MANHATTAN WEST: NORTH TOWER

ISSUED FOR: FOUNDATION BID
SEPTEMBER 12TH, 2014

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:

Seal & Signature:

REGISTERED ARCHITECT
JOHN GOTTESFELD
SEAL
STATE OF NEW YORK

Warning: It is a violation of the New York State Architecture Law, §65.5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
7	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
COVER SHEET

Project No.: 207120	B-SCAN Sheet No.: G-001.00
Date: 12 SEPT 2014	Sheet No.: G-001
Scale: NTS	
File No.: G-001	Page No.: 1 OF 30

GENERAL DRAWINGS

DRAWING NO.	DRAWING NAME	SCALE
G-001.00	COVER SHEET	NTS
G-003.00	DRAWING INDEX	NTS
G-005.00	GENERAL NOTES	NTS
G-006.00	ABBREVIATIONS, LEGENDS & SYMBOLS	NTS
G-007.00	ADA REQUIREMENTS	1/4" = 1'-0"

DRAWING LIST - BUILDERS PAVEMENT PLAN

DRAWING NO.	DRAWING NAME	SCALE
BPP-100.00	BPP TITLE SHEET	1" = 20'-0"
BPP-101.00	WEST 33RD STREET PLAN & PROFILE	1" = 20'-0"
BPP-102.00	9TH AVENUE PLAN & PROFILE	1" = 20'-0"
BPP-103.00	BPP DETAILS	1" = 20'-0"

ARCHITECTURAL DRAWINGS

DRAWING NO.	DRAWING NAME	SCALE
A-002.00	FLOOD ZONE DATA	1" = 20'-0"
A-004.00	KEY PLAN - CELLAR B1 PITS	1" = 20'-0"
A-005.00	KEY PLAN - CELLAR B1	1" = 20'-0"
A-006.00	KEY PLAN - CELLAR B	1" = 20'-0"
A-007.00	KEY PLAN - GROUND FLOOR	1" = 20'-0"
A-012.00	CODE ANALYSIS - CELLAR B1	1/16" = 1'-0"
A-013.00	CODE ANALYSIS - CELLAR B	1/16" = 1'-0"
A-014.00	CODE ANALYSIS - GROUND FLOOR & LEVEL 2	1/16" = 1'-0"
A-016.00	CODE ANALYSIS - LEVEL 5 & 6-16	1/16" = 1'-0"
A-021.00	CODE ANALYSIS - LEVEL 32 & 33-38	1/16" = 1'-0"
A-027.00	CODE ANALYSIS - LEVEL 56 & 57-58	1/16" = 1'-0"
A-094.00	CELLAR B1 PIT PLAN	1/8" = 1'-0"
A-095.00	CELLAR B1 FLOOR PLAN - PART A	1/8" = 1'-0"
A-096.00	CELLAR B1 FLOOR PLAN - PART B	1/8" = 1'-0"
A-097.00	CELLAR B FLOOR PLAN - PART A	1/8" = 1'-0"
A-098.00	CELLAR B FLOOR PLAN - PART B	1/8" = 1'-0"
A-100.00	GROUND FLOOR PLAN - PART A	1/8" = 1'-0"
A-101.00	GROUND FLOOR PLAN - PART B	1/8" = 1'-0"
A-102.00	LEVEL 2 FLOOR PLAN - RETAIL	1/8" = 1'-0"
A-103.00	LEVEL 3 FLOOR PLAN - STAIR TRANSFER	1/8" = 1'-0"
A-104.00	LEVEL 4 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
A-105.00	LEVEL 5 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
A-106.00	LEVEL 6-16 FLOOR PLAN - TYPICAL LOW-RISE	1/8" = 1'-0"
A-117.00	LEVEL 17 FLOOR PLAN - LOW-RISE	1/8" = 1'-0"
A-118.00	LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN	1/8" = 1'-0"
A-119.00	LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR	1/8" = 1'-0"
A-121.00	LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE	1/8" = 1'-0"
A-128.00	LEVEL 28 FLOOR PLAN - LOW-RISE & MID-RISE	1/8" = 1'-0"
A-129.00	LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN	1/8" = 1'-0"
A-130.00	LEVEL 30 FLOOR PLAN - MID-RISE EMR	1/8" = 1'-0"
A-131.00	LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM	1/8" = 1'-0"
A-132.00	LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK	1/8" = 1'-0"
A-133.00	LEVEL 33-38 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
A-139.00	LEVEL 39 FLOOR PLAN - MID-RISE	1/8" = 1'-0"
A-140.00	LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN	1/8" = 1'-0"
A-142.00	LEVEL 42 FLOOR PLAN - MID-RISE EMR	1/8" = 1'-0"
A-143.00	LEVEL 43-48 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
A-149.00	LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE	1/8" = 1'-0"
A-150.00	LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN	1/8" = 1'-0"
A-152.00	LEVEL 52 FLOOR PLAN - HIGH-RISE EMR	1/8" = 1'-0"
A-153.00	LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM	1/8" = 1'-0"
A-154.00	LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK	1/8" = 1'-0"
A-155.00	LEVEL 55 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
A-156.00	LEVEL 56 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
A-157.00	LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE	1/8" = 1'-0"
A-159.00	LEVEL 59 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
A-160.00	LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN	1/8" = 1'-0"
A-162.00	LEVEL 62 FLOOR PLAN - HIGH-RISE EMR	1/8" = 1'-0"
A-163.00	LEVEL 63 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
A-164.00	LEVEL 64-67 FLOOR PLAN - TYPICAL HIGH-RISE	1/8" = 1'-0"
A-168.00	LEVEL 68 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
A-169.00	LEVEL 69 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
A-170.00	ROOF PLAN - MECHANICAL PENTHOUSE	1/8" = 1'-0"
A-171.00	ROOF PLAN - MECHANICAL PENTHOUSE ROOF	1/8" = 1'-0"
A-172.00	ROOF PLAN	1/8" = 1'-0"
A-200.00	BUILDING ELEVATIONS	1/32" = 1'-0"
A-201.00	BUILDING ELEVATIONS	1/32" = 1'-0"
A-210.00	ENLARGED ELEVATIONS AT GROUND FLOOR	1/8" = 1'-0"
A-211.00	ENLARGED ELEVATIONS AT GROUND FLOOR	1/8" = 1'-0"
A-225.00	ENLARGED ELEVATIONS AT LOFT BUILDING	1/8" = 1'-0"
A-230.00	ENLARGED ELEVATIONS AT ROOF	1/8" = 1'-0"
A-231.00	ENLARGED ELEVATIONS AT ROOF	1/8" = 1'-0"
A-250.00	BUILDING SECTIONS	1/32" = 1'-0"
A-270.00	ENLARGED SECTION AT LOBBY	1/8" = 1'-0"
A-271.00	ENLARGED SECTION AT LOBBY	1/8" = 1'-0"
A-290.00	ENLARGED SECTIONS AT ROOF	1/8" = 1'-0"
A-298.00	CELLAR B1 ENLARGED PIT PLAN	1/4" = 1'-0"
A-299.00	CELLAR B1 ENLARGED CORE PLAN	1/4" = 1'-0"
A-300.00	CELLAR B ENLARGED CORE PLAN	1/4" = 1'-0"
A-301.00	GROUND FLOOR ENLARGED CORE PLAN	1/4" = 1'-0"
A-306.00	LEVEL 6-16 ENLARGED CORE PLAN - TYPICAL LOW-RISE	1/4" = 1'-0"
A-328.00	LEVEL 28 ENLARGED CORE PLAN - LOW-RISE & MID-RISE	1/4" = 1'-0"
A-333.00	LEVEL 33-38 ENLARGED CORE PLAN - TYPICAL MID-RISE	1/4" = 1'-0"
A-349.00	LEVEL 49 ENLARGED CORE PLAN - MID-RISE & HIGH-RISE	1/4" = 1'-0"
A-357.00	LEVEL 57-58 ENLARGED CORE PLAN - TYPICAL HIGH-RISE	1/4" = 1'-0"
A-364.00	LEVEL 64-67 ENLARGED CORE PLAN - TYPICAL HIGH-RISE	1/4" = 1'-0"
A-372.00	ENLARGED RETAIL CORE PLANS	1/4" = 1'-0"
A-395.00	ENLARGED TRANSFORMER VAULT PLANS	1/4" = 1'-0"
A-396.00	ENLARGED TRANSFORMER VAULT SECTIONS	1/4" = 1'-0"
A-500.00	FOUNDATION WALL SECTIONS	1/2" = 1'-0"
A-501.00	FOUNDATION WALL SECTIONS	1/2" = 1'-0"
A-502.00	FOUNDATION WALL SECTIONS	1/2" = 1'-0"
A-503.00	FOUNDATION WALL SECTIONS	1/2" = 1'-0"
A-504.00	FOUNDATION WALL SECTIONS	1/2" = 1'-0"
A-505.00	FOUNDATION WALL SECTIONS	1/2" = 1'-0"
A-506.00	FOUNDATION WALL SECTIONS	1/2" = 1'-0"
A-507.00	FOUNDATION WALL SECTIONS	1/2" = 1'-0"
A-508.00	FOUNDATION DETAILS	1 1/2" = 1'-0"
A-520.00	TYPICAL STOREFRONT	1/2" = 1'-0"
A-521.00	TYPICAL STOREFRONT	1/2" = 1'-0"
A-525.00	STOREFRONT ENTRANCES	1/2" = 1'-0"
A-526.00	STOREFRONT ENTRANCES	1/2" = 1'-0"
A-530.00	CURTAIN WALL AT LEVEL 2 MECHANICAL	1/2" = 1'-0"
A-535.00	TYPICAL CURTAIN WALL	3/4" = 1'-0"
A-536.00	TYPICAL CURTAIN WALL SECTIONS	3/4" = 1'-0"
A-537.00	TYPICAL CURTAIN WALL CORNERS	3/4" = 1'-0"
A-538.00	PANEL TYPES	3/4" = 1'-0"
A-540.00	CURTAIN WALL AT ROOF	1/2" = 1'-0"
A-541.00	CURTAIN WALL AT ROOF	1/2" = 1'-0"
A-550.00	STOREFRONT DETAILS	3" = 1'-0"
A-551.00	STOREFRONT DETAILS	3" = 1'-0"
A-552.00	STOREFRONT DETAILS	3" = 1'-0"
A-560.00	CURTAIN WALL DETAILS	3" = 1'-0"
A-561.00	CURTAIN WALL DETAILS	3" = 1'-0"
A-570.00	CURTAIN WALL DETAILS	3" = 1'-0"
A-571.00	CURTAIN WALL DETAILS	3" = 1'-0"
A-575.00	CURTAIN WALL DETAILS	3" = 1'-0"

ZONING DRAWINGS

DRAWING NO.	DRAWING NAME	SCALE
Z-001.00	ZONING MAP & TAX LOT MAP	NTS
Z-002.00	ZONING CALCULATIONS & ROOF PLAN	1" = 20'-0"
Z-003.00	HEIGHT & SETBACK SECTIONS / FLOOR AREA SCHEDULE	1" = 40'-0"
Z-004.00	STREET TREES PLANTING	1" = 40'-0"
Z-005.00	PUBLIC ACCESS AREAS - ENTRY PLAZA	AS SHOWN
Z-006.00	DEVELOPMENT SITE SURVEY	1" = 30'-0"
Z-007.00	BICYCLE PARKING / LOADING BERTHS	AS SHOWN
Z-101.00	ZONING FLOOR AREA DEDUCTIONS - CELLAR B1 PITS	1/16" = 1'-0"
Z-102.00	ZONING FLOOR AREA DEDUCTIONS - CELLAR B1	1/16" = 1'-0"
Z-103.00	ZONING FLOOR AREA DEDUCTIONS - CELLAR B	1/16" = 1'-0"
Z-104.00	ZONING FLOOR AREA DEDUCTIONS - GROUND FLOOR & LEVEL 2-4	1/16" = 1'-0"
Z-105.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 5-8	1/16" = 1'-0"
Z-106.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 9-12	1/16" = 1'-0"
Z-107.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 13-16	1/16" = 1'-0"
Z-108.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 17-20	1/16" = 1'-0"
Z-109.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 21-24	1/16" = 1'-0"
Z-110.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 25-28	1/16" = 1'-0"
Z-111.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 29-32	1/16" = 1'-0"
Z-112.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 33-36	1/16" = 1'-0"
Z-113.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 37-40	1/16" = 1'-0"
Z-114.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 41-44	1/16" = 1'-0"
Z-115.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 45-48	1/16" = 1'-0"
Z-116.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL49-52	1/16" = 1'-0"
Z-117.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 53-56	1/16" = 1'-0"
Z-118.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 57-60	1/16" = 1'-0"
Z-119.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 61-64	1/16" = 1'-0"
Z-120.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 65-68	1/16" = 1'-0"
Z-121.00	ZONING FLOOR AREA DEDUCTIONS - LEVEL 69 & PENTHOUSE ROOF PLANS	1/16" = 1'-0"

ENERGY CODE DRAWINGS

DRAWING NO.	DRAWING NAME	SCALE
EN-001.00	NYC EC COMPLIANCE COVER SHEET	NTS
EN-002.00	NYC EC COMPLIANCE MANDATORY MEASURES SHEET NO. 1	NTS
EN-003.00	NYC EC COMPLIANCE MANDATORY MEASURES SHEET NO. 2	NTS
EN-004.00	NYC EC ENERGY MODELING AND PRESCRIPTIVE PATH SHEET NO. 1	NTS
EN-005.00	NYC EC ENERGY MODELING AND PRESCRIPTIVE PATH SHEET NO.	NTS
EN-100.00	NYC EC COMPLIANCE COMPLIANCE LIGHTING CELLAR B1 FLOOR PLAN - PART A	NTS
EN-101.00	NYC EC COMPLIANCE COMPLIANCE LIGHTING CELLAR B FLOOR PLAN - PART A	NTS
EN-102.00	NYC EC COMPLIANCE COMPLIANCE LIGHTING CELLAR B FLOOR PLAN - PART B	NTS
EN-103.00	NYC EC COMPLIANCE LIGHTING LEVEL 1 FLOOR PLAN	NTS
EN-104.00	NYC EC COMPLIANCE LIGHTING LEVEL 3 FLOOR PLAN	NTS
EN-105.00	NYC EC COMPLIANCE LIGHTING LEVEL 4 FLOOR PLAN	NTS
EN-106.00	NYC EC COMPLIANCE LIGHTING LEVEL 5 FLOOR PLAN	NTS
EN-107.00	NYC EC COMPLIANCE LIGHTING LEVEL 6-16 FLOOR PLAN	NTS
EN-108.00	NYC EC COMPLIANCE LIGHTING LEVEL 17 FLOOR PLAN	NTS
EN-109.00	NYC EC COMPLIANCE LIGHTING LEVEL 18 FLOOR PLAN	NTS
EN-110.00	NYC EC COMPLIANCE LIGHTING LEVEL 19-20 FLOOR PLAN	NTS
EN-111.00	NYC EC COMPLIANCE LIGHTING LEVEL 21-27 FLOOR PLAN	NTS
EN-112.00	NYC EC COMPLIANCE LIGHTING LEVEL 28 FLOOR PLAN	NTS
EN-113.00	NYC EC COMPLIANCE LIGHTING LEVEL 29 FLOOR PLAN	NTS
EN-114.00	NYC EC COMPLIANCE LIGHTING LEVEL 30 FLOOR PLAN	NTS
EN-115.00	NYC EC COMPLIANCE LIGHTING LEVEL 31 FLOOR PLAN	NTS
EN-116.00	NYC EC COMPLIANCE LIGHTING LEVEL 32 FLOOR PLAN	NTS
EN-117.00	NYC EC COMPLIANCE LIGHTING LEVEL 33-38 FLOOR PLAN	NTS
EN-118.00	NYC EC COMPLIANCE LIGHTING LEVEL 39 FLOOR PLAN	NTS
EN-119.00	NYC EC COMPLIANCE LIGHTING LEVEL 40-41 FLOOR PLAN	NTS
EN-120.00	NYC EC COMPLIANCE LIGHTING LEVEL 42 FLOOR PLAN	NTS
EN-121.00	NYC EC COMPLIANCE LIGHTING LEVEL 43-48 FLOOR PLAN	NTS
EN-122.00	NYC EC COMPLIANCE LIGHTING LEVEL 49 FLOOR PLAN	NTS
EN-123.00	NYC EC COMPLIANCE LIGHTING LEVEL 50-51 FLOOR PLAN	NTS
EN-124.00	NYC EC COMPLIANCE LIGHTING LEVEL 52 FLOOR PLAN	NTS
EN-125.00	NYC EC COMPLIANCE LIGHTING LEVEL 53 FLOOR PLAN	NTS
EN-126.00	NYC EC COMPLIANCE LIGHTING LEVEL 44 FLOOR PLAN	NTS
EN-127.00	NYC EC COMPLIANCE LIGHTING LEVEL 55 FLOOR PLAN	NTS
EN-128.00	NYC EC COMPLIANCE LIGHTING LEVEL 56 FLOOR PLAN	NTS
EN-129.00	NYC EC COMPLIANCE LIGHTING LEVEL 57-58 FLOOR PLAN	NTS
EN-130.00	NYC EC COMPLIANCE LIGHTING LEVEL 59 FLOOR PLAN	NTS
EN-131.00	NYC EC COMPLIANCE LIGHTING LEVEL 60-61 FLOOR PLAN	NTS
EN-132.00	NYC EC COMPLIANCE LIGHTING LEVEL 62 FLOOR PLAN	NTS
EN-133.00	NYC EC COMPLIANCE LIGHTING LEVEL 63 FLOOR PLAN	NTS
EN-134.00	NYC EC COMPLIANCE LIGHTING LEVEL 64-67 FLOOR PLAN	NTS
EN-135.00	NYC EC COMPLIANCE LIGHTING LEVEL 68 FLOOR PLAN	NTS
EN-136.00	NYC EC COMPLIANCE LIGHTING LEVEL 69 FLOOR PLAN	NTS
EN-137.00	NYC EC COMPLIANCE LIGHTING ROOF PLAN MECH PENTHOUSE	NTS
EN-138.00	NYC EC COMPLIANCE LIGHTING ROOF PLAN MECH PENTHOUSE ROOF	NTS
EN-139.00	NYC EC COMPLIANCE LIGHTING SYSTEM CONTROLS SHEET NO. 1	NTS
EN-200.00	ENCLOSURE ASSEMBLIES	1 1/2" = 1'-0"

STRUCTURAL DRAWINGS

DRAWING NO.	DRAWING NAME	SCALE
S-001.00	STRUCTURAL SYSTEMS DRAWING AND SHEET LIST	NTS
S-002.00	TYPICAL STRUCTURAL SYMBOLS AND ABBREVIATIONS	NTS
S-003.00	EXCAVATION AND FOUNDATION NOTES	NTS
S-004.00	STRUCTURAL CONCRETE NOTES	NTS
S-005.00	STRUCTURAL STEEL AND METAL DECK NOTES	NTS
S-010.00	LOADING DIAGRAMS	NTS
S-011.00	LOADING DIAGRAMS	NTS
S-050.00	OVERALL LEVEL B PLAN	NTS
S-051.00	OVERALL GROUND FLOOR PLAN	NTS
S-092.00	FOUNDATION LOWER PLAN (TRACK LEVEL)	1/8"=1'-0"
S-093.00	FOUNDATION UPPER PLAN	1/8"=1'-0"
S-094.00	CELLAR B1 PITS FLOOR FRAMING PLAN	1/8"=1'-0"
S-095.00	CELLAR B1 FLOOR FRAMING PLAN - PART A	1/8"=1'-0"
S-096.00	CELLAR B1 FLOOR FRAMING PLAN - PART B	1/8"=1'-0"
S-097.00	CELLAR B FLOOR FRAMING PLAN - PART A	1/8"=1'-0"
S-098.00	CELLAR B FLOOR FRAMING PLAN - PART B	1/8"=1'-0"
S-100.00	GROUND FLOOR FRAMING PLAN - LOBBY - PART A	1/8"=1'-0"
S-101.00	GROUND FLOOR FRAMING PLAN - LOBBY - PART B	1/8"=1'-0"
S-102.00	2ND FLOOR FRAMING PLAN	1/8"=1'-0"
S-103.00	3RD FLOOR FRAMING PLAN	1/8"=1'-0"
S-104.00	4TH FLOOR FRAMING PLAN - MECHANICAL	1/8"=1'-0"
S-105.00	5TH FLOOR FRAMING PLAN - MECHANICAL MEZZANINE	1/8"=1'-0"
S-106.00	6TH FLOOR FRAMING PLAN- LOW-RISE	1/8"=1'-0"
S-116.00	16TH FLOOR FRAMI NG PLAN - TYPICAL LOW-RISE	1/8"=1'-0"
S-131.00	31ST FLOOR FRAMING PLAN - MID-RISE	1/8"=1'-0"
S-137.00	37TH FLOOR FRAMING PLAN - TYPICAL MID-RISE	1/8"=1'-0"
S-153.00	53RD FLOOR FRAMING PLAN - HIGH-RISE	1/8"=1'-0"
S-159.00	59TH FLOOR FRAMING PLAN - TYPICAL HIGH-RISE	1/8"=1'-0"
S-168.00	68TH FLOOR FRAMING PLAN - MECHANICAL	1/8"=1'-0"
S-169.00	69TH FLOOR FRAMING PLAN - MECHANICAL MEZZANINE	1/8"=1'-0"
S-170.00	ROOF FRAMING PLAN - MECHANICAL PENTHOUSE	1/8"=1'-0"
S-171.00	ROOF FRAMING PLAN	1/8"=1'-0"
S-201.00	TOWER ELEVATIONS	AS NOTED
S-202.00	TOWER ELEVATIONS	AS NOTED
S-203.00	TOWER SECTIONS	AS NOTED
S-204.00	TOWER SECTIONS	AS NOTED
S-301.00	CORE WALL CONT. FOOTING SECTIONS & DETAILS	AS NOTED
S-302.00	CORE WALL CONT. FOOTINGS SECTIONS & DETAILS	AS NOTED
S-307.00	SPREAD FOOTING SCHEDULE, SECTIONS & DETAILS	AS NOTED
S-310.00	WEST PERIMETER COLUMN FOUNDATION SECTIONS & DETAILS	AS NOTED
S-311.00	WEST PERIMETER COLUMN FOUNDATION SECTIONS & DETAILS	AS NOTED
S-315.00	FOUNDATION WALL ELEVATIONS	AS NOTED
S-316.00	FOUNDATION WALL SECTIONS & DETAILS	AS NOTED
S-317.00	FOUNDATION WALL SECTIONS & DETAILS	AS NOTED
S-318.00	FOUNDATION WALL SECTIONS & DETAILS	AS NOTED
S-325.00	SLAB-ON-GRADE SECTIONS & DETAILS	AS NOTED
S-340.00	REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS & DETAILS	AS NOTED
S-341.00	TYPICAL REINFORCED CONCRETE WALL DETAILS	AS NOTED
S-342.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-343.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-344.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-345.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-346.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-347.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-348.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-349.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-350.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-351.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-352.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-353.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-354.00	CORE WALL REINFORCEMENT LAYOUT	AS NOTED
S-355.00	LINK BEAM SCHEDULES, SECTIONS & DETAILS	AS NOTED
S-356.00	LINK BEAM SECTION AND DETAILS	AS NOTED
S-360.00	CORE WALL ELEVATIONS ALONG LINE 3	AS NOTED
S-361.00	CORE WALL ELEVATIONS ALONG LINE 5	AS NOTED
S-362.00	CORE WALL ELEVATIONS ALONG LINE C	AS NOTED
S-363.00	CORE WALL ELEVATIONS ALONG LINE D	AS NOTED
S-364.00	CORE WALL ELEVATIONS ALONG LINE E	AS NOTED
S-365.00	CORE WALL ELEVATIONS ALONG LINE F	AS NOTED
S-366.00	CORE WALL ELEVATIONS ALONG LINE G	AS NOTED
S-367.00	CORE WALL ELEVATIONS ALONG LINE 4	AS NOTED
S-368.00	CORE WALL ELEVATIONS WITHIN SERVICE CORE BETWEEN LINES D & E	AS NOTED
S-370.00	REINFORCED CONCRETE BEAM SCHEDULE, SECTIONS & DETAILS	AS NOTED
S-375.00	REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS & DETAIL	AS NOTED
S-401.00	STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS & DETAILS	AS NOTED
S-402.00	STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS & DETAILS	AS NOTED
S-405.00	KICKER COLUMNS AT CORE LINES C TO F - SCHEDULES, ELEVATIONS, SECTIONS & DETAILS	AS NOTED
S-406.00	KICKER COLUMNS AT CORE LINE G - SCHEDULES, ELEVATIONS, SECTIONS & DETAILS	AS NOTED
S-407.00	KICKER COLUMNS AT CORE LINE 3 & 5 SCHEDULES, ELEVATIONS, SECTIONS & DETAILS	AS NOTED
S-408.00	KICKER COLUMN AT LINE B - SCHEDULE, ELEVATIONS, SECTIONS & DETAILS	AS NOTED
S-409.00	COLUMNS & DIAGONALS ON LINE A BELOW LEVEL 6 - SECTIONS & DETAILS	AS NOTED
S-410.00	KICKER COLUMN SECTIONS & DETAILS	AS NOTED
S-411.00	COLUMNS & DIAGONALS EAST OF LINE J BELOW LEVEL 1 - SECTIONS & DETAILS	AS NOTED
S-415.00	LOWER BELT TRUSS SCHEDULES, SECTIONS & DETAILS	AS NOTED
S-416.00	UPPER BELT TRUSS SCHEDULES, SECTIONS & DETAILS	AS NOTED
S-417.00	BELT TRUSS SECTIONS & DETAILS	AS NOTED
S-420.00	TYPICAL STRUCTURAL STEEL SECTIONS & DETAILS	AS NOTED
S-421.00	TYPICAL STRUCTURAL STEEL SECTIONS & DETAILS	AS NOTED
S-422.00	RETAIL SECTIONS	AS NOTED
S-501.00	METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS	AS NOTED

MECHANICAL DRAWINGS

DRAWING NO.	DRAWING NAME	SCALE
M-001.00	MECHANICAL DRAWING INDEX	NTS
M-002.00	MECHANICAL TITLE SHEET	NTS
M-094.00	MECHANICAL CELLAR B1 PIT PART PLAN	1/8" = 1'-0"
M-095.00	MECHANICAL CELLAR B1 FLOOR PLAN - PART A	1/8" = 1'-0"
M-096.00	MECHANICAL CELLAR B1 FLOOR PLAN - PART B	1/8" = 1'-0"
M-097.00	MECHANICAL CELLAR B FLOOR PLAN - PART A	1/8" = 1'-0"
M-098.00	MECHANICAL CELLAR B FLOOR PLAN - PART B	1/8" = 1'-0"
M-100.00	MECHANICAL GROUND FLOOR PLAN - PART A	1/8" = 1'-0"
M-101.00	MECHANICAL GROUND FLOOR PLAN - PART B	1/8" = 1'-0"
M-102.00	MECHANICAL LEVEL 2 FLOOR PLAN - RETAIL	1/8" = 1'-0"
M-103.00	MECHANICAL LEVEL 3 FLOOR PLAN - STAIR TRANSFER	1/8" = 1'-0"
M-104.00	MECHANICAL LEVEL 4 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
M-105.00	MECHANICAL LEVEL 5 FLOOR PLAN - MECHANICAL MEZANNINE	1/8" = 1'-0"
M-106.00	MECHANICAL LEVEL 6 - 16 FLOOR PLAN - TYPICAL LOW-RISE	1/8" = 1'-0"
M-117.00	MECHANICAL LEVEL 17 FLOOR PLAN - LOW-RISE	1/8" = 1'-0"
M-118.00	MECHANICAL LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN	1/8" = 1'-0"
M-119.00	MECHANICAL LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR	1/8" = 1'-0"
M-121.00	MECHANICAL LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE	1/8" = 1'-0"
M-128.00	MECHANICAL LEVEL 28 FLOOR PLAN - LOW RISE & MID-RISE	1/8" = 1'-0"
M-129.00	MECHANICAL LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN	1/8" = 1'-0"
M-130.00	MECHANICAL LEVEL 30 FLOOR PLAN - MID-RISE EMR	1/8" = 1'-0"
M-131.00	MECHANICAL LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM	1/8" = 1'-0"
M-132.00	MECHANICAL LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK	1/8" = 1'-0"
M-133.00	MECHANICAL LEVEL 33-38 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
M-139.00	MECHANICAL LEVEL 39 FLOOR PLAN - MID-RISE	1/8" = 1'-0"
M-140.00	MECHANICAL LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN	1/8" = 1'-0"
M-142.00	MECHANICAL LEVEL 42 FLOOR PLAN - MID-RISE EMR	1/8" = 1'-0"
M-143.00	MECHANICAL LEVEL 43-48 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
M-149.00	MECHANICAL LEVEL 49 FLOOR PLAN - MID RISE & HIGH-RISE	1/8" = 1'-0"
M-150.00	MECHANICAL LEVEL 50 FLOOR PLAN - HIGH-RISE OVERRUN	1/8" = 1'-0"
M-152.00	MECHANICAL LEVEL 52 FLOOR PLAN - HIGH-RISE EMR	1/8" = 1'-0"
M-153.00	MECHANICAL LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM	1/8" = 1'-0"
M-154.00	MECHANICAL LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK	1/8" = 1'-0"
M-155.00	MECHANICAL LEVEL 55 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
M-156.00	MECHANICAL LEVEL 56 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
M-157.00	LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH RISE	1/8" = 1'-0"
M-159.00	MECHANICAL LEVEL 59 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
M-160.00	MECHANICAL LEVEL 60 - 61 FLOOR PLAN - HIGH-RISE OVERRUN	1/8" = 1'-0"
M-162.00	MECHANICAL LEVEL 62 FLOOR PLAN - HIGH-RISE EMR	1/8" = 1'-0"
M-163.00	MECHANICAL LEVEL 63 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
M-164.00	MECHANICAL LEVEL 64-67 FLOOR PLAN - TYPICAL HIGH RISE	1/8" = 1'-0"
M-168.00	MECHANICAL LEVEL 68 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
M-169.00	MECHANICAL LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE	1/8" = 1'-0"
M-170.00	MECHANICAL ROOF PLAN - MECHANICAL PENTHOUSE	1/8" = 1'-0"
M-171.00	MECHANICAL ROOF PLAN - MECHANICAL PENTHOUSE ROOF	1/8" = 1'-0"
M-172.00	MECHANICAL ROOF PLAN	1/8" = 1'-0"
M-200.00	MECHANICAL TYPICAL FAN ROOM ENLARGED PLAN	1/4" = 1'-0"
M-300.00	MECHANICAL NORTH SHEAR WALL SECTIONS	1/4" = 1'-0"
M-301.00	MECHANICAL SOUTH SHEAR WALL SECTIONS	1/4" = 1'-0"
M-302.00	MECHANICAL COOLING TOWER ROOF SECTION	1/4" = 1'-0"
M-400.00	MECHANICAL BASEMENT AIR RISER DIAGRAM	NTS
M-401.00	MECHANICAL LOW-RISE AIR RISER DIAGRAM	NTS
M-402.00	MECHANICAL HIGH-RISE AIR RISER DIAGRAM	NTS
M-403.00	MECHANICAL PIPING RISER DIAGRAM SHEET 1	NTS
M-404.00	MECHANICAL PIPING RISER DIAGRAM SHEET 2	NTS
M-405.00	MECHANICAL HOT WATER RISER DIAGRAM SHEET 1	NTS
M-406.00	MECHANICAL HOT WATER RISER DIAGRAM SHEET 2	NTS
M-407.00	MECHANICAL HOT WATER RISER DIAGRAM LOBBY SHEET 3	NTS
M-500.00	MECHANICAL SCHEDULE SHEET 1 OF 6	1/8" = 1'-0"
M-501.00	MECHANICAL SCHEDULE SHEET 2 OF 6	1/8" = 1'-0"
M-502.00	MECHANICAL SCHEDULE SHEET 3 OF 6	1/8" = 1'-0"
M-503.00	MECHANICAL SCHEDULE SHEET 4 OF 6	1/8" = 1'-0"
M-504.00	MECHANICAL SCHEDULE SHEET 5 OF 6	1/8" = 1'-0"
M-505.00	MECHANICAL SCHEDULE SHEET 6 OF 6	1/8" = 1'-0"
M-600.00	MECHANICAL CO-GEN FLOW DIAGRAM	NTS
M-601.00	MECHANICAL CONDENSER WATER FLOW DIAGRAM	NTS
M-602.00	MECHANICAL FUEL OIL FLOW DIAGRAM	NTS
M-603.00	MECHANICAL STEAM / HOT WATER FLOW DIAGRAM	NTS
M-700.00	MECHANICAL DETAIL SHEET NO. 1	NTS
M-701.00	MECHANICAL DETAIL SHEET NO. 2	NTS
M-702.00	MECHANICAL DETAIL SHEET NO. 3	NTS
M-703.00	MECHANICAL DETAIL SHEET NO. 4	NTS
M-704.00	MECHANICAL DETAIL SHEET NO. 5	NTS
M-705.00	MECHANICAL DETAIL SHEET NO. 6	NTS
M-706.00	MECHANICAL DETAIL SHEET NO. 7	NTS

FIRE ALARM

DRAWING NO.	DRAWING NAME	SCALE
FA-001.00	FIRE ALARM TITLE SHEET	NTS
FA-002.00	FIRE ALARM ABBREVIATIONS AND SYMBOLS LIST	NTS
FA-097.00	FIRE ALARM CELLAR B FLOOR PLAN - PART A	1/8" = 1'-0"
FA-098.00	FIRE ALARM CELLAR B FLOOR PLAN - PART B	1/8" = 1'-0"
FA-100.00	FIRE ALARM GROUND FLOOR PLAN - PART A	1/8" = 1'-0"
FA-104.00	FIRE ALARM LEVEL 4 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
FA-105.00	FIRE ALARM LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE	1/8" = 1'-0"
FA-106.00	FIRE ALARM LEVEL 6-67 FLOOR PLAN - TYPICAL OFFICE FLOOR	1/8" = 1'-0"
FA-168.00	FIRE ALARM LEVEL 68 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
FA-169.00	FIRE ALARM LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE	1/8" = 1'-0"
FA-300.00	FIRE ALARM EMR PART PLAN	1/8" = 1'-0"
FA-401.00	FIRE ALARM RISER DIAGRAM NO. 1	NTS
FA-402.00	FIRE ALARM RISER DIAGRAM NO. 2	NTS
FA-403.00	FIRE ALARM RISER DIAGRAM NO. 3	NTS
FA-404.00	FIRE ALARM RISER DIAGRAM NO. 4	NTS
FA-405.00	FIRE ALARM RISER DIAGRAM NO. 5	NTS
FA-406.00	FIRE ALARM RISER DIAGRAM NO. 6	NTS

PLUMBING DRAWINGS

DRAWING NO.	DRAWING NAME	SCALE
P-001.00	PLUMBING DRAWING INDEX	NTS
P-002.00	PLUMBING ABBREVIATIONS AND SYMBOLS LIST	NTS
P-093.00	PLUMBING CELLAR B1 PIT PART PLAN - PART A	1/8" = 1'-0"
P-094.00	PLUMBING CELLAR B1 FLOOR PLAN - PART A	1/8" = 1'-0"
P-095.00	PLUMBING CELLAR B1 FLOOR PLAN - PART B	1/8" = 1'-0"
P-097.00	PLUMBING CELLAR B FLOOR PLAN - PART A	1/8" = 1'-0"
P-098.00	PLUMBING CELLAR B FLOOR PLAN - PART B	1/8" = 1'-0"
P-100.00	PLUMBING GROUND FLOOR PLAN - PART A	1/8" = 1'-0"
P-101.00	PLUMBING GROUND FLOOR PLAN - PART B	1/8" = 1'-0"
P-102.00	PLUMBING LEVEL 2 FLOOR PLAN - RETAIL	1/8" = 1'-0"
P-103.00	PLUMBING LEVEL 3 FLOOR PLAN - STAIR TRANSFER	1/8" = 1'-0"
P-104.00	PLUMBING LEVEL 4 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
P-105.00	PLUMBING LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE	1/8" = 1'-0"
P-106.00	PLUMBING LEVEL 6-15 FLOOR PLAN - TYPICAL LOW-RISE	1/8" = 1'-0"
P-116.00	PLUMBING LEVEL 16 FLOOR PLAN - TYPICAL LOW-RISE	1/8" = 1'-0"
P-117.00	PLUMBING LEVEL 17 FLOOR PLAN - LOW-RISE	1/8" = 1'-0"
P-118.00	PLUMBING LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN	1/8" = 1'-0"
P-119.00	PLUMBING LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR	1/8" = 1'-0"
P-121.00	PLUMBING LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE	1/8" = 1'-0"
P-128.00	PLUMBING LEVEL 28 FLOOR PLAN - LOW-RISE & MID-RISE	1/8" = 1'-0"
P-129.00	PLUMBING LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN	1/8" = 1'-0"
P-130.00	PLUMBING LEVEL 30 FLOOR PLAN - MID-RISE EMR	1/8" = 1'-0"
P-131.00	PLUMBING LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM	1/8" = 1'-0"
P-132.00	PLUMBING LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK	1/8" = 1'-0"
P-133.00	PLUMBING LEVEL 33-35 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
P-136.00	PLUMBING LEVEL 36 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
P-137.00	PLUMBING LEVEL 37-38 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
P-139.00	PLUMBING LEVEL 39 FLOOR PLAN - MID-RISE	1/8" = 1'-0"
P-140.00	PLUMBING LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN	1/8" = 1'-0"
P-142.00	PLUMBING LEVEL 42 FLOOR PLAN - MID-RISE EMR	1/8" = 1'-0"
P-143.00	PLUMBING LEVEL 43-46 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
P-147.00	PLUMBING LEVEL 47-48 FLOOR PLAN - TYPICAL MID-RISE	1/8" = 1'-0"
P-149.00	PLUMBING LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE	1/8" = 1'-0"
P-150.00	PLUMBING LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN	1/8" = 1'-0"
P-152.00	PLUMBING LEVEL 52 FLOOR PLAN - HIGH-RISE EMR	1/8" = 1'-0"
P-153.00	PLUMBING LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM	1/8" = 1'-0"
P-154.00	PLUMBING LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK	1/8" = 1'-0"
P-155.00	PLUMBING LEVEL 55 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
P-156.00	PLUMBING LEVEL 56 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
P-157.00	PLUMBING LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE	1/8" = 1'-0"
P-159.00	PLUMBING LEVEL 59 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
P-160.00	PLUMBING LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN	1/8" = 1'-0"
P-162.00	PLUMBING LEVEL 62 FLOOR PLAN - HIGH-RISE EMR	1/8" = 1'-0"
P-163.00	PLUMBING LEVEL 63 FLOOR PLAN - HIGH-RISE	1/8" = 1'-0"
P-164.00	PLUMBING LEVEL 64-66 FLOOR PLAN - TYPICAL HIGH-RISE	1/8" = 1'-0"
P-167.00	PLUMBING LEVEL 67 FLOOR PLAN - TYPICAL HIGH-RISE	1/8" = 1'-0"
P-168.00	PLUMBING LEVEL 68 FLOOR PLAN - MECHANICAL	1/8" = 1'-0"
P-169.00	PLUMBING LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE	1/8" = 1'-0"
P-170.00	PLUMBING ROOF PLAN - MECHANICAL PENTHOUSE	1/8" = 1'-0"
P-171.00	PLUMBING ROOF PLAN - MECHANICAL PENTHOUSE ROOF	1/8" = 1'-0"
P-172.00	PLUMBING ROOF PLAN	1/8" = 1'-0"
P-400.00	PLUMBING DOMESTIC WATER RISER DIAGRAM	NTS
P-401.00	PLUMBING SANITARY RISER DIAGRAM - SHEET 1	NTS
P-402.00	PLUMBING SANITARY RISER DIAGRAM - SHEET 2	NTS
P-403.00	PLUMBING STORM & NATURAL GAS RISER DIAGRAMS	NTS
P-500.00	PLUMBING SCHEDULE SHEET	NTS
P-600.00	PLUMBING DETAILS - SHEET 1	NTS
P-601.00	PLUMBING DETAILS - SHEET 2	NTS

FIRE PROTECTION

DRAWING NO.	DRAWING NAME	SCALE
FP-001.00	FIRE PROTECTION DRAWING INDEX	NTS
FP-002.00	FIRE PROTECTION ABBREVIATIONS AND SYMBOLS LIST	NTS
FP-097.00	FIRE PROTECTION CELLAR B1 FLOOR PLAN - PART A	1/8' = 1'-0"
FP-098.00	FIRE PROTECTION CELLAR B FLOOR PLAN - PART A	1/8' = 1'-0"
FP-099.00	FIRE PROTECTION CELLAR B FLOOR PLAN - PART B	1/8' = 1'-0"
FP-100.00	FIRE PROTECTION GROUND FLOOR PLAN - PART A	1/8' = 1'-0"
FP-101.00	FIRE PROTECTION GROUND FLOOR PLAN - PART B	1/8' = 1'-0"
FP-102.00	FIRE PROTECTION LEVEL 2 FLOOR PLAN - RETAIL	1/8' = 1'-0"
FP-103.00	FIRE PROTECTION LEVEL 3 FLOOR PLAN - STAIR TRANSFER	1/8' = 1'-0"
FP-104.00	FIRE PROTECTION LEVEL 4 FLOOR PLAN - MECHANICAL	1/8' = 1'-0"
FP-105.00	FIRE PROTECTION LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE	1/8' = 1'-0"
FP-106.00	FIRE PROTECTION LEVEL 6-16 FLOOR PLAN - TYPICAL LOW-RISE	1/8' = 1'-0"
FP-117.00	FIRE PROTECTION LEVEL 17 FLOOR PLAN - LOW-RISE	1/8' = 1'-0"
FP-118.00	FIRE PROTECTION LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN	1/8' = 1'-0"
FP-119.00	FIRE PROTECTION LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR	1/8' = 1'-0"
FP-121.00	FIRE PROTECTION LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE	1/8' = 1'-0"
FP-128.00	FIRE PROTECTION LEVEL 28 FLOOR PLAN - LOW-RISE & MIDE-RISE	1/8' = 1'-0"
FP-129.00	FIRE PROTECTION LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN	1/8' = 1'-0"
FP-130.00	FIRE PROTECTION LEVEL 30 FLOOR PLAN - MID-RISE EMR	1/8' = 1'-0"
FP-131.00	FIRE PROTECTION LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM	1/8' = 1'-0"
FP-132.00	FIRE PROTECTION LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK	1/8' = 1'-0"
FP-133.00	FIRE PROTECTION LEVEL 33-38 FLOOR PLAN - TYPICAL MID-RISE	1/8' = 1'-0"
FP-139.00	FIRE PROTECTION LEVEL 39 FLOOR PLAN - MID-RISE	1/8' = 1'-0"
FP-140.00	FIRE PROTECTION LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN	1/8' = 1'-0"
FP-142.00	FIRE PROTECTION LEVEL 42 FLOOR PLAN - MID-RISE EMR	1/8' = 1'-0"
FP-143.00	FIRE PROTECTION LEVEL 43-48 FLOOR PLAN - TYPICAL MID-RISE	1/8' = 1'-0"
FP-149.00	FIRE PROTECTION LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE	1/8' = 1'-0"
FP-150.00	FIRE PROTECTION LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN	1/8' = 1'-0"
FP-152.00	FIRE PROTECTION LEVEL 52 FLOOR PLAN - HIGH-RISE EMR	1/8' = 1'-0"
FP-153.00	FIRE PROTECTION LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM	1/8' = 1'-0"
FP-154.00	FIRE PROTECTION LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK	1/8' = 1'-0"
FP-155.00	FIRE PROTECTION LEVEL 55 FLOOR PLAN - HIGH-RISE	1/8' = 1'-0"
FP-156.00	FIRE PROTECTION LEVEL 56 FLOOR PLAN - HIGH-RISE	1/8' = 1'-0"
FP-157.00	FIRE PROTECTION LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE	1/8' = 1'-0"
FP-159.00	FIRE PROTECTION LEVEL 59 FLOOR PLAN - HIGH-RISE	1/8' = 1'-0"
FP-160.00	FIRE PROTECTION LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN	1/8' = 1'-0"
FP-162.00	FIRE PROTECTION LEVEL 62 FLOOR PLAN - HIGH-RISE EMR	1/8' = 1'-0"
FP-163.00	FIRE PROTECTION LEVEL 63 FLOOR PLAN - HIGH-RISE	1/8' = 1'-0"
FP-164.00	FIRE PROTECTION LEVEL 64-67 FLOOR PLAN - TYPICAL HIGH-RISE	1/8' = 1'-0"
FP-168.00	FIRE PROTECTION LEVEL 68 FLOOR PLAN - MECHANICAL	1/8' = 1'-0"
FP-169.00	FIRE PROTECTION LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE	1/8' = 1'-0"
FP-170.00	FIRE PROTECTION ROOF PLAN - MECHANICAL PENTHOUSE	1/8' = 1'-0"
FP-196.00	FIRE PROTECTION CELLAR B1 PIT PART SPRINKLER PLAN	1/8' = 1'-0"
FP-197.00	FIRE PROTECTION CELLAR B1 FLOOR SPRINKLER PLAN - PART A	1/8' = 1'-0"
FP-198.00	FIRE PROTECTION CELLAR B FLOOR SPRINKLER PLAN - PART A	1/8' = 1'-0"
FP-199.00	FIRE PROTECTION CELLAR B FLOOR SPRINKLER PLAN - PART B	1/8' = 1'-0"
FP-200.00	FIRE PROTECTION GROUND FLOOR SPRINKLER PLAN - PART A	1/8' = 1'-0"
FP-201.00	FIRE PROTECTION GROUND FLOOR SPRINKLER PLAN - PART B	1/8' = 1'-0"
FP-202.00	FIRE PROTECTION LEVEL 2 FLOOR SPRINKLER PLAN - RETAIL	1/8' = 1'-0"
FP-203.00	FIRE PROTECTION LEVEL 3 FLOOR SPRINKLER PLAN - STAIR TRANSFER	1/8' = 1'-0"
FP-204.00	FIRE PROTECTION LEVEL 4 FLOOR SPRINKLER PLAN - MECHANICAL	1/8' = 1'-0"
FP-205.00	FIRE PROTECTION LEVEL 5 FLOOR SPRINKLER PLAN - MECHANICAL MEZZANINE	1/8' = 1'-0"
FP-206.00	FIRE PROTECTION LEVEL 6-27 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR	1/8' = 1'-0"
FP-228.00	FIRE PROTECTION LEVEL 28-48 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR	1/8' = 1'-0"
FP-249.00	FIRE PROTECTION LEVEL 49-67 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR	1/8' = 1'-0"
FP-268.00	FIRE PROTECTION LEVEL 68 FLOOR SPRINKLER PLAN - MECHANICAL MEZZANINE	1/8' = 1'-0"
FP-269.00	FIRE PROTECTION ROOF SPRINKLER PLAN - MECHANICAL PENTHOUSE	1/8' = 1'-0"
FP-270.00	FIRE PROTECTION ROOF SPRINKLER PLAN - MECHANICAL PENTHOUSE ROOF	1/8' = 1'-0"
FP-400.00	FIRE PROTECTION RISER DIAGRAM SHEET 1	NTS
FP-401.00	FIRE PROTECTION RISER DIAGRAM SHEET 2	NTS
FP-500.00	FIRE PROTECTION SCHEDULE SHEET	NTS
FP-600.00	FIRE PROTECTION DETAIL SHEET	NTS

DEPT OF BLDGS 121187143 Job Number

ES143828814 Scan Code

MANHATTAN WEST:
NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:

Seal & Signature:

TED J. GOTTESDIENER
No. 5649

Warning: It is a violation of the New York State Architecture Law, §69.5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
7	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

DRAWING INDEX

Project No.: 207120

Date: 20 JUN 2014

Scale: NTS

File No.: G-003

B-SCAN Sheet No.: G-003.00

Sheet No.: G-003

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DEPT OF BLDGS 121187143 Job Number

ES167755778 Scan Code

G-000 - GENERAL NOTES

1. THESE DRAWINGS INDICATE THE GENERAL SCOPE OF THE PROJECT IN TERMS OF ARCHITECTURAL DESIGN CONCEPT, THE DIMENSIONS OF THE BUILDING, THE MAJOR ARCHITECTURAL ELEMENTS AND THE TYPE OF STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION SYSTEMS. THE DRAWINGS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL WORK REQUIRED FOR FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. ON THE BASIS OF THE GENERAL SCOPE INDICATED OR DESCRIBED, THE CONTRACTOR SHALL FURNISH ALL ITEMS REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK.

2. THE CONTRACTOR SHALL PREPARE "COORDINATION DRAWINGS" WHICH REPRESENT THAT ALL TRADES INVOLVED IN THE PROJECT HAVE COORDINATED THE INSTALLATION OF THEIR WORK SO AS TO AVOID CONFLICTS AND/OR MISALIGNMENTS.

3. ALL WORK CONTAINED IN ALL CEILINGS SHALL BE SIMULTANEOUSLY REPRESENTED ON A SINGLE DRAWING TO CONFIRM THAT ALL TRADES "FIT" WITHIN THE ALLOTTED SPACE. ALL CONFLICTS SHALL BE RESOLVED PRIOR TO SUBMITTING SHOP DRAWINGS FOR THE ARCHITECT'S (OR ENGINEER'S) REVIEW AND PRIOR TO EXECUTING ANY OF THE WORK WITHIN THE CEILING CAVITY.

4. EXISTING WORK IS TO BE PROTECTED DURING CONSTRUCTION AND KEPT FREE OF DEBRIS. ANY EXISTING WORK DAMAGED DURING CONSTRUCTION IS TO BE REPLACED WITH WORK OF EQUAL QUALITY.

5. THE ARCHITECT HAS NOT BEEN RETAINED FOR SUPERVISION OF CONSTRUCTION AND ASSUMES NO RESPONSIBILITY FOR MEANS, METHODS AND TECHNIQUES OF CONSTRUCTION.

6. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND JOB CONDITIONS BEFORE COMMENCEMENT OF WORK AND BE RESPONSIBLE FOR THEIR ACCURACY. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE DOCUMENTS OR WITHIN THE DOCUMENTS ARE TO BE REPORTED TO THE ARCHITECT VIA THE CONTRACTOR.

7. DIMENSIONS SHALL BE FIGURED RATHER THAN DETERMINED BY SCALE OR RULE. IN THE EVENT OF CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS OR WITHIN THEMSELVES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BRING THE CONFLICT TO THE ARCHITECT'S ATTENTION. THE ARCHITECT WILL DECIDE WHICH CONFLICTING REQUIREMENT GOVERNS.

8. ALL REFERENCES TO CODES, SPECIFICATIONS AND STANDARDS REFERRED TO IN THE CONTRACT DOCUMENTS SHALL MEAN, AND ARE INTENDED TO BE THE LATEST EDITION, AMENDMENT, OR REVISION OF SUCH REFERENCE STANDARDS IN EFFECT AS OF THE DATE OF ISSUANCE OF THE CONTRACT DOCUMENTS.

9. EXCEPT WHERE THE CONTRACT DOCUMENTS INCLUDE MORE STRINGENT REQUIREMENTS, APPLICABLE CONSTRUCTION INDUSTRY STANDARDS HAVE THE SAME FORCE AND EFFECT AS IF BOUND OR COPIED DIRECTLY INTO THE CONTRACT DOCUMENTS TO THE EXTENT REFERENCED. SUCH STANDARDS ARE MADE A PART OF THE CONTRACT DOCUMENTS BY REFERENCE.

10. WHERE COMPLIANCE WITH TWO OR MORE STANDARDS IS SPECIFIED, AND THE STANDARDS MAY ESTABLISH DIFFERENT OR CONFLICTING REQUIREMENTS FOR MINIMUM QUANTITIES OR QUANTITY LEVELS, REQUIREMENTS THAT ARE DIFFERENT, BUT APPARENTLY EQUAL, AND UNCERTAINTIES ARE TO BE DEFERRED TO THE DESIGN TEAM FOR A DECISION BEFORE PROCEEDING.

11. EACH ENTITY ENGAGED IN CONSTRUCTION ON THE PROJECT IS REQUIRED TO BE FAMILIAR WITH INDUSTRY STANDARDS APPLICABLE TO THAT ENTITY'S CONSTRUCTION ACTIVITY. COPIES OF APPLICABLE STANDARDS ARE NOT BOUND WITH THE CONTRACT DOCUMENTS. WHERE COPIES OF STANDARDS ARE NEEDED FOR PERFORMANCE OF A REQUIRED CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL OBTAIN COPIES DIRECTLY FROM THE PUBLICATION SOURCE.

12. WHERE "AS SHOWN", "AS INDICATED", "AS DETAILED" OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT REFERENCE TO THE DRAWINGS ACCOMPANYING THE SPECIFICATIONS IS MADE UNLESS OTHERWISE STATED. WHERE "AS DIRECTED", "AS REQUIRED", "AS AUTHORIZED", "AS ACCEPTED", OR WORDS OF SIMILAR IMPORT ARE USED, IT SHALL BE UNDERSTOOD THAT THE DIRECTION, REQUIREMENT, REVIEW OR ACCEPTANCE OF THE DESIGN TEAM IS INTENDED, UNLESS OTHERWISE STATED.

13. AS USED IN THE CONTRACT DOCUMENTS, "PROVIDE" SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE", THAT IS, "FURNISH AND INSTALL".

14. THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS.

15. THE TERM "INSTALL" IS TO BE USED TO DESCRIBE OPERATIONS AT THE PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

16. THE TERM "REGULATIONS" INCLUDES LAWS, ORDINANCES, STATUTES, AND LAWFUL ORDERS ISSUED BY AUTHORITIES HAVING JURISDICTION, AS WELL AS RULES, CONVENTIONS, AND AGREEMENTS WITHIN THE CONSTRUCTION INDUSTRY THAT CONTROL PERFORMANCE OF THE WORK.

17. ON SHEETS FOR MULTIPLE FLOORS, FINISH CODES, KEYNOTES, GENERAL NOTES AND SHEET NOTES ARE FOR FLOOR LISTED U.N.O.

G-000 - BUILDING DEPARTMENT NOTES (NYC)

A. GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR FILING AND SECURING ALL PERMITS.

2. THE CONTRACTOR IS TO BE PRESENT AT FINAL INSPECTION WITH THE BUILDING DEPARTMENT INSPECTOR.

3. PROPER 24 HOUR WRITTEN NOTICE SHALL BE GIVEN TO THE DEPARTMENT BEFORE COMMENCMENT OF WORK PER SECTION BC 105.5.1. PROPER 72 HOUR WRITTEN NOTICE SHALL BE GIVEN TO SPECIAL INSPECTORS BEFORE COMMENCEMENT OF ANY WORK REQUIRING SPECIAL INSPECTION PER SECTION BC 1704.1.1.1.

4. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE NEW YORK CITY CONSTRUCTION CODE.

5. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE REQUIREMENTS OF CHAPTER 33, "SAFEGUARDS DURING CONSTRUCTION OR DEMOLITION" AND SHALL BE HELD RESPONSIBLE FOR SAFE MAINTENANCE UNTIL COMPLETION AND FINAL ACCEPTANCE OF THE WORK.

6. OCCUPANCY CLASSIFICATION PER SECTION BC 302.

7. THE BUILDING IS CLASSIFIED AS CONSTRUCTION CLASS IB, NON-COMBUSTIBLE CONSTRUCTION PER SECTION BC 602.

8. CORRIDORS AND PASSAGEWAYS SHALL COMPLY WITH SECTIONS BC 1003, BC 1016, AND BC 1020.

9. HEADROOM IN CORRIDORS AND IN EXIT PASSAGEWAYS SHALL COMPLY WITH SECTION BC 1003.2. HEADROOM IN EXIT STAIRS SHALL NOT BE LESS THAN 7'-0" CLEAR PER SECTION BC 1009.2.

10. PROJECT SHALL COMPLY WITH CHAPTER 11 OF THE NEW YORK CITY BUILDING CODE AND ANSI A117.1-2009 REGARDING HANDICAPPED ACCESIBILITY REQUIREMENTS, CHAPTER 4 OF THE NEW YORK CITY PLUMBING CODE FOR PLUMBING FIXTURE REQUIREMENTS, AND SECTION BC 1617 OF THE NEW YORK CITY BUILDING CODE FOR EARTHQUAKE CRITERIA.

11. TO THE BEST OF OUR PROFESSIONAL KNOWLEDGE, BELIEF, AND JUDGEMENT, THESE DOCUMENTS CONFORM TO THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE.

12. TEN (10) DAYS PRIOR NOTICE SHALL BE GIVEN TO ADJOINING LOT OWNERS BY THE CONTRACTOR WHEN AFFECTED BY WORK PER SECTIONS BC 3304.3.2 AND BC 3306.3.2.

13. AN ACCURATE AND COMPLETE SURVEY MADE BY A LICENSED SURVEYOR AS PER ARTICLE 118, SECTION 28-118.4 SHALL BE SUBMITTED AFTER COMPLETION OF WORK WITH FIRST FLOOR ELEVATION, EXTERIOR GRADES AND CURB ELEVATIONS.

14. PERMIT FOR WORK BEYOND THE BUILDING LINE SIDEWALK AND VAULTS WILL BE OBTAINED BY THE CONTRACTOR BEFORE CONSTRUCTION IS STARTED, AS PER THE DEPARTMENT OF HIGHWAYS.

15. BORING DIAGRAM WILL BE FILED BEFORE CONSTRUCTION AS PER SECTION BC 1802.6(2).

16. THE CONTRACTOR IS TO PROVIDE ALL SHORING, BRACING, BARRICADES, TEMPORARY FENCES, PARTITIONS, AND EXCAVATIONS TO ACCOMPLISH ALL OF THE WORK IN AN APPROVED MANNER PER SECTION BC 3304.4.

17. MATERIALS APPROVAL PROCEDURE: WHENEVER THE BUILDING CODE PRESCRIBES A METHOD OF TESTING, SUCH TEST SHALL BE MADE BY A TESTING SERVICE OR A LABORATORY ACCEPTABLE TO THE COMMISSIONER AS PER ARTICLE 113, SECTION 28-113.3.

18. INSPECTIONS DURING PROGRESS OF WORK SHALL BE IN ACCORDANCE WITH ARTICLE 166, SECTION 28-116.2.3.

19. MASONRY TO COMPLY WITH CHAPTER 21 OF THE NEW YORK CITY BUILDING CODE.

20. CONCRETE BLOCK SHALL BE OF BOARD OF STANDARDS AND APPEALS APPROVED TYPE AND SHALL BE IN ACCORDANCE WITH SECTION BC 2103.1.

21. LINTELS FOR OPENINGS IN MASONRY WALLS WIDER THAN 4'-0" SHALL BE FIRE PROTECTED AS PER SECTION BC 714.2 AND BC 714.6.

22. INTERIOR AND EXTERIOR STEEL COLUMNS, BEAMS GIRDERS AND FLOOR CONSTRUCTION SHALL BE FIREPROOFED IN ACCORDANCE WITH NEW YORK CITY BUILDING CODE TABLE 601, FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS.

23. HANDRAILS WILL BE PROVIDED ON BOTH SIDES OF REQUIRED STAIRS AND SHALL NOT ENCROACH MORE THAN 4-1/2" PER SECTION BC 1009.11.7.

24. GUARDS AND HANDRAILS SHALL COMPLY WITH SECTION BC 1009.11. DESIGN AND CONSTRUCTION TO WITHSTAND A 200 LB. LOAD APPLIED AT ANY POINT, DOWNWARD OR HORIZONTALLY OR THE SIMULTANEOUS APPLICATION OF A LATERAL FORCE OF 40 PLF AND A VERTICAL FORCE OF 50 PLF, BOTH APPLIED AT THE TOP OF THE RAILING; THE MORE STRINGENT REQUIREMENT GOVERNING.

25. STAIRS TO BE DESIGNED FOR 100 LB. LIVE LOAD AND CONSTRUCTED OF STEEL PANS WITH CONCRETE FILLED TREADS OR PRECAST CONCRETE TREADS, STEEL STRINGERS, RISER, TREADS AND PLATFORM MATERIALS SHALL COMFORM TO SECTIONS BC 1009.3 AND BC 1009.4.

26. ALL WOOD SHALL BE FIRE-RETARDANT-TREATED PER SECTION 2303.2, AND BE TESTED AS PER SECTION 703.3.

27. ALL FIRESAFING AT THE PERIMETERS OF FLOORS AND AT PENETRATIONS IN FIRE-RATED SEPARATIONS SHALL BE SEMI-RIGID MINERAL FIBER RATED AT TWO(2) OR THREE(3) HOURS (AS REQUIRED).

28. FIRESTOPPING OF OPENINGS THROUGH FLOORS OR PARTITIONS SHALL PROVIDE A FIRE RESISTANCE RATING EQUIVALENT TO THAT OF THE FLOOR OR PARTITION ASSEMBLY.

29. ROOFING FIRE CLASSIFICATION TO BE AS PER SECTION BC 1505.

30. PARAPETS SHALL COMPLY WITH SECTIONS BC 704.11 AND BC 1509.8.

31. DOORS AND ASSEMBLIES SHALL HAVE FIRE-RESISTIVE RATINGS PER SECTION BC 1008.1.

32. ALL FIRE RATED DOORS SHALL BEAR A LABEL INDICATING SAME TYPE AS APPROVED BY BOARD OF STANDARDS AND APPEALS OF M.E.A. ALL OTHER DOORS SHALL BE OF NONCOMBUSTIBLE MATERIALS.

33. MINIMUM PASS THROUGH DOOR WIDTH SHALL BE 2'-10"

34. WHERE GLASS IS USED, GLASS SHALL COMPLY WITH SECTIONS BC 2403 AND BC 2404.

35. ALL EXTERIOR WINDOW FRAMES SHALL BE METAL.

36. ALL FINISHES SHALL COMPLY WITH CHAPTER 8 OF THE NEW YORK CITY BUILDING CODE.

37. SUSPENDED CEILING SYSTEMS SHALL CONSIST OF SUPPORTING RUNNERS, CARRYING CHANNELS AND A SUPPORTING GRID AND SHALL COMPLY WITH SECTION BC 803.9 FOR TYPE IB NON-COMBUSTIBLE CONSTRUCTION.

38. ALL ELEVATOR DOORS SHALL HAVE ELECTRIC INTERLOCKS IN ACCORDANCE WITH SECTION BC 3001.2.

39. ALL MECHANICAL EQUIPMENT TO BE M.E.A. APPROVED.

40. FIRE STANDPIPES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION BC 905.

41. ALL MATERIALS AND SERVICE EQUIPMENT WILL COMPLY WITH ARTICLE 113.

42. THE ENTIRE BUILDING SHALL BE PROVIDED WITH AN APPROVED SPRINKLER SYSTEM

43. ALL TOILETS SHALL BE MECHANICALLY VENTILATED IN ACCORDANCE WITH SECTION BC 1203.4.2.1.

44. EXIT LIGHTS AND SIGNS SHALL BE PROVIDED AT ALL REQUIRED EXITS, STAIRS AND EXIT PASSAGEWAYS WITH SEPARATE ELECTRIC CIRCUIT TAKEN OFF AHEAD OF MAIN SWITCHBOARD AS PER SECTIONS 27-382 AND 27-384 OF THE NEW YORK CITY ADMINISTRATIVE CODE.

45. FIRE ALARM AND COMMUNICATION SYSTEM TO BE PROVIDED THROUGHOUT THE BUILDING AS PER SECTION BC 907.2. SYSTEM IS TO COMPLY WITH REQUIREMENTS OF THE FIRE COMMISSIONER.

46. ALL STAIR AND ELEVATOR SIGNAGE SHALL COMPLY WITH SECTION BC 1026.

47. ALL SHAFTS SHALL BE VENTED PER SECTION BC 910.

48. THE ENTIRE BUILDING SHALL COMPLY FULLY WITH LOCAL LAW 16/84. THE FOLLOWING SEPARATE APPLICATIONS WILL BE FILED:

- SPRINKLERS
- STANDPIPES
- ELEVATORS
- FIRE ALARM SYSTEM
- EMERGENCY GENERATORS
- BUILDER'S PAVEMENT PLAN / CURB CUTS
- FIRE PROTECTION PLAN
- PUBLIC ASSEMBLY

B. CONTROLLED INSPECTIONS

THE FOLLOWING MATERIALS, OPERATIONS AND EQUIPMENT RELATED TO THE WORK DESCRIBED IN THESE DOCUMENTS ARE SUBJECT TO CONTROLLED INSPECTIONS AS DESCRIBED BY THE NEW YORK CITY BUILDING CODE SECTION BC 1704.

- FLOOD ZONE COMPLIANCE (BC G105)
- FIRE ALARM TESTING (BC 907, BC 1704.13)
- PHOTOLUMINESCENT EXIT PATH MARKINGS (BC 1026.11)
- EMERGENCY POWER SYSTEMS (GENERATORS) (BC 1704.13, BC 2702)
- STRUCTURAL STEEL - WELDING (BC 1704.3.1)
- STRUCTURAL STEEL - ERECTION & BOLTING (BC 1704.3.2, BC 1704.3.3)
- STRUCTURAL COLD-FORMED STEEL (BC 1704.3.4)
- CONCRETE - CAST-IN-PLACE (BC 1704.4)
- CONCRETE - PRECAST (BC 1704.4)
- CONCRETE - PRESTRESSED (BC 1704.4)
- MASONRY (BC 1704.5)
- WOOD - OFF-SITE FABRICATION OF STRUCTURAL ELEMENTS (BC 1704.6)
- WOOD - INSTALLATION OF HIGH-LOAD DIAPHRAGMS (1704.6.1)
- WOOD - INSTALLATION OF METAL-PLATE-CONNECTED TRUSSES (BC 1704.6.3)
- WOOD - INSTALLATION OF PREFABRICATED I-JOISTS (BC 1704.6.4)
- SOILS - SITE PREPARATION (BC 1704.7.1)
- SOILS - FILL PLACEMENT & IN-PLACE DENSITY (BC 1704.7.2, BC 1704.7.3)
- SOILS - INVESTIGATIONS (BORINGS/TEST PITS) (BC 1704.7.4)
- PILE FOUNDATIONS & DRILLED PIER INSTALLATION (BC 1704.8)
- PIER FOUNDATIONS (BC 1704.9)
- UNDERPINNING (BC 1704.9.1)
- WALL PANELS, CURTAIN WALLS, AND VENEERS (BC 1704.10)
- SPRAYED FIRE-RESISTANT MATERIALS (BC 1704.11)
- EXTERIOR INSULATION FINISH SYSTEMS (EIFS) (BC 1704.12)
- ALTERNATIVE MATERIALS (BC 1704.13)
- SMOKE CONTROL SYSTEMS (BC 1704.14)
- MECHANICAL SYSTEMS (BC 1704.15)
- FUEL-OIL STORAGE AND FUEL OIL PIPING SYSTEMS (BC 1704.16)
- HIGH-PRESSURE STEAM PIPING (WELDING) (BC 1704.17)
- FUEL-GAS PIPING (WELDING) (BC 1704.18)
- STRUCTURAL SAFETY - STRUCTURAL STABILITY (BC 1704.19)
- MECHANICAL DEMOLITION (BC 1704.19, BC 3306.6)
- EXCAVATION - SHEETING, SHORING, AND BRACING (BC 1704.19, BC 3304.4.1)
- SOIL PERCOLATION TEST - DRYWELL (BC 1704.20.1)
- SOIL PERCOLATION TEST - SEPTIC (BC 1704.20.1)
- SITE STORM DRAINAGE DISPOSAL AND DETENTION SYSTEM INSTALLATINO (BC 1704.20)
- SEPTIC SYSTEM INSTALLATION (BC 1704.20)
- SPRINKLER SYSTEMS (BC 1704.21)
- STANDPIPE SYSTEMS (BC 1704.22)
- HEATING SYSTEMS (BC 1704.23)
- CHIMNEYS (BC 1704.24)
- FIRESTOP, DRAFTSTOP, AND FIREBLOCK SYSTEMS (BC 1704.25)
- ALUMINUM WELDING (BC 1704.26)
- SEISMIC ISOLATION SYSTEMS (BC 1707.8)
- CONCRETE TEST CYLINDERS (BC 1905.6)
- CONCRETE DESIGN MIX (BC 1905.3)

C. RESPONSIBILITY OF THE OWNER'S AGENT PERFORMING CONTROLLED INSPECTION OF THE STABILITY AND INTEGRITY OF THE EXISTING STRUCTURE DURING CONSTRUCTION OPERATIONS.

1. THE NEW YORK STATE REGISTERED ARCHITECT OR PROFESSIONAL ENGINEER RETAINED BY THE OWNER TO PERFORM THE CONTROLLED INSPECTION OF THE STABILITY AND INTEGRITY OF THE EXISTING STRUCTURE SHALL PERFORM THIS INSPECTION SERVICE IN STRICT COMPLIANCE WITH THE PROCEDURES AND REQUIREMENTS DEFINED BY THE NEW YORK CITY DEPARTMENT OF BUILDINGS IN THE DOCUMENT "PROMULGATION OF THE RULES RELATING TO THE CONTROLLED INSPECTION OF THE STABILITY AND INTEGRITY OF EXISTING STRUCTURES DURING CONSTRUCTION OPERATIONS," DATED AUGUST 26, 1992.
2. IT SHALL BE THE RESPONSIBILITY OF THE OWNER'S CONTROLLED INSPECTING AGENT TO PREPARE DETAIL DRAWINGS AND ASSOCIATED CALCULATIONS REPRESENTING ALL SHORING, BRACING OR OTHER TEMPORARY CONSTRUCTION WHICH MAY BE REQUIRED TO MAINTAIN THE STRUCTURAL STABILITY AND INTEGRITY OF THE EXISTING CONSTRUCTION DURING THE COURSE OF THE WORK REPRESENTED IN THESE DOCUMENTS.
3. ALL DRAWINGS AND CALCULATIONS PREPARED BY THE OWNER'S CONTROLLED INSPECTING AGENT SHALL BEAR AN ORIGINAL SIGNATURE AND SEAL INDICATING THE INSPECTOR'S NEW YORK STATE REGISTRATION. DUPLICATE COPIES OF ALL DRAWINGS AND CALCULATIONS SHALL BE FORWARDED TO THE OWNER PRIOR TO COMMENCING ANY OF THE TEMPORARY WORK REPRESENTED IN THOSE DOCUMENTS. THE OWNER WILL, IN TURN, TRANSMIT THOSE DOCUMENTS TO THE STRUCTURAL ENGINEER OF RECORD FOR HIS REVIEW.
4. THE STRUCTURAL ENGINEER OF RECORD WILL REVIEW THE DOCUMENTS ONLY FOR HOW THE SHORING, BRACING AND OTHER TEMPORARY CONSTRUCTION INTERACTS AND AFFECTS THE EXISTING STRUCTURE. THE STRUCTURAL ENGINEER AT RECORD REVIEW SHALL NOT BE CONSTRUED AS COMPLETE CHECK, NOR RELIEVE THE OWNER'S CONTROLLED INSPECTING AGENT FROM RESPONSIBILITY FOR ERRORS OF ANY SORT NOR FROM THE NECESSITY OF FURNISHING ANY ADDITIONAL DETAILS OR CALCULATIONS WHICH MAY HAVE BEEN OMITTED OR REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.

D. BUILDING DEPARTMENT AND ZONING DATA

ZONING DISTRICT:	HY (SPECIAL HUDSON YARDS DISTRICT)
ZONING MAP:	MANHATTAN BOROUGH - 8D
CONSTRUCTION TYPE:	IA
PRIMARY OCCUPANCY TYPE:	B (BUSINESS)
FLOOR AREA (ABOVE GRADE):	1,791,837 ft² GROSS FLOOR AREA ABOVE GRADE
ADDRESS:	375 NINTH AVENUE, NEW YORK, NY 10001
FIRE RESISTIVE REQUIREMENTS:	CLASS IA
COLUMNS, GIRDERS, TRUSSES:	3HR
FLOOR CONSTRUCTION:	2HR
STAIRS, ELEVATORS, SHAFTS:	2HR
HORIZONTAL EXITS:	2HR

E. CON EDISON VAULT NOTES:

- THE CONTRACTOR SHALL NOTIFY CON EDISON OF ALL PLANNED CONSTRUCTION ACTIVITIES & MILESTONES, AND SHALL PROVIDE CON EDISON REPRESENTATIVES AND INSPECTORS WITH TIMELY, SUITABLE, AND ACCEPTABLE ACCESS TO ALL WORK REQUIRING CON EDISON INSPECTION AND APPROVAL.
- ALL SUBMITTALS RELATIVE TO CON EDISON WORK SHALL BE SUBJECT TO REVIEW AND APPROVAL BY CON EDISON.

G-000 - CLARIFICATION OF THE WORK NOTES

A. GENERAL

1. THE LOCATION OF ALL ELECTRICAL, FIRE PROTECTION, PLUMBING, MECHANICAL, AND VERTICAL TRANSPORTATION WALL MOUNTED DEVICES INCLUDING ACCESS DOORS AND PANELS ARE TO BE COORDINATED WITH THE ARCHITECT. COORDINATED ELEVATIONS, SIGNED OFF BY ALL TRADES, SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEERS FOR REVIEW AS A STANDARD SHOP DRAWING SUBMITTAL FOR ANY SPACE WHERE PANELING OR INTERIOR STONEWORK IS REQUIRED.

2. ALL CEILING DEVICES INCLUDING LIGHT FIXTURES, SPEAKERS, EXIT SIGNS, DIFFUSERS, GRILLES, SPRINKLERS, AND SMOKE DETECTORS ARE TO BE CENTERED IN TILE, U.N.O.. ALL DEVICES SHOWN ARE FOR LOCATION INFORMATION ONLY. REFER TO M.E.P.F. DRAWINGS FOR QUANTITIES AND INSTALLATION.

3. NOT ALL REQUIRED CONCRETE CURBS ARE INDICATED ON THE STRUCTURAL DRAWINGS. DRAWINGS OF ALL TRADES (ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL) MUST BE EXAMINED FOR THE SIZE AND LOCATION OF CONCRETE CURBS. PROVIDE ALL CONCRETE PADS AND CURBS AS REQUIRED BY FINAL COORDINATION WITHIN THE SCOPE OF THE BID. PADS AND CURBS INDICATED ON ARCHITECTURAL DRAWINGS ARE FOR GENERAL REFERENCE ONLY.

4. THE PRECISE NUMBER, SIZE, SHAPE & LOCATION OF ALL HOUSEKEEPING PADS REQUIRED TO SUPPORT AND/OR MAINTAIN MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION EQUIPMENT SHALL BE CONFIRMED/COORDINATED WITH THE EQUIPMENT SUPPLIER. WHERE THE FLOORS OF ROOMS OR SPACES CONTAINING HOUSEKEEPING PADS ARE WATERPROOFED, APPLY RESIN MATRIX TYPE WATERPROOFING TO THE TOP AND SIDE SURFACES OF ALL PADS PRIOR TO INSTALLATION OF EQUIPMENT.

5. IN MECHANICAL SPACES PROVIDE 8" HIGH BY 8" WIDE REINFORCED CONCRETE CURBS AROUND ALL SHAFT OPENINGS, INCLUDING STAIRS AND ELEVATORS U.N.O.

6. PROVIDE CATWALKS, GRATINGS AND LADDERS, AS REQUIRED BY FINAL COORDINATION IN COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

7. PROVIDE HOIST BEAMS IN MACHINE AND MECHANICAL ROOMS AS REQUIRED FOR EQUIPMENT REMOVAL/INSTALLATION.

8. ALL EXPOSED CONCRETE SLAB SURFACES TO HAVE DUSTPROOF SEALER, EXCEPT AREAS WITH STONE FINISH, RESIN MATRIX FINISH, TERRAZZO FINISH, WATERPROOFING, TILE FINISH AND PAINTED FLOOR FINISHES.

9. ALL SLAB PENETRATIONS THROUGH FLOOR ASSEMBLIES (OUTSIDE OF RATED SHAFTS) ARE TO BE FIRESAFED WITH A SYSTEM PROVIDING A RATING EQUAL TO THAT OF THE FLOOR PENETRATED. PENETRATIONS SHALL EXTEND 2" ABOVE TOP OF FINISHED FLOOR ELEVATION. FIRESAFING AT PENETRATIONS THROUGH PARTITION ASSEMBLIES SHALL PROVIDE A FIRE RESISTANCE RATING EQUAL TO THAT OF THE PARTITION.

10. ALL PIECES OF ARCHITECTURAL WOODWORK THAT HAVE INTEGRATED ELECTRICAL SUPPLY SHALL BE SECURED TO STRUCTURE.

11. PROVIDE ARCHITECTURAL SHEET METAL, ACOUSTICALLY TREATED CLOSURES FROM SLAB TO UNDERSIDE OF STRUCTURE WHEREVER PARTITIONS MEET EXTERIOR CURTAIN WALLS OR WINDOW AND MULLIONS. PROVIDE ACOUSTICAL PILLOWS AROUND ANY STRUCTURAL OR MECHANICAL PENETRATIONS.

12. PROVIDE 16 GAUGE (6" HIGH) WALL REINFORCEMENT BACKER PLATES (FASTENED TO STUDS) AT WALL MOUNTED HANDRAILS, AND DOOR STOPS ON GYPSUM WALLBOARD PARTITIONS.

13. INSTALL ADEQUATE SOLID BLOCKING AND PARTITION REINFORCING FOR ALL WALL MOUNTED CABINETRY, ACCESSORIES AND EQUIPMENT. ALL BLOCKING AND WOOD SHALL BE FIRE RETARDANT TREATED.

14. USE DIELECTRIC SEPARATOR ON ALL DISSIMILAR METALS.

15. COORDINATE LOCATION OF OUTLET BOX FACES WITH SCHEDULED APPLIED FINISH THICKNESS.

16. ALL PARTITIONS ARE DIMENSIONED FROM FACE OF PARTITION U.N.O.

17. STARTING POINT FOR CEILINGS TO BE CENTER OF ROOM U.N.O.

18. PARTITION TARGETS DENOTE THE GENERAL WALL CONSTRUCTION OF A PARTITION FOR ITS ENTIRE LENGTH. IF MORE THAN ONE TARGET IS SHOWN, THE POINT OF TRANSITION GENERALLY OCCURS WHERE THE WALL CHANGES DIRECTION, OR IS INTERSECTED BY ANOTHER PARTITION. MAINTAIN CONTINUITY OF FIRE RATINGS AROUND SHAFTS, AND INDICATED ON PLANS.

19. GWB STAIR SOFFITS SHALL BE SUSPENDED FROM STRUCTURE ABOVE, AND SHALL BE A MINIMUM OF 7'-0" ABOVE FINISHED FLOOR OR STAIR NOSING (WHERE OCCURS), U.N.O.

20. ALL EXPOSED EXTERIOR STEEL SHALL BE HOT DIP GALVANIZED, TO INCLUDE STEEL LINTEL IN EXTERIOR OPENING, U.N.O.

21. ALL SURFACES VISIBLE THROUGH MECHANICAL OR ARCHITECTURAL SLOTS, LOUVERS, GRILLES, DIFFUSERS, ETC. SHALL BE PAINTED MATTE BLACK, U.N.O.

22. WHERE SLAB DEPRESSION PLAN DIMENSIONS ARE EXTENDED OR OVERSIZED TO SUIT STRUCTURAL DECK CONFIGURATIONS, PROVIDE LIGHTWEIGHT CONCRETE FILL ALONG PERIMETER OF SLAB DEPRESSION TO SUIT ARCHITECTURAL CONFIGURATION OF WALLS, TILE SETTING BEDS, ETC.

23. ALL CERAMIC TILE FLOOR INSTALLATIONS SHALL BE FULL BED "MORTAR SET". AREAS WITHOUT SLAB DEPRESSIONS SHALL BE "THIN SET".

24. PROVIDE CONTINUOUS 70 DEGREE DRYWALL CANTS AT ALL PROJECTIONS GREATER THAN 2" IN ALL ELEVATOR SHAFTS, INCLUDING STRUCTURAL BRACING LOCATIONS.

25. MECHANICAL EQUIPMENT ROOM FLOORING SHALL EXTEND 6" UP CURBS OR WALLS. SEE FINISH CODE FOR TYPE.

26. PROVIDE 4' HIGH STEEL CORNER GUARDS ON ALL OUTSIDE CORNERS OF CMU AND GWB WALL ALONG CORRIDORS WITHIN SERVICE AREAS, MECHANICAL ROOMS, SERVICE ELEVATOR LOBBIES AND LOADING DOCK.

27. PROVIDE STEEL LINTELS FOR ALL OPENINGS UP TO 4'-0" WIDE IN MASONRY WALLS, UNLESS REINFORCED MASONRY LINTELS ARE SHOWN.

28. PROVIDE REINFORCED CMU LINTELS FOR ALL OPENINGS 4'-0" OR GREATER IN MASONRY WALLS.

29. ALL ELEMENTS OF THE BUILDING MUST REMAIN INSIDE THE PROPERTY LINE & ZONING SETBACKS.

30. COORDINATE AND PROVIDE ALL REQUIRED UNDERSLAB DRAINAGE PIPE LENGTHS, FITTINGS, INVERTS AND CLEANOUTS TO TERMINATION AT EJECTOR PIT.

31. CURTAIN/BLIND POCKETS TO BE COORDINATED WITH WINDOW TREATMENT FOR DETAIL AND HANGING LOADS.

32. FINISH SCHEDULE INDICATES GENERAL TYPES OF FINISHES ONLY. FINAL SELECTION OF COLORS/FINISHES TO BE MADE BY ARCHITECT.

33. FREE-STANDING COLUMNS WITHIN SPACES TO RECIEVE SAME CLADDING AND FINISHES AS OTHER SURFACES IN THE SPACE UNLESS OTHERWISE SHOWN OR NOTED.

B. SPRAY-ON FIREPROOFING NOTES

1. CONSTRUCTION TYPE IB FIRE RESISTIVE CONSTRUCTION THROUGHOUT THE ENTIRE PROJECT. FULLY SPRINKLERED HIGH-RISE BUILDING WITH APPROVED TWO SOURCE WATER SUPPLY.

2. ELEVATOR DIVIDER BEAMS WITHIN ELEVATOR SHAFTS THAT ONLY SUPPORT ELEVATOR RAILS ARE NOT TO RECEIVE SPRAY-ON FIREPROOFING. BEAMS THAT SUPPORT ELEVATOR RAILS, SLABS OR WALLS ARE TO HAVE 2HR SPRAY-ON FIREPROOFING.

3. UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL BEAMS, METAL DECK, ETC. NOT ENCASED IN CONCRETE SHALL BE PROTECTED WITH 2HR SPRAY-ON FIREPROOFING. ALL COLUMNS, GIRDERS, & TRUSSES, SHALL BE PROTECTED WITH 3HR SPRAY-ON FIREPROOFING(GIRDERS ARE DEFINED AS STRUCTURE SUPPORTING MORE THAN ONE FLOOR AS IN A TRANSFER GIRDER OR TRUSS ASSEMBLY).

4. ALL STRUCTURAL STEEL WITHIN A LOADING DOCK AREA, PARKING AREA, AND MTA VENT SHALL HAVE 3HR SPRAY-ON FIREPROOFING.

5. ALL SPRAY-ON FIREPROOFING WITHIN MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION ROOMS INCLUDING BUT LOT LIMITED TO TELECOM CLOSETS, ELECTRICAL CLOSETS, MECHANICAL ROOMS, ELEVATOR SHAFTS, AND STAIR AREAS TO HAVE SPRAY-ON FIREPROOFING WHICH INCLUDES SEALER.

6. ALL STRUCTURAL STEEL IN FUEL OIL STORAGE AND PUMP ROOMS, CHEMICAL/SOLVENT STORAGE ROOMS, AND ADJACENT HAZARDOUS WASTE STORAGE ROOMS AND ENTRIES SHALL HAVE 4HR SPRAY-ON FIREPROOFING WHICH INCLUDES SEALER.

7. PROVIDE SPRAY-ON FIREPROOFING WHICH INCLUDES SEALER IN ALL AREAWAYS, PLENUMS AND ELEVATOR MACHINE ROOMS.

8. WHERE THE FIREPROOFING OF EXISTING STRUCTURAL STEEL IS DISTURBED BY NEW WORK, THE FIREPROOFING SHALL BE RESTORED TO PROVIDE PROTECTION AS INDICATED IT ITEM 3 ABOVE.

9. UNLESS NOTED OTHERWISE, ALL COLUMNS, BEAMS AND OTHER STRUCTURAL MEMBERS SHALL HAVE SPRAY-ON FIREPROOFING INSTALLED AT THE REQUIRED THICKNESS AND DENSITY TO ACHIEVE THE HOURLY RATINGS AS SET FORTH HEREAFTER. ALL FIREPROOFING SHALL COMPLY WITH UNDERWRITER'S LABORATORIES DESIGN TEST FOR THE REQUIRED HOURLY RATINGS.

a. COLUMNS AND GIRDERS:	3HR
b. FLOOR CONSTRUCTION INCLUDING BEAMS:	2HR
c. ROOF CONSTRUCTION:	
1. IF LESS THAN 20'-0" ABOVE FLOOR:	1.5HR
2. IF 20'-0" OR MORE ABOVE FLOOR:	0HR

C. DOOR AND FINISH HARDWARE - GENERAL NOTES

1. ALL DOORS AND FRAMES TO BE WELDED HOLLOW METAL, U.N.O.

2. PROVIDE INTEGRATED ASTRAGALS & COORDINATOR AT ALL FIRE RATED DOUBLE DOORS.

3. PROVIDE "B-LABEL" (1 1/2 HR) AND "C-LABEL" (3/4 HR) RATED DOORS AND FRAMES WHERE SUCH DOORS OCCUR IN 2 HOUR AND 1 HOUR FIRE RATED CONSTRUCTION RESPECTIVELY.

4. PROVIDE BUMPER STOPS AT ALL DOORS WHICH BACK AGAINST PARTITIONS WHEN OPENED. PROVIDE OVERHEAD STOPS IN LOCATIONS WHERE WALL STOPS CANNOT BE USED AND WHERE INDICATED IN THE HARDWARE SETS.

5. PROVIDE JAMB HUNG CENTER PIVOT SETS, WALL STOPS AND EMERGENCY RELEASE DOOR STOPS WITH STRIKES AT ALL TOILETS.

6. ALL LOCKSETS AND LATCHSETS SHALL BE LEVER X LEVER, U.N.O.

7. DOORS AND ASSEMBLIES SHALL HAVE FIRE-RESISTIVE RATINGS AS FOLLOWS (AS PER SECTION BC 715), U.N.O.:

- DOORS TO EGRESS STAIRS: 1 1/2 HRS
- DOORS TO ELEVATOR SHAFTS: 1 1/2 HRS

8. IN ADDITION TO THE CRITERIA AND ITEMS NOTED ABOVE, PROVIDE ITEMS OF FINISH HARDWARE NOTED IN THE HARDWARE SET SCHEDULED FOR EACH DOOR. WHERE SPECIFIC HINGES, CLOSERS, ETC. ARE INDICATED IN THE HARDWARE SET, SUCH ITEMS SHALL SUPERSEDE THE REQUIREMENTS ESTABLISHED BY THE GENERAL CRITERIA NOTED ABOVE.

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Warning: It is a violation of the New York State Architecture Law, §69.5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION BID
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

GENERAL NOTES

Project No.: 207120

Date: 20 JUN 2014

Scale: NTS

File No.: G-005

B-SCAN Sheet No.: G-005.00

Sheet No.: G-005

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ANNOTATIONS

#	Number
&	And
/	Angle
@	At
A/C	Air Conditioning
A/V	Audio Visual
ACST	Acoustical
AD	Area Drain
ADDL	Additional
ADJ	Adjacent
ADR	Access Door
AF	Access Floor
AFF	Above Finished Floor
AGGR	Aggregate
AL	Aluminum
ANOD	Anodized
AP	Access Panel
APPROX	Approximate(ly)
APT	Apartment
ARC	Architectural Concrete
ARCH	Architect(ural)
ASP	Asphalt
AUTO	Automatic
AUX	Auxilary
AVG	Average
B/	Bottom of
BD	Board
BEV	Beveled
BG	Bumper Guard
BLDG	Building
BLK	Block
BM	Beam
BMK	Benchmark
BMU	Building Maintenance Unit
BOC	Bottom of Curb
BR	Bedroom
BRK	Brick
BRZ	Bronze
BS	Brass
BSMT	Basement
BTU	British Thermal Unit(s)
CAP	Capacity
CB	Catch Basin
CCTV	Closed Circuit Television
CFM	Cubic Feet Per Minute
CG	Corner Guard
CI	Cast Iron
CJ	Control Joint
CL	Center Line
CLG	Ceiling
CLG HT	Ceiling Height
CLO	Closet
CLR OPNG	Clear Opening
CMU	Concrete Masonry Unit(s)
CO	Cleanout
COL	Column
CONC	Concrete
CONF	Conference
CONN	Connect(ion)
CONSTR	Construction
CONT	Continuous / Continue
CONV	Convector
CORR	Corridor
CPT	Carpet(ed)
CSK	Countersink / Countersunk
CSWK	Casework
CT	Ceramic Tile
CTR	Center(ed)
CU	Cubic
CW	Cold Water
DB	Decibel
DBL	Double
DD	Deck Drain
DEG	Degrees
DEPT	Department
DET	Detail(s)
DF	Drinking Fountain
DH	Double Hung
DIA	Diameter
DIAG	Diagonal
DIFF	Diffuser(s)
DIM	Dimension(s)
DISP	Dispenser
DIV	Divide / Division
DL	Dead Load
DMPF	Dampproofing
DMPR	Damper
DN	Down
DP	Drainage Panel
DR	Dining Room
DRP	Drapery
DWG	Drawings
DWTR	Dumbwaiter
EA	Each
EC	Exposed Construction
EIFS	Exterior Insulated Finish System
EJ	Expansion Joint
EL	Elevation (Grade)
ELAST	Elastomeric
ELEC	Electric(al)
ELEC CL	Electrical Closet
ELEV	Elevator
ELEV	Elevation (Bldg)
EM	Entrance Mat
EMER	Emergency
EMR	Elevator Machine Room
ENCL	Enclosure / Enclose(d)
ENTR	Entrance
EOS	Edge of Slab
EQ	Equal
EQUIP	Equipment
ESCAL	Escalator
EW	Each Way
EWC	Electrical Water Cooler
EXH	Exhaust
EXIST	Existing
EXP	Exposed
EXPN	Expansion
EXT	Exterior
F	Fairenheit
FA	Fire Alarm
FAAP	Fire Alarm Annunciator Panel
FAB	Fabric
FAI	Fresh Air Intake
FD	Floor Drain
FDMPR	Fire Damper
FDTN	Foundation
FE	Fire Extinguisher
FEC	Fire Extinguisher Cabinet
FEMA	Federal Emergency Management Agency
FH	Fire Hydrant
FHC	Fire Hose Cabinet
FHR	Fire Hose Rack
FIN	Finish(ed)
FIN FL	Finished Floor
FIN GR	Finished Grade
FLEX	Flexible

FLH	Flashing
FLMT	Flush Mounted
FLR	Floor(s)
FLS	Floor Sealer
FLUOR	Fluorescent
FO	Finished Opening
FP	Fireproofing
FPM	Feet per Minute
FPSC	Fireproofing Self Closing
FR	Fire Retardant / Rating / Resistance
FRM	Frame
FRTW	Fire Retardant Treated Wood
FS	Full Size
FSE	Food Service Equipment
FSP	Fire Standpipe
FSS	Fire Stopping
FT	Feet (Foot)
FTG	Footing
FWP	Fabric Wrapped Panel
G	Gas
GA	Gauge
GAL	Gallon(s)
GALV	Galvanized
GFRC	Glass Fiber Reinforced Concrete
GFRG	Glass Fiber Reinforced Gypsum
GI	Galvanized Iron
GL	Glass
GL BLK	Glass Block
GND	Ground
GPH	Gallons per Hour
GPM	Gallons per Minute
GRD	Grade
GRL	Grille
GWB	Gypsum Wallboard
HB	Hose Bib
HD	Head
HDW	Hardware
HEX	Hexagon(al)
HM	Hollow Metal
HNDRL	Handrail
HO	Hold Open
HORIZ	Horizontal
HPT	High Point
HR	Hour(s) (Fire Resistance Rating)
HT	Height
HVAC	Heating, Ventilation, Air Conditioning
HWY	Highway
ID	Inside Diameter
INCL	Include(d) / Inclusive / Including
INFO	Information
INS	Insulation / Insulate(d)
INT	Interior
JC	Janitor Closet
JF	Joint Filler
JG	Joint Gasket
JT	Joint
KD	Knockdown
KIT	Kitchen
KO	Knockout
KPL	Kickplate
LAB	Laboratory
LAM	Laminate(d)
LAV	Lavatory
LBS	Pound(s)
LD	Linear Diffuser
LH	Left Hand
LIN	Linear
LONG	Longitudinal
LPT	Low Point
LR	Living Room
LTG	Lighting
LVR	Louver(ed)
MACH	Machine
MAINT	Maintain / Maintenance
MATL	Material
MAX	Maximum
MB	Metal Base
MECH	Mechanical
MED	Medium
MEZZ	Mezzanine
MFR	Manufacturer
MH	Manhole
MIN	Minimum
MISC	Miscellaneous
ML	Metal Lathe
ML WK	Millwork
MLDG	Molding
MO	Masonry Opening
MP	Metal Panel
MTD	Mounted
MTL	Metal
MUL	Mullion
N	North
NA	Not Applicable
NC	Noise Criteria
NIC	Not in Contract
NO	Number
NOM	Nominal
NRC	Noise Reduction Coefficient
NTS	Not to Scale
NWP	Network Protector
OA	Outside Air
OC	On Center
OD	Outside Diameter / Dimension
OF	Outside Face
OFD	Overflow Drain
OFF	Office
OH DR	Overhead Coiling Door
OPH	Opposite Hand
OPNG	Opening
OPP	Opposite
OPR	Operating / Operable
ORD	Overflow Roof Drain
OSHA	Occupational Safety and Health Administration
OZ	Ounce
PA	Public Address
PAR	Parallel
PART	Partial
PAV	Pavers
PB	Partical Board
PCC	Precast Concrete
PERF	Perforated
PERP	Perpedicular
PL	Plastic Laminate
PLA	Plaster
PLBG	Plumbing
PLYWD	Plywood
PNEU	Pneumatic
POL	Polished
PR	Pair
PREFAB	Prefabricate(d)
PROJ	Project(s)
PROP	Property

PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
PT	Paint(ed)
PTN	Partition
PVC	Polyvinyl Chloride
PVG	Paving
PWR	Power
QT	Quarry Tile
QTY	Quantity
R	Riser
RA	Return Air
RAD	Radius
RB	Resilient Base
RC	Reinforced Concrete
RD	Roof Drain
RECPT	Receptacle
RECT	Rectangle
REF	Reference
REFR	Refridgerator
REG	Register
REINF	Reinforce(d, -ing, -ment)
REQD	Required
REV	Revised / Revision
RF	Resilient Flooring
RFA	Roofing Accessories
RH	Right Hand
RM	Room
RMX	Resin Matrix
RND	Round(ed)
RO	Rough Opening
ROW	Right of Way
RPM	Revolutions per Minute
RR	Railroad
RS	Roofing System
SA	Supply Air
SAN	Sanitary
SB	Splash Block
SCHED	Schedule(d)
SE	Sealant
SECT	Section
SHR	Shower
SHT	Sheet
SHTHG	Sheathing
SIM	Similar
SLDG	Slide / Sliding
SMR	Sheet Metal Roofing
SPC	Synthetic Polymer Countertop
SPEC	Specification(s)
SQ	Square
SQ FT	Square Foot / Feet
SST	Stainless Steel
ST	Stone
STC	Sound Transmission Class
STD	Standard
STL	Steel
STOR	Storage
STRUCT	Structure / Structural
SURF MTD	Surface Mounted
SUSP	Suspend(ed) / Suspension
SWBD	Switchboard
SYMM	Symmetrical
T	Tread
T&G	Tongue and Groove
T/	Top of
TA	Toilet Accessory(ies)
TC	Traffic Coating
TD	Trench Drain
TEL	Telephone
TEMP	Temperature
TER	Terrazzo
THK	Thick(ness)
THRES	Threshold
TOC	Top of Curb
TOPO	Topography Map
TRANS	Transom
TV	Television
TYP	Typical
UC	Undercut
UNFIN	Unfinished
UNO	Unless Noted Otherwise
UPS	Uninterrupted Power Supply
VAC	Vacuum
VERT	Vertical
VEST	Vestibule
VIF	Verify in Field
VNR	Veneer
VOL	Volume
W/	With
W/O	Without
WB	Wood Base
WCV	Wall Covering
WD	Wood
WDF	Wood Door Frame
WH	Wall Hydrant
WI	Wrought Iron
WP	Work Point
WPS	Waterproofing System
WR	Weather Resistant
WRB	Wardrobe
WS	Weatherstrip(ping)
WT	Weight
WTR	Window Treatment
WV	Wood Veneer
WWF	Welded Wire Fabric

G-000 - SYMBOLS LEGEND

1 A-XXX	BUILDING ELEVATION REFERENCE
12 A-XXX 12 12 12	INTERIOR ELEVATION REFERENCE
SIM 1 A-XXX	SECTION REFERENCE
1 A-XXX Ref	DETAIL REFERENCE
Ref 1 A-XXX	DETAIL CALLOUT REFERENCE
0	COLUMN CENTERLINE REFERENCE
22	REVISION
FLOOR LEVEL EL. +XX'-XX"	FINISH FLOOR LEVEL REFERENCE
FLOOR LEVEL EL. +XX'-XX"	FLOOR SLAB LEVEL REFERENCE
EL. + XX'-XX"	SPOT ELEVATION (TOP OF FINISHED FLOOR)
EL. + XX'-XX"	SPOT ELEVATION (TOP OF SLAB)
N XX'-XX" E XX'-XX"	SPOT COORDINATE
WP	WORK POINT
?	KEYNOTE REFERENCE
	NORTH ARROW
X"	CHANGE IN SLAB
ALIGN	ALIGN SYMBOL
MATCHLINE SEE: 1 / A-XXX	MATCHLINE REFERENCE
	PROPERTY LINE
	NOT IN SCOPE / NOT IN CONTRACT
00 Name SCALE: 1/8" = 1'-0"	DRAWING TITLE

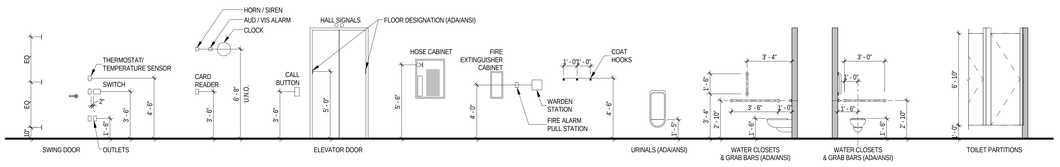
XXX	WALL TYPE REFERENCE
XX-XXX	DOOR REFERENCE
ROOM NAME XXX	ROOM TARGET REFERENCE
XXXX	ELEVATOR REFERENCE
XX	WINDOW REFERENCE
XXX XXX	CURTAIN PANEL REFERENCE
XX	LIGHT FIXTURE REFERENCE
XXX	CASEWORK REFERENCE
XX	PARKING REFERENCE
1 HR FIRE RATING	
2 HR FIRE RATING	
3 HR FIRE RATING	
4 HR FIRE RATING	
SMOKE RATING	
LINE ABOVE	
LINE BELOW / HIDDEN	
DIRECTION OF GRAIN	DIRECTION OF GRAIN SYMBOL
	ACCESS PANEL
	SUPPLY DIFFUSER
	RETURN DIFFUSER

$	SINGLE POLE ELECTRICAL SWITCH
2	TWO POLE ELECTRICAL SWITCH
3	THREE POLE ELECTRICAL SWITCH
	SINGLE ELECTRICAL RECEPTACLE
	DUPLEX ELECTRICAL RECEPTACLE
	QUAD ELECTRICAL RECEPTACLE
	220V ELECTRICAL RECEPTACLE
GFI	DUPLEX ELECTRICAL RECEPTACLE WITH GFI PROTECTION
	WALL MOUNTED TELEPHONE RECEPTACLE
	WALL MOUNTED DATA RECEPTACLE
	WALL MOUNTED TELEPHONE & DATA RECEPTACLE
	SINGLE FLOOR MOUNTED ELECTRICAL RECEPTACLE
	DUPLEX FLOOR MOUNTED ELECTRICAL RECEPTACLE
	GFI PROTECTED ELECTRICAL RECEPTACLE
FD	FLOOR DRAIN
RD	ROOF DRAIN
RD	ROOF DRAIN WITH OVERFLOW
RD RD	FACE MOUNTED ROOF DRAIN
	CEILING MOUNTED EXIT SIGN
	CEILING MOUNTED DIRECTIONAL EXIT SIGN
	CEILING MOUNTED DIRECTIONAL EXIT SIGN (TWO SIDED)
	WALL MOUNTED EXIT SIGN
	WALL MOUNTED EXIT SIGN (TWO SIDED)
	WALL MOUNTED DIRECTIONAL EXIT SIGN
	WALL MOUNTED DIRECTIONAL EXIT SIGN
	WALL MOUNTED DIRECTIONAL EXIT SIGN
	SPRINKLER HEAD
SP	SPEAKER
ST	WALL MOUNTED FIRE ALARM STROBE
ST	FIRE ALARM STROBE
SD	SMOKE DETECTOR
HD	HEAT DETECTOR
	RECESSED DOWNLIGHT
	DIRECTIONAL RECESSED DOWNLIGHT
G	GRAVITY ANCHOR
L	LATERAL ANCHOR
P	PANEL STACK JOINT
FEC	FIRE EXTINGUISHER CABINET
FVC	FIRE VALVE CABINET
FHC/SP	FIRE HOSE CABINET & STAND PIPE

G-000 - MATERIALS LEGEND

EARTH / SOIL
GYPSUM BOARD
CONCRETE
BRICK
CONCRETE MASONRY UNIT
STONE
CERAMIC / QUARRY TILE
ACOUSTIC CEILING TILE
STEEL
ALUMINUM
PARTICAL BOARD / PLYWOOD / MEDIUM DENSITY FIBERBOARD
RIGID INSULATION / FIRE SAFING
SEMI-RIGID INSULATION
GRAVEL / TERRAZZO
CONTINUOUS BLOCKING / FURRING / SHIM
NON-CONTINUOUS BLOCKING / FURRING / SHIM
BATT INSULATION
FINISHED WOOD
SAND / MORTAR / GROUT / PLASTER / SPRAY-ON FIREPROOFING
ACOUSTICAL INSULATION
EXPANSION JOINT
METAL GRATING
WATERPROOFING MEMBRANE
AIR / VAPOR BARRIER

G-000 - MOUNTING HEIGHTS



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Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY NOT FOR CONSTRUCTION

Key Plan:

Seal & Signature:

REGISTERED ARCHITECT JOHN C. GOTTESDIENER NO. 26249 STATE OF NEW YORK

Warning: It is a violation of the New York State Architecture Law, §69-5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION BID
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR S/PA DESIGN DEVELOPMENT

Sheet Name:
ABBREVIATIONS, LEGENDS & SYMBOLS

Project No.: 207120	B-SCAN Sheet No.: G-006.00
Date: 20 JUN 2014	Sheet No.: G-006
Scale: NTS	
File No.: G-006	Page No.: 4 OF 87

6/19/2014 12:12:20 AM

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
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102 Madison Avenue #11, New York, NY 10016

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Vertical Transportation
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Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

SIGNAGE

HANDICAPPED ACCESS NOTES:

1. DOORS SHALL BE CAPABLE OF OPENING AT LEAST 90 DEGRESS AND SHALL B ESO MOUNTED THAT CLEAR WIDTH OF DOORWAY IS NOT AT LEAST 32 INCHES.

2. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE.

3. MAXIMUM EFFORT TO OPERATE FIRE DOORS SHALL BE 15 LBS. AT OTHER INTERIOR DOORS MAXIMUM EFFORT TO OPERATE SHALL BE 5 LBS.

4. FLOOR, RAMP, AND TREAD SURFACES SHALL BE SLIP RESISTANT.

5. EMERGENCY WARNING SYSTEM SHALL ACTIVATE A MEANS OF WARNING THE HEARING IMPAIRED. PLASHING VISUAL WARNING SHALL HAVE A FREQUENCY OF NOT MORE THAN 60 FLASHES PER MINUTE.

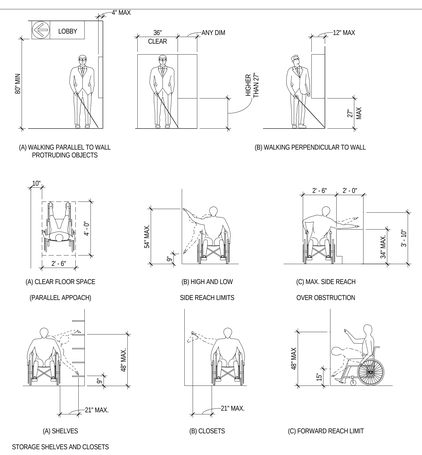
6. THRESHOLDS SHALL NOT BE MORE THAN 1/2" HIGHER THAN ADJACENT FLOOR OR LANDING. LEVEL CHANGE BETWEEN 1/4" AND 1/2" SHALL BE BEVELED WITH SLOPE NO GREATER THAN 1:2.

7. CENTER OF ALARM PULL BOXES SHALL BE 4'-0" A.F.F.

NOTE:
AT TOILET ROOMS WITH FINISHED DIMENSIONS LESS THAN 5'-5" X 7'-4", Y=48"
Y=54" MINIMUM SHALL BE PROVIDED IF THE DOOR HAS A CLOSER.

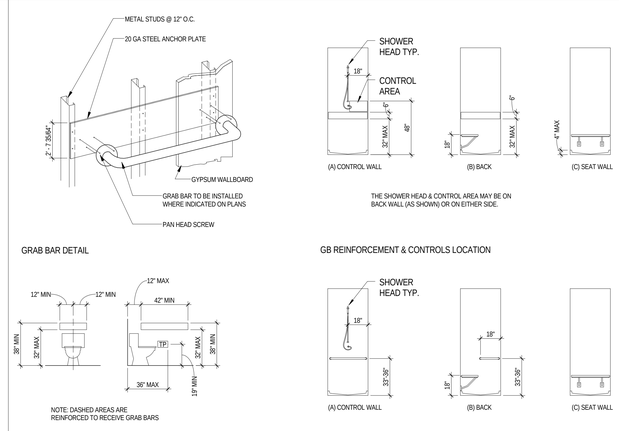
NOTES:
1. ADJ TO LATCH SIDE OF DOOR
2. 6" PICTOGRAM WITH VERBAL DESCRIPTION.
3. CENTER 60" FROM FLOOR.
4. LETTERS AND NUMERALS ARE RAISED 1/32" SANS-SERIF UPPERCASE CHARACTERS
5. BLACK COPY ON A BRUSHED ALUM. BACKGROUND.

MANEUVERING & PROTRUDING OBJECTS



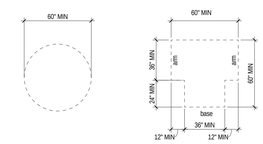
(A) WALKING PARALLEL TO WALL PROTRUDING OBJECTS
(B) WALKING PERPENDICULAR TO WALL
(A) CLEAR FLOOR SPACE (PARALLEL APPOACH)
(B) HIGH AND LOW SIDE REACH LIMITS
(C) MAX. SIDE REACH OVER OBSTRUCTION
(A) SHELVES
(B) CLOSETS
(C) FORWARD REACH LIMIT
STORAGE SHELVES AND CLOSETS

GRAB BARS



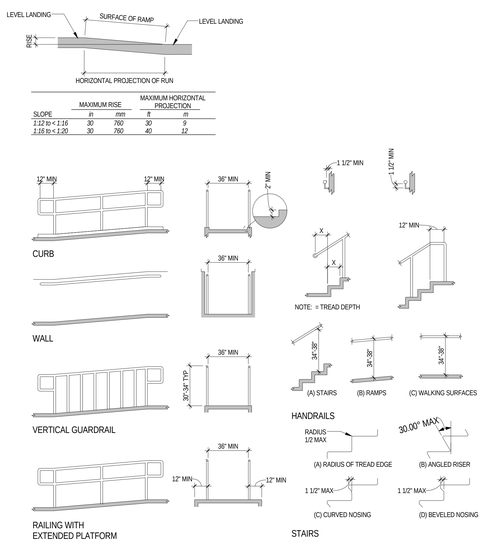
GRAB BAR DETAIL
(A) CONTROL WALL
(B) BACK
(C) SEAT WALL
THE SHOWER HEAD & CONTROL AREA MAY BE ON BACK WALL (AS SHOWN) OR ON EITHER SIDE.
GB REINFORCEMENT & CONTROLS LOCATION
NOTE: DASHED AREAS ARE REINFORCED TO RECEIVE GRAB BARS
REINFORCED AREAS FOR GRAB BARS AT WC
LOCATION OF GRAB BARS

TURNING SPACE REQUIREMENTS



CIRCULAR TURNING SPACE
T - SHAPED TURNING SPACE

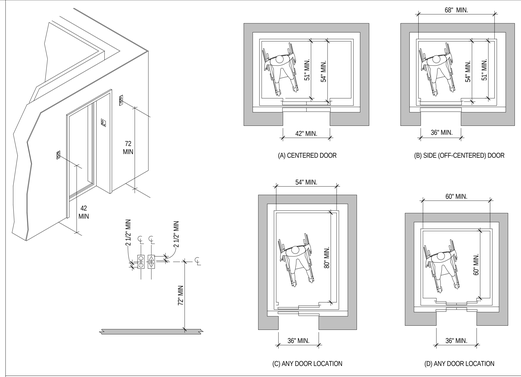
PRIMARY ACCESS



	MAXIMUM RISE		MAXIMUM HORIZONTAL PROJECTION	
SLOPE	in	mm	ft	m
1:12 to < 1:16	30	760	30	9
1:16 to < 1:20	30	760	40	12

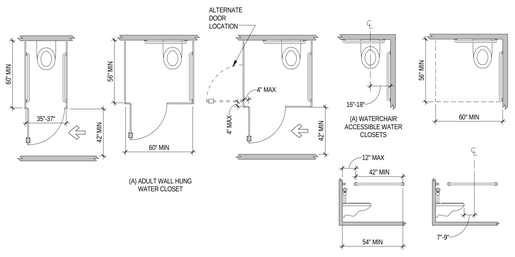
(A) STAIRS
(B) RAMPS
(C) WALKING SURFACES
(A) RADIUS OF TREAD EDGE
(B) ANGLED RISER
(C) CURVED NOSING
(D) BEVELED NOSING

ELEVATORS



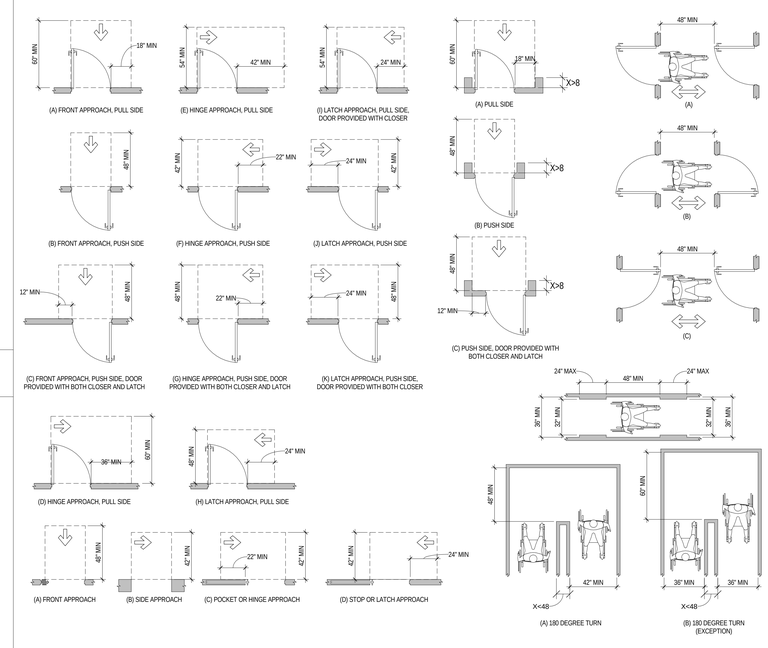
(A) CENTERED DOOR
(B) SIDE (OFF-CENTERED) DOOR
(C) ANY DOOR LOCATION
(D) ANY DOOR LOCATION

WATER CLOSETS



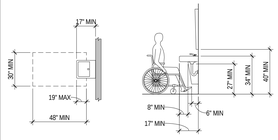
(A) ADULT WALL HUNG WATER CLOSET
(A) WATERCHAIR ACCESSIBLE WATER CLOSETS

DOORS & MANEUVERING CLEARANCES

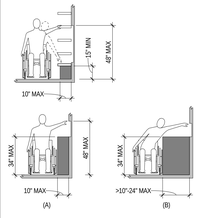


(A) FRONT APPROACH, PULL SIDE
(E) HINGE APPROACH, PULL SIDE
(I) LATCH APPROACH, PULL SIDE, DOOR PROVIDED WITH CLOSER
(A) PULL SIDE
(A)
(B) FRONT APPROACH, PUSH SIDE
(F) HINGE APPROACH, PUSH SIDE
(J) LATCH APPROACH, PUSH SIDE
(B) PUSH SIDE
(B)
(C) FRONT APPROACH, PUSH SIDE, DOOR PROVIDED WITH BOTH CLOSER AND LATCH
(G) HINGE APPROACH, PUSH SIDE, DOOR PROVIDED WITH BOTH CLOSER AND LATCH
(K) LATCH APPROACH, PUSH SIDE, DOOR PROVIDED WITH BOTH CLOSER
(C) PUSH SIDE, DOOR PROVIDED WITH BOTH CLOSER AND LATCH
(C)
(D) HINGE APPROACH, PULL SIDE
(H) LATCH APPROACH, PULL SIDE
(A) FRONT APPROACH
(B) SIDE APPROACH
(C) POCKET OR HINGE APPROACH
(D) STOP OR LATCH APPROACH
(A) 180 DEGREE TURN
(B) 180 DEGREE TURN (EXCEPTION)

LAVATORIES & SINKS

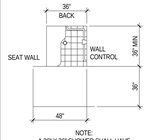


STORAGE



(A)
(B)

SHOWER CLEARANCES



NOTE:
A 36" X 36" SHOWER SHALL HAVE CURBS NO HIGHER THAN 4".

Key Plan:

Seal & Signature:

REGISTERED ARCHITECT
GOTTFRIED
No. 16649
STATE OF NEW YORK

Warning: It is a violation of the New York State Architecture Law, Sec. 409.5(h) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION BID
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1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

ADA REQUIREMENTS

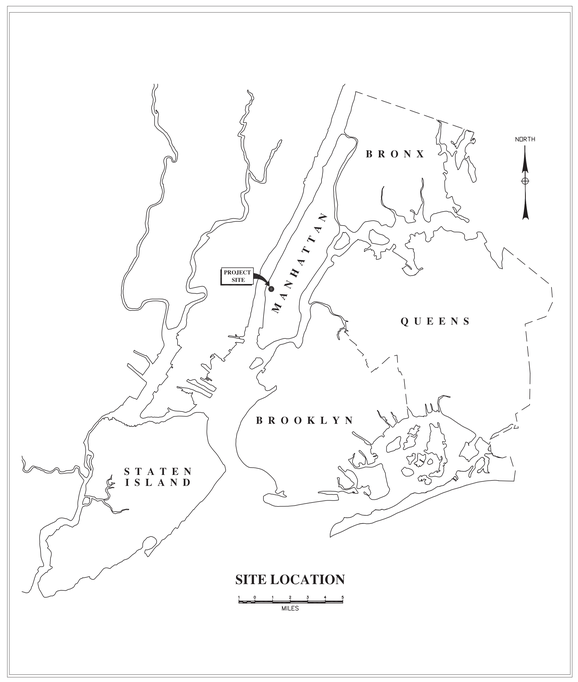
Project No.: 207120	B-SCAN Sheet No.: G-007.00
Date: 20 JUN 2014	Sheet No.: G-007
Scale: 1/4" = 1'-0"	
File No.: G-007	Page No.: 5 OF 87

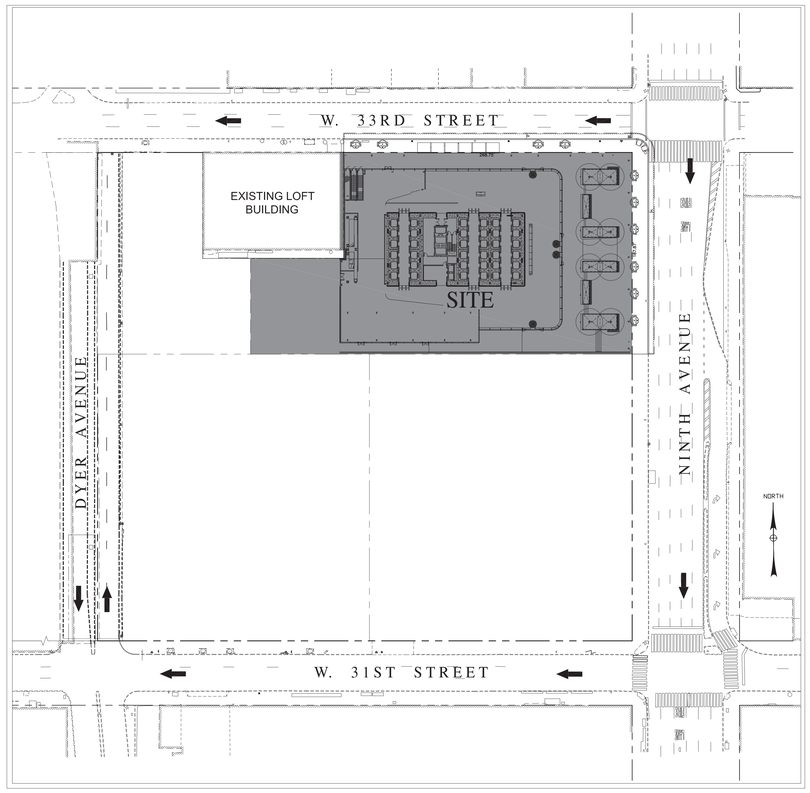
6/19/2014 12:22:27 AM

DEPT OF BLDGS 37139743 Job Number ES34651109 Scan Code

DOT APPROVAL OF DESIGN ELEMENTS
For self-certified projects only
Item requiring DOT approval — Approved by — Date

MANHATTAN WEST - NE TOWER





KEY PLAN
SCALE: 1"=50'

LIST OF ESTIMATED QUANTITIES

New Curb	555	Lin. ft.
New Sidewalk	7,685	Sq. ft.
New Roadway	310	Sq. yds.
New Trees	10	Each
New CBs	0	Each
New DIP	0	Lin. ft.
New Manholes	0	Each

Date: June 20, 2014

NEW YORK CITY
DEPARTMENT OF TRANSPORTATION

BUILDERS PAVEMENT PLAN

PROJECT DATA

Block: 729 — Lot(s): 60
Zoning: M1-6 — Zoning Map No.: 08d
Street Address: 401 9th Avenue, New York, NY 10001
Owner: Name: 33rd Street Corporation
Address: 3 World Financial Center, 200 Vesey Street, New York, NY 10281

Plan prepared by:

Philip Habib & Associates
102 Madison Avenue, 11th Floor
New York, NY 10016
(212) 929-5656

Seal

Signature

WAIVERS

DOT requirement waived — As per/Date

1)
2)
3)
4)

NOTES

GENERAL REQUIREMENTS

1. ALL DESIGNS, MATERIALS, CONSTRUCTION METHODS AND WORKMANSHIP SHALL COMPLY WITH THE FOLLOWING PUBLICATIONS OF THE BUREAU OF HIGHWAYS: STANDARD SPECIFICATIONS, STANDARD DETAILS OF CONSTRUCTION; RULES OF THE BUREAU OF HIGHWAY OPERATIONS; GUIDELINES FOR THE DESIGN INFRASTRUCTURE COMPONENTS.
2. ALL NON STANDARD MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE SPECIFICALLY APPROVED IN WRITING BY THE DOT.
3. ANY WORK NOT COMPLYING WITH THE REQUIREMENTS OF THE DOT SHALL BE REMOVED AND REPLACED.
4. THIS PLAN SHALL BE VALID FOR THE ISSUANCE OF CONSTRUCTION PERMITS FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL OR SELF-CERTIFICATION, AS APPLICABLE.
5. ALL SIDEWALK AND STREET AREAS CONSTRUCTED UNDER THIS PLAN SHALL REMAIN OPEN TO THE PUBLIC AT ALL TIMES.

ISSUANCE OF PERMITS

6. NO SIDEWALK, CURB OR ROADWAY WORK SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH HIGHWAY SUPERINTENDANT. APPLICATION SHALL BE MADE THREE DAYS BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL HAVE ALL REQUIRED INSURANCE COVERAGE ON FILE.
7. NO WORK ON DRAINAGE STRUCTURES SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH OFFICE OF THE DEPARTMENT OF ENVIROMENTAL PROTECTION.
8. ANY VAULT WORK AT THE SITE SHALL BE DONE AS PER THE APPLICABLE RULES OF THE DOT AND THE DEPT. OF BUILDINGS.

CONSTRUCTION ACTIVITY

9. A CONSTRUCTION PLAN SHOWING MAINTENANCE AND PROTECTIONOF TRAFFIC, INCLUDING PLACEMENT OF SIDEWALK BRIDGES, BARRIERS AND SIGNAGE, SHALL BE SUBMITTED TO THE BOROUGH HIGHWAY OFFICE BEFORE CONSTRUCTION BEGINS.
10. NO SIDEWALK SHALL BE CLOSED WITHOUT A PERMIT. PEDESTRIAN AND TRAFFIC SAFETY SHALL BE PROTECTED AT ALL TIMES. ROADWAY CLOSINGS SHALL BE AS DIRECTED.
11. THE SITE SHALL BE MAINTAINED IN A CLEAN AND SAFE CONDITION.

FINAL SIGN-OFF

12. PERMITS SHALL BE PRESENTED FROM ALL PUBLIC AGENCIES AND UTILITIES HAVING OWNERSHIP OF STRUCTURES RELOCATED OR REMOVED DURING CONSTRUCTION
13. ALL PAVEMENT MARKINGS INCLUDING THERMOPLASTIC LANE DIVIDERS, REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN KIND TO THE BUREAU OF TRAFFIC STDS.
14. ALL EXISTING CATCH BASINS ON SITE SHALL BE CLEANED AND MADE OPERABLE.
15. ALL DAMAGE CAUSED BY CONSTRUCTION ON THIS PROJECT OUTSIDE THE PROJECT LIMITS SHALL BE REPAIRED AS DIRECTED.
16. THE ROADWAY SHALL BE PAVED TO THE REQUIREMENTS OF THE DOT AND AS DIRECTED.

PROFESSIONAL CERTIFICATION

(Optional)
I am submitting this plan under professional certification in compliance with all applicable requirements.

Signature — ____/____/____ Date

DOT APPROVAL NOT REQUIRED

DOT APPROVAL

Proposed and existing work shown here reviewed for compliance with all applicable rules and requirements by:

Plan Examiner

Approval for issuance of work permits granted by:

Chief / Builders Pavement Section — ____/____/____ Date

SHEET NOTES

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
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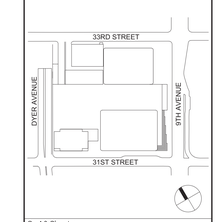
Key Plan:



Seal & Signature:

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Sheet Name:

BPP TITLE SHEET

Project No.: 207120	B-SCAN Sheet No.: BPP-100.00
Date: 20 DEC 2013	
Scale: 1" = 20'	Sheet No.: BPP-100
File No.:	Page No.: 1 OF 4

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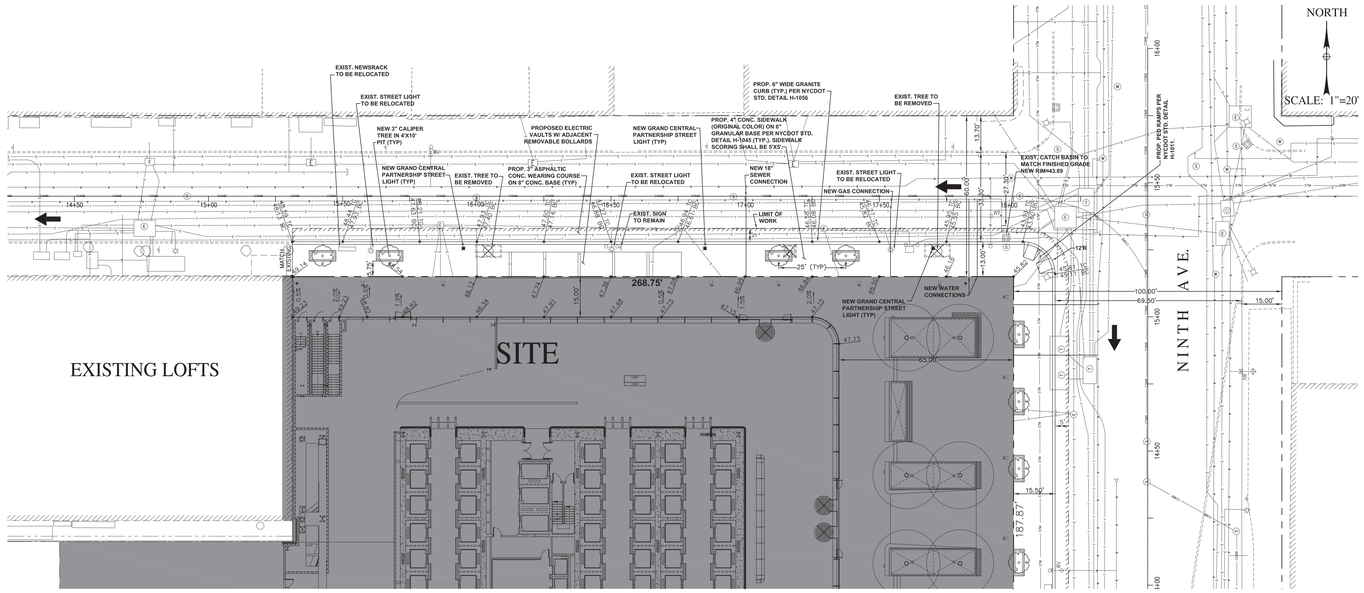

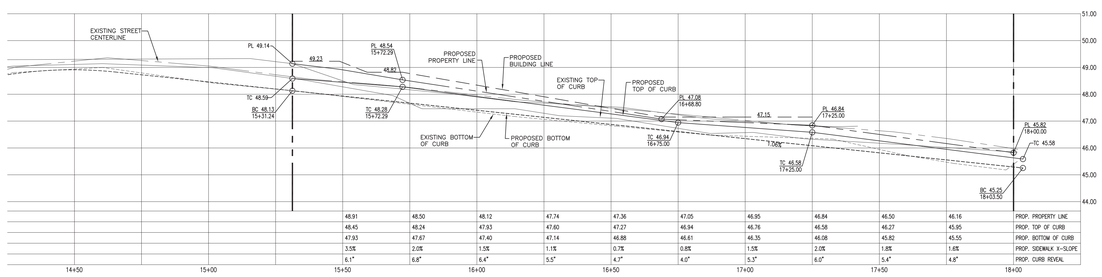

48.91	48.50	48.12	47.74	47.36	47.05	46.95	46.84	46.50	46.16	PROP. PROPERTY LINE
48.45	48.24	47.93	47.60	47.27	46.94	46.76	46.58	46.27	45.95	PROP. TOP OF CURB
47.93	47.67	47.40	47.14	46.88	46.61	46.35	46.08	45.82	45.55	PROP. BOTTOM OF CURB
3.5%	2.0%	1.5%	1.1%	0.7%	0.8%	1.5%	2.0%	1.8%	1.8%	PROP. SIDEWALK X-SLOPE
6.1"	6.8"	6.4"	5.5"	4.7"	4.0"	5.3"	6.0"	5.4"	4.8"	PROP. CURB REVEAL

W. 33RD STREET

SOUTH SIDE

SCALE: H: 1"=20'

V: 1"=1'

MANHATTAN WEST NE TOWER		
33rd ST. PLAN & PROFILE		
PHILIP HABIB & ASSOCIATES 102 MADISON AVENUE NEW YORK, NY 10016	DATE 6/20/2014	
Scale: AS SHOWN	Sheet 2 of 4	
DOB Ref. No.: --------	BPP 101.00	

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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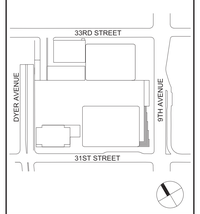

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Sheet Name:

WEST 33RD STREET PLAN & PROFILE

Project No.: 207120	B-SCAN Sheet No.: BPP-101.00
Date: 20 DEC 2013	
Scale: 1" = 20'	Sheet No.: BPP-101
File No.:	Page No.: 2 OF 4

GENERAL NOTES:

1. ELEVATIONS ARE BASED ON THE DATUM USED BY THE TOPOGRAPHICAL BUREAU, BOROUGH OF MANHATTAN, WHICH IS 2.750 FEET ABOVE THE UNITED STATES COAST AND GEODETIC SURVEY DATUM MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY.

2. UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES, WHETHER FUNCTIONAL OR ABANDONED, WITHIN THE PROJECT AREA ARE SHOWN.

3. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF DESIGN ELEMENTS AND LOCATIONS OF EXISTING ELEMENTS. IMMEDIATELY INFORM THE ARCHITECT AND CONSTRUCTION MANAGER ABOUT ANY DIMENSIONAL DISCREPANCIES OR POTENTIAL CONFLICTS.

4. MATERIALS, CONSTRUCTION METHODS AND WORKMANSHIP FOR STANDARD DETAILS SHALL CONFORM WITH STANDARD DETAILS AND SPECIFICATIONS OF NEW YORK STATE DEPARTMENT OF TRANSPORTATION AND/OR THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY OPERATIONS (LATEST EDITION) AVAILABLE AT 40 WORTH STREET, ROOM 824.

5. PROVIDE ONE-QUARTER (1/4) INCH EXPANSION JOINTS WITH PREFORMED FILLER AND SEALANT IN ACCORDANCE WITH THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION STANDARDS. CONTRACTOR TO SUBMIT LOCATIONS OF EXPANSION JOINTS FOR ARCHITECTS APPROVAL. JOINTS TO BE PROVIDED AT 20' ON CENTER.

6. EXPANSION JOINTS FOR ALL CURBS SHALL BE ONE-HALF (1/2) INCH WIDTH FILLED WITH PREMOLDED JOINT FILLER AND JOINT SEALANT. EXPANSION JOINTS FOR CURBS SHALL LINE UP WITH THE PROPOSED LOCATION OF EXPANSION JOINTS IN NEW ABUTTING CONC. SIDEWALK. FILLERS SHALL COMPLETELY FILL THE JOINT AND SHALL BE CUT FLUSH WITH ALL CURB SURFACES. JOINTS TO BE PROVIDED AT 20' ON CENTER

7. THE CONTRACTOR SHALL INFORM THE OWNER OF ANY EXISTING SIDEWALK OR CURB WHICH IS NOT CALLED OUT FOR REPLACEMENT ON THIS PLAN, BUT MAY PRESENT A TRIP HAZARD OR UNSAFE CONDITION. SUCH CONDITION WILL BE CORRECTED AS DIRECTED BY THE OWNER.

8. ALL EXISTING HYDRANTS AND CATCH BASINS WITHIN THE WORK LIMITS SHALL BE MADE OPERABLE PER THE LATEST NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS AND REQUIREMENTS.

9. ALL EXISTING PAVEMENT STRIPING & SIGNAGE TO BE REPLACED IN KIND PER THE MOST RECENT MUTCD REQUIREMENTS.

10. ALL EXISTING MANHOLES, VAULTS, VALVE BOXES AND OTHER SUCH HARDWARE IN THE ADJACENT SIDEWALKS SHALL BE ABANDONED IF NOT UTILIZED IN THE FINAL BUILDING PLANS. IF EXISTING HARDWARE AND UTILITIES WILL BE REUSED IN THE FINAL BUILDING PLAN, THEY SHALL BE ADJUSTED TO FINISH GRADES AS NECESSARY. THIS HARDWARE MAY NOT BE SHOWN ON THESE PLANS. CONTRACTOR SHALL VERIFY LOCATIONS OF THIS HARDWARE IN THE FIELD AND WITH THE SIGNED AND SEALED SURVEY.

DRAINAGE NOTES:

1. ALL CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS AND REQUIREMENTS. ALL NEW CATCH BASIN CONNECTIONS SHALL BE MADE TO THE EXISTING SEWERS AT MANHOLES AND SHALL CONSIST OF 12" DUCTILE IRON PIPE CLASS 56, "PUSH-ON" JOINTS LAID ON BROKEN STONE.

2. ALL EXISTING NON-STANDARD BASINS WITHIN THE PROJECT LIMITS SHALL BE REPLACED OR MODIFIED TO CONFORM WITH THE LATEST NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS AND REQUIREMENTS.

3. ALL EXISTING BASINS, INLETS, AND DRAINAGE STRUCTURES TO BE ABANDONED SHALL BE BULKHEADED AND CUT DOWN TO TWO (2) FEET BELOW SUBGRADE, HOLES PUNCHED IN BOTTOM SLAB AND FILLED WITH COMPACTED CLEAN SAND. BASIN CONNECTIONS TO BE ABANDONED SHALL BE PLUGGED AT BOTH ENDS.

4. ALL DAMAGED MANHOLES DAMAGED BY THE CONTRACTOR'S WORK SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE CITY.

5. PRIOR TO INSTALLATION OF THE DRAINAGE FACILITIES PROPOSED UNDER THIS PLAN, PERMITS ARE TO BE OBTAINED FROM THE LOCAL SEWER RECORDS OFFICE OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (D.E.P.). CONSTRUCTION INSPECTION IS TO BE REQUESTED AT LEAST 24 HOURS IN ADVANCE FROM THE HOUSE CONNECTION INSPECTION UNIT OF THE D.E.P. DIVISION OF SEWER REGULATION AND CONTROL.

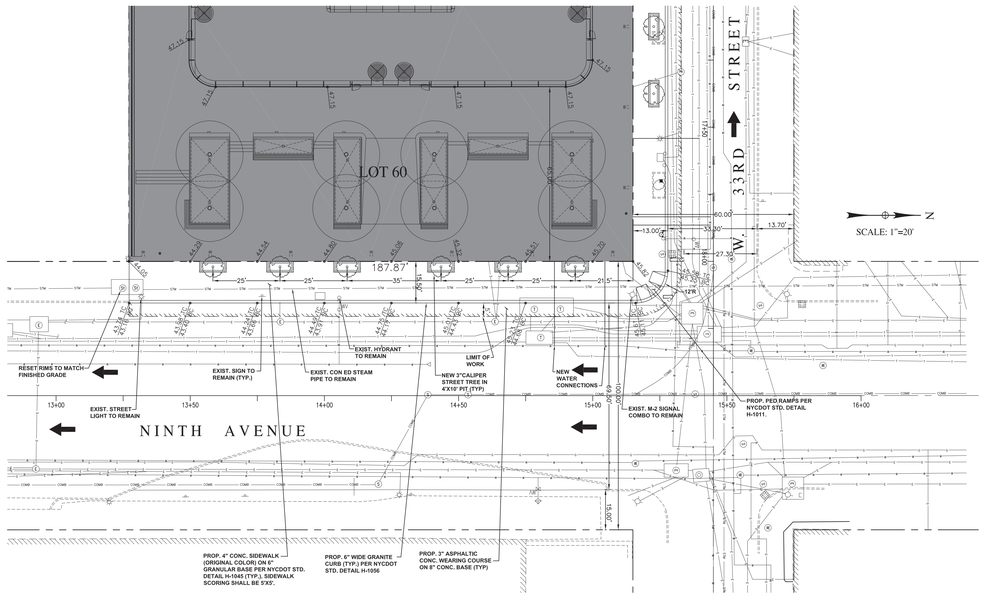
PARKS & RECREATION NOTES:

1. CONTRACTOR SHALL CONTACT CITY OF NEW YORK PARKS & RECREATION (PARKS) IF ANY UNDERGROUND INFRASTRUCTURE (GAS/WATER/ELECTRIC/ETC.) AFFECTS ANY PROPOSED/EXISTING CITY TREES. ANY CONSTRUCTION ACTIVITIES, INCLUDING EXCAVATION, GRADE CHANGES, UTILITIES, SIDEWALKS, PRUNING, OR ANY OTHER WORK, PREFORMED BY THE CONTRACTOR OR SUBCONTRACTORS ABOVE OR BELOW GROUND ADJACENT TO A CITY TREE OR WITHIN THE TREE DRIPLINE REQUIRES A FORESTRY PERMIT FROM PARKS.

2. ALL CITY TREE PLANTINGS SHALL FOLLOW PARKS PLANTING SPECIFICATIONS AND GUIDELINES. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF EXISTING UTILITIES AND LAY OUT PROPOSED UTILITIES AND/OR STREET FURNITURE. IF ANY DIMENSIONAL DISCREPANCIES OR POTENTIAL CONFLICTS ARE FOUND, THE CONTRACTOR SHALL INFORM THE ENGINEER. ANY SUBSTANTIAL REVISIONS TO THE PLAN SHALL BE SENT TO PARKS FOR APPROVAL.

3. ALL PIT SIZES INDICATED ARE TO BE FULLY EXCAVATED TO THE DIMENSIONS LABELED AND REPLACED WITH NEW TOPSOIL TO NYC PARKS STANDARDS.

4. TOTAL NUMBER OF:
   - TREES REQUIRED BY NYCDOB=19
   - EXISTING TREES TO PROTECT=0
   - PROPOSED TREES TO REMOVE/RELOCATE W/ NYC PARKS DOCUMENTATION=3
   - PROPOSED TREES TO PLANT=11
   - TREES TO PLANT OFFSITE=0
   - TREES TO PAY INTO TREE FUND=8

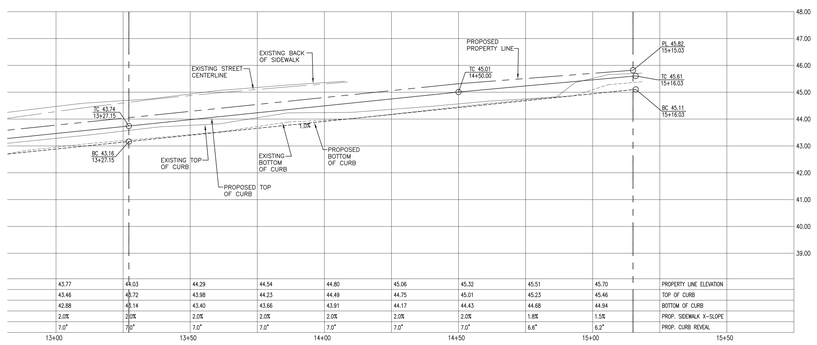


LEGEND:

- EXISTING MANHOLE
- PROPOSED MANHOLE
- EXISTING STREET LIGHT
- PROPOSED/RELOCATED STREET LIGHT
- EXISTING HYDRANT WITH STEEL FENDERS
- EXISTING CATCH BASIN OR DRAIN INLET
- PROPOSED CATCH BASIN OR DRAIN INLET
- PEDESTRIAN RAMP
- DROP CURB
- PROPOSED/RELOCATED SIGN
- EXISTING SIGN
- PROPOSED GRADE
- EXISTING TREE & PROPOSED PIT
- PROPOSED TREE & PIT

PROFILE

- EXISTING CENTERLINE
- PROPOSED CENTERLINE
- PROPOSED PROPERTY LINE
- EXISTING PROPERTY LINE
- PROPOSED TOP OF CURB
- EXISTING TOP OF CURB
- PROPOSED BOTTOM OF CURB
- EXISTING BOTTOM OF CURB
- TC PROPOSED TOP OF CURB
- BC PROPOSED BOTTOM OF CURB
- PPL PROPOSED PROPERTY LINE



43.77	44.03	44.29	44.54	44.80	45.06	45.32	45.51	45.70		PROPERTY LINE ELEVATION
43.46	43.72	43.98	44.23	44.49	44.75	45.01	45.23	45.46		TOP OF CURB
42.88	43.14	43.40	43.66	43.91	44.17	44.43	44.68	44.94		BOTTOM OF CURB
2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.8%	1.5%		PROP. SIDEWALK X-SLOPE
7.0"	7.0"	7.0"	7.0"	7.0"	7.0"	7.0"	6.6"	6.2"		PROP. CURB REVEAL
13+00		13+50		14+00		14+50		15+00		15+50

NINTH AVENUE
WEST SIDE
SCALE: H: 1"=20'
V: 1"=1'

MANHATTAN WEST
NE TOWER

9th AVE. PLAN & PROFILE

PHILIP HABIB & ASSOCIATES
226 WEST 26TH STREET
NEW YORK, NY 10001

DATE 6/20/2014

Scale: AS SHOWN | Sheet 3 of 4

DOB Ref. No.: --------- | BPP 102.00

SHEET NOTES

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Civil Engineering
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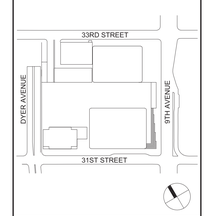
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

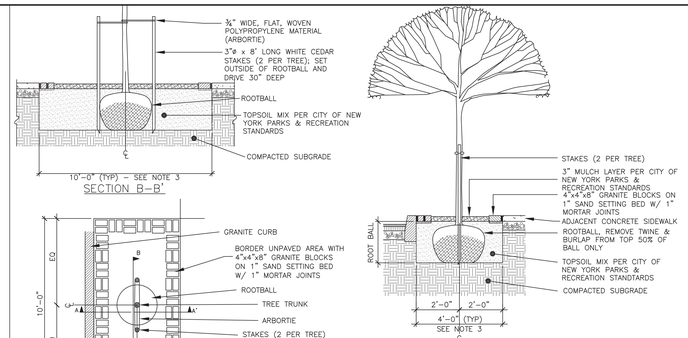
No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

9TH AVENUE
PLAN & PROFILE

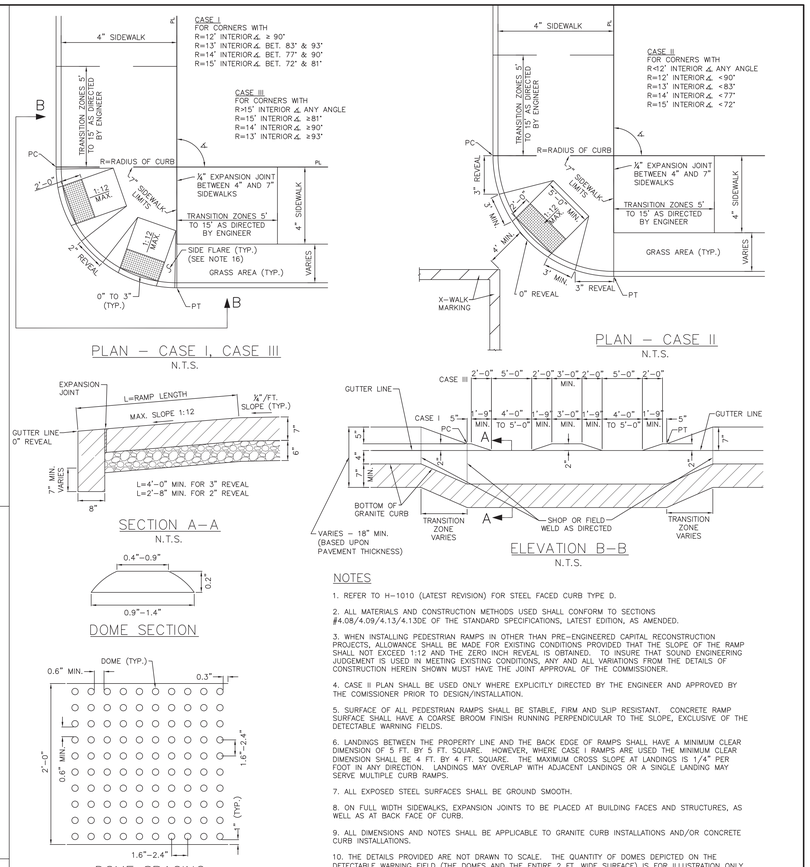
Project No.: 207120
Date: 20 DEC 2013
Scale: 1" = 20'
File No.:
B-SCAN Sheet No.: BPP-102.00
Sheet No.: BPP-102
Page No.: 3 OF 4

SHEET NOTES



NOTES:
1. ALL STREET TREE PLANTINGS REQUIRE CITY OF NEW YORK PARKS & RECREATION APPROVED PERMIT.
2. ANY TREE WORK IMPROPERLY PERFORMED OR OTHERWISE NOT IN ACCORDANCE WITH CITY OF NEW YORK PARKS & RECREATION STANDARDS WILL BE SUBJECT TO RESTITUTION AND PENALTY AT THE EXPENSE OF THE PROPERTY OWNER.
3. OPTIMAL TREE PIT SIZE IS 4'x10' OR 5'x10'. SEE PLANS FOR INDIVIDUAL TREE PIT SIZES. REFER TO CITY OF NEW YORK PARKS & RECREATION TREE PIT CONFIGURATION SHEET FOR ALTERNATE SIZES.

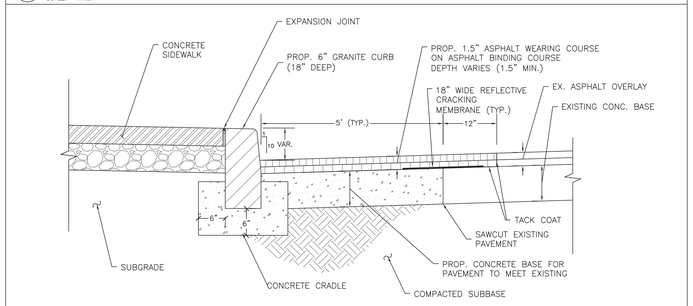
6 STANDARD STREET TREE
SCALE: N.T.S.



NOTES

1. REFER TO H-1010 (LATEST REVISION) FOR STEEL FACED CURB TYPE D.
2. ALL MATERIALS AND CONSTRUCTION METHODS USED SHALL CONFORM TO SECTIONS #4.08/4.09/4.13/4.13DE OF THE STANDARD SPECIFICATIONS, LATEST EDITION, AS AMENDED.
3. WHEN INSTALLING PEDESTRIAN RAMPS IN OTHER THAN PRE-ENGINEERED CAPITAL RECONSTRUCTION PROJECTS, ALLOWANCE SHALL BE MADE FOR EXISTING CONDITIONS PROVIDED THAT THE SLOPE OF THE RAMP SHALL NOT EXCEED 1:12 AND THE ZERO INCH REVEAL IS OBTAINED. TO INSURE THAT SOUND ENGINEERING JUDGEMENT IS USED IN MEETING EXISTING CONDITIONS, ANY AND ALL VARIATIONS FROM THE DETAILS OF CONSTRUCTION HEREIN SHOWN MUST HAVE THE JOINT APPROVAL OF THE COMMISSIONER.
4. CASE I PLAN SHALL BE USED ONLY WHERE EXPLICITLY DIRECTED BY THE ENGINEER AND APPROVED BY THE COMMISSIONER PRIOR TO DESIGN/INSTALLATION.
5. SURFACE OF ALL PEDESTRIAN RAMPS SHALL BE STABLE, FIRM AND SLIP RESISTANT. CONCRETE RAMP SURFACE SHALL HAVE A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE SLOPE, EXCLUSIVE OF THE DETECTABLE WARNING FIELDS.
6. LANDINGS BETWEEN THE PROPERTY LINE AND THE BACK EDGE OF RAMPS SHALL HAVE A MINIMUM CLEAR DIMENSION OF 5 FT. BY 5 FT. SQUARE. HOWEVER, WHERE CASE I RAMPS ARE USED THE MINIMUM CLEAR DIMENSION SHALL BE 4 FT. BY 4 FT. SQUARE. THE MAXIMUM CROSS SLOPE AT LANDINGS IS 1/4" PER FOOT IN ANY DIRECTION. LANDINGS MAY OVERLAP WITH ADJACENT LANDINGS OR A SINGLE LANDING MAY SERVE MULTIPLE CURB RAMPS.
7. ALL EXPOSED STEEL SURFACES SHALL BE GROUND SMOOTH.
8. ON FULL WIDTH SIDEWALKS, EXPANSION JOINTS TO BE PLACED AT BUILDING FACES AND STRUCTURES, AS WELL AS AT BACK FACE OF CURB.
9. ALL DIMENSIONS AND NOTES SHALL BE APPLICABLE TO GRANITE CURB INSTALLATIONS AND/OR CONCRETE CURB INSTALLATIONS.
10. THE DETAILS PROVIDED ARE NOT DRAWN TO SCALE. THE QUANTITY OF DOMES DEPICTED ON THE DETECTABLE WARNING FIELD (THE DOMES AND THE ENTIRE 2 FT. WIDE SURFACE) IS FOR ILLUSTRATION ONLY.
11. THE SIZE OF THE DETECTABLE WARNING FIELD SHALL BE 2 FT. IN THE DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP AS SHOWN, EXCLUSIVE OF SIDE FLARES.
12. DETECTABLE WARNINGS SHALL BE LOCATED SO THAT THE EDGE OF THE WARNING FIELD NEAREST TO THE ROADWAY OR STREET SURFACE IS 0" TO 3" FROM THE BACK OF CURB AS SHOWN.
13. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL.
14. THE DETECTABLE WARNING FIELD SHALL BE THE COLOR SPECIFIED IN THE CONTRACT DOCUMENTS OR SHALL VISUALLY CONTRAST WITH THE ADJOINING CURB RAMP, OR OTHER ADJACENT WALKWAY SURFACES WHERE THERE IS NO CURB RAMP, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT AS DEFINED IN THE AMERICANS WITH DISABILITIES ACCESSIBILITY GUIDELINES (ADAAG).
15. PAVEMENT LINES FOR DETECTABLE WARNING UNITS ARE THE 2FT. DIMENSION SHOWN IN THE DETAILS EXTENDING THE FULL WIDTH OF THE CURB RAMP.
16. WHEN STREET FURNITURE (LAMP POSTS, TRAFFIC SIGNAL POSTS, UTILITY POSTS, HYDRANTS, ETC.) INTERFERES WITH THE CONSTRUCTION OF A SIDE FLARE ADJACENT TO A NON-WALKING (GRASS) AREA, SAID SIDE FLARE SHALL BE REPLACED WITH A CONCRETE CURB, AS DIRECTED BY THE ENGINEER, PROVIDED THE INTERFERENCE CAN BE AVOIDED AND LEFT IN PLACE.
17. REFER TO NYC DOT DRAWING H-1011 FOR LATEST REVISION (R9/06).

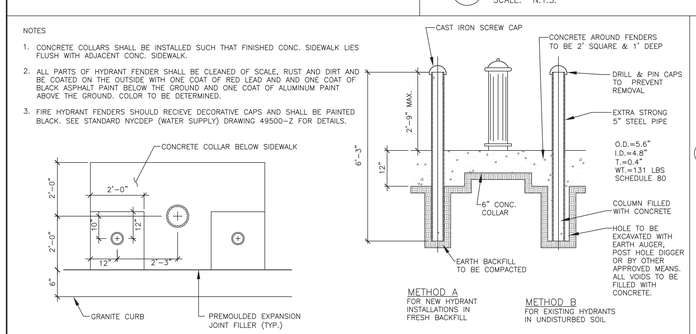
10 SIDEWALK PEDESTRIAN RAMP
SCALE: N.T.S.



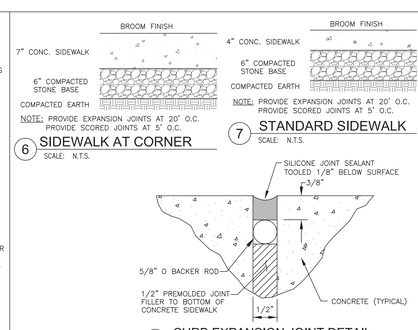
7 TYPICAL ROADWAY RESTORATION DETAIL
SCALE: N.T.S.

NOTES

1. CONCRETE COLLARS SHALL BE INSTALLED SUCH THAT FINISHED CONC. SIDEWALK LIES FLUSH WITH ADJACENT CONC. SIDEWALK.
2. ALL PARTS OF HYDRANT FENDER SHALL BE CLEANED OF SCALE, RUST AND DIRT AND BE COATED ON THE OUTSIDE WITH ONE COAT OF RED LEAD AND AND ONE COAT OF BLACK ASPHALT PAINT BELOW THE GROUND AND ONE COAT OF ALUMINUM PAINT ABOVE THE GROUND. COLOR TO BE DETERMINED.
3. FIRE HYDRANT FENDERS SHOULD RECIEVE DECORATIVE CAPS AND SHALL BE PAINTED BLACK. SEE STANDARD NYCDEP (WATER SUPPLY) DRAWING 49500-Z FOR DETAILS.



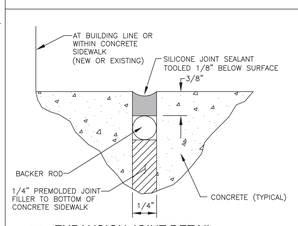
5 FIRE HYDRANT AND FENDER LAYOUT
SCALE: 1/2"=1'-0"



6 SIDEWALK AT CORNER
SCALE: N.T.S.

7 STANDARD SIDEWALK
SCALE: N.T.S.

8 CURB EXPANSION JOINT DETAIL
SCALE: N.T.S.



10 EXPANSION JOINT DETAIL
SCALE: N.T.S.

MANHATTAN WEST NE TOWER		
DETAILS		
PHILIP HABIB & ASSOCIATES 102 MADISON AVENUE NEW YORK, NY 10016	DATE 6/20/2014	
Scale: AS SHOWN	Sheet 4 of 4	
DOB Ref. No.: --------	BPP 103.00	

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650 Woodlawn Road West, Guelph
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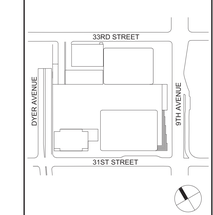
Key Plan:



Seal & Signature:

No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:
BPP DETAILS

Project No.: 207120	B-SCAN Sheet No.: BPP-103.00
Date: 20 DEC 2013	
Scale: 1" = 20'	Sheet No.: BPP-103
File No.:	Page No.: 4 OF 4

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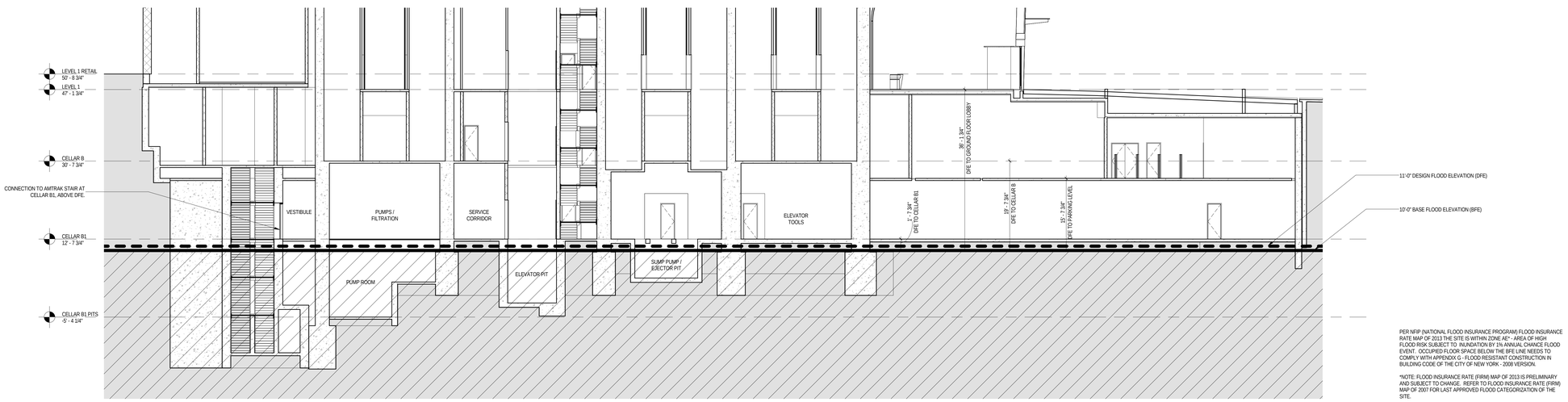
3 PRELIMINARY FLOOD INSURANCE RATE MAP (FIRM) - 2013
SCALE: NTS

2 FLOOD INSURANCE RATE MAP (FIRM) - 2007
SCALE: NTS



PER NFIP (NATIONAL FLOOD INSURANCE PROGRAM) FLOOD INSURANCE RATE MAP OF 2013 THE SITE IS WITHIN ZONE AE* - AREA OF HIGH FLOOD RISK SUBJECT TO INUNDATION BY 1% ANNUAL CHANCE FLOOD EVENT. OCCUPIED FLOOR SPACE BELOW THE BFE LINE NEEDS TO COMPLY WITH APPENDIX G - FLOOD RESISTANT CONSTRUCTION IN BUILDING CODE OF THE CITY OF NEW YORK - 2008 VERSION.

*NOTE: FLOOD INSURANCE RATE (FIRM) MAP OF 2013 IS PRELIMINARY AND SUBJECT TO CHANGE. REFER TO FLOOD INSURANCE RATE (FIRM) MAP OF 2007 FOR LAST APPROVED FLOOD CATEGORIZATION OF THE SITE.

1 BUILDING SECTION LOOKING NORTH
SCALE: NTS

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PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:

Seal & Signature:

No.	Date	Description
5	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
4	20 JUN 2014	ISSUED FOR FOUNDATION BID
3	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:
FLOOD ZONE DATA

Project No.: 207120
Date: 12 SEPT 2014
Scale: NTS
File No.: A-002
B-SCAN Sheet No.: A-002.00
Sheet No.: A-002
Page No.: 6 OF 30

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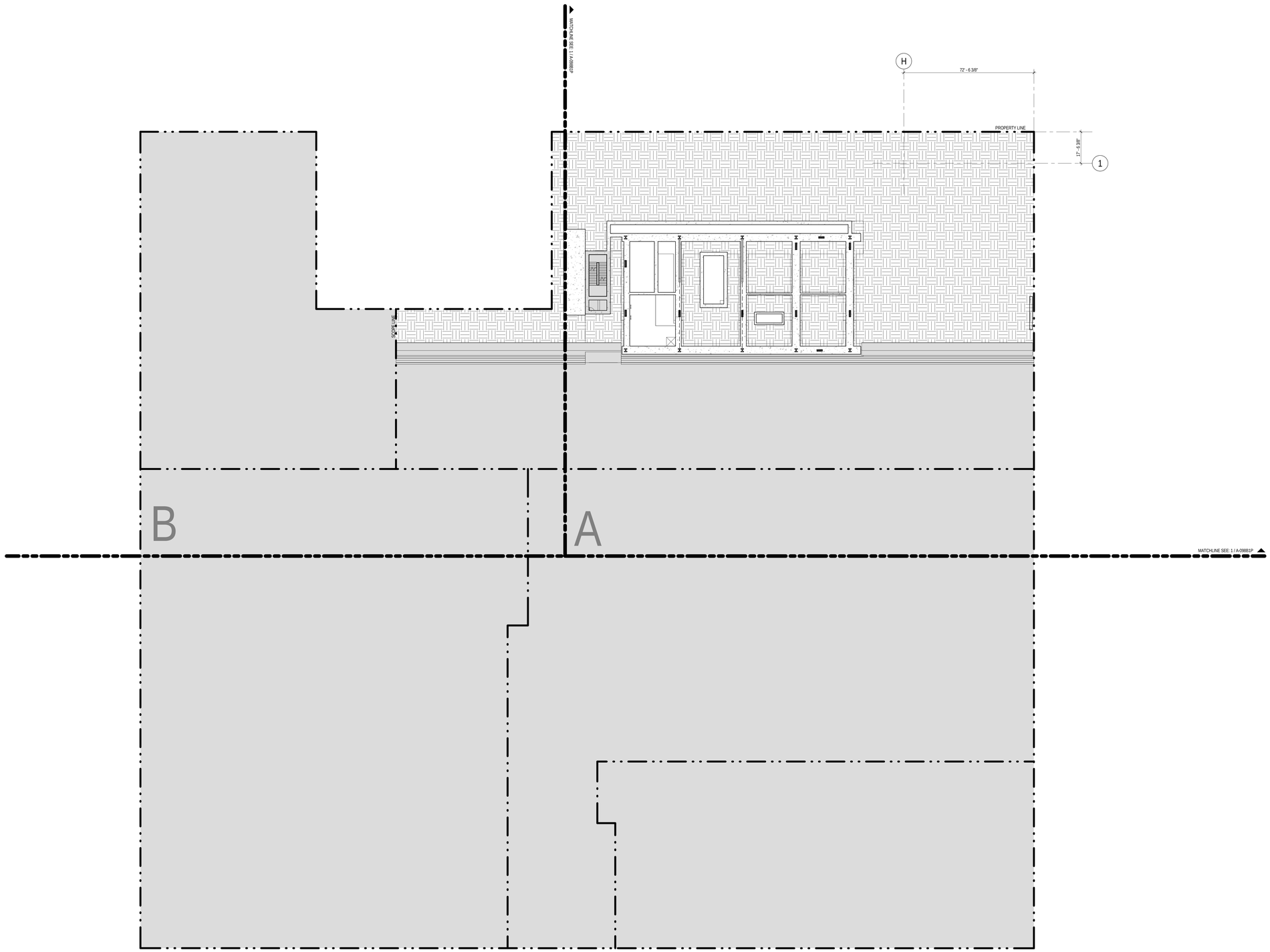

SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HAROWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

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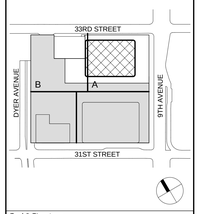

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REGISTERED ARCHITECT
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No. 5649
STATE OF NEW YORK

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Sheet Name:

KEY PLAN - CELLAR B1 PITS

Project No.: 207120
Date: 20 JUN 2014
Scale: 1" = 20'-0"
File No.: A-004
B-SCAN Sheet No.: A-004.00
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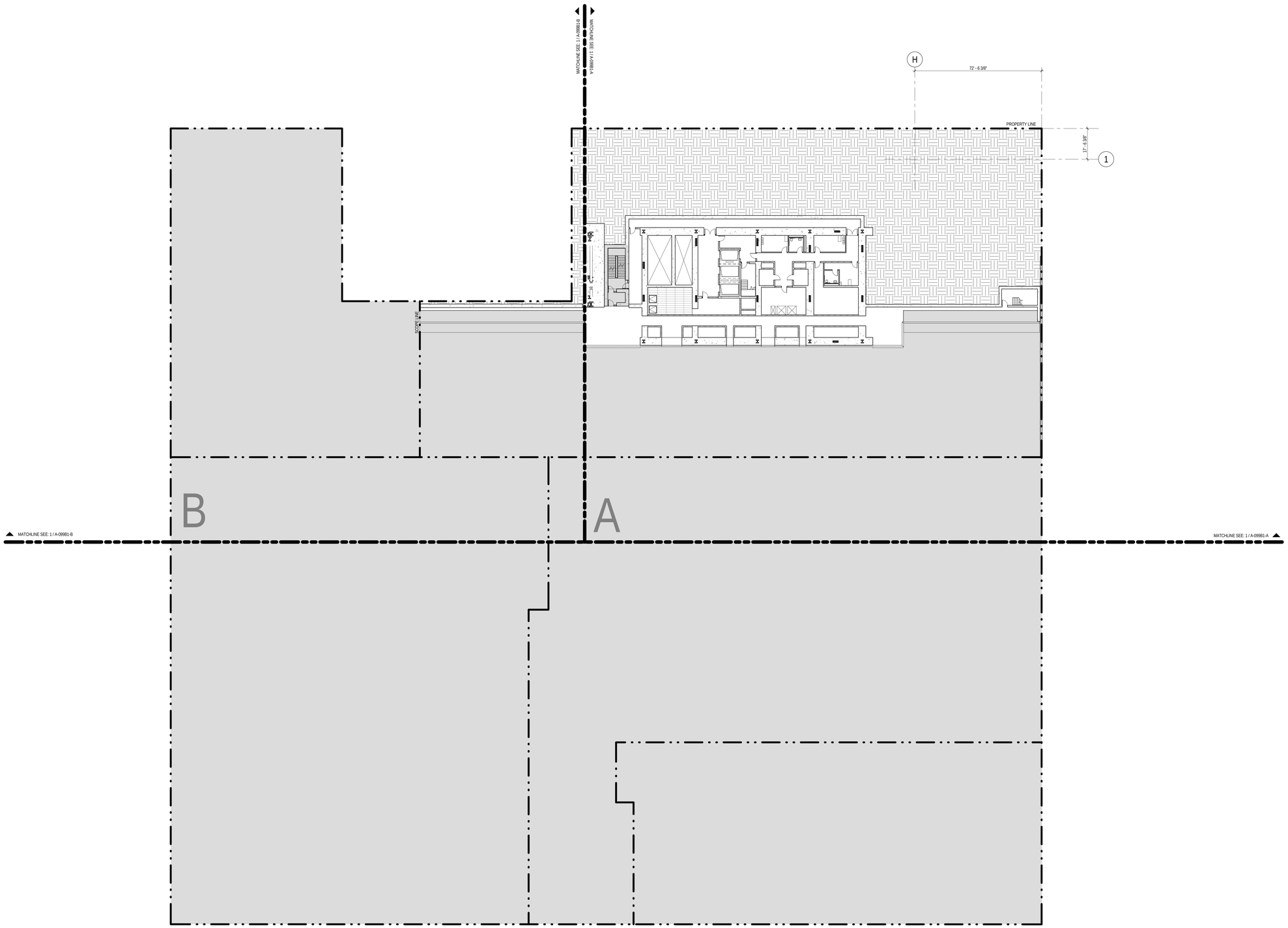

SHEET NOTES

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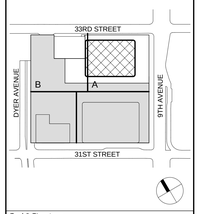

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Sheet Name:

KEY PLAN - CELLAR B1

Project No.: 207120	B-SCAN Sheet No.: A-005.00
Date: 20 JUN 2014	Sheet No.: A-005
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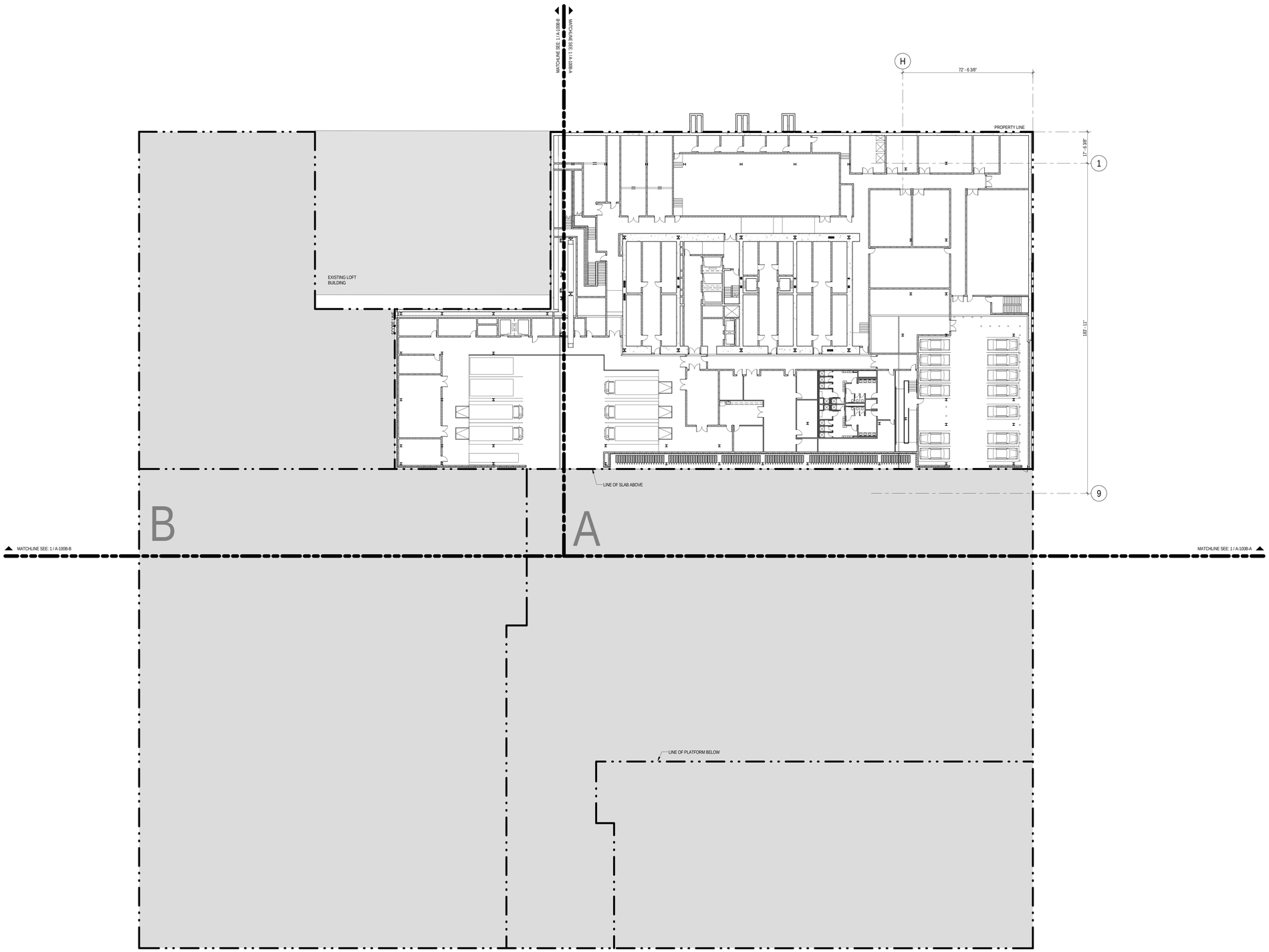

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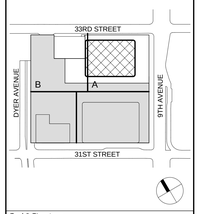

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KEY PLAN - CELLAR B

Project No.: 207120	B-SCAN Sheet No.: A-006.00
Date: 20 JUN 2014	Sheet No.: A-006
Scale: 1" = 20'-0"	
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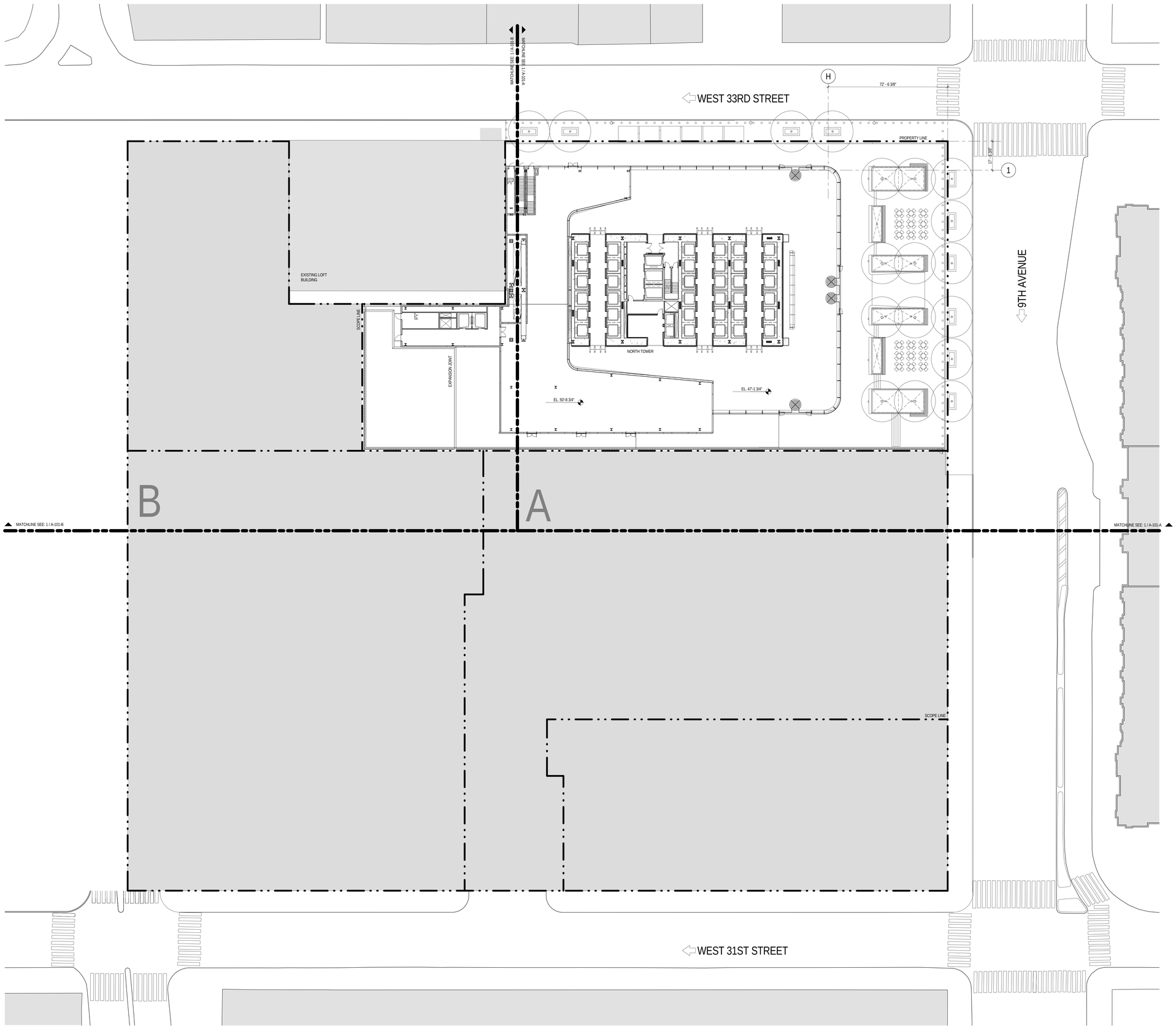

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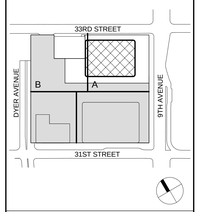

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Sheet Name:

KEY PLAN - GROUND FLOOR

Project No.: 207120	B-SCAN Sheet No.: A-007.00
Date: 20 JUN 2014	Sheet No.: A-007
Scale: 1" = 20'-0"	
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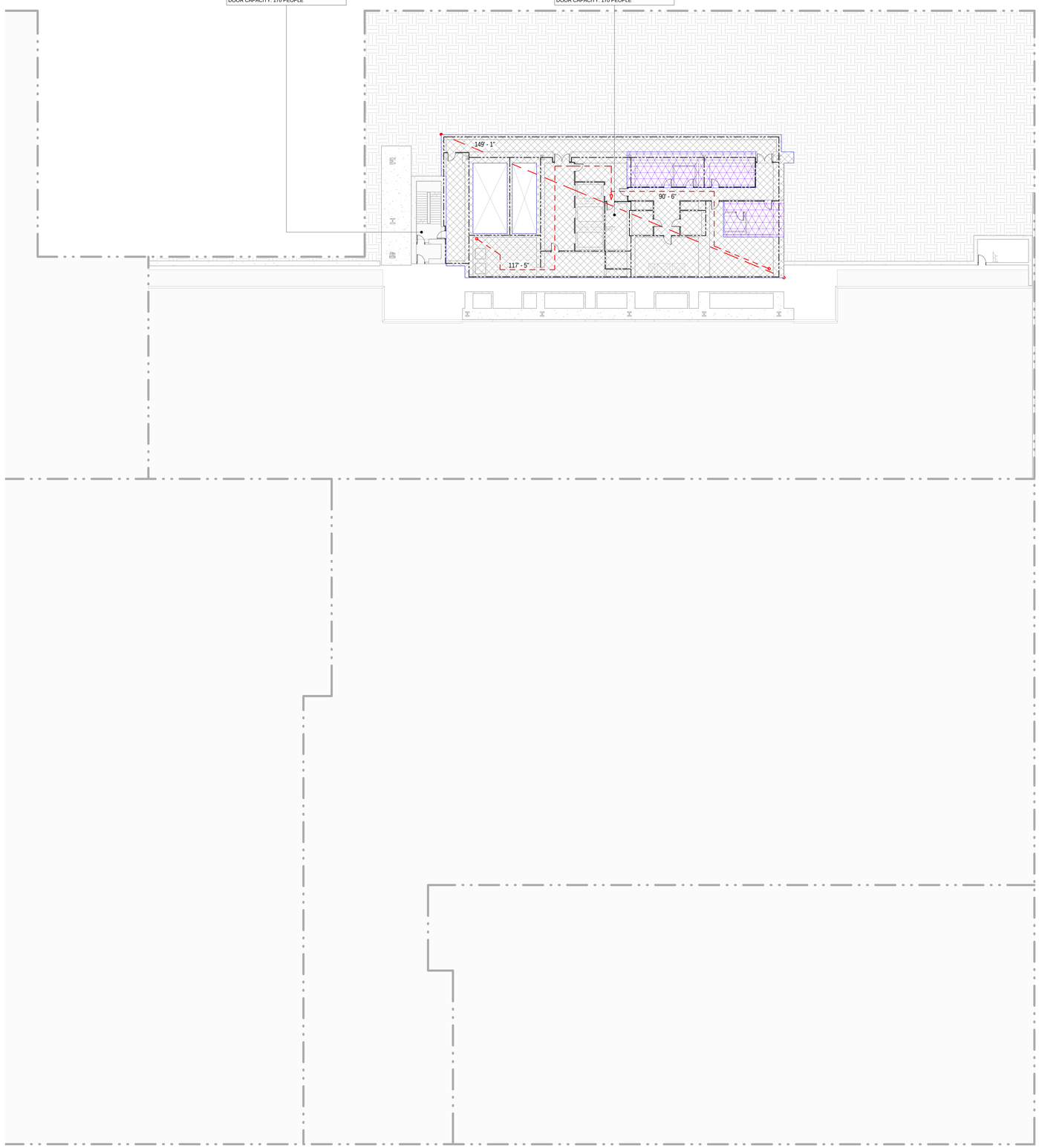
EXIT STAIR E	TOTAL CAPACITY: 167
STAIR WIDTH: 50"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 167 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR D	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	



EGRESS CAPACITY - CELLAR B1

STAIR	CLEAR STAIR WIDTH	STAIR OCC. FACTOR	STAIR OCC. TOTAL	CLEAR DOOR WIDTH	DOOR OCC. FACTOR	DOOR OCC. TOTAL	CAPACITY
D	44	0.3	147	34	0.2	170	147
E	50	0.3	167	34	0.2	170	167
Grand total							314

OCCUPANT LOAD - CELLAR B1

USE OF SPACE	AREA	FLOOR AREA PER OCCUPANT	TOTAL OCCUPANT LOAD
LOCKER ROOMS	1103 ft²	50 ft²	22
MECHANICAL / STORAGE	6022 ft²	300 ft²	20
Grand total	7126 ft²		42

PLUMBING FIXTURE CALCULATION: CELLAR B1

FIXTURE TYPE	REQUIRED*		PROVIDED**	
	MALE	FEMALE	MALE	FEMALE
WATER CLOSETS	0	0	0	0
URINALS	0	-	0	-
LAVATORIES	0	0	0	0
DRINKING FOUNTAINS	0		0	

*PLUMBING FIXTURE REQUIREMENTS FOR BUSINESS OCCUPANCY ARE BASED ON POPULATION DENSITY OF 100 GROSS SQ. FT. PER PERSON (BASED ON CHAPTER 3 OF THE 2008 NEW YORK CITY BUILDING CODE & INTRO 659A OF THE NEW YORK CITY PLUMBING CODE) AND A 50/50 SPLIT BETWEEN MALE AND FEMALE OCCUPANTS.

**FULFILLMENT OF REQUIRED DRINKING FOUNTAINS TO BE PROVIDED BY TENANT WHERE REQUIRED AS PER SECTION PC 403 OF THE 2008 NEW YORK CITY PLUMBING CODE.

BUILDING CODE

BUILDING CODE OF THE CITY OF NEW YORK - 2008 EDITION, UNLESS OTHERWISE NOTED.

OCCUPANCY CLASSIFICATION

DESIGNATIONS FOR THE BUILDING (SECTION BC 301-312):

- A-2 ASSEMBLY
- B BUSINESS (PRIMARY)
- M MERCANTILE
- S-1 MODERATE-HAZARD STORAGE
- S-2 LOW-HAZARD STORAGE
- F-2 LOW-HAZARD FACTORY INDUSTRIAL

CONSTRUCTION CLASSIFICATION

CONSTRUCTION TYPE FOR THE BUILDING (TABLE 503): 1A

FIRE RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601 & 602):

BUILDING ELEMENT	FIRE RATING
STRUCTURAL FRAME	3 HRS
BEARING WALLS (EXTERIOR)	3 HRS
BEARING WALLS (INTERIOR)	3 HRS
NONBEARING WALLS & PARTITIONS (EXTERIOR):	
SEPARATION LESS THAN 5'-0"	1 HR
SEPARATION BETWEEN 5'-0" AND 10'-0"	1 HR
SEPARATION BETWEEN 10'-0" AND 30'-0"	1 HR
SEPARATION GREATER OR EQUAL TO 30'-0"	0 HRS
NONBEARING WALLS & PARTITIONS (INTERIOR)	0 HRS
FLOOR CONSTRUCTION	2 HRS
ROOF CONSTRUCTION	1.5 HR

BUILDING LIMITATIONS

AREA, HEIGHT & # OF STORIES (TABLE 503):
CLASS 1A CONSTRUCTION: NO LIMIT FOR HEIGHT, AREA, OR # OF STORIES*

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

FIRE SEPARATION

BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

OCCUPANCY SEPARATION NEED NOT BE PROVIDED FOR STORAGE AREAS SERVING GROUP B OR M IF ANY OF THE FOLLOWING CONDITIONS APPLY (TABLE 508.3.3):
- -THE STORAGE AREA IS LESS THAN 10% OF THE FLOOR AREA AND LESS THAN 3,000 ft²
- -THE STORAGE AREA IS PROVIDED WITH AN AUTOMATIC FIRE-EXTINGUISHING SYSTEM AND IS LESS THAN 3,000 ft²
- -THE STORAGE AREA IS LESS THAN 1,000 ft²

SPACES OCCUPIED BY DIFFERENT TENANTS SHALL BE SEPARATED BY FIRE BARRIERS HAVING AT LEAST 1-HOUR FIRE RESISTANCE RATINGS (SECTION 509.9).

MEANS OF EGRESS

OCCUPANCY	EXIT ACCESS TRAVEL DISTANCE (TABLE 1015.1) W/ SPRINKLER SYSTEM (ft)*	
	PRIMARY	SECONDARY
A-2	150	250
B	300	
M	200	
S-1	200	
S-2	250	
F-2	250	

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT OR EXIT ACCESS REMOTENESS (SECTION 1014.2.1):
MIN. EXIT REMOTENESS: 1/2 THE MAX. DIAGONAL DISTANCE
MIN. EXIT REMOTENESS (SPRINKLERED)*: 1/3 THE MAX. DIAGONAL DISTANCE

DEAD ENDS (1016.3):
MAX. DEAD END LENGTH (GROUP B, F*): 50'-0"

COMMON PATH OF EGRESS TRAVEL (1013.3):
MAX. COMMON PATH OF EGRESS (GROUP B, F, S*): 100'-0"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

DOOR WIDTH (SECTION 1008.1.1.1):
MIN. DOOR CLEAR WIDTH (SINGLE LEAF): 32"
MIN. DOOR CLEAR WIDTH (DOUBLE LEAF): 32" FOR A SINGLE LEAF
MAX. DOOR CLEAR WIDTH (PER LEAF): 48"

STAIRWAY WIDTH (SECTION 1009.1):
MIN. STAIRWAY WIDTH: 44"

CORRIDOR WIDTH (SECTION 1016.2):
MIN. CORRIDOR WIDTH: 44"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT ENCLOSURE FIRE RATING REQUIREMENTS (SECTION 1019.1):
MIN. FIRE RATING REQUIREMENT: 2 HRS

EXIT DOOR FIRE RATING REQUIREMENTS (TABLE 715.3):
MIN. FIRE RATING REQUIREMENT: 1.5 HRS

STAIR REQUIREMENTS (SECTION 1009.2 & 1009.3):
MIN. HEADROOM: 84"
MIN. RISER HEIGHT: 4"
MAX. RISER HEIGHT: 7"
MIN. TREAD DEPTH: 11"

PLUMBING FACILITIES
(2008 NEW YORK CITY PLUMBING CODE)

MINIMUM NUMBER OF FIXTURES (SECTION 403.1):
PLUMBING FIXTURES SHALL BE PROVIDED FOR THE TYPE OF OCCUPANCY AND IN THE MINIMUM NUMBER SHOWN IN TABLE 403.1. TYPES OF OCCUPANCIES NOT SHOWN IN TABLE 403.1 SHALL BE CONSIDERED INDIVIDUALLY BY THE COMMISSIONER. THE NUMBER OF OCCUPANTS AND OCCUPANCY CLASSIFICATION SHALL BE DETERMINED BY THE NEW YORK CITY BUILDING CODE.

MIN. NO. OF PLUMBING FIXTURES (TABLE 403.1)

OCC.	WC.		LAV.		TUB/ SHOWER	DRINKING FOUNTAIN	OTHER
	M	F	M	F			
A-2	1/75		1/75		-	1/500	1 SVC SINK
B	200		200		-	1/100	1 SVC SINK
M	SEE CHART BELOW					1/1000	1 SVC SINK
S-1	1/100		1/100		1/1000	SEE 411	1 SVC SINK
S-2	1/100		1/100		1/1000	SEE 411	1 SVC SINK
F-2	1/100		1/100		SEE 411	1 PER 400	1 SVC SINK

BUSINESS PLUMBING FIXTURE REQUIREMENT (TABLE 403.1)

WATER CLOSETS & URINALS		LAVATORIES	
# OF PERSONS (PER SEX)	# OF FIXTURES	# OF PERSONS (PER SEX)	# OF FIXTURES
1-20	1	1-25	1
21-45	2	26-50	2
46-70	3	51-75	3
71-100	4	76-115	4
101-140	5	116-160	5
141-190	6		
1 FIXTURE PER ADDITIONAL 60 PERSONS		1 FIXTURE PER ADDITIONAL 60 PERSONS	

NUMBER OF OCCUPANTS OF EACH SEX (SECTION 403.3):
THE OCCUPANT LOAD SHALL BE COMPOSED OF 50% OF EACH SEX.

REQUIRED DRINKING FOUNTAINS (SECTION 410.2):
UP TO 50% OF THE REQUIRED DRINKING FOUNTAINS MAY BE SUBSTITUTED BY DEDICATED PLUMBING FIXTURES WITH FAUCETS DESIGNED FOR FILLING A CONTAINER AT LEAST 10" IN HEIGHT.

SUBSTITUTION FOR WATER CLOSETS (SECTION 419.2):
URINALS SHALL NOT BE SUBSTITUTED FOR MORE THAN 50% OF THE REQUIRED WATER CLOSETS.

LEGEND

- BUSINESS
- ASSEMBLY (UNCONCENTRATED)
- MERCANTILE
- MECHANICAL / STORAGE
- PARKING
- LOCKER ROOMS

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

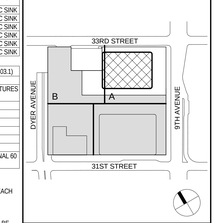
Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT JAY P. GOTTESFELD STATE OF NEW YORK

Warning: It is a violation of the New York State Architecture Law, §69.5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION BID
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:
CODE ANALYSIS - CELLAR B1

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: A-012
B-SCAN Sheet No.: A-012.00
Sheet No.: A-012
Page No.: 11 OF 87

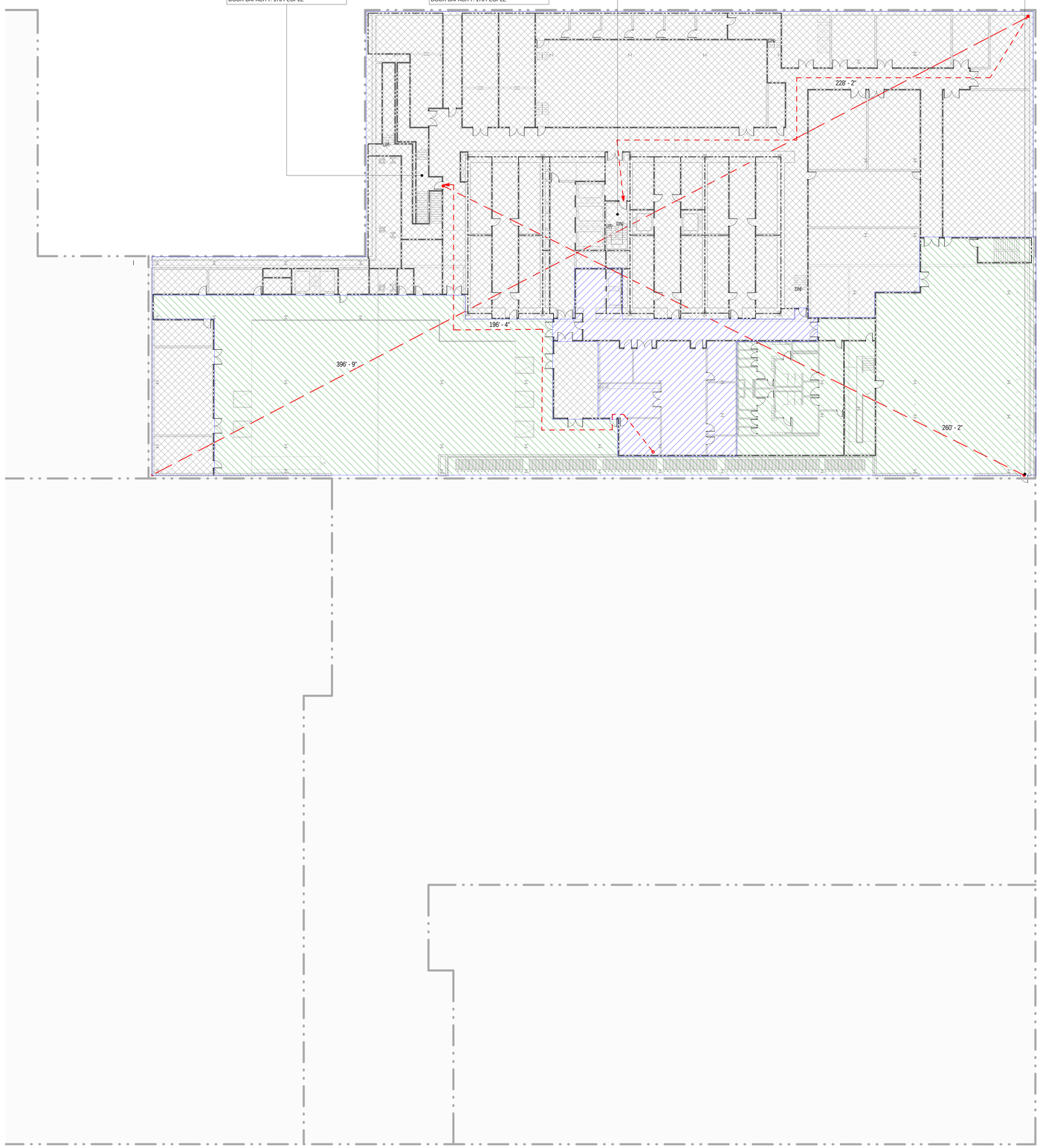
1 CELLAR B1
SCALE: 1/16" = 1'-0"

6/18/2014 11:50:13 PM

EXIT STAIR F	TOTAL CAPACITY: 167
STAIR WIDTH: 50"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 167 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR D	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT DOOR S	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	



EGRESS CAPACITY - CELLAR B							
STAIR / DOOR	CLEAR STAIR WIDTH	STAIR OCC. FACTOR	STAIR OCC. TOTAL	CLEAR DOOR WIDTH	DOOR OCC. FACTOR	DOOR OCC. TOTAL	CAPACITY
D	44	0.3	147	34	0.2	170	147
F	50	0.3	167	34	0.2	170	167
S	0	0.3	0	34	0.2	170	170
Grand total							484

OCCUPANT LOAD - CELLAR B			
USE OF SPACE	AREA	FLOOR AREA PER OCCUPANT	TOTAL OCCUPANT LOAD
BUSINESS	3826 ft²	100 ft²	38
MECHANICAL / STORAGE	33934 ft²	300 ft²	113
PARKING	19596 ft²	200 ft²	98
Grand total	57356 ft²		249

PLUMBING FIXTURE CALCULATION: CELLAR B				
FIXTURE TYPE	REQUIRED*		PROVIDED**	
	MALE	FEMALE	MALE	FEMALE
WATER CLOSETS	0	0	0	0
URINALS	0	-	0	-
LAVATORIES	0	0	0	0
DRINKING FOUNTAINS	0		0	

*PLUMBING FIXTURE REQUIREMENTS FOR BUSINESS OCCUPANCY ARE BASED ON POPULATION DENSITY OF 100 GROSS SQ. FT. PER PERSON (BASED ON CHAPTER 3 OF THE 2008 NEW YORK CITY BUILDING CODE & INTRO 659A OF THE NEW YORK CITY PLUMBING CODE) AND A 50/50 SPLIT BETWEEN MALE AND FEMALE OCCUPANTS.

**FULFILLMENT OF REQUIRED DRINKING FOUNTAINS TO BE PROVIDED BY TENANT WHERE REQUIRED AS PER SECTION PC 403 OF THE 2008 NEW YORK CITY PLUMBING CODE.

BUILDING CODE

BUILDING CODE OF THE CITY OF NEW YORK - 2008 EDITION, UNLESS OTHERWISE NOTED.

OCCUPANCY CLASSIFICATION

DESIGNATIONS FOR THE BUILDING (SECTION BC 301-312):

- A-2 ASSEMBLY
- B BUSINESS (PRIMARY)
- M MERCANTILE
- S-1 MODERATE-HAZARD STORAGE
- S-2 LOW-HAZARD STORAGE
- F-2 LOW-HAZARD FACTORY INDUSTRIAL

CONSTRUCTION CLASSIFICATION

CONSTRUCTION TYPE FOR THE BUILDING (TABLE 503): 1A

FIRE RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601 & 602):

BUILDING ELEMENT	FIRE RATING
STRUCTURAL FRAME	3 HRS
BEARING WALLS (EXTERIOR)	3 HRS
BEARING WALLS (INTERIOR)	3 HRS
NONBEARING WALLS & PARTITIONS (EXTERIOR):	
SEPARATION LESS THAN 5'-0"	1 HR
SEPARATION BETWEEN 5'-0" AND 10'-0"	1 HR
SEPARATION BETWEEN 10'-0" AND 30'-0"	1 HR
SEPARATION GREATER OR EQUAL TO 30'-0"	0 HRS
NONBEARING WALLS & PARTITIONS (INTERIOR)	0 HRS
FLOOR CONSTRUCTION	2 HRS
ROOF CONSTRUCTION	1.5 HR

BUILDING LIMITATIONS

AREA, HEIGHT & # OF STORIES (TABLE 503):
CLASS 1A CONSTRUCTION: NO LIMIT FOR HEIGHT, AREA, OR # OF STORIES*

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

FIRE SEPARATION

BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

OCCUPANCY SEPARATION NEED NOT BE PROVIDED FOR STORAGE AREAS SERVING GROUP B OR M IF ANY OF THE FOLLOWING CONDITIONS APPLY (TABLE 508.3.3):
- -THE STORAGE AREA IS LESS THAN 10% OF THE FLOOR AREA AND LESS THAN 3,000 ft²
- -THE STORAGE AREA IS PROVIDED WITH AN AUTOMATIC FIRE-EXTINGUISHING SYSTEM AND IS LESS THAN 3,000 ft²
- -THE STORAGE AREA IS LESS THAN 1,000 ft²

SPACES OCCUPIED BY DIFFERENT TENANTS SHALL BE SEPARATED BY FIRE BARRIERS HAVING AT LEAST 1-HOUR FIRE RESISTANCE RATINGS (SECTION 509.9).

MEANS OF EGRESS

EXIT ACCESS TRAVEL DISTANCE (TABLE 1015.1)		
OCCUPANCY	W/ SPRINKLER SYSTEM (ft)*	
	PRIMARY	SECONDARY
A-2	150	250
B	300	
M	200	
S-1	200	
S-2	250	
F-2	250	

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT OR EXIT ACCESS REMOTENESS (SECTION 1014.2.1):
MIN. EXIT REMOTENESS: 1/2 THE MAX. DIAGONAL DISTANCE
MIN. EXIT REMOTENESS (SPRINKLERED)*: 1/3 THE MAX. DIAGONAL DISTANCE

DEAD ENDS (1016.3):
MAX. DEAD END LENGTH (GROUP B, F*): 50'-0"

COMMON PATH OF EGRESS TRAVEL (1013.3):
MAX. COMMON PATH OF EGRESS (GROUP B, F, S*): 100'-0"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

DOOR WIDTH (SECTION 1008.1.1.3):
MIN. DOOR CLEAR WIDTH (SINGLE LEAF): 32"
MIN. DOOR CLEAR WIDTH (DOUBLE LEAF): 32" FOR A SINGLE LEAF
MAX. DOOR CLEAR WIDTH (PER LEAF): 48"

STAIRWAY WIDTH (SECTION 1009.1):
MIN. STAIRWAY WIDTH: 44"

CORRIDOR WIDTH (SECTION 1016.2):
MIN. CORRIDOR WIDTH: 44"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT ENCLOSURE FIRE RATING REQUIREMENTS (SECTION 1019.1):
MIN. FIRE RATING REQUIREMENT: 2 HRS

EXIT DOOR FIRE RATING REQUIREMENTS (TABLE 715.3):
MIN. FIRE RATING REQUIREMENT: 1.5 HRS

STAIR REQUIREMENTS (SECTION 1009.2 & 1009.3):
MIN. HEADROOM: 84"
MIN. RISER HEIGHT: 4"
MAX. RISER HEIGHT: 7"
MIN. TREAD DEPTH: 11"

PLUMBING FACILITIES
(2008 NEW YORK CITY PLUMBING CODE)

MINIMUM NUMBER OF FIXTURES (SECTION 403.1):
PLUMBING FIXTURES SHALL BE PROVIDED FOR THE TYPE OF OCCUPANCY AND IN THE MINIMUM NUMBER SHOWN IN TABLE 403.1. TYPES OF OCCUPANCIES NOT SHOWN IN TABLE 403.1 SHALL BE CONSIDERED INDIVIDUALLY BY THE COMMISSIONER. THE NUMBER OF OCCUPANTS AND OCCUPANCY CLASSIFICATION SHALL BE DETERMINED BY THE NEW YORK CITY BUILDING CODE.

MIN. NO. OF PLUMBING FIXTURES (TABLE 403.1)							
OCC.	WC.		LAV.		TUB/ SHOWER	DRINKING FOUNTAIN	OTHER
	M	F	M	F			
A-2	1/75		1/75		-	1/500	1 SVC SINK
B	200		200		-	1/100	1 SVC SINK
M	SEE CHART BELOW					1/1000	1 SVC SINK
S-1	1/100		1/100		1/1000	SEE 411	1 SVC SINK
S-2	1/100		1/100		1/1000	SEE 411	1 SVC SINK
F-2	1/100		1/100		SEE 411	1 PER 400	1 SVC SINK

BUSINESS PLUMBING FIXTURE REQUIREMENT (TABLE 403.1)			
WATER CLOSETS & URINALS		LAVATORIES	
# OF PERSONS	# OF FIXTURES (PER SEX)	# OF PERSONS	# OF FIXTURES (PER SEX)
1-20	1	1-25	1
21-45	2	26-50	2
46-70	3	51-75	3
71-100	4	76-115	4
101-140	5	116-160	5
141-190	6		
1 FIXTURE PER ADDITIONAL 60 PERSONS		1 FIXTURE PER ADDITIONAL 60 PERSONS	

NUMBER OF OCCUPANTS OF EACH SEX (SECTION 403.3):
THE OCCUPANT LOAD SHALL BE COMPOSED OF 50% OF EACH SEX.

REQUIRED DRINKING FOUNTAINS (SECTION 410.2):
UP TO 50% OF THE REQUIRED DRINKING FOUNTAINS MAY BE SUBSTITUTED BY DEDICATED PLUMBING FIXTURES WITH FAUCETS DESIGNED FOR FILLING A CONTAINER AT LEAST 10" IN HEIGHT.

SUBSTITUTION FOR WATER CLOSETS (SECTION 419.2):
URINALS SHALL NOT BE SUBSTITUTED FOR MORE THAN 50% OF THE REQUIRED WATER CLOSETS.

LEGEND

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- MERCANTILE
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- PARKING
- LOCKER ROOMS

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MEP Engineering
Jaros Baum & Bolles
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Vertical Transportation
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Field Operations
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Security Consultant
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Blast Consultant
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Acoustical Consultant
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Vibration Consultant
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Code Consultant
Code Consultants Professional Engineers PC
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Facade Maintenance Consultant
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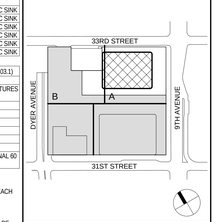
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT ANDY GOTTESDIENER STATE OF NEW YORK

Warning: It is a violation of the New York State Architecture Law, §69.5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION BID
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

CODE ANALYSIS - CELLAR B

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: A-013
B-SCAN Sheet No.:
A-013.00
Sheet No.: A-013
Page No.: 12 OF 87

1 CELLAR B
SCALE: 1/16" = 1'-0"

6/18/2014 12:53:48 PM

EXIT DOOR G	
DOOR WIDTH: 65"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 325 PEOPLE	

EXIT STAIR A	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR D	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR B	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR E	TOTAL CAPACITY: 167
STAIR WIDTH: 50"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 167 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR F	TOTAL CAPACITY: 167
STAIR WIDTH: 50"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 167 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR C	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT DOOR R	
DOOR WIDTH: 65"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 325 PEOPLE	

EXIT DOOR Q	
DOOR WIDTH: 65"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 325 PEOPLE	

EXIT DOOR P	
DOOR WIDTH: 65"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 325 PEOPLE	

EXIT DOOR H	
DOOR WIDTH: 37"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 185 PEOPLE	

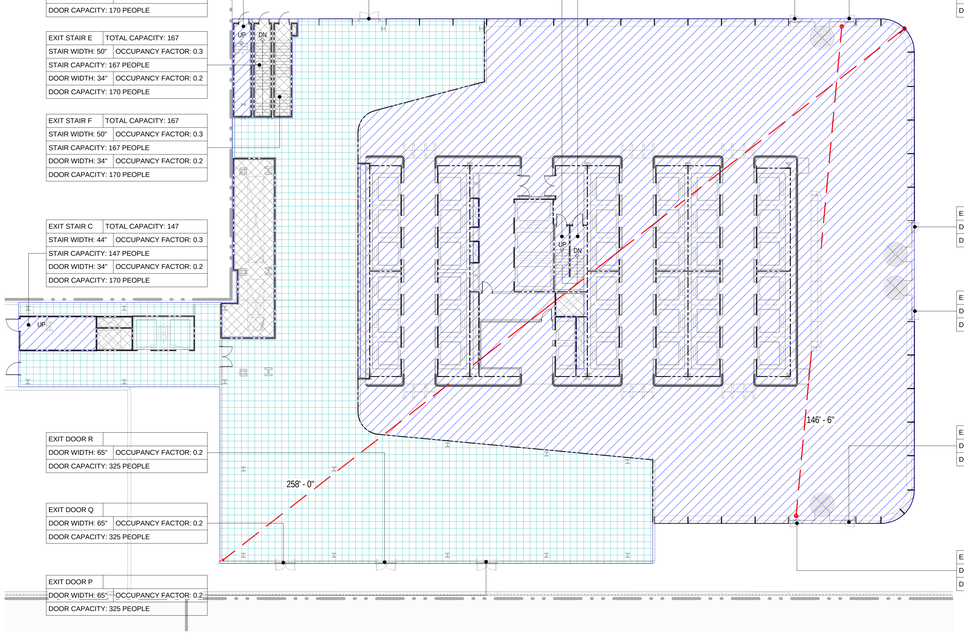
EXIT DOOR J	
DOOR WIDTH: 37"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 185 PEOPLE	

EXIT DOOR K	
DOOR WIDTH: 37"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 185 PEOPLE	

EXIT DOOR L	
DOOR WIDTH: 37"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 185 PEOPLE	

EXIT DOOR M	
DOOR WIDTH: 37"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 185 PEOPLE	

EXIT DOOR N	
DOOR WIDTH: 37"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 185 PEOPLE	



1 GROUND FLOOR

SCALE: 1/16" = 1'-0"

BUILDING CODE

BUILDING CODE OF THE CITY OF NEW YORK - 2008 EDITION, UNLESS OTHERWISE NOTED.

OCCUPANCY CLASSIFICATION

DESIGNATIONS FOR THE BUILDING (SECTION BC 301-312):

A-2	ASSEMBLY
B	BUSINESS (PRIMARY)
M	MERCANTILE
S-1	MODERATE-HAZARD STORAGE
S-2	LOW-HAZARD STORAGE
F-2	LOW-HAZARD FACTORY INDUSTRIAL

CONSTRUCTION CLASSIFICATION

CONSTRUCTION TYPE FOR THE BUILDING (TABLE 503): 1A

FIRE RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601 & 602):

BUILDING ELEMENT	FIRE RATING
STRUCTURAL FRAME	3 HRS
BEARING WALLS (EXTERIOR)	3 HRS
BEARING WALLS (INTERIOR)	3 HRS
NONBEARING WALLS & PARTITIONS (EXTERIOR):	
SEPARATION LESS THAN 5'-0"	1 HR
SEPARATION BETWEEN 5'-0" AND 10'-0"	1 HR
SEPARATION BETWEEN 10'-0" AND 30'-0"	1 HR
SEPARATION GREATER OR EQUAL TO 30'-0"	0 HRS
NONBEARING WALLS & PARTITIONS (INTERIOR)	0 HRS
FLOOR CONSTRUCTION	2 HRS
ROOF CONSTRUCTION	1.5 HR

BUILDING LIMITATIONS

AREA, HEIGHT & # OF STORIES (TABLE 503):
CLASS 1A CONSTRUCTION: NO LIMIT FOR HEIGHT, AREA, OR # OF STORIES*

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

FIRE SEPARATION

BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

OCCUPANCY SEPARATION NEED NOT BE PROVIDED FOR STORAGE AREAS SERVING GROUP B OR M IF ANY OF THE FOLLOWING CONDITIONS APPLY (TABLE 508.3.3):
- -THE STORAGE AREA IS LESS THAN 10% OF THE FLOOR AREA AND LESS THAN 3,000 ft²
- -THE STORAGE AREA IS PROVIDED WITH AN AUTOMATIC FIRE-EXTINGUISHING SYSTEM AND IS LESS THAN 3,000 ft²
- -THE STORAGE AREA IS LESS THAN 1,000 ft²

SPACES OCCUPIED BY DIFFERENT TENANTS SHALL BE SEPARATED BY FIRE BARRIERS HAVING AT LEAST 1-HOUR FIRE RESISTANCE RATINGS (SECTION 509.9).

MEANS OF EGRESS

OCCUPANCY	EXIT ACCESS TRAVEL DISTANCE (TABLE 1015.1)	
	W/ SPRINKLER SYSTEM (ft)*	
	PRIMARY	SECONDARY
A-2	150	250
B	300	
M	200	
S-1	200	
S-2	250	
F-2	250	

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT OR EXIT ACCESS REMOTENESS (SECTION 1014.2.1):
MIN. EXIT REMOTENESS: 1/2 THE MAX. DIAGONAL DISTANCE
MIN. EXIT REMOTENESS (SPRINKLERED)*: 1/3 THE MAX. DIAGONAL DISTANCE

DEAD ENDS (1016.3):
MAX. DEAD END LENGTH (GROUP B, F*): 50'-0"

COMMON PATH OF EGRESS TRAVEL (1013.3):
MAX. COMMON PATH OF EGRESS (GROUP B, F, S*): 100'-0"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

DOOR WIDTH (SECTION 1008.1.1.1):
MIN. DOOR CLEAR WIDTH (SINGLE LEAF): 32"
MIN. DOOR CLEAR WIDTH (DOUBLE LEAF): 32" FOR A SINGLE LEAF
MAX. DOOR CLEAR WIDTH (PER LEAF): 48"

STAIRWAY WIDTH (SECTION 1008.1):
MIN. STAIRWAY WIDTH: 44"

CORRIDOR WIDTH (SECTION 1016.2):
MIN. CORRIDOR WIDTH: 44"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT ENCLOSURE FIRE RATING REQUIREMENTS (SECTION 1019.1):
MIN. FIRE RATING REQUIREMENT: 2 HRS

EXIT DOOR FIRE RATING REQUIREMENTS (TABLE 715.3):
MIN. FIRE RATING REQUIREMENT: 1.5 HRS

STAIR REQUIREMENTS (SECTION 1009.2 & 1009.3):
MIN. HEADROOM: 84"
MIN. RISER HEIGHT: 4"
MAX. RISER HEIGHT: 7"
MIN. TREAD DEPTH: 11"

PLUMBING FACILITIES
(2008 NEW YORK CITY PLUMBING CODE)

MINIMUM NUMBER OF FIXTURES (SECTION 403.1):
PLUMBING FIXTURES SHALL BE PROVIDED FOR THE TYPE OF OCCUPANCY AND IN THE MINIMUM NUMBER SHOWN IN TABLE 403.1. TYPES OF OCCUPANCIES NOT SHOWN IN TABLE 403.1 SHALL BE CONSIDERED INDIVIDUALLY BY THE COMMISSIONER. THE NUMBER OF OCCUPANTS AND OCCUPANCY CLASSIFICATION SHALL BE DETERMINED BY THE NEW YORK CITY BUILDING CODE.

MIN. NO. OF PLUMBING FIXTURES (TABLE 403.1)							
OCC.	WC		LAV		TUB/ SHOWER	DRINKING FOUNTAIN	OTHER
	M	F	M	F			
A-2	1/75		1/75		-	1/500	1 SVC SINK
B	200		200		-	1/100	1 SVC SINK
M	SEE CHART BELOW					1/1000	1 SVC SINK
S-1	1/100		1/100	1/1000	SEE 411	1 SVC SINK	
S-2	1/100		1/100	1/1000	SEE 411	1 SVC SINK	
F-2	1/100		1/100	SEE 411	1 PER 400	1 SVC SINK	

BUSINESS PLUMBING FIXTURE REQUIREMENT (TABLE 403.1)			
WATER CLOSETS & URINALS		LAVATORIES	
# OF PERSONS	# OF FIXTURES (PER SEX)	# OF PERSONS	# OF FIXTURES (PER SEX)
1-20	1	1-25	1
21-45	2	26-50	2
46-70	3	51-75	3
71-100	4	76-115	4
101-140	5	116-160	5
141-190	6		
1 FIXTURE PER ADDITIONAL 60 PERSONS		1 FIXTURE PER ADDITIONAL 60 PERSONS	

NUMBER OF OCCUPANTS OF EACH SEX (SECTION 403.3):
THE OCCUPANT LOAD SHALL BE COMPOSED OF 50% OF EACH SEX.

REQUIRED DRINKING FOUNTAINS (SECTION 410.2):
UP TO 50% OF THE REQUIRED DRINKING FOUNTAINS MAY BE SUBSTITUTED BY DEDICATED PLUMBING FIXTURES WITH FAUCETS DESIGNED FOR FILLING A CONTAINER AT LEAST 10" IN HEIGHT.

SUBSTITUTION FOR WATER CLOSETS (SECTION 419.2):
URINALS SHALL NOT BE SUBSTITUTED FOR MORE THAN 50% OF THE REQUIRED WATER CLOSETS.

EGRESS CAPACITY - GROUND FLOOR							
STAIR / DOOR	CLEAR STAIR WIDTH	STAIR OCC. FACTOR	STAIR OCC. TOTAL	CLEAR DOOR WIDTH	DOOR OCC. FACTOR	DOOR OCC. TOTAL	CAPACITY
A	44	0.3	147	34	0.2	170	147
B	44	0.3	147	34	0.2	170	147
C	44	0.3	147	34	0.2	170	147
D	44	0.3	147	34	0.2	170	147
E	50	0.3	167	34	0.2	170	167
F	50	0.3	167	34	0.2	170	167
G	44	0.3	147	65	0.2	325	147
H	44	0.3	147	37	0.2	185	147
J	44	0.3	147	37	0.2	185	147
K	44	0.3	147	37	0.2	185	147
L	44	0.3	147	37	0.2	185	147
M	44	0.3	147	37	0.2	185	147
N	44	0.3	147	37	0.2	185	147
P	44	0.3	147	65	0.2	325	147
Q	44	0.3	147	65	0.2	325	147
R	44	0.3	147	65	0.2	325	147
Grand total							2392

OCCUPANT LOAD - GROUND FLOOR			
USE OF SPACE	AREA	FLOOR AREA PER OCCUPANT	TOTAL OCCUPANT LOAD
BUSINESS	22181 ft²	100 ft²	222
MECHANICAL / STORAGE	1353 ft²		6
MERCANTILE	10287 ft²	200 ft²	51
Grand total	33821 ft²		279

PLUMBING FIXTURE CALCULATION: GROUND FLOOR				
FIXTURE TYPE	REQUIRED*		PROVIDED**	
	MALE	FEMALE	MALE	FEMALE
WATER CLOSETS	0	0	0	0
URINALS	0	-	0	-
LAVATORIES	0	0	0	0
DRINKING FOUNTAINS	0		0	

*PLUMBING FIXTURE REQUIREMENTS FOR BUSINESS OCCUPANCY ARE BASED ON POPULATION DENSITY OF 100 GROSS SQ. FT. PER PERSON (BASED ON CHAPTER 3 OF THE 2008 NEW YORK CITY BUILDING CODE & INTRO 659A OF THE NEW YORK CITY PLUMBING CODE) AND A 50/50 SPLIT BETWEEN MALE AND FEMALE OCCUPANTS.

**FULFILLMENT OF REQUIRED DRINKING FOUNTAINS TO BE PROVIDED BY TENANT WHERE REQUIRED AS PER SECTION PC 403 OF THE 2008 NEW YORK CITY PLUMBING CODE.

LEGEND

- BUSINESS
- ASSEMBLY (UNCONCENTRATED)
- MERCANTILE
- MECHANICAL / STORAGE
- PARKING
- LOCKER ROOMS

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
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65 Broadway, Suite 401, New York, NY 10006

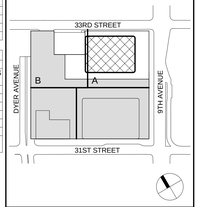
Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT MARK J. GOTTESDIENER STATE OF NEW YORK

Warning: It is a violation of the New York State Architecture Law, §69.5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

CODE ANALYSIS - GROUND FLOOR & LEVEL 2

Project No.: 207120	B-SCAN Sheet No.: A-014.00
Date: 20 JUN 2014	Sheet No.: A-014
Scale: 1/16" = 1'-0"	
File No.: A-014	Page No.: 13 OF 87

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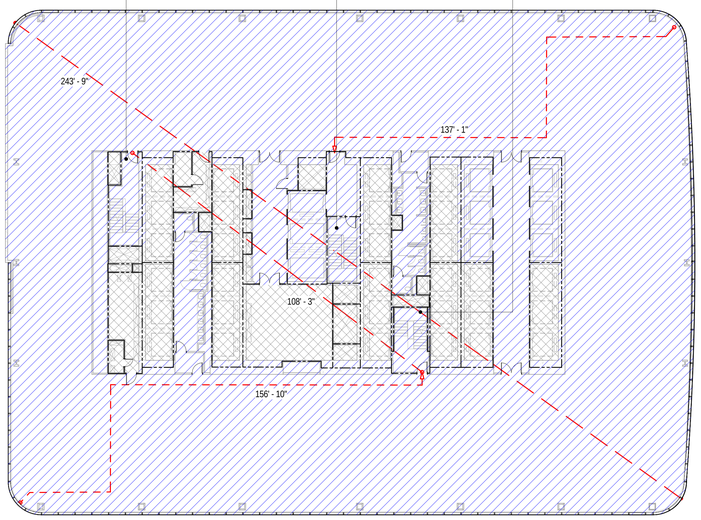
EXIT STAIR B	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR A	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR C	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	



1 LEVEL 6-16
SCALE: 1/16" = 1'-0"

EGRESS CAPACITY - LEVEL 6-16

STAIR	CLEAR STAIR WIDTH	STAIR OCC. FACTOR	STAIR OCC. TOTAL	CLEAR DOOR WIDTH	DOOR OCC. FACTOR	DOOR OCC. TOTAL	CAPACITY
A	44	0.3	147	34	0.2	170	147
B	44	0.3	147	34	0.2	170	147
C	44	0.3	147	34	0.2	170	147
Grand total							441

OCCUPANT LOAD - LEVEL 6-16

USE OF SPACE	AREA	FLOOR AREA PER OCCUPANT	TOTAL OCCUPANT LOAD
BUSINESS	26406 ft²	100 ft²	264
MECHANICAL / STORAGE	4209 ft²	300 ft²	14
Grand total	30615 ft²		278

PLUMBING FIXTURE CALCULATION: LEVEL 6-16

FIXTURE TYPE	REQUIRED*		PROVIDED**	
	MALE	FEMALE	MALE	FEMALE
WATER CLOSETS	3	6	4	7
URINALS	3	-	3	-
LAVATORIES	5	5	6	6
DRINKING FOUNTAINS	3		0	

*PLUMBING FIXTURE REQUIREMENTS FOR BUSINESS OCCUPANCY ARE BASED ON POPULATION DENSITY OF 100 GROSS SQ. FT. PER PERSON (BASED ON CHAPTER 3 OF THE 2008 NEW YORK CITY BUILDING CODE & INTRO 659A OF THE NEW YORK CITY PLUMBING CODE) AND A 50/50 SPLIT BETWEEN MALE AND FEMALE OCCUPANTS.

**FULFILLMENT OF REQUIRED DRINKING FOUNTAINS TO BE PROVIDED BY TENANT WHERE REQUIRED AS PER SECTION PC 403 OF THE 2008 NEW YORK CITY PLUMBING CODE.

BUILDING CODE

BUILDING CODE OF THE CITY OF NEW YORK: - 2008 EDITION, UNLESS OTHERWISE NOTED.

OCCUPANCY CLASSIFICATION

DESIGNATIONS FOR THE BUILDING (SECTION BC 301-312):

- A-2 ASSEMBLY
- B BUSINESS (PRIMARY)
- M MERCANTILE
- S-1 MODERATE-HAZARD STORAGE
- S-2 LOW-HAZARD STORAGE
- F-2 LOW-HAZARD FACTORY INDUSTRIAL

CONSTRUCTION CLASSIFICATION

CONSTRUCTION TYPE FOR THE BUILDING (TABLE 503): 1A

FIRE RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601 & 602):

BUILDING ELEMENT	FIRE RATING
STRUCTURAL FRAME	3 HRS
BEARING WALLS (EXTERIOR)	3 HRS
BEARING WALLS (INTERIOR)	3 HRS
NONBEARING WALLS & PARTITIONS (EXTERIOR):	
SEPARATION LESS THAN 5'-0"	1 HR
SEPARATION BETWEEN 5'-0" AND 10'-0"	1 HR
SEPARATION BETWEEN 10'-0" AND 30'-0"	1 HR
SEPARATION GREATER OR EQUAL TO 30'-0"	0 HRS
NONBEARING WALLS & PARTITIONS (INTERIOR)	0 HRS
FLOOR CONSTRUCTION	2 HRS
ROOF CONSTRUCTION	1.5 HR

BUILDING LIMITATIONS

AREA, HEIGHT & # OF STORIES (TABLE 503):
CLASS 1A CONSTRUCTION: NO LIMIT FOR HEIGHT, AREA, OR # OF STORIES*

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

FIRE SEPARATION

BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

OCCUPANCY SEPARATION NEED NOT BE PROVIDED FOR STORAGE AREAS SERVING GROUP B OR M IF ANY OF THE FOLLOWING CONDITIONS APPLY (TABLE 508.3.3):
- THE STORAGE AREA IS LESS THAN 10% OF THE FLOOR AREA AND LESS THAN 3,000 ft²
- THE STORAGE AREA IS PROVIDED WITH AN AUTOMATIC FIRE-EXTINGUISHING SYSTEM AND IS LESS THAN 3,000 ft²
- THE STORAGE AREA IS LESS THAN 1,000 ft²

SPACES OCCUPIED BY DIFFERENT TENANTS SHALL BE SEPARATED BY FIRE BARRIERS HAVING AT LEAST 1-HOUR FIRE RESISTANCE RATINGS (SECTION 509.9).

MEANS OF EGRESS

OCCUPANCY	EXIT ACCESS TRAVEL DISTANCE (TABLE 1015.1) W/ SPRINKLER SYSTEM (*)*	
	PRIMARY	SECONDARY
A-2	150	250
B	300	
M	200	
S-1	200	
S-2	250	
F-2	250	

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT OR EXIT ACCESS REMOTENESS (SECTION 1014.2.1):
MIN. EXIT REMOTENESS: 1/2 THE MAX. DIAGONAL DISTANCE
MIN. EXIT REMOTENESS (SPRINKLERED)*: 1/3 THE MAX. DIAGONAL DISTANCE

DEAD ENDS (1016.3):
MAX. DEAD END LENGTH (GROUP B, F*): 50'-0"

COMMON PATH OF EGRESS TRAVEL (1013.3):
MAX. COMMON PATH OF EGRESS (GROUP B, F, S*): 100'-0"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

DOOR WIDTH (SECTION 1008.1.1.1):
MIN. DOOR CLEAR WIDTH (SINGLE LEAF): 32"
MIN. DOOR CLEAR WIDTH (DOUBLE LEAF): 32" FOR A SINGLE LEAF
MAX. DOOR CLEAR WIDTH (PER LEAF): 48"

STAIRWAY WIDTH (SECTION 1009.1):
MIN. STAIRWAY WIDTH: 44"

CORRIDOR WIDTH (SECTION 1016.2):
MIN. CORRIDOR WIDTH: 44"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT ENCLOSURE FIRE RATING REQUIREMENTS (SECTION 1019.1):
MIN. FIRE RATING REQUIREMENT: 2 HRS

EXIT DOOR FIRE RATING REQUIREMENTS (TABLE 715.3):
MIN. FIRE RATING REQUIREMENT: 1.5 HRS

STAIR REQUIREMENTS (SECTION 1009.2 & 1009.3):
MIN. HEADROOM: 84"
MIN. RISER HEIGHT: 4"
MAX. RISER HEIGHT: 7"
MIN. TREAD DEPTH: 11"

PLUMBING FACILITIES
(2008 NEW YORK CITY PLUMBING CODE)

MINIMUM NUMBER OF FIXTURES (SECTION 403.1):
PLUMBING FIXTURES SHALL BE PROVIDED FOR THE TYPE OF OCCUPANCY AND IN THE MINIMUM NUMBER SHOWN IN TABLE 403.1. TYPES OF OCCUPANCIES NOT SHOWN IN TABLE 403.1 SHALL BE CONSIDERED INDIVIDUALLY BY THE COMMISSIONER. THE NUMBER OF OCCUPANTS AND OCCUPANCY CLASSIFICATION SHALL BE DETERMINED BY THE NEW YORK CITY BUILDING CODE.

OCC.	WC		LAV		TUB/ SHOWER	DRINKING FOUNTAIN	OTHER
	M	F	M	F			
A-2	1/75		1/75		-	1/500	1 SVC SINK
B	200		200		-	1/100	1 SVC SINK
M	SEE CHART BELOW					1/1000	1 SVC SINK
S-1	1/100		1/100		1/1000	SEE 411	1 SVC SINK
S-2	1/100		1/100		1/1000	SEE 411	1 SVC SINK
F-2	1/100		1/100		SEE 411	1 PER 400	1 SVC SINK

MIN. NO. OF PLUMBING FIXTURES (TABLE 403.1)

BUSINESS PLUMBING FIXTURE REQUIREMENT (TABLE 403.1)

WATER CLOSETS & URINALS		LAVATORIES	
# OF PERSONS	# OF FIXTURES (PER SEX)	# OF PERSONS	# OF FIXTURES (PER SEX)
1-20	1	1-25	1
21-45	2	26-50	2
46-70	3	51-75	3
71-100	4	76-115	4
101-140	5	116-160	5
141-190	6		
1 FIXTURE PER ADDITIONAL 60 PERSONS		1 FIXTURE PER ADDITIONAL 60 PERSONS	

NUMBER OF OCCUPANTS OF EACH SEX (SECTION 403.3):
THE OCCUPANT LOAD SHALL BE COMPOSED OF 50% OF EACH SEX.

REQUIRED DRINKING FOUNTAINS (SECTION 410.2):
UP TO 50% OF THE REQUIRED DRINKING FOUNTAINS MAY BE SUBSTITUTED BY DEDICATED PLUMBING FIXTURES WITH FAUCETS DESIGNED FOR FILLING A CONTAINER AT LEAST 10" IN HEIGHT.

SUBSTITUTION FOR WATER CLOSETS (SECTION 419.2):
URINALS SHALL NOT BE SUBSTITUTED FOR MORE THAN 50% OF THE REQUIRED WATER CLOSETS.

LEGEND

- BUSINESS
- ASSEMBLY (UNCONCENTRATED)
- MERCANTILE
- MECHANICAL / STORAGE
- PARKING
- LOCKER ROOMS

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
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Security Consultant
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Blast Consultant
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Acoustical Consultant
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Code Consultants Professional Engineers PC
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Facade Maintenance Consultant
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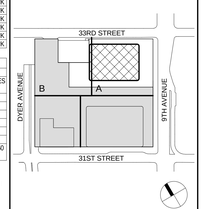
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT ROY J. GOTTESMAN STATE OF NEW YORK SEAL

Warning: It is a violation of the New York State Architecture Law, §69.5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

CODE ANALYSIS - LEVEL 5 & 6-16

Project No.: 207120	B-SCAN Sheet No.: A-016.00
Date: 20 JUN 2014	
Scale: 1/16" = 1'-0"	Sheet No.: A-016
File No.: A-016	Page No.: 14 OF 87

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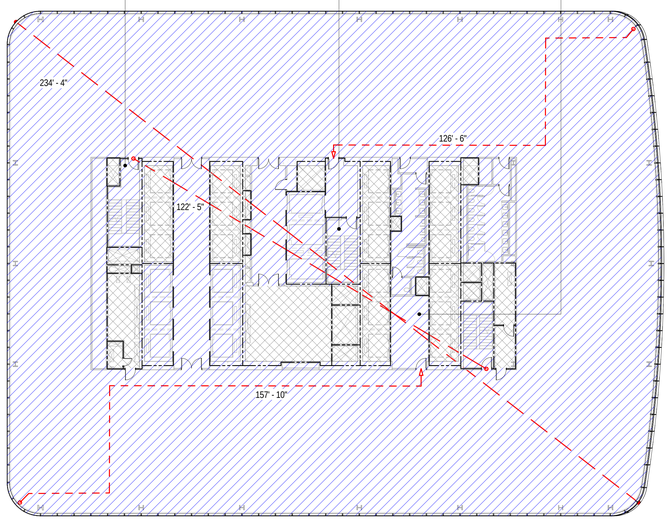
207 OF 30,000 | 2713 F 143 Job Number | E 5214 F 5448 Scan Code

EXIT STAIR B	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR A	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR C	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	



1 LEVEL 33-36

SCALE: 1/16" = 1'-0"

EGRESS CAPACITY - LEVEL 33-38								
STAIR	CLEAR STAIR WIDTH	STAIR OCC. FACTOR	STAIR OCC. TOTAL	CLEAR DOOR WIDTH	DOOR OCC. FACTOR	DOOR OCC. TOTAL	CAPACITY
A	44	0.3	147	34	0.2	170	147
B	44	0.3	147	34	0.2	170	147
C	44	0.3	147	34	0.2	170	147
Grand total							441

OCCUPANT LOAD - LEVEL 33-38			
USE OF SPACE	AREA	FLOOR AREA PER OCCUPANT	TOTAL OCCUPANT LOAD
BUSINESS	25814 ft²	100 ft²	258
MECHANICAL / STORAGE	3137 ft²	300 ft²	10
Grand total	28951 ft²		269

PLUMBING FIXTURE CALCULATION: LEVEL 33-38				
FIXTURE TYPE	REQUIRED*		PROVIDED**	
	MALE	FEMALE	MALE	FEMALE
WATER CLOSETS	3	6	4	7
URINALS	3	-	3	-
LAVATORIES	5	5	6	6
DRINKING FOUNTAINS	3		0	

*PLUMBING FIXTURE REQUIREMENTS FOR BUSINESS OCCUPANCY ARE BASED ON POPULATION DENSITY OF 100 GROSS SQ. FT. PER PERSON (BASED ON CHAPTER 3 OF THE 2008 NEW YORK CITY BUILDING CODE & INTRO 659A OF THE NEW YORK CITY PLUMBING CODE) AND A 50/50 SPLIT BETWEEN MALE AND FEMALE OCCUPANTS.

**FULFILLMENT OF REQUIRED DRINKING FOUNTAINS TO BE PROVIDED BY TENANT WHERE REQUIRED AS PER SECTION PC 403 OF THE 2008 NEW YORK CITY PLUMBING CODE.

BUILDING CODE

BUILDING CODE OF THE CITY OF NEW YORK - 2008 EDITION, UNLESS OTHERWISE NOTED.

OCCUPANCY CLASSIFICATION

DESIGNATIONS FOR THE BUILDING (SECTION BC 301-312):

- A-2 ASSEMBLY
- B BUSINESS (PRIMARY)
- M MERCANTILE
- S-1 MODERATE-HAZARD STORAGE
- S-2 LOW-HAZARD STORAGE
- F-2 LOW-HAZARD FACTORY INDUSTRIAL

CONSTRUCTION CLASSIFICATION

CONSTRUCTION TYPE FOR THE BUILDING (TABLE 503): 1A

FIRE RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601 & 602):

BUILDING ELEMENT	FIRE RATING
STRUCTURAL FRAME	3 HRS
BEARING WALLS (EXTERIOR)	3 HRS
BEARING WALLS (INTERIOR)	3 HRS
NONBEARING WALLS & PARTITIONS (EXTERIOR):	
SEPARATION LESS THAN 5'-0"	1 HR
SEPARATION BETWEEN 5'-0" AND 10'-0"	1 HR
SEPARATION BETWEEN 10'-0" AND 30'-0"	1 HR
SEPARATION GREATER OR EQUAL TO 30'-0"	0 HRS
NONBEARING WALLS & PARTITIONS (INTERIOR)	0 HRS
FLOOR CONSTRUCTION	2 HRS
ROOF CONSTRUCTION	1.5 HR

BUILDING LIMITATIONS

AREA, HEIGHT & # OF STORIES (TABLE 503):
CLASS 1A CONSTRUCTION: NO LIMIT FOR HEIGHT, AREA, OR # OF STORIES*

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

FIRE SEPARATION

BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

OCCUPANCY SEPARATION NEED NOT BE PROVIDED FOR STORAGE AREAS SERVING GROUP B OR M IF ANY OF THE FOLLOWING CONDITIONS APPLY (TABLE 508.3.3):
- -THE STORAGE AREA IS LESS THAN 10% OF THE FLOOR AREA AND LESS THAN 3,000 ft²
- -THE STORAGE AREA IS PROVIDED WITH AN AUTOMATIC FIRE-EXTINGUISHING SYSTEM AND IS LESS THAN 3,000 ft²
- -THE STORAGE AREA IS LESS THAN 1,000 ft²

SPACES OCCUPIED BY DIFFERENT TENANTS SHALL BE SEPARATED BY FIRE BARRIERS HAVING AT LEAST 1-HOUR FIRE RESISTANCE RATINGS (SECTION 509.9).

MEANS OF EGRESS

EXIT ACCESS TRAVEL DISTANCE (TABLE 1015.1)		
OCCUPANCY	W/ SPRINKLER SYSTEM (S)*	
	PRIMARY	SECONDARY
A-2	150	250
B	300	
M	200	
S-1	200	
S-2	250	
F-2	250	

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT OR EXIT ACCESS REMOTENESS (SECTION 1014.2.1):
MIN. EXIT REMOTENESS: 1/2 THE MAX. DIAGONAL DISTANCE
MIN. EXIT REMOTENESS (SPRINKLERED)*: 1/3 THE MAX. DIAGONAL DISTANCE

DEAD ENDS (1016.3):
MAX. DEAD END LENGTH (GROUP B, F*): 50'-0"

COMMON PATH OF EGRESS TRAVEL (1013.3):
MAX. COMMON PATH OF EGRESS (GROUP B, F, S*): 100'-0"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

DOOR WIDTH (SECTION 1008.1.1.1):
MIN. DOOR CLEAR WIDTH (SINGLE LEAF): 32"
MIN. DOOR CLEAR WIDTH (DOUBLE LEAF): 32" FOR A SINGLE LEAF
MAX. DOOR CLEAR WIDTH (PER LEAF): 48"

STAIRWAY WIDTH (SECTION 1009.1):
MIN. STAIRWAY WIDTH: 44"

CORRIDOR WIDTH (SECTION 1016.2):
MIN. CORRIDOR WIDTH: 44"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT ENCLOSURE FIRE RATING REQUIREMENTS (SECTION 1019.1):
MIN. FIRE RATING REQUIREMENT: 2 HRS

EXIT DOOR FIRE RATING REQUIREMENTS (TABLE 715.3):
MIN. FIRE RATING REQUIREMENT: 1.5 HRS

STAIR REQUIREMENTS (SECTION 1009.2 & 1009.3):
MIN. HEADROOM: 84"
MIN. RISER HEIGHT: 4"
MAX. RISER HEIGHT: 7"
MIN. TREAD DEPTH: 11"

PLUMBING FACILITIES
(2008 NEW YORK CITY PLUMBING CODE)

MINIMUM NUMBER OF FIXTURES (SECTION 403.1):
PLUMBING FIXTURES SHALL BE PROVIDED FOR THE TYPE OF OCCUPANCY AND IN THE MINIMUM NUMBER SHOWN IN TABLE 403.1. TYPES OF OCCUPANCIES NOT SHOWN IN TABLE 403.1 SHALL BE CONSIDERED INDIVIDUALLY BY THE COMMISSIONER. THE NUMBER OF OCCUPANTS AND OCCUPANCY CLASSIFICATION SHALL BE DETERMINED BY THE NEW YORK CITY BUILDING CODE.

MIN. NO. OF PLUMBING FIXTURES (TABLE 403.1)						
OCC.	WC		LAV		TUB/ SHOWER	DRINKING FOUNTAIN	OTHER
	M	F	M	F			
A-2	1/75		1/75		-	1/500	1 SVC SINK
B	200		200		-	1/100	1 SVC SINK
M	SEE CHART BELOW				-	1/1000	1 SVC SINK
S-1	1/100		1/100		1/1000	SEE 411	1 SVC SINK
S-2	1/100		1/100		1/1000	SEE 411	1 SVC SINK
F-2	1/100		1/100		SEE 411	1 PER 400	1 SVC SINK

BUSINESS PLUMBING FIXTURE REQUIREMENT (TABLE 403.1)		
WATER CLOSETS & URINALS	LAVATORIES	
# OF PERSONS	# OF FIXTURES (PER SEX)	# OF PERSONS	# OF FIXTURES (PER SEX)
1-20	1	1-25	1
21-45	2	26-50	2
46-70	3	51-75	3
71-100	4	76-115	4
101-140	5	116-160	5
141-190	6		
1 FIXTURE PER ADDITIONAL 60 PERSONS		1 FIXTURE PER ADDITIONAL 60 PERSONS	

NUMBER OF OCCUPANTS OF EACH SEX (SECTION 403.3):
THE OCCUPANT LOAD SHALL BE COMPOSED OF 50% OF EACH SEX.

REQUIRED DRINKING FOUNTAINS (SECTION 410.2):
UP TO 50% OF THE REQUIRED DRINKING FOUNTAINS MAY BE SUBSTITUTED BY DEDICATED PLUMBING FIXTURES WITH FAUCETS DESIGNED FOR FILLING A CONTAINER AT LEAST 10" IN HEIGHT.

SUBSTITUTION FOR WATER CLOSETS (SECTION 419.2):
URINALS SHALL NOT BE SUBSTITUTED FOR MORE THAN 50% OF THE REQUIRED WATER CLOSETS.

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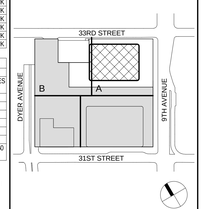

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Sheet Name:

CODE ANALYSIS - LEVEL 32 & 33-38

Project No.: 207120	B-SCAN Sheet No.: A-021.00
Date: 20 JUN 2014	
Scale: 1/16" = 1'-0"	Sheet No.: A-021
File No.: A-021	Page No.: 15 OF 87

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EXIT STAIR B	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR A	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
DOOR CAPACITY: 170 PEOPLE	

EXIT STAIR C	TOTAL CAPACITY: 147
STAIR WIDTH: 44"	OCCUPANCY FACTOR: 0.3
STAIR CAPACITY: 147 PEOPLE	
DOOR WIDTH: 34"	OCCUPANCY FACTOR: 0.2
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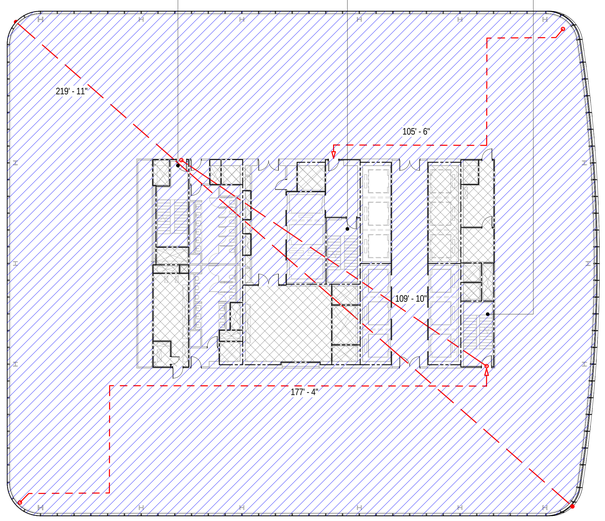

1 LEVEL 57
SCALE: 1/16" = 1'-0"

EGRESS CAPACITY - LEVEL 57-58							
STAIR	CLEAR STAIR WIDTH	STAIR OCC. FACTOR	STAIR OCC. TOTAL	CLEAR DOOR WIDTH	DOOR OCC. FACTOR	DOOR OCC. TOTAL	CAPACITY
A	44	0.3	147	34	0.2	170	147
B	44	0.3	147	34	0.2	170	147
C	44	0.3	147	34	0.2	170	147
Grand total							441

OCCUPANT LOAD - LEVEL 57-58			
USE OF SPACE	AREA	FLOOR AREA PER OCCUPANT	TOTAL OCCUPANT LOAD
BUSINESS	23768 ft²	100 ft²	238
MECHANICAL / STORAGE	2060 ft²	300 ft²	7
Grand total	25828 ft²		245

PLUMBING FIXTURE CALCULATION: LEVEL 57-58				
FIXTURE TYPE	REQUIRED*		PROVIDED**	
	MALE	FEMALE	MALE	FEMALE
WATER CLOSETS	3	5	3	6
URINALS	2	-	3	-
LAVATORIES	5	5	6	6
DRINKING FOUNTAINS	3		0	

*PLUMBING FIXTURE REQUIREMENTS FOR BUSINESS OCCUPANCY ARE BASED ON POPULATION DENSITY OF 100 GROSS SQ. FT. PER PERSON (BASED ON CHAPTER 3 OF THE 2008 NEW YORK CITY BUILDING CODE & INTRO 659A OF THE NEW YORK CITY PLUMBING CODE) AND A 50/50 SPLIT BETWEEN MALE AND FEMALE OCCUPANTS.

**FULFILLMENT OF REQUIRED DRINKING FOUNTAINS TO BE PROVIDED BY TENANT WHERE REQUIRED AS PER SECTION PC 403 OF THE 2008 NEW YORK CITY PLUMBING CODE.

BUILDING CODE

BUILDING CODE OF THE CITY OF NEW YORK - 2008 EDITION, UNLESS OTHERWISE NOTED.

OCCUPANCY CLASSIFICATION

DESIGNATIONS FOR THE BUILDING (SECTION BC 301-312):

- A-2 ASSEMBLY
- B BUSINESS (PRIMARY)
- M MERCANTILE
- S-1 MODERATE-HAZARD STORAGE
- S-2 LOW-HAZARD STORAGE
- F-2 LOW-HAZARD FACTORY INDUSTRIAL

CONSTRUCTION CLASSIFICATION

CONSTRUCTION TYPE FOR THE BUILDING (TABLE 503): 1A

FIRE RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601 & 602):

BUILDING ELEMENT	FIRE RATING
STRUCTURAL FRAME	3 HRS
BEARING WALLS (EXTERIOR)	3 HRS
BEARING WALLS (INTERIOR)	3 HRS
NONBEARING WALLS & PARTITIONS (EXTERIOR):	
SEPARATION LESS THAN 5'-0"	1 HR
SEPARATION BETWEEN 5'-0" AND 10'-0"	1 HR
SEPARATION BETWEEN 10'-0" AND 30'-0"	1 HR
SEPARATION GREATER OR EQUAL TO 30'-0"	0 HRS
NONBEARING WALLS & PARTITIONS (INTERIOR)	0 HRS
FLOOR CONSTRUCTION	2 HRS
ROOF CONSTRUCTION	1.5 HR

BUILDING LIMITATIONS

AREA, HEIGHT & # OF STORIES (TABLE 503):
CLASS 1A CONSTRUCTION: NO LIMIT FOR HEIGHT, AREA, OR # OF STORIES*

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

FIRE SEPARATION

BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

OCCUPANCY SEPARATION NEED NOT BE PROVIDED FOR STORAGE AREAS SERVING GROUP B OR M IF ANY OF THE FOLLOWING CONDITIONS APPLY (TABLE 508.3.3):
- THE STORAGE AREA IS LESS THAN 10% OF THE FLOOR AREA AND LESS THAN 3,000 ft²
- THE STORAGE AREA IS PROVIDED WITH AN AUTOMATIC FIRE-EXTINGUISHING SYSTEM AND IS LESS THAN 3,000 ft²
- THE STORAGE AREA IS LESS THAN 1,000 ft²

SPACES OCCUPIED BY DIFFERENT TENANTS SHALL BE SEPARATED BY FIRE BARRIERS HAVING AT LEAST 1-HOUR FIRE RESISTANCE RATINGS (SECTION 509.9).

MEANS OF EGRESS

EXIT ACCESS TRAVEL DISTANCE (TABLE 1015.1)		
OCCUPANCY	W/ SPRINKLER SYSTEM (ft)*	
	PRIMARY	SECONDARY
A-2	150	250
B	300	
M	200	
S-1	200	
S-2	250	
F-2	250	

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT OR EXIT ACCESS REMOTENESS (SECTION 1014.2.1):
MIN. EXIT REMOTENESS: 1/2 THE MAX. DIAGONAL DISTANCE
MIN. EXIT REMOTENESS (SPRINKLERED)*: 1/3 THE MAX. DIAGONAL DISTANCE

DEAD ENDS (1016.3):
MAX. DEAD END LENGTH (GROUP B, F*): 50'-0"

COMMON PATH OF EGRESS TRAVEL (1013.3):
MAX. COMMON PATH OF EGRESS (GROUP B, F, S*): 100'-0"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

DOOR WIDTH (SECTION 1008.1.1.1):
MIN. DOOR CLEAR WIDTH (SINGLE LEAF): 32"
MIN. DOOR CLEAR WIDTH (DOUBLE LEAF): 32" FOR A SINGLE LEAF
MAX. DOOR CLEAR WIDTH (PER LEAF): 48"

STAIRWAY WIDTH (SECTION 1009.1):
MIN. STAIRWAY WIDTH: 44"

CORRIDOR WIDTH (SECTION 1016.2):
MIN. CORRIDOR WIDTH: 44"

*BUILDING IS FULLY SPRINKLERED IN ACCORDANCE WITH SECTION 903.3.1.1

EXIT ENCLOSURE FIRE RATING REQUIREMENTS (SECTION 1019.1):
MIN. FIRE RATING REQUIREMENT: 2 HRS

EXIT DOOR FIRE RATING REQUIREMENTS (TABLE 715.3):
MIN. FIRE RATING REQUIREMENT: 1.5 HRS

STAIR REQUIREMENTS (SECTION 1009.2 & 1009.3):
MIN. HEADROOM: 84"
MIN. RISER HEIGHT: 4"
MAX. RISER HEIGHT: 7"
MIN. TREAD DEPTH: 11"

PLUMBING FACILITIES
(2008 NEW YORK CITY PLUMBING CODE)

MINIMUM NUMBER OF FIXTURES (SECTION 403.1):
PLUMBING FIXTURES SHALL BE PROVIDED FOR THE TYPE OF OCCUPANCY AND IN THE MINIMUM NUMBER SHOWN IN TABLE 403.1. TYPES OF OCCUPANCIES NOT SHOWN IN TABLE 403.1 SHALL BE CONSIDERED INDIVIDUALLY BY THE COMMISSIONER. THE NUMBER OF OCCUPANTS AND OCCUPANCY CLASSIFICATION SHALL BE DETERMINED BY THE NEW YORK CITY BUILDING CODE.

MIN. NO. OF PLUMBING FIXTURES (TABLE 403.1)						
OCC.	WC		LAV		TUB/ SHOWER	DRINKING FOUNTAIN	OTHER
	M	F	M	F			
A-2	1/75		1/75		-	1/500	1 SVC SINK
B	200		200		-	1/100	1 SVC SINK
M	SEE CHART BELOW					1/1000	1 SVC SINK
S-1	1/100		1/100		1/1000	SEE 411	1 SVC SINK
S-2	1/100		1/100		1/1000	SEE 411	1 SVC SINK
F-2	1/100		1/100		SEE 411	1 PER 400	1 SVC SINK

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WATER CLOSETS & URINALS		LAVATORIES
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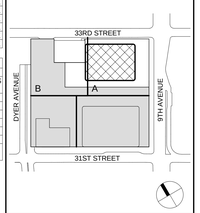

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STATE OF NEW YORK
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Sheet Name:

CODE ANALYSIS - LEVEL 56 & 57-58

Project No.: 207120	B-SCAN Sheet No.: A-027.00
Date: 20 JUN 2014	
Scale: 1/16" = 1'-0"	Sheet No.: A-027
File No.: A-027	Page No.: 16 OF 87

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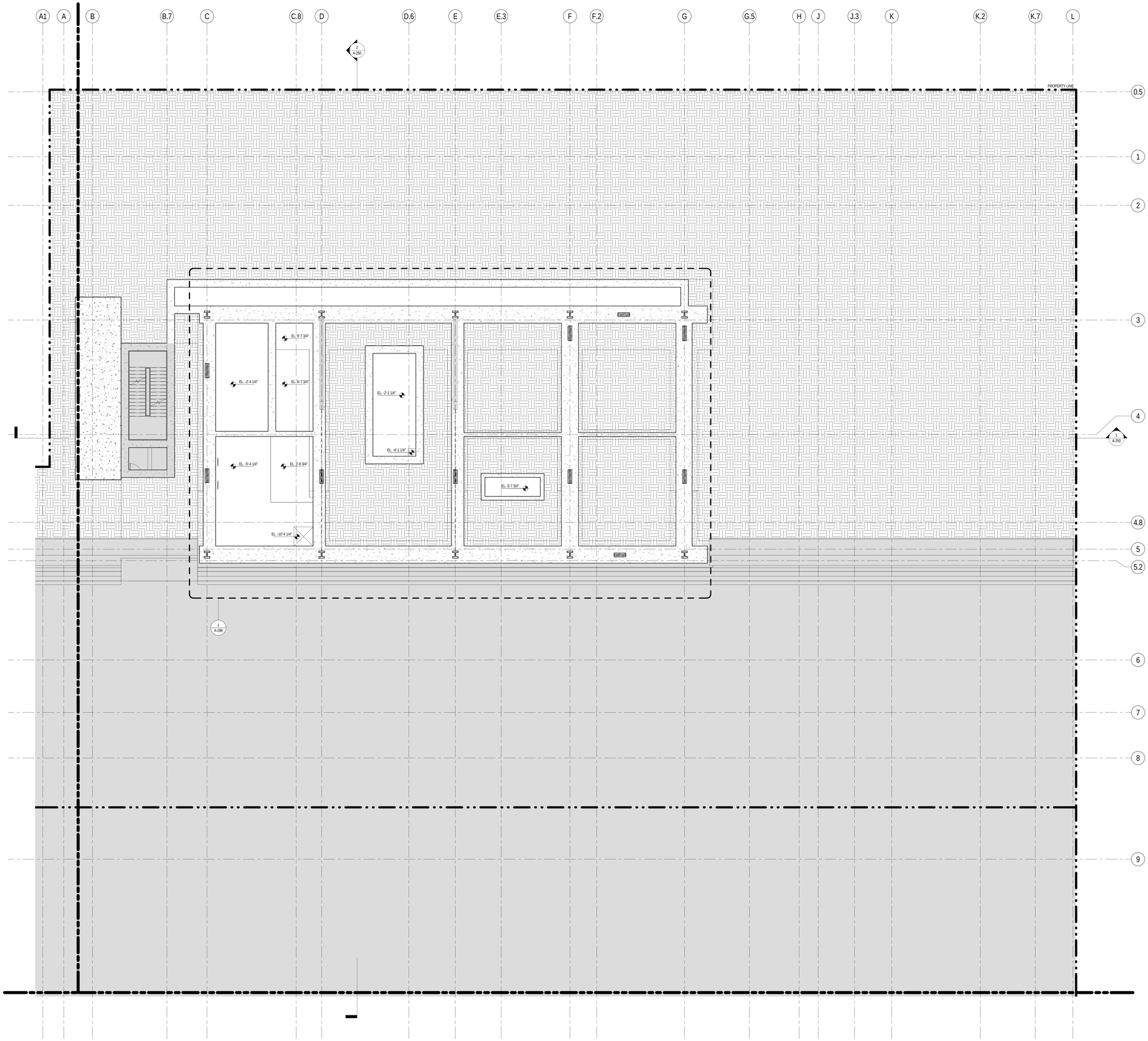

SHEET NOTES

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2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

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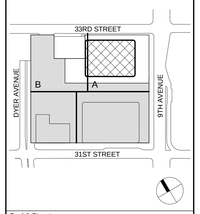

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CELLAR B1 PIT PLAN

Project No.: 207120	B-SCAN Sheet No.: A-094.00
Date: 20 JUN 2014	Sheet No.: A-098B1P
Scale: 1/8" = 1'-0"	
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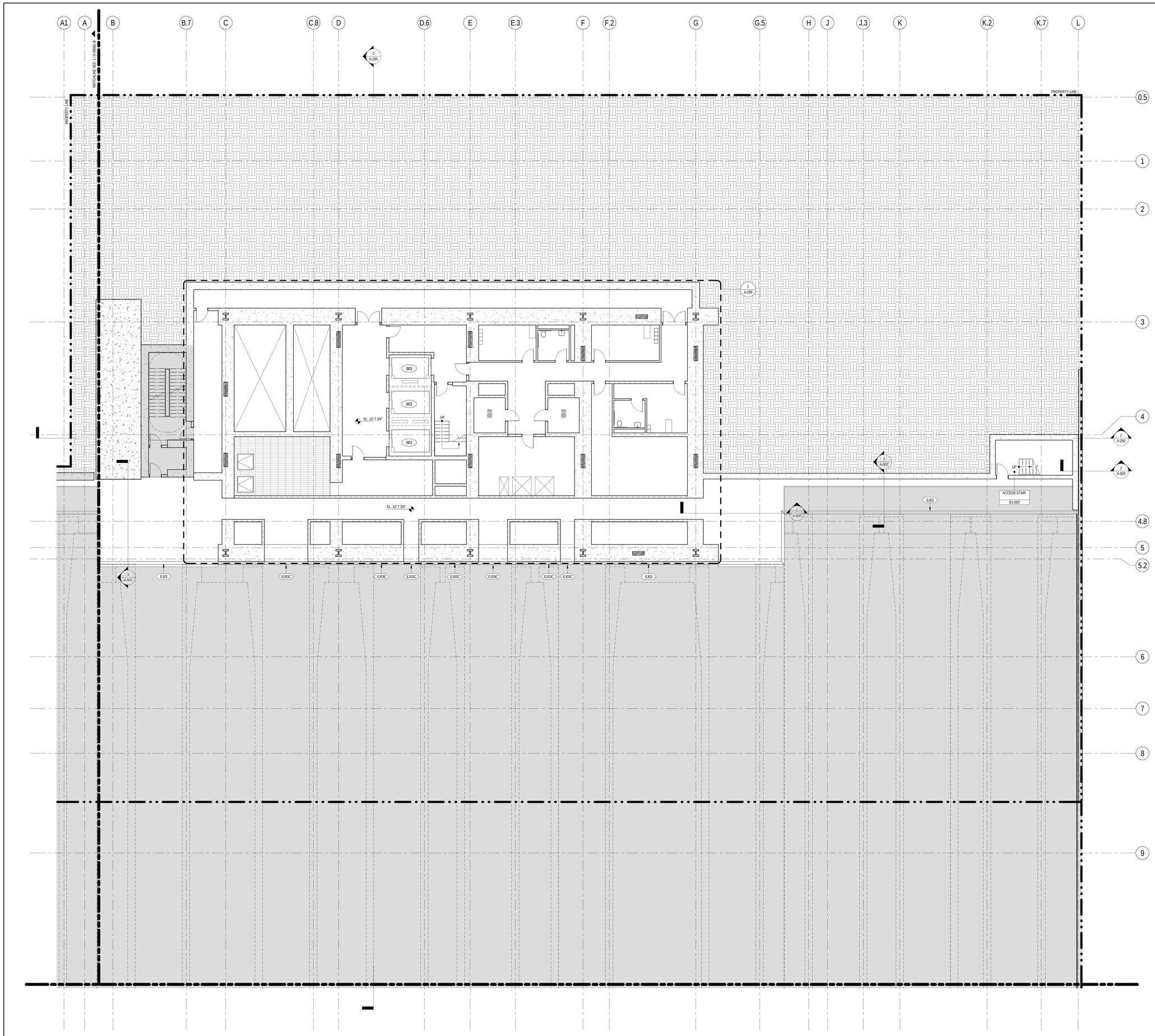

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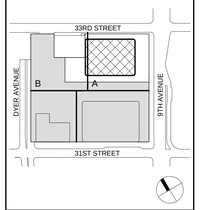

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Sheet Name:

CELLAR B1 FLOOR PLAN - PART A

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: A-099B1-A

B-SCAN Sheet No.: A-095.00

Sheet No.: A-099B1-A

Page No.: 18 OF 87

6/18/2014 11:51:49 PM

SHEET OF BLOCK 271.01.143 Job Number

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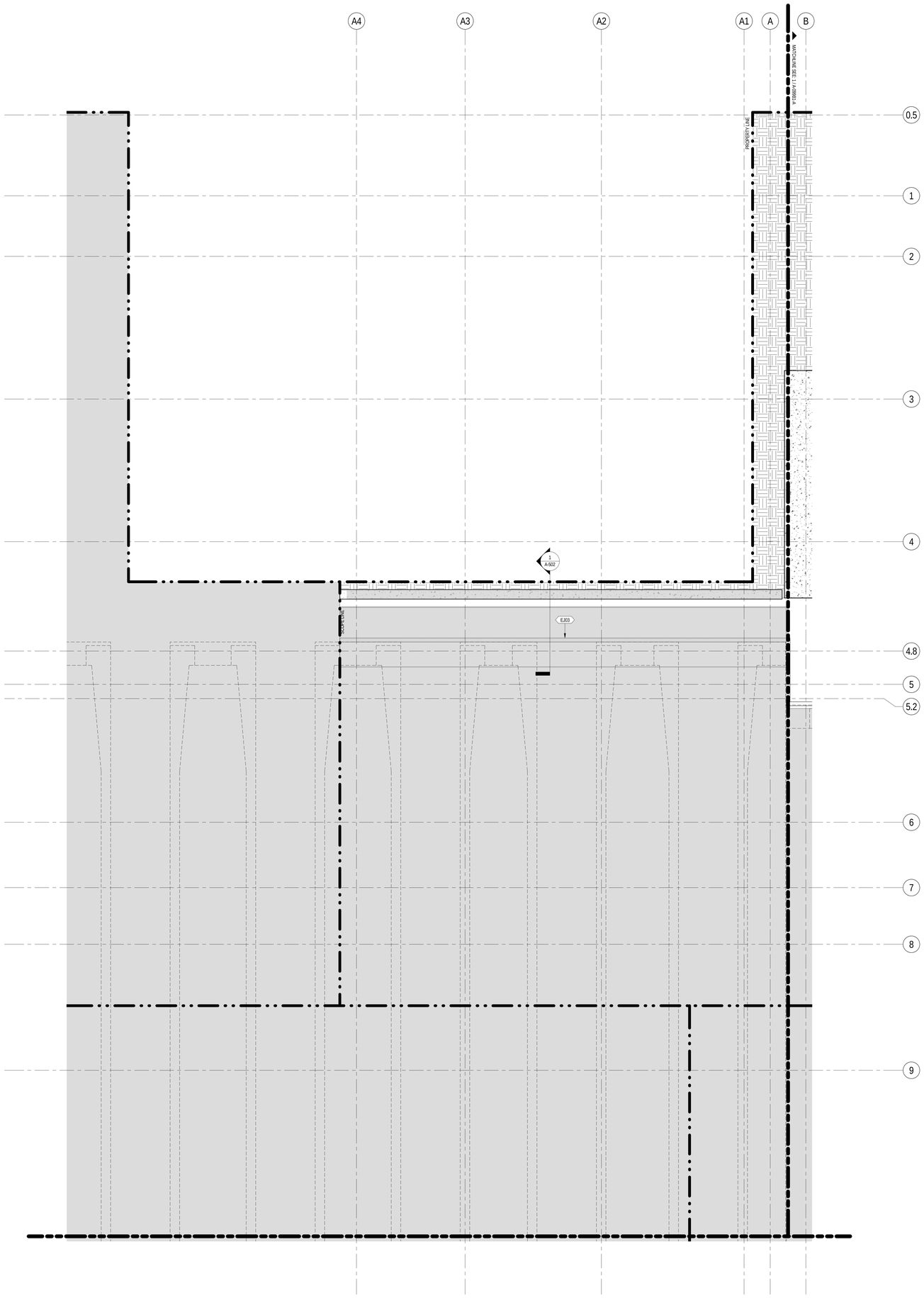

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MANHATTAN WEST: NORTH TOWER

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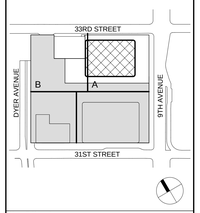
Key Plan:



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Sheet Name:

CELLAR B1 FLOOR PLAN - PART B

Project No.: 207120	B-SCAN Sheet No.: A-096.00
Date: 20 JUN 2014	
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File No.: A-099B1-B	Page No.: 19 OF 87

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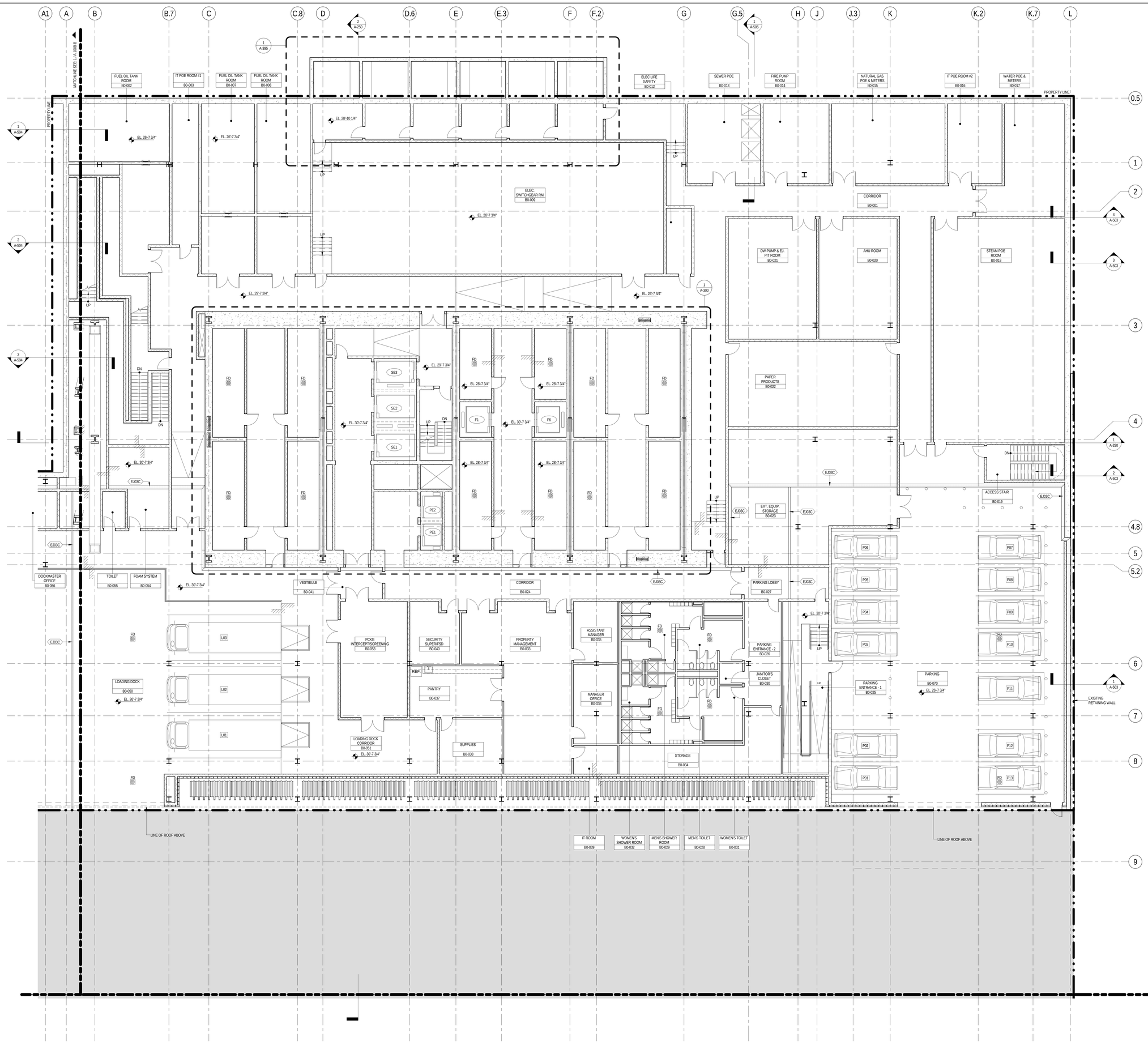

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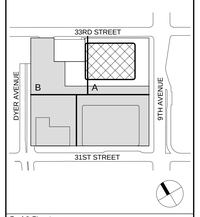

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REGISTERED ARCHITECT
JOHN D. GOTTESDIENER
No. 5649
STATE OF NEW YORK

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CELLAR B FLOOR PLAN - PART A

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: A-100B-A

B-SCAN Sheet No.: A-097.00

Sheet No.: A-100B-A

Page No.: 20 OF 87

SHEET OF BLOCK 271.01.143 Job Number

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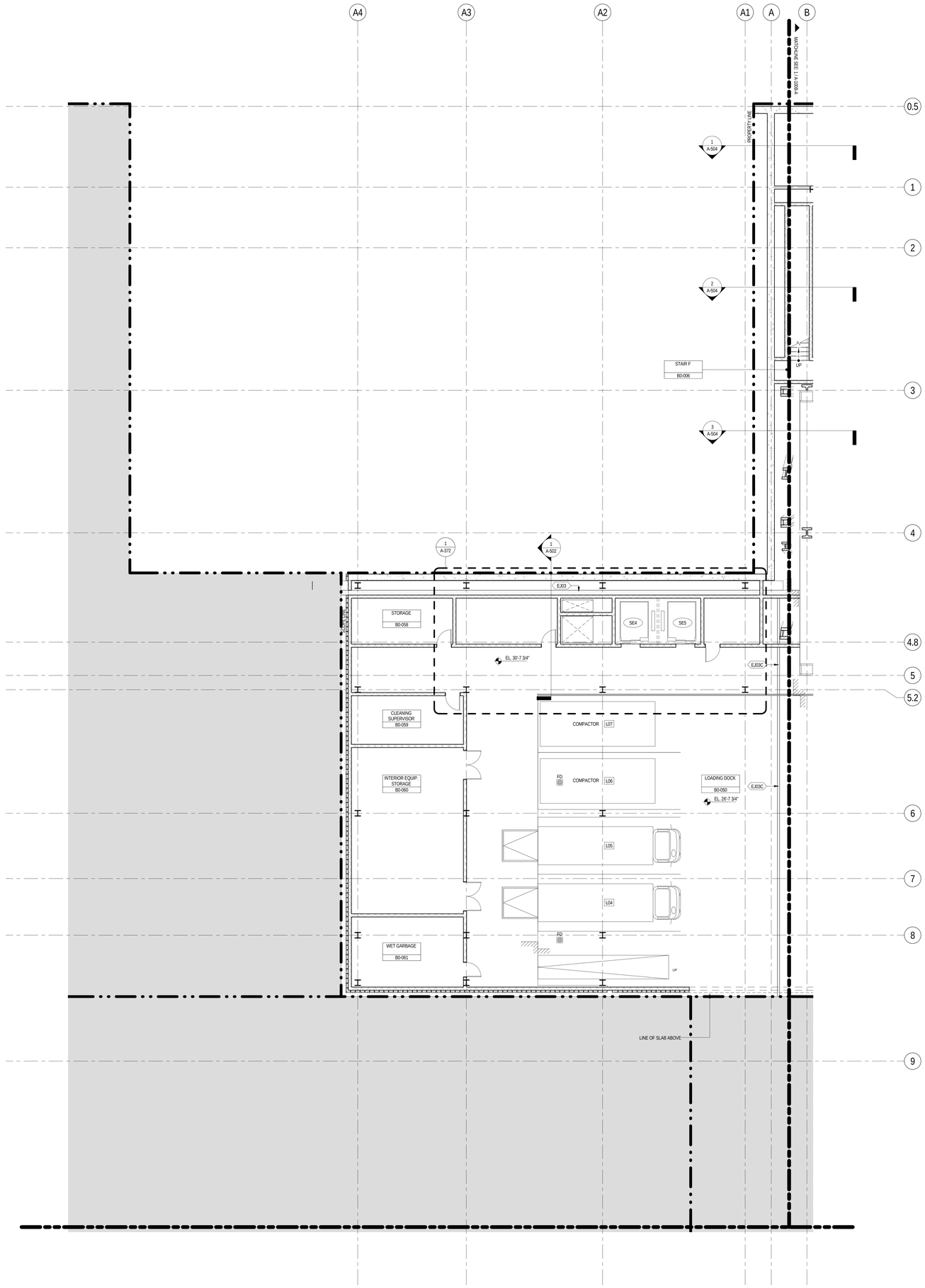

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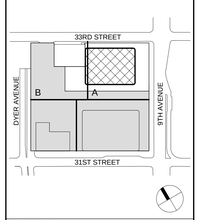

Seal & Signature:

REGISTERED ARCHITECT
PETER J. GOTTESDIENER
NO. 036649
STATE OF NEW YORK

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Sheet Name:

CELLAR B FLOOR PLAN - PART B

Project No.: 207120	B-SCAN Sheet No.: A-098.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-100B-B
File No.: A-100B-B	Page No.: 21 OF 87

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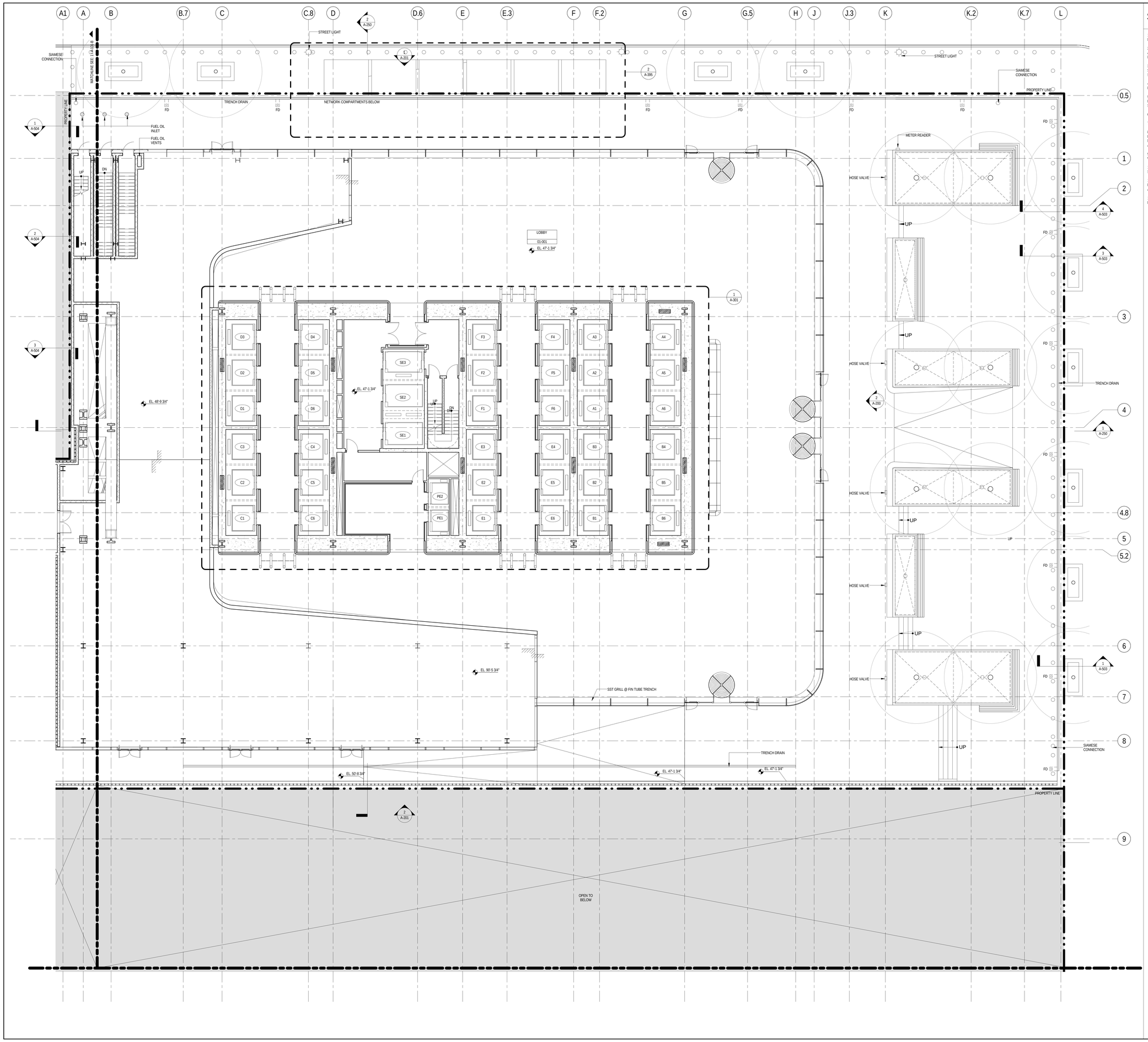

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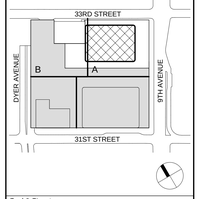

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Sheet Name:

GROUND FLOOR PLAN - PART A

Project No.: 207120	B-SCAN Sheet No.: A-100.00
Date: 20 JUN 2014	Sheet No.: A-101-A
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File No.: A-101-A	Page No.: 22 OF 87

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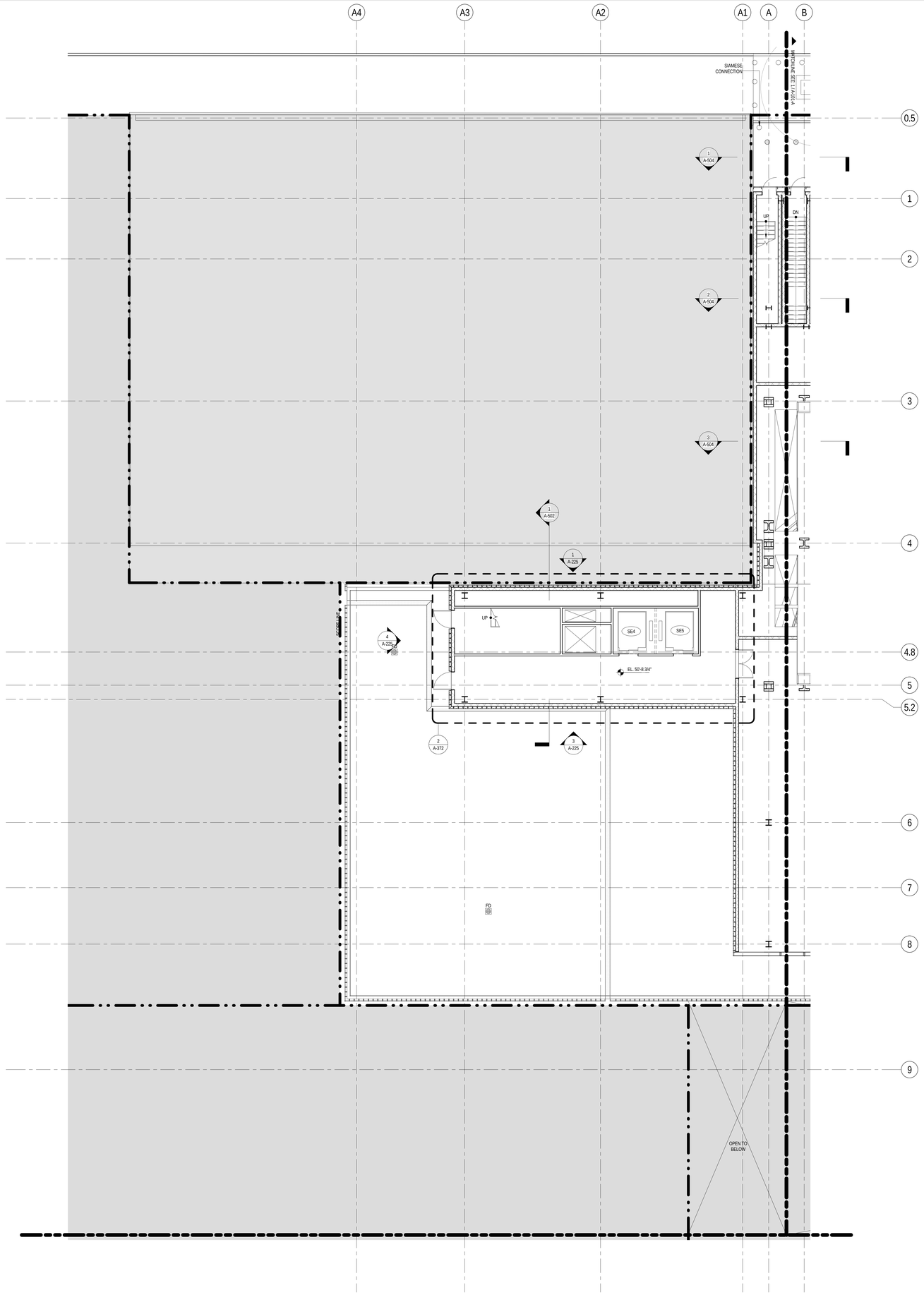

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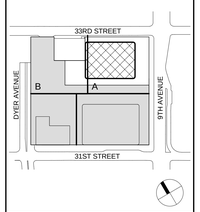

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Sheet Name:

GROUND FLOOR PLAN - PART B

Project No.: 207120

Date: 12 SEPT 2014

Scale: 1/8" = 1'-0"

File No.: A-101-B

B-SCAN Sheet No.: A-101.00

Sheet No.: A-101-B

Page No.: 23 OF 30

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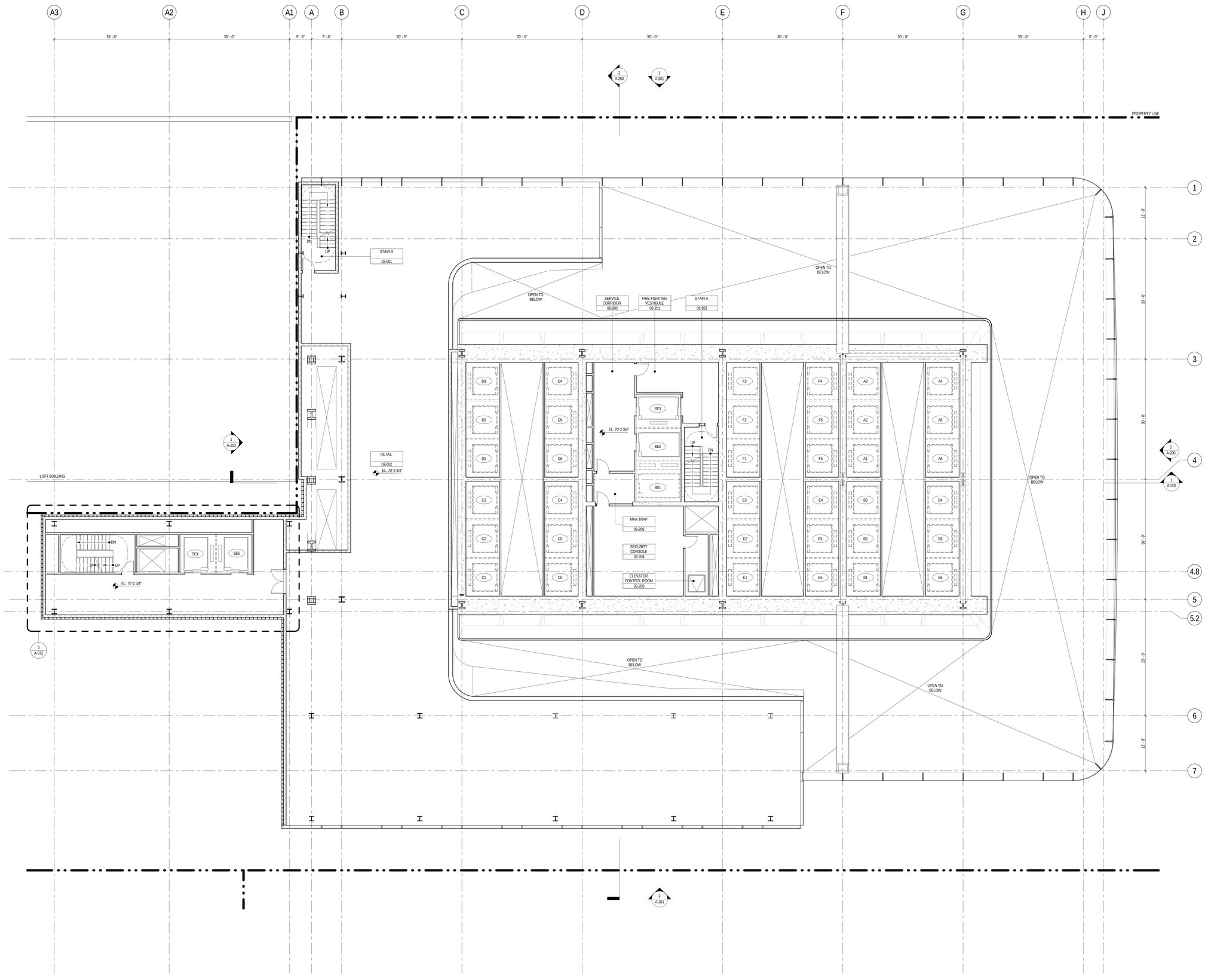

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11. REFER TO MEPFP DRAWINGS FOR ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION ROOM, RISER AND EQUIPMENT DESIGNATIONS.

12. FOR PROJECT WORK POINT REFER TO A-000 SERIES DRAWINGS.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Skidmore, Owings & Merrill LLP
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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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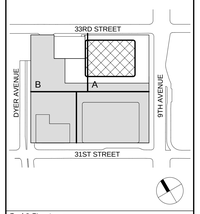

Seal & Signature:

REGISTERED ARCHITECT
JOHN P. GOTTESDIENER
No. 5649
STATE OF NEW YORK

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4	20 JUN 2014	ISSUED FOR FOUNDATION BID
3	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

LEVEL 2 FLOOR PLAN - RETAIL

Project No.: 207120	B-SCAN Sheet No.: A-102.00
Date: 20 JUN 2014	Sheet No.: A-102
Scale: 1/8" = 1'-0"	
File No.: A-102	Page No.: 24 OF 87

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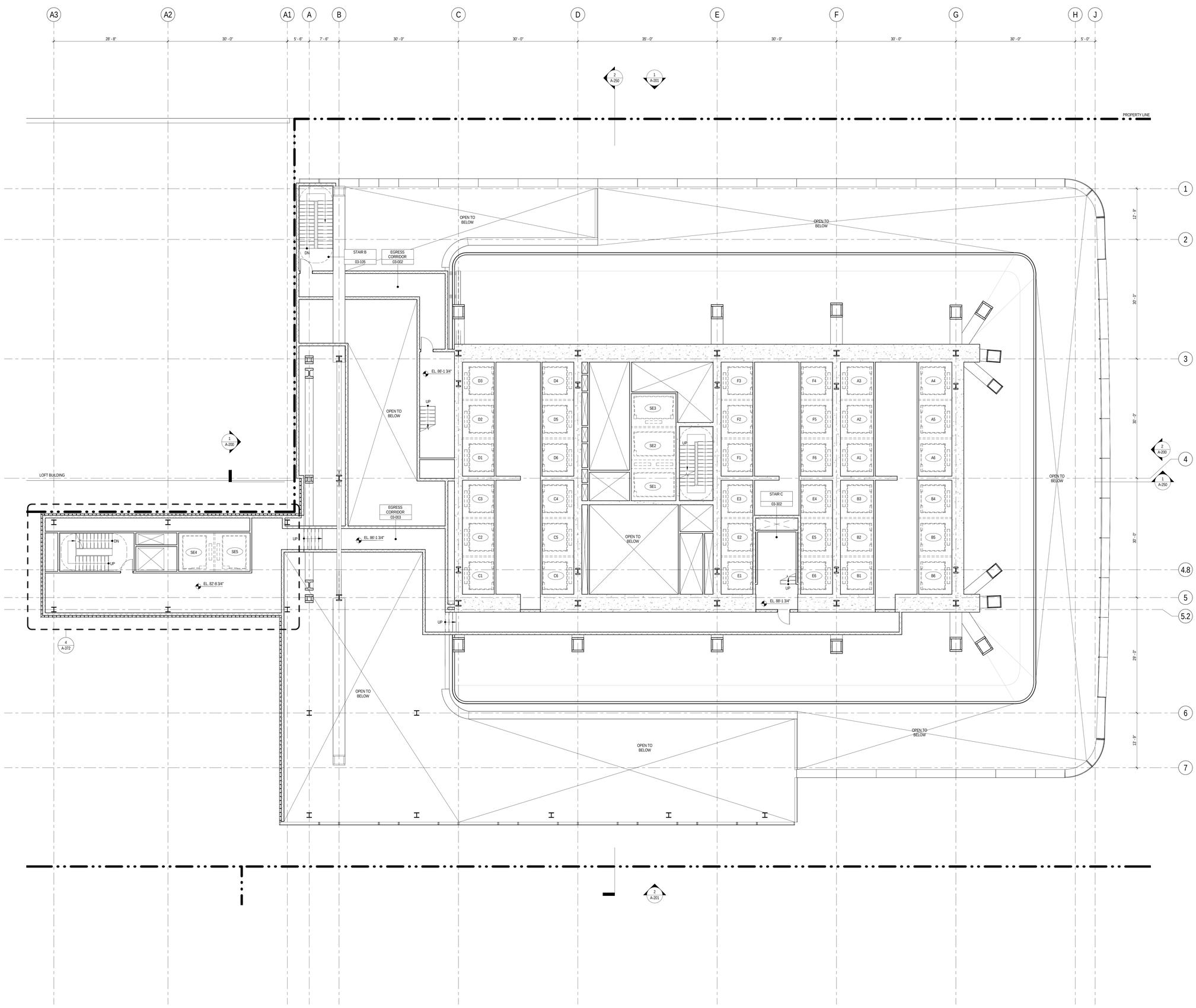

SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

8. FOR REFLECTED CEILING PLANS SEE A-600 SERIES DRAWINGS. IF RCP IS NOT PROVIDED SEE MEP/FP/FA/SEC/TEL SERVICE DRAWINGS FOR LOCATIONS OR ALL CEILING/WALL MOUNTED DEVICES.

9. FOR STRUCTURAL COLUMNS, EDGE OF SLAB, AND CORE WORK POINTS SEE STRUCTURAL SERIES DRAWINGS, UNO.

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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250 Vesey Street, 15th Floor, New York, NY 10281

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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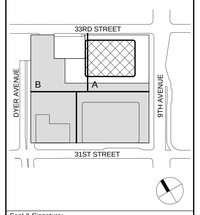
Key Plan:



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REGISTERED ARCHITECT
ROY J. GOTTESMAN
STATE OF NEW YORK
No. 15648

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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

LEVEL 3 FLOOR PLAN - STAIR TRANSFER

Project No.: 207120	B-SCAN Sheet No.: A-103.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-103
File No.: A-103	Page No.: 25 OF 87

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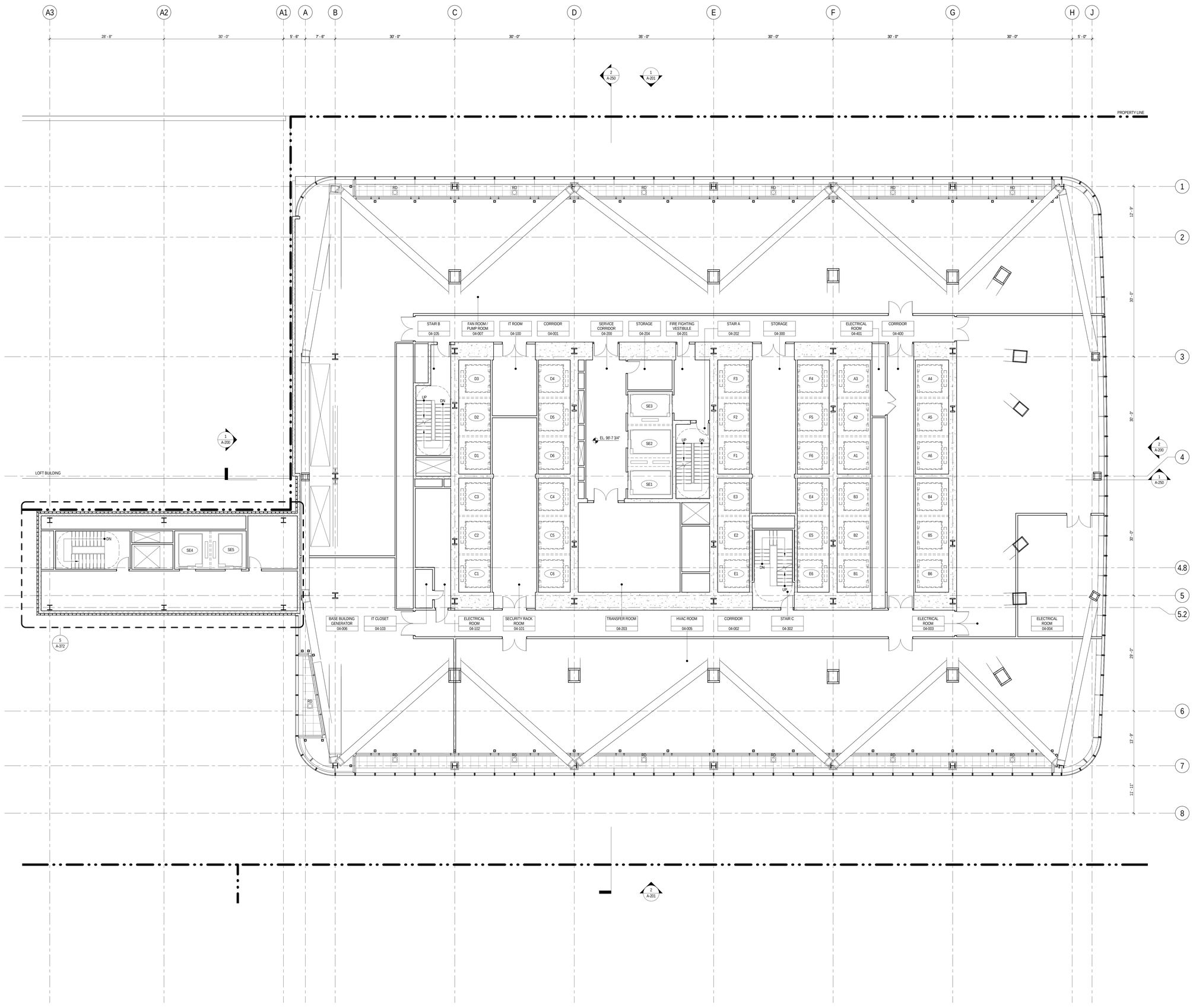

SHEET NOTES

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4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

8. FOR REFLECTED CEILING PLANS SEE A-600 SERIES DRAWINGS. IF RCP IS NOT PROVIDED SEE MEP/FP/FA/SEC/TEL SERVICE DRAWINGS FOR LOCATIONS OF ALL CEILING/WALL MOUNTED DEVICES.

9. FOR STRUCTURAL COLUMNS, EDGE OF SLAB, AND CORE WORK POINTS SEE STRUCTURAL SERIES DRAWINGS, UNO.

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11. REFER TO MEPPP DRAWINGS FOR ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION ROOM, RISER AND EQUIPMENT DESIGNATIONS.

12. FOR PROJECT WORK POINT REFER TO A-000 SERIES DRAWINGS.

MANHATTAN WEST: NORTH TOWER

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Ontario, Canada N1K 1B8

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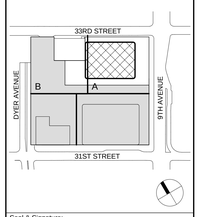

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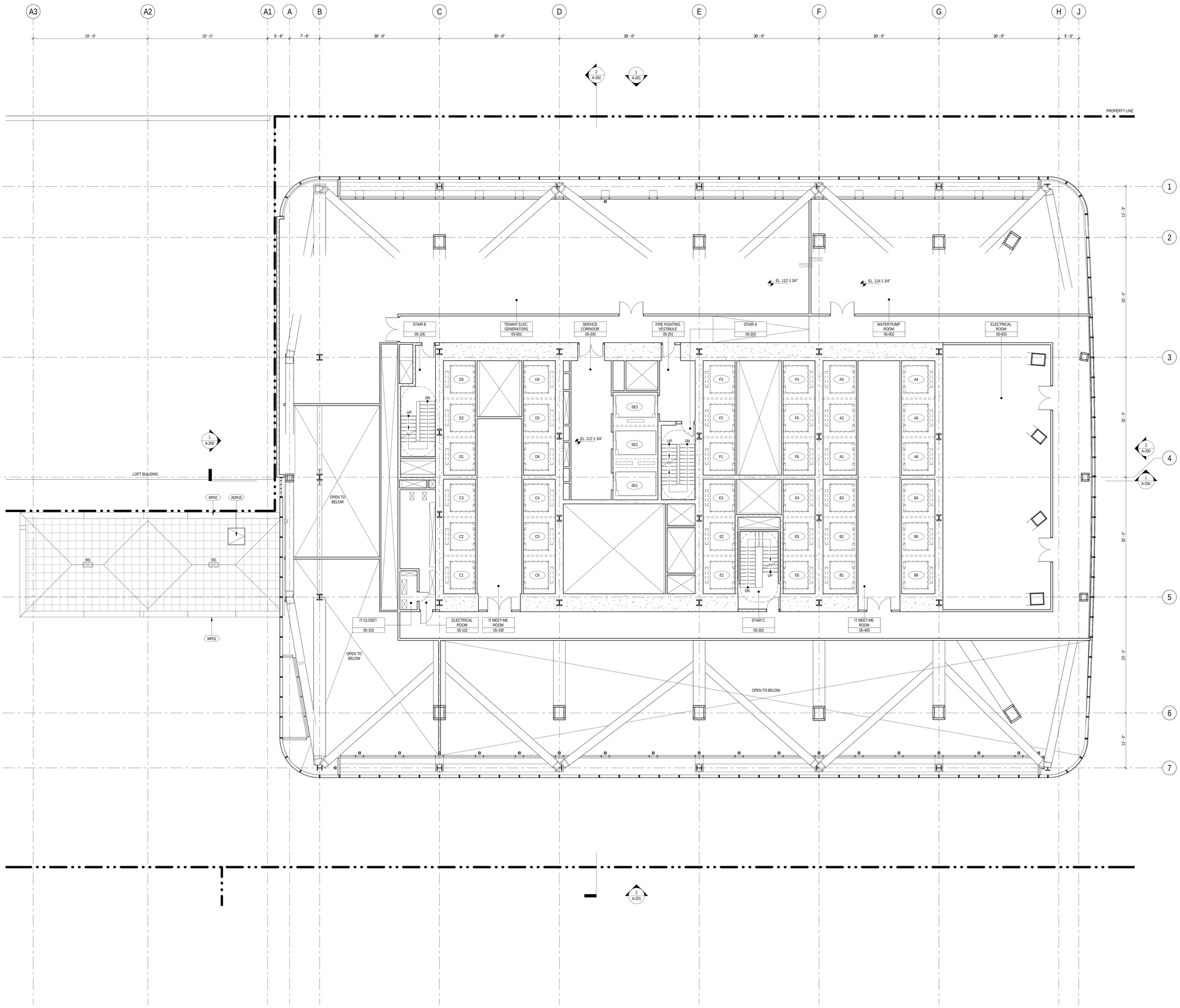
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 4 FLOOR PLAN - MECHANICAL

Project No.: 207120	B-SCAN Sheet No.: A-104.00
Date: 20 JUN 2014	Sheet No.: A-104
Scale: 1/8" = 1'-0"	
File No.: A-104	Page No.: 26 OF 87



SHEET NOTES

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3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

8. FOR REFLECTED CEILING PLANS SEE A-600 SERIES DRAWINGS. IF RCP IS NOT PROVIDED SEE MEPFP/FA/SEC/TEL SERVICE DRAWINGS FOR LOCATIONS OR ALL CEILING/WALL MOUNTED DEVICES.

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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Architecture/Structural Engineering

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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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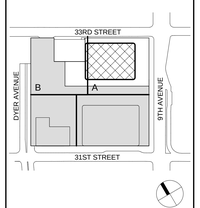

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REGISTERED ARCHITECT
ANDREW J. GOTTESFELD
STATE OF NEW YORK
No. 16640

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1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

LEVEL 5 FLOOR PLAN - MECHANICAL

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: A-105

B-SCAN Sheet No.:
A-105.00
Sheet No.: A-105
Page No.: 27 OF 87

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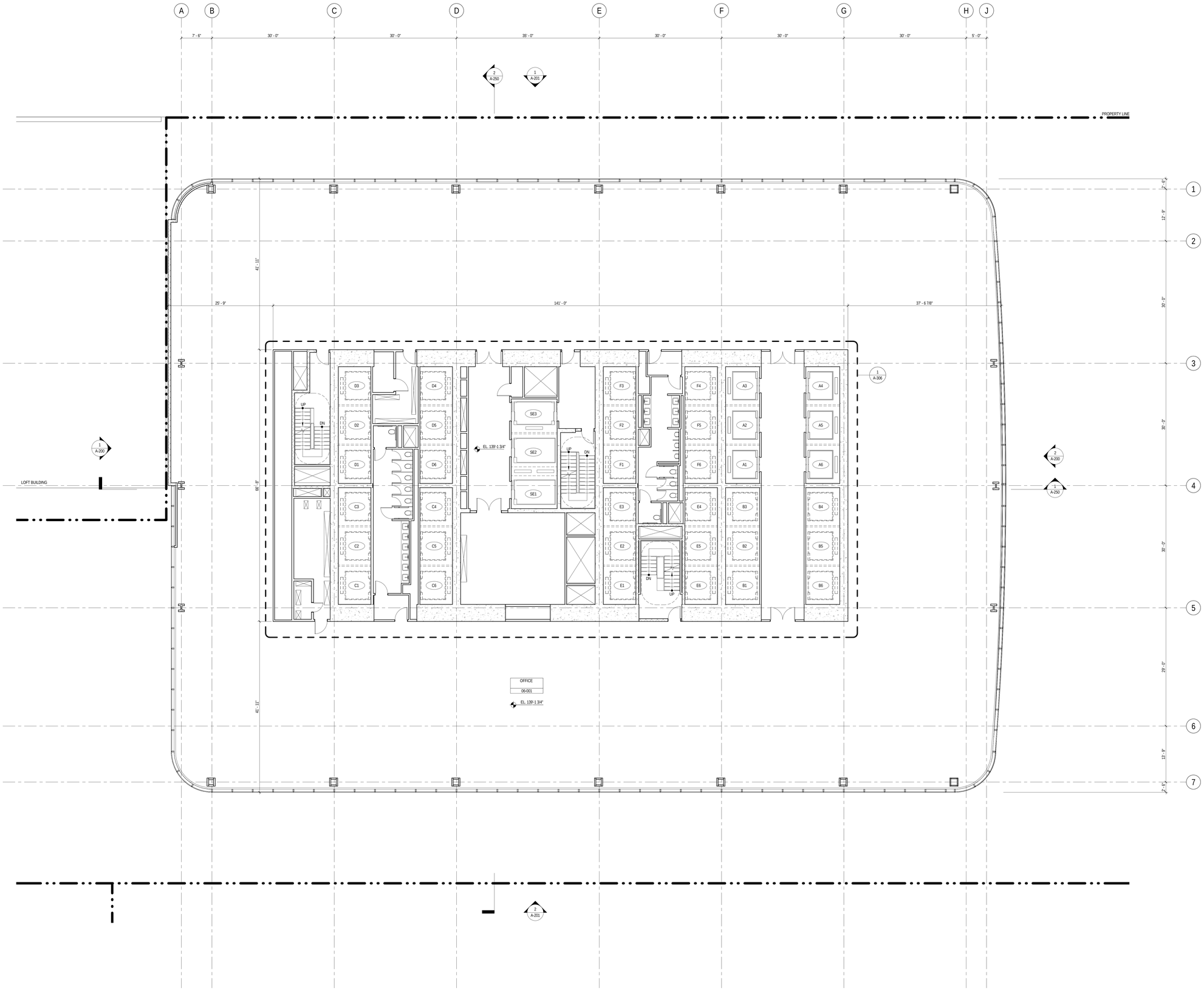

SHEET NOTES

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2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

8. FOR REFLECTED CEILING PLANS SEE A-600 SERIES DRAWINGS. IF RCP IS NOT PROVIDED SEE MEP/FP/FA/SECTEL SERVICE DRAWINGS FOR LOCATIONS OR ALL CEILING/WALL MOUNTED DEVICES.

9. FOR STRUCTURAL COLUMNS, EDGE OF SLAB, AND CORE WORK POINTS SEE STRUCTURAL SERIES DRAWINGS, UNO.

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MANHATTAN WEST: NORTH TOWER

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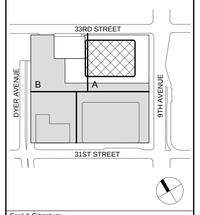

Seal & Signature:

REGISTERED ARCHITECT
JOHN P. GOTTESMAN
NO. 5649
STATE OF NEW YORK

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 6-16 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 207120	B-SCAN Sheet No.: A-106.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-106
File No.: A-106	Page No.: 28 OF 87

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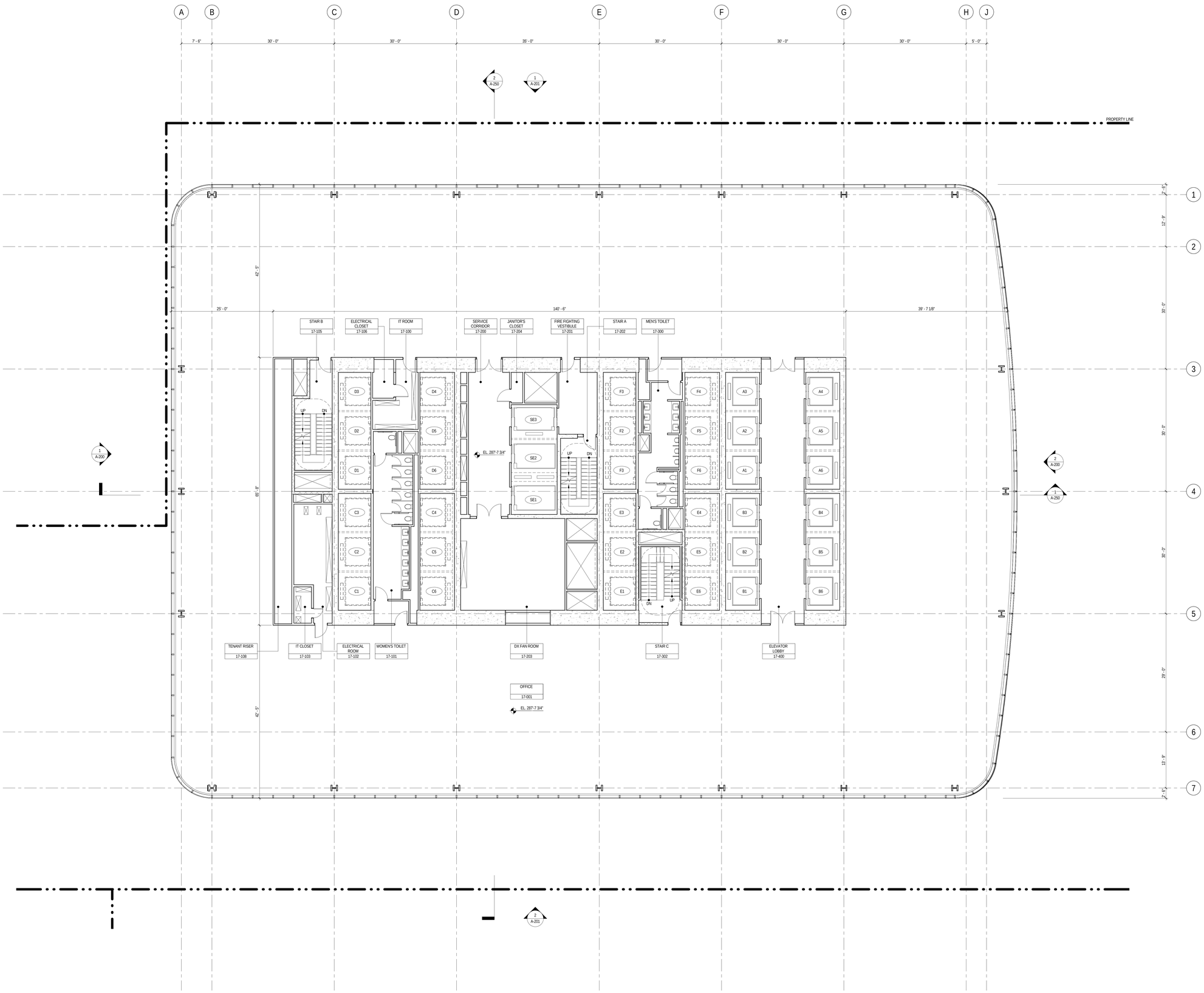

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5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

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MANHATTAN WEST: NORTH TOWER

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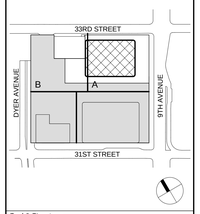
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ROY J. GOTTESMAN
No. 5649
STATE OF NEW YORK

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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 17 FLOOR PLAN - LOW-RISE

Project No.: 207120	B-SCAN Sheet No.: A-117.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-117
File No.: A-117	Page No.: 29 OF 87

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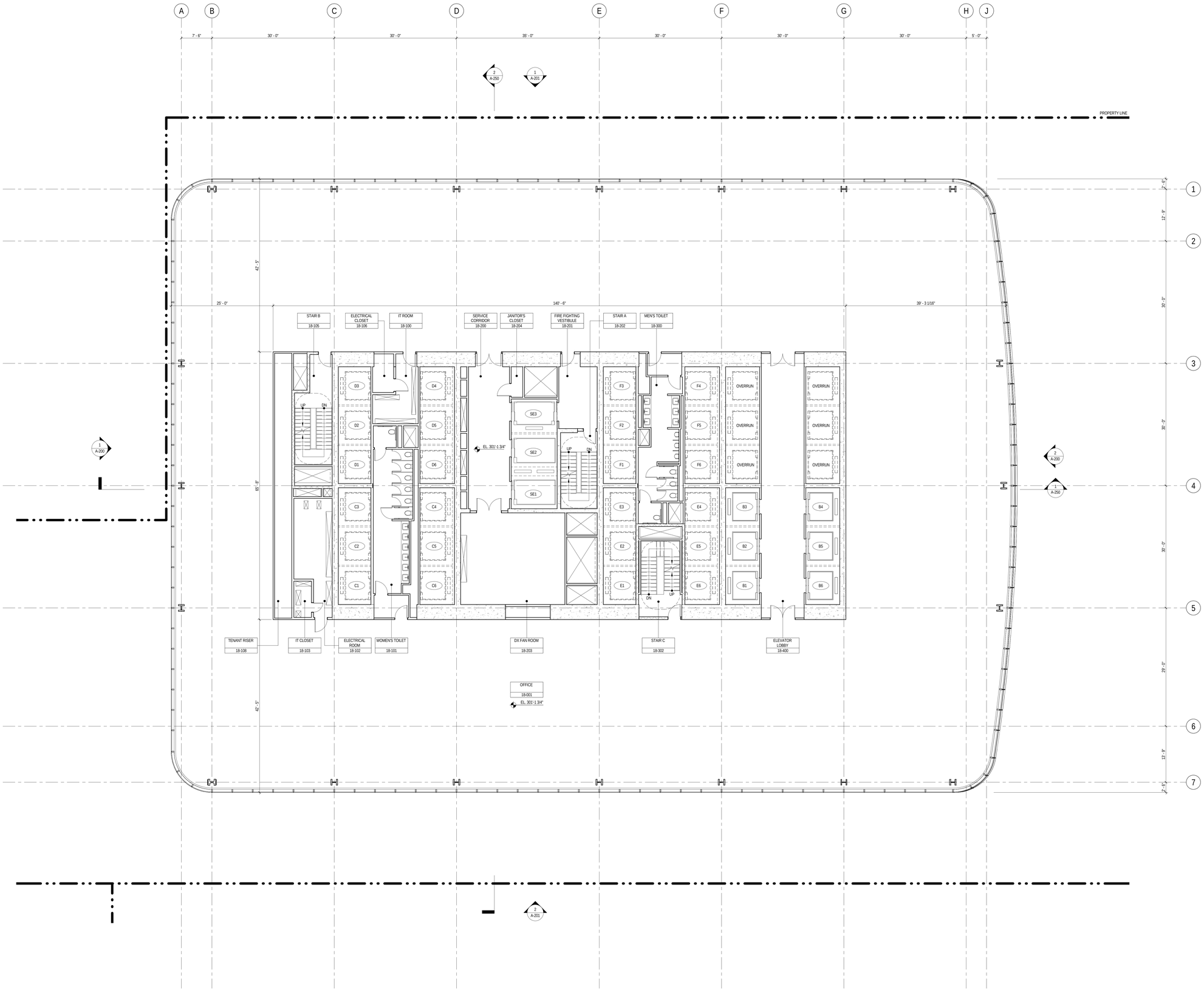

SHEET NOTES

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2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

8. FOR REFLECTED CEILING PLANS SEE A-600 SERIES DRAWINGS. IF RCP IS NOT PROVIDED SEE MEP/FP/FA/SECITEL SERVICE DRAWINGS FOR LOCATIONS OR ALL CEILING/WALL MOUNTED DEVICES.

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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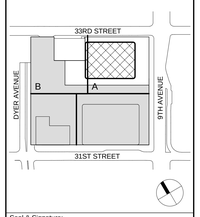

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN

Project No.: 207120	B-SCAN Sheet No.: A-118.00
Date: 20 JUN 2014	Sheet No.: A-118
Scale: 1/8" = 1'-0"	
File No.: A-118	Page No.: 30 OF 87

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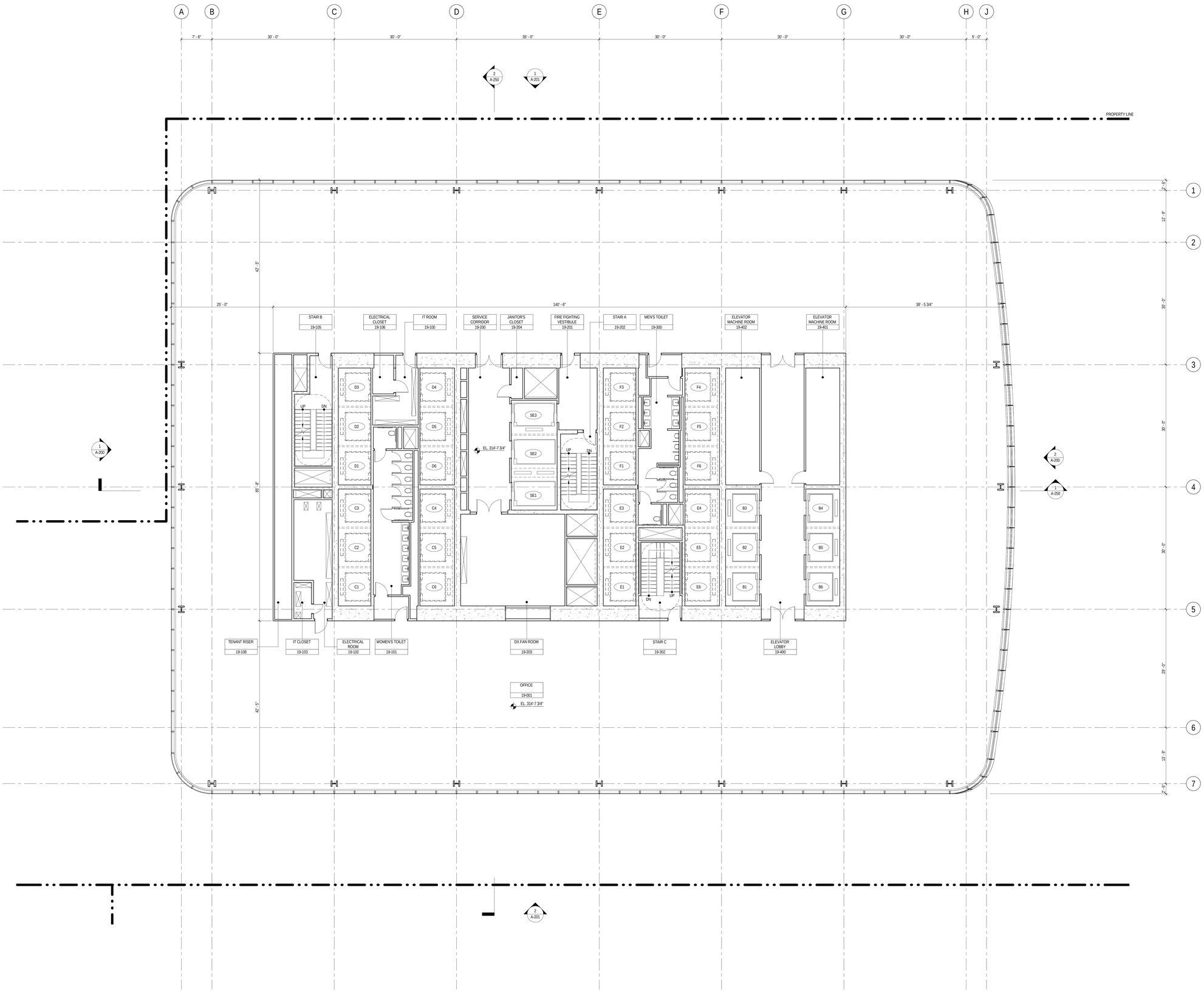

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MANHATTAN WEST: NORTH TOWER

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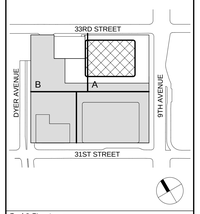

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Sheet Name:

LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR

Project No.: 207120	B-SCAN Sheet No.: A-119.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-119
File No.: A-119	Page No.: 31 OF 87

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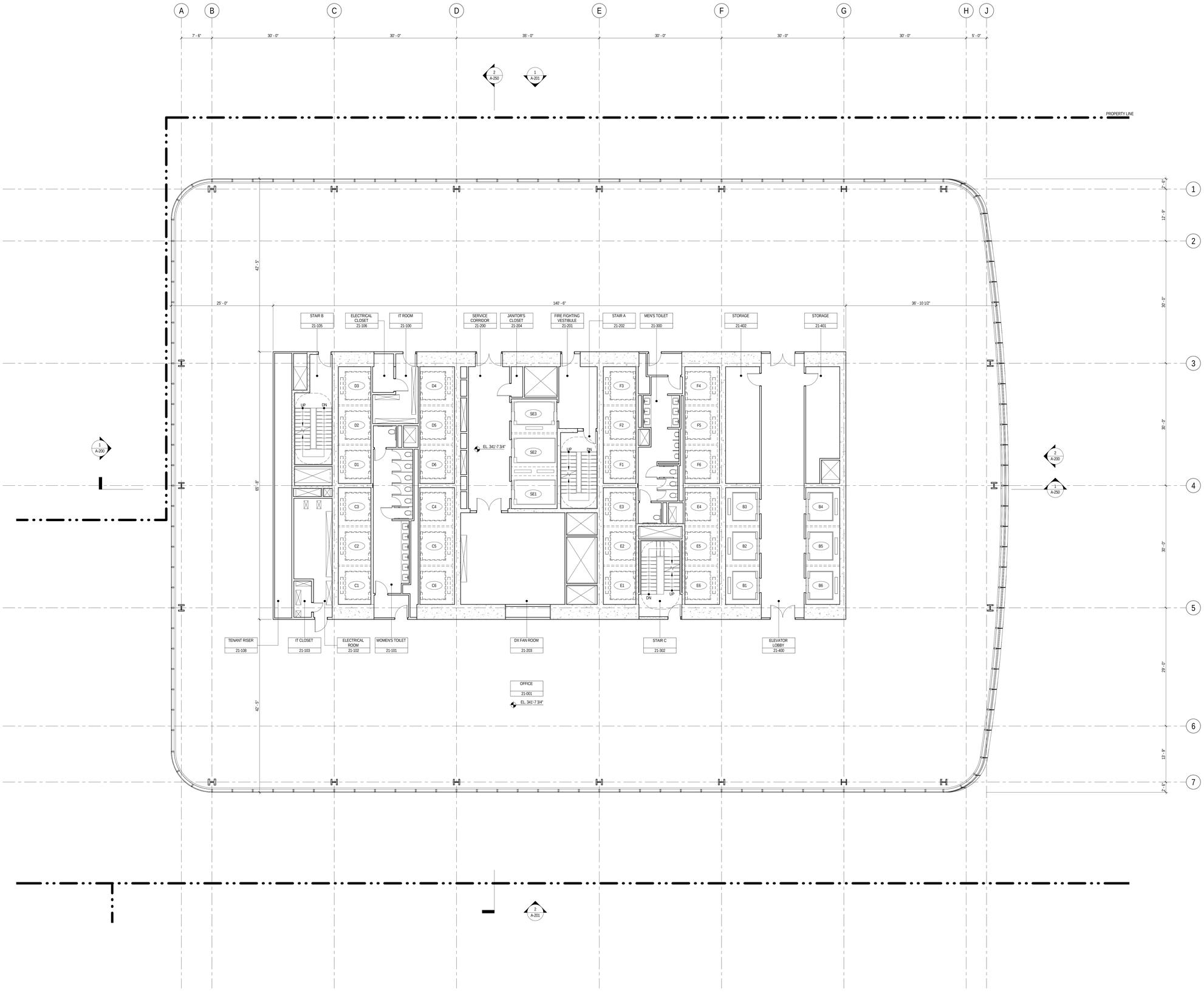

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MANHATTAN WEST: NORTH TOWER

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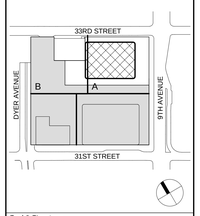

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Sheet Name:

LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 207120	B-SCAN Sheet No.: A-121.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-121
File No.: A-121	Page No.: 32 OF 87

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SHEET OF BLOCK 271.01.143 Job Number

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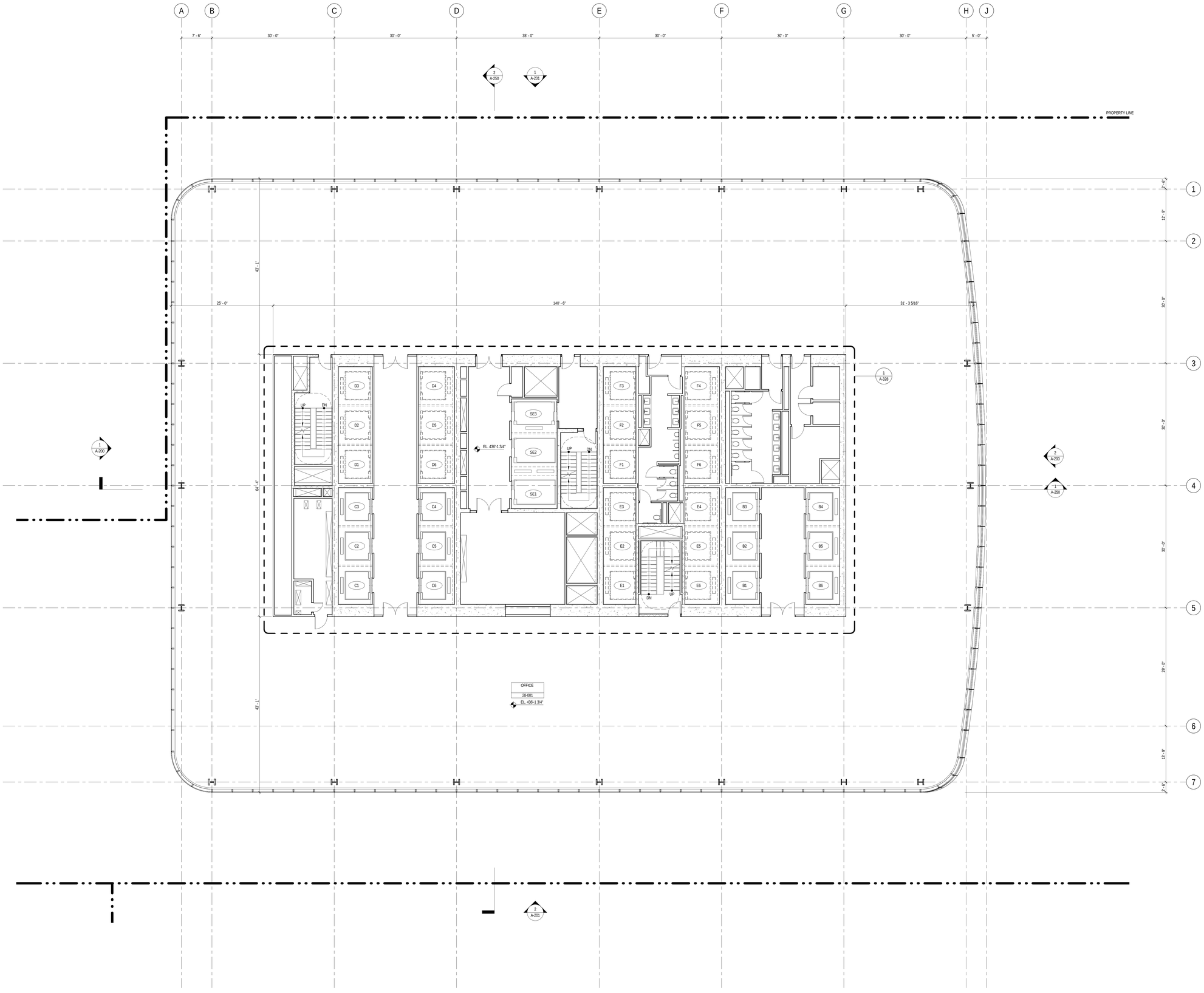

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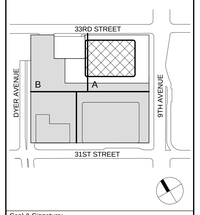

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Sheet Name:

LEVEL 28 FLOOR PLAN - LOW-RISE & MID-RISE

Project No.: 207120	B-SCAN Sheet No.: A-128.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-128
File No.: A-128	Page No.: 33 OF 87

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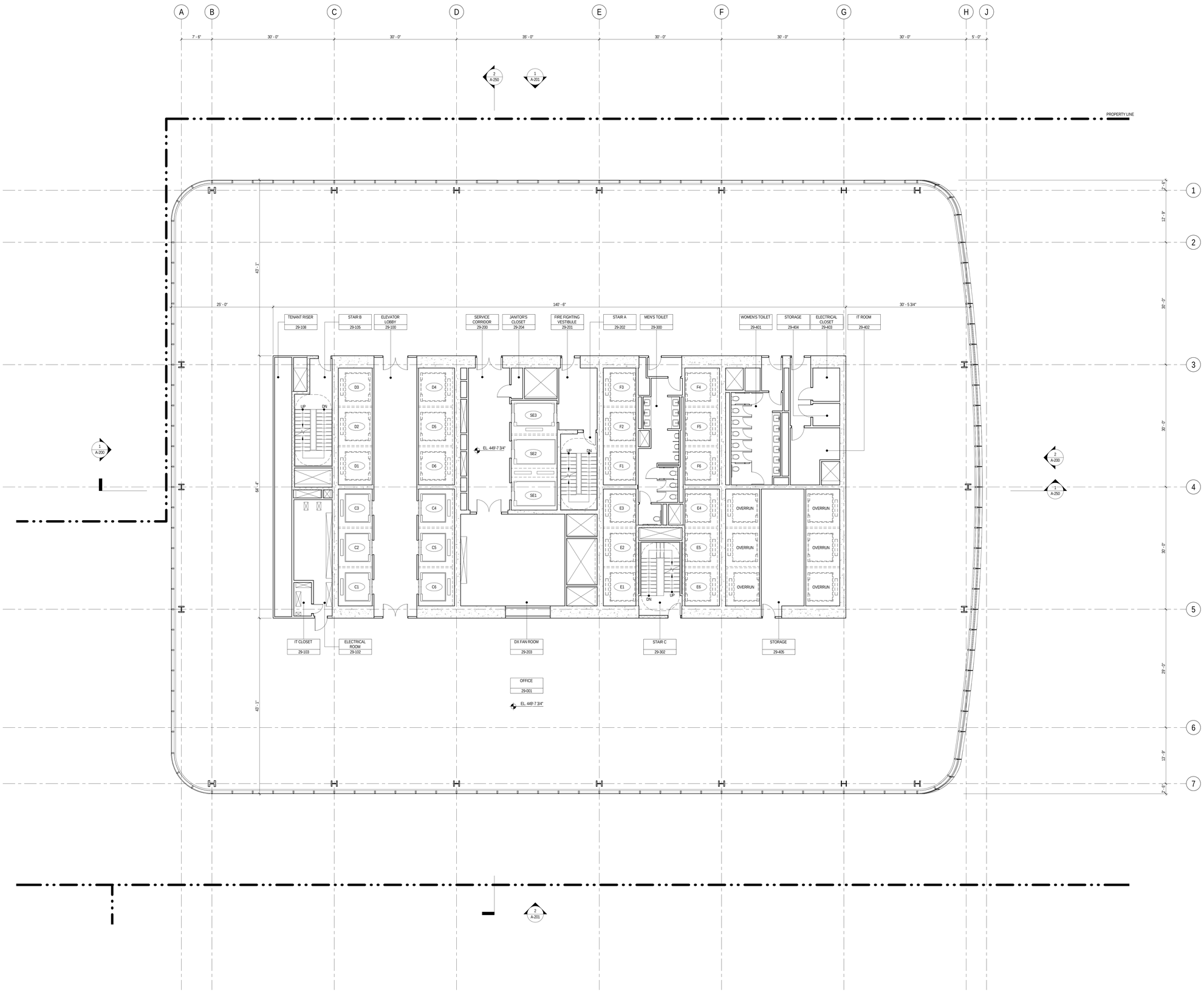

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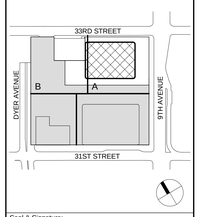

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LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN

Project No.: 207120	B-SCAN Sheet No.: A-129.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-129
File No.: A-129	Page No.: 34 OF 87

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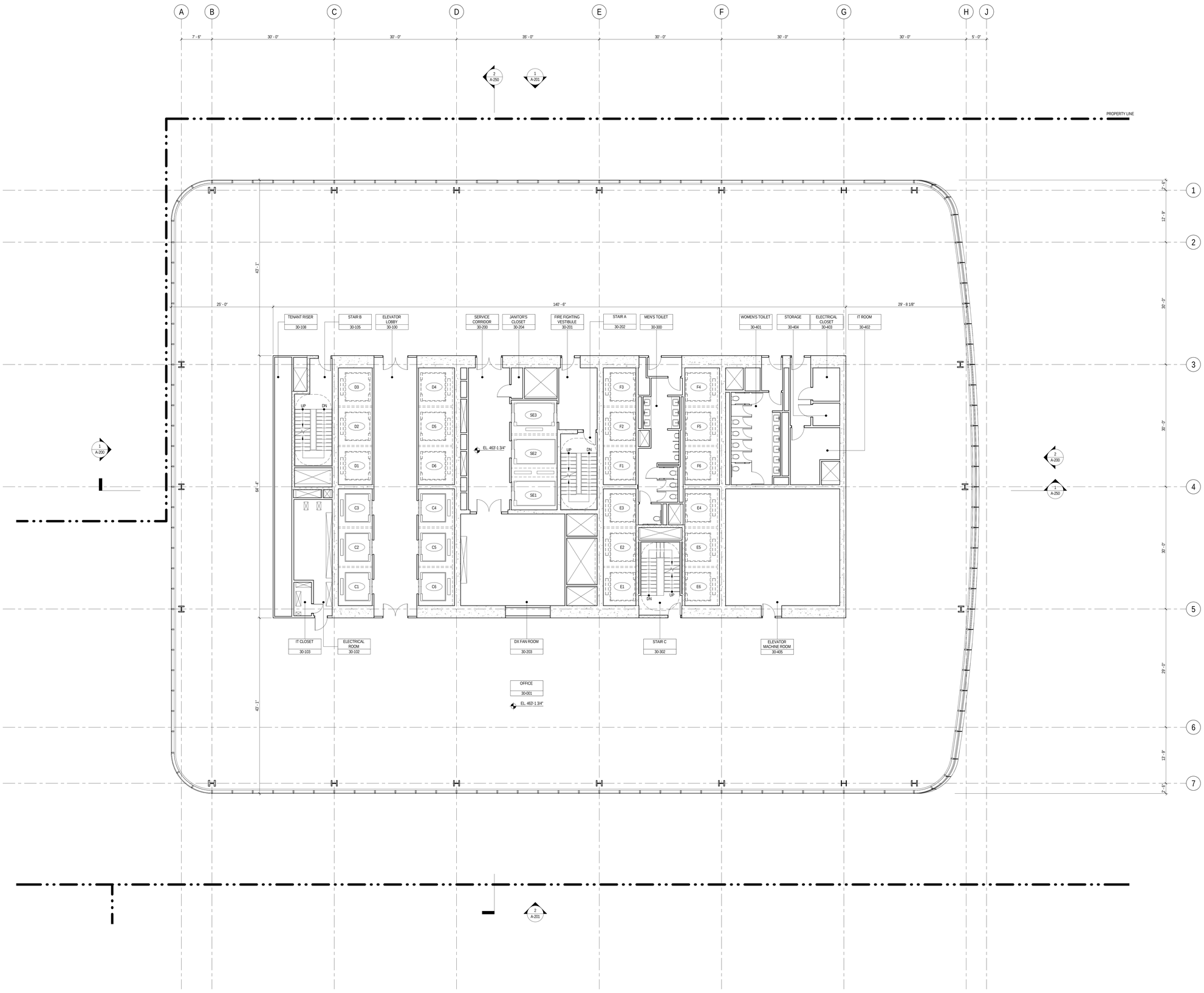

SHEET NOTES

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4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

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MANHATTAN WEST: NORTH TOWER

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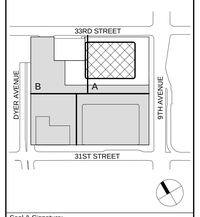

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REGISTERED ARCHITECT
ROY J. GOTTESMAN
STATE OF NEW YORK
No. 5648

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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 30 FLOOR PLAN - MID-RISE EMR

Project No.: 207120	B-SCAN Sheet No.: A-130.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-130
File No.: A-130	Page No.: 35 OF 87

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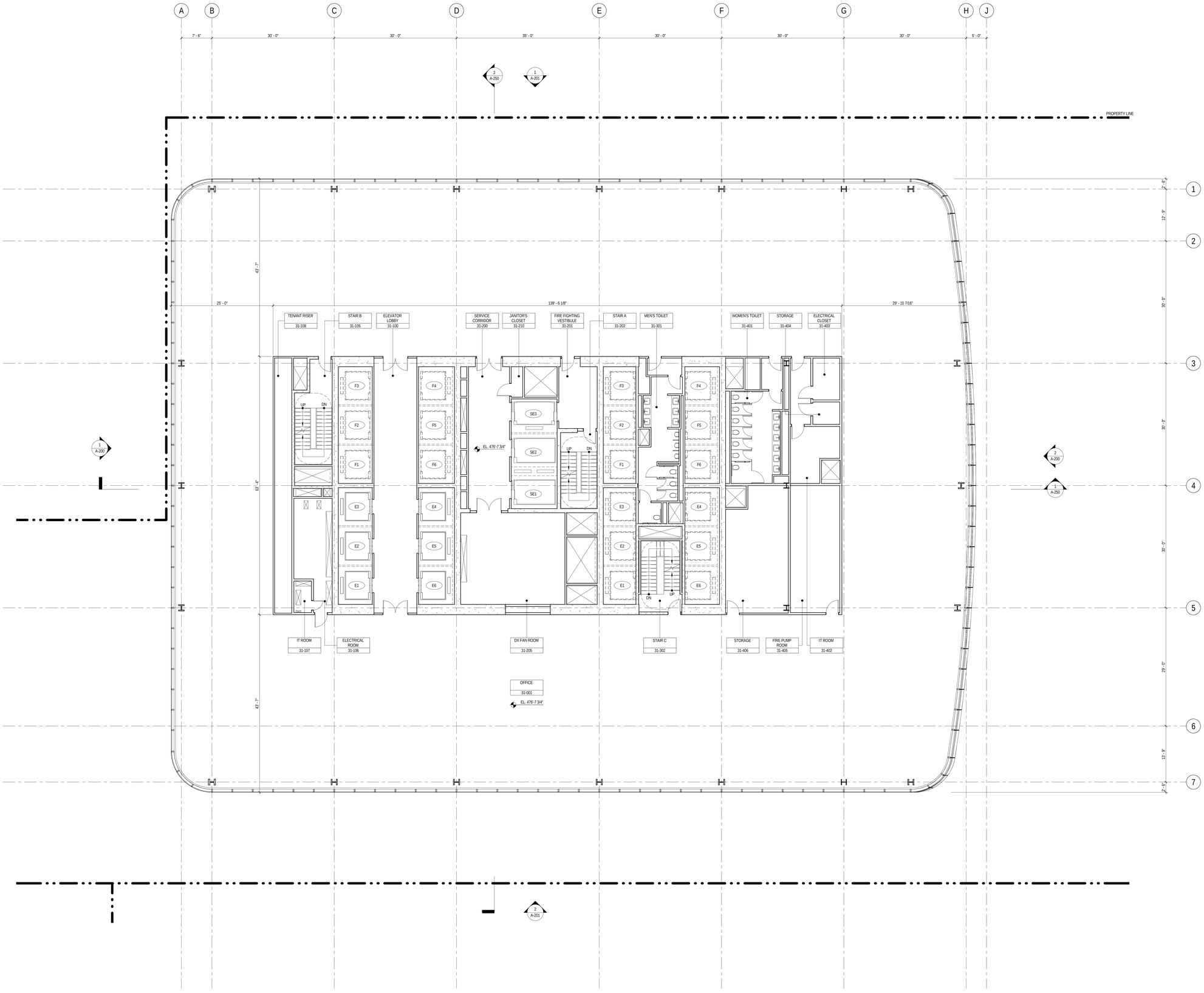

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MANHATTAN WEST: NORTH TOWER

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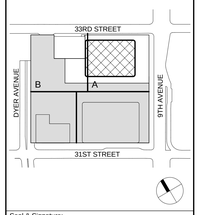

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STATE OF NEW YORK
No. 5649

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Sheet Name:

LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM

Project No.: 207120	B-SCAN Sheet No.: A-131.00
Date: 20 JUN 2014	Sheet No.: A-131
Scale: 1/8" = 1'-0"	
File No.: A-131	Page No.: 36 OF 87

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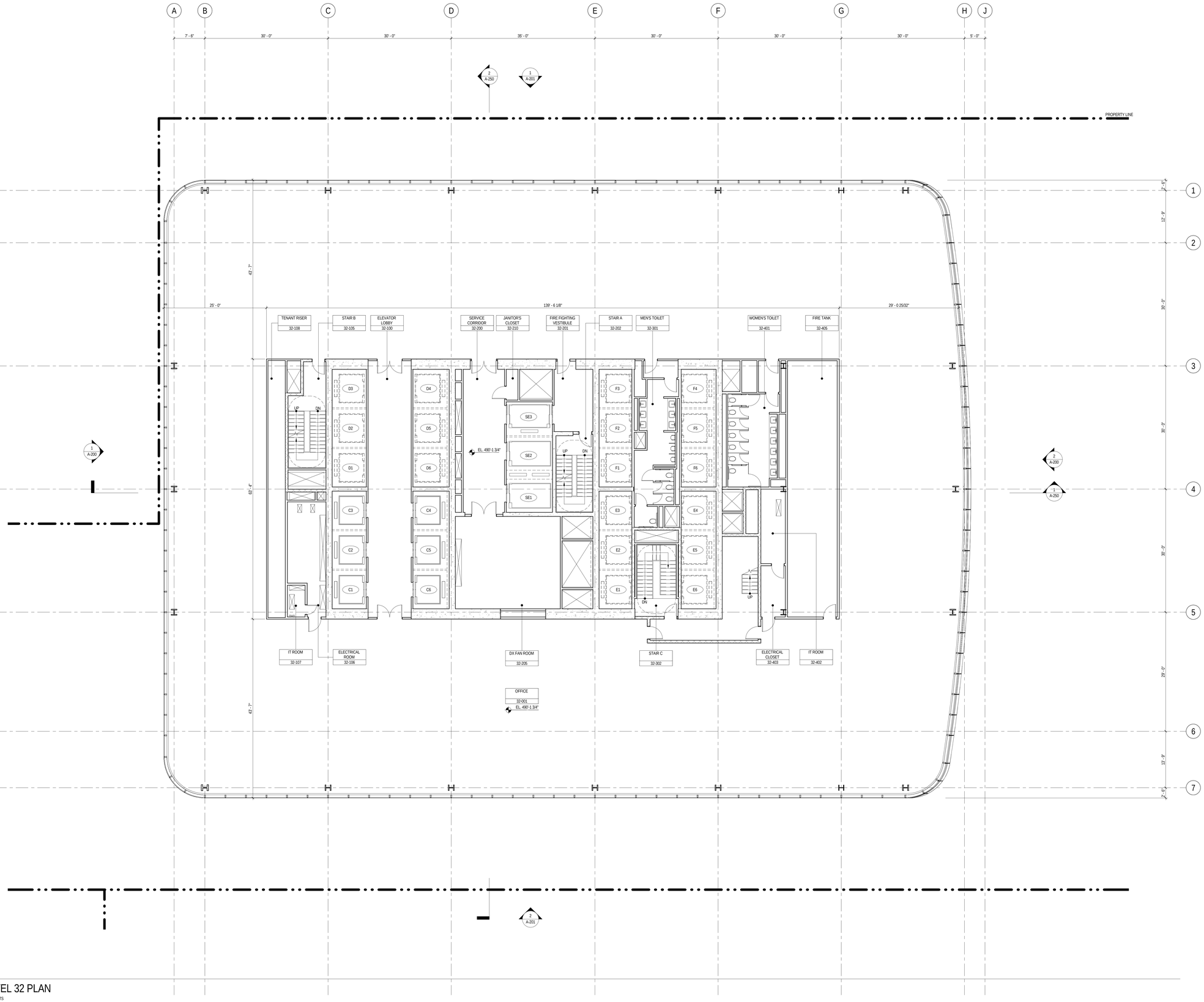

1 LEVEL 32 PLAN

SCALE: NTS

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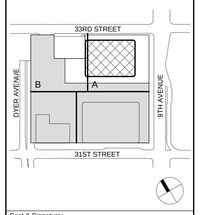

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Sheet Name:

LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK

Project No.: 207120	B-SCAN Sheet No.: A-132.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-132
File No.: A-132	Page No.: 37 OF 87

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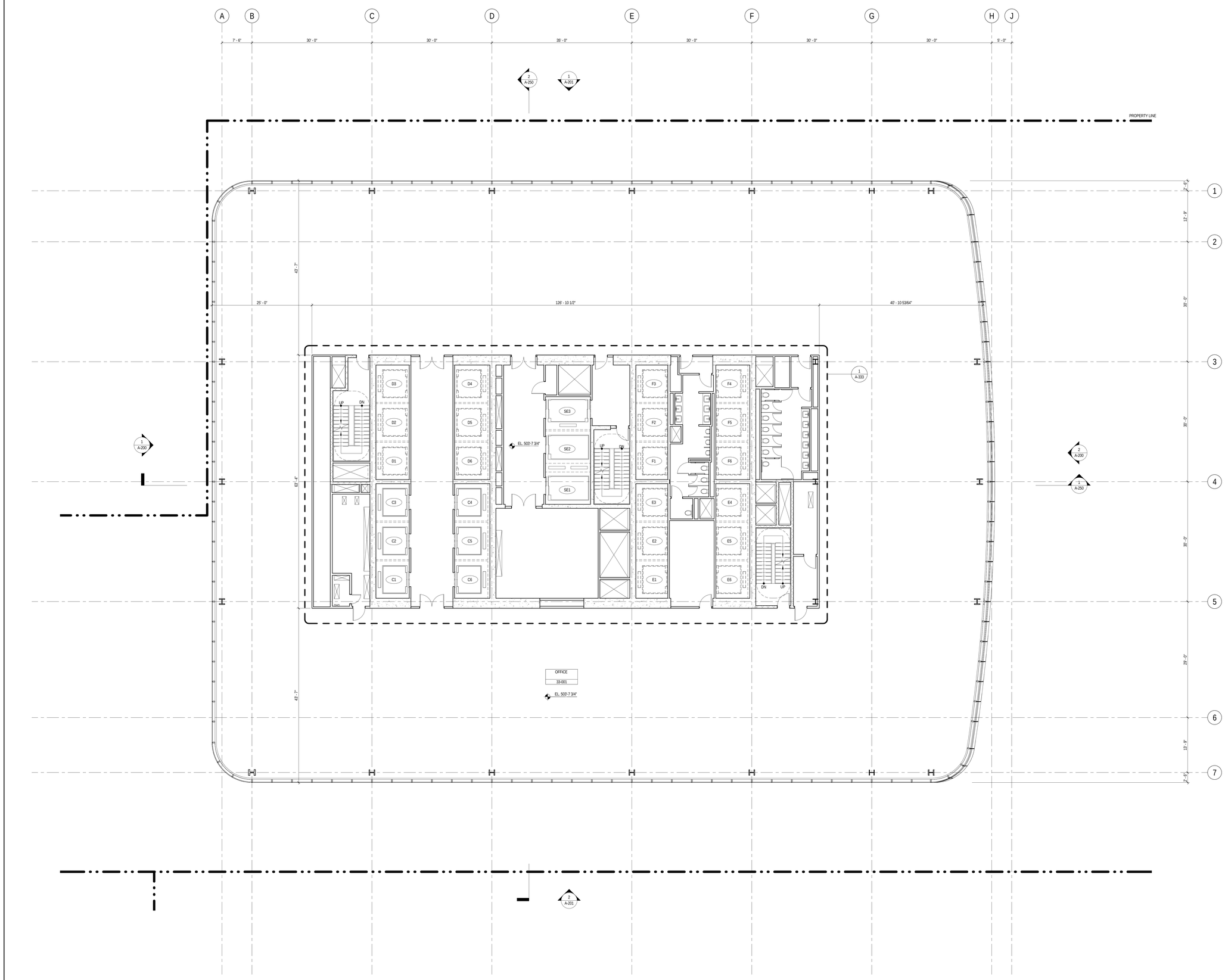

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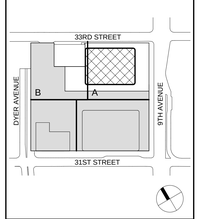

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REGISTERED ARCHITECT
DAVID GOTTESDIENER
NO. 026649
STATE OF NEW YORK

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Sheet Name:

LEVEL 33-38 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 207120	B-SCAN Sheet No.: A-133.00
Date: 20 JUN 2014	Sheet No.: A-133
Scale: 1/8" = 1'-0"	
File No.: A-133	Page No.: 38 OF 87

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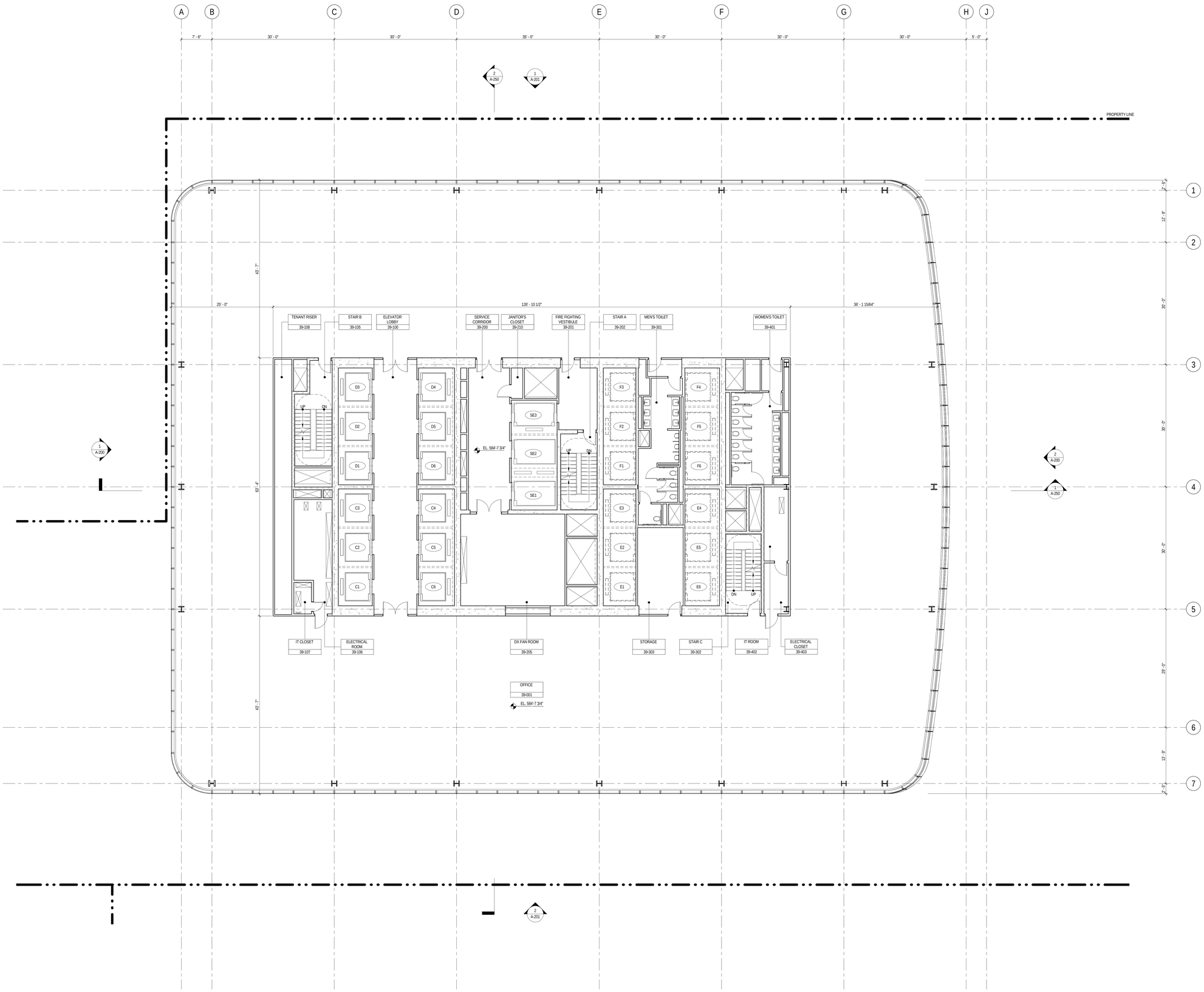

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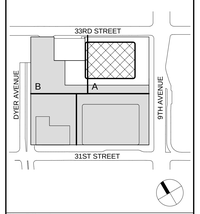

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Sheet Name:

LEVEL 39 FLOOR PLAN - MID-RISE

Project No.: 207120	B-SCAN Sheet No.: A-139.00
Date: 20 JUN 2014	Sheet No.: A-139
Scale: 1/8" = 1'-0"	
File No.: A-139	Page No.: 39 OF 87

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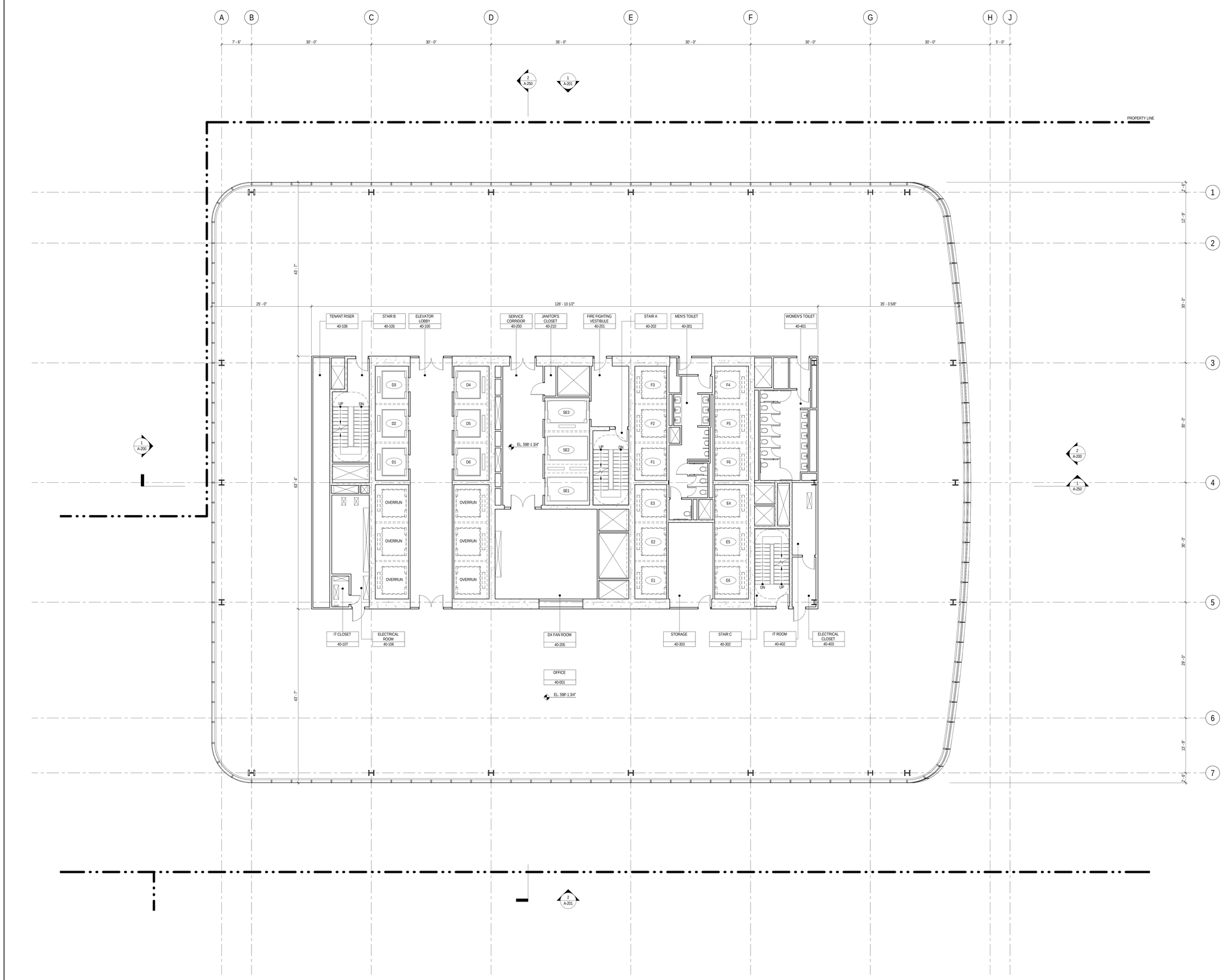

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MANHATTAN WEST: NORTH TOWER

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Brookfield

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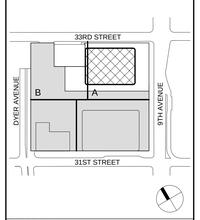

Seal & Signature:

REGISTERED ARCHITECT
DAVID GOTTESDIENER
No. 5649
STATE OF NEW YORK

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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN

Project No.: 207120	B-SCAN Sheet No.: A-140.00
Date: 20 JUN 2014	Sheet No.: A-140
Scale: 1/8" = 1'-0"	
File No.: A-140	Page No.: 40 OF 87

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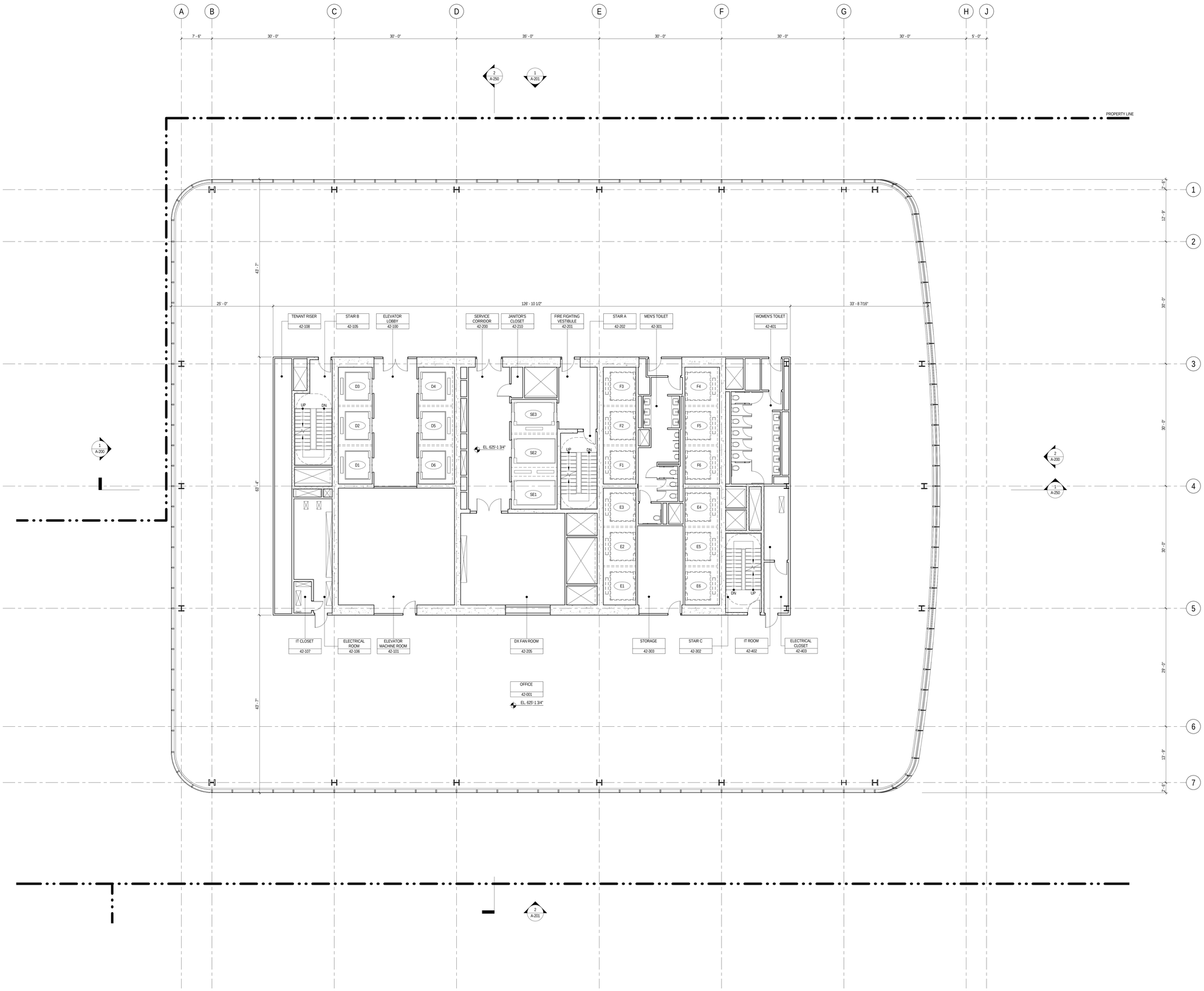

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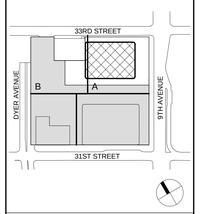

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LEVEL 42 FLOOR PLAN - MID-RISE EMR

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: A-142

B-SCAN Sheet No.: A-142.00

Sheet No.: A-142

Page No.: 41 OF 87

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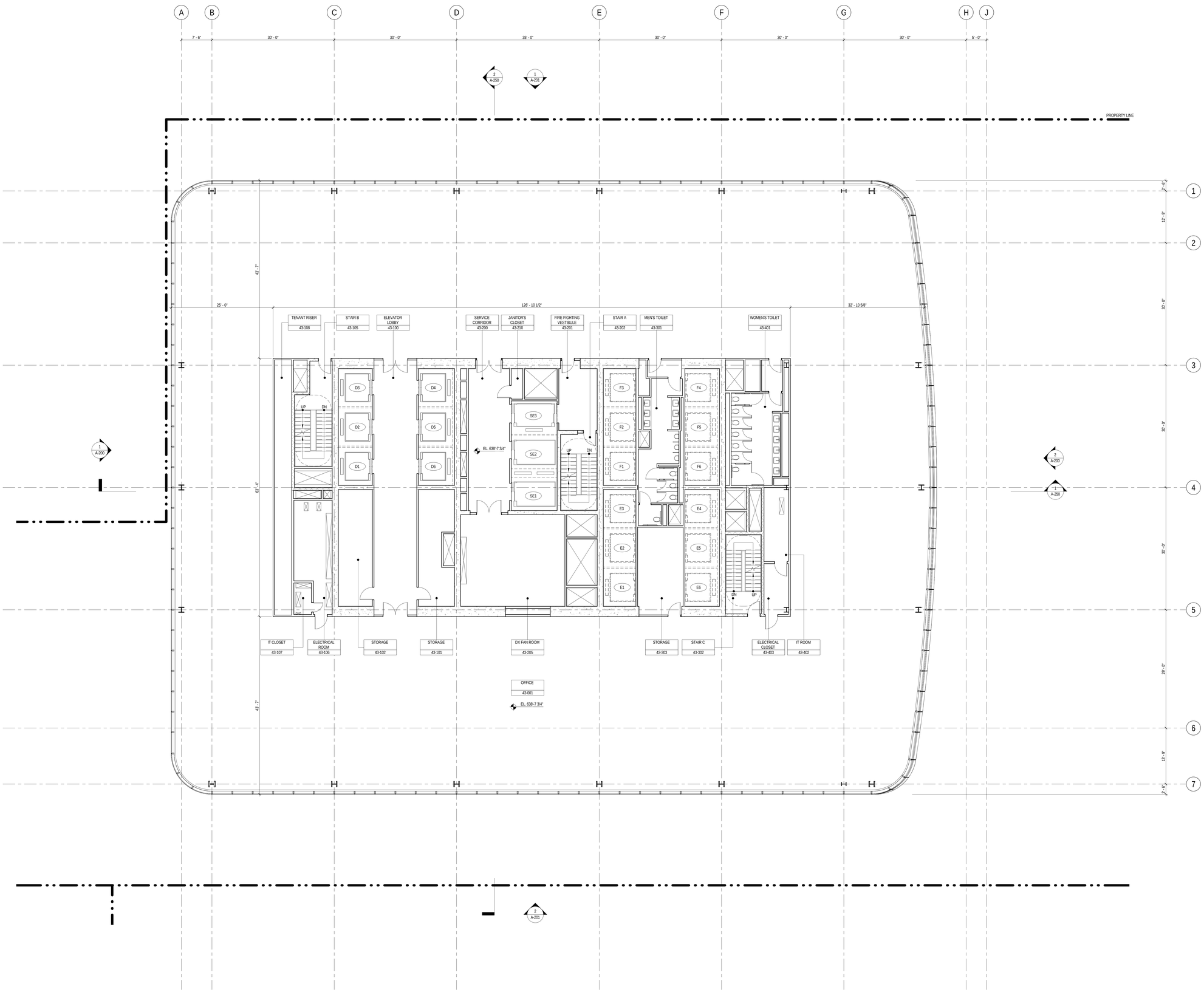

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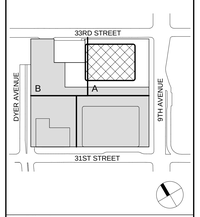

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REGISTERED ARCHITECT
SCOTT FORBES
No. 035643
STATE OF NEW YORK

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Sheet Name:

LEVEL 43-48 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: A-143

B-SCAN Sheet No.: A-143.00
Sheet No.: A-143
Page No.: 42 OF 87

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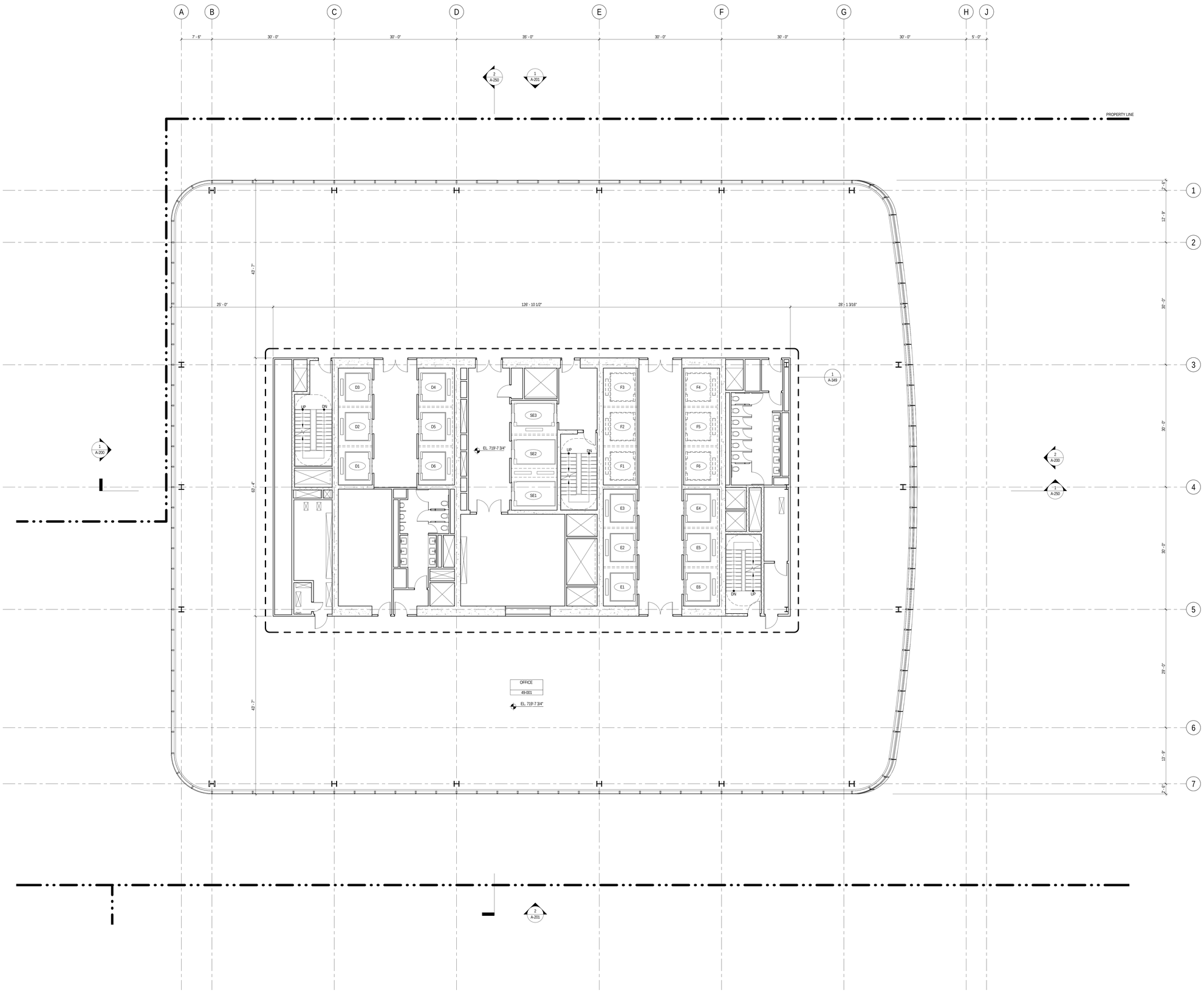

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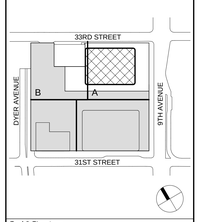

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REGISTERED ARCHITECT
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No. 026649
STATE OF NEW YORK

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Sheet Name:

LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE

Project No.: 207120	B-SCAN Sheet No.: A-149.00
Date: 20 JUN 2014	Sheet No.: A-149
Scale: 1/8" = 1'-0"	
File No.: A-149	Page No.: 43 OF 87

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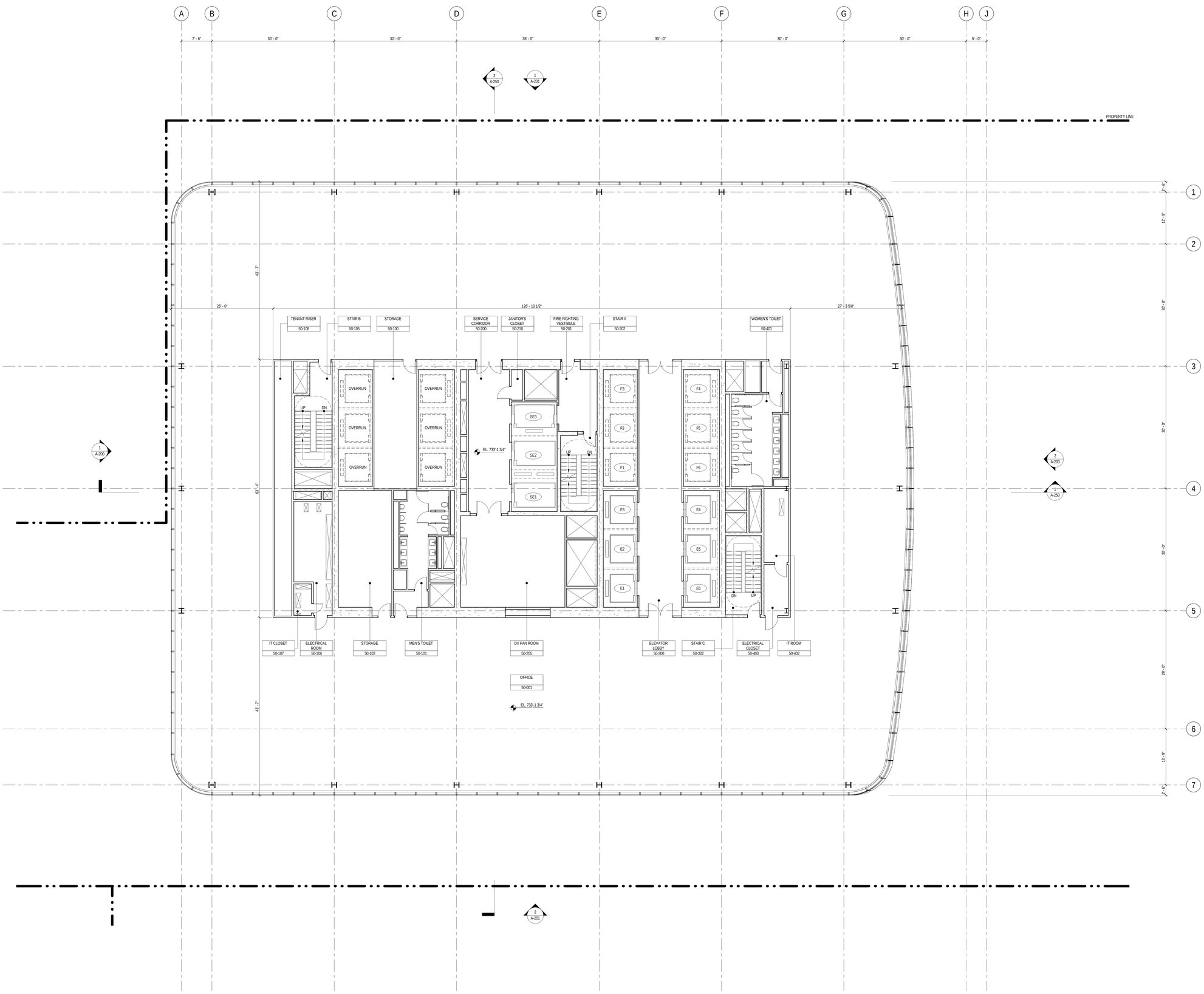

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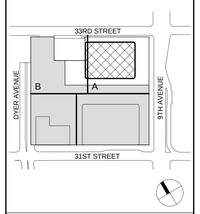

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Sheet Name:

LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN

Project No.: 207120	B-SCAN Sheet No.: A-150.00
Date: 20 JUN 2014	Sheet No.: A-150
Scale: 1/8" = 1'-0"	
File No.: A-150	Page No.: 44 OF 87

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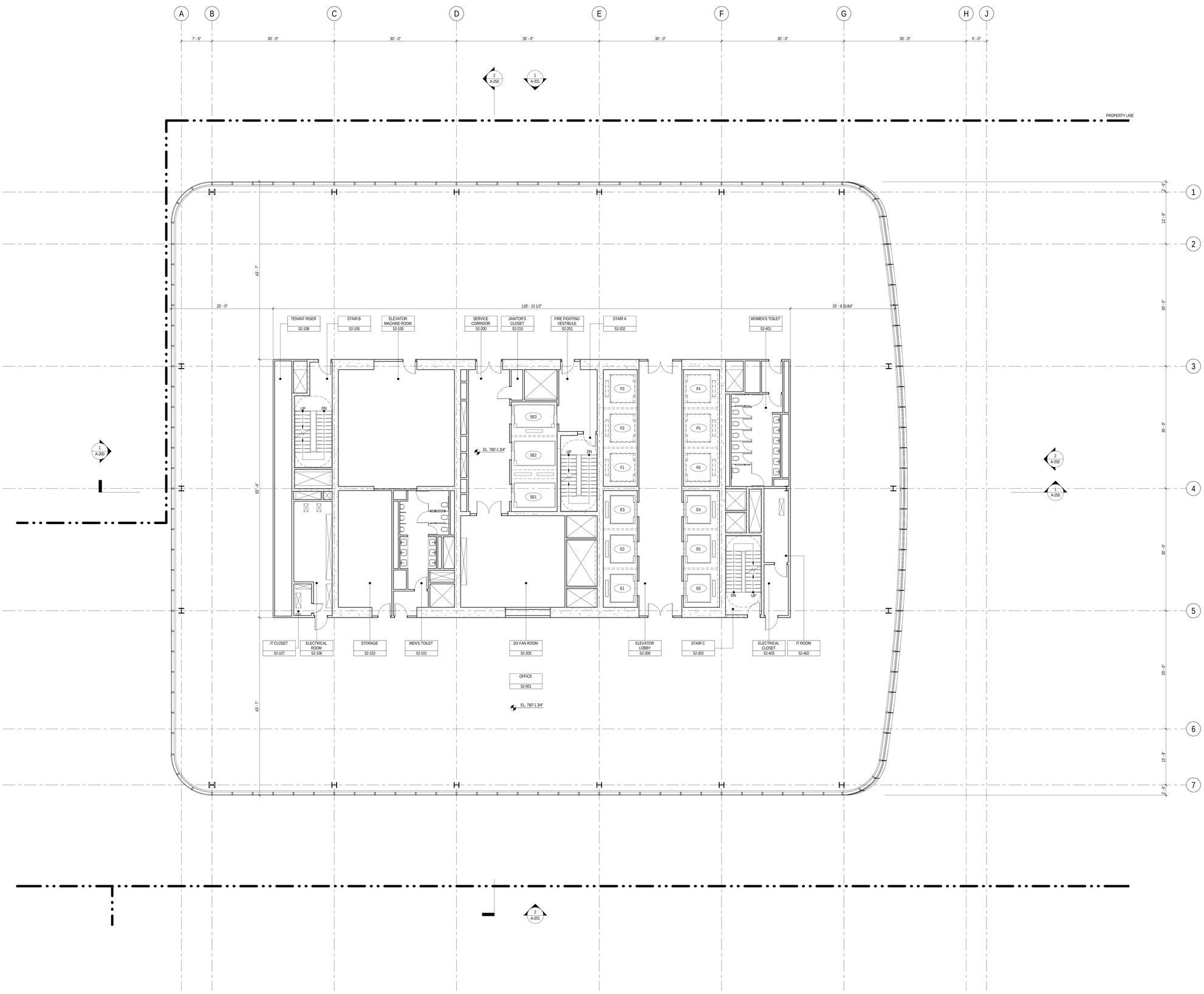

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215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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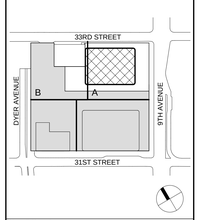
Key Plan:



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REGISTERED ARCHITECT
DAVID GOTTESDIENER
No. 5649
STATE OF NEW YORK

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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 52 FLOOR PLAN - HIGH-RISE EMR

Project No.: 207120	B-SCAN Sheet No.: A-152.00
Date: 20 JUN 2014	Sheet No.: A-152
Scale: 1/8" = 1'-0"	
File No.: A-152	Page No.: 45 OF 87

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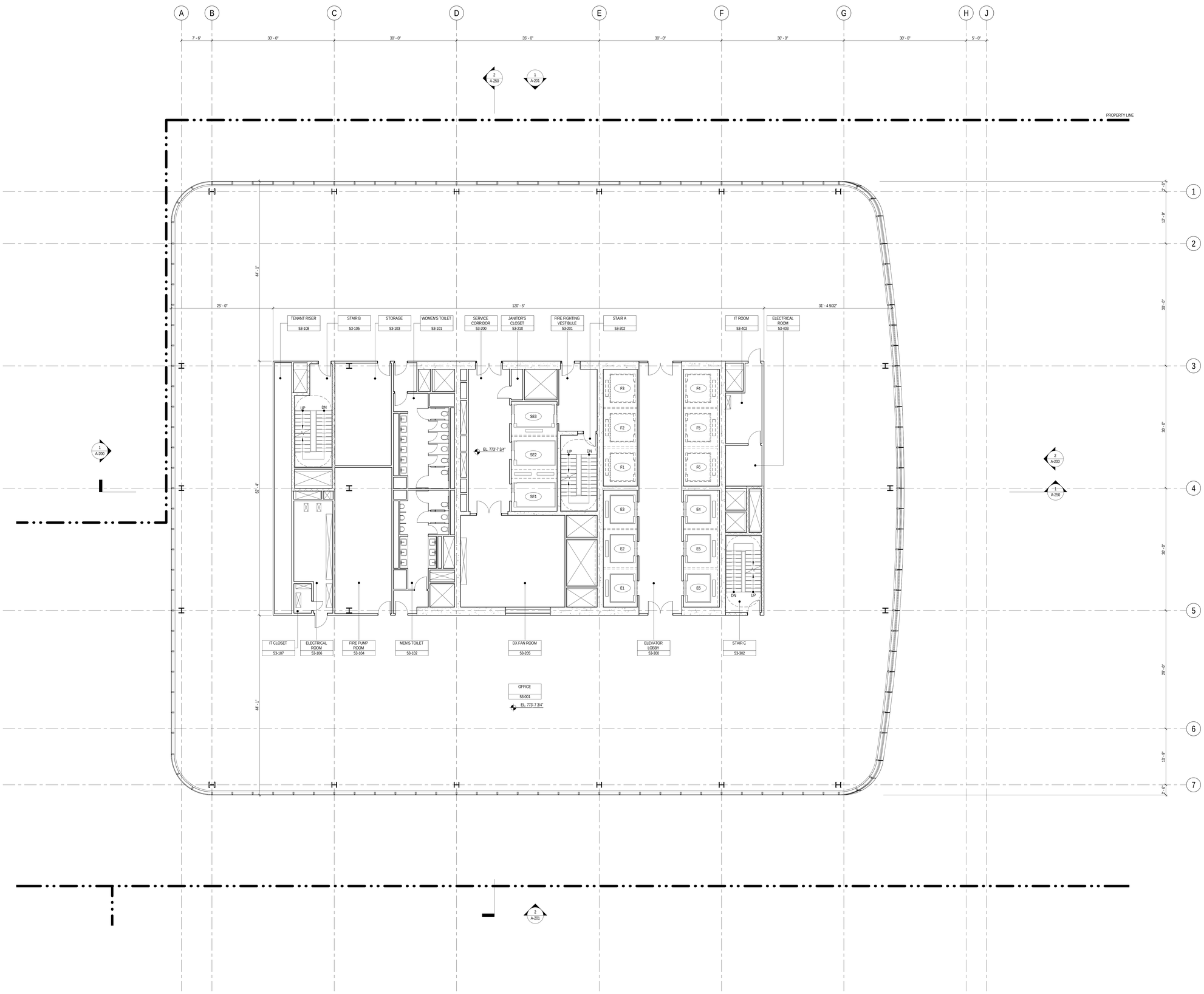
SHEET OF BLOCK 271.01.143 Job Number

E500053C005 Scan Code



SHEET NOTES

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2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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250 Vesey Street, 15th Floor, New York, NY 10281

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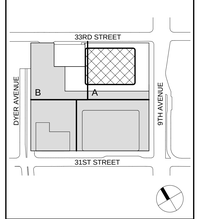

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM

Project No.: 207120	B-SCAN Sheet No.: A-153.00
Date: 20 JUN 2014	Sheet No.: A-153
Scale: 1/8" = 1'-0"	
File No.: A-153	Page No.: 46 OF 87

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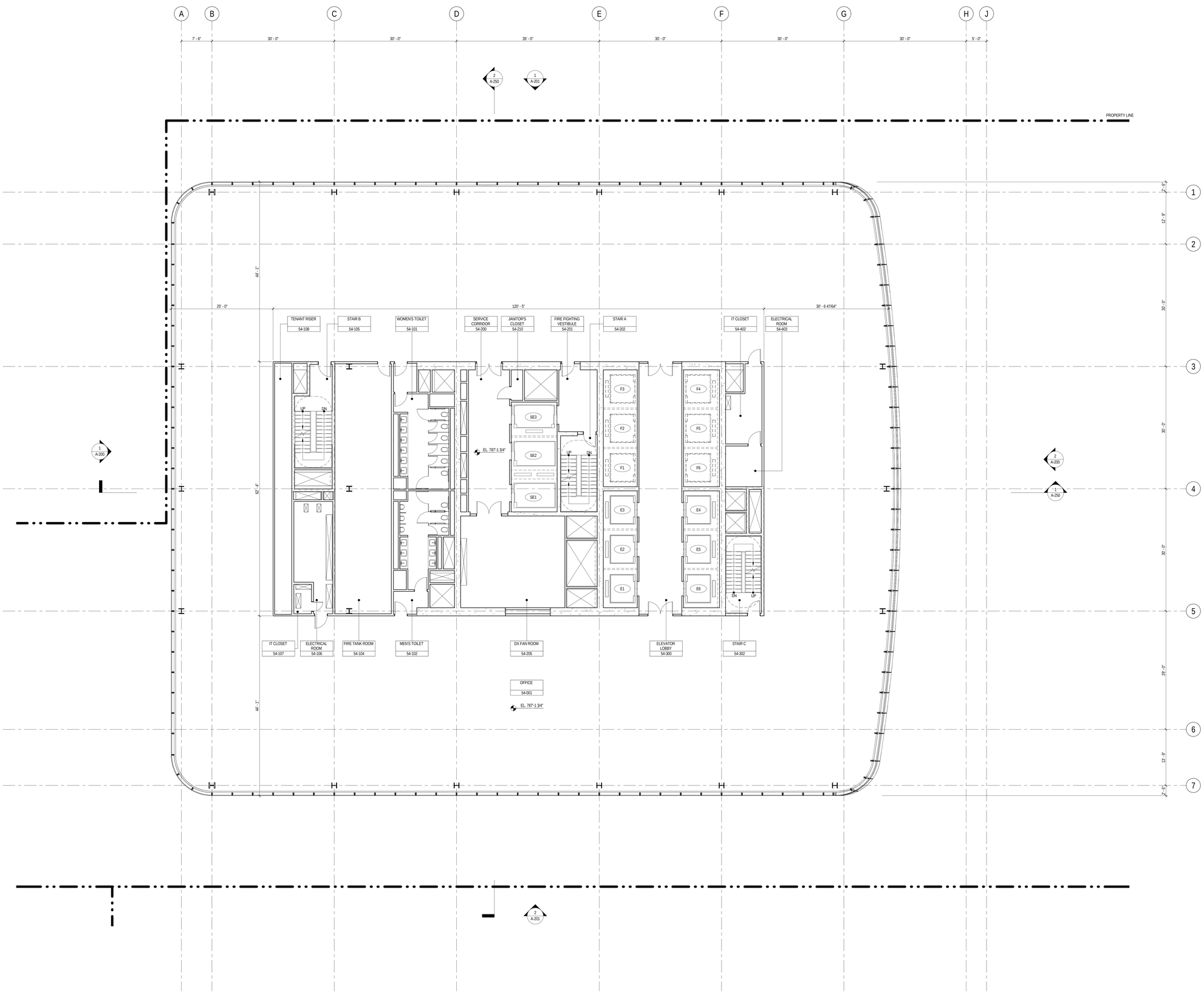

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MANHATTAN WEST: NORTH TOWER

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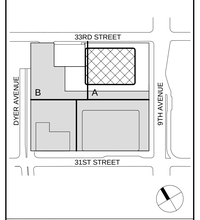

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REGISTERED ARCHITECT
ROY J. GOTTESDIENER
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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK

Project No.: 207120	B-SCAN Sheet No.: A-154.00
Date: 20 JUN 2014	Sheet No.: A-154
Scale: 1/8" = 1'-0"	
File No.: A-154	Page No.: 47 OF 87

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SHEET OF BLOCK 121.01.143 Job Number

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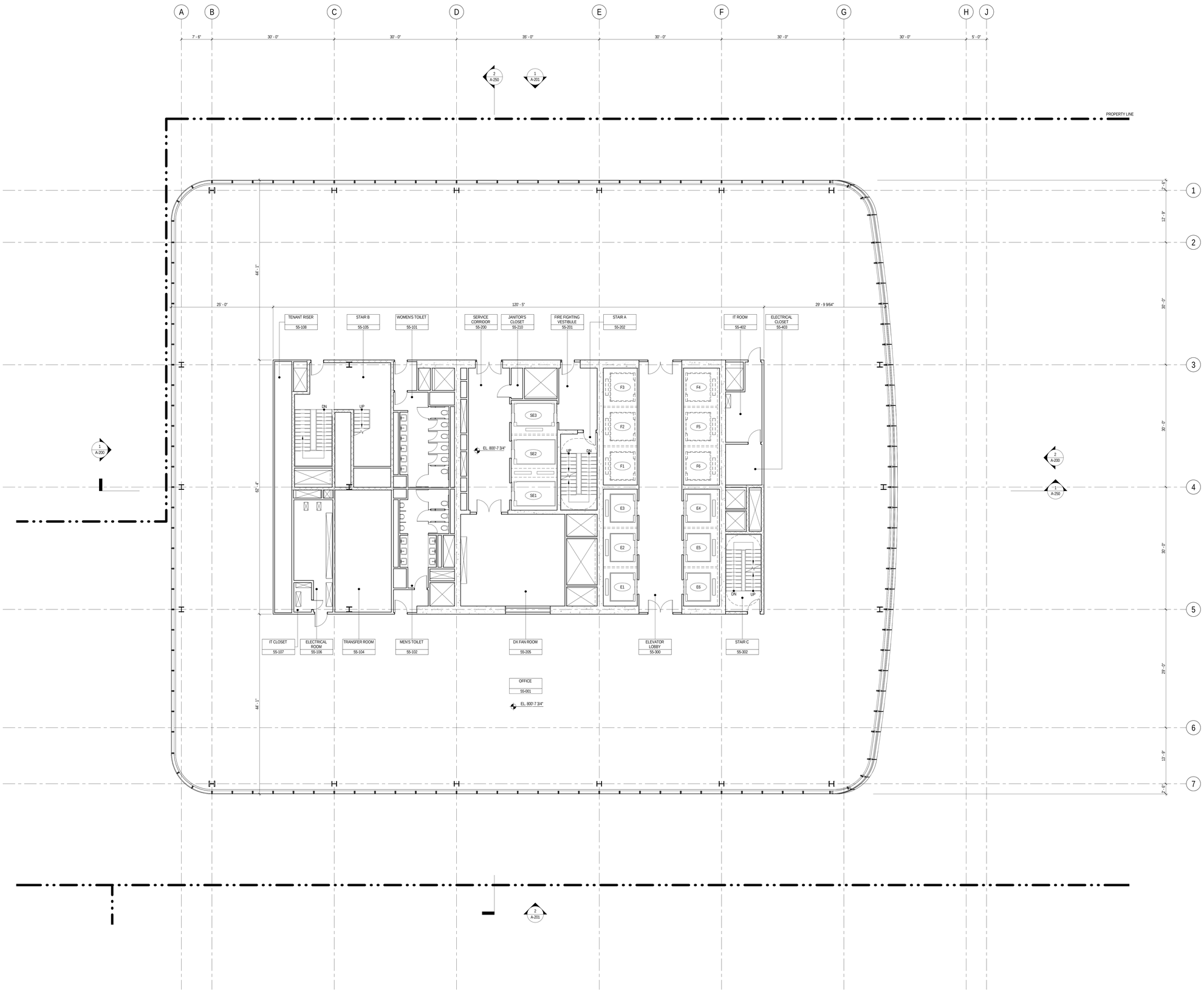

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MANHATTAN WEST: NORTH TOWER

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Client

Brookfield

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Ontario, Canada N1K 1B8

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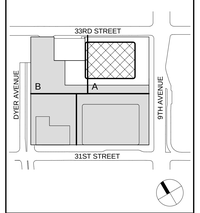

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REGISTERED ARCHITECT
DAVID GOTTESDIENER
No. 5649
STATE OF NEW YORK

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 55 FLOOR PLAN - HIGH-RISE

Project No.: 207120	B-SCAN Sheet No.: A-155.00
Date: 20 JUN 2014	Sheet No.: A-155
Scale: 1/8" = 1'-0"	
File No.: A-155	Page No.: 48 OF 87

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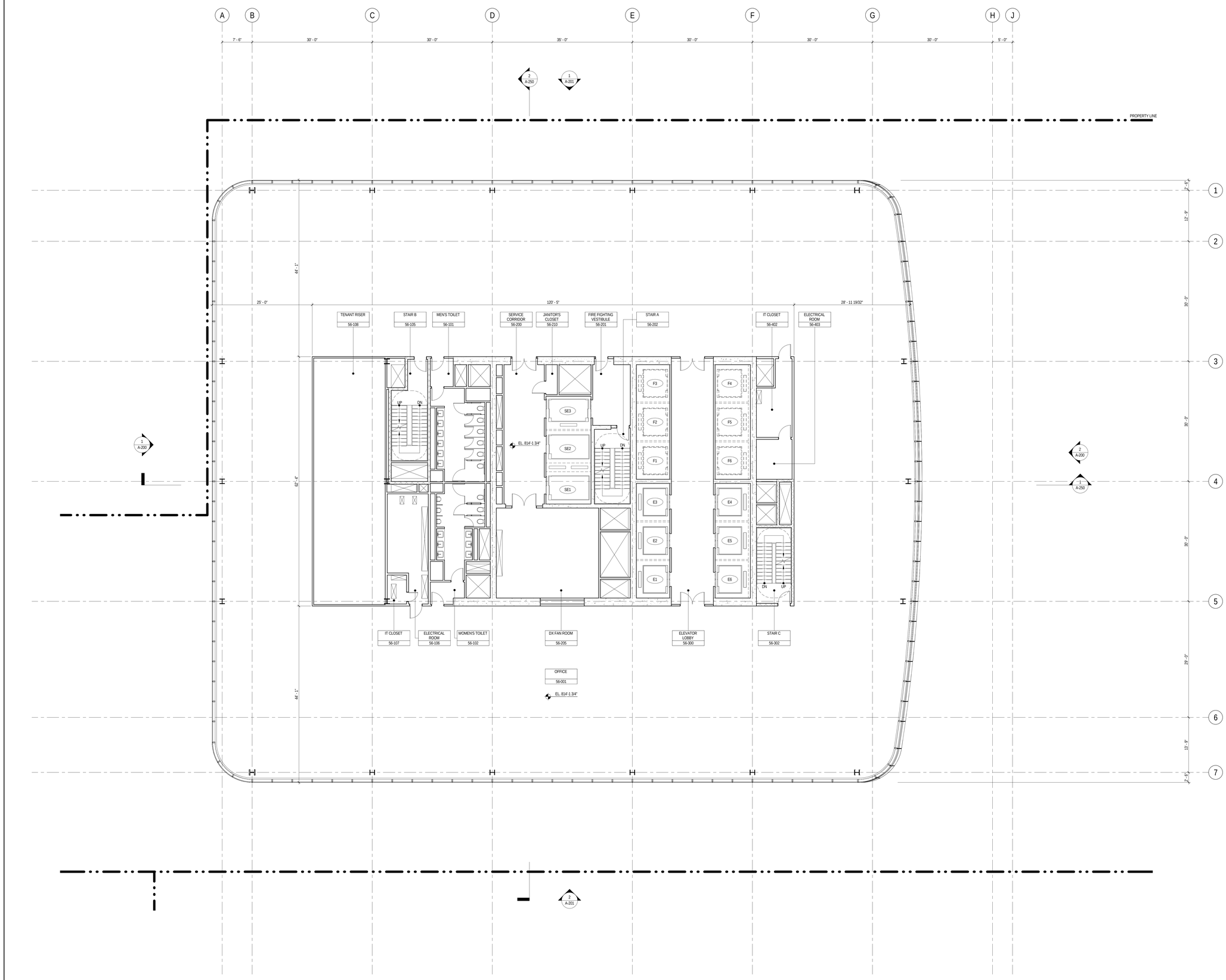

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MANHATTAN WEST: NORTH TOWER

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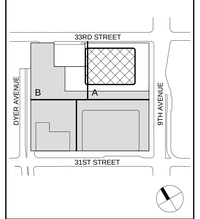

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 56 FLOOR PLAN - HIGH-RISE

Project No.: 207120	B-SCAN Sheet No.: A-156.00
Date: 20 JUN 2014	Sheet No.: A-156
Scale: 1/8" = 1'-0"	
File No.: A-156	Page No.: 49 OF 87

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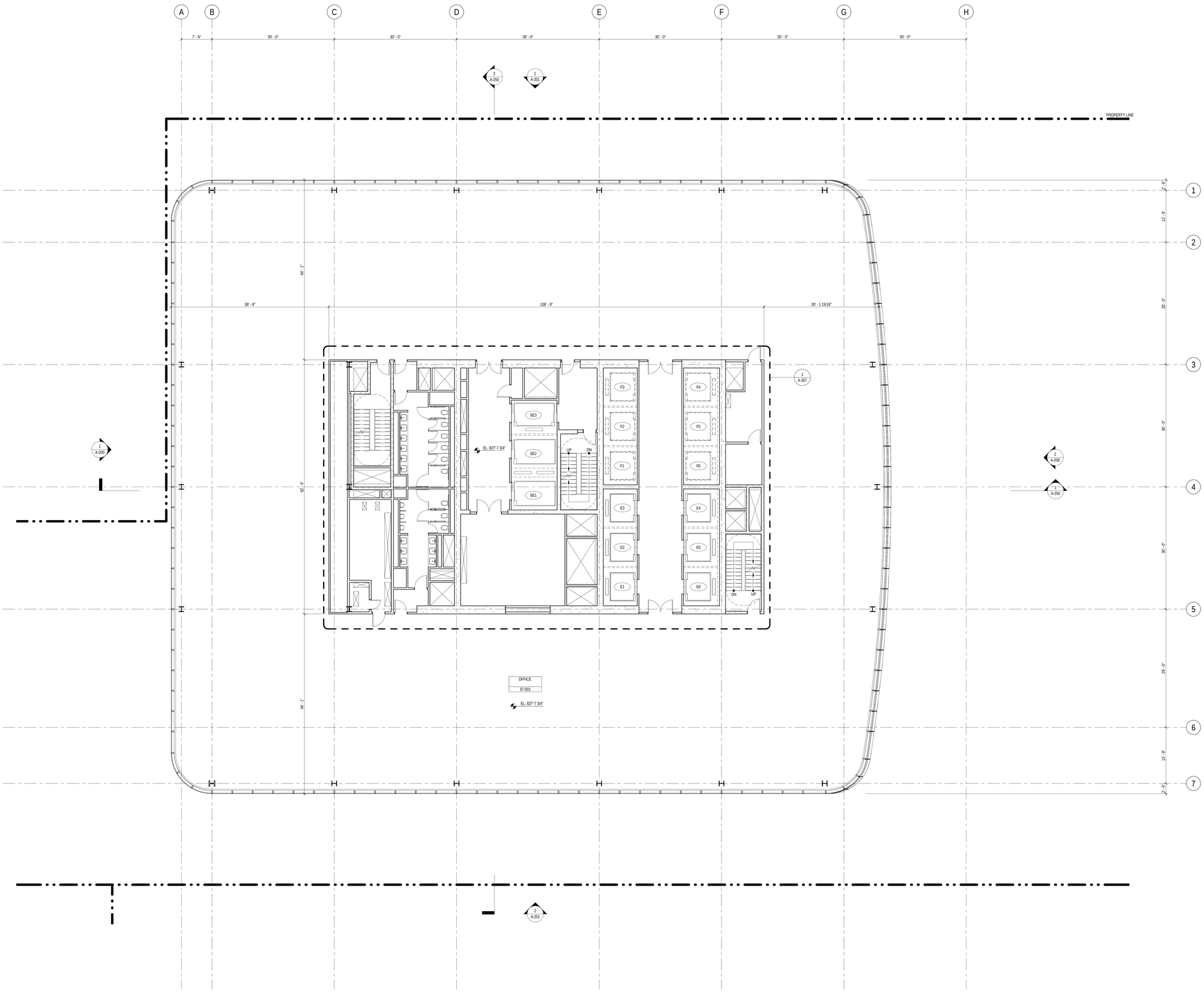
SHEET OF BLOCK 271.01.143 Job Number

E500-F230810 Scan Code



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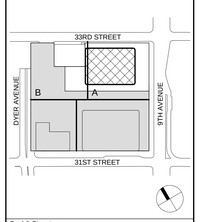

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Sheet Name:

LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE

Project No.: 207120	B-SCAN Sheet No.: A-157.00
Date: 20 JUN 2014	Sheet No.: A-157
Scale: 1/8" = 1'-0"	
File No.: A-157	Page No.: 50 OF 87

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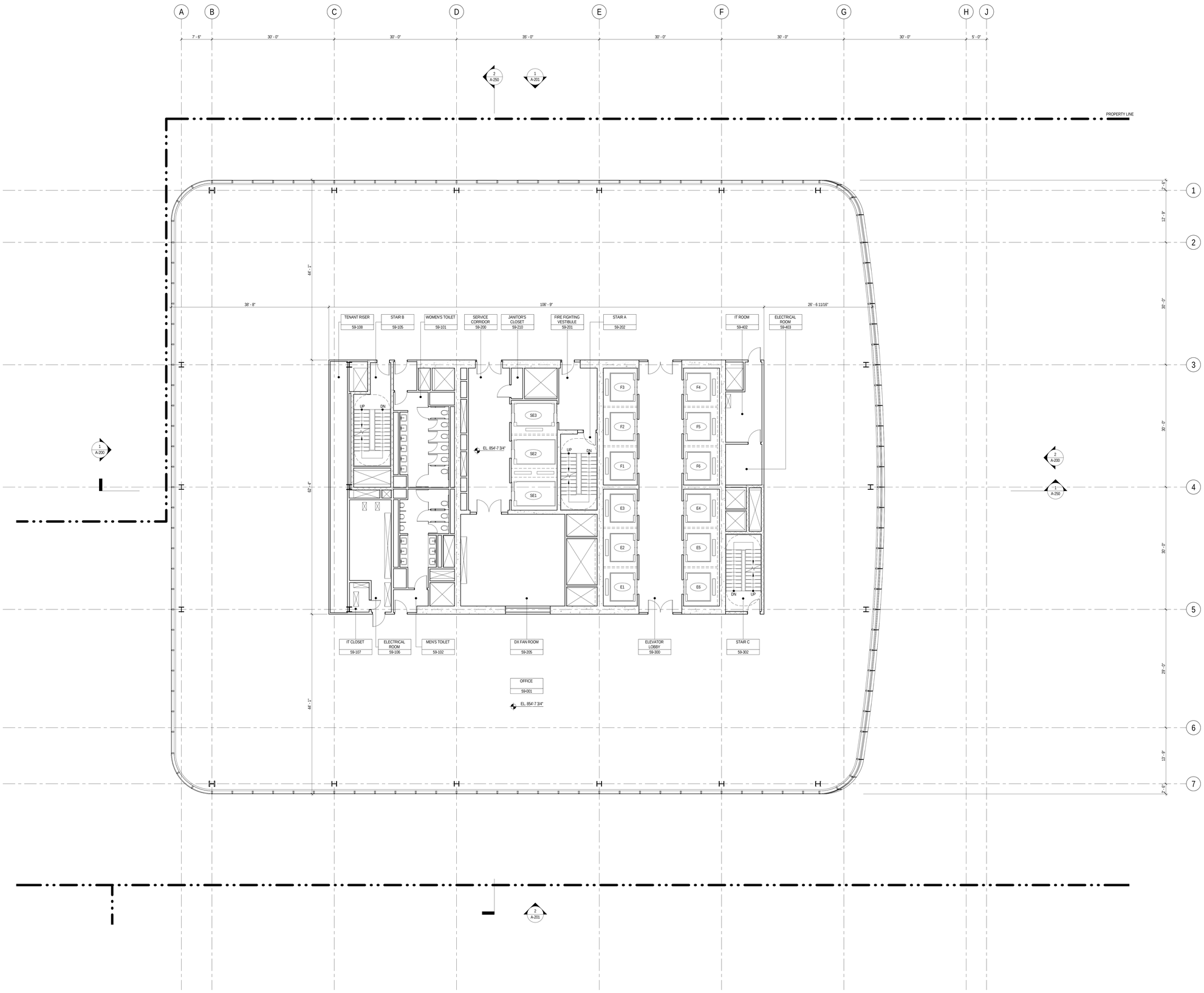
SHEET OF BLOCK 1211 F143 Job Number E5386459915 Scan Code



SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

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9. FOR STRUCTURAL COLUMNS, EDGE OF SLAB, AND CORE WORK POINTS SEE STRUCTURAL SERIES DRAWINGS, UNO.

