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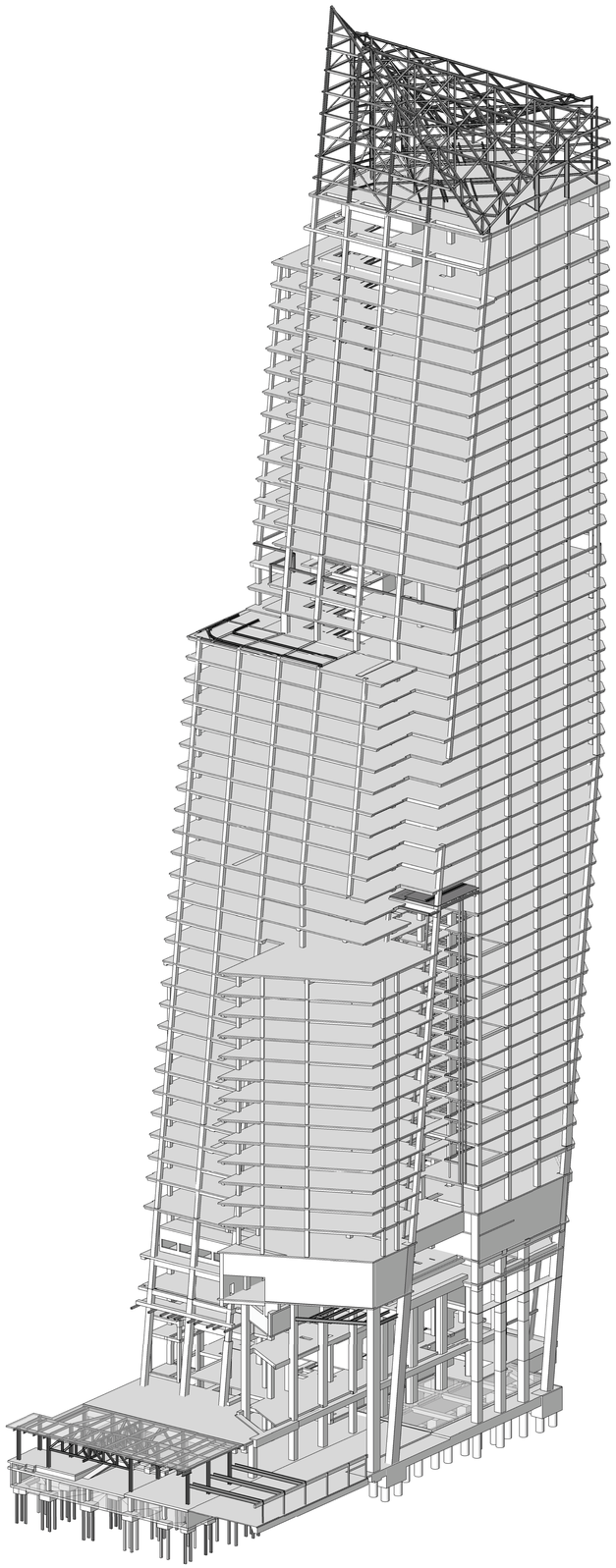
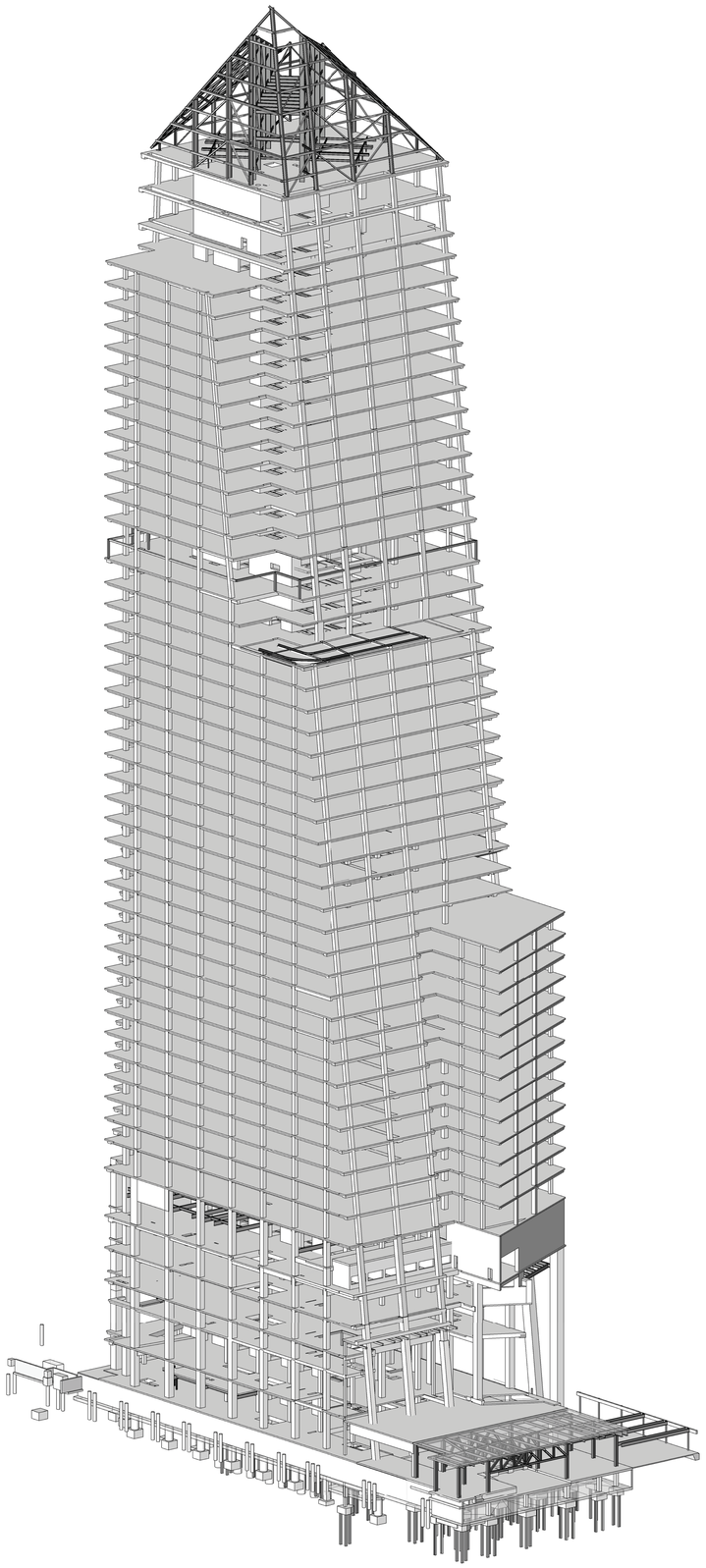
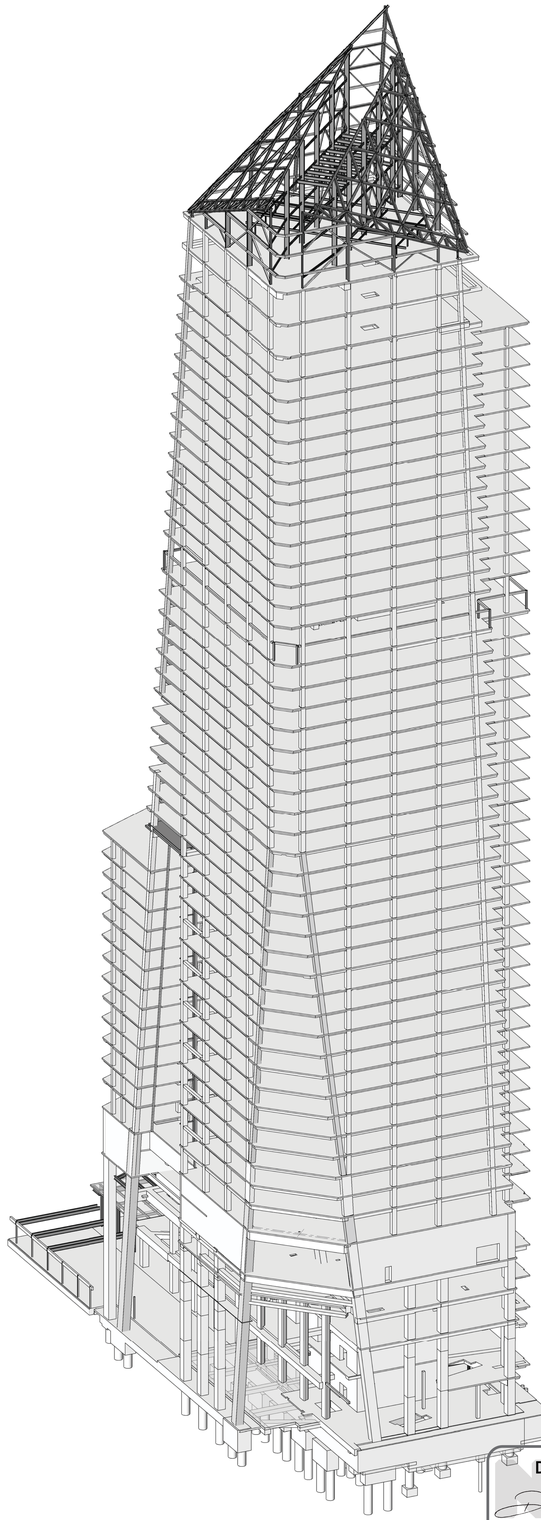


1 VIEW FROM SOUTH - WEST



2 VIEW FORM NORTH - WEST



3 VIEW FROM SOUTH - EAST

Damian Titus

Buildings

APPROVED
Under Directive 2 of 1975

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DN22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: 12/14/2012
Project No. 1776.10
Drawn By
Sheet Number

HYE -TC -S0-0000

Drawing Title

ISOMETRIC VIEWS

Drawing Number
S0-0000

22

B-Scan Drawing Number
S-006.00

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S3-S000 ISOMETRIC VIEWS
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TS TOWER ELEVATION CONTROL AND SURVEY MONITORING PROGRAM:

GENERAL

TS-1 THE FOLLOWING ARE GENERAL REQUIREMENTS AND GUIDELINES FOR THE CONSTRUCTION OF THE TOWER SUPERSTRUCTURE. THE TOWER SUPERSTRUCTURE CONSTRUCTION GENERAL NOTES ARE ORGANIZED BASED ON THE FOLLOWING GENERAL AND SEQUENTIAL PHASES OF THE OVERALL CONSTRUCTION PROCESS.

- PRECONSTRUCTION HIGH STRENGTH CONCRETE (HSC) TESTING PROGRAM
- TOWER HIGH STRENGTH CONCRETE (HSC) REQUIREMENTS
- PRECONSTRUCTION ANALYTICAL PREDICTION FOR ELASTIC, CREEP, AND SHRINKAGE EFFECTS
- CONSTRUCTION PHASE SURVEY MONITORING AND CORRECTION PROGRAM

TS-2 THE FOLLOWING REQUIREMENTS ARE SUPPLEMENTARY TO THOSE PROVISIONS CONTAINED IN THE TECHNICAL SPECIFICATIONS AND OTHER GENERAL NOTES INDICATED ON THE DRAWINGS.

TS-3 THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A DETAILED AND COMPREHENSIVE METHODS STATEMENT FOR THE PRECONSTRUCTION PLANNING AND CONSTRUCTION OF THE TOWER SUPERSTRUCTURE. THE METHODS STATEMENT SHALL INCLUDE BUT NOT BE LIMITED TO: SCHEDULE FOR CONCRETE WORKS, CONCRETE FORMWORK SYSTEMS, CONSTRUCTION JOINT LOCATIONS, POUR SEQUENCES, CONCRETE PLACEMENT LOCATIONS AND METHODS, CONCRETE MIX DESIGNS AND PRECONSTRUCTION CONCRETE TESTING REPORTS, SURVEYING EQUIPMENT AND TECHNIQUES, AND OTHER DETAILS AND PROCEDURES FOR THE COMPLETION OF THE TOWER SUPERSTRUCTURE.

TS-4 THE TOWER STRUCTURE HAS BEEN DESIGNED SUCH THAT THE CORE WALLS TOGETHER WITH THE FLOOR SLAB DIAPHRAGMS PROVIDE GLOBAL STABILITY FOR THE TOWER. STABILITY OF THE TOWER DURING CONSTRUCTION AND IN PARTIALLY-COMPLETE STATES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

PRECONSTRUCTION HIGH STRENGTH CONCRETE (HSC) TESTING PROGRAM

TS-5 THE PURPOSE OF THE PRECONSTRUCTION HIGH STRENGTH CONCRETE (HSC) TESTING PROGRAM IS TO PROVIDE EARLY INPUT AS TO THE SUITABILITY OF THE MIX DESIGNS TO BE USED ON THE PROJECT AND TO PROVIDE MEANINGFUL ENGINEERING DATA FOR THESE MIXES, WHICH WILL BE USED IN ESTIMATING THE TOTAL AND DIFFERENTIAL VERTICAL SHORTENING EFFECTS ON THE TOWER STRUCTURE. THE PROGRAM ENCOMPASSES A COMPREHENSIVE CONCRETE TESTING PROTOCOL FOR ALL HSC MIXES- INCLUDING: STRENGTH, CREEP, SHRINKAGE, MODULUS OF ELASTICITY (MOE), AND SPLIT-CYLINDER (TENSILE) TESTING. THE TESTING OUTLINED BELOW IS A REQUIREMENT FOR THIS PROJECT AND IS SUPPLEMENTARY TO THE PROVISIONS IN THE TECHNICAL SPECIFICATIONS.

TS-6 ALL CONCRETE COLUMNS, WALLS AND INTEGRAL COUPLING BEAMS IN THE TOWER STRUCTURE, FOR ITS FULL HEIGHT, ARE CONSIDERED HIGH STRENGTH CONCRETE. THERE ARE FIVE CONCRETE STRENGTH GRADES SPECIFIED AND INCLUDED IN THE PRECONSTRUCTION HSC TESTING PROGRAM: 6 KSI, 8 KSI, 10 KSI, 12 KSI, AND 14 KSI.

TS-7 PRIOR TO BEGINNING TESTING WORK, THE LABORATORY SHALL SUBMIT A DETAILED SCOPE OF WORK AND METHOD STATEMENT FOR REVIEW BY THE EOR. THE LABORATORY MAY PROPOSE MODIFICATIONS TO THE PROCEDURES INDICATED IN THESE NOTES WHICH WOULD ENHANCE THE TESTING FOR THE INTENDED PURPOSE DESCRIBED ABOVE. ALL SUCH ENHANCEMENTS SHALL BE CLEARLY STATED AND INCLUDED IN THE LABORATORY'S PROPOSAL.

TS-8 THE CONRETE MATERIALS TESTING LABORATORY AND KEY LABORATORY PERSONNEL SHALL HAVE PROVEN EXPERIENCE IN CONCRETE ELASTIC, CREEP, AND SHRINKAGE TESTING OF HSC. LABORATORY QUALIFICATIONS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL.

TS-9 PRIOR TO COMMENCING DETAILED LONG TERM CREEP/SHRINKAGE AND MOE TESTING, THE CONTRACTOR AND HIS PROPOSED CONCRETESUPPLIER SHALL SUBMIT COMPLETE DETAILS OF THE PRELIMINARY MIX DESIGNS PROPOSED FOR THE ACTUAL CONSTRUCTION OF THE TOWER. STRENGTH FOR EACH MIX AND GRADE OF CONCRETE SHALL BE CONFIRMED BASED ON EITHER THE TRIAL MIXTURE METHOD OR HISTORICAL DATA FROM ESTABLISHED MIXES AS STIPULATED IN ACI 318, PARAGRAPH 5.3 THE MIX DESIGNS AND DOCUMENTATION OF THE STRENGTH CHARACTERISTICS FOR EACH MIX SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. AFTER ACCEPTANCE OF THE PRELIMINARY HSC MIX DESIGNS BY THE EOR, THE CONTRACTOR SHALL ARRANGE FOR THE TRANSPORT, BATCHING OF CONCRETE, AND MAKING OF TEST CYLINDERS WITH THE LABORATORY.

TS-10 THE CONTRACTOR'S CONCRETE SUPPLIER SHALL FURNISH CEMENT, SUPPLEMENTARY CEMENTITIOUS MATERIALS (SCM'S), AGGREGATE, ADMIXTURES, AND MIX PROPORTIONS TO THE LABORATORY FOR TESTING. THE LABORATORY SHALL RECORD PERTINENT INFORMATION REGARDING THE MATERIALS INCLUDING MIX DESIGN, DATE, LOCATION, BATCH PLANT, LABORATORY, TEMPERATURE, UNIT WEIGHT (ASTM C138), SLUMP (ASTM C143), AIR CONTENT (ASTM C173) AND CURING HISTORY. APPROPRIATE CONSIDERATION SHALL BE GIVEN TO THE CONCRETE MIX FOR PUMPING REQUIREMENTS DURING CONSTRUCTION.

FOR EACH OF THE TEST CONFIGURATIONS LISTED IN NOTE TS-13 BELOW, MAKE 12 STANDARD 6X12IN CYLINDERS CONFORMING TO ASTM C192 FROM THE SAME BATCH:

- 2 CYLINDERS FOR MOE TESTS
- 2 CYLINDERS FOR STRENGTH TESTS
- 2 CYLINDERS FOR CREEP TESTS
- 2 CYLINDERS FOR SHRINKAGE TESTS (COMPANION CONTROL SAMPLES)
- 2 CYLINDERS FOR SPLIT-CYLINDER TESTS
- 2 CYLINDERS HELD IN RESERVE

TS-11 FOR EACH OF THE TEST CONFIGURATIONS LISTED IN NOTE TS-13 BELOW, TEST TWO CYLINDERS FOR STATIC MODULUS OF ELASTICITY (ASTM C469) AT 28-DAYS, 56-DAYS, 90-DAYS, 180-DAYS, ONE YEAR, AND TWO YEARS AFTER CASTING. IT IS RECOMMENDED THAT COMPANION DYNAMIC MOE TESTING BE PERFORMED ON EACH CYLINDER PER ASTM C215 IN ORDER TO ANTICIPATE FUTURE CORRELATION OF MOE TESTS IN THE FIELD AS INDICATED IN THE PROJECT SPECIFICATIONS.

TS-12 FOR EACH OF THE TEST CONFIGURATIONS LISTED IN NOTE TS-13 BELOW, PERFORM ONE STRENGTH TEST (2 CYLINDERS) (ASTM C39) AT THE AGE OF APPLIED LOAD.

TS-13 PERFORM CREEP TESTING IN ACCORDANCE WITH ASTM C512. THE FOLLOWING TEST CONFIGURATIONS SHALL BE PERFORMED AS A MINIMUM TESTING PROGRAM:

CONFIGURATION	F'C	SEALED/UNSEALED	AGE AT LOADING	LOADING LEVEL
1	14 KSI	SEALED	28 DAYS	40% OF F'C
2	12 KSI	SEALED	28 DAYS	25% OF F'C
3	12 KSI	SEALED	28 DAYS	40% OF F'C
4	12 KSI	SEALED AND REINF.	28 DAYS	40% OF F'C
5	12 KSI	UNSEALED	28 DAYS	40% OF F'C
6	10 KSI	SEALED	28 DAYS	40% OF F'C
7	8 KSI	SEALED	28 DAYS	25% OF F'C
8	8 KSI	SEALED	28 DAYS	40% OF F'C
9	6 KSI	SEALED	28 DAYS	40% OF F'C

TS-14 AT A MINIMUM, THE SHRINKAGE CONTROL SAMPLES SHALL BE MEASURED DAILY AFTER CASTING FOR THE FIRST WEEK, AND WEEKLY THEREAFTER UP TO 18 MONTHS. PRIOR TO LOADING OF THE CREEP TEST SAMPLES, THE SAMPLES SHALL BE MEASURED IN THE SAME MANNER AS THE CONTROL SAMPLES. UPON LOADING OF THE CREEP SAMPLES, STRAIN MEASUREMENTS SHALL BE TAKEN AT THE FOLLOWING TIMES: IMMEDIATELY BEFORE AND AFTER LOADING, 2 TO 6 HOURS AFTER LOAD APPLICATION, DAILY FOR THE FIRST WEEK AFTER LOADING, AND MONTHLY THEREAFTER UP TO 18 MONTHS.

THE "SEALED" SAMPLES SHALL BE SEALED IN A METALLIC FOIL JACKET AFTER EMERSION IN LIME WATER FOR THREE DAYS AFTER CASTING.

THE "REINFORCED" SAMPLES ARE TO HAVE APPROXIMATELY 2% REINFORCEMENT ARRANGED IN A SYMMETICAL PATTERN IN THE CENTER OF THE SAMPLES TO AVOID UNEVEN SHRINKAGE AND CREEP.

TS-15 FOR EACH OF THE FIVE CONCRETE STRENGTHS, PERFORM SPLIT-CYLINDER TESTS AT 90 DAYS AFTER CASTING PER ASTM C496. TEST TWO CYLINDERS FOR EACH MIX.

TS-16 THE LABORATORY SHALL PROVIDE IN-PROGRESS REPORTS ON A MONTHLY BASIS, AS WELL AS SUMMARY REPORTS AT 6 MONTHS, 12 MONTHS, AND UPON COMPLETION OF THE TESTING PROGRAM. THE SUMMARY REPORTS SHALL RECOMMEND APPROPRIATE MATERIAL CHARACTERISTICS SUCH AS MOE, PREDICTED ULTIMATE CREEP COEFFICIENT, PREDICTED ULTIMATE CREEP STRAIN, AND PREDICTED ULTIMATE SHRINKAGE. THE SUMMARY REPORTS SHALL INCLUDE MOE VERSUS TIME CUREVES, CREEP, SHRINKAGE, AND TOTAL STRAIN VERSUS TIME FITTED CURVES.

TS-17 HSC TESTING AND REPORTING OF RESULTS FOR MOE, CREEP, AND SHRINKAGE VALUES SHALL BE CONTINUED FOR THE ENTIRE DURATION OF THE CONSTRUCTION PROGRAM FOR THE TOWER.

TOWER HIGH STRENGTH CONCRETE (HSC) REQUIREMENTS

TS-18 THE STRUTURAL ENGINEERING DESIGN OF THE TOWER COLUMNS, WALLS AND COUPLING BEAMS HAS BEEN BASED ON THE HSC PROPERTIES INDICATED IN THESE NOTES. ALL ENGINEERING PROPERTIES FOR THE HSC TO BE USED ON THE TOWER CONSTRUCTION SHALL BE VERIFIED PRIOR TO PROCEEDING WITH CONSTRUCTION SUCH PROPERTIES INCLUDE COMPRESSIVE AND TENSILE STRENGTH, MODULUS OF ELASTICITY (MOE), CREEP, AND SHRINKAGE COEFFICIENTS.

TS-19 THE RESULTS OF THE PRECONSTRUCTION HSC TESTING PROGRAM SHALL BE SUBMITTED TO THE EOR FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING WITH THE TOWER CONSTRUCTION.

TS-20 THE WALL SCHEDULES ON S6 SERIES DRAWINGS INDICATE THE LOCATIONS AND REQUIRED CONCRETE (CYLINDER) STRENGTH GRADES FOR ALL WALLS IN THE TOWER. COUPLING BEAMS FOLLOW THE CONCRETE STRENGTH OF ADJACENT WALLS.

TS-21 TOWER CONCRETE MIX DESIGNS SHALL BE DEVELOPED TO NOT ONLY MEET THE STRENGTH AND STIFFNESS REQUIREMENTS IN THE HARDENED STATE INDICATED BELOW, BUT ALSO THE REQUIREMENTS OF THE PUMPING HEIGHTS AND LENGTHS REQUIRED BY THE CONSTRUCTION SEQUENCE, INCLUDING ANY STAGED PUMPING THAT MAY BE REQUIRED . CONSIDERATION SHALL BE GIVEN TO FLOWABLE CONCRETE MIXTURES FOR ALL HSC.

TS-22 PROPER CONSIDERATION SHALL BE GIVEN TO PROPER CURING OF HSC IN THE TOWER STRUCTURE. SHOULD CONSTRUCTION TIMING AND SEQUENCE REQUIRE EARLY REMOVAL OF WALL FORMS THAT DO NOT ALLOW PROPER SURFACE HYDRATION AT EARLY AGE, HSC WALLS AND COUPLING BEAMS SHALL BE WRAPPED WITH MOISTURE RETAINING MATERIALS OR OTHER ACCEPTABLE CURING METHODOLOGY AND FOR DURATIONS AS APPROVED BY THE EOR.

TS-23 THE REQUIRED STRUCTURAL PROPERTIES FOR THE FIVE STRENGTH GRADES SPECIFIED FOR THE TOWER SUPERSTRUCTURE ARE AS INDICATED ON THE HSC SCHEDULE PROVIDED ON THIS SHEET. THE ASSUMED AVERAGE DENSITY IS FOR UNREINFORCED CONCRETE AND IS ALLOWED TO VARY UP TO PLUS OR MINUS 2 LB/FT3.

TS-24 FOR TOWER HSC, AVERAGE MOEREQUIREMENTS INDICATED IN THE SCHEDULE MAY GOVERN THE MIX DESIGN OVER THE MINIMUM COMPRESSIVE STRENGTH. REFER TO TECHNICAL SPECIFICATION FOR ALL TESTING REQUIREMENTS.

PRECONSTRUCTION ANALYTICAL PREDICTION FOR ELASTIC, CREEP, AND SHRINKAGE EFFECTS

TS-25 THE TOWER HAS BEEN ANALYZED FOR ELASTIC, CREEP, AND SHRINKAGE EFFECTS BASED ON THE PRELIMINARY CONSTRUCTION SCHEDULE, DATED JULY 12 2012, DEVELOPED BY THE CONTRACTOR AND RECEIVED BY THE EOR.

TS-26 THE CONTRACTOR SHALL NOT COMMENCE WITH CONSTRUCTION UNTIL A COMPREHENSIVE CONSTRUCTION PROCEDURE HAS BEEN SUBMITTED AND REVIEWED BY THE EOR. THE EOR WILL REVIEW THE SUBMITTED CONSTRUCTION PROCEDURE WITH RESPECT TO COMPLIANCE WITH THE GUIDELINES AND SEQUENCES INDICATED ON THE DRAWINGS AS WELL AS ALL OTHER REQUIREMENTS OF THE CONTRACT. THE CONSTRUCTION PROCEDURE SHALL ADDRESS AND SPECIFY ALL CONSTRUCTION TOLERANCES BASED ON THE DESIGN DOCUMENTS.

TS-27 THE CONRACTOR'S PROPOSED ERECTION MEANS AND METHODS WILL LIKELY BE AFFECTED BY STRUCTURAL DESIGN CONSIDERATIONS AND THE BEHAVIOR OF THE STRUCTURE. AS SUCH, IT IS RECOMMENDED THAT THE CONTRACTOR EMPLOYS THE SERVICES OF QUALIFIED PROFESSIONALS TO ASSIST WITH THE PREPARATION AND MONITORING OF A COMPREHENSIVE CONSTRUCTION PLAN AND PROCEDURES.

TS-28 DURING THE CONSTRUCTION PHASE OF THE PROJECT, REVISIONS TO THE SCHEDULE FOR COMPLETION OF MAJOR STRUCTURAL ELEMENTS, SUCH AS REINFORCED CONCRETE WALLS, COLUMNS AND SLABS, SHALL BE SUBMITTED TO THE EOR FOR REVIEW. IF IN THE OPINION OF THE EOR THE REVISIONS TO THE CONSTRUCTION PROGRAM OR THE CONCRETE MATERIAL CHARACTERISTICS ARE SIGNIFICANT, REANALYSIS FOR ELASTIC, CREEP, AND SHRINKAGE EFFECTS ON THE TOWER WILL BE REQUIRED.

TS-29 TS-29 DUE TO THE ASYMMETRY IN THE TOWER GEOMETRY, THE TOWER IS EXPECTED TO DISPLACE LATERALLY DURING CONSTRUCTION AND WILL SLOWLY AND GRADUALLY CONTINUE TO DO SO AFTER CONSTRUCTION HAS BEEN COMPLETED DUE TO LONG-TERM CREEP AND SHRINKAGE EFFECTS. THE MAGNITUDE OF THELATERAL DISPLACMENTS AT THE END OF TOWER CONSTRUCTION AS PREDICTED BY THE PRECONSTRUCTION ANALYSIS HAS BEEN SUMMARIZED ON THIS SHEET. THE ANALYSIS ASSUMES THAT AT EACH CONSTRUCTION STAGE, THE TOWER WALLS ARE CONSTRUCTED TO THE THEORETICAL CENTERLINE OF THE CORE. BY DOING SO, A PORTION OF THE OVERALL LATERAL MOVEMENT IS CORRECTED FOR.

TS-30 PREDICTIONS FOR TOWER VERTICAL SHORTENING BASED ON THE PRECONSTRUCTION ANALYSIS S ARE INCLUDED ON THIS SHEET. THE ANALYSIS ASSUMES THAT AT EACH CONSTRUCTION STAGE, THE TOWER WALLS ARE CONSTRUCTED TO THE THEORETICAL ELEVATION INDICATED ON THE DRAWINGS. BY DOING SO, A PORTION OF THE OVEREALL SHORTENING OF THE TOWER IS CORRECTED FOR. THE VERTICAL SHORTENING PREDICTIONS INDICATED ON THIS SHEET DO NOT INCLUDE ADDITIONAL VERTICAL MOVEMENT DUE TO FOUNDATION SETTLEMENT.

TS-31 UPON COMPLETION OF THE PRECONSTRUCTION (HSC TESTING PROGRAM, IT IS EXPECTED THAT THE TIME-DEPENDENT MATERIAL MODELS UTILIZED FOR THE PRECONSTRUCTION ANALYSIS AND PREDICTION FOR ELASTIC, CREEP, AND SHRINKAGE EFFECTS WILL BE RECALIBRATED AND THE TOWER REANALYZED TAKING INTO ACCOUNT THE AVAILABLE HSC TEST DATA.

CONSTRUCTION PHASE SURVEY MONITORING AND CORRECTION PROGRAM

TS-32 THE CONTRACTOR SHALL ENGAGE A QUALIFIED SURVEYOR TO ASSIST WITH DEVELOPING A COMPREHENSIVE SURVEY MONITORING AND CORRECTION PROGRAM FOF THE TOWER CONSTRUCTION. THE SURVEYOR SHALL BE FAMILIAR WITH THE LATEST DEVELOPMENTS IN MONITORING TECHNIQUES (SUCH AS ELECTRICAL/OPTICAL/LASER SURVEYING AND GPS DISPLACMENT) . THE SURVEY MONITORING AND CORRECTION PROGRAM SHALL BE SUBMITTED TO THE EOR FOR APPROVAL PRIOR TO PROCEEDING WITH CONSTRUCTION.

TS-33 THE CONTRACTOR SHALL ESTABLISH OFF-SITE STATIONARY BENCHMARKS TO REFERENCE HORIZONTAL AND VERTICAL DISPLACEMENTS RELATIVE TO TOWER BENCHMARKS LOCATED AT THE BASE OF THE TOWER. IT IS SUGGESTED THAT AT LEAST 4 BENCHMARK LOCATIONS BE ESTABLISHED AT THE CORE FOUNDATION. THESE BENCHMARKS SHALL BE USED FOR LOCATING THE TOWER WALLS AND MONITORING DISPLACEMENTS OF THE TOWER DURING CONSTRUCTION. OFF-SITE STATIONARY BENCHMARKS SHALL BE USED RELATIVE TO THE TOWER BENCHMARKS IN ORDER TO DETERMINE VERTICAL AND LATERALL DISPLACEMENTS DURING CONSTRUCTION.

TS-34 ELEMENTS OF THE CONTRUCTION PHASE SURVEY MONITORING AND CORRECTION PROGRAM SHALL BE LEFT IN PLACE IN A FULLY FUNCTIONING CONDITION.

TS-35 AT THE TIME OF THEIR CONSTRUCTION, THE TOWER WALLS AND COLUMNS SHALL BE POURED TO THE THEORETICAL FLOOR ELEVATIONS INDICATED ON THE DRAWINGS PLUS ANY VERTICAL CAMBER INDICATED IN THE CAMBER SCHEDULE. THIS WILL REQUIRE CONSTRUCTING SLIGHTLY TALLER THAN THEORETICAL WALL/COLUMN HEIGHTS DUE TO THE COMBINED EFFECTS OF ELASTIC, CREEP, AND SHRINKAGE DEFORMATIONS FOR ALL WALLS AND COLUMNS BELOW THE PARTICULAR LEVEL OF CONCRETE POUR.

TS-36 THE PRELIMINARY CONSTRUCTION SCHEDULE CALLS FOR THE CORE WALLS TO BE CONSTRUCTED AT THE SAME TIME AS THE COLUMNS FOR EACH LEVEL. AS SUCH, THE COLUMNS WILL BE CONSTRUCTED SLIGHTLY HIGHER THAN AT THE THEORETICAL FLOOR ELEVATION BY THE AMOUNT OF THE VERTICAL CAMBERS INDICATED IN THE SCHEDULE. THE WALLS WILL BE CONSTRUCTED TO THEORETICAL FLOOR ELEVATION, U.N.O. ON THE CAMBER SCHEDULE.

TS-37 THE FLOOR FRAMING WITHIN THE CONCRETE CORE SHALL BE CONSTRUCTED FLAT AND WITH A UNIFORM THICKNESS TO AN ELEVATION DERIVED BY AVERAGING THE TOP OF STRUCTURAL SLAB AT THE FOUR CORNERS OF THE CORE.

TS-38 OTHER FLOOR FRAMINGSHALL BE CONSTRUCTED WITH A UNIFORM THICKNESS. SEE PLANS FOR ADDITIONAL INFORMATION.

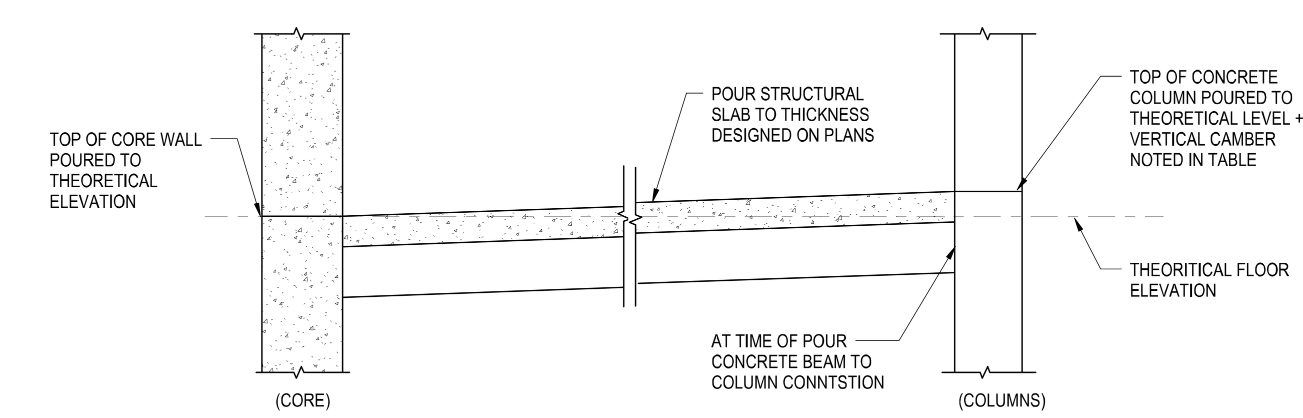
TS-39 ALL NON-STRUCTURAL CONCRETE TOPPING SLABS (IF REQUIRED) SHALL BE CONSTRUCTED FLAT AND LEVEL, AT THE TIME OF TENANT HANDOVER. SHOULD A PARTICULAR FLOOR AREA REQUIRE ADDITIONAL TOPPING TO CREATE A LEVEL FLOOR, THE EOR SHALL BE NOTIFIED AND APPROVE SUCH REQUEST.

TS-40 THE LOCATION OF SURVEY CONTROL POINTS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. WE SUGGEST THAT UPON COMPLETION OF EACH TOWER WALL POUR, A SURVEY MARK SHALL BE PLACED AT A CONSTANT HEIGHT (APPROXIMATELY 3 FT) ABOVE THE PREVIOUS WALL POUR AND IN THE SAME PLAN LOCATIONS. THE SURVEY MARK SHALL BE IMMEDIATELY SURVEYED, BOTH VERTICALLY AND HORIZONTALLY.

TS-41 AT A MINIMUM, WALL MARKS SHALL BE RE-SURVEYED MONTHLY AT EVERY FIFTH FLOOR ALONG THE HEIGHT OF THE TOWER. SURVEY MONITORING OF THE TOWER MOVEMENTS SHALL BE DONE IN BOTH VERTICAL AND HORIZONTAL DIRECTIONS AND DONE RELATIVE TO THE CORE FOUNDATION. SUBMIT MONTHLY RESURVEY MONITORING REPORTS IN A TIMELY MANNER TO THE EORFOR REVIEW. PROVIDE TABULAR REPORTING ON AN ONGOING TIME SCALE FOR EACH LEVEL AND SURVEY POINT.