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MANHATTAN WEST: NORTH TOWER

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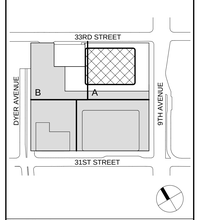
Key Plan:



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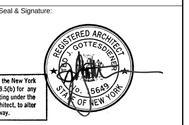

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 59 FLOOR PLAN - HIGH-RISE

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: A-159

B-SCAN Sheet No.: A-159.00

Sheet No.: A-159

Page No.: 51 OF 87

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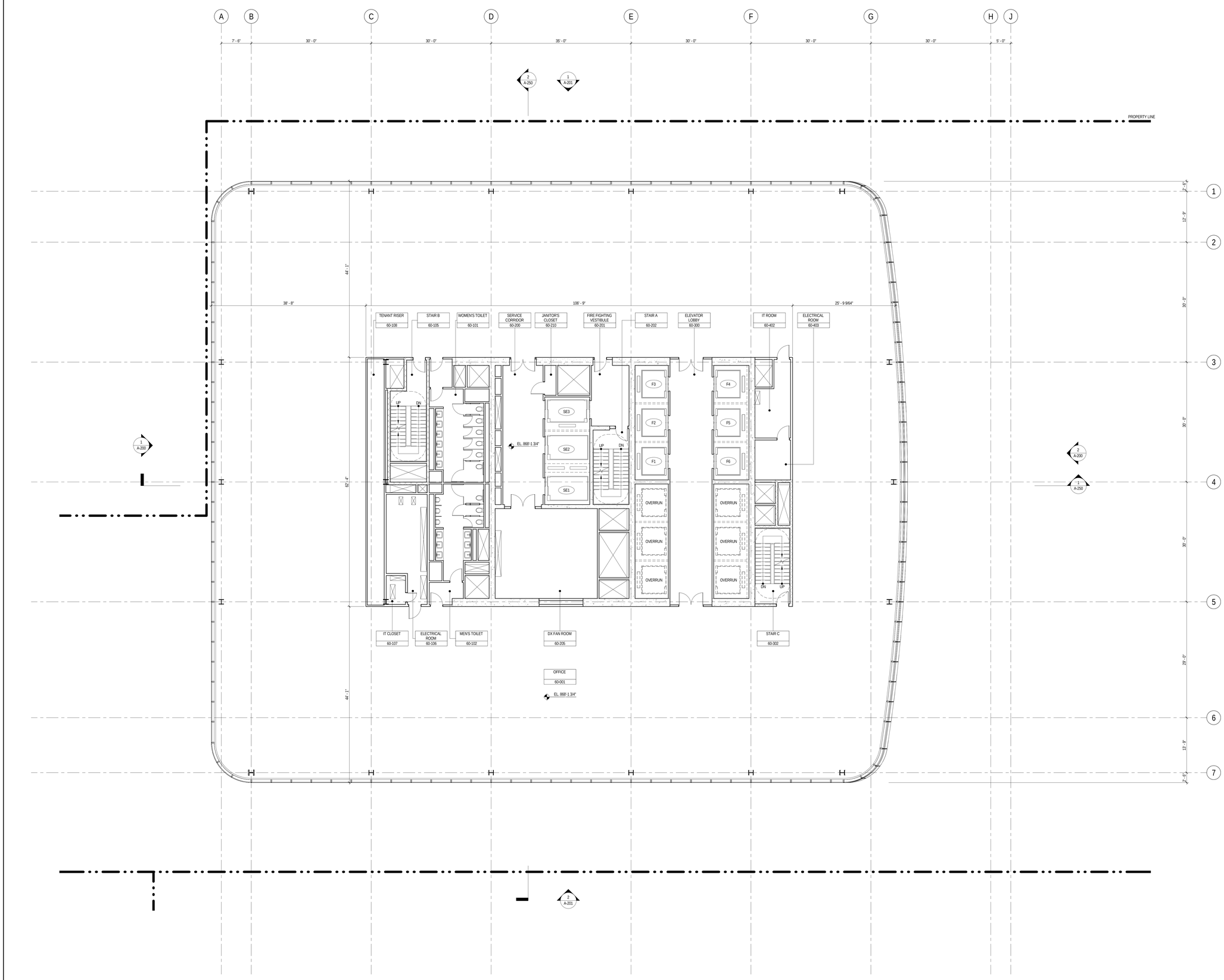
SHEET OF BLOCK 1211.01.143 Job Number
E.5999/X32081 Scan Code



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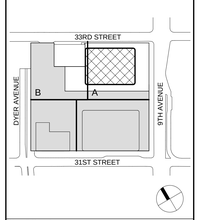

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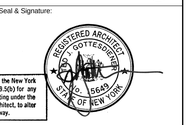

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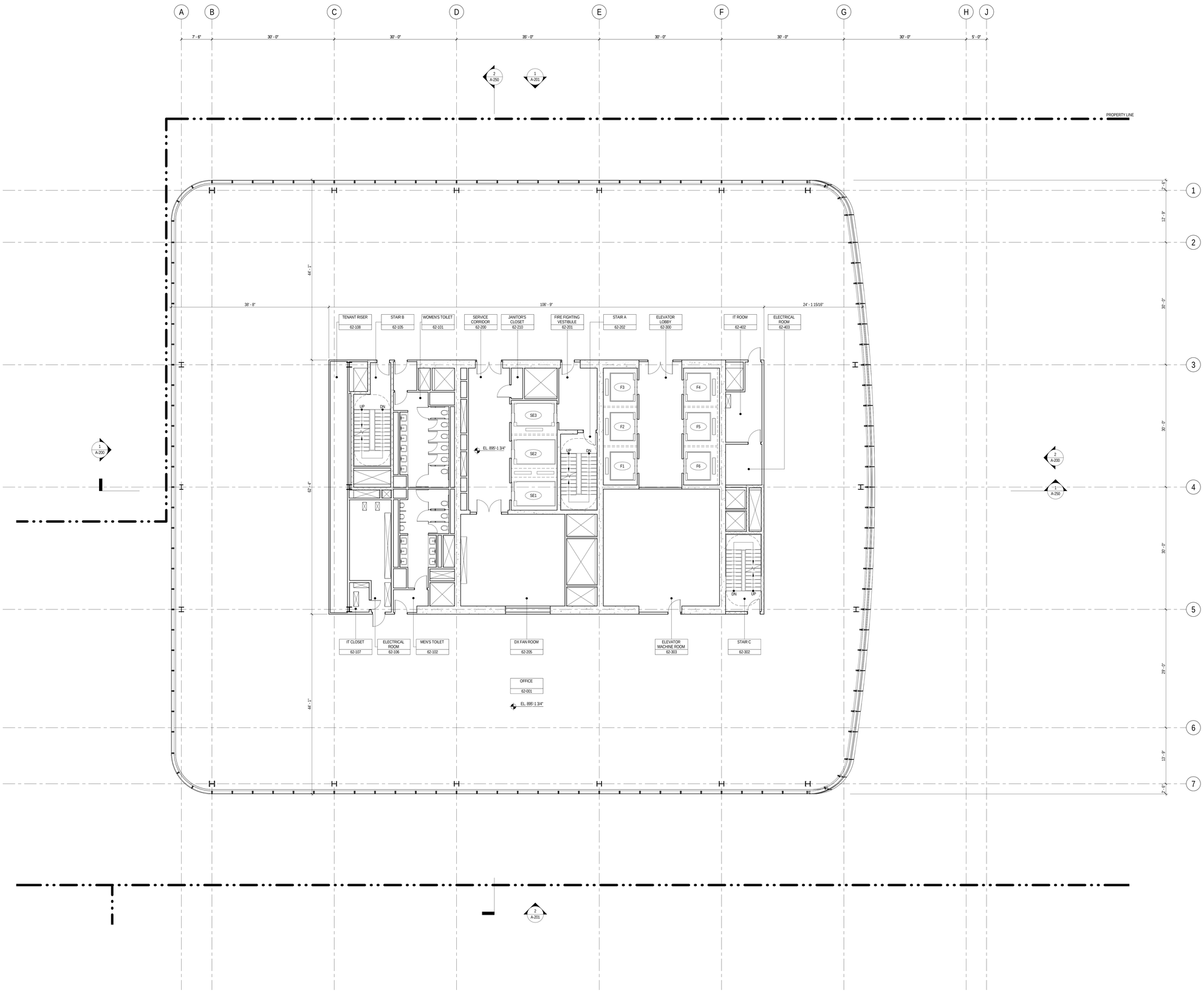
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN

Project No.: 207120	B-SCAN Sheet No.: A-160.00
Date: 20 JUN 2014	Sheet No.: A-160
Scale: 1/8" = 1'-0"	
File No.: A-160	Page No.: 52 OF 87

6/18/2014 11:56:28 PM



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MANHATTAN WEST: NORTH TOWER

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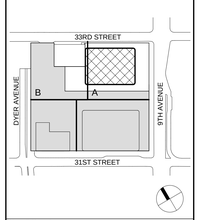
Key Plan:



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REGISTERED ARCHITECT
ROY J. GOTTESDIENER
NO. 5649
STATE OF NEW YORK

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 62 FLOOR PLAN - HIGH-RISE EMR

Project No.: 207120	B-SCAN Sheet No.: A-162.00
Date: 20 JUN 2014	Sheet No.: A-162
Scale: 1/8" = 1'-0"	
File No.: A-162	Page No.: 53 OF 87

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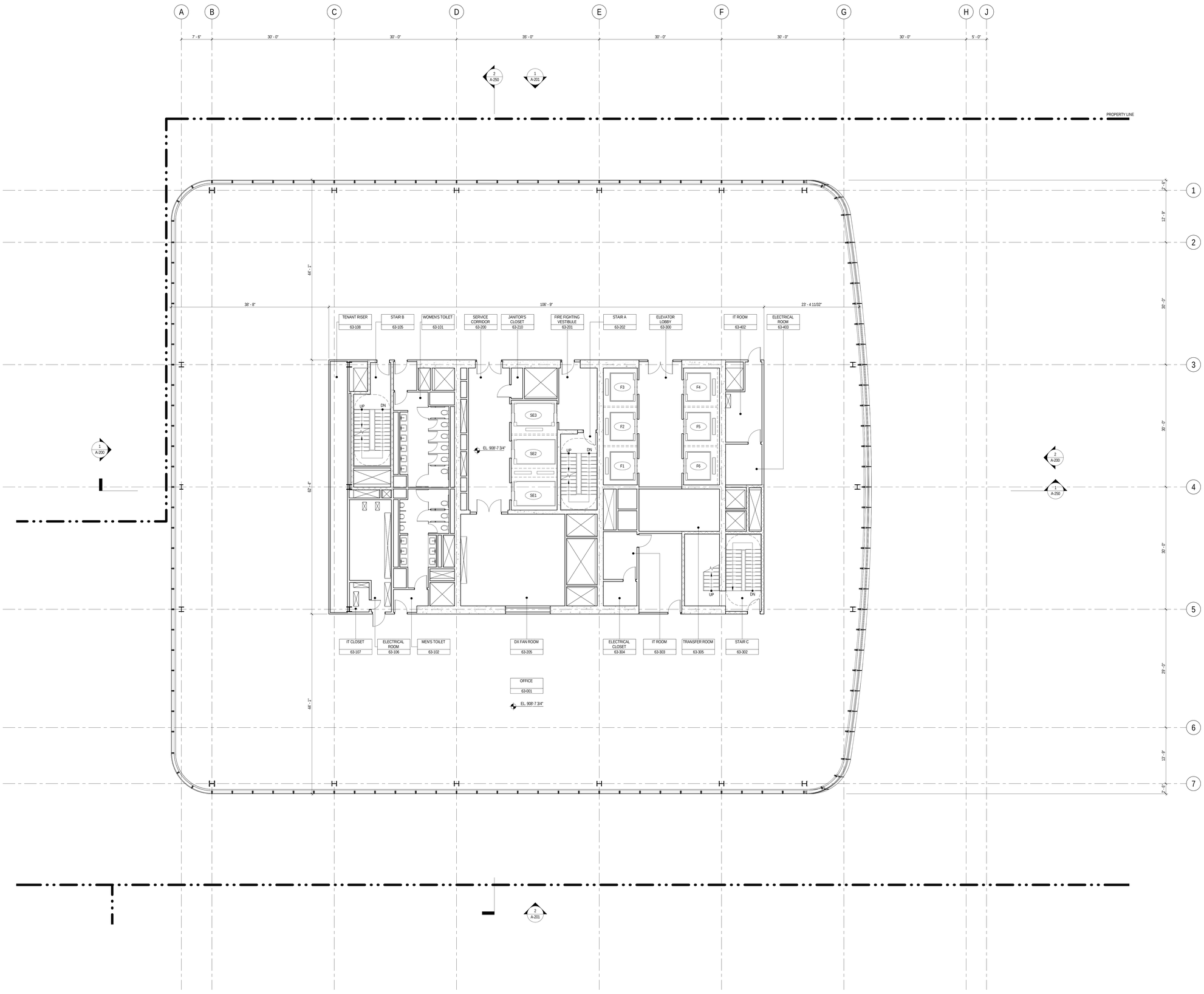
SHEET OF BLOCK 1211914 Job Number E5290C0249R Scan Code



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MANHATTAN WEST: NORTH TOWER

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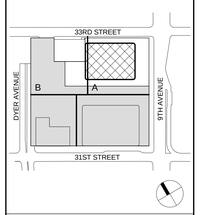

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REGISTERED ARCHITECT
JOHN DOTTERWEICH
No. 15649
STATE OF NEW YORK

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Sheet Name:

LEVEL 63 FLOOR PLAN - HIGH-RISE

Project No.: 207120	B-SCAN Sheet No.: A-163.00
Date: 20 JUN 2014	Sheet No.: A-163
Scale: 1/8" = 1'-0"	
File No.: A-163	Page No.: 54 OF 87

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SHEET OF BLOCK 271197143 Job Number

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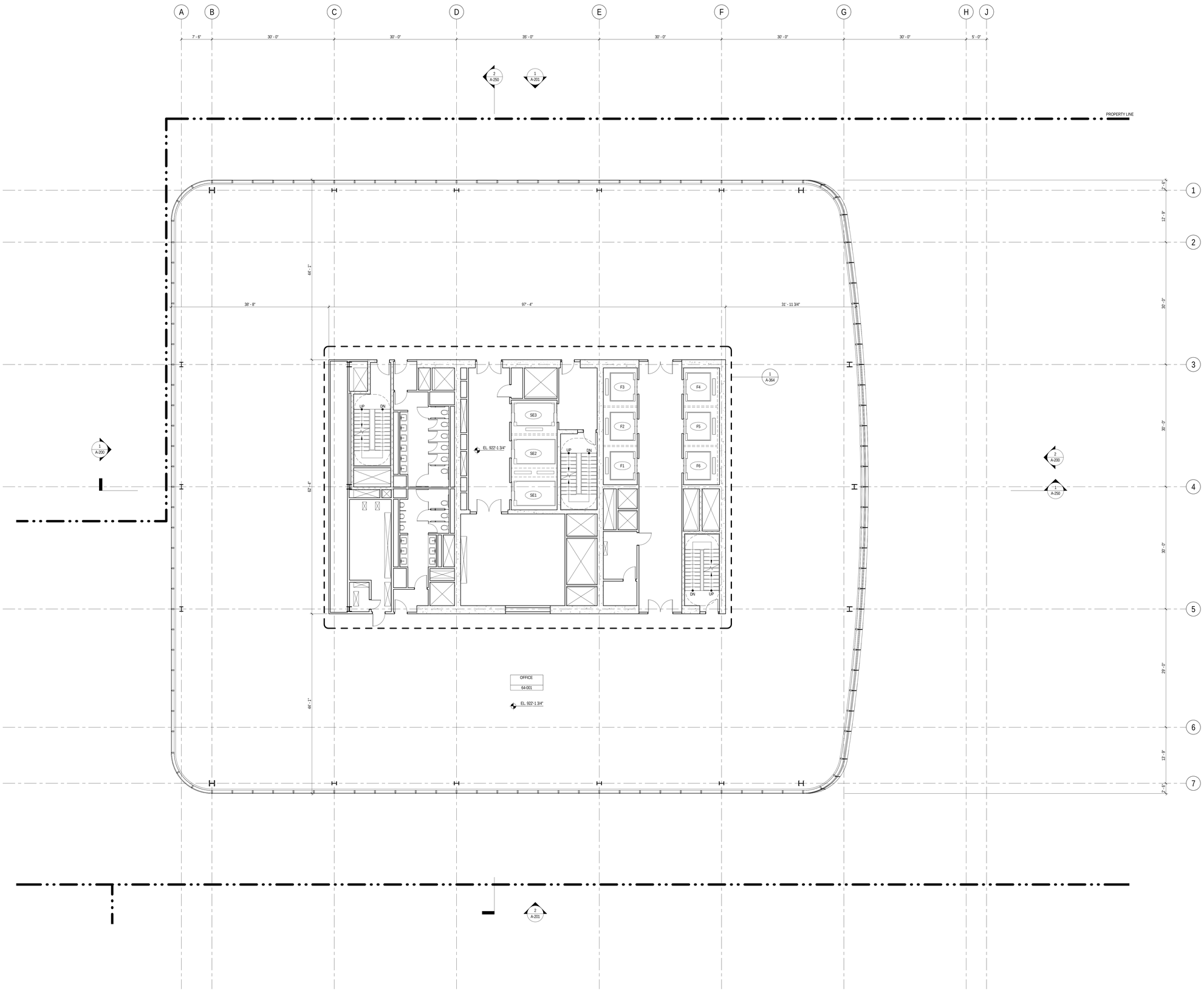

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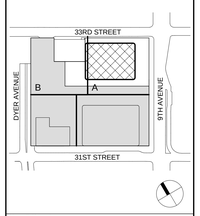

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Sheet Name:

LEVEL 64-67 FLOOR PLAN - TYPICAL HIGH-RISE

Project No.: 207120	B-SCAN Sheet No.: A-164.00
Date: 20 JUN 2014	Sheet No.: A-164
Scale: 1/8" = 1'-0"	
File No.: A-164	Page No.: 55 OF 87

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SHEET OF BLOCK 271197143 Job Number

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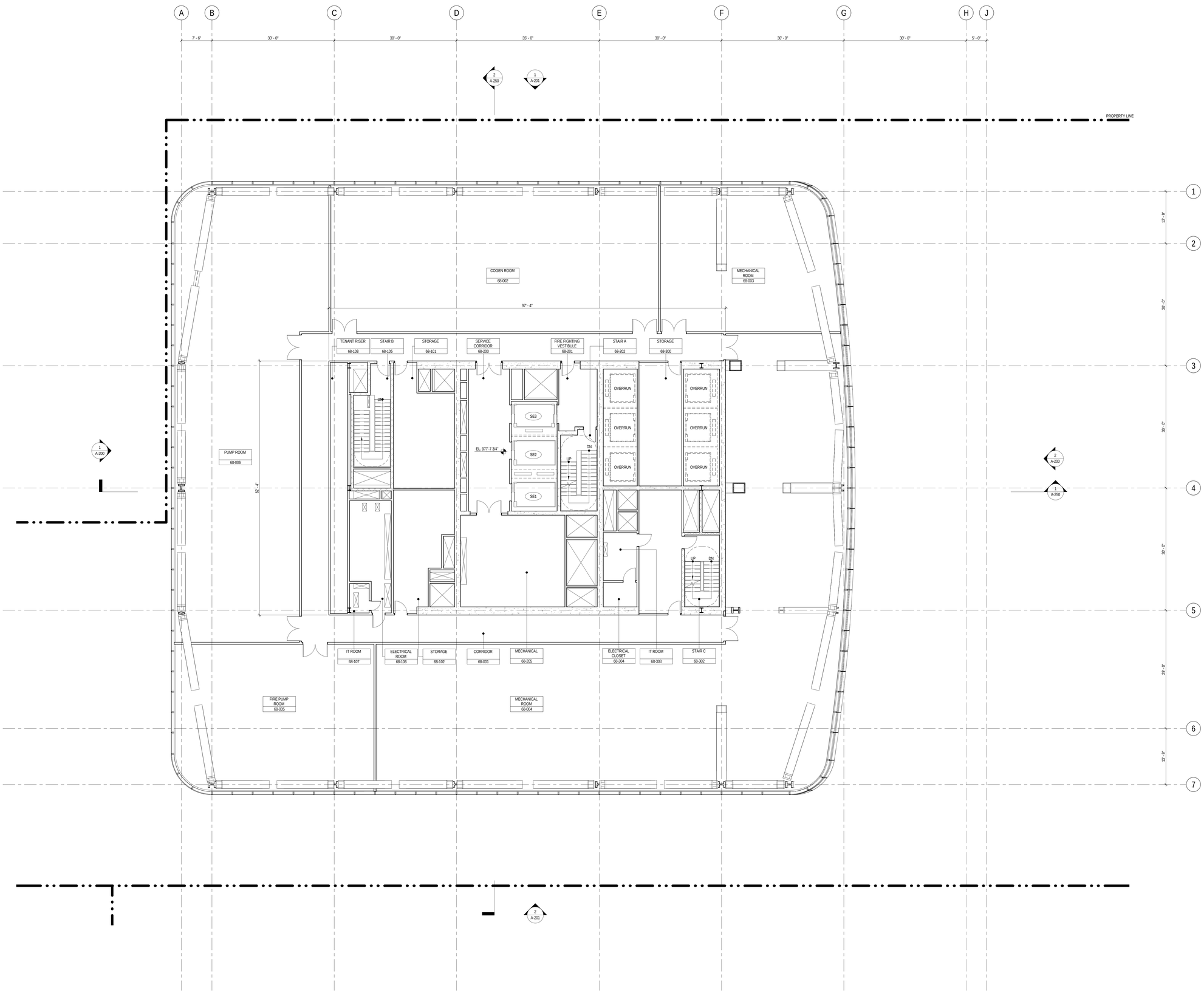

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4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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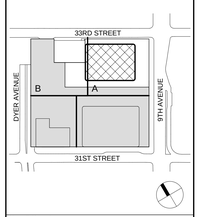
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
SCOTT EDWARDS
No. 026643
STATE OF NEW YORK

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 68 FLOOR PLAN - MECHANICAL

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: A-168

B-SCAN Sheet No.: A-168.00

Sheet No.: A-168

Page No.: 56 OF 87

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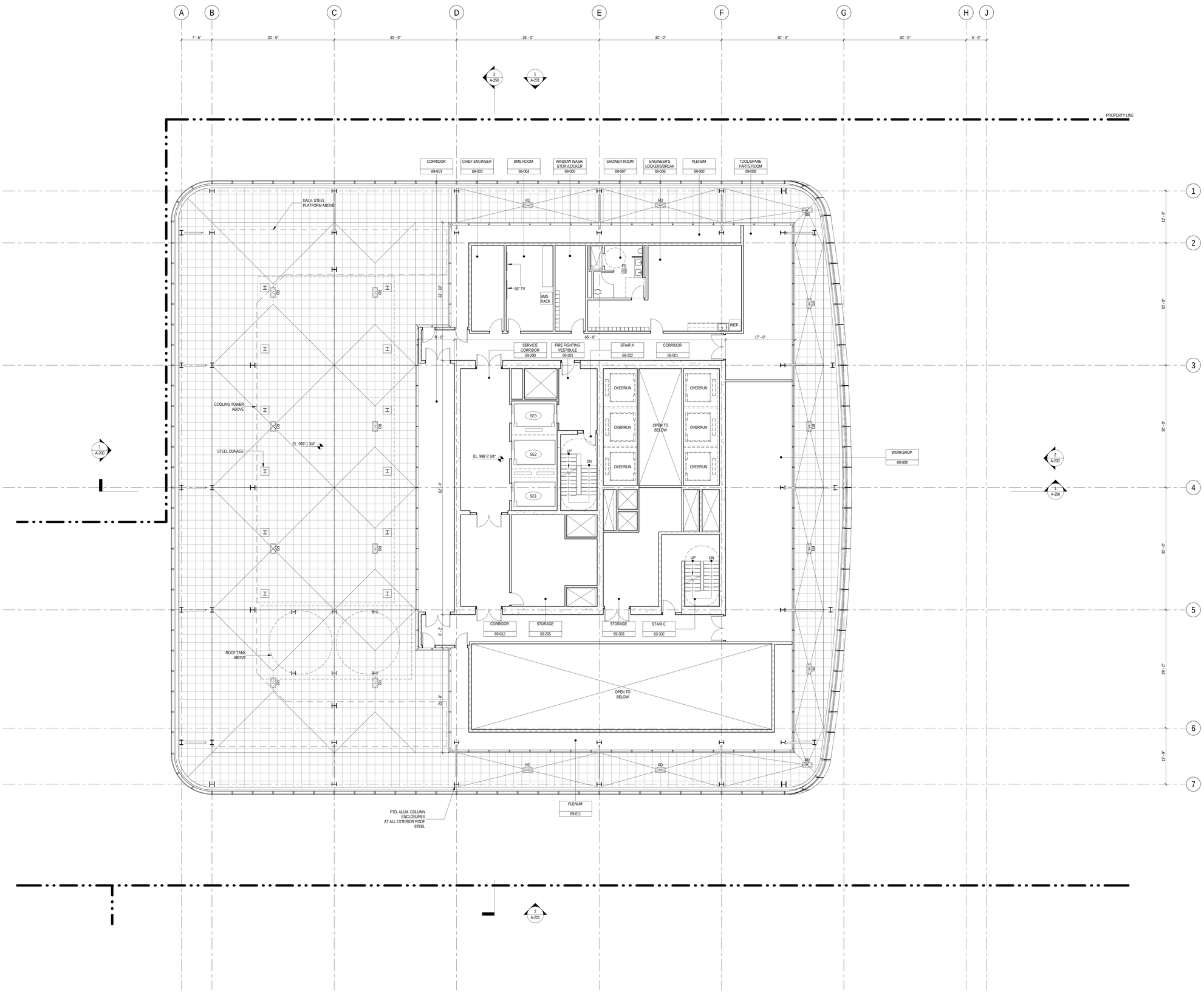

SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVB8).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

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MANHATTAN WEST: NORTH TOWER

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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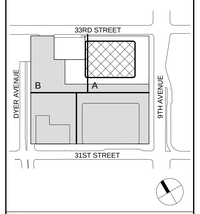

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

LEVEL 69 FLOOR PLAN - MECHANICAL

Project No.: 207120	B-SCAN Sheet No.: A-169.00
Date: 20 JUN 2014	Sheet No.: A-169
Scale: 1/8" = 1'-0"	
File No.: A-169	Page No.: 57 OF 87

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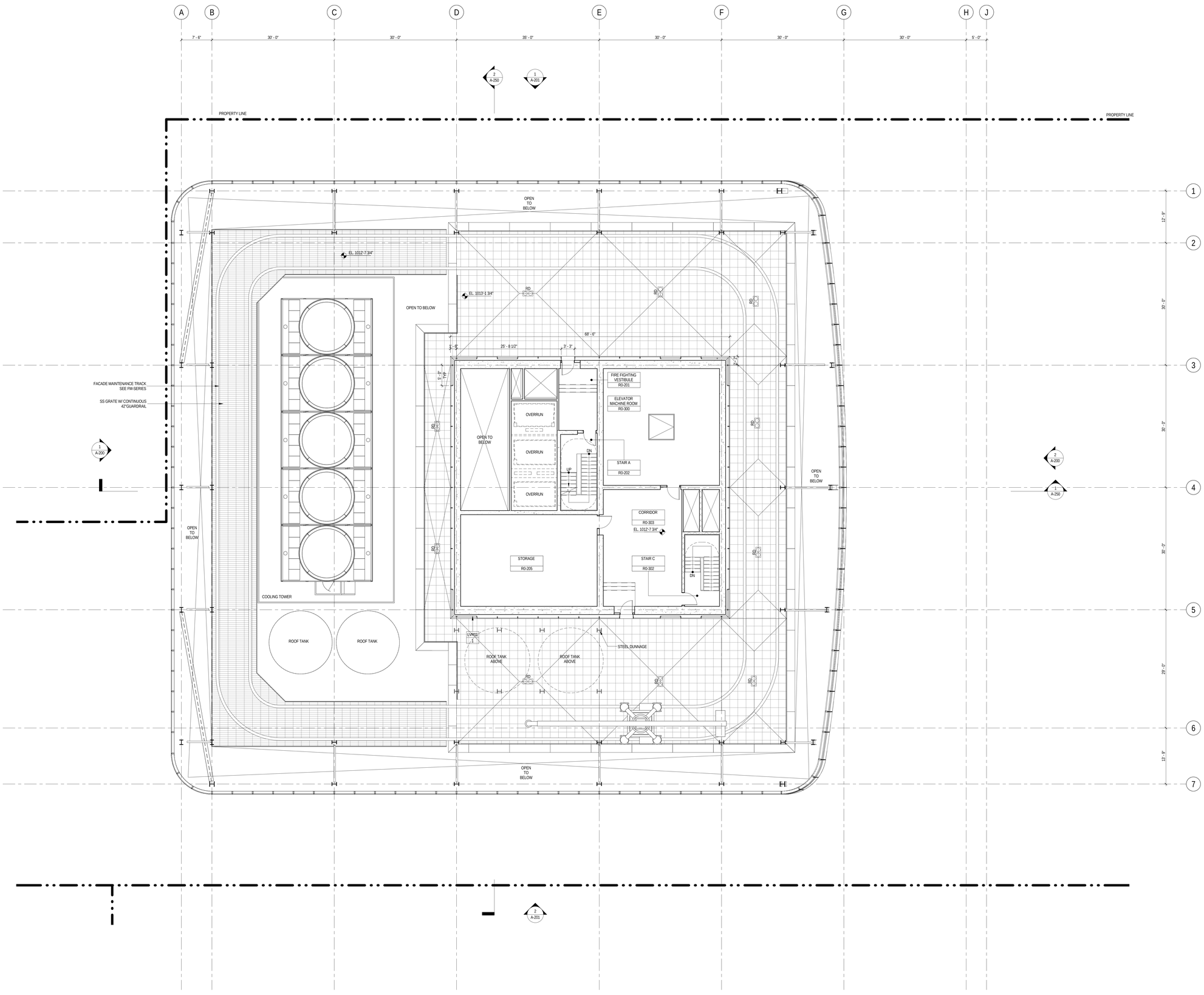

SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

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MANHATTAN WEST: NORTH TOWER

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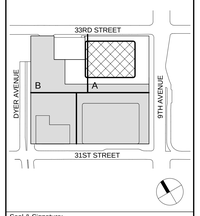

Seal & Signature:

REGISTERED ARCHITECT
CHRISTOPHER J. GOTTESMAN
STATE OF NEW YORK
No. 5648

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

ROOF PLAN - MECHANICAL PENTHOUSE

Project No.: 207120	B-SCAN Sheet No.: A-170.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-170
File No.: A-170	Page No.: 58 OF 87

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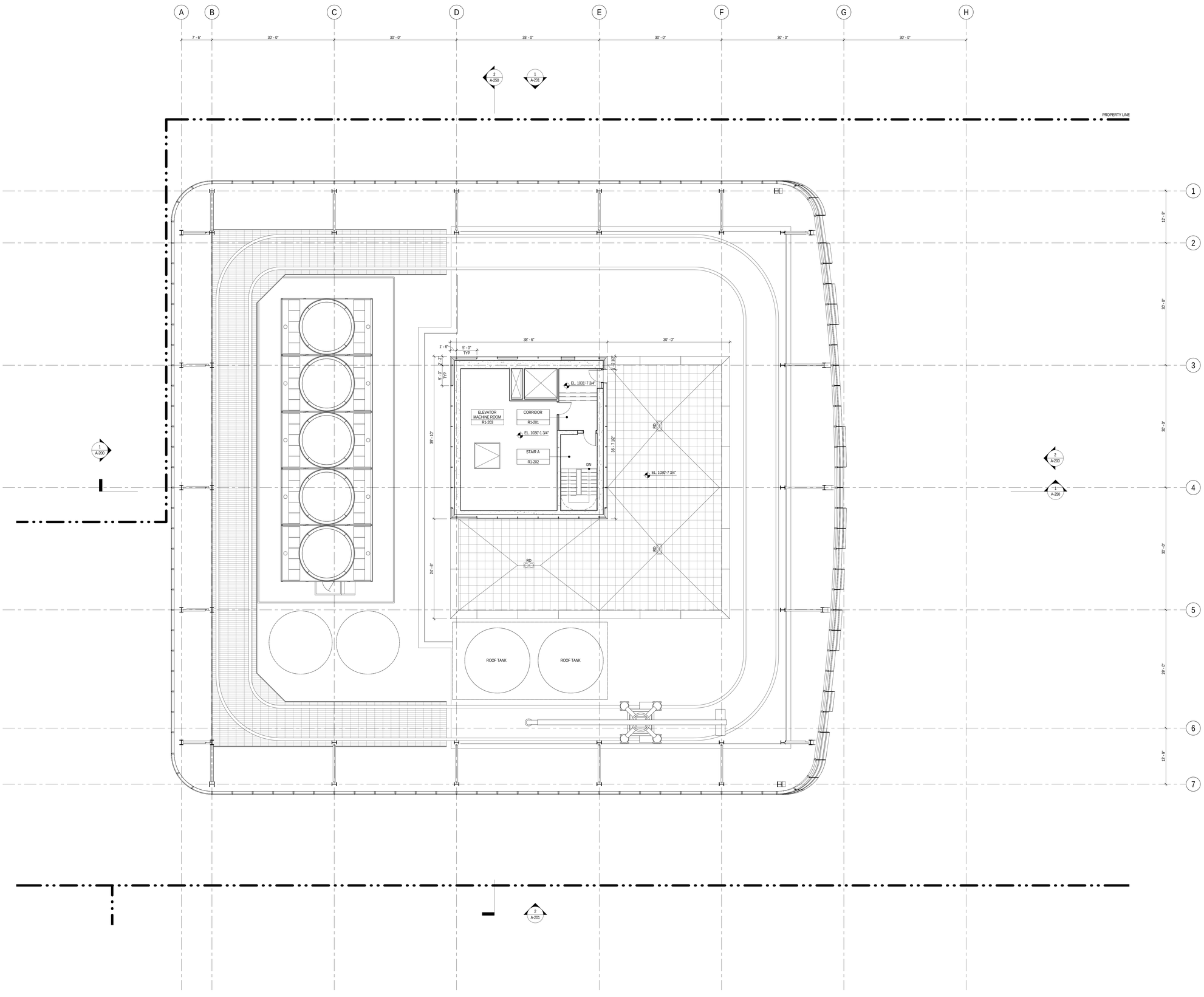

SHEET NOTES

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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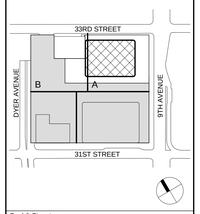

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Sheet Name:

ROOF PLAN - MECHANICAL PENTHOUSE ROOF

Project No.: 207120	B-SCAN Sheet No.: A-171.00
Date: 20 JUN 2014	Sheet No.: A-171
Scale: 1/8" = 1'-0"	
File No.: A-171	Page No.: 99 OF 87

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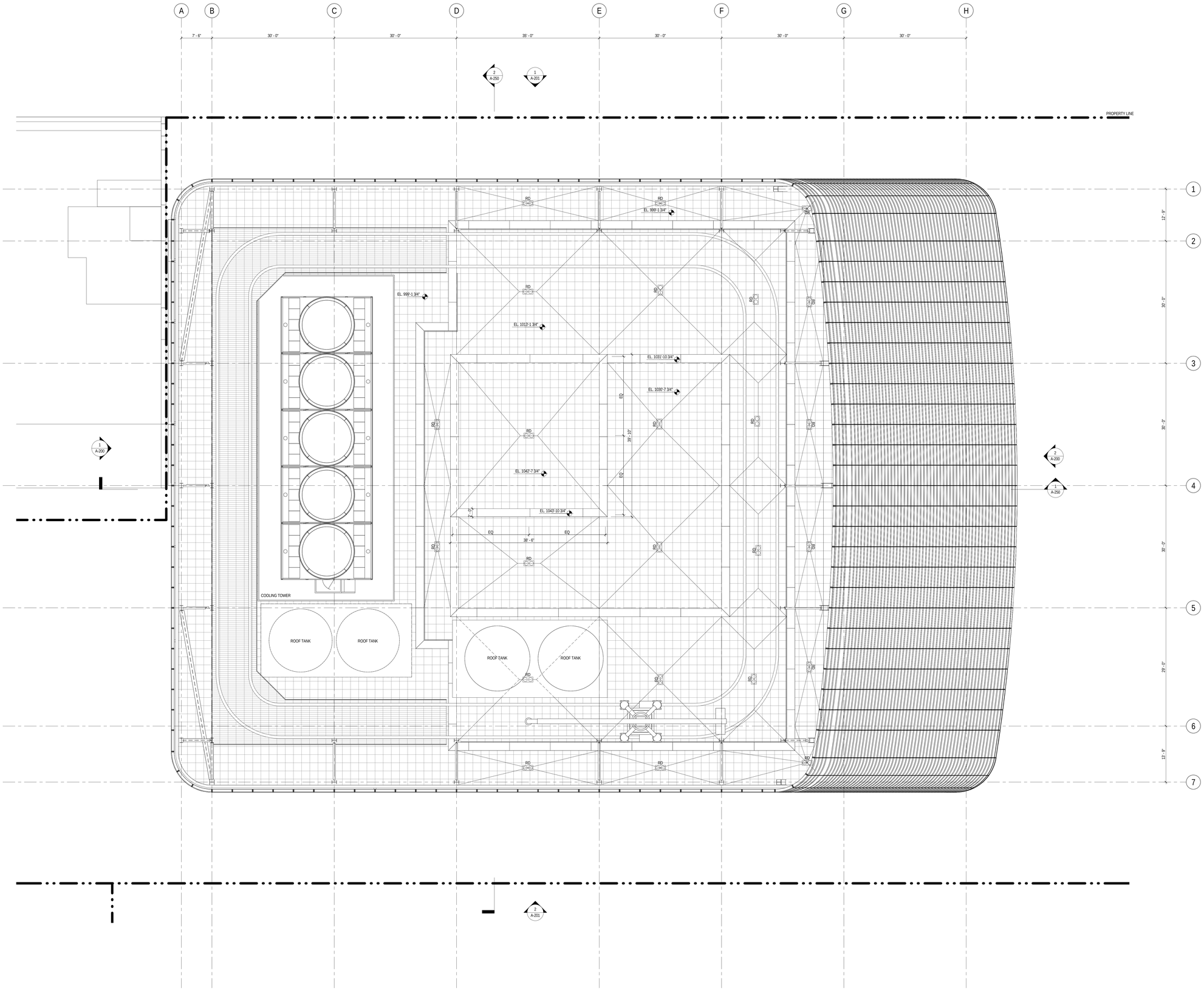

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MANHATTAN WEST: NORTH TOWER

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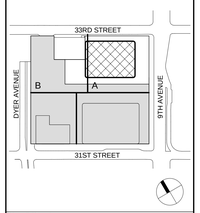

Seal & Signature:

REGISTERED ARCHITECT
ROY J. GOTTESDIENER
No. 5649
STATE OF NEW YORK

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Sheet Name:

ROOF PLAN

Project No.: 207120	B-SCAN Sheet No.: A-172.00
Date: 20 JUN 2014	Sheet No.: A-172
Scale: 1/8" = 1'-0"	
File No.: A-172	Page No.: 60 OF 87

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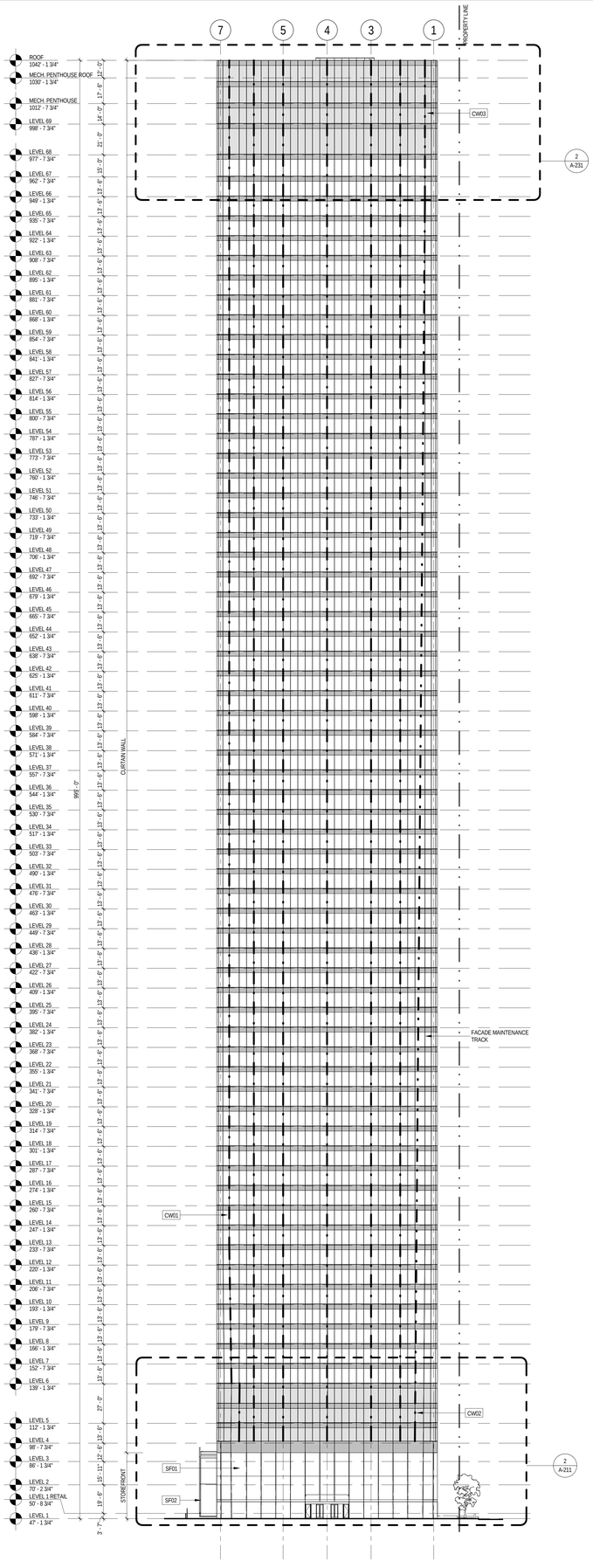
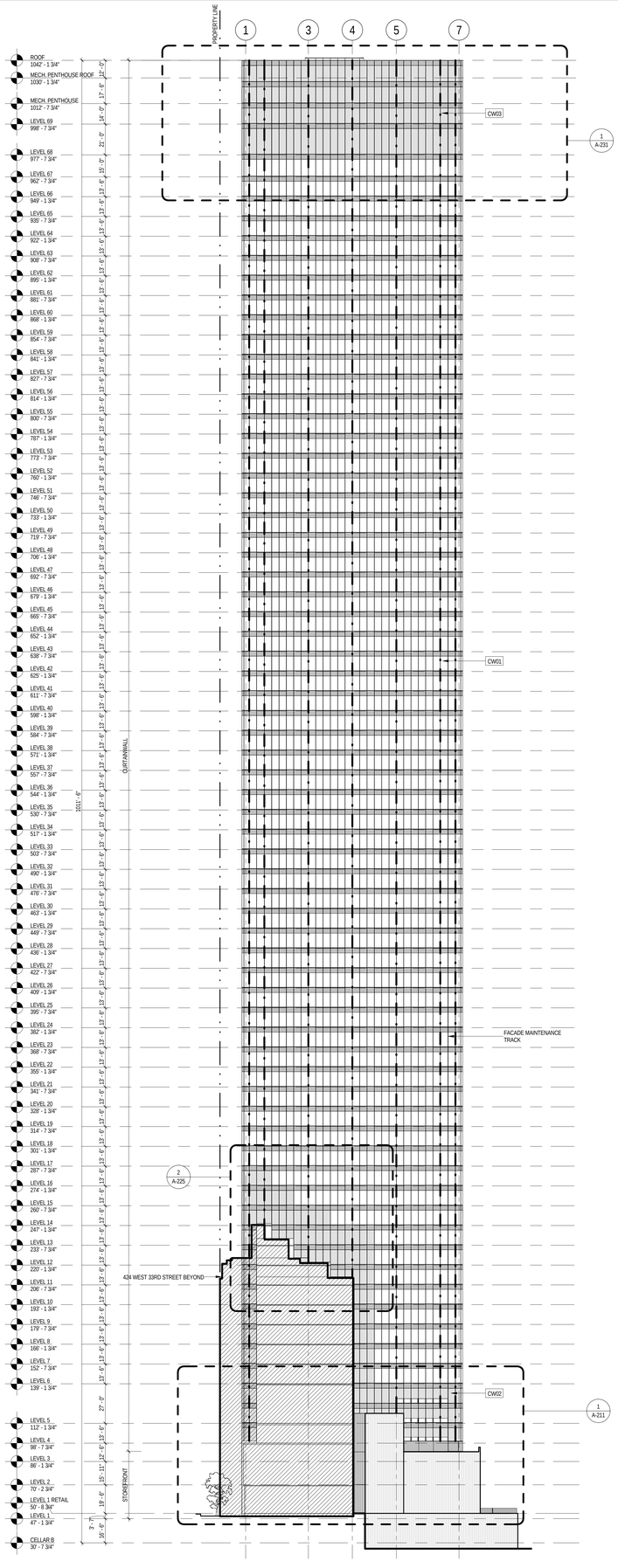


2 EAST BUILDING ELEVATION

SCALE: 1/32" = 1'-0"



1 WEST BUILDING ELEVATION

SCALE: 1/32" = 1'-0"

SHEET NOTES

1. SEE 500 SERIES FOR ENCLOSURE DETAILS
2. ALL DOCUMENTATION OF 424 WEST 33RD STREET IS PRELIMINARY. VERIFY EXISTING CONDITIONS.
3. VERIFY EXISTING CONDITIONS OF ADJACENT LOFT BUILDING. LOCATION OF FOUNDATION WALL AND EXTENT OF CURTAIN WALL SEPARATIONS TO BE VERIFIED IN FIELD.
4. SEE FM-SERIES FOR FACADE MAINTENANCE DETAILS.

LEGEND

SHADOW BOX 1

SHADOW BOX 2

MANHATTAN WEST: NORTH TOWER

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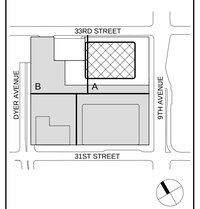
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
JOHN P. GOTTESMAN
STATE OF NEW YORK
No. 5649

Warning: It is a violation of the New York State Architecture Law, §69.5(b) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
7	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

BUILDING ELEVATIONS

Project No.: 207120

Date: 12 SEPT 2014

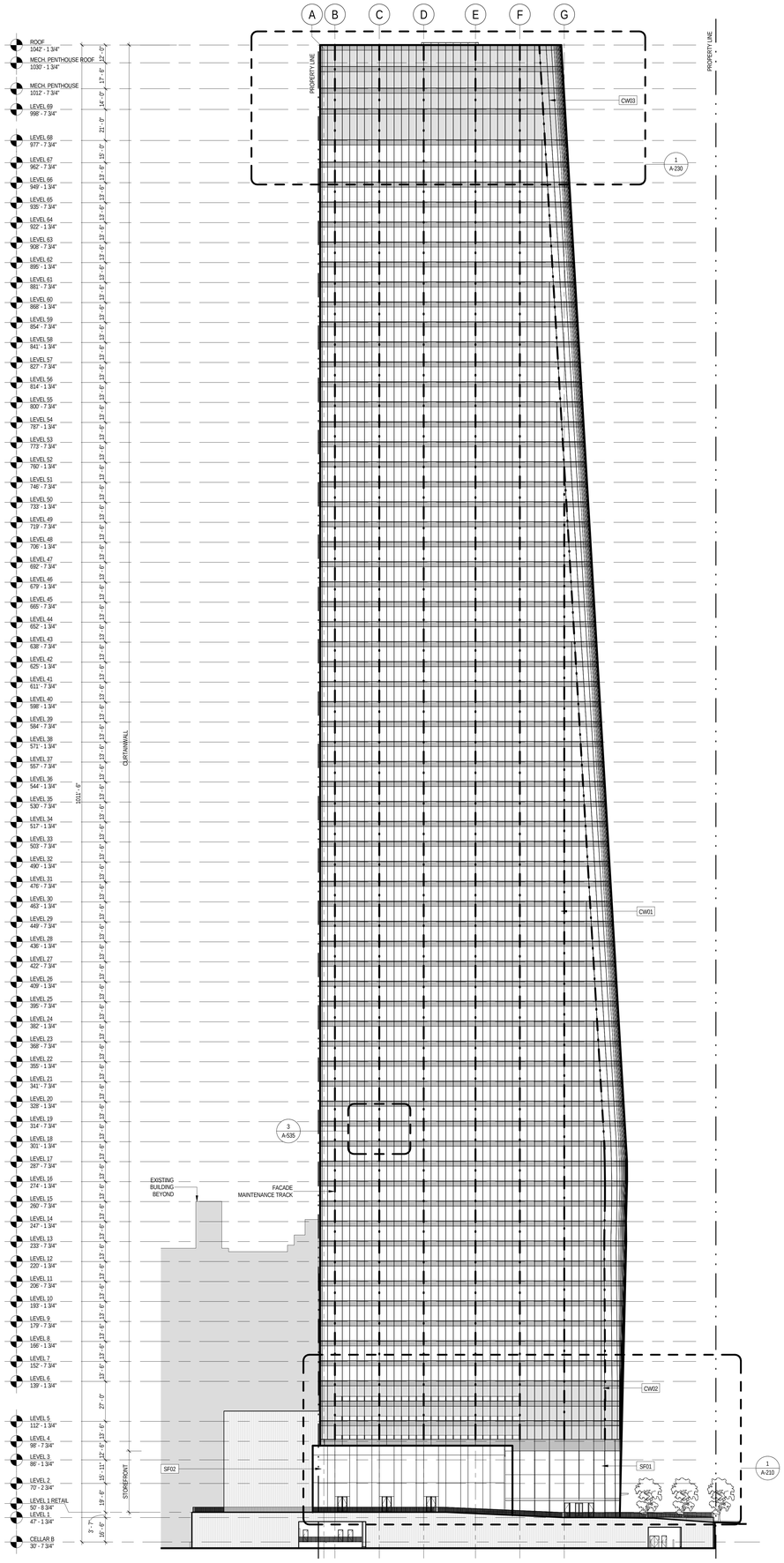
Scale: 1/32" = 1'-0"

File No.: A-200

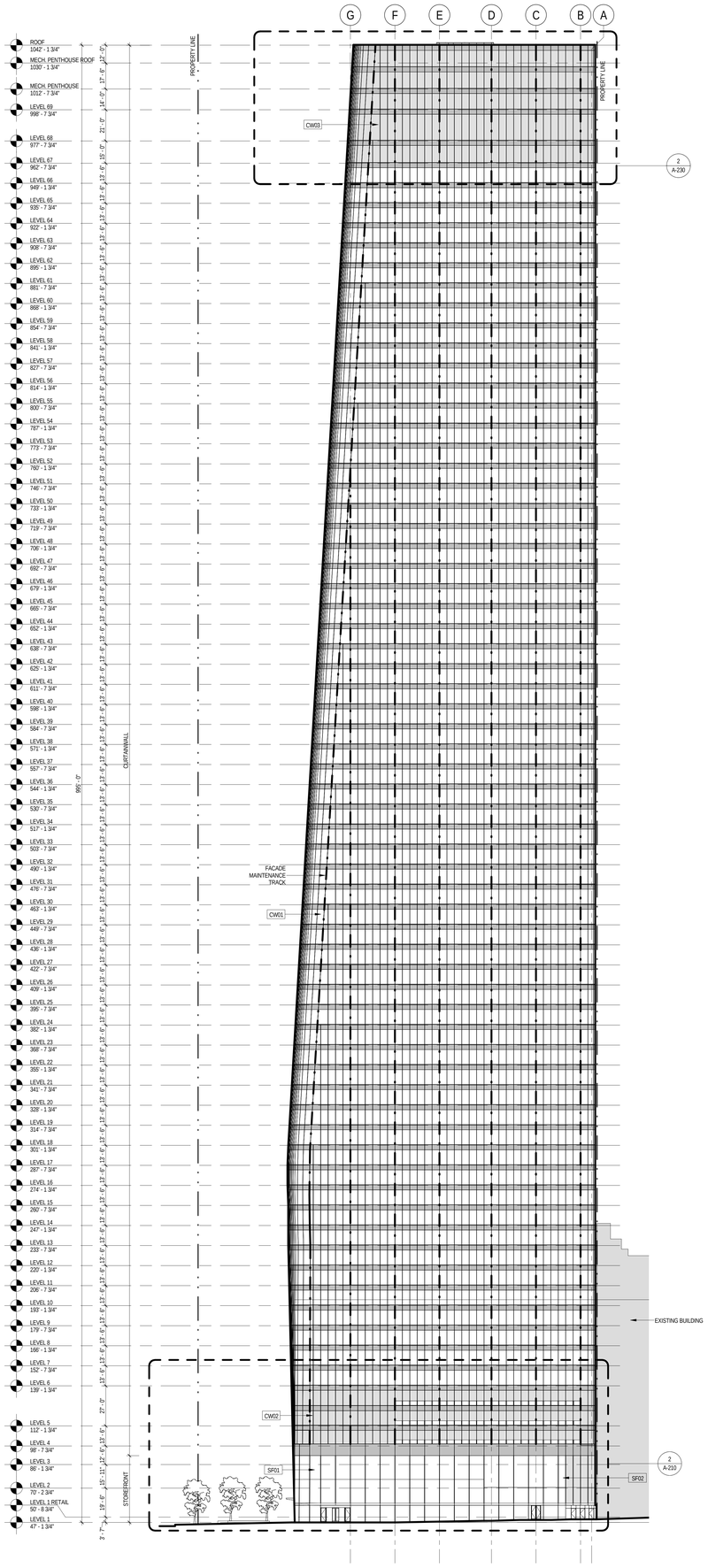
B-SCAN Sheet No.: A-200.00

Sheet No.: A-200

Page No.: 61 OF 30



2 SOUTH BUILDING ELEVATION
SCALE: 1/32" = 1'-0"



1 NORTH BUILDING ELEVATION
SCALE: 1/32" = 1'-0"

SHEET NOTES

1. SEE 500 SERIES FOR ENCLOSURE DETAILS
2. ALL DOCUMENTATION OF 424 WEST 33RD STREET IS PRELIMINARY. VERIFY EXISTING CONDITIONS.
3. VERIFY EXISTING CONDITIONS OF ADJACENT LOFT BUILDING. LOCATION OF FOUNDATION WALL AND EXTENT OF CURTAIN WALL SEPARATIONS TO BE VERIFIED IN FIELD.
4. SEE FM-SERIES FOR FACADE MAINTENANCE DETAILS.

LEGEND
SHADOW BOX 1
SHADOW BOX 2

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
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Skidmore, Owings & Merrill LLP
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Ontario, Canada N1K 1B8

PRELIMINARY
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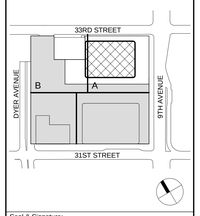
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ROY J. GOTTESMAN
No. 5648
STATE OF NEW YORK

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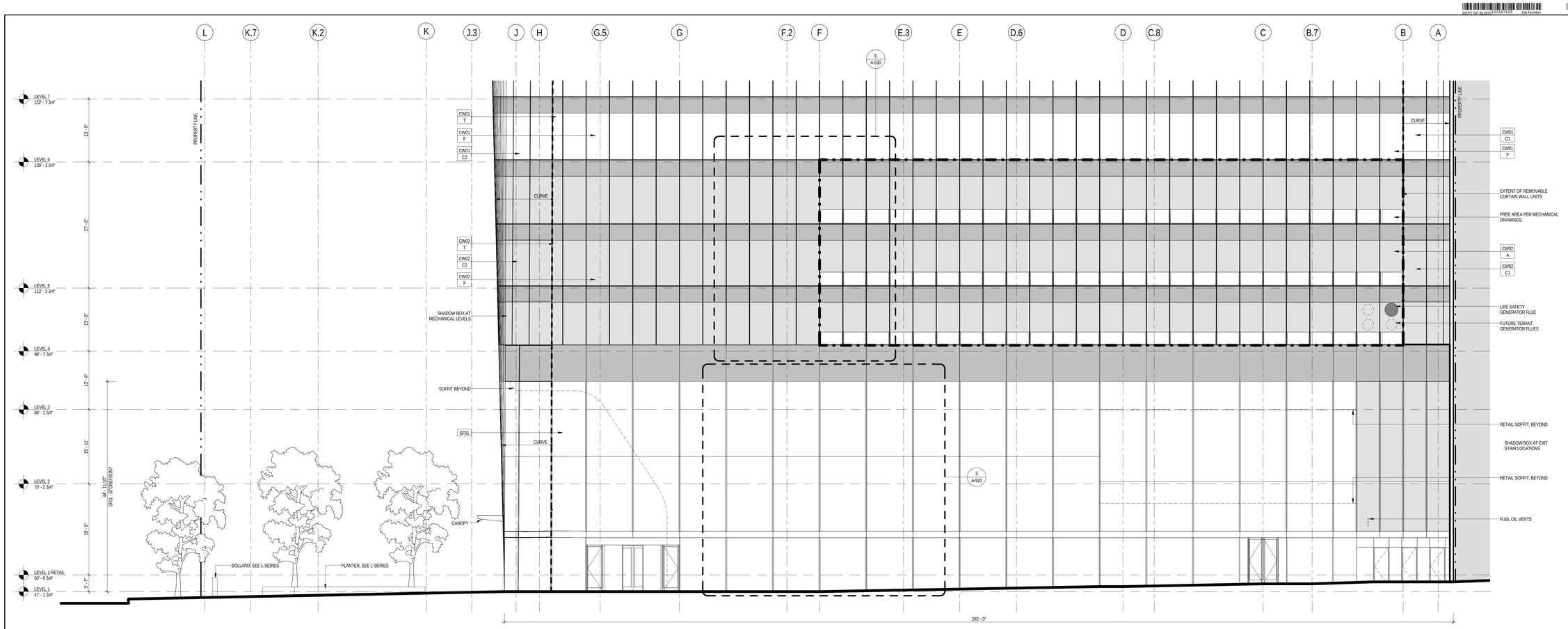
1	15 MAR 2013	ISSUED FOR RECONCILIATION

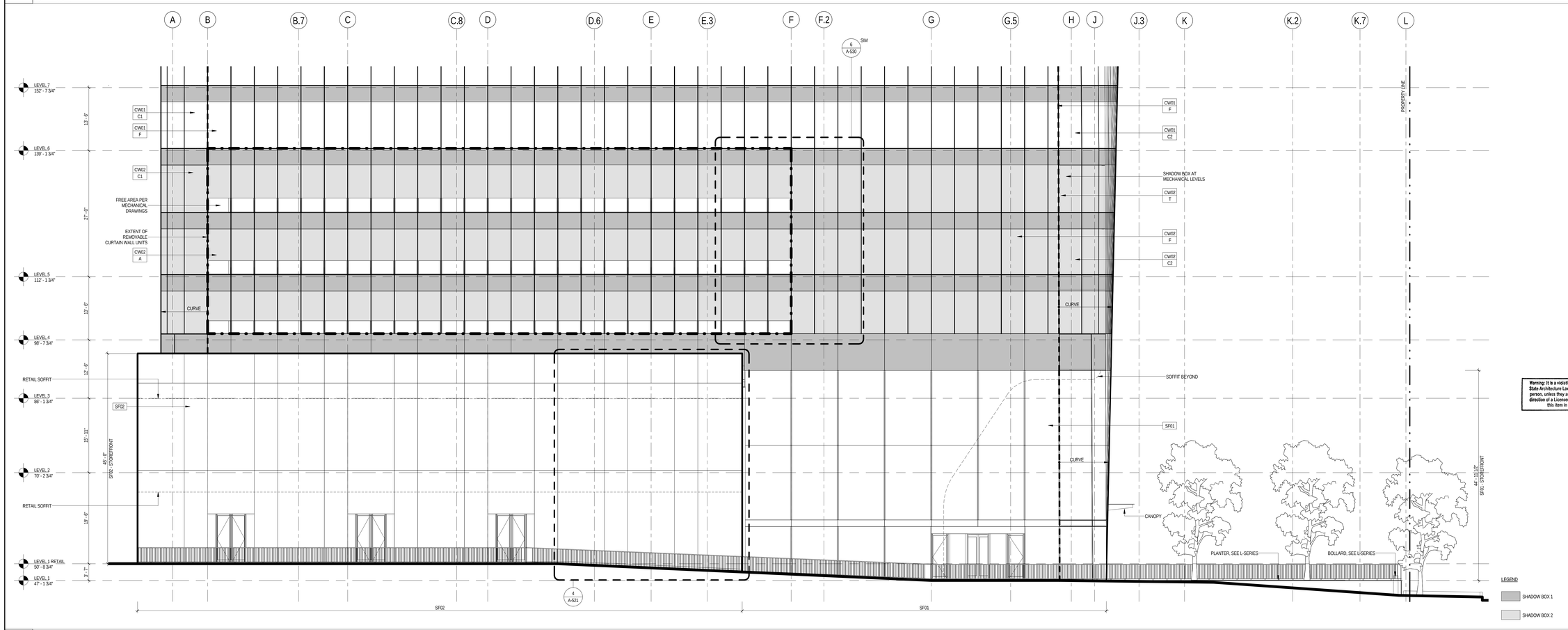
Sheet Name:
BUILDING ELEVATIONS

Project No.: 207120
Date: 12 SEPT 2014
Scale: 1/32" = 1'-0"
File No.: A-201
B-SCAN Sheet No.: A-201.00
Sheet No.: A-201
Page No.: 62 OF 30



2 ENLARGED ELEVATION AT GROUND FLOOR LOOKING SOUTH

SCALE: 1/8" = 1'-0"



1 ENLARGED ELEVATION AT GROUND FLOOR LOOKING NORTH

SCALE: 1/8" = 1'-0"

9/11/2014 5:27:18 PM

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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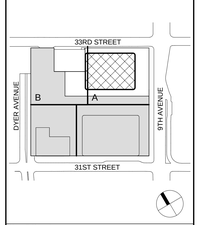

Seal & Signature:

REGISTERED ARCHITECT
GUY J. DOTTERWEICH
No. 15649
STATE OF NEW YORK

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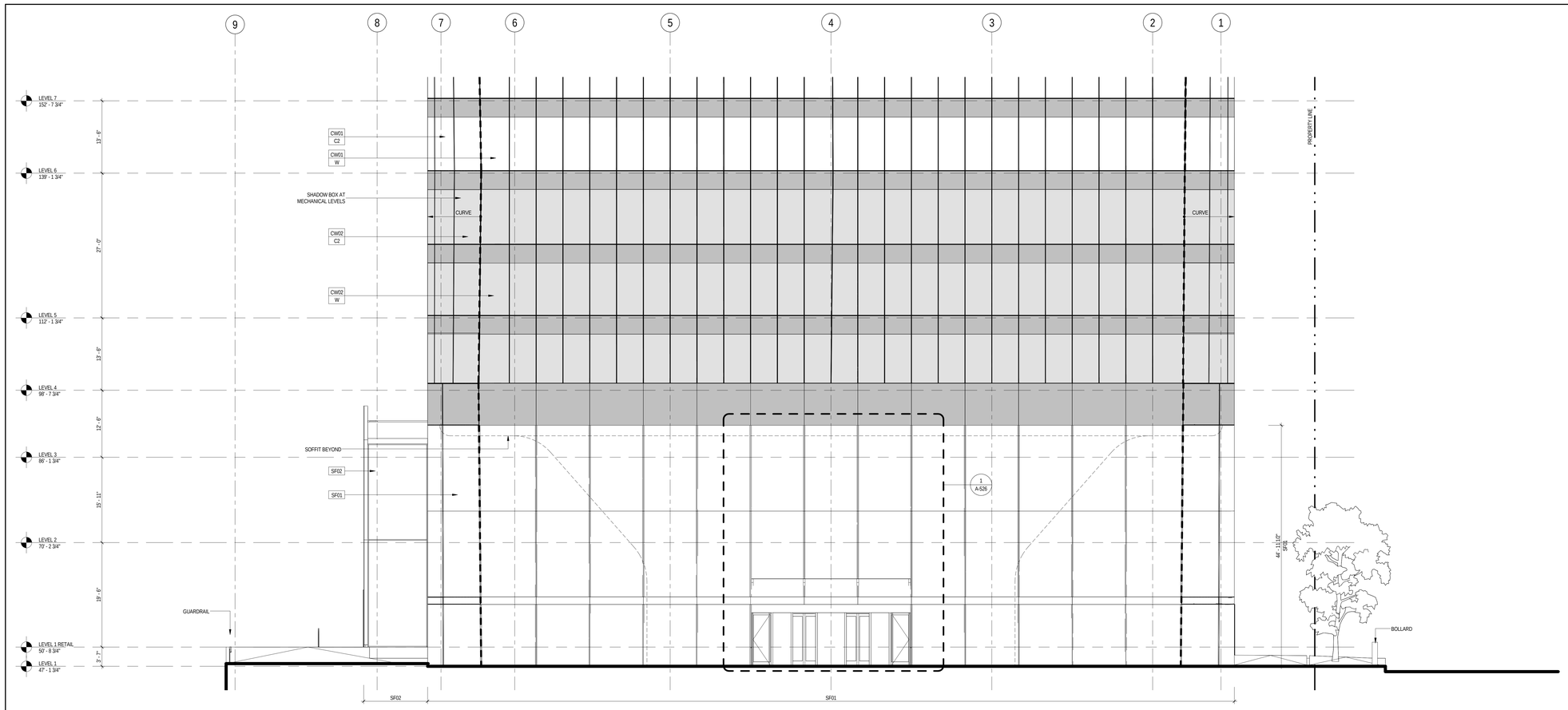
Sheet Name:

ENLARGED ELEVATIONS AT GROUND FLOOR

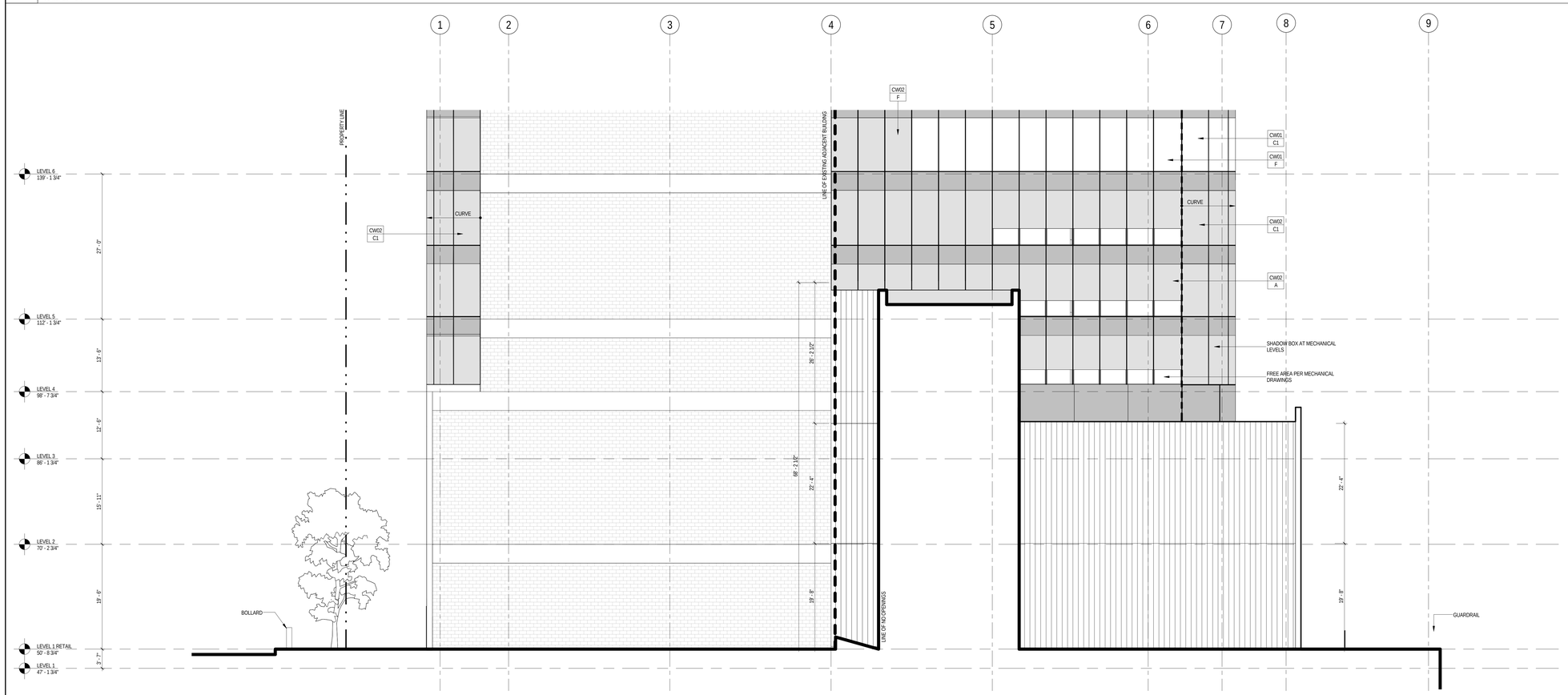
Project No.: 207120
Date: 12 SEPT 2014
Scale: 1/8" = 1'-0"
File No.: A-210

B-SCAN Sheet No.: A-210.00
Sheet No.: A-210
Page No.: 67 OF 30



2 ENLARGED ELEVATION AT GROUND FLOOR LOOKING WEST

SCALE: 1/8" = 1'-0"



1 ENLARGED ELEVATION AT GROUND FLOOR LOOKING EAST

SCALE: 1/8" = 1'-0"

LEGEND

SHADOW BOX 1

SHADOW BOX 2

SHEET NOTES

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MANHATTAN WEST: NORTH TOWER

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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
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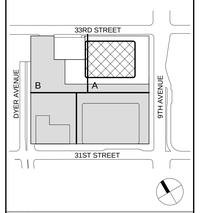
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
JOHN DOTTERWICH
LICENSE NO. 15649
STATE OF NEW YORK

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Sheet Name:

ENLARGED ELEVATIONS AT GROUND FLOOR

Project No.: 207120

Date: 12 SEPT 2014

Scale: 1/8" = 1'-0"

File No.: A-211

B-SCAN Sheet No.: A-211.00

Sheet No.: A-211

Page No.: 68 OF 30

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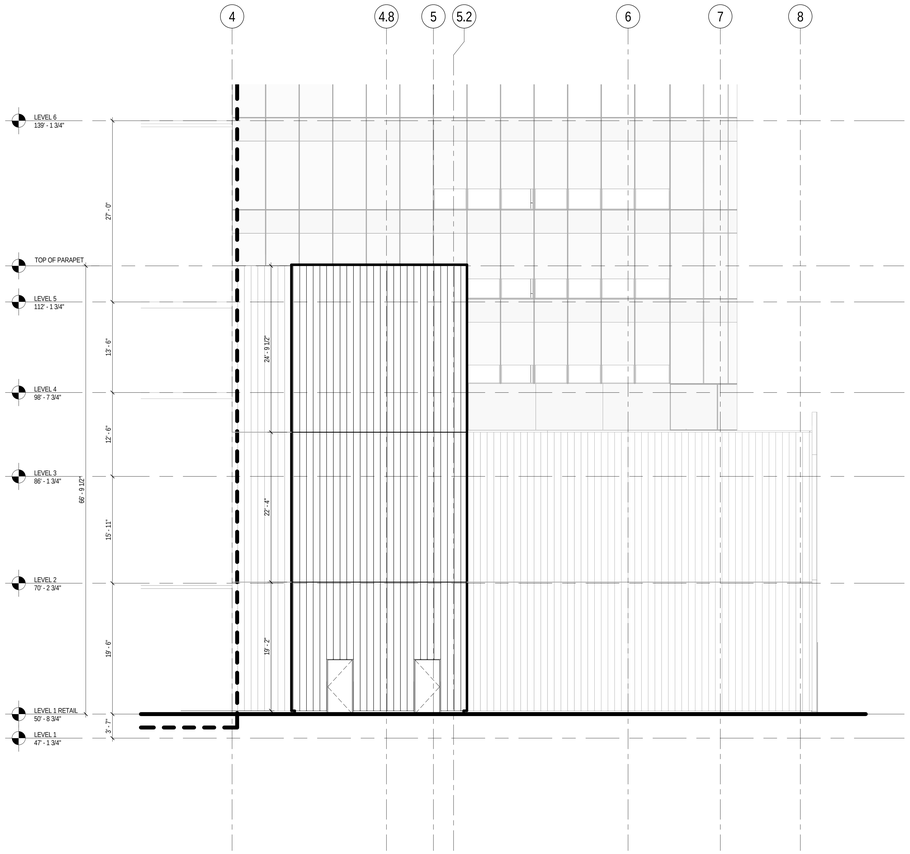
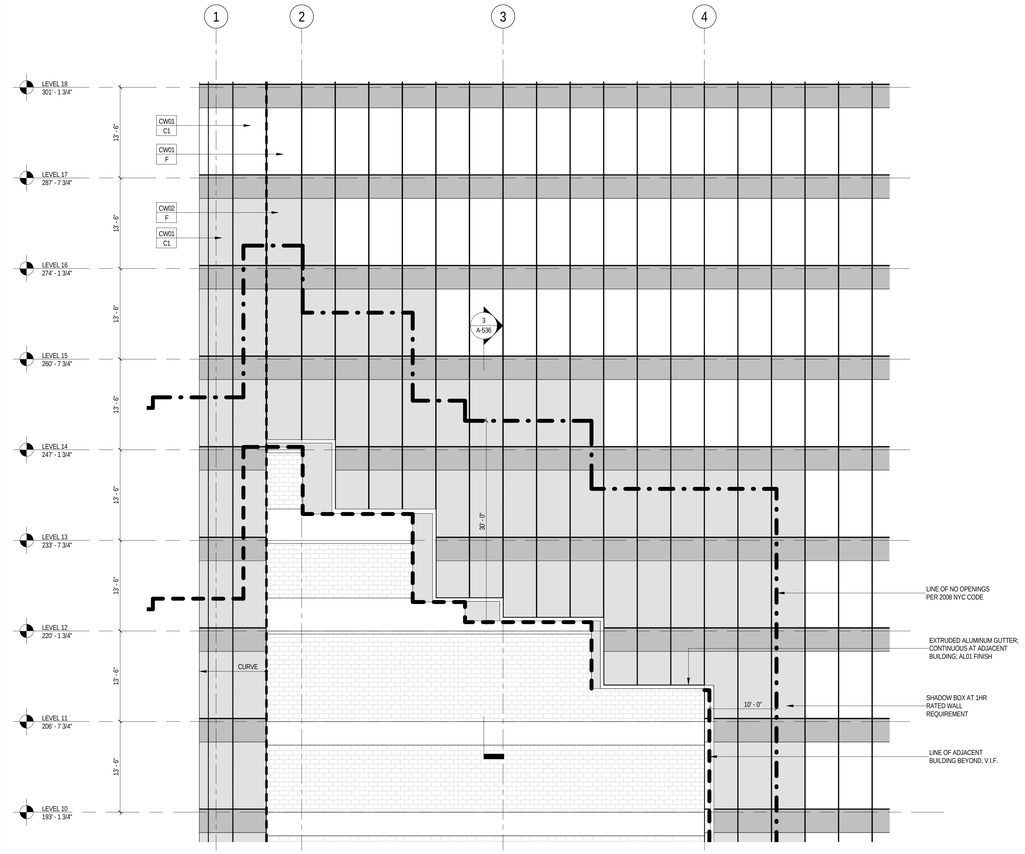


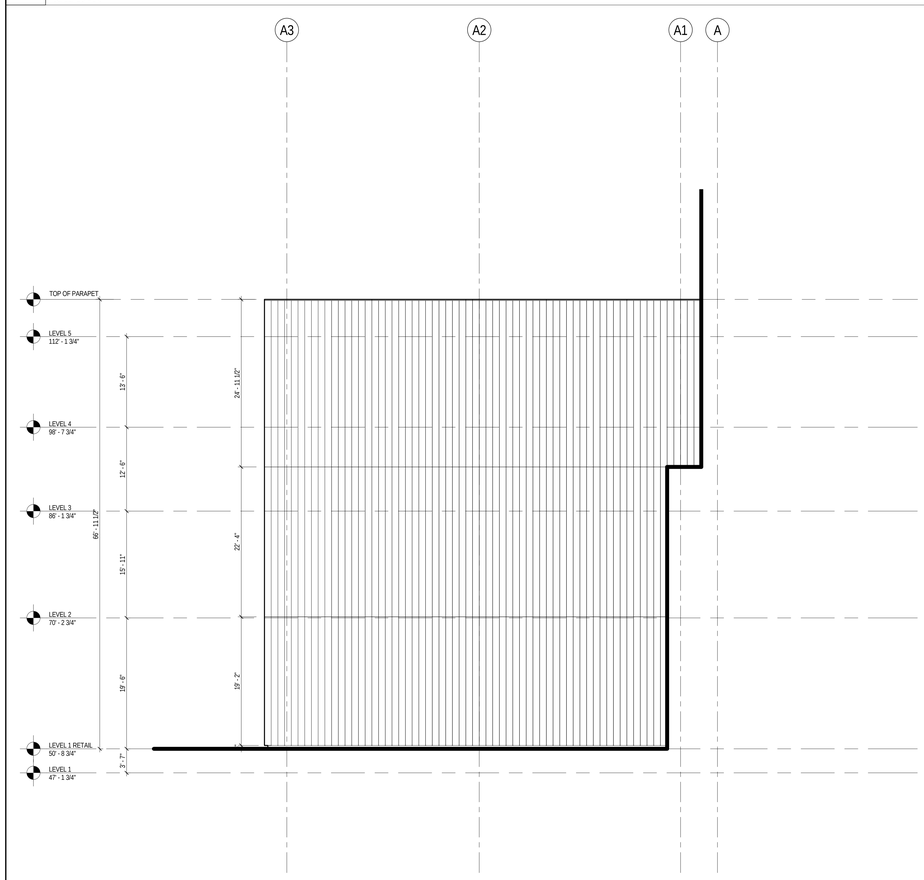
4 ENLARGED BUILDING ELEVATION AT RETAIL CORE LOOKING EAST

SCALE: 1/8" = 1'-0"



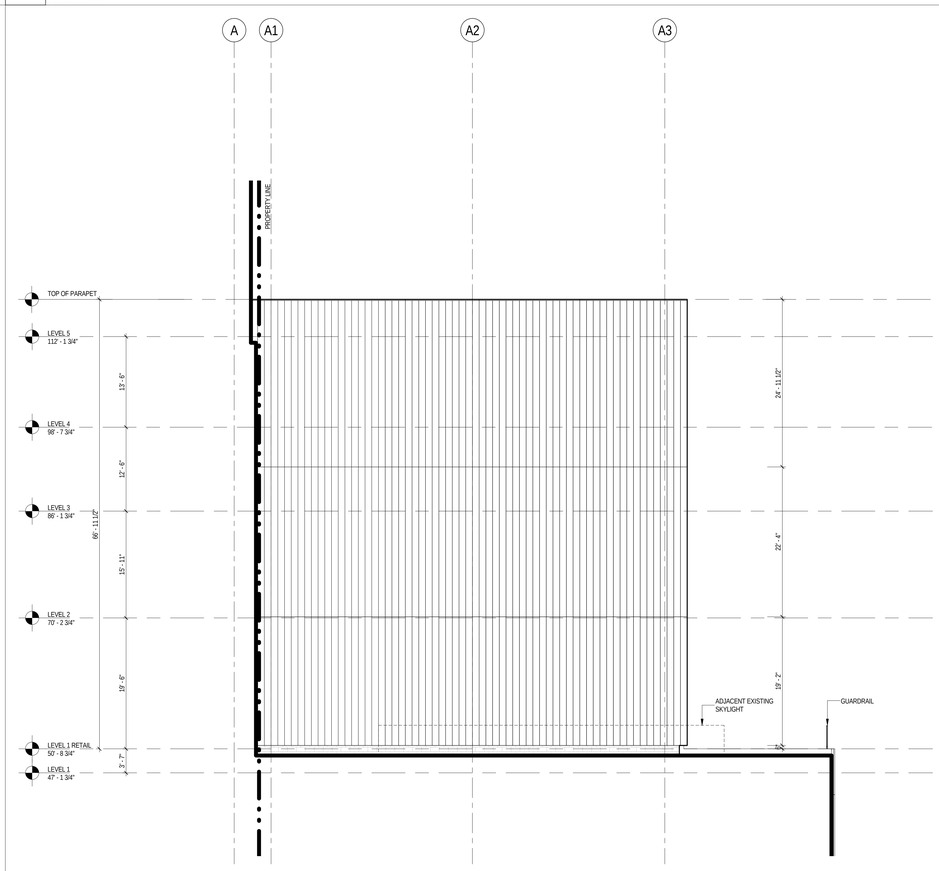
2 ENLARGED BUILDING ELEVATION - WEST LOFT

SCALE: 1/8" = 1'-0"



3 ENLARGED BUILDING ELEVATION AT RETAIL CORE LOOKING NORTH

SCALE: 1/8" = 1'-0"



1 ENLARGED BUILDING ELEVATION AT RETAIL CORE LOOKING SOUTH

SCALE: 1/8" = 1'-0"

LEGEND

SHADOW BOX 1

SHADOW BOX 2

SHEET NOTES

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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Ontario, Canada N1K 1B8

PRELIMINARY
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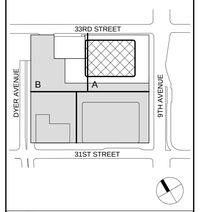
Key Plan:



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REGISTERED ARCHITECT
ROBERT GOTTESMAN
No. 15649
STATE OF NEW YORK

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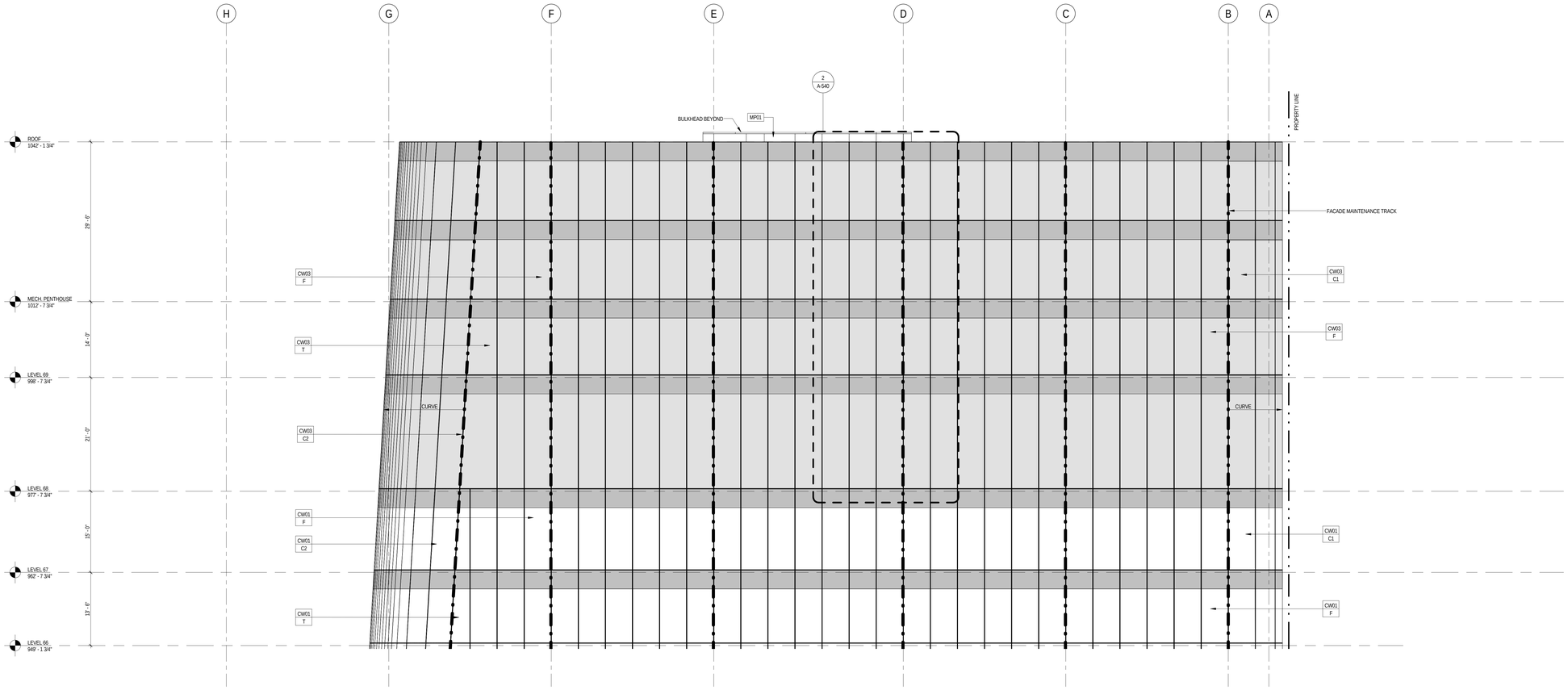
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

ENLARGED ELEVATIONS AT LOFT BUILDING

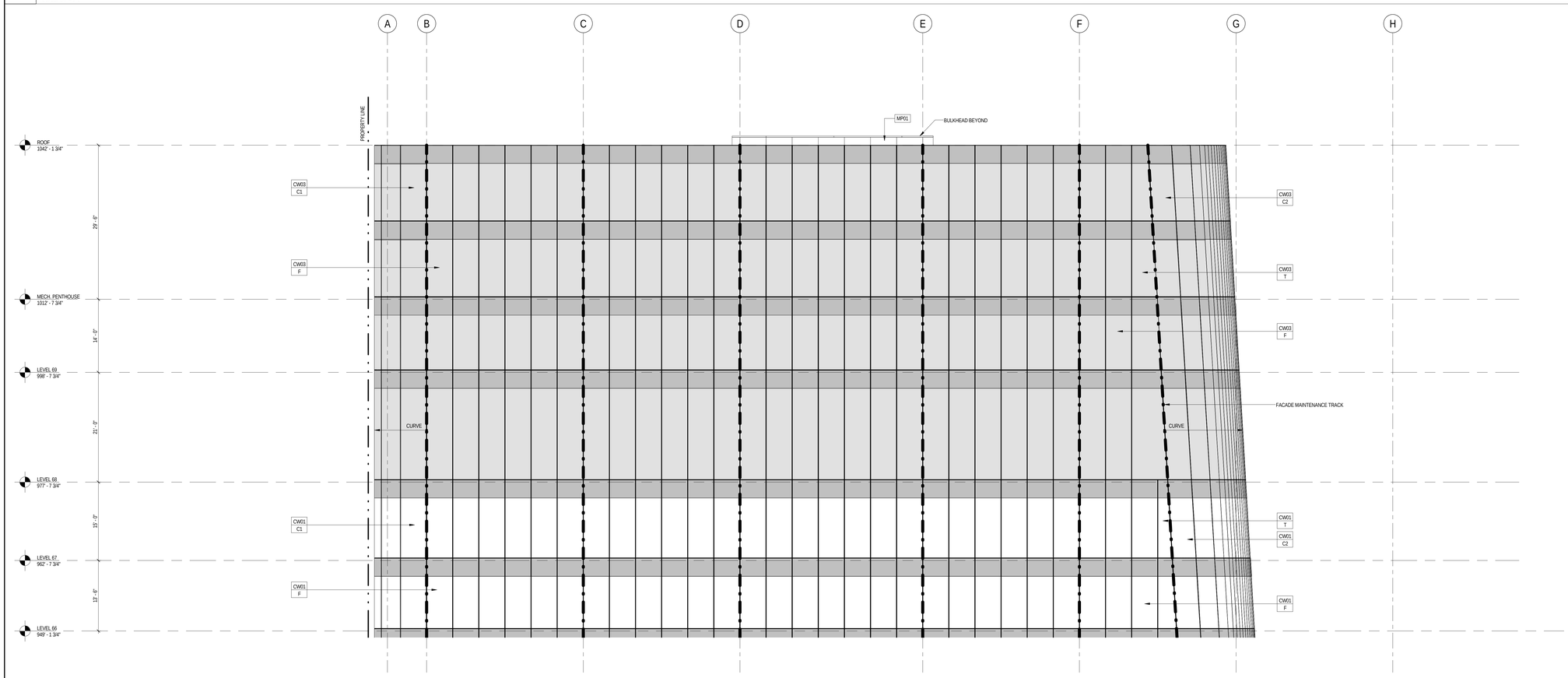
Project No.: 207120
Date: 12 SEPT 2014
Scale: 1/8" = 1'-0"
File No.: A-225
B-SCAN Sheet No.: A-225.00
Sheet No.: A-225
Page No.: 69 OF 30

9/11/2014 5:31:38 PM



2 ENLARGED ELEVATION AT ROOF LOOKING SOUTH

SCALE: 1/8" = 1'-0"



1 ENLARGED ELEVATION AT ROOF LOOKING NORTH

SCALE: 1/8" = 1'-0"

9/11/2014 5:32:21 PM

SHEET NOTES

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LEGEND

SHADOW BOX 1

SHADOW BOX 2

MANHATTAN WEST: NORTH TOWER

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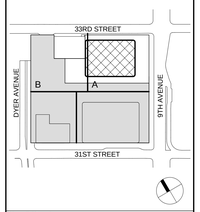

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Sheet Name:

ENLARGED ELEVATIONS AT ROOF

Project No.: 207120

Date: 12 SEPT 2014

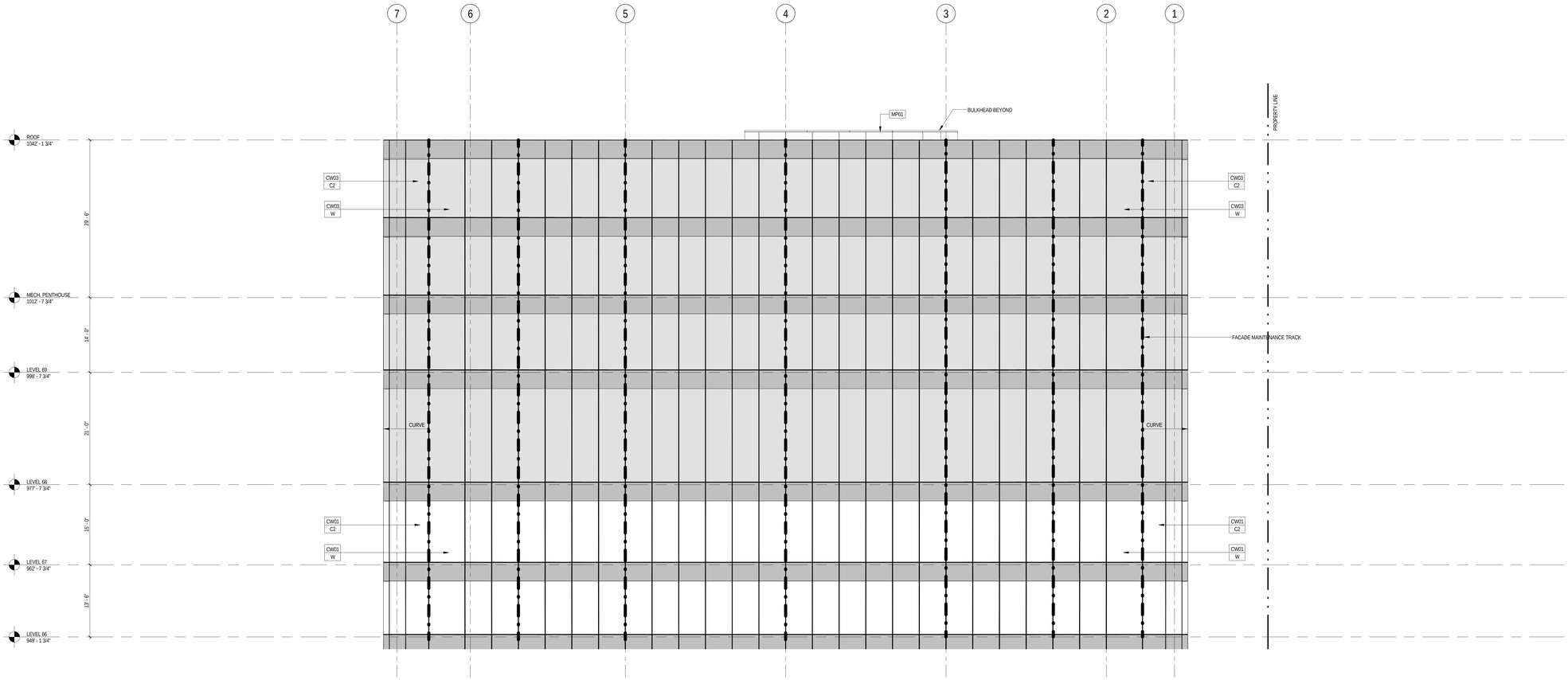
Scale: 1/8" = 1'-0"

File No.: A-230

B-SCAN Sheet No.: A-230.00

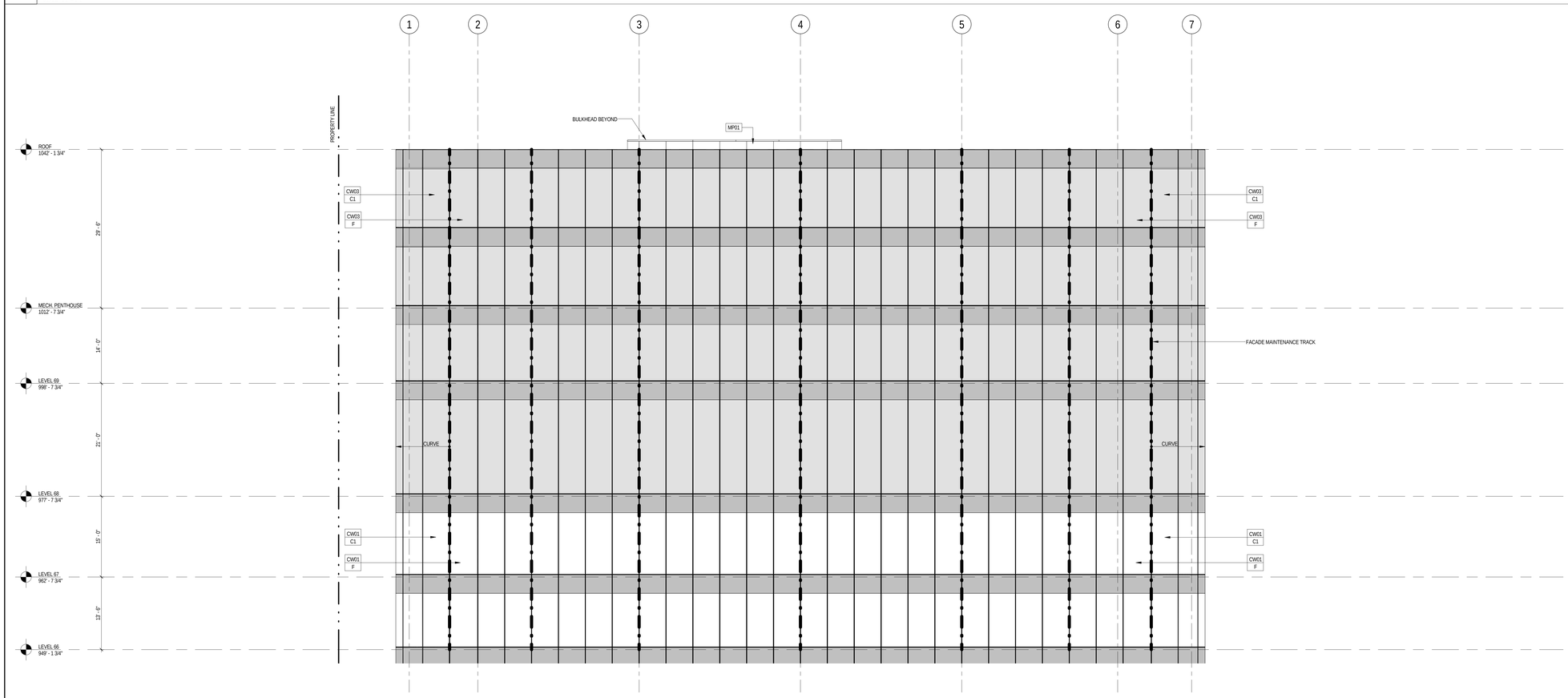
Sheet No.: A-230

Page No.: 70 OF 30



2 ENLARGED ELEVATION AT ROOF LOOKING WEST

SCALE: 1/8" = 1'-0"



1 ENLARGED ELEVATION AT ROOF LOOKING EAST

SCALE: 1/8" = 1'-0"

LEGEND

SHADOW BOX 1

SHADOW BOX 2

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Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

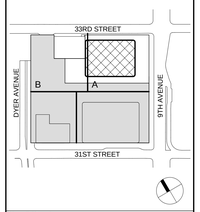
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
JOHN DOTTERER
No. 15649
STATE OF NEW YORK

Warning: It is a violation of the New York State Architecture Law, §7209 for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
4	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

ENLARGED ELEVATIONS AT ROOF

Project No.: 207120

Date: 12 SEPT 2014

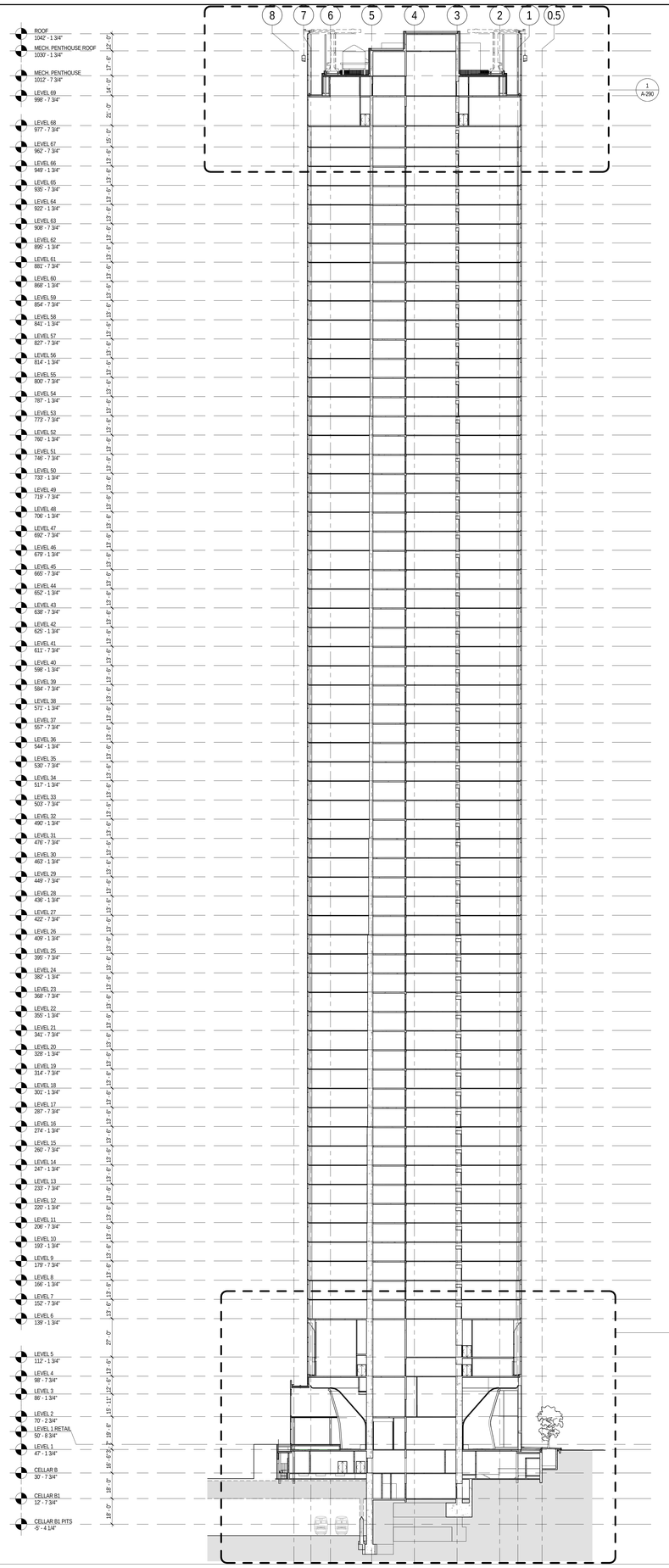
Scale: 1/8" = 1'-0"

File No.: A-231

B-SCAN Sheet No.: A-231.00

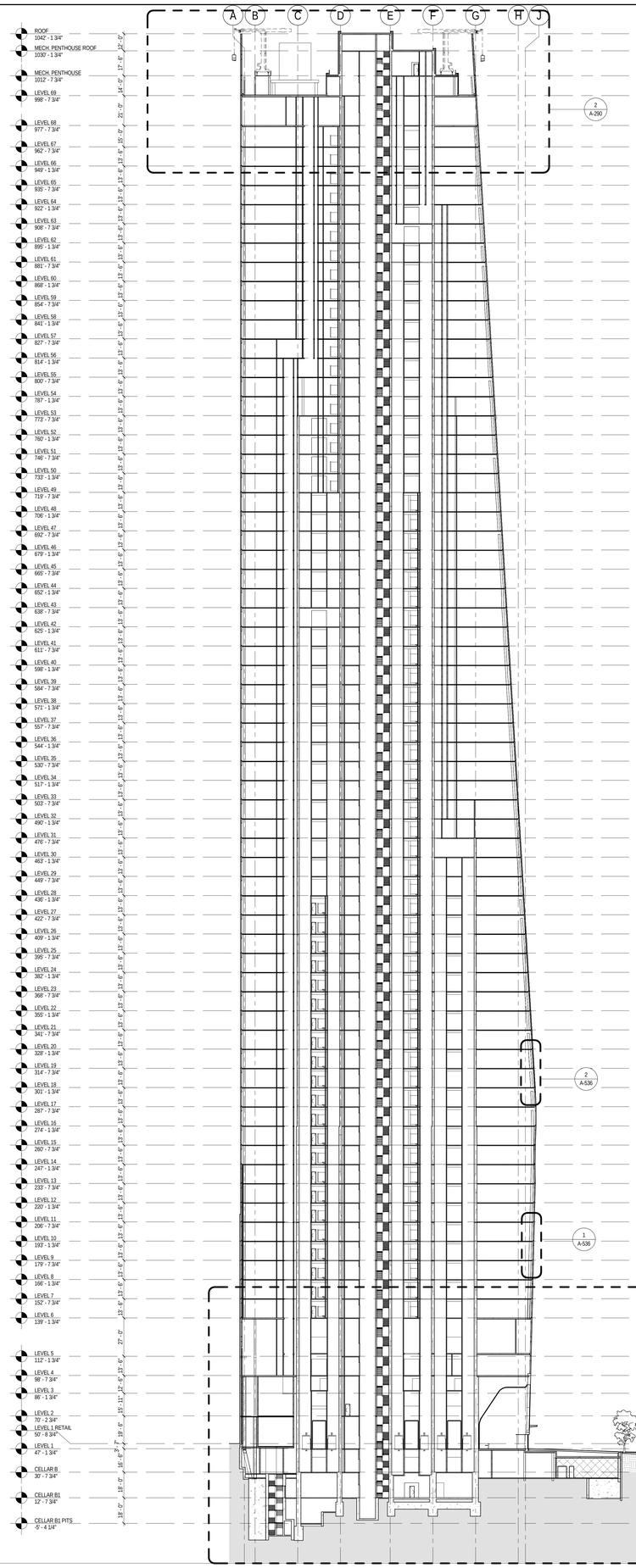
Sheet No.: A-231

Page No.: 71 OF 30



2 BUILDING SECTION LOOKING WEST

SCALE: 1/32" = 1'-0"



1 BUILDING SECTION LOOKING NORTH

SCALE: 1/32" = 1'-0"

SHEET NOTES

1. SEE 500 SERIES FOR ENCLOSURE DETAILS
2. ALL DOCUMENTATION OF 424 WEST 33RD STREET IS PRELIMINARY. VERIFY EXISTING CONDITIONS.
3. VERIFY EXISTING CONDITIONS OF ADJACENT LOFT BUILDING, LOCATION OF FOUNDATION WALL AND EXTENT OF CURTAIN WALL SEPARATIONS TO BE VERIFIED IN FIELD.
4. SEE FM-SERIES FOR FACADE MAINTENANCE DETAILS.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
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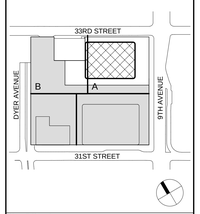
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
GOTTFRIED
No. 16649
STATE OF NEW YORK

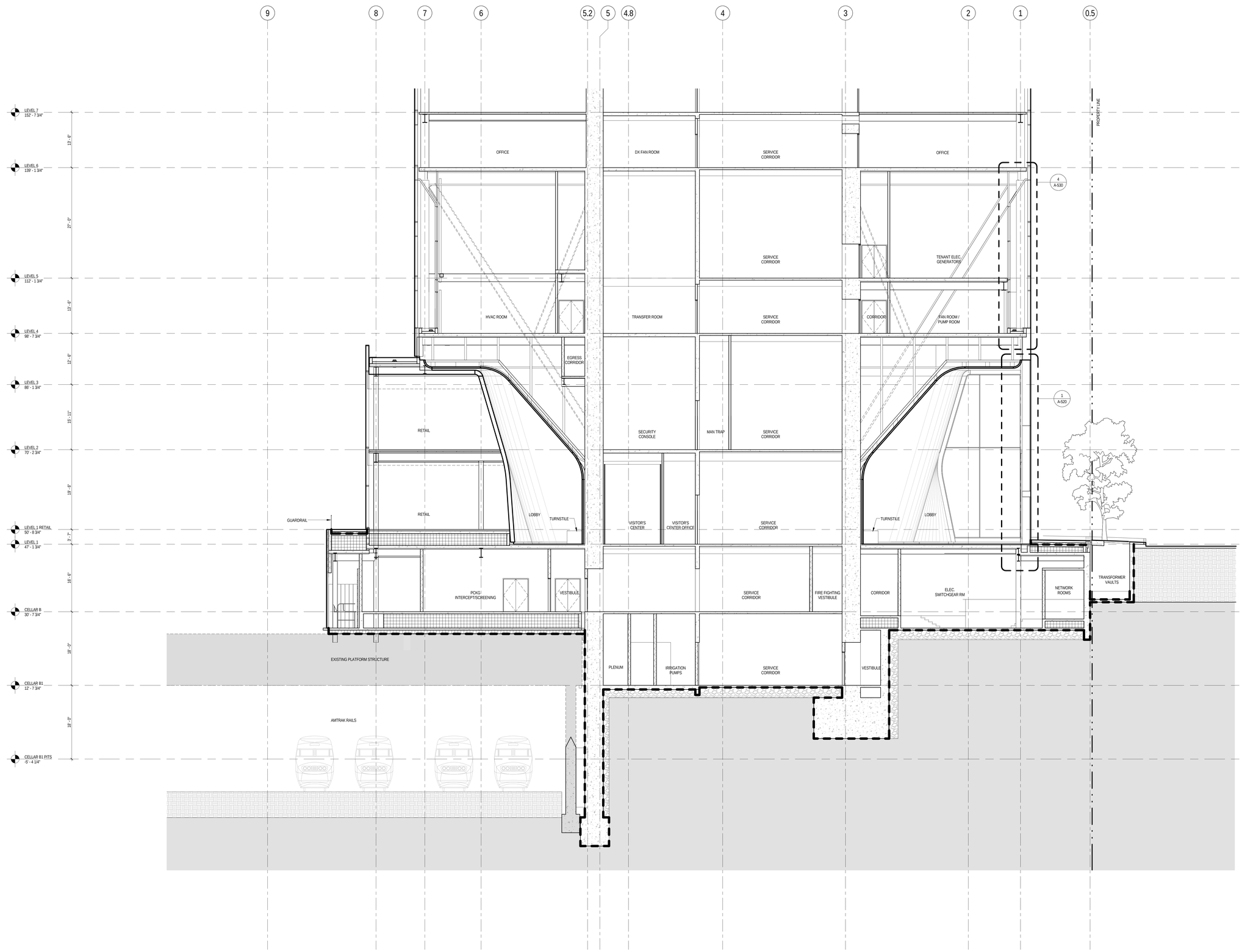
Warning: It is a violation of the New York State Architecture Law, §65.520 for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
7	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

BUILDING SECTIONS

Project No.: 207120
Date: 12 SEPT 2014
Scale: 1/32" = 1'-0"
File No.: A-250
B-SCAN Sheet No.: A-250.00
Sheet No.: A-250
Page No.: 63 OF 30



1 ENLARGED SECTION AT GROUND FLOOR LOOKING WEST

SCALE: 1/8" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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PRELIMINARY
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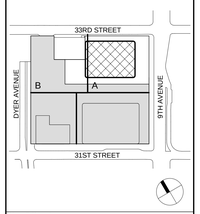

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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

ENLARGED SECTION AT LOBBY

Project No.: 207120

Date: 12 SEPT 2014

Scale: 1/8" = 1'-0"

File No.: A-270

B-SCAN Sheet No.: A-270.00

Sheet No.: A-270

Page No.: 64 OF 30

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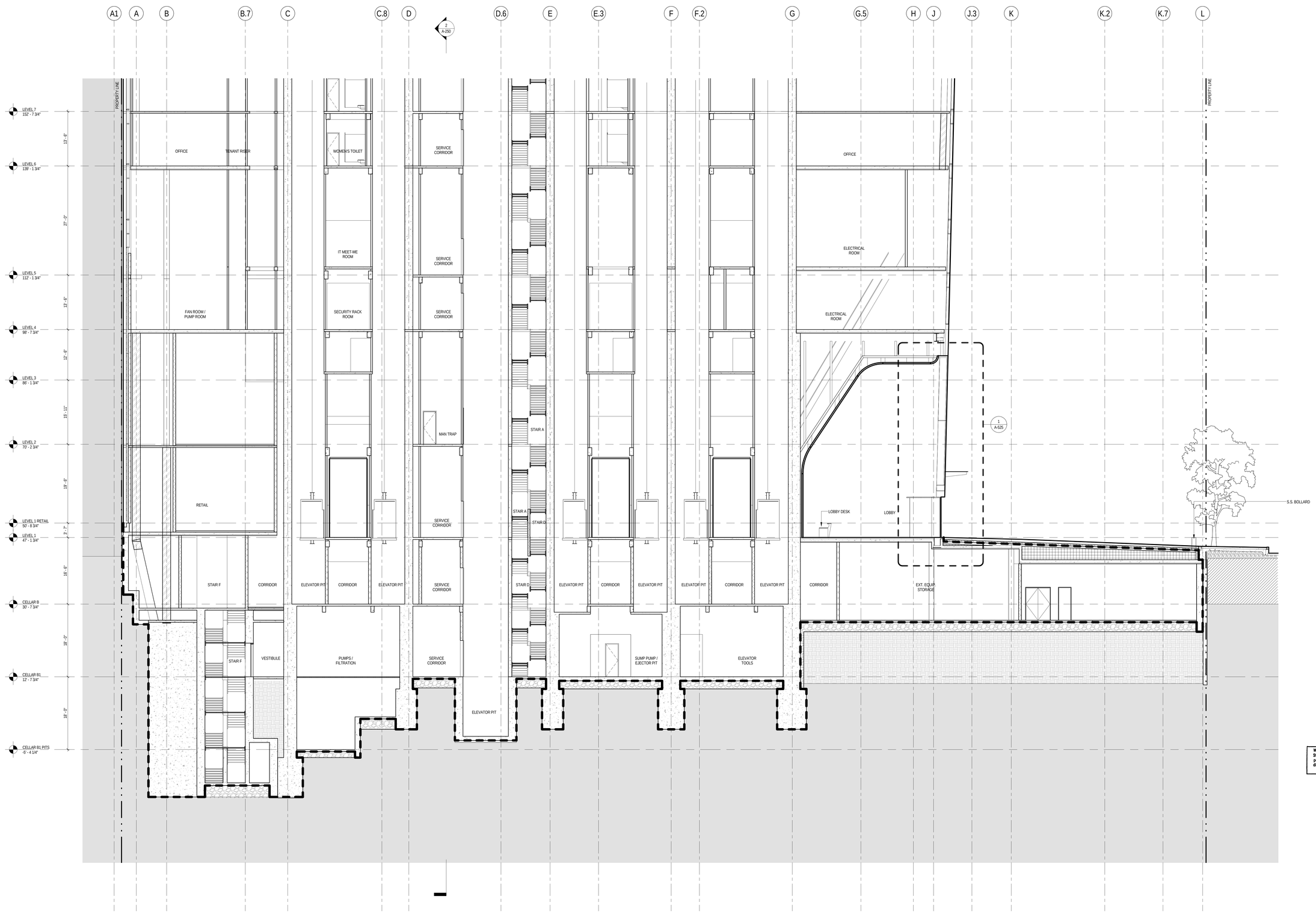

1 ENLARGED SECTION AT GROUND FLOOR LOOKING NORTH

SCALE: 1/8" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant

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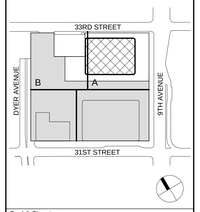
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ROY J. GOTTESMAN
STATE OF NEW YORK
No. 5649

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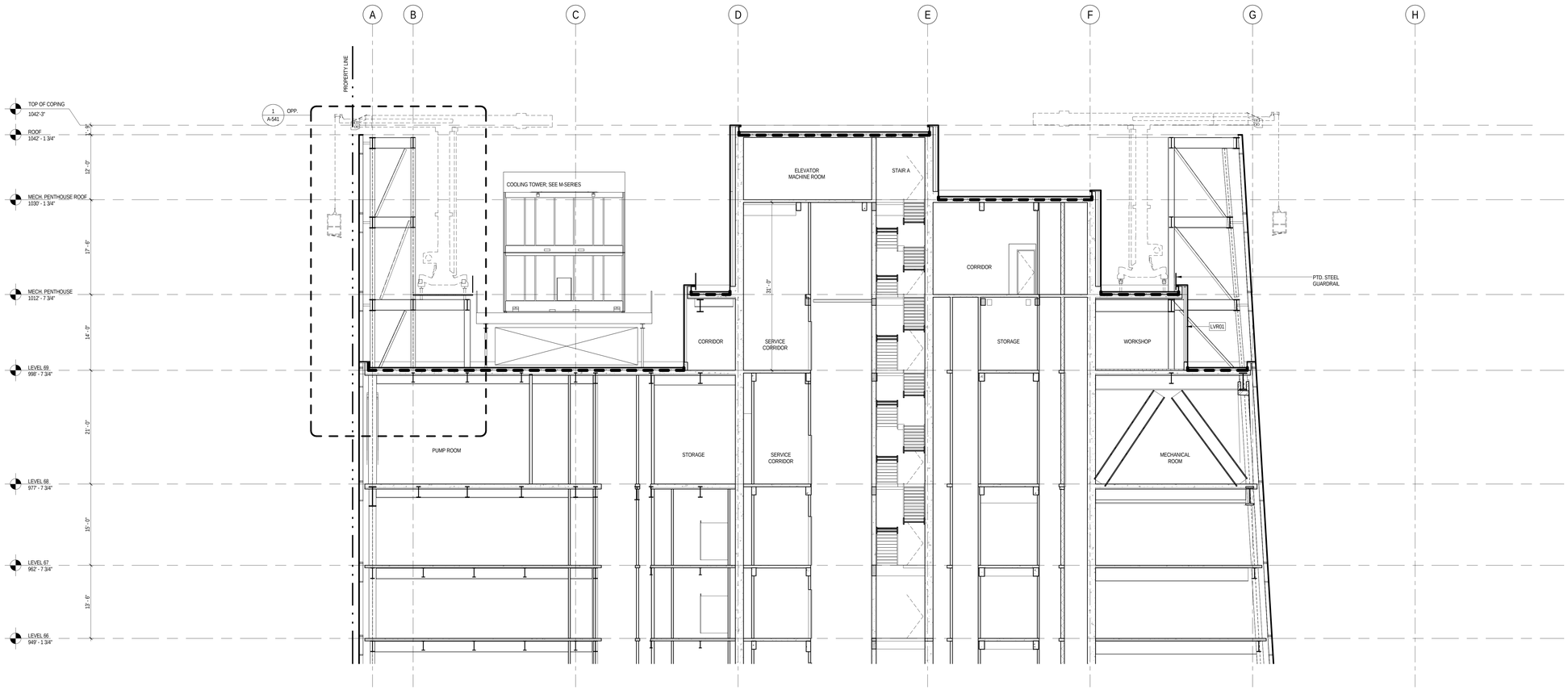
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

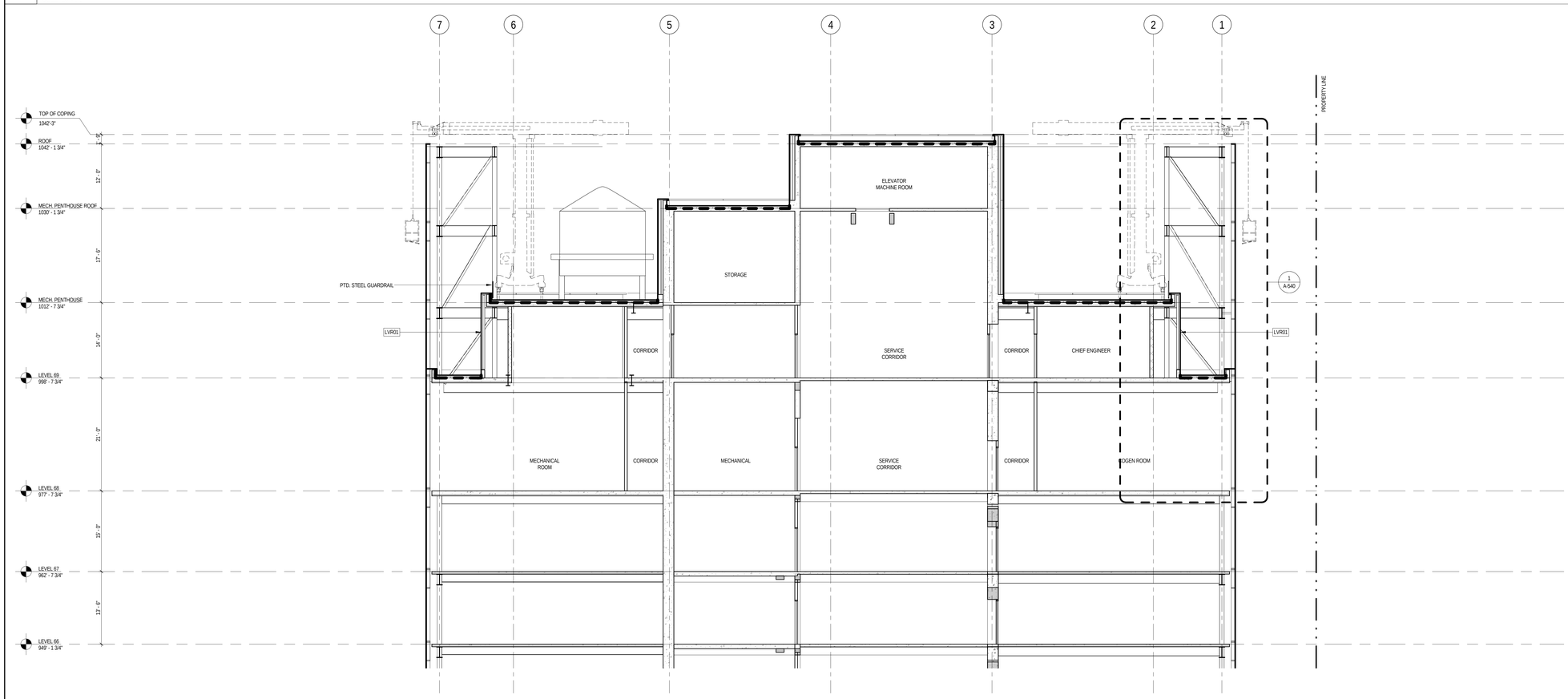
ENLARGED SECTION AT LOBBY

Project No.: 207120	B-SCAN Sheet No.: A-271.00
Date: 12 SEPT 2014	
Scale: 1/8" = 1'-0"	Sheet No.: A-271
File No.: A-271	Page No.: 65 OF 30



2 ENLARGED SECTION AT ROOF LOOKING NORTH

SCALE: 1/8" = 1'-0"



1 ENLARGED SECTION AT ROOF LOOKING EAST

SCALE: 1/8" = 1'-0"

SHEET NOTES

1. SEE 500 SERIES FOR ENCLOSURE DETAILS
2. ALL DOCUMENTATION OF 404 WEST 33RD STREET IS PRELIMINARY. VERIFY EXISTING CONDITIONS.
3. VERIFY EXISTING CONDITIONS OF ADJACENT LOFT BUILDING, LOCATION OF FOUNDATION WALL AND EXTENT OF CURTAIN WALL SEPARATIONS TO BE VERIFIED IN FIELD.
4. SEE FM-SERIES FOR FACADE MAINTENANCE DETAILS.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
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Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

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Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

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Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

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250 State Street #F1, North Haven, CT 06473

Blast Consultant

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Acoustical Consultant

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404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

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215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

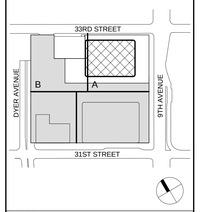
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
DAVID GOTTESMAN
No. 15649
STATE OF NEW YORK

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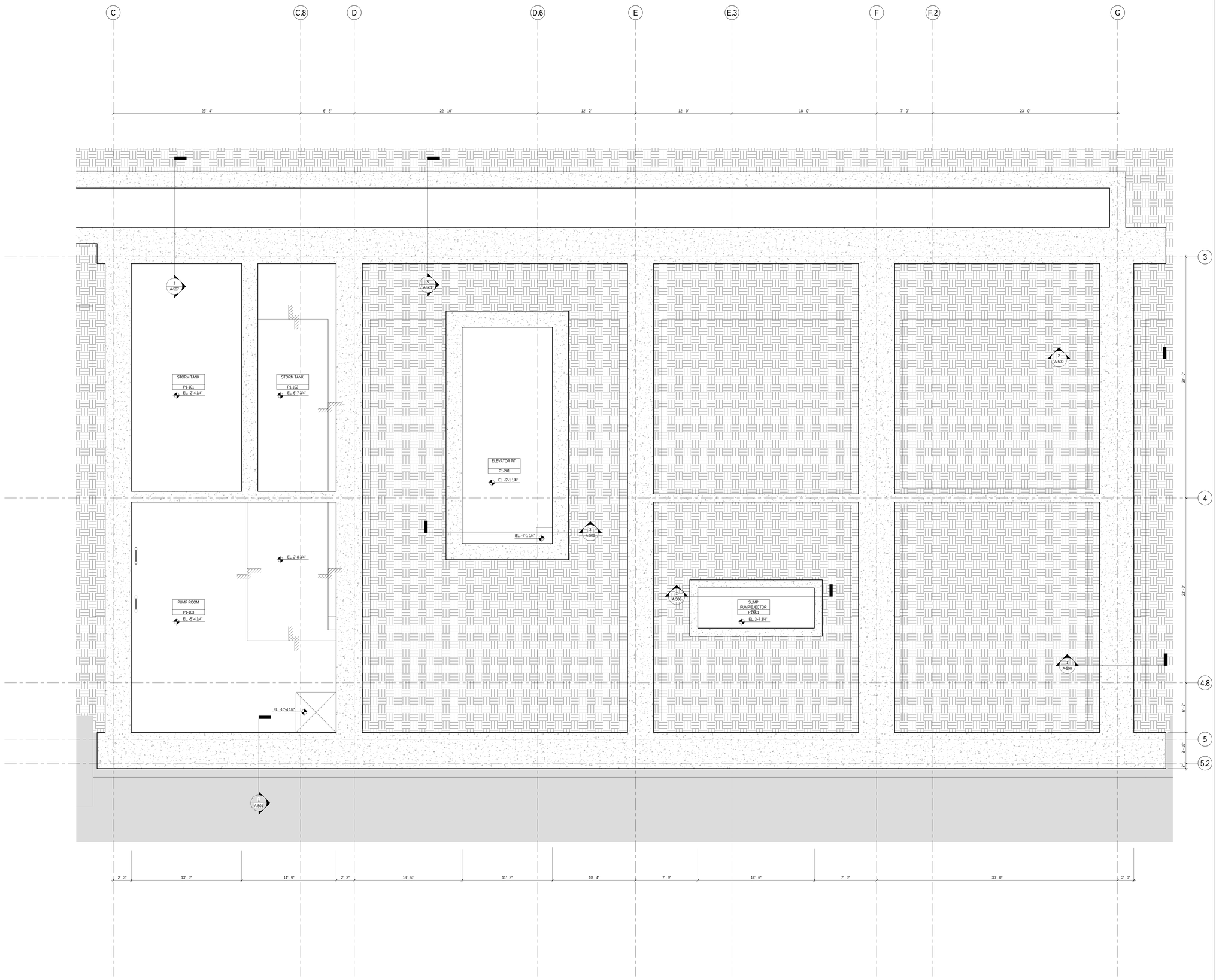
No.	Date	Description
5	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

ENLARGED SECTIONS AT ROOF

Project No.: 207120	B-SCAN Sheet No.: A-290.00
Date: 12 SEPT 2014	Sheet No.: A-290
Scale: 1/8" = 1'-0"	
File No.: A-290	Page No.: 79 OF 30



SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVIB).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700-SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

8. FOR REFLECTED CEILING PLANS SEE A-600 SERIES DRAWINGS. IF RCP IS NOT PROVIDED SEE MEP/FP/FA/SEC/TEL SERVICE DRAWINGS FOR LOCATIONS OR ALL CEILING/WALL MOUNTED DEVICES.

9. FOR STRUCTURAL COLUMNS, EDGE OF SLAB, AND CORE WORK POINTS SEE STRUCTURAL SERIES DRAWINGS, UNO.

10. REFER TO STRUCTRAL SERIES DRAWINGS FOR ALL STRUCTURAL WALL DESIGNATIONS AND DIMENSIONS.

11. REFER TO MEPFP DRAWINGS FOR ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION ROOM, RISER AND EQUIPMENT DESIGNATIONS.

12. FOR PROJECT WORK POINT REFER TO A-000 SERIES DRAWINGS.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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250 State Street #F1, North Haven, CT 06473

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Ontario, Canada N1K 1B8

PRELIMINARY
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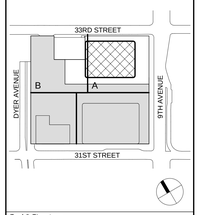
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
JOHN GOTTESDIENER
No. 5649
STATE OF NEW YORK

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2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

CELLAR B1 ENLARGED PIT PLAN

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/4" = 1'-0"

File No.: A-298

B-SCAN Sheet No.: A-298.00

Sheet No.: A-298

Page No.: 66 OF 87

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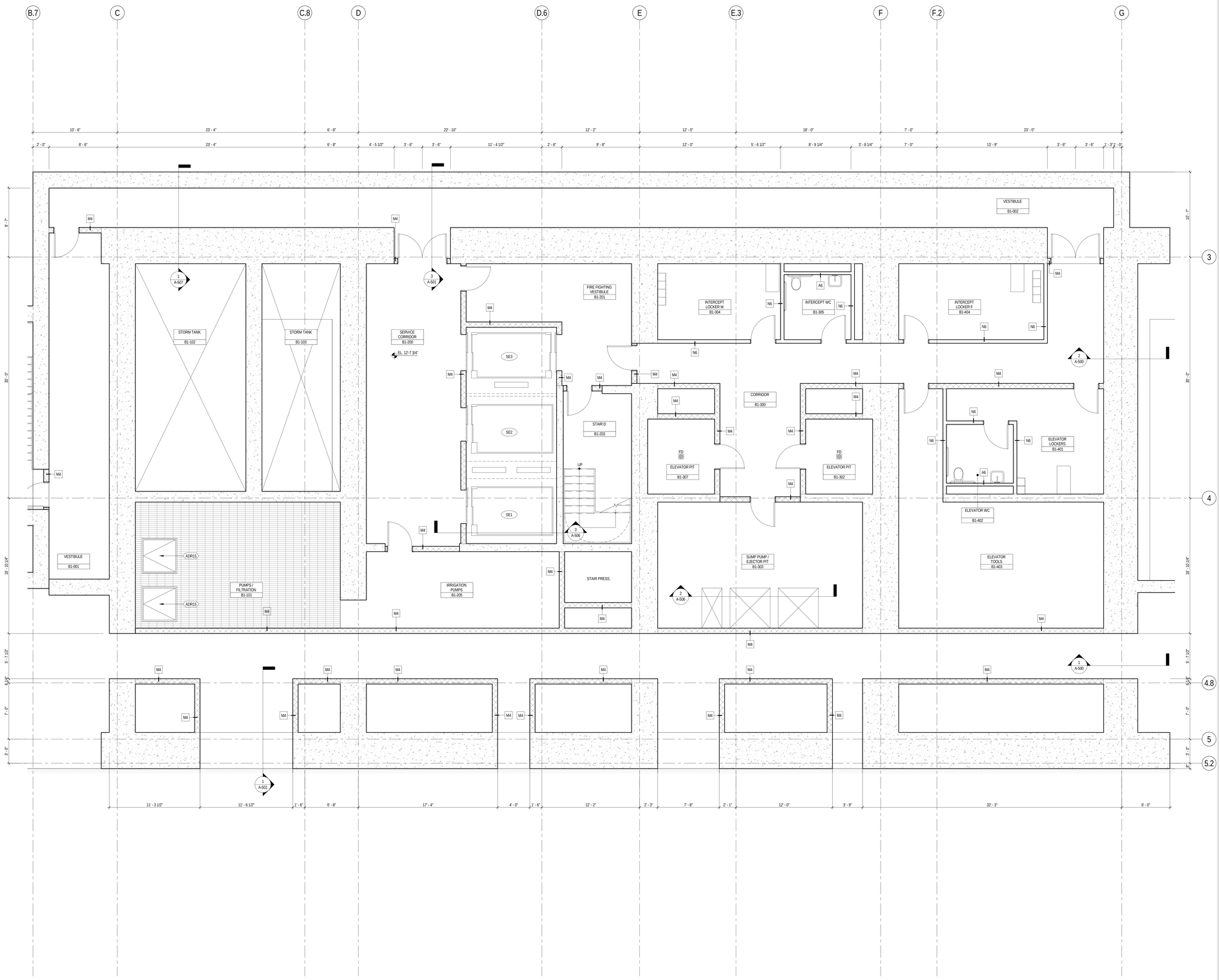

SHEET NOTES

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3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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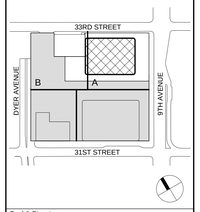
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
JOHN J. GOTTESMAN
No. 5649
STATE OF NEW YORK

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No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION BID
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

CELLAR B1 ENLARGED CORE PLAN

Project No.: 207120	B-SCAN Sheet No.: A-299.00
Date: 20 JUN 2014	Sheet No.: A-299
Scale: 1/4" = 1'-0"	
File No.: A-299	Page No.: 67 OF 87

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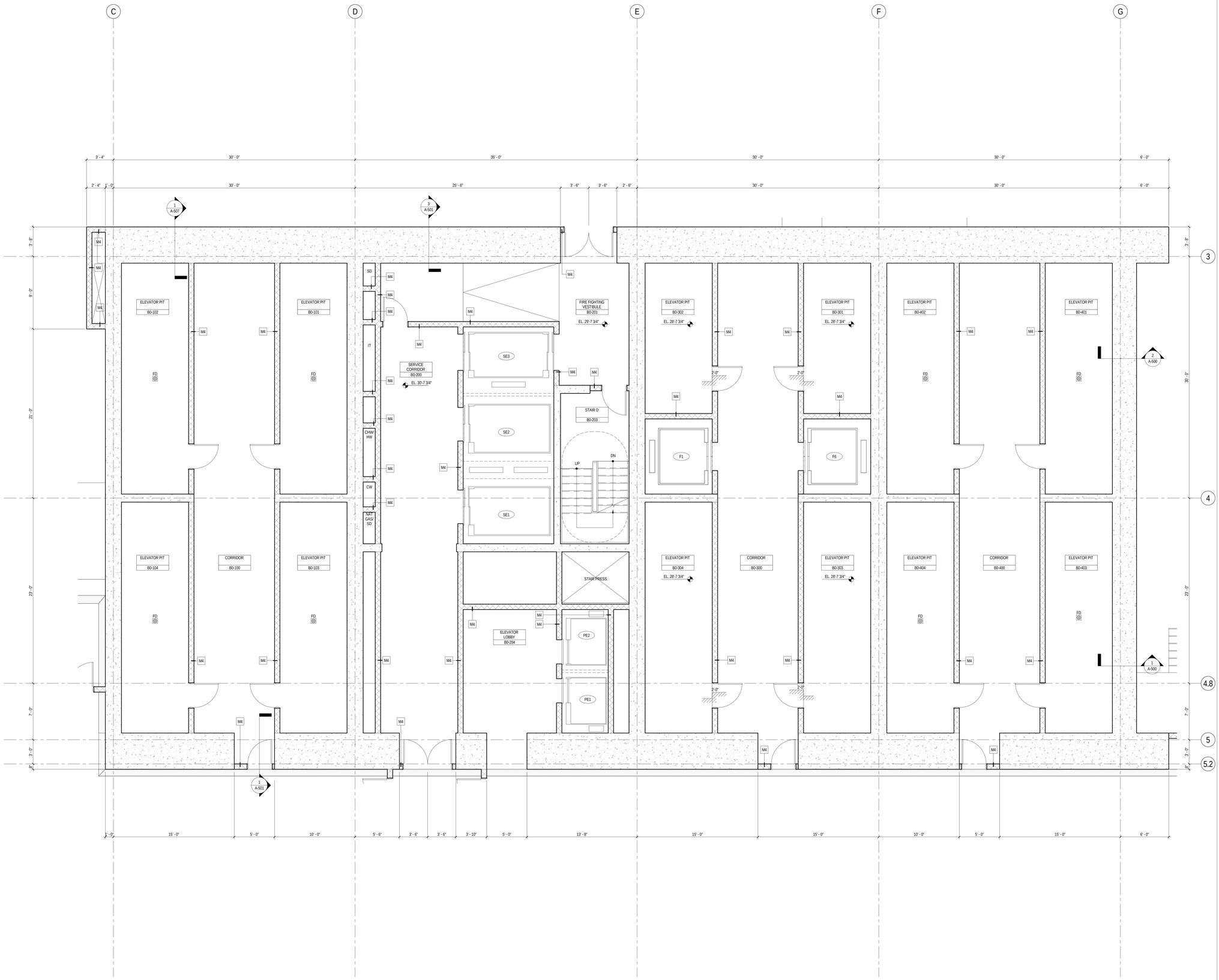

SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVIB).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

8. FOR REFLECTED CEILING PLANS SEE A-600 SERIES DRAWINGS. IF RCP IS NOT PROVIDED SEE MEP/FP/FA/SEC/TEL SERVICE DRAWINGS FOR LOCATIONS OR ALL CEILING/WALL MOUNTED DEVICES.

9. FOR STRUCTURAL COLUMNS, EDGE OF SLAB, AND CORE WORK POINTS SEE STRUCTURAL SERIES DRAWINGS, UNO.

10. REFER TO STRUCTRAL SERIES DRAWINGS FOR ALL STRUCTURAL WALL DESIGNATIONS AND DIMENSIONS.

11. REFER TO MEPFP DRAWINGS FOR ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION ROOM, RISER AND EQUIPMENT DESIGNATIONS.

12. FOR PROJECT WORK POINT REFER TO A-000 SERIES DRAWINGS.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Acoustical Consultant

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Facade Maintenance Consultant

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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
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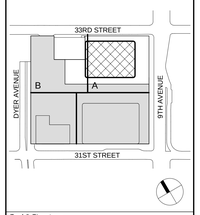
Key Plan:



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1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

CELLAR B ENLARGED CORE PLAN

Project No.: 207120	B-SCAN Sheet No.: A-300.00
Date: 20 JUN 2014	Sheet No.: A-300
Scale: 1/4" = 1'-0"	
File No.: A-300	Page No.: 68 OF 87

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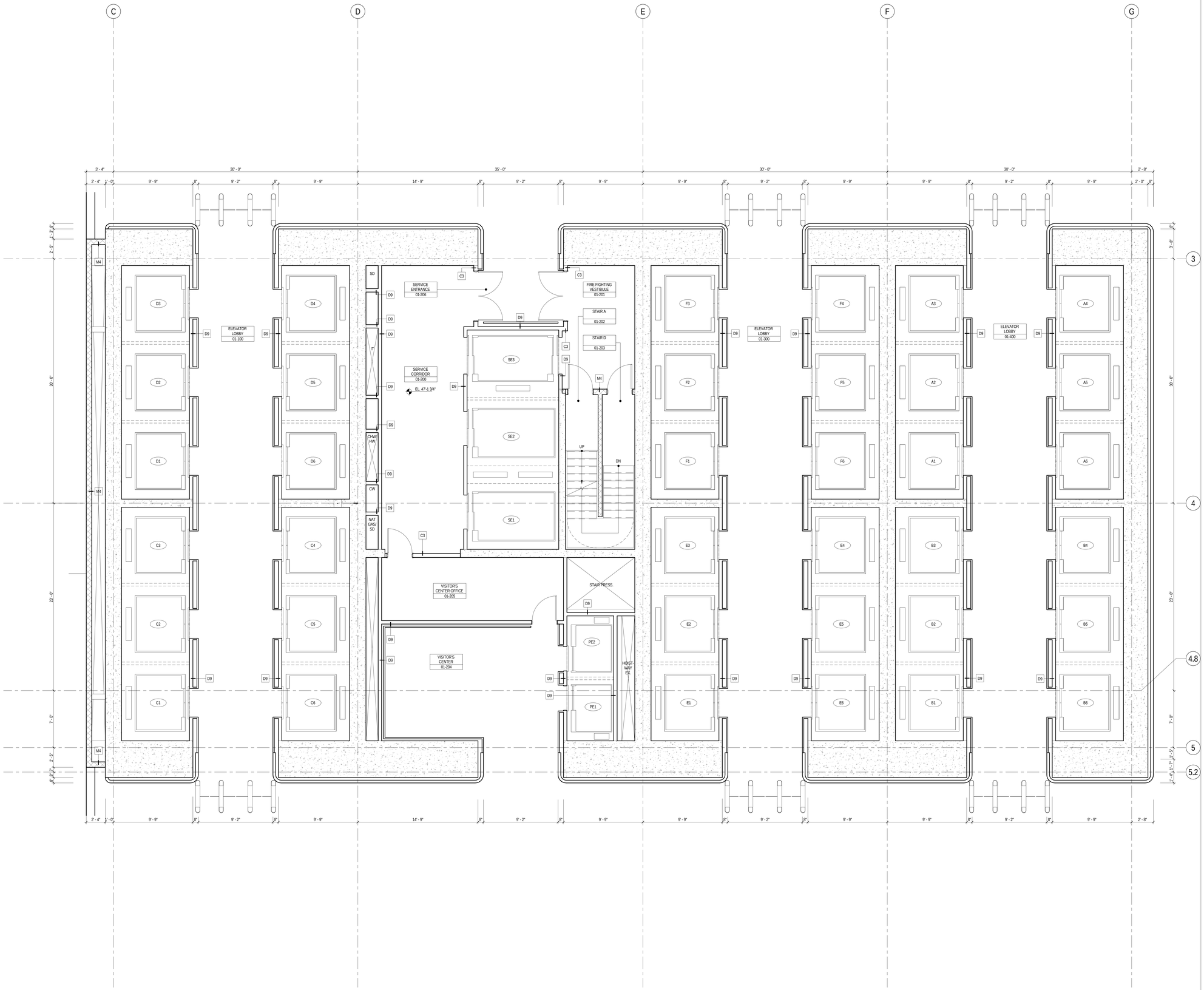

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5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HAROWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Ontario, Canada N1K 1B8

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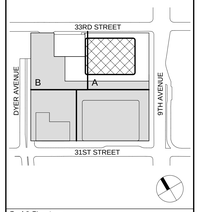

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1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

GROUND FLOOR ENLARGED CORE PLAN

Project No.: 207120	B-SCAN Sheet No.: A-301.00
Date: 20 JUN 2014	Sheet No.: A-301
Scale: 1/4" = 1'-0"	
File No.: A-301	Page No.: 69 OF 87

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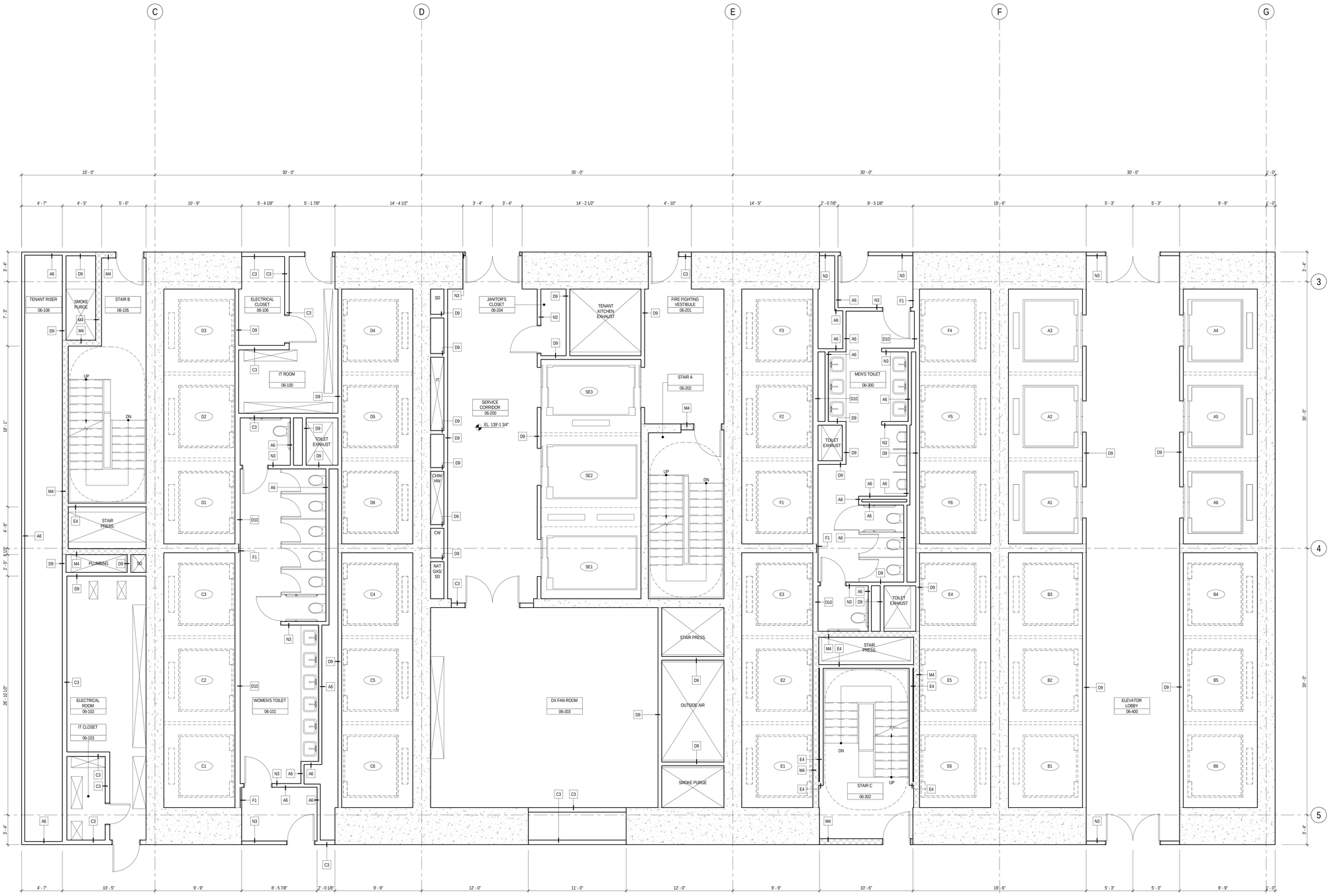

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4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

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12. FOR PROJECT WORK POINT REFER TO A-000 SERIES DRAWINGS.

MANHATTAN WEST: NORTH TOWER

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Wind Tunnel Consultant

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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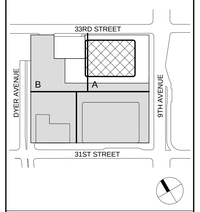
Key Plan:



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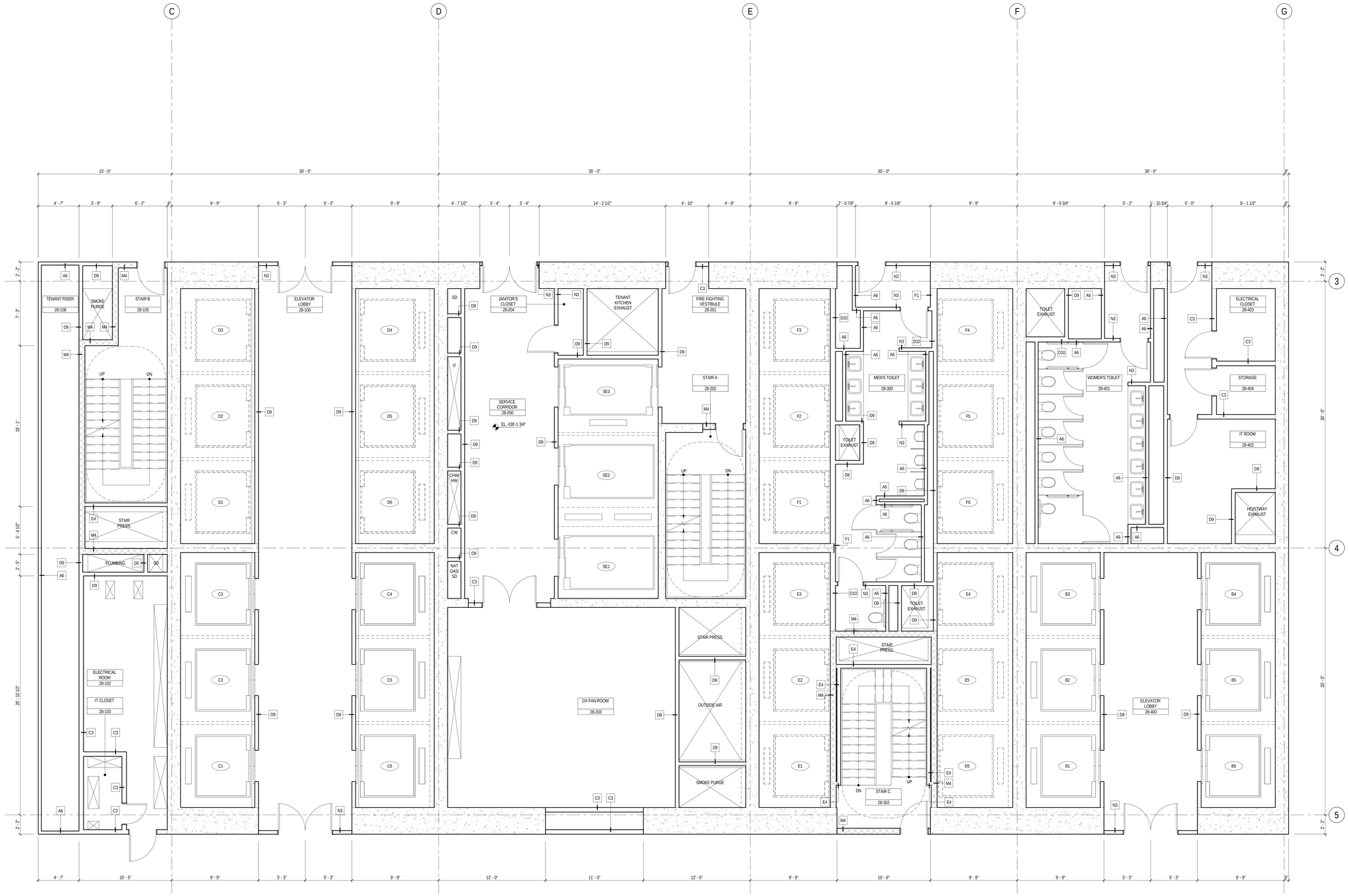
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

LEVEL 6-16 ENLARGED CORE PLAN - TYPICAL LOW-RISE

Project No.: 207120	B-SCAN Sheet No.: A-306.00
Date: 20 JUN 2014	Sheet No.: A-306
Scale: 1/4" = 1'-0"	
File No.: A-306	Page No.: 70 OF 87



SHEET NOTES

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3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HAROWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

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9. FOR STRUCTURAL COLUMNS, EDGE OF SLAB, AND CORE WORK POINTS SEE STRUCTURAL SERIES DRAWINGS, UNO.

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11. REFER TO MEPPP DRAWINGS FOR ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION ROOM, RISER AND EQUIPMENT DESIGNATIONS.

12. FOR PROJECT WORK POINT REFER TO A-000 SERIES DRAWINGS.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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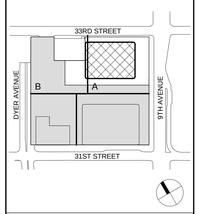
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
CHRISTOPHER J. GRIFFITH
No. 15640
STATE OF NEW YORK

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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

LEVEL 28 ENLARGED CORE PLAN - LOW-RISE & MID-RISE

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/4" = 1'-0"
File No.: A-328

B-SCAN Sheet No.: A-328.00
Sheet No.: A-328
Page No.: 71 OF 87

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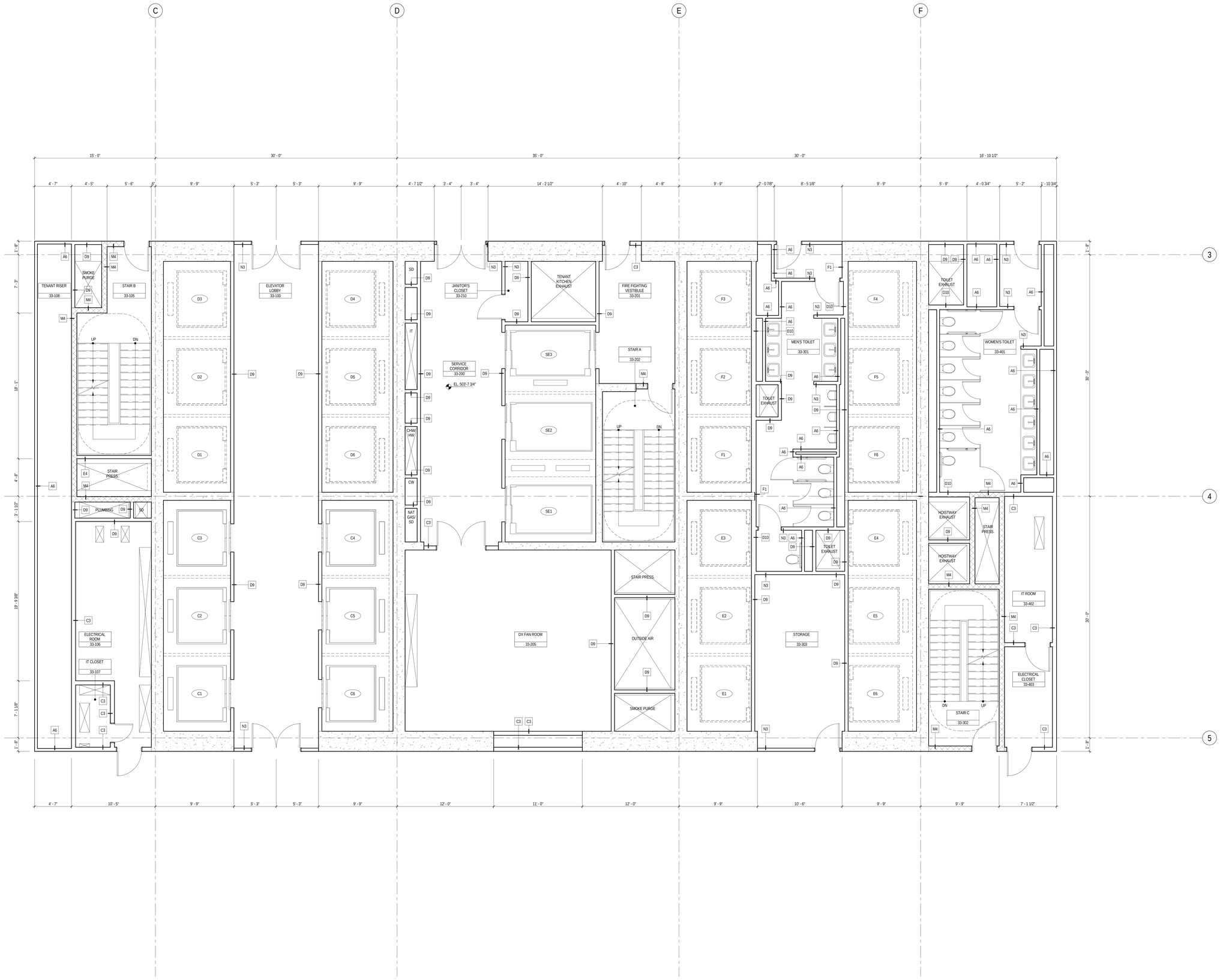

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MANHATTAN WEST: NORTH TOWER

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Client

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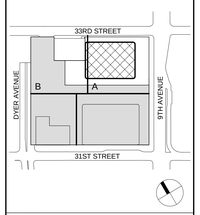

Seal & Signature:

REGISTERED ARCHITECT
SCOTT FORBES
No. 035643
STATE OF NEW YORK

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Sheet Name:

LEVEL 33-38 ENLARGED CORE PLAN - TYPICAL MID-RISE

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/4" = 1'-0"
File No.: A-333
B-SCAN Sheet No.: A-333.00
Sheet No.: A-333
Page No.: 72 OF 87

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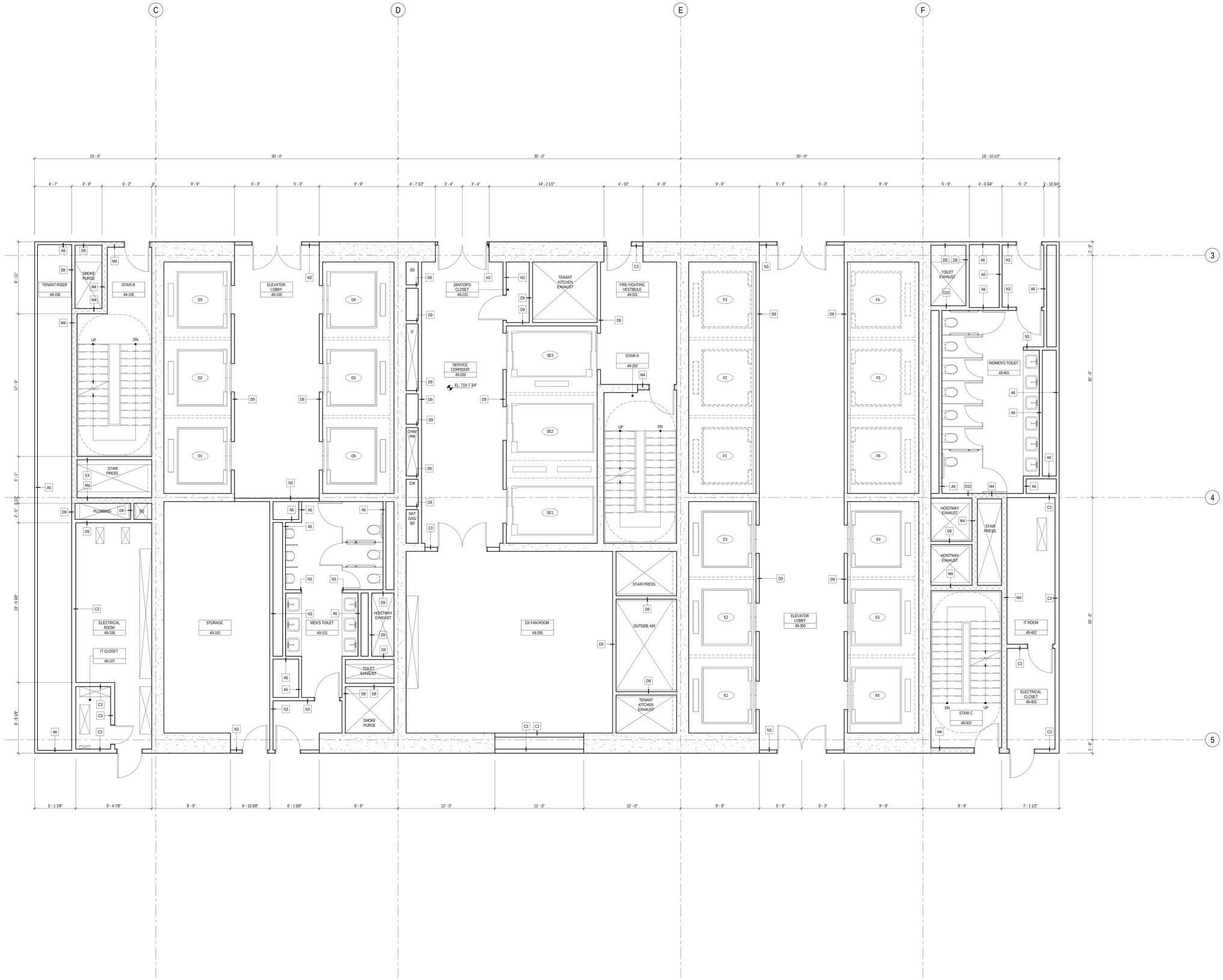
SHEET OF BLOCK 271 OF 743 Job Number
E5524257048 Scan Code



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4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HAROWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

7. ALL PARTITIONS SHALL BE TYPE D9, UNO.

8. FOR REFLECTED CEILING PLANS SEE A-600 SERIES DRAWINGS. IF RCP IS NOT PROVIDED SEE MEPFP/FA/SEC/TEL SERVICE DRAWINGS FOR LOCATIONS OR ALL CEILING/WALL MOUNTED DEVICES.

9. FOR STRUCTURAL COLUMNS, EDGE OF SLAB, AND CORE WORK POINTS SEE STRUCTURAL SERIES DRAWINGS, UNO.

10. REFER TO STRUCTRAL SERIES DRAWINGS FOR ALL STRUCTURAL WALL DESIGNATIONS AND DIMENSIONS.

11. REFER TO MEPFP DRAWINGS FOR ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION ROOM, RISER AND EQUIPMENT DESIGNATIONS.

12. FOR PROJECT WORK POINT REFER TO A-000 SERIES DRAWINGS.

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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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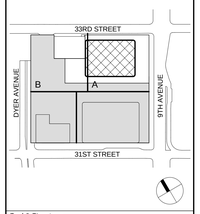
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ROY J. GOTTESMAN
STATE OF NEW YORK
SEAL

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No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION BID
3	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

LEVEL 49 ENLARGED CORE PLAN - MID-RISE & HIGH-RISE

Project No.: 207120	B-SCAN Sheet No.: A-349.00
Date: 20 JUN 2014	
Scale: 1/4" = 1'-0"	Sheet No.: A-349
File No.: A-349	Page No.: 73 OF 87

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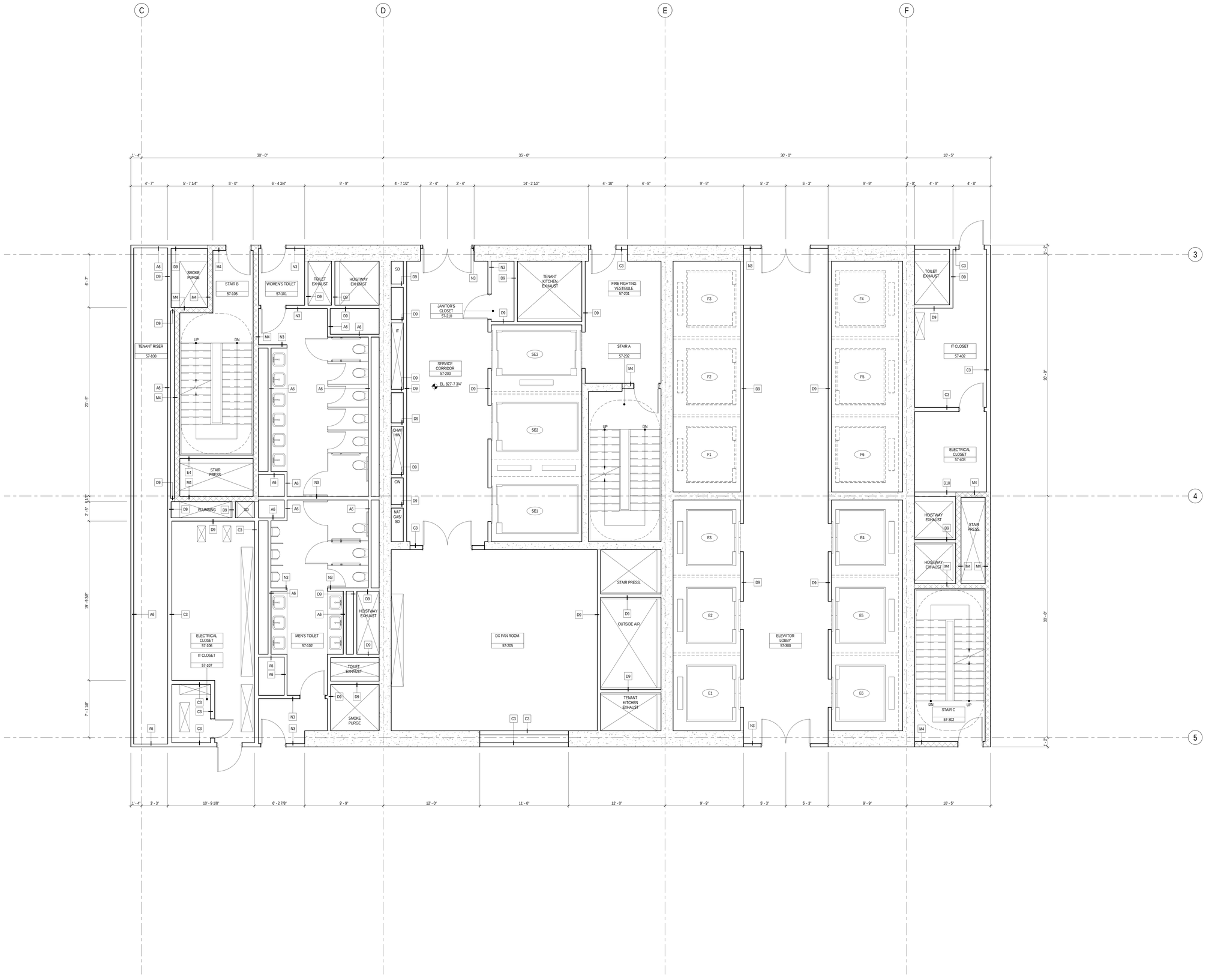

SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

3. FOR ARCHITECTURAL ABBREVIATIONS, LEGEND OF SYMBOLS & MATERIALS, AND MOUNTING HEIGHTS REFER TO SHEET NO. G-006.

4. FOR ROOM FINISH SCHEDULE SEE A-700 SERIES DRAWINGS.

5. FOR DOOR SCHEDULE SEE A-700 SERIES DRAWINGS. FOR DOOR HARDWARE SPECIFICATION SEE TECHNICAL SPECIFICATION SECTION 087010.

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MANHATTAN WEST: NORTH TOWER

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Ontario, Canada N1K 1B8

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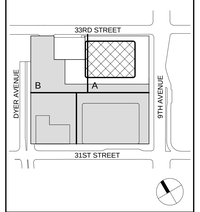

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REGISTERED ARCHITECT
ROY J. GOTTESMAN
LICENSE NO. 15643
STATE OF NEW YORK

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No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION BID
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

LEVEL 57-58 ENLARGED CORE PLAN - TYPICAL HIGH-RISE

Project No.: 207120	B-SCAN Sheet No.: A-357.00
Date: 20 JUN 2014	Sheet No.: A-357
Scale: 1/4" = 1'-0"	
File No.: A-357	Page No.: 74 OF 87

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SHEET OF BLOCK 271.01.143 Job Number

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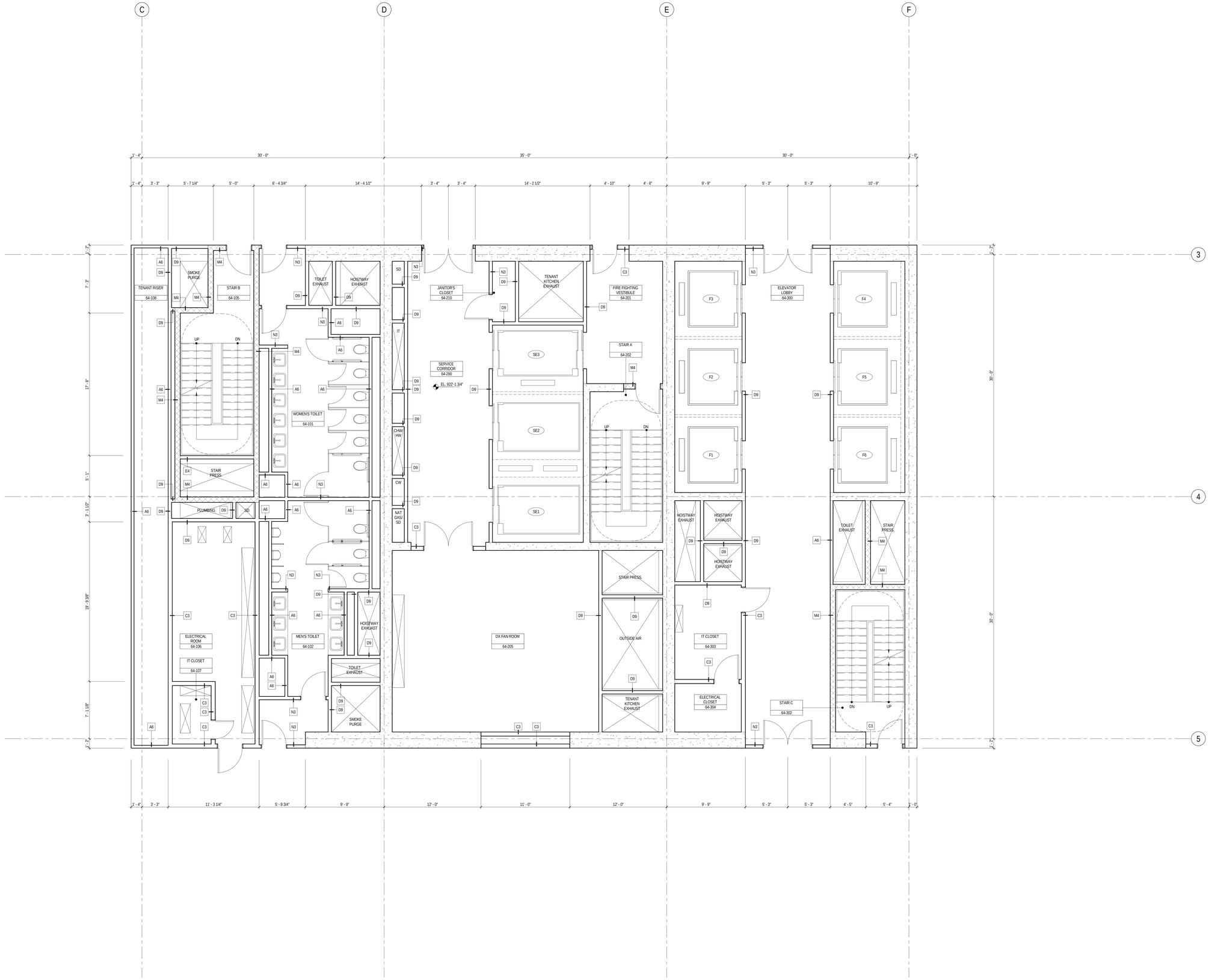

SHEET NOTES

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6. FOR PARTITION TYPES SEE A-700 SERIES DRAWINGS.

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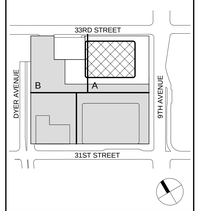

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REGISTERED ARCHITECT
PETER J. GOTTESMAN
NO. 15649
STATE OF NEW YORK

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2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

LEVEL 64-67 ENLARGED CORE PLAN - TYPICAL HIGH-RISE

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/4" = 1'-0"

File No.: A-364

B-SCAN Sheet No.: A-364.00

Sheet No.: A-364

Page No.: 75 OF 87

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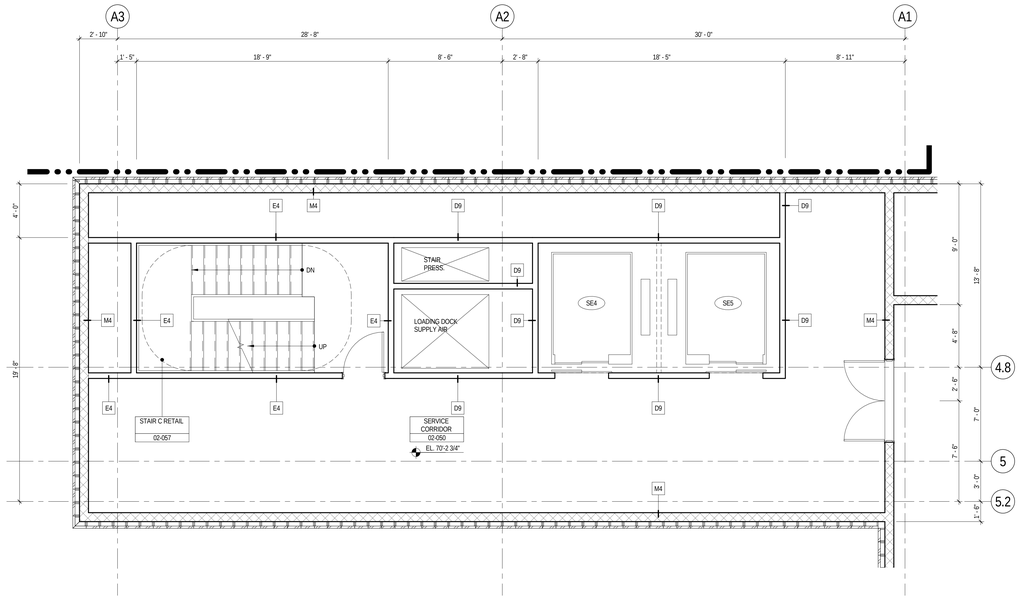

3 LEVEL 2 ENLARGED RETAIL CORE PLAN

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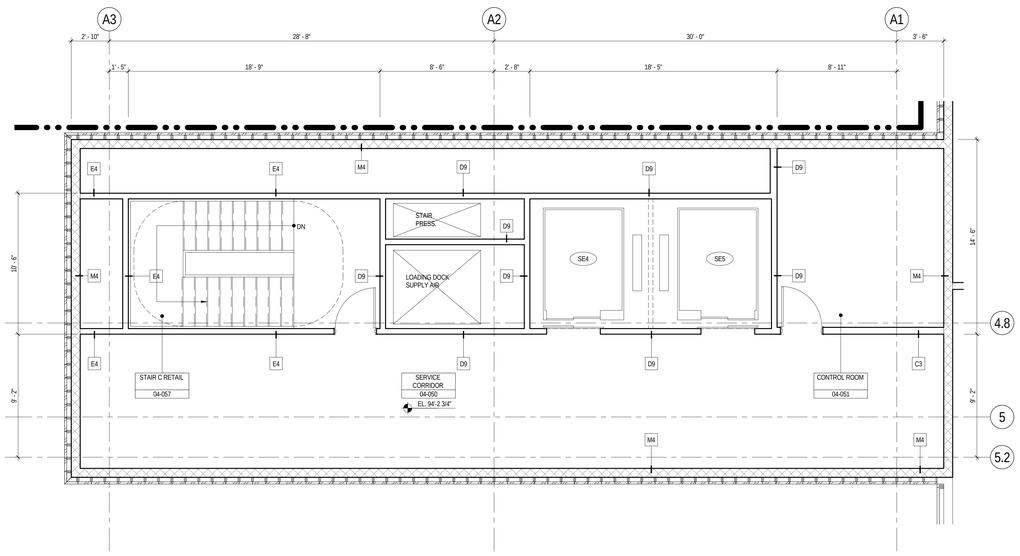

5 LEVEL 4 ENLARGED RETAIL CORE PLAN

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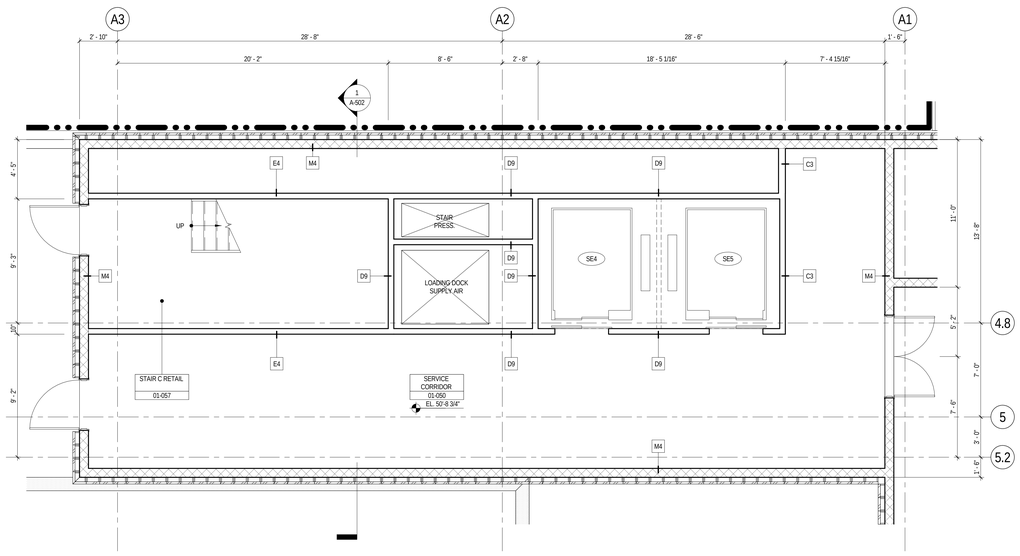

2 LEVEL 1 ENLARGED RETAIL CORE PLAN

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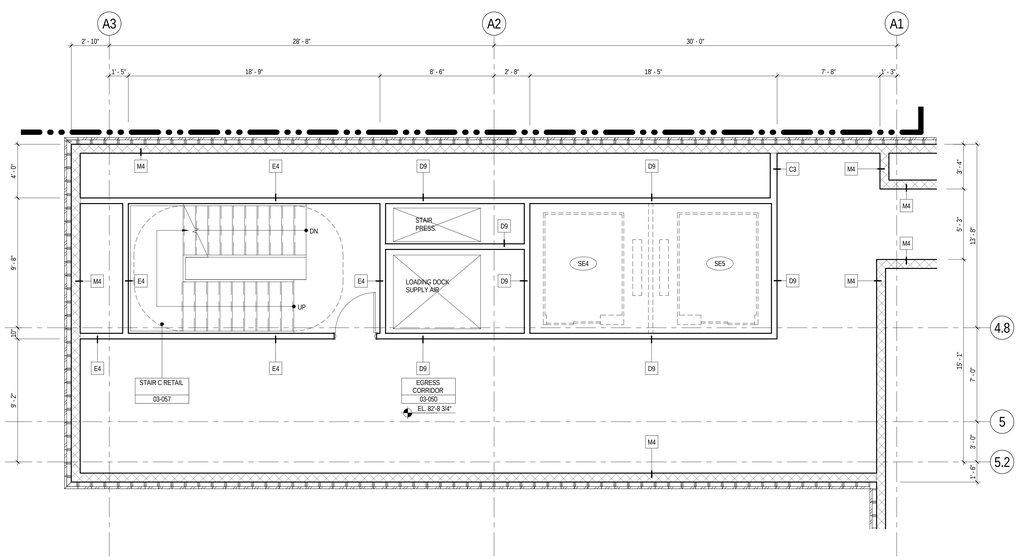
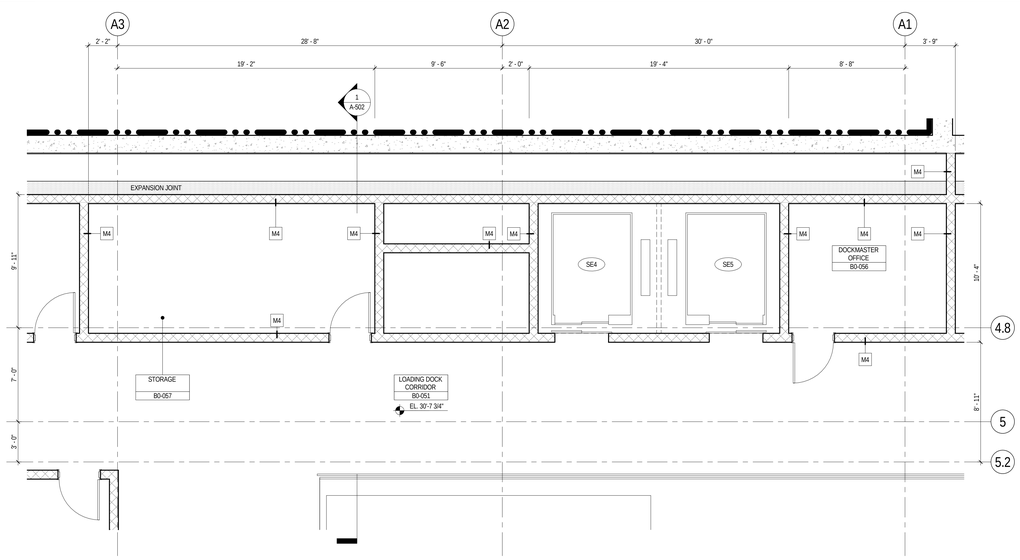


4 LEVEL 3 ENLARGED RETAIL CORE PLAN

SCALE: 1/4" = 1'-0"



1 CELLAR B ENLARGED RETAIL CORE PLAN

SCALE: 1/4" = 1'-0"

SHEET NOTES

1. ALL BUILDING ELEVATIONS (IN FEET) REFERENCED TO THE NORTH AMERCAN VERTICAL DATUM OF 1988 (NAVIB8).

2. FOR GENERAL NOTES, BUILDING DEPARTMENT NOTES, AND CLARIFICATION OF THE WORK NOTES REFER TO SHEET NO. G-005.

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MANHATTAN WEST: NORTH TOWER

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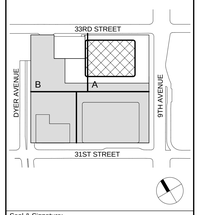
Key Plan:



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REGISTERED ARCHITECT
JOHN P. GOTTESMAN
NO. 5649
STATE OF NEW YORK

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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

ENLARGED RETAIL CORE PLANS

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/4" = 1'-0"
File No.: A-372
B-SCAN Sheet No.: A-372.00
Sheet No.: A-372
Page No.: 76 OF 87

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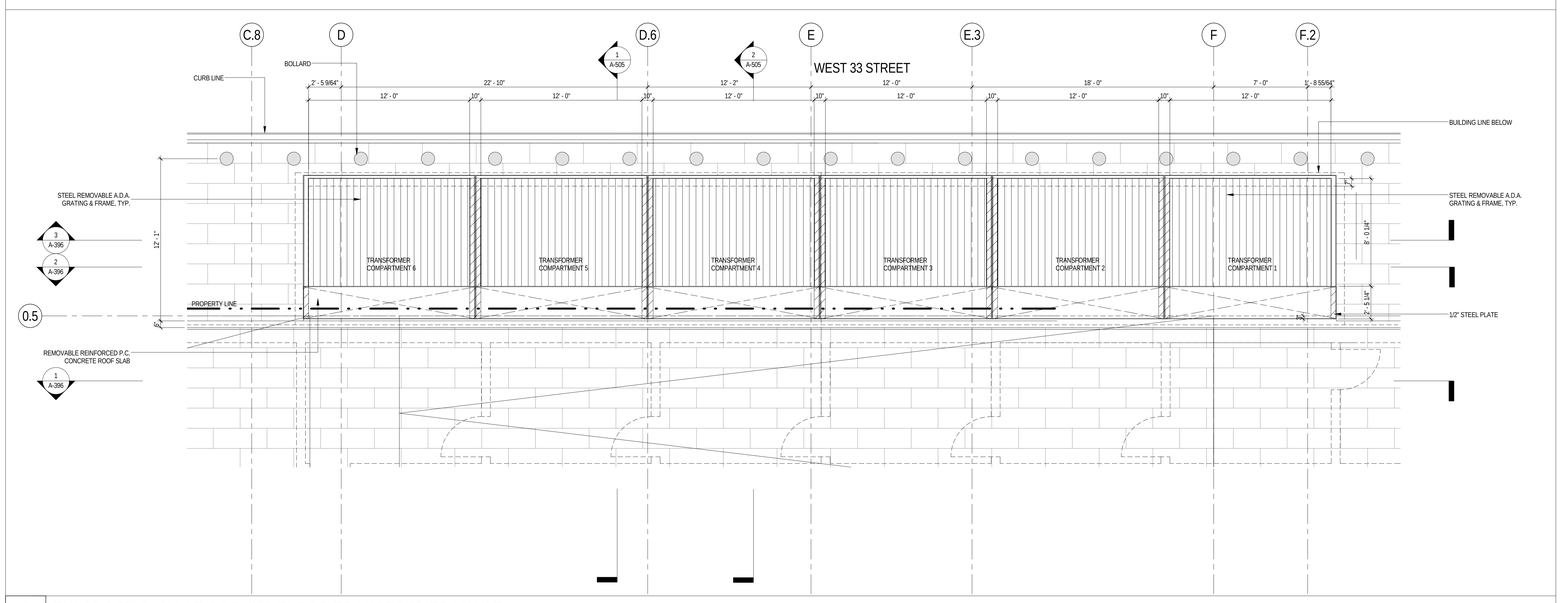
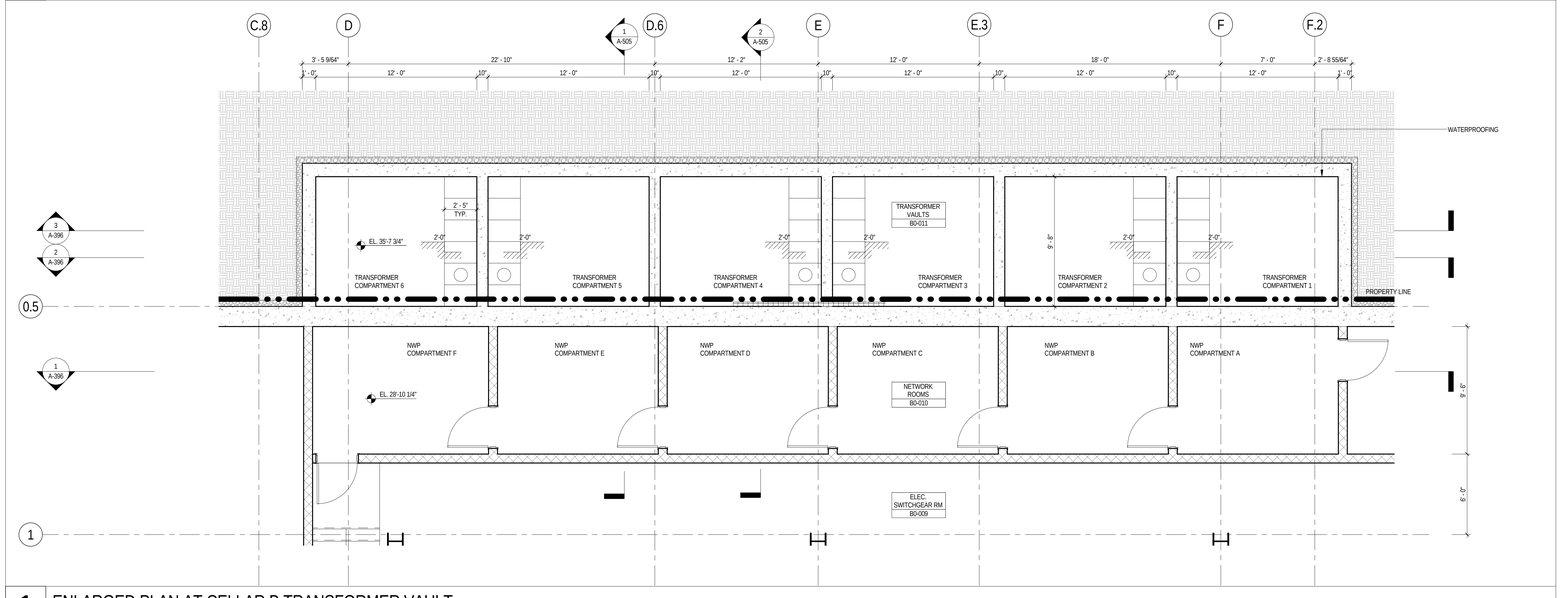


2 ENLARGED PLAN AT GROUND FLOOR TRANSFORMER VAULT

SCALE: 1/4" = 1'-0"



1 ENLARGED PLAN AT CELLAR B TRANSFORMER VAULT

SCALE: 1/4" = 1'-0"

SHEET NOTES

1. REFER TO THE APPROVED CON EDISON DRAWINGS FOR ALL TRANSFORMER VAULT AND NETWORK REQUIREMENTS
2. REFER TO ALL APPLICABLE CON EDISON REFERENCE STANDARDS

MANHATTAN WEST: NORTH TOWER

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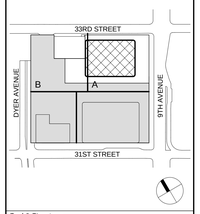

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REGISTERED ARCHITECT
JOSEPH GOTTESDIENER
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STATE OF NEW YORK

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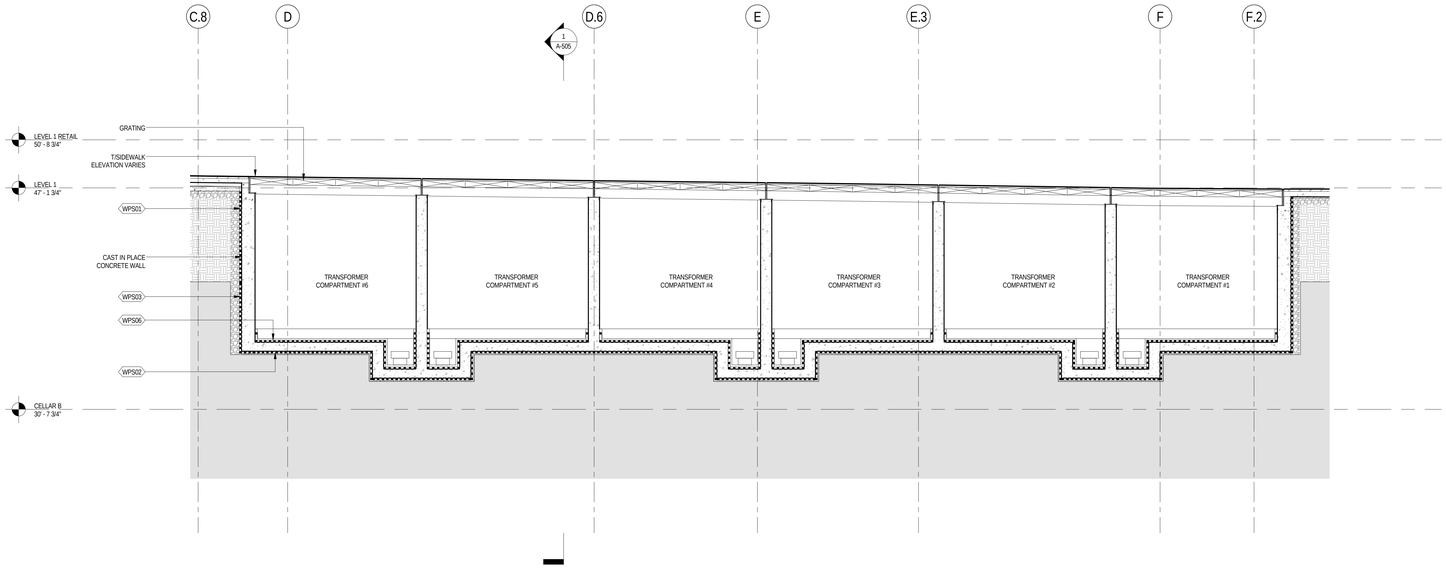
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

ENLARGED TRANSFORMER VAULT PLANS

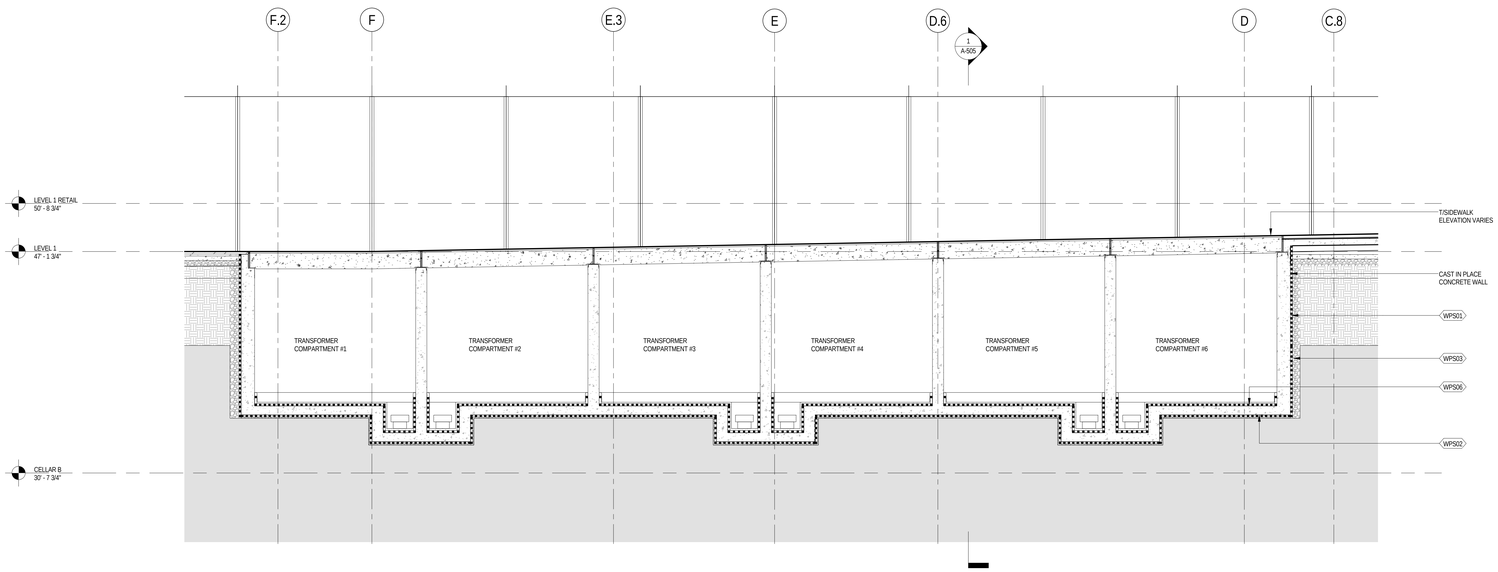
Project No.: 207120	B-SCAN Sheet No.: A-395.00
Date: 20 JUN 2014	Sheet No.: A-395
Scale: 1/4" = 1'-0"	
File No.: A-395	Page No.: 77 OF 87

6/19/2014 12:55:57 PM



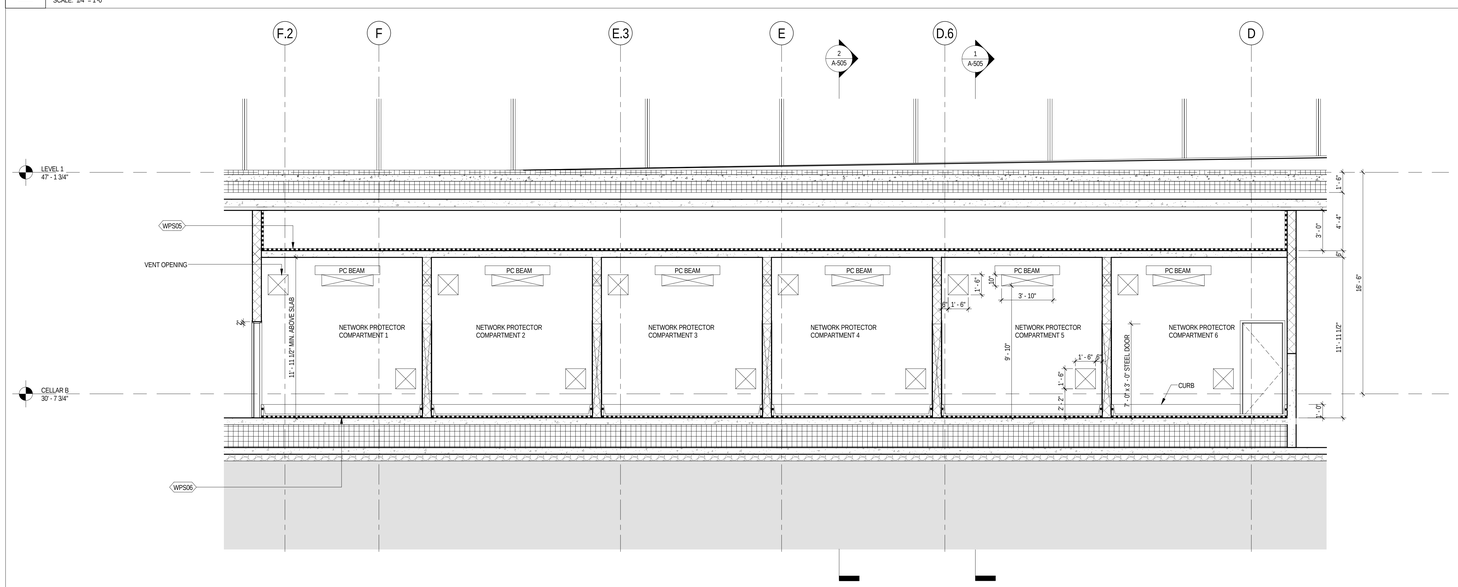
3 TRANSFORMER VAULT SECTION - NORTH

SCALE: 1/4" = 1'-0"



2 TRANSFORMER VAULT SECTION - SOUTH

SCALE: 1/4" = 1'-0"



1 NETWORK PROTECTOR COMPARTMENT SECTION

SCALE: 1/4" = 1'-0"

SHEET NOTES

1. REFER TO THE APPROVED CON EDISON DRAWINGS FOR ALL TRANSFORMER VAULT AND NETWORK REQUIREMENTS
2. REFER TO ALL APPLICABLE CON EDISON REFERENCE STANDARDS

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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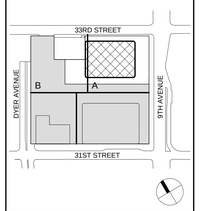
Key Plan:



Seal & Signature:

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No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION BID
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2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

ENLARGED TRANSFORMER VAULT SECTIONS

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/4" = 1'-0"
File No.: A-396
B-SCAN Sheet No.: A-396.00
Sheet No.: A-396
Page No.: 78 OF 87

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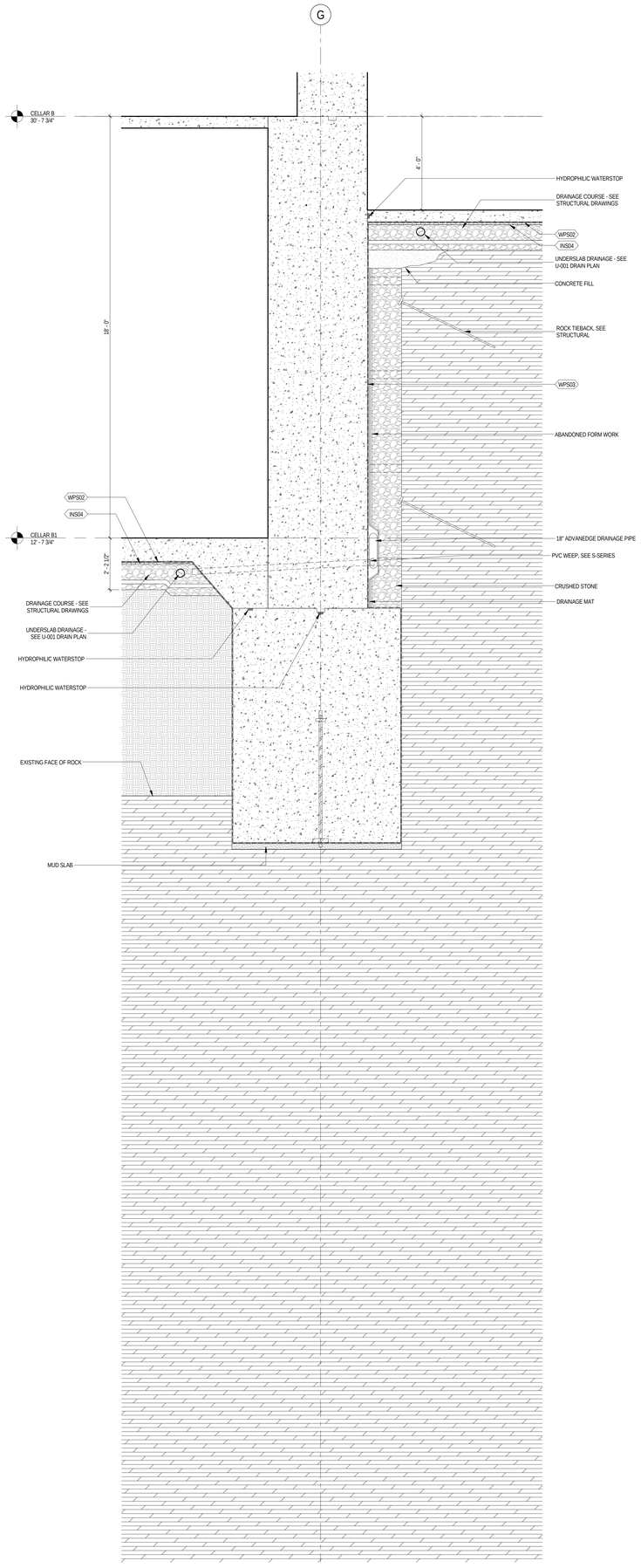

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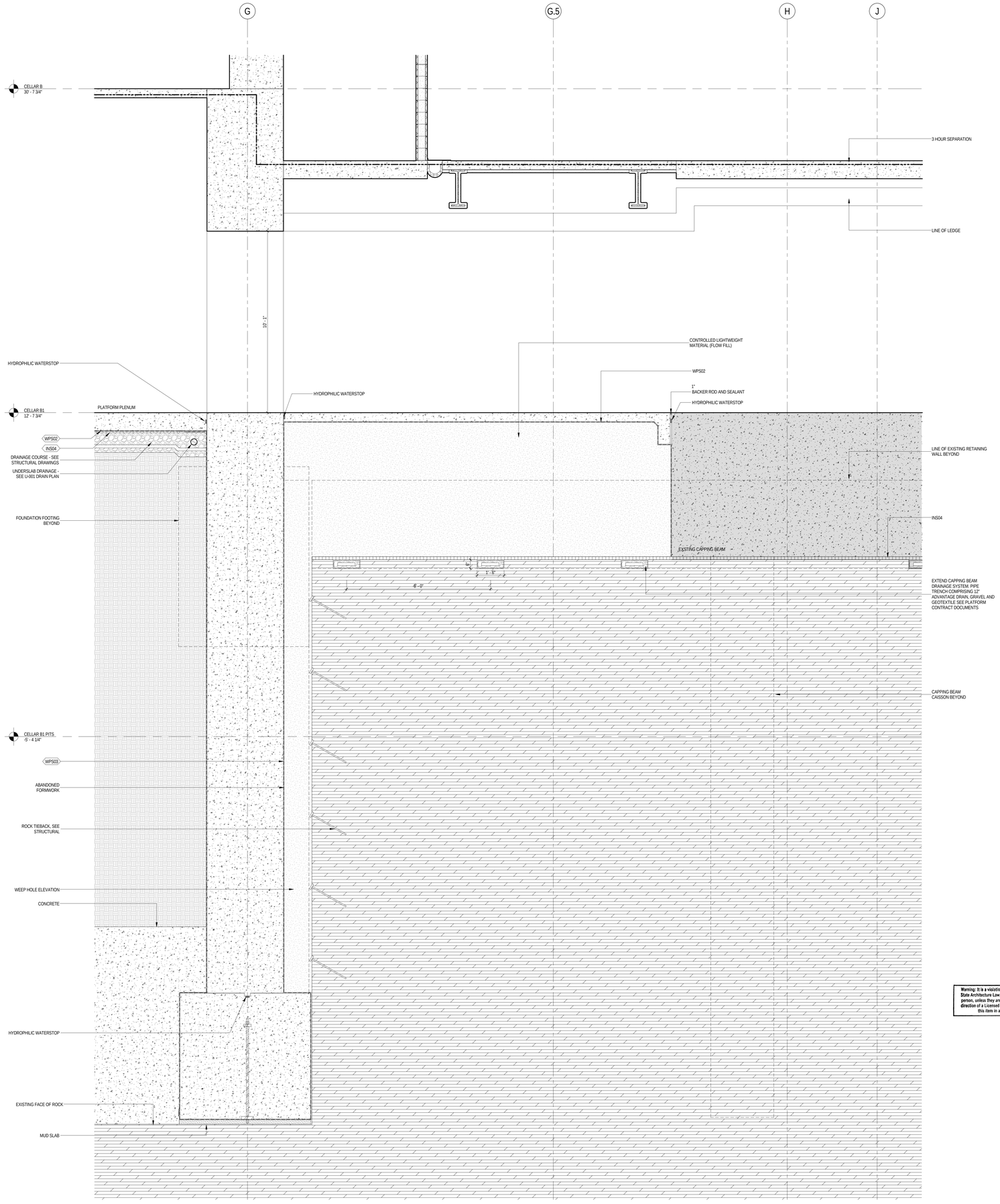

1 FOUNDATION SECTION
SCALE: 1/2" = 1'-0"

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Ontario, Canada N1K 1B8

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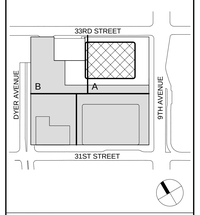
Key Plan:



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REGISTERED ARCHITECT
JOHN P. GOTTESMAN
STATE OF NEW YORK

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2	15 NOV 2013	ISSUED FOR GD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

FOUNDATION WALL SECTIONS

Project No.: 207120	B-SCAN Sheet No.: A-500.00
Date: 20 JUN 2014	
Scale: 1/2" = 1'-0"	Sheet No.: A-500
File No.: A-500	Page No.: 79 OF 87

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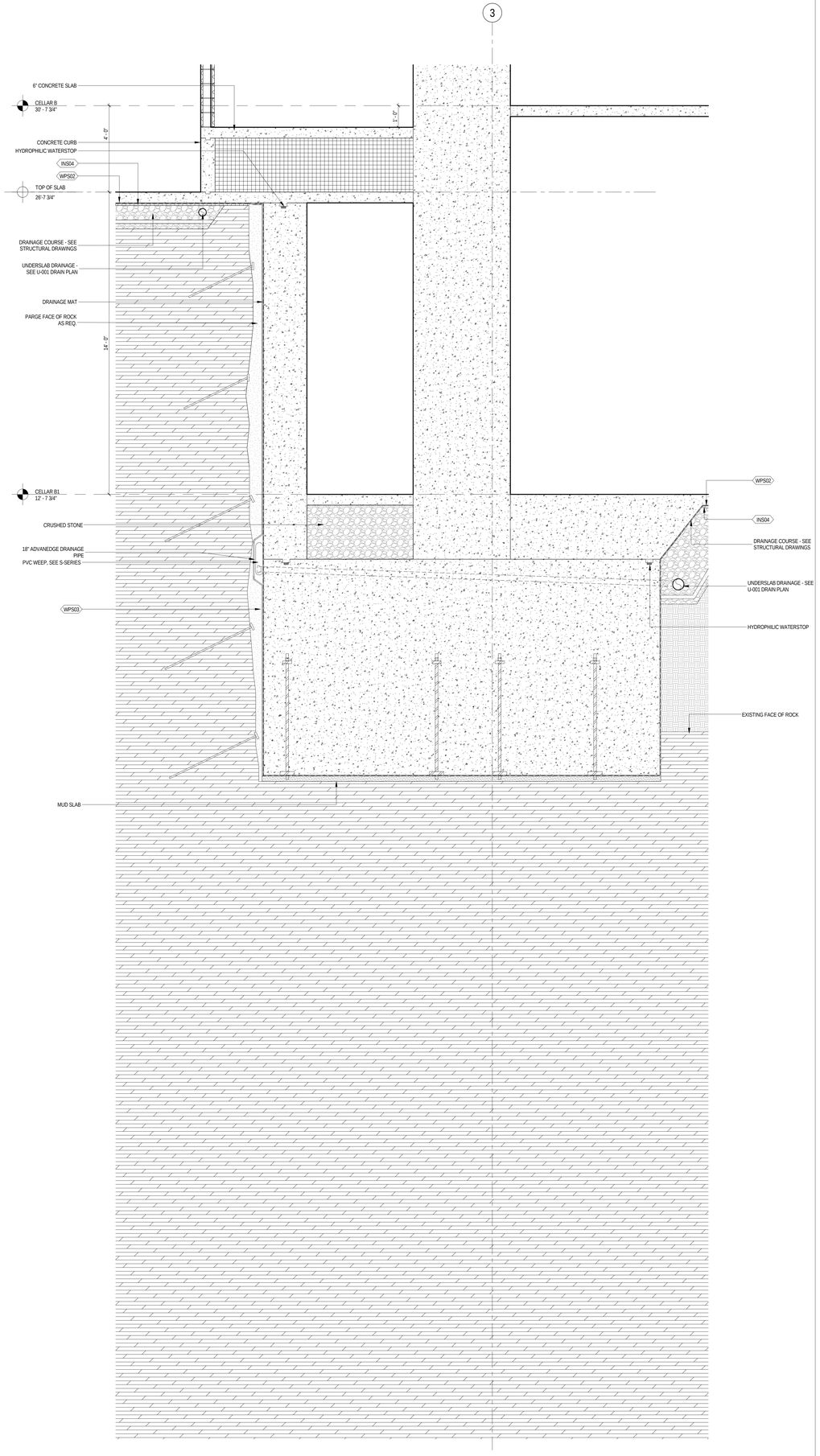

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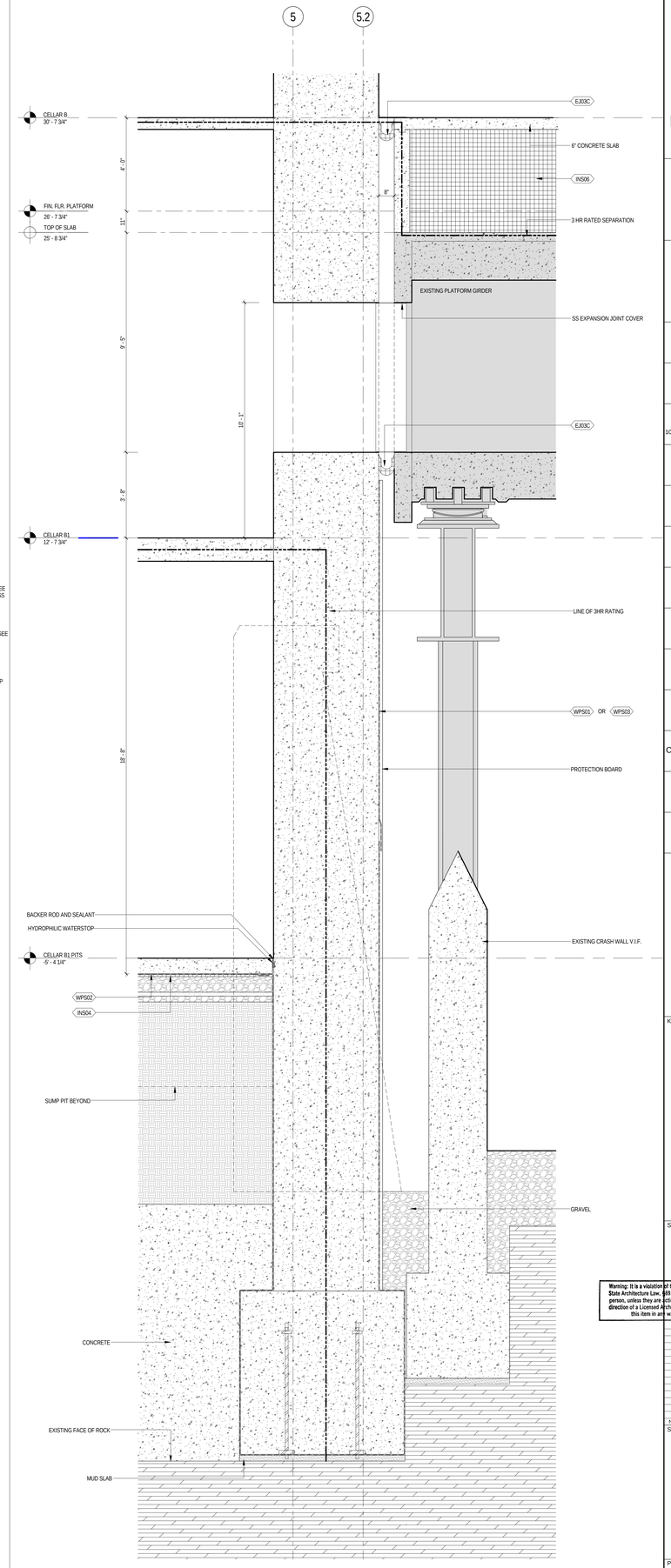

1 FOUNDATION SECTION AT CORE
SCALE: 1/2" = 1'-0"

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REGISTERED ARCHITECT
DAVID GOTTESMAN
NO. 5649
STATE OF NEW YORK

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2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:
FOUNDATION WALL SECTIONS

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/2" = 1'-0"
File No.: A-501
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Sheet No.: A-501
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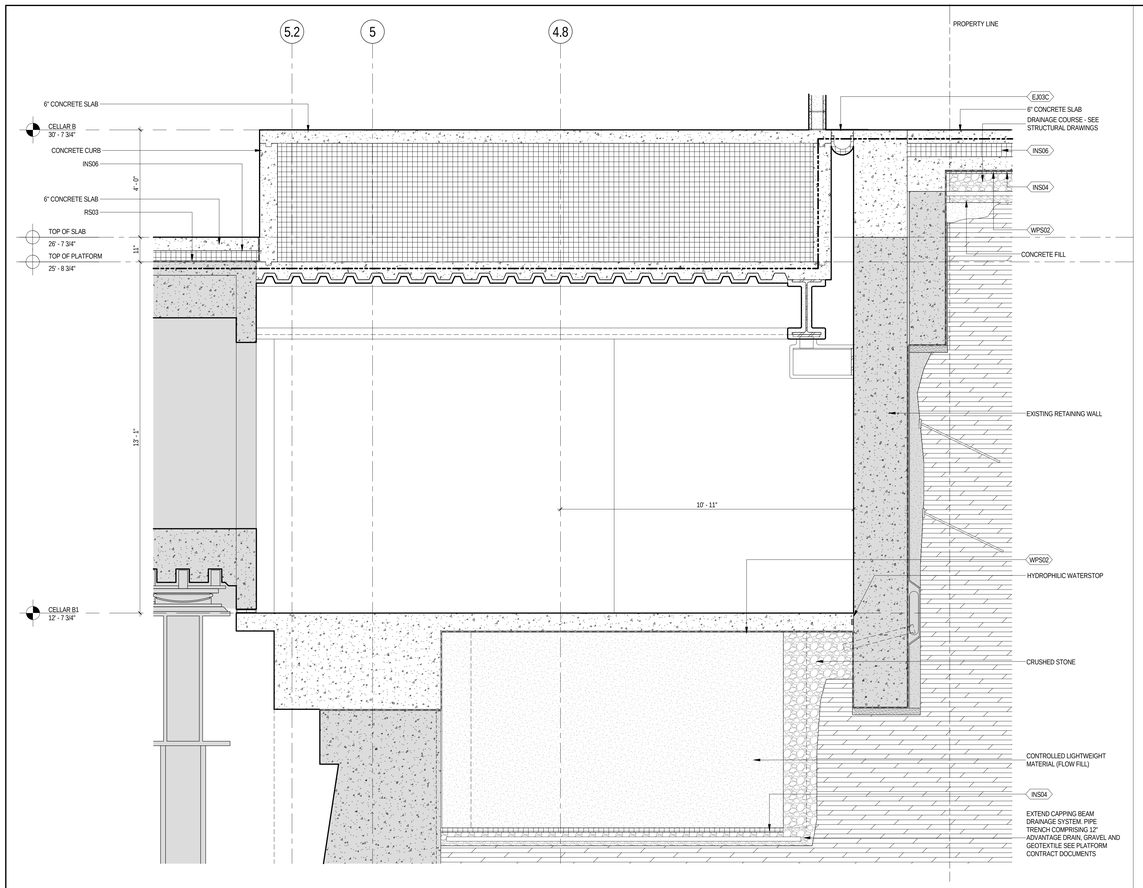

3 FOUNDATION SECTION AT PLENUM 3

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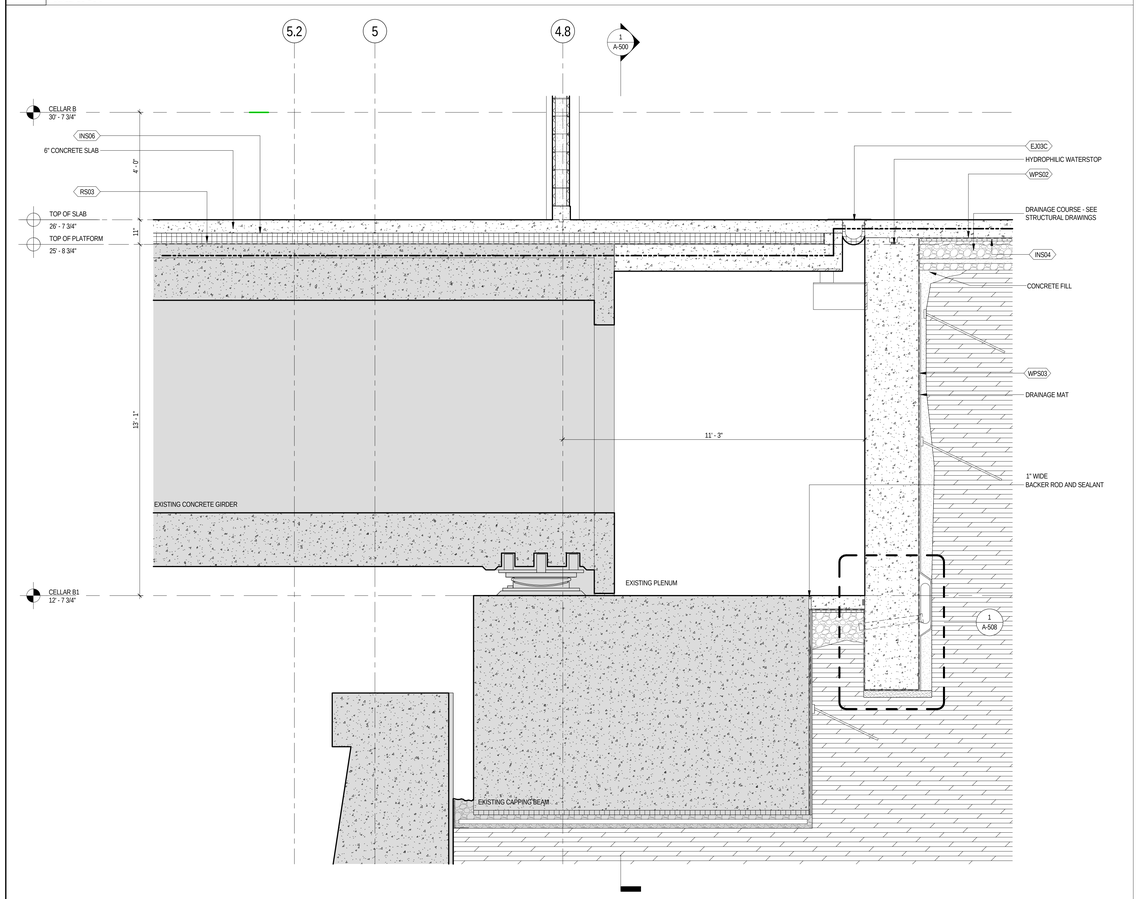

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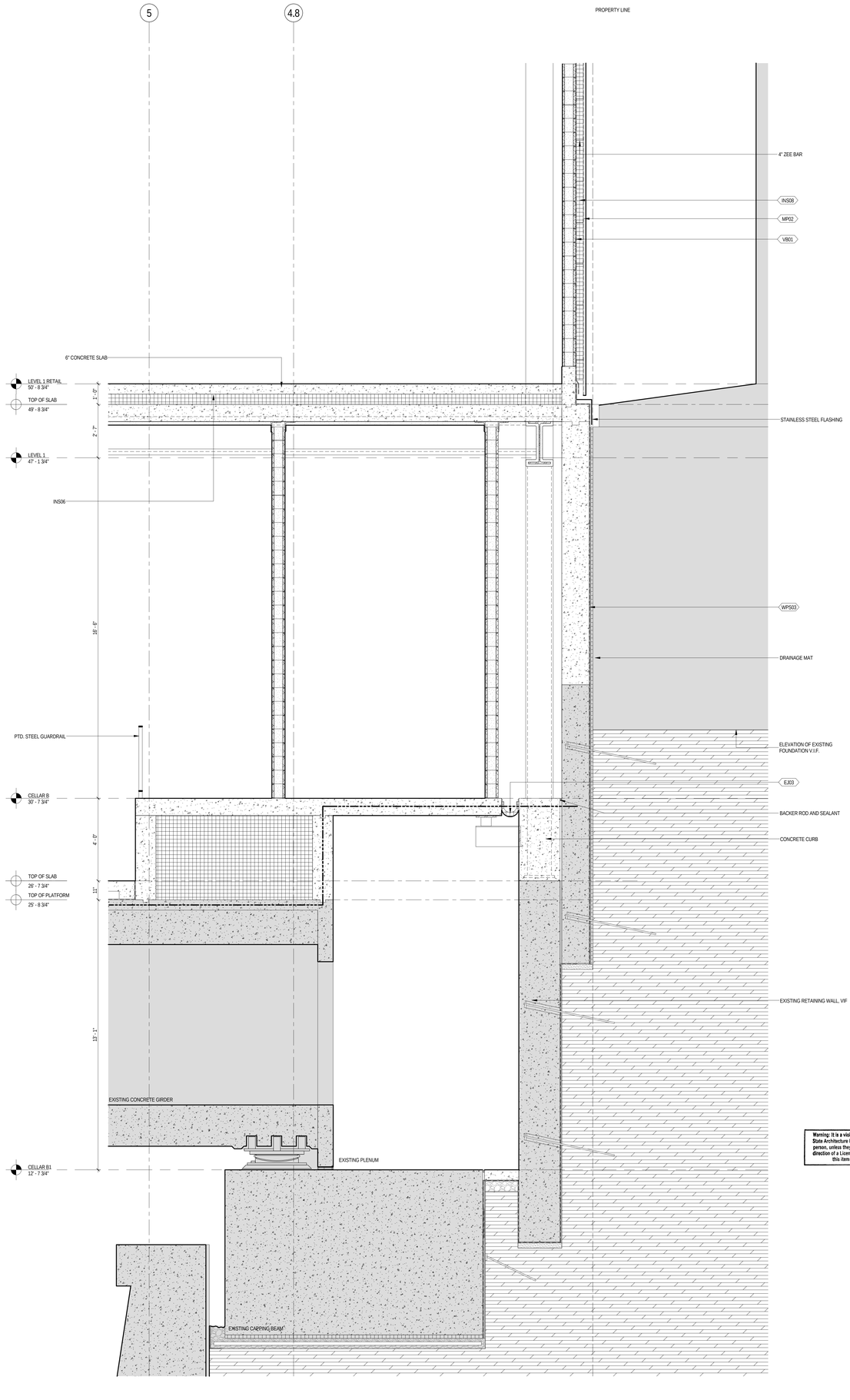

1 FOUNDATION SECTION

SCALE: 1/2" = 1'-0"

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375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
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Ontario, Canada N1K 1B8

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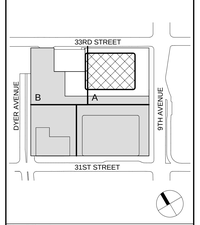
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
JOHN DOTTERWEICH
No. 15649
STATE OF NEW YORK

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2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

FOUNDATION WALL SECTIONS

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/2" = 1'-0"

File No.: A-502

B-SCAN Sheet No.: A-502.00

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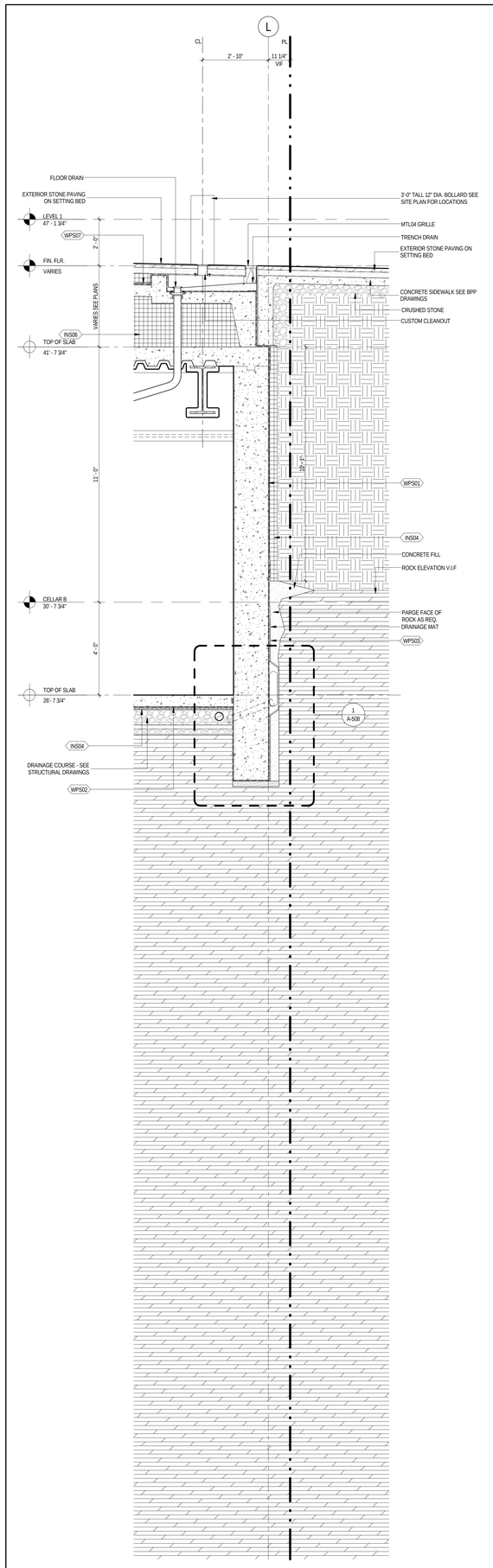
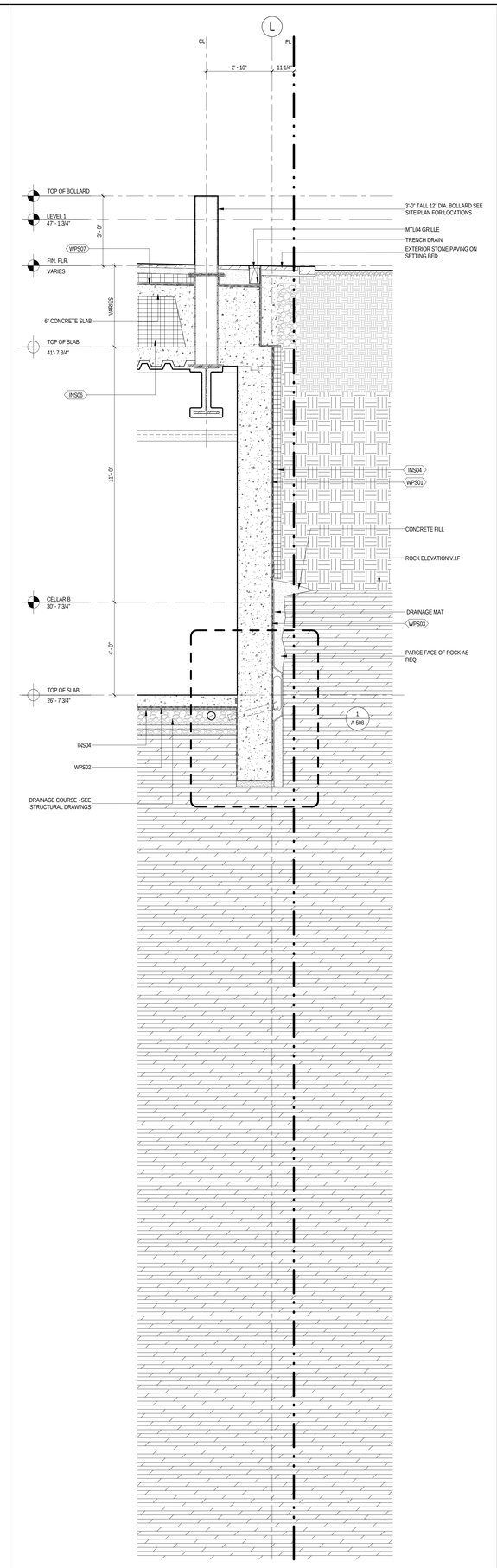


4 FOUNDATION SECTION
SCALE: 1/2" = 1'-0"



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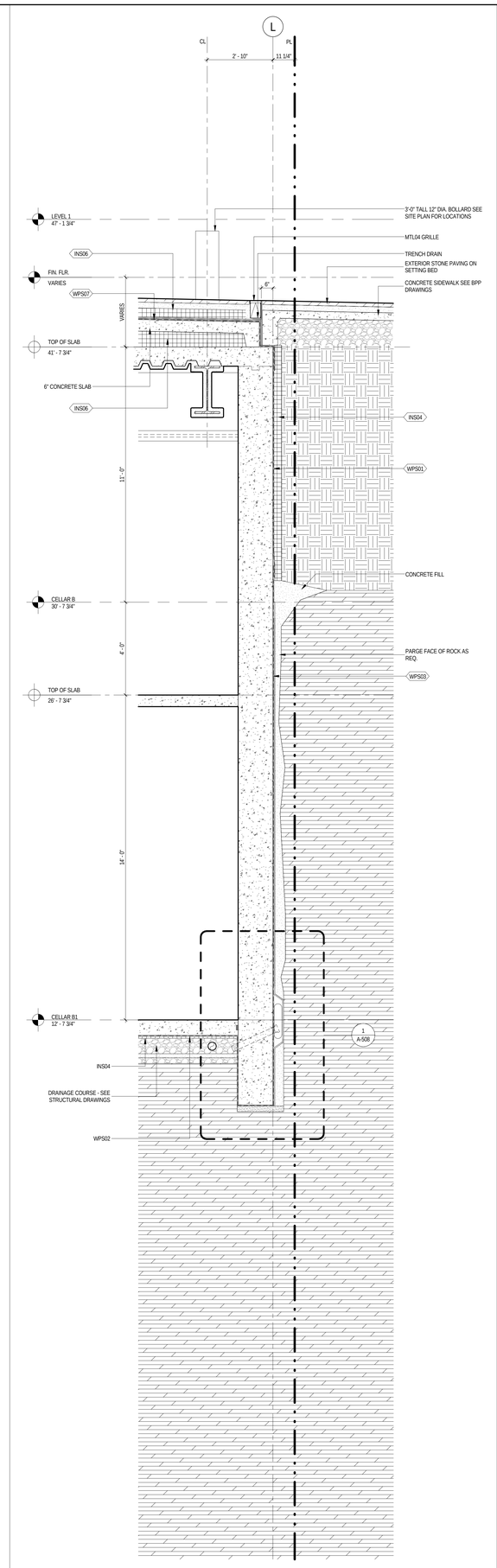

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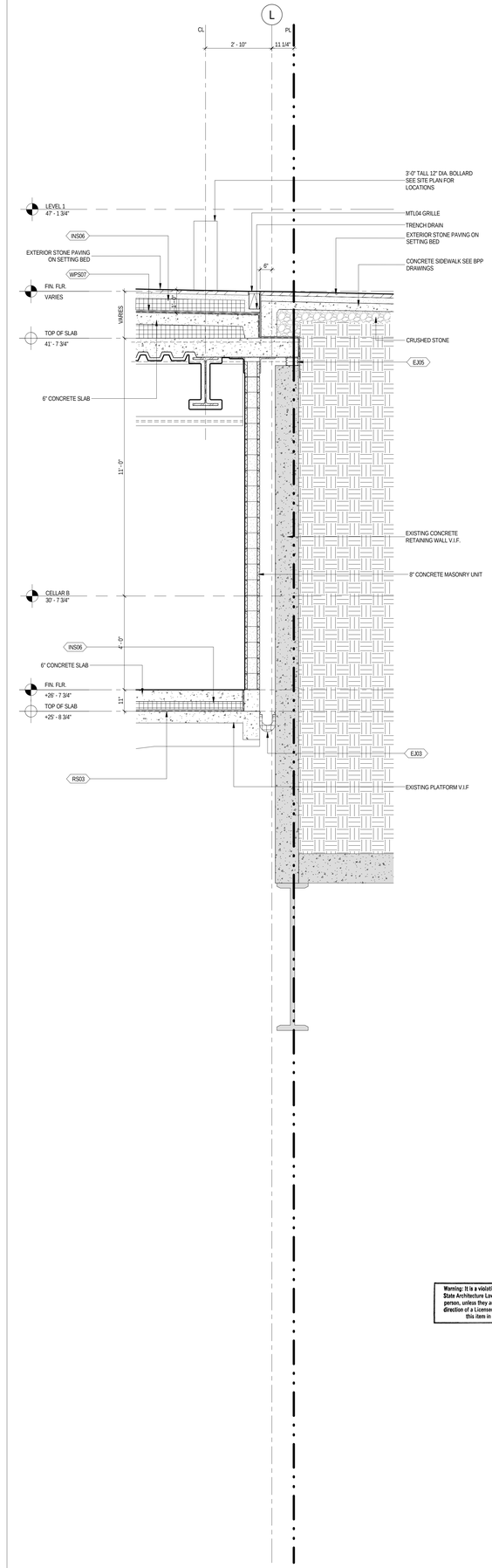

1 FOUNDATION SECTION AT BRIDGE
SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
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Skidmore, Owings & Merrill LLP
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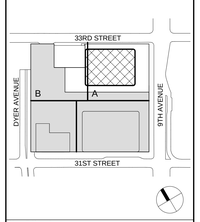
Key Plan:



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REGISTERED ARCHITECT
PETER J. GOTTESDIENER
NO. 5649
STATE OF NEW YORK

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1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:
FOUNDATION WALL SECTIONS

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/2" = 1'-0"
File No.: A-503
B-SCAN Sheet No.: A-503.00
Sheet No.: A-503
Page No.: 82 OF 87

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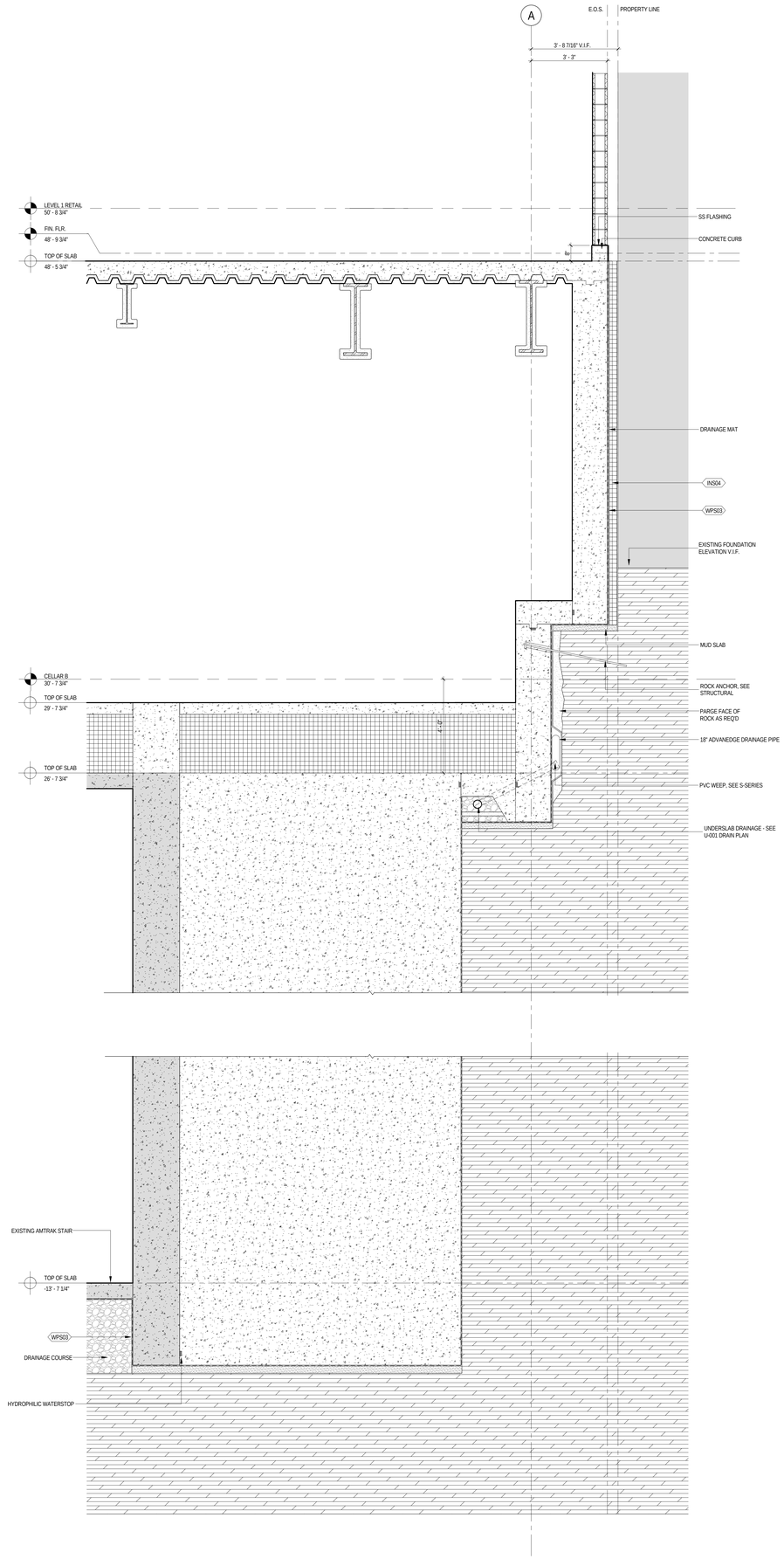

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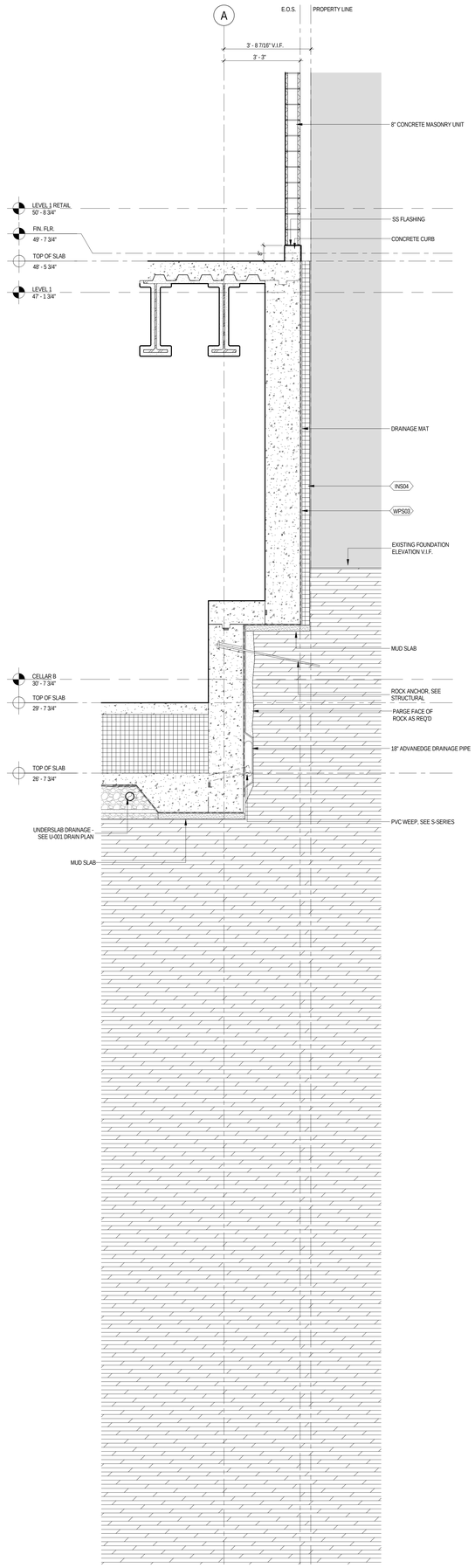

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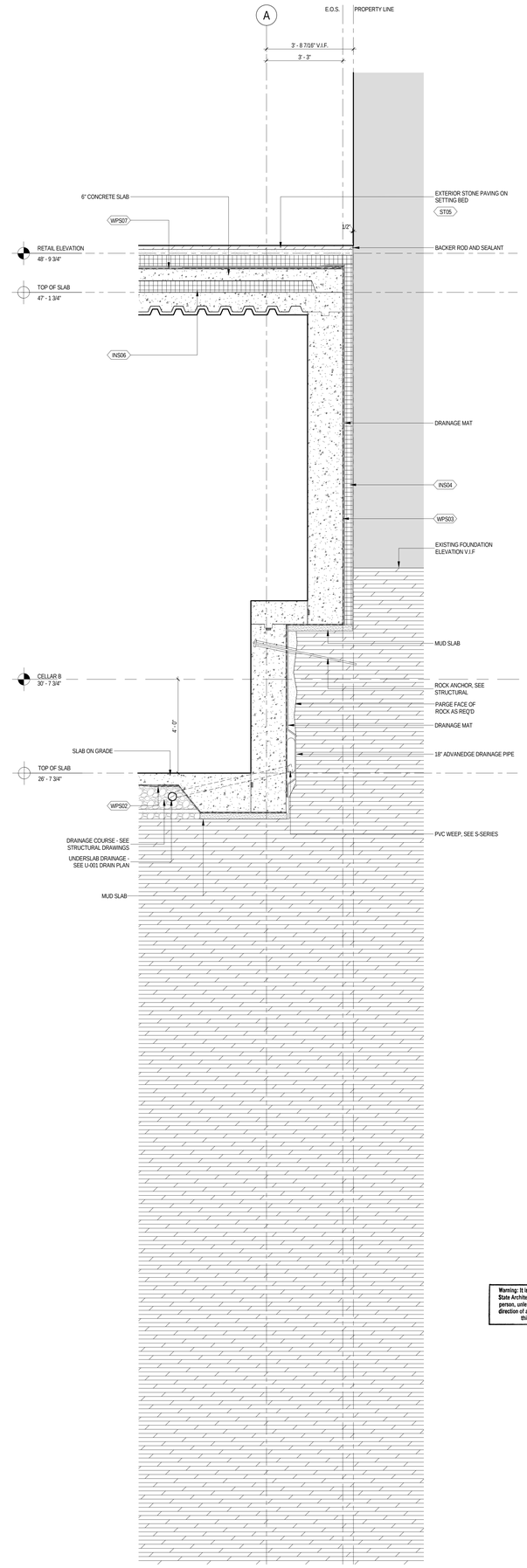

1 FOUNDATION SECTION AT LOFT
SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER
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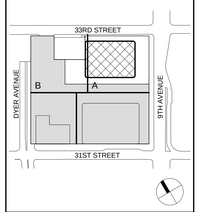

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REGISTERED ARCHITECT
BRIAN J. GOTTESDIENER
No. 5649
STATE OF NEW YORK

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Sheet Name:
FOUNDATION WALL SECTIONS

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/2" = 1'-0"
File No.: A-504
B-SCAN Sheet No.: A-504.00
Sheet No.: A-504
Page No.: 83 OF 87

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207120 Job Number

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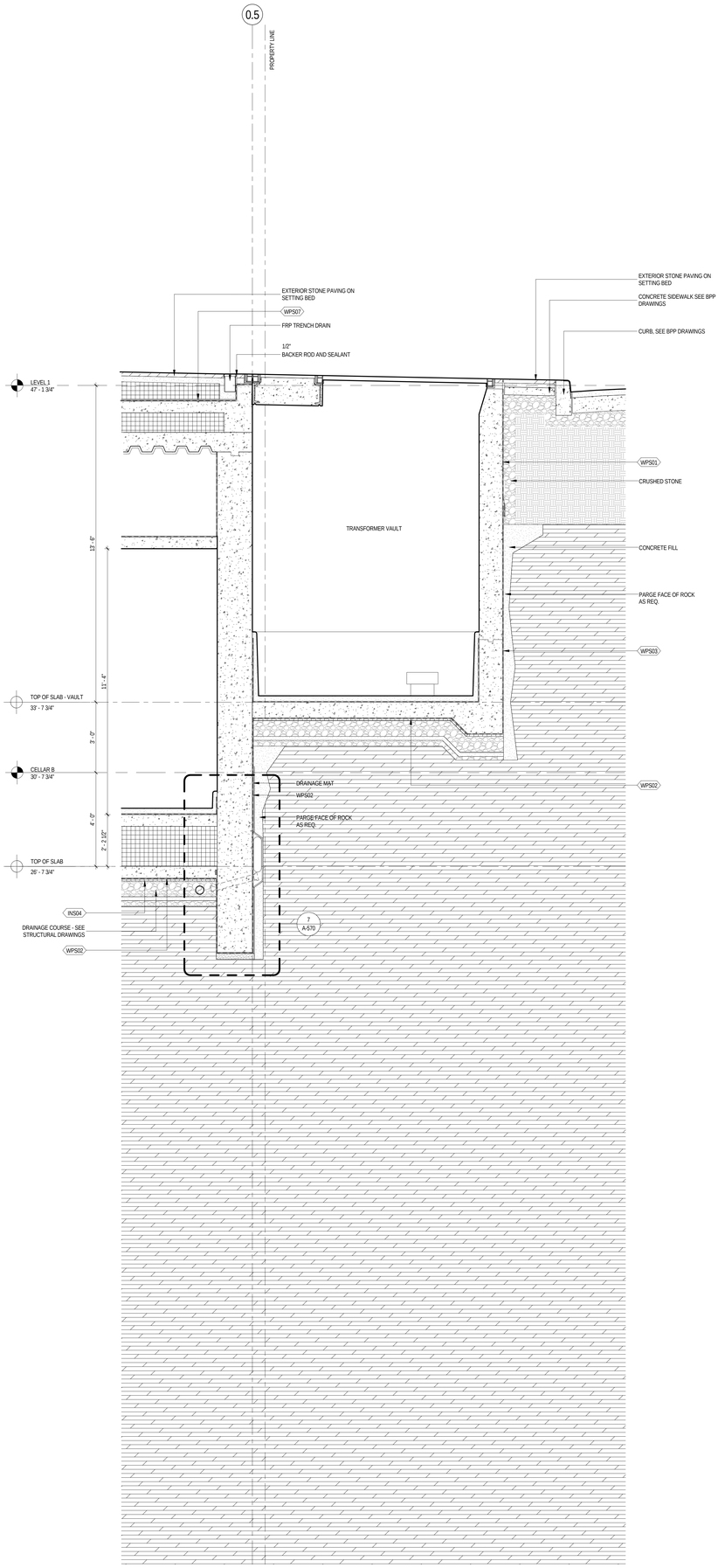

2 FOUNDATION SECTION

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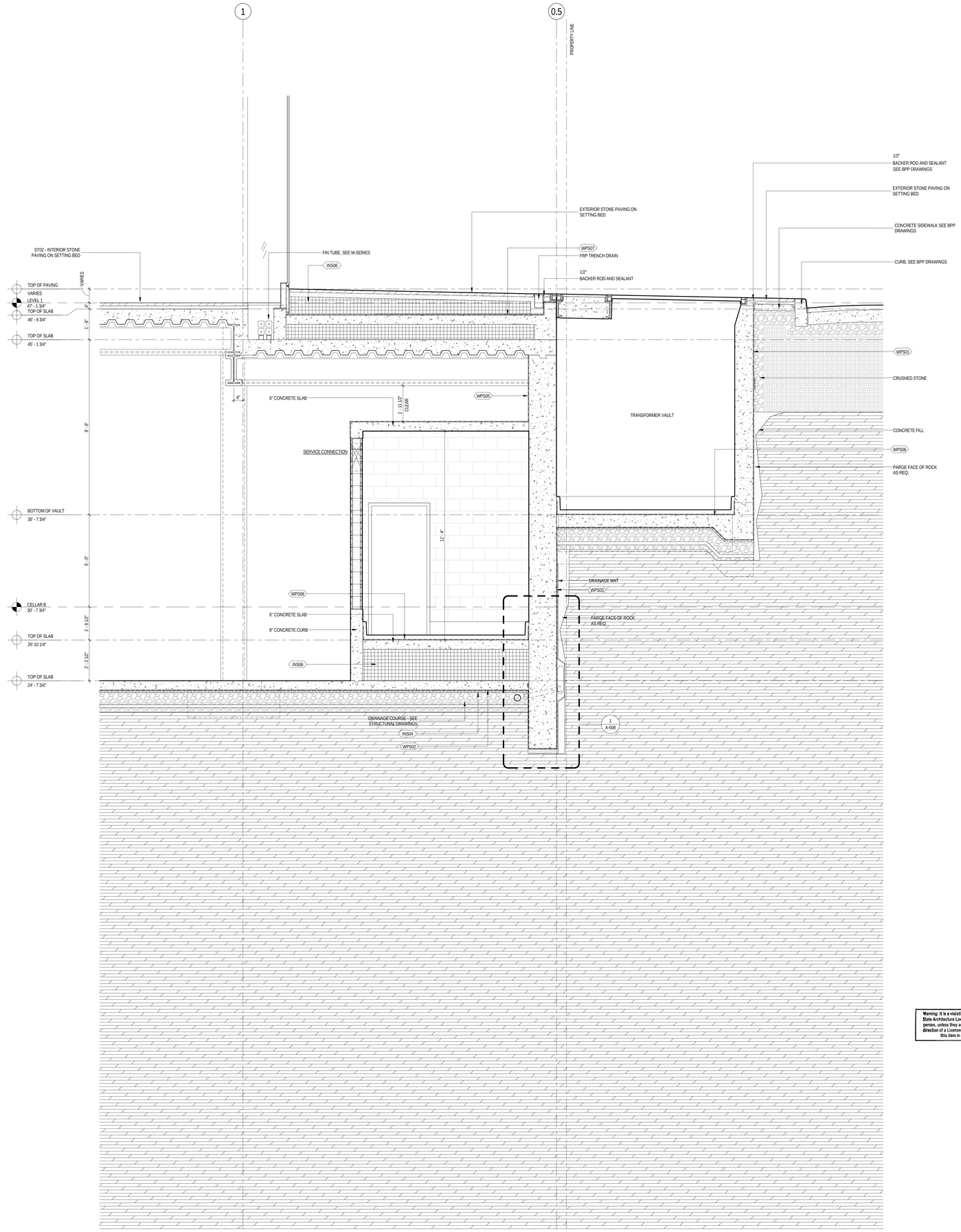

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404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

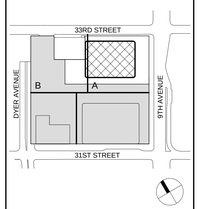
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ROY J. GOTTESMAN
STATE OF NEW YORK
No. 5648

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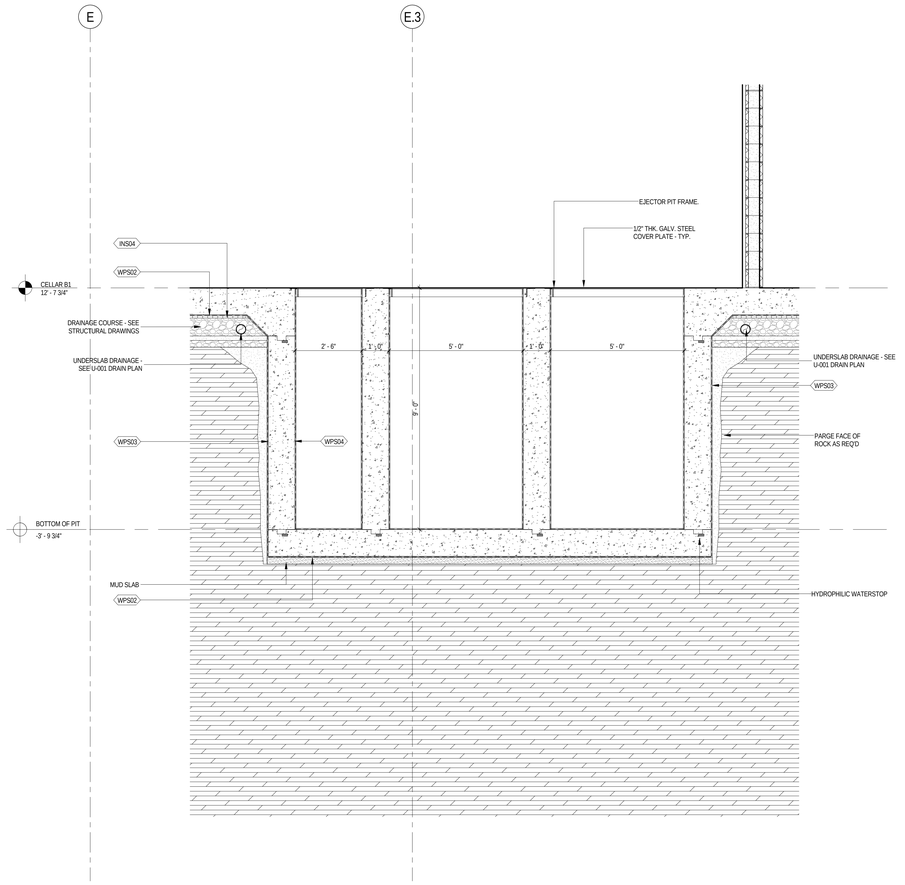
No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION BID
3	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FOUNDATION WALL SECTIONS

Project No.: 207120	B-SCAN Sheet No.: A-505.00
Date: 20 JUN 2014	
Scale: 1/2" = 1'-0"	Sheet No.: A-505
File No.: A-505	Page No.: 84 OF 87

6/19/2014 12:11:20 AM



2 FOUNDATION SECTION AT CELLAR B3 SUMP

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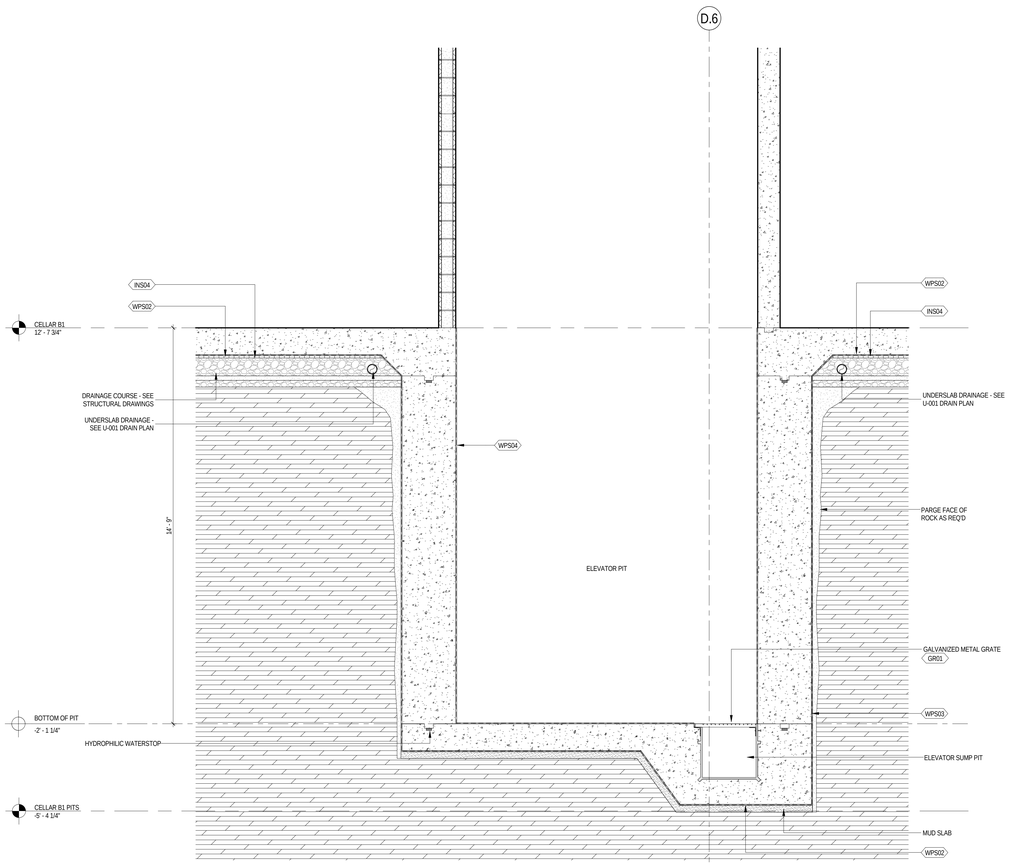

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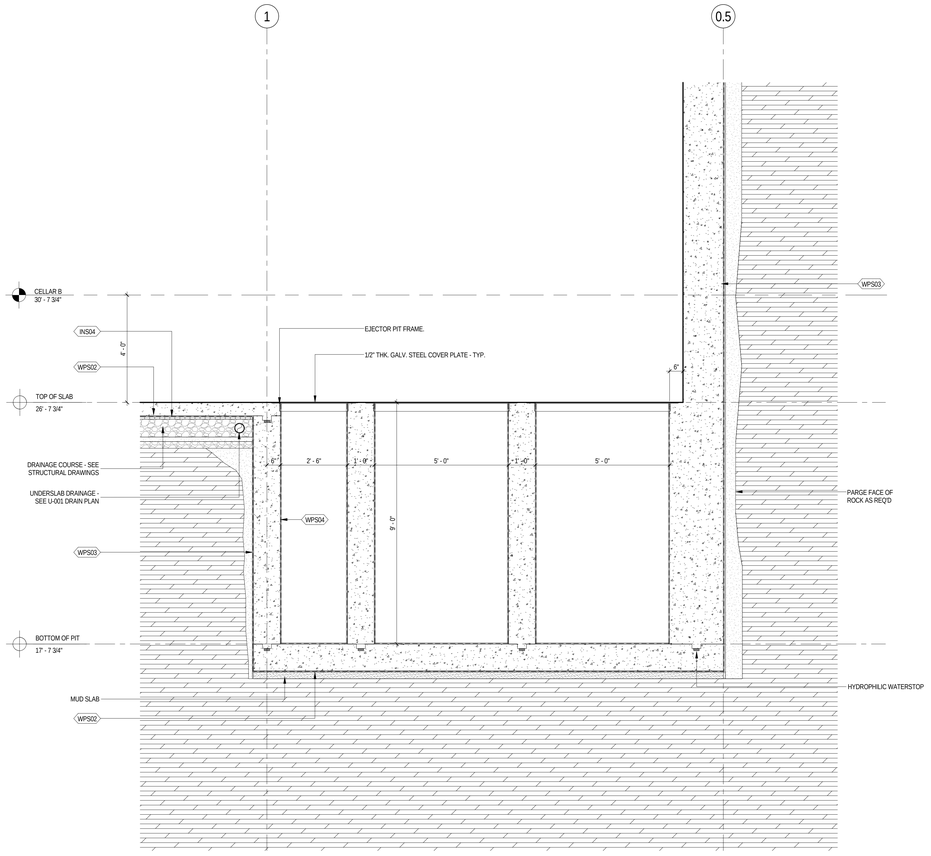
SCALE: NTS



1 FOUNDATION SECTION AT CELLAR B SUMP

SCALE: 1/2" = 1'-0"

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

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250 State Street #F1, North Haven, CT 06473

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Ontario, Canada N1K 1B8

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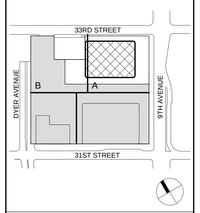
Key Plan:



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REGISTERED ARCHITECT
ROBERT SCOTTI GUTTMAN
No. 16649
STATE OF NEW YORK

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Sheet Name:

FOUNDATION WALL SECTIONS

Project No.: 207120	B-SCAN Sheet No.: A-506.00
Date: 20 JUN 2014	Sheet No.: A-506
Scale: 1/2" = 1'-0"	
File No.: A-506	Page No.: 85 OF 87

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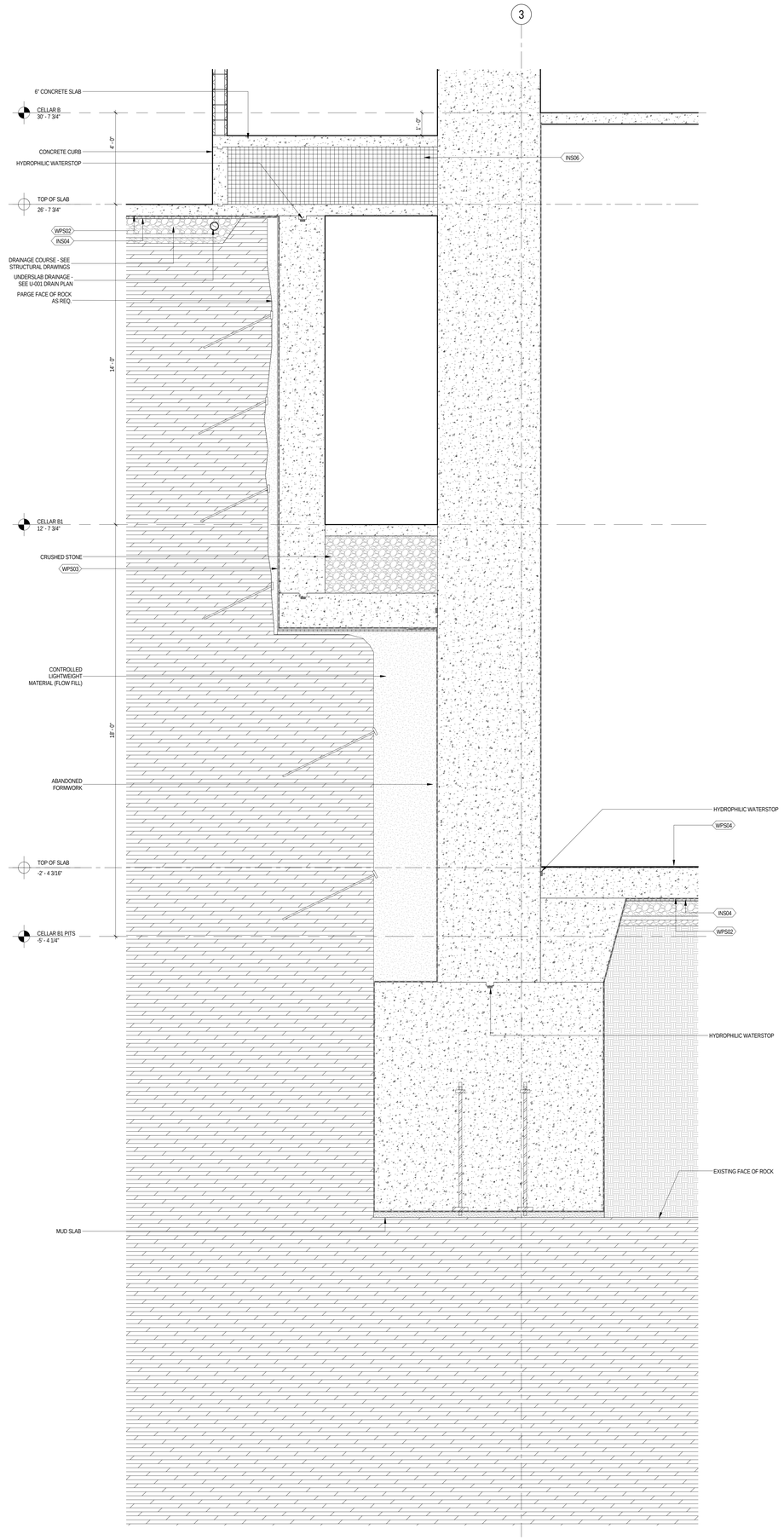

1 FOUNDATION SECTION AT CORE

SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Ontario, Canada N1K 1B8

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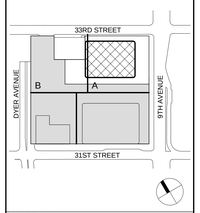
Key Plan:



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REGISTERED ARCHITECT
JOHN P. GOTTESMAN
LICENSE NO. 15649
STATE OF NEW YORK

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION BID
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Sheet Name:

FOUNDATION WALL SECTIONS

Project No.: 207120	B-SCAN Sheet No.: A-507.00
Date: 20 JUN 2014	Sheet No.: A-507
Scale: 1/2" = 1'-0"	
File No.: A-507	Page No.: 86 OF 87

REF OF BLOCK 1711F143 Job Number

E5F5D13A8B Scan Code

MANHATTAN WEST: NORTH TOWER

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Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Ontario, Canada N1K 1B8

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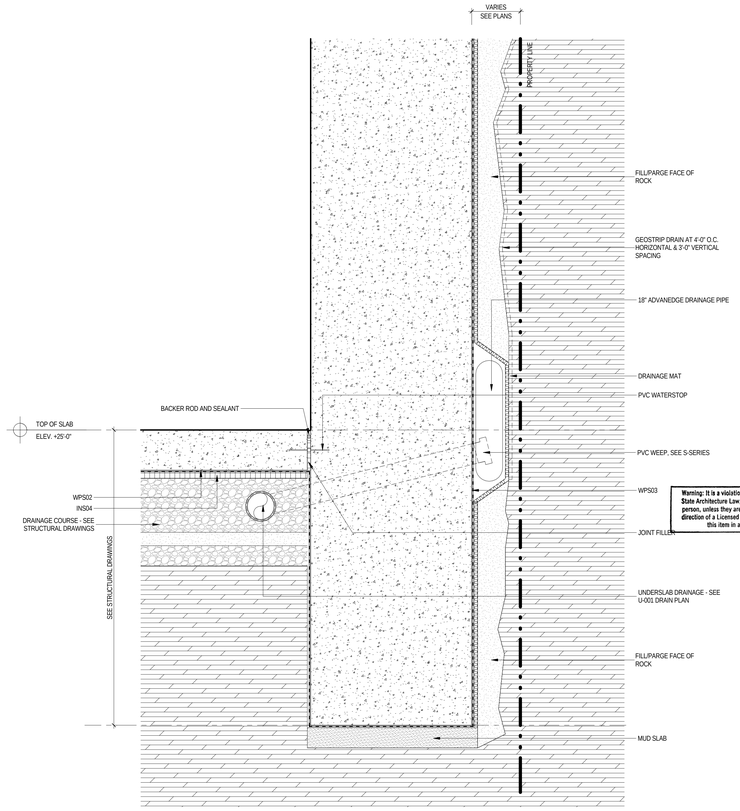

1 DETAIL AT PERIMETER FOOTING

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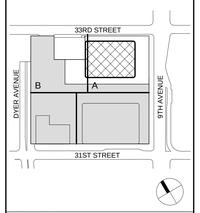

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REGISTERED ARCHITECT
JOHN DOTTERWEICH
No. 15649
STATE OF NEW YORK

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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FOUNDATION DETAILS

Project No.: 207120

Date: 20 JUN 2014

Scale: 1 1/2" = 1'-0"

File No.: A-508

B-SCAN Sheet No.: A-508.00

Sheet No.: A-508

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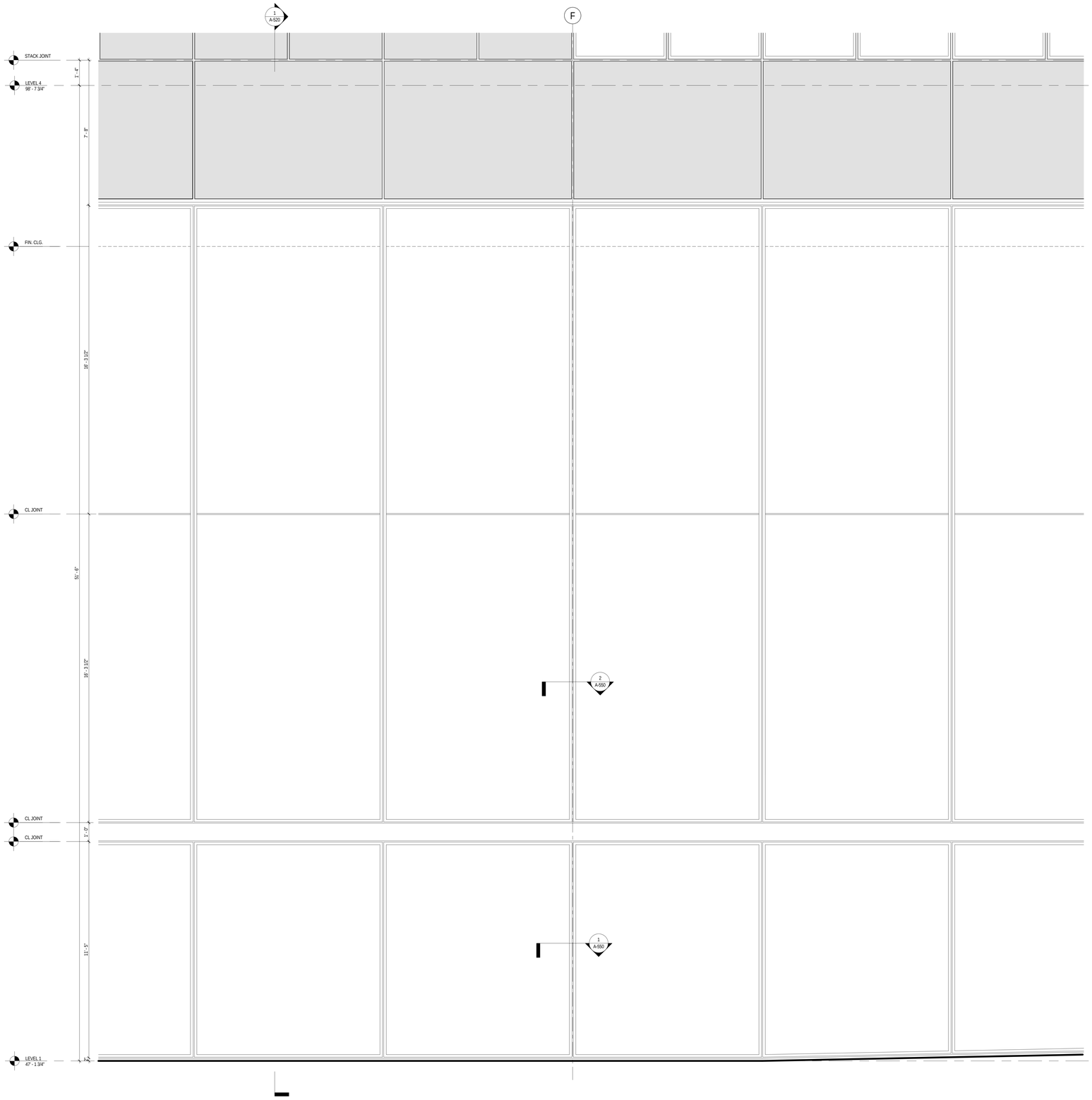

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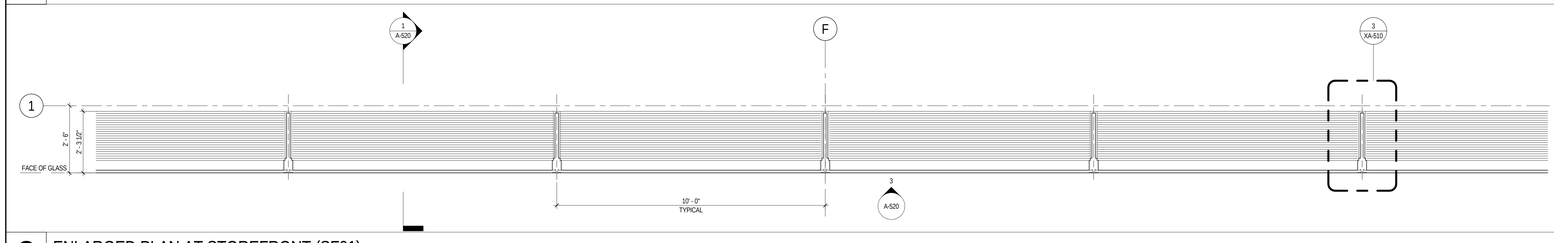

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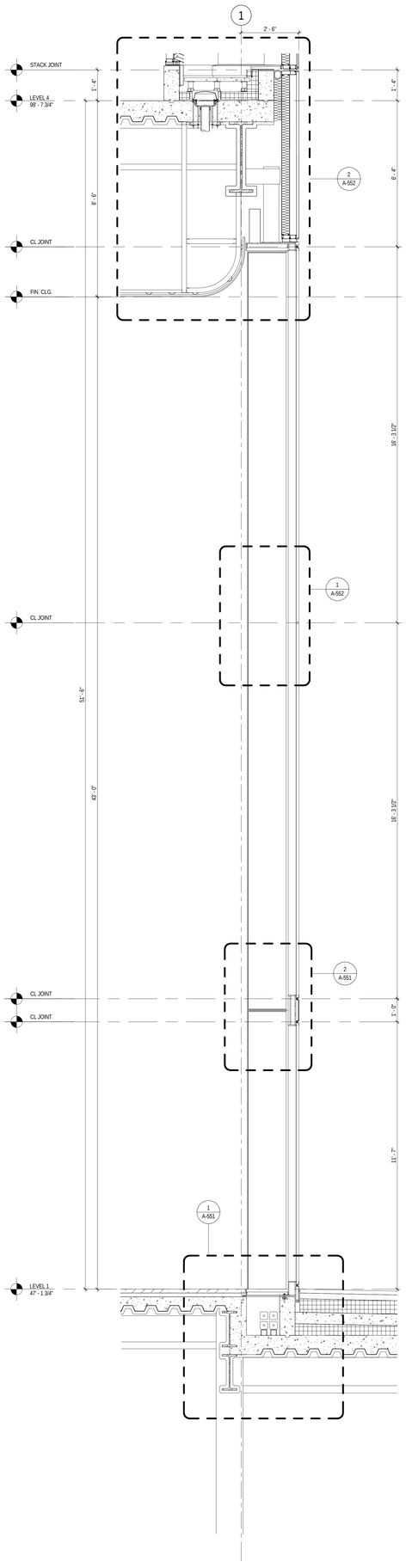

1 ENLARGED SECTION AT STOREFRONT (SF01)

SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
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Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
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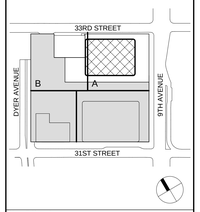
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ROY J. GOTTESMAN
STATE OF NEW YORK

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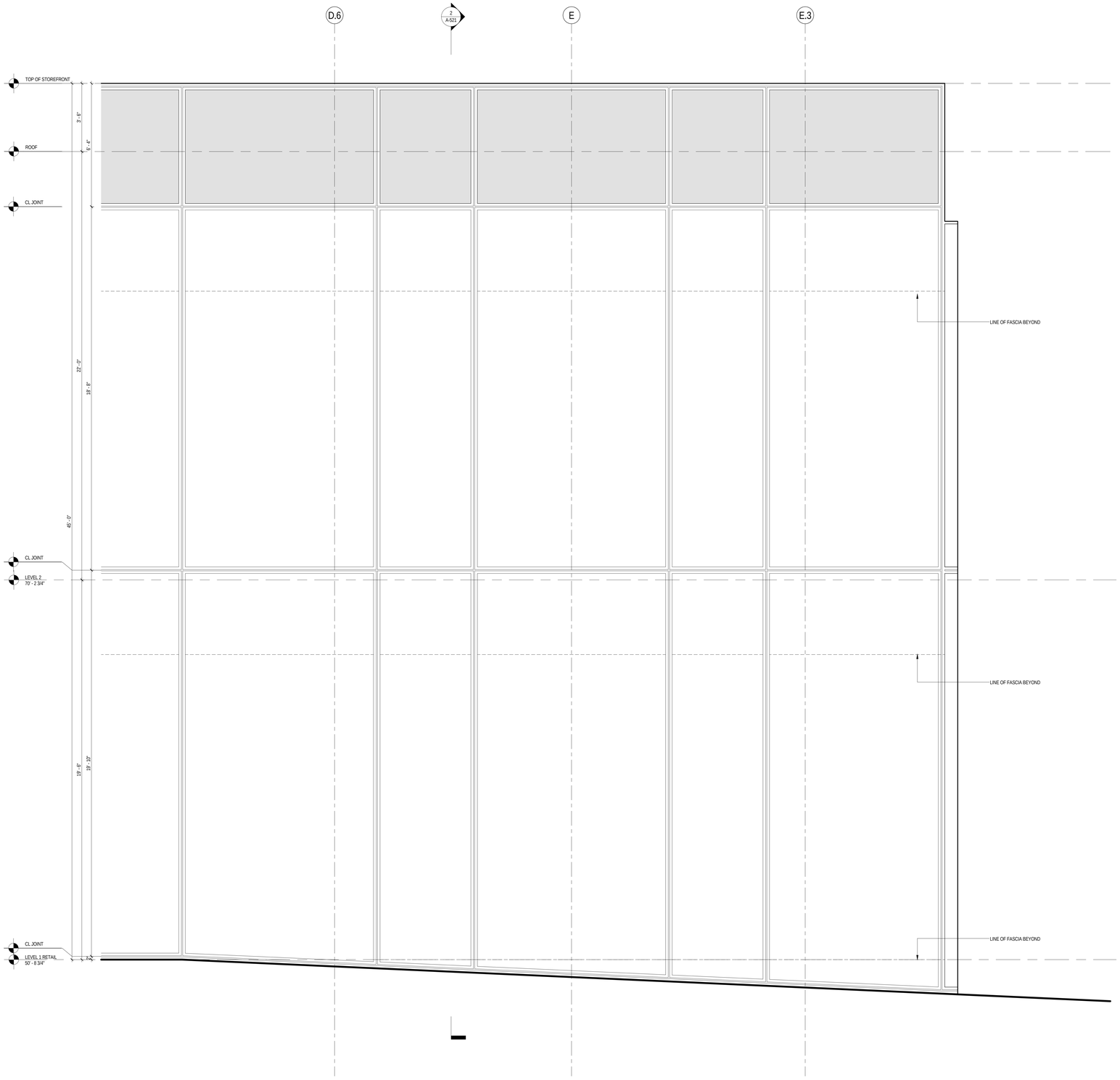
No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

TYPICAL STOREFRONT

Project No.: 207120	B-SCAN Sheet No.: A-520.00
Date: 12 SEPT 2014	Sheet No.: A-520
Scale: 1/2" = 1'-0"	
File No.: A-520	Page No.: 30

9/11/2014 5:34:56 PM



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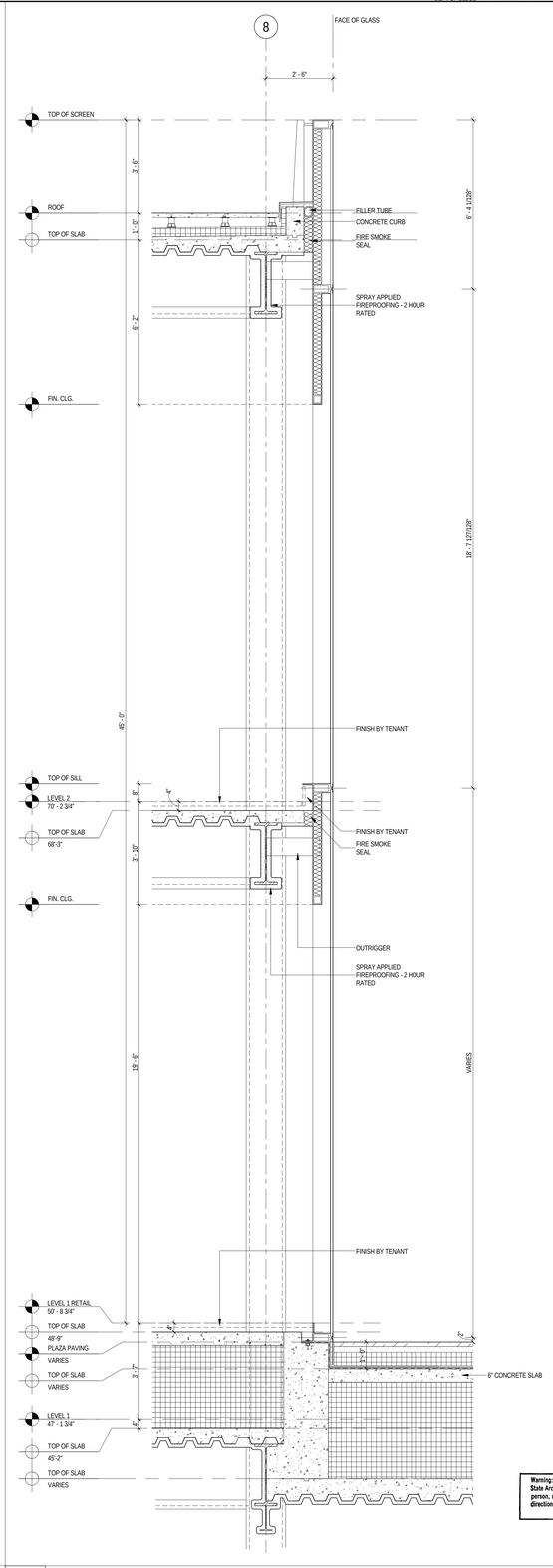

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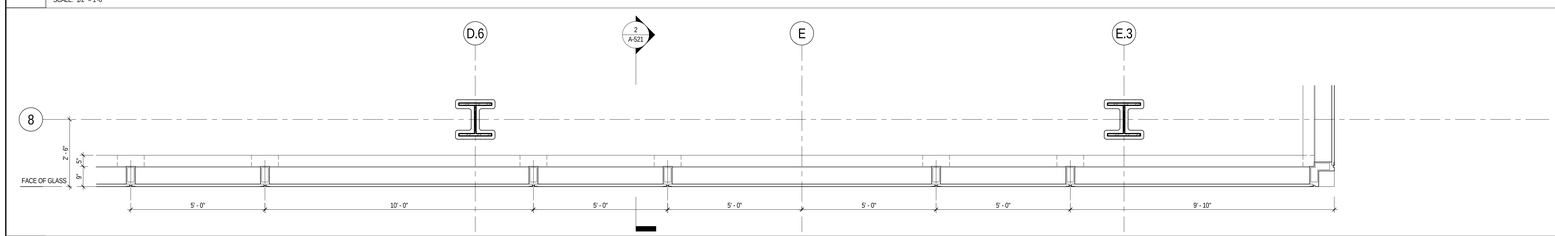

3 ENLARGED PLAN AT STOREFRONT (SF02)

SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

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Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

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Wind Tunnel Consultant

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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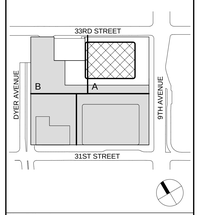
Key Plan:



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REGISTERED ARCHITECT
ANDREW J. GOTTESMAN
STATE OF NEW YORK

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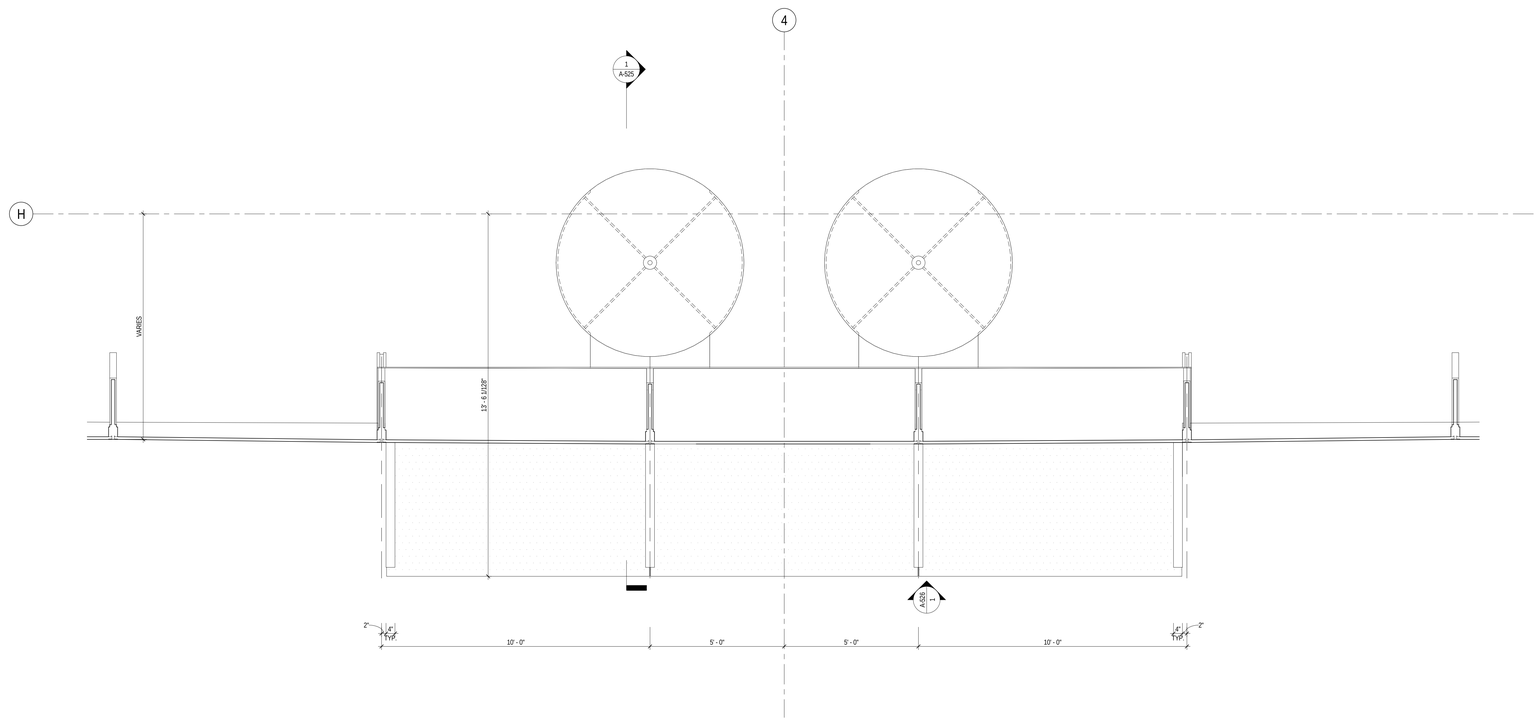
No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

TYPICAL STOREFROND

Project No.: 207120
Date: 12 SEPT 2014
Scale: 1/2" = 1'-0"
File No.: A-521

B-SCAN Sheet No.: A-521.00
Sheet No.: A-521
Page No.: 30



2 ENLARGED PLAN AT EAST ENTRY - ABOVE CANOPY

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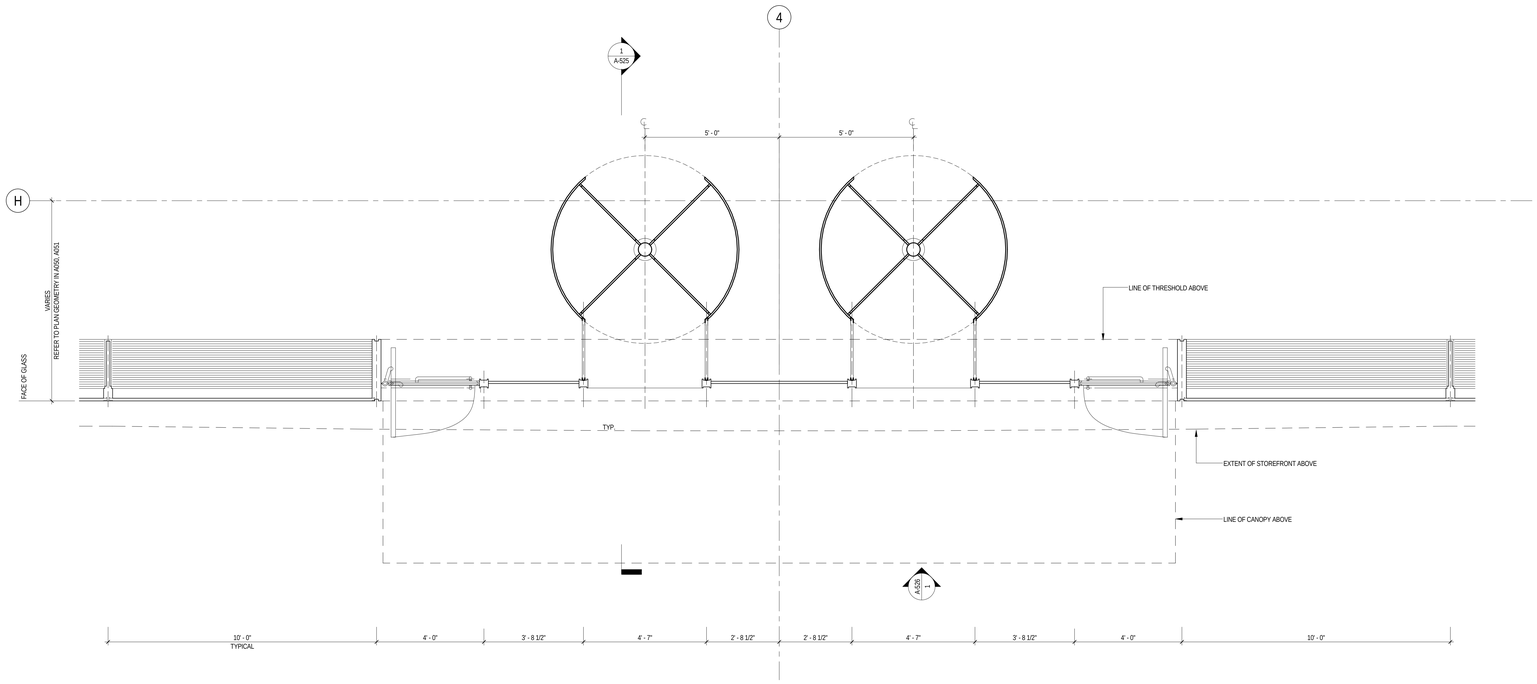

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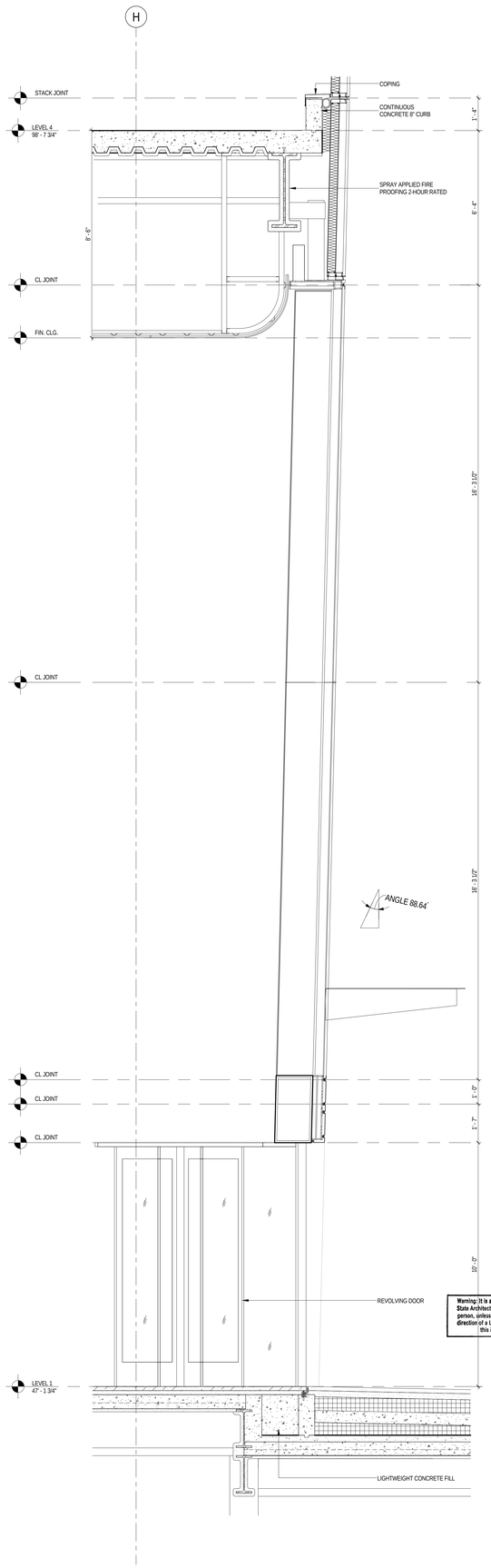

1 ENLARGED SECTION AT EAST ENTRY

SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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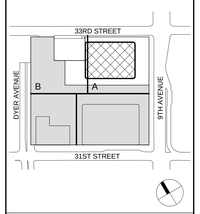

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REGISTERED ARCHITECT
DAVID GOTTESMAN
No. 15649
STATE OF NEW YORK

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No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
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Sheet Name:

STOREFRONT ENTRANCES

Project No.: 207120	B-SCAN Sheet No.: A-525.00
Date: 12 SEPT 2014	Sheet No.: A-525
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File No.: A-525	Page No.: 30

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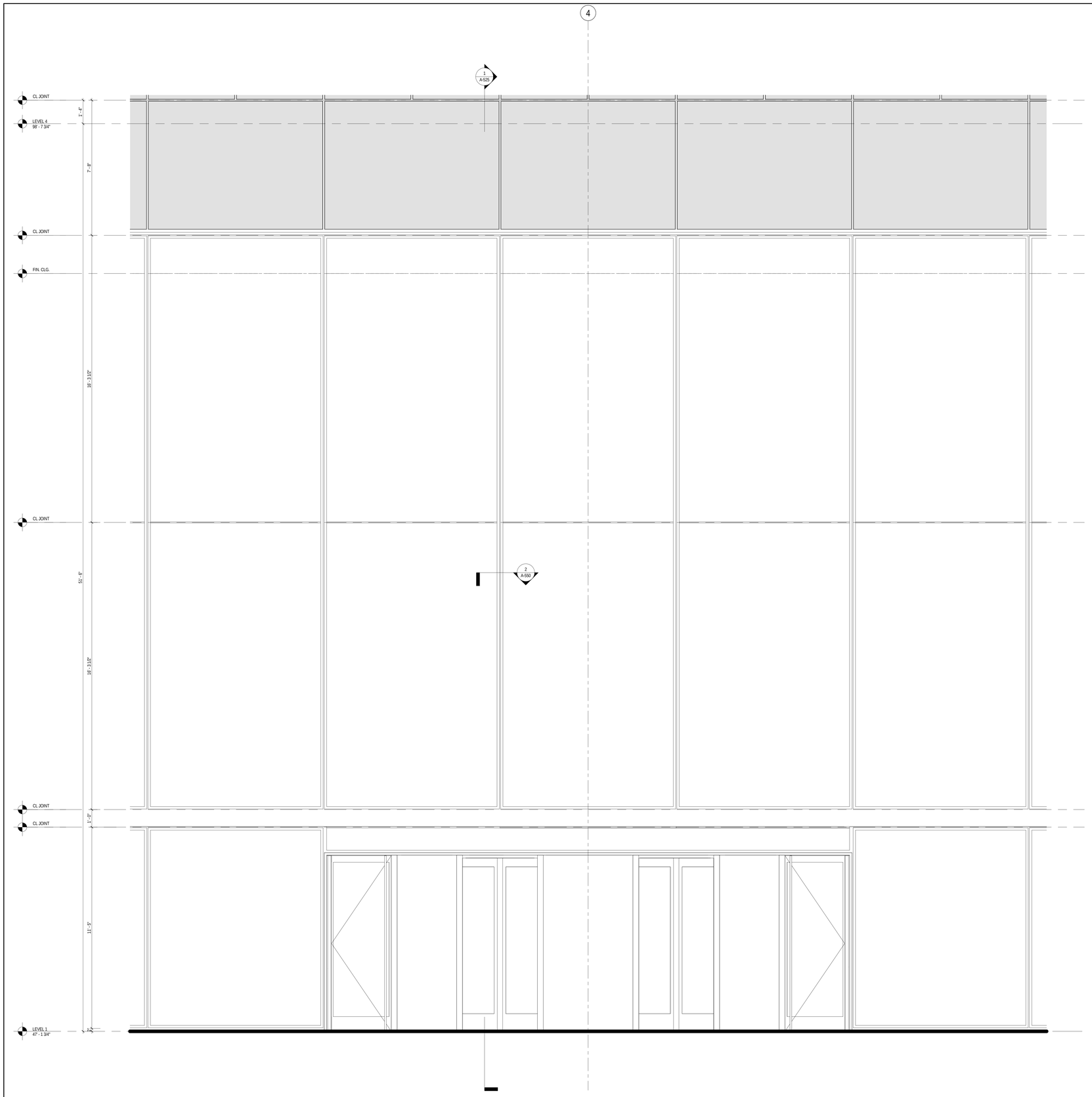

1 ENLARGED ELEVATION AT EAST ENTRY

SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant
Field Operations
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Security Consultant
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250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

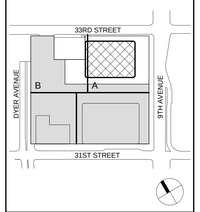
Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ANDREW J. GOTTESMAN
STATE OF NEW YORK

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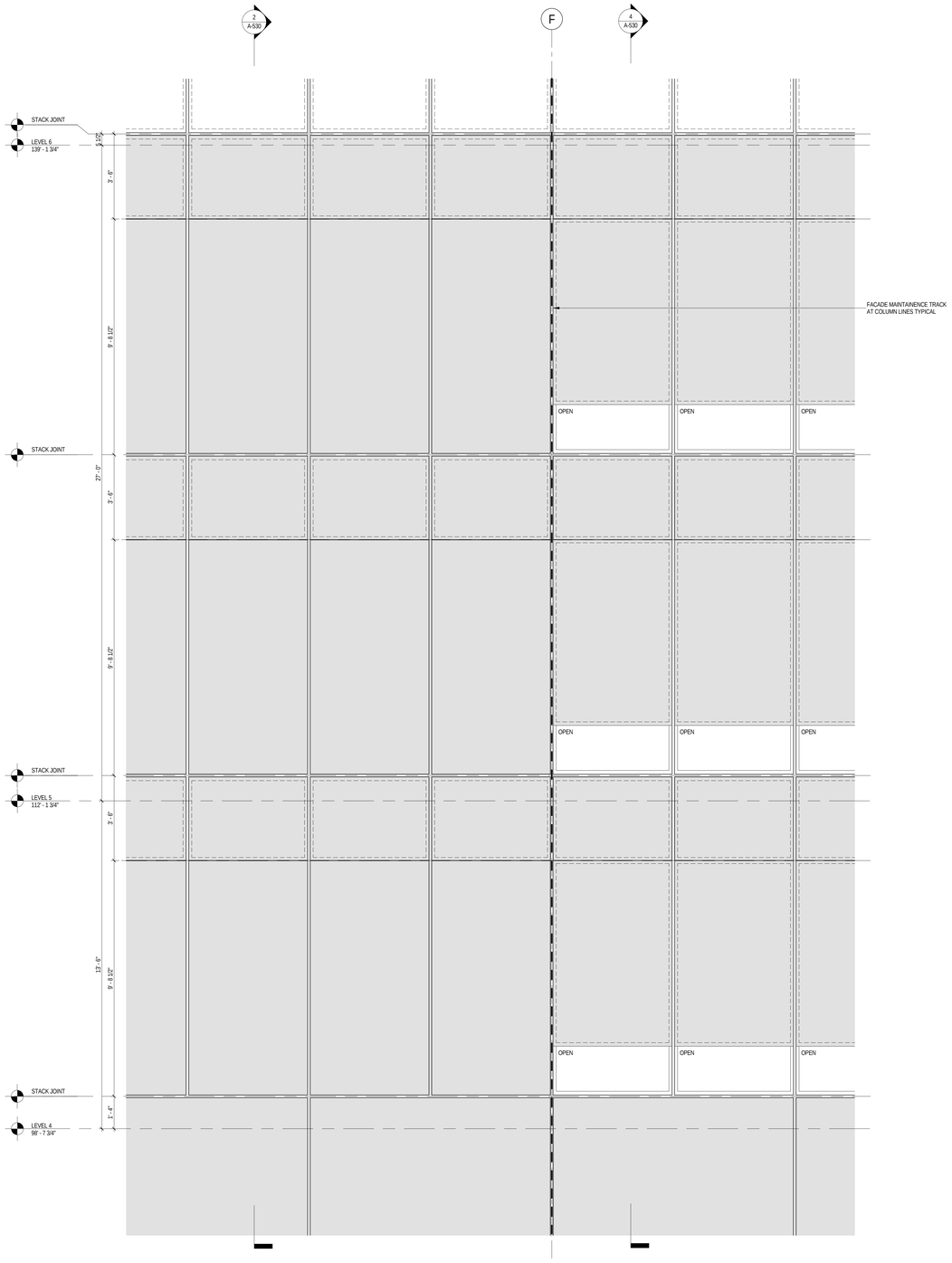
No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

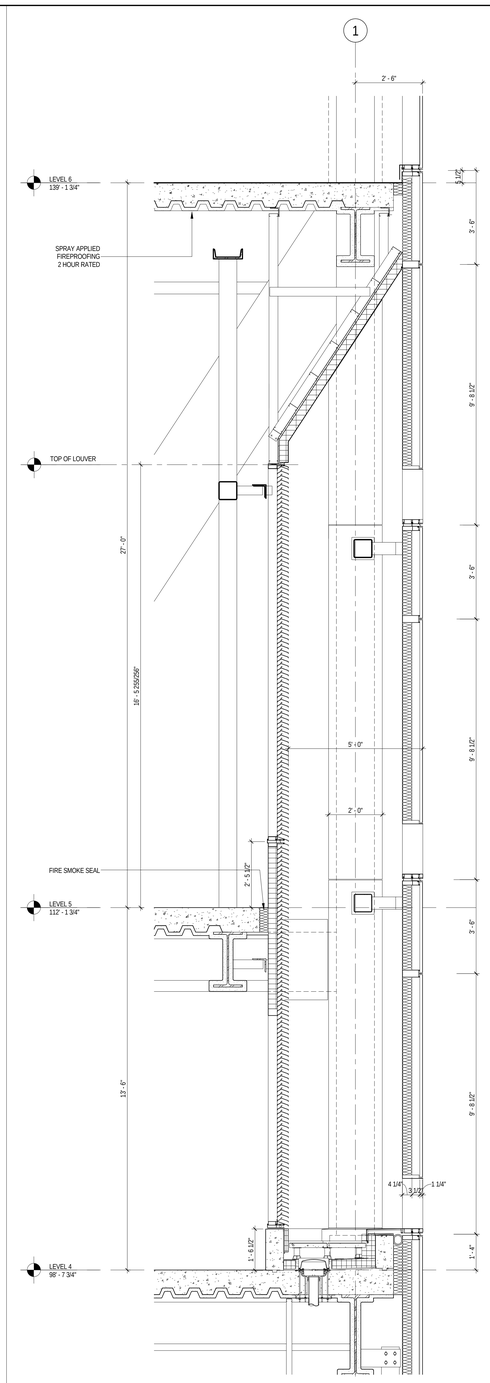
STOREFRONT ENTRANCES

Project No.: 207120
Date: 12 SEPT 2014
Scale: 1/2" = 1'-0"
File No.: A-526
B-SCAN Sheet No.: A-526.00
Sheet No.: A-526
Page No.: 30



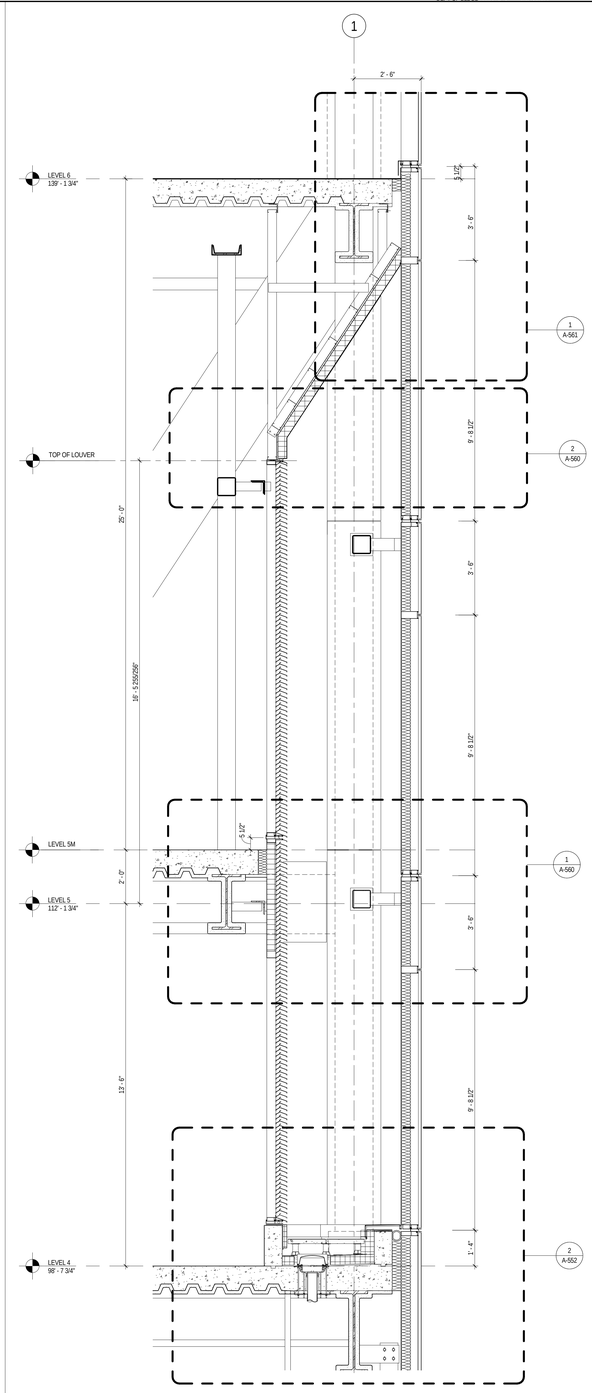
6 ENLARGED ELEVATION AT MECHANICAL LEVEL

SCALE: 1/2" = 1'-0"



4 ENLARGED SECTION AT MECHANICAL AREAWAY

SCALE: 1/2" = 1'-0"



2 ENLARGED SECTION AT MECHANICAL

SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
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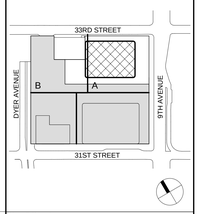
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
STEVEN J. GOTTESDIENER
No. 026879
STATE OF NEW YORK

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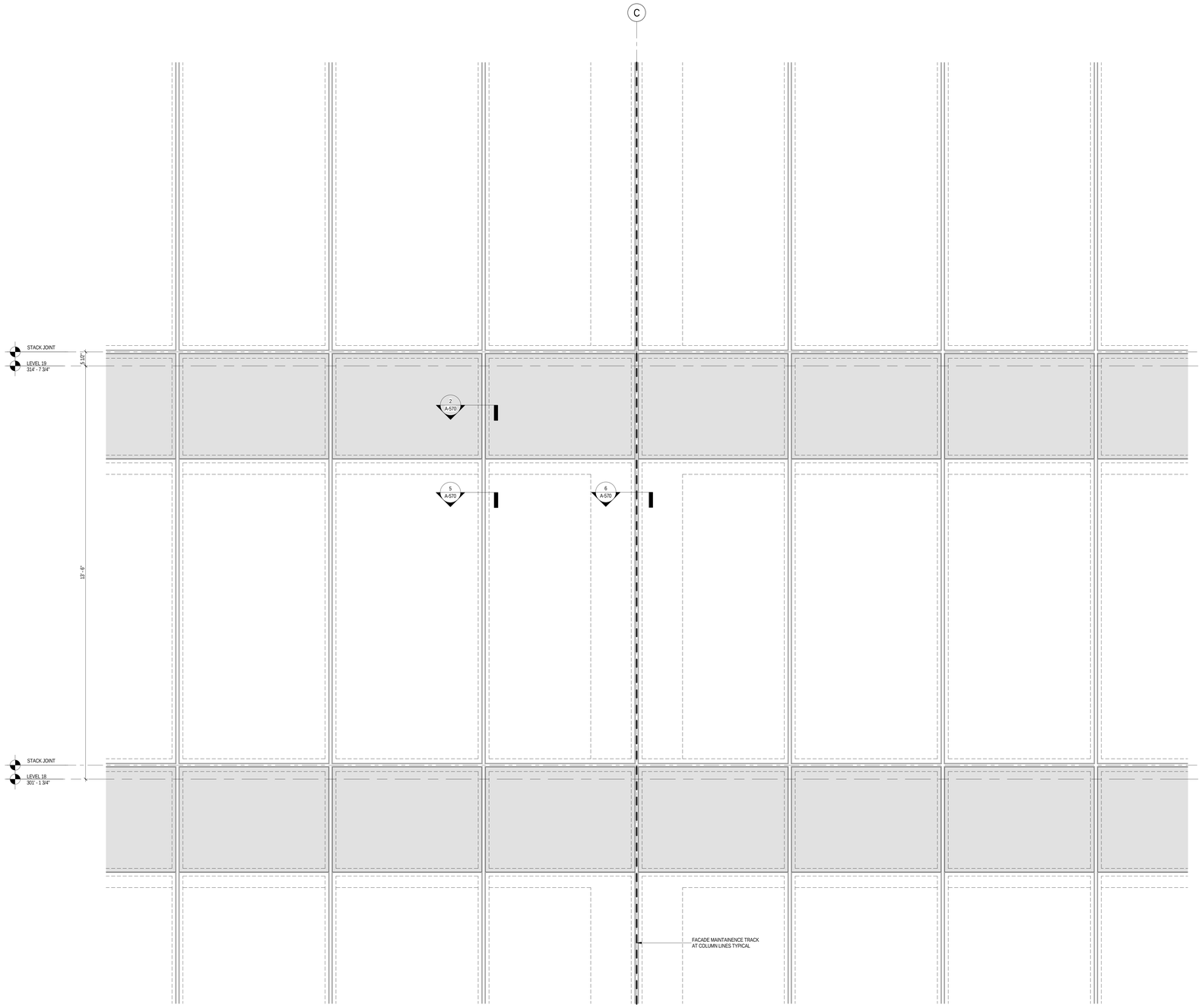
No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

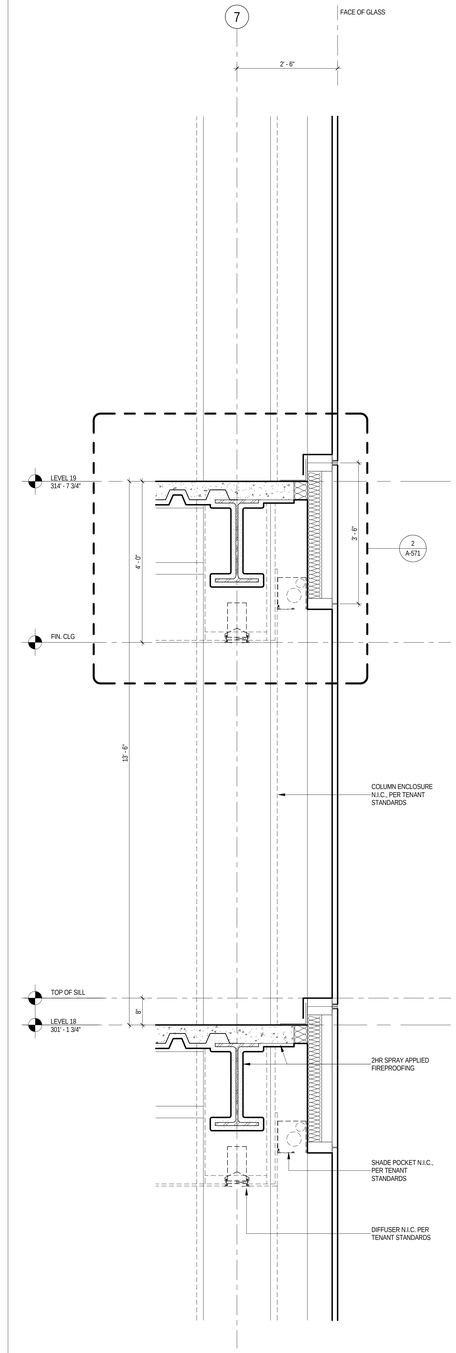
CURTAIN WALL AT LEVEL 2 MECHANICAL AREAWAY

Project No.: 2071120	B-SCAN Sheet No.: A-530.00
Date: 12 SEPT 2014	Sheet No.: A-530
Scale: 1/2" = 1'-0"	
File No.: A-530	Page No.: 30



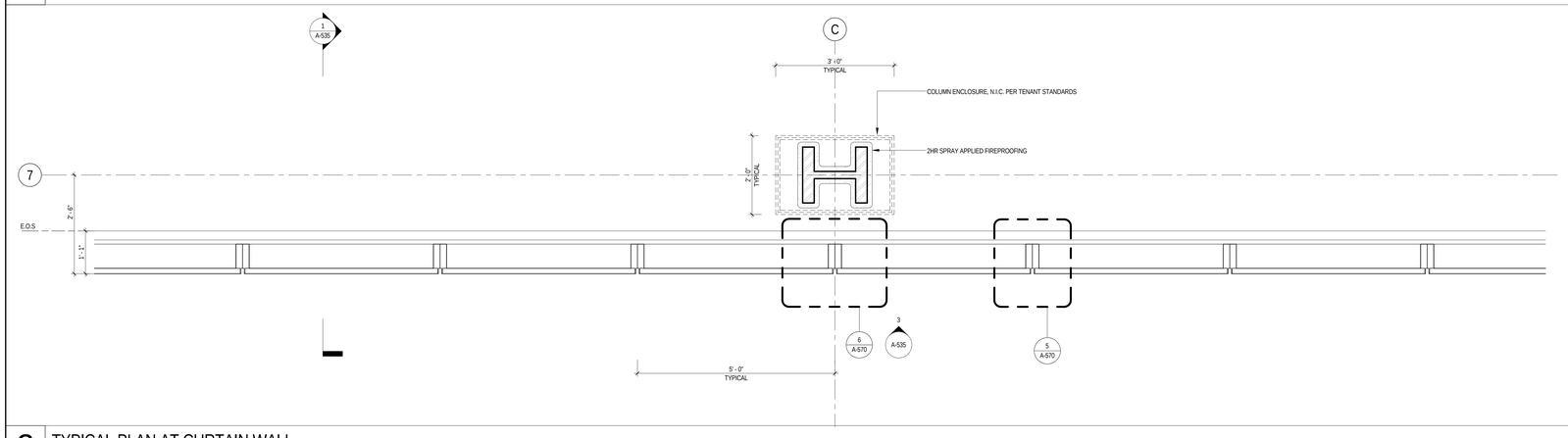
3 TYPICAL ELEVATION AT CURTAIN WALL

SCALE: 3/4" = 1'-0"



1 TYPICAL SECTION AT CURTAIN WALL

SCALE: 3/4" = 1'-0"



2 TYPICAL PLAN AT CURTAIN WALL

SCALE: 3/4" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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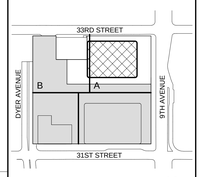
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
JOHN P. GOTTESDIENER
NO. 5649
STATE OF NEW YORK

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No.	Date	Description
4	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

TYPICAL CURTAIN WALL

Project No.: 207120	B-SCAN Sheet No.: A-535.00
Date: 12 SEPT 2014	Sheet No.: A-535
Scale: 3/4" = 1'-0"	
File No.: A-535	Page No.: 30

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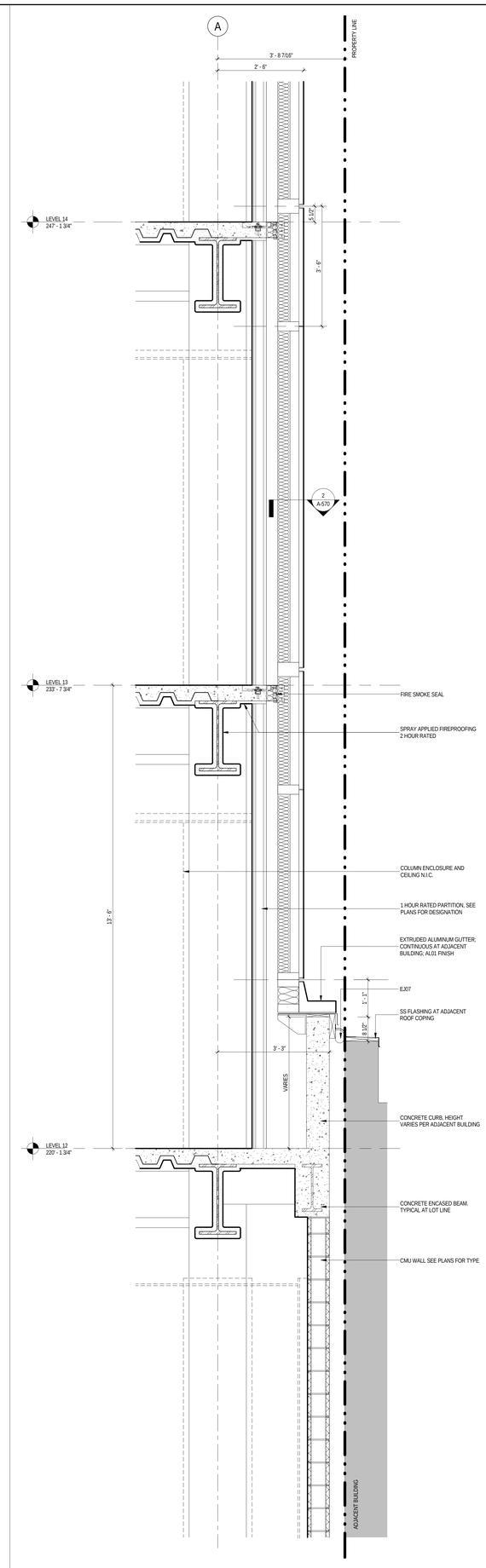
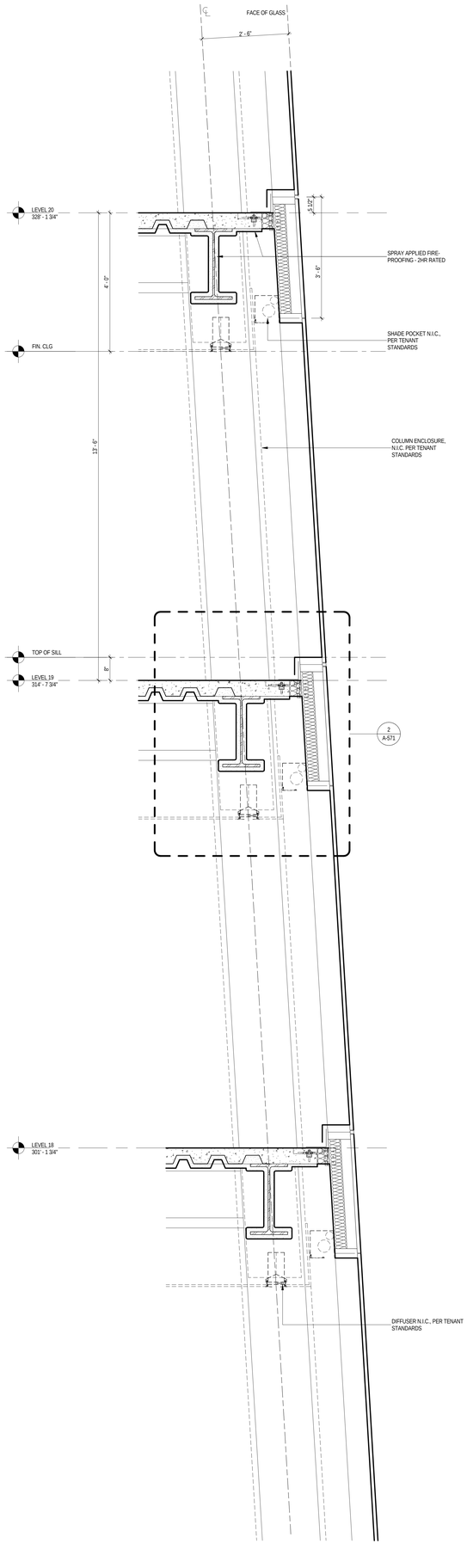
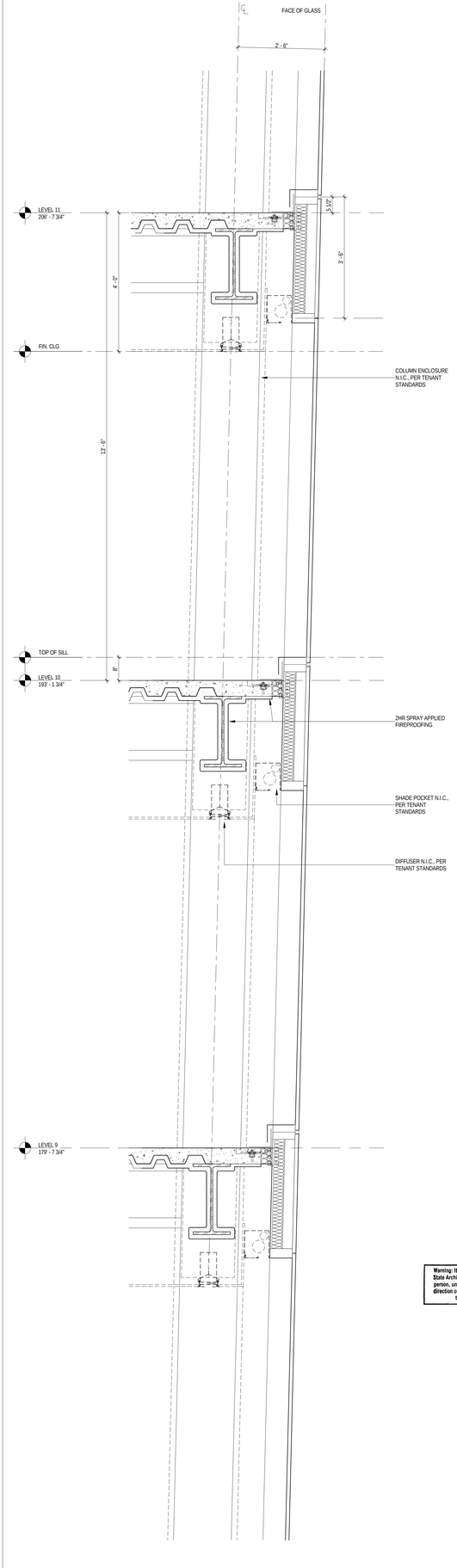


3 SECTION AT CURTAIN WALL
SCALE: 3/4" = 1'-0"



2 SECTION AT CURTAIN WALL
SCALE: 3/4" = 1'-0"



1 SECTION AT CURTAIN WALL
SCALE: 3/4" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Skidmore, Owings & Merrill LLP
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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

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475 10th Avenue, New York, NY 10018

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250 State Street #F1, North Haven, CT 06473

Blast Consultant

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40 Wall Street, New York, NY 10005

Acoustical Consultant

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404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

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Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

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166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
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Key Plan:

Seal & Signature:

REGISTERED ARCHITECT
PETER J. GOTTESMAN
No. 15649
STATE OF NEW YORK

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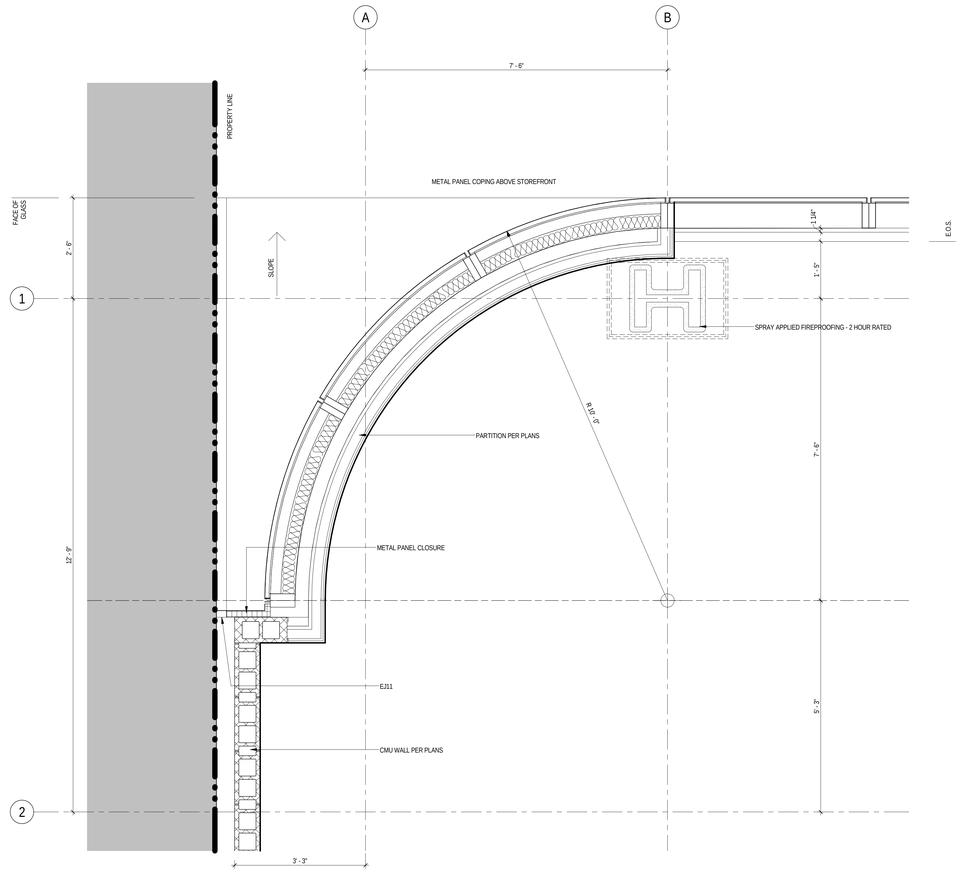
No.	Date	Description
3	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

TYPICAL CURTAIN WALL SECTIONS

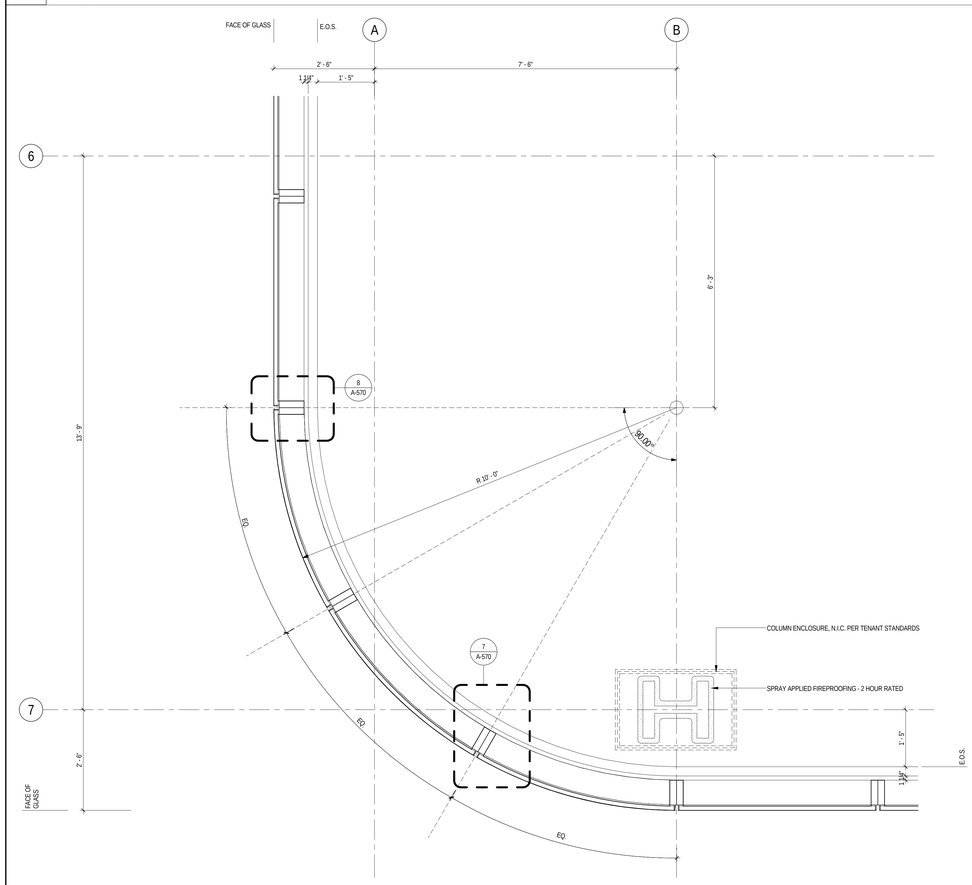
Project No.: 207120
Date: 12 SEPT 2014
Scale: 3/4" = 1'-0"
File No.: A-536

B-SCAN Sheet No.: A-536.00
Sheet No.: A-536
Page No.: 30



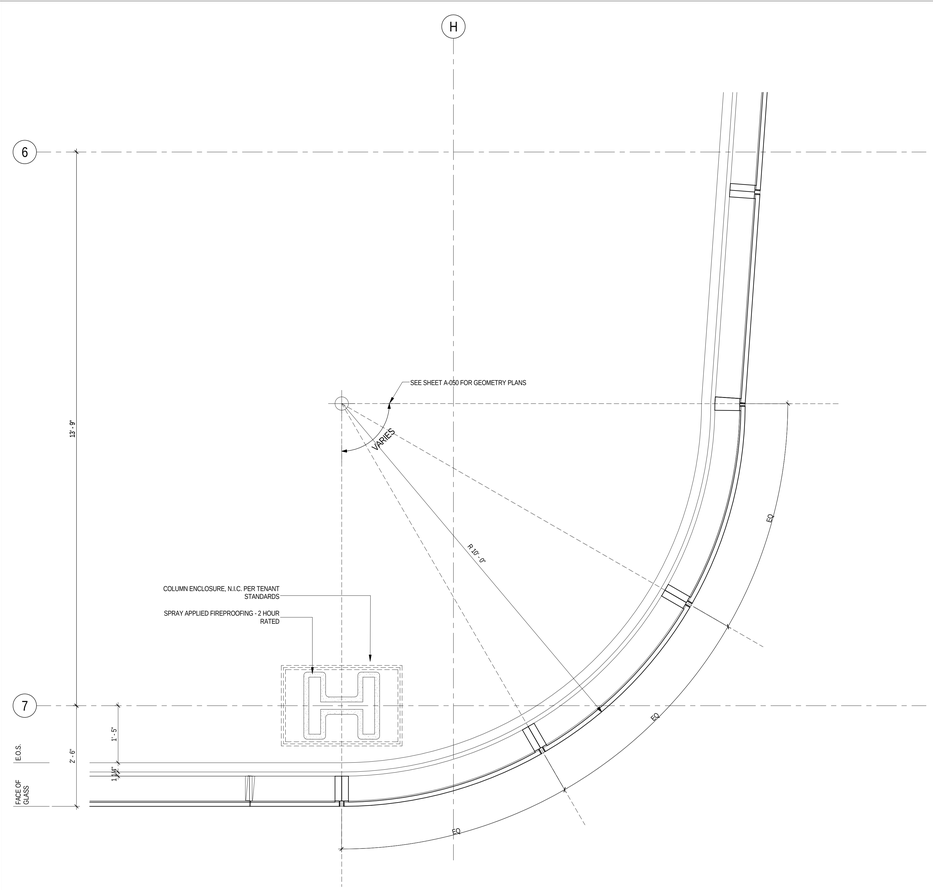
3 ENLARGED PLAN AT NORTHWEST CORNER

SCALE: 3/4" = 1'-0"



2 ENLARGED PLAN AT SOUTHWEST CORNER

SCALE: 3/4" = 1'-0"



1 ENLARGED PLAN AT SOUTHEAST CORNER

SCALE: 3/4" = 1'-0"

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
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250 State Street #F1, North Haven, CT 06473

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Ontario, Canada N1K 1B8

PRELIMINARY
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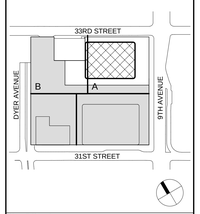
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
DAVID GOTTESMAN
No. 15649
STATE OF NEW YORK

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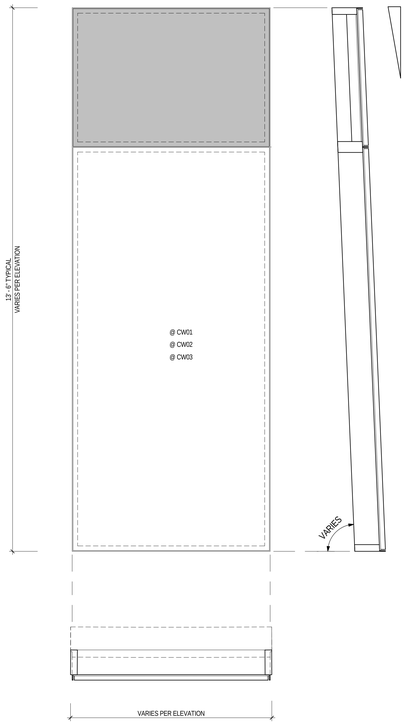
No.	Date	Description
3	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

TYPICAL CURTAIN WALL CORNERS

Project No.: 207120
Date: 12 SEPT 2014
Scale: 3/4" = 1'-0"
File No.: A-537
B-SCAN Sheet No.: A-537.00
Sheet No.: A-537
Page No.: 30

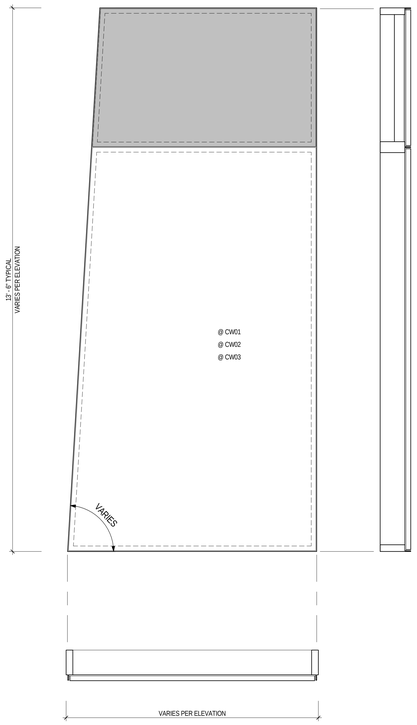
9/11/2014 5:36:53 PM



* REFER TO BUILDING ELEVATIONS FOR DIMENSIONS .
* REFER TO A050 AND A051 FOR PLAN PROFILES.

6 GEOMETRY W PANEL (WARPED)

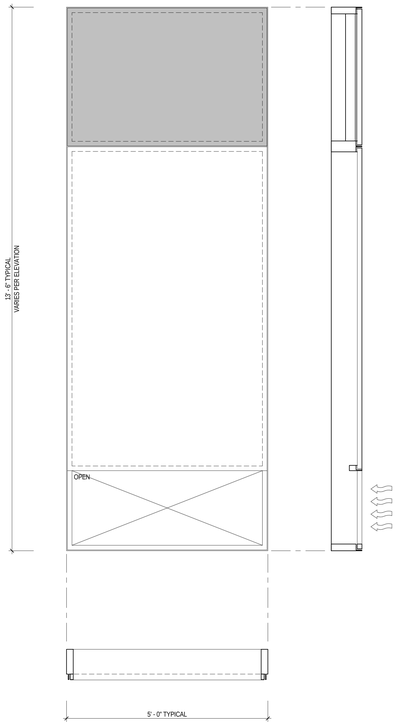
SCALE: 3/4" = 1'-0"



* REFER TO BUILDING ELEVATIONS FOR DIMENSIONS .
* REFER TO A050 AND A051 FOR PLAN PROFILES.

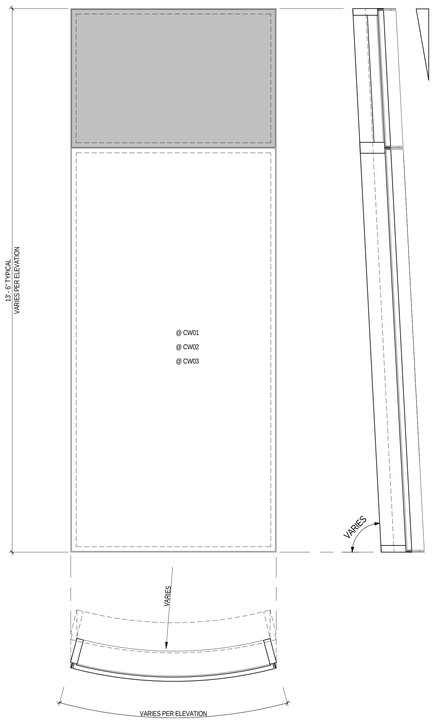
4 GEOMETRY T PANEL (TRAPEZOIDAL)

SCALE: 3/4" = 1'-0"



2 GEOMETRY A PANEL (FLAT - AIR SLOT)

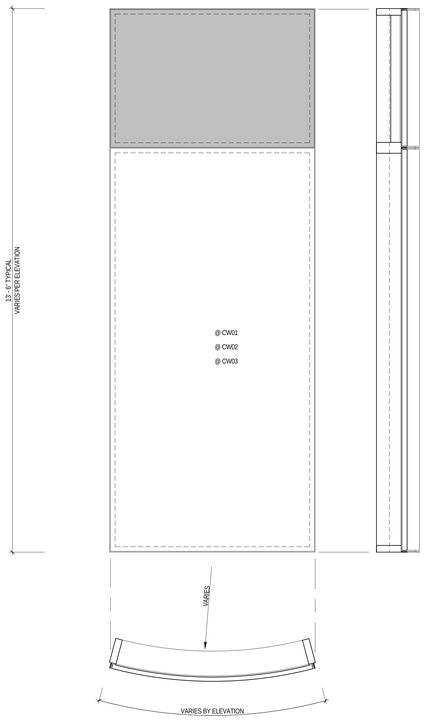
SCALE: 3/4" = 1'-0"



* REFER TO A050 AND A051 FOR PLAN PROFILES.

5 GEOMETRY C2 PANEL (THERMALLY CURVED WARPED)

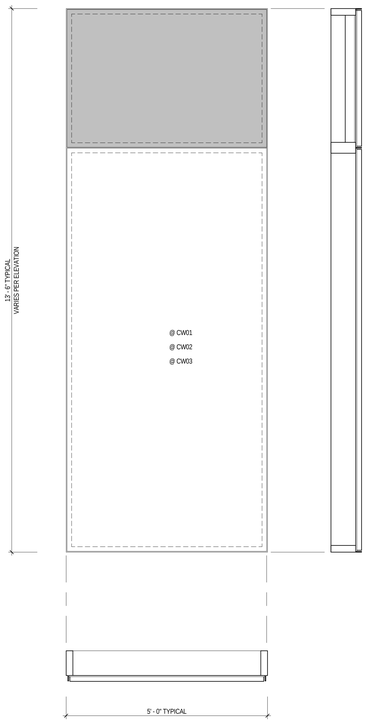
SCALE: 3/4" = 1'-0"



* REFER TO A050 AND A051 FOR PLAN PROFILES.

3 GEOMETRY C1 PANEL (THERMALLY WARPED)

SCALE: 3/4" = 1'-0"



1 GEOMETRY F PANEL (FLAT)

SCALE: 3/4" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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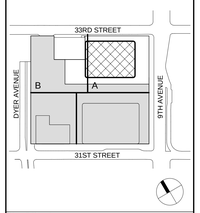
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
JOHN P. GOTTESDIENER
No. 15649
STATE OF NEW YORK

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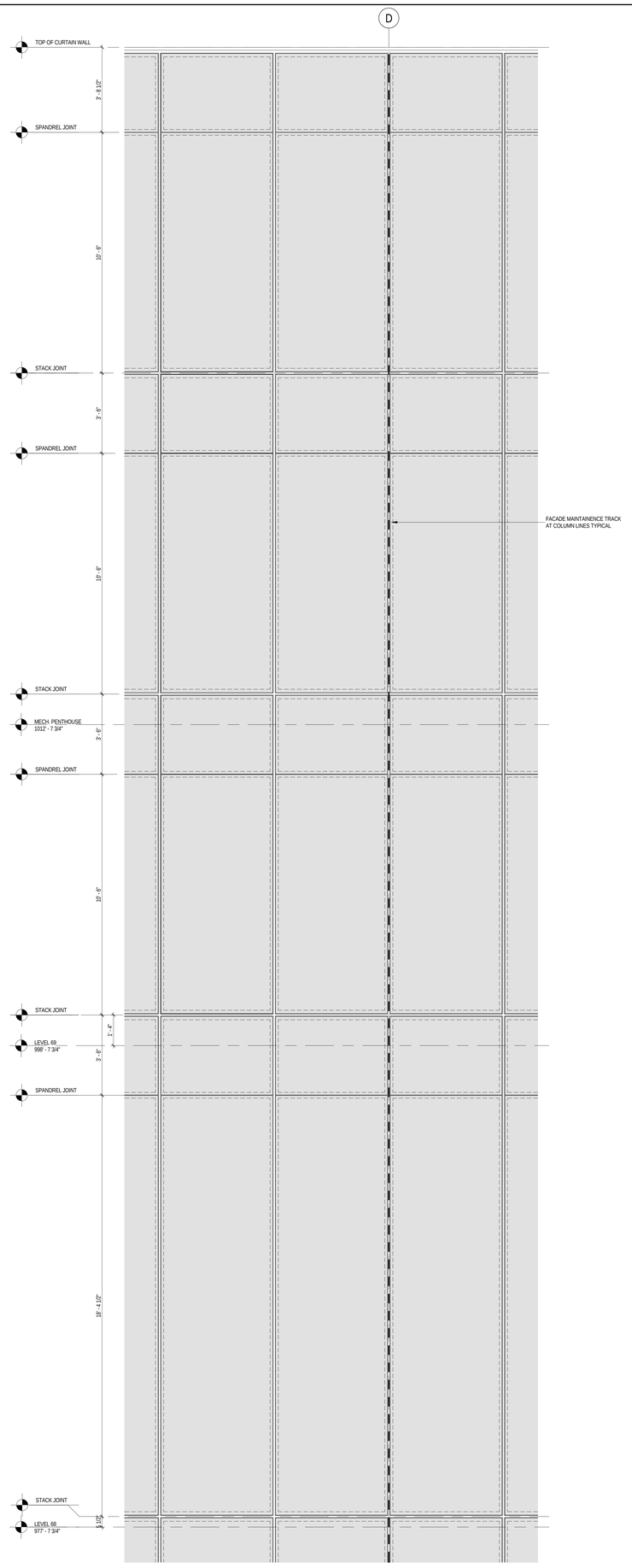
No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

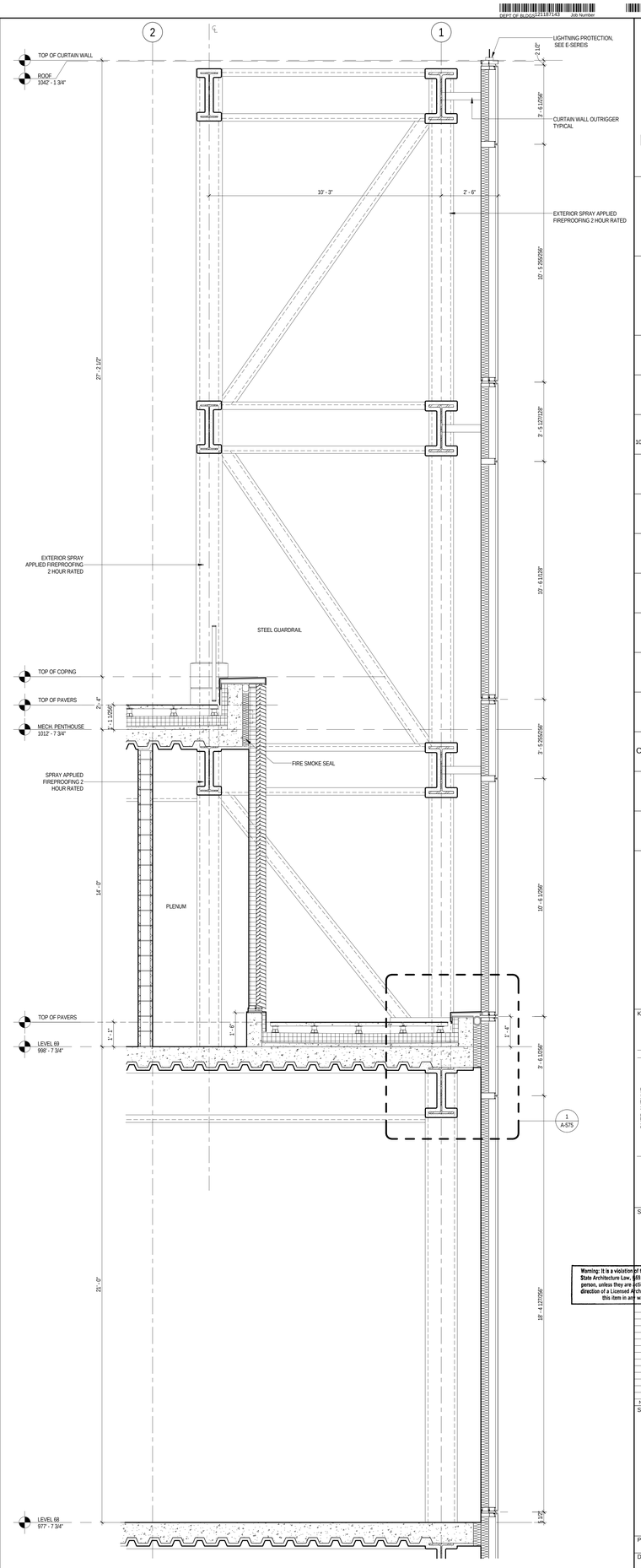
PANEL TYPES

Project No.: 207120	B-SCAN Sheet No.: A-538.00
Date: 12 SEPT 2014	Sheet No.: A-538
Scale: 3/4" = 1'-0"	
File No.: A-538	Page No.: 30



2 ENLARGED ELEVATION AT ROOF

SCALE: 1/2" = 1'-0"



1 ENLARGED SECTION AT ROOF LOOKING EAST

SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

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40 Wall Street, New York, NY 10005

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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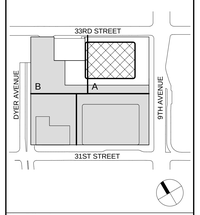
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
CHRISTOPHER J. GRIMLEY
No. 026643
STATE OF NEW YORK

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No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

CURTAIN WALL AT ROOF

Project No.: 207120	B-SCAN Sheet No.: A-540.00
Date: 12 SEPT 2014	Sheet No.: A-540
Scale: 1/2" = 1'-0"	
File No.: A-540	Page No.: 30

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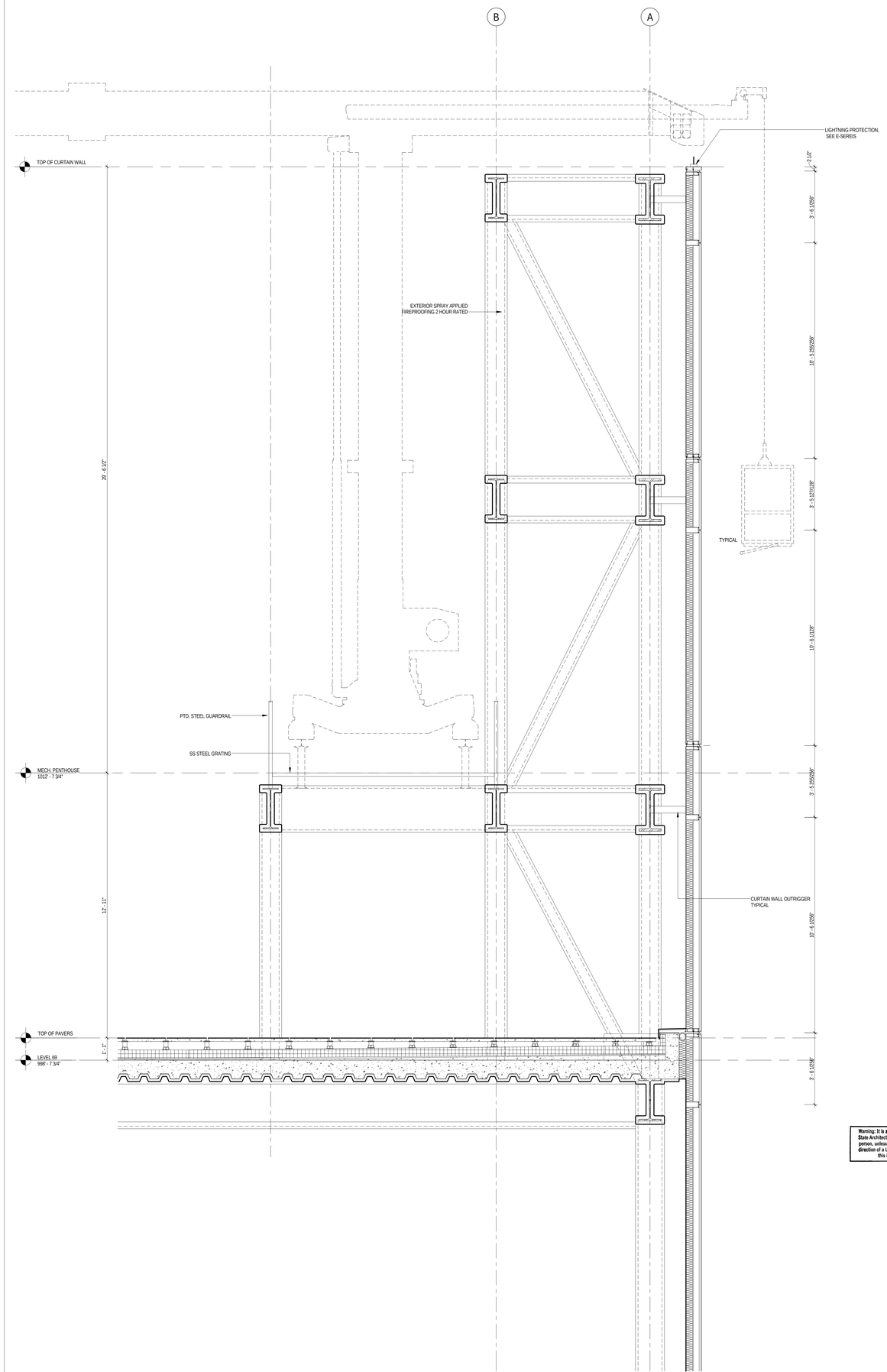

1 ENLARGED SECTION AT ROOF LOOKING SOUTH

SCALE: 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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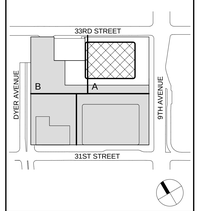
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
DAVID GOTTESMAN
No. 5649
STATE OF NEW YORK

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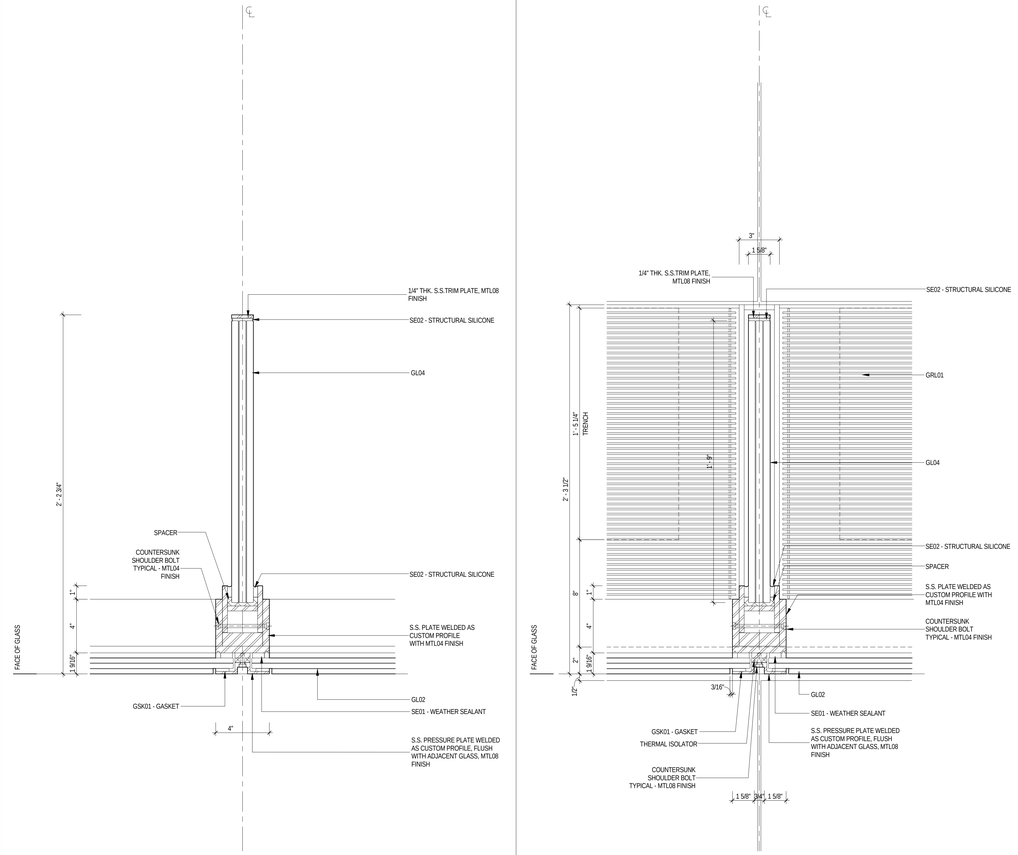
No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

CURTAIN WALL AT ROOF

Project No.: 207120	B-SCAN Sheet No.: A-541.00
Date: 12 SEPT 2014	
Scale: 1/2" = 1'-0"	Sheet No.: A-541
File No.: A-541	Page No.: 30



2 PLAN DETAIL AT STOREFRONT
SCALE: 3" = 1'-0"

1 PLAN DETAIL AT STOREFRONT
SCALE: 3" = 1'-0"

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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SOM
Skidmore, Owings & Merrill LLP
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Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
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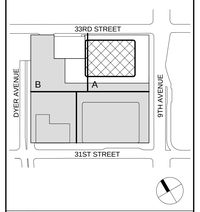
Key Plan:



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No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:
STOREFRONT DETAILS

Project No.: 207120	B-SCAN Sheet No.: A-550.00
Date: 12 SEPT 2014	Sheet No.: A-550
Scale: 3" = 1'-0"	
File No.: A-550	Page No.: 30

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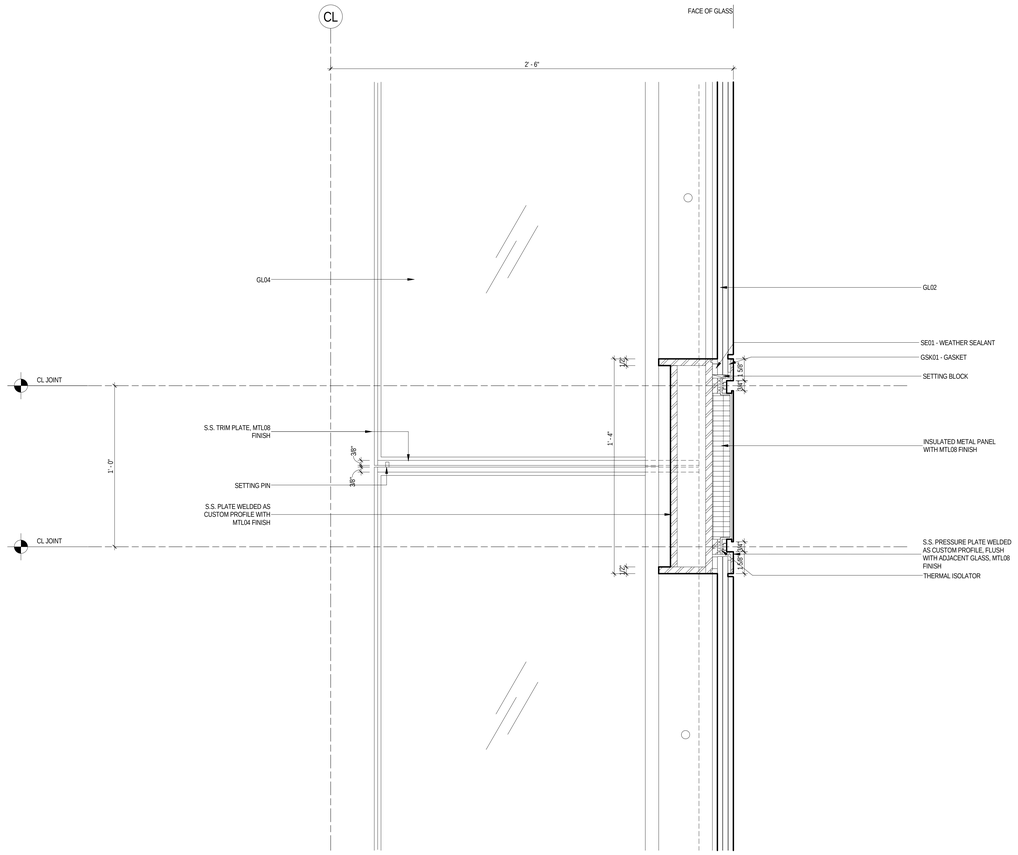

2 STOREFRONT SECTION DETAIL

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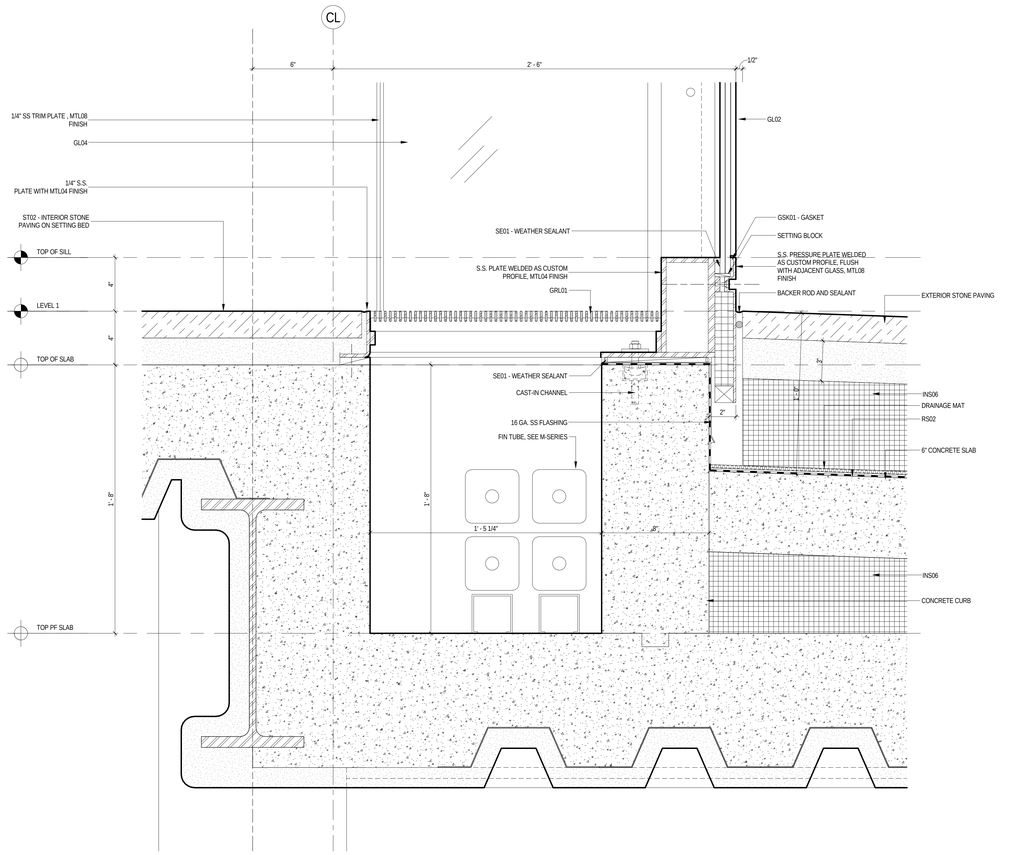

1 STOREFRONT SECTION DETAIL

SCALE: 3" = 1'-0"

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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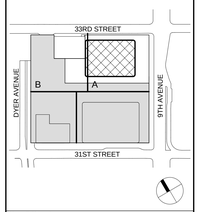
Key Plan:



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No.	Date	Description
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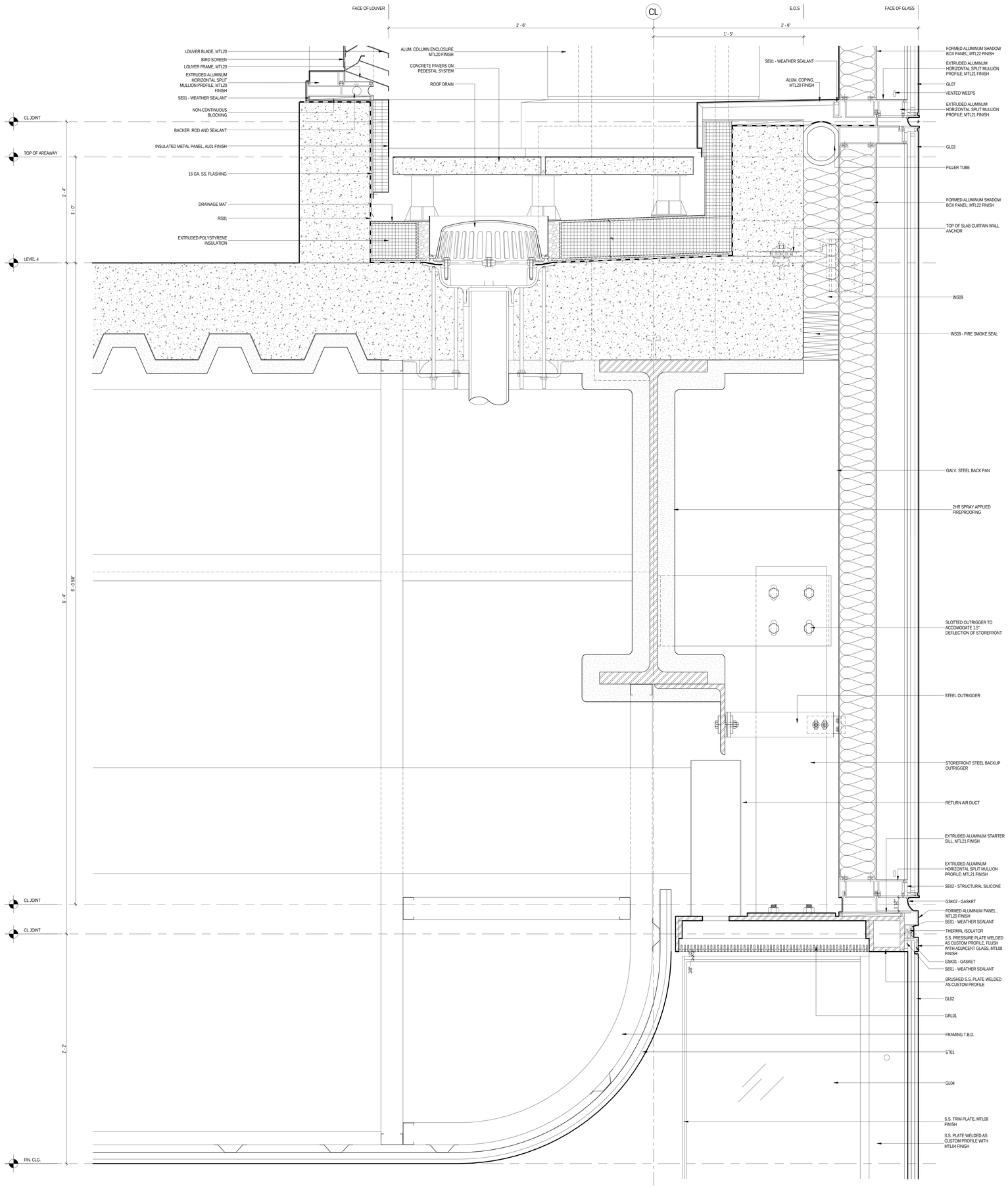
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

STOREFRONT DETAILS

Project No.: 207120	B-SCAN Sheet No.: A-551.00
Date: 12 SEPT 2014	Sheet No.: A-551
Scale: 3" = 1'-0"	
File No.: A-551	Page No.: 30



2 STOREFRONT SECTION DETAIL
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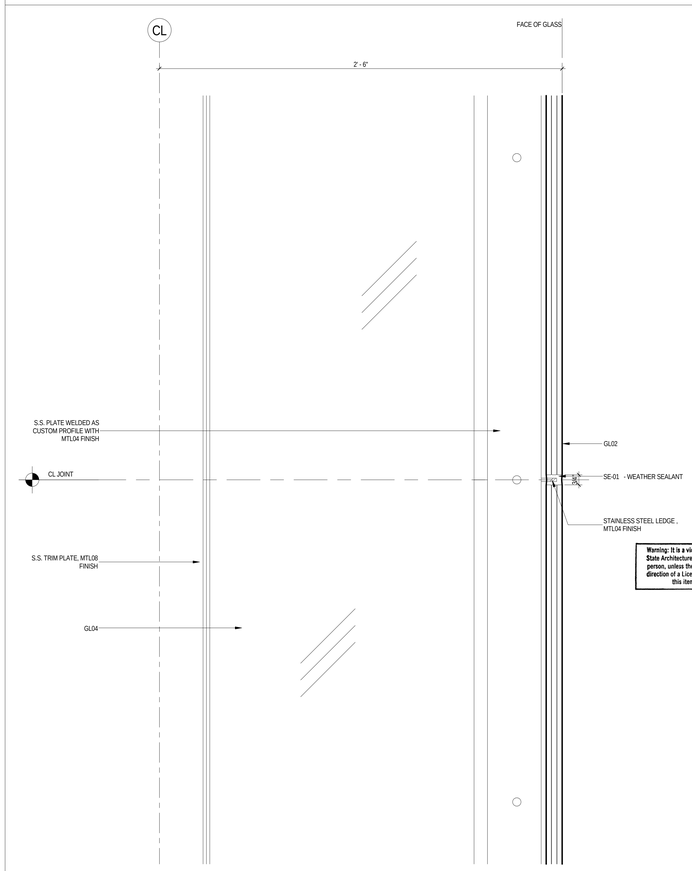

1 STOREFRONT SECTION DETAIL
SCALE: 3" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

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MEP Engineering
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Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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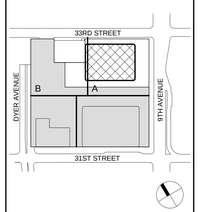
Key Plan:



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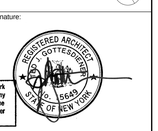

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No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:
STOREFRONT DETAILS

Project No.: 207120	B-SCAN Sheet No.: A-552.00
Date: 12 SEPT 2014	Sheet No.: A-552
Scale: 3" = 1'-0"	
File No.: A-552	Page No.: 30

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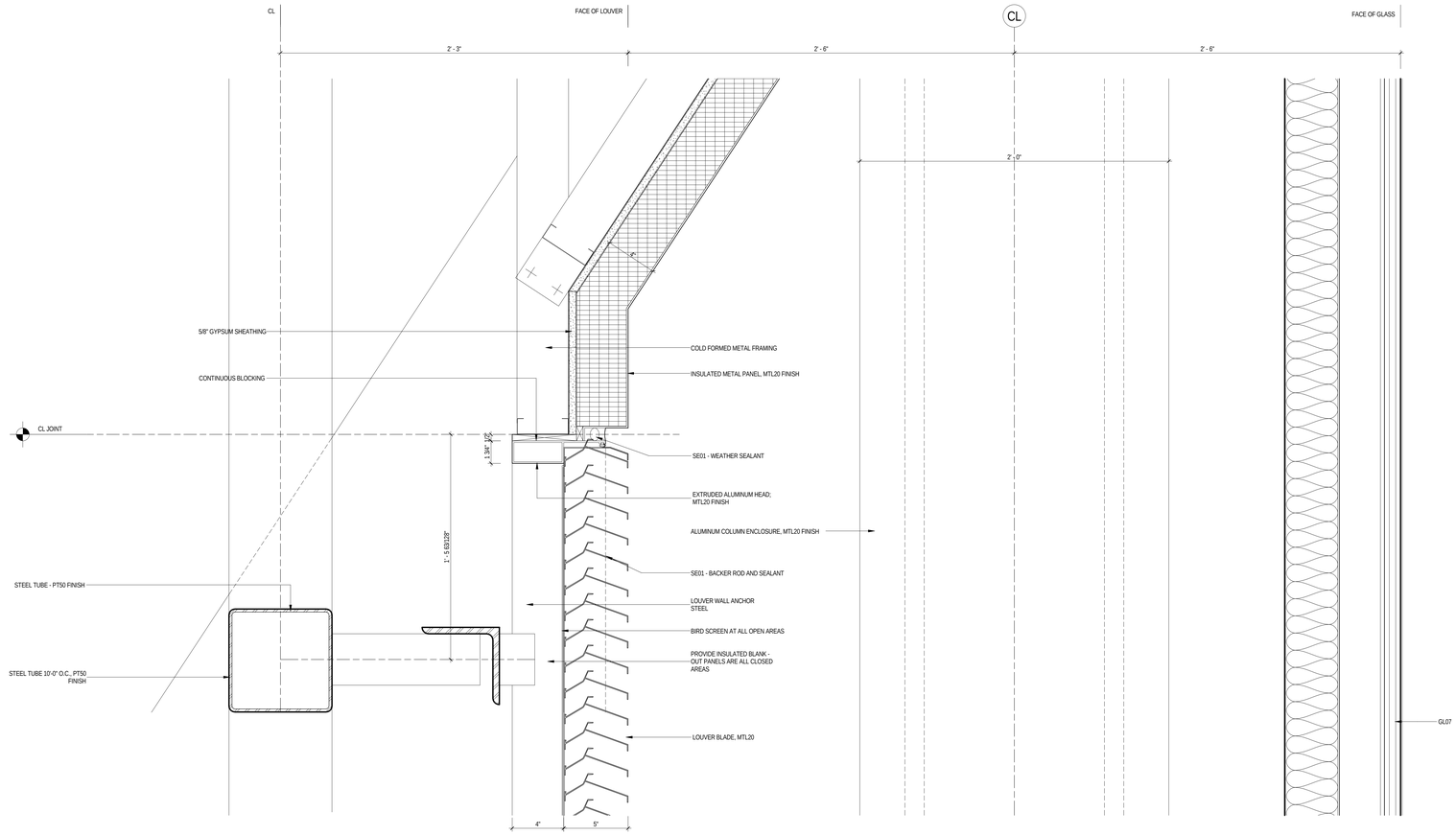

2 CURTAIN WALL DETAILS

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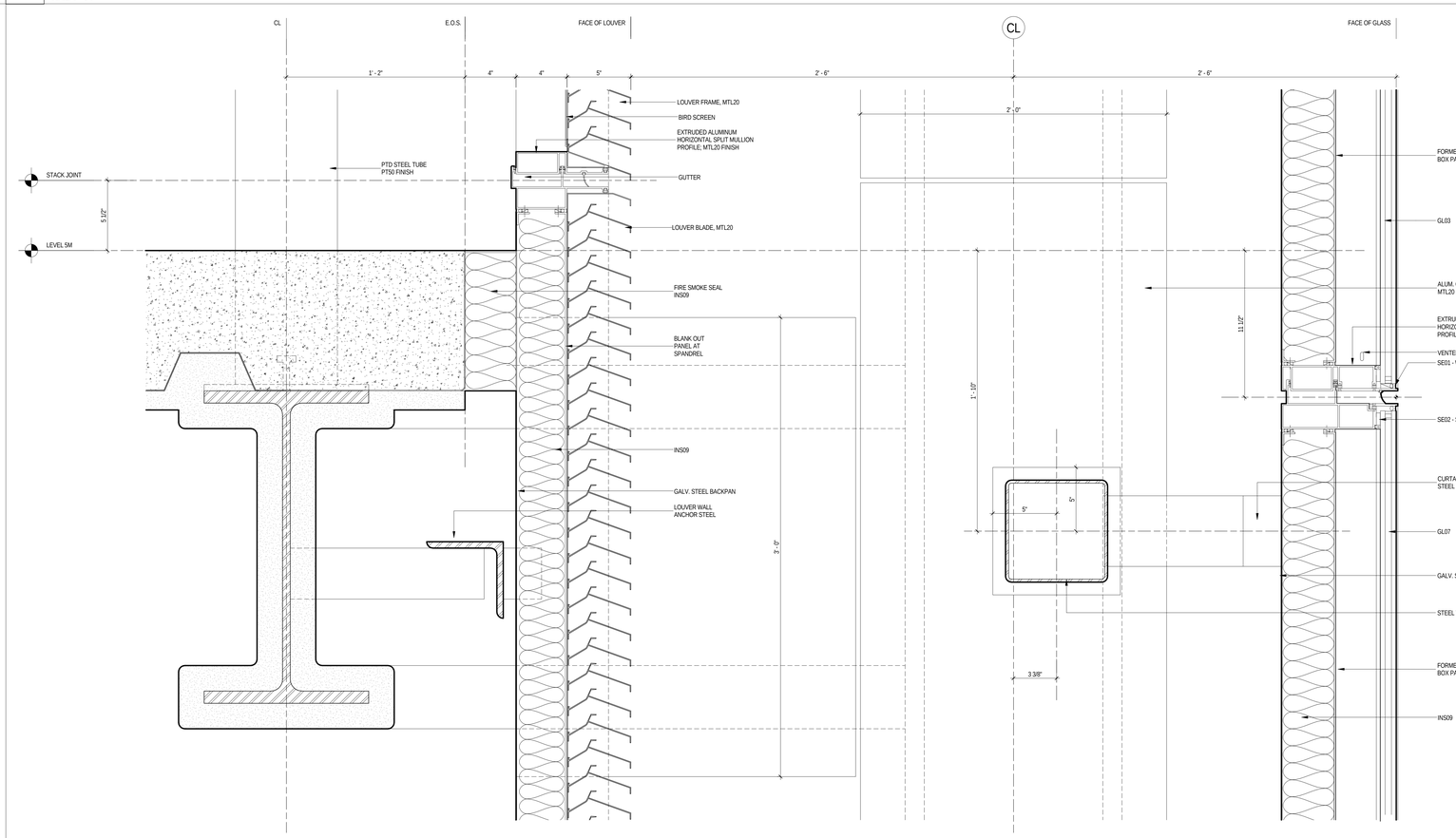

1 CURTAIN WALL SECTION DETAIL

SCALE: 3" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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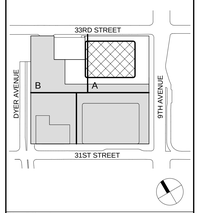
Key Plan:



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REGISTERED ARCHITECT
JOHN G. GOTTESMAN
No. 16649
STATE OF NEW YORK

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No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

CURTAIN WALL DETAILS

Project No.: 207120	B-SCAN Sheet No.: A-560.00
Date: 12 SEPT 2014	Sheet No.: A-560
Scale: 3" = 1'-0"	
File No.: A-560	Page No.: 30

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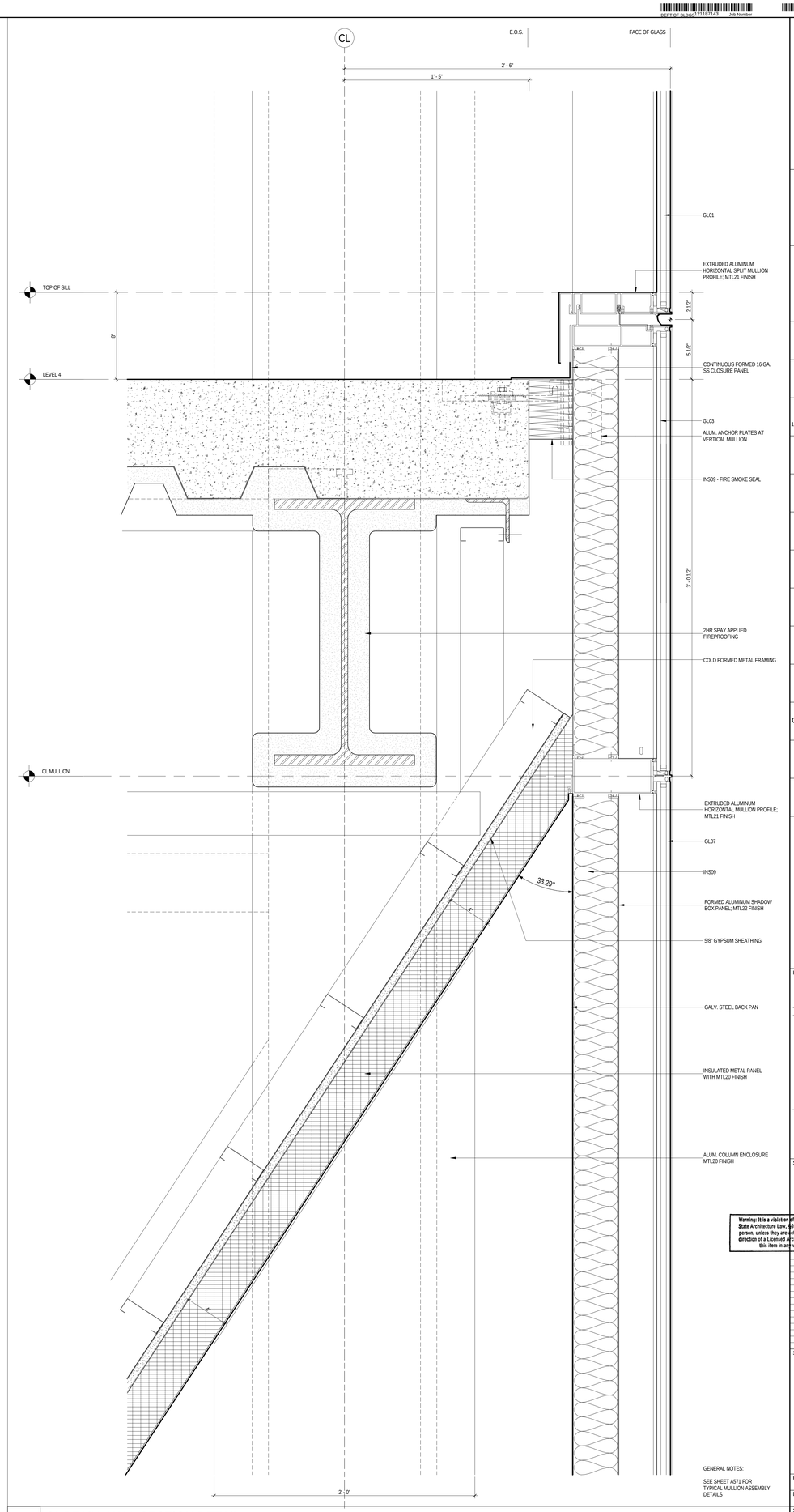

GENERAL NOTES:

SEE SHEET A571 FOR TYPICAL MULLION ASSEMBLY DETAILS

1 CURTAIN WALL SECTION DETAIL

SCALE: 3" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
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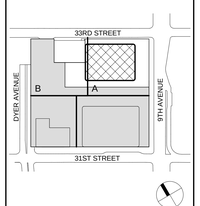
Key Plan:



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REGISTERED ARCHITECT
CHRISTOPHER J. WALSH
No. 36643
STATE OF NEW YORK

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No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

CURTAIN WALL DETAILS

Project No.: 207120	B-SCAN Sheet No.: A-561.00
Date: 12 SEPT 2014	Sheet No.: A-561
Scale: 3" = 1'-0"	
File No.: A-561	Page No.: 30

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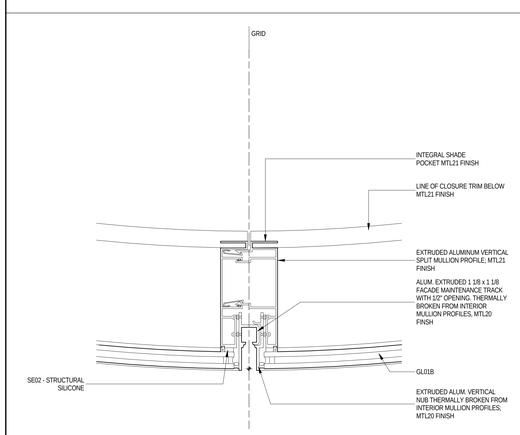
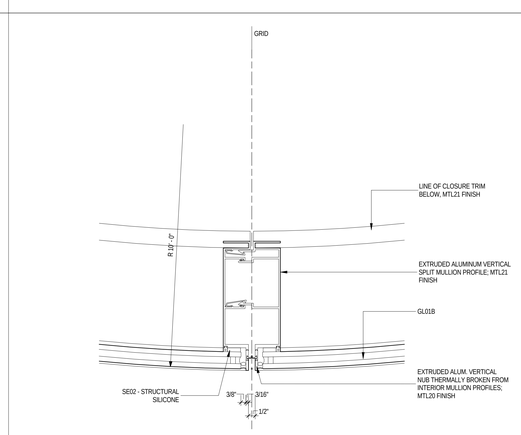


8 PLAN DETAIL AT CURVED UNIT
SCALE: 3" = 1'-0"



7 PLAN DETAIL AT CURVED UNIT
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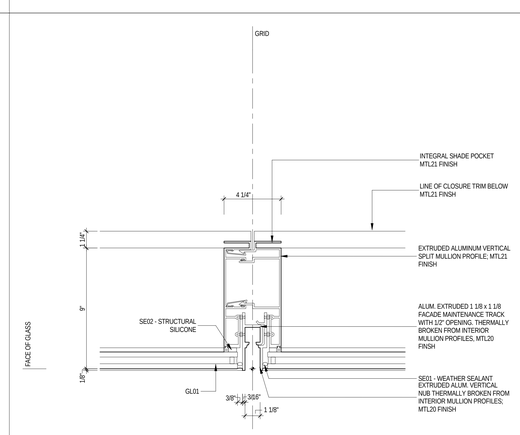
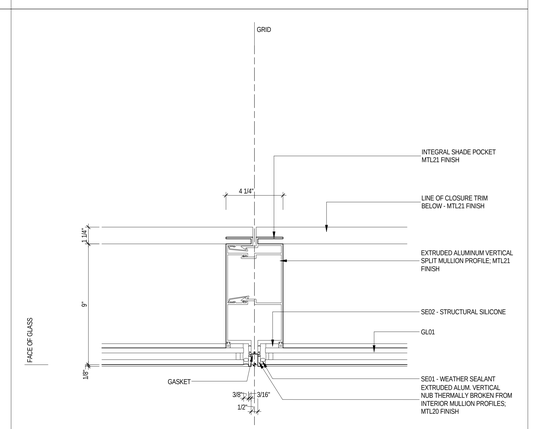
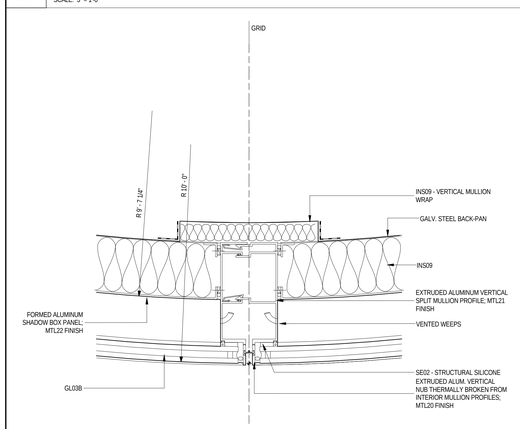


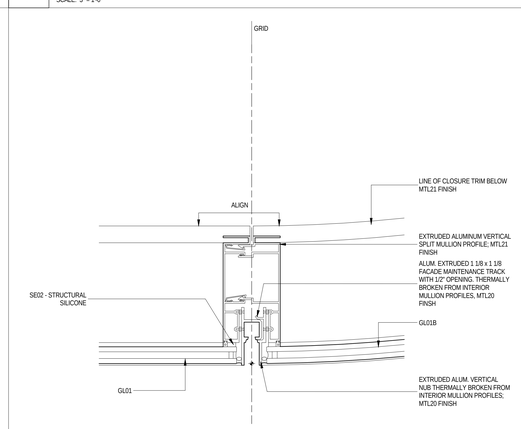
6 PLAN DETAIL AT FACADE MAINTENANCE TRACK
SCALE: 3" = 1'-0"



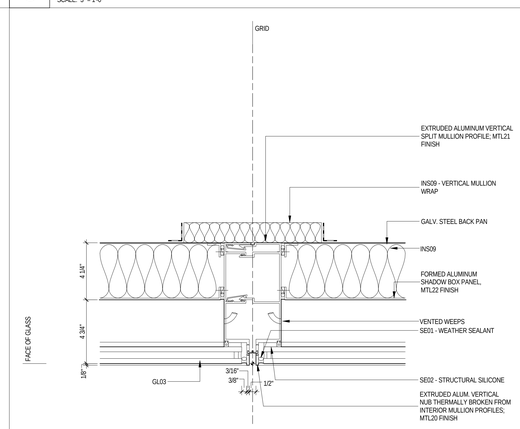
5 PLAN DETAIL AT TYPICAL MULLION
SCALE: 3" = 1'-0"



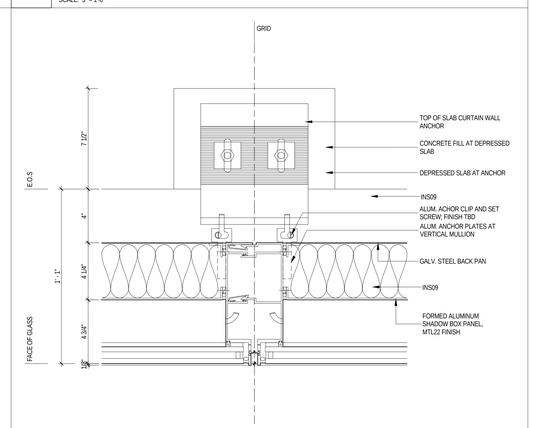
4 PLAN DETAIL AT CURVED SPANDREL
SCALE: 3" = 1'-0"



3 PLAN DETAIL
SCALE: 3" = 1'-0"



2 PLAN DETAIL AT SHADOW BOX
SCALE: 3" = 1'-0"



1 PLAN DETAIL AT ANCHOR
SCALE: 3" = 1'-0"

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
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50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

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Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

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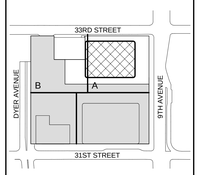
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



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No.	Date	Description
3	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

CURTAIN WALL DETAILS

Project No.: 207120

Date: 12 SEPT 2014

Scale: 3" = 1'-0"

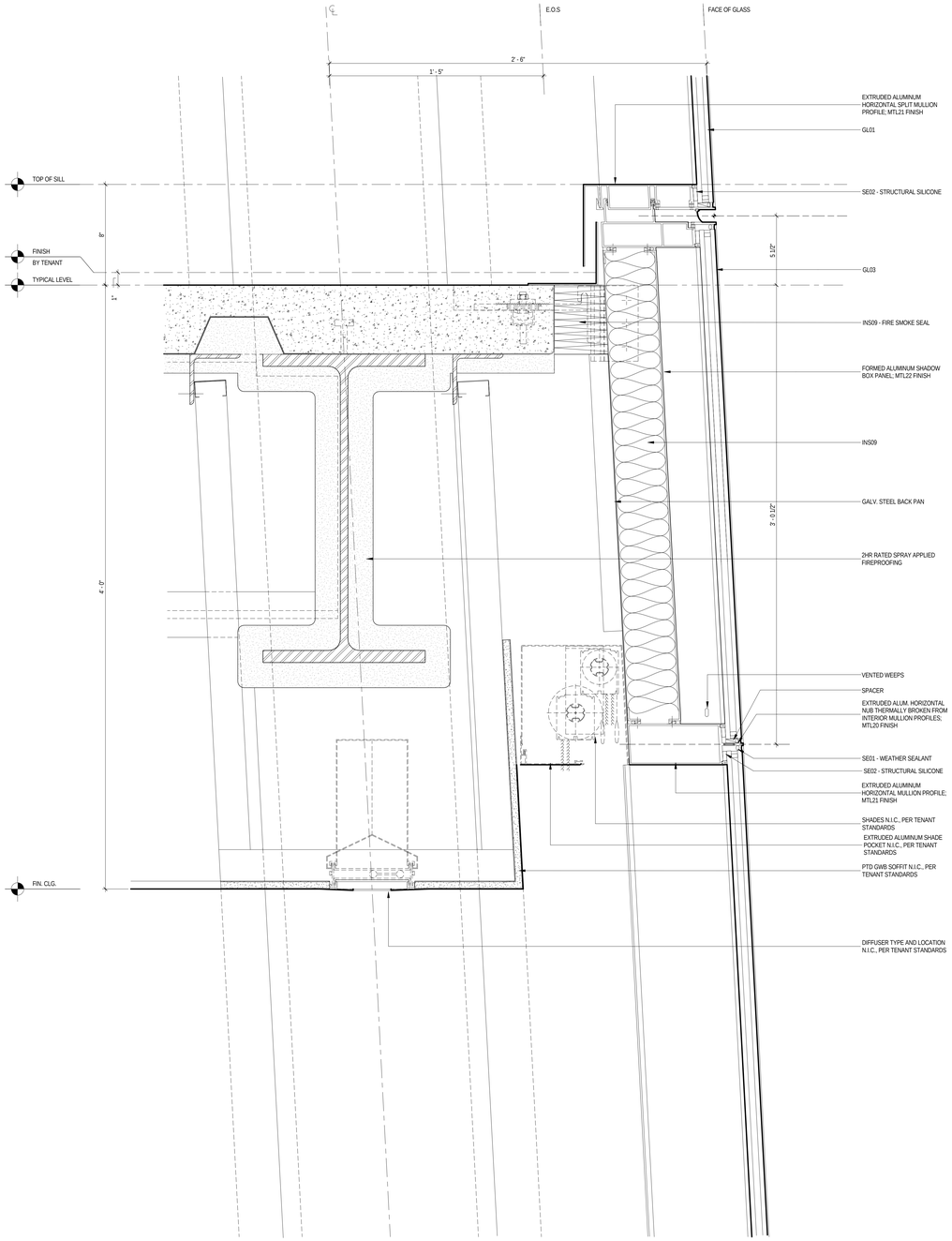
File No.: A-570

B-SCAN Sheet No.: A-570.00

Sheet No.: A-570

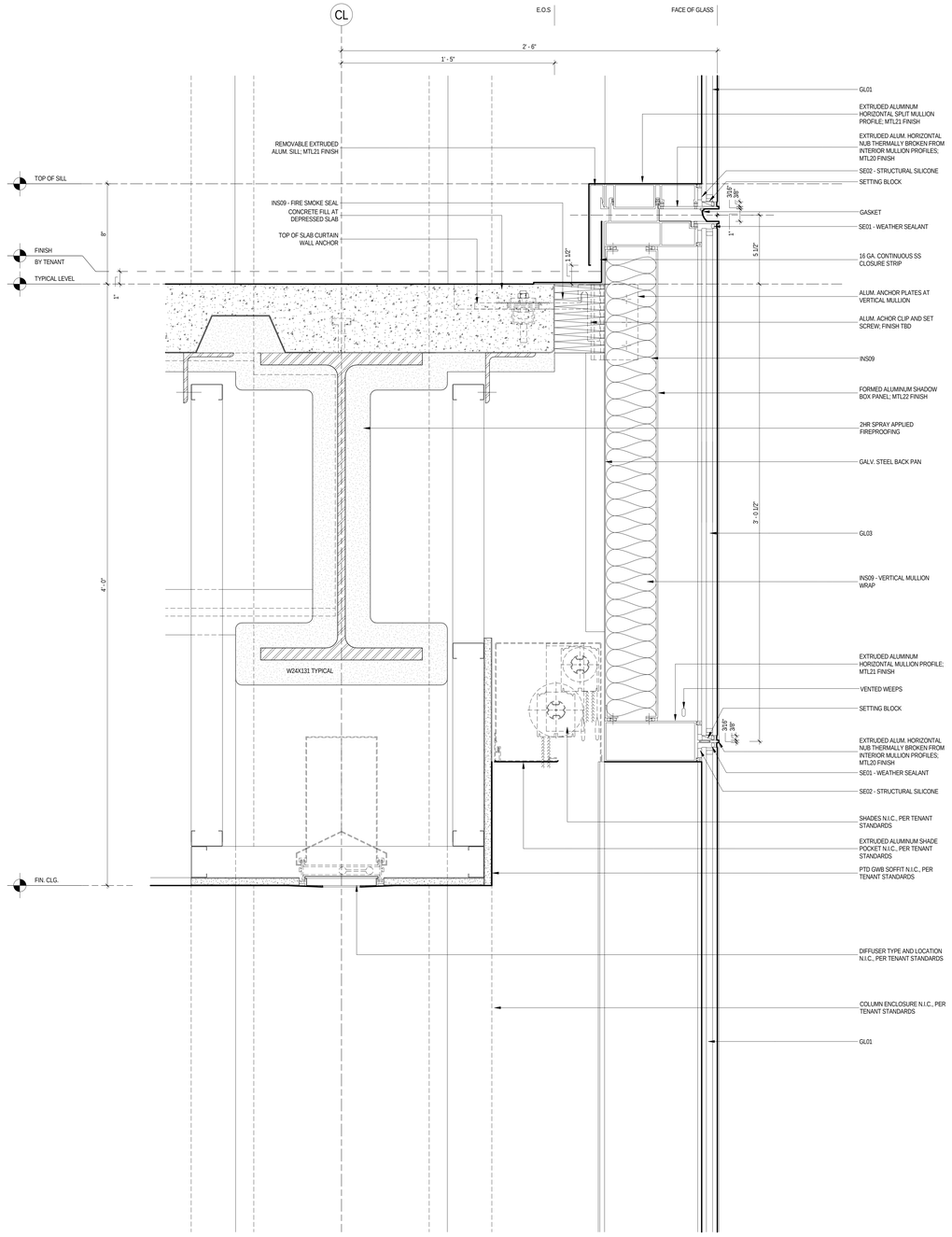
Page No.: 30

9/11/2014 5:36:48 PM



2 CURTAIN WALL SECTION DETAIL

SCALE: 3" = 1'-0"



1 CURTAIN WALL SECTION DETAIL

SCALE: 3" = 1'-0"

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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Ontario, Canada N1K 1B8

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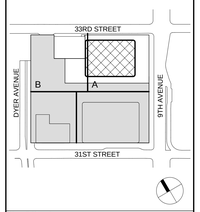

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REGISTERED ARCHITECT
ROY J. GOTTESMAN
NO. 5649
STATE OF NEW YORK

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3	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
2	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
1	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT

Sheet Name:

CURTAIN WALL DETAILS

Project No.: 207120	B-SCAN Sheet No.: A-571.00
Date: 12 SEPT 2014	Sheet No.: A-571
Scale: 3" = 1'-0"	
File No.: A-571	Page No.: 30

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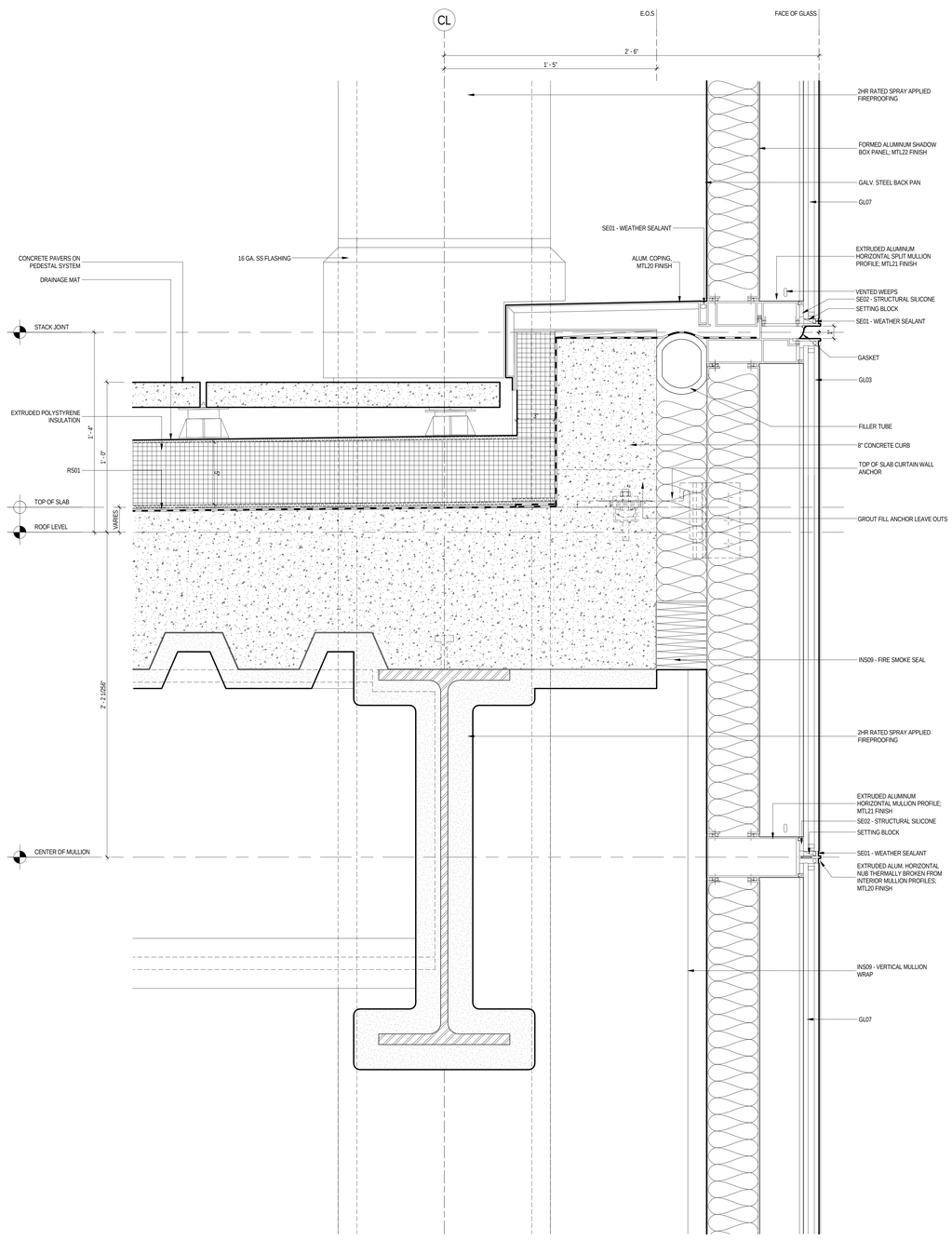

1 CURTAIN WALL SECTION DETAIL

SCALE: 3" = 1'-0"

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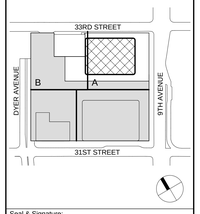

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JOHN P. GOTTESDIENER
NO. 5649
STATE OF NEW YORK

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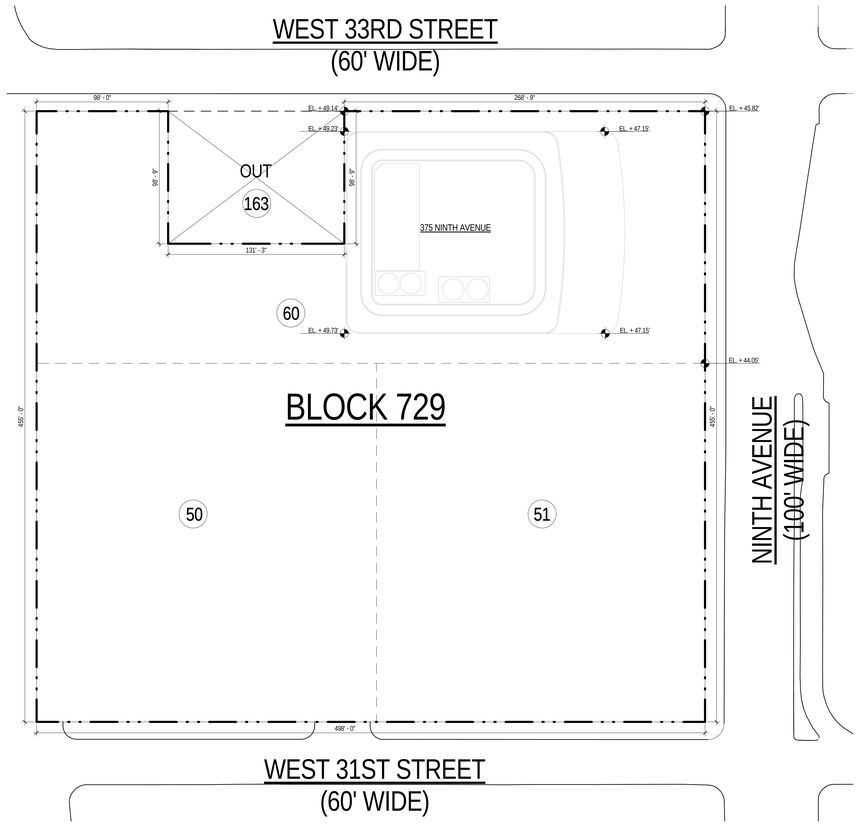
No.	Date	Description
2	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

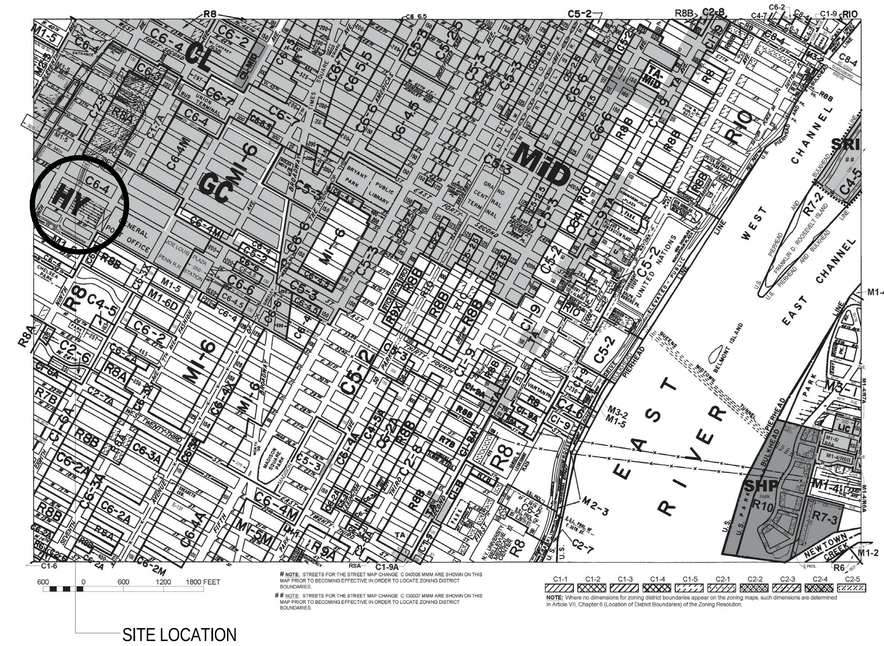
Sheet Name:

CURTAIN WALL DETAILS

Project No.: 207120	B-SCAN Sheet No.: A-575.00
Date: 12 SEPT 2014	Sheet No.: A-575
Scale: 3" = 1'-0"	
File No.: A-575	Page No.: 0 OF 30



7 ZONING LOT MAP
SCALE: 1" = 40'-0"



ZONING MAP
THE NEW YORK CITY PLANNING COMMISSION

Major Zoning Classifications:
The number(s) and/or letter(s) that follows an R, C or M District designation indicates use, bulk and other controls as described in the text of the Zoning Resolution.
R — RESIDENTIAL DISTRICT
C — COMMERCIAL DISTRICT
M — MANUFACTURING DISTRICT
SPECIAL PURPOSE DISTRICT The letter(s) within the shaded area designates the special purpose district as described in the text of the Zoning Resolution.
AREA(S) REZONED

Effective Date(s) of Rezoning:
05-08-2013 C 130078 ZMM

Special Requirements:
For a list of lots subject to CEQR environmental requirements, see APPENDIX C.
For a list of lots subject to "D" restrictive declarations, see APPENDIX D.
For Inclusionary Housing designated areas on this map, see APPENDIX F.