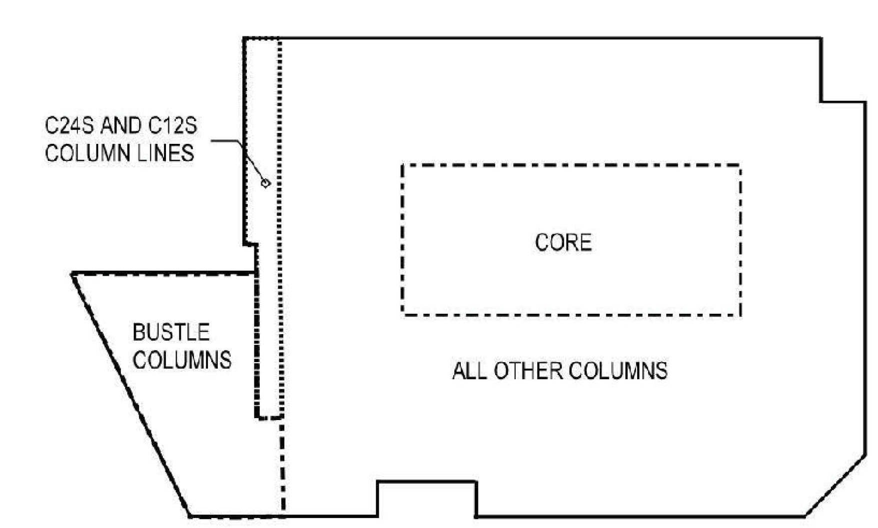
TOWER WALL & COLUMN HIGH-STRENGTH CONCRETE MATERIALS SCHEDULE

MINIMUM COMPRESSIVE CYLINDER STRENGTH (KSI)	AVERAGE ELASTIC MODULUS (KSI)	ASSUMED DENSITY (lb/ft^3)
6 (28 Days)	5200 (28 Days)	150
8 (28 Days)	6000 (28 Days)	150
10 (56 Days)	6600 (56 Days)	150
12 (90 Days)	7000 (90 Days)	150
14 (90 Days)	7400 (90 Days)	150



TOWER STRUCTURAL ELEMENTS VERTICAL CAMBER SCHEDULE

LEVELS	CORE	C24S+C12S COLUMN LINES	BUSTLE COLUMNS	ALL OTHER COLUMNS
B1-3	0"	0"	0"	0"
4-7	0"	1/4"	0"	1/2"
8-12	0"	1/2"	1/4"	3/4"
13-17	0"	1/2"	1/4"	1"
18-22	0"	1/2"	1/4"	1 1/4"
23-27	0"	1/2"	-	1 1/2"
28-32	0"	1/2"	-	2"
33-37	0"	3/4"	-	2"
38-50	0"	1"	-	2 1/4"



KEY PLAN

Damian Titus
NYC Buildings
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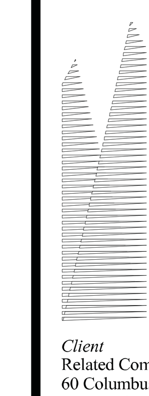

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

STATE OF NEW YORK · AINE M. BRAZIL · 062542-1 · LICENSED PROFESSIONAL ENGINEER

Issue Date: 12/14/12
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S0-0010

Drawing Title

TOWER CONSTRUCTION GUIDELINES

Drawing Number
S0-0010

B-Scan Drawing Number
S-012.00 SHEET 2 OF 118

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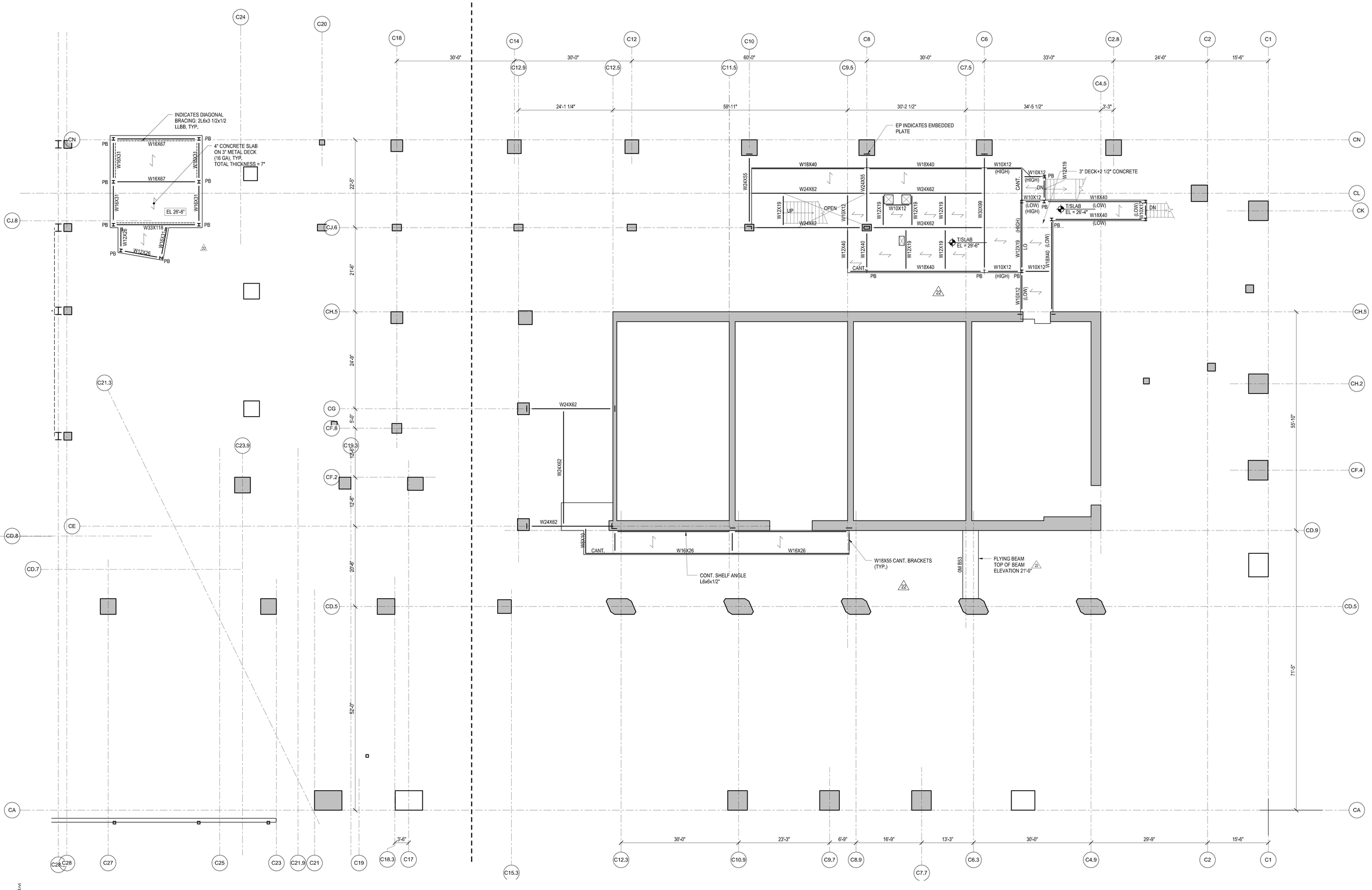

HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY

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New York, NY 10022
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PCArchitects & Planning Consultants
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Structural Engineer
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Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
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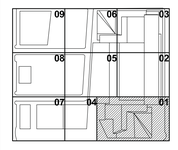
No.	Description	Date
2	ISSUE FOR FILING	02/15/2013
1	DI-22: STRUCTURE	02/01/2013

Key Plan



Issue Date: 11.28.12
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · ALBERT M. BRAZZI · 082843-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-001M
Drawing Title

GROUND FLOOR MEZZANINE FRAMING PLAN SECTOR 01
Drawing Number

S1-001M
E-Scan Drawing Number

S-015.00

SHEET 3 OF 118

Damian Titus
NYC Buildings
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Under Directive 2 of 1975
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S1-001M
2/13/2013 10:23:58 AM
GROUND FLOOR MEZZANINE FRAMING PLAN SECTOR 01
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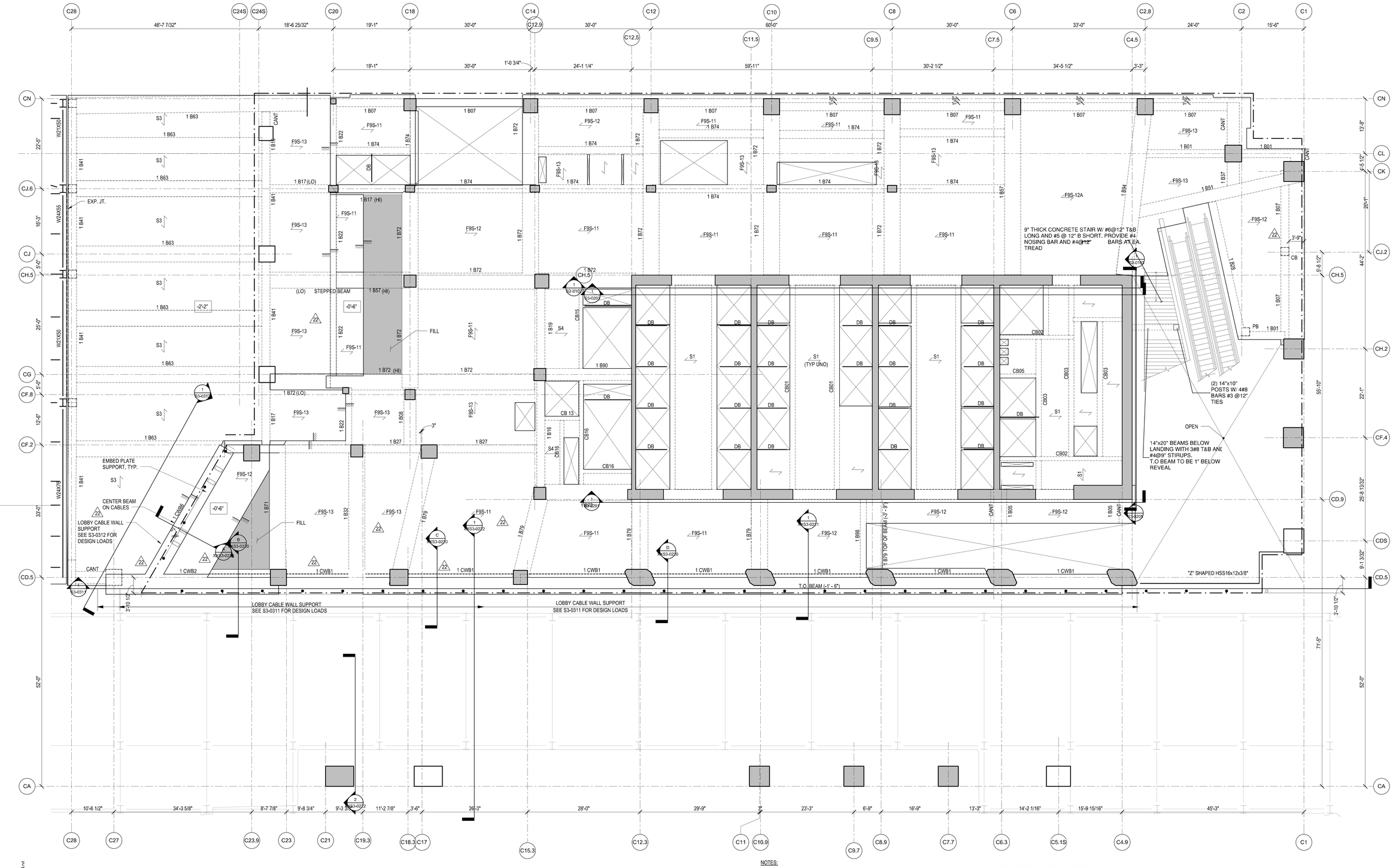

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 40'-2".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000.PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED), REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

HYE -TC -S1-0101

Drawing Title

LEVEL 01 FRAMING PLAN SECTOR 1

Drawing Number
S1-0101

B-Scan Drawing Number
S-016.00

SHEET 4 OF 118

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S1-0101
2/19/2013 10:24:02 AM
LEVEL 01 FRAMING PLAN SECTOR 1
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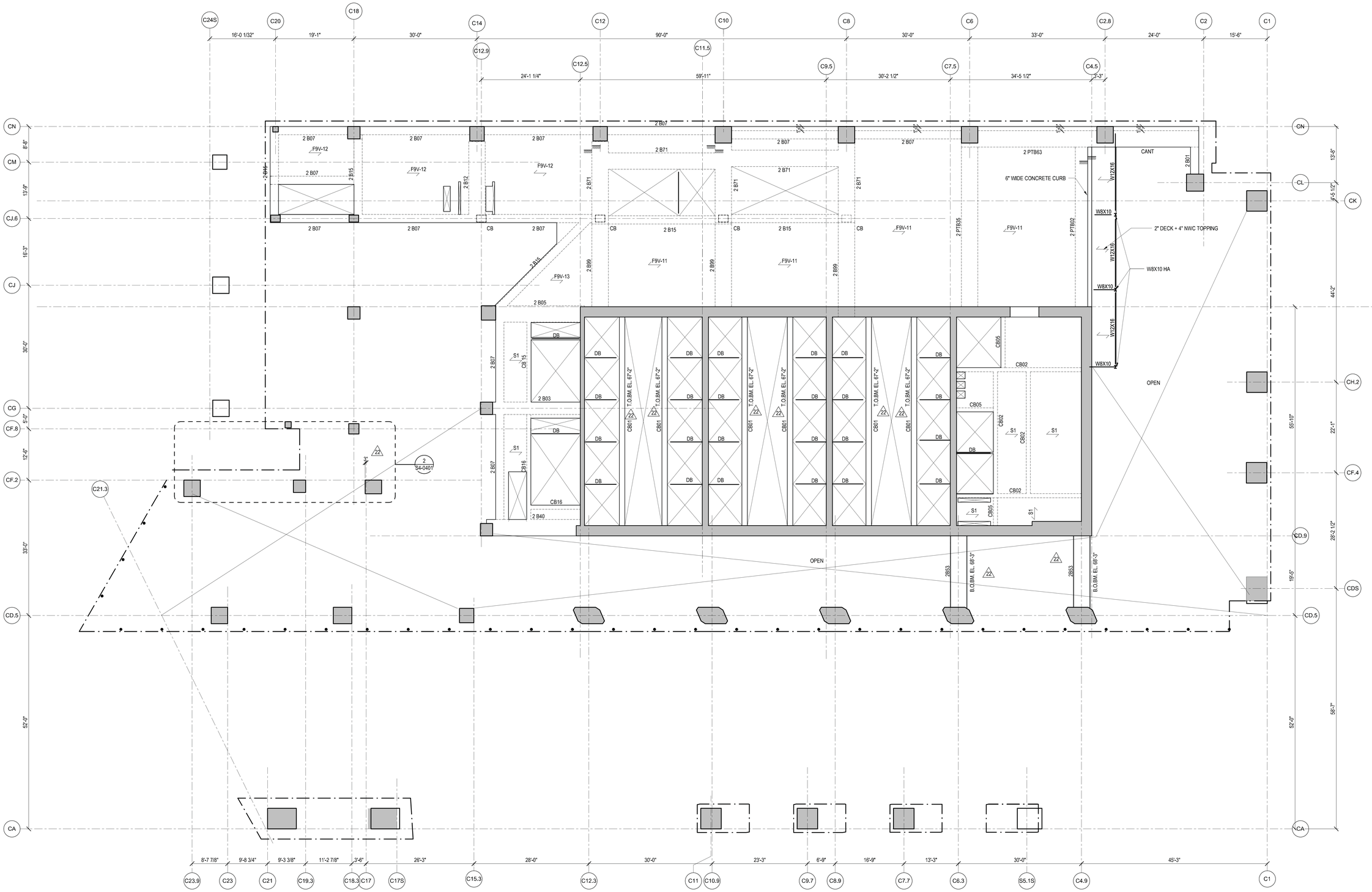

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 66'-0" 22
   X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #), SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:
   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
   CA/CB INDICATES COLUMN ABOVE/BELOW.
   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

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No.	Description	Date
4	ISSUE FOR FILING	03/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S1-0201

Drawing Title

LEVEL 02 FRAMING PLAN SECTOR 1

Drawing Number
S1-0201

B/Scan Drawing Number
S-017.00

SHEET 5 OF 118

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S1-0201 LEVEL 02 FRAMING PLAN SECTOR 1
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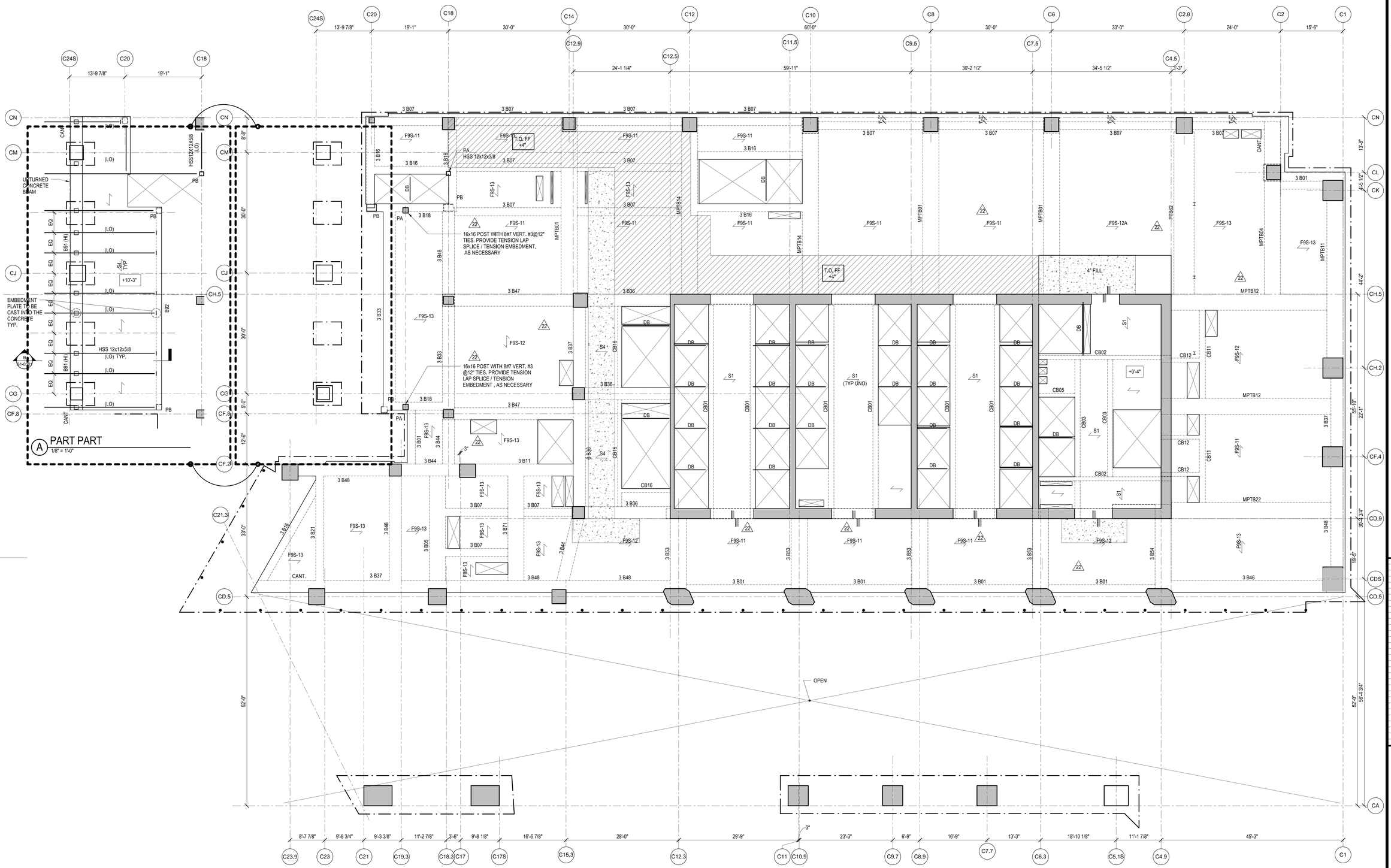
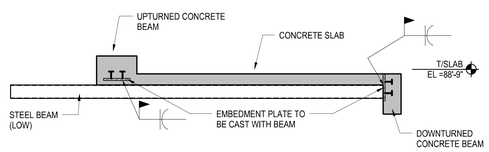
E1642900445 Scan Code





B SECTION
1/4" = 1'-0"

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 78'-2".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB. SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.
8. INDICATES 4" OF TOPPING CONCRETE.

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HUDSON YARDS - TOWER C

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Construction Manager
Construction Manager Name
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Address
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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number **HYE -TC -S1-0301**
Drawing Title

LEVEL 03 FRAMING PLAN SECTOR 1

Drawing Number **S1-0301**
B.Koon Drawing Number S-018.00

SHEET 6 OF 118

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S1-0301 L:\R-02\ 03 FRAMING PLAN SECTOR 1
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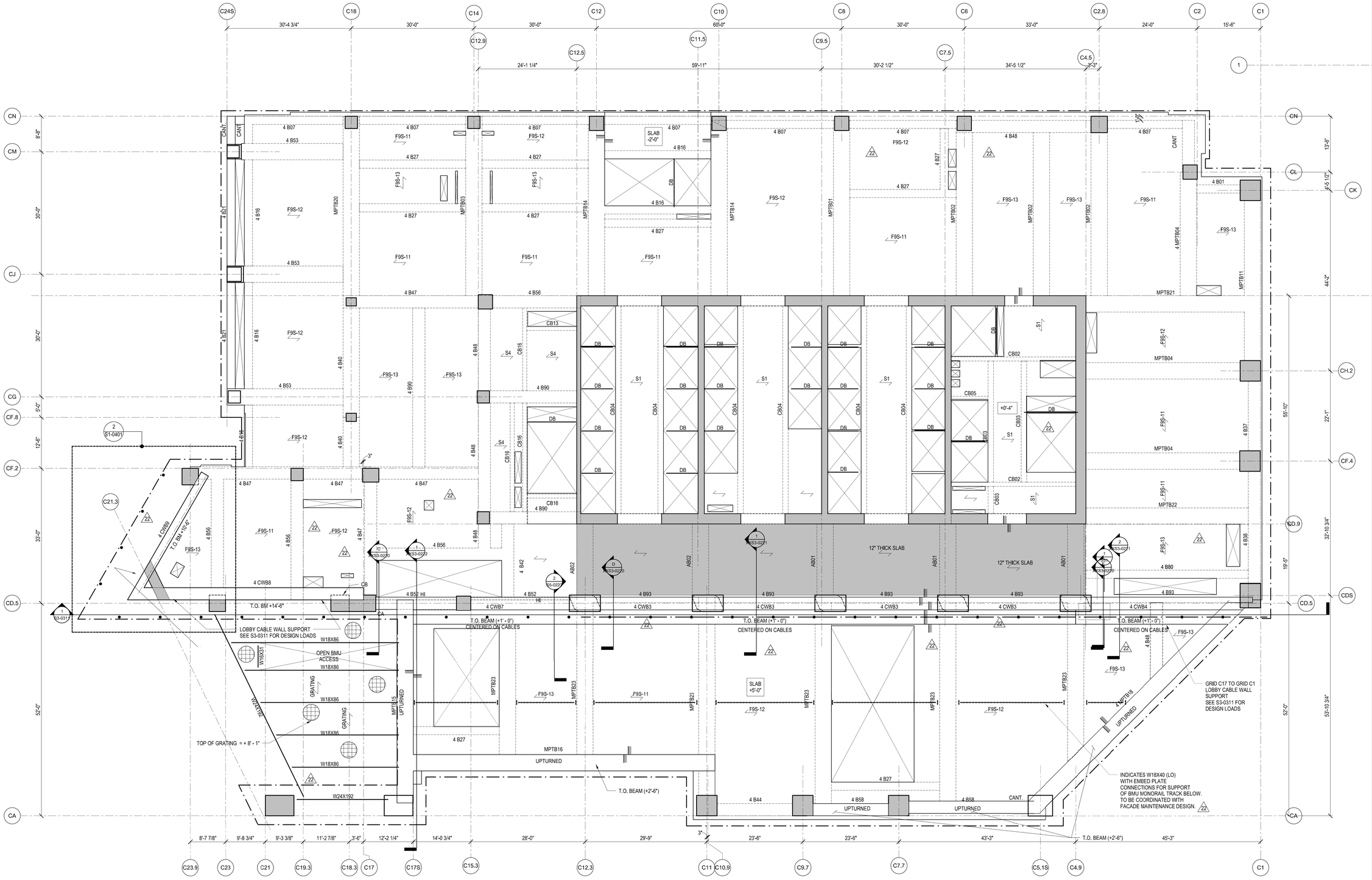

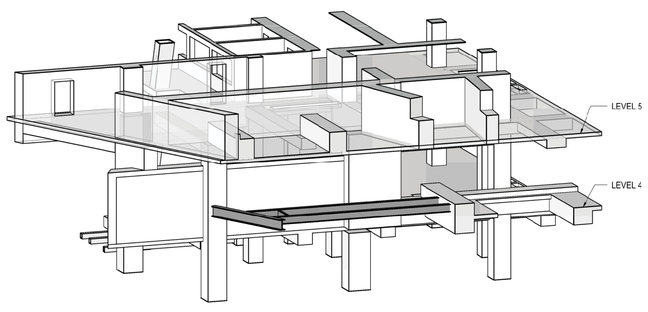

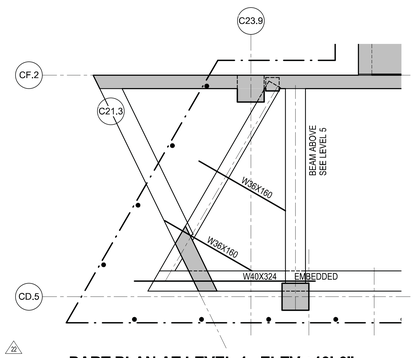

2 PART PLAN AT LEVEL 4 - ELEV.+13'-6"
1/8" = 1'-0"

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 98'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 8,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

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STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

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   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:
   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   CA/CB INDICATES COLUMN ABOVE/BELOW.
   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL OBERGURTH SERIES.

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Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:27 AM
NYC Development Hub

HUDSON YARDS - TOWER C

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NEW YORK, NY

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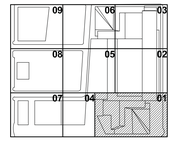
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

HYE -TC -S1-0401

Drawing Title

LEVEL 04 FRAMING PLAN SECTOR 1

Drawing Number

S1-0401

R-Scan Drawing Number

S-019.00

SHEET 7 OF 118

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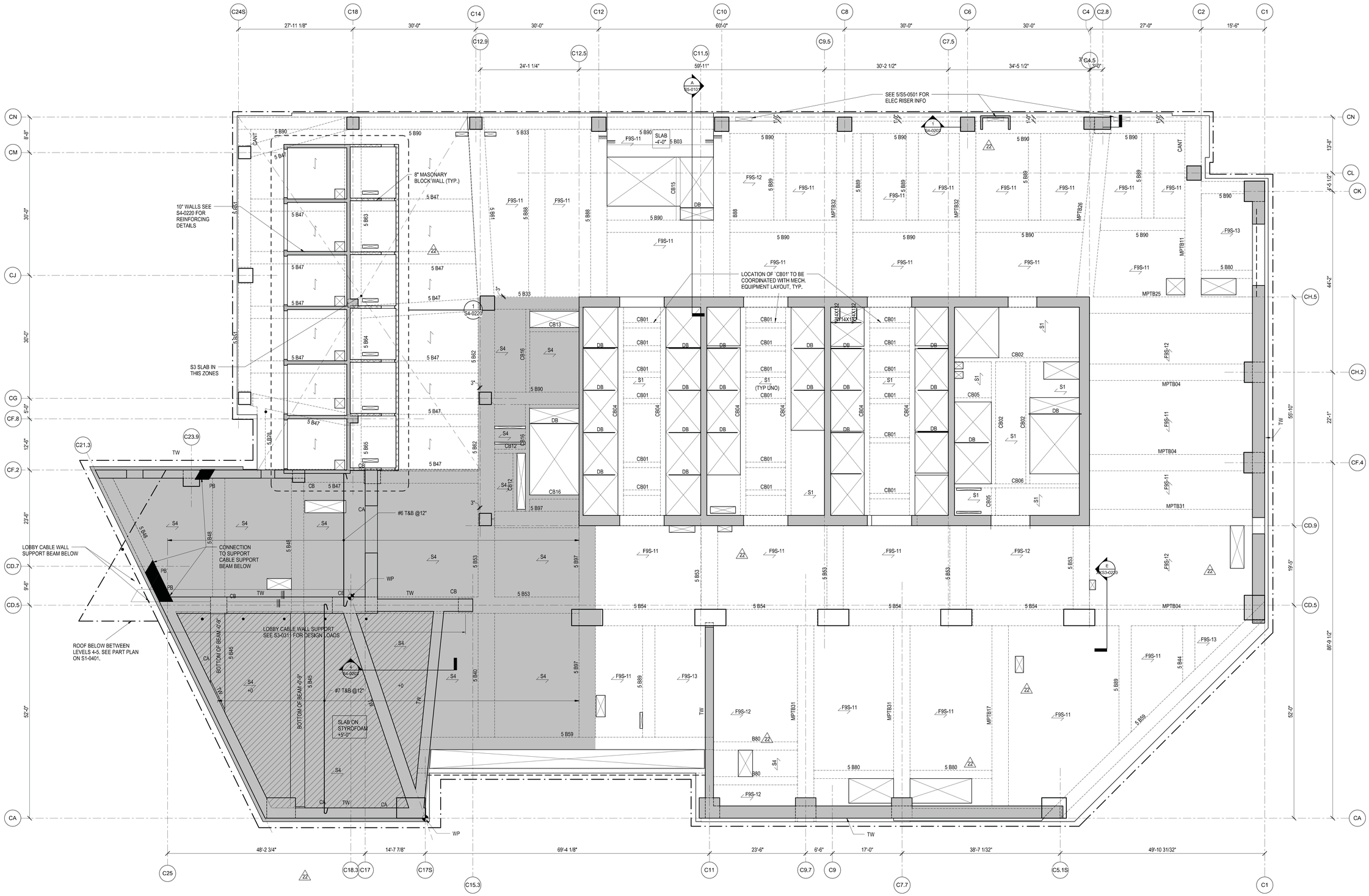

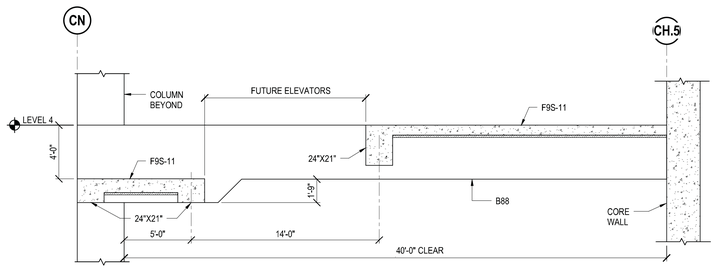

A SECTION
1/4" = 1'-0"

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION118'-6". 'X' INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB. SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 8,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S5 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:27 AM
NYC Development Hub

HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY

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60 Columbus Circle
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Oxford Properties Group
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Construction Manager
Construction Manager Name
Address
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TEL: XXX.XXX.XXXX FAX: XXX.XXX.XXXX

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PCArchitects & Planning Consultants
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No.	Description	Date
	DOB SUBMISSION	02/15/2013

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

STATE OF NEW YORK
ALEX M. BRAZIL
082542-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-0501

Drawing Title

LEVEL 05 FRAMING PLAN SECTOR 1

Drawing Number

S1-0501

BoXcar Drawing Number

S-020.00

SHEET 8 OF 118

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S1-0501
3/22/2013 3:57:13 PM
LEVEL 05 FRAMING PLAN SECTOR 1
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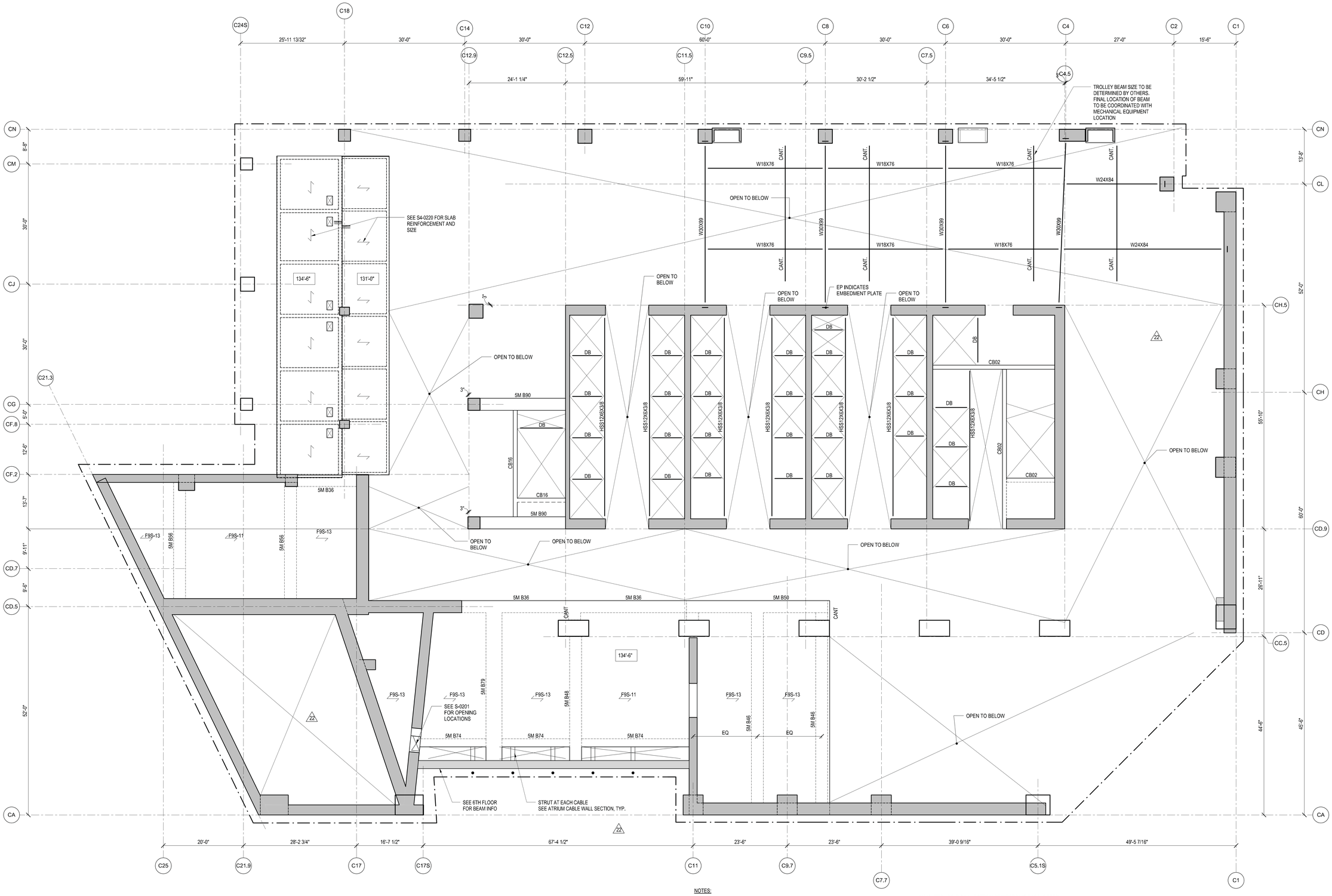

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION(SEE PLAN).
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000,PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

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No.	Description	Date
	DOB SUBMISSION	02/15/2013

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · ARIC M. BRAZIL · 082242-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-0501M

Drawing Title

LEVEL 05M FRAMING PLAN SECTOR 1

Drawing Number

S1-0501M

B-Scan Drawing Number

S-021.01

SHEET 9 OF 118

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S1-0501M
3/22/2013 3:57:16 PM
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DEPT OF BUILDINGS 421524290 Job Number
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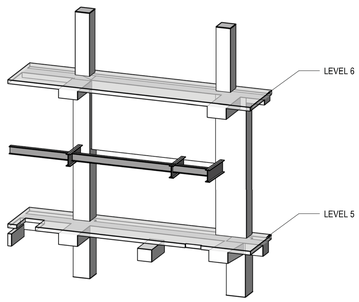
HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY



NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 148'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 8,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
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SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. AT THIS FLOOR INDICATES A 12" THICK POURED IN PLACE SLAB MARK S3
   REINFORCING SHOWN ON PLAN IS IN ADDITION TO REINF CALLED ON SCHEDULE.
8. INDICATES 4" OF TOPPING SLAB ON TOP OF HIGH DENSITY STYROFOAM.

Damian Titus
NYC Buildings
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Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:27 AM
NYC Development Hub

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No.	Description	Date
4	ISSUE FOR FILING	03/15/2013
3	DN-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number
HYE -TC -S1-0601
Drawing Title

STATE OF NEW YORK
DAMIAN TITUS
LICENSED PROFESSIONAL ENGINEER

LEVEL 06 FRAMING PLAN SECTOR 1

Drawing Number
S1-0601
B/Scan Drawing Number
S-022.00

SHEET 10 OF 118

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S1-0601
2/15/2013 10:28:11 AM
LEVEL 06 FRAMING PLAN SECTOR 1
C:\Users\ernestoley\Documents\H11329.00 Revit\H11329.00 - TOWER C - amlocal.rvt

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 166'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #), SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 8,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER166'-6". SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:
   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
   CA/CB INDICATES COLUMN ABOVE/BELOW.
   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 # 6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. INDICATES 4" OF TOPPING SLAB ON TOP OF HIGH DENSITY STYROFOAM.
9. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING INTO THE ADJACENT SPAN.

Damian Titus
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Under Directive 2 of 1975
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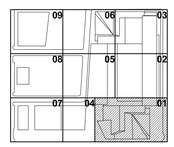
No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date: -
Project No. 1776.10
Drawn By:
Sheet Number
HYE -TC -S1-0701
Drawing Title
LEVEL 07 FRAMING PLAN SECTOR 1
Drawing Number
S1-0701
B-Scan Drawing Number
S-023.00 SHEET 11 OF 118

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S1-0701
2/15/2013 10:26:15 AM
LEVEL 07 FRAMING PLAN SECTOR 1
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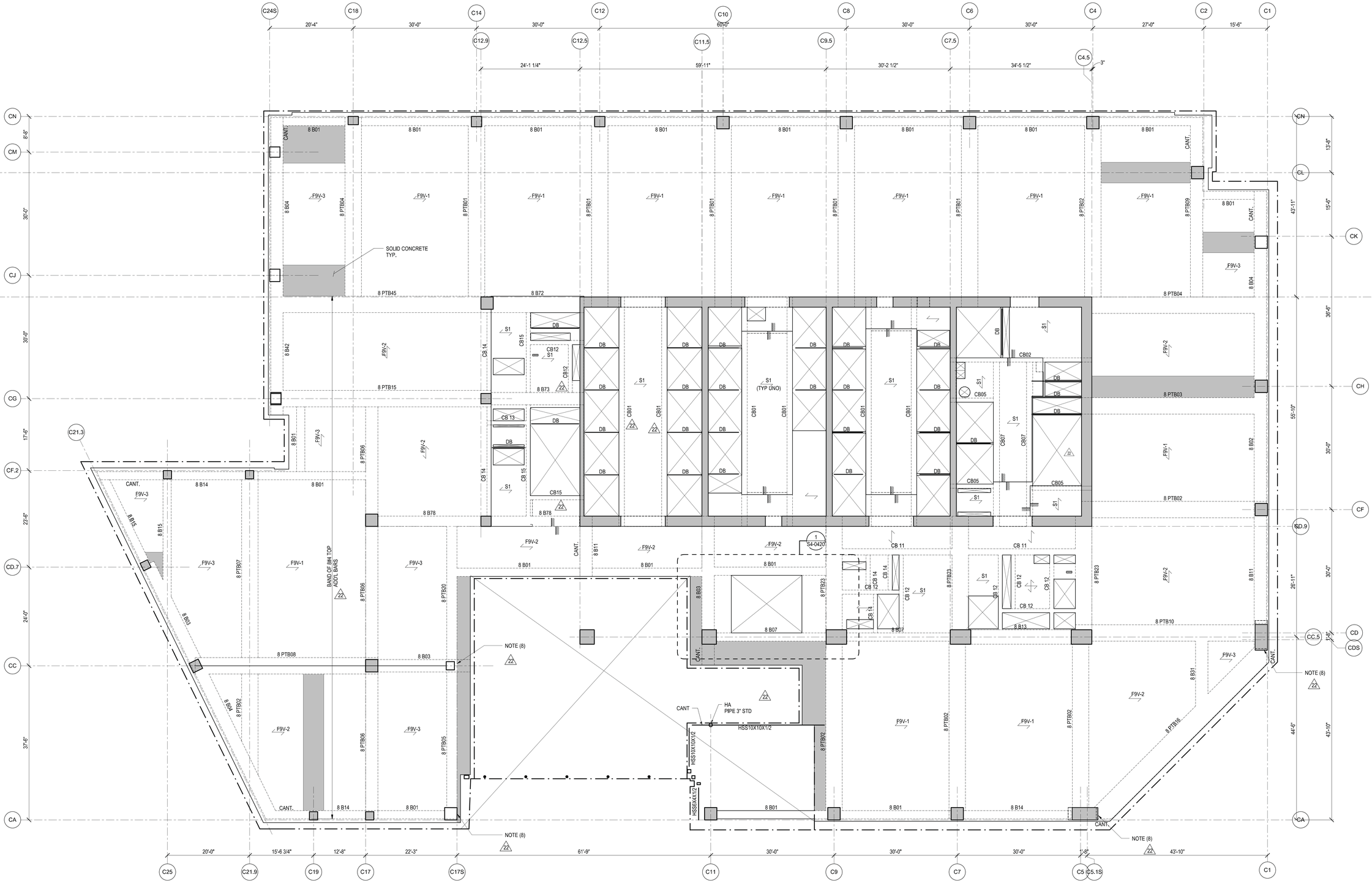

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 180'-0".
   'X' INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF **6,000** *PSI*. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

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8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:27 AM
NYC Development Hub

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

STATE OF NEW YORK
DAMIAN R. TITUS
025243-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-0801

Drawing Title

LEVEL 08 FRAMING PLAN SECTOR 1

Drawing Number
S1-0801

R.Koan Drawing Number
S-024.00

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S1-0801 L S1-01_08 FRAMING PLAN SECTOR 1
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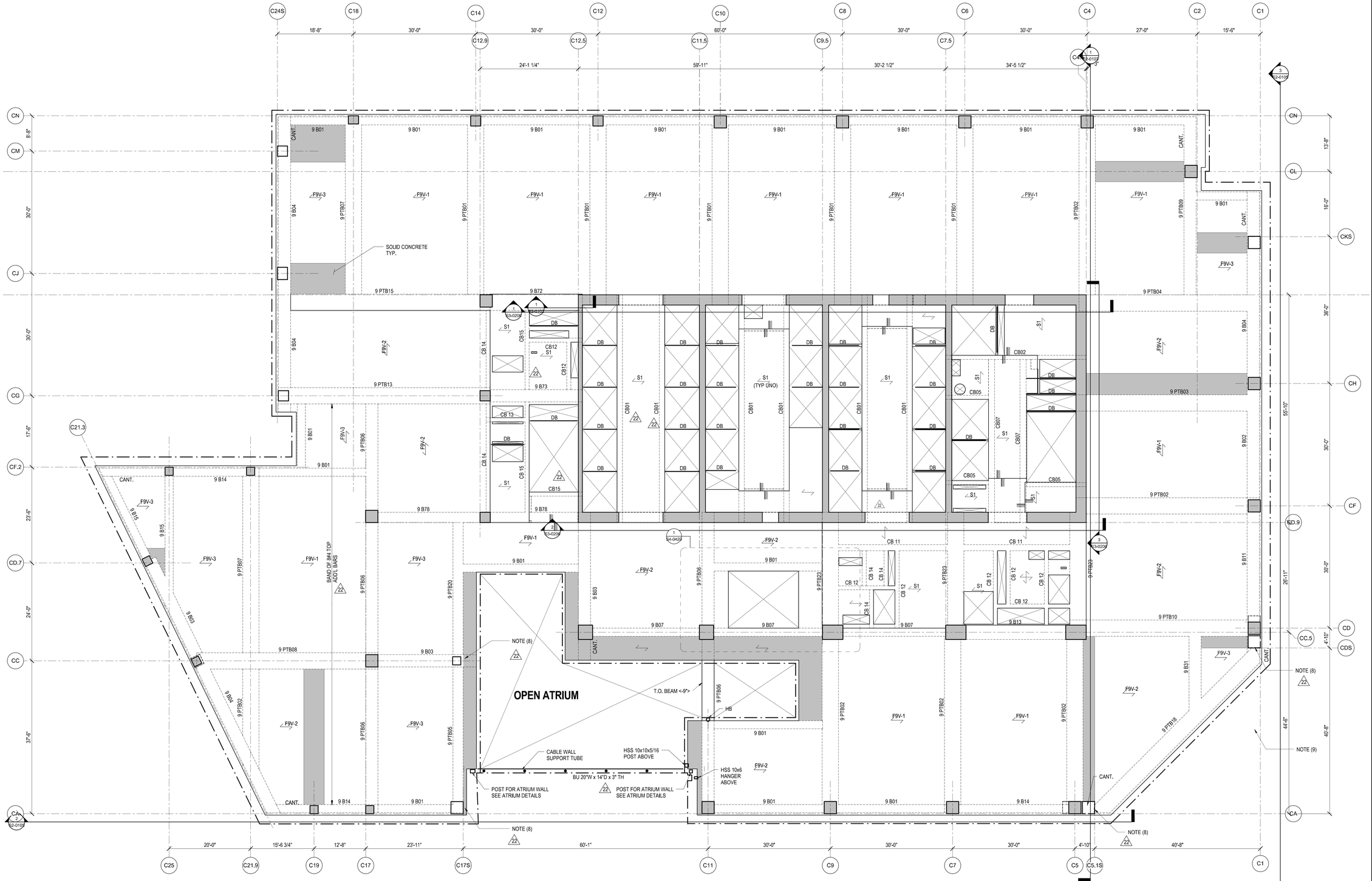

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 193'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

Damian Titus
NYC Buildings
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Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

STATE OF NEW YORK · DAMIAN M. BRAZIL · 082843-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-0901

Drawing Title

LEVEL 09 FRAMING PLAN SECTOR 1

Drawing Number

S1-0901

R-Scan Drawing Number

S-025.00

SHEET 13 OF 118

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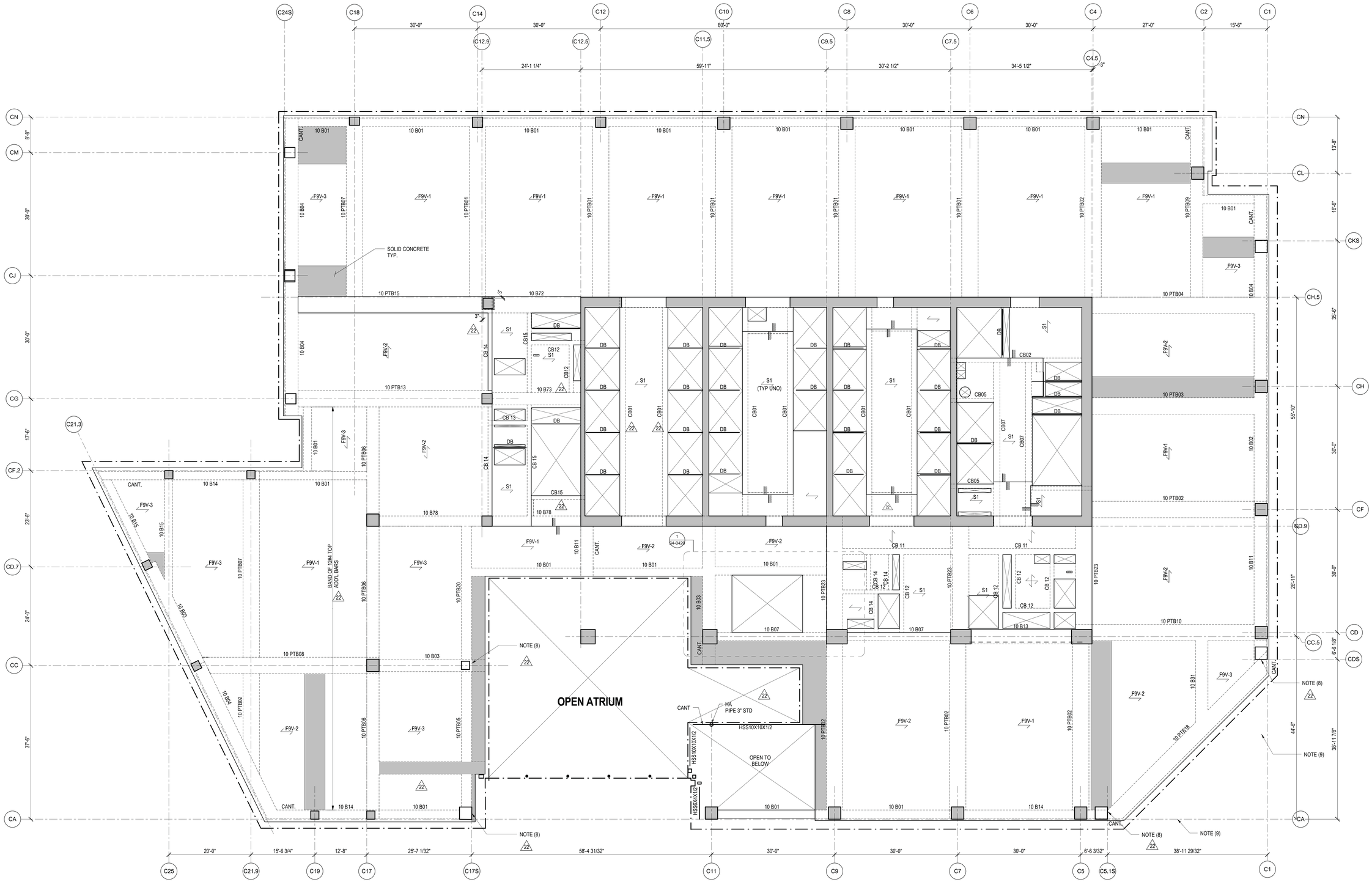

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 207'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF ***6,000 PSI.*** REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

Damian Titus
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1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

STATE OF NEW YORK
DAMIAN A. TITUS
082642-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-1001

Drawing Title

LEVEL 10 FRAMING PLAN SECTOR 1

Drawing Number
S1-1001

B-Scan Drawing Number
S-026.00

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LEVEL 10 FRAMING PLAN SECTOR 1
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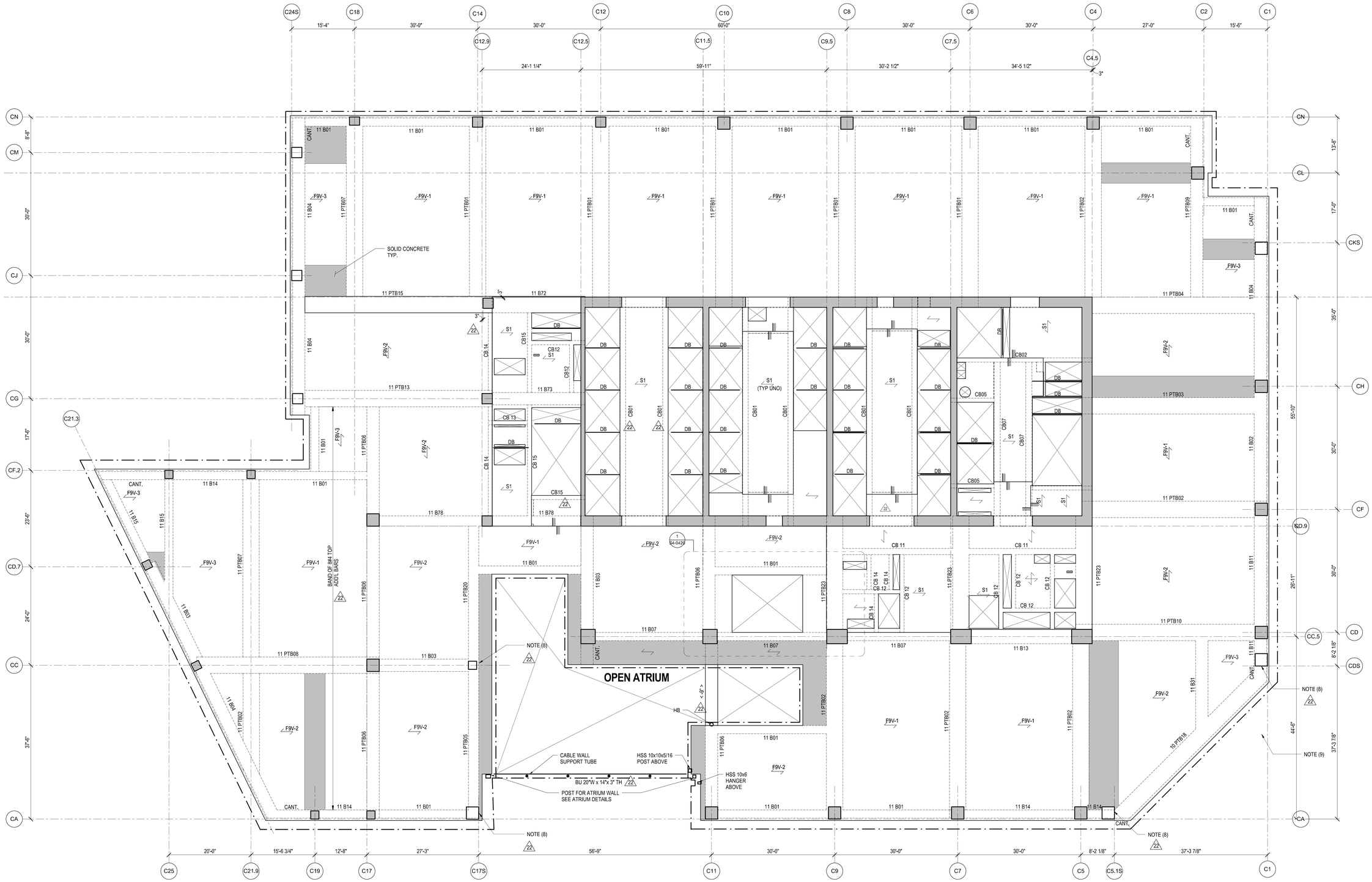

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 220'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
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SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
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   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
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   INDICATES STEP IN SLAB
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6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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PA/PB	INDICATES POST ABOVE/BELOW.
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TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

Damian Titus
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PCArchitects & Planning Consultants
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1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S1-1101
Drawing Title

LEVEL 11 FRAMING PLAN SECTOR 1

Drawing Number S1-1101
R-Scan Drawing Number S-027.00

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S1-1101 LEVEL 11 FRAMING PLAN SECTOR 1
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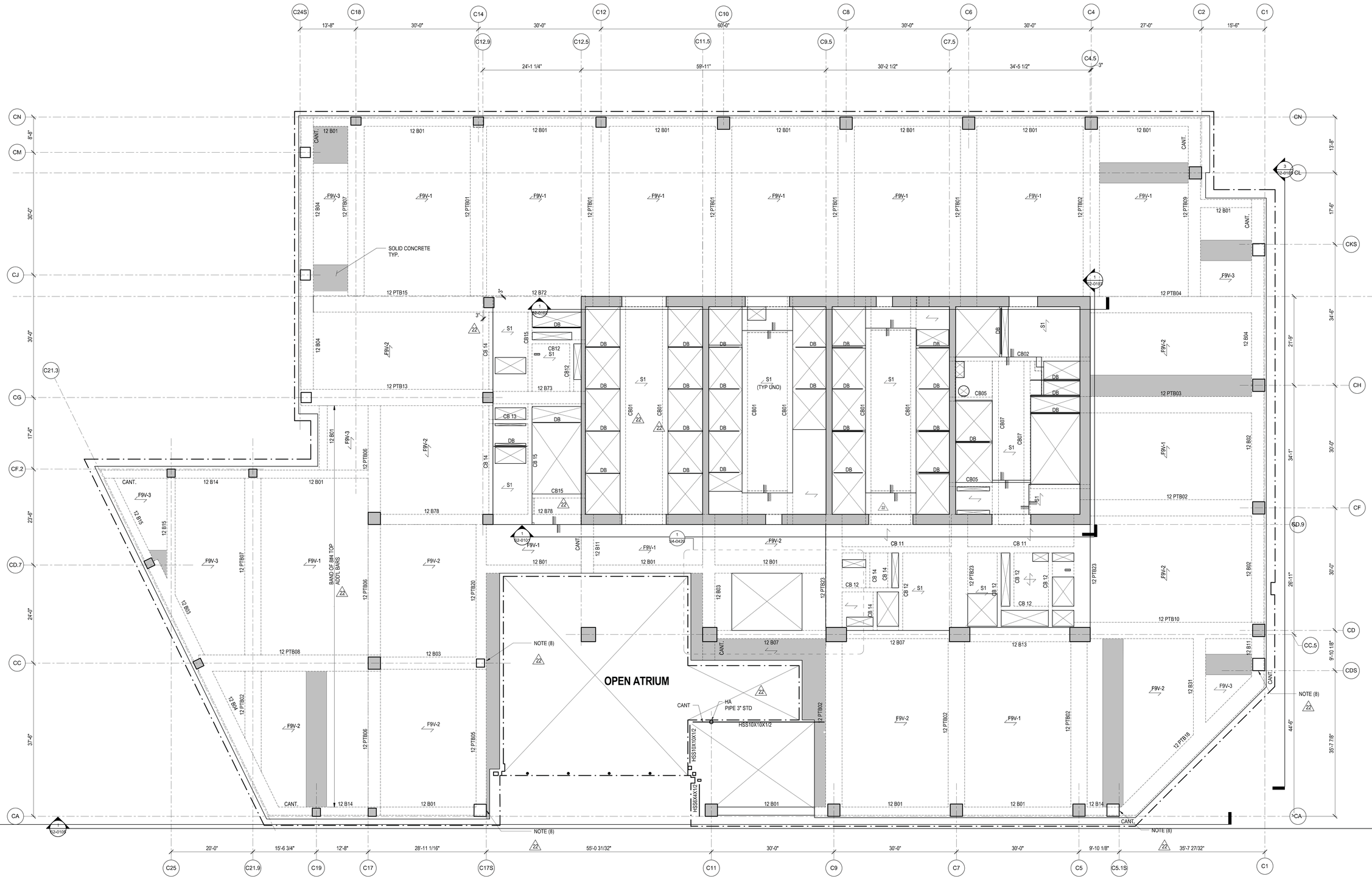

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 234'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF **6,000**.PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
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5. SYMBOLS:
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   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
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   INDICATES STEP IN SLAB
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6. NOTATION:
   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
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Damian Titus
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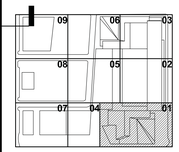
Key Plan



Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S1-1201
Drawing Title

LEVEL 12 FRAMING PLAN SECTOR 1

Drawing Number
S1-1201
B-Scan Drawing Number
S-028.00

SHEET 16 OF 118

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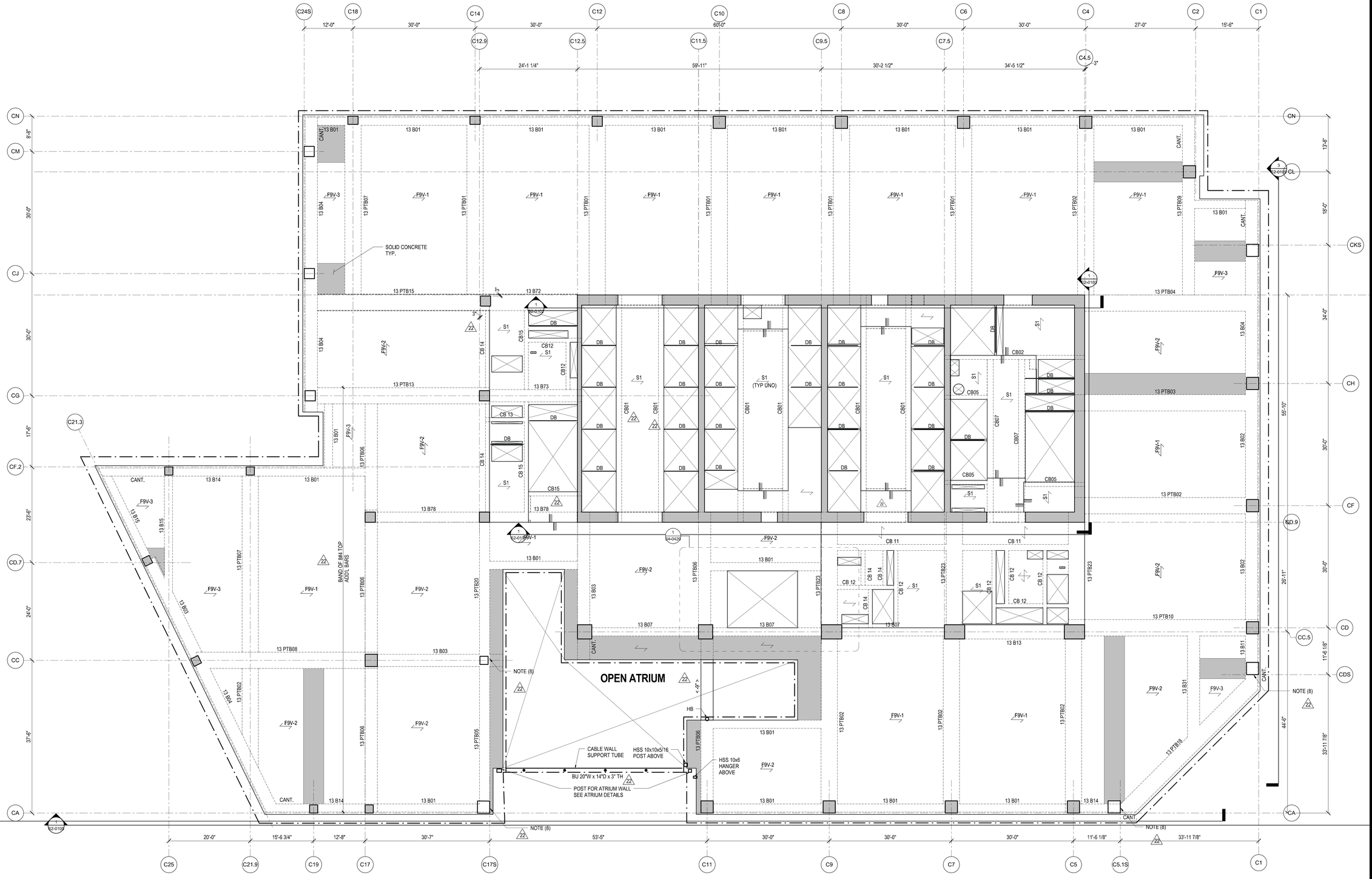

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 247'-6".
   X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
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   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED), REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U,N,O,) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

22
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Under Directive 2 of 1975
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HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S1-1301

Drawing Title

LEVEL 13 FRAMING PLAN SECTOR 1

Drawing Number
S1-1301

R-Scan Drawing Number
S-029.00

SHEET 17 OF 118

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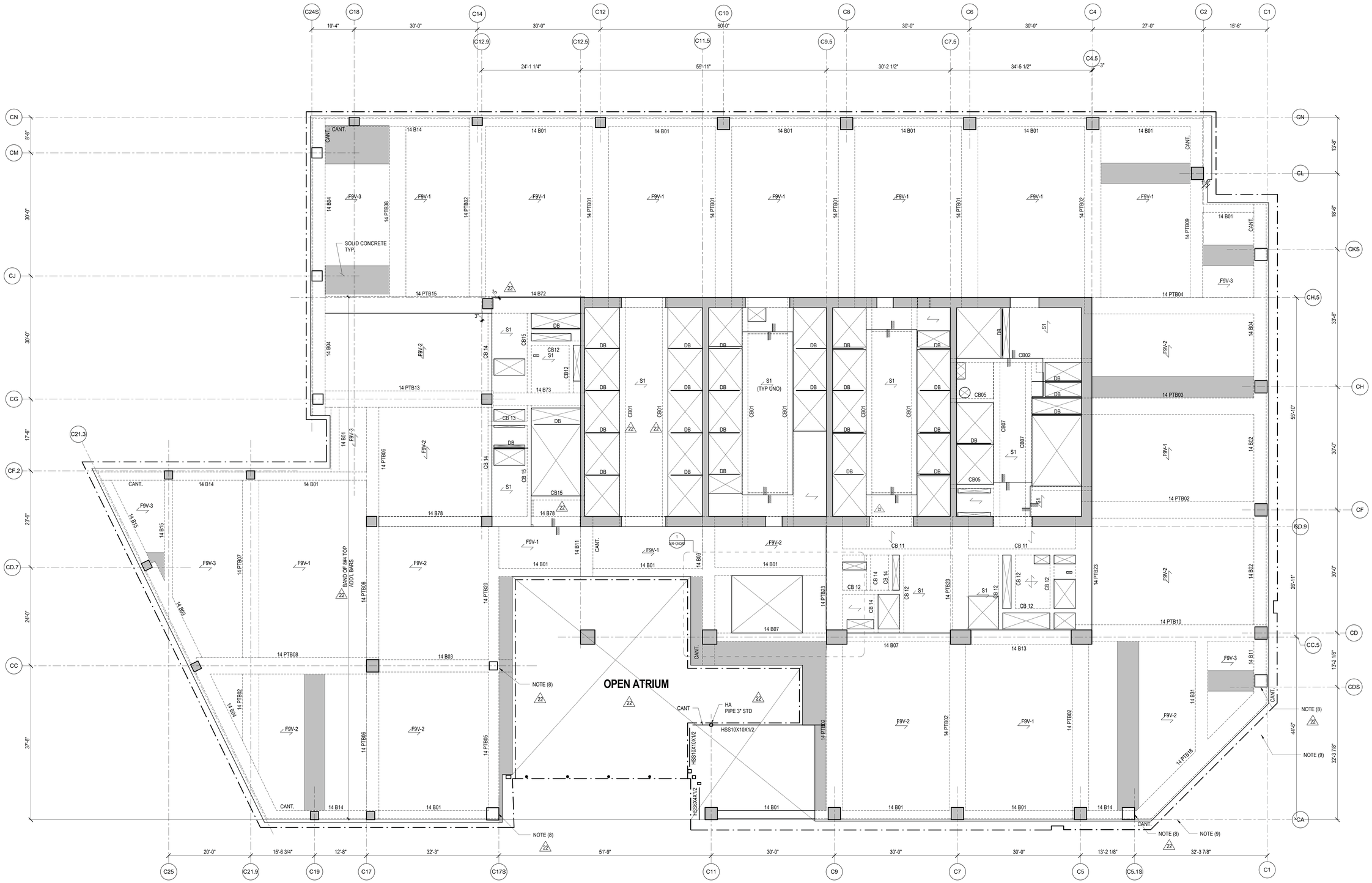

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 261'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
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   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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Under Directive 2 of 1975
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1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S1-1401
Drawing Title

LEVEL 14 FRAMING PLAN SECTOR 1

Drawing Number
S1-1401
B/Scan Drawing Number
S-030.00

SHEET 18 OF 118

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LEVEL 14 FRAMING PLAN SECTOR 1
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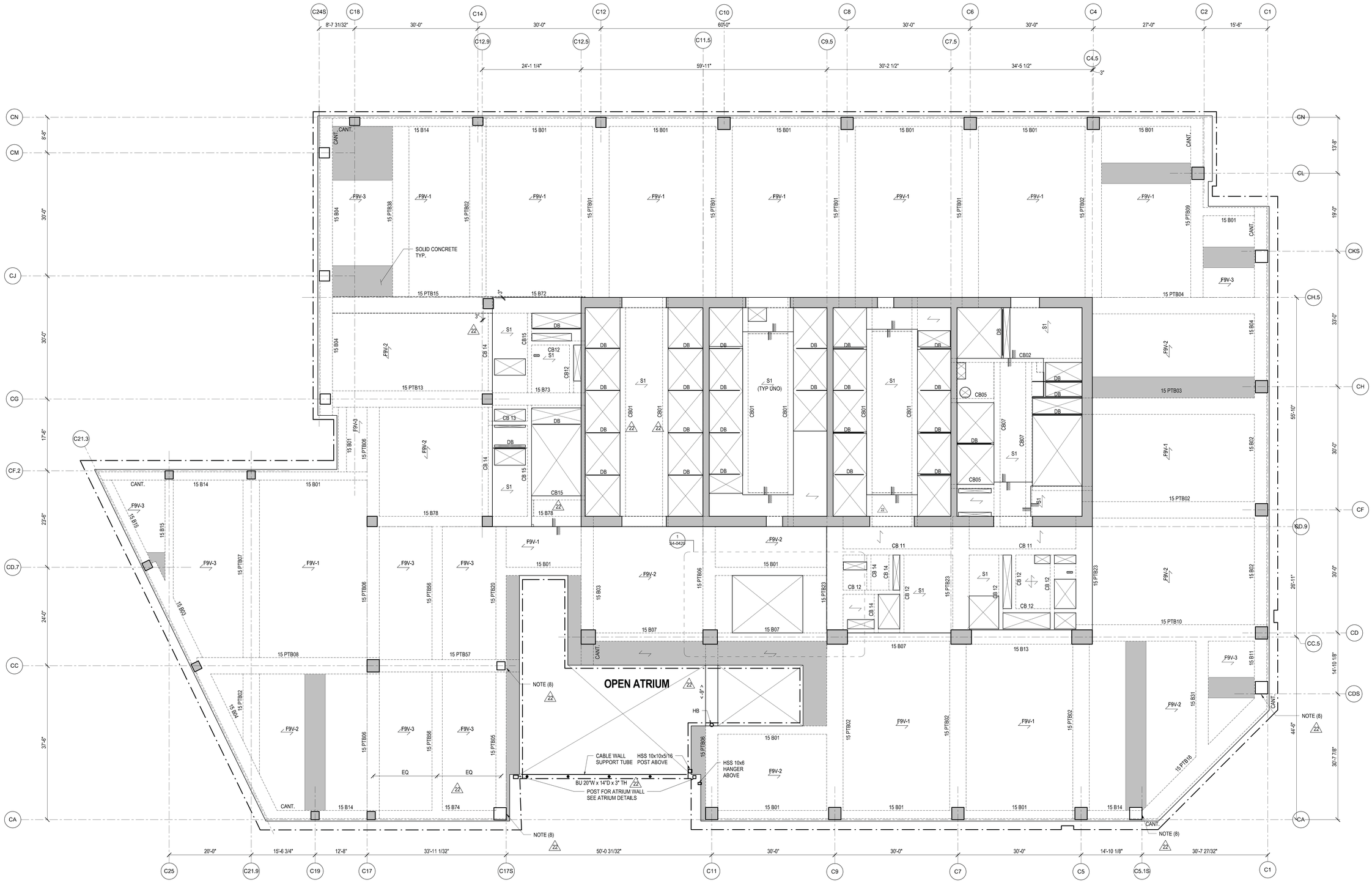

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 274'-6".
   X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   Sill INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF **6,000** PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
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   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
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Under Directive 2 of 1975
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3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · KYLE M. BRAY · 082843 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-1501

Drawing Title

LEVEL 15 FRAMING PLAN SECTOR 1

Drawing Number
S1-1501

8-Scan Drawing Number
S-031.00 SHEET 19 OF 118

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S1-1501 LEVEL 15 FRAMING PLAN SECTOR 1
2/15/2013 10:26:42 AM C:\Users\ksmithey\Documents\N1329.00-Revit\N1329.00 - TOWER C - ksmithcall.rvt

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 288'-0".
   "X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #), SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
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CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
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   INDICATES STEP IN SLAB
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Damian Titus
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Under Directive 2 of 1975
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1	DOB Permit Set	08/17/2012

Key Plan

Issue Date: -
Project No. 1776.10
Drawn By: Author
Sheet Number

HYE -TC -S1-1601

Drawing Title

LEVEL 16 FRAMING PLAN SECTOR 1

Drawing Number

S1-1601

B-Scan Drawing Number

S-032.00 SHEET 20 OF 118

S1-1601 LEVEL 16 FRAMING PLAN SECTOR 1
2/15/2013 10:26:45 AM C:\Users\rsmalley\Documents\N11329.00-Revit\N11329.00 - TOWER C - amlocal.rvt

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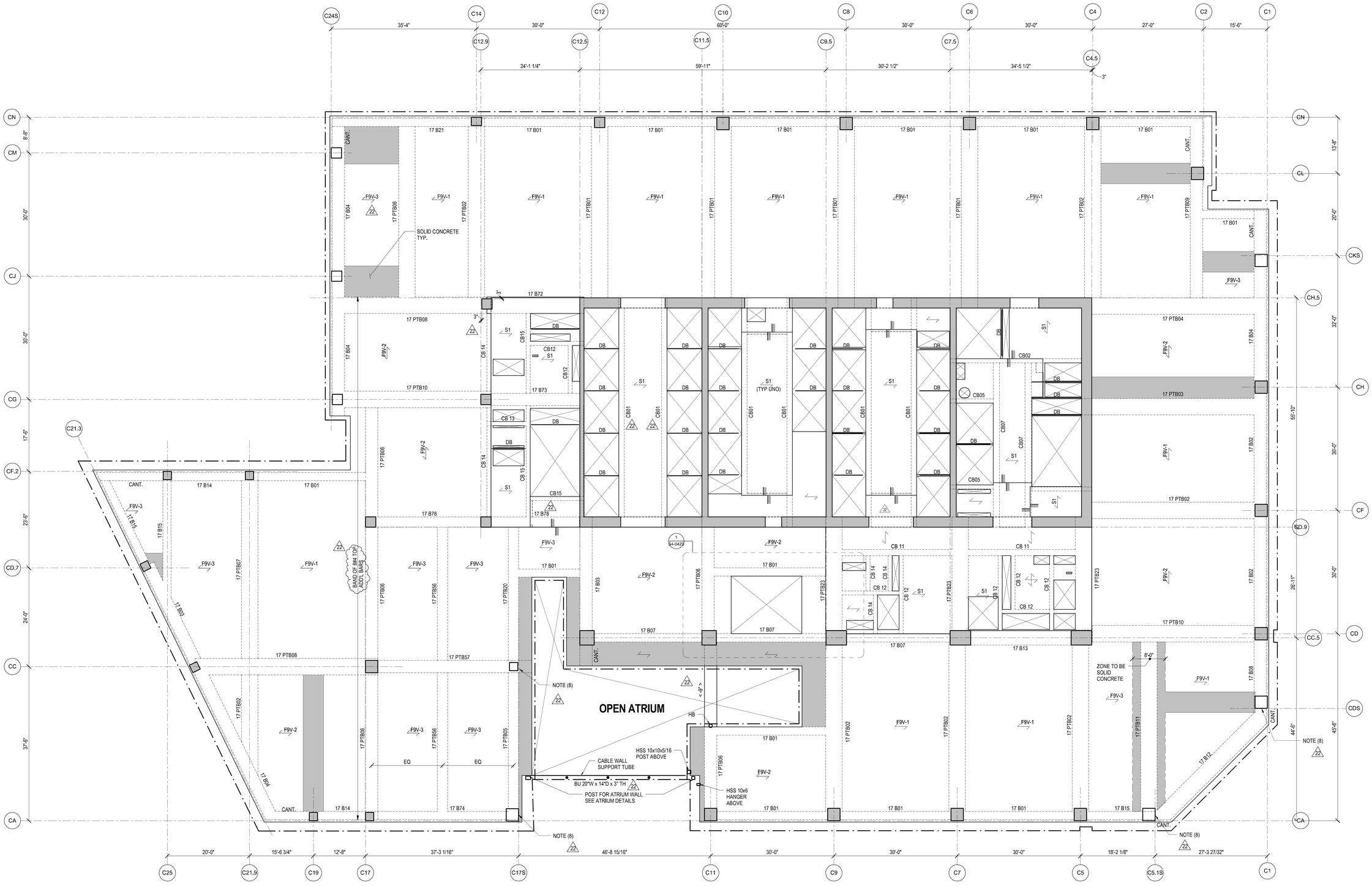