MAP KEY

8a	8c	9a
8b	8d	9b
12a	12c	13a

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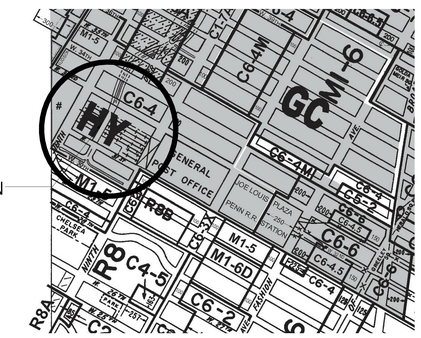
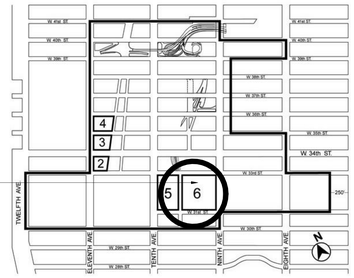
SITE LOCATION

3 ZONING MAP - SPECIAL HUDSON YARDS DISTRICT
SCALE: AS INDICATED



SITE LOCATION

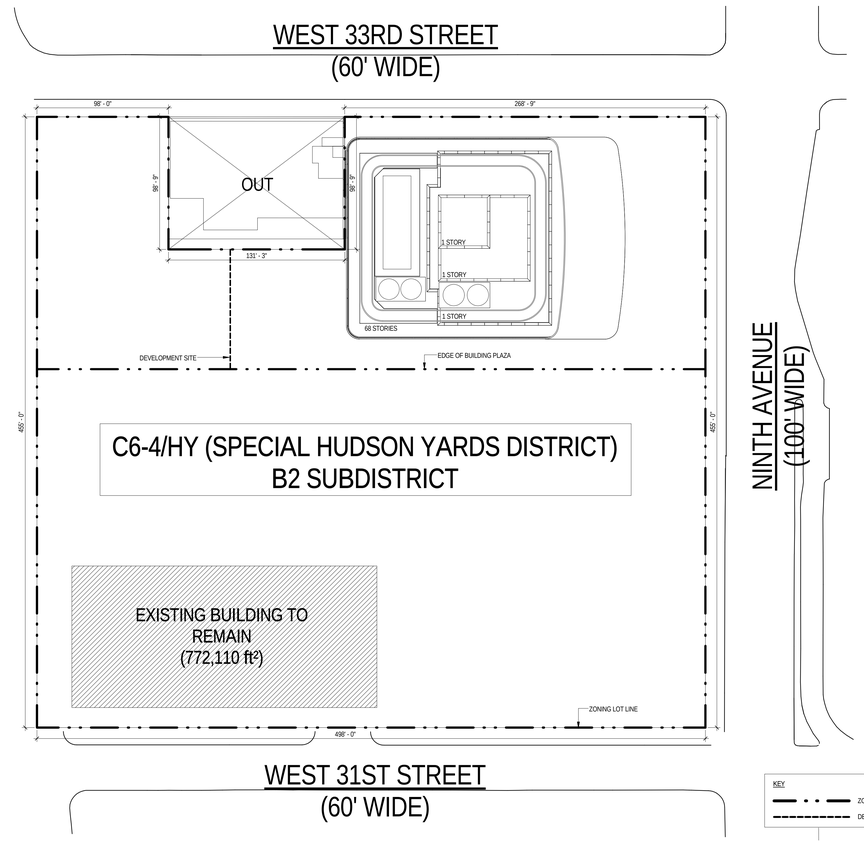
4 ZONING MAP - ENLARGED
SCALE: NTS



SITE LOCATION

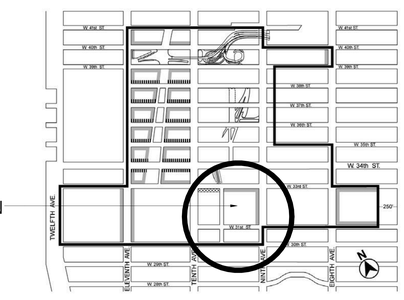
Special Hudson Yards District
Sites with Special Parking Regulations

2 ZONING MAP - SPECIAL PARKING REGULATIONS
SCALE: NTS



6 ZONING DISTRICT MAP
SCALE: 1" = 40'-0"

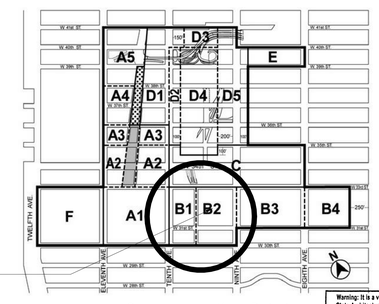
(12/21/09)
Map 4 - Mandatory Sidewalk Widenings (93-A4)



SITE LOCATION

Special Hudson Yards District
10' Sidewalk widening
5' Sidewalk widening
5' Sidewalk widening required if more than 75% of the total floor area existing on the zoning lot on January 19, 2005 is demolished

5 ZONING MAP - MANDATORY SIDEWALK WIDENING
SCALE: NTS



SITE LOCATION

Special Hudson Yards District
Subdistricts
Subareas within subdistricts
Phase 1 Hudson Boulevard and Park
Phase 2 Hudson Boulevard and Park

Large-Scale Plan Subdistrict A
Eastern Rail Yards Subarea A1
Four Corners Subarea A2
Subareas A3 through A5

Farley Corridor Subdistrict B
Western Blocks Subarea B1
Central Blocks Subarea B2
Farley Post Office Subarea B3
Pennsylvania Station Subarea B4

34th Street Corridor Subdistrict C

Hell's Kitchen Subdistrict D
Subareas D1 through D5

South of Port Authority Subdistrict E

Western Rail Yard Subdistrict F

1 ZONING MAP - SUBDISTRICT MAP
SCALE: NTS

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
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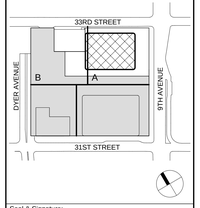

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No.	Date	Description
3	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
ZONING MAP &
TAX LOT MAP

Project No.: 207120
Date: 12 SEPT 2014
Scale: As indicated
File No.: Z-001
B-SCAN Sheet No.: Z-001.00
Sheet No.: Z-001
Page No.: 1 OF 30

SECTION	ITEM	COMPLIANCE
93-00	GENERAL PURPOSES	General Note (G.N.)
93-01	Definitions	G.N.
93-02	General provisions	G.N.
93-03	District plan and maps	G.N.
93-04	Sub districts and subareas within Farley Corridor subdistrict western blocks subarea B1, central blocks subarea B2	G.N.
93-05	Applicability of district regulations	G.N.
93-051	Applicability of Article I, Chapter 1	G.N.
93-052	Applicability of Article I, Chapter 3	G.N.
93-053	Applicability of Chapter 3 of Article VII	G.N.
93-054	Applicability of Article VII, Chapter 4	G.N.
93-055	Modification of use and bulk regulations for zoning lots bounding Hudson Boulevard Park	G.N.
93-10	USE REGULATIONS	
93-11	Air space over a rail road or transit right-of-way or yard	G.N.
93-12	Special residential use regulations	G.N.
93-13	Special office use regulations	G.N.
93-131	Certification for office use	G.N.
93-132	Authorization for office use	G.N.
93-14	Ground floor level requirements	G.N.
93-15	Security gates	G.N.
93-16	Public parking facilities	G.N.
93-17	Modification of sign regulations	G.N.
93-18	Non-conforming uses in large-scale plan sub district A	G.N.
93-19	Authorization for electrical utility substation	G.N.
93-20	FLOOR AREA REGULATIONS	
93-21	Floor area regulations in the large-scale plan subdistrict A	G.N.
93-22	Floor area regulations in subdistrict B,C,D,E, and F	COMPLIES
93-221	Maximum floor area ratio in the Farley Corridor subdistrict B	COMPLIES
93-222	Maximum floor area ratio in the 34th Street Corridor subdistrict C	G.N.
93-223	Maximum floor area ratio in Hell's Kitchen subdistrict D	G.N.
93-224	Maximum floor area ratio in the south of Port Authority subdistrict E	G.N.
93-225	Floor area regulations in subdistrict F	G.N.
93-23	Modification of inclusionary housing program	G.N.
93-30	Special floor area regulations	G.N.
93-31	District improvement found bonus	G.N.
93-32	Floor area regulation in the phase 2 Hudson Boulevard and park	G.N.
93-33	Special regulations for residual portions of zoning lots partially within the phase 2 Hudson Boulevard and park	G.N.
93-34	Distribution of floor area in the large-scale plan subdistrict A	G.N.
93-35	Special permit for transit bonus in Pennsylvania Station subarea B4 plan subdistrict A	G.N.
93-40	HEIGHT AND SETBACK REGULATIONS	
93-41	Rooftop regulations	G.N.
93-42	Height and setback in subdistrict A,B,C,D,E and F	COMPLIES
93-50	SPECIAL HEIGHT AND SETBACKS REGULATIONS	
93-51	Special height and setback regulations in the large-scale plan subdistrict A	COMPLIES
93-52	Special height and setback regulations in the Farley Corridor subdistrict B	COMPLIES
93-521	450 West 33rd Street	
93-522	Ninth Avenue rail yard	COMPLIES
93-523	Pennsylvania Station subarea B4	G.N.
93-57	Special permit for modification of height and setback regulations	G.N.
93-60	MANDATORY IMPROVEMENTS	
93-61	Sidewalk widening	COMPLIES
93-62	Street tree planting	COMPLIES
93-63	Pedestrian circulation space	G.N.
93-64	Major building entrances	COMPLIES
93-65	Transit facilities	G.N.
93-66	Open area requirements in the large scale plan subdistrict A	
93-70	Public access requirements for special sites	G.N.
93-71	Public access areas in the eastern rail yard subarea A1	G.N.
93-72	Public access areas at 450 West 33rd Street	G.N.
93-73	Public access areas on Ninth Avenue rail yards	COMPLIES
93-731	Design and maintenance requirements for public access areas on Ninth Avenue rail yard	COMPLIES
93-732	Certification for public access areas on the Ninth Avenue rail yard	G.N.
93-733	Certification to modify general requirements for public access areas for ventilation demands	G.N.
93-734	Certification to temporarily modify public access areas for construction staging	G.N.
93-80	OFF STREET PARKING REGULATIONS	
93-81	Definitions	G.N.
93-82	Permitted parking	G.N.
93-83	Use and location of parking facilities	G.N.
93-84	Curb cut restrictions	G.N.
93-842	Curb cut restriction in Farley Corridor subdistrict B	COMPLIES
	No curb cut shall be permitted on Ninth Ave. between West 31st and West 33rd street.	
	Max. aggregate width of curb cuts on West 33rd street: 90'	
93-90	HARASSMENT	
36-62	Required accessory off-street loading berths	COMPLIES
36-71	Required bicycle parking spaces	COMPLIES
37-725	Steps	COMPLIES
37-726	Permitted obstructions	COMPLIES
37-727	Hours of access	G.N.
37-741	Seatings	
37-742	Planting and trees	
37-751	Public space signage system	

4 ZONING RESOLUTION - GENERAL

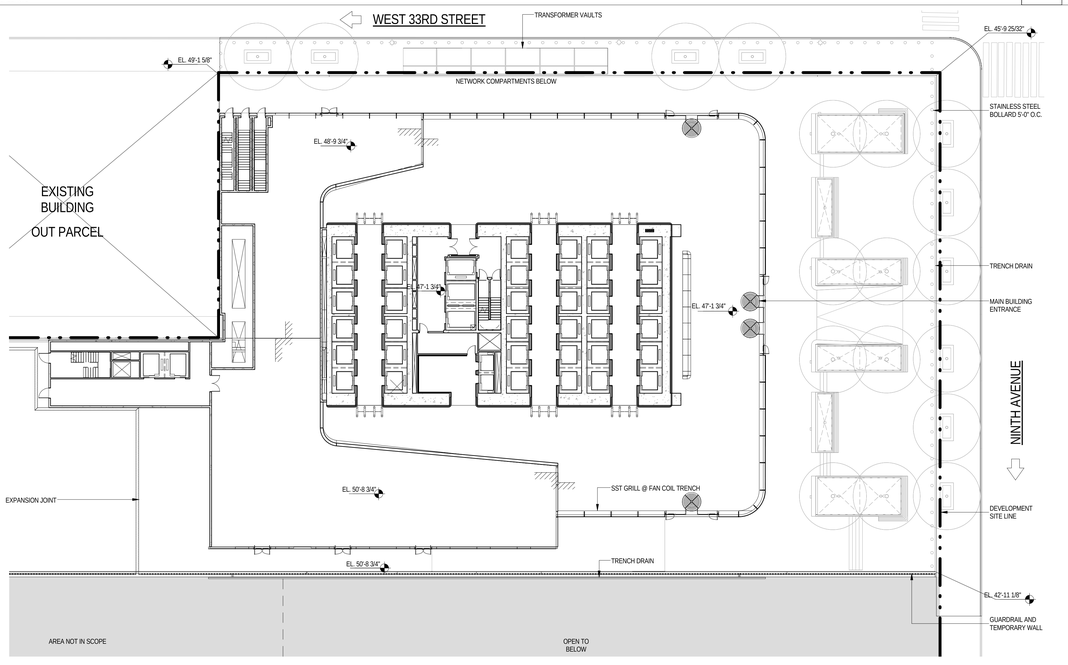
SCALE: NTS

Development Site:	Block 729
Lot:	60
Existing Buildings:	Lot 163 to remain Lot 50 to remain
Community board:	#4, Manhattan
Little "E" restricted:	Hazmat / Noise / Air
Zoning Map:	8d
Zoning District:	C6-4 / HY (Special Hudson Yards District)
Subdistrict:	Farley Corridor Subdistrict B
Subarea:	Central Blocks Subarea B2

SECTION	ITEM			COMPLIANCE
32-11	Lot area:	213,629 GSF		
	Uses permitted:	Use group 1-12		
	Uses proposed:	Retail - Use group 6, Use group 10		COMPLIES
		Office - Use group 6B		COMPLIES
93-22 93-22(a) ROW C	FLOOR AREA REGULATIONS Maximum permitted FAR			
	Total:	19.0		
	Commercial:	19.0		
	Residential:	4.0		
	Community Facility:	2.0		
	Maximum permitted floor area			
	Total:	19.0 x 213,629 =	4,058,951 ft²	
	Commercial:	19.0 x 213,629 =	4,058,951 ft²	
	Residential:	4.0 x 213,629 =	854,516 ft²	
	Community Facility:	2.0 x 213,629 =	427,258 ft²	
	Existing building floor area			
	Total:	772,110 ft² (3.61 FAR)		
	Commercial:	8,542 ft² (.04 FAR)		
	Residential:	763,568 ft² (3.57 FAR)		
	Community Facility:	0 ft²		
	Proposed floor area (see floor area schedule, 1/Z-003.00)			
	Total:	1,644,660 ft² (7.70 FAR)		COMPLIES
	Commercial:	1,644,660 ft² (7.70 FAR)		COMPLIES
	Residential:	0 ft²		
	Community Facility:	0 ft²		
93-42	HEIGHT AND SETBACK REGULATIONS			COMPLIES
	Max. base height on a wide street:		150 ft	(See 1/Z-002.00
	Max. base height on a narrow street:			and Z-003.00)
	-Within 100' of its intersection with wide street:		150 ft	
	-Beyond 100' of its intersection with wide street:		150 ft	
	-Weighted avg. base height on a narrow street:		120 ft (Approx.)	
93-522	SPECIAL HEIGHT AND SETBACK REGULATIONS			COMPLIES
	Required setback on a wide street:		15 ft	(See 1/Z-002.00
	Required setback on a narrow street:		20 ft*	and Z-003.00)
	*Exception: A building may rise without setback when no part of building is within 15' of street line.			
93-61	SIDEWALK WIDENING			COMPLIES
	Minimum along West 33rd Street and Ninth Ave.:		5 ft	(See 3/Z-005.00)
93-62	STREET TREE PLANTING			
	Max. interval along West 33rd Street and Ninth Avenue:		25 ft	
	Requirement/Permitted			
	Along West 33rd Street:		15 trees	
	Along Ninth Avenue:		19 trees	
	Along West 31st Street:		20 trees	
	Proposed			COMPLIES
	Along West 33rd Street:		6 trees*	(See Z-004.00)
	Along Ninth Avenue:		13 trees*	
	Along West 31st Street:		6 trees*	
	*Remainder to be paid to the Dept. of Parks and Recreation			
93-64	MAJOR BUILDING ENTRANCES The street wall of any building facing east towards Ninth Avenue south of West 33rd Street shall contain either a major building entrance or have at least 70% of its ground floor frontage occupied by retail use.			COMPLIES
93-73 93-73(a) 93-73(a)(1) 93-73(a)(2)	PUBLIC ACCESS AREAS ON THE NINTH AVE. RAIL YARD Entry plaza Location and minimum dimensions Required amenities -A minimum of 8 trees -At least 336 linear feet of seating -Two or more planting beds, occupy an area of at least 800 ft² -Ground floor transparency in accordance with paragraph (c) -Section 93-14 -One clear pedestrian circulation path, minimum width of 12 ft			COMPLIES
93-731	DESIGN AND MAINTENANCE REQUIREMENT FOR PUBLIC ACCESS AREAS			See 4/Z-005.00
93-81	OFF STREET PARKING REGULATIONS *Chairperson certification required			See 4/Z-007.00*
36-62	ACCESSORY OFF-STREET LOADING BERTHS			COMPLIES
	Berths required for office use			(See 4/Z-007.00)
	First 100,000 ft²:		0 berths	
	Next 200,000 ft²:		1 berth	
	Each additional 300,000 ft²:		1 berth	
	Total:		5.4 berths	
	(1,624,537 ft² - 300,000 ft²) / 300,000 ft²			
	Berths required for retail use			
	First 25,000 ft²:		0 berths	
	Next 15,000 ft²:		1 berth	
	Next 60,000 ft²:		1 berth	
	Each additional 150,000 ft²:		1 berth	
	Total:		0 berths	
	(20,123 ft² - 100,000 ft²) / 150,000 ft²			
36-71	REQUIRED BICYCLE PARKING SPACES			COMPLIES
	Spaces required for office use			(See 1-3/Z-007.00)
	1 per 7,500 ft² of floor area			
	Total (1,624,537 / 7,500):		217 spaces	
	Spaces required for retail use			
	1 per 10,000 ft² of floor area			
	Total (20,123 / 7,500):		3 spaces	

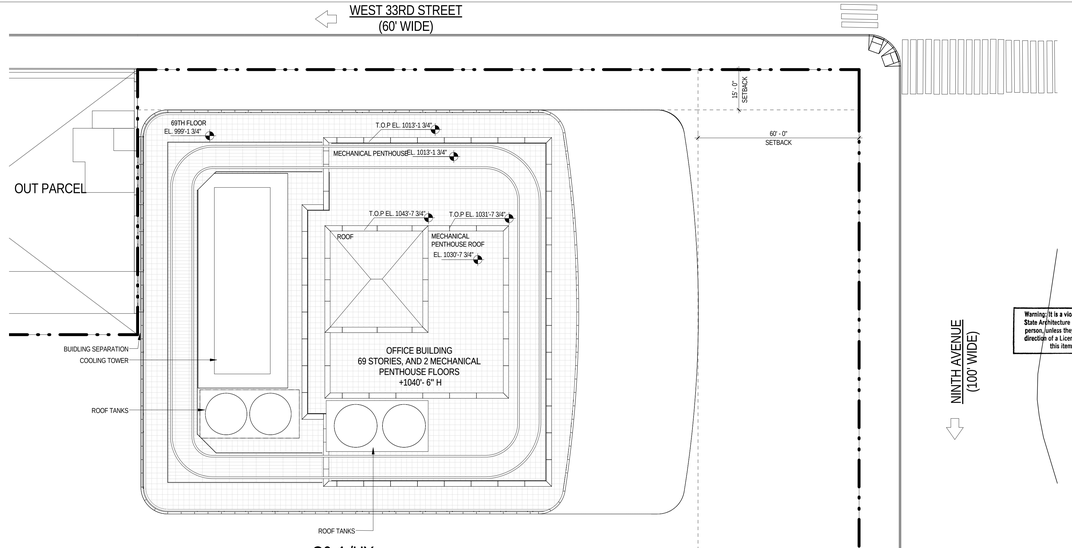
2 ZONING RESOLUTION - APPLICABLE

SCALE: NTS



3 ZONING - GROUND FLOOR PLAN

SCALE: 1" = 20'-0"



1 ZONING - ROOF PLAN

SCALE: 1" = 20'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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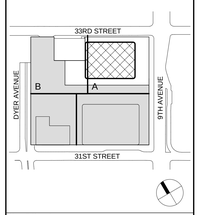
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ANDREW J. GOTTESPEIN
STATE OF NEW YORK
No. 026449

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING CALCULATIONS & ROOF PLAN

Project No.: 207120	B-SCAN Sheet No.: Z-002.00
Date: 20 JUN 2014	Sheet No.: Z-002
Scale: As indicated	
File No.: Z-002	Page No.: 2 OF 28

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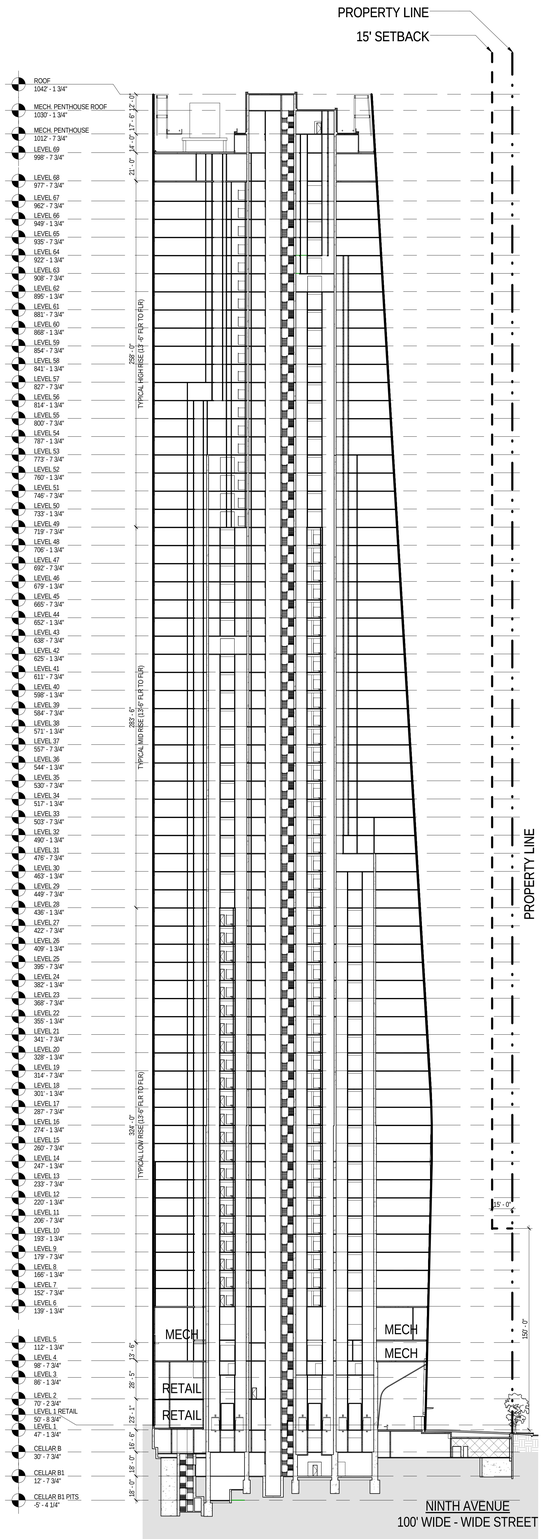
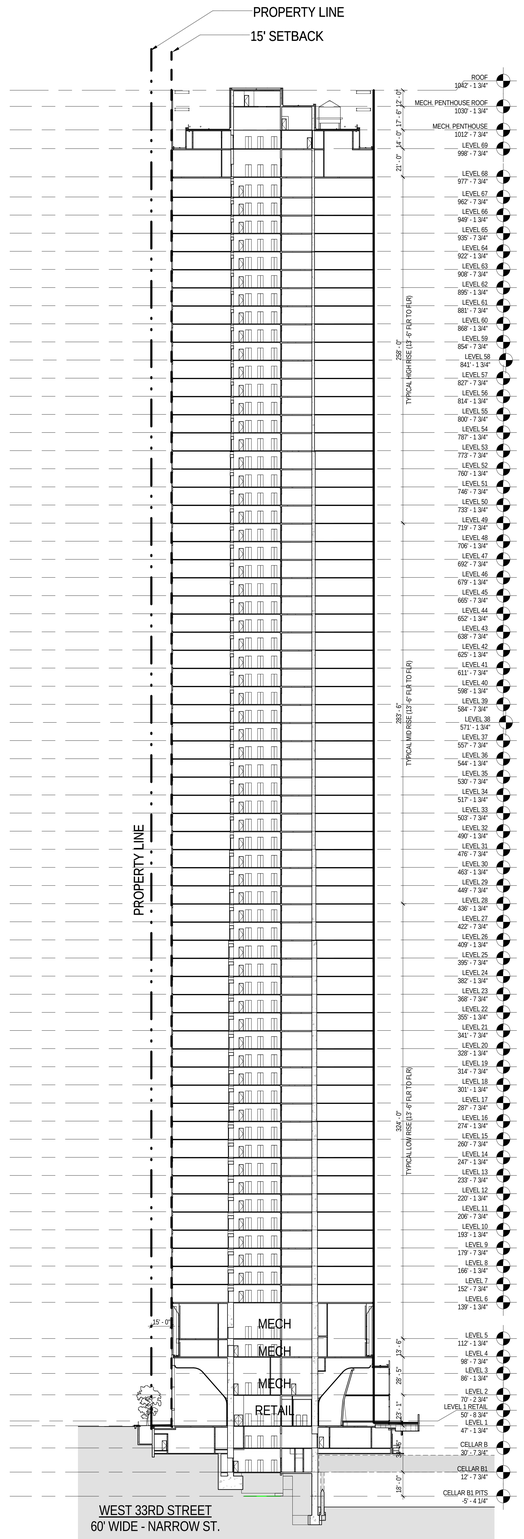


4 BUILDING SECTION LOOKING NORTH

SCALE: 1" = 40'-0"



3 BUILDING SECTION LOOKING WEST

SCALE: 1" = 40'-0"

HEIGHT AND SETBACK REGULATIONS (ZR 93-42)

Max. base height on a wide street:	150 ft
Max. base height on a narrow street:	
-Within 100' of its intersection with wide street:	150 ft
-Beyond 100' of its intersection with wide street:	150 ft
-Weighted avg. base height on a narrow street:	120 ft (Approx.)

SPECIAL HEIGHT AND SETBACK REGULATIONS (ZR 93-522)

Required setback on a wide street:	15 ft
Required setback on a narrow street:	20 ft*

*Exception: A building may rise without setback when no part of building is within 15' of street line.

2 ZONING RESOLUTION - HEIGHT & SETBACK REGULATIONS

SCALE: NTS

FLOOR AREA SCHEDULE

FLOOR	USE	GROSS FLOOR AREA (SF)	RETAIL AREA	ZONING DEDUCTIONS	ZONING FLOOR AREA
CELLAR B1 PITS	Mechanical / Storage	2,742 ft²	-	2,742 ft²	-
CELLAR B1	Mechanical / Storage	7,782 ft²	-	7,782 ft²	-
CELLAR B	Mechanical / Storage	57,777 ft²	-	57,777 ft²	-
LEVEL 1	Office / Retail	33,862 ft²	-	1,784 ft²	-
LEVEL 2	Retail	14,162 ft²	10,008 ft²	1,250 ft²	32,078 ft²
LEVEL 3	Mechanical / Mezzanine	8,275 ft²	10,115 ft²	627 ft²	12,912 ft²
LEVEL 4	Mechanical	32,237 ft²	-	32,237 ft²	7,648 ft²
LEVEL 5	Mechanical	20,296 ft²	-	20,296 ft²	-
LEVEL 6	Office	30,620 ft²	-	2,631 ft²	-
LEVEL 7	Office	30,646 ft²	-	2,631 ft²	27,989 ft²
LEVEL 8	Office	30,673 ft²	-	2,631 ft²	28,015 ft²
LEVEL 9	Office	30,699 ft²	-	2,631 ft²	28,042 ft²
LEVEL 10	Office	30,726 ft²	-	2,631 ft²	28,068 ft²
LEVEL 11	Office	30,753 ft²	-	2,615 ft²	28,095 ft²
LEVEL 12	Office	30,780 ft²	-	2,615 ft²	28,137 ft²
LEVEL 13	Office	30,807 ft²	-	2,615 ft²	28,164 ft²
LEVEL 14	Office	30,812 ft²	-	2,615 ft²	28,191 ft²
LEVEL 15	Office	30,831 ft²	-	2,616 ft²	28,196 ft²
LEVEL 16	Office	30,832 ft²	-	2,552 ft²	28,215 ft²
LEVEL 17	Office	30,807 ft²	-	2,552 ft²	28,280 ft²
LEVEL 18	Office	30,756 ft²	-	2,552 ft²	28,255 ft²
LEVEL 19	Office	30,637 ft²	-	3,235 ft²	28,204 ft²
LEVEL 20	Office	30,517 ft²	-	3,235 ft²	27,402 ft²
LEVEL 21	Office	30,396 ft²	-	2,598 ft²	27,282 ft²
LEVEL 22	Office	30,276 ft²	-	2,598 ft²	27,798 ft²
LEVEL 23	Office	30,155 ft²	-	2,598 ft²	27,678 ft²
LEVEL 24	Office	30,035 ft²	-	2,598 ft²	27,557 ft²
LEVEL 25	Office	29,915 ft²	-	2,598 ft²	27,437 ft²
LEVEL 26	Office	29,794 ft²	-	2,537 ft²	27,317 ft²
LEVEL 27	Office	29,674 ft²	-	2,537 ft²	27,257 ft²
LEVEL 28	Office	29,553 ft²	-	2,700 ft²	27,137 ft²
LEVEL 29	Office	29,433 ft²	-	2,700 ft²	26,853 ft²
LEVEL 30	Office	29,313 ft²	-	3,692 ft²	26,733 ft²
LEVEL 31	Office	29,192 ft²	-	3,074 ft²	25,622 ft²
LEVEL 32	Office	29,072 ft²	-	3,489 ft²	26,118 ft²
LEVEL 33	Office	28,951 ft²	-	2,646 ft²	25,582 ft²
LEVEL 34	Office	28,831 ft²	-	2,646 ft²	26,305 ft²
LEVEL 35	Office	28,711 ft²	-	2,646 ft²	26,185 ft²
LEVEL 36	Office	28,590 ft²	-	2,646 ft²	26,065 ft²
LEVEL 37	Office	28,470 ft²	-	2,646 ft²	25,944 ft²
LEVEL 38	Office	28,349 ft²	-	2,646 ft²	25,823 ft²
LEVEL 39	Office	28,229 ft²	-	2,646 ft²	25,703 ft²
LEVEL 40	Office	28,109 ft²	-	2,646 ft²	25,583 ft²
LEVEL 41	Office	27,988 ft²	-	2,646 ft²	25,463 ft²
LEVEL 42	Office	27,868 ft²	-	3,557 ft²	25,342 ft²
LEVEL 43	Office	27,747 ft²	-	2,674 ft²	24,311 ft²
LEVEL 44	Office	27,627 ft²	-	2,674 ft²	25,073 ft²
LEVEL 45	Office	27,507 ft²	-	2,674 ft²	24,953 ft²
LEVEL 46	Office	27,386 ft²	-	2,674 ft²	24,833 ft²
LEVEL 47	Office	27,266 ft²	-	2,674 ft²	24,712 ft²
LEVEL 48	Office	27,145 ft²	-	2,674 ft²	24,592 ft²
LEVEL 49	Office	27,025 ft²	-	2,700 ft²	24,471 ft²
LEVEL 50	Office	26,905 ft²	-	2,700 ft²	24,325 ft²
LEVEL 51	Office	26,784 ft²	-	2,700 ft²	24,205 ft²
LEVEL 52	Office	26,664 ft²	-	3,653 ft²	24,084 ft²
LEVEL 53	Office	26,543 ft²	-	3,199 ft²	23,011 ft²
LEVEL 54	Office	26,423 ft²	-	3,577 ft²	23,344 ft²
LEVEL 55	Office	26,303 ft²	-	3,175 ft²	22,846 ft²
LEVEL 56	Office	26,182 ft²	-	3,575 ft²	23,128 ft²
LEVEL 57	Office	26,062 ft²	-	2,723 ft²	22,607 ft²
LEVEL 58	Office	25,941 ft²	-	2,723 ft²	23,338 ft²
LEVEL 59	Office	25,821 ft²	-	2,723 ft²	23,218 ft²
LEVEL 60	Office	25,701 ft²	-	2,723 ft²	23,098 ft²
LEVEL 61	Office	25,580 ft²	-	2,723 ft²	22,978 ft²
LEVEL 62	Office	25,460 ft²	-	3,658 ft²	22,857 ft²
LEVEL 63	Office	25,339 ft²	-	3,241 ft²	21,801 ft²
LEVEL 64	Office	25,219 ft²	-	2,673 ft²	22,099 ft²
LEVEL 65	Office	25,099 ft²	-	2,673 ft²	22,546 ft²
LEVEL 66	Office	24,978 ft²	-	2,673 ft²	22,426 ft²
LEVEL 67	Office	24,858 ft²	-	2,673 ft²	22,305 ft²
LEVEL 68	Mechanical	24,724 ft²	-	24,724 ft²	22,185 ft²
LEVEL 69	Mechanical	9,843 ft²	-	3,208 ft²	-
MECH. PENTHOUSE	Mechanical Penthouse	4,003 ft²	-	4,003 ft²	-
MECH. PENTHOUSE ROOF	Mechanical Penthouse	1,534 ft²	-	1,534 ft²	6,635 ft²
Grand total		1,976,602 ft²	20,123 ft²	331,941 ft²	1,644,660 ft²

FAR: 1,644,660 SF/ 213,629 SF = 7.7

1 ZONING FLOOR AREA SCHEDULE

SCALE: NTS

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

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50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

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Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

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40 Wall Street, New York, NY 10005

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Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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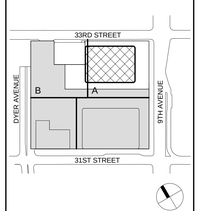
Key Plan:



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REGISTERED ARCHITECT ROBERT GOTTESDIENER STATE OF NEW YORK 5645

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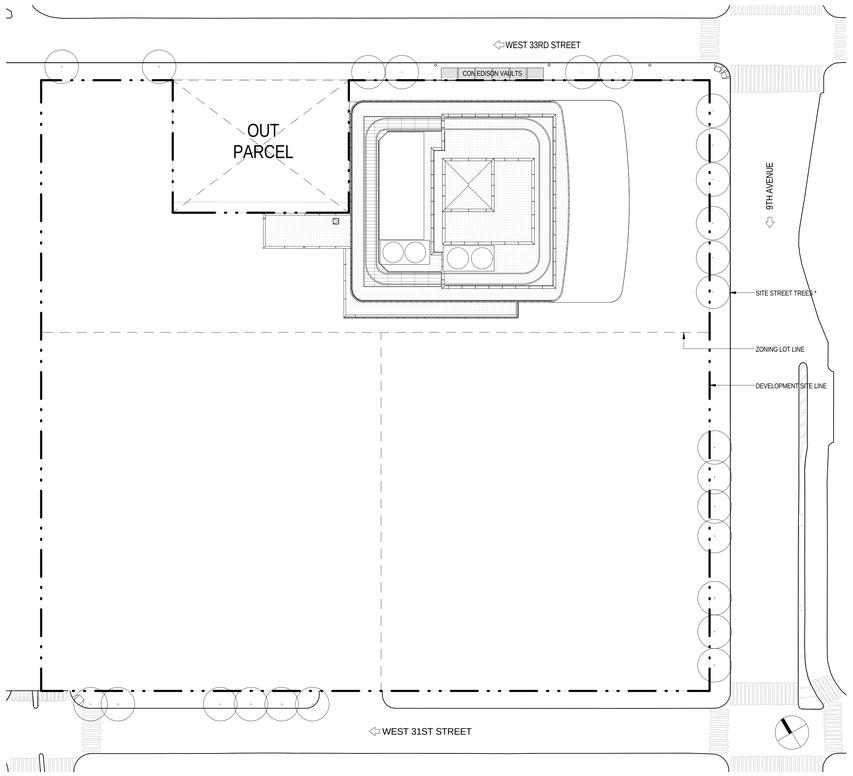
No.	Date	Description
3	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

HEIGHT & SETBACK SECTIONS / FLOOR AREA SCHEDULE

Project No.: 207120	B-SCAN Sheet No.: Z-003.00
Date: 12 SEPT 2014	Sheet No.: Z-003
Scale: As indicated	
File No.: Z-003	Page No.: 3 OF 30



* REMAINDER OF STREET TREES TO BE PAID TO THE DEPARTMENT OF PARKS AND RECREATION.

1 STREET TREES PLANTING
SCALE: 1" = 40'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant
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SEAL
STATE OF NEW YORK

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
STREET TREES PLANTING

Project No.: 207120	B-SCAN Sheet No.: Z-004.00
Date: 20 JUN 2014	
Scale: 1" = 40'-0"	Sheet No.: Z-004
File No.: Z-004	Page No.: 4 OF 28

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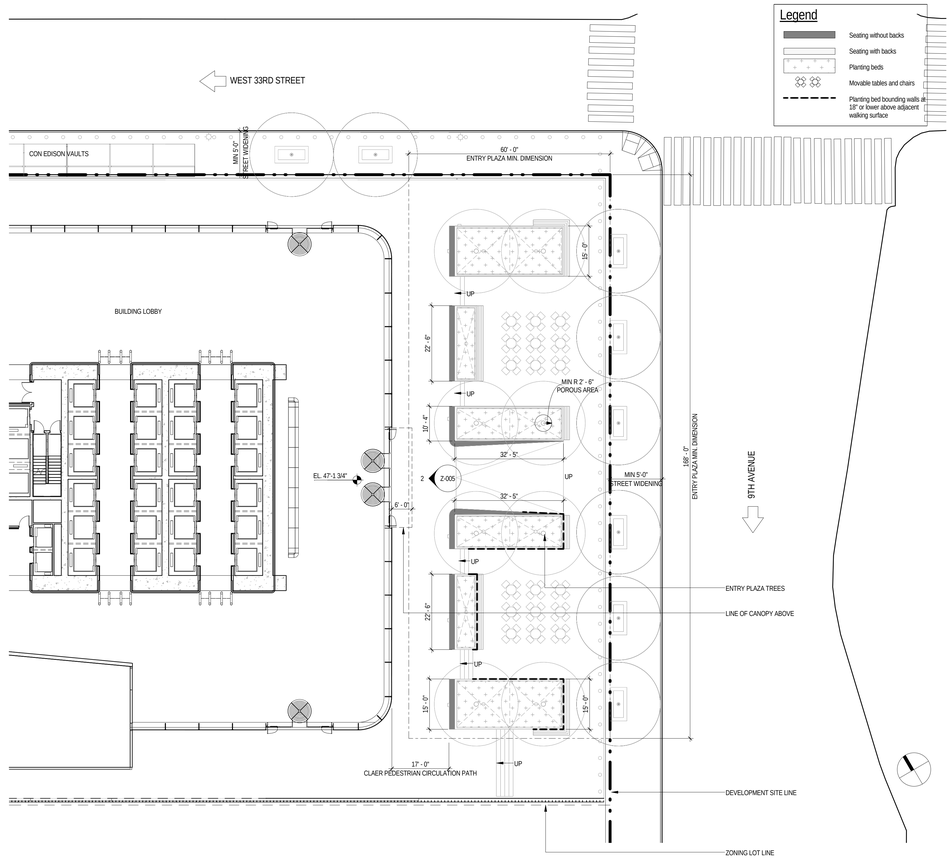
SECTION	ITEM	COMPLIANCE
93-73	PUBLIC ACCESS AREAS ON NINTH AVENUE RAIL YARD	
93-61	SIDEWALK WIDENING 5'-0" on 33rd Street and 9th Avenue	COMPLIES
93-732	CERTIFICATION FOR PUBLIC ACCESS AREAS ON THE NINTH AVENUE RAIL YARD Certification required as per section above.	
93-73(a)(2)(iv)	GROUND FLOOR TRANSPARENCY In accordance with Section 93-14, shall apply to at least 70% of the length of all building walls facing entry plaza.	COMPLIES (See 2/Z-005.00)

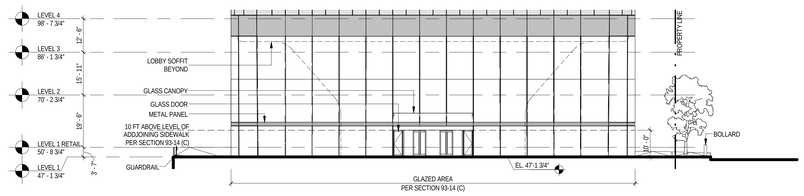
4 ZONING RESOLUTION - PUBLIC ACCESS AREA REQUIREMENTS

SCALE: NTS



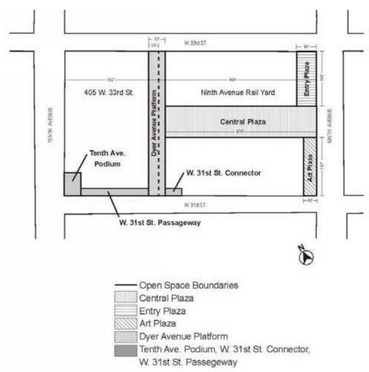
3 PUBLIC ACCESS AREAS - ENTRY PLAZA

SCALE: 1/16" = 1'-0"



2 ENLARGED BUILDING ELEVATION FACING ENTRY PLAZA

SCALE: 1" = 20'-0"



MAP 1: SUBDISTRICT B: 450 WEST 33RD STREET AND NINTH AVENUE RAIL YARD PUBLIC ACCESS AREA (93-B1)

1 ZONING MAP - SPECIAL HUDSON YARDS SUBDISTRICT MAP

SCALE NTS

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:

Seal & Signature:

REGISTERED ARCHITECT
RICHARD GOTTESDIENER
STATE OF NEW YORK
No. 15645

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

PUBLIC ACCESS AREAS - ENTRY PLAZA

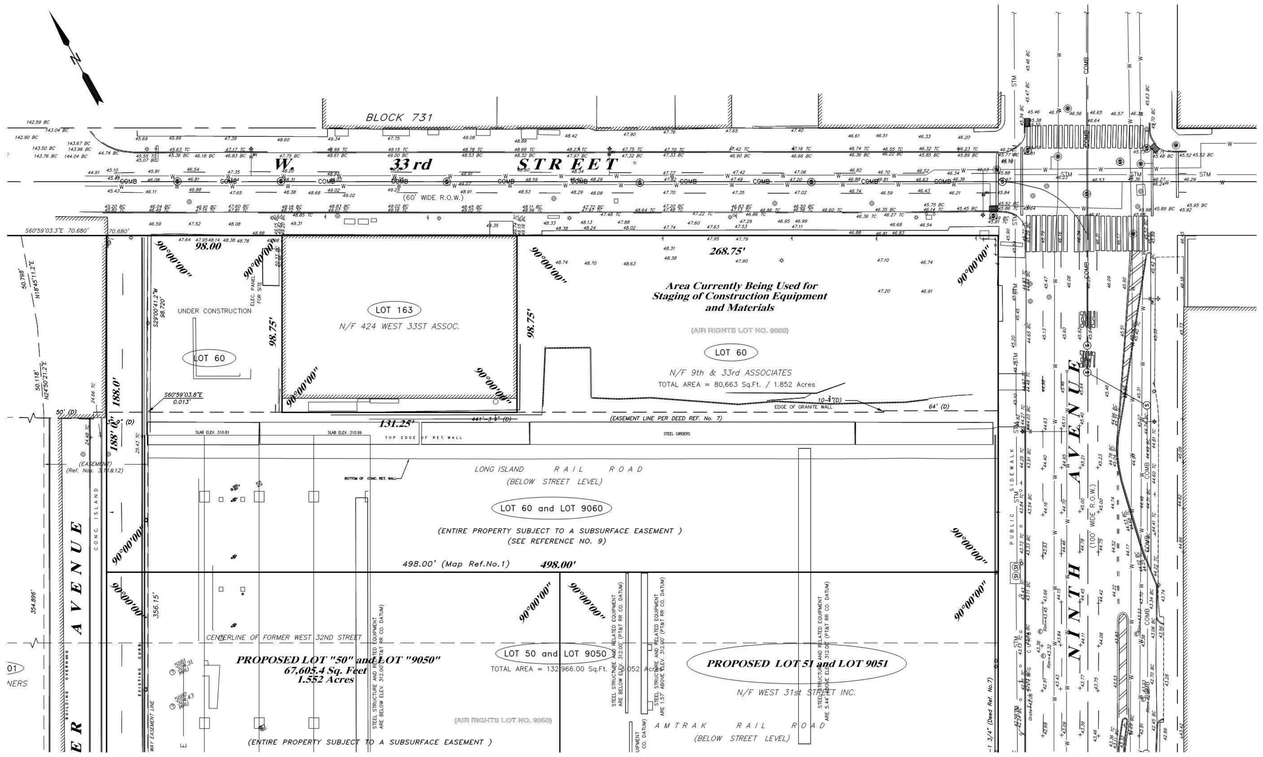
Project No.: 207120
Date: 20 JUN 2014
Scale: As indicated
File No.: Z-005

B-SCAN Sheet No.: Z-005.00
Sheet No.: Z-005
Page No.: 5 OF 28

6/20/2014 3:54:23 PM

PART OF BLOCK 731 LOT 9060 — Job Number

E5406D0030 — Scan Code



GENERAL NOTES

1. THE INFORMATION SHOWN HEREON CORRECTLY REPRESENTS THE CONDITIONS FOUND AT AND AS OF THE DATE OF THE FIELD SURVEY.
2. SUBJECT TO EASEMENTS AND RESTRICTIONS THAT MAY EXIST, INCLUDING BUT NOT LIMITED TO: AGREEMENTS, BOUNDARY LINE AND THE LIKE, WRITTEN AND/OR IMPLIED; CLAIMS; CONTRACTS; EASEMENTS; GRANTS; LEASES; LICENSES; LIMITATIONS; MATTERS OF FACT; RESERVATIONS; RIGHTS, AERIAL AND/OR SUBTERRANEAN; UNWRITTEN TRANSFERS OR CLAIMS; WETLANDS AND/OR ENVIRONMENTAL STUDIES; MUNICIPAL/COUNTY/STATE AND/OR FEDERAL LAWS, ORDINANCES, REGULATIONS, REQUIREMENTS AND RULES, SPECIFICALLY THOSE CONDITIONS PLACED UPON THIS PARCEL THROUGH THE SUBDIVISION PROCESS AND FOUND IN THE BOROUGH OF MANHATTAN APPROVAL RESOLUTION. NO EASEMENTS SHOWN.
3. UNLESS OTHERWISE NOTED, LOT AND BLOCK DESIGNATIONS ARE IN ACCORDANCE WITH THE CURRENT TAX MAP OF THE BOROUGH OF MANHATTAN, CITY, COUNTY AND STATE OF NEW YORK, SHEET NO. 16.
4. ALL DIMENSIONS SHOWN ARE IN THE LEGAL OR BLOCK STANDARD OF MEASUREMENT AND ARE TO BE USED FOR LEGAL DESCRIPTIONS AND COMPUTATIONS OF THE AREA OF THE LOT.
5. ALL TOPOGRAPHIC DATA AS PER DRAWING TITLED "TOPOGRAPHIC SURVEY AT STREET LEVEL. PREPARED FOR BROOKFIELD PROPERTIES BY MEDINA CONSULTANTS DATED 6-4-07.
6. UTILITY INFORMATION SHOWN IS AS PER DRAWING TITLED "UTILITY PLAN AT STREET LEVEL. PREPARED FOR BROOKFIELD PROPERTIES BY MEDINA CONSULTANTS DATED 6-4-07.
7. MAP REFERENCES ARE AS SHOWN ON ALTA SURVEY PREPARED FOR OVERALL PARCEL PREPARED BY TYLIN INTERNATIONAL DATED 2-5-08 AND REVISED ON 2-12-12.
6. A CONVERSION FACTOR OF +1.675 WAS USED TO CONVERT MANHATTAN HIGHWAY DATUM TO NAVD '88. THIS WAS BASED UPON A STANDARD CONVERSION FROM MANHATTAN TO NGVD '29 OF + 2.75 AND THE CONVERSION OF NAVD '29 TO NAVD '88 OF -1.075 AS DETERMINED FOR THE SITE AS PER NGS SURVEY CONVERSION PROGRAM CORPSCON.
8. THERE ARE NO VISABLE STREAMS NOR NATURAL WATER COURSES IN THE PROPERTY AS SHOWN ON THIS SURVEY.

REFERENCES (SEE NOTE 7)

1. MAP ENTITLED "METES AND BOUNDS SURVEY, BLOCK 729, LOT 50 NEW YORK COUNTY, NEW YORK, N.Y." DATED JANUARY 28, 2004, PREPARED BY MANHATTAN SURVEYING, P.C., 225 BROADWAY, NEW YORK, N.Y. 10007, PAUL W. WERLER, NEW YORK STATE LICENSE NO. 0498751.
2. MAP ENTITLED "RECORD PROPERTY MAP LINCOLN TUNNEL, NEW YORK CITY" DATED SEPT. 10, 1991, THE PORT AUTHORITY OF NEW YORK & NEW JERSEY, DRAWING NO. LTP-R-76, SHEETS 1 of 2 AND 2 of 2.
3. MAP ENTITLED "EXISTING CONDITIONS PLAN, 31st STREET ASSOCIATES 9th AVENUE TOWER" DATED AUGUST 18, 1986, PREPARED BY SIELVE STEVENSON VALLE & KNECHT, INC.
4. MANHATTAN BOROUGH TAX MAP SECTION 3 VOLUME 2 SHEET NO. 16.
5. MANHATTAN BOROUGH PRESIDENTS MAP NO. 36.
6. DEED REEL 2850, PAGE 1360 RECORDED IN THE COUNTY REGISTRAR'S OFFICE ON APRIL 6, 1999. SCHEDULE A TITLE NO. TS-4002099.
7. DEED FROM PT&T RR CO. TO STUYVESANT REAL ESTATE CO. RECORDED IN THE COUNTY REGISTRAR'S OFFICE ON APRIL 22, 1955 IN LIBER 3673, PAGE 13. EXHIBIT A TITLE NO. TS-06-7406-15714-NY
8. CONFIRMATORY DEED FROM PT&T RR CO. TO STUYVESANT REAL ESTATE CO. RECORDED IN THE COUNTY REGISTRAR'S OFFICE ON APRIL 22, 1955 IN LIBER 4920, PAGE 12.
9. GRANT OF EASEMENT FROM STUYVESANT REAL ESTATE CO. TO PT&T RR CO. RECORDED IN THE COUNTY REGISTRAR'S OFFICE ON APRIL 22, 1955 IN LIBER 4920, PAGE 22. (THE PERMANENT AND PERPETUAL EASEMENT SUBSURFACE AREA BELOW A HORIZONTAL PLANE AT ELEVATION 312.00 PT&T RR CO. DATUM.)
10. BLOCK 729, LOT 1 & 9001 CRFN# 2005031400407001, DATED 03/14/2005.
11. AGREEMENT BETWEEN THE PORT OF NEW YORK AUTHORITY AND THE STUYVESANT REAL ESTATE COMPANY, PENNSYLVANIA TUNNEL AND TERMINAL RAILROAD COMPANY, DATED NOV. 1, 1954 AND RECORDED ON NOV. 23, 1954 IN LIBER 4900, PAGE 291.
12. PURSUANT TO THE ABOVE AGREEMENT, THE PERMANENT AND PERPETUAL RIGHT OF USE AND OCCUPANCY FOR CONSTRUCTION, RECONSTRUCTION, OPERATION, REPAIR AND MAINTENANCE CONVEYED TO THE PORT OF NEW YORK AUTHORITY BY THE STUYVESANT REAL STATE COMPANY AND THE PENNSYLVANIA TUNNEL AND TERMINAL RAILROAD COMPANY BY INDENTURE DATED NOV. 19, 1954, RECORDED ON DEC. 7, 1954 IN LIBER 4902, PAGE 271.
13. SURVEY MADE BY EARL B. LOVELL-S.P. BELCHER, INC. DATED FEBRUARY 7, 2001 AND LAST REVISED JULY 7, 2006.
14. SURVEY OF BLOCK 729-730 MADE BY FRANK E. TOWLE AND SON, INC. DATED MARCH 1967, LAST REVISED AUGUST 28, 1969
15. DEED REEL 1058, PAGE 68 RECORDED IN THE COUNTY REGISTRAR'S OFFICE MAY 1, 1968. SCHEDULE A TITLE TS-007406-15714-NYM.
16. DEED FROM PENNSYLVANIA TUNNEL AND TERMINAL RAILROAD COMPANY TO CONSOLIDATED RAIL CORPORATION RECORDED OCTOBER 20, 1978 IN REEL 457, PAGE 716. EXHIBIT F TITLE NO. TS-06-7406-15714-NYM.
17. DEED FROM CONSOLIDATED RAIL CORPORATION TO NATIONAL RAILROAD PASSENGER CORPORATION RECORDED OCTOBER 20, 1978 IN REEL 457, PAGE 780 / REEL 457, PAGE 780. EXHIBIT G TITLE NO. TS-06-7406-15714-NYM.
18. NORTHEAST CORRIDOR IMPROVEMENT EASEMENT FROM NATIONAL RAILROAD PASSENGER CORPORATION TO THE UNITED STATES OF AMERICA, RECORDED OCTOBER 20, 1978 IN REEL 457 PAGE 866. EXHIBIT I TITLE NO. TS-06-7406-15714-NYM.
19. LEASE MADE BETWEEN NATIONAL RAILROAD PASSENGER CORPORATION AND THE LONG ISLAND RAIL ROAD COMPANY, DATED JANUARY 30, 1985 AND RECORDED MARCH 10, 1986 IN REEL 1035 PAGE 1067. EXHIBIT K IN TITLE NO. TS-06-7406-15714-NYM.
20. TERMS, COVENANTS, RESTRICTIONS, EASEMENTS AND AGREEMENTS CONTAINED IN THE DEED FROM THE STUYVESANT REAL ESTATE COMPANY, PENNSYLVANIA TUNNEL AND TERMINAL RAILROAD COMPANY AND THE PENNSYLVANIA RAILROAD COMPANY TO 9178 CORPORATION, DATED APRIL 19, 1055 AND RECORDED APRIL 22. 1955 IN LIBER 4920 PAGE 1. EXHIBIT N IN TITLE NO. TS-06-7406-15714-NYM.
21. DESIGN AND CONSTRUCTION PLAN OF LOT AND BLOCK LINES AS SHOWN ON A CERTAIN MAP "50 & 60 L - B 729 SURVEYED JANUARY 30, 2008 BY EARL B. LOVELL - S.P. BELCHER, INC." MEDINA CONSULTANTS LOCATED THE EXISTING CROSS CUTS AS SHOWN. THE REFERENCED MAP REPRESENTS A BEST FIT PLACEMENT IN RELATIONSHIP TO THE DEEDED BOUNDARY LINES.
22. BLOCK 729, LOT 60 & 9060 CRFN# 2010000117299, DATED 01/26/2010.
23. BLOCK 729, LOT 60 & 9060 CRFN# 2010000117174, DATED 03/08/2010.
24. BLOCK 729, LOT 50 & 9050 CRFN# 2010000117351, DATED 01/26/2010.
25. BLOCK 729, LOT 50 & 9050 CRFN# 2010000117166, DATED 03/08/2010.
26. BLOCK 729, LOT 50 & 9050 CRFN# 2007000062883, DATED 12/06/2007.
27. BLOCK 729, LOT 50 & 9050 CRFN# 2007000062884, DATED 12/06/2007.
28. AGREEMENT BETWEEN SEARS ROEBUCK AND CO., A NEW YORK CORPORATION, AND PENN CENTRAL TRANSPORTATION COMPANY, DATED OCT. 21, 1969 AND RECORDED DEC. 4, 1969 IN REEL 158 PAGE 557.
29. REEL 1445 PAGE 1325, DATED 8/5/1988 (NOT PLOTTABLE)
30. REEL 1445 PAGE 1356, DATED 8/5/1988 (NOT PLOTTABLE)
31. REEL 457 PAGE 830, DATED 12/9/1976 (NOT PLOTTABLE)
32. REEL 1445 PAGE 1319, DATED 12/9/76 (NOT PLOTTABLE)
33. REEL 457 PAGE 883, DATED 10/17/1978 (NOT PLOTTABLE)
34. REEL 457 PAGE 890, DATED 10/20/1978 (NOT PLOTTABLE)
35. REEL 1056 PAGE 649, (NOT LEGIBLE)
36. LIBER 5112 PAGE 474, DATED 2/23/1960 (NOT PLOTTABLE)
37. LIBER 5146 PAGE 162, DATED 2/08/1961 (NOT PLOTTABLE)
38. REEL 1944 PAGE 2355, DATED 3/16/92 (NOT PLOTTABLE)
39. REEL 2478 PAGE 377, DATED 04/02/1997 (NOT PLOTTABLE)
40. LIBER 648 PAGE 291, (NOT LEGIBLE)
41. LIBER 3673 PAGE 13, (NOT LEGIBLE)

I HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR LICENSED TO PRACTICE IN THE STATE OF NEW YORK AND THAT THIS PLAN IS AN ACCURATE ACTUAL FIELD SURVEY PREPARED UNDER MY IMMEDIATE SUPERVISION. I FURTHER DECLARE, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF, THAT THIS PLAN IS AN ACCURATE REPRESENTATION THE CONDITIONS EXISTING AS OF THE DATE HEREON.

No.	Date	Revisions
1	1/30/14	Add Legal Description, Revise Lot Dimensions
2	2/20/14	Add dim's. to remainder of Lot

MUNICIPAL LAND SURVEY P.C.
10 SYLVIA LANE
MIDDLE ISLAND, NEW YORK, 11953
(631) 345-2658

Topographic Survey
Lot 9060, Block 729
Borough of Manhattan, NY

Proj. No. 13027
Dwg. No. 1/1
Scale : 1"= 30'
Date : 12/18/13

0 15'-0" 30'-0" 60'-0" 120'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
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Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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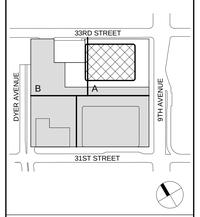
Key Plan:



Seal & Signature:

No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
DEVELOPMENT SITE SURVEY

Project No.: 207120
Date: 20 JUN 2014
Scale: 1" = 30'-0"
File No.: Z-006
B-SCAN Sheet No.: Z-006.00
Sheet No.: Z-006
Page No.: 6 OF 28

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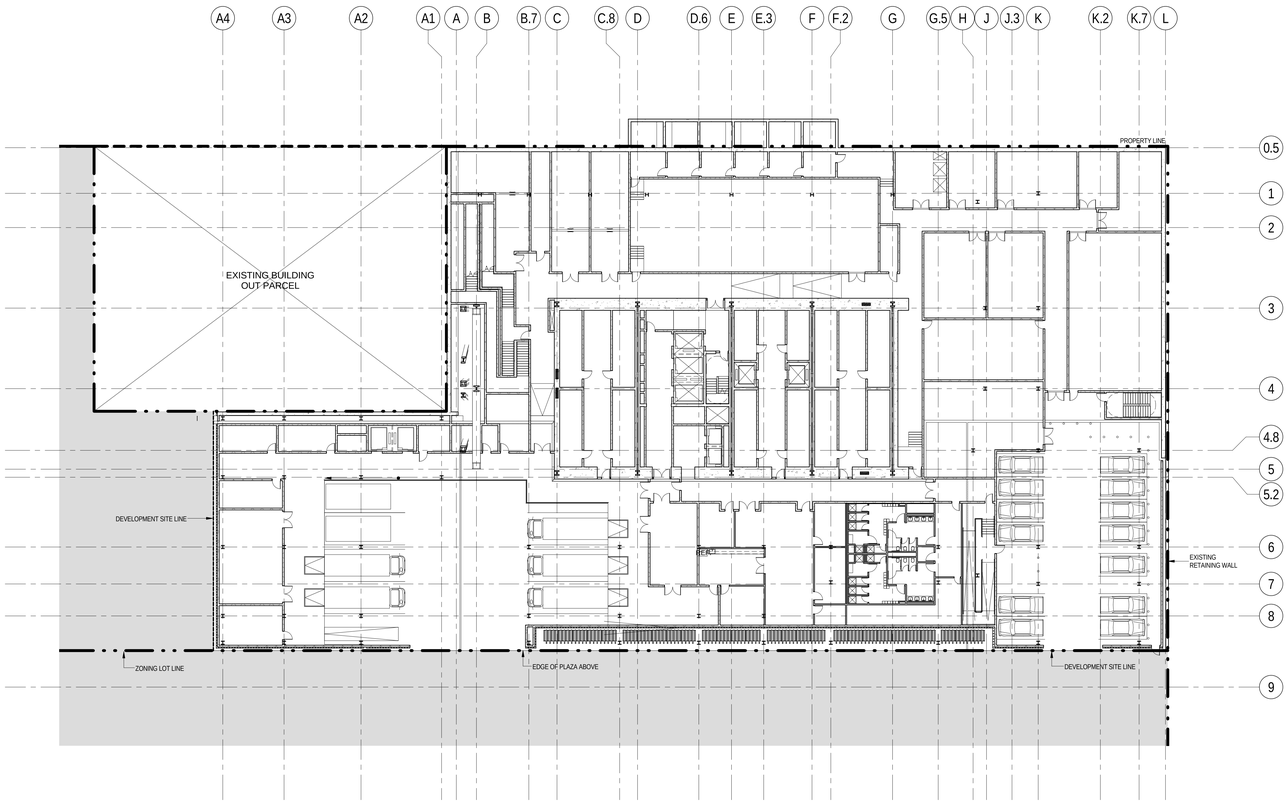


ACCESSORY OFF-STREET LOADING BERTHS (ZR 36-62)
Berths required for office use

First 100,000 ft²:	0 berths
Next 200,000 ft²:	1 berth
Each additional 300,000 ft²:	1 berth
Total:	5.4 berths
(1,624,537 ft² - 300,000 ft²) / 300,000 ft²	

Berths required for retail use

First 25,000 ft²:	0 berths
Next 15,000 ft²:	1 berth
Next 60,000 ft²:	1 berth
Each additional 150,000 ft²:	1 berth
Total:	0 berths
(20,123 ft² - 100,000 ft²) / 150,000 ft²	

Provided: 7 accessory off-street loading berths (COMPLIES)

OFF STREET PARKING REGULATIONS (ZR 93-81)

Provided: 13 parking spaces*
*Chairperson certification required

KEY
- DEVELOPMENT SITE LINE
- ZONING LOT LINE
- EDGE OF PLAZA ABOVE
- SCOPE LINE
- NOT IN SCOPE

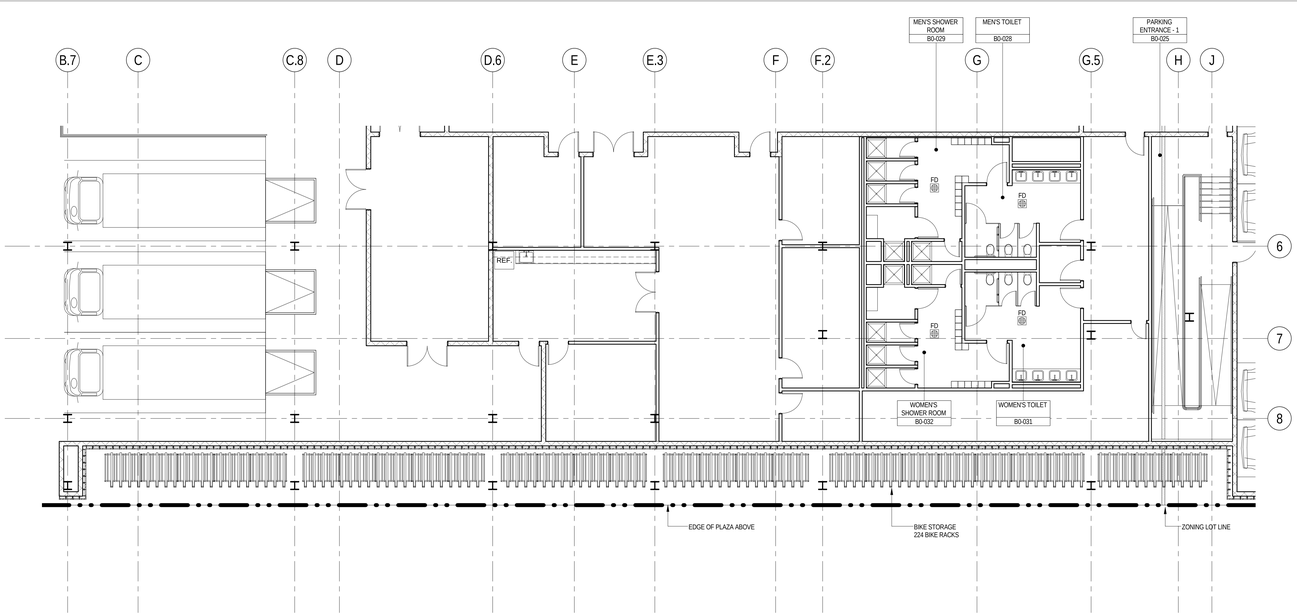
REQUIRED BICYCLE PARKING SPACES (ZR 36-71)
Spaces required for office use
1 per 7,500 ft² of floor area
Total (1,624,537 / 7,500): 217 spaces

Spaces required for retail use
1 per 10,000 ft² of floor area
Total (20,123 / 7,500): 3 spaces

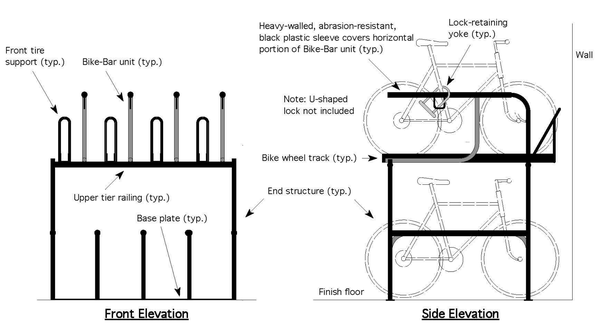
Provided: 224 bike racks (COMPLIES)

4 CELLAR B PLAN - LOADING DOCK
SCALE: 1" = 20'-0"

2 ZONING RESOLUTION - BICYCLE PARKING RERQUIREMENTS
SCALE: NTS



3 ENLARGED BICYCLE STORAGE PLAN
SCALE: 1/8" = 1'-0"



Specifications

Model#: • BDDF-8.16 Bike-Double-Decker-Framework™ : Two-Tier, Moderate Security Bike Rack

Capacity: • (8) bikes on 16" centers (4 on the top and 4 on the bottom)

Materials:
- 1" nom., Sched. 40 ASTM A500 welded, seamless-steel pipe for Bike-Bar units and end structures
- 1.5" nom., Sched. 40 ASTM A500 welded, seamless-steel pipe for upper-tier railings
- 1" nom., heavy-walled, abrasion-resistant, black plastic sleeve covers entire horizontal portion of Bike-Bar units
- 3" x 3" x 18 gauge H.R. steel channel for bike wheel tracks
- 1/4" x 3" H.R. steel flat-bar for base plates
- 1/2" dia. H.R. steel round-bar for lock-retaining yokes and front tire supports

Finishes:
- Hot-dipped galvanizing
- Black, abrasion-resistant thermoplastic powder coating 8 to 10 mils thick
- Standard-colored, abrasion-resistant thermoplastic powder coating 8 to 10 mils thick (extra)
- Hot-dipped galvanized substrate plus thermoplastic powder coating 8 to 10 mils thick (extra)
- Satin-finished #304 stainless-steel construction (extra)

Fabrication: • All metallurgical joints are MIG welds

Bike Security Racks Co., Inc.
12 Sawyer Avenue
Wentworth, NH 03282
(800) 545-2757 Ph.#
(603) 786-9652 FAX

1 BICYCLE PARKING SPECIFICATIONS
SCALE: NTS

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

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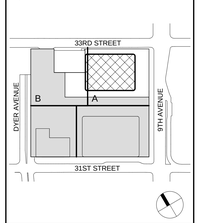
Key Plan:



Seal & Signature:

Warning: It is a violation of the New York State Architecture Law §6512(2) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
BICYCLE PARKING / LOADING BERTHS

Project No.: 207120	B-SCAN Sheet No.: Z-007.00
Date: 20 JUN 2014	Sheet No.: Z-007
Scale: As indicated	
File No.: Z-007	Page No.: 7 OF 28

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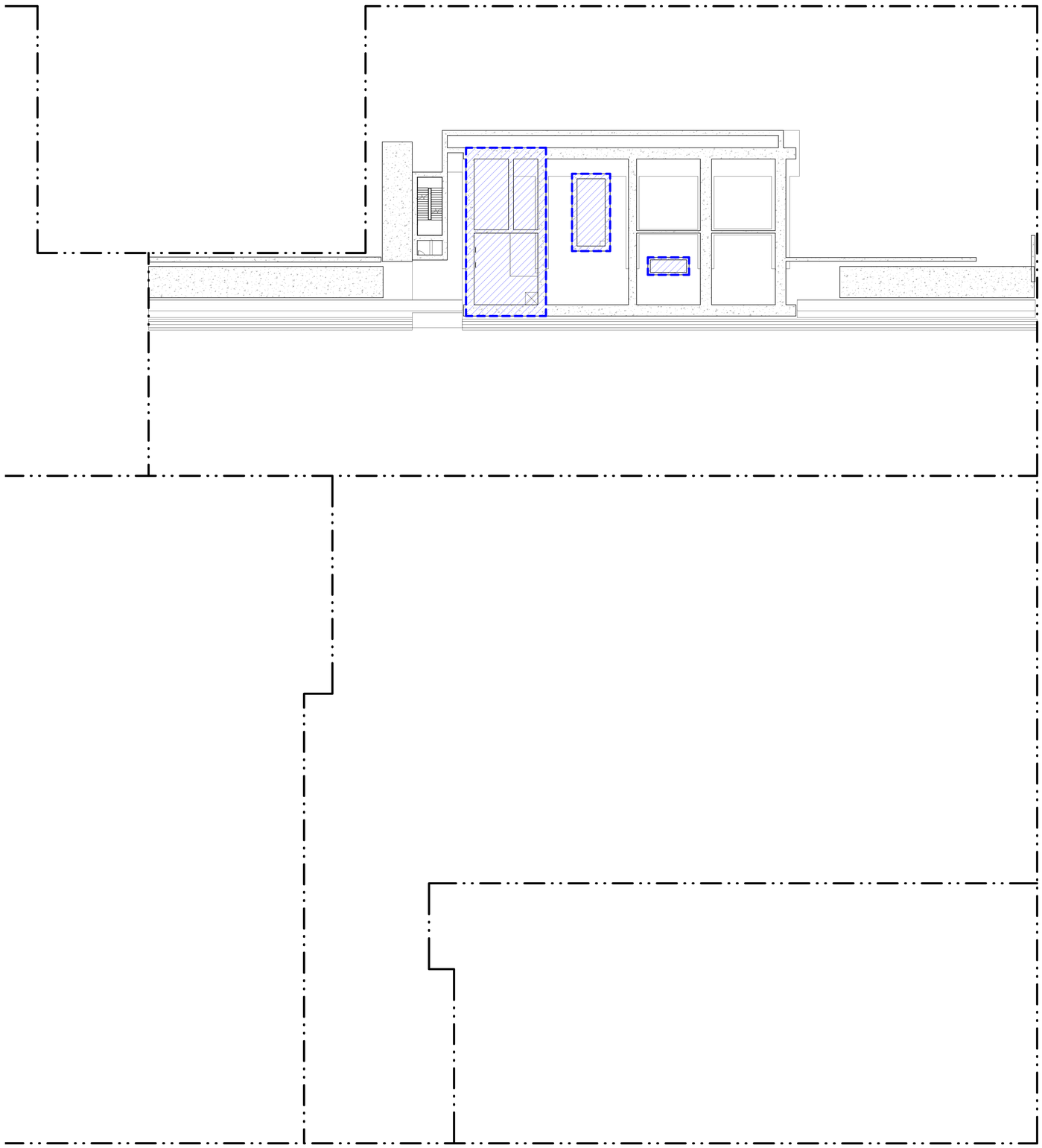

ZONING SCHEDULE - LEVEL B2

ZONING DEDUCTIONS	2742 ft²
GROSS FLOOR AREA	2742 ft²

1 SUB-CELLAR LEVEL B2 FLOOR PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL

MR	MECHANICAL ROOM
M	MECHANICAL
E	ELECTRICAL/TEL/IT
P	PLUMBING
EM	ELEVATOR MACHINE ROOM

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield Place
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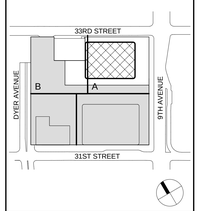

Seal & Signature:

REGISTERED ARCHITECT
ROTTERSMAN
NO. 15643
STATE OF NEW YORK

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - CELLAR B1 PITS

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-101
B-SCAN Sheet No.: Z-101.00
Sheet No.: Z-101
Page No.: 8 OF 28

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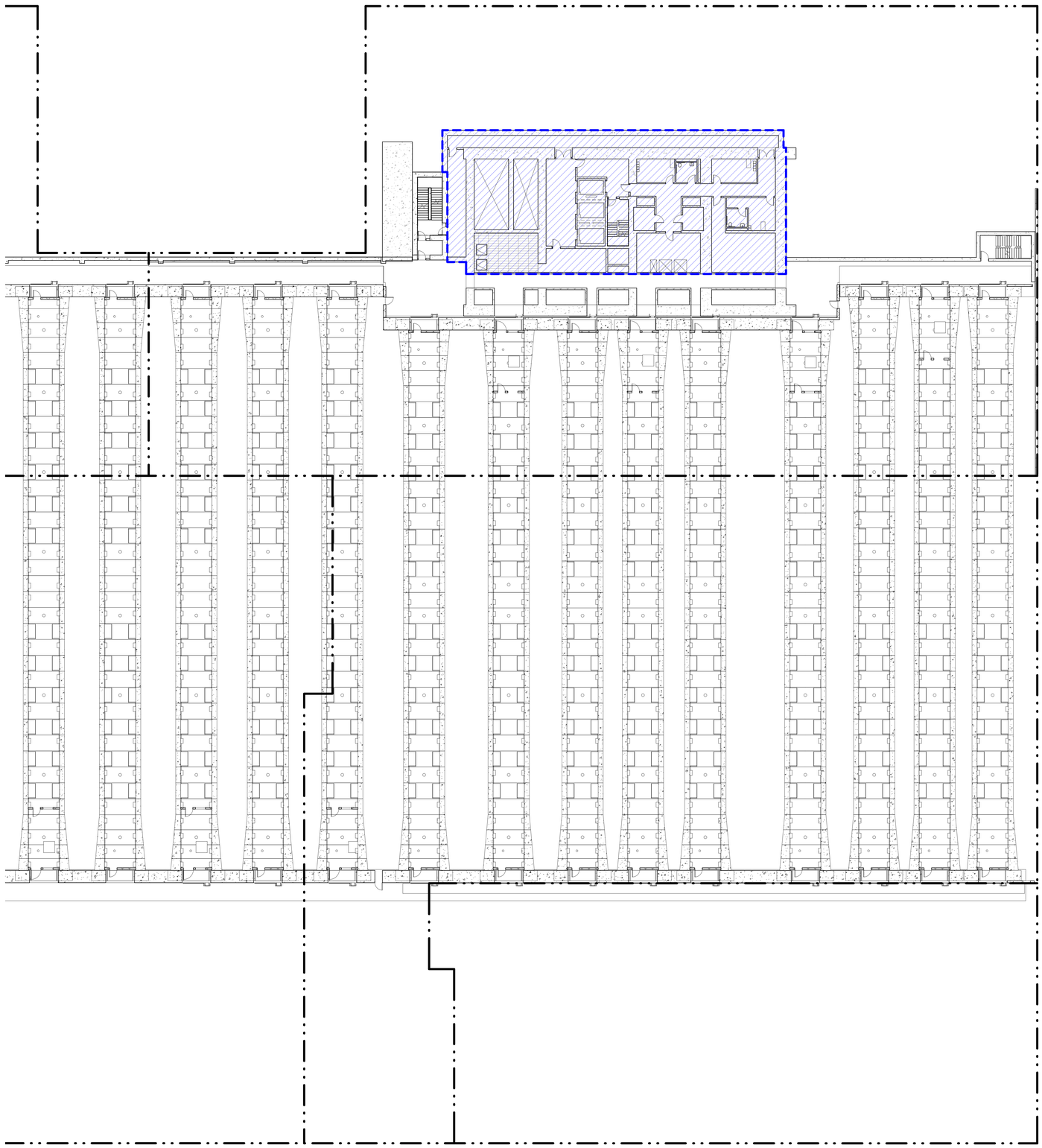

ZONING SCHEDULE - LEVEL B1

ZONING DEDUCTIONS	7782 ft²
GROSS FLOOR AREA	7782 ft²

1 SUB-CELLAR LEVEL B1 FLOOR PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

MANHATTAN WEST: NORTH TOWER

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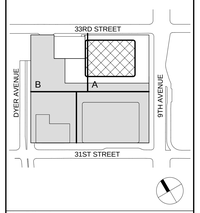
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ANDRZEJ GOTTESPOREN
No. 5649
STATE OF NEW YORK

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - CELLAR B1

Project No.: 207120

Date: 20 JUN 2014

Scale: 1/16" = 1'-0"

File No.: Z-102

B-SCAN Sheet No.: Z-102.00

Sheet No.: Z-102

Page No.: 9 OF 28

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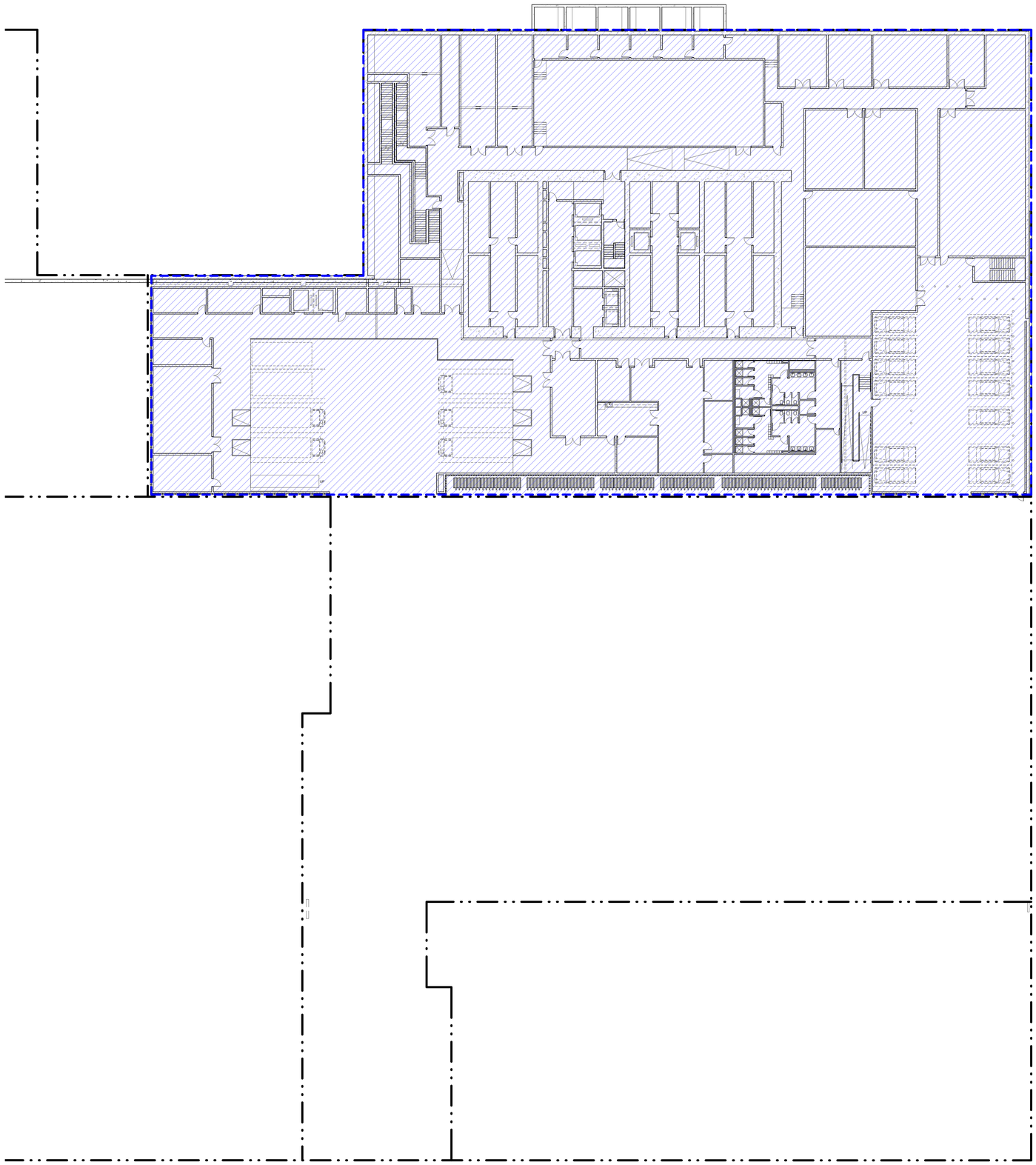

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

ZONING SCHEDULE - LEVEL B	
ZONING DEDUCTIONS	57777 ft²
GROSS FLOOR AREA	57777 ft²

1 CELLAR LEVEL B FLOOR PLAN

SCALE: 1/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Skidmore, Owings & Merrill LLP
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MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

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14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

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166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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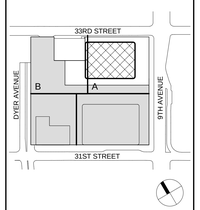
Key Plan:



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REGISTERED ARCHITECT
ROTTERDAM
No. 15643
STATE OF NEW YORK

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - CELLAR B

Project No.: 207120	B-SCAN Sheet No.: Z-103.00
Date: 20 JUN 2014	Sheet No.: Z-103
Scale: 1/16" = 1'-0"	
File No.: Z-103	Page No.: 10 OF 28

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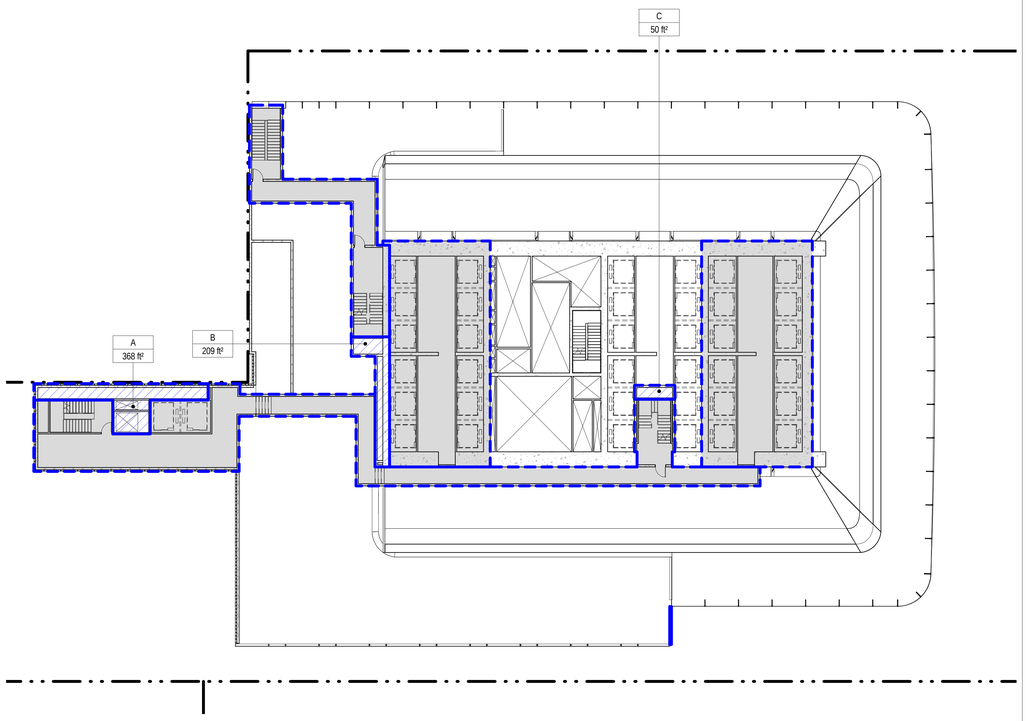
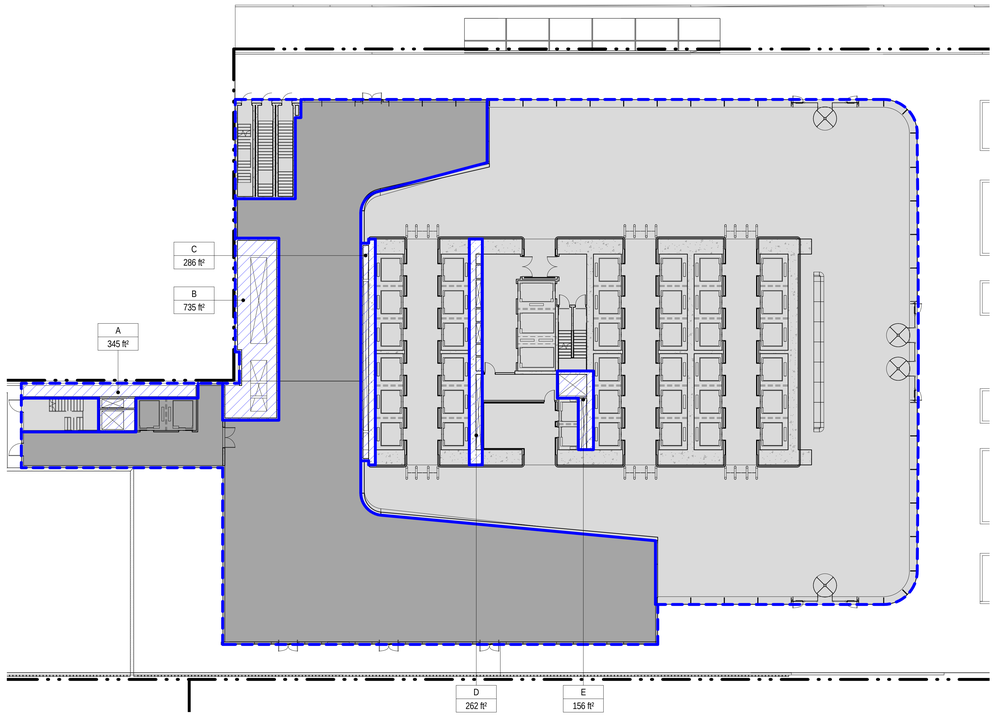


AREA DEDUCTIONS LEVEL 3		
NAME	TYPE	AREA
A	M	368 ft²
B	M/E	209 ft²
C	M	50 ft²
Grand total		627 ft²

ZONING SCHEDULE - LEVEL 3	
ZONING DEDUCTIONS	627 ft²
ZONING FLOOR AREA	7648 ft²
GROSS FLOOR AREA	8275 ft²

3 LEVEL 3 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 1		
NAME	TYPE	AREA
A	M	345 ft²
B	M	735 ft²
C	E	286 ft²
D	M/E/P	262 ft²
E	M	156 ft²
Grand total		1784 ft²

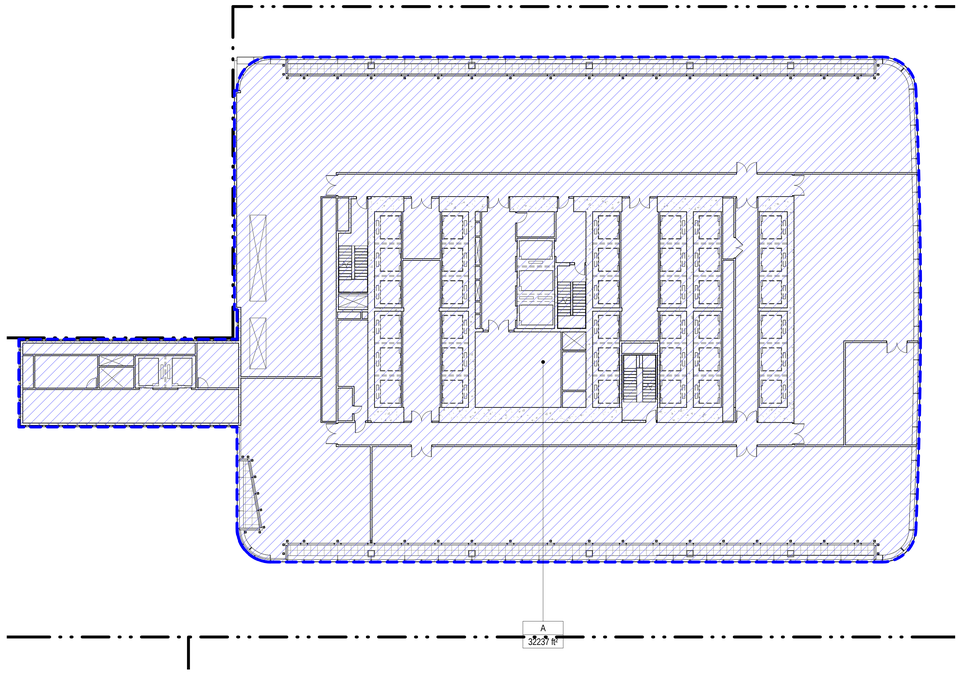
ZONING SCHEDULE - LEVEL 1	
RETAIL	10008 ft²
ZONING DEDUCTIONS	1784 ft²
ZONING FLOOR AREA	22070 ft²
GROSS FLOOR AREA	33862 ft²

1 LEVEL 1 PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

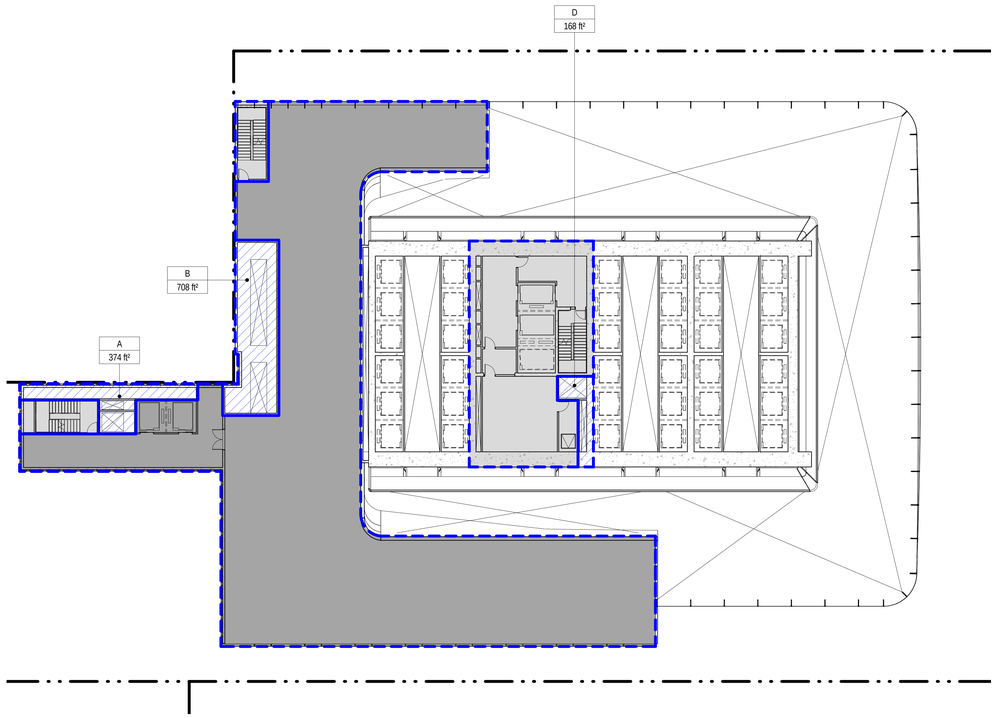


AREA DEDUCTIONS LEVEL 4		
NAME	TYPE	AREA
A	MR	32237 ft²
Grand total		32237 ft²

ZONING SCHEDULE - LEVEL 4	
ZONING DEDUCTIONS	32237 ft²
GROSS FLOOR AREA	32237 ft²

4 LEVEL 4 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 2		
NAME	TYPE	AREA
A	M	374 ft²
B	M/E/P	708 ft²
D	M	168 ft²
Grand total		1250 ft²

ZONING SCHEDULE - LEVEL 2	
RETAIL	10115 ft²
ZONING DEDUCTIONS	1250 ft²
ZONING FLOOR AREA	2797 ft²
GROSS FLOOR AREA	14162 ft²

2 LEVEL 2 PLAN

SCALE: 1/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER

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Ontario, Canada N1K 1B8

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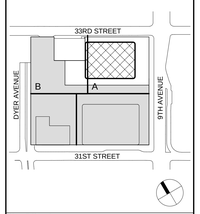

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - GROUND FLOOR & LEVEL 2-4

Project No.: 207120	B-SCAN Sheet No.: Z-104.00
Date: 20 JUN 2014	Sheet No.: Z-104
Scale: 1/16" = 1'-0"	
File No.: Z-104	Page No.: 11 OF 28

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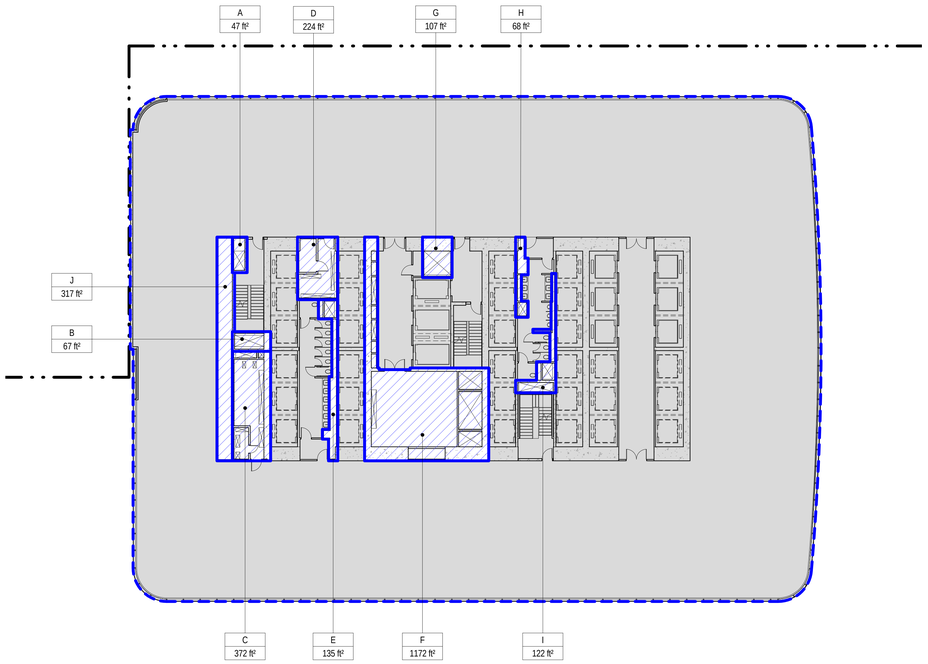
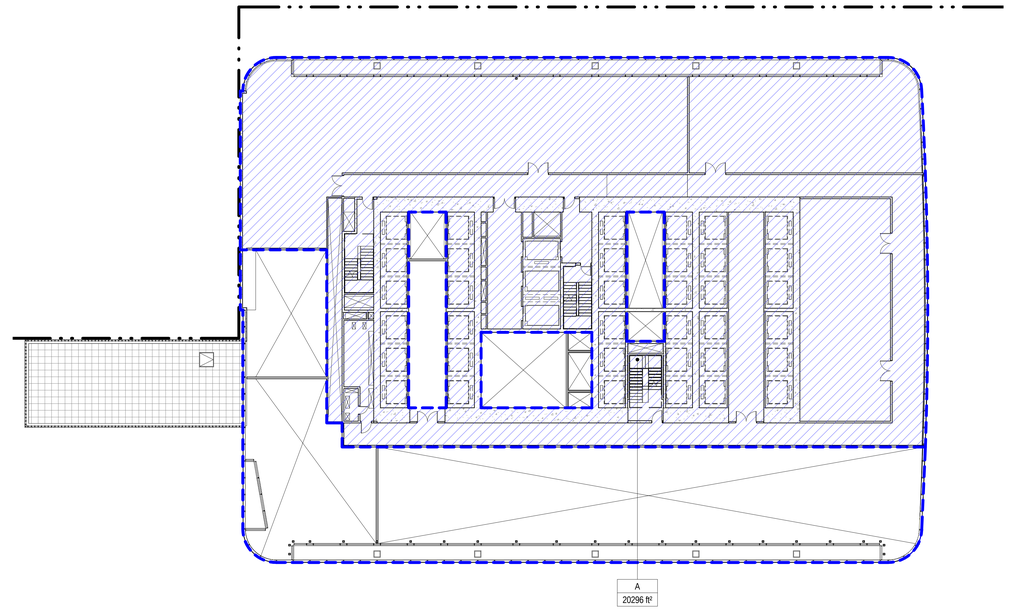


AREA DEDUCTIONS LEVEL 7		
NAME	TYPE	AREA
A	M	47 ft²
B	M	67 ft²
C	E/P	372 ft²
D	E	224 ft²
E	M/P	135 ft²
F	M/E/P	1172 ft²
G	M	107 ft²
H	P	68 ft²
I	M/P	122 ft²
J	M/E/P	317 ft²
Grand total		2631 ft²

ZONING SCHEDULE - LEVEL 7	
ZONING DEDUCTIONS	2631 ft²
ZONING FLOOR AREA	28015 ft²
GROSS FLOOR AREA	30646 ft²

3 LEVEL 7 PLAN

SCALE: 1/16" = 1'-0"

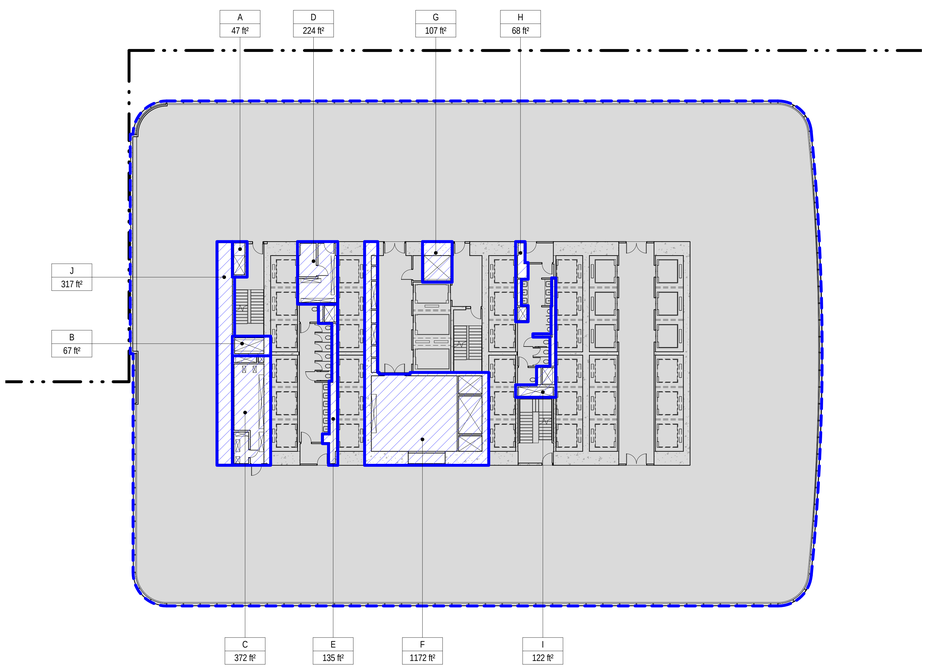


AREA DEDUCTIONS LEVEL 5		
NAME	TYPE	AREA
A	MR	20296 ft²
Grand total		20296 ft²

ZONING SCHEDULE - LEVEL 5	
ZONING DEDUCTIONS	20296 ft²
GROSS FLOOR AREA	20296 ft²

1 LEVEL 5 PLAN

SCALE: 1/16" = 1'-0"

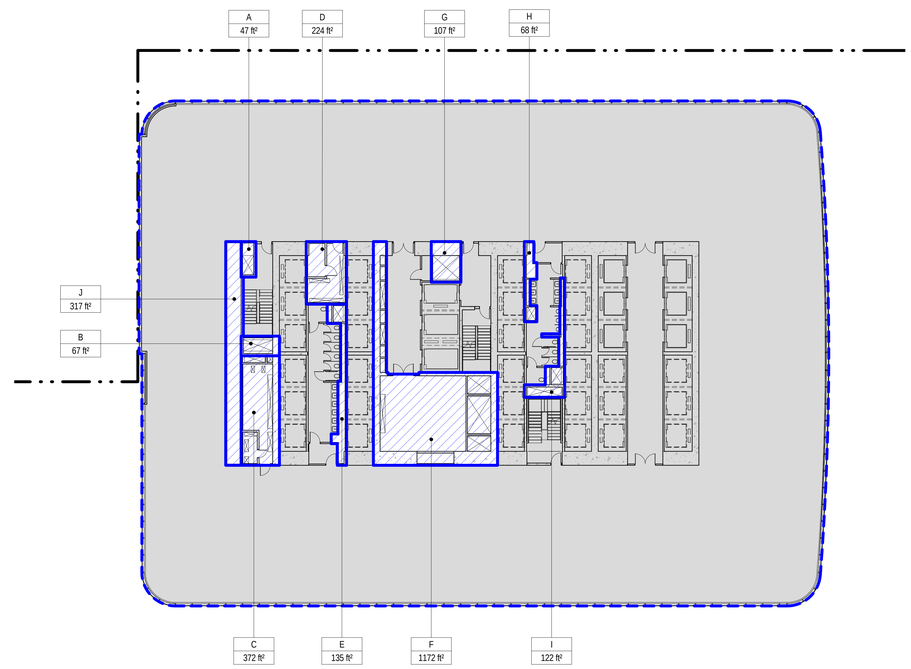


AREA DEDUCTIONS LEVEL 8		
NAME	TYPE	AREA
A	M	47 ft²
B	M	67 ft²
C	E/P	372 ft²
D	E	224 ft²
E	M/P	135 ft²
F	M/E/P	1172 ft²
G	M	107 ft²
H	M/P	68 ft²
I	M/P	122 ft²
J	M/E/P	317 ft²
Grand total		2631 ft²

ZONING SCHEDULE - LEVEL 7	
ZONING DEDUCTIONS	2631 ft²
ZONING FLOOR AREA	28015 ft²
GROSS FLOOR AREA	30646 ft²

4 LEVEL 8 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 6		
NAME	TYPE	AREA
A	M	47 ft²
B	M	67 ft²
C	E/P	372 ft²
D	E	224 ft²
E	M/P	135 ft²
F	M/E/P	1172 ft²
G	M	107 ft²
H	M/P	68 ft²
I	M/P	122 ft²
J	M/E/P	317 ft²
Grand total		2631 ft²

ZONING SCHEDULE - LEVEL 6	
ZONING DEDUCTIONS	2631 ft²
ZONING FLOOR AREA	27989 ft²
GROSS FLOOR AREA	30620 ft²

2 LEVEL 6 PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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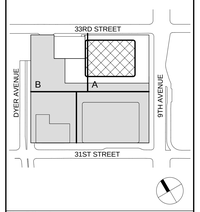
Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 5-8

Project No.: 207120	B-SCAN Sheet No.: Z-105.00
Date: 20 JUN 2014	Sheet No.: Z-105
Scale: 1/16" = 1'-0"	
File No.: Z-105	Page No.: 12 OF 28

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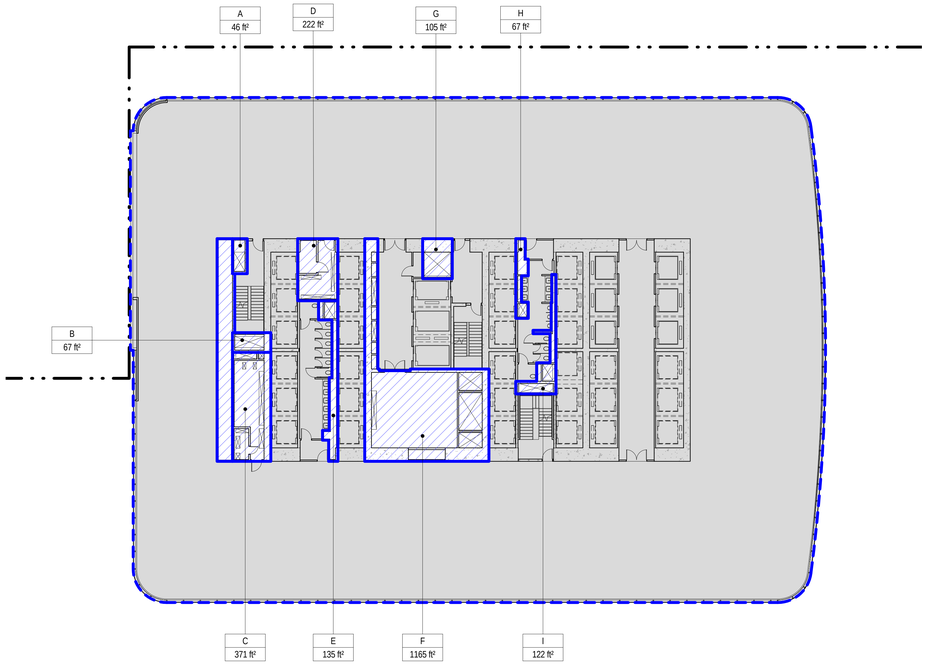
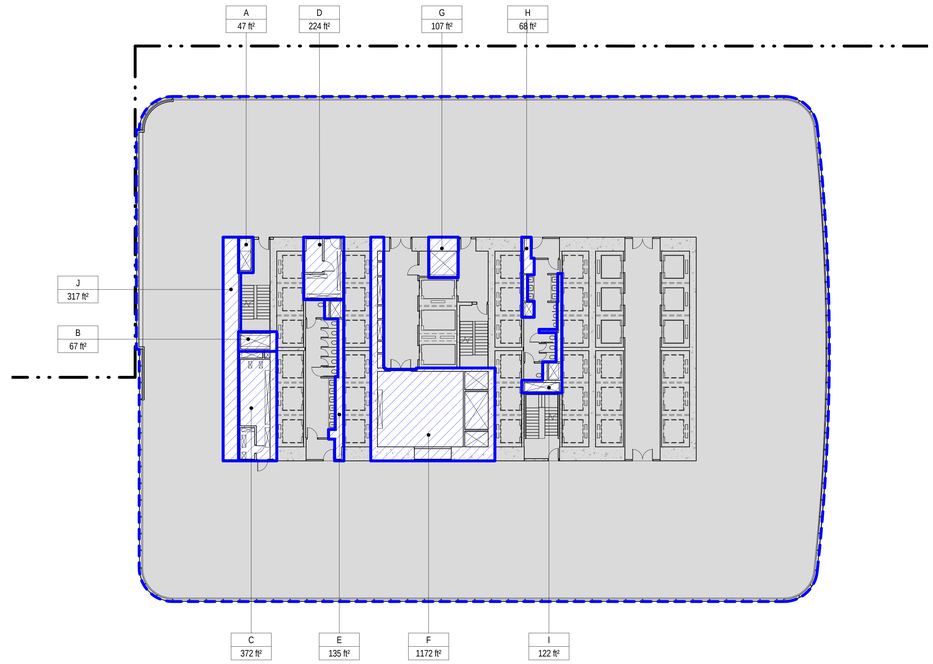


AREA DEDUCTIONS LEVEL 11		
NAME	TYPE	AREA
A	M	46 ft²
B	M	67 ft²
C	E/P	371 ft²
D	E	222 ft²
E	M/P	135 ft²
F	M/E/P	1165 ft²
G	M	105 ft²
H	M/P	67 ft²
I	M/P	122 ft²
J	M/E/P	316 ft²
Grand total		2615 ft²

ZONING SCHEDULE - LEVEL 11	
ZONING DEDUCTIONS	2615 ft²
ZONING FLOOR AREA	28137 ft²
GROSS FLOOR AREA	30753 ft²

3 LEVEL 11 PLAN

SCALE: 1/16" = 1'-0"

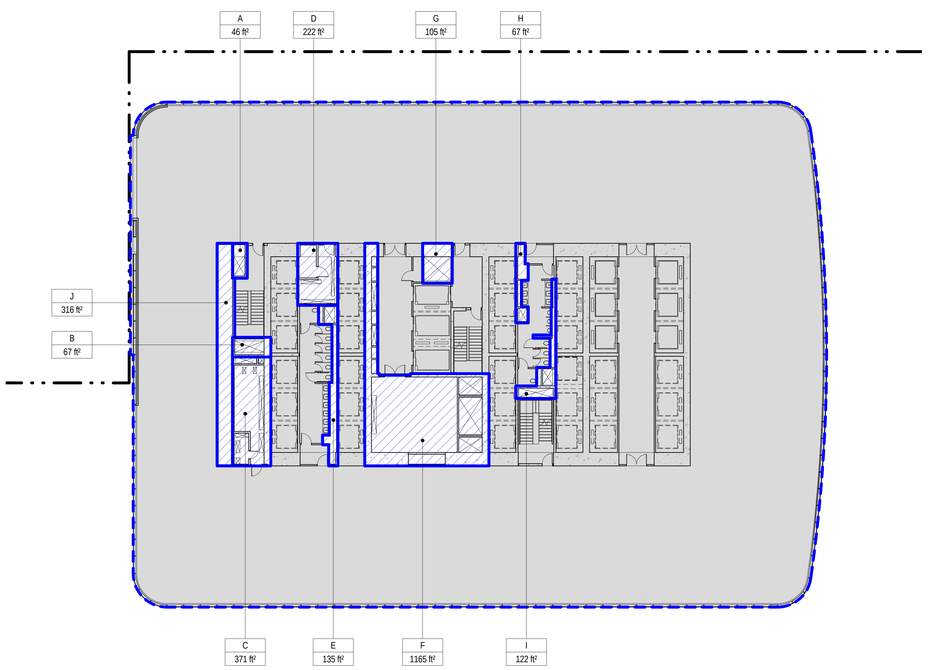


AREA DEDUCTIONS LEVEL 9		
NAME	TYPE	AREA
A	M	47 ft²
B	M	67 ft²
C	E/P	372 ft²
D	E	224 ft²
E	M/P	135 ft²
F	M/E/P	1172 ft²
G	M	107 ft²
H	M/P	68 ft²
I	M/P	122 ft²
J	M/E/P	317 ft²
Grand total		2631 ft²

ZONING SCHEDULE - LEVEL 9	
ZONING DEDUCTIONS	2631 ft²
ZONING FLOOR AREA	28068 ft²
GROSS FLOOR AREA	30699 ft²

1 LEVEL 9 PLAN

SCALE: 1/16" = 1'-0"

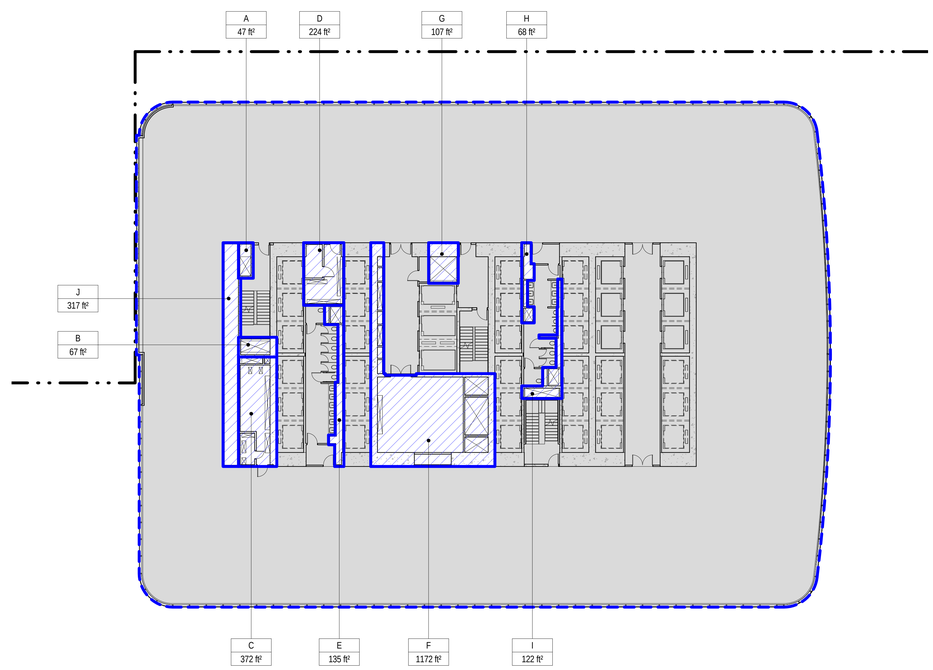


AREA DEDUCTIONS LEVEL 12		
NAME	TYPE	AREA
A	M	46 ft²
B	M	67 ft²
C	E/P	371 ft²
D	E	222 ft²
E	M/P	135 ft²
F	M/E/P	1165 ft²
G	M	105 ft²
H	M/P	67 ft²
I	M/P	122 ft²
J	M/E/P	316 ft²
Grand total		2615 ft²

ZONING SCHEDULE - LEVEL 12	
ZONING DEDUCTIONS	2615 ft²
ZONING FLOOR AREA	28164 ft²
GROSS FLOOR AREA	30780 ft²

4 LEVEL 12 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 10		
NAME	TYPE	AREA
A	M	47 ft²
B	M	67 ft²
C	E/P	372 ft²
D	E	224 ft²
E	M/P	135 ft²
F	M/E/P	1172 ft²
G	M	107 ft²
H	M/P	68 ft²
I	M/P	122 ft²
J	M/E/P	317 ft²
Grand total		2631 ft²

ZONING SCHEDULE - LEVEL 10	
ZONING DEDUCTIONS	2631 ft²
ZONING FLOOR AREA	28095 ft²
GROSS FLOOR AREA	30726 ft²

2 LEVEL 10 PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
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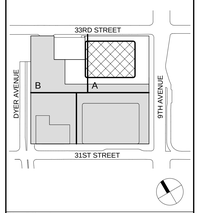

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 9-12

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-106
B-SCAN Sheet No.:
Z-106.00
Sheet No.: Z-106
Page No.: 13 OF 28

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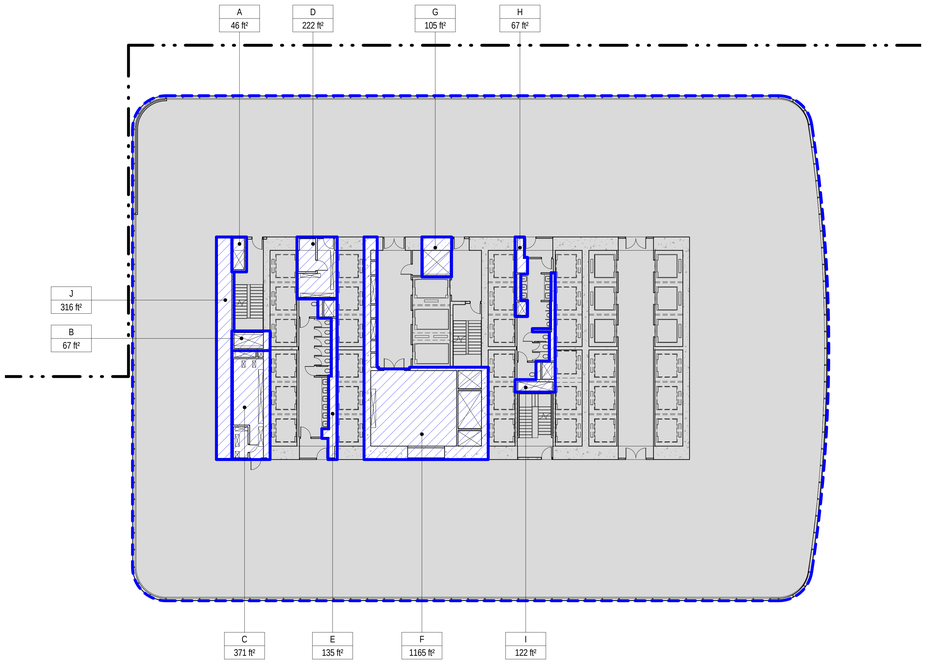
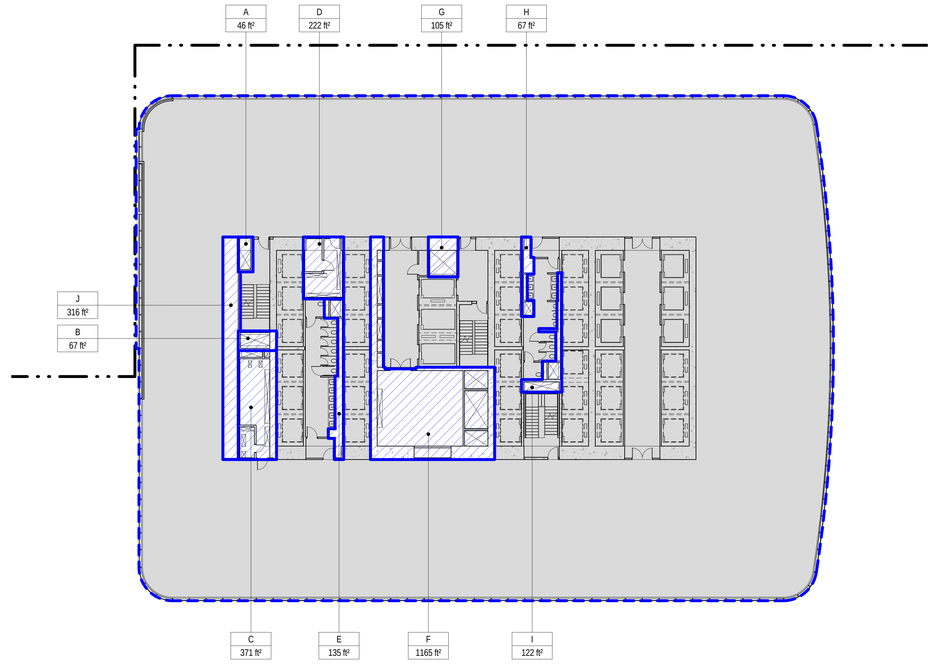


AREA DEDUCTIONS LEVEL 15		
NAME	TYPE	AREA
A	M	46 ft²
B	M	67 ft²
C	E/P	371 ft²
D	E	222 ft²
E	M/P	135 ft²
F	M/E/P	1165 ft²
G	M	105 ft²
H	M/P	67 ft²
I	M/P	122 ft²
J	M/E/P	316 ft²
Grand total		2616 ft²

ZONING SCHEDULE - LEVEL 15	
ZONING DEDUCTIONS	2616 ft²
ZONING FLOOR AREA	28215 ft²
GROSS FLOOR AREA	30831 ft²

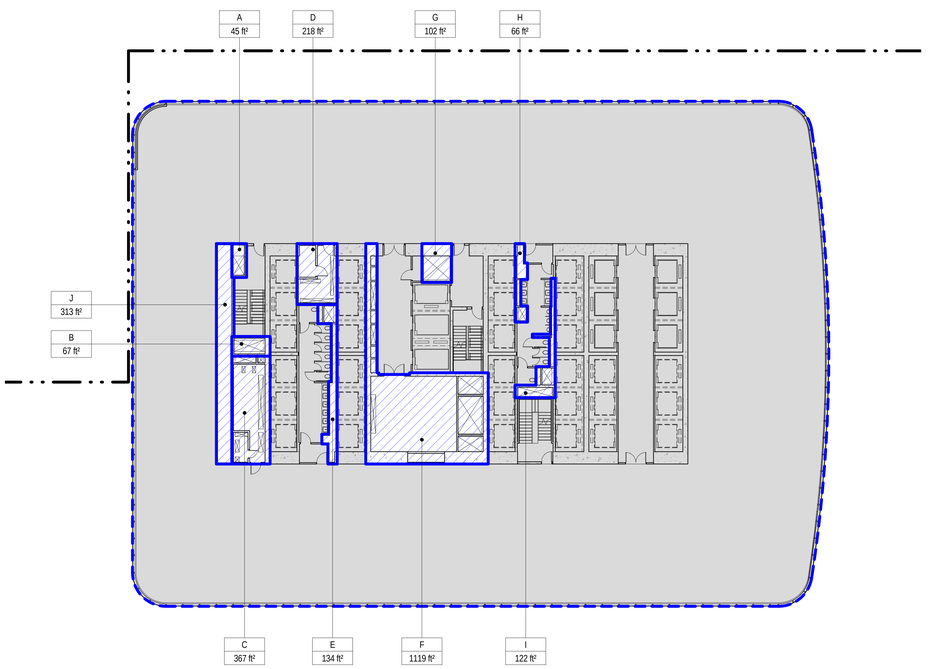
3 LEVEL 15 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 13		
NAME	TYPE	AREA
A	M	46 ft²
B	M	67 ft²
C	E/P	371 ft²
D	E	222 ft²
E	M/P	135 ft²
F	M/E/P	1165 ft²
G	M	105 ft²
H	M/P	67 ft²
I	M/P	122 ft²
J	M/E/P	316 ft²
Grand total		2615 ft²

ZONING SCHEDULE - LEVEL 13	
ZONING DEDUCTIONS	2615 ft²
ZONING FLOOR AREA	28191 ft²
GROSS FLOOR AREA	30807 ft²

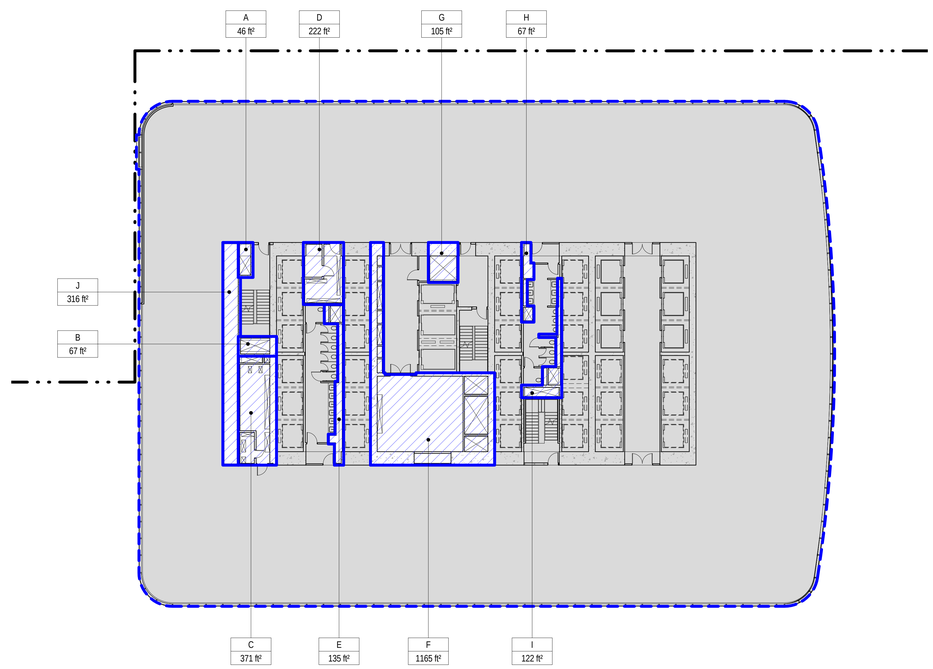
1 LEVEL 13 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 16		
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
E	M/P	134 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	M/E/P	313 ft²
Grand total		2552 ft²

ZONING SCHEDULE - LEVEL 16	
ZONING DEDUCTIONS	2552 ft²
ZONING FLOOR AREA	28280 ft²
GROSS FLOOR AREA	30832 ft²

4 LEVEL 16
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 14		
NAME	TYPE	AREA
A	M	46 ft²
B	M	67 ft²
C	E/P	371 ft²
D	E	222 ft²
E	M/P	135 ft²
F	M/E/P	1165 ft²
G	M	105 ft²
H	M/P	67 ft²
I	M/P	122 ft²
J	M/E/P	316 ft²
Grand total		2615 ft²

ZONING SCHEDULE - LEVEL 14	
ZONING DEDUCTIONS	2615 ft²
ZONING FLOOR AREA	28196 ft²
GROSS FLOOR AREA	30812 ft²

2 LEVEL 14 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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14 Wall Street, New York, NY 10005

Civil Engineering
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MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
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50 Washington Street, Norwalk, CT 06854

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Mueser Rutledge Consulting Engineers
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Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
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Code Consultant
Code Consultants Professional Engineers PC
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Facade Maintenance Consultant
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166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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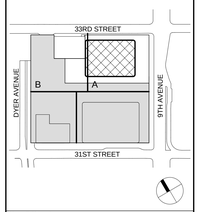
Key Plan:



Seal & Signature:

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 13-16

Project No.: 207120	B-SCAN Sheet No.: Z-107.00
Date: 20 JUN 2014	Sheet No.: Z-107
Scale: 1/16" = 1'-0"	
File No.: Z-107	Page No.: 14 OF 28

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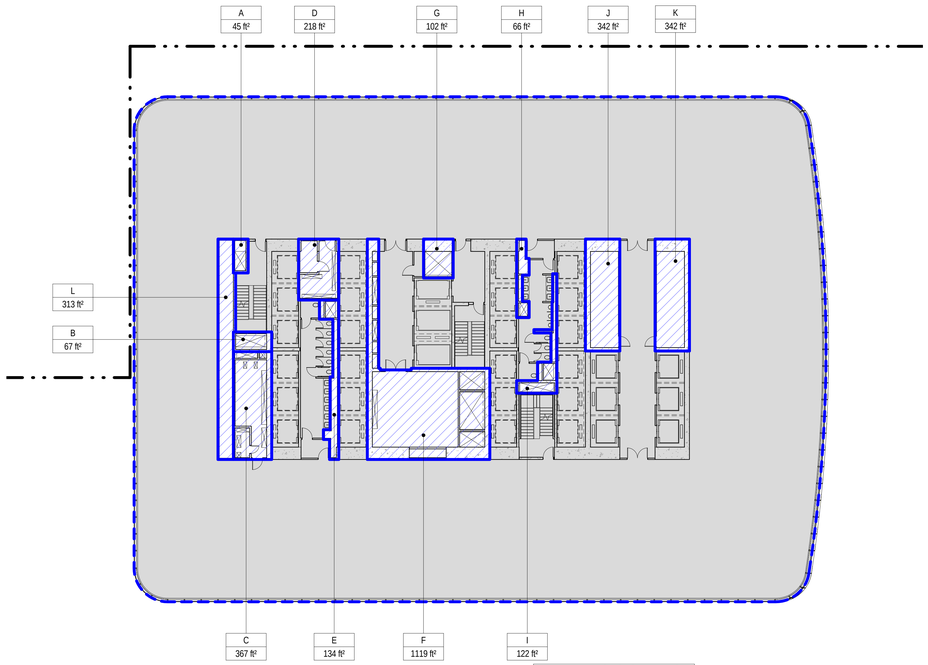


AREA DEDUCTIONS LEVEL 19

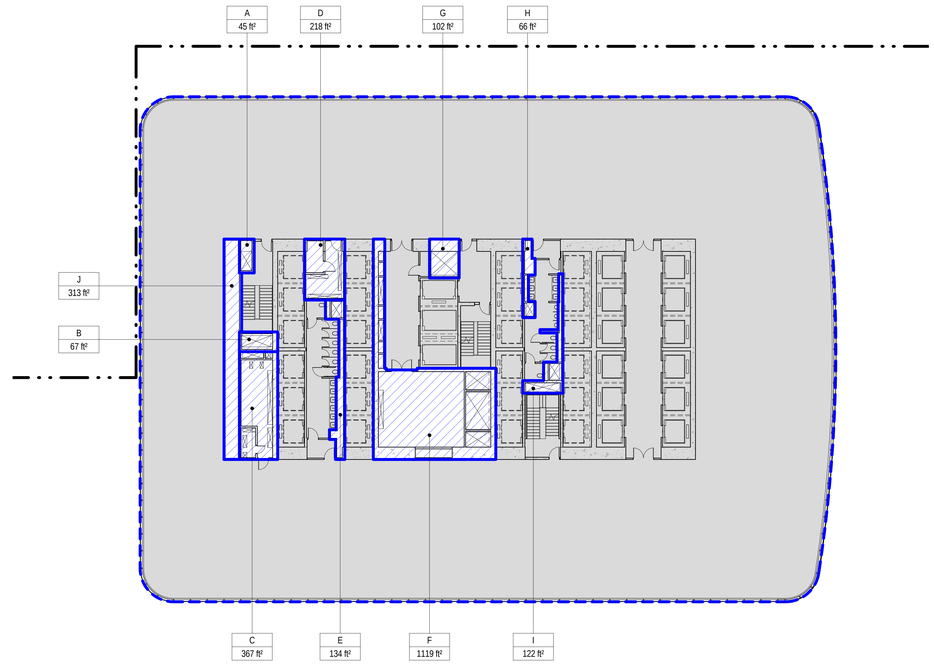
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
E	M/P	134 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	EM	342 ft²
K	EM	342 ft²
L	M/E/P	313 ft²
Grand total		3235 ft²

ZONING SCHEDULE - LEVEL 19

ZONING DEDUCTIONS	3235 ft²
ZONING FLOOR AREA	27402 ft²
GROSS FLOOR AREA	30637 ft²

3 LEVEL 19 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 17

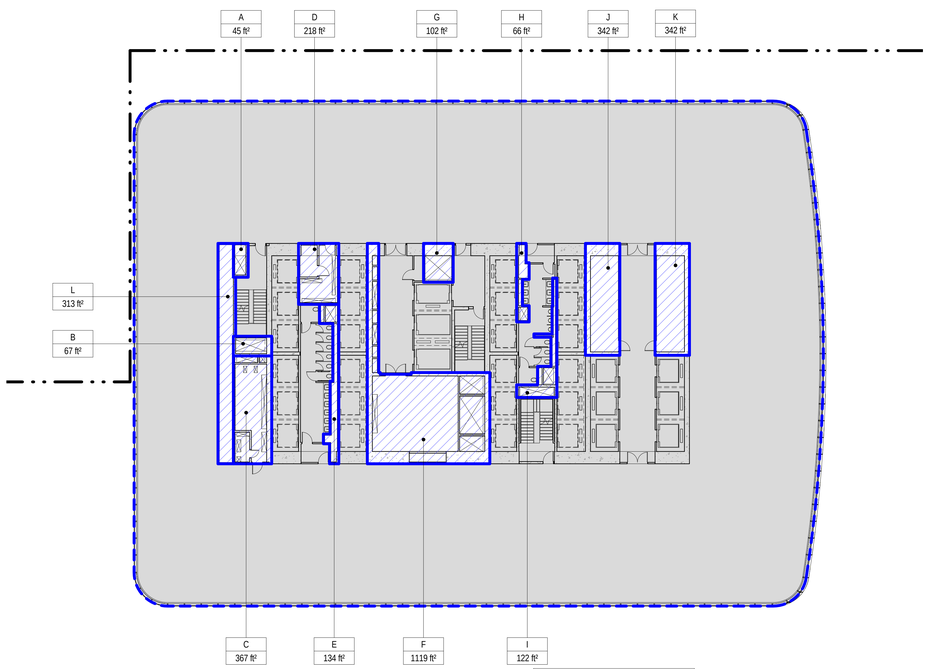
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
E	M/P	134 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	M/E/P	313 ft²
Grand total		2552 ft²

ZONING SCHEDULE - LEVEL 17

ZONING DEDUCTIONS	2552 ft²
ZONING FLOOR AREA	28255 ft²
GROSS FLOOR AREA	30807 ft²

1 LEVEL 17 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 20

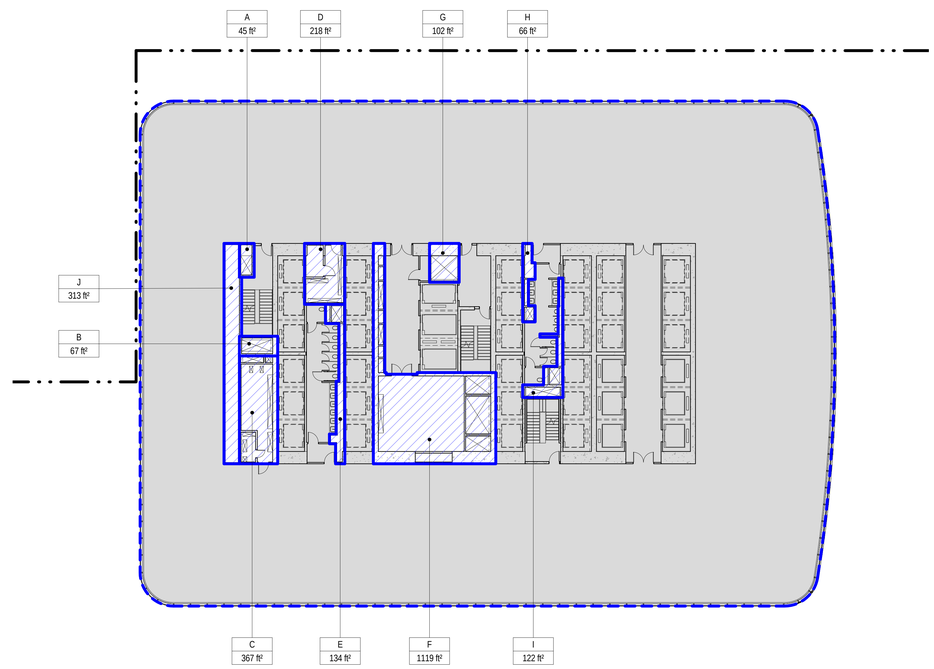
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
E	M/P	134 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	EM	342 ft²
K	EM	342 ft²
L	M/E/P	313 ft²
Grand total		3235 ft²

ZONING SCHEDULE - LEVEL 20

ZONING DEDUCTIONS	3235 ft²
ZONING FLOOR AREA	27282 ft²
GROSS FLOOR AREA	30517 ft²

4 LEVEL 20 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 18

NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
E	M/P	134 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	M/E/P	313 ft²
Grand total		2552 ft²

ZONING SCHEDULE - LEVEL 18

ZONING DEDUCTIONS	2552 ft²
ZONING FLOOR AREA	28204 ft²
GROSS FLOOR AREA	30756 ft²

2 LEVEL 18 PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

MANHATTAN WEST: NORTH TOWER

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Geotechnical Engineering

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Field Operations
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Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

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Acoustical Consultant

Cerami & Associates
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Vibration Consultant

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Ontario, Canada N1K 1B8

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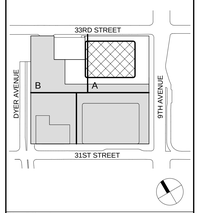
Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 17-20

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-108
B-SCAN Sheet No.: Z-108.00
Sheet No.: Z-108
Page No.: 15 OF 28

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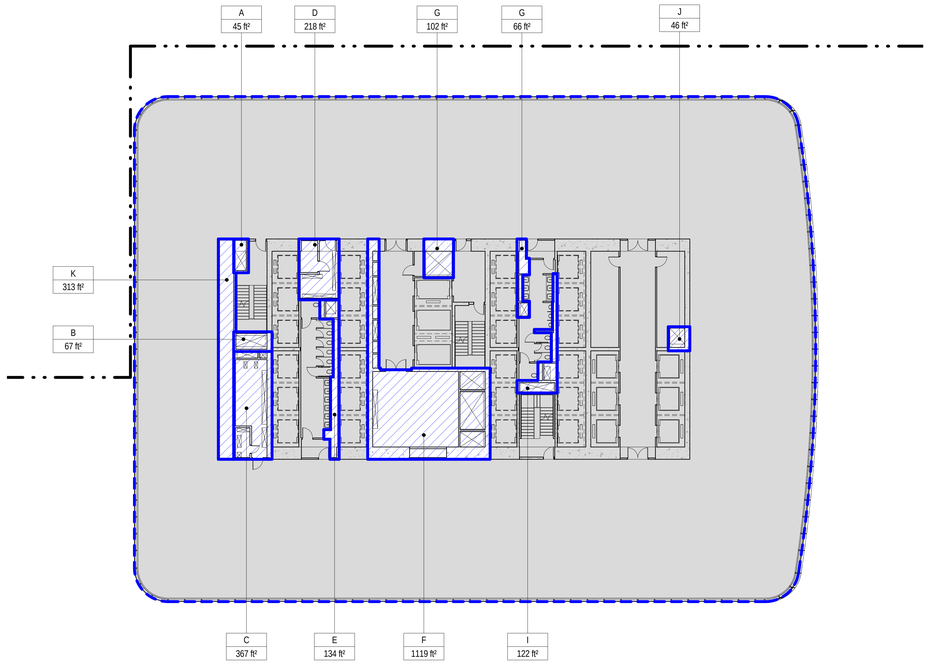
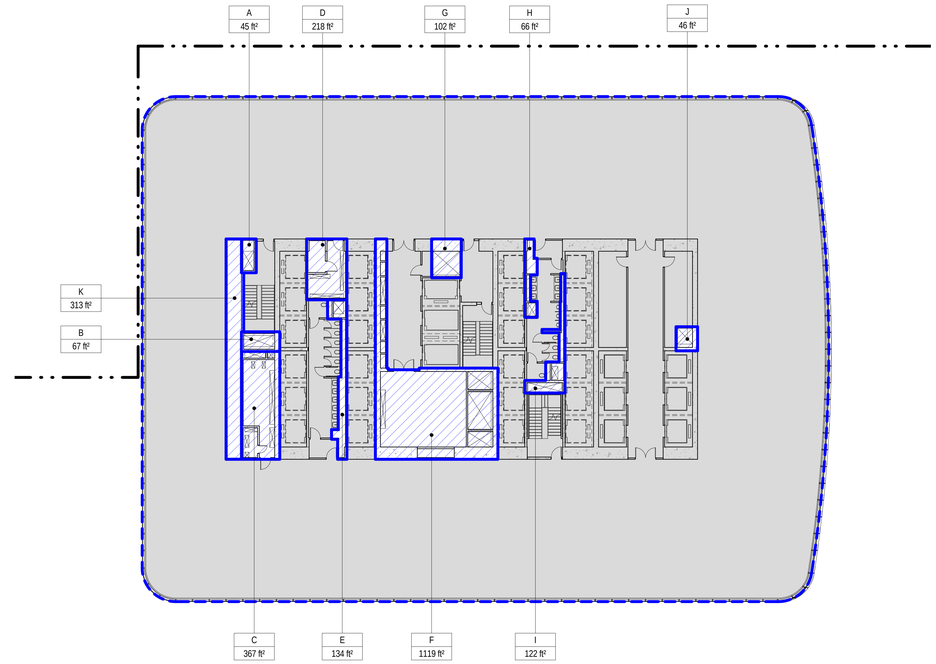


AREA DEDUCTIONS LEVEL 23		
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
E	M/P	134 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
G	M/P	66 ft²
I	M/P	122 ft²
J	M	46 ft²
K	M/E/P	313 ft²
Grand total		2598 ft²

ZONING SCHEDULE - LEVEL 23	
ZONING DEDUCTIONS	2598 ft²
ZONING FLOOR AREA	27557 ft²
GROSS FLOOR AREA	30155 ft²

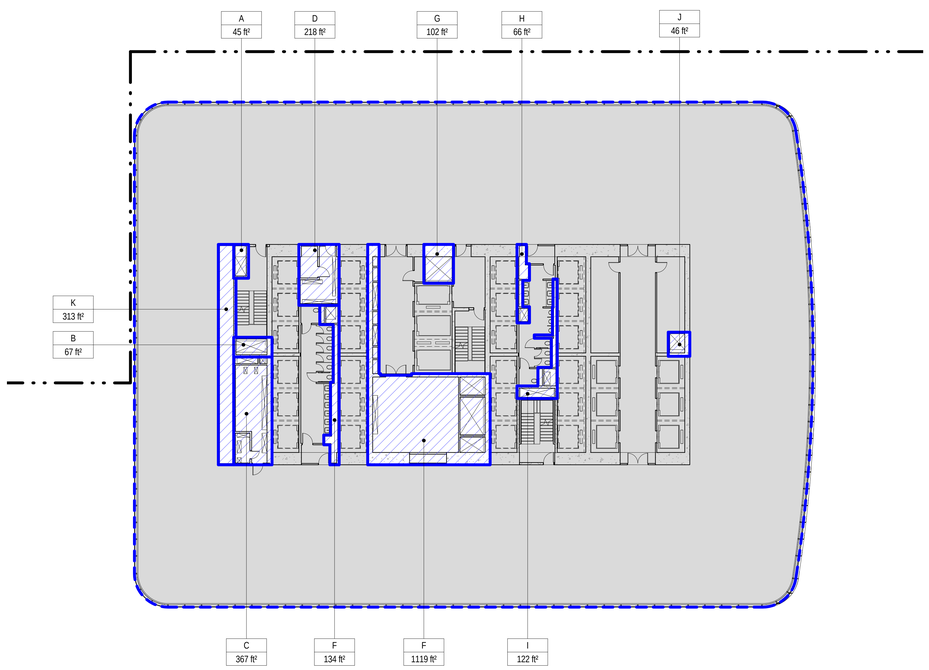
3 LEVEL 23 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 21		
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
E	M/P	134 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	M	46 ft²
K	M/E/P	313 ft²
Grand total		2598 ft²

ZONING SCHEDULE - LEVEL 21	
ZONING DEDUCTIONS	2598 ft²
ZONING FLOOR AREA	27798 ft²
GROSS FLOOR AREA	30396 ft²

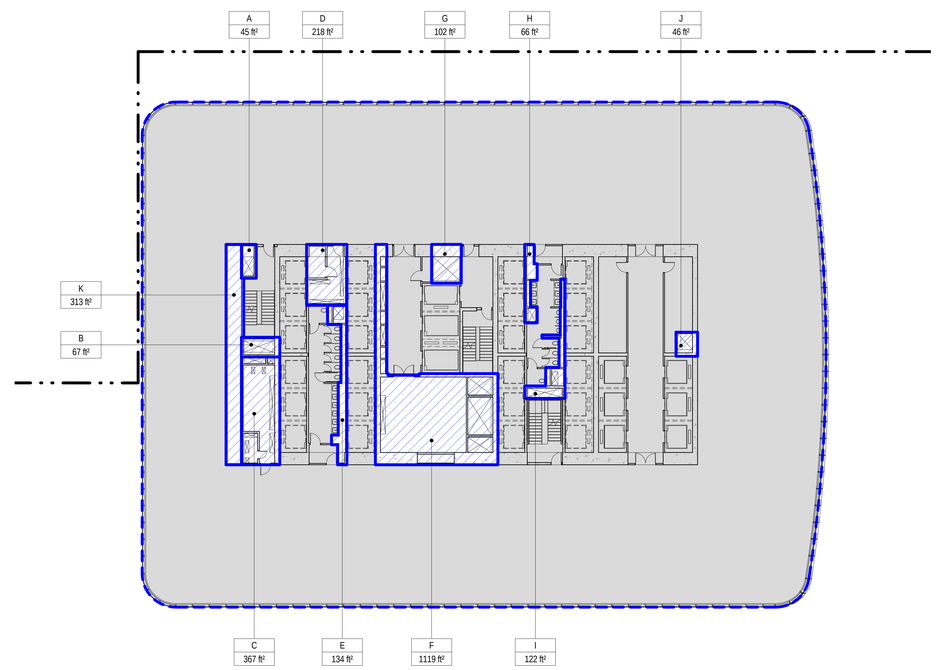
1 LEVEL 21 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 24		
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
F	M/E/P	1119 ft²
F	M/P	134 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	M	46 ft²
K	M/E/P	313 ft²
Grand total		2598 ft²

ZONING SCHEDULE - LEVEL 24	
ZONING DEDUCTIONS	2598 ft²
ZONING FLOOR AREA	27437 ft²
GROSS FLOOR AREA	30035 ft²

4 LEVEL 24 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 22		
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
E	M/P	134 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	M	46 ft²
K	M/E/P	313 ft²
Grand total		2598 ft²

ZONING SCHEDULE - LEVEL 22	
ZONING DEDUCTIONS	2598 ft²
ZONING FLOOR AREA	27678 ft²
GROSS FLOOR AREA	30276 ft²

2 LEVEL 22 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
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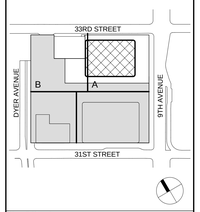

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 21-24

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-109
B-SCAN Sheet No.: Z-109.00
Sheet No.: Z-109
Page No.: 16 OF 28

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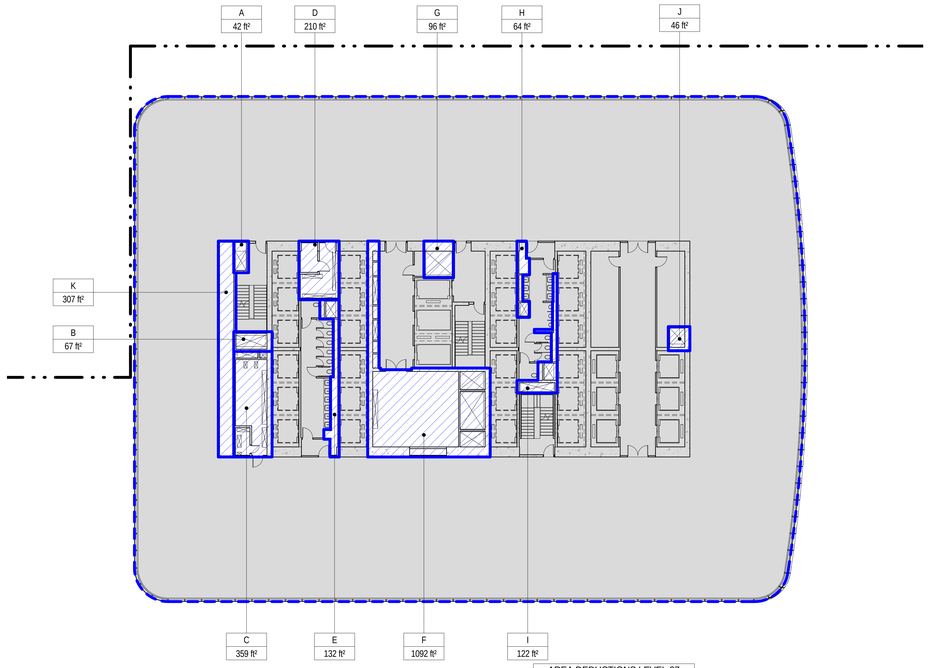


AREA DEDUCTIONS LEVEL 27

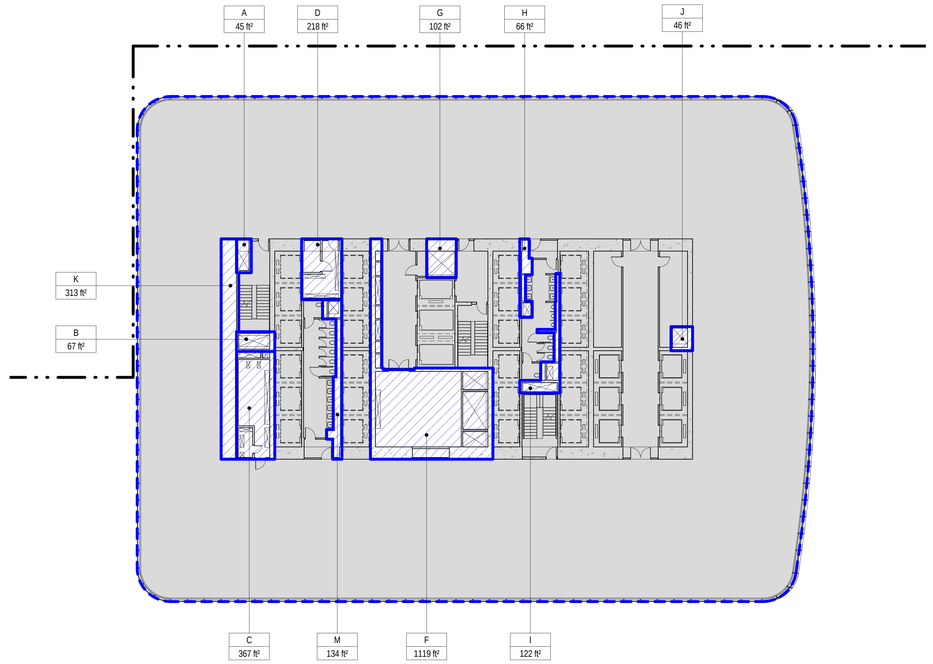
NAME	TYPE	AREA
A	M	42 ft²
B	M	67 ft²
C	E/P	359 ft²
D	E	210 ft²
E	M/P	132 ft²
F	M/E/P	1092 ft²
G	M	96 ft²
H	M/P	64 ft²
I	M	122 ft²
J	M	46 ft²
K	M/E/P	307 ft²
Grand total		2537 ft²

ZONING SCHEDULE - LEVEL 27

ZONING DEDUCTIONS	2537 ft²
ZONING FLOOR AREA	27137 ft²
GROSS FLOOR AREA	29674 ft²

3 LEVEL 27 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 25

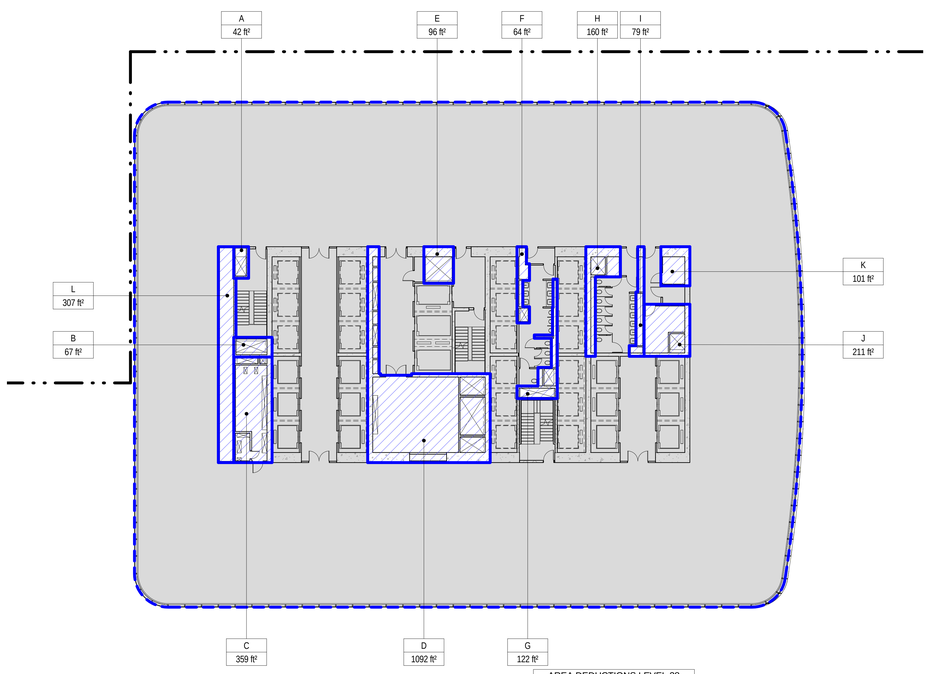
NAME	TYPE	AREA
A	M	45 ft²
B	M	67 ft²
C	E/P	367 ft²
D	E	218 ft²
F	M/E/P	1119 ft²
G	M	102 ft²
H	M/P	66 ft²
I	M/P	122 ft²
J	M	46 ft²
K	M/E/P	313 ft²
M	M/P	134 ft²
Grand total		2598 ft²

ZONING SCHEDULE - LEVEL 25

ZONING DEDUCTIONS	2598 ft²
ZONING FLOOR AREA	27317 ft²
GROSS FLOOR AREA	29915 ft²

1 LEVEL 25 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 28

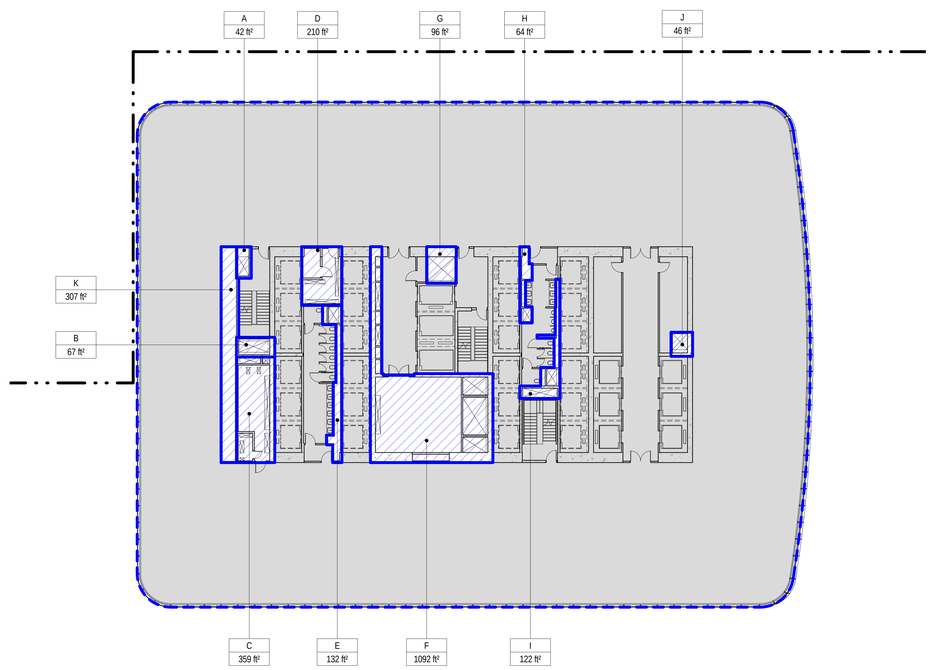
NAME	TYPE	AREA
A	M	42 ft²
B	M	67 ft²
C	E/P	359 ft²
D	M/E/P	1092 ft²
E	M	96 ft²
F	M/P	64 ft²
G	M/P	122 ft²
H	M/P	160 ft²
I	P	79 ft²
J	M/E	211 ft²
K	E	101 ft²
L	M/E/P	307 ft²
Grand total		2700 ft²

ZONING SCHEDULE - LEVEL 28

ZONING DEDUCTIONS	2700 ft²
ZONING FLOOR AREA	26853 ft²
GROSS FLOOR AREA	29553 ft²

4 LEVEL 28 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 26

NAME	TYPE	AREA
A	M	42 ft²
B	M	67 ft²
C	E/P	359 ft²
D	E	210 ft²
E	M/P	132 ft²
F	M/E/P	1092 ft²
G	M	96 ft²
H	M/P	64 ft²
I	M/P	122 ft²
J	M	46 ft²
K	M/E/P	307 ft²
Grand total		2537 ft²

ZONING SCHEDULE - LEVEL 26

ZONING DEDUCTIONS	2537 ft²
ZONING FLOOR AREA	27257 ft²
GROSS FLOOR AREA	29794 ft²

2 LEVEL 26 PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
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Architecture/Structural Engineering

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Code Consultants Professional Engineers PC
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Facade Maintenance Consultant

Entek Engineering LLC
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Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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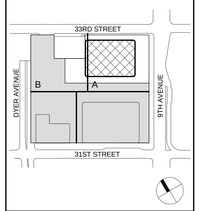
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ROBERT SOTTER EDWARDS
No. 035649
STATE OF NEW YORK

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 25-28

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-110
B-SCAN Sheet No.: Z-110.00
Sheet No.: Z-110
Page No.: 17 OF 28

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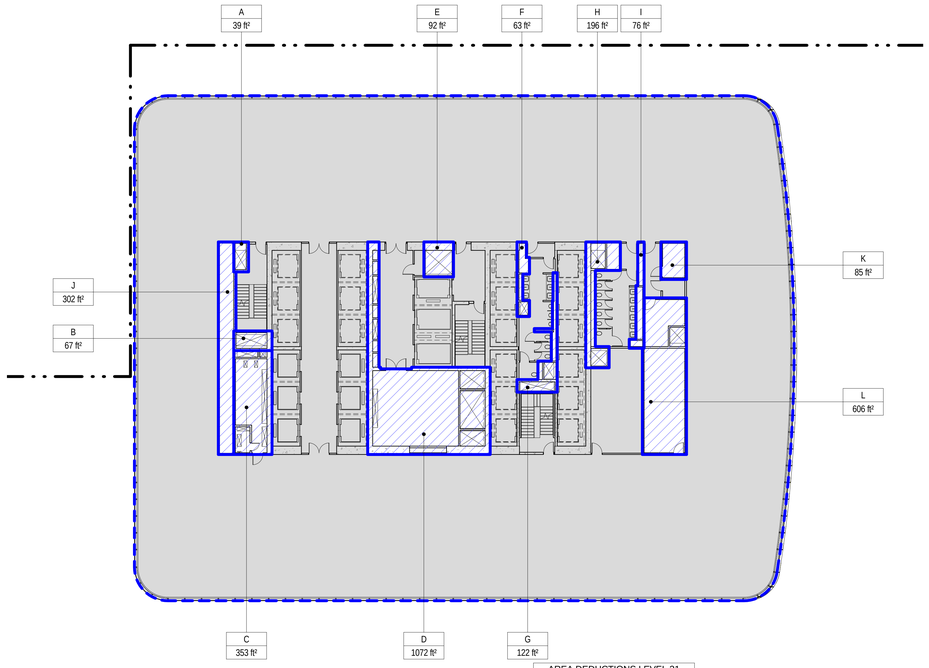


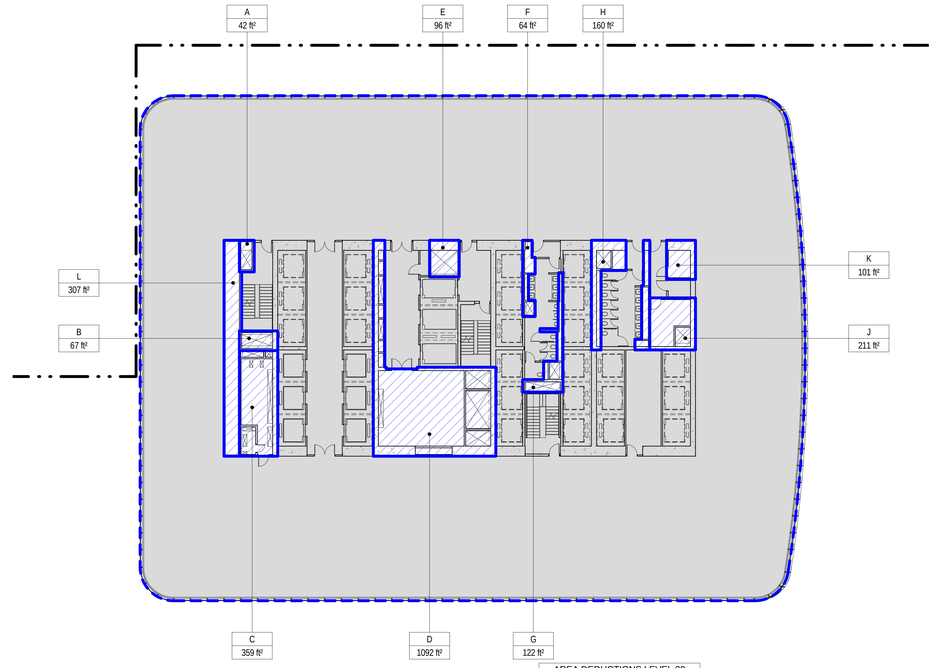
AREA DEDUCTIONS LEVEL 31

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	122 ft²
H	M/P	196 ft²
I	P	76 ft²
J	M/E/P	302 ft²
K	E	85 ft²
L	M/E/P	606 ft²
Grand total		3074 ft²

ZONING SCHEDULE - LEVEL 31

ZONING DEDUCTIONS	3074 ft²
ZONING FLOOR AREA	26118 ft²
GROSS FLOOR AREA	29192 ft²

3 LEVEL 31 PLAN
SCALE: 1/16" = 1'-0"



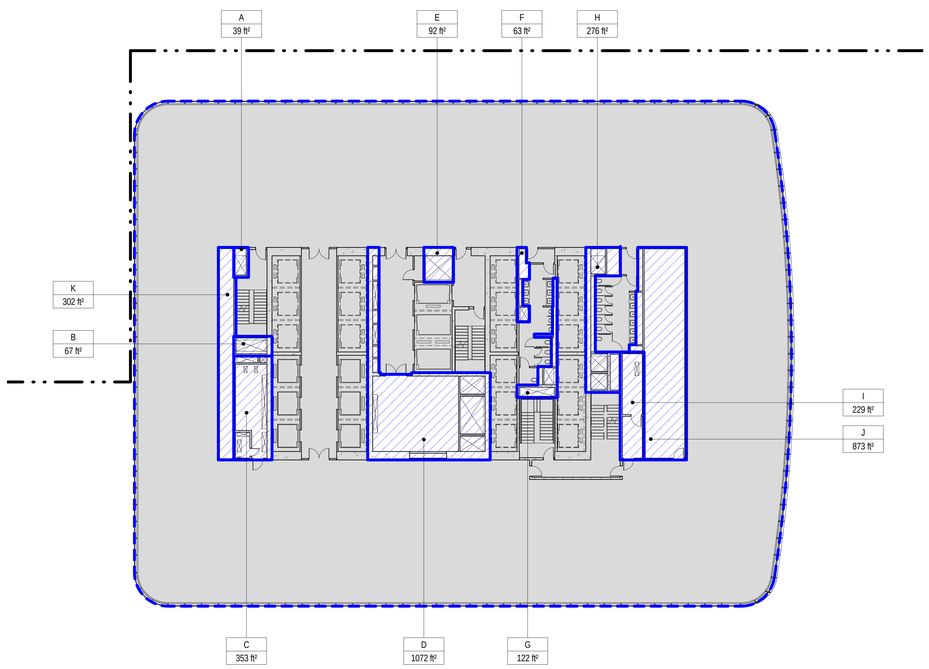
AREA DEDUCTIONS LEVEL 29

NAME	TYPE	AREA
A	M	42 ft²
B	M	67 ft²
C	E/P	359 ft²
D	M/E/P	1092 ft²
E	M	96 ft²
F	M/P	64 ft²
G	M/P	122 ft²
H	M/P	160 ft²
I	P	79 ft²
J	M/E	211 ft²
K	E	101 ft²
L	M/E/P	307 ft²
Grand total		2700 ft²

ZONING SCHEDULE - LEVEL 29

ZONING DEDUCTIONS	2700 ft²
ZONING FLOOR AREA	26733 ft²
GROSS FLOOR AREA	29433 ft²

1 LEVEL 29 PLAN
SCALE: 1/16" = 1'-0"



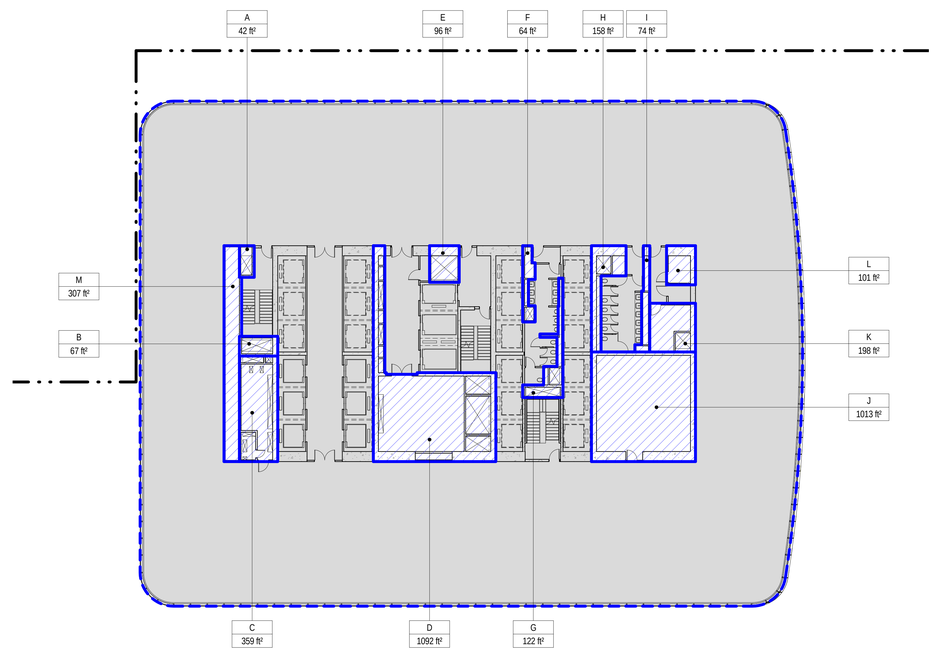
AREA DEDUCTIONS LEVEL 32

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	122 ft²
H	M/P	276 ft²
I	E	229 ft²
J	P	873 ft²
K	M/E/P	302 ft²
Grand total		3489 ft²

ZONING SCHEDULE - LEVEL 32

ZONING DEDUCTIONS	3489 ft²
ZONING FLOOR AREA	25582 ft²
GROSS FLOOR AREA	29072 ft²

4 LEVEL 32 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 30

NAME	TYPE	AREA
A	M	42 ft²
B	M	67 ft²
C	E/P	359 ft²
D	M/E/P	1092 ft²
E	M	96 ft²
F	M/P	64 ft²
G	M/P	122 ft²
H	M/P	158 ft²
I	P	74 ft²
J	EM	1013 ft²
K	M/E	198 ft²
L	E	101 ft²
M	M/E/P	307 ft²
Grand total		3692 ft²

ZONING SCHEDULE - LEVEL 30

ZONING DEDUCTIONS	3692 ft²
ZONING FLOOR AREA	25622 ft²
GROSS FLOOR AREA	29313 ft²

2 LEVEL 30 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

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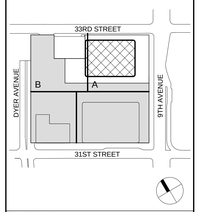

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 29-32

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-111
B-SCAN Sheet No.: Z-111.00
Sheet No.: Z-111
Page No.: 18 OF 28

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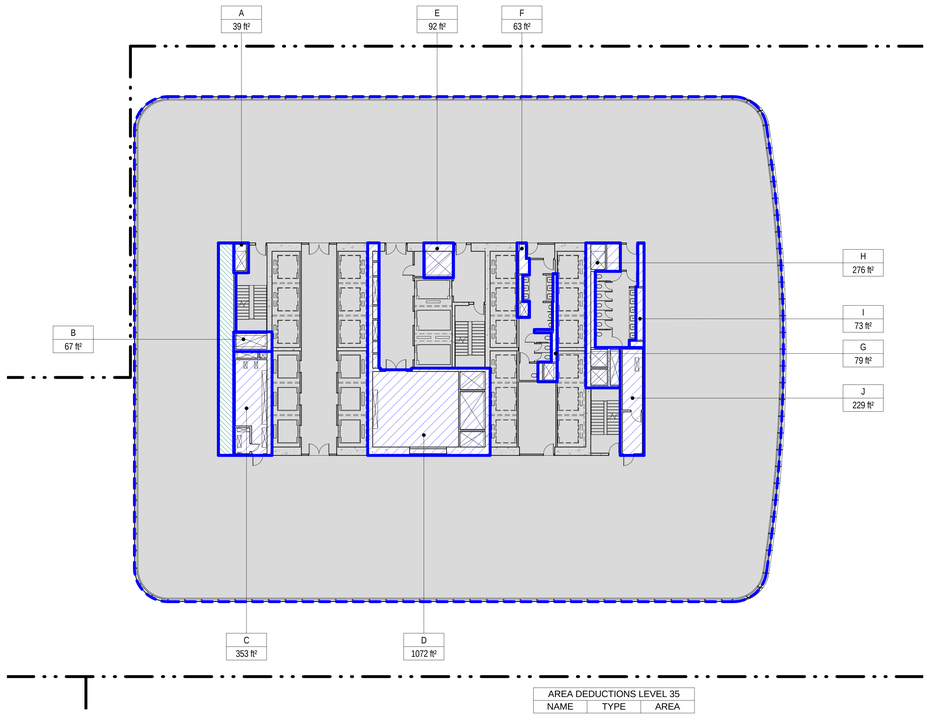
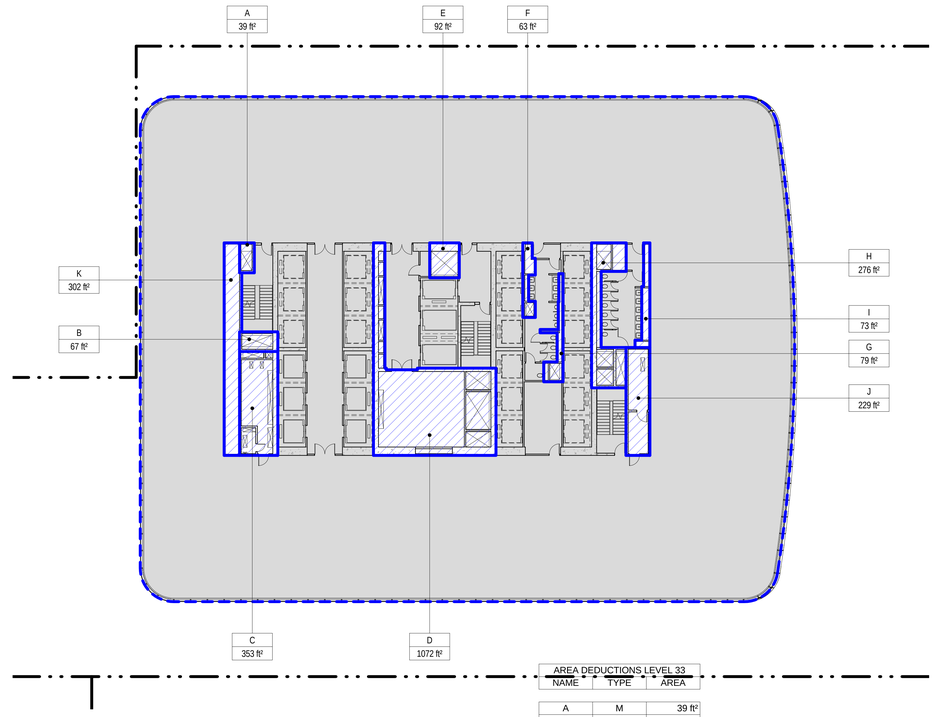


AREA DEDUCTIONS LEVEL 35		
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
Grand total		2344 ft²

ZONING SCHEDULE - LEVEL 35	
ZONING DEDUCTIONS	2344 ft²
ZONING FLOOR AREA	26065 ft²
ZONING TENANT RISER DEDUCTIONS	302 ft²
GROSS BUILDING AREA	28711 ft²

3 LEVEL 35 PLAN
SCALE: 1/16" = 1'-0"



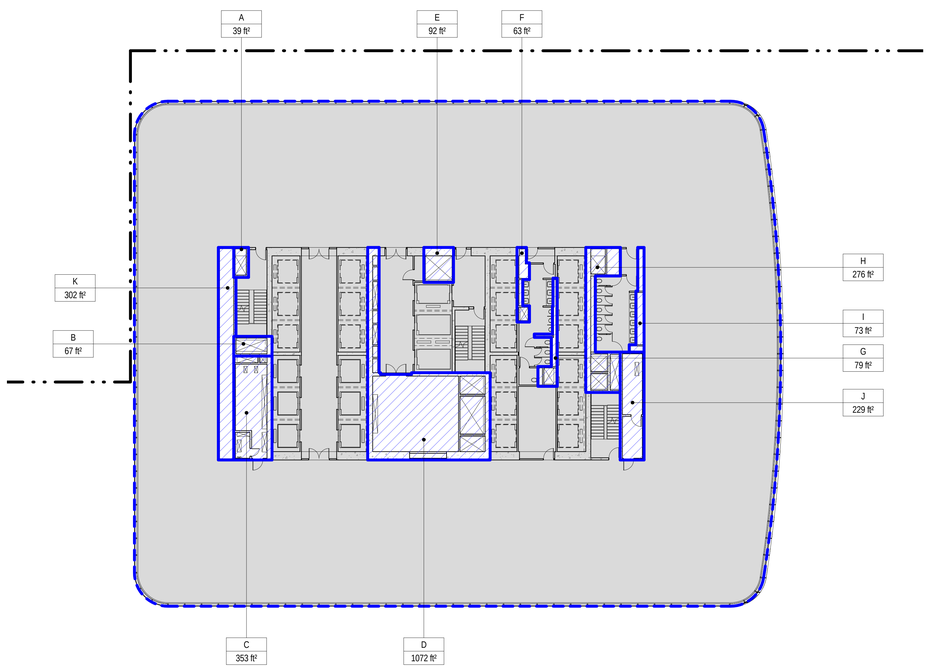
AREA DEDUCTIONS LEVEL 33		
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2646 ft²

ZONING SCHEDULE - LEVEL 33	
ZONING DEDUCTIONS	2646 ft²
ZONING FLOOR AREA	26305 ft²
GROSS FLOOR AREA	28951 ft²

1 LEVEL 33 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

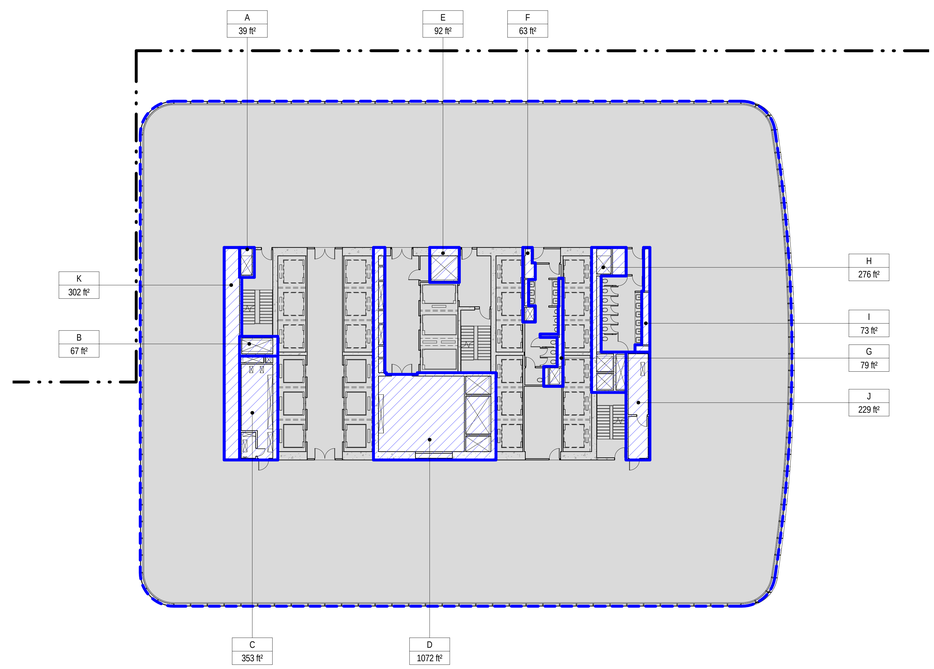
- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM



AREA DEDUCTIONS LEVEL 36		
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2646 ft²

ZONING SCHEDULE - LEVEL 36	
ZONING DEDUCTIONS	2646 ft²
ZONING FLOOR AREA	25944 ft²
GROSS FLOOR AREA	28590 ft²

4 LEVEL 36 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 34		
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2646 ft²

ZONING SCHEDULE - LEVEL 34	
ZONING DEDUCTIONS	2646 ft²
ZONING FLOOR AREA	26185 ft²
GROSS FLOOR AREA	28831 ft²

2 LEVEL 34 PLAN
SCALE: 1/16" = 1'-0"

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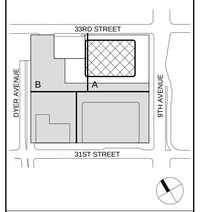
Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
ZONING FLOOR AREA DEDUCTIONS - LEVEL 33-36

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-112
B-SCAN Sheet No.: Z-112.00
Sheet No.: Z-112
Page No.: 19 OF 28

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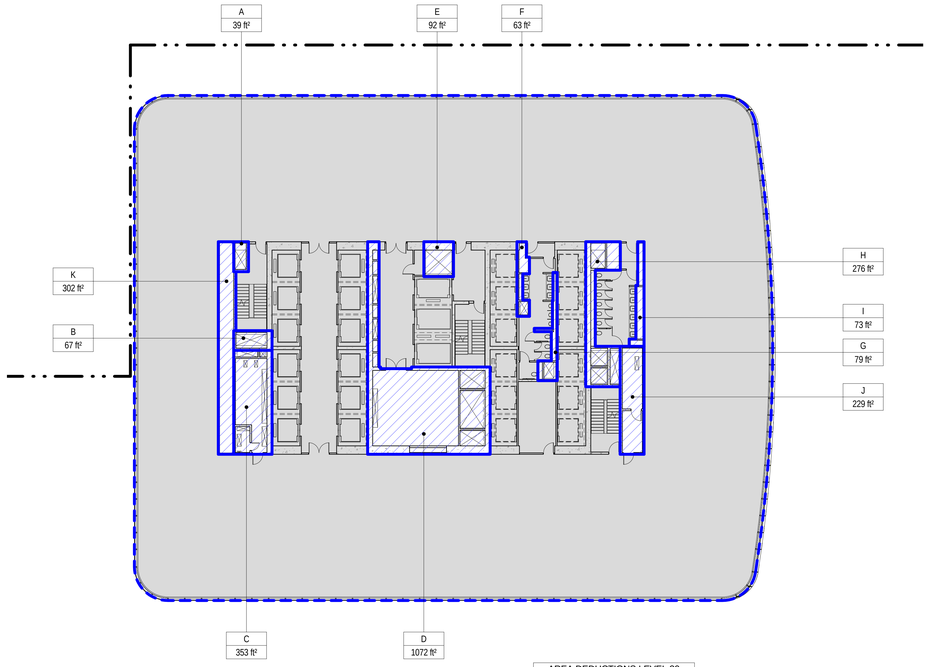


AREA DEDUCTIONS LEVEL 39

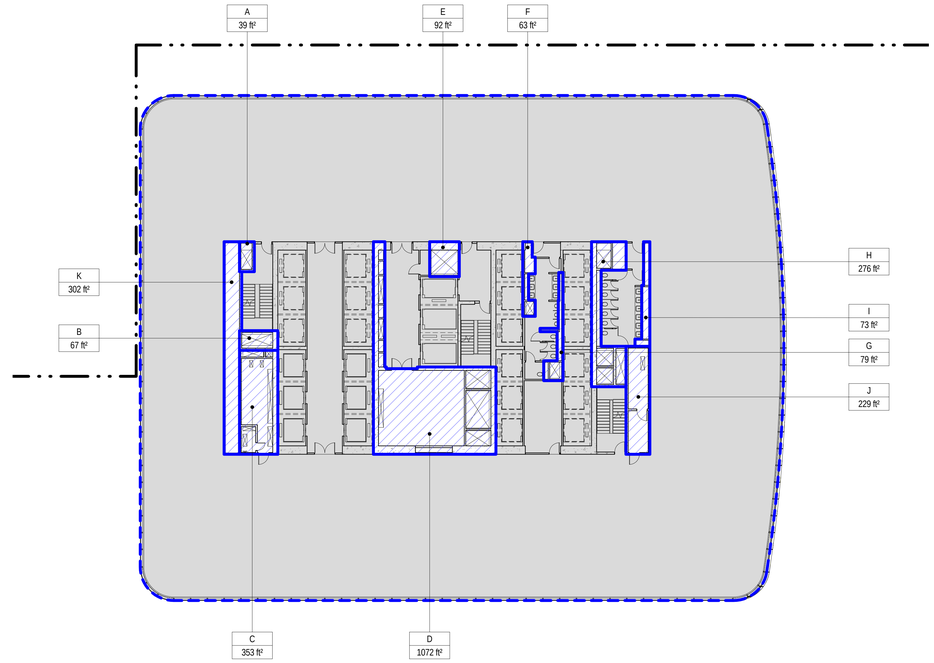
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2646 ft²

ZONING SCHEDULE - LEVEL 39

ZONING DEDUCTIONS	2646 ft²
ZONING FLOOR AREA	25583 ft²
GROSS FLOOR AREA	28229 ft²

3 LEVEL 39 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 37

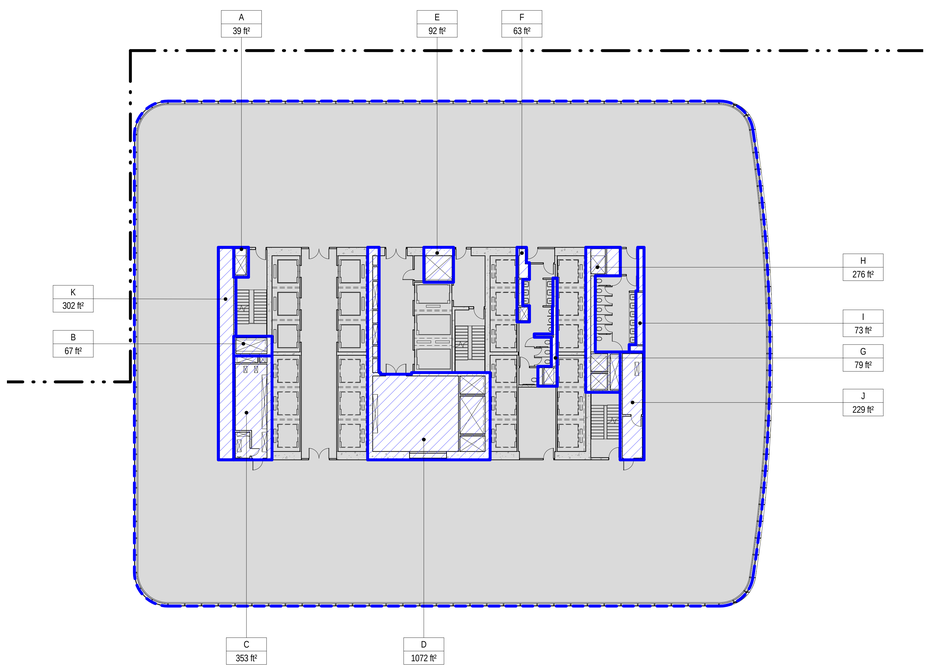
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2646 ft²

ZONING SCHEDULE - LEVEL 37

ZONING DEDUCTIONS	2646 ft²
ZONING FLOOR AREA	25823 ft²
GROSS FLOOR AREA	28470 ft²

1 LEVEL 37 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 40

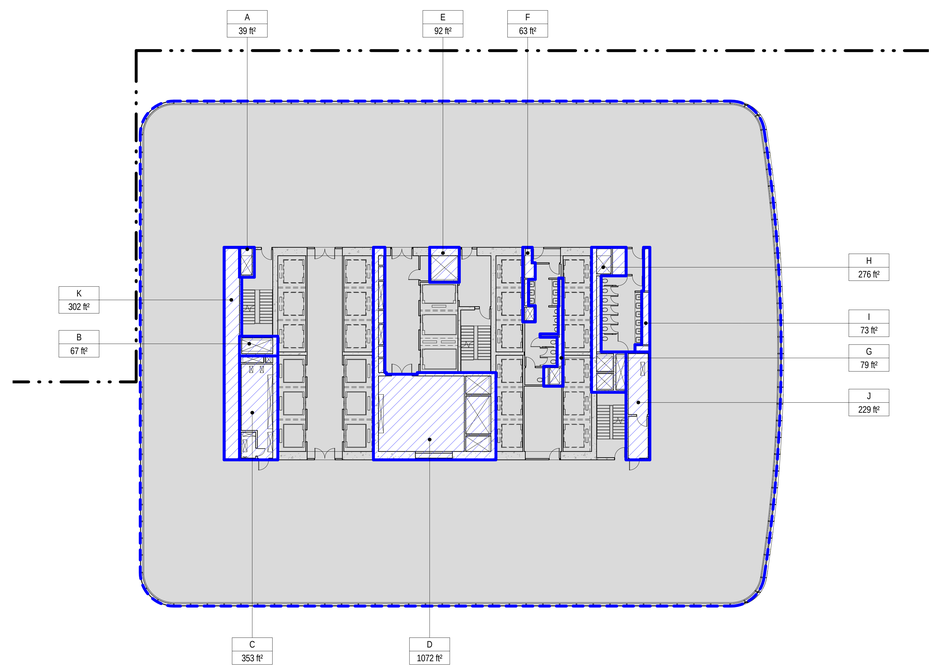
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2646 ft²

ZONING SCHEDULE - LEVEL 40

ZONING DEDUCTIONS	2646 ft²
ZONING FLOOR AREA	25463 ft²
GROSS FLOOR AREA	28109 ft²

4 LEVEL 40 PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 38

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2646 ft²

ZONING SCHEDULE - LEVEL 38

ZONING DEDUCTIONS	2646 ft²
ZONING FLOOR AREA	25703 ft²
	28349 ft²

2 LEVEL 38 PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
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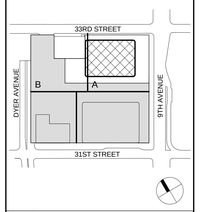
Key Plan:



Seal & Signature:

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 37-40

Project No.: 207120	B-SCAN Sheet No.: Z-113.00
Date: 20 JUN 2014	Sheet No.: Z-113
Scale: 1/16" = 1'-0"	
File No.: Z-113	Page No.: 20 OF 28

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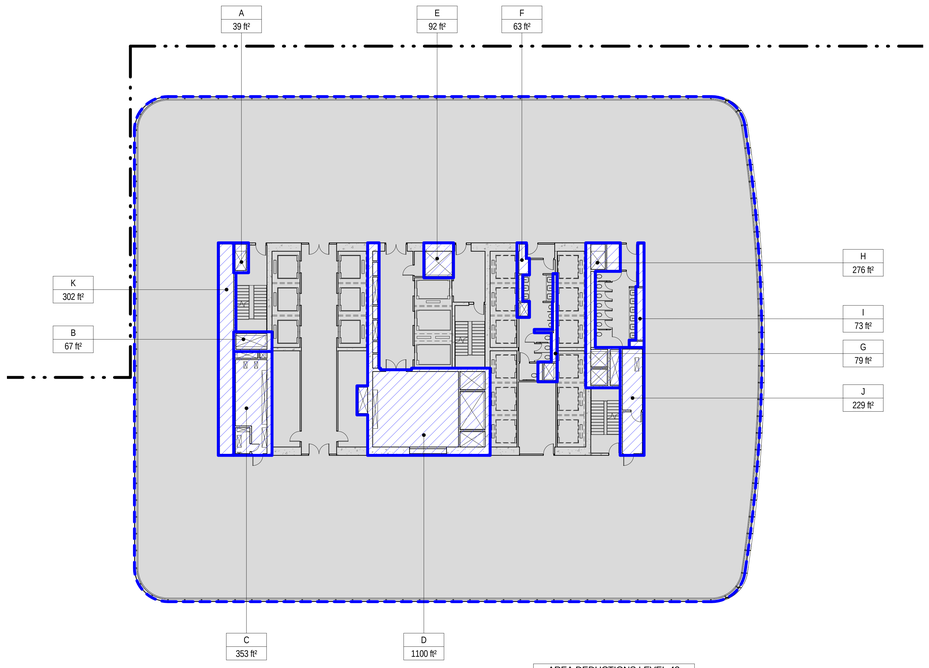


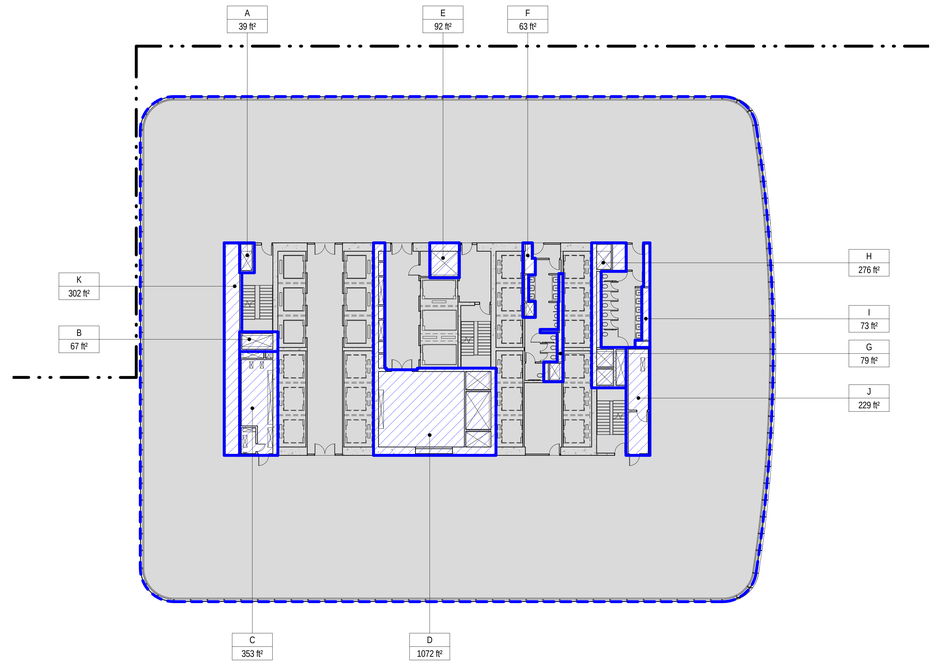
AREA DEDUCTIONS LEVEL 43

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1100 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2674 ft²

ZONING SCHEDULE - LEVEL 43

ZONING DEDUCTIONS	2674 ft²
ZONING FLOOR AREA	25073 ft²
GROSS FLOOR AREA	27747 ft²

3 LEVEL 43 PLAN
SCALE: 1/16" = 1'-0"



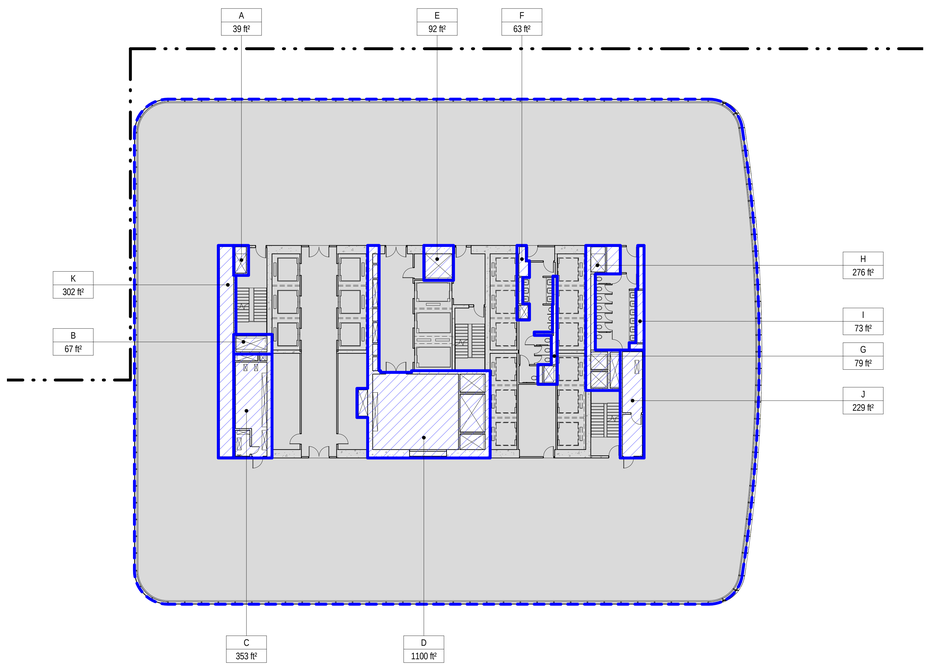
AREA DEDUCTIONS LEVEL 41

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1072 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2646 ft²

ZONING SCHEDULE - LEVEL 41

ZONING DEDUCTIONS	2646 ft²
ZONING FLOOR AREA	25342 ft²
GROSS FLOOR AREA	27988 ft²

1 LEVEL 41 PLAN
SCALE: 1/16" = 1'-0"



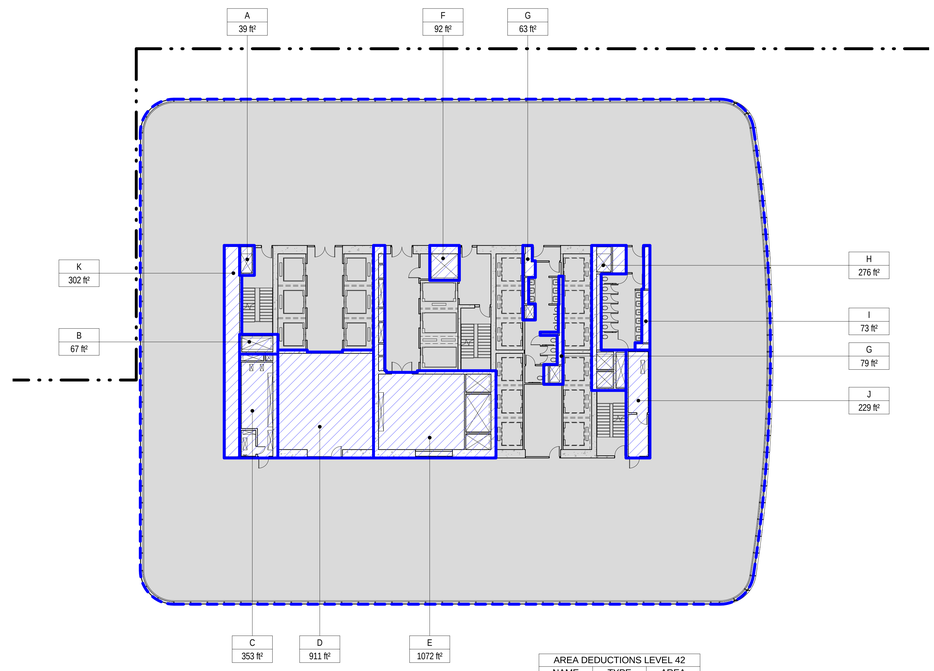
AREA DEDUCTIONS LEVEL 44

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1100 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2674 ft²

ZONING SCHEDULE - LEVEL 44

ZONING DEDUCTIONS	2674 ft²
ZONING FLOOR AREA	24953 ft²
GROSS FLOOR AREA	27627 ft²

4 LEVEL 44 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 42

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	EM	911 ft²
E	M/E/P	1072 ft²
F	M	92 ft²
G	M/P	79 ft²
G	M/P	63 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		3557 ft²

ZONING SCHEDULE - LEVEL 42

ZONING DEDUCTIONS	3557 ft²
ZONING FLOOR AREA	24311 ft²
GROSS FLOOR AREA	27868 ft²

2 LEVEL 42 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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14 Wall Street, New York, NY 10005

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102 Madison Avenue #11, New York, NY 10016

MEP Engineering
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80 Pine Street, New York, NY 10005

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Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

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14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

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Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

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40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
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65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
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Facade Maintenance Consultant
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166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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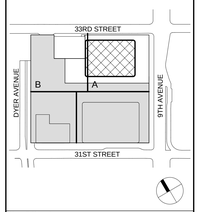
Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 41-44

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-114
B-SCAN Sheet No.:
Z-114.00
Sheet No.: Z-114
Page No.: 21 OF 28

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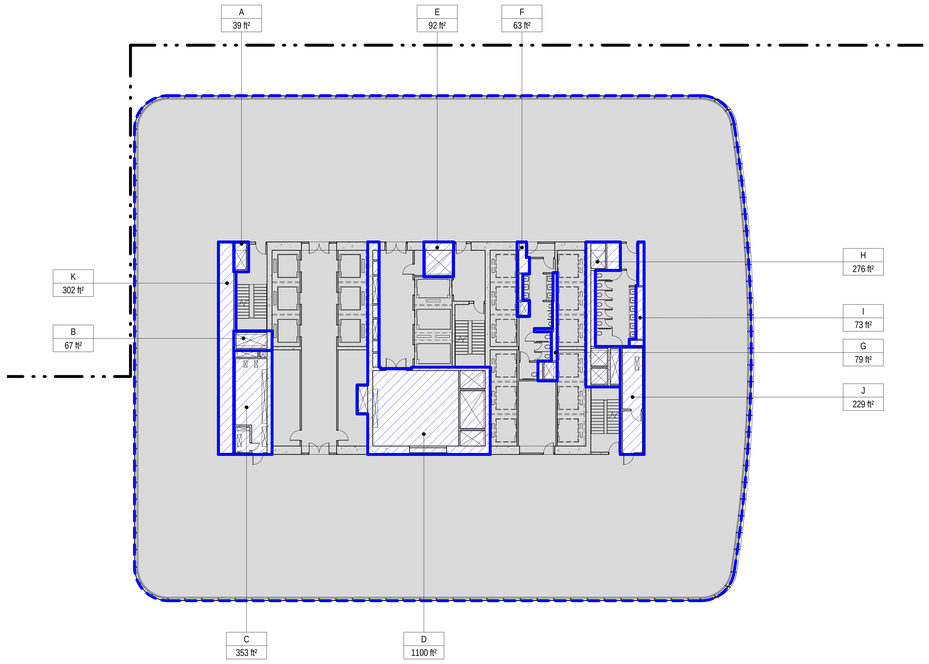
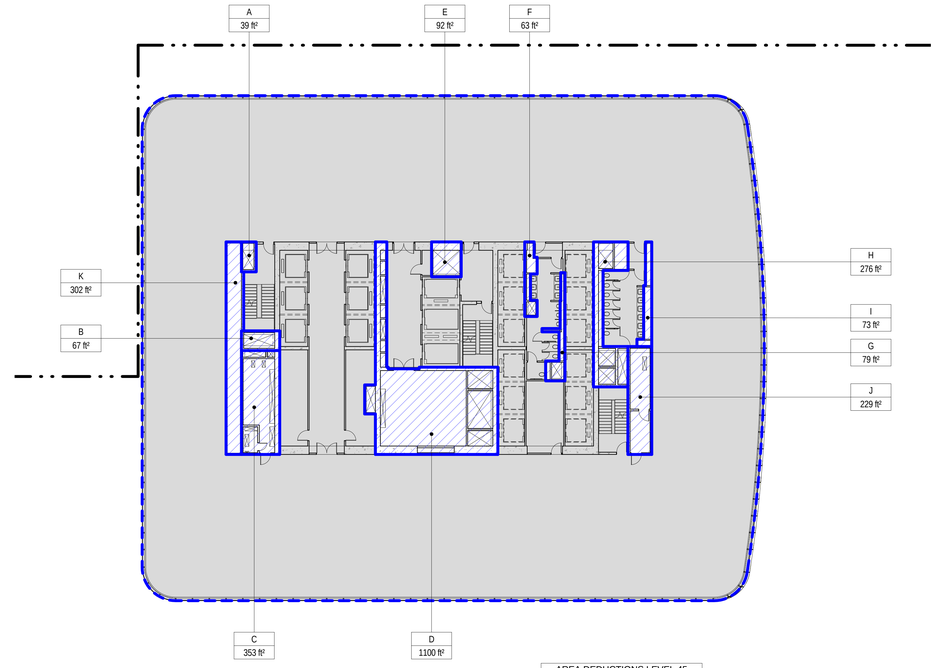


AREA DEDUCTIONS LEVEL 47		
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1100 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2674 ft²

ZONING SCHEDULE - LEVEL 47	
ZONING DEDUCTIONS	2674 ft²
ZONING FLOOR AREA	24592 ft²
GROSS FLOOR AREA	27266 ft²

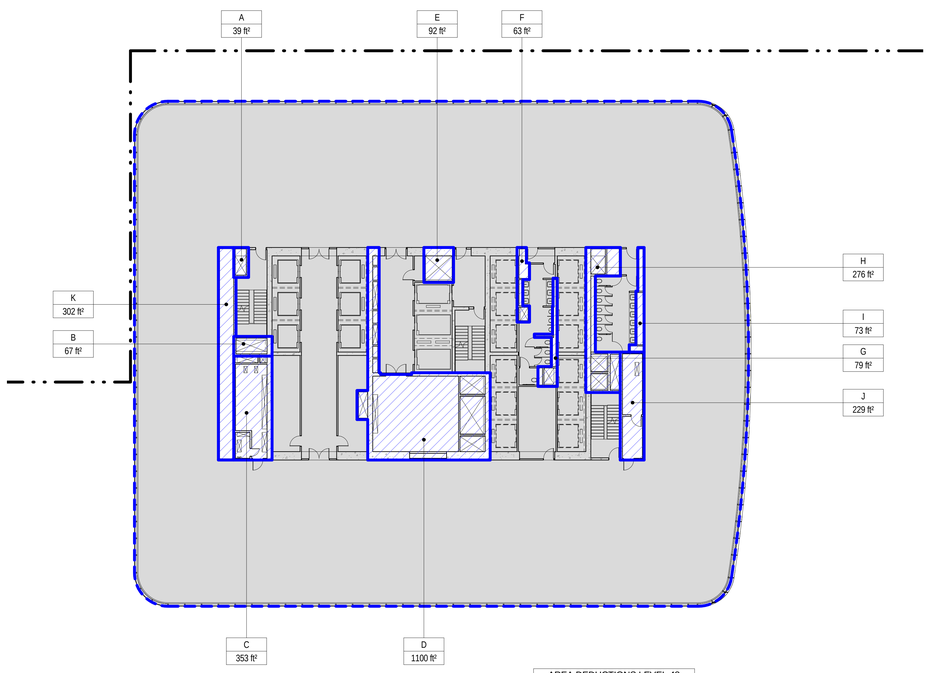
3 LEVEL 47 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 45		
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1100 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2674 ft²

ZONING SCHEDULE - LEVEL 45	
ZONING DEDUCTIONS	2674 ft²
ZONING FLOOR AREA	24833 ft²
GROSS FLOOR AREA	27507 ft²

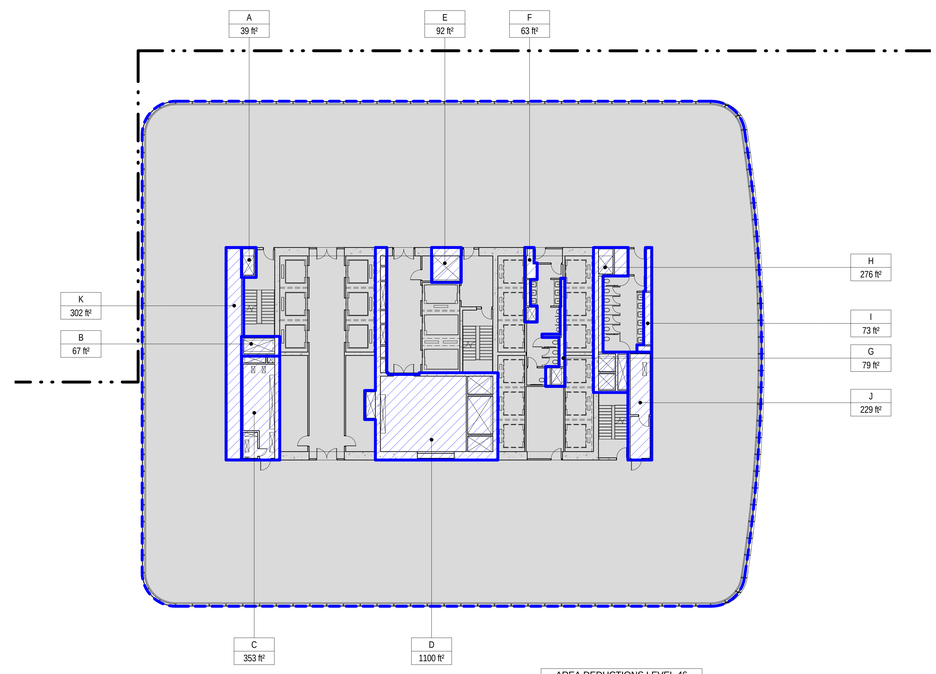
1 LEVEL 45 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 48		
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1100 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2674 ft²

ZONING SCHEDULE - LEVEL 48	
ZONING DEDUCTIONS	2674 ft²
ZONING FLOOR AREA	24471 ft²
GROSS FLOOR AREA	27145 ft²

4 LEVEL 48 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 46		
NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	M/E/P	1100 ft²
E	M	92 ft²
F	M/P	63 ft²
G	M/P	79 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2674 ft²

ZONING SCHEDULE - LEVEL 46	
ZONING DEDUCTIONS	2674 ft²
ZONING FLOOR AREA	24712 ft²
GROSS FLOOR AREA	27386 ft²

2 LEVEL 46 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Wind Tunnel Consultant
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Ontario, Canada N1K 1B8

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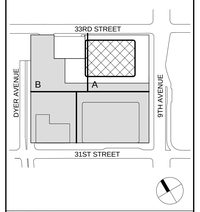
Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 45-48

Project No.: 207120	B-SCAN Sheet No.: Z-115.00
Date: 20 JUN 2014	Sheet No.: Z-115
Scale: 1/16" = 1'-0"	
File No.: Z-115	Page No.: 22 OF 28

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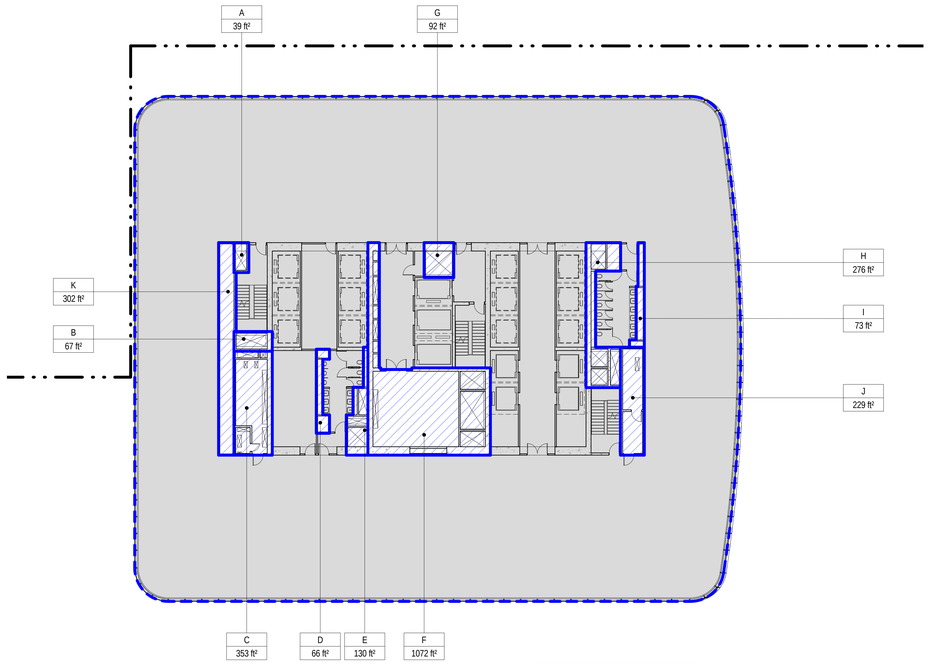


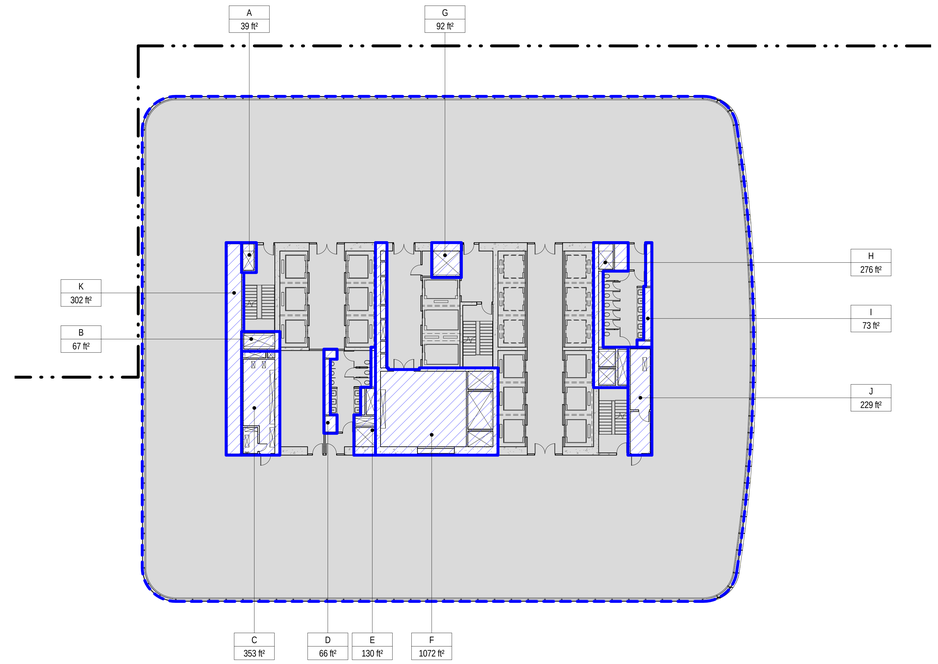
AREA DEDUCTIONS LEVEL 51

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	P	66 ft²
E	M/P	130 ft²
F	M/E/P	1072 ft²
G	M	92 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2700 ft²

ZONING SCHEDULE - LEVEL 51

ZONING DEDUCTIONS	2700 ft²
ZONING FLOOR AREA	24084 ft²
GROSS FLOOR AREA	26784 ft²

3 LEVEL 51 PLAN
SCALE: 1/16" = 1'-0"



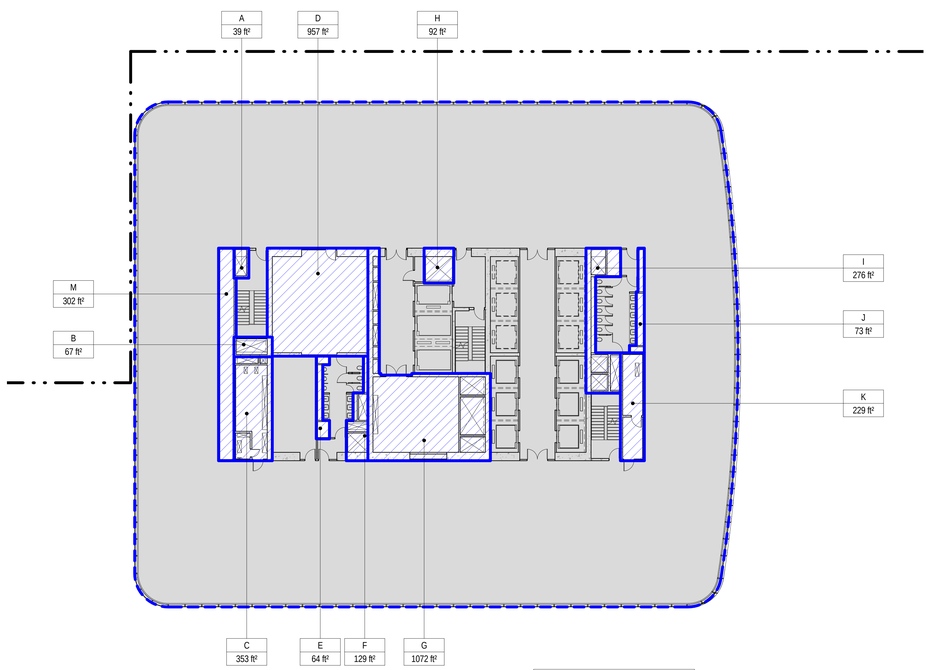
AREA DEDUCTIONS LEVEL 49

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	P	66 ft²
E	M/P	130 ft²
F	M/E/P	1072 ft²
G	M	92 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2700 ft²

ZONING SCHEDULE - LEVEL 49

ZONING DEDUCTIONS	2700 ft²
ZONING FLOOR AREA	24325 ft²
GROSS FLOOR AREA	27025 ft²

1 LEVEL 49 PLAN
SCALE: 1/16" = 1'-0"



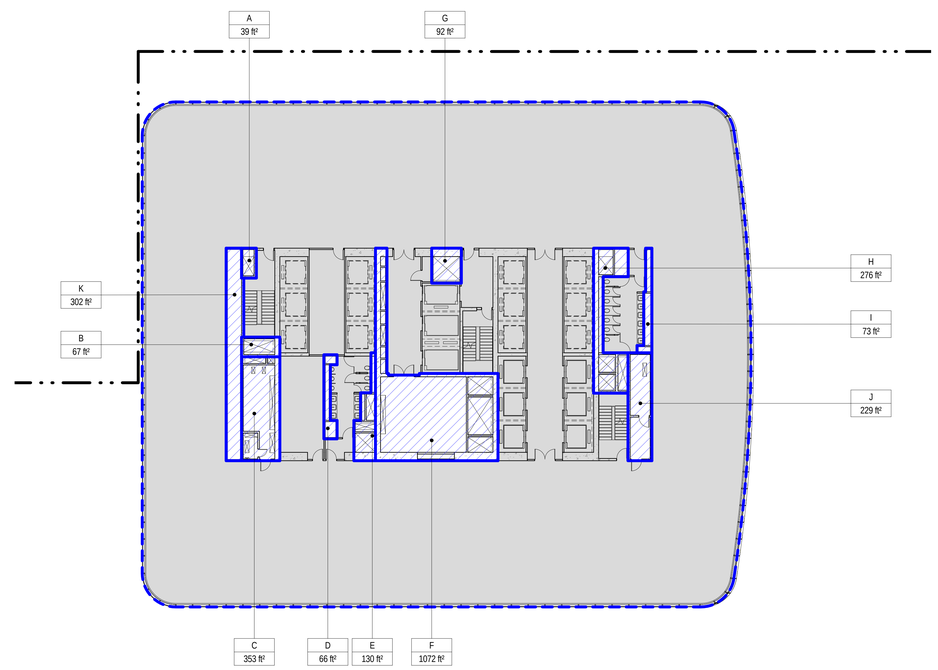
AREA DEDUCTIONS LEVEL 52

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	EM	957 ft²
E	P	64 ft²
F	M/P	129 ft²
G	M/E/P	1072 ft²
H	M	92 ft²
I	M/P	276 ft²
J	P	73 ft²
K	E	229 ft²
M	M/E/P	302 ft²
Grand total		3653 ft²

ZONING SCHEDULE - LEVEL 52

ZONING DEDUCTIONS	3653 ft²
ZONING FLOOR AREA	23011 ft²
GROSS FLOOR AREA	26664 ft²

4 LEVEL 52 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 50

NAME	TYPE	AREA
A	M	39 ft²
B	M	67 ft²
C	E/P	353 ft²
D	P	66 ft²
E	M/P	130 ft²
F	M/E/P	1072 ft²
G	M	92 ft²
H	M/P	276 ft²
I	P	73 ft²
J	E	229 ft²
K	M/E/P	302 ft²
Grand total		2700 ft²

ZONING SCHEDULE - LEVEL 50

ZONING DEDUCTIONS	2700 ft²
ZONING FLOOR AREA	24205 ft²
GROSS FLOOR AREA	26905 ft²

2 LEVEL 50 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
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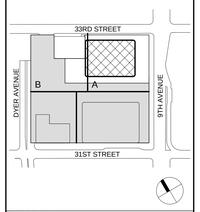

Seal & Signature:

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL49-52

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-116
B-SCAN Sheet No.: Z-116.00
Sheet No.: Z-116
Page No.: 23 OF 28

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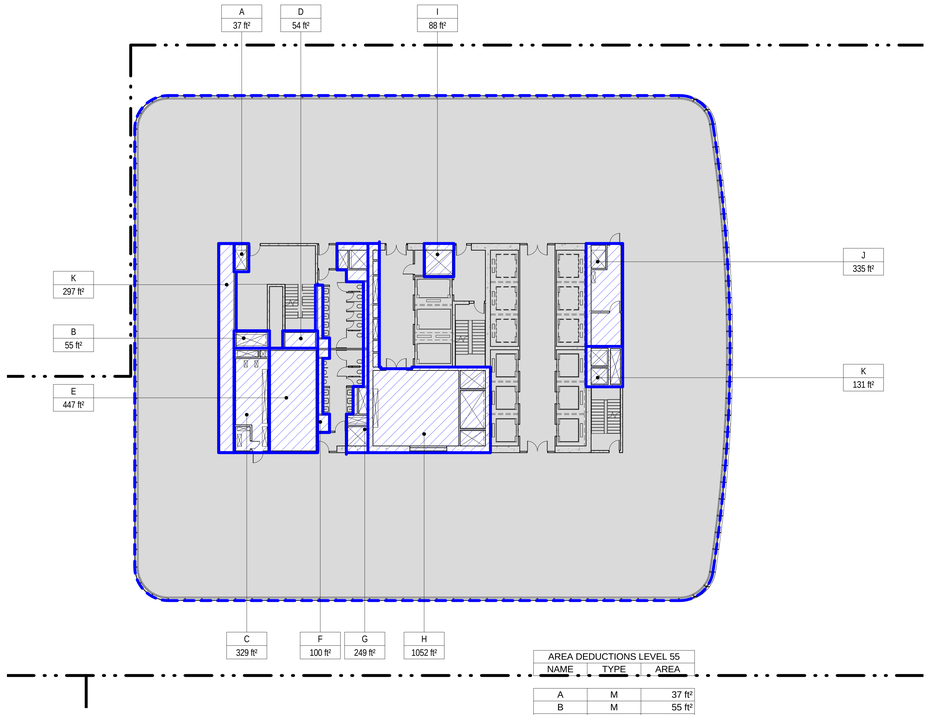
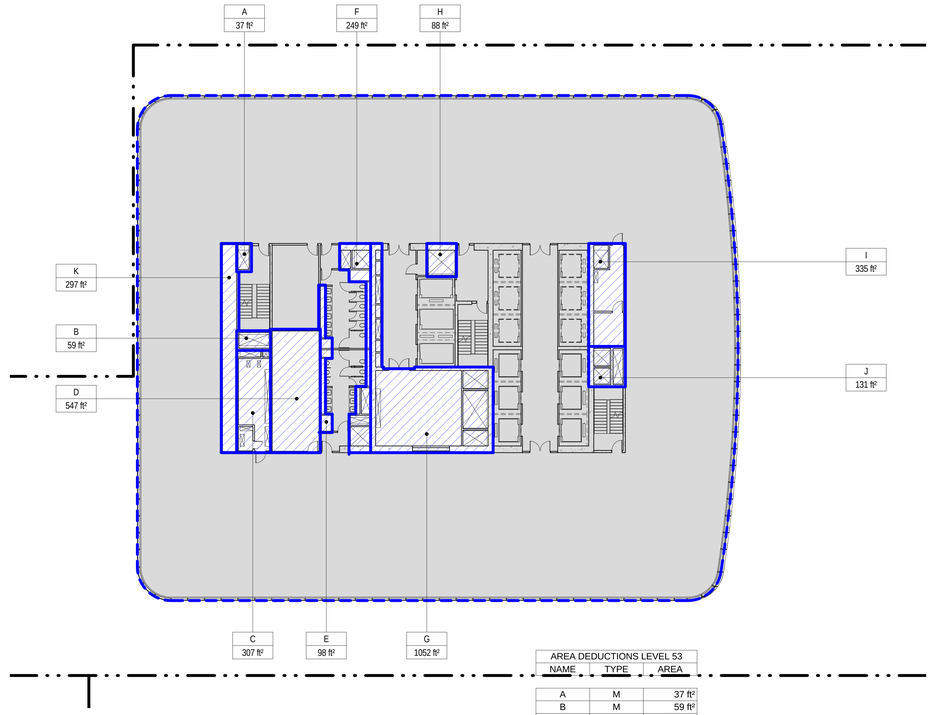


AREA DEDUCTIONS LEVEL 55		
NAME	TYPE	AREA
A	M	37 ft²
B	M	55 ft²
C	E/P	329 ft²
D	M	54 ft²
E	M/P	447 ft²
F	P	100 ft²
G	M/P	249 ft²
H	M/E/P	1052 ft²
I	M	88 ft²
J	M/E	335 ft²
K	M/E/P	297 ft²
K	M	131 ft²
Grand total		3175 ft²

ZONING SCHEDULE - LEVEL 55	
ZONING DEDUCTIONS	3175 ft²
ZONING FLOOR AREA	23128 ft²
GROSS FLOOR AREA	26303 ft²

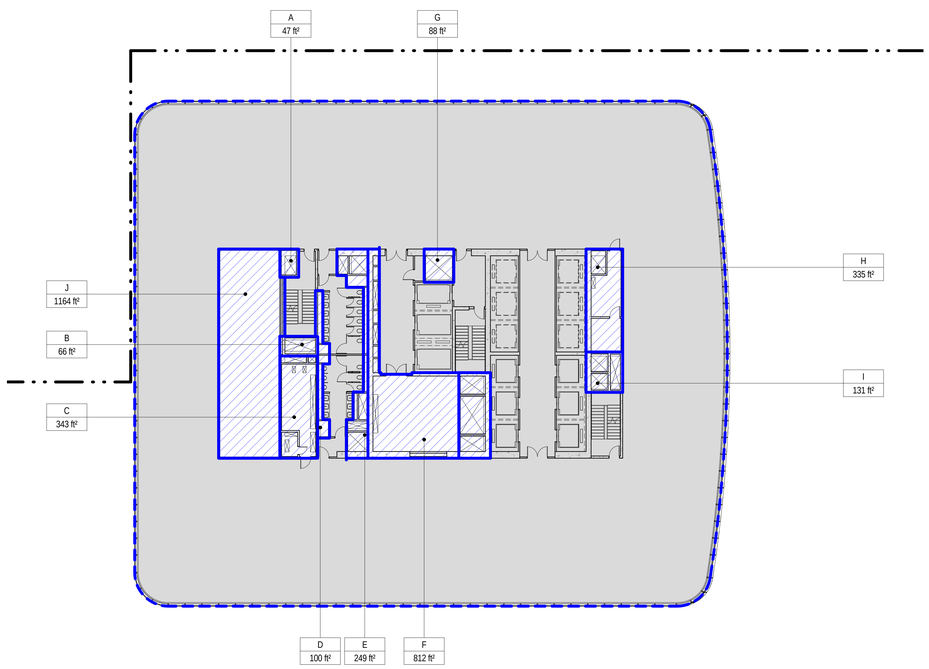
3 LEVEL 55 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 53		
NAME	TYPE	AREA
A	M	37 ft²
B	M	59 ft²
C	E/P	307 ft²
D	M/P	547 ft²
E	P	98 ft²
F	M/P	249 ft²
G	M/E/P	1052 ft²
H	M	88 ft²
I	M/E	335 ft²
J	M	131 ft²
K	M/E/P	297 ft²
Grand total		3199 ft²

ZONING SCHEDULE - LEVEL 53	
ZONING DEDUCTIONS	3199 ft²
ZONING FLOOR AREA	23344 ft²
GROSS FLOOR AREA	26543 ft²

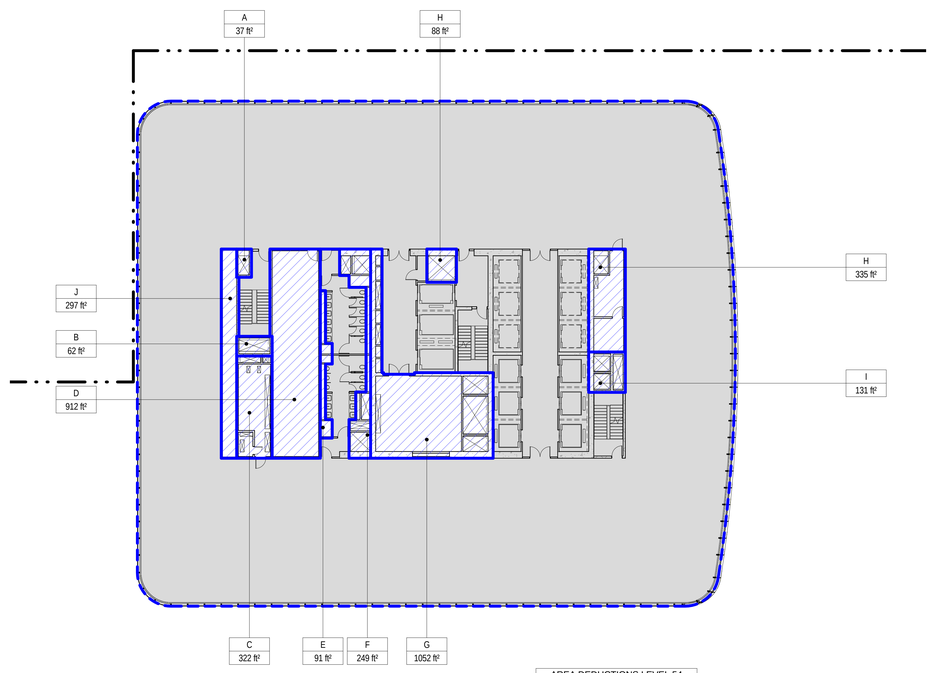
1 LEVEL 53 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 56		
NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	88 ft²
H	M/E	335 ft²
I	M	131 ft²
J	M/E/P	1164 ft²
K	M	240 ft²
Grand total		3575 ft²

ZONING SCHEDULE - LEVEL 56	
ZONING DEDUCTIONS	3575 ft²
ZONING FLOOR AREA	22607 ft²
GROSS FLOOR AREA	26182 ft²

4 LEVEL 56 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 54		
NAME	TYPE	AREA
A	M	37 ft²
B	M	62 ft²
C	E/P	322 ft²
D	M/P	912 ft²
E	P	91 ft²
F	M/P	249 ft²
G	M/E/P	1052 ft²
H	M	88 ft²
H	M/E	335 ft²
I	M	131 ft²
J	M/E/P	297 ft²
Grand total		3577 ft²

ZONING SCHEDULE - LEVEL 54	
ZONING DEDUCTIONS	3577 ft²
ZONING FLOOR AREA	22846 ft²
GROSS FLOOR AREA	26423 ft²

2 LEVEL 54 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM

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215 West 40th Street, 15th Floor, New York, NY 10018

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650 Woodlawn Road West, Guelph
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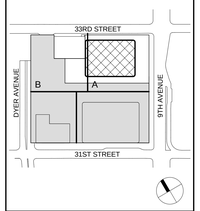

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 53-56

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-117
B-SCAN Sheet No.:
Z-117.00
Sheet No.: Z-117
Page No.: 24 OF 28

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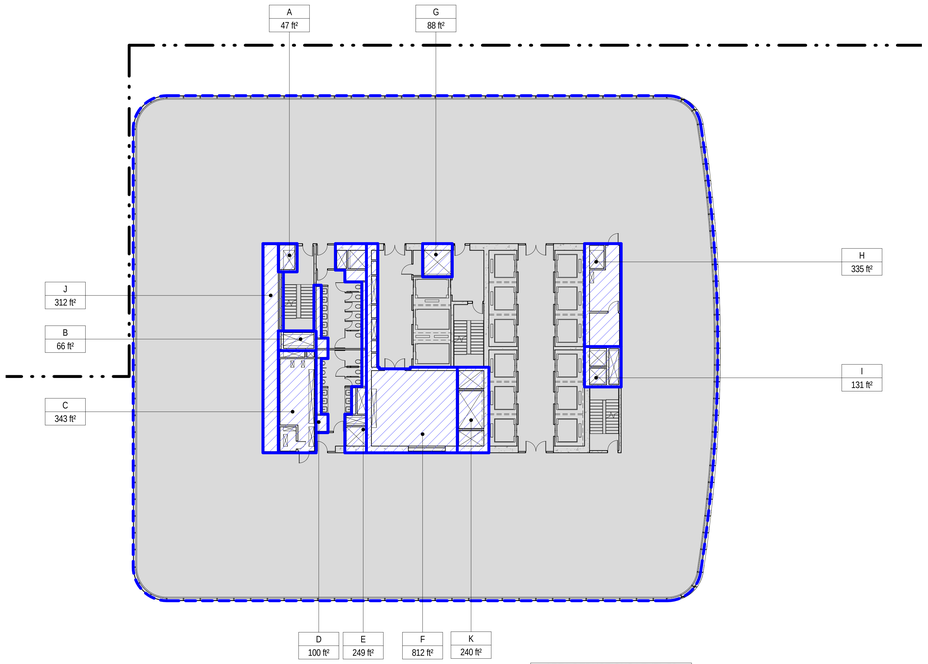


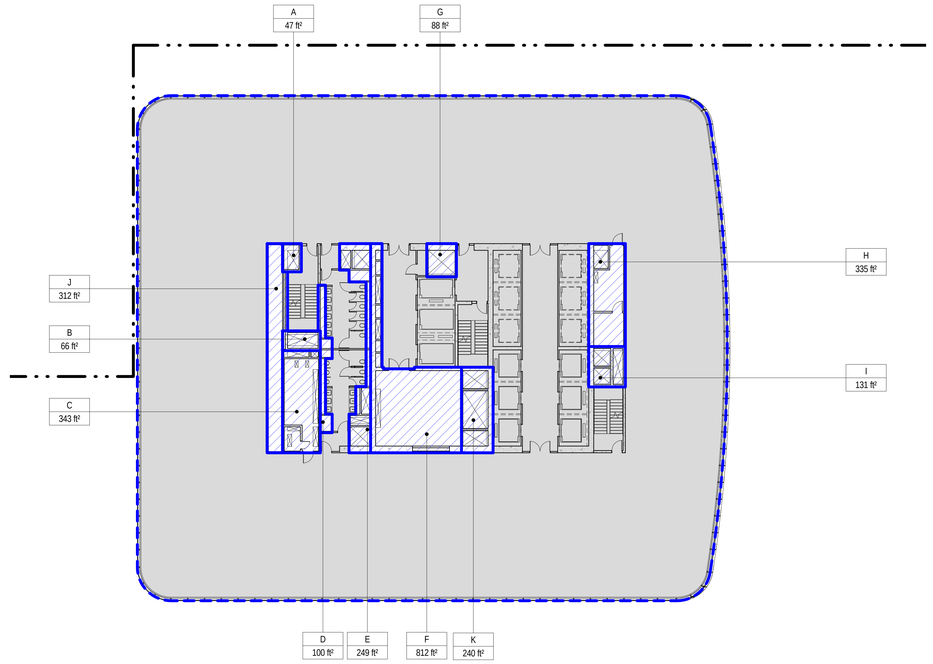
AREA DEDUCTIONS LEVEL 59

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	88 ft²
H	M/E	335 ft²
I	M	131 ft²
J	M/E/P	312 ft²
K	M	240 ft²
Grand total		2723 ft²

ZONING SCHEDULE - LEVEL 59

ZONING DEDUCTIONS	2723 ft²
ZONING FLOOR AREA	23098 ft²
GROSS FLOOR AREA	25821 ft²

3 LEVEL 59 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 57

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	88 ft²
H	M/E	335 ft²
I	M	131 ft²
J	M/E/P	312 ft²
K	M	240 ft²
Grand total		2723 ft²

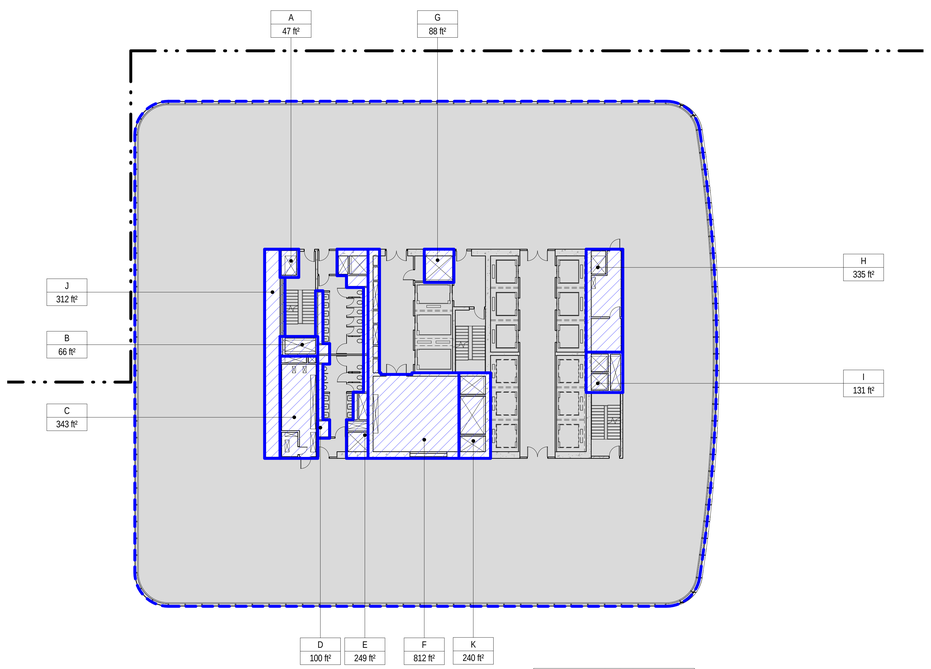
ZONING SCHEDULE - LEVEL 57

ZONING DEDUCTIONS	2723 ft²
ZONING FLOOR AREA	23338 ft²
GROSS FLOOR AREA	26062 ft²

1 LEVEL 57 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM



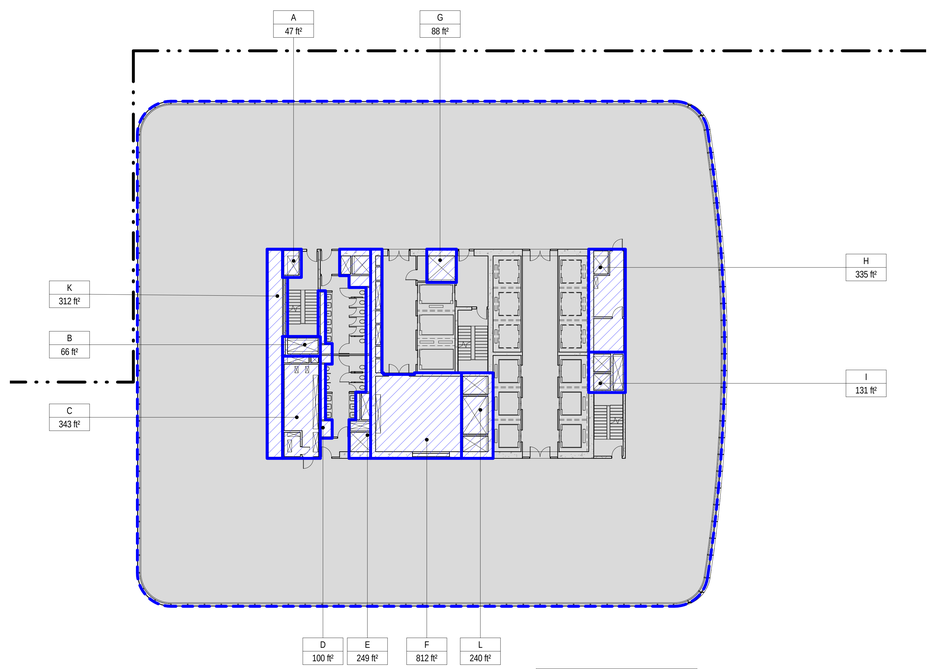
AREA DEDUCTIONS LEVEL 60

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	88 ft²
H	E	335 ft²
I	M	131 ft²
J	M/E/P	312 ft²
K	M	240 ft²
Grand total		2723 ft²

ZONING SCHEDULE - LEVEL 60

ZONING DEDUCTIONS	2723 ft²
ZONING FLOOR AREA	22978 ft²
GROSS FLOOR AREA	25701 ft²

4 LEVEL 60 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 58

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	88 ft²
H	M/E	335 ft²
I	M	131 ft²
K	M/E/P	312 ft²
L	M	240 ft²
Grand total		2723 ft²

ZONING SCHEDULE - LEVEL 58

ZONING DEDUCTIONS	2723 ft²
ZONING FLOOR AREA	23218 ft²
GROSS FLOOR AREA	25941 ft²

2 LEVEL 58 PLAN
SCALE: 1/16" = 1'-0"

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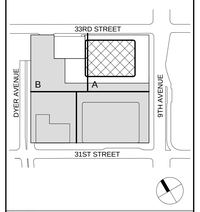

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 57-60

Project No.: 207120	B-SCAN Sheet No.: Z-118.00
Date: 20 JUN 2014	Sheet No.: Z-118
Scale: 1/16" = 1'-0"	
File No.: Z-118	Page No.: 25 OF 28

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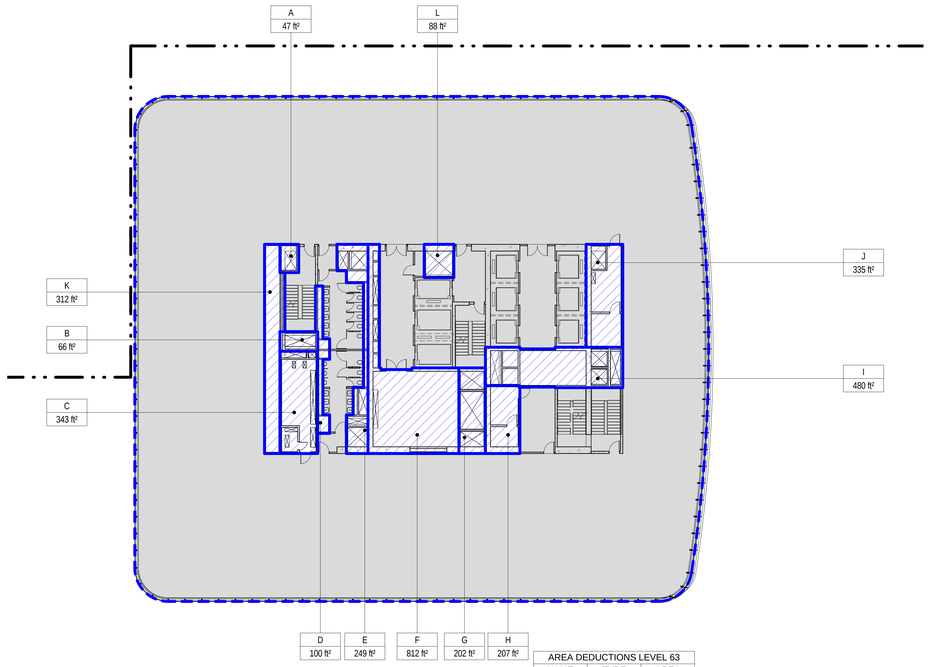


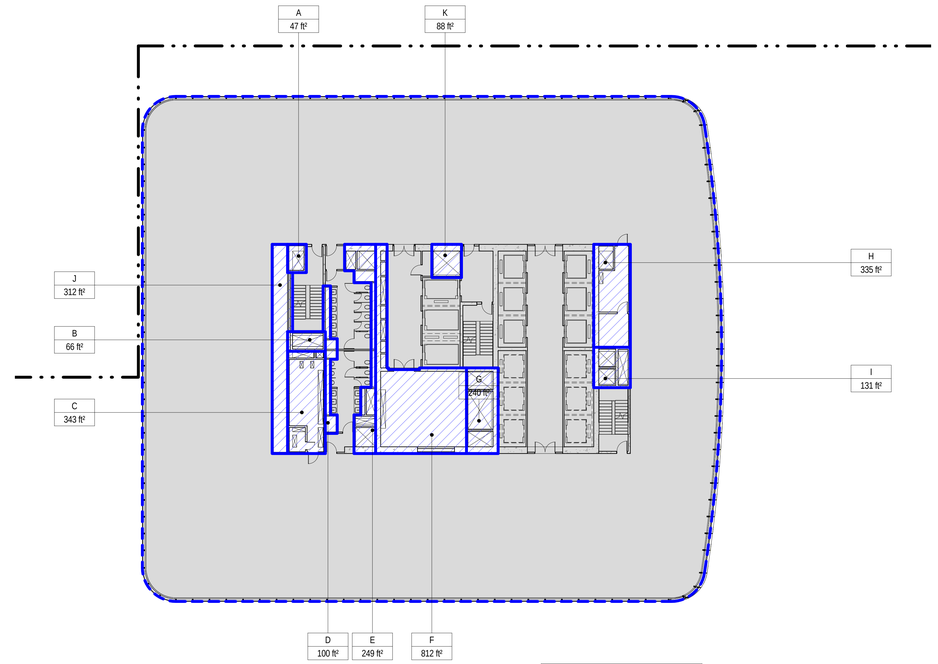
AREA DEDUCTIONS LEVEL 63

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	202 ft²
H	E	207 ft²
I	M	480 ft²
J	M/E	335 ft²
K	M/E/P	312 ft²
L	M	88 ft²
Grand total		3241 ft²

ZONING SCHEDULE - LEVEL 63

ZONING DEDUCTIONS	3241 ft²
ZONING FLOOR AREA	22099 ft²
GROSS FLOOR AREA	25339 ft²

3 LEVEL 63 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 61

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	240 ft²
H	M/E	335 ft²
I	M	131 ft²
J	M/E/P	312 ft²
K	M	88 ft²
Grand total		2723 ft²

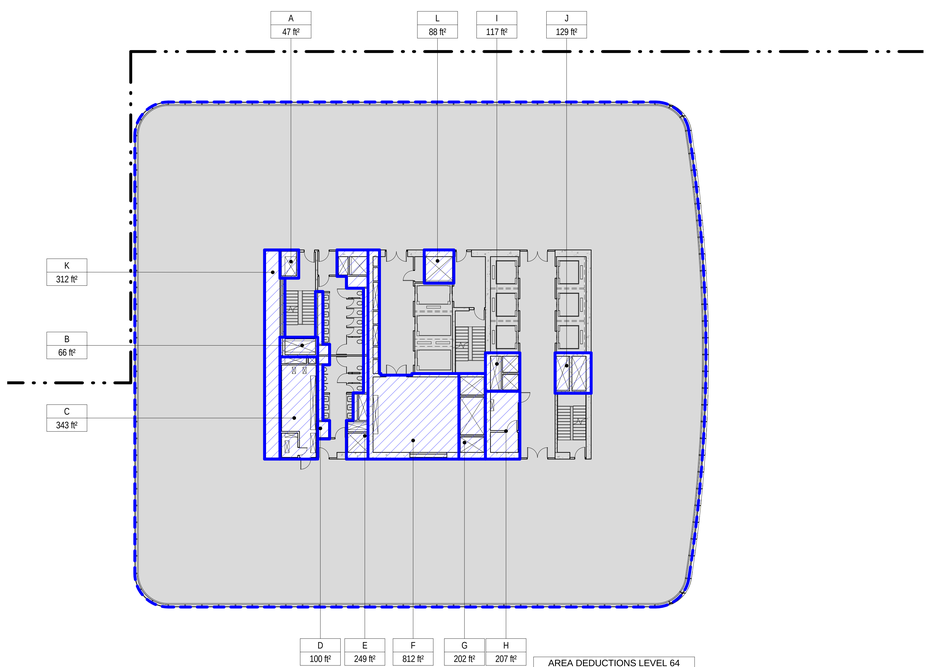
ZONING SCHEDULE - LEVEL 61

ZONING DEDUCTIONS	2723 ft²
ZONING FLOOR AREA	22857 ft²
GROSS FLOOR AREA	25580 ft²

1 LEVEL 61 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM



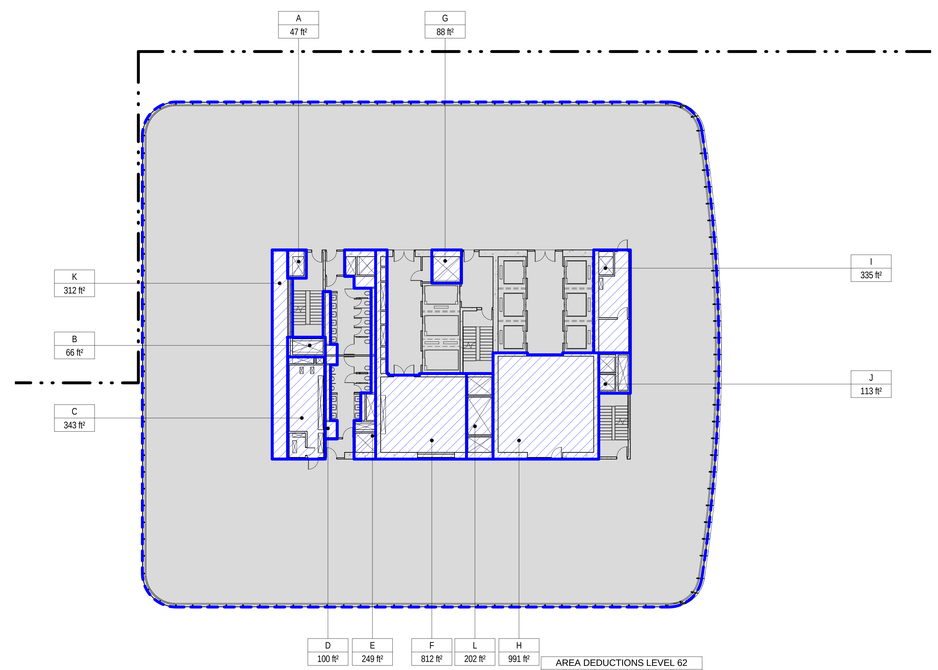
AREA DEDUCTIONS LEVEL 64

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	202 ft²
H	E	207 ft²
I	M	117 ft²
J	M	129 ft²
K	M/E/P	312 ft²
L	M	88 ft²
Grand total		2673 ft²

ZONING SCHEDULE - LEVEL 64

ZONING DEDUCTIONS	2673 ft²
ZONING FLOOR AREA	22546 ft²
GROSS FLOOR AREA	25219 ft²

4 LEVEL 64 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 62

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	88 ft²
H	EM	991 ft²
I	M/E	335 ft²
J	M	113 ft²
K	M/E/P	312 ft²
L	M	202 ft²
Grand total		3658 ft²

ZONING SCHEDULE - LEVEL 62

ZONING DEDUCTIONS	3658 ft²
ZONING FLOOR AREA	21801 ft²
GROSS FLOOR AREA	25460 ft²

2 LEVEL 62 PLAN
SCALE: 1/16" = 1'-0"

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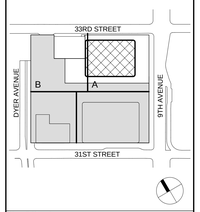

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REGISTERED ARCHITECT
ERIC P. GOTTFRIED
No. 026649
STATE OF NEW YORK

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ZONING FLOOR AREA DEDUCTIONS - LEVEL 61-64

Project No.: 207120
Date: 20 JUN 2014
Scale: 1/16" = 1'-0"
File No.: Z-119
B-SCAN Sheet No.:
Z-119.00
Sheet No.: Z-119
Page No.: 26 OF 28

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AREA DEDUCTIONS LEVEL 67

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	202 ft²
H	M	117 ft²
I	E	207 ft²
J	M	129 ft²
K	M/E/P	312 ft²
L	M	88 ft²
Grand total		2673 ft²

ZONING SCHEDULE - LEVEL 67

ZONING DEDUCTIONS	2673 ft²
ZONING FLOOR AREA	22185 ft²
GROSS FLOOR AREA	24858 ft²

3 LEVEL 67 PLAN
SCALE: 1/16" = 1'-0"

AREA DEDUCTIONS LEVEL 65

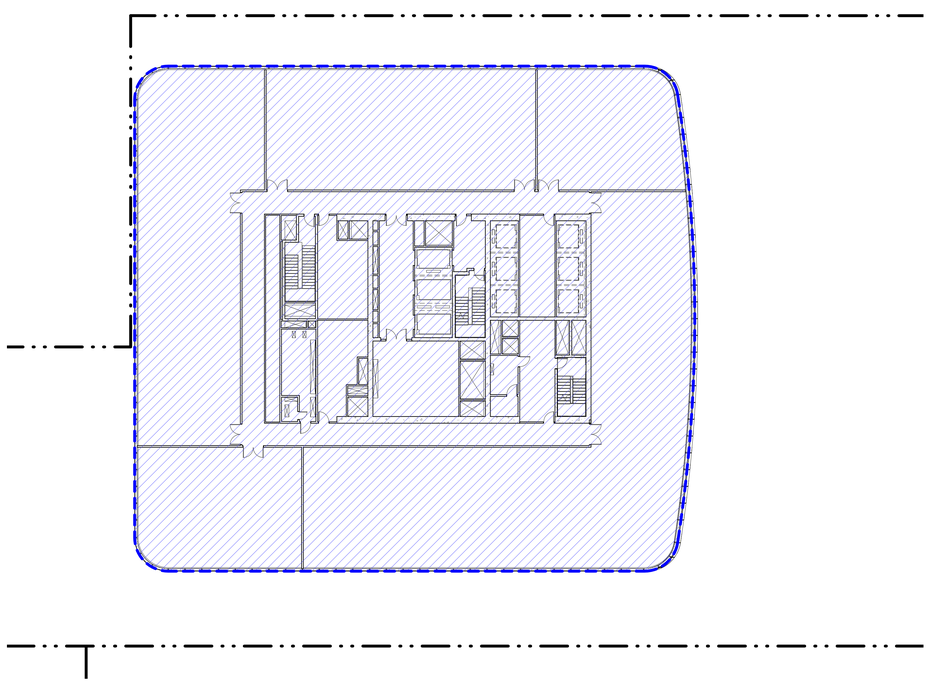
NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	202 ft²
H	M	117 ft²
I	E	207 ft²
J	M	129 ft²
K	M/E/P	312 ft²
L	M	88 ft²
Grand total		2673 ft²

ZONING SCHEDULE - LEVEL 65

ZONING DEDUCTIONS	2673 ft²
ZONING FLOOR AREA	22426 ft²
	25099 ft²

GROSS BUILDING AREA	25099 ft²

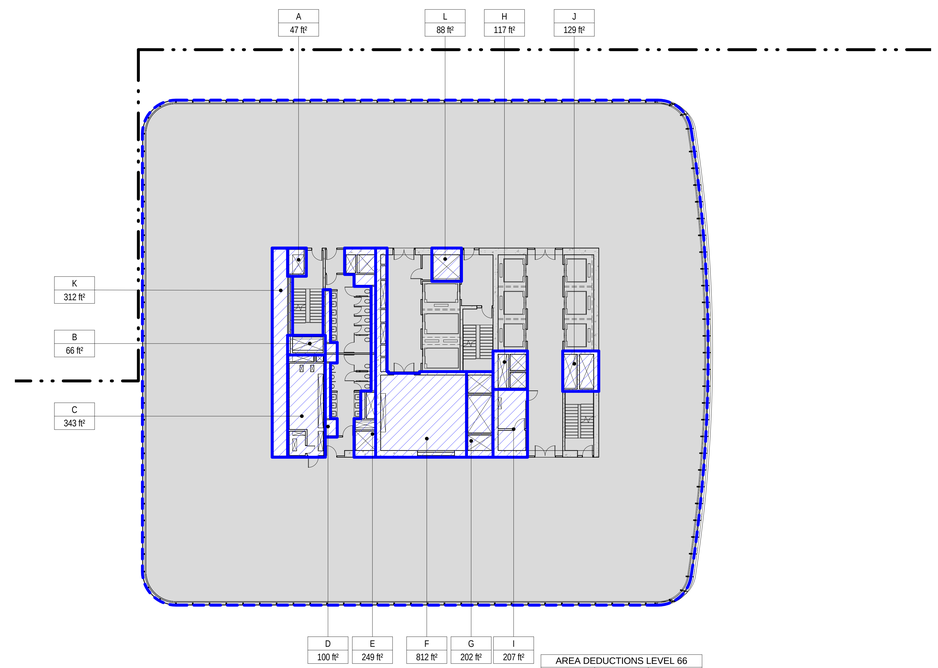
1 LEVEL 65 PLAN
SCALE: 1/16" = 1'-0"



ZONING SCHEDULE - LEVEL 68

ZONING DEDUCTIONS	24724 ft²
GROSS FLOOR AREA	24724 ft²

4 LEVEL 68 PLAN
SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 66

NAME	TYPE	AREA
A	M	47 ft²
B	M	66 ft²
C	E/P	343 ft²
D	P	100 ft²
E	M/P	249 ft²
F	M/E/P	812 ft²
G	M	202 ft²
H	M	117 ft²
I	E	207 ft²
J	M	129 ft²
K	M/E/P	312 ft²
L	M	88 ft²
Grand total		2673 ft²

ZONING SCHEDULE - LEVEL 66

ZONING DEDUCTIONS	2673 ft²
ZONING FLOOR AREA	22305 ft²
GROSS FLOOR AREA	24978 ft²

2 LEVEL 66 PLAN
SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
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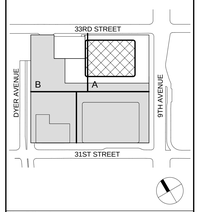

Seal & Signature:

Warning: It is a violation of the New York State Architecture Law §6209.2(2) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 65-68

Project No.: 207120	B-SCAN Sheet No.: Z-120.00
Date: 20 JUN 2014	Sheet No.: Z-120
Scale: 1/16" = 1'-0"	
File No.: Z-120	Page No.: 27 OF 28

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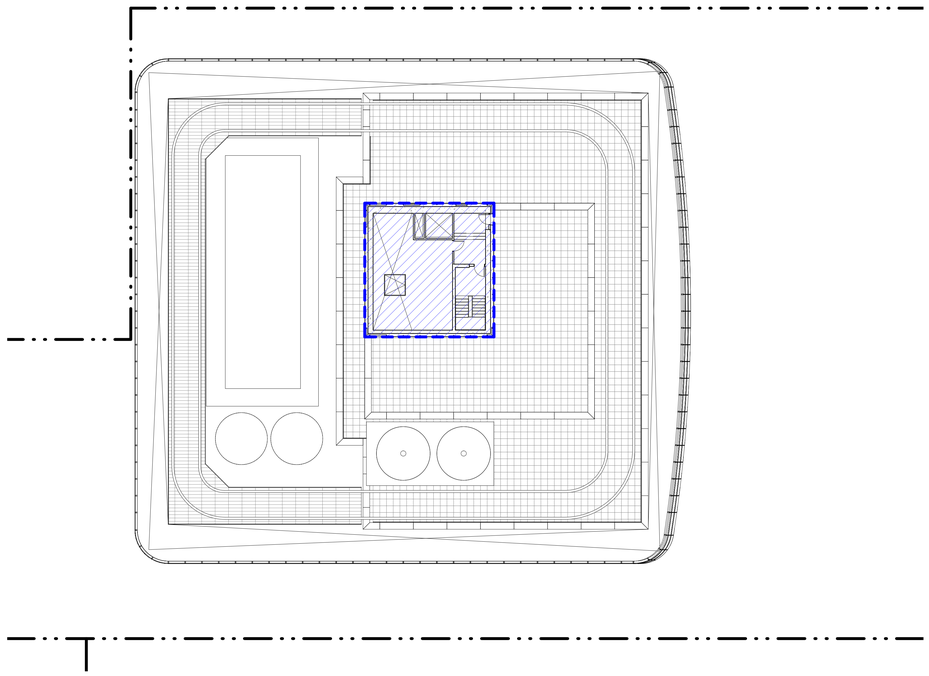
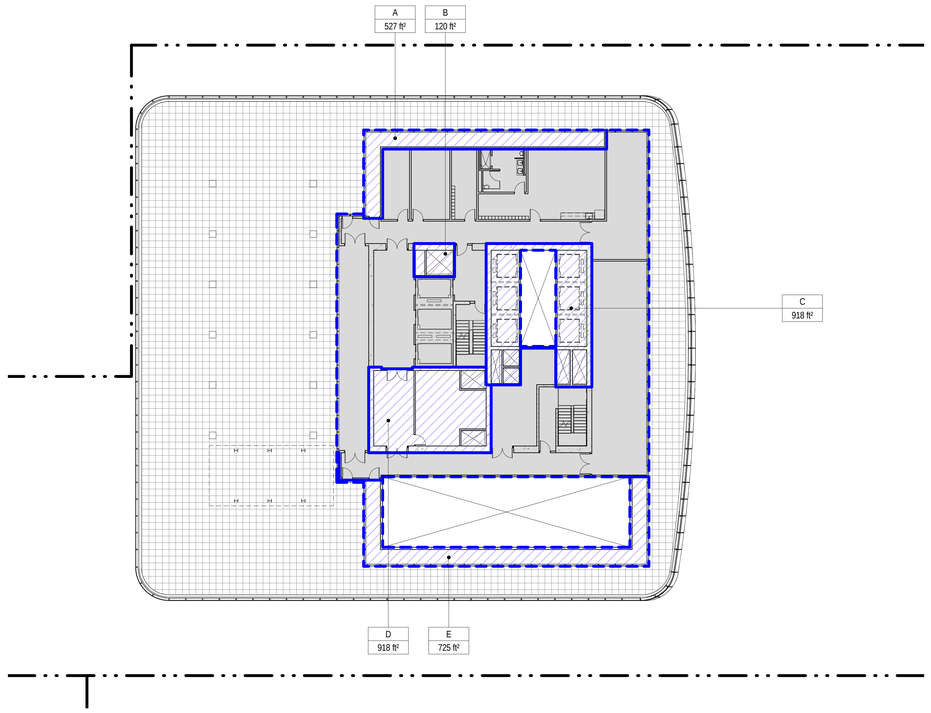


ZONING SCHEDULE - MECHANICAL PENTHOUSE ROOF	
ZONING DEDUCTIONS	1534 ft²
GROSS FLOOR AREA	1534 ft²

3 MECH. PENTHOUSE ROOF PLAN

SCALE: 1/16" = 1'-0"



AREA DEDUCTIONS LEVEL 69		
NAME	TYPE	AREA
A	M	527 ft²
B	E/P	120 ft²
C	M/E/P	918 ft²
D	M/E/P	918 ft²
E	M	725 ft²
Grand total		3208 ft²

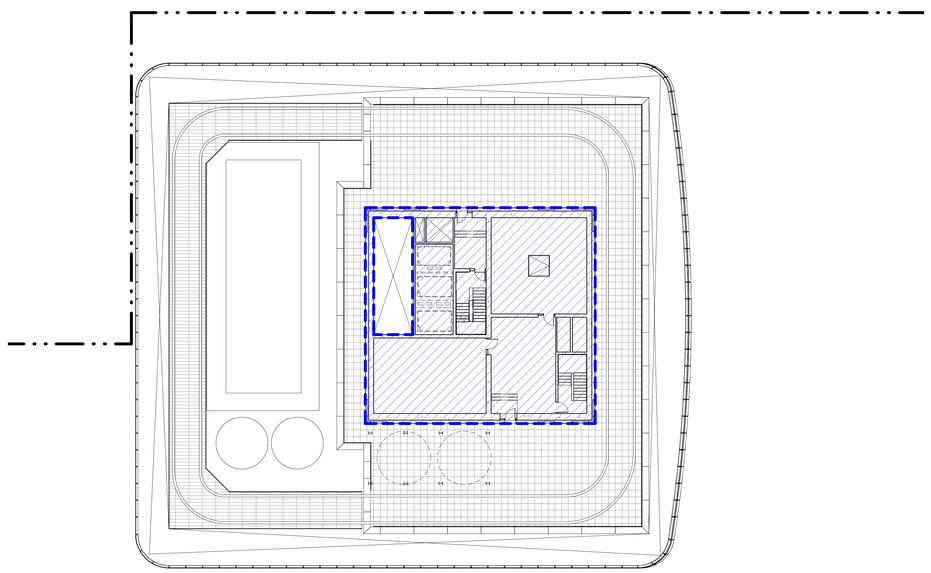
ZONING SCHEDULE - LEVEL 69	
ZONING DEDUCTIONS	3208 ft²
ZONING FLOOR AREA	6635 ft²
GROSS BUILDING AREA	9843 ft²

1 LEVEL 69 PLAN

SCALE: 1/16" = 1'-0"

ZONING LEGENDS

- GROSS BUILDING AREA
- ZONING AREA DEDUCTIONS
- ZONING FLOOR AREA
- RETAIL
- MR MECHANICAL ROOM
- M MECHANICAL
- E ELECTRICAL/TEL/IT
- P PLUMBING
- EM ELEVATOR MACHINE ROOM



ZONING SCHEDULE - MECHANICAL PENTHOUSE	
ZONING DEDUCTIONS	4003 ft²
GROSS FLOOR AREA	4003 ft²

2 MECH. PENTHOUSE PLAN

SCALE: 1/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geotechnical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant

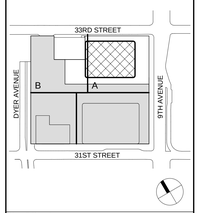
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



Seal & Signature:

REGISTERED ARCHITECT
ROBERT SCOTT DUNCAN
LICENSE NO. 15649
STATE OF NEW YORK

Warning: It is a violation of the New York State Architecture Law §6512(2) for any person, unless they are acting under the direction of a Licensed Architect, to alter this item in any way.

No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

ZONING FLOOR AREA DEDUCTIONS - LEVEL 69 & PENTHOUSE ROOF PLANS

Project No.: 207120	B-SCAN Sheet No.: Z-121.00
Date: 20 JUN 2014	Sheet No.: Z-121
Scale: 1/16" = 1'-0"	
File No.: Z-121	Page No.: 28 OF 28

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MEP DRAWING INDEX

DRAWING NUMBER	DRAWING TITLE	ISSUED DRAWING DATES 09.12.2014			
EN-001.00	NYC EC COMPLIANCE COVER SHEET	•			
EN-002.00	NYC EC COMPLIANCE MANDATORY MEASURES SHEET NO. 1	•			
EN-003.00	NYC EC COMPLIANCE MANDATORY MEASURES SHEET NO. 2	•			
EN-004.00	NYC EC COMPLIANCE ENERGY MODELING AND PRESCRIPTIVE PATH SHEET NO. 1	•			
EN-005.00	NYC EC COMPLIANCE ENERGY MODELING AND PRESCRIPTIVE PATH SHEET NO. 2	•			
EN-100.00	NYC EC COMPLIANCE LIGHTING CELLAR B1 FLOOR PLAN - PART A	•			
EN-101.00	NYC EC COMPLIANCE LIGHTING CELLAR B FLOOR PLAN - PART A	•			
EN-102.00	NYC EC COMPLIANCE LIGHTING CELLAR B FLOOR PLAN - PART B	•			
EN-103.00	NYC EC COMPLIANCE LIGHTING LEVEL 1 FLOOR PLAN	•			
EN-104.00	NYC EC COMPLIANCE LIGHTING LEVEL 3 FLOOR PLAN	•			
EN-105.00	NYC EC COMPLIANCE LIGHTING LEVEL 4 FLOOR PLAN	•			
EN-106.00	NYC EC COMPLIANCE LIGHTING LEVEL 5 FLOOR PLAN	•			
EN-107.00	NYC EC COMPLIANCE LIGHTING LEVEL 6-16 FLOOR PLAN	•			
EN-108.00	NYC EC COMPLIANCE LIGHTING LEVEL 17 FLOOR PLAN	•			
EN-109.00	NYC EC COMPLIANCE LIGHTING LEVEL 18 FLOOR PLAN	•			
EN-110.00	NYC EC COMPLIANCE LIGHTING LEVEL 19-20 FLOOR PLAN	•			
EN-111.00	NYC EC COMPLIANCE LIGHTING LEVEL 21-27 FLOOR PLAN	•			
EN-112.00	NYC EC COMPLIANCE LIGHTING LEVEL 28 FLOOR PLAN	•			
EN-113.00	NYC EC COMPLIANCE LIGHTING LEVEL 29 FLOOR PLAN	•			
EN-114.00	NYC EC COMPLIANCE LIGHTING LEVEL 30 FLOOR PLAN	•			
EN-115.00	NYC EC COMPLIANCE LIGHTING LEVEL 31 FLOOR PLAN	•			
EN-116.00	NYC EC COMPLIANCE LIGHTING LEVEL 32 FLOOR PLAN	•			
EN-117.00	NYC EC COMPLIANCE LIGHTING LEVEL 33-38 FLOOR PLAN	•			
EN-118.00	NYC EC COMPLIANCE LIGHTING LEVEL 39 FLOOR PLAN	•			
EN-119.00	NYC EC COMPLIANCE LIGHTING LEVEL 40-41 FLOOR PLAN	•			
EN-120.00	NYC EC COMPLIANCE LIGHTING LEVEL 42 FLOOR PLAN	•			
EN-121.00	NYC EC COMPLIANCE LIGHTING LEVEL 43-48 FLOOR PLAN	•			
EN-122.00	NYC EC COMPLIANCE LIGHTING LEVEL 49 FLOOR PLAN	•			
EN-123.00	NYC EC COMPLIANCE LIGHTING LEVEL 50-51 FLOOR PLAN	•			
EN-124.00	NYC EC COMPLIANCE LIGHTING LEVEL 52 FLOOR PLAN	•			
EN-125.00	NYC EC COMPLIANCE LIGHTING LEVEL 53 FLOOR PLAN	•			
EN-126.00	NYC EC COMPLIANCE LIGHTING LEVEL 54 FLOOR PLAN	•			
EN-127.00	NYC EC COMPLIANCE LIGHTING LEVEL 55 FLOOR PLAN	•			
EN-128.00	NYC EC COMPLIANCE LIGHTING LEVEL 56 FLOOR PLAN	•			
EN-129.00	NYC EC COMPLIANCE LIGHTING LEVEL 57-58 FLOOR PLAN	•			
EN-130.00	NYC EC COMPLIANCE LIGHTING LEVEL 59 FLOOR PLAN	•			
EN-131.00	NYC EC COMPLIANCE LIGHTING LEVEL 60-61 FLOOR PLAN	•			
EN-132.00	NYC EC COMPLIANCE LIGHTING LEVEL 62 FLOOR PLAN	•			
EN-133.00	NYC EC COMPLIANCE LIGHTING LEVEL 63 FLOOR PLAN	•			
EN-134.00	NYC EC COMPLIANCE LIGHTING LEVEL 64-67 FLOOR PLAN	•			
EN-135.00	NYC EC COMPLIANCE LIGHTING LEVEL 68 FLOOR PLAN	•			
EN-136.00	NYC EC COMPLIANCE LIGHTING LEVEL 69 FLOOR PLAN	•			
EN-137.00	NYC EC COMPLIANCE LIGHTING ROOF PLAN MECH PENTHOUSE	•			
EN-138.00	NYC EC COMPLIANCE LIGHTING ROOF PLAN MECH PENTHOUSE ROOF	•			
EN-139.00	NYC EC COMPLIANCE LIGHTING SYSTEM CONTROLS SHEET NO. 1	•			

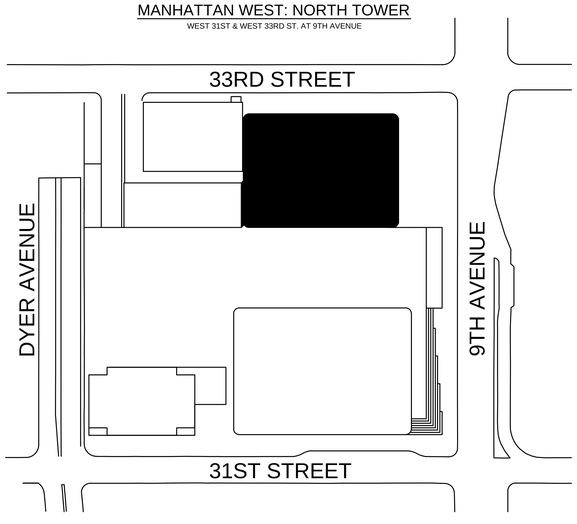
ARCH DRAWING INDEX

DRAWING NUMBER	DRAWING TITLE	ISSUED DRAWING DATES 09.12.2014		
EN-200.00	ENCLOSURE ASSEMBLIES	•		

LIGHTING DEVICE SYMBOLS

SYMBOL	LIGHTING DEVICES
$P	PILOT LIGHT SWITCH
(S)	CEILING MOUNTED SENSOR
S 3 V	VACANCY SENSOR SWITCH
$ OR	LIGHTING RELAY PANEL OVERRIDE SWITCH
EMNL	EMERGENCY NIGHT LIGHT

MANHATTAN WEST: NORTH TOWER
WEST 31ST & WEST 33RD ST. AT 9TH AVENUE



PLOT PLAN
NOT TO SCALE

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE DESIGNATION	SYMBOL	FIXTURE DESCRIPTION	LOCATION	UNITS	CONTROL GEAR	TOTAL SYSTEM WATTS
F1		LINEAR LED RECESSED DOWNLIGHT	RESTROOMS	PER FT.	ELECTRONIC DRIVER	7 W/FT.
LT01		RECESSED LED FIXED DOWNLIGHT. NOMINAL 4-1/2" SQUARE APERTURE AND 10" HOUSING DEPTH. SEMI-SPECULAR, NON-IRIDESCENT CLEAR ALZAK REFLECTOR WITH WHITE PAINTED OVERLAP SELF-FLANGE. MICROPRISM GLASS LENS. DIMMABLE.	GROUNDFLOOR LOBBY	EA.	DIMMING BALLAST	34 W
F2		LINEAR CORE VAPOR PROOF	SHOWERS	PER FT.	REMOTE DIMMING DRIVER	3.25 W/FT.
LT03		RECESSED LED WALLWASHER. NOMINAL 4-1/2" SQUARE APERTURE AND 11" HOUSING DEPTH. SEMI-SPECULAR, NON-IRIDESCENT CLEAR ALZAK REFLECTOR WITH WHITE PAINTED OVERLAP SELF-FLANGE. FROSTED MICROPRISM GLASS LENS. DIMMABLE.	GROUNDFLOOR LOBBY	EA.	DIMMING BALLAST	34 W
FA		5" COMPACT FLUORESCENT SEMI-RECESSED DOWNLIGHT	RESTROOMS	EA.	DIMMING BALLAST	32 W
FB		6" SQUARE COMPACT FLUORESCENT RECESSED DOWNLIGHT	ELEVATOR LOBBY	EA.	DIMMING BALLAST	26 W
FG		PENDANT-MOUNTED TWO LAMP FLUORESCENT GASKETED FIXTURE.	LOADING DOCK	EA.	ELECTRONIC BALLAST	120 W
FJ		LED WALL MOUNTED	PLENUM	EA.	REMOTE DIMMING DRIVER	26 W
FK		4' STRIP INDUSTRIAL FLUORESCENT PENDENT	GENERAL	EA.	ELECTRONIC BALLAST	32 W
FS		4' LINEAR FLUORESCENT LENSED SURFACE	STAIRWELLS	EA.	DIMMING DRIVER	32 W
FV		4' LINEAR INDUSTRIAL SURFACE	ELEVATOR/SUMP PUMP PIT	EA.	DIMMING DRIVER	64 W
EX		RECESSED WALL- OR CEILING-MOUNTED LED EXIT SIGN	GENERAL	PER FACE	INTEGRAL BATTERY PACK	5 W/ FACE (MAX)

ENERGY ANALYSIS
2011 NEW YORK CITY ENERGY CONSERVATION CODE CHAPTER 5
CLIMATE ZONE 4A

2011 NEW YORK CITY ENERGY CONSERVATION CODE
PROGRESS INSPECTIONS FOR ENERGY CODE COMPLIANCE – COMMERCIAL BUILDINGS

	Inspection/Test	Periodic (minimum)	Reference Standard (See ECC Chapter 6) or Other Criteria	ECC or Other Citation
IIA	**Envelope Inspections**			
IIA1	Protection of exposed foundation insulation: Insulation shall be visually inspected to verify proper protection where applied to the exterior of basement or cellar walls, crawl-space walls and/or the perimeter of slab-on-grade floors.	As required during foundation work and prior to backfill	Approved construction documents	303.2.1; ASHRAE 90.1 – 5.8.1.7
IIA2	Insulation placement and R-values: Installed insulation for each component of the conditioned space envelope and at junctions between components shall be visually inspected to ensure that the R-values are marked, that such R-values conform to the R-values identified in the construction documents and that the insulation is properly installed. Certifications for unmarked insulation shall be similarly visually inspected.	As required to verify continuous enclosure while walls, ceilings and floors are open	Approved construction documents	303.1, 303.1.1, 303.1.2, 502.1, 502.2; ASHRAE 90.1 –5.5, 5.6 or 11; 5.8.1
IIA3	Fenestration thermal values and product ratings: U-factors and SHGC values of installed fenestration shall be visually inspected for conformance with the U-factors and SHGC values identified in the construction drawings by verifying the manufacturer's NFRC labels or, where not labeled, using the ratings in ECC Tables 303.1.3(1), (2) and (3). Where ASHRAE 90.1 is used, visible light transmittance values shall also be verified.	As required during installation	Approved construction documents; NFRC 100, NFRC 200	303.1, 303.1.3, 502.3; ASHRAE 90.1 –5.5; 5.6 or 11; 5.8.2
IIA4	Fenestration and door assembly product ratings for air leakage: Windows and sliding or swinging door assemblies, except site-built windows and/or doors, shall be visually inspected to verify that installed assemblies are listed and labeled by the manufacturer to the referenced standard. For curtain wall, storefront glazing, commercial entrance doors and revolving doors, the testing reports shall be reviewed to verify that the installed assembly complies with the standard cited in the approved plans.	As required during installation; prior to final construction inspection	NFRC 400, AAMA/WDMA/CSA 101/I.S.2/A440 ASTM E283; ANSI/DASMA 105	502.4; ASHRAE 90.1 –5.4.3.2
IIA5	Fenestration areas: Dimensions of windows, doors and skylights shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents	502.3; ASHRAE 90.1 – 5.5.4, 5.6 or 11
IIA6	Sealing: Openings and penetrations in the building envelope, including site-built fenestration and doors, shall be visually inspected to verify that a continuous air barrier around the envelope forms an air-tight enclosure. The progress inspector shall visually inspect to verify that materials and/or assemblies have been tested and meet the requirements of the respective standards, or that the building is tested and meets the requirements of the standard, in accordance with the standard(s) cited in the approved plans.	As required during construction	Approved construction documents; ASTM E2178, ASTM E2357, ASTM E1677, ASTM E779, ASTM E283.	502.4.3, 502.4.7; ASHRAE 90.1 – 5.4.3.1
IIA7	Projection factors: Where the energy analysis utilized a projection factor > 0, the projection dimensions of overhangs, eaves or permanently attached shading devices shall be verified for conformance with approved plans by visual inspection.	Prior to final construction inspection	Approved construction documents, including energy analysis	502.3; ASHRAE 90.1 – 5.5.4, 5.6 or 11
IIA8	Loading dock weatherseals: Weatherseals at loading docks shall be visually verified.	Prior to final construction inspection	Approved construction documents	502.4.5; ASHRAE 90.1 – 5.4.3.3
IIA9	Building entrance vestibules: Required entrance vestibules shall be visually inspected for proper operation.	Prior to final construction inspection	Approved construction documents	502.4.6; ASHRAE 90.1 – 5.4.3.4
IIB	**Mechanical and Service Water Heating Inspections**			
IIB1	Fireplaces: Provision of combustion air and tight-fitting fireplace doors shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents; ANSI Z21.60 (see also MC 904), ANSI Z21.50	303.1.5; BC 2111; MC Chapters 7, 9; FGC Chapter
IIB2	Outdoor air intakes and exhaust openings: Dampers for stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be visually inspected to verify that such dampers, except where permitted to be gravity dampers, comply with approved construction drawings. Manufacturer's literature shall be reviewed to verify that the product has been tested and found to meet the standard.	As required during installation	Approved construction documents; AMCA 500D	502.4.4; ASHRAE 90.1 – 6.4.3.4
IIB3	HVAC, service water heating and pool equipment sizing and performance: Equipment sizing, efficiencies and other performance factors of all major equipment units, as determined by the applicant of record, and no less than 15% of minor equipment units, shall be verified by visual inspection and, where necessary, review of manufacturer's data. Pool heaters and covers shall be verified by visual inspection.	Prior to final plumbing and construction inspection	Approved construction documents	503.2, 504.2, 504.7; ASHRAE 90.1 – 6.3, 6.4.1, 6.4.2, 6.8; 7.4, 7.8
IIB4	HVAC system controls and economizers and service hot water system controls: No less than 20% of each type of required controls and economizers shall be verified by visual inspection and tested for functionality and proper operation. Such controls shall include, but are not limited to: Thermostatic; Set point overlap restriction; Off-hour; Shutoff damper; Snow-melt system; Demand control systems; Outdoor heating systems; Zones; Economizers; Air systems; Variable air volume fan; Hydronic systems; Heat rejection equipment fan speed; Complex mechanical systems serving multiple zones; Ventilation; Energy recovery systems; Hot gas bypass limitation; Temperature; Service water heating; Hot water system; Pool heater and time switches; Exhaust hoods; Radiant heating systems. Controls with seasonally dependent functionality: Controls whose complete operation cannot be demonstrated due to prevailing weather conditions typical of the season during which progress inspections will be performed shall be permitted to be signed off for the purpose of a Temporary Certificate of Occupancy with only a visual inspection, provided, however, that the progress inspector shall perform a supplemental inspection where the controls are visually inspected and tested for functionality and proper operation during the next immediate season thereafter. The owner shall provide full access to the progress inspector within two weeks of the progress inspector's request for such access to perform the progress inspection. For such supplemental inspections, the Department shall be notified by the approved progress inspection agency of any unresolved deficiencies in the installed work within 180 days of such supplemental inspection.	After installation and prior to final electrical and construction inspection, except that for controls with seasonally dependent functionality, such testing shall be performed before sign-off for issuance of a Final Certificate of Occupancy	Approved construction documents, including control system narratives; ASHRAE Guideline 1: The HVAC Commissioning Process where applicable	503.2.4, 503.2.5.1, 503.2.1.1, 503.3, 503.4, 504.3, 504.6, 504.7; ASHRAE 90.1 – 6.3, 6.4, 6.5, 6.7.2.4, 7.4.4, 7.4.5
IIB5	Duct, plenum and piping insulation and sealing: Installed duct and piping insulation shall be visually inspected to verify proper insulation placement and values. Joints, longitudinal and transverse seams and connections in ductwork shall be visually inspected for proper sealing.	After installation and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA Duct Construction Standards, Metal and Flexible	503.2.7, 503.2.8, 504.5; ASHRAE 90.1 – 6.3, 6.4.4.2, 6.8.2, 6.8.3; 7.4.3
IIB6	Air leakage testing for high-pressure duct systems: For duct systems designed to operate at static pressures in excess of 3 inches w.g. (746 Pa), representative sections, as determined by the progress inspector, totaling at least 25% of the duct area, per ECC 503.2.7.1.3, shall be tested to verify that actual air leakage is below allowable amounts.	After installation and sealing and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA HVAC Air Duct Leakage Test Manual	503.2.7.1.3; ASHRAE 90.1 – 6.4.4.2
IIC	**Electrical Power and Lighting Systems**			
IIC1	Electrical metering: The presence and operation of individual meters or other means of monitoring individual apartments shall be verified by visual inspection for all apartments.	Prior to final electrical and construction inspection	Approved construction documents	505.7
IIC2	Lighting in dwelling units: Lamps in permanently installed lighting fixtures shall be visually inspected to verify compliance with high-efficacy requirements.	Prior to final electrical and construction inspection	Approved construction documents	505.5.3
IIC3	Interior lighting power: Installed lighting shall be verified for compliance with the lighting power allowance by visual inspection of fixtures, lamps, ballasts and transformers.	Prior to final electrical and construction inspection	Approved construction documents	505.5; ASHRAE 90.1 –9.1, 9.2, 9.5, 9.6; 1RCNY §101-07(c)(3)(v)(C)4
IIC4	Exterior lighting: Installed lighting shall be verified for compliance with source efficacy and/or the lighting power allowance by visual inspection of fixtures, lamps, ballasts and relevant transformers.	Prior to final electrical and construction inspection	Approved construction documents	505.6; ASHRAE 90.1 – 9.4.4, 9.4.5; 1RCNY §101-07(c)(3)(v)(C)4
IIC5	Lighting controls: Each type of required lighting controls, including: occupant sensors; manual interior lighting controls; light-reduction controls; automatic lighting shut-off; daylight zone controls; sleeping unit controls; exterior lighting controls, shall be verified by visual inspection and tested for functionality and proper operation.	Prior to final electrical and construction inspection	Approved construction documents, including control system narratives	505.2, 505.2.2.2; ASHRAE 90.1 – 9.4.1, 9.4.1.2 (as modified by section ECC A102)
IIC6	Exit signs: Installed exit signs shall be visually inspected to verify that the label indicates that they do not exceed maximum permitted wattage.	Prior to final electrical and construction inspection	Approved construction documents	505.4; ASHRAE 90.1 – 9.4.3
IIC7	Tandem wiring: Tandem wiring shall be tested for functionality.	Prior to final electrical and construction inspection	Approved construction documents	505.3; ASHRAE 90.1 – 9.4.2
IIC8	Electric motors (including but not limited to fan motors): Where required by the construction documents for energy code compliance, motor listing or labels shall be visually inspected to verify that they comply with the respective energy requirements in the construction documents.	Prior to final electrical and construction inspection	Approved construction documents	503.2.10; ASHRAE 90.1 – 10.4
IID	**Other**			
IID1	Maintenance information: Maintenance manuals for mechanical, service hot water and electrical equipment and systems requiring preventive maintenance shall be reviewed for applicability to installed equipment and systems before such manuals are provided to the owner. Labels required for such equipment or systems shall be inspected for accuracy and completeness.	Prior to sign-off or issuance of Final Certificate of Occupancy	Approved construction documents, including electrical drawings where applicable; ASHRAE Guideline 4: Preparation of Operating and Maintenance Documentation for Building Systems	303.3, 503.2.9.3; ASHRAE 90.1 – 4.2.2.3, 6.7.2.2, 8.7.2
Note:				
(i)	Energy Analysis of Constructed Conditions. In accordance with Section 28-104.3 of the Administrative Code and section ECC 103.4, if constructed work differs from the last-approved full energy analysis, an as-built energy analysis shall be submitted to the Department, listing the actual values used in the building for all applicable Energy Code-regulated items and demonstrating that the building complies with the Energy Code. Such energy analysis shall be signed and sealed by a registered design professional. The progress inspector shall certify that to the best of his or her knowledge and belief the building as built complies with such signed and sealed energy analysis and construction drawings for energy code compliance; where no trade-offs have been used among disciplines, more than one registered design professional may sign and seal the elements of the energy analysis. The energy analysis shall be approved or accepted by the Department prior to sign-off.			

PROFESSIONAL'S STATEMENT

TO THE BEST OF OUR KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

BUILDING DEPARTMENT NOTE:

THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

SHEET NOTES

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Acoustical Consultant
Cerami & Associates
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Vibration Consultant
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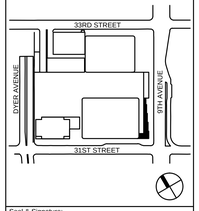
Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
NYC EC COMPLIANCE COVER SHEET

Project No.: 14830.A.000
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NEW YORK STATE ENERGY CODE COMPLIANCE
SECTION 5 - BUILDING ENVELOPE
MANDATORY PROVISIONS

STANDARD: ASHRAE 90.1-2007
CLIMATE ZONE: 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE AND CITATION
5.4.1: INSULATION	INSULATION SPECIFIED MEETS THE MINIMUM REQUIREMENTS	INSULATION REQUIRED FOR ROOFS, WALLS, ETC... MEETS THE MINIMUM REQUIREMENTS OF TABLE 5.8.1.1 THROUGH 5.8.1.9 OF ASHRAE 90.1.
5.4.2: FENESTRATION AND DOORS	FENESTRATION AND DOOR PERFORMANCE OF THE EQUIPMENT SPECIFIED HAS BEEN DETERMINED BY A NATIONALLY RECOGNIZED ACCREDITATION ORGANIZATION.	FENESTRATION AND DOOR PERFORMANCE OF PRODUCTION LINE EQUIPMENT SHALL BE DETERMINED BY A LABORATORY ACCREDITED BY A NATIONALLY RECOGNIZED ACCREDITATION ORGANIZATION.
5.4.3: AIR LEAKAGE		
5.4.3.1: BUILDING ENVELOP SEALING	THE BUILDING ENVELOPE OPENINGS HAVE BEEN SPECIFIED TO MINIMIZE AIR LEAKAGE.	ALL JOINTS, JUNCTIONS, OPENINGS, PENETRATIONS, ETC.. OF THE BUILDING ENVELOP SHALL BE SEALED CAULKED, GASKETED, OR WEATHER-STRIPPED TO MINIMIZE AIR LEAKAGE.
5.4.3.2: FENESTRATION AND DOORS	THE AIR LEAKAGE DOES NOT EXCEED THE MAXIMUM OF 1.0 CFM/FT^2 FOR GLAZED SWINGING ENTRANCE DOORS AND 0.4 CFM/FT^2 FOR ALL OTHER PRODUCTS WHEN TESTED IN ACCORDANCE WITH NFRC 400.	AIR LEAKAGE FOR FENESTRATION AND DOORS SHALL BE DETERMINED IN ACCORDANCE WITH NFRC 400. AIR LEAKAGE SHALL NOT EXCEED 1.0 CFM/FT^2 FOR GLAZED SWINGING ENTRANCE DOORS AND 0.4 CFM/FT^2 FOR ALL OTHER PRODUCTS.
5.4.3.3: LOADING DOCK WEATHERSEALS	LOADING DOCK DOORS HAVE BEEN SPECIFIED WITH WEATHER-STRIPPING.	CARGO DOORS AND LOADING DOCKS DOORS SHALL BE EQUIPPED WITH WEATHERSEALS TO RESTRICT INFILTRATION WHEN VEHICLES ARE PARKED IN THE DOORWAY.
5.4.3.4: VESTIBULES	VESTIBULES MEETING THESE REQUIREMENTS HAVE BEEN DESIGNED.	A DOOR THAT SEPARATES CONDITIONED SPACE FROM THE EXTERIOR SHALL BE PROTECTED WITH AN ENCLOSED VESTIBULE, WITH ALL DOORS OPENING INTO AND OUT OF THE VESTIBULE EQUIPPED WITH SELF-CLOSING DEVICES. THE INTERIOR AND EXTERIOR DOOR SHALL HAVE A MINIMUM DISTANCE OF 7 FEET BETWEEN THEM WHEN BOTH DOORS ARE CLOSED.

NEW YORK STATE ENERGY CODE COMPLIANCE
SECTION 7 - SERVICE WATER HEATING
MANDATORY PROVISIONS

STANDARD: ASHRAE 90.1-2007
CLIMATE ZONE: 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE AND CITATION
7.4.1: LOAD CALCULATIONS	SYSTEM AND EQUIPMENT HAS BEEN SIZED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND ACCEPTED ENGINEERS STANDARDS.	SYSTEMS AND EQUIPMENT SIZED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND ACCEPTED ENGINEERS STANDARDS.
7.4.2: EQUIPMENT EFFICIENCY	SPECIFIED DOMESTIC HOT WATER HEATERS ARE BOILERS WATER TO DOMESTIC HOT WATER AND ARE NO APPLICABLE TO A MINIMUM PERFORMANCE RATING EFFICIENCY	EQUIPMENT SHOWN IN TABLES 7.8 SHALL HAVE A MINIMUM PERFORMANCE AT THE SPECIFIED RATING CONDITIONS IN ACCORDANCE WITH THE SPECIFIED TEST PROCEDURE
7.4.3: PIPE INSULATION	DOMESTIC HOT WATER PIPING MINIMUM INSULATION IS SPECIFIED AS FOLLOWS: PIPING WITH DIAMETER < 1 1/2" = 1.0" PIPING WITH DIAMETER >= 1 1/2" = 1.0"	INSULATION SHALL BE INSTALLED AS PER INDUSTRY-ACCEPTED STANDARDS. PIPING SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE 6.8.3 OF ASHRAE 90.1.
7.4.4: SERVICE WATER HEATING CONTROLS		
7.4.4.1: TEMPERATURE CONTROLS	SPECIFIED DOMESTIC HOT WATER HEATERS HAVE A STORAGE TEMPERATURE CONTROL SETTING OF 140° F.	TEMPERATURE CONTROLS SHALL BE PROVIDED THAT ALLOW FOR STORAGE TEMPERATURE ADJUSTMENT FROM A MINIMUM OF 120°F TO A MAXIMUM TEMPERATURE COMPATIBLE FOR INTENDED USE.
7.4.4.2: TEMPERATURE MAINTENANCE CONTROLS	SPECIFIED DOMESTIC WATER HEATER SYSTEM HAS AN AUTOMATIC CONTROL SYSTEM THAT TURNS OFF THE USAGE TEMPERATURE WHEN NOT REQUIRED.	SYSTEMS DESIGNED TO MAINTAIN USAGE TEMPERATURES IN HOT WATER PIPES SHALL BE EQUIPPED WITH AUTOMATIC CONTROLS THAT CAN SWITCH OFF THE USAGE TEMPERATURE WHEN HOT WATER IS NOT REQUIRED.
7.4.4.3: OUTLET TEMPERATURE CONTROLS	THE FIXTURE DELIVERY TEMPERATURE IS LIMITED TO NOT GREATER THAN 110°F VIA A MIXING VALVE.	THE MAXIMUM TEMPERATURE OF WATER DELIVERY FOR A FIXTURE SHALL BE 110°F.
7.4.4.4: CIRCULATING PUMP CONTROLS	CONTROLS TO LIMIT THE CIRCULATING PUMP RUN TIME TO A MAXIMUM OF FIVE MINUTES HAS BEEN PROVIDED.	WHEN USED TO MAINTAIN STORAGE TANK TEMPERATURE, CONTROLS TO LIMIT CIRCULATING PUMP OPERATION FROM START OF HEATING CYCLE TO 5 MIN AFTER END OF HEATING CYCLE SHALL BE PROVIDED.
7.4.5: POOLS	NOT INCLUDED IN THIS APPLICATION.	NOT INCLUDED IN THIS APPLICATION.
7.4.6: HEAT TRAPS	NOT INCLUDED IN THIS APPLICATION.	VERTICAL PIPING SERVING STORAGE TYPE HEATERS AND STORAGE HEATERS WITHOUT AN INTEGRAL HEAT TRAP AND SERVING A NONRECIRCULATING SYSTEM SHALL HAVE INLET AND OUTLET HEAT TRAPS.

NEW YORK STATE ENERGY CODE COMPLIANCE
SECTION 8 - POWER
MANDATORY PROVISIONS

STANDARD: ASHRAE 90.1-2007
CLIMATE ZONE: 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE AND CITATION
8.4.1: VOLTAGE DROP		
8.4.1.1: FEEDERS	FEEDER CONDUCTORS ARE SIZED FOR A VOLTAGE DROP OF LESS THAN 2%.	FEEDER CONDUCTORS SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 2% AT DESIGN LOAD.
8.4.1.2: BRANCH CIRCUITS	BRANCH CIRCUIT CONDUCTORS ARE SIZED FOR A VOLTAGE DROP OF LESS THAN 3% AT DESIGN LOAD.	BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3% AT DESIGN LOAD.

NEW YORK STATE ENERGY CODE COMPLIANCE
SECTION 6 - HEATING VENTILATING AND AIR CONDITIONING
MANDATORY PROVISIONS

STANDARD: ASHRAE 90.1-2007
CLIMATE ZONE: 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE AND CITATION
6.4.1: EQUIPMENT EFFICIENCIES, VERIFICATION & LABELING REQUIREMENTS		
6.4.1.1: MINIMUM EQUIPMENT EFFICIENCIES - LIST EQUIPMENT - STANDARD RATING CONDITIONS	EQUIPMENT HAS BEEN SELECTED TO MEET THE MINIMUM PERFORMANCE. SEE TABLE 1.	EQUIPMENT SHOWN IN TABLES 6.8.1A TO 6.8.1G SHALL HAVE A MINIMUM PERFORMANCE AT THE SPECIFIED RATING CONDITIONS IN ACCORDANCE WITH THE SPECIFIED TEST PROCEDURE
6.4.1.2: MINIMUM EQUIPMENT EFFICIENCIES - LIST EQUIPMENT - NONSTANDARD RATING CONDITIONS	EQUIPMENT HAS BEEN SELECTED TO MEET THE MINIMUM PERFORMANCE. SEE TABLE 2.	PERFORMANCE SHOWN IN TABLES 6.8.1H TO 6.8.1J SHALL BE MET AT THE GIVEN EQUIPMENT SIZE.
6.4.1.3: EQUIPMENT NOT LISTED		EQUIPMENT NOT LISTED IN TABLES 6.8.1A TO 6.8.1J MAY BE USED.
6.4.1.4: VERIFICATION OF EQUIPMENT EFFICIENCIES	EQUIPMENT EFFICIENCY HAS BEEN VERIFIED	EQUIPMENT EFFICIENCY INFORMATION SUPPLIED BY MANUFACTURES SHALL BE VERIFIED.
6.4.1.5: LABELING	EQUIPMENT IS COVERED BY THE NAECA OF 1987	MECHANICAL EQUIPMENT THAT IS NOT COVERED BY THE US NATIONAL APPLIANCE ENERGY CONSERVATION ACT (NAECA) OF 1987 SHALL CARRY A PERMANENT LABEL INSTALLED BY THE MANUFACTURER STATING THAT THE EQUIPMENT COMPLIES WITH THE REQUIREMENTS OF ASHRAE 90.1.
6.4.2: LOAD CALCULATIONS	SYSTEM AND EQUIPMENT HAS BEEN SIZED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND ACCEPTED ENGINEERS STANDARDS.	SYSTEMS AND EQUIPMENT SIZED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND ACCEPTED ENGINEERS STANDARDS.
6.4.3: CONTROLS		
6.4.3.1: ZONE THERMOSTATIC CONTROLS		
6.4.3.1.1: GENERAL	EACH HEATING AND COOLING ZONE IS THERMOSTATICALLY CONTROLLED.	THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE INDIVIDUALLY CONTROLLED BY THERMOSTATIC CONTROLS RESPONDING TO TEMPERATURE WITHIN THE ZONE.
6.4.3.1.2: DEAD BAND	SEE TABLE 3	ZONE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEAD BAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT-OFF OR REDUCED TO A MINIMUM.
6.4.3.2: SET POINT OVERLAP RESTRICTIONS	THE SYSTEMS PROVIDED AS SPECIFIED HAVING CONTROLS WHICH PREVENT THE HEAT SET POINT FROM EXCEEDING THE COOL SET POINT - THE DEADBAND.	MEANS SHALL BE PROVIDED TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT MINUS ANY APPLICABLE PROPORTIONAL BAND.
6.4.3.3: OFF-HOUR CONTROLS		
6.4.3.3.1: AUTOMATIC SHUTDOWN	SEE TABLE 3	HVAC SYSTEM SHALL BE EQUIPPED WITH AN AUTOMATIC COMPLYING WITH SECTION 6.4.3.2.1
6.4.3.3.2: SETBACK CONTROLS	SEE TABLE 3	HVAC SYSTEM SHALL BE EQUIPPED WITH A TEMPERATURE RESET FUNCTION COMPLYING WITH SECTION 6.4.3.2.2
6.4.3.3.3: OPTIMAL START CONTROLS	SEE TABLE 3	INDIVIDUAL AIR DISTRIBUTION SYSTEMS WITH A TOTAL DESIGN SUPPLY AIR CAPACITY OF 10,000 CFM SHALL HAVE OPTIMAL START CONTROLS.
6.4.3.3.4: ZONE ISOLATION	SEE TABLE 3	HVAC SYSTEM SHALL BE DIVIDED IN INDIVIDUAL ZONES COMPLYING WITH SECTION 6.4.3.2.4
6.4.3.4: VENTILATION SYSTEM CONTROLS		
6.4.3.4.1: STAIR AND SHAFT VENT	THE STAIR AND SHAFT VENTS AS SPECIFIED COMPLY WITH THESE REQUIREMENTS.	STAIR AND ELEVATOR SHAFT VENTS SHALL BE EQUIPPED WITH MOTORIZED DAMPERS THAT ARE CAPABLE OF BEING AUTOMATICALLY CLOSED DURING NORMAL OPERATION AND ARE INTERLOCKED TO BE OPEN AS REQUIRED BY FIRE AND SMOKE DETECTION SYSTEMS.
6.4.3.4.2: GRAVITY HOODS, VENTS & VENTILATORS	THE GRAVITY HOODS, VENTS AND VENTILATORS AS SPECIFIED COMPLY WITH THESE REQUIREMENTS.	OUTDOOR AIR SUPPLY AND EXHAUST HOODS, VENTS AND VENTILATORS SHALL BE EQUIPPED WITH MOTORIZED DAMPERS THAT WILL AUTOMATICALLY SHUT WHEN THE SPACES SERVED ARE NOT IN USE.
6.4.3.4.3: SHUTOFF DAMPER CONTROL	SEE TABLE 3	OUTDOOR AIR SUPPLY AND EXHAUST SYSTEMS SHALL BE EQUIPPED WITH MOTORIZED DAMPERS THAT WILL AUTOMATICALLY SHUT WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE.
6.4.3.4.4: DAMPERS	THE DAMPERS HAVE BEEN SPECIFIED TO MEET THE MAXIMUM LEAKAGE REQUIREMENTS IN TABLE 6.4.3.3.4.	THE MAXIMUM LEAKAGE OF REQUIRED DAMPERS SHALL HAVE A MAXIMUM LEAKAGE RATE WHEN TESTED IN ACCORDANCE WITH AMCA STANDARD 500 AS INDICATED IN TABLE 6.4.3.3.4
6.4.3.4.5: VENTILATION FAN CONTROLS	THE VENTILATION FANS AS SPECIFIED COMPLY WITH THESE REQUIREMENTS.	VENTILATION FANS WITH MOTORS GREATER THAN 3/4 HP SHALL HAVE CONTROLS WHICH WILL AUTOMATICALLY SHUT OFF THE FANS WHEN NOT REQUIRED.
6.4.3.5: HEAT PUMP AUXILIARY HEAT CONTROL	SEE TABLE 3	HEAT PUMPS WITH INTERNAL ELECTRIC RESISTANCE HEATERS SHALL HAVE CONTROLS THAT PREVENT SUPPLEMENTAL HEATER OPERATION WHEN THE HEATING LOAD CAN BE MET BY THE HEAT PUMP ALONE DURING BOTH STEADY-STATE OPERATION AND SETBACK RECOVERY.
6.4.3.6: HUMIDIFIER PREHEAT	SEE TABLE 3	HUMIDIFIERS WITH PREHEATING JACKETS MOUNTED IN THE AIR STREAM SHALL BE PROVIDED WITH AN AUTOMATIC VALVE TO SHUT OFF THE PREHEAT WHEN HUMIDIFICATION IS NOT REQUIRED.
6.4.3.7: HUMIDIFICATION & DEHUMIDIFICATION	SEE TABLE 3	SYSTEMS WITH BOTH MEANS FOR HUMIDIFICATION AND DEHUMIDIFICATION SHALL BE PROVIDED WITH THE CAPABILITY OF PREVENTING SIMULTANEOUS OPERATION OF HUMIDIFICATION AND DEHUMIDIFICATION EQUIPMENT.
6.4.3.8: FREEZE PROTECTION & SNOW/ICE MELTING SYSTEMS	THE FREEZE PROTECTION SYSTEMS AS SPECIFIED COMPLY WITH THESE REQUIREMENTS, AS SPECIFIED.	FREEZE PROTECTION SYSTEMS SHALL INCLUDE AUTOMATIC CONTROLS CAPABLE OF SHUTTING OFF SYSTEM WHEN THE OUTDOOR AIR TEMPERATURE IS ABOVE 40°F. SNOW/ICE MELTING SYSTEMS SHALL INCLUDE AUTOMATIC CONTROLS CAPABLE OF SHUTTING OFF SYSTEM WHEN THE PAVEMENT TEMPERATURE IS ABOVE 50°F.
6.4.3.9: VENTILATION CONTROLS FOR HIGH OCCUP AREAS	VENTILATION SYSTEMS FOR HIGH OCCUPANCY AREAS COMPLY WITH THESE REQUIREMENTS, AS SPECIFIED.	SYSTEMS WITH DESIGN OUTDOOR AIR CAPACITIES GREATER THAN 3000 CFM SERVING AREAS HAVING AN AVERAGE DESIGN OCCUPANCY EXCEEDING 100 PEOPLE PER 1000 FT^2 SHALL INCLUDE MEANS TO AUTOMATICALLY REDUCE OUTDOOR AIR INTAKE BELOW DESIGN RATES WHEN SPACES ARE PARTIALLY OCCUPIED.
6.4.4: HVAC SYSTEM CONSTRUCTION AND INSULATION		
6.4.4.1: INSULATION	INSULATION HAS BEEN SPECIFIED TO BE INSTALLED AS PER INDUSTRY-STANDARD. SUPPLY AND RETURN DUCTS AND PLENUMS HAVE BEEN SPECIFIED TO BE INSULATED IN ACCORDANCE WITH TABLE 6.8.2A AND B. PIPING HAS BEEN SPECIFIED TO BE INSULATED ACCORDING TO TABLE 6.8.3	INSULATION SHALL BE INSTALLED AS PER INDUSTRY-ACCEPTED STANDARDS. ALL SUPPLY AND RETURN DUCTS AND PLENUMS SHALL BE INSULATED IN ACCORDANCE WITH TABLES 6.8.2A AND 6.8.2B. PIPING SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE 6.8.3.
6.4.4.2: DUCTS AND PLENUM LEAKAGE	DUCTWORK AND PLENUMS HAVE BEEN SPECIFIED TO BE SEALED IN ACCORDANCE WITH TABLE6.4.4.2A. DUCT DESIGNED TO OPERATE AT STATIC PRESSURES GREATER THAN 3 IN OF WC HAS BEEN SPECIFIED TO BE LEAK TESTED ACCORDING TO INDUSTRY STANDARDS	DUCTWORK AND PLENUMS SHALL BE SEALED IN ACCORDANCE WITH TABLE 6.4.4.2A. DUCTWORK THAT IS DESIGNED TO OPERATE AT STATIC PRESSURES IN EXCESS OF 3 IN OF WC SHALL BE LEAK TESTED ACCORDING TO INDUSTRY-ACCEPTED PROCEDURES.
6.4.5: COMPLETION REQUIREMENTS	CONSTRUCTION DOCUMENTS REQUIRE RECORD DRAWINGS, MANUALS, SYSTEM BALANCING AND SYSTEM COMMISSIONING.	CONSTRUCTION DOCUMENTS SHALL REQUIRE RECORD DRAWINGS, MANUALS, SYSTEM BALANCING AND SYSTEM COMMISSIONING.

NEW YORK STATE ENERGY CODE COMPLIANCE
SECTION 10 - OTHER EQUIPMENT
MANDATORY PROVISIONS

STANDARD: ASHRAE 90.1-2007
CLIMATE ZONE: 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE AND CITATION
10.4.1: ELECTRIC MOTORS	ALL MOTORS HAVE MINIMUM EFFICIENCY GREATER OR EQUAL TO THE EFFICIENCIES REQUIRED BY THE ENERGY POLICY ACT OF 1992.	ELECTRIC MOTORS SHALL COMPLY WITH THE REQUIREMENTS OF THE ENERGY POLICY ACT OF 1992 WHERE APPLICABLE.

PROFESSIONAL'S STATEMENT

TO THE BEST OF OUR KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

BUILDING DEPARTMENT NOTE:

THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

SHEET NOTES

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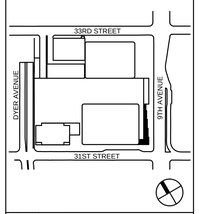
Key Plan:



Seal & Signature:

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No. 080395
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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
NYC EC COMPLIANCE MANDATORY MEASURES SHEET NO. 1

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:
B-SCAN Sheet No.: EN-002.00
Page No.:

DEPT OF BUILDINGS 421197243 Job Number

B525115748B Scan Code

TABLE 3 - AIR-CONDITIONING CONTROLS SYSTEMS WORKSHEET

SYSTEM TAG	AC-B-1 & AC-B-2	AC-B-3	AC-B-4	AC-B-5	AC-B-6	AC-B-7	AC-B-8	AC-6-1 THRU AC-67-1	AC-B1-1	AC-B2-1	AC-B3-1	AC-1-1	AC-2-1	AC-4-1	AC-20-1B & 2B	AC-30-1B	AC-40-1B & 2B	AC-52-1B	AC-62-1B	AC-70-1B	AC-71-1B	AHU-4-1	AHU-4-2	HV-4-1&2	HV-4-3	HV-5-1	HV-5-2	HV-68-1&2	HV-68-3	HV-68-4&5
SUPPLY CFM	8,000	12,000	800	800	800	800	800	25,000	3,000	3,000	3,000	1,500	1,500	3,000	2,000	5,000	5,000	10,000	10,000	10,000	7,500	15,000	55,000	75,000	62,500	15,000	11,000	37,500	18,000	32,000
SUPPLY ESP	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.5	0.75	0.75	0.75	0.75	0.75	0.75	0.5	0.75	0.75	1.0	1.0	1.0	1.0	2.0	2.0	2.0	1.5	2.0	2.0	2.0	1.5	1.5
FAN SYSTEM HP	7-1/2	15	3/4	3/4	3/4	3/4	3/4	40	3	3	3	1-1/2	1-1/2	3	1-1/2	5	5	10	10	10	7-1/2	25	100	125	75	20	15	60	20	50
OA CFM	0	0	150	150	150	150	150	4,500	0	0	0	0	0	0	0	0	0	0	0	0	0	3,000	11,000	75,000	62,500	15,000	11,000	37,500	18,000	32,000
AUTOMATIC SHUTDOWN (SECTION 6.4.3.2.1)	N1	N1	N2	N2	N2	N2	N2	C1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	C1	C1	N1	N1	N1	N1	N1	N1	N1
DEAD BAND (SECTION 6.4.3.2.1)	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	N2	C1	C1	N2	N2	N2	N2	N2	N2	N2
SETBACK CONTROLS (SECTION 6.4.3.2.2)	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	N5	C1	C1	N1	N1	N1	N1	N1	N1	N1
OPTIMUM START CONTROLS (SECTION 6.4.3.2.3)	N1	N1	N3	N3	N3	N3	N3	C1	C1	C1	C1	C1	C1	C1	N1	N1	N1	N1	N1	N1	N1	C1	C1	N1	N1	N1	N1	N1	N1	N1
ZONE ISOLATION (SECTION 6.4.3.2.4)	N1	N1	N2	N2	N2	N2	N2	C1	C1	C1	C1	C1	C1	C1	N1	N1	N1	N1	N1	N1	N1	C1	C1	N1	N1	N1	N1	N1	N1	N1
SHUTOFF DAMPER CONTROLS (SECTION 6.4.3.3.4)	N1	N1	N2	N2	N2	N2	N2	C1	C1	C1	C1	C1	C1	C1	N1	N1	N1	N1	N1	N1	N1	C1	C1	N1	N1	N1	N1	N1	N1	N1
HEAT PUMP AUX HEAT CONTROL (SECTION 6.4.3.4)	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1
HUMIDIFIER PREHEAT (SECTION 6.4.3.5)	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1
HUMIDIFICATION & DEHUMIDIFICATION (SECTION 6.4.3.6)	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1

TABLE 3 - CONTROLS LEGEND

AUTOMATIC SHUTDOWN		OPTIMUM START CONTROLS		HEAT PUMP AUX HEAT CONTROL	
C1	COMPLYING NONRESIDENTIAL TIME SWITCH WITH OVERRIDE	C1	OPTIMUM START PROVIDED	C1	CONTROLS PROVIDED
C2	COMPLYING RESIDENTIAL TIME SWITCH WITH OVERRIDE	N1	N/A CONTINUOUS OPERATION	N1	N/A – SYSTEM NOT A HEAT PUMP
N1	N/A – UNIT CONTINUOUSLY OPERATES	N2	N/A <15 KBTU/H OR < 3/4 HP	N2	N/A – AUX HEAT IS NOT ELECTRIC OR NOT PROVIDED
N2	N/A – UNIT IS <15 KBTU/H OR < 3/4 HP	N3	N/A SUPPLY <= 10,000 CFM	N3	N/A – HEAT PUMP COVERED BY NAECA
N3	N/A – UNIT IS HOTEL/MOTEL GUESTROOM				
DEAD BAND		**SHUTOFF DAMPER CONTROLS**		**HUMIDIFIER PREHEAT**	
C1	DUAL SET POINT CONTROL	C1	MOTORIZED SHUTOFF DAMPERS ON OA AND EXH	C1	CONTROLS PROVIDED
C2	MANUAL CHANGE OVER CONTROL	C2	GRAVITY SHUTOFF DAMPERS ON OA AND EXH	N1	N/A – NO HUMIDIFIER
N1	N/A – SPECIAL OCCUPANCY	N1	N/A – UNIT CONTINUOUSLY OPERATES		
N2	N/A – UNIT PROVIDES HEATING OR COOLING ONLY	N2	N/A – UNIT IS <15 KBTU/H OR < 3/4 HP	**HUMIDIFICATION & DEHUMIDIFICATION**	
		N3	N/A – OA/EA FOR UNIT <= 300 CFM	C1	COMPLY – CONTROLS PROVIDED
				N1	N/A – NO HUMIDIFICATION AND/OR DEHUMIDIFICATION
SETBACK CONTROLS		**ZONE ISOLATION**		**DUCT/PLENUM INSULATION**	
C1	SETBACK PROVIDED (DOWN TO 55°F)	C1	COMPLY – ISOLATION ZONES PROVIDED	C1	COMPLYING INSULATION PROVIDED
N1	N/A – UNIT CONTINUOUSLY OPERATES	N1	N/A – UNIT CONTINUOUSLY OPERATES	N1	N/A – ALL DUCTS LOCATED IN CONDITIONED SPACE
N2	N/A – UNIT IS <15 KBTU/H OR < 3/4 HP	N2	N/A – UNIT IS <15 KBTU/H OR < 3/4 HP		
N3	N/A – 99.6% WINTER DB > 40°F	N3	N/A – ALL ZONES ON SAME SCHEDULE		
N4	N/A – RADIANT HEATING	N4	N/A – OA/EA FOR UNIT <= 5,000 CFM		
N5	N/A – NO HEATING PROVIDED BY UNIT				

MISCELLANEOUS REQUIREMENTS - MANDATORY MEASURES

1. MECHANICAL EQUIPMENT NOT COVERED BY THE US NATIONAL APPLIANCE ENERGY CONSERVATION ACT (NAECA) OF 1987 SHALL BE PROVIDED A PERMANENT LABEL INSTALLED BY THE MANUFACTURER STATING THAT THE EQUIPMENT COMPLIES WITH THE REQUIREMENTS OF ASHRAE 90.1.

2. PACKAGED TERMINAL AIR CONDITIONERS AND HEAT PUMPS WITH SLEEVE SIZES LESS THAN 16 INCHES HIGH AND 42 INCHES WIDE SHALL BE PROVIDED WITH A FACTORY LABEL WHICH READS: "MANUFACTURED FOR REPLACEMENT APPLICATIONS ONLY: NOT TO BE INSTALLED IN NEW CONSTRUCTION PROJECTS."

3. A DEADBAND OF _____°F SHALL BE PROVIDED TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT.

4. THE LEAKAGE OF THE SPECIFIED DAMPERS SHALL BE LESS THAN THE 10 CFM / SQUARE FOOT FOR MOTORIZED DAMPERS AND 20 CFM / SQUARE FOOT FOR NONMOTORIZED DAMPERS AT 1.0 INCHES OF WATER GAUGE WHEN TESTED IN ACCORDANCE WITH AMCA STANDARD 500.

5. VENTILATION FANS WITH MOTORS GREATER THAN 3/4 HP SHALL HAVE CONTROLS WHICH AUTOMATICALLY SHUT OFF THE FANS WHEN NOT REQUIRED.

6. FREEZE PROTECTION SYSTEMS (SUCH AS HEAT TRACING) SHALL HAVE CONTROLS TO SHUT OFF THE SYSTEM WHEN THE OUTDOOR AIR TEMPERATURE IS ABOVE 40°F. SNOW/ICE MELTING SYSTEMS SHALL HAVE CONTROLS TO SHUT OFF THE SYSTEM WHEN THE PAVEMENT TEMPERATURE IS ABOVE 50°F.

7. CO_2 SENSORS, WHICH REDUCE THE OUTDOOR AIR INTAKE BELOW DESIGN RATES WHEN SPACES ARE PARTIALLY OCCUPIED, HAVE BEEN PROVIDED FOR SYSTEMS WITH DESIGN OUTDOOR AIR CAPACITIES GREATER THAN 3000 CFM SERVING AREAS HAVING AN AVERAGE DESIGN OCCUPANCY EXCEEDING 100 PEOPLE PER 1000 FT^2.

8. DUCTWORK USED FOR BOTH HEATING AND COOLING SHALL HAVE BE INSULATED WITH AN R-VALUE GREATER THAN OR EQUAL TO 3.5. RETURN AIR DUCTS ARE NOT TO BE INSULATED.

9. SUPPLY AND RETURN DUCTWORK AND PLENUMS LOCATED OUTDOORS AND SUPPLY DUCTWORK AND PLENUMS GREATER THAN 2 INCHES OF W.C. IN UNCONDITIONED SPACES SHALL BE A MINIMUM OF CLASS "A" SEALED. SUPPLY DUCTWORK AND PLENUMS LESS THAN 2 INCHES OF W.C. AND RETURN DUCTWORK IN UNCONDITIONED SPACES AND SUPPLY DUCTWORK AND PLENUMS GREATER THAN 2 INCHES OF W.C. AND EXHAUST DUCTWORK IN CONDITIONED SPACES SHALL BE A MINIMUM OF CLASS "B" SEALED. EXHAUST DUCTWORK AND PLENUMS LOCATED OUTDOORS AND IN UNCONDITIONED SPACE AND SUPPLY DUCTWORK AND PLENUMS LESS THAN 2 INCHES OF W.C. AND RETURN DUCTWORK IN CONDITIONED SPACE SHALL BE A MINIMUM OF CLASS "C" SEALED.

10. THIS CONTRACTOR IS REQUIRED TO PROVIDE RECORD DRAWINGS AND OWNER'S OPERATIONAL MANUALS. THIS CONTRACTOR IS ALSO RESPONSIBLE TO PARTICIPATE IN THE AIR AND WATER SYSTEM BALANCING AND ANY REQUIRED CONTROL SYSTEM COMMISSIONING.

PROFESSIONAL'S STATEMENT

TO THE BEST OF OUR KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

BUILDING DEPARTMENT NOTE:

THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

SHEET NOTES

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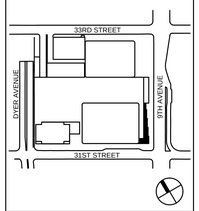
Ontario, Canada N1K 1B8

Key Plan:



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1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE MANDATORY MEASURES SHEET NO. 2

Project No.: 14830.A.000
Date: 20 JUN 2014
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Page No.:

NEW YORK STATE ENERGY CODE COMPLIANCE
SECTION 6 - HEATING VENTILATING AND AIR CONDITIONING
PRESCRIPTIVE PATH

STANDARD: ASHRAE 90.1–2007
CLIMATE ZONE: 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE AND CITATION
6.5.1: ECONOMIZERS	COOLING SYSTEM PROVIDED INCLUDES AN ECONOMIZER COMPLYING WITH SECTION 6.5.1 THROUGH 6.5.4)	EACH COOLING SYSTEM WITH A FAN SHALL INCLUDE AN AIR OR WATER ECONOMIZER MEETING THE REQUIREMENTS OF SECTIONS 6.5.1 THROUGH 6.5.4
6.5.1.1: AIR ECONOMIZERS		
6.5.1.1.1: DESIGN CAPACITY	EQUIPMENT HAS BEEN SELECTED TO MEET THIS CAPACITY.	AIR ECONOMIZER SYSTEM SHALL BE CAPABLE OF MODULATING OUTDOOR AIR AND RETURN AIR DAMPERS TO PROVIDE UP TO 100% OF THE DESIGN SUPPLY AIR QUANTITY AS OUTDOOR AIR FOR COOLING
6.5.1.1.2: CONTROL SIGNAL	THE CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	ECONOMIZER SHALL BE CAPABLE OF BEING SEQUENCED WITH THE MECHANICAL COOLING EQUIPMENT AND SHALL NOT BE CONTROLLED BY MIXED AIR TEMPERATURE.
6.5.1.1.3: HIGH–LIMIT SHUTOFF	EQUIPMENT SPECIFIED MEETS THE REQUIREMENTS OF THESE TABLES.	HIGH LIMIT SHUT–OFF CONTROLS TYPE SPECIFIED SHALL BE LISTED IN TABLE 6.5.1.1.3A AND THE CONTROL'S SETTINGS SHALL COMPLY WITH TABLE 6.5.1.1.3B.
6.5.1.1.4: DAMPERS	THE DAMPERS HAVE BEEN SPECIFIED TO MEET THE MAXIMUM LEAKAGE REQUIREMENTS IN SECTION 6.4.3.3.4 AND TABLE 6.4.3.3.4.	BOTH RETURN AND OUTDOOR DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 6.4.3.3.4.
6.5.1.1.5: RELIEF OF EXCESS OUTDOOR AIR	SYSTEM HAS BEEN PROVIDED WITH A MEANS TO RELIEVE THE EXCESS OUTDOOR AIR.	SYSTEMS SHALL PROVIDE A MEANS TO RELIEVE EXCESS OUTDOOR AIR DURING AIR ECONOMIZER OPERATION.
6.5.1.2: WATER ECONOMIZERS		
6.5.1.2.1: DESIGN CAPACITY	EQUIPMENT HAS BEEN SELECTED TO MEET THIS CAPACITY.	WATER ECONOMIZER SHALL BE CAPABLE OF PROVIDING UP TO 100% OF THE COOLING LOAD AT AN OUTDOOR AIR TEMPERATURE OF 50°F (DRY BULB) / 45°F (WET BULB)
6.5.1.2.2: MAXIMUM PRESSURE DROP	EQUIPMENT HAS BEEN SELECTED TO MEET THIS PRESSURE DROP.	PRECOOLING COILS AND HEAT EXCHANGERS USED AS PART OF THE WATER ECONOMIZER SYSTEM SHALL HAVE A PRESSURE DROP OF LESS THAN 15 FEET OF WATER OR A DEDICATED SECONDARY ECONOMIZER LOOP.
6.5.1.3: INTEGRATED ECONOMIZER CONTROL	THE CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	ECONOMIZER SYSTEMS SHALL BE INTEGRATED WITH THE MECHANICAL COOLING SYSTEM AND BE CAPABLE OF PARTIAL COOLING.
6.5.1.4: ECONOMIZER SYSTEM HEATING IMPACT	THE EQUIPMENT AND CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	ECONOMIZER SYSTEM DESIGN AND CONTROLS SHALL NOT INCREASE THE BUILDING HEATING ENERGY USE DURING NORMAL OPERATION.
6.5.2: SIMULTANEOUS HEATING AND COOLING LIMITATION		
6.5.2.1: ZONE CONTROLS	THE CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	ZONE THERMOSTATIC CONTROLS SHALL BE PREVENT REHEATING, RECOOLING, MIXING OR SIMULTANEOUS SUPPLYING AIR THAT HAS BEEN PREVIOUSLY MECHANICALLY HEATED AND PREVIOUSLY MECHANICALLY COOLED.
6.5.2.2: HYDRONIC SYSTEM CONTROLS		
6.5.2.2.1: THREE–PIPE SYSTEM	A THREE PIPE SYSTEM IS NOT USED.	HYDRONIC SYSTEMS THAT USE A COMMON RETURN SYSTEM FOR BOTH HOT WATER AND CHILLED WATER SHALL NOT BE USED.
6.5.2.2.2: TWO–PIPE CHANGEOVER SYSTEM	THE EQUIPMENT AND CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	SYSTEMS THAT USE A COMMON PIPING DISTRIBUTION SYSTEM SHALL COMPLY WITH THE FOLLOWING: A) THE DEADBAND BETWEEN CHANGEOVER FROM ONE MODE TO ANOTHER OF AT LEAST 15F OUTDOOR AIR B) SYSTEM SHALL OPERATE IN ONE MODE FOR AT LEAST FOUR HOURS BEFORE CHANGING MODES C) RESET CONTROLS ARE PROVIDED THAT ALLOW HEATING AND COOLING SUPPLY TEMPERATURES AT THE CHANGEOVER POINT TO BE NO MORE THAN 30°F APART
6.5.2.2.3: HYDRONIC HEAT PUMP SYSTEM	THE EQUIPMENT AND CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	HEAT PUMP SYSTEM SHALL HAVE CONTROLS CAPABLE OF PROVIDING A TEMPERATURE DEADBAND OF AT LEAST 20°F AND AN AUTOMATIC VALVE SHALL BE INSTALLED IN THE LOOP TO BYPASS ALL BUT THE MINIMAL FLOW AROUND THE COOLING TOWER.
6.5.2.3: DEHUMIDIFICATION	THE CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	WHEN HUMIDIFICATION CONTROLS ARE PROVIDED, SUCH CONTROLS SHALL PREVENT REHEATING, MIXING OF HOT AND COLD AIR STREAMS, OR OTHER MEANS OF SIMULTANEOUS HEATING AND COOLING THE AIRSTREAM.
6.5.2.4: HUMIDIFICATION	A WATER ECONOMIZER SYSTEM HAS BEEN DESIGNED.	SYSTEMS WITH HYDRONIC COOLING AND HUMIDIFICATION SYSTEMS DESIGNED TO MAINTAIN INSIDE HUMIDITY AT GREATER THAN 35°F DEW POINT SHALL USE A WATER ECONOMIZER IF AN ECONOMIZER IS REQUIRED BY SECTION 6.5.1.
6.5.3: AIR SYSTEM DESIGN AND CONTROL		
6.5.3.1: FAN POWER LIMITATION	SEE TABLE 4	THE RATIO OF THE FAN SYSTEM POWER TO THE SUPPLY AIR FLOW RATE OF EACH HVAC SYSTEM AT DESIGN CONDITIONS SHALL NOT EXCEED THE ALLOWABLE FAN SYSTEM POWER SHOWN IN TABLE 6.5.3.1
6.5.3.2: VAV FAN CONTROL		
6.5.3.2.1: PART LOAD FAN POWER LIMITATION	EQUIPMENT HAS BEEN SELECTED TO MEET THIS REQUIREMENT.	INDIVIDUAL VAV FANS WITH MOTORS GREATER THAN 15 HP AND LARGER SHALL 1) BE DRIVEN BY MECHANICAL OR ELECTRICAL VARIABLE SPEED DRIVE OR 2) BE A VANE AXIAL FAN WITH VARIABLE PITCH BLADES OR 3) HAVE OTHER CONTROLS AND DEVICES THAT WILL RESULT IN MOTOR DEMAND OF NO MORE THAN 30% OF THE DESIGN WATTAGE AT 50% OF THE DESIGN AIR VOLUME WHEN THE STATIC PRESSURE SET POINT EQUALS ONE–THIRD OF THE TOTAL DESIGN STATIC PRESSURE.
6.5.3.2.2: STATIC PRESSURE SENSOR LOCATION	THE CONTROL EQUIPMENT HAS BEEN PLACED SUCH THAT THE SET POINT IS NO GREATER THAN 1/3 OF THE TOTAL DESIGN STATIC PRESSURE.	STATIC PRESSURE SENSOR LOCATIONS SHALL BE SUCH THAT THE CONTROLLER SET POINT IS NO GREATER THAN ONE–THIRD OF THE TOTAL DESIGN STATIC PRESSURE.
6.5.3.2.3: SETPOINT RESET	THE CONTROL EQUIPMENT HAS BEEN PLACED SUCH THAT THE STATIC PRESSURE SET POINT RESETS BASED ON THE ZONE REQUIRING THE MOST PRESSURE.	FOR SYSTEMS WITH DIRECT DIGITAL CONTROL OF INDIVIDUAL ZONE BOXES REPORTING TO THE CENTRAL CONTROL PANEL, STATIC PRESSURE SET POINT SHALL BE RESET BASED ON THE ZONE REQUIRING THE MOST PRESSURE.
6.5.4: HYDRONIC SYSTEM DESIGN AND CONTROL		
6.5.4.1: HYDRONIC VARIABLE FLOW SYSTEMS	EQUIPMENT HAS BEEN SELECTED TO MEET THIS REQUIREMENT.	HVAC PUMPING SYSTEMS SHALL HAVE MODULATING CONTROL VALVES. ALSO, PUMPS SERVING VARIABLE FLOW SYSTEMS EXCEEDING 100 FT OF HEAD AND MOTOR EXCEEDING 50 HP SHALL HAVE CONTROLS THAT WILL RESULT IN PUMP MOTOR DEMAND OF NO MORE THAN 30% OF THE DESIGN WATTAGE AT 50% OF THE DESIGN WATER.
6.5.4.2: PUMP ISOLATION	EQUIPMENT HAS BEEN SELECTED TO MEET THIS REQUIREMENT.	WHEN A CHILLER OR BOILER PLANT INCLUDES MORE THAN ONE PIECE OF EQUIPMENT, PROVISIONS SHALL BE MADE TO SHUT EACH DOWN INDIVIDUALLY.
6.5.4.3: CHILLED & HOT WATER TEMP RESET CONTROLS	THE EQUIPMENT AND CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	CHILLED AND HOT WATER SYSTEMS WITH A DESIGN CAPACITY GREATER THAN 300,000 BTU/HR SUPPLYING CHILLED AND/OR HOT WATER TO COMFORT CONDITIONING SYSTEMS SHALL INCLUDE CONTROLS THAT AUTOMATICALLY RESET SUPPLY TEMPERATURE.
6.5.4.4: HYDRONIC HEAT PUMP SYSTEMS	EQUIPMENT HAS BEEN SELECTED TO MEET THIS REQUIREMENT.	EACH HYDRONIC HEAT PUMP SHALL HAVE A TWO–POSITION AUTOMATIC VALVE INTERLOCKED TO SHUT–OFF THE WATER WHEN THE COMPRESSOR IS OFF.

PROFESSIONAL'S STATEMENT

TO THE BEST OF OUR KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

BUILDING DEPARTMENT NOTE:

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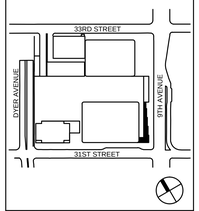
Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
NYC EC COMPLIANCE ENERGY MODELING AND PRESCRIPTIVE PATH SHEET NO. 1

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
B-SCAN Sheet No.: EN-004.00
File No.:
Page No.:

DEPT OF BUILDINGS 421187243 Job Number

E3213M3213B Scan Code

TABLE 4 - FAN POWER LIMITATION WORKSHEET

	SUPPLY FAN		RETURN FAN		EXHAUST FAN		SERIES FPB		
TAG	SUPPLY CFM	MOTOR (HP)	TAG	MOTOR (HP)	TAG	MOTOR (HP)	TAG	MOTOR (HP)	TOTAL SYSTEM MOTOR (HP)
F-3-1	58,000	40	–	–	–	–	–	–	40
F-5-2&3	15,000	10	–	–	–	–	–	–	10
	–	–	–	–	TX-4-1	7-1/2	–	–	7-1/2
	–	–	–	–	TX-4-2	10	–	–	10
	–	–	–	–	TX-4-3	10	–	–	10
	–	–	–	–	TX-4-4	3	–	–	3
	–	–	–	–	TX-4-5	2	–	–	2
	–	–	–	–	TX-69-1	10	–	–	10
	–	–	–	–	TX-69-2	10	–	–	10
	–	–	–	–	TX-69-3	7-1/2	—	—	7-1/2
	–	–	–	–	EF-4-1&2	20	–	–	20
	–	–	–	–	EF-4-3	5	–	–	5
	–	–	–	–	EF-4-4	10	–	–	10
	–	–	–	–	EF-4-5	10	–	–	10
	–	–	–	–	EF-5-1	20	–	–	20
	–	–	–	–	EF-68-1&2	15	–	–	15
	–	–	–	–	EF-A	1/2	–	–	1/2
	–	–	–	–	EF-B	1/2	–	–	1/2
	–	–	–	–	SX-4-1	40	–	–	40
	–	–	–	–	SX-4-2	5	–	–	5
	–	–	–	–	SX-69-1	25	–	–	25
	–	–	–	–	SX-69-2	15	–	–	15
	–	–	RSF-4-1&2	20	RSF-4-1&2	–	–	–	20
	–	–	RSF-5-1	30	RSF-5-1	–	–	–	30
AC-B-1 & AC-B-2	8,000	7-1/2							7-1/2
AC-B-3	12,000	15							15
AC-B-4	800	3/4							3/4
AC-B-5	800	3/4							3/4
AC-B-6	800	3/4							3/4
AC-B-7	800	3/4							3/4
AC-B-8	800	3/4							3/4
AC-6-1 THRU AC-67-1	25,000	40							40
AC-B1-1	3,000	3							3
AC-B2-1	3,000	3							3
AC-B3-1	3,000	3							3
AC-1-1	1,500	1-1/2							1-1/2
AC-2-1	1,500	1-1/2							1-1/2
AC-4-1	3,000	3							3
AC-20-1B & 2B	2,000	1-1/2							1-1/2
AC-30-1B	5,000	5							5
AC-40-1B & 2B	5,000	5							5
AC-52-1B	10,000	10							10
AC-62-1B	10,000	10							10
AC-70-1B	10,000	10							10
AC-71-1B	7,500	7-1/2							7-1/2
AHU-4-1	15,000	25							25
AHU-4-2	55,000	100							100
HV-4-1&2	75,000	125							125
HV-4-3	62,500	75							75
HV-5-1	15,000	20							20
HV-5-2	11,000	15							15
HV-68-1&2	37,500	60							60
HV-68-3	18,000	20							20
HV-68-4&5	32,000	50							50

TOTAL SUPPLY CFM 507,500

TOTAL SYSTEM MOTOR HP 620.25

TABLE 6.5.3.1 VALUE 0.00122 HP/CFM

NEW YORK CITY ENERGY CODE COMPLIANCE
SECTION 6 - HEATING VENTILATING AND AIR CONDITIONING
PRESCRIPTIVE PATH

STANDARD: ASHRAE 90.1-2007
CLIMATE ZONE: 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE AND CITATION
6.5.5: HEAT REJECTION EQUIPMENT		
6.5.5.1: GENERAL		
6.5.5.2: FAN SPEED CONTROL	THE EQUIPMENT AND CONTROL SEQUENCE OF THE EQUIPMENT HAS BEEN SPECIFIED TO MEET THIS REQUIREMENT.	EACH FAN POWERED BY A MOTOR OF 7.5 HP OR LARGER SHALL HAVE THE CAPACITY TO OPERATE THE FAN AT TWO-THIRDS OF FULL SPEED OR LESS AND SHALL HAVE CONTROLS THAT AUTOMATICALLY CHANGED THE FAN SPEED TO CONTROL THE LEAVING FLUID TEMPERATURE OR CONDENSER TEMPERATURE/PRESSURE OF THE HEAT REJECTION DEVICE.
6.5.6: ENERGY RECOVERY		
6.5.6.1: EXHAUST AIR ENERGY RECOVERY	EQUIPMENT HAS BEEN SELECTED TO MEET THIS REQUIREMENT.	FAN SYSTEMS THAT HAVE BOTH A DESIGN CAPACITY OF 5000 CFM OR GREATER AND A MINIMUM OUTDOOR AIR SUPPLY OF 70% OR GREATER OF THE SUPPLY AIR SHALL HAVE AN ENERGY RECOVERY SYSTEM WITH AT LEAST AN EFFECTIVENESS OF 50%.
6.5.6.2: HEAT RECOVERY FOR SERVICE HW HEATING		
6.5.6.2.1: GENERAL	SYSTEM DESIGN COMPLIES WITH THESE REQUIREMENTS AND A HEAT RECOVERY SYSTEM IS REQUIRED.	HEAT RECOVERY SYSTEM SHALL BE INSTALLED IN SYSTEMS THAT OPERATE 24 HOURS / DAY, THE TOTAL INSTALLED HEAT REJECTION CAPACITY OF THE WATER-COOLED SYSTEM EXCEEDS 6,000,000 BTU/HR, AND THE DESIGN SERVICE WATER HEATING LOAD EXCEEDS 1,000,000 BTU/HR.
6.5.6.2.2: DESIGN CAPACITY	THE HEAT RECOVERY SYSTEM PROVIDED COMPLIES WITH THIS REQUIREMENT.	THE HEAT RECOVERY SYSTEM SHALL HAVE THE CAPACITY TO PROVIDE THE SMALLER OF THE TWO 1) 60% OF THE PEAK HEAT REJECTION AT DESIGN CONDITIONS OR 2) PREHEAT OF THE PEAK SERVICE HOT WATER DRAW TO 85°F.
6.5.7: EXHAUST HOODS		
6.5.7.1: KITCHEN HOODS	THE KITCHEN EXHAUST MAKEUP AIR COMPLIES WITH THESE REQUIREMENTS.	KITCHEN HOODS LARGER THAN 5000 CFM SHALL PROVIDE 50% OF ITS MAKEUP AIR WITH UNHEATED OR HEATED AIR NO MORE THAN 60F AND UNCOOLED AIR.
6.5.7.2: FUME HOODS	THE FUME HOOD MAKEUP AIR IS GREATER THAN 15,000 CFM AND INCLUDES VARIABLE AIR VOLUME HOOD EXHAUST AND ROOM SUPPLY SYSTEMS CAPABLE OF REDUCING EXHAUST AND MAKE UP VOLUME TO 50% OR LESS OF DESIGN VALUES OR DIRECT MAKEUP AIR SUPPLY EQUAL TO AT LEAST 75% OF THE EXHAUST RATE OR HEAT RECOVERY SYSTEMS TO PRECONDITIONED MAKEUP AIR FROM FUME HOOD EXHAUST IN ACCORDANCE WITH SECTION 6.5.6.1.	FUME HOODS SYSTEMS HAVING AN EXHAUST RATE GREATER THAN 15,000 CFM SHALL INCLUDE AT LEAST ONE OF THE FOLLOWING: 1) VARIABLE AIR VOLUME HOOD EXHAUST AND ROOM SUPPLY SYSTEMS CAPABLE OF REDUCING EXHAUST AND MAKE UP VOLUME TO 50% OR LESS OF DESIGN VALUES 2) DIRECT MAKEUP AIR SUPPLY EQUAL TO AT LEAST 75% OF THE EXHAUST RATE 3) HEAT RECOVERY SYSTEMS TO PRECONDITIONED MAKEUP AIR FROM FUME HOOD EXHAUST IN ACCORDANCE WITH SECTION 6.5.6.1.
6.5.8: RADIANT HEATING SYSTEMS		
6.5.8.1: HEATING UNENCLOSED SPACES	RADIANT HEATING IS USED IN UNENCLOSED SPACES.	RADIANT HEATING SHALL BE USED WHEN HEATING REQUIRED FOR UNENCLOSED SPACES.
6.5.8.2: HEATING ENCLOSED SPACES	RADIANT HEATING CONFORMING WITH THE REQUIREMENTS IS USED IN ENCLOSED SPACES.	RADIANT HEATING SYSTEMS SHALL CONFORM TO THE FOLLOWING: 1) RADIANT HEATING CEILING FLOOR PANELS 2) COMBINATION OR HYBRID SYSTEMS INCORPORATING RADIANT HEATING PANELS 3) RADIANT HEATING PANELS USED IN CONJUNCTION WITH OTHER SYSTEMS.
6.5.9: HOT GAS BYPASS LIMITATION	EQUIPMENT HAS BEEN SELECTED TO MEET THIS CAPACITY.	COOLING SYSTEMS SHALL NOT USE HOT GAS BYPASS OR OTHER EVAPORATIVE PRESSURE CONTROL UNLESS THE SYSTEM IS DESIGNED WITH MULTIPLE STEPS OF UNLOADING OR CONTINUOUS CAPACITY MODULATION. THE CAPACITY OF THE HOT GAS BYPASS SHALL BE LIMITED AS INDICATED IN TABLE 6.5.9

NEW YORK CITY ENERGY CODE COMPLIANCE
SECTION 7 - SERVICE WATER HEATING
PRESCRIPTIVE PATH

STANDARD: ASHRAE 90.1-2007
CLIMATE ZONE: 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIPTIVE VALUE AND CITATION
7.5.1: SPACE HEATING & WATER HEATING	NOT INCLUDED IN THIS APPLICATION.	THE USE OF A INTEGRATED COMFORT HEATING AND SERVICE HOT WATER HEATER SHALL BE ALLOWED IF COMPIES WITH ALL OF SECTION 6 AND THE ENERGY INPUT FOR THE COMBINED SYSTEM IS LESS THAN 150,000 BTU/H OR IT IS DEMOSTRATED THAT THE USE OF A SINGLE HEAT SOURCE WILL CONSUME LESS ENERGY THAN SEPERATE UNITS.
7.5.2: SERVICE WATER HEATING EQUIPMENT	NOT INCLUDED IN THIS APPLICATION.	SERVICE WATER HEATING EQUIPMENT USED TO PROVIDE THE ADDITIONAL FUNCTION OF SPACE HEATING AS PART OF A INTEGRATED SYSTEM SHALL SATISFY ALL STATED REQUIREMENTS FOR THE SERVICE WATER HEATING EQUIPMENT.

MISCELLANEOUS REQUIREMENTS - PRESCRIPTIVE MEASURES

1. THE AIR SIDE ECONOMIZER SYSTEM SHALL MODULATE THE OUTDOOR AIR AND RETURN AIR DAMPERS TO PROVIDE UP TO 100% OF THE DESIGN SUPPLY AIR QUANTITY AS OUTDOOR AIR FOR COOLING.

2. THE AIR SIDE ECONOMIZER SHALL BE CAPABLE OF BEING SEQUENCED WITH THE MECHANICAL COOLING EQUIPMENT AND SHALL BE NOT CONTROLLED BY MIXED AIR TEMPERATURE.

3. THE AIR SIDE ECONOMISER SHALL HAVE BOTH RETURN AND OUTDOOR DAMPERS WHICH HAVE A LEAKAGE OF LESS THAN THE 10 CFM / SQUARE FOOT FOR MOTORIZED DAMPERS AND 20 CFM / SQURE FOOT FOR NONMOTORIZED DAMPERS AT 1.0 INCHES OF WATER GAUGE WHEN TESTED IN ACCORDANCE WITH AMCA STANDARD 500.

4. THE WATER SIDE ECONOMISER SYSTEM SHALL BE CAPABLE OF PROVIDING UP TO 100% OF THE COOLING LOAD AT AN OUTDOOR AIR TEMPERATURE OF 50°F (DRY BULB) / 45°F (WET BULB)

5. PRECOOLING COILS AND HEAT EXCHANGERS USED AS PART OF THE WATER SIDE ECONOMIZER SYSTEM SHALL HAVE A PRESSURE DROP OF LESS THAN 15 FEET OF WATER.

6. THE WATER SIDE ECONOMIZER SYSTEMS SHALL BE INTEGRATED WITH THE MECHANICAL COOLING SYSTEM AND SHALL BE CAPABLE OF PARTIAL COOLING AND SHALL NOT INCREASE THE BUILDING HEATING ENERGY USE DURING NORMAL OPERATION.

7. ZONE THERMOSTATIC CONTROLS SHALL PREVENT REHEATING, RECOOLING, MIXING OR SIMULTANEOUS SUPPLYING AIR THAT HAS BEEN PREVIOUSLY MECHANICALLY HEATED AND PREVIOUSLY MECHANICALLY COOLED.

8. A THREE PIPE OR TWO-PIPE CHANGEOVER HYDRONIC SYSTEM SHALL NOT USED.

9. THE HEAT PUMP SYSTEM SHALL HAVE CONTROLS CAPABLE OF PROVIDING A TEMPERATURE DEADBAND OF AT LEAST 20°F AND AN AUTOMATIC VALVE INSTALLED WITHIN THE LOOP TO BYPASS ALL BUT THE MINIMAL FLOW AROUND THE COOLING TOWER.

10. EACH HYDRONIC HEAT PUMP SHALL HAVE A TWO-POSITION AUTOMATIC VALVE INTERLOCKED TO SHUT-OFF THE WATER WHEN THE COMPRESSOR IS OFF.

11. HUMIDIFICATION CONTROLS THAT PREVENT REHEATING, MIXING OF HOT AND COLD AIR STREAMS, AND OTHER MEANS OF SIMULTANEOUS HEATING AND COOLING THE AIRSTREAM SHALL BE PROVIDED.

12. INDIVIDUAL VAV FANS WITH MOTORS GREATER THAN 15 HP AND LARGER 1) SHALL BE DRIVEN BY A MECHANICAL OR ELECTRICAL VARIABLE SPEED DRIVE OR 2) SHALL HAVE A VANE AXIAL FAN WITH VARIABLE PITCH BLADES OR 3) SHALL HAVE OTHER CONTROLS AND DEVICES THAT WILL RESULT IN MOTOR DEMAND OF NO MORE THAN 30% OF THE DESIGN WATTAGE AT 50% OF THE DESIGN AIR VOLUME WHEN THE STATIC PRESSURE SET POINT EQUALS ONE-THIRD OF THE TOTAL DESIGN STATIC PRESSURE.

12. STATIC PRESSURE SENSOR LOCATIONS SHALL BE PLACED SUCH THAT THE SETPOINT IS LESS THAN ONE-THIRD OF THE TOTAL DESIGN STATIC PRESSURE. INDIVIDUAL ZONES HAVE THEIR SETPOINT RESET BASED ON THE ZONE REQUIRING THE MOST PRESSURE.

13. THE CHILLED WATER SYSTEM (IDENTIFY THE SYSTEM) AND HOT WATER SYSTEM (IDENTIFY THE SYSTEM) SHALL BE PROVIDED WITH CONTROLS THAT AUTOMATICALLY RESET SUPPLY TEMPERATURE WITH THE OUTDOOR AIR TEMPERATURE.

PROFESSIONAL'S STATEMENT

TO THE BEST OF OUR KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

BUILDING DEPARTMENT NOTE:

THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

SHEET NOTES

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MANHATTAN WEST: NORTH TOWER
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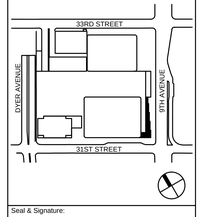

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Sheet Name:
NYC EC COMPLIANCE ENERGY MODELING AND PRESCRIPTIVE PATH SHEET NO. 2

Project No.: 14830.A.000
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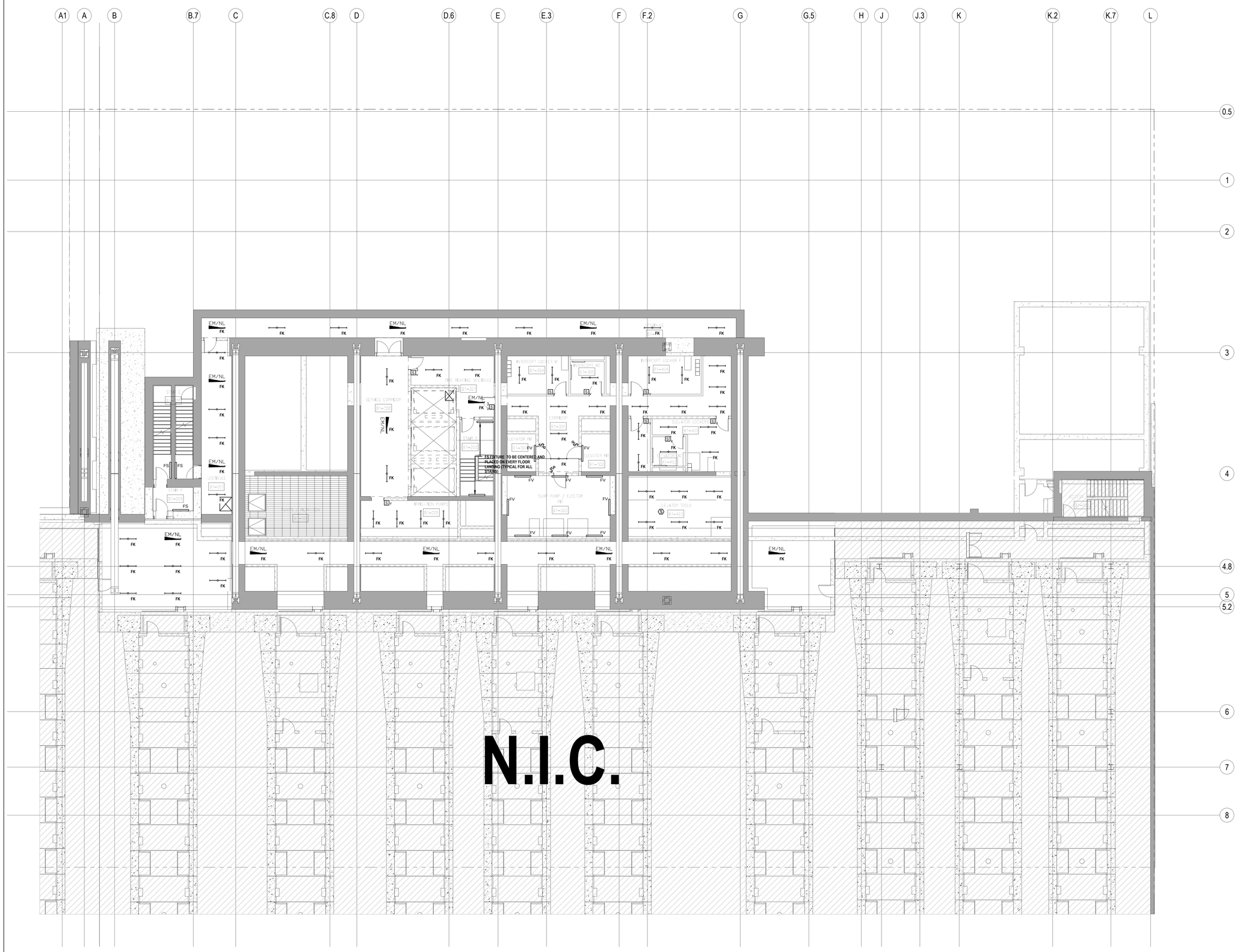
File No.:
Page No.:



PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

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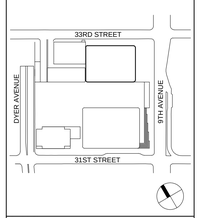

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Sheet Name:

NYC EC COMPLIANCE LIGHTING CELLAR B1 FLOOR PLAN - PART A

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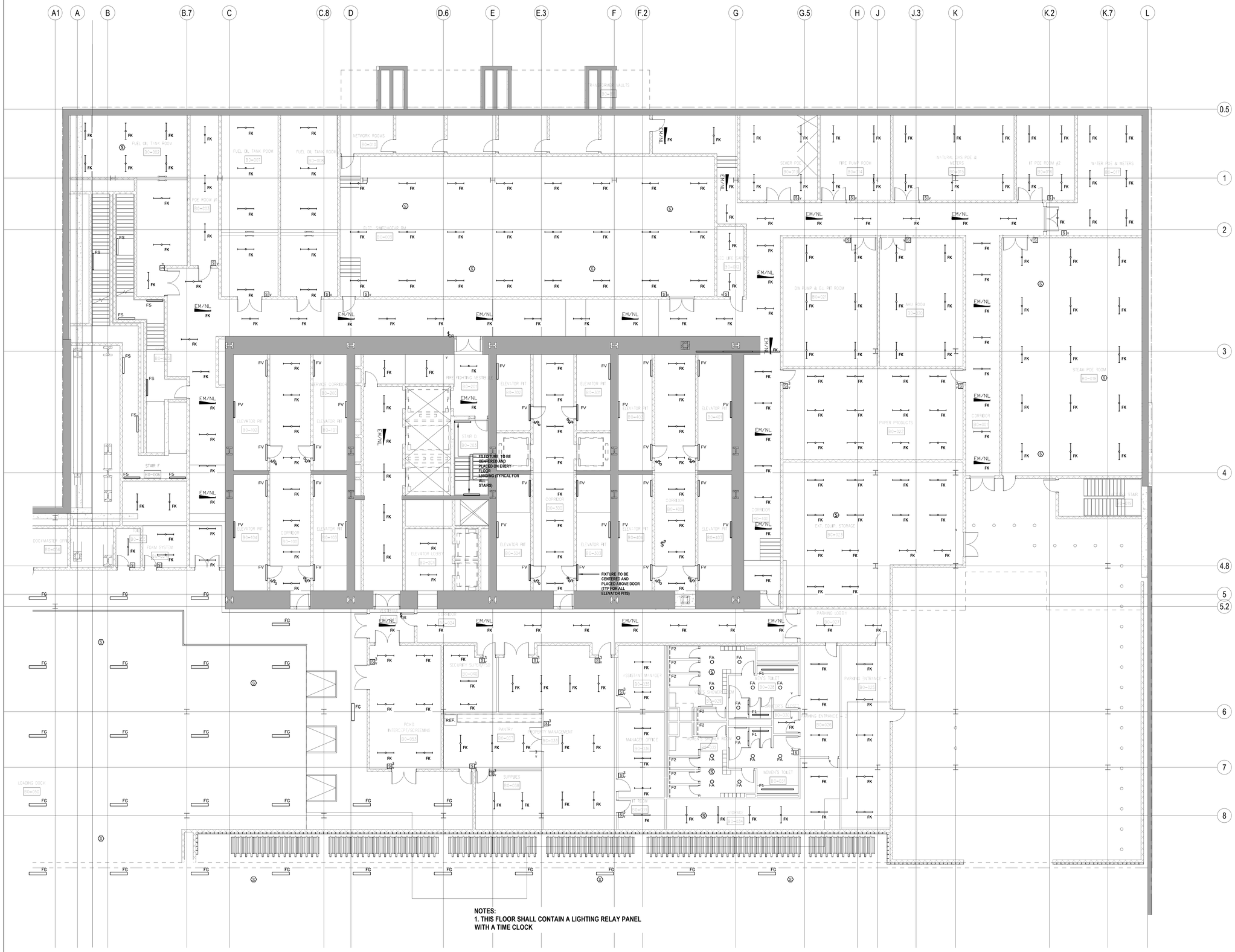

NOTES:
1. THIS FLOOR SHALL CONTAIN A LIGHTING RELAY PANEL WITH A TIME CLOCK

PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

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E3799075636 Scan Code

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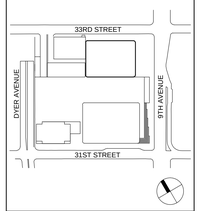

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JOHN A. MOTTO JR.
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NYC EC COMPLIANCE LIGHTING CELLAR B FLOOR PLAN - PART A

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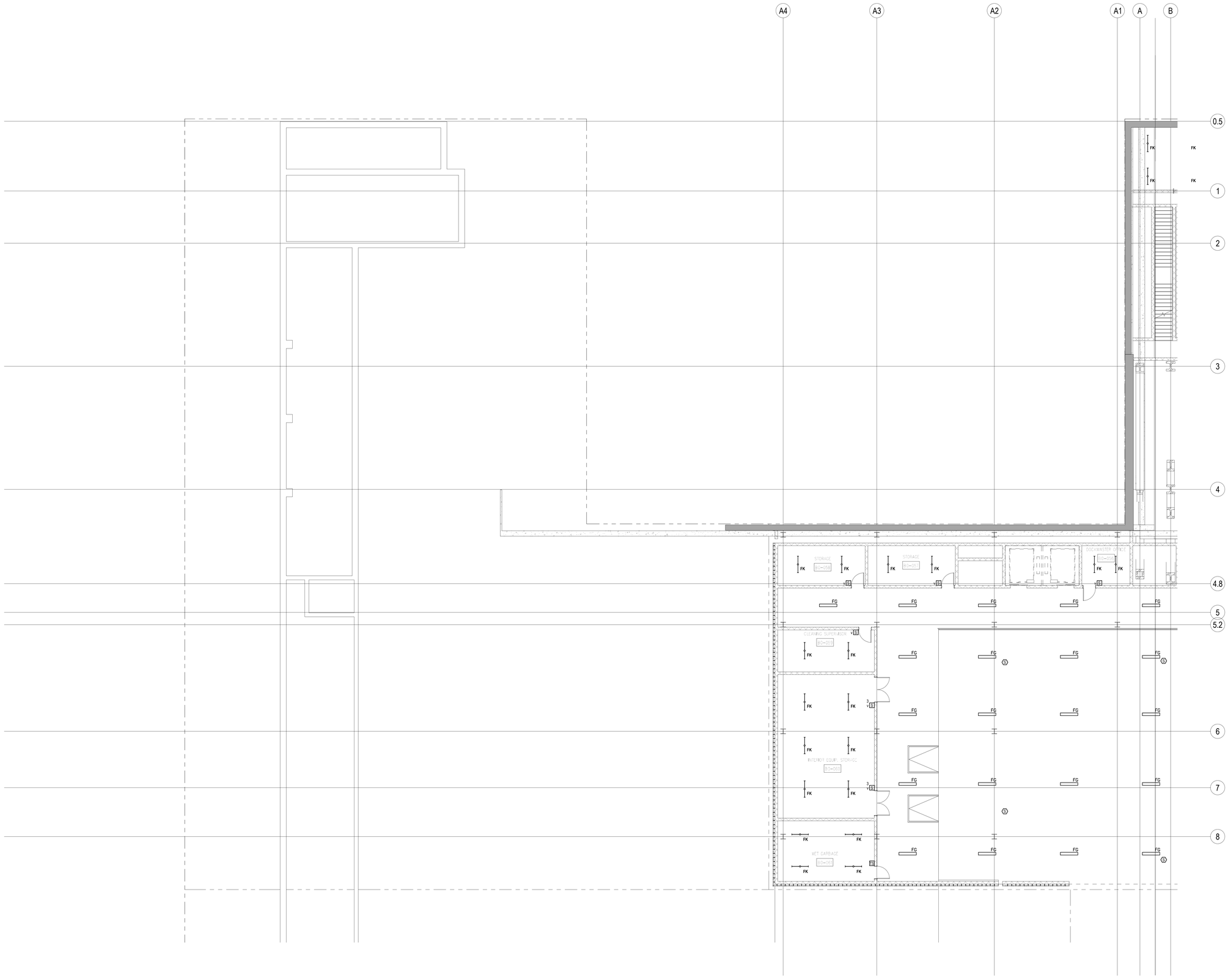

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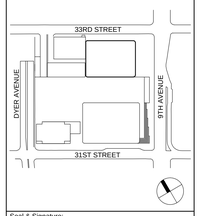

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NYC EC COMPLIANCE LIGHTING CELLAR B FLOOR PLAN - PART B

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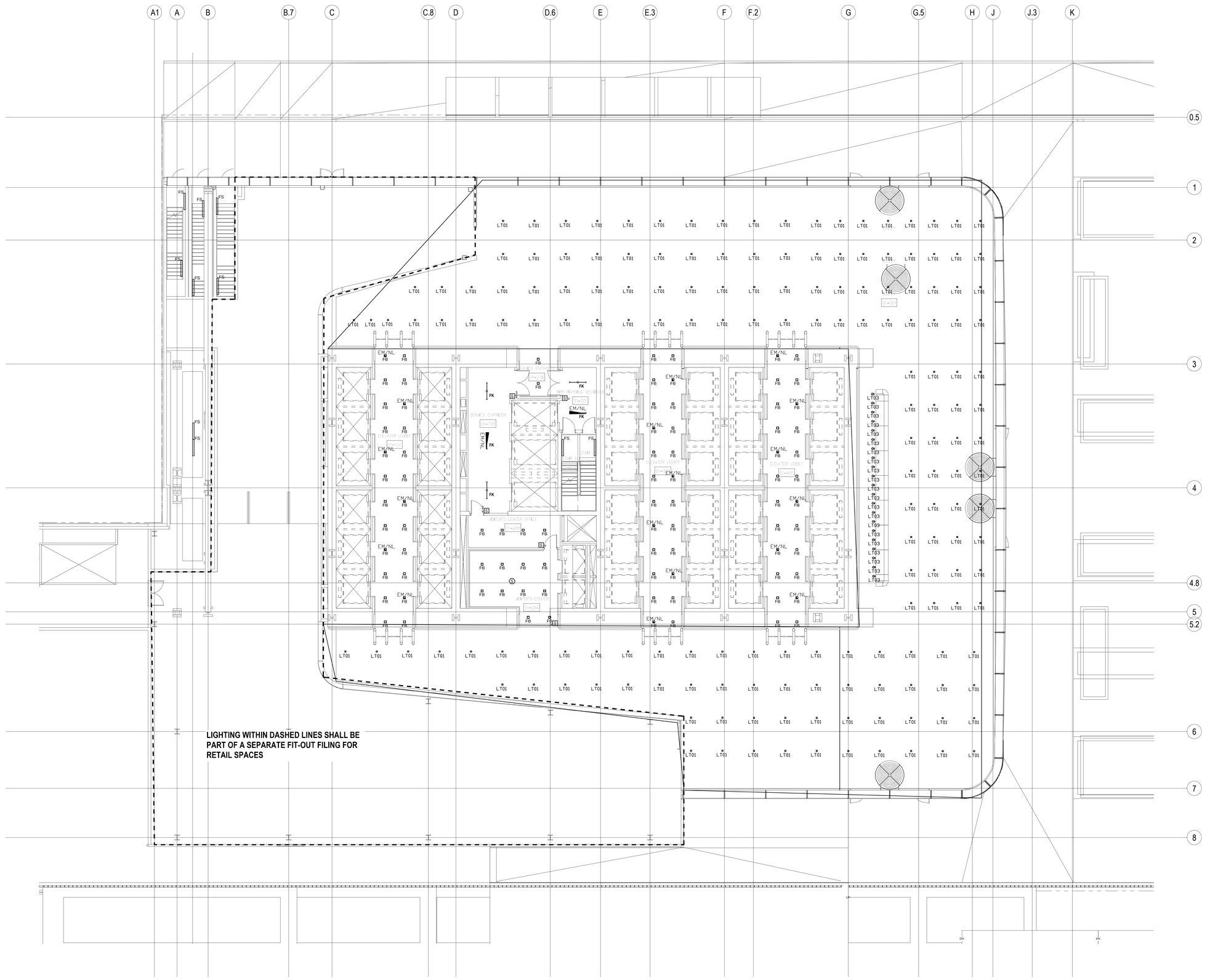

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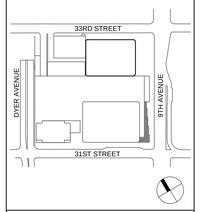

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NYC EC COMPLIANCE LIGHTING LEVEL 1 FLOOR PLAN

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Project No.: 14830.A.000	B-SCAN Sheet No.: EN-103.00
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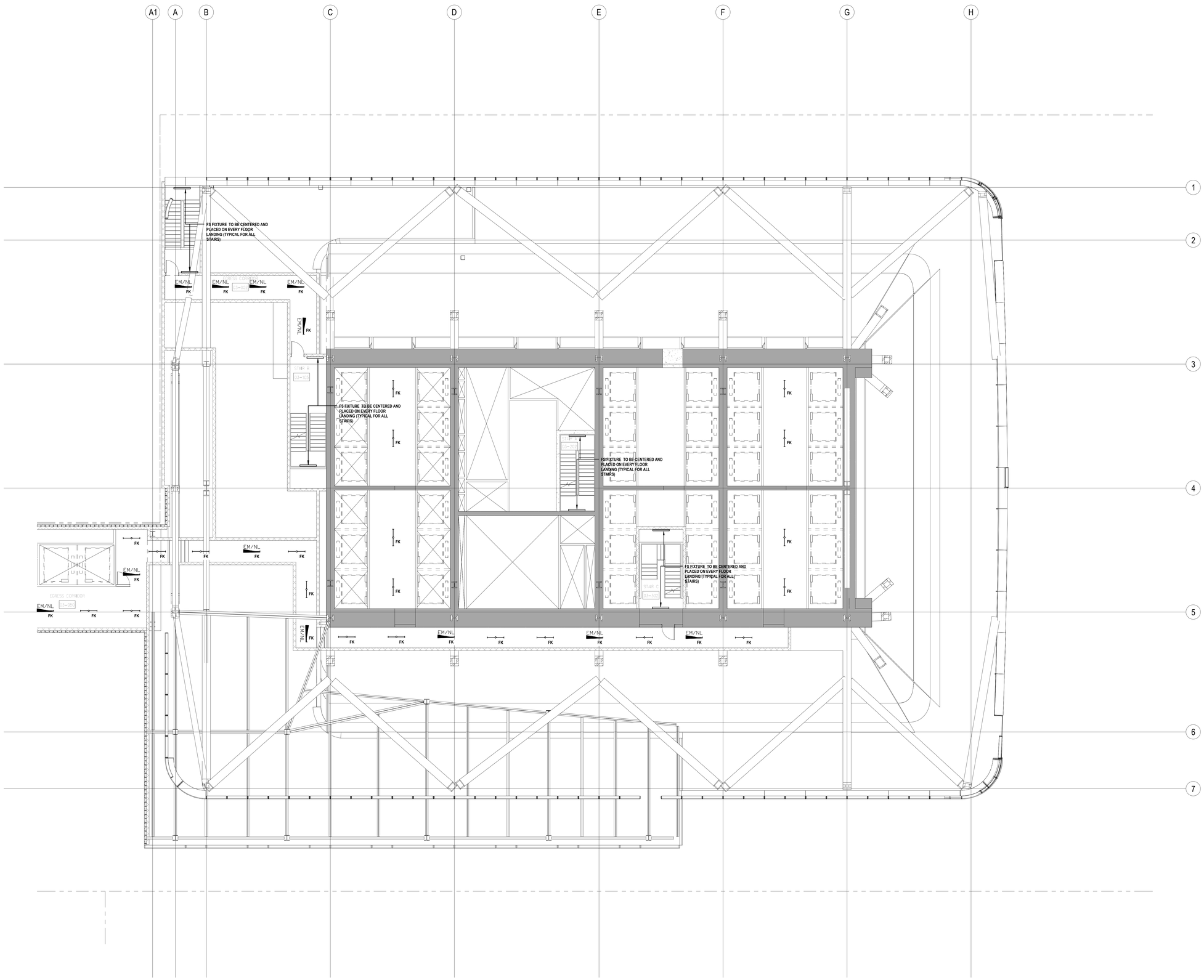

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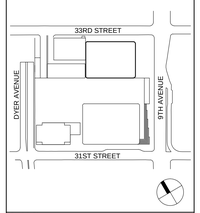

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NYC EC COMPLIANCE LIGHTING LEVEL 3 FLOOR PLAN

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Sheet No.:

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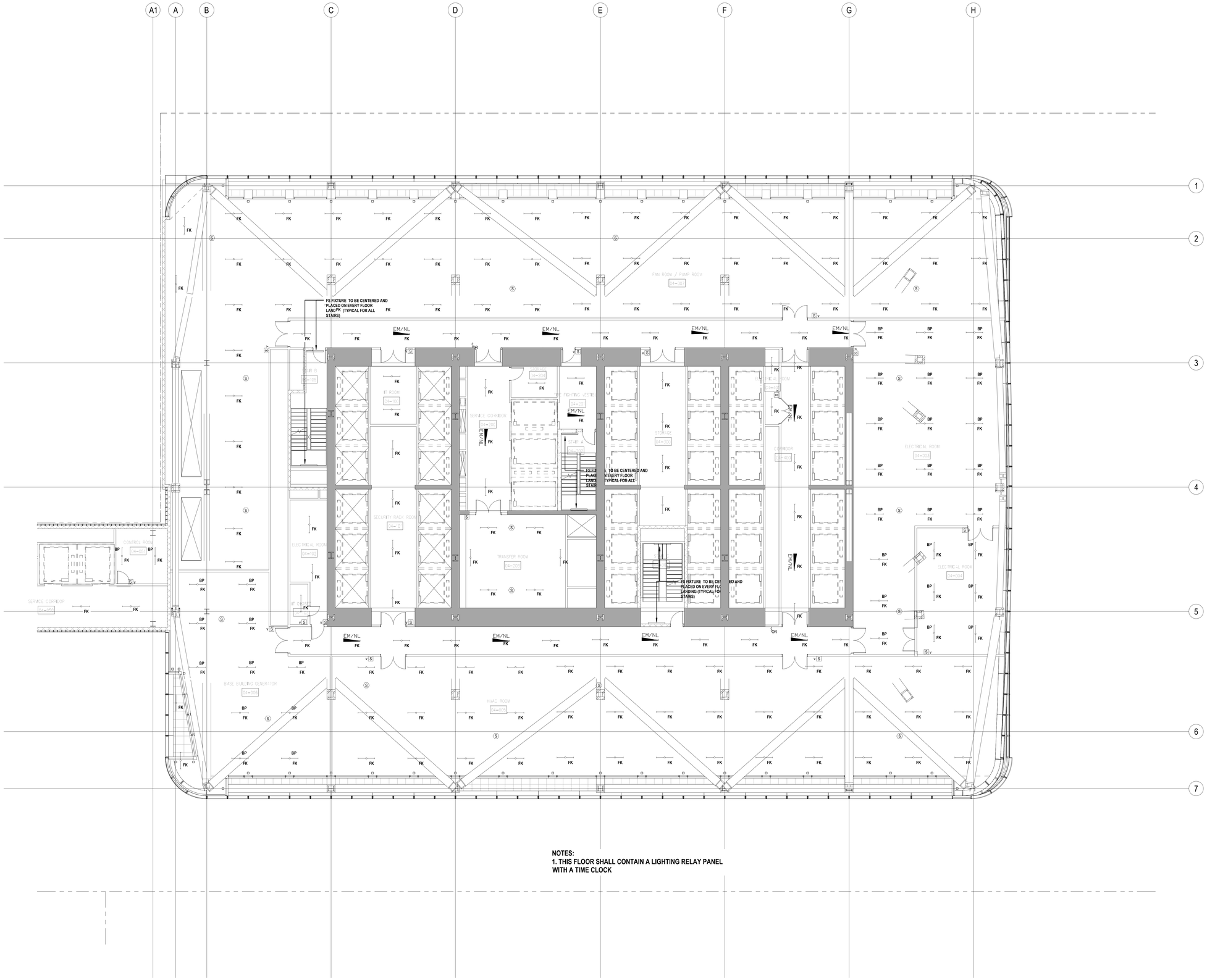

NOTES:
1. THIS FLOOR SHALL CONTAIN A LIGHTING RELAY PANEL WITH A TIME CLOCK

PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield
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Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

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Edgett Williams Consulting Group, Inc.
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Landscape Consultant
Field Operations
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Blast Consultant
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Cerami & Associates
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Wilson, Uhrig & Associates, Inc.
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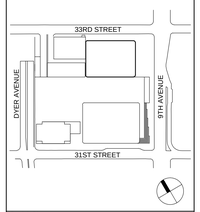
Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 4 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
B-SCAN Sheet No.: EN-105.00
File No.:
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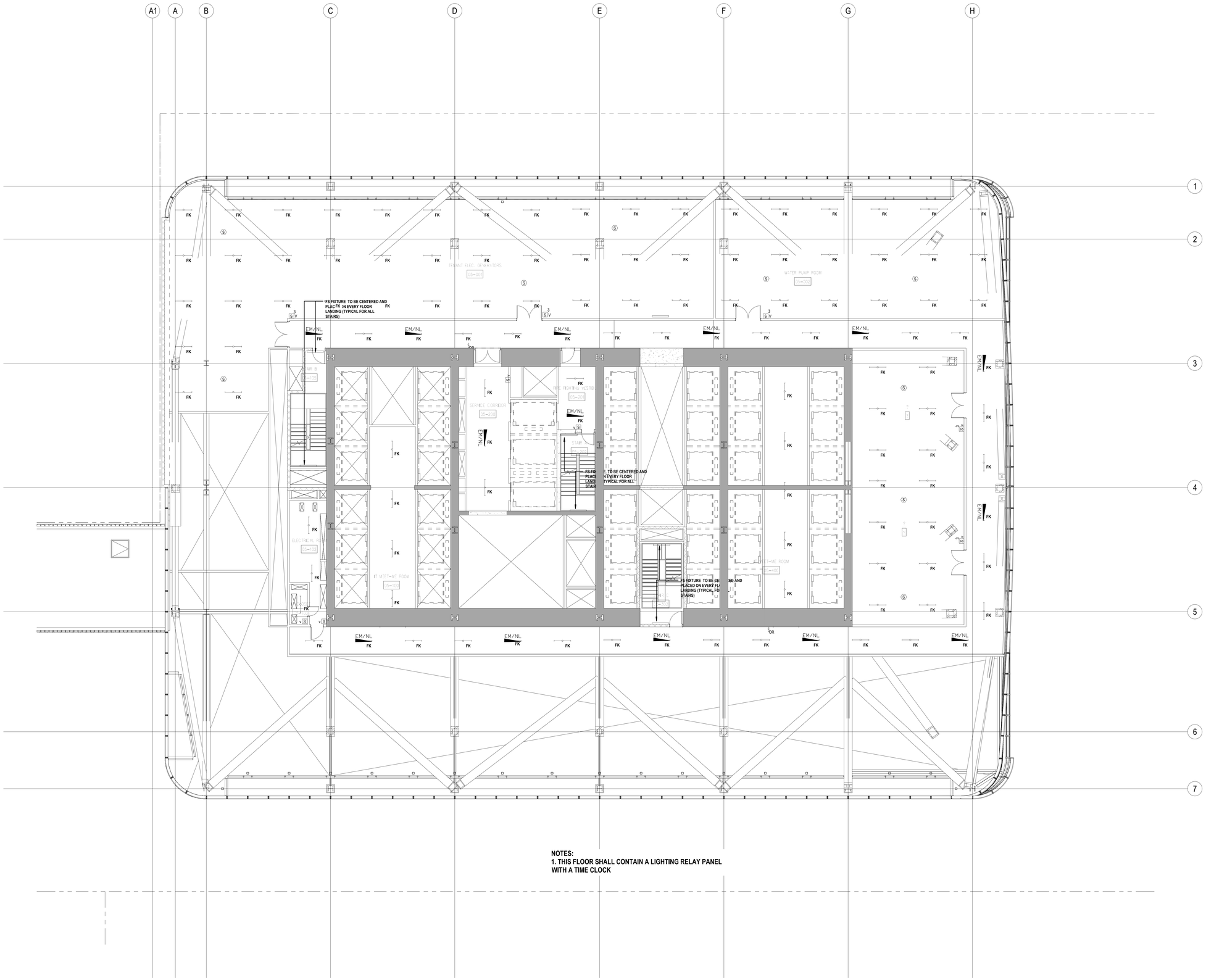

NOTES:
1. THIS FLOOR SHALL CONTAIN A LIGHTING RELAY PANEL WITH A TIME CLOCK

PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

E2150613355 Scan Code

MANHATTAN WEST: NORTH TOWER

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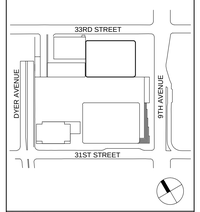
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 5 FLOOR PLAN

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-106.00

File No.:

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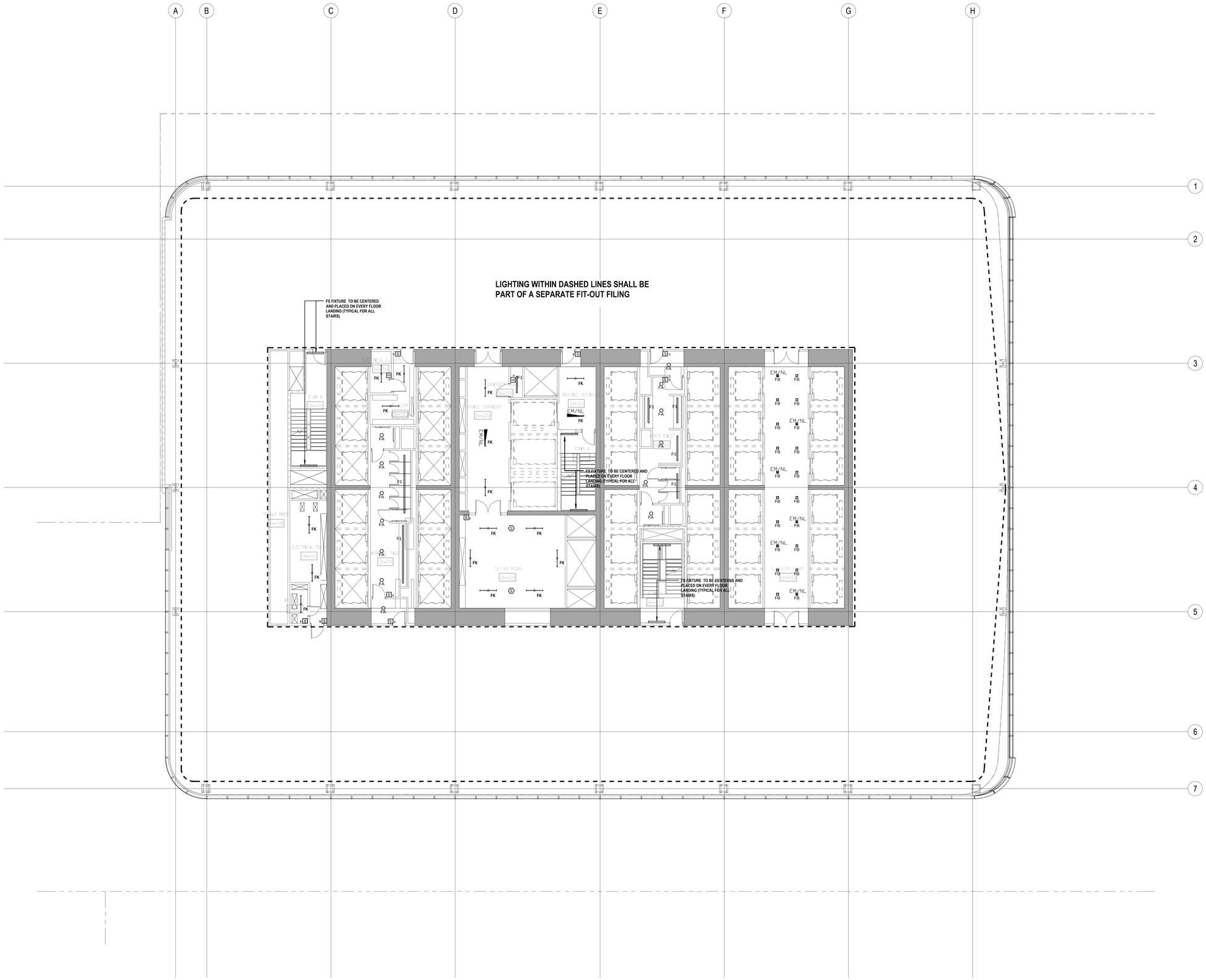

PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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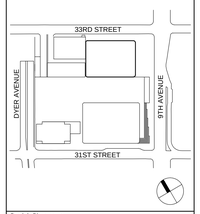
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 6-16 FLOOR PLAN

Project No.: 14830.A.000

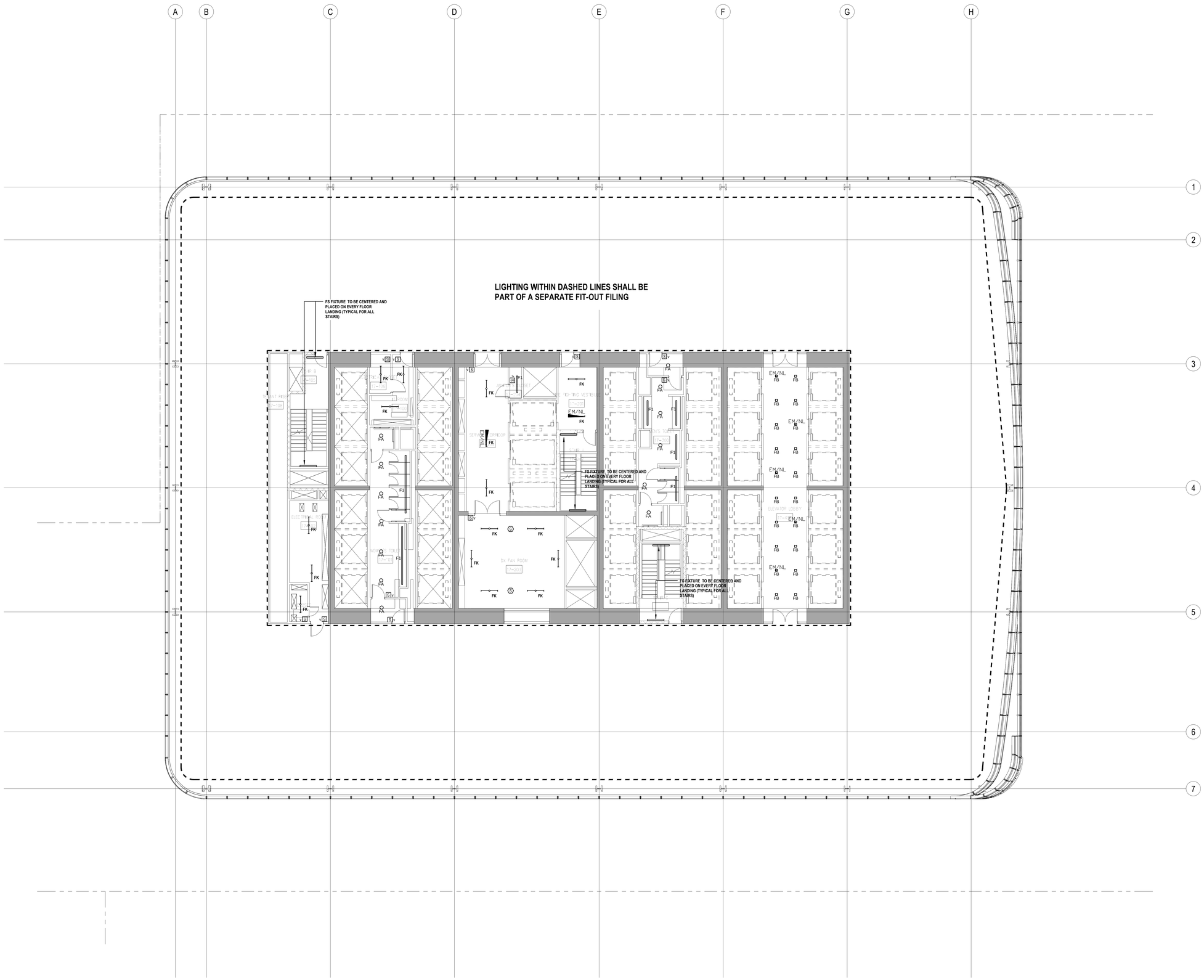
Date: 20 JUN 2014

Scale: N.T.S.

File No.:

B-SCAN Sheet No.: EN-107.00

Page No.:



PROFESSIONAL ENERGY STATEMENT

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MANHATTAN WEST: NORTH TOWER

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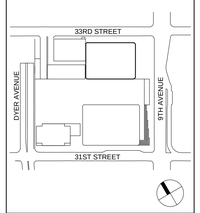
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 17 FLOOR PLAN

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: N.T.S.