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 301'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
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Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S1-1701

Drawing Title

LEVEL 17 FRAMING PLAN SECTOR 1

Drawing Number
S1-1701

B-Scan Drawing Number
S-033.00

SHEET 21 OF 118

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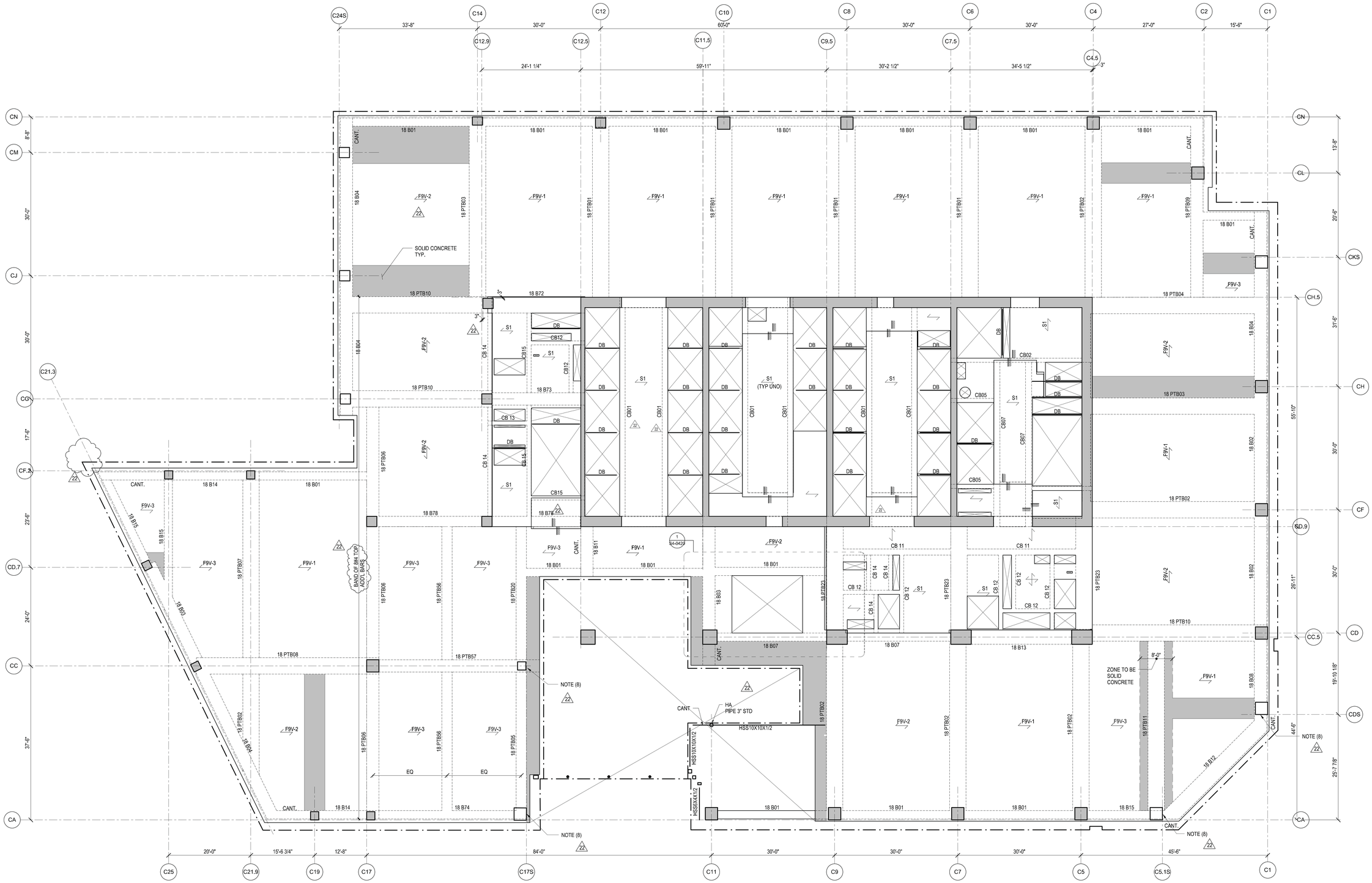

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 315'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #), SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF **6,000**.PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

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4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date: -
Project No. 1776.10
Drawn By: Author
Sheet Number

STATE OF NEW YORK
DAMIAN A. TITUS
082642-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-1801

Drawing Title

LEVEL 18 FRAMING PLAN SECTOR 1

Drawing Number
S1-1801

B-Scan Drawing Number
S-034.00 SHEET 22 OF 118

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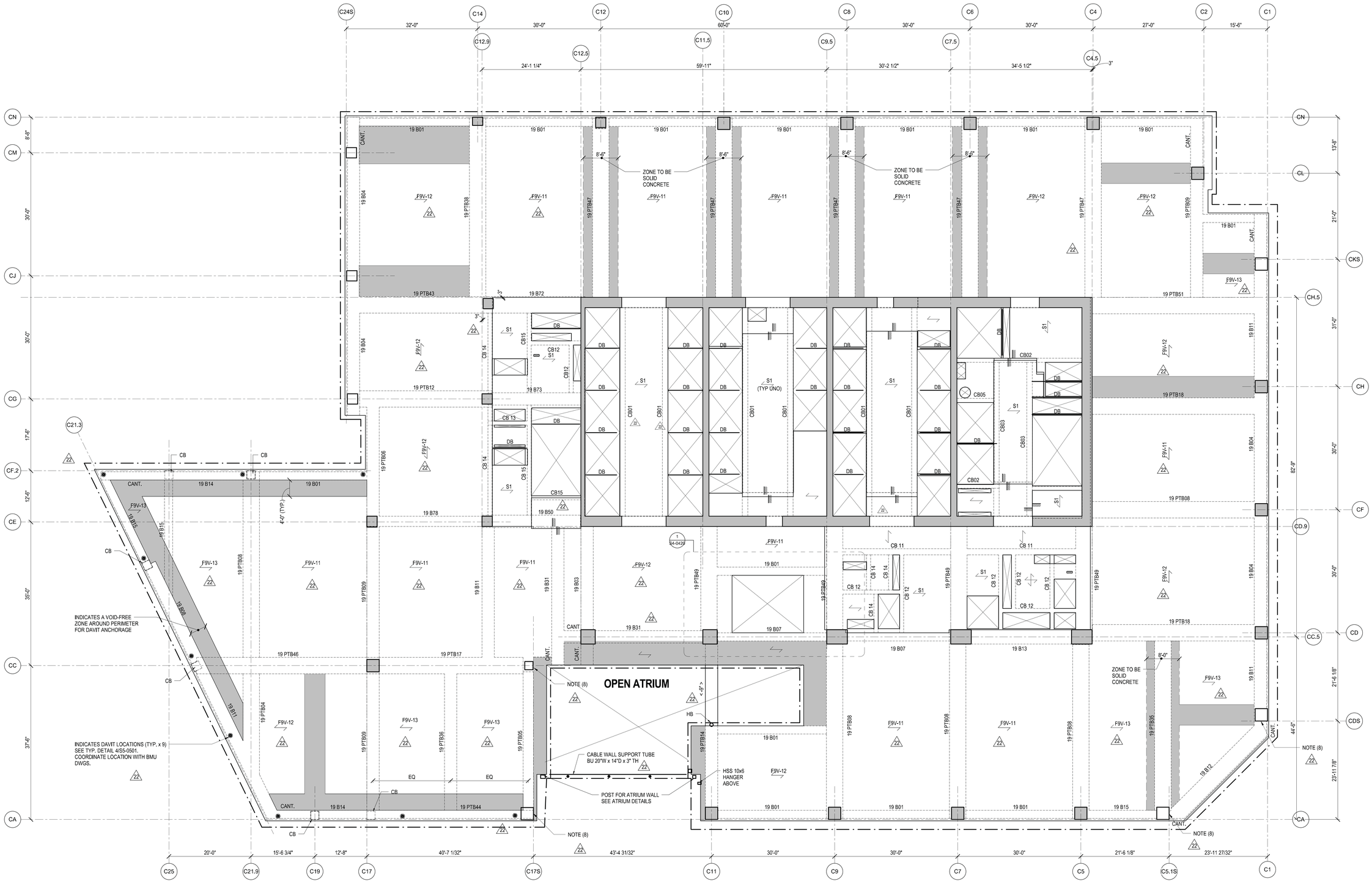
S1-1801 LEVEL 18 FRAMING PLAN SECTOR 1
2/15/2013 10:26:51 AM C:\Users\rosinsky\Documents\N11329.00-Revit\N11329.00 - TOWER C - arnlocal.rvt



NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 328'-6". X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB. SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF **6,000**.PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
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SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X IIINDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
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Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

HYE -TC -S1-1901

Drawing Title

LEVEL 19 FRAMING PLAN SECTOR 1

Drawing Number
S1-1901

R.Koan Drawing Number
S-035.00 SHEET 23 OF 118

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S1-1901 I:\ELGL 15 FRAMING (S1-AA SECTOR 1
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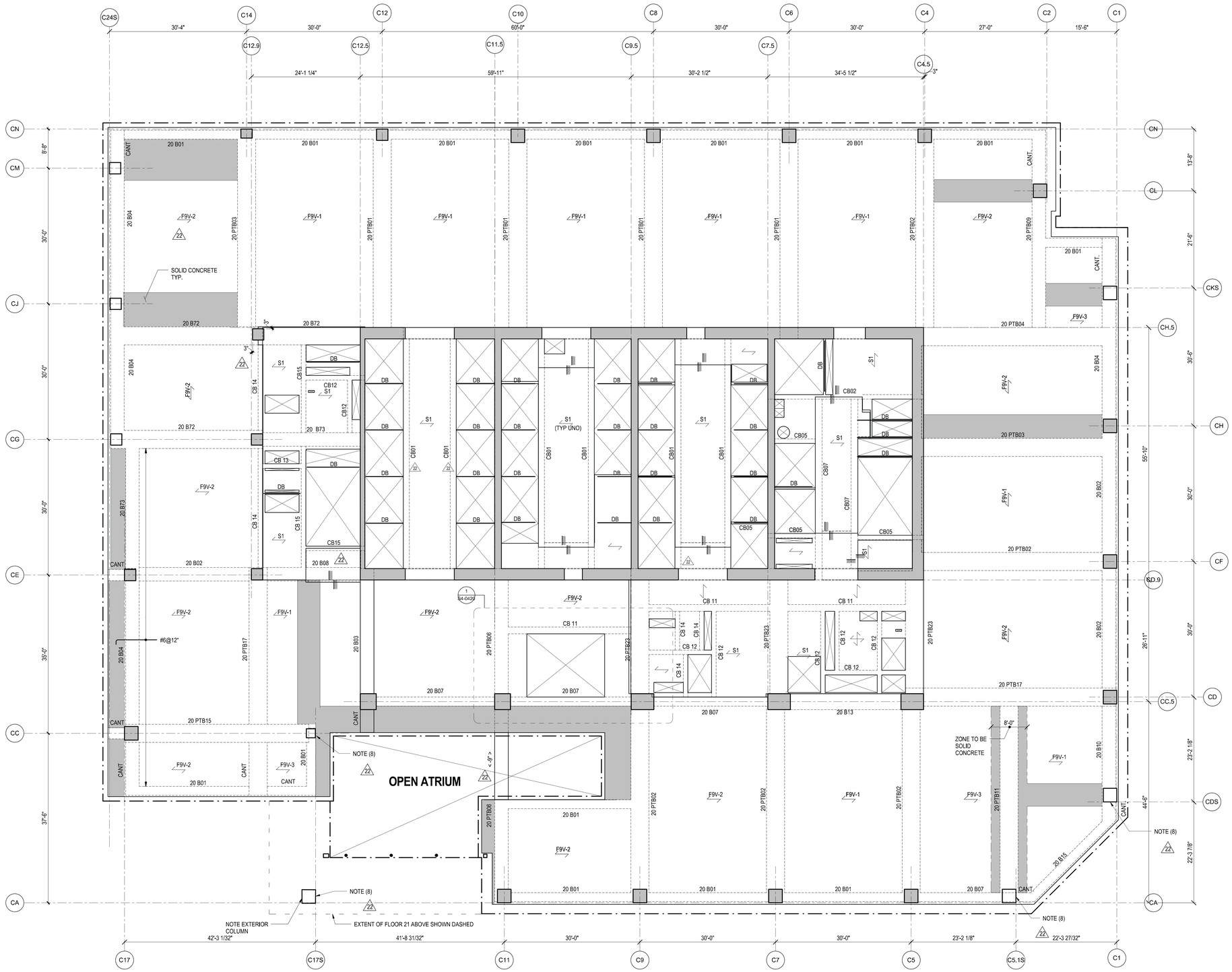

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 34'-0".
   X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

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FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
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CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
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   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
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3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

STATE OF NEW YORK
KYLE M. BRAUN
082842-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-2001

Drawing Title

LEVEL 20 FRAMING PLAN SECTOR 1

Drawing Number
S1-2001

B-Scan Drawing Number
S-036.00

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S1-2001 LEVEL 20 FRAMING PLAN SECTOR 1
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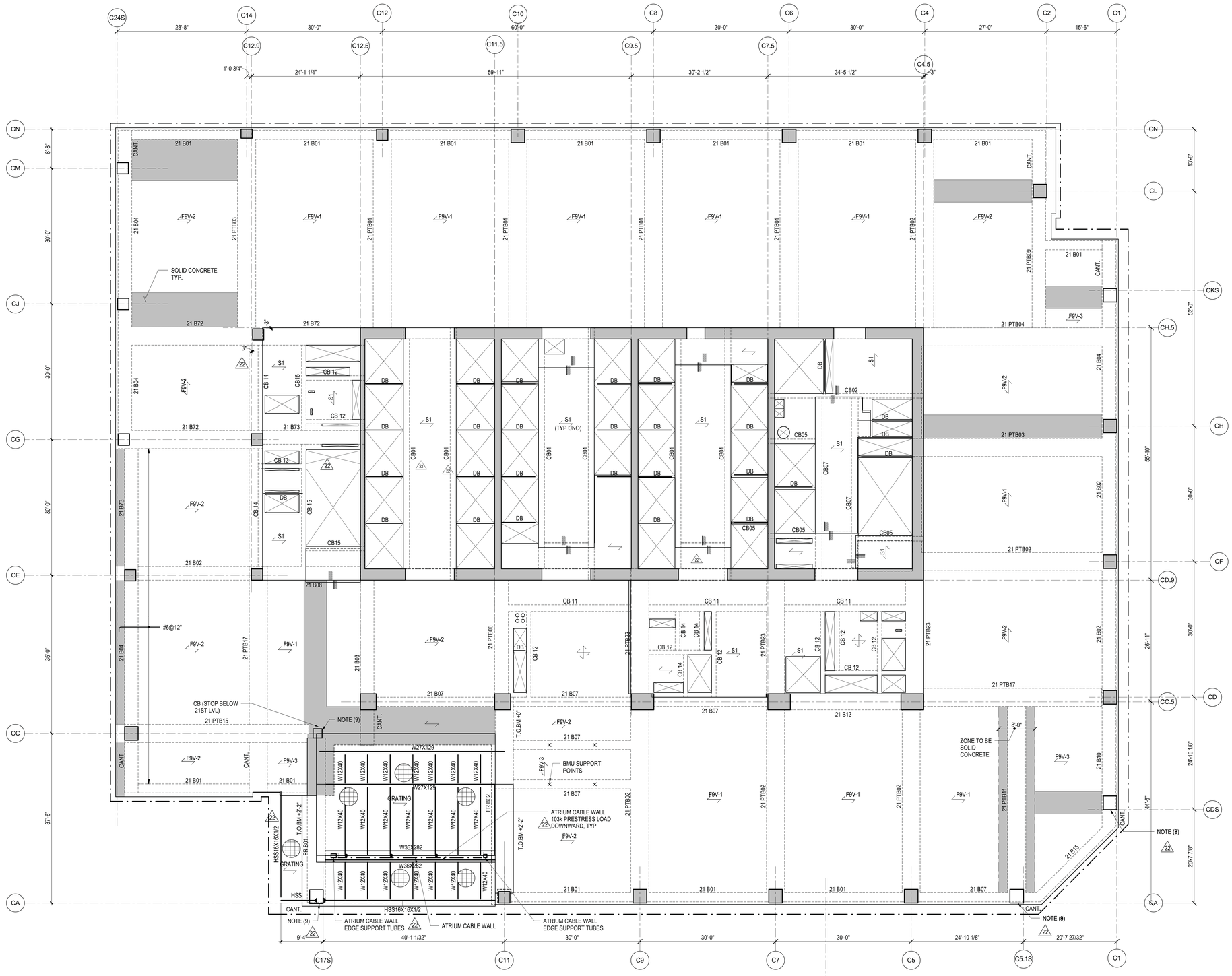

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 355'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.

   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000,PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:

   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.

   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS

6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

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Construction Manager
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2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number HYE -TC -S1-2101
Drawing Title

LEVEL 21 FRAMING PLAN SECTOR 1

Drawing Number S1-2101
R-Scan Drawing Number S-037.00

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S1-2101 LEVEL 21 FRAMING PLAN SECTOR 1
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DEPT OF BLDGS 421242290 Job Number
E3211749906 Scan Code

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 369'-0".
   X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
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3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 8,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
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Damian Titus
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Jaros Baum & Bolles Consulting Engineers
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New York, NY 10013
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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number HYE -TC -S1-2201
Drawing Title

LEVEL 22 FRAMING PLAN SECTOR 1

Drawing Number
S1-2201
Re-Issue Drawing Number
S-038.00

SHEET 26 OF 118

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S1-2201 L:\S-02_22 FRAMING PLAN SECTOR 1
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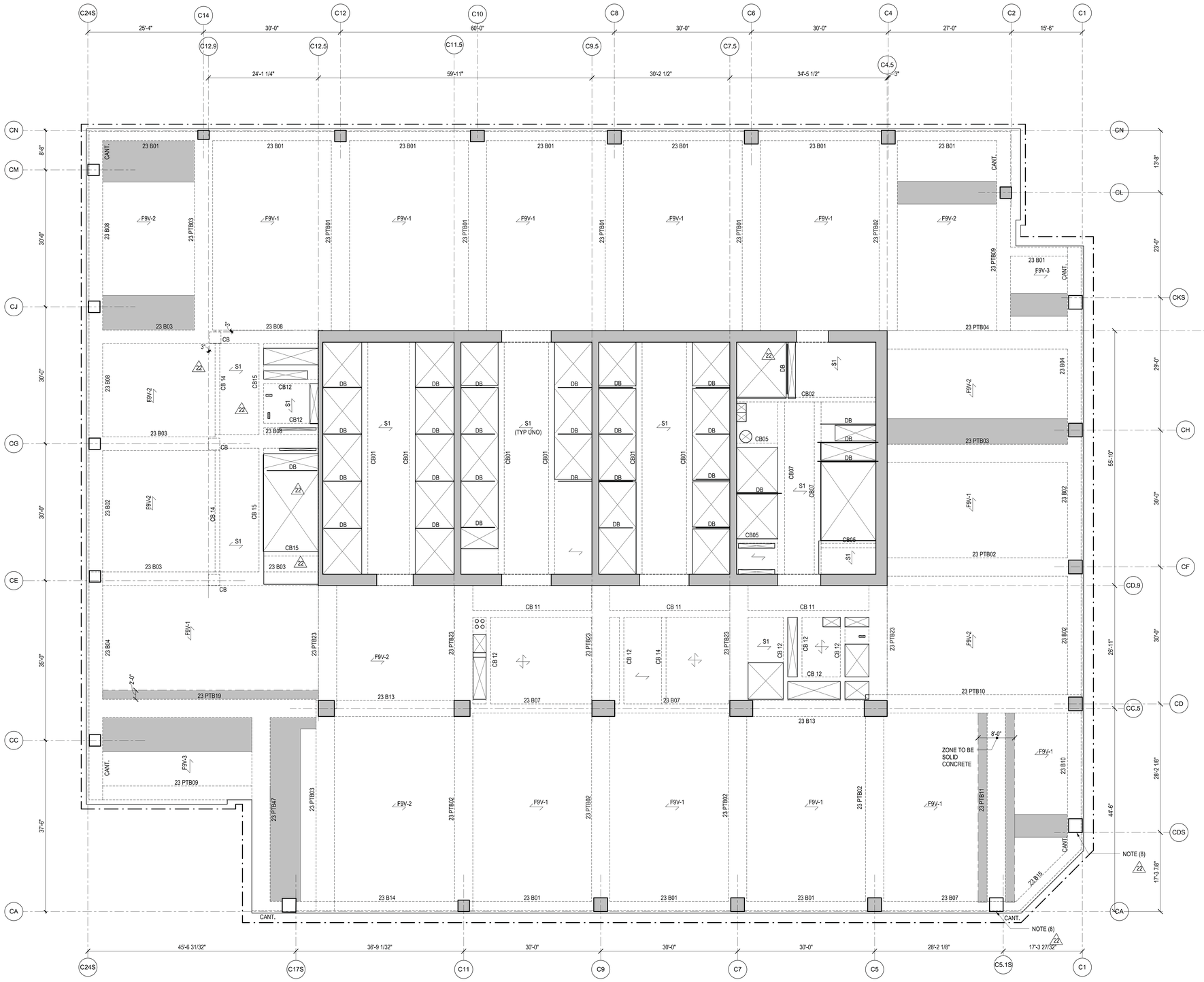

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 382'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #), SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000.PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:
   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
   CA/CB INDICATES COLUMN ABOVE/BELOW.
   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:27 AM
NYC Development Hub

HUDSON YARDS - TOWER C

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Construction Manager Name
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No.	Description	Date
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2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	06/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

STATE OF NEW YORK
ALAN R. BRAUN
082542-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-2301

Drawing Title

LEVEL 23 FRAMING PLAN SECTOR 1

Drawing Number

S1-2301

B-Scan Drawing Number

S-039.00 SHEET 27 OF 118

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S1-2301 LEVEL 23 FRAMING PLAN SECTOR 1
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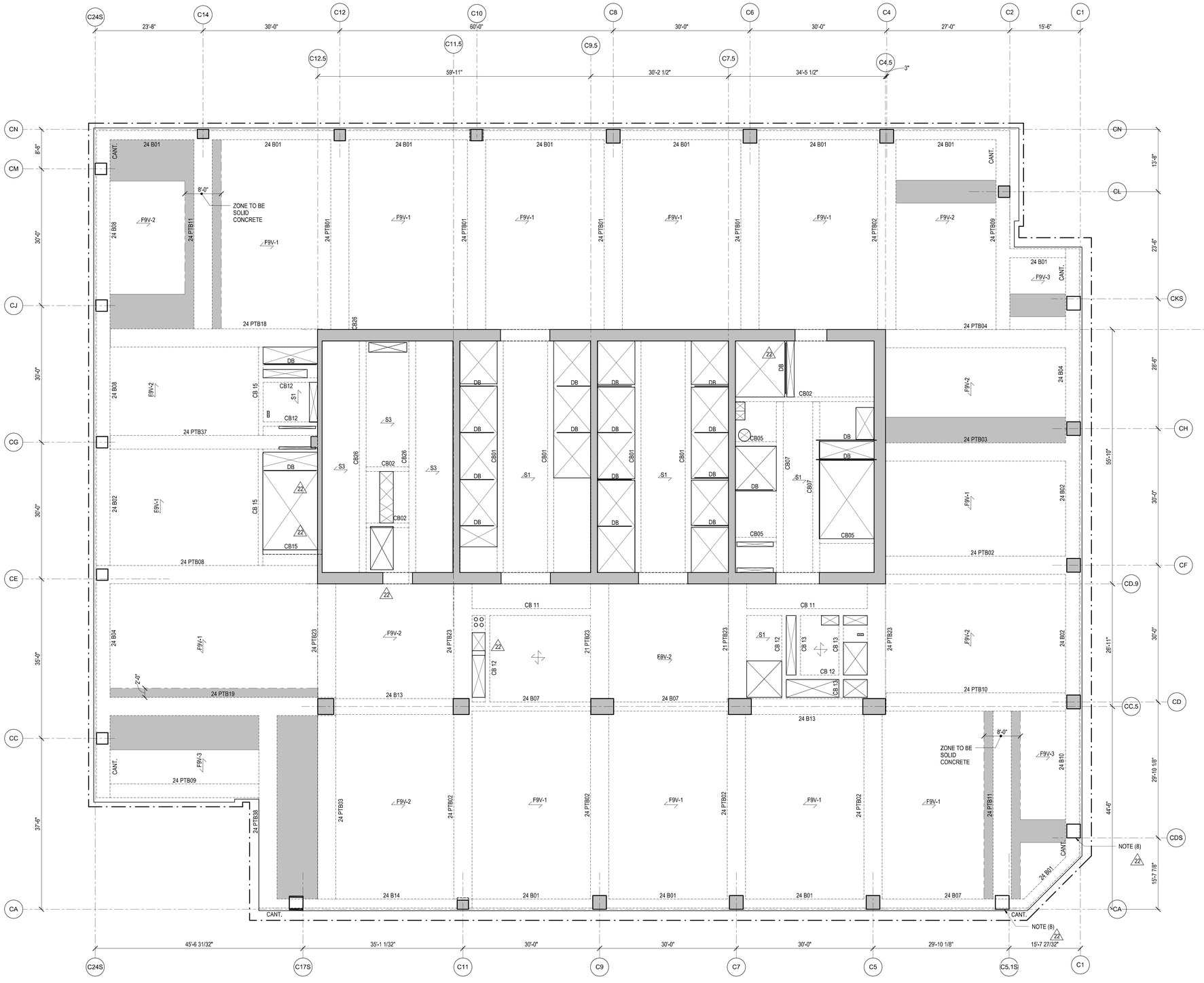

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 396'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000.PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:
   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
   CA/CB INDICATES COLUMN ABOVE/BELOW.
   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:27 AM
NYC Development Hub

HUDSON YARDS - TOWER C

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NEW YORK, NY

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

STATE OF NEW YORK
KYLE M. BRAUN
083877
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-2401

Drawing Title

LEVEL 24 FRAMING PLAN SECTOR 1

Drawing Number
S1-2401

B-Scan Drawing Number
S-040.00

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S1-2401 LEVEL 24 FRAMING PLAN SECTOR 1
2/15/2013 10:27:11 AM C:\Users\ktaubman\Documents\N1329.00-Rev8N1329.00 - TOWER C - aamcoall.rvt

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 409'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 8,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:
   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
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   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. AT THESE LOCATIONS, ALL BEAM REINFORCING FOR BEAMS RUNNING IN THE DIRECTION PARALLEL TO THE SLOPE OF THE COLUMN, SHALL TERMINATE WITH LENTON TERMINATORS AT THE EXTERIOR FACE OF THE SLOPING COLUMN INSTEAD OF HOOKS. PROVIDE ADDITIONAL 2#7 BARS CENTERED IN THE BEAMS, FOR FULL LENGTH OF FIRST SPAN EXTENDING 10' INTO THE ADJACENT SPAN.

Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:27 AM
NYC Development Hub

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501 WEST 30TH STREET
NEW YORK, NY

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New York, NY 10023
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Oxford Properties Group
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New York, NY 10022
TEL: 212.986.7514 FAX: 212.986.7510

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PCArchitects & Planning Consultants
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New York, NY 10013
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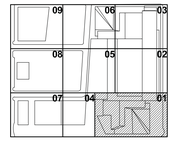
No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK
STEVE M. BRAZIL
082842-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-2501

Drawing Title

LEVEL 25 FRAMING PLAN SECTOR 1

Drawing Number
S1-2501

R-Scan Drawing Number
S-041.00

SHEET 29 OF 118

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S1-2501
2/15/2013 10:27:14 AM
LS:R21_25 FRAMING PLAN SECTOR 1
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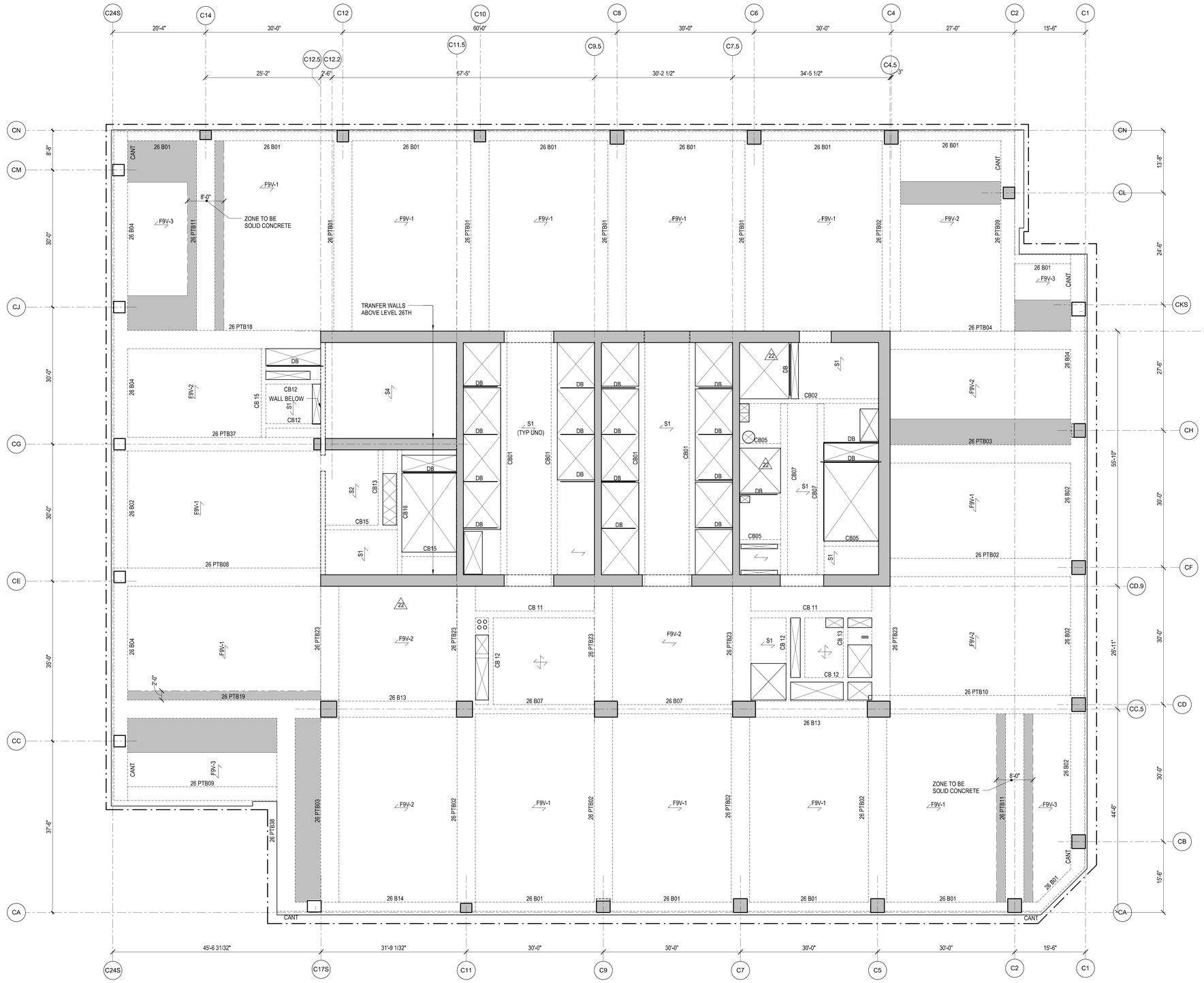

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 423'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
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3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
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5. SYMBOLS:
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6. NOTATION:
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Damian Titus
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APPROVED
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Date/Time: Aug 15, 2013 – 10:27 AM
NYC Development Hub

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-X2: STRUCTURE	02/01/2013
2	DI-X2: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number **HYE -TC -S1-2601**
Drawing Title

STATE OF NEW YORK
KYLE M. BRAUN
087847
LICENSED PROFESSIONAL ENGINEER

LEVEL 26 FRAMING PLAN SECTOR 1

Drawing Number **S1-2601**

B-Scan Drawing Number S-042.00 SHEET 30 OF 118

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S1-2601 LEVEL 26 FRAMING PLAN SECTOR 1
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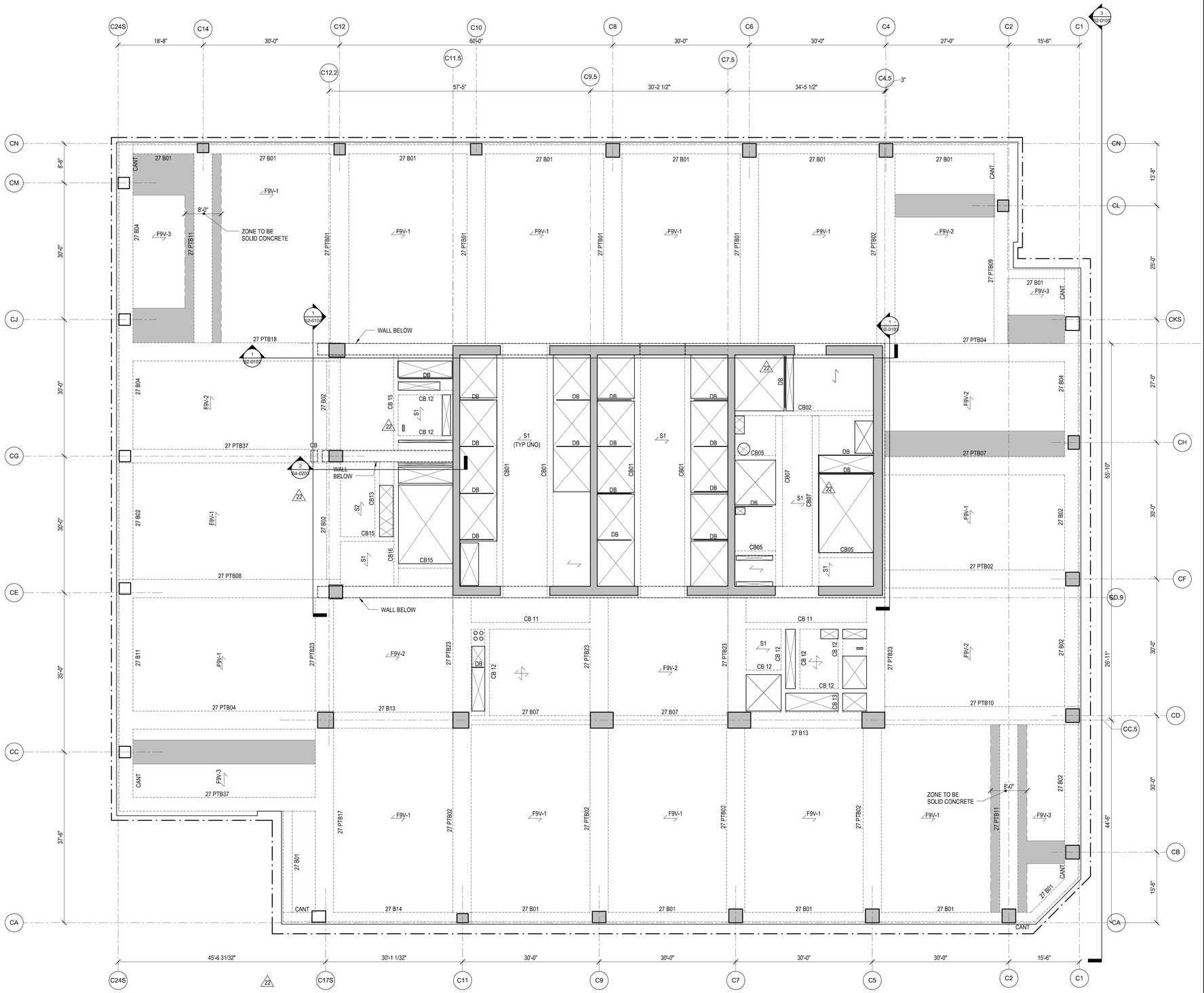