File No.:

B-SCAN Sheet No.: EN-108.00

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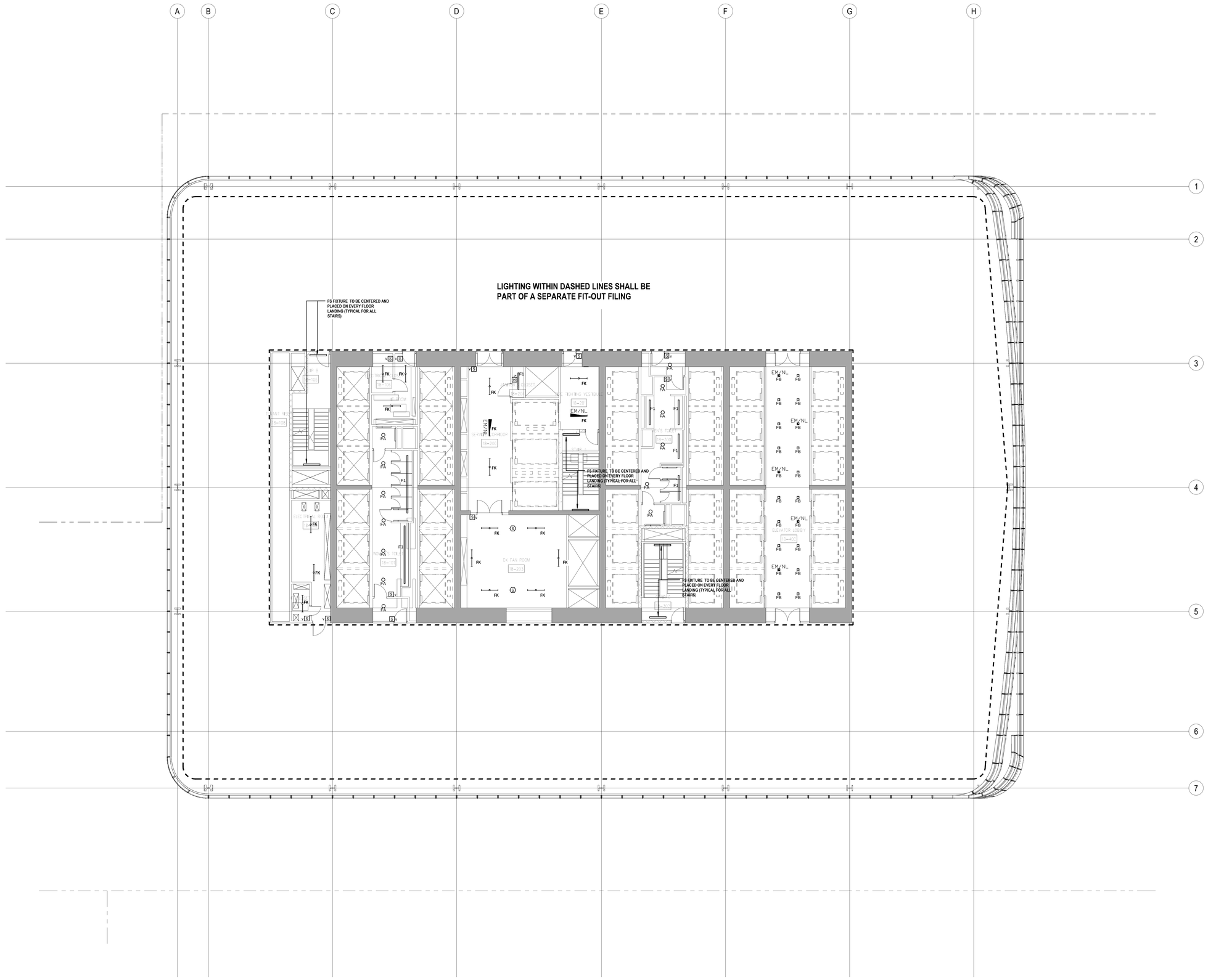

PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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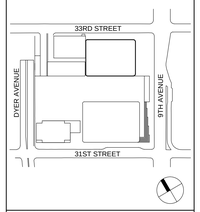
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
NYC EC COMPLIANCE LIGHTING LEVEL 18 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
B-SCAN Sheet No.: EN-109.00
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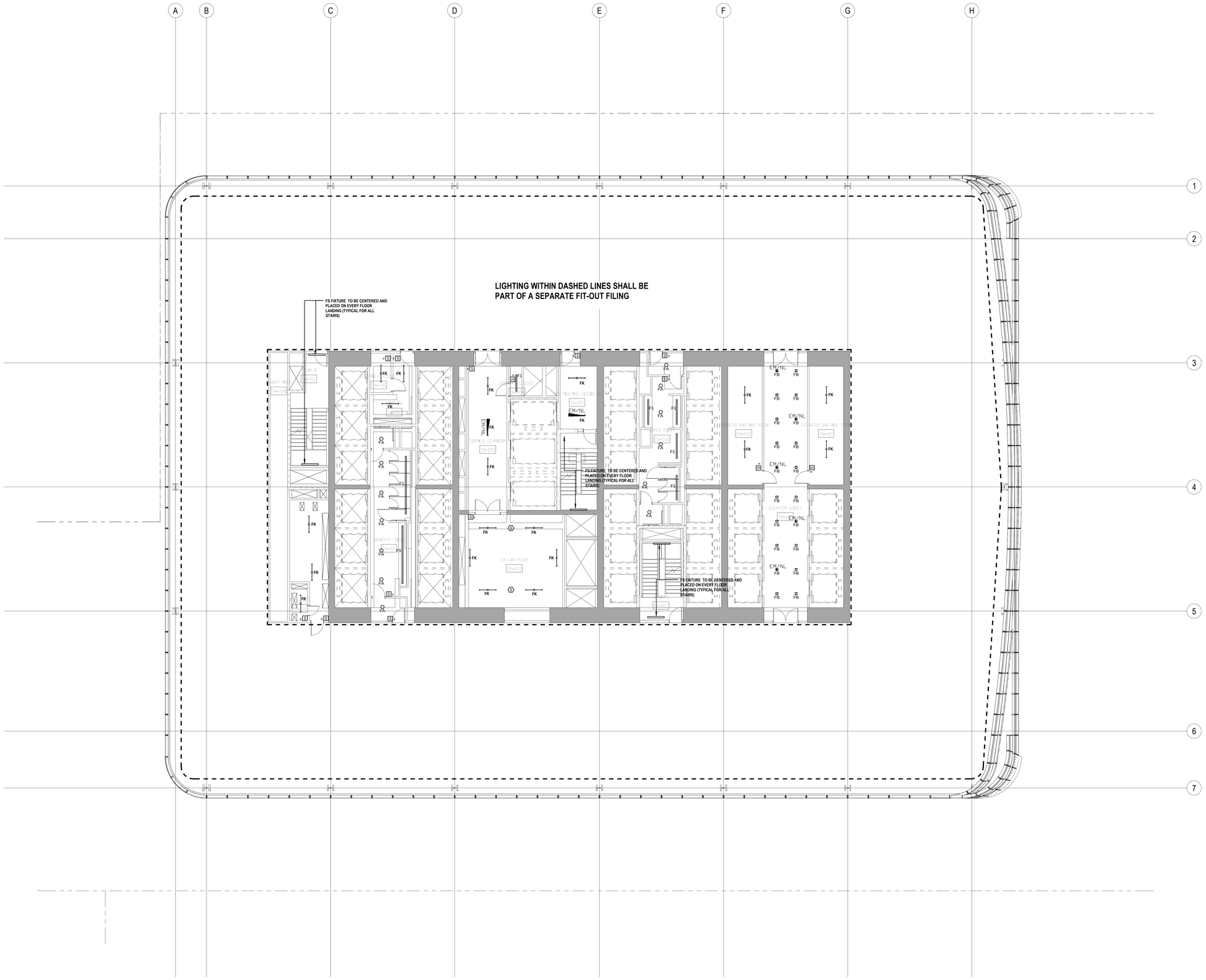

SHEET NOTES

PROFESSIONAL ENERGY STATEMENT

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DEPT OF BLDGS 121187243 Job Number

E3378051480 Scan Code

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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250 Vesey Street, 15th Floor, New York, NY 10281

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New York, NY 10122

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Wind Tunnel Consultant

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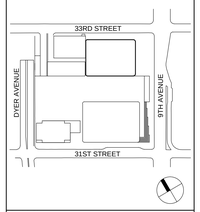
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 19 - 20 FLOOR PLAN

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-110.00

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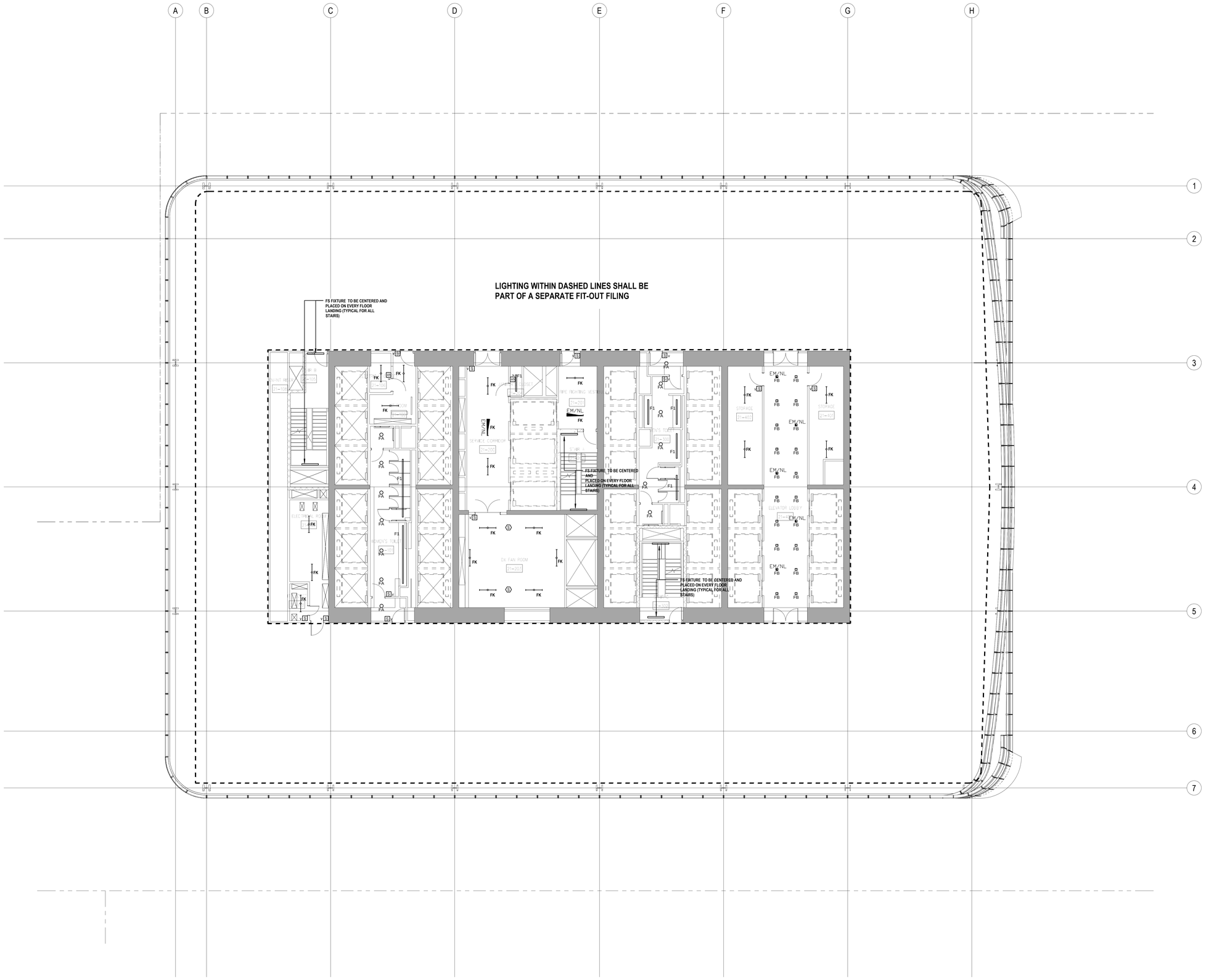

PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

E290008345 Scan Code

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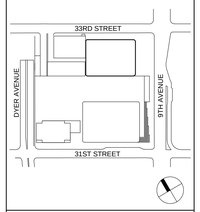
Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 21-27 FLOOR PLAN

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-111.00

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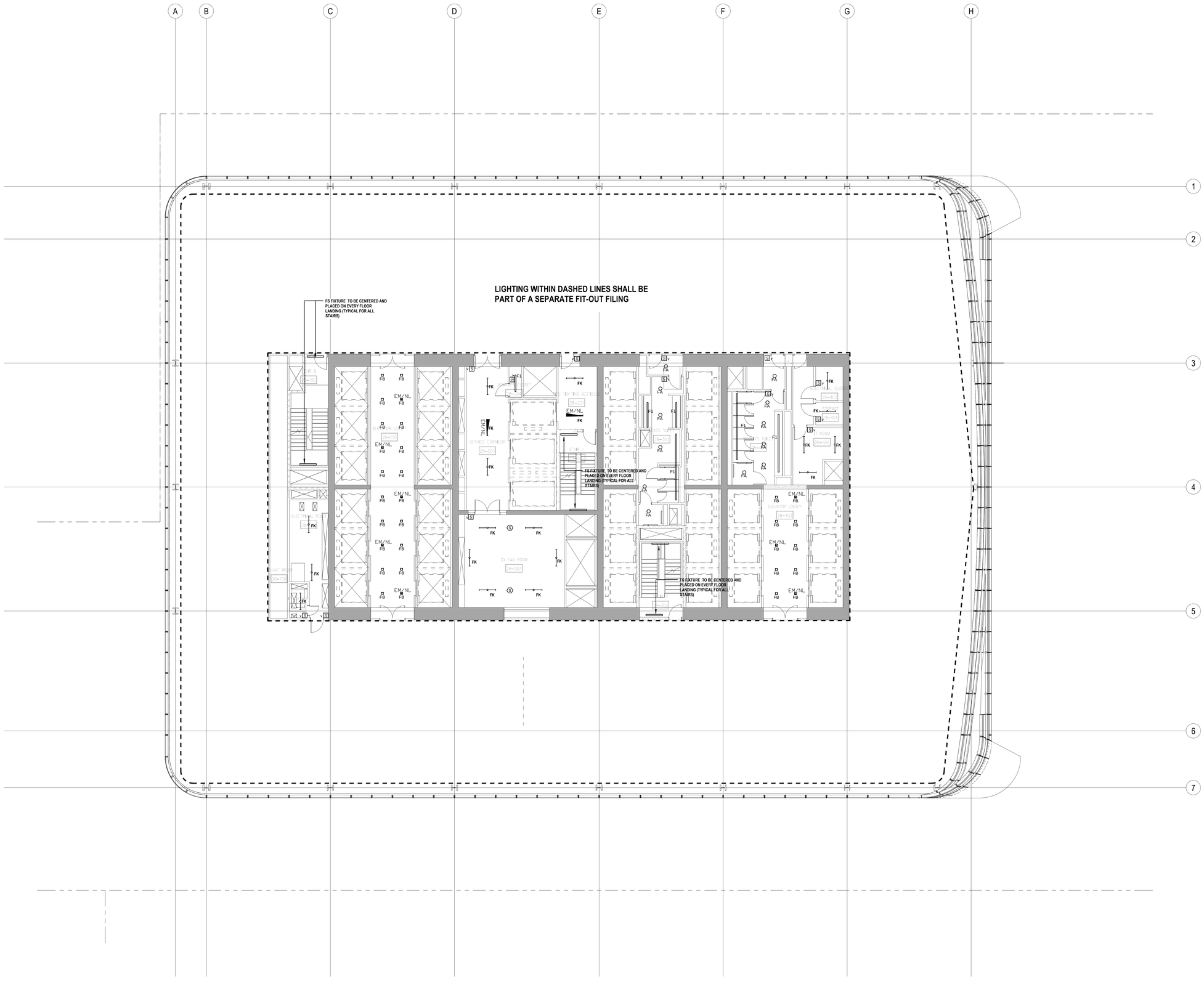

PROFESSIONAL ENERGY STATEMENT

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DEPT OF BLDGS 121187243 Job Number

E-EQF-NY-039941 Scan Code

MANHATTAN WEST: NORTH TOWER

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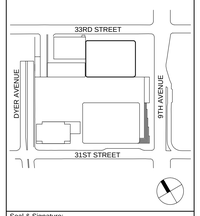
Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 28 FLOOR PLAN

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-112.00

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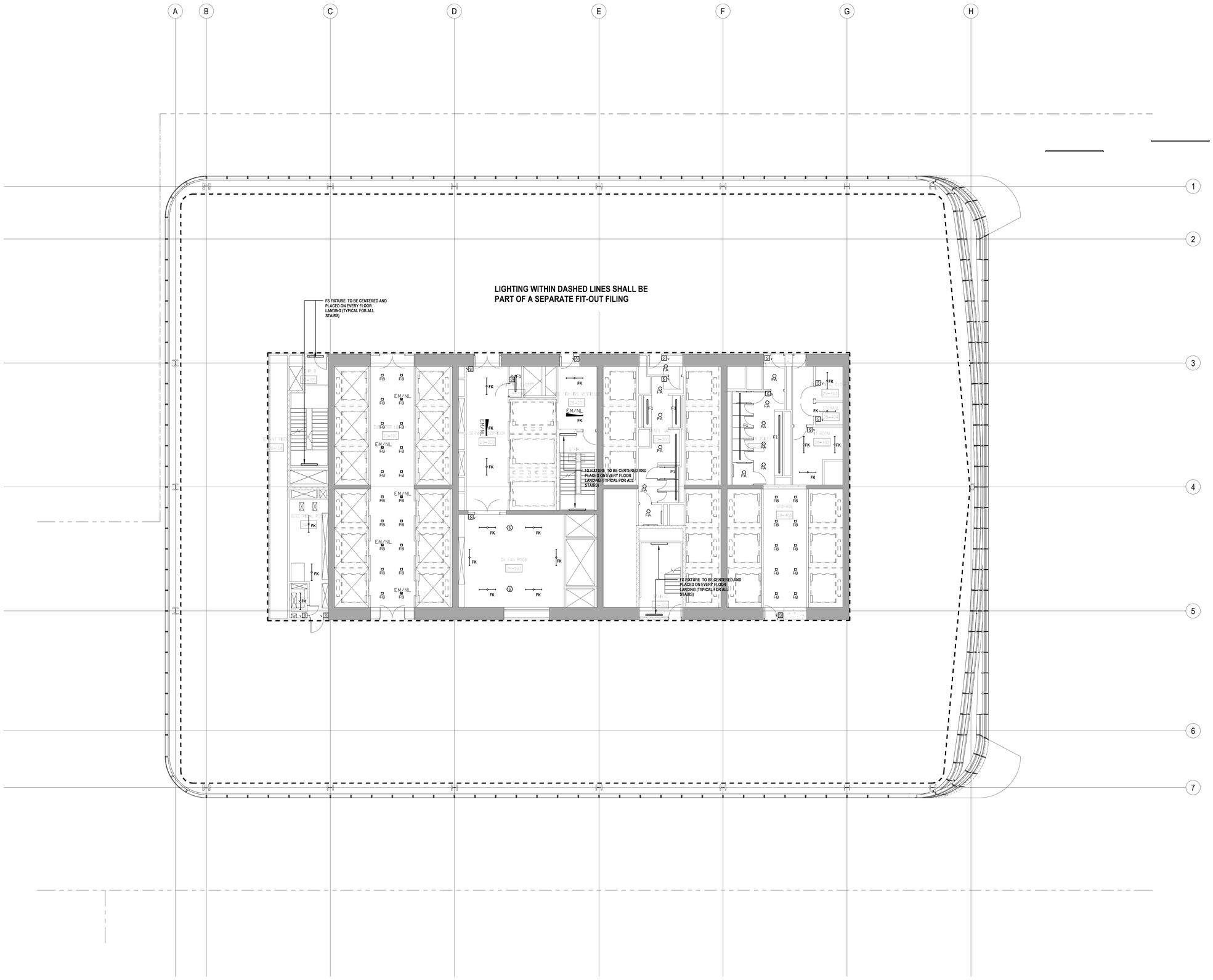

PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

DEPT OF BLDGS 121197243 Job Number

E2000421005 Scan Code

MANHATTAN WEST: NORTH TOWER
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Security Consultant
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250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
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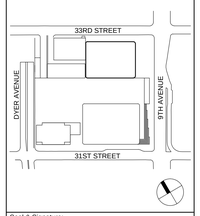
Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 29 FLOOR PLAN

Project No.: 14830.A.000

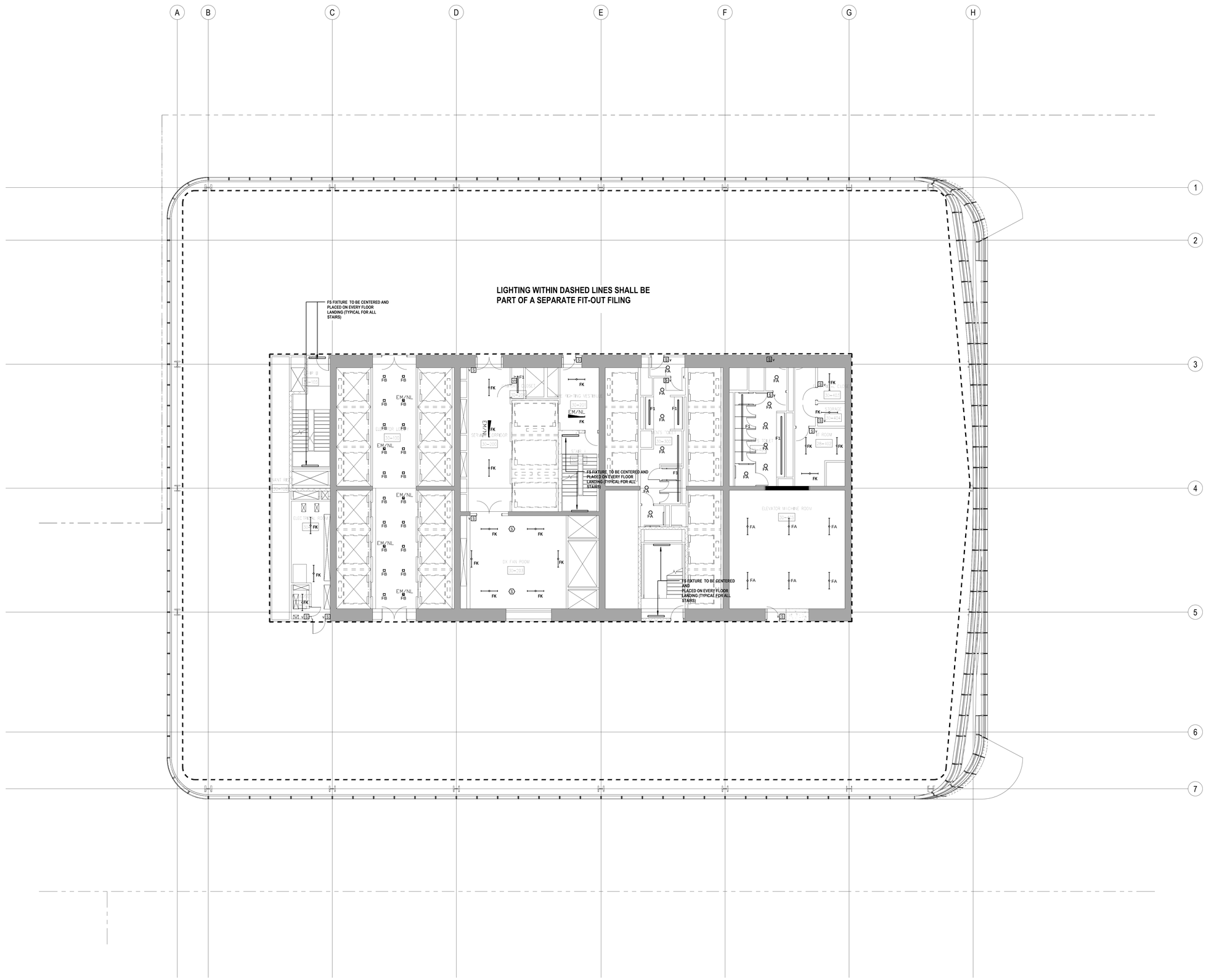
Date: 20 JUN 2014

Scale: N.T.S.

File No.:

B-SCAN Sheet No.: EN-113.00

Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
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Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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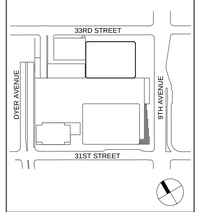
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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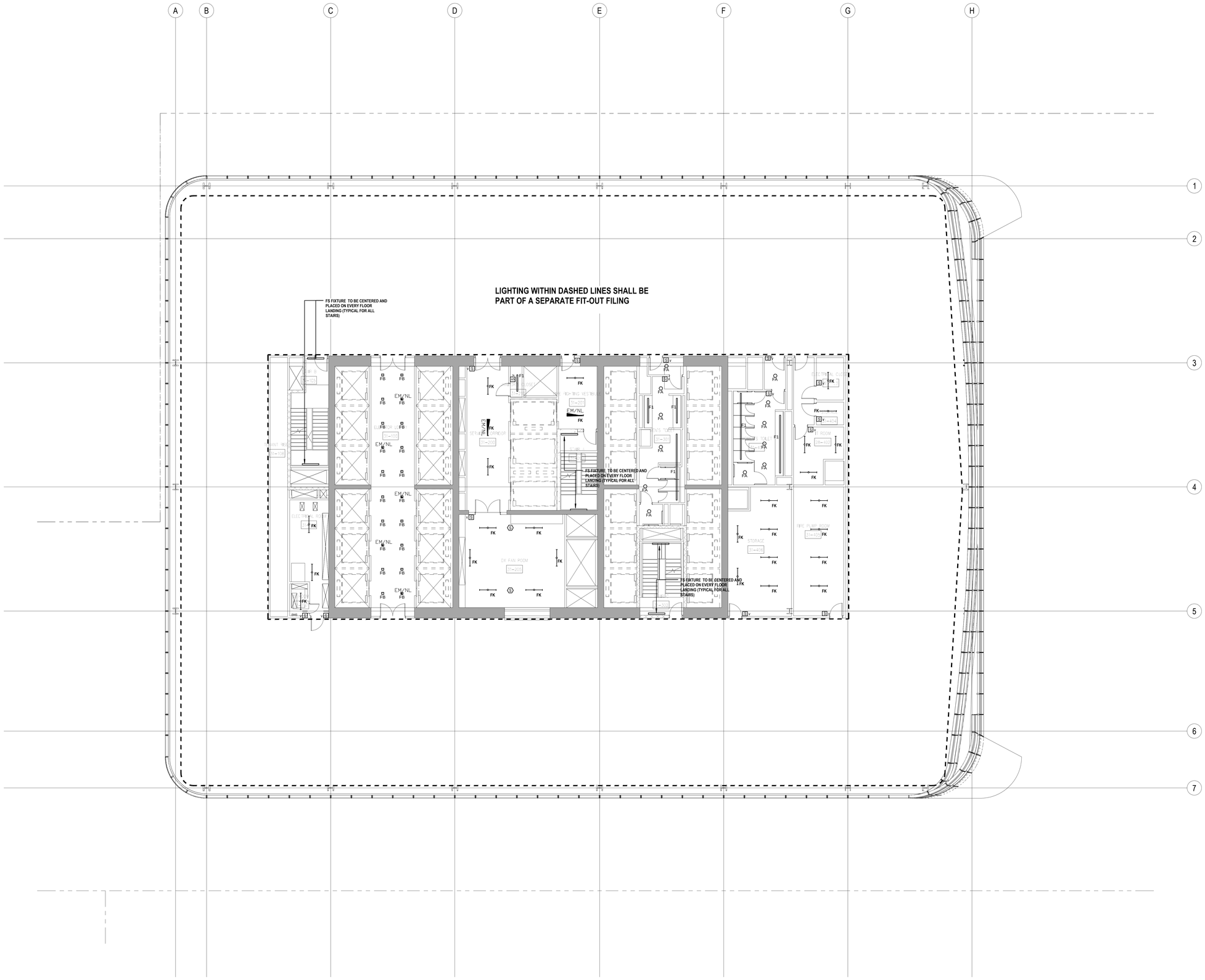
LICENSED PROFESSIONAL ENGINEER
JOHN A. MOTTOLA
No. 065884
STATE OF NEW YORK

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
NYC EC COMPLIANCE LIGHTING LEVEL 30 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:
B-SCAN Sheet No.: EN-114.00
Page No.:



SHEET NOTES

PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

DEPT OF BLDGS 121187243 Job Number

B00995089 Scan Code

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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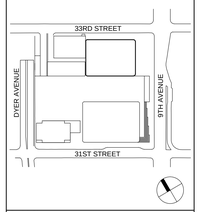
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 31 FLOOR PLAN

Project No.: 14830.A.000

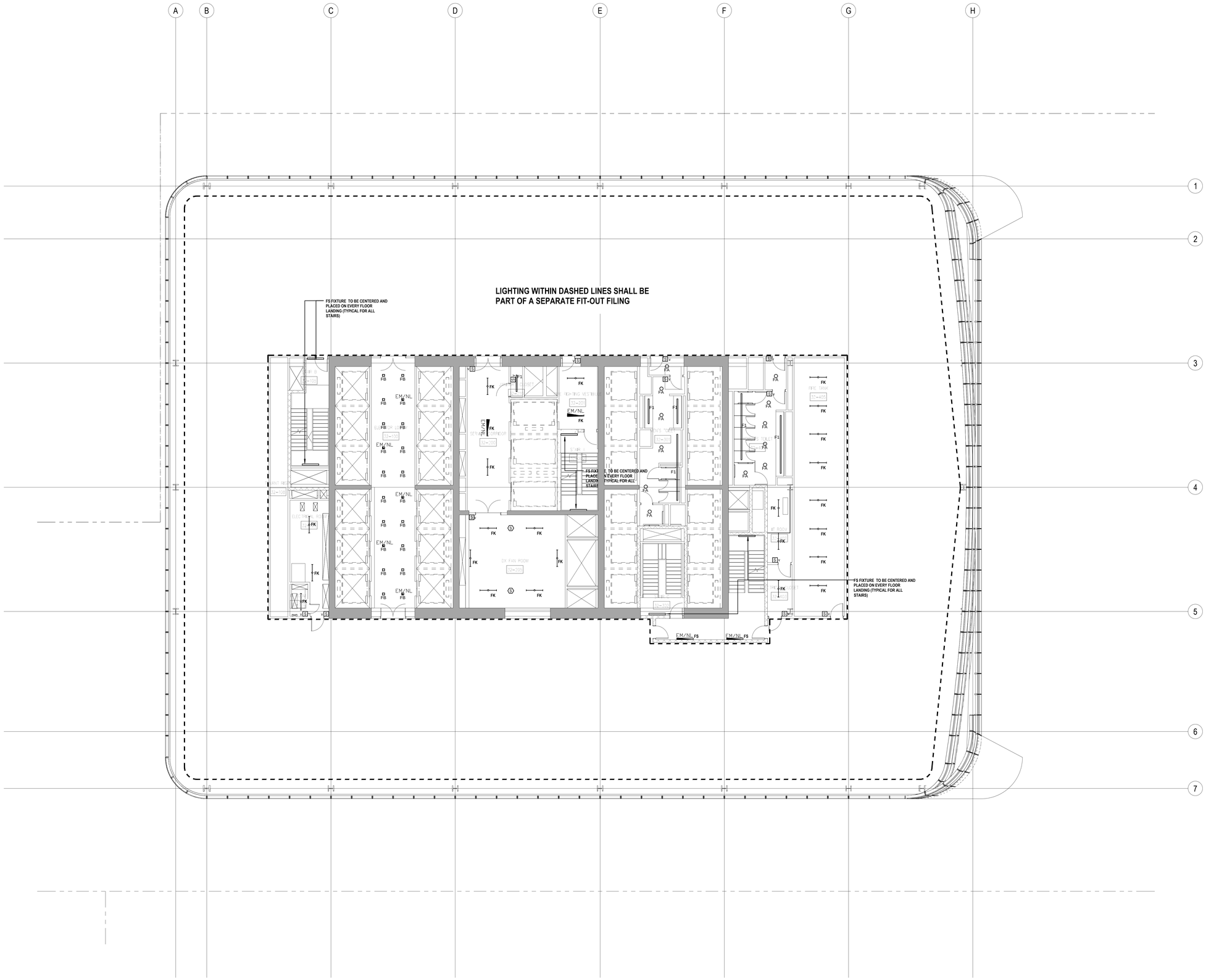
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-115.00

File No.:

Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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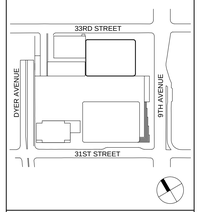
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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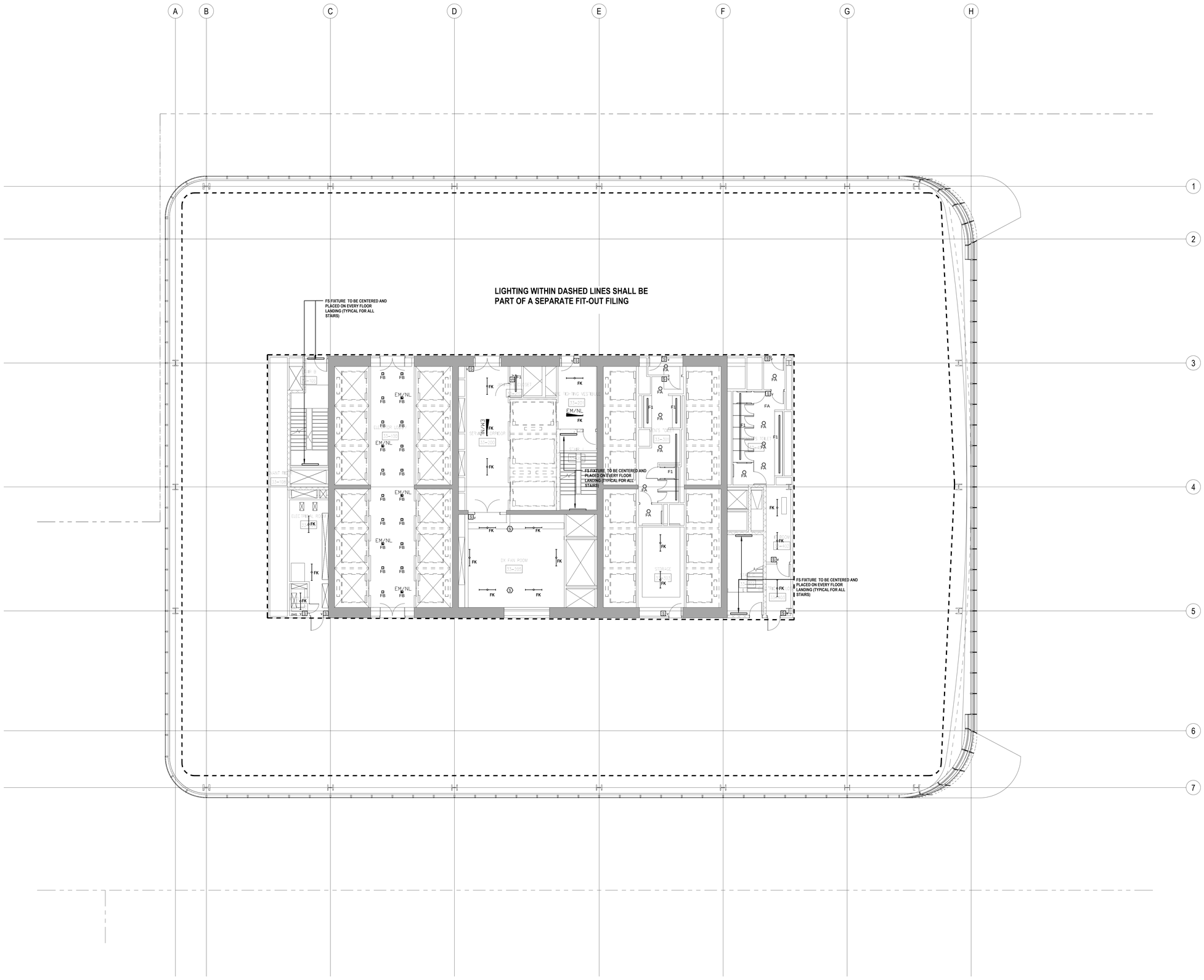
No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
NYC EC COMPLIANCE LIGHTING LEVEL 32 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
B-SCAN Sheet No.: EN-116.00
File No.:
Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
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Jaros Baum & Bolles
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Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

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Field Operations
475 10th Avenue, New York, NY 10018

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Weidlinger Associates, Inc.
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Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

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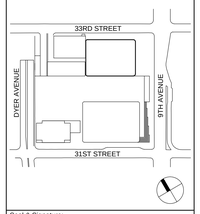
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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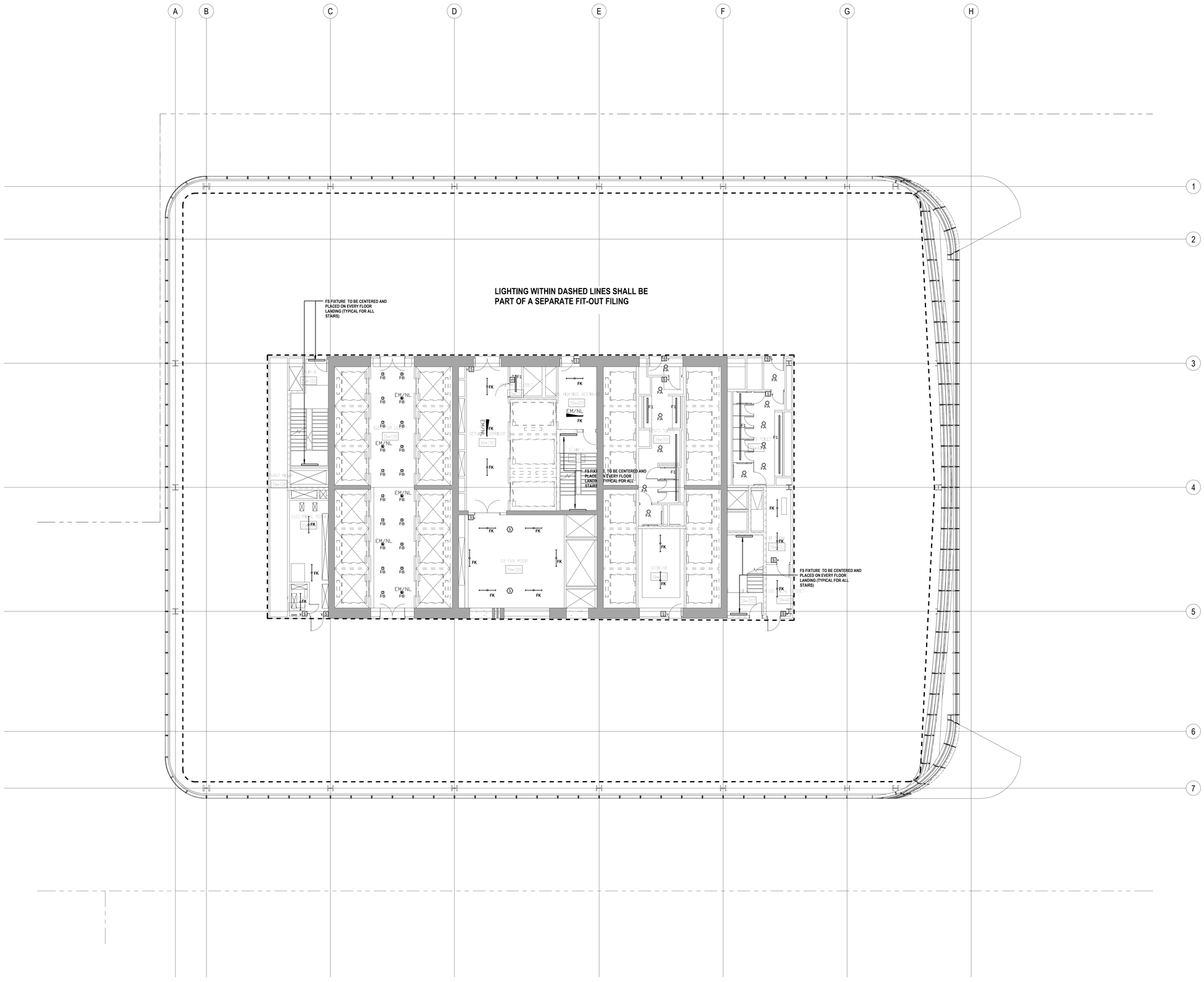
No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 33-38 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:
B-SCAN Sheet No.: EN-117.00
Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

E241560043 Scan Code

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

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Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant

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475 10th Avenue, New York, NY 10018

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Weidlinger Associates, Inc.
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Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

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Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

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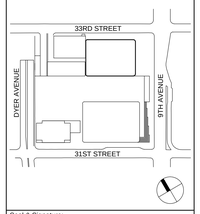
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 39 FLOOR PLAN

Project No.: 14830.A.000

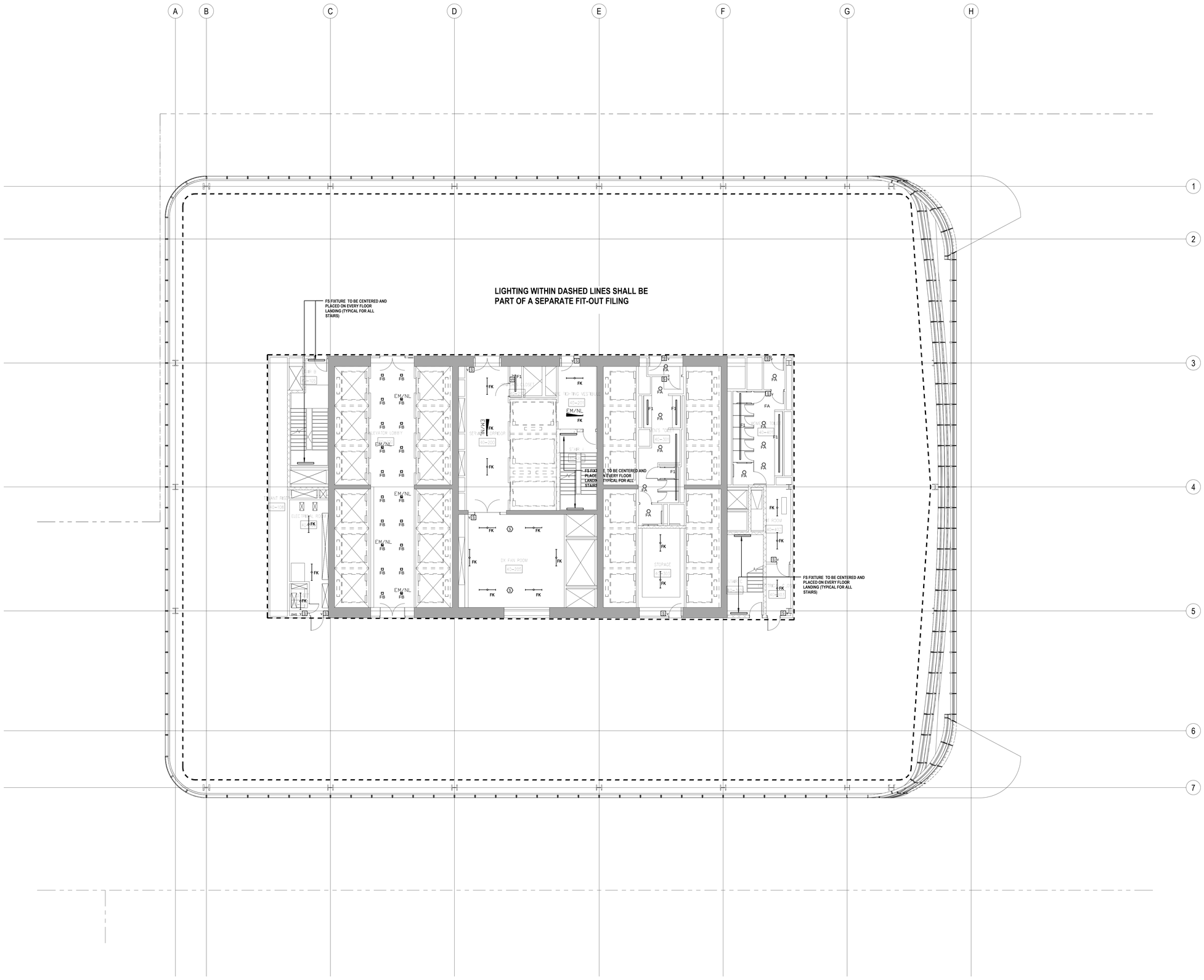
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-118.00

File No.:

Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Skidmore, Owings & Merrill LLP
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80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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14 Penn Plaza, 225 W. 34th Street #610,
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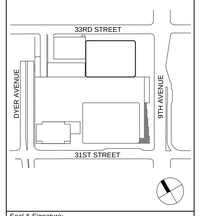
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 40-41 FLOOR PLAN

Project No.: 14830.A.000

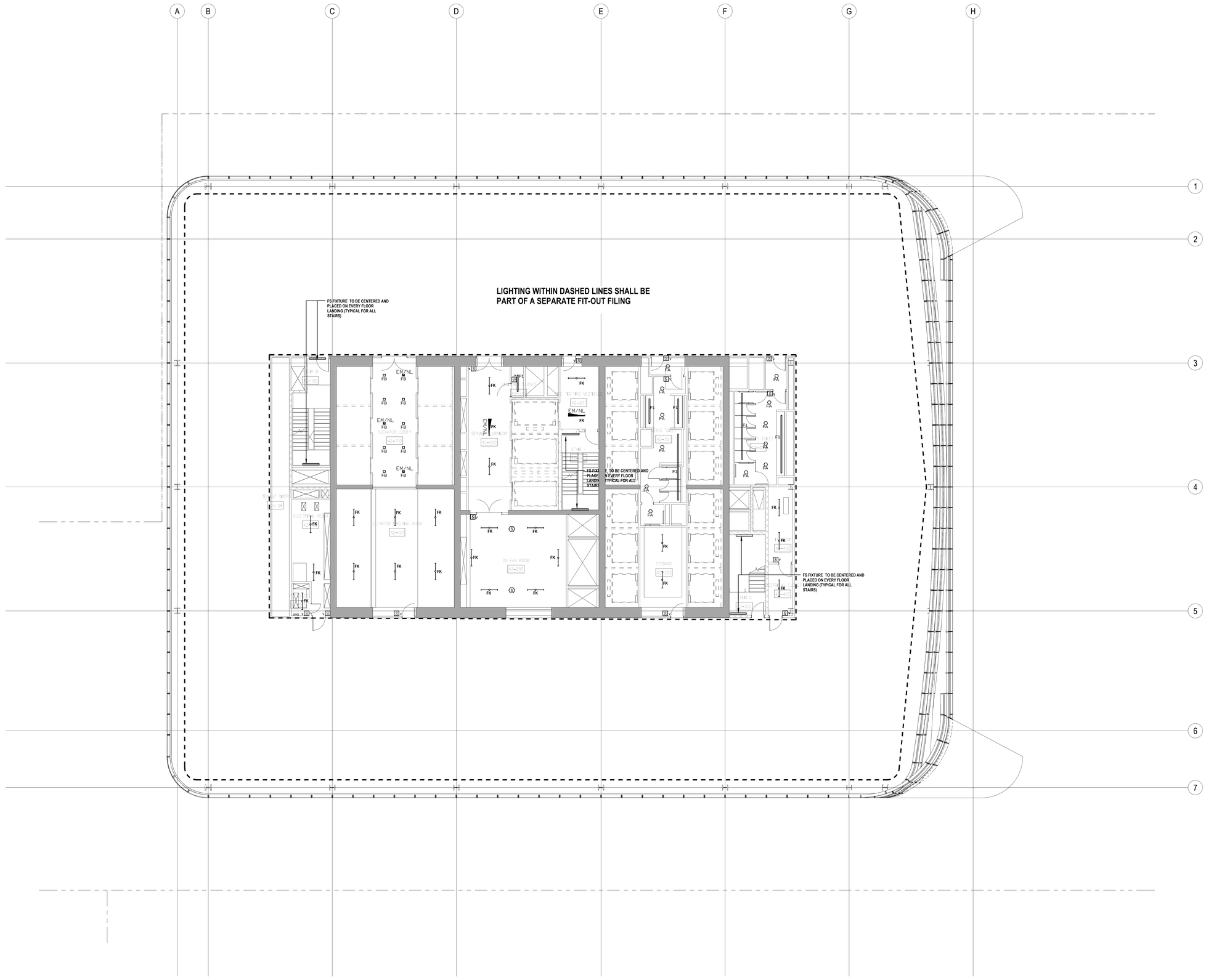
Date: 20 JUN 2014

Scale: N.T.S.

File No.:

B-SCAN Sheet No.: EN-119.00

Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

E-NB0667/006 Scan Code

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
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102 Madison Avenue #11, New York, NY 10016

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650 Woodlawn Road West, Guelph
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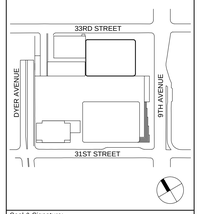
Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 42 FLOOR PLAN

Project No.: 14830.A.000

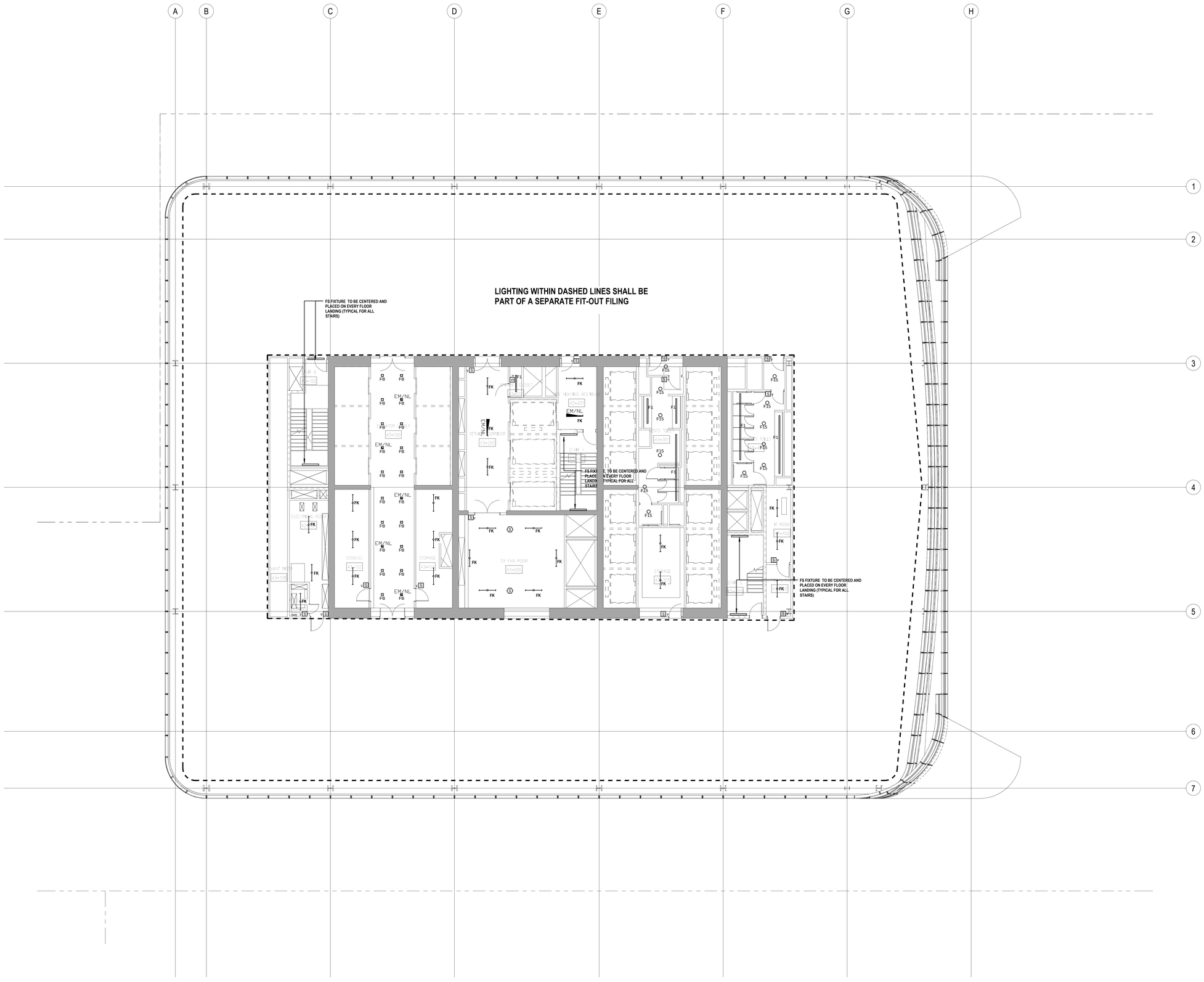
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-120.00

File No.:

Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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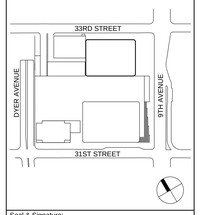
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 43-48 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
B-SCAN Sheet No.: EN-121.00
File No.:
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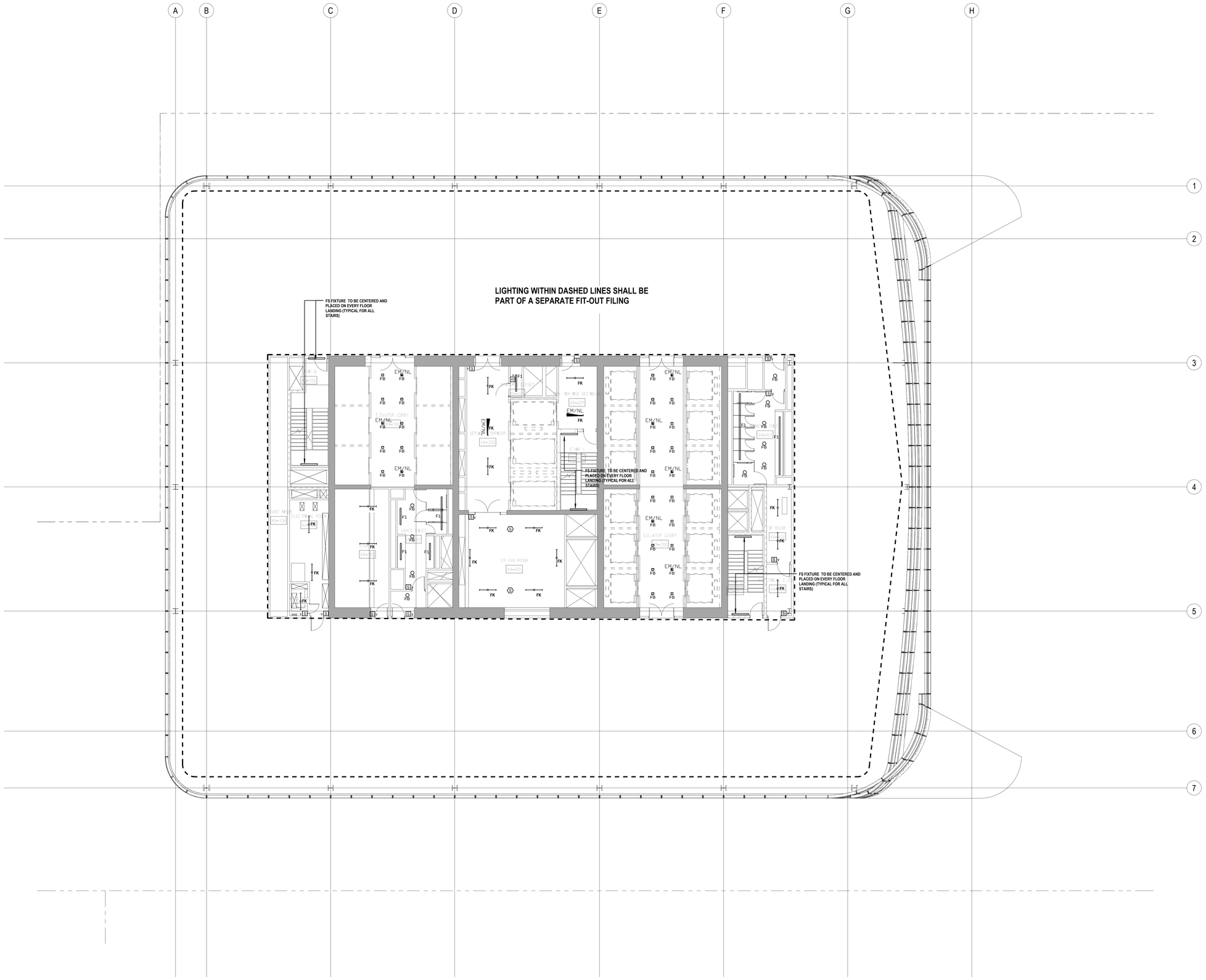

PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield
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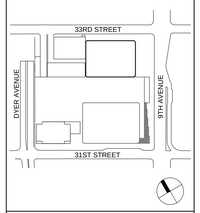
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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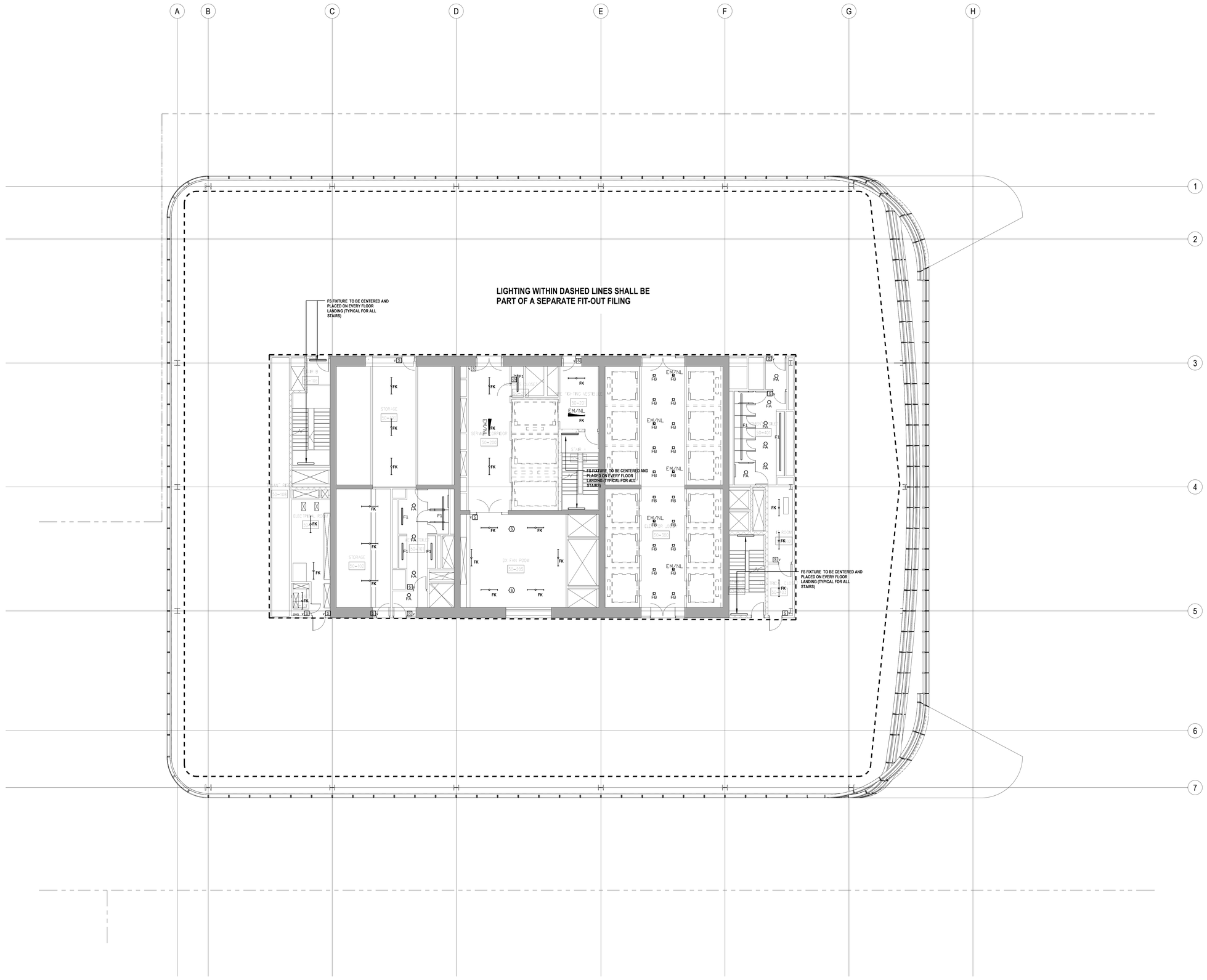
No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 49 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:
B-SCAN Sheet No.: EN-122.00
Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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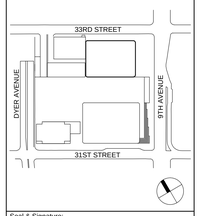
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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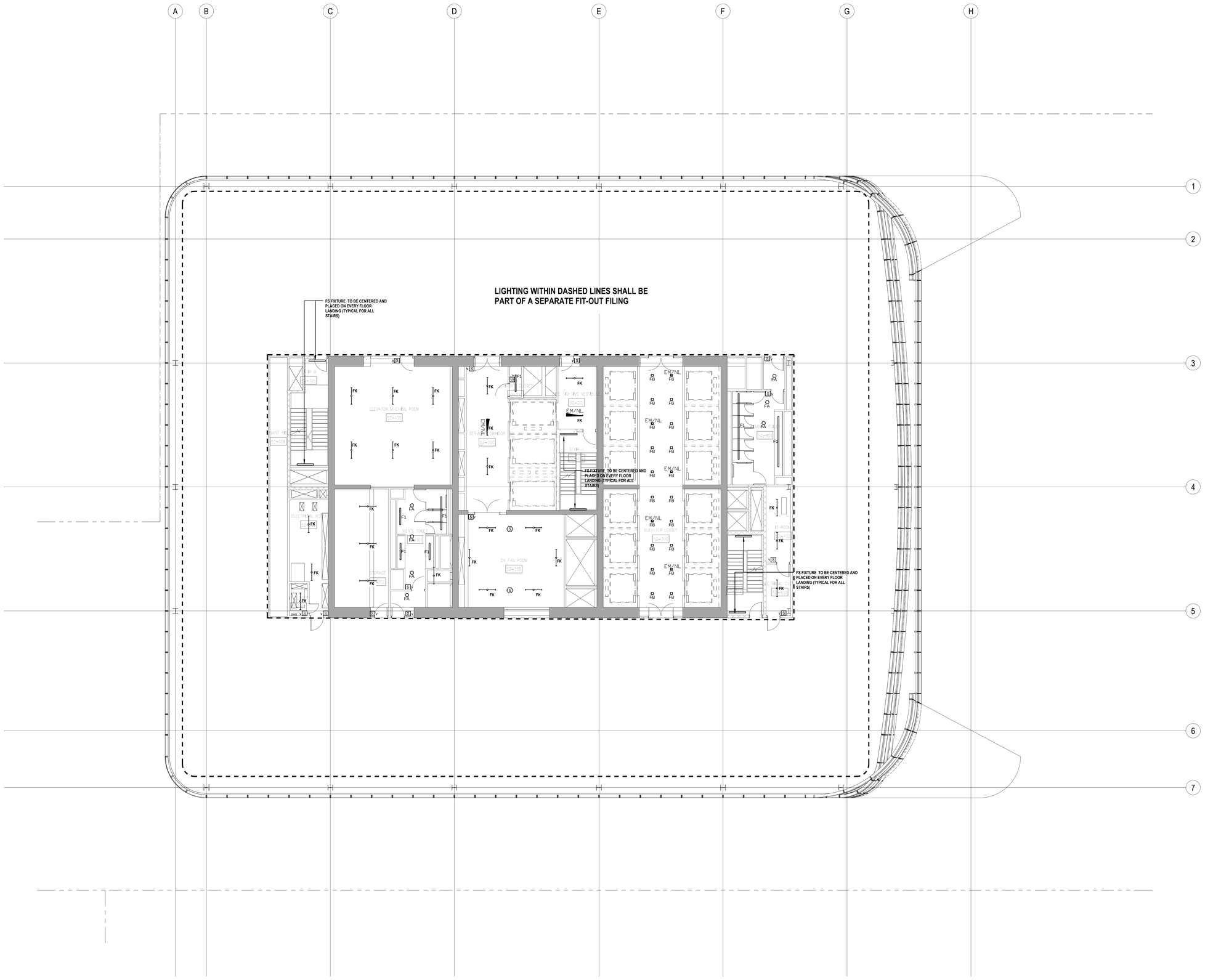
No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 50-51 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:
B-SCAN Sheet No.: EN-123.00
Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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Wind Tunnel Consultant
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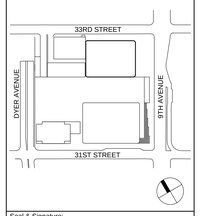
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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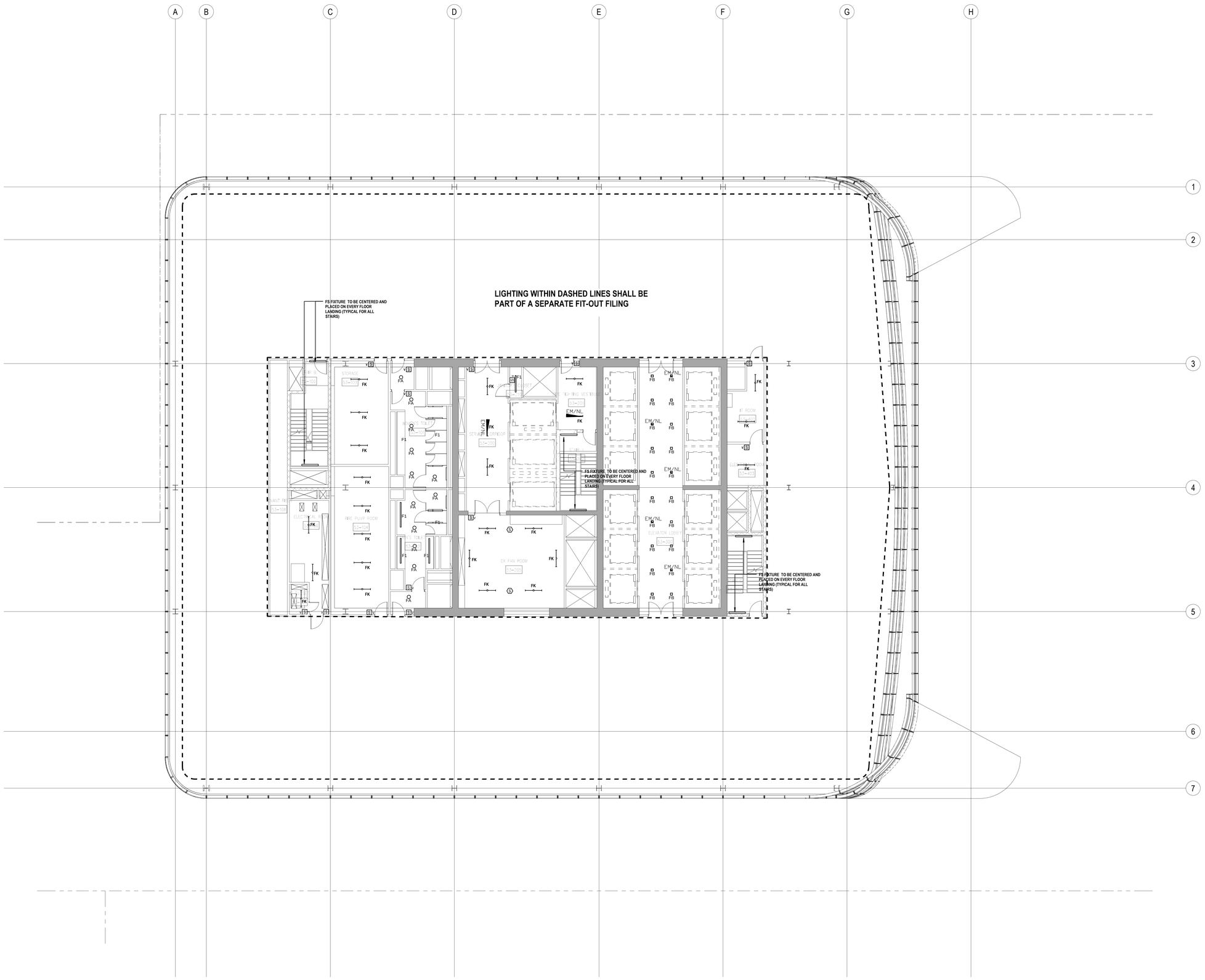
No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 52 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:
B-SCAN Sheet No.: EN-124.00
Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

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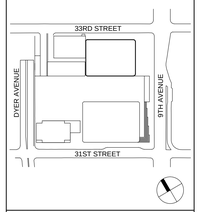
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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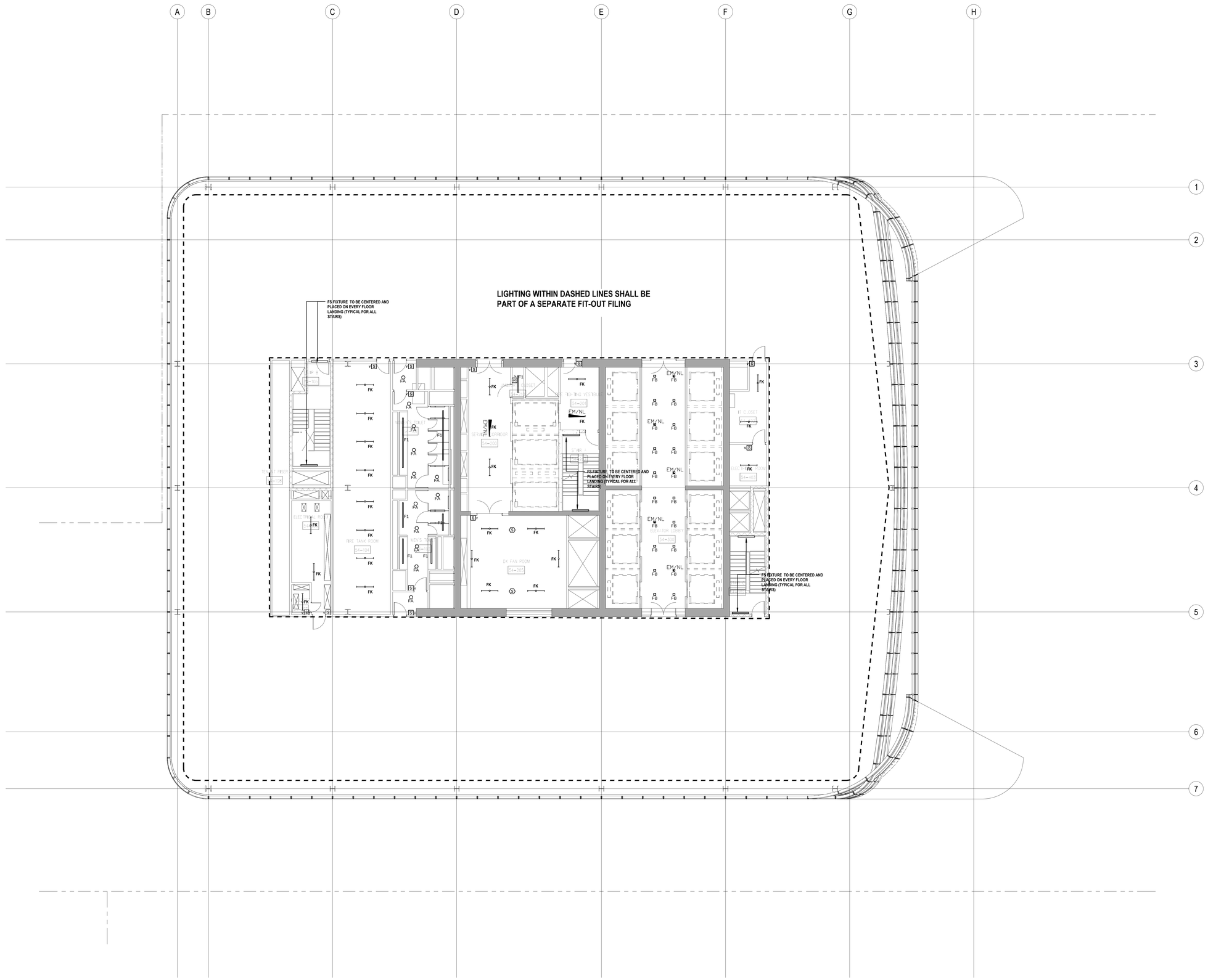
No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 53 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:
B-SCAN Sheet No.: EN-125.00
Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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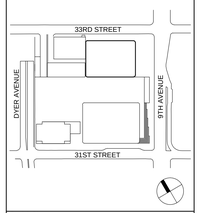
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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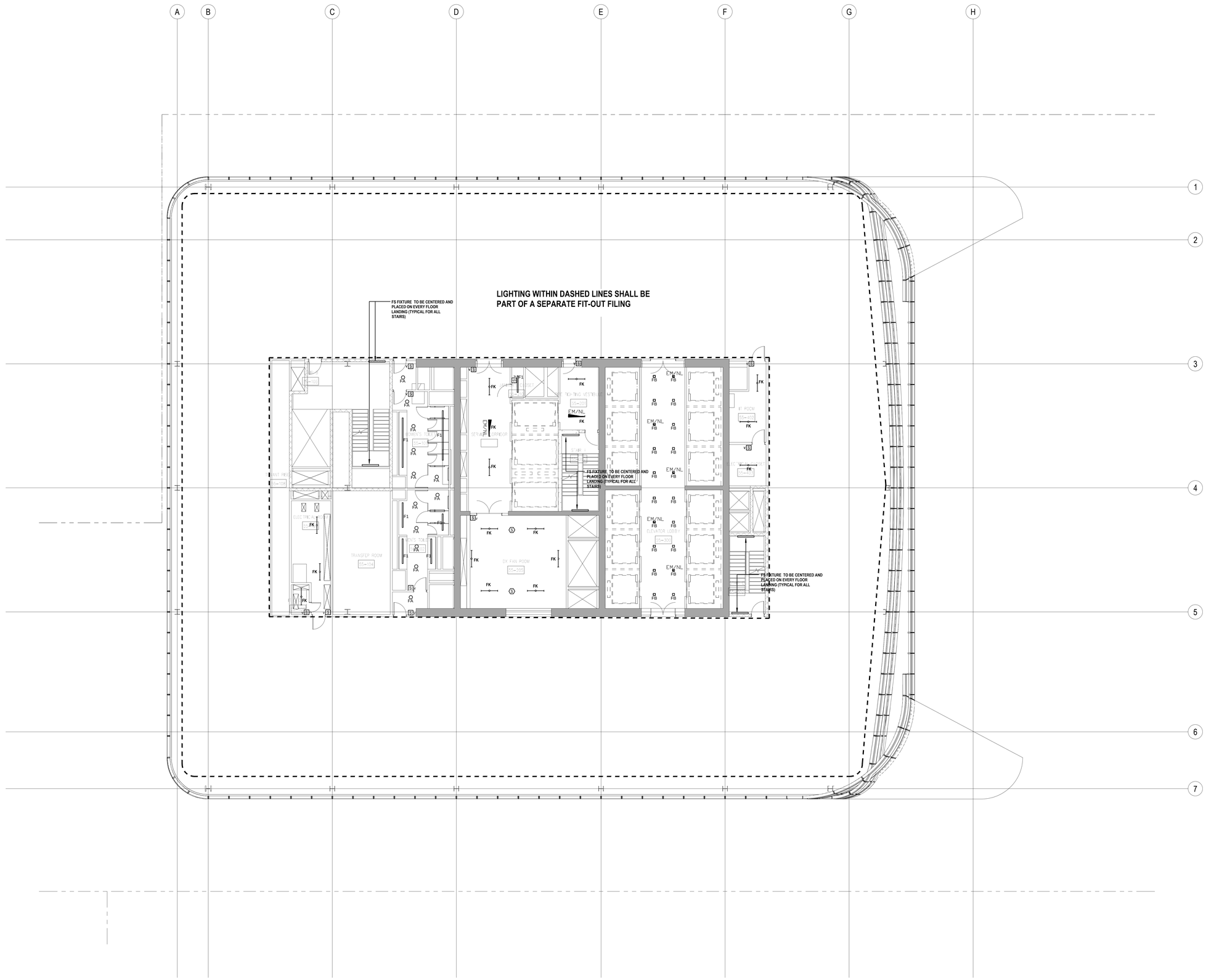
No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 54 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:

B-SCAN Sheet No.: EN-126.00
Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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Wind Tunnel Consultant
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650 Woodlawn Road West, Guelph
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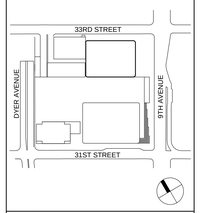
Key Plan:



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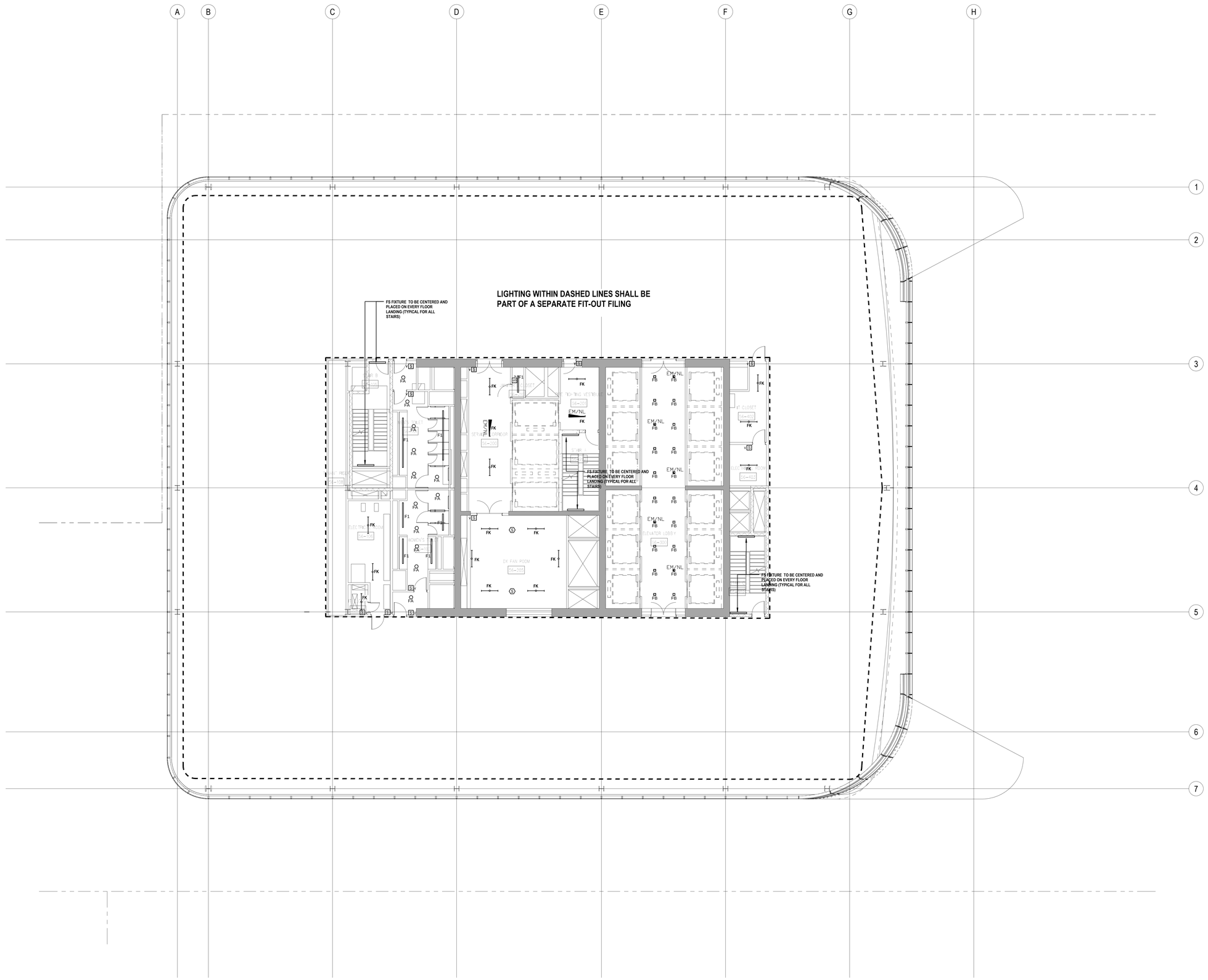
No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 55 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
B-SCAN Sheet No.: EN-127.00
File No.:
Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

E20060400005 Scan Code

MANHATTAN WEST: NORTH TOWER
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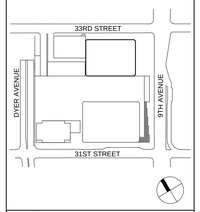
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 56 FLOOR PLAN

Project No.: 14830.A.000

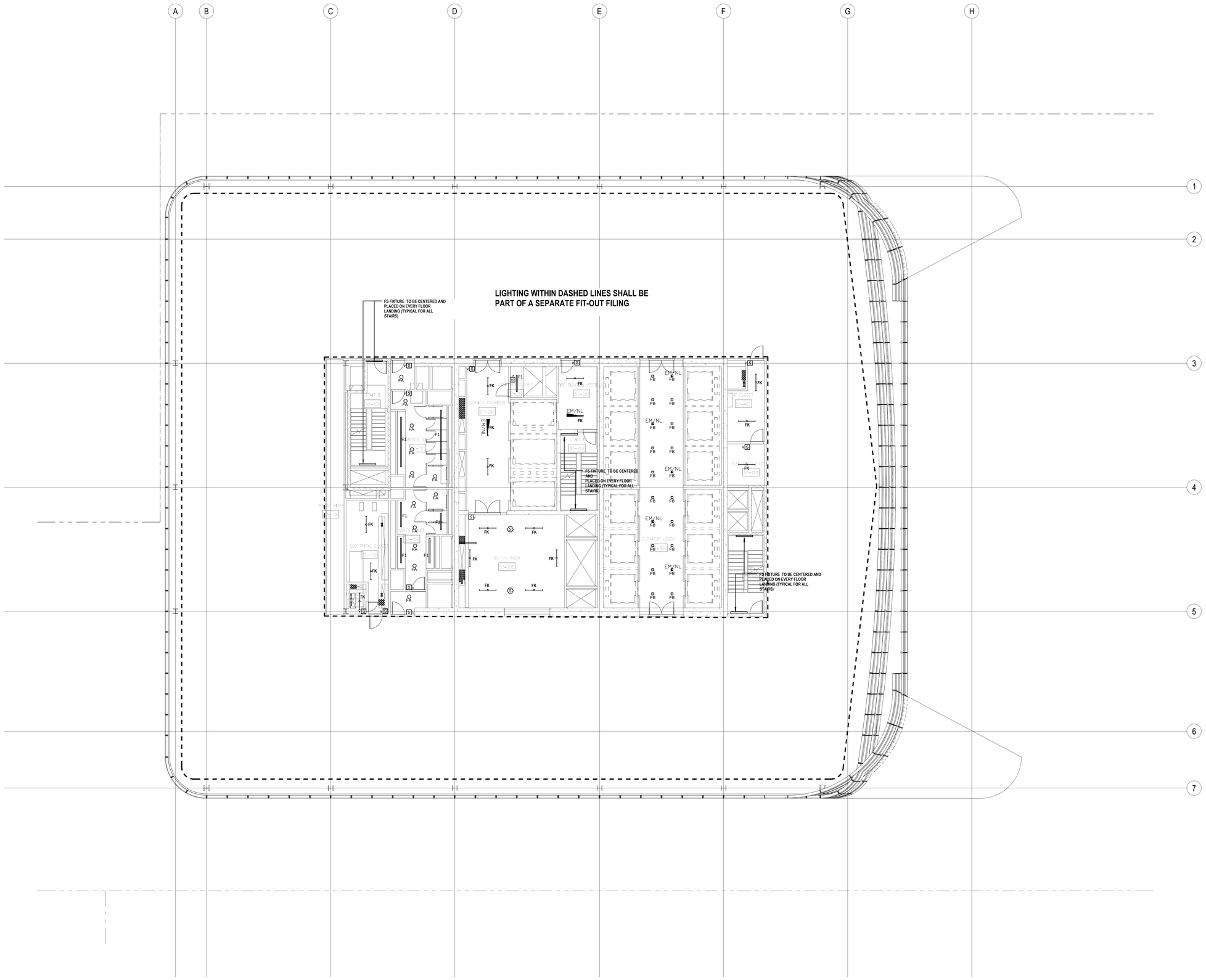
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-128.00

File No.:

Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

E120002309 Scan Code

MANHATTAN WEST: NORTH TOWER

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80 Pine Street, New York, NY 10005

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650 Woodlawn Road West, Guelph
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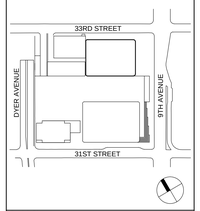
Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 57-58 FLOOR PLAN

Project No.: 14830.A.000

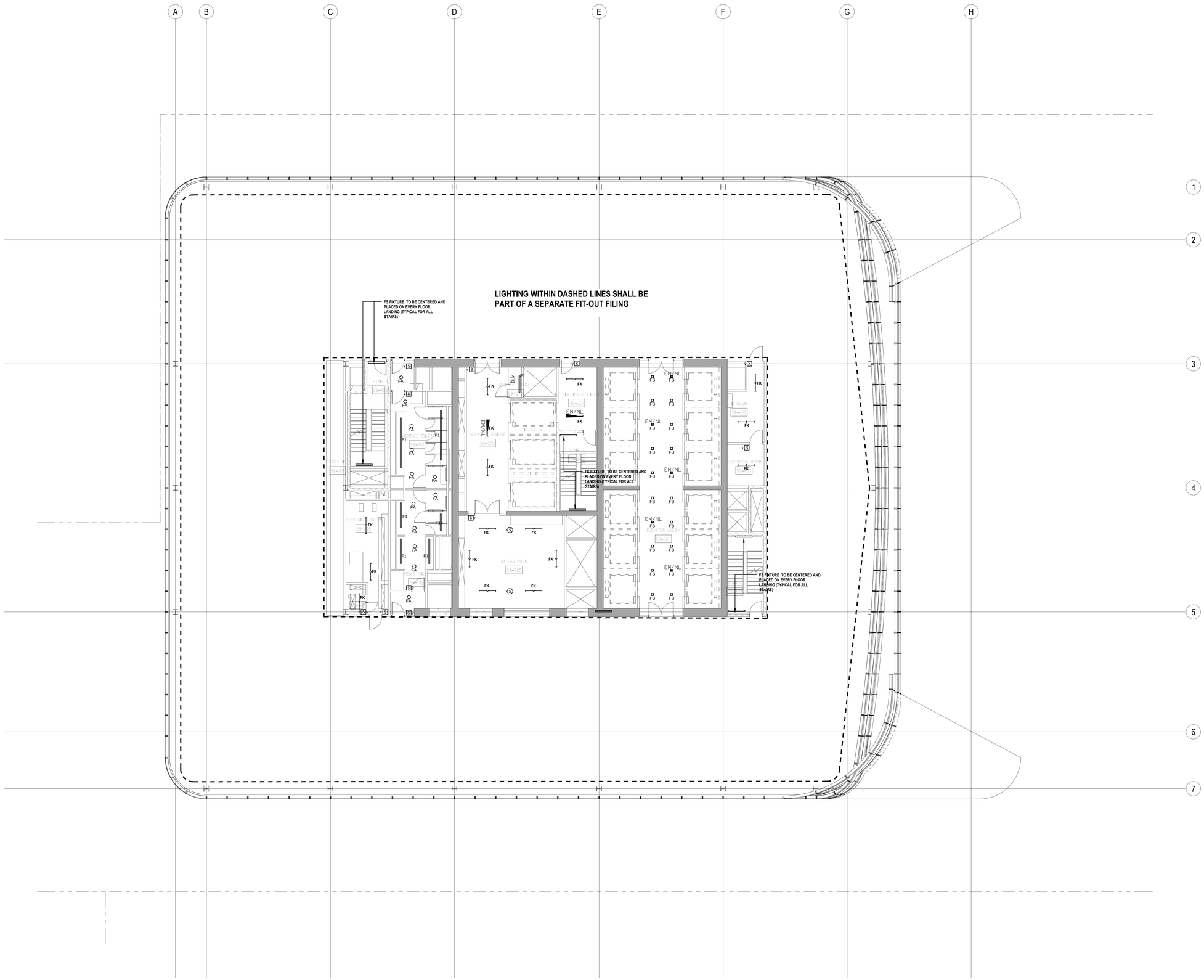
Date: 20 JUN 2014

Scale: N.T.S.

File No.:

B-SCAN Sheet No.: EN-129.00

Page No.:



PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

E20070020T1 Scan Code

MANHATTAN WEST: NORTH TOWER
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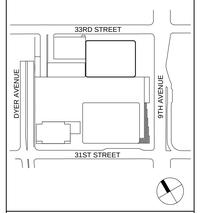
Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 59 FLOOR PLAN

Project No.: 14830.A.000

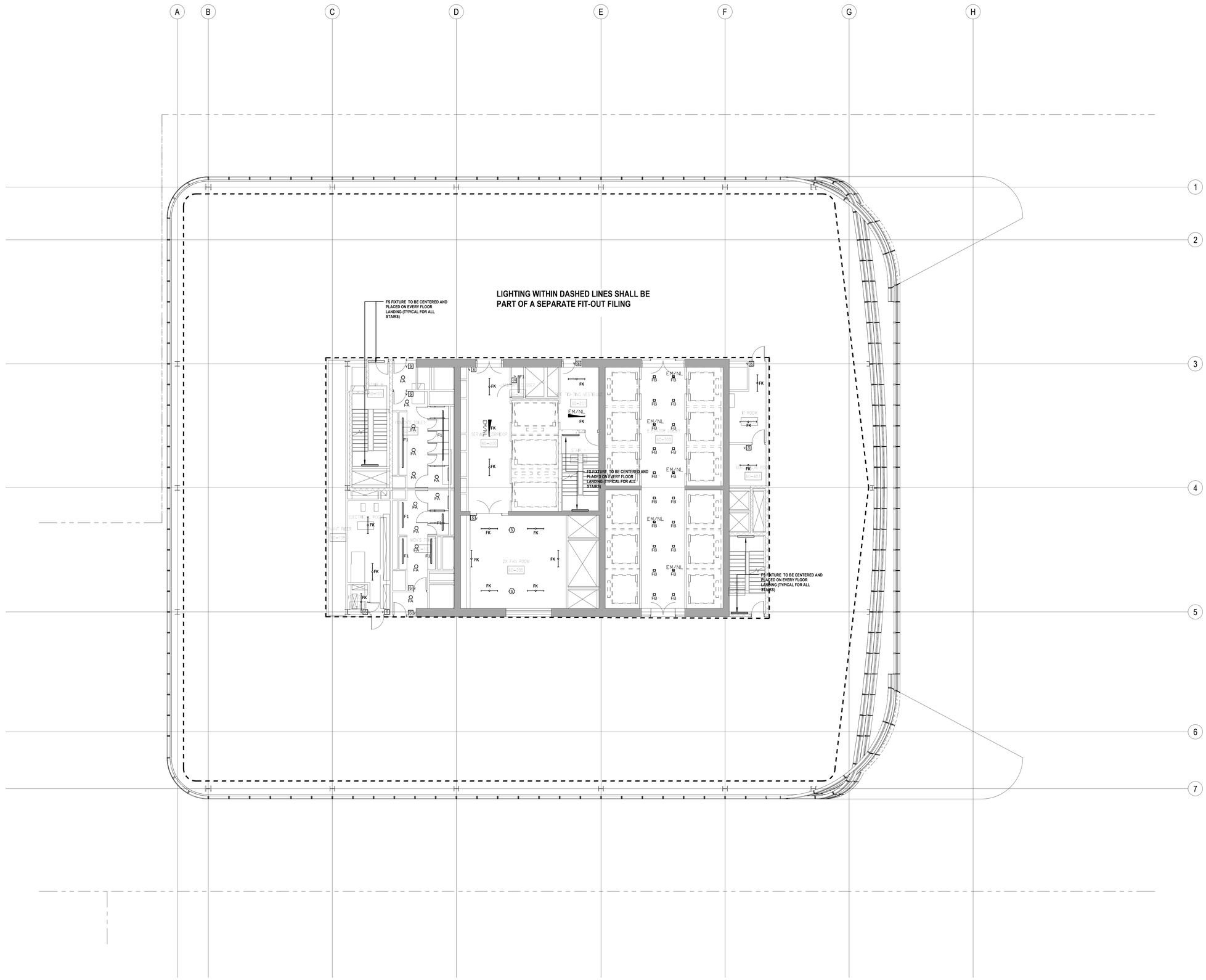
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-130.00

File No.:

Page No.:



SHEET NOTES

PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
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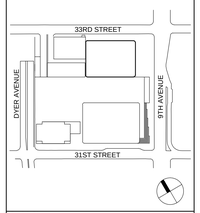
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



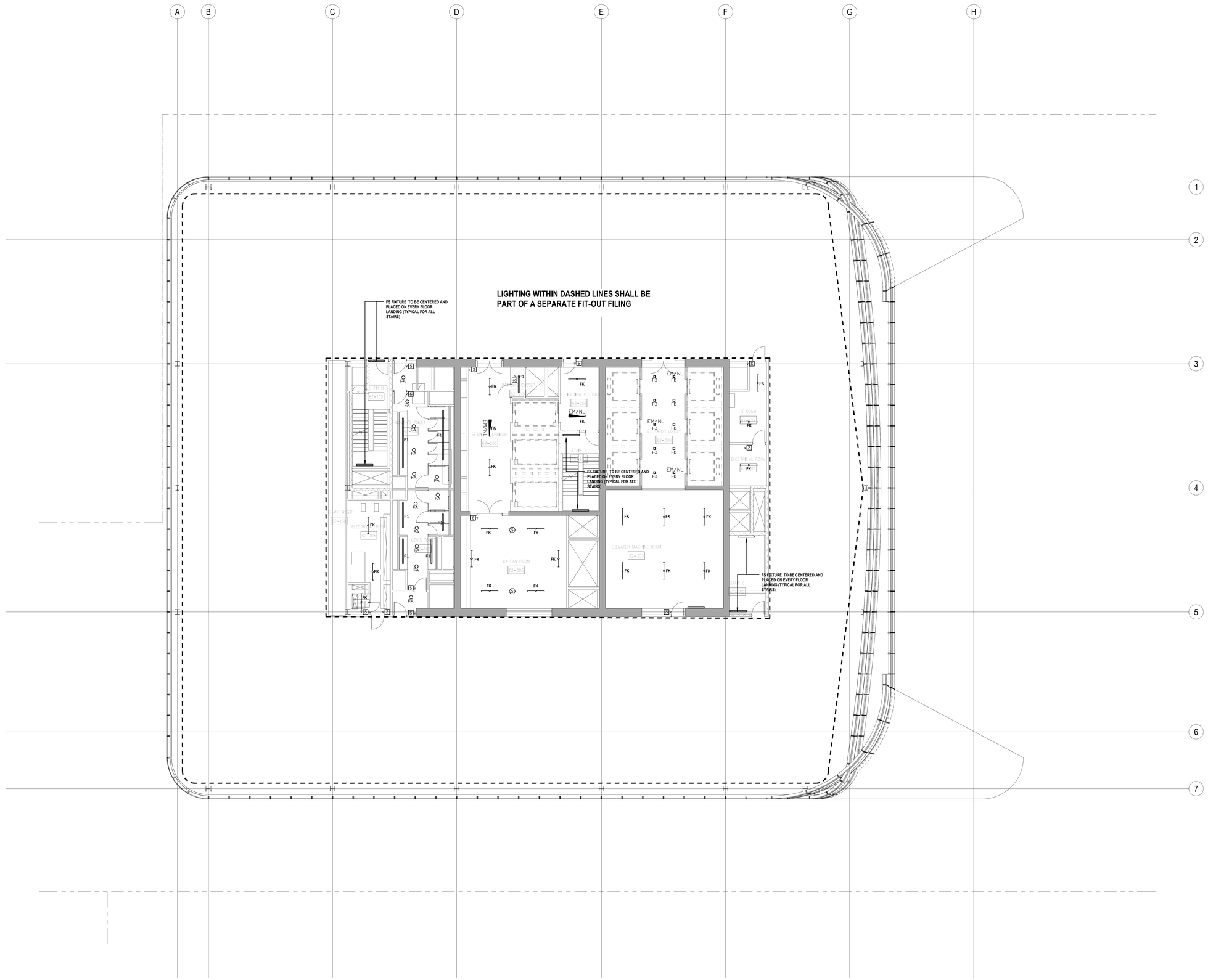
Seal & Signature:

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 60-61 FLOOR PLAN

Project No.: 14830.A.000	B-SCAN Sheet No.: EN-131.00
Date: 20 JUN 2014	
Scale: N.T.S.	
File No.:	Page No.:



PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

6/20/2002 Scan Code

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
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Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

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Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant

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Security Consultant

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250 State Street #F1, North Haven, CT 06473

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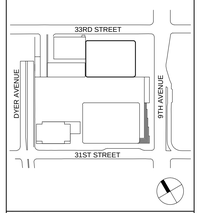
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 62 FLOOR PLAN

Project No.: 14830.A.000

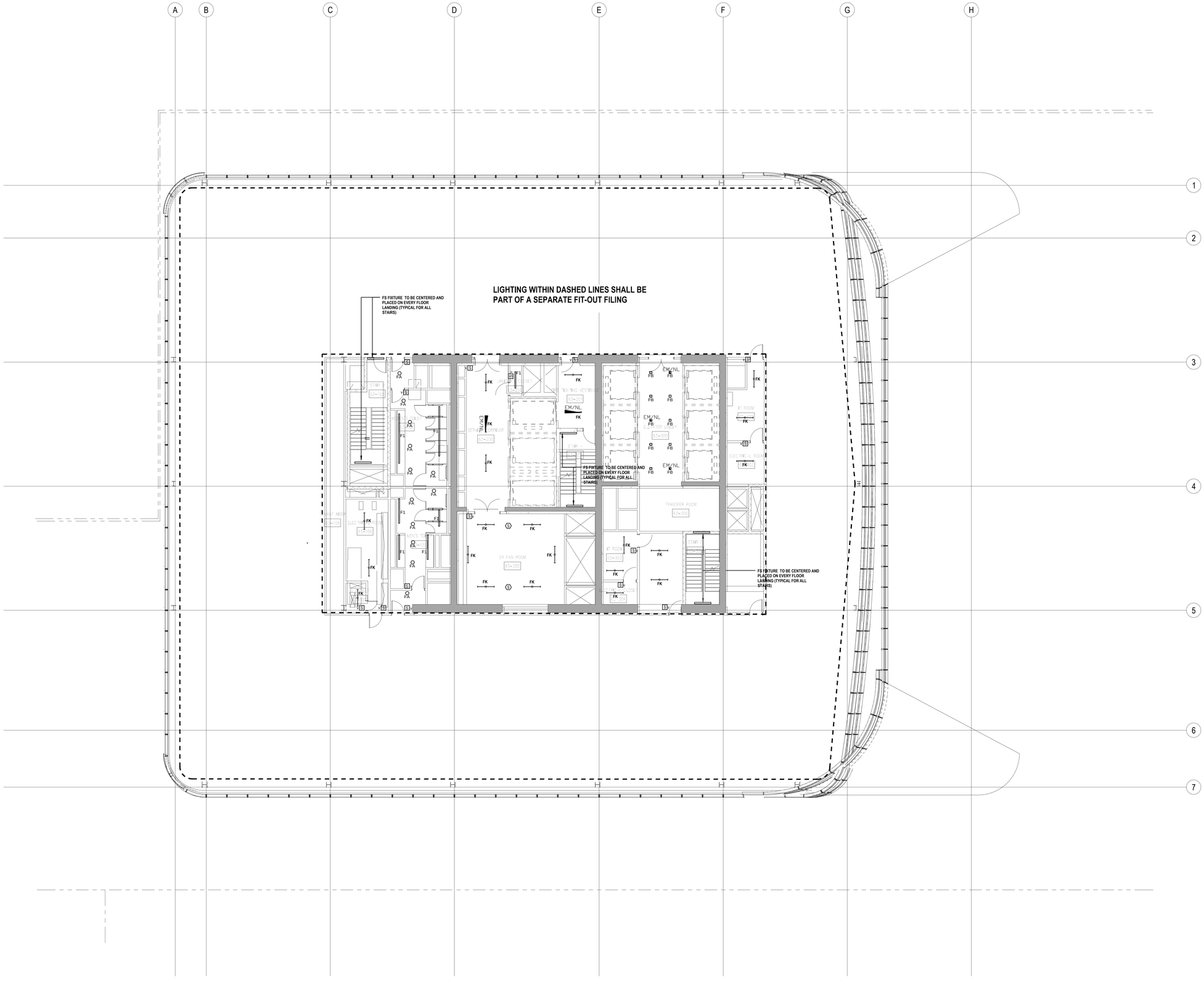
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-132.00

File No.:

Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

DEPT OF BLDGS 121187243 Job Number

E605482056 Scan Code

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

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Edgett Williams Consulting Group, Inc.
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Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant

Field Operations
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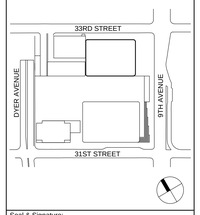
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 63 FLOOR PLAN

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: N.T.S.

File No.:

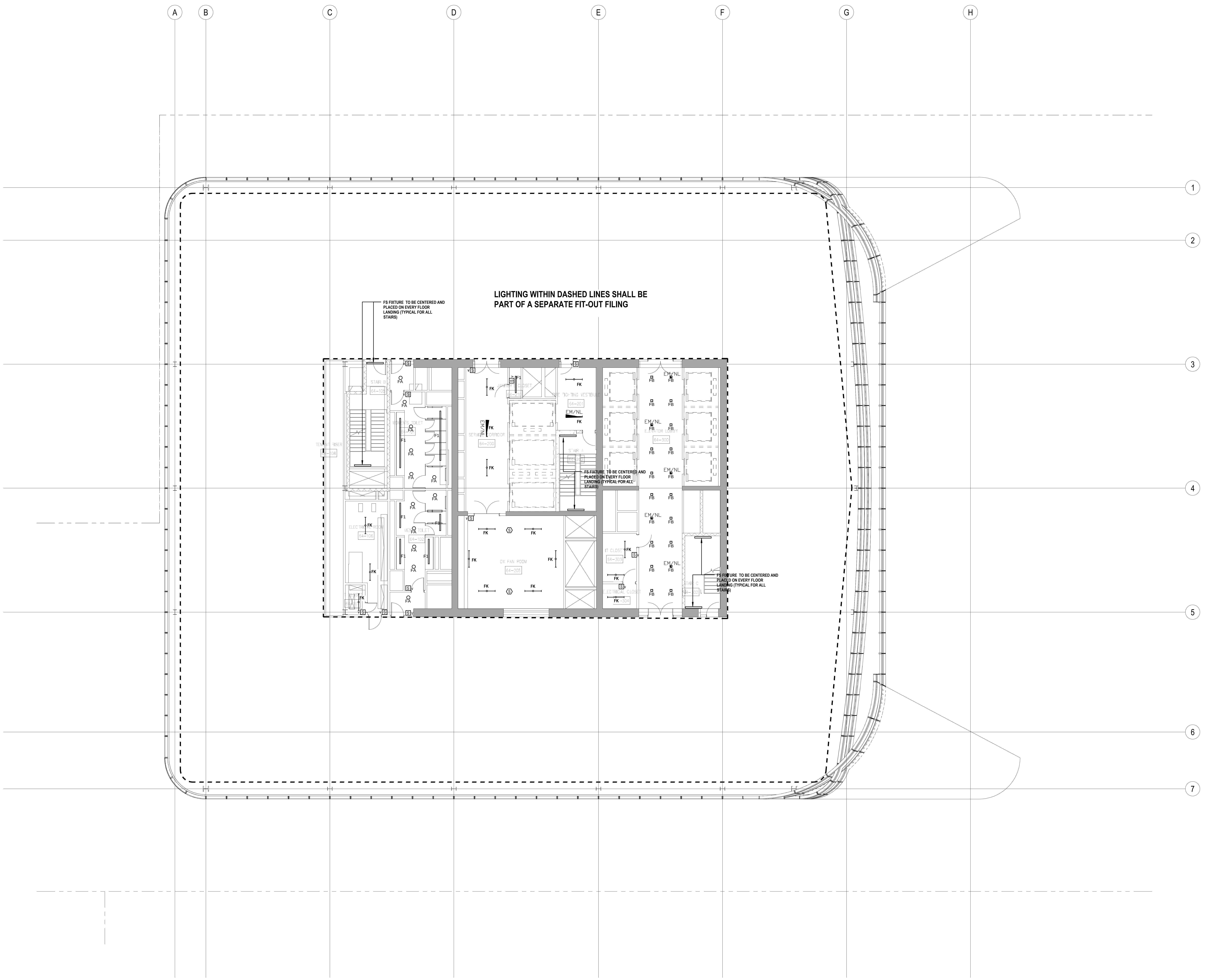
B-SCAN Sheet No.: EN-133.00

Page No.:

DEPT OF BLDGS 121187143 Job Number

ES143469293 Scan Code

SHEET NOTES



LIGHTING WITHIN DASHED LINES SHALL BE PART OF A SEPARATE FIT-OUT FILING

FS FIXTURE TO BE CENTERED AND PLACED ON EVERY FLOOR LANDING (TYPICAL FOR ALL STAIRS)

FS FIXTURE TO BE CENTERED AND PLACED ON EVERY FLOOR LANDING (TYPICAL FOR ALL STAIRS)

FS FIXTURE TO BE CENTERED AND PLACED ON EVERY FLOOR LANDING (TYPICAL FOR ALL STAIRS)

PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
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Vertical Transportation

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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

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404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

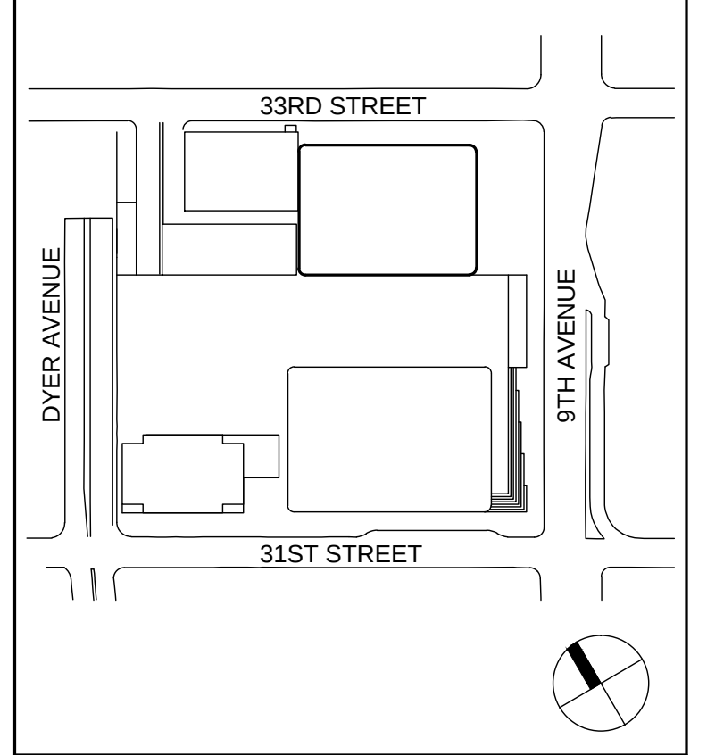
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

DONALD A. MONGITORE
No. 060395-1

Donald A. Mongitore

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING LEVEL 64-67 FLOOR PLAN

Project No.: 14830.A.000

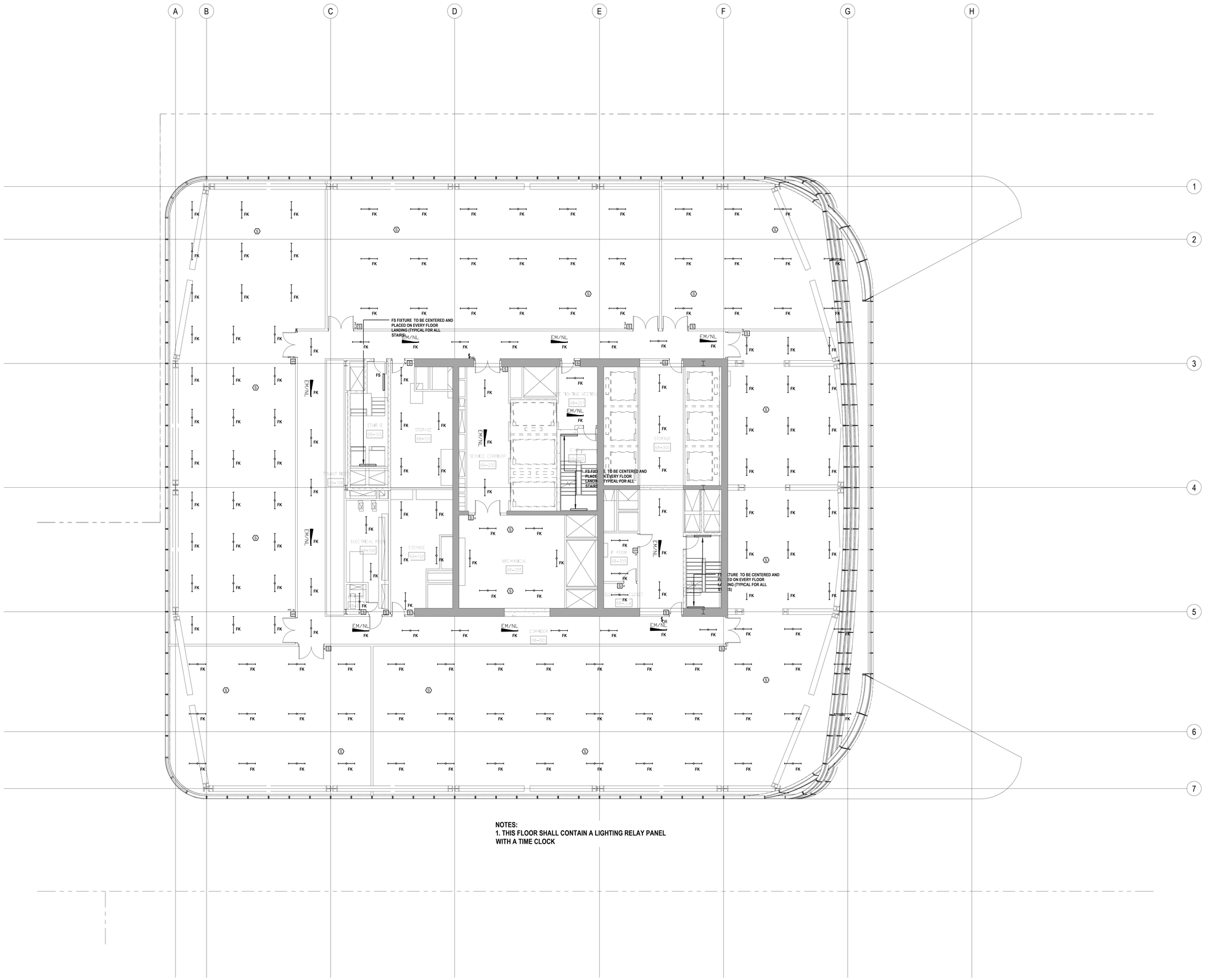
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-134.00

File No.:

Page No.:



NOTES:
1. THIS FLOOR SHALL CONTAIN A LIGHTING RELAY PANEL WITH A TIME CLOCK

PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

DEPT OF BLDGS 121187243 Job Number
E3070000106 Scan Code

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

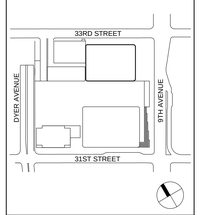
Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



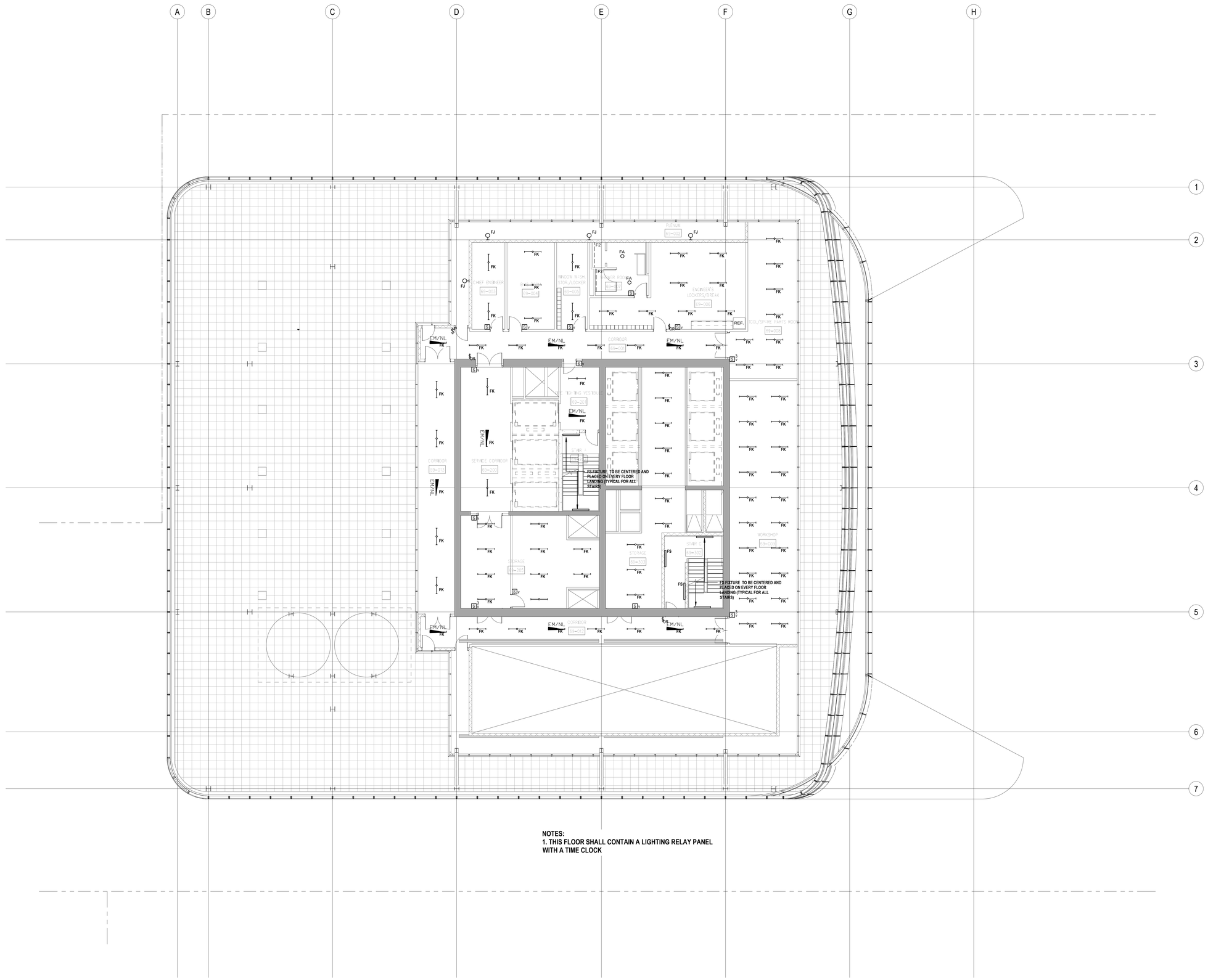
Seal & Signature:

LICENSED PROFESSIONAL ENGINEER
JOHN A. MOLINO JR.
No. 065884
STATE OF NEW YORK

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
NYC EC COMPLIANCE LIGHTING LEVEL 68 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
B-SCAN Sheet No.: EN-135.00
File No.:
Page No.:



NOTES:
1. THIS FLOOR SHALL CONTAIN A LIGHTING RELAY PANEL WITH A TIME CLOCK

PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

DEPT OF BLDGS 121197243 Job Number
Scan Code

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
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40 Wall Street, New York, NY 10005

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166 Ames Street, Hackensack, NJ 07601

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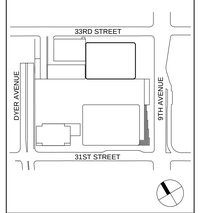
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:

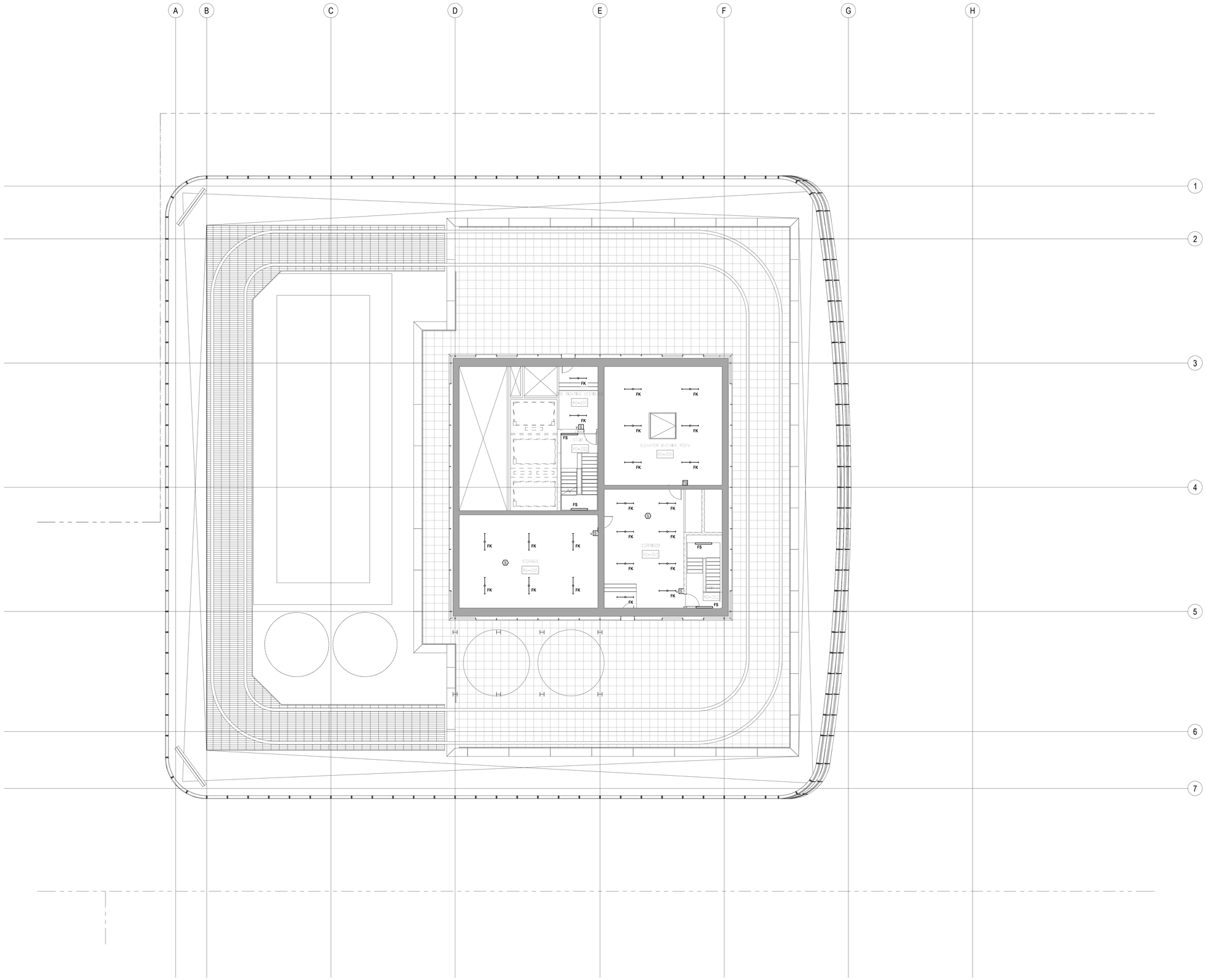


Seal & Signature:

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
NYC EC COMPLIANCE LIGHTING LEVEL 69 FLOOR PLAN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
File No.:
B-SCAN Sheet No.: EN-136.00
Page No.:



PROFESSIONAL ENERGY STATEMENT

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

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102 Madison Avenue #11, New York, NY 10016

MEP Engineering

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Vertical Transportation

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New York, NY 10122

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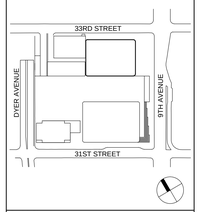
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING ROOF PLAN MECH PENTHOUSE

Project No.: 14830.A.000

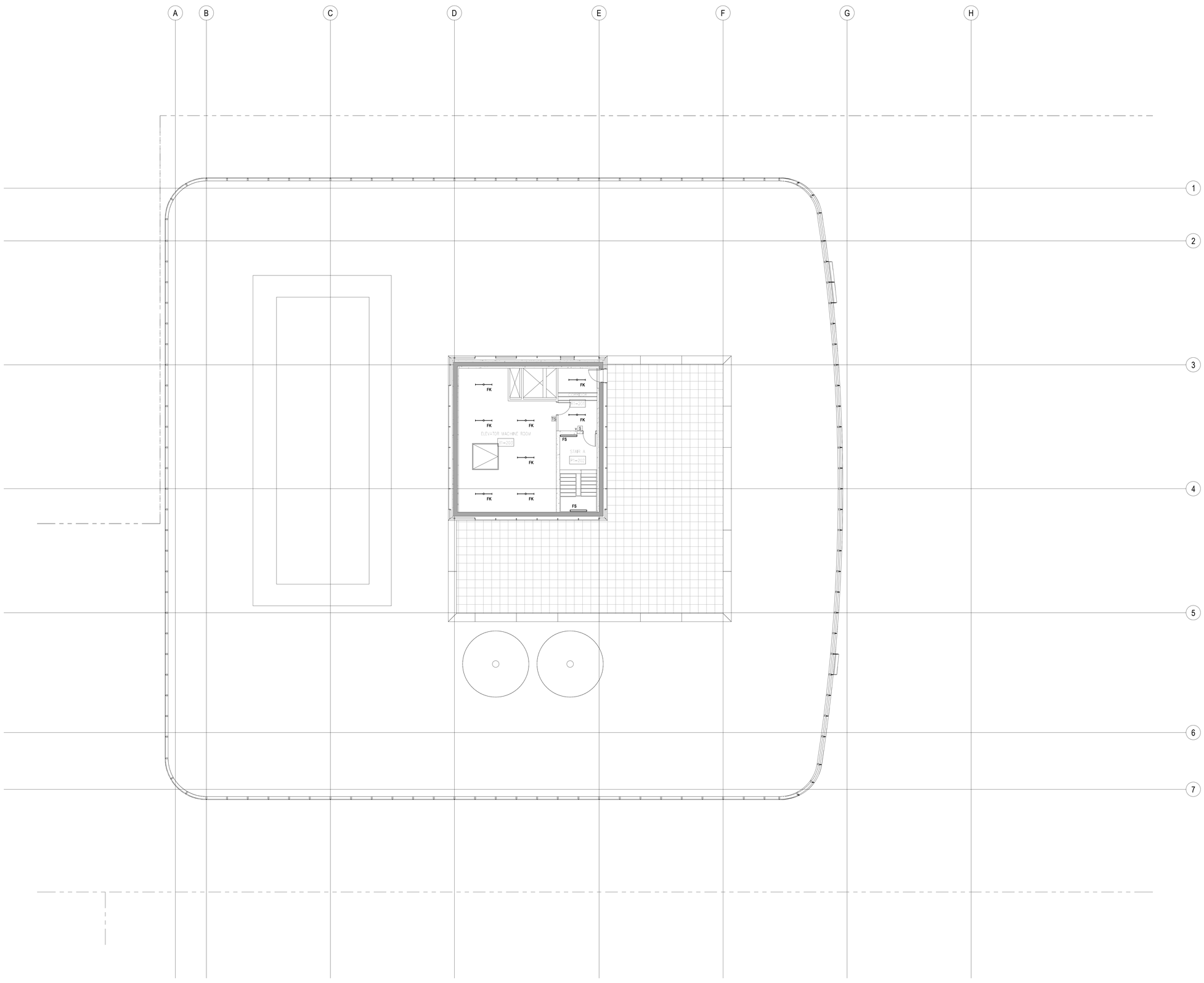
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-137.00

File No.:

Page No.:



PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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New York, NY 10122

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166 Ames Street, Hackensack, NJ 07601

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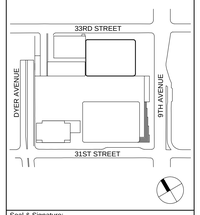
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC COMPLIANCE LIGHTING ROOF PLAN MECH PENTHOUSE ROOF

Project No.: 14830.A.000

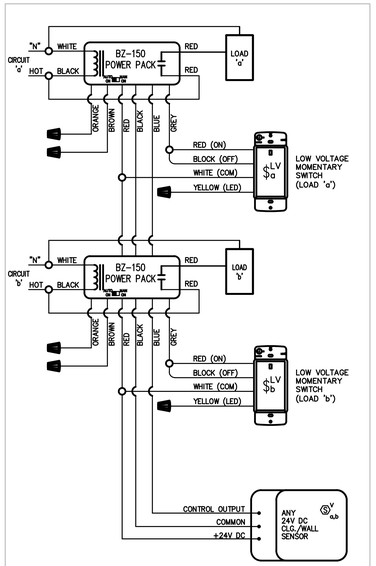
Date: 20 JUN 2014

Scale: N.T.S.

B-SCAN Sheet No.: EN-138.00

File No.:

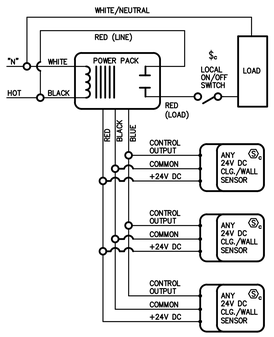
Page No.:



DETAIL #1
"MANUAL-ON" SENSOR CONTROL
FOR MULTIPLE ZONES
(N.T.S.)

NOTES:

1. ALL WIRING SHALL BE IN CONDUIT.
2. DIAGRAM IS SCHEMATIC TO INDICATE DESIGN INTENT. COORDINATE EXACT WIRING REQUIREMENTS WITH EQUIPMENT VENDOR.
3. PROVIDE ADDITIONAL POWER PACK(S) AND "DCC2" MOMENTARY SWITCH FOR EACH ADDITIONAL CONTROL ZONE. EXACT QTY. TO BE COORDINATED WITH ELECTRICAL DRAWINGS AND EQUIPMENT VENDOR.

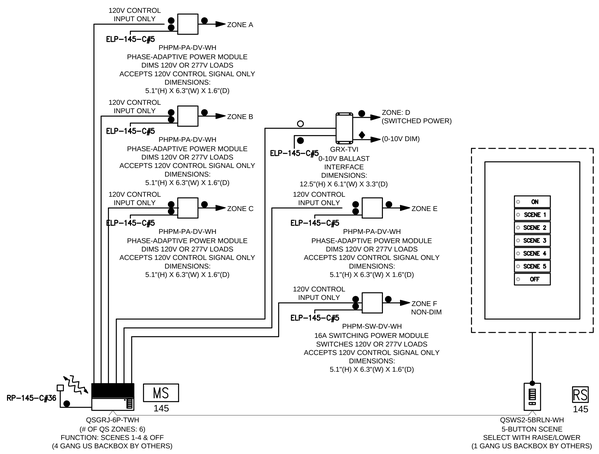


DETAIL #2
MULTIPLE SENSORS WITH SINGLE
POWER PACK WIRING DIAGRAM
(N.T.S.)

NOTES:

1. ALL WIRING SHALL BE CONDUIT.
2. DIAGRAM IS SCHEMATIC TO INDICATE DESIGN INTENT. COORDINATE EXACT WIRING REQUIREMENTS WITH EQUIPMENT VENDOR.
3. COORDINATE EXACT LOCATION OF DEVICE WITH ARCHITECT AND FIELD CONDITIONS.
4. WIRING DIAGRAM SHOWN TYPICAL FOR OCCUPANCY SENSORS LOCATED IN CORRIDOR.

LOBBY (GROUND FLOOR) DIMMING CONTROLS



LP-B-01#1	1	LIGHTING
LP-B-01#3	2	LIGHTING
LP-B-01#5	3	LIGHTING
LP-B-01#7	4	LIGHTING
LP-B-01#9	5	LIGHTING
LP-B-01#11	6	LIGHTING
LP-B-01#13	7	LIGHTING
LP-B-01#15	8	LIGHTING
LP-B-01#17	9	LIGHTING
LP-B-01#19	10	LIGHTING
SPARE	11	SPARE
SPARE	12	SPARE
SPARE	13	SPARE
SPARE	14	SPARE
SPARE	15	SPARE
SPARE	16	SPARE
SPARE	17	SPARE
SPARE	18	SPARE
SPARE	19	SPARE
SPARE	20	SPARE
SPARE	21	SPARE
SPARE	22	SPARE
SPARE	23	SPARE
SPARE	24	SPARE

SEE NOTE # 2
OR
OR

LIGHT SWEEP
RELAY PANEL SCHEDULE - CELLAR B

NOTES:

1. PROVIDE 24-POLE LIGHTING RELAY SYSTEM, GE LIGHT SWEEP. INCLUDE IN BID SYSTEM START-UP AND COMMISSIONING BY GE REPRESENTATIVE.
2. TIE IN 2 LOW VOLTAGE OVERRIDE SWITCHES TO LIGHTING CONTROL SYSTEM
3. RELAY PANEL SHALL CONTAIN TIME CLOCK TO AUTOMATICALLY TURN OFF ALL THE LIGHTS.

LP-3-01#1	1	LIGHTING
LP-3-01#3	2	LIGHTING
LP-3-01#5	3	LIGHTING
LP-3-01#7	4	LIGHTING
LP-3-01#9	5	LIGHTING
LP-3-01#11	6	LIGHTING
LP-3-01#13	7	LIGHTING
LP-3-01#15	8	LIGHTING
LP-3-01#17	9	LIGHTING
LP-3-01#19	10	LIGHTING
SPARE	11	SPARE
SPARE	12	SPARE
SPARE	13	SPARE
SPARE	14	SPARE
SPARE	15	SPARE
SPARE	16	SPARE
SPARE	17	SPARE
SPARE	18	SPARE
SPARE	19	SPARE
SPARE	20	SPARE
SPARE	21	SPARE
SPARE	22	SPARE
SPARE	23	SPARE
SPARE	24	SPARE

SEE NOTE # 2
OR
OR

LIGHT SWEEP
RELAY PANEL SCHEDULE - LEVEL 3

NOTES:

1. PROVIDE 24-POLE LIGHTING RELAY SYSTEM, GE LIGHT SWEEP. INCLUDE IN BID SYSTEM START-UP AND COMMISSIONING BY GE REPRESENTATIVE.
2. TIE IN 2 LOW VOLTAGE OVERRIDE SWITCHES TO LIGHTING CONTROL SYSTEM
3. RELAY PANEL SHALL CONTAIN TIME CLOCK TO AUTOMATICALLY TURN OFF ALL THE LIGHTS.

LP-4-01#1	1	LIGHTING
LP-4-01#3	2	LIGHTING
LP-4-01#5	3	LIGHTING
LP-4-01#7	4	LIGHTING
LP-4-01#9	5	LIGHTING
LP-4-01#11	6	LIGHTING
LP-4-01#13	7	LIGHTING
LP-4-01#15	8	LIGHTING
LP-4-01#17	9	LIGHTING
LP-4-01#19	10	LIGHTING
SPARE	11	SPARE
SPARE	12	SPARE
SPARE	13	SPARE
SPARE	14	SPARE
SPARE	15	SPARE
SPARE	16	SPARE
SPARE	17	SPARE
SPARE	18	SPARE
SPARE	19	SPARE
SPARE	20	SPARE
SPARE	21	SPARE
SPARE	22	SPARE
SPARE	23	SPARE
SPARE	24	SPARE

SEE NOTE # 2
OR
OR

LIGHT SWEEP
RELAY PANEL SCHEDULE - LEVEL 4

NOTES:

1. PROVIDE 24-POLE LIGHTING RELAY SYSTEM, GE LIGHT SWEEP. INCLUDE IN BID SYSTEM START-UP AND COMMISSIONING BY GE REPRESENTATIVE.
2. TIE IN 2 LOW VOLTAGE OVERRIDE SWITCHES TO LIGHTING CONTROL SYSTEM
3. RELAY PANEL SHALL CONTAIN TIME CLOCK TO AUTOMATICALLY TURN OFF ALL THE LIGHTS.

LP-5-01#1	1	LIGHTING
LP-5-01#3	2	LIGHTING
LP-5-01#5	3	LIGHTING
LP-5-01#7	4	LIGHTING
LP-5-01#9	5	LIGHTING
LP-5-01#11	6	LIGHTING
LP-5-01#13	7	LIGHTING
LP-5-01#15	8	LIGHTING
LP-5-01#17	9	LIGHTING
LP-5-01#19	10	LIGHTING
SPARE	11	SPARE
SPARE	12	SPARE
SPARE	13	SPARE
SPARE	14	SPARE
SPARE	15	SPARE
SPARE	16	SPARE
SPARE	17	SPARE
SPARE	18	SPARE
SPARE	19	SPARE
SPARE	20	SPARE
SPARE	21	SPARE
SPARE	22	SPARE
SPARE	23	SPARE
SPARE	24	SPARE

SEE NOTE # 2
OR
OR

LIGHT SWEEP
RELAY PANEL SCHEDULE - LEVEL 5

NOTES:

1. PROVIDE 24-POLE LIGHTING RELAY SYSTEM, GE LIGHT SWEEP. INCLUDE IN BID SYSTEM START-UP AND COMMISSIONING BY GE REPRESENTATIVE.
2. TIE IN 2 LOW VOLTAGE OVERRIDE SWITCHES TO LIGHTING CONTROL SYSTEM
3. RELAY PANEL SHALL CONTAIN TIME CLOCK TO AUTOMATICALLY TURN OFF ALL THE LIGHTS.

LP-68-01#1	1	LIGHTING
LP-68-01#3	2	LIGHTING
LP-68-01#5	3	LIGHTING
LP-68-01#7	4	LIGHTING
LP-68-01#9	5	LIGHTING
LP-68-01#11	6	LIGHTING
LP-68-01#13	7	LIGHTING
LP-68-01#15	8	LIGHTING
LP-68-01#17	9	LIGHTING
LP-68-01#19	10	LIGHTING
SPARE	11	SPARE
SPARE	12	SPARE
SPARE	13	SPARE
SPARE	14	SPARE
SPARE	15	SPARE
SPARE	16	SPARE
SPARE	17	SPARE
SPARE	18	SPARE
SPARE	19	SPARE
SPARE	20	SPARE
SPARE	21	SPARE
SPARE	22	SPARE
SPARE	23	SPARE
SPARE	24	SPARE

SEE NOTE # 2
OR
OR

LIGHT SWEEP
RELAY PANEL SCHEDULE - LEVEL 68

NOTES:

1. PROVIDE 24-POLE LIGHTING RELAY SYSTEM, GE LIGHT SWEEP. INCLUDE IN BID SYSTEM START-UP AND COMMISSIONING BY GE REPRESENTATIVE.
2. TIE IN 2 LOW VOLTAGE OVERRIDE SWITCHES TO LIGHTING CONTROL SYSTEM
3. RELAY PANEL SHALL CONTAIN TIME CLOCK TO AUTOMATICALLY TURN OFF ALL THE LIGHTS.

LP-69-01#1	1	LIGHTING
LP-69-01#3	2	LIGHTING
LP-69-01#5	3	LIGHTING
LP-69-01#7	4	LIGHTING
LP-69-01#9	5	LIGHTING
LP-69-01#11	6	LIGHTING
LP-69-01#13	7	LIGHTING
LP-69-01#15	8	LIGHTING
LP-69-01#17	9	LIGHTING
LP-69-01#19	10	LIGHTING
SPARE	11	SPARE
SPARE	12	SPARE
SPARE	13	SPARE
SPARE	14	SPARE
SPARE	15	SPARE
SPARE	16	SPARE
SPARE	17	SPARE
SPARE	18	SPARE
SPARE	19	SPARE
SPARE	20	SPARE
SPARE	21	SPARE
SPARE	22	SPARE
SPARE	23	SPARE
SPARE	24	SPARE

SEE NOTE # 2
OR
OR

LIGHT SWEEP
RELAY PANEL SCHEDULE - LEVEL 69

NOTES:

1. PROVIDE 24-POLE LIGHTING RELAY SYSTEM, GE LIGHT SWEEP. INCLUDE IN BID SYSTEM START-UP AND COMMISSIONING BY GE REPRESENTATIVE.
2. TIE IN 2 LOW VOLTAGE OVERRIDE SWITCHES TO LIGHTING CONTROL SYSTEM
3. RELAY PANEL SHALL CONTAIN TIME CLOCK TO AUTOMATICALLY TURN OFF ALL THE LIGHTS.

PROFESSIONAL ENERGY STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

SHEET NOTES

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Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

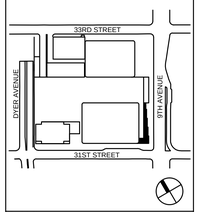
Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:

NYC EC
COMPLIANCE
LIGHTING
SYSTEM
CONTROLS
SHEET NO. 1

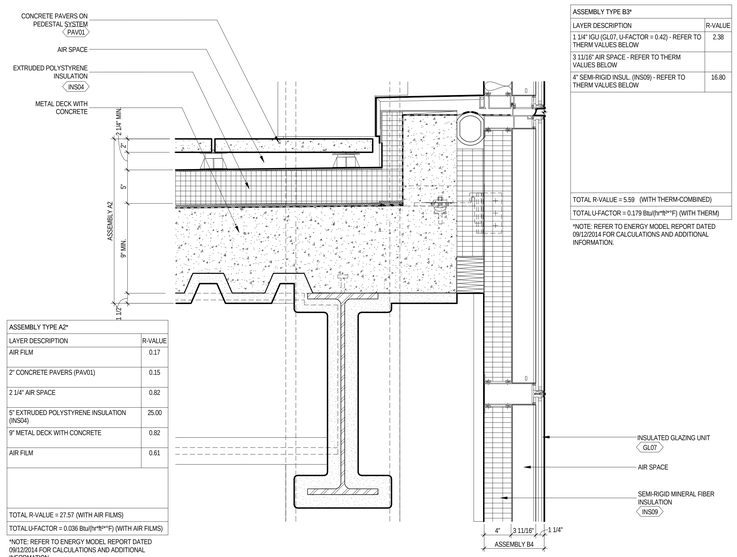
Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: N.T.S.
B-SCAN Sheet No.: EN-139.00
File No.:
Page No.:

NYCECC BUILDING ENVELOPE REQUIREMENTS - OPAQUE ELEMENTS (ECCCNYS TABLE 502.1.2)							
CLIMATE ZONE 4, COMMERCIAL BUILDING							
ENVELOPE TYPE	ENVELOPE AREA	MAXIMUM U-FACTOR	PROPOSED U-FACTOR	MAXIMUM C-FACTOR	PROPOSED C-FACTOR	MAXIMUM F-FACTOR	PROPOSED F-FACTOR
A: ROOFS							
A1: INSULATION ENTIRELY ABOVE DECK - PLAZA		U-0.048	U-0.025	-	-	-	-
A2: INSULATION ENTIRELY ABOVE DECK - TOWER		U-0.048	U-0.036	-	-	-	-
B: WALLS							
B1: METAL FRAMED - CURTAIN WALL	191,670 ft²	U-0.064	U-0.179	-	-	-	-
B2: METAL FRAMED - STOREFRONT	536 ft²	U-0.064	U-0.890	-	-	-	-
B3: METAL FRAMED - SHADOW BOX	10,679 ft²	U-0.064	U-0.179	-	-	-	-
B4: MASS - CONCRETE MASONRY UNIT	40,988 ft²	U-0.104	U-0.128	-	-	-	-
C: BELOW-GRADE WALLS							
C1: MASS - CONCRETE WALL	10,793 ft²	-	-	C-1.140	C-0.550	-	-
D: SLAB-ON-GRADE FLOORS							
D1: UNHEATED SLABS		-	-	-	-	F-0.730	F-0.460

NYCECC BUILDING ENVELOPE REQUIREMENTS - FENESTRATION (ECCCNYS TABLE 502.3)					
CLIMATE ZONE 4, COMMERCIAL BUILDING					
FENESTRATION TYPE	FENESTRATION AREA	MAXIMUM U-FACTOR	PROPOSED U-FACTOR	MAXIMUM SHGC	PROPOSED SHGC
METAL FRAMING WITH OR WITHOUT THERMAL BREAK					
CURTAIN WALL (GL01) - PF < 0.25	402,951 ft²	U-0.500	U-0.420	SHGC-0.400	SHGC-0.290
STOREFRONT (GL02) - PF < 0.25	23,975 ft²	U-0.500	U-1.06	SHGC-0.400	SHGC-0.880

NYCECC BUILDING ENVELOPE MANDATORY PROVISIONS			
CLIMATE ZONE 4, COMMERCIAL BUILDING			
SECTION	TITLE	DESCRIPTION	COMPLIANCE
502.4.1	WINDOW AND DOOR ASSEMBLIES	The air leakage of window and sliding or swinging door assemblies that are part of the building envelope shall be determined in accordance with AAMA/WDMA/CSA 101/I.S.2/A440, or NFRC 400 by an accredited, independent laboratory, and labeled and certified by the manufacturer and shall not exceed 0.3 cfm per square foot (1.5 L/s/m2), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m2).	COMPLIES
502.4.2	CURTAIN WALL, STOREFRONT GLAZING AND COMMERCIAL ENTRANCE DOORS	Curtain wall, storefront glazing and commercial-glazed swinging entrance doors and revolving doors shall be tested for air leakage at 1.57 pounds per square foot (psf) (75 Pa) in accordance with ASTM E 283. For curtain walls and storefront glazing, the maximum air leakage rate shall be 0.3 cubic foot per minute per square foot (cfm/ft2) (5.5 m3/h × m2) of fenestration area. For commercial glazed swinging entrance doors and revolving doors, the maximum air leakage rate shall be 1.00 cfm/ft2 (18.3 m3/h × m2) of door area when tested in accordance with ASTM E 283.	COMPLIES
502.4.3	CONTINUOUS AIR BARRIER	Except in unheated structures and as permitted by this section, a continuous air barrier shall be installed; sealing all seams, openings, and penetrations of the building and shall be sealed with caulking materials or closed with gasketing systems compatible with the construction materials and location. Joints and seams shall be sealed in the same manner or taped or covered with a moisture vapor-permeable wrapping material. Sealing materials spanning joints between construction materials shall allow for expansion and contraction of the construction materials. Such air barrier shall have all the following characteristics: 1. Continuous throughout the envelope with all joints and seams sealed and with sealed connections between all transitions in planes and changes in materials and at all penetrations. 2. Joined and sealed in a flexible manner to the air barrier component of adjacent assemblies, allowing for the relative movement of these assemblies and components. 3. Installed in accordance with the manufacturer's instructions and in such a manner as to achieve the performance requirements. 4. Penetrations of the continuous air barrier shall be made in a way such that the integrity of the continuous air barrier is maintained.	COMPLIES
502.4.4	OUTDOOR AIR INTAKES AND EXHAUST OPENINGS	Stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be equipped with not less than a Class I motorized, leakage-rated damper with a maximum leakage rate of 4 cfm per square foot (6.8 L/s · m2) at 1.0 inch water gauge (4 g.g.) (1250 Pa) when tested in accordance with AMCA 500D.	COMPLIES
502.4.5	LOADING DOCK WEATHERSEALS	Cargo doors and loading dock doors shall be equipped with weatherseals to restrict infiltration when vehicles are parked in the doorway.	COMPLIES
502.4.6	VESTIBULES	A door that separates conditioned space from the exterior shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time. Exceptions: 1. Doors not intended to be used as a building entrance door, such as doors to mechanical or electrical equipment rooms. 2. Doors opening directly from a sleeping unit or dwelling unit. 3. Doors that open directly from a space less than 3,000 square feet (279 m2) in area. 4. Revolving doors. 5. Doors used primarily to facilitate vehicular movement or material handling and adjacent personnel doors.	DOES NOT COMPLY

BUILDING ENVELOPE MATERIALS			
MATERIAL ID	DESCRIPTION	LOCATION	COMMENTS
GLASS			
GL01	1 1/4" INSULATED GLASS UNIT COMPOSED OF 3/8" CLEAR LOW-IRON, HEAT STRENGTHENED OUTER LITE WITH A LOW-E COATING ON THE NO. 2 SURFACE + 1/2" BLACK STAINLESS STEEL SPACER WITH ARGON FILL + 3/8" CLEAR LOW-IRON FULLY TEMPERED HEAT SOAKED INNER LITE.	TOWER CURTAIN WALL VISION GLAZING	GL01B IS A THERMALLY CURVED VERSION OF GL01 ASSEMBLY.
GL02	1 1/8" LAMINATED SAFETY GLASS COMPOSED OF 3/8" LOW-IRON HEAT STRENGTHENED GLASS + A .060" PVB INTERLAYER + 3/8" LOW-IRON HEAT STRENGTHENED GLASS	STOREFRONT VISION GLAZING	GL02B IS A THERMALLY CURVED VERSION OF GL02 ASSEMBLY.
GL03	1 1/4" INSULATED GLASS UNIT COMPOSED OF 3/8" CLEAR LOW-IRON, HEAT STRENGTHENED OUTER LITE WITH A LOW-E COATING ON THE NO. 2 SURFACE + 1/2" SPACER WITH ARGON FILL + 3/8" CLEAR LOW-IRON INNER LITE.	TOWER CURTAIN WALL SPANDREL	GL03B IS A THERMALLY CURVED VERSION OF GL03 ASSEMBLY.
GL04	2 3/8" LAMINATED GLASS FIN COMPOSED OF 3/4" LOW-IRON TEMPERED GLASS + .060" IONOPLAST INTERLAYER + 3/4" LOW-IRON TEMPERED GLASS + .060" IONOPLAST INTERLAYER + 3/4" LOW-IRON TEMPERED GLASS.	STOREFRONT FINS	
GL05	3/4" LAMINATED SAFETY GLASS COMPOSED OF 3/8" LOW-IRON GLASS + .060" IONOPLAST INTERLAYER + 3/8" LOW-IRON GLASS WITH A CUSTOM CERAMIC FRIT ON THE NO. 2 SURFACE	STOREFRONT CANOPY	
GL06	1/2" LOW-IRON FULLY TEMPERED GLASS	STOREFRONT DOORS/REVOLVERS	
GL07	1 1/4" INSULATED GLASS UNIT COMPOSED OF 3/8" CLEAR LOW-IRON, HEAT STRENGTHENED OUTER LITE WITH A LOW-E COATING ON THE NO. 2 SURFACE + 1/2" BLACK STAINLESS STEEL SPACER WITH ARGON FILL + 3/8" CLEAR LOW-IRON HEAT STRENGTHENED INNER LITE.	TOWER CURTAIN WALL SHADOW BOX	GL07B IS A THERMALLY CURVED VERSION OF GL07 ASSEMBLY.
INSULATION			
INS04	EXTRUDED POLYSTYRENE INSULATION	ROOF DECK	
INS06	EXTRUDED POLYSTYRENE INSULATION	PLAZA DECK	
INS09	SEMI-RIGID MINERAL FIBER INSULATION	CURTAIN WALL / STOREFRONT	
METAL			
MTL04	STAINLESS STEEL, BRIGHT DIRECTIONAL POLISH.	STOREFRONT INTERIOR MULLIONS	
MTL08	STAINLESS STEEL, NON-DIRECTIONAL MIRROR POLISH.	STOREFRONT EXTERIOR MULLIONS	
MTL20	PAINTED ALUMINUM.	TOWER CURTAIN WALL EXTERIOR MULLIONS	
MTL21	PAINTED ALUMINUM	TOWER CURTAIN WALL INTERIOR MULLIONS	
MTL22	PAINTED ALUMINUM	TOWER CURTAIN WALL SPANDREL/SHADOW BOX	
PAVERS			
PAV01	CONCRETE PAVERS	ROOF DECK	
STONE			
ST05	STONE	PLAZA DECK	



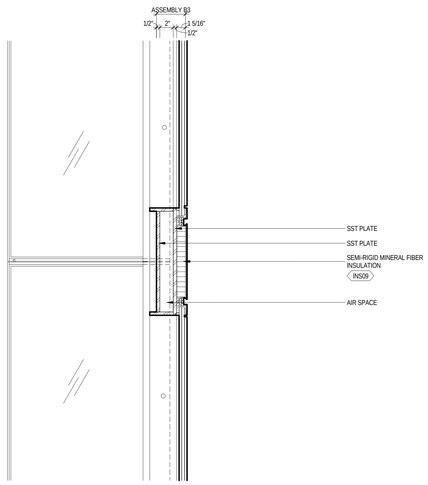
ASSEMBLY TYPE A2*	
LAYER DESCRIPTION	R-VALUE
AIR FILM	0.17
2" CONCRETE PAVERS (PAV01)	0.15
2 1/4" AIR SPACE	0.82
5" EXTRUDED POLYSTYRENE INSULATION (INS04)	25.00
9" METAL DECK WITH CONCRETE	0.82
AIR FILM	0.61
TOTAL R-VALUE = 27.57 (WITH AIR FILMS)	
TOTAL U-FACTOR = 0.036 Btu/(hr*ft²*°F) (WITH AIR FILMS)	

*NOTE: REFER TO ENERGY MODEL REPORT DATED 09/12/2014 FOR CALCULATIONS AND ADDITIONAL INFORMATION.

ASSEMBLY TYPE B3*	
LAYER DESCRIPTION	R-VALUE
1 1/4" IGU (GL07, U-FACTOR = 0.42) - REFER TO THERM VALUES BELOW	2.38
3 11/16" AIR SPACE - REFER TO THERM VALUES BELOW	
4" SEMI-RIGID INSUL. (INS09) - REFER TO THERM VALUES BELOW	16.80
TOTAL R-VALUE = 5.59 (WITH THERM-COMBINED)	
TOTAL U-FACTOR = 0.179 Btu/(hr*ft²*°F) (WITH THERM)	

*NOTE: REFER TO ENERGY MODEL REPORT DATED 09/12/2014 FOR CALCULATIONS AND ADDITIONAL INFORMATION.

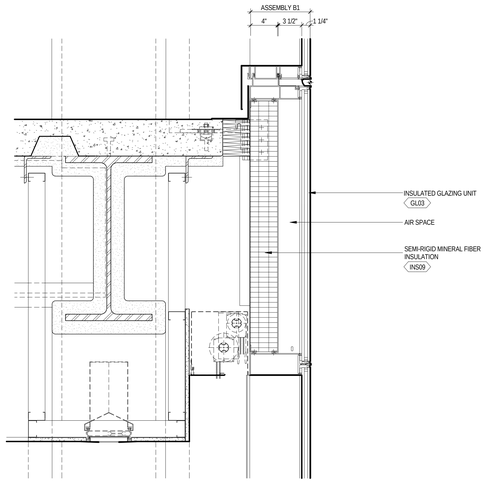
6 ROOF ASSEMBLY AT TOWER
SCALE: NTS



ASSEMBLY TYPE B2*	
LAYER DESCRIPTION	R-VALUE
1 5/16" SEMI-RIGID INSULATION (INS09) - REFER TO THERM VALUES BELOW	5.51
TOTAL R-VALUE = 1.12 (WITH THERM-COMBINED)	
TOTAL U-FACTOR = 0.890 Btu/(hr*ft²*°F) (WITH THERM)	

*NOTE: REFER TO ENERGY MODEL REPORT DATED 09/12/2014 FOR CALCULATIONS AND ADDITIONAL INFORMATION.

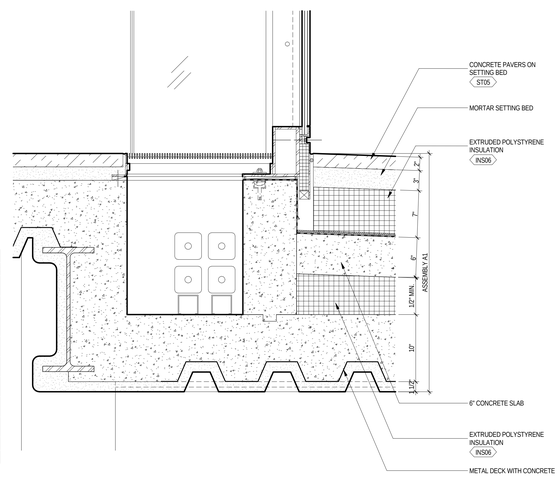
3 WALL ASSEMBLY AT STOREFRONT
SCALE: NTS



ASSEMBLY TYPE B1*	
LAYER DESCRIPTION	R-VALUE
1 1/4" IGU (GL03, U-FACTOR = 0.42) - REFER TO THERM VALUES BELOW	2.38
3 1/2" AIR SPACE - REFER TO THERM VALUES BELOW	
4" SEMI-RIGID INSULATION (INS09) - REFER TO THERM VALUES BELOW	16.80
TOTAL R-VALUE = 5.59 (WITH THERM-COMBINED)	
TOTAL U-FACTOR = 0.179 Btu/(hr*ft²*°F) (WITH THERM)	

*NOTE: REFER TO ENERGY MODEL REPORT DATED 09/12/2014 FOR CALCULATIONS AND ADDITIONAL INFORMATION.

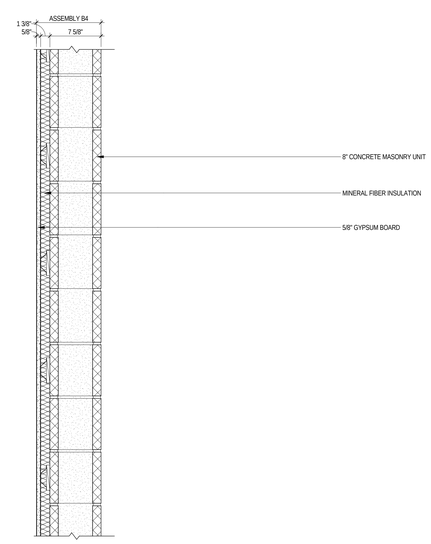
5 WALL/FLOOR ASSEMBLY AT CURTAIN WALL
SCALE: NTS



ASSEMBLY TYPE A1*	
LAYER DESCRIPTION	R-VALUE
AIR FILM	0.17
2" EXTERIOR STONE PAVING (ST05)	0.10
3" MORTAR SETTING BED	0.27
7" EXTRUDED POLYSTYRENE (INS06)	35.00
6" CONCRETE SLAB	0.45
1/2" EXTRUDED POLYSTYRENE (INS06)	2.50
10" METAL DECK WITH CONCRETE	0.76
AIR FILM	0.61
TOTAL R-VALUE = 39.86 (WITH AIR FILMS)	
TOTAL U-FACTOR = 0.025 Btu/(hr*ft²*°F) (WITH AIR FILMS)	

*NOTE: REFER TO ENERGY MODEL REPORT DATED 09/12/2014 FOR CALCULATIONS AND ADDITIONAL INFORMATION.

2 ROOF ASSEMBLY AT PLAZA
SCALE: NTS



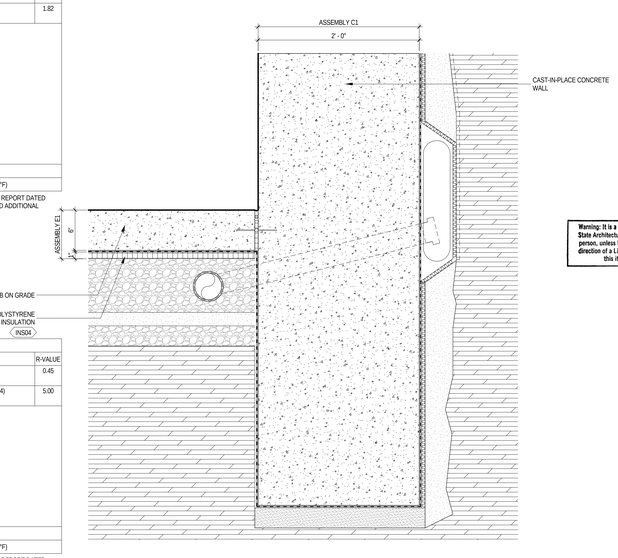
ASSEMBLY TYPE B4*	
LAYER DESCRIPTION	R-VALUE
AIR FILM	0.17
8" CONCRETE MASONRY UNIT (FULLY GROUTED)	0.64
1 3/8" MINERAL FIBER INSULATION	5.78
5/8" GYPSUM BOARD	0.56
AIR FILM	0.68
TOTAL R-VALUE = 7.83 (WITH AIR FILMS)	
TOTAL U-FACTOR = 0.128 Btu/(hr*ft²*°F) (WITH AIR FILMS)	

*NOTE: REFER TO ENERGY MODEL REPORT DATED 09/12/2014 FOR CALCULATIONS AND ADDITIONAL INFORMATION.

4 WALL ASSEMBLY AT CONCRETE MASONRY WALL
SCALE: 1 1/2" = 1'-0"

ASSEMBLY TYPE C1*	
LAYER DESCRIPTION	R-VALUE
24" CONCRETE WALL	1.82
TOTAL R-VALUE = 1.82	
TOTAL C-FACTOR = 0.550 Btu/(hr*ft²*°F)	

*NOTE: REFER TO ENERGY MODEL REPORT DATED 09/12/2014 FOR CALCULATIONS AND ADDITIONAL INFORMATION.



ASSEMBLY TYPE D1*	
LAYER DESCRIPTION	R-VALUE
6" CONCRETE SLAB	0.45
1" EXTRUDED POLYSTYRENE (INS04)	5.00
TOTAL R-VALUE = 5.45	
TOTAL F-FACTOR = 0.460 Btu/(hr*ft²*°F)	

*NOTE: REFER TO ENERGY MODEL REPORT DATED 09/12/2014 FOR CALCULATIONS AND ADDITIONAL INFORMATION.

1 WALL/FLOOR ASSEMBLY AT PERIMETER FOOTING
SCALE: 1 1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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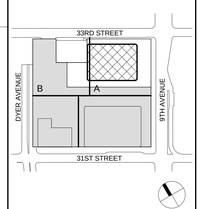
Key Plan:



Seal & Signature:

REGISTERED ARCHITECT ERIC P. GOTTESDIENER 026640 STATE OF NEW YORK

No.	Date	Description
1	12 SEPT 2014	ISSUED FOR FOUNDATION PERMIT

Sheet Name:
ENCLOSURE ASSEMBLIES

Project No.: 207120
Date: 12 SEPT 2014
Scale: 1 1/2" = 1'-0"
File No.: EN-200
B-SCAN Sheet No.: EN-200.00
Sheet No.: EN-200
Page No.: 1 OF 30

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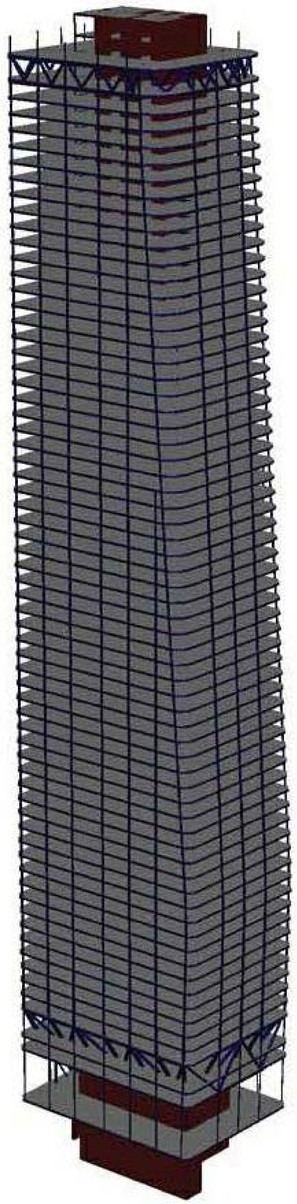
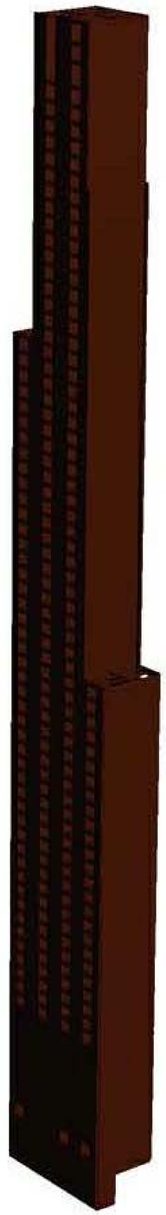
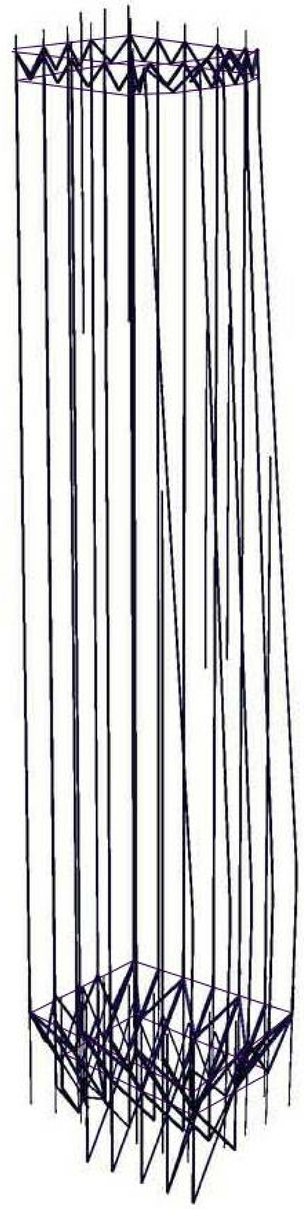


OVERALL STRUCTURAL SYSTEM



REINFORCED CONCRETE CORE WALLS



STEEL COLUMNS, "KICKERS" & BELT TRUSSES

COMPOSITE DECK & STEEL FLOOR FRAMING

STRUCTURAL SYSTEM DESCRIPTION

A. FOUNDATIONS

1. Foundation System

The primary foundation system for the North Tower is a series of continuous reinforced concrete footings on rock supporting the Tower's central reinforced concrete core walls. These footings are excavated in the underlying rock beginning near the Track Level of the site. The nominal rock capacity at Track Level is 40 to 60TSF. The footings under the core will be embedded into the sound rock to enhance the allowable strength increases per the NYC Building Code. A significant number of rock anchor tie-downs will be required primarily under the north and south continuous footings of the core to resist the overturning forces from the applied wind loads. In addition to the continuous footings under the core, a mega column foundation will be constructed on the west face of the Tower to take the load from the perimeter columns which "kick" in from the north, south and west sides towards the middle of each face. These foundations are constructed near the B Level and occur just behind the existing retaining wall and Platform support structure.

B. SUPERSTRUCTURE

1. Gravity System

The North Tower will consist of seventy-one stories above grade and one below-grade level. Height above Plaza Level is currently anticipated to be approximately 995'. Typical floor-to-floor heights in the office floors will be 13'-6". The eastern face of the building curves back to the west over the height of the Tower leading to a smaller floor plan at the top.

The gravity system will utilize reinforced concrete slab on composite metal deck supported by structural steel floor beams and girders outside of the core wall system and one-way reinforced concrete beams and slabs within the core area.. The floor beams and girders will frame to either perimeter columns, spandrel beams or the concrete core at the center of the building. The column elements will be rolled shapes where possible. Built-up structural steel column shapes will likely be required in the lower portions of the building where loads are the highest. The majority of exterior columns along grid line 1 and 7 will "kick back" to the concrete core below level 6. The mechanical floor will have in-plane bracing to take out the tension forces. Additional bracing is utilized below level 6 along grid line A and B, to take the shear force due to unbalanced live load cases. With all the gravity loads transferred back to the core, the uplift due to wind or seismic is also reduced. At the two major mechanical levels, structural steel belt trusses are used which aid in equalizing the columns loads. The belt trusses will also provide system redundancy for progressive collapse mitigation.

2. Lateral System

The lateral system will be a ductile reinforced concrete core system. The flange wall thickness varies from 54" to 24", and the web wall thickness varies from 24" to 18".The core wall concrete strength is 10000 psi at the lower portion and 8000 psi at upper portion for all the walls. The core walls are currently designed for wind loads based on the Wind Tunnel testing results from the 50% DD model extrapolated by SOM to the new height. Revised wind tunnel loads are pending.

PRELIMINARY STRUCTURAL QUANTITIES			
Gross Building Area (not including Slab-on-Grade)		1,934,000 sf (within Tower footprint)	
STRUCTURAL CONCRETE			
Foundations	Concrete	3200 cy	0.04 cf/sf
	Rebar	370 tons	0.38 psf
Core Walls/Link Beams Below Level 6	Concrete	9500 cy	0.13 cf/sf
	Rebar	1580 tons	1.63 psf
Core Walls/Link Beams Abve Level 6	Concrete	29100 cy	0.41 cf/sf
	Rebar	4200 tons	4.34 psf
Composite Deck Slab	Concrete	20350 tons	0.28 cf/sf
	Rebar	650 tons	0.67 psf
Core Beams & Slabs	Concrete	6300 cy	0.09 cf/sf
	Rebar	580 tons	0.60 psf
Total Quantity	Concrete	**68450 cy**	**0.96 cf/sf**
	Rebar	**10210 tons**	**10.56 psf**
STRUCTURAL STEEL			
Columns Above Level 6		5600 tons	5.79 psf
Kicker Columns, Lower Belt Trusses, & Diagonals Below Level 6 (Including Embedded Steel)		4200 tons	4.34 psf
Upper Belt Trusses and Outrigger Trusses		1200 tons	1.24 psf
Floor Beams & Girders		7500 tons	7.76 psf
Embedded Steel in Link Beams		400 tons	0.41 psf
Connections		1700 tons	1.76 psf
Misc.		240 tons	0.25 psf
Total Quantity		**20840 tons**	**21.55 psf**

NOTES:

1. The quantities given are anticipated and only include materials required for the primary structural system within the footprint of the tower. The quantities above exclude exterior cladding support, miscellaneous mechanical support framing, stairs, window washing framing, elevator framing, cooling tower framing, secondary services framing and framing for entrance canopies. Removable steel work required for temporary building stability or shoring during construction is also excluded. These quantities exclude additional concrete required for MEP pads, architectural curbs, pit walls, and additional reinforcement bar required for slab openings.
2. The above quantities do include progressive collapse based on project security recommendations and direction from Brookfield.
3. The above quantities do not include the structural components outside the footprint of the tower as documented in the structural drawings.
4. The above quantities do not include seismic special detailing or blast requirements, if required.
5. The above quantities do not include rock tiedowns.
6. The above quantities do not include slab-on-grade.
7. The baseline structure has been designed to accommodate the security criteria developed for this project which is more stringent that that currently required by NYC code.

This alternative would base the design on the approach outlined in the NYC code. The following preliminary tonnage savings are expected:

- Structural Steel Columns = 1900 tons (including connection allowances)
- Structural Steel Kicker Columns, Belt Trusses and Outrigger Trusses = 1400 tons (including connection allowances)

STRUCTURAL DRAWINGS

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
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Architecture/Structural Engineering

SOM

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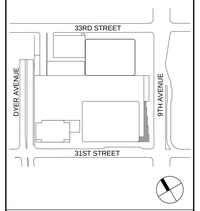
STATE OF NEW YORK
CHARLES MICHAEL BESJAK
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

PRELIMINARY
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6	20 JUN 2014	ISSUED FOR FOUNDATION BID
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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

STRUCTURAL SYSTEMS DRAWING AND SHEET LIST

Project No.: 211157	B-SCAN Sheet No.: S-001.00
Date: 20 JUN 2014	Sheet No.: S-001
Scale:	
File No.: S-001	Page No.: 1 of 90

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LINES

- DIAGONAL BRACING
- CENTER LINE
- HIDDEN, OUTLINE
- NOTE
- DIMENSION

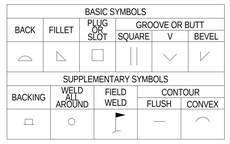
REFERENCE MARKS

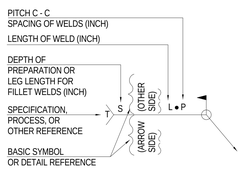
- A — GRID LINE DESIGNATION
- A / S-401 — SECTION DESIGNATION; SHEET NUMBER WHERE DETAIL IS SHOWN
- A — SECTION DESIGNATION ON SAME SHEET
- A / S-401 — DETAIL DESIGNATION; SHEET NUMBER WHERE DETAIL IS SHOWN
- A — DETAIL DESIGNATION ON SAME SHEET

SLAB MARKS

- MS1 — COMPOSITE METAL DECK SLAB
- RS1 — REINFORCED METAL DECK SLAB
- S1 — ONE-WAY REINFORCED CONCRETE SLAB
- TWO-WAY REINFORCED CONCRETE SLAB

WELDED JOINT SYMBOLS





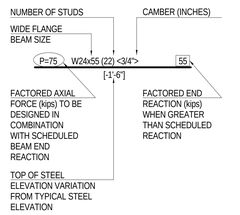
PAINT SYSTEM IDENTIFICATION

II	INTERIOR EXPOSED STRUCTURAL STEEL WITH INTUMESCENT FIREPROOFING
IP	INTERIOR EXPOSED STRUCTURAL STEEL WITHOUT INTUMESCENT FIREPROOFING
EP	EXTERIOR EXPOSED STRUCTURAL STEEL
EC	EPOXY BARRIER COATING SYSTEM

COLUMN MARKS

- STEEL WIDE FLANGE
- STEEL PIPE
- TR — COLUMN TRANSFER (AT LEVEL SHOWN)
- SC — STUB COLUMN (TO FRAMING ON LEVEL SHOWN)
- STEEL HANGER
- RECTANGULAR CONCRETE COLUMN
- CIRCULAR CONCRETE COLUMN
- CONCRETE COLUMN BELOW LEVEL SHOWN

COMPOSITE BEAM DIAGRAM



BEAM MARKS

- MOMENT CONNECTION
- FIELD SPLICE
- MARK (SEE SCHEDULE) X= +2" 4 — DISTANCE FROM BEAM ℄; RECTANGULAR BEAM PENETRATION
- MARK (SEE SCHEDULE) X= +2" 8 — DISTANCE FROM BEAM ℄; CIRCULAR BEAM PENETRATION

MISCELLANEOUS SYMBOLS

- REINFORCING BAR MECHANICAL COUPLER
- METAL DECK
- WELDED WIRE FABRIC
- CHANGE IN ELEVATION
- EPOXY ANCHORED DOWEL
- EXPANSION BOLT
- EMBEDDED PLATE

ABBREVIATIONS

ACI	=	AMERICAN CONCRETE INSTITUTE
AESS	=	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AISC	=	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	=	AMERICAN IRON AND STEEL INSTITUTE
APPROX	=	APPROXIMATE, APPROXIMATELY
ARCH	=	ARCHITECT, ARCHITECTURAL
ASCE	=	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	=	AMERICAN SOCIETY OF CIVIL ENGINEERS
AWS	=	AMERICAN WELDING SOCIETY
B/	=	BOTTOM OF
C-C	=	CENTER-TO-CENTER
CONC	=	CONCRETE
CONT	=	CONTINUOUS
CU	=	CUBIC
DEG	=	DEGREE
DIA	=	DIAMETER
DIAG	=	DIAGONAL
EA	=	EACH
EW, EF	=	EACH WAY, EACH FACE
EOS	=	EDGE OF SLAB
E	=	ELEVATOR SHAFT
EL	=	ELEVATION
EXT	=	EXTERIOR
FDN	=	FOUNDATION
FTG	=	FOOTING
GA	=	GAUGE, GAGE
GALV	=	GALVANIZED
HORIZ	=	HORIZONTAL
HP	=	HIGH POINT
HSS	=	HOLLOW STRUCTURAL SHAPE
IBC	=	INTERNATIONAL BUILDING CODE
INT	=	INTERIOR
KIPS	=	THOUSANDS OF POUNDS
KLF	=	KIPS PER LINEAL FOOT
KSF	=	KIPS PER SQUARE FOOT
KSI	=	KIPS PER SQUARE INCH
LB(S)	=	POUND(S)
LOC	=	LOCATION
LLV	=	LONG LEG VERTICAL
LLH	=	LONG LEG HORIZONTAL
LWT	=	LIGHTWEIGHT
M	=	MECHANICAL SHAFT
MAX	=	MAXIMUM
MEZZ	=	MEZZANINE
MIN	=	MINIMUM
MISC	=	MISCELLANEOUS
NTS	=	NOT TO SCALE
NWT	=	NORMAL WEIGHT
O.C.	=	ON CENTER
OPP	=	OPPOSITE
PERP	=	PERPENDICULAR
PL	=	PLATE
PLF	=	POUNDS PER LINEAL FOOT
PSF	=	POUNDS PER SQUARE FOOT
PSI	=	POUNDS PER SQUARE INCH
REQ'D	=	REQUIRED
REV	=	REVISION, REVISED
S	=	STAIR OPENING
S.C.	=	SLIP-CRITICAL
SCHED	=	SCHEDULE
SECT	=	SECTION
SHT	=	SHEET
SIM	=	SIMILAR
SPEC	=	SPECIFICATION
S.S.	=	STAINLESS STEEL
STRUC	=	STRUCTURE, STRUCTURAL
T/	=	TOP OF
TYP.	=	TYPICAL
U.N.O.	=	UNLESS NOTED OTHERWISE
V.I.F.	=	VERIFY IN FIELD
W/	=	WITH
W/O	=	WITHOUT
W.P.	=	WORK POINT
W.W.F.	=	WELDED WIRE FABRIC

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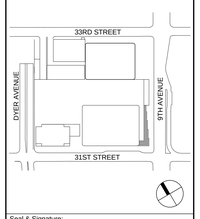

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Sheet Name:

TYPICAL STRUCTURAL SYMBOLS AND ABBREVIATIONS

Project No.: 211157	B-SCAN Sheet No.: S-002.00
Date: 20 JUN 2014	
Scale: 12" = 1'-0"	Sheet No.: S-002
File No.: S-002	Page No.: 2 of 90

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GENERAL EXCAVATION NOTES

1. THE GENERAL EXCAVATION PROGRAM, INCLUDING METHODS, SEQUENCES, PROTECTION OF EXCAVATION SURFACES, ETC., SHALL BE THE COMPLETE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. SOIL RETENTION SYSTEMS WILL BE REQUIRED IN ALL THE NON-ROCK EXCAVATION ZONES, ESPECIALLY ADJACENT TO ROADWAYS AND RAILROAD TRACKS. EXCAVATION-RETENTION SYSTEM DESIGN, INSTALLATION, MAINTENANCE, AND REMOVAL SHALL ALSO BE THE COMPLETE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE AND MINIMIZE SETTLEMENT OF EXISTING OR NEW CONSTRUCTION INSIDE OR OUTSIDE THE PROJECT LIMITS. ANY DAMAGE TO NEW OR EXISTING CONSTRUCTION, INSIDE OR OUTSIDE OF THE PROJECT LIMITS, CAUSED BY EXCAVATION TECHNIQUES OR MOVEMENTS OF THE ANY SOIL RETENTION SYSTEM, IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. WHEN EXCAVATION IS NEAR THE TRACKS, RAILROAD PROTECTION IS REQUIRED. WHEN EXCAVATION IS NEAR THE TRACKS, SUPPORT OF THE TRACKS IS REQUIRED.

2. THE CONTRACTOR SHALL RETAIN A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NEW YORK ACCEPTABLE TO THE ENGINEER-OF-RECORD TO DESIGN AND INSPECT THE ROCK EXCAVATION PROGRAM AND ANY EXCAVATION-RETENTION SYSTEM COMPONENTS, INCLUDING ALL MEASURES REQUIRED TO SUPPORT, EITHER PERMANENTLY OR TEMPORARILY, ADJACENT FOUNDATIONS, BUILDINGS, RAILROAD TRACKS, STREETS, PROPERTIES, SIDEWALKS, AND UTILITIES. THESE MEASURES INCLUDE UNDERPINNING, ROCK BOLTING, SHOTCRETING, TIEBACKS, SHEETING, AND SHORING.

3. THE ROCK EXCAVATION PROGRAM AND ANY EXCAVATION-RETENTION SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE GEOTECHNICAL DESIGN PARAMETERS AND SOIL PRESSURES AS INDICATED IN THE GEOTECHNICAL EXPLORATION REPORT. REFER TO NOTE #19 BELOW.

4. SLOT OR LINE DRILL AS REQUIRED.

5. PLUG ALL SEEPS & LENSES IN ROCK WITH GROUT AS REQUIRED.

6. BLASTING OPERATIONS SHALL COMPLY WITH ALL LOCAL & STATE LAWS, RULES AND REGULATIONS. ALL BLASTING OPERATIONS SHALL COMPLY WITH AMTRAK BLASTING SPECIFICATIONS.

7. BLASTING OPERATIONS SHALL COMPLY WITH THE RECOMMENDATIONS OF THE OWNER'S BLAST CONSULTANT, ESPECIALLY WITH REGARD TO COORDINATING TIMING AND EFFECTS OF BLASTING WITH EXISTING RAILROAD OPERATIONS. ALL BLASTING OPERATIONS SHALL COMPLY WITH AMTRAK BLASTING SPECIFICATIONS.

8. AFTER CONCRETE HAS BEEN PLACED, BLASTING SHALL NOT OCCUR WITHIN A 50-FOOT RADIUS UNLESS WRITTEN PERMISSION IS OBTAINED FROM THE ENGINEER-OF-RECORD. ALL BLASTING OPERATIONS SHALL COMPLY WITH AMTRAK BLASTING SPECIFICATIONS.

9. THE CONTRACTOR SHALL COORDINATE ALL GENERAL EXCAVATION WORK AND ALL ELEMENTS OF ANY SOIL RETENTION SYSTEMS WITH ALL ELEMENTS OF THE PERMANENT BUILDINGS.

10. PRIOR TO ANY GENERAL EXCAVATION OR INSTALLATION OF ELEMENTS OF ANY SOIL RETENTION SYSTEM, THE CONTRACTOR SHALL ESTABLISH A GRID OF SURVEY POINTS AROUND THE PERIMETER OF THE AREA TO BE EXCAVATED, INCLUDING POINTS UP TO 200 FEET BEYOND THE PERIMETER AND POINTS ON ADJACENT EXISTING STRUCTURES TO REMAIN. THESE POINTS SHALL BE SURVEYED FOR VERTICAL AND HORIZONTAL MOVEMENT AT FREQUENT INTERVALS DURING ACTUAL EXCAVATION, AND CONTINUED DURING EACH SUBSEQUENT PHASE OF THE WORK, AND SUBMITTED TO THE ARCHITECT FOR INFORMATION. MONITORING POINTS WILL ALSO BE REQUIRED ON ALL RAILROAD TRACKS THAT HAVE ANY EXCAVATION OR DEWATERING ADJACENT TO THEM. A DETAILED MONITORING PROGRAM SHALL BE PREPARED AND SUBMITTED TO THE RAILROADS AS WELL AS THE RESULTS OF THE MONITORING PROGRAM.

11. EXCAVATION WORK SHALL BE BASED UPON ENGINEERED DRAWINGS PREPARED BY THE CONTRACTOR INCLUDING PLANS AND SECTIONS OF EXCAVATION SEQUENCES. THE EXCAVATION SEQUENCES SHALL BE CONTROLLED TO MATCH THE REQUIREMENTS OF ALL NEW AND EXISTING CONSTRUCTION WORK.

12. THE GENERAL EXCAVATION ACROSS THE SITE SHALL NOT EXTEND DEEPER THAN THE SLAB-ON-GRADE GRANULAR FILL SUBGRADE ELEVATION. THE DEEPER EXCAVATIONS FOR GRADE BEAMS, SPREAD FOOTINGS, PITS, ETC. SHALL BE EXCAVATED ON AN INDIVIDUAL, LOCALIZED BASIS DOWN FROM THE SLAB-ON-GRADE SUBGRADE.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY STRUCTURAL COMPONENTS WHICH ARE TO RESIST TEMPORARY LOADS AS PART OF THE CONTRACTOR'S EXCAVATION/RETENTION PROGRAM.

14. EXCAVATION BELOW THE SLAB LEVEL REQUIRED FOR PITS SHALL BE RETAINED BY LOCALIZED EXCAVATION-RETENTION SYSTEMS, AS MAY BE NECESSARY, BASED ON THE CONTRACTOR'S DESIGN USING APPROPRIATE EARTH/ROCK AND HYDRAULIC PRESSURES AS INDICATED IN THE GEOTECHNICAL EXPLORATION REPORT, AND OTHER CONSTRUCTION LOADING

15. THE CONTRACTOR SHALL PROVIDE POSITIVE PROTECTION (MAT/SHEET COVERINGS), FOR ALL EXCAVATION FACES, TO PROTECT FACES FROM INSTABILITY AND DETERIORATION DUE TO RAIN, WIND OR SNOW/ICE.

16. THE CONTRACTOR SHALL PROVIDE SURFACE DRAINAGE CHANNELS AND SUMPS AND SUMP PUMPS TO PROTECT ALL EXCAVATIONS FROM FLOODING. FLOODING OF ANY EXCAVATION AFTER APPROVAL OF ANY SUBGRADE WILL BE CAUSE FOR THE COMPLETE REPREPARATION AND APPROVAL OF THE SUBGRADE, INCLUDING REMOVAL OF CONCRETE MUD SLABS, IF ANY EXIST. NO DISCHARGE OF ANY DEWATERING OPERATION IS TO BE MADE ONTO AMTRAK PROPERTY. IF THE CONTRACTOR DISCHARGES ANY WATER INTO EXISTING STORMWATER FACILITIES ON AMTRAK, THEN THE CONTRACTOR IS TO PROVIDE PROOF THAT THE SYSTEM CAN HANDLE THE FLOWS. UPON THE COMPLETION OF THE DEWATERING, THE CONTRACTOR IS TO CLEAN PIPES OF ALL DEBRIS THAT HAS ACCUMULATED AS A RESULT OF THE DEWATERING OPERATION.

17. AFTER COMPLETION OF EACH EXCAVATION PHASE, IN EACH AREA, THE SITE SHALL BE DEWATERED, AS REQUIRED, BEFORE (OR AS) THE EXCAVATION PROCEEDS. THE CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION AND EQUIPMENT FOR THE DEWATERING SYSTEM INCLUDING, BUT NOT LIMITED TO, TRENCHES, SUMPS, DEWATERING WELLS, WELL POINTS, OBSERVATION WELLS, PUMPING SYSTEM, DISPOSAL LOCATION, SETTLING BASINS, MAINTENANCE AND EMERGENCY BACK-UP EQUIPMENT, ETC. AT ALL TIMES, THE DEWATERING SYSTEM SHALL MAINTAIN THE WATER LEVEL A MINIMUM OF 3 FEET BELOW THE DEEPEST FOUNDATION SUBGRADE. THE DEWATERING SYSTEM SHALL BE MAINTAINED UNTIL ALL LOWER LEVEL AND GROUND FLOOR SLABS, PERIMETER WALLS AND WATERPROOFING ARE INSTALLED AND THE PERMANENT BUILDING DRAINAGE SYSTEM IS FULLY OPERATIONAL.

18. THE OWNER'S SOIL TESTING AGENCY SHALL REVIEW AND CONTINUOUSLY MONITOR THE EXCAVATION, DEWATERING AND SOIL RETENTION SYSTEMS. THE CONTRACTOR SHALL INSTALL AND CONTINUOUSLY SURVEY: (A) VERTICAL AND HORIZONTAL MOVEMENTS OF THE TOP OF THE SOIL RETENTION SYSTEM; (B) BENCH MARKS ADJACENT TO AND AWAY FROM THE SITE PERIMETER FOR VERTICAL AND HORIZONTAL MOVEMENTS; (C) INCLINOMETERS INSTALLED ALONG THE PERIMETER OF THE EXCAVATION, PRIOR TO THE START OF EXCAVATION; AND (D) OBSERVATION WELLS FOR MONITORING WATER LEVELS BELOW GROUND SURFACE. REFER TO FINAL SOIL CONSULTANT'S REPORT FOR MONITORING REQUIREMENTS.

19. ALL WORK IS SUBJECT TO CONTROLLED INSPECTION AS REQUIRED BY THE NEW YORK CITY BUILDING CODE.

20. A GEOTECHNICAL EXPLORATION REPORT, INCLUDING SOIL AND ROCK BORING DATA, HAS BEEN PREPARED BY MUESER RUTLEDGE CONSULTING ENGINEERS, 14 PENN PLAZA, 225 WEST 34TH STREET, NEW YORK, NY 10122.

21. FOR ADDITIONAL REQUIREMENTS, SEE SPECIFICATIONS:

312300	EXCAVATION & FILL
312316.26	ROCK EXCAVATION
312319	CONSTRUCTION DEWATERING
313313	ROCK GROUTING
315100	EXCAVATION SUPPORT AND PROTECTION
316813	ROCK FOUNDATION ANCHORS
334619	UNDERSLAB DRAINAGE PIPING
071000	FOUNDATION WATERPROOFING

22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY STRUCTURAL COMPONENTS WHICH ARE TO RESIST TEMPORARY LOADS AS PART OF THE CONTRACTORS EXCAVATION/RETENTION PROGRAM.

GENERAL FOUNDATION NOTES

1. FOUNDATION DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE LATEST EDITION, EXCEPT AS VARIANCES ARE OBTAINED.

2. THE GEOTECHNICAL REPORT BY MRCE CONTAINING BORING AND TEXT PIT INFORMATION IS PROVIDED FOR INFORMATION.

3. THE FOUNDATION OF THE BUILDING CONSISTS OF:
- LARGE "MEGA COLUMN" FOUNDATION WALL
- SPREAD FOOTINGS.
- STRIP FOOTINGS

4. FOOTINGS AND GRADE BEAMS SHALL BE FOUNDED UPON UNDISTURBED, NATURAL ROCK SUBGRADE WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 20 TSF TO 60 TSF AS INDICATED ON THE DRAWINGS. THE BOTTOM OF THE FOOTING ELEVATIONS AND ROCK BEARING CAPACITIES AS SHOWN ON THE DRAWINGS ARE ESTIMATED FROM THE ROCK BORING DATA. FINAL, EXACT BEARING ELEVATIONS SHALL BE FIELD DETERMINED AND ROCK BEARING CAPACITIES VERIFIED BY THE OWNER'S SOIL TESTING LABORATORY DURING CONSTRUCTION.

5. THE ROCK SUBGRADE FOR ALL FOOTINGS, GRADE BEAMS, AND SLABS SHALL BE INSPECTED AND APPROVED BY THE OWNER'S TESTING AGENCY IMMEDIATELY PRIOR TO PLACING FOUNDATION CONCRETE OR CONCRETE MUD SLABS.

6. ALL ORGANIC AND/OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM FOUNDATION AND SLAB SUBGRADES AND BACKFILL AREAS, AND THEN BACKFILLED WITH LEAN CONCRETE (f'c=2000 psi).

7. PROVIDE TEMPORARY BRACING FOR ALL BASEMENT WALLS, IN ACCORDANCE WITH THE GEOTECHNICAL DESIGN PARAMETERS AND SOIL PRESSURES AS INDICATED IN THE GEOTECHNICAL EXPLORATION REPORT, UNTIL THE GROUND FLOOR AND LOWER LEVEL SLABS HAVE BEEN PLACED, AND THE CONCRETE HAS ATTAINED FULL DESIGN STRENGTH.

8. NO MUD SLABS, FOOTINGS OR STRUCTURAL SLABS SHALL BE PLACED INTO OR AGAINST SUBGRADES CONTAINING FREE WATER, FROST OR ICE. SHOULD WATER OR FROST ENTER A FOOTING/MUD SLAB/STRUCTURAL SLAB EXCAVATION AFTER SUBGRADE APPROVAL, THE SUBGRADE SHALL BE REINSPECTED BY THE OWNER'S SOIL TESTING AGENCY AFTER REMOVAL OF WATER, FROST, OR ICE.

9. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY WATER, FROST, OR ICE FROM PENETRATING ANY FOOTING OR STRUCTURAL/MUD SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE, AND UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.

10. ALL SLAB AND FOOTING MUD SLABS SHALL BE THOROUGHLY CLEANED IMMEDIATELY PRIOR TO CONCRETE PLACEMENT.

11. THE CONCRETE FOR EACH ISOLATED OR COMBINED FOOTING SHALL BE PLACED IN ONE (1) CONTINUOUS POUR.

12. SLABS-ON-GRADE SHALL BE PLACED OVER A CONTINUOUS VAPOR BARRIER OVER A MINIMUM OF 8" COMPACTED GRANULAR MATERIAL.

13. SEE PLUMBING AND CIVIL DRAWINGS FOR UNDERFLOOR AND PERIMETER WALL DRAINAGE SYSTEMS, AND SPECIAL GRANULAR FILL MATERIALS FOR SUCH DRAINAGE SYSTEMS.

14. SEE ARCHITECTURAL DRAWINGS FOR ALL WATERPROOFING AND DAMP PROOFING DETAILS.

15. ELEVATIONS ON THE FOUNDATION PLANS ARE GIVEN RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88). FOR REFERENCE, 0.0' NAV88 = 301.675' PENN RAIL ROAD TUNNELS DATUM.

GEOTECHNICAL ASSUMPTIONS:

1. ALL FOUNDATION DESIGNS ARE BASED ON RECOMMENDATIONS PROVIDED BY MRCE PRIOR TO THE FINAL GEOTECHNICAL REPORT AND ON THE FINAL GEOTECHNICAL REPORT TITLED "FOUNDATION DESIGN RECOMMENDATIONS, 9TH AVENUE DEVELOPMENT, NEW YORK, NEW YORK" DATED JUNE 10,2008, EXCEPT AS NOTED IN ITEM 3 BELOW.

2. THE TOP 1'-0" OF ROCK BELOW BALLAST IS ASSUMED TO BE TOO FRACTURED TO PROVIDE RESISTANCE TO LOAD.

3. ALLOWABLE ROCK BEARING CAPACITY AT TRACK LEVEL HAS BEEN ASSUMED TO BE 60 TSF. THIS IS TO BE VERIFIED BY ADDITIONAL BORINGS BY MRCE.

4. ALLOWABLE ROCK BEARING CAPACITY NEAR LEVEL B1 HAS BEEN ASSUMED TO BE 40 TSF.

5. AN ALLOWABLE ROCK BEARING CAPACITY INCREASE OF 10% PER FOOT OF EMBEDMENT INTO ROCK (BEYOND THE FIRST FOOT) UP TO A 100% INCREASE HAS BEEN ASSUMED IN MOST CASES REGARDLESS OF THE ELEVATION OF THE ROCK.

6. FOR TENSION RESISTANCE, UNIT WEIGHT OF BUOYANT ROCK ASSUMED TO BE 100 pcf .

7. LATERAL LOADS APPLIED TO THE TOPS OF FOOTINGS BY THE STRUCTURE ARE ASSUMED TO BE TRANSFERRED TO THE ROCK ENTIRELY THROUGH FRICTION ON THE SIDE AND BOTTOM OF THE FOOTING AND PASSIVE PRESSURE RESISTANCE OF THE ROCK AGAINST THE FOOTING.

8. TENSION CAPACITY BASED ON A FAILURE CONE OF 45° FROM THE BOTTOM OF THE CAISSON SHAFT.

9. B/FRICTIONLESS CAISSON SHAFT ELEVATIONS INDICATED ON THE DRAWINGS HAVE BEEN BASED UPON THE FOLLOWING:
- THE ASSUMPTION PROVIDED BY MRCE THAT NO ADDITIONAL SURCHARGE LOAD MAY BE APPLIED TO THE EXISTING ROCK BOLTED RETAINING WALLS.
- THE ASSUMPTION PROVIDED BY MRCE OF A 1:2 INFLUENCE LINE EXTENDING FROM THE INTERFACE OF THE WALL AND THE ROCK AT THE BOTTOM OF THE EXISTING RETAINING WALL.
- ASSUMED LOCATION OF THE EXISTING RETAINING WALL BASED UPON SURVEY DATA PROVIDED BY MEDINA.

10. ADDITIONAL ROCK BOLTS INTO THE EXISTING RETAINING WALL ARE ASSUMED TO BE ADDED AS REQUIRED.

11. THE TOP OF FOOTING ELEVATION ARE GENERALLY ASSUMED TO MATCH THE TOP OF SOUND ROCK ELEVATION.

12. T/FOUNDATION ELEVATIONS INDICATED ON THE DRAWINGS HAVE BEEN BASED UPON THE FOLLOWING INFORMATION:
- T/RAIL PROFILE AND OFFSET FROM T/RAIL TO T/ROCK SHOWN ON "TERMINAL STATION WEST, TYPICAL SECTIONS, CONTRACT DRAWING NO. 2112B" DATED FEBRUARY 1906 WITH REVISIONS ON SEPT. 20, 1907 AND NOV. 15, 1909 FOR THE PENNSYLVANIA, NEW YORK AND LONG ISLAND RAILROAD COMPANY.
- FOUNDATION AND DRAINAGE CONFLICT ANALYSIS PERFORMED BY TURNER AND EVALUATED BY PARSONS BRINKERHOFF RECEIVED BY SOM ON 24 APRIL, 2008.
- T/SOUND ROCK ELEVATIONS PROVIDED BY MRCE IN THE FINAL GEOTECHNICAL REPORT.

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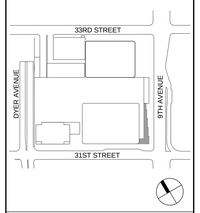
Key Plan:



Seal & Signature:

PRELIMINARY
NOT FOR CONSTRUCTION

No.	Date	Description
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
EXCAVATION AND FOUNDATION NOTES

Project No.: 211157	B-SCAN Sheet No.: S-003.00
Date: 20 JUN 2014	Sheet No.: S-003
Scale:	
File No.: S-003	Page No.: 3 of 90

CONCRETE NOTES

A. GENERAL
1. SHOP DRAWINGS FOR FORMWORK AND REINFORCING SHALL BE APPROVED PRIOR TO FORMWORK CONSTRUCTION OR REINFORCING FABRICATION AND PLACEMENT.
2. IN ADDITION TO CAMBERS SHOWN, CAMBER FORMWORK TO COMPENSATE FOR DEFLECTION OF FORMS UNDER THE WET WEIGHT OF CONCRETE AS REQUIRED TO ACHIEVE THE SPECIFIED TOLERANCES.
3. SLAB-ON-GRADE THICKNESSES SHALL BE FIVE (5) INCHES FOR SIDEWALKS, SIX (6) INCHES FOR BASEMENT AND PLAZA SLABS, EIGHT (8) INCHES FOR AUTOMOBILE DRIVEWAY AREAS, AND TEN (10) INCHES FOR TRUCK TRAFFIC AREAS, UNLESS NOTED OTHERWISE.
4. CONCRETE BEAMS AND SLABS SHALL NOT BE SLEEVED, BOXED-OUT OR HAVE THEIR REINFORCING INTERRUPTED EXCEPT AS SHOWN ON THE STRUCTURAL DRAWINGS.
5. EXPOSED CONCRETE CORNERS SHALL HAVE 3/4 INCH CHAMFERS UNLESS NOTED OTHERWISE.
6. REFER TO ARCHITECTURAL DRAWINGS FOR THE TYPE, SIZE AND LOCATION OF FLOOR FINISHES, FLOOR DEPRESSIONS AND CURBS.
7. REFER TO ARCHITECTURAL DRAWINGS FOR WATERPROOFING AND DAMPPROOFING REQUIREMENTS.
8. PROVIDE SLEEVES AND BLOCKOUTS AS SHOWN ON THE APPROVED HVAC, ELECTRICAL, FIRE PROTECTION AND PLUMBING SHOP DRAWINGS IN ACCODANCE WITH THE STRUCTURAL DETAILS.
9. INSERTS AND EMBEDMENTS SHALL BE ANCHORED SECURELY AND POSITIONED SO THAT THEY WILL BE FLUSH WITH THE FINISHED CONCRETE SURFACE TO A TOLERANCE OF 1/8 INCH, UNLESS NOTED OTHERWISE.
10. PERFORM AND SUBMIT INSTRUMENT SURVEYS OF ALL FINISHED REINFORCED CONCRETE AND STEEL DECK CONCRETE SLAB SURFACES. CONDUCT SURVEYS IMMEDIATELY BOTH BEFORE AND AFTER REMOVAL OF FORMWORK AND/OR SHORING SYSTEMS.
11. REFER TO SPECIFICATION SECTION 031000, "CONCRETE FORMWORK," SECTION 032000, "CONCRETE REINFORCEMENT," AND SECTION 033000, "CAST-IN-PLACE CONCRETE" FOR ADDITIONAL REQUIREMENTS.
12. REFER TO "STATEMENT OF SPECIAL INSPECTIONS" FOR SPECIAL INSPECTION REQUIREMENTS AND THE SPECIFICATIONS FOR THE REQUIRED PROGRAM OF TESTING AND INSPECTIONS. PROVIDE MATERIAL TESTS, DATA AND ACCESS AS REQUIRED TO FACILITATE SPECIAL INSPECTIONS AND OWNER MONITORING

B. CONCRETE
1. CAST-IN-PLACE CONCRETE SHALL BE OF THE TYPES AND MINIMUM 28-DAY COMPRESSIVE STRENGTHS AND MAXIMUM WATER CEMENT RATIOS AS SHOWN IN THE CONCRETE MATERIAL SCHEDULE.
2. ALL CONCRETE SHALL CONTAIN A WATER REDUCING OR HIGH-RANGE WATER REDUCING, PLASTICIZING ADMIXTURE.
3. CONCRETE PERMANENTLY EXPOSED TO WEATHER SHALL CONTAIN AN APPROVED AIR-ENTRAINING ADMIXTURE.
4. CONCRETE ELEMENTS WITH A LEAST CROSS SECTIONAL DIMENSION GREATER THAN 48 INCHES SHALL BE CONSIDERED TO BE "MASS CONCRETE."

C. REINFORCING
1. MATERIALS:
   a. REINFORCING BARS: ASTM A615, ASTM A706 (WELDABLE REBAR) GRADE 60.
   b. WELDED WIRE FABRIC (WWF): ASTM A185
   c. STRUCTURAL MACRO FIBERS: ASTM C1116, MIN. 2 INCH LENGTH
   d. ANCHOR RODS: ASTM A1559 UNLESS NOTED OTHERWISE
2. CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, SPACED IN FORMS, AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITIONS OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315.
3. REINFORCING SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, BUT NOT LESS THAN 36 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
4. WELDED WIRE FABRIC SPLICES SHALL BE LAPPED EIGHT (8) INCHES AND TIED SECURELY.
5. MACRO FIBERS AT A DOSAGE RATE OF 4 LB/CU YARD MAY BE SUBSTITUTED FOR WELDED WIRE FABRIC IN STEEL DECK SLABS AND FILL CONCRETE OVER STRUCTURAL SLABS. SLABS WITH MACRO FIBERS SHALL HAVE #3 BY 2'-0" AT 12 INCHES ON CENTER AT CONSTRUCTION JOINTS IN ADDITION TO THE REINFORCING BARS SHOWN.
6. MECHANICAL COUPLERS SHALL BE USED WHERE NOTED AND OTHERWISE AT THE CONTRACTOR'S OPTION. COUPLERS SHALL DEVELOP IN TENSION 125% OF THE BAR STRENGTH UNLESS NOTED OTHERWISE.
7. DOWELS SHALL MATCH THE SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE.
8. FIELD WELDING OR BENDING OF REINFORCING IS NOT PERMITTED EXCEPT WHERE SHOWN ON THE DRAWINGS OR OTHERWISE APPROVED
9. MINIMUM REINFORCING, UNLESS NOTED OTHERWISE.
   a. WALLS AND STRUCTURAL SLABS #4 AT 12 EACH WAY, EACH FACE
   b. SLABS ON GRADE: 1 LAYER 6X6 - W2.9XW2.9 WWF
   c. FILLS/WEAR SLABS: 1 LAYER 6X6 - W1.4XW1.4 WWF
   d. MEP EQUIPMENT PADS: 1 LAYER 6X6 - W4.0XW4.0 WWF
10. MINIMUM REINFORCING FOR EXTERIOR AND VEHICLE TRAFFIC SLABS-ON-GRADE, GALVANIZED OR EPOXY COATED UNLESS NOTED OTHERWISE.
   a. SIDEWALKS, PLAZAS: 1 LAYER 4X4 - W2.9XW2.9 WWF
   b. AUTO TRAFFIC AREAS: 1 LAYER 4X4 - W6.0XW6.0 WWF
   c. TRUCK TRAFFIC AREAS: 1 LAYER 4X4 - W7.0XW7.0 WWF
11. BAR SUPPORTS SHALL BE GALVANIZED OR EPOXY COATED. BAR SUPPORTS IN CONTACT WITH EXPOSED SURFACES SHALL ALSO BE PLASTIC TIPPED.
12. SLAB-ON-GRADE REINFORCING SHALL BE SUPPORTED BY CONCRETE BLOCKS.

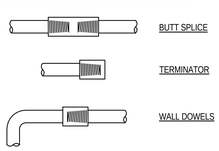
D. CONSTRUCTION JOINTS:
1. CONSTRUCTION JOINTS IN ALL WALLS, SLABS AND BEAMS SHALL NOT BE FURTHER APART THAN 90 FEET IN ANY DIRECTION.
2. CONSTRUCTION JOINTS SHALL BE WIRE BRUSHED, CLEANED AND MOISTENED IMMEDIATELY PRIOR TO PLACING NEW CONCRETE.
3. PLACE SLABS-ON-GRADE IN STRIP POURS OF A MAXIMUM WIDTH OF 15 FEET WITH A MINIMUM OF 24 HOURS BETWEEN ADJACENT POURS.
4. SLABS-ON-GRADE STRIP POURED SLABS SHALL HAVE SAWCUT CONTROL JOINTS AT 15'-0" CENTERS IN EACH DIRECTION. AT THE FOLLOWING MAXIMUM CENTERS, UNLESS SHOWN OTHERWISE:
   a. 4 INCH SLAB 10 FEET
   b. 5 INCH SLAB 12 FEET
   c. 6 INCH OR GREATER SLAB 15 FEET
5. CONSTRUCTION JOINTS IN STEEL DECK SLABS SHALL BE LOCATED A MINIMUM OF 18 INCHES FROM ANY BEAM LINE.
6. PROVIDE SHEAR KEYS AT ALL BEAM, REINFORCED SUSPENDED SLAB, GRADE BEAM, MAT AND FOUNDATION WALL CONSTRUCTION JOINTS. REFER TO STEEL DECK DETAILS FOR REQUIREMENTS AT STEEL DECK SLABS.REFER TO DETAILS FOR SLAB-ON-GRADE AND SLAB ON METAL DECK CONSTRUCTION JOINT REQUIREMENTS.
7. CONSTRUCTION JOINTS SHALL BE LOCATED ONLY IN ACCORDANCE WITH APPROVED SHOP DRAWINGS.
8. ALLOW A MINIMUM OF THREE (3) HOURS BETWEEN PLACEMENT OF CONCRETE FOR COLUMNS, WALLS OR PIERS AND PLACEMENT OF CONCRETE ON THE ADJACENT FLOOR.

E. ELECTRICAL CONDUIT
1. CONDUIT SHALL BE STEEL OR RIGID PLASTIC ONLY.
2. MAXIMUM CONDUIT DIAMETER IS 1/6 THE SLAB DEPTH.
3. CONDUIT SHALL BE LOCATED IN THE CENTER 1/3 OF THE SLAB AND AS SHOWN IN THE STEEL DECK DETAILS.
4. CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 3 TIMES THE CONDUIT DIAMETER.
5. CONDUIT SHALL BE SECURELY TIED TO REINFORCING TO PREVENT DISPLACEMENT DRUING CONCRETE PLACEMENT.
6. CONDUIT SHALL BE PLACED ONLY IN ACCORDANCE WITH SHOP DRAWINGS APPROVED BY THE STRUCTURAL ENGINEER.

F. CURING AND SEALING
1. PROVIDE APPROVED CURING COMPOUND AND SEALER FOR THE TOP SURFACE OF ALL SLAB WORK, UNLESS NOTED OTHERWISE.
2. PROVIDE APPROVED CURING COMPOUND, SEALER, AND HARDENER FOR ALL SLABS IN M.E.P. AND STORAGE AREAS, UNLESS NOTED OTHERWISE.
3. MOIST CURE PARKING SLABS FOR A MINIMUM OF 7 DAYS.
4. MOIST CURE CONCRETE FILLS AND TOPPINGS PLACED OVER STRUCTURAL SLABS.
5. CURE FORMED CONCRETE IN FORMS OR PROVIDE APPROVED CURING COMPOUND.

G. DRILLED IN ANCHORS AND REINFORCING BARS
1. DRILLED IN EXPANSION ANCHORS, ADHESIVE ANCHORS AND GROUTED BARS MAY BE USED ONLY WHERE SHOWN ON THE DRAWINGS.
2. DRILLED IN BARS SHALL BE ADHESIVE ANCHORED UNLESS NOTED OTHERWISE.
3. CONDUCT A PRECONSTRUCTION CONFERENCE AT LEAST 14 DAYS PRIOR TO INSTALLATION OF ANCHORS TO VERIFY MATERIALS AND PROCEDURES. CONFERENCE SHALL BE ATTENDED BY REPRESENTATIVES OF THE MANUFACTURER, INSTALLER, CONTRACTOR AND ARCHITECT.
4. ADHESIVE ANCHORED BARS SHALL BE INSTALLED BY TRAINED PERSONEL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE INSTALLATION SHALL BE MONITORED AND APPROVED BY THE MANUFACTURER'S REPRESENTATIVE.

LENTON MECHANICAL SPLICES



NOTE: USE LENTON MECHANICAL SPLICES OR MECHANICAL SPLICES THAT MEET OR EXCEED STRENGTH OF EQUIVALENT LENTON SPLICE.

CONCRETE MATERIALS SCHEDULE

LOCATION	COMPRESSIVE STRENGTH (28 DAY U.N.O.)	MAX. SIZE AGGREGATE	SUPPLEMENTARY MATERIALS	MAXIMUM W/C RATIO	AIR CONTENT
STRIP FOOTINGS	8,000 PSI @ 28 DAYS	1"	FLY ASH AND/ OR SLAG	0.45	3% MAXIMUM
SHEAR WALLS	10,000 PSI 8,000 PSI @ 56 DAYS 6,000 PSI @ 28 DAYS	3/4"	FLY ASH AND/ OR SLAG SILICA FUME REQUIRED FOR F'C ≥ 10,000 PSI	0.30 (10 KSI) 0.45 (6 TO 9 KSI)	3% TO 5% MAXIMUM
BASEMENT WALLS	5,000 PSI	3/4"		0.50	3% MAXIMUM
SLABS AND BEAMS	5,000 PSI	3/4"		0.50	3% MAXIMUM
EXPOSED TO FREEZING	5,000 PSI @ 28 DAYS	3/4"		0.45	4.5% TO 7.5%
SLABS ON STEEL DECK	4,000 PSI @ 28 DAYS	3/4"	MACRO FIBERS	0.50	3% MAXIMUM
TIGHT POURS	COORDINATE W/ELEMENTS	3/8"	COORDINATE W/ELEMENT	COORDINATE W/ELEMENT	3% MAXIMUM
TOPPING/FILL SLABS	4,000 PSI @ 28 DAYS	3/4"	MACRO FIBERS FLY ASH AND/ OR SLAG	0.40	3% INTERIOR 3% TO 7% EXTERIOR

NOTES:
1. ALL CONCRETE NORMAL WEIGHT UNLESS NOTED OTHERWISE.

MINIMUM CONCRETE COVER

CONCRETE SURFACE EXPOSURE	MINIMUM CONCRETE CLEAR COVER
FOOTINGS/CAISSONS	3"
CORE WALLS/BUTTRESS WALLS	1"
SLAB - ON - GRADE	2"
SLABS	3/4"
BEAMS	1 1/2"
COLUMNS	1 1/2"
SLAB ON COMPOSITE DECK	3/4"
FOUNDATION WALLS	2" O.F./1" I.F.

COMPRESSION LAP SPLICE LENGTH AND COMPRESSION DEVELOPMENT LENGTH

BAR SIZE	COMPRESSION LAP SPLICE	COMPRESSION DEVELOPMENT LENGTH					
		f'c = 4000 psi	f'c = 5000 psi	f'c = 6000 psi	f'c = 7000 psi	f'c = 8000 psi	f'c = 10000 psi
#3	12	8	8	8	8	8	8
#4	15	10	9	9	9	9	9
#5	19	12	12	12	12	12	12
#6	23	15	14	14	14	14	14
#7	27	17	16	16	16	16	16
#8	30	19	18	18	18	18	18
#9	34	22	21	21	21	21	21
#10	39	25	23	23	23	23	23
#11	43	27	26	26	26	26	26
#14	SEE NOTE 2	33	31	31	31	31	31
#18	SEE NOTE 2	43	41	41	41	41	41

NOTES:
1. TABULATED COMPRESSION DEVELOPMENT LENGTHS AND COMPRESSION LAP SPLICES ARE GIVEN IN INCHES, AND ARE CALCULATED FOR REINFORCEMENT CONFORMING TO ASTM A615 GRADE 60 AS PER THE REQUIREMENTS OF ACI 318-05.
2. USE MECHANICAL SPLICE FOR #14 AND #18 BAR SIZES.

TENSION DEVELOPMENT LENGTH AND CLASS 'A' TENSION LAP SPLICE LENGTH

BAR SIZE	f'c = 4000 psi				f'c = 5000 psi				f'c = 6000 psi				f'c = 7000 psi				f'c = 8000 psi				f'c = 10000 psi			
	TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
#3	19	28	15	22	17	25	13	19	15	23	12	18	14	21	12	16	13	20	12	15	12	18	12	14
#4	25	37	19	29	22	33	17	26	20	31	16	24	19	28	15	22	18	26	14	20	16	24	12	18
#5	31	47	24	36	28	42	22	32	25	38	20	29	24	35	18	27	22	33	17	25	20	30	15	23
#6	37	56	29	43	33	50	26	38	31	46	24	35	28	42	22	33	26	40	20	30	24	35	18	27
#7	54	81	42	63	49	73	37	56	44	66	34	51	41	61	32	47	38	58	30	44	34	51	27	40
#8	62	93	48	71	55	83	43	64	51	76	39	58	47	70	36	54	44	66	34	51	39	59	30	45
#9	70	105	54	81	63	94	48	72	57	85	44	66	53	79	41	61	49	74	38	57	44	66	34	51
#10	79	118	61	91	70	105	54	81	64	96	49	74	59	89	46	69	56	83	43	64	50	75	38	57
#11	87	131	67	101	78	117	60	90	71	107	55	82	66	99	51	76	62	93	48	71	55	83	43	64
#14	105	157	81	121	94	140	72	108	86	128	66	99	79	119	61	91	74	111	57	85	66	99	51	76
#18	139	209	107	161	125	187	96	144	114	171	88	131	106	158	81	122	98	148	76	114	88	132	68	102

NOTES:
1. TABULATED TENSION DEVELOPMENT LENGTHS ARE GIVEN IN INCHES, AND ARE CALCULATED FOR REINFORCEMENT CONFORMING TO ASTM A615 GRADE 60 AS PER THE REQUIREMENTS OF ACI 318 (2005).
2. CASES 1 AND 2 DEPEND UPON CONCRETE COVER AND THE CENTER-TO-CENTER SPACING OF THE BARS, DEFINED AS FOLLOWS:

   CASE 1: CLEAR SPACING AT LEAST ONE (1) BAR DIAMETER
   CLEAR COVER AT LEAST ONE (1) BAR DIAMETER
   STIRRUPS OR TIES THROUGHOUT THE DEVELOPMENT LENGTH NOT LESS THAN THE CODE MINIMUM
   OR
   CLEAR SPACING AT LEAST TWO (2) BAR DIAMETERS
   CLEAR COVER AT LEAST ONE (1) BAR DIAMETER

   CASE 2: ALL OTHER CASES

3. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
4. TABULATED TENSION DEVELOPMENT LENGTHS HAVE BEEN CALCULATED WITH RESPECT TO NORMALWEIGHT CONCRETE. FOR LIGHTWEIGHT CONCRETE, MULTIPLY THE TABULATED VALUES BY 1.3.
5. FOR EPOXY COATED BARS, MULTIPLY THE TABULATED VALUES BY ONE OF THE FOLLOWING FACTORS:

   1.5 FOR EPOXY COATED BARS WITH COVER LESS THAN 3 BAR DIAMETERS, OR CLEAR SPACING LESS THAN 6 BAR DIAMETERS
   1.2 FOR ALL OTHER EPOXY COATED BARS

6. LAP SPLICE LENGTHS (ACI 12.15.1) ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS:
   - CLASS A = 1.0 LD, WHERE 50% OR LESS BARS ARE LAP SPLICED AT A SECTION FOR A DISTANCE EQUAL TO THE REQUIRED LAP SPLICE LENGTH, OR
   - CLASS B = 1.3 LD, AT ALL OTHER LOCATIONS.
7. ALL ADJACENT LAP SPLICES IN SLAB-ON-GRADE SHALL BE STAGGERED BY A MINIMUM DISTANCE EQUAL TO THE REQUIRED LAP SPLICE LENGTH.
8. USE MECHANICAL SPLICE FOR #14 AND #18 BAR SIZES.

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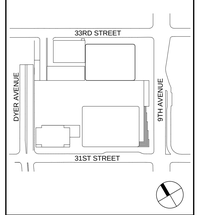
Key Plan:



Seal & Signature:

PRELIMINARY
NOT FOR CONSTRUCTION

No.	Date	Description
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
STRUCTURAL CONCRETE NOTES

Project No.: 211157
Date: 20 JUN 2014
Scale: 12" = 1'-0"
File No.: S-004
B-SCAN Sheet No.: S-004.00
Sheet No.: S-004
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STRUCTURAL STEEL NOTES

A. GENERAL

1. ALL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO AISC (LRFD) SPECIFICATIONS AND CODES, LATEST EDITION.

2. ALL WELDING WORK SHALL CONFORM TO THE AWS D1.1 "STRUCTURAL WELDING CODE - STEEL," LATEST EDITION, AND SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.

3. ALL STEEL BEAM SIZES FOLLOWED BY A NUMBER IN PARENTHESES, (XX), ARE COMPOSITE BEAMS WITH SHEAR STUDS. SEE "STRUCTURAL METAL DECK NOTES" FOR ADDITIONAL INFORMATION.

4. COMPOSITE BEAMS ARE NOT REQUIRED TO BE SHORED, UNLESS NOTED OTHERWISE.

5. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR REVIEW BY THE ARCHITECT.

6. ALL STRUCTURAL STEEL SHALL BE FIREPROOFED TO ATTAIN THE APPLICABLE FIRE RATING REQUIRED BY CODE WITH UL APPROVED SPRAYED-ON CEMENTIOUS FIREPROOFING MATERIALS. SEE THE ARCHITECTURAL DRAWINGS FOR SPECIFIC FIREPROOFING REQUIREMENTS. ALL STEEL SURFACES ENCASED IN CONCRETE, ELEVATOR GUIDE BEAMS, AND PENTHOUSE ROOF FRAMING DO NOT REQUIRE SPRAY FIREPROOFING.

7. AFTER FABRICATION AND JUST PRIOR TO SITE APPLICATION OF SPRAY-ON FIREPROOFING, ALL STEEL SHALL BE CLEANED OF ALL RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS. PRIMING AND PAINTING OF THE STRUCTURAL STEEL WILL NOT BE REQUIRED EXCEPT FOR STEEL WHICH IS PERMANENTLY EXPOSED.

8. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)
FOR REFERENCE 0.0 NAV88 = 301.75' PENN RAIL ROAD TUNNELS DATUM

9. SEE SPECIFICATION SECTION 05120, "STRUCTURAL STEEL," FOR ADDITIONAL REQUIREMENTS NOT NOTED HEREIN.

B. MATERIALS

1. STRUCTURAL STEEL GRADES SHALL BE AS FOLLOWS:

BUILT-UP STEEL COLUMNS: ASTM A572 Gr. 50
FLOOR BEAMS: ASTM A992 - GRADE 50
W14 COLUMNS, HANGERS, & BRACED FRAME DIAGONALS: ASTM A913 - GRADE 65
W12, W24, W30, W36 COLUMNS: ASTM A992 - GRADE 50
WT DIAGONALS: ASTM A992 - GRADE 50
CONNECTIONS, PLATES: ASTM A572 - GRADE 50
ANGLES: ASTM A36 - GRADE 36
WELDING: E70XX ELECTRODES

2. ALL STRUCTURAL STEEL TUBING SHALL BE ASTM A500, GRADE B, UNLESS NOTED OTHERWISE.

3. ALL STRUCTURAL STEEL PIPE SHALL BE ASTM A53, TYPE E, GRADE B, UNLESS NOTED OTHERWISE.

4. ALL BOLTS, NUT AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 OR A490.

C. CONNECTIONS

1. ALL CONNECTIONS, EXCEPT FOR THOSE CONNECTIONS COMPLETELY DESIGNED ON THE DRAWINGS, SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES, UNLESS SPECIFICALLY NOTED. THE CONTRACTOR SHALL SUBMIT ENGINEERING CALCULATIONS AND CONNECTION DETAIL DRAWINGS FOR EACH CONNECTION TYPE, MEMBER SIZE, AND REACTION INDICATED ON THE DRAWINGS FOR REVIEW BY THE ARCHITECT PRIOR TO THE SUBMITTAL OF THE STRUCTURAL STEEL SHOP DRAWINGS. AFTER REVIEW BY THE ARCHITECT, THESE DETAIL DRAWINGS SHALL BE UTILIZED AS THE STANDARD FOR FABRICATION AND SHOP DRAWING DETAILING. THE DESIGN CALCULATIONS SHALL BE PREPARED AND SEALED BY A QUALIFIED PROFESIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.

2. ALL CONNECTIONS, UNLESS NOTED OTHERWISE, SHALL BE SIMPLE SHEAR CONNECTIONS UTILIZING "SHORT-SLOTTED" HOLES AND HIGH-STRENGTH BOLTS IN BEARING-TYPE CONNECTIONS WITH THREADS EXCLUDED FROM THE SHEAR PLANE. THE CONNECTION CAPACITIES SHALL BE AS SHOWN IN NOTE C5 BELOW, OR AS NOTED ON THE STRUCTURAL FRAMING PLANS.

3. BEAM-TO-COLUMN CONNECTIONS SHALL BE MOMENT CONNECTED WHERE SHOWN ON THE DRAWINGS. THE WEB SHEAR CONNECTION FOR THESE MEMBERS SHALL UTILIZE SINGLE SHEAR PLATE SLIP-CRITICAL TYPE CONNECTIONS WITH HIGH-STRENGTH BOLTS WITH THREADS EXCLUDED FROM THE SHEAR PLANE FOR THE CAPACITIES SHOWN IN NOTE C5 BELOW.

4. ALL BOLTS SHALL BE FULLY TORQUED FOR BOTH SLIP CRITICAL AND BEARING TYPE CONNECTIONS.

5. MINIMUM SERVICE END REACTIONS (ASD) FOR STANDARD ROLLED SHAPES:

W36	160 kips	W16	40 kips	C18	35 kips
W33	135 kips	W14	30 kips	C15	30 kips
W30	115 kips	W12	20 kips	C12	10 kips
W27	85 kips	W10	15 kips	C10	10 kips
W24	75 kips	W8	10 kips	C9,C8	6 kips
W21	60 kips	W6	10 kips	C7,C6	6 kips
W18	50 kips	W5	10 kips		

ANY MEMBERS WITH END REACTIONS EXCEEDING THE VALUES LISTED ABOVE ARE INDICATED ON THE PLANS, EITHER WITH BOXED END REACTIONS OR IN TABULAR FORM.

6. THE MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE TWO (2) -3/4 INCH DIAMETER, A325 BOLTS.

7. MINIMUM FILLET WELD SIZES SHALL COMPLY WITH THE AISC SPECIFICATION REQUIREMENTS, BUT SHALL NOT BE LESS THAN 1/4 INCH, UNLESS NOTED OTHERWISE.

D. DETAILING AND FABRICATION

1. THE CONTRACTOR SHALL SUBMIT DETAILED, ENGINEERED, COORDINATED AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE ARCHITECT FOR REVIEW PRIOR TO THE START OF FABRICATION AND/OR ERECTION.

2. ALL BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP. PROVIDE ADDITIONAL CAMBERS AS INDICTED IN BRACKETS <XX> ON THE STRUCTURAL DRAWINGS. FOR CANTILEVERS, CAMBER SHALL BE MEASURED AT THE FREE END.

3. ALL SIMPLE SHEAR CONNECTIONS SHALL BE CAPABLE OF END ROTATION AS PER THE REQUIREMENTS OF AISC SPECIFICATION, CHAPTER J1.2. "SIMPLE CONNECTIONS."

4. ALL BEAMS FRAMING INTO NEW CONCRETE WALLS SHALL BE DETAILED TO SUIT THE HORIZONTAL FIELD TOLERANCES

E. ERECTION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES, ESPECIALLY WITH RELATION TO TEMPERATURE DIFFERENTIALS, ERECTION TOLERANCES, AND WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO REINFORCED CONCRETE WALLS.

2. SURVEY THE TOPS OF ALL COLUMNS AT EACH LEVEL. RECORD X, Y & Z - COORDINATES MEASURED CONSISTANTLY FROM AN ESTABLISHED BENCHMARK. PROVIDE A COPY OF THE SURVEY DATA TO THE ARCHITECT AND STRUCTURAL ENGINEER WITHIN TWO DAYS OF THE COMPLETION OF EACH SURVEY.

3. ALL ERECTION PROCEDURES, DESIGNS AND CALCULATIONS SHALL BE PERFORMED BY THE CONTRACTOR'S QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK. ANY REVIEW OF SUCH CALCULATIONS AND/OR DRAWINGS BY THE ARCHITECT WILL BE SOLELY LIMITED TO ANY EFFECTS ON THE INTEGRITY OF THE PERMANENT PRIMARY STRUCTURE.

4. ALL ADDITIONAL STEEL REQUIRED BY THE CONTRACTOR FOR ERECTION PURPOSES AND SITE ACCESS OF STOCKPILED MATERIALS SHALL BE PROVIDED AT NO COST TO THE OWNER. ALL SUCH ADDITIONAL STEEL SHALL BE REMOVED BY THE CONTRACTOR UNLESS APPROVED BY THE OWNER IN WRITING.

5. THE CONTRACTOR SHALL SUBMIT A METHODS STATEMENT FOR ALL STRUCTURAL STEEL/METAL DECK ERECTION PROGRAMS.

F. NON-SELF-SUPPORTING STEEL FRAMES

THE STEEL STRUCTURE (COMPRISED OF GRAVITY COLUMNS, FLOOR BEAMS, FLOOR BRACING, BRACED FRAMES AND MOMENT FRAMES) IS A NON-SELF-SUPPORTING FRAME. THE FLOOR DIAPHRAGM (METAL DECK AND HARDENED CONCRETE SLAB TOPPING) AND R/C CONCRETE WALLS ARE REQUIRED TO PROVIDE STABILITY AND STRENGTH TO RESIST THE LOADS FOR WHICH THE FRAME IS DESIGNED. THE CONTRACTOR SHALL PROVIDE AND INSTALL TEMPORARY SUPPORT AS NECESSARY UNTIL THE COMPLETE STRUCTURE IS ERECTED.

G. TESTING AND INSPECTION

TESTING AND INSPECTION OF BOTH SHOP AND FIELD STRUCTURAL STEEL FABRICATION AND ERECTION WORK, INCLUDING WELDED AND BOLTED CONNECTIONS, SHALL BE AS FOLLOWS:

1. ALL STRUCTURAL STEEL FABRICATION AND ERECTION SHALL BE VISUALLY INSPECTED.

2. ALL WELDERS SHALL BE AWS CERTIFIED.

3. ALL WELDS SHALL BE AWS/AISC PREQUALIFIED.

4. ALL WELDS SHALL BE VISUALLY INSPECTED PER AWS D1.1. WELD MEASUREMENTS SHALL BE PERFORMED FOR 15% OF ALL WELDS ON A RANDOM BASIS.

5. MAGNETIC PARTICLE TESTING IN ACCORDANCE WITH ASTM E709 SHALL BE PERFORMED FOR A MINIMUM OF:

A. 10% OF ALL FILLET WELDS CHOSEN AT RANDOM, FINAL PHASE ONLY.

B. 100% OF TENSION MEMBER CONNECTION WELDS (I.E., HANGER CONNECTION PLATES, ETC.)
FOR ROOT AND FINAL PASSES.

6. ULTRASONIC TESTING IN ACCORDANCE WITH AWS D1.1 SHALL BE PERFORMED FOR A MINIMUM OF:

A. 100% OF ALL FULL PENETRATION WELDS.

B. 20% OF ALL COLUMN SPLICE WELDS, CHOSEN AT RANDOM.

7. ULTRASONIC TESTING AND VISUAL INSPECTION IN ACCORDANCE WITH ASTM A435 SHALL BE UTILIZED TO VERIFY BASE MATERIALS FOR LAMINATIONS, INCLUSIONS, AND OTHER DISCONTINUITIES AS FOLLOWS:

A. ALL STRUCTURAL STEEL PLATES GREATER THAN 11/2" THICK USED FOR THE CAISSON CORE STEEL, FOR THE CAISSON CAP TRANSFER GIRDERS, AND FOR THE DIAGONAL JOINT ASSEMBLIES w/ TIE BEAMS IN THE CONTINUOUS CAISSON CAPS PRIOR TO FABRICATION.

B. ALL COLUMN FLANGES AND WEBS WITHIN STRUCTURAL SHAPE GROUPS 4 AND 5 AS DEFINED BY AISC LOCATED AT MOMENT CONNECTIONS. TEST AREA IS DEFINED AS 6" ABOVE AND BELOW BEAM FLANGE CONNECTION.

C. ALL GUSSET PLATES USED IN X-BRACED FRAMES GREATER THAN 11/2" THICK.

D. ALL COLUMN FLANGES IN COLUMNS WITH GUSSET PLATES ATTACHED TO BOTH FLANGES. TEST AREA IS DEFINED AS 6" AT 2'-0" INTERVALS.

8. ALL BOLTED CONNECTIONS SHALL BE VISUALLY INSPECTED AND TESTED WITH A CALIBRATED TORQUE WRENCH TO VERIFY A MINIMUM OF 25% OF BOLTS IN EACH CONNECTION (2 BOLTS PER CONNECTION MINIMUM).

9. THE REQUIRED CONTACT SURFACE CONDITIONS OF ALL SHEAR CONNECTIONS SHALL BE VISUALLY INSPECTED IMMEDIATELY PRIOR TO BEAM ERECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMEDIAL WORK REQUIRED TO CONTACT SURFACES.

10. THE OWNER'S STRUCTURAL STEEL TESTING SHALL PERFORM ALL FIELD INSPECTION AND TESTING AS OUTLINED ABOVE, AND MONITOR THE CONTRACTOR'S INSPECTION AND TESTING OUTLINED ABOVE FOR ALL SHOP WORK. IF THE CONTRACTOR'S QUALITY CONTROL PROGRAM IS NOT AISC CERTIFIED, THE CONTRACTOR SHALL ENGAGE AN APPROVED STRUCTURAL STEEL TESTING LABORATORY, ACCEPTABLE TO THE OWNER, WHO SHALL PERFORM ALL SHOP TESTING AND INSPECTION.

11. THE STRUCTURAL STEEL FABRICATOR AND ERECTOR SHALL SCHEDULE ALL WORK TO ALLOW THE ABOVE INSPECTION AND TESTING REQUIREMENTS TO BE COMPLETED.

STRUCTURAL STEEL PAINTING

1. ALL STRUCTURAL STEEL SHALL BE CLEANED AND PAINTED AS REQUIRED BY THE TECHNICAL SPECIFICATIONS.

2. ALL STRUCTURAL STEEL TO RECEIVE SPRAYED-ON FIREPROOFING AND/OR TO BE ENCASED IN CONCRETE DOES NOT REQUIRE PAINTING UNLESS NOTED OTHERWISE.

3. THE FOLLOWING STRUCTURAL STEEL ELEMENTS REQUIRE CLEANING AND PAINTING SYSTEMS:

A. ELEVATOR SEPARATOR BEAMS: CLEANED; PRIMED

B. NON-FIREPROOFED, INTERIOR STRUCTURAL STEEL: CLEANED; PRIMED; FIELD PAINTED
(1 COAT)

STRUCTURAL METAL DECK NOTES

1. ALL METAL DECK SHALL BE FABRICATED FROM STEEL TYPE ASTM A446, GRADE A, HAVING A MINIMUM YIELD STRENGTH OF 40,000 PSI. ALL FLOOR DECKING SHALL BE HOT-DIPPED GALVANIZED, OR PHOSPHATIZED AND PAINTED. ALL DECKING AT ROOF LEVELS, PARKING/VEHICULAR LEVELS, LOADING DOCK FREIGHT AREAS, AND SIDEWALK AREAS SHALL BE HOT-DIPPED GALVANIZED. ALL INSULATED METAL ROOF DECKING SHALL BE FORMED WITH TELESCOPED ENDS TO ALLOW ENDS OF SHEETS TO BE LAPPED A MINIMUM OF 2 INCHES.

2. ALL METAL DECK SHALL BE DESIGNED FOR THE SPAN AND LOADING CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS AND IN THE METAL DECK SCHEDULE. NONCELLULAR METAL DECK SHALL BE PROVIDED IN ALL AREAS, UNLESS NOTED OTHERWISE.

3. METAL DECK SECTION PROPERTIES SHALL BE COMPUTED IN ACCORDANCE WITH THE AISI "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION, UNLESS NOTED OTHERWISE.

4. THE MINIMUM GAGE OF ALL METAL DECK SHALL BE 18 GAGE WHEN THE CONCRETE TOPPING SLAB THICKNESS IS LESS THAN OR EQUAL TO 41/2" AND 16 GAGE WHEN CONCRETE TOPPING SLAB THICKNESS IS GREATER THAN 41/2".

5. THE METAL DECK CONTRACTOR SHALL SUBMIT, TO THE ARCHITECT FOR REVIEW, STRUCTURAL ENGINEERING CALCULATIONS, PREPARED AND SEALED BY A QUALIFIED, PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK, PROVIDE PUBLISHED MANUFACTURER'S DATA, AND INDEPENDENTLY CERTIFIED LOAD TEST DATA, VERIFYING THAT THE METAL DECK AND RELATED DECK ACCESSORIES SATISFY THE SPECIFIED LOADING AND DEFLECTION REQUIREMENTS FOR THE SPANS INDICATED ON THE DRAWINGS.

6. THE CONTRACTOR SHALL PROVIDE DETAILED, COORDINATED, AND CHECKED SHOP DRAWINGS INDICATING LOCATION, GAGE AND SIZE OF EACH PIECE OF DECKING AND RELATED ACCESSORIES. THE DRAWINGS SHALL CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING ELEMENTS, SIDE LAP CONNECTION DETAILS, DECK OPENING/EDGE CLOSURES, AND WHERE REQUIRED, SUPPLEMENTARY DECK AND/OR CLOSURE REINFORCING.

7. ALL NON-CELLULAR COMPOSITE METAL DECK SHALL HAVE WIDE RIBS SUITABLE FOR SHEAR STUD PLACEMENT WHERE STUDS ARE REQUIRED. THE CONFIGURATION OF THE METAL DECK SHALL BE SUCH AS TO DEVELOP THE FULL HORIZONTAL SHEAR VALUE OF THE STUD FOR THE PARTICULAR METAL DECK-SLAB CONFIGURATION PER THE AISC SPECIFICATIONS, LATEST EDITION, AND AS REQUIRED BY NOTE 17C HEREIN.

8. ALL DECKING SHALL BE WELDED TO STRUCTURAL STEEL BY QUALIFIED WELDERS USING PRE-QUALIFIED PROCEDURES. THE TECHNICAL SPECIFICATIONS ESTABLISH A PROCEDURE FOR PRE-QUALIFICATION OF THE PLUG WELDING OF THE STEEL DECKING TO THE STRUCTURAL STEEL FOR THE PARTICULAR GAGES USED. PRIOR TO THE START OF ERECTION OF THE STEEL DECK, EACH WELDER SHALL BE QUALIFIED USING THIS PROCEDURE AS WITNESSED BY THE OWNER'S TESTING LABORATORY.

9. ALL METAL DECK SHALL BE WELDED AT 12 INCHES MAXIMUM ON CENTER TO THE SUPPORTING STEEL WITH A 3/4 INCH DIAMETER PLUG WELD. SIDE LAPS SHALL BE FASTENED AT 30 INCHES MAXIMUM ON CENTER.

10. THE METAL DECK SHALL BE DESIGNED TO BE UNSHORED AND CONTINUOUS OVER A MINIMUM OF THREE (3) SPANS IN THE DIRECTION INDICATED. METAL DECKING FOR SINGLE AND DOUBLE SPANS, IF REQUIRED, SHALL ALSO SATISFY THE SPECIFIED LOAD AND DEFLECTION REQUIREMENTS, NOTED HEREIN.

11. THE METAL DECK SHALL BE DESIGNED FOR AN ASSUMED SUITABLE CONSTRUCTION LIVE LOAD TAKING INTO CONSIDERATION THE PARTICULAR METHOD OF CONCRETE PLACEMENT TO BE USED ON THE PROJECT, SPAN AND LOAD CONDITIONS INDICATED BY THE SUPPORTING FRAMEWORK, OPENINGS, AND ACTUAL DECK PIECE SIZES UTILIZED. THE ASSUMED CONSTRUCTION LIVE LOAD SHALL NOT BE LESS THAN 20 PSF. THE CONTRACTOR SHALL NOT EXCEED THE ASSUMED CONSTRUCTION DESIGN LIVE LOAD WITHOUT FIRST TAKING ALL NECESSARY SAFETY PRECAUTIONS SUCH AS SHORING, ETC. ADDITIONALLY, FOLLOW ALL APPLICABLE CITY, LOCAL AND AISI REQUIREMENTS FOR TEMPORARY CONSTRUCTION LOADINGS, IF MORE STRINGENT.

12. COMPOSITE METAL DECK DESIGN CRITERIA: (CELLULAR AND NON-CELLULAR DECKS)

A. METAL DECK: (CONSTRUCTION LOADS ONLY)

1A. MAXIMUM DECK DEFLECTION FOR CONCRETE WET WEIGHT SHALL BE LESS THAN OR EQUAL TO L/240, BUT NOT TO EXCEED 1/2", COMPUTED EITHER ON A SINGLE SPAN BASIS, OR ON LOADING ONLY ONE (1) SPAN FOR MULTIPLE SPAN CONDITIONS.

2A. MAXIMUM STRESS IN DECK FOR CONCRETE WET WEIGHT AND CONSTRUCTION LOADS SHALL BE LESS THAN OR EQUAL TO 0.6 Fy (Fy = YIELD STRESS) COMPUTED ON A SINGLE SPAN BASIS, OR ON LOADING TWO ADJACENT SPANS FOR MULTIPLE SPAN CONDITIONS.

3A. ALLOW FOR AN AVERAGE OF 5 PSF WET CONCRETE WEIGHT FOR CONCRETE LEVELING (AS PER SPECIFICATIONS) IN ADDITION TO THE SPECIFIED SLAB THICKNESS, FOR STRESS AND DEFLECTION CALCULATIONS.

4A. PROVIDE DECK SHORING, IF REQUIRED, TO MEET THE CONDITIONS OF ITEMS NO. 1, 2, AND 3 ABOVE.

5A. ALL FORM DECKS, FOR REINFORCED CONCRETE SLABS, SHALL BE DESIGNED FOR THE SAME CRITERIA STATED IN ITEMS NOS. 1, 2, 3, AND 4 ABOVE.

B. COMPOSITE METAL DECK SLAB: (FINAL DESIGN LOAD)

1B. THE DECK SHALL DEVELOP FULL COMPOSITE ACTION FOR IMPOSED LOADS AS SHOWN IN THE DECK SCHEDULE.

2B. MAXIMUM DEFLECTION UNDER SUPERIMPOSED LOAD SHALL BE LESS THAN OR EQUAL TO L/360.

3B. MAXIMUM STRESS IN DECK FOR TOTAL LOAD USING APPROPRIATE NON-COMPOSITE AND COMPOSITE PROPERTIES SHALL BE LESS THAN OR EQUAL TO 0.75 FY.

4B. MAXIMUM ALLOWABLE STRESS IN CONCRETE SHALL BE AS PER ACI 318, LATEST EDITION.

5B. THE COMPOSITE DECK SHALL BE DESIGNED ON THE BASIS OF OBTAINING A MINIMUM FACTOR OF SAFETY OF 2 FOR THE TOTAL SUPERIMPOSED LOAD ON A SINGLE SPAN BASIS. TEST RESULTS SHALL BE FURNISHED TO SUBSTANTIATE THE FACTOR OF SAFETY.

16. SHEAR STUDS:

A. ALL SHEAR STUD PLACEMENT DIAGRAMS SHOWN REPRESENT IDEALIZED CONDITIONS, AND ACTUAL FRAMING CONFIGURATIONS MAY REQUIRE ADDITIONAL MODIFICATIONS AND INTERPRETATIONS.

B. THE CONTRACTOR SHALL SUBMIT CHECKED SHOP DRAWINGS INDICATING THE SHEAR STUD LAYOUT, INCLUDING SIZE, SPACING AND GROUPING, FOR EACH BEAM.

C. THE NUMBER OF STUDS PER BEAM AS SHOWN ON THE DRAWINGS INCLUDES REDUCTIONS BASED ON RIB WIDTH, NUMBER OF STUDS PER CELL, DECK-RIB ORIENTATION, AND SLAB THICKNESS AS PER AISC SPECIFICATIONS FOR COMPOSITE CONSTRUCTION, LATEST EDITION. THE ASSUMED ALLOWABLE HORIZONTAL SHEAR DESIGN VALUE (ASD) FOR A NOMINAL 3/4"-DIA. x 6" LONG STUD IS 10.5 KIPS PER STUD FOR NON-CELLULAR DECK WITH LIGHTWEIGHT CONCRETE AND 12.5 KIPS PER STUD FOR NON-CELLULAR DECK WITH NORMAL WEIGHT CONCRETE. THE ASSUMED DECK NOMINAL RIB HEIGHT IS 3", AND THE ASSUMED AVERAGE CONCRETE RIB WIDTH IS 6". THE METAL DECK CONTRACTOR SHALL SUBMIT LOAD TEST DATA VERIFYING THE HORIZONTAL SHEAR CAPACITY OF SHEAR STUDS FOR DIFFERENT DECK TYPES AND CELL CONFIGURATIONS, AS DETAILED ON THE SHOP DRAWINGS. IF ANY OF THE ASSUMPTIONS LISTED ABOVE ARE VIOLATED, THE METAL DECK CONTRACTOR SHALL SUBMIT STRUCTURAL DESIGN CALCULATIONS, PREPARED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK, BASED ON THE DETAILED SHOP DRAWINGS. PROVIDE ALL EXTRA STUDS AS MAY BE REQUIRED TO ACHIEVE THE TOTAL HORIZONTAL SHEAR CAPACITY.

D. MAXIMUM SPACING OF STUDS SHALL BE 12" ON CENTER.

E. SHEAR STUDS SHALL BE EITHER WELDED DIRECTLY TO STRUCTURAL STEEL ELEMENTS AT LOCATIONS WITHOUT DECK OR WELDED TYPE THROUGH THE METAL DECK BY PREQUALIFIED METHODS. IF THROUGH DECK WELDING IS UNFEASIBLE, THE STUDS SHALL BE INSTALLED IN PRE-PUNCHED HOLES IN THE METAL DECK. THE CONTRACTOR SHALL ESTABLISH SPECIFIC WELDING REQUIREMENTS FOR EACH THICKNESS OF FRAMING ELEMENT AND/OR GAGE OF METAL DECK.

17. THE OWNER'S TESTING LABORATORY SHALL INSPECT AND TEST ALL METAL DECK AND SHEAR STUD INSTALLATION WORK. SEE TECHNICAL SPECIFICATION SECTION 05310, "STEEL DECK" FOR ADDITIONAL TESTING AND INSPECTION REQUIREMENTS.

18. CONDUIT SHALL NOT BE PLACED IN STRUCTURAL SLABS.

19. ALL ELEVATIONS ARE REFERENCED TO A LOCAL SITE DATUM, WHERE Z = 0'-0" = 44'-6" BOROUGH OF MANHATTAN DATUM (2.75' ABOVE NATIONAL GEODETIC SURVEY VERTICAL DATUM OF 1929, MEAN SEA LEVEL, SANDY HOOK, NEW JERSEY).

20. SEE SPECIFICATION SECTION 05310, "STEEL DECK", FOR ADDITIONAL REQUIREMENTS.

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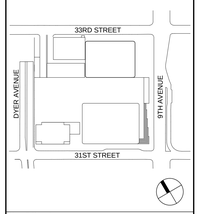
Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BERGMAN
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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No.	Date	Description
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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
STRUCTURAL STEEL AND METAL DECK NOTES

Project No.: 211157
Date: 20 JUN 2014
Scale: 12" = 1'-0"
File No.: S-005
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Sheet No.: S-005
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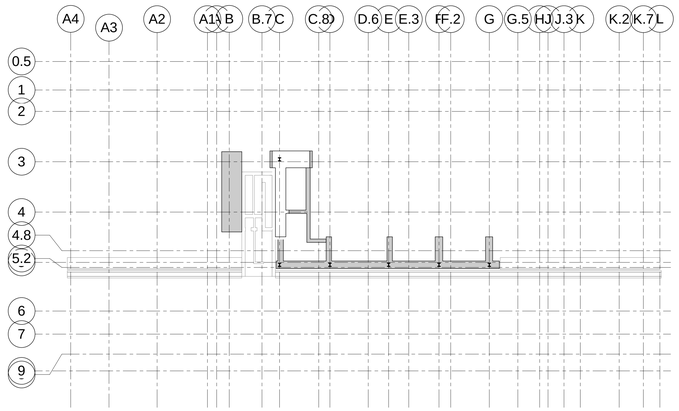
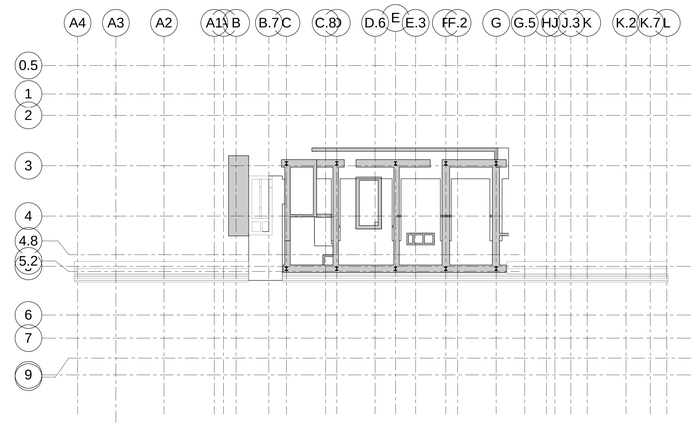


1 LEVEL B3 LOADING DIAGRAM
1/32" = 1'-0"



2 LEVEL B2 LOADING DIAGRAM
1/32" = 1'-0"

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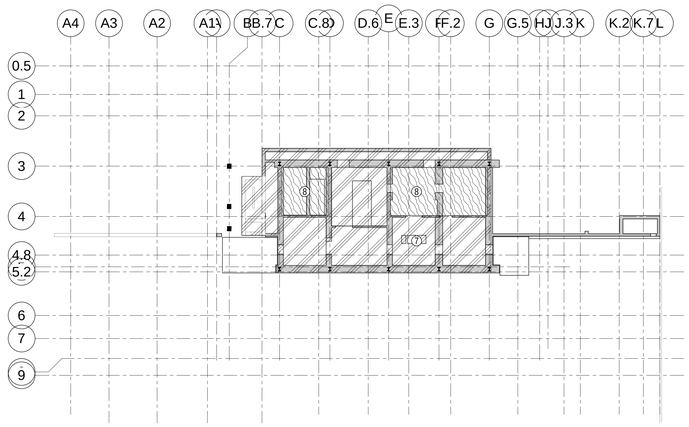
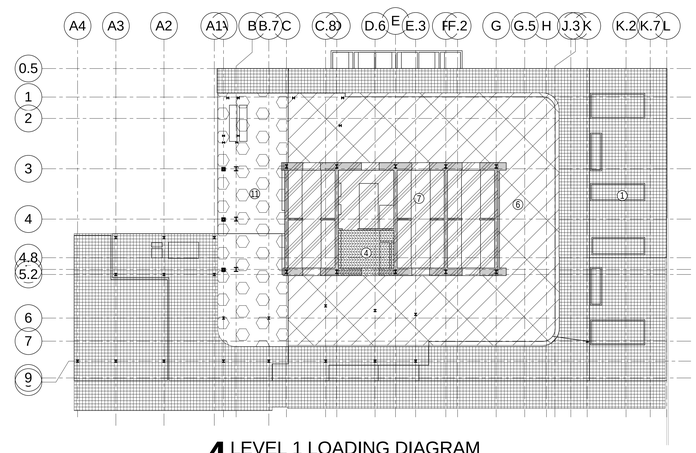
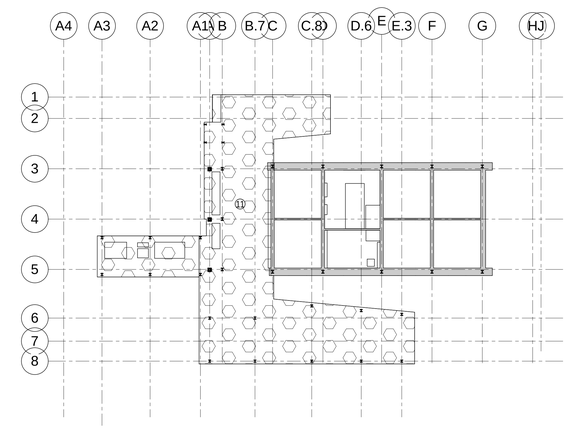
2	MECHANICAL	60	150
3	HEAVY MECHANICAL	60	225
4	LIGHT MECHANICAL	50	100
5	OFFICE	45	50
6	PLAZA	60	100
7	CORRIDOR	50	100
8	FUEL TANK	40	880
9	BACK OF HOUSE	50	50
10	ROOF MECH	60	250
11	RETAIL	60	100



3 LEVEL B1 LOADING DIAGRAM
NOT TO SCALE



4 LEVEL 1 LOADING DIAGRAM
1/32" = 1'-0"



5 LEVEL 2 LOADING DIAGRAM
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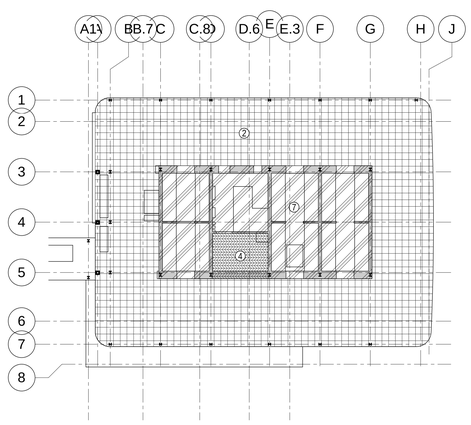

6 LEVEL 4 MECH. LOADING DIAGRAM
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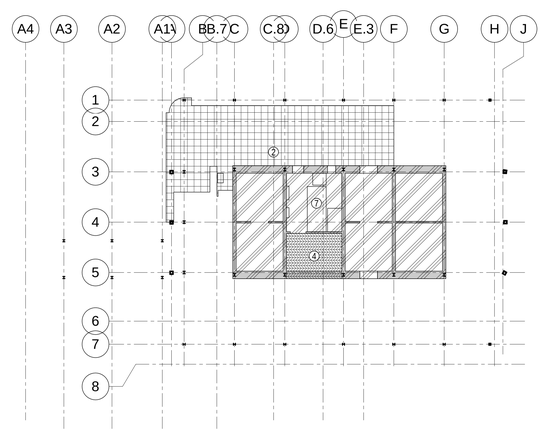

7 LEVEL 5 MECHANICAL MEZZ. LOADING DIAGRAM
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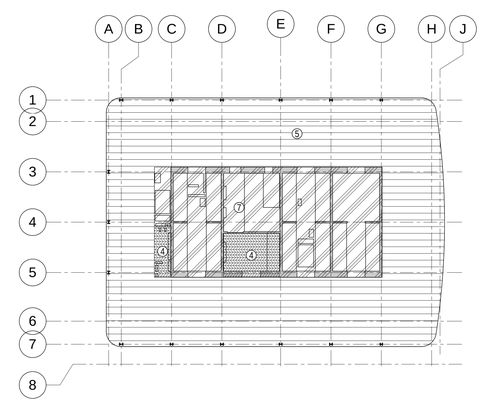

8 LEVEL 22 TYP LOW-RISE LOADING DIAGRAM
1/32" = 1'-0"

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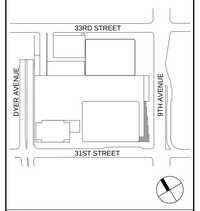
Key Plan:



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Sheet Name:
LOADING DIAGRAMS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-010
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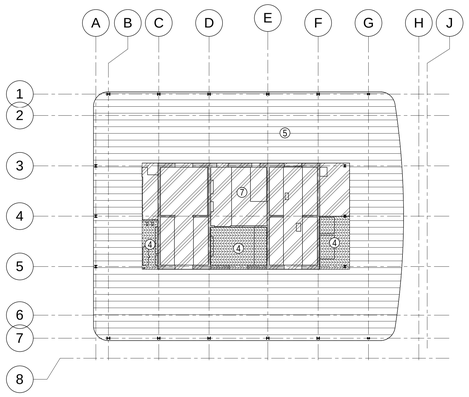

1 LEVEL 43 TYP MID-RISE LOADING DIAGRAM
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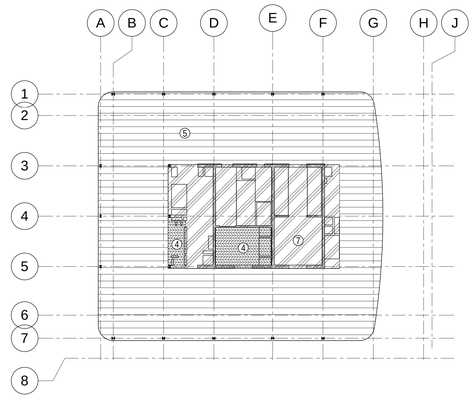

2 LEVEL 62 TYP HIGH-RISE LOADING DIAGRAM
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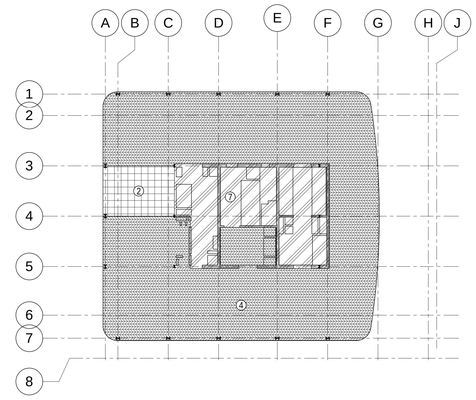

3 LEVEL 68 MECH LOADING DIAGRAM
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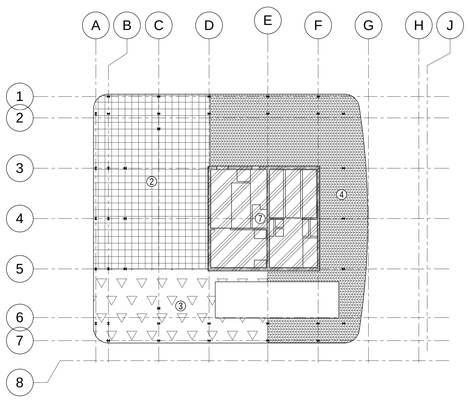

4 LEVEL 69 MECH MEZZ. LOADING DIAGRAM
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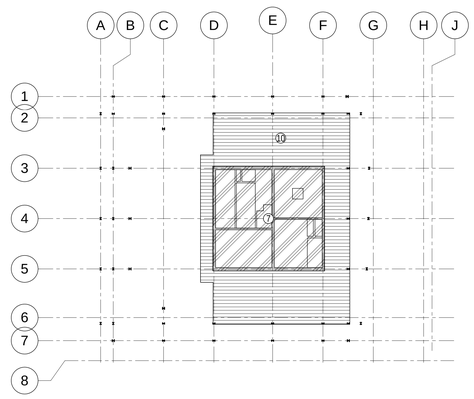

5 MECHANICAL PENTHOUSE LOADING DIAGRAM
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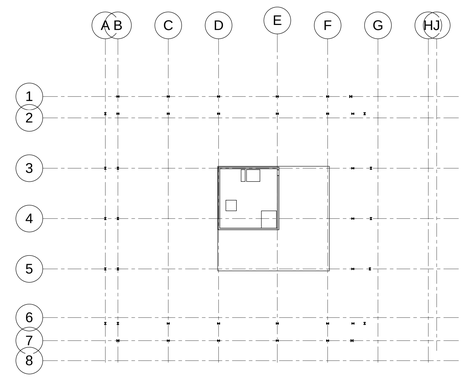

6 ROOF FRAMING PLAN
1/32" = 1'-0"

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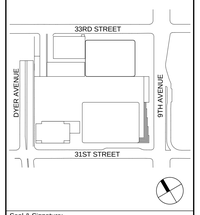
Key Plan:



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Sheet Name:
LOADING DIAGRAMS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/32" = 1'-0"
File No.: S-011
B-SCAN Sheet No.: S-011.00
Sheet No.: S-011
Page No.: 7 of 90

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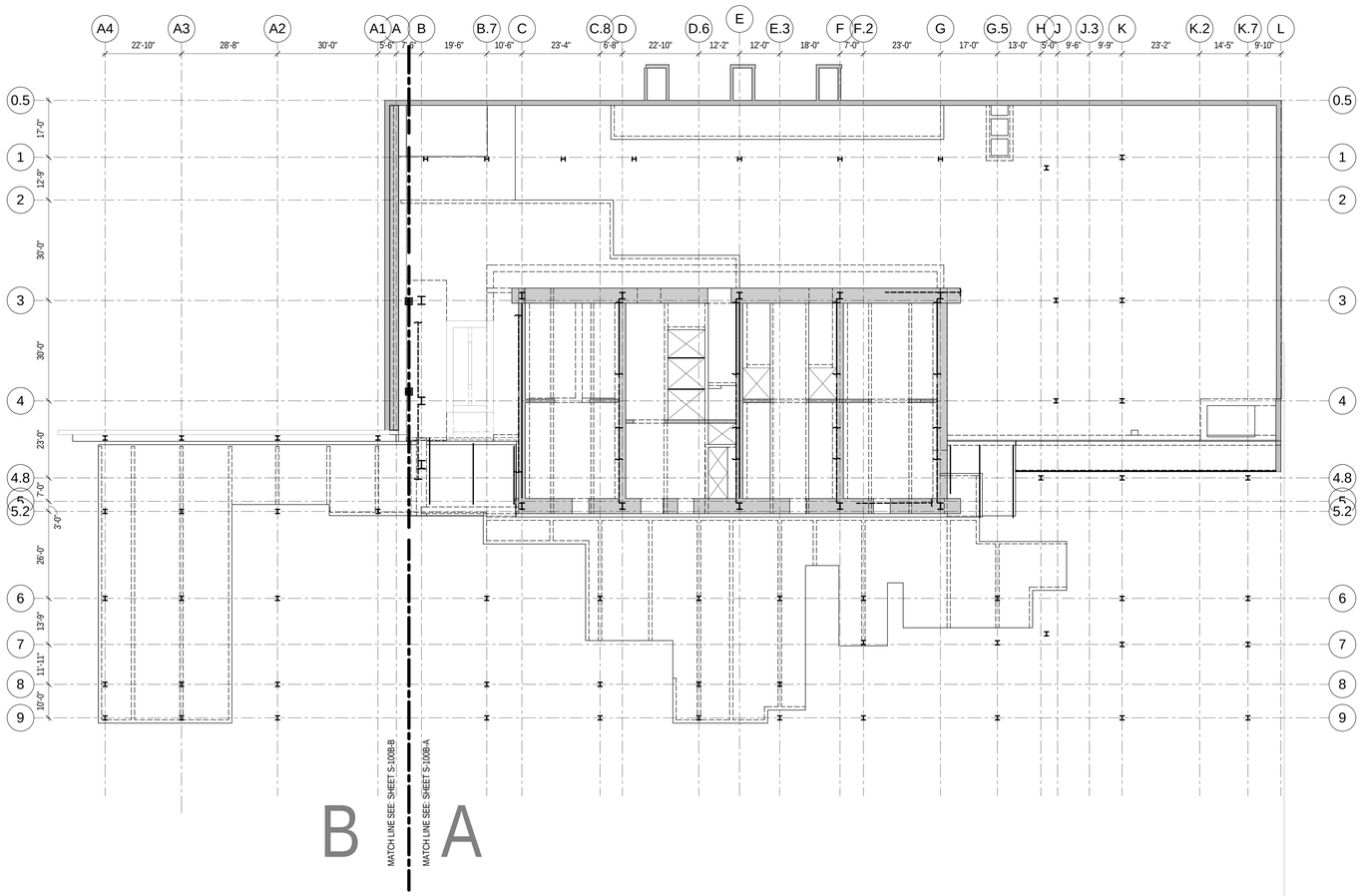

1 OVERALL LEVEL B PLAN
1/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER

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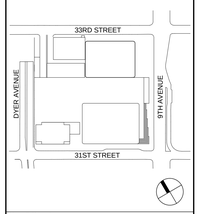
Key Plan:



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Sheet Name:

OVERALL LEVEL B PLAN

Project No.: 211157	B-SCAN Sheet No.: S-050.00
Date: 20 JUN 2014	Sheet No.: S-050
Scale: 1/16" = 1'-0"	
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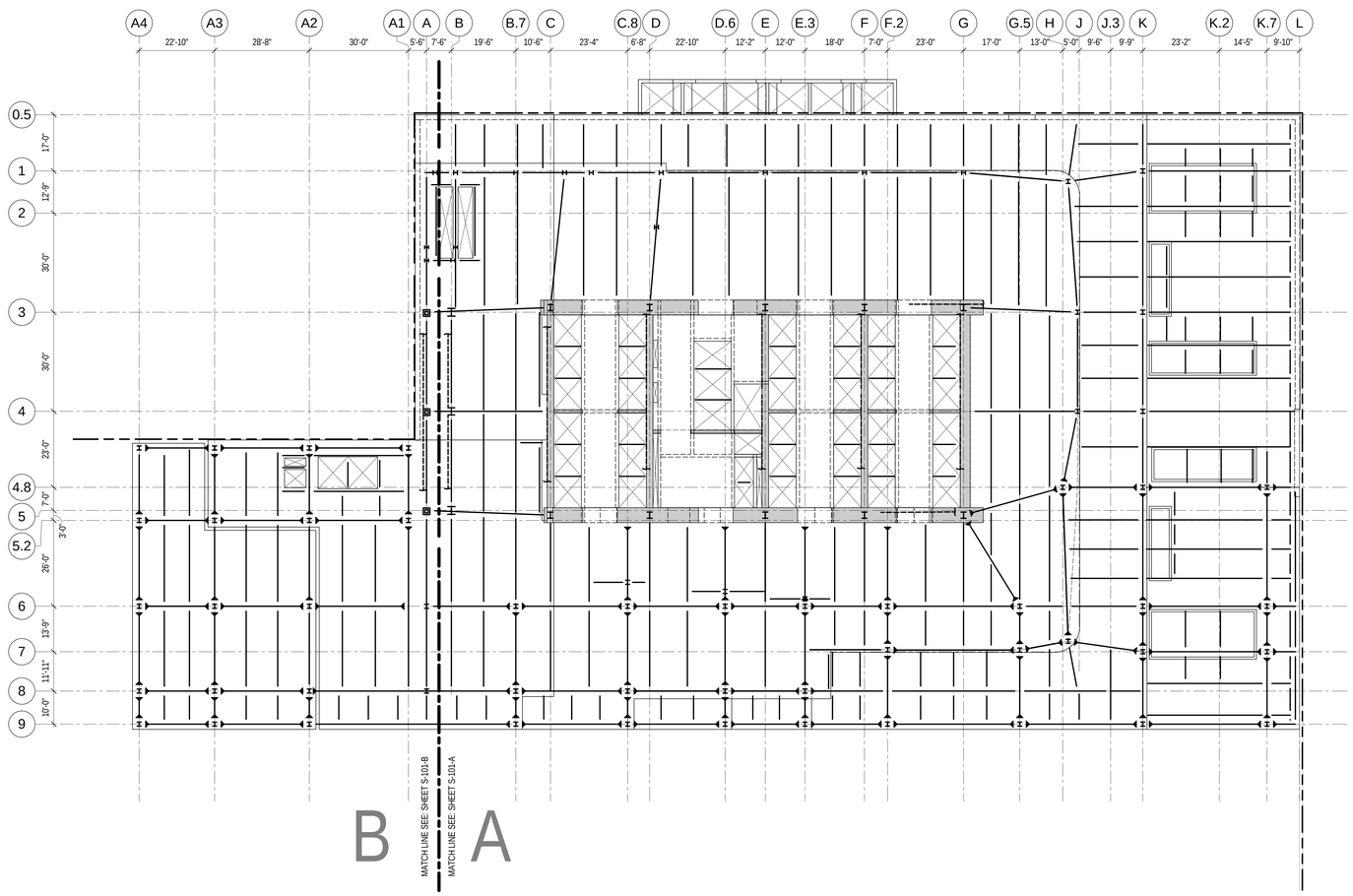

1 OVERALL GROUND FLOOR PLAN
1/16" = 1'-0"

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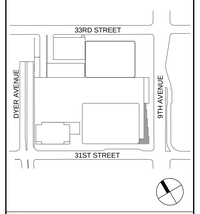
Ontario, Canada N1K 1B8

Key Plan:



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6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

OVERALL GROUND FLOOR PLAN

Project No.: 211157	B-SCAN Sheet No.: S-051.00
Date: 20 JUN 2014	Sheet No.: S-051
Scale: 1/16" = 1'-0"	
File No.: S-051	Page No.: 9 of 90

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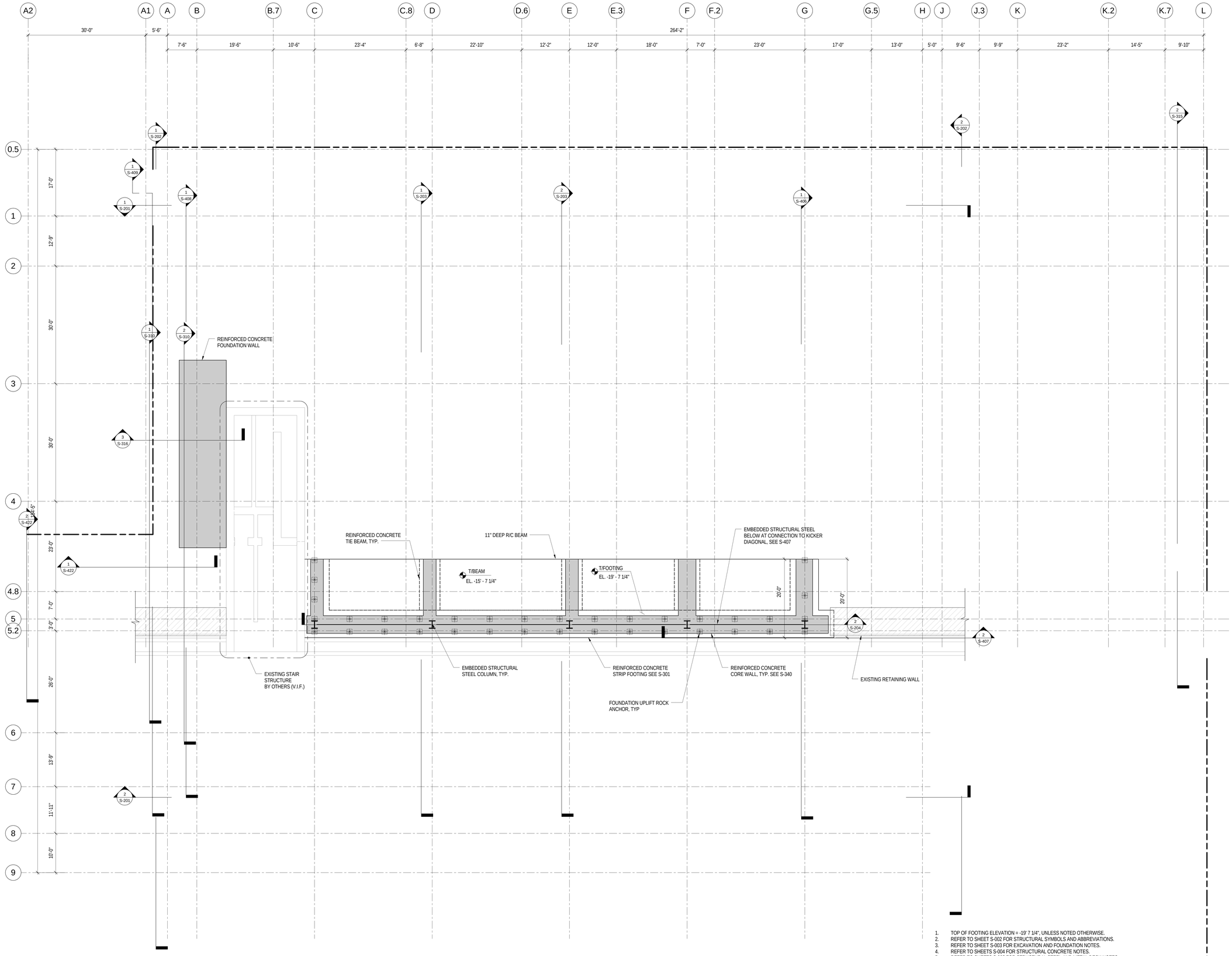

1 FOUNDATION LOWER PLAN (TRACK LEVEL)

1/8" = 1'-0"

1. TOP OF FOOTING ELEVATION = -19' 7 1/4", UNLESS NOTED OTHERWISE.
2. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
3. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
4. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
5. REFER TO SHEETS S-005 FOR STRUCTURAL STEEL AND METAL DECK NOTES.
6. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
7. REFER TO SHEETS S-301 AND S-302 FOR CORE WALL CONTINUOUS FOOTINGS SECTIONS AND DETAILS.
8. REFER TO SHEET S-305 FOR CAISSON SCHEDULE, SECTIONS AND DETAILS.
9. REFER TO SHEET S-340 FOR REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS AND DETAILS.
10. REFER TO SHEET S-341 FOR TYPICAL REINFORCED CONCRETE WALL DETAILS.
11. REFER TO SHEET S-355 FOR LINK BEAM SCHEDULES, SECTIONS AND DETAILS.
12. REFER TO SHEETS S-360 THROUGH S-368 FOR CORE WALL ELEVATIONS.
13. REFER TO SHEETS S-405 TO S-407 FOR EMBEDDED STRUCTURAL STEEL ELEVATIONS, SCHEDULES, SECTIONS AND DETAILS.
14. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.

SHEET OF BLOCK 1211 211157 Job Number
E 5010011095 Scan Code

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Jaros Baum & Bolles
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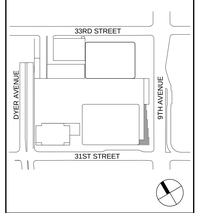
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
FOUNDATION LOWER PLAN (TRACK LEVEL)

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-FND
B-SCAN Sheet No.: S-092.00
Sheet No.: S-FND
Page No.: 10 of 90

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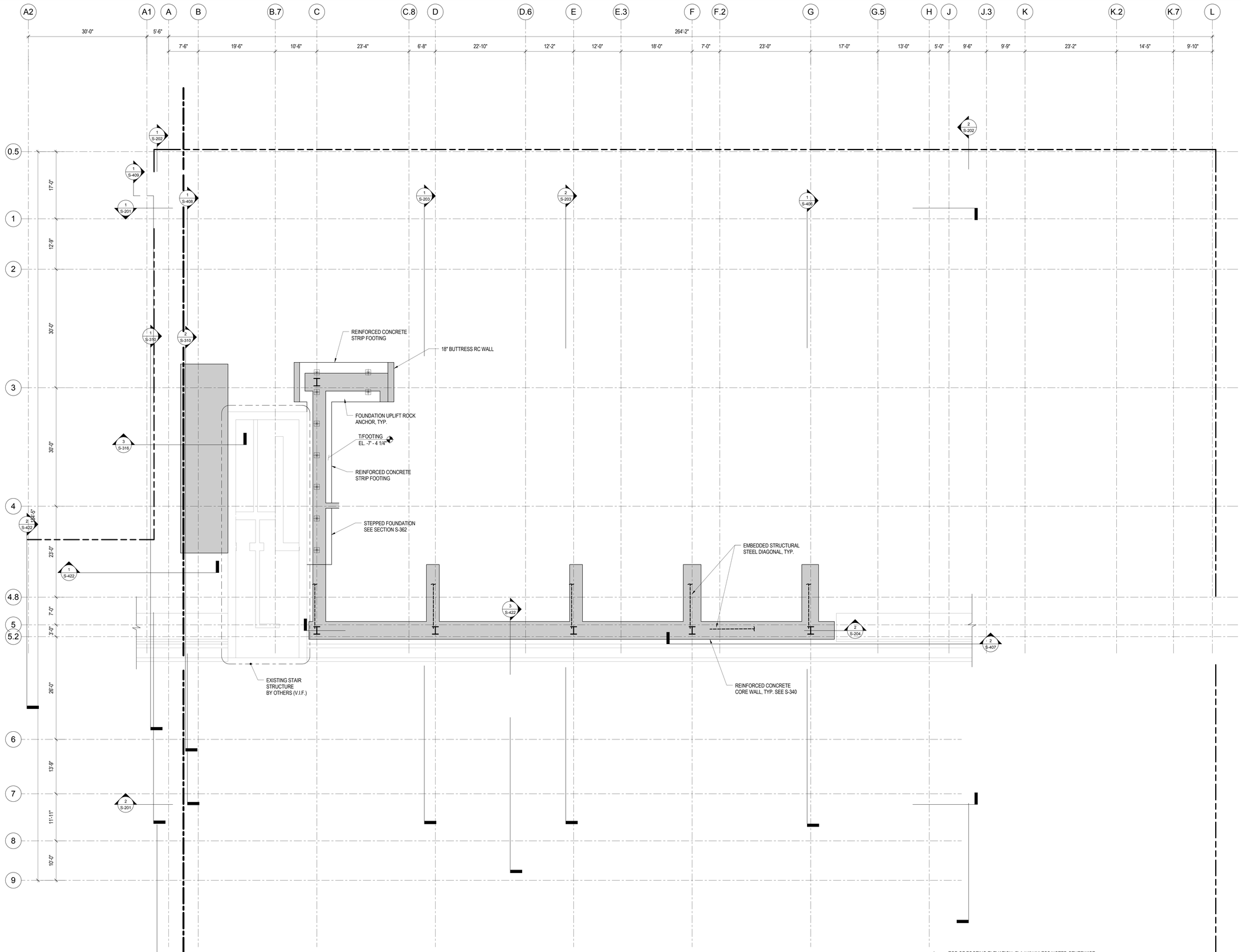

1 FOUNDATION UPPER PLAN

1/8" = 1'-0"

1. TOP OF FOOTING ELEVATION -7'-4 1/4" UNLESS NOTED OTHERWISE
2. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
3. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
4. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
5. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
8. REFER TO SHEET S-305 FOR CAISSON SCHEDULE, SECTIONS AND DETAILS.
9. REFER TO SHEET S-325 FOR SLAB-ON-GRADE SECTIONS AND DETAILS.
10. REFER TO SHEET S-340 FOR REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS AND DETAILS.
11. REFER TO SHEET S-341 FOR TYPICAL REINFORCED CONCRETE WALL DETAILS.
12. REFER TO SHEET S-355 FOR LINK BEAM SCHEDULES, SECTIONS AND DETAILS.
13. REFER TO SHEETS S-360 THROUGH S-368 FOR CORE WALL ELEVATIONS.
14. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

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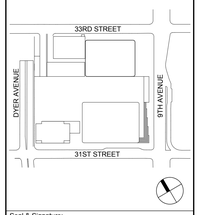
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:

FOUNDATION UPPER PLAN

Project No.: 211157	B-SCAN Sheet No.: S-093.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: S-097B3
File No.: S-097B3	Page No.: 11 of 90

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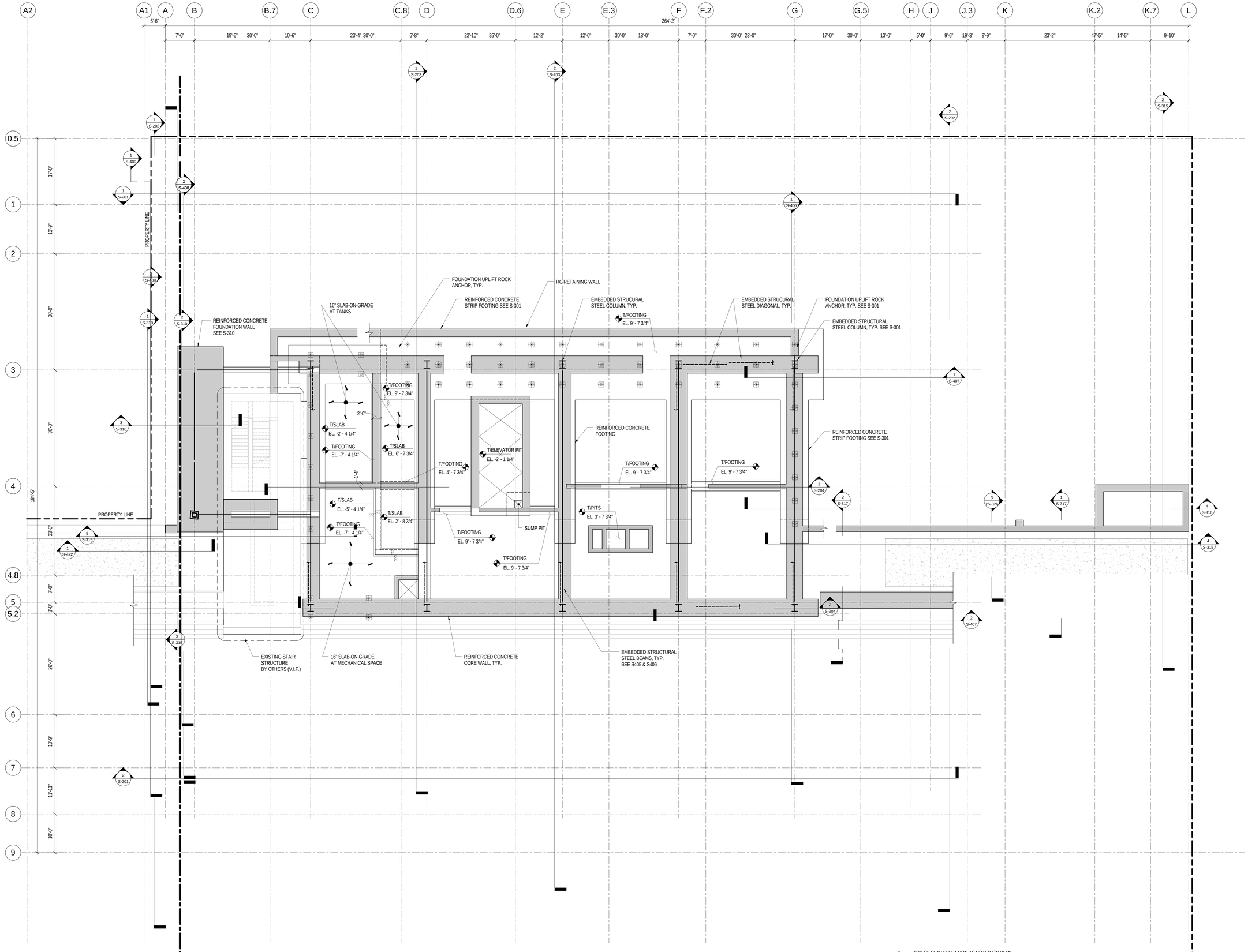

1 CELLAR B1 PITS FRAMING PLAN

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION AS NOTED ON PLAN.
2. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
3. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
4. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
6. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
7. REFER TO SHEET S-305 FOR CAISSON SCHEDULE, SECTIONS AND DETAILS.
8. REFER TO SHEET S-307 FOR SPREAD FOOTING SCHEDULE, SECTIONS AND DETAILS.
9. REFER TO SHEET S-340 FOR REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS AND DETAILS.
10. REFER TO SHEET S-341 FOR TYPICAL REINFORCED CONCRETE WALL DETAILS.
11. REFER TO SHEET S-355 FOR LINK BEAM SCHEDULES, SECTIONS AND DETAILS.
12. REFER TO SHEETS S-360 THROUGH S-368 FOR CORE WALL ELEVATIONS.
13. REFER TO SHEET S-370 FOR REINFORCED CONCRETE BEAM SCHEDULE, SECTIONS AND DETAILS.
14. REFER TO SHEET S-375 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS AND DETAILS.
15. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.

MANHATTAN WEST: NORTH TOWER

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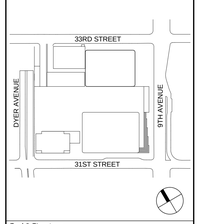
Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BESSAI
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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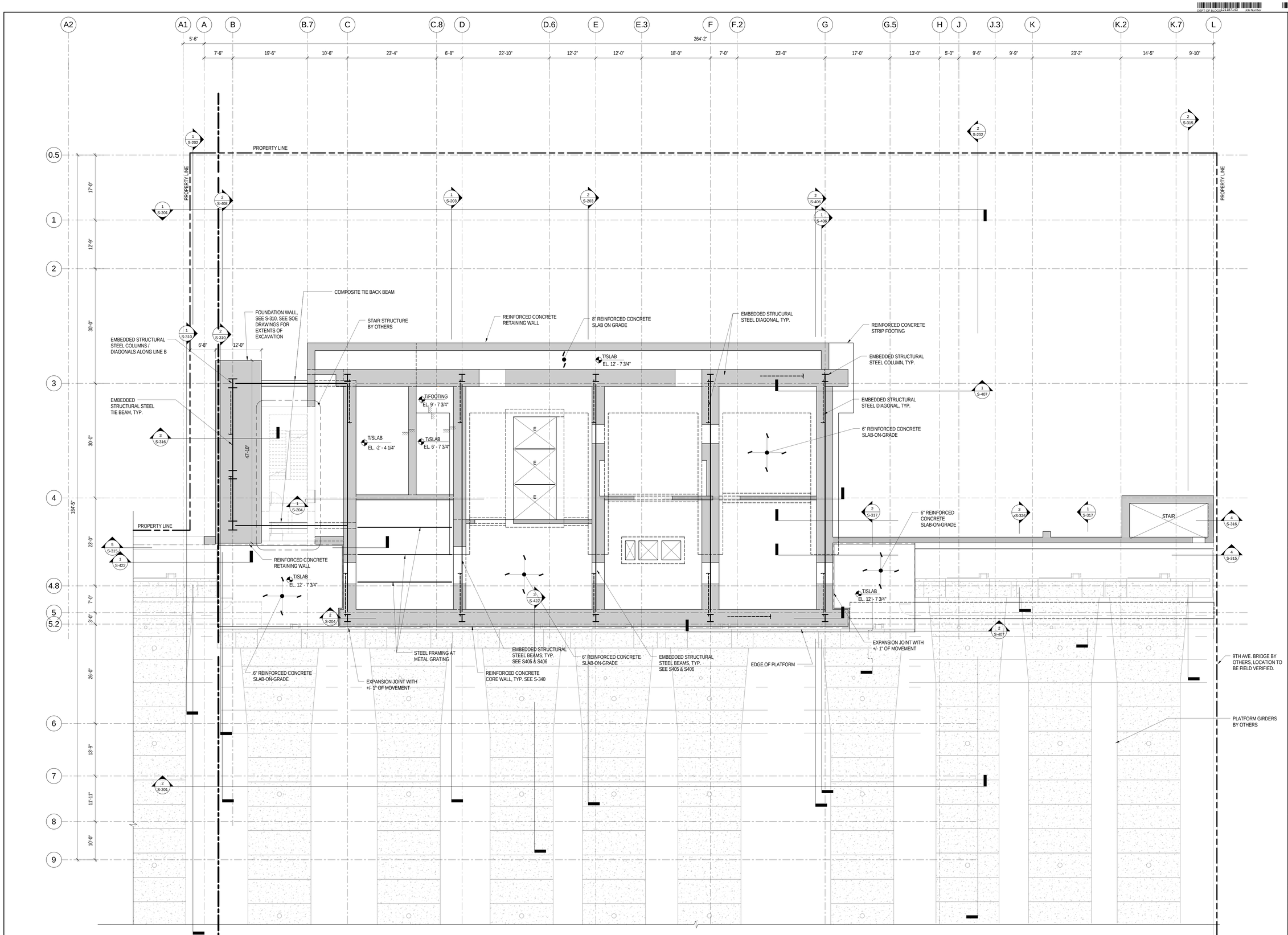
Sheet Name:

CELLAR B1 PITS FLOOR FRAMING PLAN

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-098B2

B-SCAN Sheet No.: S-094.00
Sheet No.: S-098B2
Page No.: 12 of 90



1 CELLAR B1 FLOOR FRAMING PLAN - PART A

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = +12'-7 3/4", UNLESS NOTED OTHERWISE.
2. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
3. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
4. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
5. REFER TO SHEETS S-005 FOR STRUCUTRAL STEEL AND METAL DECK NOTES.
6. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
7. REFER TO SHEETS S-301 AND S-302 FOR CORE WALL CONTINUOUS FOOTINGS SECTIONS AND DETAILS.
8. REFER TO SHEET S-315 FOR SPREAD FOOTING SCHEDULE, SECTIONS AND DETAILS.
9. REFER TO SHEET S-316 FOR GRADE BEAM SCHEDULE, SECTIONS AND DETAILS.
10. REFER TO SHEETS S-320 THROUGH S-322 FOR FOUNDATION WALL ELEVATIONS, SECTIONS AND DETAILS.
11. REFER TO SHEET S-330 FOR SLAB-ON-GRADE SECTIONS AND DETAILS.
12. REFER TO SHEET S-350 FOR REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS AND DETAILS.
13. REFER TO SHEET S-351 FOR TYPICAL REINFORCED CONCRETE WALL DETAILS.
14. REFER TO SHEET S-355 FOR LINK BEAM SCHEDULES, SECTIONS AND DETAILS.
15. REFER TO SHEETS S-360 THROUGH S-368 FOR CORE WALL ELEVATIONS.
16. REFER TO SHEET S-370 FOR REINFORCED CONCRETE BEAM SCHEDULE, SECTIONS AND DETAILS.
17. REFER TO SHEET S-375 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS AND DETAILS.
18. REFER TO SHEET S-401 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
19. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.

MANHATTAN WEST: NORTH TOWER
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STATE OF NEW YORK
CHARLES MICHAEL SESSA
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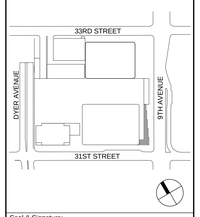
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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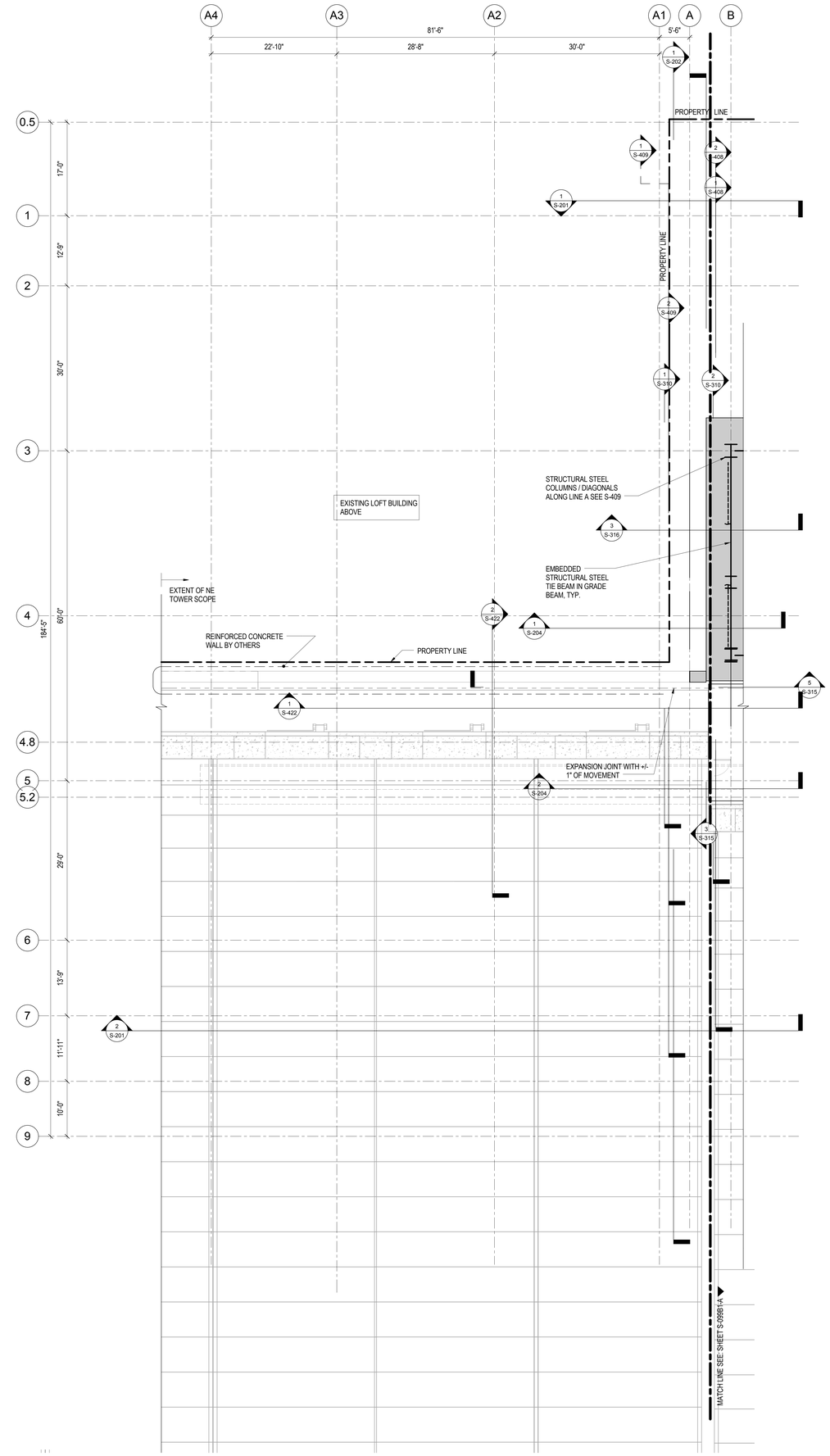
Sheet Name:
CELLAR B1 FLOOR FRAMING PLAN - PART A

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-099B1-A
B-SCAN Sheet No.:
S-095.00
Sheet No.: S-099B1-A
Page No.: 13 of 90



1. TOP OF SLAB ELEVATION = +12'-7 3/4", UNLESS NOTED OTHERWISE.
2. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
3. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
4. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
5. REFER TO SHEETS S-005 FOR STRUCUTRAL STEEL AND METAL DECK NOTES.
6. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
7. REFER TO SHEETS S-301 AND S-302 FOR CORE WALL CONTINUOUS FOOTINGS SECTIONS AND DETAILS.
8. REFER TO SHEET S-315 FOR SPREAD FOOTING SCHEDULE, SECTIONS AND DETAILS.
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13. REFER TO SHEET S-351 FOR TYPICAL REINFORCED CONCRETE WALL DETAILS.
14. REFER TO SHEET S-355 FOR LINK BEAM SCHEDULES, SECTIONS AND DETAILS.
15. REFER TO SHEETS S-360 THROUGH S-368 FOR CORE WALL ELEVATIONS.
16. REFER TO SHEET S-370 FOR REINFORCED CONCRETE BEAM SCHEDULE, SECTIONS AND DETAILS.
17. REFER TO SHEET S-375 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS AND DETAILS.
18. REFER TO SHEET S-401 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
19. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.

1 CELLAR B1 FLOOR FRAMING PLAN - PART B

1/8" = 1'-0"

MANHATTAN WEST: NORTH TOWER

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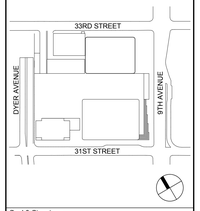
STATE OF NEW YORK
CHARLES MICHAEL BESJAK
070322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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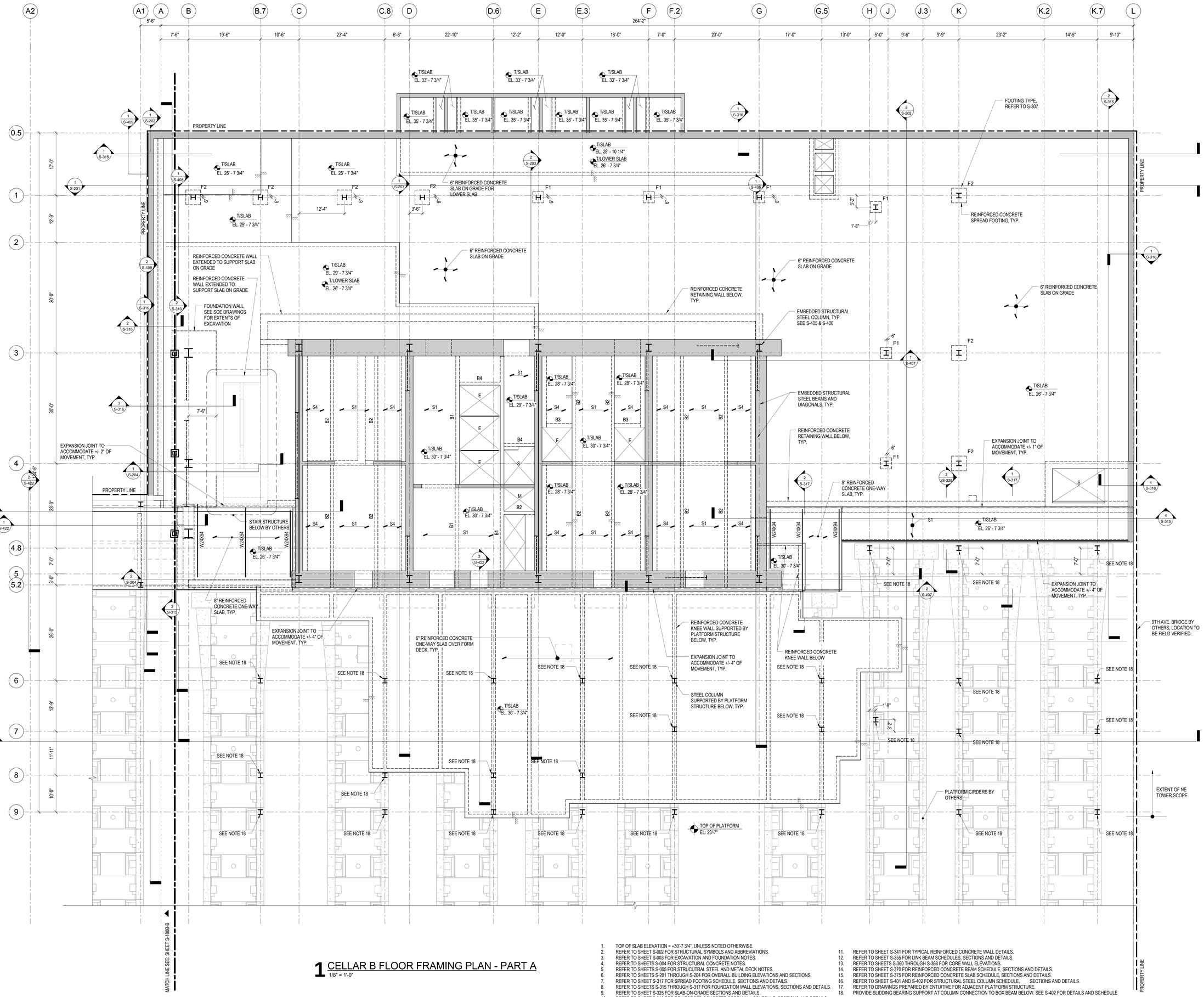
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

CELLAR B1
FLOOR FRAMING
PLAN - PART B

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-099B1-B

B-SCAN Sheet No.:
S-096.00
Sheet No.: S-099B1-B



1 CELLAR B FLOOR FRAMING PLAN - PART A

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = +30'-7 3/4", UNLESS NOTED OTHERWISE.
2. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
3. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
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5. REFER TO SHEETS S-005 FOR STRUCUTRAL STEEL AND METAL DECK NOTES.
6. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
7. REFER TO SHEET S-317 FOR SPREAD FOOTING SCHEDULE, SECTIONS AND DETAILS.
8. REFER TO SHEETS S-315 THROUGH S-317 FOR FOUNDATION WALL ELEVATIONS, SECTIONS AND DETAILS.
9. REFER TO SHEET S-325 FOR SLAB-ON-GRADE SECTIONS AND DETAILS.
10. REFER TO SHEET S-340 FOR REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS AND DETAILS.
11. REFER TO SHEET S-341 FOR TYPICAL REINFORCED CONCRETE WALL DETAILS.
12. REFER TO SHEET S-355 FOR LINK BEAM SCHEDULES, SECTIONS AND DETAILS.
13. REFER TO SHEETS S-360 THROUGH S-368 FOR CORE WALL ELEVATIONS.
14. REFER TO SHEET S-370 FOR REINFORCED CONCRETE BEAM SCHEDULE, SECTIONS AND DETAILS.
15. REFER TO SHEET S-375 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS AND DETAILS.
16. REFER TO SHEET S-401 AND S-402 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
17. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.
18. PROVIDE SLIDDING BEARING SUPPORT AT COLUMN CONNECTION TO BOX BEAM BELOW. SEE S-402 FOR DETAILS AND SCHEDULE

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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Skidmore, Owings & Merrill LLP
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Security Consultant

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Code Consultant

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Facade Maintenance Consultant

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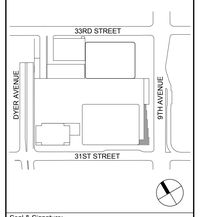
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BESS
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

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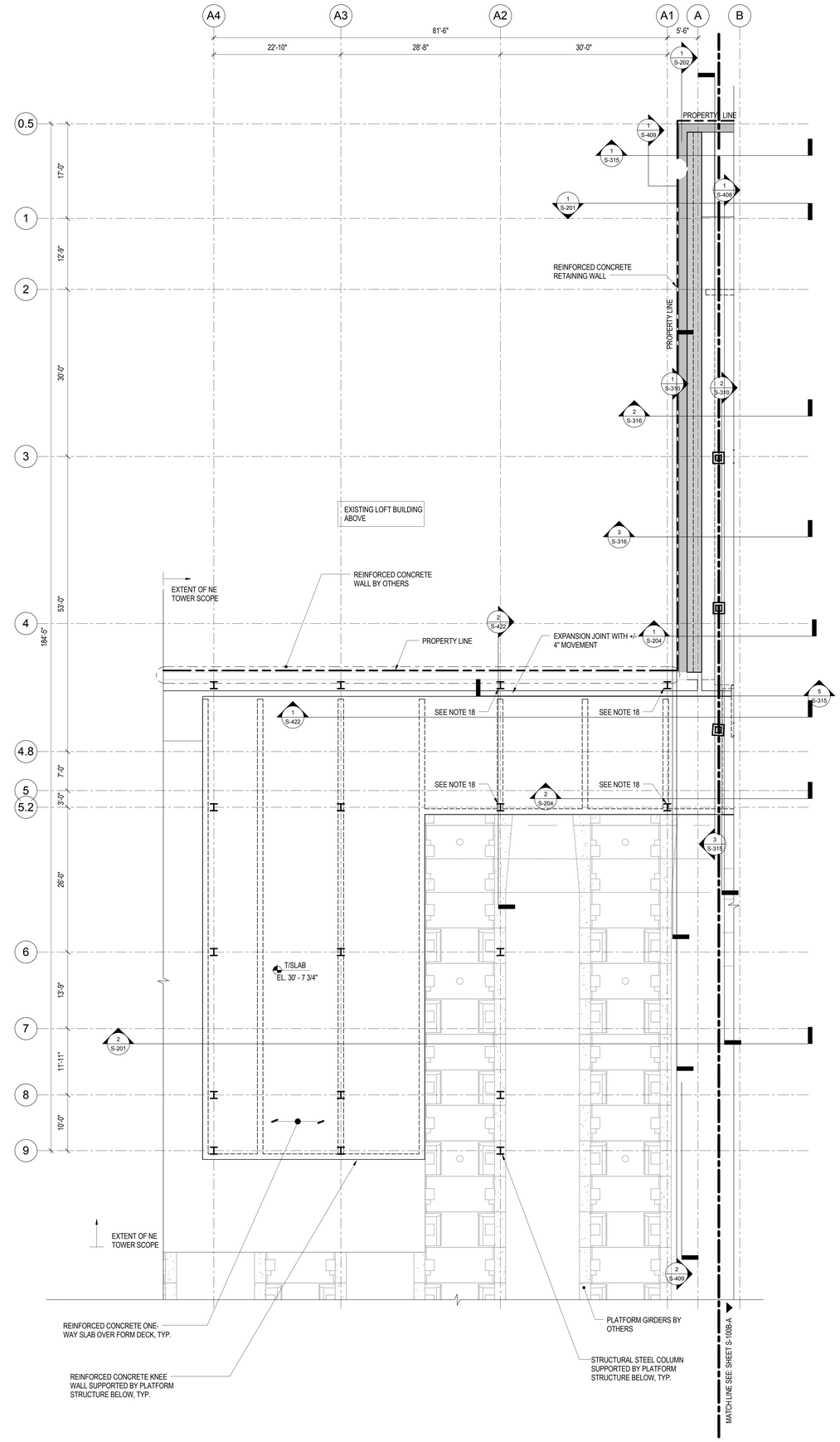
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

CELLAR B FLOOR FRAMING PLAN - PART A

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-100B-A
B-SCAN Sheet No.:
S-097.00
Sheet No.: S-100B-A
Page No.: 15 of 90



1. TOP OF SLAB ELEVATION = +30'-7 3/4", UNLESS NOTED OTHERWISE.
2. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
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1 CELLAR B FLOOR FRAMING PLAN - PART B
1/8" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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STATE OF NEW YORK
CHARLES MICHAEL BESJAK
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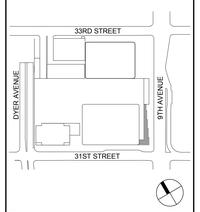
LICENSED PROFESSIONAL ENGINEER
06/20/2014

Key Plan:



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CELLAR B FLOOR FRAMING PLAN - PART B

Project No.: 211157
Date: 20 JUN 2014
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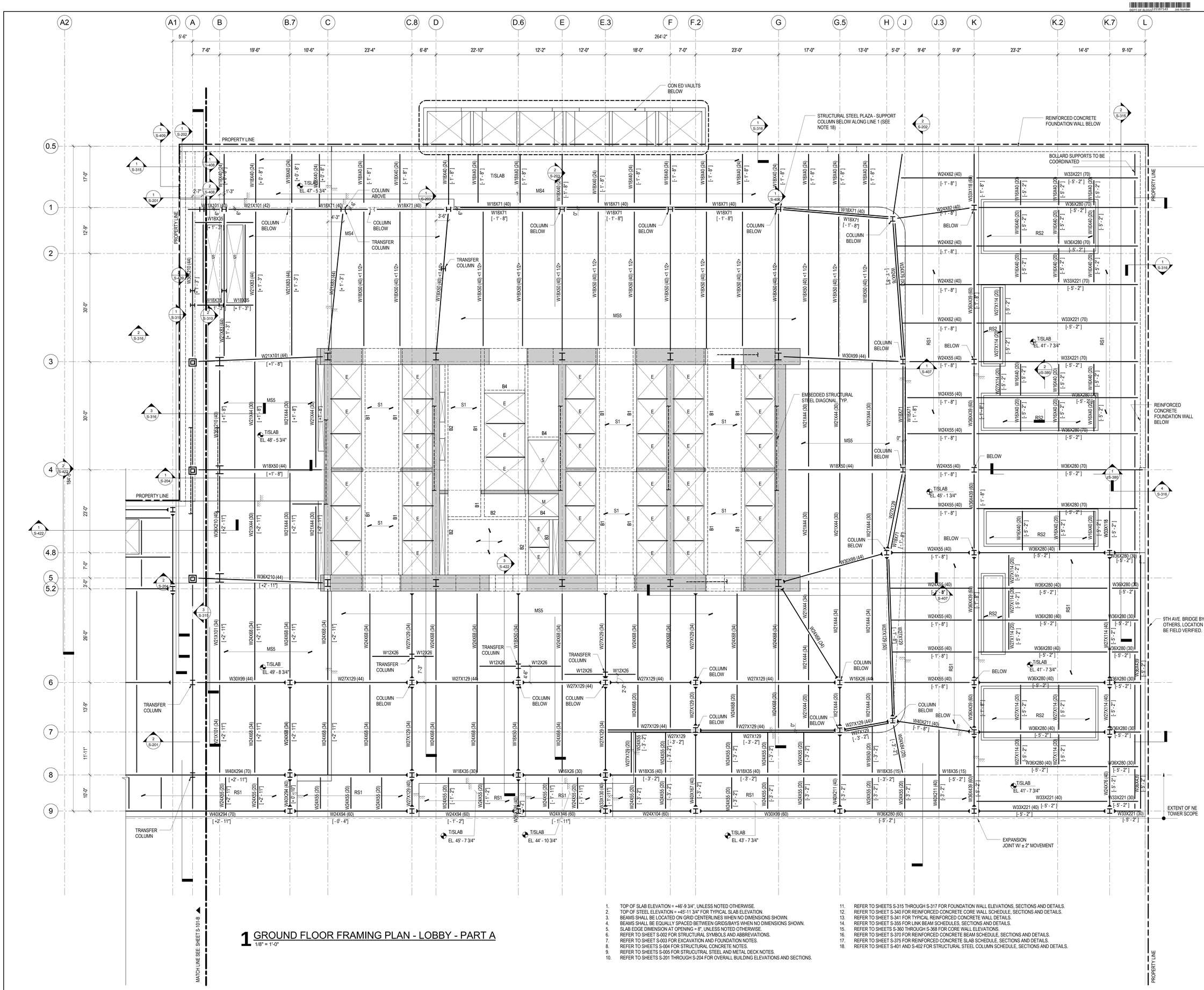
File No.: S-100B-B
B-SCAN Sheet No.: S-098.00
Sheet No.: S-100B-B
Page No.: 16 of 90



1 GROUND FLOOR FRAMING PLAN - LOBBY - PART A

1/8" = 1'-0"

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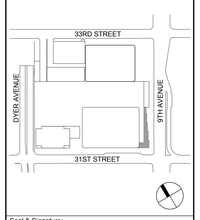
Key Plan:



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Sheet Name:

GROUND FLOOR FRAMING PLAN - LOBBY - PART A

Project No.: 211157	B-SCAN Sheet No.: S-100.00
Date: 20 JUN 2014	Sheet No.: S-101-A
Scale: 1/8" = 1'-0"	
File No.: S-101-A	Page No.: 17 of 90

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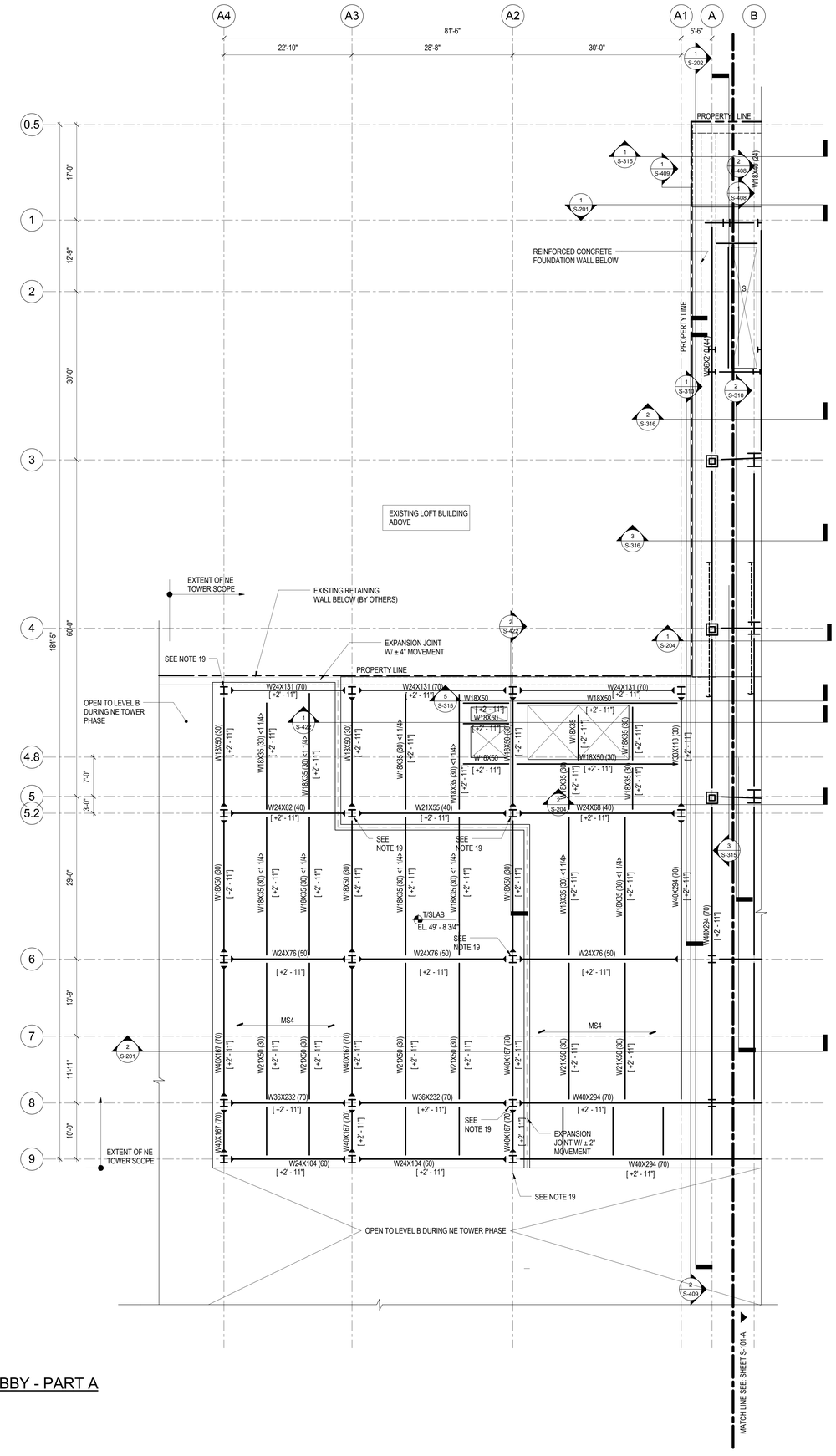

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18. REFER TO SHEET S-401 AND S-402 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
19. PROVIDE SLIDDING CONNECTION AT GIRDER SUPPORT TO COLUMN ACCROSS EXPANSION JOINT. SEE DETAIL 6/421.

2 GROUND FLOOR FRAMING PLAN - LOBBY - PART A
1/8" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
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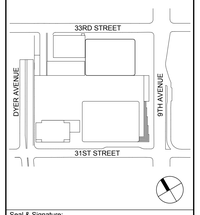
Key Plan:



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Sheet Name:
GROUND FLOOR FRAMING PLAN - LOBBY - PART B

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-101-B
B-SCAN Sheet No.: S-101.00
Sheet No.: S-101-B
Page No.: 18 of 90

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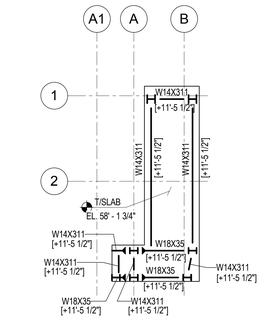
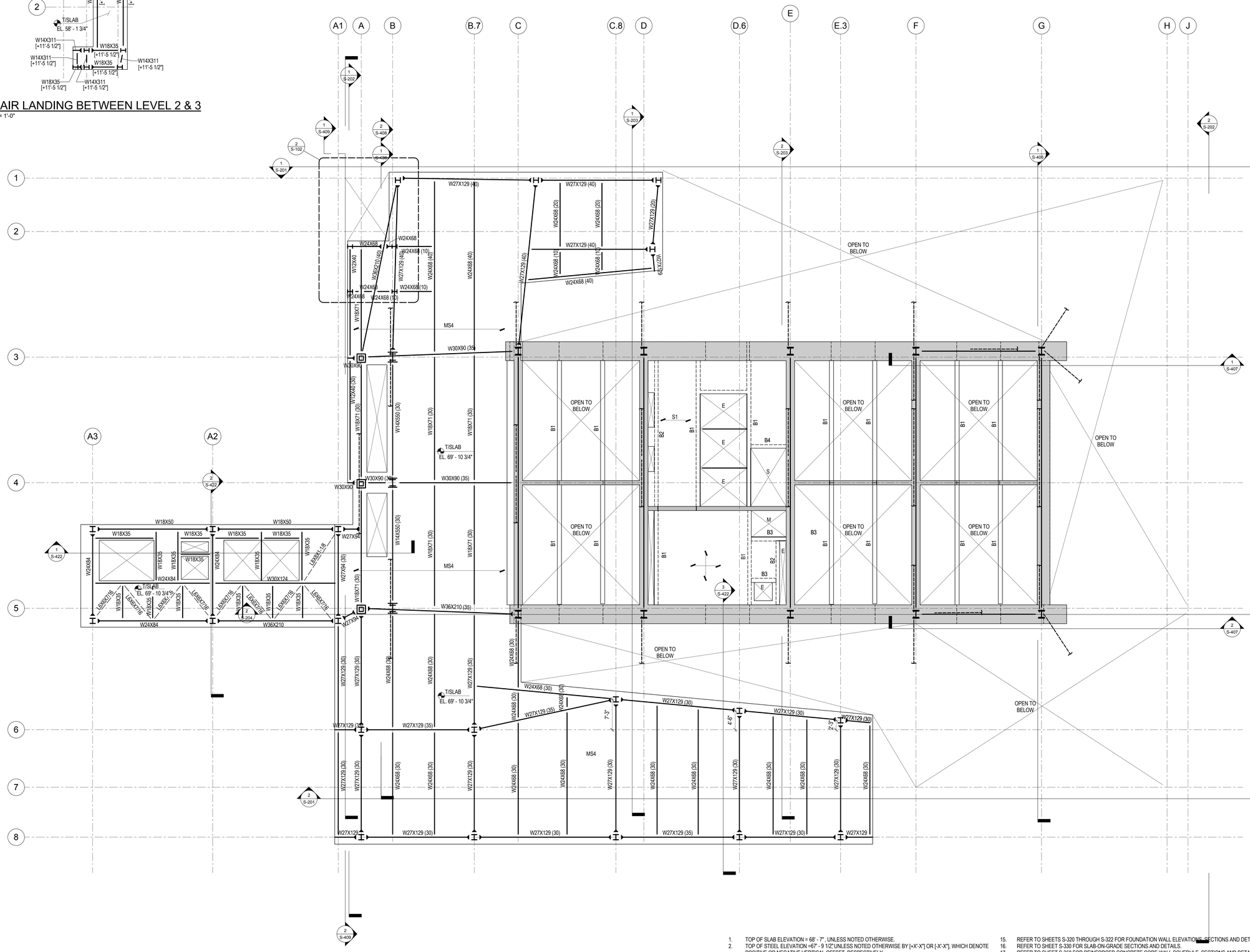


2 STAIR LANDING BETWEEN LEVEL 2 & 3

1/8" = 1'-0"



1 2ND FLOOR FRAMING PLAN

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 68' - 7". UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION =67' - 9 1/2" UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
4. BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
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14. REFER TO SHEET S-316 FOR GRADE BEAM SCHEDULE, SECTIONS AND DETAILS.
15. REFER TO SHEETS S-320 THROUGH S-322 FOR FOUNDATION WALL ELEVATIONS, SECTIONS AND DETAILS.
16. REFER TO SHEET S-330 FOR SLAB-ON-GRADE SECTIONS AND DETAILS.
17. REFER TO SHEET S-350 FOR REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS AND DETAILS.
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24. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.
25. REFER TO SHEET S-501 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.

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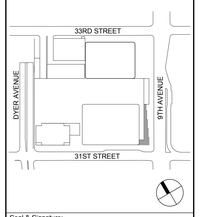

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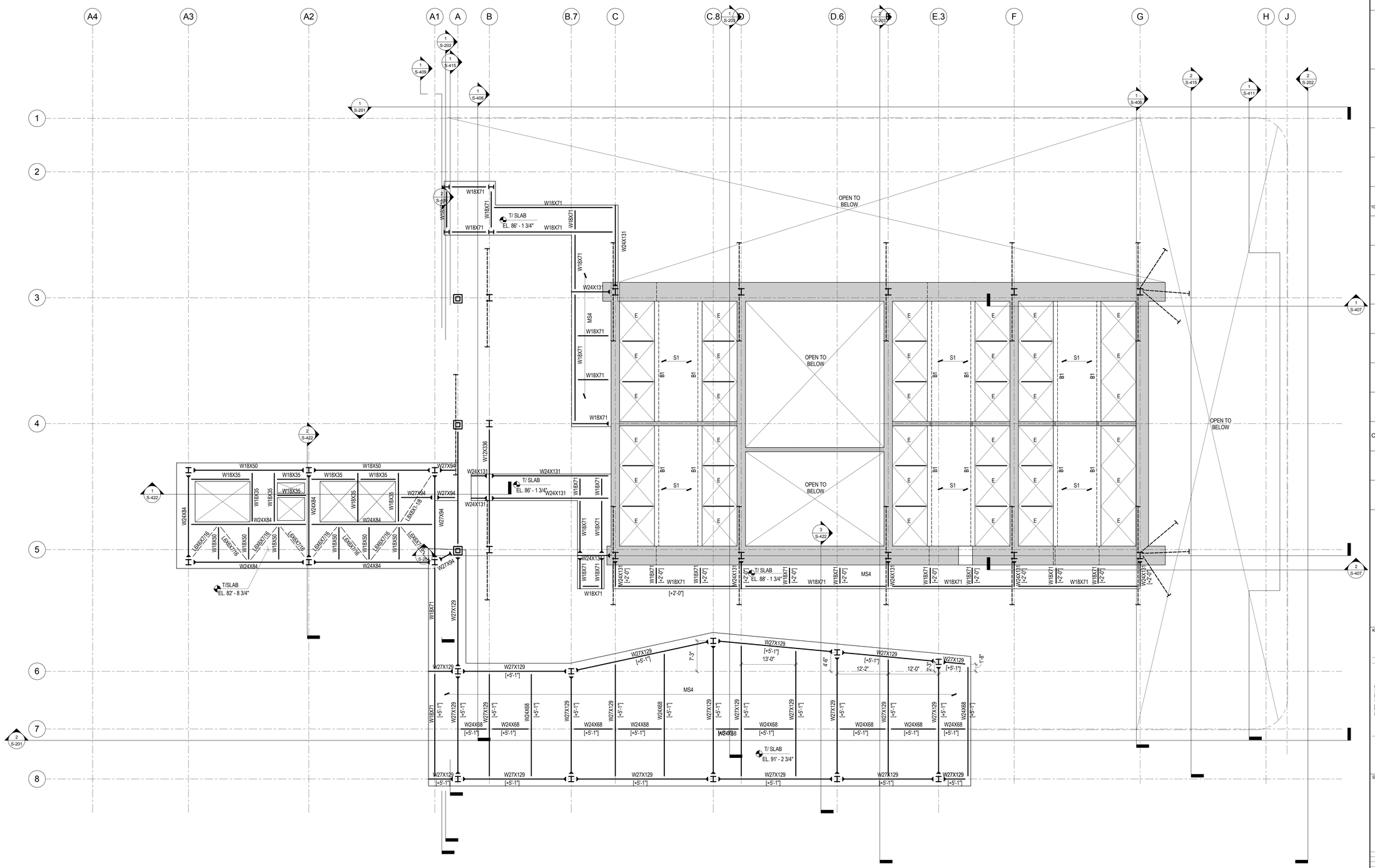
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

2ND FLOOR FRAMING PLAN

Project No.: 211157	B-SCAN Sheet No.: S-102.00
Date: 20 JUN 2014	Sheet No.: S-102
Scale: 1/8" = 1'-0"	
File No.: S-102	Page No.: 19 of 90



1 3RD FLOOR FRAMING PLAN

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 84' - 6" , UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 84' - 1/2", UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
4. BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
5. SLAB EDGE DIMENSION AT OPENING = 8", UNLESS NOTED OTHERWISE.
6. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
7. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
8. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
9. REFER TO SHEETS S-005 FOR STRUCUTRAL STEEL AND METAL DECK NOTES.
10. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
11. REFER TO SHEETS S-301 AND S-302 FOR CORE WALL CONTINUOUS FOOTINGS SECTIONS AND DETAILS.
12. REFER TO SHEET S-305 FOR CAISSON SCHEDULE, SECTIONS AND DETAILS.
13. REFER TO SHEET S-315 FOR SPREAD FOOTING SCHEDULE, SECTIONS AND DETAILS.
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16. REFER TO SHEET S-330 FOR SLAB-ON-GRADE SECTIONS AND DETAILS.
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18. REFER TO SHEET S-351 FOR TYPICAL REINFORCED CONCRETE WALL DETAILS.
19. REFER TO SHEET S-355 FOR LINK BEAM SCHEDULES, SECTIONS AND DETAILS.
20. REFER TO SHEETS S-360 THROUGH S-368 FOR CORE WALL ELEVATIONS.
21. REFER TO SHEET S-370 FOR REINFORCED CONCRETE BEAM SCHEDULE, SECTIONS AND DETAILS.
22. REFER TO SHEET S-375 FOR REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS AND DETAILS.
23. REFER TO SHEET S-401 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
24. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.
25. REFER TO SHEET S-501 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.

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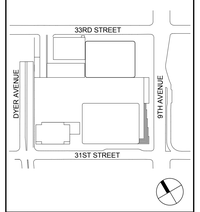
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BESSAK
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

PRELIMINARY
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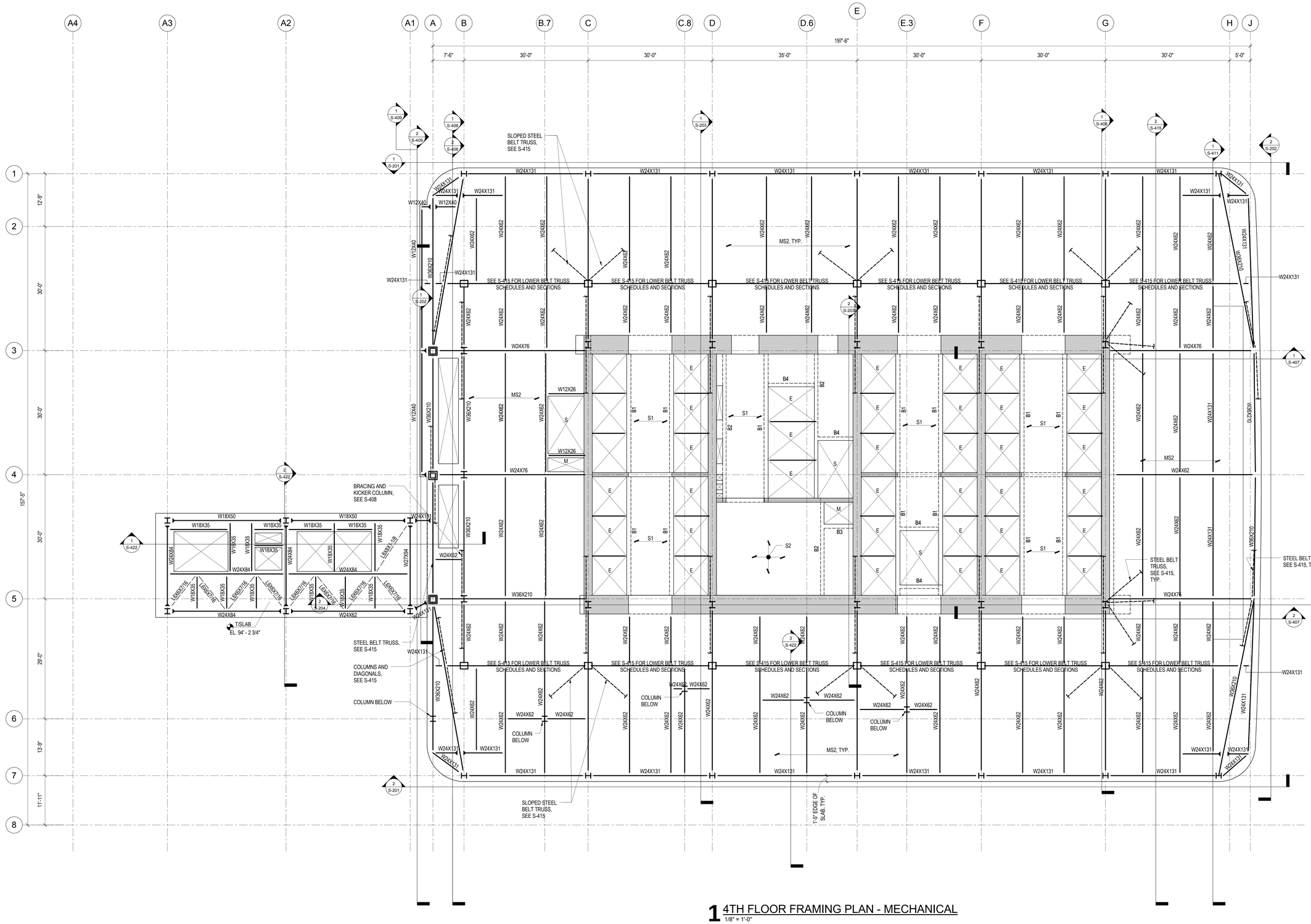
No.	Date	Description
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
3RD FLOOR FRAMING PLAN

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-103
B-SCAN Sheet No.: S-103.00
Sheet No.: S-103
Page No.: 20 of 90



1 4TH FLOOR FRAMING PLAN - MECHANICAL

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 97' - 0", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 96' - 1" , UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
4. BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
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6. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
7. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
8. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
9. REFER TO SHEETS S-005 FOR STRUCUTRAL STEEL AND METAL DECK NOTES.
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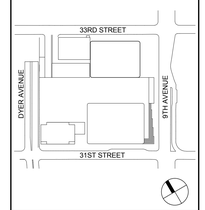

Seal & Signature:

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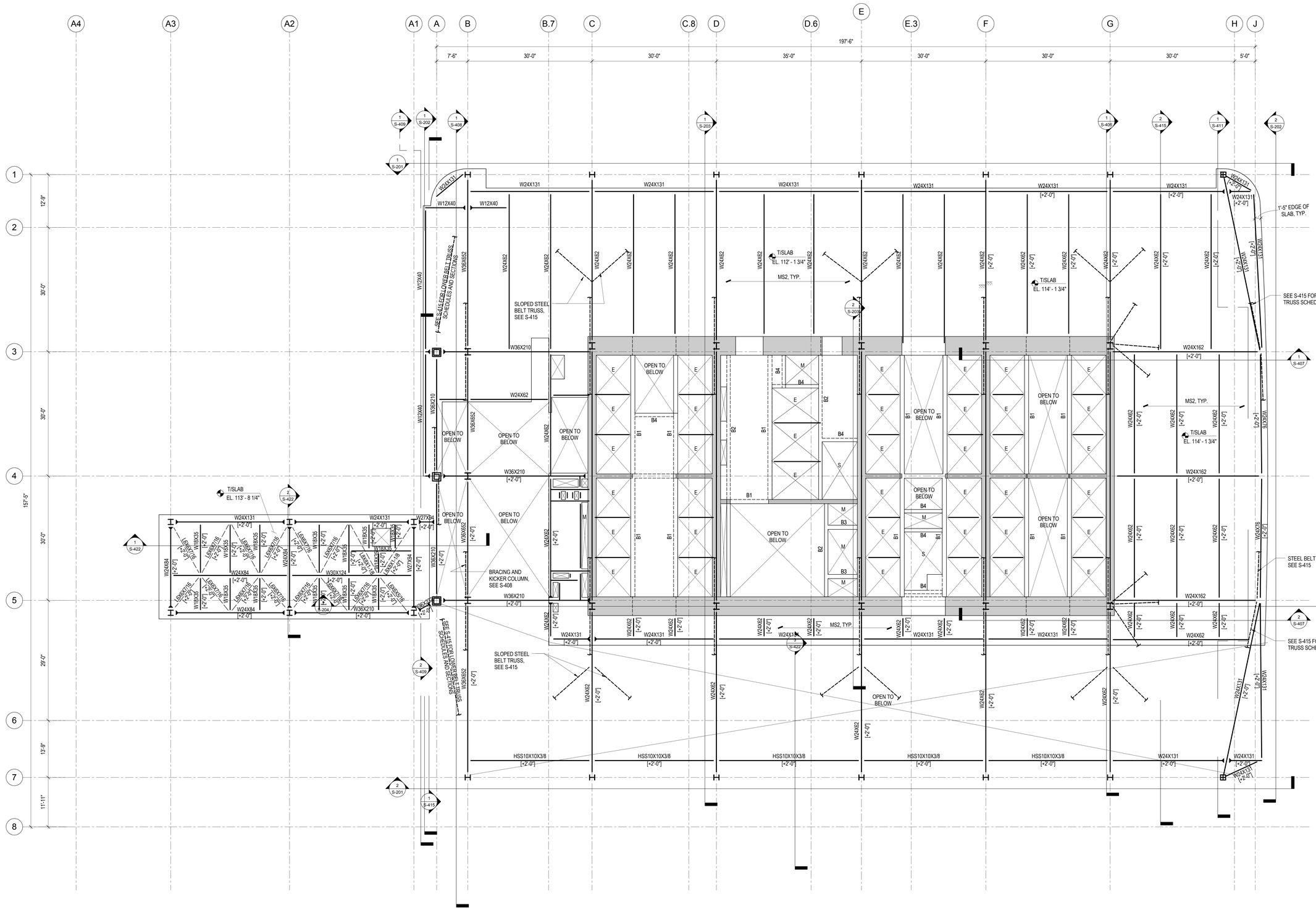
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
4TH FLOOR FRAMING PLAN - MECHANICAL

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-104
B-SCAN Sheet No.: S-104.00
Sheet No.: S-104
Page No.: 21 of 90



1 5TH FLOOR FRAMING PLAN - MECHANICAL MEZZANINE

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 110'-6", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 109'-7" , UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
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Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL SELLAK
079322
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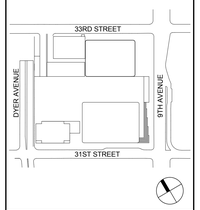
Key Plan:



Seal & Signature:

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
5TH FLOOR FRAMING PLAN - MECHANICAL MEZZANINE

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-105
B-SCAN Sheet No.: S-105.00
Sheet No.: S-105
Page No.: 22 of 90

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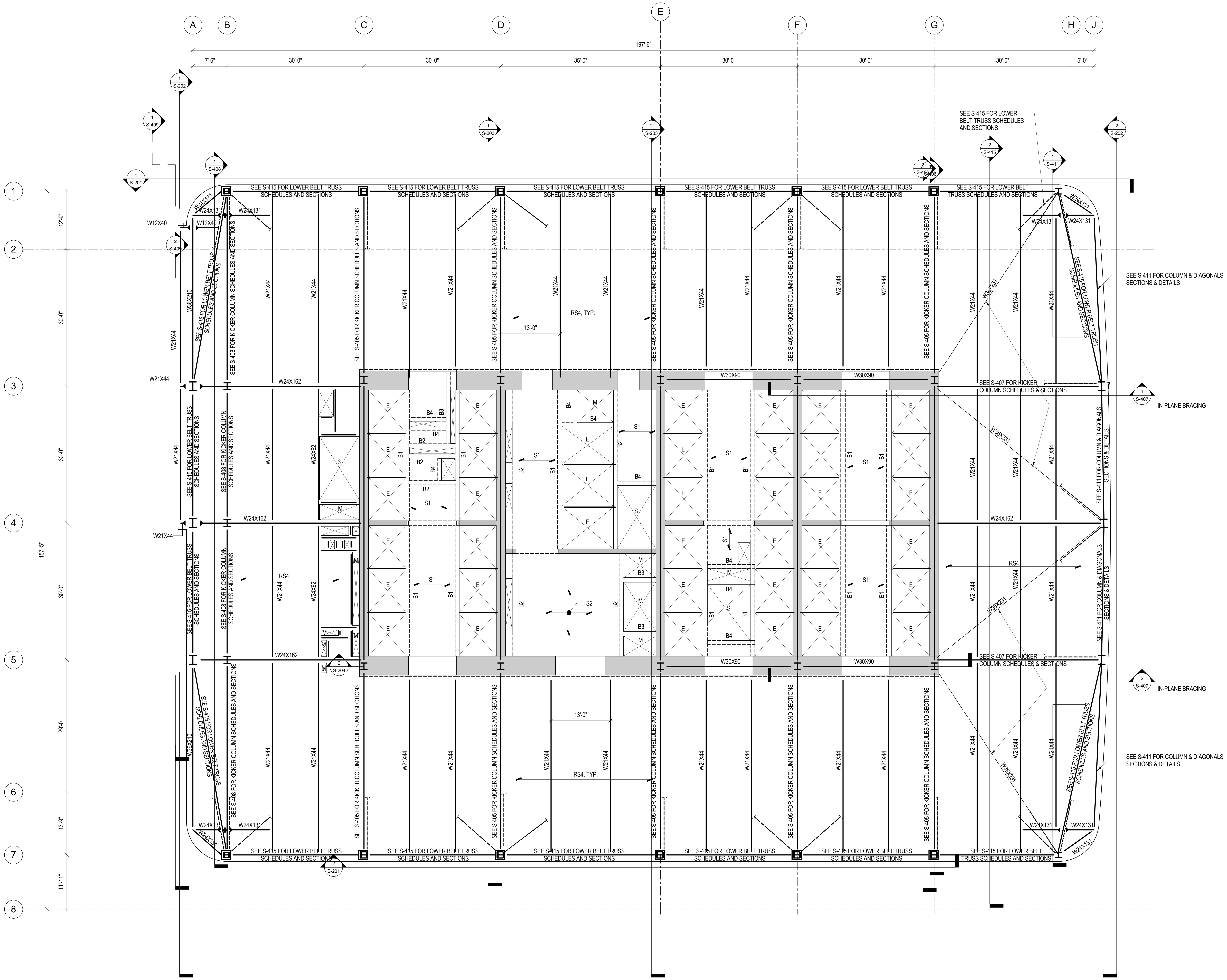

1 6TH FLOOR FRAMING PLAN- LOW-RISE
1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 137'- 6", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 136' - 7" , UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
4. BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
5. SLAB EDGE DIMENSION AT OPENING = 8", UNLESS NOTED OTHERWISE.
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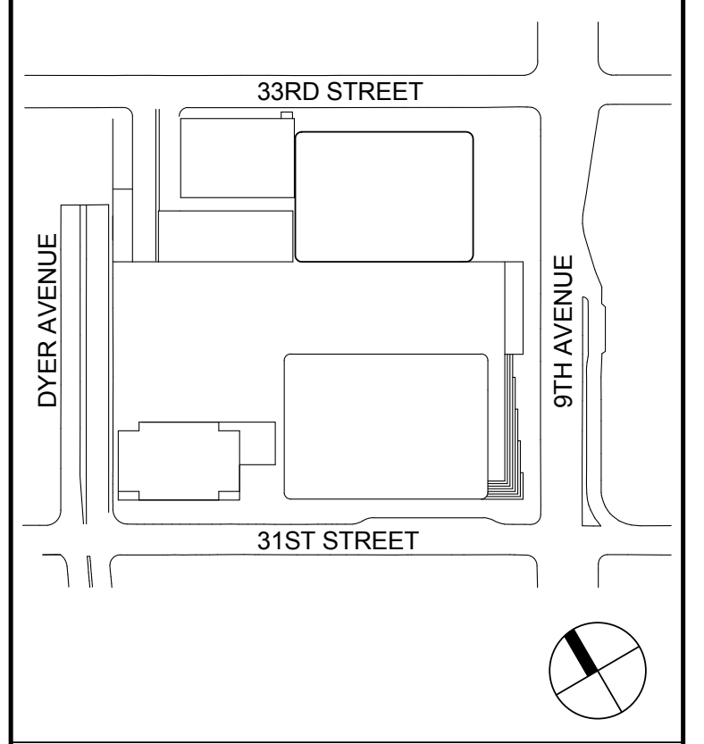

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Sheet Name:
6TH FLOOR
FRAMING PLAN-
LOW-RISE

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-106
B-SCAN Sheet No.: S-106.00
Sheet No.: S-106
Page No.: 23 of 90

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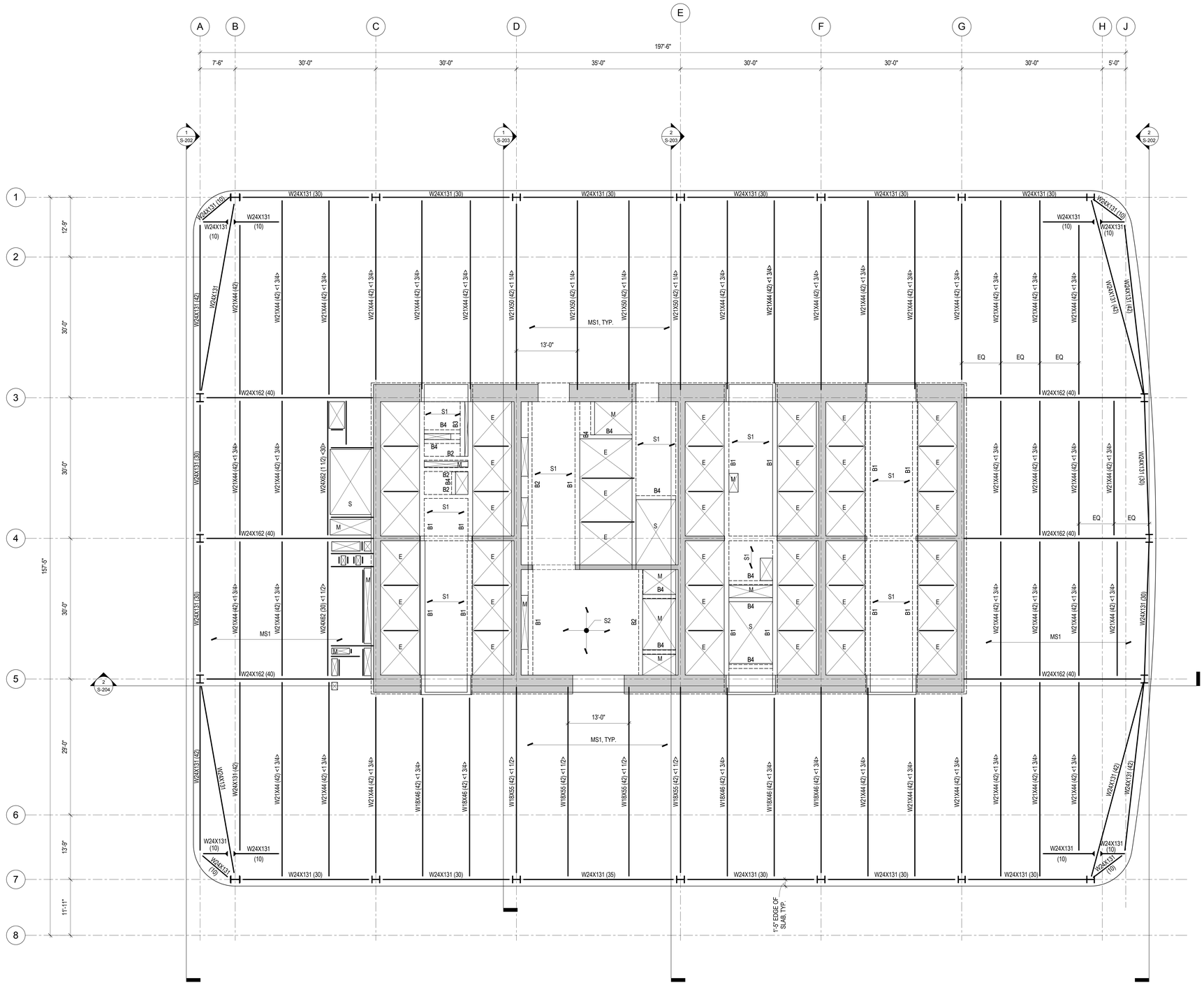

1 16TH FLOOR FRAMI NG PLAN - TYPICAL LOW-RISE

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 272'-6", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 272'-1/2", UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
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23. REFER TO SHEET S-401 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
24. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.
25. REFER TO SHEET S-501 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.

SHEET OF BLOCK 271.01.143 Job Number
E3656431115 Scan Code

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant
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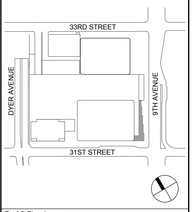
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
16TH FLOOR FRAMI NG PLAN - TYPICAL LOW-RISE

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-116
B-SCAN Sheet No.: S-116.00
Sheet No.: S-116
Page No.: 24 of 90

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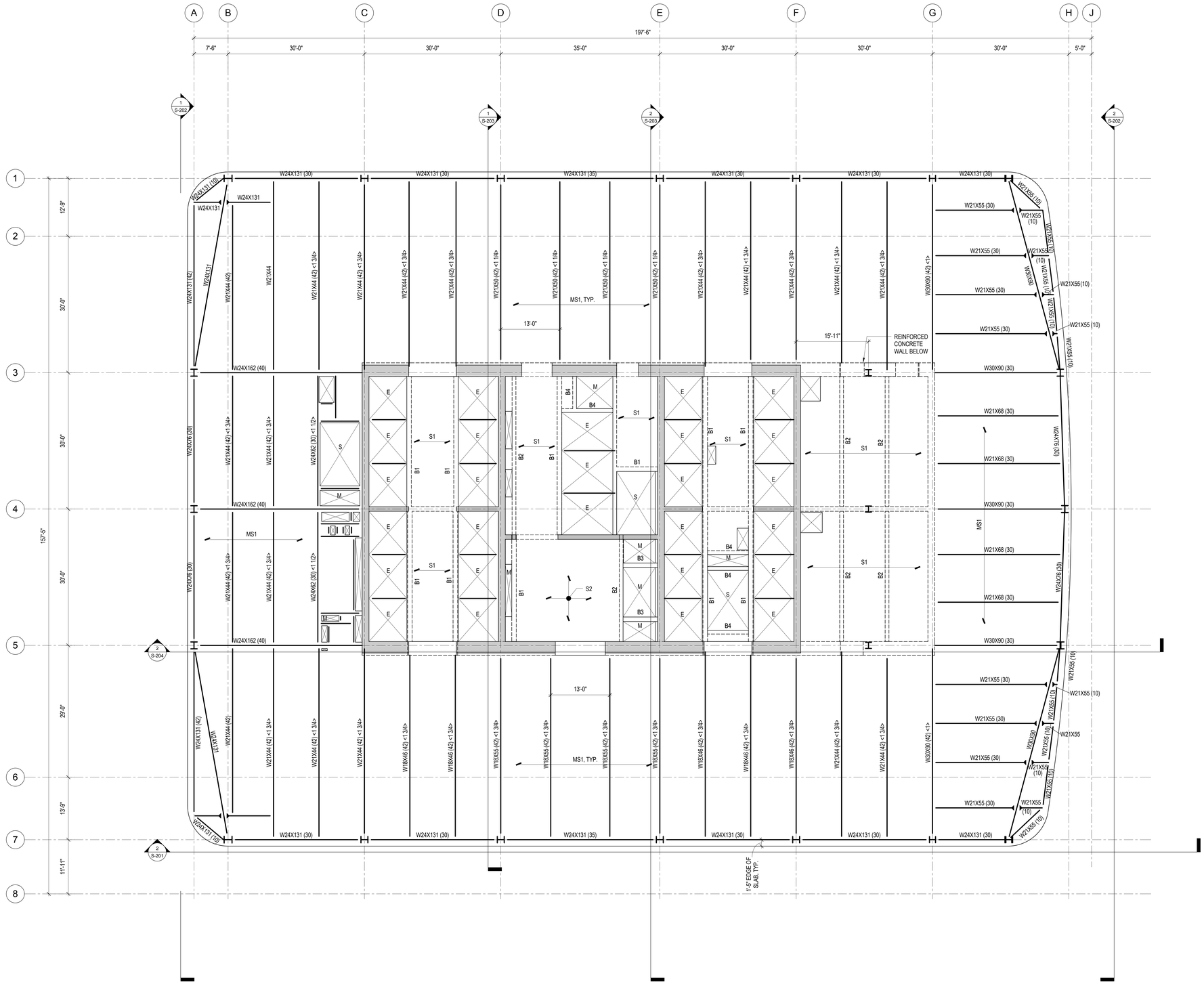

1 31ST FLOOR FRAMING PLAN - MID-RISE

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 475'-0", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 474'-6 1/2"UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
4. BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
5. SLAB EDGE DIMENSION AT OPENING = 8", UNLESS NOTED OTHERWISE.
6. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
7. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
8. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
9. REFER TO SHEETS S-005 FOR STRUCUTRAL STEEL AND METAL DECK NOTES.
10. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
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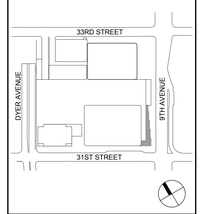
STATE OF NEW YORK
CHARLES MICHAEL BERLAND
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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Sheet Name:
31ST FLOOR FRAMING PLAN - MID-RISE

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-131
B-SCAN Sheet No.: S-131.00
Sheet No.: S-131
Page No.: 25 of 90

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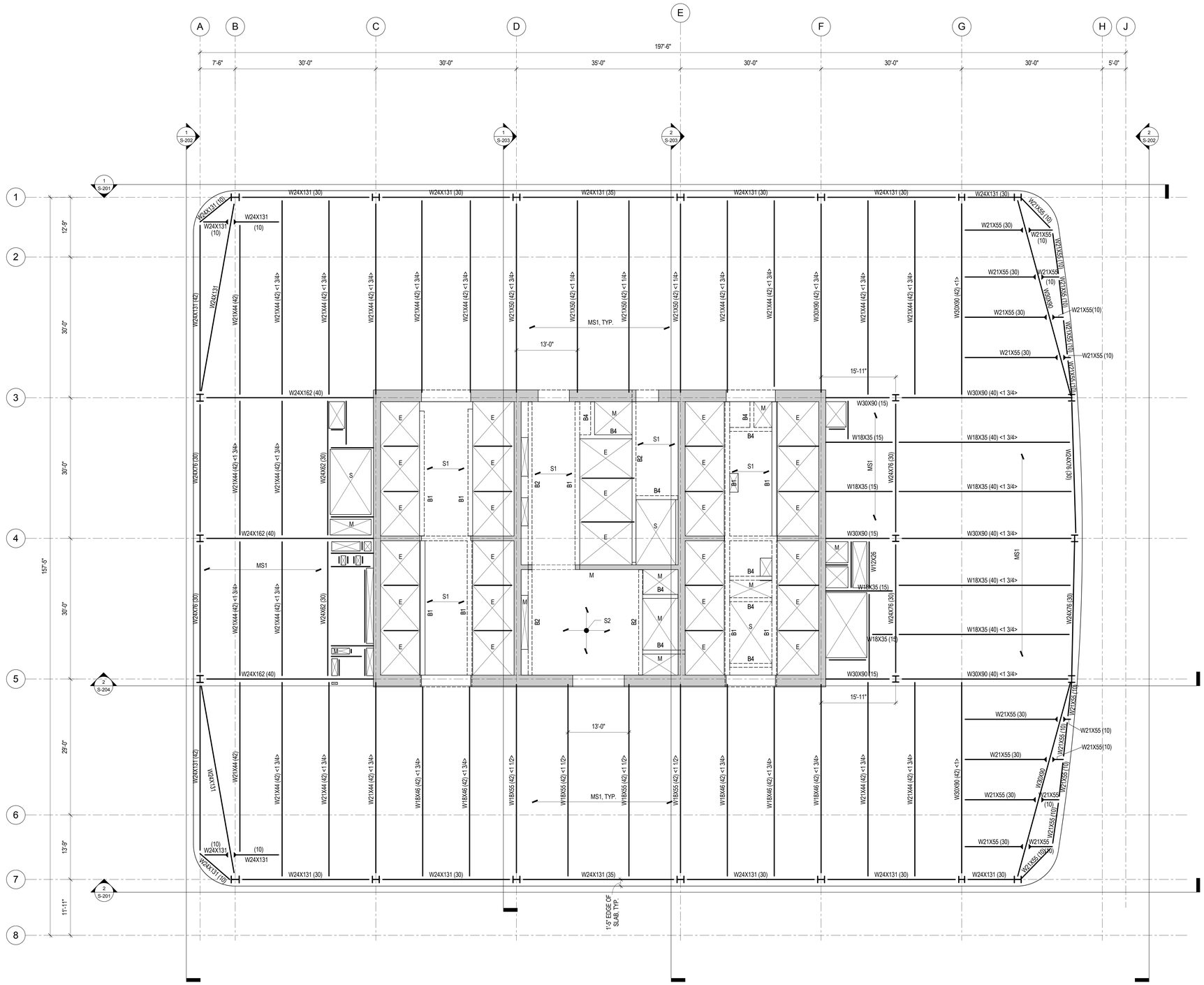

1 37TH FLOOR FRAMING PLAN - TYPICAL MID-RISE

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 555'-0", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION =555'-6 1/2" UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
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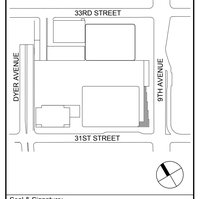
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

37TH FLOOR FRAMING PLAN - TYPICAL MID-RISE

Project No.: 211157	B-SCAN Sheet No.: S-137.00
Date: 20 JUN 2014	Sheet No.: S-137
Scale: 1/8" = 1'-0"	
File No.: S-137	Page No.: 26 of 90

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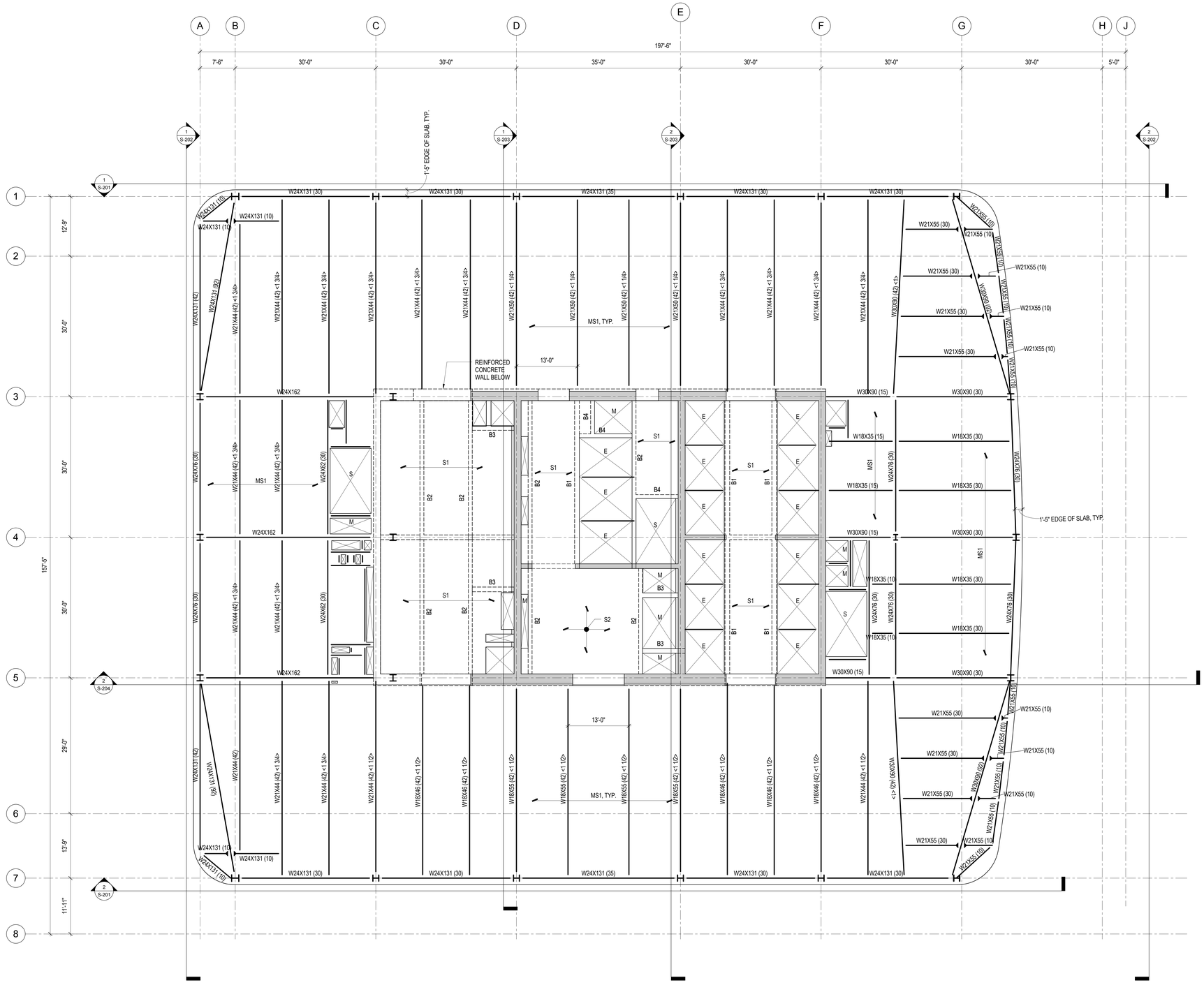

1 53RD FLOOR FRAMING PLAN - HIGH-RISE

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 758'-6", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 758'-1/2", UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
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MANHATTAN WEST: NORTH TOWER
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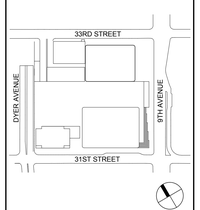

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Sheet Name:
53RD FLOOR FRAMING PLAN - HIGH-RISE

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-153
B-SCAN Sheet No.:
S-153.00
Sheet No.: S-153
Page No.: 27 of 90

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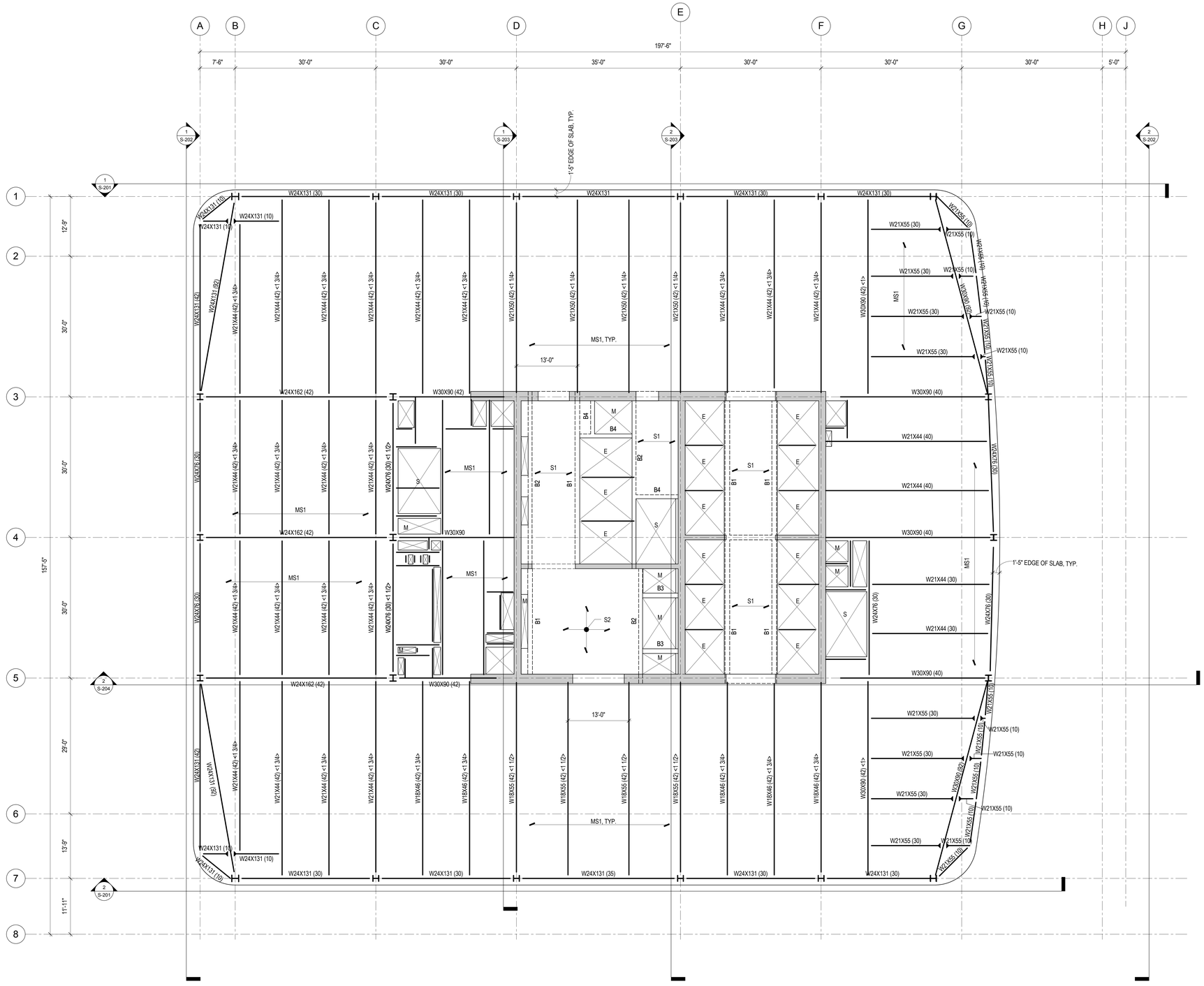

1 59TH FLOOR FRAMING PLAN - TYPICAL HIGH-RISE

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 812'-6", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 812'-1/2", UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
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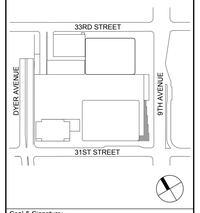

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
59TH FLOOR FRAMING PLAN - TYPICAL HIGH-RISE

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-159
B-SCAN Sheet No.: S-159.00
Sheet No.: S-159
Page No.: 28 of 90

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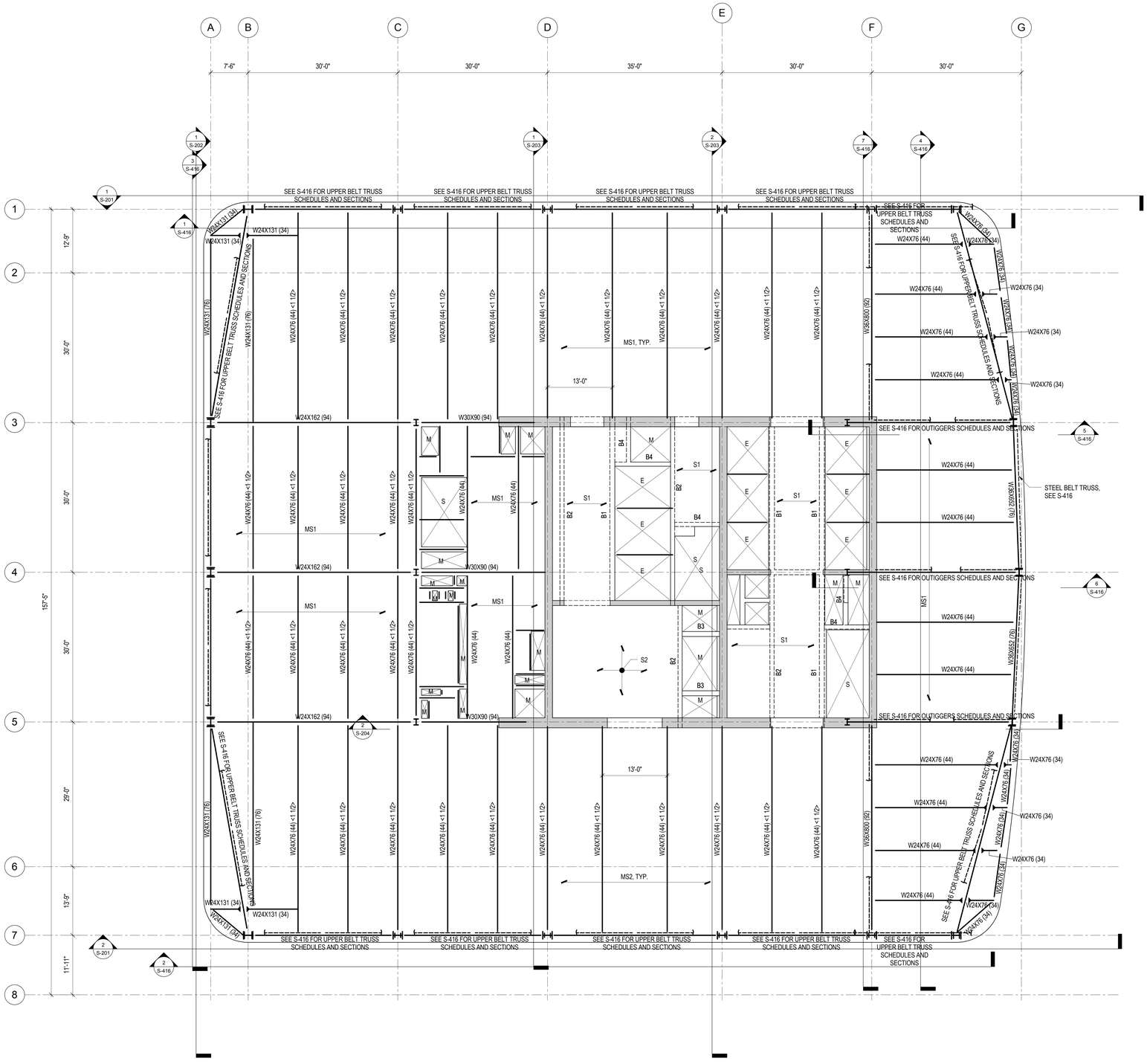

1 68TH FLOOR FRAMING PLAN - MECHANICAL

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 849'-6", UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 948'- 7" , UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
3. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
4. BEAMS SHALL BE EQUALLY SPACED BETWEEN GRIDS/BAYS WHEN NO DIMENSIONS SHOWN.
5. SLAB EDGE DIMENSION AT OPENING = 8", UNLESS NOTED OTHERWISE.
6. REFER TO SHEET S-002 FOR STRUCTURAL SYMBOLS AND ABBREVIATIONS.
7. REFER TO SHEET S-003 FOR EXCAVATION AND FOUNDATION NOTES.
8. REFER TO SHEETS S-004 FOR STRUCTURAL CONCRETE NOTES.
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10. REFER TO SHEETS S-201 THROUGH S-204 FOR OVERALL BUILDING ELEVATIONS AND SECTIONS.
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23. REFER TO SHEET S-401 FOR STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS AND DETAILS.
24. REFER TO DRAWINGS PREPARED BY ENTUITIVE FOR ADJACENT PLATFORM STRUCTURE.
25. REFER TO SHEET S-501 FOR METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS.

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
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Skidmore, Owings & Merrill LLP
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Blast Consultant
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40 Wall Street, New York, NY 10005

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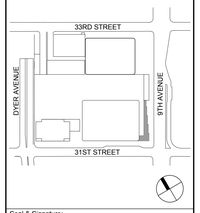
Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:
68TH FLOOR FRAMING PLAN - MECHANICAL

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-168
B-SCAN Sheet No.:
Sheet No.: S-168.00
Page No.: 29 of 90

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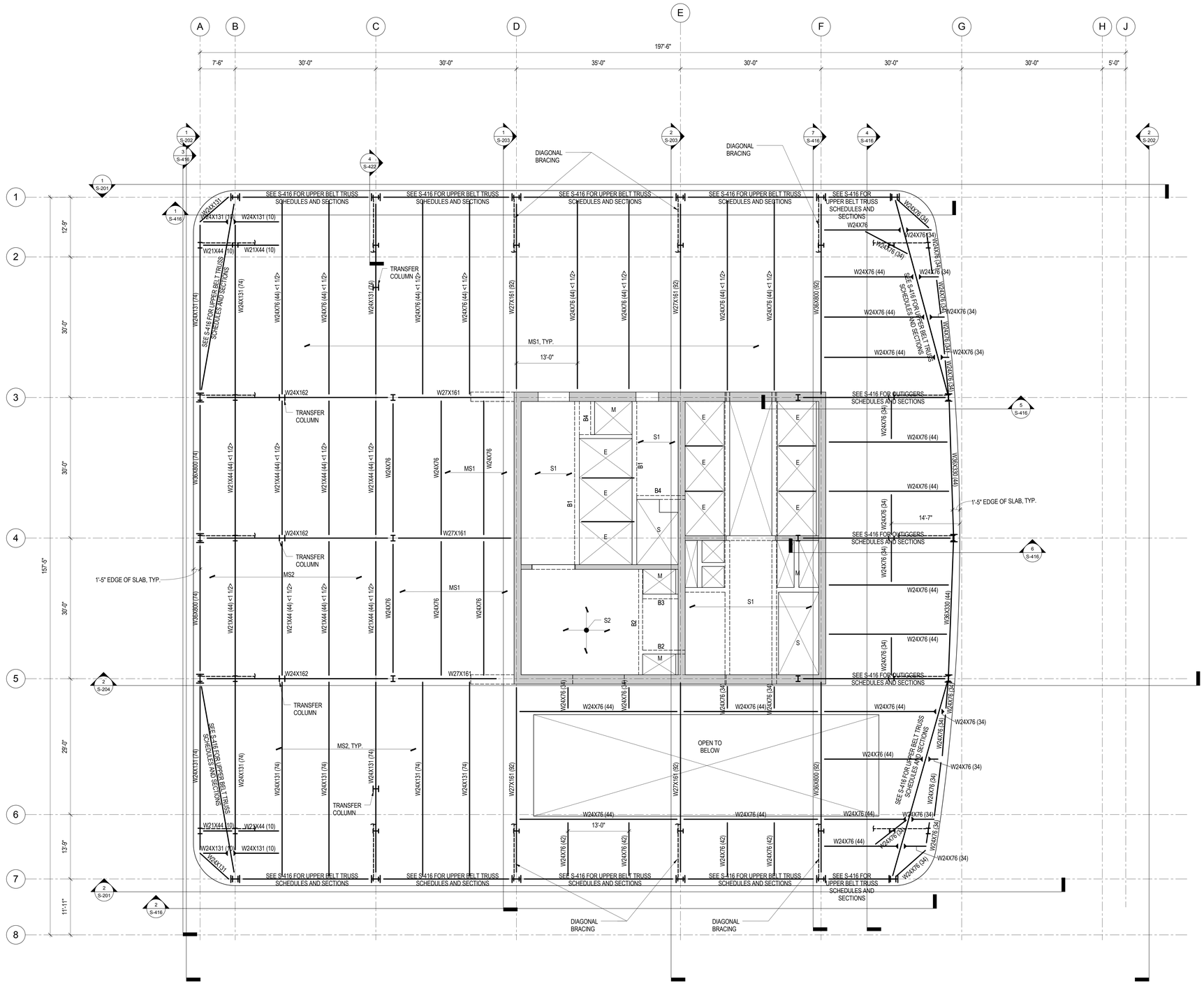

1 69TH FLOOR FRAMING PLAN - MECHANICAL MEZZANINE

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 969'-10" UNLESS NOTED OTHERWISE.
2. TOP OF STEEL ELEVATION = 968' - 11" UNLESS NOTED OTHERWISE BY [+X'-X"] OR [-X'-X"], WHICH DENOTE POSITIVE OR NEGATIVE VERTICAL OFFSET, RESPECTIVELY.
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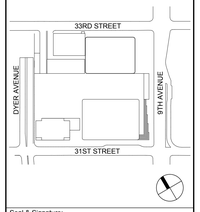
Key Plan:



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Sheet Name:

69TH FLOOR FRAMING PLAN - MECHANICAL MEZZANINE

Project No.: 211157	B-SCAN Sheet No.: S-169.00
Date: 20 JUN 2014	Sheet No.: S-169
Scale: 1/8" = 1'-0"	
File No.: S-169	Page No.: 30 of 90

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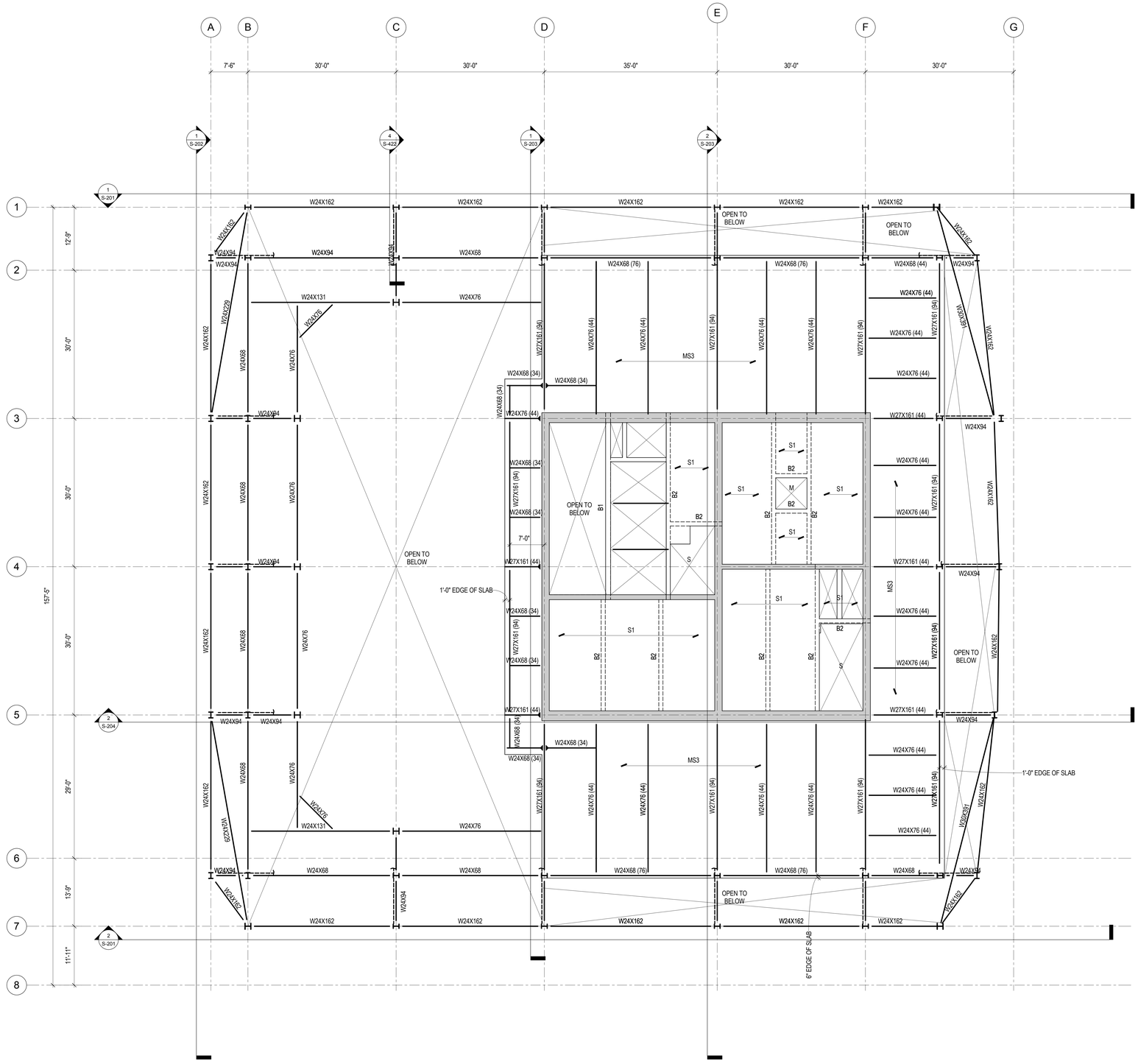

1 ROOF FRAMING PLAN - MECHANICAL PENTHOUSE

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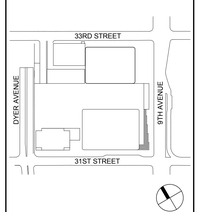
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BESSAI
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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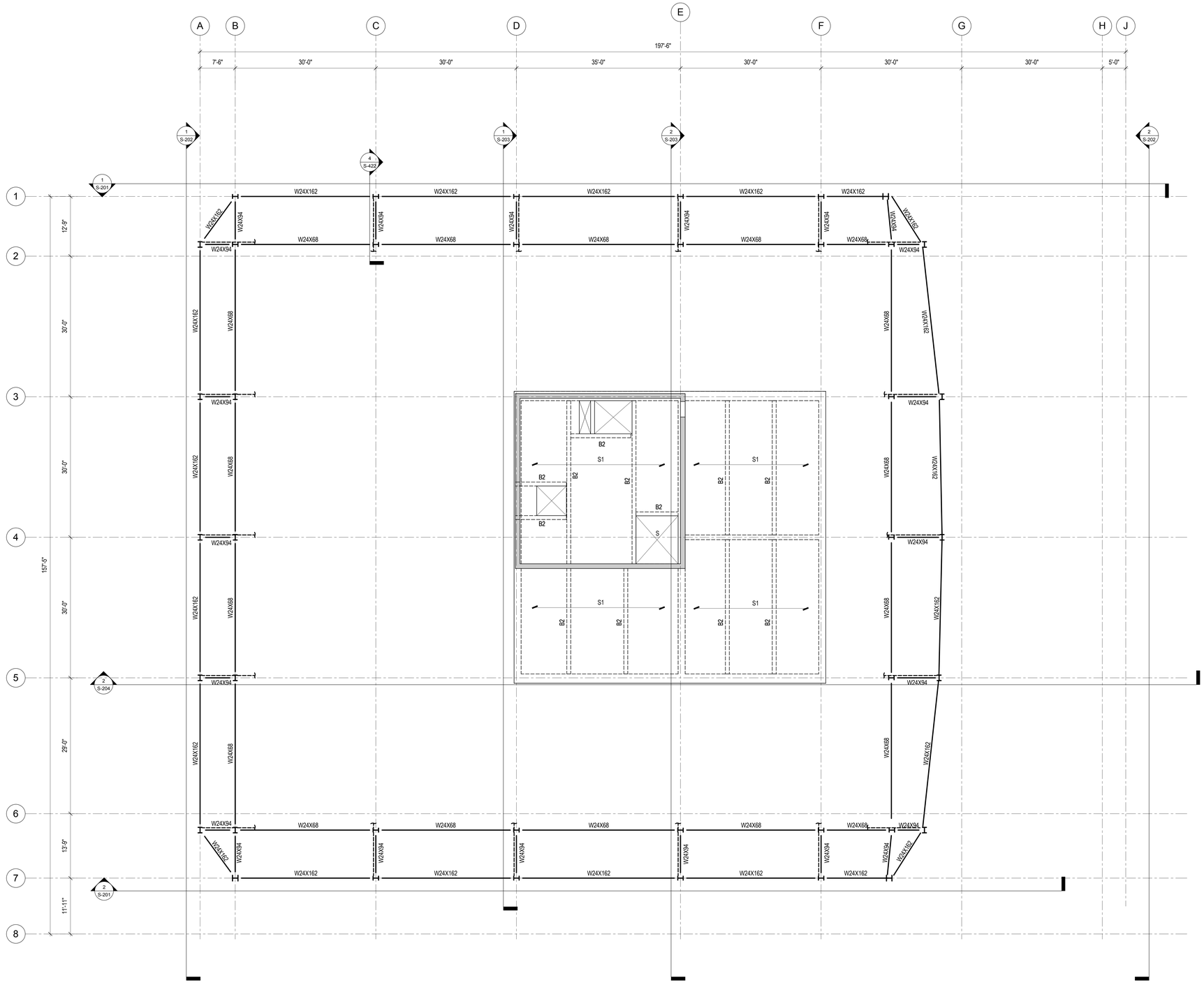
Sheet Name:
ROOF FRAMING PLAN - MECHANICAL PENTHOUSE

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-170
B-SCAN Sheet No.: S-170.00
Sheet No.: S-170
Page No.: 31 of 90



1 ROOF FRAMING PLAN

1/8" = 1'-0"

1. TOP OF SLAB ELEVATION = 998'-0", UNLESS NOTED OTHERWISE.
2. BEAMS SHALL BE LOCATED ON GRID CENTERLINES WHEN NO DIMENSIONS SHOWN.
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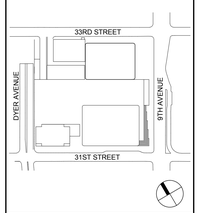

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ROOF FRAMING PLAN

Project No.: 211157
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Scale: 1/8" = 1'-0"
File No.: S-171
B-SCAN Sheet No.: S-171.00
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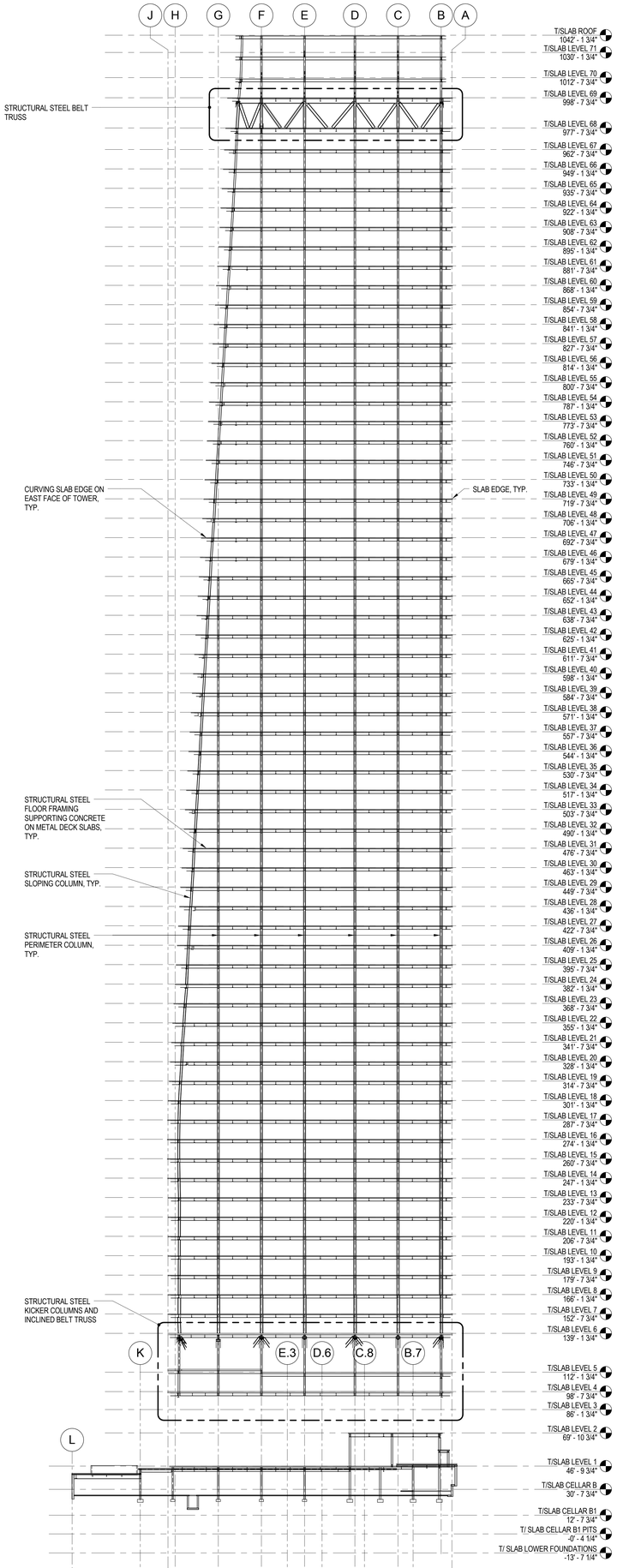
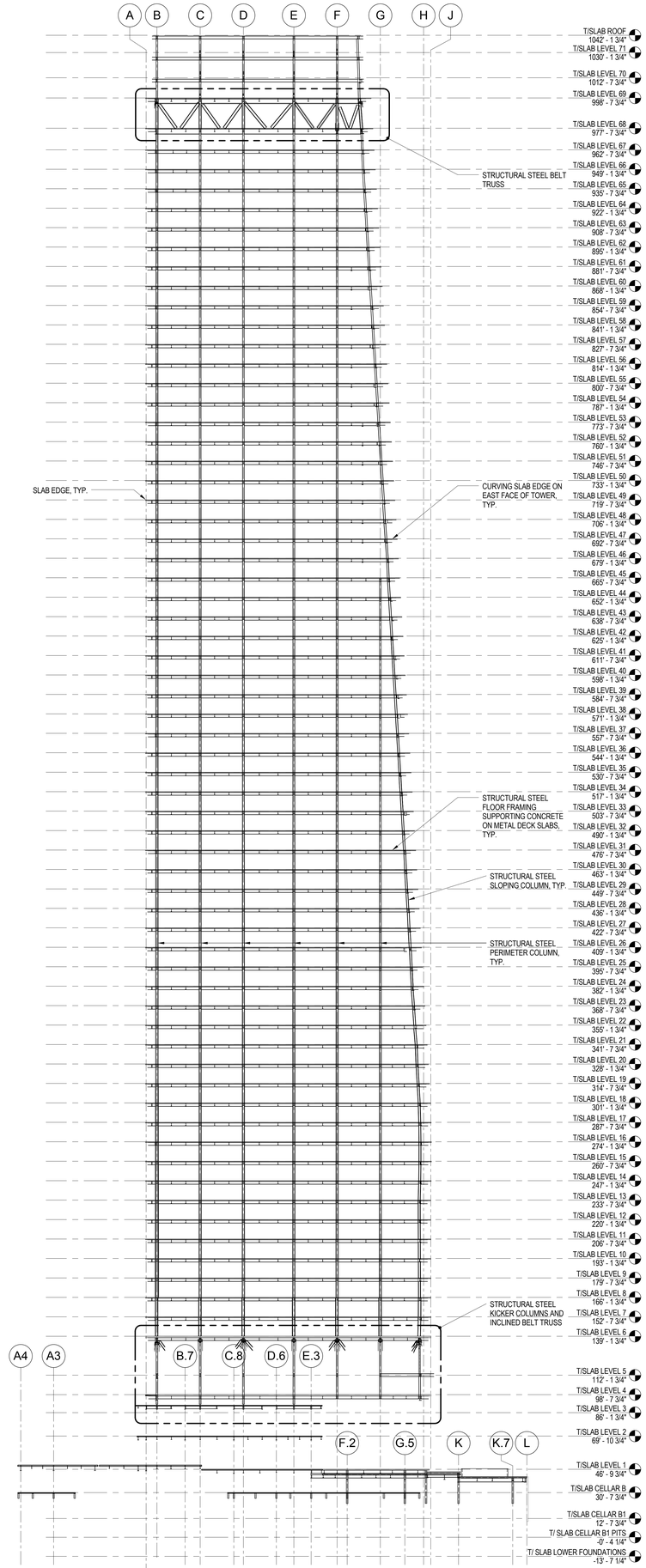
Page No.: 32 of 90



1 TOWER ELEVATION NORTH (LOOKING SOUTH)
1/32" = 1'-0"



2 TOWER ELEVATION SOUTH (LOOKING NORTH)
1/32" = 1'-0"

MANHATTAN WEST: NORTH TOWER

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Client

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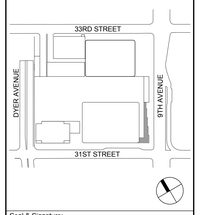
Ontario, Canada N1K 1B8

Key Plan:



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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

TOWER ELEVATIONS

Project No.: 211157	B-SCAN Sheet No.: S-201.00
Date: 20 JUN 2014	
Scale: 1/32" = 1'-0"	Sheet No.: S-201
File No.: S-201	Page No.: 33 of 90

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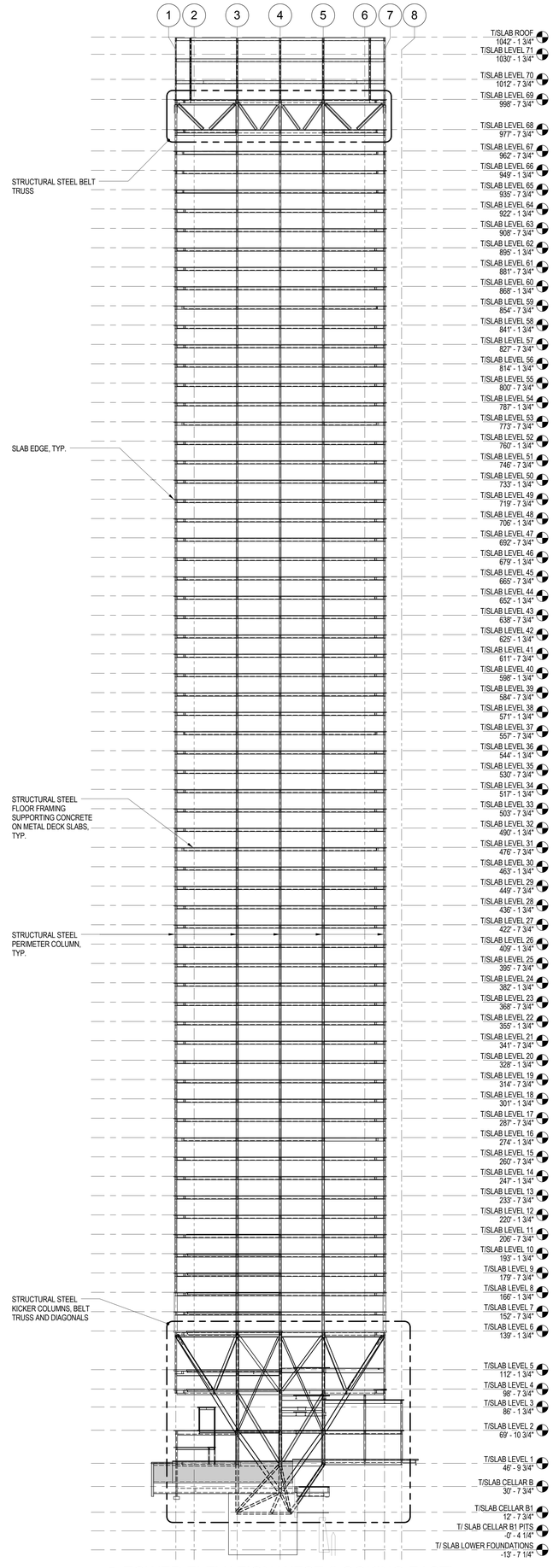
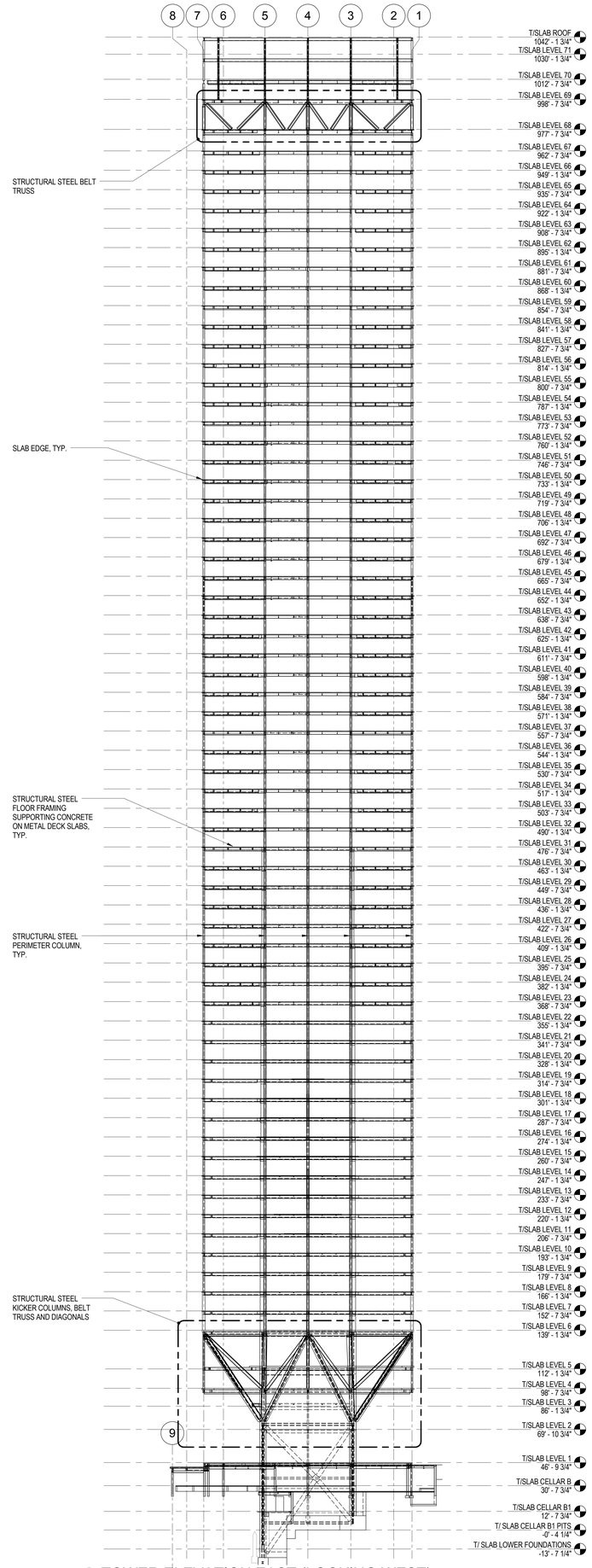


1 TOWER ELEVATION WEST (LOOKING EAST)
1/32" = 1'-0"



2 TOWER ELEVATION EAST (LOOKING WEST)
1/32" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
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MEP Engineering

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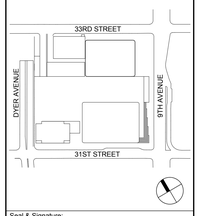
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:

TOWER ELEVATIONS

Project No.: 211157	B-SCAN Sheet No.: S-202.00
Date: 20 JUN 2014	Sheet No.: S-202
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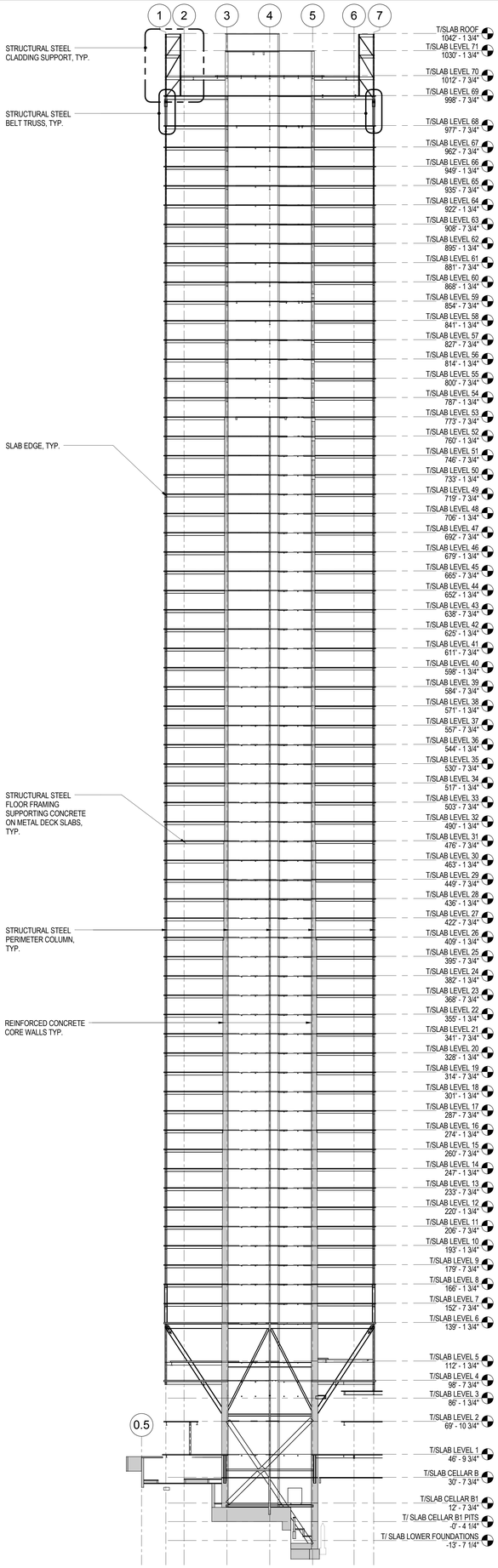
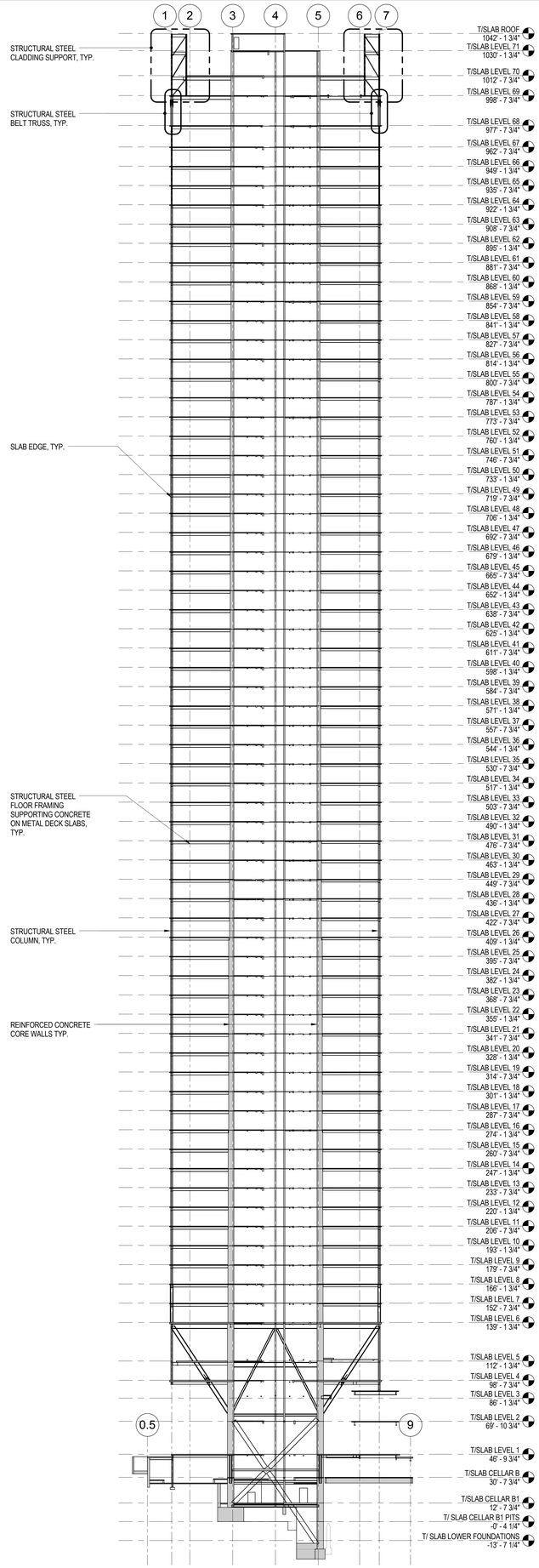
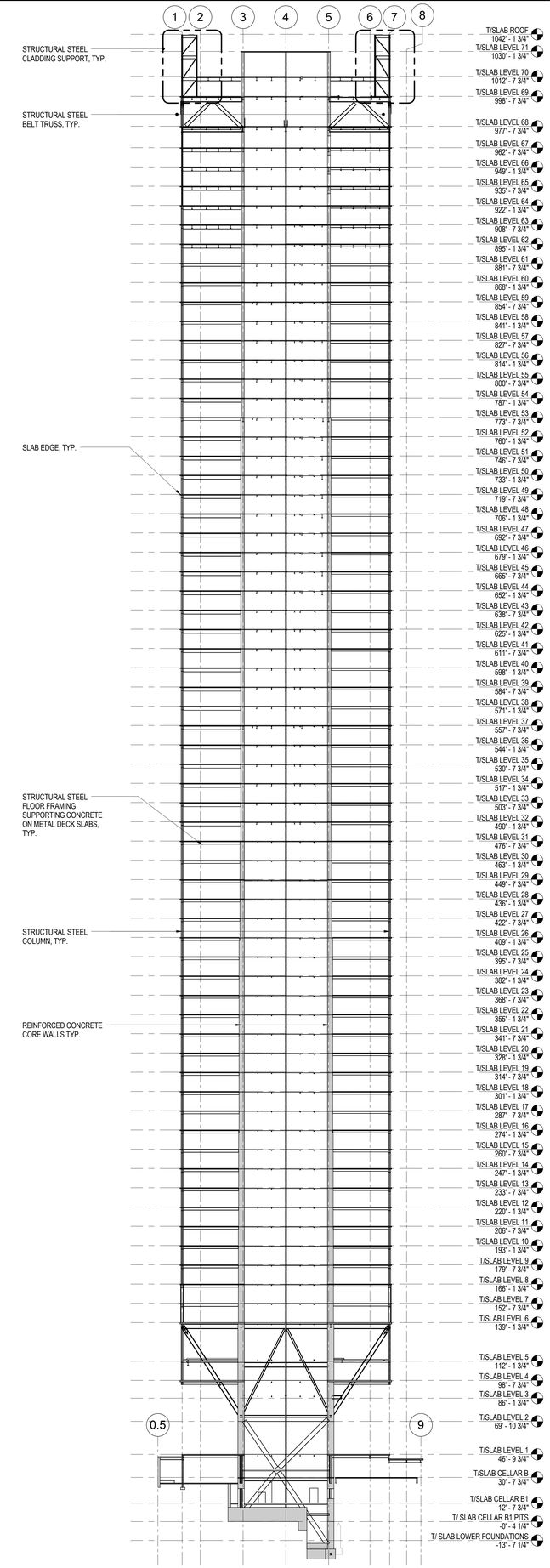


1 TOWER SECTION AT GRID D (LOOKING EAST)
1/32" = 1'-0"



2 TOWER SECTION AT GRID E (LOOKING EAST)
1/32" = 1'-0"



3 TOWER SECTION AT GRID F (LOOKING EAST)
1/32" = 1'-0"

6/19/2014 11:18:23 PM

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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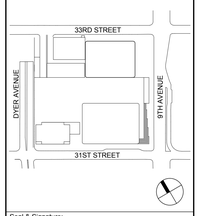
Key Plan:



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Sheet Name:

TOWER SECTIONS

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Date: 20 JUN 2014	Sheet No.: S-203
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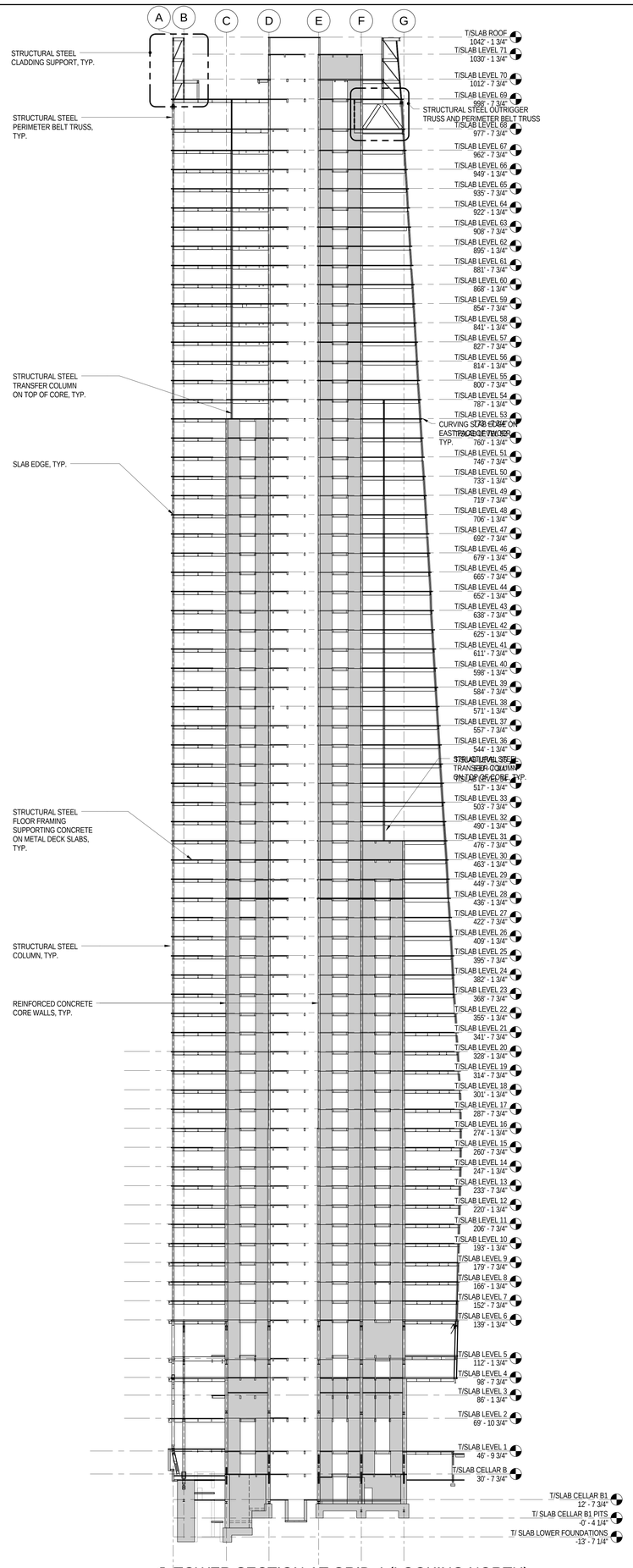
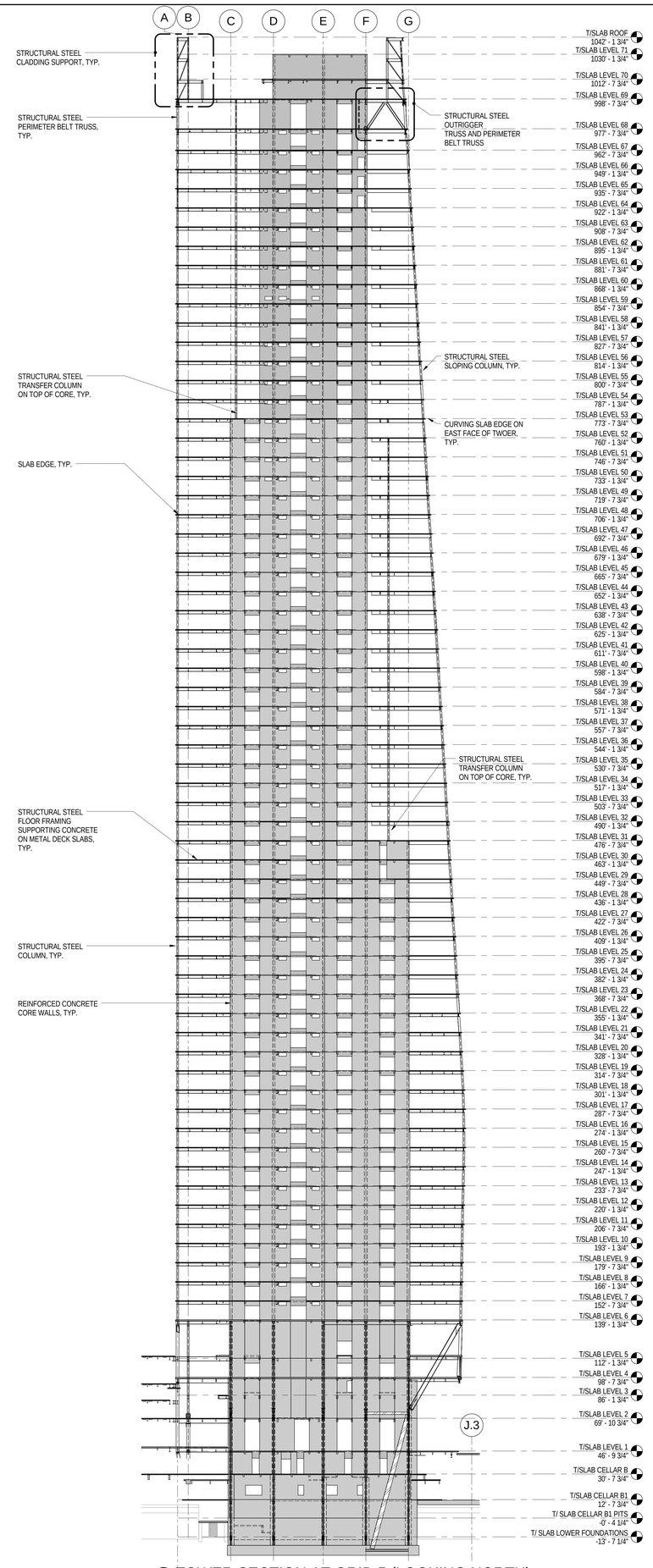


1 TOWER SECTION AT GRID 4 (LOOKING NORTH)
1/32" = 1'-0"



2 TOWER SECTION AT GRID 5 (LOOKING NORTH)
1/32" = 1'-0"

MANHATTAN WEST: NORTH TOWER
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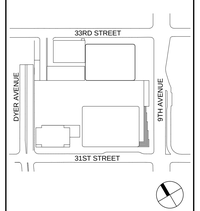
Key Plan:



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Sheet Name:
TOWER SECTIONS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/32" = 1'-0"
File No.: S-204
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Page No.: 36 of 90

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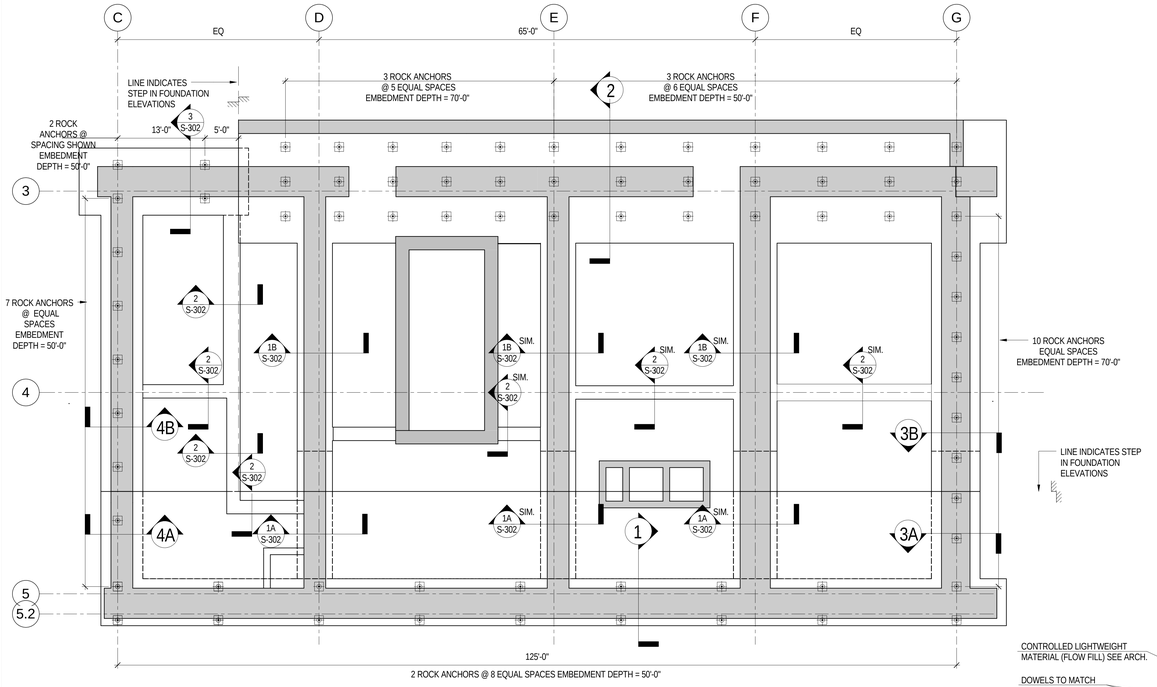
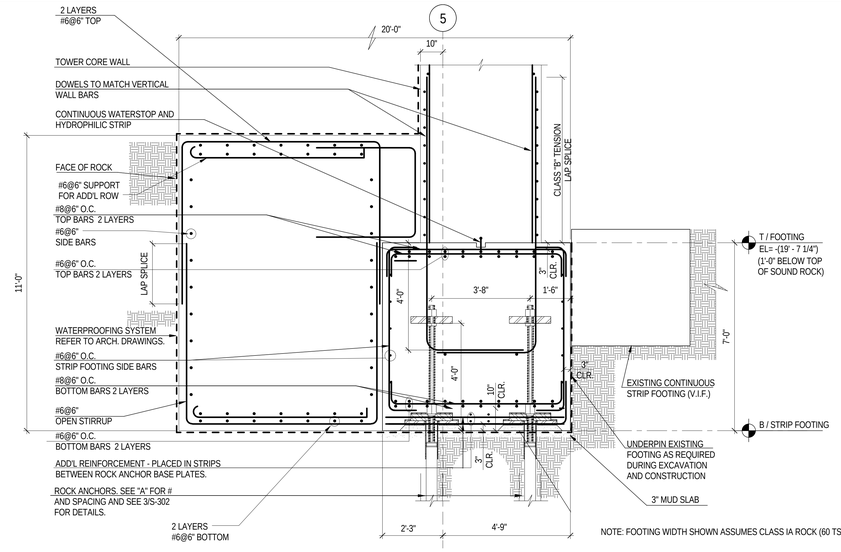


A KEY PLAN - TOWER CONCRETE CORE FOUNDATION

NOT TO SCALE



1 SECTION THRU SOUTH CORE WALL CONTINUOUS FOOTING ON ROCK W/ ROCK ANCHORS

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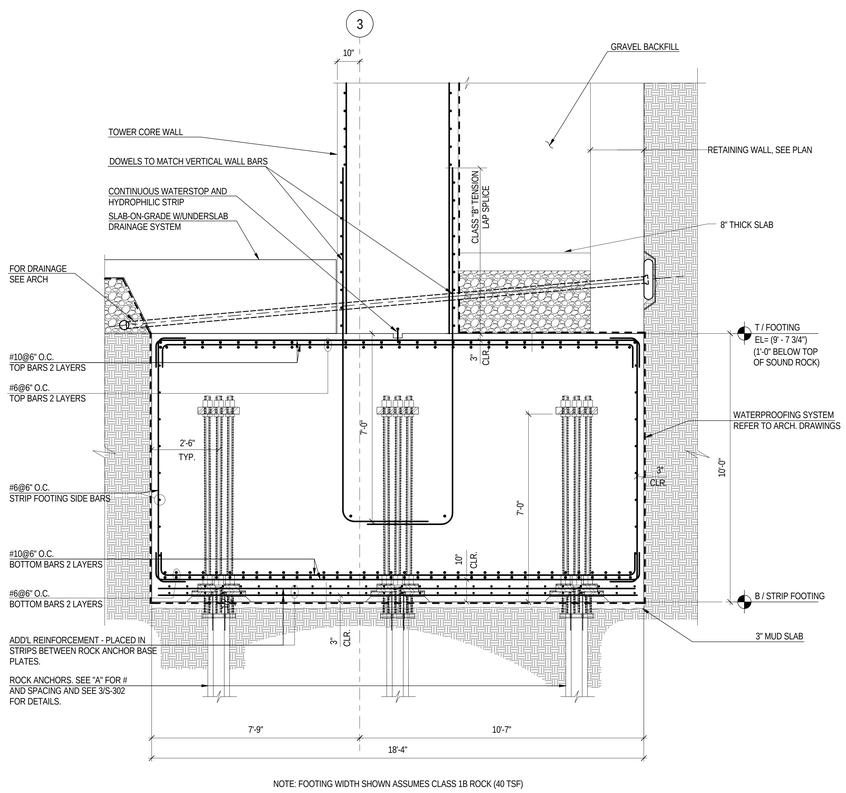

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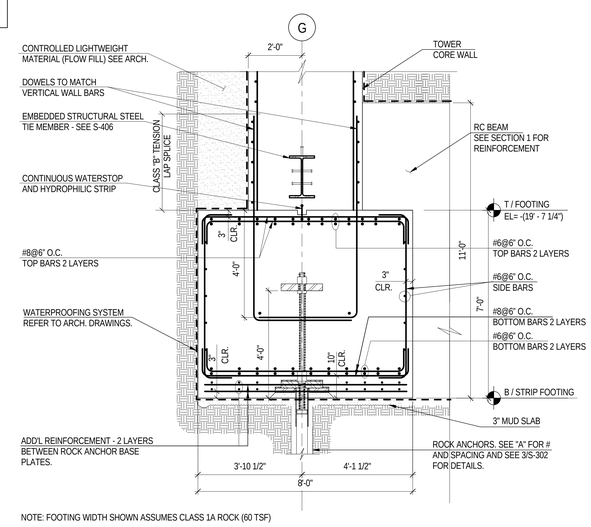

3A LOWER - SECTION THRU EAST EXTERIOR WALL CONT. FOOTING ON ROCK W/ ROCK ANCHORS

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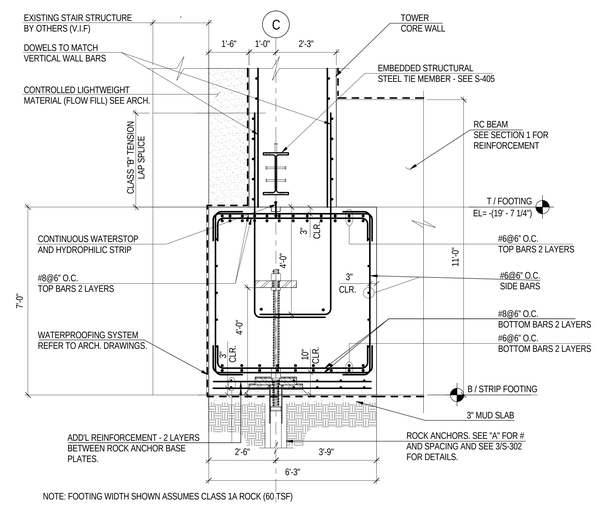

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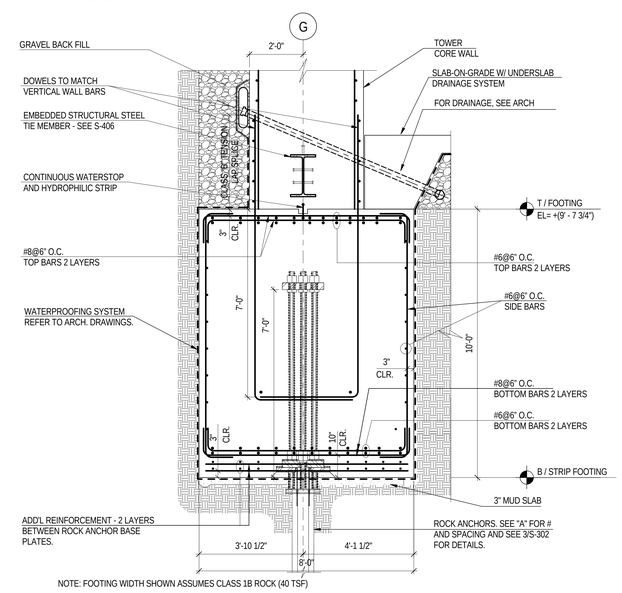

3B UPPER - SECTION THRU EAST EXTERIOR WALL CONT. FOOTING ON ROCK W/ ROCK ANCHORS

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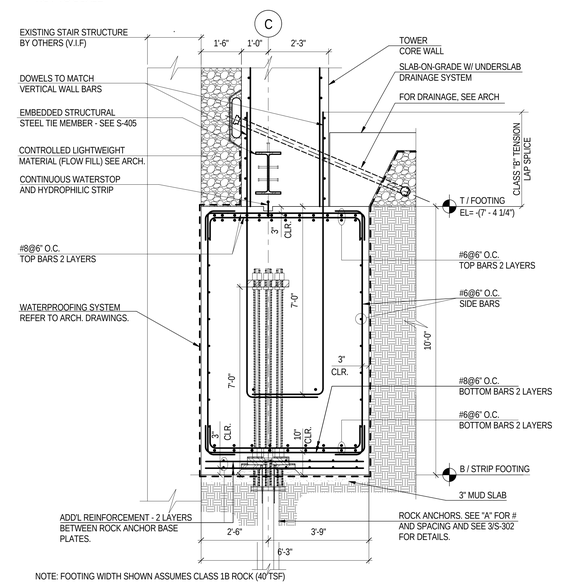

4B UPPER - SECTION THRU WEST EXTERIOR WALL CONT. FOOTING ON ROCK W/ ROCK ANCHORS

NOT TO SCALE

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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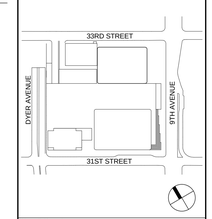
Key Plan:



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Sheet Name:

CORE WALL CONT. FOOTING SECTIONS & DETAILS

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Date: 20 JUN 2014	Sheet No.: S-301
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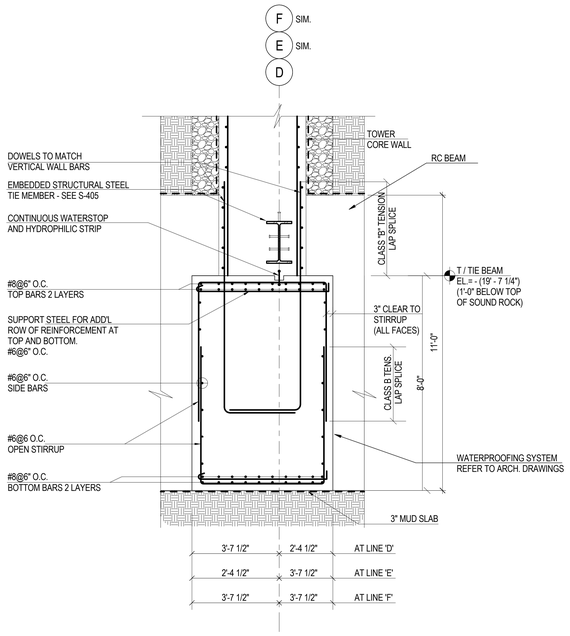
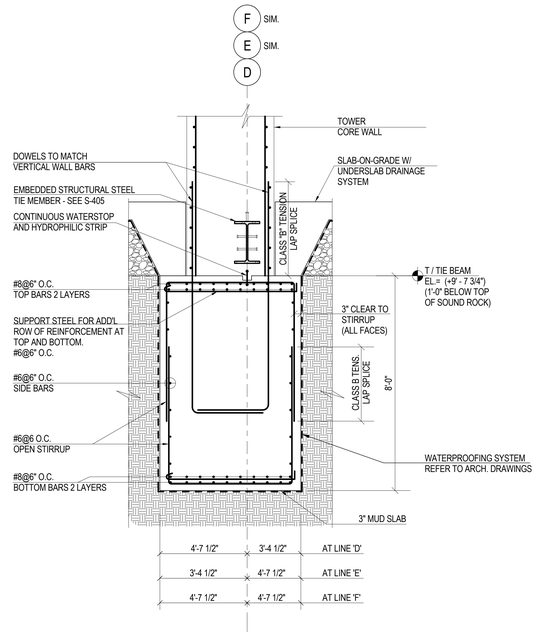


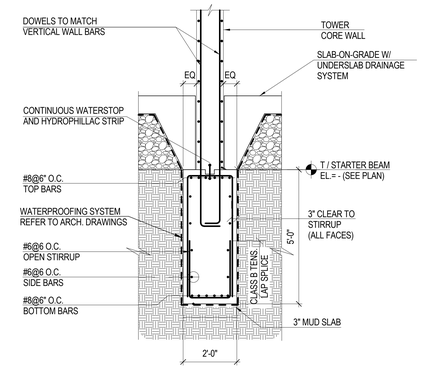
NOTE: FOOTING WIDTH ASSUMES CLASS IS 1A ROCK (60 TSF).