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 436'-6".
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2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
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   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

Damian Titus
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Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:27 AM
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HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY

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New York, NY 10023
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Oxford Properties Group
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New York, NY 10022
TEL: 212.986.7514 FAX: 212.986.7510

Construction Manager
Construction Manager Name
Address
Address
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Architect
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PCArchitects & Planning Consultants
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No.	Description	Date
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2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number **HYE -TC -S1-2701**
Drawing Title

LEVEL 27 FRAMING PLAN SECTOR 1

Drawing Number **S1-2701**
B-Scan Drawing Number S-043.00 SHEET 31 OF 118

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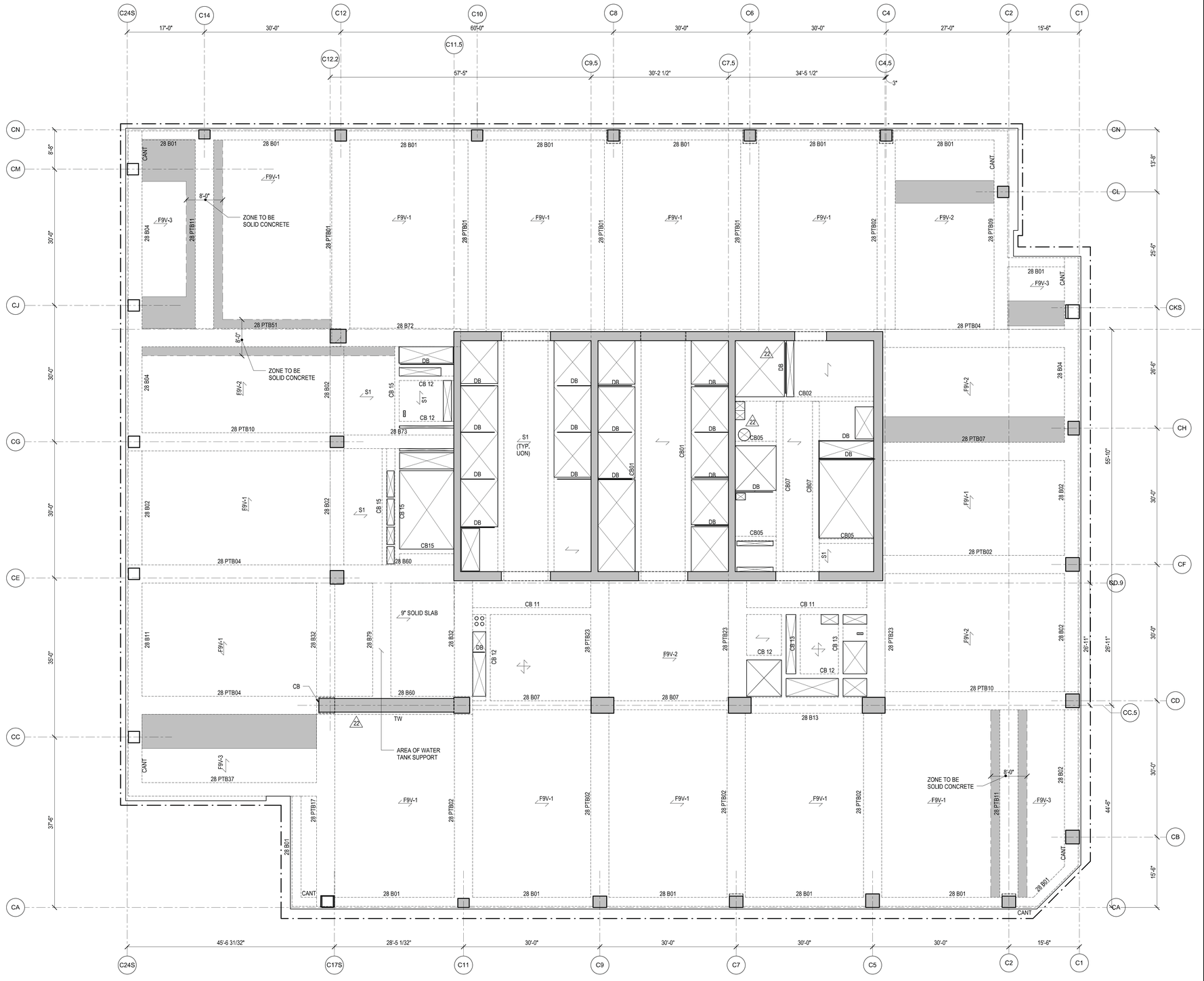
S1-2701 LEVEL 27 FRAMING PLAN SECTOR 1
2/15/2013 10:27:20 AM C:\Users\smalsbary\Documents\N1329.00-RevitRN1329.00 - TOWER C - smalsbar.rvt



NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 450'-0".
   X' INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
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6. NOTATION:

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1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number HYE -TC -S1-2801
Drawing Title

STATE OF NEW YORK
KYLE M. BRAUN
No. 087847
LICENSED PROFESSIONAL ENGINEER

LEVEL 28 FRAMING PLAN SECTOR 1

Drawing Number
S1-2801
B-Scan Drawing Number
S-044.00

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LEVEL 28 FRAMING PLAN SECTOR 1
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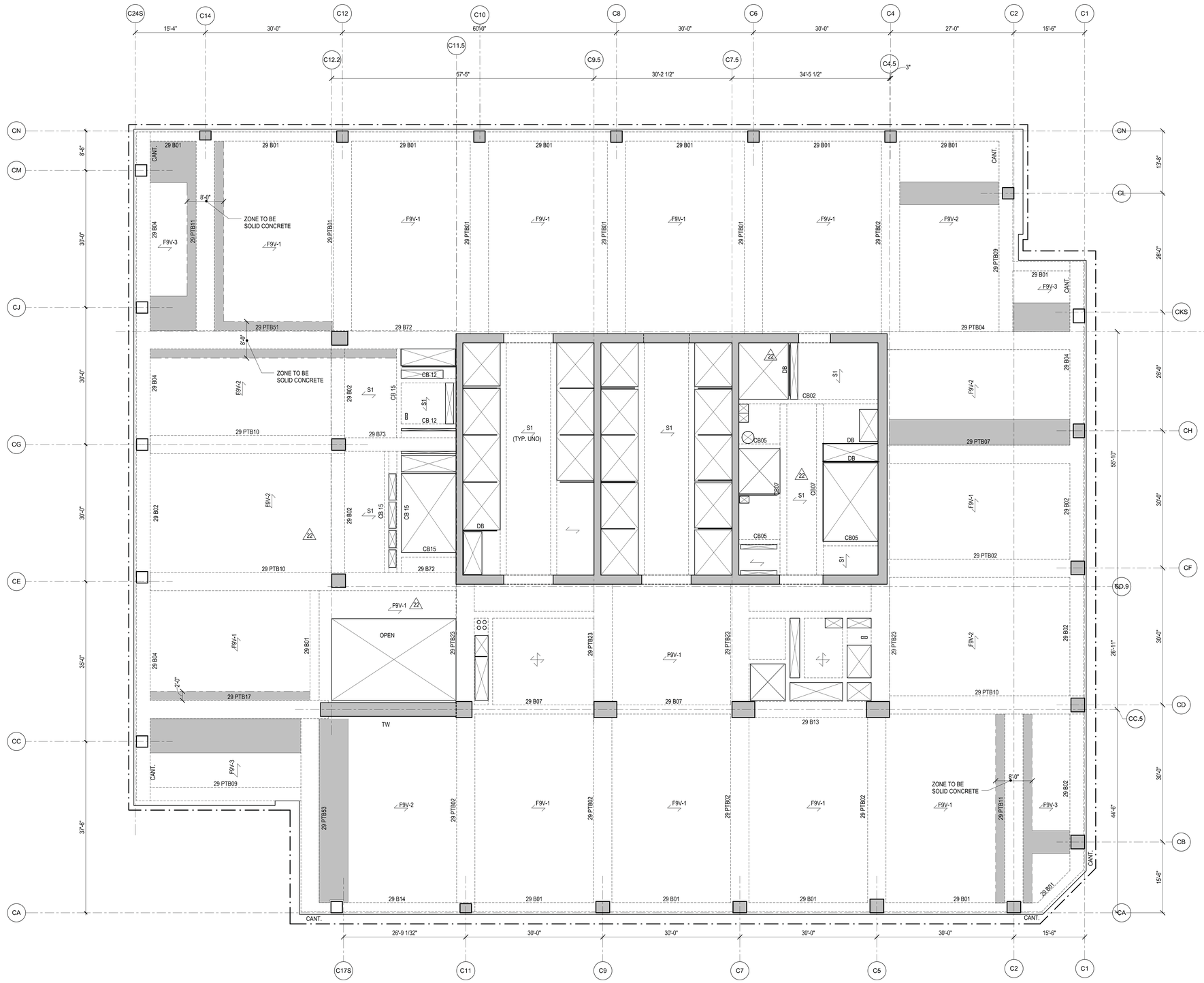

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Damian Titus
NYC Buildings
APPROVED
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Date/Time: Aug 15, 2013 – 10:27 AM
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1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

STATE OF NEW YORK
ALEX W. BRAZIL
025243-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-2901

Drawing Title

LEVEL 29 FRAMING PLAN SECTOR 1

Drawing Number

S1-2901

R.Koon Drawing Number

S-045.00

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S1-2901 L:\S-01_29 FRAMING PLAN SECTOR 1
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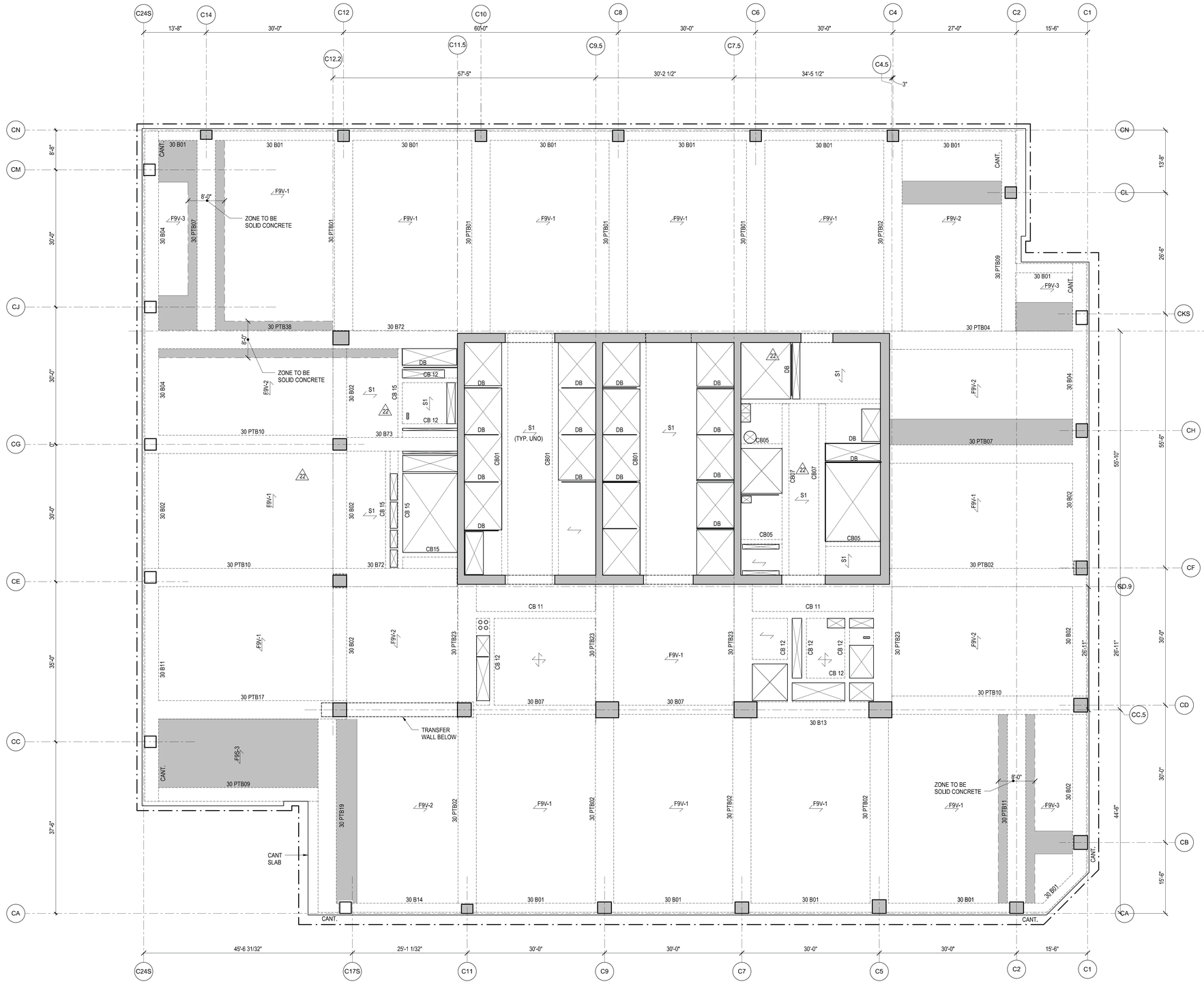

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1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S1-3001
Drawing Title

STATE OF NEW YORK · STEVE M. BRAIL · LICENSED PROFESSIONAL ENGINEER

LEVEL 30 FRAMING PLAN SECTOR 1

Drawing Number
S1-3001
B-Scan Drawing Number
S-046.00

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S1-3001 LEVEL 30 FRAMING PLAN SECTOR 1
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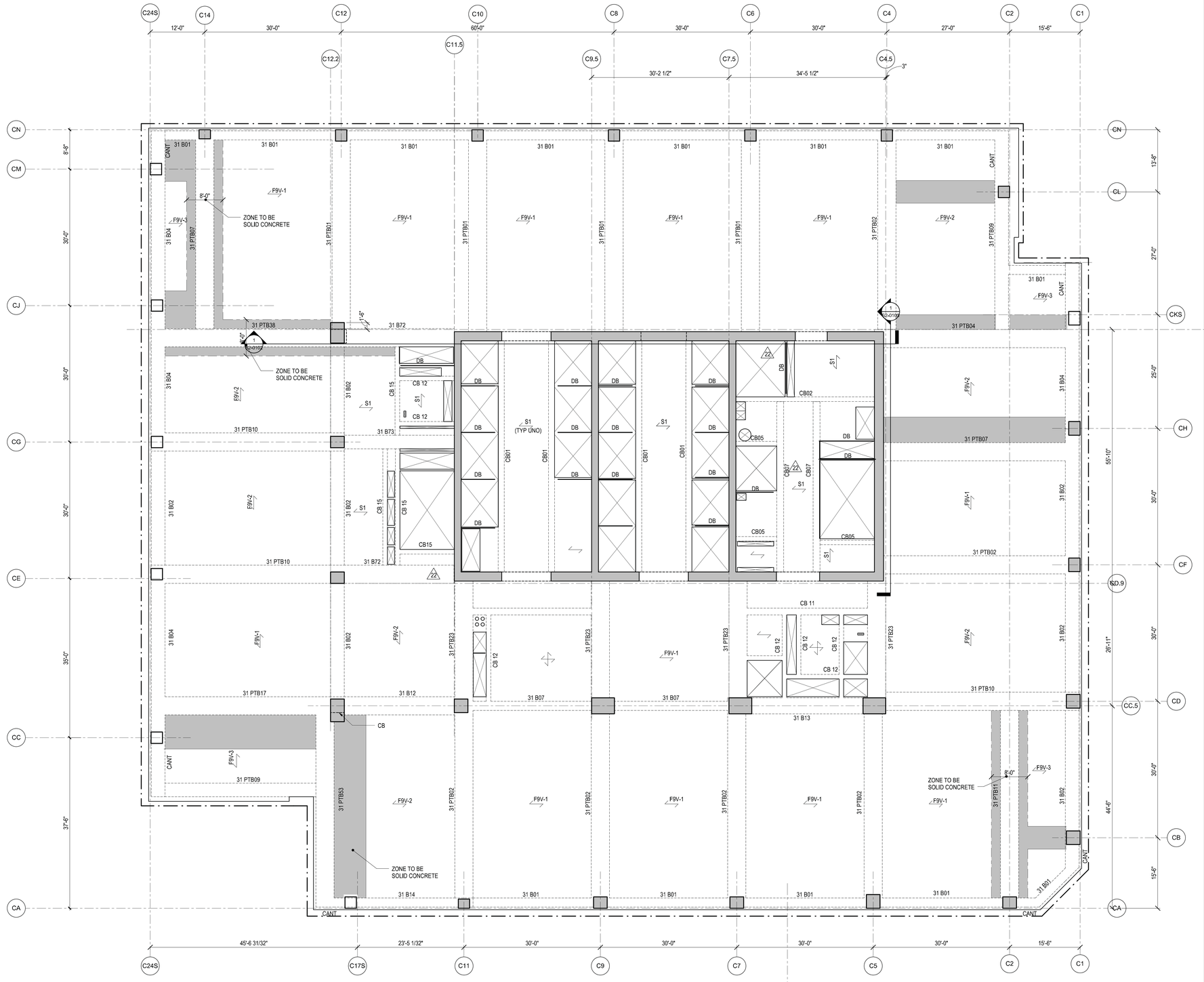

NOTES:

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Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S1-3101
Drawing Title

LEVEL 31 FRAMING PLAN SECTOR 1

Drawing Number S1-3101
B-Scan Drawing Number S-047.00

SHEET 35 OF 118

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S1-3101
2/15/2013 10:27:31 AM
LEVEL 31 FRAMING PLAN SECTOR 1
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HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY

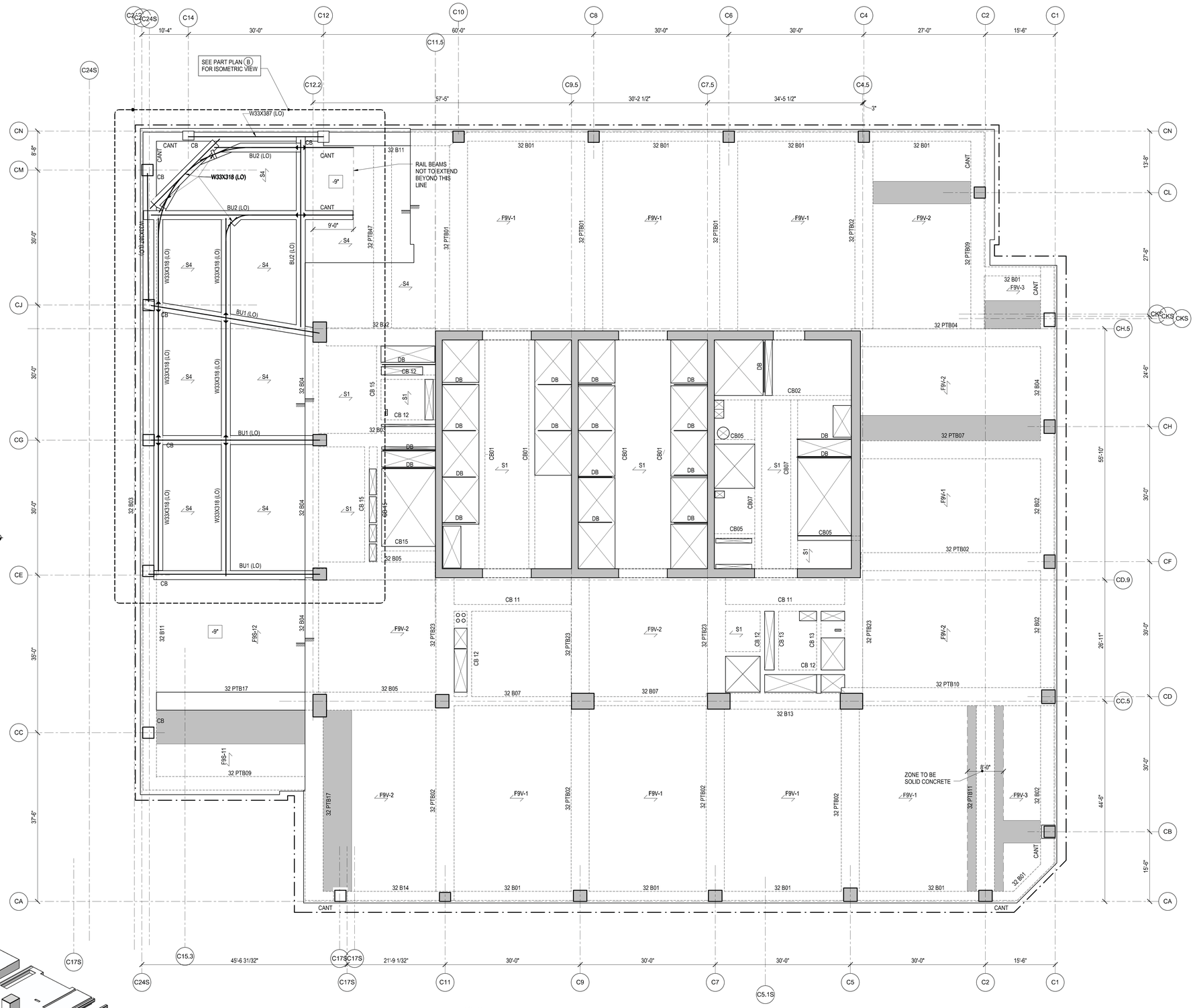
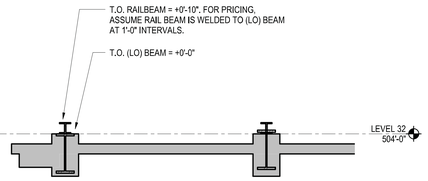


PLATE GIRDER SCHEDULE

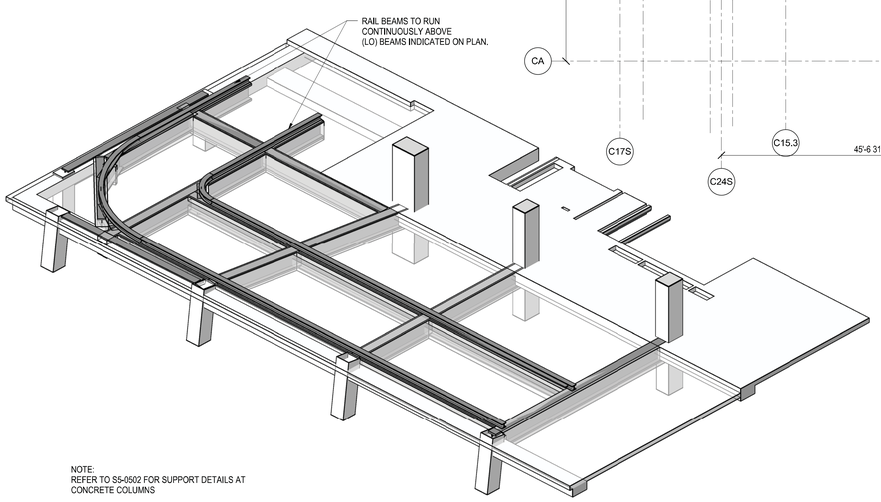
MARK	FLANGE bf (in)	FLANGE tf (in)	WEB tw (in)	WEB h (in)	TOTAL DEPTH (in)
BU1	18	3.5	1.5	29	36
BU2	20	4.0	1.5	28	36
RAIL BEAM	10	1.0	1.25	8	10

NOTES:

1. SIZE OF WELD ASSUMES SHIELDED METAL ARC WELDING (SMAW).
2. ALL WELDS ARE CONTINUOUS UON.
3. PLATE GIRDER DESIGNED FOR ASTM A572 (Fy = 50ksi) PLATE GRADE



A SECTION
1/4" = 1'-0"



NOTE:
REFER TO S5-0502 FOR SUPPORT DETAILS AT CONCRETE COLUMNS

B 3D VIEW

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 504'-0".
   X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S#_ INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   (X) INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:
   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
   CA/CB INDICATES COLUMN ABOVE/BELOW.
   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS
8. PROVIDE CONCRETE ENCASEMENT FOR ALL STEEL FRAMING BENEATH THE TERRACE. ENCASEMENT TO EXTEND 2" MIN BEYOND SIDE FACES AND BOTTOM FACE OF BEAMS.
9. ◀ INDICATES STEEL BEAM-TO-BEAM MOMENT CONNECTION. FOR PRICING, ASSUME BOLTED SHEAR CONNECTION BETWEEN WEBS AND FULL PENETRATION WELDS BETWEEN BEAM FLANGE AND GIRDER FLANGE.
10. WHERE STEEL BEAMS INTERFERE WITH PLACEMENT OF SLAB CONTINUOUS TOP REINFORCEMENT, ASSUME COUPLERS WELDED TO BEAM WEB FOR DEVELOPMENT OF REBAR.

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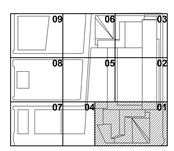
4	ISSUE FOR FILING	00/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S1-3201

Drawing Title

LEVEL 32 FRAMING PLAN SECTOR 1

Drawing Number

S1-3201

B-Scan Drawing Number

S-048.00

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S1-3201 L6-R3: 32 FRAMING PLAN SECTOR 1
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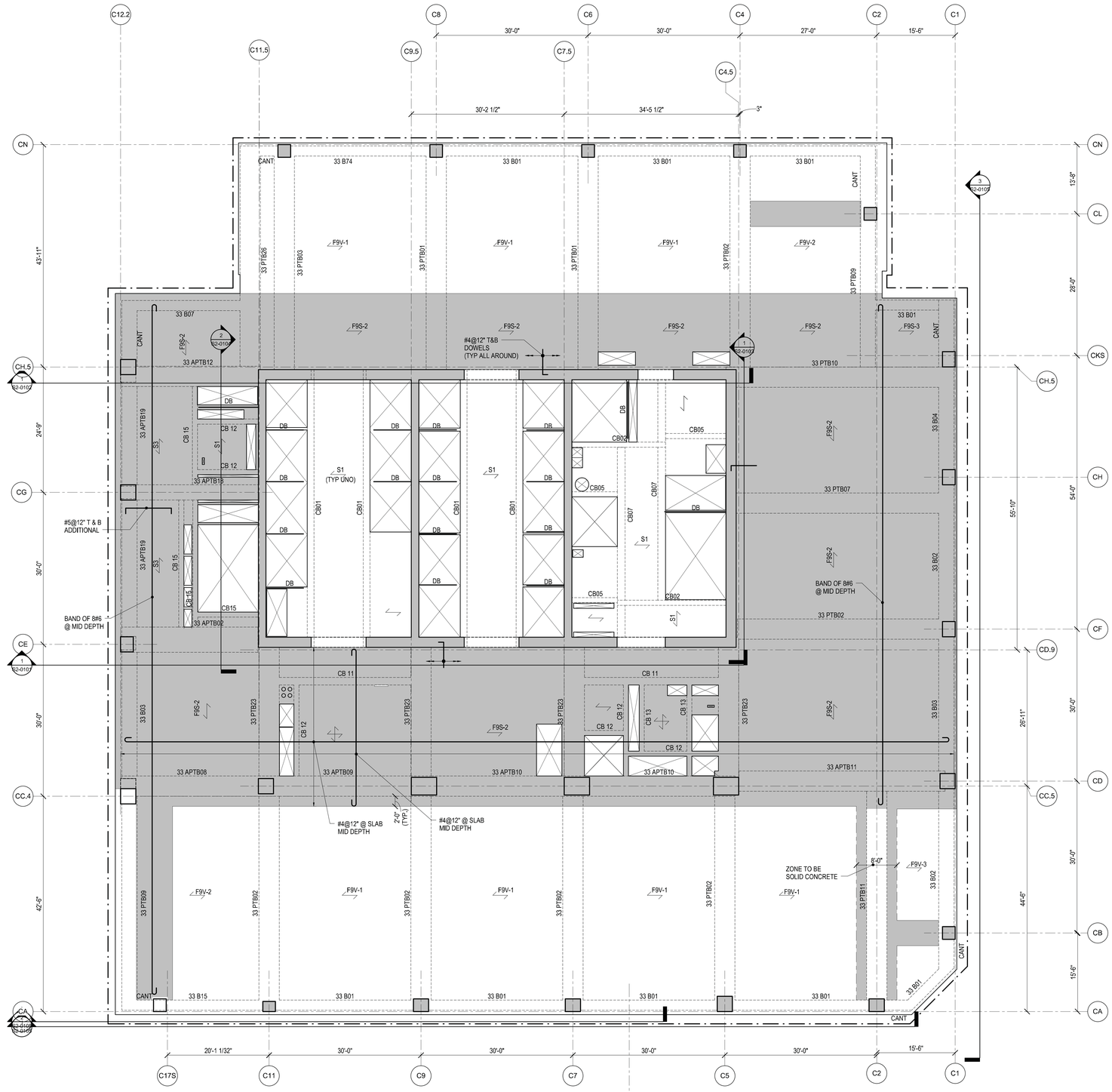

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 517'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.

2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.

   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.

3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 8,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.

4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

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FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:

   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.

   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS

6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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CA/CB	INDICATES COLUMN ABOVE/BELOW.
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HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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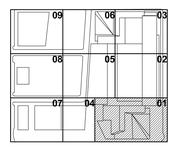
Key Plan



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Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK
STEVEN M. BRAZIL
082242-1
LICENSED PROFESSIONAL ENGINEER

Drawing Title
HYE -TC -S1-3301

LEVEL 33 FRAMING PLAN SECTOR 1

Drawing Number
S1-3301

R-Scan Drawing Number
S-049.00

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S1-3301 LS-R3: 33 FRAMING PLAN SECTOR 1
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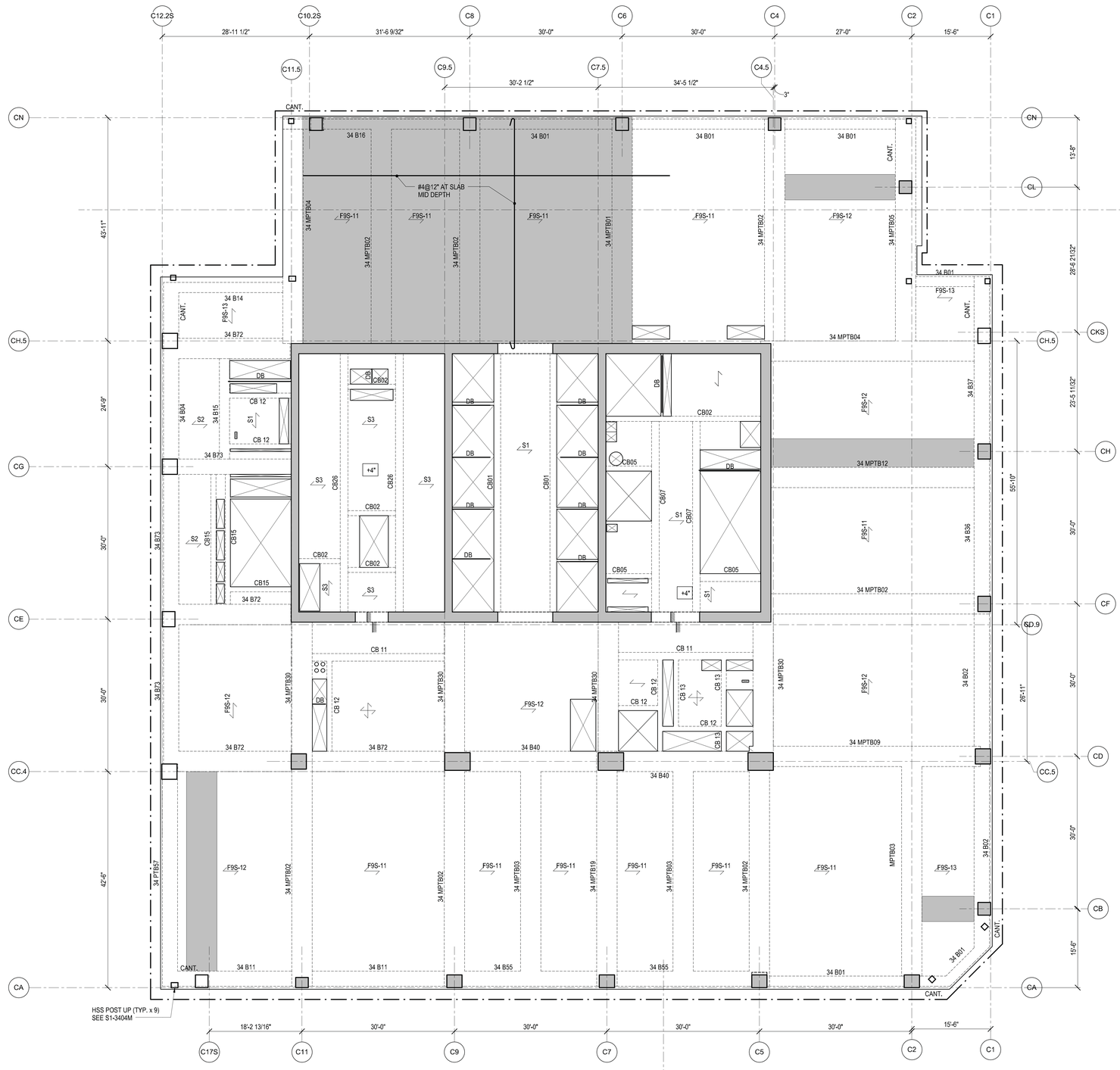

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 53'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.

2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.

   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.

3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 8,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.

4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:

   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.

   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS

6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED), REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
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PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK
KYLE M. BRAY
082842-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-3401

Drawing Title

LEVEL 34 FRAMING PLAN SECTOR 1

Drawing Number
S1-3401

R-Scan Drawing Number
S-050.00 SHEET 38 OF 118

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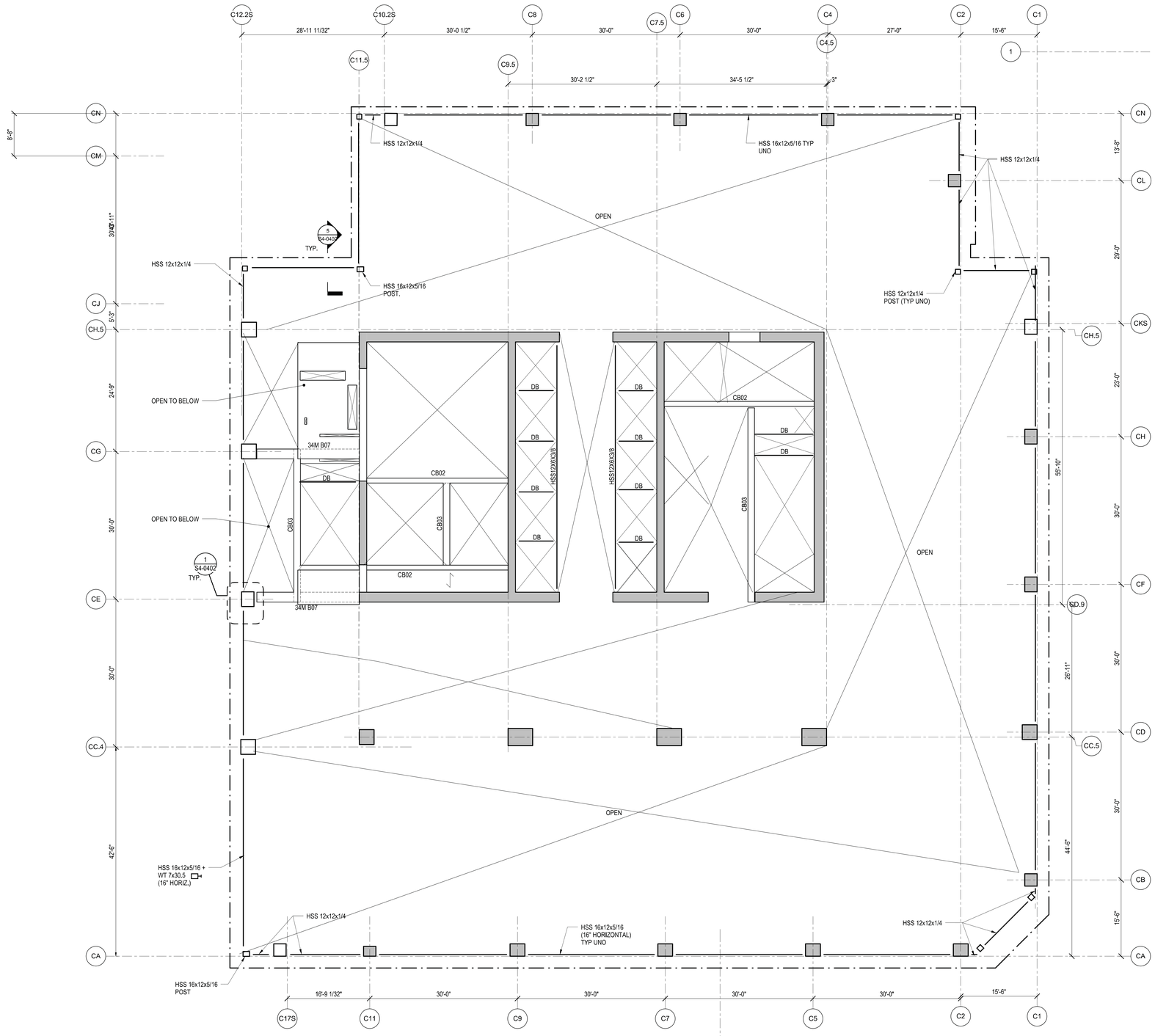

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 544'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.