1A SECTION THRU CONTINUOUS FOOTING UNDER N-S WEB WALLS (LOWER)
1/2" = 1'-0"



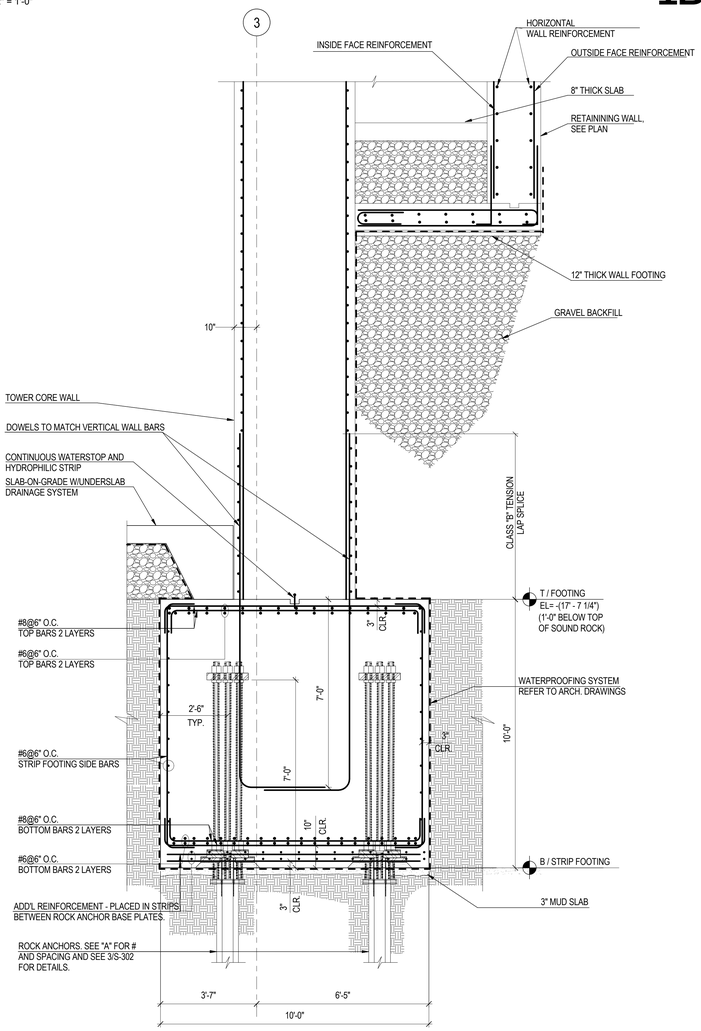
NOTE: FOOTING WIDTH ASSUMES CLASS IS 1B ROCK (40 TSF).

1B SECTION THRU CONTINUOUS FOOTING UNDER N-S WEB WALLS (UPPER)
1/2" = 1'-0"



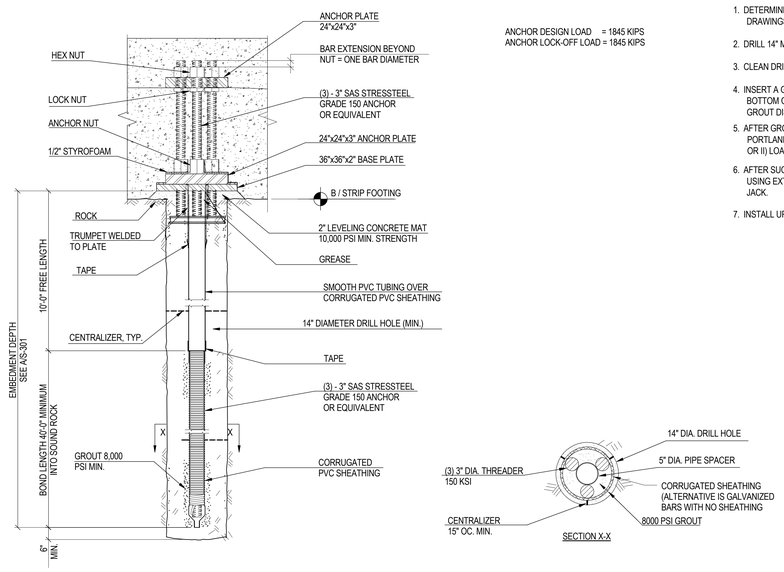
NOTE:
1. FOOTING WIDTH ASSUMES CLASS 1B ROCK (40 TSF). AT HIGHER FOUNDATION ELEVATION.
2. FOOTING WIDTH ASSUMES CLASS 1A ROCK (60 TSF) AT LOWER FOUNDATION ELEVATION.

2 SECTION THRU CONTINUOUS FOOTING UNDER E-W WEB WALLS
NOT TO SCALE



NOTE: FOOTING WIDTH SHOWN ASSUMES CLASS 1A ROCK (60 TSF)

3 SECTION THRU NORTH CORE WALL CONTINUOUS FOOTING ON ROCK W/ ROCK ANCHORS (2)
1/2" = 1'-0"



4 TYPICAL FOUNDATION ROCK ANCHOR DETAIL
1" = 1'-0"

INSTALLATION PROCEDURE

1. DETERMINE ANCHOR LOCATION AS INDICATED ON CONTRACT DRAWINGS.
2. DRILL 14" MINIMUM DIAMETER HOLE TO SPECIFIED DEPTH.
3. CLEAN DRILL HOLE OF ALL DRILL CUTTINGS AND DEBRIS.
4. INSERT A GROUT PIPE AND PREFABRICATED ANCHOR TO THE BOTTOM OF THE ANCHOR HOLE AND PUMP FULL OF CEMENT GROUT DISPLACING ANY STANDING WATER.
5. AFTER GROUT REACHES SPECIFIED STRENGTH, (3 DAYS FOR PORTLAND CEMENT TYPE III OR 7 DAYS FOR PORTLAND TYPE I OR II) LOAD ANCHORS USING CALIBRATED JACKS.
6. AFTER SUCCESFULL TESTING, LOCK OFF ANCHOR AT 680 KIP, USING EXTERNAL WRENCH AND RELEASE PRESSURE FROM JACK.
7. INSTALL UPPER PLATE & NUTS AND POUR FOOTING CONCRETE.

GENERAL NOTES

1. ROCK ANCHORS SHALL BE IN CONFORMANCE WITH PTI (POST TENSIONING INSTITUTE) LATEST RECOMMENDATIONS ON ROCK & SOIL ANCHORS.
2. ALL ANCHORS SHALL BE 3" DIAMETER SAS STRESSTEEL THREADED BARS OR EQUIVALENT, GRADE 150 KSI, MEETING OR EXCEEDING PROPERTIES OF ASTM A-722.
3. THE THREADED BAR SHALL BE PROVIDED WITH SHOP-FABRICATED DOUBLE CORROSION PROTECTION. THE ANCHOR BARS SHALL BE ENCAPSULATED WITH HIGH STRENGTH PVC CORRUGATED SHEATHING.(COMPRESSIVE STRENGTH=7000 psi) AND PRE-GROUTED.
4. PLATES SHALL CONFORM TO ASTM A-36.
5. ANCHOR NUTS & COUPLERS SHALL BE CAPABLE OF DEVELOPING 100% OF THE ULTIMATE STRENGTH OF THREADBAR.
6. CARE MUST BE TAKEN NOT TO DAMAGE THE THREADED BAR TENDONS. KEEP THREADBARS FREE OF DIRT OR OTHER DELETERIOS SUBSTANCES.
7. DO NOT WELD IN THE VICINITY OF THE HIGH STRENGTH BARS.
8. DO NOT USE ANCHORS AS A GROUND FOR WELDING.
9 THE FIRST THREE ANCHORS INSTALLED, AND 10% OF THE REMAINING ANCHORS SHALL BE PERFORMANCE TESTED, ALL OTHER ANCHORS SHALL BE PROOF TESTED USING A CALIBRATED CENTER HOLE JACK.
10. PERFORMANCE TEST SHALL BE CONDUCTED BY CYCLICALLY AND INCREMENTALLY LOADING AND UNLOADING THE ANCHOR AS NOTED BELOW:

AL, .25P P=615 KIPS
AL, .25P, .50P
AL, .25P, .50P, .75P
AL, .25P, .50P, .75P, 1.00P
AL, .25P, .50P, .75P, 1.00P, 1.20P
AL, .25P, .50P, .75P, 1.00P, 1.20P, 1.33P

HOLD 1.33P FOR CREEP TEST. RECORD MOVEMENTS USING A DIAL INDICATOR CAPABLE OF READING INCREMENTS OF .001". RECORD READINGS AT 0,1,2,3,4,5,6 AND 10 MINUTES.
THE ANCHOR IS ACCEPTABLE. IF THE ANCHOR MOVEMENT BETWEEN THE 1 MIN. AND 10 MIN. DOES NOT EXCEED 0.040". RELEASE TO TRANSFER LOAD AND LOCK OFF ANCHOR NUT.

11. PROOF TESTS SHALL BE CONDUCTED BY CYCLICALLY AND INCREMENTALLY LOADING THE ANCHOR AS NOTED BELOW:

AL, .25P, .50P, .75P, 1.00P, 1.20P, 1.33P

HOLD 1.33P FOR CREEP TEST AS ABOVE.

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Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
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50 Washington Street, Norwalk, CT 06854

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Vibration Consultant
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Code Consultants Professional Engineers PC
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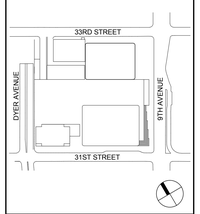
Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

PRELIMINARY
NOT FOR CONSTRUCTION

No.	Date	Description
6	20 JUN 2014	ISSUED FOR FOUNDATION BID
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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
CORE WALL CONT. FOOTINGS SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-302
B-SCAN Sheet No.: S-302.00
Sheet No.: S-302
Page No.: 38 of 90

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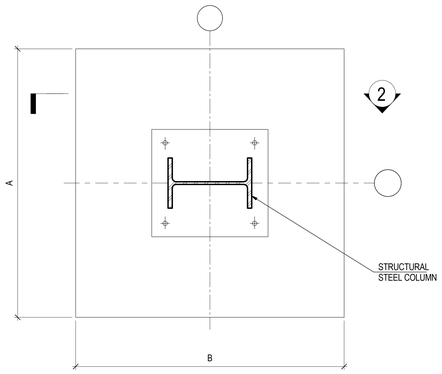
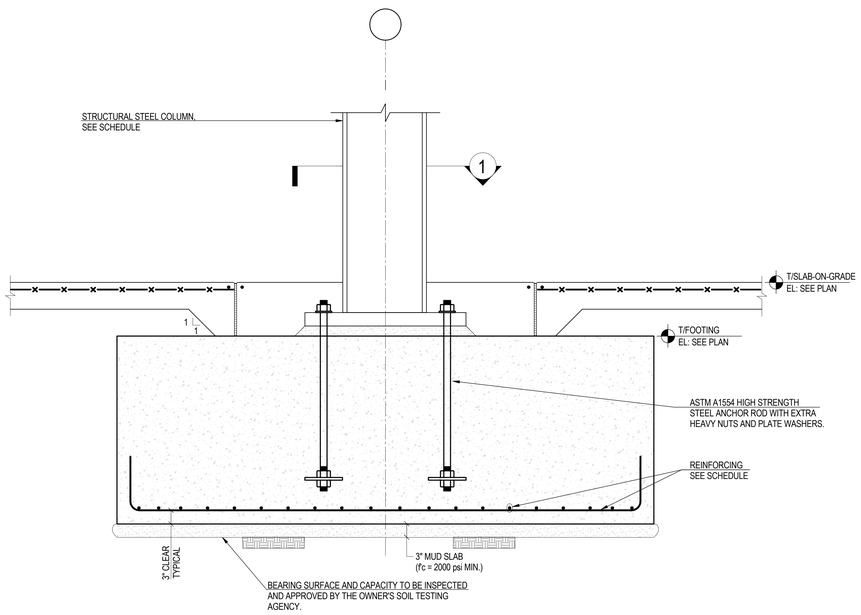


NOTES:
1. "A" REFERS TO THE FOOTING DIMENSION IN THE NORTH-SOUTH DIRECTION U.N.O. SEE FOOTING SCHEDULE
2. "B" REFERS TO THE FOOTING DIMENSION IN THE EAST-WEST DIRECTION U.N.O. SEE FOOTING SCHEDULE

1 TYPICAL SPREAD FOOTING PLAN
1" = 1'-0"



NOTES:
1. REFER TO SLAB-ON-GRADE DRAWINGS FOR ADDITIONAL INFORMATION.

2 TYPICAL SPREAD FOOTING SECTION
1" = 1'-0"

REINFORCED CONCRETE SPREAD FOOTING SCHEDULE

f'c = 8000 psi
fy = 60 ksi

MARK	REQUIRED MINIMUM BEARING CAPACITY, ksf	SIZE			REINFORCING BOTTOM		REMARKS
		A (ft.)	B (ft.)	DEPTH D (in.)	LONG BARS	SHORT BARS	
F1	40	3'-0"	3'-0"	1'-6"	4 - #6@10"	4 - #6@10"	
F2	40	5'-0"	5'-0"	2'-6"	9 - #6@6"	9 - #6@6"	

3 REINFORCED CONCRETE SPREAD FOOTING SCHEDULE
1" = 1'-0"

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
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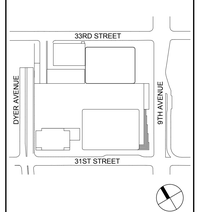
STATE OF NEW YORK
CHARLES MICHAEL BESSAI
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
SPREAD FOOTING SCHEDULE, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1" = 1'-0"
File No.: S-307
B-SCAN Sheet No.: S-307.00
Sheet No.: S-307
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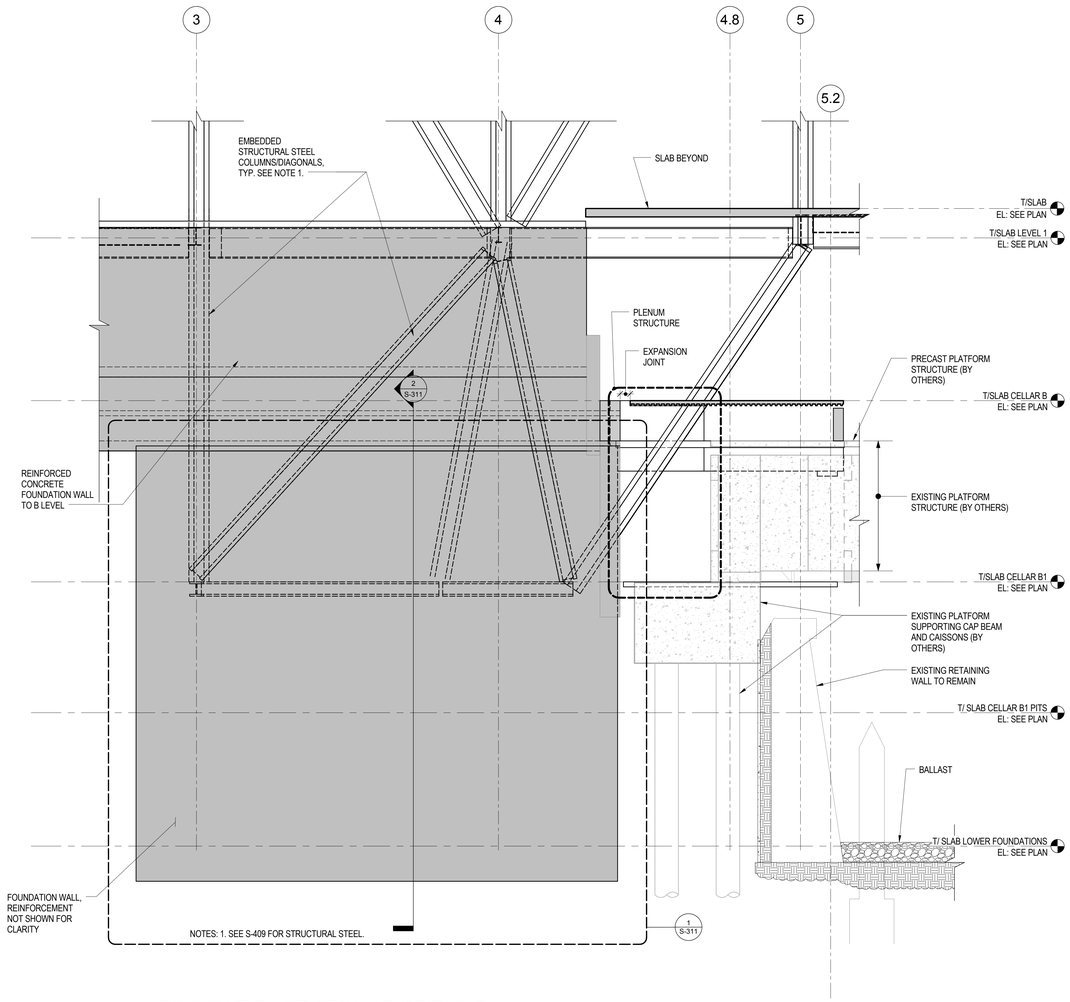
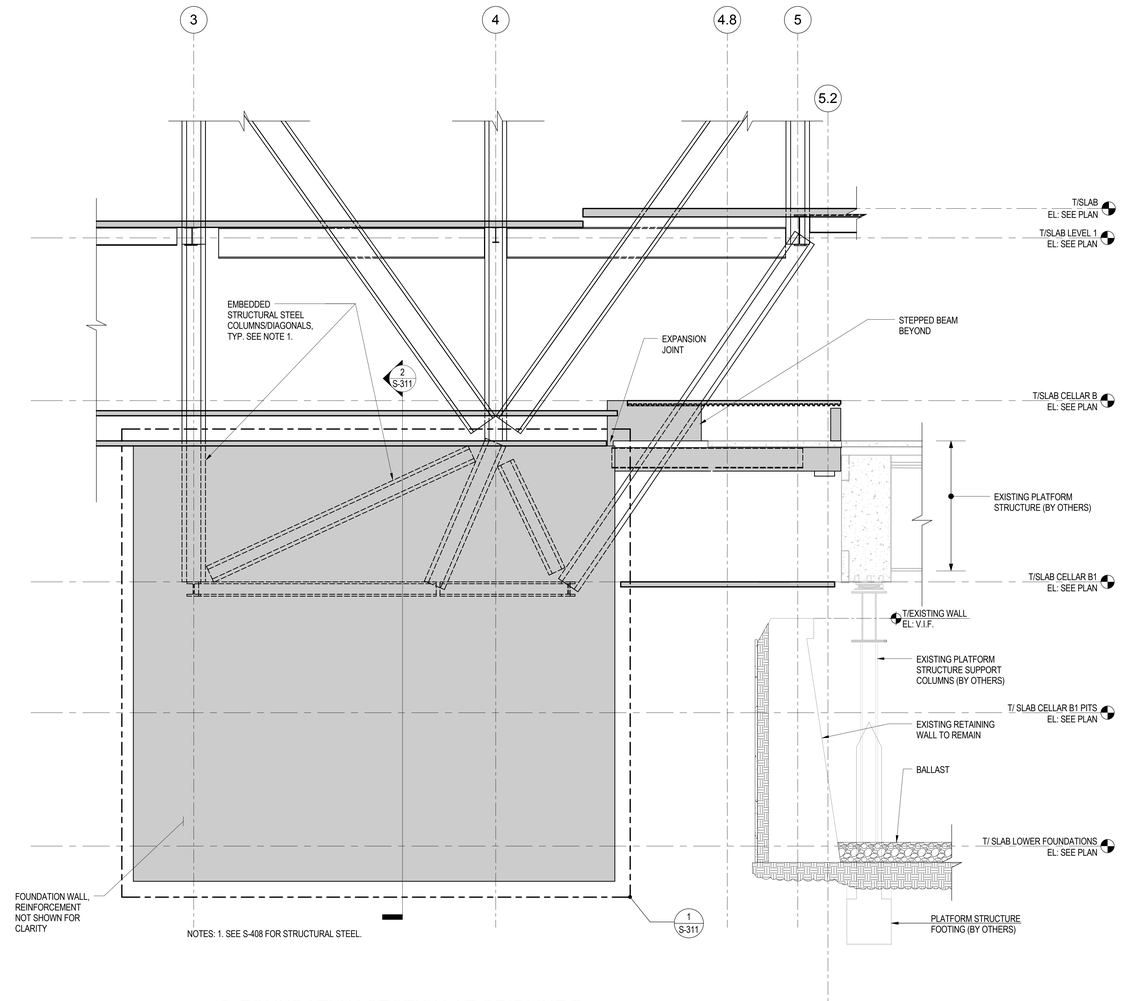


NOTES: 1. SEE S-409 FOR STRUCTURAL STEEL.

1 FOUNDATION SECTION AT GRIDLINE A
3/16" = 1'-0"



NOTES: 1. SEE S-408 FOR STRUCTURAL STEEL.

2 FOUNDATION SECTION AT GRIDLINE B
3/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER
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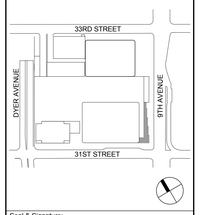
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:
WEST PERIMETER COLUMN FOUNDATION SECTIONS & DETAILS

Project No.: 211157	B-SCAN Sheet No.: S-310.00
Date: 20 JUN 2014	
Scale: 3/16" = 1'-0"	Sheet No.: S-310
File No.: S-310	Page No.: 40 of 90

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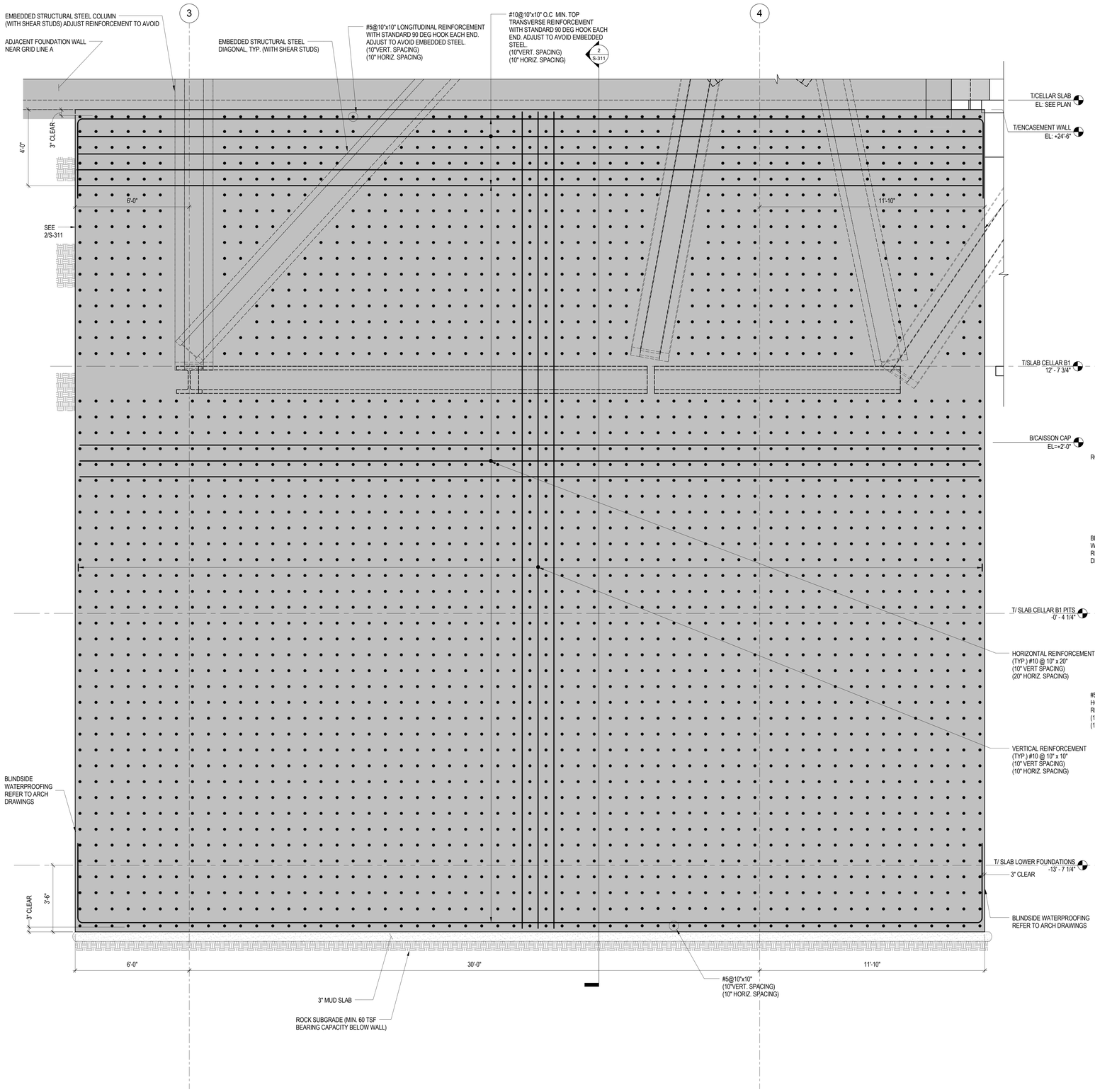
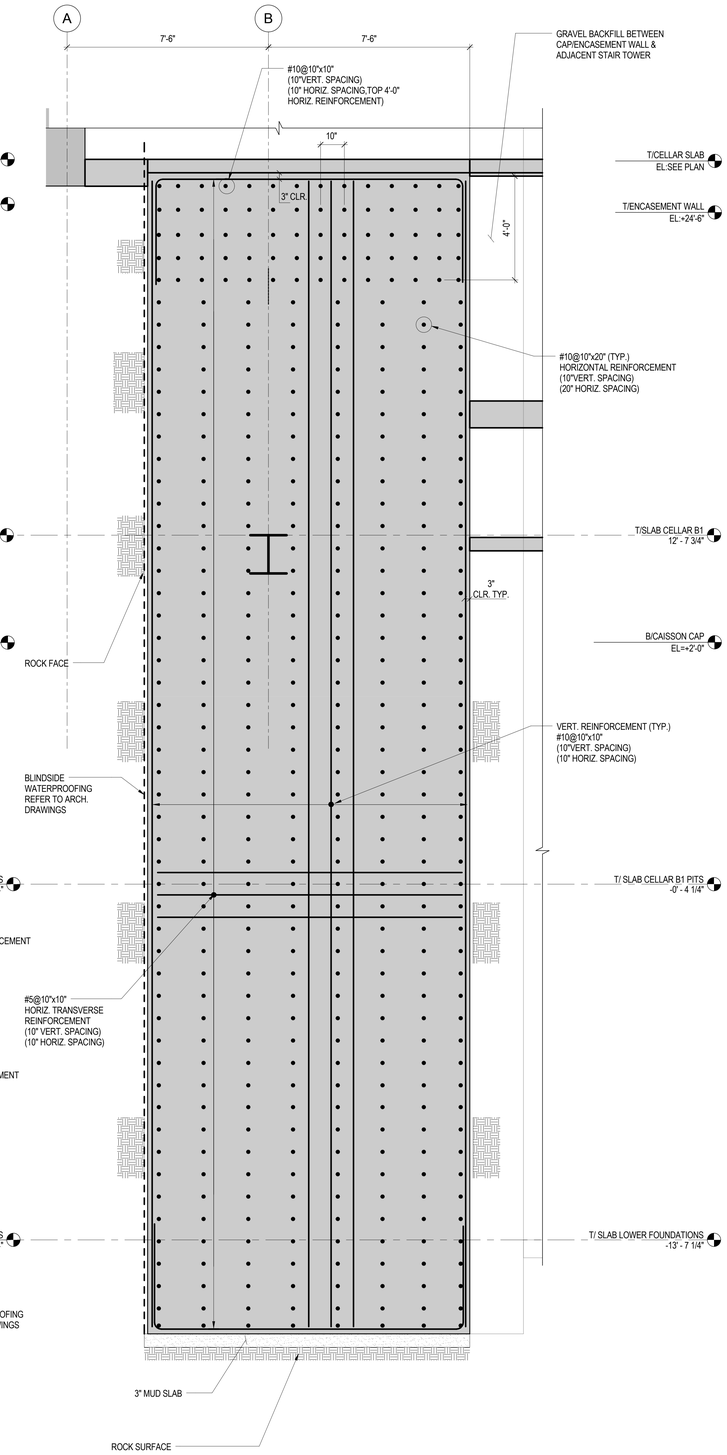


1 FOUNDATION WALL FOR COLUMNS / DIAGONALS ALONG LINES 'A' AND 'B'
1/2" = 1'-0"



2 TRANSVERSE SECTION AT FOUNDATION WALL FOR COLUMNS/DIAGONALS ALONG LINES 'A' AND 'B'
NOT TO SCALE

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield Place
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Skidmore, Owings & Merrill LLP
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STATE OF NEW YORK
CHARLES MICHAEL SELLAN
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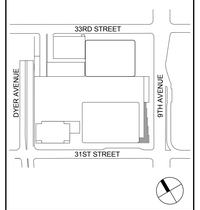
Key Plan:



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Sheet Name:
WEST PERIMETER COLUMN FOUNDATION SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/2" = 1'-0"
File No.: S-311
B-SCAN Sheet No.: S-311.00
Sheet No.: S-311
Page No.: 41 of 90

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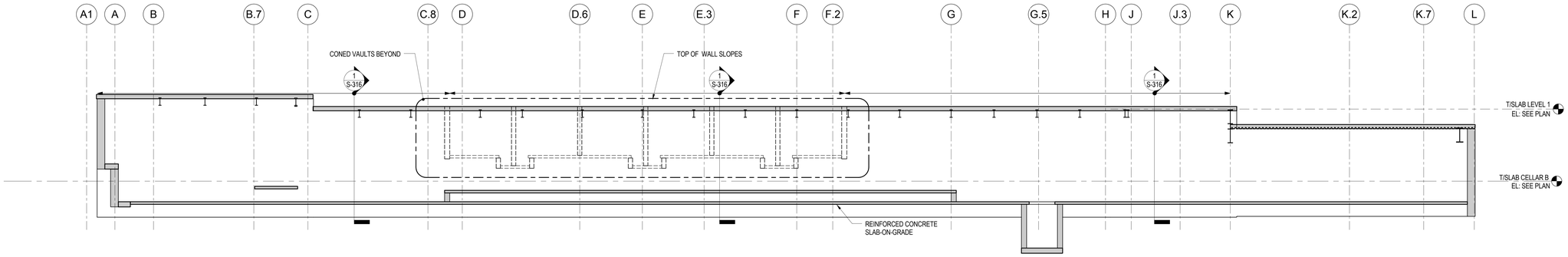
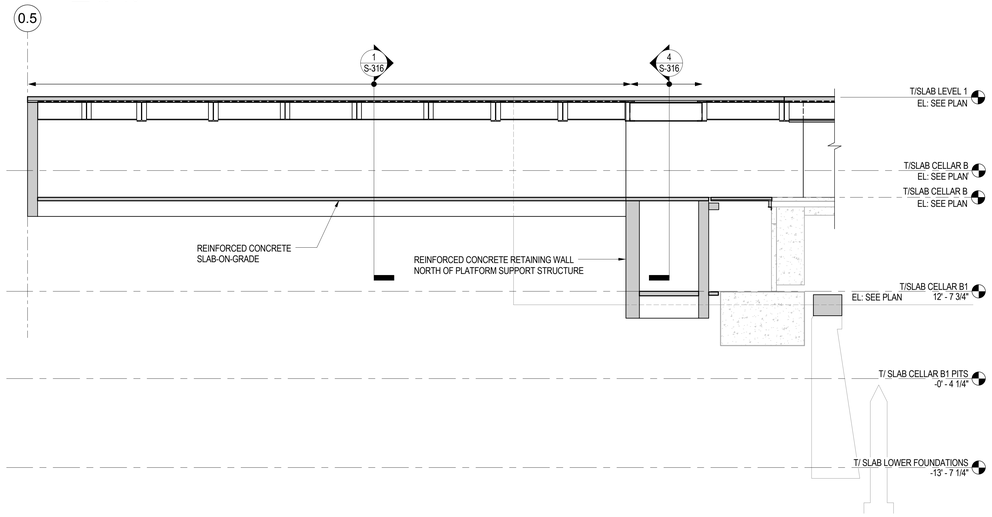
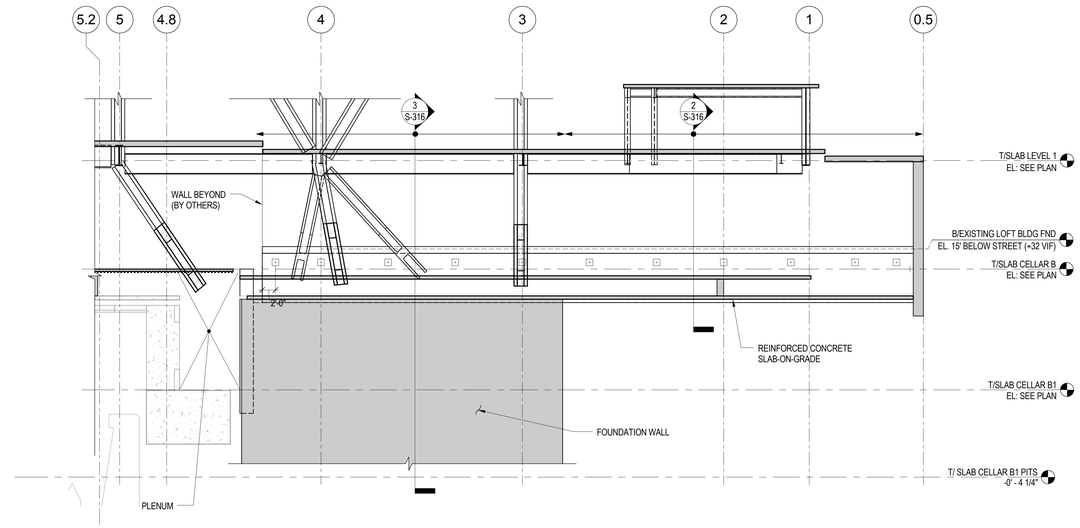


1 ELEVATION OF FOUNDATION WALL ALONG LINE 0.5 - LOOKING NORTH

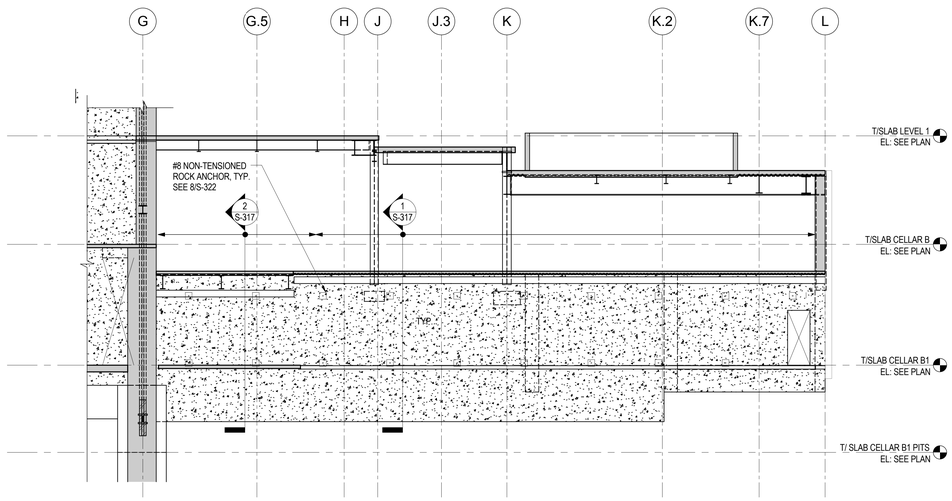
1/8" = 1'-0"





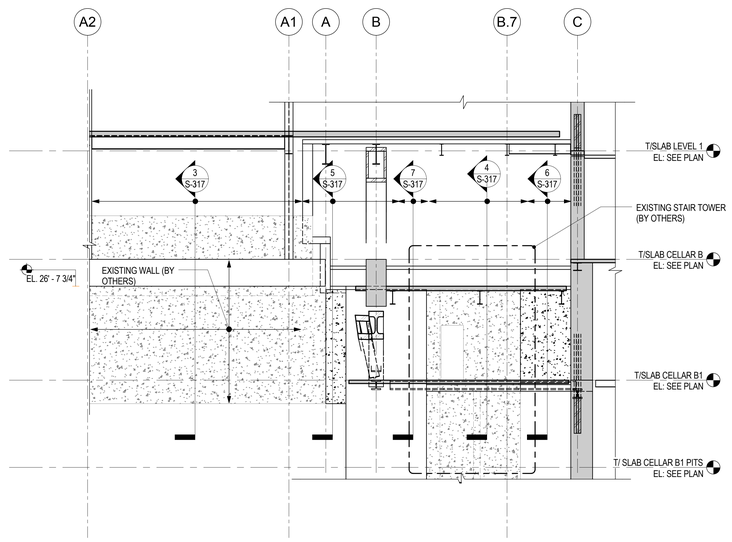
2 ELEVATION OF FOUNDATION WALL ALONG LINE L - LOOKING EAST

1/8" = 1'-0"



3 ELEVATION OF FOUNDATION WALL ALONG LINE A - LOOKING WEST

1/8" = 1'-0"



4 ELEVATION OF RETAINING WALL EAST OF TOWER CORE BETWEEN LINES 4 & 5 - LOOKING NORTH

1/8" = 1'-0"

5 ELEVATION OF RETAINING WALL WEST OF TOWER CORE BETWEEN LINES 4 & 5 - LOOKING NORTH

1/8" = 1'-0"

NOTE: REFER TO SUPPORT OF EXCAVATION (S.O.E) DRAWINGS FOR ROCK BOLTS FOR BOTH TEMPORARY AND PERMANENT CONDITIONS AT ALL FOUNDATION/RETAINING WALLS

MANHATTAN WEST: NORTH TOWER
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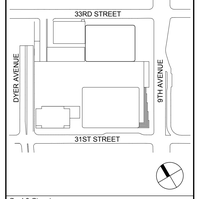
Key Plan:



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Sheet Name:
FOUNDATION WALL ELEVATIONS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-315
B-SCAN Sheet No.: S-315.00
Sheet No.: S-315
Page No.: 42 of 90

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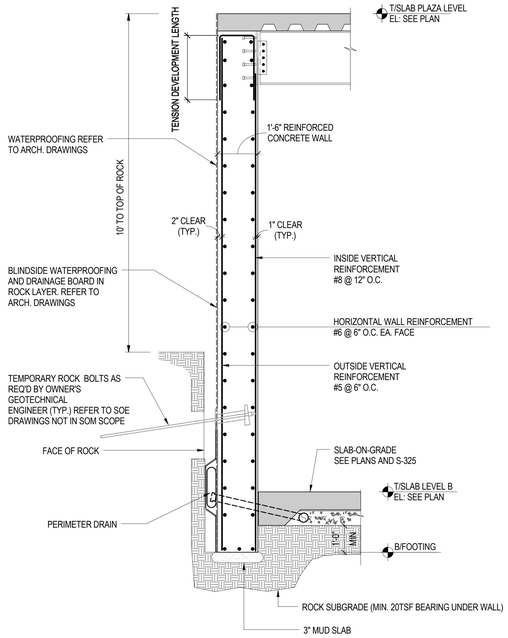
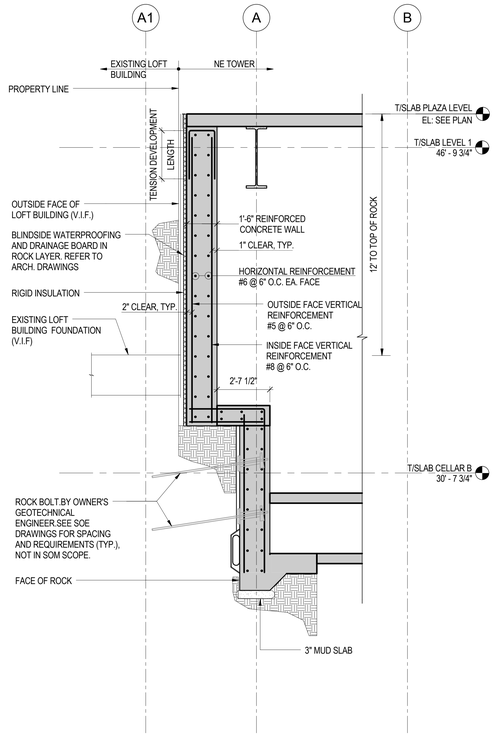


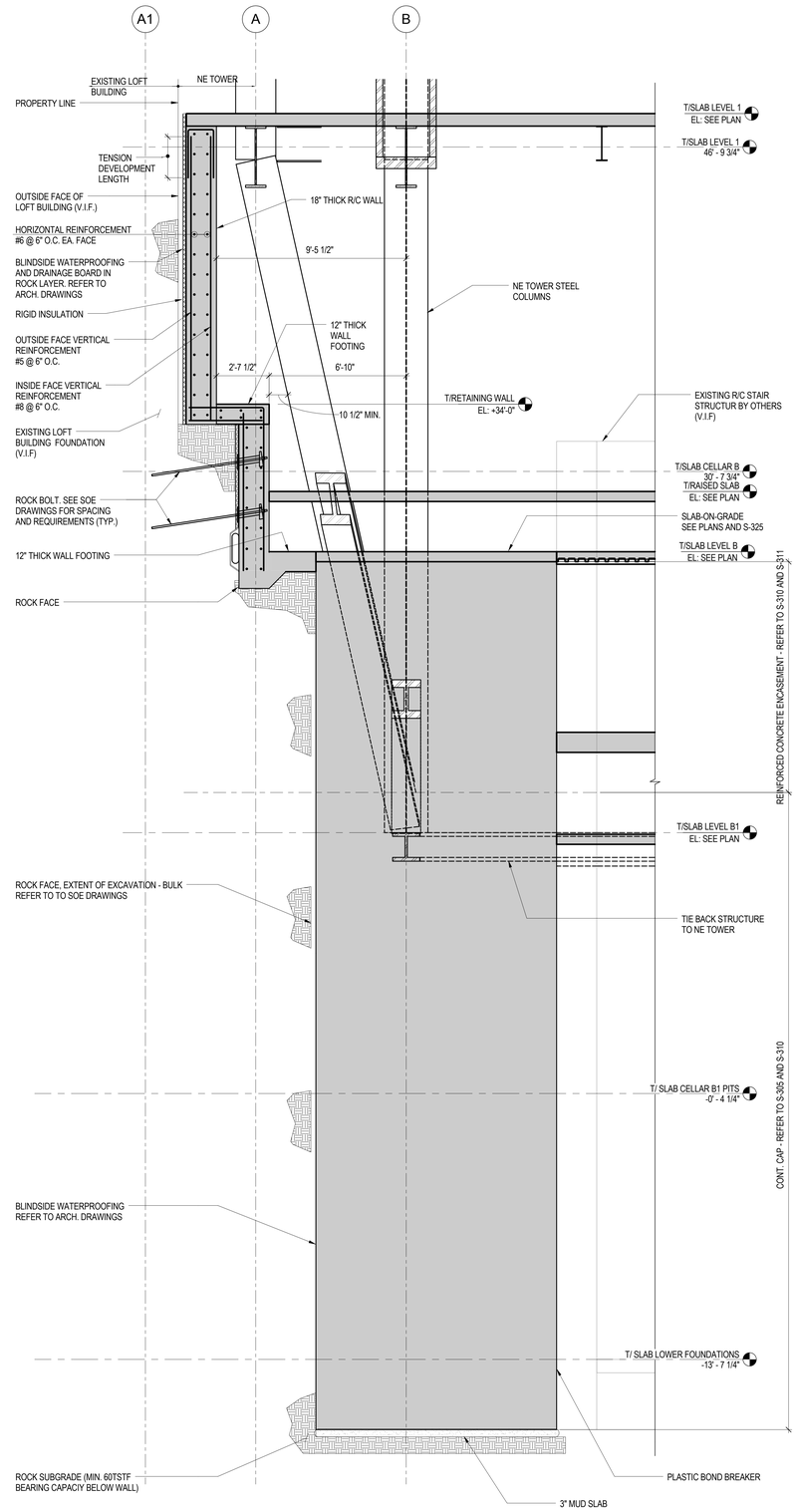
1 FOUNDATION WALL SECTION TYP ALONG NORTH & EAST WALL

NOT TO SCALE



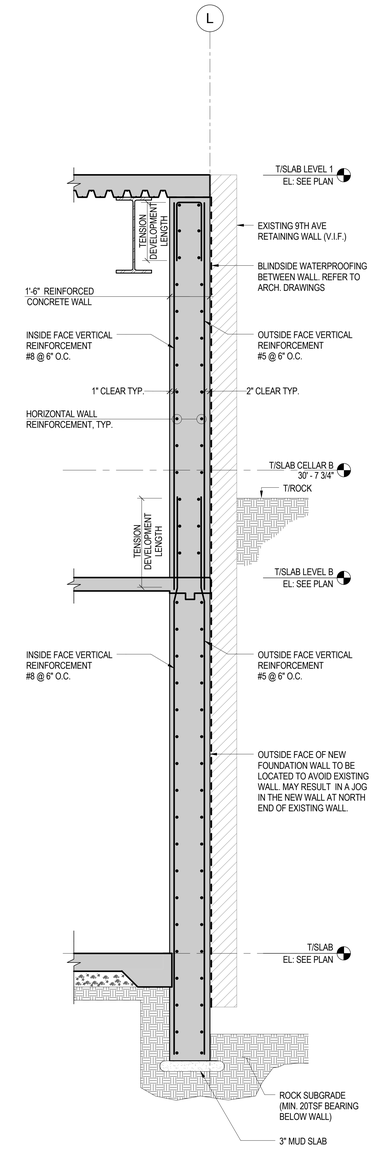
2 FOUNDATION WALL SECTION AT LINE A LOOKING NORTH

NOT TO SCALE



3 FOUNDATION WALL SECTION NEAR LINE A - LOOKING NORTH

3/8" = 1'-0"



4 FOUNDATION WALLSECTION ALONG LINE 'L' AT EXIT STAIR

NOT TO SCALE

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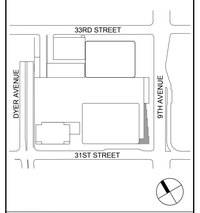
Key Plan:



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Sheet Name:
FOUNDATION WALL SECTIONS & DETAILS

Project No.: 211157	B-SCAN Sheet No.: S-316.00
Date: 20 JUN 2014	Sheet No.: S-316
Scale: As indicated	
File No.: S-316	Page No.: 43 of 90

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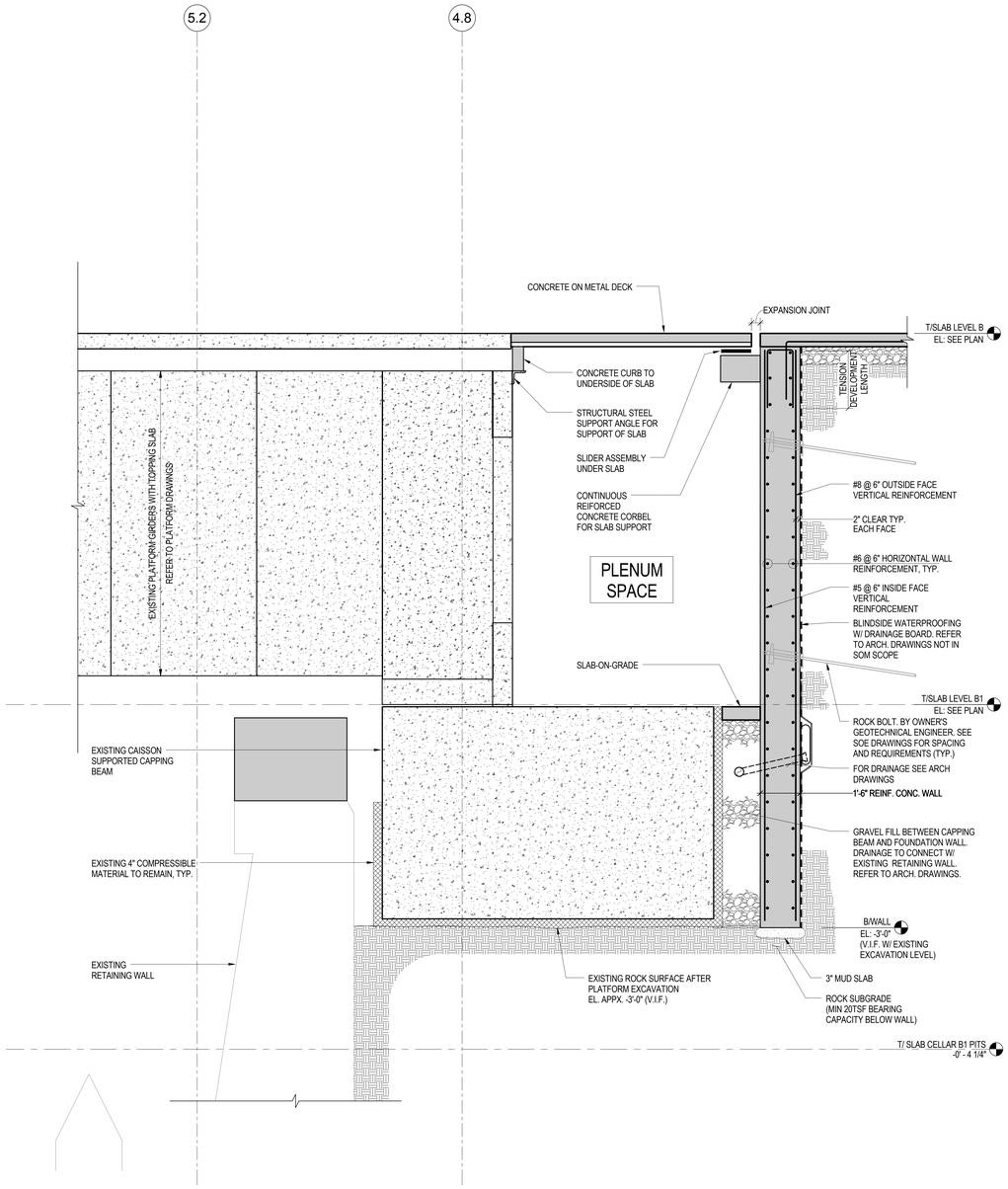
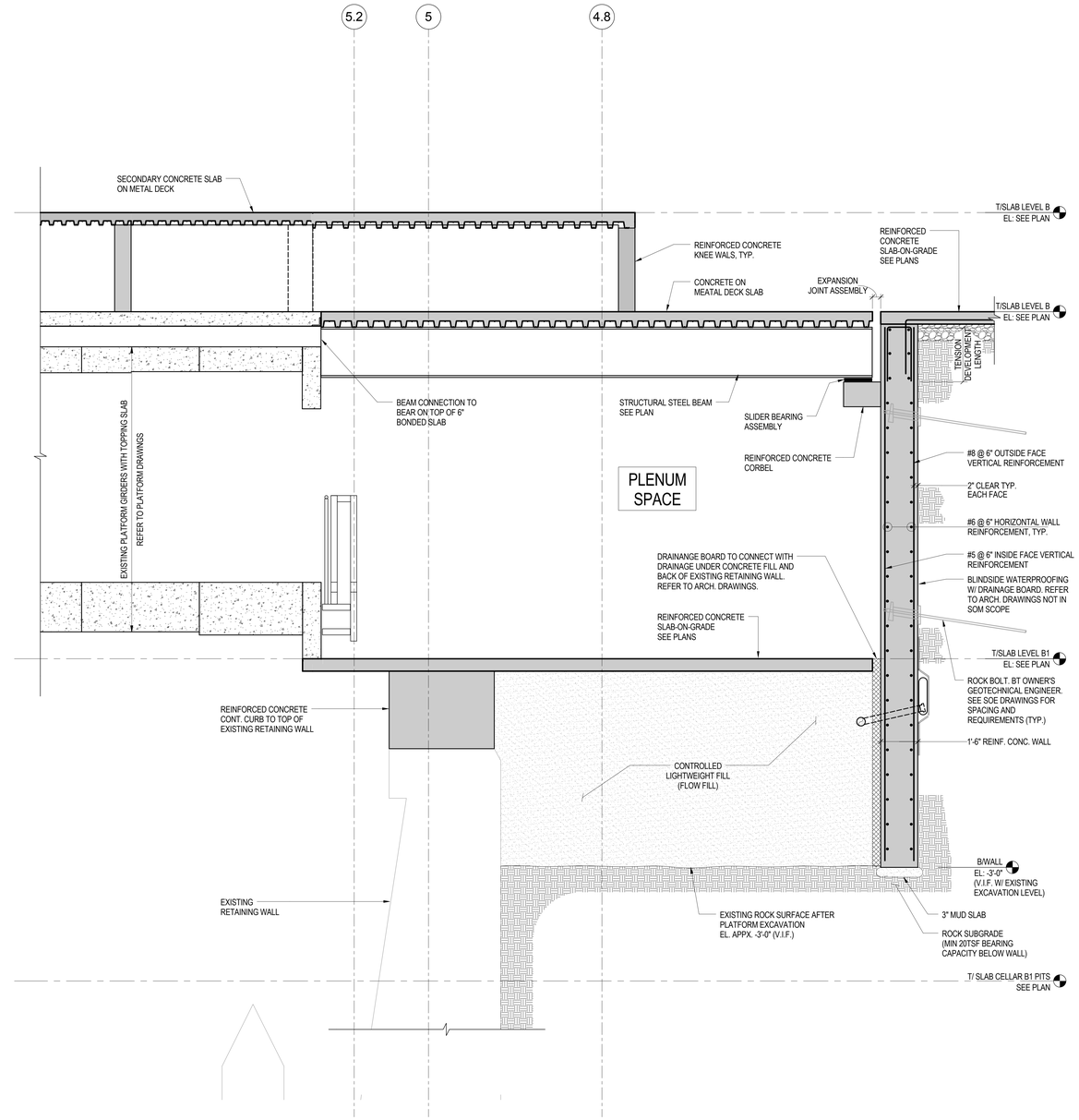


1 SECTION AT RETAINING WALL NORTH OF PLATFORM
NOT TO SCALE



2 SECTION AT RETAINING WALL NORTH OF PLATFORM ADJACENT TO TOWER CORE
NOT TO SCALE

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
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Wind Tunnel Consultant
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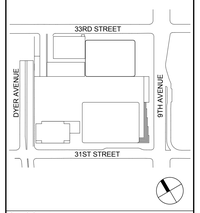
STATE OF NEW YORK
CHARLES MICHAEL BESSAI
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

PRELIMINARY
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Sheet Name:
FOUNDATION WALL SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/2" = 1'-0"
File No.: S-317
B-SCAN Sheet No.: S-317.00
Sheet No.: S-317
Page No.: 44 of 90

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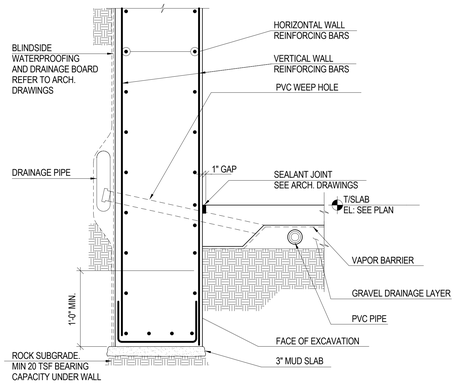
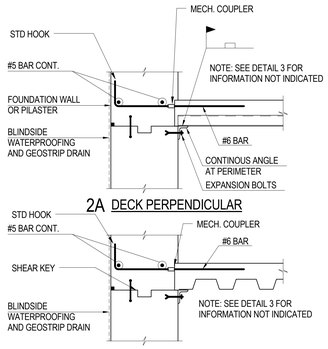


NOTE: REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

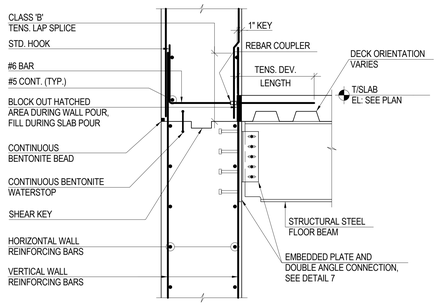
1 TYPICAL FOUNDATION WALL DETAIL AT BASE
SCALE: 3/4" = 1'-0"



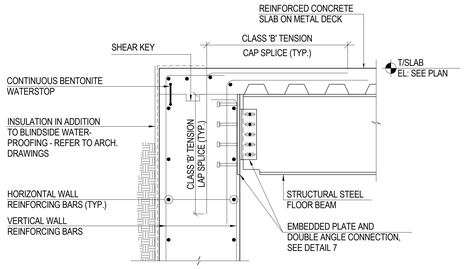
2A DECK PERPENDICULAR

2B DECK PARALLEL

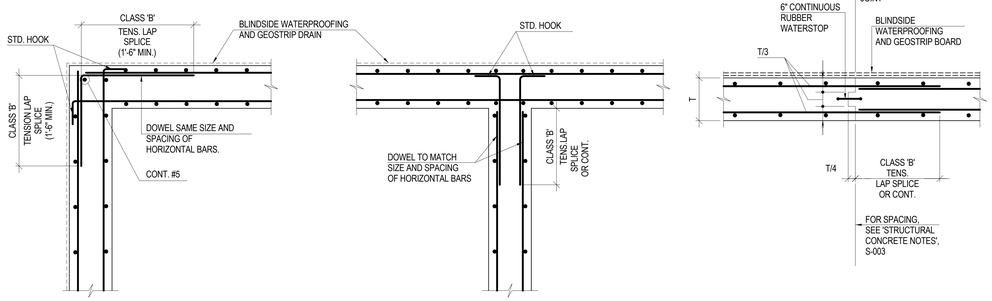
2 TYPICAL METAL DECK TO FOUNDATION WALL DETAILS
SCALE: 3/4" = 1'-0"



3 TYPICAL BEAM TO FOUNDATION WALL DETAIL
SCALE: 3/4" = 1'-0"



4 TYPICAL FOUNDATION WALL DETAIL AT TOP
SCALE: 3/4" = 1'-0"

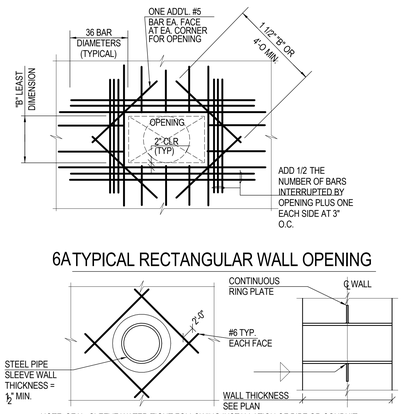


5A CORNER

5B INTERSECTION

5C CONSTRUCTION JOINT

5 TYPICAL FOUNDATION WALL DETAILS
SCALE: 3/4" = 1'-0"

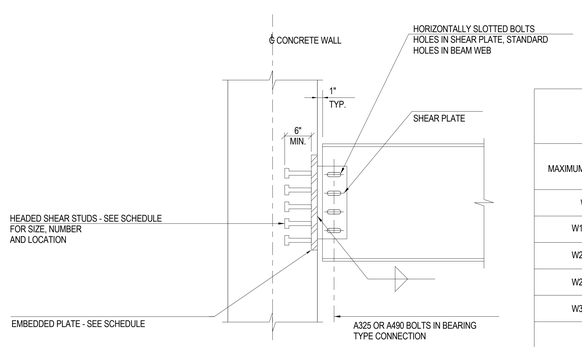


6A TYPICAL RECTANGULAR WALL OPENING

NOTE: SEAL SLEEVE WATER-TIGHT FOLLOWING INSTALLATION OF PIPE OR CONDUIT

6B TYPICAL SLEEVE WALL OPENING (10" DIA. MAX.)

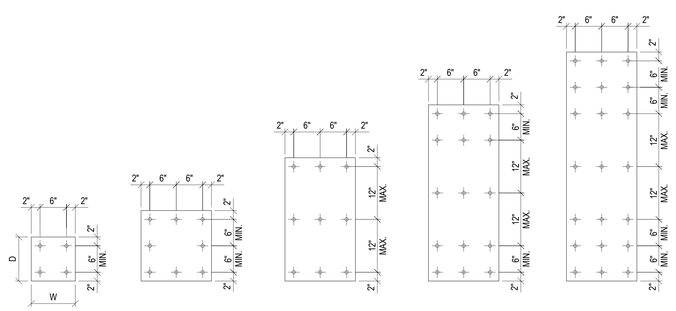
6 TYPICAL OPENING DETAILS
NOT TO SCALE



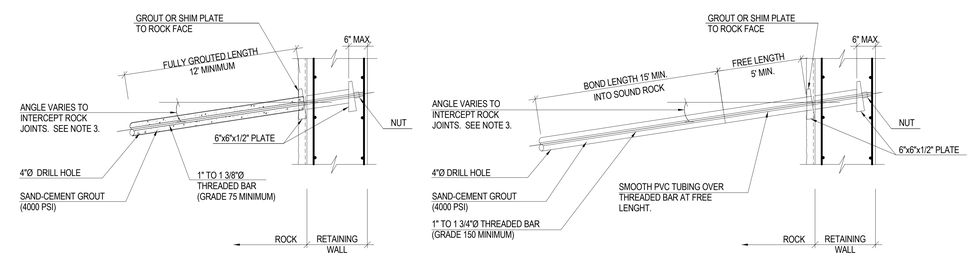
EMBEDDED PLATE SCHEDULE					Fy, PLATE = 50ksi Fy, STUDS = 60 ksi
MAXIMUM BEAM SIZE	MAXIMUM CAPACITY (kips)	NUMBER OF SHEAR STUDS	EMBEDDED PLATE SIZE TxWxD	MIN. SHEAR PLATE DEPTH (in)	PLATE TYPE
W12					
W14-W18					
W21-W24					
W27-W30					
W33-W36					

NOTE: WELDS, SHEAR PLATE AND BOLTS TO DEVELOP 100% OF SCHEDULED BEAM REACTION.

NOTES:
1. BOLTS, WELDS AND ANGLES TO DEVELOP REACTIONS LISTED ON THE PLANS
2. ALL SHEAR STUD CONNECTORS, ANGLES & WELDS SHALL MEET THE REQUIREMENTS OF THE AISC SPECIFICATION
3. ALL SHEAR STUDS SHALL BE TYPE B ASTM A108
4. ALL SHEAR STUD WELDS SHALL DEVELOP THE ULTIMATE STRENGTH OF THE STUD



7 EMBEDDED PLATE DETAIL
NOT TO SCALE



NON - TENSIONED ROCK ANCHORS

POST - TENSIONED ROCK ANCHORS

NOTES:
1. DETAILS TO BE CONFIRMED WITH MUESER RUTLEDGE CONSULTING ENGINEERS (MRCE).
2. ANCHORS CAN BE ALSO USED FOR TEMPORARY SUPPORT OF EXCAVATION.
3. DURING EXCAVATION, THE BOLT CAPACITY, ANGLE AND LENGTH SHOULD BE VERIFIED BY FOUNDATION CONTRACTOR BASED ON THE JOINTING PATTERN OBSERVED. SUPPLEMENTAL BOLTS MAY BE REQUIRED IF UNFAVORABLE JOINTING PATTERNS ARE ENCOUNTERED AND WHEN EXISITING BUILDING LOADS ARE SUPERIMPOSED.
4. ROCK BOLT TO BE ANGLED DOWNWARD A MINIMUM OF 5° FROM HORIZONTAL. BOLTS WITHIN 5' OF THE TOP OF BEDROCK SHALL BE ANGLED DOWNWARD A MINIMUM OF 30° FROM HORIZONTAL TO ENGAGE AN ADEQUATE BLOCK OF BEDROCK. BOLT ANGLE WILL VARY DEPENDING ON THE DIP AND DIRECTION OF THE ROCK JOINTS.
5. ALL BOLTS SHOULD BE GALVANIZED FOR CORROSION PROTECTION.
6. ANCHOR NUTS AND COUPLERS SHALL BE CAPABLE OF DEVELOPING 100% OF THE ULTIMATE STRENGTH OF THREADED BAR.
7. POST-TENSIONED ANCHORS SHALL BE IN CONFORMANCE WITH PTI (POST TENSIONING INSTITUTE) LATEST RECOMMENDATIONS ON ROCK AND SOIL ANCHORS.
8. POST-TENSIONED ANCHOR LOCK-OFF LOAD SHOULD NOT EXCEED 70% OF THE GUARANTEED ULTIMATE STRENGTH OF THE THREADED BAR.

8 TYPICAL PERMANENT ROCK ANCHOR DETAIL
NOT TO SCALE

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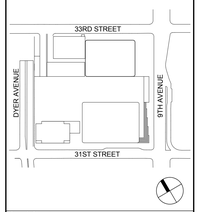
Key Plan:



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File No.: S-318
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Sheet No.: S-318
Page No.: 45 of 90

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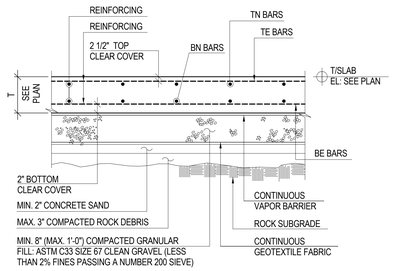
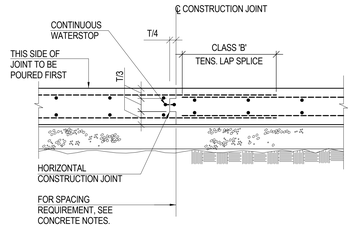


NOTE: REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

1 TYPICAL SLAB-ON-GRADE DETAIL - REBAR

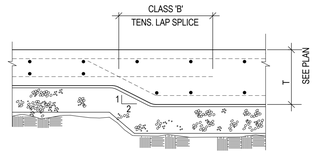
NOT TO SCALE



NOTES: 1. REFER TO DETAIL 1 FOR ADDITIONAL INFORMATION NOT INDICATED.
2. REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

2 TYPICAL SLAB-ON-GRADE CONSTRUCTION JOINT - REBAR

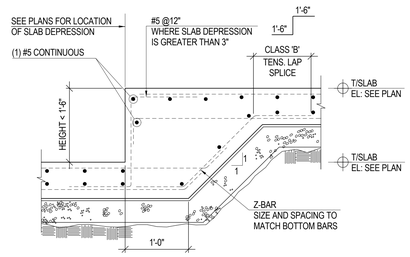
NOT TO SCALE



NOTES: 1. REFER TO DETAIL 1 FOR ADDITIONAL INFORMATION NOT INDICATED.
2. REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

3 TYPICAL SLAB-ON-GRADE CHANGE IN THICKNESS - REBAR

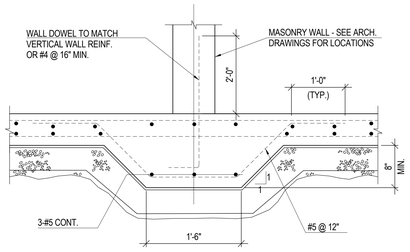
NOT TO SCALE



NOTES: 1. REFER TO DETAIL 1 FOR ADDITIONAL INFORMATION NOT INDICATED.
2. REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

4 TYPICAL SLAB-ON-GRADE DEPRESSION (HEIGHT LESS THAN 1'-6")-REBAR

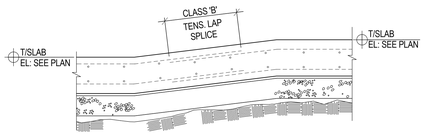
NOT TO SCALE



NOTES: 1. REFER TO DETAIL 1 FOR ADDITIONAL INFORMATION NOT INDICATED.
2. REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

5 TYPICAL SLAB-ON-GRADE AT MASONRY WALL - REBAR

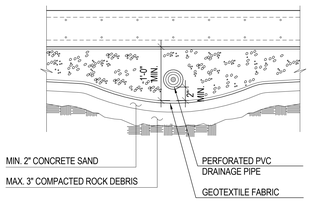
NOT TO SCALE



NOTES: 1. REFER TO DETAIL 1 FOR ADDITIONAL INFORMATION NOT INDICATED.
2. REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

6 TYPICAL SLAB-ON-GRADE RAMP DETAIL - REBAR

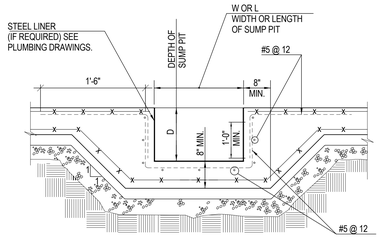
NOT TO SCALE



NOTES: 1. REFER TO DETAIL 1 FOR ADDITIONAL INFORMATION NOT INDICATED.
2. REFER TO PLUMBING DRAWINGS FOR LOCATIONS OF UNDER DRAIN CONNECTIONS TO SUMP PUMPS.
3. REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

7 TYPICAL SLAB-ON-GRADE UNDERDRAIN DETAIL - REBAR

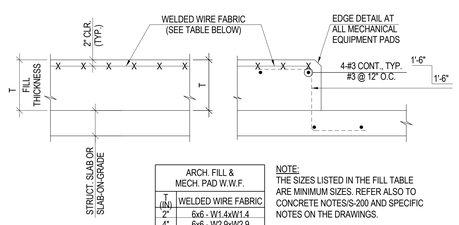
NOT TO SCALE



NOTES: 1. REFER TO DETAIL 2 FOR ADDITIONAL INFORMATION NOT INDICATED.
2. SEE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION.
3. REFER TO THE DRAWING U-001 FOR DETAILS OF THE UNDERDRAIN SYSTEM.

8 TYPICAL SLAB-ON-GRADE TRENCH DETAIL - WWF

NOT TO SCALE



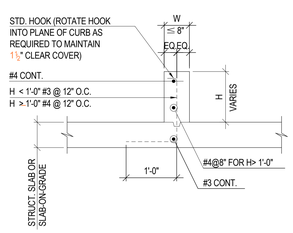
ARCH. FILL & MECH. PAD W.W.F.	
T (IN)	WELDED WIRE FABRIC
2"	6x6 - W1.4xW1.4
4"	6x6 - W2.9xW2.9
6"	6x6 - W4xW4
8"	6x6 - W6xW6
10"	6x6 - W8xW8
12"	6x6 - W10xW10

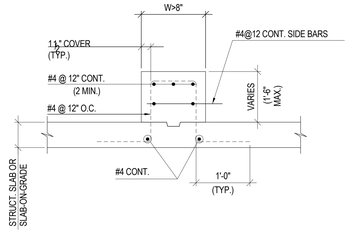
NOTE:
THE SIZES LISTED IN THE FILL TABLE ARE MINIMUM SIZES. REFER ALSO TO CONCRETE NOTES/S-200 AND SPECIFIC NOTES ON THE DRAWINGS.

NOTE: 1. SEE ARCH., MECH., ELEC., AND PLUMBING DRAWINGS FOR PAD SIZES AND LOCATIONS.

9 TYPICAL CONCRETE PAD/ ARCH. FILL DETAIL - WWF

1" = 1'-0"

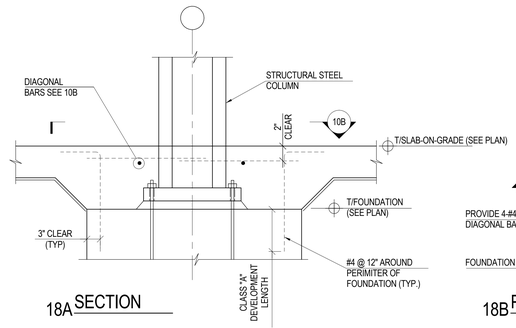




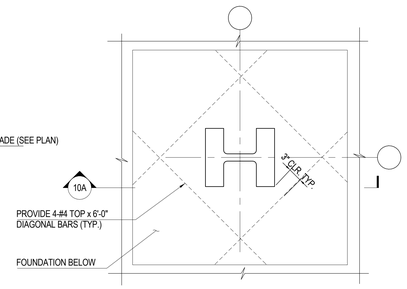
NOTE: 1. SEE ARCH., MECH., ELEC., AND PLUMBING DRAWINGS FOR CURB SIZE AND LOCATION.

10 TYPICAL CURB DETAILS - WWF

1" = 1'-0"



18A SECTION



18B PLAN

11 TYPICAL ADDITIONAL SLAB REINFORCEMENT AT COLUMN

1" = 1'-0"

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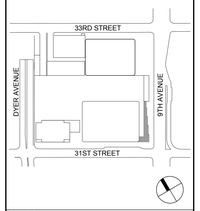

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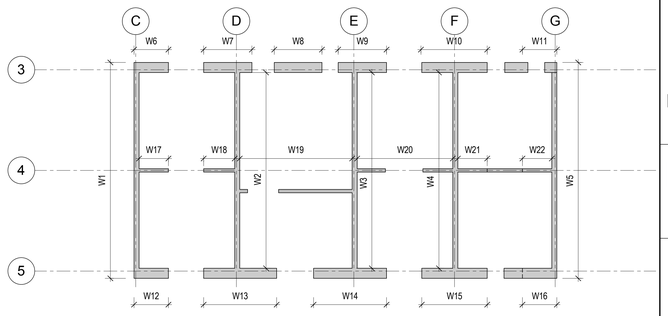

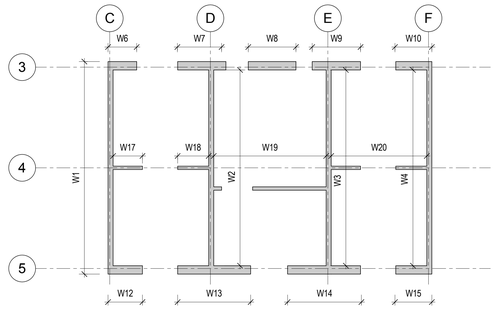

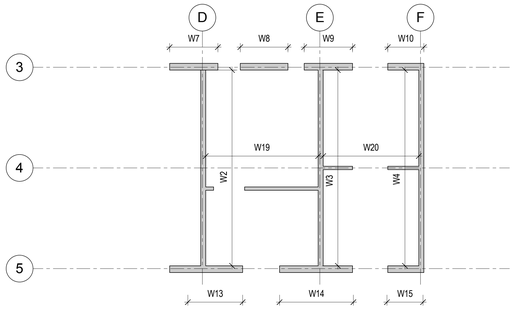

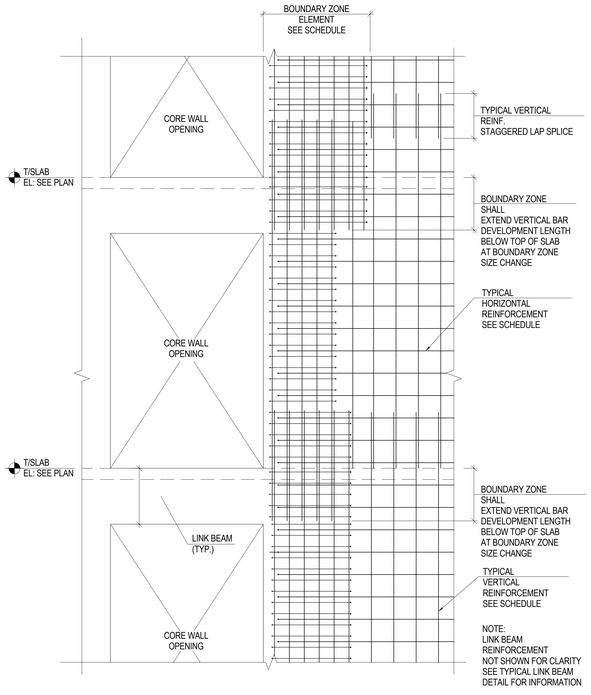

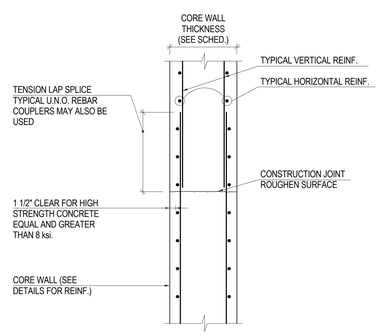

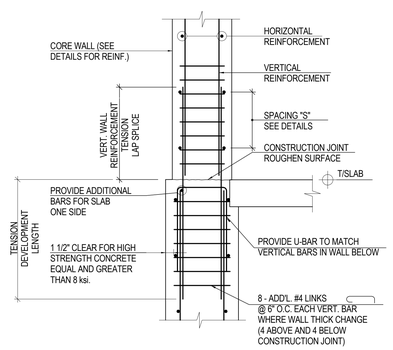

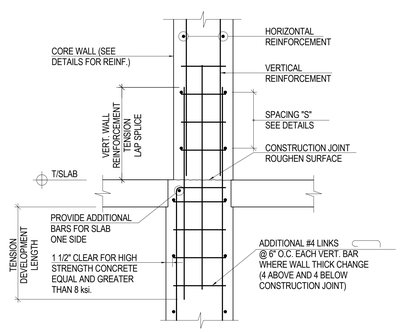

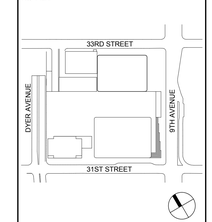

REINFORCED CONCRETE CORE WALL SCHEDULE FOR NORTH TOWER

CONCRETE: AS NOTED
REINFORCEMENT: ASTM A615 GR. 60

WALL MARK / LEVEL	CONCRETE (PSI)	WALL 1 WALL THICKNESS TW (IN)	WALL 2 WALL THICKNESS TW (IN)	WALL 3 WALL THICKNESS TW (IN)	WALL 4 WALL THICKNESS TW (IN)	WALL 5 WALL THICKNESS TW (IN)	WALL 6 WALL THICKNESS TW (IN)	WALL 7 WALL THICKNESS TW (IN)	WALL 8 WALL THICKNESS TW (IN)	WALL 9 WALL THICKNESS TW (IN)	WALL 10 WALL THICKNESS TW (IN)	WALL 11 WALL THICKNESS TW (IN)	WALL 12 WALL THICKNESS TW (IN)	WALL 13 WALL THICKNESS TW (IN)	WALL 14 WALL THICKNESS TW (IN)	WALL 15 WALL THICKNESS TW (IN)	WALL 16 WALL THICKNESS TW (IN)	WALL 17 WALL THICKNESS TW (IN)	WALL 18 WALL THICKNESS TW (IN)	WALL 19 WALL THICKNESS TW (IN)	WALL 20 WALL THICKNESS TW (IN)	WALL 21 WALL THICKNESS TW (IN)	WALL 22 WALL THICKNESS TW (IN)	REINFORCEMENT
ROOF LEVEL	8000	-	18	18	-	-	-	24	24	24	24	-	-	-	-	-	-	-	12	12	-	12	-	SEE 1/S-354
LEVEL 70 - ROOF	8000	-	18	18	18	-	-	24	24	24	24	-	-	24	24	24	-	-	12	12	12	12	-	SEE 2/S-353
LEVEL 69 - 70	8000	-	18	18	18	-	-	24	24	24	24	-	-	24	24	24	-	-	12	12	12	12	-	SEE 1/S-353
LEVEL 68 - 69	8000	-	18	18	18	-	-	24	24	24	24	-	-	24	24	24	-	-	12	12	12	12	-	SEE 2/S-352
LEVEL 63 - 68	8000	-	18	18	18	-	-	24	24	24	24	-	-	24	24	24	-	-	12	12	12	12	-	SEE 1/S-352
LEVEL 58 - 63	8000	-	18	18	18	-	-	24	24	24	24	-	-	24	24	24	-	-	12	12	12	12	-	SEE 2/S-351
LEVEL 53 - 58	8000	-	18	18	18	-	-	24	24	24	24	-	-	24	24	24	-	-	12	12	12	12	-	SEE 1/S-351
LEVEL 47 - 53	8000	18	18	18	18	-	30	30	30	30	30	-	30	30	30	30	-	12	12	12	12	12	-	SEE 2/S-350
LEVEL 42 - 47	8000	18	18	18	18	-	30	30	30	30	30	-	30	30	30	30	-	12	12	12	12	12	-	SEE 1/S-350
LEVEL 36 - 42	8000	18	18	18	18	-	30	30	30	30	30	-	30	30	30	30	-	12	12	12	12	12	-	SEE 2/S-349
LEVEL 31 - 36	8000	18	18	18	18	-	30	30	30	30	30	-	30	30	30	30	-	12	12	12	12	12	-	SEE 1/S-349
LEVEL 28 - 31	8000	18	18	18	18	18	36	36	36	36	36	36	36	36	36	36	36	12	12	12	12	12	12	SEE 2/S-348
LEVEL 26 - 28	8000	18	18	18	18	18	36	36	36	36	36	36	36	36	36	36	36	12	12	12	12	12	12	SEE 1/S-348
LEVEL 16 - 26	8000	18	18	18	18	18	44	44	44	44	44	44	44	44	44	44	44	12	12	12	12	12	12	SEE 2/S-347
LEVEL 11 - 16	10000	24	24	24	24	24	48	48	48	48	48	48	48	48	48	48	48	12	12	12	12	12	12	SEE 1/S-347
LEVEL 6 - 11	10000	24	24	24	24	24	50	50	50	50	50	50	50	50	50	50	50	12	12	12	12	12	12	SEE 2/S-346
LEVEL 5 - 6	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 1/S-346
LEVEL 4 - 5	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 2/S-345
LEVEL 3 - 4	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 1/S-345
LEVEL 2 - 3	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 2/S-344
LEVEL 1 - 2	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 1/S-344
LEVEL B - 1	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 2/S-343
LEVEL B1 - B	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 1/S-343
LEVEL B2 - B1	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 2/S-342
LEVEL B3 - B2	10000	39	39	39	39	39	54	54	54	54	54	54	54	54	54	54	54	12	12	12	12	12	12	SEE 1/S-342
DOWELS	–	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	#8 @ 6	

A KEY PLAN A - UP TO LEVEL 31
1/16" = 1'-0"

B KEY PLAN B - LEVEL 31 TO LEVEL 53
1/16" = 1'-0"

C KEY PLAN C - LEVEL 53 TO ROOF
1/16" = 1'-0"

NOTE:
LINK BEAM
REINFORCEMENT
NOT SHOWN FOR CLARITY
SEE TYPICAL LINK BEAM
DETAIL FOR INFORMATION

1 TYPICAL SHEAR WALL TIE REINFORCEMENT
1/2" = 1'-0"

2 TYPICAL CORE WALL SPLICE
1" = 1'-0"

3 TYPICAL CORE WALL SPLICE WITH WALL THICKNESS CHANGE
NOT TO SCALE

4 TYPICAL CORE WALL SPLICE WITH WALL THICKNESS
NOT TO SCALE

6/19/2014 11:20:42 PM

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CHARLES MICHAEL BESJAK
079322

Key Plan:

Seal & Signature:

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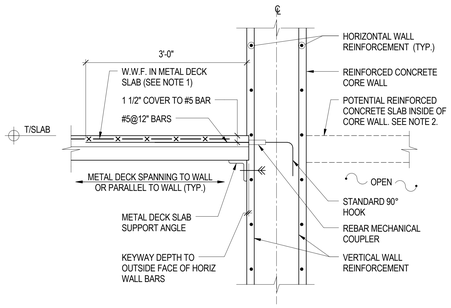
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

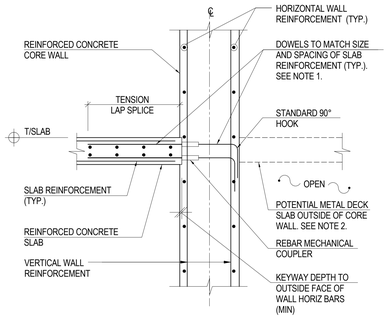
REINFORCED CONCRETE CORE WALL SCHEDULE, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-340
B-SCAN Sheet No.: S-340.00
Sheet No.: S-340
Page No.: 47 of 90



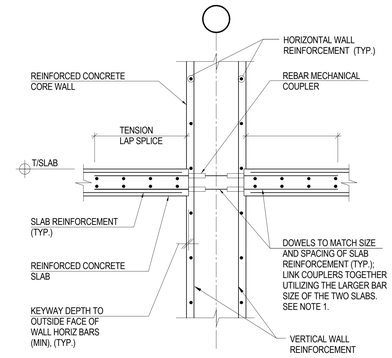
NOTE:
1. 'RS' SLABS TO HAVE REBAR IN LIEU OF W.W.F. REFER TO PLANS AND S-501.
2. AT CONDITIONS WHERE A R/C SLAB EXISTS ON THE OTHER SIDE OF THE CORE WALL, THIS DETAILTO BE USED IN CONJUNCTION WITH DETAIL 2.

1 TYPICAL METAL DECK SLAB CONNECTION DETAIL: ONE-SIDED
NOT TO SCALE



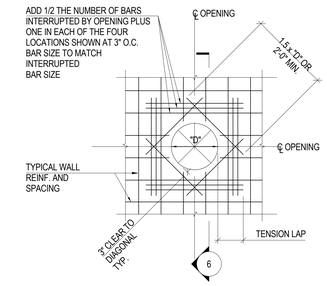
NOTE:
1. AT ONE WAY SLABS SPANNING PARALLEL TO CORE WALL, PROVIDE EQUIVALENT OF #5@12" AT MID-DEPTH OF SLAB EXTENDING 4'-0" OUT FROM FACE OF WALL. COORDINATE SIZE AND SPACING OF THIS REINFORCEMENT WITH CORE WALL REINFORCEMENT SPACING.
2. AT CONDITIONS WHERE A METAL DECK SLAB EXISTS ON THE OTHER SIDE OF THE CORE WALL, THIS DETAIL TO BE USED IN CONJUNCTION WITH DETAIL 1.

2 TYPICAL R/C SLAB CONNECTION DETAIL: ONE-SIDED
NOT TO SCALE

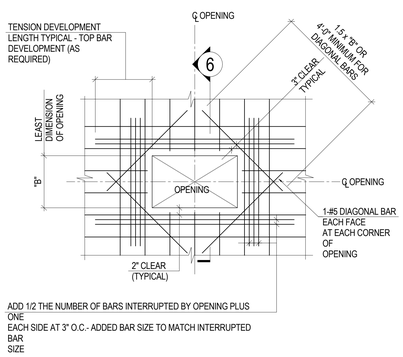


NOTE:
1. AT ONE WAY SLABS SPANNING PARALLEL TO CORE WALL, PROVIDE EQUIVALENT OF #5@12" AT MID-DEPTH OF SLAB EXTENDING 4'-0" OUT FROM FACE OF WALL. COORDINATE SIZE AND SPACING OF THIS REINFORCEMENT WITH CORE WALL REINFORCEMENT SPACING.

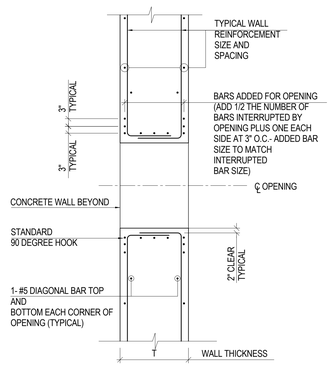
3 TYPICAL R/C SLAB CONNECTION DETAIL: TWO-SIDED
NOT TO SCALE



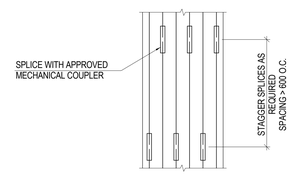
4 TYPICAL RECTANGULAR CORE WALL OPENING DETAIL
NOT TO SCALE



5 TYPICAL RECTANGULAR CORE WALL OPENING DETAIL
NOT TO SCALE

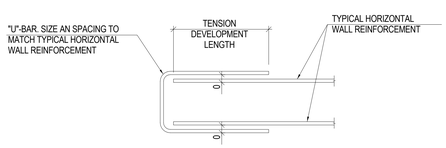


6 TYPICAL RECTANGULAR/CIRCULAR CORE WALL OPENING DETAIL
NOT TO SCALE

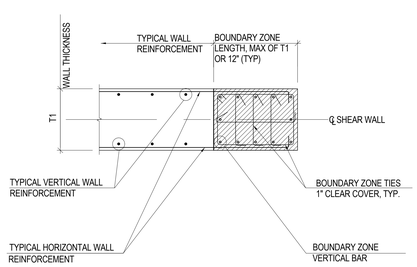


NOTE:
TIE REINFORCEMENT NOT SHOWN FOR CLARITY. REDISTRIBUTE STIRRUP VERTICAL SPACING FOR NOT TO BE PLACED AT CONNECTOR LOCATION.

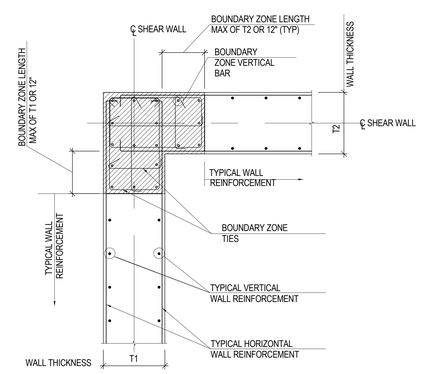
7 ALTERNATE REBAR SPLICE DETAIL
NOT TO SCALE



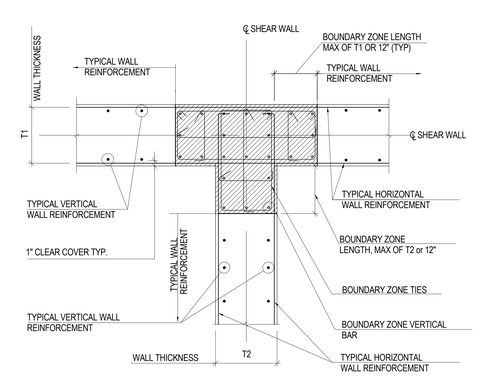
8 ALTERNATE REBAR SPLICE DETAIL
NOT TO SCALE



9 TYPICAL SHEAR WALL BOUNDARY ELEMENT END DETAIL
NOT TO SCALE



10 TYPICAL SHEAR WALL BOUNDARY ELEMENT CORNER DETAIL
NOT TO SCALE



11 TYPICAL SHEAR WALL BOUNDARY ELEMENT INTERSECTION DETAIL
NOT TO SCALE

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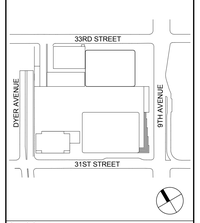
Key Plan:



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Sheet Name:
TYPICAL REINFORCED CONCRETE WALL DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-341
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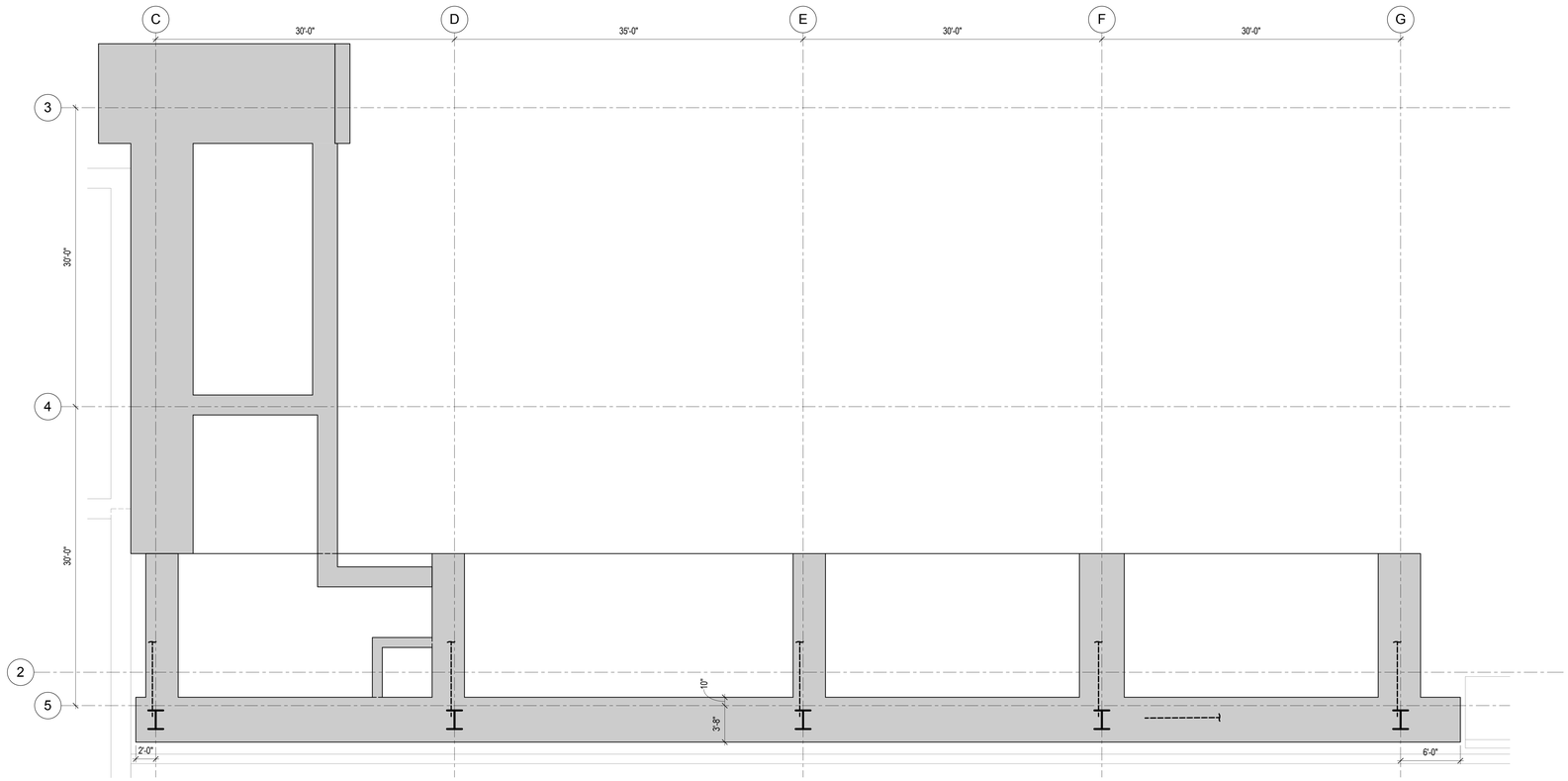
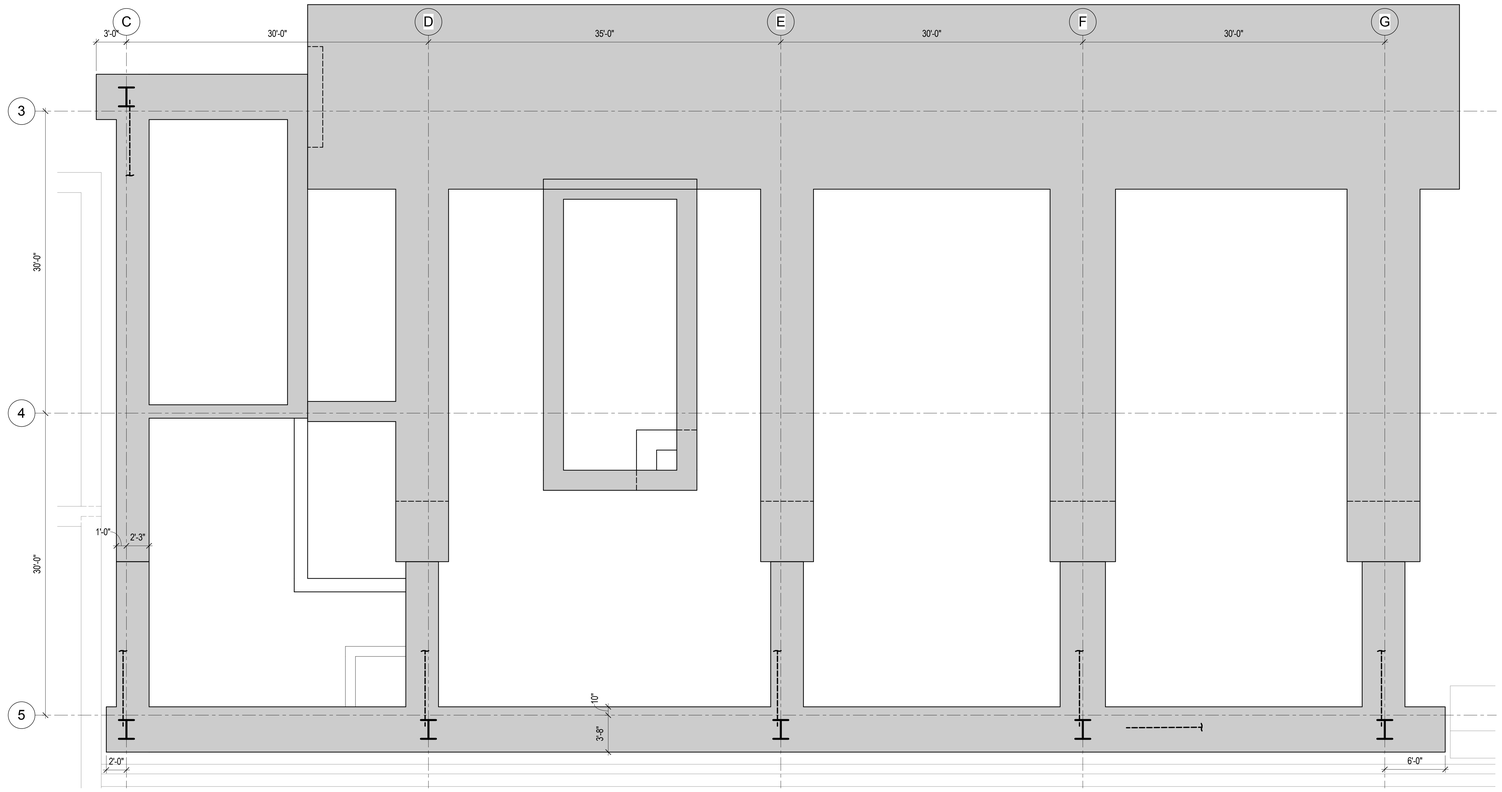


1 REINFORCEMENT LAYOUT - LEVEL B3 TO LEVEL B2
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.



2 REINFORCING LAYOUT - LEVEL B2 TO LEVEL B1
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.

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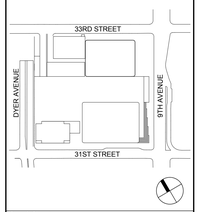

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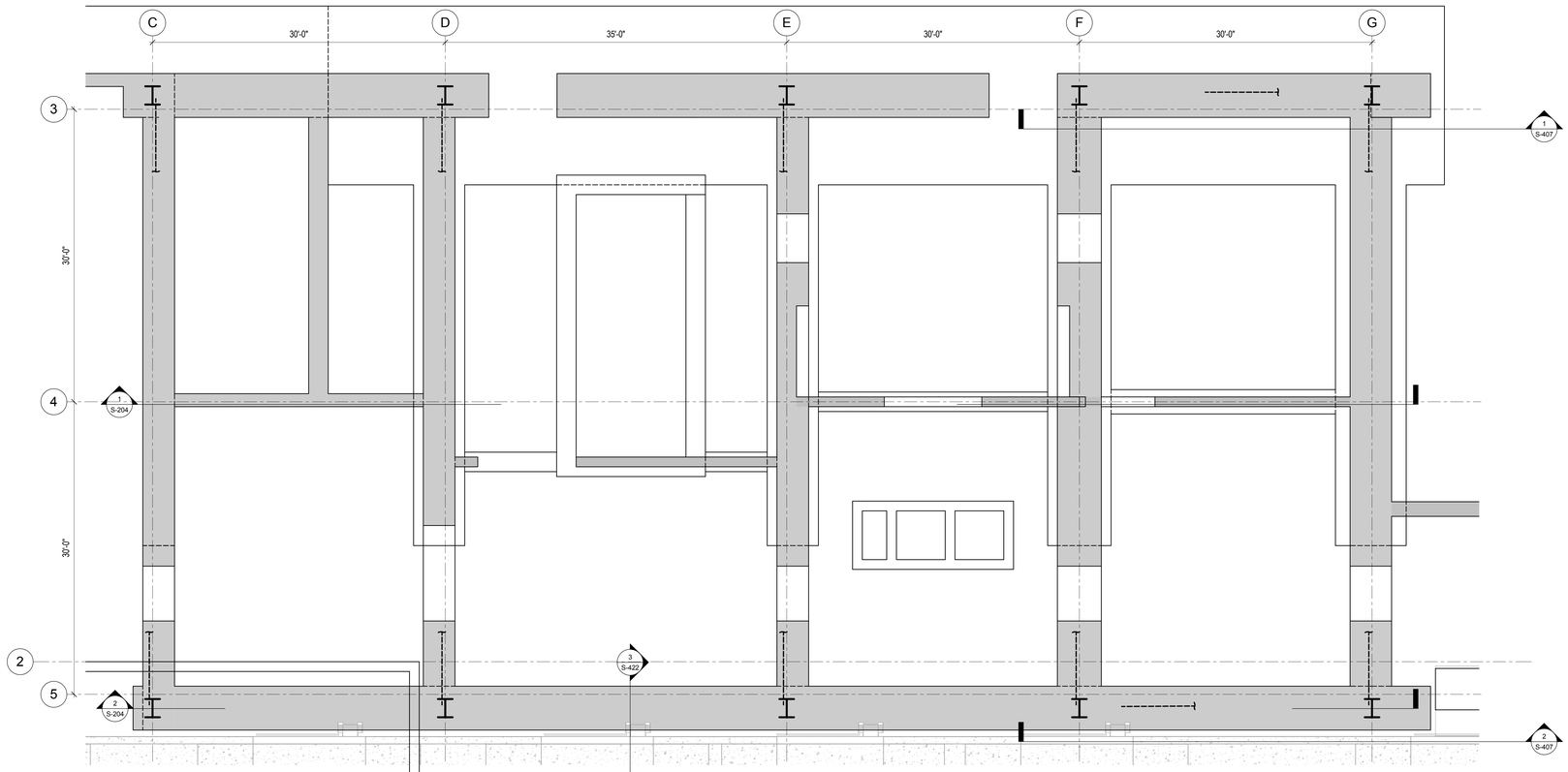
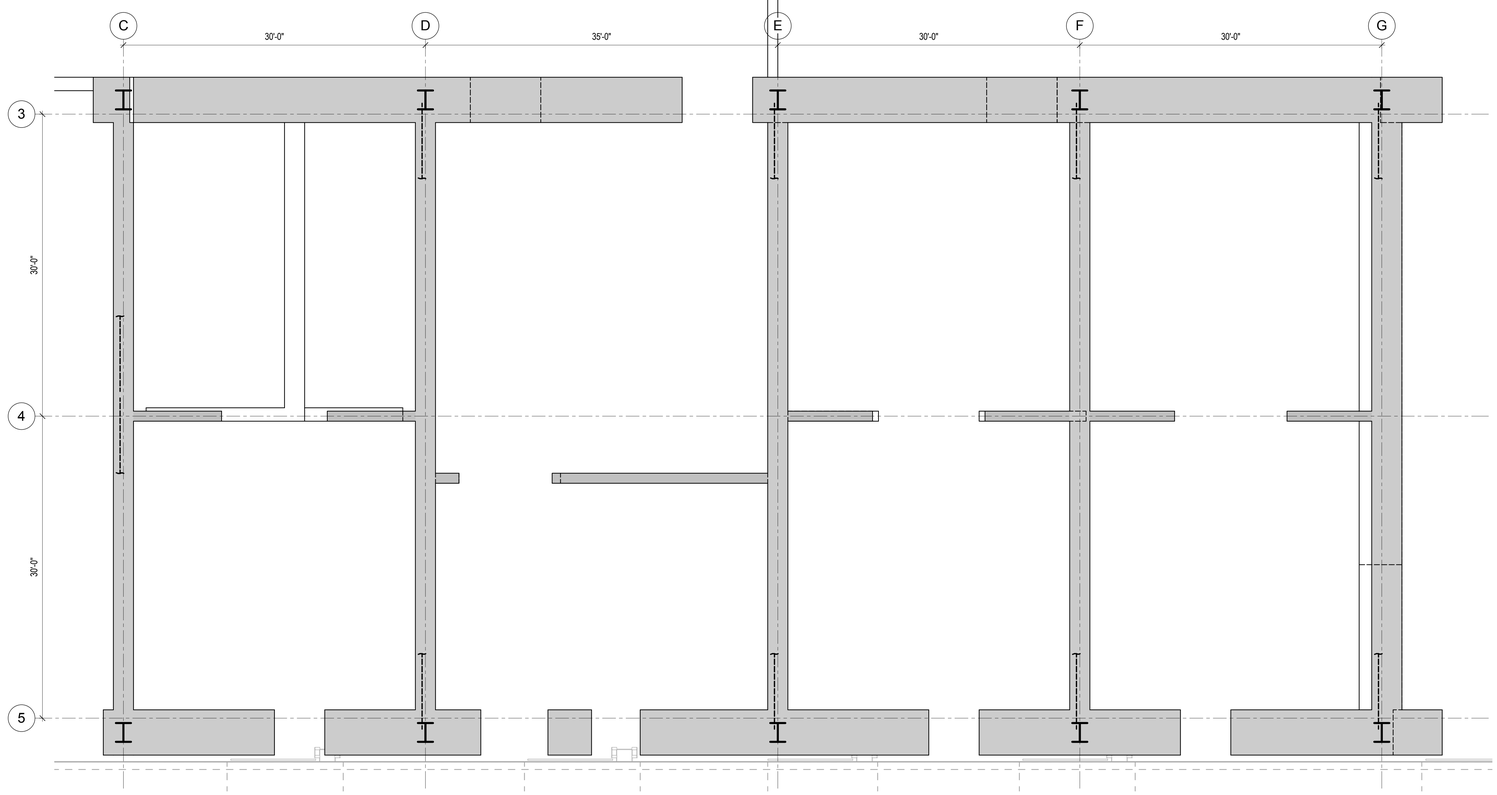
Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-342
B-SCAN Sheet No.: S-342.00
Sheet No.: S-342
Page No.: 49 of 90



REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.

1 REINFORCEMENT LAYOUT - LEVEL B1 TO LEVEL B
3/16" = 1'-0"



REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.

2 REINFORCEMENT LAYOUT - LEVEL B TO LEVEL 1
3/16" = 1'-0"

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

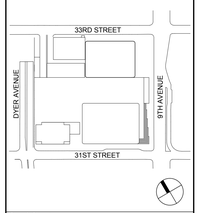
Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

PRELIMINARY
NOT FOR CONSTRUCTION

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6	20 JUN 2014	ISSUED FOR FOUNDATION BID
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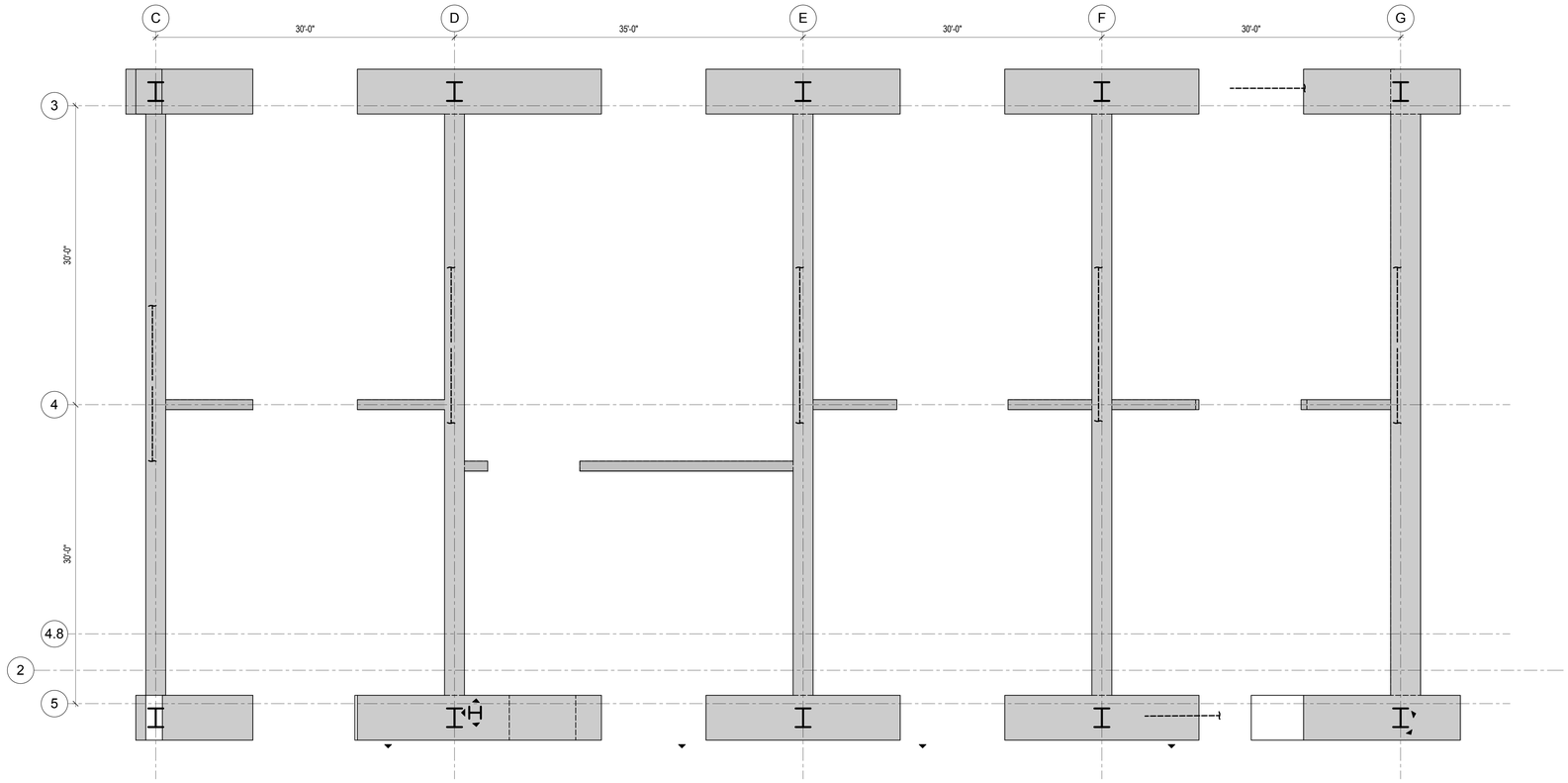
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

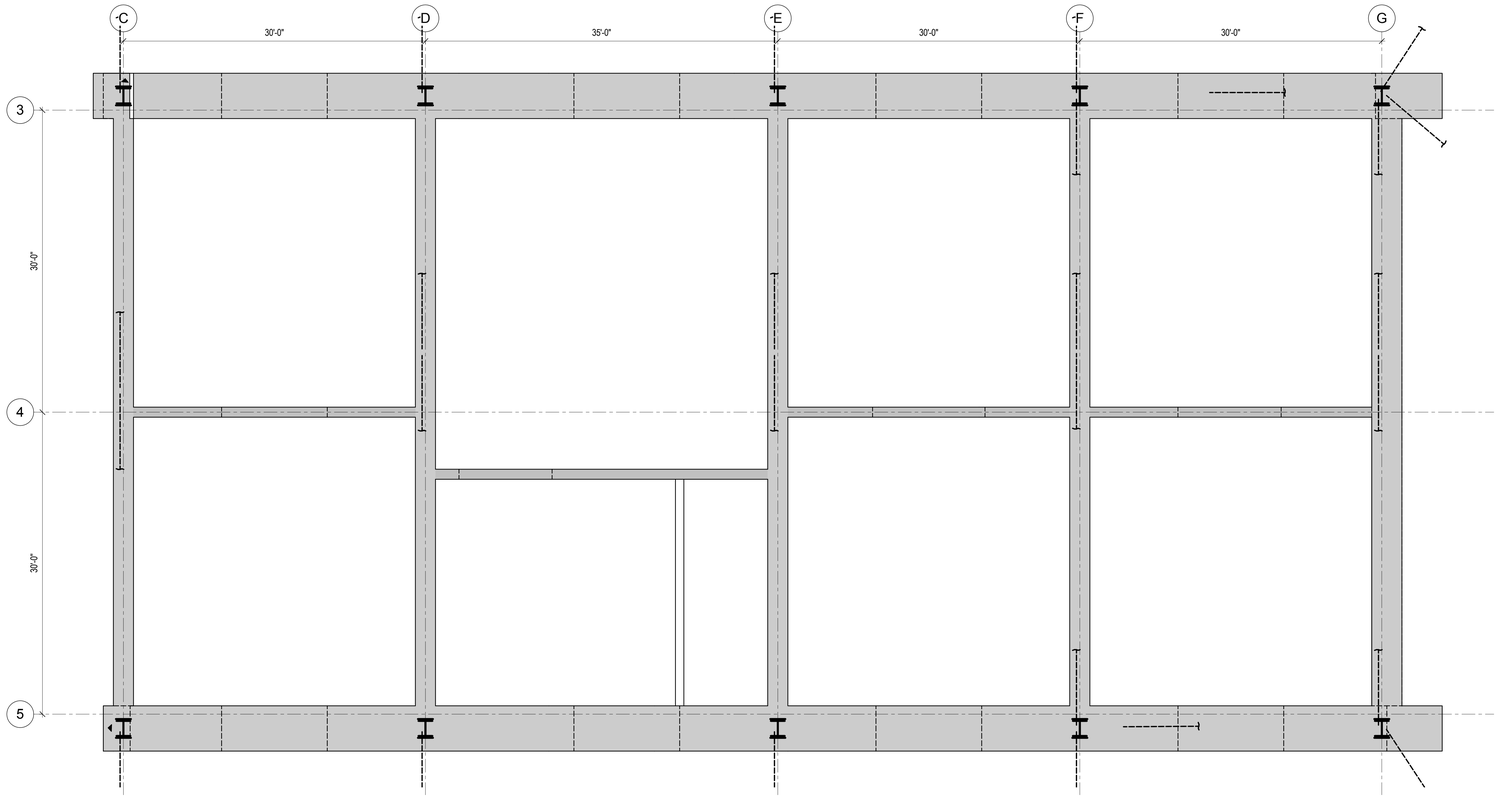
Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-343
B-SCAN Sheet No.: S-343.00
Sheet No.: S-343
Page No.: 50 of 90

8/18/2014 11:21:02 PM



1 REINFORCEMENT LAYOUT - LEVEL 1 TO LEVEL 2
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.



2 REINFORCEMENT LAYOUT - LEVEL 2 TO LEVEL 3
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.

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New York, NY 10122

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Ducibella, Ventor & Santore
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Code Consultants Professional Engineers PC
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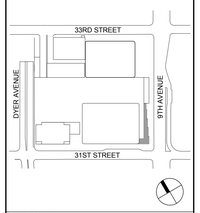
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
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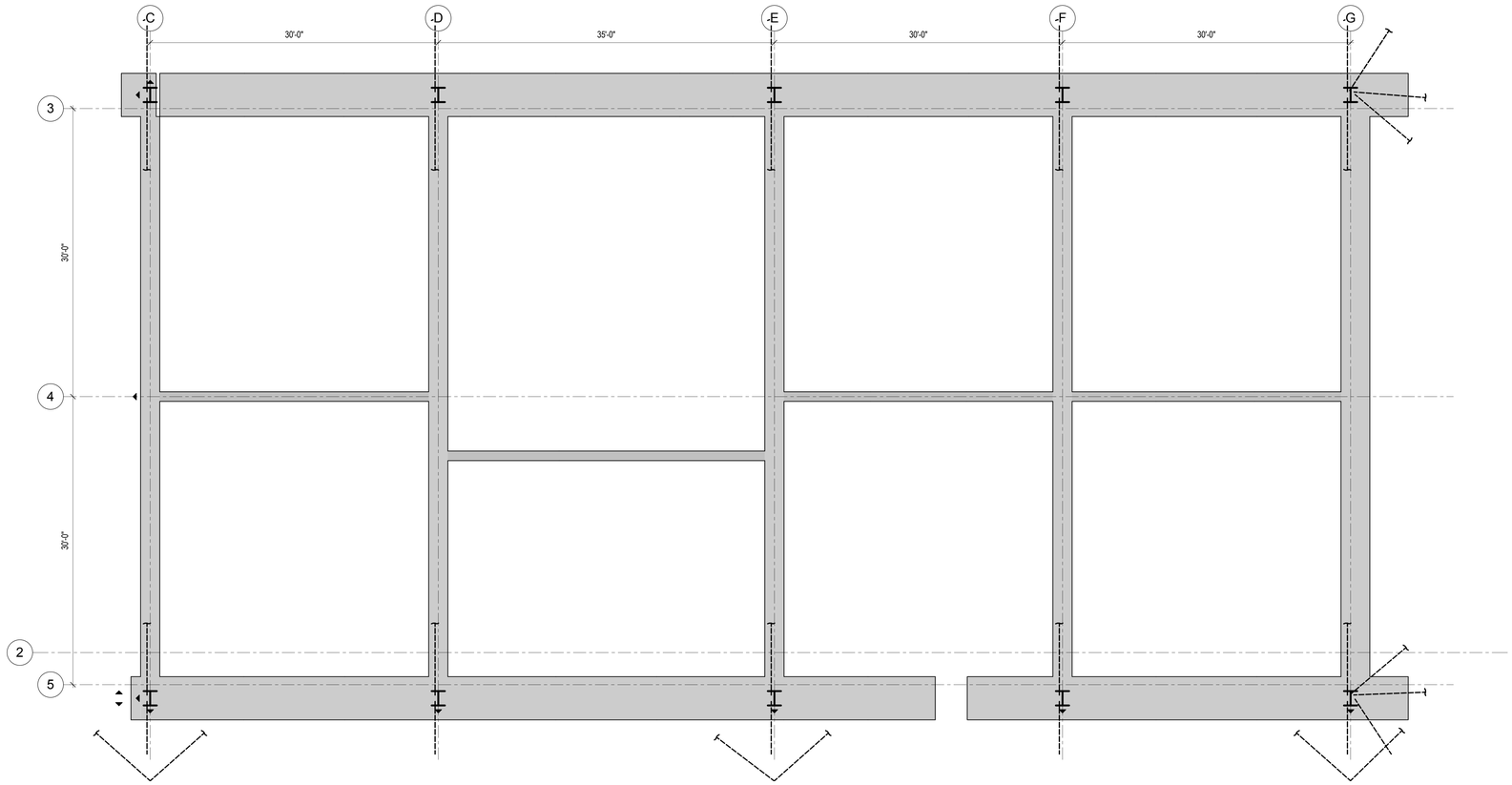
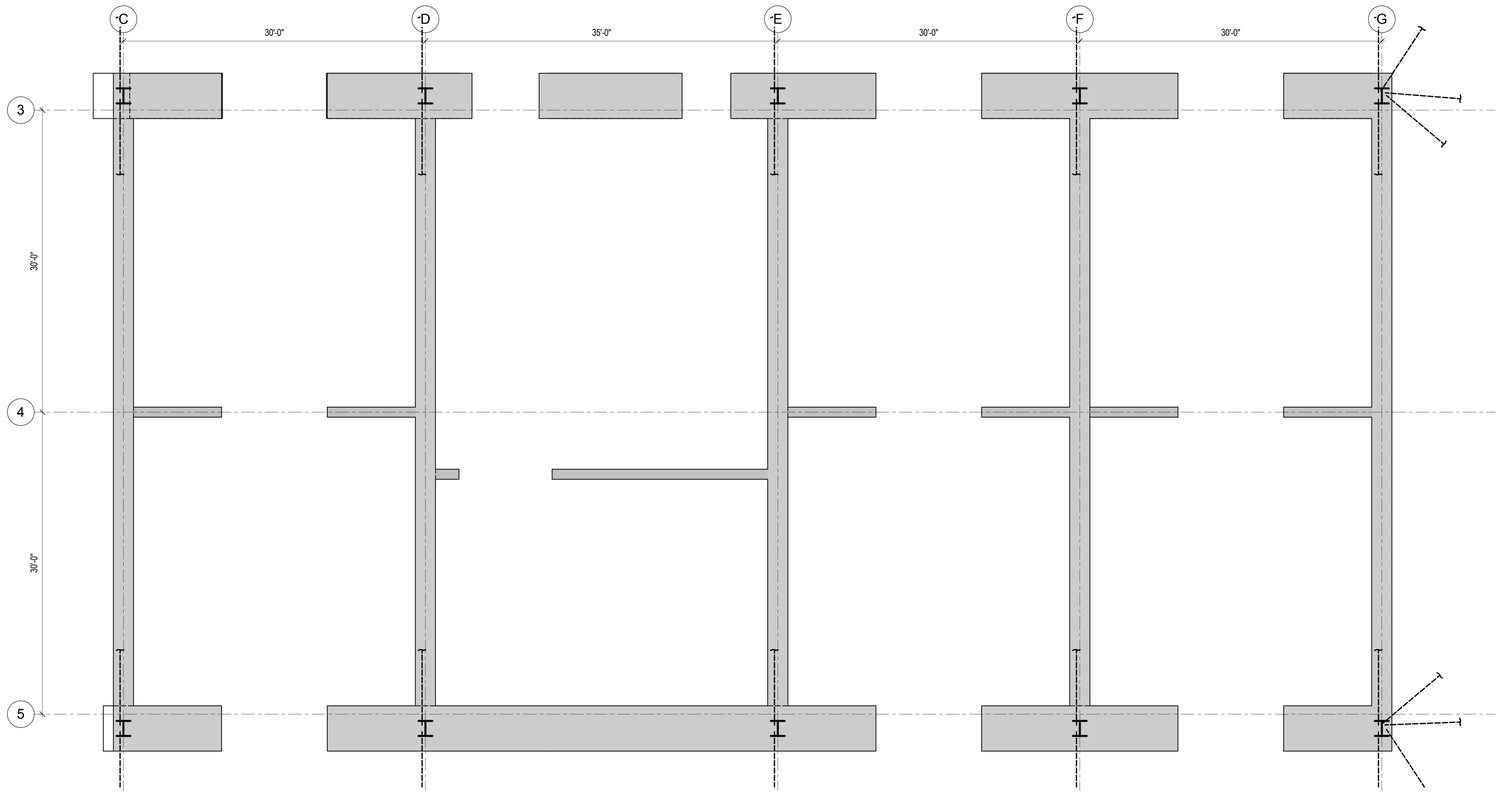


1 REINFORCEMENT LAYOUT - LEVEL 3 TO LEVEL 4
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.



2 REINFORCEMENT LAYOUT - LEVEL 4 TO LEVEL 5
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.

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Code Consultants Professional Engineers PC
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Facade Maintenance Consultant
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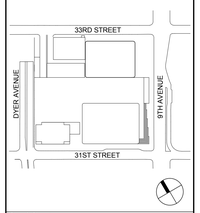
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BESSAK
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-345
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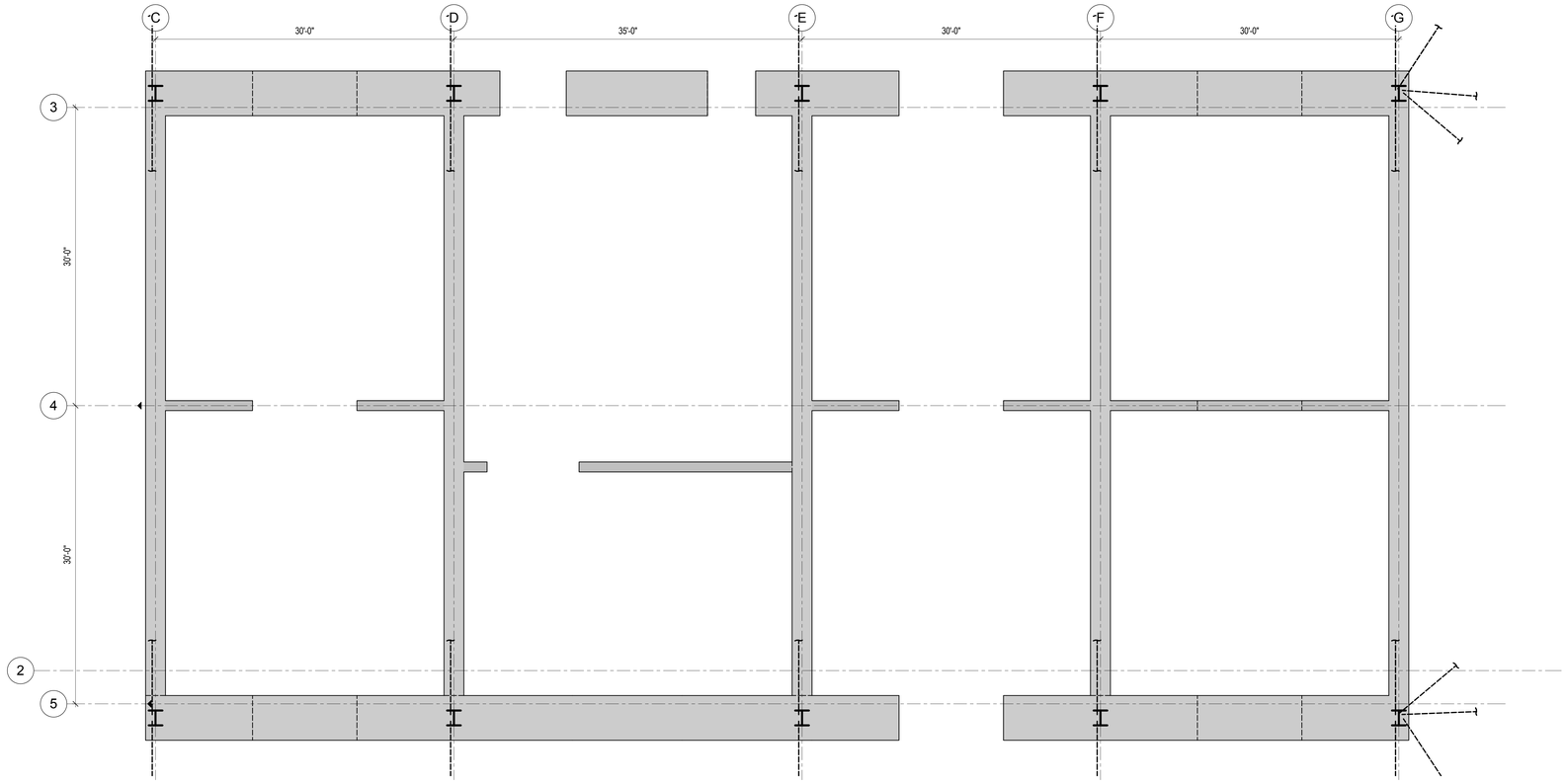
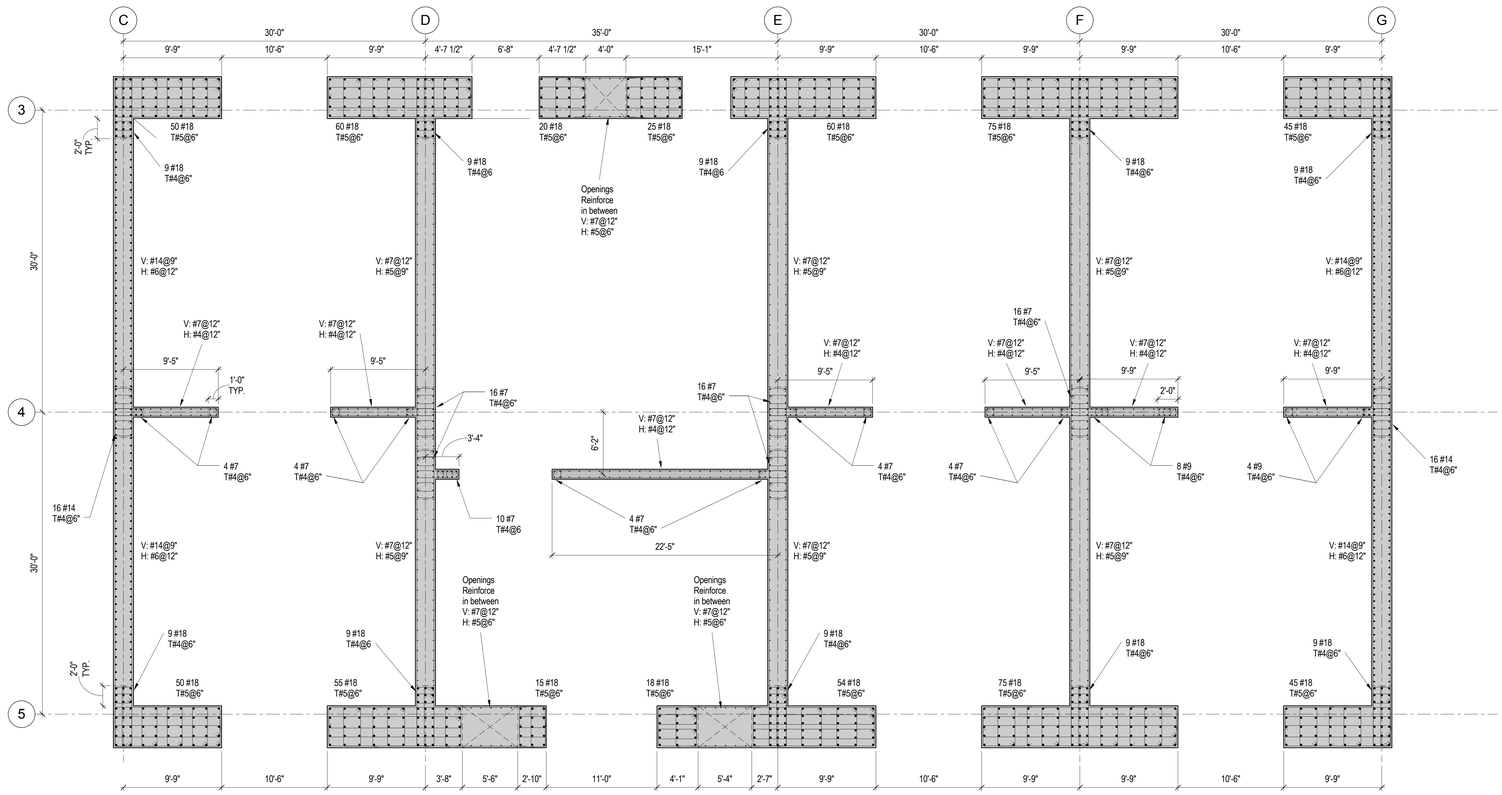
Sheet No.: S-345
Page No.: 52 of 90



REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.

1 REINFORCEMENT LAYOUT - LEVEL 5 TO LEVEL 6
3/16" = 1'-0"



2 REINFORCEMENT LAYOUT - LEVEL 6 TO LEVEL 11
3/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
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Architecture/Structural Engineering
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Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

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Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

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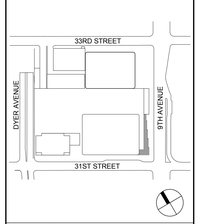
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-346
B-SCAN Sheet No.: S-346.00
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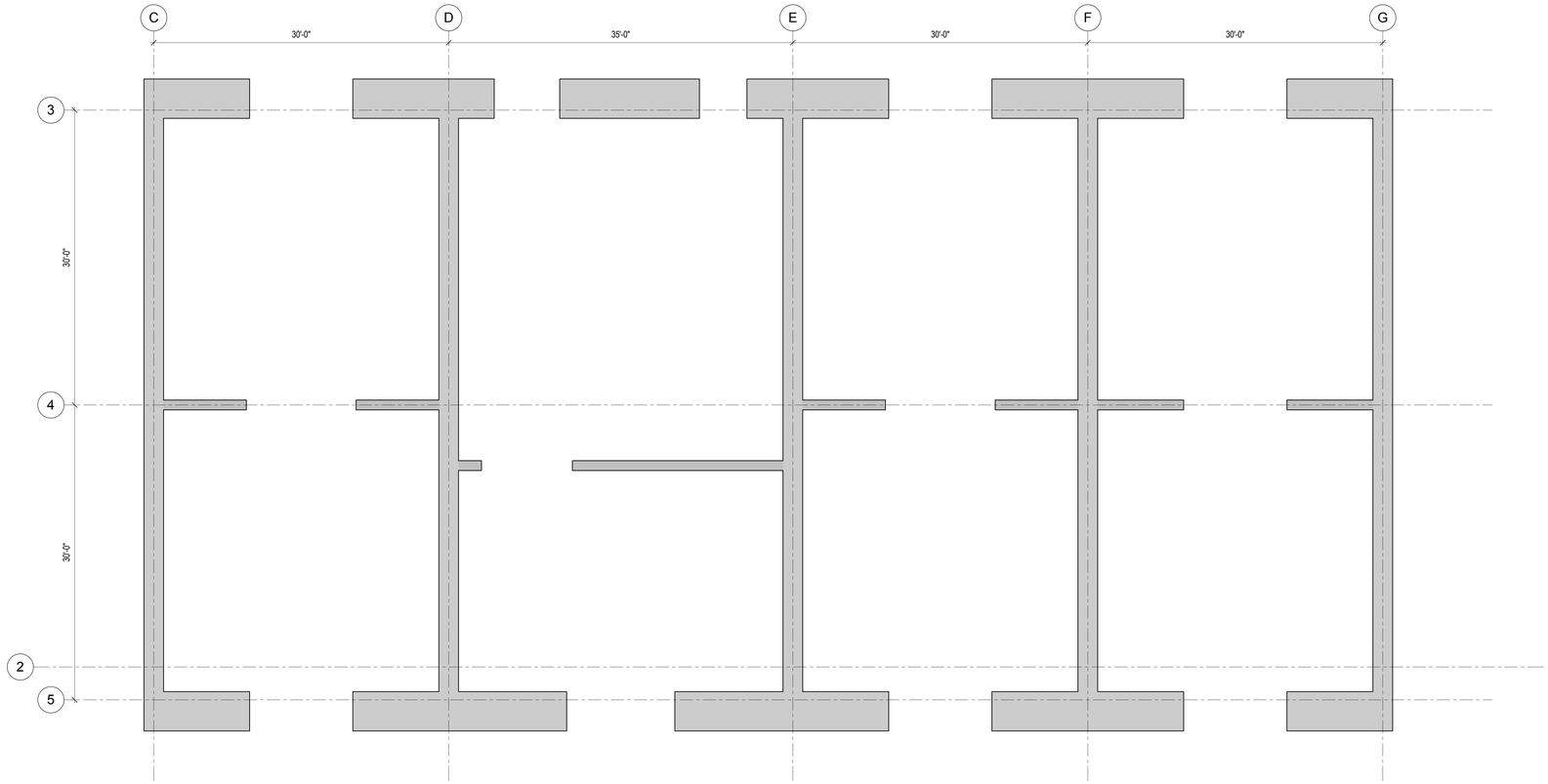
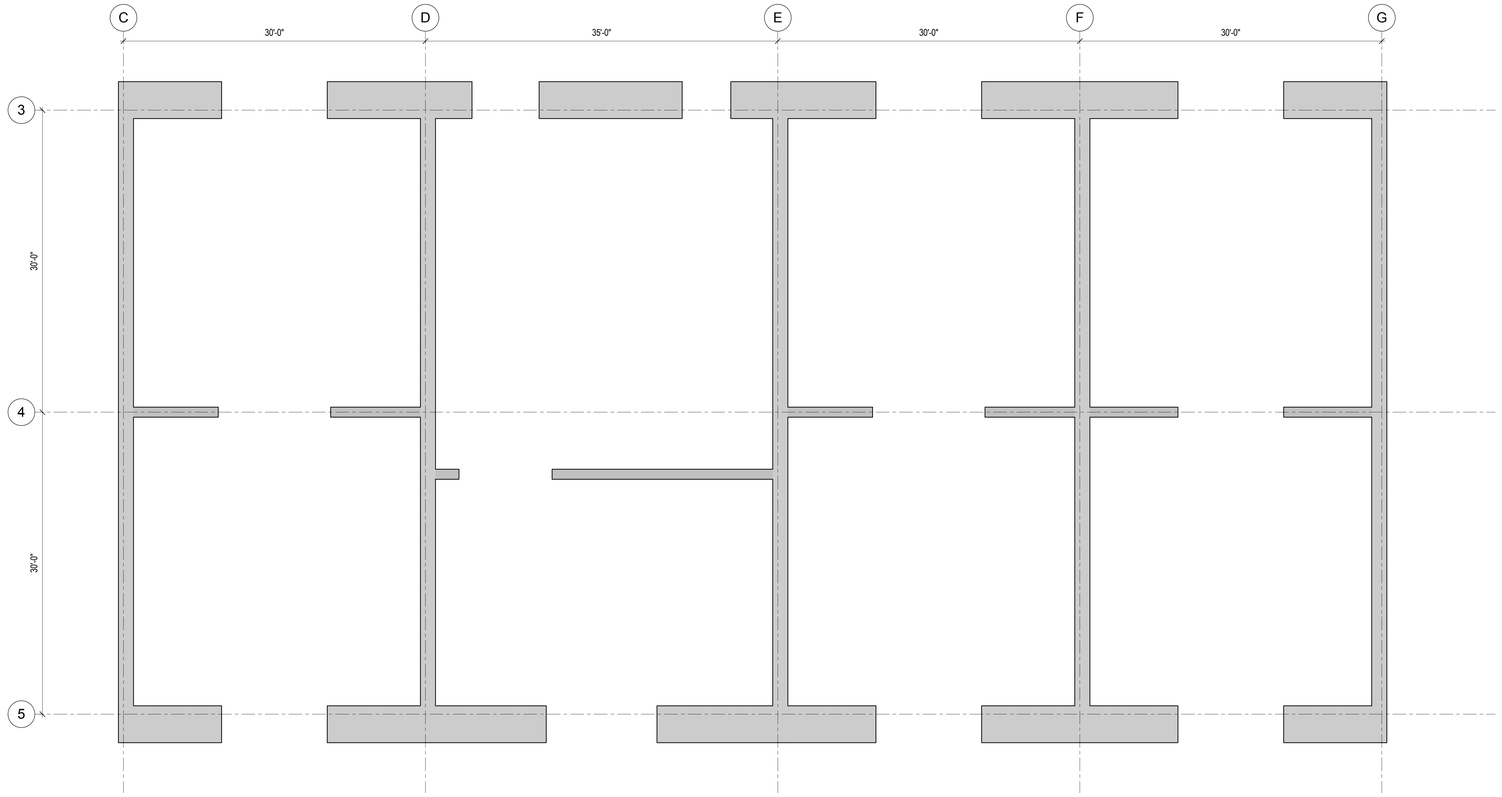


REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 2/S-346 FOR SIMILAR LAYOUT.

1 REINFORCEMENT LAYOUT - LEVEL 11 TO LEVEL 16
3/16" = 1'-0"



REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 2/S-346 FOR SIMILAR LAYOUT.

2 REINFORCEMENT LAYOUT - LEVEL 16 TO LEVEL 26
3/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
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Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

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Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

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Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

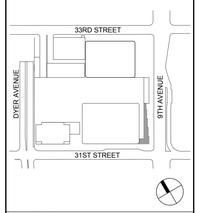
Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:
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Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-347
B-SCAN Sheet No.: S-347.00
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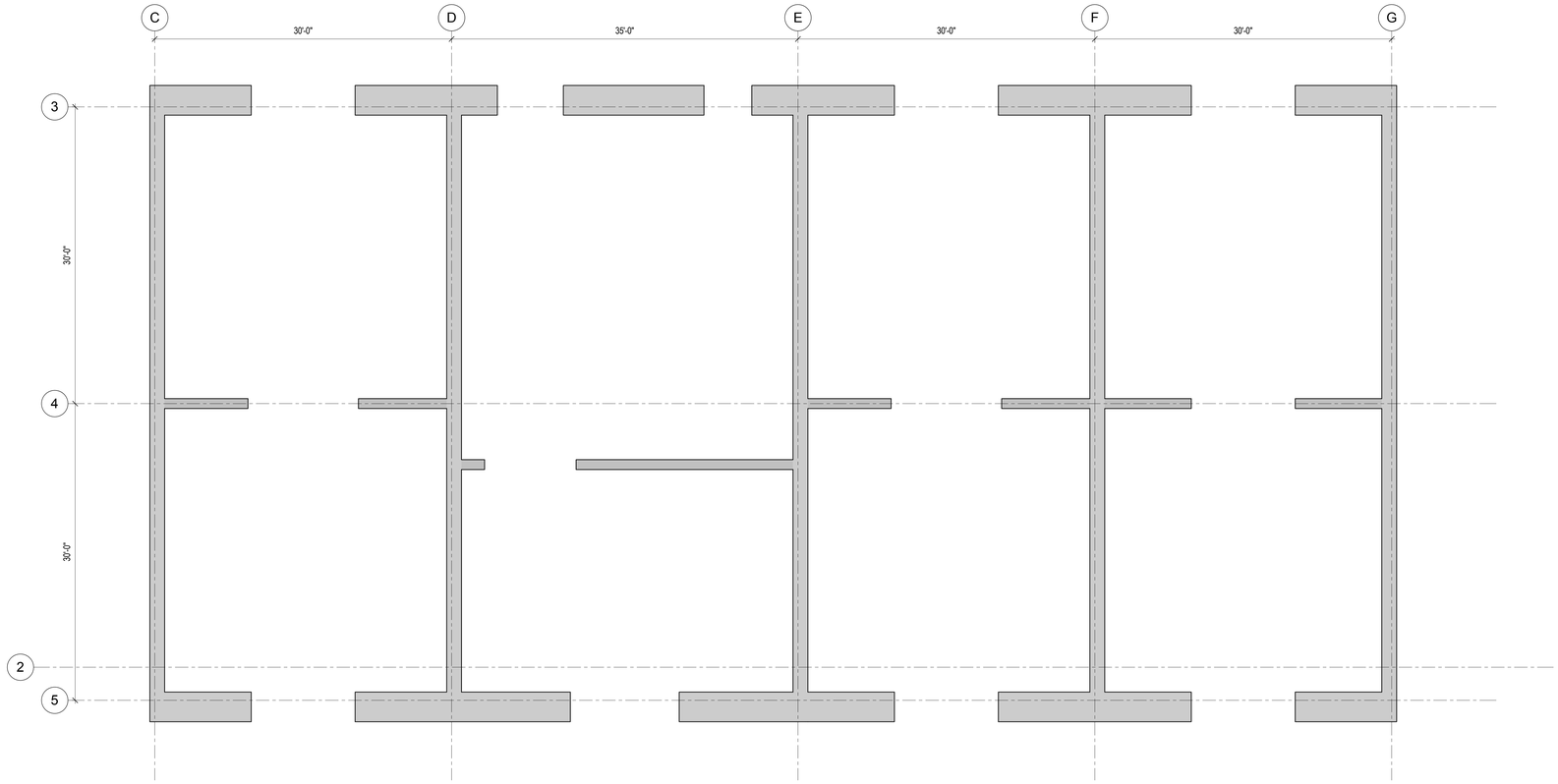
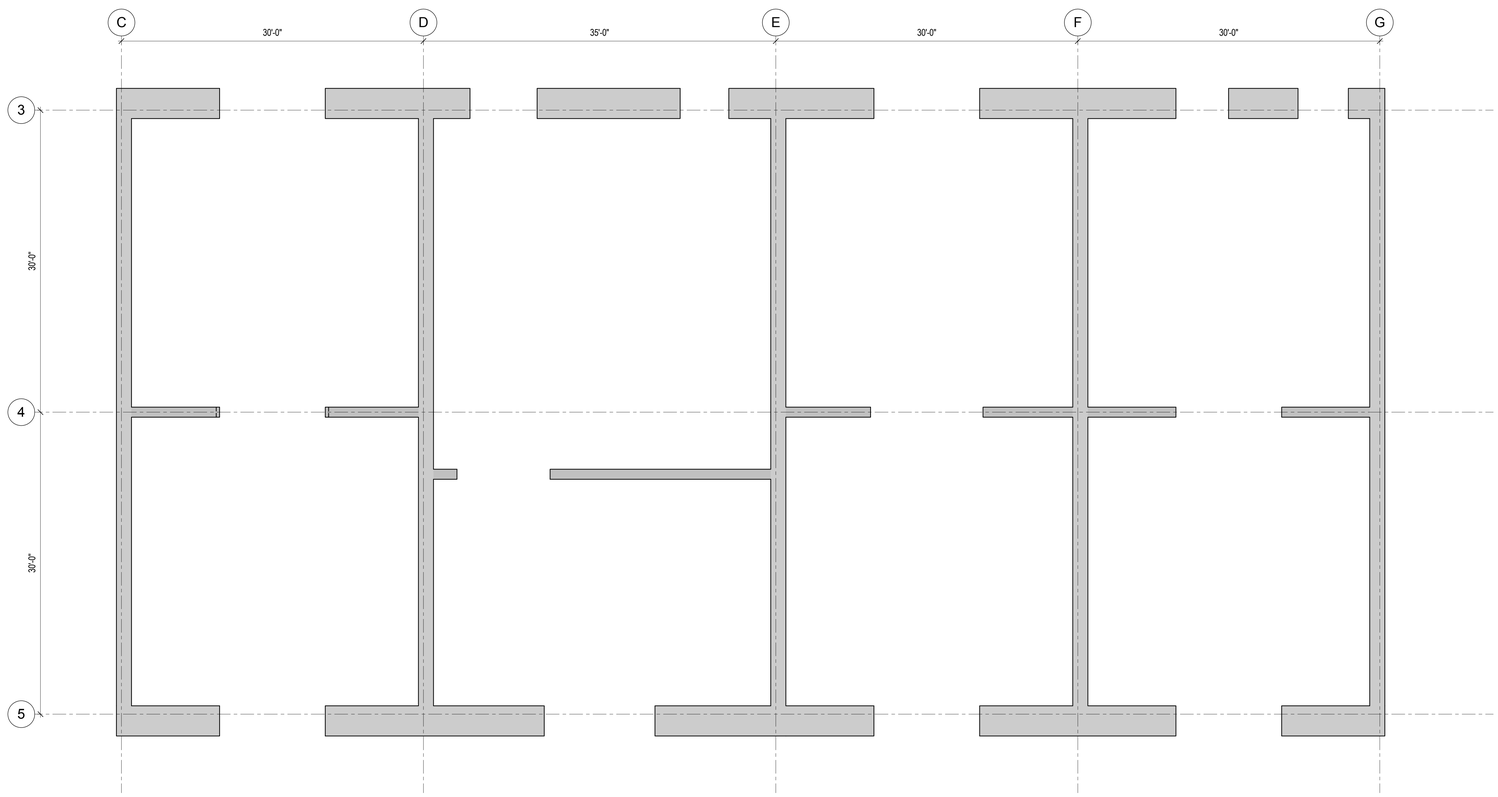


1 REINFORCEMENT LAYOUT - LEVEL 26 TO LEVEL 28

3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 2/S-346 FOR SIMILAR LAYOUT.



2 REINFORCEMENT LAYOUT - LEVEL 28 TO LEVEL 31

3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 2/S-346 FOR SIMILAR LAYOUT.

MANHATTAN WEST: NORTH TOWER
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Client
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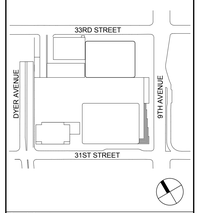
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Project No.: 211157
Date: 20 JUN 2014
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File No.: S-348
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Sheet No.: S-348
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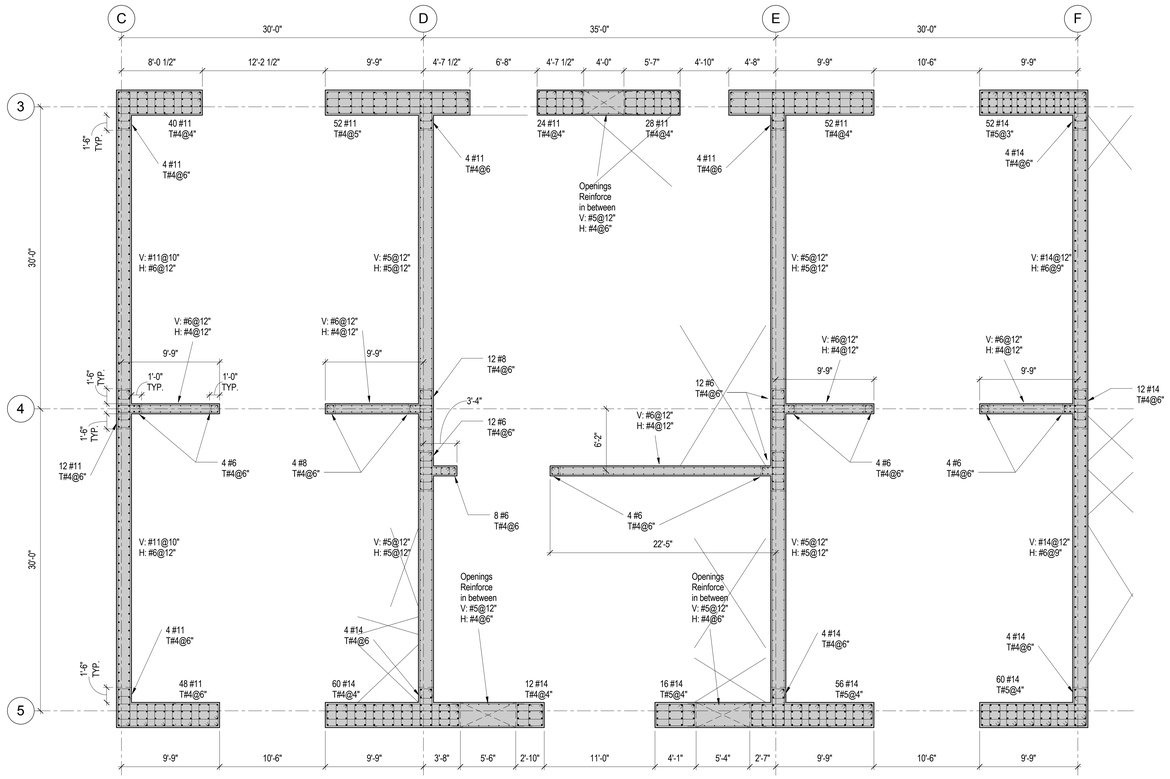
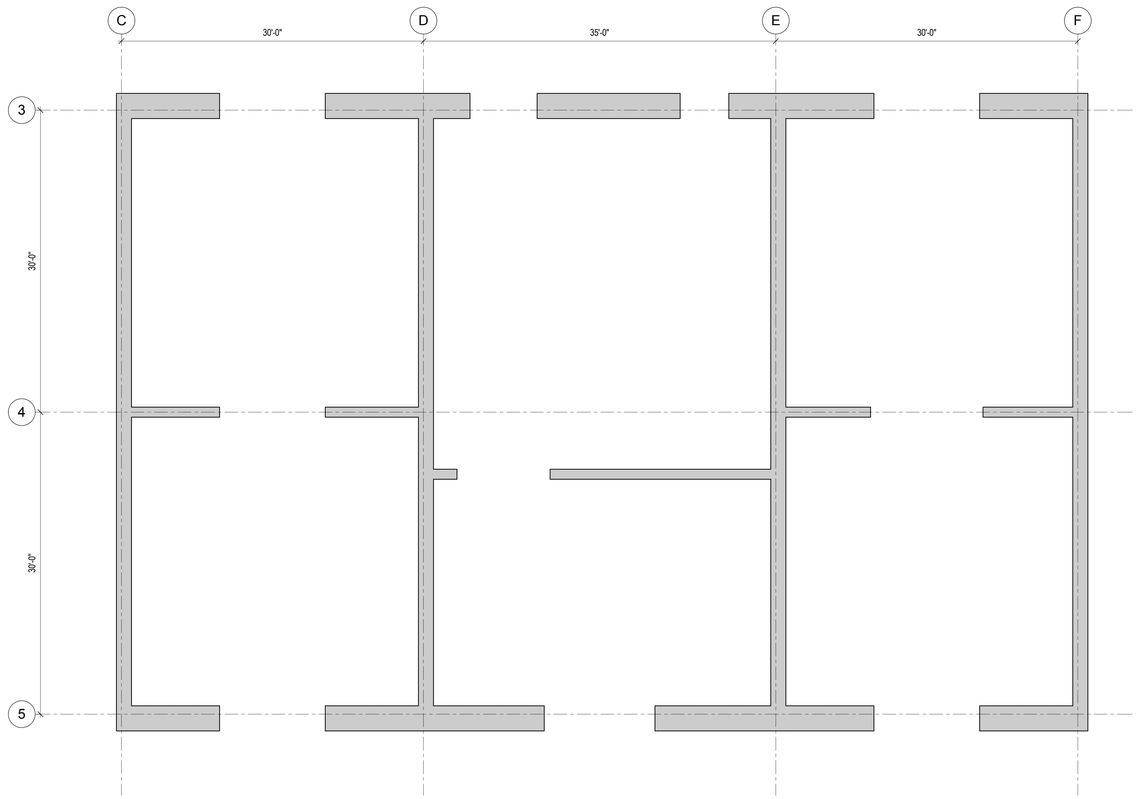


1 REINFORCEMENT LAYOUT - LEVEL 31 TO LEVEL 36
3/16" = 1'-0"



2 REINFORCEMENT LAYOUT - LEVEL 36 TO LEVEL 42
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 1/S-349 FOR SIMILAR LAYOUT.

MANHATTAN WEST: NORTH TOWER
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Security Consultant
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250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

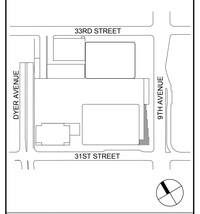
Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BERMAN
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

PRELIMINARY
NOT FOR CONSTRUCTION

No.	Date	Description
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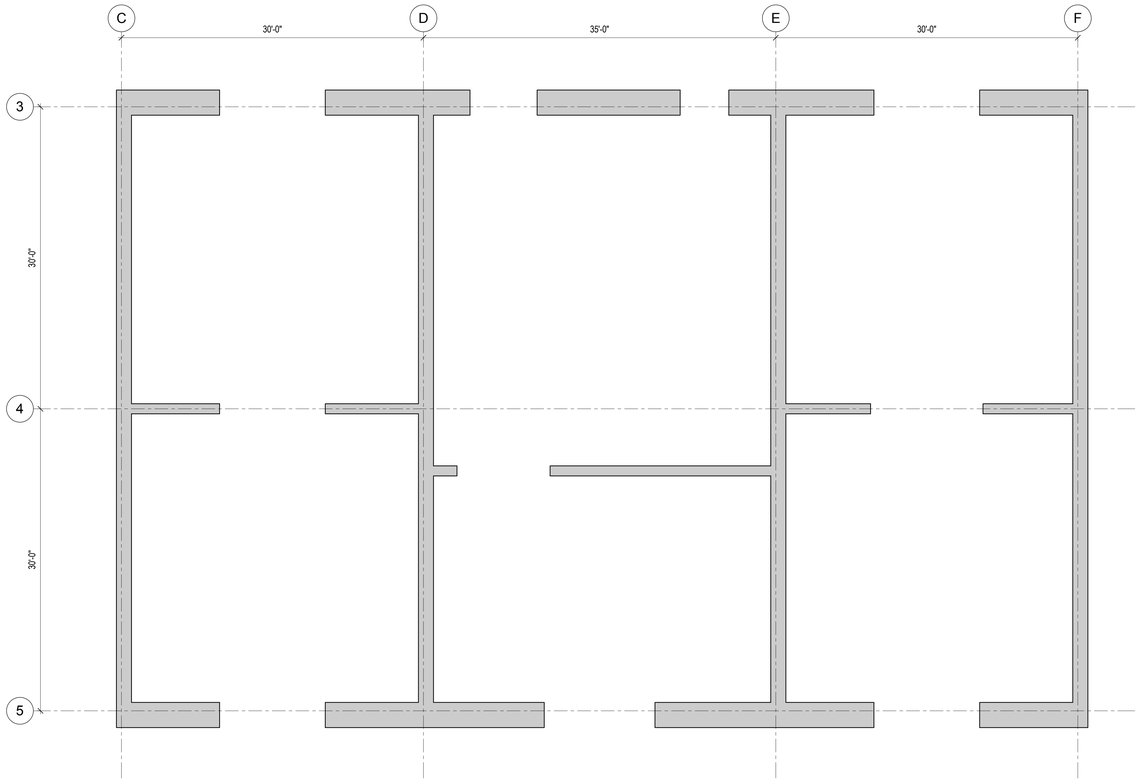
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

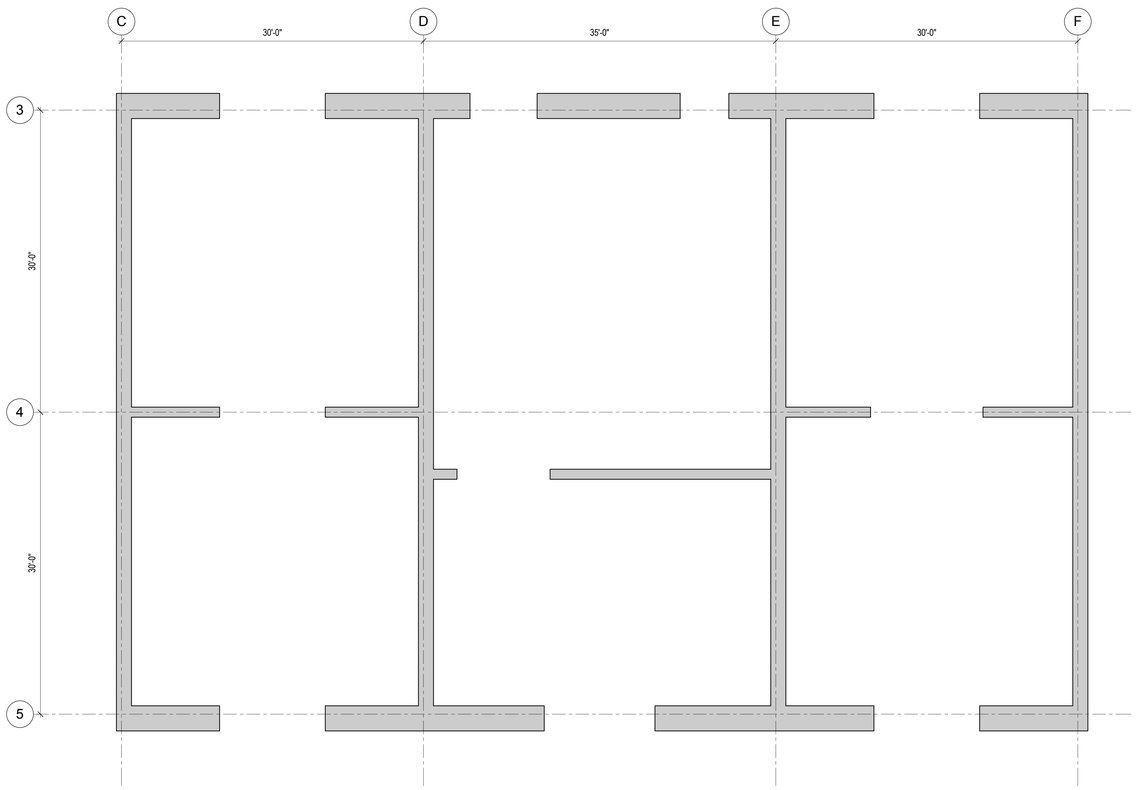
Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-349
B-SCAN Sheet No.: S-349.00
Sheet No.: S-349
Page No.: 56 of 90



1 REINFORCEMENT LAYOUT - LEVEL 42 TO LEVEL 47

3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 1/S-349 FOR SIMILAR LAYOUT.



2 REINFORCEMENT LAYOUT - LEVEL 47 TO LEVEL 53

3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 1/S-349 FOR SIMILAR LAYOUT.

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
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Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
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Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
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14 Penn Plaza, 225 W. 34th Street #610,
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Landscape Consultant
Field Operations
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Acoustical Consultant
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Vibration Consultant
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Facade Maintenance Consultant
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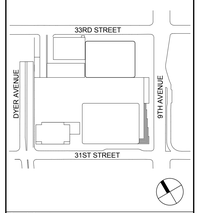
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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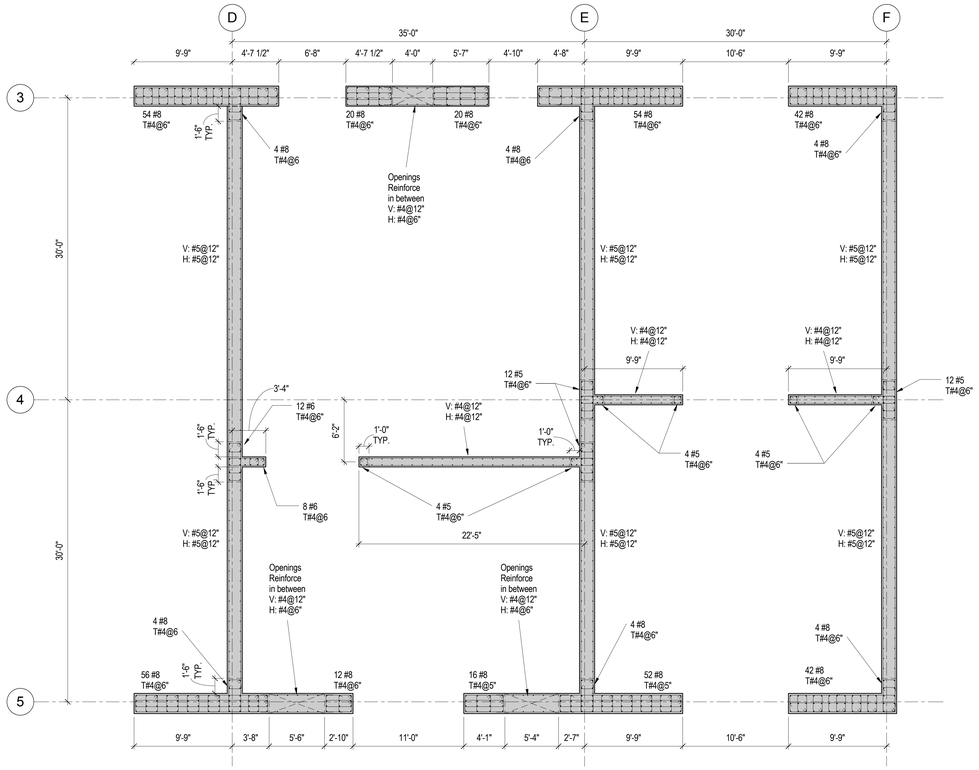
Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

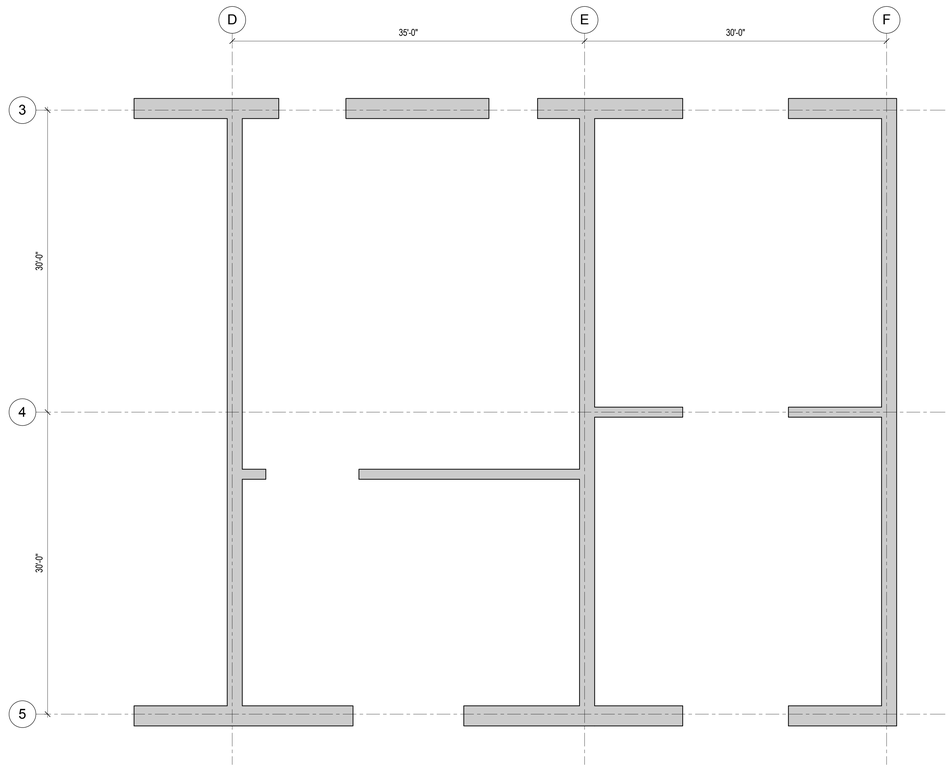
Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-350
B-SCAN Sheet No.: S-350.00
Sheet No.: S-350
Page No.: 57 of 90



1 REINFORCEMENT LAYOUT - LEVEL 53 TO LEVEL 58

3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 1/S-349 FOR SIMILAR LAYOUT.



2 REINFORCEMENT LAYOUT - LEVEL 58 TO LEVEL 63

3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 1/S-351 FOR SIMILAR LAYOUT.

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
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MEP Engineering
Jaros Baum & Bolles
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Field Operations
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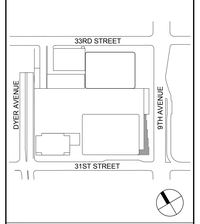
Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

Project No.: 211157
Date: 20 JUN 2014
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File No.: S-351
B-SCAN Sheet No.: S-351.00
Sheet No.: S-351
Page No.: 58 of 90

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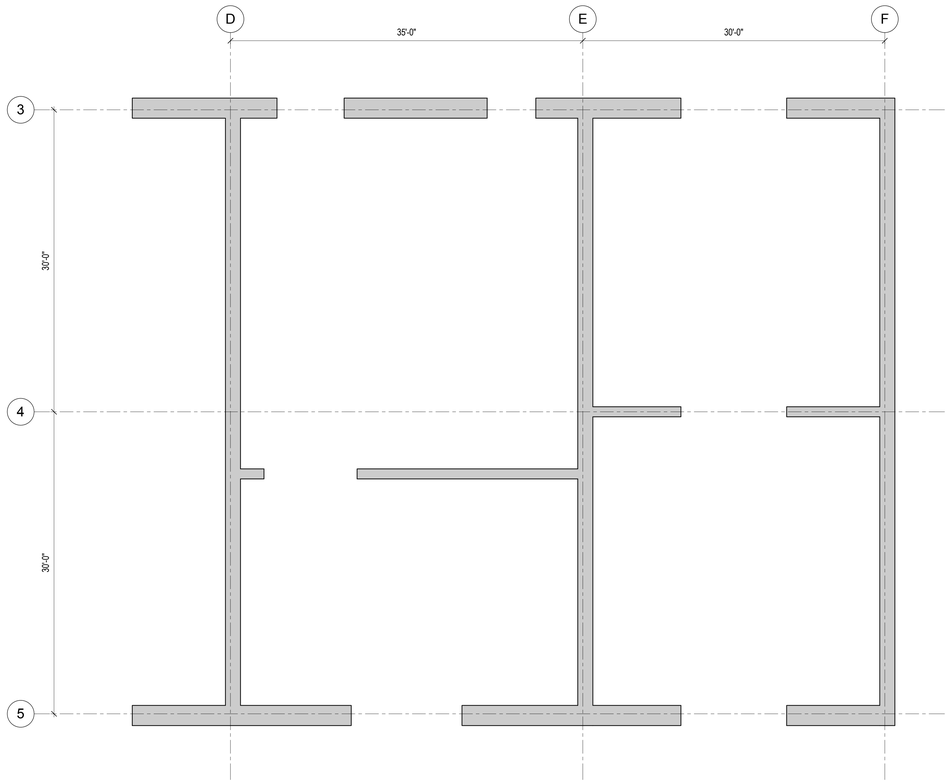
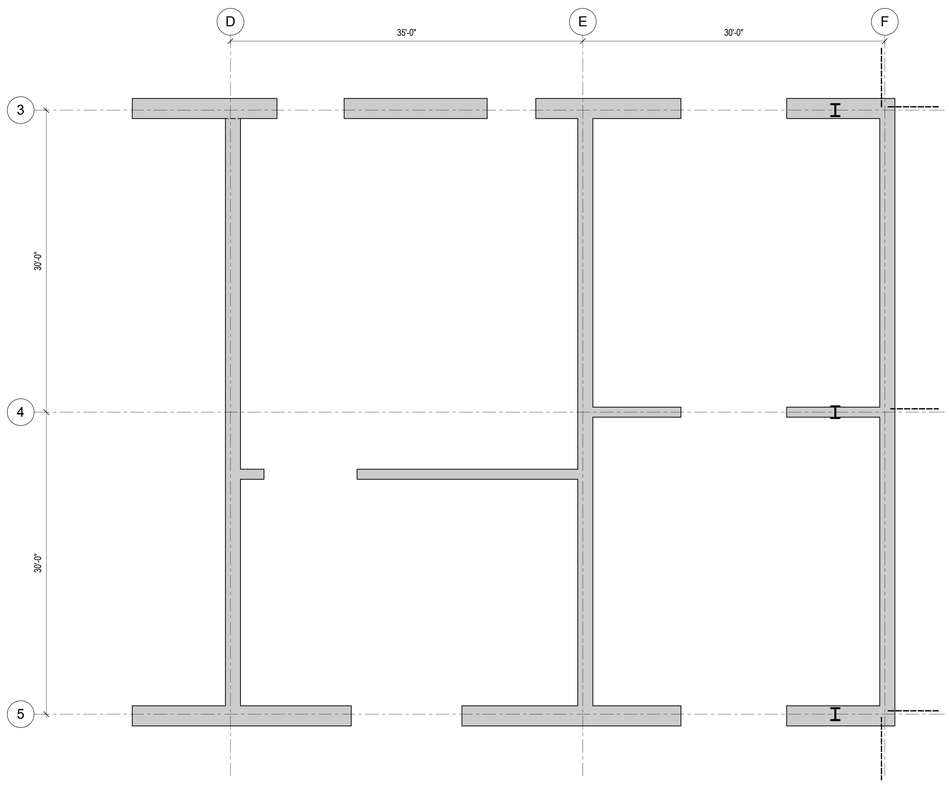


1 REINFORCEMENT LAYOUT - LEVEL 63 TO LEVEL 68
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 1/S-351 FOR SIMILAR LAYOUT.



2 REINFORCEMENT LAYOUT - LEVEL 68 TO LEVEL 69
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.
REFER TO 1/S-351 FOR SIMILAR LAYOUT.

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
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Architecture/Structural Engineering
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Skidmore, Owings & Merrill LLP
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Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
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Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
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Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
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Blast Consultant
Weidlinger Associates, Inc.
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Acoustical Consultant
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404 Fifth Avenue #8, New York, NY 10018

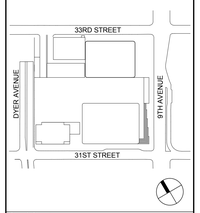
Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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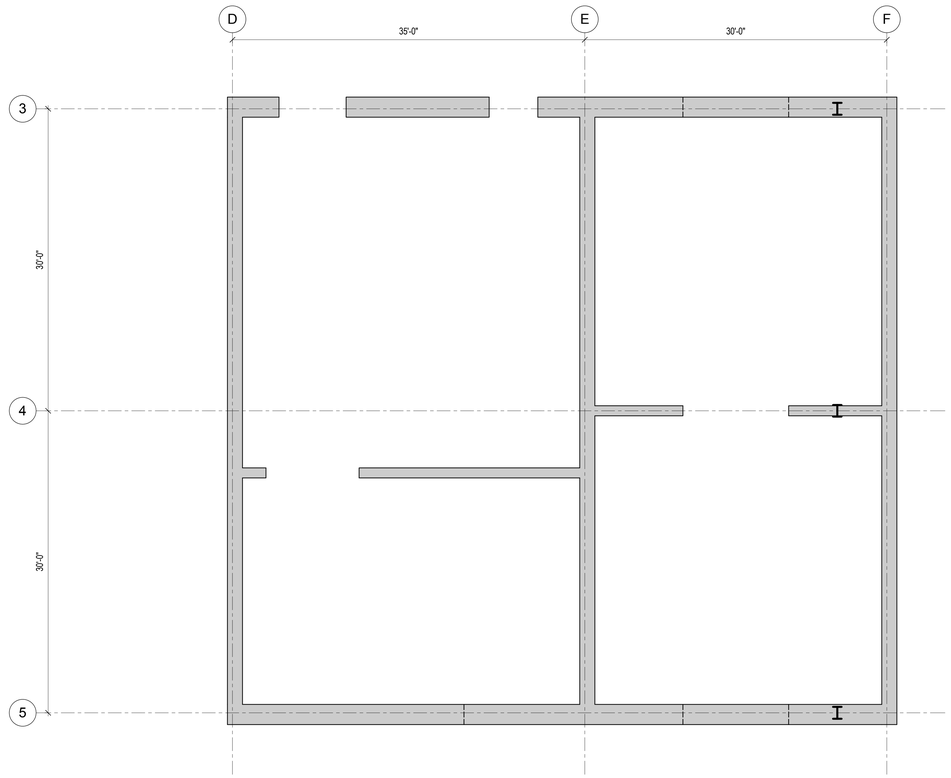
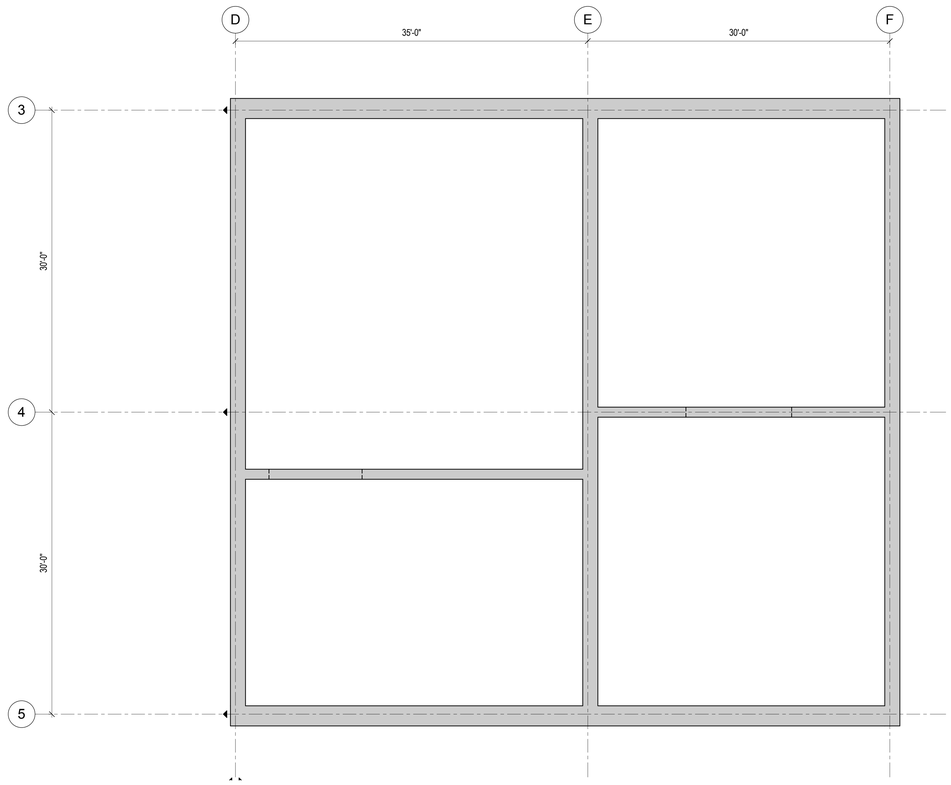
Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-352
B-SCAN Sheet No.: S-352.00
Sheet No.: S-352
Page No.: 59 of 90



1 REINFORCEMENT LAYOUT - LEVEL 69 TO LEVEL 70
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.



2 REINFORCEMENT LAYOUT - LEVEL 70 TO ROOF
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
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404 Fifth Avenue #8, New York, NY 10018

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Code Consultants Professional Engineers PC
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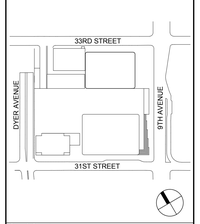
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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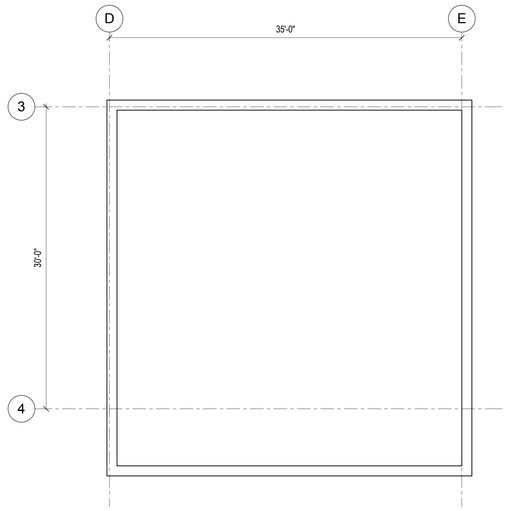
Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-353
B-SCAN Sheet No.: S-353.00
Sheet No.: S-353
Page No.: 60 of 90



1 REINFORCEMENT LAYOUT - ROOF
3/16" = 1'-0"

REINFORCING LAYOUT DESIGN IN-PROGRESS AND WILL BE SHOWN ON FUTURE DRAWING ISSUES.

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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14 Wall Street, New York, NY 10005

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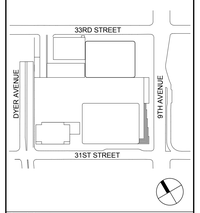
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BERSAK
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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Sheet Name:
CORE WALL REINFORCEMENT LAYOUT

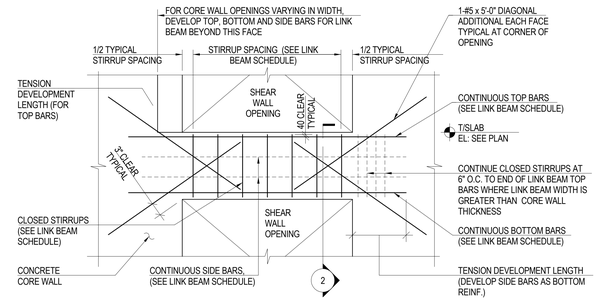
Project No.: 211157
Date: 20 JUN 2014
Scale: 3/16" = 1'-0"
File No.: S-354
B-SCAN Sheet No.: S-354.00
Sheet No.: S-354
Page No.: 61 of 90

REINFORCED CONCRETE CORE WALL LINK BEAM SCHEDULE

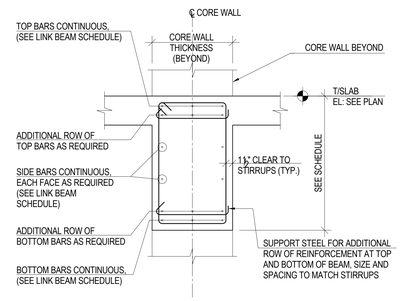
fy = 60 ksi
f'c = SEE NOTE 1
E = SEE NOTE 1

LEVEL	LOCATION (SEE KEY PLANS)	DIMENSIONS DEPTH "D" (IN)	DIMENSIONS WIDTH "W" (IN)	TOP AND BOTTOM REINF.	SIDE REINF. (EA. FACE)	STIRRUPS SIZE/ SPACING	STIRRUPS TYPE	REMARKS
54 - ROOF	LB2	111	30	2 x 12 - #9	2 - #5	#5 @ 6.0"	-	
	LB3	66	30	2 x 7 - #9	2 - #5	#5 @ 6.0"	-	EMBEDDED W18x158 ON LEVEL 53 TO 60
	LB4, LB8	120	42	3 x 9 - #9	4 - #5	#5 @ 5.0"	-	
	LB7	132	32	3 x 10 - #9	2 - #5	#5 @ 6.0"	-	UPTURNED LINK BEAM, EMBEDDED W24x162 ON LEVEL 53 TO 60
	LB11, LB12	120	24	8 - #9	2 - #5	#4 @ 6.0"	-	
32 - 53	LB1, LB6	124	42	3 x 9 - #9	3 - #5	#5 @ 4.0"	-	
	LB2	111	30	3 x 12 - #9	1 - #5	#5 @ 5.0"	-	EMBEDDED W18x234
	LB3	66	30	2 x 10 - #9	2 - #5	#5 @ 5.0"	-	EMBEDDED W18x234
	LB4, LB8	120	42	3 x 10 - #9	3 - #5	#5 @ 5.0"	-	EMBEDDED W27x258 ON LEVEL 31 TO 42
	LB7	132	32	5 - #9	3 - #5	#5 @ 6.0"	-	UPTURNED LINK BEAM, EMBEDDED 24x32x2x1 STEEL BUILT-UP MEMBER
	LB10	124	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB11	111	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB12	120	24	4 - #9	2 - #5	#4 @ 6.0"	-	
29 - 31	LB1, LB6	124	42	3 x 9 - #9	3 - #5	#5 @ 4.0"	-	
	LB2	111	30	3 x 14 - #9	1 - #5	#4 @ 5.0"	-	
	LB3	66	30	3 x 14 - #9	1 - #5	#4 @ 5.0"	-	
	LB4, LB8	120	42	3 x 12 - #9	4 #5	#5 @ 5.0"	-	
	LB5, LB9	60	42	8 - #9	5 #5	#5 @ 6.0"	-	EMBEDDED 24x34x2x2.5 STEEL BUILT-UP MEMBER
	LB7	132	32	6 - #9	3 - #5	#5 @ 6.0"	-	UPTURNED LINK BEAM, EMBEDDED 24x32x2x1 STEEL BUILT-UP MEMBER
	LB10	124	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB11	111	24	8 - #9	2 - #5	#4 @ 6.0"	-	
	LB12	120	24	8 - #9	2 - #5	#4 @ 6.0"	-	
	LB14	60	42	2 x 6 - #9	3 - #5	#5 @ 5.0"	-	
27 - 28	LB1, LB6	124	42	3 x 9 - #9	3 - #5	#5 @ 4.0"	-	
	LB2	111	30	3 x 14 - #9	1 - #5	#4 @ 5.0"	-	
	LB3	66	30	3 x 14 - #9	1 - #5	#4 @ 5.0"	-	
	LB4, LB5, LB8, LB9	120	42	3 x 12 - #9	3 - #5	#5 @ 5.0"	-	
	LB7	132	32	6 - #9	3 - #5	#5 @ 6.0"	-	UPTURNED LINK BEAM, EMBEDDED 24x32x2x1 STEEL BUILT-UP MEMBER
	LB10	124	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB11	111	24	8 - #9	2 - #5	#4 @ 6.0"	-	
	LB12, LB13	120	24	8 - #9	2 - #5	#4 @ 6.0"	-	
17 - 26	LB1, LB6	124	42	3 x 9 - #9	3 - #5	#5 @ 5.0"	-	
	LB2	111	30	2 x 18 - #9	2 - #5	#5 @ 5.0"	-	
	LB3	66	30	3 x 8 - #9	2 - #5	#5 @ 5.0"	-	
	LB4, LB5, LB8, LB9	120	42	3 x 14 - #9	3 - #5	#5 @ 4.0"	-	
	LB7	132	32	8 - #9	3 - #5	#5 @ 6.0"	-	UPTURNED LINK BEAM, EMBEDDED 24x32x2x1.5 STEEL BUILT-UP MEMBER
	LB10	124	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB11	111	24	8 - #9	2 - #5	#4 @ 6.0"	-	
	LB12, LB13	120	24	8 - #9	2 - #5	#4 @ 6.0"	-	
12 - 16	LB1, LB6	124	42	3 x 8 - #9	3 - #5	#5 @ 5.0"	-	
	LB2	111	30	3 x 11 - #9	2 - #5	#5 @ 5.0"	-	
	LB3	66	30	3 x 8 - #9	2 - #5	#5 @ 5.0"	-	
	LB4, LB5, LB8, LB9	120	42	3 x 11 - #9	3 - #5	#5 @ 5.0"	-	
	LB7	132	32	10 - #9	3 - #5	#5 @ 6.0"	-	UPTURNED LINK BEAM, EMBEDDED 24x32x2x1.5 STEEL BUILT-UP MEMBER
	LB10	124	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB11	111	24	8 - #9	2 - #5	#4 @ 6.0"	-	
	LB12, LB13	120	24	8 - #9	2 - #5	#4 @ 6.0"	-	
7 - 11	LB1, LB6	124	42	3 x 8 - #9	3 - #5	#5 @ 5.0"	-	
	LB2	111	30	3 x 10 - #9	2 - #5	#5 @ 5.0"	-	
	LB3	66	30	3 x 8 - #9	2 - #5	#5 @ 4.0"	-	
	LB4, LB5, LB8, LB9	120	42	3 x 10 - #9	3 - #5	#5 @ 6.0"	-	
	LB7	132	32	3 x 17 - #9	2 - #5	#5 @ 5.0"	-	UPTURNED LINK BEAM
	LB10	124	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB11	111	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB12, LB13	120	24	4 - #9	2 - #5	#4 @ 6.0"	-	
6	LB2	111	224	3 x 10 - #9	2 - #5	#5 @ 5.0"	-	
	LB3	66	224	3 x 8 - #9	2 - #5	#5 @ 4.0"	-	
	LB4	120	204	3 x 10 - #9	3 - #5	#5 @ 6.0"	-	
	LB8	120	180	3 x 10 - #9	3 - #5	#5 @ 6.0"	-	
	LB10	124	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB11	111	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB12	120	24	4 - #9	2 - #5	#4 @ 6.0"	-	
5	LB1, LB6	124	42	3 x 8 - #9	3 - #5	#5 @ 5.0"	-	
	LB2	111	30	3 x 10 - #9	2 - #5	#5 @ 5.0"	-	
	LB3	66	30	3 x 8 - #9	2 - #5	#5 @ 4.0"	-	
	LB4, LB5, LB8, LB9	120	42	3 x 10 - #9	3 - #5	#5 @ 6.0"	-	
	LB10	124	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB11	111	24	4 - #9	2 - #5	#4 @ 6.0"	-	
	LB12, LB13	120	24	4 - #9	2 - #5	#4 @ 6.0"	-	
2	LB1, LB6	124	474	8 - #8	40 - #8	#8 @ 12.0"	-	
	LB2	111	474	8 - #8	40 - #8	#8 @ 12.0"	-	
	LB3	66	474	8 - #8	40 - #8	#8 @ 12.0"	-	
	LB4, LB5	120	474	8 - #8	40 - #8	#8 @ 12.0"	-	
	LB7	80	474	8 - #8	40 - #8	#8 @ 12.0"	-	
	LB8, LB9	46	474	8 - #8	40 - #8	#8 @ 12.0"	-	
	LB10	124	474	8 - #8	40 - #8	#8 @ 12.0"	-	
	LB11	111	474	8 - #8	40 - #8	#8 @ 12.0"	-	
	LB12, LB13	120	474	8 - #8	40 - #8	#8 @ 12.0"	-	

NOTE: SEE S-356 FOR LINK BEAM DETAILS W/ EMBEDDED STEEL SHAPES.

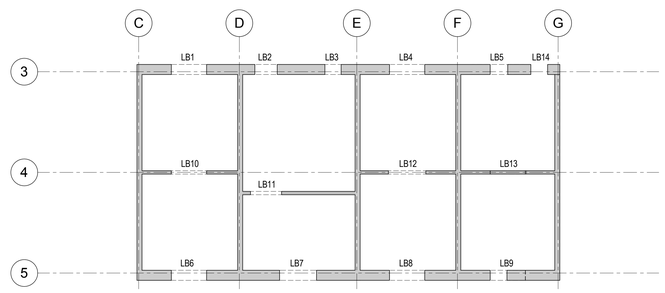


NOTES: 1. CORE WALL REINFORCEMENT NOT SHOWN FOR CLARITY.
2. SEE CORE WALL ELEVATION FOR SIZE OF OPENINGS.

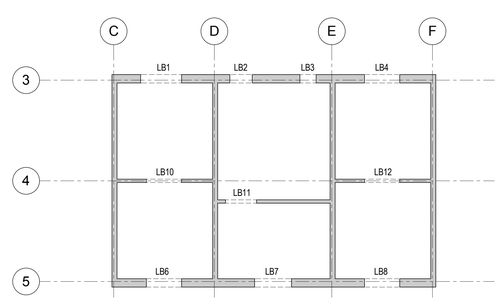


NOTES: 1. SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

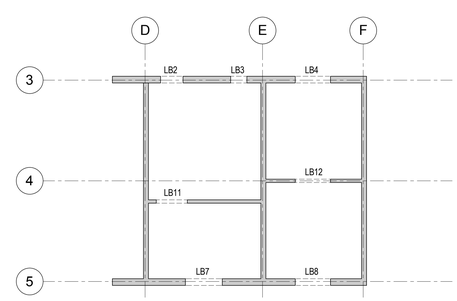
1 TYPICAL LINK BEAM ELEVATION FOR SHEAR SPAN-TO-DEPTH RATIO LESS THAN 2.0
1" = 1'-0"



A KEY PLAN A - LEVEL 6 TO LEVEL 31 KEY PLAN
1/16" = 1'-0"



B KEY PLAN B - LEVEL 31 TO 53
1/16" = 1'-0"



C KEY PLAN C - LEVEL 53 TO ROOF
1/16" = 1'-0"

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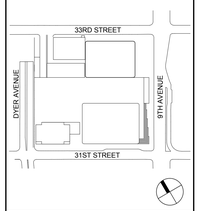
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
LINK BEAM SCHEDULES, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-355
B-SCAN Sheet No.: S-355.00
Sheet No.: S-355
Page No.: 62 of 90

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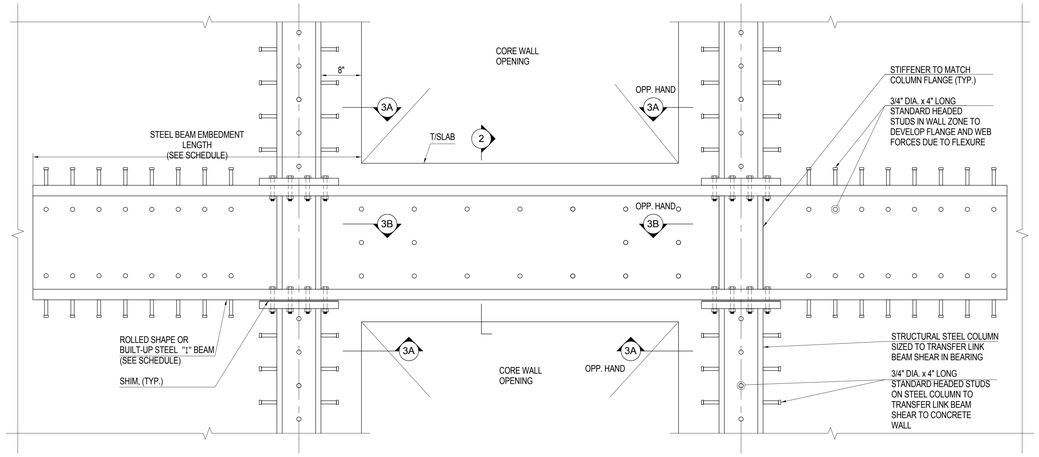
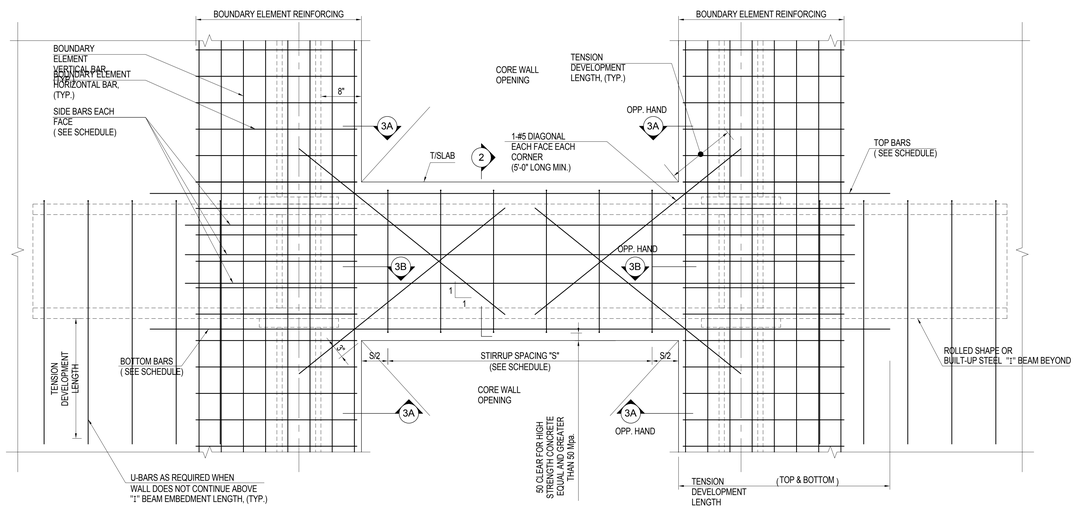


A ELEVATION VIEW AT ENCASED STRUCTURAL STEEL SHAPE

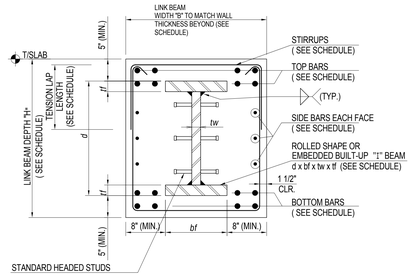


B ELEVATION VIEW FOR REINFORCING STEEL (EMBEDDED STEEL BEYOND)

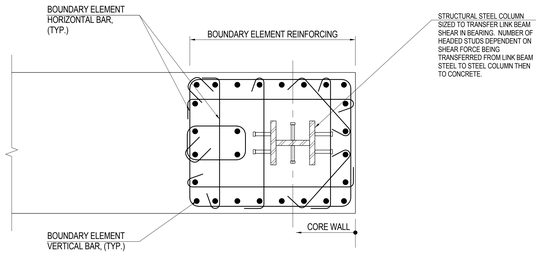
NOTE: 1. WHEN TWO EMBEDED STEEL PIECES ARE LOCATED SUCH THAT THEIR EMBEDMENT LENGTHS WOULD OVERLAP, PROVIDE THE LARGER STEEL EMBED CONTINUOUS THROUGH BOTH LINK BEAMS. BETWEEN OPENINGS THE WEB TO FLANGE WELD SHALL BE THE LARGER WEB TO FLANGE WELD INDICATED ON DETAIL 3B FOR THE STEEL EMBED.

CONTRACTOR TO PROVIDE METHOD STATEMENT FOR ALL LINK BEAM CONSTRUCTION INCLUDING SPECIAL PLACEMENT METHODS FOR LINK BEAMS WITH EMBEDDED STEEL PIECES

1 TYPICAL LINK BEAM ELEVATION WITH EMBEDDED STEEL SHAPE
NOT TO SCALE

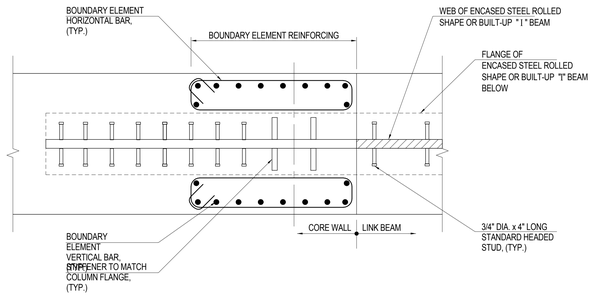


2 SECTION AT LINK BEAM WITH EMBEDDED STEEL SHAPE
NOT TO SCALE



NOTE: 1. TYPICAL WALL REINFORCEMENT NOT SHOWN FOR CLARITY.

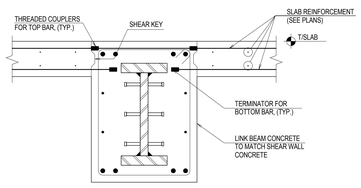
A SECTION THRU CORE WALL ABOVE AND BELOW LINK BEAM



NOTE: 1. TYPICAL WALL REINFORCEMENT NOT SHOWN FOR CLARITY.

B SECTION THRU CORE WALL AT LINK BEAM

3 SECTIONS AT CORE WALL-TO-LINK BEAM INTERFACE
NOT TO SCALE



NOTES:
1. WORK WITH DETAILS ON S-341.

4 DETAIL AT LINK BEAM/SLAB INTERFACE (EMBEDDED STEEL SHAPE)
NOT TO SCALE

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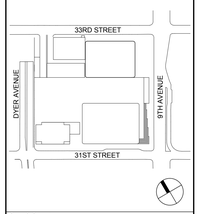
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:
LINK BEAM SECTION AND DETAILS

Project No.: 211157	B-SCAN Sheet No.: S-356.00
Date: 20 JUN 2014	Sheet No.: S-356
Scale: NOT TO SCALE	
File No.: S-356	Page No.: 63 of 90

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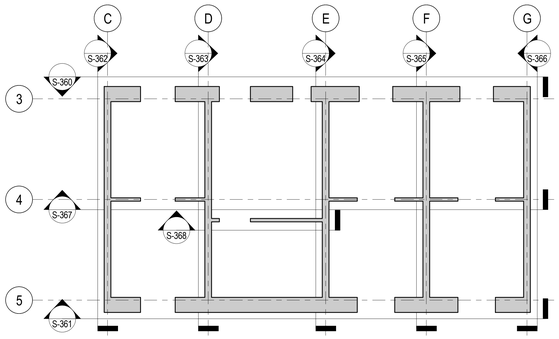
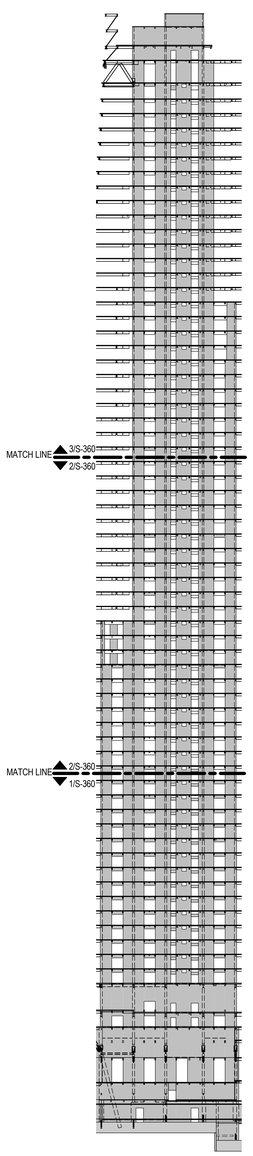
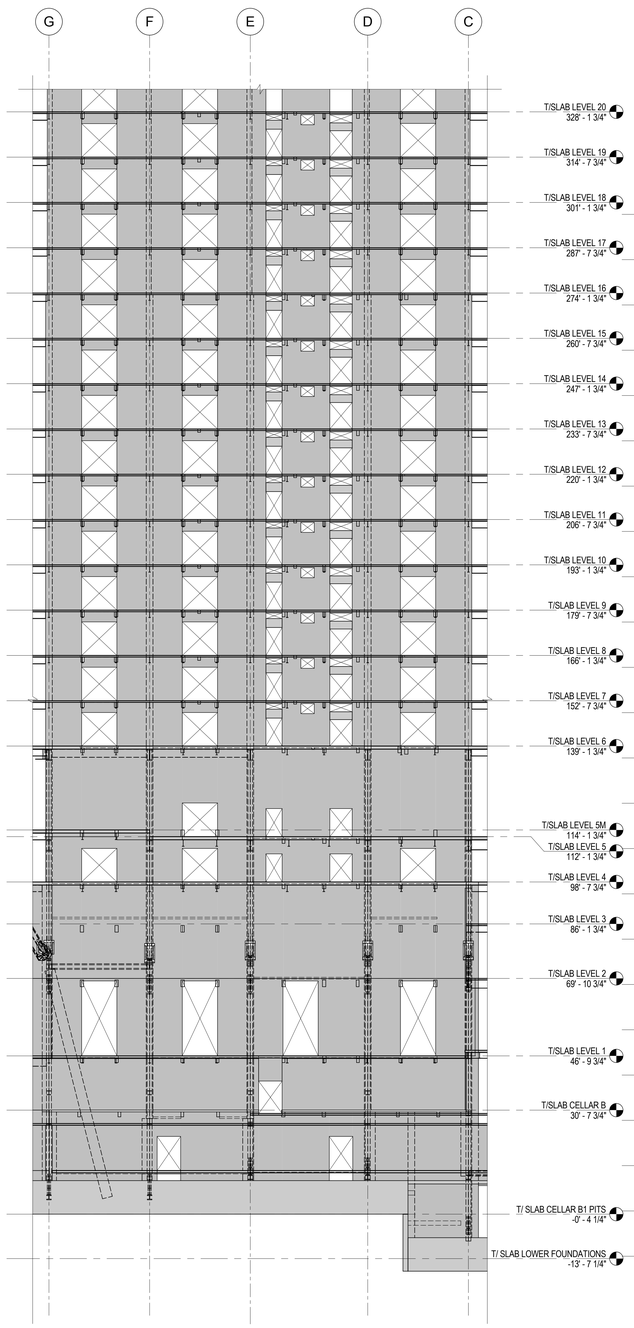


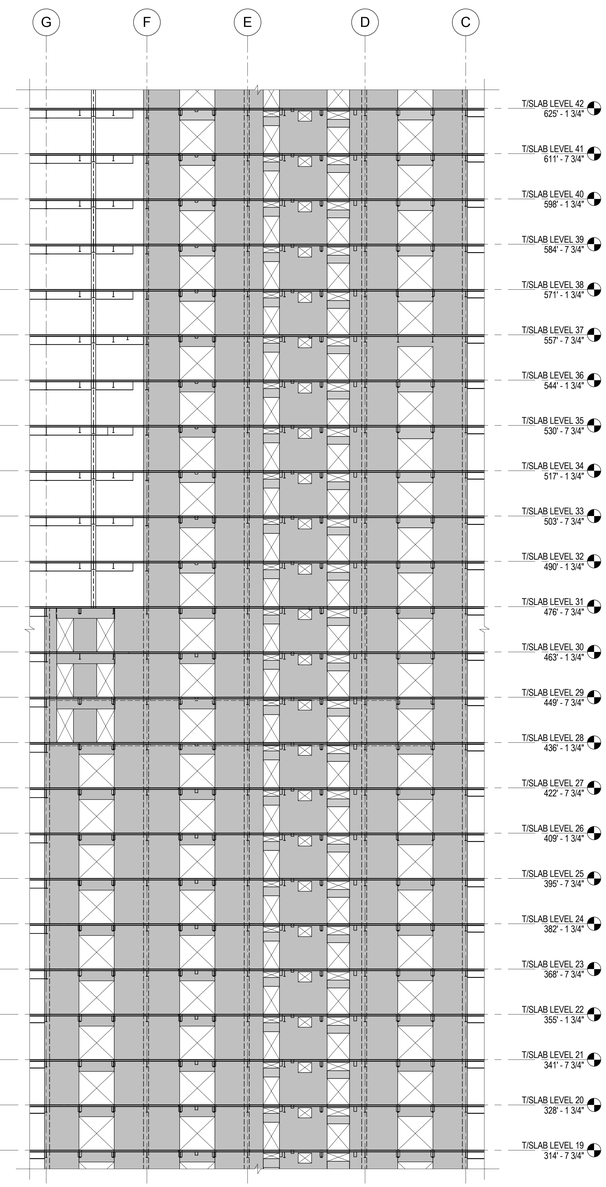
CORE WALL ELEVATION KEY PLAN
NTS



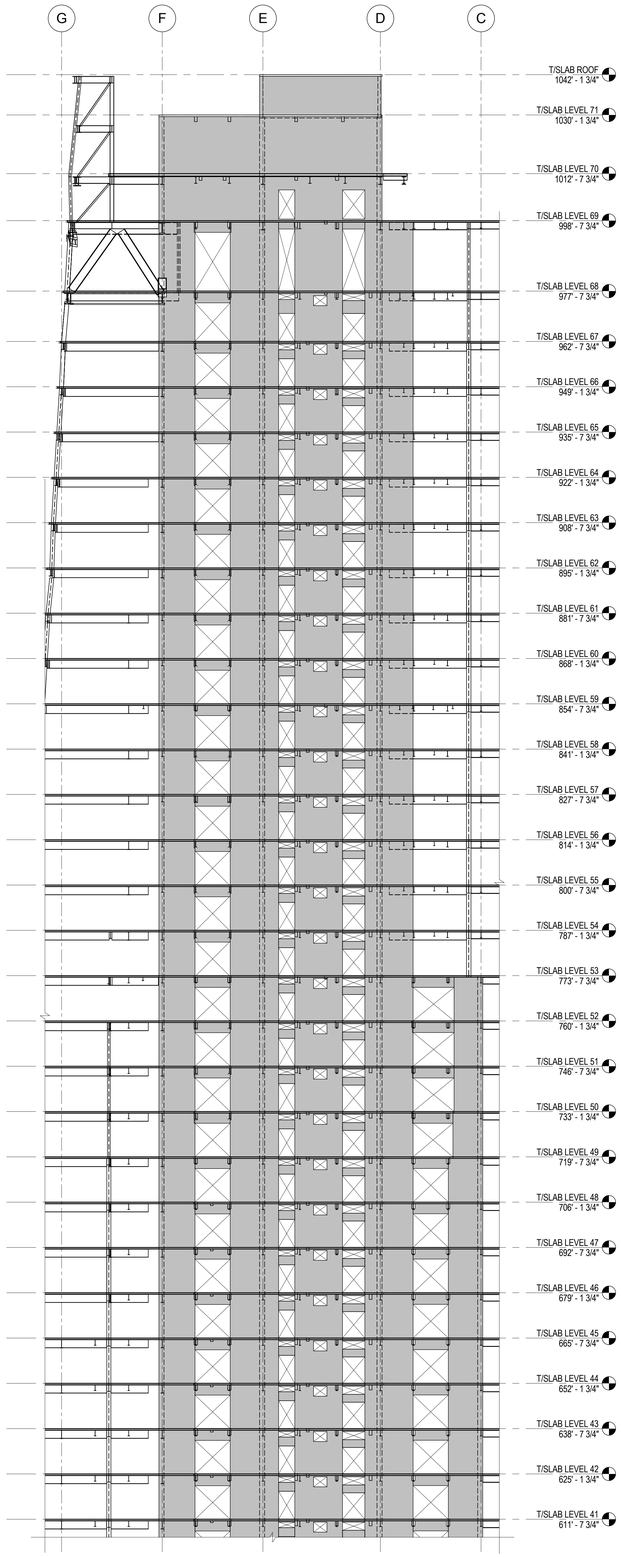
ELEVATION KEY
N.T.S



1 ELEVATION ALONG LINE 3
1/16" = 1'-0"



2 ELEVATION ALONG LINE 3
1/16" = 1'-0"



3 ELEVATION ALONG LINE 3
1/16" = 1'-0"

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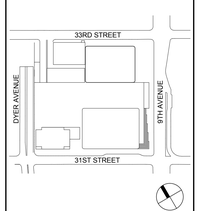
Key Plan:



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Sheet Name:
CORE WALL ELEVATIONS ALONG LINE 3

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-360
B-SCAN Sheet No.: S-360.00
Sheet No.: S-360
Page No.: 64 of 90

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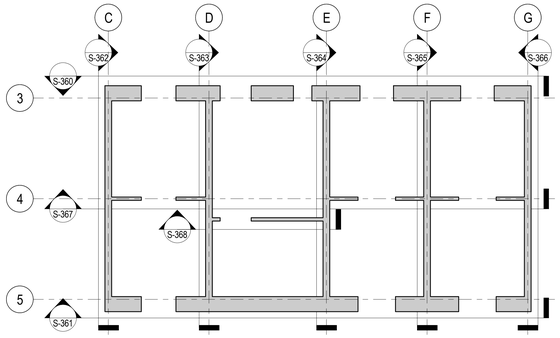
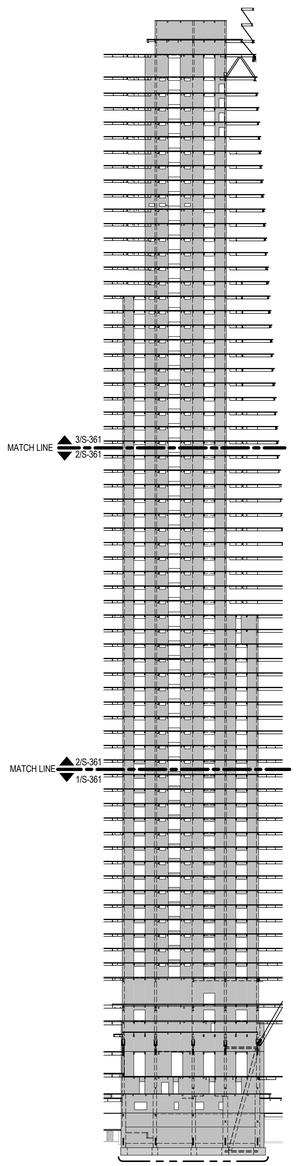


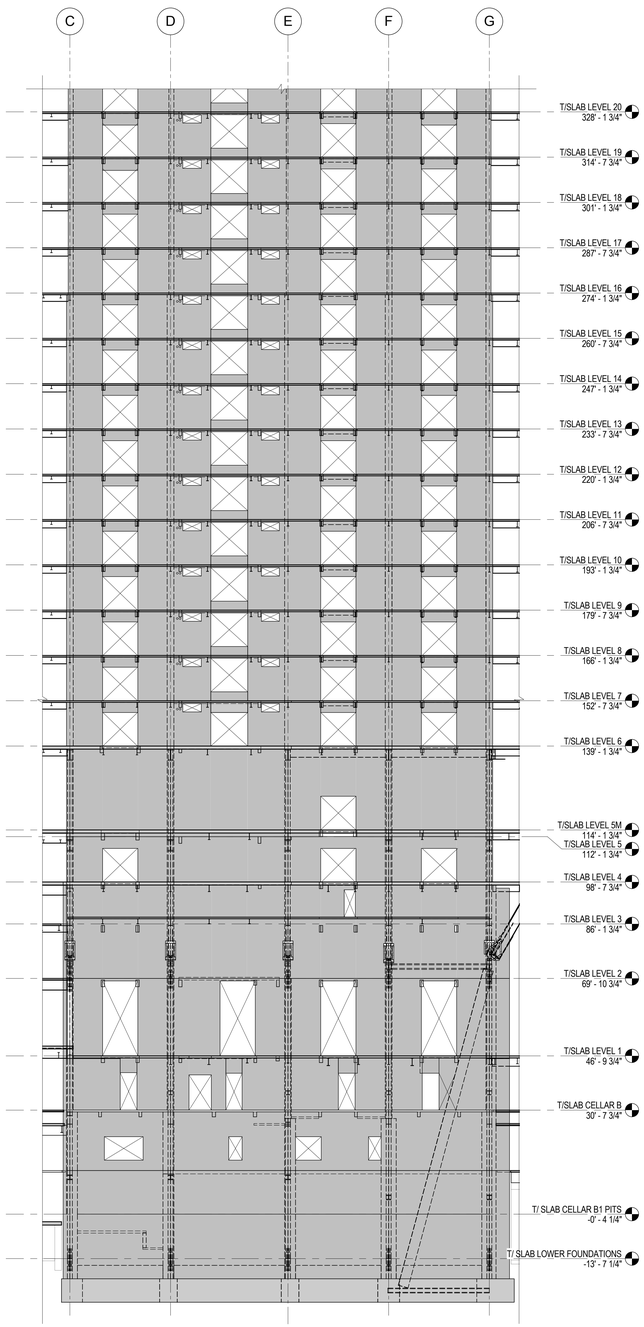
CORE WALL ELEVATION KEY PLAN

NTS



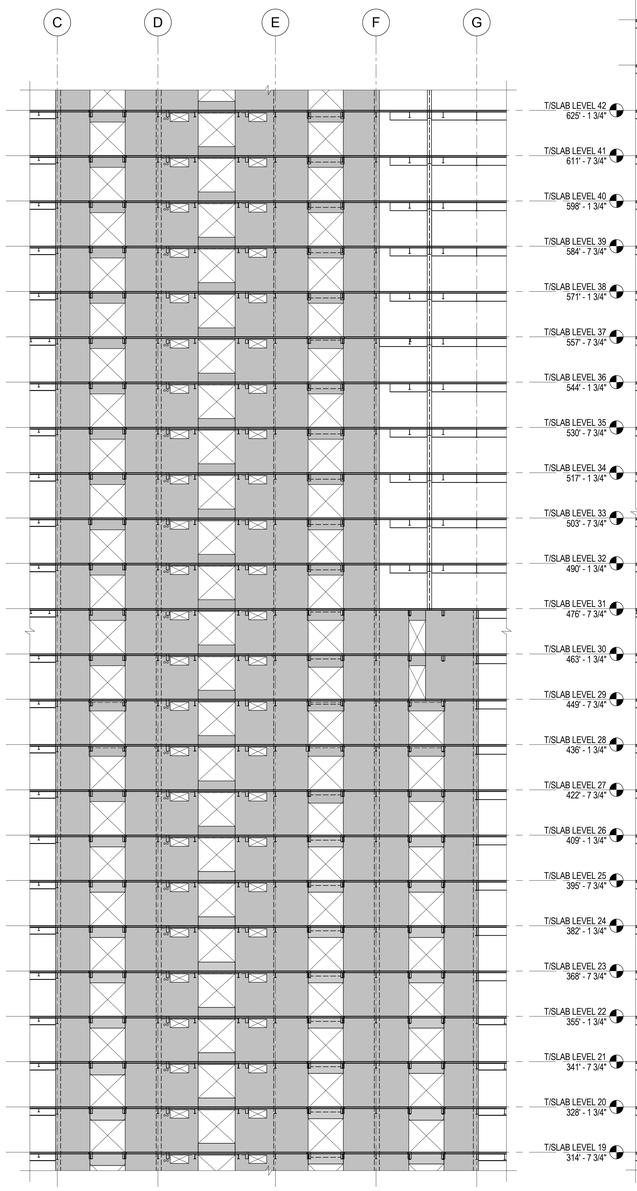
ELEVATION KEY

N.T.S



1 ELEVATION ALONG LINE 5

1/16" = 1'-0"



2 ELEVATION ALONG LINE 5

1/16" = 1'-0"

3 ELEVATION ALONG LINE 5

1/16" = 1'-0"

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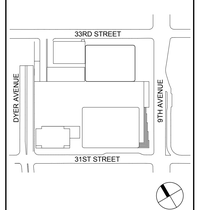

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5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

CORE WALL ELEVATIONS ALONG LINE 5

Project No.: 211157

Date: 20 JUN 2014

Scale: As indicated

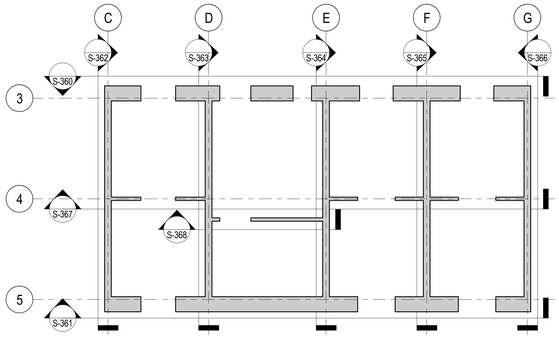
File No.: S-361

B-SCAN Sheet No.: S-361.00

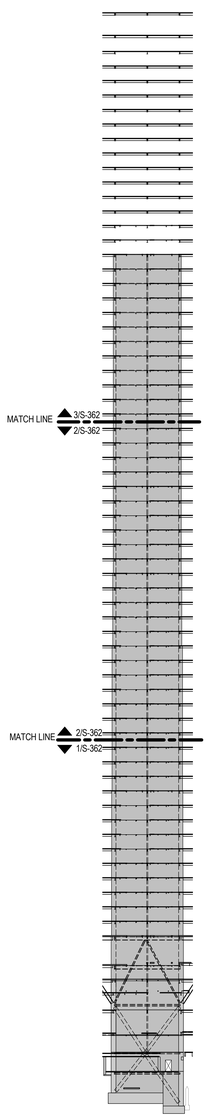
Sheet No.: S-361

Page No.: 65 of 90

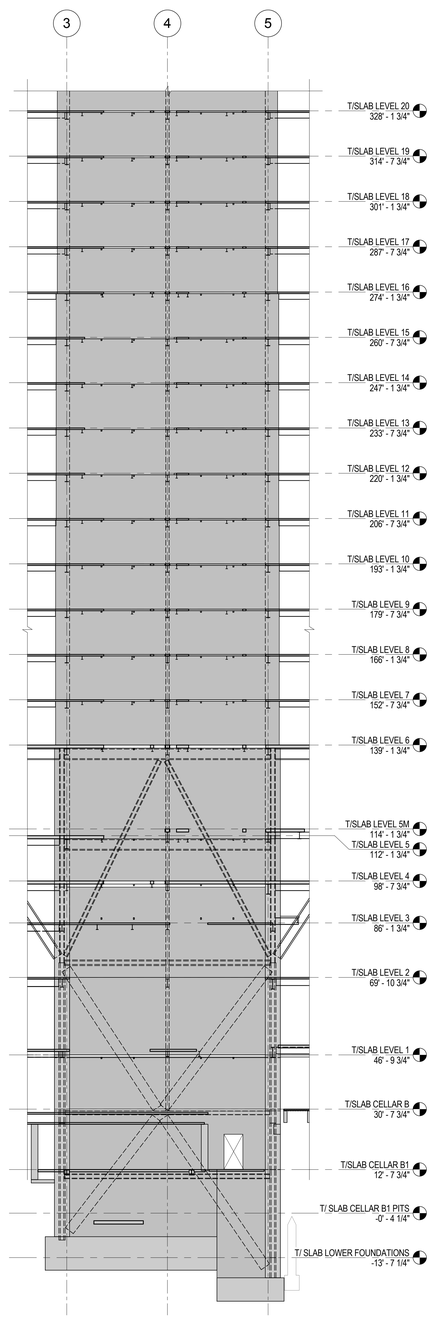
6/19/2014 11:23:21 PM



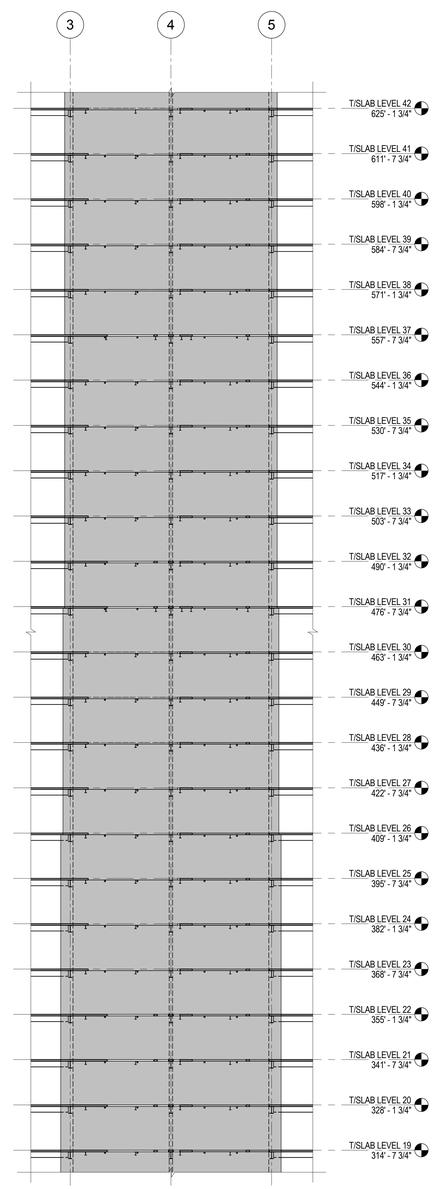
CORE WALL ELEVATION KEY PLAN
NTS



ELEVATION KEY
N.T.S



1 ELEVATION ALONG LINE C
1/16" = 1'-0"



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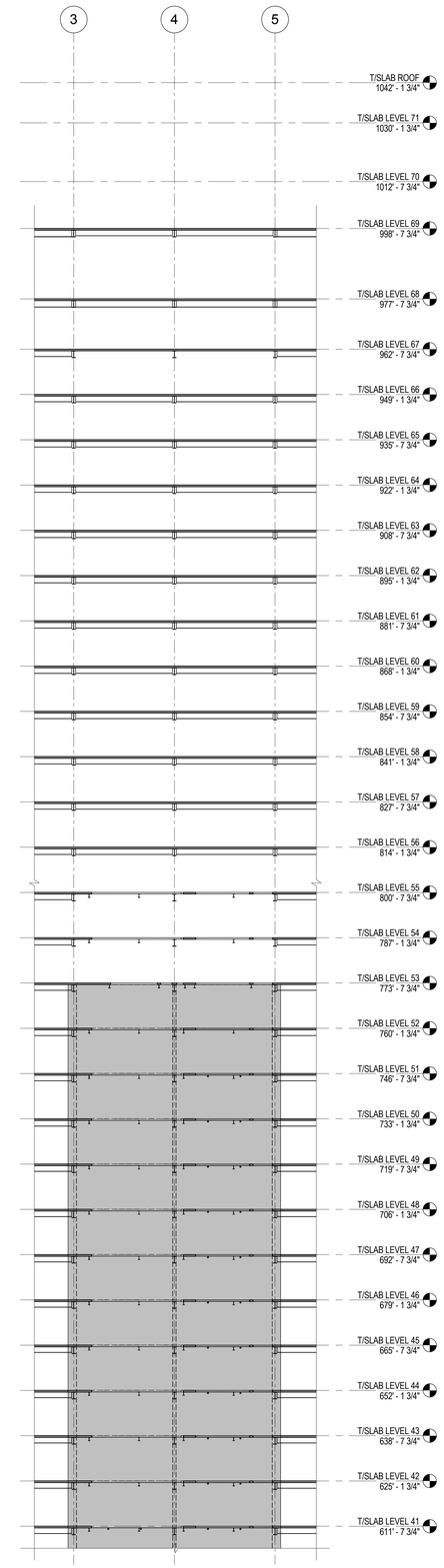

3 ELEVATION ALONG LINE C
1/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
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MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
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14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

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Field Operations
475 10th Avenue, New York, NY 10018

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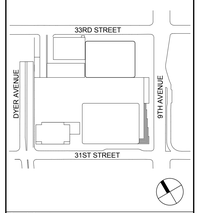
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
CORE WALL ELEVATIONS ALONG LINE C

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-362
B-SCAN Sheet No.:
S-362.00
Sheet No.: S-362
Page No.: 66 of 90

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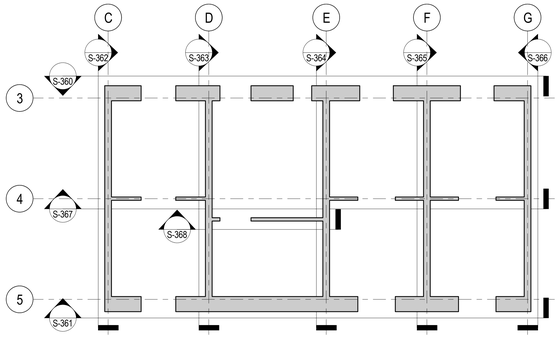
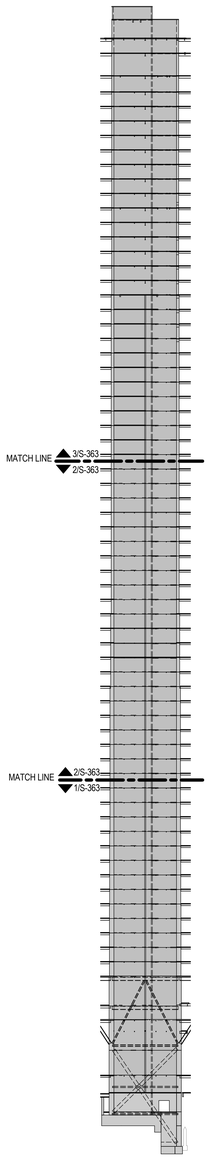
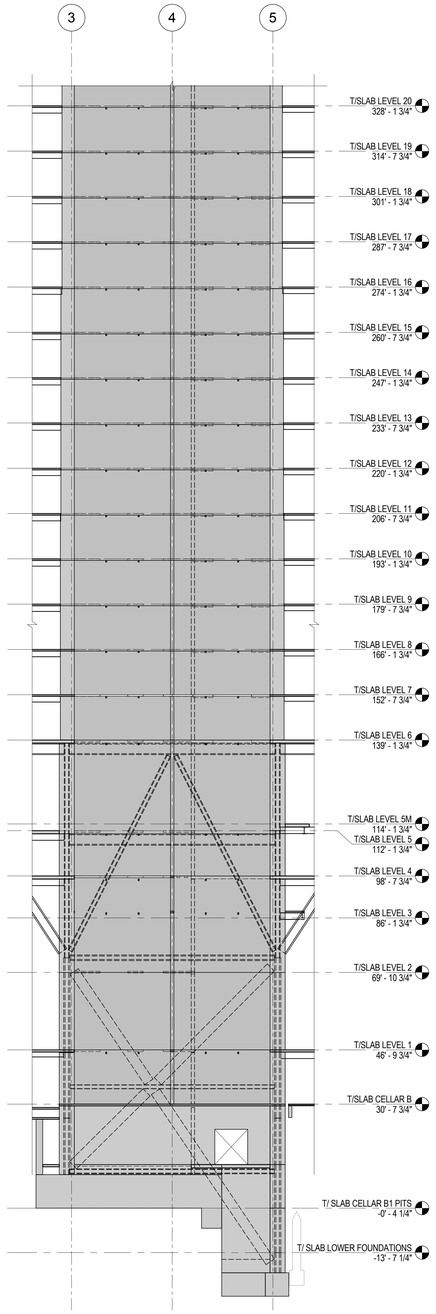


CORE WALL ELEVATION KEY PLAN
NTS



ELEVATION KEY
N.T.S



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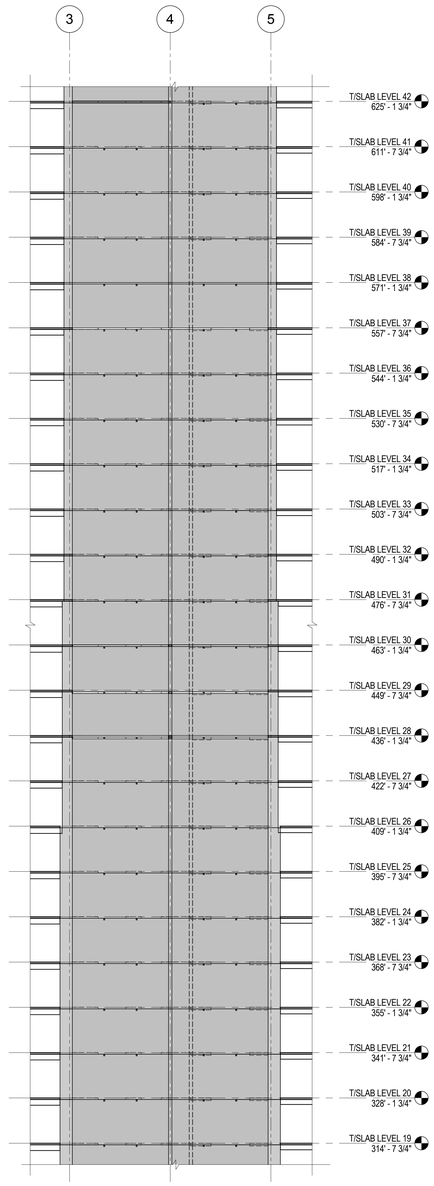

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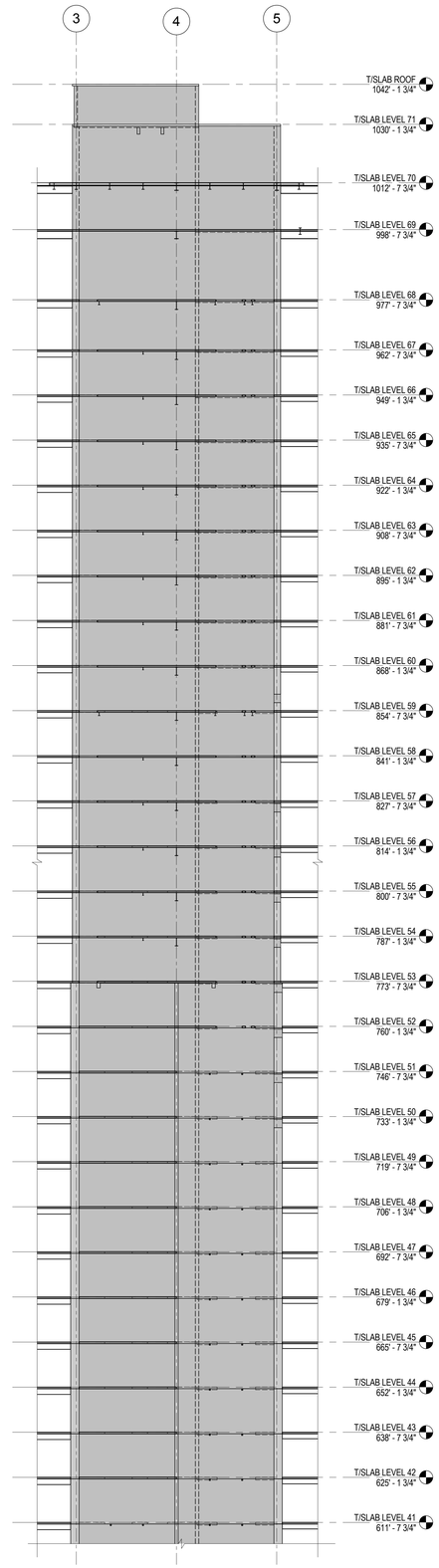
1/16" = 1'-0"



3 ELEVATION ALONG LINE D
1/16" = 1'-0"

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375 Ninth Avenue, New York, NY 10001

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Brookfield
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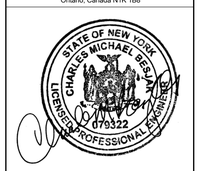
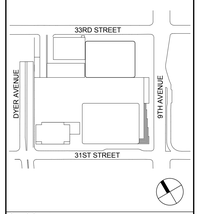


Key Plan:



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Sheet Name:
CORE WALL ELEVATIONS ALONG LINE D

Project No.: 211157	B-SCAN Sheet No.: S-363.00
Date: 20 JUN 2014	Sheet No.: S-363
Scale: As indicated	
File No.: S-363	Page No.: 67 of 90

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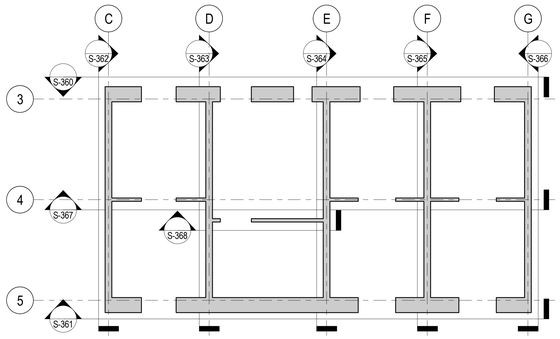
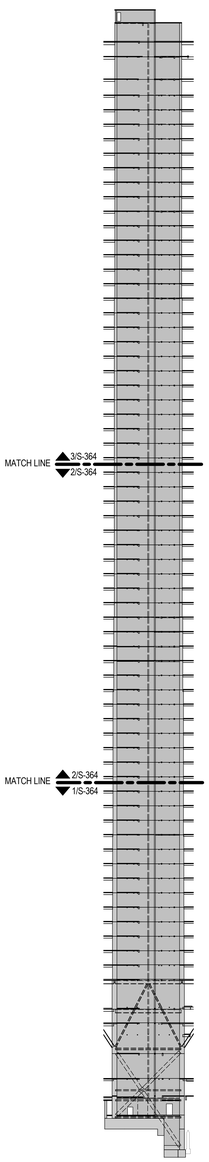
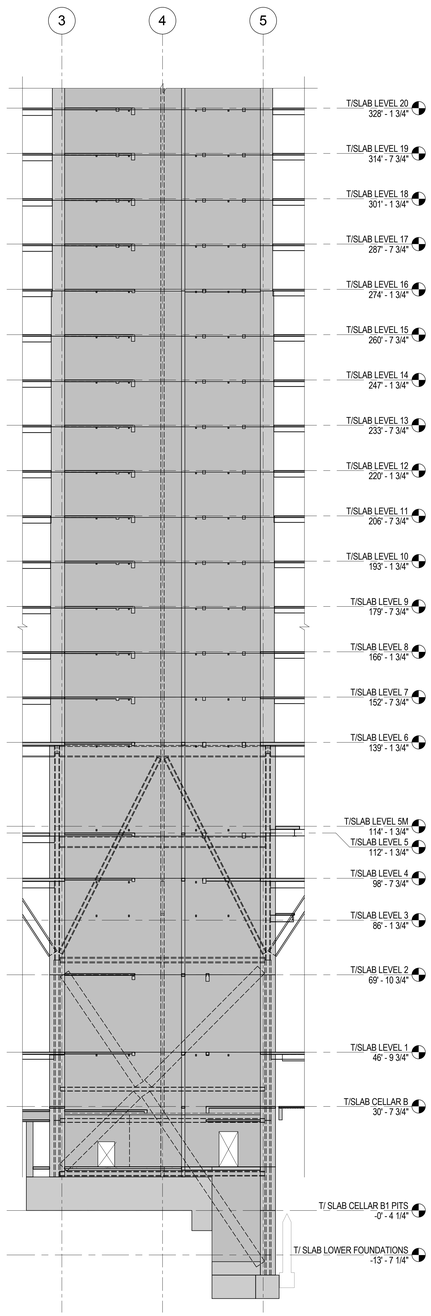


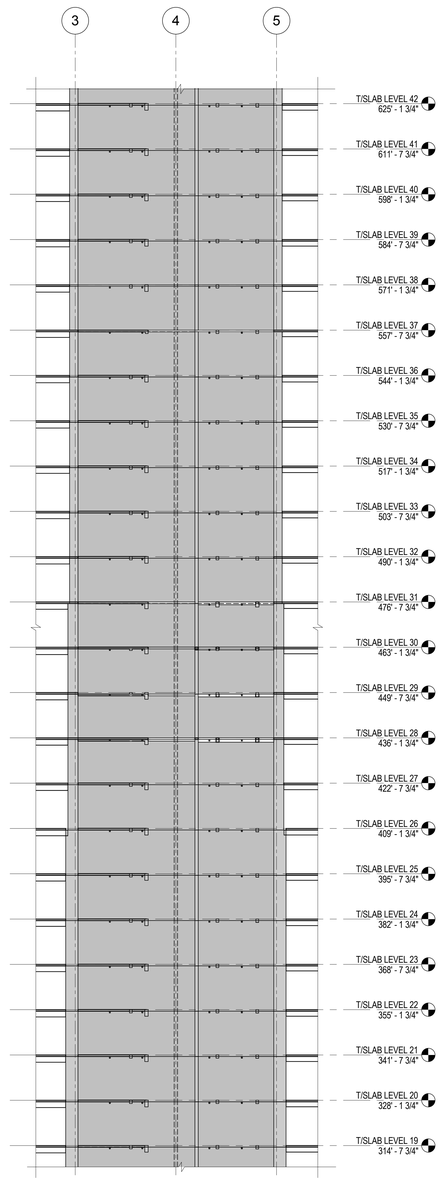
CORE WALL ELEVATION KEY PLAN
NTS



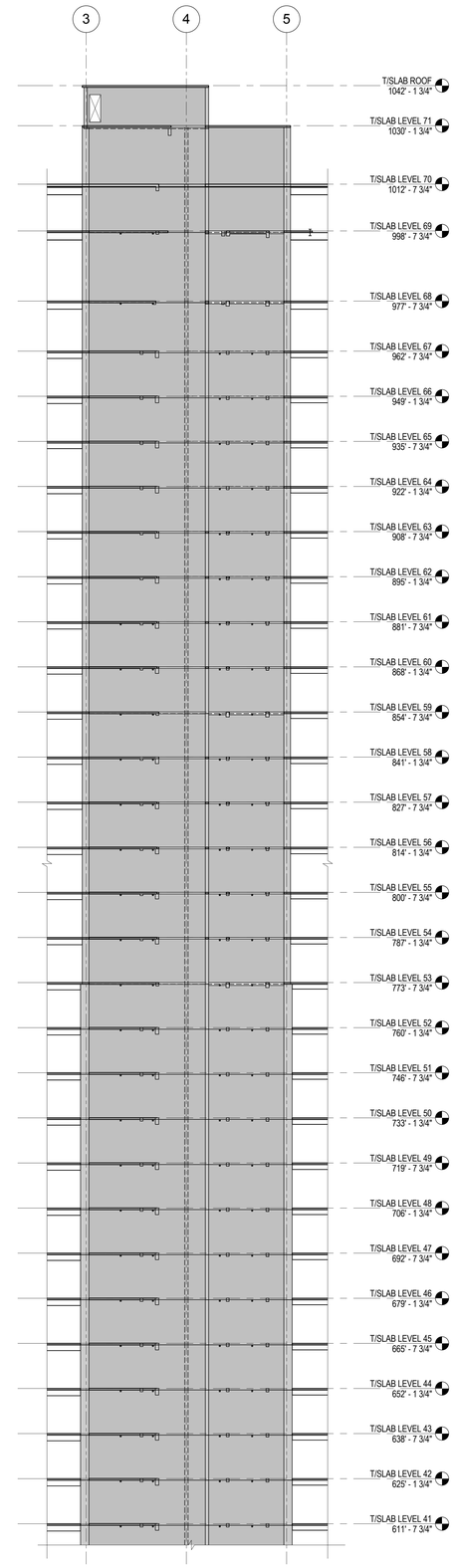
ELEVATION KEY
N.T.S



1 ELEVATION ALONG LINE E
1/16" = 1'-0"



2 ELEVATION ALONG LINE E
1/16" = 1'-0"



3 ELEVATION ALONG LINE E
1/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield
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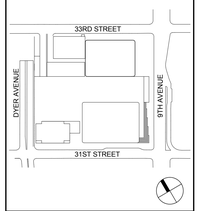
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:
CORE WALL ELEVATIONS ALONG LINE E

Project No.: 211157
B-SCAN Sheet No.:
Date: 20 JUN 2014
S-364.00
Scale: As indicated
Sheet No.: S-364
File No.: S-364
Page No.: 68 of 90

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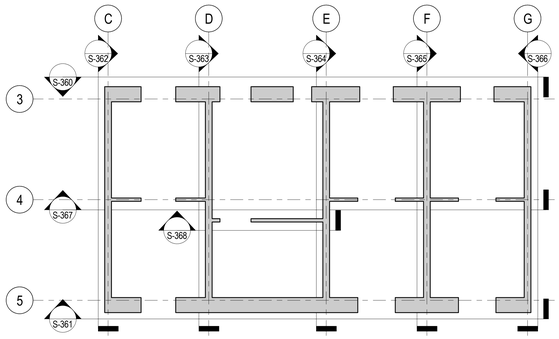
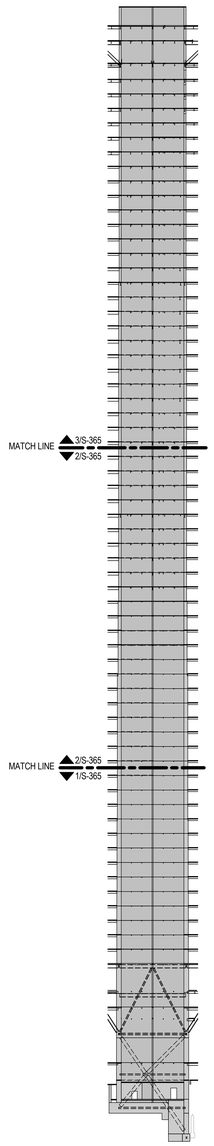
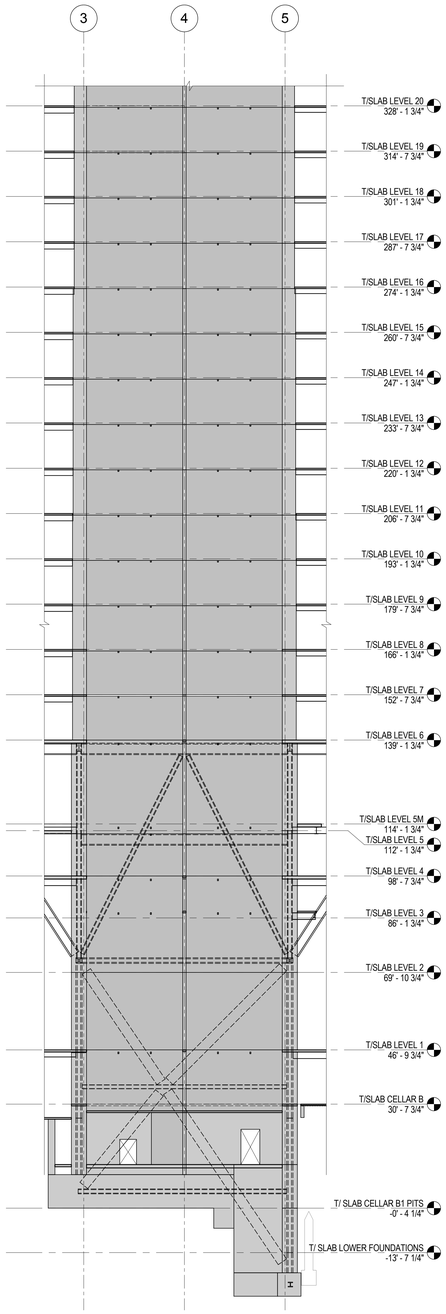


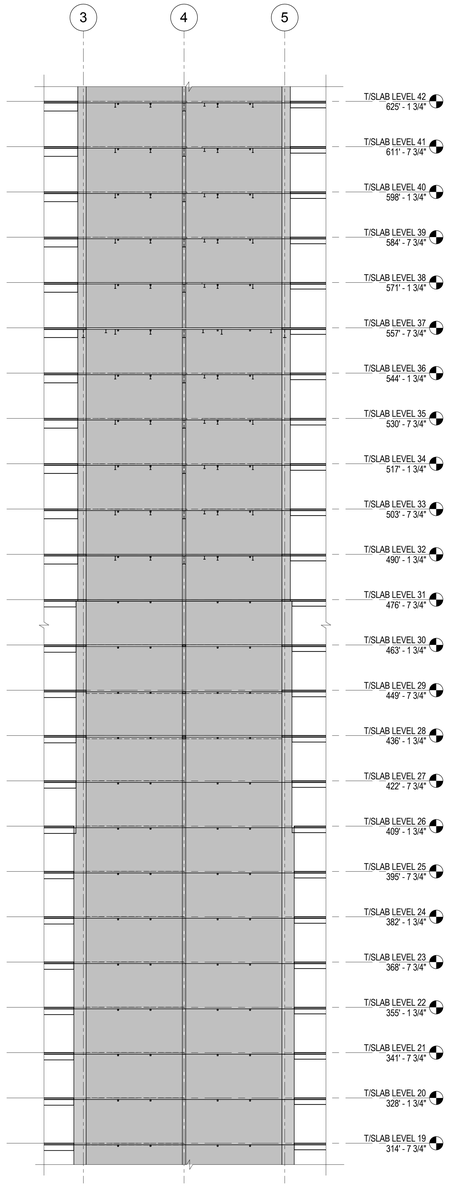
CORE WALL ELEVATION KEY PLAN
NTS



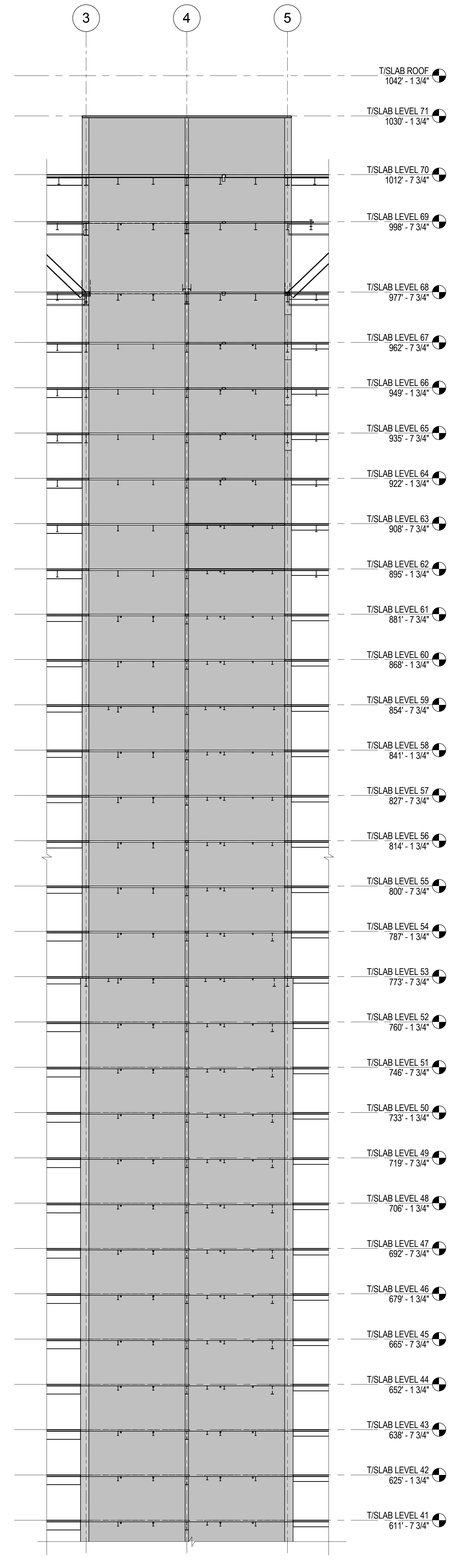
ELEVATION KEY
N.T.S



1 ELEVATION ALONG LINE F
1/16" = 1'-0"



2 ELEVATION ALONG LINE F
1/16" = 1'-0"



3 ELEVATION ALONG LINE F
1/16" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
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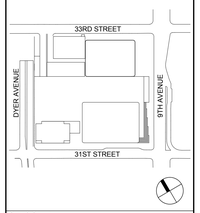
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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Sheet Name:
CORE WALL ELEVATIONS ALONG LINE F

Project No.: 211157	B-SCAN Sheet No.: S-365.00
Date: 20 JUN 2014	Sheet No.: S-365
Scale: As indicated	
File No.: S-365	Page No.: 69 of 90

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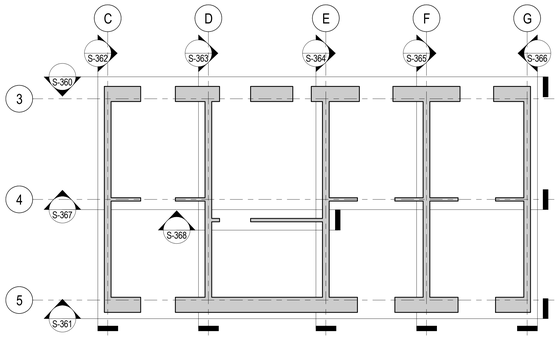
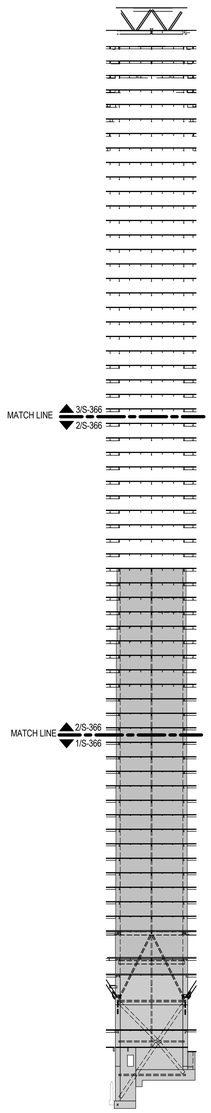
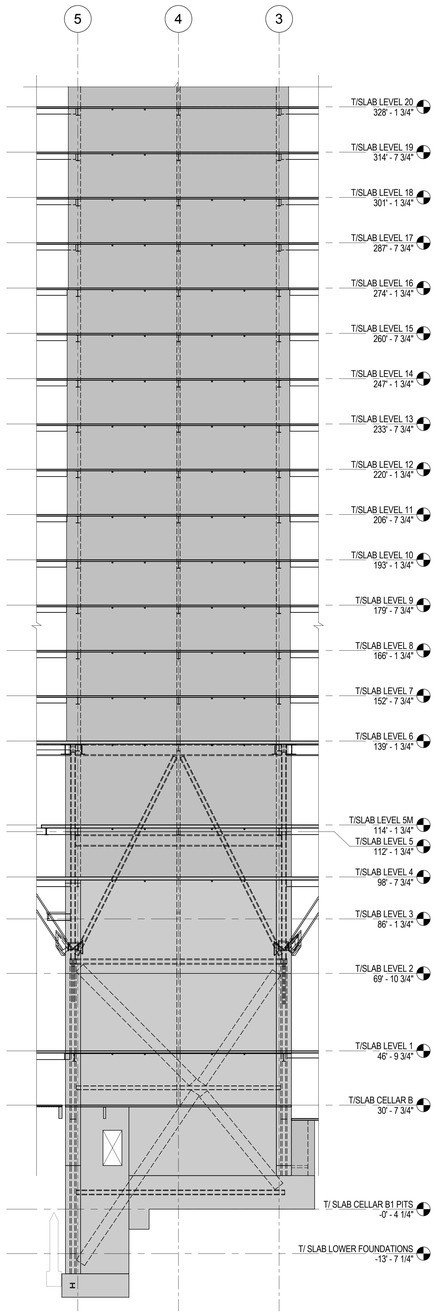


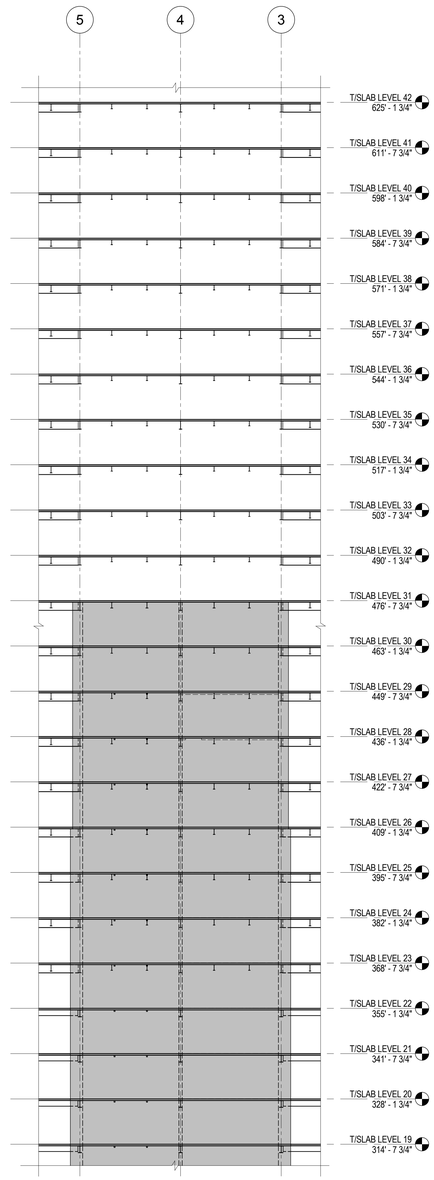
CORE WALL ELEVATION KEY PLAN
NTS



ELEVATION KEY
N.T.S



1 ELEVATION KEY
1/16" = 1'-0"



2 ELEVATION KEY
1/16" = 1'-0"

3 ELEVATION KEY
1/16" = 1'-0"

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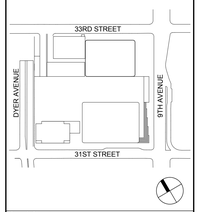

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Sheet Name:
CORE WALL ELEVATIONS ALONG LINE G

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-366
B-SCAN Sheet No.: S-366.00
Sheet No.: S-366
Page No.: 70 of 90

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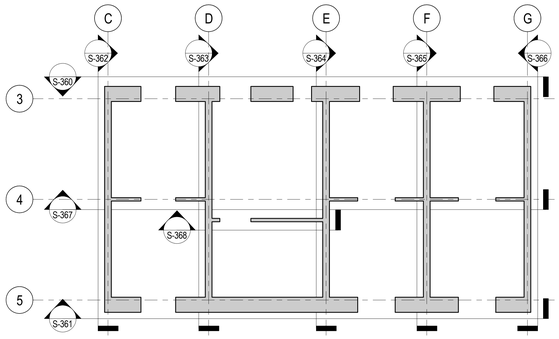
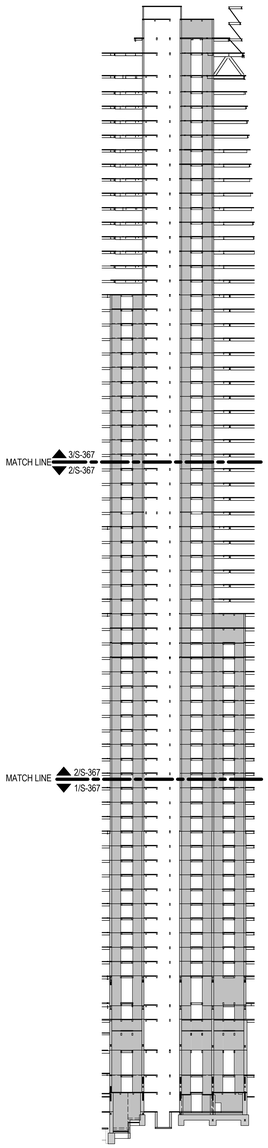
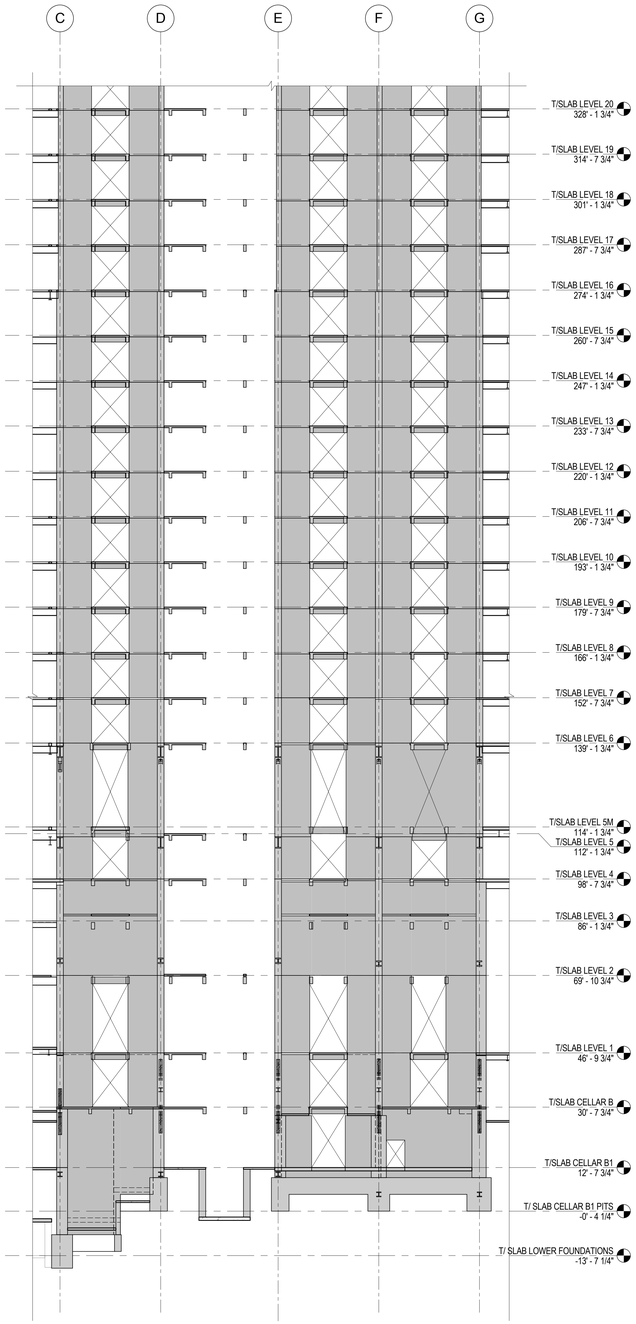


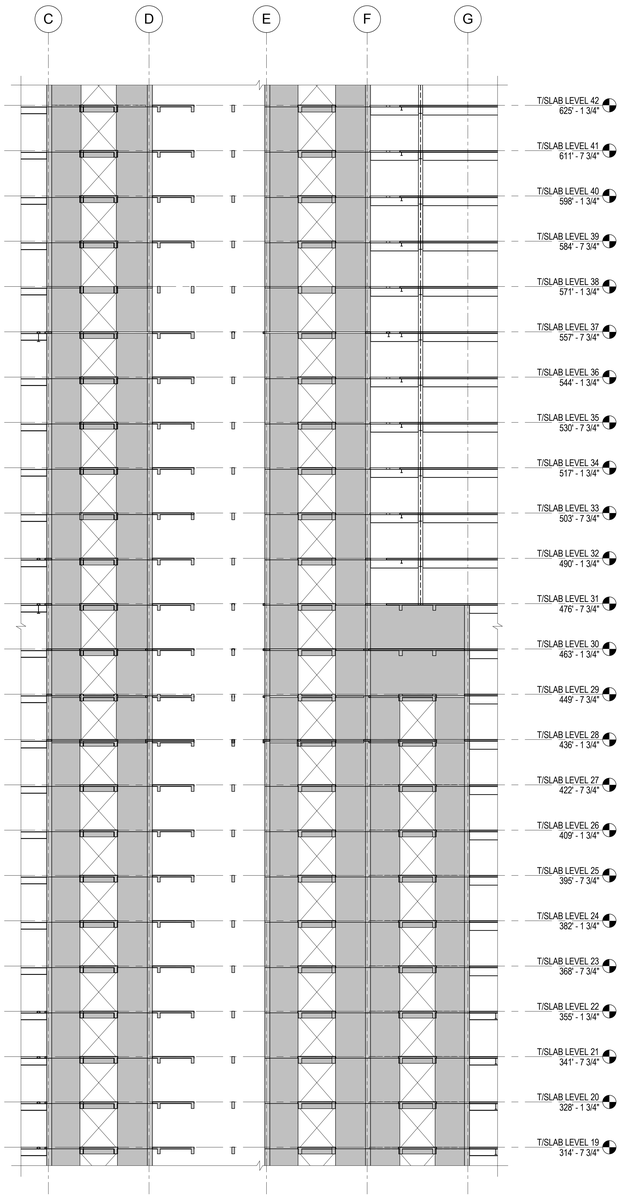
CORE WALL ELEVATION KEY PLAN
NTS



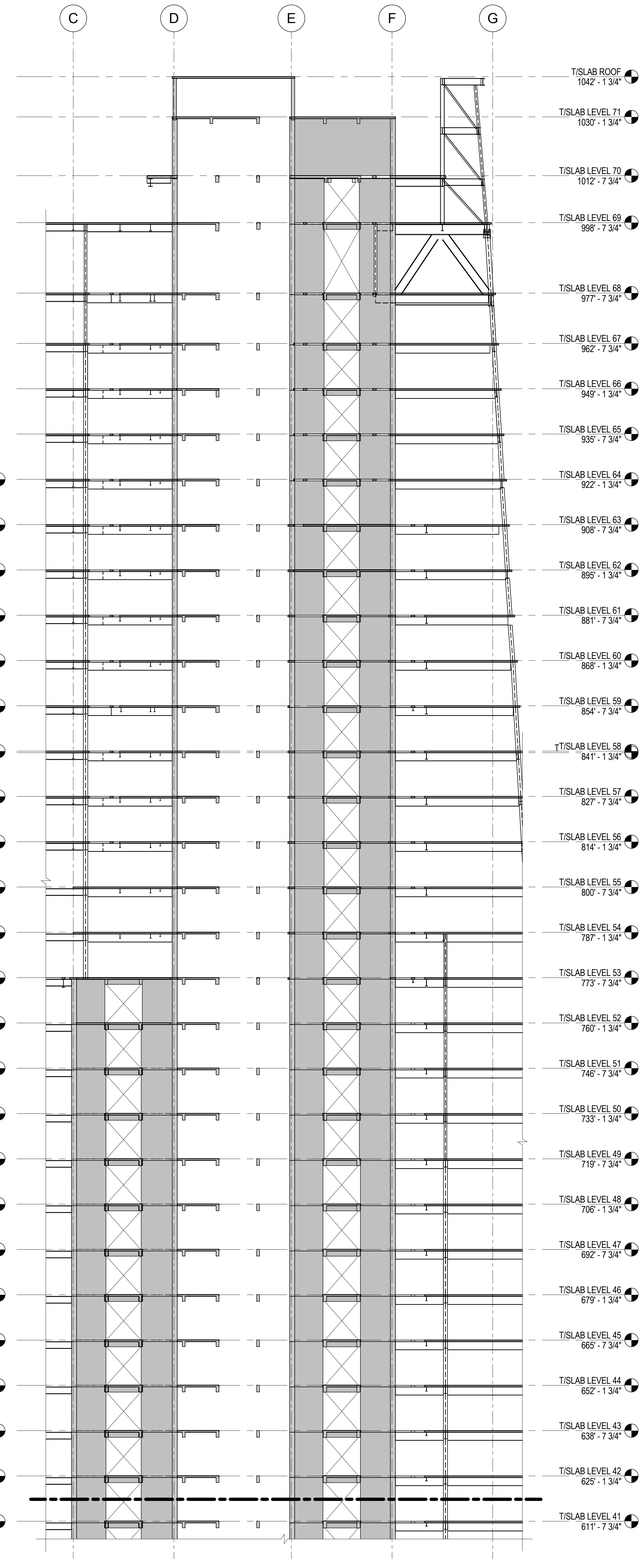
ELEVATION KEY
N.T.S



1 ELEVATION ALONG LINE 4
1/16" = 1'-0"



2 ELEVATION ALONG LINE 4
1/16" = 1'-0"



3 ELEVATION ALONG LINE 4
1/16" = 1'-0"

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Client
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Brookfield Place
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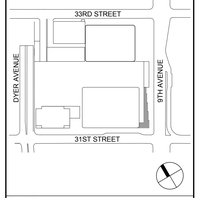
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
CORE WALL ELEVATIONS ALONG LINE 4

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-367
B-SCAN Sheet No.: S-367.00
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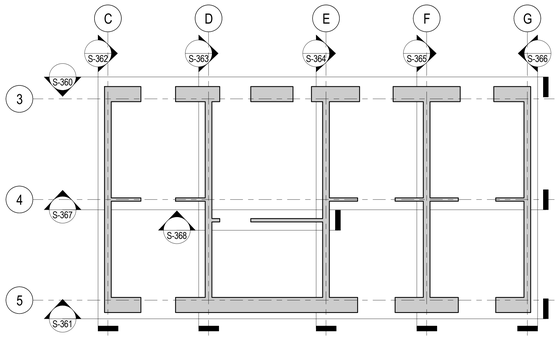
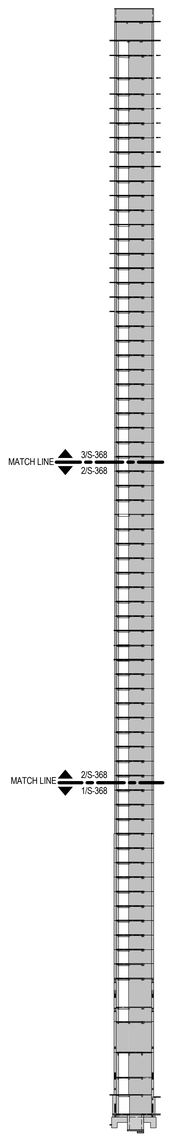
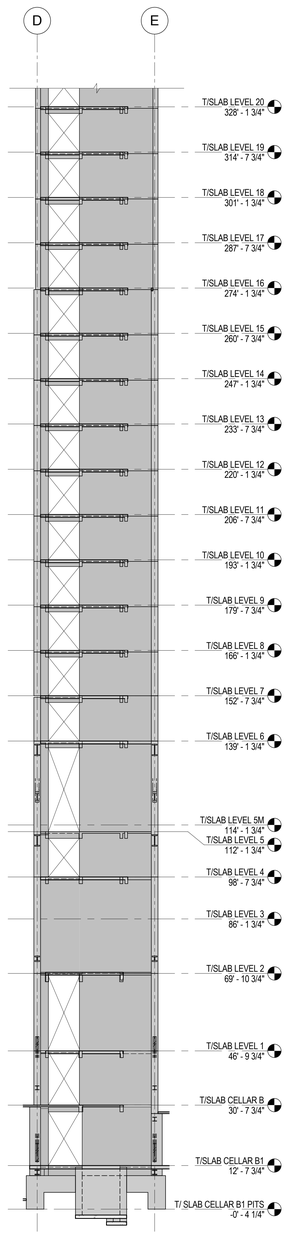


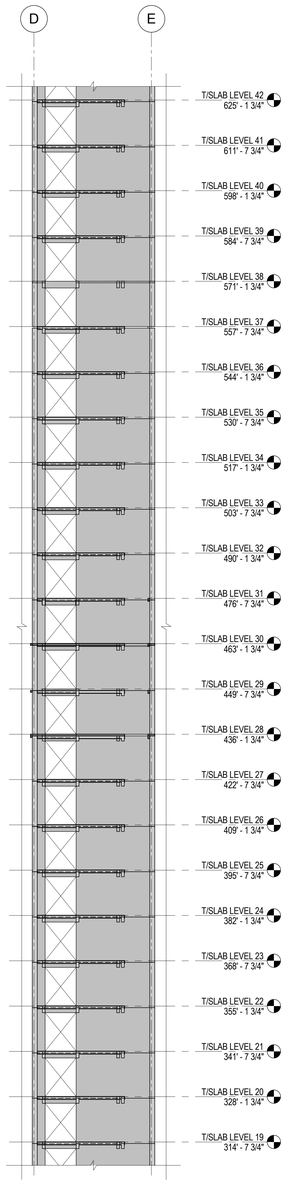
CORE WALL ELEVATION KEY PLAN
NTS



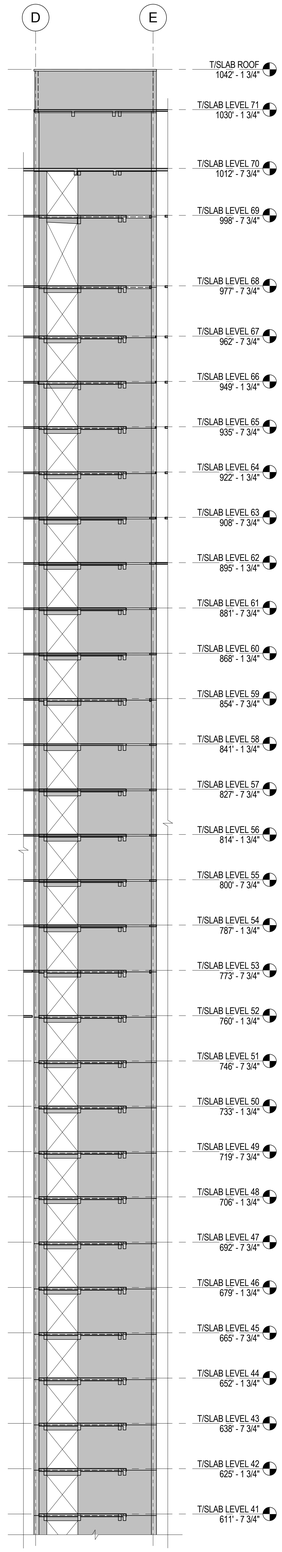
ELEVATION KEY
N.T.S



1 ELEVATION WITHIN SERVICE CORE BETWEEN LINES D & E
1/16" = 1'-0"



2 ELEVATION WITHIN SERVICE CORE BETWEEN LINES D & E
1/16" = 1'-0"



3 ELEVATION WITHIN SERVICE CORE BETWEEN LINES D & E
1/16" = 1'-0"

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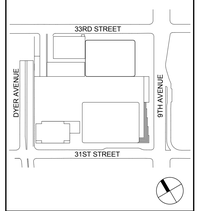
Key Plan:



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Sheet Name:
CORE WALL ELEVATIONS WITHIN SERVICE CORE BETWEEN LINES D & E

Project No.: 211157
Date: 20 JUN 2014
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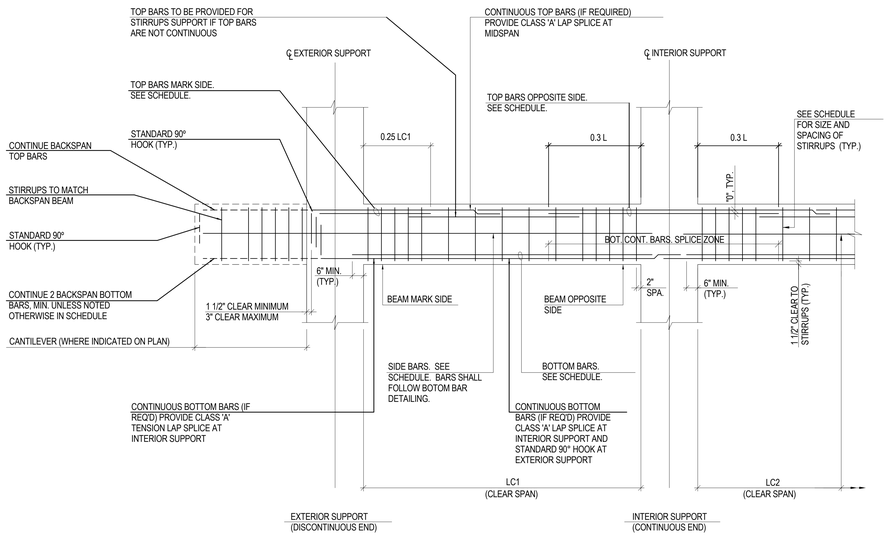
REINFORCED CONCRETE BEAM SCHEDULE

CONCRETE:
STEEL REINFORCEMENT:

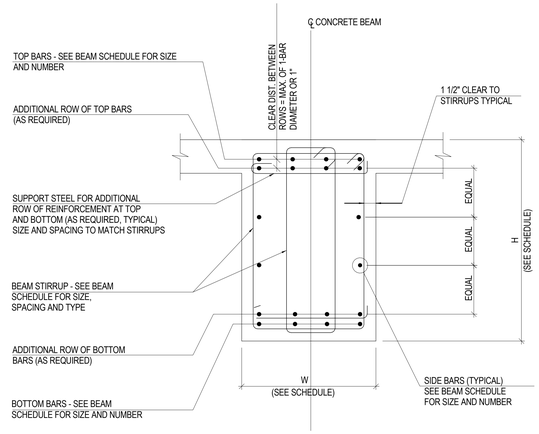
MARK	SIZE		LONGITUDINAL REINFORCEMENT				TRANSVERSE REINFORCEMENT - STIRRUPS			
	W (IN)	H (IN)	TOP BARS		BOTTOM BARS	SIDE BARS EACH FACE	SIZE	TYPE	SPACING	REMARKS
			MARK SIDE	OPPOSITE SIDE						
B1	14	24								
B2	10	24								
B3	12	18								
B4	10	12								

NOTES:
1. SEE DETAILS 1 THRU 3 FOR TYPICAL REINFORCED CONCRETE BEAM DETAILS.



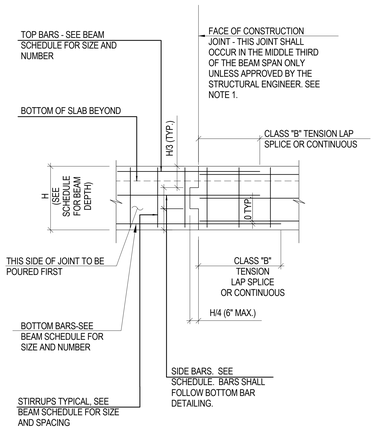
NOTES:
1. LC1, LC2 = LENGTH OF CLEAR SPANS 1, 2 (FACE OF SUPPORT TO FACE OF SUPPORT).
2. L = THE GREATER LENGTH OF CLEAR SPAN LC1 OR LC2.
3. AT INTERIOR SUPPORT (CONTINUOUS END) PROVIDE LARGER SIZE AND NUMBER OF TOP BARS FROM ADJACENT SPANS.
4. EXTERIOR AND INTERIOR SUPPORT REINFORCEMENT NOT SHOWN FOR CLARITY.

1 TYPICAL REINFORCED CONCRETE GRAVITY BEAM ELEVATION
12" = 1'-0"



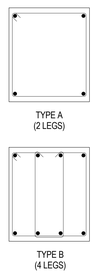
NOTE: SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

2 TYPICAL REINFORCED CONCRETE BEAM SECTION
12" = 1'-0"



NOTES:
1. ADDITIONAL REINFORCEMENT MAY BE REQUIRED IF JOINT JOINT OCCURS OUTSIDE MIDDLE THIRD OF BEAM SPAN.

3 TYPICAL BEAM CONSTRUCTION JOINT
12" = 1'-0"



4 TYPICAL BEAM STIRRUPS TYPES
12" = 1'-0"

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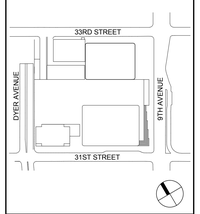
Key Plan:



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Sheet Name:
REINFORCED CONCRETE BEAM SCHEDULE, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: 12" = 1'-0"
File No.: S-370
B-SCAN Sheet No.: S-370.00
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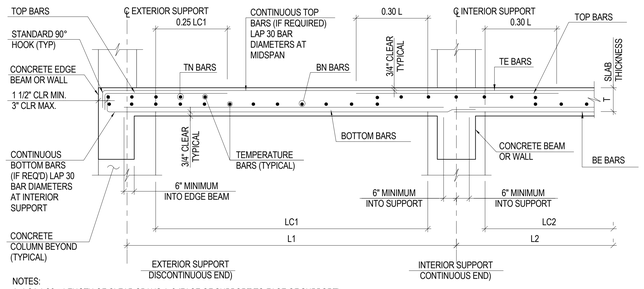
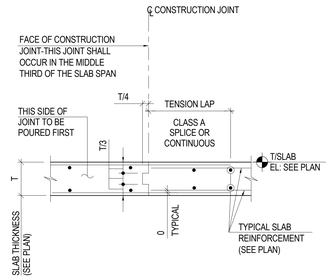
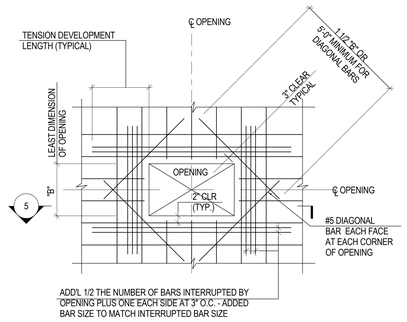


NOTES:
1. LC1, LC2 = LENGTH OF CLEAR SPANS 1, 2 (FACE OF SUPPORT TO FACE OF SUPPORT).
2. L = LC1 LC2 THE GREATER LENGTH OF CLEAR SPAN LC1 OR LC2.
3. L1, L2 = LENGTH OF SPANS 1, 2 FROM CENTERLINE OF SUPPORT TO CENTERLINE OF SUPPORT.
4. AT INTERIOR SUPPORT (CONTINUOUS END) PROVIDE LARGER SIZE AND NUMBER OF TOP BARS FROM ADJACENT SPANS.

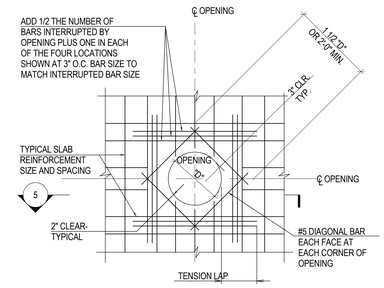
1 TYPICAL ONE WAY SLAB
1" = 1'-0"



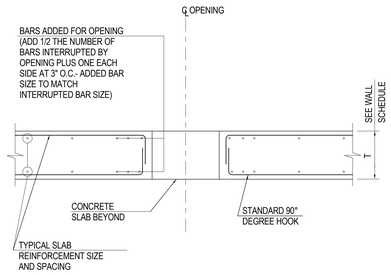
2 TYPICAL CONCRETE SLAB CONSTRUCTION JOINT
NOT TO SCALE



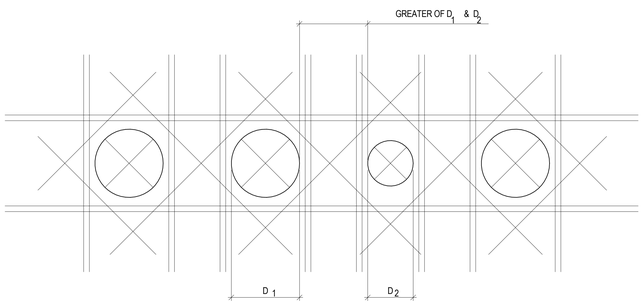
3 TYPICAL MEP RECTANGULAR SLAB OPENING DETAIL
NOT TO SCALE



4 TYPICAL MEP CIRCULAR SLAB OPENING DETAIL D > 12"
NOT TO SCALE

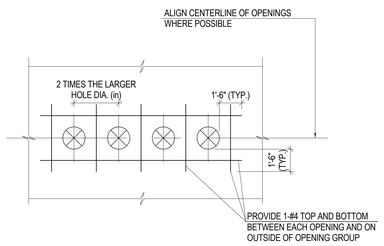


5 5 TYPICAL SECTION AT MEP SLAB OPENING
1" = 1'-0"



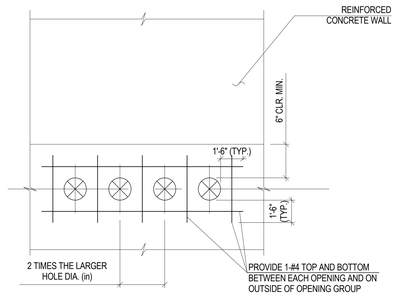
NOTE: SEE DETAIL 4 THIS SHEET FOR ADDITIONAL INFORMATION

6 6 TYPICAL DETAIL AT ALIGNED SLAB OPENING (D GREATER THAN 12")
NOT TO SCALE



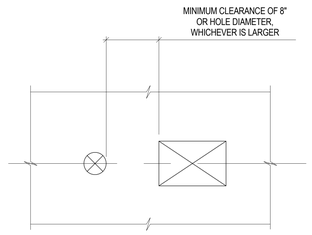
NOTE: SEE DETAIL 6 FOR D>12"

A TYPICAL PLAN AT MULTIPLE MEP SLAB OPENINGS



NOTE: SEE DETAIL 6 FOR D>12"

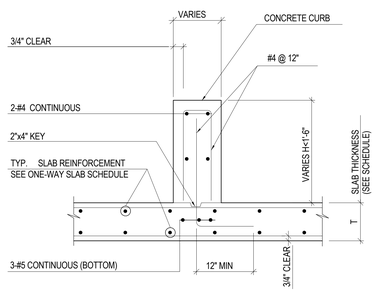
B OPENINGS NEAR RECTANGULAR CONCRETE WALLS



NOTE: WORK W/DETAILS 3, 4, 6, AND 7A.

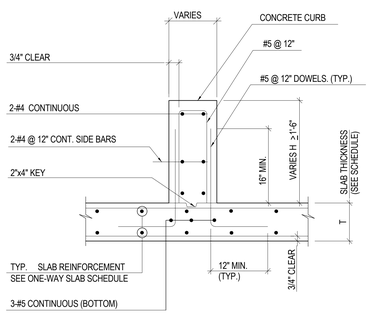
C CIRCULAR OPENINGS ADJACENT TO RECTANGULAR OPENINGS

7 7 SLAB OPENING SYSTEM DIAGRAMS
NOT TO SCALE



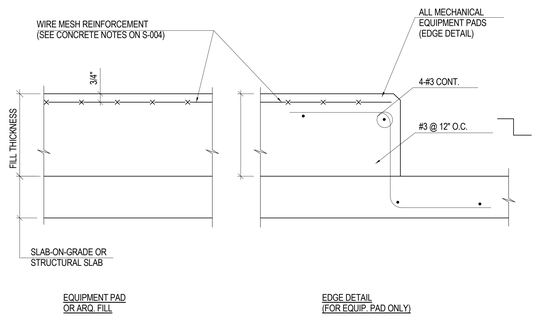
NOTES:
1. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR CONCRETE CURB AND PARAPET SIZES AND LOCATIONS.

8 TYPICAL CONCRETE CURB OR PARAPET AT REINFORCED CONRETE SLAB (H < 1'-6")
NOT TO SCALE



NOTES:
1. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR CONCRETE CURB AND PARAPET SIZES AND LOCATIONS.

9 TYPICAL CONCRETE CURB OR PARAPET AT REINFORCED CONRETE SLAB (H ≥ 1'-6")
NOT TO SCALE



NOTES:
1. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR PAD SIZE AND LOCATION.

10 10 TYPICAL SECTION AT CONCRETE PAD OR FILL
1" = 1'-0"

REINFORCED CONCRETE ONE-WAY SLAB SCHEDULE

CONCRETE:
STEEL REINFORCEMENT:

MARK	SLAB THICKNESS, T (IN)	SUPER-IMPOSED LOAD (kPa)		MAIN REINFORCEMENT						TEMP. REINF.	REMARKS
				BOTH ENDS CONTINUOUS		ONE END DISCONTINUOUS		BOTH ENDS DISCONTINUOUS			
		LIVE	DEAD	BOT.	TOP	BOT.	TOP	BOT.	TOP		
S1	6										TYPICAL CORE SLAB
S2	10										MECHANICAL CORE SLAB
S3	12										SLAB SUPPORTING FUEL TANKS

NOTES:

1. SEE DETAIL 1 FOR TYPICAL ONE-WAY REINFORCED CONCRETE SLAB DETAIL.

REINFORCED CONCRETE TWO-WAY SLAB SCHEDULE

CONCRETE:
STEEL REINFORCEMENT:

MARK	SLAB THICKNESS, T (IN)	MAIN REINFORCEMENT				REMARKS
		TE	TN	BE	BT	
S4	14	#8 @ 12	#8 @ 12	#4 @ 12	#4 @ 12	ELEVATOR PIT SLAB
S5	8	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	TYPICAL SLAB ON GRADE
S6	16	#8 @ 12	#8 @ 12	#4 @ 12	#4 @ 12	SLAB ON GRADE AT TANKS
S7	16	#8 @ 12	#8 @ 12	#4 @ 12	#4 @ 12	ELEVATOR PIT SLAB

NOTES:

1. SEE DETAIL 1/S-325 FOR TYPICAL SLAB ON GRADE DETAIL AND REBAR DESIGNATION.

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Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:

Seal & Signature:

PRELIMINARY
NOT FOR CONSTRUCTION

No.	Date	Description
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Sheet Name:
REINFORCED CONCRETE SLAB SCHEDULE, SECTIONS & DETAIL

Project No.: 211157
Date: 20 JUN 2014
Scale: 1" = 1'-0"
File No.: S-375
B-SCAN Sheet No.: S-375.00
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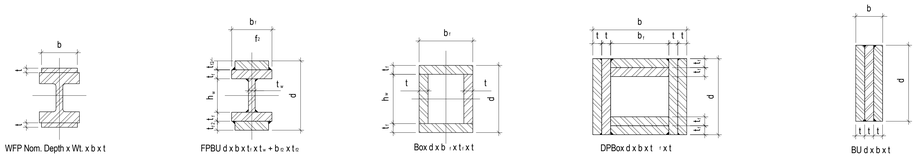
6/19/2014 11:25:08 PM

STRUCTURAL STEEL COLUMN SCHEDULE OF NE TOWER

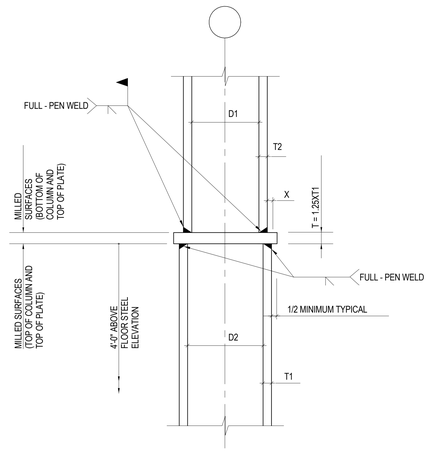
W14 COLUMNS: ASTM A913-GRADE 65
PLATE MATERIAL: ASTM A572 GR 50, TYP. U.N.O.

FLOOR LEVEL \ GRID LOCATION	A-3, A-5	A-4	B-1, B-7	TC-1, TC-7	TC-3, TC-4, TC-5	C-1, C-7, D-1, D-7, E-1, E-7	F-1, F-7	C.1-3, C.1-4, C.1-5	G-1, G-7	F.5-3, F.5-4, F.5-5
ROOF LEVEL EL: SEE PLAN										
LEVEL 71 EL: SEE PLAN	W14X61	W14X61	W14X90	W14X90	W14X61	W14X61	W14X61	--	--	--
LEVEL 70 EL: SEE PLAN	W14X61	W14X61	W14X90	W14X90	W14X61	W14X61	W14X61	--	--	--
LEVEL 69 EL: SEE PLAN	W14X61	W14X61	W14X90	W14X90	W14X61	W14X61	W14X61	--	--	--
LEVEL 68 EL: SEE PLAN	SEE NOTE 1	SEE NOTE 1	SEE NOTE 1	SEE NOTE 1	SEE NOTE 1	SEE NOTE 1	SEE NOTE 1	W14X109	--	--
LEVEL 67 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 66 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 65 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 64 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 63 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 62 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 61 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 60 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 59 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X109	--	--
LEVEL 58 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X159	--	--
LEVEL 57 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X159	--	--
LEVEL 56 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X159	--	--
LEVEL 55 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X193	--	--
LEVEL 54 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X193	--	--
LEVEL 53 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	W14X233	--	--
LEVEL 52 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	--	--
LEVEL 51 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	--	W14X61
LEVEL 50 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	--	W14X61
LEVEL 49 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	--	W14X61
LEVEL 48 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	--	W14X61
LEVEL 47 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	--	W14X61
LEVEL 46 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	--	W14X61
LEVEL 45 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	--	W14X90
LEVEL 44 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X159	W14X90
LEVEL 43 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X159	W14X90
LEVEL 42 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X159	W14X132
LEVEL 41 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X159	W14X132
LEVEL 40 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X159	W14X132
LEVEL 39 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X159	W14X159
LEVEL 38 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X211	W14X159
LEVEL 37 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X211	W14X159
LEVEL 36 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X211	W14X211
LEVEL 35 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X283	W14X211
LEVEL 34 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X283	W14X211
LEVEL 33 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X283	W14X211
LEVEL 32 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X283	W14X283
LEVEL 31 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X342	W14X283
LEVEL 30 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X342	--
LEVEL 29 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X342	--
LEVEL 28 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X342	--
LEVEL 27 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X426	--
LEVEL 26 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X426	--
LEVEL 25 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X426	--
LEVEL 24 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X426	--
LEVEL 23 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X426	--
LEVEL 22 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X426	--
LEVEL 21 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X500	--
LEVEL 20 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X500	--
LEVEL 19 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X500	--
LEVEL 18 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X500	--
LEVEL 17 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X500	--
LEVEL 16 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X500	--
LEVEL 15 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X550	--
LEVEL 14 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X550	--
LEVEL 13 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X550	--
LEVEL 12 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X455	W14X665	W14X665	W14X665	--	W14X550	--
LEVEL 11 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X500	W14X665	W14X665	W14X665	--	W14X605	--
LEVEL 10 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X500	W14X730	W14X665	W14X665	--	W14X605	--
LEVEL 09 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X2	W14X500	W14X730	W14X665	W14X665	--	W14X605	--
LEVEL 08 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X3	W14X500	W14X730	W14X730	W14X730	--	W14X605	--
LEVEL 07 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X3	W14X500	W14X730	W14X730	W14X730	--	W14X730	--
LEVEL 06 EL: SEE PLAN	W14X665	W14X665	WFP 14X730X16X3	W14X500	WFP 14X730X16X1	W14X730	W14X730	--	W14X730	--
LEVEL 05 EL: SEE PLAN	WFP 14X730X16X1	W14X730	DP BOX 24X24X3X3	DP BOX 24X24X3.25X3.25	DP BOX 24X24X2.5X2.5	DP BOX 24X24X2.5X2.5	BOX 24X24X4X4	--	DP BOX 24X24X3X3	--
LEVEL 04 EL: SEE PLAN	WFP 14X730X16X1	W14X730	DP BOX 24X24X3X3	DP BOX 24X24X3.25X3.25	DP BOX 24X24X2.5X2.5	DP BOX 24X24X2.5X2.5	BOX 24X24X4X4	--	DP BOX 24X24X3X3	--
LEVEL 03 EL: SEE PLAN	SEE NOTE 2	SEE NOTE 2	W14X132	W14X132	SEE NOTE 3	W14X132	W14X132	--	W14X132	--
LEVEL 02 EL: SEE PLAN	SEE NOTE 2	SEE NOTE 2	W14X132	W14X132	SEE NOTE 3	W14X132	W14X132	--	W14X132	--
LEVEL 01 EL: SEE PLAN	SEE NOTE 2	SEE NOTE 2	HSS 12X12X1/2	HSS 12X12X1/2	DP BOX 24X24X3X3	HSS 12X12X1/2	HSS 12X12X1/2	--	HSS 12X12X1/2	--

1. REFER TO S-416 FOR UPPER BELT TRUSS COLUMN SCHEDULE.
2. REFER TO S-409 FOR COLUMN SCHEDULE ALONG GRID A BELOW LEVEL 6.
3. REFER TO S-415 FOR COLUMN SCHEDULE ALONG GRID J ON LOWER BELT TRUSS.

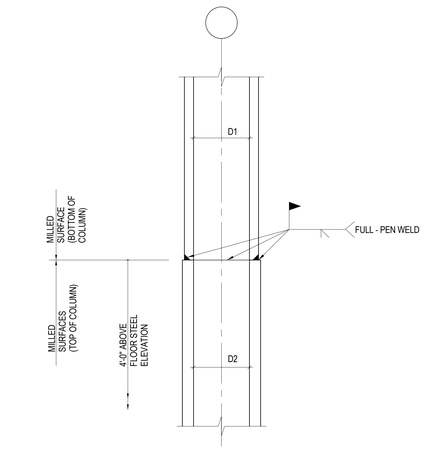


1 NOMENCLATURE FOR BUILT-UP COLUMN SECTIONS
NOT TO SCALE



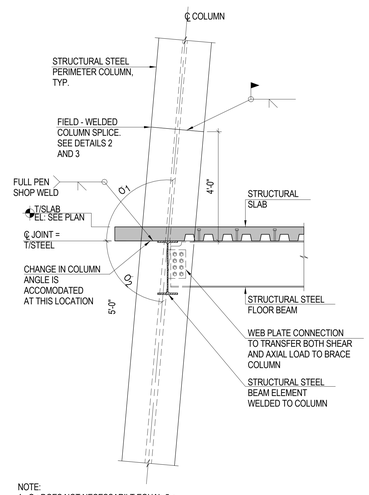
NOTE:
1. CONNECTION VALID FOR 3/16" < x < 1".
2. SPLICE CONNECTION SHALL DEVELOP LOAD EQUAL TO TENSION CAPACITY OF SMALLER COLUMN.

2 TYPICAL COLUMN SPLICE (D1 ≠ D2)
NOT TO SCALE



NOTE:
1. SPLICE CONNECTION SHALL DEVELOP LOAD EQUAL TO TENSION CAPACITY OF SMALLER COLUMN.
2. BOLTED CONNECTIONS WHICH ACHIEVE THE SAME CAPACITY WILL BE CONSIDERED.

3 TYPICAL COLUMN SPLICE (D1=D2)
NOT TO SCALE



NOTE:
1. O_1 DOES NOT NECESSARILT EQUAL O_2.
2. SEE SPLICE REQUIREMENT IN DETAILS 2 AND 3.

4 TYPICAL SLOPING COLUMN DETAIL
NOT TO SCALE

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
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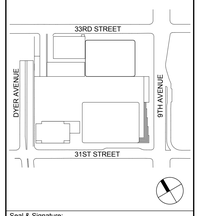
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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Sheet Name:
STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS & DETAILS

Project No.: 211157
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File No.: S-401
B-SCAN Sheet No.: S-401.00
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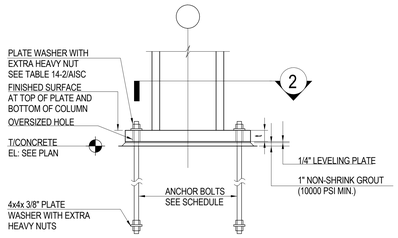
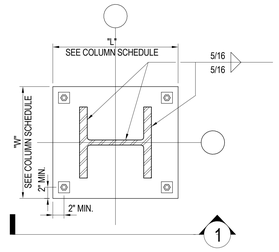
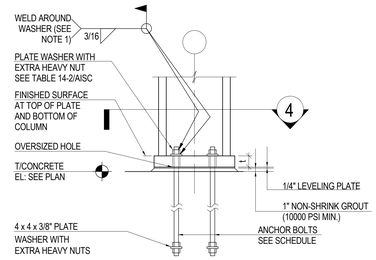
Page No.: 75 of 90



1 TYPICAL BASE PLATE ELEVATION
1" = 1'-0"

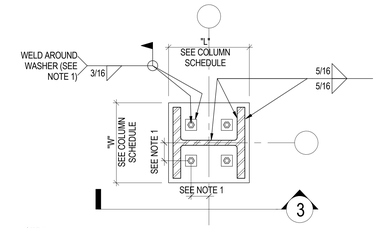


2 TYPICAL BASE PLATE PLAN
1" = 1'-0"



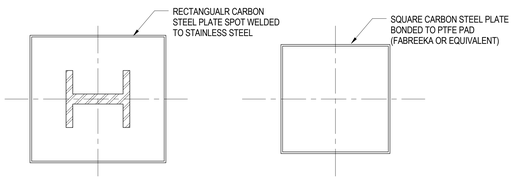
NOTE 1:
PROVIDE WELD AROUND WASHER FOR COLUMN SC22 IN MUSEUM BUILDING AND EXHIBIT WING COLUMNS ONLY. SEE SCHEDULE FOR LOCATION.

3 BASE PLATE WITH INTERIOR ANCHOR RODS ELEVATION
1" = 1'-0"



NOTE 1:
4" FOR W14 AND 5" FOR BU COLUMNS IN THE MUSEUM BUILDING.
3" FOR W14 AND RIGID FRAME COLUMNS IN THE EXHIBIT WING.

4 BASE PLATE WITH INTERIOR ANCHOR RODS PLAN
1" = 1'-0"



5 TYPICAL COLUMN BASE DETAIL AT SLIDING SUPPORT
3/4" = 1'-0"

STRUCTURAL STEEL COLUMN SCHEDULE AT RETAIL

W14 COLUMNS: ASTM A913-GRADE 50
PLATE MATERIAL: ASTM A572 GR 50, TYP. U.N.O.

GRID LOCATION / FLOOR LEVEL	B.7 - 6	C.8 - 6	D.6 - 6	E.3 - 6	B.7 - 8	C.8 - 8	D.6 - 8	E.3 - 8	A3 - 5	A2 - 5	A1 - 5	A3 - 4	A2 - 4	A1 - 4	A4 - 4.5	A4 - 5	A4 - 6	A4 - 8	A4 - 9	A3 - 6	A3 - 8	A3 - 9	A2 - 6	A2 - 8	A2 - 9	A - 6	A - 8
LEVEL 05 EL: SEE PLAN																											
LEVEL 04 EL: SEE PLAN									W14X43	W14X43	W14X43	W14X43	W14X43	W14X43													
LEVEL 03 EL: SEE PLAN									W14X43	W14X43	W14X43	W14X43	W14X43	W14X43													
LEVEL 02 EL: SEE PLAN	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X43	W14X61	W14X48	W14X48	W14X61	W14X43												W14X132	W14X132
LEVEL 01 EL: SEE PLAN	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X176	W14X145	W14X132	W14X159	W14X145												W14X132	W14X132
CELLAR B EL: SEE PLAN	W14X370	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X370	W14X132	W14X176	W14X145	W14X132	W14X159	W14X145	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X370	W14X370	W14X370		

1. ALL COLUMNS SUPPORTED ON A SLIDDING BEARING PAD WEST OF GL C SHALL BE DESIGNED FOR AN AXIAL LOAD (LRFD) OF 1110 KIPS AND ACCOMODATE MOUVEMENTS IN THE EAST-WEST DIRECTION OF +/- 2-3/4in AND IN THE NORTH-SOUTH DIRECTION OF+/- 4in.
2. ALL COLUMNS SUPPORTED ON A SLIDDING BEARING PAD EAST OF GL C AND WEST OF GL H SHALL BE DESIGNED FOR AN AXIAL LOAD (LRFD) OF 500 KIPS AND ACCOMODATE MOUVEMENTS IN THE EAST-WEST DIRECTION OF +/- 2-3/4in AND IN THE NORTH-SOUTH DIRECTION OF+/- 4in.
3. ALL COLUMNS SUPPORTED ON A SLIDDING BEARING PAD EAST OF GL H SHALL BE DESIGNED FOR AN AXIAL LOAD (LRFD) OF 500 KIPS AND ACCOMODATE MOUVEMENTS IN THE EAST-WEST DIRECTION OF +/- 1-1/2in AND IN THE NORTH-SOUTH DIRECTION OF+/- 4in.

STRUCTURAL STEEL COLUMN SCHEDULE OUTSIDE OF TOWER

W14 COLUMNS: ASTM A913-GRADE 50
PLATE MATERIAL: ASTM A572 GR 50, TYP. U.N.O.

GRID LOCATION / FLOOR LEVEL	B.7 - 9	C.8 - 9	D.6 - 9	E.3 - 9	F.2 - 9	G.5 - 9	K - 9	K.7 - 9	F.2 - 7	G.5 - 7	K - 7	K.7 - 7	F.2 - 6	G.5 - 6	K - 6	K.7 - 6	J - 7	H - 4.8	K - 4.8	K.7 - 4.8	H - 4	K - 4	H - 3	K - 3	B - 1	B.7 - 1	C - 1	C.5 - 1	D - 1	D - 2	E - 1	F - 1	G - 1	H - 1	K - 1
LEVEL 01 EL: SEE PLAN																									W14X132		W14X132		W14X132	W14X132					
CELLAR B EL: SEE PLAN	W14X370	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132	W14X132		W14X132	W14X132	W14X132	W14X132	W14X132

1. ALL COLUMNS SUPPORTED ON A SLIDDING BEARING PAD WEST OF GL C SHALL BE DESIGNED FOR AN AXIAL LOAD (LRFD) OF 1110 KIPS AND ACCOMODATE MOUVEMENTS IN THE EAST-WEST DIRECTION OF +/- 2-3/4in AND IN THE NORTH-SOUTH DIRECTION OF+/- 4in.
2. ALL COLUMNS SUPPORTED ON A SLIDDING BEARING PAD EAST OF GL C AND WEST OF GL H SHALL BE DESIGNED FOR AN AXIAL LOAD (LRFD) OF 500 KIPS AND ACCOMODATE MOUVEMENTS IN THE EAST-WEST DIRECTION OF +/- 2-3/4in AND IN THE NORTH-SOUTH DIRECTION OF+/- 4in.
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MANHATTAN WEST:
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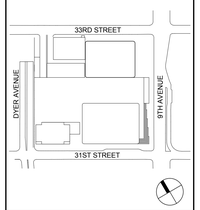
STATE OF NEW YORK
CHARLES MICHAEL BESS
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

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Sheet Name:
STRUCTURAL STEEL COLUMN SCHEDULE, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-402
B-SCAN Sheet No.:
S-402.00
Sheet No.: S-402
Page No.: 76 of 90

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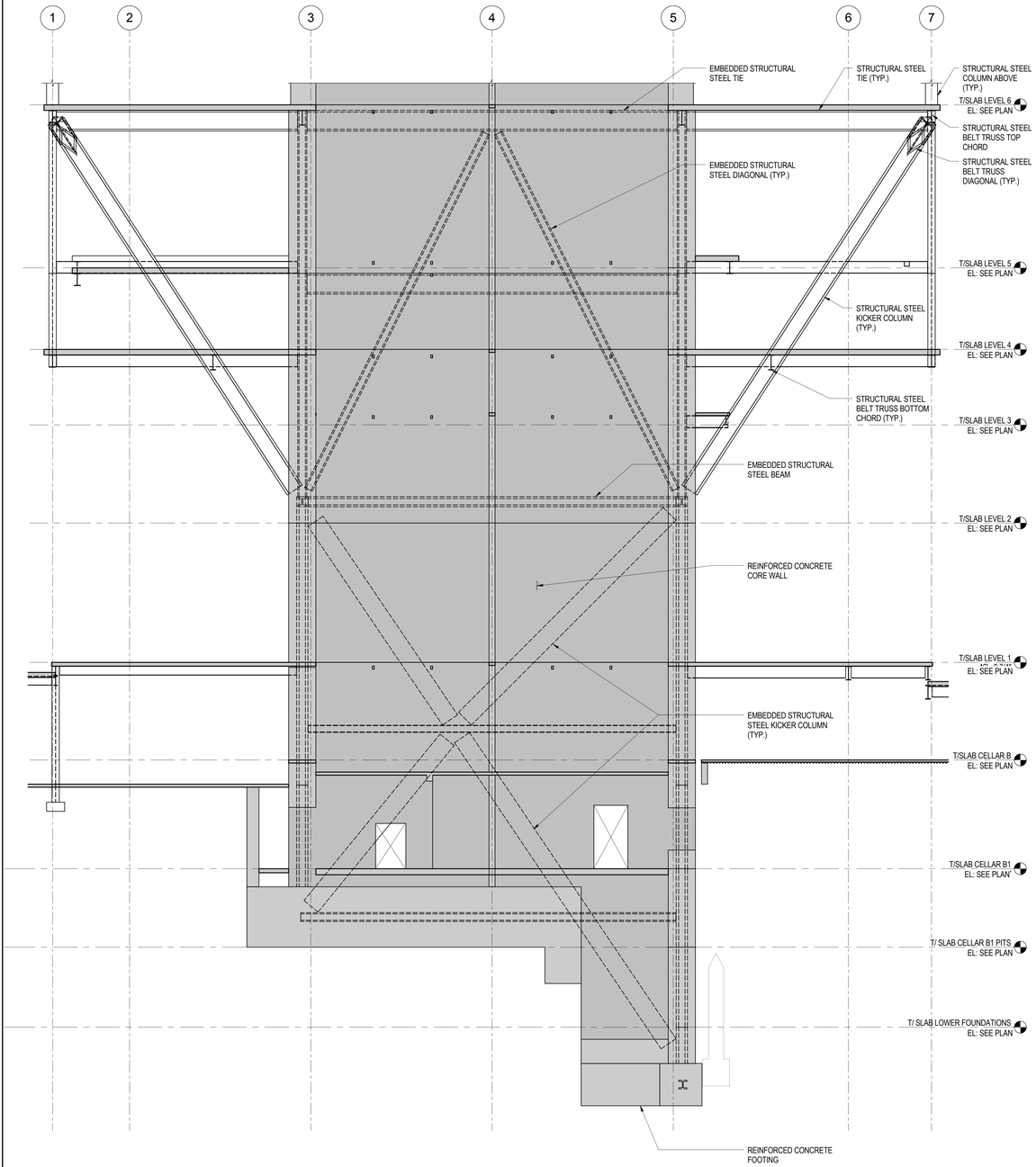
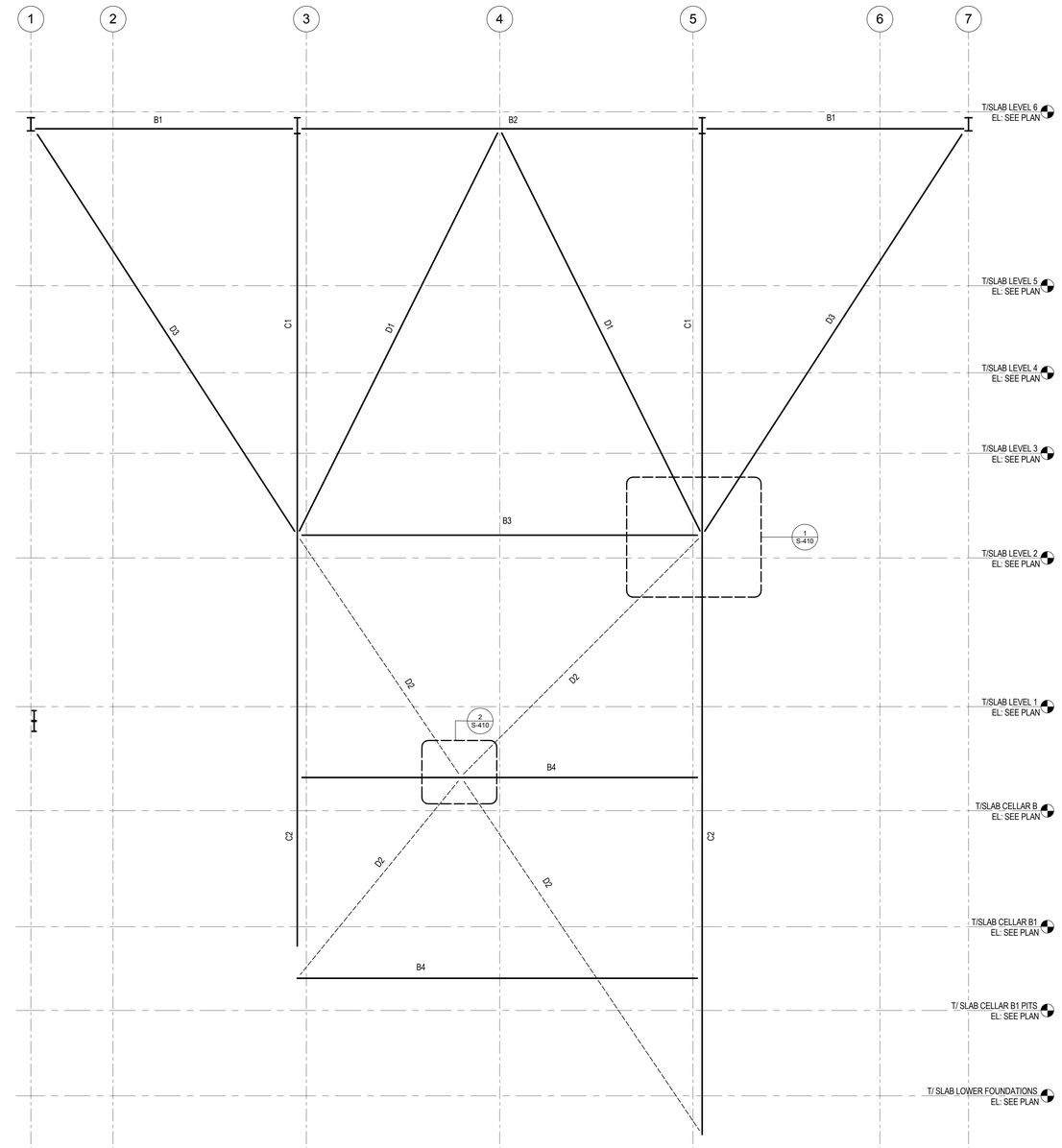
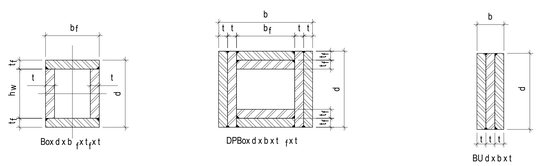


1 TYPICAL SECTION @ KICKERS THRU CORE WALL ALONG GRID LINES C TO F LOOKING EAST
NOT TO SCALE



STEEL MEMBER SCHEDULE FOR KICKER COLUMN ASSEMBLY	
MARK	LINE C, D, E, F, G
B1	W36X652
B2	W36X652
B3	W14X550
B4	W14X109
B5	W14X311
D1	W12X336
D2	BU 36X12X4
D3	DPBOX 36X36X2-1/4X2-1/4
C1	W14X730
C2	W14X730



A BOX

B DPBOX- DOUBLE PLATED BOX

C BU - BUILT-TOP SOLID PLATE SECTION

NOMENCLATURE FOR BUILT-UP SECTIONS
1/2" = 1'-0"

2 KEY SECTION AND SCHEDULE FOR KICKER COLUMN ASSEMBLY ALONG GRID LINES 'C' TO 'F'
NOT TO SCALE

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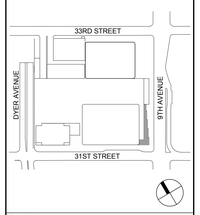
STATE OF NEW YORK
CHARLES MICHAEL BESSJAK
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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Sheet Name:
KICKER COLUMNS AT CORE LINES C TO F - SCHEDULES, ELEVATIONS, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-405
B-SCAN Sheet No.: S-405.00
Sheet No.: S-405
Page No.: 77 of 90

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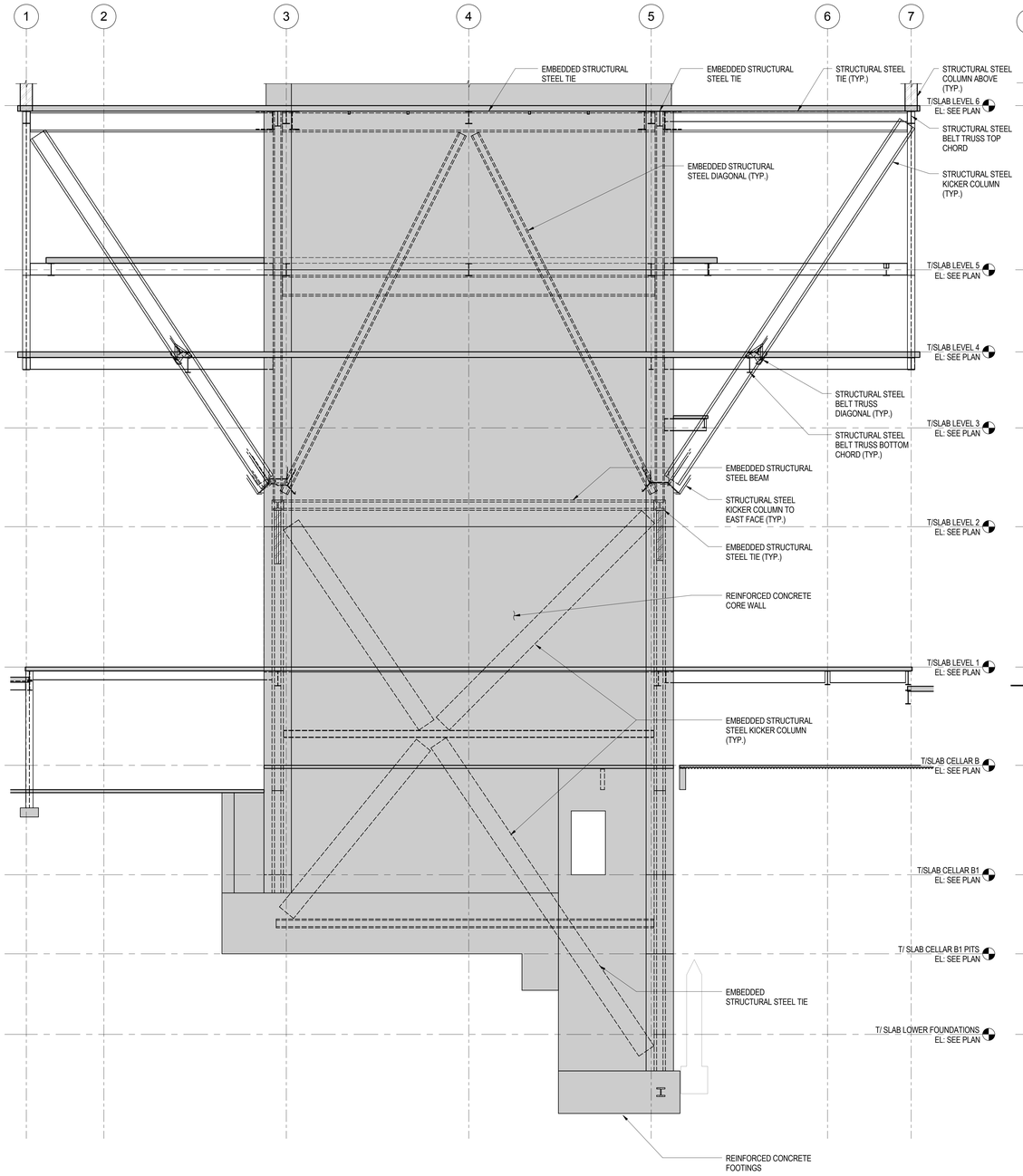
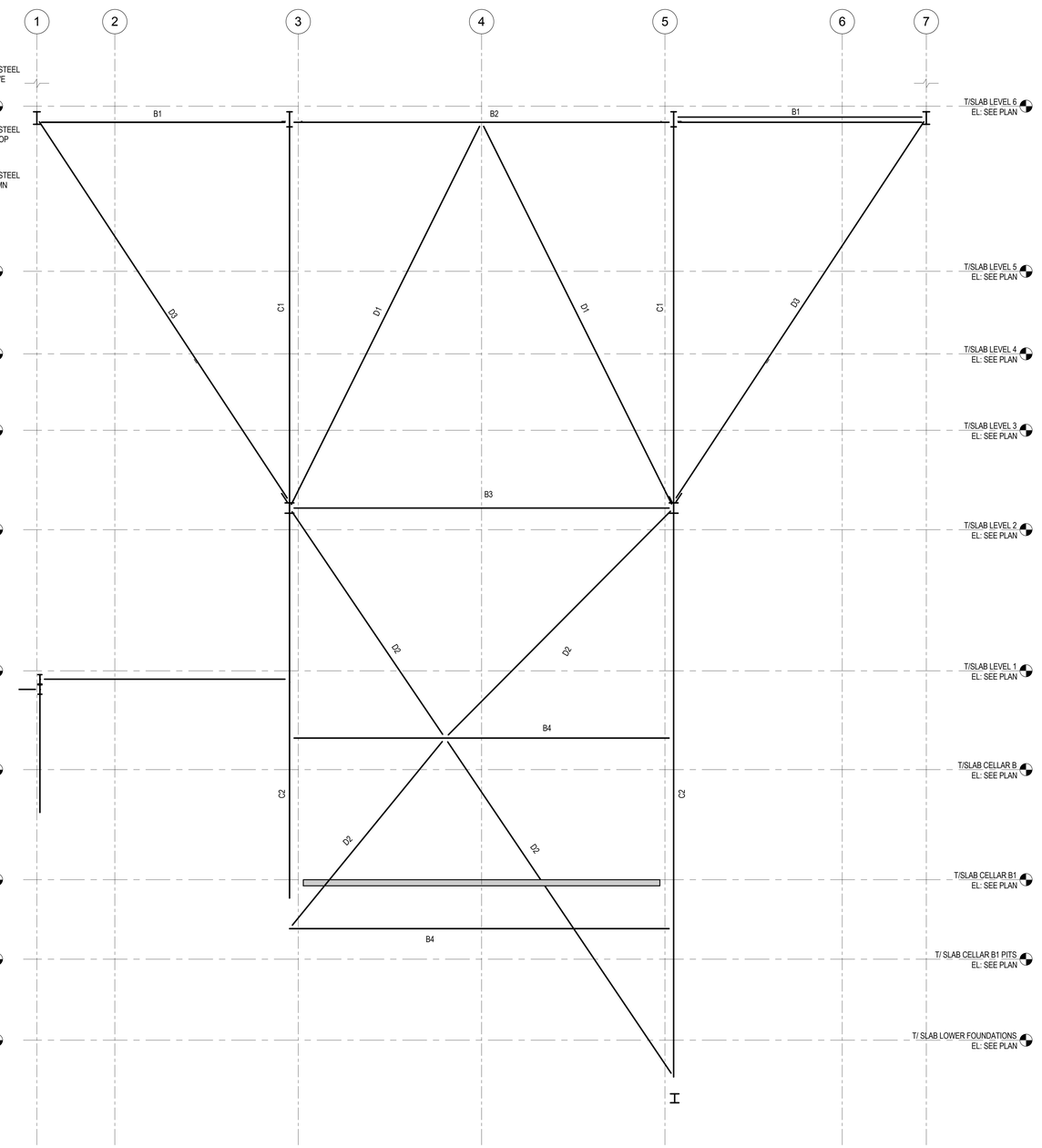
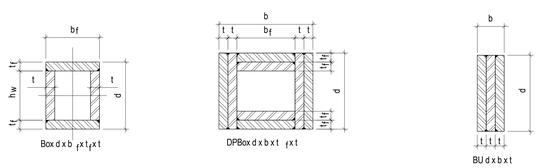


1 TYPICAL SECTION @ KICKERS THRU CORE WALL ALONG GRID LINE 'G' LOOKING EAST
NOT TO SCALE



STEEL MEMBER SCHEDULE FOR KICKER COLUMN ASSEMBLY	
MARK	LINE C, D, E, F, G
B1	W36X652
B2	W36X652
B3	W14X550
B4	W14X109
B5	W14X311
D1	W12X336
D2	BU 36X12X4
D3	DPBOX 36X36X2-1/4X2-1/4
C1	W14X730
C2	W14X730

2 KEY SECTION AND SCHEDULE FOR KICKER COLUMN ASSEMBLY ALONG LINE 'G'
1/8" = 1'-0"



A BOX

B DPBOX- DOUBLE PLATED BOX

C BU - BUILT-TOP SOLID PLATE SECTION

NOMENCLATURE FOR BUILT-UP SECTIONS
1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER
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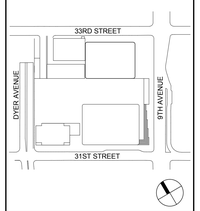
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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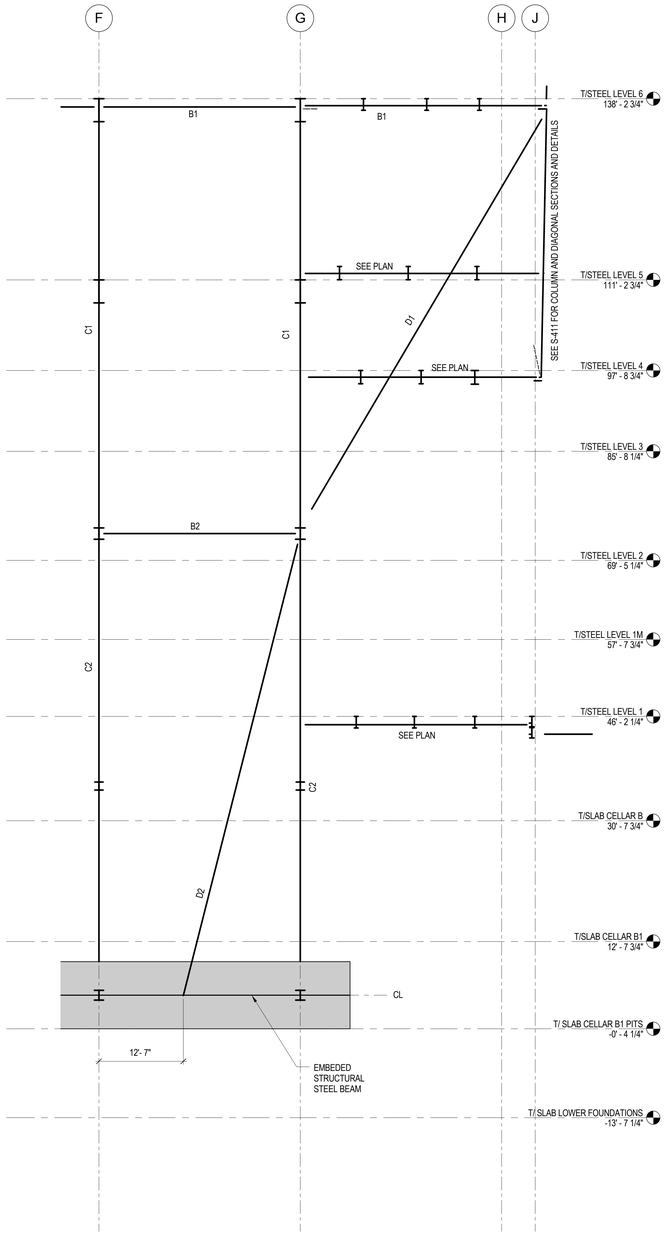
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
KICKER COLUMNS AT CORE LINE G - SCHEDULES, ELEVATIONS, SECTIONS & DETAILS

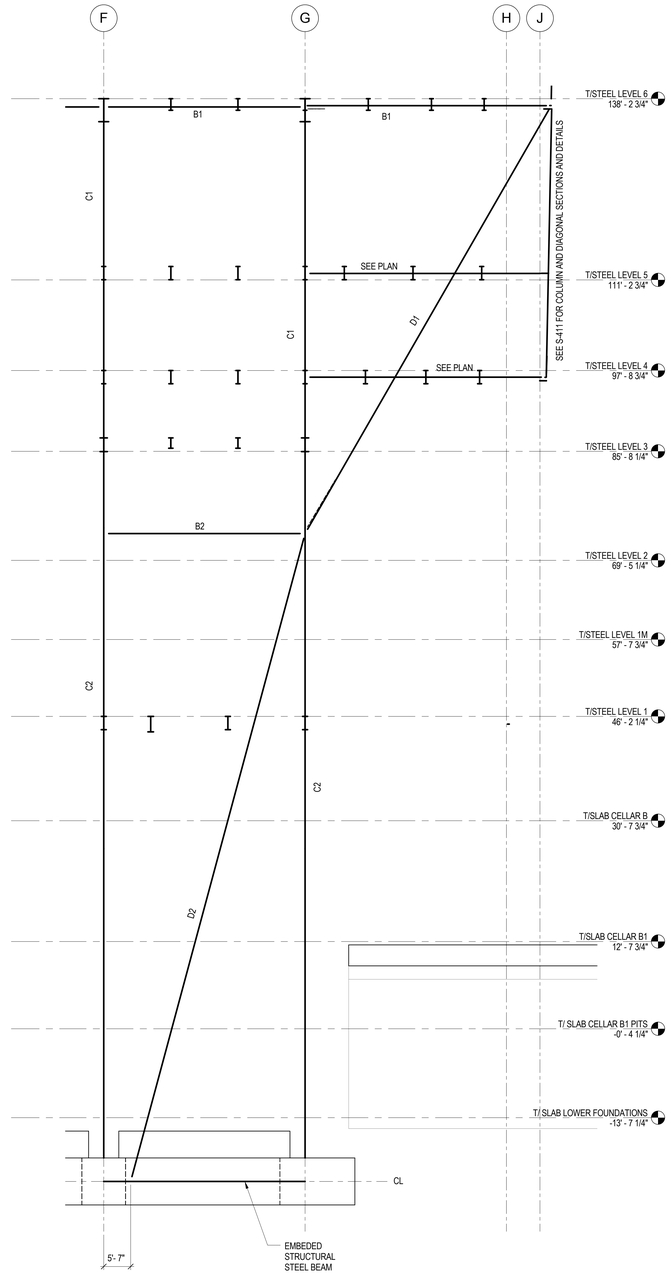
Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-406
B-SCAN Sheet No.: S-406.00
Sheet No.: S-406
Page No.: 78 of 90



B1: W36X652
B2: W14X550
D1: BOX 36X36X2X2
D2: BU 36X12X4
C1: W14X370
C2: W14X730

1 TYPICAL SECTION AT LINE 3 KICKER COLUMN ASSEMBLY LOOKING NORTH

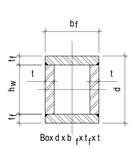
1/8" = 1'-0"



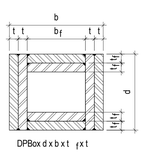
2 TYPICAL SECTION AT LINE 5 KICKER COLUMN ASSEMBLY LOOKING NORTH

1/8" = 1'-0"

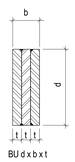
STEEL MEMBER SCHEDULE FOR KICKER COLUMN ASSEMBLY	
MARK	LINE C, D, E, F, G
B1	W36X652
B2	W14X550
D1	BOX 36X36X2X2
D2	BU 36X12X4
C1	W14X730
C2	W14X730



A BOX



B DPBOX- DOUBLE PLATED BOX



C BU - BUILT-TOP SOLID PLATE SECTION

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield
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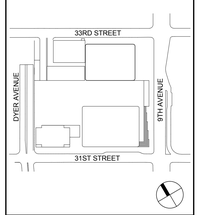
Key Plan:



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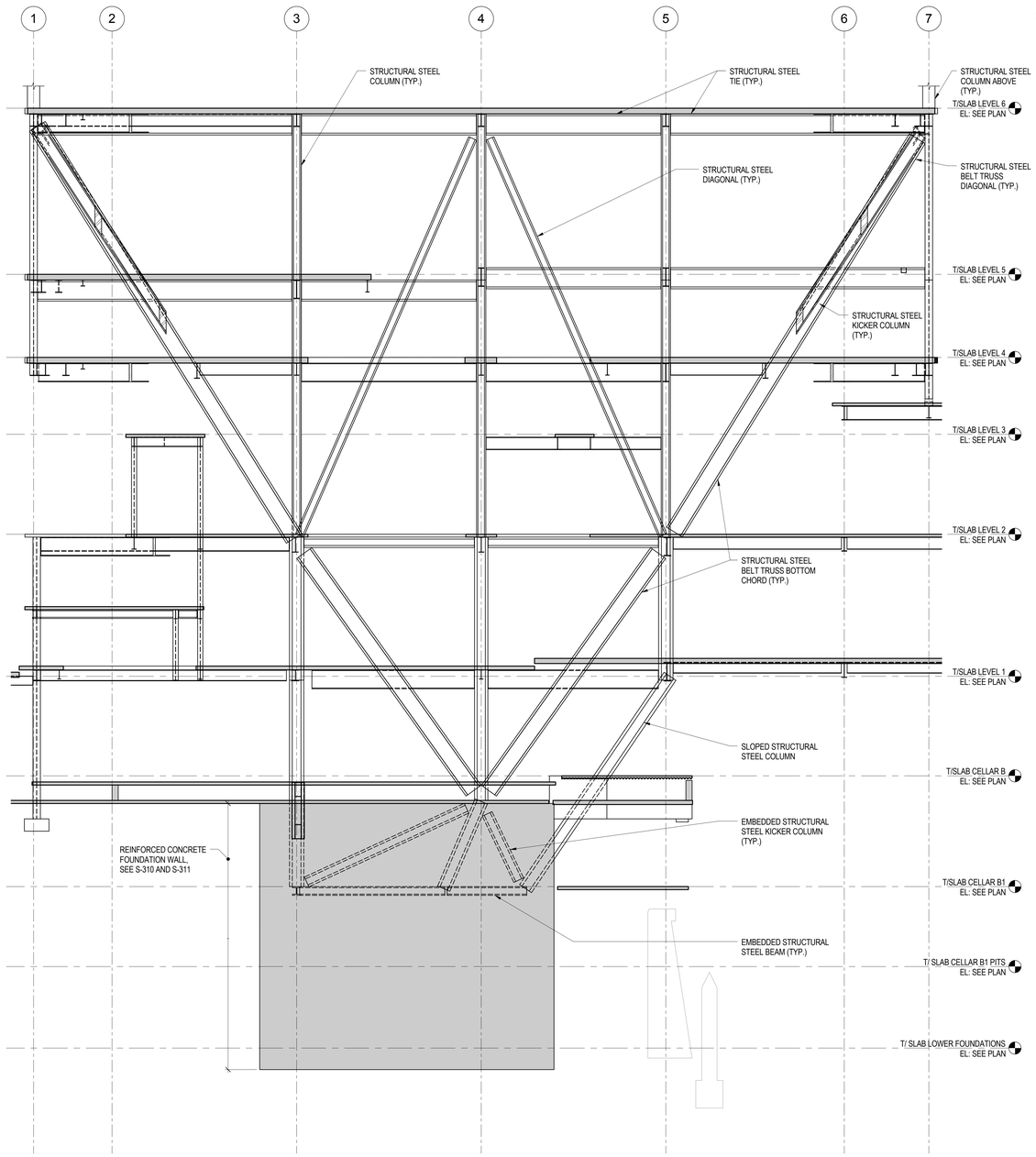
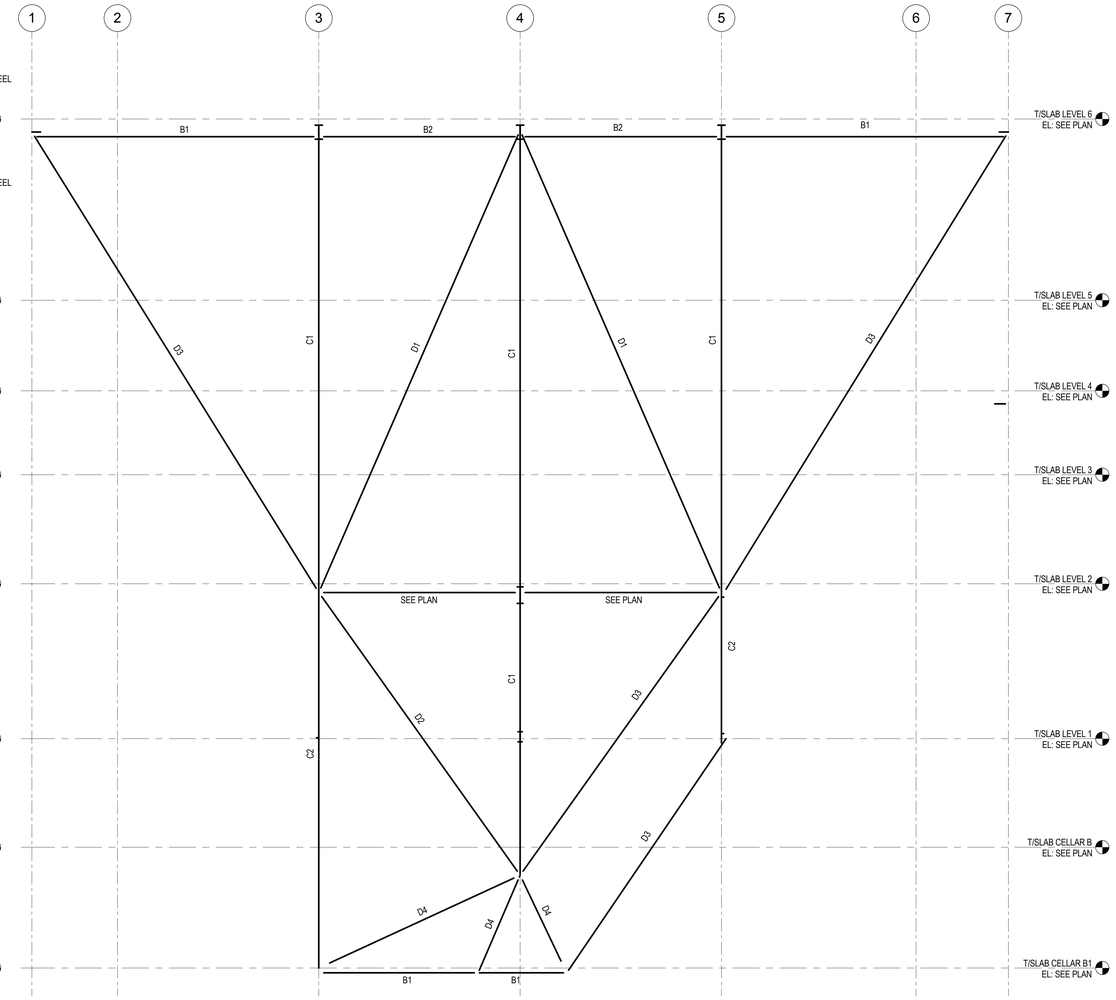
Sheet Name:
KICKER COLUMNS AT CORE LINE 3 & 5 SCHEDULES, ELEVATIONS, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-407
B-SCAN Sheet No.: S-407.00
Sheet No.: S-407
Page No.: 79 of 90

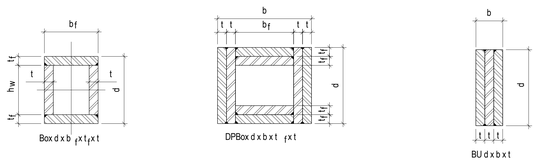


1 TYP SECTION @ LINE B KICKER COLUMN ASSEMBLY LOOKING EAST
1/8" = 1'-0"



STEEL MEMBER SCHEDULE	
MARK	SECTION
B1	W14X311
B2	W36X652
C1	W14X370
C2	BOX 28X26X5.5X3.75
D1	W14X283
D2	BU 36X12X4
D3	DPBU 36X36X2 1/4X2 1/4
D4	W14X605

2 KEY SECTION AND SCHEDULE FOR KICKER COLUMN ASSEMBLY
NOT TO SCALE



A BOX

B DPBOX- DOUBLE PLATED BOX

C BU - BUILT-TOP SOLID PLATE SECTION

NOMENCLATURE FOR BUILT-UP SECTIONS
1/2" = 1'-0"

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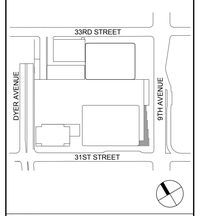
STATE OF NEW YORK
CHARLES MICHAEL BESSAI
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

PRELIMINARY
NOT FOR CONSTRUCTION

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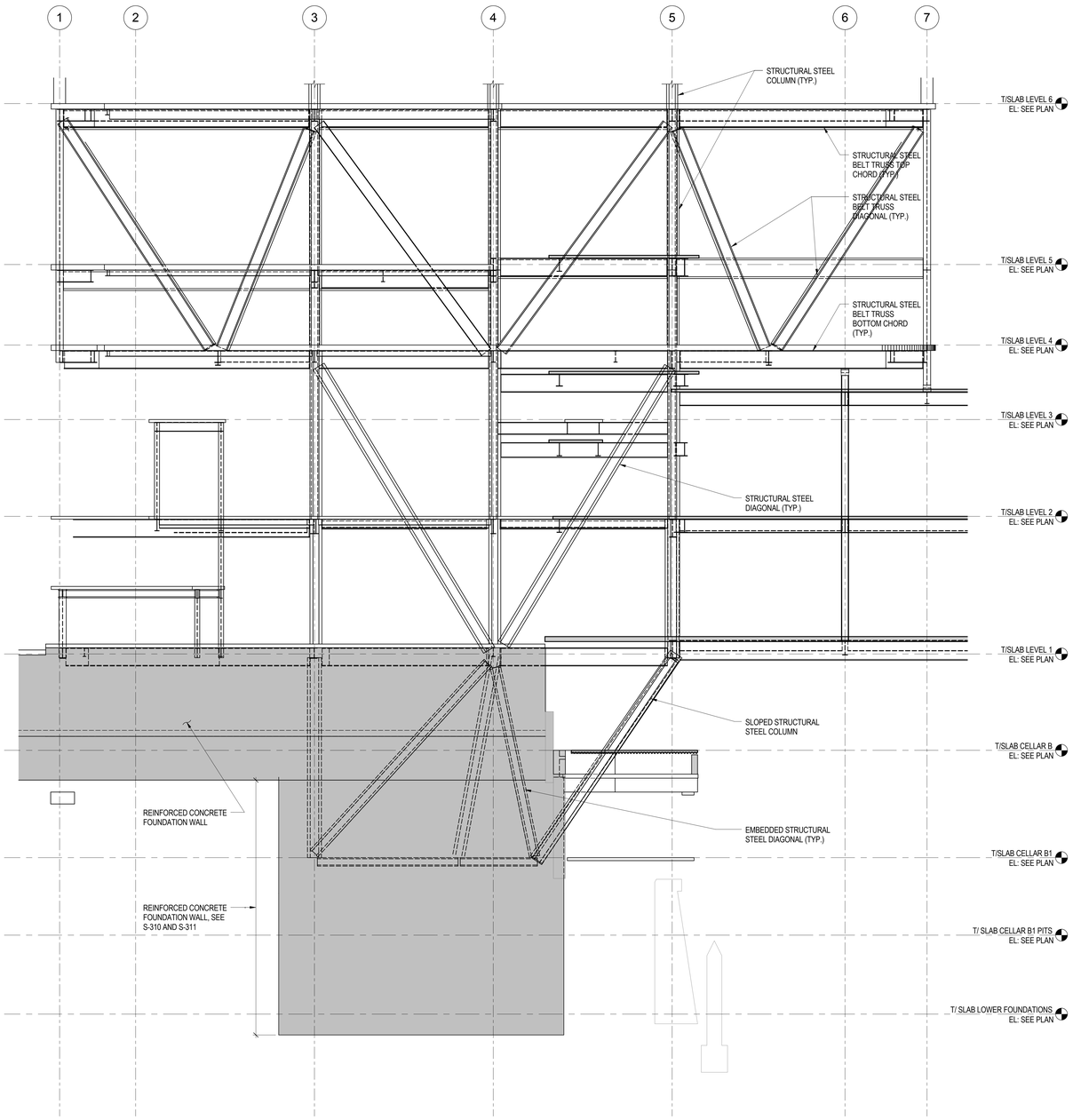
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

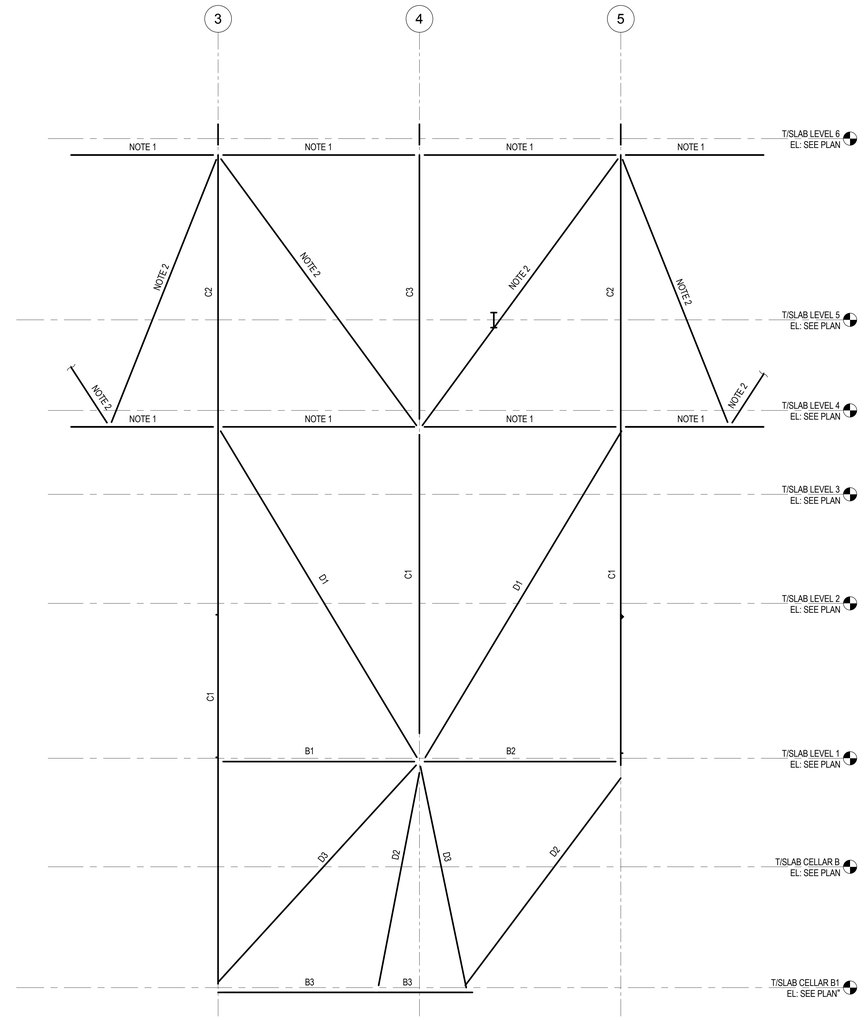
Sheet Name:
KICKER COLUMN AT LINE B - SCHEDULE, ELEVATIONS, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-408
B-SCAN Sheet No.: S-408.00
Sheet No.: S-408
Page No.: 80 of 90



1 SECTION @ LINE 'A' BELOW LEVEL 6 LOOKING EAST

1/8" = 1'-0"

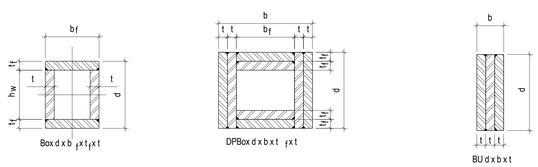


STEEL MEMBER SCHEDULE	
MARK	SECTION
B1	W24X76
B2	W24X76
B3	W14X311
D1	BU 26X24X5X3.5
D2	DP BOX 24X24X3X3
D3	W14X605
C1	DP BOX 24X24X3X3
C2	BOX 24X24X3.75X3.75
C3	DP BOX 24X24X2.375X2.375

NOTES:
1. BELT TRUSS CHORD MEMBER SEE S-415.
2. BELT TRUSS DIAGONAL MEMBER SEE S-415.

2 KEY SECTION AND SCHEDULE AT LINE 'A' BELOW LEVEL 6

NOT TO SCALE



A BOX

B DPBOX- DOUBLE PLATED BOX

C BU - BUILT-TOP SOLID PLATE SECTION

NOMENCLATURE FOR BUILT-UP SECTIONS

1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

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Vertical Transportation

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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

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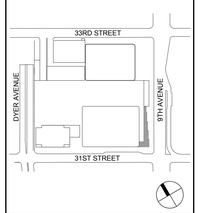
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

STATE OF NEW YORK
CHARLES MICHAEL BESS
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

COLUMNS & DIAGONALS ON LINE A BELOW LEVEL 6 - SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-409
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Sheet No.: S-409
Page No.: 81 of 90

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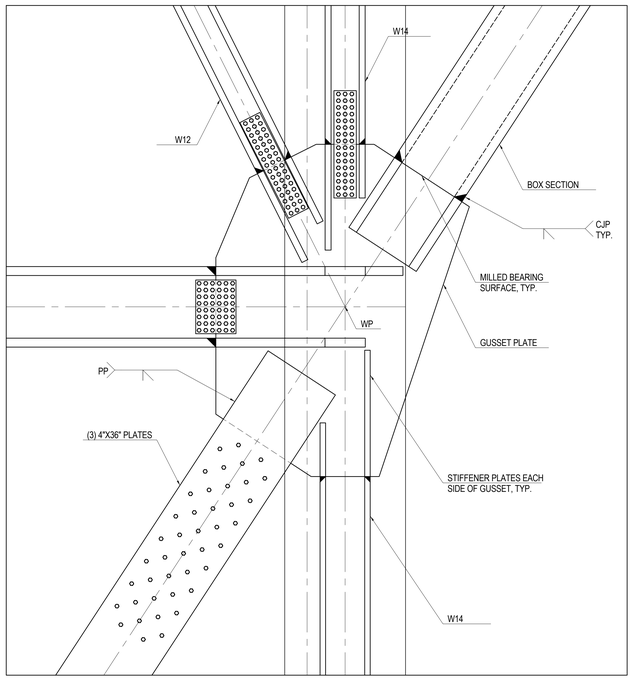
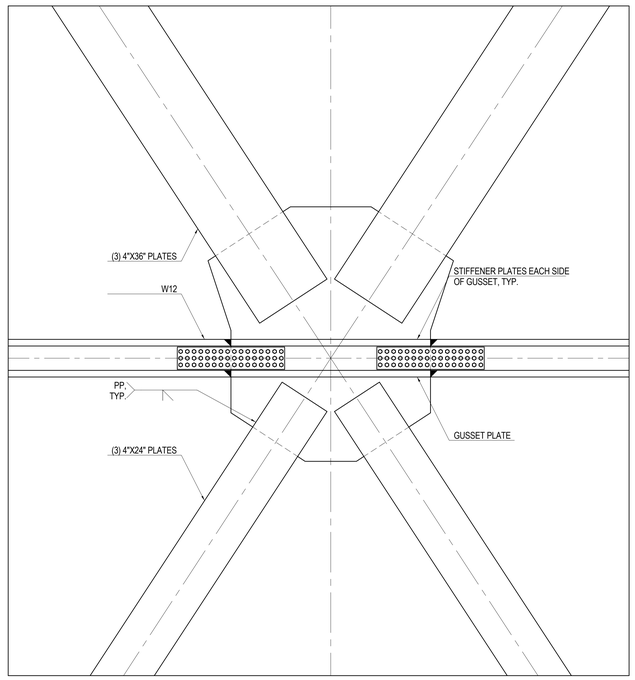


1 DETAIL AT KICKER COLUMN INTERFACE WITH CORE WALL
1/2" = 1'-0"



2 DETAIL AT KICKER COLUMN INTERSECTION WITHIN CORE WALL
1/2" = 1'-0"

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield
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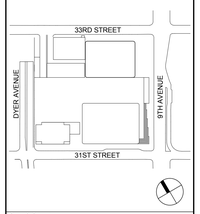
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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KICKER COLUMN SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/2" = 1'-0"
File No.: S-410
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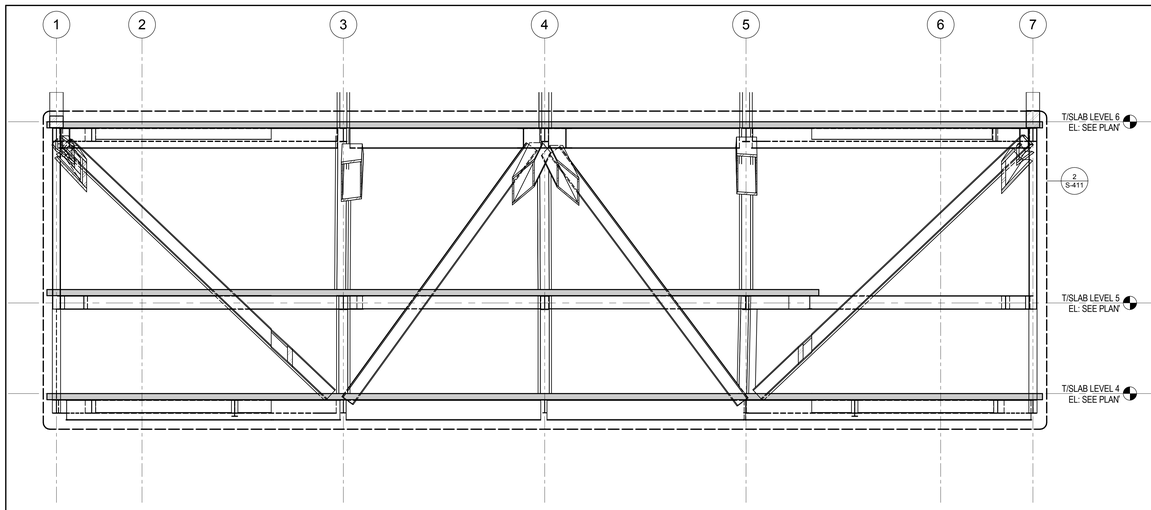
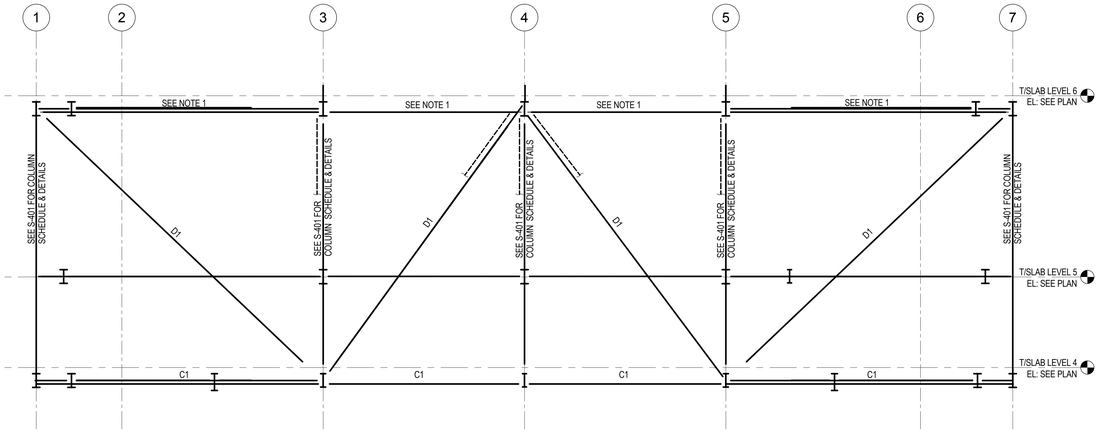
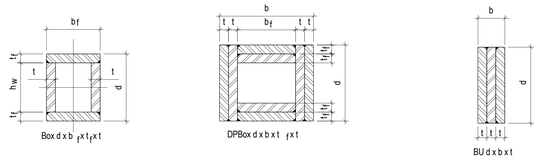


1 TYP SECTION @ LINE J LOOKING EAST
1/8" = 1'-0"



C1: W36X210
D1: BOX 24X24X1-3/4X1-3/4
NOTE: REFER TO S-415 FOR LOWER BELT TRUSS TOP CHORD.

2 TYP SECTION @ LINE J LOOKING EAST
1/8" = 1'-0"



A BOX

B DPBOX- DOUBLE PLATED BOX

C BU - BUILT-TOP SOLID PLATE SECTION

NOMENCLATURE FOR BUILT-UP SECTIONS
1/2" = 1'-0"

MANHATTAN WEST: NORTH TOWER
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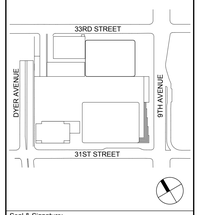
Key Plan:



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Sheet Name:
COLUMNS & DIAGONALS EAST OF LINE J BELOW LEVEL 1 - SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: As indicated
File No.: S-411
B-SCAN Sheet No.: S-411.00
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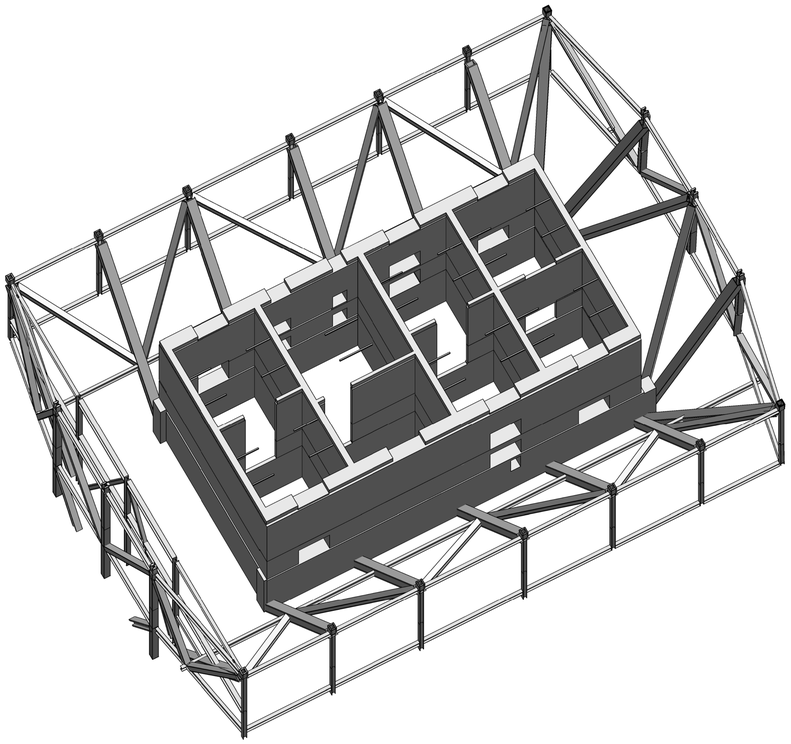
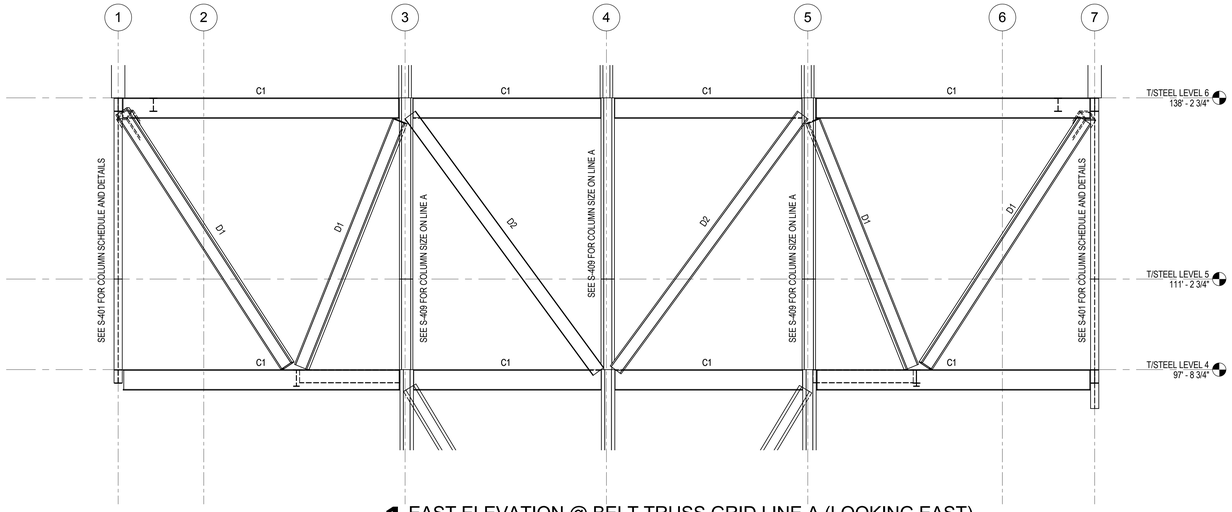
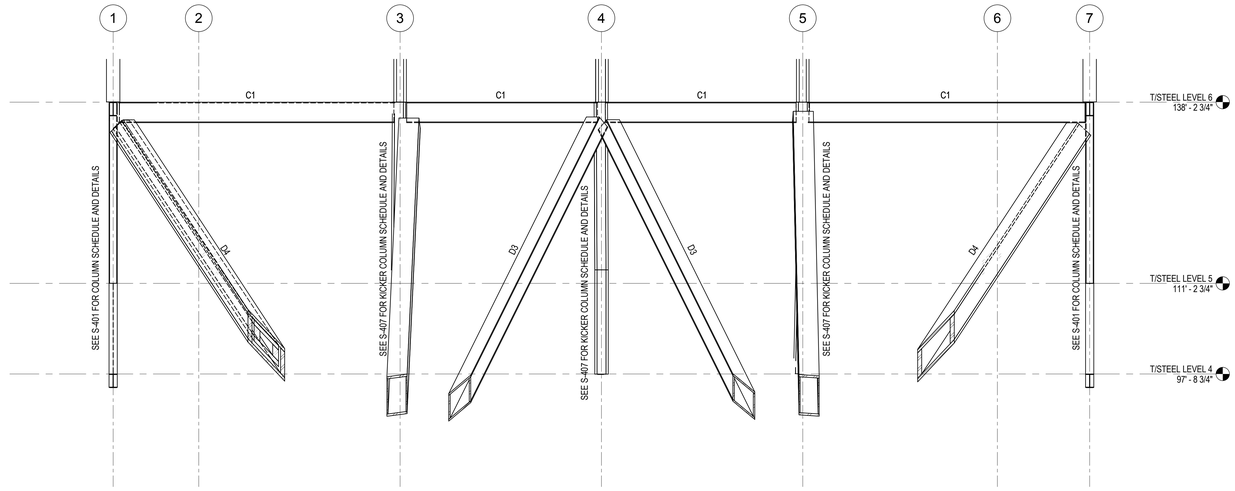


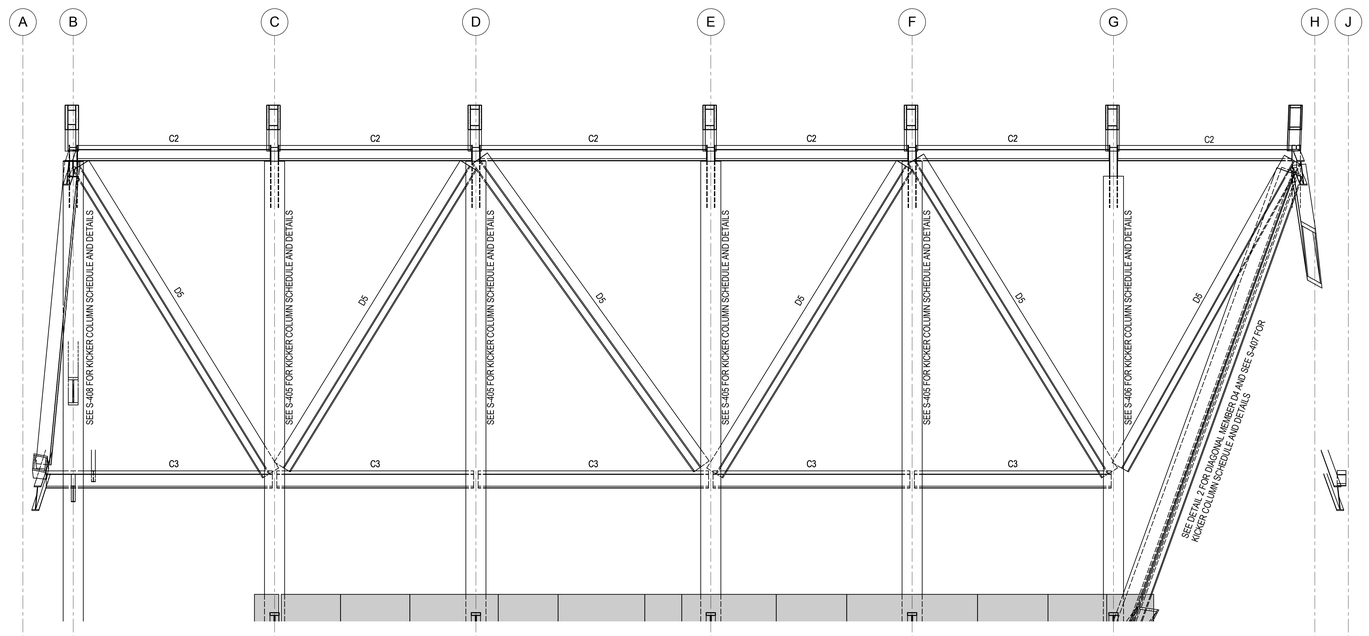
LEVEL 2 TO 4 BELT TRUSS SCHEDULE			
	EAST ELEVATION	WEST ELEVATION	NORTH AND SOUTH ELEVATION
C1	W36x210	W36x210	-
C2	-	-	W24x131
C3	-	-	W30x116
D1	BOX 24X24X2 1/4X2 1/4	-	-
D2	-	BOX 24X24X7/8X7/8	-
D3	-	-	BOX 30X30X2X2
D4	BOX 36X36X4X4	-	-
D5	-	BOX 30X30X3X3	-



1 EAST ELEVATION @ BELT TRUSS GRID LINE A (LOOKING EAST)
1/8" = 1'-0"



2 SLOPED STRUCTURAL STEEL ON EAST SIDE (LOOKING EAST)
1/8" = 1'-0"



3 TYP SLOPED STRUCTURAL STEEL BELT TRUSS
1/8" = 1'-0"

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
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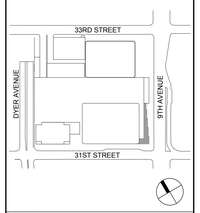
STATE OF NEW YORK
CHARLES MICHAEL BESSAI
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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Sheet Name:
LOWER BELT TRUSS SCHEDULES, SECTIONS & DETAILS

Project No.: 211157
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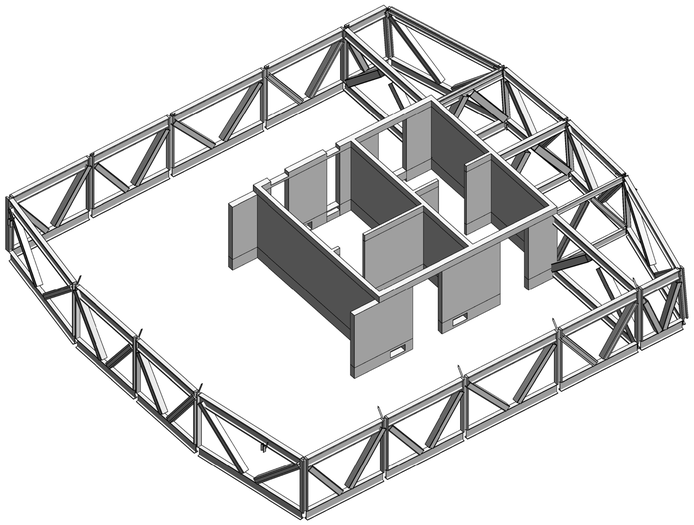
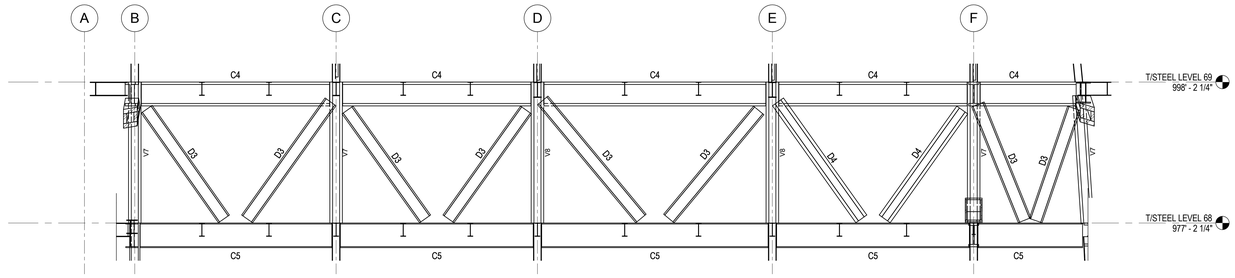
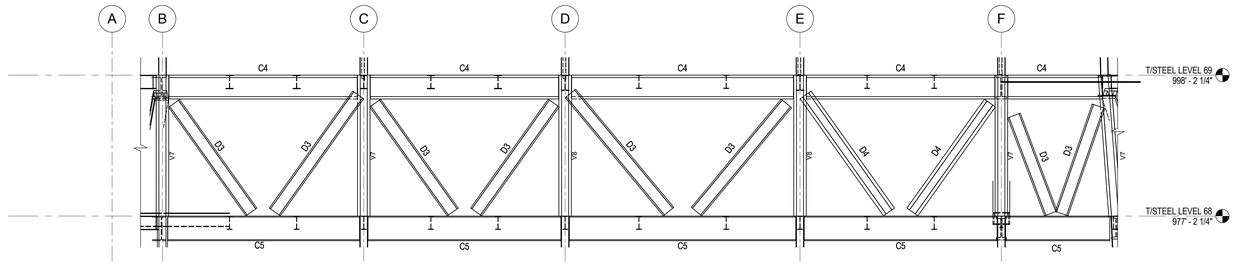


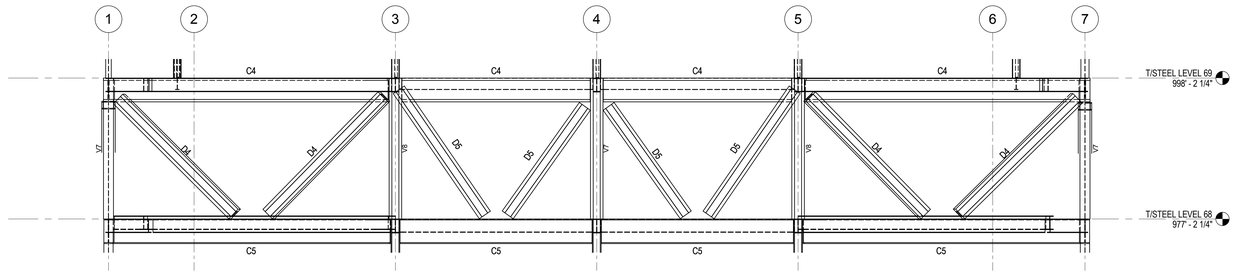
LEVEL 64 TO 65 BELT TRUSS SCHEDULE				
	NORTH AND SOUTH ELEVATION	WEST ELEVATION	EAST ELEVATION	OUTRIGGERS
C4	W36x800	W36x800	-	W36x800
C5	BU44x20x4x4	BU44x20x4x4	-	BU44x20x4x4
C6	-	-	W36x330	W36x330
C7	-	-	W36x652	W36x652
C8	-	-	-	W36x361
D3	BOX24x24x2 1/2x2 1/2	-	-	-
D4	BOX24x24x3 1/4x3 1/4	BOX24x24x3 1/4x3 1/4	-	-
D5	-	BOX24x24x2 1/4x2 1/4	-	-
D6	-	-	BOX24x24x1 1/4x1 1/4	-
D9	-	-	-	BOX30x24x4x4
D10	-	-	-	BOX30x24x1 1/2x1 1/2
D11	-	-	-	BOX30x24x3 1/2x3 1/2
V7	W14x730	W14x730	W14x730	-
V8	WFP14x730x17x1	WFP14x730x17x1	-	-
V9	-	-	W14x426	-



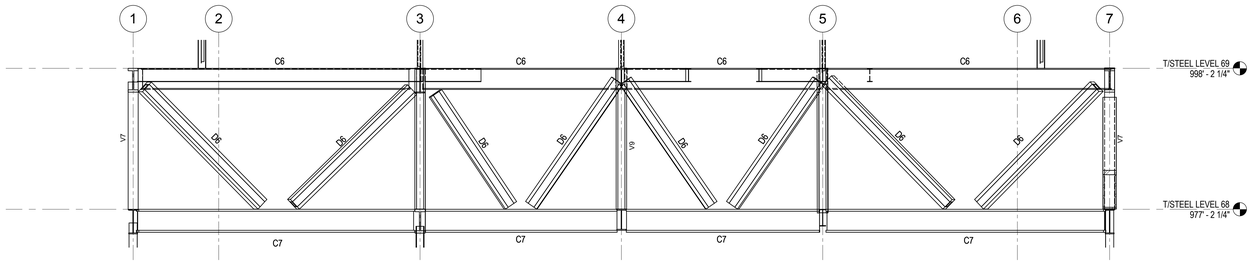
1 NORTH ELEVATION @ BELT TRUSS GRID LINE 1 (LOOKING NORTH)
1/8" = 1'-0"



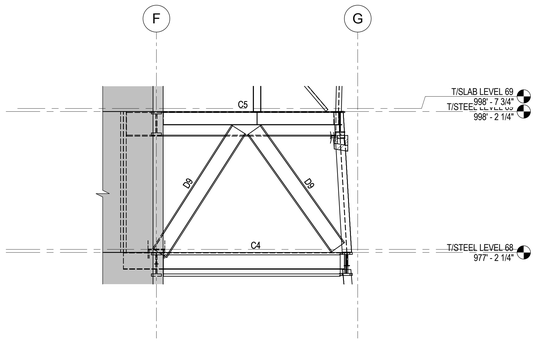
2 SOUTH ELEVATION @ BELT TRUSS GRID LINE7 (LOOKING NORTH)
1/8" = 1'-0"



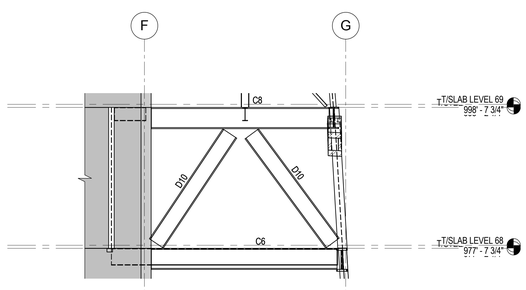
3 WEST ELEVATION @ BELT TRUSS GRID LINE A (LOOKING EAST)
1/8" = 1'-0"



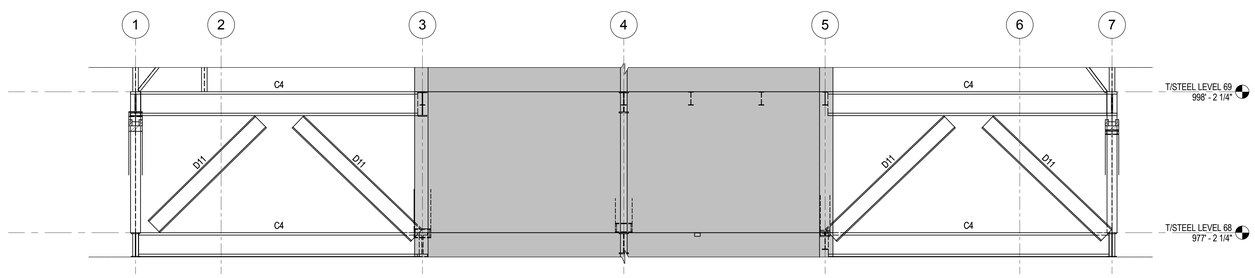
4 EAST ELEVATION @ BELT TRUSS GRID LINE G (LOOKING EAST)
1/8" = 1'-0"



5 OUTRIGGER SECTION ALONG LINES 3 AND 5
1/8" = 1'-0"



6 OUTRIGGER SECTION ALONG LINE 4
1/8" = 1'-0"



7 ELEVATION @ LINE F (LOOKING EAST)
1/8" = 1'-0"

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475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

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Wind Tunnel Consultant
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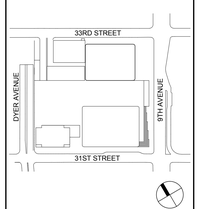
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

PRELIMINARY
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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
UPPER BELT TRUSS SCHEDULES, SECTIONS & DETAILS

Project No.: 211157	B-SCAN Sheet No.: S-416.00
Date: 20 JUN 2014	
Scale: As indicated	Sheet No.: S-416
File No.: S-416	Page No.: 85 of 90

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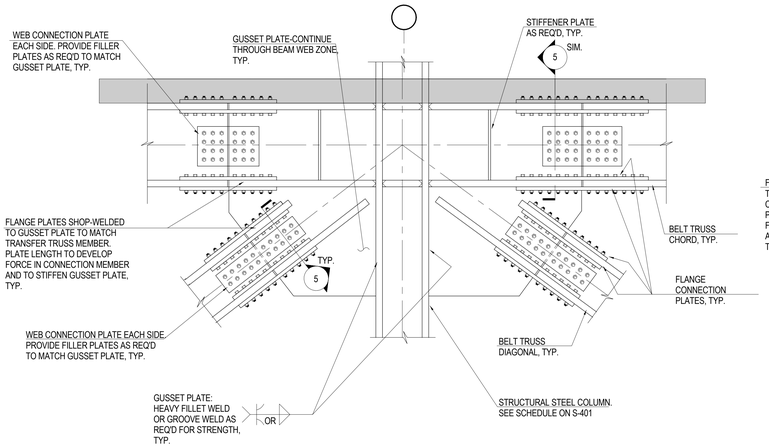

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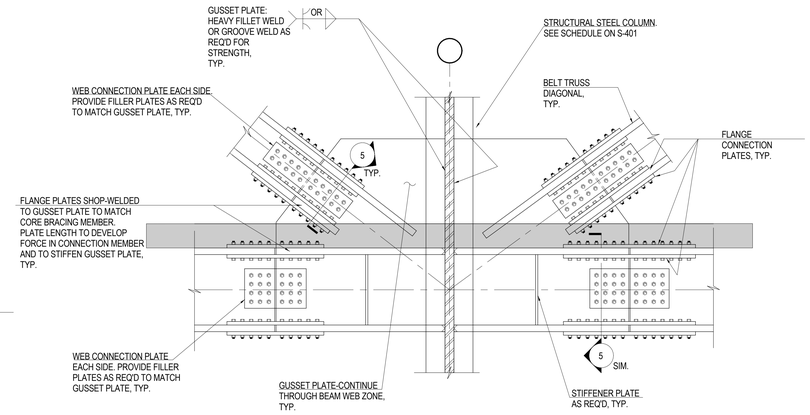

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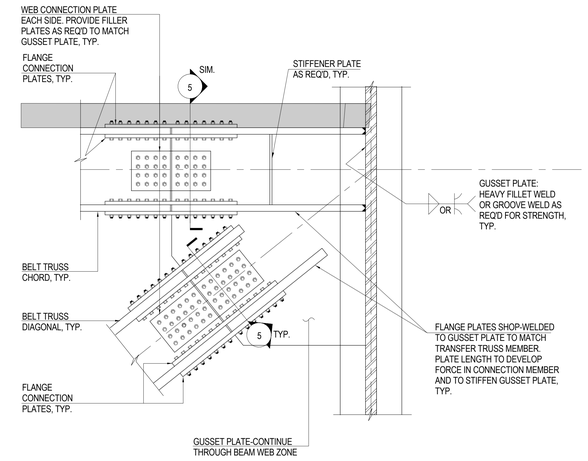

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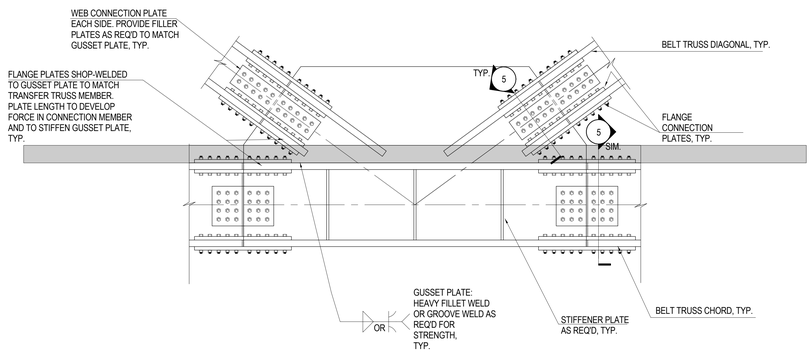

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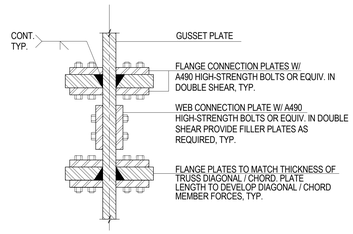

5 TYPICAL DIAGONAL / CHORD TO GUSSET PLATE CONNECTION
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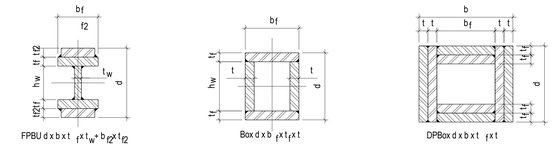

A FPBU- FLANGE PLATED BUILT UP

B BOX

C DPBOX- DOUBLE PLATED BOX

NOMENCLATURE FOR BUILT-UP SECTIONS
NOT TO SCALE

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
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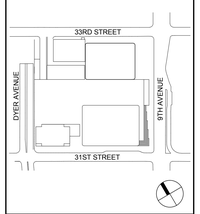

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BELT TRUSS SECTIONS & DETAILS

Project No.: 211157
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B-SCAN Sheet No.:
S-417.00
Sheet No.: S-417
Page No.: 86 of 90

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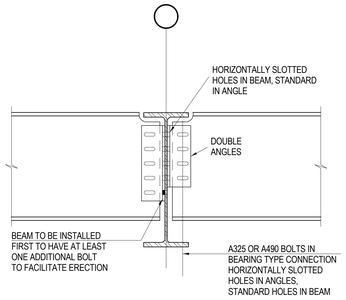
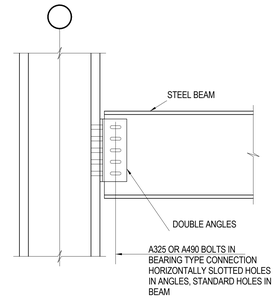


NOTE: 1. CONNECTION TO DEVELOP THE BEAM REACTION IN ACCORDANCE WITH THE AISC-ASD RECOMMENDED PRACTICE FOR A DOUBLE ANGLE CONNECTION
2. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)

1 TYPICAL BEAM-TO-BEAM SHEAR CONNECTION
NOT TO SCALE



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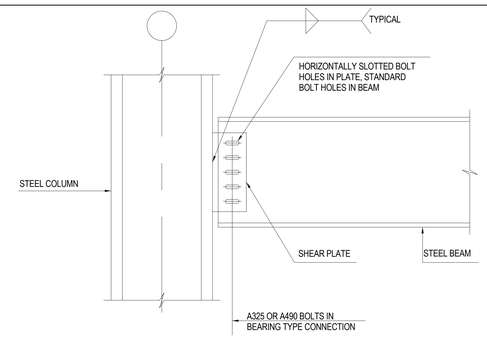
2. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)

2 TYPICAL BEAM-TO-COLUMN FLANGE SHEAR CONNECTION - OPTION #1
NOT TO SCALE



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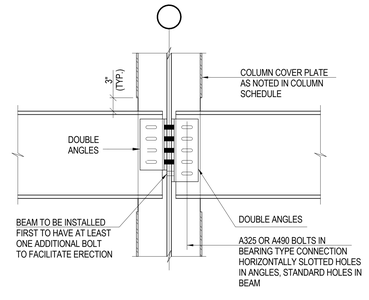
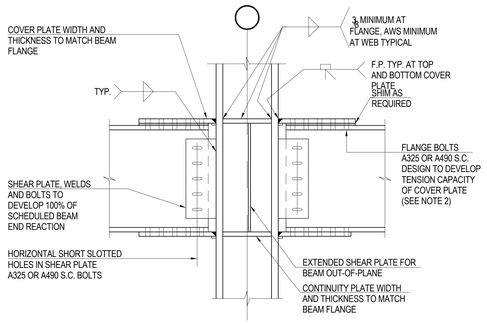
2. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)

3 TYPICAL BEAM-TO-COLUMN FLANGE SHEAR CONNECTION - OPTION #2
NOT TO SCALE



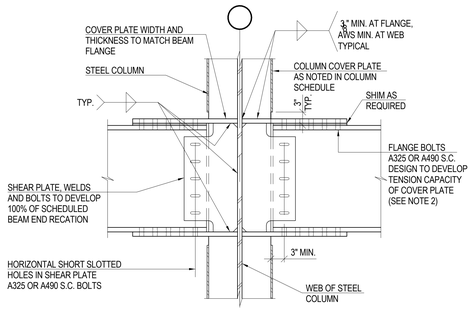
NOTE: 1. CONNECTION TO DEVELOP THE BEAM REACTION IN ACCORDANCE WITH THE AISC-ASD RECOMMENDED PRACTICE FOR A DOUBLE ANGLE CONNECTION
2. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)

4 TYPICAL BEAM-TO-COLUMN WEB SHEAR CONNECTION
NOT TO SCALE



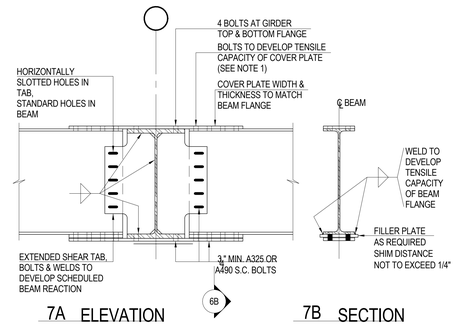
NOTES: 1. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)
2. TENSION CAPACITY OF PLATE = PLATE GROSS AREA x Fy x 0.66

5 TYPICAL BEAM-TO-COLUMN FLANGE MOMENT CONNECTION
NOT TO SCALE



NOTES: 1. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)
2. TENSION CAPACITY OF PLATE = PLATE GROSS AREA x Fy x 0.66

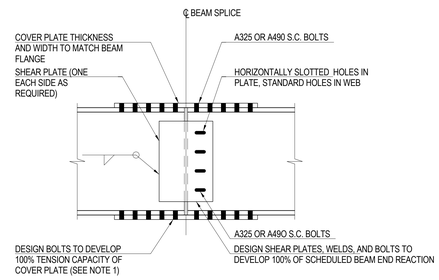
6 TYPICAL BEAM-TO-COLUMN WEB MOMENT CONNECTION
NOT TO SCALE



7A ELEVATION 7B SECTION

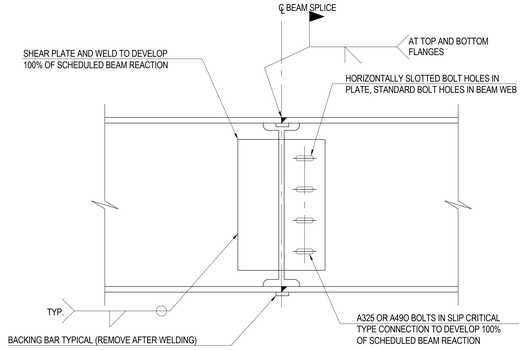
NOTES: 1. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)
2. TENSION CAPACITY OF PLATE = PLATE GROSS AREA x Fy x 0.66

7 TYPICAL BEAM-TO-GIRDER MOMENT CONNECTION
NOT TO SCALE



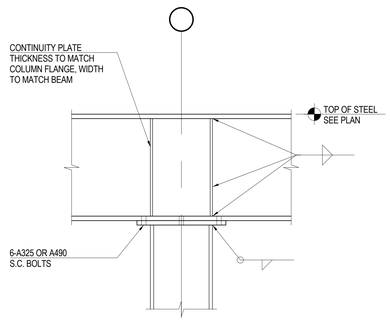
NOTES: 1. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)
2. TENSION CAPACITY OF PLATE = PLATE GROSS AREA x Fy x 0.66

8 TYPICAL BEAM-TO-BEAM MOMENT SPLICE: BOLTED
NOT TO SCALE

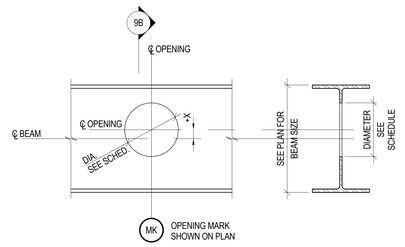


NOTES: 1. SHEAR CONNECTION TO DEVELOP AXIAL CAPACITY EQUAL TO SCHEDULED SHEAR CAPACITY SHOWN ON S-005 (PER NYC CODE)

9 TYPICAL BEAM-TO-BEAM MOMENT SPLICE: FIELD-WELDED
NOT TO SCALE



10 BEAM OVER TOP OF COLUMN
NOT TO SCALE

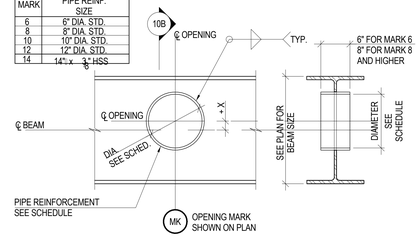


11A ELEVATION 11B SECTION

11 TYPICAL ROUND STEEL BEAM OPENING DETAIL - UNINREINFORCED
NOT TO SCALE

REINFORCED ROUND OPENING SCHEDULE	
MARK	PIPE REINF. SIZE
6	6" DIA. STD.
8	8" DIA. STD.
10	10" DIA. STD.
12	12" DIA. STD.
14	14" x 3/8" HSS

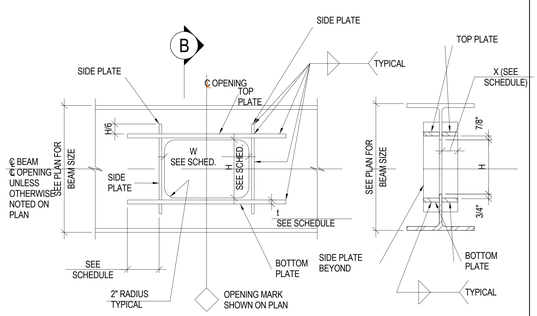
NOTE: WHERE 'R(X)' INDICATED IN PLAN, USE EXTRA-STRONG PIPE INSTEAD OF STANDARD PIPE



12A ELEVATION 12B SECTION

NOTES: 1. BEAM OPENING REINFORCEMENT SHALL MATCH BEAM MATERIAL STRENGTH UNLESS NOTED OTHERWISE.
2. FILLET WELD TO BE AWS MINIMUM BUT NOT LESS THAN 1/4".

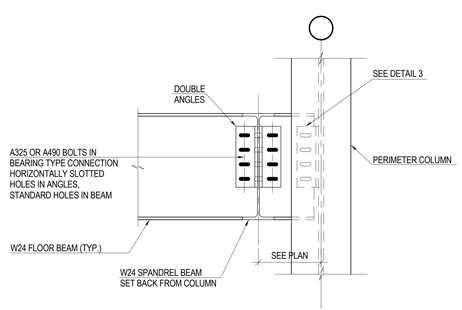
12 TYPICAL ROUND STEEL BEAM OPENING DETAIL - REINFORCED
NOT TO SCALE



A ELEVATION B SECTION

NOTES: 1. BEAM OPENING REINFORCEMENT SHALL MATCH BEAM MATERIAL STRENGTH UNLESS NOTED OTHERWISE.
2. FILLET WELD TO BE AWS MINIMUM BUT NOT LESS THAN 1/4".

13 TYPICAL RECTANGULAR STEEL BEAM OPENING DETAIL - REINFORCED
NOT TO SCALE



NOTE: CONNECTION TO DEVELOP THE BEAM REACTION IN ACCORDANCE WITH THE AISC-ASD RECOMMENDED PRACTICE FOR A DOUBLE ANGLE CONNECTION.