2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.

   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.

3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000. PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.

4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:

   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.

   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS

6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
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PA/PB	INDICATES POST ABOVE/BELOW.
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TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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Key Plan

Issue Date:
Project No. 1776.10
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STATE OF NEW YORK
DAMIAN T. TITUS
025242-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-3401M
Drawing Title

LEVEL 34M FRAMING PLAN SECTOR 1

Drawing Number
S1-3401M

B-Scan Drawing Number
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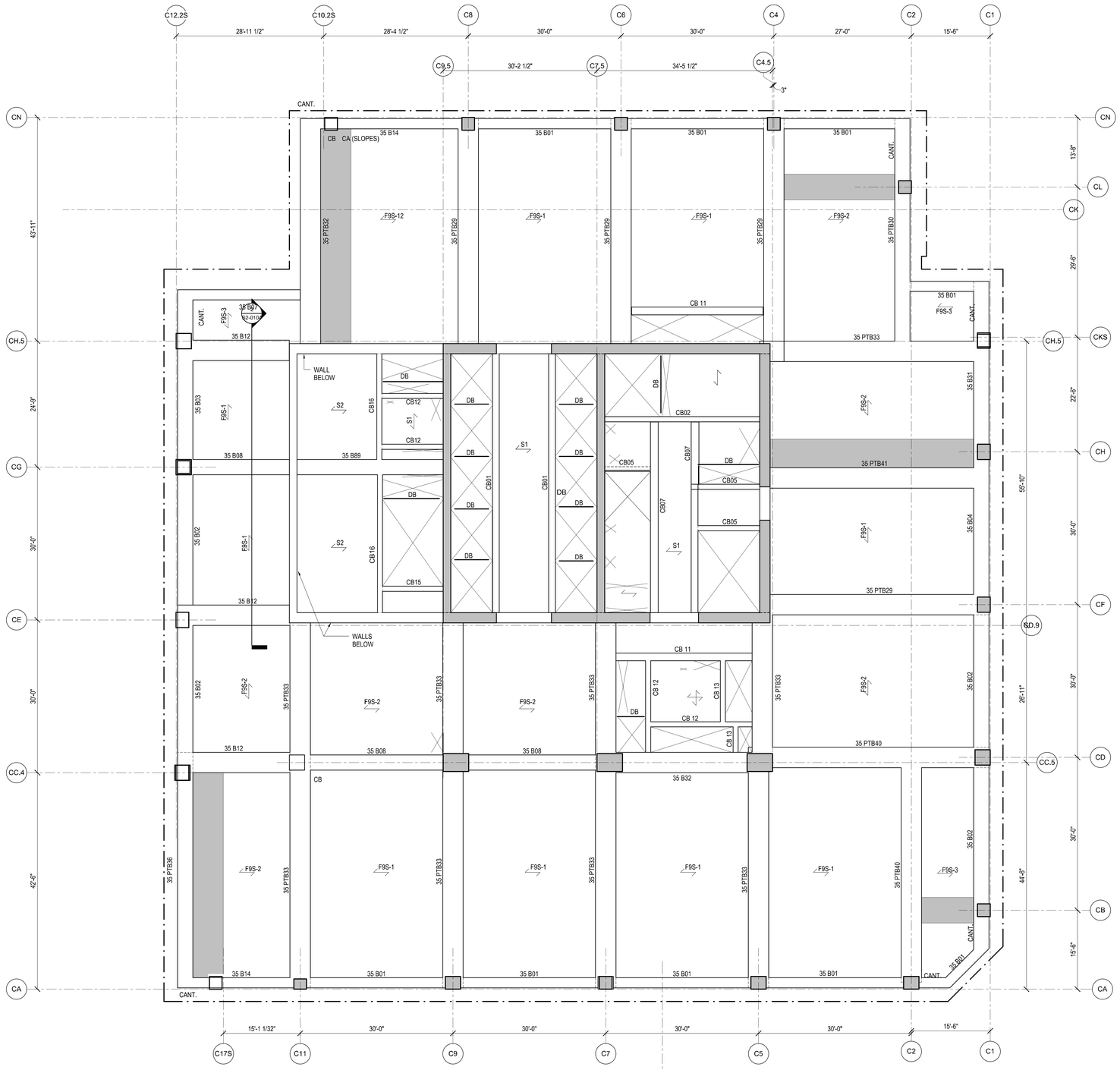

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 55'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.

2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
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5. SYMBOLS:

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6. NOTATION:

   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S8 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

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Jaros Baum & Bolles Consulting Engineers
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New York, NY 10013
TEL: 212.530.9300 FAX: 212.269.5894

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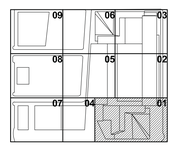
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK
STEVEN M. BRAZIL
022242-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-3501

Drawing Title

LEVEL 35 FRAMING PLAN SECTOR 1

Drawing Number
S1-3501

R-Scan Drawing Number
S-052.00

SHEET 40 OF 118

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S1-3501 LEVEL 35 FRAMING PLAN SECTOR 1
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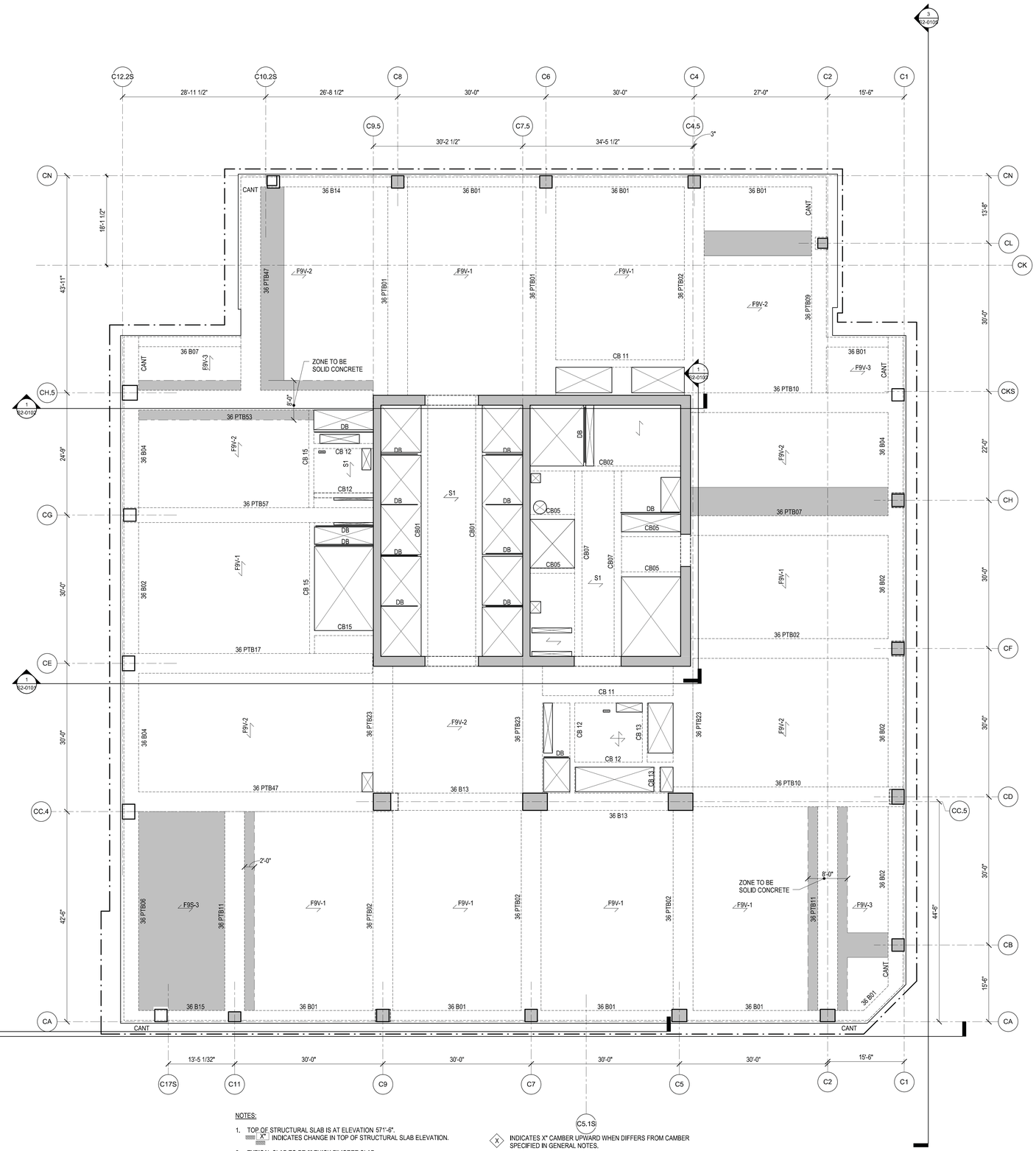

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 571'-6".
   X' INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.

2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.

   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.

3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.

4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:

   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   X" INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.

   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS

6. NOTATION:

   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.

   CA/CB INDICATES COLUMN ABOVE/BELOW.
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   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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Under Directive 2 of 1975
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Key Plan

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STATE OF NEW YORK
STEVEN M. BRAZIL
022242-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-3601
Drawing Title

LEVEL 36 FRAMING PLAN SECTOR 1

Drawing Number
S1-3601

R-Scan Drawing Number
S-053.00

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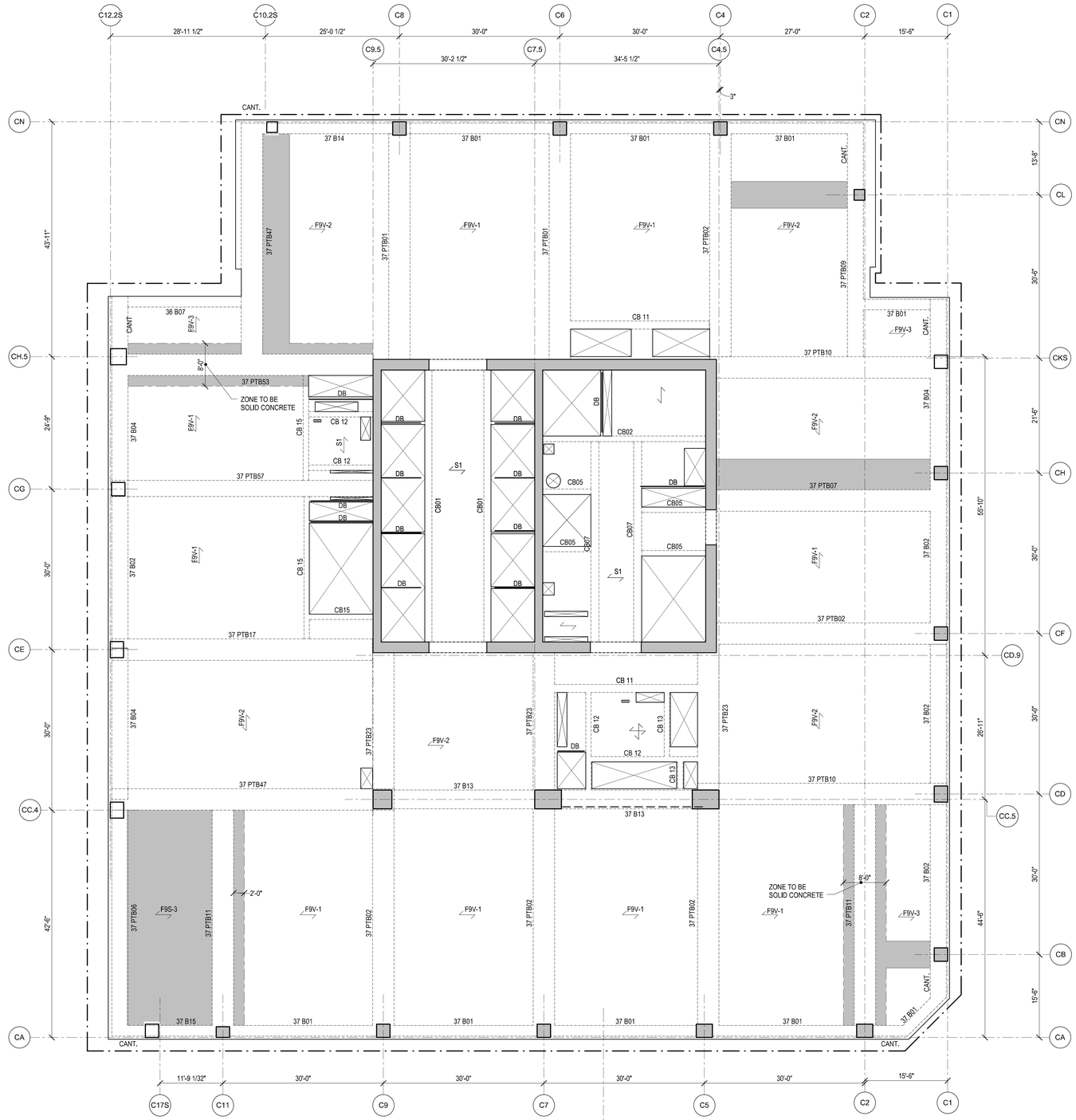

NOTES:

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CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

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   INDICATES STEP IN SLAB
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Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

STATE OF NEW YORK · STEVEN M. BRAZIL · 065242-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-3701

Drawing Title

LEVEL 37 FRAMING PLAN SECTOR 1

Drawing Number

S1-3701

R.Scan Drawing Number

S-054.00 SHEET 42 OF 118

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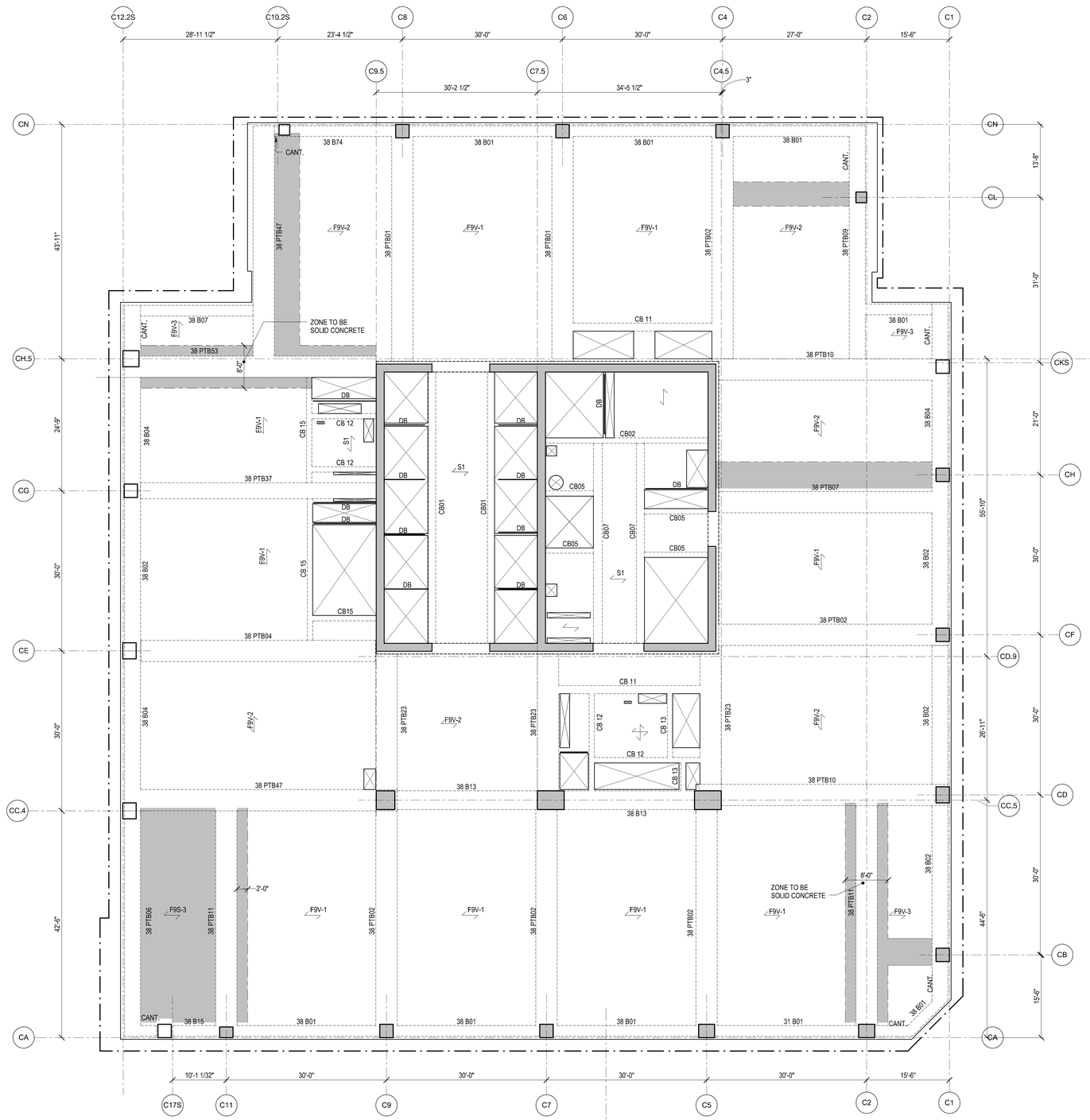

NOTES:

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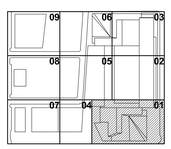
Key Plan



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HYE -TC -S1-3801

Drawing Title

LEVEL 38 FRAMING PLAN SECTOR 1

Drawing Number

S1-3801

B-Scan Drawing Number

S-055.00 SHEET 43 OF 118

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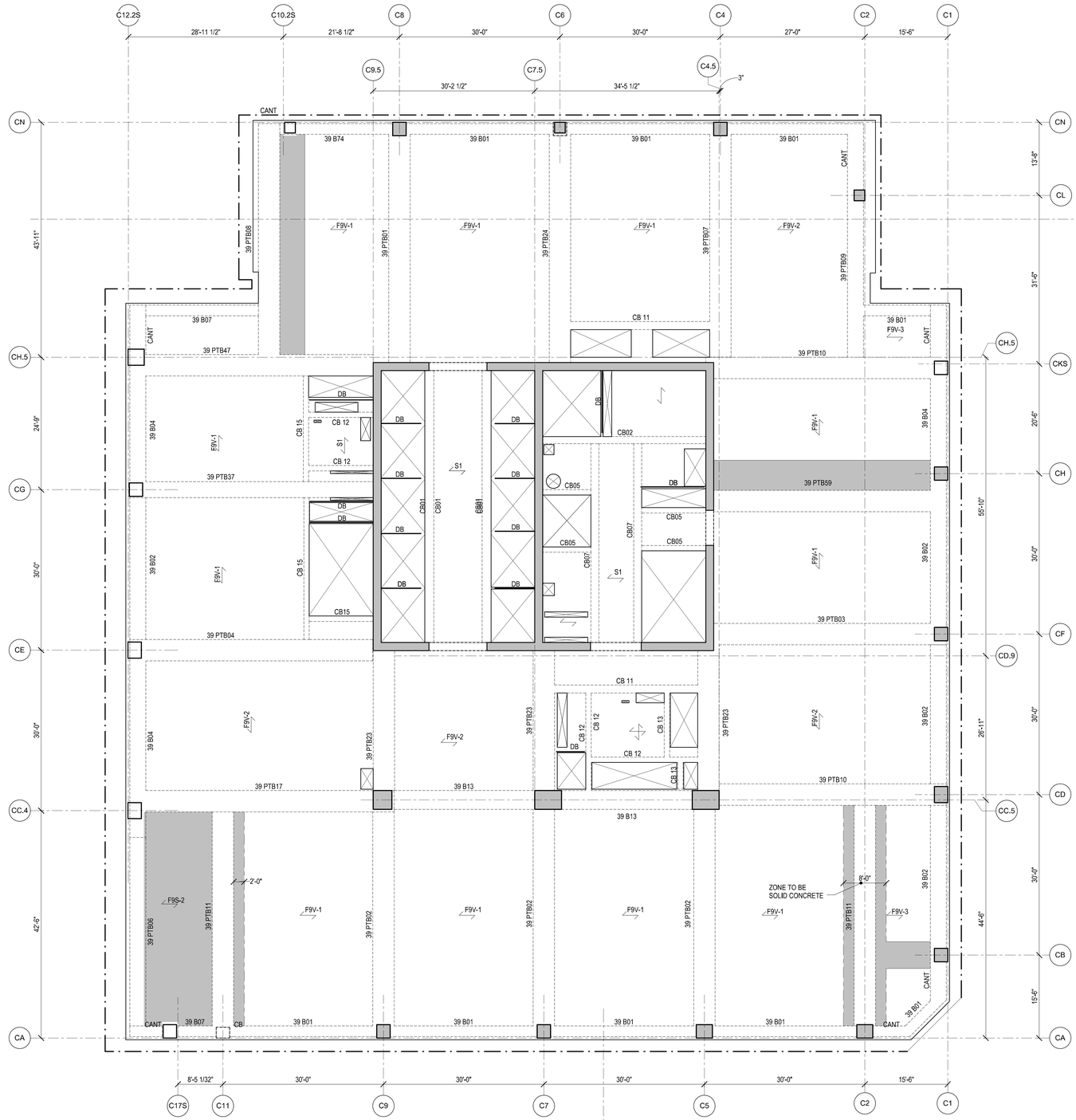

NOTES:

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2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
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5. SYMBOLS:
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   C5.1S
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   INDICATES STEP IN SLAB
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6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S8 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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LEVEL 39 FRAMING PLAN SECTOR 1

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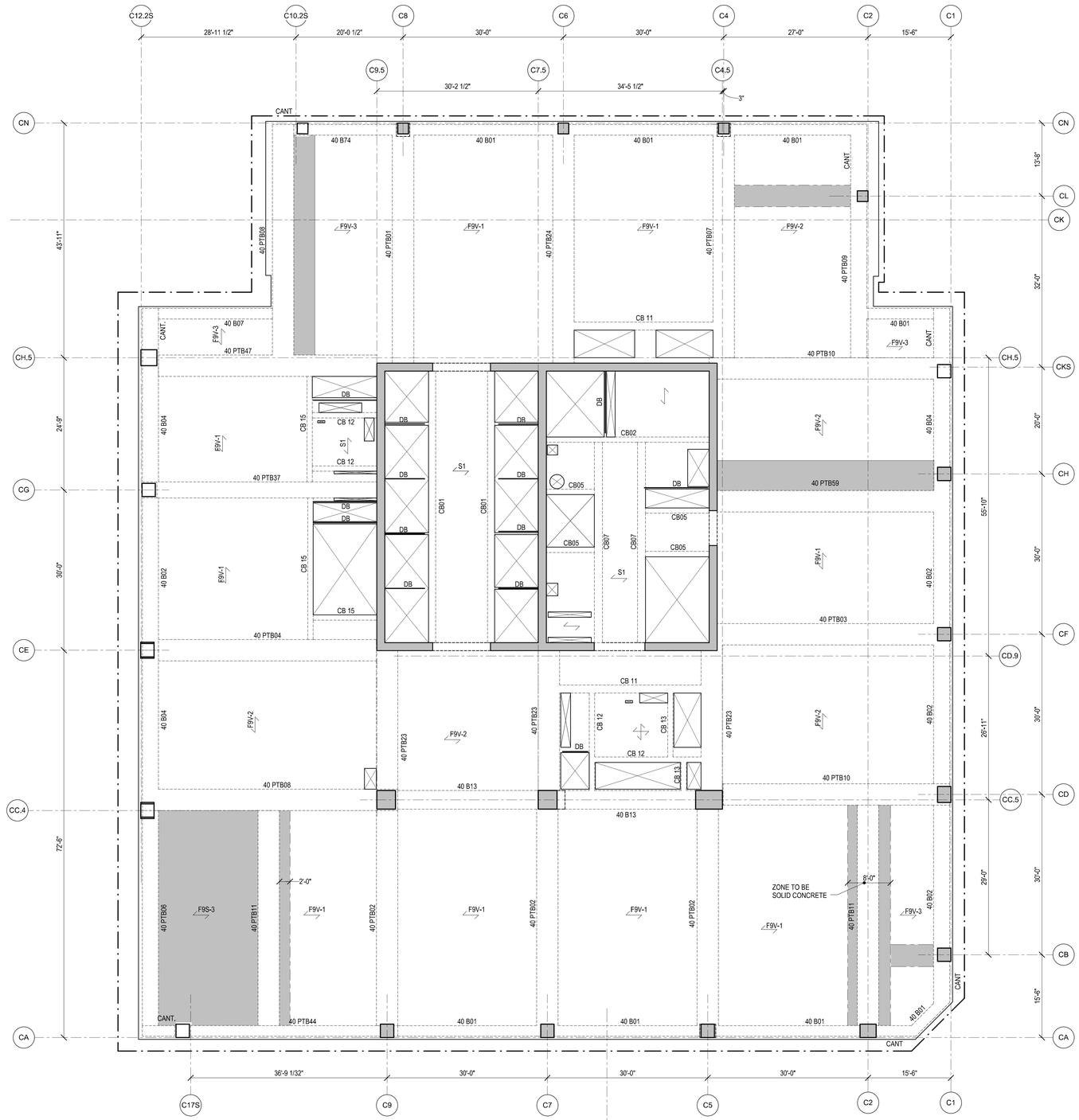

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 625'-6".
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   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.

   CA/CB INDICATES COLUMN ABOVE/BELOW.
   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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NEW YORK, NY

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PCArchitects & Planning Consultants
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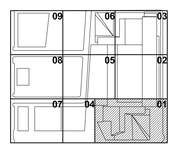
No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-02: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

STATE OF NEW YORK
ANTHONY P. TOMASETTI
No. 082843-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-4001

Drawing Title

LEVEL 40 FRAMING PLAN SECTOR 1

Drawing Number

S1-4001

B.Scan Drawing Number

S-057.00 SHEET 45 OF 118

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S1-4001
2/15/2013 10:28:07 AM
LEVEL 40 FRAMING PLAN SECTOR 1
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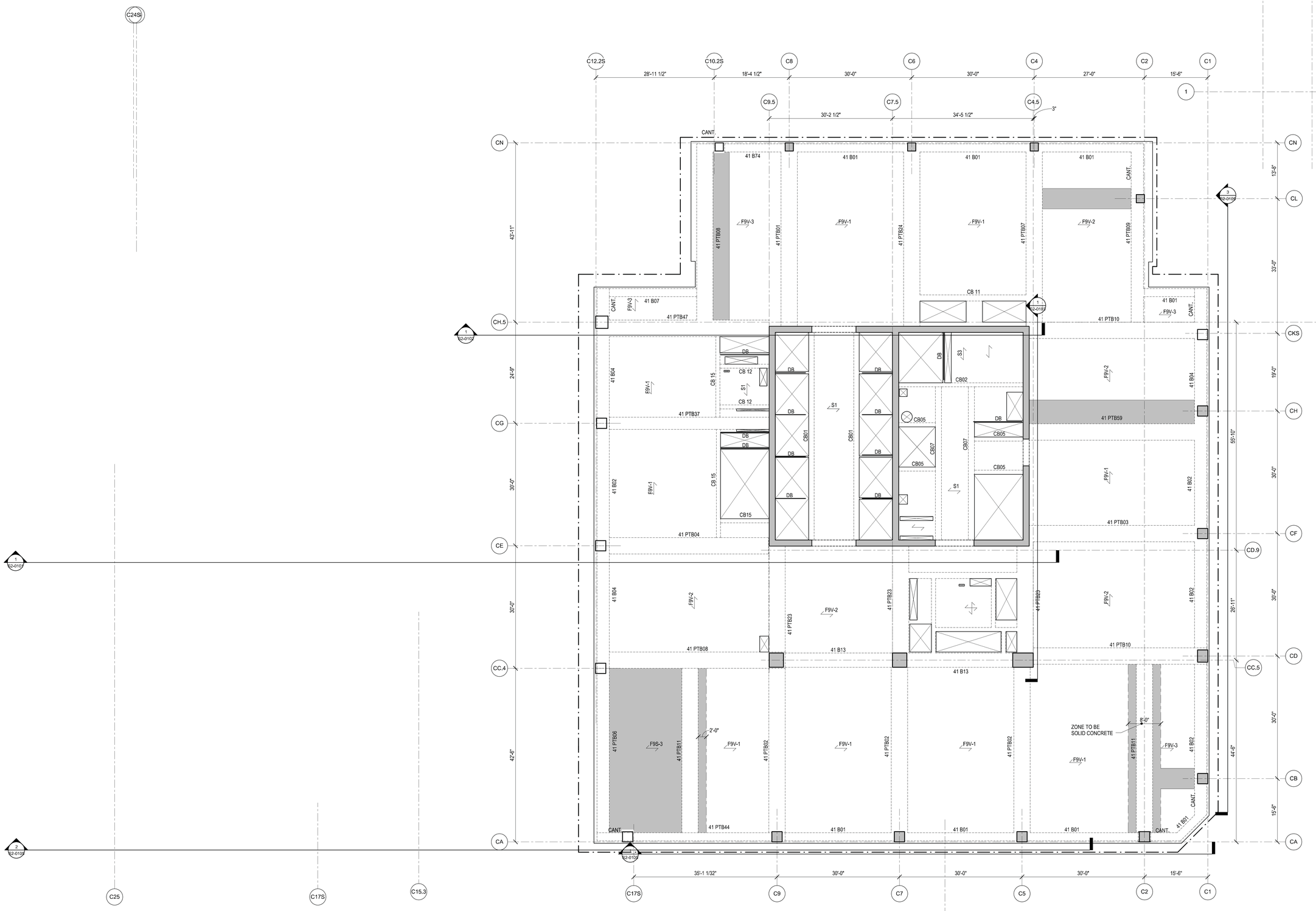

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 639'-0'.
   X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.

   S#_ INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000. PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S5 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:

   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.

   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

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   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.
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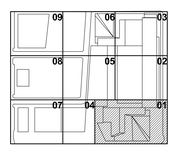
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S1-4101

Drawing Title

LEVEL 41 FRAMING PLAN SECTOR 1

Drawing Number

S1-4101

B-Scan Drawing Number

S-058.00 SHEET 46 OF 118

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S1-4101
2/15/2013 10:28:10 AM
LEVEL 41 FRAMING PLAN SECTOR 1
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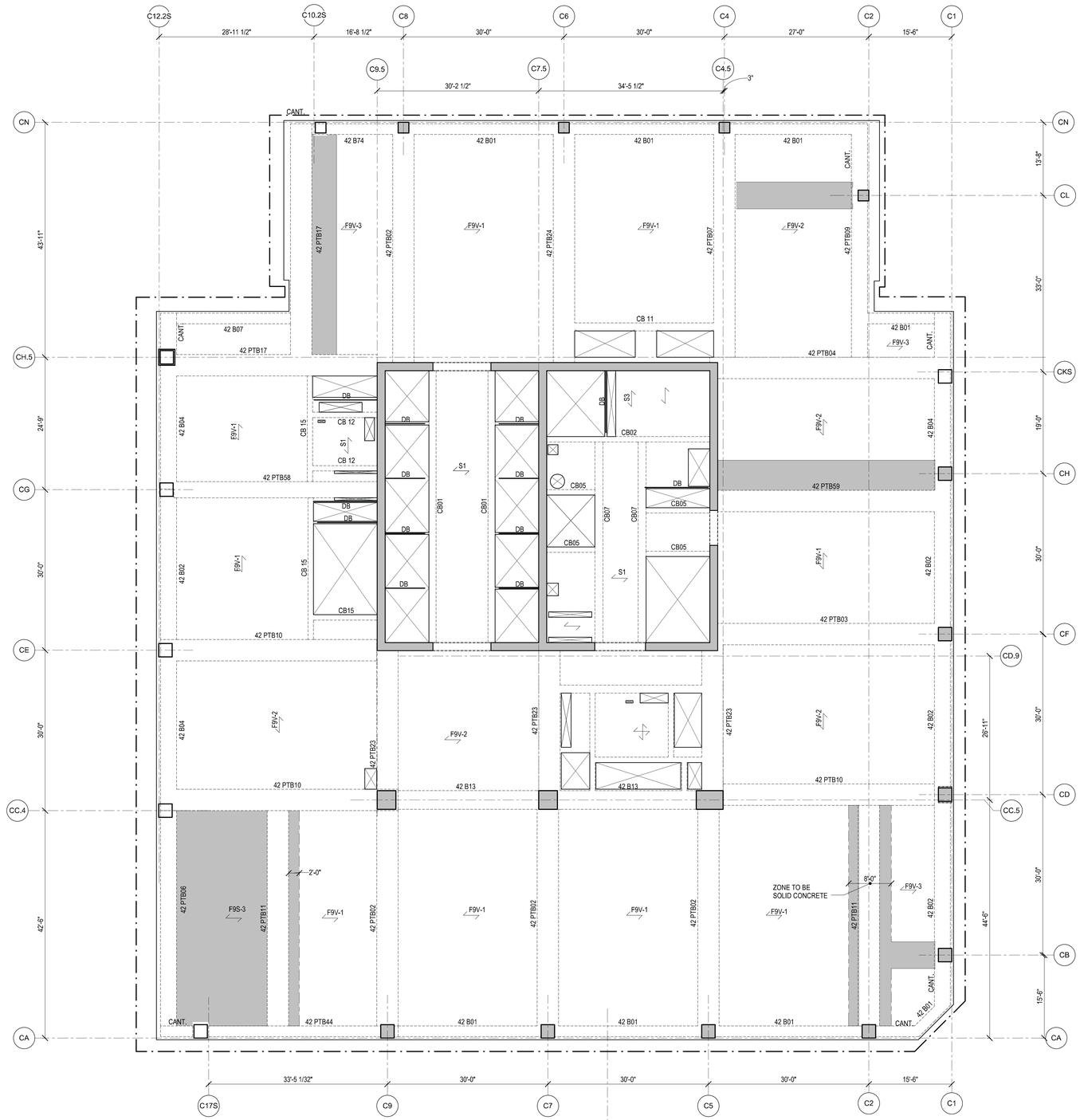

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 652'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.

2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.

   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.

3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.

4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:

   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.

   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS

6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB..	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x8x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
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HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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New York, NY 10013
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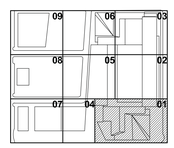
No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date:
Project No. 1776.10
Drawn By
Sheet Number
HYE -TC -S1-4201
Drawing Title

STATE OF NEW YORK · HYE M. BRAUN · LICENSED PROFESSIONAL ENGINEER

LEVEL 42 FRAMING PLAN SECTOR 1

Drawing Number
S1-4201
B-Scan Drawing Number
S-059.00

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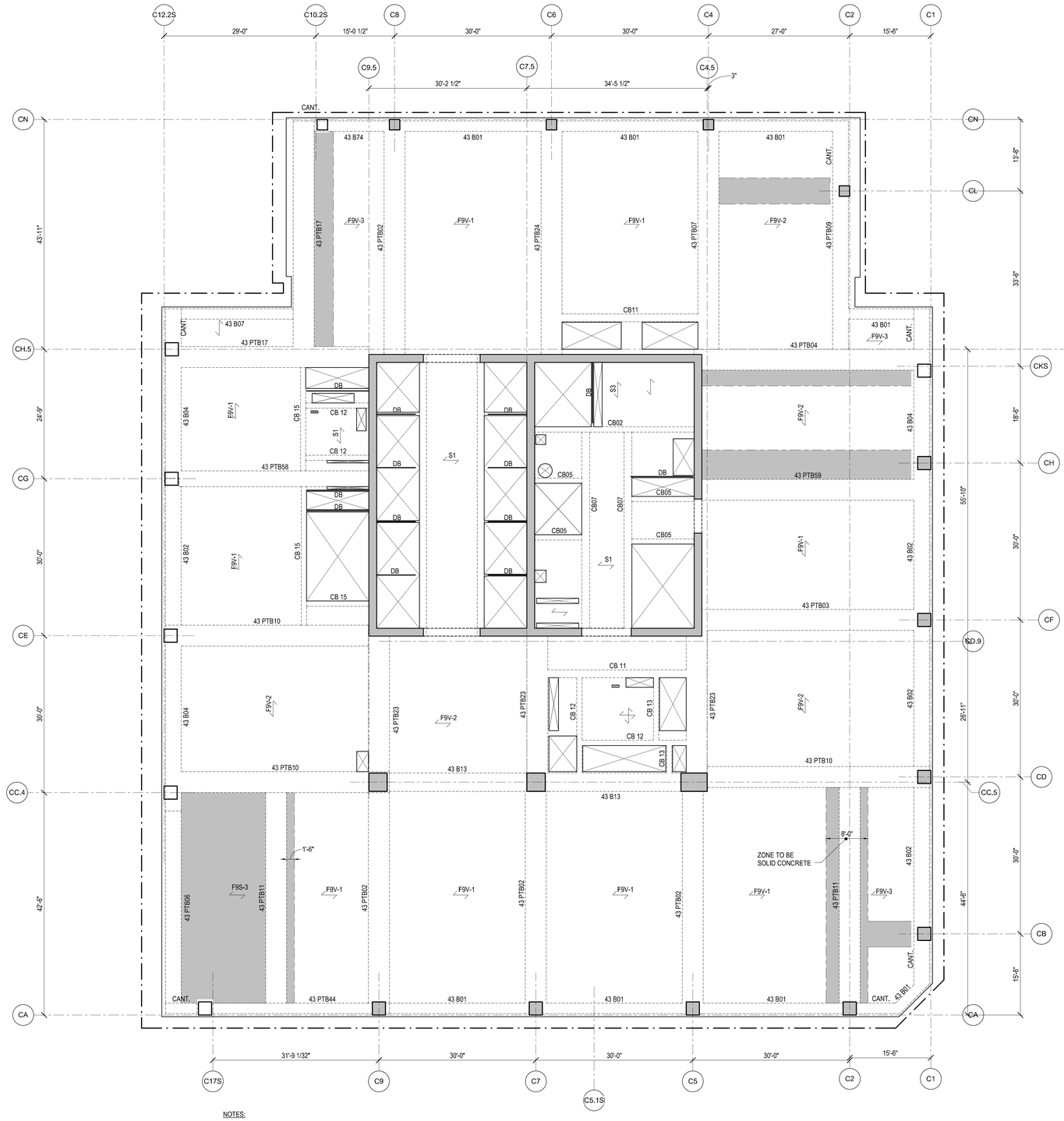

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 666'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000,PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
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STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
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   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
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6. NOTATION:

XB..	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
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HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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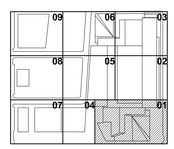
No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	09/17/2012

Key Plan



Issue Date:
Project No. 1776.10
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Sheet Number HYE -TC -S1-4301
Drawing Title

LEVEL 43 FRAMING PLAN SECTOR 1

Drawing Number
S1-4301
B-Scan Drawing Number
S-060.00

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S1-4301 LEVEL 43 FRAMING PLAN SECTOR 1
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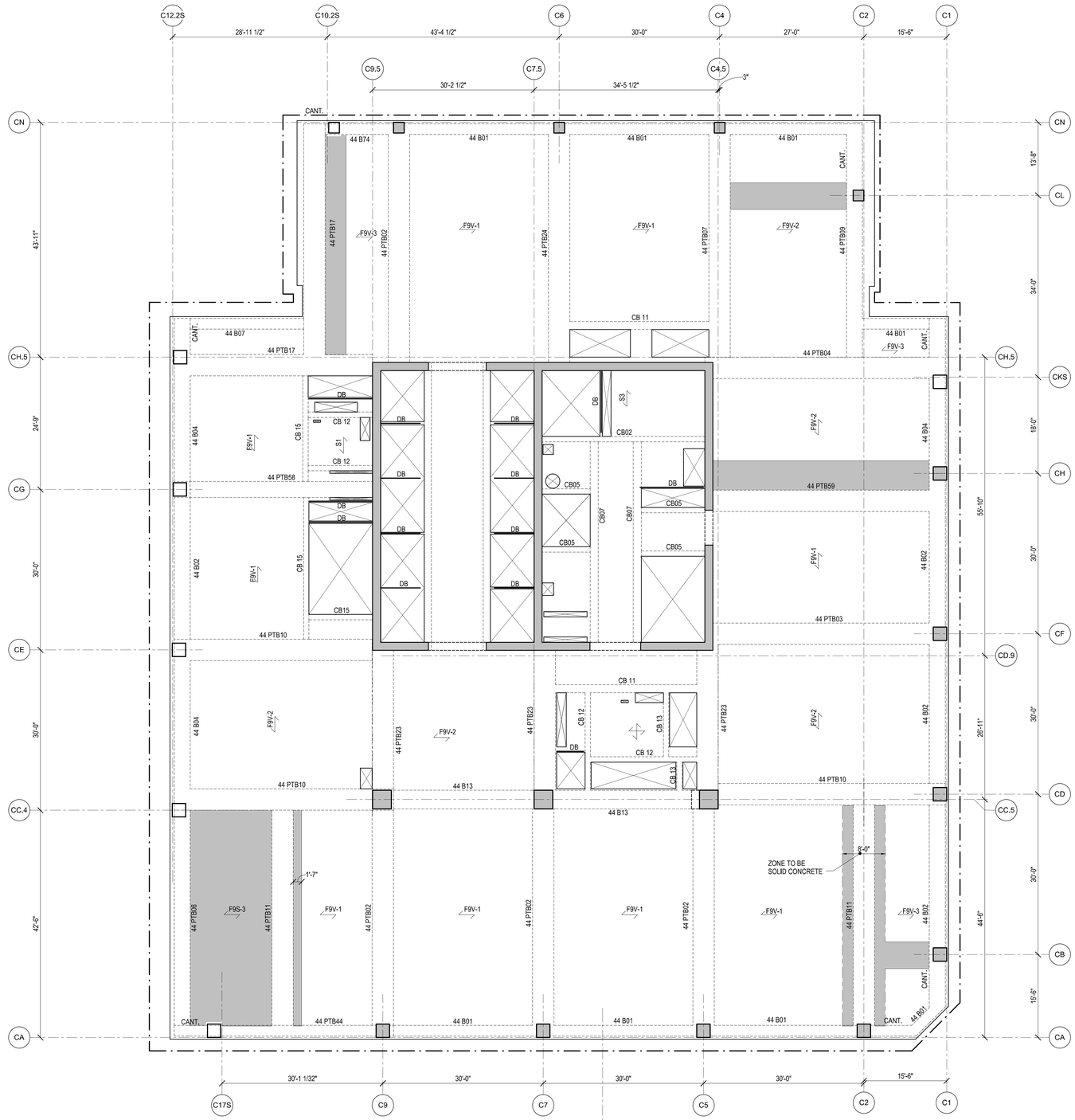

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 679'-6".
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2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
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6. NOTATION:

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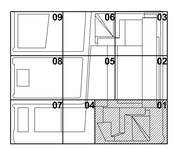
Key Plan



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KYLE M. BRAIL
087847
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-4401

Drawing Title

LEVEL 44 FRAMING PLAN SECTOR 1

Drawing Number

S1-4401

B-Scan Drawing Number

S-061.00 SHEET 49 OF 118

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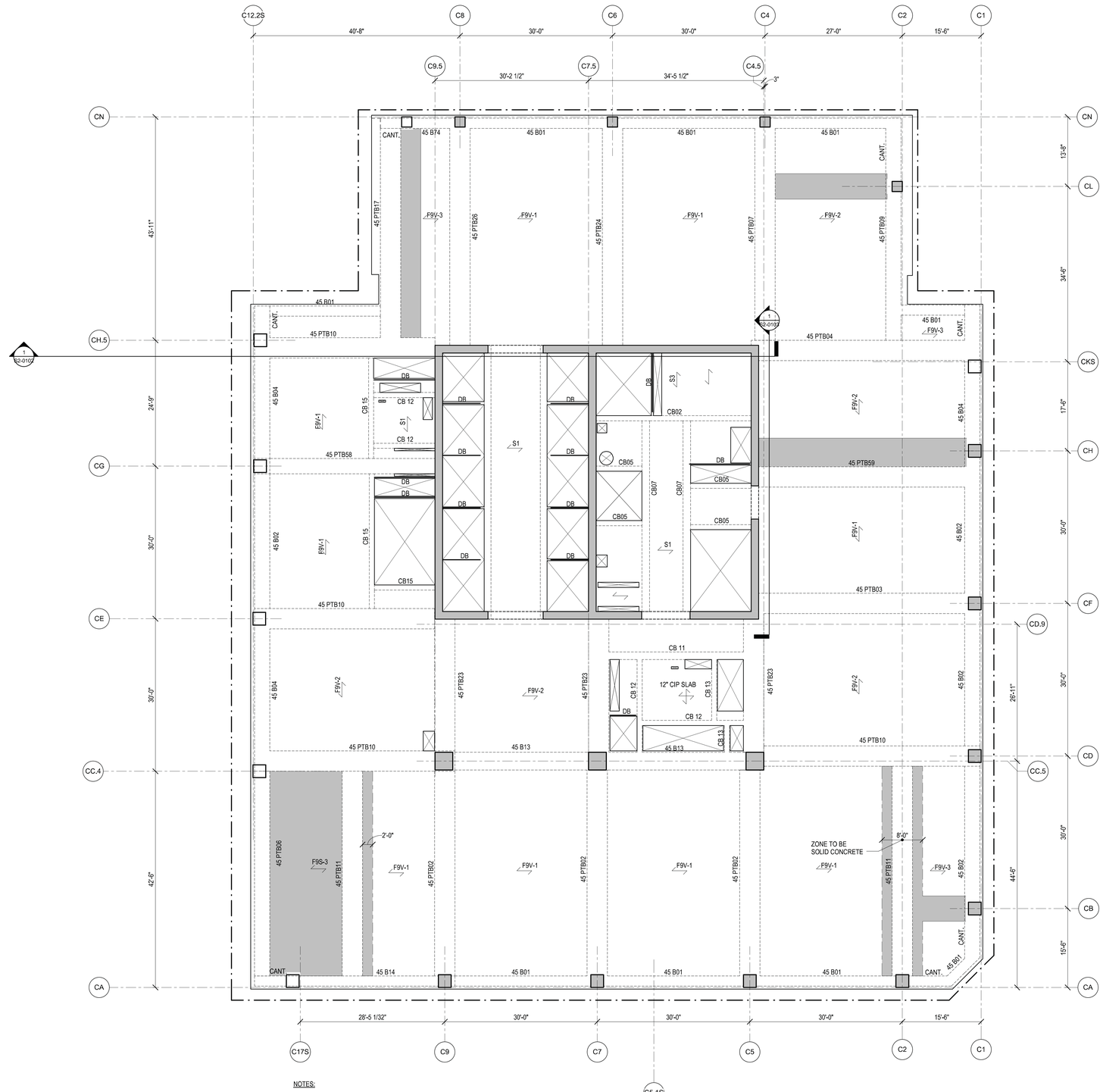
2/15/2013 10:28:18 AM
L:\R\D 44 FRAMING PLAN SECTOR 1
C:\Users\aslaney\Documents\N11329.00-Revit\N11329.00 - TOWER C - armcsaf.rvt



NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 693'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.
3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:
   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.
   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.
   INDICATES STEP IN SLAB
   INDICATES CHANGE IN SLAB THICKNESS
6. NOTATION:

XB...	INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
XPTB...	INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.
DB...	INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.
CA/CB	INDICATES COLUMN ABOVE/BELOW.
PA/PB	INDICATES POST ABOVE/BELOW.
HA/HB	INDICATES HANGER ABOVE/BELOW.
TW	INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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Address
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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S1-4501
Drawing Title

STATE OF NEW YORK
KYLE M. BRAUN
082842
LICENSED PROFESSIONAL ENGINEER

LEVEL 45 FRAMING PLAN SECTOR 1

Drawing Number
S1-4501
R-Scan Drawing Number
S-062.00

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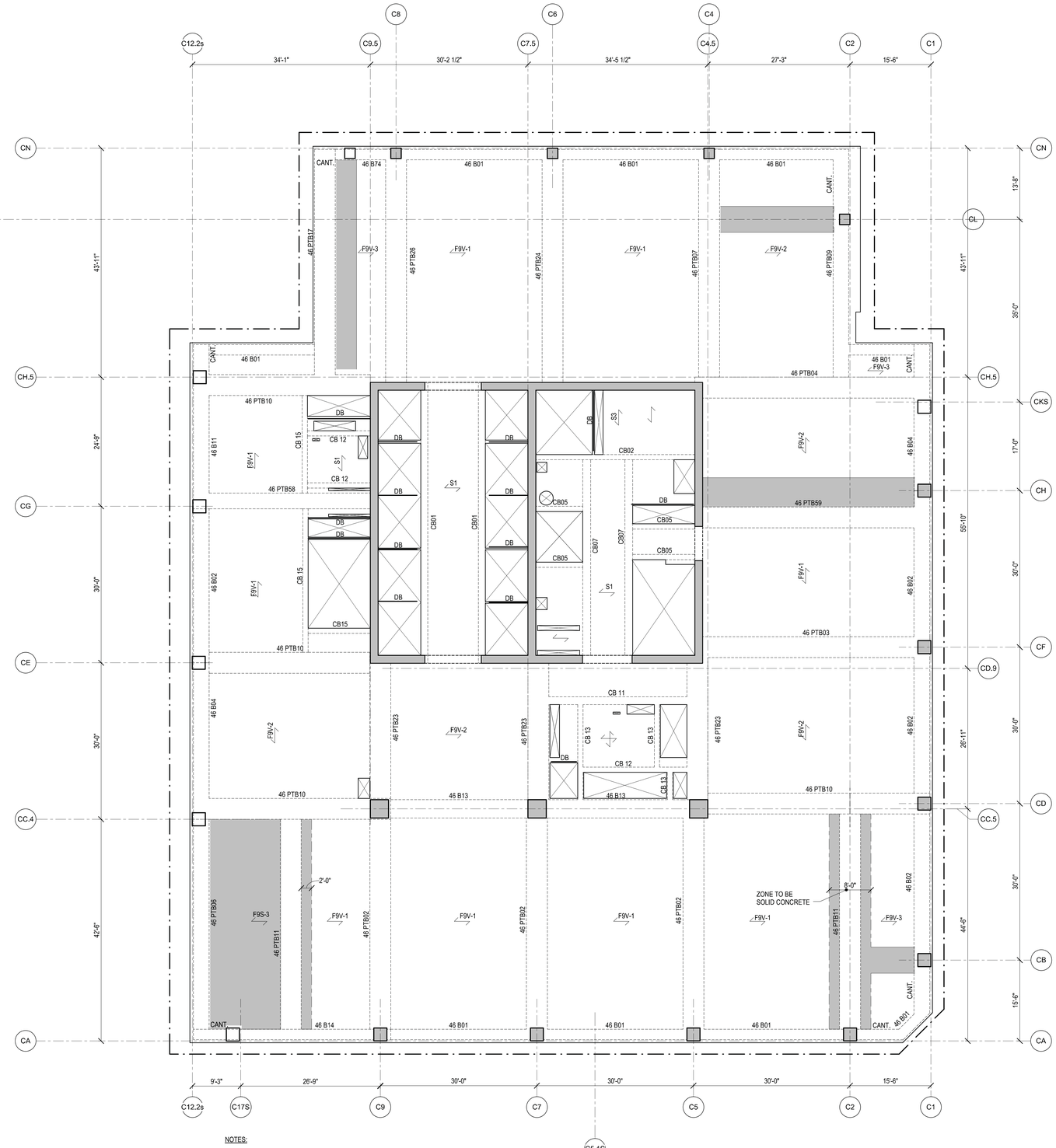

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 706'-6".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
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3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000 PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.
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CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-02: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

STATE OF NEW YORK · STEVEN M. BAER · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-4601

Drawing Title

LEVEL 46 FRAMING PLAN SECTOR 1

Drawing Number

S1-4601

B/Scan Drawing Number

S-063.00 SHEET 51 OF 118

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S1-4601 LEVEL 46 FRAMING PLAN SECTOR 1
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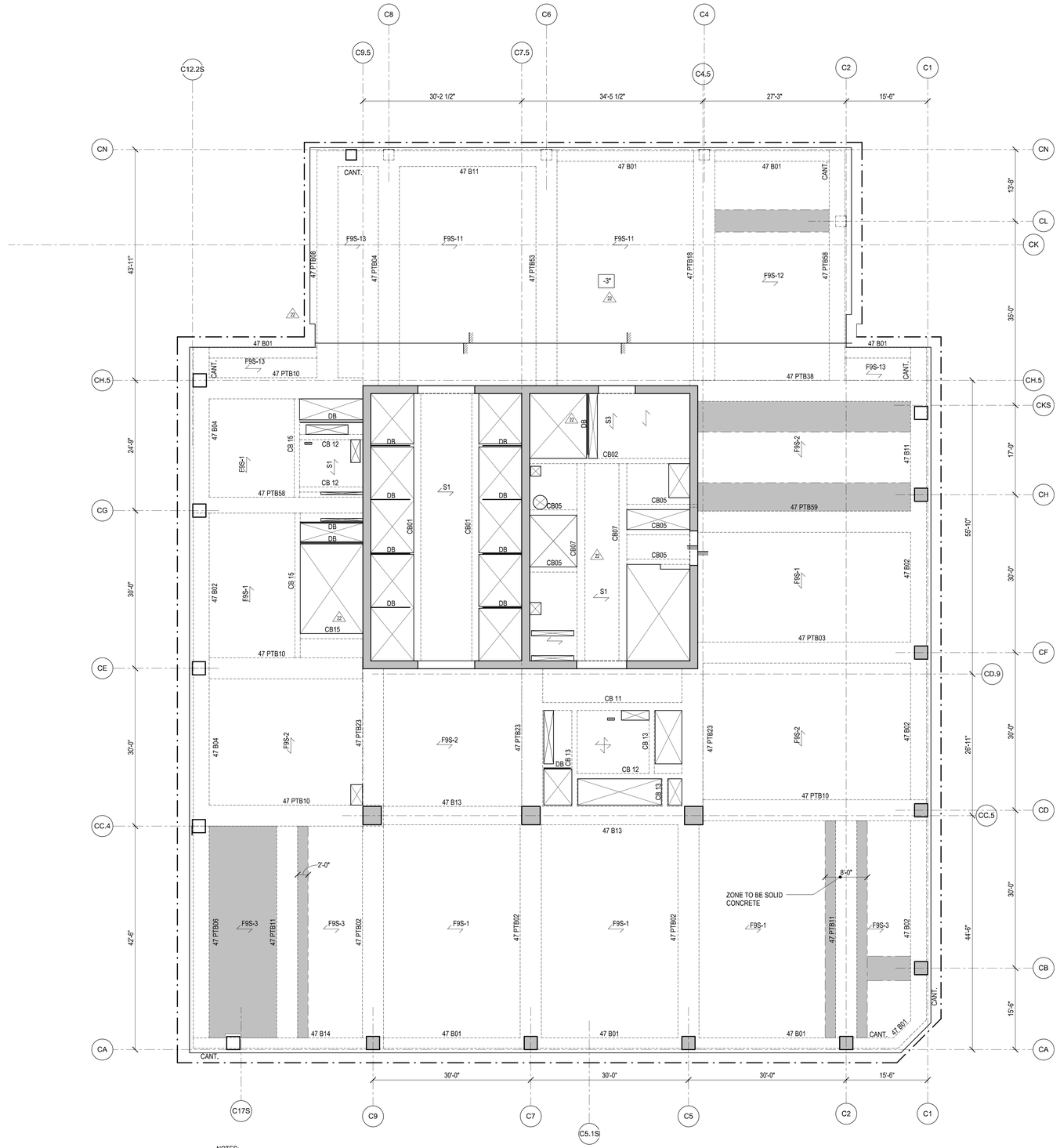

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 720'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	D\422: STRUCTURE	02/01/2013
2	D\412: STRUCTURE	12/14/2012
1	DOB Permit Set	08/17/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By
Sheet Number

STATE OF NEW YORK
JOHN M. BRAIL
No. 048331
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-4701

Drawing Title

LEVEL 47 FRAMING PLAN SECTOR 1

Drawing Number
S1-4701

B-Scan Drawing Number
S-064.00 SHEET 52 OF 118

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S1-4701 LEVEL 47 FRAMING PLAN SECTOR 1
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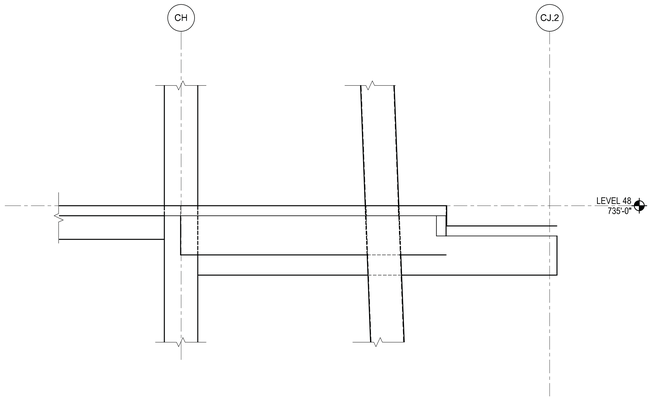
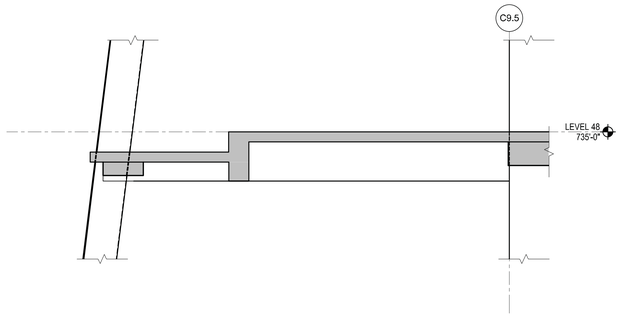


1 SECTION 1
1/4" = 1'-0"



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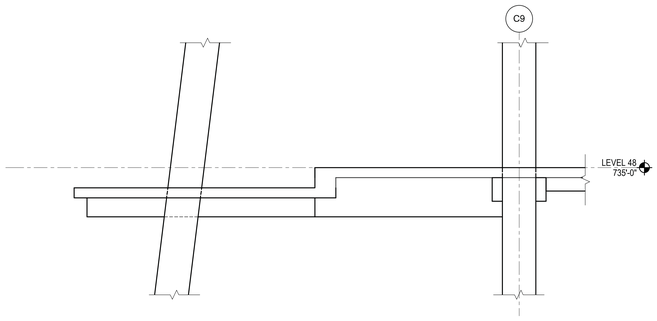
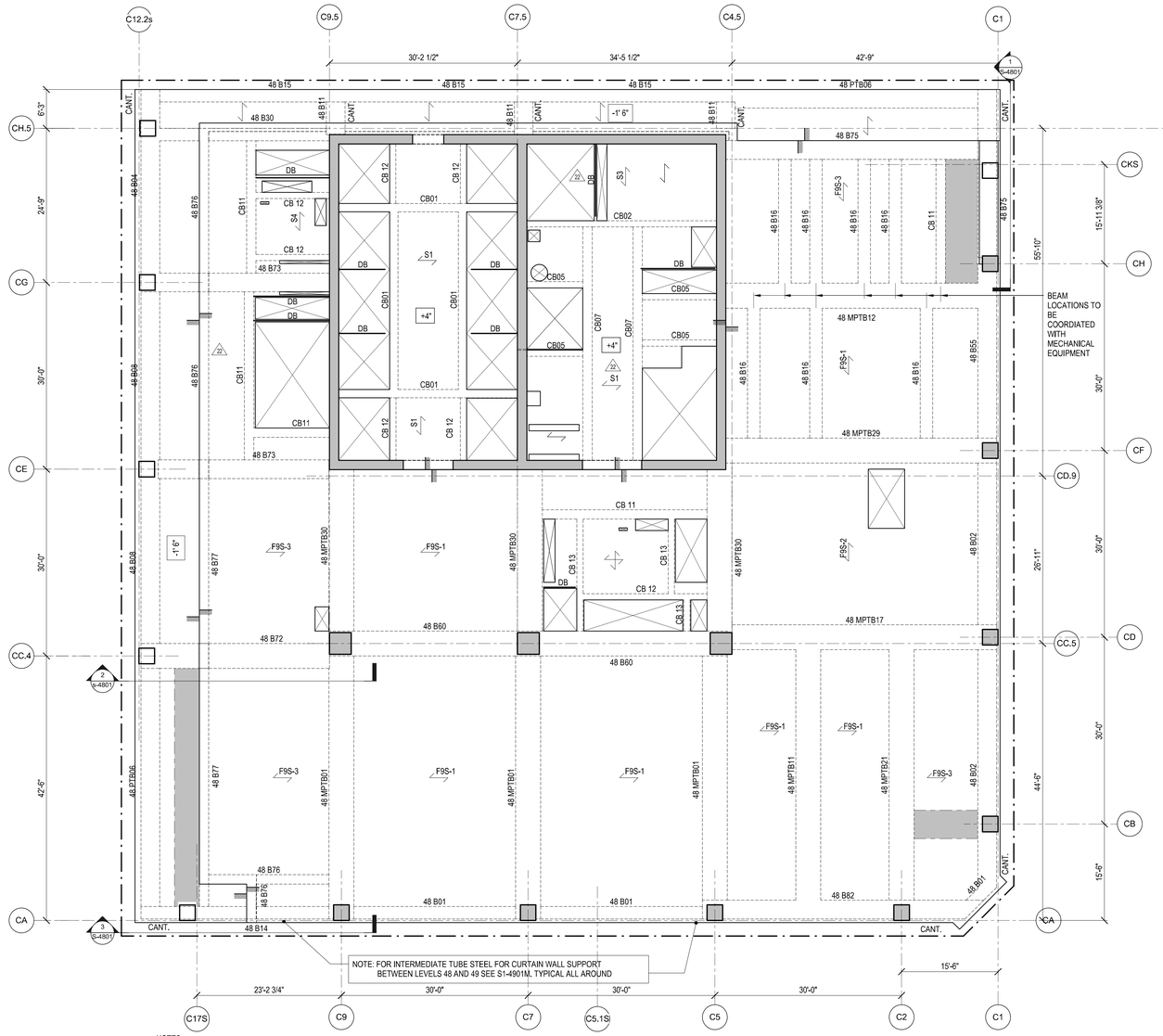
1/4" = 1'-0"



3 SECTION 3
1/4" = 1'-0"



NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 735'-0".
   X INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.
2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.
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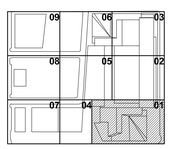
2	DI-12: STRUCTURE	12/14/2012
1	DOB Permit Set	09/17/2012

Key Plan



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Project No. 1776.10
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LEVEL 48 FRAMING PLAN SECTOR 1

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S-065.00 SHEET 53 OF 118

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LEVEL 48 FRAMING PLAN SECTOR 1
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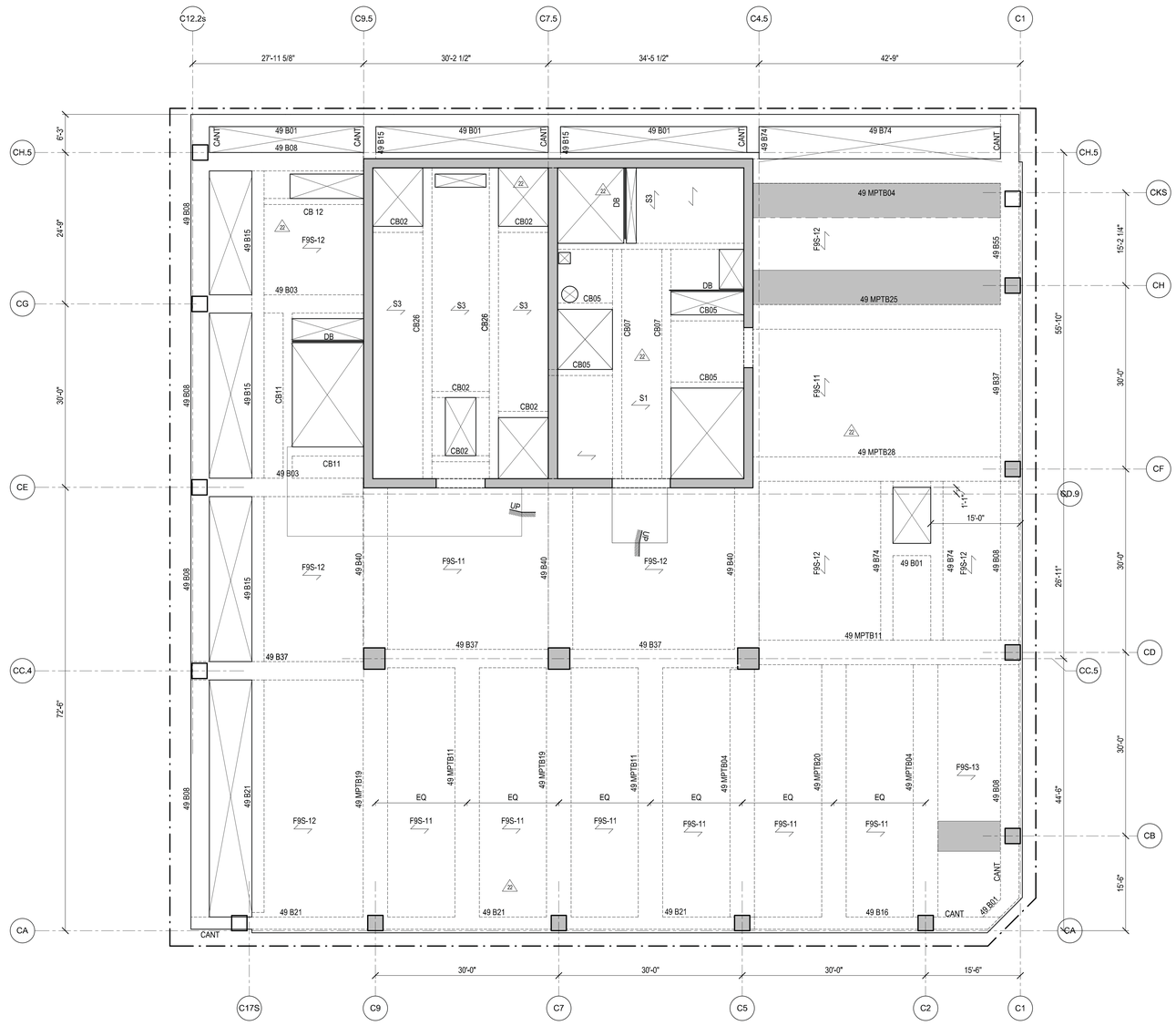

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION 75'-0".
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   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS

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   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S5 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

   XPTB.. INDICATES POST-TENSIONED REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

   DB... INDICATES HSS 8x4x1/4 ELEVATOR DIVIDER BEAM (NOT FIRE-PROOFED). REFER TO TYPICAL DETAIL ON S4 SERIES DRAWINGS.

   CA/CB INDICATES COLUMN ABOVE/BELOW.
   PA/PB INDICATES POST ABOVE/BELOW.
   HA/HB INDICATES HANGER ABOVE/BELOW.
   TW INDICATES TRANSFER WALL SEE S3-0210 SERIES.

7. INDICATES STRIP ZONES (4'-0" MIN. WIDTH U.N.O.) OF NO VOIDS IN SLAB FOR DIAPHRAGM PURPOSES. PROVIDE MIN. 4 #6 T & B BARS FULL LENGTH OF STRIP ANCHORED AT EXTERIOR FACE OF COLUMN AND AT FAR SIDE OF INTERIOR BMS

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HUDSON YARDS - TOWER C

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NEW YORK, NY

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TEL: 212.801.1000 FAX: XXX.XXX.XXXX

Oxford Properties Group
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New York, NY 10022
TEL: 212.986.7514 FAX: 212.986.7510

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Construction Manager Name
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PCArchitects & Planning Consultants
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Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
TEL: 917.661.7800 FAX: 718.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
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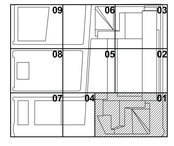
1	DOB Permit Set	08/17/2012

Key Plan



Issue Date:
Project No. 1776.10
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Sheet Number
HYE -TC -S1-4901
Drawing Title

LEVEL 49 FRAMING PLAN SECTOR 1

Drawing Number
S1-4901
B-Scan Drawing Number
S-066.00 SHEET 54 OF 118

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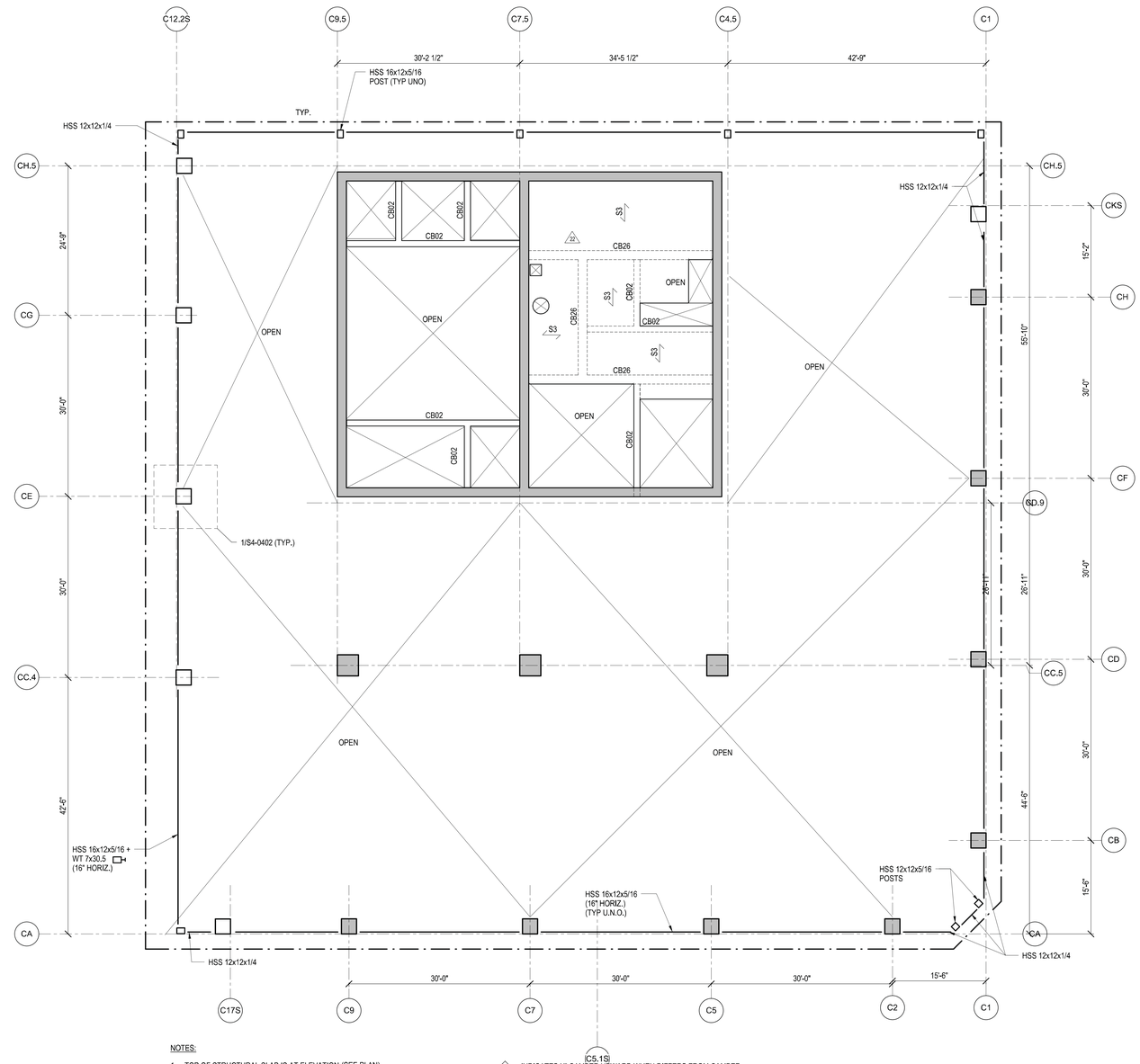

NOTES:

1. TOP OF STRUCTURAL SLAB IS AT ELEVATION (SEE PLAN).
   "X" INDICATES CHANGE IN TOP OF STRUCTURAL SLAB ELEVATION.

2. TYPICAL SLAB TO BE 9" THICK FILIGREE SLAB.
   SLABS ARE EITHER 9" SOLID (INDICATED AS F9S - #) OR 9" VOIDED (INDICATED AS F9V- #). SEE PLAN FOR SLAB DESIGNATIONS. SEE S5-0203 FOR SCHEDULE AND DETAILS.

   S# INDICATES A CONVENTIONALLY FORMED CAST IN PLACE SLAB. SEE S5-0202 FOR SCHEDULE AND DETAILS.

3. AT THIS FLOOR, SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 6,000. PSI. REFER TO TYP DETAILS FOR CONCRETE PUDDLING AT VICINITY OF HIGH STRENGTH COLUMNS.

4. FOR ADDITIONAL INFORMATION, REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES DRAWINGS.
FOUNDATION DETAILS	S3 SERIES DRAWINGS.
COLUMN SCHEDULES AND DETAILS	S6 SERIES DRAWINGS.
SHEARWALL DETAILS	S6 SERIES DRAWINGS.
CONCRETE SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.
STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

5. SYMBOLS:

   INDICATES ADDITIONAL TOP REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   INDICATES ADDITIONAL BOTTOM REINFORCING BARS. REFER TO TYPICAL DETAILS ON S5 SERIES DRAWINGS.

   X INDICATES X" CAMBER UPWARD WHEN DIFFERS FROM CAMBER SPECIFIED IN GENERAL NOTES.