14 TYPICAL OFFSET SPANDREL CONNECTION (LEVELS 2, 4, 6, 8 AND 10)
NOT TO SCALE

MANHATTAN WEST: NORTH TOWER
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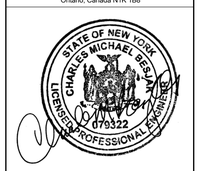
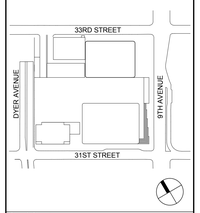


Key Plan:



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Sheet Name:
TYPICAL STRUCTURAL STEEL SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1" = 1'-0"
File No.: S-420
B-SCAN Sheet No.: S-420.00
Sheet No.: S-420
Page No.: 87 of 90

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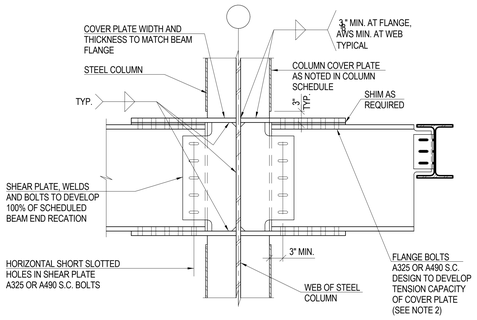
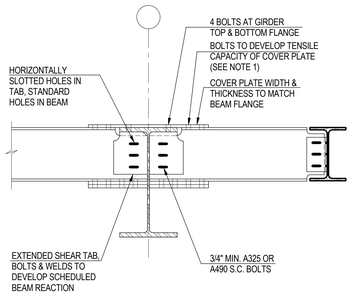


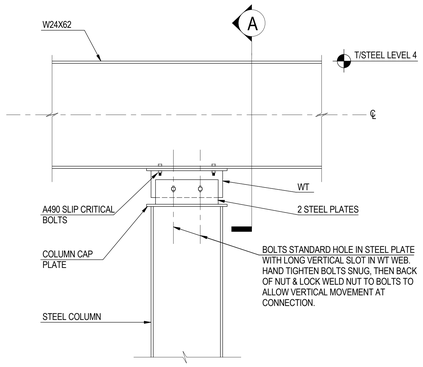
NOTE: SEE S-420 FOR TYPICAL STEEL MOMENT AND SHEAR CONNECTIONS

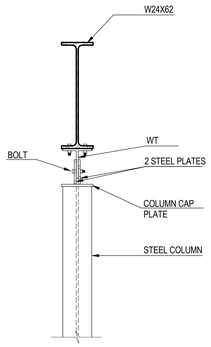
1 BEAM CONNECTION
1" = 1'-0"



NOTE: SEE S-420 FOR TYPICAL STEEL MOMENT AND SHEAR CONNECTIONS

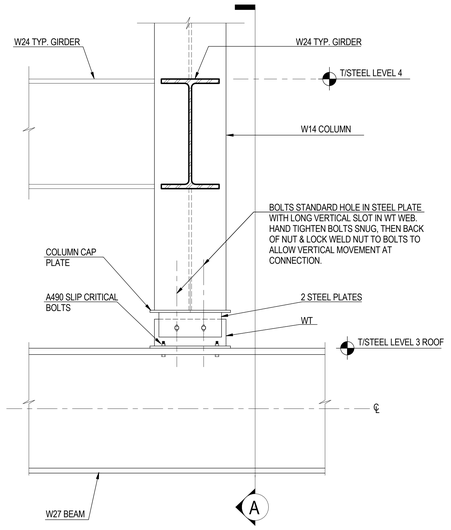
2 BEAM CONNECTION
1" = 1'-0"

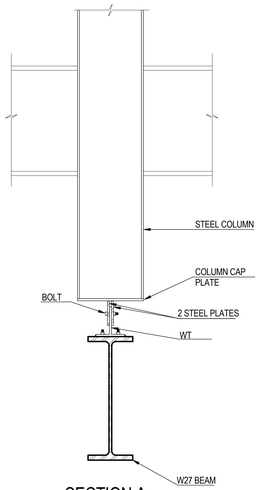




SECTION A

3 DETAIL AT RETAIL BUILDING ROOF CONNECTION TO UNDERSIDE OF LEVEL 4
NOT TO SCALE





SECTION A

4 DETAIL AT RETAIL BUILDING ROOF CONNECTION TO UNDERSIDE OF LEVEL 4
NOT TO SCALE

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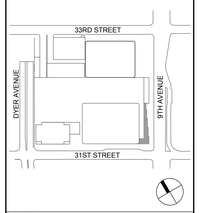
STATE OF NEW YORK
CHARLES MICHAEL BERSANI
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



Seal & Signature:

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NOT FOR CONSTRUCTION

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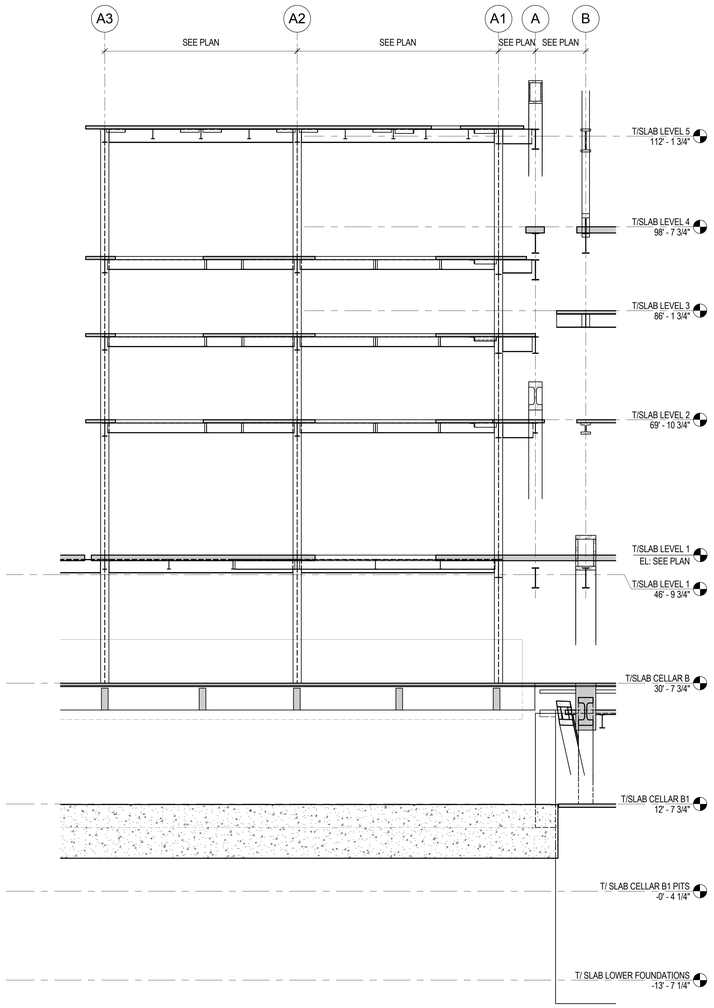
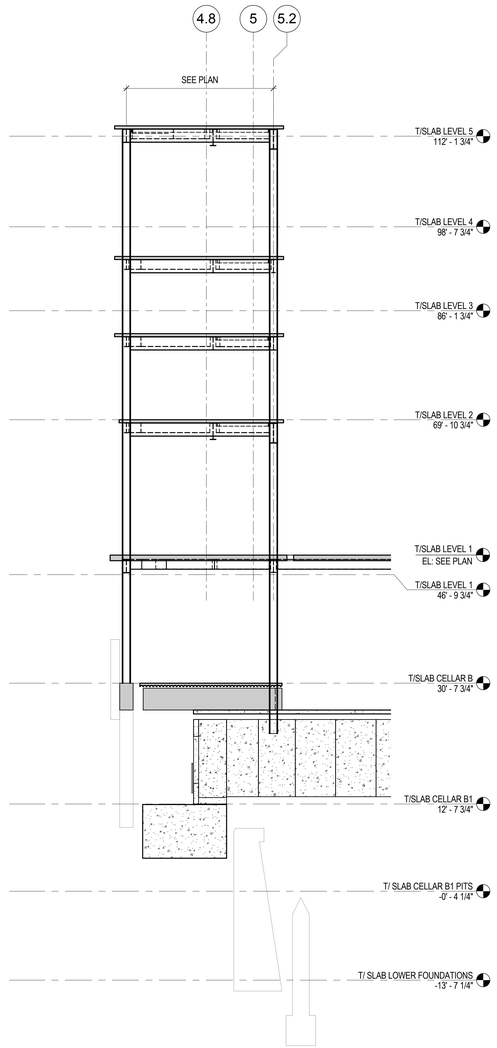
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
TYPICAL STRUCTURAL STEEL SECTIONS & DETAILS

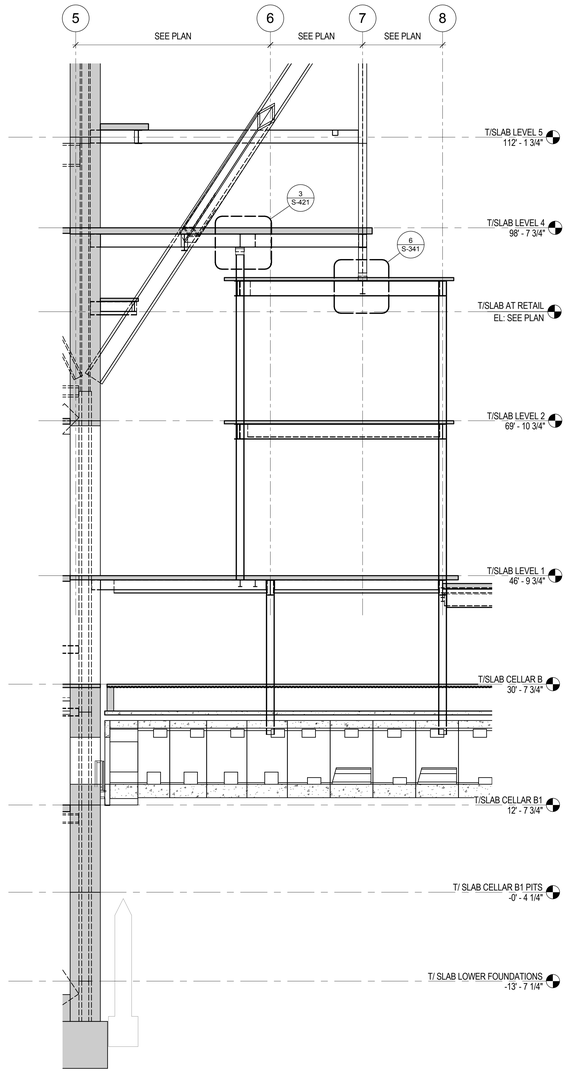
Project No.: 211157
Date: 20 JUN 2014
Scale: 1" = 1'-0"
File No.: S-421
B-SCAN Sheet No.: S-421.00
Sheet No.: S-421
Page No.: 88 of 90



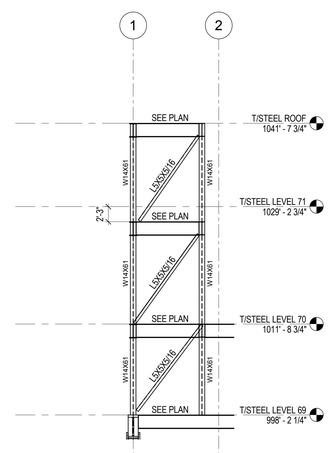
1 RETAIL SECTION LOOKING NORTH
1/8" = 1'-0"



2 RETAIL SECTION LOOKING WEST
1/8" = 1'-0"



3 RETAIL SECTION NEAR BUILDING LOOKING WEST
1/8" = 1'-0"



4 TYPICAL BRACING AT TOP OF TOWER
1/8" = 1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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650 Woodlawn Road West, Guelph
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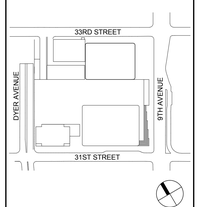
Key Plan:



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Sheet Name:
RETAIL SECTIONS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: S-422
B-SCAN Sheet No.: S-422.00
Sheet No.: S-422
Page No.: 89 of 90

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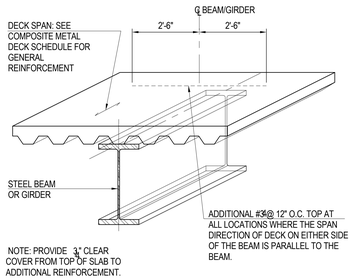
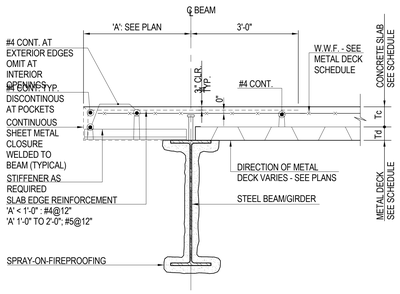
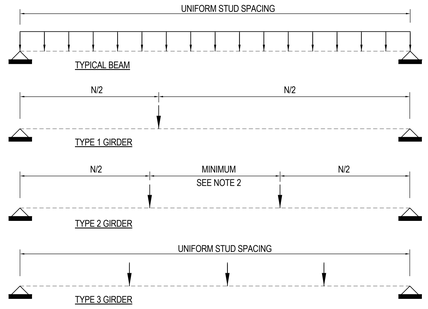
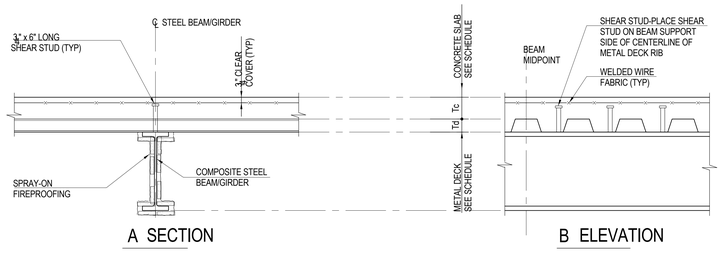


NOTE: PROVIDE 3/4" CLEAR COVER FROM TOP OF SLAB TO ADDITIONAL REINFORCEMENT.





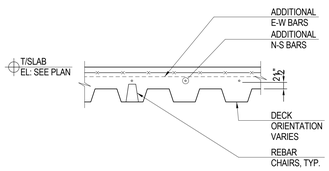
NOTES: 1. ALL DIAGRAMS REPRESENT IDEALIZED CONDITIONS. ACTUAL FRAMING CONFIGURATIONS MAY REQUIRE ADDITIONAL INTERPRETATION.
2. MAXIMUM SPACING OF STUDS SHALL BE 24" ON CENTER.
3. 'N' INDICATES NUMBER OF STUDS SHOWN ON PLANS



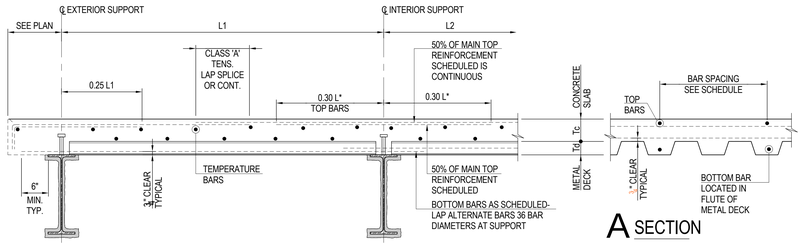
A SECTION

B ELEVATION

NOTE: ADD'L. ARCH. CONCRETE FILL SLAB OR FINISHES NOT SHOWN FOR CLARITY

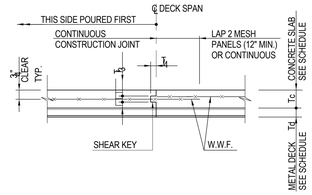


NOTES: 1. SEE DETAILS 4 & 7 FOR ADDITIONAL INFORMATION

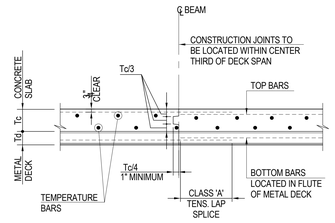


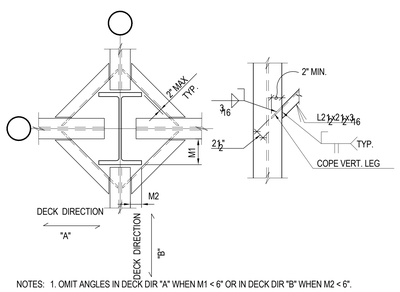
A SECTION

NOTES: 1. L* IS GREATER OF L1 OR L2.
2. METAL DECK SHALL BE DESIGNED AS FORM DECK.
3. SLAB REINFORCING AND SPACING IS BASED ON DECK PROFILE WITH 12" RIB SPACING. ACTUAL SPACING AND QUANTITY SHALL BE CONTINGENT ON SPECIFIC DECK PROFILE PROVIDED BY DECK MANUFACTURER.

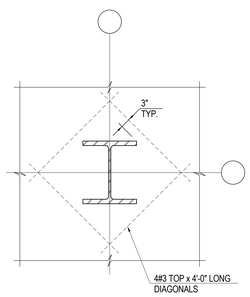


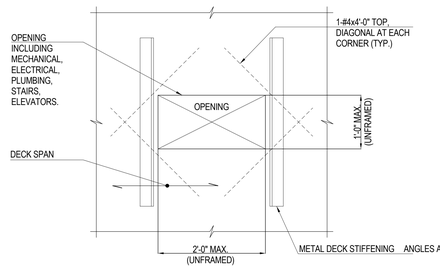
NOTE: ORIENT JOINT PARALLEL TO DECK SPAN IF POSSIBLE. IF JOINT PERPENDICULAR TO DECK SPAN, LOCATE IN MIDDLE THIRD OF SPAN

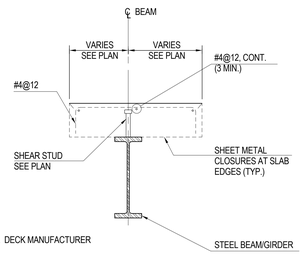


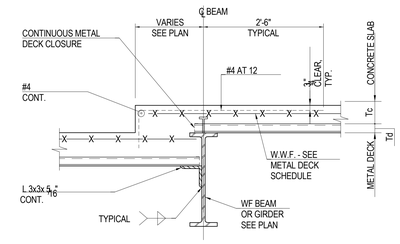


NOTES: 1. OMIT ANGLES IN DECK DIR "A" WHEN M1 < 6" OR IN DECK DIR "B" WHEN M2 < 6".









COMPOSITE METAL DECK SLAB SCHEDULE

REBAR fy = 60 ksi
DECK fy = 40 ksi

MARK	Td (IN)	Tc (IN)	IMPOSED LOAD CAPACITIES (PSF) LL	IMPOSED LOAD CAPACITIES (PSF) SDL	ONE LAYER TEMP. REINF.	CONCRETE WGT. (PCF)	CONCRETE f'c (PSI)	REMARKS
MS1	3	2 1/2				150	4000	TYPICAL OFFICE FLOOR SLAB
MS2	3	8				150	4000	TYPICAL MECHANICAL FLOOR SLAB
MS3	3	6				150	4000	TYPICAL ROOF SLAB
MS4	3	2 1/2				150	4000	TYPICAL RETAIL SLAB
MS5	4	3 1/2				150	4000	TYPICAL LOBBY SLAB

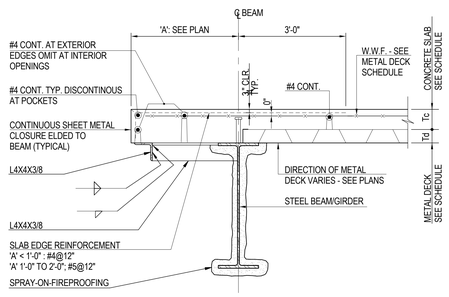
NOTES:
1. SEE DETAIL 4 FOR TYPICAL COMPOSITE METAL DECK SLAB DETAIL.

REINFORCED METAL DECK SLAB SCHEDULE

REBAR fy = 60 ksi
DECK fy = 40 ksi

MARK	Td (IN.)	Tc (IN.)	IMPOSED LOAD CAPACITIES (PSF) LL	IMPOSED LOAD CAPACITIES (PSF) SDL	MAIN REINFORCEMENT BOT.	MAIN REINFORCEMENT TOP	TEMP. REINF.	CONCRETE WGT. (PCF)	CONCRETE f'c (PSI)	REMARKS
RS1	3	7								TYPICAL PLAZA SLAB AT PLANTED AREAS
RS2	3	9								TYPICAL TREE PIT SLAB
RS3	3	8								TYPICAL MECHANICAL
RS4	3	8								TYPICAL AT TOP OF KICKERS

NOTES: 1. SEE DETAIL 5 FOR TYPICAL REINFORCED METAL DECK SLAB DETAIL.



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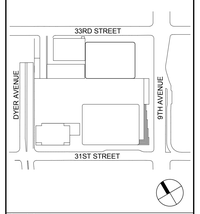
STATE OF NEW YORK
CHARLES MICHAEL BERMAN
079322
LICENSED PROFESSIONAL ENGINEER

Key Plan:



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Sheet Name:
METAL DECK SLAB SCHEDULES, SECTIONS & DETAILS

Project No.: 211157
Date: 20 JUN 2014
Scale: 1" = 1'-0"
File No.: S-501
B-SCAN Sheet No.: S-501.00
Sheet No.: S-501
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DRAWING INDEX

	Number	Name	ISSUED FOR DD PROGRESS PRICING 11/15/13	ISSUED FOR PERMIT 6/20/14
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2	M-002	MECHANICAL TITLE SHEET	•	•
3	M-094	MECHANICAL CELLAR B1 PIT PART PLAN	•	•
4	M-095	MECHANICAL CELLAR B1 FLOOR PLAN - PART A	•	•
5	M-096	MECHANICAL CELLAR B1 FLOOR PLAN - PART B	•	•
6	M-097	MECHANICAL CELLAR B FLOOR PLAN - PART A	•	•
7	M-098	MECHANICAL CELLAR B FLOOR PLAN - PART B	•	•
8	M-100	MECHANICAL GROUND PLAN -PART A	•	•
9	M-101	MECHANICAL GROUND PLAN -PART B	•	•
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11	M-103	MECHANICAL LEVEL 3 FLOOR PLAN - STAIR TRANSFER	•	•
12	M-104	MECHANICAL LEVEL 4 FLOOR PLAN - MECHANICAL	•	•
13	M-105	MECHANICAL LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE	•	•
14	M-106	MECHANICAL LEVEL 6-16 FLOOR PLAN - TYPICAL LOW-RISE	•	•
15	M-117	MECHANICAL LEVEL 17 FLOOR PLAN - LOW-RISE	•	•
16	M-118	MECHANICAL LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN	•	•
17	M-119	MECHANICAL LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR	•	•
18	M-121	MECHANICAL LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE	•	•
19	M-128	MECHANICAL LEVEL 28 FLOOR PLAN - LOW-RISE & MID-RISE	•	•
20	M-129	MECHANICAL LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN	•	•
21	M-130	MECHANICAL LEVEL 30 FLOOR PLAN - MID-RISE EMR	•	•
22	M-131	MECHANICAL LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM	•	•
23	M-132	MECHANICAL LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK	•	•
24	M-133	MECHANICAL LEVEL 33 FLOOR PLAN - TYPICAL MID-RISE	•	•
25	M-139	MECHANICAL LEVEL 39 FLOOR PLAN - MID-RISE	•	•
26	M-140	MECHANICAL LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN	•	•
27	M-142	MECHANICAL LEVEL 42 FLOOR PLAN - MID-RISE EMR	•	•
28	M-143	MECHANICAL LEVEL 43-48 FLOOR PLAN - TYPICAL MID-RISE	•	•
29	M-149	MECHANICAL LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE	•	•
30	M-150	MECHANICAL LEVEL 50 FLOOR PLAN - HIGH RISE OVERRUN	•	•
31	M-152	MECHANICAL LEVEL 52 FLOOR PLAN - HIGH-RISE EMR	•	•
32	M-153	MECHANICAL LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM	•	•
33	M-154	MECHANICAL LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK	•	•
34	M-155	MECHANICAL LEVEL 55 FLOOR PLAN - HIGH-RISE	•	•
35	M-156	MECHANICAL LEVEL 56 FLOOR PLAN - HIGH-RISE	•	•
36	M-157	MECHANICAL LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE	•	•
37	M-159	MECHANICAL LEVEL 59 FLOOR PLAN - HIGH-RISE	•	•
38	M-160	MECHANICAL LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN	•	•
39	M-162	MECHANICAL LEVEL 62 FLOOR PLAN - HIGH-RISE EMR	•	•
40	M-163	MECHANICAL LEVEL 63 FLOOR PLAN - HIGH-RISE	•	•
41	M-164	MECHANICAL LEVEL 64-67 FLOOR PLAN - TYPICAL HIGH-RISE	•	•
42	M-168	MECHANICAL LEVEL 68 FLOOR PLAN - MECHANICAL	•	•
43	M-169	MECHANICAL LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE	•	•
44	M-170	MECHANICAL ROOF PLAN - MECHANICAL PENTHOUSE	•	•
45	M-171	MECHANICAL ROOF PLAN - MECHANICAL PENTHOUSE ROOF	•	•
46	M-172	MECHANICAL ROOF PLAN	•	•
47	M-200	MECHANICAL TYPICAL FAN ROOM ENLARGED PLAN	•	•
48	M-300	MECHANICAL NORTH SHEAR WALL SECTIONS	•	•
49	M-301	MECHANICAL SOUTH SHEAR WALL SECTIONS	•	•
50	M-302	MECHANICAL COOLING TOWER ROOF SECTION	•	•
51	M-400	MECHANICAL BASEMENT AIR RISER DIAGRAM	•	•
52	M-401	MECHANICAL LOW-RISE AIR RISER DIAGRAM	•	•
53	M-402	MECHANICAL HIGH-RISE AIR RISER DIAGRAM	•	•
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55	M-404	MECHANICAL PIPING RISER DIAGRAM SHEET 2	•	•
56	M-405	MECHANICAL HOT WATER RISER DIAGRAM SHEET 1	•	•
57	M-406	MECHANICAL HOT WATER RISER DIAGRAM SHEET 2	•	•
58	M-407	MECHANICAL HOT WATER RISER DIAGRAM LOBBY SHEET 3	•	•
59	M-500	MECHANICAL SCHEDULE SHEET 1 OF 6	•	•
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65	M-600	MECHANICAL CO-GEN FLOW DIAGRAM	•	•
66	M-601	MECHANICAL CONDENSER WATER FLOW DIAGRAM	•	•
67	M-602	MECHANICAL FUEL OIL FLOW DIAGRAM	•	•
68	M-603	MECHANICAL STEAM / HOT WATER FLOW DIAGRAM	•	•
69	M-700	MECHANICAL DETAIL SHEET NO. 1	•	•
70	M-701	MECHANICAL DETAIL SHEET NO. 2	•	•
71	M-702	MECHANICAL DETAIL SHEET NO. 3	•	•
72	M-703	MECHANICAL DETAIL SHEET NO. 4	•	•
73	M-704	MECHANICAL DETAIL SHEET NO. 5	•	•
74	M-705	MECHANICAL DETAIL SHEET NO. 6	•	•
75	M-706	MECHANICAL DETAIL SHEET NO. 7	•	•

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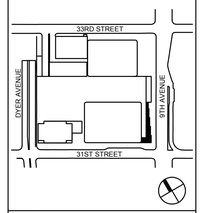
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
MECHANICAL DRAWING INDEX

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Page No.:

KEY TO SYMBOLS

ABBREVIATIONS

AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTICAL LINING
ALD	AUTOMATIC LOUVER DAMPER
BDD	BACKDRAFT DAMPER
BI	BLACK IRON
BRD	BAROMETRIC RELIEF DAMPER
BR(G)	BOTTOM REGISTER OR GRILLE
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CD	CEILING DIFFUSER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
COD	CLEAN OUT DOOR
CR(G)	CEILING REGISTER OR GRILLE
CV	CONSTANT VOLUME SUPPLY BOX
CVR	CONSTANT VOLUME RETURN BOX
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DB	DRY BULB TEMPERATURE
DSD	DUCT SMOKE DETECTOR
DWDI	DOUBLE WIDTH DOUBLE INLET
E	EXHAUST / EXHAUST REGULATOR BOX
EAT	ENTERING AIR TEMPERATURE
EMR	ELEVATOR MACHINE ROOM
FAI	FRESH AIR INTAKE
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FL	FIRE LIFT
FLCR	FUSIBLE LINK REGISTER
FLV	FIRE LIFT VESTIBULE
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FSD	COMBINATION FIRE SMOKER DAMPER
GSX	GARAGE SMOKE EXHAUST
GX	GARAGE EXHAUST
HC	HEATING COIL
HWR	HOT WATER RADIATION RETURN
HWS	HOT WATER RADIATION SUPPLY
HX	HEAT EXCHANGER (CONVERTER)
IFP	MOTOR CONTROL CENTER
JD(TD)	JUMP DUCT (TRANSFER DUCT)
KW	KILOWATTS
KX	KITCHEN EXHAUST
LAT	LEAVING AIR TEMPERATURE
LPS	LOW PRESSURE STEAM
LWT	LEAVING WATER TEMPERATURE
M	MOTOR
MER	MECHANICAL EQUIPMENT ROOM
MLWS	METAL LOUVER WITH WIRE MESH SCREEN
MM	MILLIMETERS
MO	MASONRY OR WALL OPENING (1 SQ. FT U.O.N.)
MPS	MEDIUM PRESSURE STEAM
N	NORTH
NC	NORMALLY CLOSED
NE	NORTHEAST
NIC	NOT IN CONTRACT
NK	NECK SIZE
NO	NORMALLY OPEN
NTS	NOT TO SCALE
NW	NORTHWEST
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
P	PUMP
PC	PUMPED CONDENSATE
PCHWR	PROCESS CHILLED WATER RETURN
PCHWS	PROCESS CHILLED WATER SUPPLY
PCWS	PRIMARY CONDENSER WATER SUPPLY
PCWR	PRIMARY CONDENSER WATER RETURN
PHC	PRE HEAT COIL
PHWR	PRIMARY HOT WATER RETURN
PHWS	PRIMARY HOT WATER SUPPLY
RA	RETURN AIR
RR	REFRIGERANT RELIEF
RSX	RETAIL SMOKE EXHAUST
RTX	RETAIL TOILET EXHAUST
R/S	RETURN/SPILL
S	SUPPLY
SA	SUPPLY AIR
SCWS	SECONDARY CONDENSER WATER SUPPLY
SCWR	SECONDARY CONDENSER WATER RETURN
SD	SOUTH
SD	SMOKE DAMPER
SE	SOUTHEAST
SF	SQUARE FEET
ST	SOUND TRAP
SW	SOUTHWEST
SWSI	SINGLE WIDTH SINGLE INLET
SX	SMOKE EXHAUST
S/S	STAINLESS STEEL
TD	TRANSFER DUCT
TF	TRANSFER FAN
TR(G)	TOP REGISTER OR GRILLE
TX	TOILET EXHAUST
UAS	UNDER ANOTHER SECTION OF THE SPECIFICATION
UC	UNDERCUT DOOR (1 INCH)
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VENTILATION
VAV	VARIABLE AIR VOLUME REGULATOR
VD	VOLUME DAMPER
VI	VIBRATION ISOLATOR
VIV	VARIABLE INLET VANES
VP	VESTIBULE PRESSURIZATION
VR	VARIABLE AIR VOLUME BOX WITH REHEAT COIL
W	WEST
WB	WET BULB TEMPERATURE
WMS	WIRE MESH SCREEN
WP	WEATHER PROOF
W/SQ. FT	WATTS PER SQUARE FOOT

SYMBOLS

	REDUCER
	DIRECTION OF FLOW
E	EXPANSION LINE
	UNION
	PUMPED CONDENSATE
D	DRAIN LINE
V	VENT
	REFRIGERANT RELIEF
HPS	HIGH PRESSURE STEAM
MPS	MEDIUM PRESSURE STEAM
LPS	LOW PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
MPC	MEDIUM PRESSURE CONDENSATE
LPC	LOW PRESSURE CONDENSATE
	SHUT OFF VALVE (NORMALLY OPEN)
	SHUT OFF VALVE (NORMALLY CLOSED)
	BALANCING VALVE
	AUTOMATIC CONTROL VALVE
	SOLENOID VALVE
	DUCT SMOKE DETECTOR
	PRESSURE GAUGE
	SAFETY RELIEF VALVE
M	MOTORIZED BUTTERFLY VALVE
	STRAINER WITH BLOW OFF VALVE AND HOSE ADAPTER
	CHECK VALVE
	PIPE ANCHOR
	PIPE GUIDE
	PIPE TURNING DOWN
	PIPE TURNING UP
	UNDERGROUND PIPE
	PRESSURE TEMPERATURE PORT
	SUPPLY AIR DUCT UP
	EXHAUST OR RETURN AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	EXHAUST OR RETURN AIR DUCT DOWN
	DUCT WITH ACOUSTIC LINING (1" THICK U.O.N.)
	FIRE RATED DUCT CONSTRUCTION (1 1/2 HOUR U.O.N.)
	OFFSET IN DUCT ELEVATION
	SHEET METAL PLENUM WALL
	SOUND TRAP
	CEILING DIFFUSER (2-WAY BLOW)
	CEILING DIFFUSER (3-WAY BLOW)
	CEILING DIFFUSER (4-WAY BLOW)
	CEILING GRILLE (CEILING REGISTER WHERE NOTED AS CR)
T	THERMOSTAT
S	FAN START/STOP SWITCH W/ PILOT LIGHT
S/T	AC UNIT START/STOP W/THERMOSTAT
	DOOR LOUVER (SQ. FEET)
	UNDERCUT DOOR (1")
PT	PRESSURE TRANSMITTER
TS	IT CABINET TEMPERATURE SENSOR
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DSD	DUCT MOUNTED SMOKE DETECTOR
SP	STATIC PRESSURE SENSOR
H	HUMIDITY SENSOR
FT	FLOW TRANSMITTER
CO_2	CARBON DIOXIDE DETECTOR
CO	CARBON MONOXIDE DETECTOR
TS	BUTTON TEMPERATURE SENSOR
WWWWW	FLEXIBLE DUCT
C	FAN
	CONSTANT/VARIABLE AIR VOLUME BOX OR EXHAUST BOX
	CONSTANT/VARIABLE AIR VOLUME BOX WITH REHEAT COIL
	AUTOMATIC LOUVER DAMPER
	COMBINATION FIRE/SMOKE DAMPER
	COMBINATION FIRE DAMPER/ AUTOMATIC LOUVER DAMPER
	VOLUME DAMPER
	ACCESS DOOR
	DISCONNECT SWITCH
	HEATING COIL
	COOLING COIL
	PUMP
	THERMOMETER
	EXISTING DUCTWORK/EQUIPMENT/PIPING TO BE REMOVED
	CONNECT NEW WORK TO EXISTING
	BEAM CUT

NYC BLDG. CODE NOTES

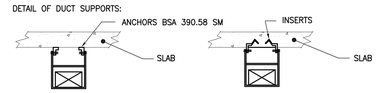
GENERAL N.Y.C. BUILDING CODE NOTES
(BUILDING CODE CITY OF NEW YORK EFFECTIVE JULY 1, 2008, TO BE COMPLIED WITH)

1. MATERIALS AND EQUIPMENT SUBJECT TO SPECIAL INSPECTION
   - A. MECHANICAL SYSTEMS – CODE/SECTION: BC 1704.15
   - B. SMOKE CONTROL SYSTEMS – CODE/SECTION: BC 1704.14
   - C. FUEL OIL PIPING/STORAGE SYSTEMS – CODE/SECTION: BC 1704.16
   - D. HIGH PRESSURE STEAM PIPING – CODE/SECTION: BC 1704.17
   - E. HEATING SYSTEMS – CODE/SECTION: BC 1704.23
   - – FINAL INSPECTION PER BC 109.5 AND DIRECTIVE 14 OF 1975
2. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC., TO COMPLY WITH THE FOLLOWING:

ARTICLE OR REFERENCE:

WORK ITEM OR MATERIAL(S)	CHAPTER	SUBPARAGRAPHS
A. DUCT CONSTRUCTION	MC603	603.1 THROUGH 603.18 INCLUSIVE
B. AIR INLETS AND OUTLETS	MC608	608.1 THROUGH 608.23 INCLUSIVE
C. FILTERS	MC605	605.1 THROUGH 605.5 INCLUSIVE
D. MOTORS AND FANS	MC503	503.1 THROUGH 503.5 INCLUSIVE
E. ELEC. WIRING AND EQUIP.	MC301	301.7 (REFERENCE TO NYCEC)
F. REFRIGERATION SYSTEMS	MC1102	1102.1 THROUGH 1102.2.2.3 INCLUSIVE
G. SMOKE CONTROLS	MC513	513.1 THROUGH 513.20.3 INCLUSIVE
H. CONTROLS	MC405	405.1 THROUGH 405.2.1 INCLUSIVE
I. HEATING CAPACITY	MC312	312.1 (BC 1204.1 THROUGH 1204.4 INCLUSIVE)
J. NOISE CONTROL REQUIREMENTS	MC926	926.1 THROUGH 926.2.9 INCLUSIVE
K. HYDRONIC PIPING	MC1201	1201.1 THROUGH 1210.3.2 INCLUSIVE
L. INTAKES AND EXHAUSTS	MC401	401.5 THROUGH 401.6 INCLUSIVE
M. FUEL OIL PIPING AND STORAGE	MC1301	1301 THROUGH 1308.3 INCLUSIVE

3. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALL COMPOSITIONS.
4. MINIMUM TEMPERATURE TO BE MAINTAINED IN HABITABLE ROOMS: 68°F AT A POINT 3 FEET ABOVE FLOOR WHEN 0°F OUTSIDE WITH 15 MPH WIND. HEATING REQUIREMENTS PER BC 1204 (MC 309.1).
5. VENTILATION FOR ALL AREAS IS COMPLIANT WITH BC 1203 UNDER WHICH MECHANICAL VENTILATION SHALL COMPLY WITH MC 403
6. WHERE UNDER MECHANICAL VENTILATION, A STATEMENT WILL BE FILED (BY OWNER OR TENANT IN POSSESSION) THAT THE VENTILATING SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION DURING NOMINAL OCCUPANCY OF THE PREMISES.
7. DETAIL OF DUCT SUPPORTS:



   - A. SEE NOTE 2.A. ABOVE FOR HANGERS, BRACINGS, ETC.
   - B. UNLESS OTHERWISE NOTED, ALL DUCTS SHALL BE CONSTRUCTED OF GALVANIZED IRON.
8. MECHANICAL EQUIPMENT LOCATED OUTSIDE OF THE BUILDING OR WHERE EQUIPMENT OPENS TO THE EXTERIOR OF THE BUILDING SHALL BE SUBJECT TO THE NOISE LIMITATIONS OF BC 1207 (MC 926) WHERE WINDOWS OF A DWELLING UNIT ARE WITHIN 100 FT. OF EQUIPMENT OPENING TO OR ON THE EXTERIOR OF THE BUILDING.
9. WHERE PIPING OR DUCTWORK HAS TO BE HUNG IN SPACES WHERE INSERTS ARE NOT PROVIDED, INSTALL TWO STAR NO. 7000 DOUBLE 3/8 IN. EXPANSION SHIELDS CONNECTED BY A 2 INCH X 2 INCH ANGLE, FROM WHICH SUSPENDS THE HANGAR RODS. THE NUMBER OF HANGERS WILL BE DOUBLE THAT ALLOWED FOR INSERTS. ALL METHODS OF ATTACHMENT TO THE BUILDING STRUCTURE MUST BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO THEIR USE. ANGLE SIZE SHALL BE SUITABLE TO SUPPORT THE LOAD WHICH IS BEING SUPPORTED.
10. PLANS ARE IN COMPLIANCE WITH LOCAL LOW 17-95
11. THE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2007 ENERGY CONSERVATION CODE OF NEW YORK STATE CHAPTER 8 AND THE LATEST EDITION (2008) OF NYC BUILDING CODE

GENERAL NOTES

1. ALL LOW PRESSURE BRANCH DUCTWORK (SUPPLY AND RETURN) SHALL BE PROVIDED WITH VOLUME CONTROL SPLITTER DAMPERS AND VOLUME DAMPERS RESPECTIVELY (PROVIDE LOCK NUT AT DAMPERS).
2. PROVIDE COMBINATION FIRE/SMOKE DAMPER AT BRANCH CONNECTIONS TO ALL RISERS AND AT ALL SLAB AND FIRE RATED WALL PENETRATIONS.
3. ALL DUCTWORK AND PIPING ENCLOSURES FOR HORIZONTAL OFFSETS SHALL BE OF 2HR RATED MINIMUM SHAFTWALL CONSTRUCTION (TOP, BOTTOM AND SIDES) SHALL BE SUPPORTED INDEPENDENTLY OF THE DUCTWORK OR PIPING AND SHALL BE THE WORK OF ANOTHER CONTRACTOR.
4. EACH VARIABLE AIR VOLUME BOX (WITH AND WITHOUT REHEAT COIL) AND CONSTANT VOLUME BOX (WITH REHEAT COIL) SHALL BE PROVIDED WITH A THERMOSTAT FURNISHED AND INSTALLED UNDER THE B.A.T.C. SECTION OF THE SPECIFICATIONS. THERMOSTATS SHALL BE LOCATED AS SHOWN OR AS DIRECTED.
5. FOR SIZES OF THE MOTOR CONTROL CENTERS (MCC, INCLUDING VARIABLE SPEED DRIVE) AND ARRANGEMENT AND/OR GROUPING OF ISOLATED STARTERS REFER TO ELECTRICAL CONTRACT DOCUMENTS.
6. ALL GRATINGS, CATWALKS AND STEEL RUNG ACCESS LADDERS WILL BE PROVIDED UNDER ANOTHER SECTION OF THE SPECIFICATIONS. EXCEPT AS NOTED ON PLANS.
7. VARIABLE AIR VOLUME AND CONSTANT AIR VOLUME BOXES AND SOUND TRAP SYMBOLS SHOWN ON DRAWINGS ARE SCHEMATIC. SEE DETAIL OF INSTALLATION ON DRAWING FOR ACTUAL TYPICAL ARRANGEMENT REQUIRED.
8. BORDER TYPES, COLOR, FINISHES, AND METHOD OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH THE ARCHITECTURAL CEILING DETAILS AND SPECIFICATIONS.
9. ALL LINEAR DIFFUSERS ARE TO BE COORDINATED WITH ARCHITECTURAL PLANS FOR EXACT LENGTHS AND LOCATIONS. ACTIVE PLENUM SECTIONS SHALL BE OF THE SIZES AS SHOWN ON PLANS. EACH BRANCH TAP SERVING THE LINEAR DIFFUSER SHALL BE PROVIDED WITH A VOLUME DAMPER WHICH SHALL BE OPERABLE THROUGH THE ROOM SIDE FACE OF THE DIFFUSER. (CABLE OPERATED DAMPER) ACTIVE SUPPLY SECTIONS OF THE LINEAR DIFFUSERS SHALL BE PROVIDED WITH PATTERN CONTROL DEVICES AND EQUALIZING GRIDS. ACTIVE OR INACTIVE RETURN SECTIONS SHALL NOT BE FURNISHED WITH PATTERN CONTROL OR EQUALIZING GRIDS. REFER TO SPECIFICATIONS FOR MODEL NUMBERS. ALL FINISH COLORS AND TYPES SHALL BE AS PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
10. THERMOSTAT SHOULD BE LOCATED 5'-0" A.F.F. AND 9" FROM EDGE OF DOOR U.O.N. FINAL LOCATIONS TO BE VERIFIED WITH THE ARCHITECT. FINISHED PAINT COLOR TO BE SELECTED BY THE OWNER. MANUFACTURER'S LOGO SHALL NOT BE EXPOSED.
11. WHERE PIPING CONNECTIONS FOR EQUIPMENT SUCH AS PUMPS, CHILLERS, HEAT EXCHANGERS, ETC. DIFFER FROM THE LINE SIZE PIPING, IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO FURNISH AND INSTALL THE NECESSARY REDUCER/EXPANDER FITTINGS TO ENABLE CONNECTION BETWEEN THE PIPING SYSTEM AND THE EQUIPMENT.
12. ALL PRESSURE AND TEMPERATURE GAUGES ARE SCHEMATICALLY SHOWN ON THE PLANS. REFER TO SPECIFICATIONS FOR EXACT TYPES.
13. REFER TO SCHEDULE SHEETS FOR THE DIFFUSER, GRILLE AND REGISTER SCHEDULES.
14. LOCATION OF DIRECT DIGITAL CONTROL (DDC) AND LOCAL (LC) PANELS SHOWN ON PLANS ARE SUGGESTED LOCATIONS ONLY. FINAL LOCATION AND EXACT QUANTITY OF DDC/LC PANELS, WILL BE DEPENDENT ON SELECTION OF ATC VENDOR AND SHALL BE SUBJECT TO SHOP DRAWING SUBMITTAL, REVIEW AND APPROVAL BY THE ENGINEER AND ARCHITECT.
15. ALL COMBINATION FIRE/SMOKE DAMPERS SHALL BE APPROVED FOR USE IN NEW YORK CITY (SHALL HAVE NEW YORK CITY M.E.A./B.S.A. No.) DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH APPROVED U.L. LISTING REQUIREMENTS. DAMPERS SHALL BE RUSKIN AS STD.
16. ALL FSD AND TERMINAL BOXES WITH REHEAT COILS SHALL BE PROVIDED WITH ACCESS DOORS.
17. ALL MER FLOORS TO BE WATERPROOFED. (REFER TO ARCH. DRAWINGS)
18. ALL STEAM VALVES, CHILLED WATER, CONDENSER WATER AND HOT WATER PUMPS SHALL BE PROVIDED WITH INSULATED CUSTOM FITTED BLANKET/ENCLOSURES AS PER SPECIFICATION.
19. INSTALL INITIAL CROSS CONNECTION "FLUSH VALVES" AT THE BEGINNING AND END OF ALL WATER PIPE RUNS. VALVE SIZE SHALL NOT BE LESS THAN TWO PIPE SIZES SMALLER THAN THE LINE SIZE WITH A MINIMUM SIZE OF 2". WATER SYSTEMS INCLUDE: CHILLER WATER, SECONDARY CONDENSER, HOT WATER REHEAT, HOT WATER RADIATION, ETC.
20. ALL HEAT TRANSFER PACKAGED EQUIPMENT (PUMPS, HEAT EXCHANGERS, EXPANSION TANKS, CONDENSATE PUMPS, ETC.SHALL BE VALVED AS SHOWN ON THE DETAIL SHEETS, AND/OR AS DESCRIBED IN THE SPECIFICATIONS.
21. ALL TERMINAL BOXES AND EQUIPMENT THAT REQUIRE ACCESS AND SERVICE SHALL BE CENTER LINE NO MORE THAN 11'-0" ABOVE FINISH FLOOR.
22. ALL ELEVATOR HOISTWAYS SHALL BE PROVIDED WITH A 3 SQUARE FOOT VENT TO THE EXTERIOR. REFER TO ARCHITECTURAL PLANS FOR VENTING REQUIREMENTS. .
23. ALL VALVED OUTLETS FOR FUTURE USE AND DEAD LEGS SHALL BE PROVIDED WITH A BYPASS LINE AND BALANCING VALVE. (INCLUDING BUT NOT LIMITED TO THE VALVES FOR FUTURE PUMPS, VALVED OUTLETS ON FITOUT FLOORS)
24. ALL DUCTWORK LOCATED IN ELECTRICAL ROOMS SHALL BE INSTALLED 6'-0" ABOVE ALL ELECTRICAL EQUIPMENT.
25. ALL PIPING RUNNING THROUGH OR SERVING ELECTRICAL ROOMS SHALL BE LOCATED 6'-0" ABOVE ALL ELECTRICAL EQUIPMENT. PIPING SHALL BE PROVIDED WITH A DRAIN PAN AND LEAK DETECTION TIED INTO THE BMS SYSTEM.
26. ALL CHILLED WATER VALVES SHALL BE RATED FOR ANSI CLASS 300.
27. ALL MOTORS SHALL BE INVERTER DUTY RATED.
28. PER NYC BUILDING CODE AND THE SEISMIC CATEGORY C ASSIGNED TO THIS BUILDING, MECHANICAL SYSTEMS ARE REQUIRED TO BE SEISMICALLY RESTRAINED. REFER TO COMPONENT SEISMIC IMPORTANCE FACTORS IP SCHEDULE ON THIS DRAWING.
29. ALL METAL LOUVERS, AND ALL BLANK OFF PANELS (INSULATED OR NOT INSULATED, ACTIVE OR INACTIVE) FOR LOUVERS SHALL BE PROVIDED UNDER ANOTHER SECTION OF THE SPECIFICATIONS. WIRE MESH SCREENS FOR LOUVERS SHALL BE PROVIDED BY THE LOUVER MANUFACTURER. ALL OTHER WIRE MESH SCREENS SHALL BE PROVIDED UNDER THIS SECTION OF THE SPECIFICATIONS.
30. ALL HORIZONTAL S.A. DUCTWORK UPSTREAM OF TERMINAL UNITS SHALL BE LEAK TESTED.
31. DIFFUSERS LOCATED IN INACCESSIBLE CEILINGS SHALL HAVE CORD OPERATED VOLUME DAMPERS IN ITS RESPECTIVE BRANCH DUCTS OPERABLE THROUGH FACE OF THE DIFFUSER.
32. PROVIDE CLEANOUTS FOR CONDENSATE DRAIN PIPING AT EACH CHANGE OF DIRECTION AS REQUIRED.
33. CONTRACTOR MUST SIZE REFRIGERANT LINES ONCE AN ACCURATE PIPING LAYOUT HAS BEEN DONE DURING THE SHOP DRAWING COORDINATION PHASE. REFRIGERANT PIPING SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
34. ALL REQUIRED SPECIAL INSPECTIONS SHALL BE CONDUCTED BY A SPECIAL INSPECTOR IN ACCORDANCE WITH REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE. SERVICES OF THE SPECIAL INSPECTORS SHALL BE RETAINED BY THE OWNER UNDER A SEPARATE CONTRACT.
35. ALL HVAC SYSTEMS SHALL BE BALANCED. BALANCING REPORTS SHALL BE PROVIDED TO THE OWNER.

COMPONENT SEISMIC IMPORTANCE FACTORS Ip

COMPONENT	TAG NO.	I_P
EMERGENCY GENERATOR VENTILATION FANS	TAG, TBD REFER TO PLANS	1.5
EMERGENCY GENERATOR EXHAUST STACK	TAG, TBD REFER TO PLANS	1.5
STAIR PRESSURIZATION FANS (SMOKE CONTROL)	TAG, TBD REFER TO PLANS	1.5
GENERAL SMOKE CONTROL FANS (MAKE UP AND EXHAUST)	TAG, TBD REFER TO PLANS	1.5
HOISTWAY EXHAUST FANS (SMOKE CONTROL, IF USED IN LIEU OF VENTING PER BC 3004.6.1)	TAG, TBD REFER TO PLANS	1.5
BASEMENT COMPARTMENTS	TAG, TBD REFER TO PLANS	1.5
FUEL OIL TANK ROOM EXHAUST FANS	TAG, TBD REFER TO PLANS	1.5
GAS METER ROOM EXHAUST FANS	TAG, TBD REFER TO PLANS	1.5
DUCT SYSTEMS FOR FANS WITH Ip=1.5	TAG, TBD REFER TO PLANS	1.5
BOILERS – GAS AND OIL FIRED	NA	1.5
APPLIANCES – GAS AND OIL FIRED (INCLUDING ROOFTOP UNITS)	NA	1.5
FUEL/DIESEL OIL TANKS	TAG, TBD REFER TO PLANS	1.5
FUEL/DIESEL OIL PUMPS	TAG, TBD REFER TO PLANS	1.5
FUEL/DIESEL OIL PIPING	TAG, TBD REFER TO PLANS	1.5
STEAM PIPING	TAG, TBD REFER TO PLANS	1.5
STEAM HEAT EXCHANGERS	TAG, TBD REFER TO PLANS	1.5
STEAM UNIT HEATERS	TAG, TBD REFER TO PLANS	1.5
AHU/H&V UNITS WITH STEAM COILS	TAG, TBD REFER TO PLANS	1.5
APPLIANCES CONNECTED TO STEAM	TAG, TBD REFER TO PLANS	1.5
CONTROL SYSTEMS SERVING EQUIPMENT WITH Ip=1.5	TAG, TBD REFER TO PLANS	1.5
COMPONENTS CONTAINING HAZARDOUS OR FLAMMABLE MATERIAL IN EXCESS OF MAXIMUM ALLOWABLE QUANTITIES LISTED IN SECTION BC 307	TAG, TBD REFER TO PLANS	1.5
COMPONENTS WITH Ip =1.0 LOCATED ABOVE OR IN PROXIMITY TO COMPONENTS WITH Ip=1.5 WHICH COULD DAMAGE COMPONENTS WITH I =1.5	NOTE 4	1.5

REMARKS:
FOR ALL ITEMS THAT ARE REQUIRED TO HAVE SEISMIC BRACING OR RESTRAINTS, SEISMIC PLANS AND SEISMIC BRACING CALCULATIONS SHALL BE PREPARED, SEALED, AND SUBMITTED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK ENGAGED BY THE CONTRACTOR. THE ENGINEER SHALL PROVIDE INSTALLATION SUPERVISION OF ALL SEISMIC BRACING AND RESTRAINTS. THE CONTRACTOR'S REGISTERED PROFESSIONAL ENGINEER SHALL SUBMIT SIGNED AND SEALED AFFIDAVIT AND AS BUILTS STATING THAT THE INSTALLATION IS IN FULL COMPLIANCE WITH THE SIGNED/SEALED SHOP DRAWINGS.

NOTES:
1. THE DEFAULT FOR TYPICAL COMPONENTS IN NORMAL SERVICE IS Ip=1.0
2. SEISMIC DESIGN CATEGORY B IS ASSIGNED TO THE NEW ADDITION PROJECT.
3. THE FUNCTION AND PHYSICAL INTERRELATIONSHIP OF COMPONENTS AND THEM EFFECT ON EACH OTHER SHALL BE DESIGNED SO THAT FAILURE OF AN ESSENTIAL OR NONESSENTIAL BUILDING COMPONENTS SHALL NOT CAUSE THE FAILURE OF A NEARBY ESSENTIAL BUILDING COMPONENTS.
4. REFER TO DETAIL DRAWINGS FOR TYPICAL SEISMIC BRACING.
5. PENDANT SUPPORTED EQUIPMENT SHALL NOT CONTACT ANY OTHER OBJECT AT A 45° ANGLE TO VERTICAL.

ALTERNATES

NUMBER	DESCRIPTION
23000.1	PROVIDE AN ADD ALTERNATE PRICE TO FURNISH AND INSTALL AN ACOUSTIC RETURN AIR PLENUM SECTION ON EACH LOCAL FLOOR AIR CONDITIONING UNIT. THE PLENUM WILL BE OF SIMILAR CONSTRUCTION AS THE LOCAL FLOOR AIR CONDITIONING UNIT CASING WITH A PERFORATED INNER LINER. REFER TO M-200 FOR TYPICAL FAN ROOM DETAILS.
23000.2	PROVIDE AN ADD ALTERNATE PRICE TO FURNISH AND INSTALL THE 1200 KW CO-GENERATION SYSTEM. THE ALTERNATE WOULD INCLUDE ALL SPECIALTIES AND ALL REQUIRED AUXILIARIES FOR THE CO-GEN MODULES, SUPPORTING SYSTEMS FOR EXHAUST FLUES, VENTILATION MAKE-UP AIR, PIPING, INSULATION AND CONTROLS. ALSO INCLUDED WOULD BE ALL EQUIPMENT AND PIPING ASSOCIATED WITH THE HEAT RECOVERY AND ABSORPTION COOLING SYSTEMS. REFER TO M-168, 403, 404, 600, 601, 603, FOR THE 68TH FLOOR MECHANICAL PLAN AND ASSOCIATED PIPING RISER DIAGRAMS AND FLOW DIAGRAMS.
23000.3	PROVIDE AN ADD ALTERNATE PRICE TO FURNISH AND INSTALL ELECTRIC CLOSET EXHAUST FANS AND MAKE-UP AIR TRANSFER DUCTS. FANS WOULD SERVE THE TYPICAL A & B ELECTRIC CLOSETS ON THE TOWER OFFICE FLOOR 6 THRU 67. REFER TO TYPICAL TOWER OFFICE FLOOR PLANS AND M-501 FOR THE EXHAUST FAN SCHEDULE.
23000.4	PROVIDE AN ADD ALTERNATE PRICE TO FURNISH AND INSTALL UPGRADED FILTERS FOR LOBBY AND BACK OF HOUSE AIR CONDITIONING UNITS. UPGRADE FINAL FILTRATION ON THESE SYSTEM TO MERV 17 FILTERS. UNITS FOR THE FILTER UPGRADE ARE LISTED: –LOBBY SYSTEMS (ACU-4-1,2) –BASEMENT OUTSIDE AIR (AC-3) –SECURITY CONSOLE ROOM (AC-2-1) –VISITORS CENTER (AC-1-1) –BACK OF HOUSE SYSTEMS ON B LEVEL (AC-B-1 THRU AC-B-8) –BACK OF HOUSE SYSTEMS ON B, B2, B3 (AC-B1-1, AC-B2-1, AC-B3-1)
23000.5	PROVIDE AN ADD ALTERNATE PRICE TO FURNISH AND INSTALL ELECTRIC RADIANT FLOOR HEATER IN THE MAIN LOBBY. REFER TO ELECTRICAL DRAWINGS AND M-101A FOR THE LOCATION AND FLOOR AREAS FOR RADIANT FLOOR HEATING.
23000.6	PROVIDE AN ADD ALTERNATE PRICE TO FURNISH AND INSTALL TEMPORARY HEATING ON PER FLOOR BASIS FOR SHELLED FLOORS AWAITING TENANCY (NOT FOR CONTRACTION PHASE HEATING). THE HEATING WOULD BE PROVIDED BY A SERIES OF FAN-POWERED BOXES (FPB'S) MOUNTED, PIPED, TRIMMED, WIRED AND CONTROLLED. REFER TO SCHEMATIC LAYOUT OF FPB'S FOR TEMPORARY HEATING INDICATED ON M-106.

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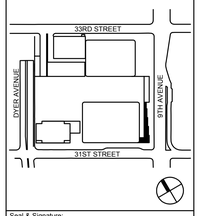
Key Plan:



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4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL TITLE SHEET

Project No.: 14830.A.000	B-SCAN Sheet No.: M-002.00
Date: 20 JUN 2014	Sheet No.: M-002
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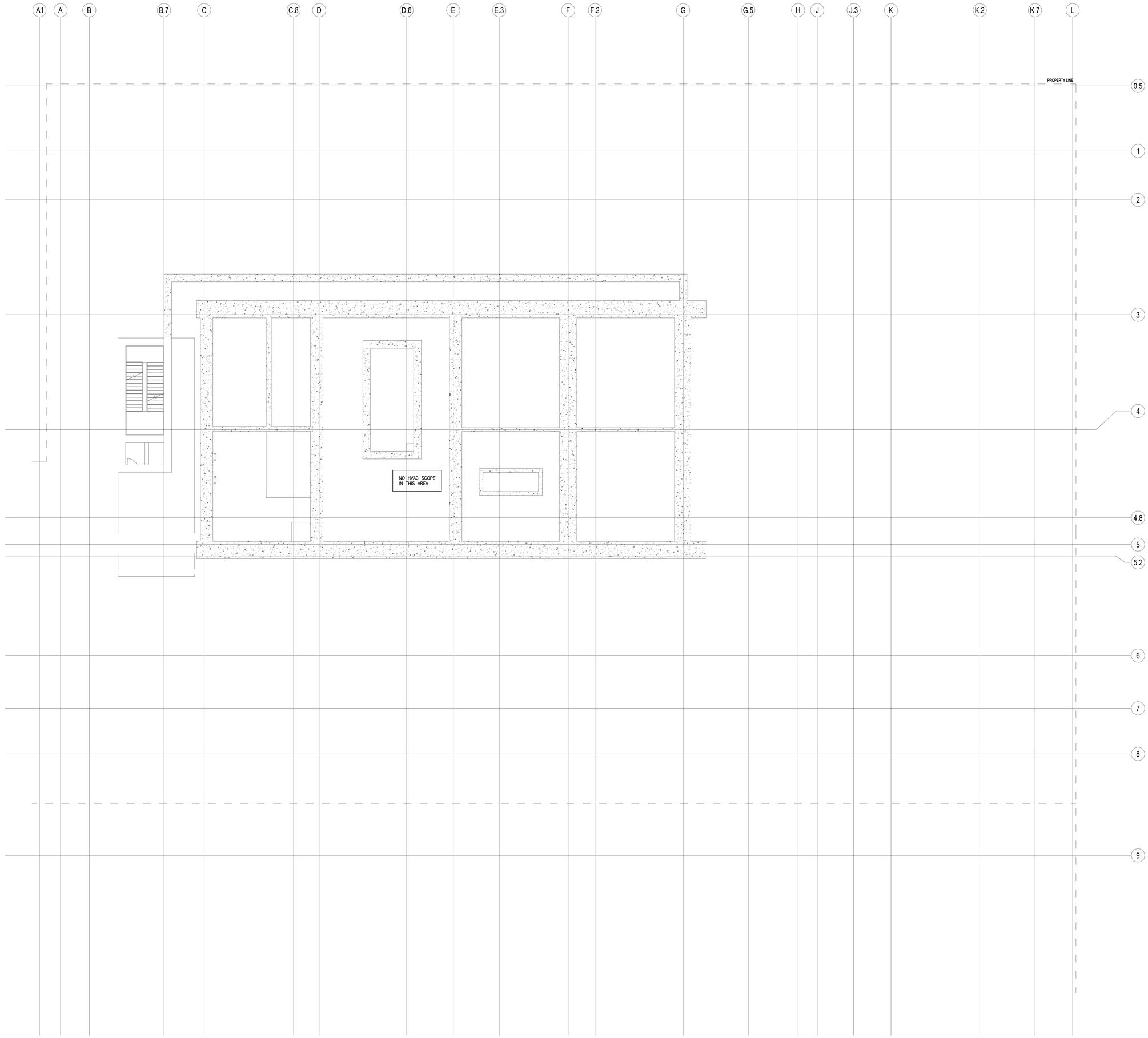
File No.:	Page No.:



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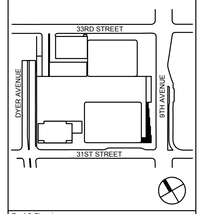

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MECHANICAL CELLAR B1 PIT PART PLAN

Project No.: 14830.A.000	B-SCAN Sheet No.: M-094.00
Date: 20 JUN 2014	Sheet No.: M-094
Scale: 1/8"=1'-0"	
File No.:	Page No.:

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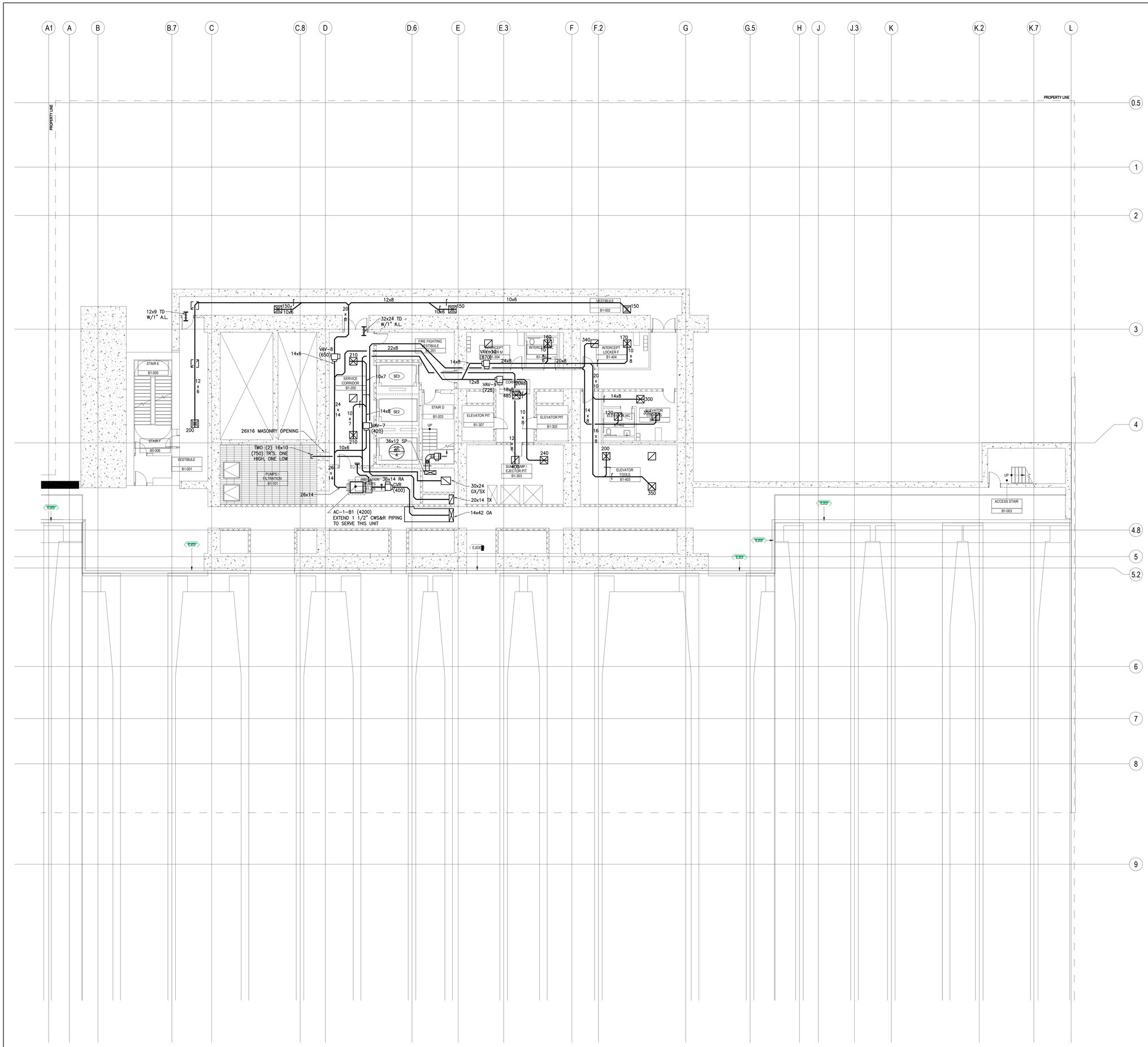

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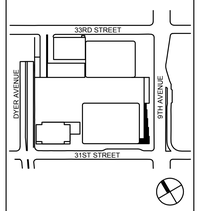

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MECHANICAL CELLAR B1 FLOOR PLAN - PART A

Project No.: 14830.A.000	B-SCAN Sheet No.: M-095.00
Date: 20 JUN 2014	Sheet No.: M-095
Scale: 1/8"=1'-0"	
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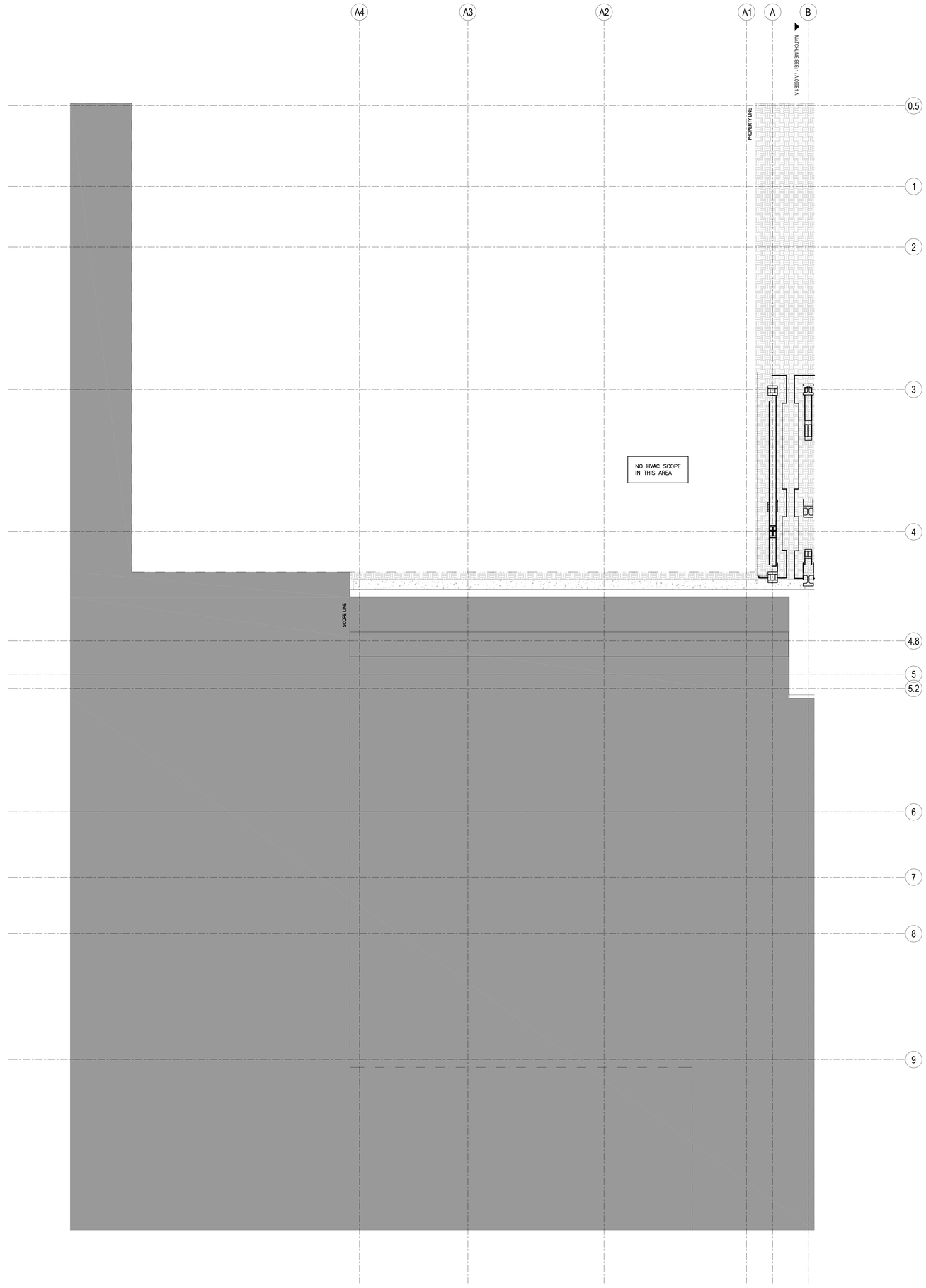

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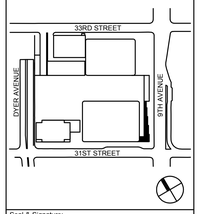

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Sheet Name:

MECHANICAL CELLAR B1 FLOOR PLAN - PART B

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: 1/8"=1'-0"

B-SCAN Sheet No.: M-096.00

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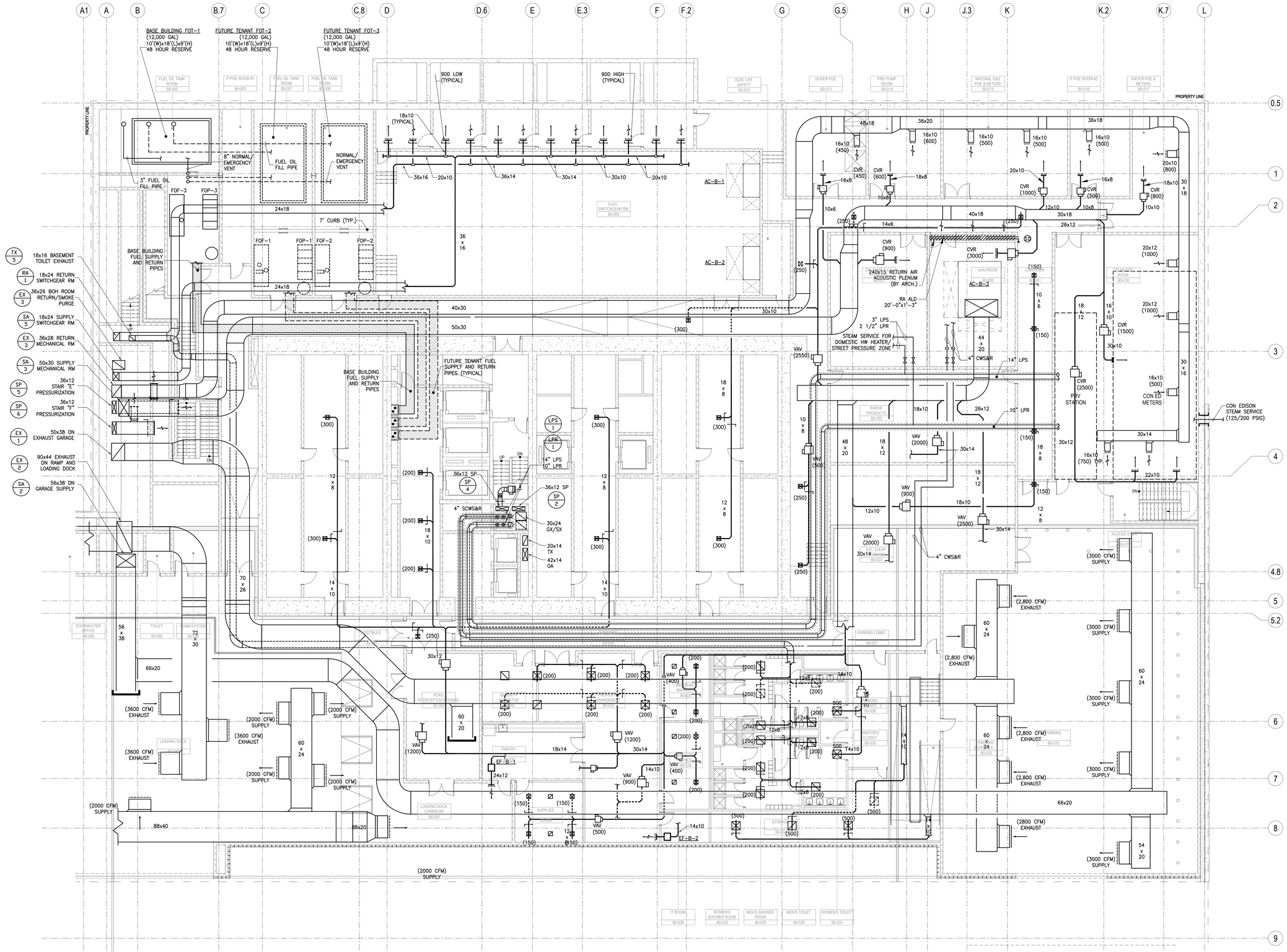
Page No.:



MANHATTAN WEST: NORTH TOWER

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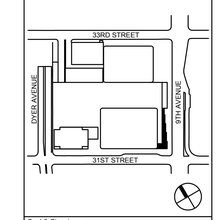

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Sheet Name:

MECHANICAL CELLAR B FLOOR PLAN - PART A

Project No.: 14830.A.000	B-SCAN Sheet No.: M-097.00
Date: 20 JUN 2014	Sheet No.: M-097
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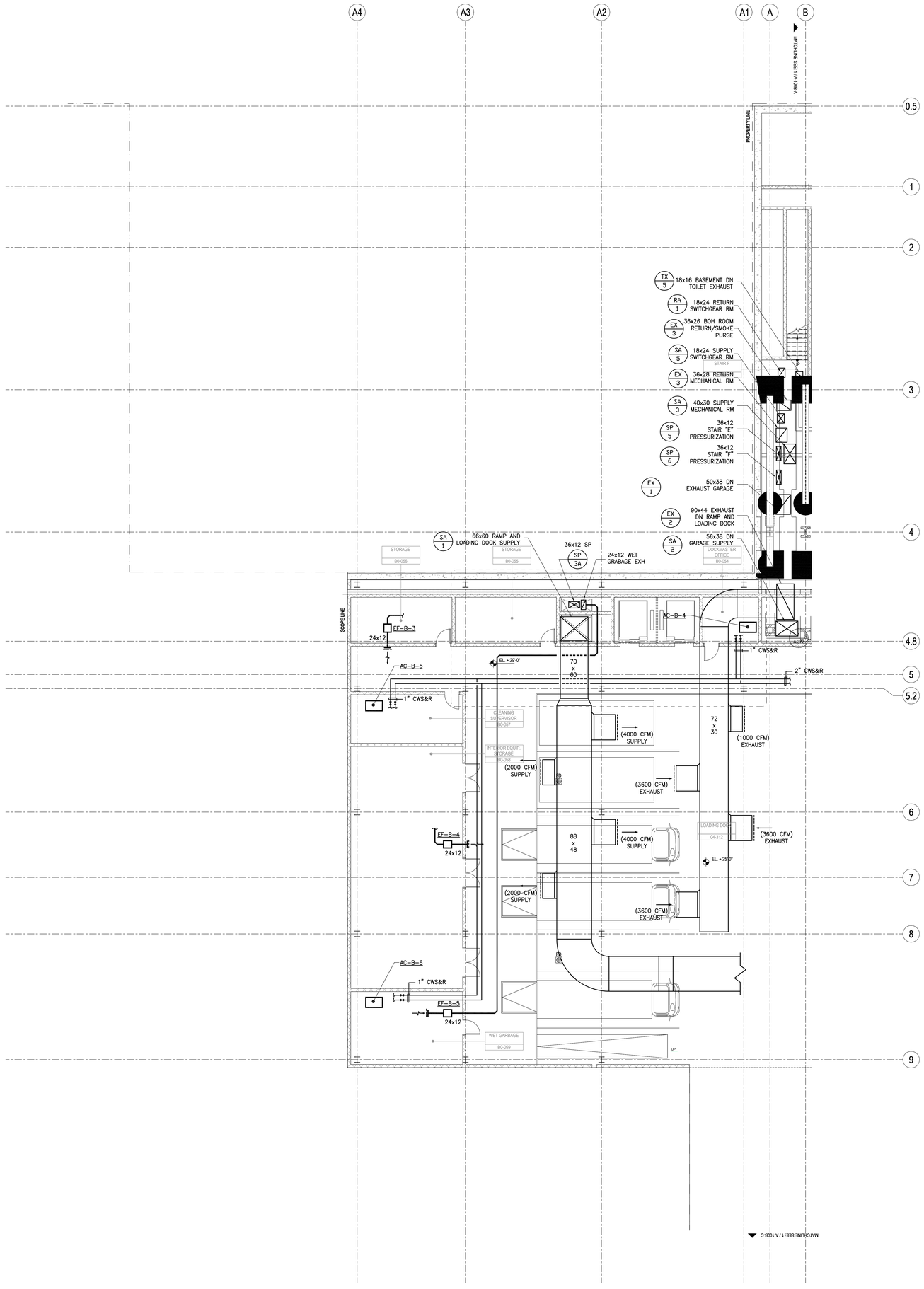

MANHATTAN WEST: NORTH TOWER

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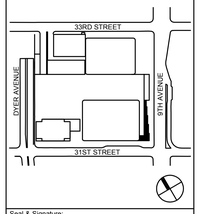
Key Plan:



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Sheet Name:

MECHANICAL CELLAR B FLOOR PLAN - PART B

Project No.: 14830.A.000	B-SCAN Sheet No.: M-098.00
Date: 20 JUN 2014	Sheet No.: M-098
Scale: 1/8"=1'-0"	
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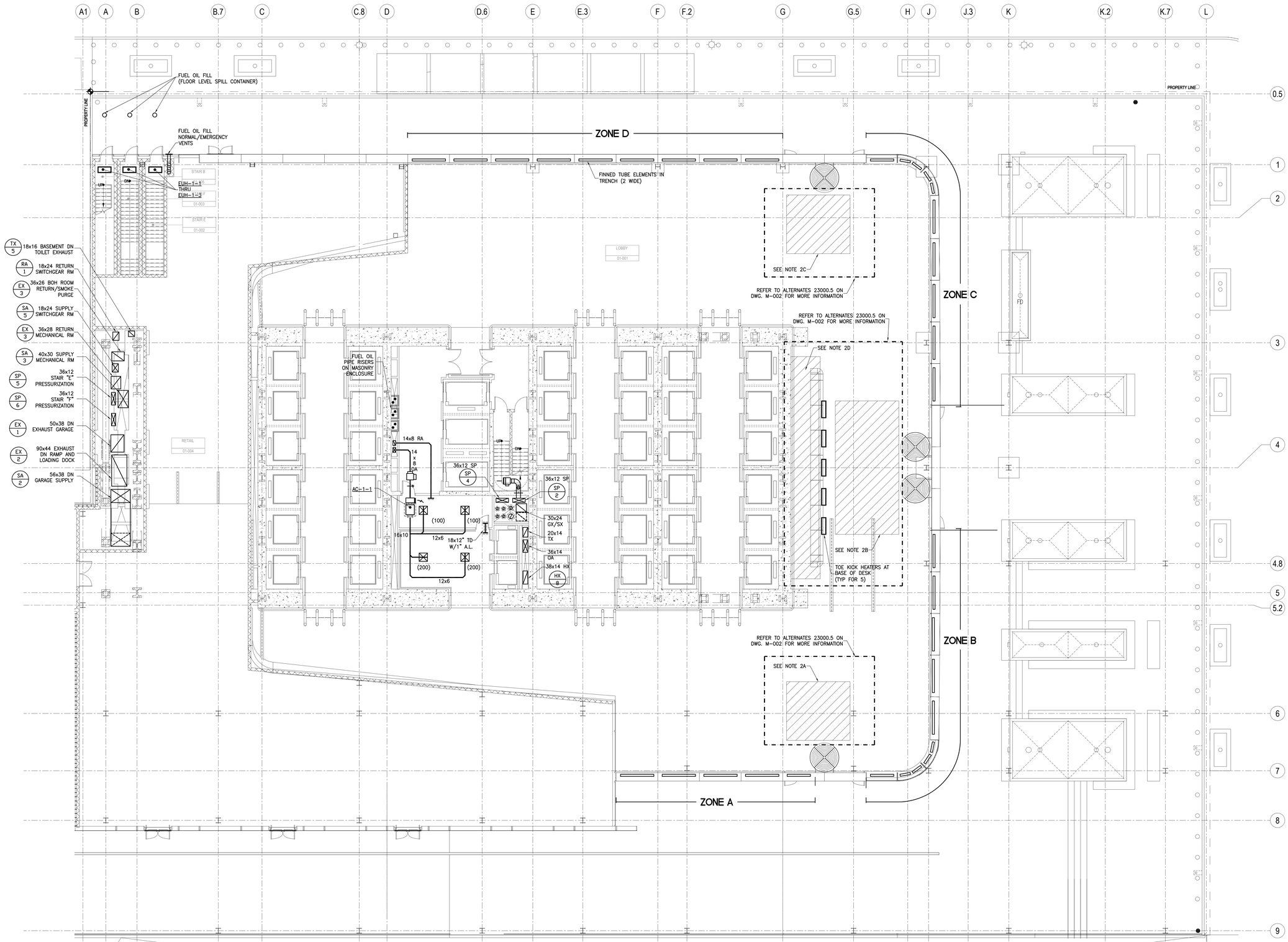

NOTES:

1. LOBBY HEATING AT PERIMETER WILL CONSIST OF HOT WATER FINNED TUBE ELEMENTS. IN PERIMETER TRENCH PROVIDE 2-WIDE FINNED TUBE ELEMENTS. IN SOFFIT PROVIDE SINGLE ROW FINNED TUBE ELEMENTS.REFER TO LOBBY HOT WATER FLOW DIAGRAM FOR PIPING AND ZONING REQUIREMENTS.

2. FLOOR AREA IN FRONT OF ENTRY DOOR TO BE PROVIDED WITH ELECTRICAL RADIANT FLOOR HEATING. (REFER TO ELECTRICAL DRAWINGS).
   A. RADIANT FLOOR AREA APPROXIMATELY 15'x15'
   B. RADIANT FLOOR AREA APPROXIMATELY 30'x15'
   C. RADIANT FLOOR AREA APPROXIMATELY 15'x15'
   D. RADIANT FLOOR AREA APPROXIMATELY 54'x7'

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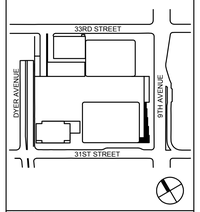

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MECHANICAL GROUND FLOOR PLAN - PART A

Project No.: 14830.A.000	B-SCAN Sheet No.: M-100.00
Date: 20 JUN 2014	Sheet No.: M-100
Scale: 1/8"=1'-0"	
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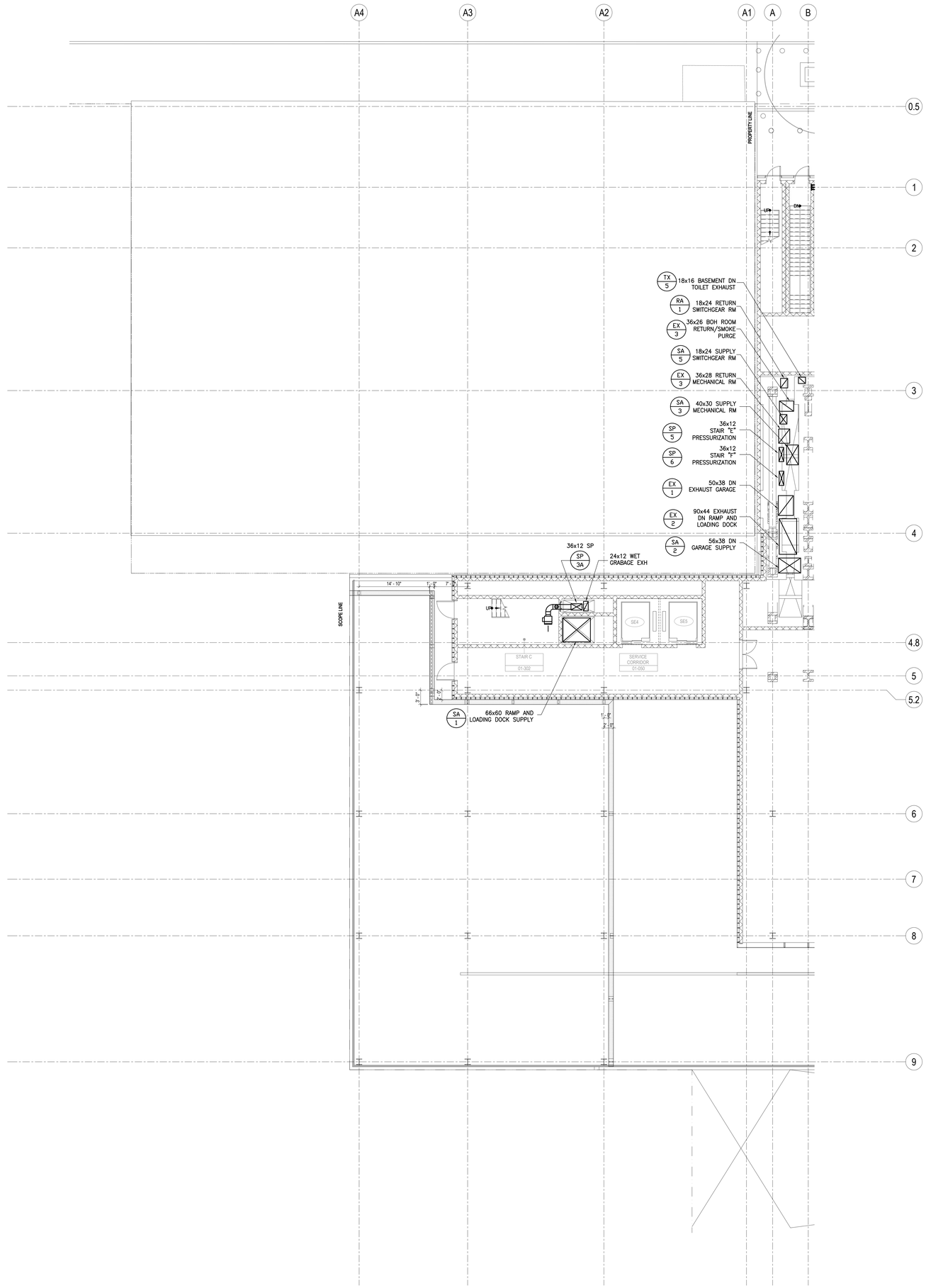

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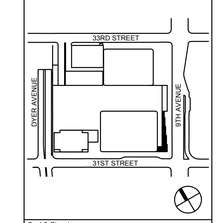

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MECHANICAL GROUND FLOOR PLAN - PART B

Project No.: 14830.A.000	B-SCAN Sheet No.: M-101.00
Date: 20 JUN 2014	Sheet No.: M-101
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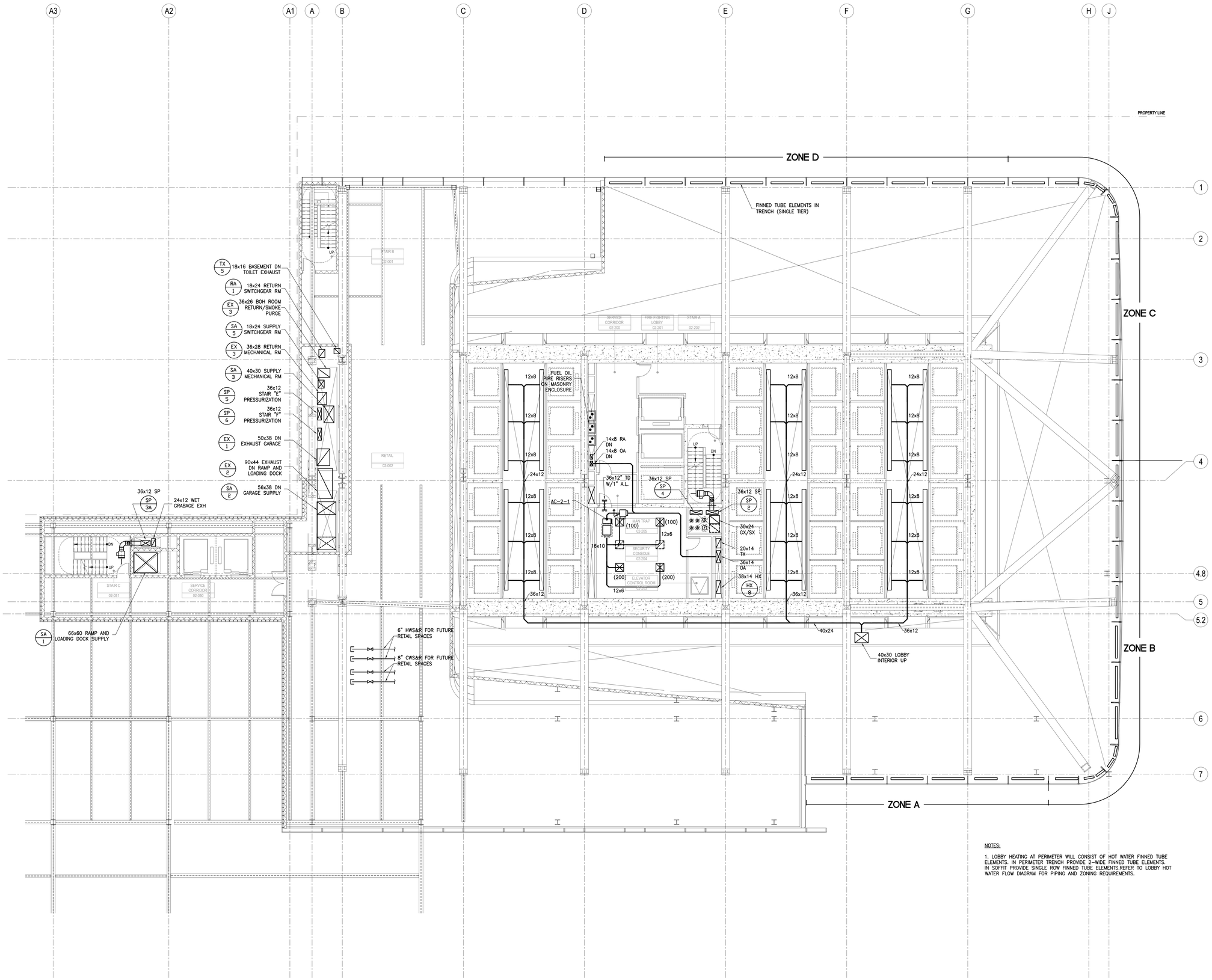

NOTES:

1. LOBBY HEATING AT PERIMETER WILL CONSIST OF HOT WATER FINNED TUBE ELEMENTS. IN PERIMETER TRENCH PROVIDE 2-WIDE FINNED TUBE ELEMENTS. IN SOFFIT PROVIDE SINGLE ROW FINNED TUBE ELEMENTS.REFER TO LOBBY HOT WATER FLOW DIAGRAM FOR PIPING AND ZONING REQUIREMENTS.

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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SOM

Skidmore, Owings & Merrill LLP
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Civil Engineering

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MEP Engineering

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Security Consultant

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Blast Consultant

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Acoustical Consultant

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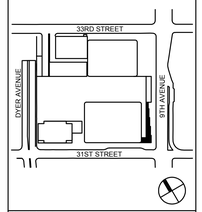
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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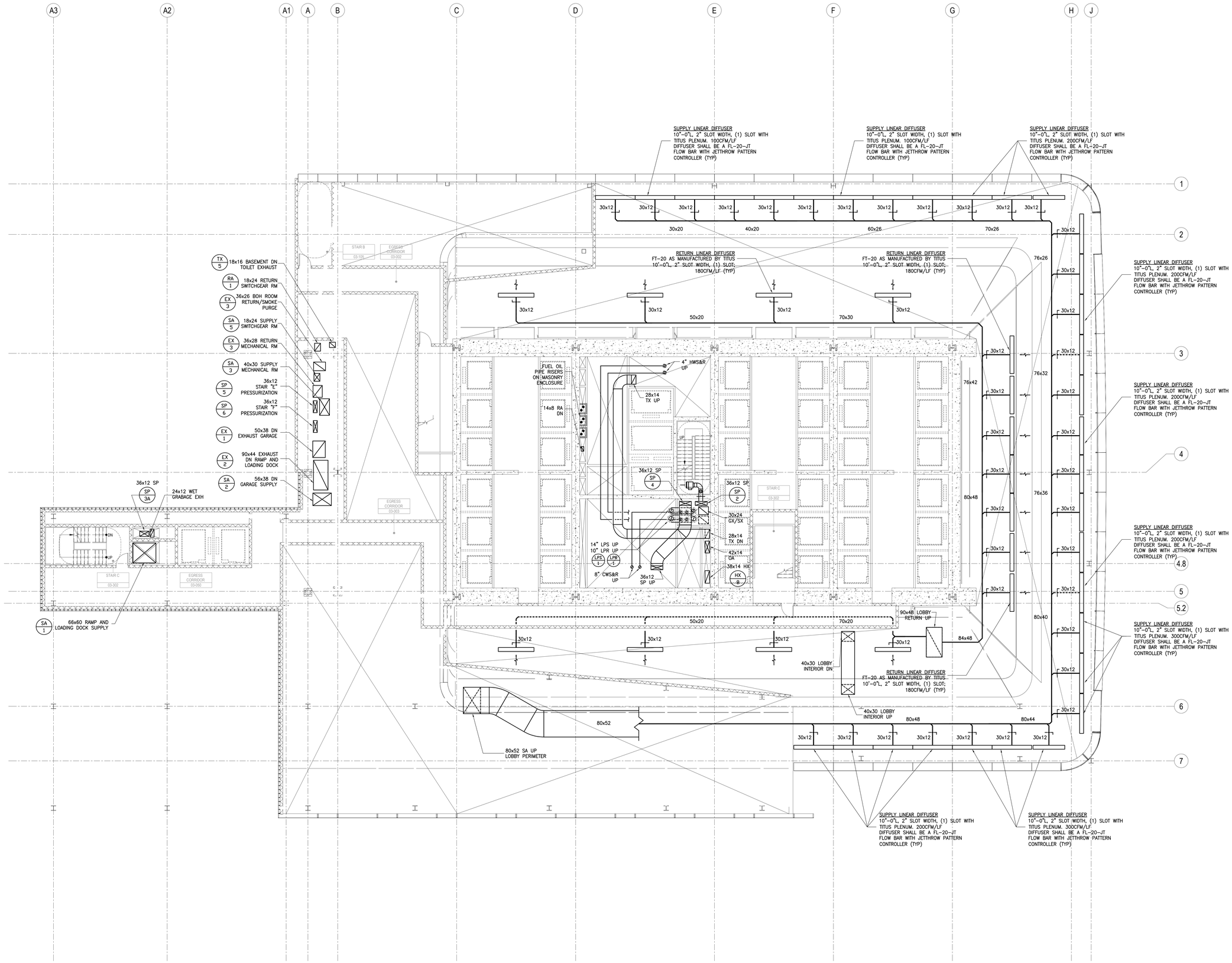
No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR GD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 2 FLOOR PLAN - RETAIL

Project No.: 14830.A.000	B-SCAN Sheet No.: M-102.00
Date: 20 JUN 2014	Sheet No.: M-102
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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Architecture/Structural Engineering

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Wind Tunnel Consultant

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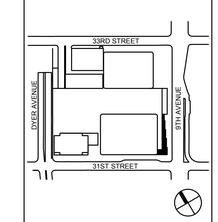
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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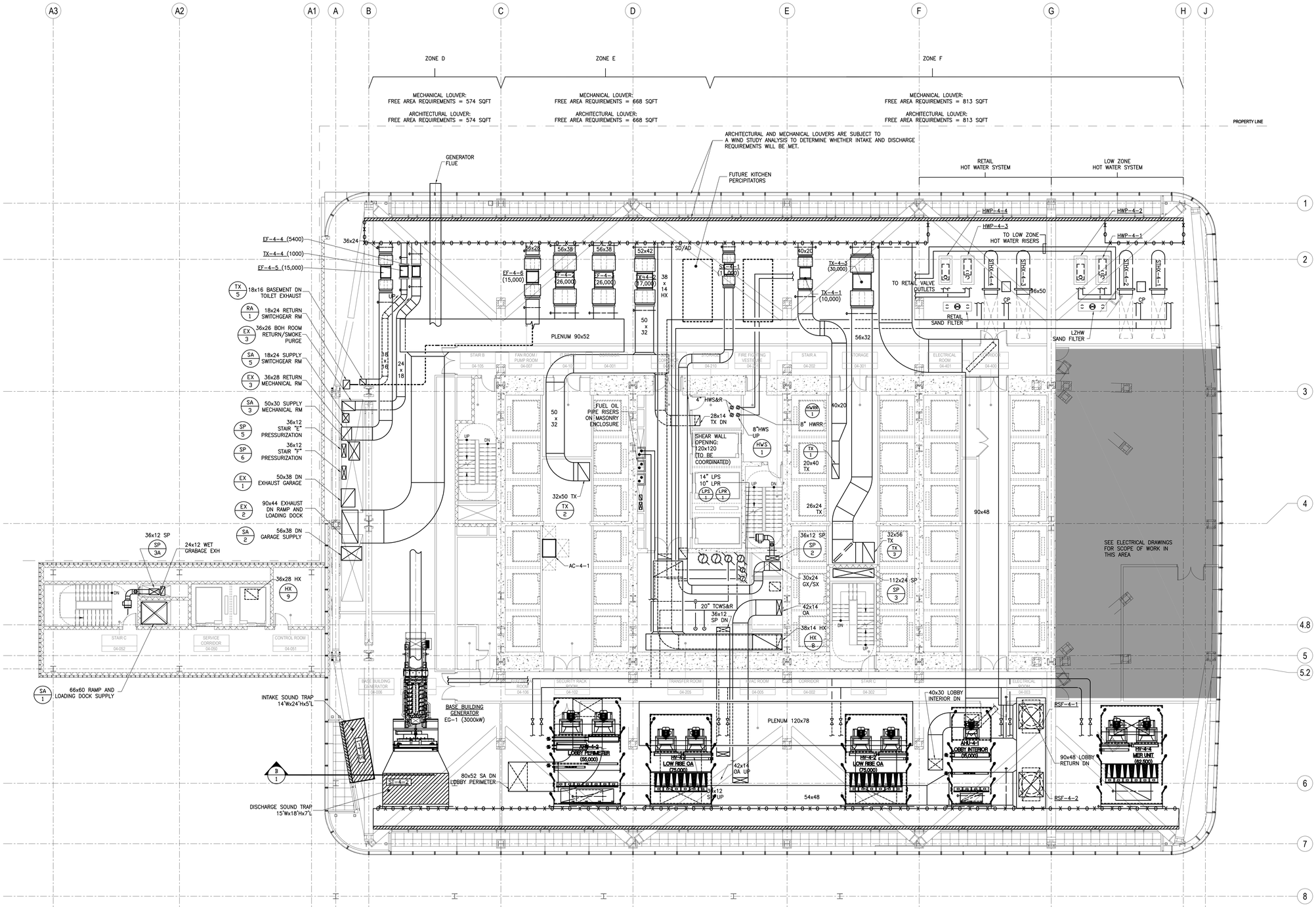
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 3 FLOOR PLAN - STAIR TRANSFER

Project No.: 14830.A.000	B-SCAN Sheet No.: M-103.00
Date: 20 JUN 2014	Sheet No.: M-103
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MECHANICAL LOUVER REQUIREMENTS

ZONES	FREE AREA REQUIRED	UNITS
ZONE A	600	SQFT
ZONE B	838	SQFT
ZONE C	500	SQFT
ZONE D	574	SQFT
ZONE E	668	SQFT
ZONE F	813	SQFT

FREE AREA SQUARE FOOTAGE ARE BASED ON 45% MINIMUM FREE AREA.

LOUVERS TO BE STORM CLASS, AMCA-CERTIFIED, LAB TESTED AND RATED IN ACCORDANCE WITH AMCA 500-L (LABORATORY METHODS OF TESTING LOUVERS FOR RATING, LATEST EDITION) AND AMCA 511 (CERTIFIED RATINGS PROGRAM – PRODUCT RATING MANUAL FOR AIR CONTROL DEVICES, LATEST EDITION)

STORM CLASS LOUVERS SHALL HAVE AN AMCA CERTIFIED CLASS 'A' RATING FOR WIND-DRIVEN RAIN AT 29MPH, AND 3.0" RAINFALL PER HOUR; AND SHALL HAVE NOT LESS THAN AN AMCA CERTIFIED CLASS 'B' RATING FOR WIND-DRIVEN RAIN AT 50MPH, AND 8.0" RAINFALL PER HOUR.

MANHATTAN WEST: NORTH TOWER

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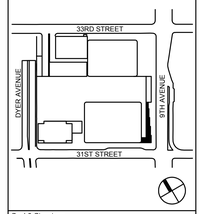
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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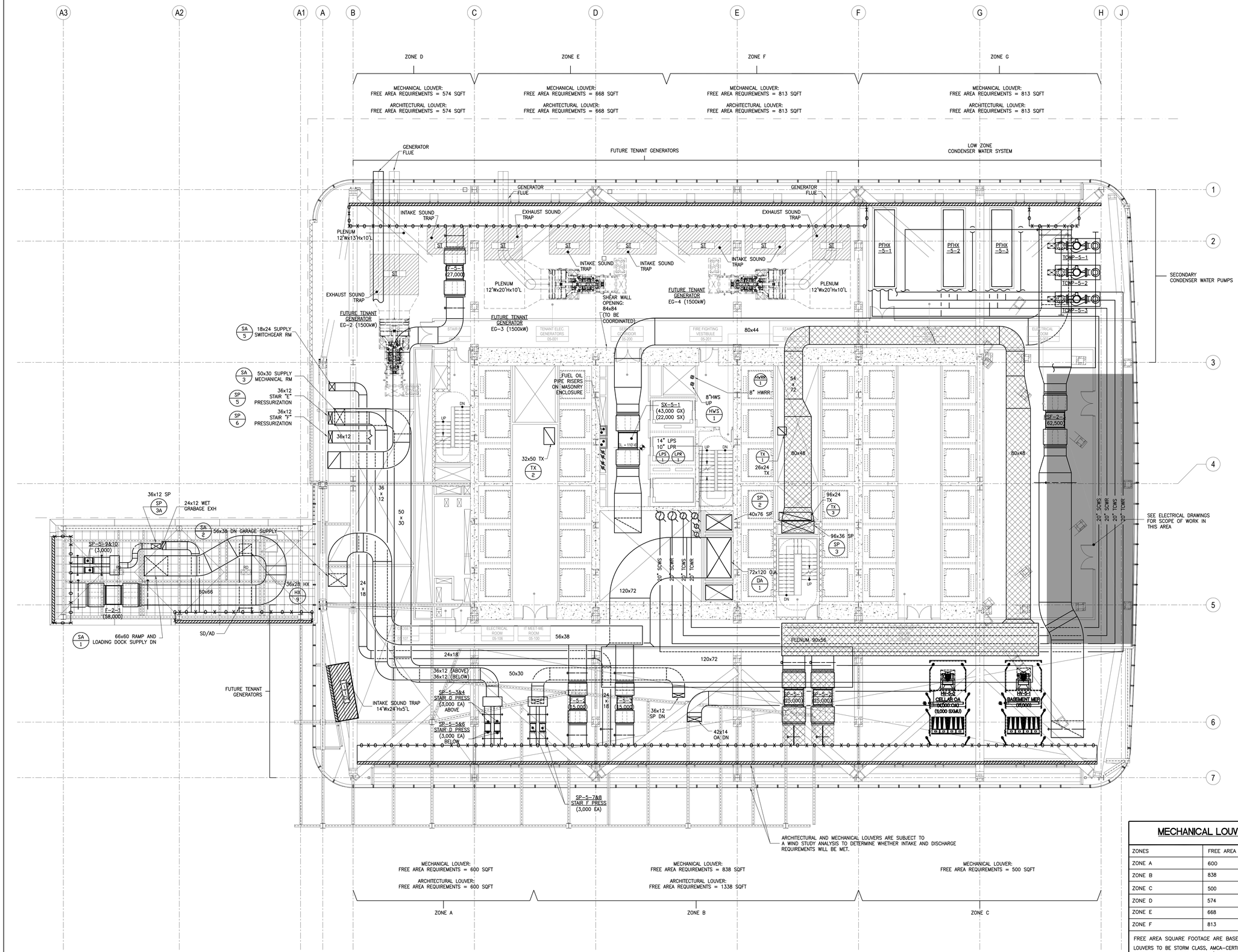
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 4 FLOOR PLAN - MECHANICAL

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8"=1'-0"
File No.:
B-SCAN Sheet No.: M-104.00
Sheet No.: M-104
Page No.:



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ZONE C	500	SQFT
ZONE D	574	SQFT
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ZONE F	813	SQFT

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MANHATTAN WEST: NORTH TOWER

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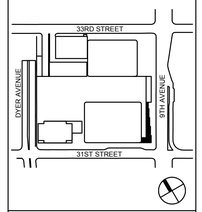
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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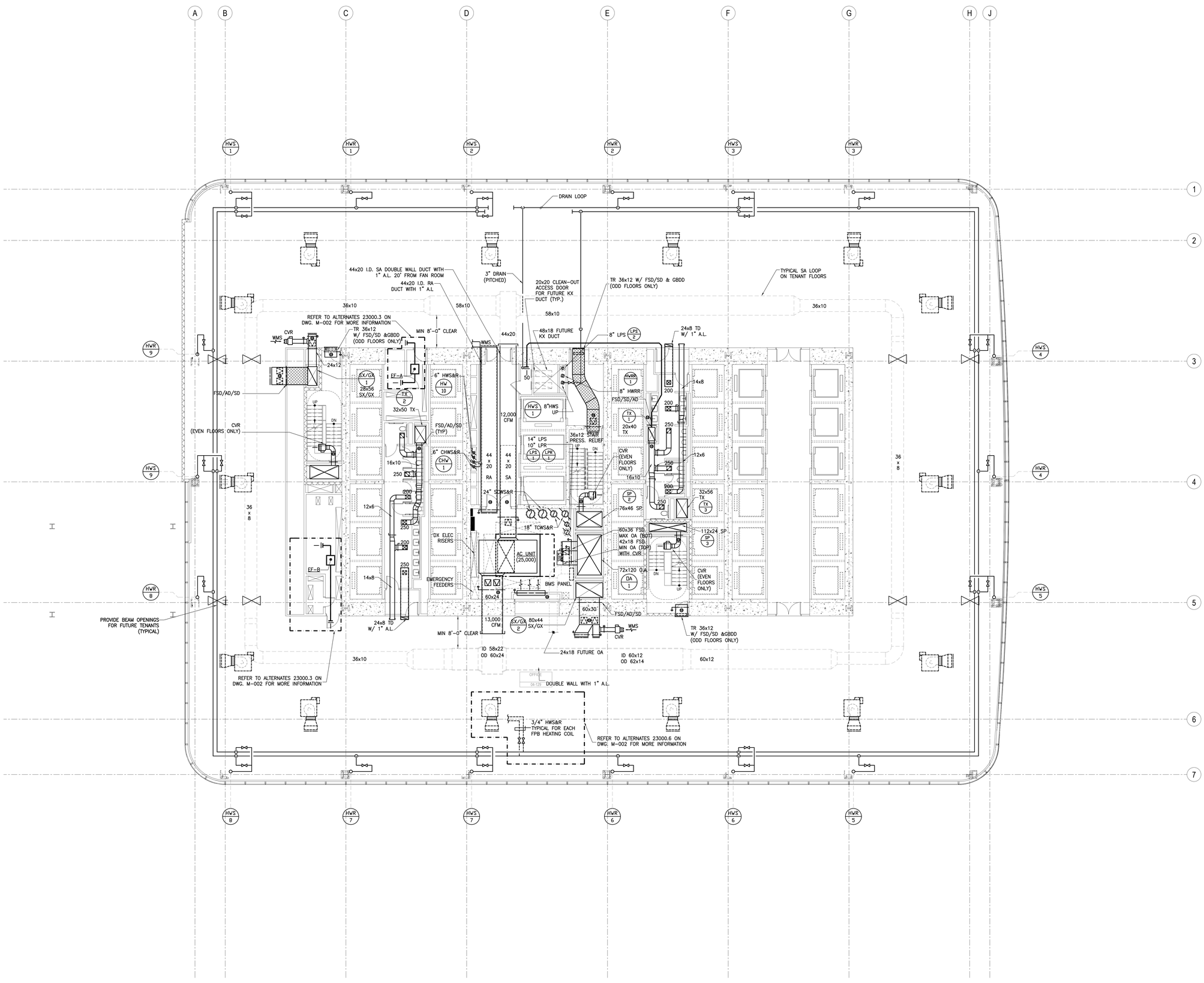
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8"=1'-0"
File No.:
B-SCAN Sheet No.: M-105.00
Sheet No.: M-105
Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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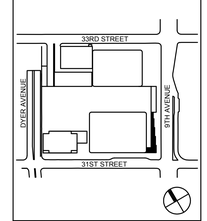
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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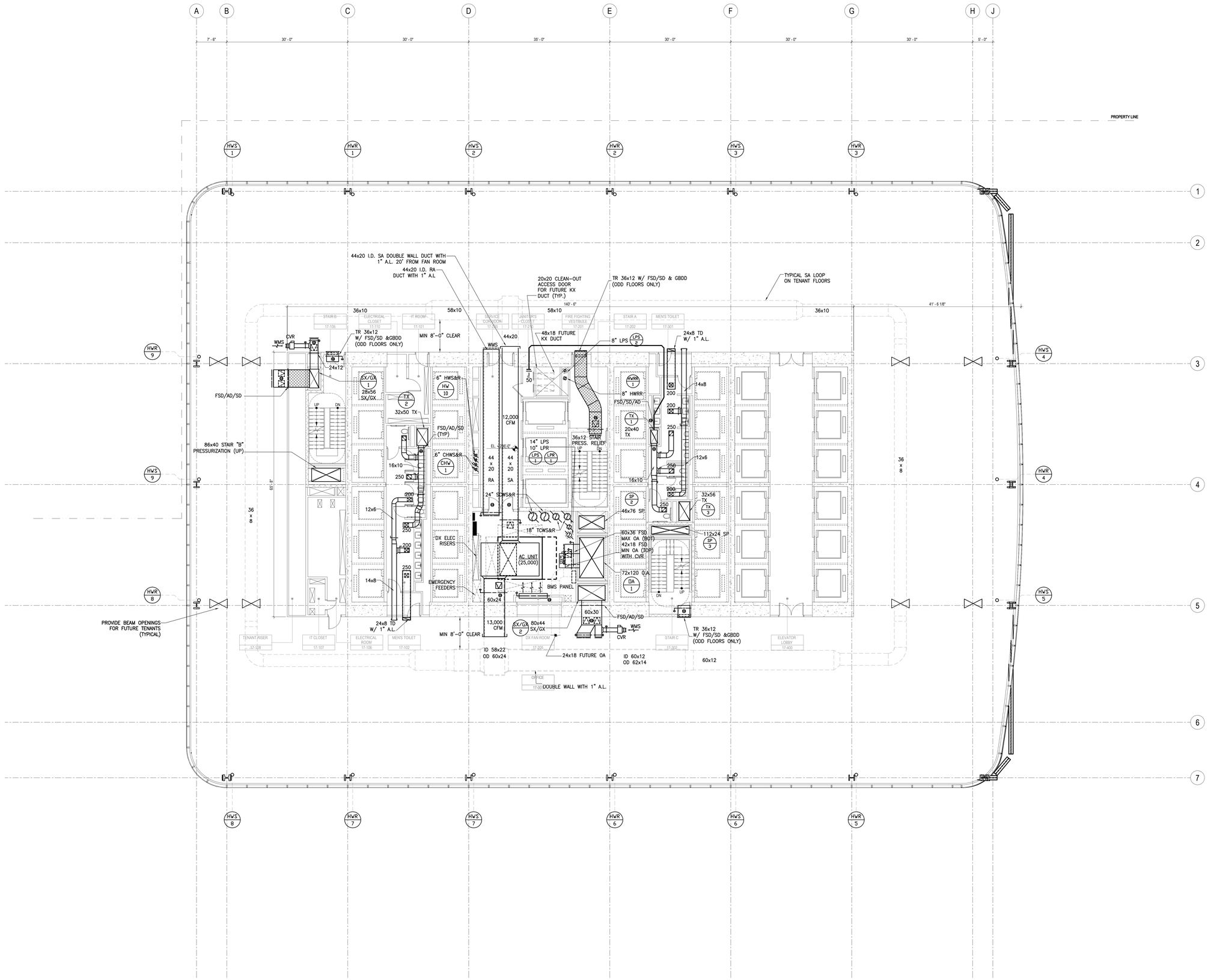
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 6-16 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-106.00
Date: 20 JUN 2014	Sheet No.: M-106
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

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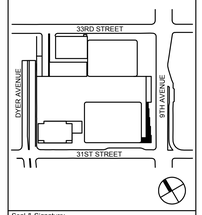
Key Plan:



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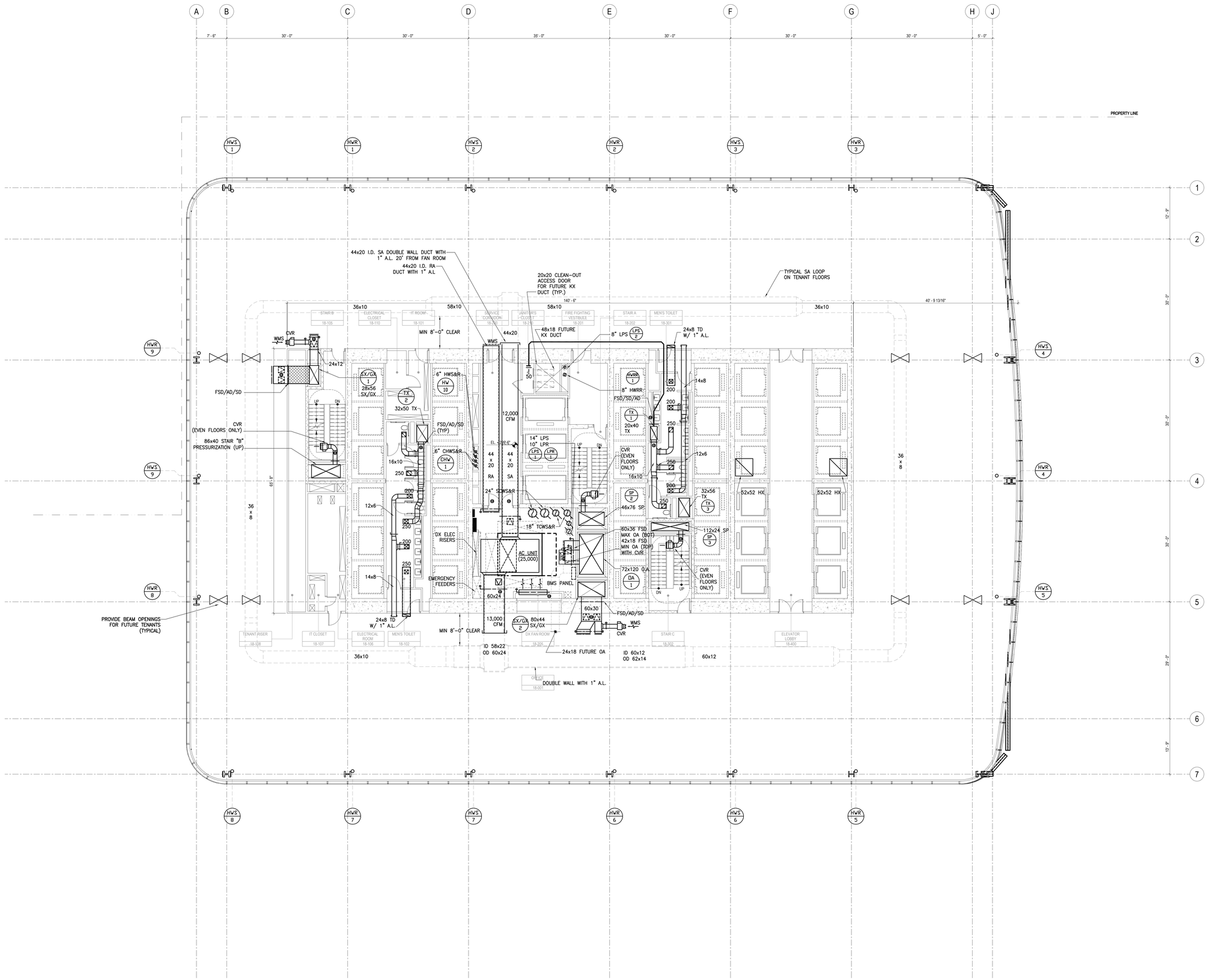
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 17 FLOOR PLAN - LOW-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-117.00
Date: 20 JUN 2014	Sheet No.: M-117
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

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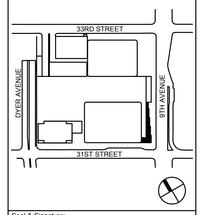

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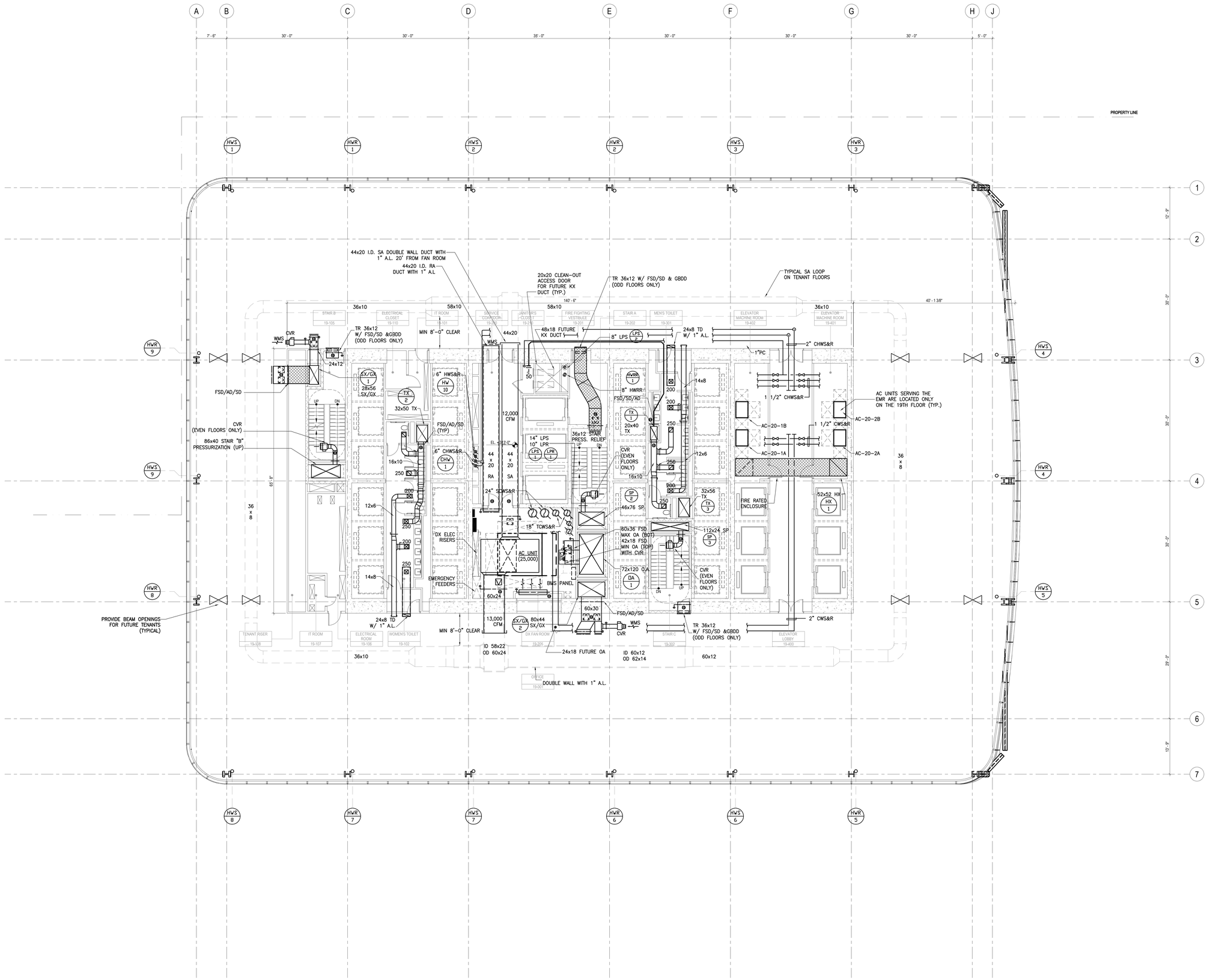
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: M-118.00
Date: 20 JUN 2014	Sheet No.: M-118
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

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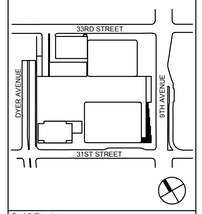

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5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 19-20 FLOOR LOW - RISE EMR

Project No.: 14830.A.000	B-SCAN Sheet No.: M-119.00
Date: 20 JUN 2014	Sheet No.: M-119
Scale: 1/8"=1'-0"	
File No.:	Page No.:

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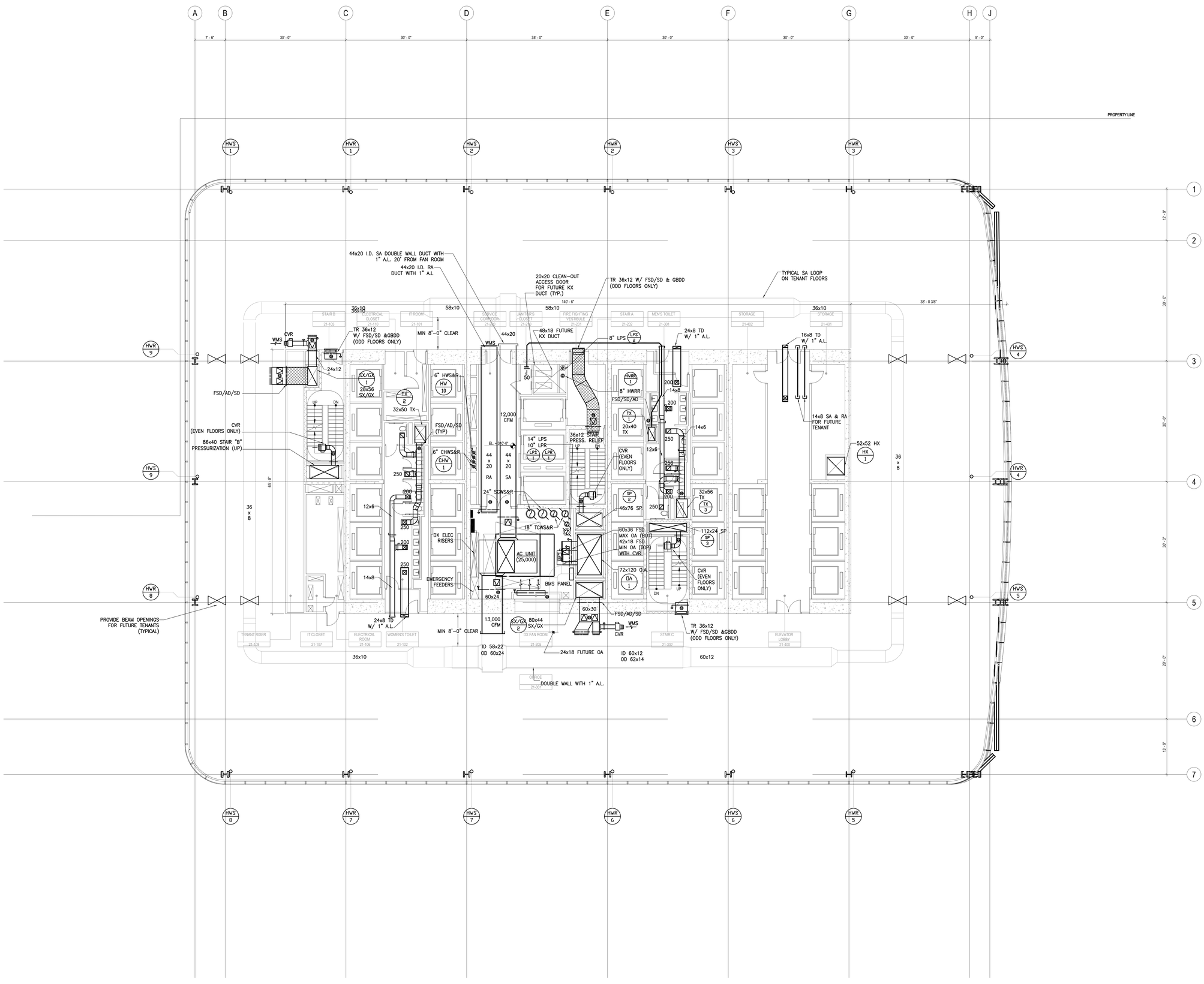

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

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Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

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Edgett Williams Consulting Group, Inc.
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Sustainable Design
Viridian Energy & Environmental
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475 10th Avenue, New York, NY 10018

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404 Fifth Avenue #8, New York, NY 10018

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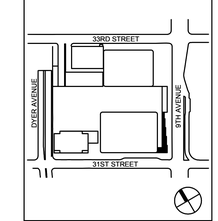
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-121.00
Date: 20 JUN 2014	Sheet No.: M-121
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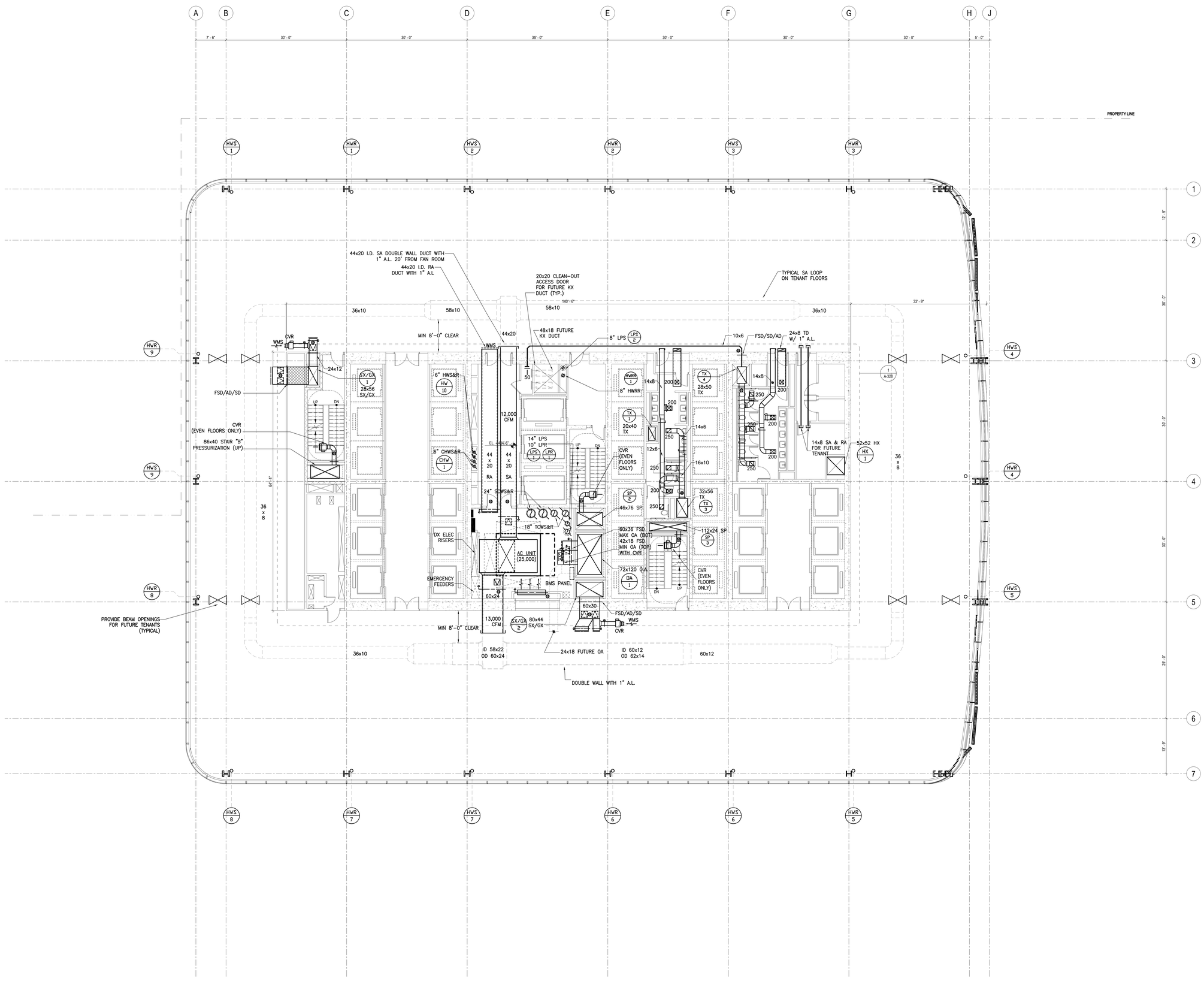

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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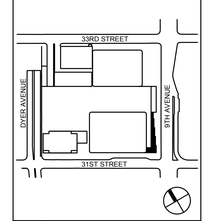
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 28 FLOOR PLAN - LOW RISE & MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-128.00
Date: 20 JUN 2014	Sheet No.: M-128
Scale: 1/8"=1'-0"	
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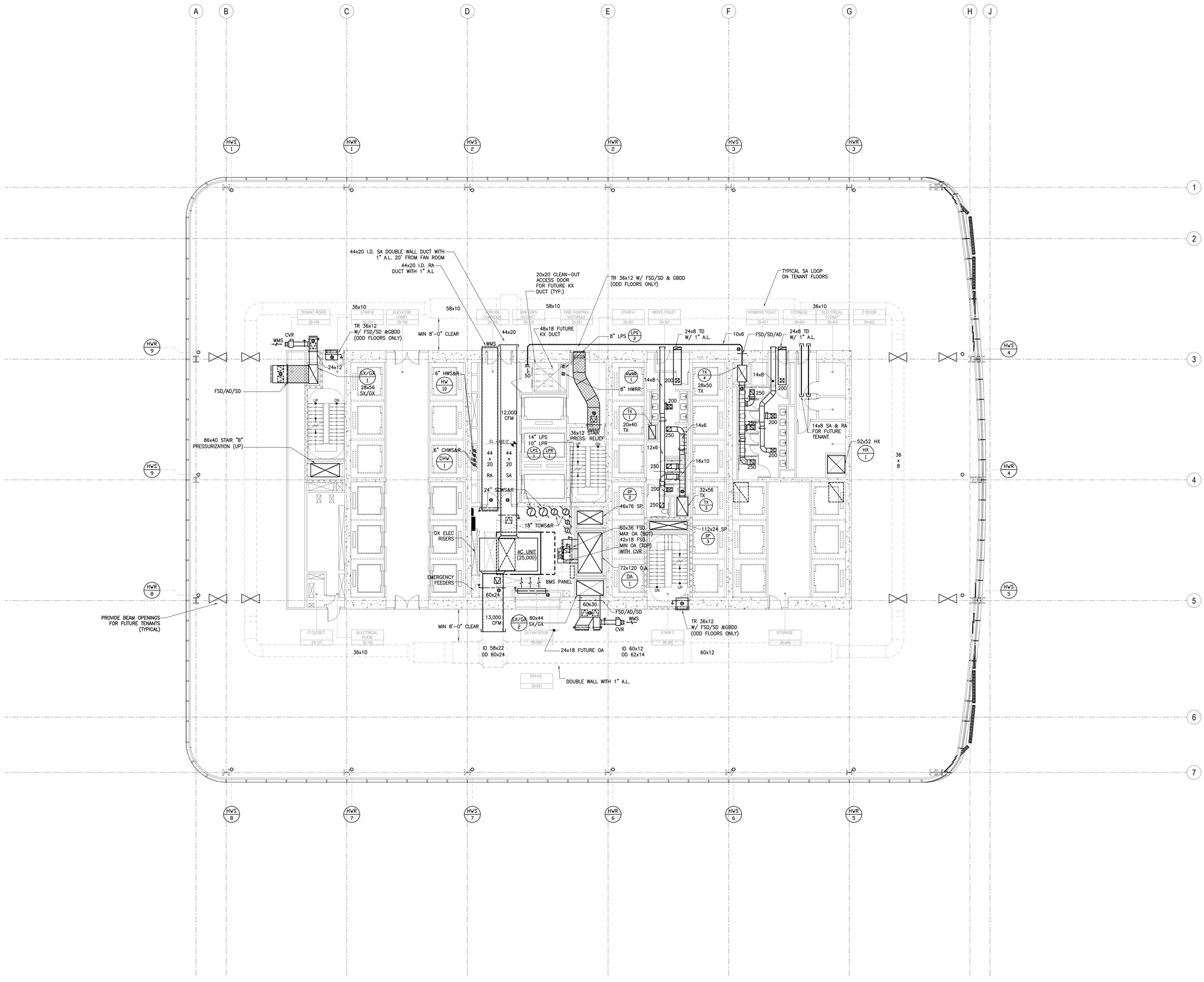

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Wind Tunnel Consultant

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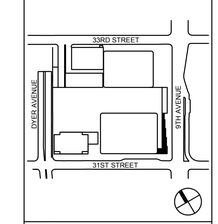
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: M-129.00
Date: 20 JUN 2014	Sheet No.: M-129
Scale: 1/8"=1'-0"	
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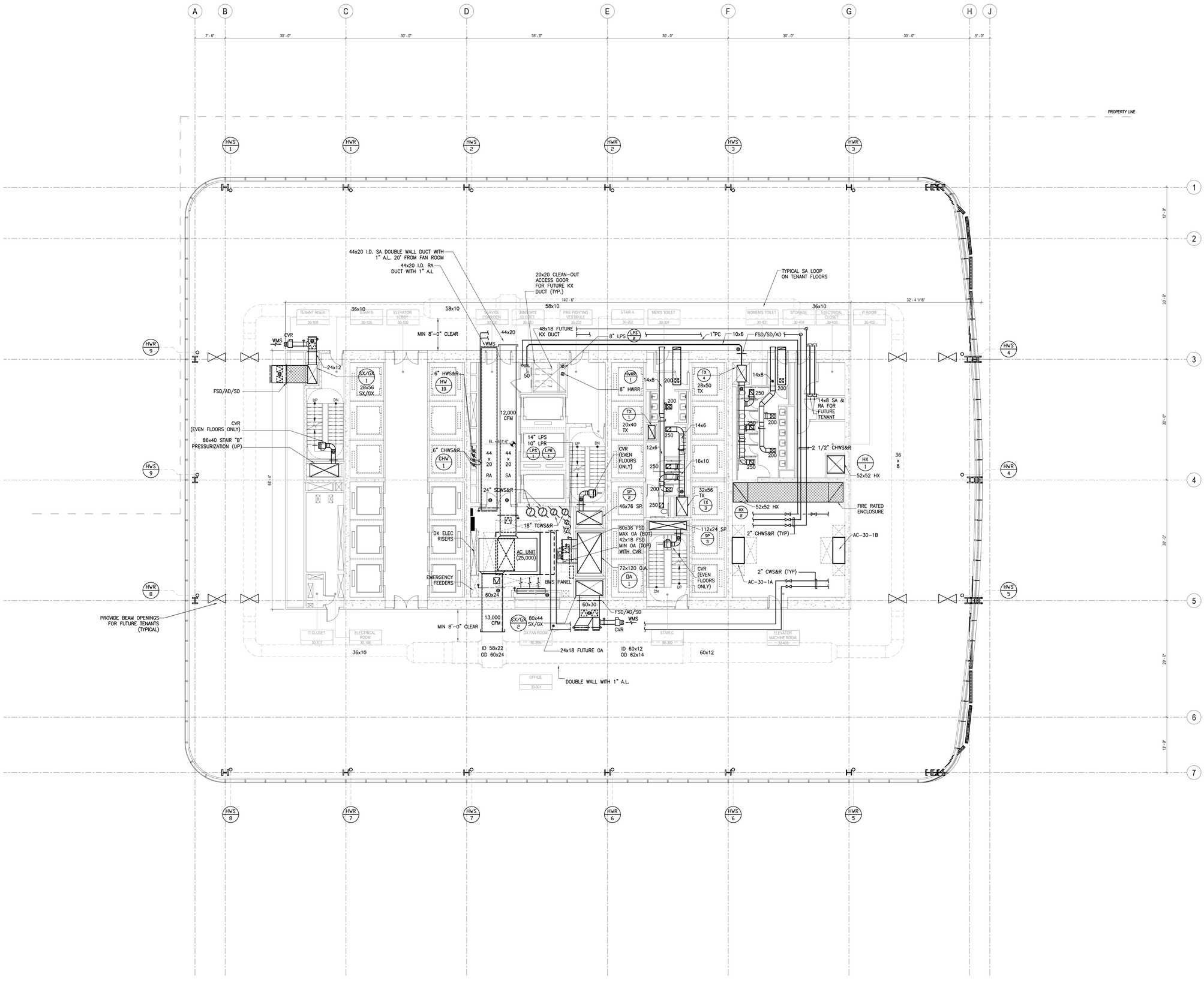

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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250 Vesey Street, 15th Floor, New York, NY 10281

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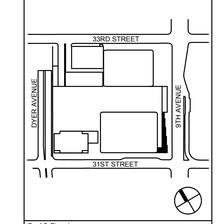
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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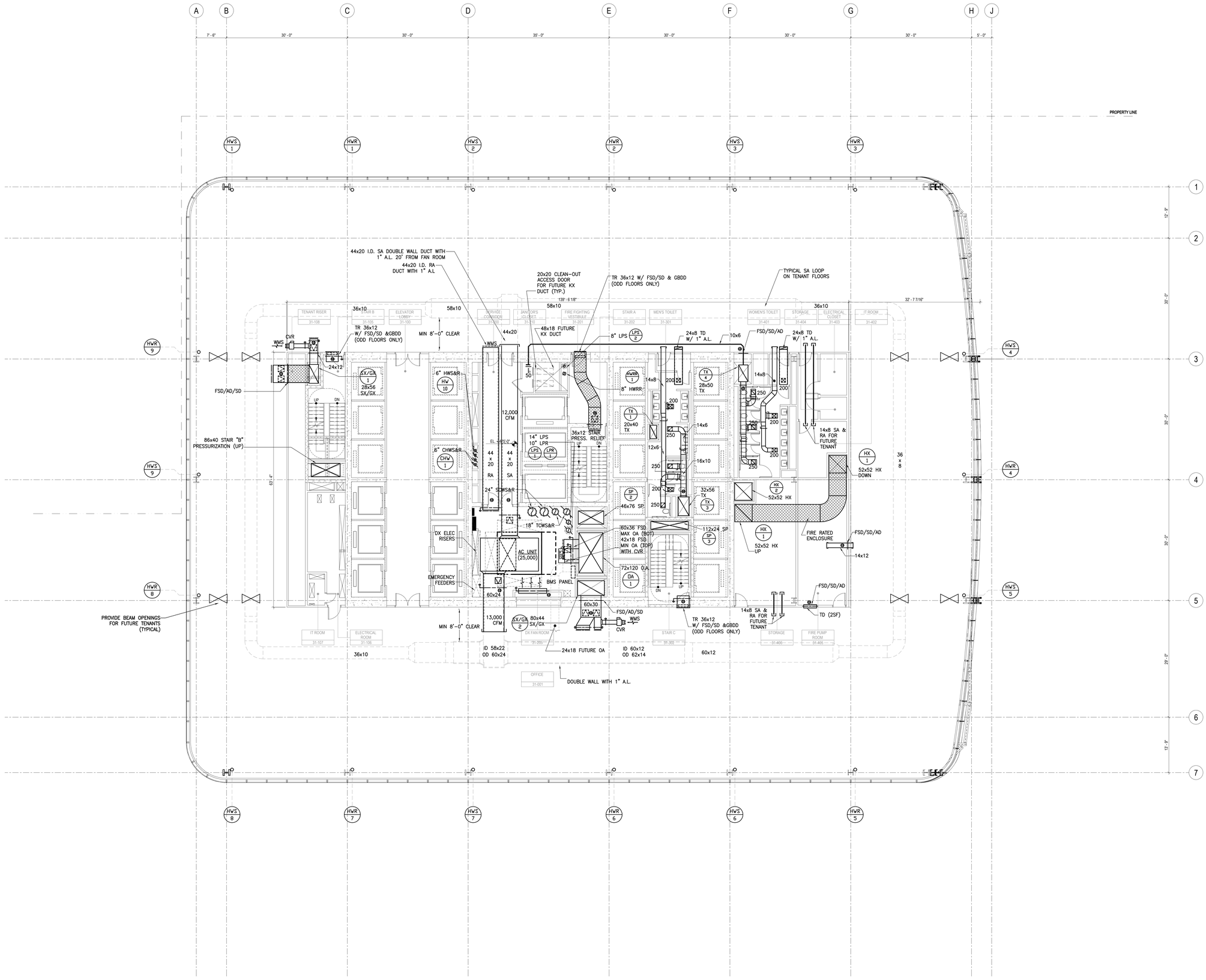
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 30 FLOOR PLAN - MID-RISE EMR

Project No.: 14830.A.000	B-SCAN Sheet No.: M-130.00
Date: 20 JUN 2014	Sheet No.: M-130
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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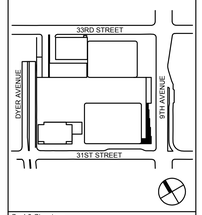
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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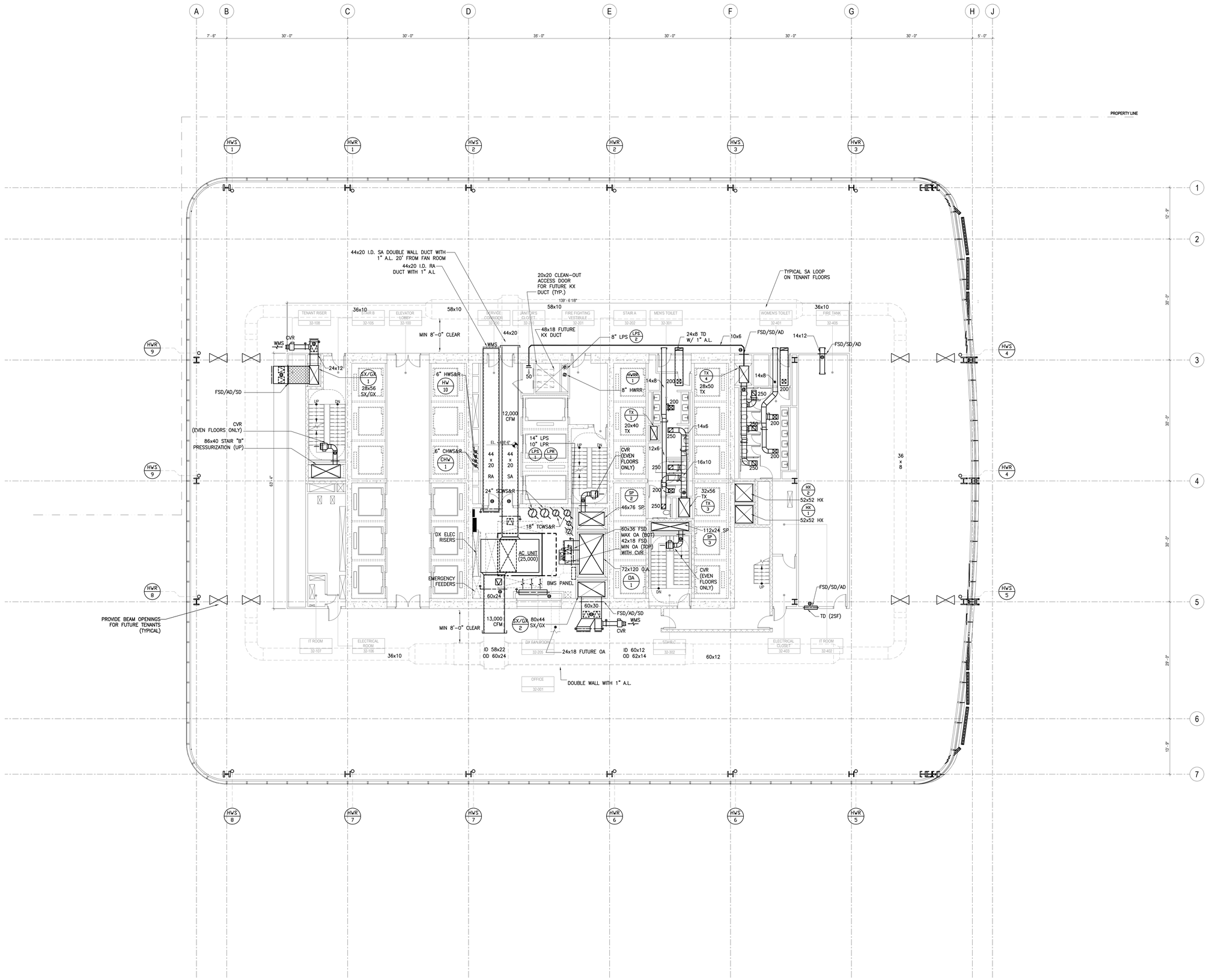
3	15 NOV 2013	ISSUED FOR 60 PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM

Project No.: 14830.A.000	B-SCAN Sheet No.: M-131.00
Date: 20 JUN 2014	Sheet No.: M-131
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
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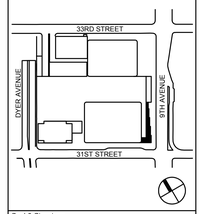
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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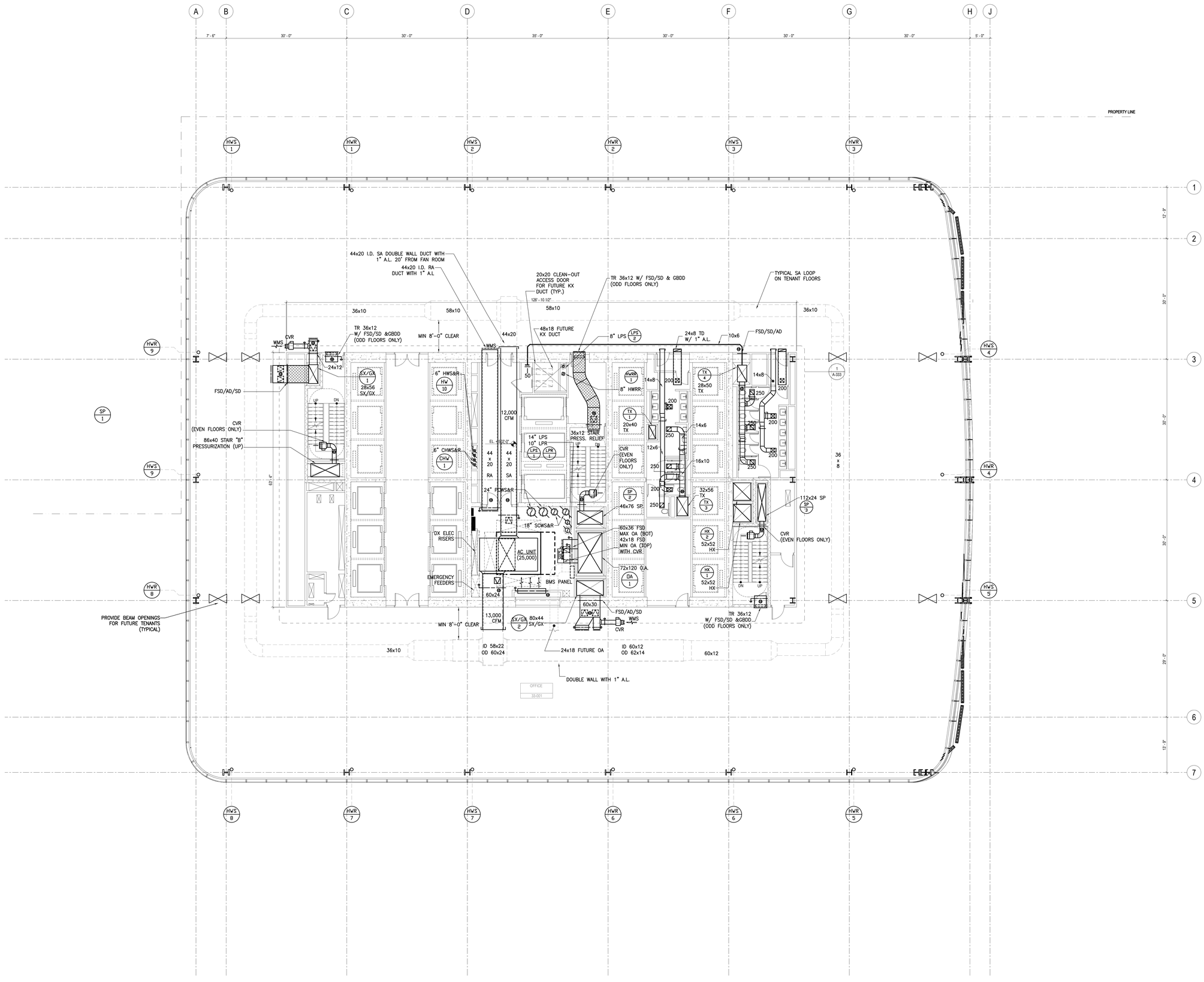
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK

Project No.: 14830.A.000	B-SCAN Sheet No.: M-132.00
Date: 20 JUN 2014	Sheet No.: M-132
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

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Client

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Wind Tunnel Consultant

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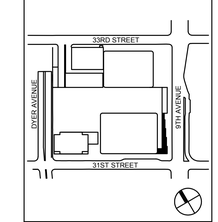
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 33-38 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-133.00
Date: 20 JUN 2014	Sheet No.: M-133
Scale: 1/8"=1'-0"	
File No.:	Page No.:

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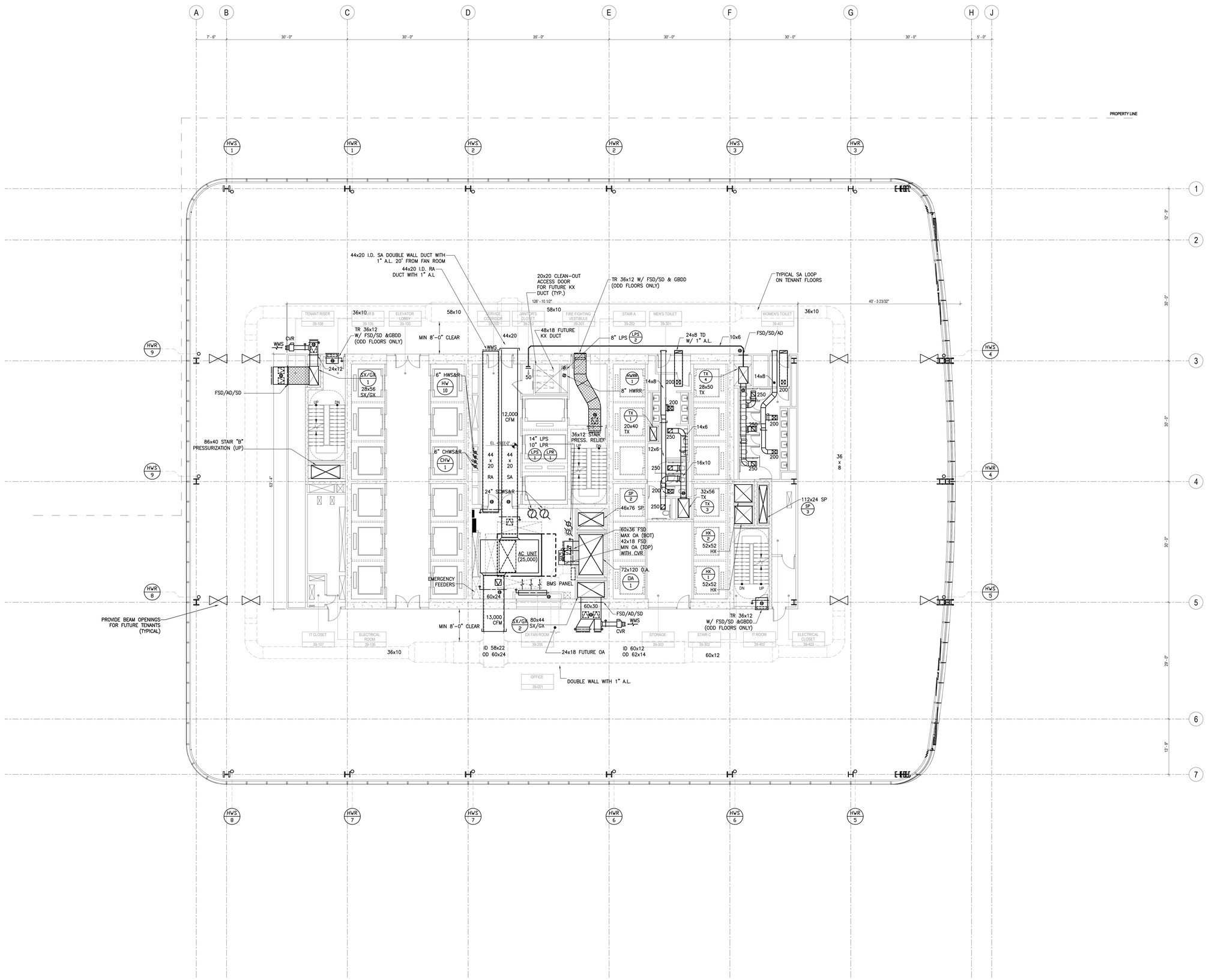

MANHATTAN WEST: NORTH TOWER

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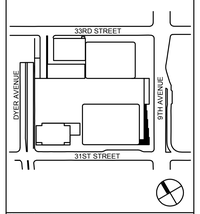
Ontario, Canada N1K 1B8

Key Plan:



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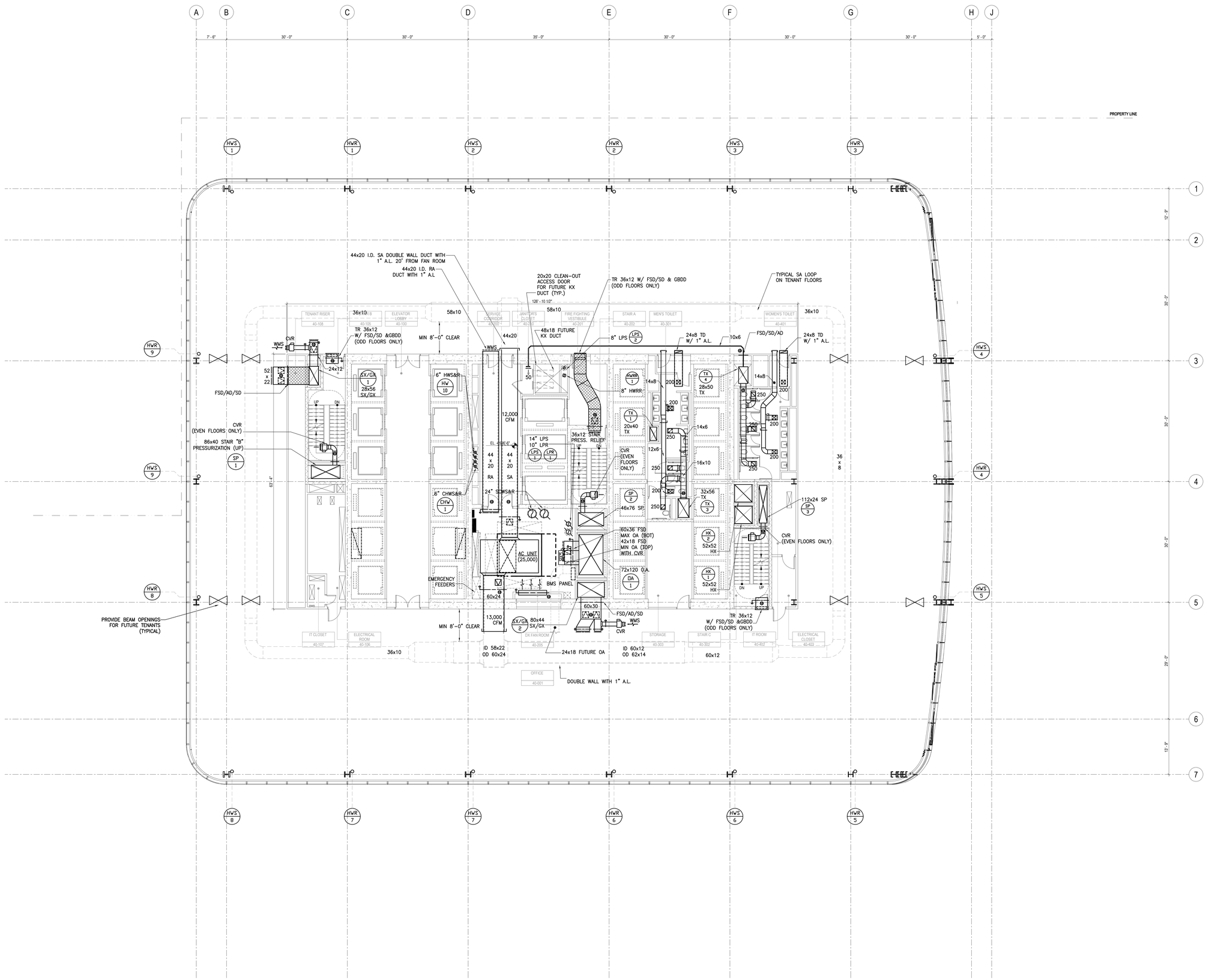
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 39 FLOOR PLAN - MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-139.00
Date: 20 JUN 2014	Sheet No.: M-139
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

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50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

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404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

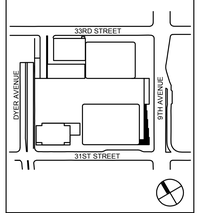
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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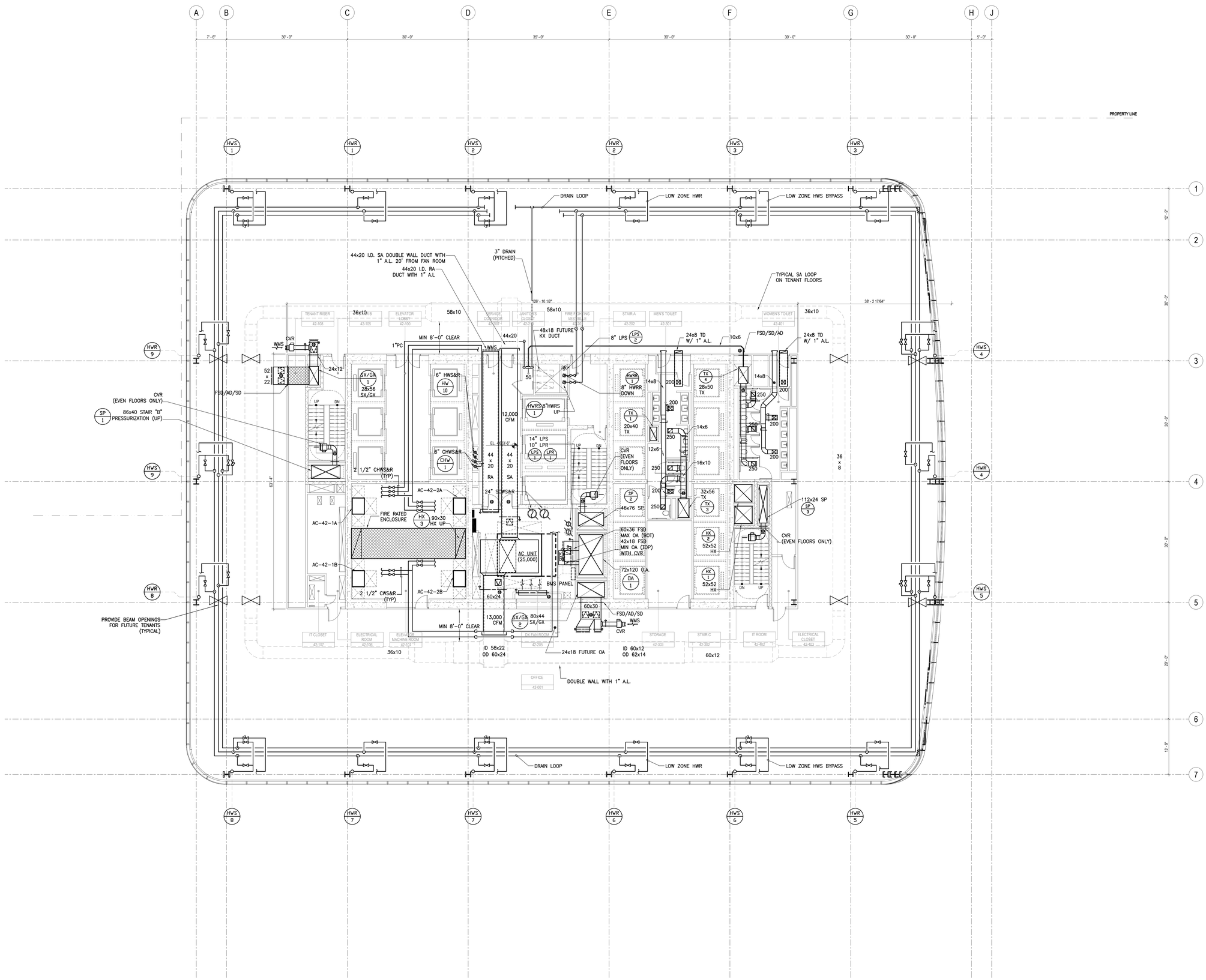
No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: M-140.00
Date: 20 JUN 2014	Sheet No.: M-140
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Skidmore, Owings & Merrill LLP
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MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

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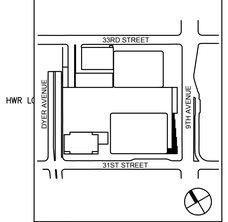
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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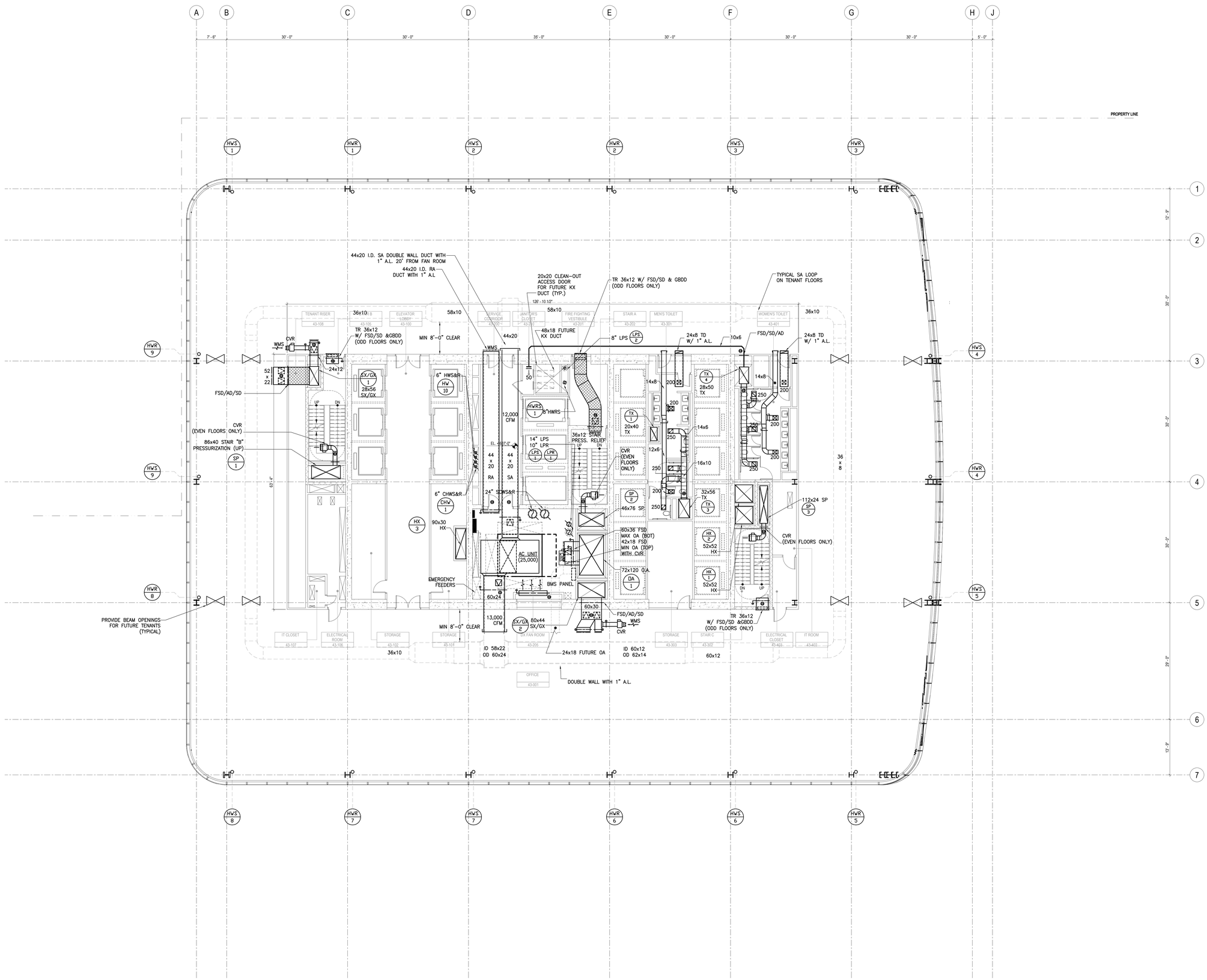
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 42 FLOOR PLAN - MID-RISE EMR

Project No.: 14830.A.000	B-SCAN Sheet No.: M-142.00
Date: 20 JUN 2014	Sheet No.: M-142
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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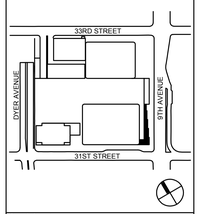
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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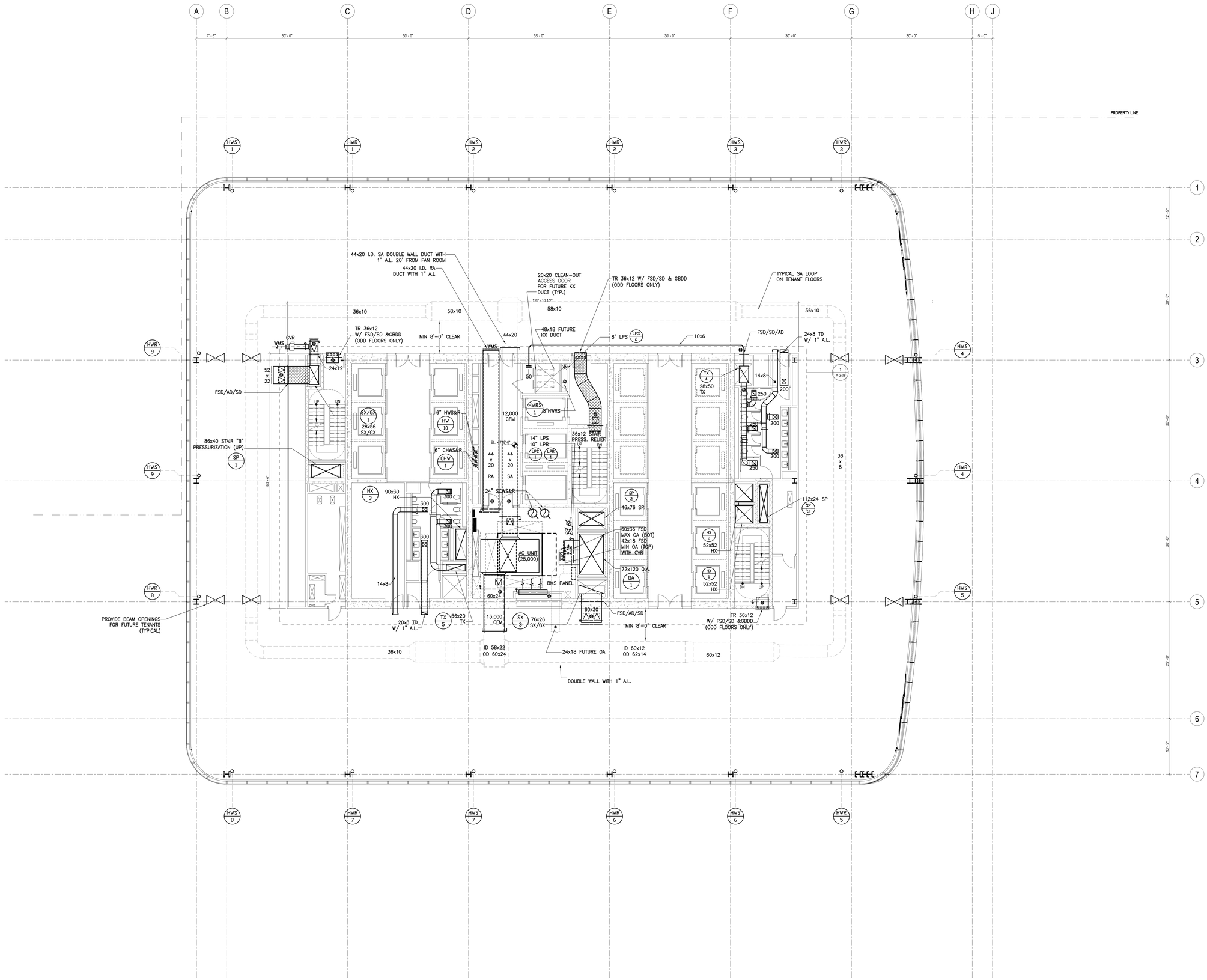
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 43-48 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-143
Date: 20 JUN 2014	Sheet No.: M-143
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER
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Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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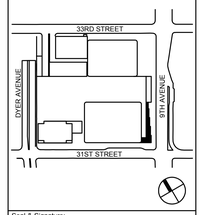
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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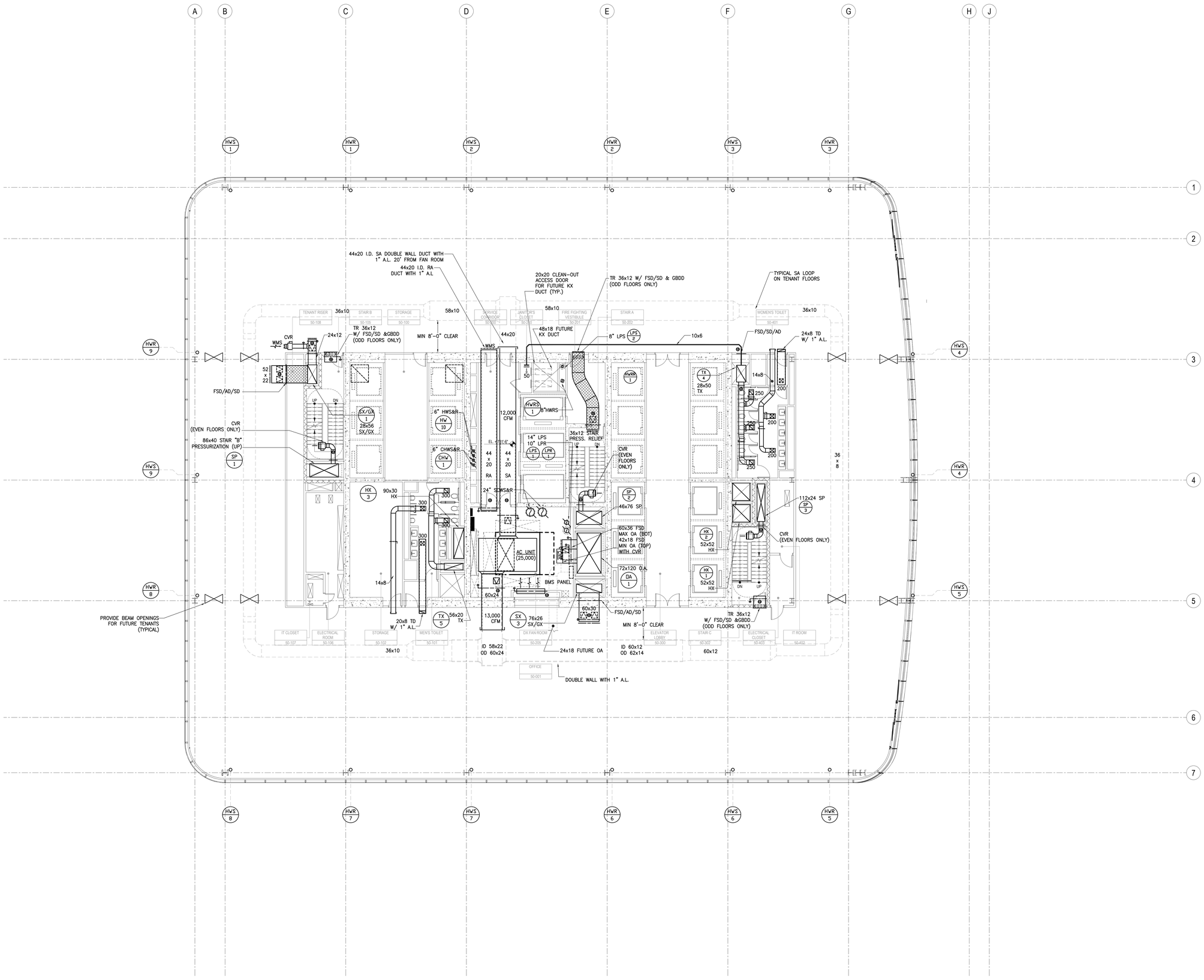
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 49 FLOOR PLAN - MID-RISE & HIGH RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-149.00
Date: 20 JUN 2014	Sheet No.: M-149
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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250 State Street #F1, North Haven, CT 06473

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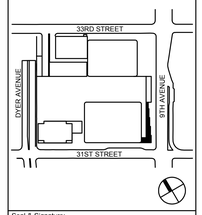
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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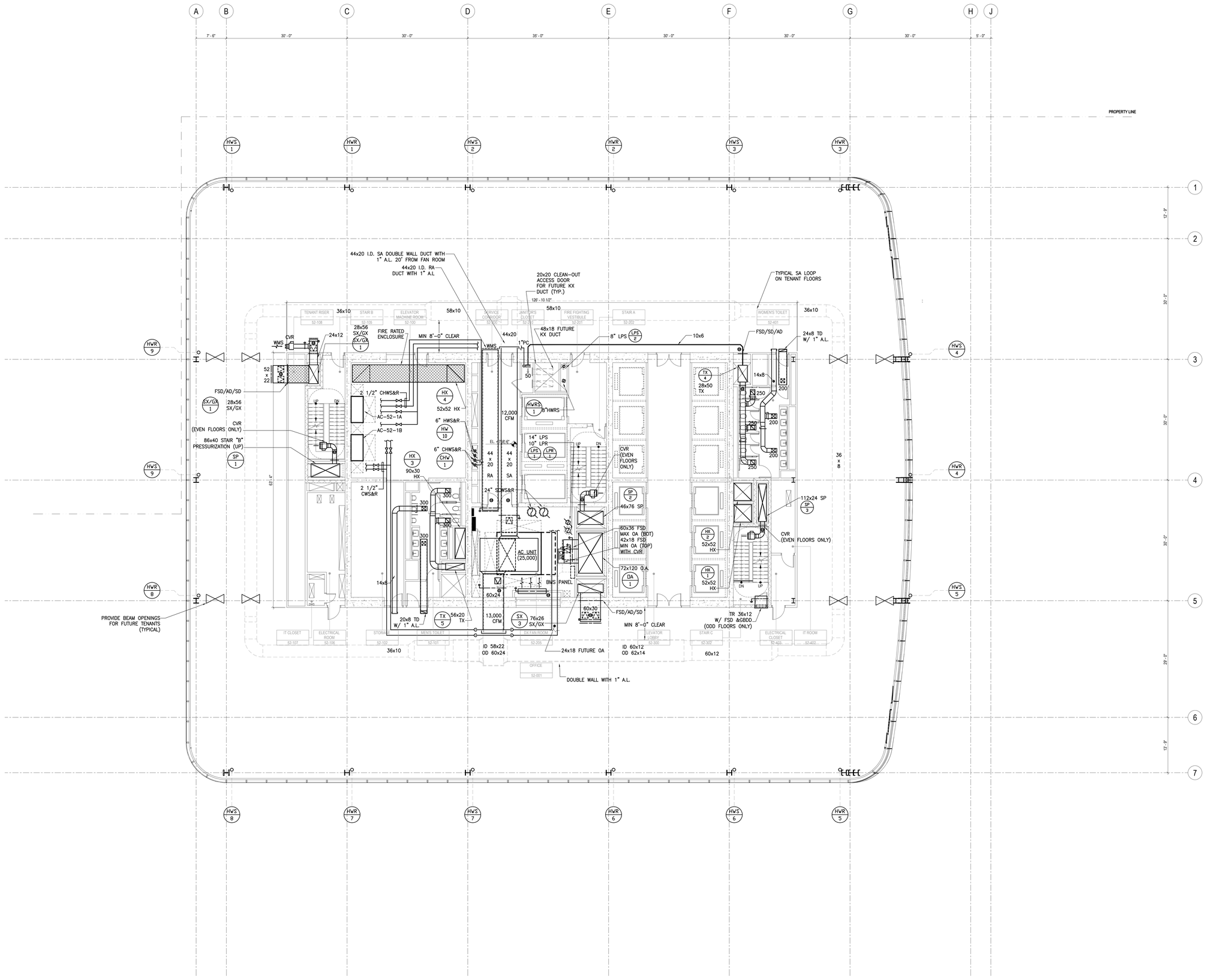
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: M-150.00
Date: 20 JUN 2014	Sheet No.: M-150
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
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Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

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250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
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Vibration Consultant

Wilson, Uhrig & Associates, Inc.
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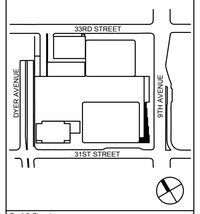
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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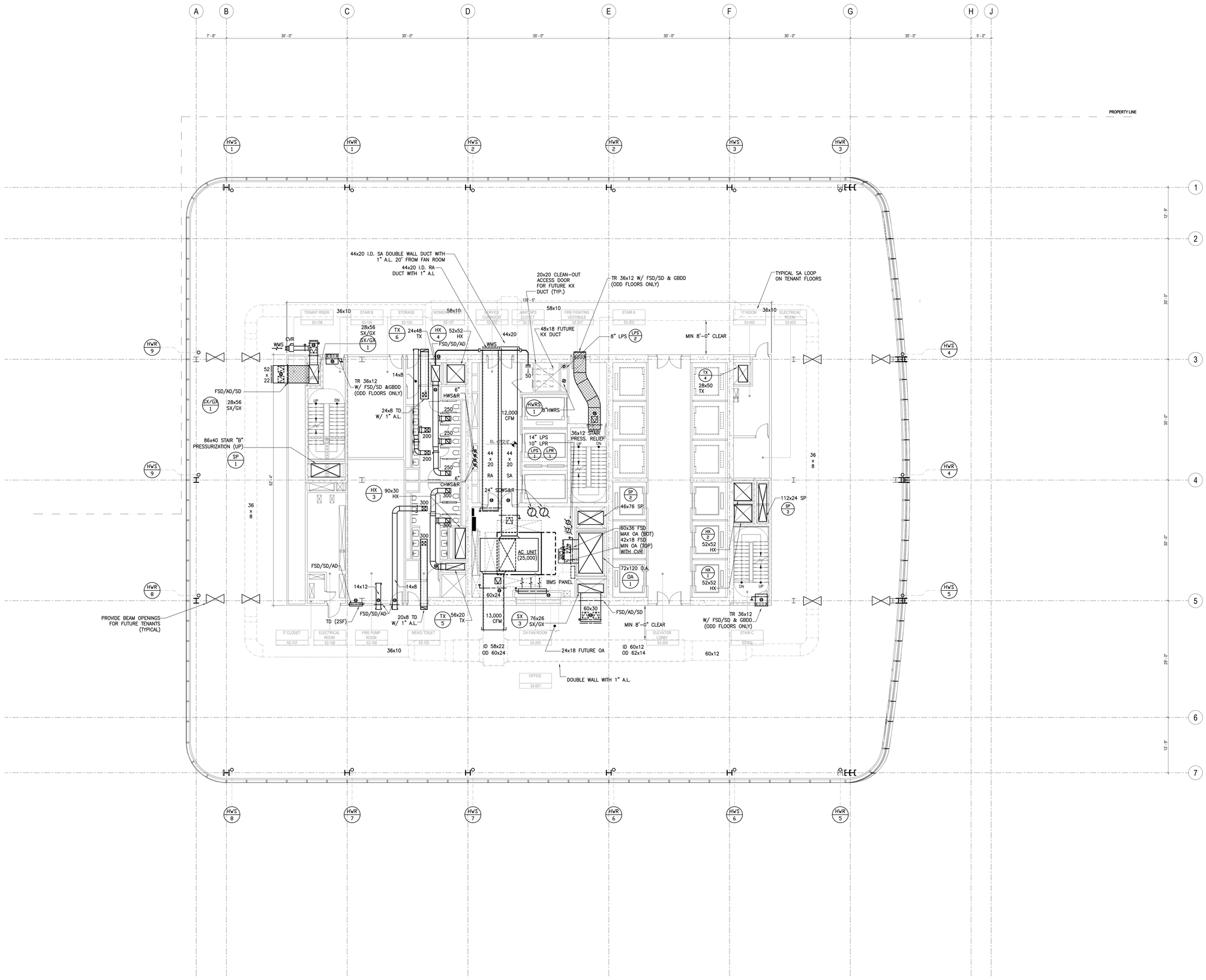
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 52 FLOOR PLAN - HIGH RISE EMR

Project No.: 14830.A.000	B-SCAN Sheet No.: M-152.00
Date: 20 JUN 2014	Sheet No.: M-152
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
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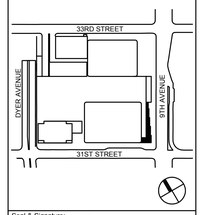
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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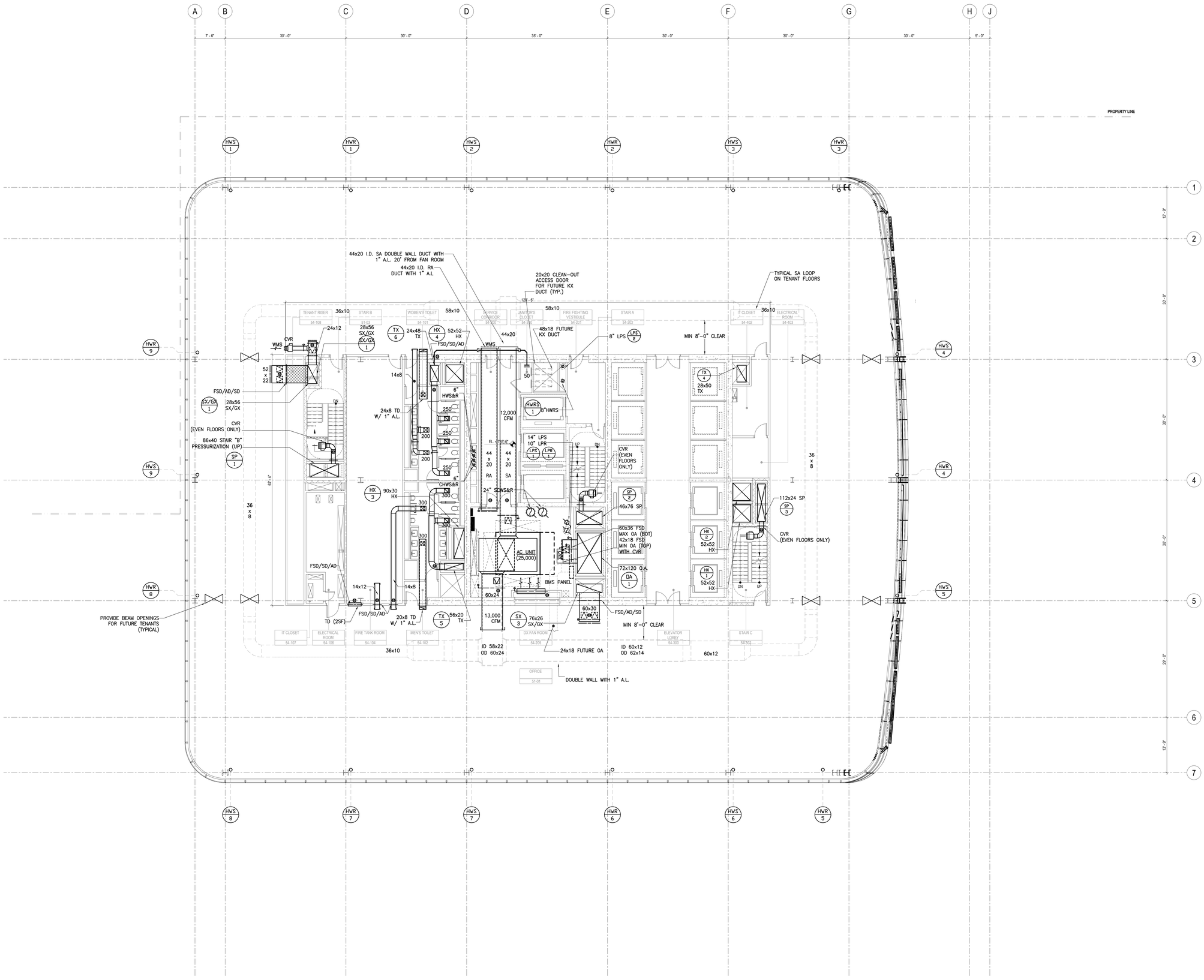
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 53 FLOOR PLAN - HIGH RISE PUMP ROOM

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8"=1'-0"
File No.:
B-SCAN Sheet No.: M-153.00
Sheet No.: M-153
Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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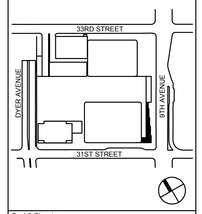
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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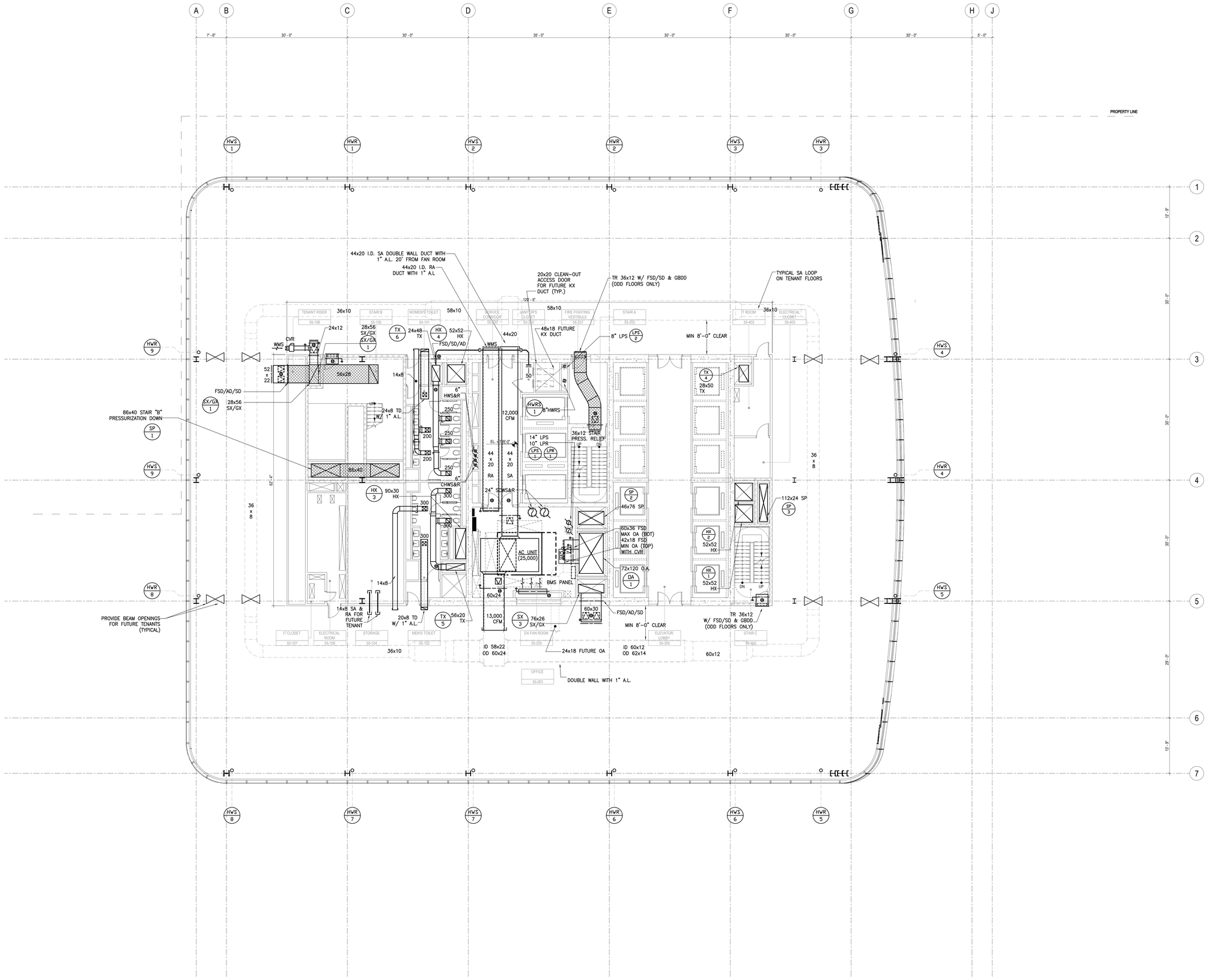
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 54 FLOOR PLAN - HIGH RISE WATER TANK

Project No.: 14830.A.000	B-SCAN Sheet No.: M-154.00
Date: 20 JUN 2014	Sheet No.: M-154
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

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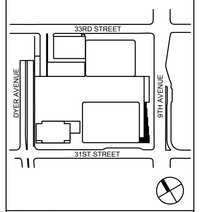
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 55 FLOOR PLAN - HIGH RISE

Project No.: 14830.A.000

Date: 20 JUN 2014

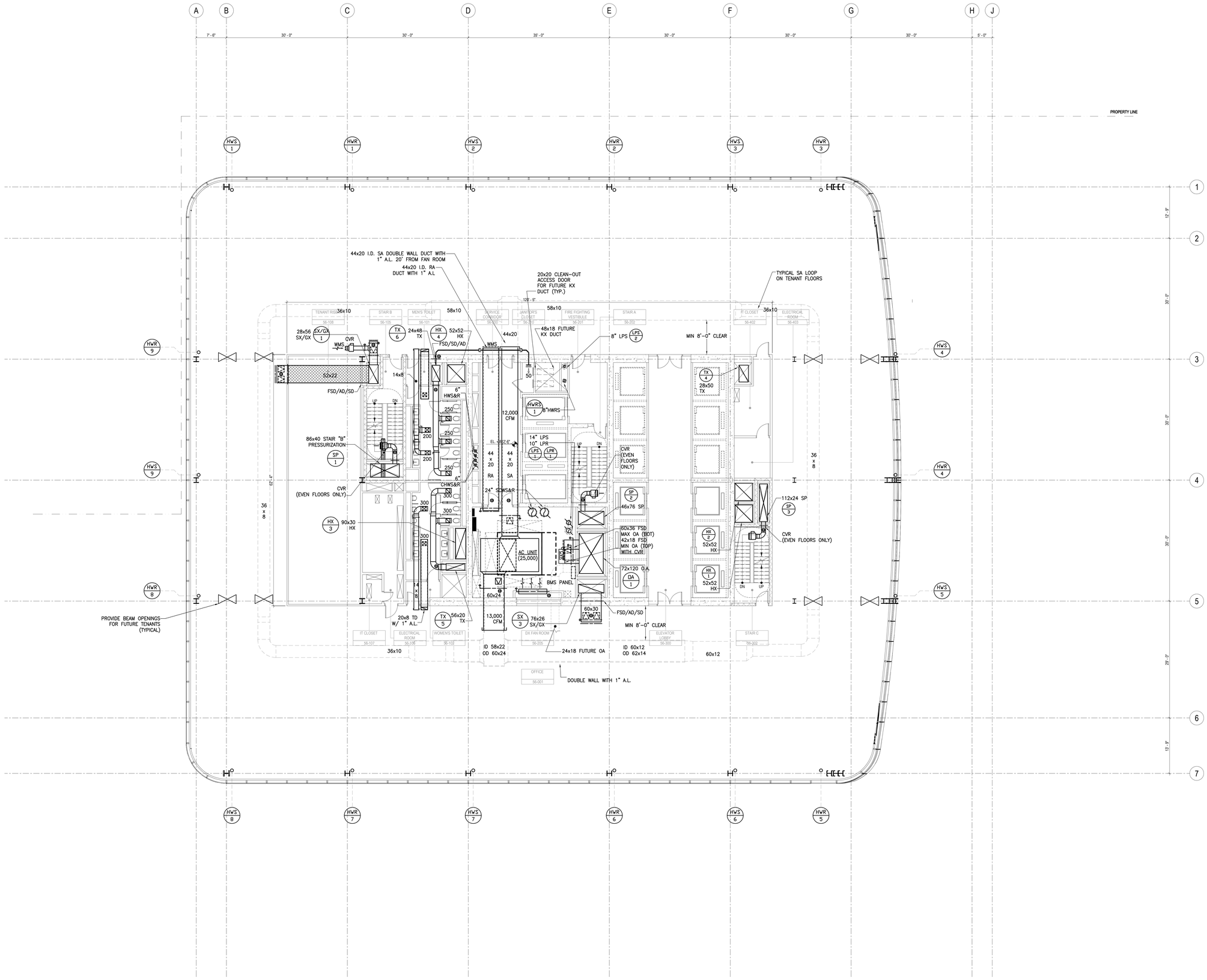
Scale: 1/8"=1'-0"

File No.:

B-SCAN Sheet No.: M-155.00

Sheet No.: M-155

Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

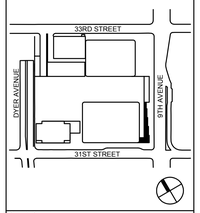
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 56 FLOOR PLAN - HIGH RISE

Project No.: 14830.A.000

Date: 20 JUN 2014

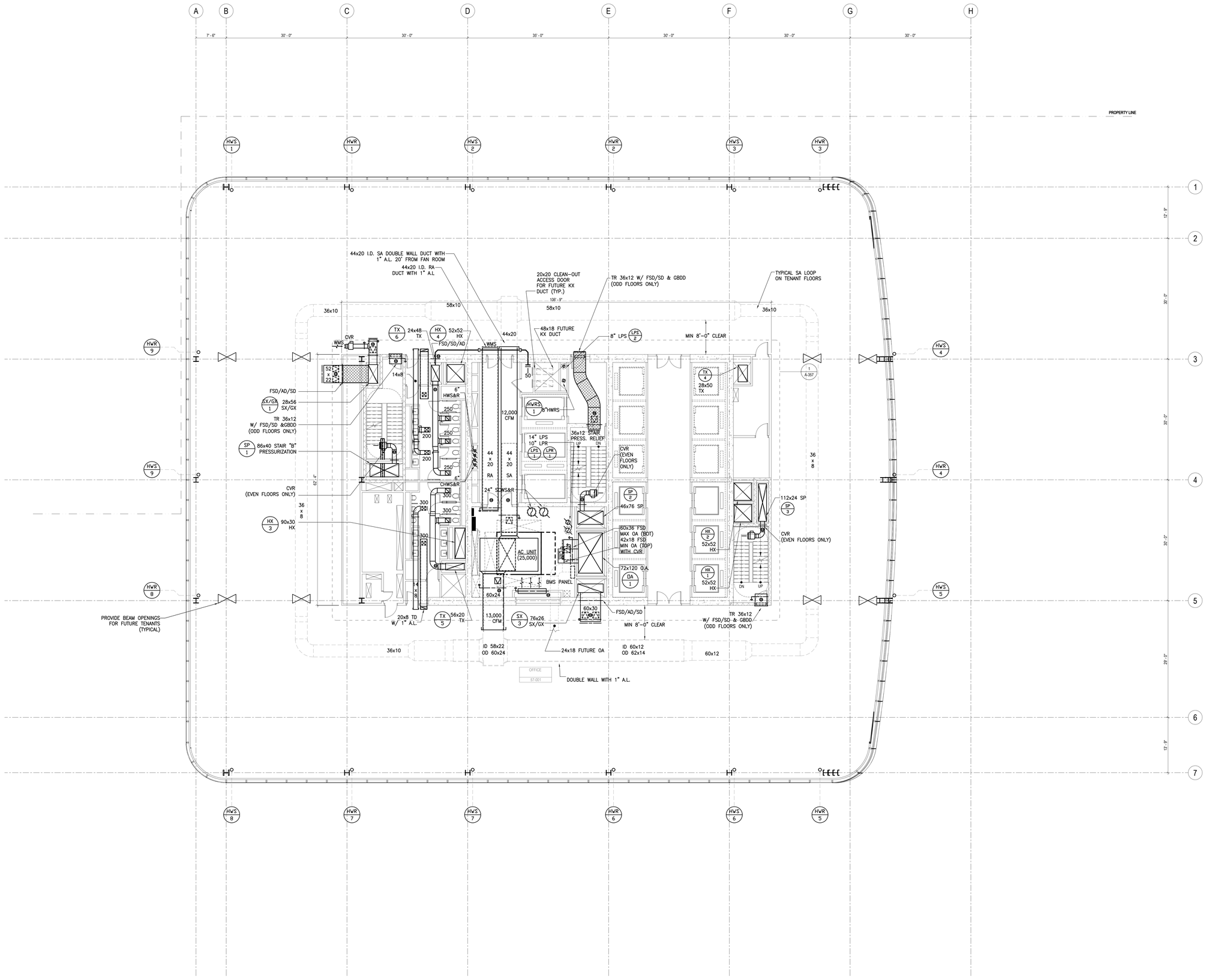
Scale: 1/8"=1'-0"

File No.:

B-SCAN Sheet No.: M-156.00

Sheet No.: M-156

Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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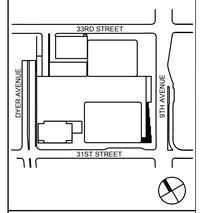
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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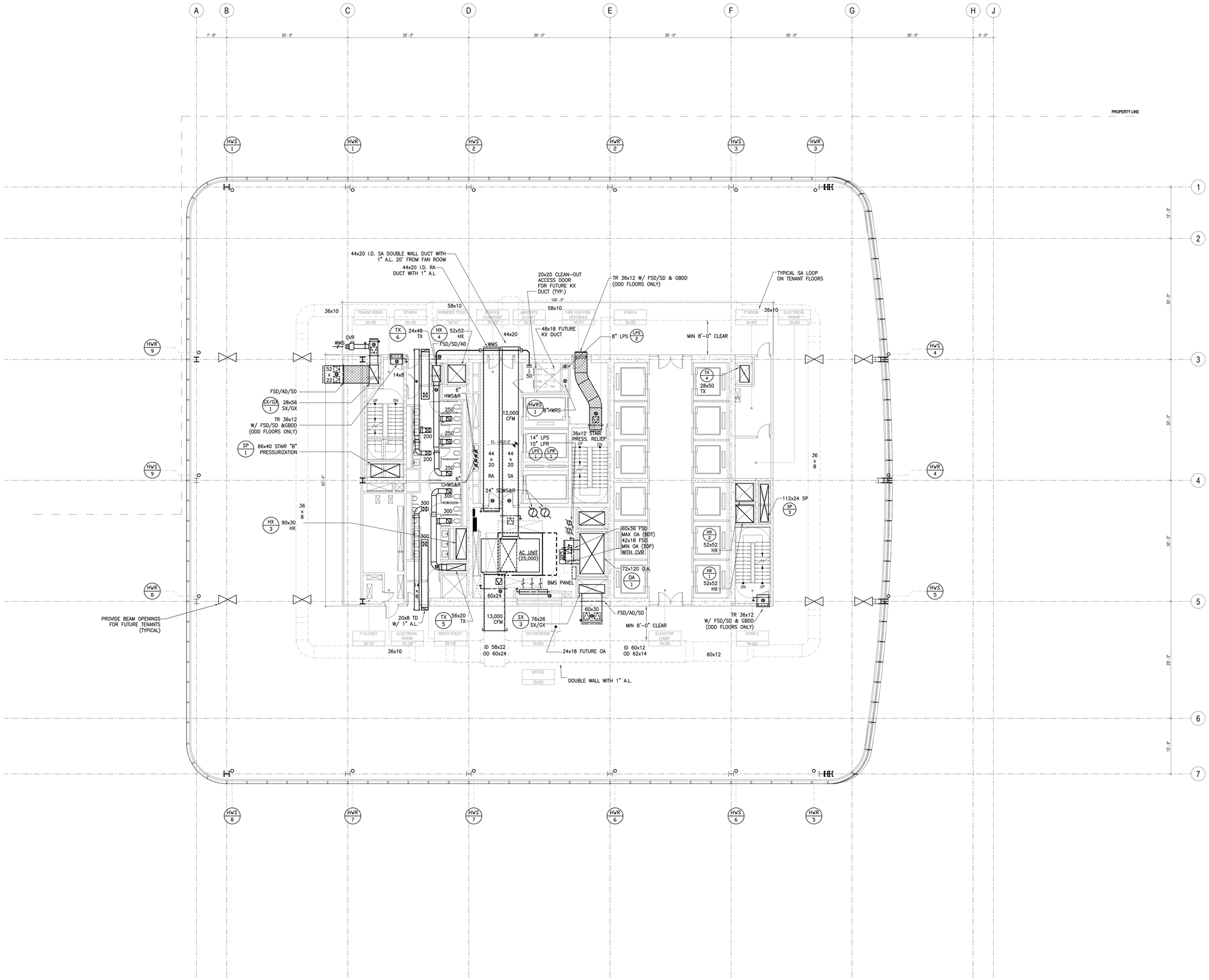
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-157.00
Date: 20 JUN 2014	Sheet No.: M-157
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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475 10th Avenue, New York, NY 10018

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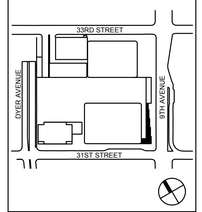
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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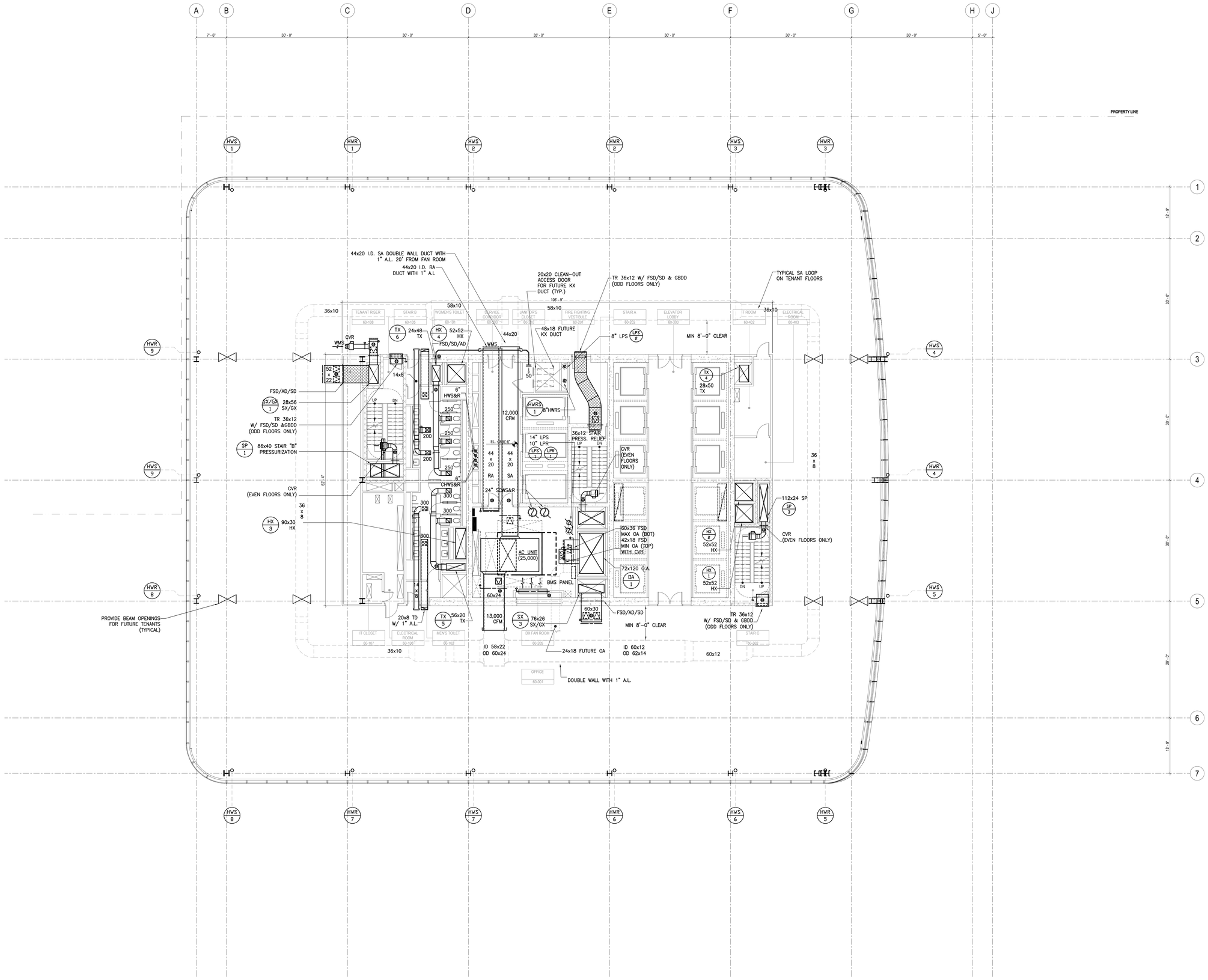
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 59 FLOOR PLAN - HIGH RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-159.00
Date: 20 JUN 2014	Sheet No.: M-159
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
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Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

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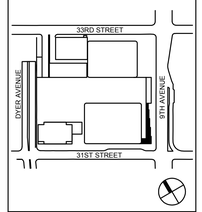
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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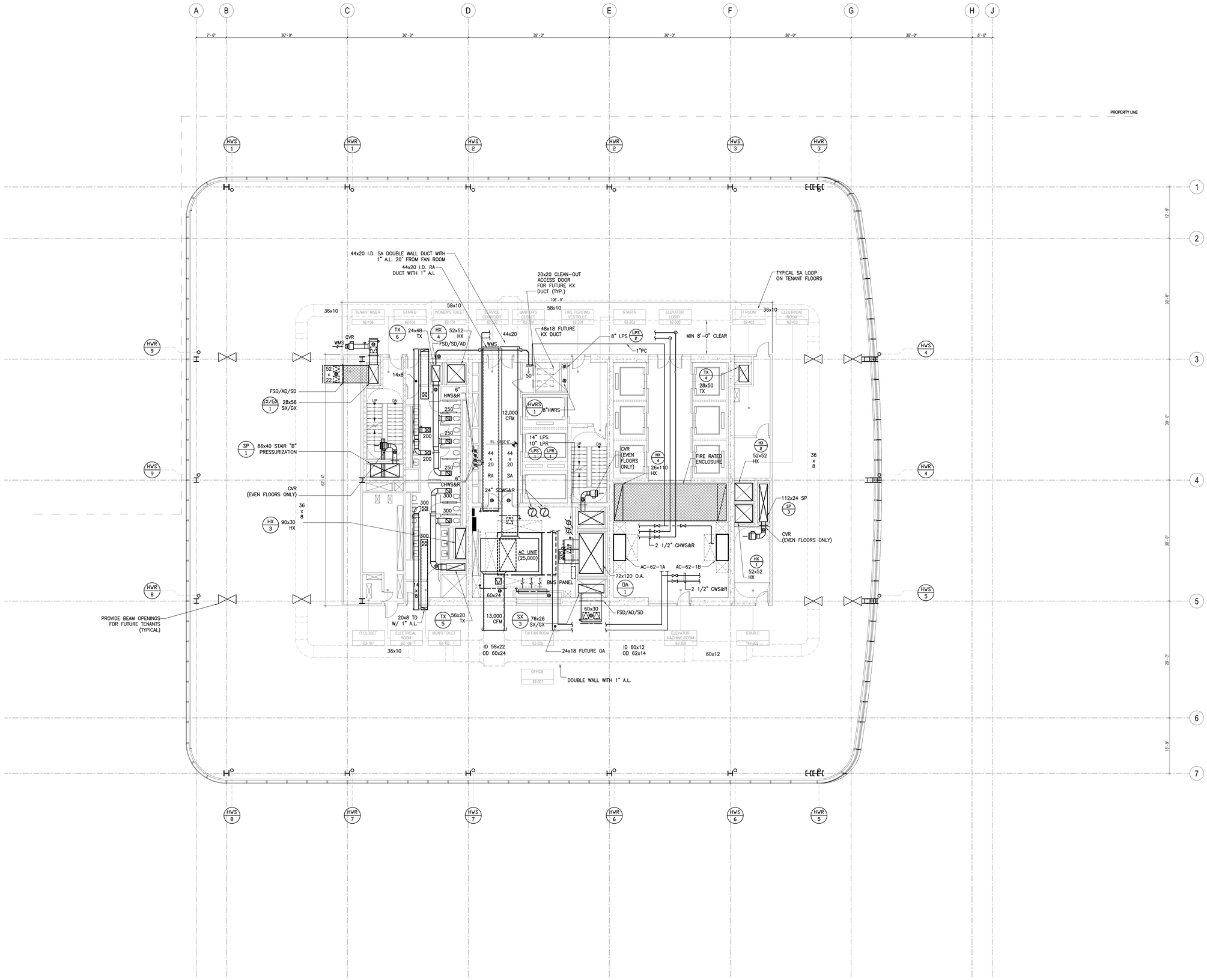
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 60-61 FLOOR PLAN - HIGH RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: M-160.00
Date: 20 JUN 2014	
Scale: 1/8"=1'-0"	Sheet No.: M-160
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
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Philip Habib & Associates
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MEP Engineering
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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

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14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

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Field Operations
475 10th Avenue, New York, NY 10018

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250 State Street #F1, North Haven, CT 06473

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40 Wall Street, New York, NY 10005

Acoustical Consultant
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404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
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Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

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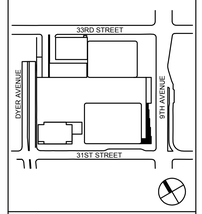
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 62 FLOOR PLAN - HIGH RISE EMR

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8"=1'-0"
File No.:
B-SCAN Sheet No.: M-162.00
Sheet No.: M-162
Page No.:

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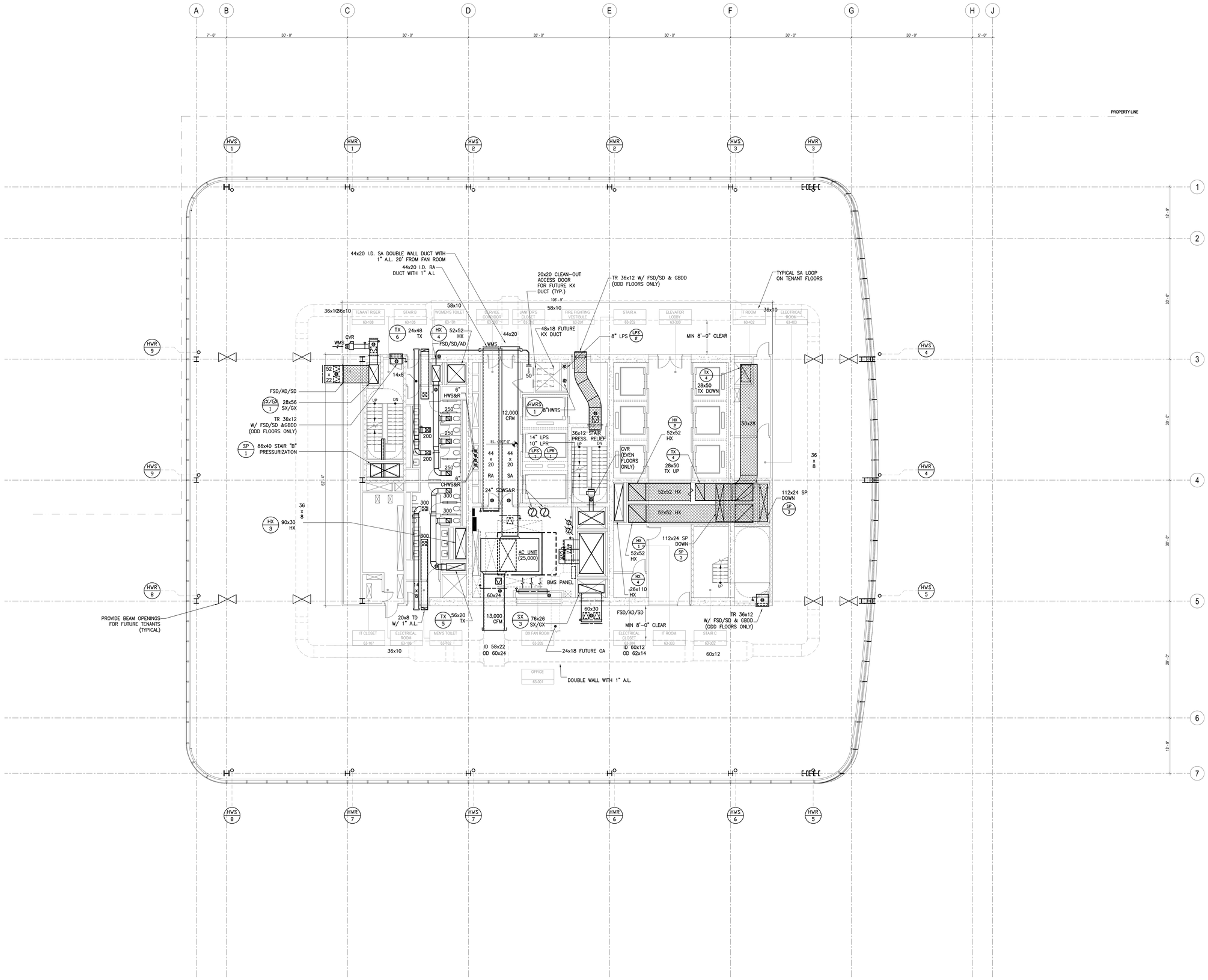

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
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Acoustical Consultant

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404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

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215 West 40th Street, 15th Floor, New York, NY 10018

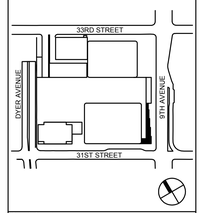
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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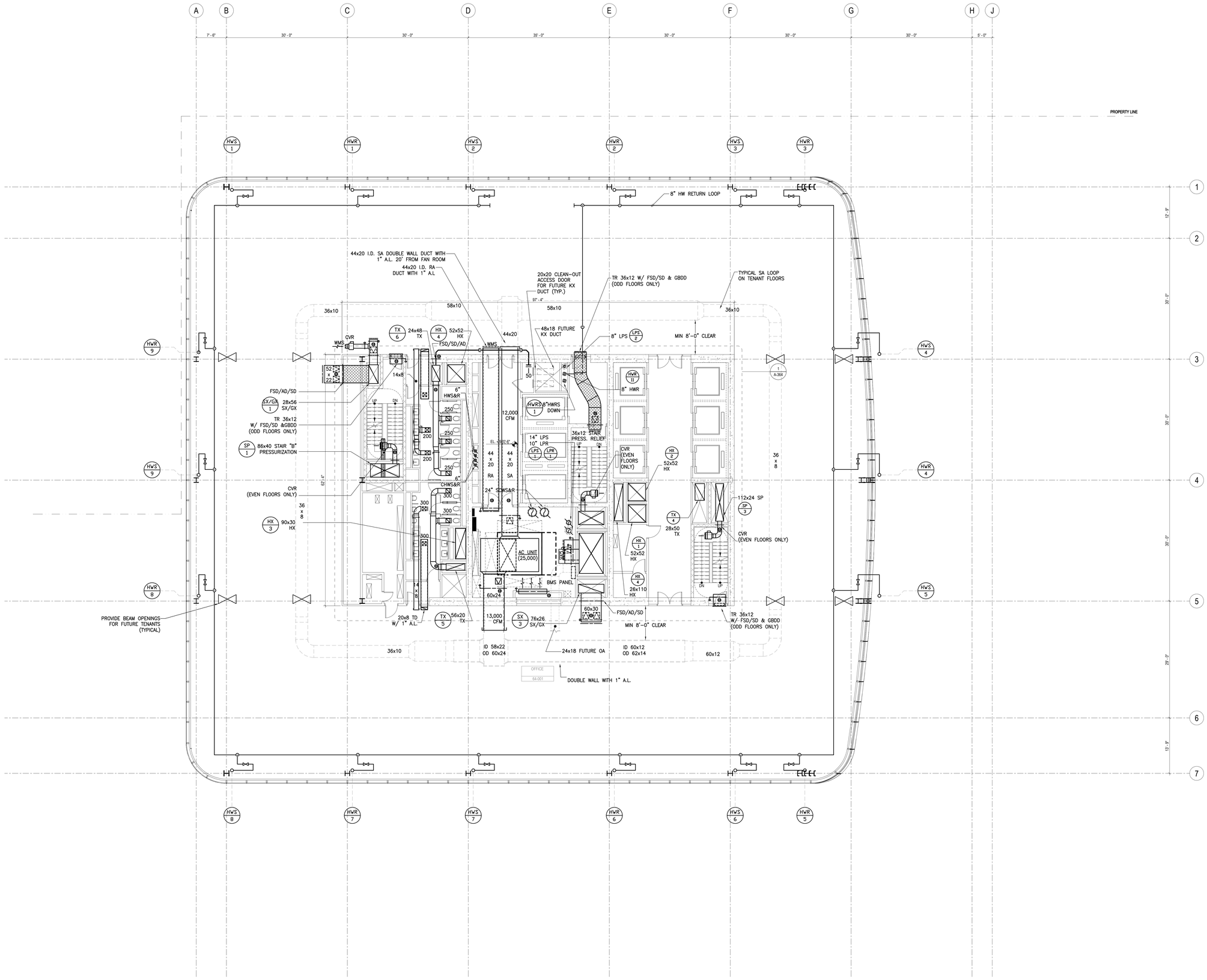
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 63 FLOOR PLAN - HIGH RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-163.00
Date: 20 JUN 2014	Sheet No.: M-163
Scale: 1/8"=1'-0"	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Wind Tunnel Consultant

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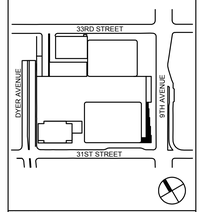
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
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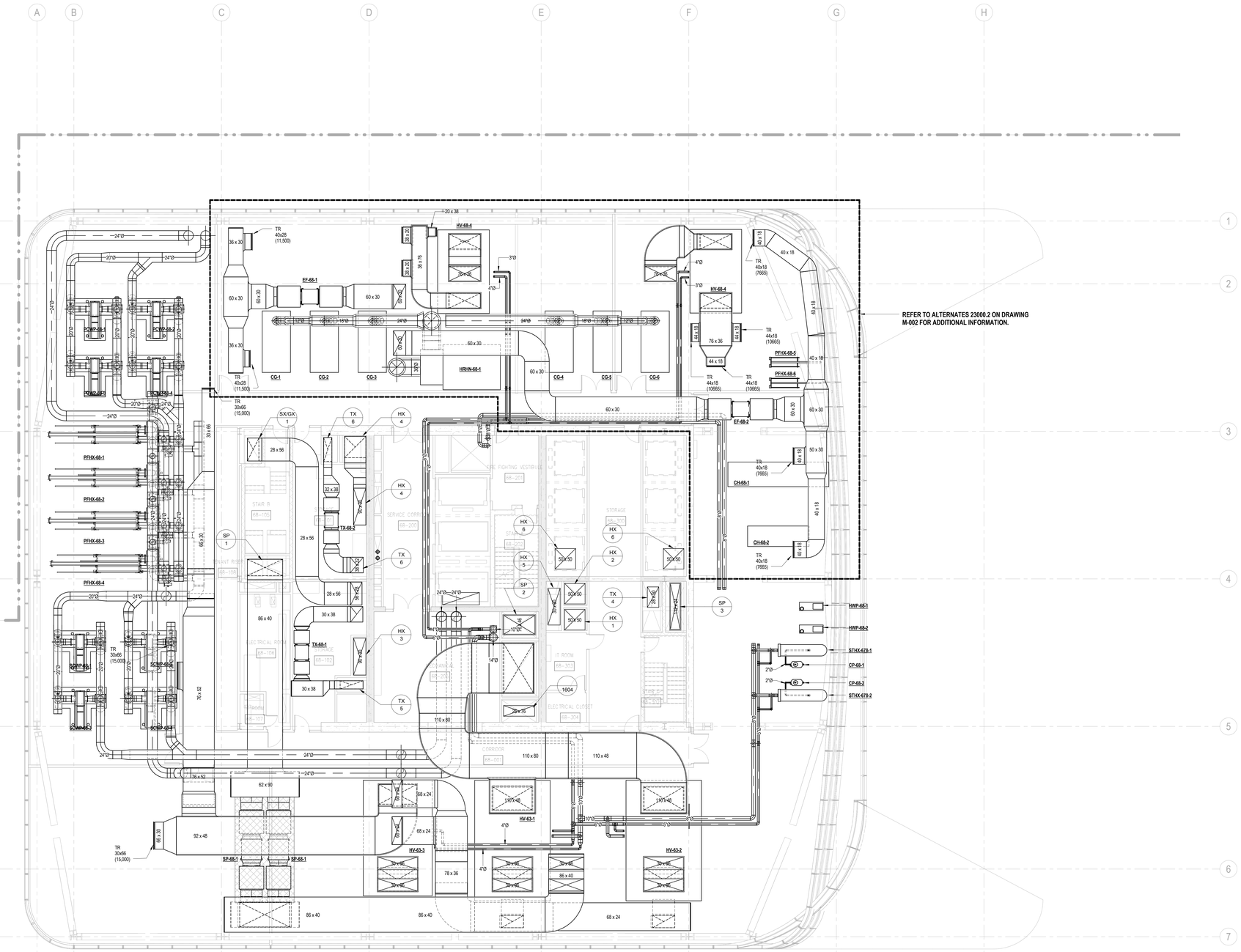
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 64-67 FLOOR PLAN - TYPICAL HIGH RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: M-164.00
Date: 20 JUN 2014	
Scale: 1/8"=1'-0"	Sheet No.: M-164
File No.:	Page No.:



SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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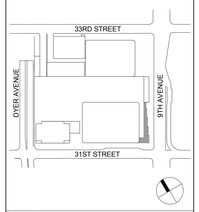
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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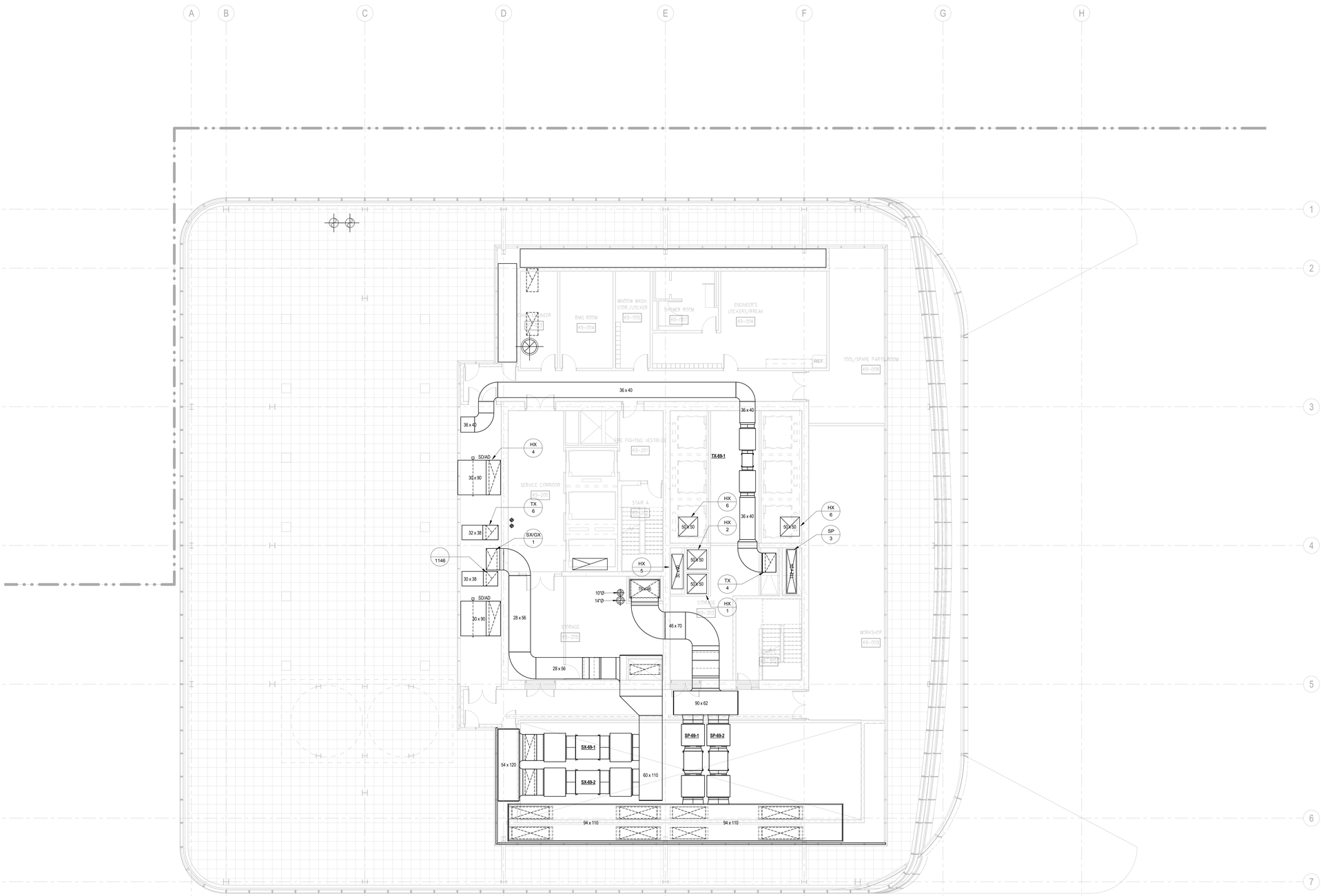
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 68 FLOOR PLAN - MECHANICAL

BUILDING DEPARTMENT NOTE:
THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

Project No.: 14830.A.000	B-SCAN Sheet No.: M-168.00
Date: 20 JUN 2014	Sheet No.: M-168
Scale: 1/8" = 1'-0"	
File No.: M-168	Page No.: 44 OF 77



MECHANICAL LOUVER REQUIREMENTS

ZONES	FREE AREA REQUIRED	UNITS
ZONES A	650	SQFT
ZONES B	400	SQFT
ZONES C	700	SQFT

FREE AREA SQUIRE FOOTAGE ARE BASED ON 45% MINIMUM FREE AREA

LOUVERS TO BE STORM CLASS, AMCA-CERTIFIED, LAB TESTED AND RATED IN ACCORDANCE WITH AMCA 500-L (LABORATORY METHODS OF TESTING LOUVERS FOR RATING, LATEST EDITION) AND AMCA 511 (CERTIFIED RATINGS PROGRAM-PRODUCT RATING MANUAL FOR AIR CONTROL DEVICES, LATEST EDITION)

STORM CLASS LOUVERS SHALL HAVE AN AMCA CERTIFIED CLASS "A" RATING FOR WIND-DRIVEN RAIN AT 29 MPH, AND 3.0" RAINFALL PER HOUR, AND SHALL HAVE NOT LESS THAN AN AMCA CERTIFIED CLASS "B" RATING FOR WIND-DRIVEN RAIN AT 50 MPH, AND 8.0" RAINFALL PER HOUR.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
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MEP Engineering

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Edgett Williams Consulting Group, Inc.
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New York, NY 10122

Landscape Consultant

Field Operations
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Security Consultant

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250 State Street #F1, North Haven, CT 06473

Blast Consultant

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Acoustical Consultant

Cerami & Associates
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Vibration Consultant

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Code Consultant

Code Consultants Professional Engineers PC
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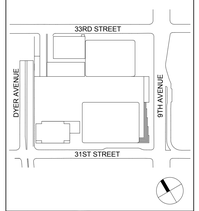
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50%DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE

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Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: M-169
B-SCAN Sheet No.: M-169.00
Sheet No.: M-169
Page No.: 45 OF 77

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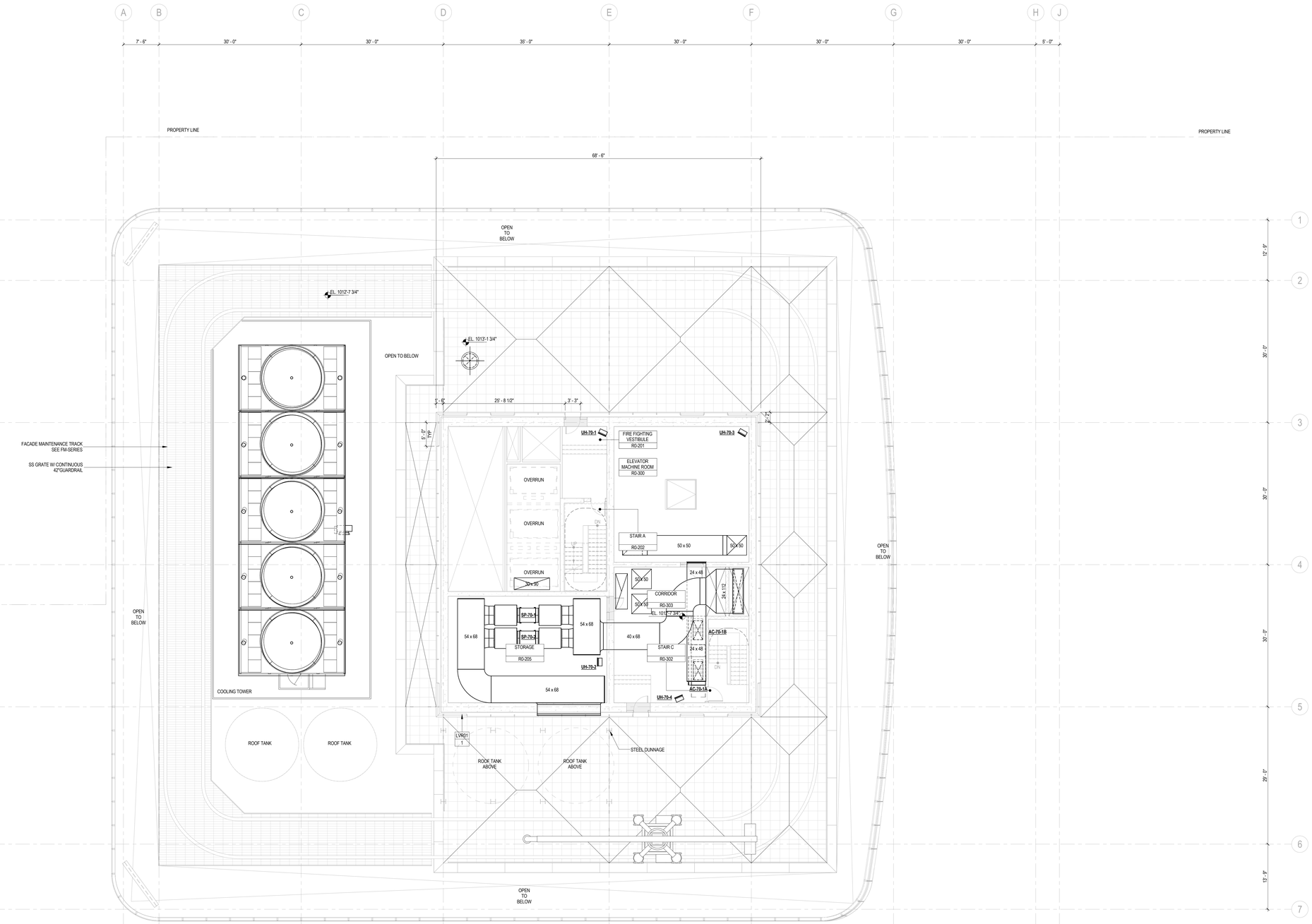

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
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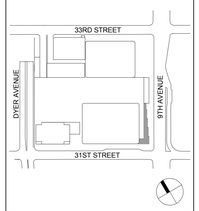
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL ROOF PLAN - MECHANICAL PENTHOUSE

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Project No.: 14830.A.000	B-SCAN Sheet No.: M-170.00
Date: 20 JUN 2014	Sheet No.: M-170
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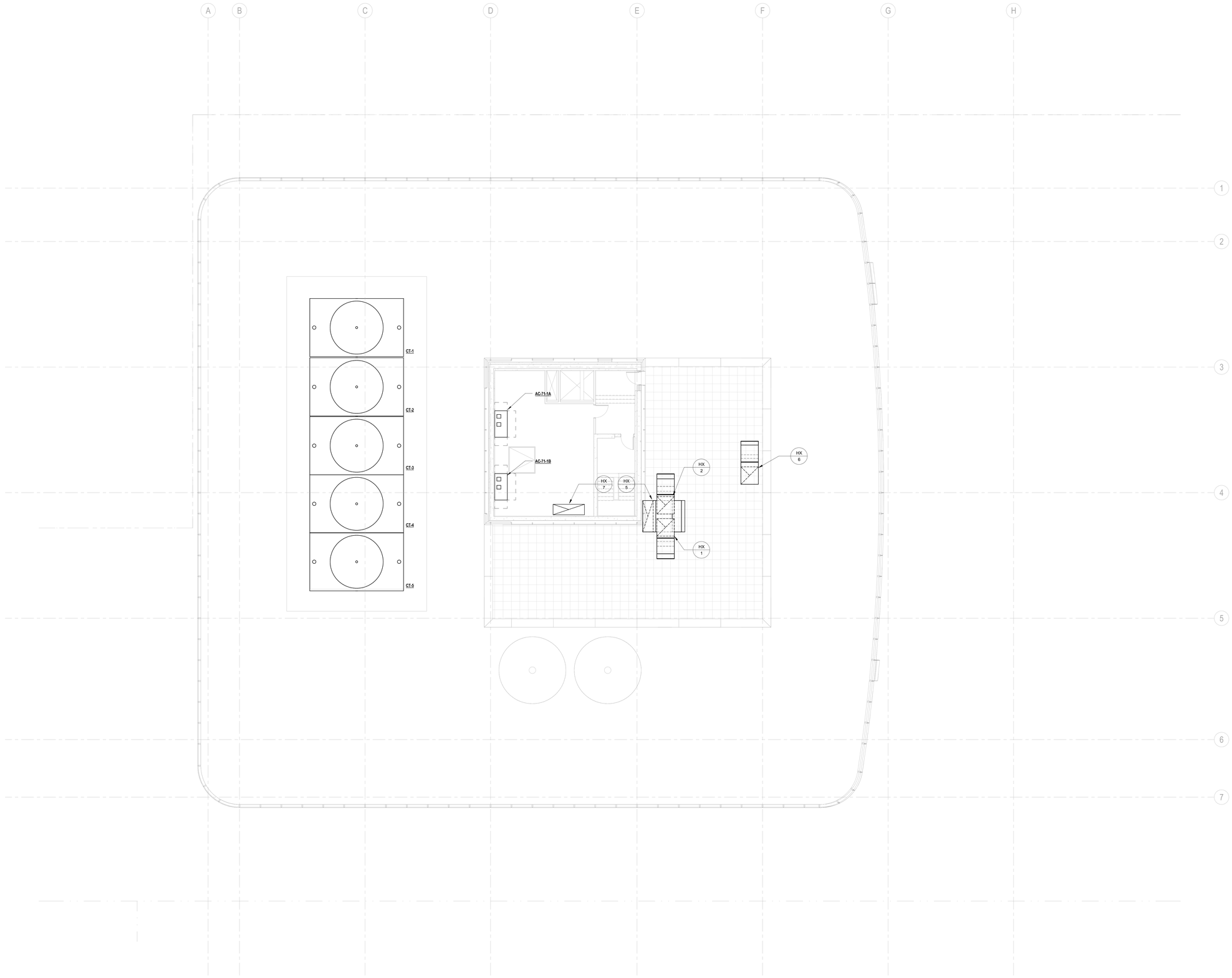

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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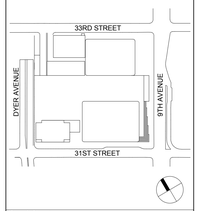
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILATION

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MECHANICAL ROOF PLAN - MECHANICAL PENTHOUSE ROOF

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Date: 20 JUN 2014	Sheet No.: M-171
Scale: 1/8" = 1'-0"	
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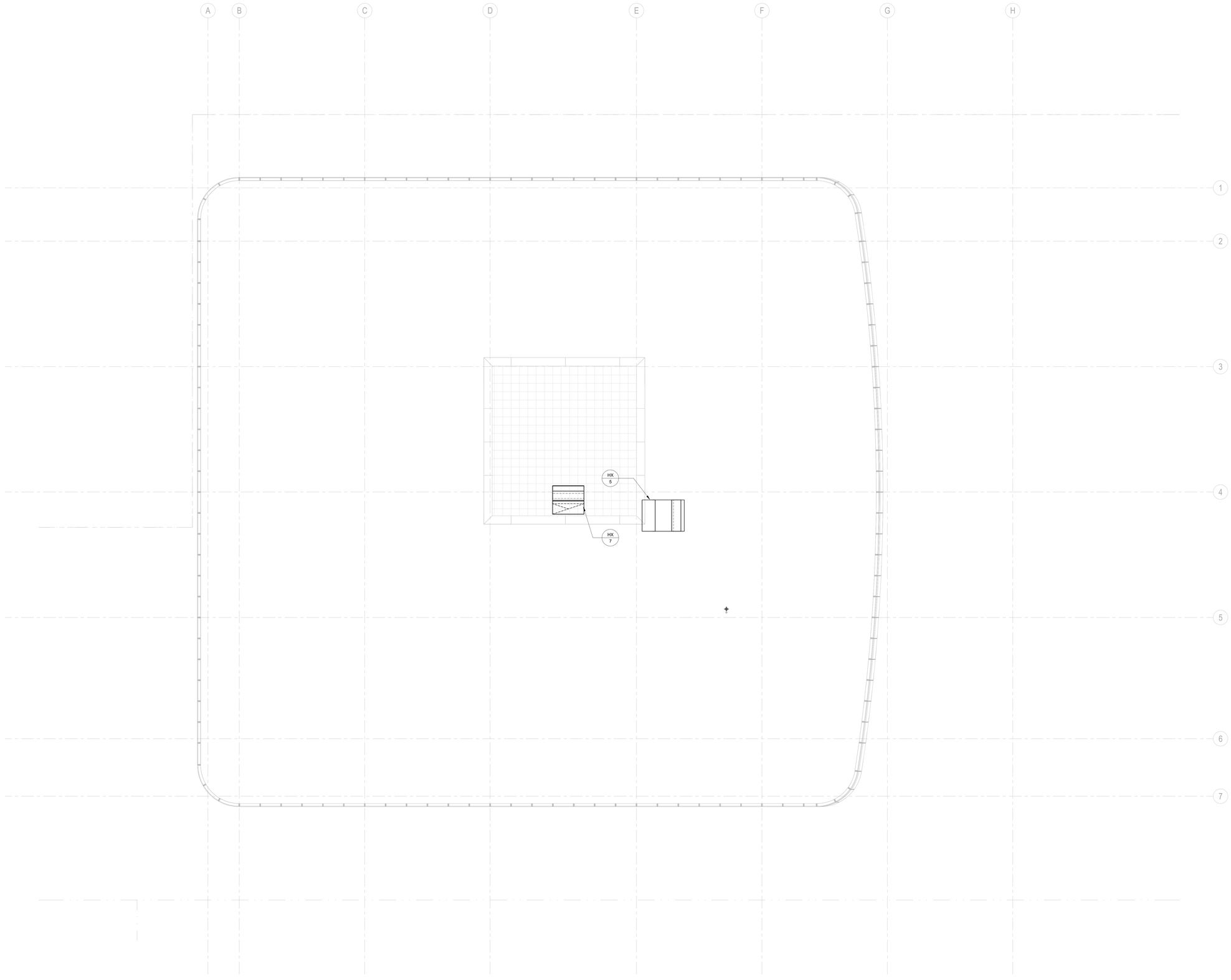

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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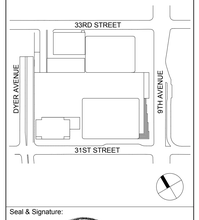
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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MECHANICAL ROOF PLAN

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Project No.: 14830.A.000	B-SCAN Sheet No.: M-172.00
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Scale: 1/8" = 1'-0"	
File No.: M-172	Page No.: 48 OF 77

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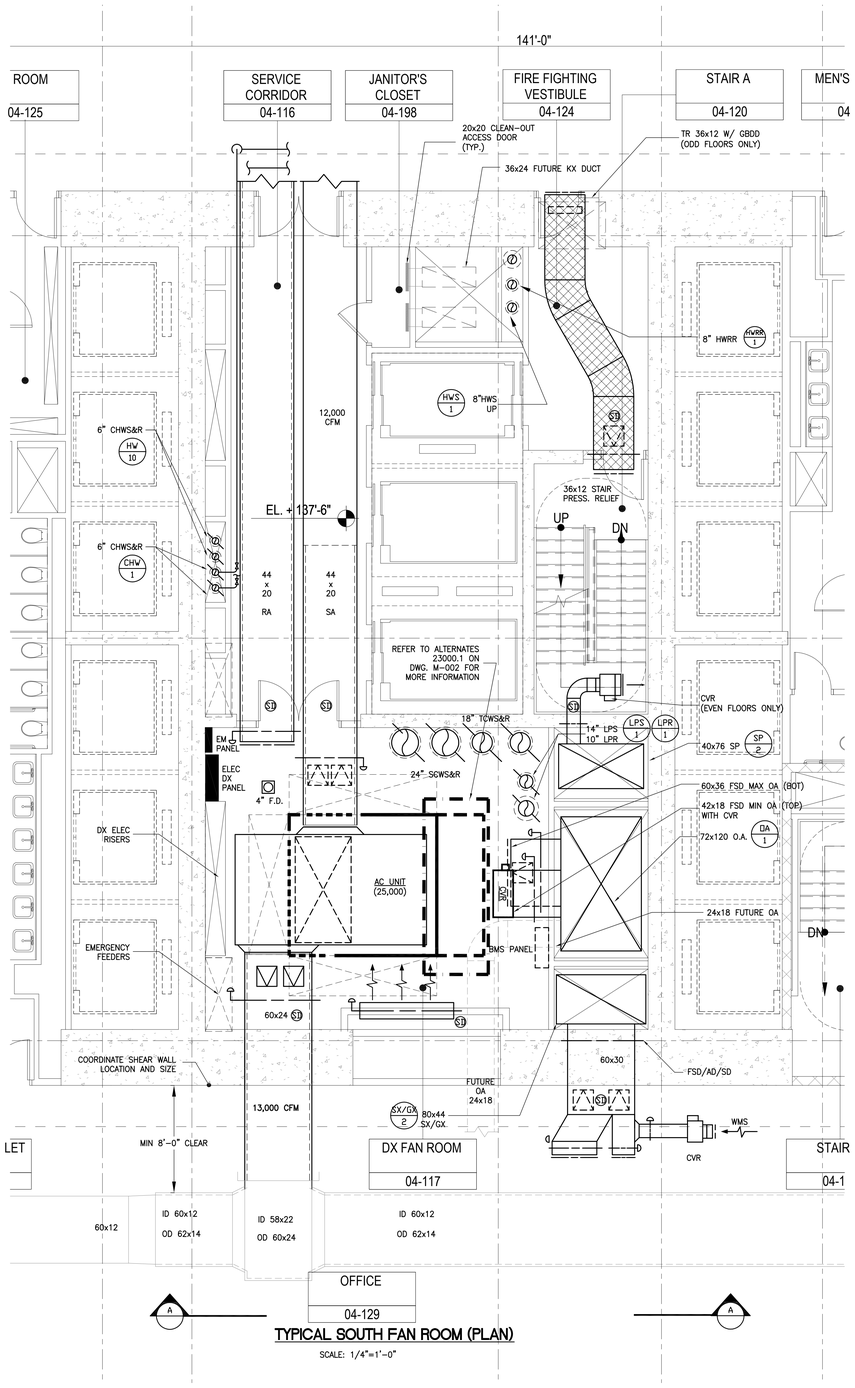

TYPICAL SOUTH FAN ROOM (PLAN)

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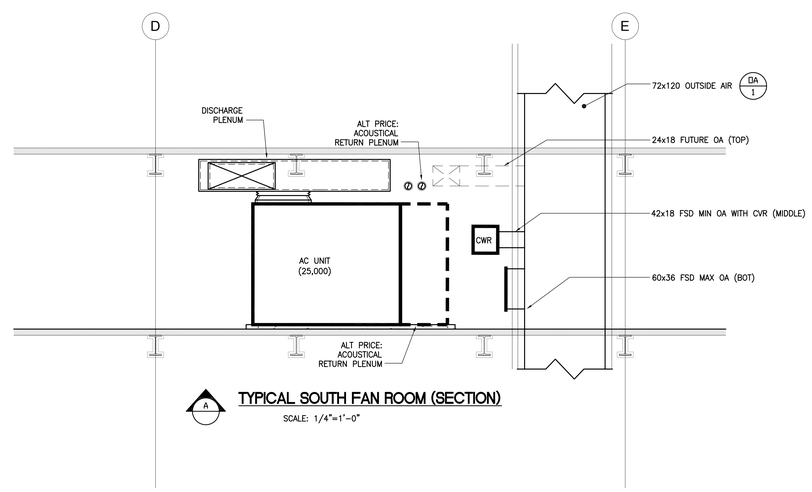

TYPICAL SOUTH FAN ROOM (SECTION)

SCALE: 1/4"=1'-0"

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Facade Maintenance Consultant

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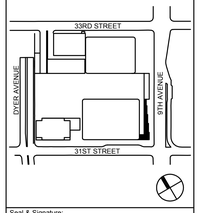
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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MECHANICAL TYPICAL FAN ROOM ENLARGED PLAN

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: 1/4"=1'-0"

File No.:

B-SCAN Sheet No.: M-200.00

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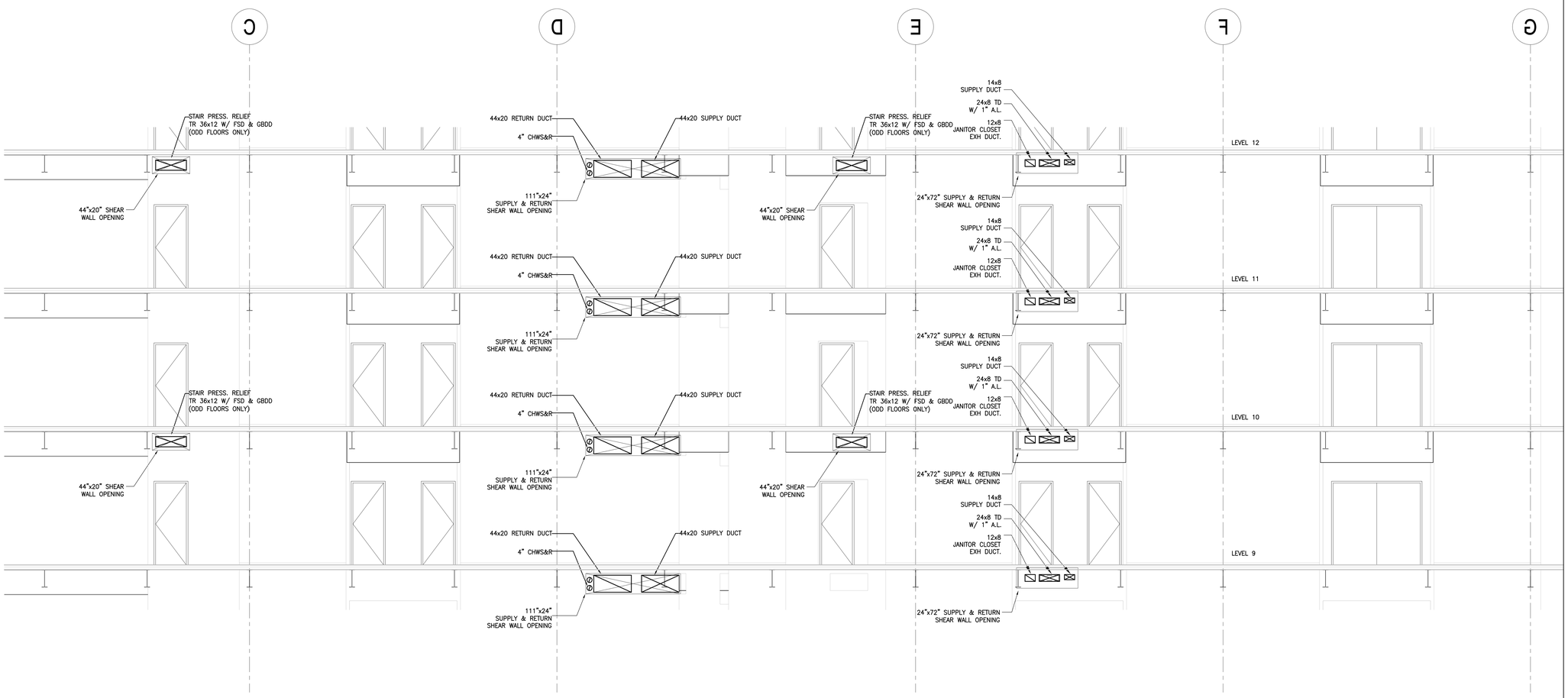

NORTH SHEAR WALL SECTIONS

SCALE: 1/4"=1'-0"

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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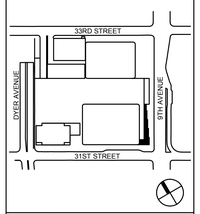
Key Plan:



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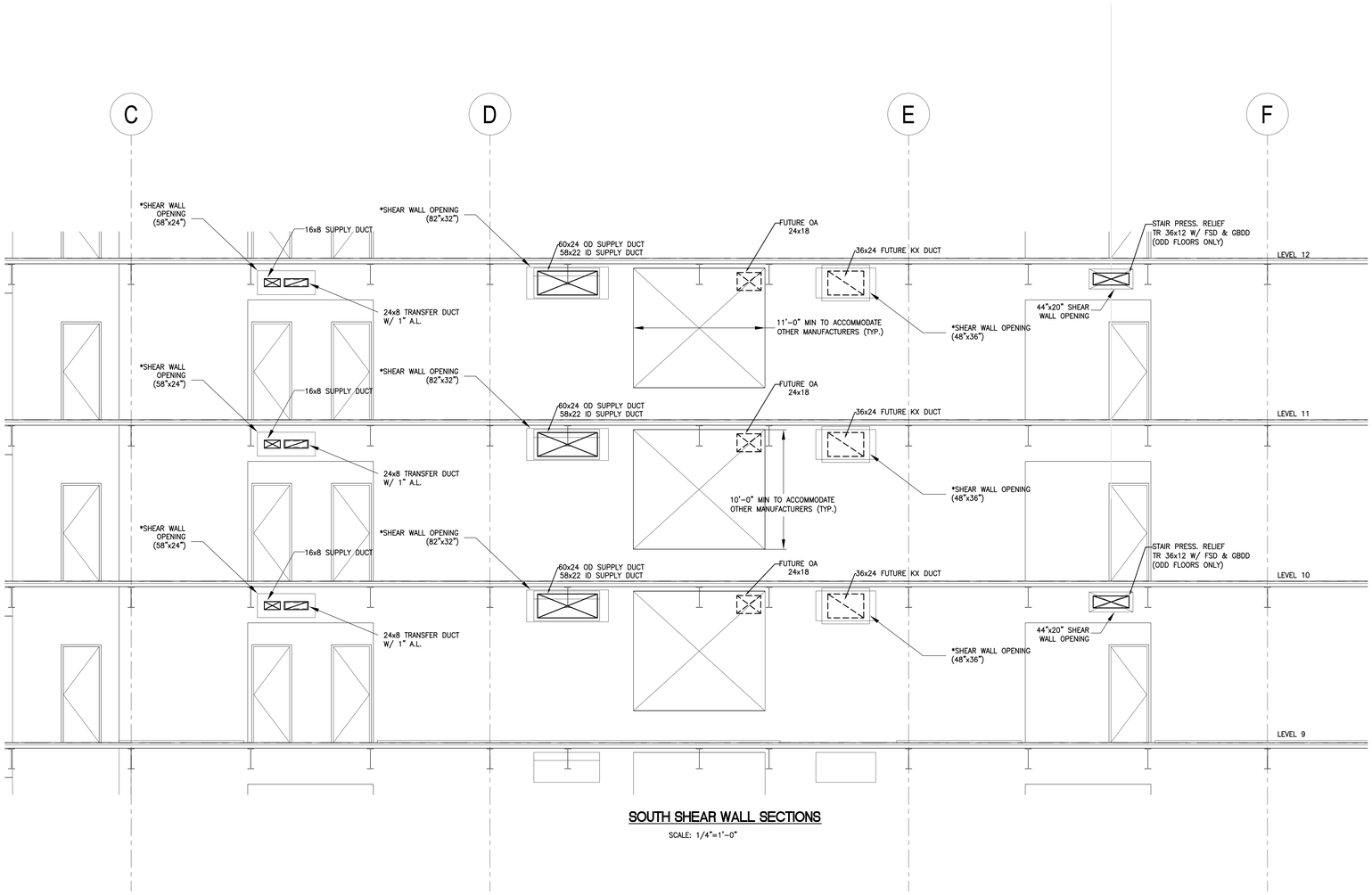
MECHANICAL NORTH SHEAR WALL SECTIONS

Project No.: 14830.A.000	B-SCAN Sheet No.: M-300.00
Date: 20 JUN 2014	Sheet No.: M-300
Scale: 1/4"=1'-0"	
File No.:	Page No.:



SOUTH SHEAR WALL SECTIONS

SCALE: 1/4"=1'-0"

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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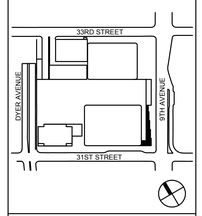

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MECHANICAL SOUTH SHEAR WALL SECTIONS

Project No.: 14830.A.000
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B-SCAN Sheet No.: M-301.00
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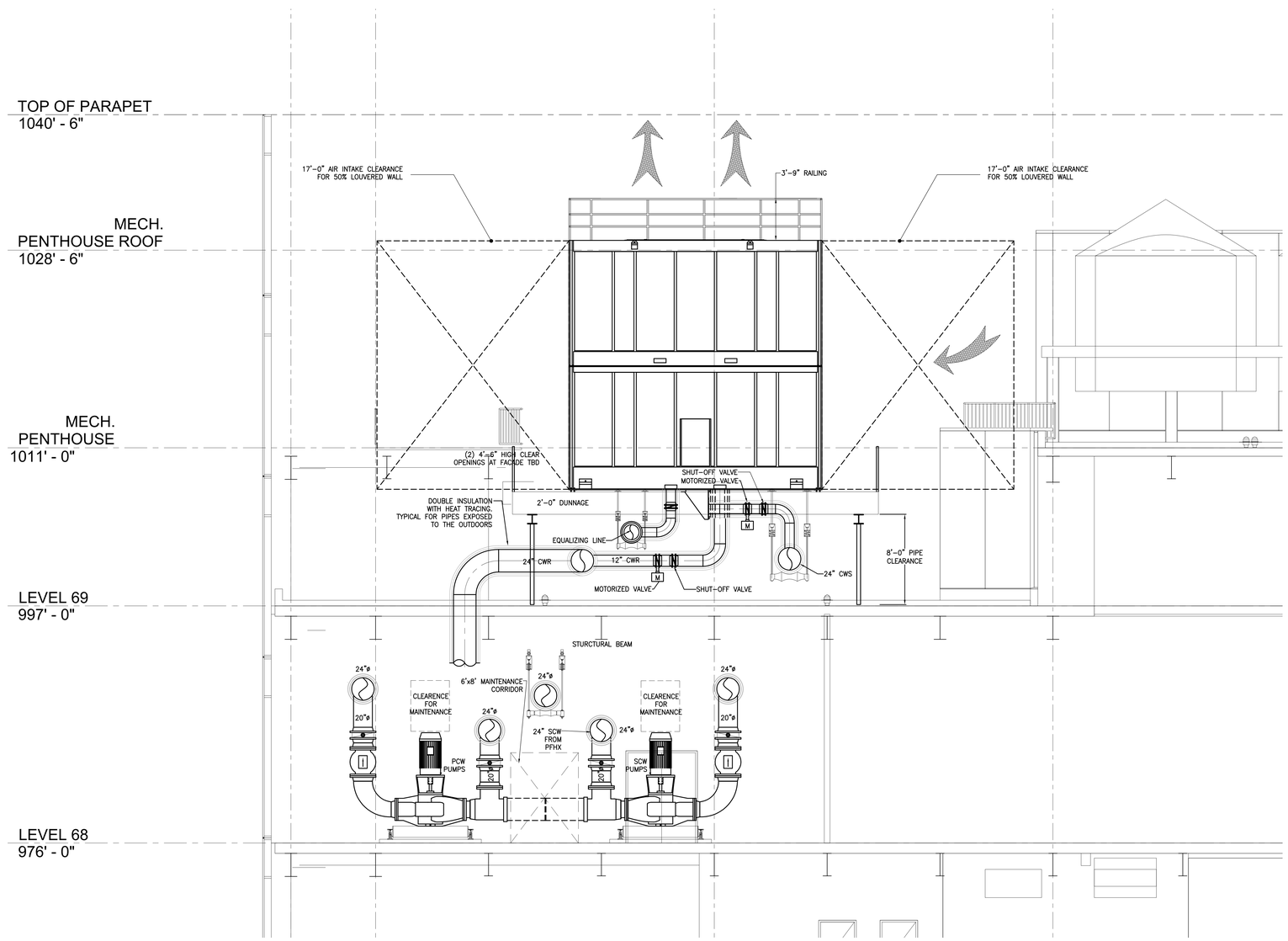

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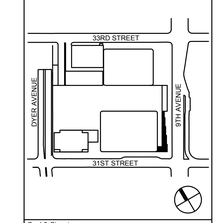
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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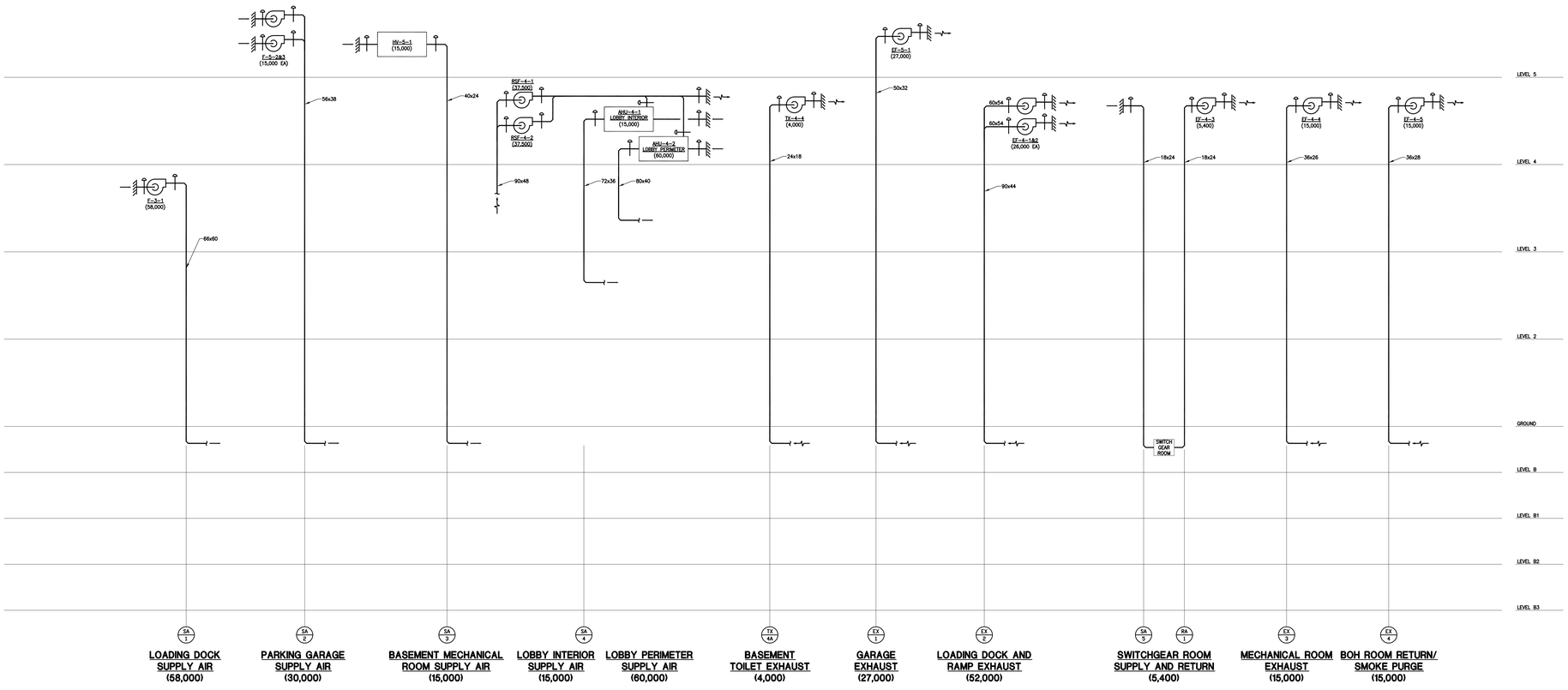
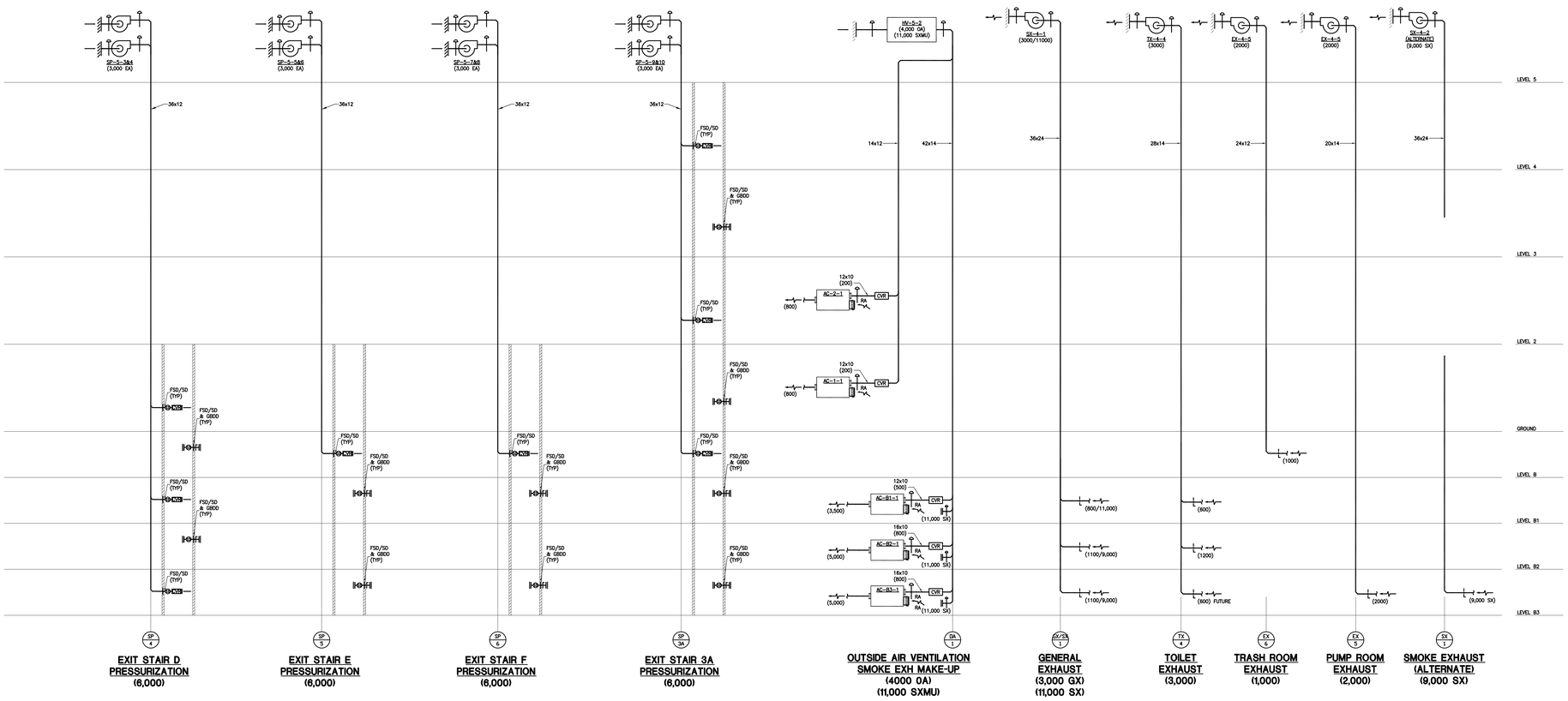
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL COOLING TOWER ROOF SECTION

Project No.: 14830.A.000	B-SCAN Sheet No.: M-302.00
Date: 20 JUN 2014	Sheet No.: M-302
Scale: 1/4"=1'-0"	
File No.:	Page No.:





MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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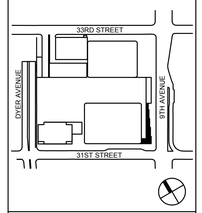
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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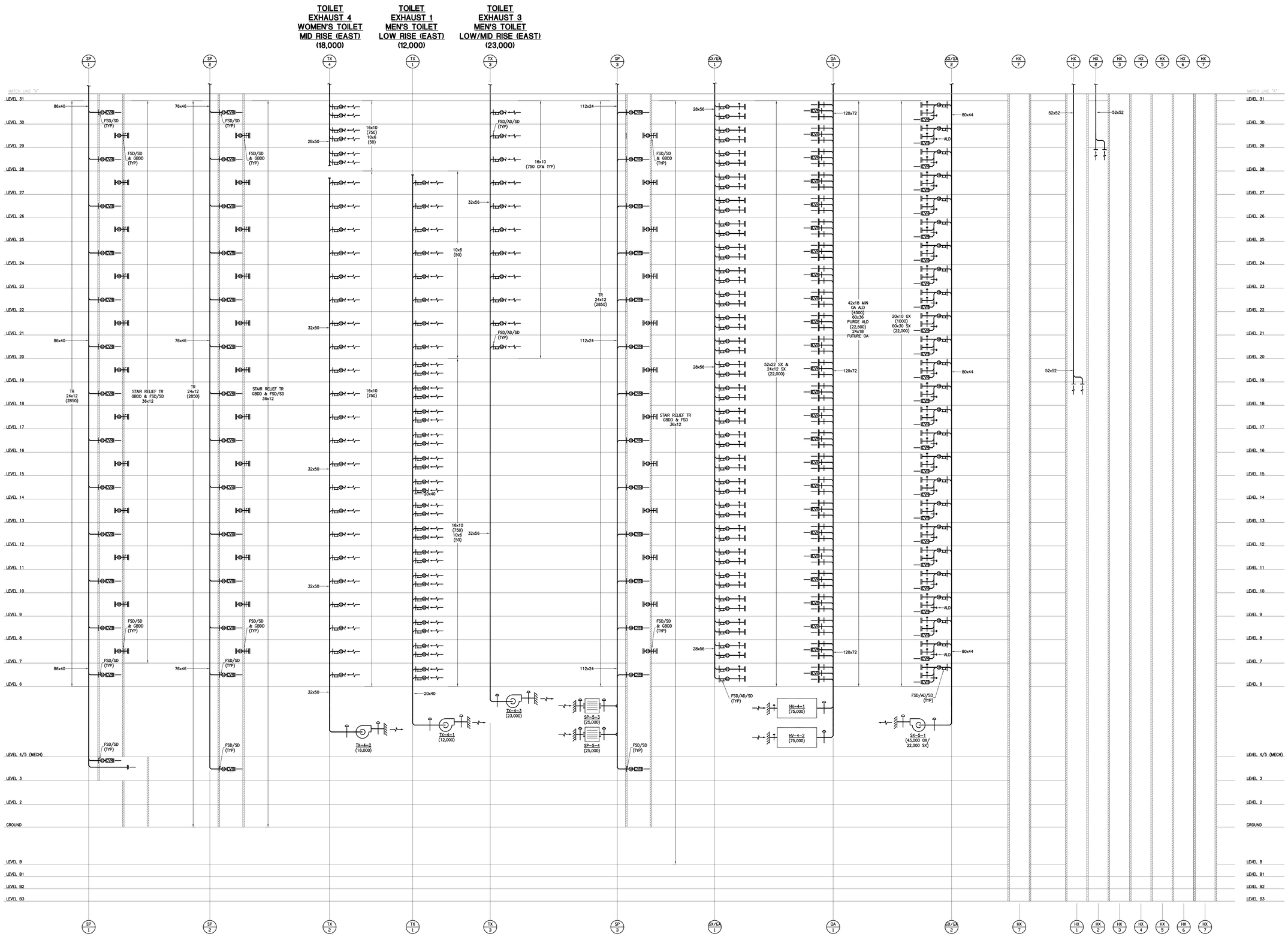
Sheet Name:

MECHANICAL BASEMENT AIR RISER DIAGRAM

Project No.: 14830.A.000	B-SCAN Sheet No.: M-400.00
Date: 20 JUN 2014	Sheet No.: M-400
Scale: NTS	
File No.:	Page No.:



SP 1	SP 2	TX 4	TX 1	TX 3	SP 3	GX/GA 1	DA 1	GX/GA 2	HX 7	HX 1	HX 2	HX 3	HX 4	HX 5	HX 6	HX 7
EXIT STAIR B PRESSURIZATION (50,000)	EXIT STAIR A PRESSURIZATION (50,000)	TOILET EXHAUST 2 WOMEN'S TOILET LOW RISE (WEST) (18,000)	TOILET EXHAUST 1 MEN'S TOILET LOW RISE (EAST) (12,000)	TOILET EXHAUST 3 MEN'S TOILET LOW/MID RISE (EAST) (23,000)	EXIT STAIR C PRESSURIZATION (50,000)	GENERAL EXHAUST/ SMOKE PURGE NORTH (18,000 GX/22,000 SX)	OUTSIDE AIR VENTILATION (150,000)	GENERAL EXHAUST/ SMOKE PURGE SOUTH (43,000 GX/22,000 SX)		PASSENGER/SERVICE ELEVATOR HOIST EXHAUST						

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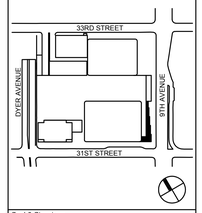
Key Plan:



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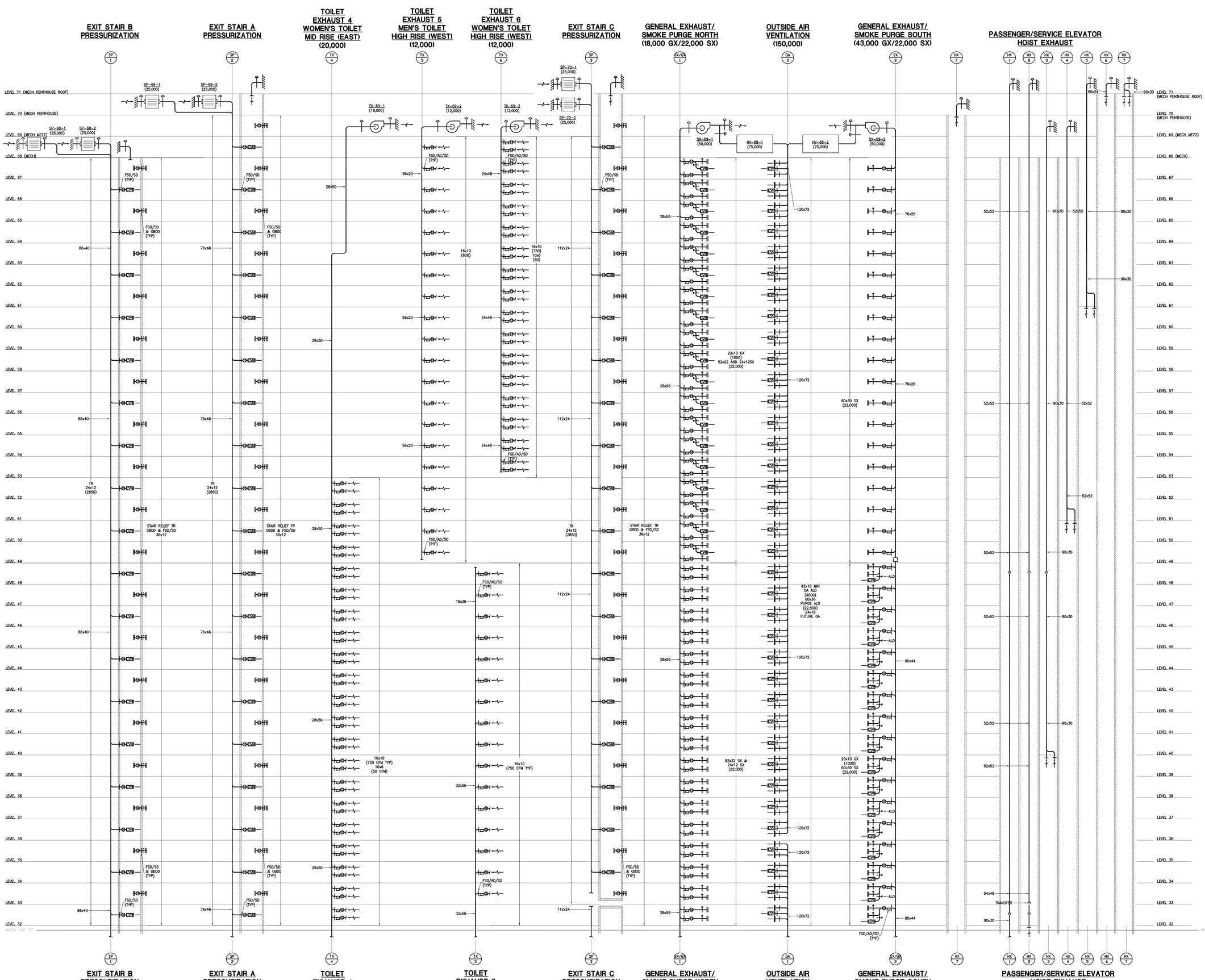
Sheet Name:

MECHANICAL LOW-RISE AIR RISER DIAGRAM

Project No.: 14830.A.000	B-SCAN Sheet No.: M-401.00
Date: 20 JUN 2014	Sheet No.: M-401
Scale: NTS	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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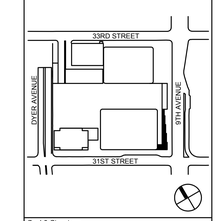
Ontario, Canada N1K 1B8

Key Plan:



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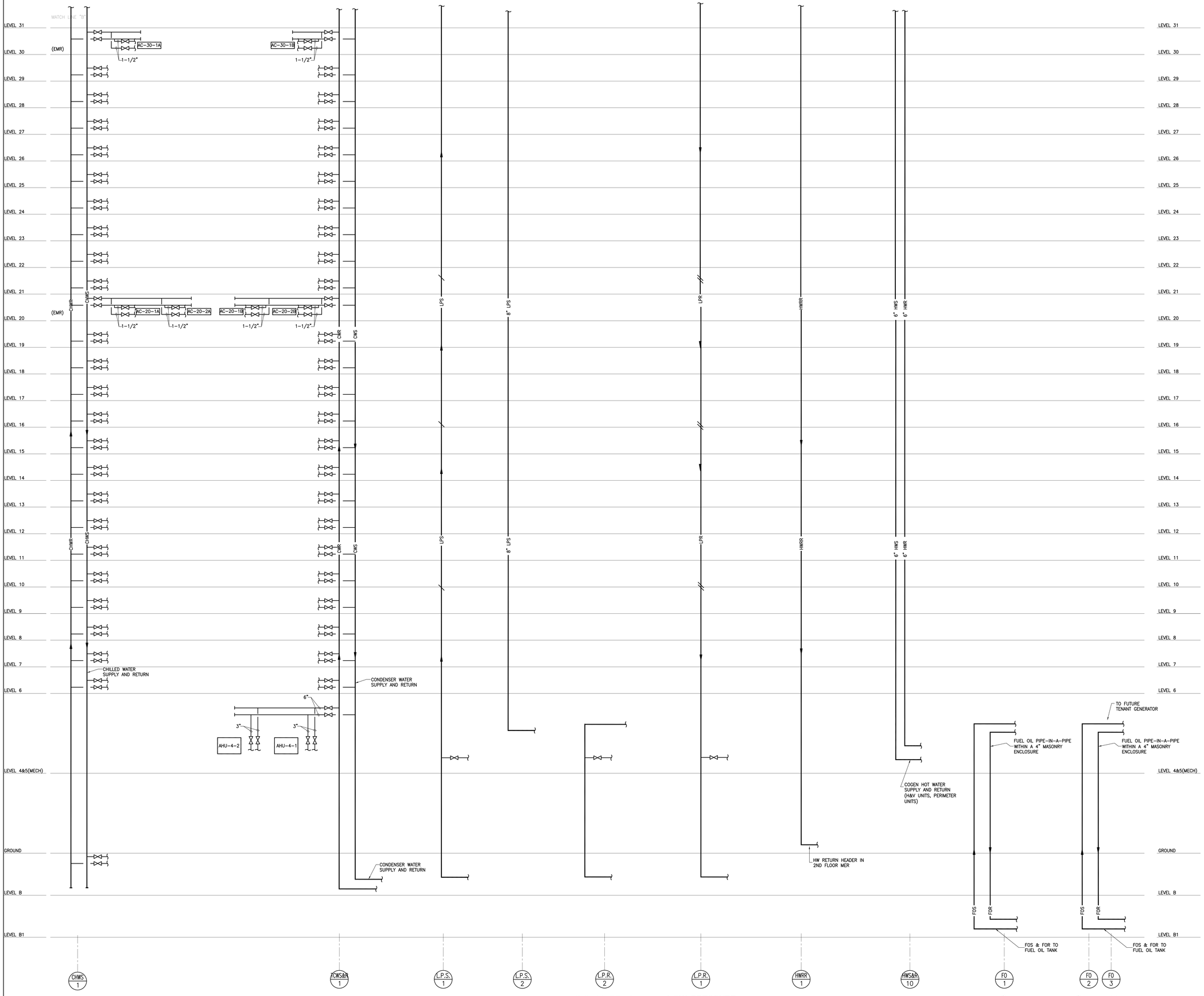
Sheet Name:

MECHANICAL HIGH-RISE AIR RISER DIAGRAM

Project No.: 14830.A.000	B-SCAN Sheet No.: M-402.00
Date: 20 JUN 2014	Sheet No.: M-402
Scale: NTS	
File No.:	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant

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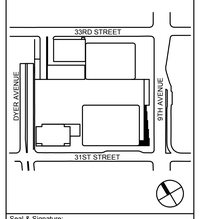
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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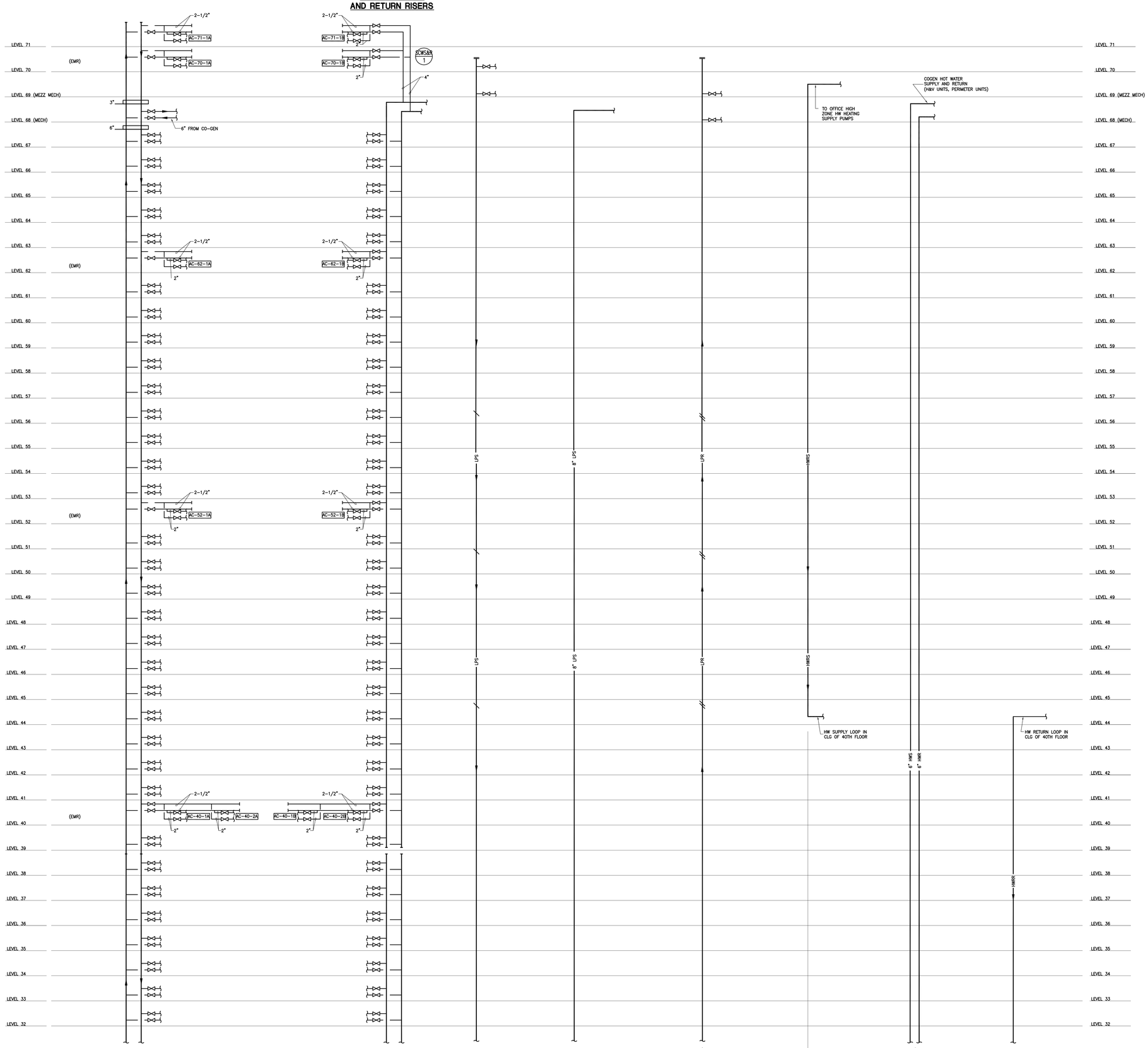
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL PIPING RISER DIAGRAM SHEET 1

Project No.: 14830.A.000	B-SCAN Sheet No.: M-403.00
Date: 20 JUN 2014	Sheet No.: M-403
Scale: NTS	
File No.:	Page No.:

SECONDARY CONDENSER WATER SUPPLY AND RETURN RISERS



CHWS 1 — CHILLED WATER SUPPLY AND RETURN RISERS

TCWS&R 1 — TERTIARY CONDENSER WATER SUPPLY AND RETURN RISERS

L.P.S. 1 — LOW PRESSURE STEAM SUPPLY

L.P.S. 2 — LOW PRESSURE STEAM SUPPLY RISER (COGEN)

L.P.R. 1 — LOW PRESSURE STEAM CONDENSATE RISER

HWRS 1 — OFFICE HIGH ZONE HOT WATER HEATING REVERSE SUPPLY RISER

HWS&R 10 — COGEN HOT WATER SUPPLY AND RETURN RISERS

HWRR 1 — OFFICE LOW ZONE HOT WATER HEATING REVERSE RETURN RISER

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
New York, NY 10122

Landscape Consultant
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475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
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Acoustical Consultant
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Vibration Consultant
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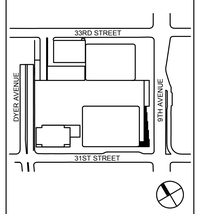
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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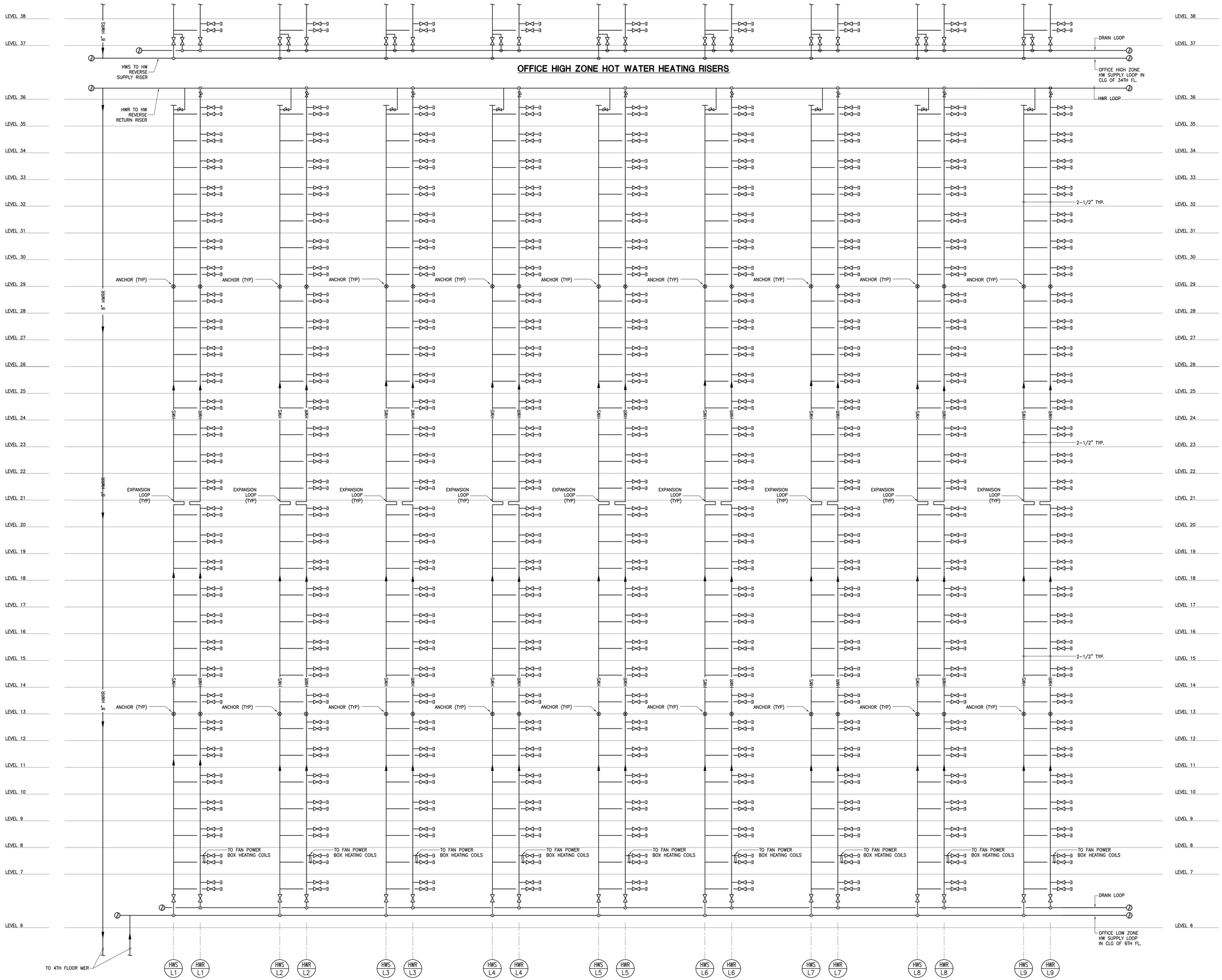
Sheet Name:

MECHANICAL PIPING RISER DIAGRAM SHEET 2

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: NTS
File No.:
B-SCAN Sheet No.: M-404.00
Sheet No.: M-404
Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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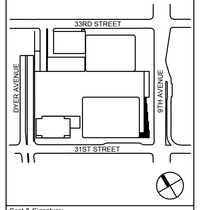

Seal & Signature:

LICENSED PROFESSIONAL ENGINEER
DONALD A. MOLINA
STATE OF NEW YORK

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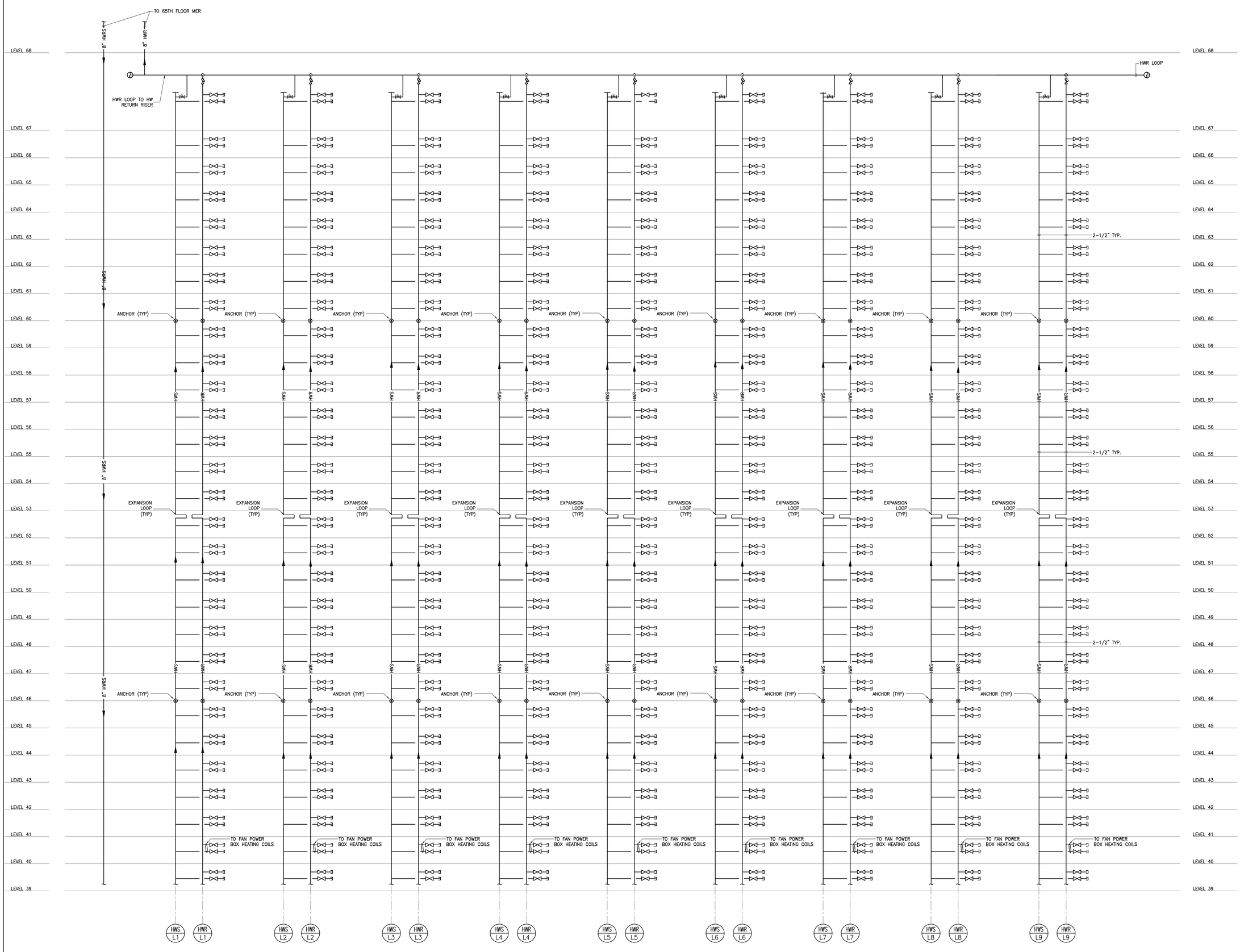
Sheet Name:

MECHANICAL HOT WATER RISER DIAGRAM SHEET 1

Project No.: 14830.A.000	B-SCAN Sheet No.: M-405.00
Date: 20 JUN 2014	Sheet No.: M-405
Scale: NTS	
File No.:	Page No.:



OFFICE HIGH ZONE HOT WATER HEATING RISERS

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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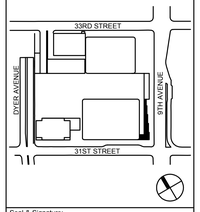

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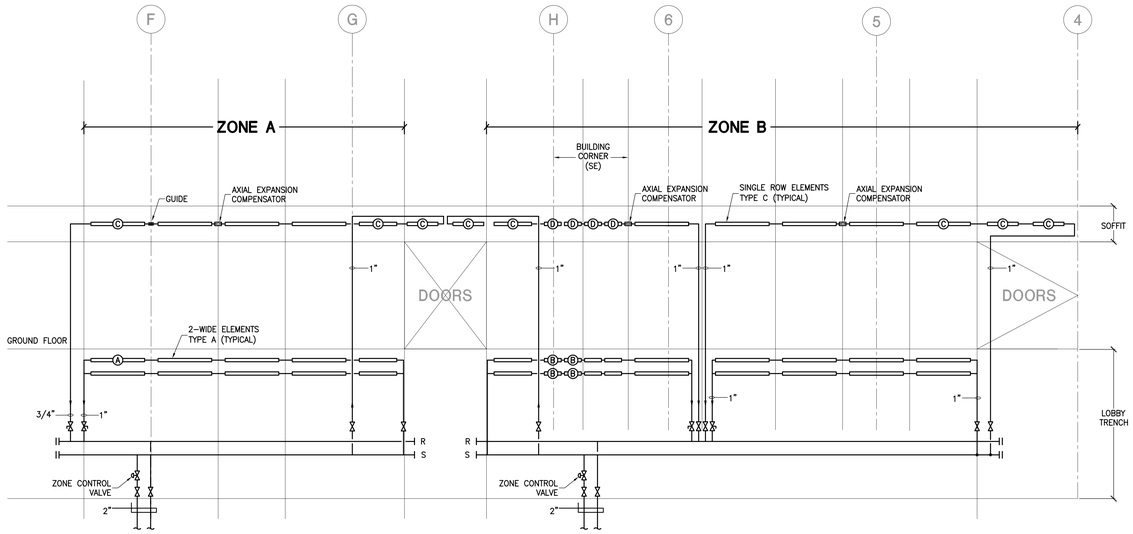
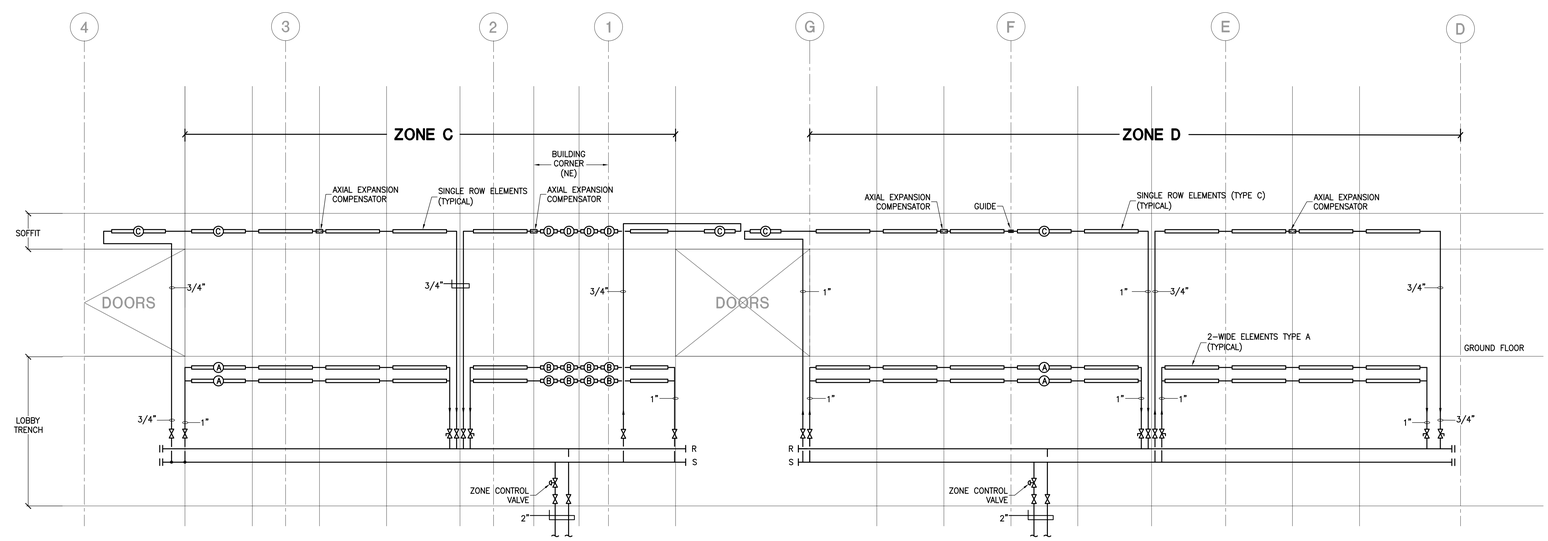
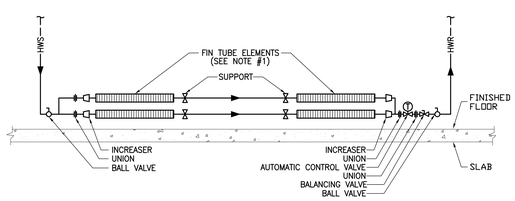
Sheet Name:

MECHANICAL HOT WATER RISER DIAGRAM SHEET 2

Project No.: 14830.A.000	B-SCAN Sheet No.: M-406.00
Date: 20 JUN 2014	Sheet No.: M-406
Scale: NTS	
File No.:	Page No.:







TWO ROW HOT WATER FINNED TUBE PIPING DETAIL

NOTES:
1. REFER TO PLANS FOR QUANTITY AND ORIENTATION OF FINNED TUBE ROWS.

CONVECTOR ELEMENTS

DESIGNATION	CONVECTOR ELEMENT FINNED LENGTH PER ROW	TUBE SIZE (IN.)	ELEMENT SIZE (IN.)	FIN THICKNESS (IN.)	FINS PER FOOT	PERFORMANCE RATING PER ACTIVE FINNED LENGTH (BTUH/LF) @ 170°F AWT @ 70°F EAT			
						BARE ELEMENTS (SINGLE)	BARE ELEMENTS (2 WIDE)	WALL MOUNTED WITHIN SOFFIT (SINGLE)	RECESSED TRENCH (2 WIDE)
A	8'-0"	1	4-1/4" x 4-1/4"	0.02	50	–	1350	–	TBD
B	3'-0"	1	4-1/4" x 4-1/4"	0.02	50	–	1350	–	TBD
C	8'-0"	1	4-1/4" x 4-1/4"	0.02	50	750	–	TBD	–
D	3'-0"	1	4-1/4" x 4-1/4"	0.02	50	750	–	TBD	–

SHEET NOTES

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Facade Maintenance Consultant
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Wind Tunnel Consultant
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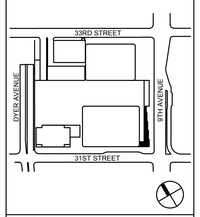
Key Plan:



Seal & Signature:

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL
HOT WATER RISER
DIAGRAM
LOBBY
SHEET 3

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: NTS
File No.:
B-SCAN Sheet No.: M-407.00
Sheet No.: M-407
Page No.:

DEPT OF BUILDINGS 3371291243 Job Number

E3406054108 Scan Code

PLATE AND FRAME HEAT EXCHANGERS

UNIT NO.	LOCATION	SERVICE	COOLED/HEATED WATER GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (PSI)	DESIGN PRESS. (PSIG)	FOULING FACTOR	LIQUID CIRCULATED	COOLING/HEATING WATER GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (PSI)	DESIGN PRESS. (PSIG)	FOULING FACTOR	LIQUID CIRCULATED	OVERALL DIM. LENGTH x WIDTH x HEIGHT (IN.)	WEIGHT (LBS.)	HEAT TRANSFER AREA (SQ. FT.)	MODEL No.	REMARKS/COMMENTS
PFHX-4-1 THRU PFHX-4-3	4TH FLOOR MER	SECONDARY/ TERTIARY CONDENSER WATER	3,500	104	89		450	.0005	H20	3,500	87	102		450	.0005	H20			15949		
PFHY-68-1 THRU PFHX-68-4	68TH FLOOR MER	PRIMARY/ SECONDARY CONDENSER WATER	4,500	102	87		150	.0005	H20	4,500	85	100		150	.0005	H20			18507		PROVIDE REVERSING VALVES
PFHX-68-5 THRU PFHX-68-6	68TH FLOOR MER	COGEN HOT WATER	400	200	220		150	.0005	H20	400	198	218		150	.0005	H20			1290		

STEAM CONDENSATE PUMPS

(DOMESTIC ITT AS STD)

PUMP NO.	LOCATION	SERVICE	TOTAL STEAM CONDENSATE LBS/HR	GPM PER PUMP	SUCTION TEMP. °F	DISCHARGE PRESS. REQ'D PER PUMP	MOTOR RPM	RECEIVER (CONST.)	MIN. MOTOR HP PER PUMP	PUMP TYPE	RECEIVER SIZE (GAL.)	MIN. INLET SIZE (IN.)	MODEL/REMARKS
CP-1	BASEMENT	MAIN STEAM ROOM							2				
CP-2	BASEMENT	AC-B-4							2				
CP-3	2ND FLOOR	LOW RISE HEAT SYSTEM							2				

SHELL AND TUBE HEAT EXCHANGERS

UNIT NO.	LOCATION	SERVICE	WATER (TUBE SIDE) GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (FT. H2O)	DESIGN PRESS. (PSIG)	FOULING FACTOR	STEAM (SHELL SIDE) STEAM PRESS. (PSIG)	STEAM (LBS/HR)	WATER (SHELL SIDE) GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (FT. H2O)	DESIGN PRESS. (PSIG)	FOULING FACTOR	HEAT TRANSFER AREA (SQ. FT.)	SHELL DIAMETER (IN)	EFFECTIVE BUNDLE LENGTH (FT.)	NUMBER OF PASSES	LIQUID CIRCULATED	CONDENSATE INLET TEMP.	CONDENSATE OUTLET TEMP.	MODEL NO.	REMARKS
STHX-4-1&2	4TH FLOOR MER	LOW RISE HEATING SYSTEM	1350	160	180				5																
STHX-4-3&4	4TH FLOOR MER	RETAIL HEATING SYSTEM	350	160	180				5																
STHX-68-1&2	68TH FLOOR MER	HIGH RISE HEATING SYSTEM	1350	160	180				5																
STHX-68-3	68TH FLOOR MER	CO-GEN BACKUP	350	160	180				5																

PUMPS

PUMP NO.	LOCATION	SERVICE	GPM	TOTAL DYNAMIC HEAD (FT. H20)	% EFFICIENCY	SHUT-OFF HEAD (FT. H20)	IMPELLER (INCHES)	B.H.P.	MINIMUM MOTOR H.P.	R.P.M.	WORKING PRESS. (PSIG)	MODEL #	PUMP TYPE	VIBRATION BASE SPEC. TYPE	VIBRATION BASE MIN. STATIC DEFLECTION (INCHES)	REMARKS
HWP-4-1&2	4TH FLOOR MER	LOW RISE HOT WATER	1350	150							300		END SUCTION			(1) STANDBY
HWP-4-3&4	4TH FLOOR MER	RETAIL HOT WATER	350	150							150		END SUCTION			(1) STANDBY
HWP-68-1&2	68TH FLOOR MER	HIGH RISE HOT WATER	1350	150							150		END SUCTION			(1) STANDBY
PCWP-68-1 THRU PCWP-68-4	68TH FLOOR MER	PRIMARY CONDENSER	5000	200							150		HORIZONTAL SPLIT CASE			(1) STANDBY
SCWP-68-5 THRU SCWP-68-8	68TH FLOOR MER	SECONDARY CONDENSER WATER (HIGH ZONE)	5000	100							300		HORIZONTAL SPLIT CASE			(1) STANDBY
TCWP-4-1 THRU TCWP-4-3	4TH FLOOR MER	TERTIARY CONDENSER WATER (LOW ZONE)	3750	100							300		HORIZONTAL SPLIT AND/OR VERTICAL SPLIT			(1) STANDBY
HRHWP-68-1 THRU HRHWP-68-2	68TH FLOOR MER	CO-GEN SYSTEM (ABSORPTION)	400	100							150		END SUCTION			(1) STANDBY
HRHWP-68-3 THRU HRHWP-68-4	68TH FLOOR MER	CO-GEN SYSTEM (HOT WATER PFHX)	400	100							150		END SUCTION			(1) STANDBY

EXPANSION TANKS / MAKE-UP PUMPS

(AMTROL/ITT DOMESTIC AS STD)

TANK NO. ET-	LOCATION	SERVICE	EXPANSION TANKS DIAMETER (IN.)	STRAIGHT SHELL LENGTH (IN.)	CAPACITY (GALLONS)	WORKING PRESS. (PSIG)	TYPE	MODEL	MAKE-UP PUMPS GPM PER PUMP	SUCTION TEMP. °F	DISCHARGE PRESS. (PSIG)	MOTOR RPM	RECEIVER CAPACITY (GALLONS)	MIN. MOTOR HP PER PUMP	PUMP TYPE	SIZE	REMARKS
ET-1	4TH FLOOR MER	LOW RISE HOT WATER															
ET-2	4TH FLOOR MER	RETAIL HOT WATER															
ET-3	4TH FLOOR MER	SECONDARY CHILLED WATER															
ET-4	68TH FLOOR MER	CHILLED WATER															
ET-5	68TH FLOOR MER	HIGH RISE HOT WATER															
ET-6	4TH FLOOR MER	BASE BUILDING SECONDARY CHILLED WATER															
ET-7	68TH FLOOR MER	RETAIL SECONDARY CHILLED WATER															
ET-8	68TH FLOOR MER	CO-GEN SYSTEM															

CHILLERS

(MULTISTACK AS STANDARD)

UNIT NO.	LOCATION	TONS	QTY.	TOTAL TONS	CHILLER GPM	INLET WATER TEMP. °F	OUTLET WATER TEMP. °F	MAX. PRESS. DROP (FT. H20)	WORKING PRESS. (PSIG)	FOULING FACTOR	MAX. WATER VELOCITY (FPS)	NO. OF PASSES	REFRIGERANT	CONDENSER GPM	INLET WATER TEMP. °F	OUTLET WATER TEMP. °F	MAX. PRESS. DROP (FT. H20)	WORKING PRESS. (PSIG)	FOULING FACTOR	MAX. WATER VELOCITY (FPS)	NO. OF PASSES	ELECTRICAL KW	VOLTAGE	PHASE	FREQUENCY	KW/TON	TOTAL FULL LOAD AMPS	MODEL NO.	REMARKS	MEA NO.
CH-68-2	68TH FLOOR MER	60	5	300																										

STEAM ABSORPTION CHILLER

UNIT No.	LOCATION	TONS	CHILLER GPM	INLET WATER TEMP. (°F)	OUTLET WATER TEMP. (°F)	MAX. PRESSURE DROP (FT H2O)	WORKING PRESS. (PSIG)	FOULING	MAX. WATER VELOCITY (FPS)	No. OF PASSES	CONDENSER GPM	INLET WATER TEMP. (°F)	OUTLET WATER TEMP. (°F)	MAX. PRESSURE DROP (FT H2O)	WORKING PRESS. (PSIG)	FOULING	MAX. WATER VELOCITY (FPS)	No. OF PASSES	ELECTRICAL KW/TON	VOLTAGE	PHASE	FREQUENCY	KW	POWER FACTOR	STEAM LBS/TON-HR	STEAM FLOW RATE (LBS/HR)	STEAM PRESSURE (PSIG)	MODEL No.	REMARKS
CH-68-1	68TH FLOOR MER	250																											

COOLING TOWERS

(MARLEY AS STANDARD U.O.N)

TOWER NO.	LOCATION	NO. OF CELLS	GPM/CELL	INLET WATER TEMP. (°F)	OUTLET WATER TEMP. (°F)	AIR WB TEMP. (°F)	MIN. MOTOR HP/CELL	CONTROLS	OPERATING WT. PER CELL (LBS.)	CFM/CELL	MAXIMUM WIDTH X LENGTH X HEIGHT (FEET)	MODEL NO.	REMARKS
CT-1 THRU 5	ROOF	5	3,000				125						

NOTES:
1. EACH COOLING TOWER CELL SHALL BE PROVIDED WITH THE FOLLOWING:
   A) BOTTOM RETURN PIPING CONNECTION (WITH INTERNAL FACTORY INSTALLED RISER & DISTRIBUTION GRID);
   B) STEAM HEATING COIL
   C) ALL S/S TOWER INCLUDING S/S BASIN AND SUMP BOX
   D) ACCESS LADDER WITH SAFETY CAGE & HANDRAIL;
   E) INTERNAL LADDER & CATWALK;
   F) PREMIUM EFFICIENCY MOTOR SUITABLE FOR USE WITH VFD.
   G) PROBE CONTROLLED COLD WATER MAKE-UP.
   H) BOTTOM CONNECTIONS FOR OVERFLOW LINE, EQUALIZATION LINE, BYPASS CONNECTION, ETC.
2. STATE AN ALTERNATE PRICE TO PROVIDE STANDBY (THIRD) COOLING TOWER CELL WITH DUTY TO MATCH CT-71-1.

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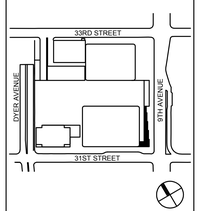
Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL SCHEDULE SHEET 1 OF 6

Project No.: 14830.A.000
B-SCAN Sheet No.: M-500.00
Date: 20 JUN 2014
Scale: 1/8"=1'-0"
Sheet No.: M-500
File No.:
Page No.:

RETURN, EXHAUST AND VENTILATION (SUPPLY) FANS

(TWIN CITY FAN BLOWER)
(UNLESS OTHERWISE NOTED)

FAN NO.	LOCATION	SERVICE	CFM	STATIC PRESS (INCHES H2O)	MAX. OUTLET VELOCITY (FPM)	DISCHARGE DIRECTION	ARRANGEMENT	FAN R.P.M.	FAN ROTATION	WIDTH AND INLET	WHEEL DIAMETER (INCHES)	ACCESS DOOR LOCATION (0° CLOCK)	UNIT TYPE	UNIT SIZE	B.H.P.	MIN. MOTOR H.P.	MOTOR R.P.M.	MOTOR LOCATION	VOLTS	PHASE	HERTZ	VIBRATION BASE SPECIFICATION TYPE	VIBRATION BASE MIN. STATIC DEFLECTION (INCHES)	CLASS	REMARKS
F-3-1	3RD FLOOR MER	B LEVEL RAMP AND LOADING DOCK SUPPLY	58,000	2.0				873					TCVX	66D4	28.18				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
F-5-2&3	5TH FLOOR MER	B LEVEL RAMP AND GARAGE SUPPLY	15,000	2.0				1192					TCVX	36D6	7.27				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
TX-4-1	4TH FLOOR MER	MEN'S LOW RISE TOILET EXHAUST 1	12,000	2.0				1074					QSL	270	4.48				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
TX-4-2	4TH FLOOR MER	WOMEN'S LOW RISE TOILET EXHAUST 2	18,000	2.0				772					QSL	365	7.91				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
TX-4-3	4TH FLOOR MER	MEN'S LOW/MID RISE TOILET EXHAUST 3	18,000	2.0				772					QSL	365	7.91				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
TX-4-4	4TH FLOOR MER	B LEVEL TOILET EXHAUST	4,000	2.0				1144					QSL	222	1.91				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
TX-4-5	4TH FLOOR MER	B3-B1 LEVEL TOILET EXHAUST	3,000	2.0				1969					QSL	150	1.49				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
TX-69-1	69TH FLOOR MER	WOMEN'S MID RISE TOILET EXHAUST 5	18,000	2.0				772					QSL	365	7.91				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
TX-69-2	69TH FLOOR MER	MEN'S HIGH RISE TOILET EXHAUST 5	15,000	2.0				728					QSL	365	6.65				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
TX-69-3	69TH FLOOR MER	WOMEN'S HIGH RISE TOILET EXHAUST 6	12,000	2.0				964					QSL	300	5.38				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
EF-4-1&2	4TH FLOOR MER	B LEVEL LOADING DOCK AND RAMP EXHAUST	26,000	2.0				1175					TCVX	42D7	14.39				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
EF-4-3	4TH FLOOR MER	B LEVEL SWITCHGEAR EXHAUST	5,400	2.0				1715					TCVX	24D6	2.56				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
EF-4-4	4TH FLOOR MER	B LEVEL MECHANICAL ROOM EXHAUST	15,000	2.0				1192					TCVX	36D6	7.27				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
EF-4-5	4TH FLOOR MER	B LEVEL BOH SPACES RETURN/SMOKE PURGE	15,000	2.0				1192					TCVX	36D6	7.27				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
EF-5-1	5TH FLOOR MER	B LEVEL GARAGE EXHAUST	27,000	2.0				1150					TCVX	42D6	13.45				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
EF-68-1&2	68TH FLOOR MER	CO-GEN SYSTEM	23,000	1.5				1128					TCVX	42D5	10.98				460	3	60				PROVIDE WITH VFD AND SOUND TRAPS
EF-A	TYP OFFICE FLOOR (4-64)	LARGE ELEC CLOSET	400	0.75				974					TL	700S	0.30				115	1	60				SPEED CONTROL SWITCH (PROVIDE ALT. PRICE)
EF-B	TYP OFFICE FLOOR (4-64)	SMALL ELEC CLOSET	400	0.75				974					TL	700S	0.30				115	1	60				SPEED CONTROL SWITCH (PROVIDE ALT. PRICE)
SP-3-1&2	3RD FLOOR MER	STAIR "C" TRANSFER EXTENSION PRESSURIZATION	3,000	1.5				1811					QSL	150	1.14				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SP-5-1&2	5TH FLOOR MER	STAIR "C" PRESSURIZATION	25,000	3.0				1220					TCVX	42D7	18.67				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SP-5-3&4	5TH FLOOR MER	STAIR "E" PRESSURIZATION	3,000	2.0				2303					TCVX	18B8	1.94				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SP-5-5&6	5TH FLOOR MER	STAIR "F" PRESSURIZATION	3,000	2.0				2303					TCVX	18B8	1.94				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SP-68-1&2	69TH FLOOR MER	STAIR "B" PRESSURIZATION	25,000	3.0				1220					TCVX	42D7	18.67				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SP-69-1&2	70TH FLOOR MER	STAIR "A" PRESSURIZATION (HIGH RISE)	25,000	3.0				1220					TCVX	42D7	18.67				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SP-70-1&2	70TH FLOOR MER	STAIR "C" PRESSURIZATION (HIGH RISE)	25,000	3.0				1192					TCVX	36D6	7.27				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SX-4-1	4TH FLOOR MER	GEN EXH/SMOKE PURGE SOUTH	43,000 GX / SX 22,000	3.0				1158					TCVX	54D5	29.9				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SX-4-2	4TH FLOOR MER	GEN EXH/SMOKE PURGE CELLAR LEVELS	3,000 GX / SX 11,000	1.5				1192					TCVX	32D6	3.96				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SX-69-1	69TH FLOOR MER	GEN EXH/SMOKE PURGE SOUTH	18,000 GX / SX 22,000	3.5				1192					TCVX	36D5	19.22				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
SX-69-2	69TH FLOOR MER	SMOKE PURGE SOUTH	22,000	2.0				894					TCVX	48D7	10.92				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
RSF-4-1&2	4TH FLOOR MER	LOBBY RETURN/SMOKE EXH	37,500	1.5				907					TCVX	54D6	14.87				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS
RSF-5-1	5TH FLOOR MER	4TH/5TH FLOOR MECHANICAL ROOM RETURN/SMOKE EXH	62,500	1.5				868					TCVX	66D4	24.82				460	3	60				EMERGENCY POWER REQ'D PROVIDE WITH VFD AND SOUND TRAPS

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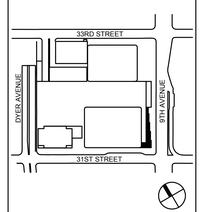
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:

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FACTORY ASSEMBLED AND FIELD ERECTED CENTRAL AIR CONDITIONING SYSTEMS

ACS SYSTEM No.	LOCATION	SERVICE	TOTAL AIR (CFM)	MINIMUM OUTSIDE AIR (CFM)	FILTERS (SEE NOTE #2) MAX. PRESSURE DROP-CLEAN (IN. H20)	FILTER TYPE	% EFFICIENCY	NUMBER OF SECTIONS-WIDE	NUMBER OF SECTIONS	MAX. PRESSURE DROP-DIRTY (IN. H20)	PRE-HEAT COILS (AEROFIN-NON-FREEZE TYPE ANF OR TYPE CH AS STD) CFM	AIR SIDE ENTERING TEMP. (F)	AIR SIDE LEAVING TEMP. (F)	AIR SIDE MAX. PRESSURE DROP (IN. H20)	STEAM OR WATER SIDE STEAM PRESS. (PSI)	STEAM OR WATER SIDE ENTERING TEMP. (F)	STEAM OR WATER SIDE LEAVING TEMP. (F)	STEAM (LBS/HR)	GPM	H20 PD (FT)	NUMBER OF SECTIONS	FINNED LENGTH (INCHES)	TUBE FACE	TOTAL FACE AREA (SQ. FT)	FACE VELOCITY (FPM)	ROW DEEP	FIN SPACING (FIN/IN.)	CIRCUITING
AHU-4-1	4TH FLOOR MER	LOBBY INTERIOR SPACES	15,000								15,000																	
AHU-4-2	4TH FLOOR MER	LOBBY PERIMETER SPACES	55,000								55,000																	

ACS SYSTEM No.	COOLING COIL (AEROFIN TYPE C) CFM	AIR SIDE ENTERING TEMP. DB (F)	AIR SIDE ENTERING TEMP. WB (F)	AIR SIDE LEAVING TEMP. DB (F)	AIR SIDE LEAVING TEMP. WB (F)	AIR SIDE MAX. PRESSURE DROP (IN. H20)	WATER SIDE GPM	WATER SIDE ENTERING TEMP. (F)	WATER SIDE LEAVING TEMP. (F)	WATER SIDE MAX. PRESSURE DROP (FT H20)	NUMBER OF SECTIONS	CASING HEIGHT	FINNED LENGTH PER SECTION	TOTAL FACE AREA (SQ. FT)	FACE VELOCITY (FPM)	ROW DEEP	FINS PER IN.	CIRCUITING
AHU-4-1	15,000																	
AHU-4-2	55,000																	

ACS SYSTEM No.	SUPPLY FAN DATA (TWIN CITY FAN AS STD) CFM	STATIC PRESSURE (IN. H20)	MAX. OUTLET VELOCITY (FPM)	DISCHARGE DIRECTION	ARRANGEMENT	FAN R.P.M.	FAN ROTATION	WIDTH & LENGTH	WHEEL DIAMETER (IN.)	ACCESS DOOR POSITION O'CLOCK	UNIT TYPE	UNIT SIZE	B.H.P.	MIN. MOTOR H.P.	MOTOR R.P.M.	MOTOR LOCATION	VIB. BASE SPEC. TYPE	VIB. BASE MIN. STATIC DEFL. (IN.)	CLASS	REMARKS
AHU-4-1	15,000	5.0											40.0							
AHU-4-2	55,000	5.0											31.4							

HEATING AND VENTILATING SYSTEMS

HV SYSTEM No.	LOCATION	SERVICE	TOTAL AIR (CFM)	FILTERS MAX. PRESSURE DROP-CLEAN (IN. H20)	FILTER TYPE	% EFFICIENCY	NUMBER OF SECTIONS-WIDE	NUMBER OF SECTIONS-HIGH	MAX. PRESSURE DROP DIRTY (IN. H20)	HEATING COILS (AEROFIN-NON-FREEZE TYPE ANF AS STD) CFM	AIR SIDE ENTERING TEMP. (F)	AIR SIDE LEAVING TEMP. (F)	AIR SIDE MAX. PRESS. DROP (IN. H20)	STEAM STEAM PRESS. (PSI)	STEAM ENTERING TEMP. (F)	STEAM LEAVING TEMP. (F)	STEAM (LBS/HR)	NUMBER OF SECTIONS	FINNED LENGTH (INCHES)	CASING HEIGHT (INCHES)	TOTAL FACE AREA (FT2)	FACE VELOCITY (FPM)	ROW DEEP	FIN SPACING (FIN/IN.)	CIRCUITING
HV-4-1&2	4TH FLOOR MER	LOW RISE TENANT FLOOR OUTSIDE AIR	75,000							75,000															
HV-4-3	4TH FLOOR MER	4TH FLOOR MECHANICAL ROOM	62,500							62,500															
HV-5-1	5TH FLOOR MER	BASEMENT MECHANICAL ROOMS	15,000							15,000															
HV-5-2	5TH FLOOR MER	CELLAR OA	11,000							11,000															
HV-68-1&2	68TH FLOOR MER	HIGH RISE TENANT FLOOR OUTSIDE AIR	75,000							75,000															
HV-68-3	68TH FLOOR MER	64TH FLOOR MECHANICAL ROOM	18,000							18,000															
HV-68-4&5	68TH FLOOR MER	CO-GEN HV	32,000							32,000															

HV SYSTEM No.	HEATING COILS CFM	AIR SIDE ENTERING TEMP. (F)	AIR SIDE LEAVING TEMP. (F)	AIR SIDE MAX. PRESS. DROP (IN. H20)	HOT WATER STEAM PRESS. (PSI)	HOT WATER ENTERING TEMP. (F)	HOT WATER LEAVING TEMP. (F)	HOT WATER STEAM (LBS/HR)	HOT WATER NUMBER OF SECTIONS	FINNED LENGTH (INCHES)	CASING HEIGHT (INCHES)	TOTAL FACE AREA (FT2)	FACE VELOCITY (FPM)	ROW DEEP	FIN SPACING (FIN/IN.)	CIRCUITING
HV-4-1&2	75,000															
HV-4-3	62,500															
HV-5-1	15,000															
HV-5-2	11,000															
HV-68-1&2	75,000															
HV-68-3	18,000															
HV-68-4&5	32,000															

HV SYSTEM No.	SUPPLY FAN DATA CFM	QUANTITY OF FANS	STATIC PRESSURE (IN. H20)	TOTALPRESSURE (IN. H20)	MAX. OUTLET VELOCITY (FPM)	DISCHARGE DIRECTION	ARRANGEMENT	FAN R.P.M.	FAN ROTATION	WIDTH & INLET	WHEEL DIAMETER (IN.)	ACCESS DOOR POSITION O'CLOCK	UNIT TYPE	UNIT SIZE	B.H.P.	MIN. MOTOR H.P.	MOTOR R.P.M.	MOTOR LOCATION	VIB. BASE TYPE MASON AS STD.	VIB. BASE MIN. STATIC DEFL. (IN.)	CLASS	REMARKS
HV-4-1&2	37,500	2	5.5												50							
HV-4-3	62,500	1	3.5												61.9							
HV-5-1	15,000	1	4.5												16.3							
HV-5-2	11,000	1	4.5												16.3							
HV-68-1&2	37,500	2	5.5												50							
HV-68-3	18,000	1	3.5												16.6							
HV-68-4&5	32,000																					

SIDESTREAM FILTRATION SYSTEM (DIAMOND WATER SYSTEMS AS STD.)

SERVICE	LOCATION	FLOW RATE (GPM)	WORKING PRESSURE (PSI)	TANK DIAMETER (IN)	FILTRATION RATING (MICRON)	BACKWASH GPM	PUMP HP	NUMBER OF PUMPS	VOLTS/ PHASE/HZ	MODEL No.	REMARKS
PRIMARY CONDENSER WATER	68TH FLOOR MER										
SECONDARY CONDENSER WATER	68TH FLOOR MER										
HIGH ZONE HOT WATER	68TH FLOOR MER										
CHILLED WATER	68TH FLOOR MER										
SECONDARY CONDENSER WATER	4TH FLOOR MER										
LOW ZONE HOT WATER	4TH FLOOR MER										
RETAIL HOT WATER	4TH FLOOR MER										
LOBBY/BOH HOT WATER	LEVEL B1										

NOTES:

1. PROVIDE AUTOMATIC CONTROLS PACKAGE WITHIN NEMA 3R ENCLOSURE.(ALL CONTROLS AND SOLENOID VALVES SHALL OPERATE ON 120/1/60 POWER.
2. FILTER MEDIA SHALL BE CAPABLE OF REMOVING 95% BY VOLUMES OF SUSPENDED SOLIDS 1/2 MICRON AND LARGER.
3. FILTER UNIT SHALL INCLUDE A PLC CONTROLLER TO CONTROL THE BACKWASH CYCLE. PLC SHALL BE ABLE TO INTERFACE WITH THE BMS SYSTEM VIA DRY CONTACT OUTPUT INDICATING A COMMON ALARM.

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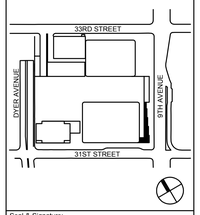
Key Plan:



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CONSTANT / VARIABLE VOLUME BOXES

TITUS (TYPE 'DESV' AS STD)

BOX SIZES (SEE DWGS)	MAXIMUM SET POINT CFM RANGE LOW	MAXIMUM SET POINT CFM RANGE HIGH	MIN. SET POINT CFM SHOWN ON PLANS	MIN. SP @ BOX MAX. CFM	INLET AND OUTLET SIZES IN	INLET AND OUTLET SIZES OUT	BOXES WITH HEATING COIL ENTERING AIR TEMP. (°F)	LEAVING AIR TEMP.(°F)	ENTERING WATER TEMP.(°F)	LEAVING WATER TEMP.(°F)	No. OF ROWS	GPM	MAX. COIL PRESSURE DROP (FT. H2O)	MIN. SP @ BOX @ MAX CFM (BOX + COIL)	SOUND TRAP IAC TYPE AND DIMENSIONS (WxHxL	PRESS DROP INCH. WG.	REMARKS
7	90	500	65	0.14	7"ø	12x10	55	VARIES	140	VARIES	1	SEE NOTES	.10	.19	3HL 12x12x36	.01	
8	245	800	120	0.20	8"ø	12x10	55	VARIES	140	VARIES	1	SEE NOTES	.10	.27	3HL 18x12x36	.01	
10	385	1000	195	0.12	10"ø	14x12.5	55	VARIES	140	VARIES	1	SEE NOTES	.10	.19	3HL 18x12x36	.02	
12	550	1500	280	0.15	12"ø	16x15	55	VARIES	140	VARIES	1	SEE NOTES	.10	.22	5HL 24x12x60	.04	
14	880	2000	400	0.16	14"ø	20x17.5	55	VARIES	140	VARIES	1	SEE NOTES	.10	.22	5HL 24x12x60	.06	
16	1000	2500	530	0.15	16"ø	24x18	55	VARIES	140	VARIES	1	SEE NOTES	.10	.22	5HL 30x12x60	.06	

NOTES

1. REFER TO SPECIFICATIONS FOR ACOUSTICAL PERFORMANCE.
2. ALL COILS SHALL BE ONE ROW UNLESS NOTED, REFER TO PLANS FOR LOCATIONS. HEATING PERFORMANCE OF ALL COILS SHALL BE BASED ON 2.0 GPM FLOW RATE.
3. ALL COILS SHALL BE SUITABLE FOR A MINIMUM OF 250 PSIG. WATER WORKING PRESSURE.
4. V = VARIABLE VOLUME
   VR = VARIABLE VOLUME WITH HEATING COIL
   C = CONSTANT VOLUME
   CR = CONSTANT VOLUME WITH HEATING COIL
5. EACH VAV BOX SHALL BE PROVIDED WITH DUCT MOUNTED SOUND TRAP AS SCHEDULED ABOVE.
6. ALL BOXES SHALL BE PROVIDED WITH BOTTOM ACCESS DOOR. FOR INTERNAL ACCESS TO CONTROLS & TO HEATING COIL).

CONSTANT VOLUME REGULATORS

(TITUS TYPE AQCV/DQCV AS STD.)

BOX SIZES (SEE DWGS)	CFM RANGE LOW	CFM RANGE HIGH	DAMPER SIZE (IN)	MIN. SP @ BOX MAX. CFM	DISCHARGE NC RATING FOR 1" W.G. INLET PRESSURE	RADIATED NC RATING FOR 1" W.G. INLET PRESSURE	REMARKS
F	250	500	14x8	0.155	26	35	
H	435	1000	18x10	0.172	22	37	
K	725	2000	20x14	0.165	22	38	
M	970	3500	22x16	0.165	25	43	
N	1220	5000	24x18	0.165	26	44	
P	1860	6000	30x20	0.162	24	42	
R	2750	8000	40x20	0.152	24	42	
R	8001	10,000	40x20	0.210	25	43	

NOTES:

1. THE 5000 CFM SERVICE ELEVATOR LOBBY PRESSURIZATION CVR SHALL HAVE A MAXIMUM SIZE OF 16"Wx36"H AS INDICATED ON PLANS.
2. THE MECHANICAL CONTRACTOR SHALL PROVIDE A PLENUM LENGTH OF 5'-0" OF STRAIGHT DUCT RUN DOWN STREAM OF EACH CVR.

CEILING SUPPLY DIFFUSERS

(TITUS "OMNI-NIT" AS STANDARD)

CFM RANGE (4 WAY)	CFM RANGE (3 WAY)	CFM RANGE (2 WAY)	NECK SIZE	FACE SIZE
0 – 200	0 – 150	0 – 100	8"ø	24x24
201 – 380	151 – 290	101 – 190	10"ø	24x24
381 – 470	291 – 325	191 – 235	12"ø	24X24
471 – 640	326 – 470	236 – 320	14"ø	24X24
641 – 735	471 – 550	321 – 365	15"ø	24X24

NOTES:

1. PMD MODEL FRAME SHALL BE SUITABLE FOR DONN-FINE LAY-IN CEILINGS.
2. NECKS SHALL BE BLANKED OFF IN FIELD WHERE PLANS INDICATE OTHER THAN WAY.
3. ALL CEILING DIFFUSERS LOCATED WITHIN GYPSUM BOARD HUNG CEILING SHALL BE EQUIPPED WITH VOLUME CONTROLS OPERABLE THRU FACE OF DIFFUSER.

CEILING RETURN GRILLES AND REGISTERS

(TITUS AS STANDARD)

NON – DUCTED CFM RANGE	SIZE	FACE SIZE	DUCTED CFM RANGE	SIZE	FACE SIZE
0–125	10 x 10	12 x 12	250	10 x 10	12 x 12
0–325	10 x 22	12 x 24	600	10 x 22	12 x 24
0–700	22 x 22	24 x 24	1200	22 x 22	24 x 24

NOTES:

1. ALL CEILING REGISTERS SHALL BE PROVIDED WITH OPPOSED BLADE DAMPERS.
2. ALL GRILLES AND REGISTERS LOCATED IN LAY-IN TILE CEILINGS SHALL BE PROVIDED WITH BORDER TYPES SUITABLE FOR LAY-IN PANEL MOUNTING. ALL GRILLES & REGISTERS LOCATED IN GYPSUM BOARD OR CONCEALED SPLINE CEILINGS SHALL BE PROVIDED WITH BORDER TYPES SUITABLE FOR SURFACE MOUNTING. REFER TO PLANS FOR SIZES.
3. THE ABOVE SCHEDULED GRILLES AND REGISTERS ARE FURNISHED AND INSTALLED, UNDER THIS SECTION OF THE SPECIFICATIONS.

FAN POWERED TERMINAL UNITS

(TITUS TYPE DTQS STD)

BOX SIZES (SEE DWGS)	MAX. SET POINT CFM RANGE OF VALVE 49°F EAT LOW	MAX. SET POINT CFM RANGE OF VALVE 49°F EAT HIGH	MINIMUM SET POINT CFM OF VALVE	SET POINT OF FAN LOW	SET POINT OF FAN HIGH OFFICE	SET POINT OF FAN HIGH TRADING	MIN. MOTOR H.P. HIGH SPEED	DISCHARGE S.P. DOWNSTREAM OF FPTU (INCLUDING HEATING COIL)	INLET SIZES	BOXES WITH HEATING COIL ENTERING AIR TEMP. (°F)	LEAVING AIR TEMP.(°F)	ENTERING WATER TEMP.(°F)	LEAVING WATER TEMP.(°F)	GPM	MAX. COIL PRESSURE DROP (FT. H2O)	MIN. SP @ BOX @ MAX CFM (COIL & BOX)	ELECTRICAL CHAR. (VOLTS/PHASE HERTZ)	SOUND TRAP IAC TYPE AND DIMENSIONS (WxHxL	PRESS DROP INCH. WG.	REMARKS
2	145	335	145	150	400	535	1/6	.40	8"ø	60	VARIES	170	140	SEE NOTE 2	.66	.08	277/1/60	3HL 12x12x36	.01	
3	200	480	160	401	1050	1150	1/4	.40	8"ø	60	VARIES	170	140	SEE NOTE 2	.20	.18	277/1/60	3HL 18x12x36	.03	
	336	900	260						10"ø							.26				
5	801	1130	375	951	1350	1600	1/3	.40	12"ø	60	VARIES	170	140	SEE NOTE 2	.43	.16	277/1/60	5HL 24x12x60	.04	
6	1131	1350	470	1351	1650	2000	3/4	.40	14"ø	60	VARIES	170	140	SEE NOTE 2	.93	.22	277/1/60	5HL 24x12x60	.06	

NOTES:

1. REFER TO FLOOR PLANS FOR ACTUAL QUANTITY OF FAN POWERED BOXES WITH AND WITHOUT HOT WATER HEATING COILS AND UNIT LEFT/RIGHT HAND ARRANGEMENT.
2. ALL COILS SHALL BE ONE ROW UNLESS NOTED, REFER TO PLANS FOR LOCATIONS. COILS ON FLOORS 15 THRU 69 SHALL HAVE 2.5 GPM FLOW RATE.
3. KEY TO SYMBOL: FAN CFM
   (MAX VALVE CFM / MIN VALVE CFM)
4. REFER TO SPECIFICATIONS FOR ACOUSTICAL PERFORMANCE.
5. FAN POWERED TERMINAL UNITS BASED ON MAXIMUM OF 1.5 INCHES INLET STATIC PRESSURE.
6. ALL COILS SHALL BE SUITABLE FOR A MINIMUM OF 250 PSIG. WATER WORKING PRESSURE.
7. FPB = FAN POWERED BOX
   FPBH = FAN POWERED BOX WITH HEATING COIL
8. EACH FPB BOX SHALL BE PROVIDED WITH DUCT MOUNTED SOUND TRAP AS SCHEDULED ABOVE.
9. ALL FANS PROVIDED WITH THE FPB'S SHALL BE SET TO PROVIDE A MINIMUM ESP OF .4 INCH W.G AT THE MAXIMUM AIRFLOW RATES NOTED IN THE SCHEDULE.
10. ALL FAN POWERED BOXES LOCATED BELOW THE 15TH FLOOR (LEVEL B4 THRU 14) SHALL BE SELECTED FOR 140°F EWT AND 120°F LWT. MAXIMUM WATER FLOW FOR THE LARGEST SIZE BOX SHALL BE 2.0 GPM.

FUEL OIL TRANSFER PUMPS

(IMO DELAVAL AS STD.)

PUMP NO.	LOCATION	SERVICE	GPM	DISCHARGE HEAD, (PSIG)	SUCTION PRESSURE (IN HG.)	PUMP RPM	BHP	MINIMUM MOTOR H.P.	MODEL NO.	REMARKS
FOP-1	BASEMENT F.O. TANK RM	EMERGENCY GENERATOR	12	70	15					

NOTE:
PUIMPS SHALL BE FURNISHED AS A DUPLEX SET ON A SINGLE SKID AND SHALL COME PREPIPED WITH ALL VALVES, STARTERS, ALTERNATER, ETC.

COLD CONDENSATE PUMPS

(LITTLE GIANT AS STD) (115/1ø/60)

PUMP No.	LOCATION	SERVICE	PUMP GPM @15 FT. HEIGHT	DISCHARGE PRESSURE	RECEIVER CAP (GALS)	MOTOR RPM	MIN. MOTOR HP	PUMP TYPE		REMARKS

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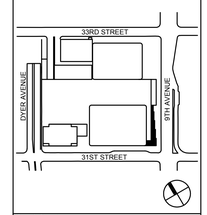

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UNIT AND ENTRANCE HEATERS

UNIT HEATER No.	LOCATION	FAN CFM (HIGH SPEED)	FAN R.P.M.	HEAT OUTPUT BTU'S PER HOUR (MBH)	ENTERING AIR TEMP. DB (°F)	FINAL AIR TEMP. DB (°F)	HOT WATER			STEAM @ 2 PSIG	ELECTRIC		MOTOR		TYPE	MODEL No.	REMARKS
							GPM	ENTERING WATER TEMP. (°F)	LEAVING WATER TEMP. (°F)	STEAM CONDENSATE (LBS/HR)	(DUAL HEAT) KW @ HIGH SETTING	VOLTS/PHASE/Hz	H.P.	R.P.M.			
UH-B-1 THRU UH-B-5	BASEMENT LOADING DOCK												1/6				
UH-68-1&2	68TH FLOOR COGENERATOR ROOM												1/6				
UH-68-3	68TH FLOOR HOUSE WATER TANK ROOM												1/6				
UH-68-4	68TH FLOOR PUMP ROOM												1/6				
UH-68-1	64TH FLOOR BANK F EMR												1/6				
UH-68-2	64TH FLOOR ROOF STAIR												1/6				
UH-68-3	64TH FLOOR SERVICE ELEVATOR EMR												1/6				
UH-69-1 THRU UH-69-6	69TH FLOOR												1/6				
UH-70-1 THRU UH-70-4	70TH FLOOR												1/6				

NOTES:
1. UNLESS OTHERWISE NOTED THERMOSTATS FOR ALL UNIT HEATERS SHALL BE UNIT MOUNTED.

SOUND TRAPS

(IAC AS STD.)

TRAP NO.	LOCATION	SERVICE	CFM	TRAP SIZE W x H x L (FT. x FT. x FT.)	MAX. PRESS. DROP (IN H_2O)	SPECIFICATION TYPE (IAC. MODEL NO.)	REMARKS
ST-4-1	BASE BUILDING GENERATOR	BASE BUILDING GENERATOR INTAKE	130,000	14'Wx24'Hx5'L	0.1		
ST-4-2	BASE BUILDING GENERATOR	BASE BUILDING GENERATOR DISCHARGE	110,000	14'Wx24'Hx5'L	0.1		
ST-3-1	RETAIL STAIR	FAN F-3-1 SUCTION	58,000	SIZE TO FIT FAN	0.1		
ST-3-2	RETAIL STAIR	FAN F-3-1 DISCHARGE	58,000	SIZE TO FIT FAN	0.1		

STEAM AND HOT WATER REHEAT COILS

(AEROFIN TYPE 'CH' AS STD.)

COIL TYPE	LOCATION	SERVICE	AIR SIDE				WATER SIDE				NUMBER OF SECTIONS	FINNED LENGTH	CASING HEIGHT (INCHES)	TOTAL FACE AREA (SQ. FT)	FACE VELOCITY (FPM)	ROW DEEP	FIN SPACING(FIN/FT)	CIRCUITING	MFGR. TYPE	FLUID	REMARKS
			CFM	ENTERING TEMP. (°F)	LEAVING TEMP. (°F)	MAX. PRESSURE DROP (IN. H2O)	CFM/LBS/HR	ENTERING TEMP. (°F)	LEAVING TEMP. (°F)	MAX. PRESSURE DROP (FT H2O)											

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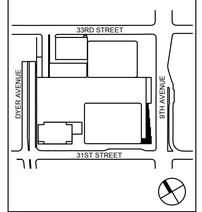
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL SCHEDULE SHEET 5 OF 6

Project No.: 14830.A.000
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DEPT OF BUILDINGS 37139143 Job Number | E5241250785 Scan Code

CONDENSER WATER PACKAGED AIR CONDITIONING UNITS

UNIT No.	LOCATION	SERVICE	SENSIBLE CAPACITY (BTU/HR)	TOTAL CAPACITY (BTU/HR)	ENTER. AIR TEMP. (°F)		FAN SECTION				COOLING COIL							CONTROL VALVES			FILTER		HUMID.		REHEAT	ELECTRICAL				VIB. BASE SPEC. TYPE	VIB. BASE MIN. STATIC. DEFL. (IN.)	MODEL NUMBER	REMARKS
					DB	WB	CFM	EXT. S.P. (IN.)	MIN. MOTOR HP	NO. OF FANS	EWT (°F)	LWT (°F)	FACE AREA (SQ. FT)	No. OF ROWS	FACE VELOCITY (FPM)	GPM	P.D. (FT)	WORKING PRESS. (PSI)	VALVE TYPE	SIZE	SIZE	%EFF.	LBS/ HR	KW	KW	TOTAL FLA	VOLTS	PHASE	Hz				
AC-B-1 THRU AC-B-2	CELLAR B LEVEL	SWITCHGEAR ROOM	200,000																							8.0	460	3	60				
AC-B-3	CELLAR B LEVEL	CELLAR B LEVEL MER	300,000																							12.0	460	3	60				
AC-B-4	CELLAR B LEVEL	DOCK MASTER OFFICE	18,000																							2.5	460	3	60				
AC-B-5	CELLAR B LEVEL	CLEANING SUPERVISOR	18,000																							2.5	460	3	60				
AC-B-6	CELLAR B LEVEL	WET GARBAGE	18,000																							2.5	460	3	60				
AC-B-7	CELLAR B LEVEL	DOCK ACCESS OFFICE	18,000																							2.5	460	3	60				
AC-B-8	CELLAR B LEVEL	MESSENGER ROOM	18,000																							2.5	460	3	60				
AC-6-1 THRU AC-67-1	TENANT FLOOR MER	TENANT FLOORS 6 THRU 67	1,062,000				25,000																			70	460	3	60				
AC-B1-1	CELLAR B-1 LEVEL	B-1 LEVEL BOH SPACES	50,000				3,000																			3.4	460	3	60				
AC-B2-1	CELLAR B-2 LEVEL	B-2 LEVEL BOH SPACES	50,000				3,000																			3.4	460	3	60				
AC-B3-1	CELLAR B-3 LEVEL	B-3 LEVEL BOH SPACES	50,000				3,000																			3.4	460	3	60				
AC-1-1	GROUND FLOOR	VISITOR CENTER	36,000				1,500																			3.4	460	3	60				
AC-2-1	LEVEL 2	SECURITY CONSOLE	36,000				1,500																			3.4	460	3	60				
AC-4-1	LEVEL 4	SECURITY RACK ROOM	50,000				3,000																			3.4	460	3	60				
AC-20-1B & 2B	20TH FLOOR CORE	LOW RISE BANK A ELEVATOR MACHINE ROOM (1-6)	50,000																							3.4	460	3	60				DOWN FLOW (1 ACT, 1 STBY)
AC-30-1B	30TH FLOOR CORE	LOW RISE BANK B ELEVATOR MACHINE ROOM (7-12)	120,000																							8.0	460	3	60				DUCTED (1 ACT, 1 STBY)
AC-40-1B & 2B	40TH FLOOR CORE	MID RISE BANK C ELEVATOR MACHINE ROOM (13-18)	120,000																							8.0	460	3	60				DOWN FLOW (1 ACT, 1 STBY)
AC-52-1B	52ND FLOOR CORE	MID RISE BANK D ELEVATOR MACHINE ROOM (19-24)	220,000																							8.0	460	3	60				DUCTED (1 ACT, 1 STBY)
AC-62-1B	62ND FLOOR CORE	HIGH RISE BANK E ELEVATOR MACHINE ROOM (25-30)	220,000																							8.0	460	3	60				DOWN FLOW (1 ACT, 1 STBY)
AC-70-1B	70TH FLOOR CORE	HIGH RISE BANK F ELEVATOR MACHINE ROOM (31-36)	220,000																							8.0	460	3	60				DUCTED (1 ACT, 1 STBY)
AC-71-1B	71ST FLOOR CORE	SERVICE ELEVATOR MACHINE ROOM (35,36,37)	160,000																							3.4	460	3	60				DUCTED (1 ACT, 1 STBY)

CHILLED WATER PACKAGED AIR CONDITIONING UNITS

(DATAAIRE AS STD.)

UNIT No.	LOCATION	SERVICE	SENSIBLE CAPACITY (BTU/HR)	TOTAL CAPACITY (BTU/HR)	ENTER. AIR TEMP. (°F)		FAN SECTION				COOLING COIL							CONTROL VALVES			FILTER		HUMID.		REHEAT	ELECTRICAL				VIB. BASE SPEC. TYPE	VIB. BASE MIN. STATIC. DEFL. (IN.)	MODEL NUMBER	REMARKS
					DB	WB	CFM	EXT. S.P. (IN.)	MIN. MOTOR HP	NO. OF FANS	EWT (°F)	LWT (°F)	FACE AREA (SQ. FT)	No. OF ROWS	FACE VELOCITY (FPM)	GPM	P.D. (FT)	WORKING PRESS. (PSI)	VALVE TYPE	SIZE	SIZE	%EFF.	LBS/ HR	KW	KW	TOTAL FLA	VOLTS	PHASE	Hz				
AC-20-1A & 2A	20TH FLOOR CORE	LOW RISE BANK A ELEVATOR MACHINE ROOM (1-6)	50,000																							3.4	460	3	60				DOWN FLOW (1 ACT, 1 STBY)
AC-30-1A	30TH FLOOR CORE	LOW RISE BANK B ELEVATOR MACHINE ROOM (7-12)	120,000																							8.0	460	3	60				DUCTED (1 ACT, 1 STBY)
AC-40-1A & 2A	40TH FLOOR CORE	MID RISE BANK C ELEVATOR MACHINE ROOM (13-18)	120,000																							8.0	460	3	60				DOWN FLOW (1 ACT, 1 STBY)
AC-52-1A	52ND FLOOR CORE	MID RISE BANK D ELEVATOR MACHINE ROOM (19-24)	220,000																							8.0	460	3	60				DUCTED (1 ACT, 1 STBY)
AC-62-1A	62ND FLOOR CORE	HIGH RISE BANK E ELEVATOR MACHINE ROOM (25-30)	220,000																							8.0	460	3	60				DOWN FLOW (1 ACT, 1 STBY)
AC-70-1A	70TH FLOOR CORE	HIGH RISE BANK F ELEVATOR MACHINE ROOM (31-36)	220,000																							8.0	460	3	60				DUCTED (1 ACT, 1 STBY)
AC-71-1A	71ST FLOOR CORE	SERVICE ELEVATOR MACHINE ROOM (35,36,37)	160,000																							3.4	460	3	60				DUCTED (1 ACT, 1 STBY)

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Wind Tunnel Consultant
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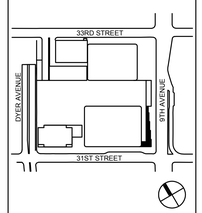
Key Plan:



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Sheet Name:

MECHANICAL SCHEDULE SHEET 6 OF 6

Project No.: 14830.A.000
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B-SCAN Sheet No.: M-505.00
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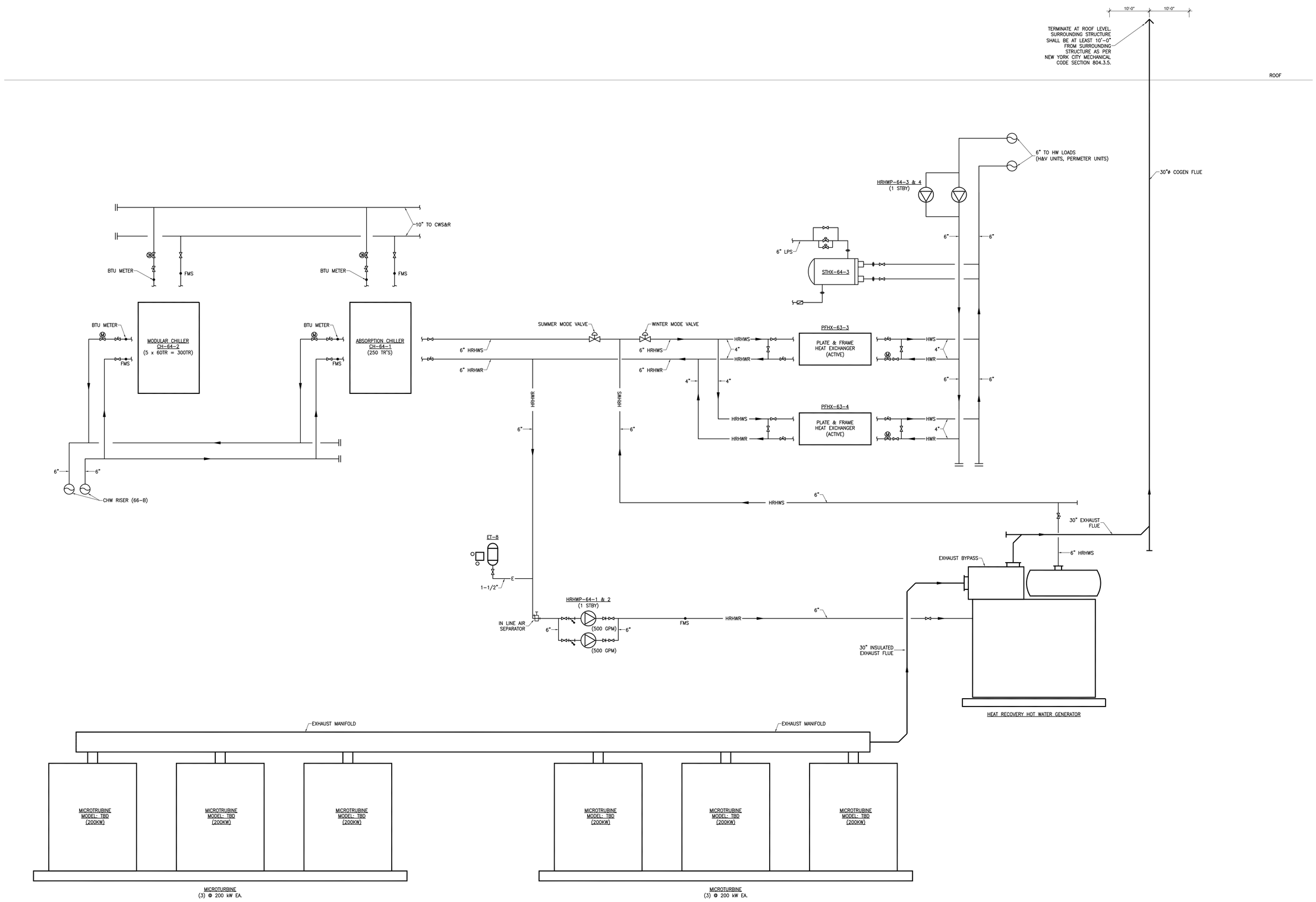

MANHATTAN WEST: NORTH TOWER

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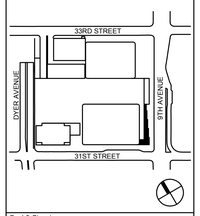

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Sheet Name:

MECHANICAL CO-GEN FLOW DIAGRAM

Project No.: 14830.A.000	B-SCAN Sheet No.: M-600.00
Date: 20 JUN 2014	Sheet No.: M-600
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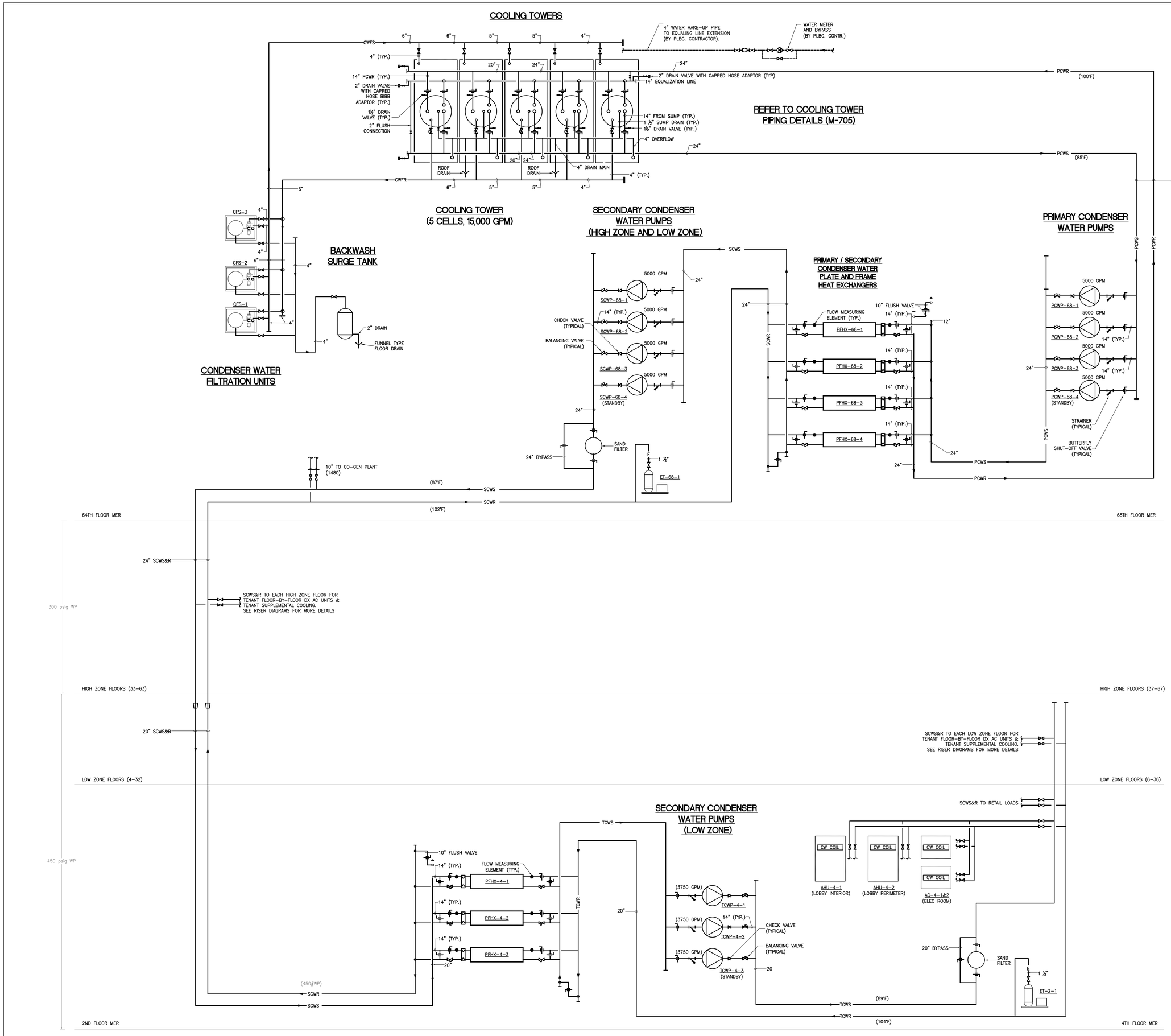
File No.:	Page No.:



SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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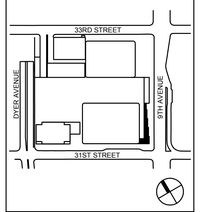
Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL CONDENSER WATER FLOW DIAGRAM

Project No.: 14830.A.000	B-SCAN Sheet No.: M-601.00
Date: 20 JUN 2014	Sheet No.: M-601
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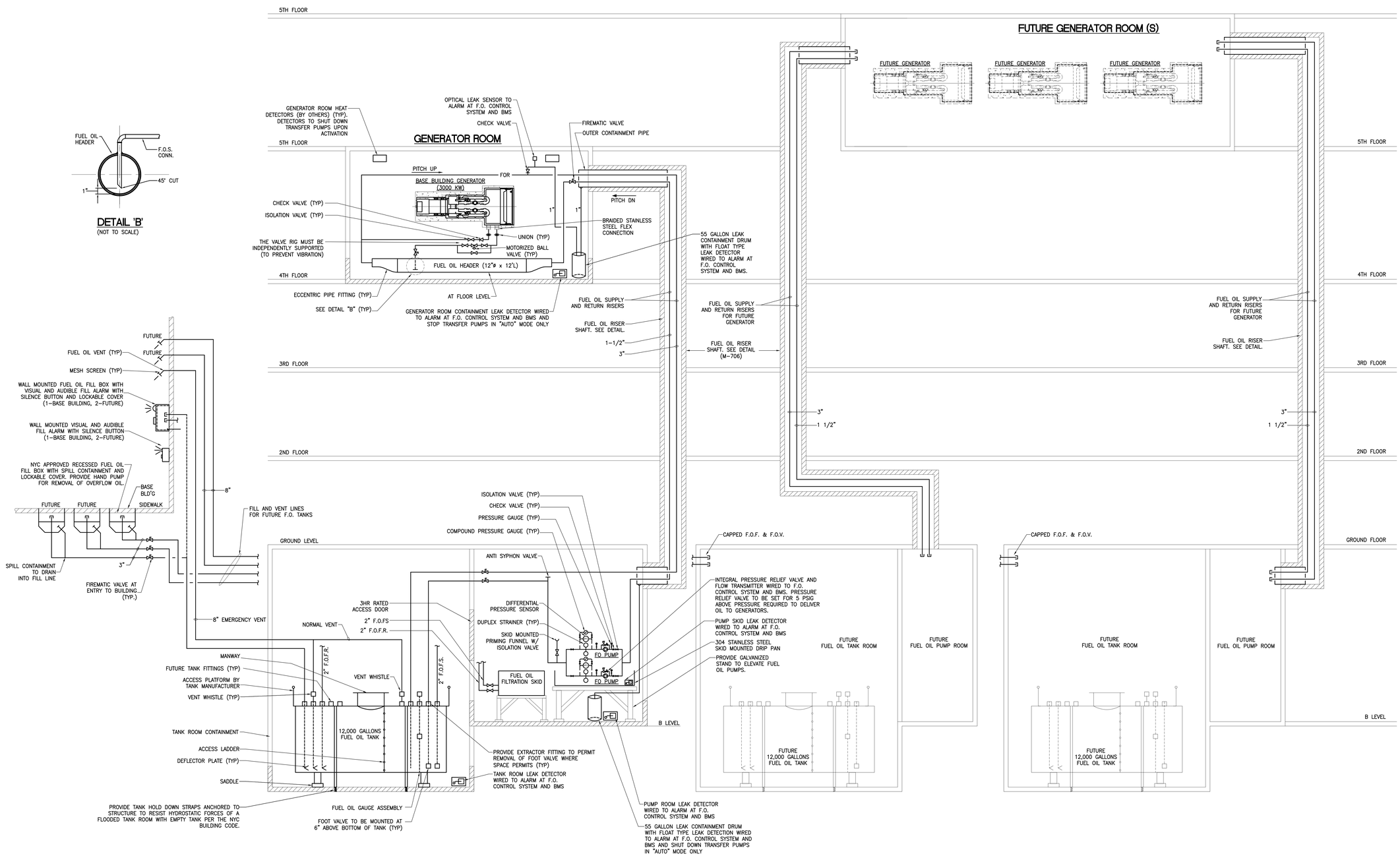

NOTES:

1. ALL F.O. PIPING FROM THE F.O. PUMP ROOM TO THE UNDERSIDE OF THE MASONRY F.O. SHAFTS AND FROM THEIR RESPECTIVE MASONRY SHAFTS TO THE GENERATOR EQUIPMENT ROOM SHALL BE PIPE-WITHIN-A-PIPE CONSTRUCTION. IN ADDITION, THE PIPING SHALL BE ENCLOSED WITHIN A TWO (2) HOUR RATED ENCLOSURE (AS DETAILED ABOVE).
2. EACH SET OF F.O. SUPPLY AND RETURN RISERS SHALL BE INSTALLED WITHIN SEPARATE DEDICATED 4" MASONRY RISER SHAFTS.
3. ALL FUEL OIL ISOLATION, BALANCING, BRIDGE AND/OR FIREMATIC VALVES SHALL BE PROVIDED WITH INTEGRAL TAMPER SWITCHES, WIRED TO THE BMS SYSTEM FOR ANNUNCIATION.
4. ALL LEAK DETECTORS SHALL BE OPTICAL TYPE AND SHALL BE CAPABLE OF DISTINGUISHING BETWEEN OIL AND WATER.

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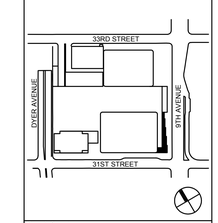

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Sheet Name:

MECHANICAL FUEL OIL FLOW DIAGRAM

Project No.: 14830.A.000	B-SCAN Sheet No.: M-602.00
Date: 20 JUN 2014	Sheet No.: M-602
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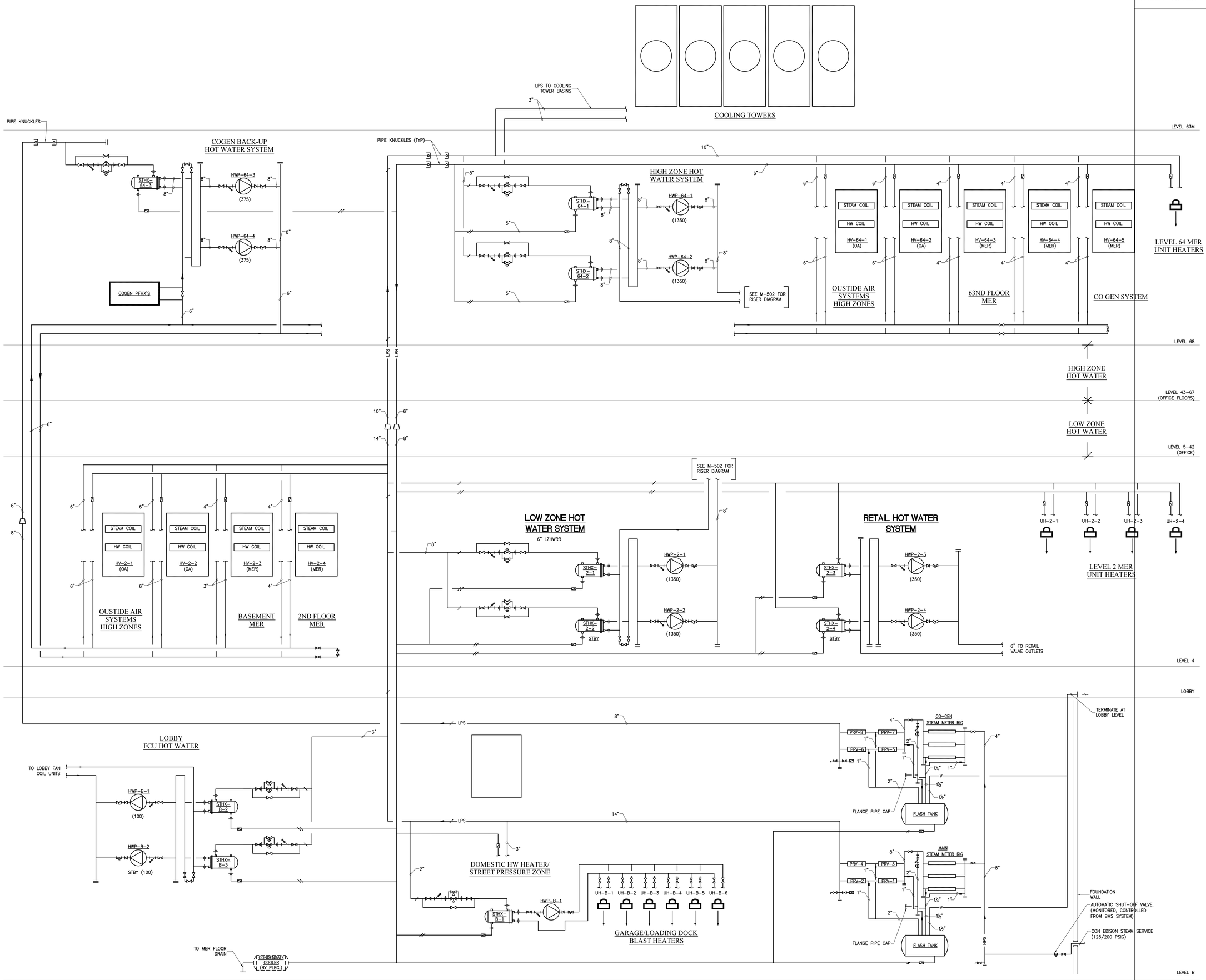

SHEET NOTES

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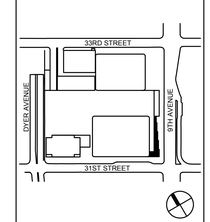

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MECHANICAL STEAM/HOT WATER FLOW DIAGRAM

Project No.: 14830.A.000	B-SCAN Sheet No.: M-603.00
Date: 20 JUN 2014	Sheet No.: M-603
Scale: NTS	
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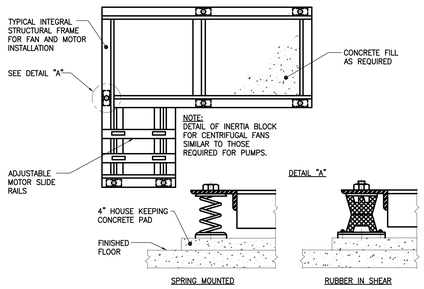
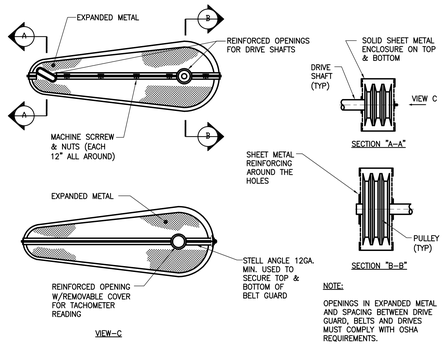


FOR VIBRATION ISOLATORS REQUIREMENTS SEE SPECIFICATIONS

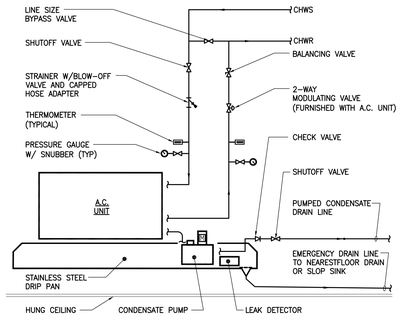
TYPICAL CENTRIFUGAL FAN BASE MOUNTING DETAIL



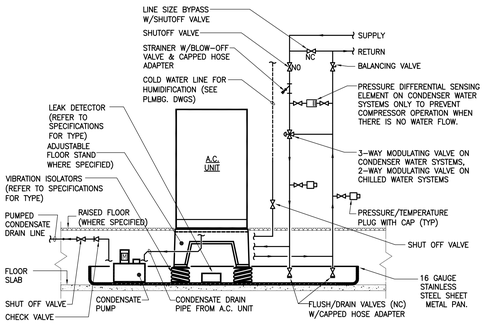
NOTE:

OPENINGS IN EXPANDED METAL AND SPACING BETWEEN DRIVE GUARD, BELTS AND DRIVES MUST COMPLY WITH OSHA REQUIREMENTS.

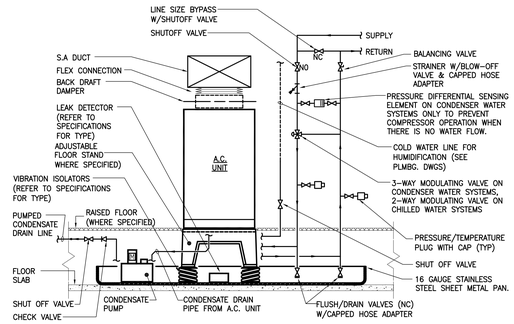
DRIVE GUARD DETAILS



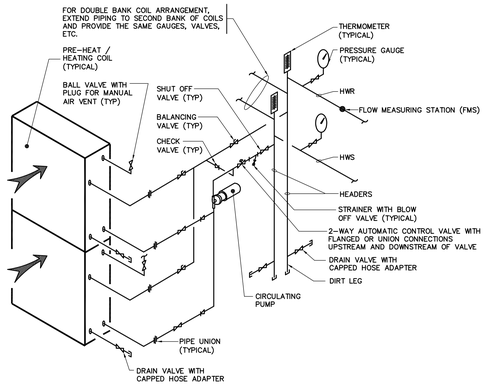
CEILING MOUNTED A.C. UNIT, CHILLED WATER PIPING CONNECTION DETAIL



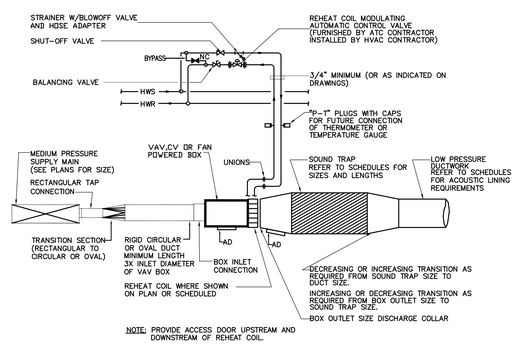
FLOOR MOUNTED A.C. UNIT, OVERHEAD WATER PIPING CONNECTION DETAIL



FLOOR MOUNTED TOP DISCHARGE A.C. UNIT, OVERHEAD WATER PIPING CONNECTION DETAIL

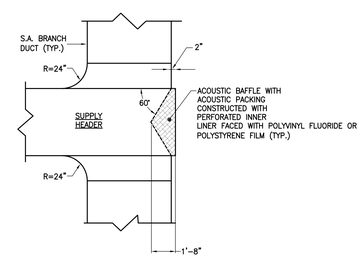


HOT WATER PRE-HEAT / HEATING COIL PIPING CONNECTION DETAIL



NOTE: PROVIDE ACCESS DOOR UPSTREAM AND DOWNSTREAM OF REHEAT COIL.

CVR, VAV, FPB or TERMINAL UNIT WITH REHEAT COIL CONNECTION DETAIL



TYPICAL MEDIUM PRESSURE TAP-OFF WITH INTERNAL ACOUSTICAL BAFFLE

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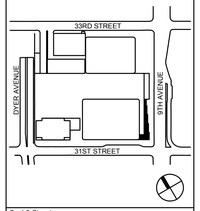
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:

MECHANICAL DETAIL SHEET NO. 1

Project No.: 14830.A.000	B-SCAN Sheet No.: M-700.00
Date: 20 JUN 2014	Sheet No.: M-700
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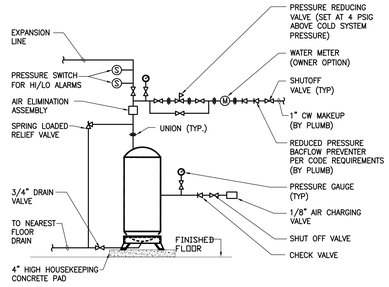
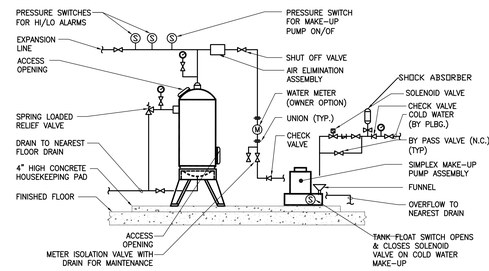
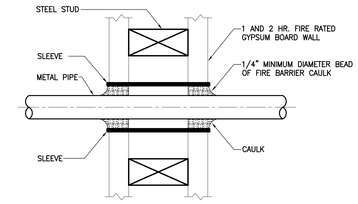


VERTICAL DIAPHRAGM EXPANSION TANK PIPING CONNECTION DETAIL

NOTES:



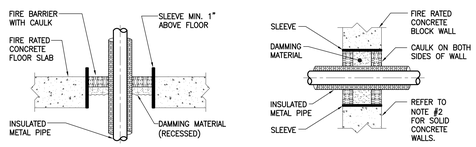
DIAPHRAGM EXPANSION TANK WITH MAKE-UP PUMP



NOTES:

1. THE SPACE BETWEEN THE PENETRATING ITEM AND WALL BOARD MUST ACCOMODATE AT LEAST ONE WRAP OF 1/4" FIRE BARRIER WRAP/STRIP.
2. IF THE ANNULAR SPACE IS LESS THAN 1/2", ONE WRAP OF WRAP/STRIP IS REQUIRED. IF THE ANNULAR SPACE IS 1/2" OR GREATER, FILL WITH ADDITIONAL WRAPS OF WRAP/STRIP UNTIL THE SPACE IS LESS THAN 1/4". WRAP/STRIP MAY BE FRICTION FIT INTO OPENING SECURED WITH FOIL TAPE OR 16 GAUGE STEEL TIE WIRE.
3. SLIDE THE WALL STRIPS INTO THE OPENING, LEAVING A MAXIMUM OF 3/4" EXPOSED WRAP BEYOND THE WALL SURFACE.
4. SEAL THE WRAP/STRIP EDGES AND SEAMS WITH 1/4" MINIMUM BEAD OF FIRE BARRIER CAULK.
5. INSTALL FIRESTOP ON BOTH SIDES OF THE WALL.
6. INSTALLATION MUST CONFORM WITH PRODUCT MANUFACTURERS PERFORMANCE RATINGS PER ASTM E-814 (UL 1479) FIRE TEST AND UL RESPECTIVE CLASSIFICATION FOR FIRE STOPPING.
7. IN ADDITION TO THE REQUIREMENTS OF THE APPROVED UL LISTED FIRE STOPPING ASSEMBLIES, ESCUTCHEON PLATES SHALL BE INSTALLED ON EACH SIDE OF THE FIRE RATED WALL AND SLAB CONSTRUCTION IN ACCORDANCE WITH ARTICLE 15005-1.25 OF THE SPECIFICATIONS AND AS REQUIRED BY THE NEW YORK CITY BUILDING CODE.

PENETRATION FIRESTOP FOR METAL PIPE THROUGH GYPSUM BOARD WALL



CONCRETE FLOOR SECTION VIEW — CONCRETE WALL SECTION VIEW

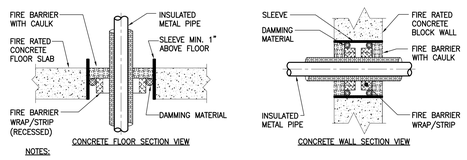
NOTES:

1. THE MAXIMUM ANNULAR SPACE TO BE FILLED IS 2", THE MINIMUM ANNULAR SPACE IS 3/4", THE MAXIMUM PIPE SIZE IS A NOMINAL 4" DIAMETER.
2. FOR SOLID CONCRETE WALLS, THE CAULK MAY BE CENTERED IN THE WALL WITH DAMMING MATERIAL ON BOTH SIDES OF THE CAULK.
3. PENETRATIONS SHALL BE CAULKED ON BOTH SIDES. SELF LEVELING CAULK SHALL BE USED ON ALL HORIZONTAL SURFACES.
4. THE DEPTH OF THE CAULK SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE:

CAULK DEPTH (MIN.)	INSULATION
1"	1" THICK
2"	2" THICK

5. INSTALLATION MUST CONFORM WITH PRODUCT MANUFACTURERS PERFORMANCE RATINGS PER ASTM E-814 (UL 1479) FIRE TEST AND UL RESPECTIVE CLASSIFICATION FOR FIRE STOPPING.
6. IN ADDITION TO THE REQUIREMENTS OF THE APPROVED UL LISTED FIRE STOPPING ASSEMBLIES, ESCUTCHEON PLATES SHALL BE INSTALLED ON EACH SIDE OF THE FIRE RATED WALL AND SLAB CONSTRUCTION IN ACCORDANCE WITH ARTICLE 15005-1.25 OF THE SPECIFICATIONS AND AS REQUIRED BY THE NEW YORK CITY BUILDING CODE.

PENETRATION FIRESTOP FOR INSULATED METAL PIPE THROUGH A CONCRETE FLOOR OR WALL



CONCRETE FLOOR SECTION VIEW — CONCRETE WALL SECTION VIEW

NOTES:

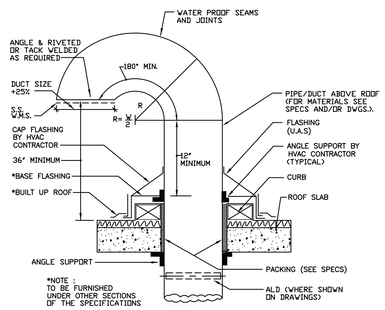
1. WALL PENETRATION FIRESTOPS MUST BE INSTALLED ON BOTH SIDES OF THE WALL, THE FLOOR PENETRATION FIRESTOP IS TO BE INSTALLED FOR THE TOP OF THE FLOOR SURFACE.
2. THE ANNULAR SPACE MUST BE LARGE ENOUGH TO ACCOMODATE THE MIN. NUMBER OF WRAP/STRIPS REQUIRED IN BOTH THE FLOOR OR WALL. THE MINIMUM ANNULAR SPACE MUST ACCOMODATE THE MINIMUM NUMBER OF WRAP/STRIPS REQUIRED PER INSULATION THICKNESS. (SEE TABLE BELOW)

TABLE 1

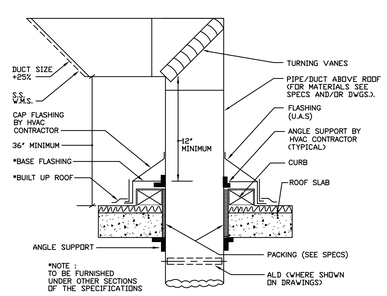
WRAP	CAULK (MIN.)	INSULATION	HOUR RATING
2 WRAPS	1/2" DEPTH	1" THICK	3
3 WRAPS	1/2" DEPTH	2" THICK	2
4 WRAPS	1/2" DEPTH	3" THICK	2

3. IF THE ANNULAR SPACE IS GREATER THAN 1/2" AFTER THE INSTALLATION OF THE WRAP/STRIP, IT MAY BE FILLED WITH ADDITIONAL WRAP/STRIPS UP TO LESS THAN 1/2" OR FILLED WITH THE PROPER AMOUNT OF CAULK (SEE TABLE 1). A SUITABLE DAMMING MATERIAL SUCH AS MINERAL WOOL MUST BE PROVIDED TO SUPPORT THE CAULK AND PREVENT LEAKAGE.
4. SEAL THE SURFACE AND EDGES OF THE THROUGH OPENINGS WITH A MINIMUM 1/4" BEAD OF CAULK.
5. INSTALLATION MUST CONFORM WITH PRODUCT MANUFACTURERS PERFORMANCE RATINGS PER ASTM E-814 (UL 1479) FIRE TEST AND UL RESPECTIVE CLASSIFICATION FOR FIRE STOPPING.
6. IN ADDITION TO THE REQUIREMENTS OF THE APPROVED UL LISTED FIRE STOPPING ASSEMBLIES, ESCUTCHEON PLATES SHALL BE INSTALLED ON EACH SIDE OF THE FIRE RATED WALL AND SLAB CONSTRUCTION IN ACCORDANCE WITH ARTICLE 15005-1.25 OF THE SPECIFICATIONS AND AS REQUIRED BY THE NEW YORK CITY BUILDING CODE.

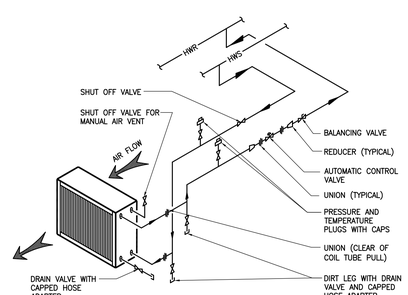
PENETRATION FIRESTOP FOR 20" MAXIMUM INSULATED METAL PIPE THROUGH A CONCRETE FLOOR OR WALL



CURB AND FLASHING DETAIL FOR GOOSENECK AT ROOF



CURB AND FLASHING DETAIL FOR GOOSENECK AT ROOF



NOTES:

1. PROVIDE ACCESS DOORS UPSTREAM AND DOWNSTREAM OF ALL HEATING COILS.
2. FOR DUCT MOUNTED REHEAT COILS PROVIDE PRESSURE TEMPERATURE PLUGS WITH CAPS IN LIEU OF THERMOMETERS AND TEMPERATURE GAUGES.

HOT WATER HEATING AND REHEAT COIL PIPING CONNECTION DETAIL

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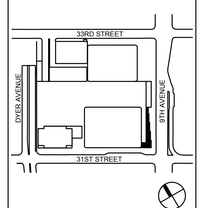
Key Plan:



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Sheet Name:

MECHANICAL DETAIL SHEET NO. 2

Project No.: 14830.A.000	B-SCAN Sheet No.: M-701.00
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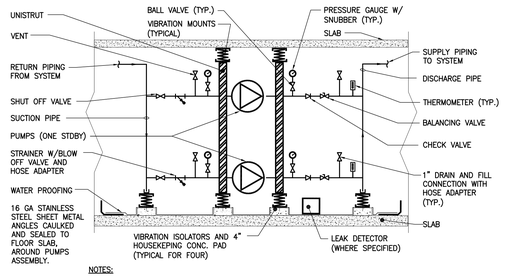
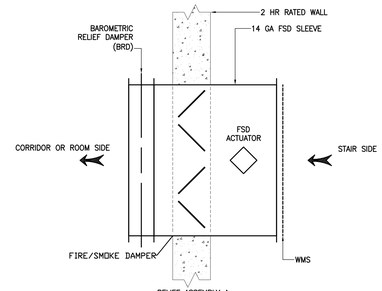


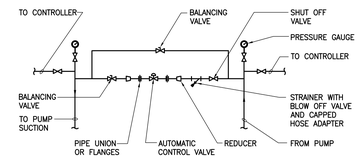
NOTES:

1. ALL PIPING AND EQUIPMENT SHALL BE RESILIENTLY SUPPORTED AS PER SPECIFICATIONS.
2. REFER TO DETAIL FOR CYCLONE SEPARATOR PIPING ARRANGEMENT.

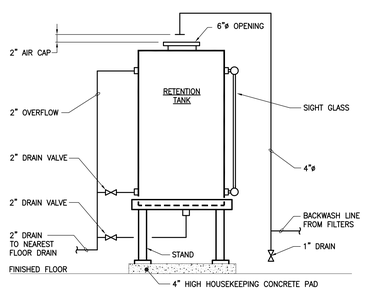
INLINE PUMP ASSEMBLY DETAIL



RELIEF ASSEMBLY A

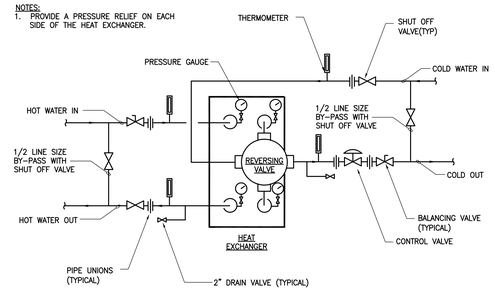


PRESSURE DIFFERENTIAL BYPASS OR INJECTION CONTROL VALVE ARRANGEMENT



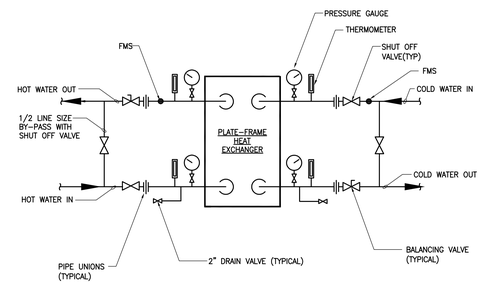
COOLING TOWER FILTRATION SYSTEM BACKWASH AND RETENTION TANK DETAIL

NOTES:
1. PROVIDE A PRESSURE RELIEF ON EACH SIDE OF THE HEAT EXCHANGER.

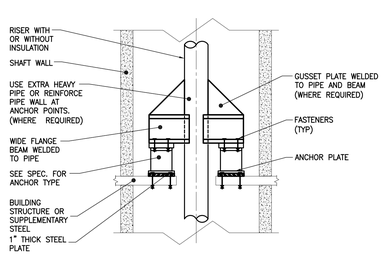


DETAIL OF PLATE-AND-FRAME HX WITH REVERSING VALVE AND CONTROL VALVE

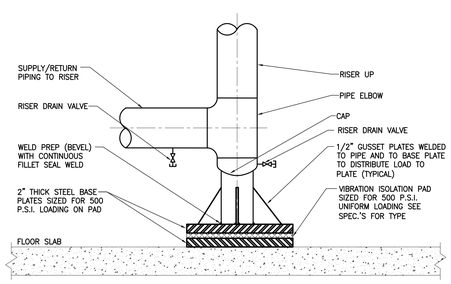
(OPEN CONDENSER WATER SIDE)



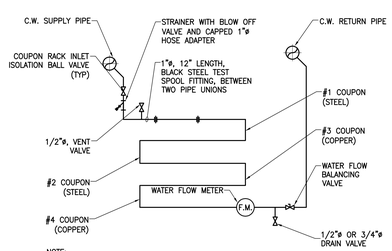
TYPICAL PLATE-AND-FRAME HX PIPING CONNECTION DETAIL (CLOSED SYSTEM)



TYPICAL ANCHOR AND GUIDE SUPPORT DETAILS FOR PIPE RISERS



TYPICAL BASE SUPPORT DETAIL FOR PIPE RISERS



NOTE:

METERED WATER FLOW THROUGH 1"ø BLACK STEEL PIPING TO BE MAINTAINED AT 4 TO 6 G.P.M., WHICH PROVIDES FLOW VELOCITY OF 3 TO 5 F.P.S.

OPEN C.W. SYSTEM 1" BLACK STEEL CORROSION COUPON RACK PIPE DETAIL

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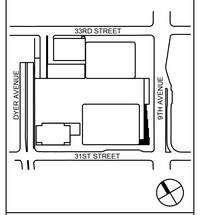
Key Plan:



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Sheet Name:

MECHANICAL DETAIL SHEET NO. 3

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Date: 20 JUN 2014	Sheet No.: M-702
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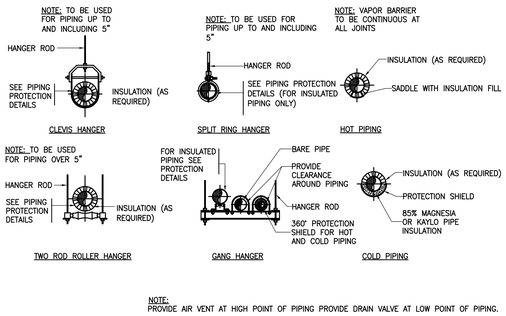
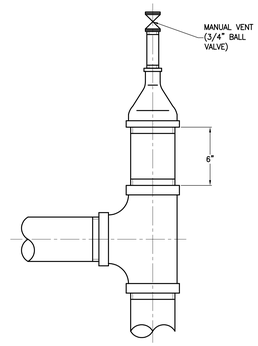
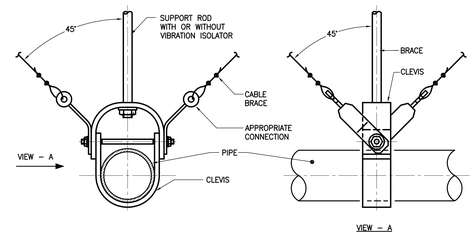


NOTE:
PROVIDE AIR VENT AT HIGH POINT OF PIPING PROVIDE DRAIN VALVE AT LOW POINT OF PIPING.

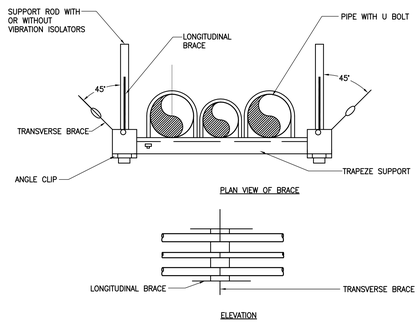
NON-SEISMIC PIPING SUPPORT AND INSULATION DETAILS



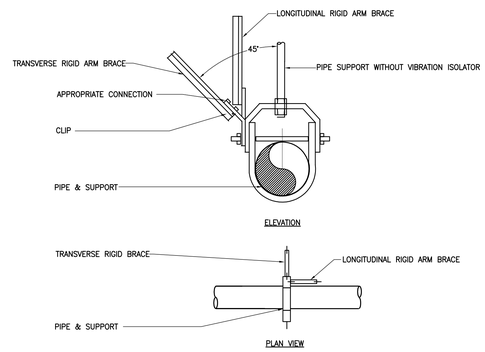
VENT ON PIPE RISER



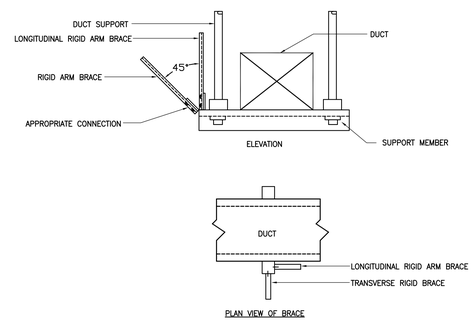
SEISMIC CABLE BRACE FOR PIPEWORK MOUNTING DETAIL



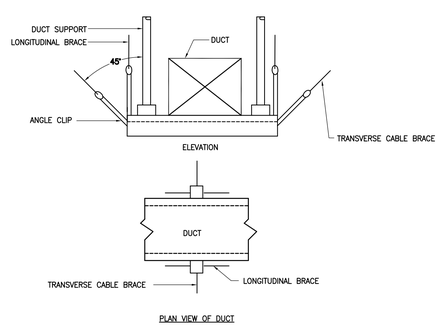
SEISMIC TWO DIRECTIONAL CABLE BRACE FOR PIPEWORK ON TRAPEZE



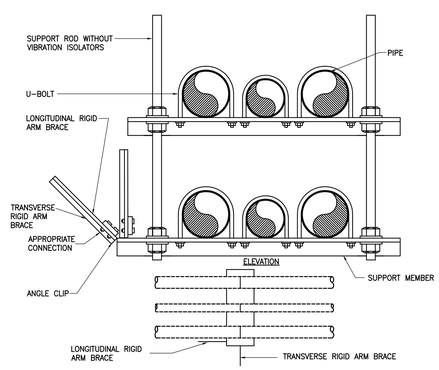
SEISMIC RIGID ARM NON-INSULATED PIPE BRACE



SEISMIC SINGLE RIGID ARM BRACE FOR DUCTS



SEISMIC TWO DIRECTIONAL CABLE BRACE FOR DUCT



SEISMIC RIGID ARM BRACE FOR NON-ISOLATED PIPES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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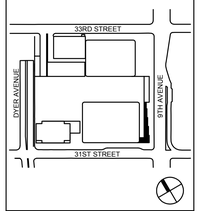
Key Plan:



Seal & Signature:

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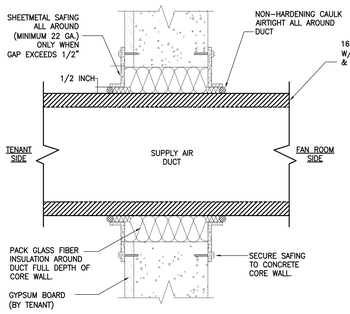
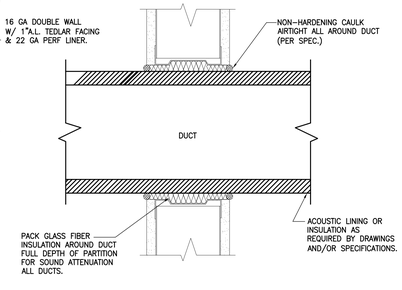
Sheet Name:

MECHANICAL DETAIL SHEET NO. 4

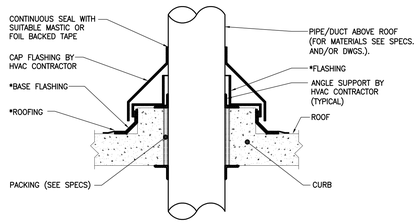
Project No.: 14830.A.000	B-SCAN Sheet No.: M-703.00
Date: 20 JUN 2014	Sheet No.: M-703
Scale: NTS	
File No.:	Page No.:



FAN ROOM DUCT PENETRATION
(NON-RATED PARTITIONS)

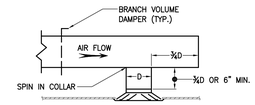


TYPICAL DUCT AT WALL PENETRATION
(NON-RATED PARTITIONS)

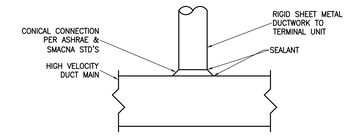


*NOTE:
TO BE FURNISHED UNDER OTHER SECTIONS OF THE SPECIFICATION.

CURB AND FLASHING DETAIL FOR
PIPE/DUCT PENETRATIONS AT ROOF

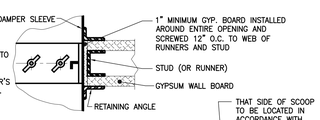


TYPICAL DIFFUSER INSTALLATION

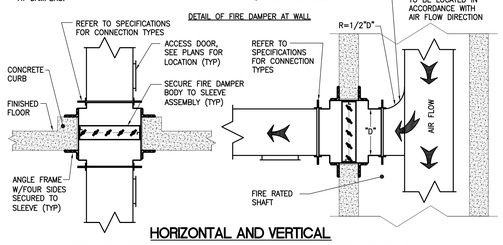


HIGH VELOCITY DUCT CONNECTION

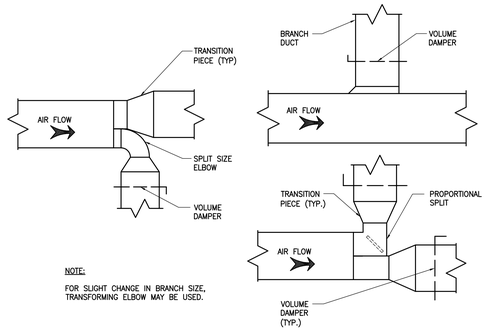
FIRE DAMPER NOTES:
1. DRY WALL FRAMING AT FIRE DAMPERS MUST BE IN ACCORDANCE WITH WALL SYSTEM MANUFACTURER'S UL APPROVED DETAILS.
2. SHEET METAL SLEEVES FOR ALL DAMPERS TO BE 14 GA.
3. FIRE DAMPERS ARE TO BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PER UL 555D.
4. SEE ARCH'L DWGS FOR STUD LOCATION AT DAMPERS.



DETAIL OF FIRE DAMPER AT WALL

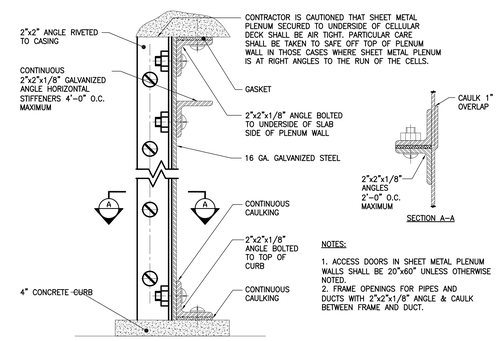


HORIZONTAL AND VERTICAL
FIRE OR FIRE SMOKE DAMPERS INSTALLATION DETAIL



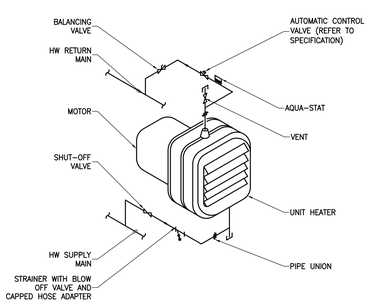
NOTE:
FOR SLIGHT CHANGE IN BRANCH SIZE, TRANSFORMING ELBOW MAY BE USED.

LOW VELOCITY DUCT CONNECTIONS

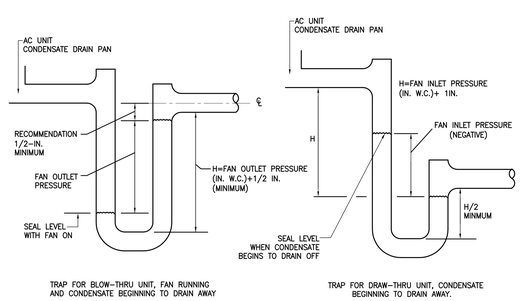


NOTES:
1. ACCESS DOORS IN SHEET METAL PLENUM WALLS SHALL BE 20"x60" UNLESS OTHERWISE NOTED.
2. FRAME OPENINGS FOR PIPES AND DUCTS WITH 2"x2"x1/8" ANGLE & CAULK BETWEEN FRAME AND DUCT.

SHEET METAL PLENUM DETAIL



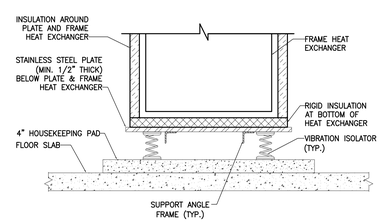
HW UNIT HEATER PIPING CONNECTION



TRAP FOR BLOW-THRU UNIT, FAN RUNNING AND CONDENSATE BEGINNING TO DRAIN AWAY

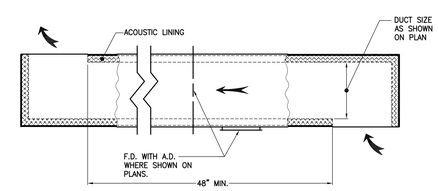
TRAP FOR DRAW-THRU UNIT, CONDENSATE BEGINNING TO DRAIN AWAY.

CONDENSATE TRAPS FOR COOLING COILS



SUPPORT DETAIL FOR FLAT PLATE
HEAT EXCHANGER WITH INSULATION

NOTE:
REQUIREMENT FOR SUPPORT ANCHORS AND FOR THE THICKNESS OF THE SUPPORT PLATE BELOW THE PLATE & FRAME HEAT EXCHANGER SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND SHALL BE AS SPECIFIED BY THE STRUCTURAL ENGINEER.



TRANSFER DUCT DETAIL

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Civil Engineering
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MEP Engineering
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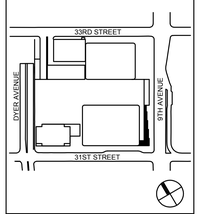
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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Sheet Name:
MECHANICAL DETAIL SHEET NO. 5

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Date: 20 JUN 2014	Sheet No.: M-704
Scale: N TS	
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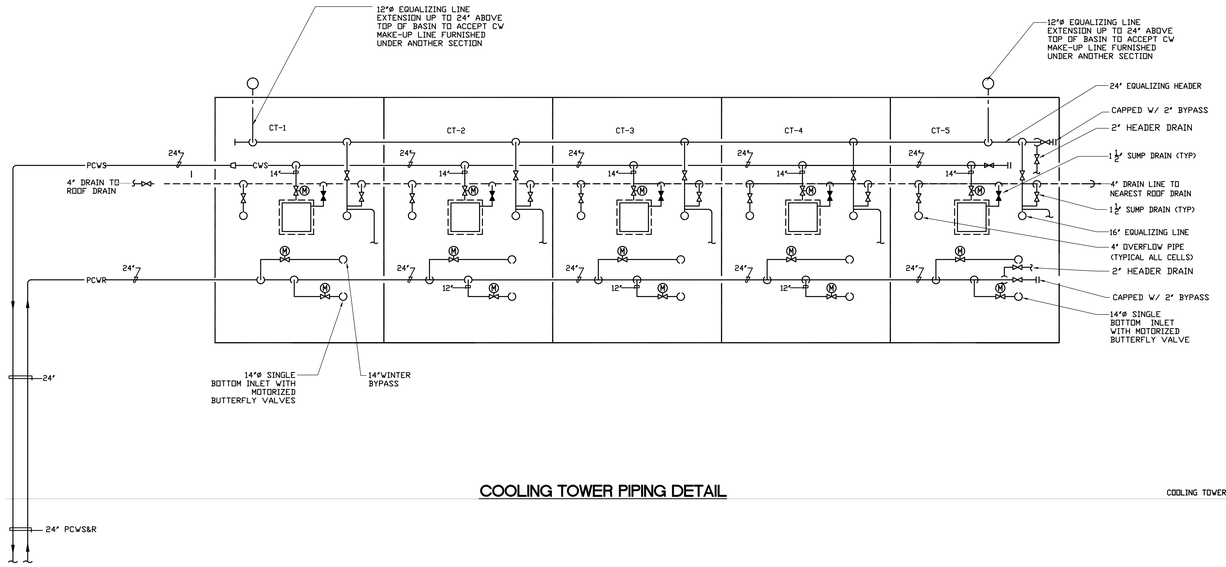
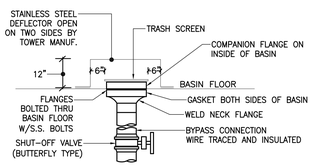


COOLING TOWER PIPING DETAIL

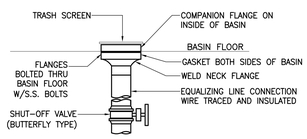
COOLING TOWER - ROOF LEVEL

NOTES:

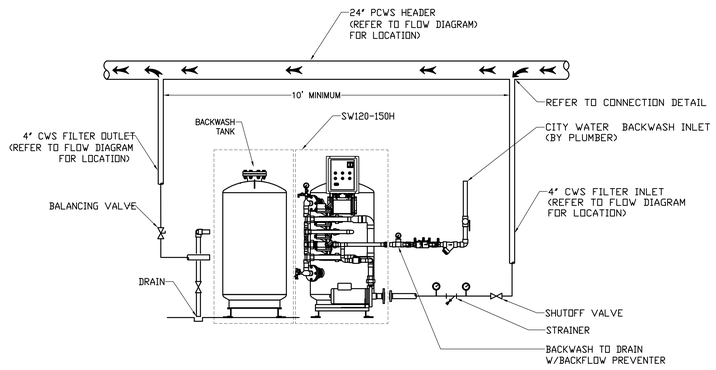
1. ALL PIPING SERVING THE COOLING TOWER SHALL BE SUPPORTED FROM THE COOLING TOWER DUNNAGE. THE USE OF ROOF SUPPORTS AND INDEPENDENT VIBRATION ISOLATORS SHALL NOT BE PERMITTED.
2. THE ACCESS WALKWAY SURROUNDING THE COOLING TOWER WILL BE FURNISHED AND INSTALLED UNDER THIS SECTION OF THE SPECIFICATION. HOWEVER, THE MECHANICAL CONTRACTOR MUST TAKE CARE TO INCLUDE THE WEIGHT OF THIS WALKWAY WHEN SIZING THE COOLING TOWER VIBRATION ISOLATORS.
3. ALL VALVES SERVING THE COOLING TOWER SHALL BE INSTALLED SO AS TO BE OPERABLE FROM EITHER THE SERVICE PLATFORM/WALKWAY OR THE ROOF WITHOUT NEED FOR A LADDER OR OTHER DEVICE.
4. COOLING TOWER WATER MAKE UP SYSTEM CONTROLS SHALL BE FURNISHED BY THE B.A.T.C. CONTRACTOR. THIS CONTRACTOR SHALL INSTALL ALL VALVES (INCLUDING VALVES FURNISHED BY THE B.A.T.C. CONTRACTOR), PIPING, PROBES, SENSORS, ETC. WITH ALL NECESSARY TRANSITIONS, ETC.
5. PROVIDE AUTOMATIC AIR VENTS AND DRAIN VALVES W/HOSE BIBBS FOR ALL SECTIONALIZED SEGMENTS OF CHW AND CW PIPE.
6. ALL COOLING TOWER BASINES & PIPING (INCLUDING VALVES) EXPOSED TO OUTDOORS SHALL BE WIRE HEAT TRACED (BY ELECTRICAL CONTRACTOR) AND INSULATED WITH TWO LAYERS OF INSULATION WITH PROTECTIVE ALUMINUM JACKET. ALL DRAIN PIPING SHALL BE DOUBLE INSULATED AND WIRE TRACED UP TO AND INCLUDING THE SHUT-OFF VALVES.
7. MOTORIZED BUTTERFLY VALVES SHALL BE PROVIDED ON THE SUPPLY AND RETURN PIPES FROM EACH COOLING TOWER.
8. REFER TO SECTIONS, DETAIL SHEETS, AND THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS.



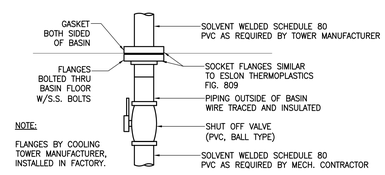
WINTER BYPASS CONNECTION DETAIL



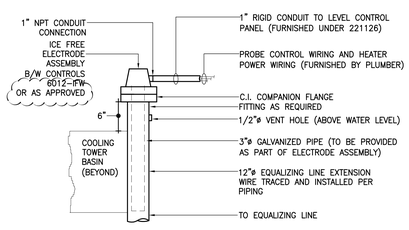
EQUALIZING LINE CONNECTION

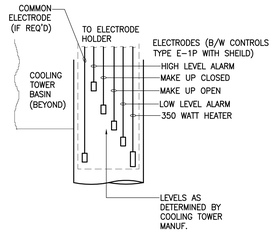


CONDENSER WATER SIDESTREAM FILTRATION PIPING 24"

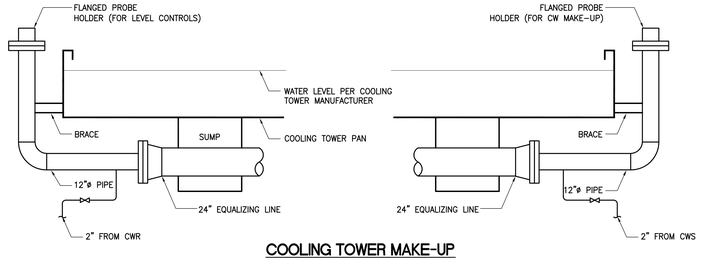


COOLING TOWER BASIN FILTRATION SYSTEM BASIN CONNECTION DETAIL

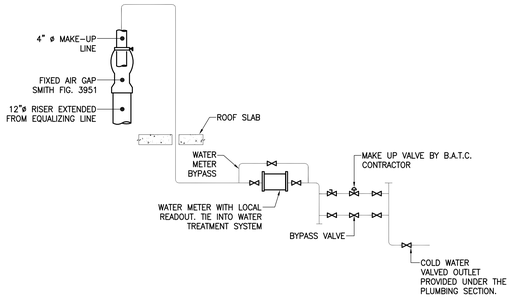




COOLING TOWER LEVEL CONTROL PROBE DETAILS



COOLING TOWER MAKE-UP PROBE ARRANGEMENT



COOLING TOWER MAKE-UP SCHEMATIC

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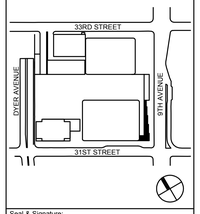
Key Plan:



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Sheet Name:

MECHANICAL DETAIL SHEET NO. 6

Project No.: 14830.A.000	B-SCAN Sheet No.: M-705.00
Date: 20 JUN 2014	Sheet No.: M-705
Scale: NTS	
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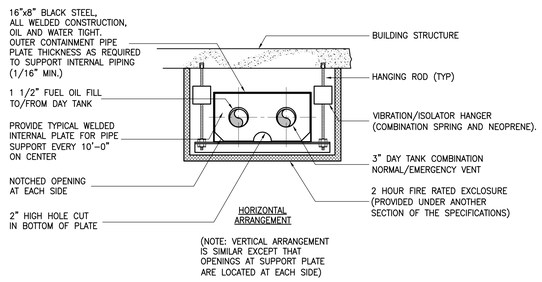
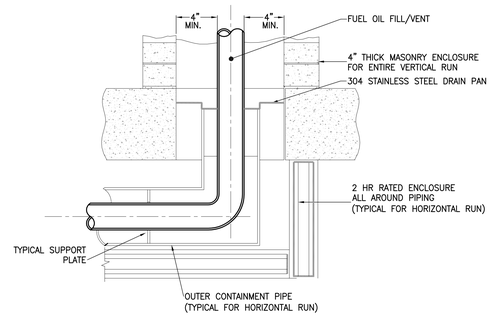
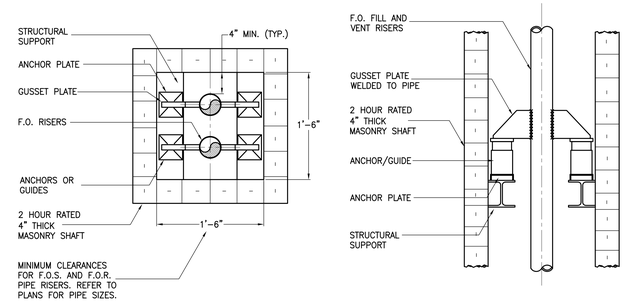


DETAIL OF CONTAINMENT PIPE AND PIPE SUPPRT PLATE



DETAIL OF BOTTOM OF FUEL OIL PIPE SHAFT

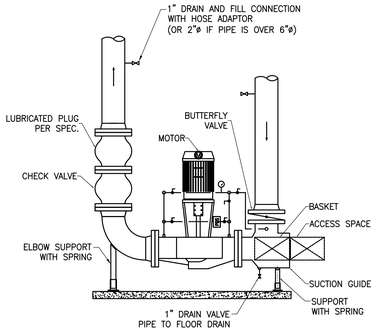
HORIZONTAL FUEL OIL PIPE ENCLOSURE DETAILS



NOTES:

1. ALL FUEL OIL PIPING FROM THE FUEL OIL PUMP ROOM TO THE UNDERSIDE OF THE MASONRY FUEL OIL SHAFTS AND FROM THEIR RESPECTIVE MASONRY SHAFTS TO THE GENERATOR EQUIPMENT ROOM SHALL BE PIPE-WITHIN-A-PIPE CONSTRUCTION. IN ADDITION, THE PIPING SHALL BE ENCLOSED WITHIN A TWO (2) HOUR RATED ENCLOSURE (AS DETAILED ABOVE).
2. REFER TO ARCHITECTURAL DETAILS FOR DIMENSIONS.

VERTICAL FUEL OIL PIPE ENCLOSURE DETAILS



VERTICAL PUMP DETAIL

PROVIDE SPRING ON ELBOW SUPPORTS

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
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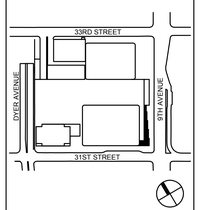

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No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

MECHANICAL DETAIL SHEET NO. 7

Project No.: 14830.A.000	B-SCAN Sheet No.: M-706.00
Date: 20 JUN 2014	Sheet No.: M-706
Scale: NTS	
File No.:	Page No.:

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FA DRAWING LIST				
		Issues		
Sheet Number	Sheet Name	50 % DD	DD PROGRESS PRICING	ISSUED FOR FOUNDATION PERMIT
000 - Cover Sheet, General Notes, Legends				
FA-001.00	FIRE ALARM TITLE SHEET	●	●	●
FA-002	FIRE ALARM ABBREVIATIONS AND SYMBOLS LIST		●	●
100 - Floor Plans				
FA-097.00	FIRE ALARM CELLAR B FLOOR PLAN - PART A		●	●
FA-098.00	FIRE ALARM CELLAR B FLOOR PLAN - PART B		●	●
FA-100.00	FIRE ALARM GROUND FLOOR PLAN - PART A		●	●
FA-104.00	FIRE ALARM LEVEL 4 FLOOR PLAN - MECHANICAL		●	●
FA-105.00	FIRE ALARM LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE		●	●
FA-106.00	FIRE ALARM LEVEL 6-67 FLOOR PLAN - TYPICAL OFFICE FLOOR		●	●
FA-168.00	FIRE ALARM LEVEL 68 FLOOR PLAN - MECHANICAL		●	●
FA-169.00	FIRE ALARM LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE		●	●
300 - Part Plans				
FA-300.00	FIRE ALARM EMR PART PLAN			●
400 - Risers & One Line Diagrams				
FA-401.00	FIRE ALARM RISER DIAGRAM NO. 1		●	●
FA-402.00	FIRE ALARM RISER DIAGRAM NO. 2		●	●
FA-403.00	FIRE ALARM RISER DIAGRAM NO. 3		●	●
FA-404.00	FIRE ALARM RISER DIAGRAM NO. 4		●	●
FA-405.00	FIRE ALARM RISER DIAGRAM NO. 5		●	●
FA-406.00	FIRE ALARM RISER DIAGRAM NO. 6		●	●

BUILDING DEPARTMENT FIRE ALARM NOTES:

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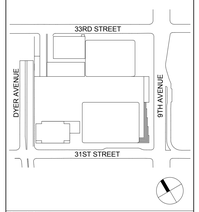

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Sheet Name:

FIRE ALARM TITLE SHEET

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale:

File No.: FA-001.00

Sheet No.: FA-001.00

B-SCAN Sheet No.:

Page No.:

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FIRE ALARM SPECIFICATIONS

A. FIRE ALARM EQUIPMENT SPECIFICATIONS

1. ALL DEVICES SHALL BE NEW OR GOOD WORKING ORDER AND HAVE B.S.A. APPROVAL.

2. STROBE PANELS

   a. IF REQUIRED, FIRE ALARM SYSTEM STROBE PANELS SHALL BE B.S.A. APPROVED PANELS WITH INTEGRAL BATTERY BACK-UP. PANELS SHALL BE CAPABLE OF SUPPLYING AT LEAST 30 A.D.A. APPROVED, 75 CANDELA STROBES PER FLOOR. PANELS SHALL BE NON-LATCHING TYPE ALLOWING FOR MANUAL RESETTING OF PANEL FROM THE FIRE COMMAND STATION. CONTRACTOR SHALL PROVIDE ADDITIONAL STROBE CARDS & POWER SUPPLIES IN ORDER TO SERVE ALL ADDITIONAL DEVICES REQUIRED.

   b. IF REQUIRED, PROVIDE A FUSE CUT-OUT TAPPED AHEAD OF THE MAIN FOR A LIFE SAFETY STROBE PANEL. LOCATE THE CUT-OUT NEAR ITS ASSOCIATED POWER PANEL AND SIZE THE WIRES ACCORDING TO N.Y.C. ELECTRICAL CODE. FUSE CUT-OUT SHALL BE PAINTED FIRE ALARM RED AND LABELED WITH A PHENOLIC NAME PLATE READING "VISUAL ALARM POWER" IN A LOCKABLE NEMA 1 ENCLOSURE. IT SHALL BE RATED FOR 120V-2P WITH A SOLID COPPER NEUTRAL BAR AND A LPN 20A FUSE. REFER TO ELECTRICAL POWER RISER FOR HOW POWER FOR THE FIRE ALARM SYSTEM WILL BE DERIVED VIA FUSED CUT-OUT IN ACCORDANCE WITH RCNY 4000.

3. FIRE STROBE LIGHTS

   a. VISUAL ALARM LAMP SHALL BE ANSI 117, AND UL 1971 LISTED AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE ADA FEDERAL REGULATIONS. ELECTRONIC HIGH INTENSITY FLASHING LIGHT SHALL BE SEALED IN SILICONE AND PROTECTED BY A LEXAN LENS. LETTERING SHALL BE RED ON A WHITE LENS MOUNTED ON A GLOSS FINISHED RED PLATE. THE WORD "FIRE" SHALL APPEAR ON THE LENS A MINIMUM OF THREE TIMES. THE LIGHT SHALL FLASH AT A RATE OF ONE FLASH PER SECOND, MAXIMUM. LAMP SHALL POWERED BY A SUPERVISED 24 VDC SOURCE. THE ASSEMBLY SHALL MOUNT ON A STANDARD OUTLET BOX.

   b. PROVIDE WEATHERPROOF STROBE LIGHTS AT LOCATIONS INDICATED ON THE DRAWINGS.

   c. POWER SUPPLY FOR STROBE LIGHTS SHALL BE CAPABLE OF PROVIDING POWER TO ALL DEVICES AS SHOWN ON DRAWINGS OR IN THIS SPECIFICATION.

   d. FIRE STROBE LIGHTS SHALL BE RATED 15/30/75/110 CANDELA.

   e. COMBINATION FIRE ALARM SPEAKER/FLASHING "FIRE" STROBE LIGHT UNITS SHALL BE AN INTEGRAL UNIT, COMBINING THE INDIVIDUAL FEATURES OF THE SPEAKER AND STROBE LIGHT DESCRIBED ABOVE.

4. ONE-WAY AUDIO ALARM DEVICES

   a. RECESSED-MOUNTED SPEAKER(S) SHALL BE OF THE DOUBLE RE-ENTRANT TYPE, WITH AN AUDIO POWER RATING OF 8 WATTS AND A FREQUENCY RESPONSE OF 400 TO 4,000 HZ. IT SHALL HAVE A DISPERSION ANGLE OF 180 DEGREES AND THE SOUND PRESSURE LEVEL SHALL BE 93 DB AT TEN FEET ON AXIS AT RATED POWER. THE SPEAKER SHALL HAVE A TRANSFORMER WITH POWER TAPS AT 1/8, 1/4, 1/2, 1, 2, 4 AND 8 WATTS. THE SPEAKER SHALL HAVE A FLANGE FOR FLUSH MOUNTING. PROVIDE, AT EACH FLUSH TYPE CEILING SPEAKER, A GRILLE WHICH MEETS THE APPROVAL OF THE ARCHITECT.

   b. SURFACE-MOUNTED SPEAKERS FOR MACHINE ROOMS SHALL BE SIMILAR IN PERFORMANCE TO SPEAKERS DESCRIBED ABOVE. EXPOSED SPEAKERS SHALL BE COMPLETELY WEATHERPROOF AND SELF-CONTAINED WHERE EXPOSED TO WEATHER.

5. ELECTRIC WIRING AND POWER SUPPLIES

   ELECTRICAL WIRING AND COMPONENTS SHALL CONFORM TO THE FOLLOWING STANDARDS:

   INSTALLATION OF CONDUIT, WIRE, SLEEVES, OUTLET BOXES, INSULATING BUSHINGS, SYSTEM CABINETS, TERMINAL BOXES, PULL BOXES, JUNCTION BOXES, INSERTS, ANCHORS, SYSTEM DEVICES AND SIMILAR ELEMENTS, SHALL BE IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS OF THESE SPECIFICATIONS AND IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE NEW YORK CITY ELECTRICAL CODE FOR SIGNALING SYSTEMS, AND ALL AUTHORITIES HAVING JURISDICTION.

   COMPONENTS SHALL BE LISTED OR APPROVED BY BSA/MEA AND UNDER- WRITERS LABORATORIES, INC. (UL), OR FACTORY MUTUAL (FM). ALL LIFE SAFETY SYSTEM WIRING AND SYSTEM OPERATION SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF CITY OF NEW YORK AND NYC FIRE DEPARTMENT, WHOSE APPROVAL ON THE COMPLETED SYSTEM IS REQUIRED.

   ALL CABLE USED SHALL BE No. 16 AWG MINIMUM. MULTICONDUCTOR CABLE SHALL BE PROVIDED WITH A MINIMUM OF 10% SPARE PAIRS.

   ALL CABLING SHALL COMPLY WITH UL-1424 AND UL910. ADDITIONALLY, CABLING SHALL CONFORM TO THE FOLLOWING:

   a. A MINIMUM TEMPERATURE RATING OF 150 DEGREES C.

   b. A MINIMUM AVERAGE INSULATION THICKNESS OF 15 MILS.

   c. A MINIMUM AVERAGE JACKET THICKNESS OF 25 MILS.

   d. THE COLOR OF THE CABLE SHALL BE RED.

   e. THE CABLE SHALL BE A TYPE FPLP (PLENUM TYPE).

   f. THE CABLE SHALL BE VISIBLY MARKED EXTERNALLY THAT IT MEETS THE ABOVE REQUIREMENTS AND IS LISTED BY UL.

   g. THE CABLE SHALL HAVE THE FOLLOWING MARKINGS:

      COMPANY NAME
      "TYPE FPLP"
      SIZE (AWG)
      TEMPERATURE RATING
      THE UL REGISTER MARK
      "ALSO CLASSIFIED NEW YORK CITY CERTIFIED FIRE ALARM CABLE"

6. AUTOMATIC SMOKE DETECTORS

   PRODUCTS OF COMBUSTION DETECTORS SHALL OPERATE ON THE IONIZATION PRINCIPLE TO DETECT THE PRESENCE OF COMBUSTION GASES, FIRE AND SMOKE. IT SHALL BE OF THE TWO (2) CHAMBER DESIGN. THE FIRST, OR REFERENCE CHAMBER, SHALL COMPENSATE AGAINST SENSITIVITY CHARGES DUE TO TEMPERATURE, BAROMETRIC PRESSURE AND HUMIDITY VARIATIONS. THE SECOND, OR SENSING CHAMBER, SHALL BE OPEN TO THE OUTSIDE ELEMENTS. THE DETECTOR SHALL CONTAIN NO HOT FILAMENT TUBES OR MOVING PARTS, AND SHALL PLUG INTO A BASE HAVING AN LED ALARM INDICATING LAMP. THE DETECTOR SHALL NOT REQUIRE REPLACEMENT OR READJUSTMENT AFTER A FIRE ALARM HAS BEEN GIVEN. THE DETECTOR SENSITIVITY SHALL BE INDIVIDUALLY ADJUSTABLE. AUTOMATIC SMOKE DETECTORS SHALL OPERATE ON THE PHOTO-ELECTRONIC PRINCIPLE, SET TO RESPOND TO A PREDETERMINED SMOKE DENSITY. A NOMINAL 1.5% LIGHT OBSCURATION PER FOOT IS CONSIDERED MAXIMUM DETECTED WITH A SOLID STATE LIGHT EMITTING DIODE AND A HIGH-SPEED LIGHT SENSING PHOTO-DIODE WITHIN A LIGHT SENSING CHAMBER. COMPONENTS SHALL BE LONG-LIFE, SOLID STATE, WITH A DESIGN LIFE IN EXCESS OF 40 YEARS. THIS INCLUDES THE POWER ON/ALARM LED, WHICH IS PULSED UNDER NORMAL CONDITIONS AND CONSTANT IN ALARM.

   DUCT TYPE DETECTORS SHALL BE PRODUCT-OF-COMBUSTION DETECTORS WITH IONIZATION PRINCIPLES. IN ADDITION, THIS DEVICE SHALL BE PROVIDED WITH FULL LENGTH SAMPLING TUBES IN LOCATIONS AS DIRECTED BY THE HVAC SECTION OF THE SPECIFICATIONS. THIS DEVICE SHALL BE A FULL ADDRESSABLE UNIT USING ANALOG AND/OR INTELLIGENT TECHNOLOGY. INCLUDE IN SHOP DRAWING SUBMISSION THE METHODS AND EXPECTED LEVELS FOR TESTING THE DEVICE SENSITIVITY AND REQUIRED VELOCITY, WITH VERIFICATION OF THE STATED VALUES INCLUDED IN THE SYSTEM SITE APPROVAL AND TESTING PROCEDURE. THE DUCT TYPE SMOKE DETECTORS SHALL BE EQUIPPED WITH AUXILIARY CONTACTS FOR REMOTE INDICATION.

7. ALL DEVICES THAT ARE RECESSED OR SEMI-RECESSED INTO TWO-HOUR FIRE-RATED PARTITIONS SHALL:

   a. PENETRATE INTO THE PARTITION A MAXIMUM OF 2-1/2 INCHES.

   b. ALLOW A MAXIMUM PENETRATION OF 25 SQUARE INCHES PER 10 SQUARE FEET.

8. ALL EQUIPMENT AND WIRING SHALL BE BSA/MEA APPROVED.

9. ALL ELECTRICAL LOCKING SYSTEMS (IF ANY) INTERFACED WITH MEANS OF EGRESS MUST FAIL-SAFE ON POWER FAILURE. PROVIDE CONNECTION TO THE FIRE ALARM SYSTEM'S DOOR RELEASE CIRCUIT. ALL COMPONENTS SHALL BE NEW YORK CITY BSA/MEA APPROVED.

B. FIRE ALARM INSTALLATION PROCEDURE:

1. FURNISH AND INSTALL ALL NEW LIFE SAFETY DEVICES AND ASSOCIATED CABLING AND CONDUIT. CONDUIT SHALL FURNISHED AS REQUIRED BY CODE (U.O.N.)

2. ALL RELOCATED OR NEW EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE ELECTRICAL AND BUILDING CODES OF THE CITY OF NEW YORK AND THE REQUIREMENTS SET FORTH BY THE NEW AMERICANS WITH DISABILITIES ACT (A.D.A.), WHICH INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

   a. STROBE LIGHTS PLACED 80 INCHES ABOVE THE FLOOR OR 6 INCHES BELOW THE CEILING, WHICH EVER IS LOWER.

   b. AUDIBLE DEVICES TAPPED AT WATTAGE SETTINGS WHICH ALLOW FOR SOUND PRESSURE LEVELS OF THE UNIT TO EXCEED THE LEVEL IN THE ROOM BY 15DBA OR THE 60 SECOND MAXIMUM LEVEL OF THE ROOM BY 5 DBA, WHICH EVER IS HIGHER, BUT NOT TO EXCEED 120 DBA.

3. SPEAKERS, STROBES AND WARDEN STATIONS SHALL BE ALTERNATELY WIRED ON TWO SEPARATE CLASS "A" SIGNAL CIRCUITS. SMOKE DETECTORS AND MANUAL PULL STATIONS SHALL BE ALTERNATELY WIRED ON TWO SEPARATE CLASS "A" SIGNAL CIRCUITS. THESE CIRCUITS MUST BE INSTALLED IN SEPARATE CONDUITS IN ORDER TO PROVIDE RELIABLE ALARM SIGNALS SO THAT LOSS OF A PORTION OF THE WIRING ON A FLOOR SHALL NOT DISABLE THE ENTIRE ALARM CAPABILITY OF THAT FLOOR.

4. SURVEY ALL SPACES PRIOR TO BID SUBMISSION, AND INCLUDE IN THE BID PROPOSAL, THE REPLACEMENT OF ALL LIFE SAFETY DEVICES WHICH WERE INTENDED TO BE REUSED, AND HAVE BEEN DESTROYED OR LOST DURING DEMOLITION.

5. PROVIDE RIGID CONDUIT FOR BOTH POWER AND DATA CABLING ASSOCIATED WITH ALL SUB-SYSTEMS AND AS REQUIRED BY CODE. INCLUDE ALL RACEWAYS AS SHOWN ON THE PLANS AND AS DESCRIBED IN THE SPECIFICATIONS. PROVIDE CONDUIT FOR ALL FIRE ALARM CABLING WHICH IS EITHER RUN BELOW 8'-0" OR ROUTED WHERE SUBJECT TO DAMAGE.

6. SEPARATELY ZONE LIFE SAFETY DEVICES AND CONNECT TO THE FIRE ALARM SYSTEM SO THAT THE SYSTEM OPERATION AS DESCRIBED ABOVE IS PERFORMED IN CONFORMANCE WITH THE BUILDING CODE OF THE CITY OF NEW YORK.

7. FUSED CUTOUTS SHALL BE TAPPED AHEAD OF THE MAIN OF A 120 VOLT PANEL (SUBMIT LOCATION TO ENGINEER/ARCHITECT FOR REVIEW), AND BE MOUNTED IN AN ACCESSIBLE LOCATION ADJACENT TO THE PANEL FROM WHICH IT IS FED. ALL FUSED CUT-OUTS (FCO'S) SHALL BE LOCKABLE WITH SOLID COPPER NEUTRAL BARS AND CONTAIN LPN FUSES AS REQUIRED. LABEL ALL FCO'S. REFER TO ELECTRICAL POWER RISER FOR HOW POWER FOR THE FIRE ALARM SYSTEM WILL BE DERIVED VIA A FUSED DISCONNECT IN ACCORDANCE WITH RCNY 4000.

8. SHOP DRAWINGS AND SAMPLES

   SHOP DRAWINGS AND MANUFACTURER'S DATA SHEETS SHALL BE SUBMITTED FOR APPROVAL FOR THE FOLLOWING ITEMS:

   a. MANUFACTURER'S DRAWINGS, SHOWING ALL EQUIPMENT TERMINALS, WIRING DIAGRAMS, INSTALLATION INSTRUCTIONS AND OTHER PERTINENT INFORMATION FOR ALL ITEMS BEING FURNISHED.

   b. CATALOGUE CUTS OF EQUIPMENT AND SENSORS FURNISHED IN THIS SECTION, INCLUDING (BUT NOT LIMITED TO) THE FOLLOWING:

      SMOKE DETECTORS - SPACE MOUNTED.
      SMOKE DETECTORS - DUCT MOUNTED.
      HEAT DETECTORS (HEAT ACTUATED DEVICES).
      VOICE ALARM AND COMMUNICATION SYSTEM EQUIPMENT.
      MANUAL FIRE ALARM STATIONS.
      FLASHING "FIRE" STROBE LIGHTS.
      SPEAKERS.

   c. A WRITTEN DESCRIPTION OF THE SYSTEM OPERATION FOR EACH ALARM AND/OR TROUBLE SIGNAL. WRITTEN DESCRIPTION CAN BE PRESENTED IN THE FORM OF A MATRIX.

   d. SUBMIT SAMPLES, AS DIRECTED, FOR APPROVAL.

   e. SUBMIT A PARAGRAPH-BY-PARAGRAPH LETTER OF COMPLIANCE (OF THIS SPECIFICATION) FOR THE LIFE SAFETY SYSTEM, IDENTIFYING COMPLIANCE OR NON-COMPLIANCE AND REASONS FOR NON-COMPLIANCE.

9. WIRE AND CABLE FOR POWER, SPRINKLER AND MOTOR CONTROL SHALL BE COPPER AND HAVE CURRENT CARRYING CAPACITY PER CODE REQUIREMENTS AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITERS LABORATORIES, INC. CONDUCTOR SIZES SHALL NOT BE LESS THAN No.12 AWG FOR POWER WORK AND No.14 AWG FOR SPRINKLER AND MOTOR CONTROL UNLESS OTHERWISE INDICATED OR SPECIFIED. VOLTAGE RATING OF CONDUCTORS SHALL BE 600 VOLTS. PLENUM RATED CABLE SHALL BE USED FOR ALL SIZES OF WIRE, UNLESS OTHERWISE NOTED ON PLANS.

10. CONTRACTOR SHALL PAY ALL FILING AND INSPECTION FEES.

FIRE ALARM SYMBOL LIST

SYMBOL	DESCRIPTION
∅ ASD	AREA SMOKE DETECTOR
∅ ESD	ELEVATOR SMOKE DETECTOR
∅ TS	TAMPER SWITCH WITH CONTROL MODULE
∅ WF	WATER FLOW WITH CONTROL MODULE
FW	FIRE WARDEN PHONE NOTE: PHONES LOCATED IN ENCLOSED STAIRWELLS SHALL BE CAPABLE OF BEING LOCKED
S	SPEAKER
F	MANUAL PULL STATION
F	SPEAKER / STROBE COMBINATION
R	ELEVATOR RELAY
S	SECURITY RELAY

BUILDING DEPARTMENT FIRE ALARM FILING NOTES:

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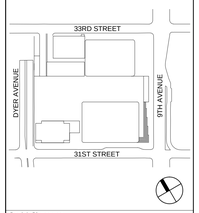

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Sheet Name:
FIRE ALARM ABBREVIATIONS AND SYMBOL LIST

Project No.: 14830	Sheet No.: FA-002.00
Date: 20 JUN 2014	
Scale: NTS	
File No.: FA-002.00	Page No.:

DEPT OF BLDGS 121197143 Job Number

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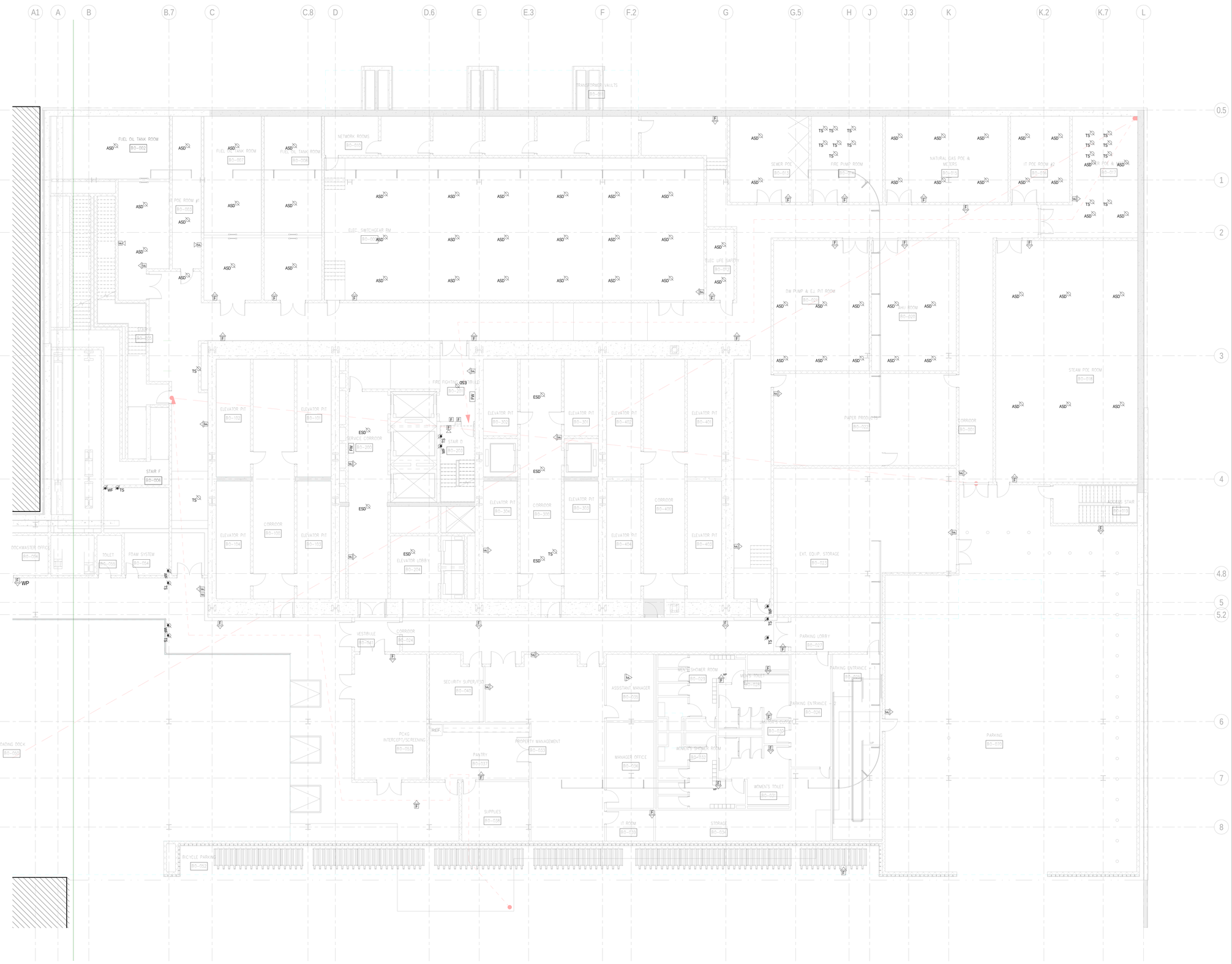

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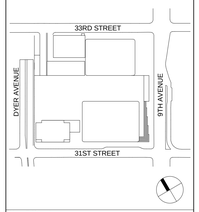
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

STATE OF NEW YORK
RICHARD McPADDEN
082472
LICENSED PROFESSIONAL ENGINEER

FIRE ALARM NOTES

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BUILDING DEPARTMENT FIRE ALARM NOTES:

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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE ALARM CELLAR B FLOOR PLAN - PART A

Project No.: 14830.A.000	Sheet No.: FA-097.00
Date: 20 JUN 2014	B-SCAN Sheet No.:
Scale: 1/8" = 1'-0"	
File No.: FA-097.00	Page No.:

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DEPT OF BLDGS 121197143 Job Number

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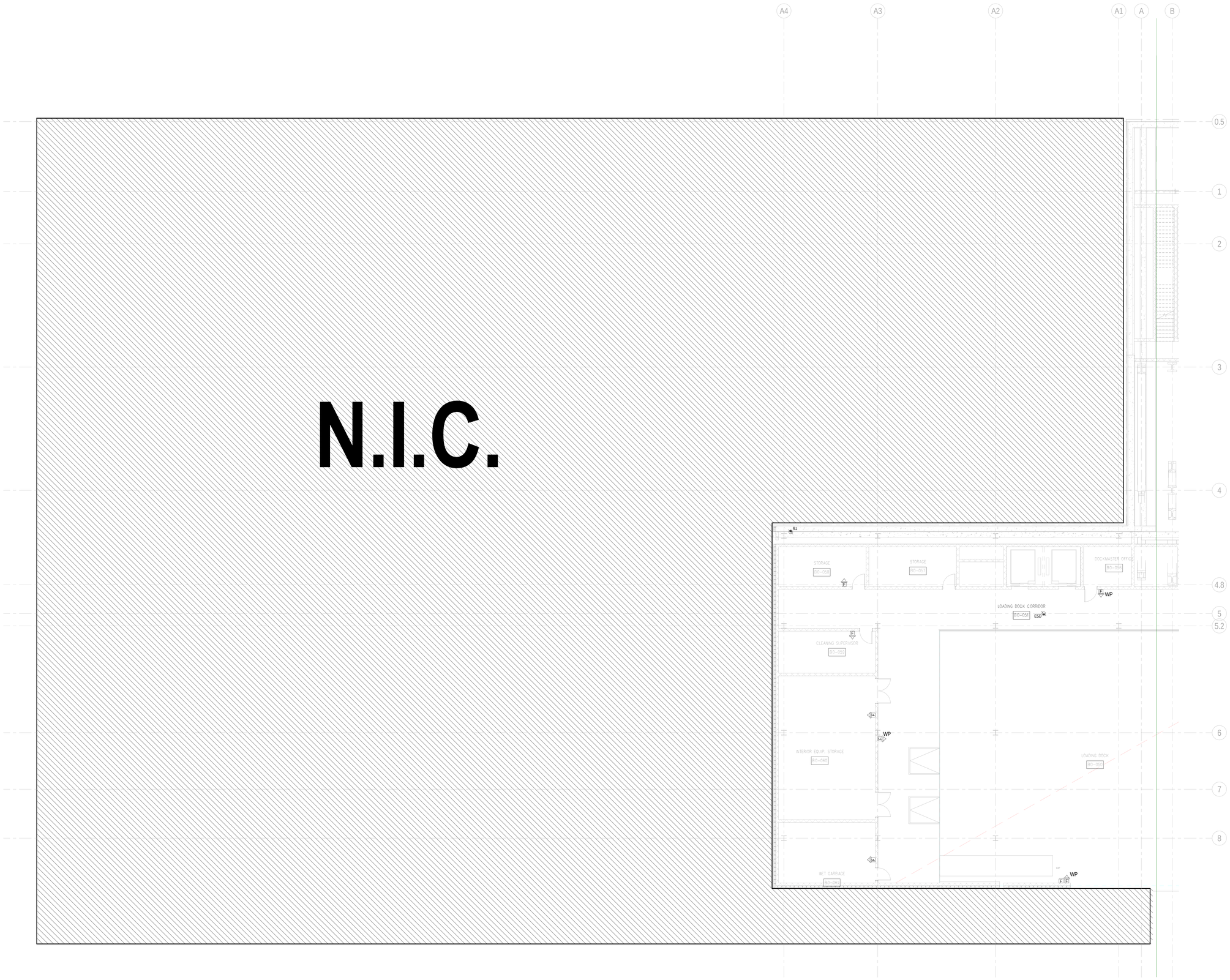

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MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
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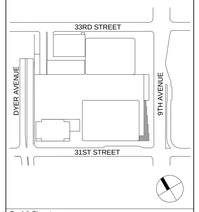

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FIRE ALARM CELLAR B FLOOR PLAN - PART B

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: FA-098.00

Sheet No.: FA-098.00

B-SCAN Sheet No.:

Page No.:

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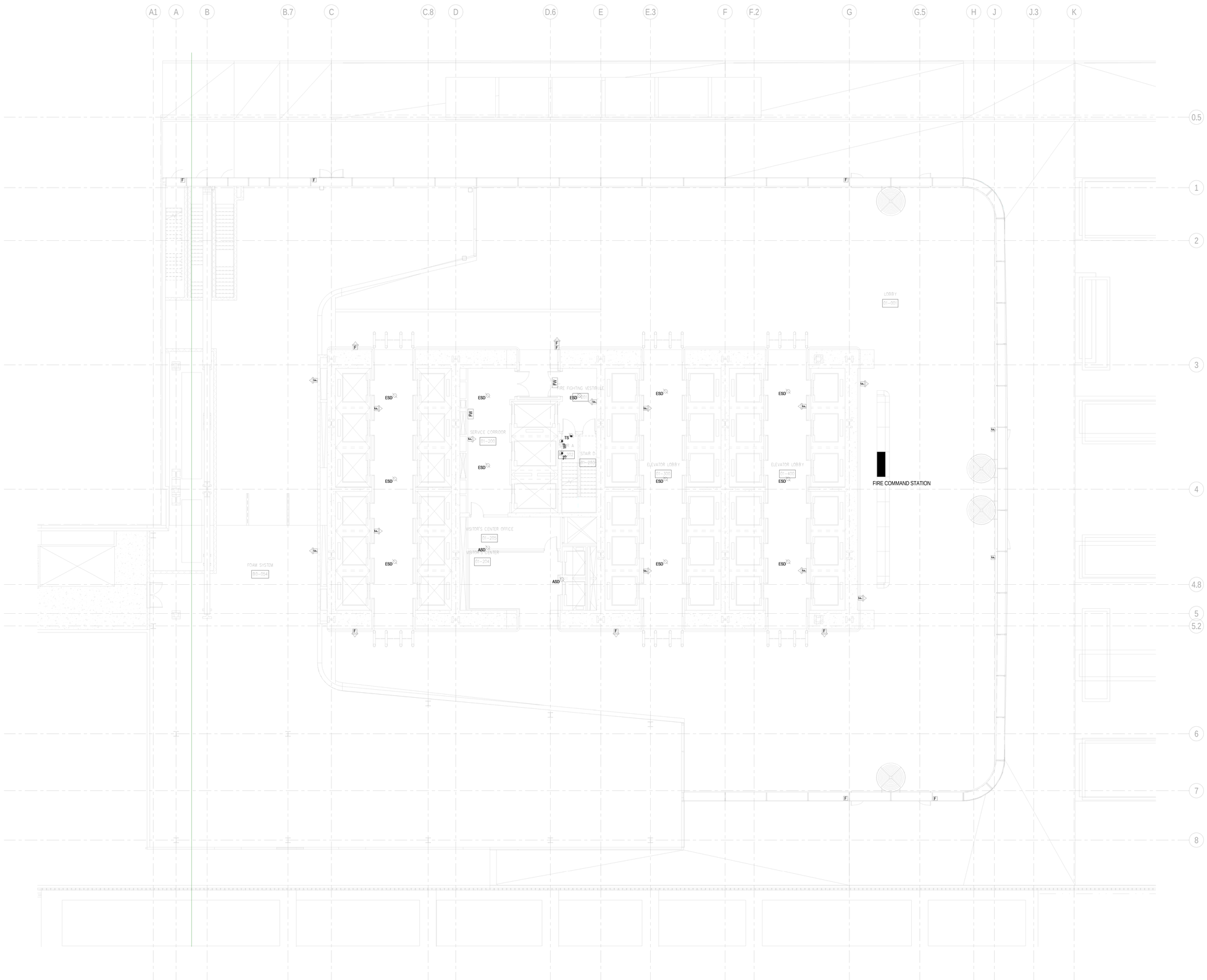

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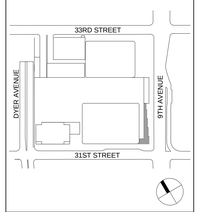

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FIRE ALARM GROUND FLOOR PLAN - PART A

Project No.: 14030.A.000	Sheet No.: FA-100.00
Date: 20 JUN 2014	B-SCAN Sheet No.:
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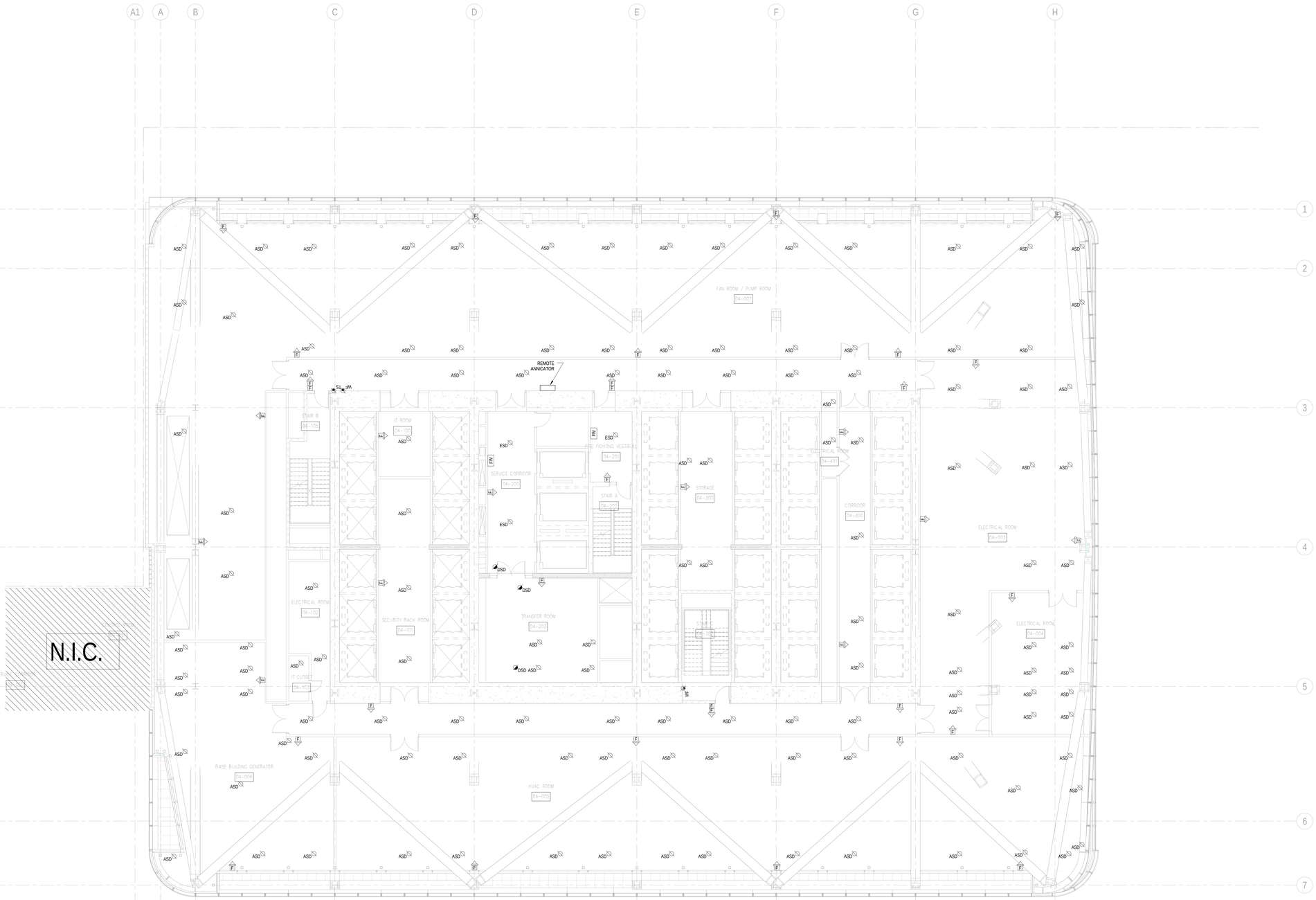

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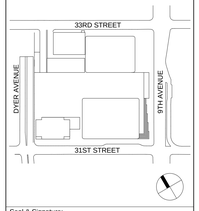

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STATE OF NEW YORK · RICHARD McGRATH · 082472 · LICENSED PROFESSIONAL ENGINEER

No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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Sheet Name:

FIRE ALARM LEVEL 4 FLOOR PLAN - MECHANICAL

Project No.: 14830.A.000	Sheet No.: FA-104.00
Date: 20 JUN 2014	B-SCAN Sheet No.:
Scale: 1/8" = 1'-0"	
File No.: FA-104.00	Page No.:

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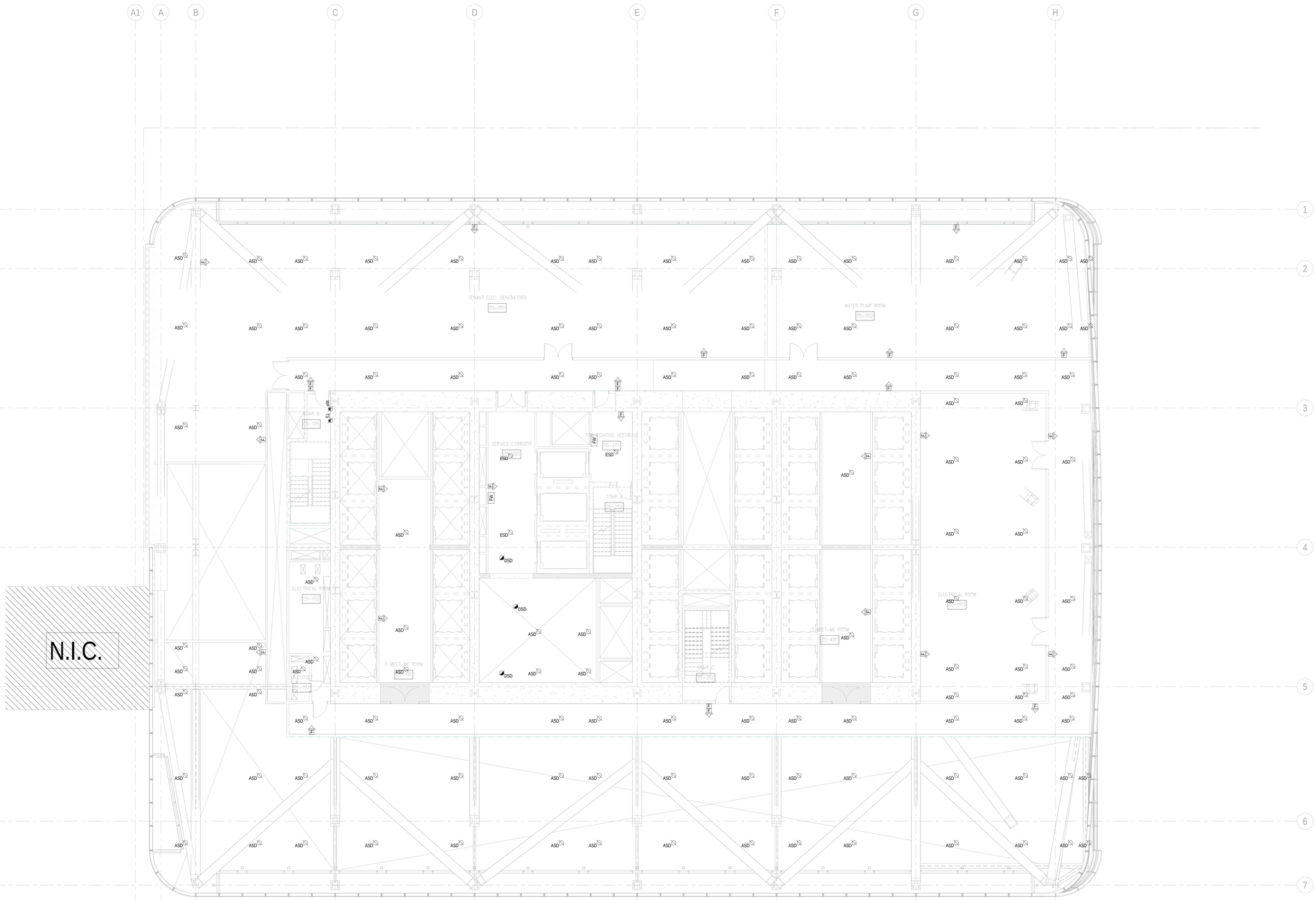

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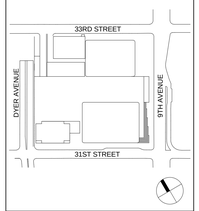

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STATE OF NEW YORK
RICHARD McFADDEN
082422
LICENSED PROFESSIONAL ENGINEER

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Sheet Name:

FIRE ALARM LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE

Project No.: 14030.A.000

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: FA-105.00

Sheet No.: FA-105.00

B-SCAN Sheet No.:

Page No.:

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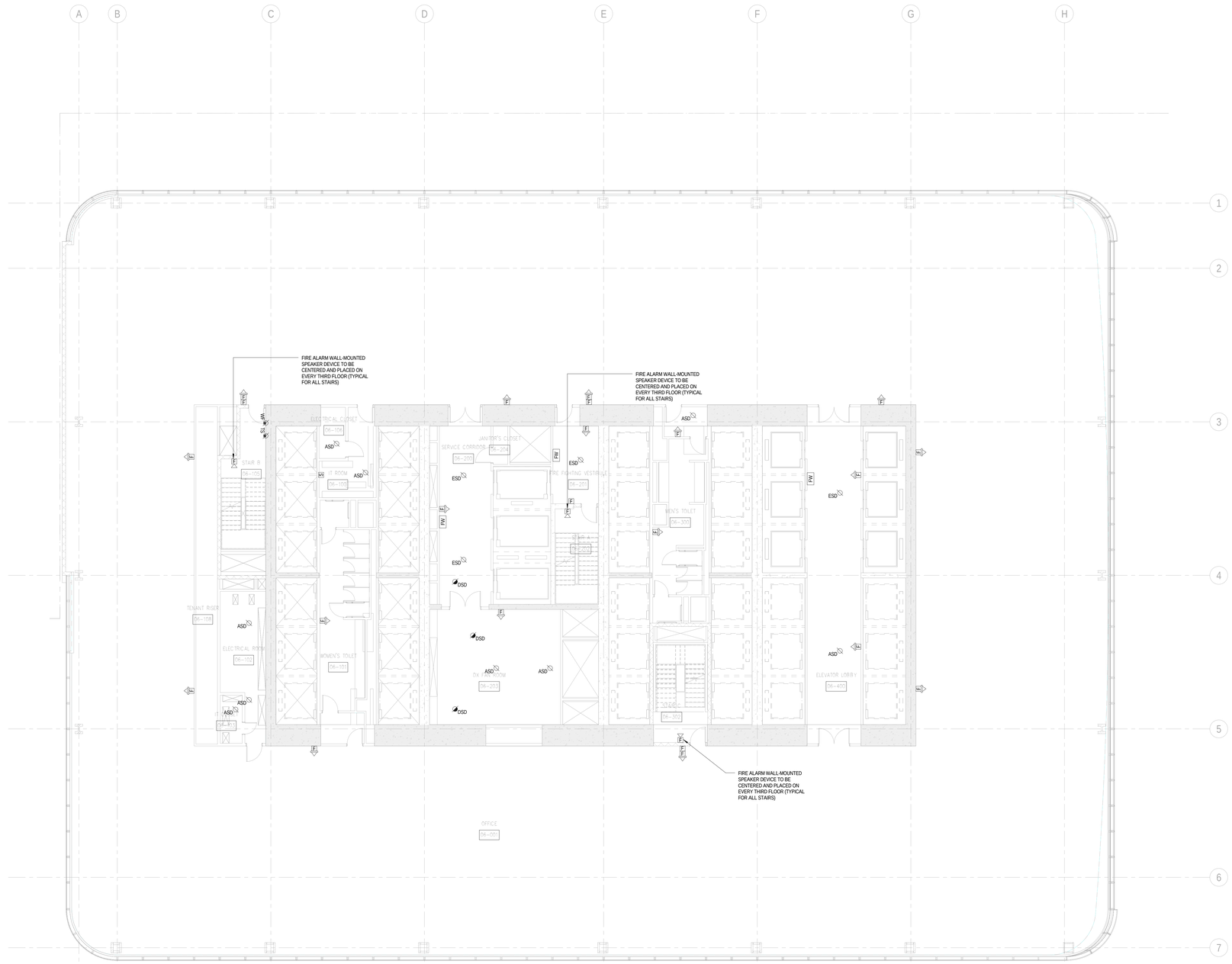

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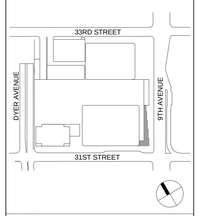

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FIRE ALARM LEVEL 6-67 FLOOR PLAN - TYPICAL OFFICE FLOOR

Project No.: 14838.A.000	Sheet No.: FA-106.00
Date: 20 JUN 2014	B-SCAN Sheet No.: FA-106.00
Scale: 1/8" = 1'-0"	
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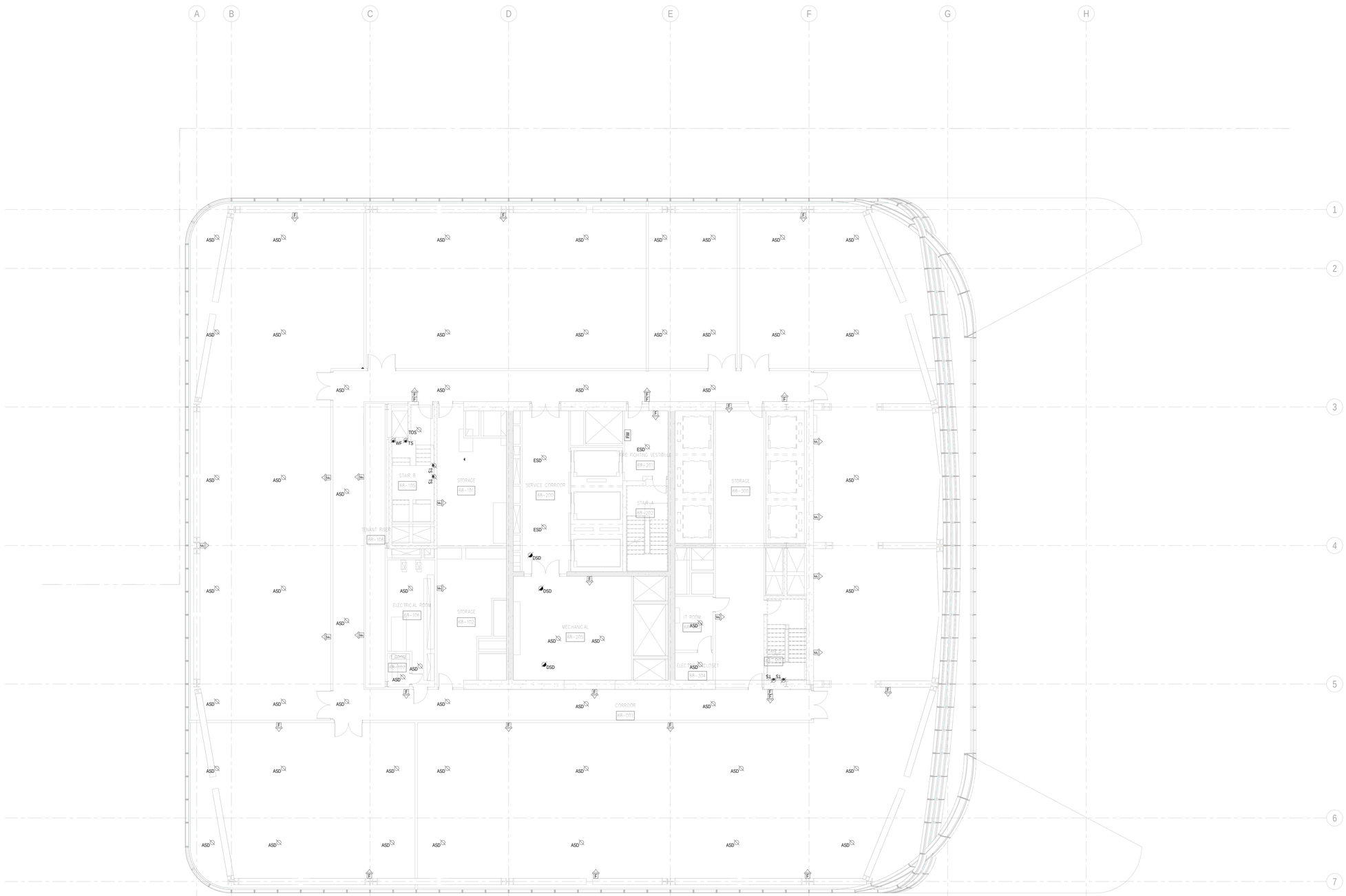

SHEET NOTES

FIRE ALARM NOTES

1. PROVIDE ADDITIONAL SMOKE DETECTORS AS REQUIRED BY NFPA72 IN ALL MECHANICAL ROOMS AND NON SPRINKLERED AREAS WHICH WILL PROVIDE ADDITIONAL SMOKE DETECTION COVERAGE WHEN POCKETS ARE CREATED DUE TO ARCHITECTURAL CEILING AND STRUCTURAL BEAMS.

2. PROVIDE WATER FLOW AND TAMPER SWITCHES AT EVERY FIRE PROTECTION RISER CONTROL VALVE AND ON EVER RISER TAKE-OFF FOR THE FLOOR SPRINKLER LOOPS.

3. PROVIDE FIRE WARDEN PHONES ON THE INSIDE OF EVERY EGRESS STAIR ON EVERY FLOOR.

4. PROVIDE SPEAKERS WITHIN ENCLOSED EGRESS STAIRS. ONE SPEAKER SHALL BE LOCATED EVERY THIRD FLOOR. THE SPEAKERS SHALL BE LOCATED ON THE OPPOSITE STAIR LANDING WHERE THE FIRE WARDEN PHONES ARE BEING INSTALLED.

5. PROVIDE A DUCT SMOKE DETECTOR AT EVERY FIRE SMOKE DAMPER OR SMOKE ONLY LOCATION. REFER TO MECHANICAL RISER DIAGRAMS FOR QUANTITIES AND LOCATIONS OF DAMPERS.

6. PROVIDE AN ELEVATOR SMOKE DETECTOR AT THE TOP OF EACH ELEVATOR HOISTWAY.

7. PROVIDE AN AREA SMOKE DETECTOR AT THE TOP OF EACH STAIRWELL.

8. PROVIDE AN AREA SMOKE DETECTOR JUST OUTSIDE THE ENTRANCE TO EACH EGRESS STAIR. (TYPICAL FOR EVERY ENTRANCE INTO THE STAIR.)

BUILDING DEPARTMENT FIRE ALARM NOTES:

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
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MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

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250 State Street #F1, North Haven, CT 06473

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40 Wall Street, New York, NY 10005

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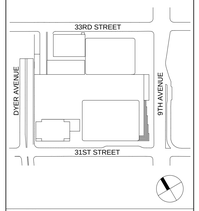
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE ALARM LEVEL 68 FLOOR PLAN - MECHANICAL

Project No.: 14830.A.000	Sheet No.: FA-168.00
Date: 20 JUN 2014	B-SCAN Sheet No.:
Scale: 1/8" = 1'-0"	
File No.: FA-168.00	Page No.:

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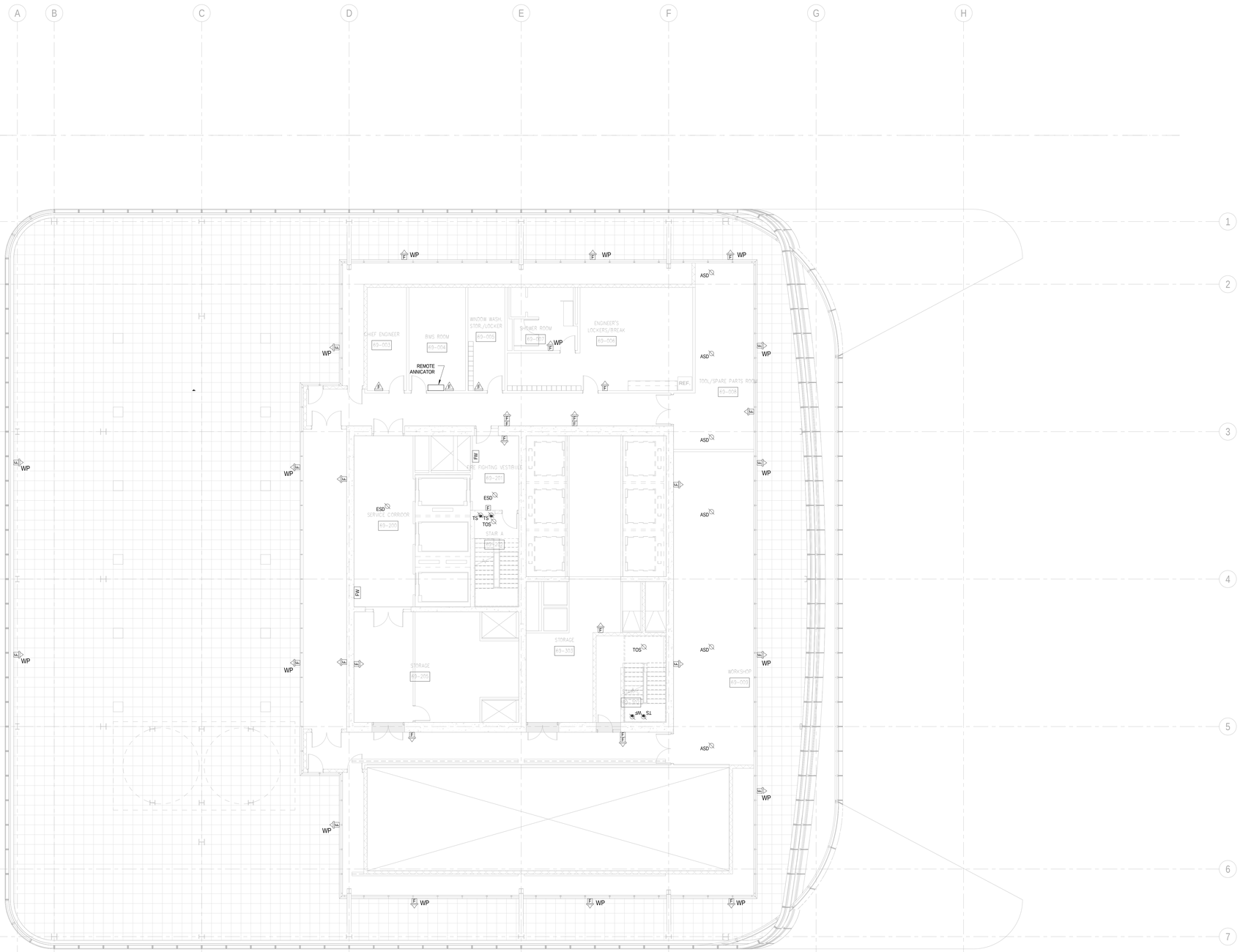

FIRE ALARM NOTES

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BUILDING DEPARTMENT FIRE ALARM NOTES:

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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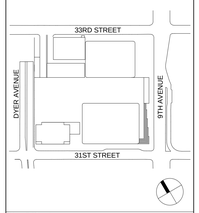
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

STATE OF NEW YORK
RODGER McFADDEN
082425
LICENSED PROFESSIONAL ENGINEER

No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE ALARM LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: FA-169.00

Sheet No.: FA-169.00

B-SCAN Sheet No.:

Page No.:

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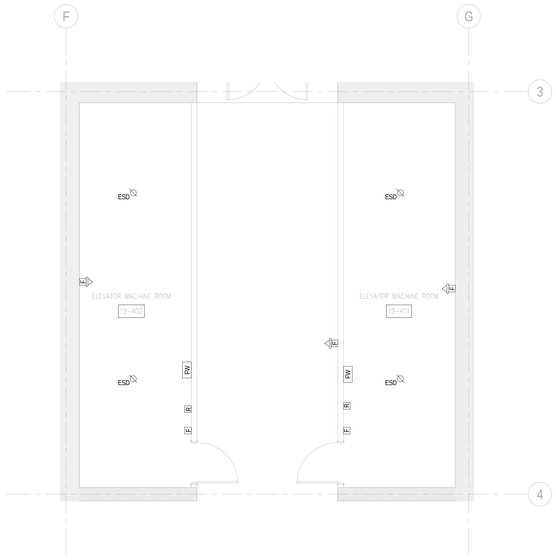

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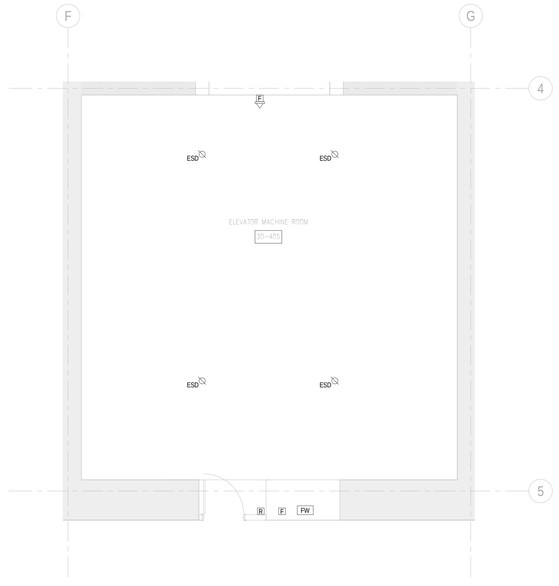

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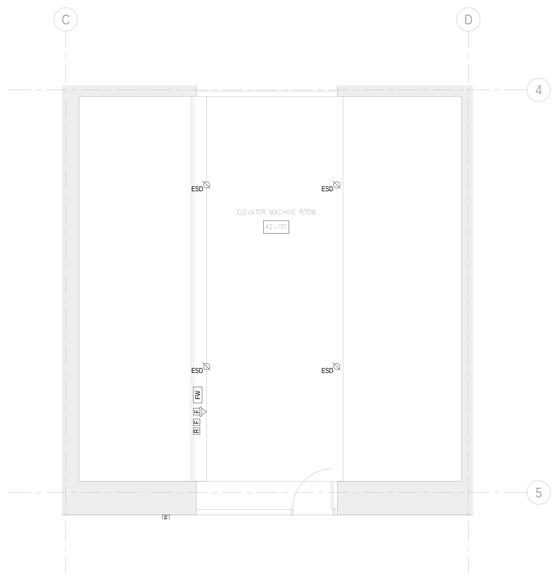

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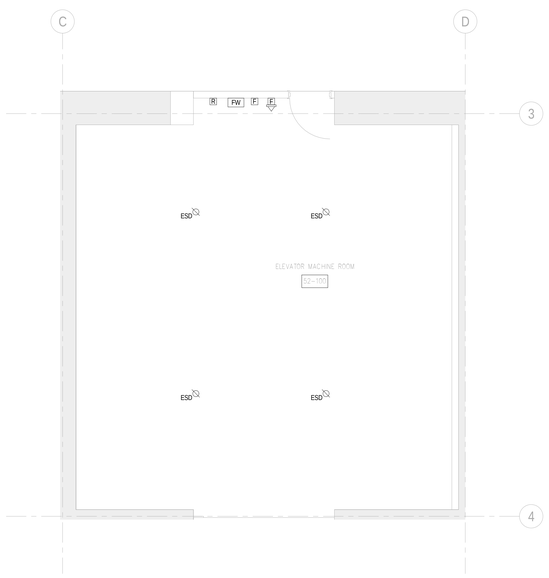

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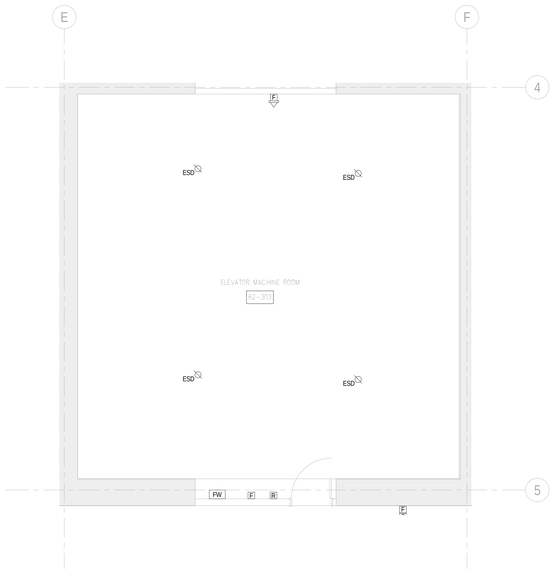

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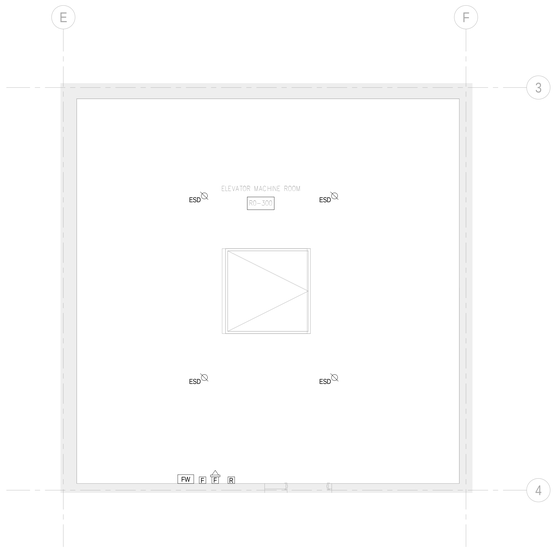

6 FA MECH. PENTHOUSE EMR
1/4" = 1'-0"

BUILDING DEPARTMENT FIRE ALARM NOTES:

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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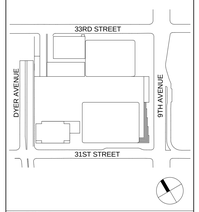
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description

Sheet Name:

FIRE ALARM EMR PART PLAN

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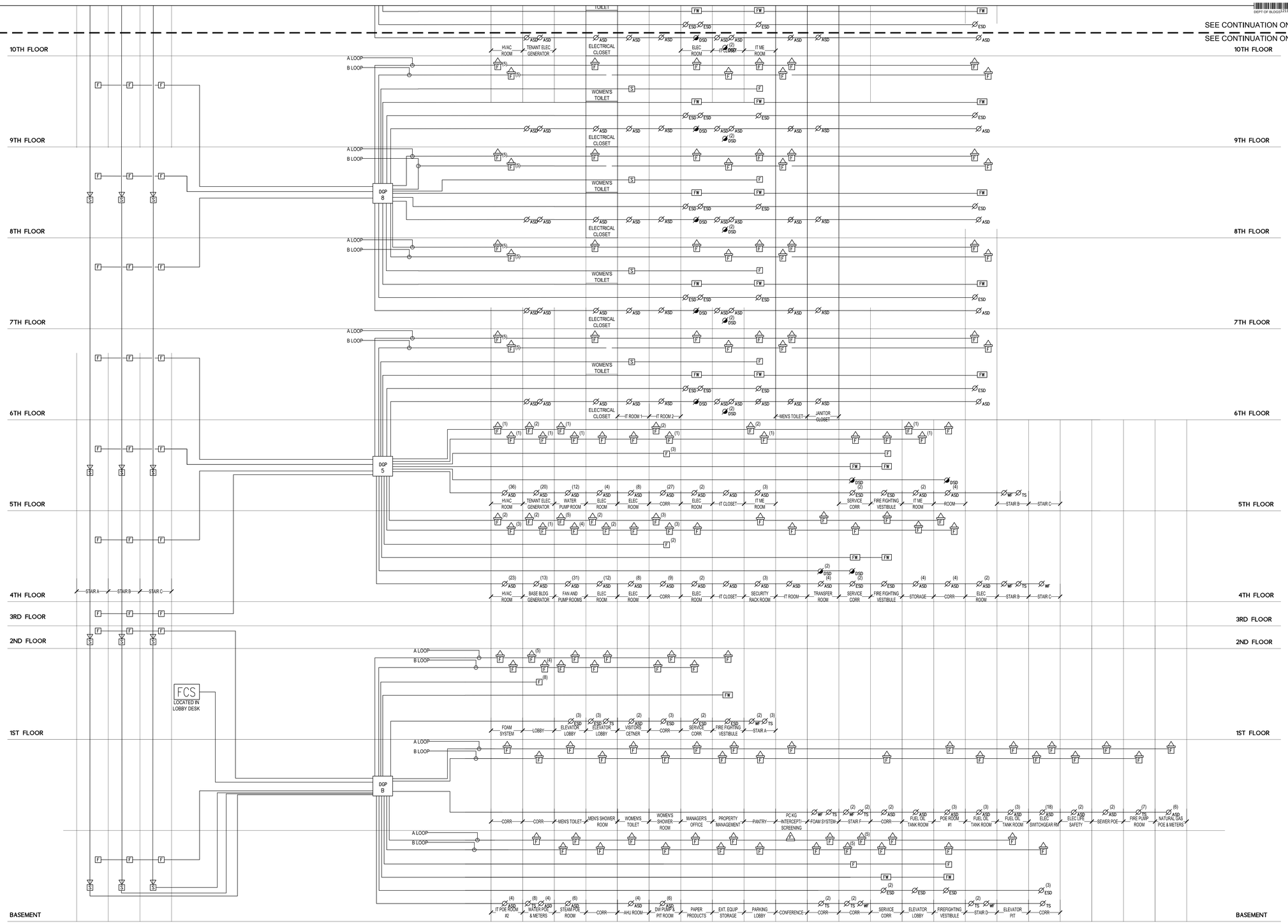

BUILDING DEPARTMENT FIRE ALARM FILING NOTES:

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DEPT OF BLDGS 121197143 Job Number

ES 20131243 Scan Code

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

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MEP Engineering

Jaros Baum & Bolles
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Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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50 Washington Street, Norwalk, CT 06854

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Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
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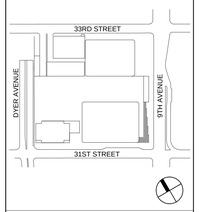
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

STATE OF NEW YORK
RICHARD McFADDEN
028963
LICENSED PROFESSIONAL ENGINEER

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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE ALARM RISER DIAGRAM NO. 1

Project No.: 14830	Sheet No.: FA-401.00
Date: 20 JUN 2014	
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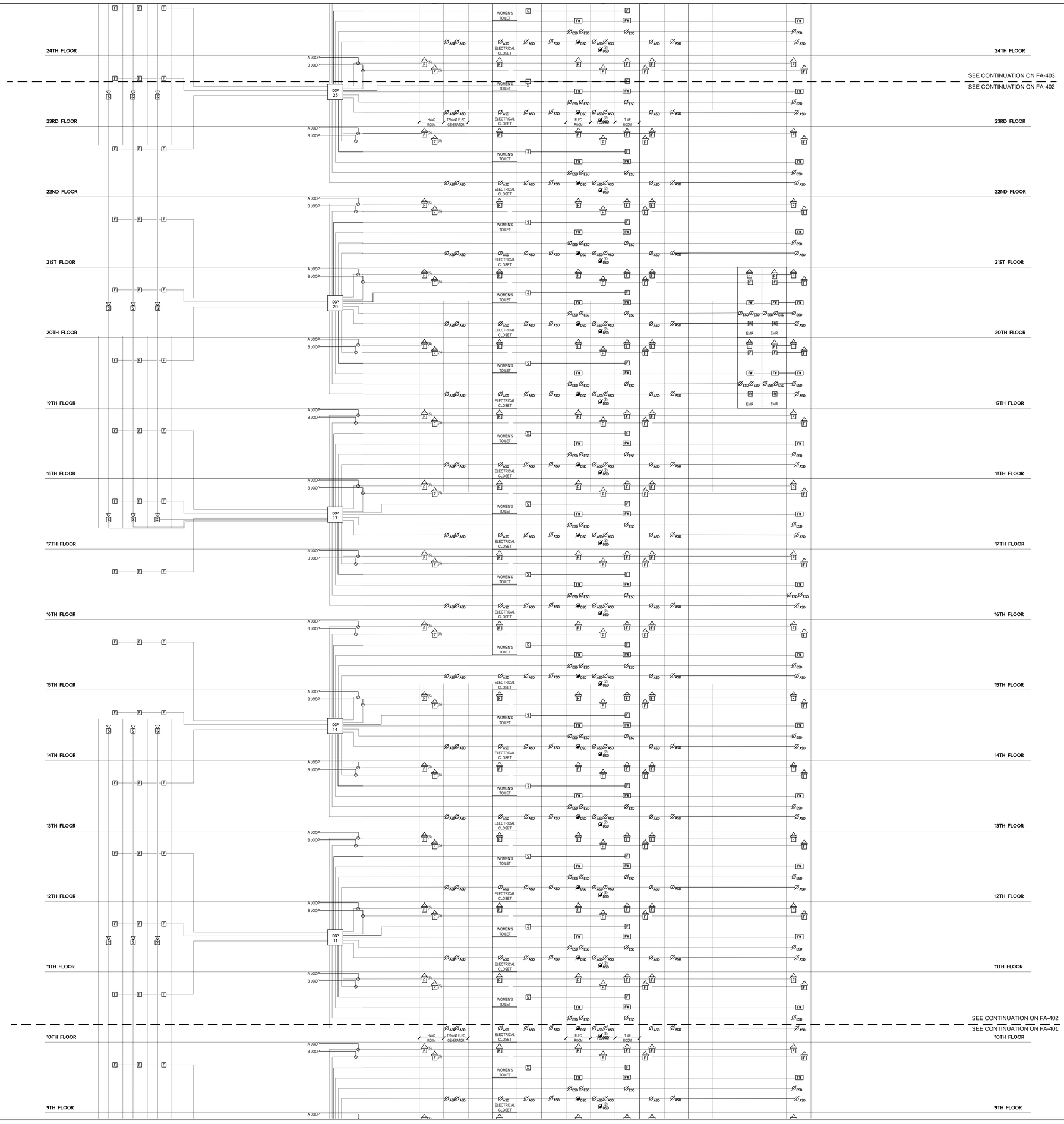
File No.: FA-401.00	Page No.:



MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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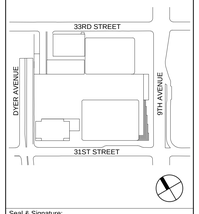
Key Plan:



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4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE ALARM RISER DIAGRAM NO. 2

BUILDING DEPARTMENT FIRE ALARM FILING NOTES:

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Date: 20 JUN 2014	
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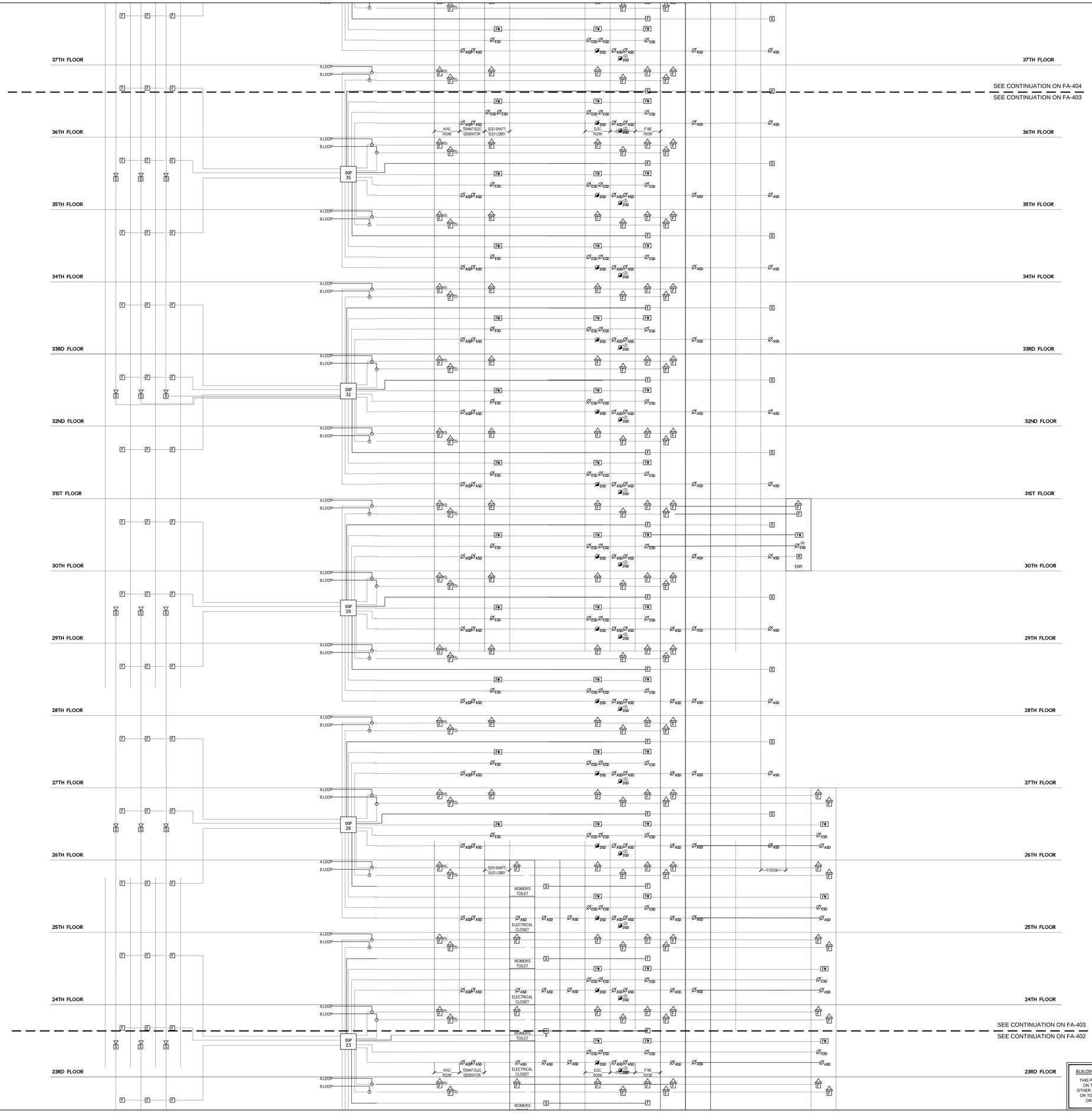

DEPT OF BLDGS 121187243 Job Number

Scan Code

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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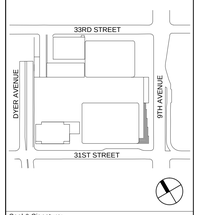
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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STATE OF NEW YORK · RICHARD McFARLAND · 073257 · LICENSED PROFESSIONAL ENGINEER

4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE ALARM RISER DIAGRAM NO. 3

BUILDING DEPARTMENT FIRE ALARM FILING NOTES:

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Project No.: 14830

Date: 20 JUN 2014

Scale: 1/8"=1'-0"

File No.: FA-403.00

Sheet No.: FA-403.00

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DEPT OF BLDGS 121187243 Job Number

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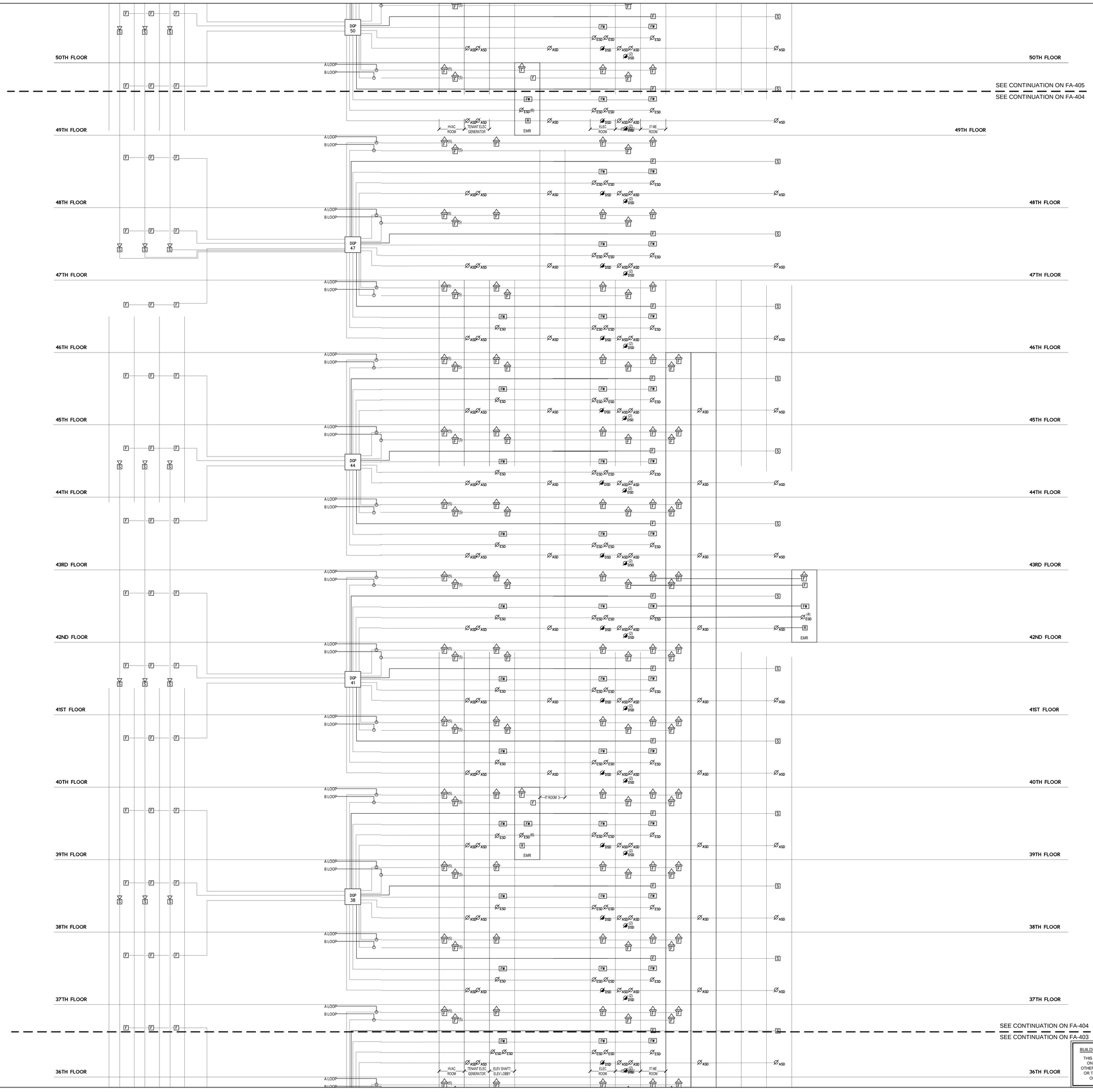

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

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404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

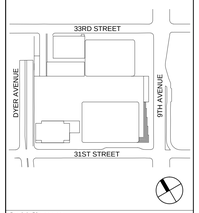
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE ALARM RISER DIAGRAM NO. 4

BUILDING DEPARTMENT FIRE ALARM FILING NOTES:

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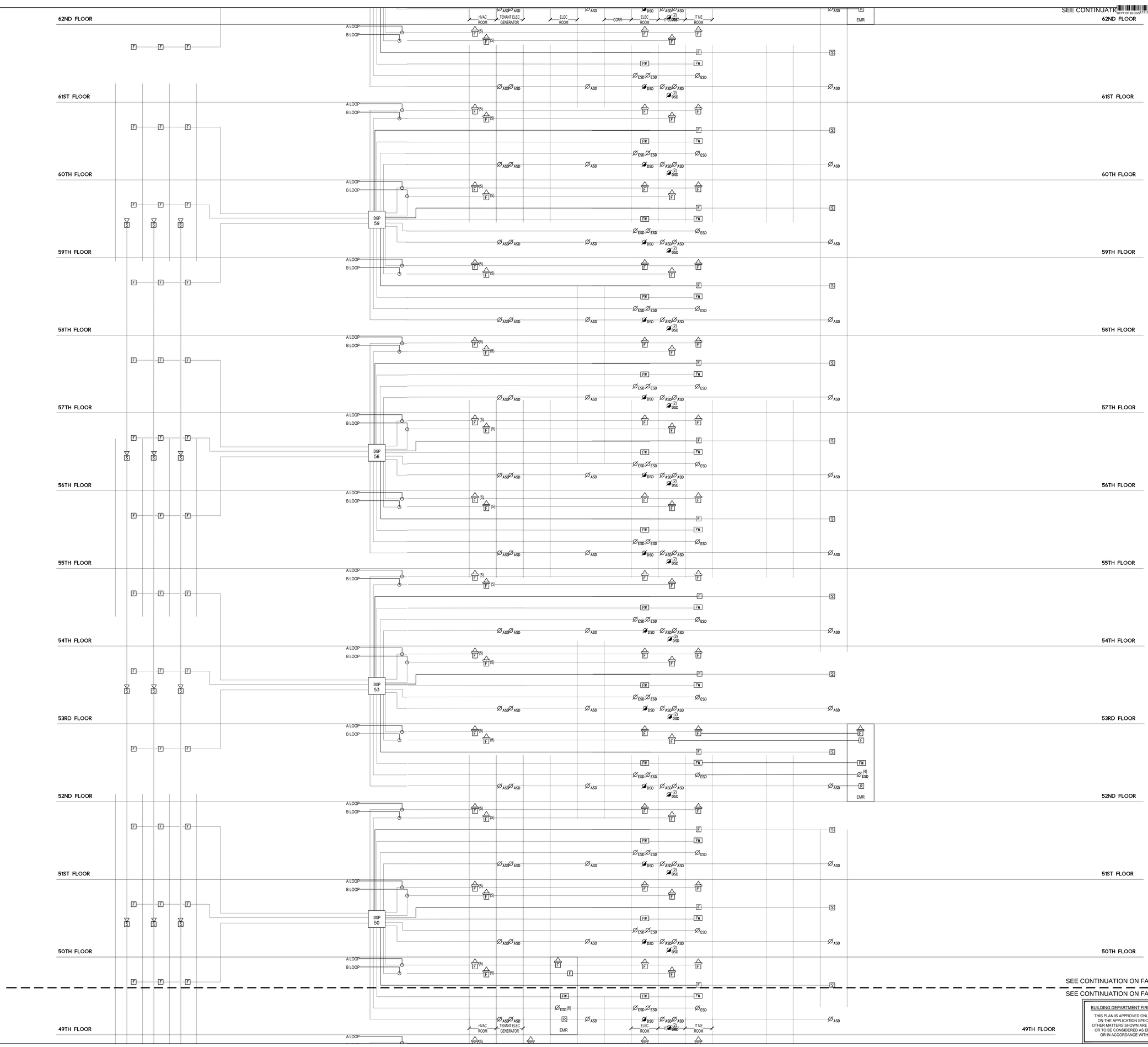
Project No.: 14830	Sheet No.: FA-404.00
Date: 20 JUN 2014	
Scale: 1/8"=1'-0"	
File No.: FA-404.00	Page No.:



BUILDING DEPARTMENT FIRE ALARM FILING NOTES:

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Date: 20 JUN 2014	
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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield Place
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Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

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MEP Engineering

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Edgett Williams Consulting Group, Inc.
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Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

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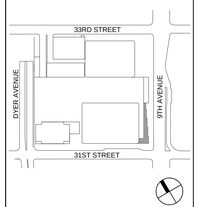

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STATE OF NEW YORK · RICHARD McFADDEN · 085625 · LICENSED PROFESSIONAL ENGINEER

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Sheet Name:

FIRE ALARM RISER DIAGRAM NO. 5

DEPT OF BLDGS 121187243 Job Number

ES0001010085 Scan Code

MANHATTAN WEST: NORTH TOWER

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Brookfield

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Architecture/Structural Engineering

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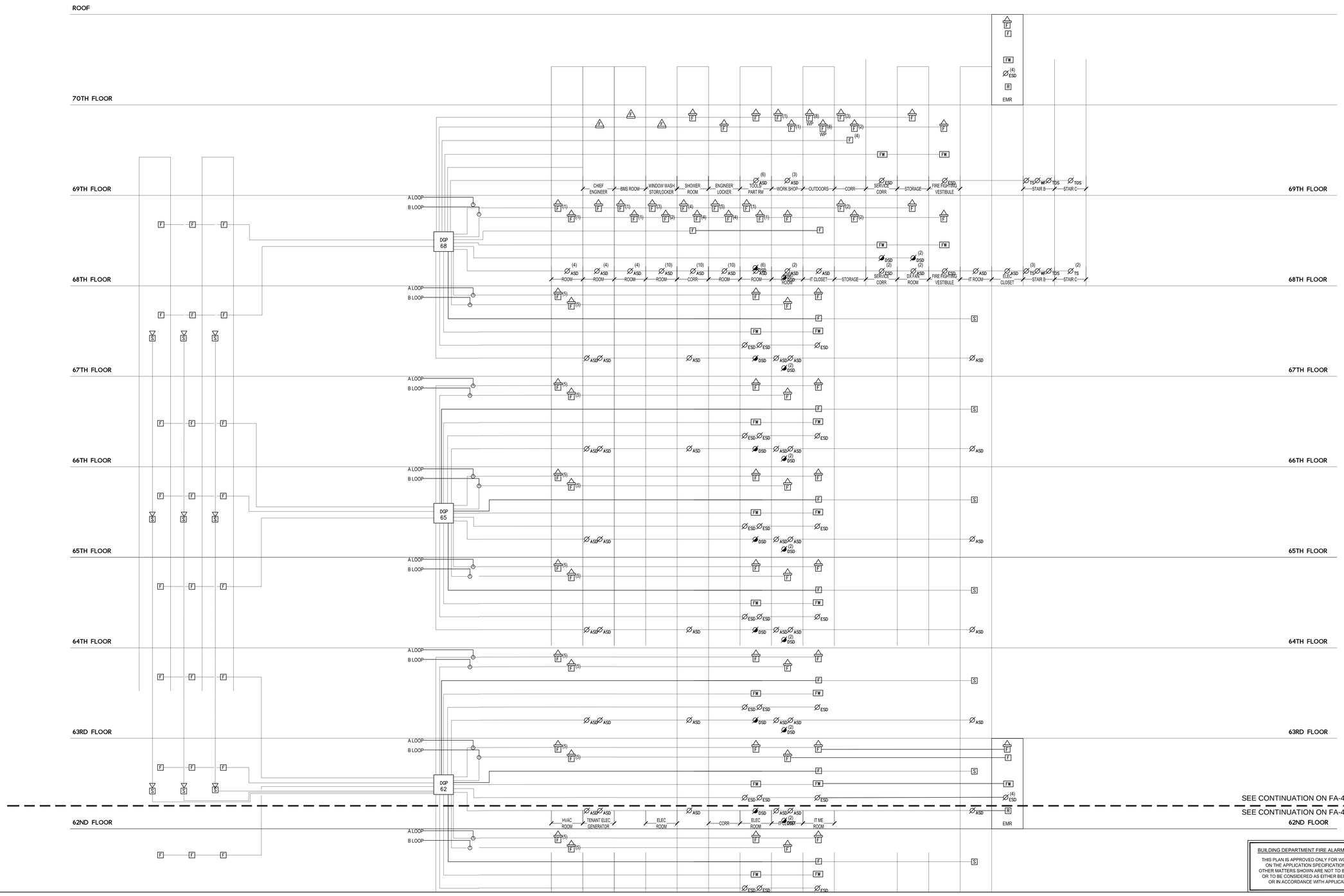

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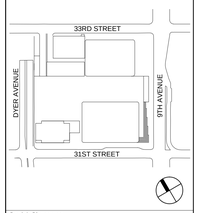

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Sheet Name:

FIRE ALARM RISER DIAGRAM NO. 6

BUILDING DEPARTMENT FIRE ALARM FILING NOTES:

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Project No.: 14630	Sheet No.: FA-406.00
Date: 20 JUN 2014	
Scale: 1/8"=1'-0"	
File No.: FA-406.00	Page No.:

22 00 - Plumbing Sheet Matrix - DOB FILING

DOB Sheet Number	Sheet Number	Sheet Name	12 JUL 2013 50% DD	15 NOV 2013 DD PROGRESS	20 DEC 2013 FOUNDATION PERMIT	20 JUN 2014 FOUNDATION PERMIT
000 - Cover Sheet, General Notes, Legends						
P-001.00	P-001	PLUMBING DRAWING INDEX	●	●	●	●
P-002.00	P-002	PLUMBING ABBREVIATIONS AND SYMBOLS LIST	●	●	●	●
100 - Floor Plans						
P-093.00	P-098B1-A	B1 PIT PART FLOOR PLAN - PART A		●	●	●
P-094.00	P-099B1-A	PLUMBING CELLAR B1 FLOOR PLAN - PART A	●	●	●	●
P-095.00	P-099B1-B	PLUMBING CELLAR B1 FLOOR PLAN - PART B		●	●	●
P-096.00	P-099B1-C	PLUMBING CELLAR B1 FLOOR PLAN - PART C		●	●	●
P-097.00	P-100B-A	PLUMBING CELLAR B FLOOR PLAN - PART A	●	●	●	●
P-098.00	P-100B-B	PLUMBING CELLAR B FLOOR PLAN - PART B		●	●	●
P-099.00	P-100B-C	PLUMBING CELLAR B FLOOR PLAN - PART C		●	●	●
P-100.00	P-101-A	PLUMBING GROUND FLOOR PLAN - PART A	●	●	●	●
P-101.00	P-101-B	PLUMBING GROUND FLOOR PLAN - PART B		●	●	●
P-102.00	P-102	PLUMBING LEVEL 2 FLOOR PLAN - RETAIL	●	●	●	●
P-103.00	P-103	PLUMBING LEVEL 3 FLOOR PLAN - STAIR TRANSFER	●	●	●	●
P-104.00	P-104	PLUMBING LEVEL 4 FLOOR PLAN - MECHANICAL	●	●	●	●
P-105.00	P-105	PLUMBING LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE		●	●	●
P-106.00	P-106	PLUMBING LEVEL 6-15 FLOOR PLAN - TYPICAL LOW-RISE		●	●	●
P-116.00	P-116	PLUMBING LEVEL 16 FLOOR PLAN - TYPICAL LOW-RISE		●	●	●
P-117.00	P-117	PLUMBING LEVEL 17 FLOOR PLAN - LOW-RISE		●	●	●
P-118.00	P-118	PLUMBING LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN		●	●	●
P-119.00	P-119	PLUMBING LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR	●	●	●	●
P-121.00	P-121	PLUMBING LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE		●	●	●
P-128.00	P-128	PLUMBING LEVEL 28 FLOOR PLAN - LOW-RISE & MID-RISE		●	●	●
P-129.00	P-129	PLUMBING LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN	●	●	●	●
P-130.00	P-130	PLUMBING LEVEL 30 FLOOR PLAN - MID-RISE EMR	●	●	●	●
P-131.00	P-131	PLUMBING LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM	●	●	●	●
P-132.00	P-132	PLUMBING LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK		●	●	●
P-133.00	P-133	PLUMBING LEVEL 33-35 FLOOR PLAN - TYPICAL MID-RISE		●	●	●
P-136.00	P-136	PLUMBING LEVEL 36 FLOOR PLAN - TYPICAL MID-RISE		●	●	●
P-137.00	P-137	PLUMBING LEVEL 37-38 FLOOR PLAN - TYPICAL MID-RISE		●	●	●
P-139.00	P-139	PLUMBING LEVEL 39 FLOOR PLAN - MID-RISE		●	●	●
P-140.00	P-140	PLUMBING LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN		●	●	●
P-142.00	P-142	PLUMBING LEVEL 42 FLOOR PLAN - MID-RISE EMR		●	●	●
P-143.00	P-143	PLUMBING LEVEL 43-46 FLOOR PLAN - TYPICAL MID-RISE		●	●	●
P-147.00	P-147	PLUMBING LEVEL 47-48 FLOOR PLAN - TYPICAL MID-RISE		●	●	●
P-149.00	P-149	PLUMBING LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE		●	●	●
P-150.00	P-150	PLUMBING LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN	●	●	●	●
P-152.00	P-152	PLUMBING LEVEL 52 FLOOR PLAN - HIGH-RISE EMR	●	●	●	●
P-153.00	P-153	PLUMBING LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM	●	●	●	●
P-154.00	P-154	PLUMBING LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK		●	●	●
P-155.00	P-155	PLUMBING LEVEL 55 FLOOR PLAN - HIGH-RISE		●	●	●
P-156.00	P-156	PLUMBING LEVEL 56 FLOOR PLAN - HIGH-RISE		●	●	●
P-157.00	P-157	PLUMBING LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE		●	●	●
P-159.00	P-159	PLUMBING LEVEL 59 FLOOR PLAN - HIGH-RISE		●	●	●
P-160.00	P-160	PLUMBING LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN		●	●	●
P-162.00	P-162	PLUMBING LEVEL 62 FLOOR PLAN - HIGH-RISE EMR		●	●	●
P-163.00	P-163	PLUMBING LEVEL 63 FLOOR PLAN - HIGH-RISE		●	●	●
P-164.00	P-164	PLUMBING LEVEL 64-66 FLOOR PLAN - TYPICAL HIGH-RISE	●	●	●	●
P-167.00	P-167	PLUMBING LEVEL 67 FLOOR PLAN - TYPICAL HIGH-RISE		●	●	●
P-168.00	P-168	PLUMBING LEVEL 68 FLOOR PLAN - MECHANICAL		●	●	●
P-169.00	P-169	PLUMBING LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE		●	●	●
P-170.00	P-170	PLUMBING ROOF PLAN - MECHANICAL PENTHOUSE		●	●	●
P-171.00	P-171	PLUMBING ROOF PLAN - MECHANICAL PENTHOUSE ROOF		●	●	●
P-172.00	P-172	PLUMBING ROOF PLAN		●	●	●
400 - Risers & One Line Diagrams						
P-400.00	P-400	PLUMBING DOMESTIC WATER RISER DIAGRAM	●	●	●	●
P-401.00	P-401	PLUMBING SANITARY RISER DIAGRAM - SHEET 1	●	●	●	●
P-402.00	P-402	PLUMBING SANITARY RISER DIAGRAM - SHEET 2		●	●	●
P-403.00	P-403	PLUMBING STORM & NATURAL GAS RISER DIAGRAMS	●	●	●	●
500 - Schedules						
P-500.00	P-500	PLUMBING SCHEDULE SHEET	●	●	●	●
600 - Details						
P-600.00	P-600	PLUMBING DETAILS - SHEET 1	●	●	●	●
P-601.00	P-601	PLUMBING DETAILS - SHEET 2	●	●	●	●

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SHEET NOTES

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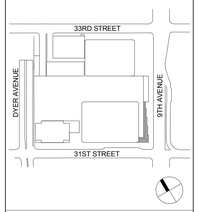

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PLUMBING DRAWING INDEX

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale:
File No.: P-001
B-SCAN Sheet No.: P-001.00
Sheet No.: P-001
Page No.: 1 OF 6

DEPT OF BLDGS 421187143 Job Number

E507405845 Scan Code

SYMBOLS SCHEDULE

PRIMARY SYSTEMS PIPING

COLD WATER PIPING
HOT WATER PIPING
HOT WATER CIRCULATION PIPING
SANITARY PIPING
VENT PIPING
LOW PRESSURE NATURAL GAS PIPING — G
STORM PIPING — L
STORM OVERFLOW PIPING — OF

SECONDARY SYSTEMS PIPING

PUMP DISCHARGE PIPING — CWPD
COLD WATER FROM GRAVITY TANK — GT
DOMESTIC WATER INCOMING SERVICE — CW(S)
COLD WATER PNEUMATIC TANK ZONE — P
COLD WATER STREET PRESSURE ZONE — ST
HOT WATER STREET PRESSURE ZONE — ST
HOT WATER CIRCULATION STREET PRESSURE ZONE — ST
COOLING TOWER PUMP DISCHARGE PIPING — CTPD
IRRIGATION WATER PIPING — IRR
AUTO BALL DRIP DISCHARGE PIPING — ABD
INDIRECT WASTE PIPING — IW
SUMP DISCHARGE PIPING — SD
SANITARY RELIEF VENT PIPING — RV
SANITARY YOKE VENT PIPING — YV
EJECTOR DISCHARGE PIPING — ED

VALVES

CHECK VALVE
CHECK VALVE W/BALL DRIP
VALVE ON HORIZONTAL PIPE (NORMALLY OPEN)
VALVE ON HORIZONTAL PIPE (NORMALLY CLOSED)
VALVE ON VERTICAL PIPE
OS&Y VALVE ON HORIZONTAL PIPE
OS&Y VALVE ON VERTICAL PIPE
3-WAY VALVE
3-WAY VALVE SOLENOID
2-WAY VALVE SOLENOID
2-WAY VALVE MOTORISED
GAS VALVE
CHECK VALVE W/ VACUUM BREAKER ASSEMBLY
PRESSURE RELIEF VALVE
ZONE CHECK VALVE ASSEMBLY
ZONE DOUBLE CHECK VALVE ASSEMBLY

PIPING SYSTEM COMPONENTS COMMON SYMBOLS

PIPE SLEEVE
PIPE TURNING UP
PIPE TURNING DOWN
PIPE TAP
CAPPED PIPE
PIPE BREAK
VACUUM BREAKER
HOSE BIBB
PIPE CLEANOUT OPENING
PIPE RUNNING TRAP (ON RISERS)
PIPE RUNNING TRAP (ON PLANS)
PIPE RUNNING TRAP W/SINGLE CLEAN OUT(ON PLANS)
PIPE RUNNING TRAP W/SINGLE CLEAN OUT(ON RISERS)
PIPE RUNNING TRAP W/DOUBLE CLEAN OUT(ON PLANS)
PIPE RUNNING TRAP W/DOUBLE CLEAN OUT(ON RISERS)
PIPE RUNNING TRAP W/SINGLE CLEAN OUT EXTENDED TO CODP (ON RISERS)
CLEANOUT DECK PLATE FLOOR/ ROOF/ AREA OR PLENUM DRAIN

COMMON EQUIPMENT SYMBOLS

GAS BOOSTER
GAS MEETER
DOMESTIC HOT WATER HEATER
PNEUMATIC TANK
END SUCTION PUMP
SPLIT CASE PUMP
IN LINE MOUNTED PUMP
WATER METER
DOUBLE SUMP SUCTION PUMP (ON PLANS)
DOUBLE SUMP SUCTION PUMP (ON RISER)

ANNOTATION SYMBOLS

CW, HW, SAN, HWR RISER LABEL — P #
STORM LEADER RISER LABEL — L #
GAS RISER LABEL — G #
SECTION/ DETAIL REFERENCE — # #
CENTER LINE SYMBOL — ℄
DIRECTION OF LIQUID FLOW
DIRECTION OF PUMPED LIQUID FLOW

ABBREVIATION SCHEDULE

A	AIR
ABD	AUTOMATIC BALL DRIP
AD	AREA DRAIN
ADJ.	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFP	AUTOMATIC FIRE PUMP
AFPH	ANTI-FREEZE POST HYDRANT
AFWH	ANTI-FREEZE WALL HYDRANT
AI	AIR INTAKE
AP	ACCESS PANEL
Ar	ARGON
@	AT
AUTO	AUTOMATIC
AV	ACID VENT
AW	ACID WASTE
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BLKHD	BULKHEAD
BMS	BUILDING MANAGEMENT SYSTEM
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BR	BRANCH
BSMT	BASEMENT
BW	BLACK WATER
BWV	BLACK WATER VENT
BWW	BLACK WATER WASTE
CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT(ITIOUS)
CF	CUBIC FEET
CI	CAST IRON
CLG	CEILING
CLOS	CLOSET
CO	CAPPED OUTLET
CO2	CARBON DIOXIDE
CODP	CLEAN OUT DECK PLATE
COL	COLUMN
COMP'T	COMPLIMENT
CONC	CONCRETE
COND	CONDENSATE
CTPD	COOLING TOWER PUMP DISCHARGE
CONF	CONFERENCE
CORR	CORRIDOR
CONST	CONSTRUCTION
CON'T	CONTINUATION
CONV	CONVECTOR
COWP	CLEAN OUT WALL PLATE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CT	COOPER TUBE
CTMU	COOLING TOWER MAKE UP
CV	CHECK VALVE
CW	COLD WATER
CWPD	COLD WATER PUMP DISCHARGE
CWVO	COLD WATER VALVED OUTLET
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DCTIRN	DUCTILE IRON
DCV	DOUBLE CHECK VALVE.
DET	DETAIL
DI	DEIONISED
DIAG	DIAGONAL
DIAM	DIAMETER
DIM	DIMENSION
DIR	DEIONISED RETURN
DN	DOWN
DP	DRY PIPE
DPV	DRY PIPE VALVE
DR	DRAIN
DRW	DRINKING WATER
DW	DISHWASHER
DWG	DRAWING
DWPD	DOMESTIC WATER PUMP DISCHARGE
EA.	EACH
ED	EJECTOR DISCHARGE
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
EMR	ELEVATOR MACHINE ROOM
ENCL	ENCLOSURE
ENGNR	ENGINEER
ENTR	ENTRANCE
EOS	END/EDGE OF SLAB
EQUIP	EQUIPMENT
EXIST	EXISTING
EXH	EXHAUST
EXP	EXPRESS
EXP. JT.	EXPANSION JOINT
EXT	EXTERIOR
F	FIRE
FAI	FRESH AIR INTAKE
FD	FLOOR DRAIN
FDN	FOUNDATION
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FIN	FINISH(ED)
FIN.FL	FINISH(ED) FLOOR
FIN.GR	FINISHED GRADE
FL	FLOOR
FPRF	FIREPROOFING
FPSC	FIREPROOF SELF CLOSING
FS	FIRE SERVICE PIPE
FSK	FLOOR SINK
FSP	FIRE STANDPIPE
FT	FOOT, FEET
FTG	FITTING
FXT	FIXTURE
G	GAS (LOW PRESSURE)
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTING
GD	GARAGE DRAIN
GEN	GENERAL
G(HP)	GAS (HIGH PRESSURE)
G(MP)	GAS (MEDIUM PRESSURE)
GR	GREASE
GRD	GRADE
GT	GRAVITY TANK
GV	GAS VENT
GW	GRAY WATER
GWV	GRAY WATER VENT
GWW	GRAY WATER WASTE
HB	HOSE BIBB
HC	HANDICAPPED
He	HELIUM
HGT	HEIGHT
HORIZ	HORIZONTAL
HP	HIGH POINT
HR	HOUR
H2	HYDROGEN
HTG	HEAT(ING)
HTR	HEATER
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HW	HOT WATER
HWC	HOT WATER CIRCULATION
HWH	HOT WATER HEATER
HZ	HIGH ZONE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INSUL	INSULATION
IRR	IRRIGATION
IW	INDIRECT WASTE
JAN	JANITOR
JAN.CL.	JANITOR'S CLOSET
JP	JOCKEY PUMP
JT	JOINT
L	LEADER
LAB	LABORATORY
LP	LOW POINT
LV	LOCAL VENT (W/BEDPAN WASHERS)
LVR	LOUVER
LZ	LOW ZONE
MA	MEDICAL AIR
MACH	MACHINE
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MER	MECHANICAL EQUIPMENT ROOM
MEZZ	MEZZANINE
MFR	MANUFACTURE
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
MTG	MEETING
MTL	METAL
MV	MEDICAL VACUUM
MZ	MID ZONE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
No.	NUMBER
NO	NORMALLY OPEN
NOM	NOMINAL
N2	NITROGEN
N2O	NITROUS OXIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OVERFLOW DRAIN
OF	OVERFLOW
OFF	OFFICE
OPNG	OPENING
OPP	OPPOSITE
O2	OXYGEN
OVHD	OVERHEAD
P	PNEUMATIC
P-1 & P-1A	WATER CLOSET
P-3 & P-3A	LAVATORY
P-5	SHOWER
P-6 & P-6A	DRINKING FOUNTAIN
PA	PREACTION
PAN.	PANEL
PAV	PREACTION VALVE
PD	PLAZA DRAIN
PE	PASSENGER ELEVATOR
PERF	PERFORATED
PL	PLATE
PLAS	PLASTER
PLBG	PLUMBING
PO	PLUGGED OUTLET
POL	POLISH(ED)
PR	PAIR
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
RA	RETURN AIR
RCV	RISER CONTROL VALVE
RD	ROOF DRAIN
REFR	REFRIGERATOR
REINF	REINFORCED
REQT'S	REQUIREMENTS
REV	REVISED
RM	ROOM
RO	REVERSE OSMOSIS
RODI	REVERSE OSMOSIS DEIONISED
RODIR	REVERSE OSMOSIS DEIONISED RETURN
ROR	REVERSE OSMOSIS RETURN
RPDA	REDUSED PRESSURE DETECTOR ASSEMBLY
RPZ	REDUSED PRESSURE ZONE ASSEMBLY
RV	RELIEF VALVE
S	SOIL, SANITARY
SCHED	SCHEDULE
SD	SUMP DISCHARGE
SE	SERVICE ELEVATOR
SECT	SECTION
SH	SHOWER
SHT	SHEET
SIM	SIMILAR (TO)
SLV	SLEEVE
SPFCA	SPRINKLER FLOW CONTROL ASSEMBLY
SPO	SANITARY PLUGGED OUTLET
SPR	SPRINKLER
SQ	SQUARE
SQ.FT.	SQUARE FEET (#)
SS	STAINLESS STEEL
SSP	SPECIAL SERVICE FIRE PUMP
ST	STREET PRESSURE
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SYMM	SYMMETRICAL
TDH	TOTAL DYNAMIC HEAD
TEL	TELEPHONE
TEMP	TEMPORARY
TER	TERRACE
THRU	THROUGH
TOS	TOP OF SLAB
TP	TRAP PRIMER
TTB	TIGHT TO BEAM
TW	TEPID WATER
TWC	TEPID WATER CIRCULATION
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VACUUM
VCO	VALVED, CAPPED OUTLET
VE	VACUUM EXHAUST
VEX	VENT EXHAUST
VERT	VERTICAL
VEST	VESTIBULE
VO	VALVED OUTLET
VPO	VENT PLUGGED OUTLET
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
WAGD	WASTE ANESTHETIC GAS DISPOSAL
WE	WASTE ANESTHETIC GAS DISPOSAL EXHAUST
WF	WIDE FLANGE
WH	WALL HYDRANT
WP	WATERPROOFING
WPO	WASTE PLUGGED OUTLET

NEW YORK CITY PLUMBING NOTES

THE PLUMBING SYSTEMS (SANITARY, WASTE, VENT, & WATER DISTRIBUTION) AND ALL ASSOCIATED EQUIPMENT WILL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE FULL REQUIREMENTS OF THE 2008 BUILDING CODE OF THE CITY OF NEW YORK AND THE 2008 PLUMBING CODE OF THE CITY OF NEW YORK.

1. THE SANITARY SYSTEM SHALL BE PROVIDED IN FULL ACCORDANCE WITH THE GENERAL PROVISIONS OF SECTION PC 701.
2. THE MATERIALS USED IN THE PLUMBING SYSTEM WILL BE PROVIDED IN FULL ACCORDANCE WITH SECTION PC 303.
3. EQUIPMENT HOOK-UP AND THE JOINING OF PIPING WILL BE IN FULL COMPLIANCE WITH CHAPTER 4.
4. THE INSTALLATION OF FIXTURES WILL BE FULL ACCORDANCE WITH CHAPTER 4.
5. TRAPS FOR FIXTURES AND DRAIN LINES WILL BE PROVIDED AND CLEANOUTS INSTALLED IN FULL COMPLIANCE WITH CHAPTER 7.
6. VERTICAL AND HORIZONTAL PIPING WILL BE HUNG AND SUPPORTED AS DIRECTED IN SPECIFICATIONS AND WITH SECTION PC 308.
7. THE WATER SUPPLY SYSTEMS OF THE SUBJECT BUILDING SHALL BE INSTALLED AND MAINTAINED IN FULL COMPLIANCE WITH CHAPTER 6.
8. THE SANITARY DRAINAGE SYSTEM WILL BE SIZED AND INSTALLED IN FULL COMPLIANCE WITH SECTIONS PC 709 AND PC 710.
9. THE VENT PIPING FOR THE SANITARY DRAINAGE SYSTEM OF THE SUBJECT BUILDING WILL BE INSTALLED IN FULL COMPLIANCE WITH CHAPTER 9.
10. ALL TRENCHING SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION PC 306.
11. RAT PROOFING SHALL BE IN ACCORDANCE WITH SECTION PC 304.
12. TEMPORARY TOILET FACILITIES SHALL BE PROVIDED FOR WORKMAN AS PER SECTION PC 311.

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. INSTALL ALL WORK IN FULL ACCORDANCE WITH THE REQUIREMENTS OF ALL LOCAL AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION OVER THESE MATTERS, AS WELL AS WITH ANY REQUIREMENTS OF THE NFPA, UL, AND OTHER APPLICABLE CODES. SECURE AND PAY FOR NECESSARY APPROVALS, PERMITS, INSPECTIONS, ETC., AND DELIVER THE OFFICIAL RECORDS OF THE GRANTING OF PERMITS TO THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.
3. PREPARE AND SUBMIT FOR APPROVAL MANUFACTURER'S SHOP DRAWINGS AND DATA FOR EQUIPMENT, AND DETAILED DRAWINGS OF ALL PLUMBING WORK.
4. KEEP AN ACCURATE RECORD ON ALL DEVIATIONS BETWEEN WORK SHOWN ON DRAWINGS AND THAT WHICH IS ACTUALLY PERFORMED.
5. COORDINATE FINAL FLOOR DRAIN LOCATIONS WITH ARCHITECT FOR EXACT DIMENSIONAL LOCATIONS WITHIN THE ROOMS CONTAINING DRAINS.

NYC DOB SPECIAL INSPECTION NOTES

1. AN INDEPENDENT SPECIAL INSPECTOR SHALL BE RETAINED TO PERFORM SPECIAL INSPECTIONS AS WELL AS FILE FORM TR-1 FOR PLUMBING SYSTEM DESIGN AS DOCUMENTED ON THESE PLANS IN ACCORDANCE WITH THE NYC BUILDING CODE.
2. SPECIAL INSPECTION REQUIRED FOR SITE STORM DRAINAGE DISPOSAL AND DETENTION SYSTEM INSTALLATION PER BC 1704.20.
3. SPECIAL INSPECTION REQUIRED FOR HIGH PRESSURE GAS INSTALLATION PER BC 1704.18.
4. SPECIAL INSPECTION REQUIRED FOR FIRESTOPPING PER BC 1704.25.

EQUIPMENT NAMING CONVENTION

EXAMPLE:

H W H – N E – G – 1

- EQUIPMENT NUMBER
- FLOOR LEVEL
- BUILDING LOCATION NORTHEAST TOWER
- EQUIPMENT TYPE HOT WATER HEATER

NYC PROFESSIONAL'S STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

PLUMBING ADD ALTERNATES

1. LOCATE CONTROL PANELS FOR B3 LEVEL SUMP & EJECTOR PUMPS ON THE B LEVEL ABOVE FLOOD ELEVATION. PROVIDE NEMA 4P LOCAL DISCONNECT SWITCH AT THE PITS ON B3, & PROVIDE 60' OF NEMA 6 WIRING FROM B3 LEVEL PUMPS TO B LEVEL CONTROL PANEL.
2. PROVIDE HARD WIRED FIXTURES IN ALL TOILET ROOMS IN LIEU OF BATTERY POWERED FIXTURES FOR FLUSHOMETERS & LAVATORY FAUCETS. COORDINATE W/ ELECTRICAL TO INCLUDE POWER WIRING SCOPE.
3. PROVIDE (12) 2" PIPES FROM GAS METER ROOM TO B LEVEL LOCATION BELOW RETAIL EACH 2" PIPE WILL RUN 300' IN B LEVEL.

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SHEET NOTES

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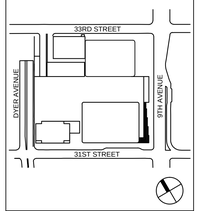
Key Plan:



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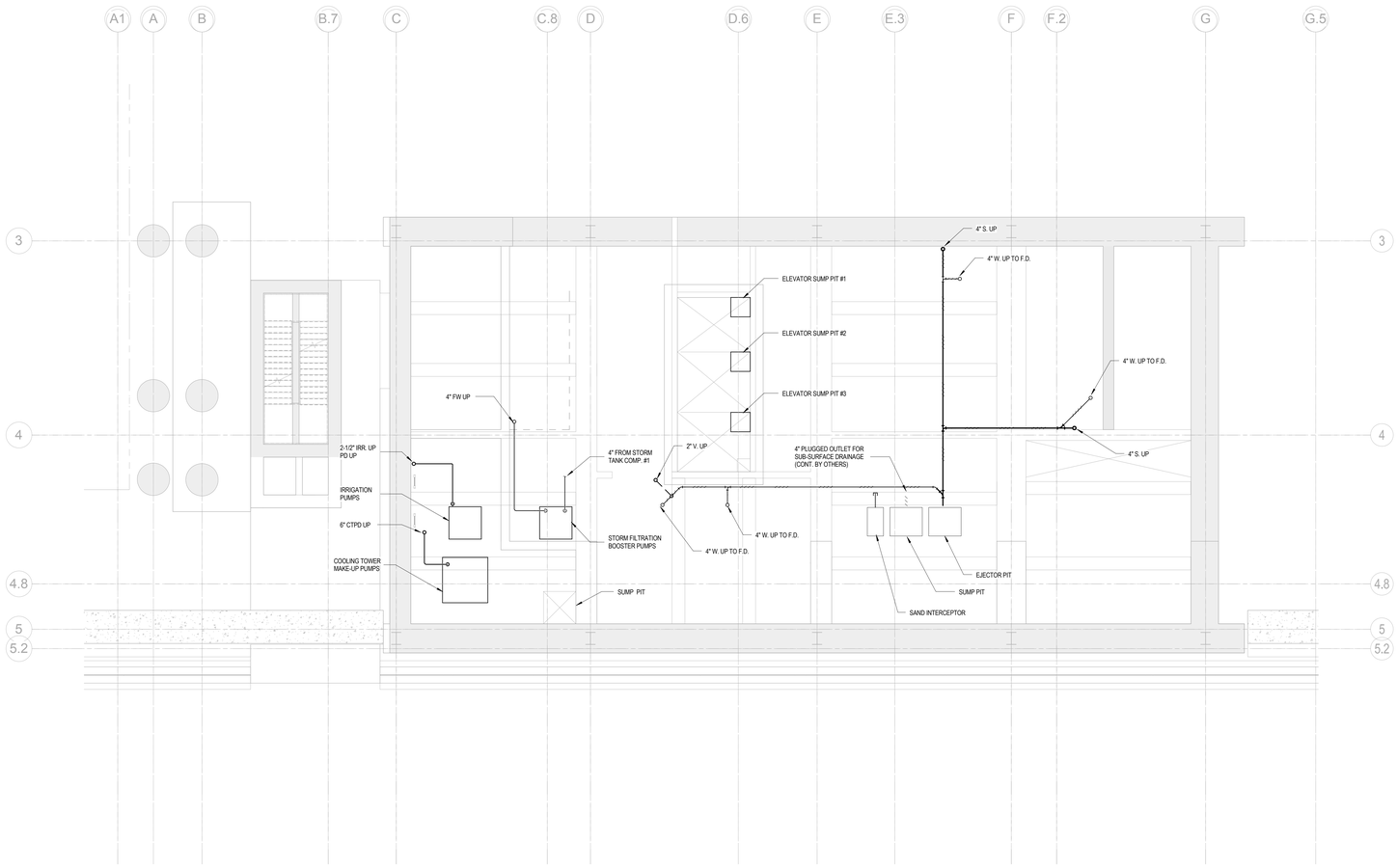
Sheet Name:

PLUMBING ABBREVIATIONS AND SYMBOLS LIST

Project No.: 14830.A	B-SCAN Sheet No.: P-002.00
Date: 20 DEC 2013	Sheet No.: P-002
Scale: NTS	
File No.: P-002	Page No.: 2 OF 62



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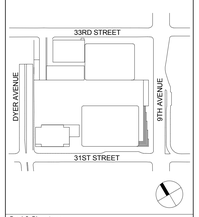

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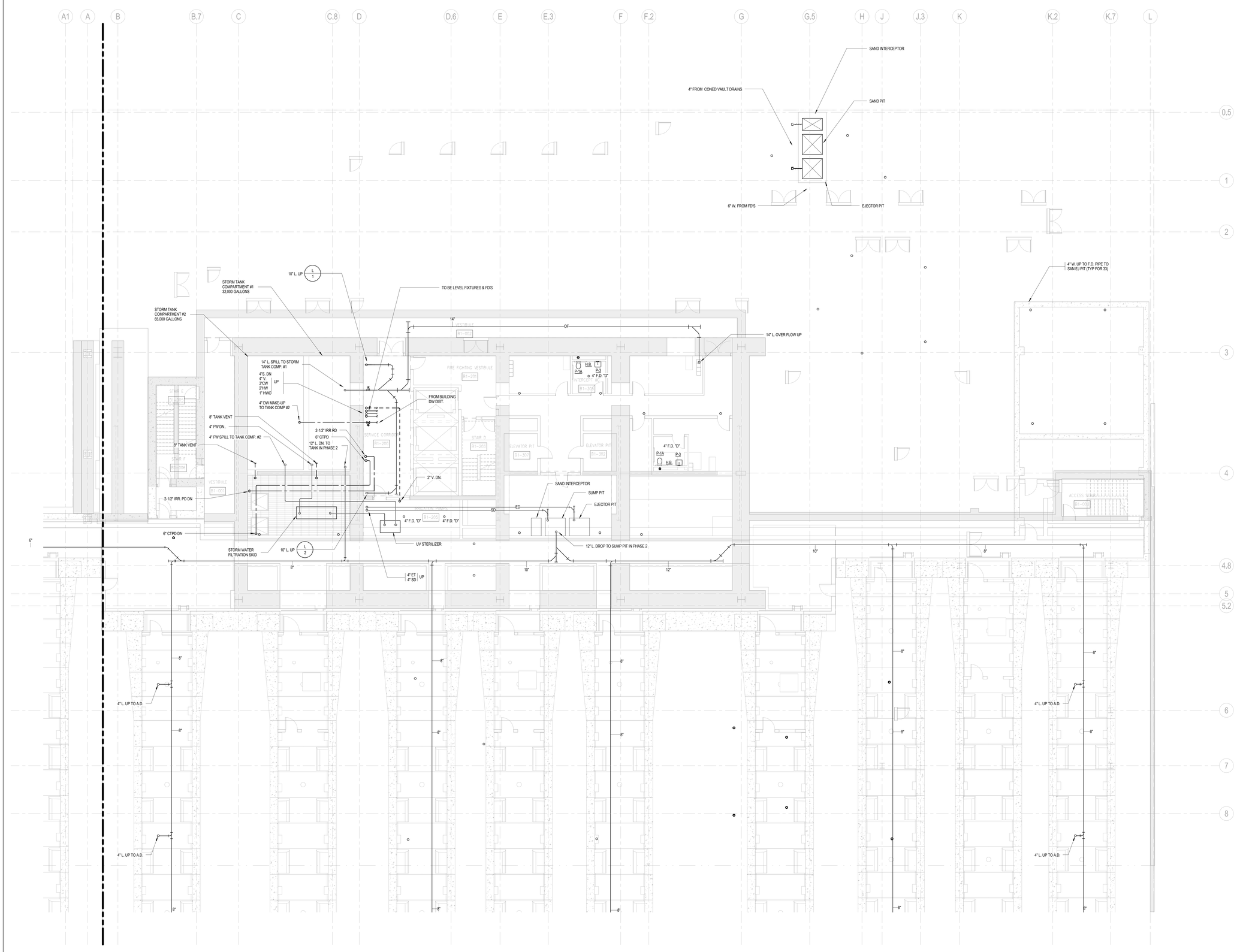
Sheet Name:

PLUMBING CELLAR B1 PIT PART PLAN - PART A

Project No.: 14830.A.000	B-SCAN Sheet No.: P-093.00
Date: 20 JUN 2014	Sheet No.: P-098B1-A
Scale: 1/8" = 1'-0"	
File No.: P-098B1-A	Page No.: 5 OF 6



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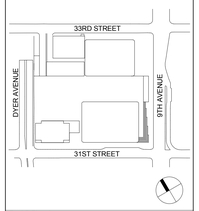

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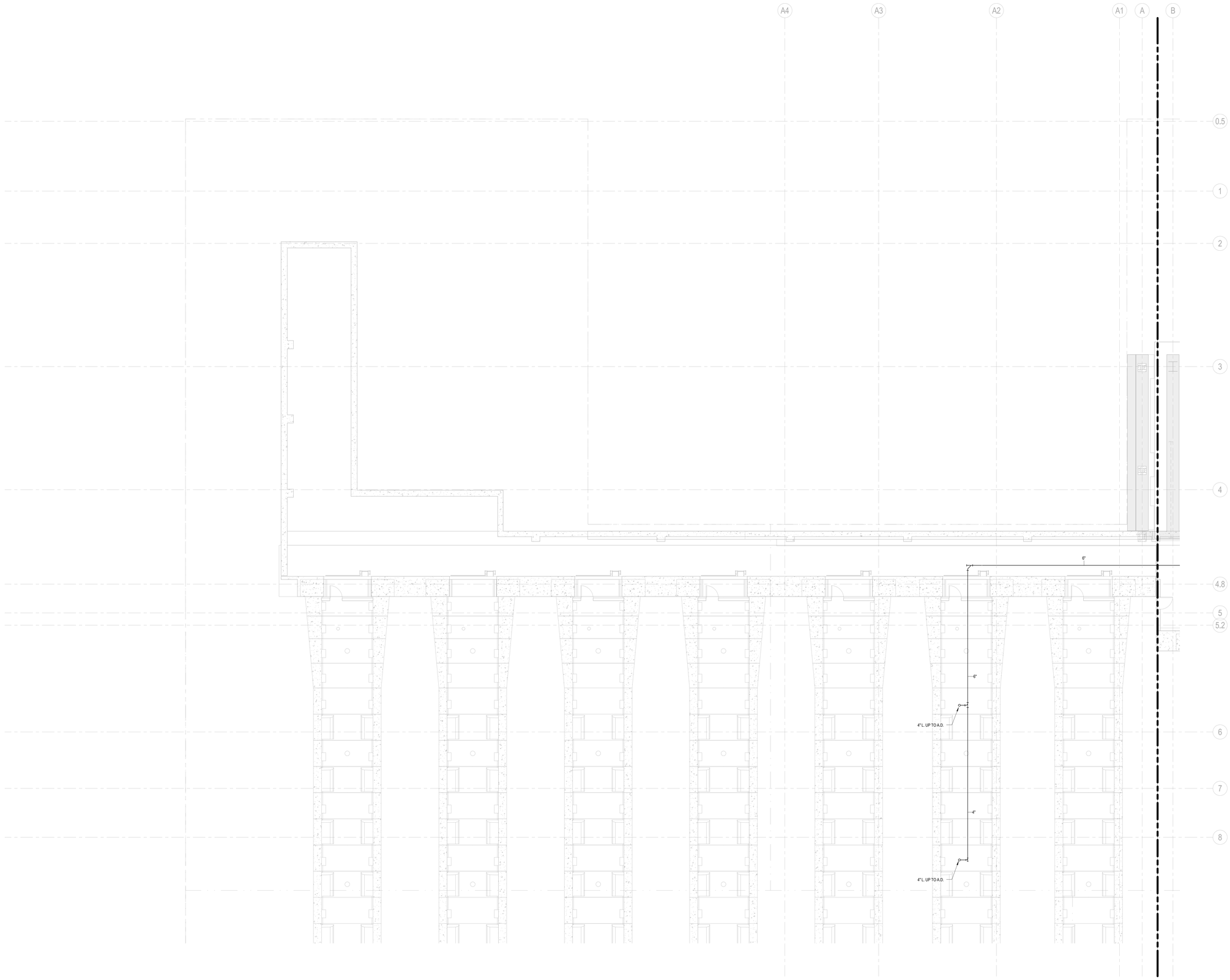
Sheet Name:

PLUMBING CELLAR B1 FLOOR PLAN - PART A

Project No.: 14830 A.000
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: P-099B1-A
B-SCAN Sheet No.: P-094.00
Sheet No.: P-099B1-A
Page No.: 6 OF 6



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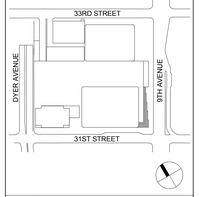

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PLUMBING CELLAR B1 FLOOR PLAN - PART B

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: P-099B1-B

B-SCAN Sheet No.: P-095.00

Sheet No.: P-099B1-B

Page No.: 7 OF 6

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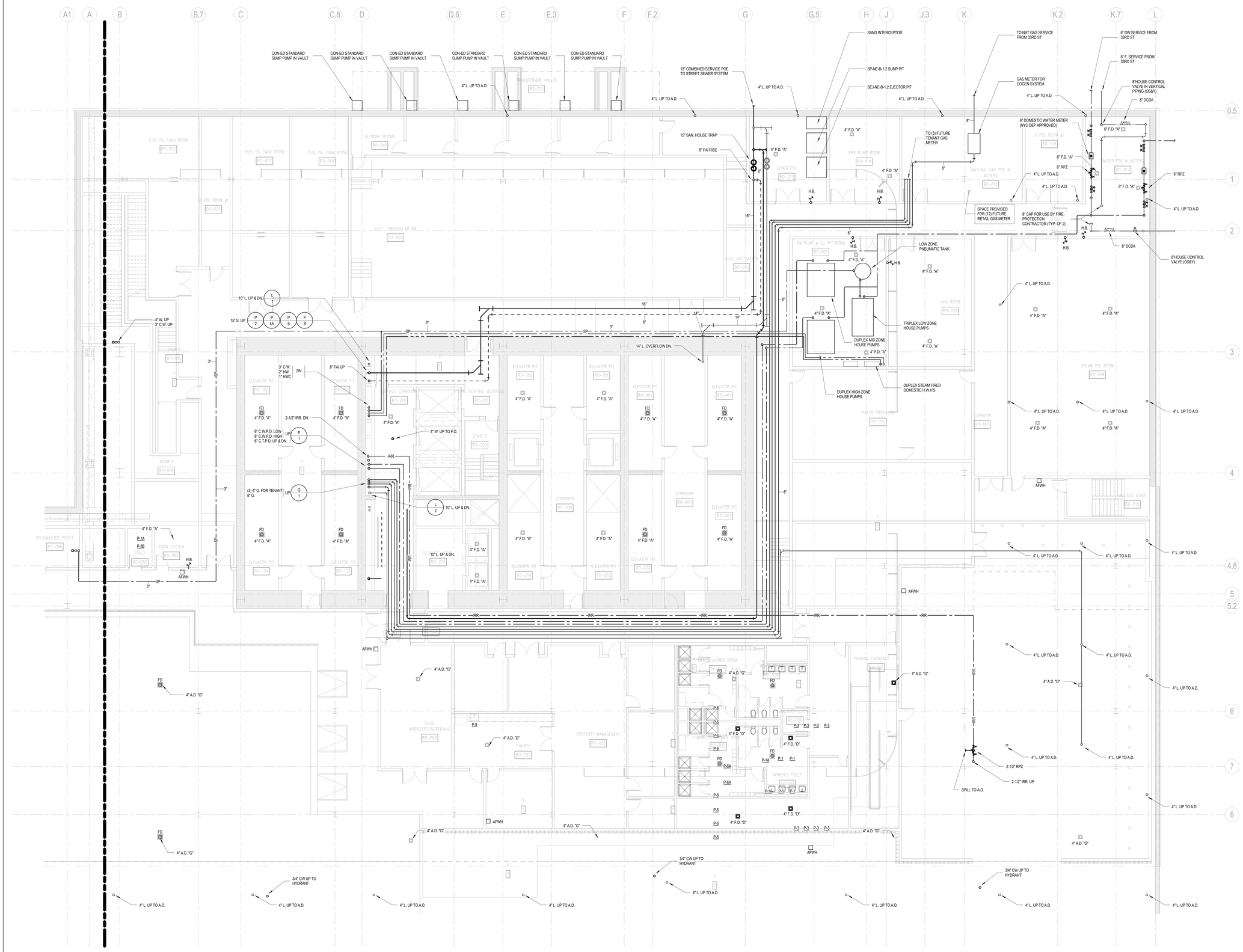

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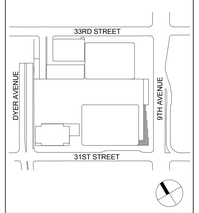

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PLUMBING CELLAR B FLOOR PLAN - PART A

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Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: P-100B-A
B-SCAN Sheet No.: P-097.00
Sheet No.: P-100B-A
Page No.: 9 OF 6

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Vertical Transportation
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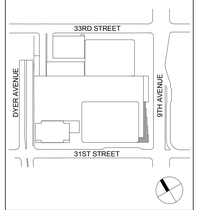
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING
CELLAR B FLOOR
PLAN - PART B

Project No.: 14830.A.000	B-SCAN Sheet No.: P-098.00
Date: 20 JUN 2014	Sheet No.: P-100B-B
Scale: 1/8" = 1'-0"	
File No.: P-100B-B	Page No.: 10 OF 6

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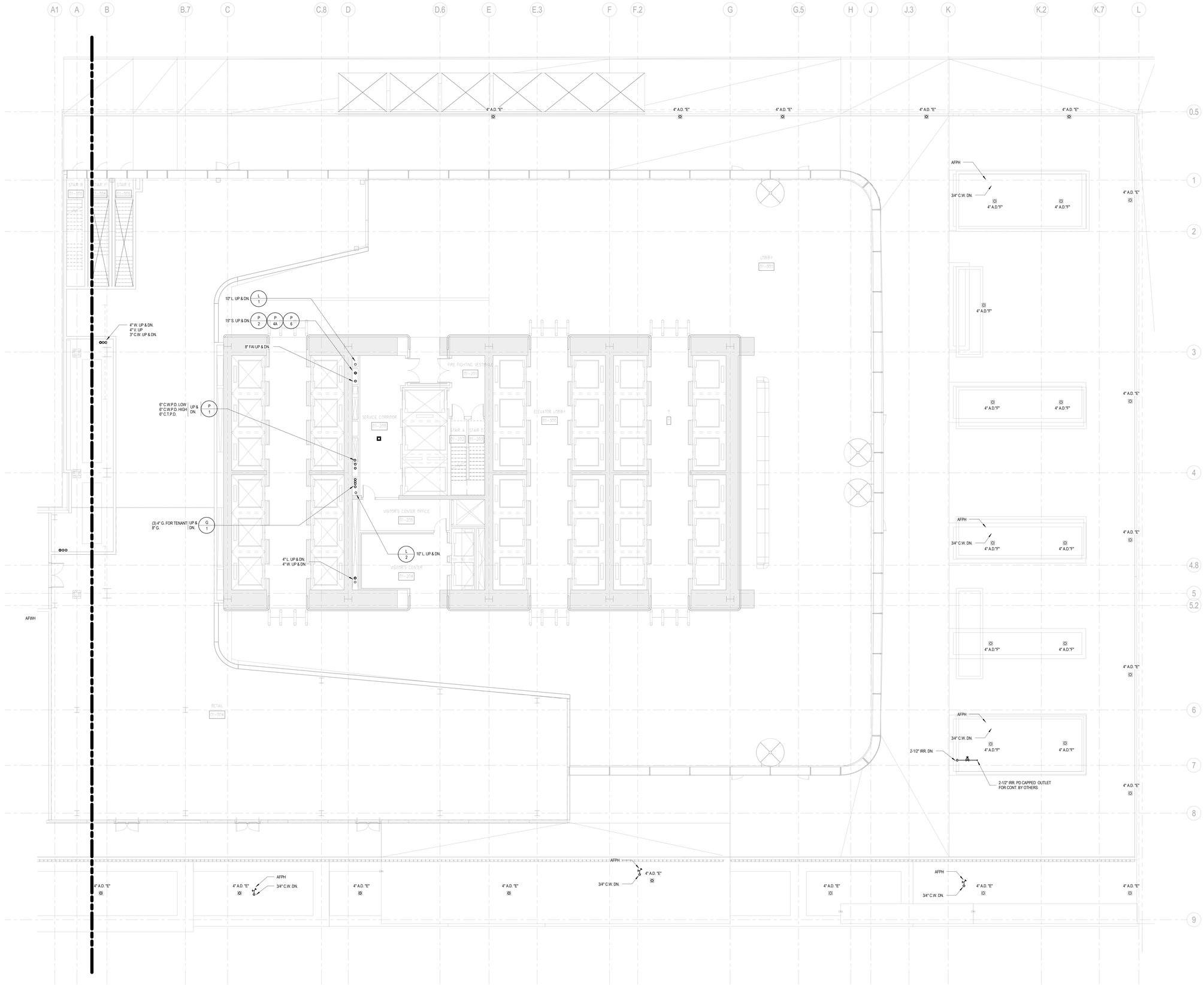

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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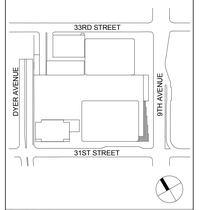
Ontario, Canada N1K 1B8

Key Plan:



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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING GROUND FLOOR PLAN - PART A

Project No.: 14830 A.000	B-SCAN Sheet No.: P-100.00
Date: 20 JUN 2014	Sheet No.: P-101-A
Scale: 1/8" = 1'-0"	
File No.: P-101-A	Page No.: 12 OF 6

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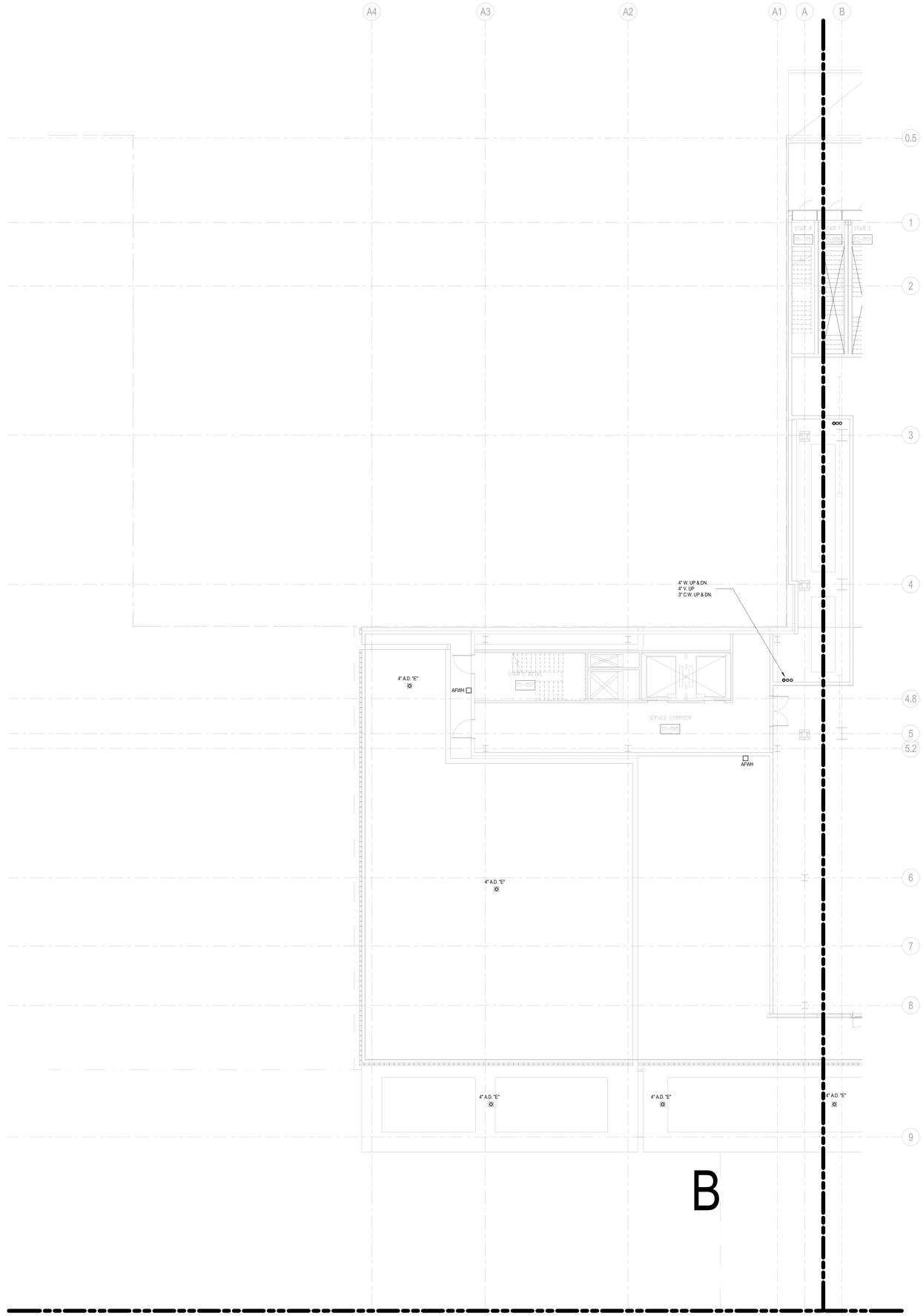

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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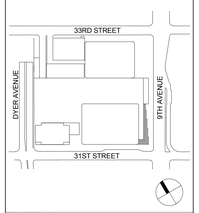
Key Plan:



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1	15 NOV 2013	ISSUED FOR GC PROGRESS PRICING

Sheet Name:

PLUMBING GROUND FLOOR PLAN - PART B

Project No.: 14830.A.000	B-SCAN Sheet No.: P-101.00
Date: 20 JUN 2014	Sheet No.: P-101-B
Scale: 1/8" = 1'-0"	
File No.: P-101-B	Page No.: 13 OF 6

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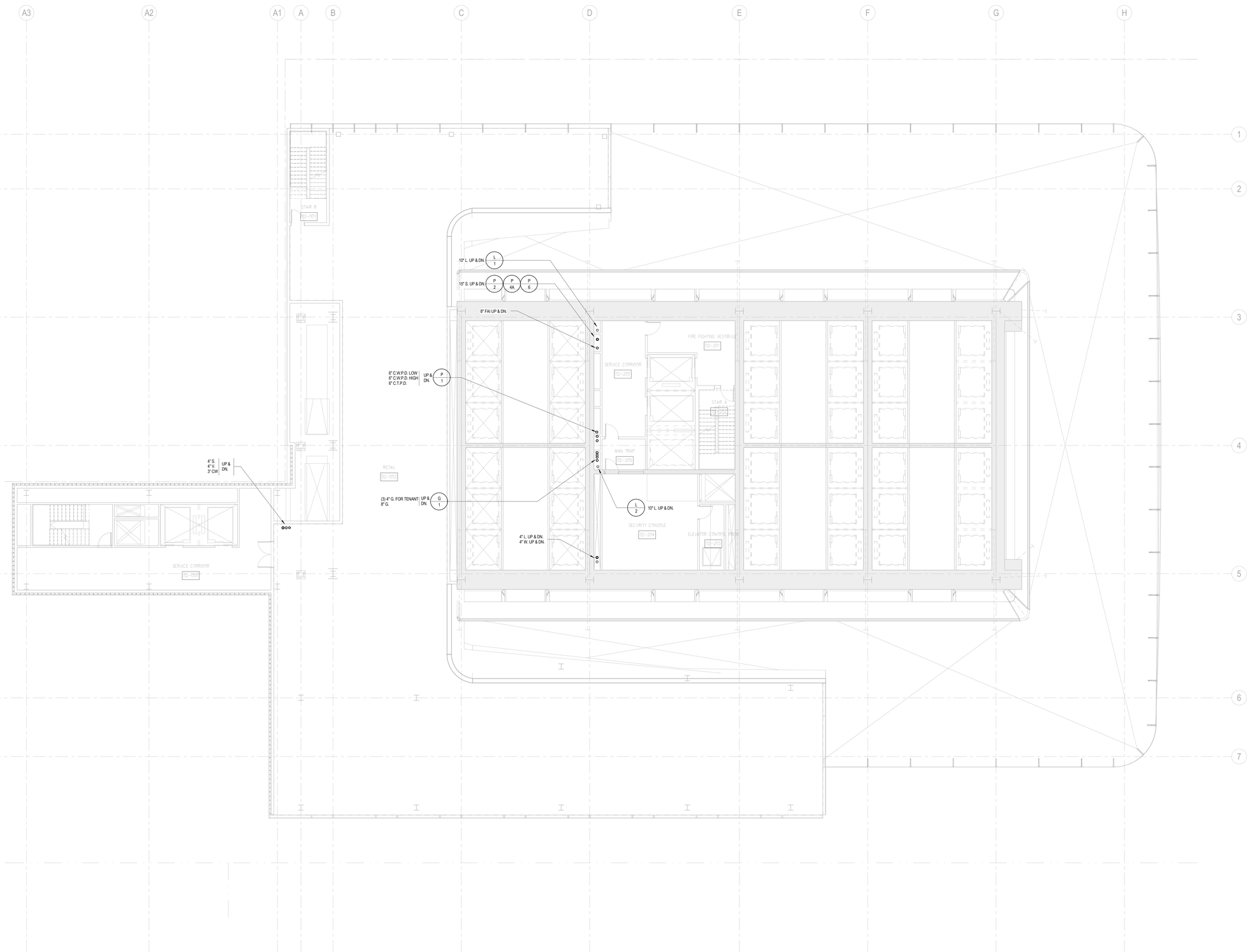

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MANHATTAN WEST: NORTH TOWER

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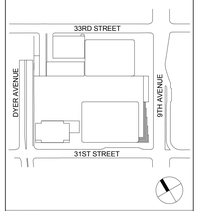
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 2 FLOOR PLAN - RETAIL

Project No.: 14830.A.000	B-SCAN Sheet No.: P-102.00
Date: 20 JUN 2014	Sheet No.: P-102
Scale: 1/8" = 1'-0"	
File No.: P-102	Page No.: 14 OF 6

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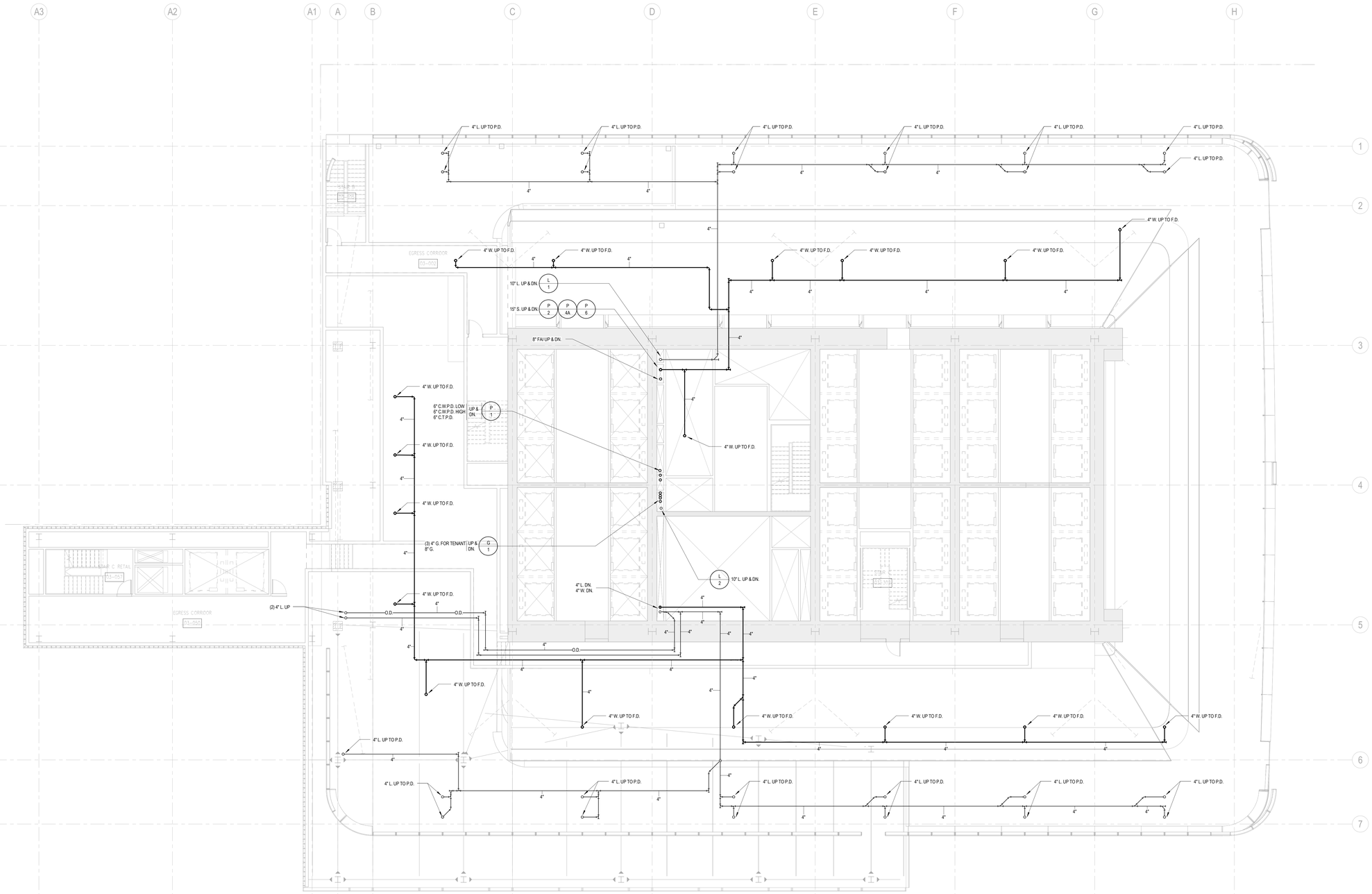

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client
Brookfield
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Architecture/Structural Engineering
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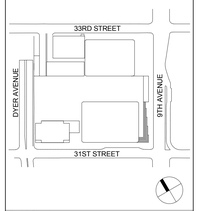
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 3 FLOOR PLAN - STAIR TRANSFER

Project No.: 14830.A.000	B-SCAN Sheet No.: P-103.00
Date: 20 JUN 2014	Sheet No.: P-103
Scale: 1/8" = 1'-0"	
File No.: P-103	Page No.: 15 OF 6

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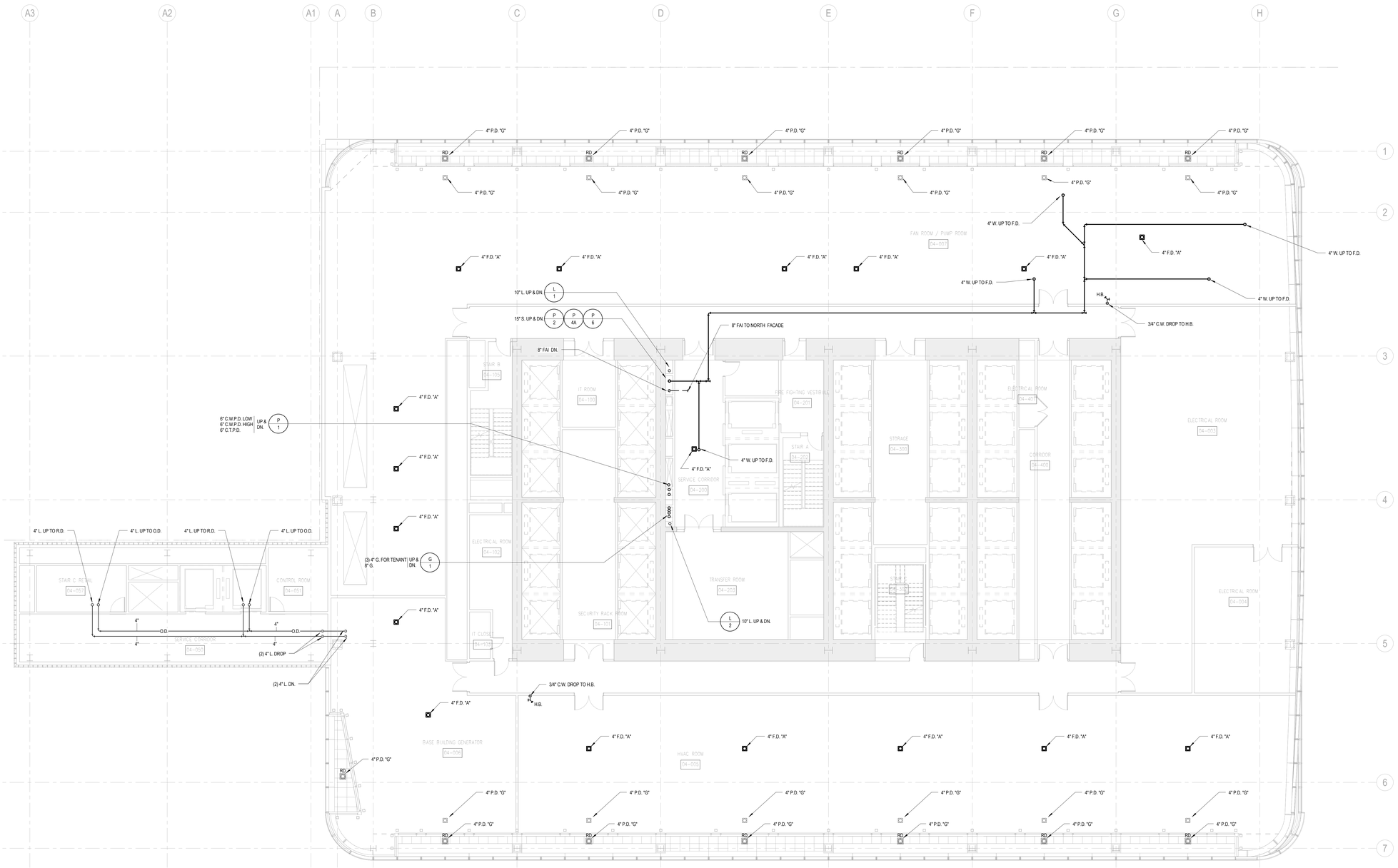

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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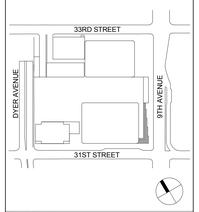
Key Plan:



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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 4 FLOOR PLAN - MECHANICAL

Project No.: 14830.A.000	B-SCAN Sheet No.: P-104.00
Date: 20 JUN 2014	Sheet No.: P-104
Scale: 1/8" = 1'-0"	
File No.: P-104	Page No.: 16 OF 6

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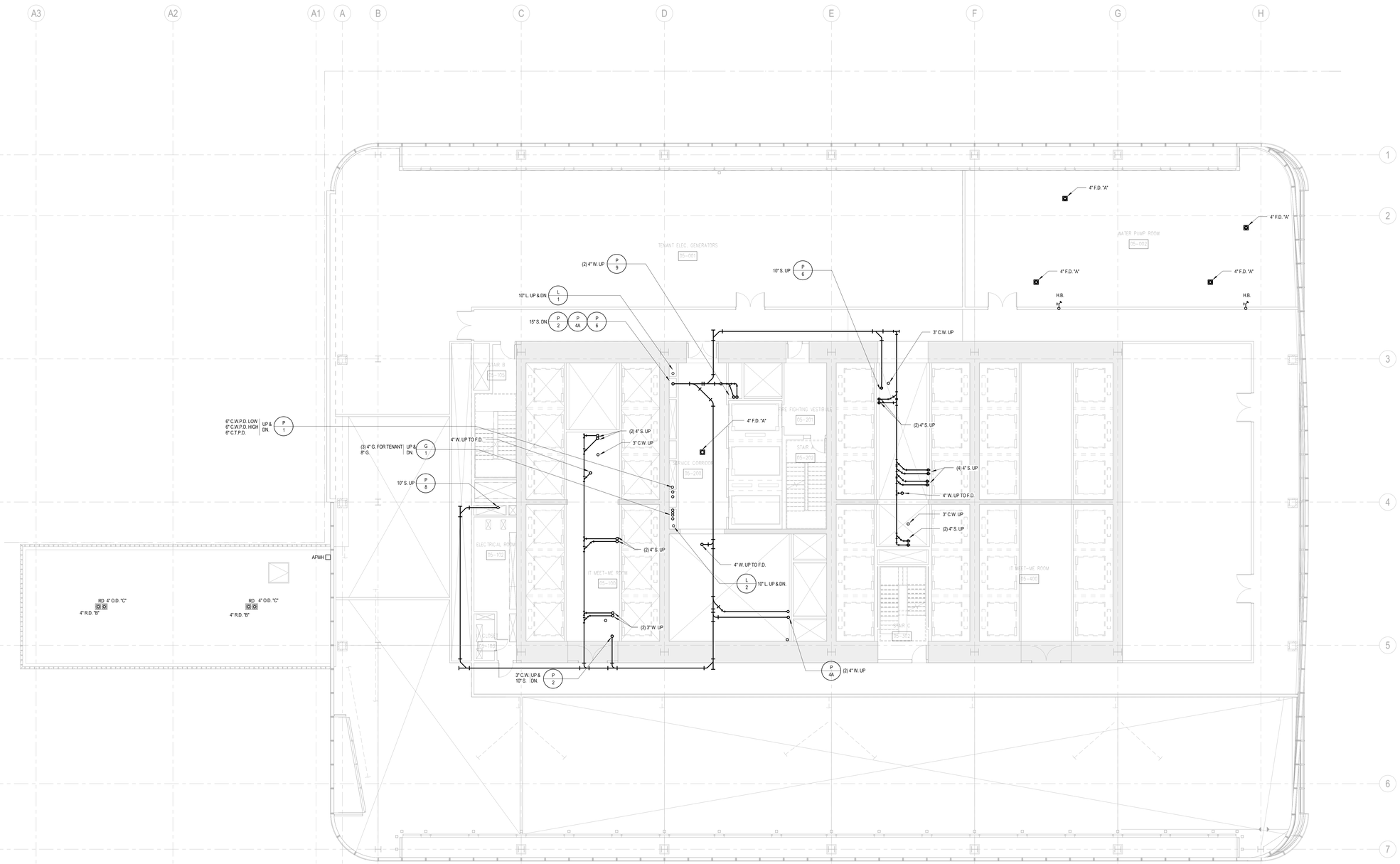

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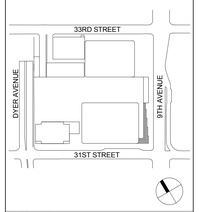
Key Plan:



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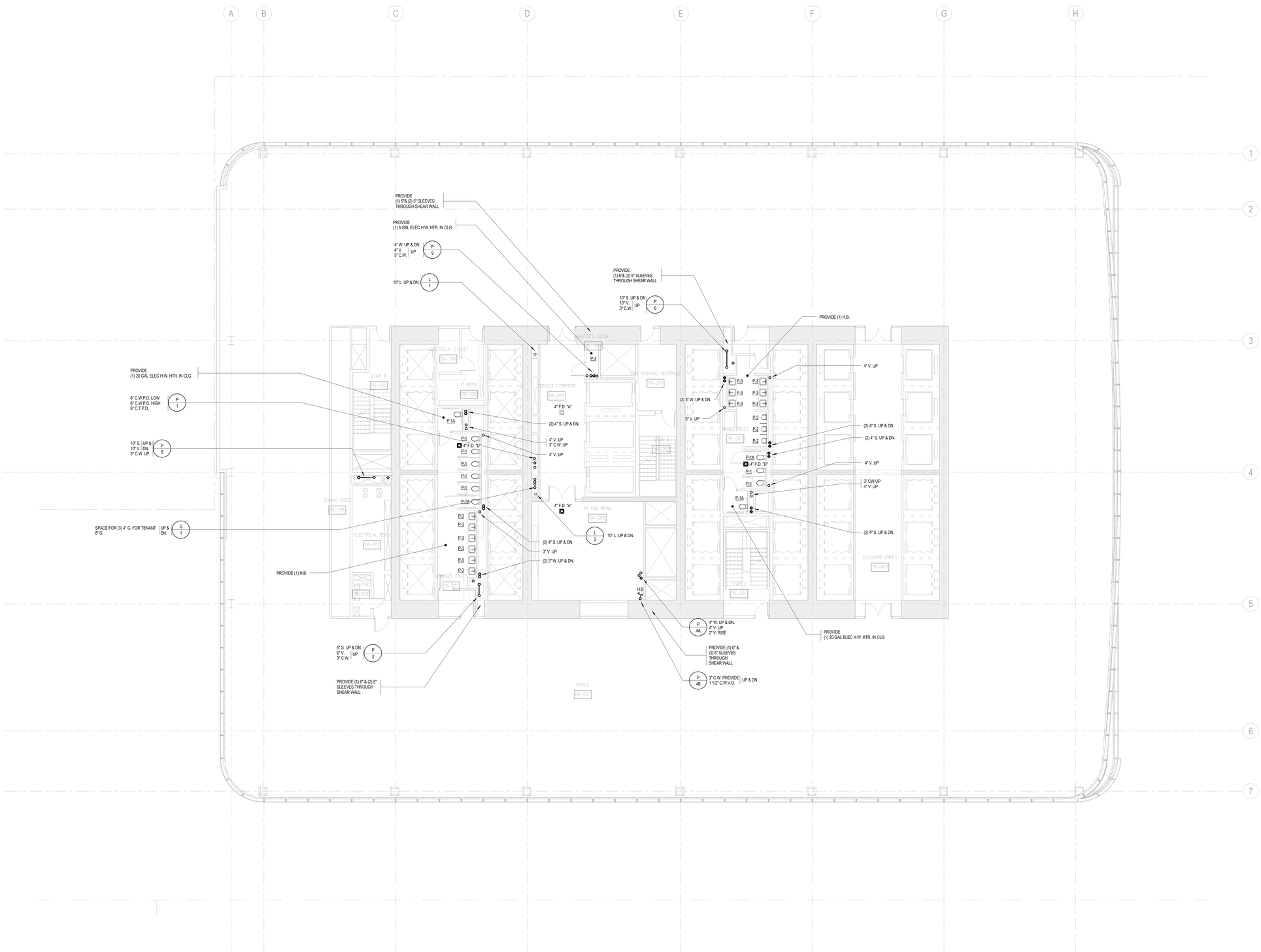
Sheet Name:

PLUMBING LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE

Project No.: 14830 A.000	B-SCAN Sheet No.: P-105.00
Date: 20 JUN 2014	Sheet No.: P-105
Scale: 1/8" = 1'-0"	
File No.: P-105	Page No.: 17 OF 6



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MANHATTAN WEST: NORTH TOWER

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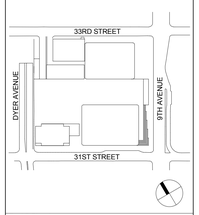

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Sheet Name:

PLUMBING LEVEL 6-15 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-106.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: P-106
File No.: P-106	Page No.: 18 OF 6

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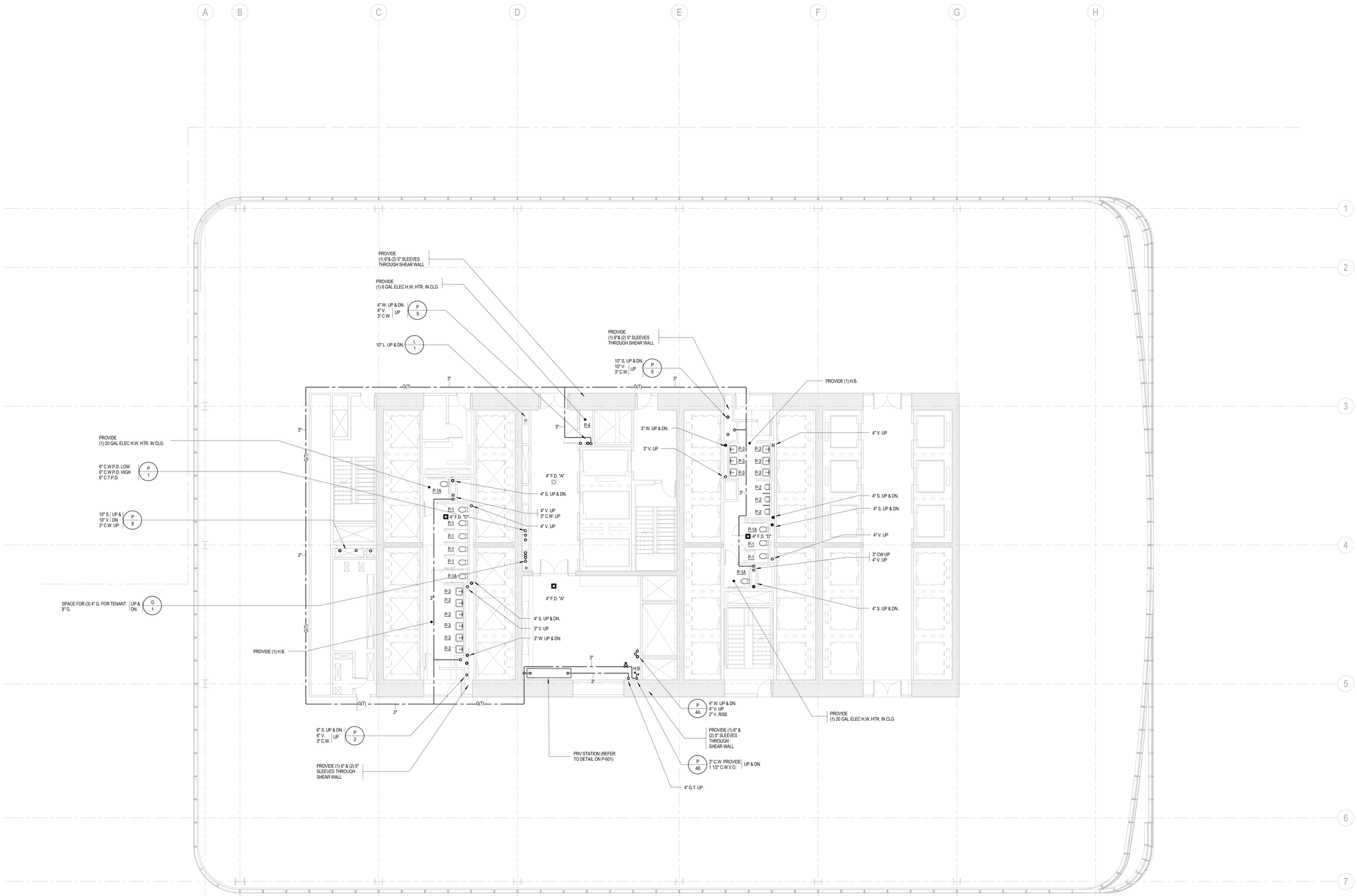

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375 Ninth Avenue, New York, NY 10001

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SOM
Skidmore, Owings & Merrill LLP
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Civil Engineering
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MEP Engineering
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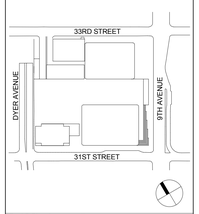
Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR CD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 16 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-116.00
Date: 20 JUN 2014	Sheet No.: P-116
Scale: 1/8" = 1'-0"	
File No.: P-116	Page No.: 19 OF 6

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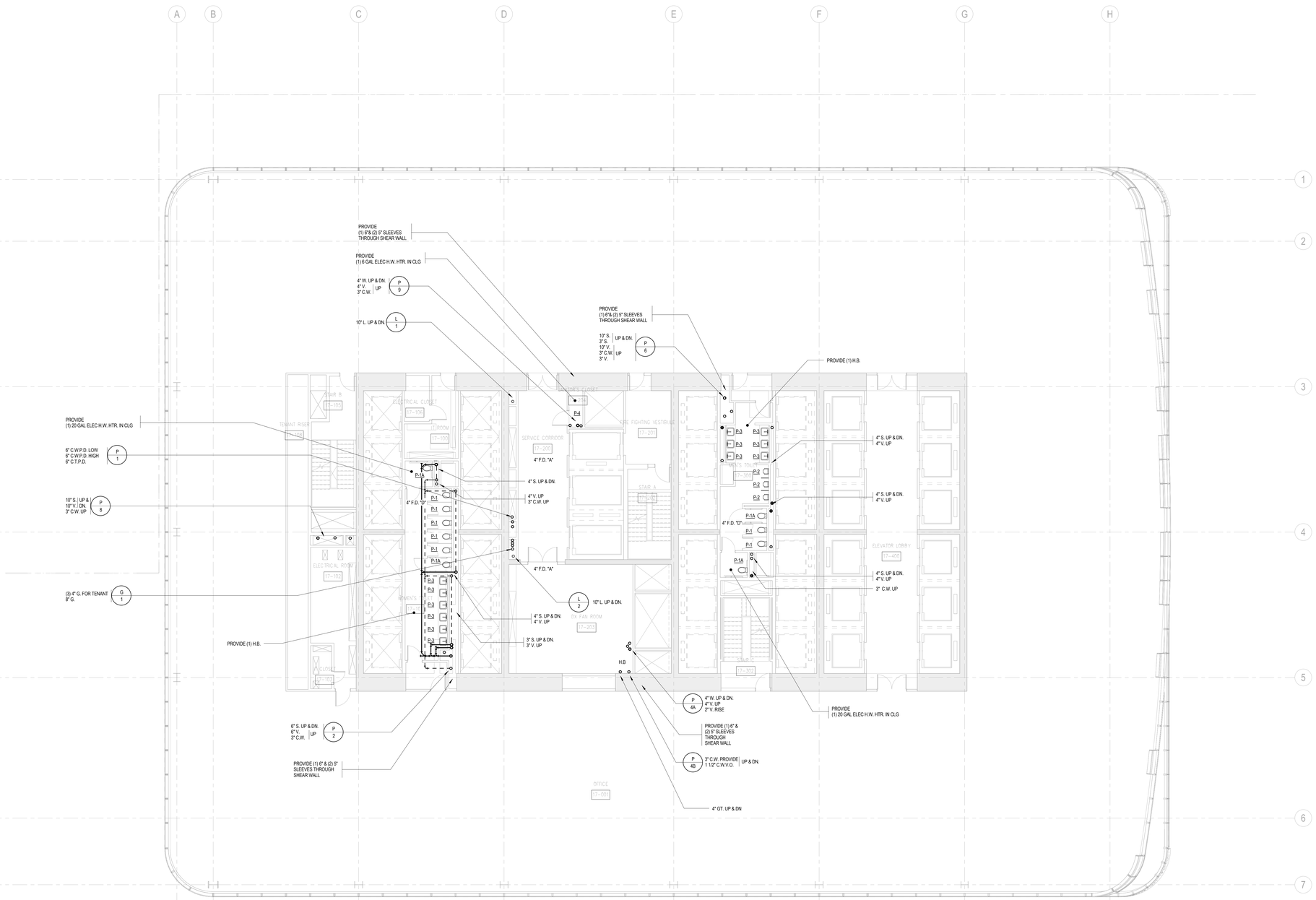

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Wind Tunnel Consultant

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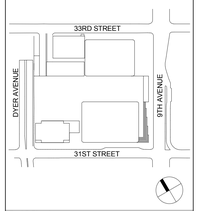
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 17 FLOOR PLAN - LOW-RISE

Project No.: 14830 A.000	B-SCAN Sheet No.: P-117.00
Date: 20 JUN 2014	Sheet No.: P-117
Scale: 1/8" = 1'-0"	
File No.: P-117	Page No.: 20 OF 6

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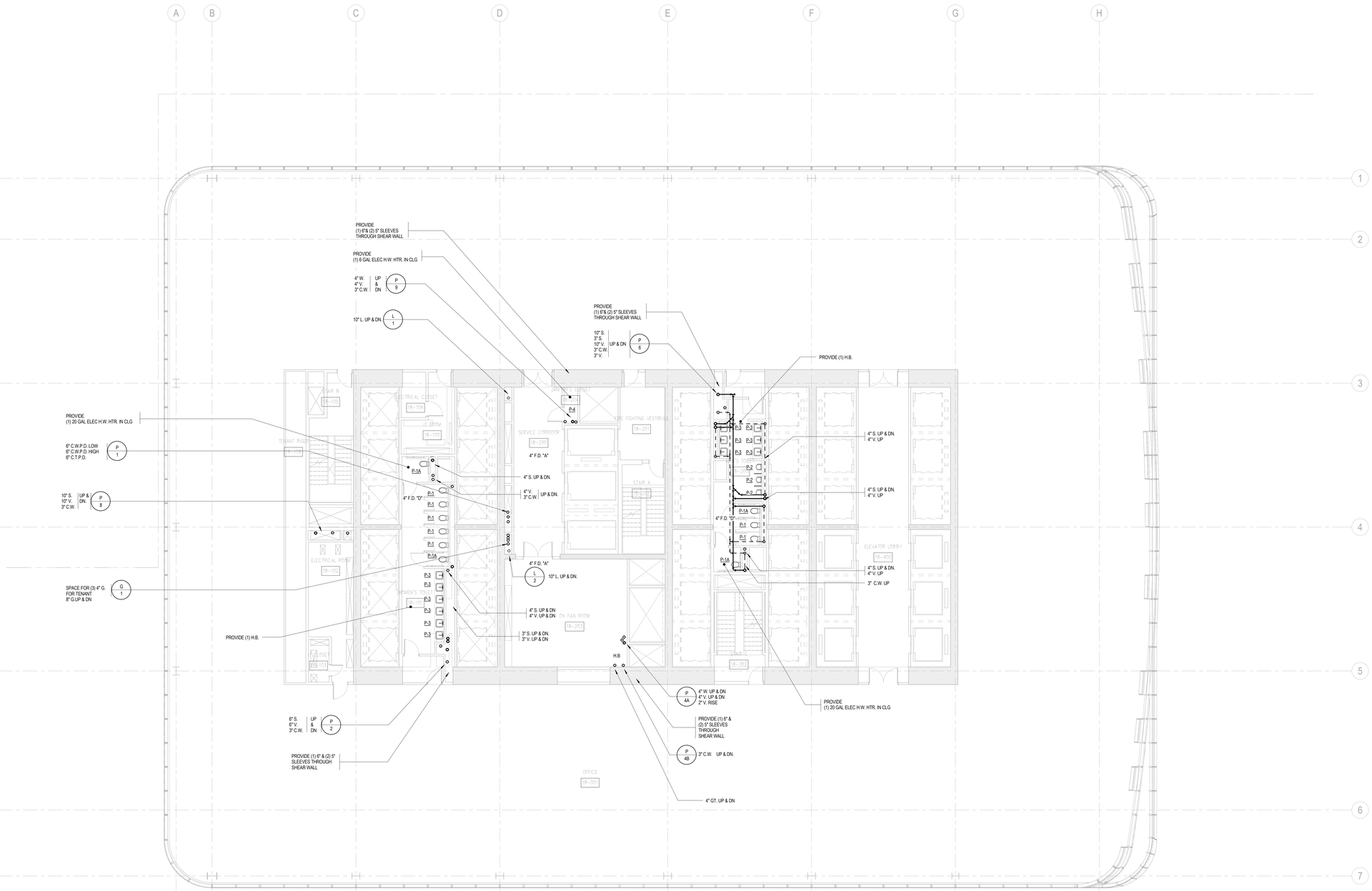

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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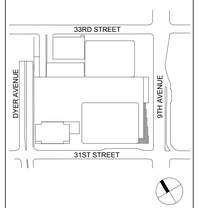
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: P-118
B-SCAN Sheet No.: P-118.00
Sheet No.: P-118
Page No.: 21 OF 6

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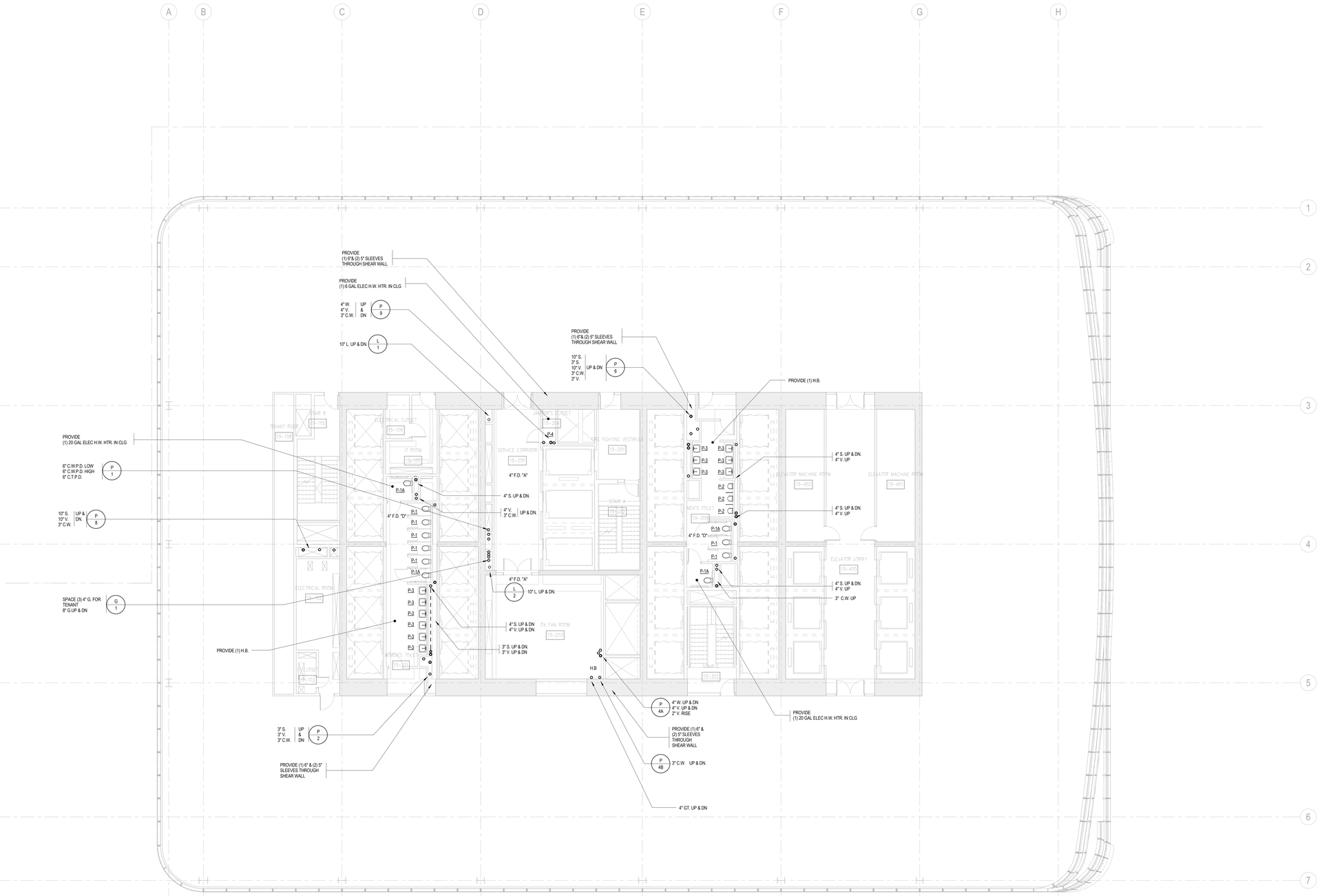

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MANHATTAN WEST: NORTH TOWER

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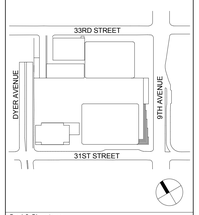
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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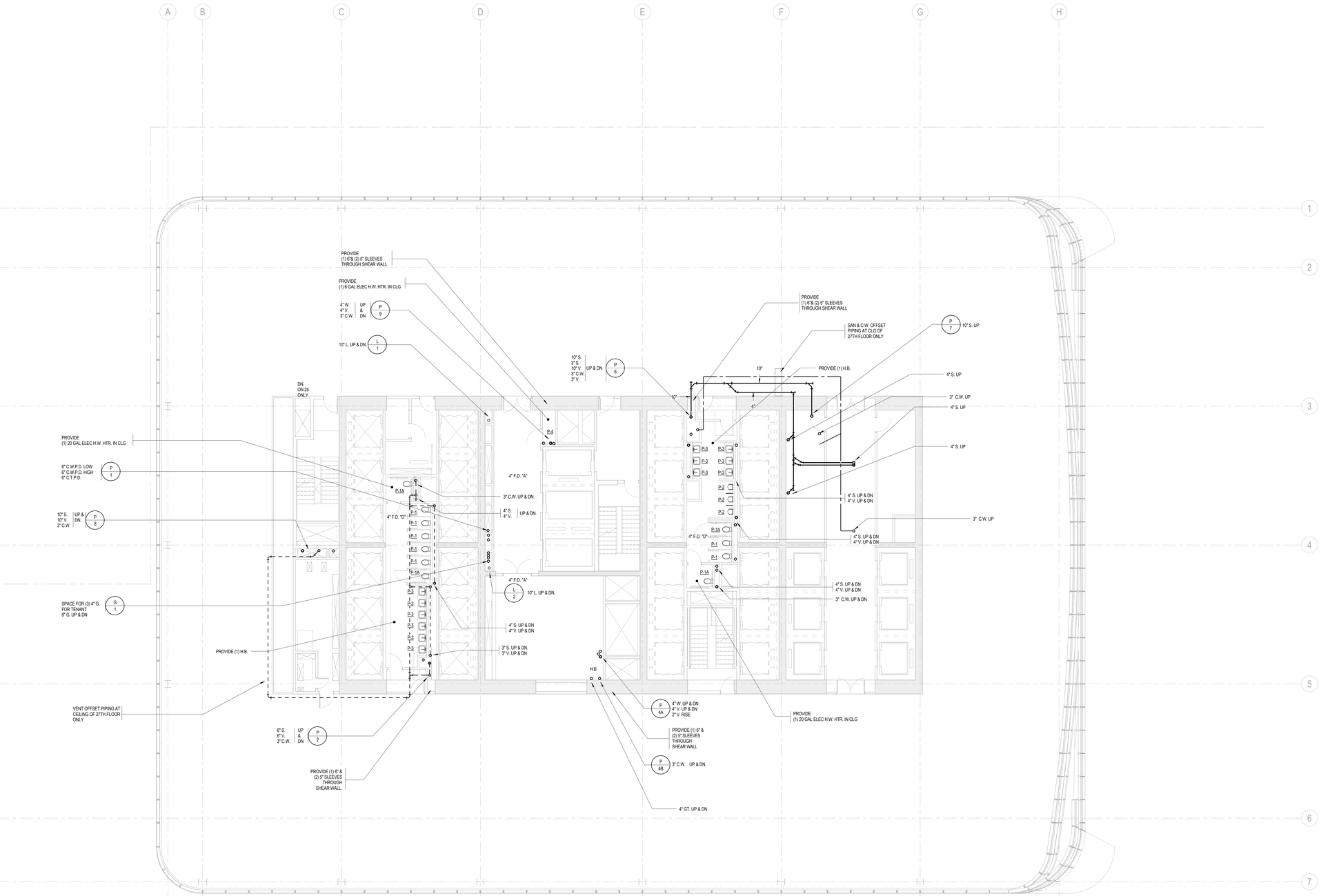
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: P-119

B-SCAN Sheet No.: P-119.00
Sheet No.: P-119
Page No.: 22 OF 6



SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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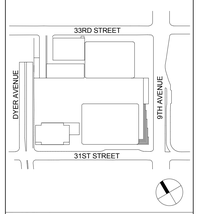
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 14830 A.000	B-SCAN Sheet No.: P-121.00
Date: 20 JUN 2014	Sheet No.: P-121
Scale: 1/8" = 1'-0"	
File No.: P-121	Page No.: 23 OF 6

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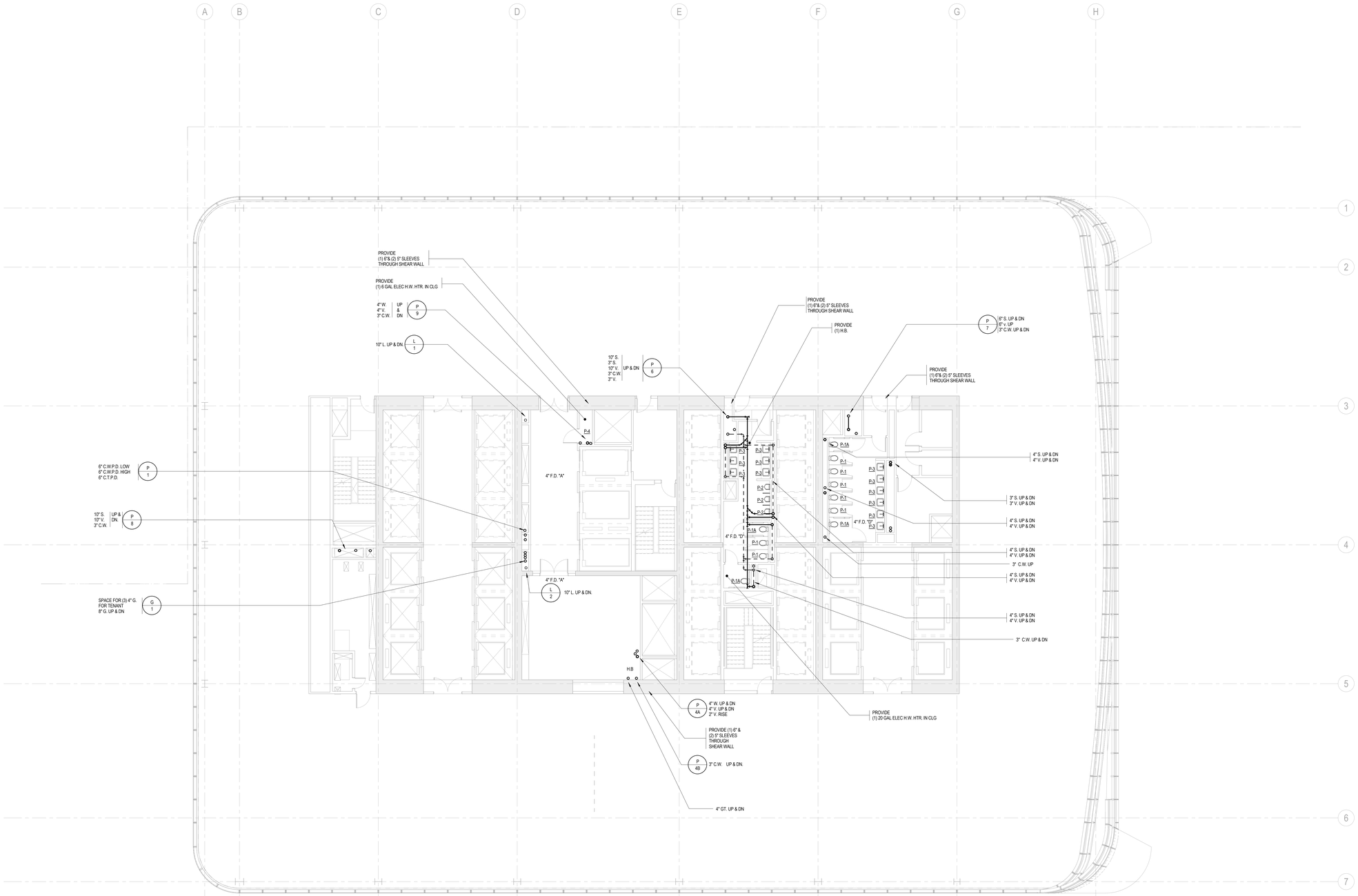

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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650 Woodlawn Road West, Guelph
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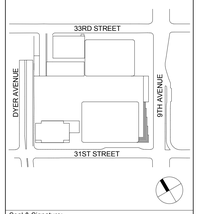
Key Plan:



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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 28 FLOOR PLAN - LOW-RISE & MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-128.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: P-128
File No.: P-128	Page No.: 24 OF 6

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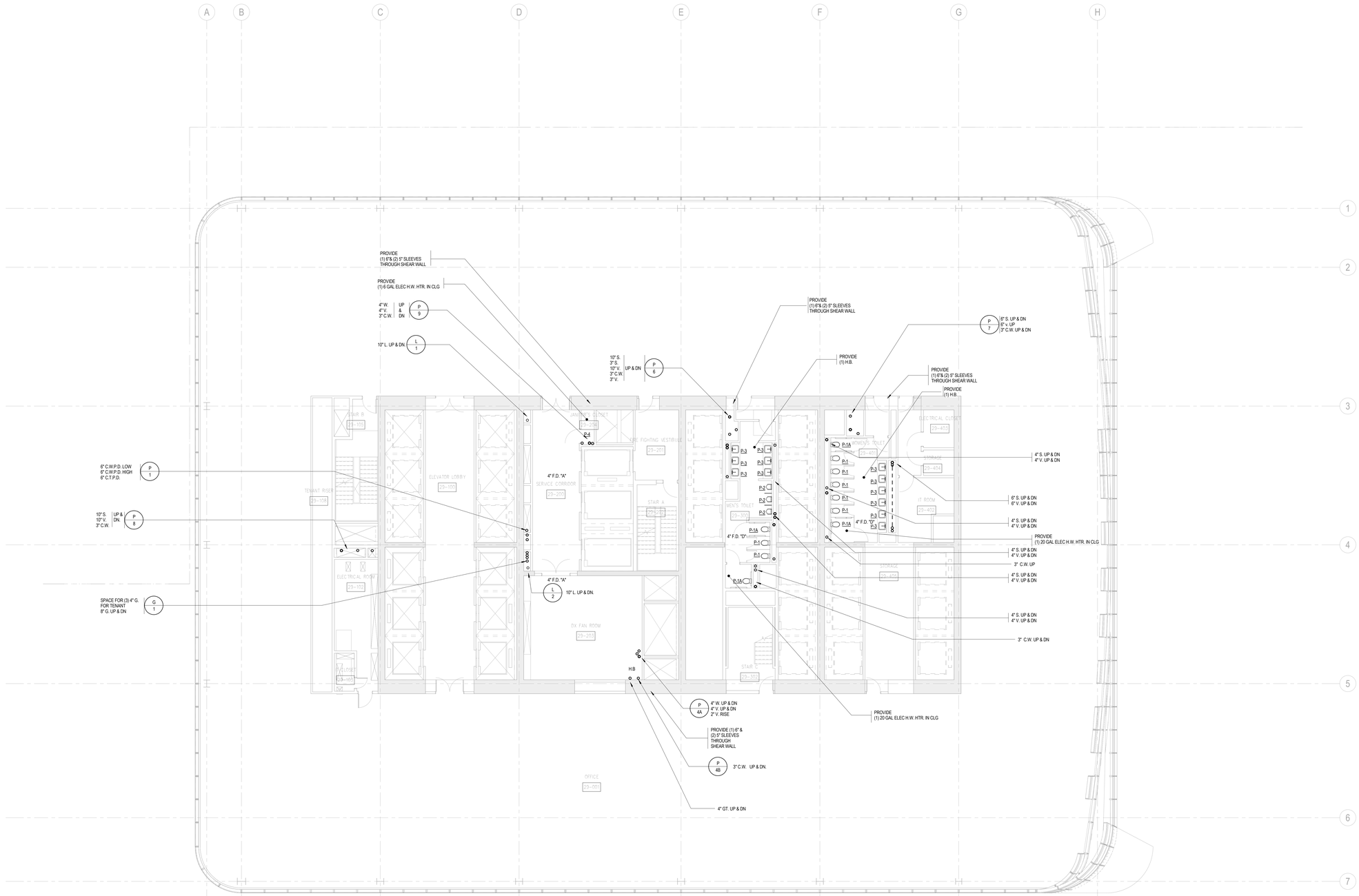

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MANHATTAN WEST: NORTH TOWER

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Wind Tunnel Consultant

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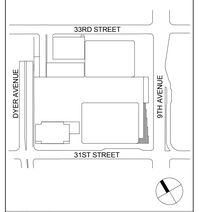
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: P-129.00
Date: 20 JUN 2014	Sheet No.: P-129
Scale: 1/8" = 1'-0"	
File No.: P-129	Page No.: 25 OF 6

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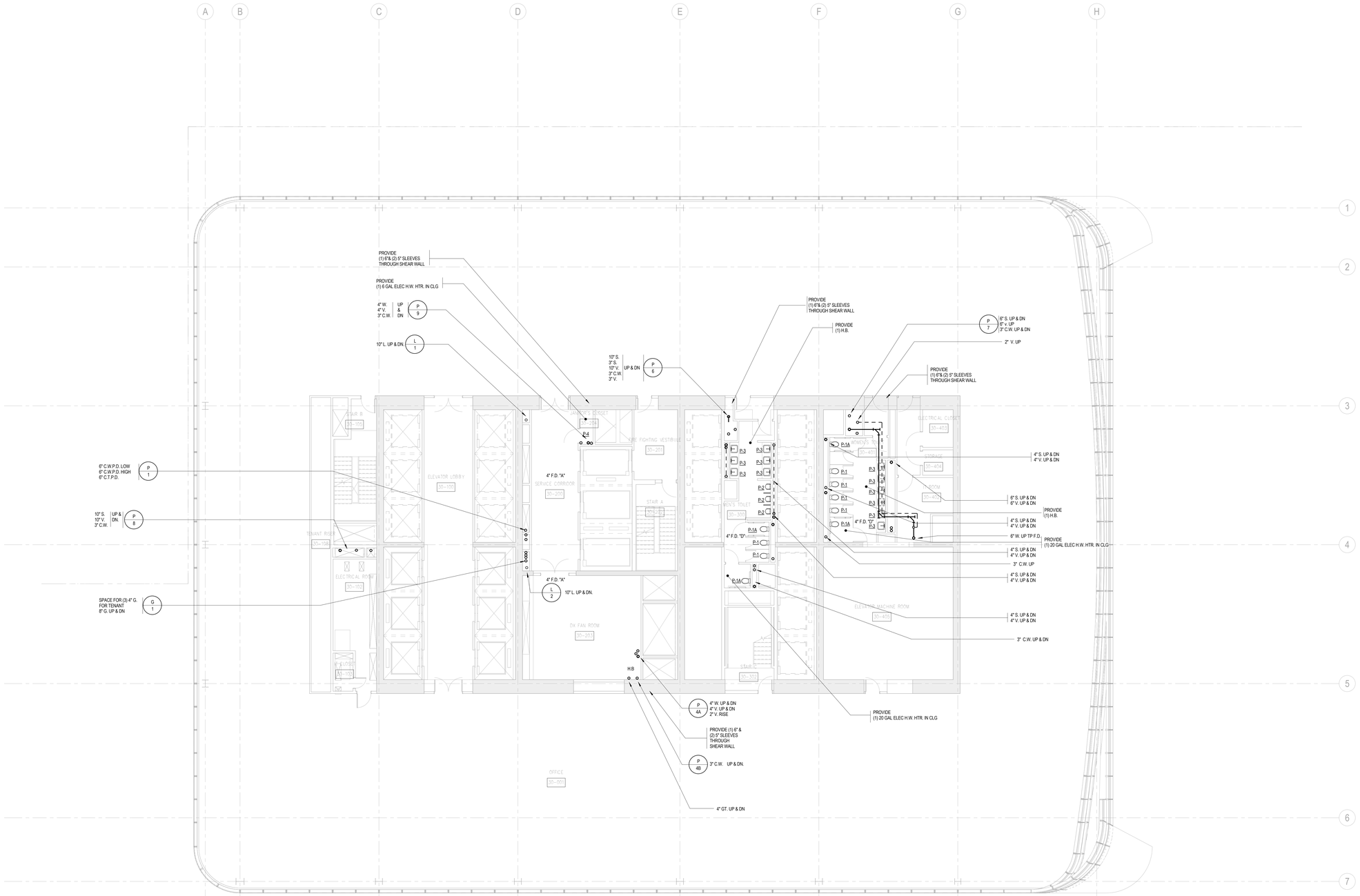

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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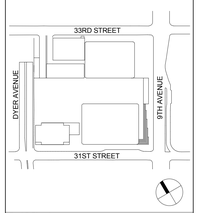
Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 30 FLOOR PLAN - MID-RISE EMR

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: P-130
B-SCAN Sheet No.: P-130.00
Sheet No.: P-130
Page No.: 26 OF 6

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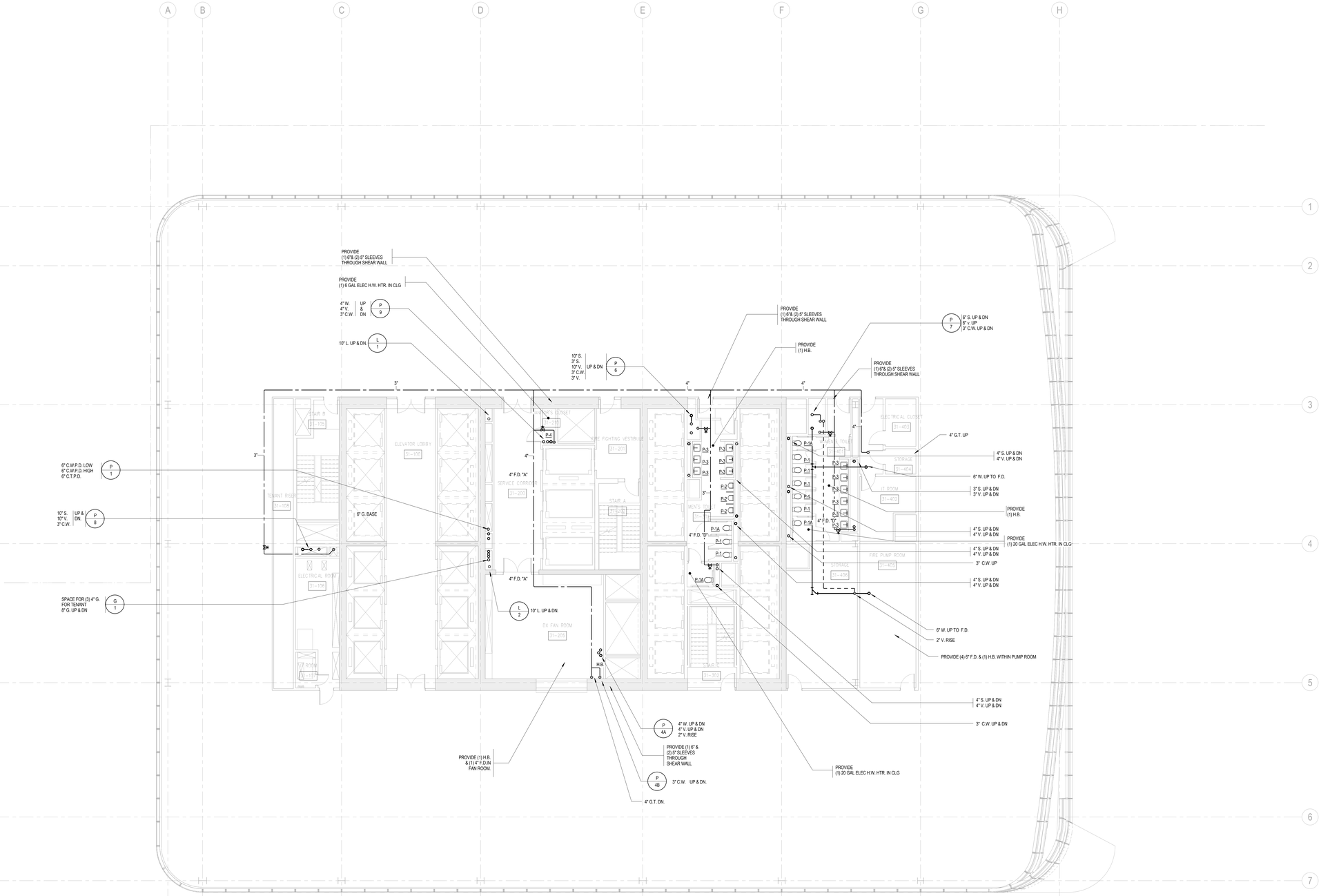

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Skidmore, Owings & Merrill LLP
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Philip Habib & Associates
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Entek Engineering LLC
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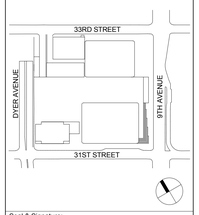
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM

Project No.: 14830.A.000	B-SCAN Sheet No.: P-131.00
Date: 20 JUN 2014	Sheet No.: P-131
Scale: 1/8" = 1'-0"	
File No.: P-131	Page No.: 27 OF 6

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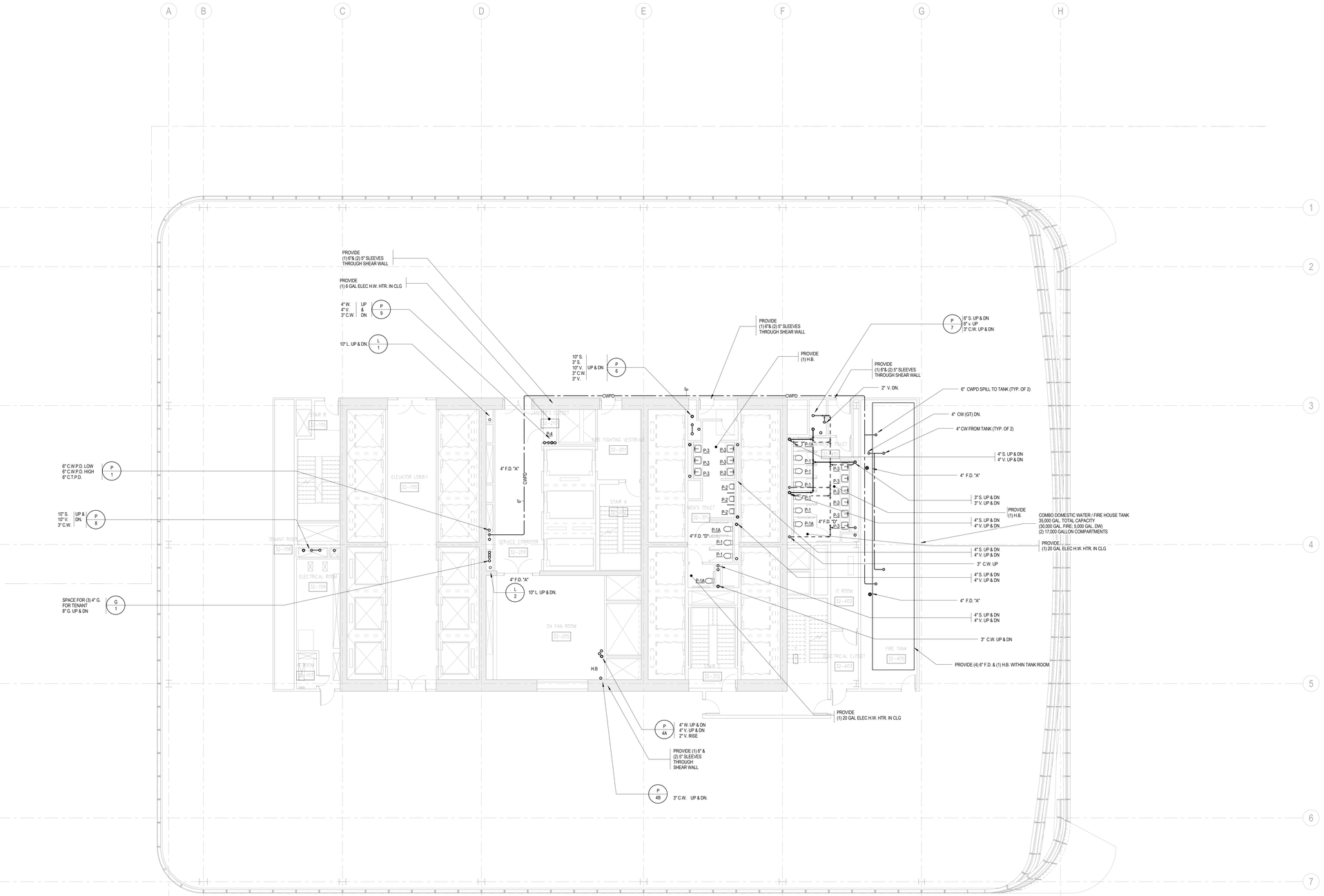

NOTE: REFER TO RISER DIAGRAM FOR EXTENT OF VALVING REQUIRED AT THIS LEVEL.

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Wind Tunnel Consultant

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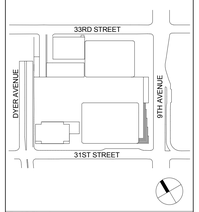
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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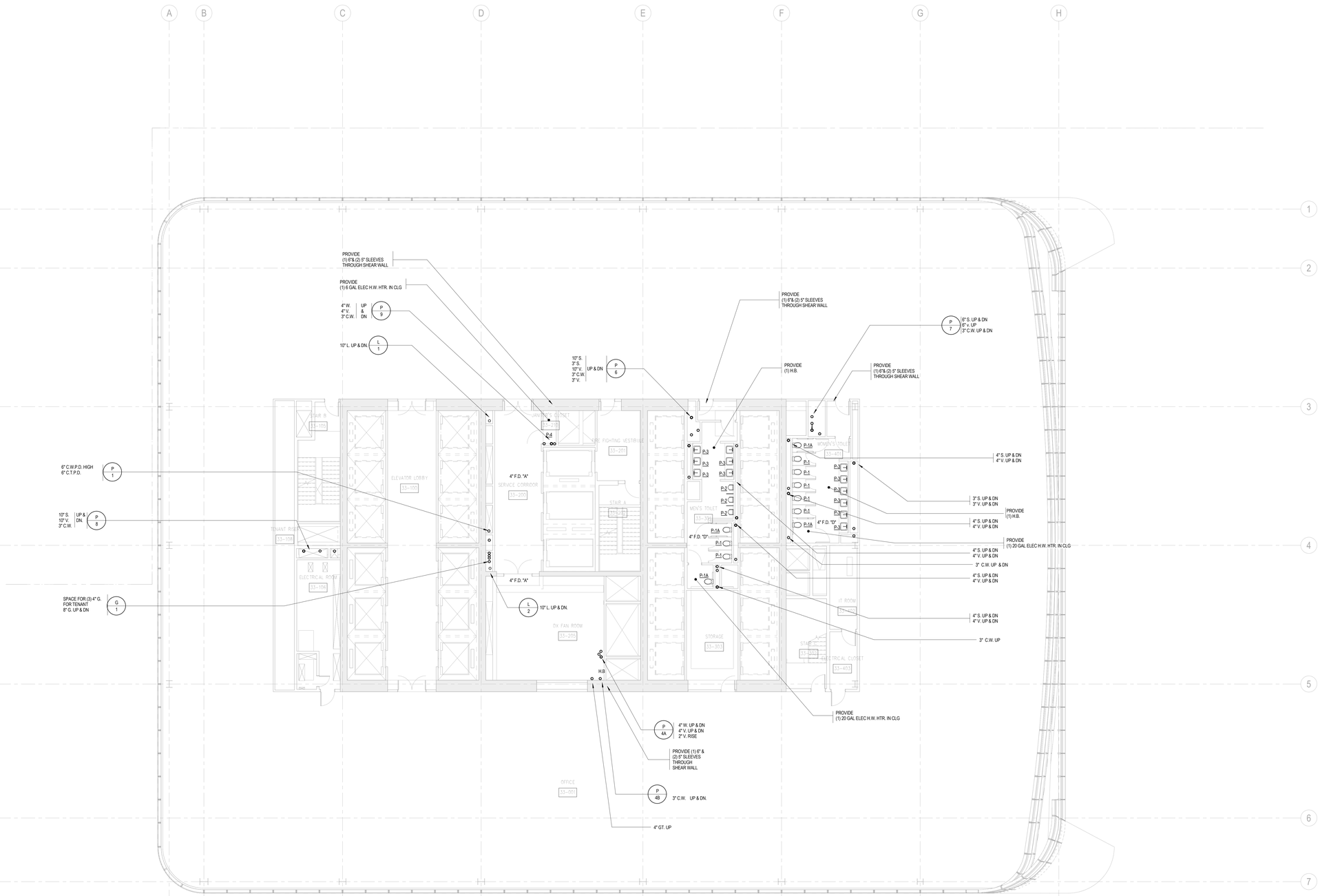
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK

Project No.: 14830.A.000	B-SCAN Sheet No.: P-132.00
Date: 20 JUN 2014	Sheet No.: P-132
Scale: 1/8" = 1'-0"	
File No.: P-132	Page No.: 28 OF 6



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Wind Tunnel Consultant

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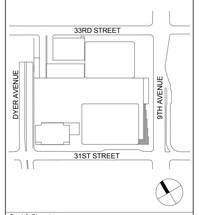
Ontario, Canada N1K 1B8

Key Plan:



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PLUMBING LEVEL 33-35 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-133.00
Date: 20 JUN 2014	Sheet No.: P-133
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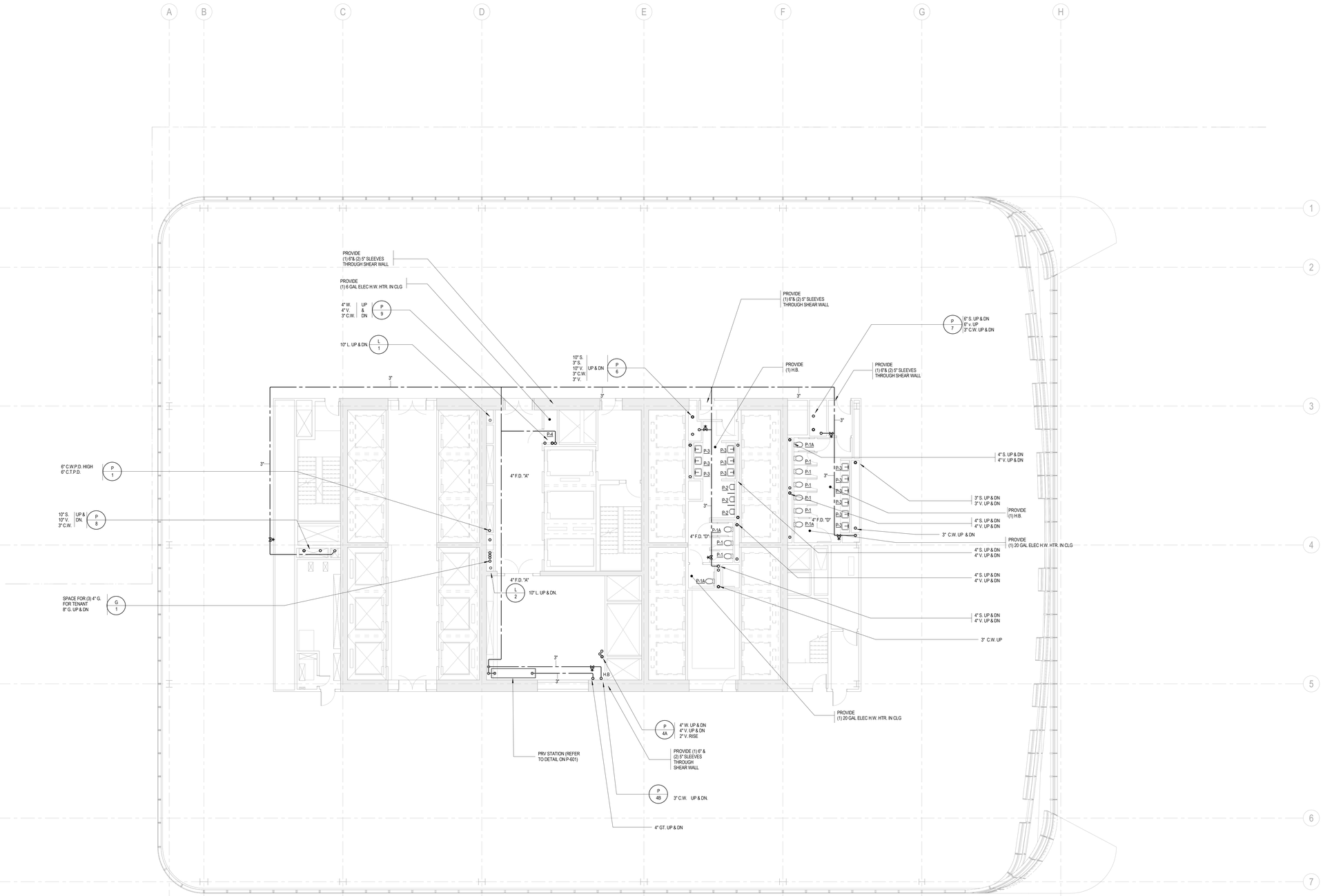

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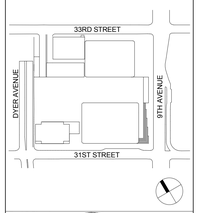
Ontario, Canada N1K 1B8

Key Plan:



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2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
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Sheet Name:

PLUMBING LEVEL 36 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-136.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: P-136
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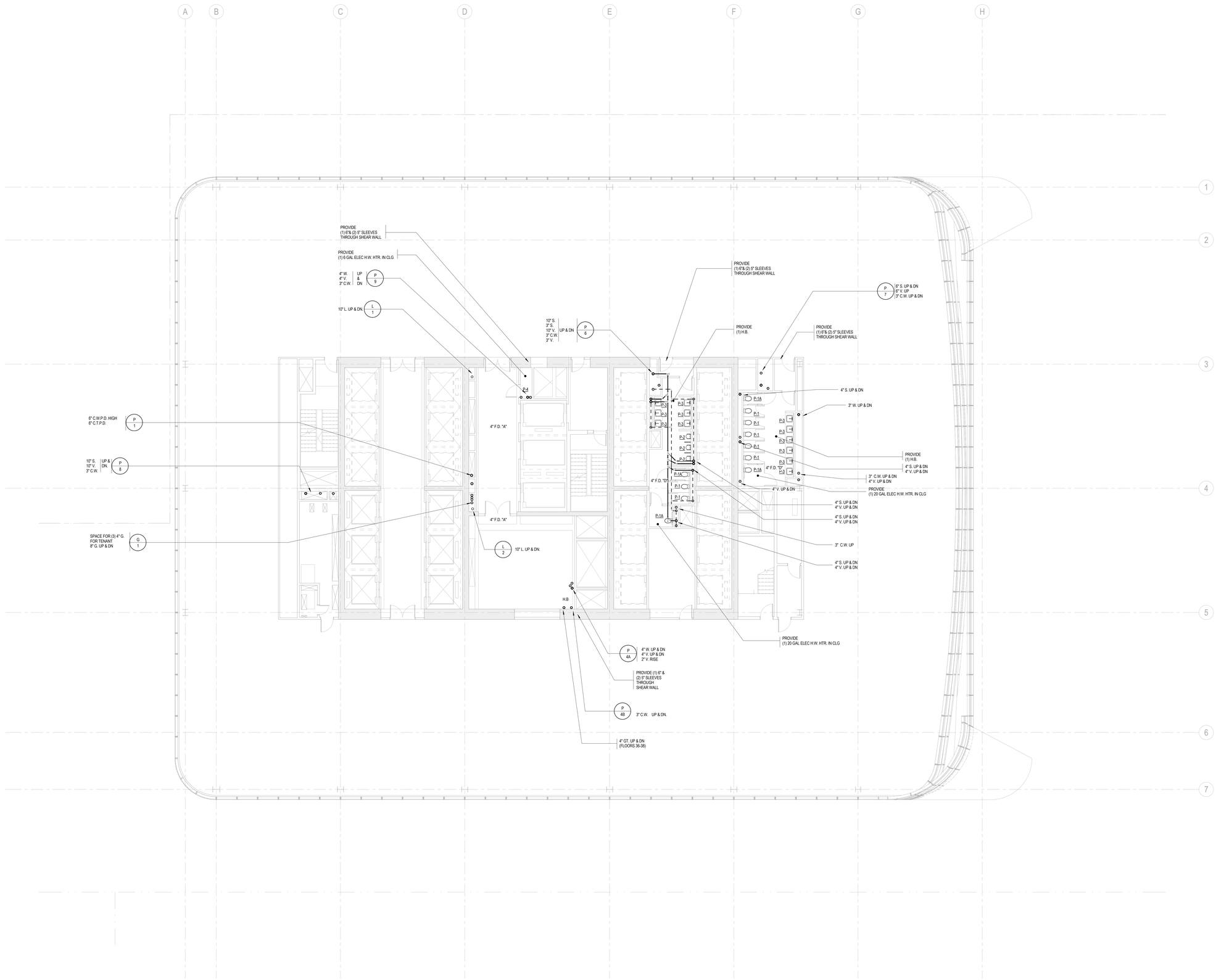

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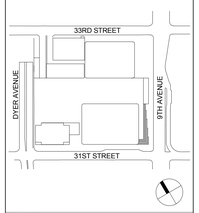
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR GC PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 37-38 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-137.00
Date: 20 JUN 2014	Sheet No.: P-137
Scale: 1/8" = 1'-0"	
File No.: P-137	Page No.: 31 OF 6

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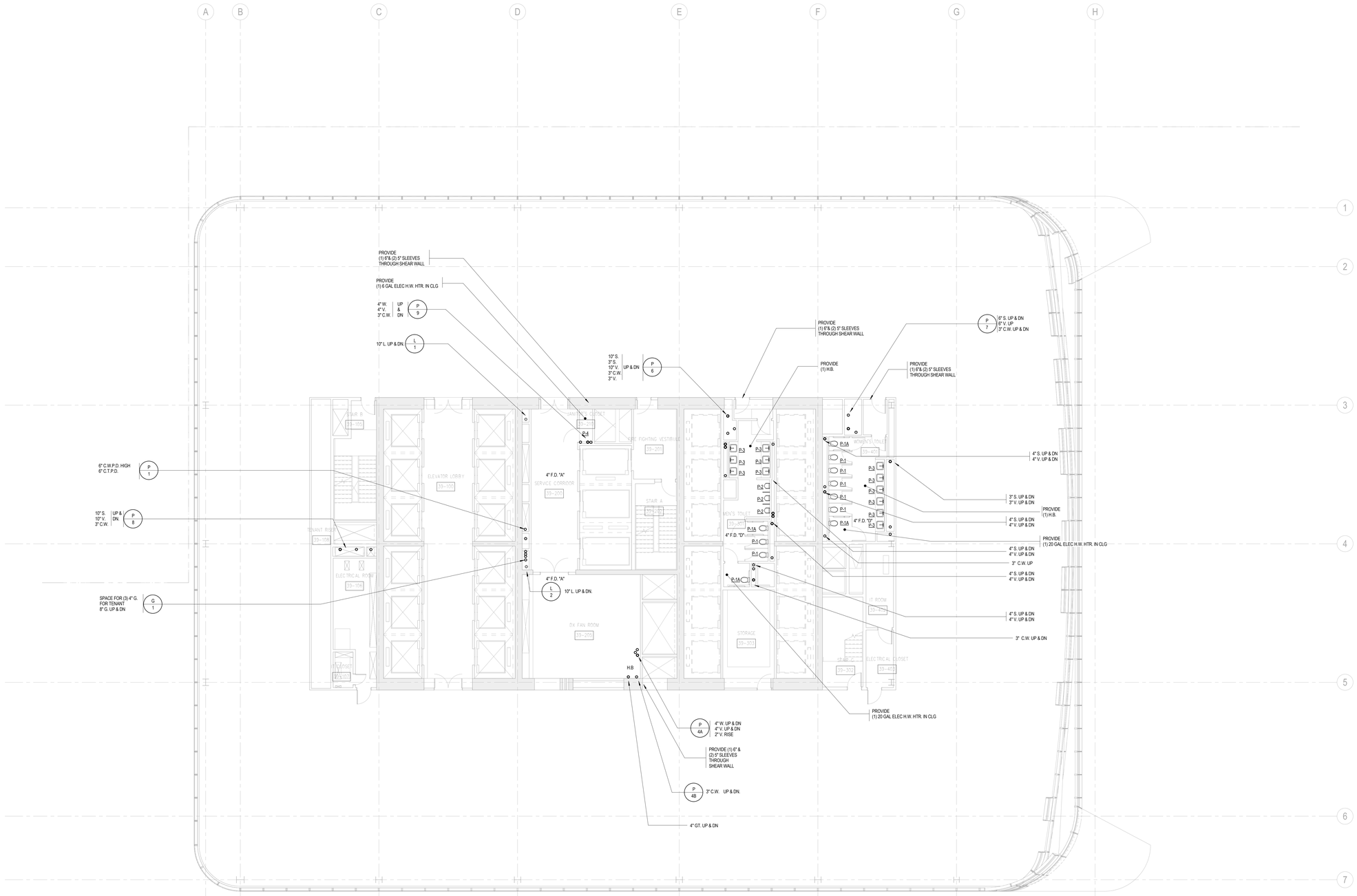

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Wind Tunnel Consultant

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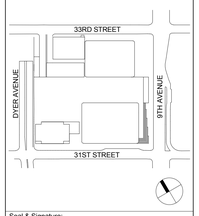
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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PLUMBING LEVEL 39 FLOOR PLAN - MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-139.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: P-139
File No.: P-139	Page No.: 32 OF 6

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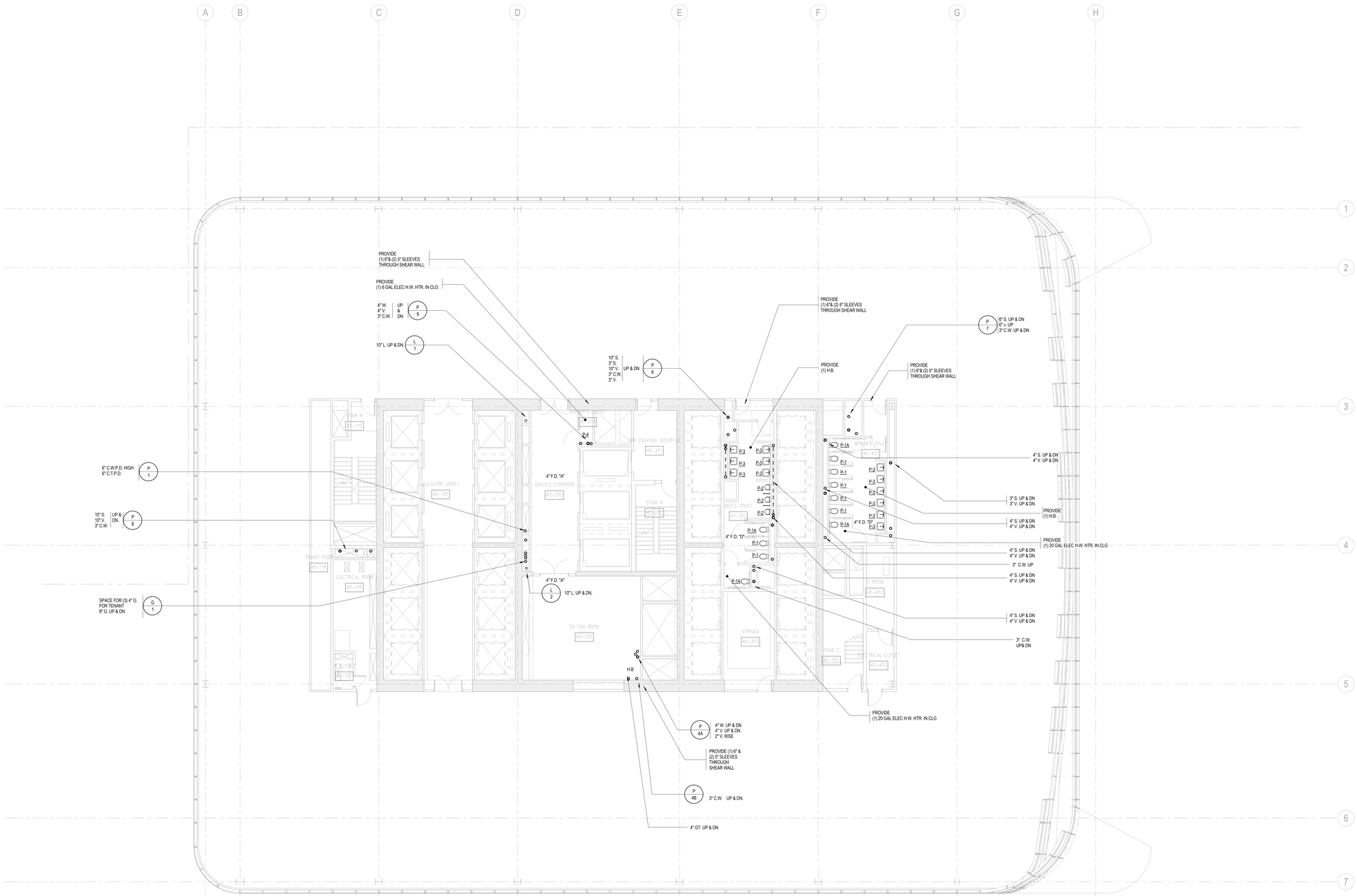

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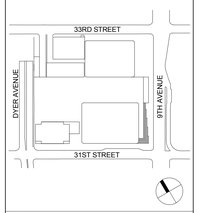
Key Plan:



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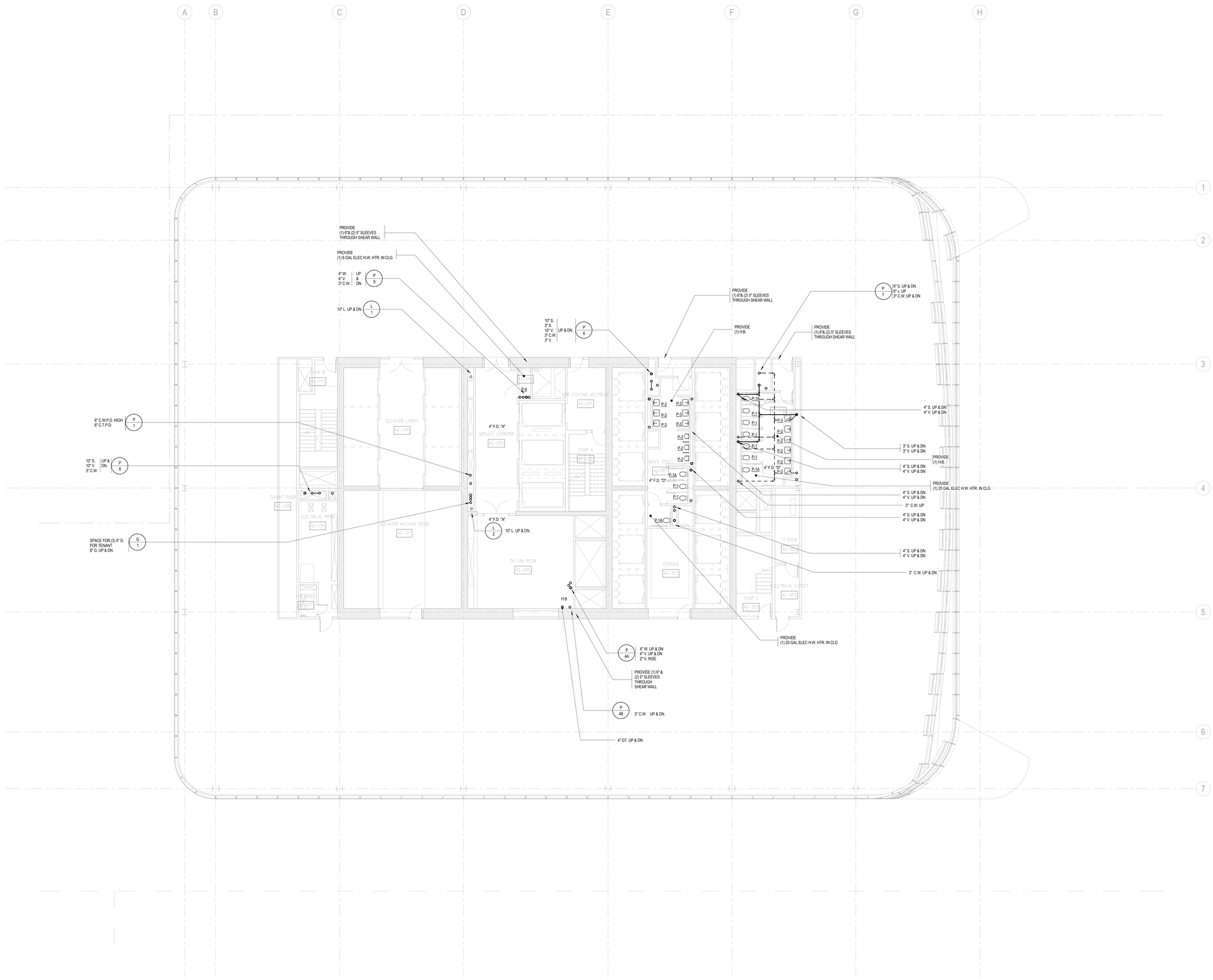
PLUMBING LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: P-140.00
Date: 20 JUN 2014	Sheet No.: P-140
Scale: 1/8" = 1'-0"	
File No.: P-140	Page No.: 33 OF 6



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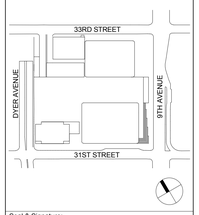

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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 42 FLOOR PLAN - MID-RISE EMR

Project No.: 14830.A.000	B-SCAN Sheet No.: P-142.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: P-142
File No.: P-142	Page No.: 34 OF 6

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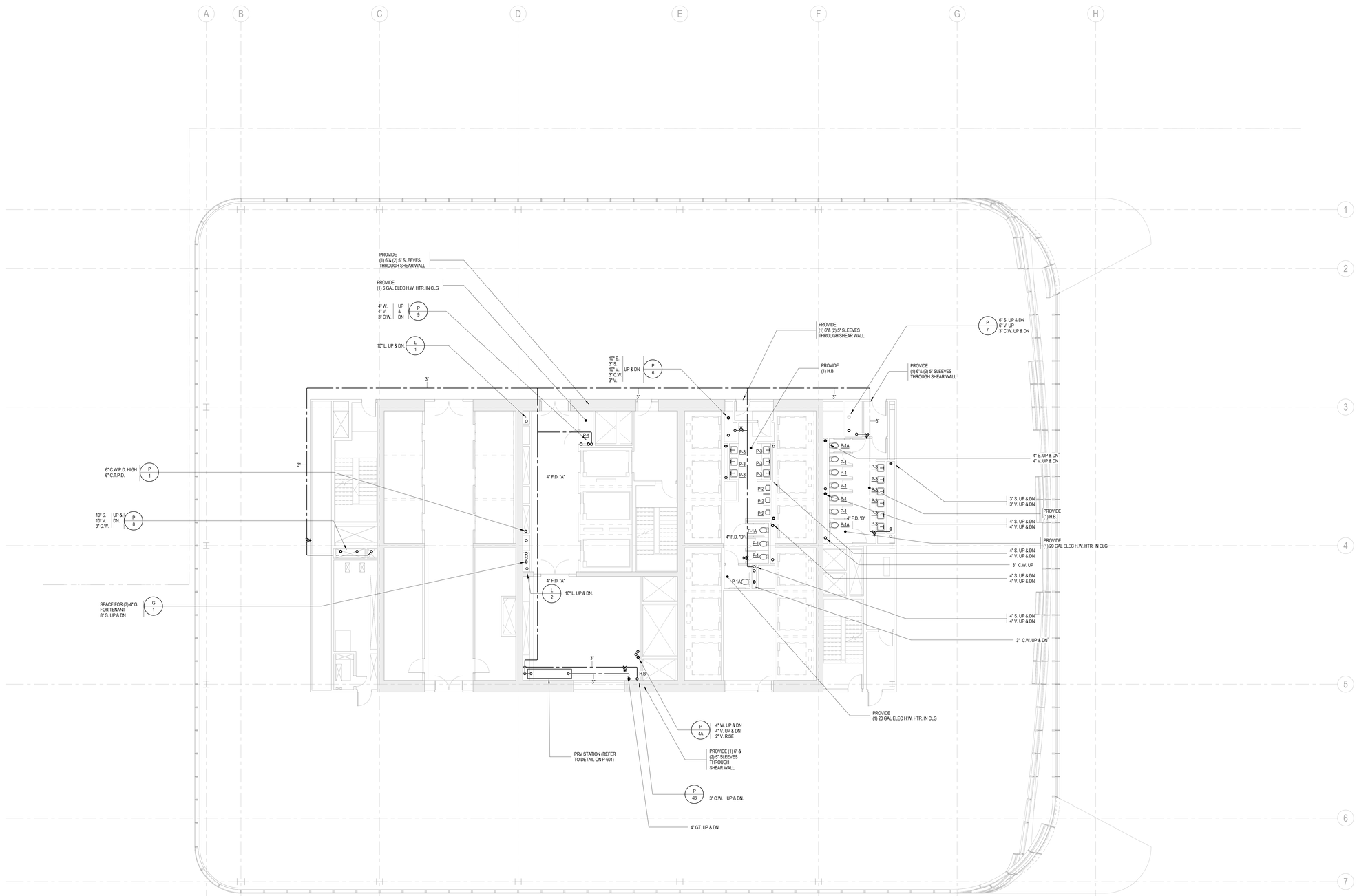

SHEET NOTES

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering
SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering
Philip Habib & Associates
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MEP Engineering
Jaros Baum & Bolles
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Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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Landscape Consultant
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Blast Consultant
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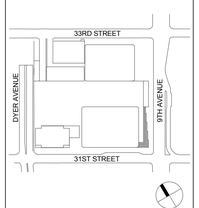
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 43-46 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-143.00
Date: 20 JUN 2014	Sheet No.: P-143
Scale: 1/8" = 1'-0"	
File No.: P-143	Page No.: 35 OF 6

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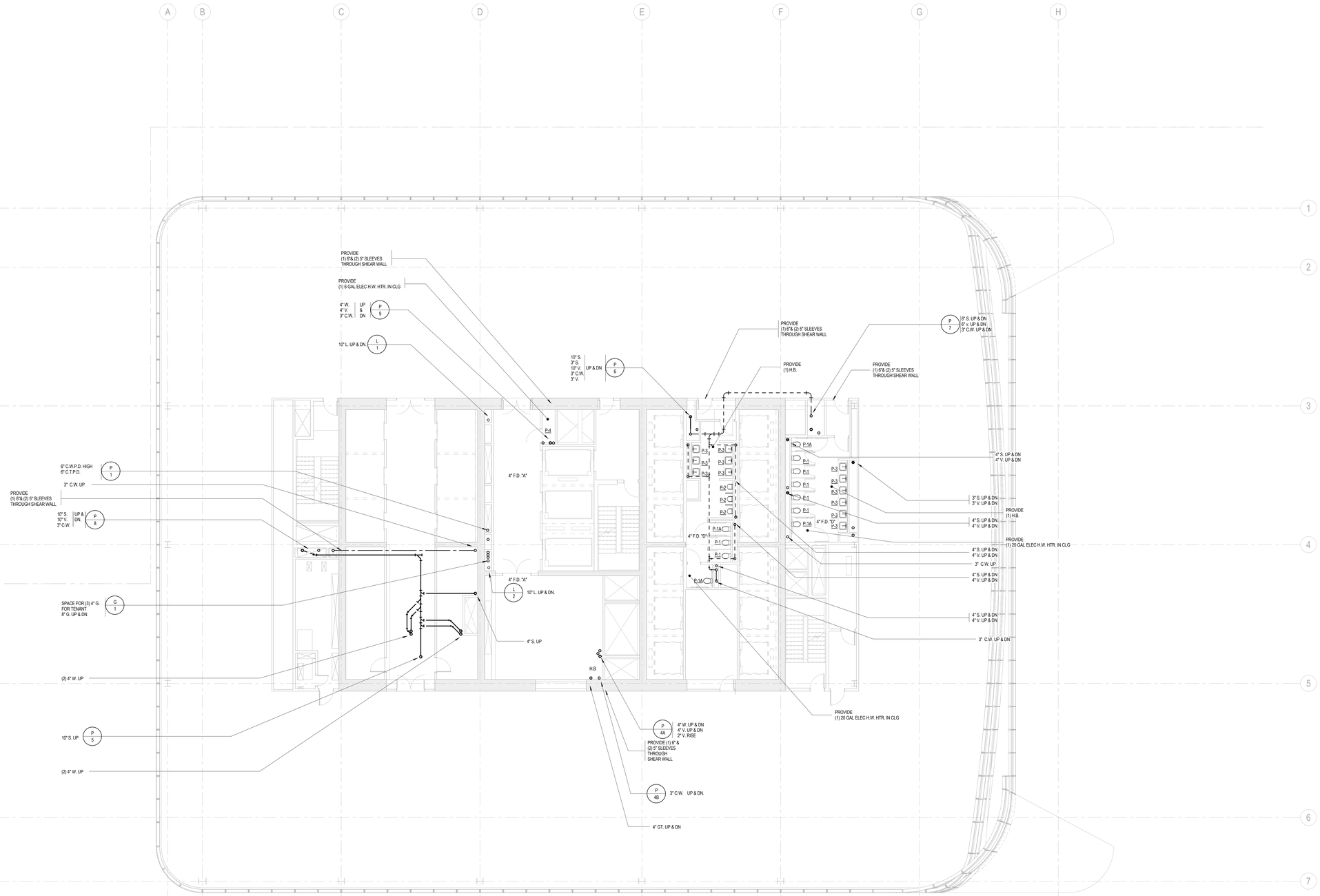

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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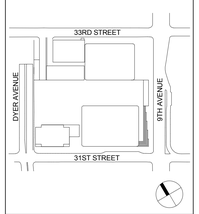
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 47-48 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-147.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: P-147
File No.: P-147	Page No.: 36 OF 6

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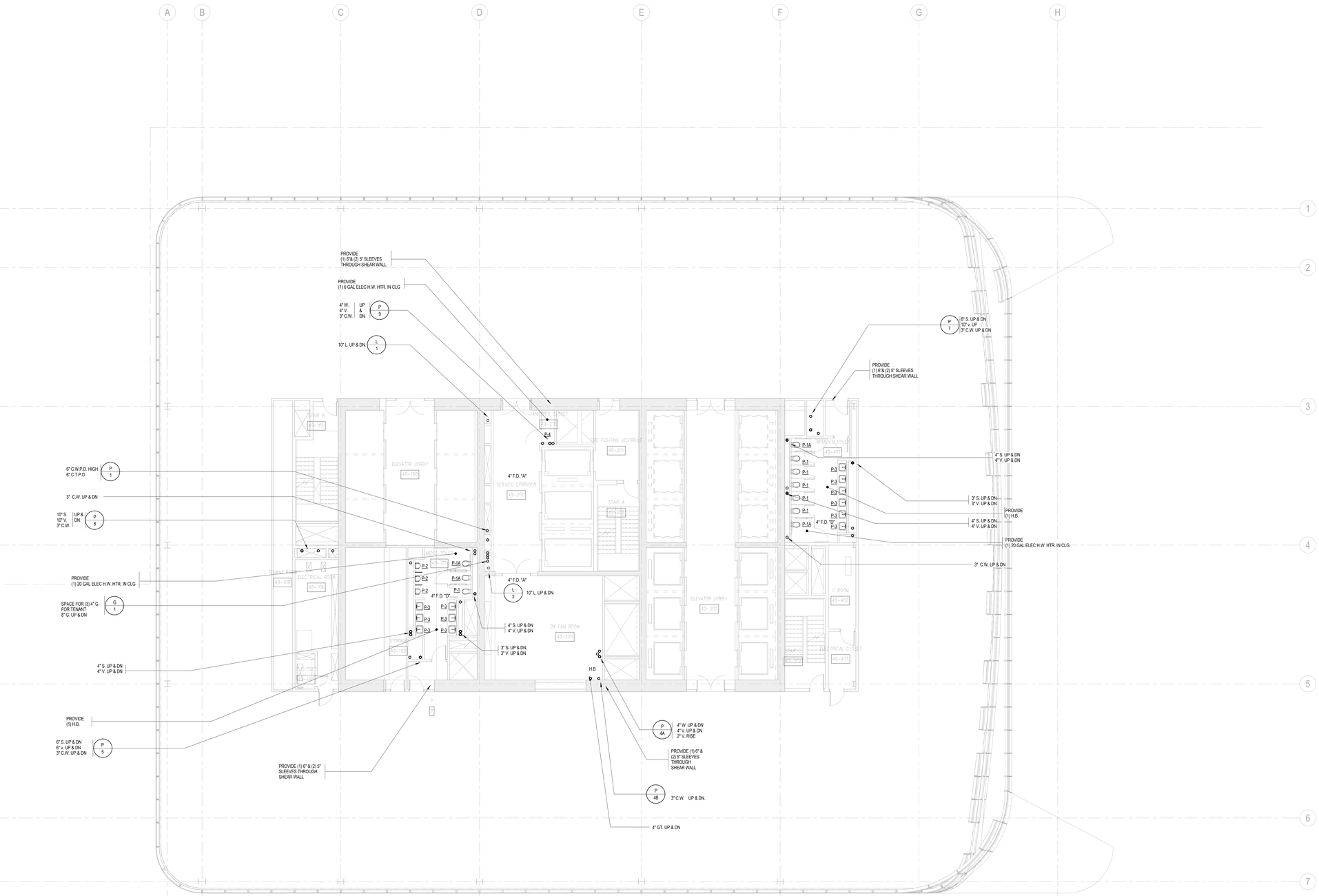

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MANHATTAN WEST: NORTH TOWER

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Wind Tunnel Consultant

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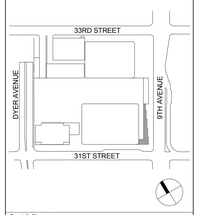
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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LICENSED PROFESSIONAL ENGINEER
JOSEPH A. NOTO
No. 065028
STATE OF NEW YORK

No.	Date	Description
3	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-149.00
Date: 20 JUN 2014	Sheet No.: P-149
Scale: 1/8" = 1'-0"	
File No.: P-149	Page No.: 37 OF 6

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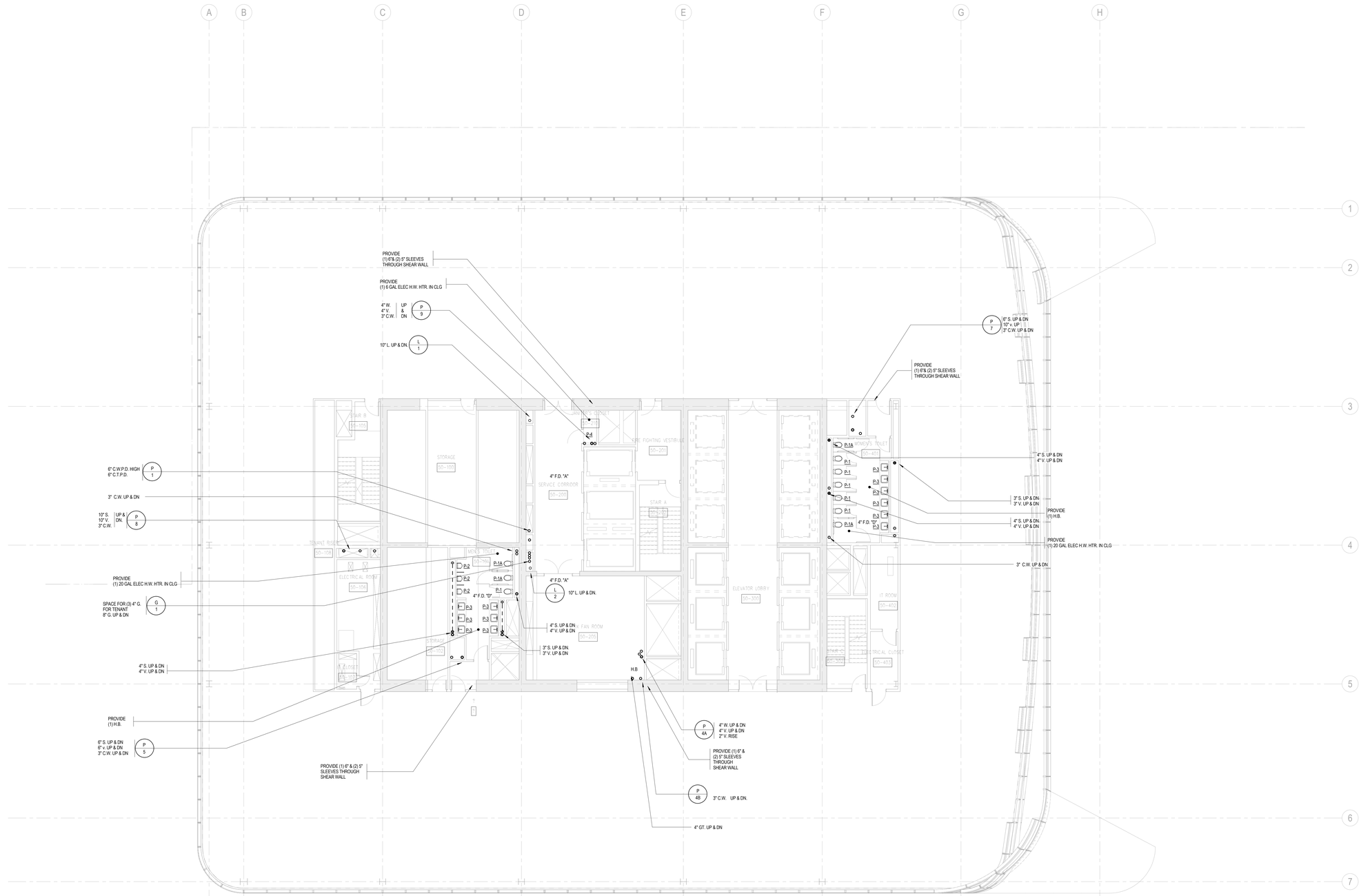

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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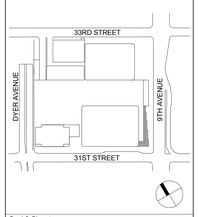
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: P-150.00
Date: 20 JUN 2014	Sheet No.: P-150
Scale: 1/8" = 1'-0"	
File No.: P-150	Page No.: 38 OF 6

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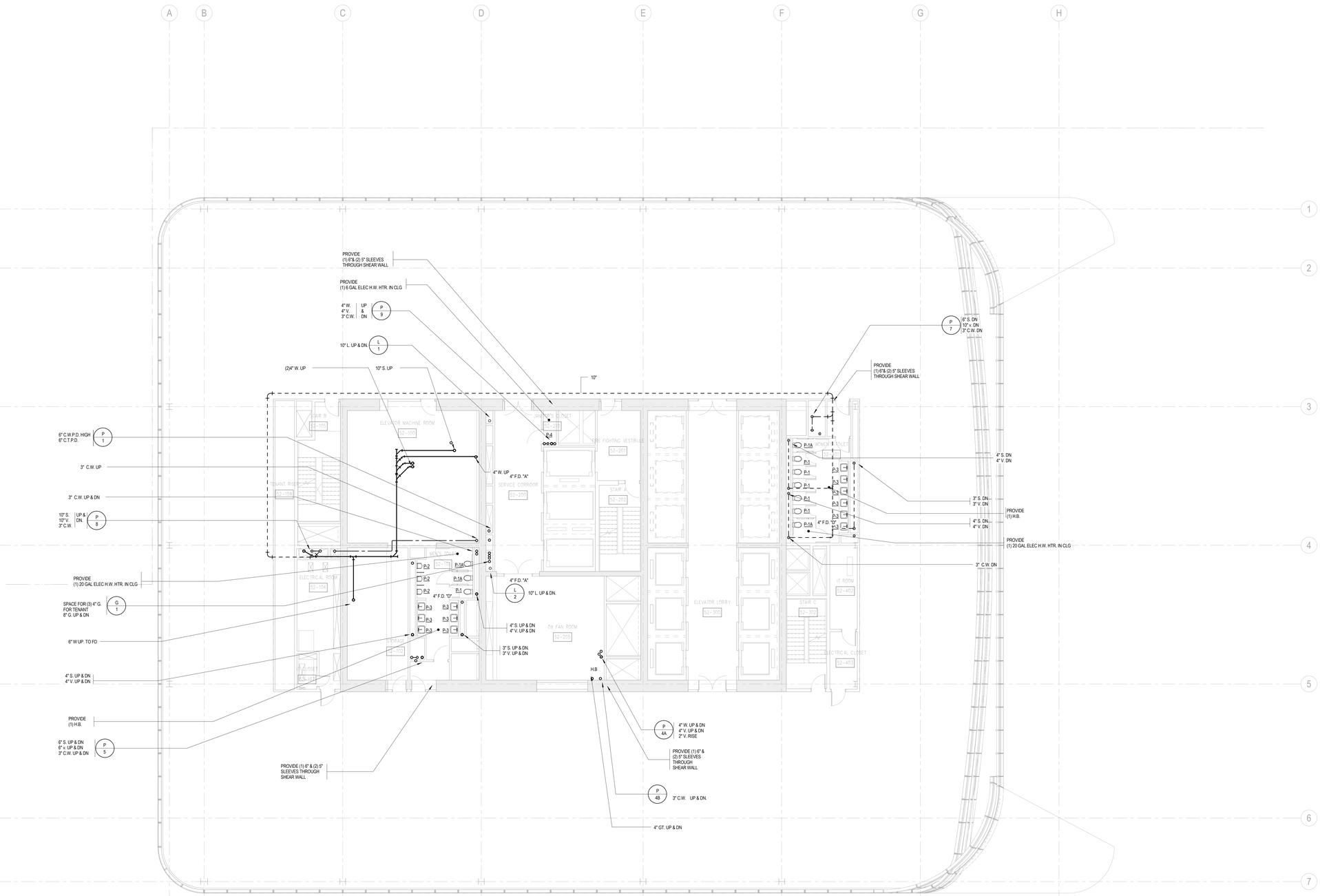

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Skidmore, Owings & Merrill LLP
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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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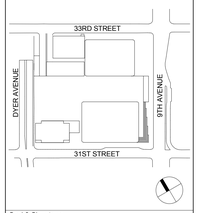
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
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3	15 NOV 2013	ISSUED FOR GD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 52 FLOOR PLAN - HIGH-RISE EMR

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: P-152

B-SCAN Sheet No.: P-152.00

Sheet No.: P-152

Page No.: 39 OF 6

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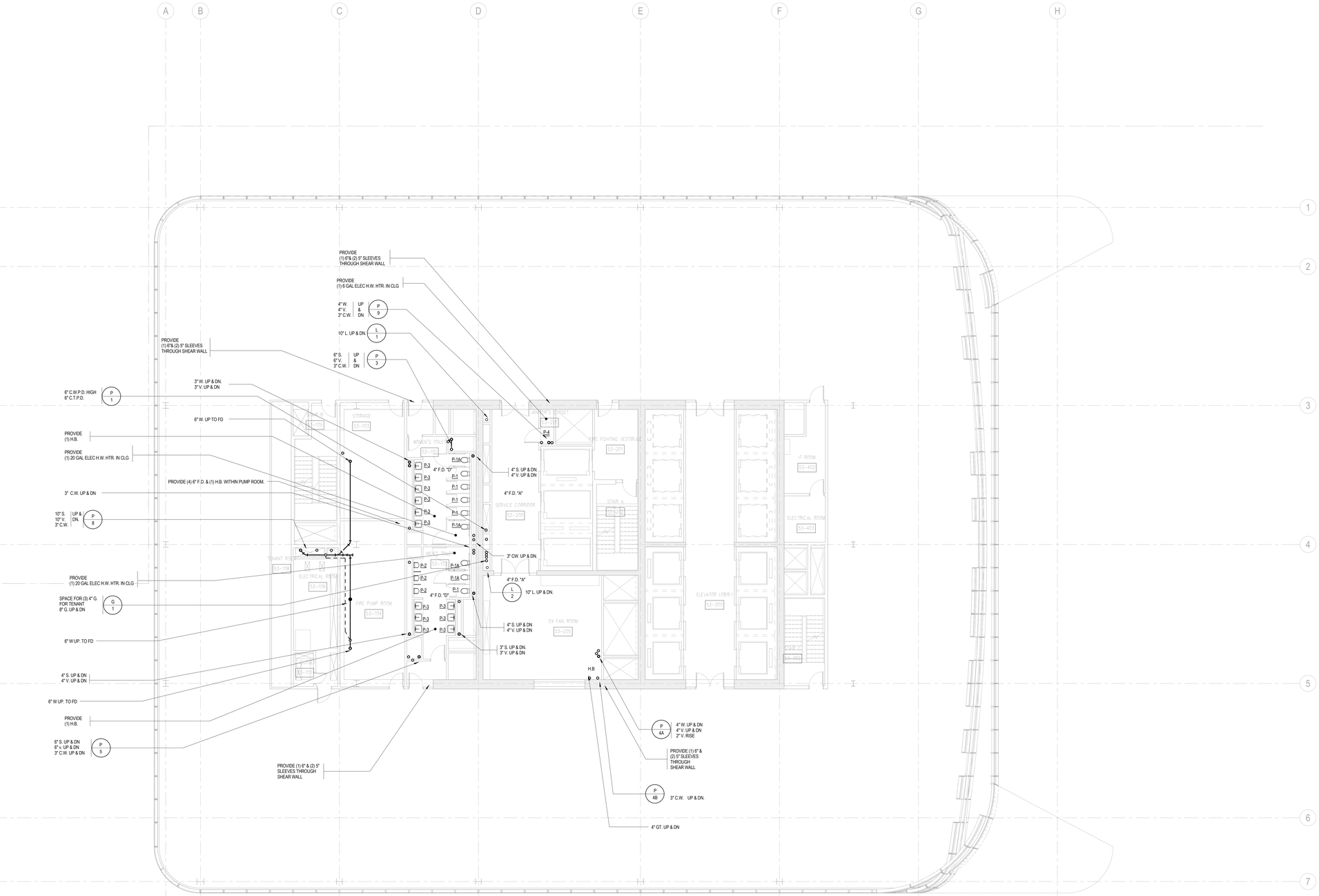

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant

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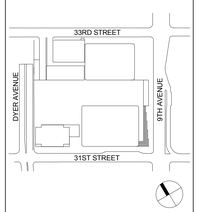
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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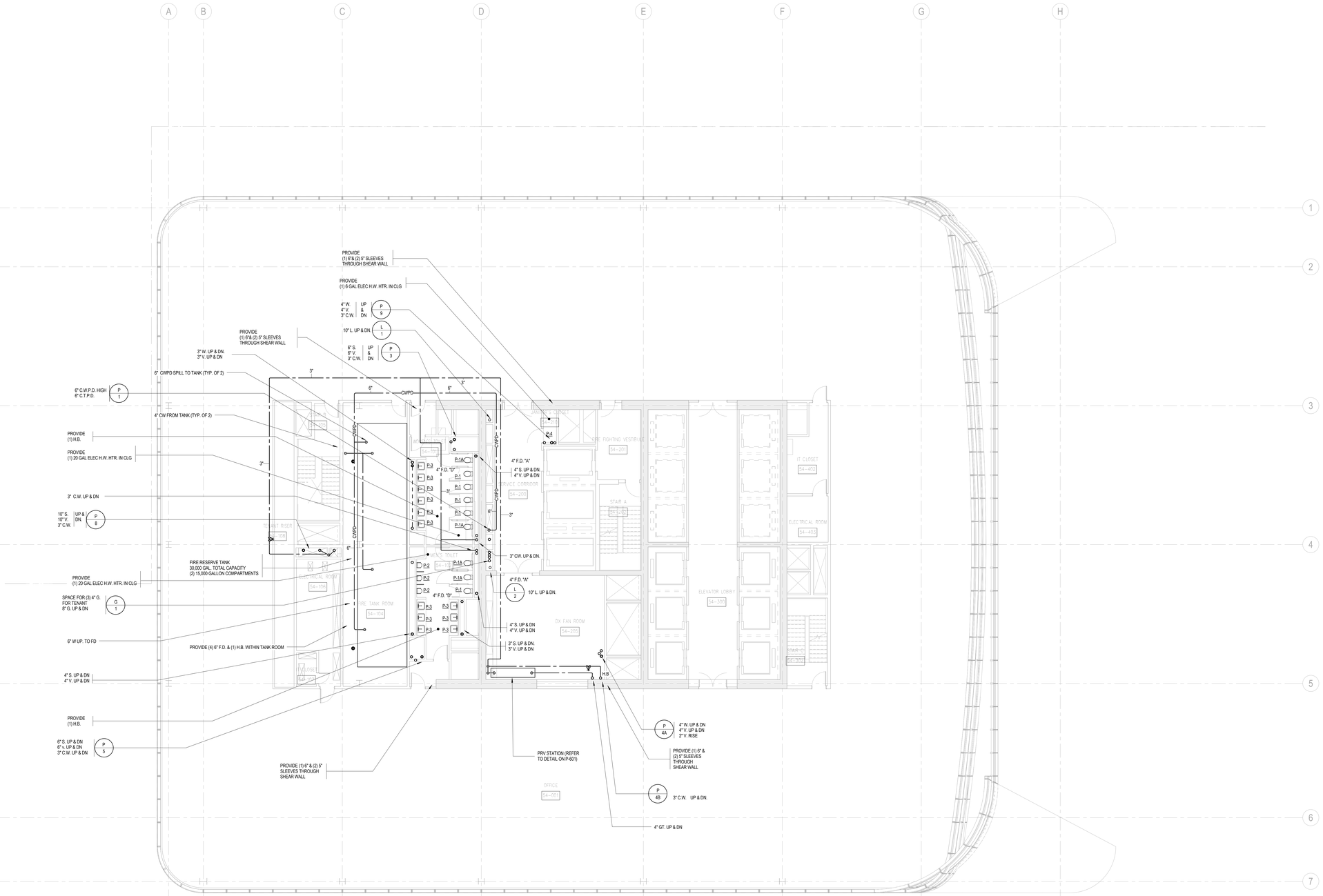
No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM

Project No.: 14830.A.000	B-SCAN Sheet No.: P-153.00
Date: 20 JUN 2014	Sheet No.: P-153
Scale: 1/8" = 1'-0"	
File No.: P-153	Page No.: 40 OF 6



NOTE: REFER TO RISER DIAGRAM FOR EXTENT OF VALVING REQUIRED AT THIS LEVEL.

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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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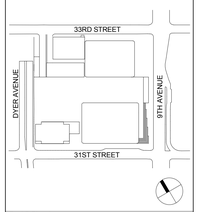
Ontario, Canada N1K 1B8

Key Plan:



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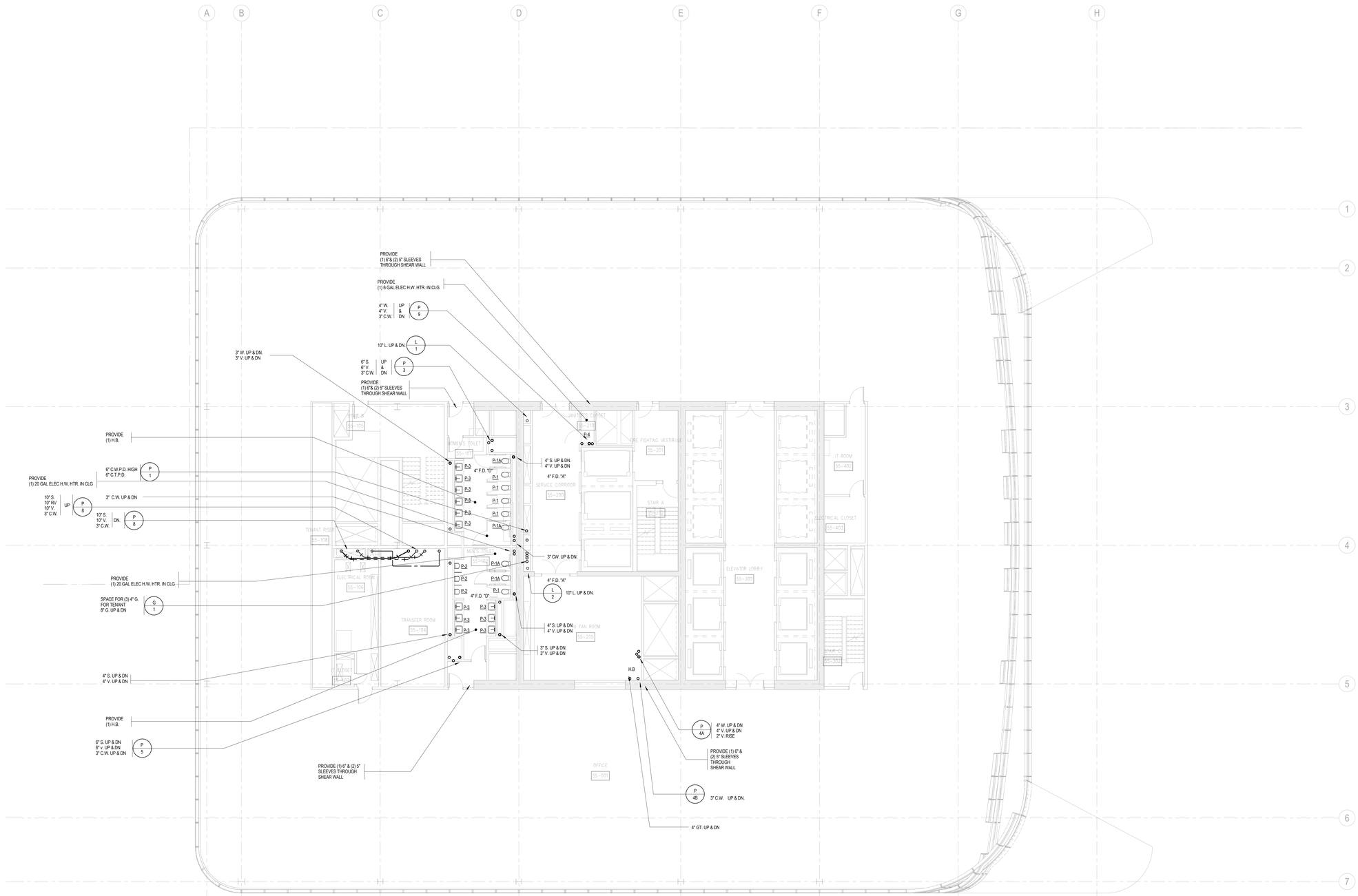
No.	Date	Description
3	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK

Project No.: 14830.A.000	B-SCAN Sheet No.: P-154.00
Date: 20 JUN 2014	Sheet No.: P-154
Scale: 1/8" = 1'-0"	
File No.: P-154	Page No.: 41 OF 6



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SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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215 West 40th Street, 15th Floor, New York, NY 10018

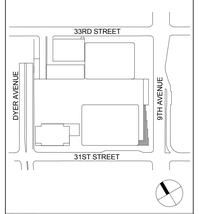
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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3	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 55 FLOOR PLAN - HIGH-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-155.00
Date: 20 JUN 2014	Sheet No.: P-155
Scale: 1/8" = 1'-0"	
File No.: P-155	Page No.: 42 OF 6

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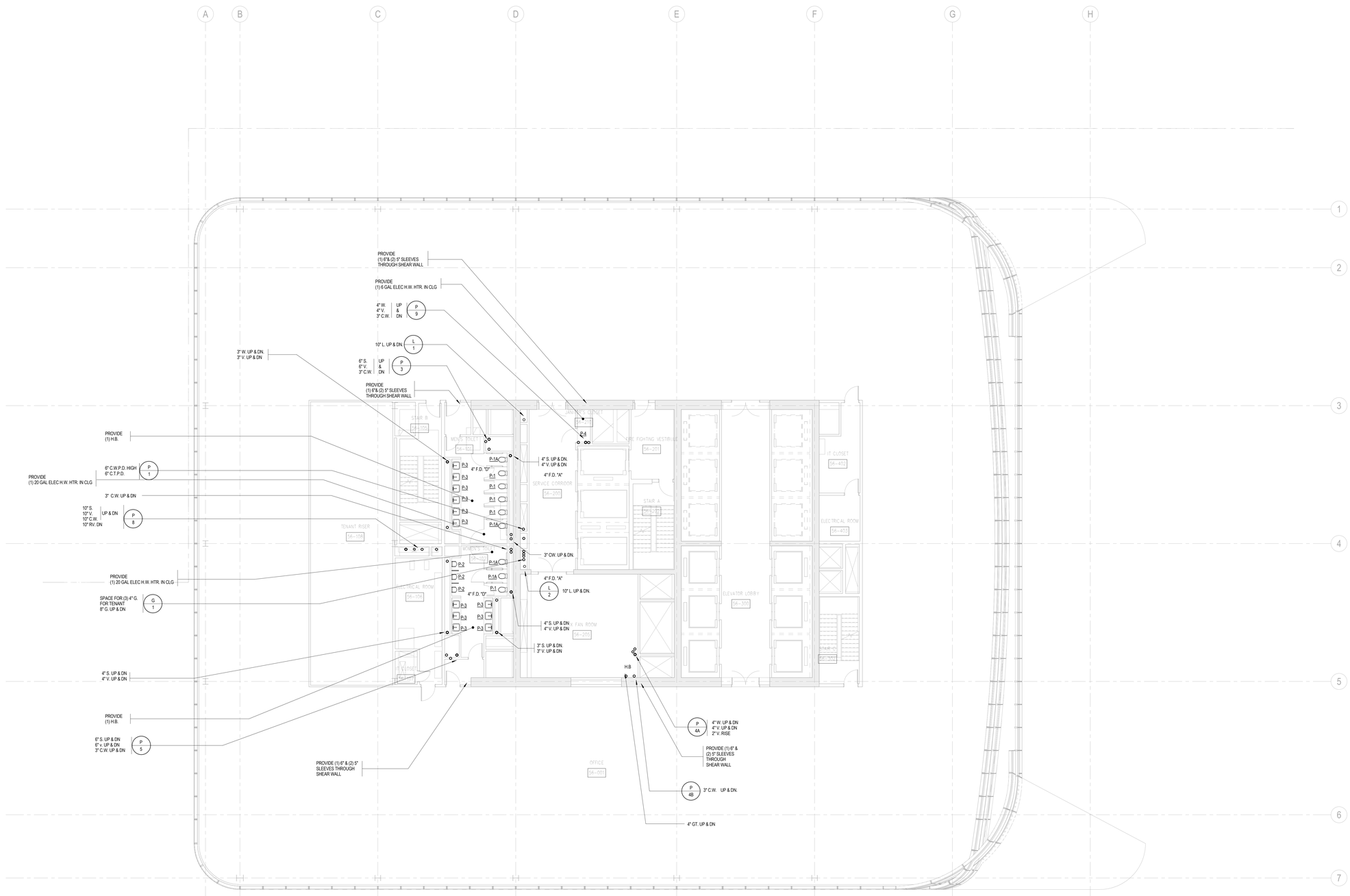

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant

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650 Woodlawn Road West, Guelph
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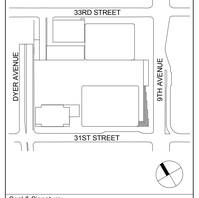
Key Plan:



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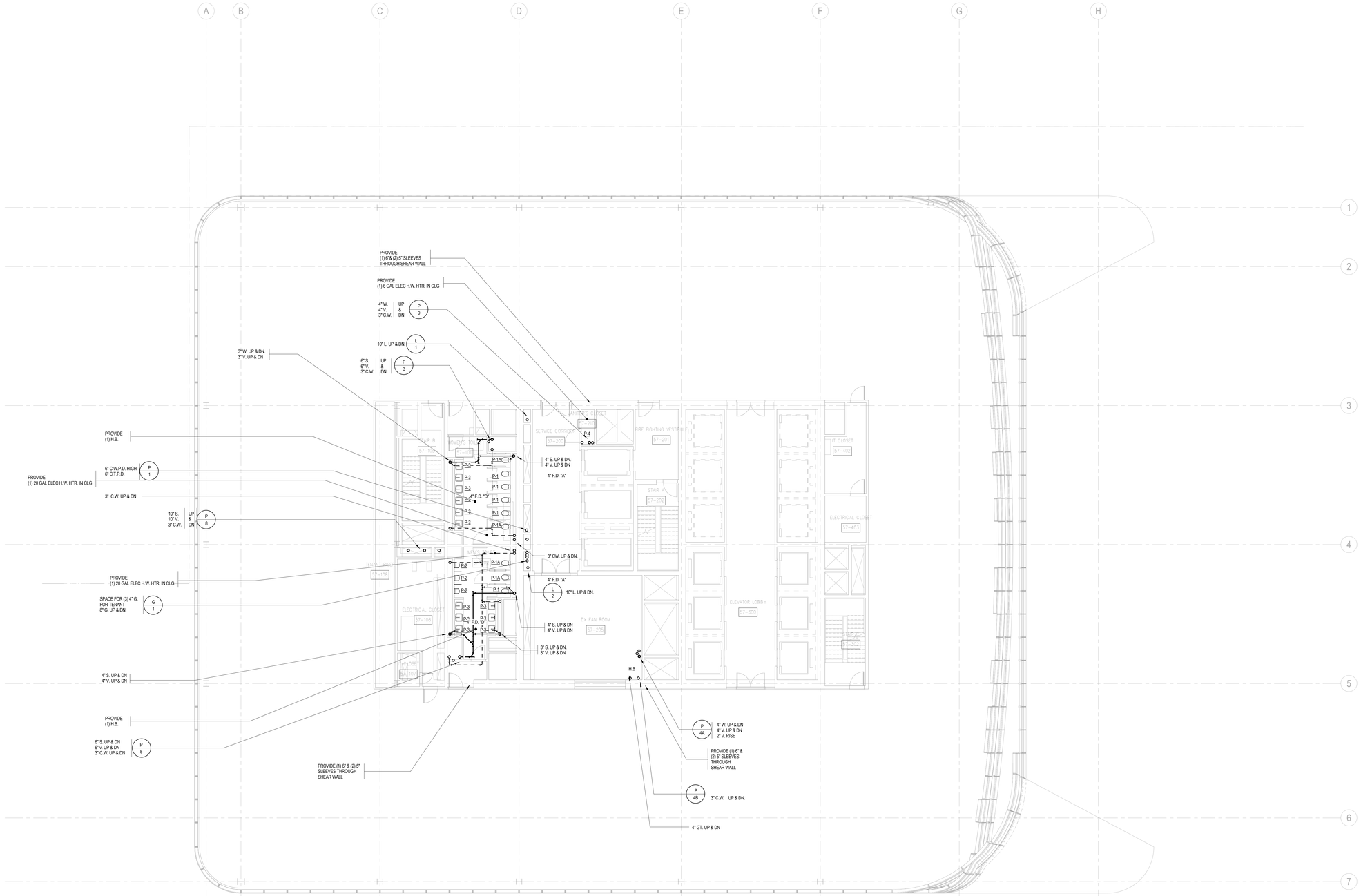
Sheet Name:

PLUMBING LEVEL 56 FLOOR PLAN - HIGH-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-156.00
Date: 20 JUN 2014	Sheet No.: P-156
Scale: 1/8" = 1'-0"	
File No.: P-156	Page No.: 43 OF 6



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MANHATTAN WEST: NORTH TOWER
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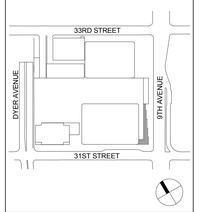
Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale: 1/8" = 1'-0"
File No.: P-157
B-SCAN Sheet No.: P-157.00
Sheet No.: P-157
Page No.: 44 OF 6

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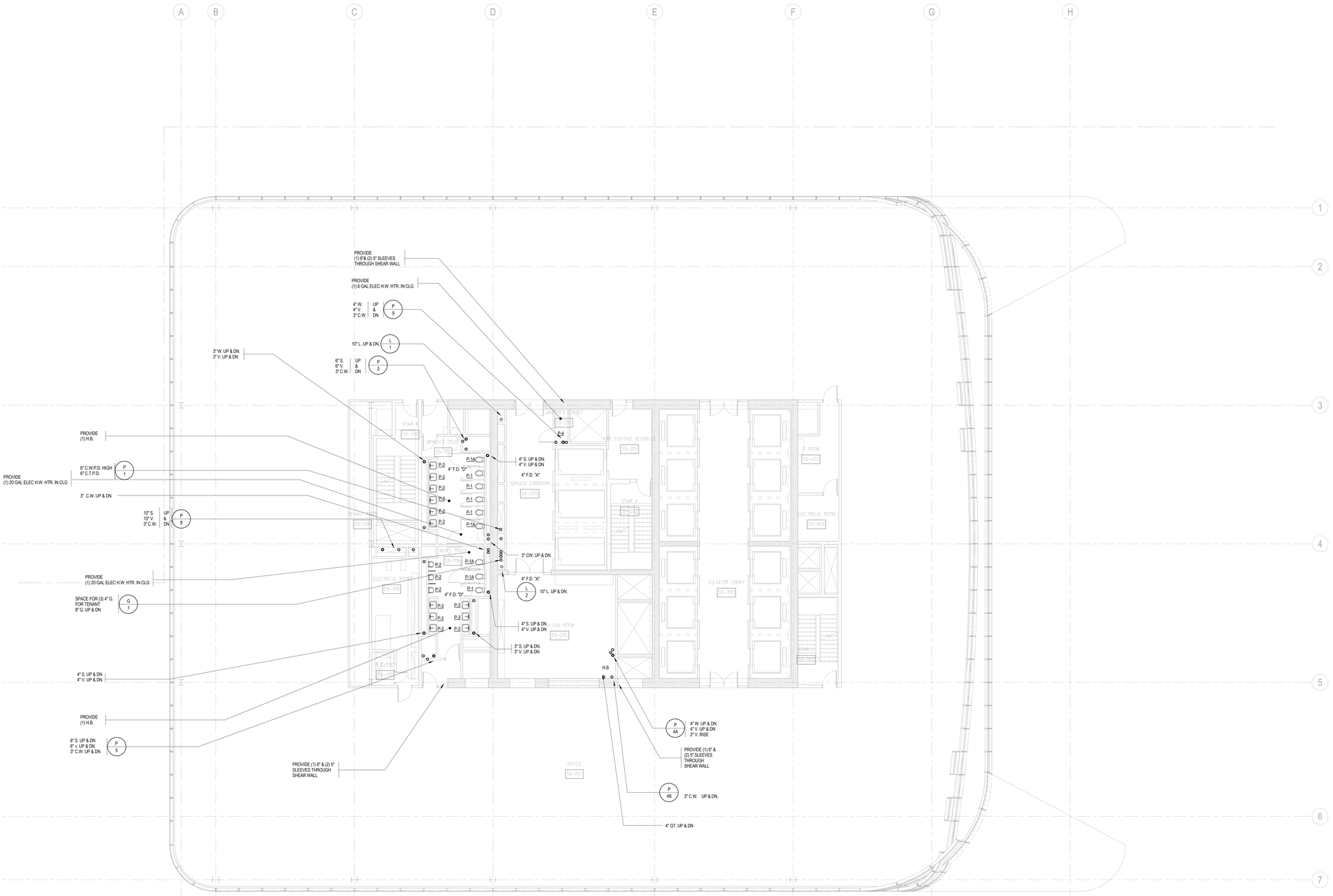

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Wind Tunnel Consultant
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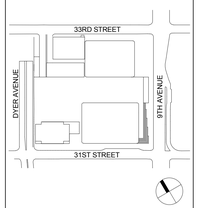
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

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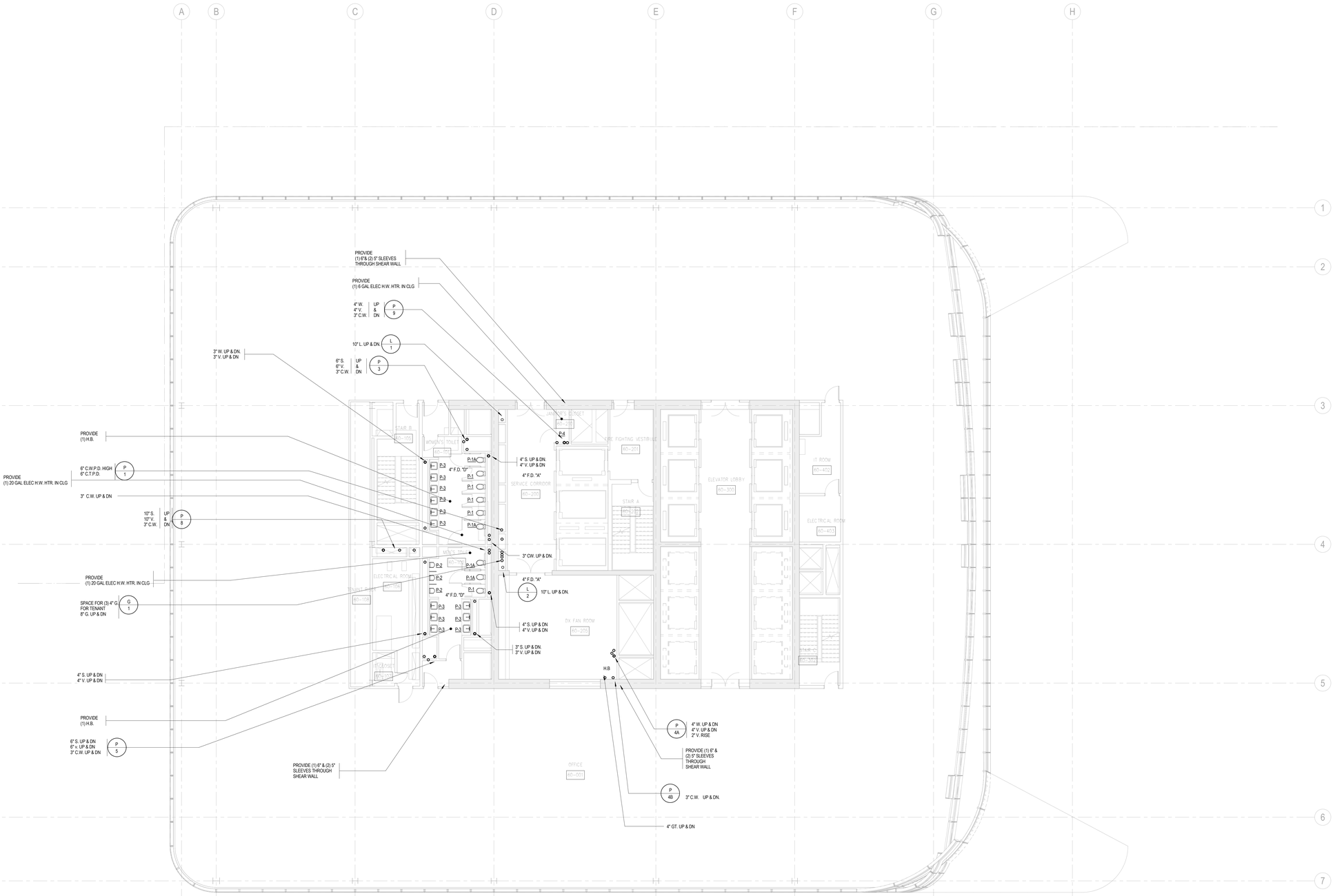
PLUMBING LEVEL 59 FLOOR PLAN - HIGH-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-159.00
Date: 20 JUN 2014	Sheet No.: P-159
Scale: 1/8" = 1'-0"	
File No.: P-159	Page No.: 45 OF 6



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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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SOM

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50 Washington Street, Norwalk, CT 06854

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404 Fifth Avenue #8, New York, NY 10018

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

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215 West 40th Street, 15th Floor, New York, NY 10018

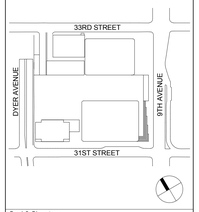
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

PLUMBING LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN

Project No.: 14830.A.000	B-SCAN Sheet No.: P-160.00
Date: 20 JUN 2014	Sheet No.: P-160
Scale: 1/8" = 1'-0"	
File No.: P-160	Page No.: 46 OF 6

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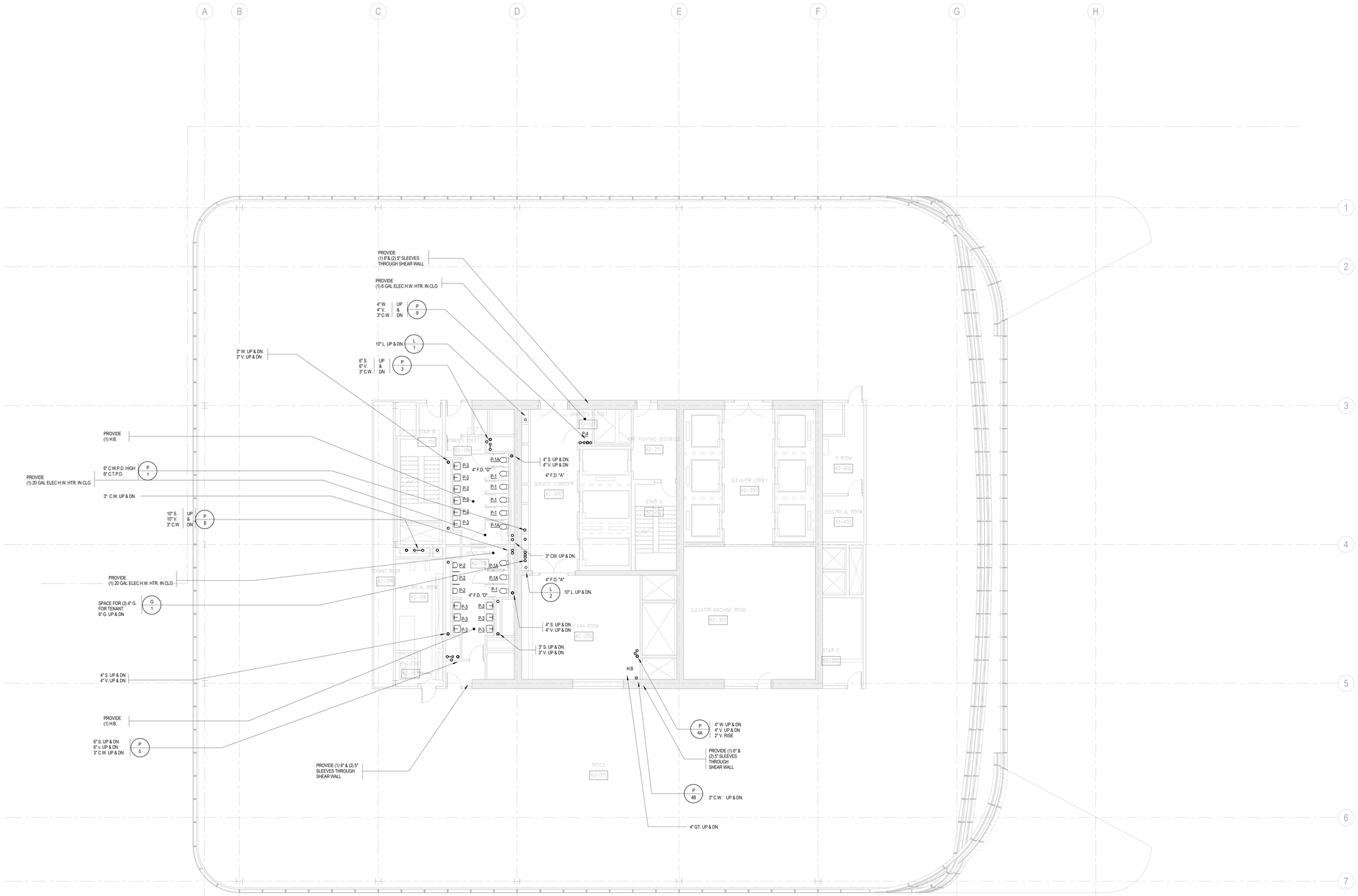

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MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant

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475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

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65 Broadway, Suite 401, New York, NY 10006

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Facade Maintenance Consultant

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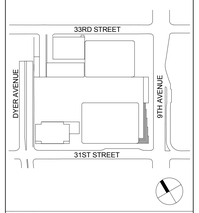
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:

PLUMBING LEVEL 62 FLOOR PLAN - HIGH-RISE EMR

Project No.: 14830.A.000	B-SCAN Sheet No.: P-162.00
Date: 20 JUN 2014	Sheet No.: P-162
Scale: 1/8" = 1'-0"	
File No.: P-162	Page No.: 47 OF 6

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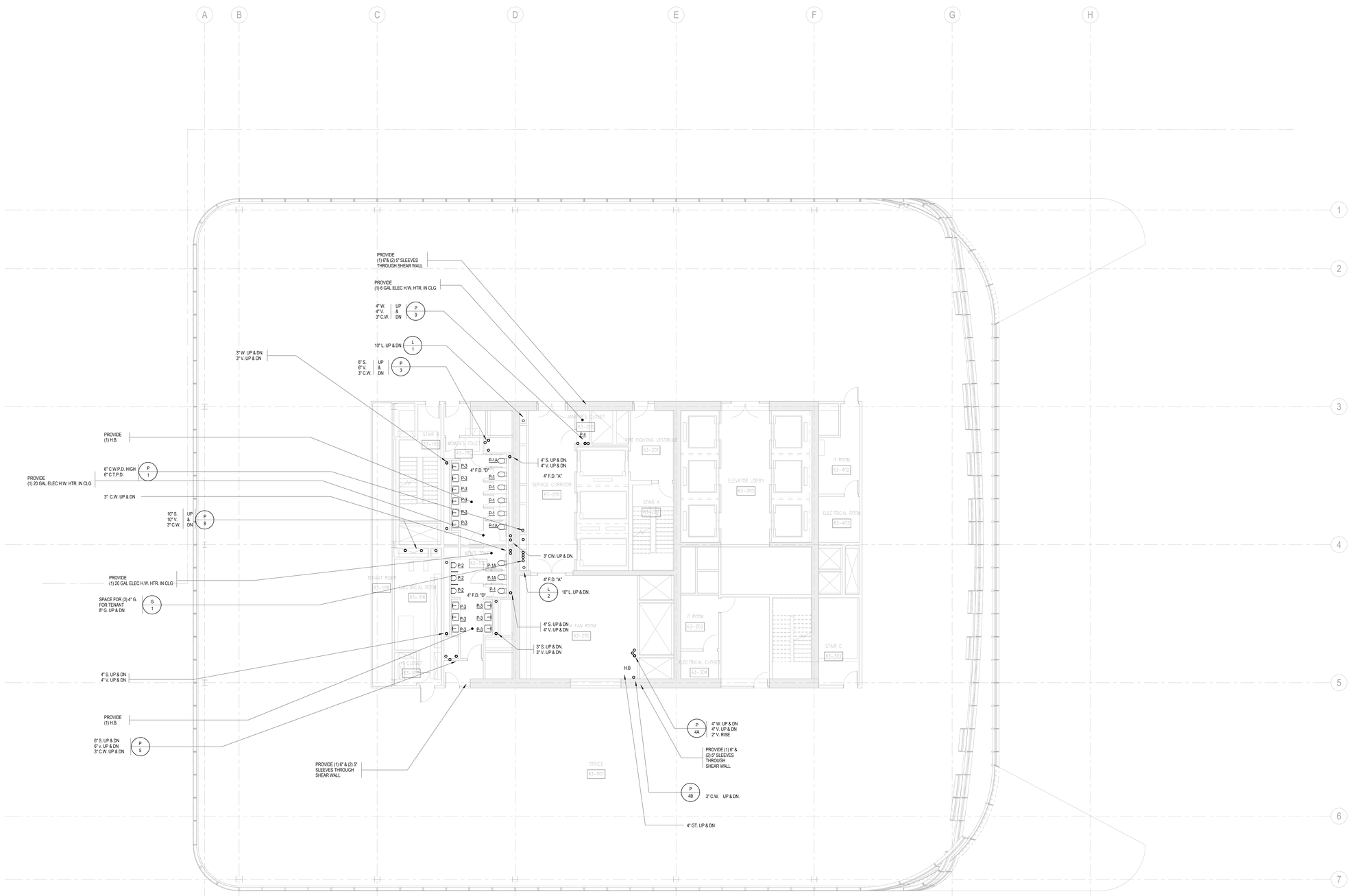

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MANHATTAN WEST: NORTH TOWER

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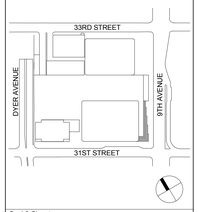
Key Plan:



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Sheet Name:

PLUMBING LEVEL 63 FLOOR PLAN - HIGH-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-163.00
Date: 20 JUN 2014	Sheet No.: P-163
Scale: 1/8" = 1'-0"	
File No.: P-163	Page No.: 48 OF 6

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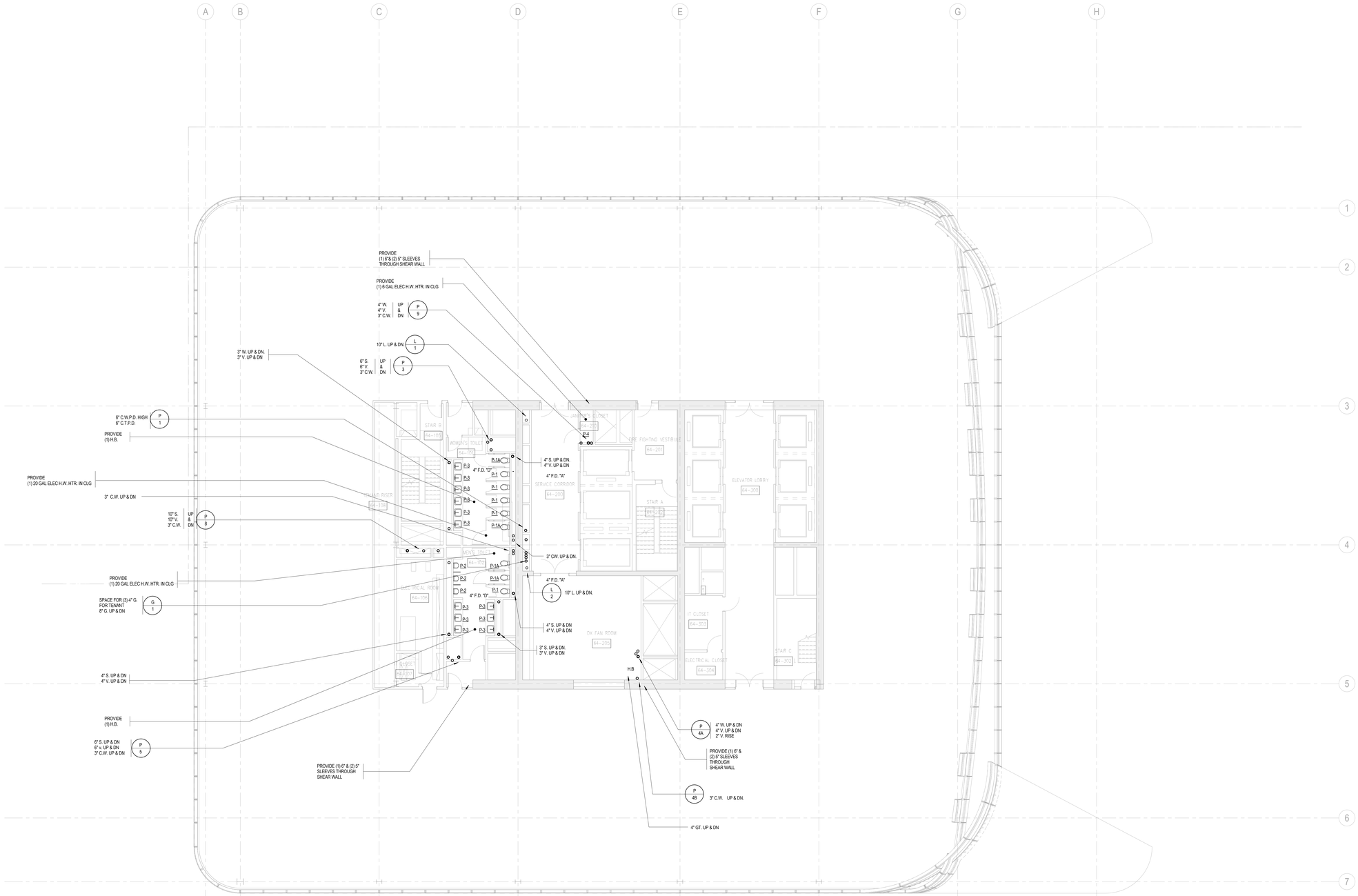

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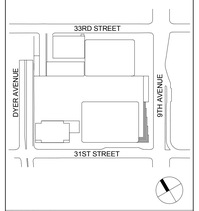

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PLUMBING LEVEL 64-66 FLOOR PLAN - TYPICAL HIGH-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-164.00
Date: 20 JUN 2014	Sheet No.: P-164
Scale: 1/8" = 1'-0"	
File No.: P-164	Page No.: 49 OF 6

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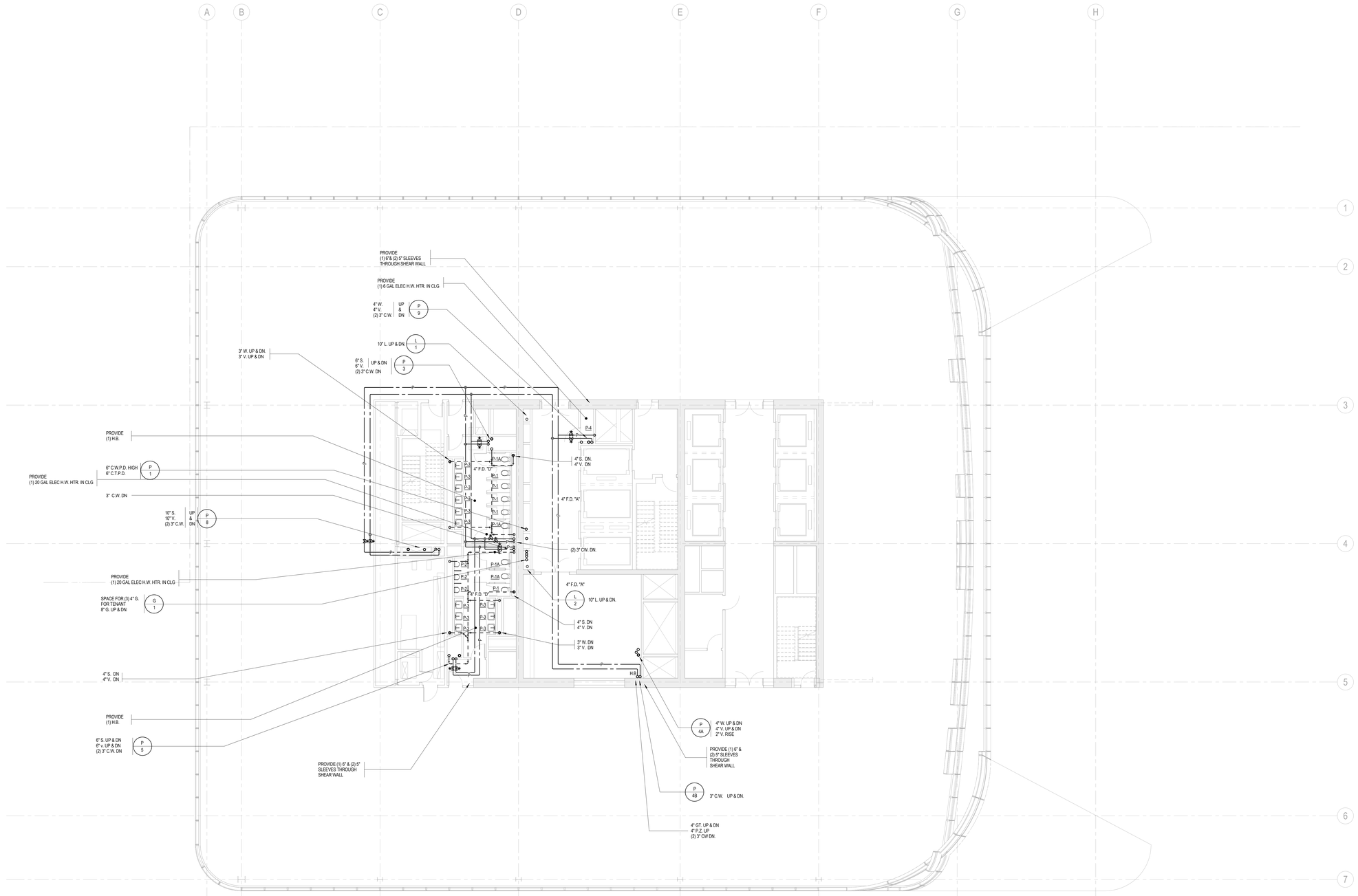

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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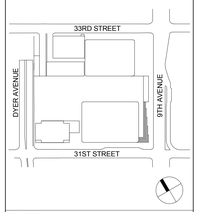
Ontario, Canada N1K 1B8

Key Plan:



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5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING LEVEL 67 FLOOR PLAN - TYPICAL HIGH-RISE

Project No.: 14830.A.000	B-SCAN Sheet No.: P-167.00
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	Sheet No.: P-167
File No.: P-167	Page No.: 50 OF 6

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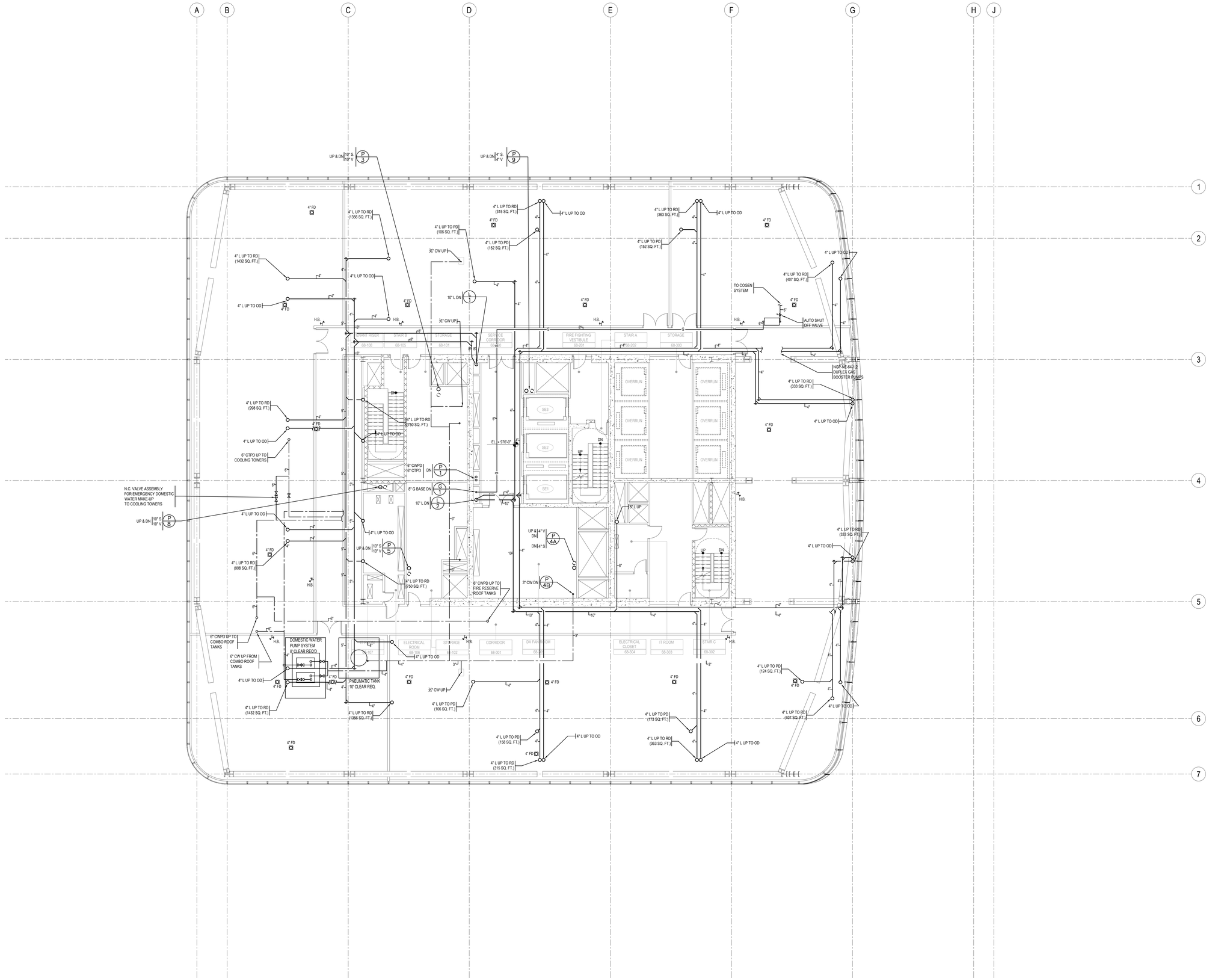

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield Place
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Wind Tunnel Consultant

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650 Woodlawn Road West, Guelph
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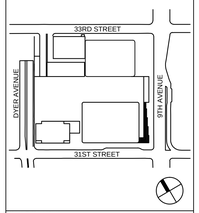
Key Plan:



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Sheet Name:

PLUMBING LEVEL 68 FLOOR PLAN - MECHANICAL

Project No.: 14830.A	B-SCAN Sheet No.: P-168.00
Date: 20 DEC 2013	Sheet No.: P-168
Scale: 1/8" = 1'-0"	
File No.: P-168	Page No.: 52 OF 62

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DEPT OF BLDGS 121197243 Job Number

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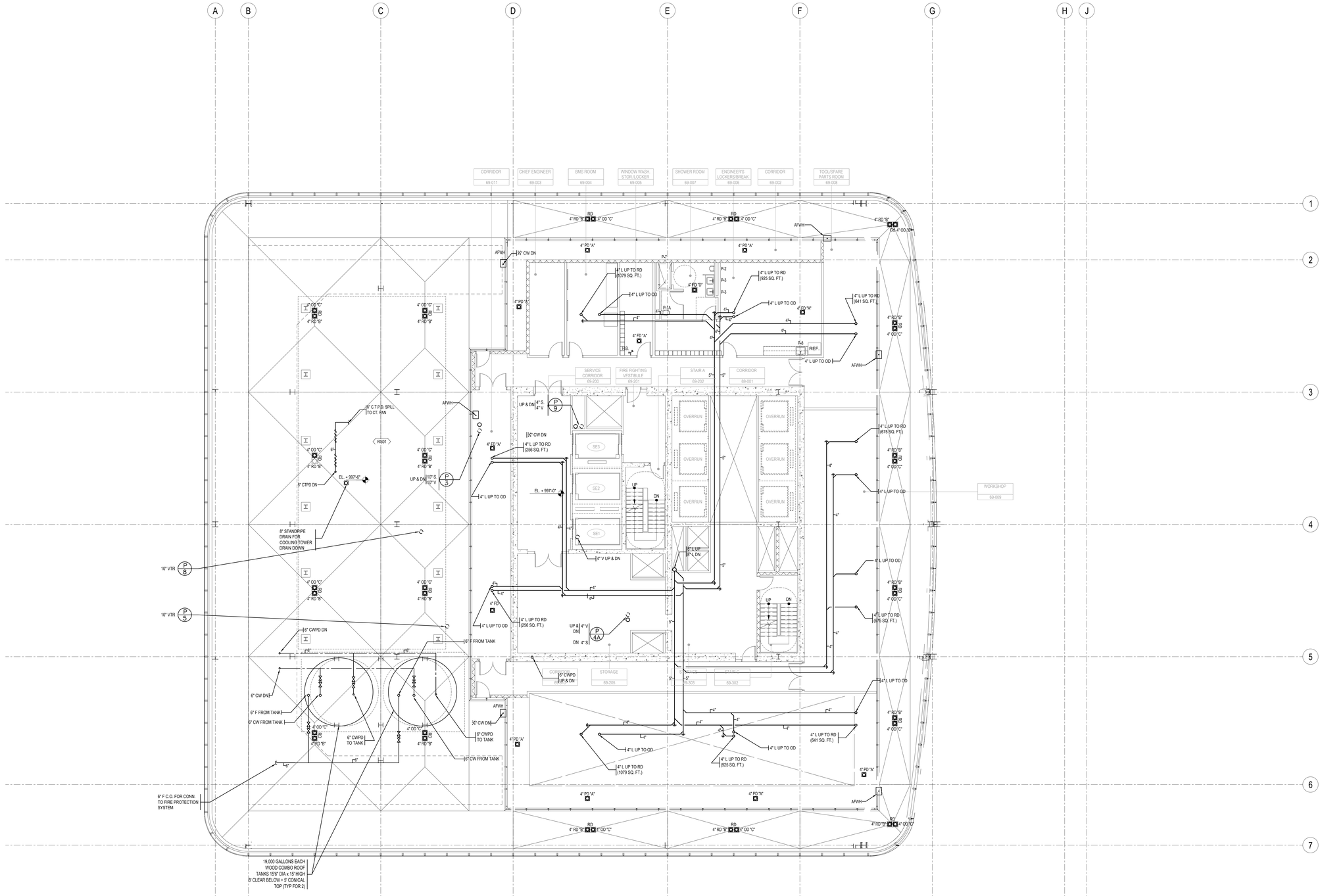

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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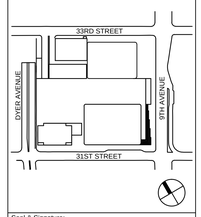
Key Plan:



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Sheet Name:

PLUMBING LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE

Project No.: 14830 A	B-SCAN Sheet No.: P-169.00
Date: 20 DEC 2013	
Scale: 1/8" = 1'-0"	Sheet No.: P-169
File No.: P-169	Page No.: 53 OF 62

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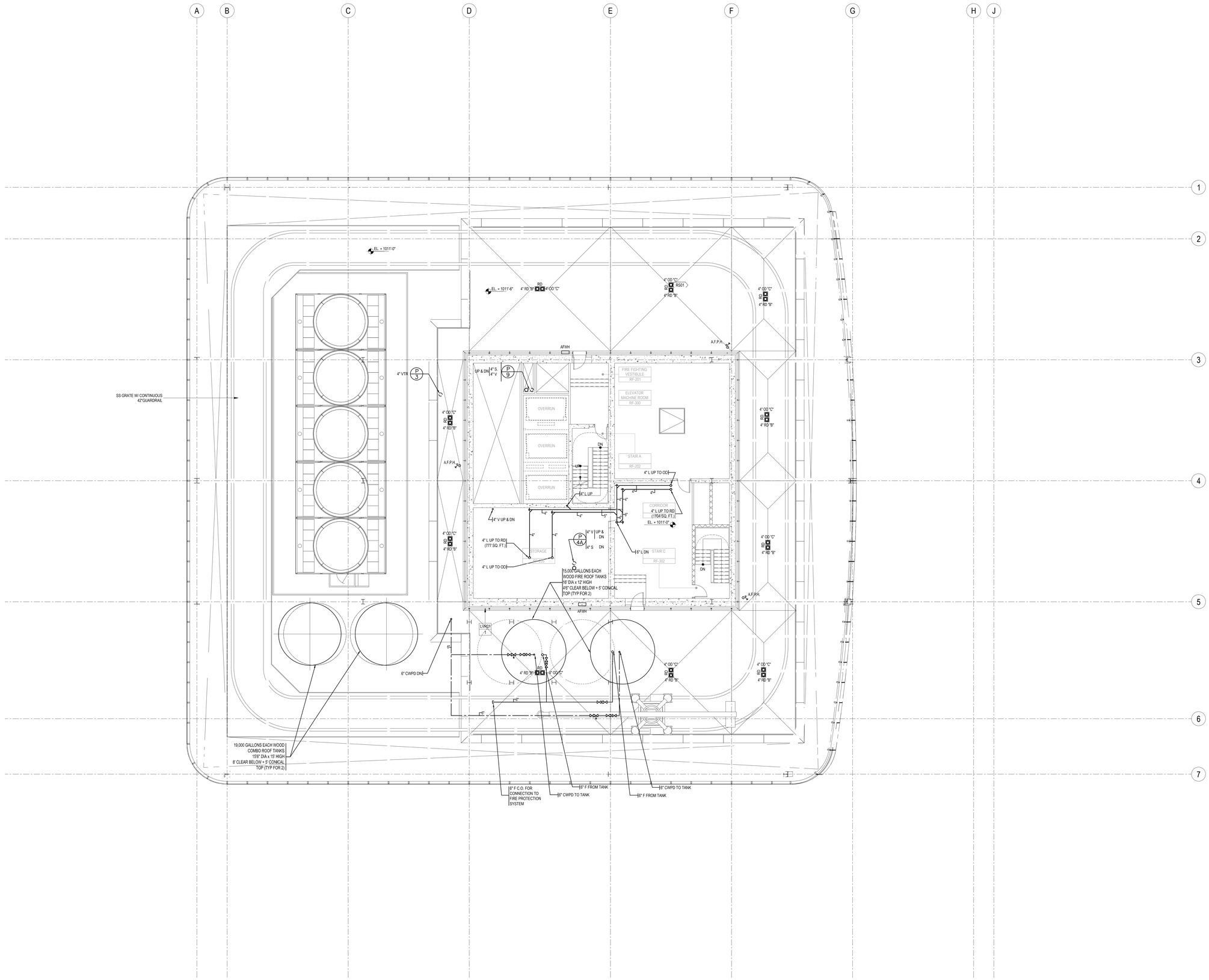

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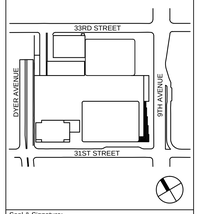

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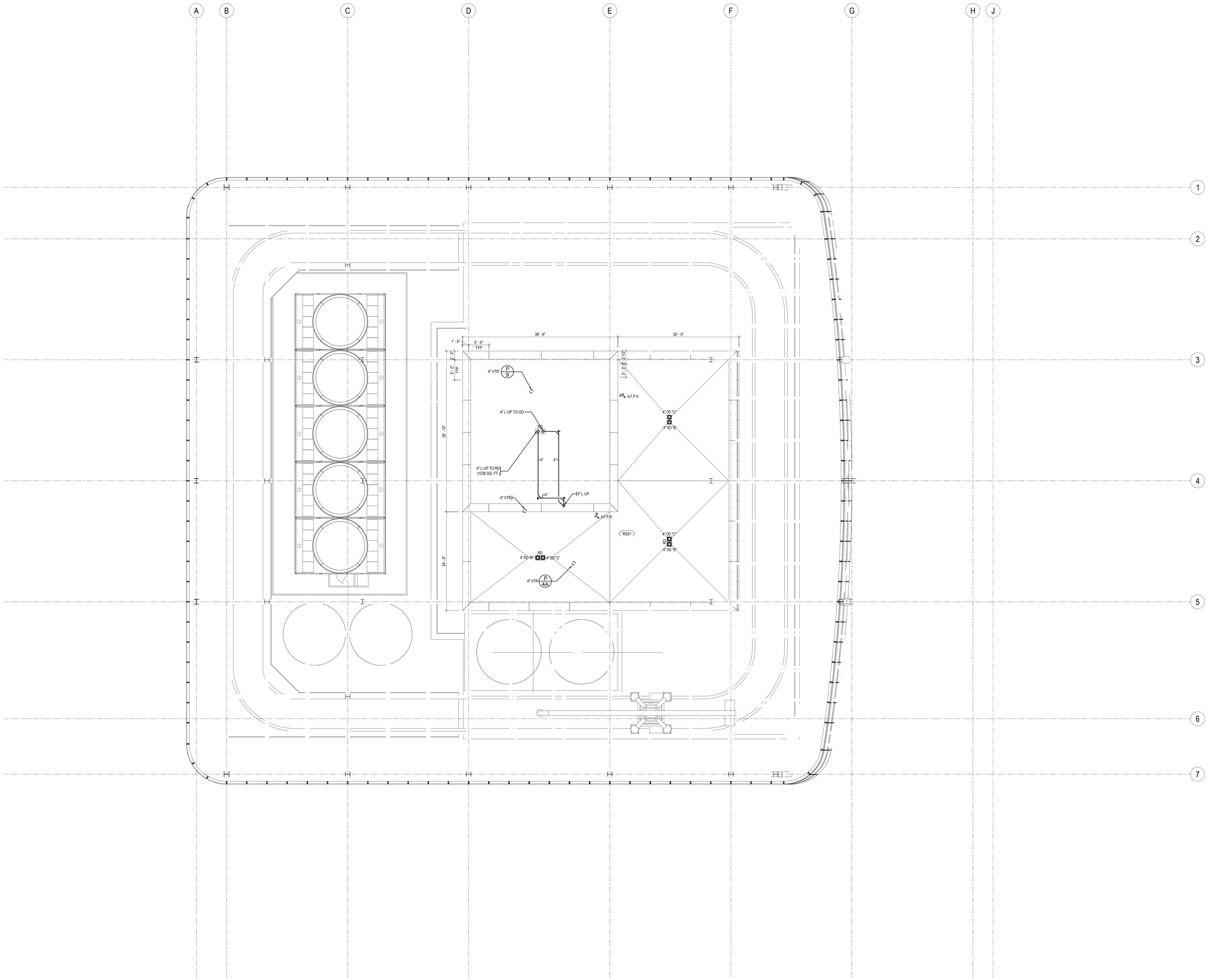
Sheet Name:

PLUMBING ROOF PLAN - MECHANICAL PENTHOUSE

Project No.: 14830.A	B-SCAN Sheet No.: P-170.00
Date: 20 DEC 2013	
Scale: 1/8" = 1'-0"	Sheet No.: P-170
File No.: P-170	Page No.: 54 OF 62



SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

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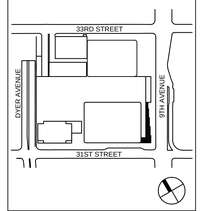

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Sheet Name:

PLUMBING ROOF PLAN - MECHANICAL PENTHOUSE ROOF

Project No.: 14830.A
Date: 15 NOV 2013
Scale: 1/8" = 1'-0"
File No.: P-171

B-SCAN Sheet No.: P-171
Sheet No.: P-171.00
Page No.: 55 OF 62

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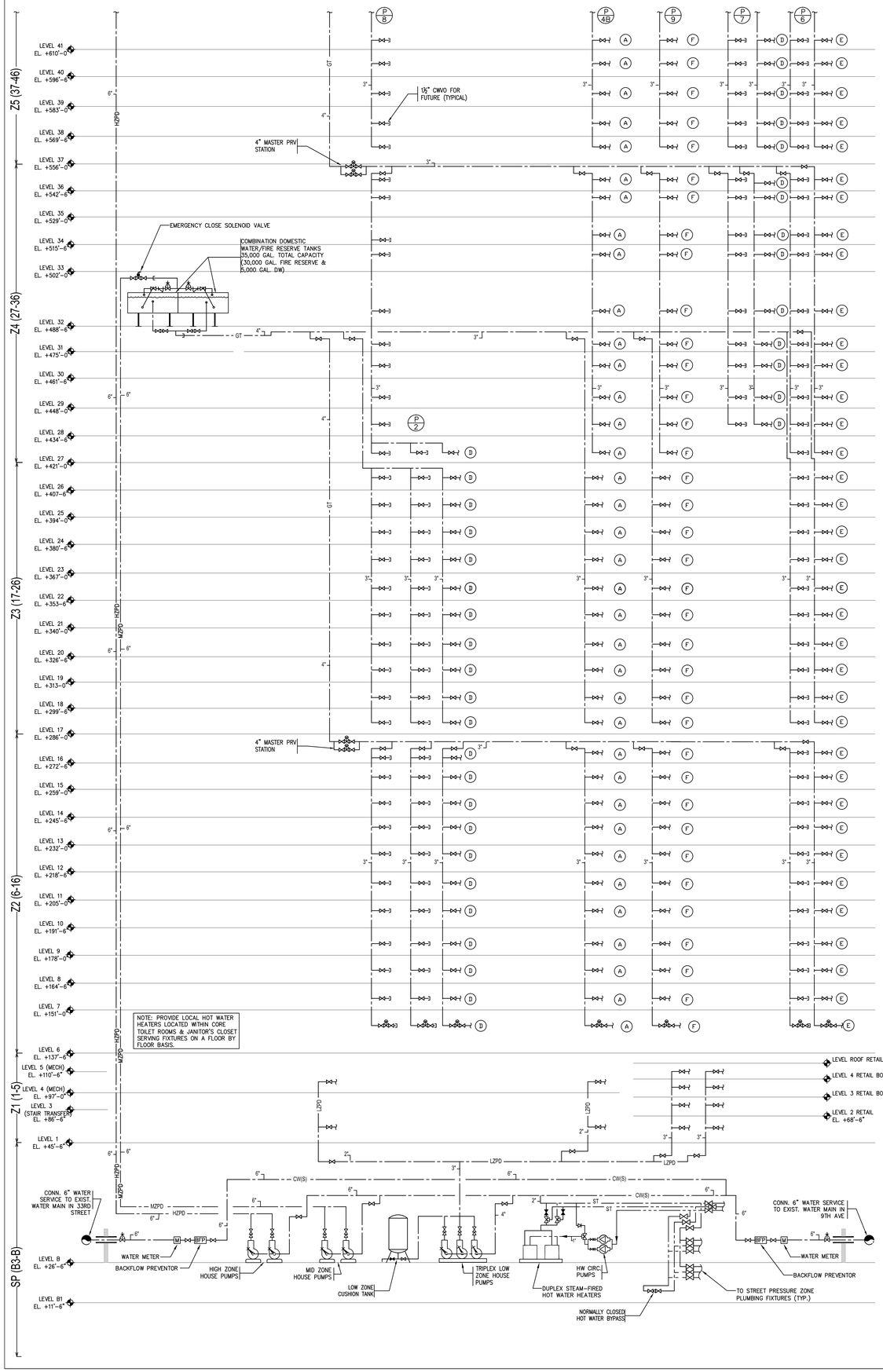

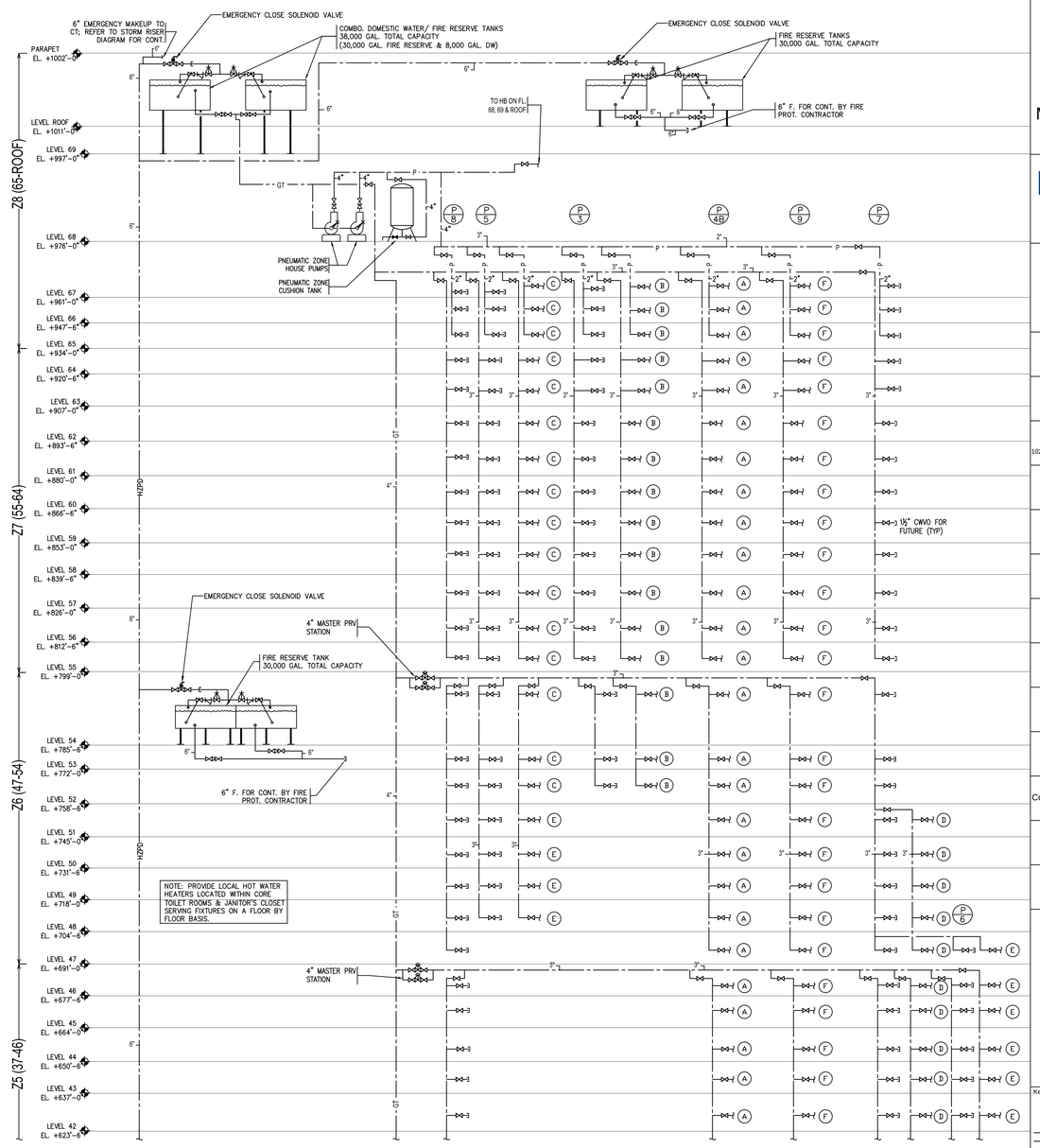

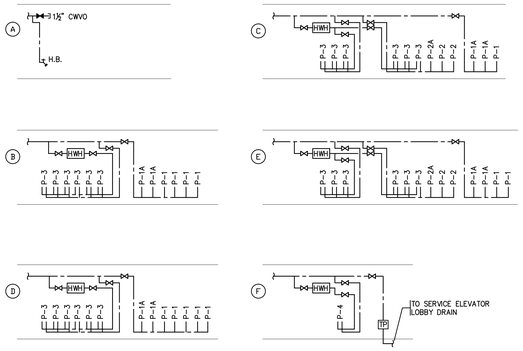

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MANHATTAN WEST: NORTH TOWER

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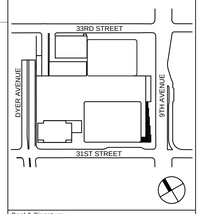
Key Plan:



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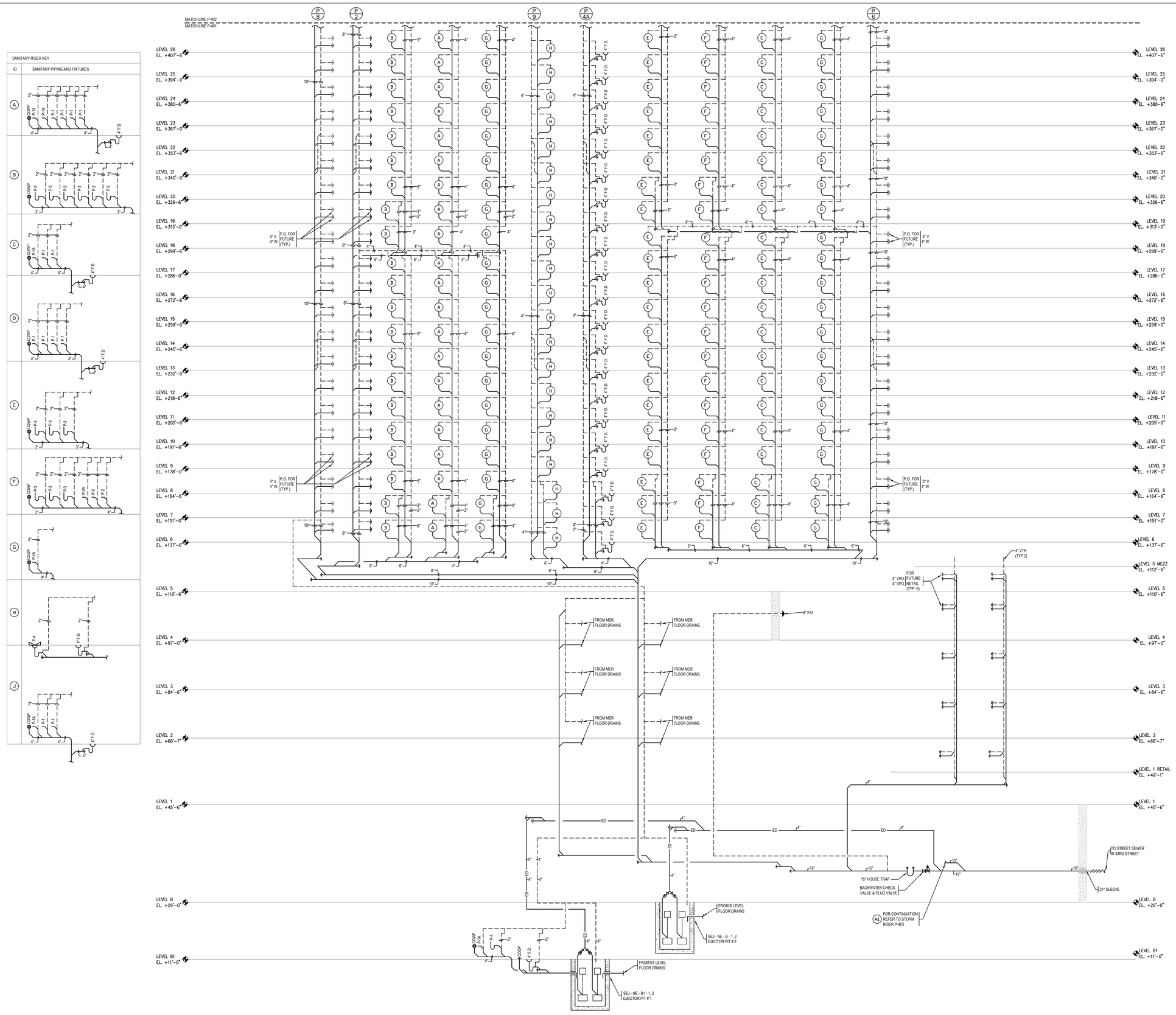
Sheet Name:

PLUMBING DOMESTIC WATER RISER DIAGRAM

Project No.: 14830.A
Date: 20 DEC 2013
Scale: NTS
File No.: P-400

B-SCAN Sheet No.: P-400.00
Sheet No.: P-400
Page No.: 56 OF 62



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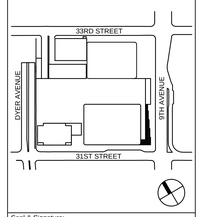
Key Plan:



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Sheet Name:

PLUMBING SANITARY RISER DIAGRAM - SHEET 1

Project No.: 14830-A	B-SCAN Sheet No.: P-401.00
Date: 20 DEC 2013	Sheet No.: P-401
Scale: NTS	
File No.: P-401	Page No.: 57 OF 62

DEPT OF BLDGS 121197243 Job Number

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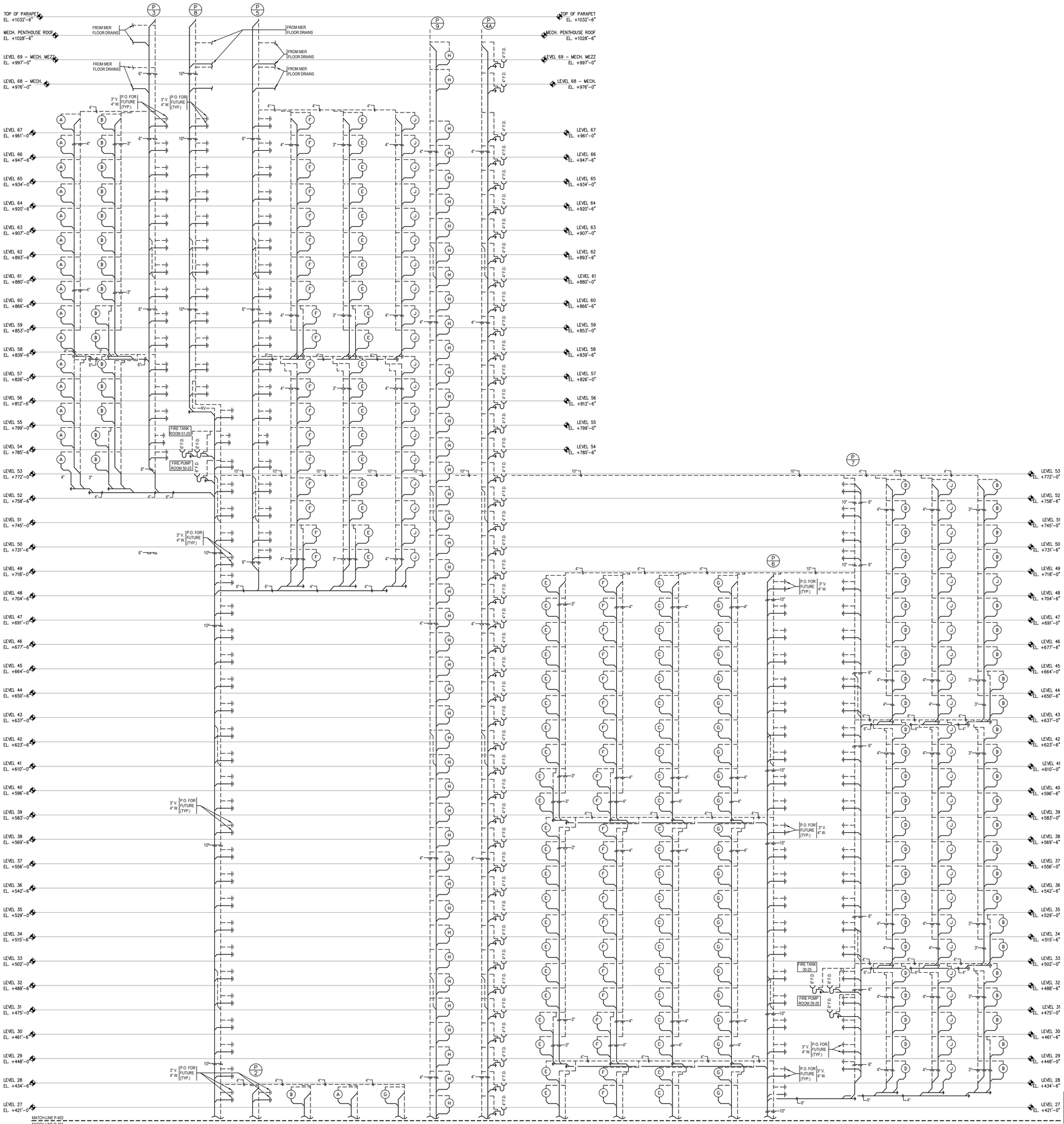

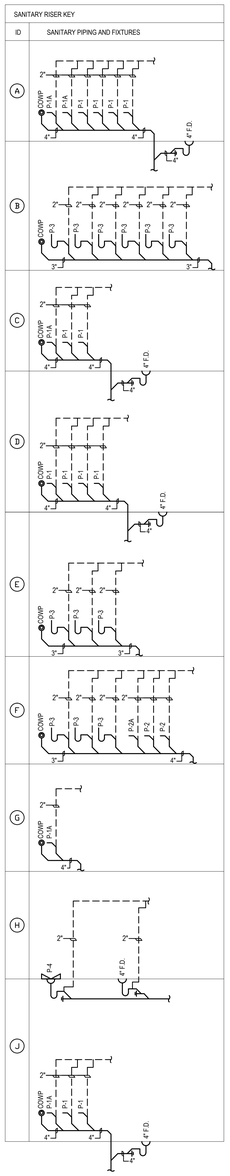

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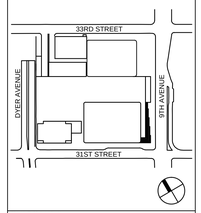

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PLUMBING SANITARY RISER DIAGRAM - SHEET 2

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Project No.: 14830.A	B-SCAN Sheet No.: P-402.00
Date: 20 DEC 2013	Sheet No.: P-402
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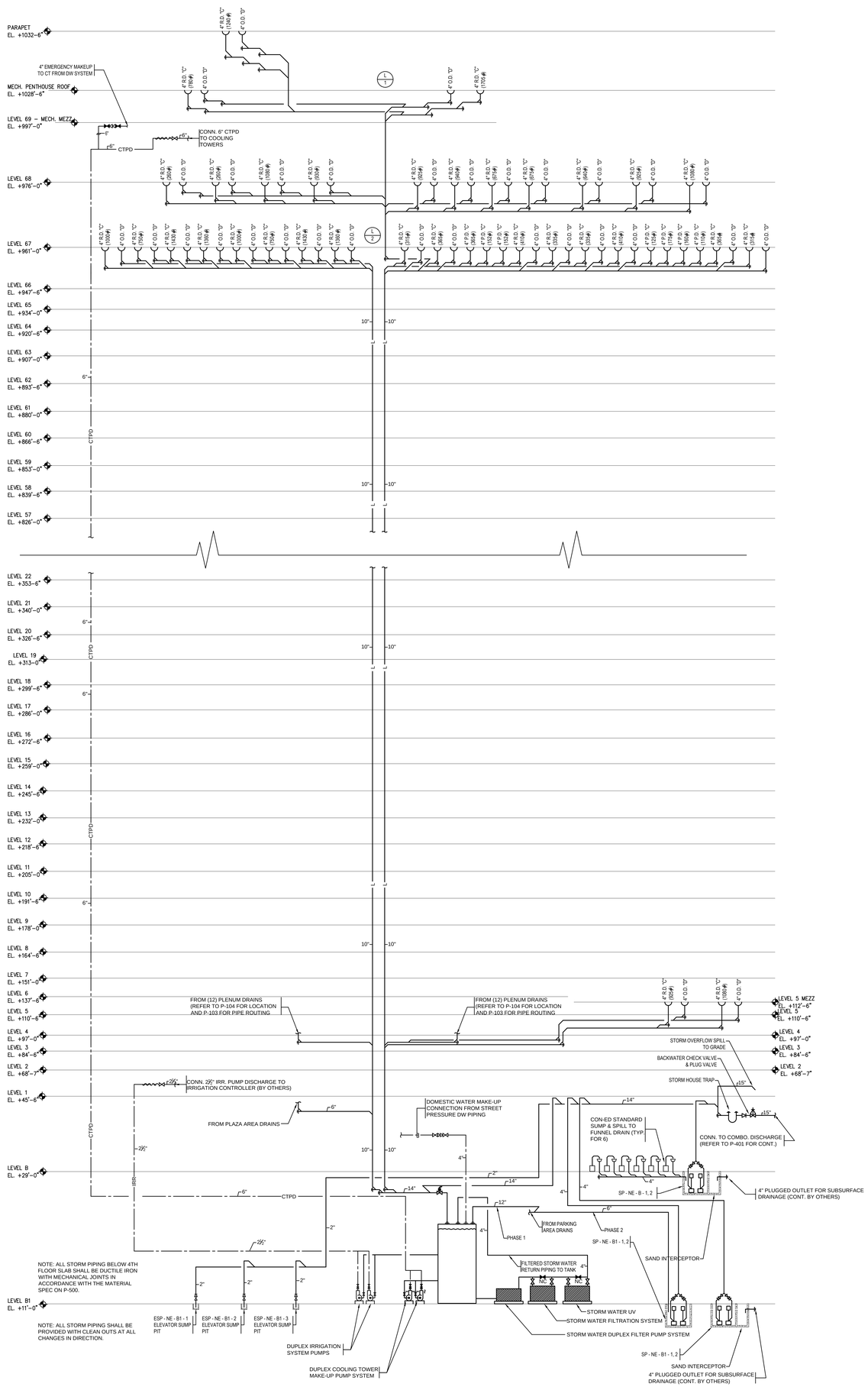

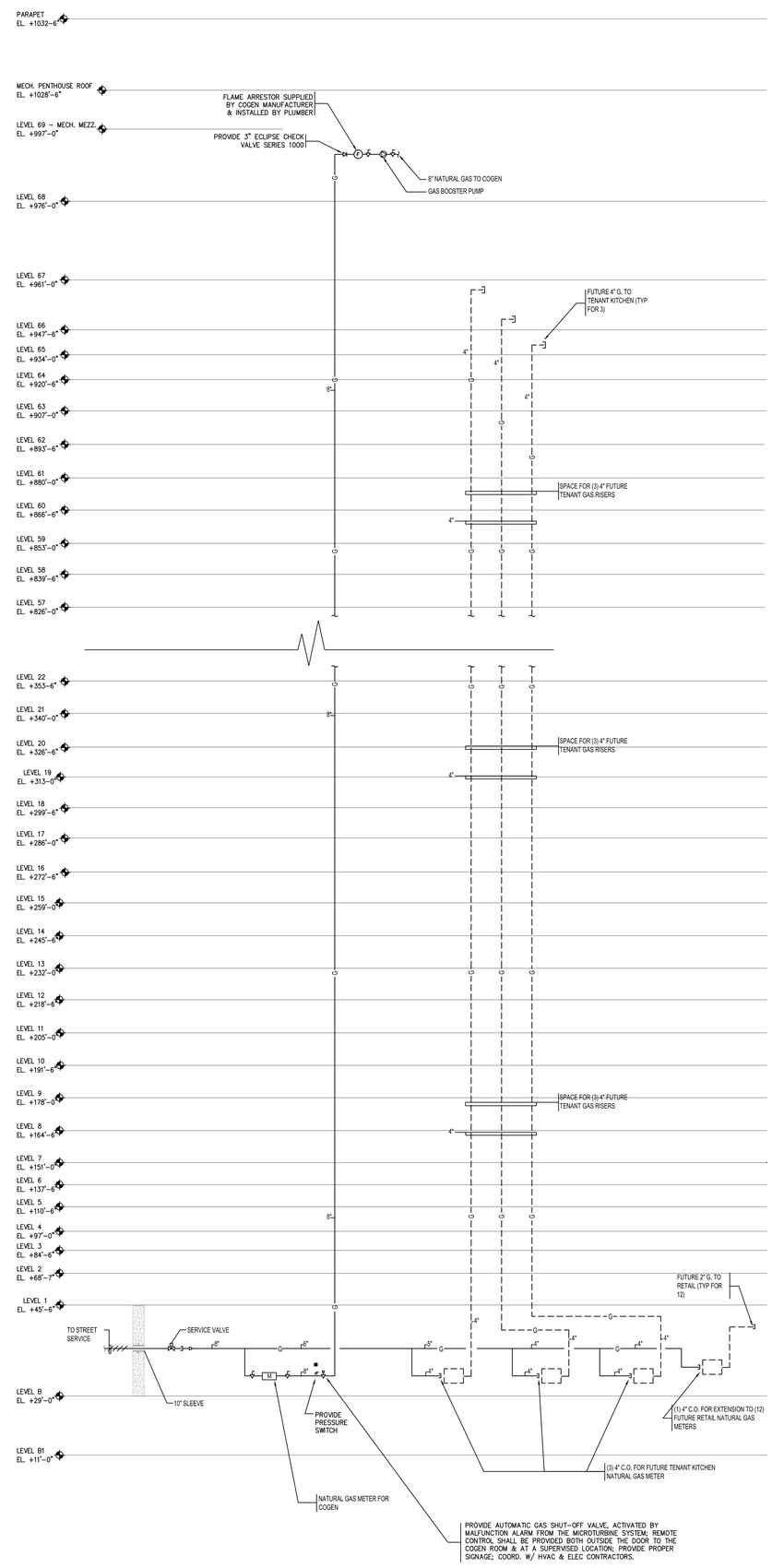

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375 Ninth Avenue, New York, NY 10001

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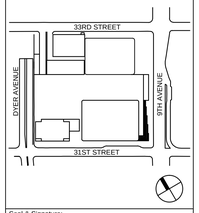

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Sheet Name:

PLUMBING STORM & NATURAL GAS RISER DIAGRAMS

Project No.: 14830.A	B-SCAN Sheet No.: P-403
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DRAIN SCHEDULE

DESIGNATION	ZURN SERIES NO. (UNLESS OTHERWISE NOTED)	BODY: CAST IRON	CORR.-COATED	GALVANIZED	STAINLESS STEEL	NICKEL BRONZE	BOTTOM OUTLET	45° OUTLET	SIDE OUTLET	CLAMPING DEVICE	UNDERDECK CLAMP	BACK WATER VALVE	THREADED OUTLET	NO HUB	R.D. RECIEVER PLATE	ACID RESISTANT COATED	CAULKED	STRAINER: CAST IRON	LACQUER COATED	GALVANIZED	SEDIMENT BUCKET	SECONDARY STRAINER	BRONZE	NICKEL BRONZE	CHROME PLATED	STAINLESS STEEL	POLISHED FINISH	6" HIGH SOLID WATER DAM	SATIN FINISH	TRACTOR GRATE (DUCTILE IRON)	PERFORATED ST. STL. EXTENSION	FUNNEL TOP	FLAT TOP	HEEL PROOF	LOW DOME	EXTENSION PIECE WEEP HOLES	GRAVEL GUARD	TOP SIZE	ANGLE TYPE	RAISED LIP	VANDAL PROOF	ALUMINUM DOME	FLOW CONTROL ASSY	REMARKS: GENERAL AREA OR LOCATION
A	Z-508-DG-Y	●	●				●											●			●												●					12"ø							MER, ELEVATOR PITS, BOH SPACES, PLENUM DRAINS
B	ZC-100-C-EA-R	●	●				●			●	●							●			●									●		●			●	●	●	12"ø							ROOF DRAINS
C	ZC-100-C-EA-R-W2	●	●				●			●	●							●			●											●			●	●	●	12"ø							OVERFLOW ROOF DRAINS
D	Z-415	●	●				●																										●					9"ø							TOILET ROOM DRAINS
E	ZC-100-C-EA-R	●	●				●			●	●							●			●											●			●	●	●	12"ø							AREA DRAINS INSTALLED IN PLAZA TRENCHES
F	ZRB-125-C-EA-BS	●	●				●			●													●														8-1/8"ø							PLANTER DRAINS (INSTALLED IN PLAZA LANDSCAPING)
G	Z-533	●	●				●											●			●									●			●					12"ø				●			PARKING AREA DRAINS (INSTALLED IN GIRDERS)
H	Z-122	●	●				●			●					●													●										12"ø							COOLING TOWER DRAIN DOWN – ROOF – PROVIDE SOLID DAM 6" ABOVE FINISHED ROOF SURFACE
J	Z882-U4-NS	●	●				●											●			●									●			●			●		12"ø				●			LOADING DOCK TRENCH DRAINS
K	Z520-P-Y W/ Z328	●	●				●																									●	●					9"ø							SPK. DRY VALVE AREAS / SPK. PRE-ACTION VALVE AREAS

NOTE: THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DRAIN TYPES & OPTIONS WITH CONSTRUCTION MANAGER AND CONFIRMING THE CONSTRUCTION MATERIALS, THICKNESS, LENGTHS (FOR LINEAR/TRENCH DRAINS) AND FINISHED FLOOR ELEVATIONS (I.E. EXTENSION HEIGHTS, GRAVEL STOP HEIGHTS, WATERPROOFING MATERIALS, ETC.)PRIOR TO PURCHASING EQUIPMENT.

PUMP SCHEDULE

PUMP DESIGNATIONS	SYSTEM	No. REQUIRED	G.P.M. / SCFH each	MAX. T.D.H./P.S.I.	MECH. SEAL	MANUFACTURER	MODEL NUMBER	STAGES	VERT. CAN	HORIZ. SPLIT	WORKING PRESSURE (PSI)	H.P.	R.P.M.	VOLTS	PHASE	CYCLE	MANUAL CONT'L.	STARTING STEPS	AUTO CONT'L.	PILOT LIGHT	PRESSURE GAUGE RANGE	EMERGENCY POWER	CONCRETE PIT	CONTROL CENTER	LOCATION
DBP-NE-68-1,2	PNEUMATIC ZONE BOOSTER PUMPS	2	30	140	●	P.P.C.	2TU12A-2	2		●	350	7.5	1750	460	3	60	●		●	●	0-100	●		●	
DBP-NE-B-3,4	HIGH ZONE HOUSE PUMPS	2	253	981	●	P.P.C.	3TUT9A-4	4		●	600	150	1750	460	3	60	●		●	●	0-500	●		●	
DBP-NE-B-1,2	MID ZONE HOUSE PUMPS	2	100	449	●	P.P.C.	3TUT13A-3	3		●	350	50	1750	460	3	60	●		●	●	0-300	●		●	
DBP-NE-B-5,6,7	LOW ZONE HOUSE PUMPS	3	35	123	●	P.P.C.	1.5TUT7A-3	3		●	350	5	1750	460	3	60	●		●	●	0-100	●		●	
SP-NE-B-1,2	SUMP PUMP SET #1	2	100	45		FLYGT	CP3057 imp 266	1			150	2.5	3600	460	3	60	●		●	●	0-100	●	●	●	
SP-NE-B1-1,2	SUMP PUMP SET #2	2	250	60		FLYGT	NP3127 imp 488	1			150	10	1750	460	3	60	●		●	●	0-100	●	●	●	
SP-NE-B3-1,2	SUMP PUMP SET #3	2	250	85		FLYGT	NP3152 imp 464	1			150	15	1750	460	3	60	●		●	●	0-100	●	●	●	
SEJ-NE-B-1,2	EJECTOR PUMP SET #1	2	500	45		FLYGT	NP3127 imp 438A	1			150	10	1750	460	3	60	●		●	●	0-100	●	●	●	
SEJ-NE-B3-1,2	EJECTOR PUMP SET #2	2	125	85		FLYGT	FP3127 imp 244	1			150	10	3600	460	3	60	●		●	●	0-100	●	●	●	
ESP-NE-B3-1,2,3	ELEVATOR SUMP PUMP	3	50	84		STANCOR	SV750-OM	1			150	7.5	3600	460	1	60		●	●	●	0-100	●	●	●	
LFP-NE-B3-1	STORM WATER FILTER SKID	1	128	42		PEP	OPEL TC 2x4x4 BP2-PUR-V	4			350	2.5	3600	460	3	60				●	0-300			●	
MUP-NE-B3-1,2	COOLING TOWER MAKEUP PUMPS	2	253	1109	●	P.P.C.	3TUT9A-4	2		●	600	200	3600	460	3	60				●	0-500	●		●	
IP-NE-B3-1,2	IRRIGATION PUMPS	2	70	243	●	P.P.C.	2TU12A-2	2		●	350	15	1750	460	3	60			●	●	0-100			●	
NGP-NE-68-1,2	NATURAL GAS BOOSTER PUMP	2	20,000	15		ECLIPSE	AEO-5-5-20-15-35-SEQ-COM-N4	1			150	35	3600	460	3	60			●	●	0-30	●		●	
HWC-NE-B-1,2	HOT WATER CIRCULATION PUMP	2	10	15		B&G	SERIES 60	1			175	1/2	1750	460	3	60			●	●	0-100	●		●	

P.P.C. = Peerless Pump Co. (Packaged Pump Plant); B&G = BELL & GOSSETT

MATERIAL SCHEDULE

SYSTEMS (NOTE: 1) FOR ALL REQUIRED PRESSURE RATES SEE RISER DIAGRAM. 2) PROVIDE SUPPORTS AND RESTRAINTS AT BASE OF STACKS AND ALL OFFSETS. REFER TO DETAIL SHEET. 3) STARTING AT THE 4" FLOOR SLAB & BELOW & WHERE NOTED ON DRAWINGS.)	PIPE: C.I.	DUCTILE IRON AWWA C15	DURION A.R.C.I.	BLACK	GALVANIZED	C.T. "L"	C.T. "M"	D.I.W.P.	GLASS	POLYPROPYLENE P.P.	C.P.V.C. SCHEDULE 80	COPPER DWV	FITTINGS: C.I. NO-HUB	C.I. SOIL	STD. C.I. 175# W.W.P.	EX. H. C.I. 400# W.W.P.	D.I. (GROVED END)	STD. MALL. 300# W.W.P.	DURION A.R.C.I. 175# W.W.P.	CAST BRONZE 400# W.W.P.	POLYPROPYLENE P.P.	SOLDER FITTINGS	C.P.V.C. SCHEDULE 80	GALVANIZED	BLACK	GALVANIZED	VICTAULIC STYLE 31	JOINTS: THREADED	TOUGH 95-5	SOLDERED	S.S. COUPLING	BRAZED JOINTS	MECHANICAL JOINTS	SOLVENT WELDED
DRAINAGE (BURIED)	●												●																					●
VENTS (BURIED)	●												●																					●
SANITARY HOUSE DRAINS (SEE NOTE No. 2)	●												●																					●
LEADER DRAINS (SEE NOTE No. 2)	●												●																					●
SANITARY STACKS	●													●																			●	
SANITARY BRANCHES	●													●																			●	
LEADERS – STACKS	●												●																					●
LEADER RUNOUTS	●												●																					●
LEADER PIPING BELOW 4TH FL. SLAB		●															●																	●
VENTS	●													●												●								
C.W.						●																●						●						
PUMP DISCHARGE (HOUSE PUMP)							●													●											●			
H.W. AND H.W.C.						●																●								●				
NATURAL GAS SYSTEM (3" & SMALLER)		●		●																				●			●							
EJECTOR DISCHARGE		●			●													●							●							●		
SUMP DISCHARGE		●			●													●							●							●		
C.W. SERVICE									●																									
SANITARY HOUSE DRAINS & LEADER DRAINS	●												●																					●
SANITARY HOUSE DRAIN (ALTERNATE SEE NOTE # 3)		●															●										●							
SANITARY STACKS (6" & SMALLER)	●													●																			●	
SANITARY STACKS (6" & LAGER SEE NOTE # 2)	●												●																					●
STORM WATER COLLECTION SYSTEM		●			●										●												●							
COOLING TOWER PUMP DISCHARGE							●													●												●		
NATURAL GAS SYSTEM (4" & LARGER)		●		●																				●								●		

NON-PRESSURE VESSELS & PITS

DESIGNATION	NO. REQUIRED	LOCATION	CAL/STANK	SIZE	MATERIAL
COMBO HOUSE TANKS	2	ROOF	19,000	18'Dx12'H	WOOD
SUMP PIT #1	1	B LEVEL	----	5'x5'x9'D	CONCRETE
SUMP PIT #2	1	B1 LEVEL	----	5'x5'x9'D	CONCRETE
SUMP PIT #3	1	B3 LEVEL	----	5'x5'x9'D	CONCRETE
EJECTOR PIT #1	1	B LEVEL	----	5'x5'x9'D	CONCRETE
EJECTOR PIT #2	1	B3 LEVEL	----	5'x5'x9'D	CONCRETE
ELEVATOR SUMP PITS	3	B3 LEVEL	----	2'x2'x2'D	CONCRETE
FIRE RESERVE TANKS	2	ROOF	15,000	20'Dx7'6"H	WOOD
FIRE RESERVE TANKS	2	54TH FLOOR	15,000	10'8"x52'8"x13'6"H	CONCRETE
COMBO HOUSE TANKS	2	32ND FLOOR	17,500	13'9"x59'6"x9'10"H	CONCRETE
STORM DETENTION TANK	1	B3/B2 LEVEL	----	-----	CONCRETE
SAND INTERCEPTOR	1	B LEVEL	----	2'6'x5'x9'D	CONCRETE
SAND INTERCEPTOR	1	B3 LEVEL	----	2'6'x5'x9'D	CONCRETE

FIXTURE CONNECTION SCHEDULE

FIXTURES	S	W	V	HW	CW	RIM HT.
WALL HUNG FLUSH VALVE WATER CLOSET	4"	--	2"	--	1¼	1'-6"
SIPHON JET URINALS	--	2"	2"	--	1"	1'-5"
LAVATORIES	--	2"	2"	¾"	¾"	2'-10"
SLOP SINKS	--	3"	2"	¾"	¾"	--
DRINKING FOUNTAINS	--	2"	2"	--	½	3'-4"
SINKS	--	2"	2"	¾"	¾"	--

PRESSURE VESSELS AND HEATERS

EQUIPMENT TAG	EQUIPMENT	No. REQUIRED	MODEL	STORAGE WATER TEMP. (°F)	SIZE (GALS.)	SIZE	W.W.P.	TEST PRESSURE	SHELL THICKNESS	HEAD THICKNESS	BTU/HOUR/HEATER	kW	TEMP. RISE (°F)	PEAK FLOWRATE (GPM)	NOTES
DWH-NE-6 TO 67-1,2	ELECTRIC HOT WATER HEATER	140	HUBBEL 20 GAL.	140°	---	3"x5"	150	300			–	5	100°	–	(1) IN EACH CORE TOILET
DWH-NE-6 TO 67-3	ELECTRIC HOT WATER HEATER	70	HUBBEL 6 GAL.	140°	---	15"Dx18"H	150	300			–	1.5	100°	–	(1) IN EACH JANITOR'S CLOSET
DWH-NE-B-1,2	STEAM-FIRED HOT WATER HEATER	2	P.K. 06 S	--	---	---	150	300			750,000	–	100°	15	SERVING STREET PRESSURE ZONE
PT-NE-B-1	PNEUMATIC TANK	1	AMTROL WX-457C	60°	528	48x96H	125	225			–	–	–	–	B LEVEL
PT-NE-68-1	PNEUMATIC TANK	1	AMTROL WX-457C	60°	528	48x96H	125	225			–	–	–	–	68TH FLOOR (MER)

P.K.: PATTERSON KELLEY (PROVIDE A LEAK DETECTION SYSTEM FOR THE WATER HEATERS TO BE PLACED ON FLOOR BENEATH WATER HEATERS. CONNECT LEAK DETECTION SYSTEM TO BMS.)
NOTE: PROVIDE HOLBY TEMPERING VALVE AT EACH SET OF H.W. HEATERS

PLUMBING FIXTURES SCHEDULE

ID#	FIXTURE TYPE	LOCATION	SIZE	MANUFACTURER	MODEL #	FAUCET / FLUSHOMETER / VALVE	NOTES
P-1	TOILET - PUBLIC	CORE TOILET ROOMS	1.28 GPF	AMERICAN STANDARD	AFWALL 3351.001	TOTO TET1LN32	WALL HUNG; TOP SPUD; ECOPOWER
P-1A	TOILET - PUBLIC	CORE TOILET ROOMS	1.28 GPF	AMERICAN STANDARD	AFWALL 3351.001	TOTO TET1LN32	WALL HUNG; TOP SPUD; ECOPOWER; MOUNTED AT ADA HEIGHT
P-2	URINAL - PUBLIC	CORE TOILET ROOMS	1/8 GPF	AMERICAN STANDARD	WASHBROOK FLOWISE 6590.001	TOTO TEU1UN12	TOP SPUD; EXPOSED AUTOMATIC FLUSH VALVE; ECOPOWER
P-2A	URINAL - PUBLIC	CORE TOILET ROOMS	1/8 GPF	AMERICAN STANDARD	WASHBROOK FLOWISE 6590.001	TOTO TEU1UN12	TOP SPUD; EXPOSED AUTOMATIC FLUSH VALVE; ECOPOWER; MOUNTED AT ADA HEIGHT
P-3	LAVATORY - PUBLIC	CORE TOILET ROOMS	0.17 GPC	AMERICAN STANDARD	OVALYN 9482.000	TOTO TEL5GG10 W/ TH559EDV432	SELF-CLOSING; UNDERCOUNTER MOUNT SINK; THERMAL MIXING FAUCET; LAMINAR FLOW; 1 GPM W/ 10 SEC CYCLE
P-3A	LAVATORY - PUBLIC	CORE TOILET ROOMS	0.17 GPC	AMERICAN STANDARD	OVALYN 9482.000	TOTO TEL5GG10 W/ TH559EDV432	SELF-CLOSING; UNDERCOUNTER MOUNT SINK; THERMAL MIXING FAUCET; MOUNTED AT ADA HEIGHT; LAMINAR FLOW; 1 GPM W/ 10 SEC CYCLE
P-4	MOP SINK	JANITOR CLOSET	---	JUST MANUFACTURING	C-2523	FIAT 830-AA	STAINLESS STEEL
P-7	SHOWER	LOCKER ROOMS	1.5 GPM	MOEN	52716EP15	MOEN 8370 MIXING VALVE	FIXED SHOWERHEAD
P-7A	SHOWER	LOCKER ROOMS ADA STALL BOH ADA LOCATIONS	1.5 GPM	MOEN	52236GBM15	MOEN 8370 MIXING VALVE	MOUNTED AT ADA HEIGHT
P-8	PANTRY SINK	BREAK ROOMS	1.5 GPM	ELKAY	LR2022	ELKAY LKE4121	DROP IN SINK; SINGLE LEVER MANUAL FAUCET

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SHEET NOTES

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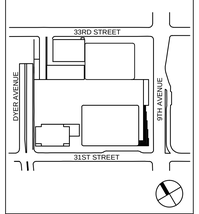

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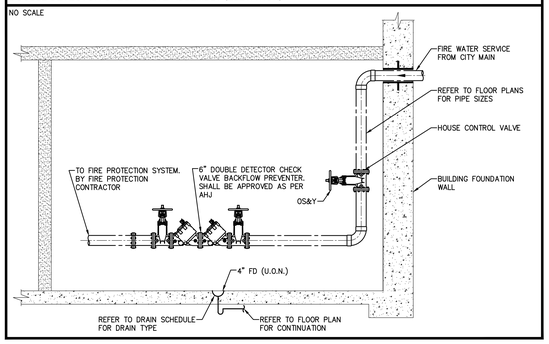
DOUBLE DETECTOR CHECK VALVE ASSEMBLY (ELEVATION)

NO SCALE



FLOOR CLEANOUT DETAIL

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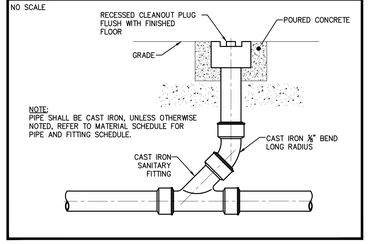
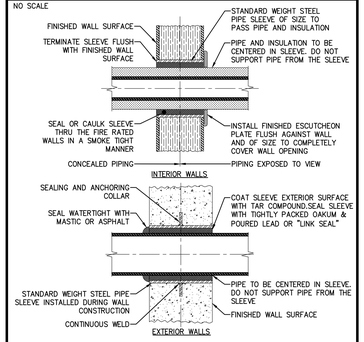


NOTE:
PIPE SHALL BE CAST IRON, UNLESS OTHERWISE NOTED, REFER TO MATERIAL SCHEDULE FOR PIPE AND FITTING SCHEDULE.

TYPICAL PIPE SLEEVES THROUGH WALL

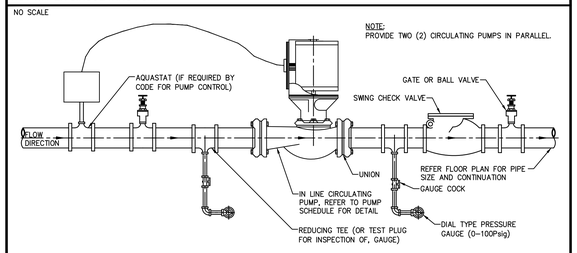
NO SCALE



NOTES:
1. PIPE SLEEVE FOR EXTERIOR WALL ABOVE OR BELOW GRADE.
2. FOR GAS SERVICE, EXTEND SLEEVE 1" PAST INSIDE FACE OF & 4" PAST OUTSIDE FACE OF WALL.
3. THE CAULK IS FORCED INTO THE ANNULAR SPACE TO THE MAXIMUM EXTENT POSSIBLE FLUSH WITH THE EXTERIOR OF THE PENETRATION SURFACE.
4. FINISH CAULKING WITH A 1/4" MINIMUM BEAD OF CAULK APPLIED TO THE PERIMETER OF THE PIPE AT ITS EGRESS FROM THE WALL.
5. THE MAXIMUM ANNULAR SPACE IS NOT TO EXCEED 3/16".
6. INSTALL FIRESTOP ON BOTH SIDES OF WALL.
7. INSTALLATION MUST CONFORM WITH PRODUCT MANUFACTURERS PERFORMANCE RATINGS PER ASTM E-814 (UL 1479) FIRE TEST AND UL RESPECTIVE CLASSIFICATION FOR FIRE STOPPING.
8. ACOUSTICAL SEALANT SHALL NOT BE USED TO SEAL PENETRATION. USE APPROVED FIRESTOP IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

HOT WATER CIRCULATING PUMP

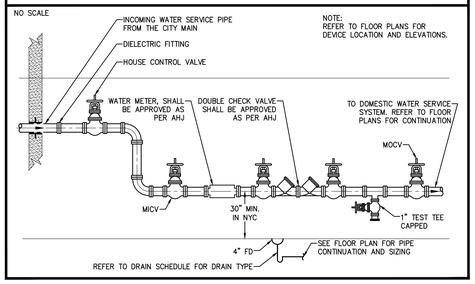
NO SCALE



NOTE:
PROVIDE TWO (2) CIRCULATING PUMPS IN PARALLEL.

NEW SERVICE BACKFLOW PREVENTOR ARRANGEMENT

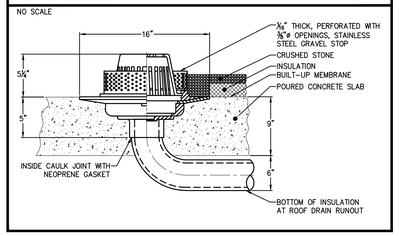
NO SCALE



NOTE:
REFER TO FLOOR PLANS FOR DEVICE LOCATION AND ELEVATIONS.

ROOF DRAIN DETAIL

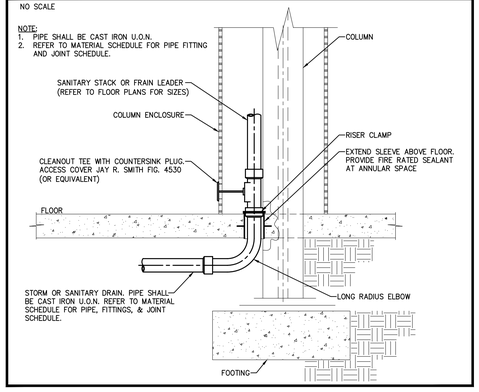
NO SCALE



DETAIL OF LEADER OR SANITARY STACK BASE W/ CLEANOUT AND ACCESS COVER AT WALL.

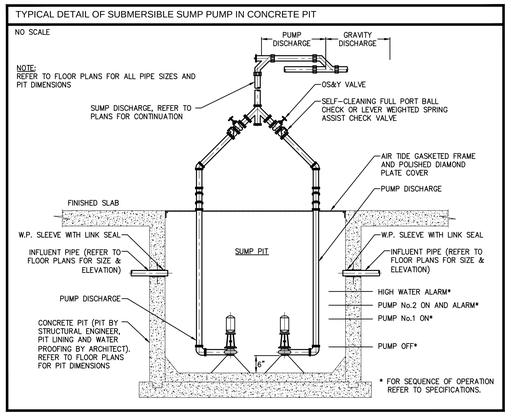
NO SCALE

NOTE:
1. PIPE SHALL BE CAST IRON U.O.N.
2. REFER TO MATERIAL SCHEDULE FOR PIPE FITTING AND JOINT SCHEDULE.



TYPICAL DETAIL OF SUBMERSIBLE SUMP PUMP IN CONCRETE PIT

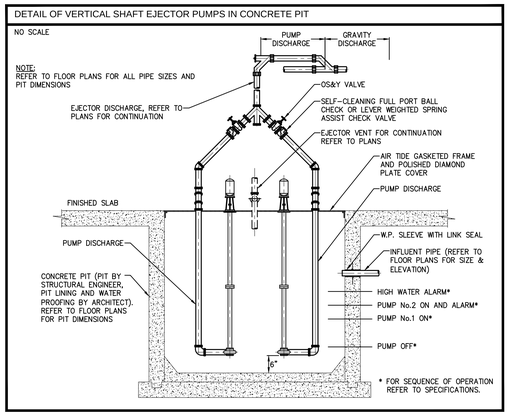
NO SCALE



NOTE:
REFER TO FLOOR PLANS FOR ALL PIPE SIZES AND PIT DIMENSIONS

DETAIL OF VERTICAL SHAFT EJECTOR PUMPS IN CONCRETE PIT

NO SCALE

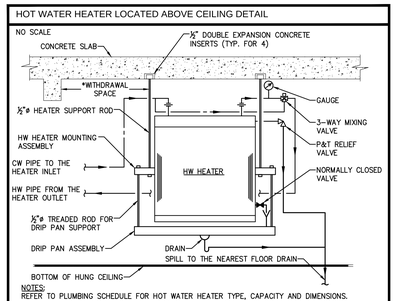


NOTE:
REFER TO FLOOR PLANS FOR ALL PIPE SIZES AND PIT DIMENSIONS

EJECTOR DISCHARGE, REFER TO PLANS FOR CONTINUATION

HOT WATER HEATER LOCATED ABOVE CEILING DETAIL

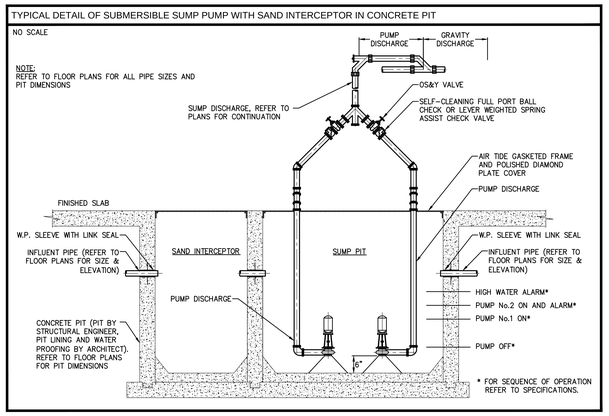
NO SCALE



NOTES:
REFER TO PLUMBING SCHEDULE FOR HOT WATER HEATER TYPE, CAPACITY AND DIMENSIONS.
REFER TO FLOOR PLAN FOR HOT AND COLD WATER PIPING SIZES.
* MINIMUM DISTANCE FOR WITHDRAWAL SPACE DEPENDENT ON HEATER TYPE AND DIMENSIONS.

TYPICAL DETAIL OF SUBMERSIBLE SUMP PUMP WITH SAND INTERCEPTOR IN CONCRETE PIT

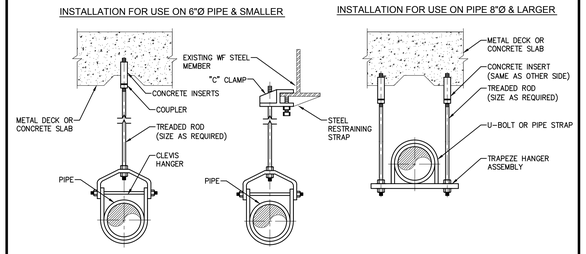
NO SCALE



NOTE:
REFER TO FLOOR PLANS FOR ALL PIPE SIZES AND PIT DIMENSIONS

PIPE HANGER DETAILS

NO SCALE

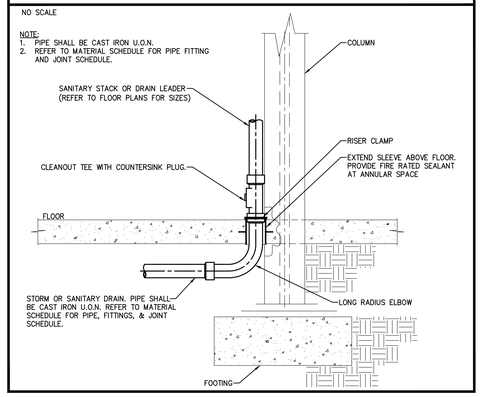


NOTES:
1. HANGER SPACING AND SIZING SHALL BE AS PER SPECIFICATION.
2. SINGLE CONCRETE ANCHOR MAY BE USED ON PIPE 6" & SMALLER.
3. CONCRETE ANCHOR SPACING SHALL NOT EXCEED 10 FEET APART FOR ALL PIPING 4" & LARGER.

DETAIL OF LEADER OR SANITARY STACK BASE W/ CLEANOUT.

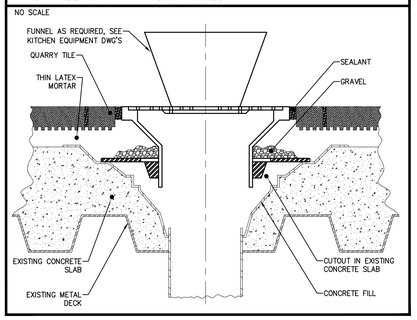
NO SCALE

NOTE:
1. PIPE SHALL BE CAST IRON U.O.N.
2. REFER TO MATERIAL SCHEDULE FOR PIPE FITTING AND JOINT SCHEDULE.



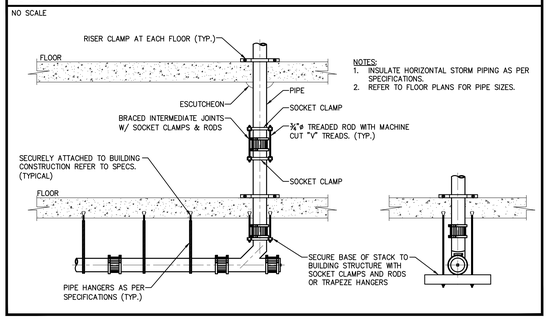
TYPICAL FLOOR DRAIN IN THIN SET TILE FLOOR

NO SCALE



NO-HUB PIPE BRACING FOR SANITARY & STORM PIPING

NO SCALE



NOTES:
1. INSULATE HORIZONTAL STORM PIPING AS PER SPECIFICATIONS.
2. REFER TO FLOOR PLANS FOR PIPE SIZES.

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SHEET NOTES

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Ducibella, Ventor & Santore
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Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant
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Code Consultant
Code Consultants Professional Engineers PC
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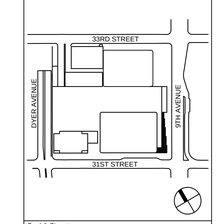
Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



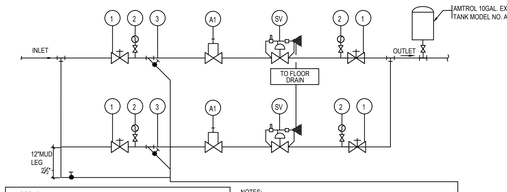
Seal & Signature:

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

PLUMBING DETAILS - SHEET 1

Project No.: 14830.A
Date: 20 DEC 2013
Scale: NTS
File No.: P-600
B-SCAN Sheet No.: P-600.00
Sheet No.: P-600
Page No.: 61 OF 62



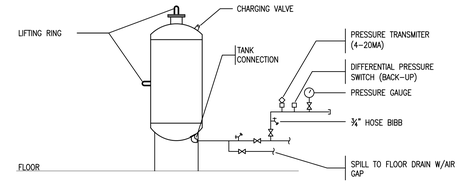
LEGEND
1 = ISOLATION VALVE
2 = PRESSURE GAUGE SHOWING INLET & OUTLET PRESSURES
3 = BRONZE Y STRAINER, 300S, FIG 352, PERF SS STRAINER
4 = PRESSURE GAUGE MEASURES PRESSURE DROP ACROSS "Y" STRAINER & PRV (GLYCERIN FILLED), 4-1/2" DIAL 0-400PSI
5 = PRESSURE REDUCING VALVE, JRG NO. 132B KKHI 150 LB SCRD, BBSST, 7-28 PSI SPRING RANGE
6 = EXCESS PRESSURE SAFETY VALVE, CLA-VAL 50G-33KKHIFS 150F, BB, BBST, 20-200 PSI, PROVIDE WITH F61KD FLOW SWITCH

NOTES:
1. REFER TO PRESSURE REDUCING VALVE SCHEDULE BELOW FOR VALVE SIZES & OUTLETS PRESSURES.
2. PIPE ALL BLOW-OFFS AND DRAINS TO SAFE WASTE.
3. ALL "SV" VALVES SHOULD BE WIRED IN PARALLEL WITH (1) COMMON SET OF WIRES CONNECTED TO BUILDING ALARM PANEL FOR EACH RIG LOCATION.
4. PIPE VALVE "SV" BLOW-OFF TO SAFE WASTE.
5. ALL ELECTRICAL WORK BY OTHERS.
6. PROVIDE SIGNAGE ON STRAINER & MUD LEG BLOW-OFF'S INDICATING "CAUTION- HIGH PRESSURE"

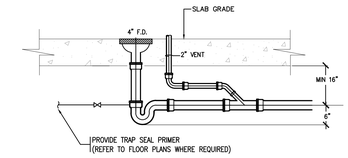
PRESSURE REDUCING VALVE SCHEDULE

PRV RIG NO.	MAX. GPM	INLET PRESSURE (P.S.I)	PRV "A1"		SV	SAFETY VALVE SIZES BY PRV RUNG	FLOORS SERVED	LOCATION	COMMENTS
			SIZE	OUTLET PRESSURE (P.S.I)	SAFETY VALVE SET POINT (PSI)				
Z-2	300	87	4"	30	33	4"	4-14	14TH FLOOR	
Z-4	300	197	4"	30	33	4"	25-32	32ND FLOOR	
Z-5	300	138	4"	30	33	4"	33-42	42ND FLOOR	
Z-6	300	86	4"	30	33	4"	43-51	51ST FLOOR	

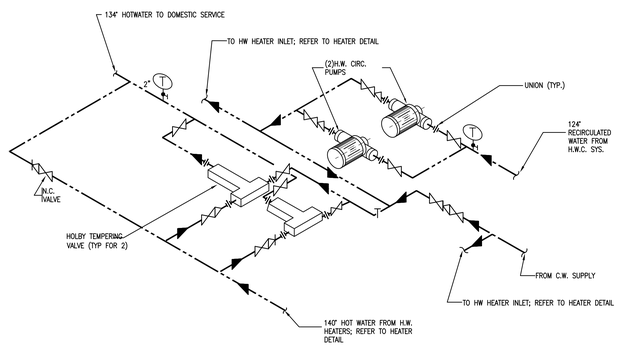
PRV STATION DETAIL
(NOT TO SCALE)



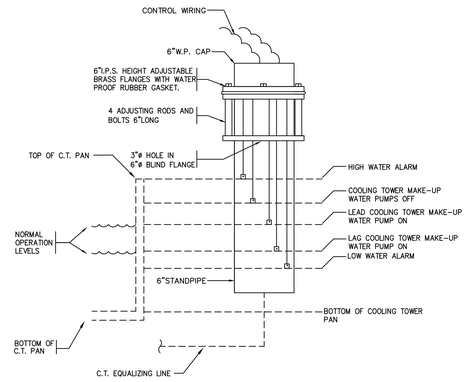
PNEUMATIC TANK DETAIL
(NTS)



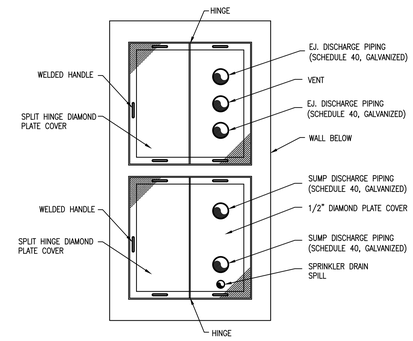
TYPICAL FLOOR DRAIN ELEVATION DETAIL
(NOT TO SCALE)

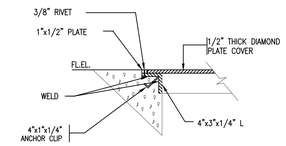


HOLBY VALVE AND CIRCULATING PUMP PIPING ARRANGEMENT
(NOT TO SCALE)



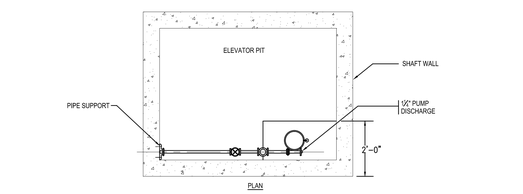
COOLING TOWER WATER MAKE-UP CONTROL DETAIL
NO SCALE

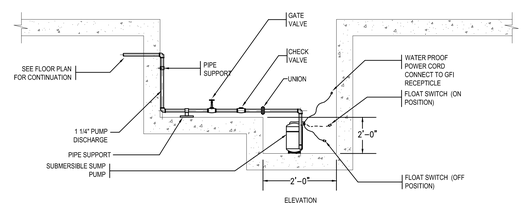




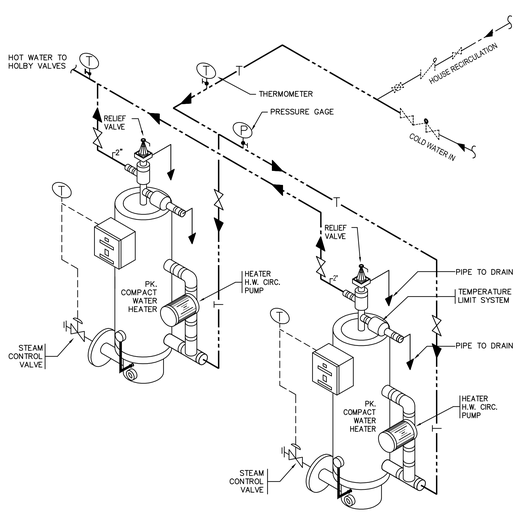
DETAIL OF PIT FRAME + COVER
(NOT TO SCALE)

NOTE:
OPENINGS IN COVERS SHALL BE PROVIDED AS REQUIRED BY APPROVED PUMP SUBMITTALS.



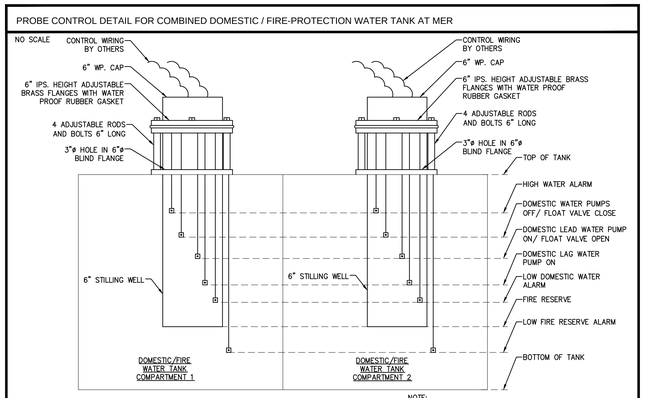


ELEVATOR SUMP PUMP DETAIL
(NOT TO SCALE)



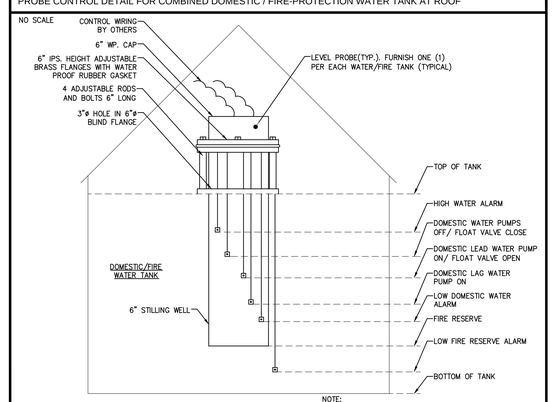
HOT WATER HEATER PIPING ARRANGEMENT
(NOT TO SCALE)

PROBE CONTROL DETAIL FOR COMBINED DOMESTIC / FIRE-PROTECTION WATER TANK AT MER



NOTE:
REFER TO PLAN DRAWINGS FOR ALL DIMENSIONS AND SIZES.

PROBE CONTROL DETAIL FOR COMBINED DOMESTIC / FIRE-PROTECTION WATER TANK AT ROOF



NOTE:
REFER TO PLAN DRAWINGS FOR ALL DIMENSIONS AND SIZES.

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Sustainable Design
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65 Broadway, Suite 401, New York, NY 10006

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Code Consultants Professional Engineers PC
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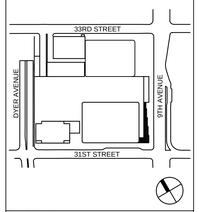
Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR 00 PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:
PLUMBING DETAILS - SHEET 2

Project No.: 14830.A	B-SCAN Sheet No.: P-601.00
Date: 20 DEC 2013	Sheet No.: P-601
Scale: NTS	
File No.: P-601	Page No.: 62 OF 62

21 00 - Fire Protection Sheet Matrix

Sheet Number	Sheet Name	Issue Dates: DD PROGRESS	Issue Dates: Issued for Foundation Permit
000 - Cover Sheet, General Notes, Legends			
FP-001	FIRE PROTECTION DRAWING INDEX	●	●
FP-002	FIRE PROTECTION ABBREVIATIONS AND SYMBOLS LIST	●	●
100 - Floor Plans			
FP-099B1-A	FIRE PROTECTION CELLAR B1 FLOOR PLAN - PART A	●	●
FP-100B-A	FIRE PROTECTION CELLAR B FLOOR PLAN - PART A	●	●
FP-100B-B	FIRE PROTECTION CELLAR B FLOOR PLAN - PART B	●	●
FP-101-A	FIRE PROTECTION GROUND FLOOR PLAN - PART A	●	●
FP-101-B	FIRE PROTECTION GROUND FLOOR PLAN - PART B	●	●
FP-102	FIRE PROTECTION LEVEL 2 FLOOR PLAN - RETAIL	●	●
FP-103	FIRE PROTECTION LEVEL 3 FLOOR PLAN - STAIR TRANSFER	●	●
FP-104	FIRE PROTECTION LEVEL 4 FLOOR PLAN - MECHANICAL	●	●
FP-105	FIRE PROTECTION LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE	●	●
FP-106	FIRE PROTECTION LEVEL 6-16 FLOOR PLAN - TYPICAL LOW-RISE	●	●
FP-117	FIRE PROTECTION LEVEL 17 FLOOR PLAN - LOW-RISE	●	●
FP-118	FIRE PROTECTION LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN	●	●
FP-119	FIRE PROTECTION LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR	●	●
FP-121	FIRE PROTECTION LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE	●	●
FP-128	FIRE PROTECTION LEVEL 28 FLOOR PLAN - LOW-RISE & MIDE-RISE	●	●
FP-129	FIRE PROTECTION LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN	●	●
FP-130	FIRE PROTECTION LEVEL 30 FLOOR PLAN - MID-RISE EMR	●	●
FP-131	FIRE PROTECTION LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM	●	●
FP-132	FIRE PROTECTION LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK	●	●
FP-133	FIRE PROTECTION LEVEL 33-38 FLOOR PLAN - TYPICAL MID-RISE	●	●
FP-139	FIRE PROTECTION LEVEL 39 FLOOR PLAN - MID-RISE	●	●
FP-140	FIRE PROTECTION LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN	●	●
FP-142	FIRE PROTECTION LEVEL 42 FLOOR PLAN - MID-RISE EMR	●	●
FP-143	FIRE PROTECTION LEVEL 43-48 FLOOR PLAN - TYPICAL MID-RISE	●	●
FP-149	FIRE PROTECTION LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE	●	●
FP-150	FIRE PROTECTION LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN	●	●
FP-152	FIRE PROTECTION LEVEL 52 FLOOR PLAN - HIGH-RISE EMR	●	●
FP-153	FIRE PROTECTION LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM	●	●
FP-154	FIRE PROTECTION LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK	●	●
FP-155	FIRE PROTECTION LEVEL 55 FLOOR PLAN - HIGH-RISE	●	●
FP-156	FIRE PROTECTION LEVEL 56 FLOOR PLAN - HIGH-RISE	●	●
FP-157	FIRE PROTECTION LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE	●	●
FP-159	FIRE PROTECTION LEVEL 59 FLOOR PLAN - HIGH-RISE	●	●
FP-160	FIRE PROTECTION LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN	●	●
FP-162	FIRE PROTECTION LEVEL 62 FLOOR PLAN - HIGH-RISE EMR	●	●
FP-163	FIRE PROTECTION LEVEL 63 FLOOR PLAN - HIGH-RISE	●	●
FP-164	FIRE PROTECTION LEVEL 64-67 FLOOR PLAN - TYPICAL HIGH-RISE	●	●
FP-168	FIRE PROTECTION LEVEL 68 FLOOR PLAN - MECHANICAL	●	●
FP-169	FIRE PROTECTION LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE	●	●
FP-170	FIRE PROTECTION ROOF PLAN - MECHANICAL PENTHOUSE	●	●
200 - Sprinkler Plans			
FP-199B1-A	FIRE PROTECTION CELLAR B1 FLOOR SPRINKLER PLAN - PART A	●	●
FP-200B-A	FIRE PROTECTION CELLAR B FLOOR SPRINKLER PLAN - PART A	●	●
FP-200B-B	FIRE PROTECTION CELLAR B FLOOR SPRINKLER PLAN - PART B	●	●
FP-201-A	FIRE PROTECTION GROUND FLOOR SPRINKLER PLAN - PART A	●	●
FP-201-B	FIRE PROTECTION GROUND FLOOR SPRINKLER PLAN - PART B	●	●
FP-202	FIRE PROTECTION LEVEL 2 FLOOR SPRINKLER PLAN - RETAIL	●	●
FP-203	FIRE PROTECTION LEVEL 3 FLOOR SPRINKLER PLAN - STAIR TRANSFER	●	●
FP-204	FIRE PROTECTION LEVEL 4 FLOOR SPRINKLER PLAN - MECHANICAL	●	●
FP-205	FIRE PROTECTION LEVEL 5 FLOOR SPRINKLER PLAN - MECHANICAL MEZZANINE	●	●
FP-206	FIRE PROTECTION LEVEL 6-27 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR	●	●
FP-228	FIRE PROTECTION LEVEL 28-48 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR	●	●
FP-249	FIRE PROTECTION LEVEL 49-67 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR	●	●
FP-268	FIRE PROTECTION LEVEL 68 FLOOR SPRINKLER PLAN - MECHANICAL MEZZANINE	●	●
FP-269	FIRE PROTECTION ROOF SPRINKLER PLAN - MECHANICAL PENTHOUSE	●	●
FP-270	FIRE PROTECTION ROOF SPRINKLER PLAN - MECHANICAL PENTHOUSE ROOF	●	●
400 - Risers & One Line Diagrams			
FP-400	FIRE PROTECTION RISER DIAGRAM SHEET 1	●	●
FP-401	FIRE PROTECTION RISER DIAGRAM SHEET 2	●	●
500 - Schedules			
FP-500	FIRE PROTECTION SCHEDULE SHEET	●	●
600 - Details			
FP-600	FIRE PROTECTION DETAIL SHEET	●	●

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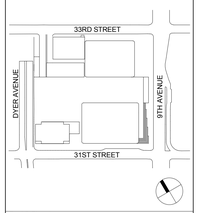
Key Plan:



Seal & Signature:

No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION DRAWING INDEX

Project No.: 14830.A.000
Date: 20 JUN 2014
Scale:
File No.: FP-001

Sheet No.: FP-001
B-SCAN Sheet No.: FP-001.00
Page No.:

SYMBOLS SCHEDULE

LINETYPES

- FIRE PROTECTION INCOMING SERVICE/STREET PRESSURE PIPING — F(S)
- FIRE STANDPIPE PIPING — F
- LOW PRESSURE FIRE DEPARTMENT CONNECTION — F(LP)
- HIGH PRESSURE FIRE DEPARTMENT CONNECTION — F(HP)
- VENTURI FLOW TEST METER — VFTM
- SPRINKLER MAIN PIPING — SP
- SPRINKLER BRANCH PIPING
- SPRINKLER BRANCH PIPING UNDER OBSTRUCTION
- SPRINKLER DRAIN PIPING — DR
- DRY SYSTEM SPRINKLER MAIN PIPING — D
- DRY SYSTEM SPRINKLER BRANCH PIPING

SPRINKLERS

- UPRIGHT/ PENDANT SPRINKLER HEAD
- CONCEALED SPRINKLER HEAD
- SPRINKLER UNDER OBSTRUCTION
- DRY UPRIGHT/ PENDANT SPRINKLER
- DRY SIDEWALL SPRINKLER HEAD

PLAN AND RISER SYMBOLS

- AUTOMATIC FIRE PUMP SHOWN IN PLAN
- JOCKEY PUMP SHOWN IN PLAN
- AUTOMATIC FIRE/ JOCKEY PUMP SHOWN ON RISER
- SPRINKLER FLOOR CONTROL ASSEMBLY
- WATER FLOW DETECTOR
- WATER METER — M
- HEAT TRACED PIPE — F
- 4-WAY ROOF MANIFOLD
- FIRE HOSE VALVE
- FIRE DEPT. CONNECTION (WALL MOUNTED)
- FIRE DEPT. CONNECTION (FREE STANDING)
- SIGHT GLASS
- PIPE SLEEVE
- PIPE TURNING UP
- PIPE TURNING DOWN
- PIPE TAP
- CAPPED PIPE
- PIPE BREAK

VALVE BLOCKS

- NORMALLY OPEN VALVE ON HORIZONTAL
- NORMALLY CLOSED VALVE ON HORIZONTAL
- VALVE ON VERTICAL
- OS&Y VALVE ON HORIZONTAL
- OS&Y VALVE ON VERTICAL
- CHECK VALVE
- CHECK VALVE W/AUTOMATIC BALL DRIP
- PRESSURE REGULATING VALVE
- SOLENOID OPERATED VALVE
- ZONE CHECK VALVE
- PRESSURE RELIEF VALVE
- BACK FLOW PREVENTOR — BFP
- REDUCED PRESSURE DETECTOR ASSEMBLY — RPDA

DRY SYSTEM

- DRY PIPE VALVE — D

ANNOTATION SYMBOLS

- FIRE STANDPIPE RISER LABEL — F #
- SECTION/ DETAIL REFERENCE — # FP
- NODE FOR HYDRAULIC CALCULATIONS — #
- CENTER LINE SYMBOL
- DIRECTION OF LIQUID FLOW
- DIRECTION OF PUMPED LIQUID FLOW

ABBREVIATION SCHEDULE

ABD	AUTOMATIC BALL DRIP
A.C.	AIR CONDITIONING
ADJ.	ADJUSTABLE
A.F.F	ABOVE FINISHED FLOOR
A.F.P	AUTOMATIC FIRE PUMP
A.F.W.H.	ANTI-FREEZE WALL HYDRANT
A.P.	ACCESS PANEL
@	AT
BFP	BACKFLOW PREVENTER
BITUM.	BITUMINOUS
BLDG.	BUILDING
BLKHD.	BULKHEAD
B.O.P	BOTTOM OF PIPE
BOT.	BOTTOM
BR.	BRANCH
BSMT.	BASEMENT
CAB.	CABINET
C.B.	CATCH BASIN
CEM.	CEMENT(ITIOUS)
C.F.	CUBIC FEET
C.I.	CAST IRON
CLG.	CEILING
CLOS.	CLOSET
C.O.	CAPPED OUTLET
COL.	COLUMN
COMP'T	COMPLIMENT
CONC.	CONCRETE
CONF.	CONFERENCE
CORR.	CORRIDOR
CONST.	CONSTRUCTION
CON'T	CONTINUATION
CONV.	CONVECTOR
C.T.	COOLING TOWER
CV	CHECK VALVE
CW	COLD WATER
CWPD	COLD WATER PUMP DISCHARGE
DET.	DETAIL
DIAG.	DIAGONAL
DIAM.	DIAMETER
DIM.	DIMENSION
DN.	DOWN
DP	DRY PIPE VALVE
DR	DRAIN
DWG.	DRAWING
EA.	EACH
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMER.	EMERGENCY
E.M.R.	ELEVATOR MACHINE ROOM
ENCL.	ENCLOSURE
ENGR.	ENGINEER
ENTR.	ENTRANCE
E.O.S.	END/EDGE OF SLAB
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXH.	EXHAUST
EXP.	EXPRESS
EXP.JT.	EXPANSION JOINT
EXT.	EXTERIOR
F.A.I.	FRESH AIR INTAKE
FDN.	FOUNDATION
F.H.	FIRE HYDRANT
F.H.C.	FIRE HOSE CABINET
F.H.R.	FIRE HOSE RACK
F.H.V.	FIRE HOSE VALVE
FIN.	FINISH(ED)
FIN.FL	FINISH(ED) FLOOR
FIN.GR.	FINISHED GRADE
FL.	FLOOR
FPRF.	FIREPROOFING
F.P.S.C.	FIREPROOF SELF CLOSING
FS	FIRE SERVICE PIPE
F.S.P	FIRE STANDPIPE
FT.	FOOT, FEET
FTG.	FITTING
FXT.	FIXTURE
GA.	GAUGE
GALV.	GALVANIZED
G.C.	GENERAL CONTRACTING
GEN.	GENERAL
GR.	GRADE
HGT.	HEIGHT
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
HR.	HOUR
HTG.	HEAT(ING)
HTR.	HEATER
H.V.A.C.	HEATING, VENTILATION & AIR-CONDITIONING
I.D.	INSIDE DIAMETER
I.E.	INVERT ELEVATION
INSUL.	INSULATION
JAN.	JANITOR
JAN.CL.	JANITOR'S CLOSET
JP	JOCKEY PUMP
LAB.	LABORATORY
L.P.	LOW POINT
LVR.	LOUVER
MACH.	MACHINE
MAX.	MAXIMUM
MECH.	MECHANICAL
MEMB.	MEMBRANE
M.E.R.	MECHANICAL EQUIPMENT ROOM
MEZZ.	MEZZANINE
MFR.	MANUFACTURE
MH.	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTD.	MOUNTED
MTG.	MEETING
MTL.	METAL
N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
No.	NUMBER
N.O.	NORMALLY OPEN
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OFF.	OFFICE
OPNG.	OPENING
OPP.	OPPOSITE
OVHD.	OVERHEAD
PA	PREACTION
PAN.	PANEL
PAV	PREACTION VALVE
P.E.	PASSENGER ELEVATOR
PERF.	PERFORATED
PL.	PLATE
PLAS.	PLASTER
PLBG.	PLUMBING
P.O.	PLUGGED OUTLET
POL.	POLISH(ED)
PR.	PAIR
PRV	PRESSURE REDUCING VALVE
PTN.	PARTITION
R.A.	RETURN AIR
R.C.V.	RISER CONTROL VALVE
REFR.	REFRIGERATOR
REINF.	REINFORCED
REQT'S	REQUIREMENTS
REV.	REVISED
RM.	ROOM
R.O.	ROUGH OPENING
R.V.	RELIEF VENT
SCHED.	SCHEDULE
S.E.	SERVICE ELEVATOR
SECT.	SECTION
SHT.	SHEET
SIM.	SIMILAR (TO)
SLV.	SLEEVE
SPFCA	SPRINKLER FLOW CONTROL ASSEMBLY
SPR	SPRINKLER
SQ.	SQUARE
SQ.FT.	SQUARE FEET (#)
S.S.	STAINLESS STEEL
SSP	SPECIAL SERVICE FIRE PUMP
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
SYMM.	SYMMETRICAL
TEL.	TELEPHONE
TEMP.	TEMPORARY
TER.	TERRACE
THRU.	THROUGH
T.O.S.	TOP OF SLAB
T.T.B.	TIGHT TO BEAM
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
VEST.	VESTIBULE
V.O.	VALVED OUTLET
W.	WITH
WF.	WIDE FLANGE
W.P.	WATERPROOFING

NEW YORK CITY SPRINKLER NOTES

1. SPRINKLER SYSTEM CONFORMS TO NEW YORK CITY BUILDING CODE, CHAPTER 9, SECTION BC 901 AND APPENDIX Q, SECTIONS BC Q101 & BC Q102.
2. THE INSTALLATION, COMPONENTS, SIZING, SPACING, CLEARANCES, POSITION & TYPE OF SYSTEMS CONFORMS TO BC 903.3 & BC Q102, CHAPTER 6.
3. ONLY APPROVED DEVICES SHALL BE USED AS PER BC Q102, SECTION 6.1.1
4. SPRINKLERS SHALL BE PROTECTED AGAINST FREEZING & INJURY AS PER BC Q102, CHAPTER 8.
5. INSPECTIONS & TESTS OF SPRINKLER SYSTEMS SHALL BE CONDUCTED AS PER BC 901.5 & BC Q102, CHAPTER 18.
6. THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED SHALL BE IN ACCORDANCE WITH BC 903 & BC Q102, CHAPTER 5.
7. WATER SUPPLY TEST PIPES & GAUGES SHALL BE PROVIDED AS PER BC Q102, CHAPTER 5.
8. SPACING, LOCATION & POSITION OF SPRINKLERS SHALL BE IN ACCORDANCE WITH BC Q102, CHAPTER 8.
9. THERE IS NO HIGH PILED STORAGE AS DEFINED IN BC Q102, CHAPTER 12.
10. ALL PIPES PASSING THOUGH WALLS SHALL BE IN ACCORDANCE WITH BC 712.
11. DISTANCE OF SPRINKLERS FROM HEAT SOURCE SHALL BE AS PER TABLE 8.3.2.5(A) OF BC Q102.
12. ALL VALVES SHALL BE IDENTIFIED AS PER CHAPTER 6.7.4 OF BC Q102.
13. DRAINAGE SHALL CONFORM TO CHAPTER 8.15.2 OF BC Q102.
14. FITTINGS SHALL BE PROVIDED AS PER CHAPTER 6.4 OF BC Q102.
15. VALVES SHALL BE APPROVED TYPE AS PER CHAPTER 6.7 OF BC Q102.
16. PIPE HANGERS SHALL BE PROVIDED AS PER CHAPTER 9 OF BC Q102.
17. PROVISIONS SHALL BE MADE TO FACILITATE FLUSHING SYSTEM PIPING AS PER CHAPTER 8.14.16 OF BC Q102.
18. SPRINKLERS SHALL BE AN APPROVED TYPE AS PER CHAPTER 6.2 OF BC Q102.
19. TEMPERATURE RATING OF SPRINKLERS SHALL COMPLY WITH CHAPTER 6.2.5 OF BC Q102.
20. MINIMUM CLEARANCE OF 18" BELOW SPRINKLER DEFLECTORS SHALL BE MAINTAINED AS PER CHAPTER 8.5.5.3 OF BC Q102.
21. CONCEALED PIPING SHALL BE INSPECTED PRIOR TO BEING COVERED PER BC 901.5 AND NEW YORK CITY FIRE CODE, FC 106.
22. SPRINKLER SYSTEM ALARMS SHALL BE PROVIDED AS PER CHAPTER 6.9 & 8.6 OF BC Q102.
23. SPARE SPRINKLER HEADS AND WRENCH TO BE KEPT ON PREMISES AS PER CHAPTER 6.2.9 OF BC Q102.
24. ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN TO COMPLY WITH THE REQUIREMENTS OF BC 901 & BC Q102.
25. ALL SPRINKLER BRANCH PIPING SHALL BE A MINIMUM OF 1 INCH AS PER CHAPTER 8 OF BC Q102.
26. SPRINKLER HEADS ARE APPROVED UNDER BSA & MEA NUMBERS AS SHOWN ON SPRINKLER SCHEDULE.
27. WATER SUPPLIES TO SPRINKLER SYSTEM SHALL BE IN ACCORDANCE WITH BC Q102, CHAPTER 15.
28. SPRINKLER SYSTEM SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION BC 1704.21 OF THE NEW YORK CITY BUILDING CODE.
15. QUICK RESPONSE SPRINKLER HEADS SHALL NOT BE PERMITTED FOR USE IN EXTRA HAZARD OCCUPANCIES PER NFPA 13-2002 ITEM 8.4.1.2 & 11.2.3.2.2.2.
16. SPRINKLER HEADS IN LIGHT HAZARD OCCUPANCIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS AS APPLICABLE:
    - 16.1. HEADS SHALL BE QUICK RESPONSE TYPE PER NFPA 13-2002 ITEM 3.6.2.9
    - 16.2. HEADS IN RESIDENTIAL OCCUPANCY SHALL MEET NFPA 13-2002 ITEM 8.4.5
    - 16.3. HEADS FOR MODIFICATION OR ADDITION TO AN EXISTING SYSTEM EQUIPPED WITH STANDARD RESPONSE SPRINKLER HEADS SHALL MEET NFPA 13-2002 ITEM 8.3.3.1
17. QUICK RESPONSE SPRINKLER HEADS & STANDARD RESPONSE SPRINKLER HEADS SHALL NOT BE INTERMIXED WITHIN A COMPARTMENT PER NFPA 13-2002 ITEMS 8.3.3.2 & 11.2.3.2.3.4.
18. WHEN EXISTING LIGHT HAZARD SYSTEMS ARE CONVERTED TO USE QUICK RESPONSE HEADS, ALL SPRINKLERS IN A COMPARTMENT SPACE SHALL BE QUICK RESPONSE PER NFPA 13-2002 ITEM 8.3.3.4.
19. OCCUPANCY OF SPACE IS: LIGHT HAZARD PER BC 903.2 & CHAPTER 5 OF BC Q102.
20. SPRINKLER SYSTEM IS HYDRAULICALLY DESIGNED IN ACCORDANCE WITH CHAPTER 11 OF BC Q102. SPRINKLER SYSTEM IS DESIGNED TO 0.10 GPM/SQ.FT. OVER 1500 SQ. FT.

NEW YORK CITY FIRE STANDPIPE NOTES

1. FIRE STANDPIPE SYSTEM SHALL CONFORM TO NEW YORK CITY BUILDING CODE BC 905, CHAPTER 9, AND APPENDIX Q, SECTION BC Q105.
2. ALL DEVICES, VALVES, PIPE, AND FITTINGS SHALL BE OF AN APPROVED TYPE IN ACCORDANCE WITH BC Q105, CHAPTER 4.
3. HOSE OUTLETS SHALL BE PROVIDED ON EACH FLOOR AND LOCATED IN ACCORDANCE WITH BC 905.3.
4. THE MAXIMUM PRESSURE AT ANY POINT IN THE SYSTEM SHALL NOT EXCEED 350 PSI PER BC Q105, SECTION 7.2.
5. AUTOMATIC FIRE PUMP INSTALLATION SHALL BE IN CONFORMANCE WITH BC Q105, SECTION 9.1.2 & 9.1.4.
6. ALL PARTS OF THE FIRE STANDPIPE SYSTEM THAT MAY BE EXPOSED TO FROST SHALL BE PROTECTED FROM FREEZING AS PER BC Q105, 6.1.2.3.1.
7. INSPECTIONS AND TESTS SHALL BE IN ACCORDANCE WITH BC Q105, CHAPTER 11.
8. STANDPIPE SIGNAL SYSTEMS SHALL BE PER BC 907, 907.2.12.3.
9. THE ELEVATORS SHALL BE AVAILABLE FOR FIRE DEPARTMENT USE AS PER BC 3001, SECTIONS 3003.2 & 3003.3.
10. MATERIAL FOR THE FIRE STANDPIPE SYSTEM:
    - A. PIPE:
      PIPE SHALL BE ACCORDANCE WITH BC Q105, CHAPTER 4.
      PIPE FOR BURIED SERVICE SHALL BE IN ACCORDANCE WITH BC Q105, SECTION 4.2.2.
      THE NAME OF THE MANUFACTURER AND THE PRESSURE RATING TO WHICH THE PIPE WAS TESTED SHALL BE PERMANENTLY AND LEGIBLY INDICATED ON ALL PIPE USED IN THE SYSTEM.
      ONLY NEW PIPE SHALL BE USED IN THE STANDPIPE SYSTEM.
    - B. FITTINGS:
      FITTINGS USED IN STANDPIPE SYSTEMS SHALL BE PER BC Q105, SECTION 4.3.
      PRESSURE RATINGS SHALL BE CAST IN OR ON THE FITTINGS (SEE TABLE 4.3.1 FOR REQUIRED RATINGS).
      FITTINGS USED IN STANDPIPE SYSTEMS THAT ARE OF WELDED CONSTRUCTION SHALL BE OF A TYPE FOR WELDING PURPOSES CONFORMING TO TABLES 4.2.1 & 4.3.1.
      APPROVED MECHANICAL JOINT FITTINGS MAY BE USED IN THE STANDPIPE SYSTEM IN CONJUNCTION WITH COUPLINGS DESIGNED FOR USE WITH THE FITTINGS.
    - C. VALVES:
      VALVES AND RELATED PRODUCTS SHALL BE PER BC Q105, SECTION 4.5.
11. RISER CONTROL VALVES SHALL BE LOCATED IN THE STAIR ENCLOSURE AT THE ENTRANCE FLOOR PER BC Q105, SECTION 6.2.2.
12. THE HOSE VALVE OUTLET FOR THE ENTRANCE FLOOR SHALL BE LOCATED ON THE RISER SIDE OF THE RISER CONTROL VALVE.
13. THE RISER CONTROL VALVE SHALL BE CONSPICUOUSLY MARKED WITH A METAL TAG AT LEAST TWO (2") INCHES IN DIAMETER SECURELY ATTACHED TO THE VALVE, PER BC Q105, SECTION 6.2.2(6).
14. CHECK VALVES SHALL BE IN ACCORDANCE WITH BC Q105, SECTION 6.2.1.
15. PIPING IN STANDPIPE SYSTEMS SHALL BE ADEQUATELY SUPPORTED BY CLAMPS, HANGERS, OR OTHER APPROVED SUPPORTING DEVICES, AS PER BC Q105, SECTION 6.4.
16. FIRE DEPARTMENT CONNECTIONS SHALL BE PROVIDED WITH PAINTED CAPS IN ACCORDANCE WITH BC Q105, SECTION 4.8.2.1.
17. FIRE DEPARTMENT CONNECTIONS SHALL BE DESIGNED, CONSTRUCTED, AND LOCATED IN ACCORDANCE WITH BC Q105, SECTION 4.8.2.2.
18. FIRE DEPARTMENT CONNECTION MARKINGS SHALL BE IN ACCORDANCE WITH BC Q105, SECTION 6.3.5.2.
19. WATER SUPPLIES TO FIRE STANDPIPE SYSTEM SHALL BE IN ACCORDANCE WITH CHAPTER 9, BC Q105.
20. FIRE STANDPIPE SYSTEM SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION BC 1704.22 OF THE NEW YORK CITY BUILDING CODE.

FIRE PROTECTION GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. EXISTING PIPING WHERE SHOWN FOR VARIOUS SYSTEMS IS DIAGRAMMATIC ONLY.
3. BECOME THOROUGHLY FAMILIAR WITH ACTUAL EXISTING CONDITIONS AT THE BUILDING OF THE PRESENT INSTALLATIONS, INCLUDING LOCATIONS, SIZES, AND ELEVATIONS OF PIPING, TO WHICH CONNECTIONS MUST BE MADE OR WHICH MUST BE CHANGED OR ALTERED. THE INTENT OF THE WORK IS SHOWN ON THE DRAWINGS AND DESCRIBED HEREINAFTER, AND NO CONSIDERATION WILL BE GRANTED BY REASON OF LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR WITH ACTUAL PHYSICAL CONDITIONS AT THE SITE.
4. INSTALL ALL WORK IN FULL ACCORDANCE WITH THE REQUIREMENTS OF ALL LOCAL AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION OVER THESE MATTERS, AS WELL AS WITH ANY REQUIREMENTS OF THE NFPA, UL, AND OTHER APPLICABLE CODES. SECURE AND PAY FOR NECESSARY APPROVALS, PERMITS, INSPECTIONS, ETC., AND DELIVER THE OFFICIAL RECORDS OF THE GRANTING OF PERMITS TO THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.
5. PREPARE AND SUBMIT FOR APPROVAL MANUFACTURER'S SHOP DRAWINGS AND DATA FOR EQUIPMENT, AND DETAILED DRAWINGS OF ALL SPRINKLER PIPING WORK.
6. KEEP AN ACCURATE RECORD ON ALL DEVIATIONS BETWEEN WORK SHOWN ON DRAWINGS AND THAT WHICH IS ACTUALLY PERFORMED.
9. ALL FIRE PROTECTION VALVES SHALL HAVE TAMPER SWITCHES.
10. ALL FIRE PROTECTION OS&Y VALVES SIZE 6" & LARGER SHALL BE PROVIDED WITH A VALVED BYPASS.
14. ALL FIRESTOPPING MUST BE APPROVED PRODUCTS THAT ARE UL RATED.
15. ALL SPRINKLER HEADS TO BE INSTALLED SHALL BE NEW.
16. PROVIDE CAGES FOR ALL SPRINKLER HEADS LOCATED IN ELECTRIC ROOMS, IDF CLOSETS, AND SWITCHGEAR ROOMS.

NYC DOB SPECIAL INSPECTION NOTES

1. AN INDEPENDENT SPECIAL INSPECTOR SHALL BE RETAINED TO PERFORM SPECIAL INSPECTIONS AS WELL AS FILE FORM TR-1 FOR FIRE PROTECTION SYSTEMS DESIGN AS DOCUMENTED ON THESE PLANS IN ACCORDANCE WITH THE NYC BUILDING CODE.
2. SPECIAL INSPECTION REQUIRED FOR FIRE STANDPIPE SYSTEMS PER BC 1704.21.
3. SPECIAL INSPECTION REQUIRED FOR SPRINKLER SYSTEMS PER BC 1704.22.
4. SPECIAL INSPECTION REQUIRED FOR FIRESTOPPING PER BC 1704.25.

EQUIPMENT NAMING CONVENTION

EXAMPLE:

A F P - N E - G - 1

- EQUIPMENT NUMBER
- FLOOR LEVEL
- BUILDING LOCATION NORTHEAST TOWER
- EQUIPMENT TYPE AUTOMATIC FIRE PUMP

NYC PROFESSIONAL'S STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

FIRE PROTECTION ADD ALTERNATES

1. PROVIDE AUTOMATIC BREACH CONTROL VALVES (ABCV) ON ALL TANK & PUMP WATER SUPPLY CONNECTIONS TO STANDPIPES. REFER TO FP-400 & FP-401 FOR ADDITIONAL INFORMATION.
2. PROVIDE AUTOMATIC BREACH CONTROL VALVES (ABCV) ON ALL SPRINKLER RIG ASSEMBLIES. REFER TO FP-400 & FP-401 FOR ADDITIONAL INFORMATION.
3. PROVIDE PREACTION SPRINKLER SYSTEMS IN GENERATOR ROOMS ON THE 4TH & 5TH FLOORS IN LIEU OF DRY SPRINKLER SYSTEMS. EACH FLOOR SHALL HAVE INDIVIDUAL PREACTION VALVE, CONTROL PANEL, ALARMS, STROBES, & HEAT DETECTORS. FOR THE 4TH FLOOR, PROVIDE 20 HEAT DETECTORS. FOR THE 5TH FLOOR, PROVIDE 50 HEAT DETECTORS.

NYC DOB FILING NOTE

THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

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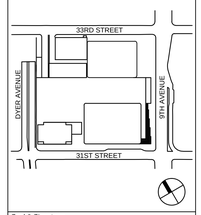
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION ABBREVIATIONS AND SYMBOLS LIST

Project No.: 14030.A.000	B-SCAN Sheet No.: FP-002.00
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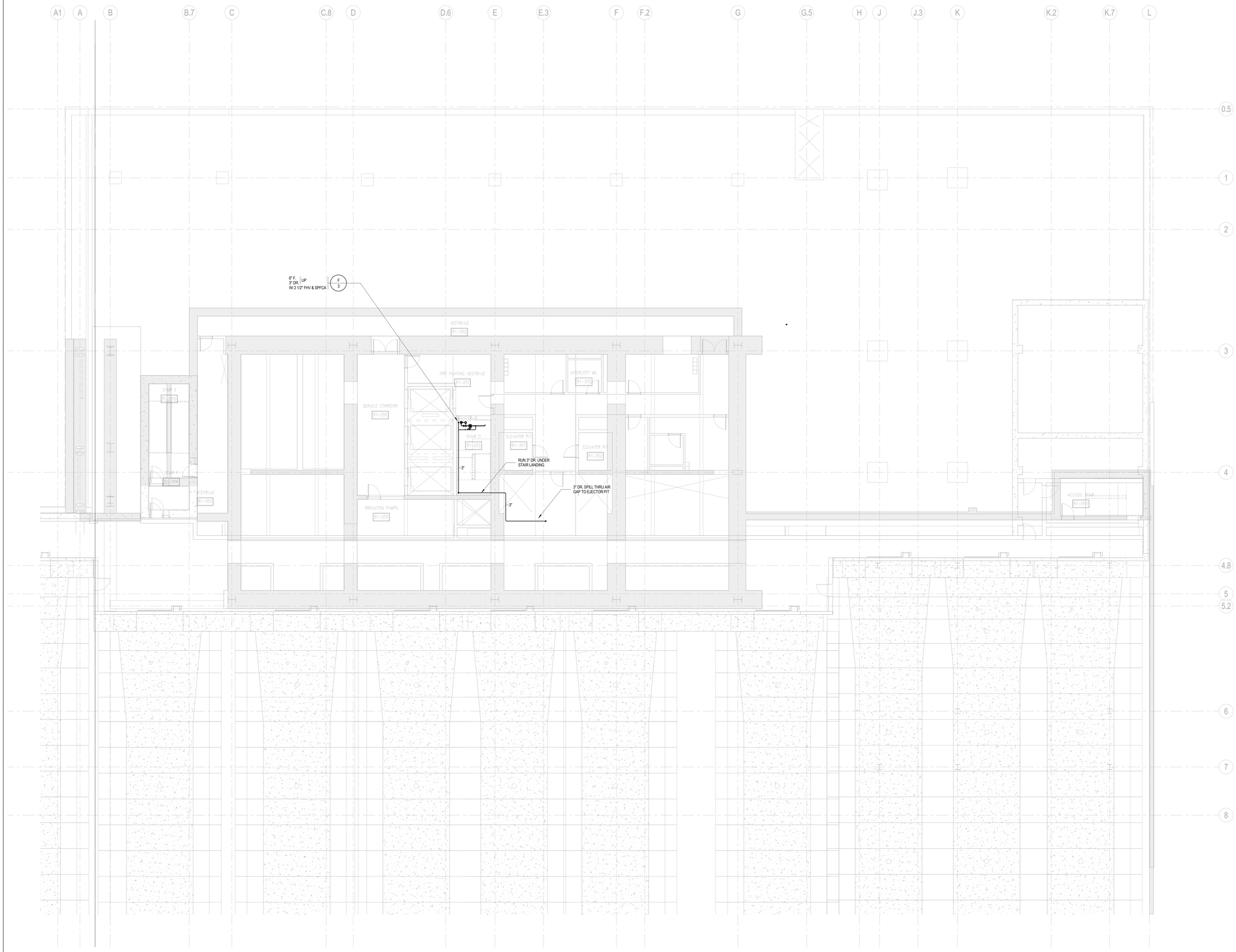

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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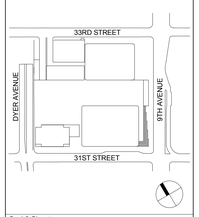
Ontario, Canada N1K 1B8

Key Plan:



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3	15 NOV 2013	ISSUED FOR GD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION CELLAR B1 FLOOR PLAN - PART A

Project No.: 14830.A.000	Sheet No.: FP-099B1-A
Date: 20 JUN 2014	
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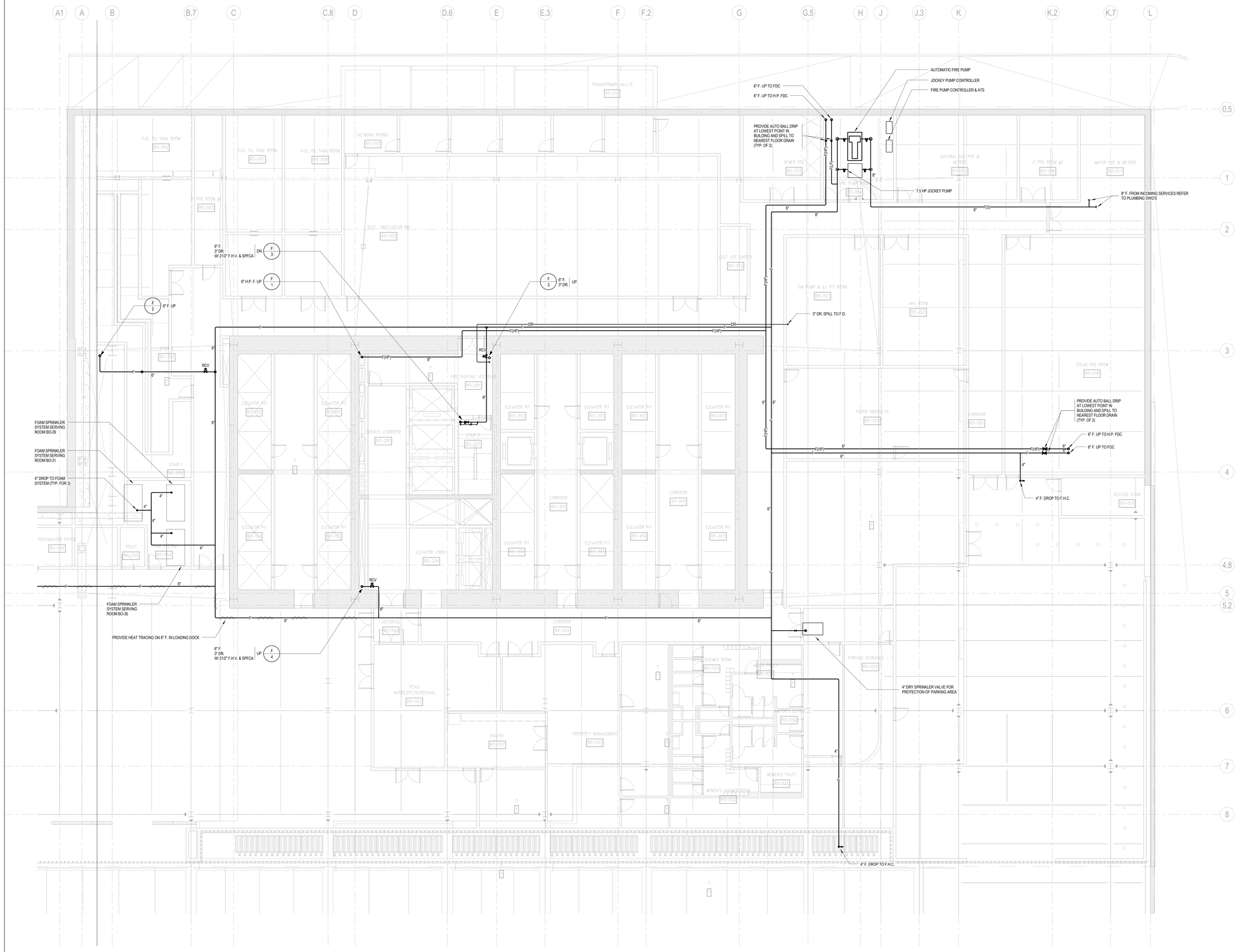

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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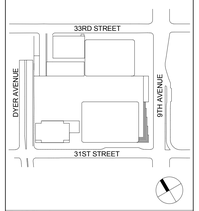
Key Plan:



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Sheet Name:

FIRE PROTECTION CELLAR B FLOOR PLAN - PART A

Project No.: 14830.A.000	Sheet No.: FP-100B-A
Date: 20 JUN 2014	B-SCAN Sheet No.: FP-098.00
Scale: 1/8" = 1'-0"	
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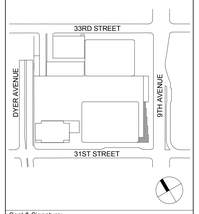

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Sheet Name:

FIRE PROTECTION CELLAR B FLOOR PLAN - PART B

Project No.: 14830.A.000	Sheet No.: FP-100B-B
Date: 20 JUN 2014	
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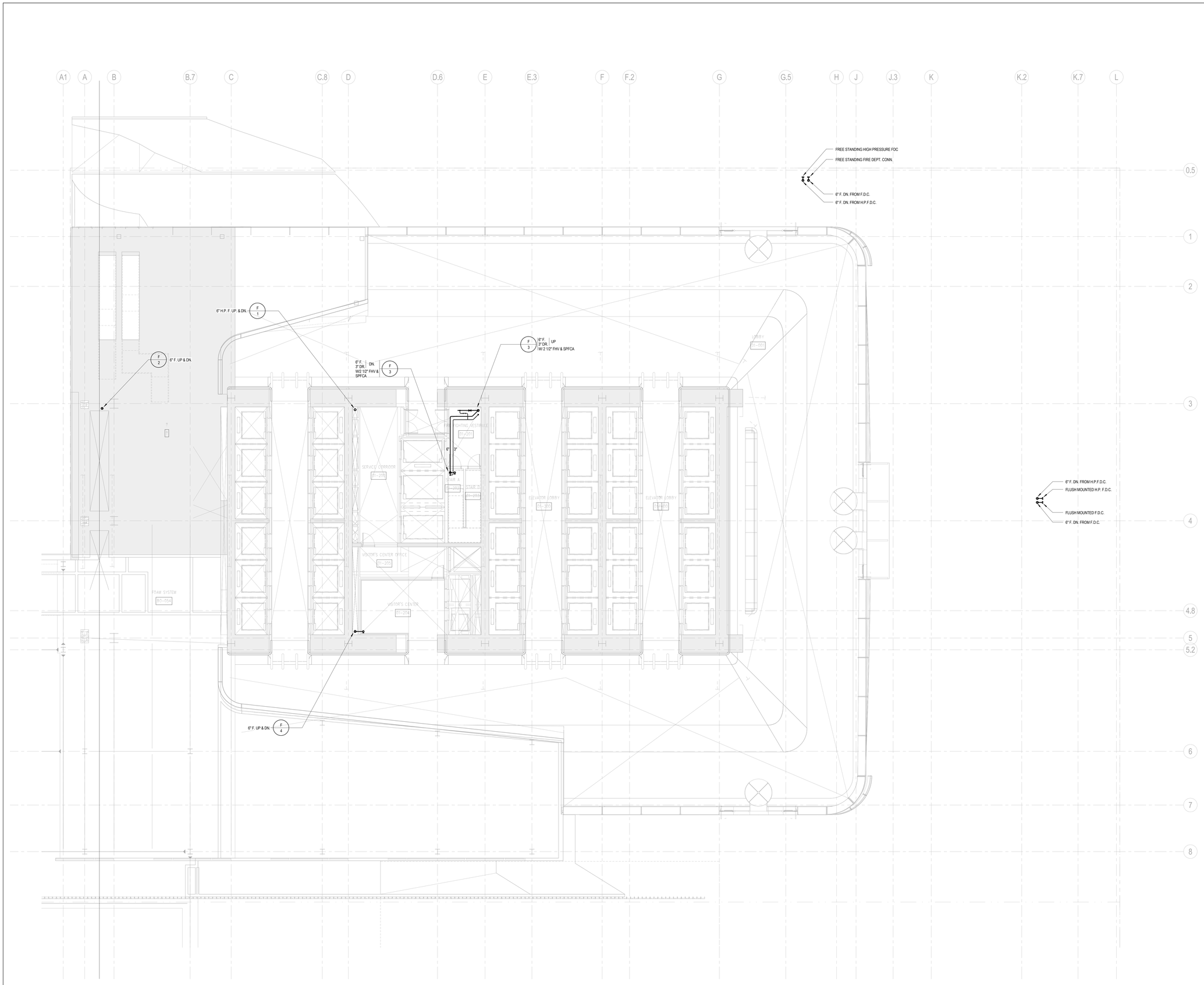

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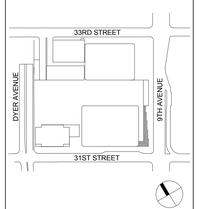

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Sheet Name:

FIRE PROTECTION GROUND FLOOR PLAN - PART A

Project No.: 14830.A.000	Sheet No.: FP-101-A
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-100.00
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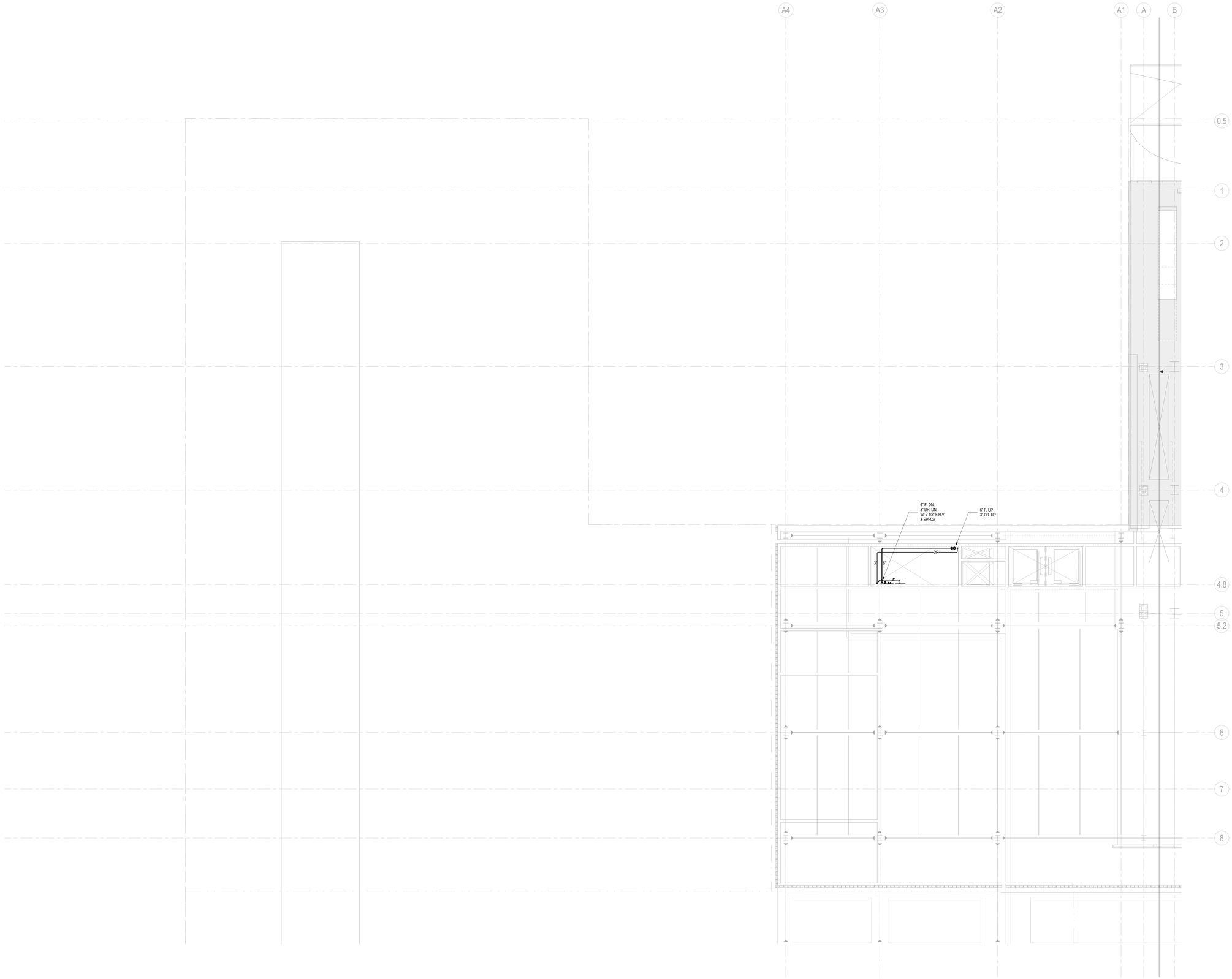

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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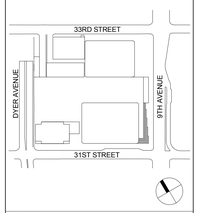
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION GROUND FLOOR PLAN - PART B

Project No.: 14830.A.000	Sheet No.: FP-101-B
Date: 20 JUN 2014	
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File No.: FP-101-B	Page No.:

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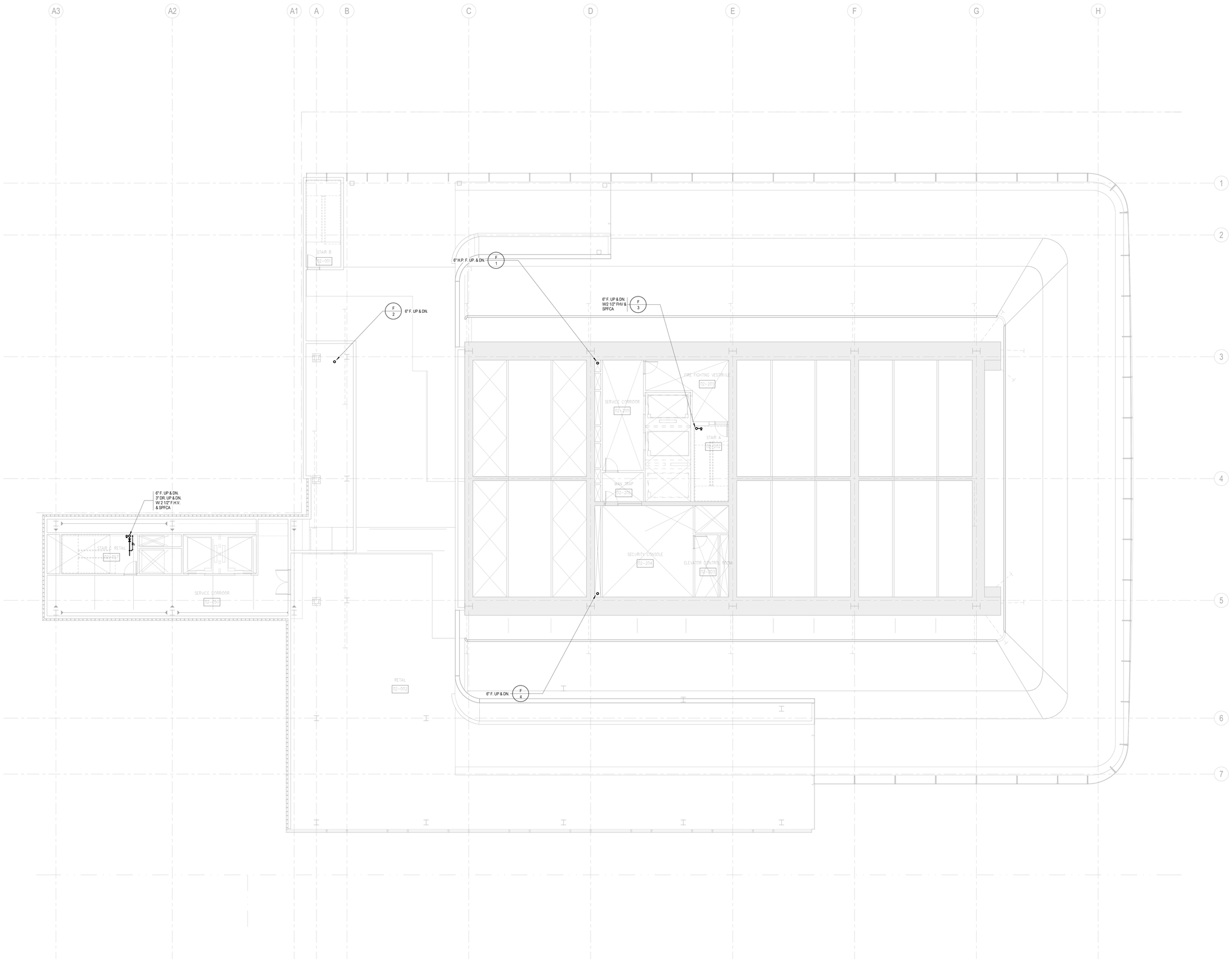

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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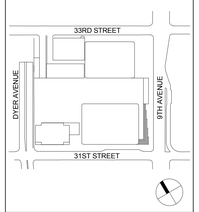
Key Plan:



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Sheet Name:

FIRE PROTECTION LEVEL 2 FLOOR PLAN - RETAIL

Project No.: 14830.A.000	Sheet No.: FP-102
Date: 20 JUN 2014	B-SCAN Sheet No.: FP-102.00
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File No.: FP-102	Page No.:

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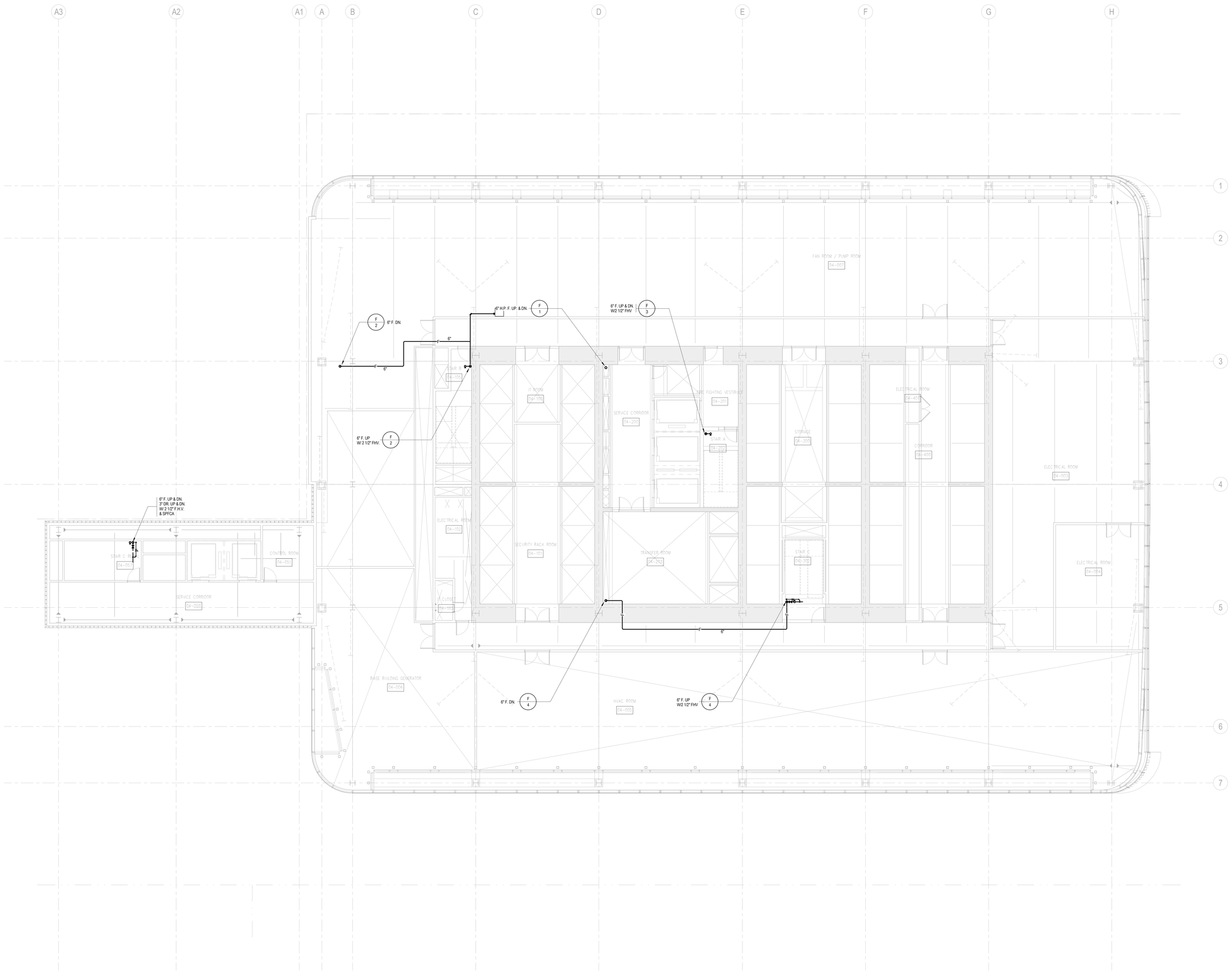

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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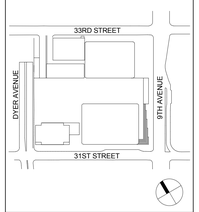

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2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR 00 PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 3 FLOOR PLAN - STAIR TRANSFER

Project No.: 14830.A.000	Sheet No.: FP-103
Date: 20 JUN 2014	B-SCAN Sheet No.: FP-103.00
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File No.: FP-103	Page No.:

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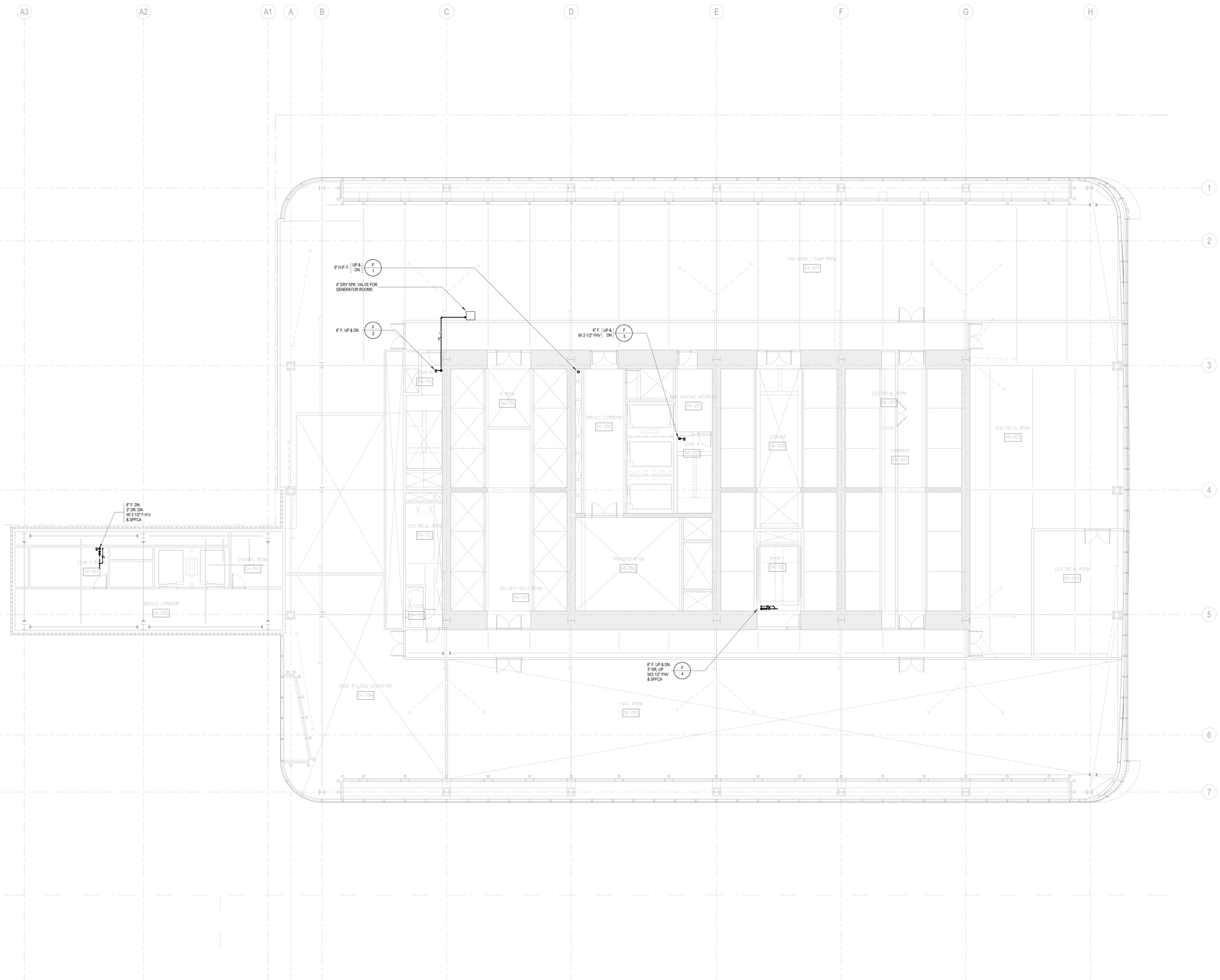

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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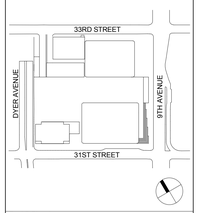

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Sheet Name:

FIRE PROTECTION LEVEL 4 FLOOR PLAN - MECHANICAL

Project No.: 14830.A.000	Sheet No.: FP-104
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-104.00
File No.: FP-104	Page No.:

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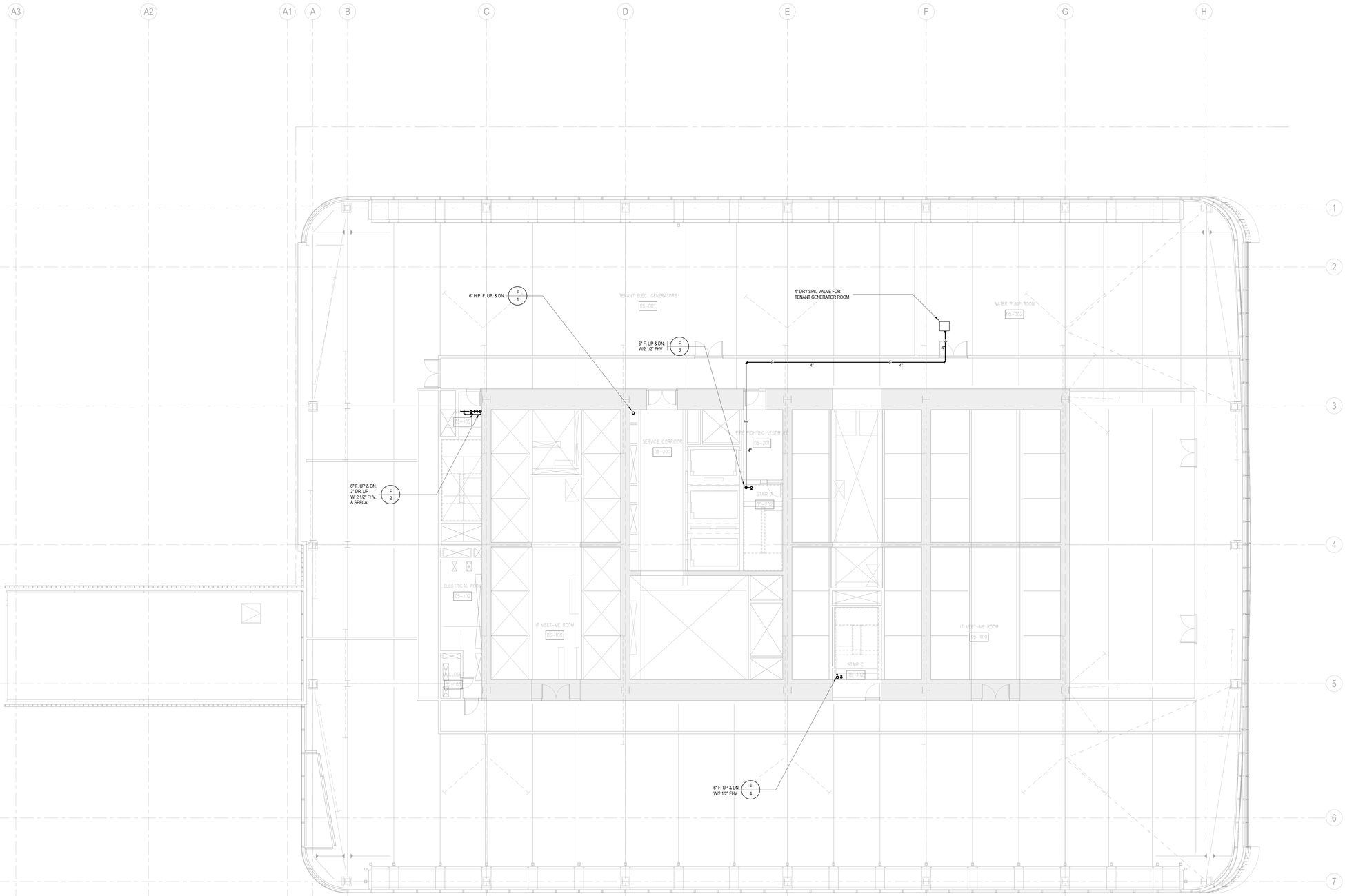

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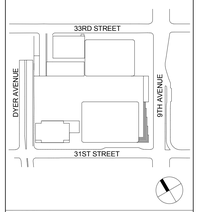
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 5 FLOOR PLAN - MECHANICAL MEZZANINE

Project No.: 14830.A.000	Sheet No.: FP-105
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-105.00
File No.: FP-105	Page No.:

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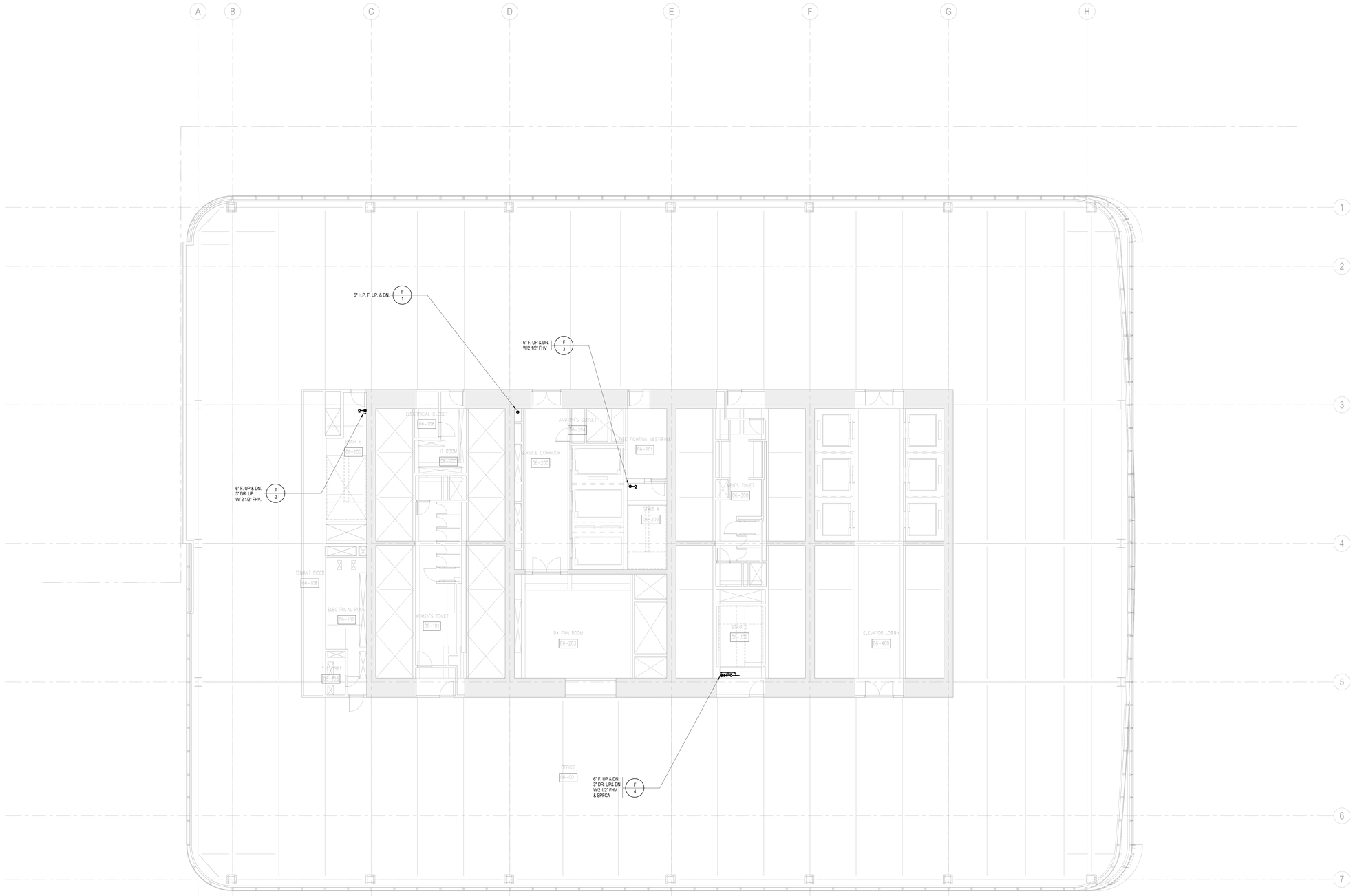

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client
Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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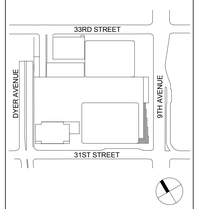
Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 6-16 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 14830.A.000	Sheet No.: FP-106
Date: 20 JUN 2014	B-SCAN Sheet No.: FP-106.00
Scale: 1/8" = 1'-0"	
File No.: FP-106	Page No.:

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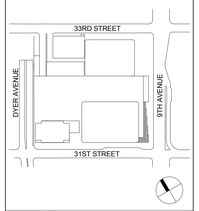
Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 17 FLOOR PLAN - LOW-RISE

Project No.: 14830 A.000	Sheet No.: FP-117
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-117
File No.: FP-117	Page No.:

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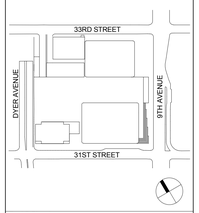
Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 18 FLOOR PLAN - LOW-RISE OVERRUN

Project No.: 14830.A.000	Sheet No.: FP-118
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-118.00
File No.: FP-118	Page No.:

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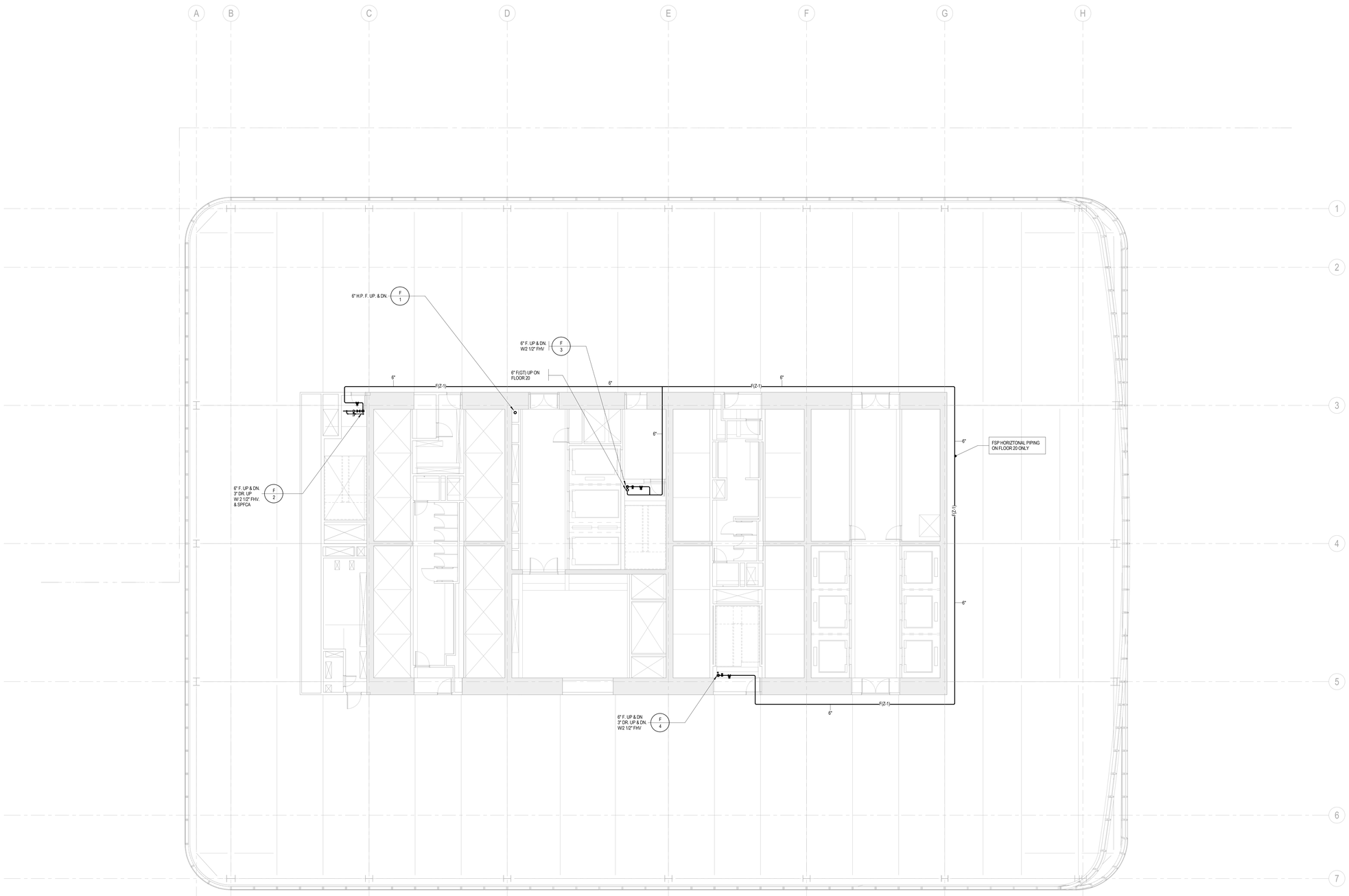

NOTE: REFER TO RISER DIAGRAM FOR EXTENT OF VALVING REQUIRED AT THIS LEVEL.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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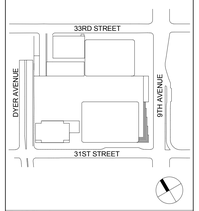
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 19-20 FLOOR PLAN - LOW-RISE EMR

Project No.: 14830.A.000	Sheet No.: FP-119
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-119.00
File No.: FP-119	Page No.:

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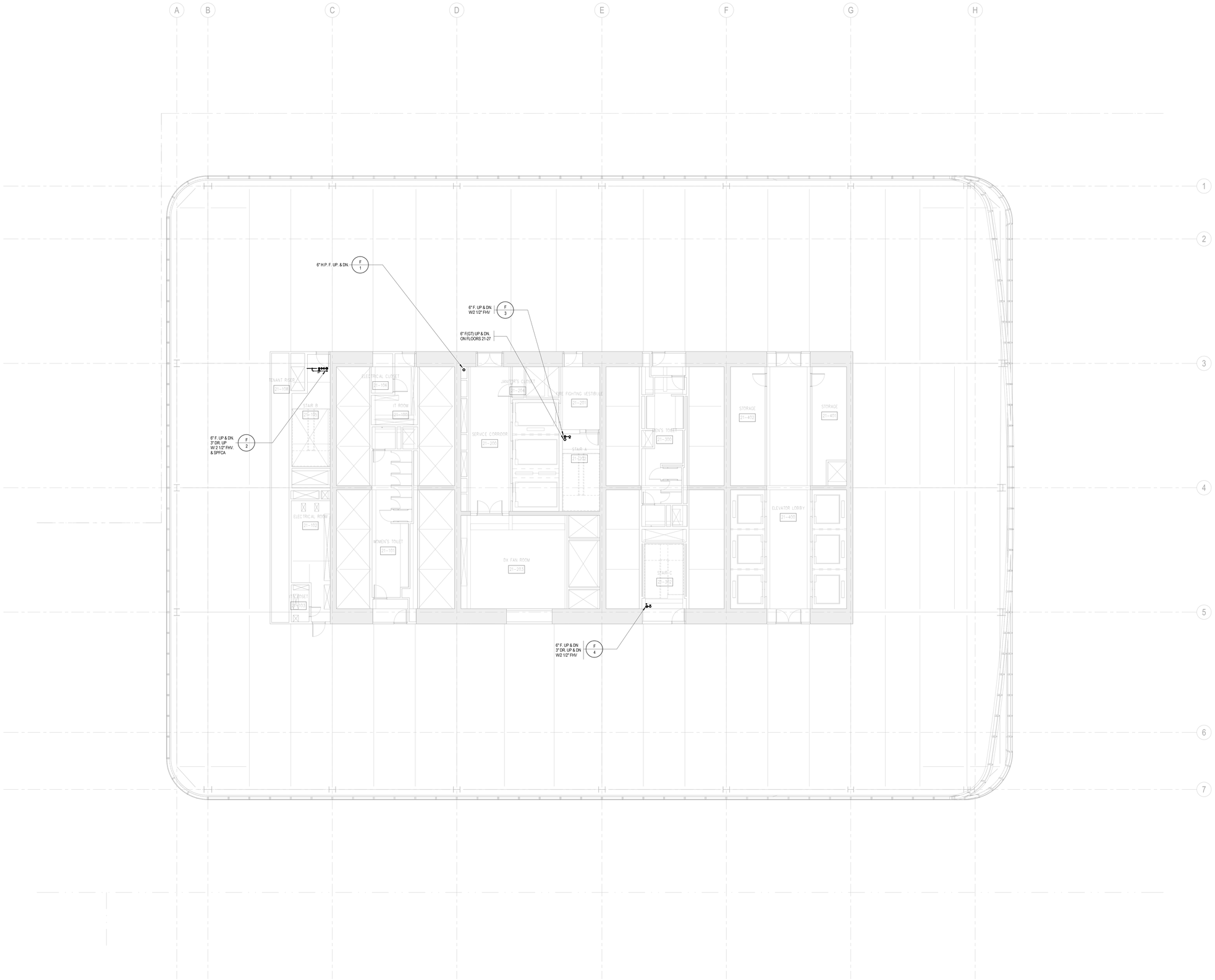

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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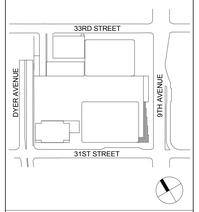
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 21-27 FLOOR PLAN - TYPICAL LOW-RISE

Project No.: 14830.A.000	Sheet No.: FP-121
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-121
File No.: FP-121	Page No.:

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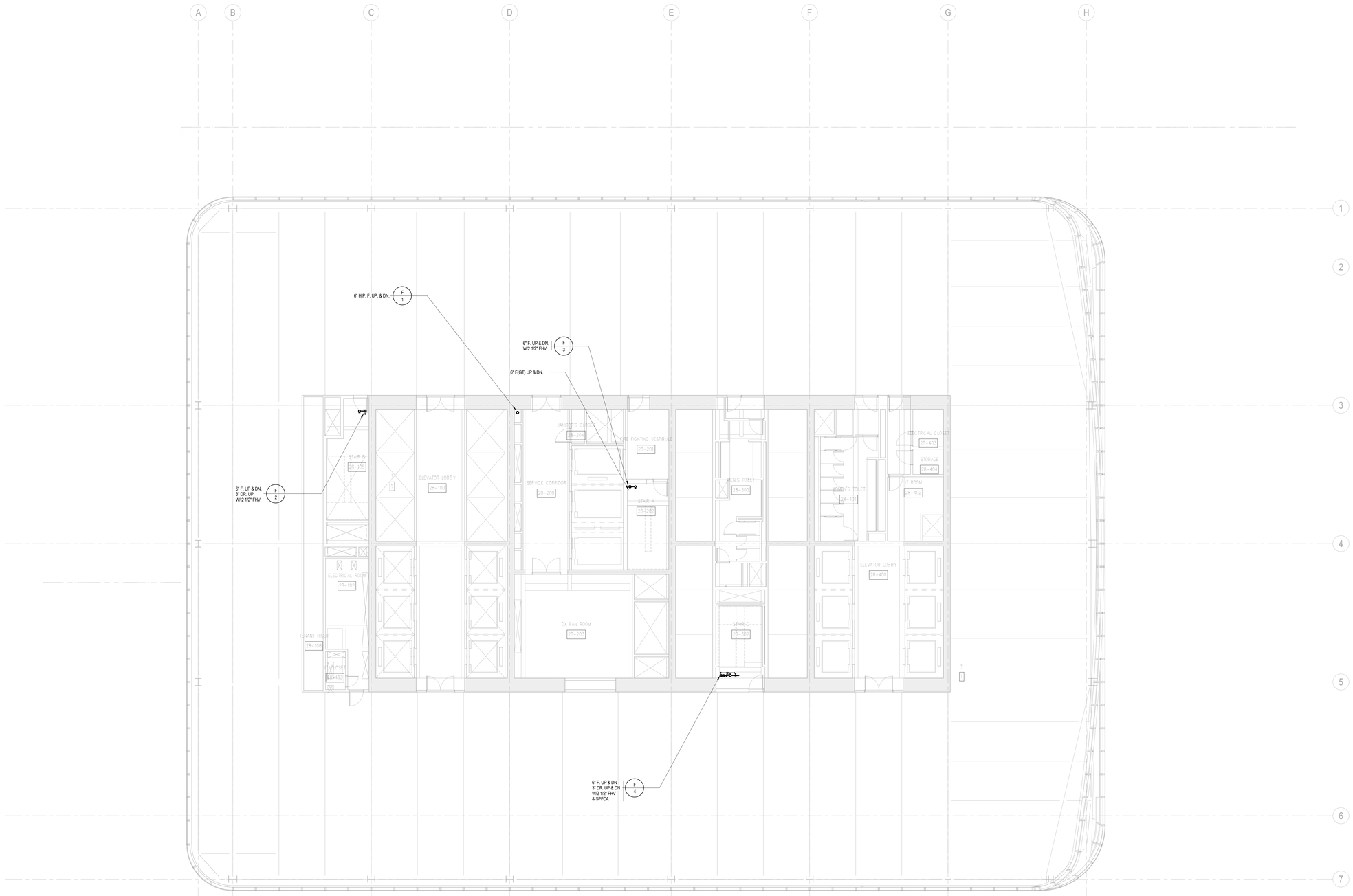

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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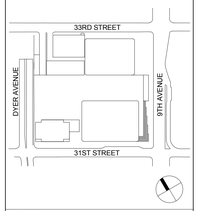
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 28 FLOOR PLAN - LOW-RISE & MIDE-RISE

Project No.: 14830.A.000	Sheet No.: FP-128
Date: 20 JUN 2014	B-SCAN Sheet No.: FP-128
Scale: 1/8" = 1'-0"	
File No.: FP-128	Page No.:

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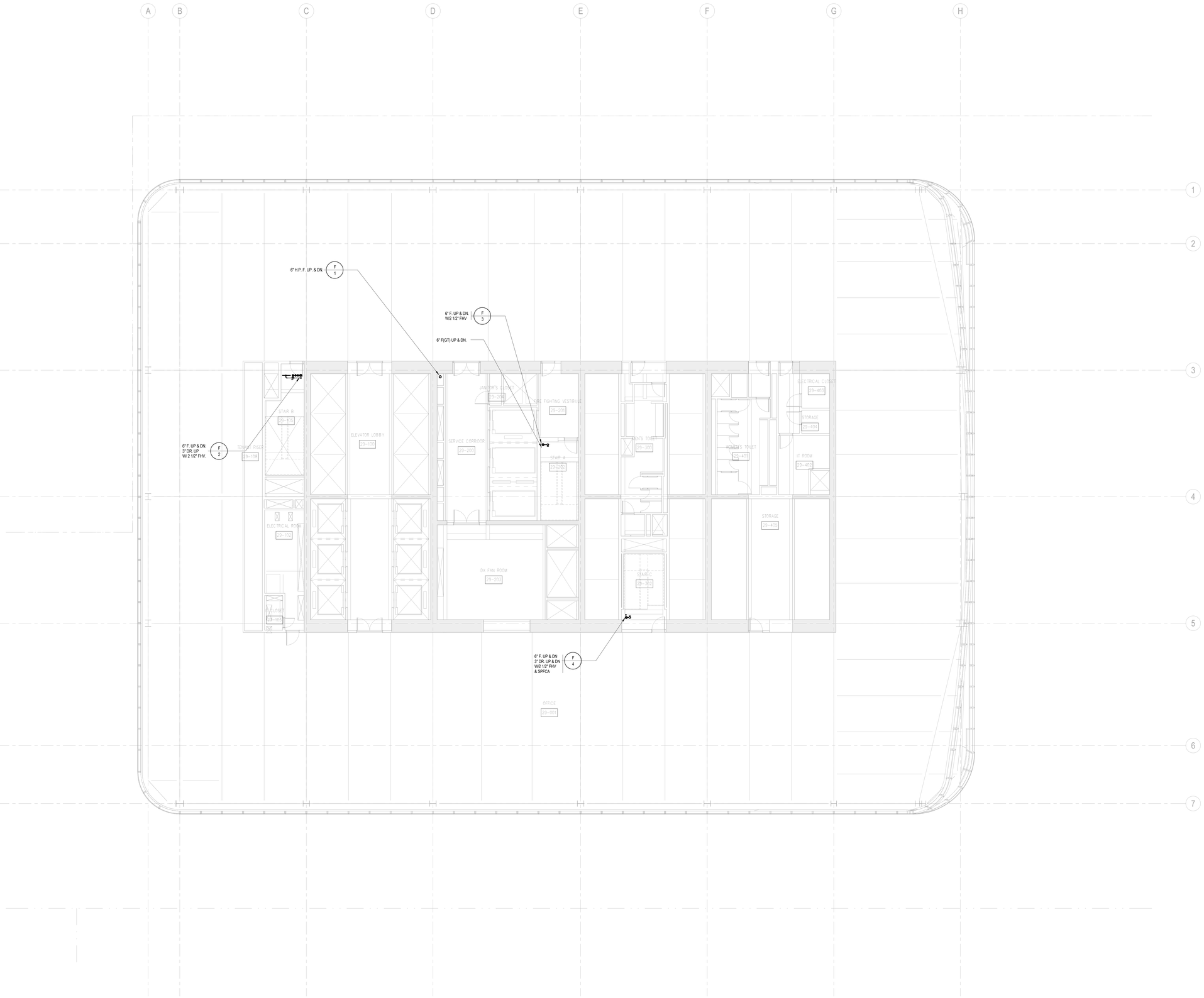

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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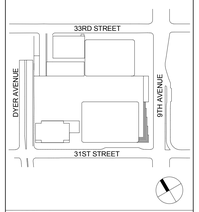
Key Plan:



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3	15 NOV 2013	ISSUED FOR GC PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 29 FLOOR PLAN - MID-RISE OVERRUN

Project No.: 14830.A.000	Sheet No.: FP-129
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-129.00
File No.: FP-129	Page No.:

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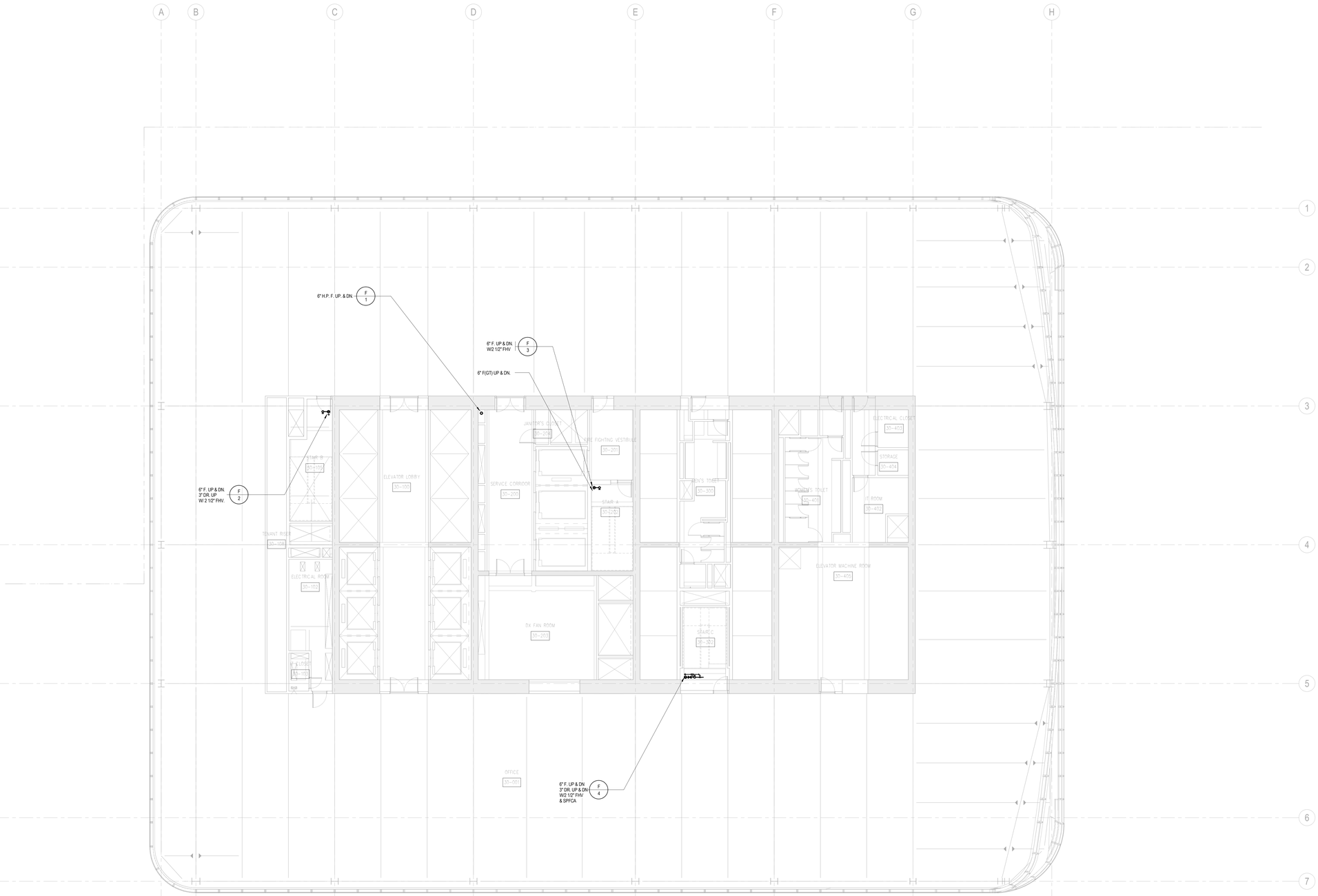

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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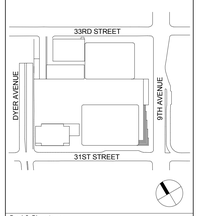
Key Plan:



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No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 30 FLOOR PLAN - MID-RISE EMR

Project No.: 14830.A.000	Sheet No.: FP-130
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-130.00
File No.: FP-130	Page No.:

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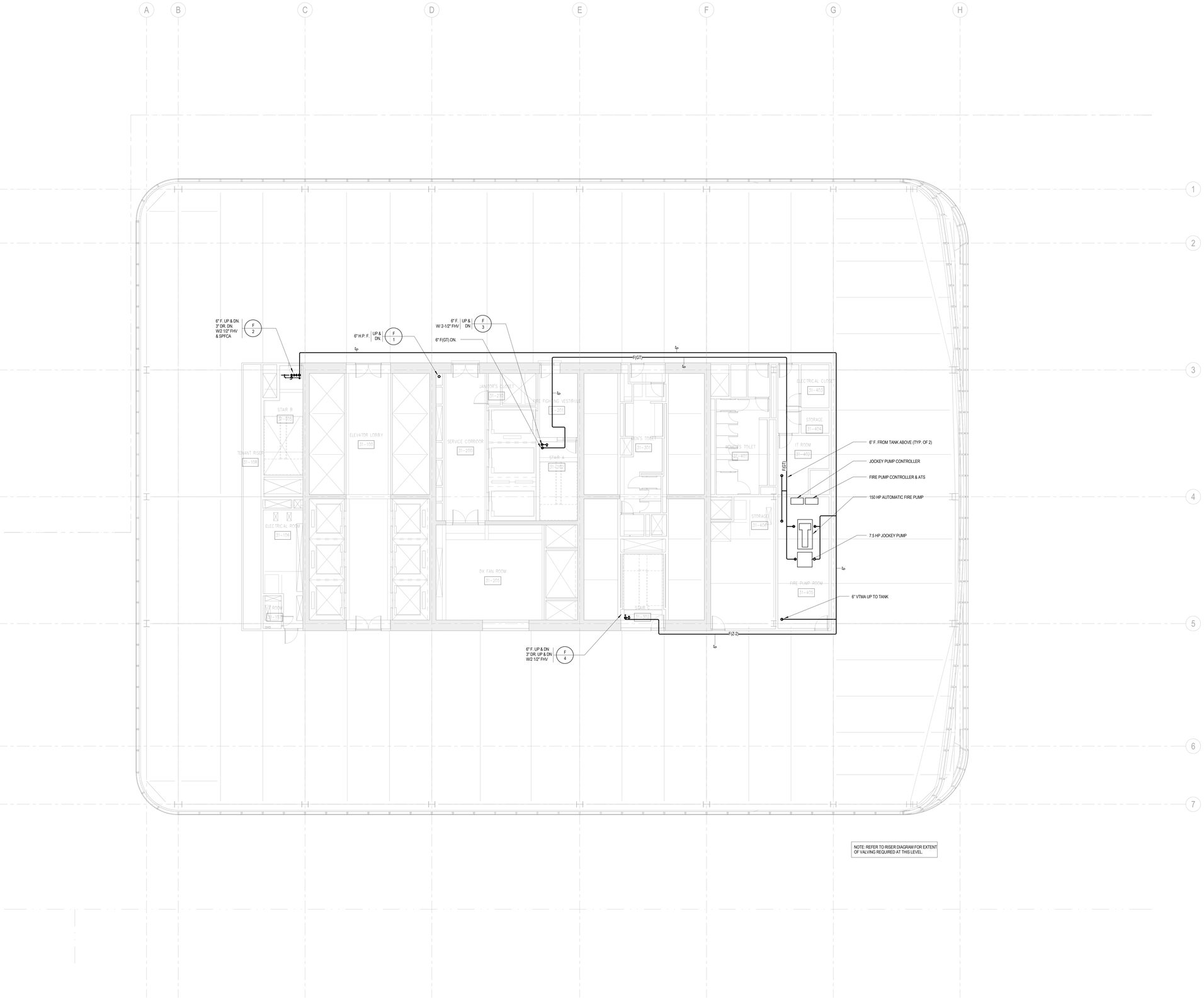

SHEET NOTES

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Edgett Williams Consulting Group, Inc.
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Sustainable Design

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Landscape Consultant

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Security Consultant

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250 State Street #F1, North Haven, CT 06473

Blast Consultant

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Acoustical Consultant

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Vibration Consultant

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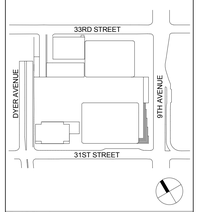
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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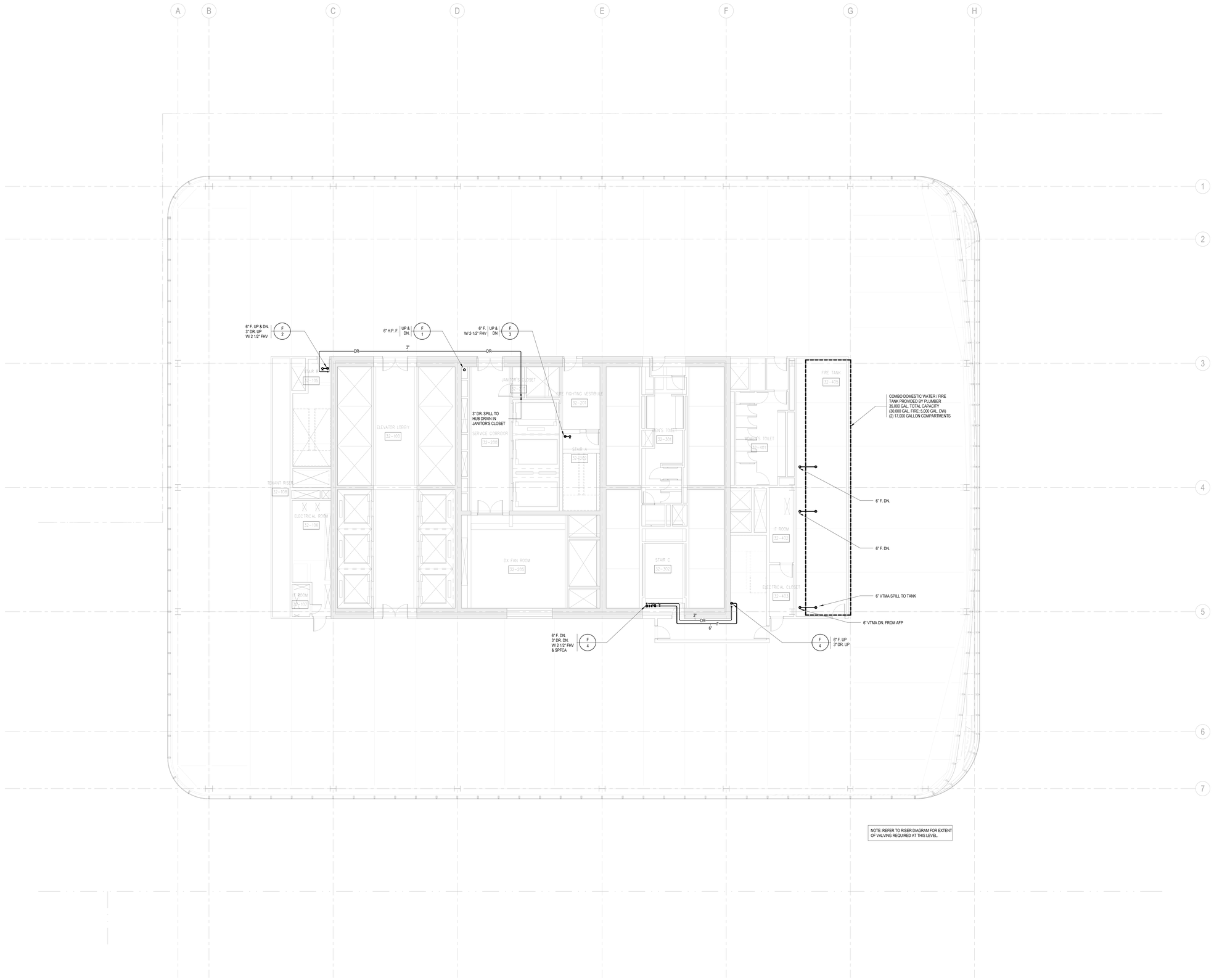
No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 31 FLOOR PLAN - MID-RISE PUMP ROOM

Project No.: 14830.A.000	Sheet No.: FP-131
Date: 20 JUN 2014	B-SCAN Sheet No.: FP-131.00
Scale: 1/8" = 1'-0"	
File No.: FP-131	Page No.:



NOTE: REFER TO RISER DIAGRAM FOR EXTENT OF VALVING REQUIRED AT THIS LEVEL.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

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SOM

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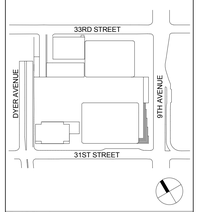
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 32 FLOOR PLAN - MID-RISE WATER TANK

Project No.: 14830.A.000	Sheet No.: FP-132
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-132.00
File No.: FP-132	Page No.:

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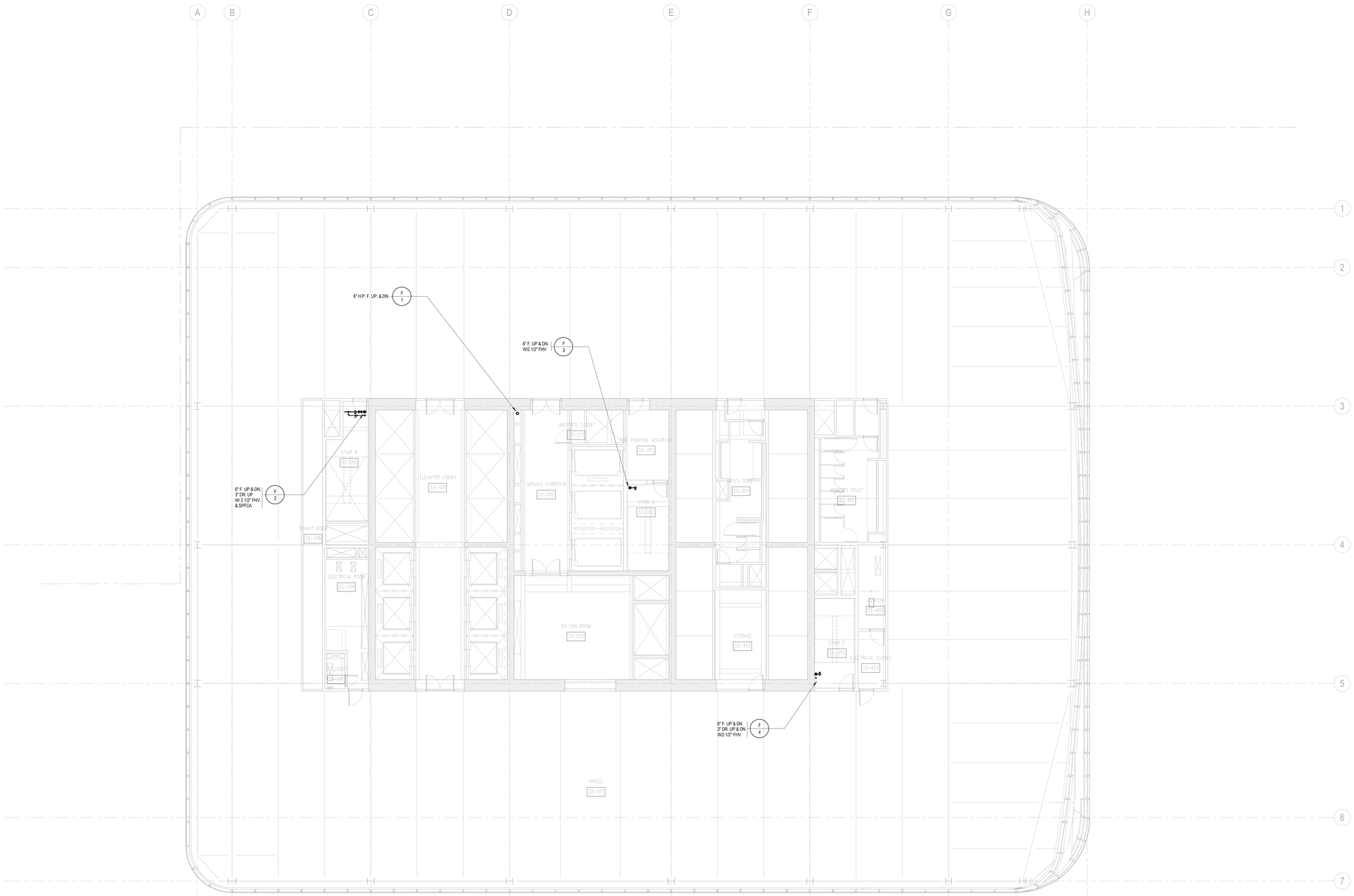

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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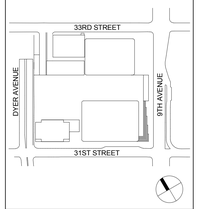
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 33-38 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	Sheet No.: FP-133
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-133.00
File No.: FP-133	Page No.:

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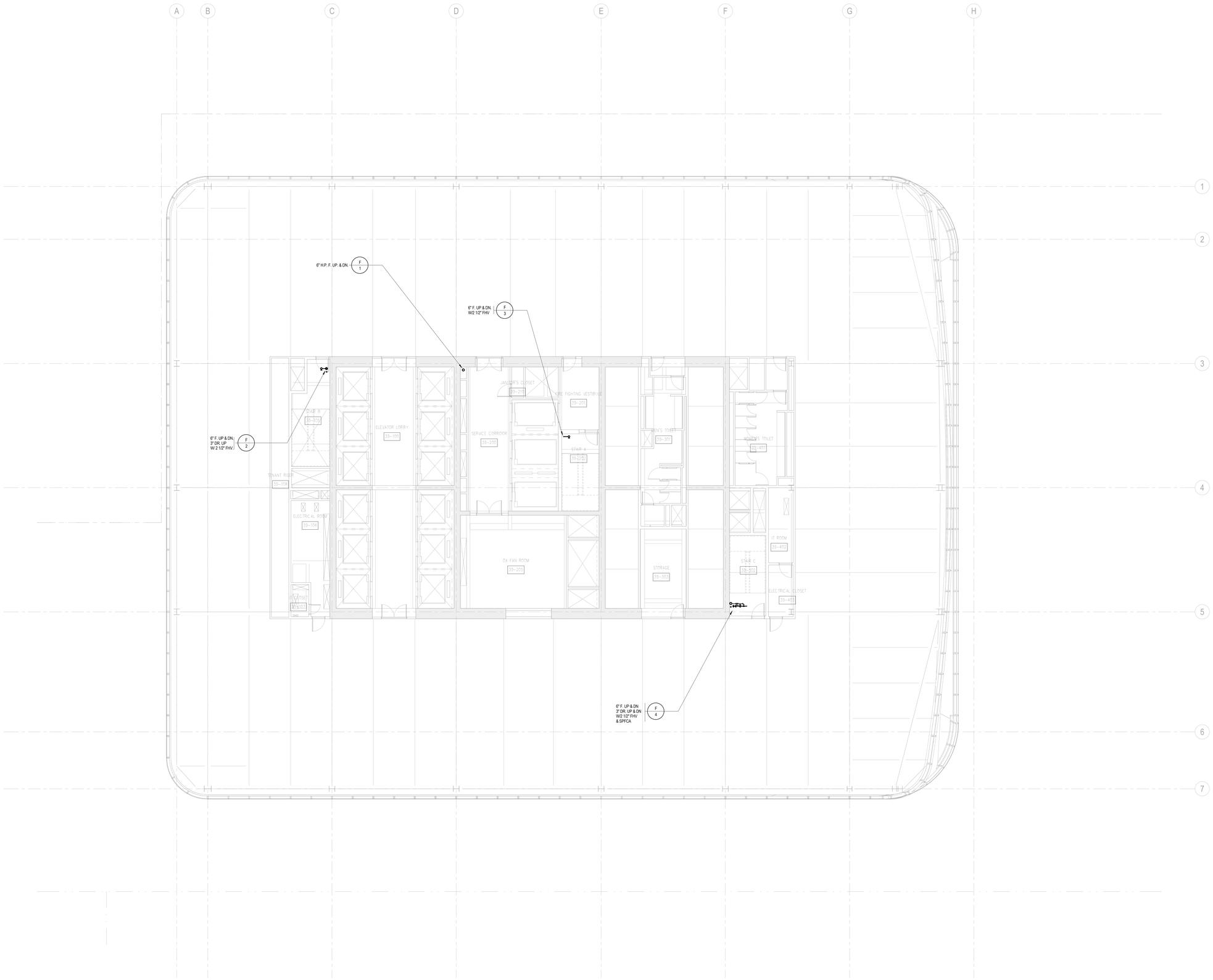

SHEET NOTES

MANHATTAN WEST:
NORTH TOWER
375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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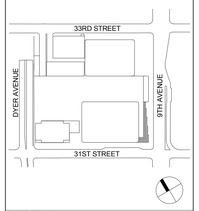
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE
PROTECTION
LEVEL 39 FLOOR
PLAN - MID-RISE

Project No.: 14830.A.000	Sheet No.: FP-139
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-139.00
File No.: FP-139	Page No.:

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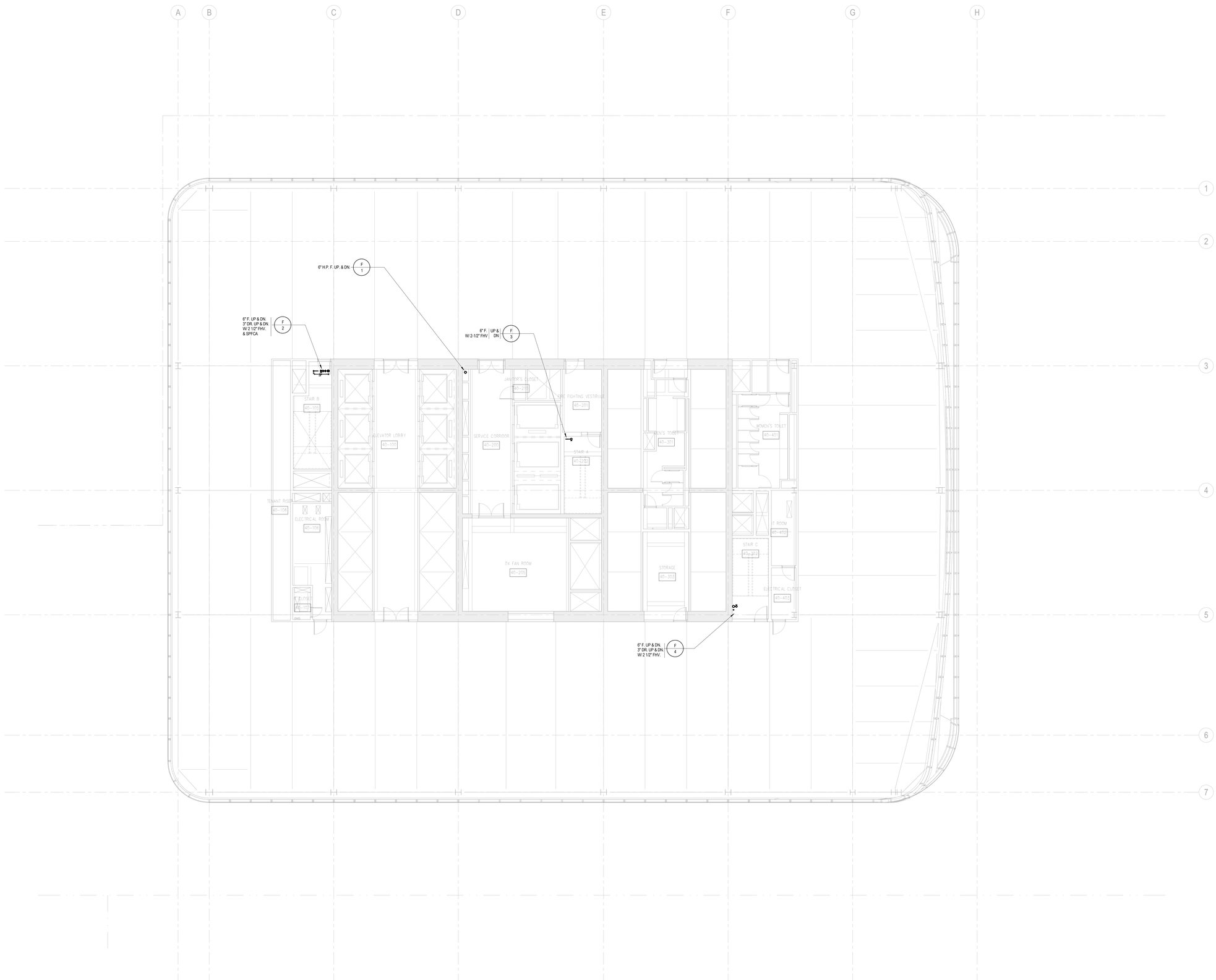

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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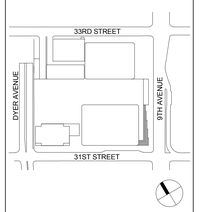
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 40-41 FLOOR PLAN - MID-RISE OVERRUN

Project No.: 14830.A.000	Sheet No.: FP-140
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-140.00
File No.: FP-140	Page No.:

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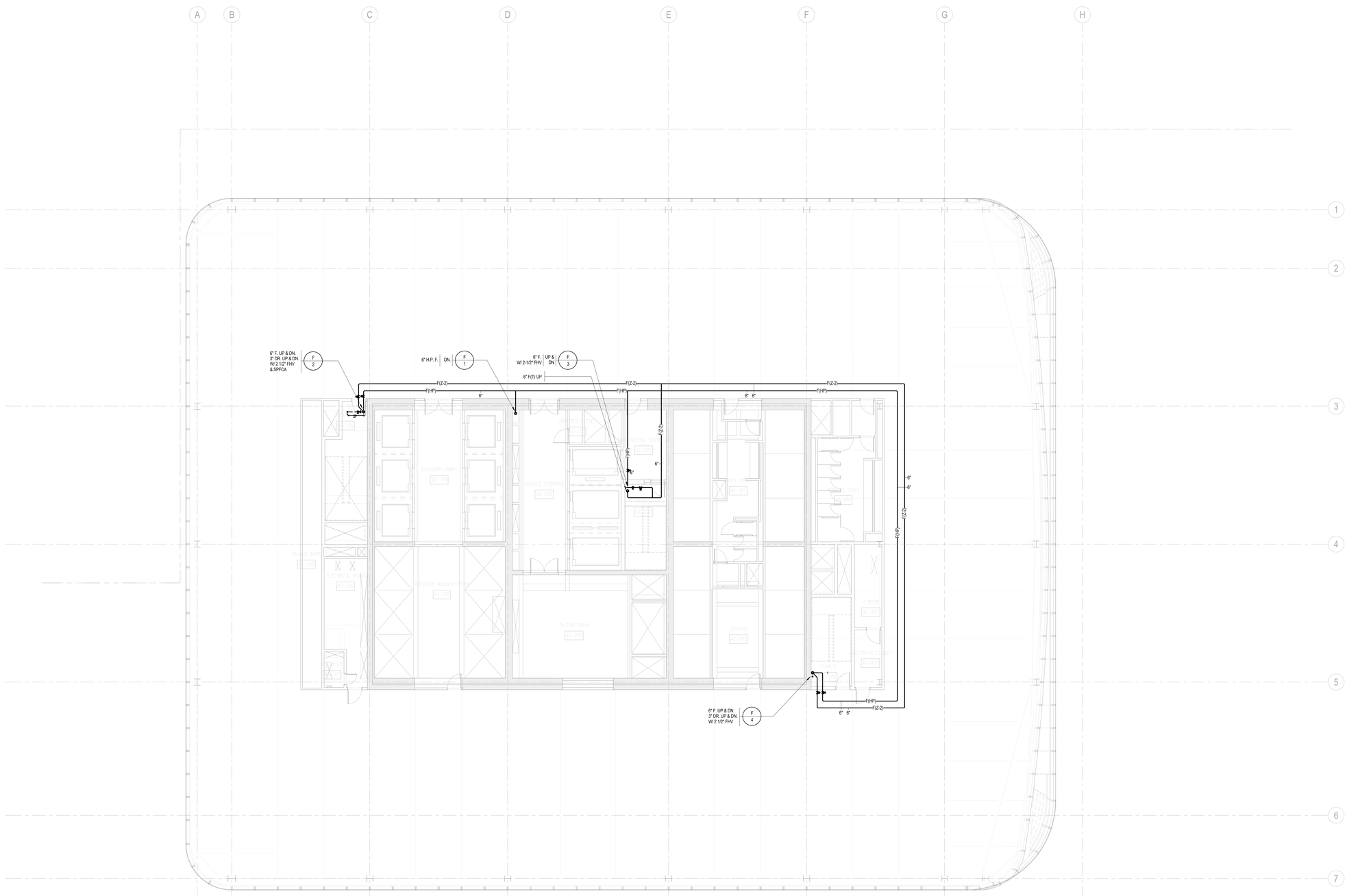

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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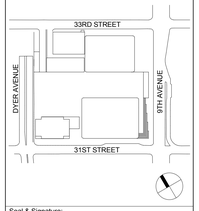
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 42 FLOOR PLAN - MID-RISE EMR

Project No.: 14830.A.000	Sheet No.: FP-142
Date: 20 JUN 2014	B-SCAN Sheet No.:
Scale: 1/8" = 1'-0"	
File No.: FP-142	Page No.:

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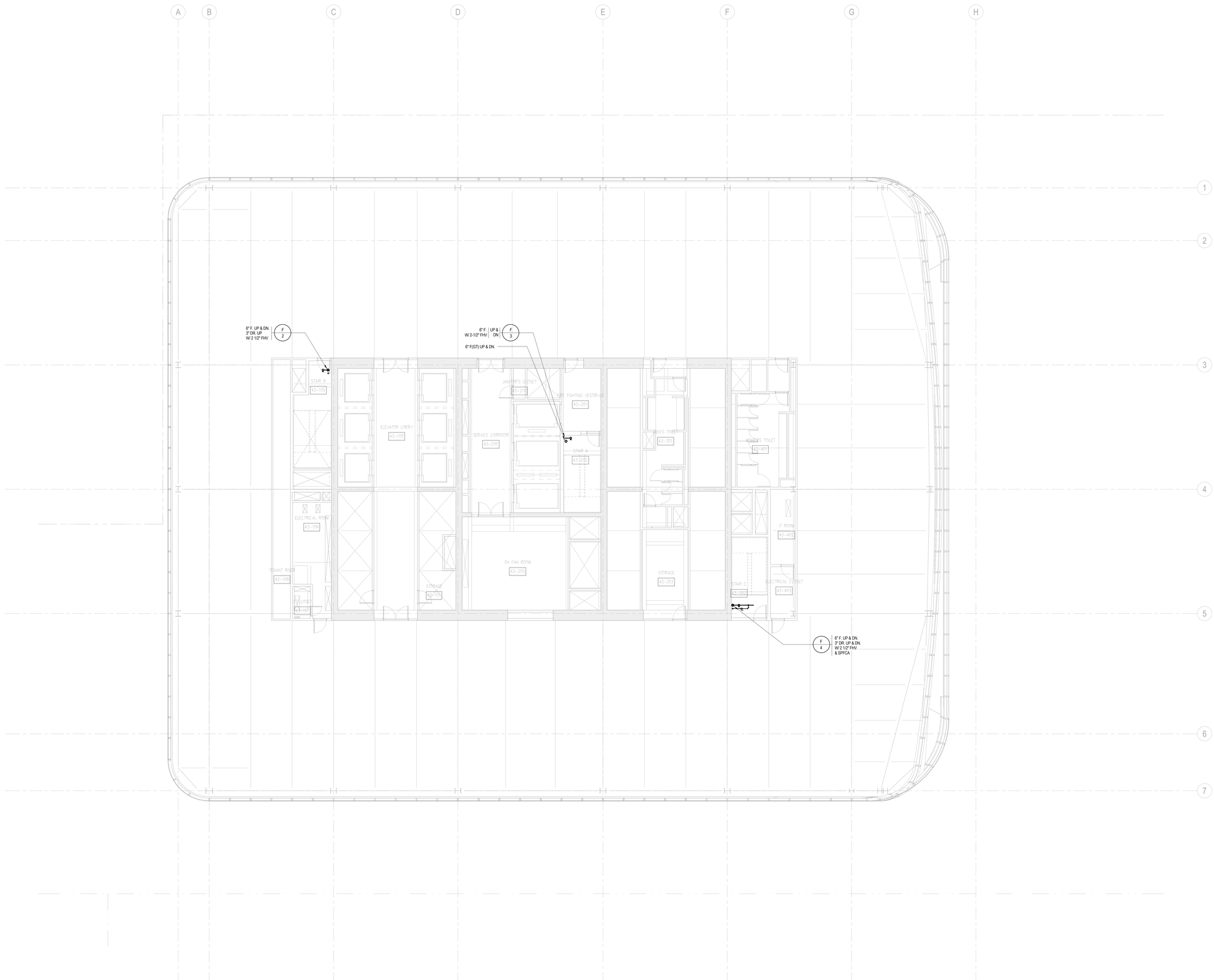

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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80 Pine Street, New York, NY 10005

Vertical Transportation

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Landscape Consultant

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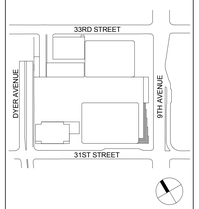
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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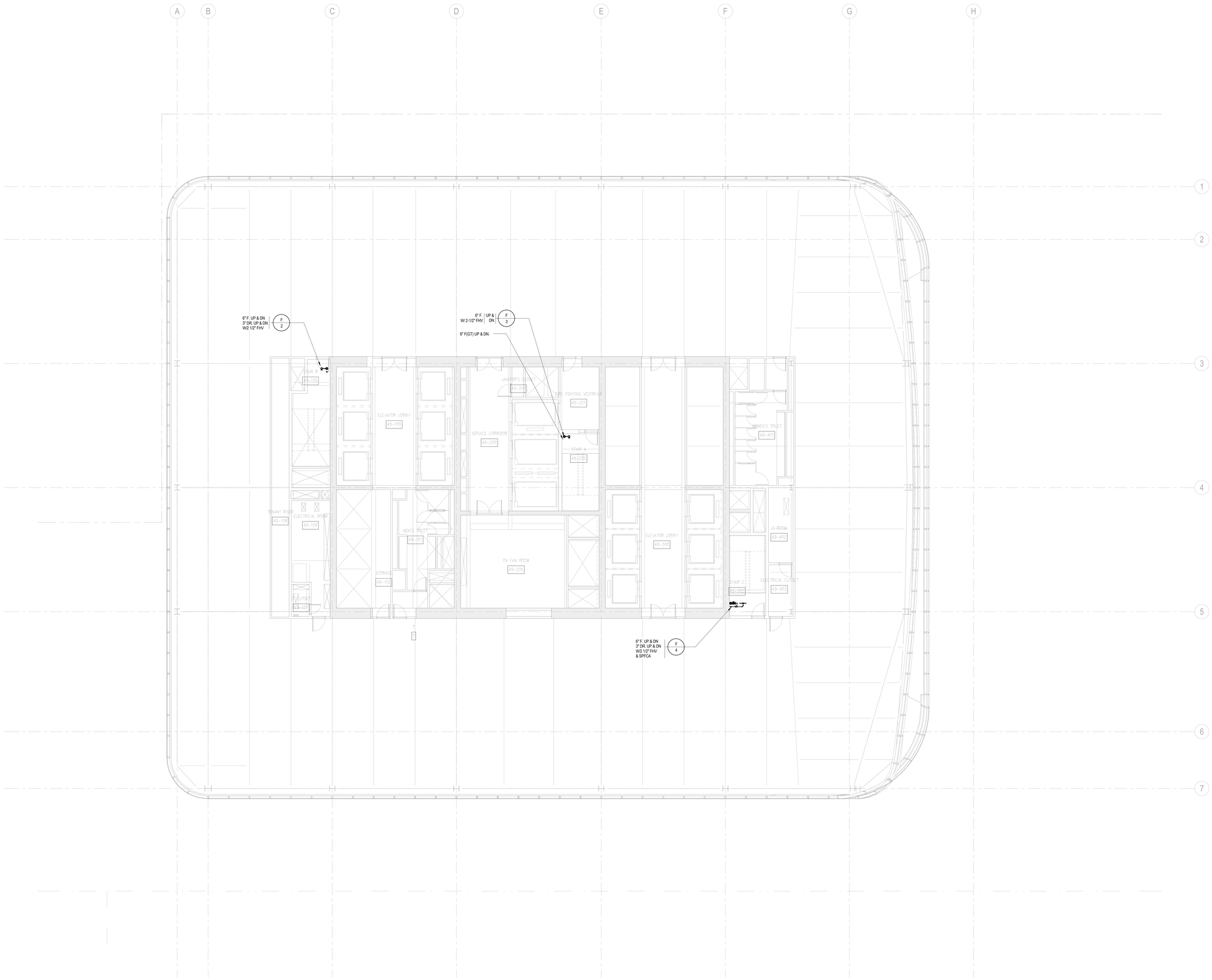
No:	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR 00 PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 43-48 FLOOR PLAN - TYPICAL MID-RISE

Project No.: 14830.A.000	Sheet No.: FP-143
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-143
File No.: FP-143	Page No.:

6/18/2014 9:22:44 PM



SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant

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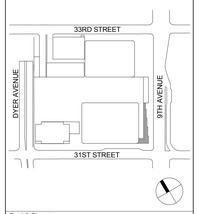
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 49 FLOOR PLAN - MID-RISE & HIGH-RISE

Project No.: 14850.A.000	Sheet No.: FP-149
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-149.00
File No.: FP-149	Page No.:

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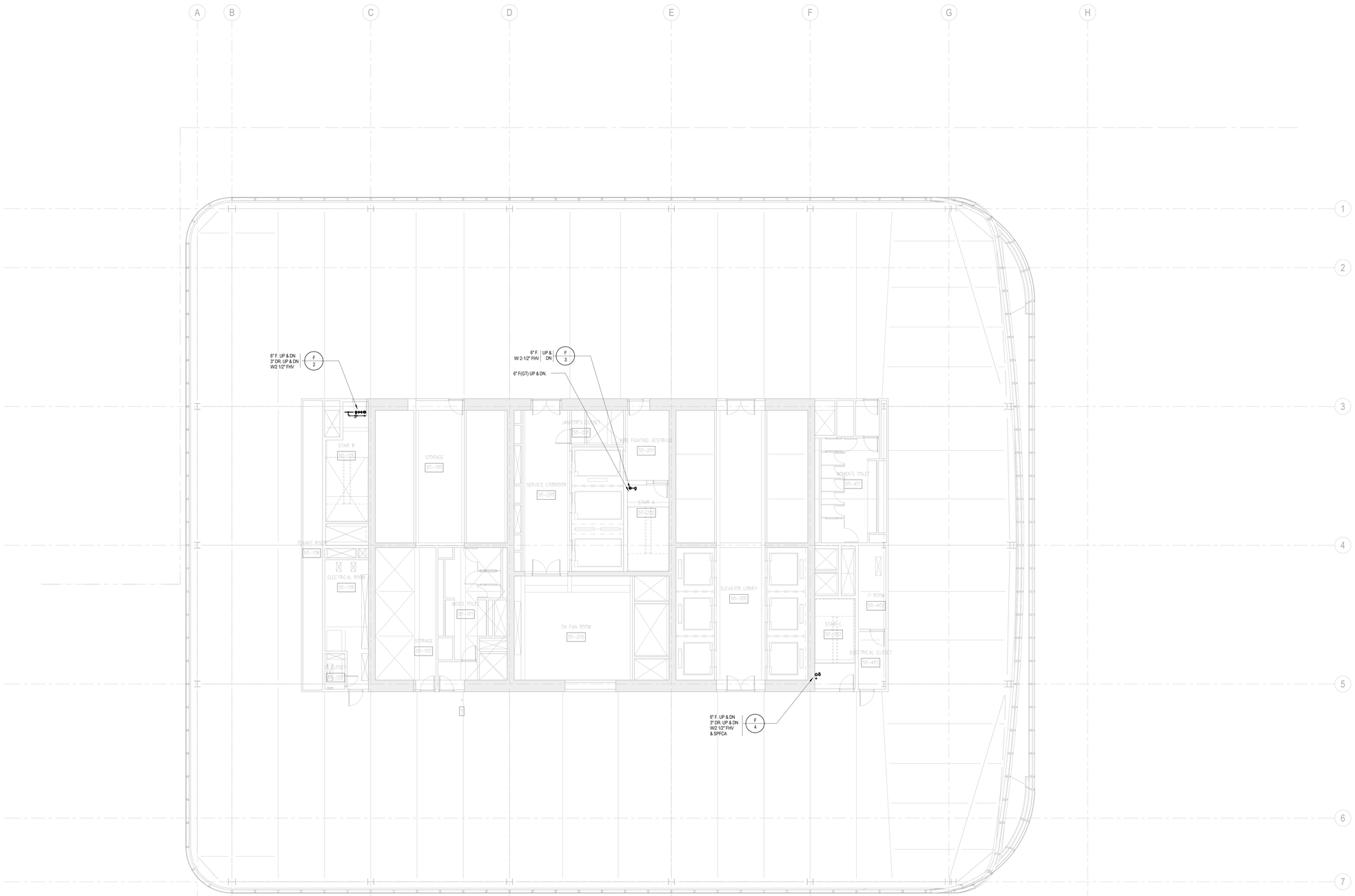

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Wind Tunnel Consultant

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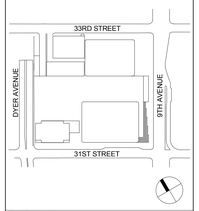
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 50-51 FLOOR PLAN - HIGH-RISE OVERRUN

Project No.: 14830.A.000	Sheet No.: FP-150
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-150.00
File No.: FP-150	Page No.: OF

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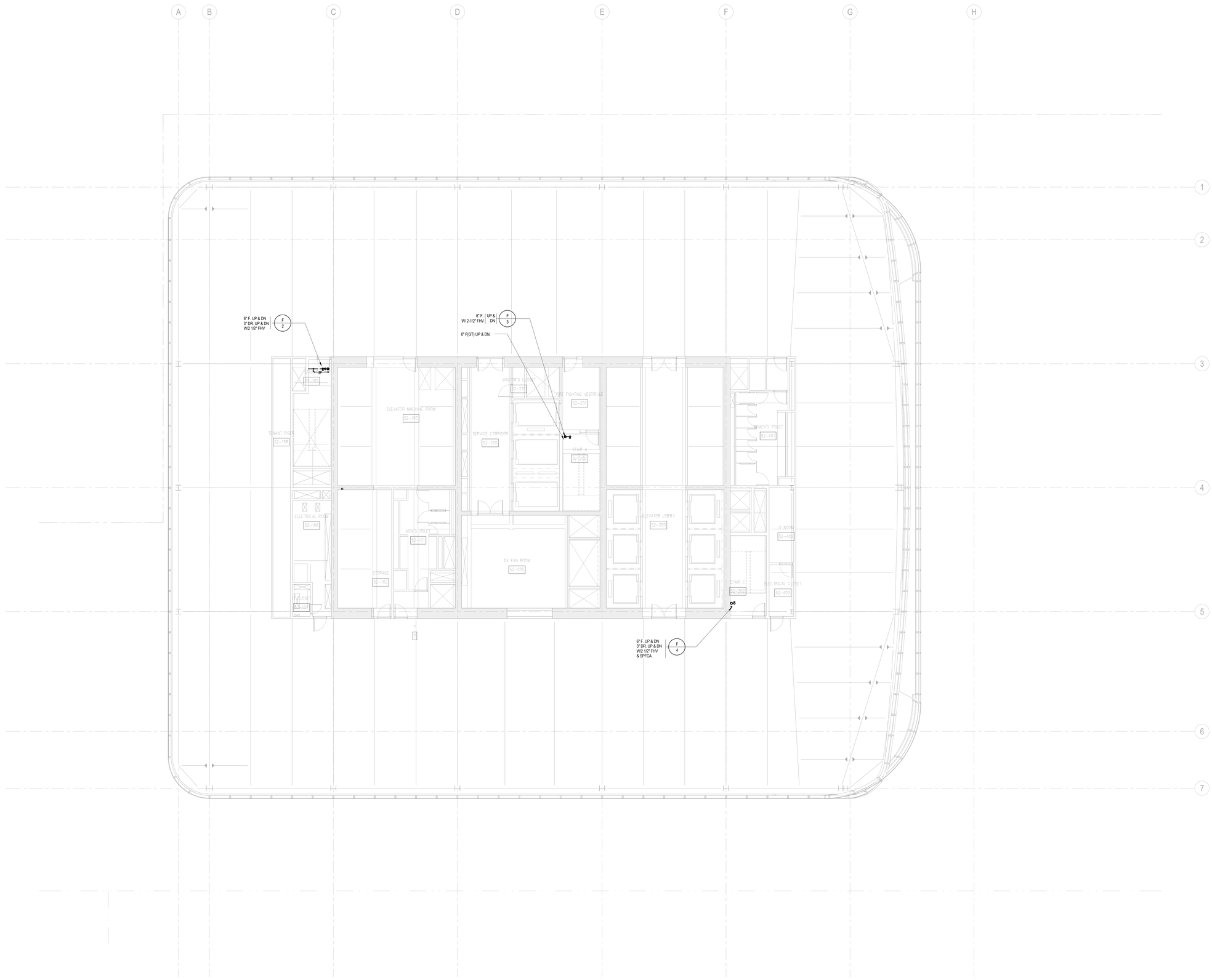

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
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MEP Engineering

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Security Consultant

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Blast Consultant

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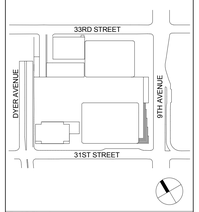
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 52 FLOOR PLAN - HIGH-RISE EMR

Project No.: 14830.A.000	Sheet No.: FP-152
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-152.00
File No.: FP-152	Page No.:

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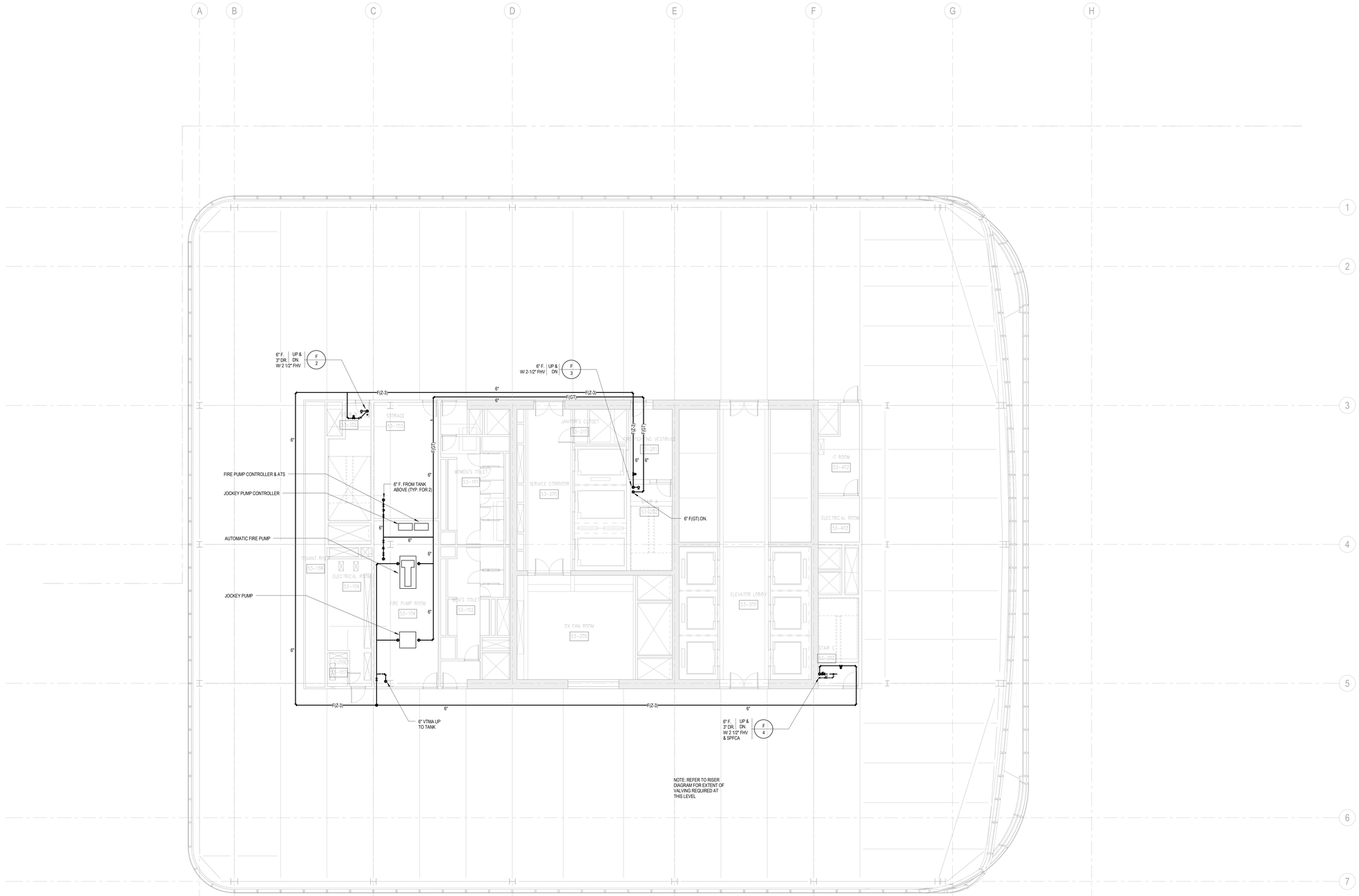

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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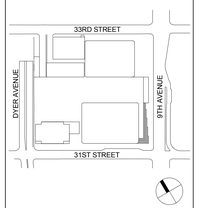
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 53 FLOOR PLAN - HIGH-RISE PUMP ROOM

Project No.: 14830.A.000	Sheet No.: FP-153
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-153.00
File No.: FP-153	Page No.:

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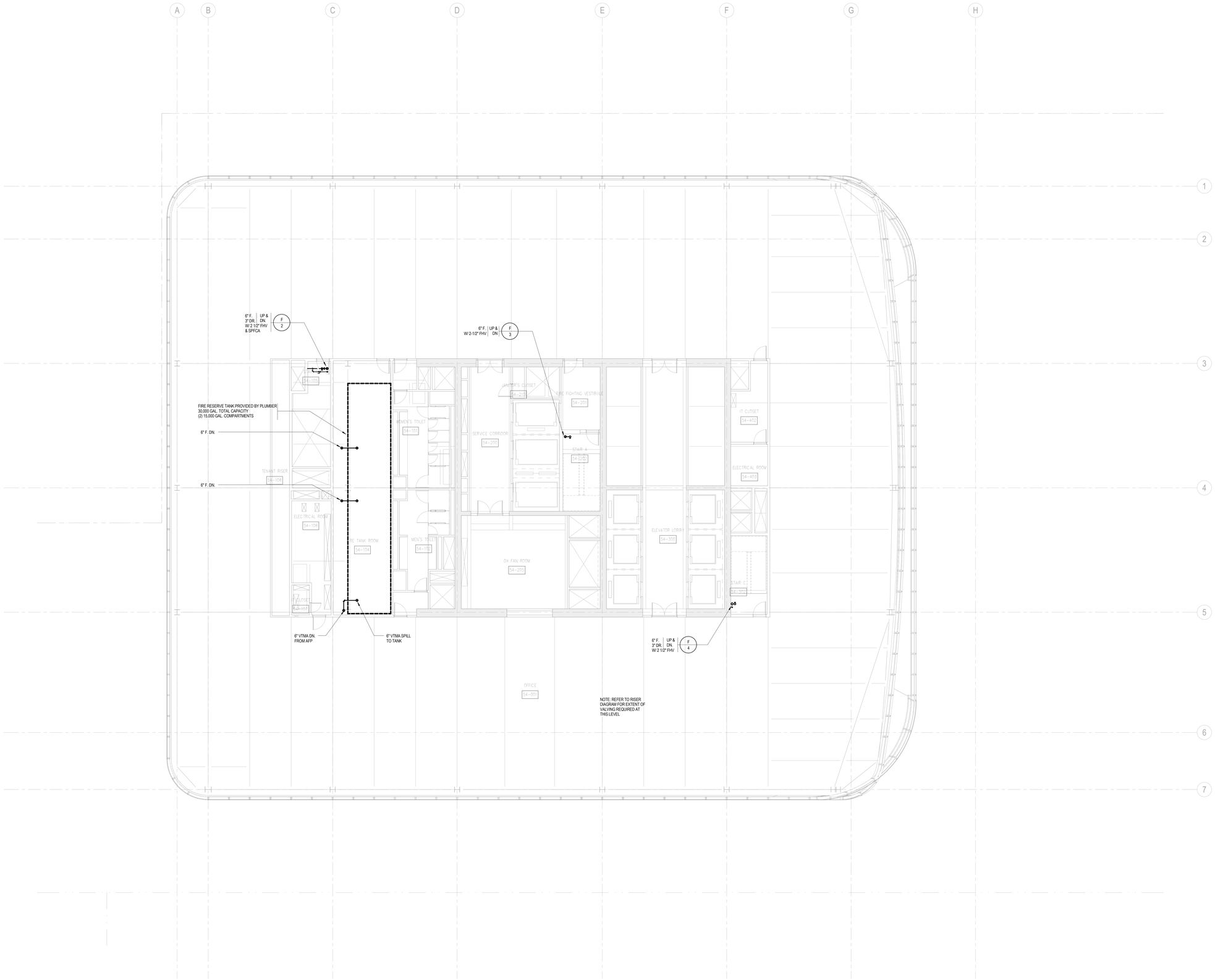

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
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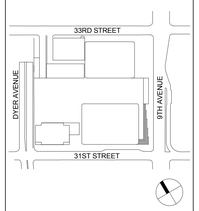
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK

Project No.: 14830.A.000	Sheet No.: FP-154
Date: 20 JUN 2014	B-SCAN Sheet No.: FP-154.00
Scale: 1/8" = 1'-0"	
File No.: FP-154	Page No.:

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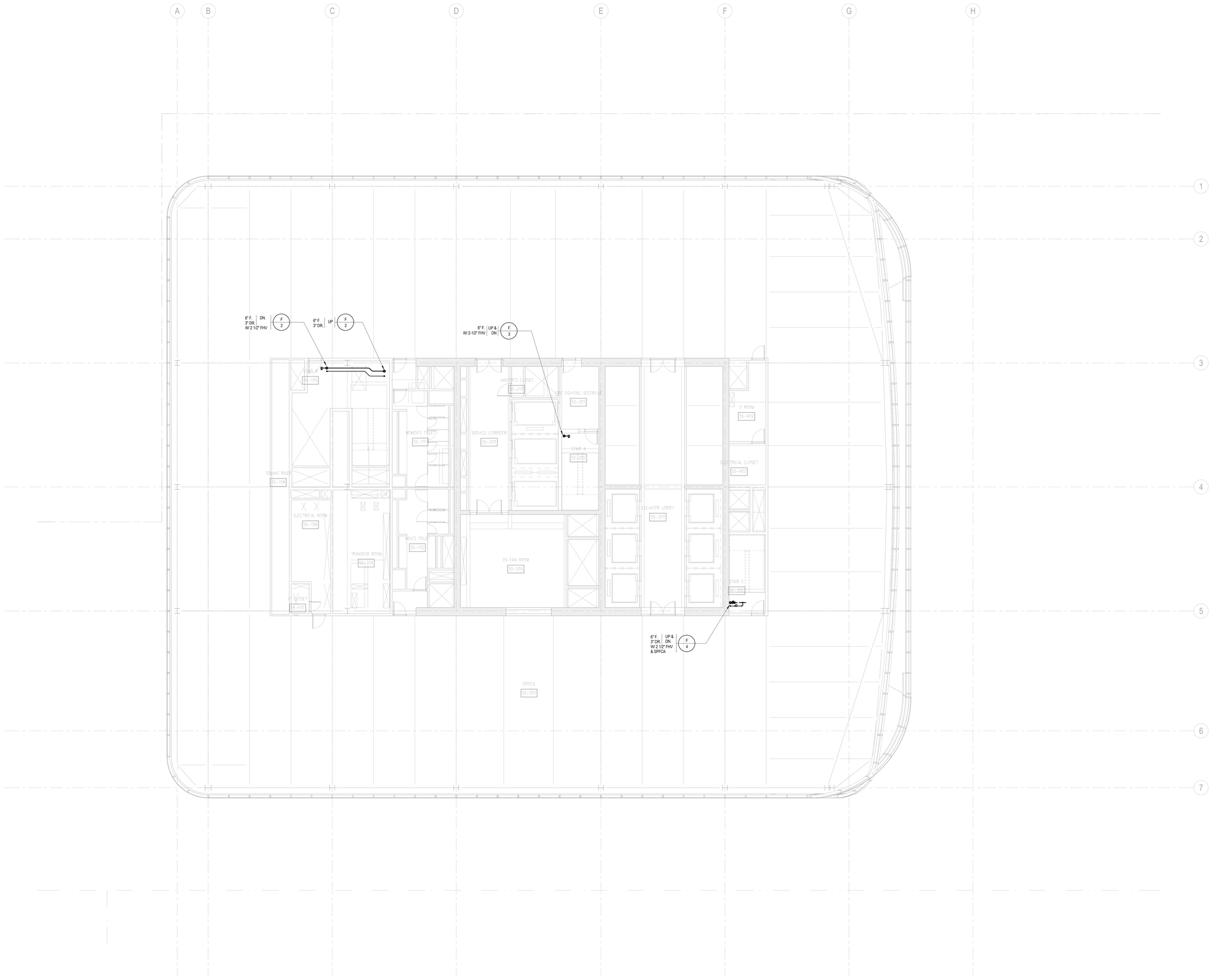

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Wind Tunnel Consultant

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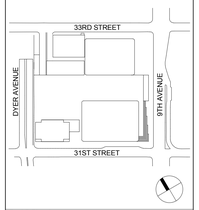
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 55 FLOOR PLAN - HIGH-RISE

Project No.: 14830.A.000	Sheet No.: FP-155
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.:
File No.: FP-155	Page No.:

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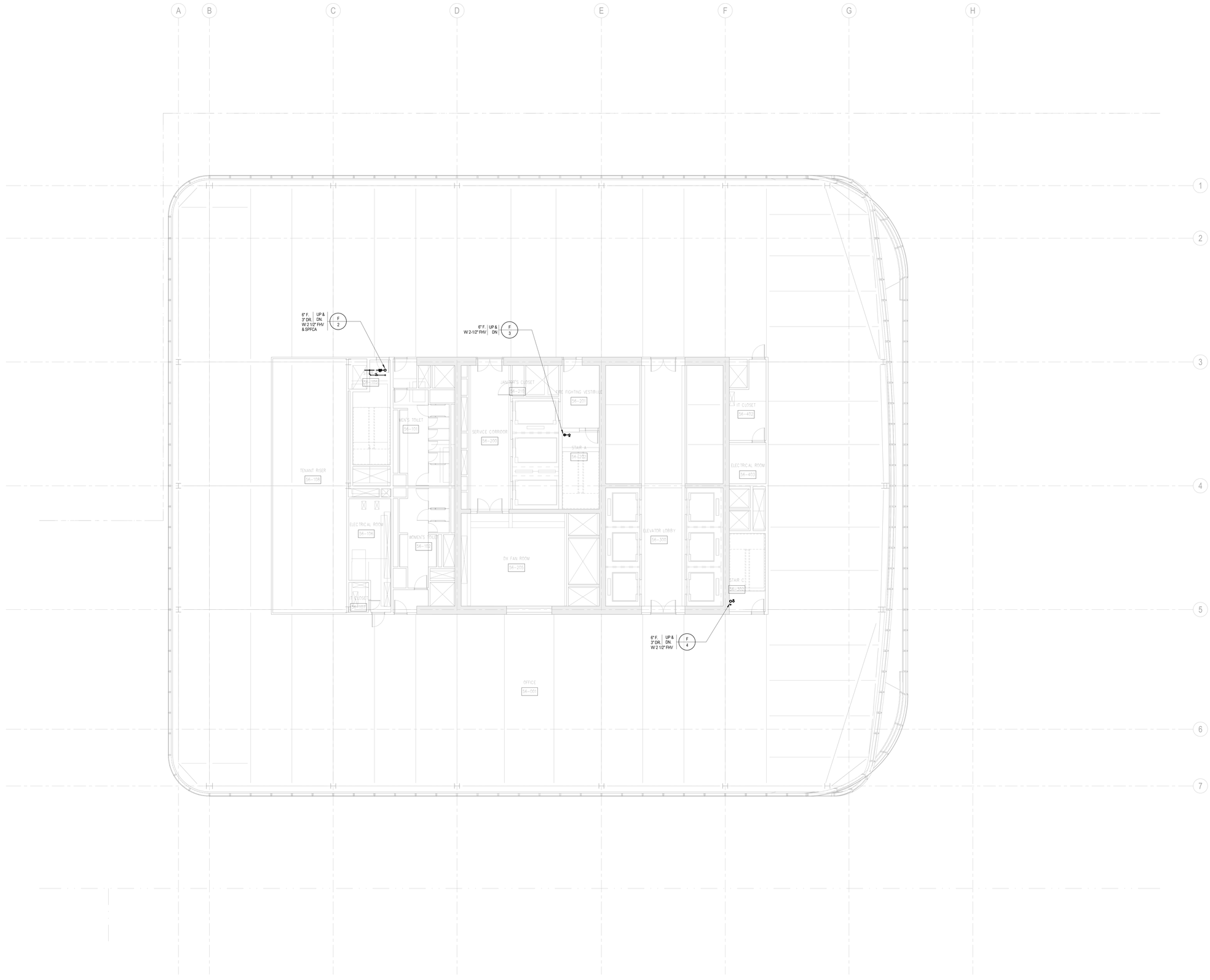

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant

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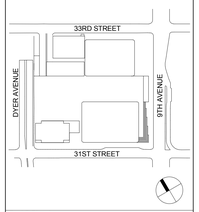
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 56 FLOOR PLAN - HIGH-RISE

Project No.: 14830.A.000	Sheet No.: FP-156
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-156.00
File No.: FP-156	Page No.:

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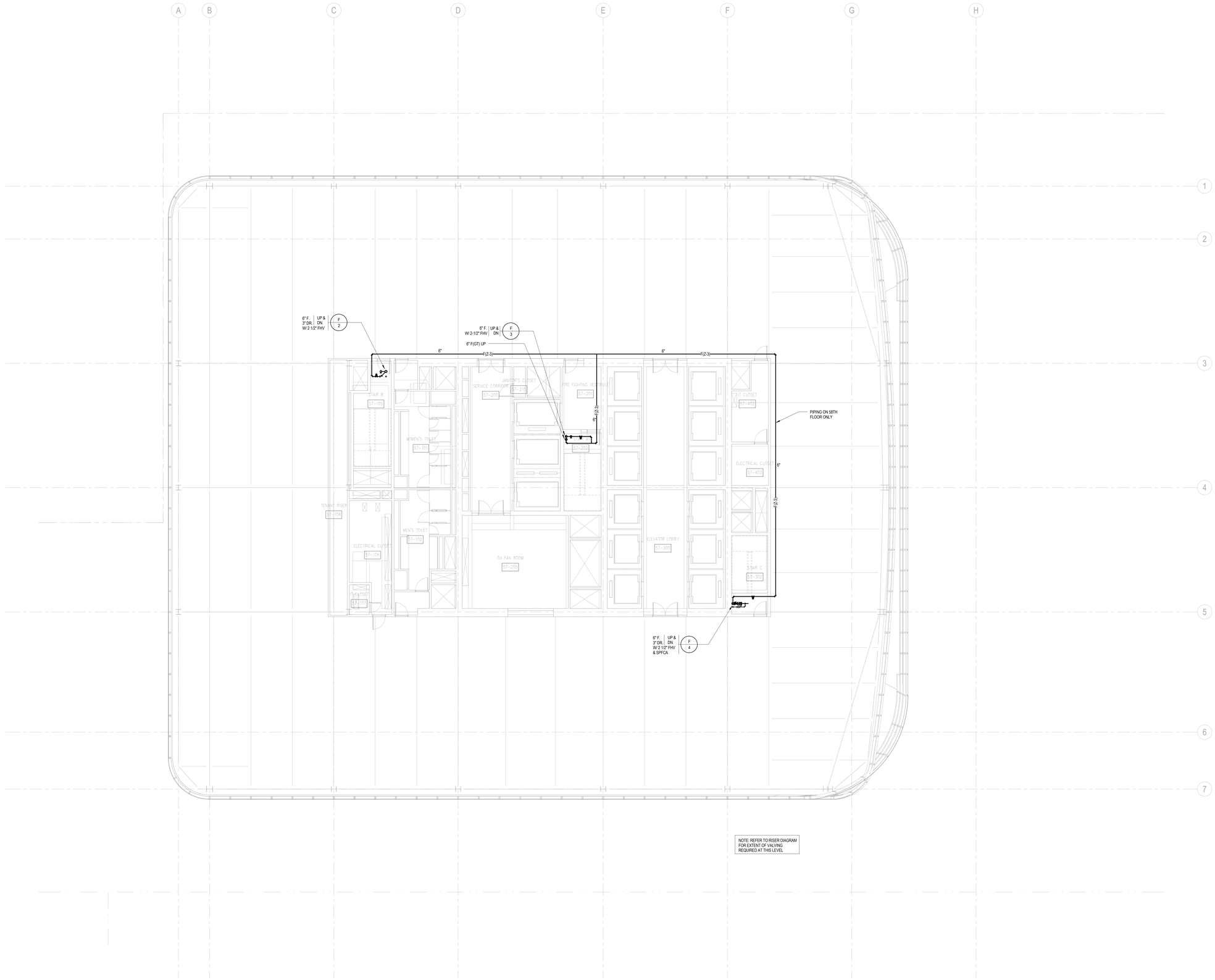

NOTE: REFER TO RISER DIAGRAM FOR EXTENT OF VALVING REQUIRED AT THIS LEVEL

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

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New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

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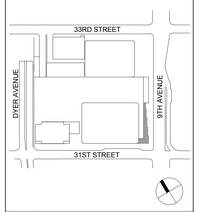
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 57-58 FLOOR PLAN - TYPICAL HIGH-RISE

Project No.: 14830.A.000	Sheet No.: FP-157
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.:
File No.: FP-157	Page No.:

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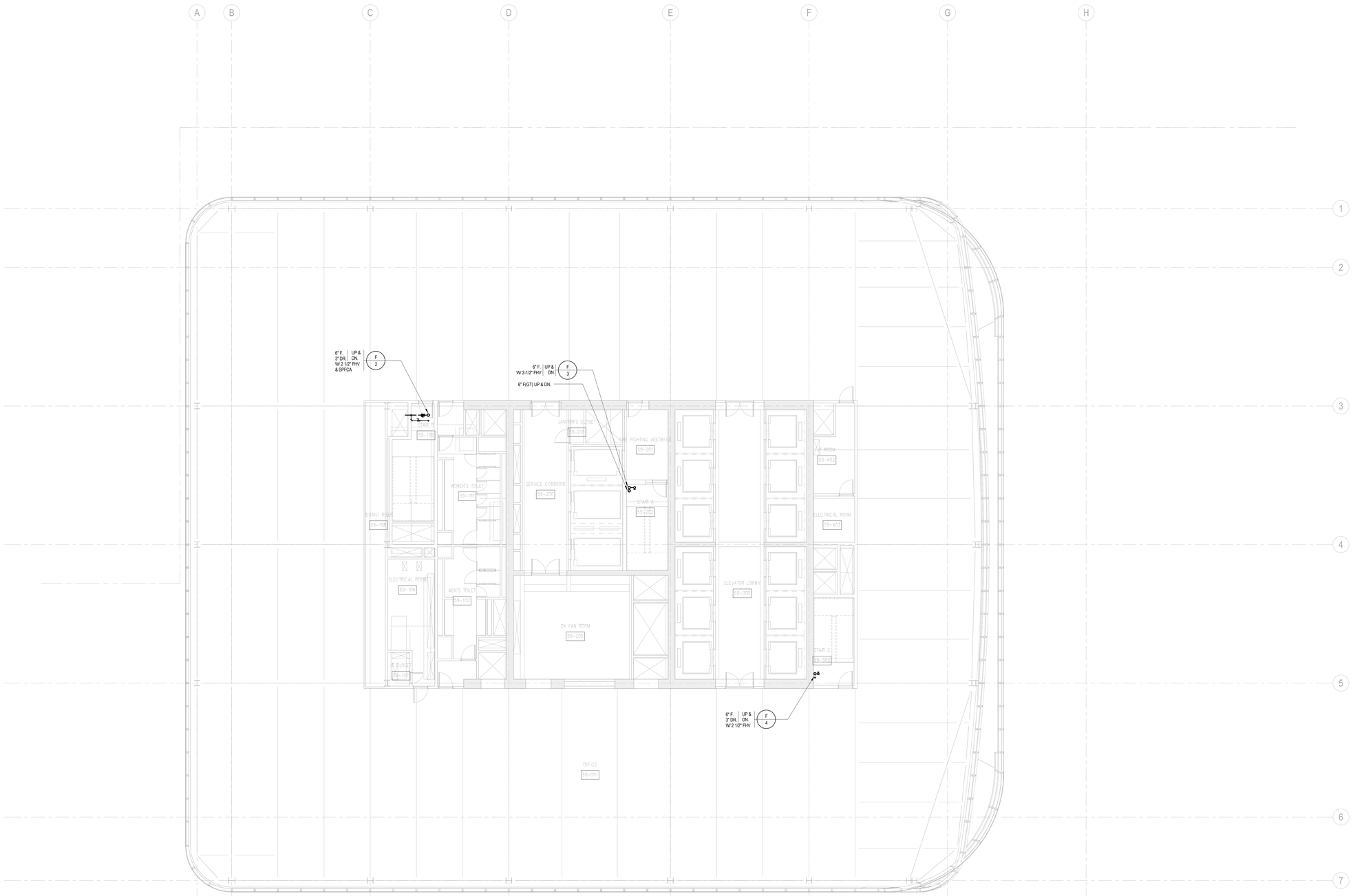

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield Place
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Wind Tunnel Consultant

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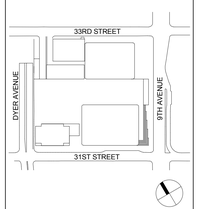
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 59 FLOOR PLAN - HIGH-RISE

Project No.: 14830.A.000

Date: 20 JUN 2014

Scale: 1/8" = 1'-0"

File No.: FP-159

Sheet No.: FP-159

B-SCAN Sheet No.: FP-159.00

Page No.:

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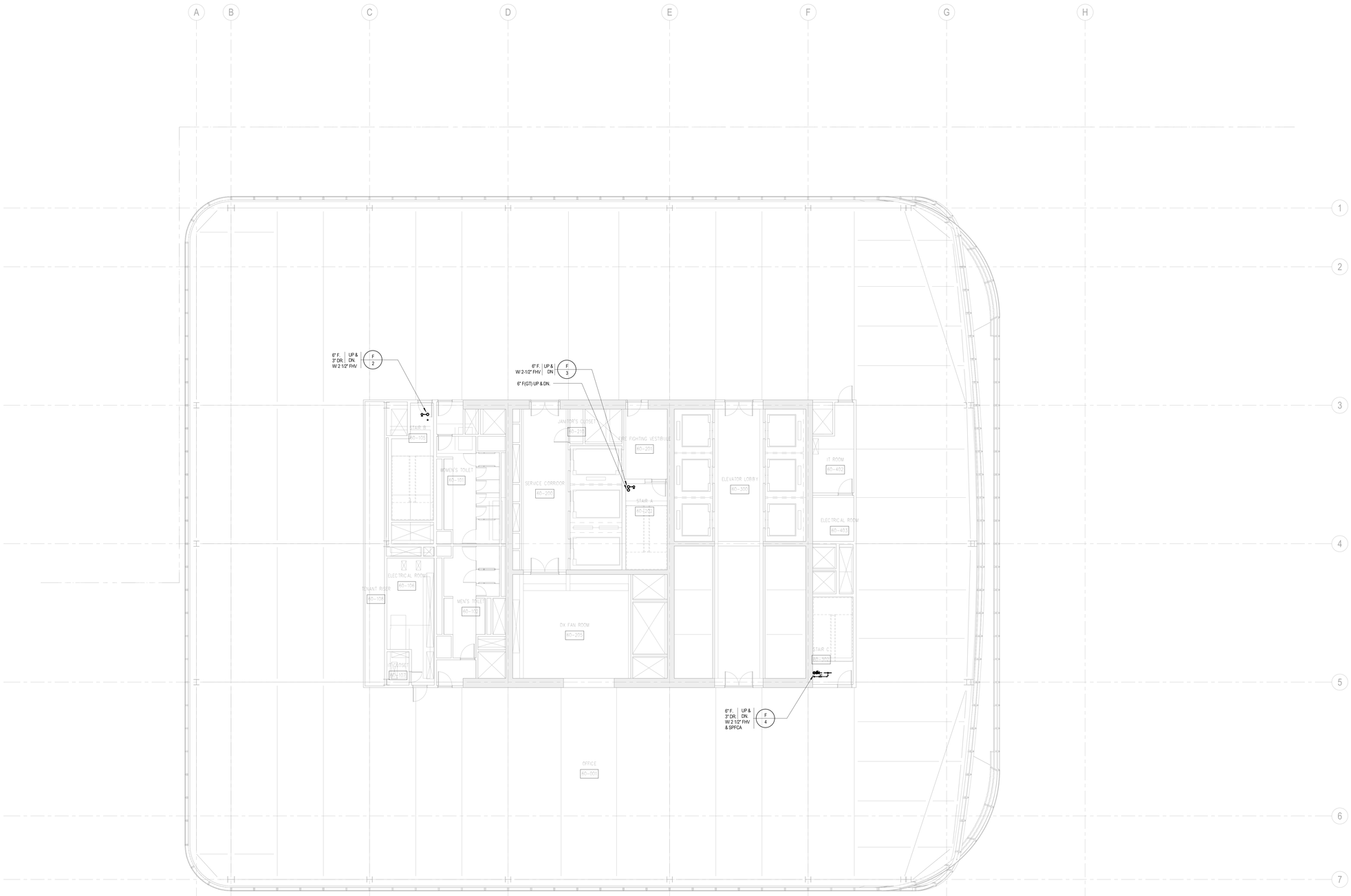

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield

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Wind Tunnel Consultant

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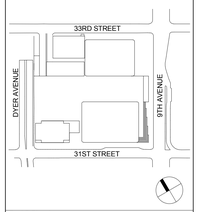
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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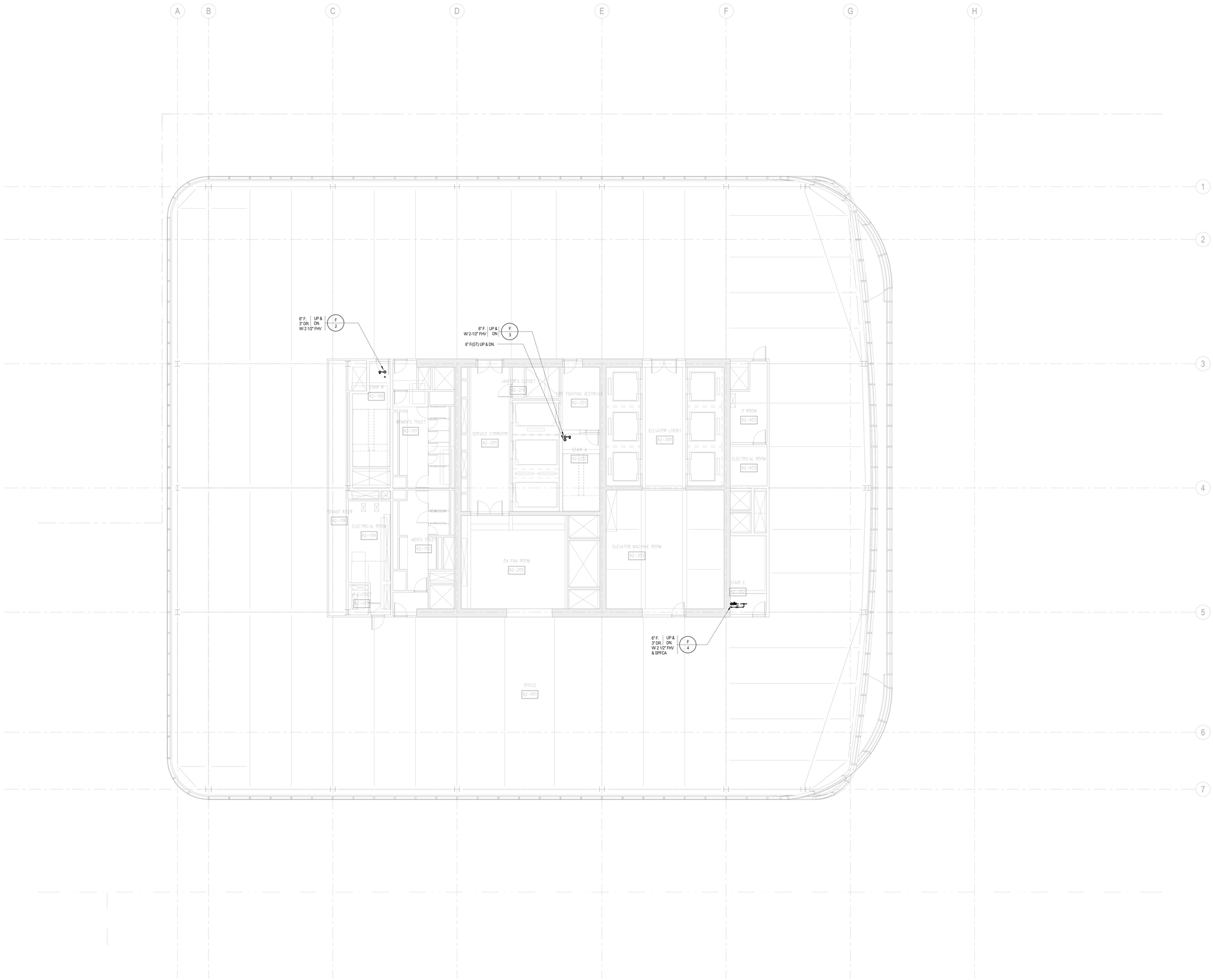
No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 60-61 FLOOR PLAN - HIGH-RISE OVERRUN

Project No.: 14830.A.000	Sheet No.: FP-160
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-160.00
File No.: FP-160	Page No.:



SHEET NOTES

MANHATTAN WEST: NORTH TOWER
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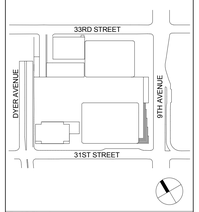
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

No.	Date	Description
2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 62 FLOOR PLAN - HIGH-RISE EMR

Project No.: 14830 A.000	Sheet No.: FP-162
Date: 20 JUN 2014	
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File No.: FP-162	Page No.:

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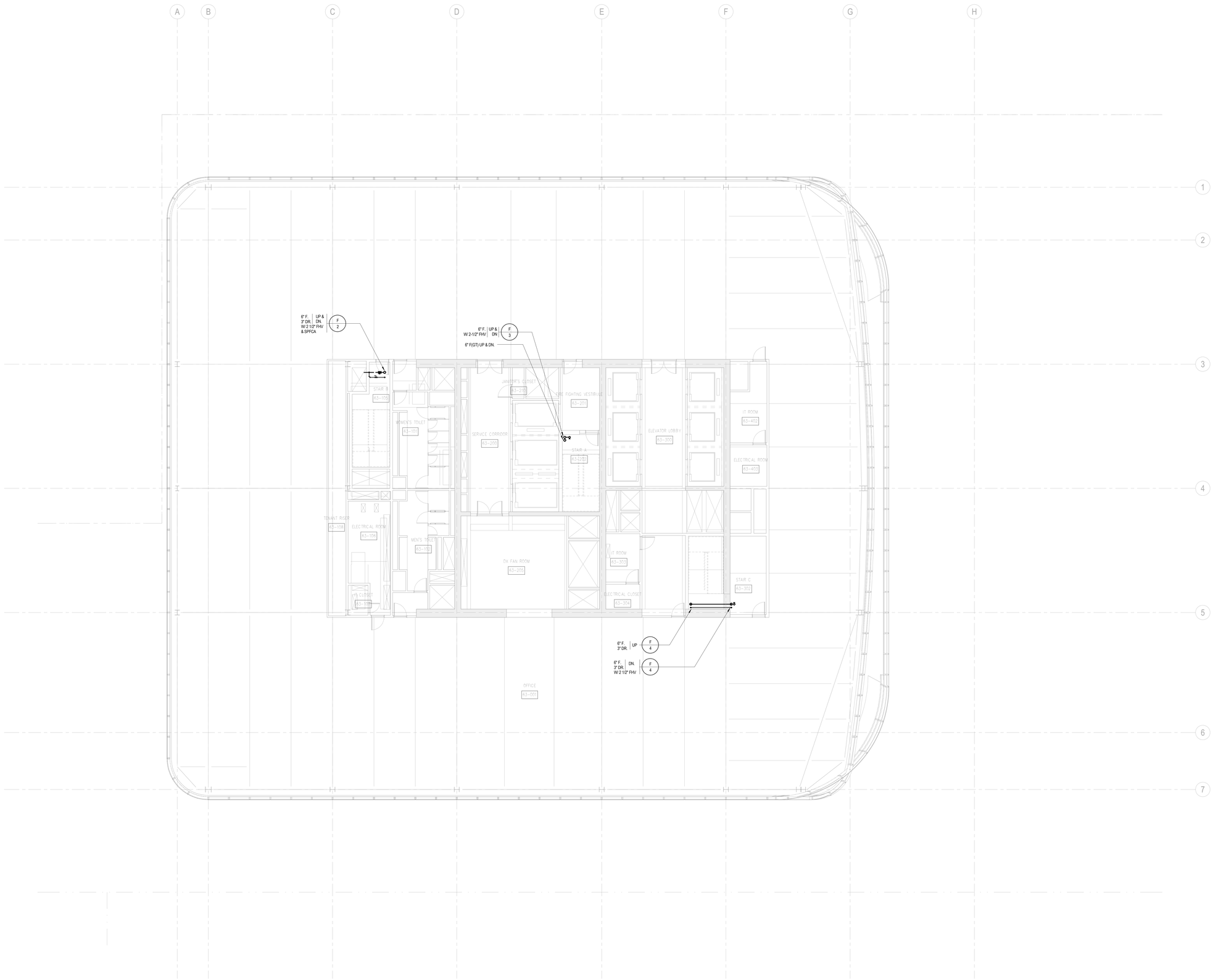

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM

Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
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Viridian Energy & Environmental
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Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610,
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Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

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Blast Consultant

Weidlinger Associates, Inc.
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Acoustical Consultant

Cerami & Associates
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Vibration Consultant

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215 West 40th Street, 15th Floor, New York, NY 10018

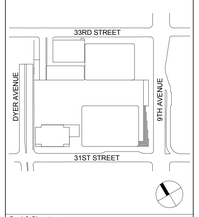
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 63 FLOOR PLAN - HIGH-RISE

Project No.: 14830.A.000	Sheet No.: FP-163
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-163.00
File No.: FP-163	Page No.:

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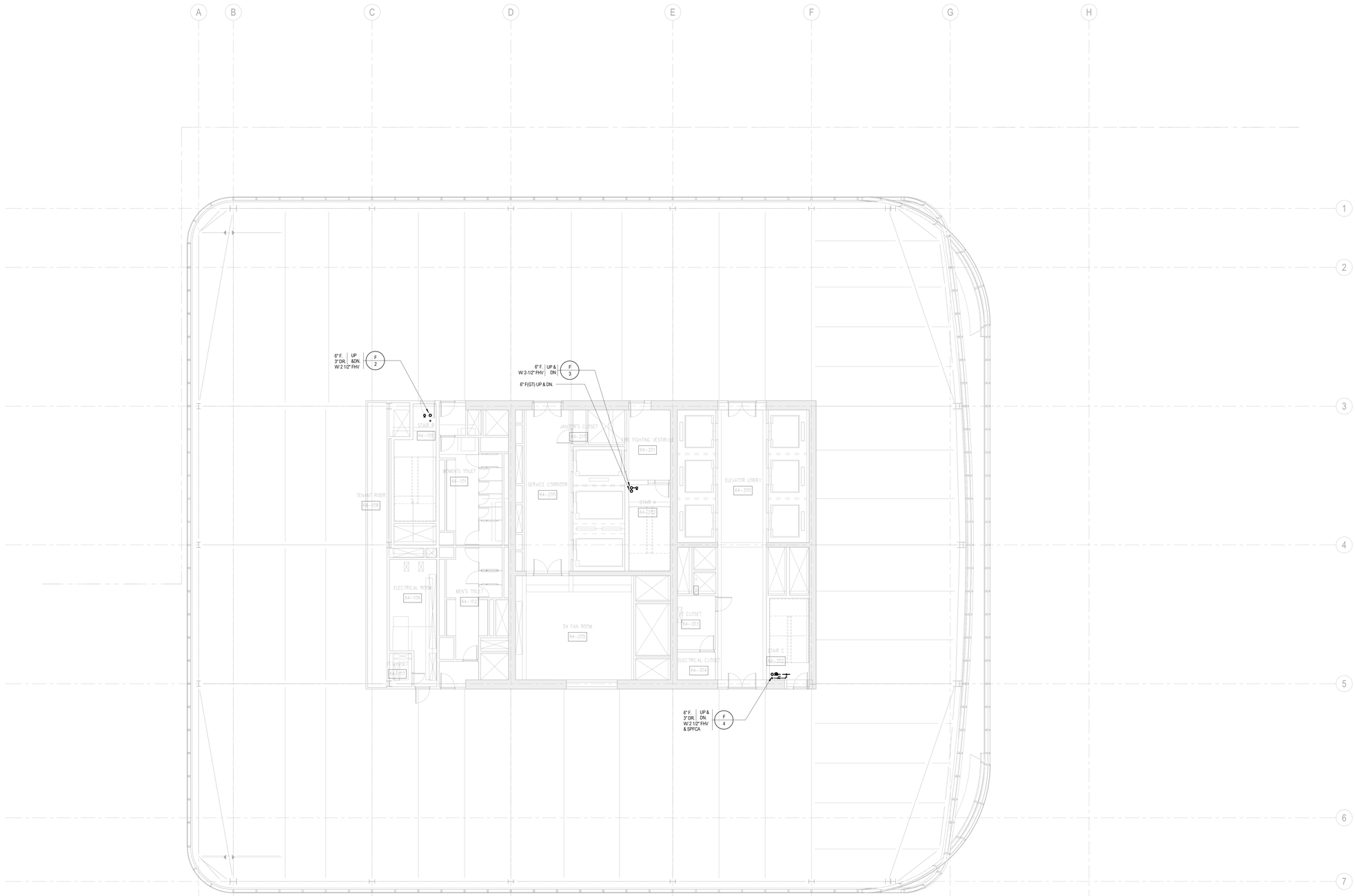

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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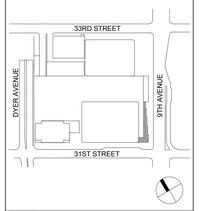
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 64-67 FLOOR PLAN - TYPICAL HIGH-RISE

Project No.: 14830.A.000	Sheet No.: FP-164
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-164.00
File No.: FP-164	Page No.:

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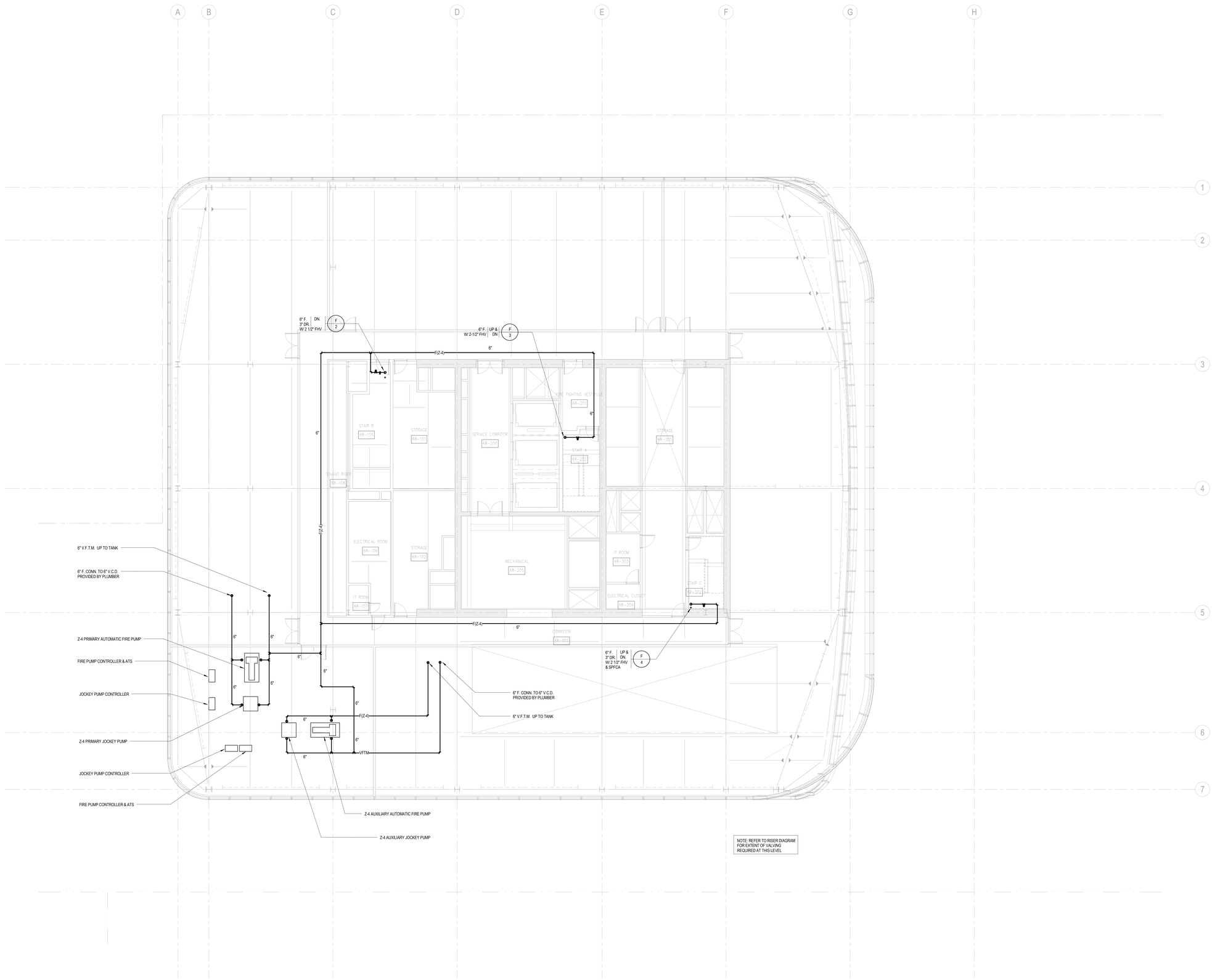

NOTE: REFER TO RISER DIAGRAM FOR EXTENT OF VALVING REQUIRED AT THIS LEVEL

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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MEP Engineering

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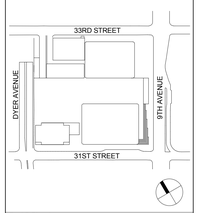
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 68 FLOOR PLAN - MECHANICAL

Project No.: 14830.A.000	Sheet No.: FP-168
Date: 20 JUN 2014	
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File No.: FP-168	Page No.:

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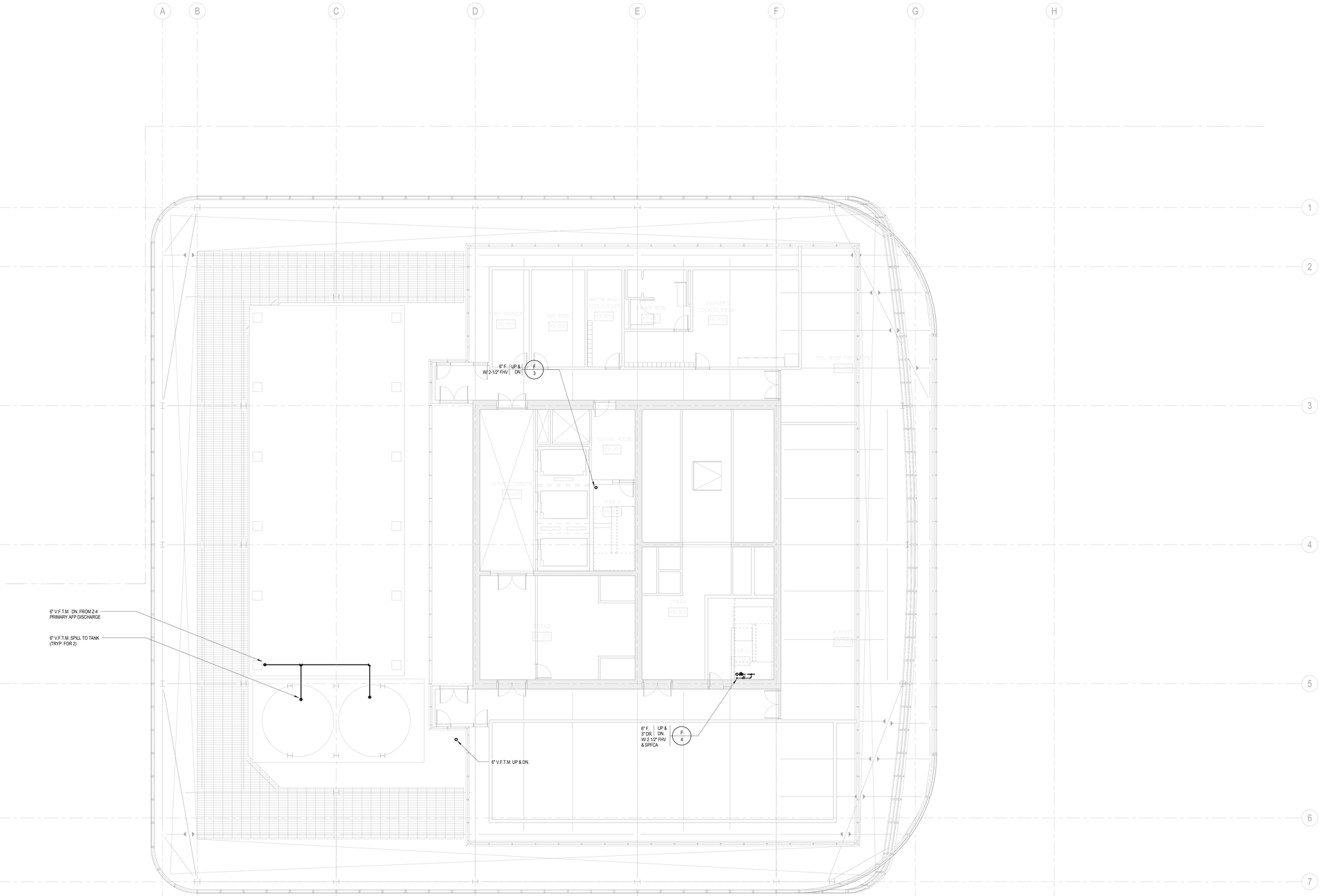

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield Place
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New York, NY 10122

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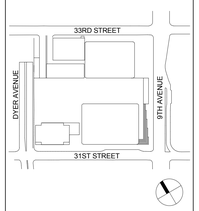
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING

Sheet Name:

FIRE PROTECTION LEVEL 69 FLOOR PLAN - MECHANICAL MEZZANINE

Project No.: 14830.A.000	Sheet No.: FP-169
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-169.00
File No.: FP-169	Page No.:

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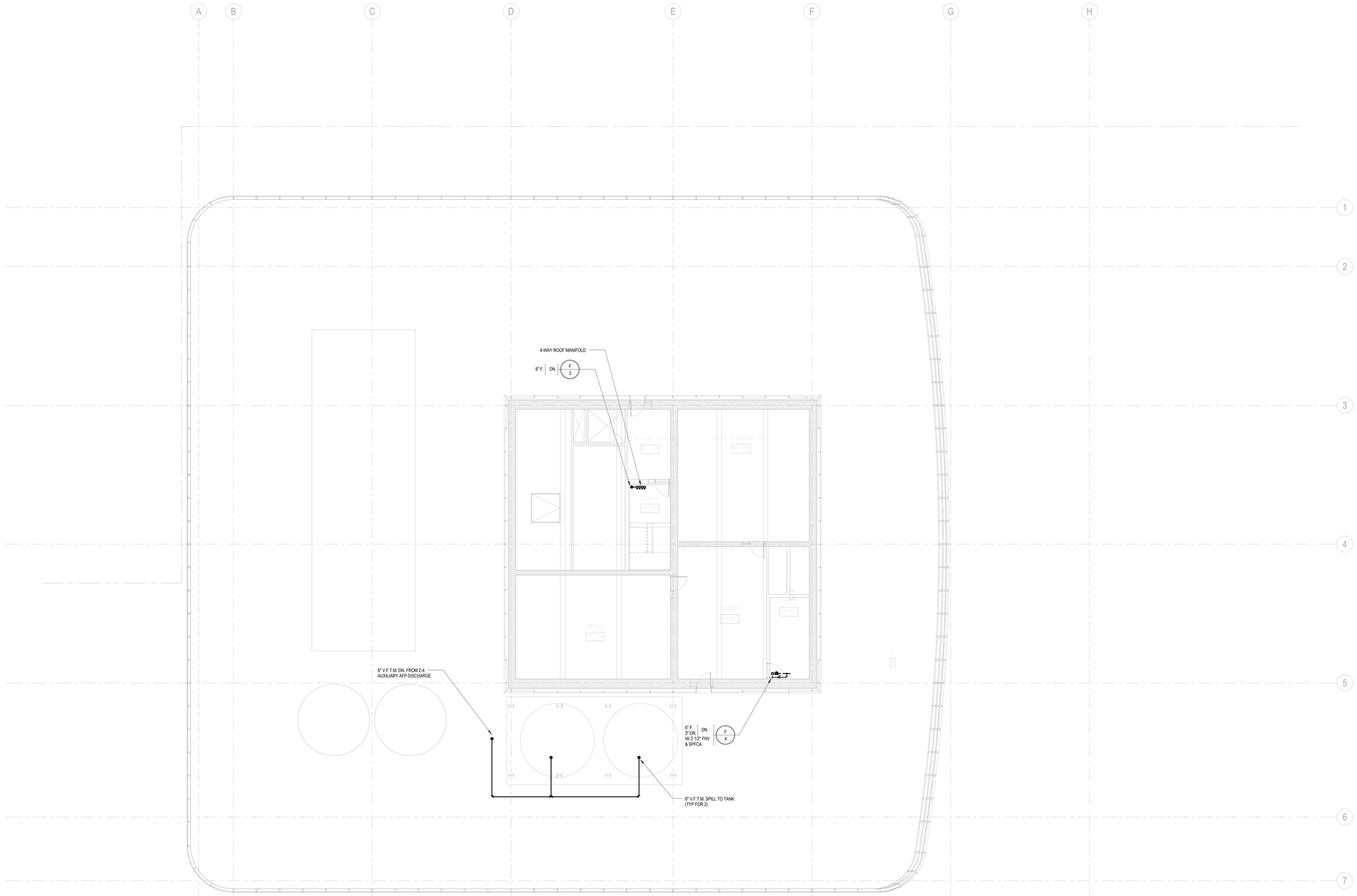

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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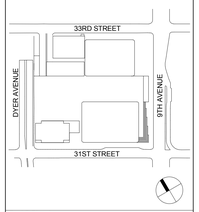
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
4	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION ROOF PLAN - MECHANICAL PENTHOUSE

Project No.: 14830.A.000	Sheet No.: FP-170
Date: 20 JUN 2014	
Scale: 1/8" = 1'-0"	B-SCAN Sheet No.: FP-170.00
File No.: FP-170	Page No.:

6/18/2014 9:24:28 PM

DEPT OF BUILDINGS 121197143 Job Number
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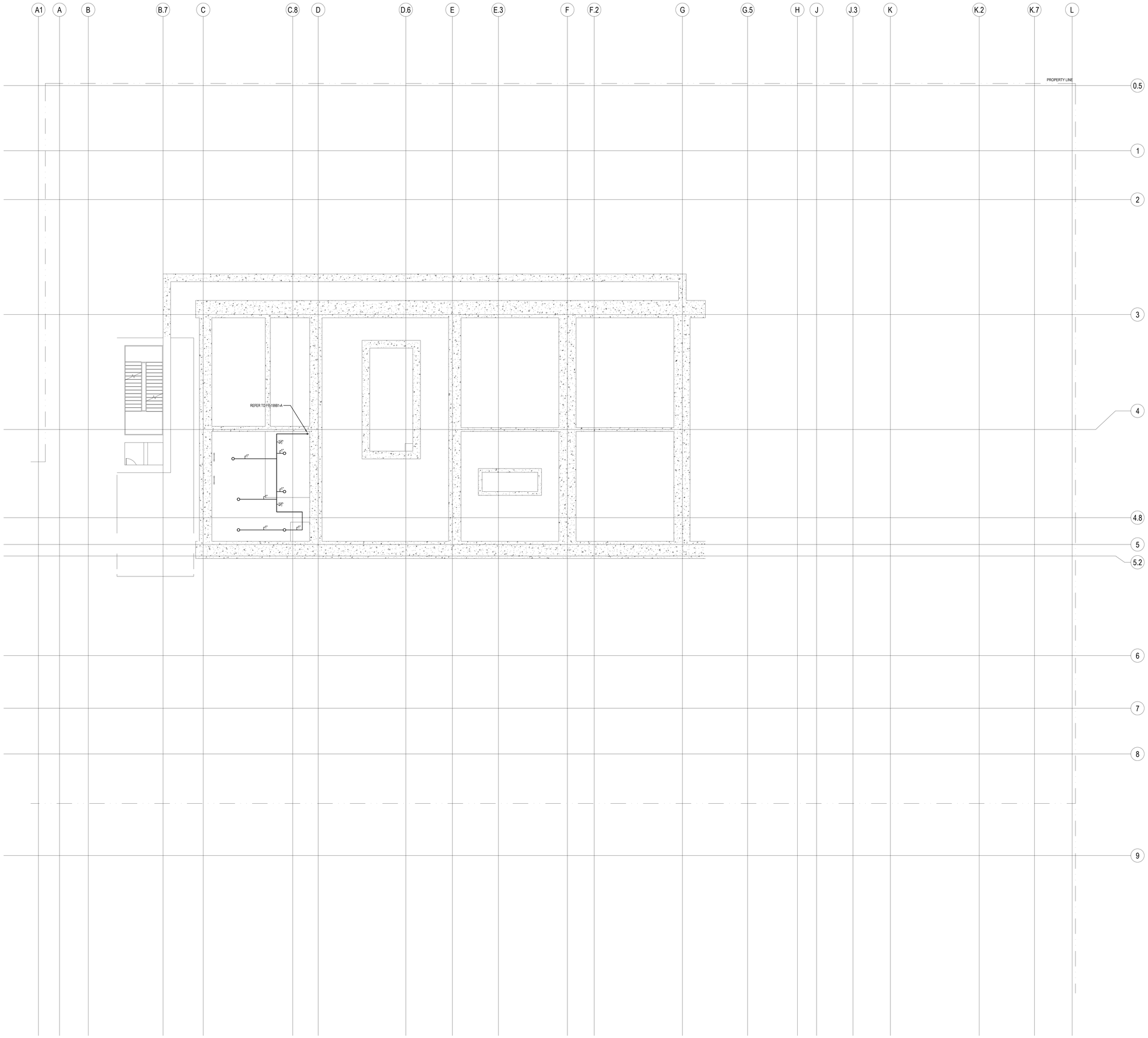

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

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Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

Civil Engineering

Philip Habib & Associates
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MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

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New York, NY 10122

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166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

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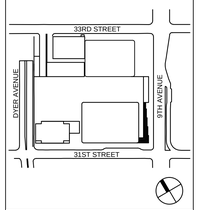
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION CELLAR B1 PIT PART SPRINKLER PLAN

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-198B1P
Date: 15 NOV 2013	
Scale: 1/8" = 1'-0"	Sheet No.: FP-196.00
File No: FP-198B1P	Page No.:

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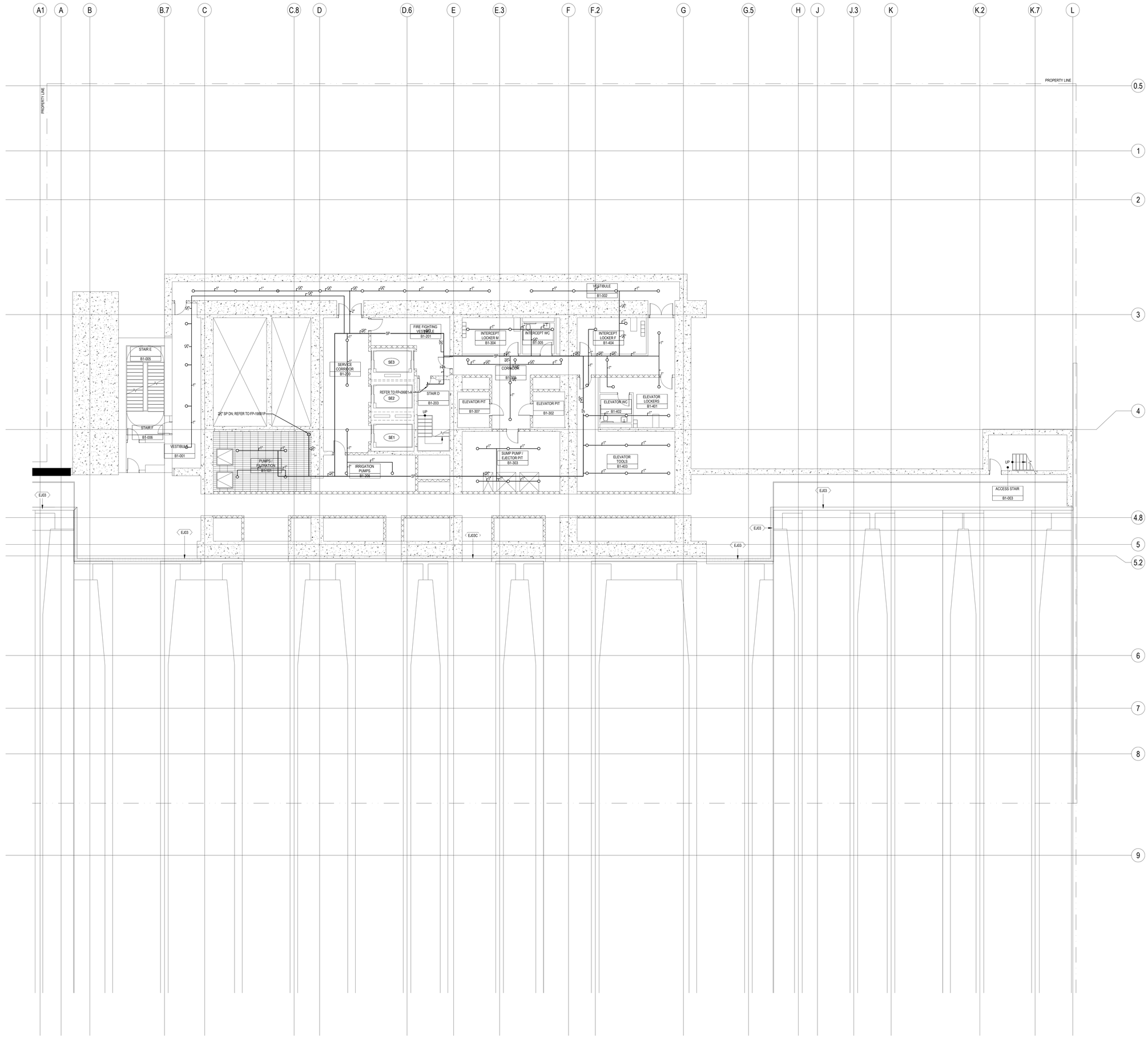

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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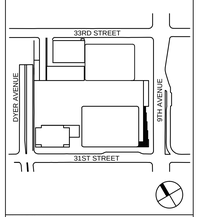
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION CELLAR B1 FLOOR SPRINKLER PLAN - PART A

Project No.: 14630.A.000	B-SCAN Sheet No.: FP-199B1-A
Date: 15 NOV 2013	
Scale: 1/8" = 1'-0"	Sheet No.: FP-197.00
File No.: FP-199B1-A	Page No.:

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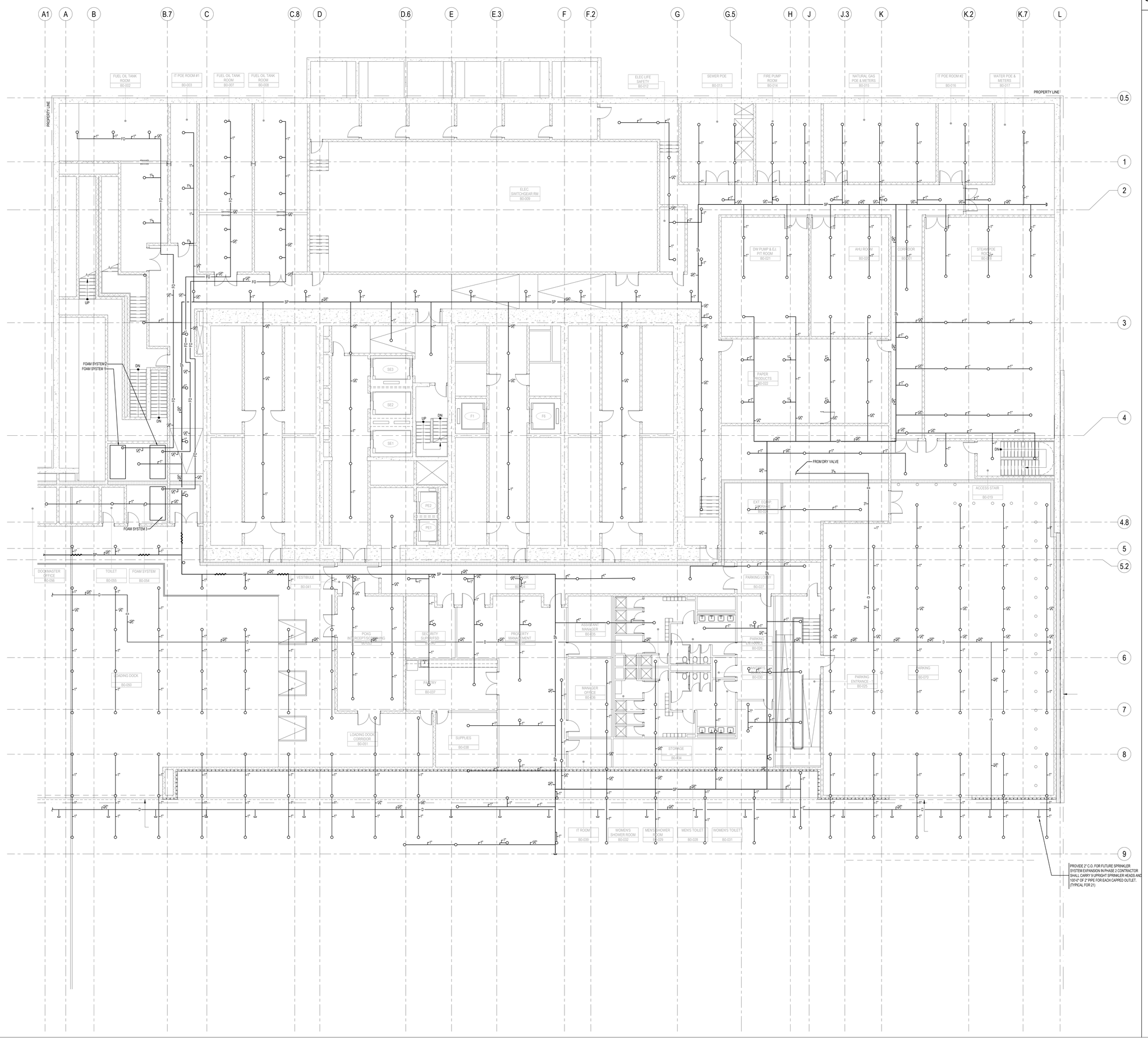

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

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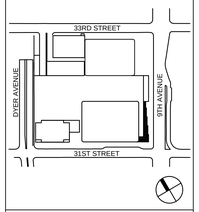
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

LICENSED PROFESSIONAL ENGINEER
JOSEPH S. HOCHREITER
No. 062028
STATE OF NEW YORK

No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION CELLAR B FLOOR SPRINKLER PLAN - PART A

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-200B-A
Date: 15 NOV 2013	
Scale: 1/8" = 1'-0"	Sheet No.: FP-198.00
File No.: FP-200B-A	Page No.:

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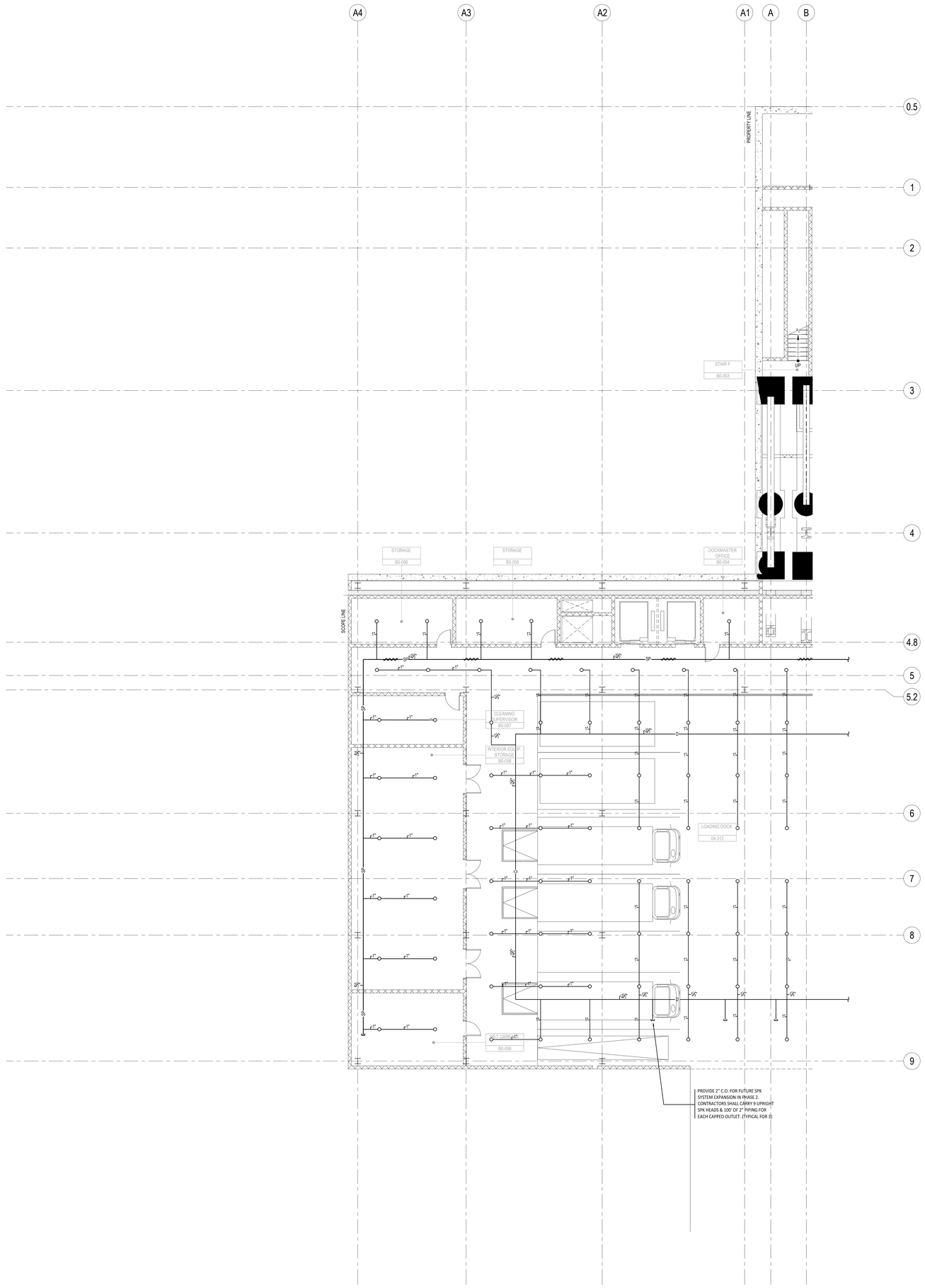

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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Architecture/Structural Engineering

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Skidmore, Owings & Merrill LLP
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Civil Engineering

Philip Habib & Associates
102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design

Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

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Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant

Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

Vibration Consultant

Wilson, Uhrig & Associates, Inc.
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Code Consultant

Code Consultants Professional Engineers PC
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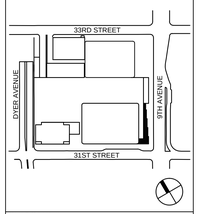
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION CELLAR B FLOOR SPRINKLER PLAN - PART B

Project No.: 14830.A.000
Date: 15 NOV 2013
Scale: 1/8" = 1'-0"
File No: FP-200B-B
B-SCAN Sheet No.: FP-200B-B
Sheet No.: FP-199.00
Page No.:

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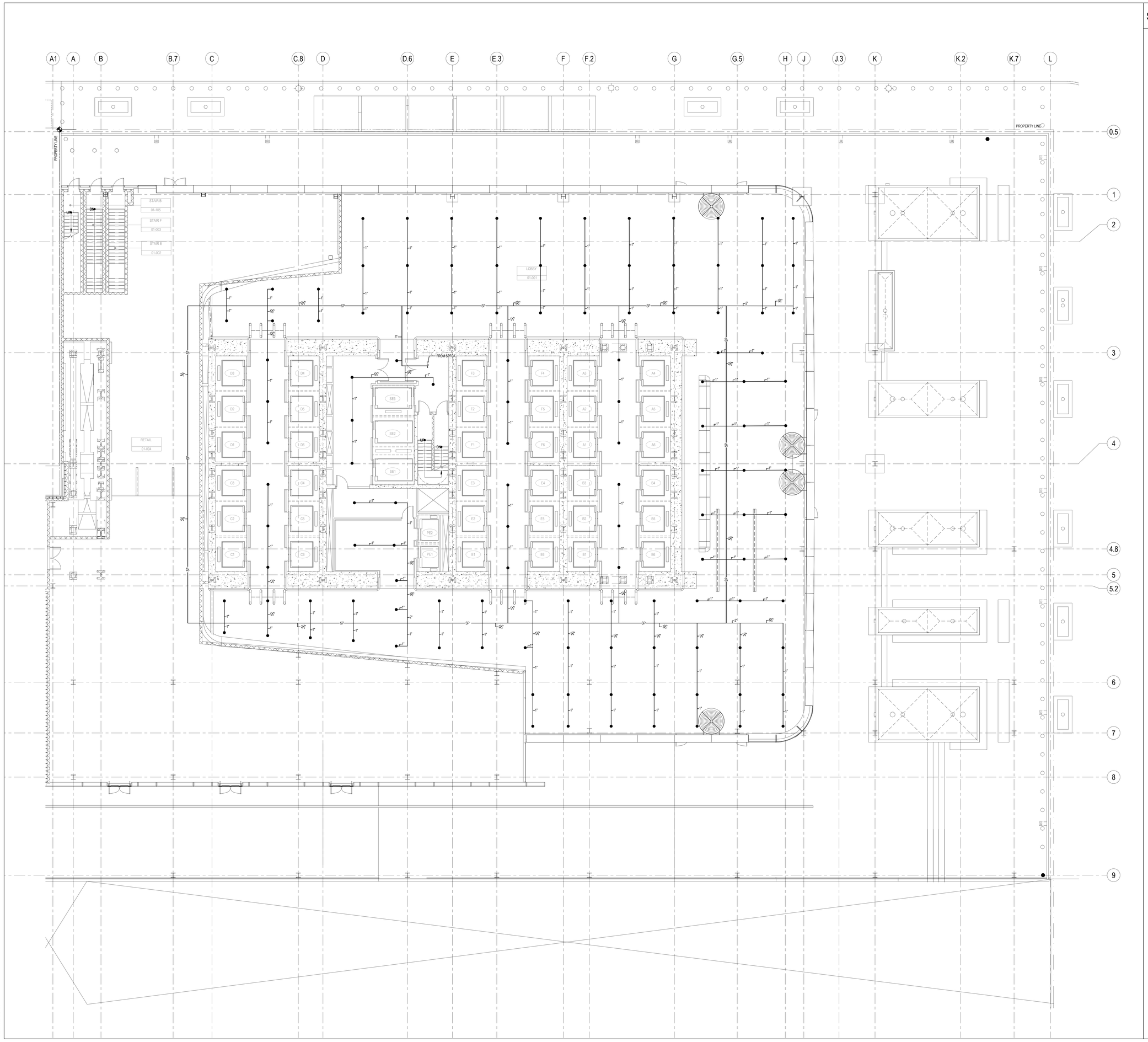

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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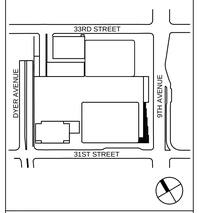
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION GROUND FLOOR SPRINKLER PLAN - PART A

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-201-A
Date: 15 NOV 2013	Sheet No.: FP-200.00
Scale: 1/8" = 1'-0"	
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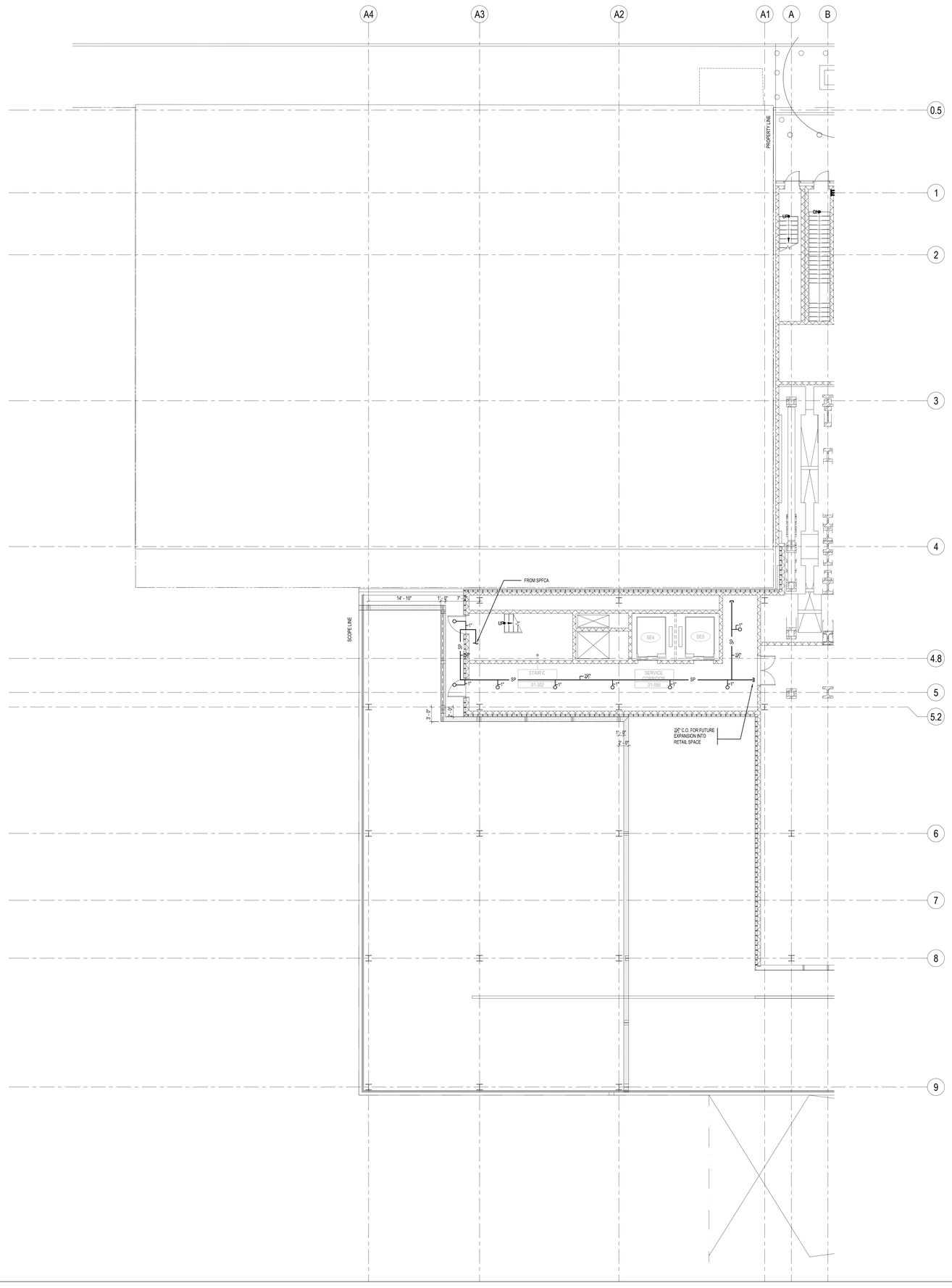

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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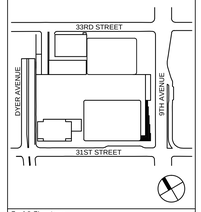
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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Sheet Name:

FIRE PROTECTION GROUND FLOOR SPRINKLER PLAN - PART B

Project No.: 14830.A.000

Date: 15 NOV 2013

Scale: 1/8" = 1'-0"

File No.: FP-201-B

B-SCAN Sheet No.: FP-201-B

Sheet No.: FP-201.00

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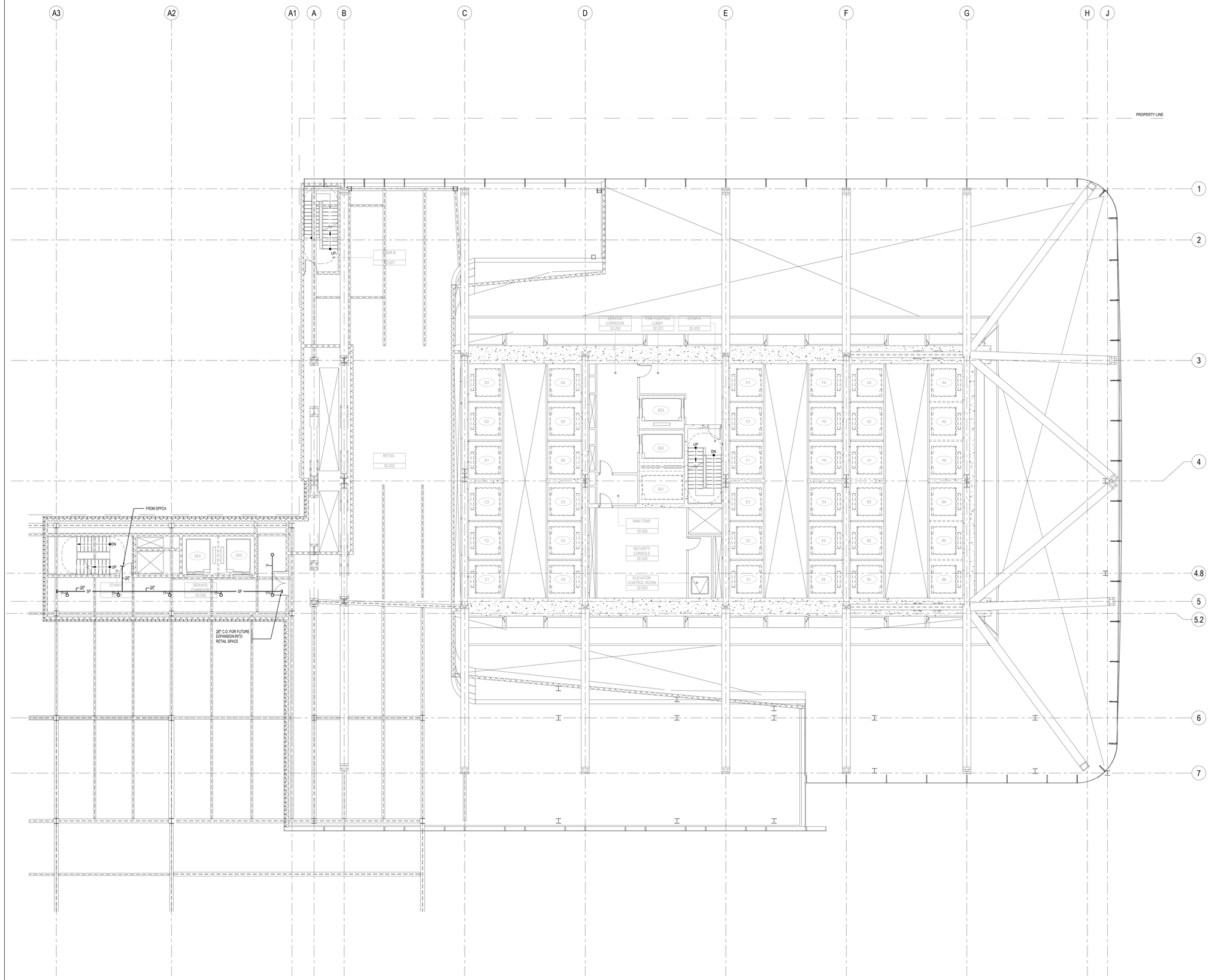

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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Wind Tunnel Consultant

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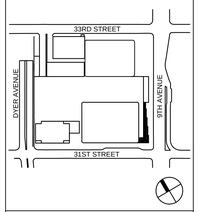
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 2 FLOOR SPRINKLER PLAN - RETAIL

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-202
Date: 15 NOV 2013	
Scale: 1/8" = 1'-0"	Sheet No.: FP-202.00
File No.: FP-202	Page No.:

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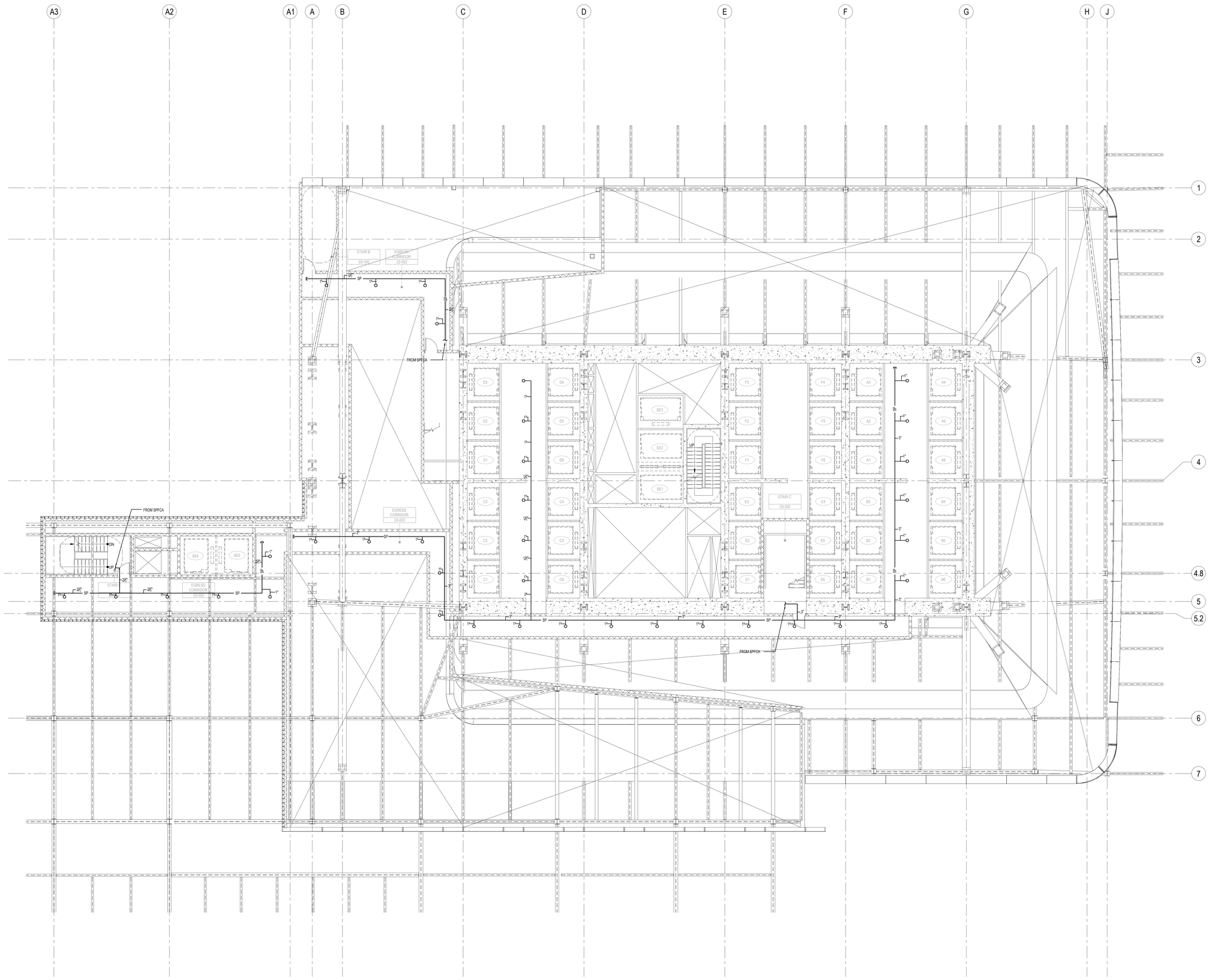

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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102 Madison Avenue #11, New York, NY 10016

MEP Engineering

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404 Fifth Avenue #8, New York, NY 10018

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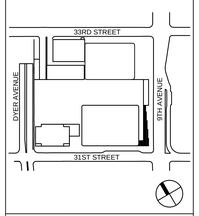
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 3 FLOOR SPRINKLER PLAN - STAIR TRANSFER

Project No.: 14830.A.000

Date: 15 NOV 2013

Scale: 1/8" = 1'-0"

File No.: FP-203

B-SCAN Sheet No.: FP-203

Sheet No.: FP-203.00

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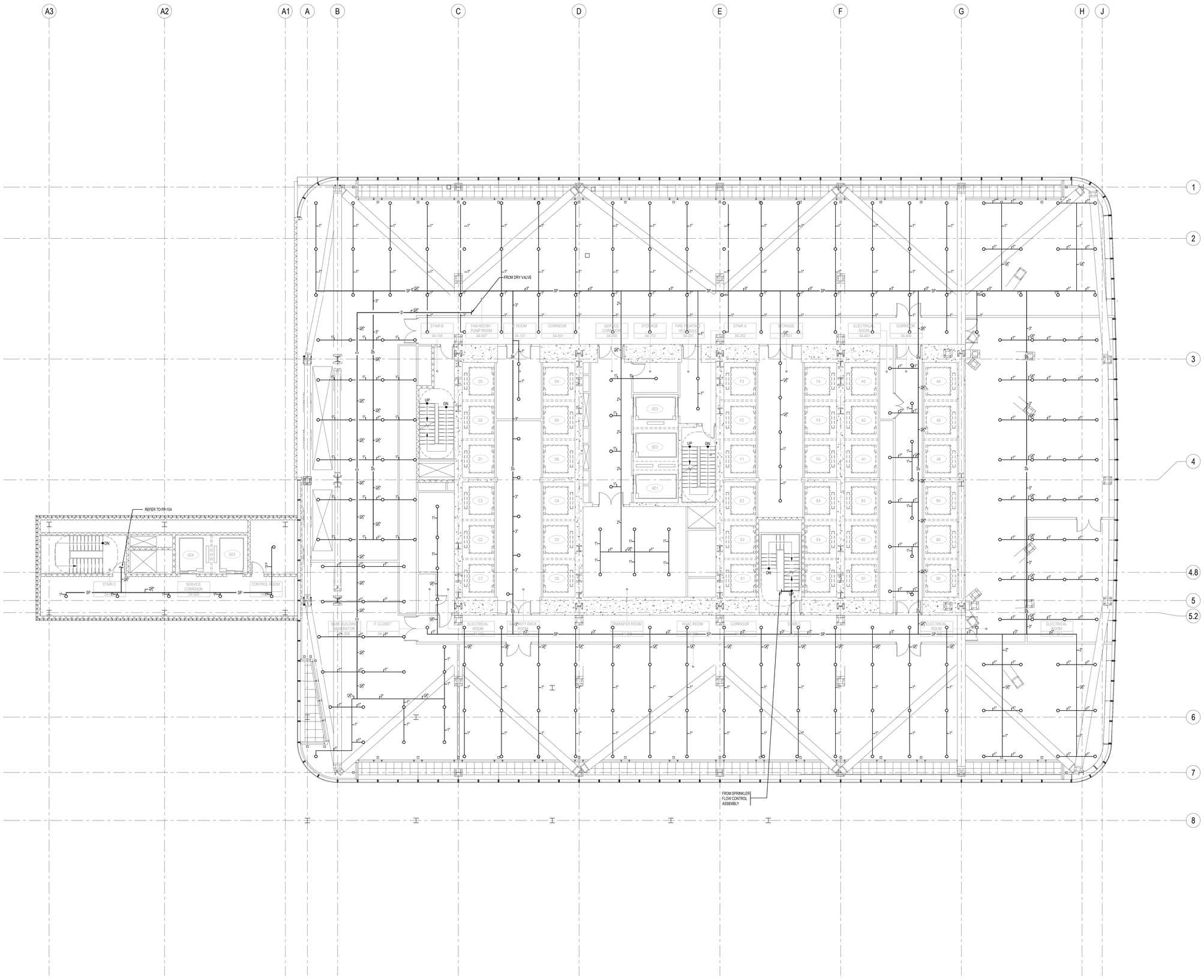

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

Architecture/Structural Engineering

SOM
Skidmore, Owings & Merrill LLP
14 Wall Street, New York, NY 10005

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MEP Engineering

Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation

Edgett Williams Consulting Group, Inc.
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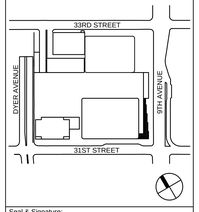
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 4 FLOOR SPRINKLER PLAN - MECHANICAL

Project No.: 14830.A.000

Date: 15 NOV 2013

Scale: 1/8" = 1'-0"

File No.: FP-204

B-SCAN Sheet No.: FP-204

Sheet No.: FP-204.00

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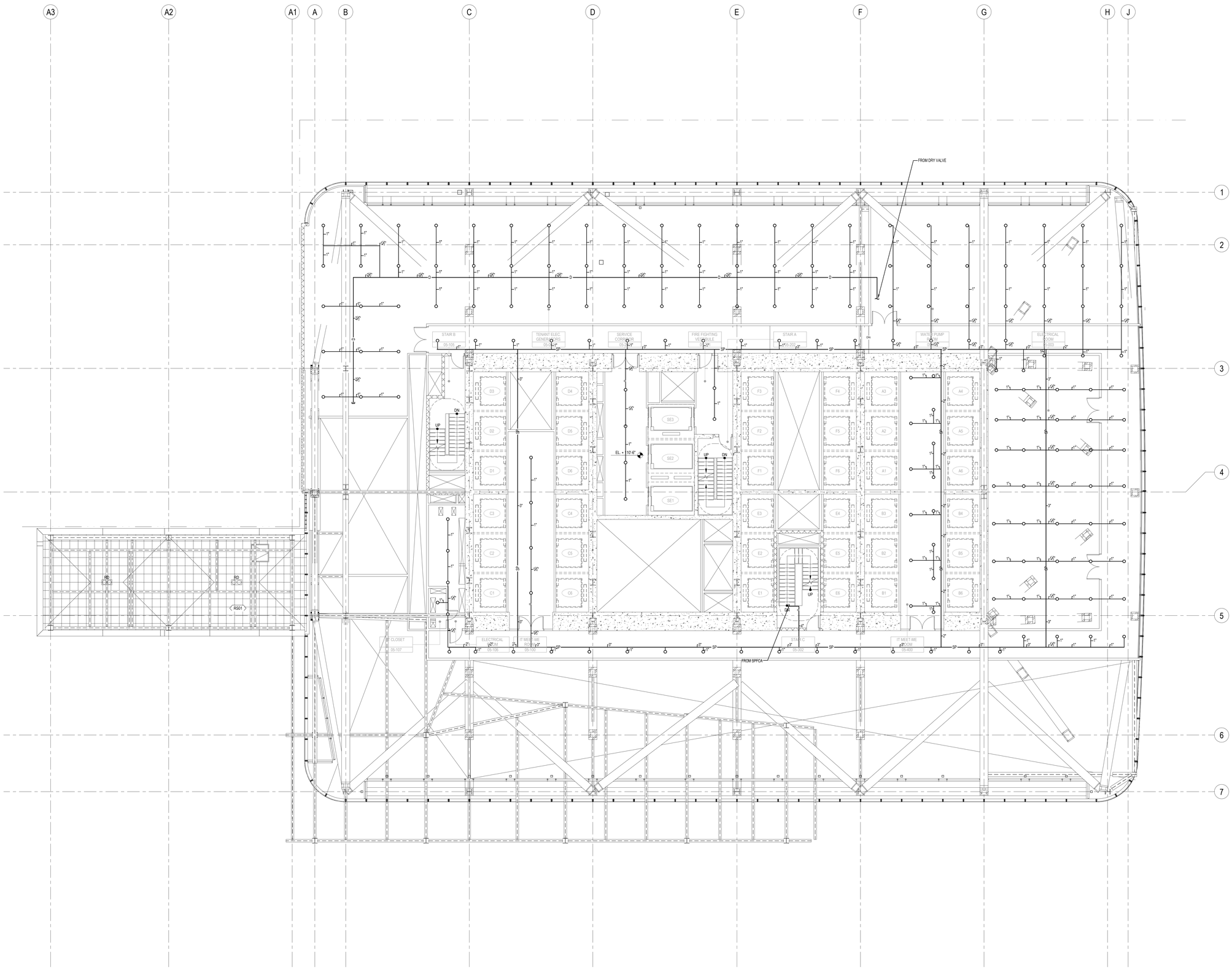

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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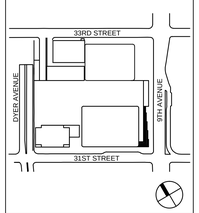
Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 5 FLOOR SPRINKLER PLAN - MECHANICAL MEZZANINE

Project No.: 14830.A.000

Date: 15 NOV 2013

Scale: 1/8" = 1'-0"

File No.: FP-205

B-SCAN Sheet No.: FP-205

Sheet No.: FP-205.00

Page No.:

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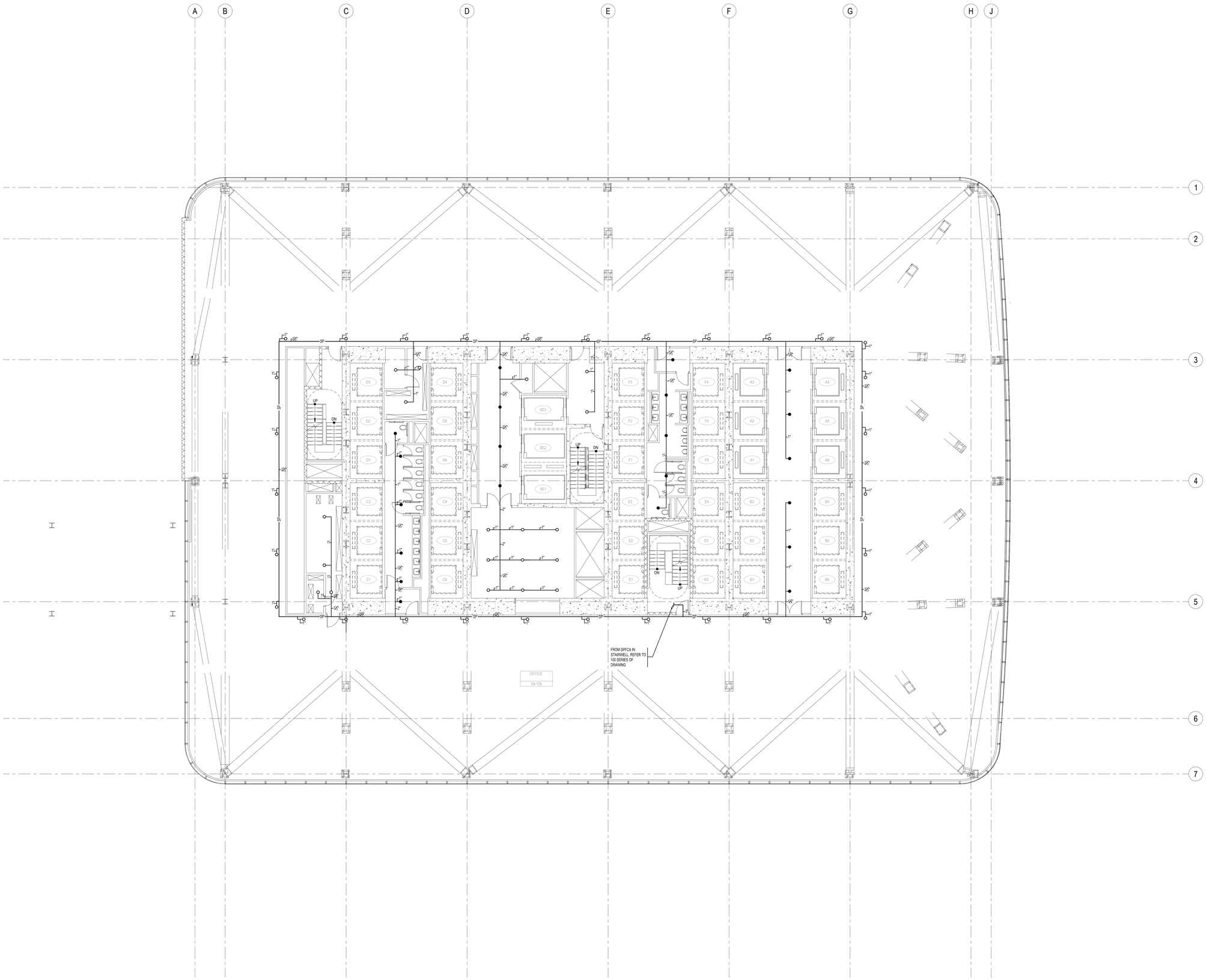

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

Client

Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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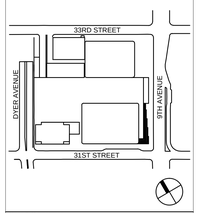
Key Plan:



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Sheet Name:

FIRE PROTECTION LEVEL 6-27 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-206
Date: 15 NOV 2013	
Scale: 1/8" = 1'-0"	Sheet No.: FP-206.00
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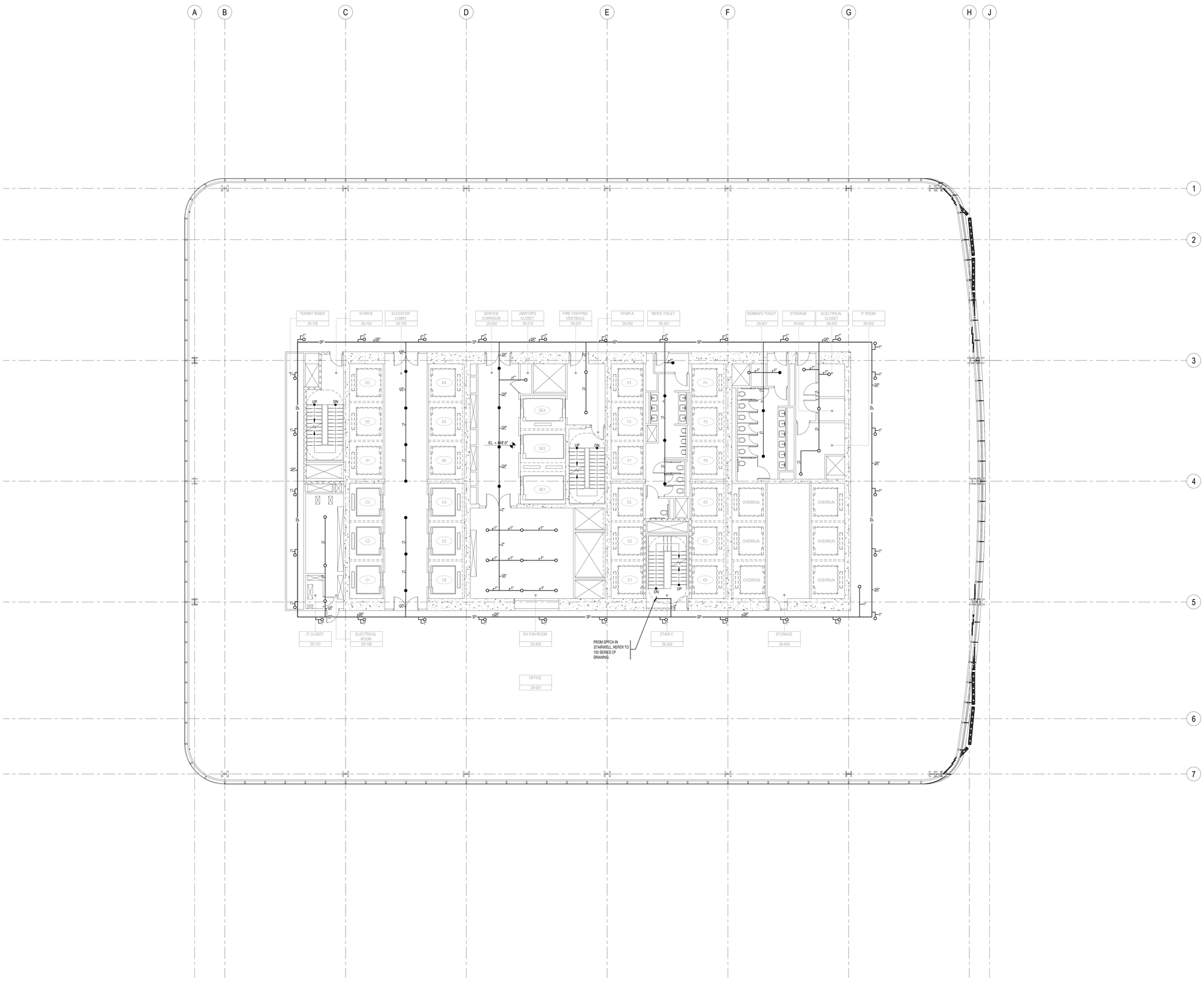

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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Sustainable Design

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Geo-Technical Engineering

Mueser Rutledge Consulting Engineers
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New York, NY 10122

Landscape Consultant

Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant

Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant

Weidlinger Associates, Inc.
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Acoustical Consultant

Cerami & Associates
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Vibration Consultant

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Code Consultant

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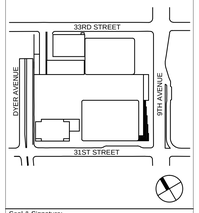
Facade Maintenance Consultant

Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



Seal & Signature:

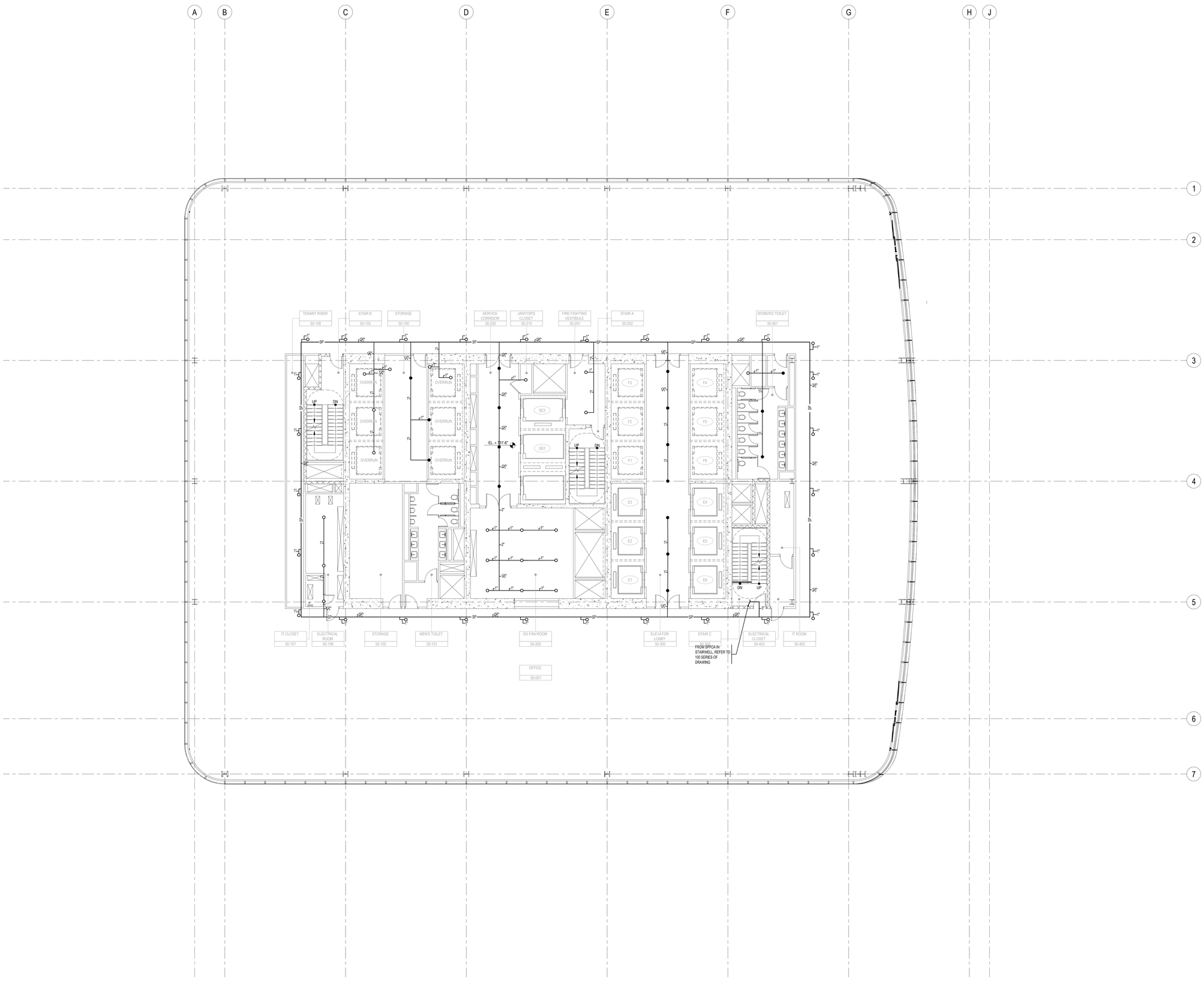
No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
3	15 NOV 2013	ISSUED FOR DD PROGRESS PRICING
2	12 JUL 2013	ISSUED FOR 50% DESIGN DEVELOPMENT
1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 28-48 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-228
Date: 15 NOV 2013	Sheet No.: FP-228.00
Scale: 1/8" = 1'-0"	
File No.: FP-228	Page No.:

8/21/2013 10:10:55 AM



SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield

Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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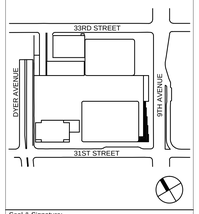
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 49-67 FLOOR SPRINKLER PLAN - TYPICAL OFFICE FLOOR

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-249
Date: 15 NOV 2013	Sheet No.: FP-249.00
Scale: 1/8" = 1'-0"	
File No.: FP-249	Page No.:

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DEPT OF BLDGS 121197143 Job Number

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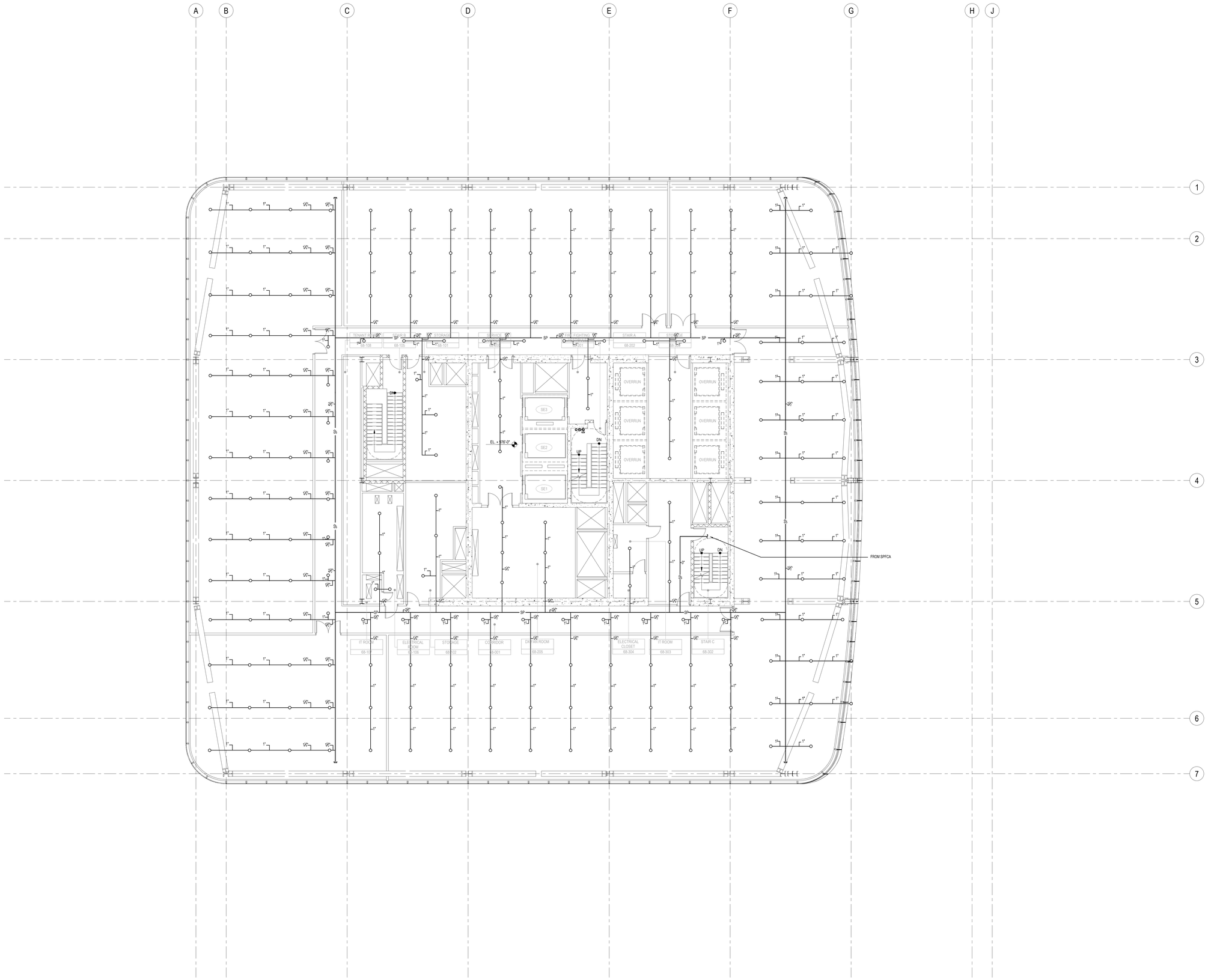

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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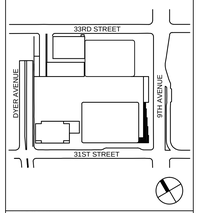
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION LEVEL 68 FLOOR SPRINKLER PLAN - MECHANICAL MEZZANINE

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-268
Date: 15 NOV 2013	
Scale: 1/8" = 1'-0"	Sheet No.: FP-268.00
File No.: FP-268	Page No.:

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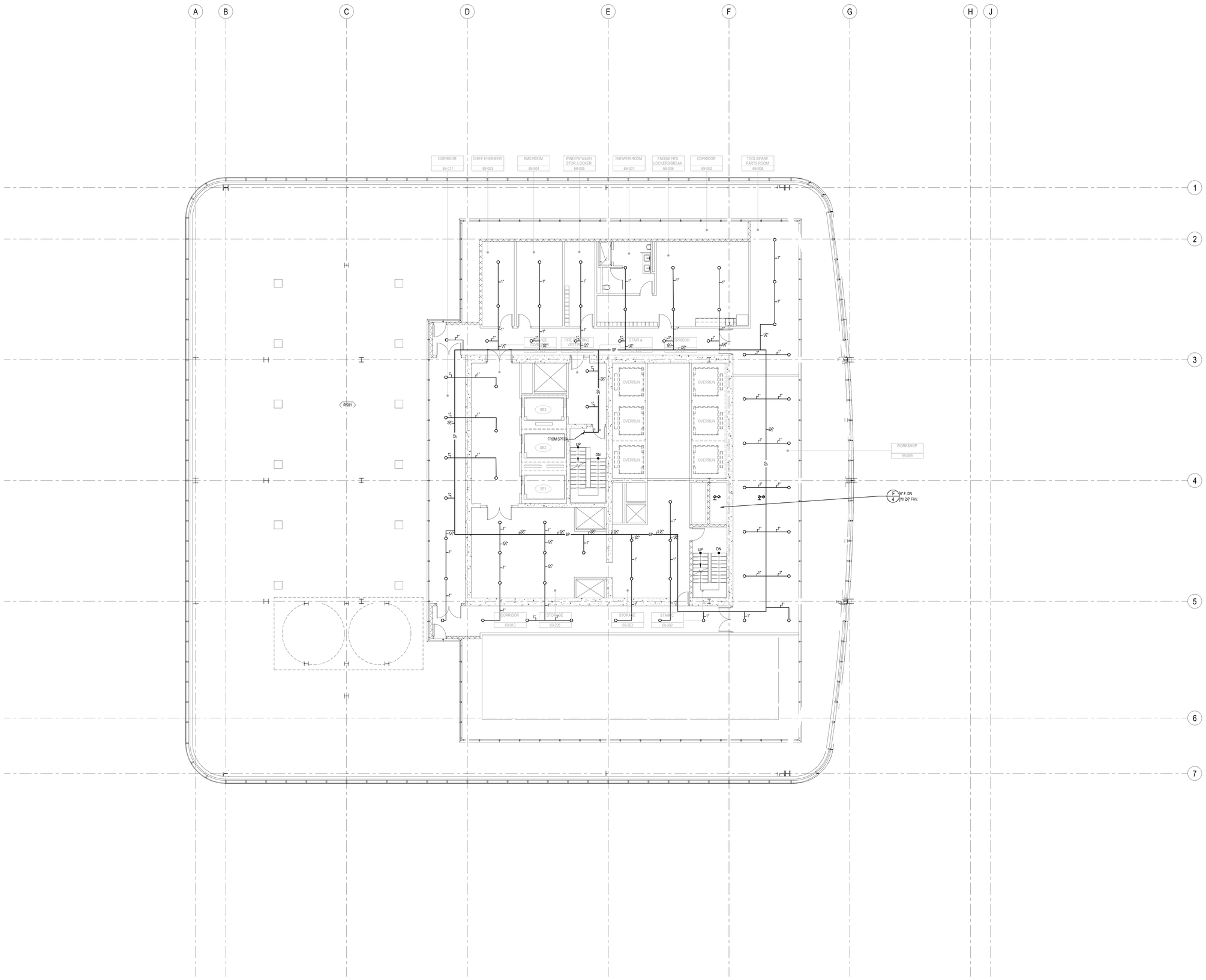

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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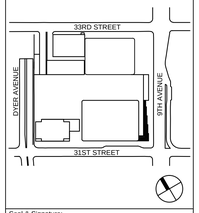
Key Plan:



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Sheet Name:

FIRE PROTECTION ROOF SPRINKLER PLAN - MECHANICAL PENTHOUSE

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-269
Date: 15 NOV 2013	Sheet No.: FP-269.00
Scale: 1/8" = 1'-0"	
File No.: FP-269	Page No.:

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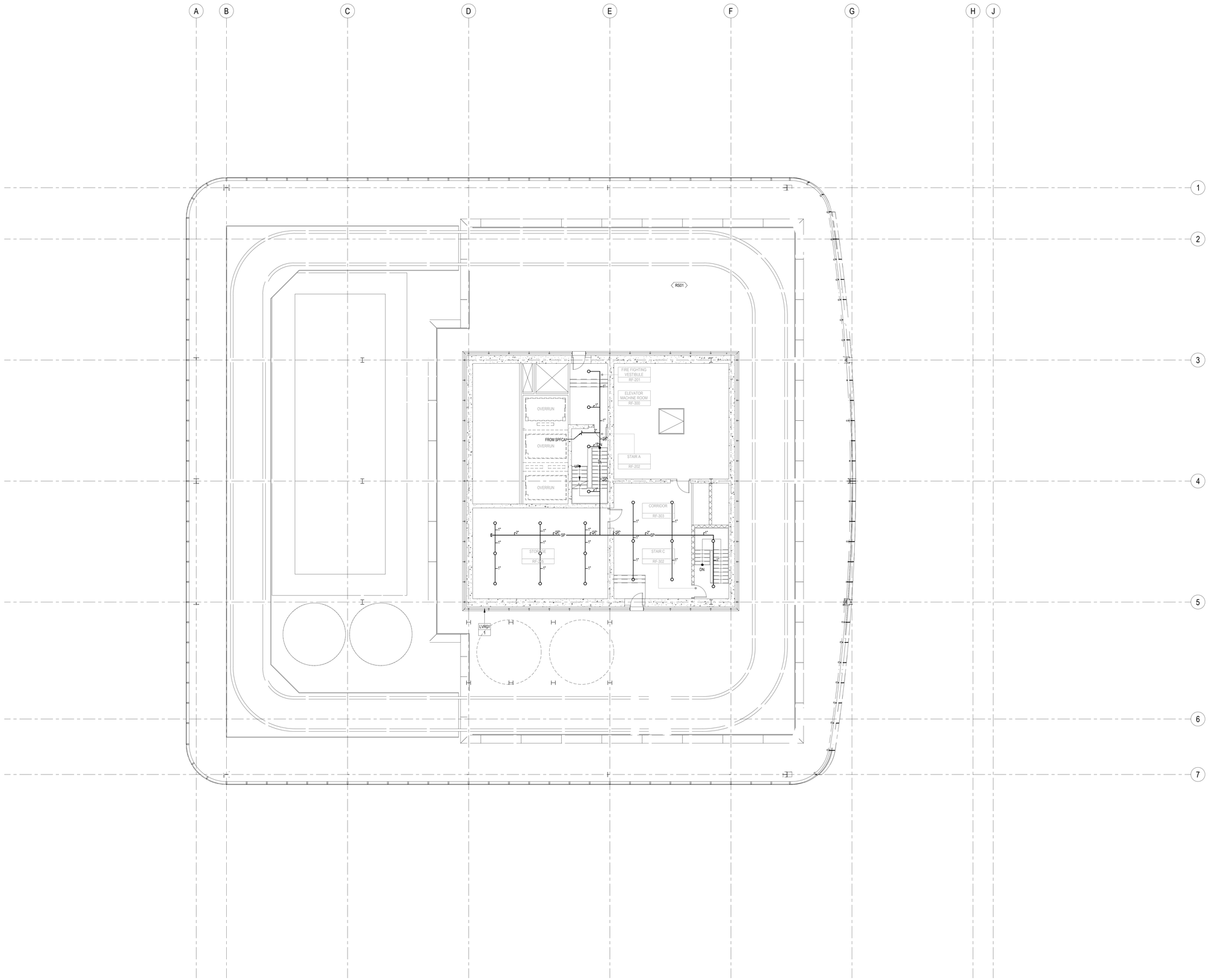

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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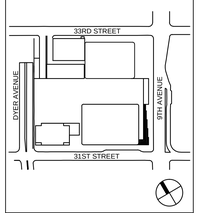
Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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1	15 MAR 2013	ISSUED FOR RECONCILIATION

Sheet Name:

FIRE PROTECTION ROOF SPRINKLER PLAN - MECHANICAL PENTHOUSE ROOF

Project No.: 14830.A.000

Date: 15 NOV 2013

Scale: 1/8" = 1'-0"

File No.: FP-270

B-SCAN Sheet No.: FP-270

Sheet No.: FP-270.00

Page No.:

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DEPT OF BUILDINGS 121197143 Job Number

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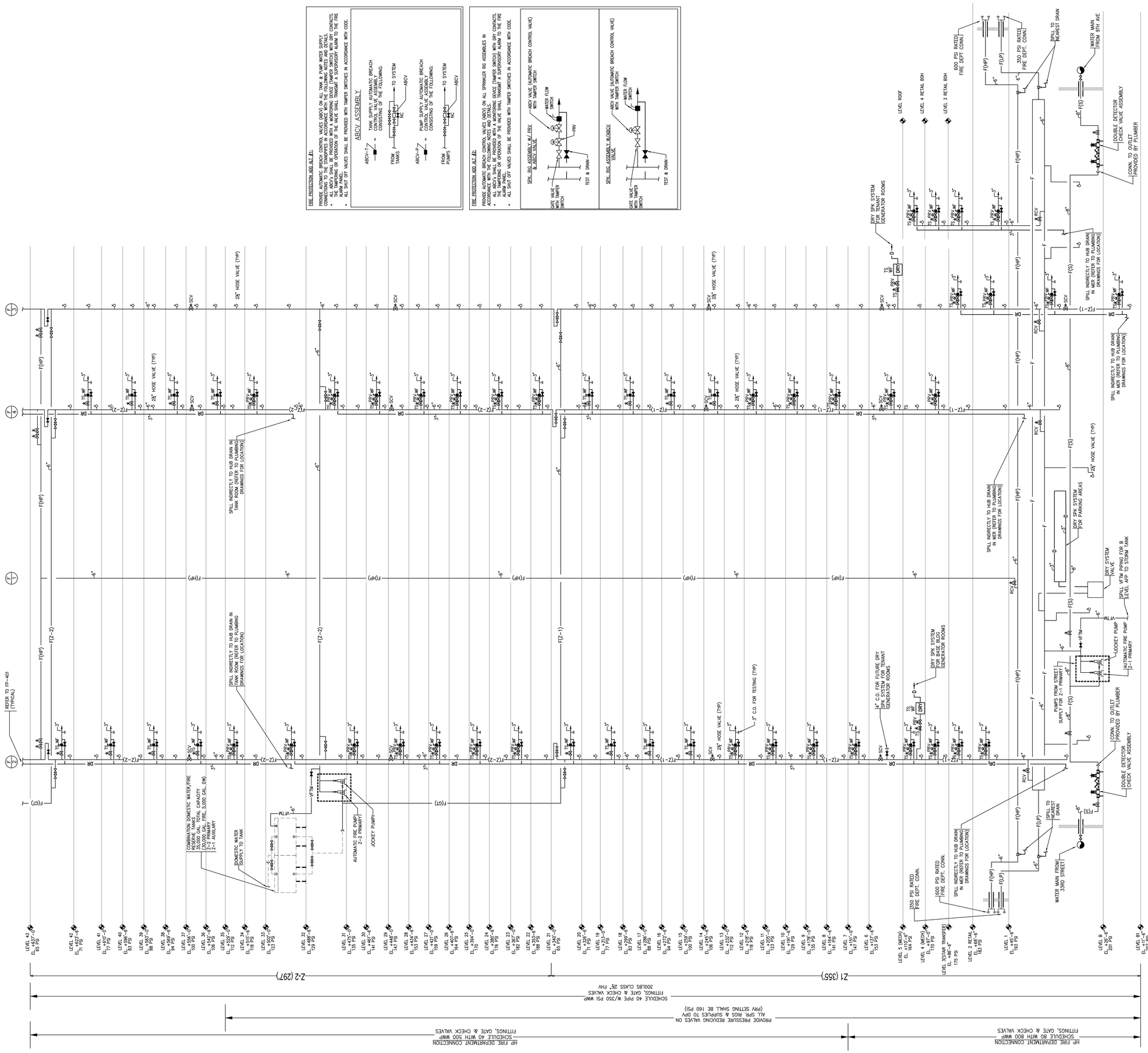

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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Brookfield Place
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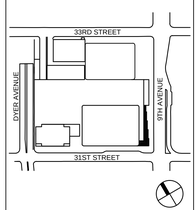
Key Plan:



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Sheet Name:

FIRE PROTECTION RISER DIAGRAM SHEET 1

Project No.: 14030.A.000	B-SCAN Sheet No.: FP-400
Date: 15 NOV 2013	Sheet No.: FP-400.00
Scale: NONE	
File No.: FP-400-1	Page No.:

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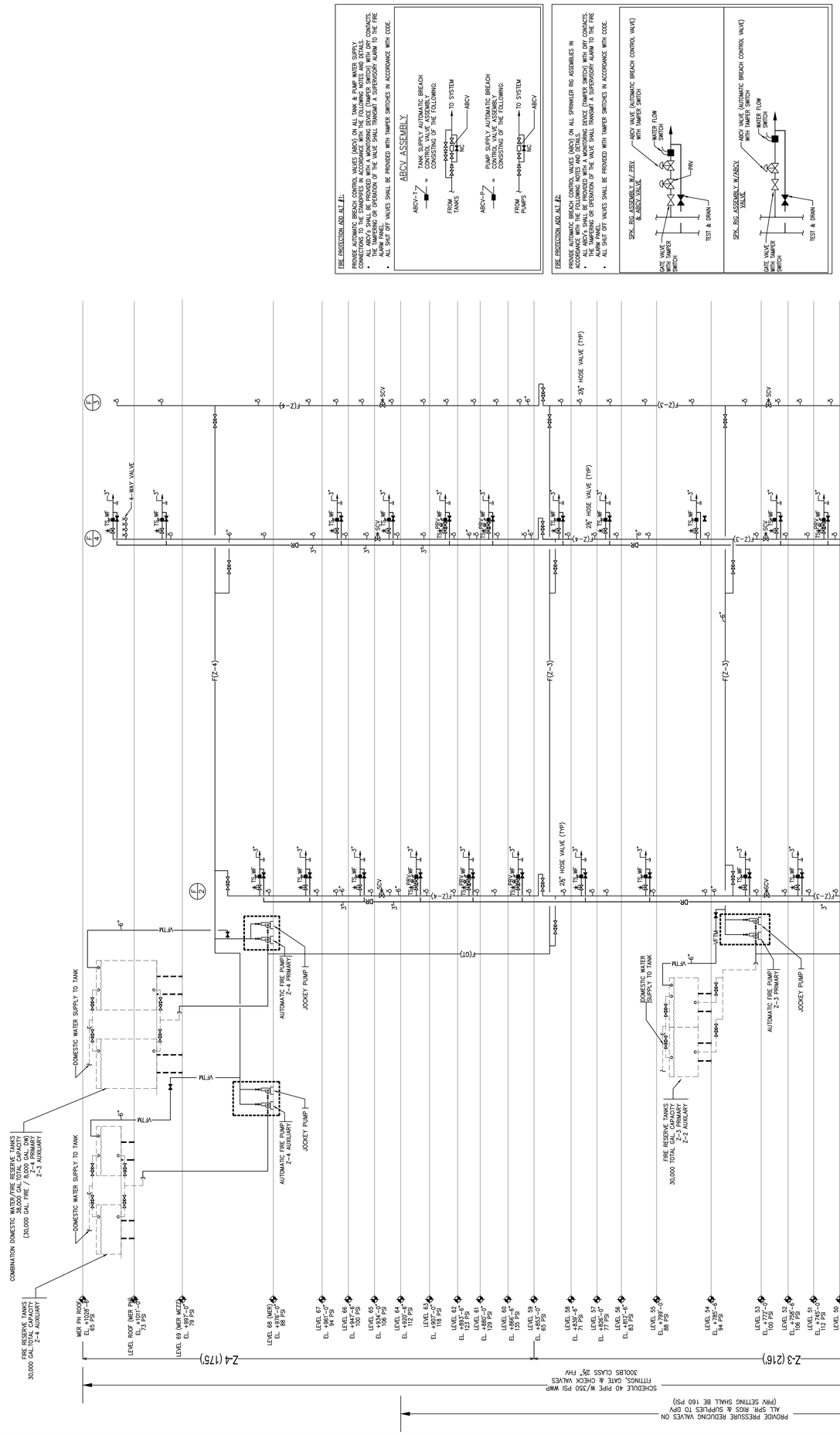

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

375 Ninth Avenue, New York, NY 10001

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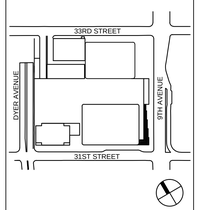

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Sheet Name:

FIRE PROTECTION RISER DIAGRAM SHEET 2

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-401
Date: 15 NOV 2013	Sheet No.: FP-401.00
Scale: NONE	
File No.: FP-400-1	Page No.:

FIRE PUMPS

EQUIPMENT NUMBER	DESIGNATION	NO. REQUIRED	G.P.M.	T.D.H. (FT)	MAX SHUT OFF T.D.H.	MECH. SEAL	MODEL	STAGES	VERTICAL TURBINE	HORIZ. SPLIT	WORKING PRESSURE (PSIG)	H.P.	R.P.M.	VOLTS	PHASE	CYCLE	MANUAL CONT'L.	STARTING STEPS	AUTO CONT'L.	PILOT LIGHT	EMERGENCY POWER	PRESSURE GAUGE RANGE (PSIG)	LOCATION
AFP-NE-B-1	AUTOMATIC FIRE PUMP	1	1000	385	539		PPC 5AEF11G	1		●	510	150	3550	460	3	60			●		●	0-300	B LEVEL
AJ-NE-B-1	AUTOMATIC JOCKEY PUMP	1	30	395	588		GRN CR5-18	18	●		725	7.5	3550	460	3	60			●		●	0-300	B LEVEL
AFP-NE-31-1	AUTOMATIC FIRE PUMP	1	1000	325	455		PPC 5AEF11G	1		●	510	125	3550	460	3	60			●		●	0-300	31ST FLOOR
AJ-NE-31-1	AUTOMATIC JOCKEY PUMP	1	30	335	488		GRN CR5-15	15	●		725	5	3550	460	3	60			●		●	0-300	31ST FLOOR
AFP-NE-53-1	AUTOMATIC FIRE PUMP	1	1000	244	341		PPC5AEF8N	1		●	510	75	3550	460	3	60			●		●	0-300	53RD FLOOR
AJ-NE-53-1	AUTOMATIC JOCKEY PUMP	1	30	254	361		GRN CR5-11	11	●		725	5	3550	460	3	60			●		●	0-300	53RD FLOOR
AFP-NE-68-1	AUTOMATIC FIRE PUMP	1	1000	216	302		PPC 5AEF8N	1		●	510	75	3550	460	3	60			●		●	0-300	68TH FLOOR
AJ-NE-68-1	AUTOMATIC JOCKEY PUMP	1	30	226	325		GRN CR5-10	10	●		725	5	3550	460	3	60			●		●	0-300	68TH FLOOR
AFP-NE-68-2	AUTOMATIC FIRE PUMP	1	1000	216	302		PPC 5AEF8N	1		●	510	75	3550	460	3	60			●		●	0-300	68TH FLOOR
AJ-NE-68-2	AUTOMATIC JOCKEY PUMP	1	30	226	325		GRN CR5-10	10	●		725	5	3550	460	3	60			●		●	0-300	68TH FLOOR

* PEERLESS PUMP (P.P.C.)
* GRUNDFOS PUMP COMPANY (GRN)

FIRE PROTECTION MATERIAL SCHEDULE

NOTES :
1. FOR REQUIRED PRESSURE RATINGS SEE RISER DIAGRAM
2. ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE LOCAL AUTHORITIES
3. TO BE USED DOWNSTREAM OF SPRINKLER FLOOR CONTROL VALVE ASSEMBLY, ON PIPING 2-1/2" TO 6"
4. TO BE USED DOWNSTREAM OF FLOOR CONTROL VALVE ASSEMBLY ON PIPING 2" & SMALLER
5. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

SYSTEM	PIPE									FITTINGS						JOINTS	
	COPPER TUBE (TYPE K)	DUCTILE IRON	CAST IRON WTR PIPE	STEEL SCHED 10	STEEL SCHED 30	STEEL SCHED 40	STEEL SCHED 80	BLACK	GALVANIZED	CEMENT LINED	MALLEABLE IRON	CLASS 350	CLASS 500	CLASS 800	LINED	COPPER	GALVANIZED (DRAINAGE)	DUCTILE IRON	THREADED	MECHANICAL COUPLING (AS PER SPEC)	MECH. JOINTS (AWWA C110/111)	BRAZED
BURIED BUILDING FIRE SERVICE		●							●			●			●			●			●	
FIRE STANDPIPE						●		●			●							●		●		
HIGH PRESSURE F.D.C. RISER (BELOW 7TH FLOOR)							●	●						●				●		●		
HIGH PRESSURE F.D.C. RISER (ABOVE 7TH FLOOR)						●		●					●					●		●		
SPRINKLER WET (SEE NOTE 3)				●				●			●							●		●		
SPRINKLER WET (SEE NOTE 4)						●		●			●								●			
SPRINKLER DRY (SEE NOTE 3)						●			●		●							●		●		
SPRINKLER DRY (SEE NOTE 4)						●			●		●								●			
SPRINKLER DRAIN PIPE (TEST & DRAIN)						●			●		●						●		●			

SHEET NOTES

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Civil Engineering
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MEP Engineering
Jaros Baum & Bolles
80 Pine Street, New York, NY 10005

Vertical Transportation
Edgett Williams Consulting Group, Inc.
102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

Sustainable Design
Viridian Energy & Environmental
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122

Landscape Consultant
Field Operations
475 10th Avenue, New York, NY 10018

Security Consultant
Ducibella, Ventor & Santore
250 State Street #F1, North Haven, CT 06473

Blast Consultant
Weidlinger Associates, Inc.
40 Wall Street, New York, NY 10005

Acoustical Consultant
Cerami & Associates
404 Fifth Avenue #8, New York, NY 10018

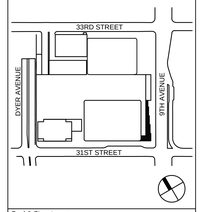
Vibration Consultant
Wilson, Uhrig & Associates, Inc.
65 Broadway, Suite 401, New York, NY 10006

Code Consultant
Code Consultants Professional Engineers PC
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant
Entek Engineering LLC
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant
Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West, Guelph
Ontario, Canada N1K 1B8

Key Plan:



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No.	Date	Description
5	20 JUN 2014	ISSUED FOR FOUNDATION PERMIT
4	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
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1	15 MAR 2013	ISSUED FOR RECONCILIATION

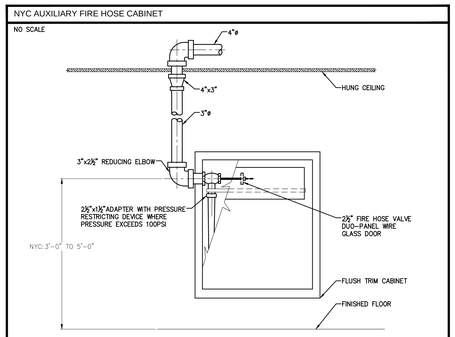
Sheet Name:
FIRE PROTECTION SCHEDULE SHEET

Project No.: 14830.A.000
Date: 15 NOV 2013
Scale: NONE
File No.: FP-500
B-SCAN Sheet No.: FP-500
Sheet No.: FP-500.00
Page No.:

DEPT OF BLDGS 121197243 Job Number | Scan Code
E399526364 Scan Code

NYC AUXILIARY FIRE HOSE CABINET

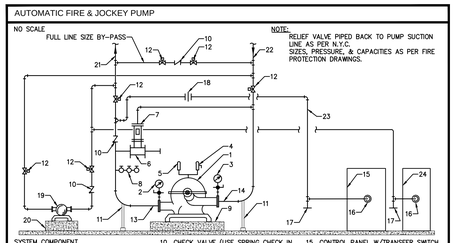
NO SCALE



NOTES:
1. FOR EXACT LOCATION OF FIRE HOSE CABINETS, SEE ARCHITECTURAL DRAWINGS.
2. THE HOSE VALVE STATION SHALL BE INSTALLED IN ACCORDANCE WITH NYC BUILDING CODE CHAPTER 9 & APPENDIX Q.
3. THE FIRE HOSE CABINET SHALL BE POTTER ROEMER 1810 SERIES OR APPROVED EQUIVALENT.

AUTOMATIC FIRE & JOCKEY PUMP

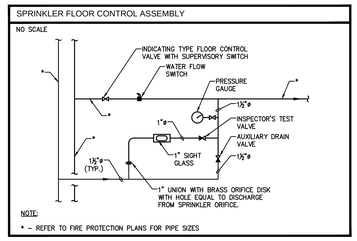
NO SCALE



SYSTEM COMPONENT
1. AUTOMATIC FIRE PUMP
2. DISCHARGE GAUGE
3. SUCTION GAUGE
4. CASING RELIEF DISCHARGE VALVE PIPED TO F.D.
5. AIR RELIEF VALVE
6. MAIN RELIEF VALVE
7. SIGHT CONE & GLASS
8. TEST VALVES
9. CONCRETE BASE MIN. 12" HIGH
10. CHECK VALVE (USE SPRING CHECK IN VERTICAL OR SWING CHECK IN HORIZONTAL POSITION)
11. SUPPORT ELBOW
12. O.S.&Y. GATE VALVE W/TAMPER
13. CONCENTRIC DISCHARGE INCREASER (HOSE VALVE HEADER MAY BE INSTALLED IN THIS LOCATION IF DESIRED)
14. ECCENTRIC SUCTION REDUCER
15. CONTROL PANEL W/TRANSFER SWITCH
16. PRESSURE SWITCH
17. PLUG OR PETCOCK
18. GROUND FACE UNION – NON CORROSIVE DIAPHRAGM ¾" ORIFICE
19. JOCKEY PUMP
20. CONCRETE BASE
21. DISCHARGE TO SYSTEM
22. SUCTION SUPPLY
23. COPPER OR BRASS ¾" PIPE SIZE
24. JOCKEY PUMP CONTROLLER

SPRINKLER FLOOR CONTROL ASSEMBLY

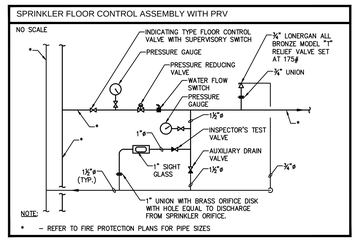
NO SCALE



NOTE:
* – REFER TO FIRE PROTECTION PLANS FOR PIPE SIZES

SPRINKLER FLOOR CONTROL ASSEMBLY WITH PRV

NO SCALE



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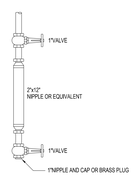
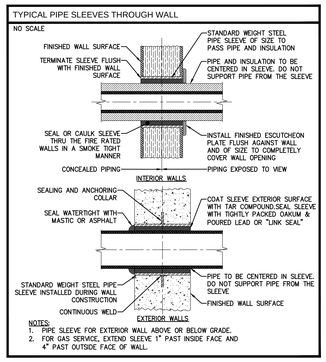
* – REFER TO FIRE PROTECTION PLANS FOR PIPE SIZES



DRY-PIPE SYSTEM AUXILIARY DRAIN DETAIL
N.T.S.

TYPICAL PIPE SLEEVES THROUGH WALL

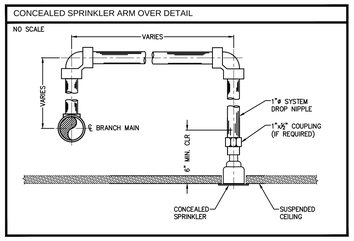
NO SCALE



NOTES:
1. PIPE SLEEVE FOR EXTERIOR WALL ABOVE OR BELOW GRADE.
2. FOR GAS SERVICE, EXTEND SLEEVE 1" PAST INSIDE FACE AND 4" PAST OUTSIDE FACE OF WALL.

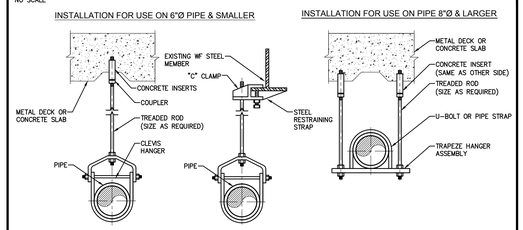
CONCEALED SPRINKLER ARM OVER DETAIL

NO SCALE



PIPE HANGER DETAILS

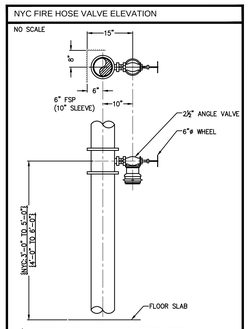
NO SCALE



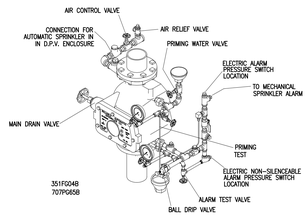
NOTES:
1. HANGER SPACING AND SIZING SHALL BE AS PER SPECIFICATION.
2. SINGLE CONCRETE ANCHOR MAY BE USED ON PIPE 6" & SMALLER.
3. CONCRETE ANCHOR SPACING SHALL NOT EXCEED 10 FEET APART FOR ALL PIPING 4" & LARGER.

NYC FIRE HOSE VALVE ELEVATION

NO SCALE



1) REFER TO FIRE PROTECTION PLANS FOR SIZES.
2) HOSE VALVE SHALL BE CAPPED WITH A HOSE VALVE CAP FASTENED TO THE VALVE WITH A CHAIN.



4" DRY PIPE VALVE
N.T.S.
(DETAIL IS BASED UPON RELIABLE SPRINKLER MODEL D DRY PIPE VALVE)

SHEET NOTES

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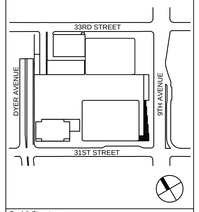

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FIRE PROTECTION DETAIL SHEET

Project No.: 14830.A.000	B-SCAN Sheet No.: FP-600.00
Date: 15 NOV 2013	
Scale: NONE	Sheet No.: FP-600.00
File No.: FP-600	Page No.:

EXCAVATION NOTES:

1. THE CONTRACTOR SHALL COORDINATE ALL WORK NEAR THE RAILROAD TRACKS WITH LIRR AND AMTRAK.

2. SOIL EXCAVATION SHALL NOT PROCEED DEEPER THAN 2 FEET BELOW THE LAST INSTALLED LAGGING. ALL LAGGING SHALL BE PLACED HORIZONTAL AND BACKPACKED PRIOR TO ADVANCING TH EXCAVATION. THE EXCAVATION SHALL BE SEQUENCED SO THAT STABILITY OF ADJACENT STRUCTURES IS MAINTAINED AT ALL TIMES.

3. ROCK EXCAVATION:

   A. SLOT (CHANNEL) OR LINE DRILL AS REQUIRED.

   B. PLUG ALL SEEMS AND LENSES IN ROCK WITH GROUT AS REQUIRED.

   C. INSTALL ROCK BOLTS AND TENSIONED ROCK ANCHORS AS REQUIRED AND AS DIRECTED BY THE ENGINEER.

4. CONTRACTOR SHALL LOCATE ALL UTILITIES AND EXISTING UNDERGROUND STRUCTURES PRIOR TO INSTALLING SOLDIER PILES, TIEBACKS OR ROCK BOLTS. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING, RELOCATING AND REINSTALLING EXISTING UTILITIES THAT INTERFERE WITH PROPOSED EXCAVATION AND SUPPORT OF EXCAVATION MEMBERS.

5. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE AND MINIMIZE SETTLEMENT OF EXISTING OR NEW CONSTRUCTION INSIDE OR OUTSIDE PROJECT LIMITS.

6. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING A GRID OF MONITORING POINTS WITHIN AND AROUND THE SITE. THE CONTRACTOR SHALL FREQUENTLY READ AND RECORD ALL MOVEMENTS OR SETTLEMENTS DURING EXCAVATION AND REPORT MOVEMENTS TO CONSTRUCTION MANAGER.

7. REMOVE SURFACE WATER AND SEEPAGE FROM ROCK BY SUMPS AS NECESSARY. PROTECT EXISTING DRAINAGE SYSTEM BELOW THE EXISTING PLATFORM CAP BEAM.

8. PROPOSED WORK ON DRAWINGS ARE SUBJECT TO SPECIAL INSPECTION IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE.

9. CONTRACTOR MAY SUBMIT ALTERNATIVE DESIGN DRAWINGS AND CALCULATIONS FOR THE SUPPORT OF EXCAVATION. DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK. DESIGN SHALL INCLUDE ALL MEASURES REQUIRED TO SUPPORT ADJACENT FOUNDATIONS, BUILDINGS, STREETS, SIDEWALKS, AND UTILITIES.

10. ELEVATIONS ON PLANS ARE GIVEN RELATIVE TO NAVD 88.

11. THE SUPPORT OF EXCAVATION SYSTEM HAS BEEN DESIGNED FOR 600 PSF VERTICAL SURCHARGE AT EXISTING GRADE ALONG THE EXTERIOR OF THE SITE.

12. MATERIALS:

A. ALL STEEL (U.O.N.):	ASTM A572, GRADE 50
B. SOLDIER PIPE PILES:	API N80 (FY=80KSI)
C. TIMBER LAGGING:	SOUTHERN PINE OR EQUAL FB = 1250 PSI (MIN) FV = 175 PSI (MIN)
D. THREADED STEEL BAR FOR TENSIONED PERMANENT ANCHORS AND TIE-BACKS:	ASTM A722, GRADE 150
E. ROCK BOLTS:	ASTM A615 GRADE 75
F. SOLDIER PILE GROUT:	MIN. 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS
G. WELDING:	AWS D1.1, E70XX ELECTRODES

13. SOLDIER (DRILLED-IN) PIPE PILES:

   A. ALL SOLDIER PILES SHALL BE INSTALLED PLUMB IN DRILLED HOLES. ANY DEVIATIONS OF THE PILE ALIGNMENT BEYOND THOSE SPECIFIED SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER PRIOR TO EXCAVATION.

   B. ALL PILES SHALL BE FILLED WITH GROUT.

TIEBACK NOTES:

1. TIEBACK INSTALLATION TOLERANCE FOR VERTICAL AND HORIZONTAL ANGLES SHALL BE A MAXIMUM OF 3 DEGREES.

2. THE TIEBACK GROUT USED TO FILL THE DRILLED HOLE SHALL CONSIST OF A MIXTURE OF PORTLAND CEMENT, WATER AND FLUIDIFIER (IF REQUIRED) PROPORTIONED TO PROVIDE A GROUT CAPABLE OF BEING PLACED WITHOUT DIFFICULTY AND WHICH WILL LATERALLY PENETRATE AND FILL THE SOIL AROUND THE ANCHOR. MATERIALS SHALL BE PROPORTIONED TO PROVIDE A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 7 DAYS AND 5000 PSI AT 28 DAYS.

3. THE MAXIMUM EXCAVATION LEVEL BELOW THE CENTERLINE OF THE TIEBACKS SHALL BE LIMITED TO 2 FEET PRIOR TO INSTALLATION AND STRESSING.

4. HOLES FOR TIEBACKS SHALL BE DRILLED BY ROTARY METHODS USING INTERNAL FLUSH OF DRILL CUTTINGS AND UTILIZING A TEMPORARY METHODS OF INSTALLATION SHALL BE USED WHICH SHALL PREVENT THE LOSS OF GROUND DUE TO EROSION. INSTALLATION METHODS USED MUST BE SUCH THAT THE FLOW OF WATER OR MOVEMENT OF SOIL THROUGH ANNULAR SPACES OUTSIDE THE CASING IS PREVENTED.

5. CONDUCT PERFORMANCE TESTS ON THE FIRST 2 ANCHOR TESTED. CONDUCT PERFORMANCE TESTS BY INCREMENTALLY LOADING AND UNLOADING THE ANCHOR IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

   P = DESIGN LOAD
   L = LOCK OFF LOAD (L=0.8P)
   AL = ALIGNMENT LOAD

   AL, 0.25P
   AL, 0.25P, 0.50P
   AL, 0.25P, 0.50P, 0.75P
   AL, 0.25P, 0.50P, 0.75P, 1.00P
   AL, 0.25P, 0.50P, 0.75P, 1.00P, 1.20P
   AL, 0.25P, 0.50P, 0.75P, 1.00P, 1.20P, 1.33P
   UNLOAD AND LOCK OFF AT L

6. PROOF TEST EACH ANCHOR WHICH IS NOT PERFORMANCE TESTED BY INCREMENTALLY LOADING AND UNLOADING THE ANCHOR IN ACCORDANCE WITH THE FOLLOWING SCHEDULE;

   P = DESIGN LOAD
   L = LOCK OFF LOAD (L=0.8P)
   AL = ALIGNMENT LOAD

   AL, 0.25P, 0.50P, 0.75P, 1.00P, 1.20P, 1.33P
   UNLOAD AND LOCK OFF AT L
   (SEE TIEBACK SCHEDULE FOR 'P' AND 'L')

7. IN ALL TESTS, THE FINAL LOAD INCREMENT SHALL BE HELD FOR 10 MINUTES. IF THE CREEP CRITERIA FOR THE 10 MINUTE HOLD PERIOD IS NOT MET (SEE NOTE 8 BELOW), THE HOLD PERIOD SHALL BE EXTENDED TO 60 MINUTES. ALL OTHER INCREMENTS SHALL BE HELD LONG ENOUGH FOR THE ENGINEER TO OBTAIN THE MOVEMENT READING, BUT NOT LONGER THAN 1 MINUTE.

8. TIEBACK ACCEPTANCE CRITERIA:

   A. CREEP RATE SHALL NOT EXCEED 0.040 INCHES BETWEEN 1 AND 10 MINUTES OR 0.080 INCHES BETWEEN 6 AND 60 MINUTES.

   B. MEASURED ELASTIC EXTENSION CORRESPONDS TO THE CALCULATED ELASTIC EXTENSION. MEASURED ELASTIC EXTENSION SHALL NOT EXCEED THE EXTENSION COMPUTED BASED ON THE FREE ANCHOR LENGTH PLUS 50-PERCENT OF THE BOND ZONE LENGTH, OR BE LESS THAN THE ELASTIC EXTENSION COMPUTED BASED ON 90-PERCENT OF FREE ANCHOR LENGTH.

9. ANCHOR TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER WHO WILL MONITOR THE ANCHOR HEAD MOVEMENTS DURING THE TESTS.

10. FOR ALL ANCHORS, AFTER TRANSFERRING THE LOCK-OFF LOAD, AND PRIOR TO REMOVING THE JACK, PERFORM AN INITIAL LIFT-OFF TEST ON EACH ANCHOR. IF THE INITIAL LIFT-OFF LOAD DIFFERS BY MORE THAN 5% OF THE LOCK-OFF LOAD, PROOF TEST THE ANCHOR AGAIN.

11. FOR EACH ANCHOR, WHICH REQUIRED AN ADDITIONAL PROOF TEST DUE TO THE INITIAL LIFT-OFF TEST VARYING BY MORE THAN 5% FROM THE LOCK OFF LOAD, PERFORM A DEFERRED LIFT OFF TEST A MINIMUM OF TWO (2) HOURS AFTER THE LOAD HAS BEEN LOCKED OFF. IF THE DEFERRED LIFT-OFF LOAD IS LESS THAN THE LOCK-OFF LOAD BY MORE THAN 5%, THE ANCHOR IS UNACCEPTABLE AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.

12. UPON COMPLETION OF WORK, ALL AND FOLLOWING BACKFILLING TO 2 FEET BELOW EACH TIEBACK, TIEBACKS SHALL BE DETENSIONED.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield
Brookfield Place
250 Vesey Street, 15th Floor, New York, NY 10281

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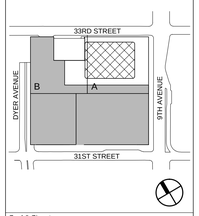
14 Penn Plaza, 225 W. 34th Street, New York, NY 10122

PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



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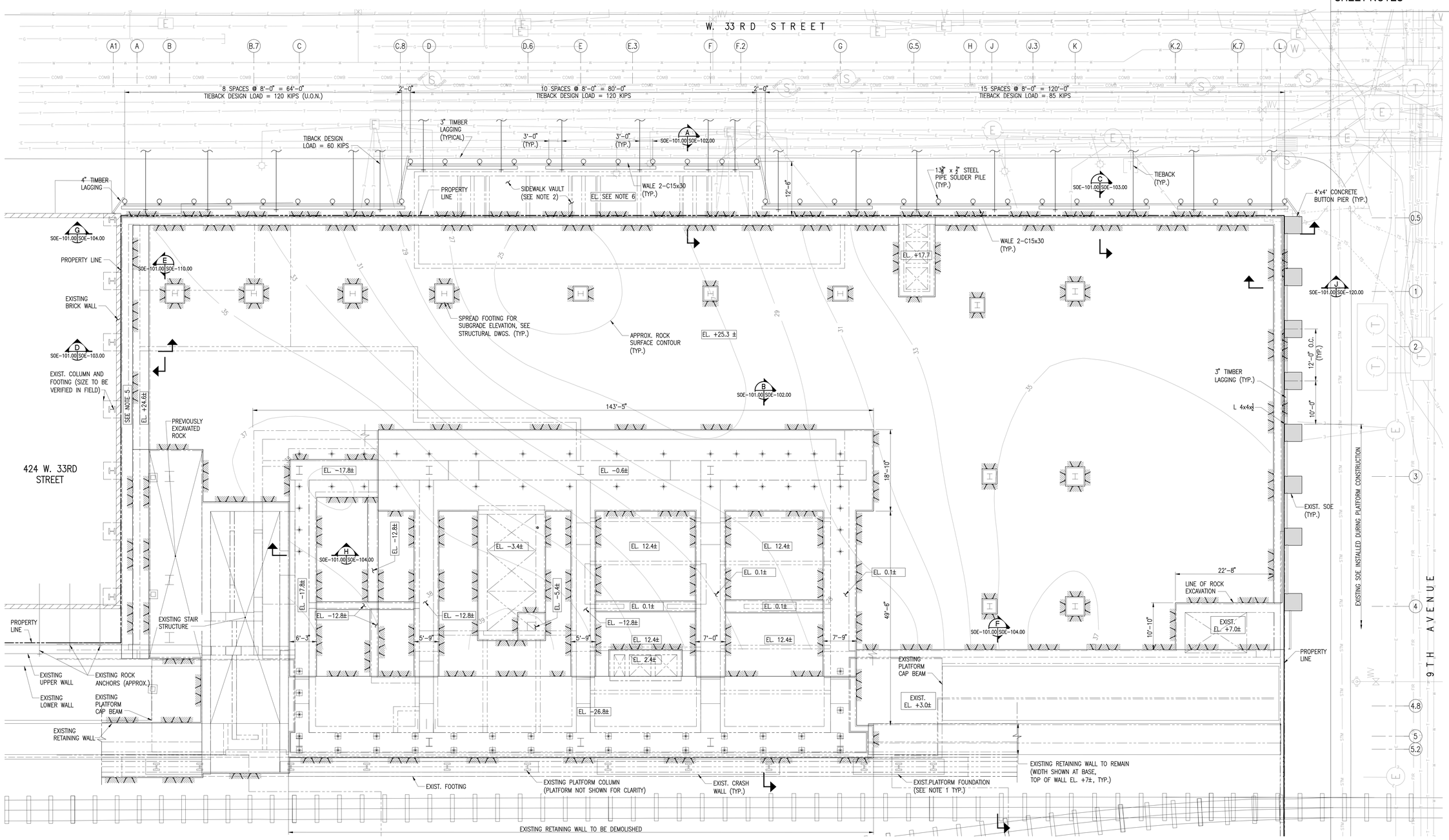
No.	Date	Description
1	20 JUNE 2014	ISSUED FOR PERMIT

Sheet Name:

SUPPORT OF EXCAVATION NOTES

Project No.:	B-SCAN Sheet No.: SOE-100.00
Date: 20 JUNE 2014	Sheet No.: SOE-100
Scale: 1/8" = 1'-0"	
File No.: SOE-100	Page No.: 1 OF 7



P L A N

SCALE: 1/8"=1'-0"

NOTES:

1. BEARING PRESSURE AT PLATFORM FOOTINGS AT TIME OF TOWER CONSTRUCTION VARIES BETWEEN 25 TSF AND 40 TSF.
2. AT SIDEWALK VAULT, EXCAVATE TO TOP OF ROCK AND BACK FILL WITH FLOWABLE FILL TO ELEVATION SHOWN ON PLAN.
3. TENSIONED PERMANENT ANCHORS TO BE INSTALLED UNDER 424 W. 33RD STREET ARE NOT SHOWN FOR CLARITY. SEE DRAWING SOE-110.00 FOR SPACING.
4. TENSION TIE DOWNS AFTER CONSTRUCTING CAISSON CAP BETWEEN EXISTING BUILDING AND EXISTING STAIR STRUCTURE. DESIGN LOAD = 60 KIPS.
5. ROCK SUBGRADE AT BASE OF LOFT BUILDING FOUNDATION (V.I.F.)
6. ALL ELEVATION ARE REFERENCED TO BOROUGH OF MANHATTAN DATUM.

SHEET NOTES

MANHATTAN WEST: NORTH TOWER

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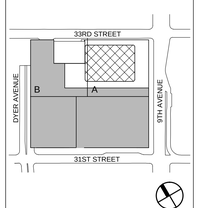

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No.	Date	Description
3	30 MAY 2014	ISSUED FOR ROCK EXC. ADJ. TO LOFT BLD.
2	20 DEC 2013	ISSUED FOR FOUNDATION PERMIT
1	25 JUNE 2013	ISSUED FOR PERMIT DESIGN DEVELOPMENT

Sheet Name:

SUPPORT OF EXCAVATION PLAN

Project No.: 9560D	B-SCAN Sheet No.: SOE-101.00
Date: 20 JUN 2014	Sheet No.: SOE-101.00
Scale: 1/8" = 1'-0"	
File No.: SOE-101.00	Page No.: 2 OF 7

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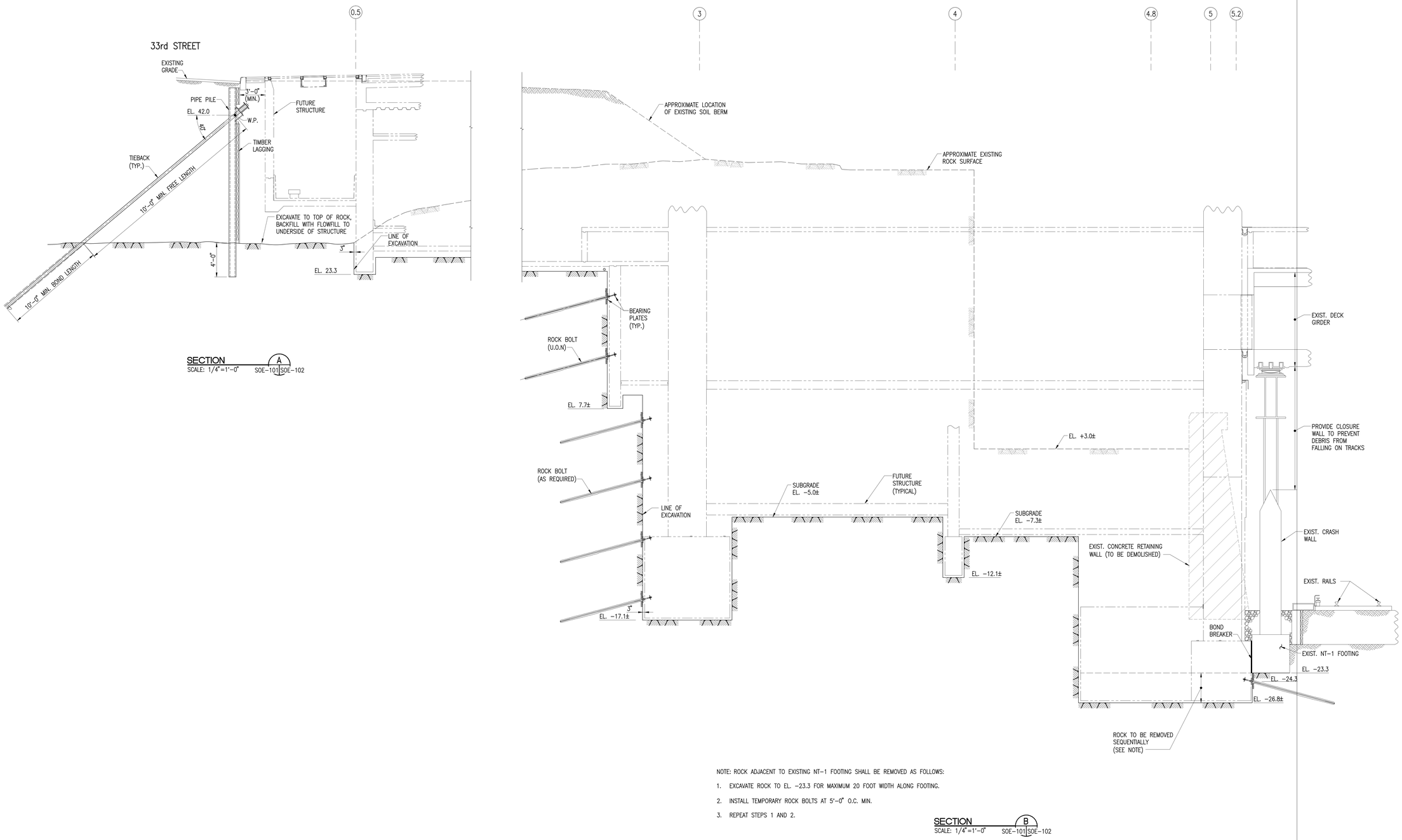
E3404499799 Scan Code



NOTE: ROCK ADJACENT TO EXISTING NT-1 FOOTING SHALL BE REMOVED AS FOLLOWS:

1. EXCAVATE ROCK TO EL. -23.3 FOR MAXIMUM 20 FOOT WIDTH ALONG FOOTING.
2. INSTALL TEMPORARY ROCK BOLTS AT 5'-0" O.C. MIN.
3. REPEAT STEPS 1 AND 2.

SECTION B
SCALE: 1/4"=1'-0"
SOE-101 SOE-102

SHEET NOTES

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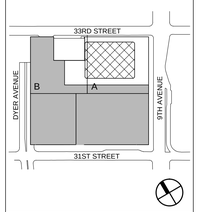

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SUPPORT OF EXCAVATION SECTIONS

Project No.:

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Scale: 1/4" = 1'-0"

File No.: SOE-102

B-SCAN Sheet No.: SOE-102.00

Sheet No.: SOE-102

Page No.: 3 OF 7

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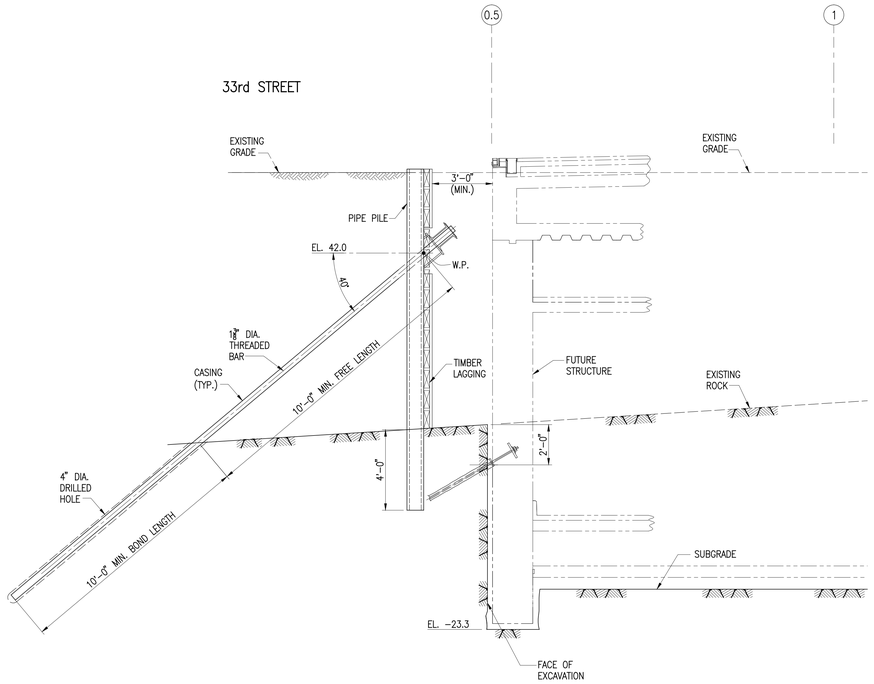
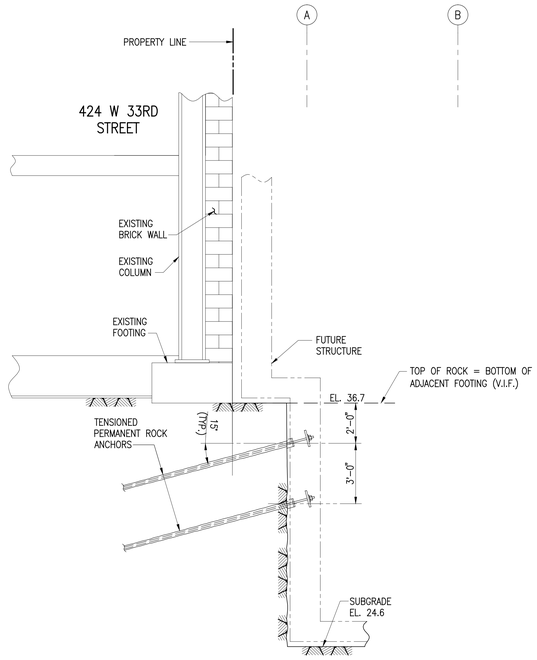


SECTION C
SCALE: 3/8"=1'-0" SOE-101 SOE-103



SECTION D
SCALE: 3/8"=1'-0" SOE-101 SOE-103

SHEET NOTES

MANHATTAN WEST: NORTH TOWER
375 Ninth Avenue, New York, NY 10001

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Brookfield
Brookfield Place
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Geotechnical Engineering
Mueser Rutledge Consulting Engineers
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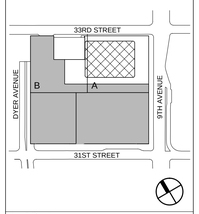
PRELIMINARY
NOT FOR CONSTRUCTION

Key Plan:



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SUPPORT OF EXCAVATION SECTIONS

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Scale: 3/8" = 1'-0"	
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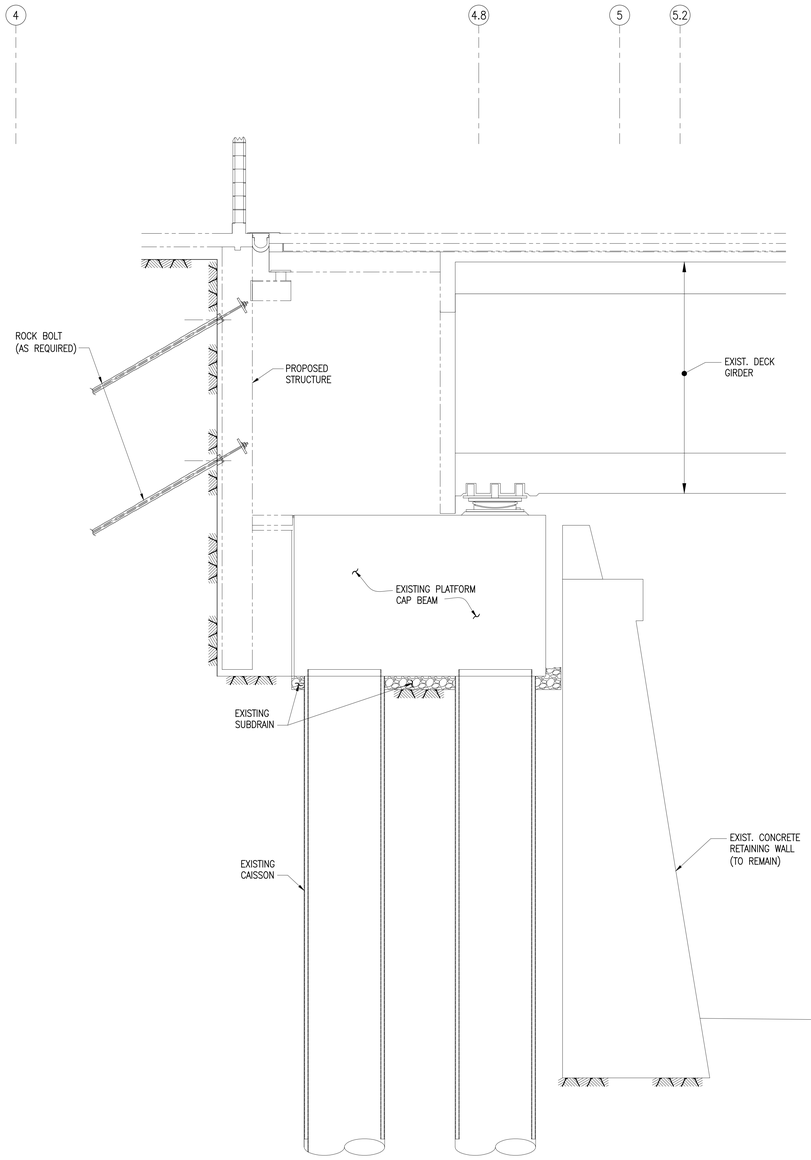
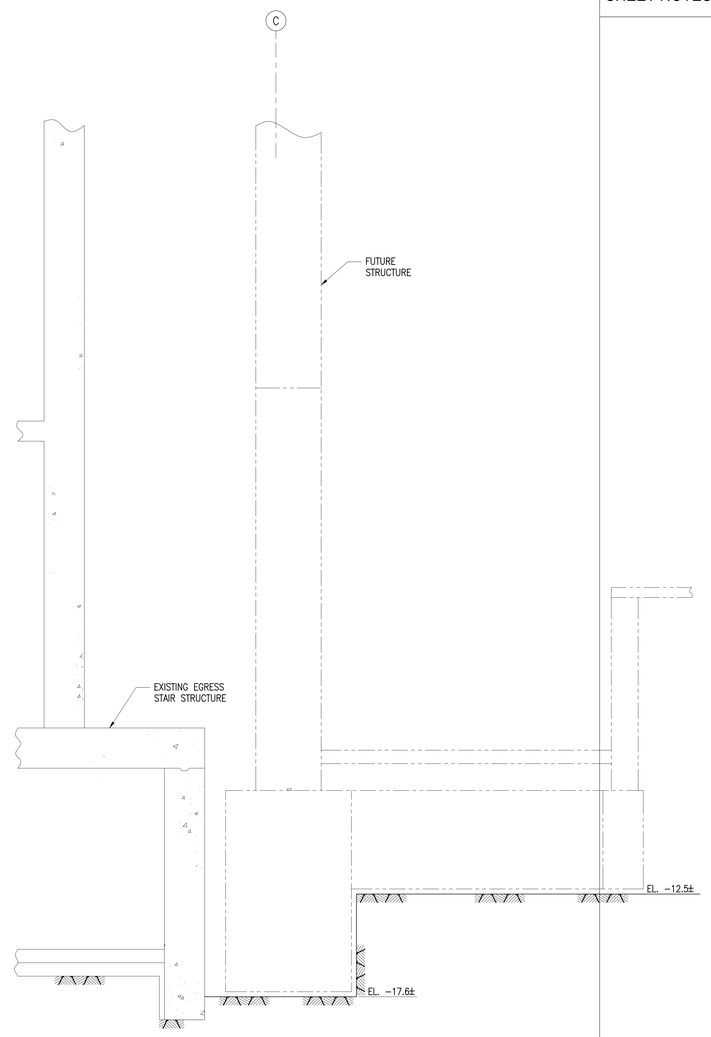
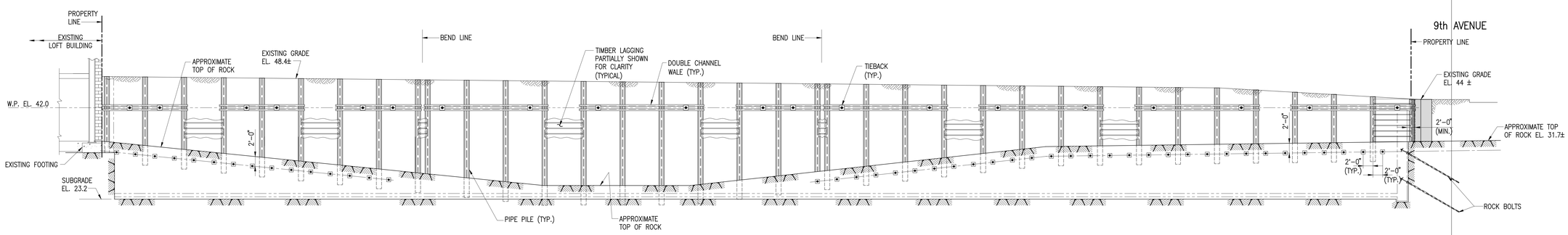


NOTE: SEE EXISTING CONDITION DRAWINGS FOR EXISTING ROCK ELEVATIONS.

SECTION F
SCALE: 3/8"=1'-0" SOE-101 SOE-104



SECTION H
SCALE: 3/8"=1'-0" SOE-101 SOE-104



SECTION G
SCALE: 1/8"=1'-0" SOE-101 SOE-104

SHEET NOTES

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Geotechnical Engineering

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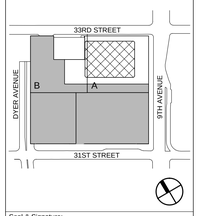

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1	20 JUNE 2014	ISSUED FOR PERMIT

Sheet Name:

SUPPORT OF EXCAVATION SECTIONS

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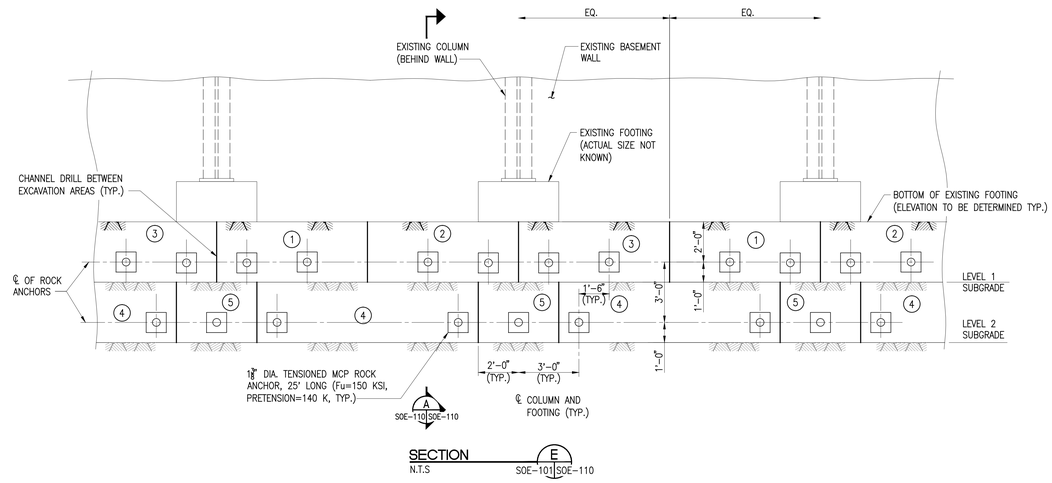
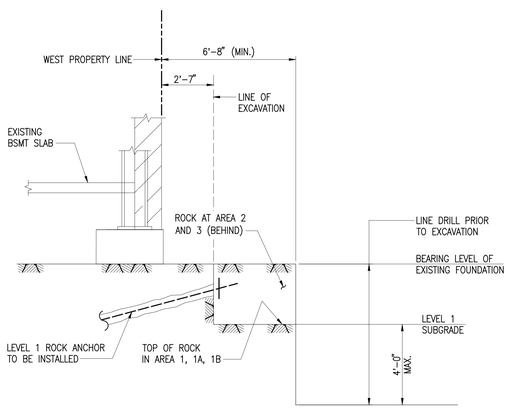
File No.: SOE-104	Page No.: 5 OF 7



SECTION
N.T.S

E
SOE-101 SOE-110

TYPICAL SEQUENCE OF ROCK EXCAVATION AT BUILDING COLUMNS



EXCAVATION AT STEP 2.2

SECTION
N.T.S.

A
SOE-110 SOE-110

EXCAVATION SEQUENCE AT BUILDING COLUMN:

1. EXCAVATE TO BEARING LEVEL OF EXISTING COLUMN FOUNDATIONS.

2. LEVEL 1 PERMANENT ANCHOR INSTALLATION BELOW FOOTINGS

   2.1 BEYOND 6'-8" FROM THE WESTERN PROPERTY LINE EXCAVATE TO A MAXIMUM OF FOUR (4) FEET BELOW LEVEL 1 SUBGRADE (SEE SECTION A AT STEP 2.2 ON THE LEFT SIDE OF THIS DRAWING).

   2.2 WITHIN 6'-8" OF THE WESTERN PROPERTY LINE, EXCAVATE ROCK TO LEVEL 1 SUBGRADE IN AREAS MARKED 1, (SEE SECTION A AT STEP 2.2 ON THE LEFT SIDE OF THIS DRAWING).

   2.3 INSTALL PERMANENT ROCK ANCHORS AND TENSION AS REQUIRED.

   2.4 WITHIN 6'-8" OF THE WESTERN PROPERTY LINE, EXCAVATE ROCK TO LEVEL 1 SUBGRADE IN AREA MARKED (2).

   2.5 INSTALL PERMANENT ROCK ANCHORS AND TENSION AS REQUIRED.

   2.6 WITHIN 6'-8" OF THE WESTERN PROPERTY LINE, EXCAVATE ROCK TO LEVEL 1 SUBGRADE IN AREA MARKED (3).

   2.7 INSTALL PERMANENT ROCK ANCHORS AND TENSION AS REQUIRED.

3 LEVEL 2 PERMANENT ANCHOR INSTALLATION

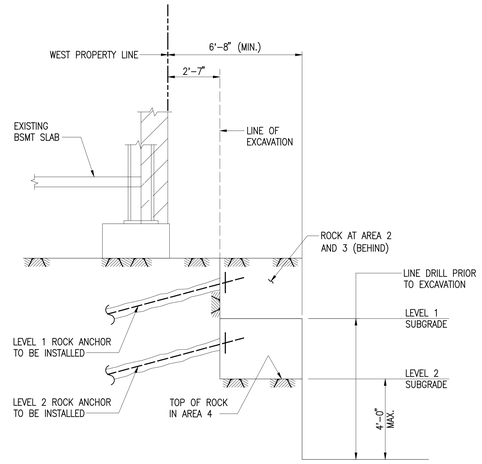
   3.1 INSTALL ANCHORS AT LEVEL 2 USING THE LEVEL 1 CRITERIA STARTING WITH THE LOWEST NUMBERED AREAS (SEE SECTION A EXCAVATION AT STEP 3.1, ON THE RIGHT SIDE OF THIS DRAWING).

4. INSTALLATION AT REMAINING PERMANENT ANCHOR LEVELS (INSTALL ANCHORS ON NORTH FACE AS ANCHOR LOCATIONS ARE EXPOSED)

   4.1 EXCAVATE TO A MAXIMUM OF FOUR (4) FEET BELOW THE ANCHOR ELEVATION.

   4.2 INSTALL PERMANENT ROCK ANCHORS AND TENSION AS REQUIRED.

   4.3 REPEAT STEPS 2.1 AND 4.2 UNTIL ALL PERMANENT ROCK ANCHORS HAVE BEEN INSTALLED AND TENSIONED.



EXCAVATION AT STEP 3.1

SECTION
N.T.S.

A
SOE-110 SOE-110

SHEET NOTES

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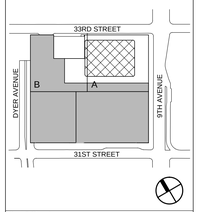
PRELIMINARY NOT FOR CONSTRUCTION

Key Plan:



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SUPPORT OF EXCAVATION SEQUENCE ADJACENT TO EXISTING STRUCTURES

Project No.:	B-SCAN Sheet No.: SOE-110.00
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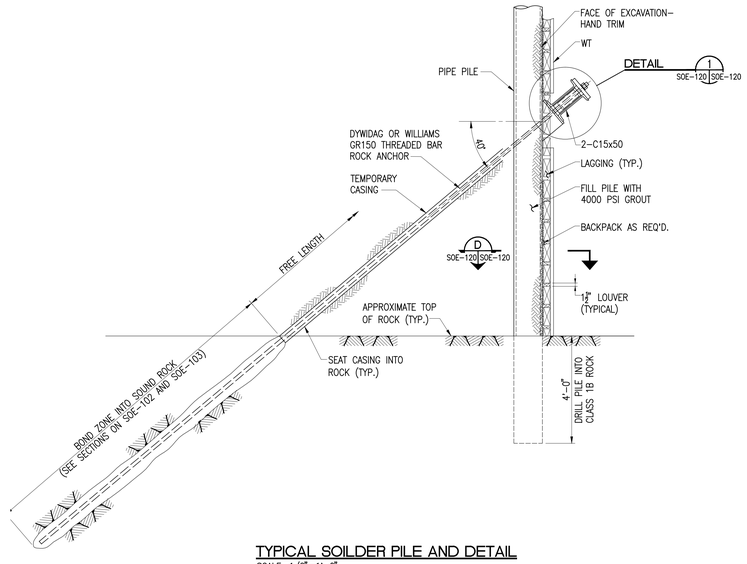
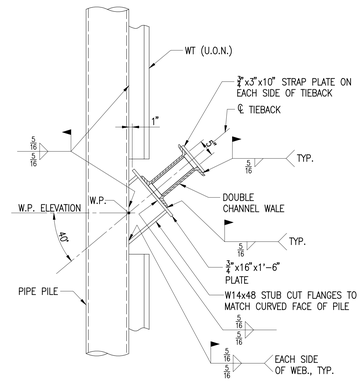
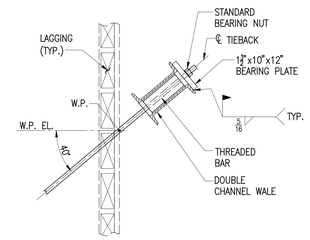


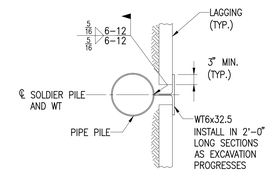
TYPICAL SOILDER PILE AND DETAIL
SCALE: 1/2"=1'-0"



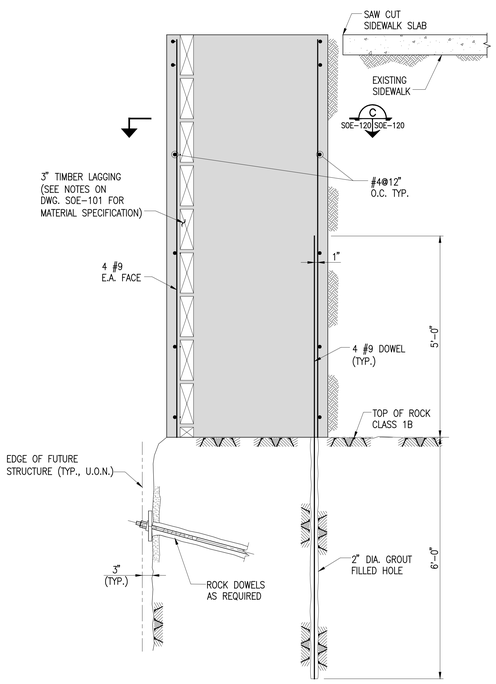
DETAIL 1 SOE-120 SOE-120
SCALE: 3/4"=1'-0"



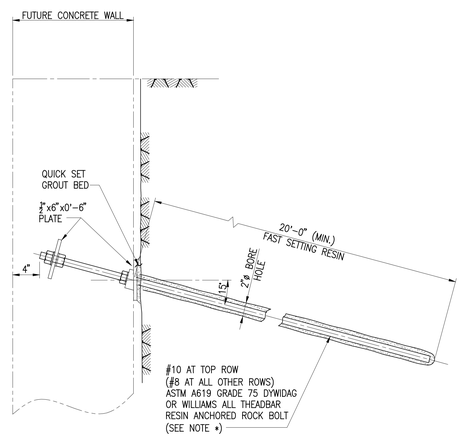
TYPICAL SECTION AT TIEBACK
SCALE: 3/4"=1'-0"



SECTION D SOE-120 SOE-120
SCALE: 3/4"=1'-0"

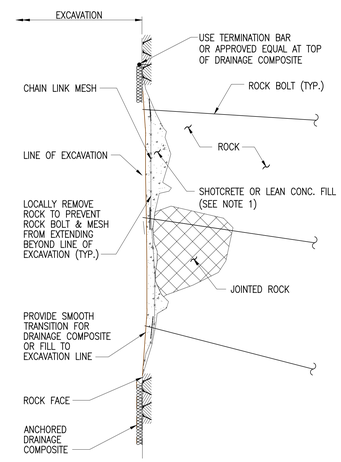


SECTION J SOE-101 SOE-120
SCALE: 3/4"=1'-0"

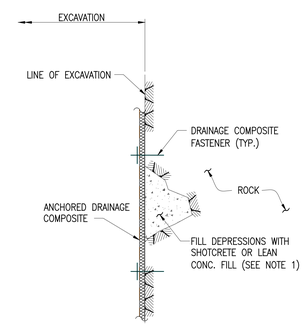


* NOTE: TENSION THE TOP ROW ROCK BOLTS
WITH TORQUE WRENCH TO 2500 FT.LBS.

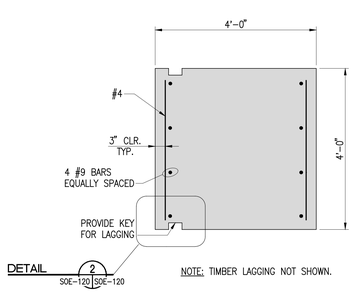
PERMANENT ROCK ANCHOR DETAIL
SCALE: 1 1/2"=1'-0"



ROCK FACE SUPPORT WITH CHAIN LINK MESH
NO SCALE



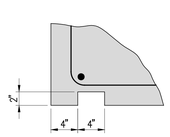
ROCK SURFACE PREPARATION
NO SCALE



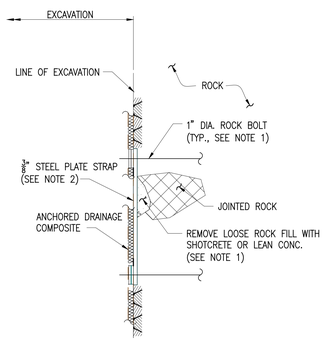
DETAIL 2 SOE-120 SOE-120

NOTE: TIMBER LAGGING NOT SHOWN.

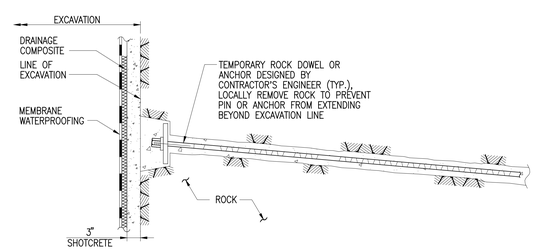
SECTION C SOE-101 SOE-120
SCALE: 3/4"=1'-0"



DETAIL 2 SOE-120 SOE-120
SCALE: 1 1/2"=1'-0"



ROCK FACE SUPPORT AT HIGHLY JOINTED AREAS BELOW EXISTING FOUNDATIONS
NO SCALE



NOTE: INTERFACE BETWEEN DRAINAGE COMPOSITE AND PERMANENT PIPING NOT SHOWN. SEE CONTRACT DOCUMENTS

ROCK FACE SUPPORT IN AREA WITH MEMBRANE WATERPROOFING
NO SCALE

NOTE:

1. INSTALL 1" DIA PVC PIPE SLEEVES OR DRILL 1" DIA. DRILL HOLES IN SHOTCRETE AND CONCRETE USED TO FILL DEPRESSIONS IN ROCK TO PROVIDE A FLOW PATH FROM THE ROCK SURFACE TO THE DRAINAGE COMPOSITE. DRAIN HOLES SHALL BE ALIGNED WITH ROCK JOINTS AND SPACED NO MORE THAN 2 FEET CENTER TO CENTER. INSTALL WEEP HOLES AND WWF WHERE PATCHED AREA EXCEEDS 20 SQUARE FEET OR IF SEEPAGE IS VISIBLE.

SHEET NOTES

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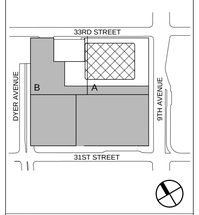

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SUPPORT OF EXCAVATION DETAILS

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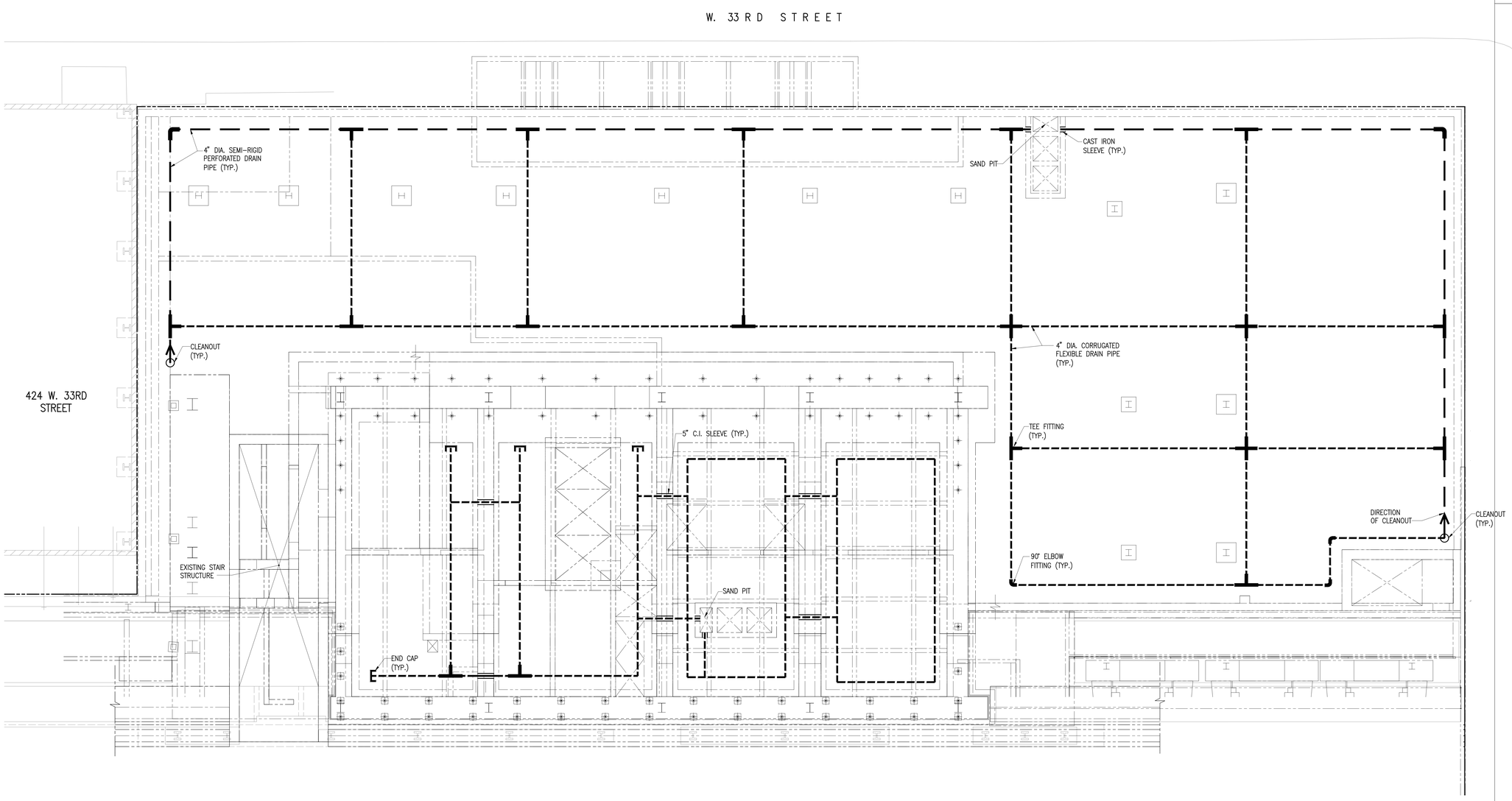
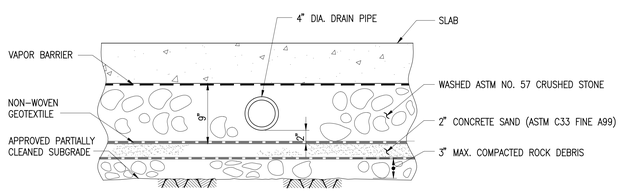
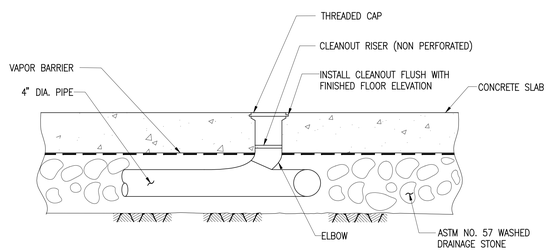


P L A N
SCALE: 1/8"=1'-0"

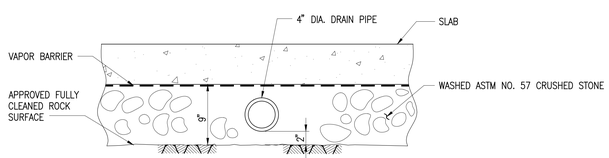


SLAB DETAIL "GRAVEL UNDER S.O.G." - ROCK SURFACE NOT FULLY CLEANED
SCALE: 1-1/2"=1'-0"



NOTE: ORIENT CLEANOUTS SO THAT ALL PERIMETER DRAINAGE PIPES ARE ACCESSIBLE.

TYPICAL CLEANOUT DETAIL
SCALE: 1-1/2"=1'-0"



SLAB DETAIL "GRAVEL UNDER S.O.G." - ROCK SURFACE FULLY CLEANED
SCALE: 1-1/2"=1'-0"

NOTES:

1. FOR SLAB, WALLS AND WATERPROOFING DESIGN, SEE STRUCTURAL DRAWINGS.
2. FOUNDATION BASE PLAN FROM STRUCTURAL DRAWINGS.

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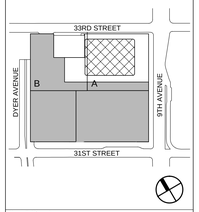

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No.	Date	Description
1	20 JUNE 2014	ISSUED FOR PERMIT

Sheet Name:
UNDERSLAB DRAINAGE PLAN & DETAILS

Project No.:	B-SCAN Sheet No.: U-001.00
Date: 20 JUNE 2014	Sheet No.: U-001
Scale: AS SHOWN	
File No.: SOE-101	Page No.: 1 OF 1

September 15, 2014

ENERGY MODELING OF THE MANHATTAN WEST NORTH TOWER NEW YORK CITY

Submitted by:
Vidaris, Inc.
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Norwalk, CT 06854

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Senior Principal
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TABLE OF CONTENTS

REPORT OVERVIEW

The Manhattan West North Tower is a core and shell office building located in New York City, with approximately 1.85 million ft^2 and 69-stories, plus a mechanical bulkhead and basement floors.

The following two energy models were created using the DOE2.1E simulation program:

- The Design Energy Model based on the NYC ECC Set dated September 12, 2014
- The Code Baseline using the New York City Energy Conservation Code 2011 (based on the 2010 NYS Energy Construction Conservation Code, Section 506 with LL 48/10 & LL 1/11).

It is important to note that in the NYS Energy Code, the fan power, expressed in W/cfm, is a mandatory provision. The W/cfm limit may not be exceeded for any fan. Exterior lighting also falls under the category of mandatory provisions.

This report refers solely to compliance in reference to the energy cost of the design vs. the energy cost of the Energy Code baseline. Mandatory provisions have to be met by the design team.

The table below summarizes the annual energy use and cost for the Design and Code Baseline:

	Annual Energy Cost [$]	Annual Regulated Energy Cost [$]	Regulated Savings Vs. Code Case [$]	Regulated Savings Vs. Code Case [%]	Energy Code Compliance With Regard to Energy Cost [Yes/No]
2011 NYC Energy Code Baseline	$7,527,189	$5,460,862			
Proposed Design	$6,516,101	$4,700,412	$760,450	13.93%	Yes

Regulated energy cost excluded plug loads, elevators, escalators, kitchen uses, appliances, computers, printers, copiers and other office equipment, as well as process loads.

<u>Note on Actual Energy Use</u>
This report is developed for the purpose of determining code compliance. Actual energy use and cost will be greater, since the modeling rules do not account for many real-life issues, such as three-dimensional heat loss at the envelope, piping heat loss, quality of construction, equipment functionality, building operation and other factors.

COMPARISON OF DESIGN BUILDING AND NYCECC 2011 CODE BASELINE

The following table shows the comparison of the Proposed Design Case and the 2011 NYC Energy Code (based on the 2010 NYS Energy Conservation Code and NYC LL 48/10 & LL 1/11):

Proposed Design	CODE Baseline: NYCECC 2011 (based on ECCCNYS 2010 + LL 48/10 and LL 1/11)	Reference Drawing / Document
Wall, Above Grade Glass spandrel curtain wall: • 1-1/4" Insulated glazing unit • 3-11/16" Air space • 4" Semi-rigid insulation with R-4.2/inch and vertical mullions 5'-0" O.C., horizontal mullions 18'-4.5" O.C. • U-factor = U-0.179 (based on THERM analysis) Storefront curtain wall: • 1-5/16" Semi-rigid insulation with R-4.2/inch and vertical mullions 10'-0" O.C., horizontal mullions 1'-4" O.C. • 1/2" Steel plate • Air space • 1/2" Steel plate • U-factor = U-1.123 (based on THERM analysis) Basement wall next to unconditioned space: • 8" Concrete masonry unit, fully grouted • 1 3/8" Semi-rigid insulation with R-4.2/inch • 5/8" Gypsum board • U-factor = U-0.128	Wall, Above Grade • U-factor = U-0.064 (Steel framed) • U-factor = U-0.104 (Mass wall, non-residential)	EN-200, Issued for Foundation Permit, September 12, 2014

Vertical Glazing Glazing area = 67% of exterior façade area Typical tower glazing • U-0.42 (unit); curtain wall with thermally broken aluminum frame • U-0.27 (center of glass) • SHGC = 0.29 • Visible transmittance = 41% Lobby glazing • U-1.06 (unit); curtain wall with thermally broken aluminum frame • U-1.0 (center of glass) • SHGC = 0.88 • Visible transmittance = 80%	**Vertical Glazing** Glazing area = 40% • U-factor = U-0.50 (Metal framing; curtain wall/storefront) • SHGC = 0.40	**EN-200, A-200, A-201, Issued for Foundation Permit, September 12, 2014**

Roof Tower roof • Concrete pavers • Air space • 5" Extruded polystyrene insulation • Roofing membrane • 9" Concrete slab • Metal deck • U-factor = U-0.036 • Roof albedo - reflectivity of 0.3 Plaza roof • 2" Stone paving • 3" Mortar setting bed • 7" Extruded polystyrene insulation • 6" Concrete slab • 1/2" Extruded polystyrene insulation • 10" Concrete slab • Metal deck • U-factor = U-0.025 • Roof albedo - reflectivity of 0.3	**Roof** • U-factor = U-0.048 (Insulation entirely above deck) • Roof albedo - reflectivity of 0.3	**EN-200, Issued for Foundation Permit, September 12, 2014**
Wall, Below Grade • C-factor = C-1.140	**Wall, Below Grade** • C-factor = C-1.140	**EN-200, Issued for Foundation Permit, September 12, 2014**
Slab-On-Grade Floors • F-factor = F-0.730	**Slab-On-Grade Floors** • F-factor = F-0.730	**EN-200, Issued for Foundation Permit, September 12, 2014**
Opaque Door • U-factor = U-0.7 (Swinging)	**Opaque Door** • U-factor = U-0.7 (Swinging)	

Lighting Power Density		Lighting Power Density		EN-100 to EN-138, Issued for Foundation Permit, September 12, 2014
Space	LPD (W/ft²)	LPD (W/ft²)	Space Classification	
Lobby	0.47	1.0	Office	
Mechanical	0.28	0.3	Parking Garage	
Electrical	0.22			
EMR	0.29			
Corridor	0.39			
Storage Active	0.35			
Stair	0.30			
Elevator Lobby	0.55			
Restrooms	0.52			
Lockers	0.47			
Parking	0.30			
IT rooms	0.47			
BOH Office	0.75			
Tenant Fit-out per ASHRAE 90.1-2010 (New Energy Code that will apply to all tenants)		Tenant Fit-out		
Office - Enclosed	1.11	1.11	Office - Enclosed	
Office - Open Plan	0.98	0.98	Office - Open Plan	
Retail	1.68	1.68	Retail - Sales Area	

Lighting Control Core & Shell: Occupancy sensors in restrooms, storage, IT rooms and stairwells, BOH offices. Daylight dimming in lobby. • Lighting setpoint: 50 foot-candles maintained throughout occupied hours. • Minimum fixture power input percentage: 18% • Minimum fixture lighting output percentage: 10%	**Lighting Control** No occupancy sensors, except for conference rooms without multi-scene controls, BOH offices < 250 ft^2 No daylight dimming.	**EN-100 to EN-138, Issued for Foundation Permit, September 12, 2014**
Plug-in office equipment Computers, monitors, printers, copiers will have standard efficiency Space — EPD (W/ft^2) Open Office — 1.5 Enclosed Office — 1.5 Lobby — 0.5 Mechanical — 0.25 Electrical — 5 Elevator Machine Room — 10 IT Rooms — 10 Data Center — 30 Meet Me Rooms — 5 Retail — 0.5	**Plug-in office equipment** Same as Design.	
High efficiency elevators with regenerative braking (savings of 25%)	Same as Design	

Outside Air Offices 20 cfm per person Corridors 0.06 cfm per square foot. Lobby 11 cfm per person Retail 16 cfm per person	**Outside Air** Same as Proposed Case	
Outside Air The outside air is heated by purchased steam. It is provided separately to air handling units on each floor.	**Outside Air** The outside air is provided separately as Design	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-502.00**
Office Floors Water-cooled, packaged DX units with variable air volume system. Minimum supply air temperature is 49F with warmest control. System fan power w/cfm is as per New York State Code Table 503.2.10.1 VAV boxes have minimum turn down ratio of 35%. Perimeter fan powered boxes with ECM motors. DX compressors with 0.85 kW/ton. DX units equipped with water-side economizers.	**Office Floors** <u>System 2 - VAV with reheat</u> • Fan Control: VAV • Minimum supply air temperature is 55F with warmest control. • System fan power w/cfm same as Design • Cooling Type: Chilled water • Heating Type: Purchased steam • VAV minimum flow setpoint of 0.4 cfm/ft^2 of the floor area	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-505.00**

Lobby Water-cooled, packaged DX units with variable air volume system. Minimum supply air temperature is 49F with warmest control. System fan power w/cfm is as per New York State Code Table 503.2.10.1 VAV boxes have minimum turn down ratio of 50%. Lobby has fan powered boxes with ECM motors. DX compressors with 0.85 kW/ton. DX units equipped with water-side economizers.	**Lobby** <u>System 7 - VAV with reheat</u> • Fan Control: VAV • Minimum supply air temperature is 55F with warmest control. • System fan power w/cfm same as Design. • Cooling Type: Chilled water • Heating Type: Purchased steam • VAV minimum turn down ratio (M-C-R) of 50%	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-505.00**
EMR Rooms 'B' System type: Fancoil units • Fan Control: Constant volume • System fan power w/cfm as per New York State Code Table 503.2.10.1. • Cooling Type: Chilled water • Heating Type: Purchased steam	**EMR Rooms 'B'** <u>System 7 – Four Pipe Fan Coil</u> • Fan Control: Constant volume • System fan power w/cfm same as Design. • Cooling Type: Chilled Water • Heating Type: Purchased Steam	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-505.00**
Data, Meetme, IT Rooms, EMR 'A' • Fan Control: Constant volume • System fan power w/cfm is as per New York State Code Table 503.2.10.1. • Cooling Type: Water Cooled DX units; Cooling efficiency (EER) = 12.1 • Heating Type: Purchased steam	**Data, Meetme, IT Rooms, EMR 'A'** <u>System 7 – Four Pipe Fan Coil</u> • Fan Control: Constant volume • System fan power w/cfm same as Design. • Cooling Type: Chilled Water • Heating Type: Purchase steam	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-505.00**

Parking Garage CO sensors in parking garage. The fans operate for ten hours per day. The parking garage is not heated.	**Parking Garage** Same as Design.	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-501.00**
Mechanical Areas Constant volume system. Heating is provided by purchased steam Cooling by air cooled packaged DX units (Cooling SEER= 13.0). Cooling setpoint is high, so there is no cooling load.	**Mechanical Areas** Constant volume system. Heating is provided by purchased steam Cooling same as Design	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-504.00**
Steam heat with condensate recovery (4% heat recovered)	Steam heat without condensate heat recovery.	
Hot water pumps : • Hot water supply temperature = 180°F • Hot water return temperature = 130°F • Hot water supply temperature reset o 180°F at 20°F and below o 150°F at 50°F and above o Ramped linearly between 180°F and 150°F at temperature between 20°F and 50°F • 33 W/gpm (based on 150 feet head and 85% pump efficiency) • VFD (w/ 30% minimum turndown ratio) • Premium efficiency motors	**Hot water pumps :** • Hot water supply temperature = 180°F • Hot water return temperature = 130°F • Hot water supply temperature reset o 180°F at 20°F and below o 150°F at 50°F and above o Ramped linearly between 180°F and 150°F at temperature between 20°F and 50°F • Same as Design • VFD (w/ 30% minimum turndown ratio) • NEMA Standard efficiency motors	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-500.00**
Cooling tower • Five Cells (One Standby) • Entering temperature = 95°F • Leaving temperature = 85°F • Wet bulb outdoor air = 75°F • The cooling tower fan has variable frequency drive with minimum turn down ratio of 50%	**Cooling tower** • Five cells (one Standby) • Entering temperature = 95°F • Leaving temperature = 85°F • Wet bulb outdoor air = 75°F • The cooling tower fan has two speed drive	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-500.00**

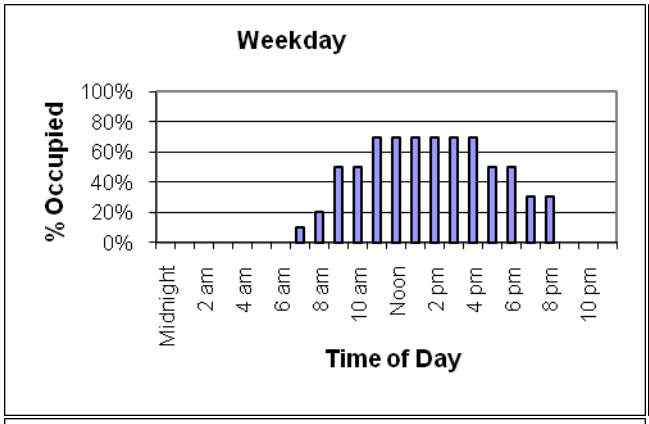
Condenser water pumps • Primary pumps: 44 W/gpm • Secondary Pumps: 22 W/gpm • Tertiary Pumps: 22 W/gpm • Premium efficiency motors	**Condenser water pumps** • Same as Design • NEMA Standard efficiency motors	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-500.00**
Chillers Chillers serve the EMR • Five 60-ton modular multi-stack chillers with efficiency of 0.822 kw/ton • 250 ton single-effect absorption chiller using heat recovered from co-generation plant • Pumps with VFD (w/ 30% minimum turndown ratio)	**Chillers** Chillers serve the entire building • Seven 750-ton electric centrifugal chillers with efficiency of 0.576 kw/ton at ARI conditions • Pumps same as Design	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-500.00**
Service Water Heating • Electric DHW heaters	**Service Water Heating** • Electric DHW heaters	
Electric Cogeneration Plant (Microturbines) • Electric Generation Capacity = 1200 KW • Electric Generation Efficiency =29.90% • Thermal Efficiency = 32.0% • Heat recovered from cogeneration plant is used by a 250 ton single-effect absorption chiller. • Electric generation mode is track electric • Heat recovered from cogeneration plant is also used for service hot water heating and space heating.	**Electric Cogeneration Plant** No cogeneration plant.	**Issued for Foundation Bid** **Issued June 20, 2014** **Sheet # M-600.00**
Premium efficiency motors for fans	NEMA Standard Efficiency motors for fans	

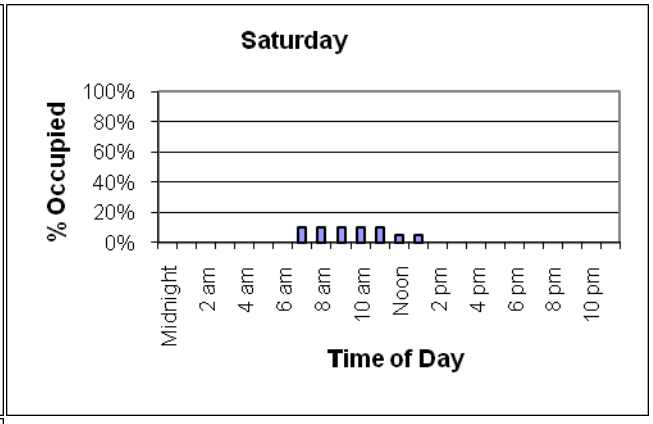
SCHEDULES FOR OCCUPANCY, LIGHTING AND EQUIPMENT

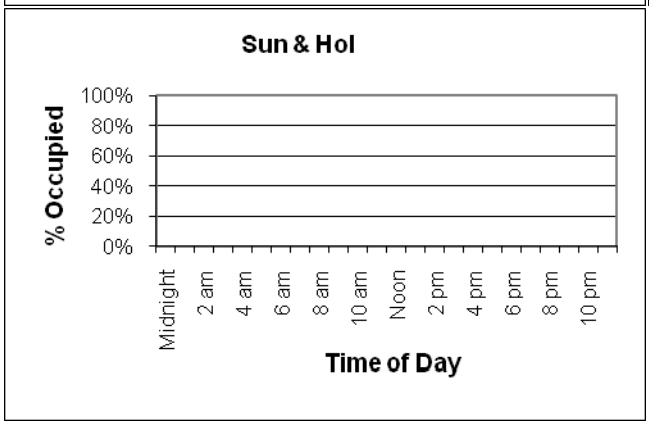
Occupancy Patterns

Space Type	Occupancy Density	Schedule
Open Office	140 ft²/person	Office occupancy
Enclosed Office	140 ft²/person	Office occupancy
Lobby	50 ft²/person	Corridor occupancy
Mechanical	5000 ft²/person	Mechanical occupancy
Electrical	5000 ft²/person	Mechanical occupancy
Corridor	140 ft²/person	Corridor occupancy
Elevator Lobby	140 ft²/person	Corridor occupancy
Restrooms	140 ft²/person	Corridor occupancy
Stairwells	140 ft²/person	Corridor occupancy
Lockers	140 ft²/person	Corridor occupancy
Parking	5000 ft²/person	Corridor occupancy
IT Rooms	5000 ft²/person	Mechanical occupancy
Retail	50 ft²/person	Retail occupancy

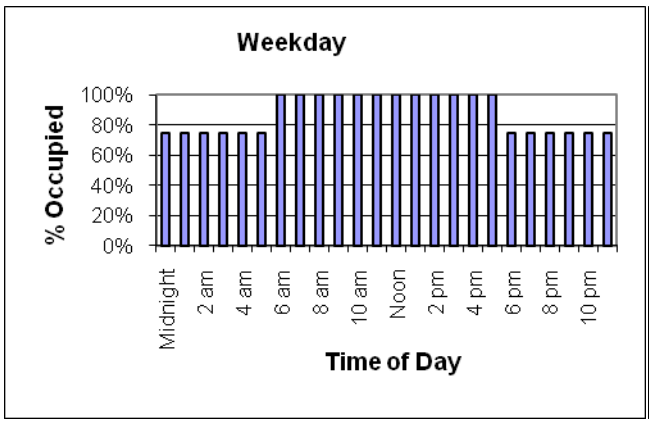
Corridor occupancy
Schedule thru December 31

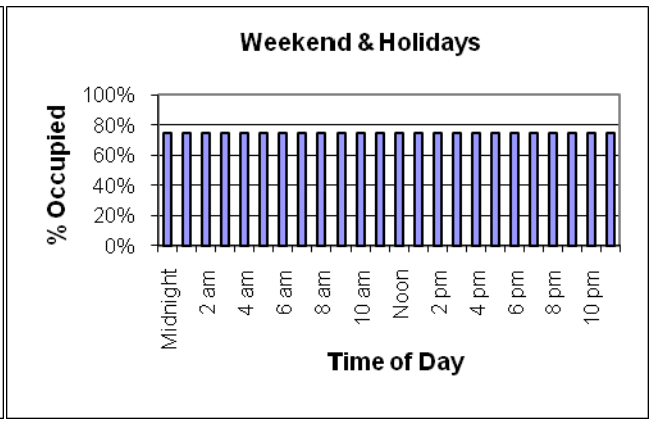




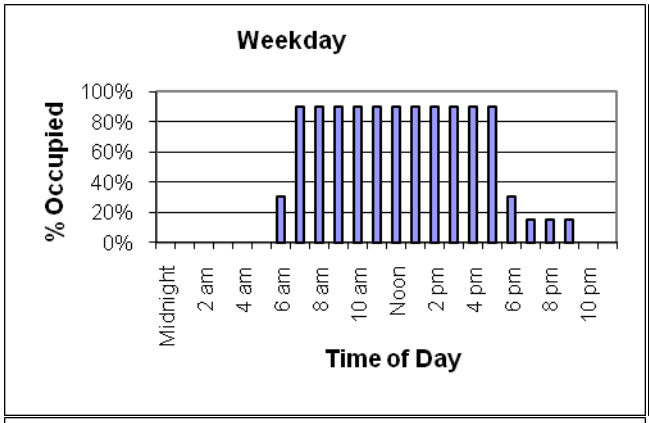


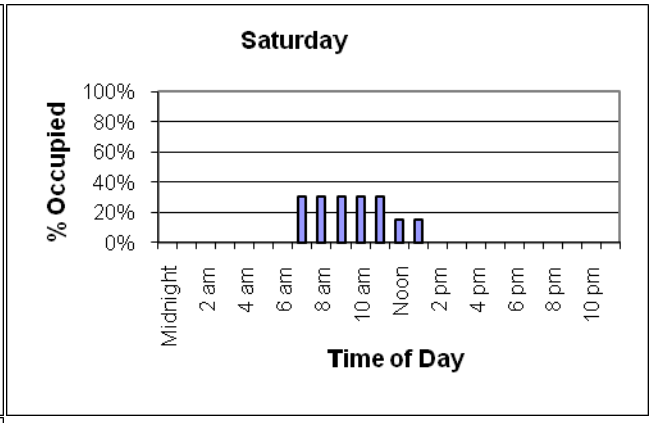
Mechanical occupancy
Schedule thru December 31

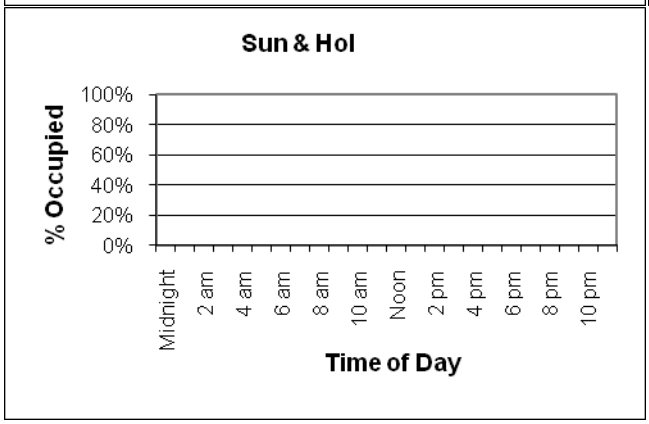




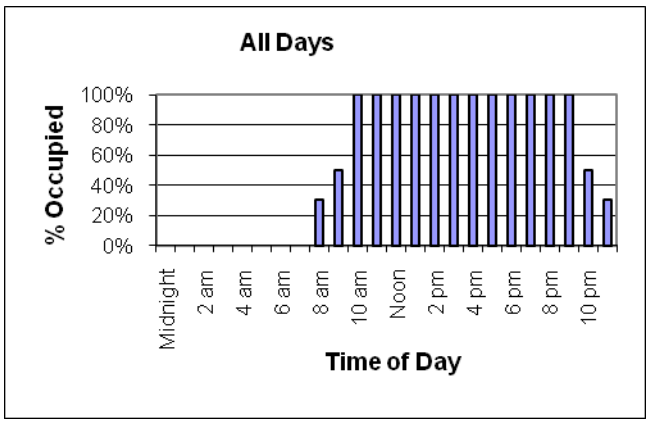
Office occupancy
Schedule thru December 31







Retail occupancy
Schedule thru December 31

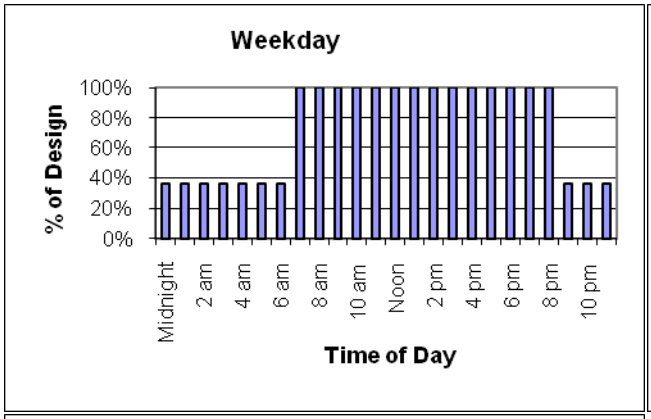

All Days
% Occupied
100%
80%
60%
40%
20%
0%
Midnight
2 am
4 am
6 am
8 am
10 am
Noon
2 pm
4 pm
6 pm
8 pm
10 pm
Time of Day

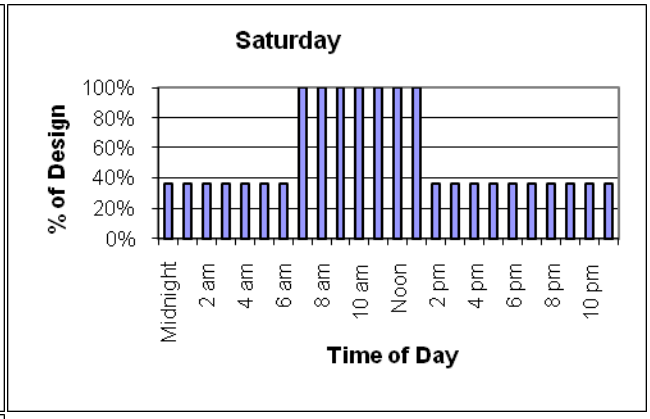
Lighting Use Patterns

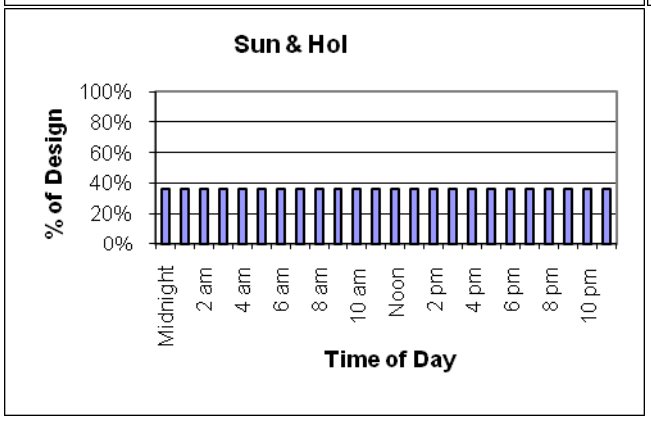
Space Type	Lighting Power Density	Schedule
Open Office (tenant)	0.98 W/ft²	Office lighting
Enclosed Office (tenant)	1.11 W/ft²	Office lighting
Lobby	0.47 W/ft²	Lobby lighting
Mechanical	0.28 W/ft²	Mechanical lighting
Electrical	0.22 W/ft²	Mechanical lighting
EMR	0.29 W/ft²	Mechanical lighting
Corridor	0.39 W/ft²	Corridor lighting
Elevator Lobby	0.55 W/ft²	Corridor lighting
Restrooms	0.52 W/ft²	Core lighting
Stairwells	0.30 W/ft²	Stair lighting
Storage	0.35 W/ft²	Core lighting
Lockers	0.47 W/ft²	Corridor lighting
Parking	0.30 W/ft²	Corridor lighting
IT rooms	0.47 W/ft²	Mechanical lighting
Retail	1.68 W/ft²	Retail lighting

Core lighting

Schedule thru December 31

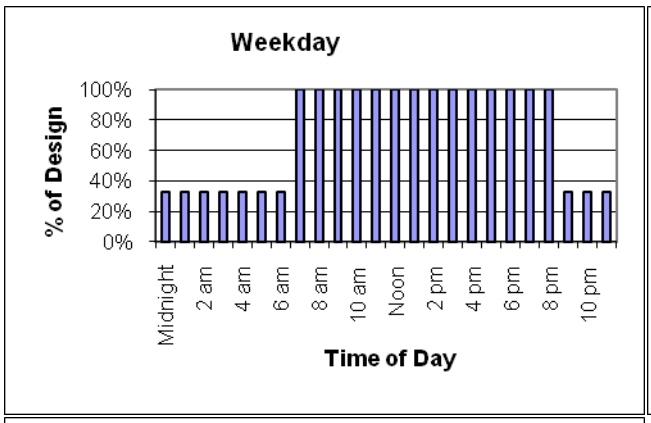


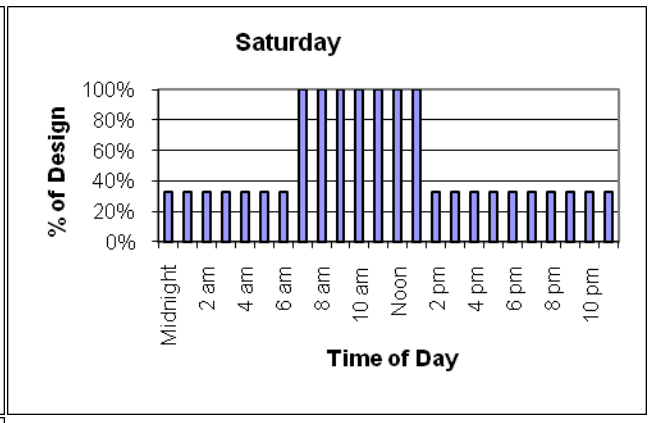


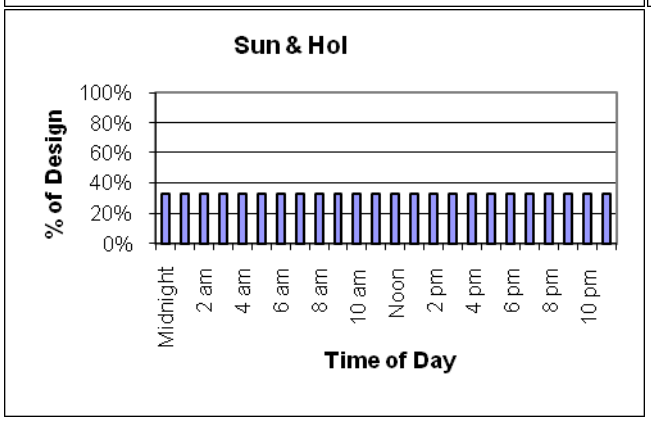


Corridor lighting

Schedule thru December 31

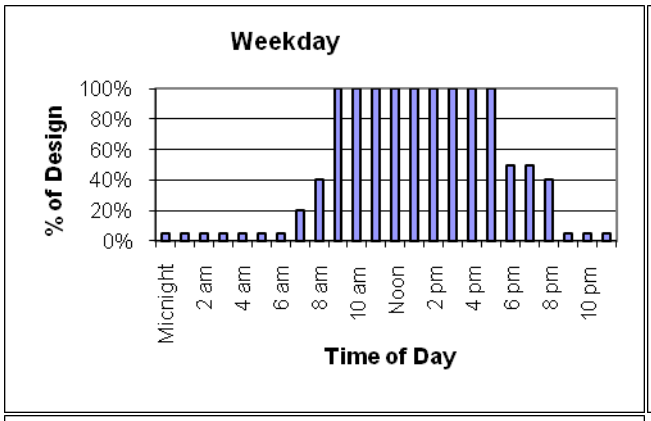


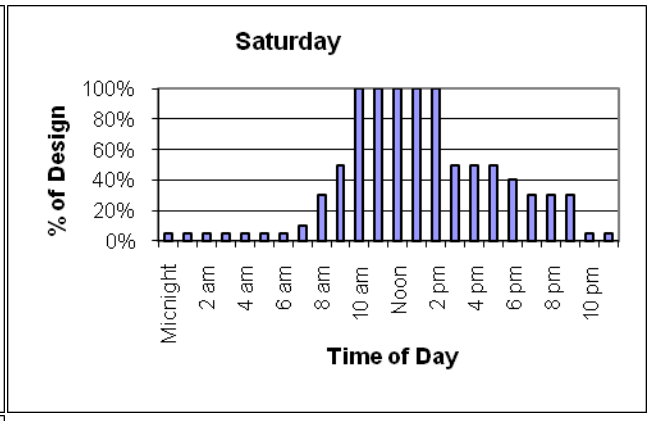


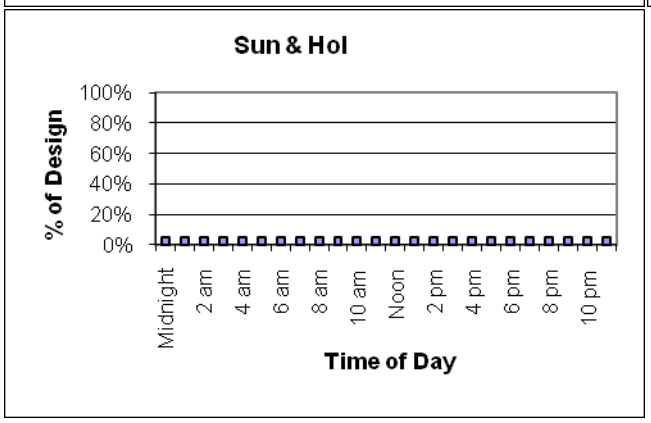


Lobby lighting

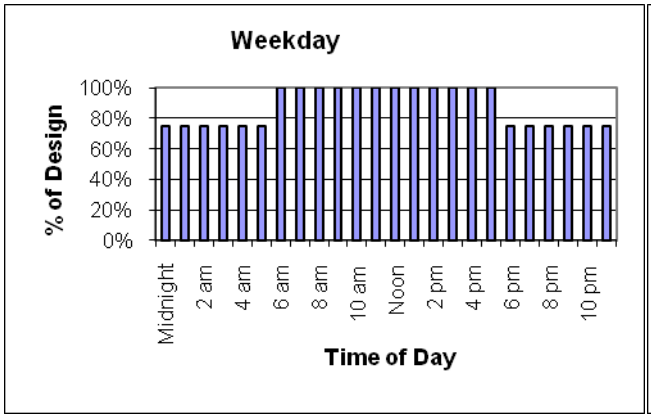
Schedule thru December 31

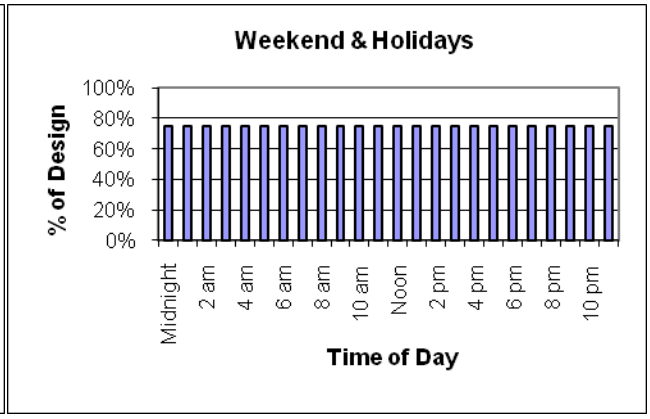




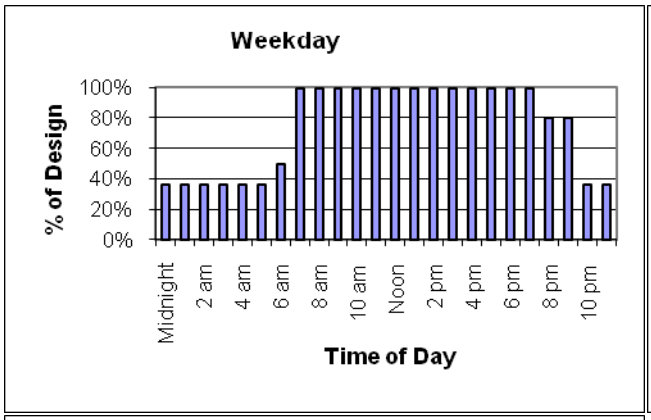


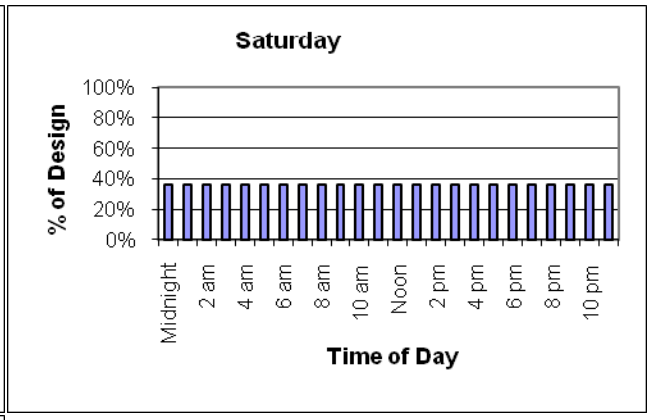
Mechanical lighting
Schedule thru December 31

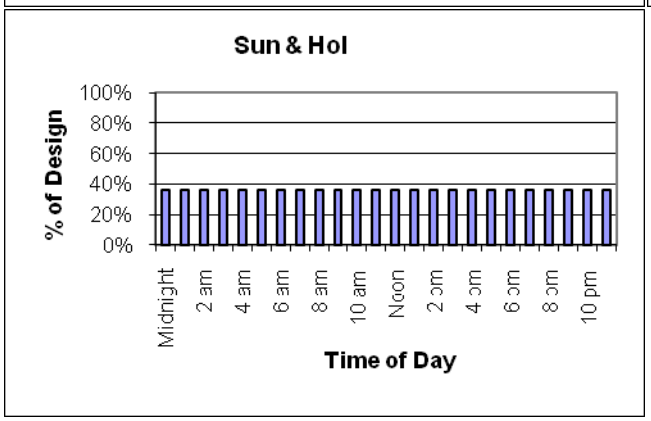




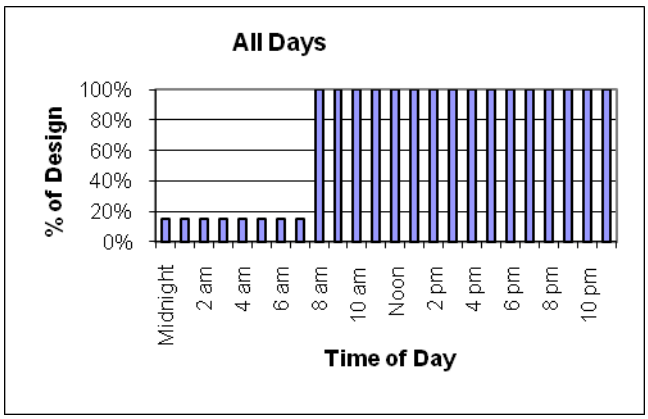
Office lighting
Schedule thru December 31





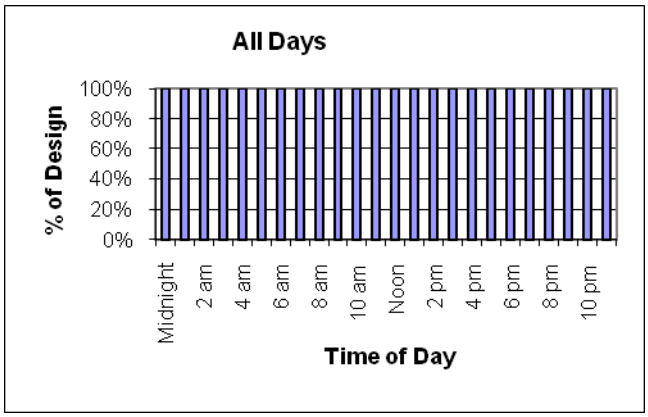


Retail lighting
Schedule thru December 31



Stair lighting

Schedule thru December 31

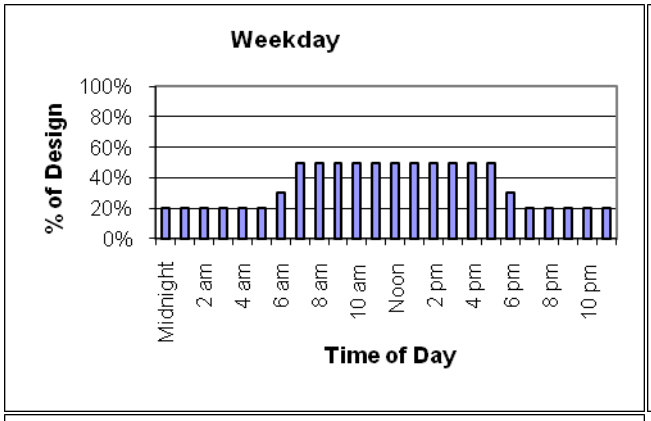


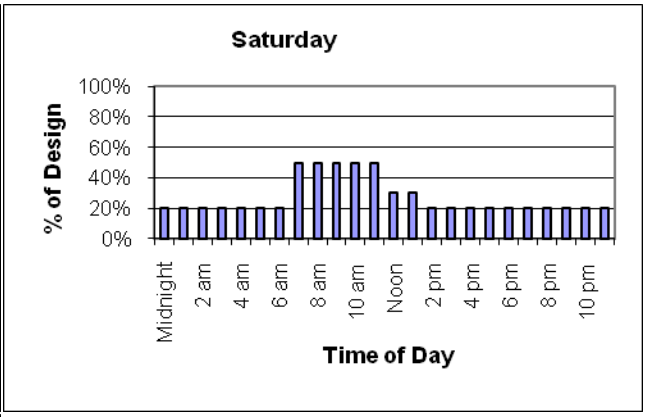
Equipment Use Patterns

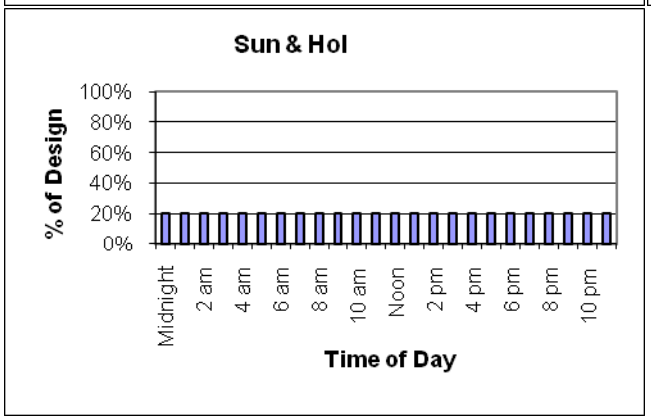
Space Type	Equipment Power Density	Schedule
Open Office	1.5 W/ft²	Office equipment
Enclosed Office	1.5 W/ft²	Office equipment
Lobby	0.5 W/ft²	Lobby equipment
Mechanical	0.25 W/ft²	Mechanical equipment
Electrical	5 W/ft²	Mechanical equipment
Elevator Machine Room	10 W/ft²	Mechanical equipment
IT Rooms	10 W/ft²	Mechanical equipment
Data Center	30 W/ft²	Mechanical equipment
Meet Me Rooms	5 W/ft²	Mechanical equipment
Retail	0.5 W/ft²	Retail equipment

Office equipment

Schedule thru December 31

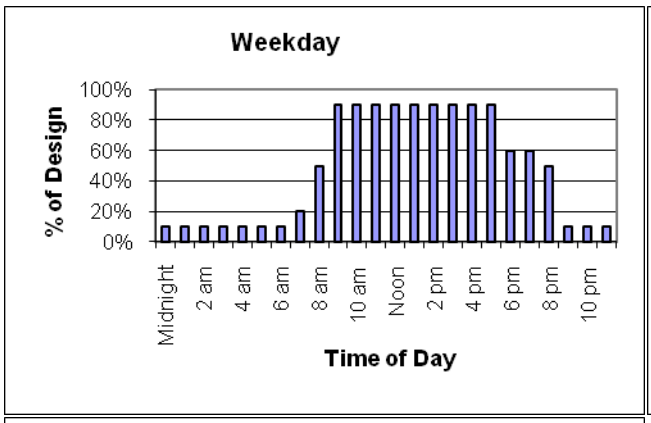


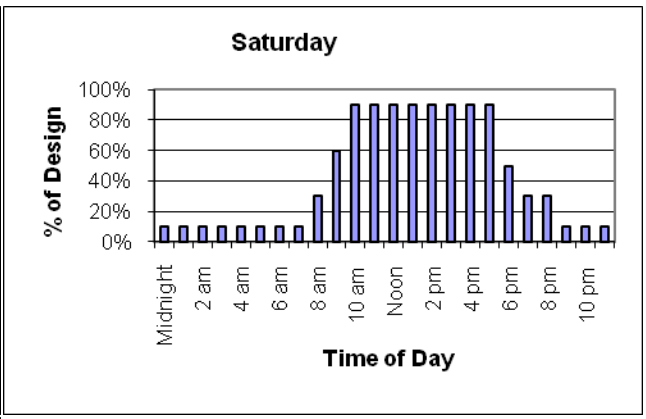


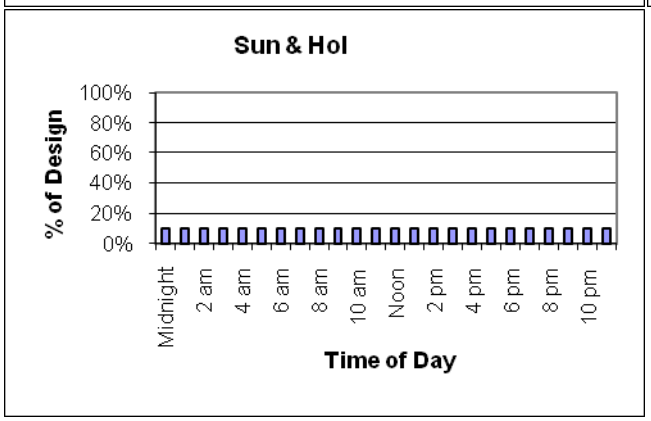


Lobby equipment

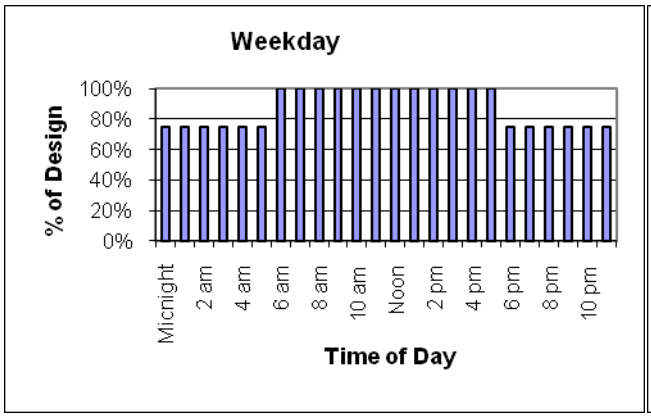
Schedule thru December 31

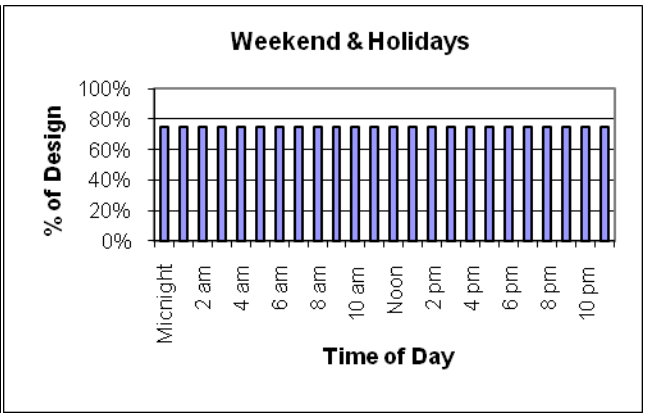




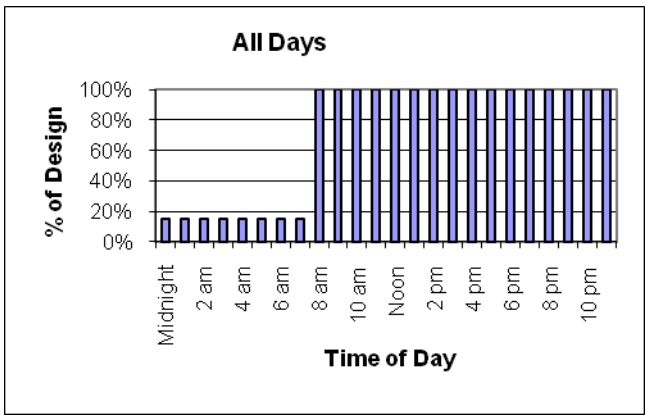


Mechanical equipment
Schedule thru December 31





Retail equipment:
Schedule thru December 31


All Days
% of Design
100%
80%
60%
40%
20%
0%
Midnight
2 am
4 am
6 am
8 am
10 am
Noon
2 pm
4 pm
6 pm
8 pm
10 pm
Time of Day

APPENDIX A - UTILITY RATES

The energy model uses the following utility rates to calculate the building's energy cost.

1.1. Electricity

ConEdison PSC-10, SC-9, Rate II (General Large > 1,500 kW monthly demand), low tension

NY Sales Tax: 8.875

Time Period	Demand Charge			Energy Charge	
	M-F, 8am-6 pm	M-F, 8am-10pm	All hours	M-F 8am-10pm	Other hours
	per kW	*per kW*	*per kW*	*per kWh*	*per kWh*
January	$24.87	$19.41	$7.71	$0.0958	$0.0783
February	$22.89	$17.43	$5.73	$0.0983	$0.0905
March	$22.89	$17.43	$5.73	$0.1103	$0.0985
April	$22.89	$17.43	$5.73	$0.1054	$0.0924
May	$32.84	$27.38	$15.68	$0.0999	$0.0844
June	$57.06	$40.03	$24.16	$0.1300	$0.0970
July	$57.06	$40.03	$24.16	$0.0975	$0.0653
August	$57.06	$40.03	$24.16	$0.0776	$0.0550
September	$57.06	$40.03	$24.16	$0.1049	$0.0883
October	$32.84	$27.38	$15.68	$0.0734	$0.0596
November	$24.87	$19.41	$7.71	$0.1086	$0.0946
December	$24.87	$19.41	$7.71	$0.0741	$0.0650

1.2. Steam

DES Steam Rate

NY Sales Tax: 8.375%

Month	Per MMBTU
January	$17.708
February	$22.922
March	$21.704
April	$22.422
May	$18.843
June	$18.377
July	$11.265
August	$12.594
September	$8.965
October	$12.780
November	$16.483
December	$23.915

1.3. Gas

ConEdison PSC-9 Gas, Rider H Rate I (Distributed Generation Rule for less than 5,000 kW)

NY Sales Tax: 8.875 %

Time Period	Energy Charge	
	Monthly Charge	Energy Charge
		per therm
January	$420.588	$0.9065
February	$420.573	$0.9065
March	$420.420	$0.8125
April	$421.305	$0.8250
May	$421.470	$0.6100
June	$421.320	$0.6515
July	$421.371	$0.6515
August	$421.236	$0.6675
September	$421.359	$0.6675
October	$421.230	$0.6900
November	$420.753	$0.8805
December	$420.564	$0.8805

APPENDIX B – DOE2.1E SUMMARY OUTPUT REPORTS

```
1 DOE 2.1E                              MANHATTAN WEST                          DOE-2.1E-121  Mon Sep 15 10:47:26 2014PDL RUN  1
  Alnp3: 1600 kW:290 TR                 SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
 REPORT- PS-D  PLANT LOADS SATISFIED                                                    WEATHER FILE- NEW YORK CENTRAL  NY
 ------------------------------------------------------------------------------------------------------------------------------


                           HEATING LOADS                MBTU SUPPLIED      PCT OF TOTAL LOAD
                           -------------------------    -------------      -----------------

                                HW-BOILER                     36521.5              63.4
                                ELEC-DHW-HEATER                   0.0               0.0
                                GTURB-GEN                     21043.6              36.6
                                                         =============      =================

                                     LOAD SATISFIED           57565.1             100.0
                              TOTAL LOAD ON PLANT             57564.5


                           COOLING LOADS                MBTU SUPPLIED      PCT OF TOTAL LOAD
                           -------------------------    -------------      -----------------

                                OPEN-REC-CHLR                     0.0               0.0
                                ABSOR1-CHLR                    2178.2              64.9
                                COOLING-TWR                    1177.0              35.1
                                                         =============      =================

                                     LOAD SATISFIED            3355.2             100.0
                              TOTAL LOAD ON PLANT              3355.2


                           ELECTRICAL LOADS             KWH SUPPLIED       PCT OF TOTAL LOAD
                           -------------------------    -------------      -----------------

                                GTURB-GEN                   11641912.0              38.4
                                ELECTRICITY                 18655876.0              61.6
                                                         =============      =================

                                     LOAD SATISFIED        30297788.0             100.0
                              TOTAL LOAD ON PLANT          30297732.0


                           TOWER ABOVE DESIGN TEMPERATURE OF 88.F   0 HOURS
1 DOE 2.1E                              MANHATTAN WEST                          DOE-2.1E-121  Mon Sep 15 10:47:26 2014PDL RUN  1
  Alnp3: 1600 kW:290 TR                 SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
 REPORT- PS-D  PLANT LOADS SATISFIED                                                    WEATHER FILE- NEW YORK CENTRAL  NY
 ------------------------------------------------------------------------------------------------------------(CONTINUED)--------
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SUMMARY OF LOADS MET

TYPE OF LOAD	TOTAL LOAD (MBTU)	LOAD SATISFIED (MBTU)	TOTAL OVERLOAD (MBTU)	PEAK OVERLOAD (MBTU)	HOURS OVERLOADED
HEATING LOADS	57564.5	57565.1	0.000	0.000	0
COOLING LOADS	3355.2	3355.2	0.000	0.000	0
ELECTRICAL LOADS	103405.2	103405.4	0.000	0.000	0

1 DOE 2.1E MANHATTAN WEST DOE-2.1E-121 Mon Sep 15 10:47:26 2014PDL RUN 1
Alnp3: 1600 kW:290 TR SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
REPORT- PS-E MONTHLY ENERGY END-USE SUMMARY WEATHER FILE- NEW YORK CENTRAL NY

0ELECTRICAL END-USES IN KWH

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0 AREA LIGHTS	714750.	658119.	755434.	727493.	714489.	727437.	728302.	741487.	713691.	714608.	700073.	727963.	8623846.
MAX KW	1551.8	1551.8	1548.5	1547.0	1547.0	1547.0	1547.0	1547.0	1547.0	1547.7	1551.8	1551.8	1551.8
DAY/HR	4/18	2/18	1/18	1/10	3/10	1/10	1/10	2/10	1/10	29/18	1/18	1/18	
0MISC EQUIPMT	780987.	712654.	806567.	778502.	780987.	778501.	790703.	796851.	768785.	780987.	759069.	787135.	9321729.
MAX KW	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4
DAY/HR	4/10	1/10	1/10	1/10	3/10	1/10	1/10	2/10	1/10	1/10	1/10	1/10	
0 SPACE COOL	98521.	132886.	241911.	227671.	338628.	549136.	708531.	632038.	442266.	229131.	228002.	122418.	3951139.
MAX KW	1134.8	1339.0	1702.8	2377.4	1854.9	1880.7	2370.2	2931.9	1911.8	1305.0	1475.4	1153.7	2931.9
DAY/HR	19/14	23/14	16/13	28/ 4	28/17	2/16	13/16	17/16	3/16	1/15	18/13	16/14	
0 HEAT REJECT	14.	342.	3017.	6153.	21364.	32851.	47743.	42607.	30133.	10142.	2425.	41.	196830.
MAX KW	1.6	44.5	45.9	91.9	91.9	91.9	91.9	91.9	91.9	48.9	44.5	6.5	91.9
DAY/HR	26/14	2/10	16/12	28/11	12/14	2/13	3/14	2/10	2/13	18/14	6/16	21/13	
0PUMPS & MISC	260973.	280628.	370183.	143336.	128379.	99153.	119032.	112026.	92910.	151641.	313850.	309079.	2381188.
MAX KW	1100.4	1093.0	1126.6	1075.9	1036.0	308.1	401.7	515.3	590.7	675.0	1086.8	1098.1	1126.6
DAY/HR	18/13	6/13	16/14	8/ 9	6/ 8	22/15	13/16	17/16	20/ 5	30/12	18/ 9	11/13	
0 VENT FANS	411444.	377276.	431458.	410734.	383215.	424340.	440846.	437613.	397569.	386559.	384074.	414556.	4899682.
MAX KW	1026.0	1026.6	1045.5	1085.4	1188.7	1221.6	1245.3	1312.4	1177.0	1067.4	1044.7	1025.9	1312.4
DAY/HR	27/10	2/10	16/13	28/17	10/15	22/16	21/18	17/16	7/16	1/17	2/13	15/10	
0DOMHOT WATER	2182.	1971.	2182.	2112.	2182.	2112.	2182.	2182.	2112.	2182.	2112.	2182.	25695.
MAX KW	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
DAY/HR	1/ 1	1/ 1	15/23	1/ 1	1/ 2	1/ 2	1/ 2	1/ 2	20/ 9	9/15	1/ 1	13/ 3	
0 EXT LIGHTS	3302.	2762.	2996.	2899.	2802.	2472.	2690.	2939.	2899.	2996.	3084.	3439.	35280.
MAX KW	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
DAY/HR	1/ 1	1/ 1	1/ 1	1/ 1	1/ 2	1/ 2	1/ 2	1/ 2	1/ 2	1/ 2	1/ 1	1/ 1	
0 EXT MISC	71859.	65843.	75136.	72448.	71859.	72448.	72883.	74112.	71219.	71859.	69990.	72678.	862336.
MAX KW	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8	204.8
DAY/HR	4/ 7	1/ 7	1/ 7	1/ 7	3/ 7	1/ 7	1/ 7	2/ 7	1/ 7	1/ 7	1/ 7	1/ 7	
0 TOTAL KWH	2344032.	2232482.	2688883.	2371346.	2443906.	2688450.	2912912.	2841854.	2521585.	2350105.	2462680.	2439490.	30297724.

0FUEL END-USES IN MBTU

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0 SPACE HEAT	9092.5	6664.0	5568.7	1881.2	454.2	0.0	0.0	0.0	10.4	1217.5	4303.7	7329.3	36521.4
MAX MBTU	54.559	36.972	25.500	19.638	13.991	0.000	0.000	0.000	10.388	19.806	27.830	37.847	54.559
DAY/HR	23/ 8	6/ 8	1/ 8	8/ 9	4/22	0/ 0	0/ 0	0/ 0	20/ 8	23/14	27/ 8	27/ 5	
0 TOTAL MBTU	9092.5	6664.0	5568.7	1881.2	454.2	0.0	0.0	0.0	10.4	1217.5	4303.7	7329.3	36521.4

1 DOE 2.1E MANHATTAN WEST DOE-2.1E-121 Mon Sep 15 10:47:26 2014PDL RUN 1
Alnp3: 1600 kW:290 TR SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
REPORT- BEPS BUILDING ENERGY PERFORMANCE SUMMARY WEATHER FILE- NEW YORK CENTRAL NY

ENERGY TYPE: UNITS: MBTU	ELECTRICITY	NATURAL-GAS	FUEL-OIL	RECOVERED
CATEGORY OF USE				
AREA LIGHTS	17382.1	40103.2	0.0	0.0
MISC EQUIPMT	17738.5	46824.3	0.0	0.0
SPACE HEAT	0.0	0.0	36521.5	15279.6
SPACE COOL	9575.2	13232.6	0.0	3223.2
HEAT REJECT	398.6	931.0	0.0	0.0
PUMPS & MISC	5535.6	8585.0	0.0	0.0
VENT FANS	11232.8	18270.6	0.0	0.0
DOMHOT WATER	42.2	151.2	0.0	2540.9
EXT LIGHTS	39.0	270.1	0.0	0.0
EXT MISC	1727.9	4042.9	0.0	0.0
COGEN SURPLS	0.0	0.0	0.0	0.0
TOTAL	63672.0	132410.8	36521.5	21043.7

TOTAL SITE ENERGY 232604.30 MBTU 109.1 KBTU/SQFT-YR GROSS-AREA 109.1 KBTU/SQFT-YR NET-AREA
TOTAL SOURCE ENERGY 359967.34 MBTU 168.9 KBTU/SQFT-YR GROSS-AREA 168.9 KBTU/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 1.5
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

1 DOE 2.1E MANHATTAN WEST DOE-2.1E-121 Mon Sep 15 10:47:26 2014PDL RUN 1
Alnp3: 1600 kW:290 TR SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
REPORT- BEPU BUILDING ENERGY PERFORMANCE SUMMARY (UTILITY UNITS) WEATHER FILE- NEW YORK CENTRAL NY

ENERGY TYPE: SITE UNITS:	ELECTRICITY KWH	NATURAL-GAS THERM	FUEL-OIL MMBTU	RECOVERED MBTU
CATEGORY OF USE				
AREA LIGHTS	5092942.	401032.	0.	0.
MISC EQUIPMT	5197373.	468243.	0.	0.
SPACE HEAT	0.	0.	38853.	15280.
SPACE COOL	2805544.	132326.	0.	3223.
HEAT REJECT	116798.	9310.	0.	0.
PUMPS & MISC	1621931.	85850.	0.	0.
VENT FANS	3291216.	182706.	0.	0.
DOMHOT WATER	12367.	1512.	0.	2541.
EXT LIGHTS	11430.	2701.	0.	0.
EXT MISC	506284.	40429.	0.	0.
COGEN SURPLS	0.	0.	0.	0.
TOTAL	18655886.	1324108.	38853.	21044.

TOTAL ELECTRICITY	18655886. KWH	8.753 KWH	/SQFT-YR GROSS-AREA	8.753 KWH	/SQFT-YR NET-AREA
TOTAL NATURAL-GAS	1324108. THERM	0.621 THERM	/SQFT-YR GROSS-AREA	0.621 THERM	/SQFT-YR NET-AREA
TOTAL FUEL-OIL	38853. MMBTU	0.018 MMBTU	/SQFT-YR GROSS-AREA	0.018 MMBTU	/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 1.5
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

```
1 DOE 2.1E                              MANHATTAN WEST                          DOE-2.1E-121  Mon Sep 15 10:47:26 2014EDL RUN  1
  Alnp3: 1600 kW:290 TR                 SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
 REPORT- ES-D  ENERGY COST SUMMARY
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UTILITY-RATE	RESOURCE	METERS	METERED ENERGY UNITS/YR	TOTAL CHARGE ($)	VIRTUAL RATE ($/UNIT)	RATE USED ALL YEAR?
0ELEC-SALE	ELEC-NET-SALE	1 2 3 4 5	0. KWH	0.	0.0000	YES
0SC9-ELEC-TARIFF	ELECTRICITY	1 2 3 4 5	18655880. KWH	4546852.	0.2437	YES
0DES-STM-RATE	FUEL-OIL	1 2	38853. MMBTU	861504.	22.1737	YES
0RDR-H-GAS-TARIFF	NATURAL-GAS	5	1324109. THERM	1108197.	0.8369	YES
0				==========		
0				6516554.		

ENERGY COST/GROSS BLDG AREA: 3.06
ENERGY COST/NET BLDG AREA: 3.06

```
1 DOE 2.1E                              MANHATTAN WEST                          DOE-2.1E-121  Mon Sep 15 11:02:33 2014PDL RUN  1
  ANYEC: NYSECCC code compliance for EN1  SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
 REPORT- PS-D  PLANT LOADS SATISFIED                                                    WEATHER FILE- NEW YORK CENTRAL  NY
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HEATING LOADS	MBTU SUPPLIED	PCT OF TOTAL LOAD
HW-BOILER	44857.6	94.8
ELEC-DHW-HEATER	2460.4	5.2
	==========	==========
LOAD SATISFIED	47318.0	100.0
TOTAL LOAD ON PLANT	47318.3	

COOLING LOADS	MBTU SUPPLIED	PCT OF TOTAL LOAD
OPEN-CENT-CHLR	83693.0	100.0
	==========	==========
LOAD SATISFIED	83693.0	100.0
TOTAL LOAD ON PLANT	83693.0	

ELECTRICAL LOADS	KWH SUPPLIED	PCT OF TOTAL LOAD

```
                                ELECTRICITY                31725734.0            100.0
                                                        =============      =================

                                     LOAD SATISFIED        31725734.0            100.0
                                TOTAL LOAD ON PLANT        31725796.0


                           TOWER ABOVE DESIGN TEMPERATURE OF 88.F   1 HOURS
                           MAXIMUM TOWER EXIT TEMPERATURE = 89.F
1 DOE 2.1E                              MANHATTAN WEST                        DOE-2.1E-121  Mon Sep 15 11:02:33 2014PDL RUN  1
  ANYEC: NYSECCC code compliance for EN1  SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
 REPORT- PS-D  PLANT LOADS SATISFIED                                                   WEATHER FILE- NEW YORK CENTRAL  NY
 ----------------------------------------------------------------------------------------------------------(CONTINUED)--------
```

SUMMARY OF LOADS MET

TYPE OF LOAD	TOTAL LOAD (MBTU)	LOAD SATISFIED (MBTU)	TOTAL OVERLOAD (MBTU)	PEAK OVERLOAD (MBTU)	HOURS OVERLOADED
HEATING LOADS	47318.3	47318.0	0.000	0.000	0
COOLING LOADS	83693.0	83693.0	0.521	0.286	2
ELECTRICAL LOADS	108279.2	108279.0	0.000	0.000	0

```
1 DOE 2.1E                              MANHATTAN WEST                        DOE-2.1E-121  Mon Sep 15 11:02:33 2014PDL RUN  1
  ANYEC: NYSECCC code compliance for EN1  SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
 REPORT- PS-E  MONTHLY ENERGY END-USE SUMMARY                                          WEATHER FILE- NEW YORK CENTRAL  NY
 ----------------------------------------------------------------------------------------------------------------------------
0ELECTRICAL END-USES IN KWH
```

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
0 AREA LIGHTS	874901.	803868.	919551.	885890.	874320.	885766.	889704.	903882.	870524.	874576.	855576.	889149.	10527706.
MAX KW	1842.1	1842.1	1838.0	1832.0	1832.0	1832.0	1832.0	1832.0	1832.0	1834.5	1842.1	1842.1	1842.1
DAY/HR	4/18	2/18	17/18	1/10	3/10	1/10	1/10	2/10	1/10	26/18	1/18	1/18	
0MISC EQUIPMT	780987.	712654.	806567.	778502.	780987.	778501.	790703.	796851.	768785.	780987.	759069.	787135.	9321729.
MAX KW	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4	1596.4
DAY/HR	4/10	1/10	1/10	1/10	3/10	1/10	1/10	2/10	1/10	1/10	1/10	1/10	
0 SPACE COOL	158959.	187666.	297959.	202965.	261007.	427342.	581832.	510330.	334464.	178970.	278367.	189774.	3609634.
MAX KW	1038.4	1308.0	1513.6	1226.9	1555.4	1541.5	2092.0	2633.2	1592.7	1008.5	1394.3	1174.2	2633.2
DAY/HR	14/14	23/13	16/13	28/16	28/18	23/18	23/18	17/16	3/16	27/13	18/14	16/15	
0 HEAT REJECT	81787.	85978.	123169.	93490.	133036.	210028.	297079.	258788.	170012.	85571.	114413.	90053.	1743404.
MAX KW	293.5	460.2	687.1	635.2	635.2	635.2	707.6	780.0	635.2	488.1	489.8	425.0	780.0
DAY/HR	14/14	1/15	16/12	28/15	10/15	2/13	12/10	17/13	2/15	18/15	18/ 9	16/16	
0PUMPS & MISC	68406.	61740.	69945.	61537.	56343.	49115.	57860.	54376.	44898.	60178.	66109.	67322.	717830.
MAX KW	147.5	151.6	166.9	132.5	151.5	128.5	155.9	186.4	126.2	130.6	159.3	143.7	186.4

```
       DAY/HR     23/ 8    23/13    16/13    28/17    28/17    23/17    23/18    17/15     3/16    30/14    18/14    16/15
0   VENT FANS   344174.  311689.  344612.  325150.  320899.  365281.  385606.  378472.  337826.  318803.  305522.  342509.  4080544.
       MAX KW     752.8    753.5    754.2    833.1    987.7   1026.4   1047.3   1120.0    963.4    819.4    764.3    752.3    1120.0
       DAY/HR     27/10     2/10    17/10    28/17    10/16    22/16    21/18    17/16     7/17     1/16     2/12    15/10
0DOMHOT WATER    72999.   70834.   84216.   79489.   69764.   69264.   63166.   62567.   59709.   60247.   63682.   71360.   827297.
       MAX KW     400.7    415.8    417.0    409.8    381.0    352.3    327.5    311.7    310.4    323.2    347.4    375.2     417.0
       DAY/HR      4/13     1/13     1/13     1/13     3/13     1/13     1/13     2/13     1/13     1/13     1/13     1/13
0  EXT LIGHTS     3302.    2762.    2996.    2899.    2802.    2472.    2690.    2939.    2899.    2996.    3084.    3439.    35280.
       MAX KW       8.1      8.1      8.1      8.1      8.1      8.1      8.1      8.1      8.1      8.1      8.1      8.1       8.1
       DAY/HR      1/ 1     1/ 1     1/ 1     1/ 1     1/ 2     1/ 2     1/ 2     1/ 2     1/ 2     1/ 2     1/ 1     1/ 1
0    EXT MISC    71859.   65843.   75136.   72448.   71859.   72448.   72883.   74112.   71219.   71859.   69990.   72678.   862336.
       MAX KW     204.8    204.8    204.8    204.8    204.8    204.8    204.8    204.8    204.8    204.8    204.8    204.8     204.8
       DAY/HR      4/ 7     1/ 7     1/ 7     1/ 7     3/ 7     1/ 7     1/ 7     2/ 7     1/ 7     1/ 7     1/ 7     1/ 7
                 =======  =======  =======  =======  =======  =======  =======  =======  =======  =======  =======  =======  ========
0   TOTAL KWH  2457374. 2303034. 2724150. 2502370. 2571018. 2860218. 3141522. 3042315. 2660336. 2434187. 2515813. 2513419. 31725760.

0FUEL END-USES IN MBTU

                  JAN      FEB      MAR      APR      MAY      JUN      JUL      AUG      SEP      OCT      NOV      DEC     TOTAL
                -------  -------  -------  -------  -------  -------  -------  -------  -------  -------  -------  -------  -------
0  SPACE HEAT   10251.0   7927.5   7116.4   2712.1    676.1      0.0      0.0      0.0     15.1   1821.5   5687.5   8650.5   44857.7
     MAX MBTU    52.764   36.089   28.104   22.635   17.520    0.000    0.000    0.000   15.087   21.709   27.423   36.459    52.764
       DAY/HR     23/ 8     6/ 8     4/10     7/ 9     5/ 8     0/ 0     0/ 0     0/ 0    20/ 8    23/14    27/ 8    11/14
                =======  =======  =======  =======  =======  =======  =======  =======  =======  =======  =======  =======  ========
0  TOTAL MBTU   10251.0   7927.5   7116.4   2712.1    676.1      0.0      0.0      0.0     15.1   1821.5   5687.5   8650.5   44857.7

1 DOE 2.1E                              MANHATTAN WEST                        DOE-2.1E-121  Mon Sep 15 11:02:33 2014PDL RUN  1
  ANYEC: NYSECCC code compliance for EN1  SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
 REPORT- BEPS  BUILDING ENERGY PERFORMANCE SUMMARY                                                WEATHER FILE- NEW YORK CENTRAL  NY
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ENERGY TYPE:	ELECTRICITY	FUEL-OIL
UNITS:	MBTU	
CATEGORY OF USE		
AREA LIGHTS	35931.1	0.0
MISC EQUIPMT	31814.5	0.0
SPACE HEAT	0.0	44857.6
SPACE COOL	12319.6	0.0
HEAT REJECT	5950.2	0.0
PUMPS & MISC	2449.9	0.0
VENT FANS	13926.8	0.0

DOMHOT WATER	2823.5	0.0
EXT LIGHTS	120.4	0.0
EXT MISC	2943.1	0.0
TOTAL	108279.0	44857.6

TOTAL SITE ENERGY 153136.67 MBTU 71.8 KBTU/SQFT-YR GROSS-AREA 71.8 KBTU/SQFT-YR NET-AREA
TOTAL SOURCE ENERGY 369727.22 MBTU 173.5 KBTU/SQFT-YR GROSS-AREA 173.5 KBTU/SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.8
PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.0

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

1 DOE 2.1E MANHATTAN WEST DOE-2.1E-121 Mon Sep 15 11:02:33 2014PDL RUN 1
ANYEC: NYSECCC code compliance for EN1 SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
REPORT- BEPU BUILDING ENERGY PERFORMANCE SUMMARY (UTILITY UNITS) WEATHER FILE- NEW YORK CENTRAL NY

ENERGY TYPE:	ELECTRICITY	FUEL-OIL
SITE UNITS:	KWH	MMBTU
CATEGORY OF USE		
AREA LIGHTS	10527813.	0.
MISC EQUIPMT	9321645.	0.
SPACE HEAT	0.	49294.
SPACE COOL	3609633.	0.
HEAT REJECT	1743408.	0.
PUMPS & MISC	717809.	0.
VENT FANS	4080550.	0.
DOMHOT WATER	827296.	0.
EXT LIGHTS	35280.	0.
EXT MISC	862320.	0.

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                                    TOTAL     31725754.        49294.


            TOTAL ELECTRICITY  31725754. KWH        14.885 KWH     /SQFT-YR GROSS-AREA   14.885 KWH     /SQFT-YR NET-AREA
            TOTAL FUEL-OIL        49294. MMBTU       0.023 MMBTU   /SQFT-YR GROSS-AREA    0.023 MMBTU   /SQFT-YR NET-AREA


                    PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE =  0.8
                    PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED                =  0.0

                    NOTE:  ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.


1 DOE 2.1E                                MANHATTAN WEST                          DOE-2.1E-121  Mon Sep 15 11:02:33 2014EDL RUN  1
  ANYEC: NYSECCC code compliance for EN1  SIM: VIRIDIAN ENERGY & ENVIRONMENTAL LL
 REPORT- ES-D  ENERGY COST SUMMARY
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                                                                  METERED             TOTAL       VIRTUAL
                                                                   ENERGY            CHARGE          RATE    RATE USED
 UTILITY-RATE        RESOURCE            METERS                  UNITS/YR             ($)       ($/UNIT)    ALL YEAR?
 ----------------    ----------------    -----------    -------------------    ----------    ----------    ---------
0SC9-ELEC-TARIFF     ELECTRICITY          1 2 3 4 5      31725734. KWH          6438364.        0.2029       YES
0DES-STM-RATE        FUEL-OIL             1 2               49294. MMBTU        1090039.       22.1129       YES
0                                                                             ==========
0                                                                              7528403.


                                                   ENERGY COST/GROSS BLDG AREA:      3.53
                                                     ENERGY COST/NET BLDG AREA:      3.53
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