   INDICATES STEP IN SLAB

   INDICATES CHANGE IN SLAB THICKNESS

6. NOTATION:

   XB.. INDICATES REINFORCED CONCRETE BEAM AT FLOOR X. REFER TO BEAM SCHEDULE ON S6 SERIES DRAWINGS. REFER TO TYPICAL DETAIL ON S5 SERIES DRAWINGS.

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1	DOB Permit Set	08/17/2012

Key Plan

Issue Date: 12/14 2012
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S1-4901M

STATE OF NEW YORK · ALAN M. BRAZIL · LICENSED PROFESSIONAL ENGINEER

Drawing Title

LEVEL 49M FRAMING PLAN SECTOR 1

Drawing Number
S1-4901M

B.Kean Drawing Number
S-067.00 SHEET 55 OF 118

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S1-4901M
2/15/2013 10:28:37 AM
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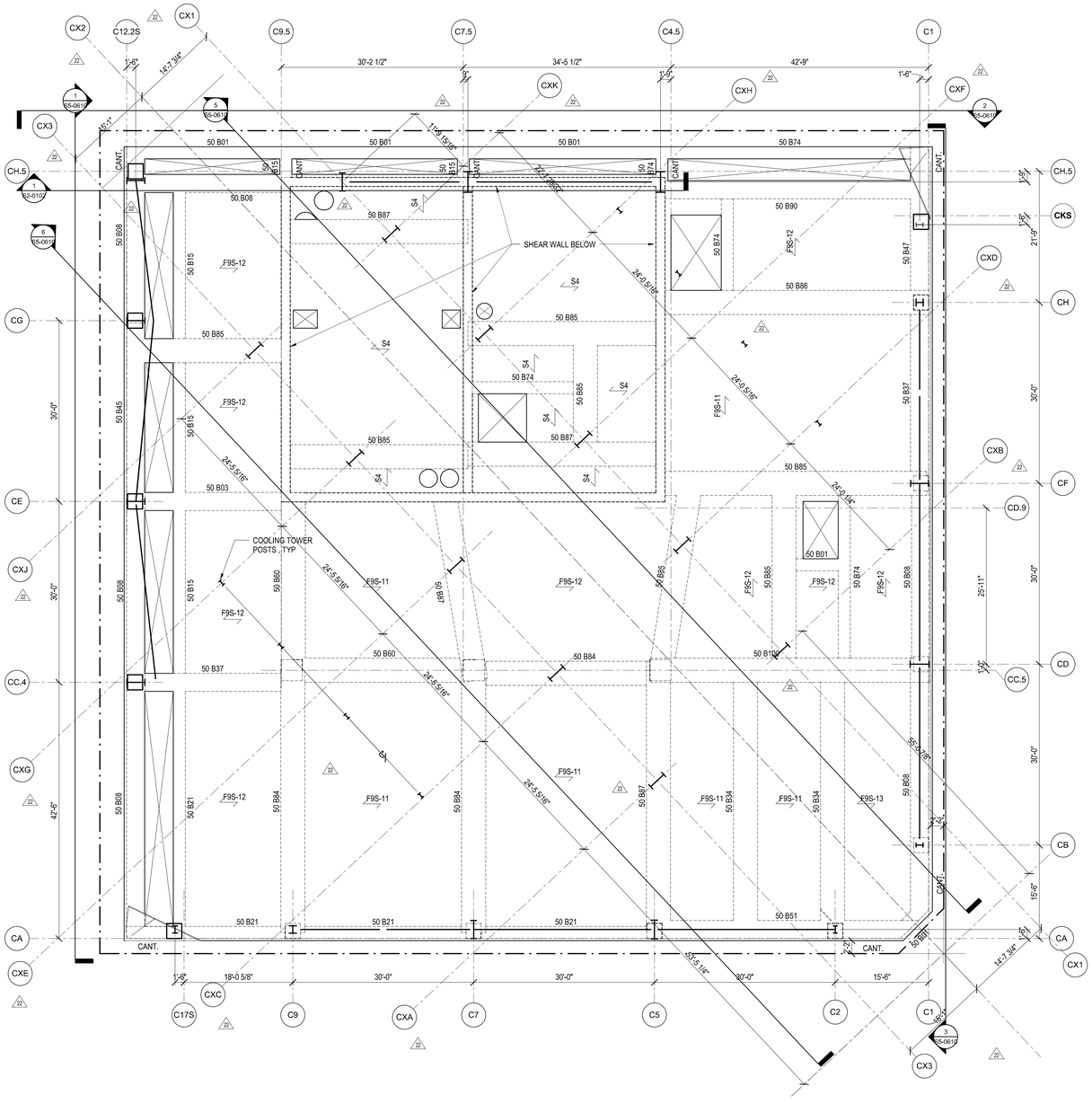

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STEEL SUPERSTRUCTURE DETAILS	S5 SERIES DRAWINGS.

6,000.

5. SYMBOLS:
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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 12.14.12
Project No. 1776.10
Drawn By: Author
Sheet Number

STATE OF NEW YORK
DAMIAN A. TITUS
083242-1
LICENSED PROFESSIONAL ENGINEER

HYE -TC -S1-5001

Drawing Title

LEVEL 50 FRAMING PLAN SECTOR 1

Drawing Number

S1-5001

B-Scan Drawing Number

S-068.00 SHEET 56 OF 118

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S1-5001
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LEVEL 50 FRAMING PLAN SECTOR 1
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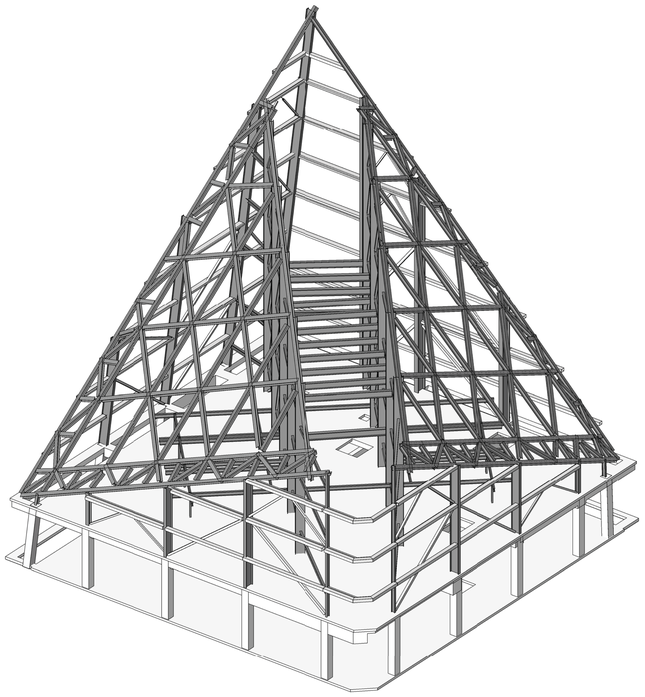
E3292145756 Scan Code



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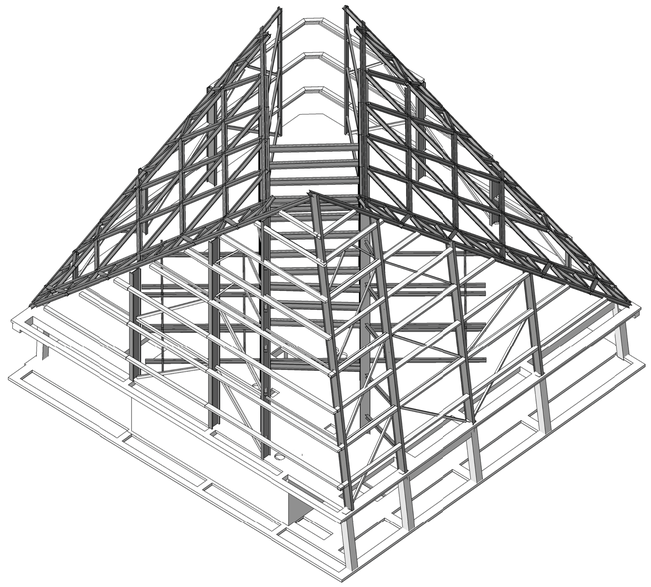

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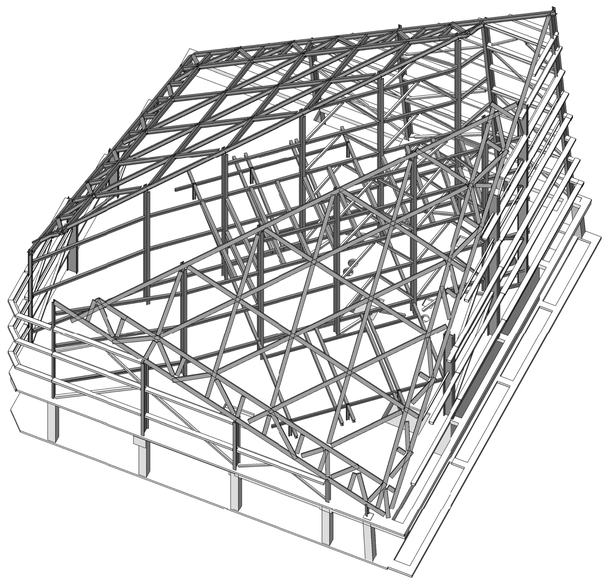

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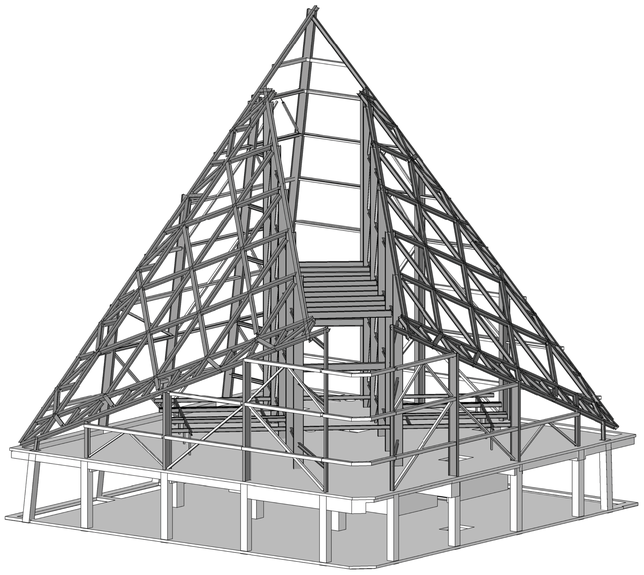
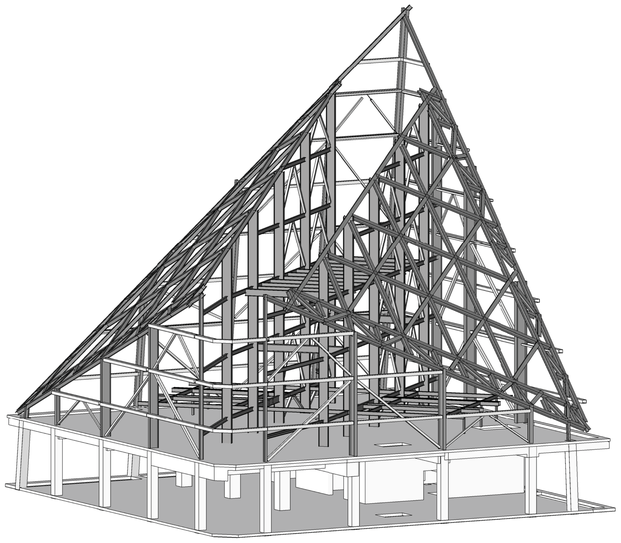


4 SOUTH-EAST CORNER



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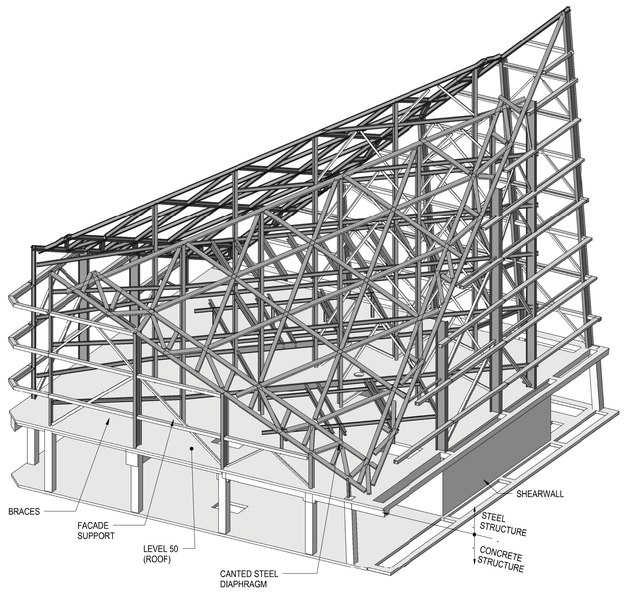

6 NORTH-EAST CORNER

CROWN NOTES:

1. PERIMETER BRACED FRAMES FOR LATERAL SUPPORT ABOVE LEVEL 50(ROOF). SEE S5-0610 FOR ELEVATIONS
2. SEE S1-5001 FOR BASE OF STEEL.
3. SEE S1-5101 FOR CANTED STEEL DIAPHRAGM
4. SEE S2-0002 FRO ISOMETRIC VIEW

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1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: 12/14/2012
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S2-0002
Drawing Title

CROWN ISOMETRIC VIEWS

Drawing Number
S2-0002
B-Scan Drawing Number
S-069.00

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S2-0002
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CROWN ISOMETRIC VIEWS
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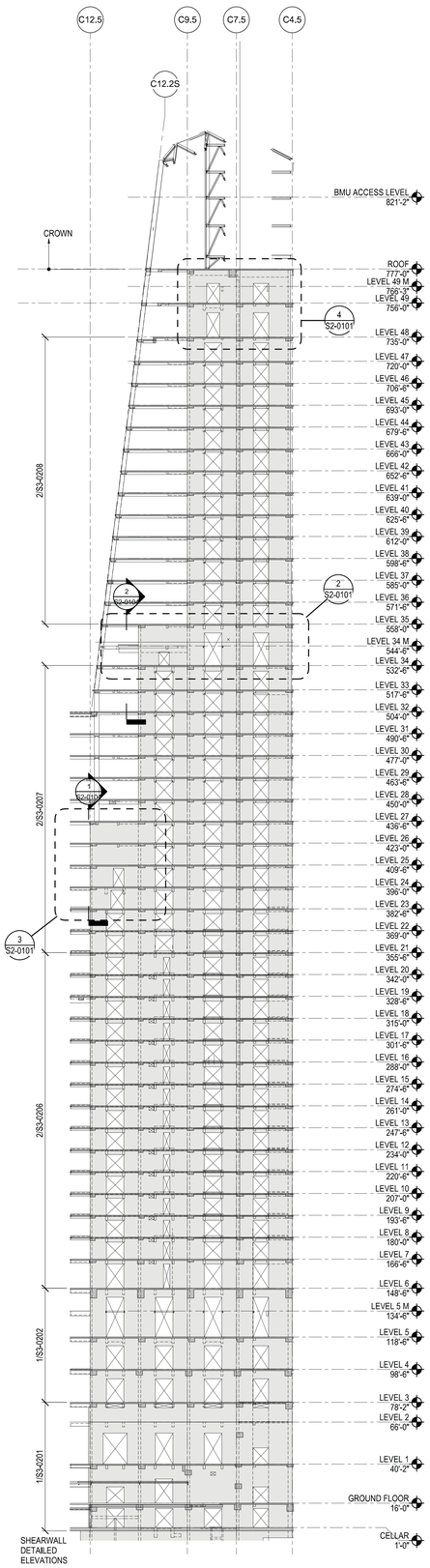
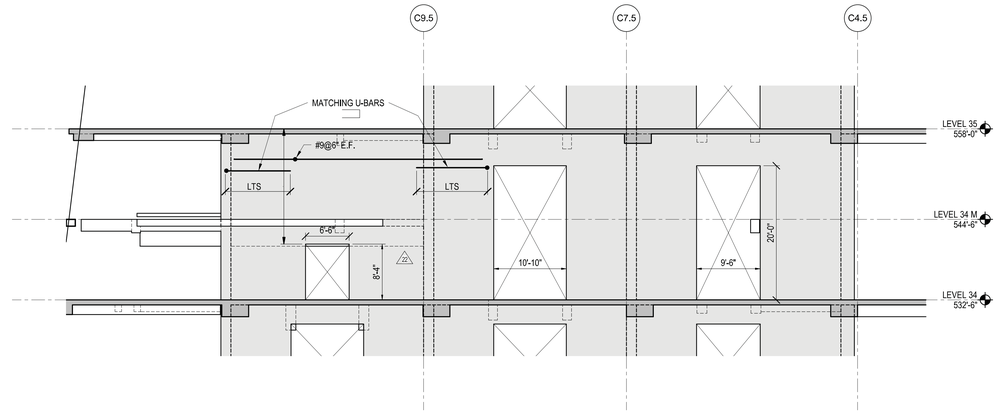
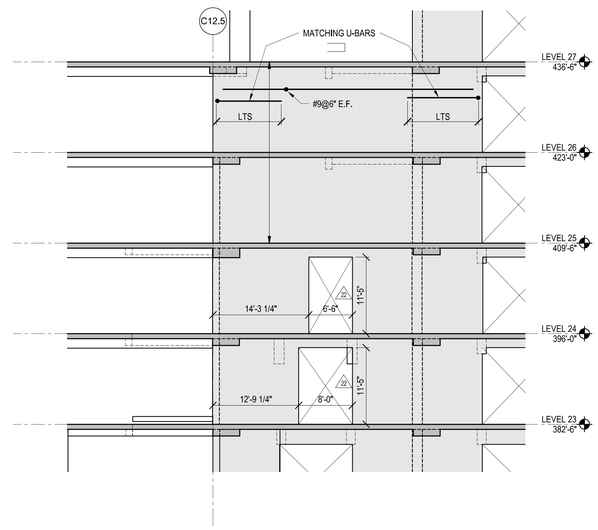
DEPT OF BLDGS 421524290 Job Number
E3530957499 Scan Code



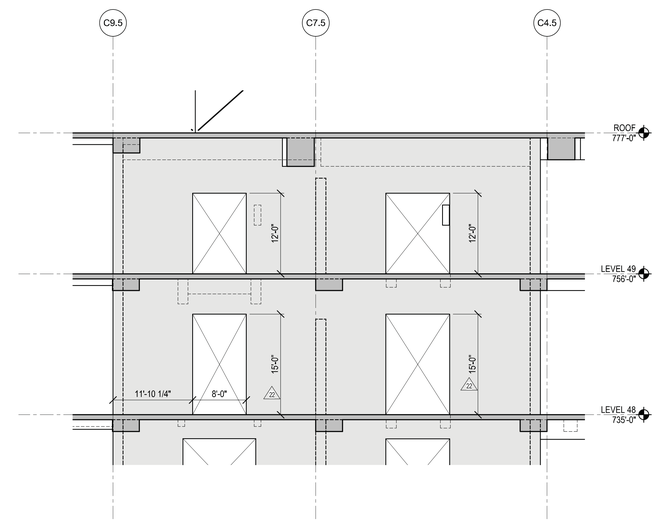
1 CD.9 SHEARWALL ELEVATION
1/32" = 1'-0"



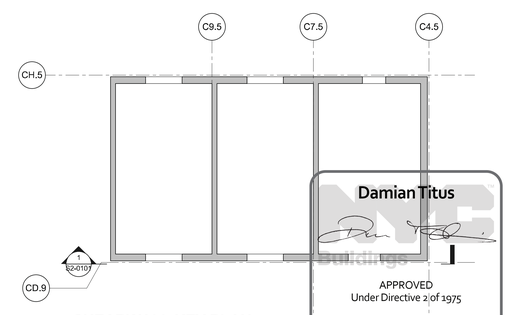
2 CD.9 LEVEL 34-35
1/8" = 1'-0"



3 CD.9 LEVEL 23-27
1/8" = 1'-0"



4 CD.9 LEVEL 48-ROOF
1/8" = 1'-0"



A SHEARWALL KEY PLAN
1/16" = 1'-0"

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NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
SHEARWALL ELEVATIONS	S2-0100 SERIES
SHEARWALL PART PLANS	S4-0100 SERIES
SHEARWALL DETAILS	S5-0500 SERIES
SHEARWALL SCHEDULE	S6-0200 SERIES

2. OPENINGS CENTERED U.O.N.
3. OPENINGS PER S3-0200 SERIES U.O.N. ON S2-0100 SERIES
4. FOR WALL THICKNESSES SEE SHEARWALL PART PLANS (S4-0100 SERIES)
5. REFER TO MEP AND ARCHITECTURAL DRAWINGS FOR SLEEVES REQUIRED.

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2	0I-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: 12/14/2012
Project No. 1776.10
Drawn By:
Sheet Number

STATE OF NEW YORK · DAMIAN A. TITUS · 082542-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S2-0101

Drawing Title

CD.9 SHEARWALL ELEVATION

Drawing Number

S2-0101

B-Scan Drawing Number

S-070.00 SHEET 58 OF 118

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S2-0101
2/15/2013 10:29:06 AM
CD.9 SHEARWALL ELEVATION
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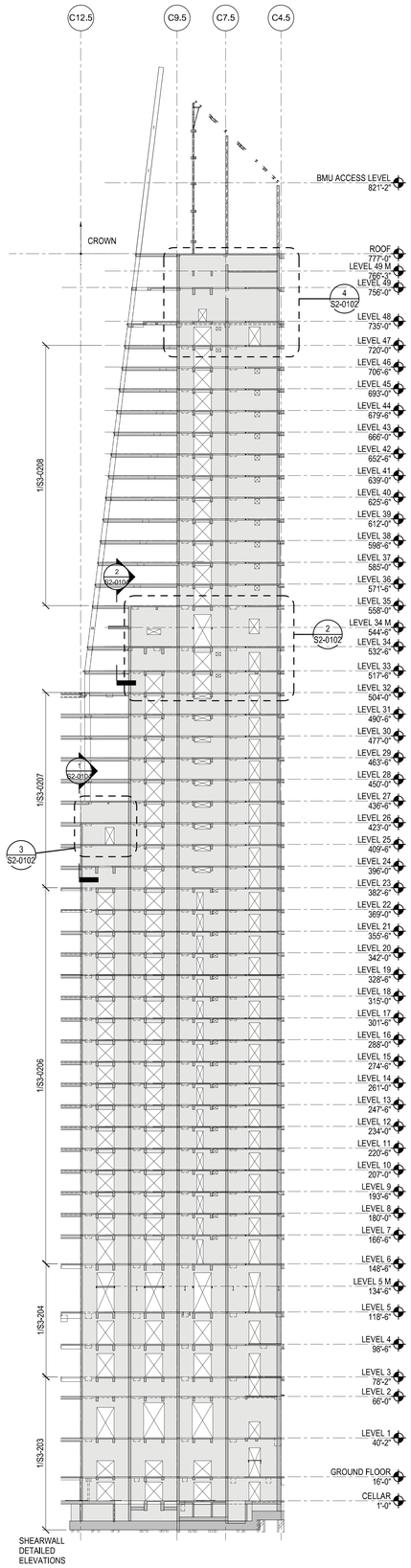
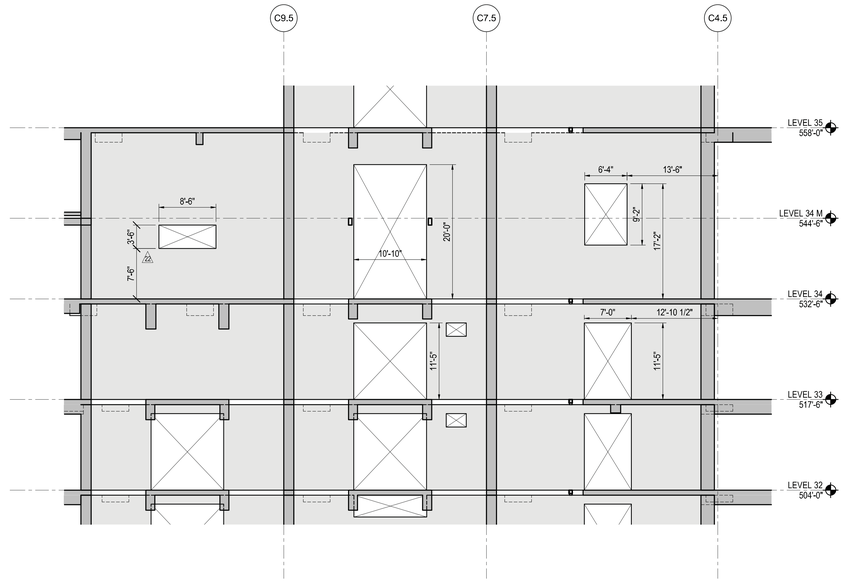
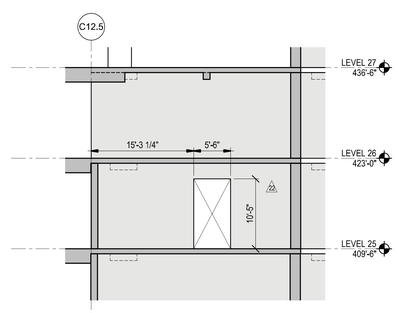


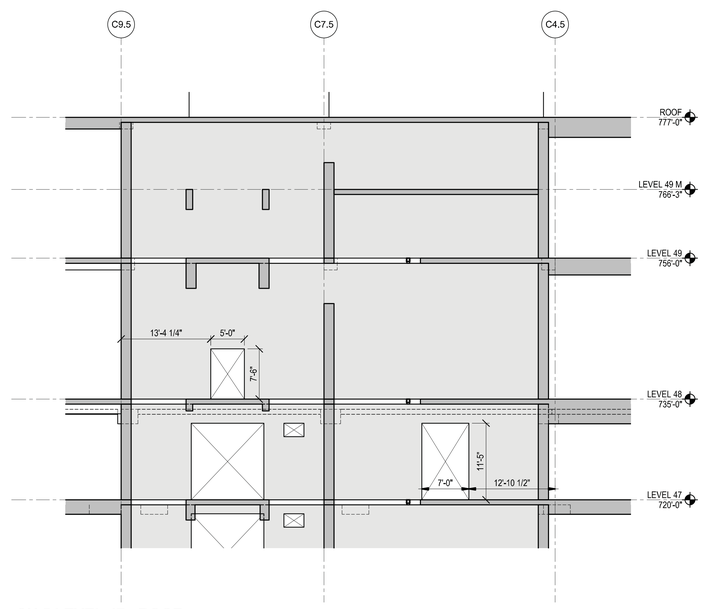
1 CH.5 SHEARWALL ELEVATION
1/32" = 1'-0"



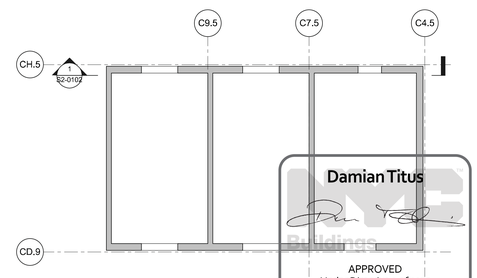
2 CH.5 LEVEL 32 - 35
1/8" = 1'-0"



3 CH.5 LEVEL 25 - 27
1/8" = 1'-0"



4 CH.5 LEVEL 47 - ROOF
1/8" = 1'-0"



A SHEARWALL KEY PLAN
1/16" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
SHEARWALL ELEVATIONS	S2-0100 SERIES
SHEARWALL PART PLANS	S4-0100 SERIES
SHEARWALL DETAILS	S5-0500 SERIES
SHEARWALL SCHEDULE	S6-0200 SERIES

2. OPENINGS CENTERED U.O.N.
3. OPENINGS PER S3-0200 SERIES U.O.N. ON S2-0100 SERIES
4. FOR WALL THICKNESSES SEE SHEARWALL PART PLANS (S4-0100 SERIES)
5. REFER TO MEP AND ARCHITECTURAL DRAWINGS FOR SLEEVES REQUIRED.

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New York, NY 10013
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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

STATE OF NEW YORK · DAMIAN A. TITUS · 082543-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S2-0102
Drawing Title

CH.5 SHEARWALL ELEVATION

Drawing Number
S2-0102

B/Scan Drawing Number
S-071.00 SHEET 59 OF 118

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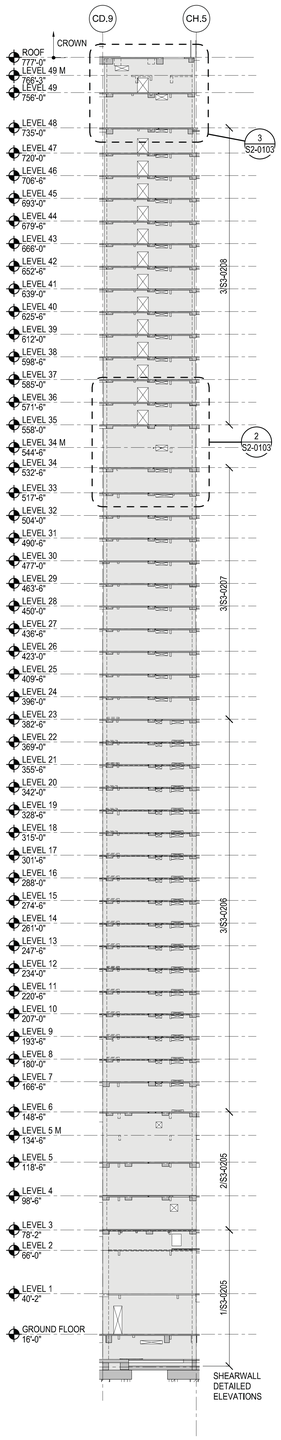
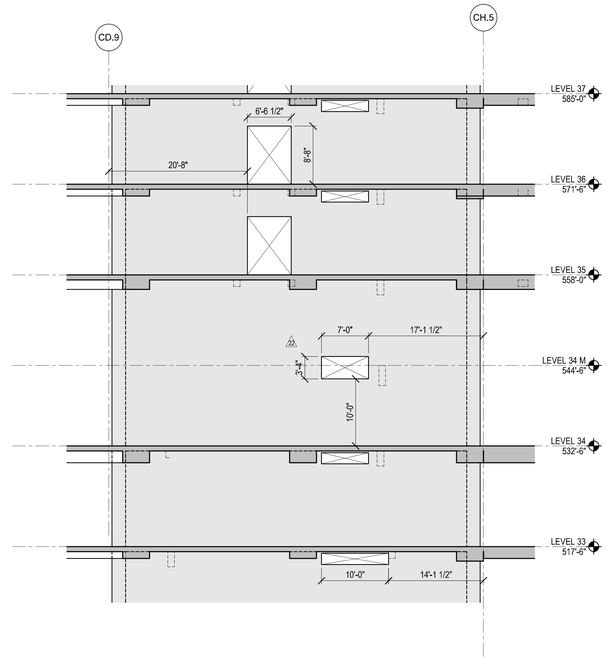
S2-0102
2/15/2013 10:29:17 AM
CH.5 SHEARWALL ELEVATION
C:\Users\ryanwang\Documents\N11329.00 Revit\N11329.00 - TOWER C - arnicial.rvt

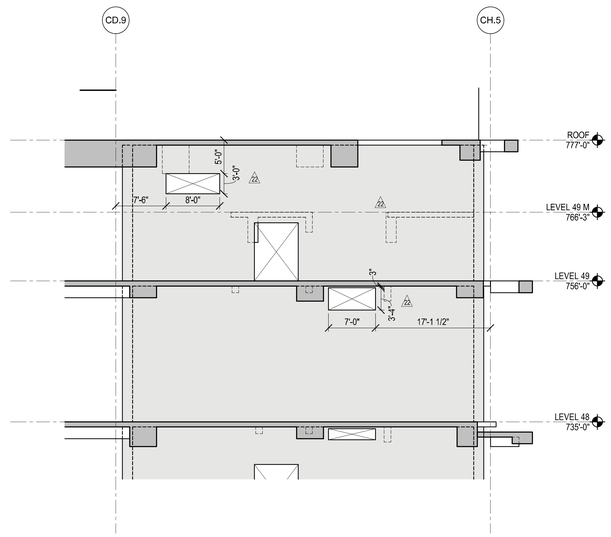
DEPT OF BLDGS 421524290 Job Number
E3616530189 Scan Code



1 **C4.5 SHEARWALL ELEVATION**
1/32" = 1'-0"



2 **C4.5 LEVEL 33 - 37**
1/8" = 1'-0"



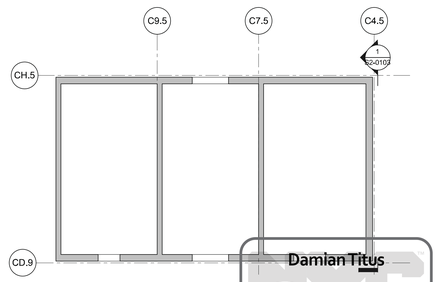
3 **C4.5 LEVEL 48 -ROOF**
1/8" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
SHEARWALL ELEVATIONS	S2-0100 SERIES
SHEARWALL PART PLANS	S4-0100 SERIES
SHEARWALL DETAILS	S5-0500 SERIES
SHEARWALL SCHEDULE	S6-0200 SERIES

2. OPENINGS CENTERED U.O.N.
3. OPENINGS PER S3-0200 SERIES U.O.N. ON S2-0100 SERIES
4. FOR WALL THICKNESSES SEE SHEARWALL PART PLANS (S4-0100 SERIES)
5. REFER TO MEP AND ARCHITECTURAL DRAWINGS FOR SLEEVES REQUIRED.



A **SHEARWALL KEY PLAN**
1/16" = 1'-0"

Damian Titus

Buildings

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Under Directive 2 of 1975

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: 12/14/2012
Project No. 1776.10
Drawn By
Sheet Number

STATE OF NEW YORK · STEVEN M. BRAZIL · 082242-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S2-0103
Drawing Title

C4.5 SHEARWALL ELEVATION

Drawing Number
S2-0103

B-Scan Drawing Number
S-072.00

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S2-0103 C4.5 SHEARWALL ELEVATION
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DEPT OF BLDGS 421324200 Job Number
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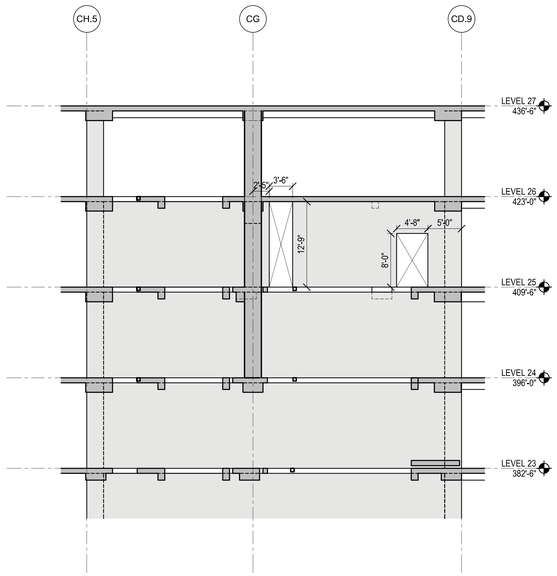
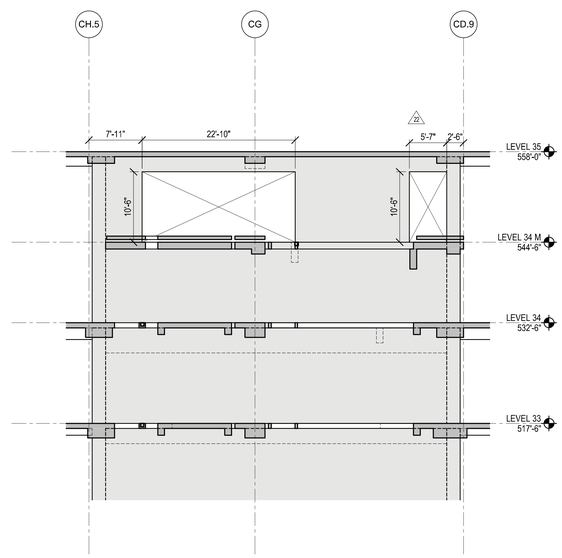


1 C12.5 LEVELS 23 - 27
1/8" = 1'-0"



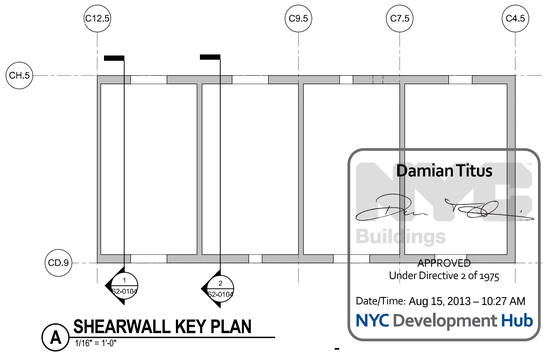
2 C11.5 LEVELS 33 - 36
1/8" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
SHEARWALL ELEVATIONS	S2-0100 SERIES
SHEARWALL PART PLANS	S4-0100 SERIES
SHEARWALL DETAILS	S5-0500 SERIES
SHEARWALL SCHEDULE	S6-0200 SERIES

2. OPENINGS CENTERED U.O.N.
3. OPENINGS PER S3-0200 SERIES U.O.N. ON S2-0100 SERIES
4. FOR WALL THICKNESSES SEE SHEARWALL PART PLANS (S4-0100 SERIES)
5. REFER TO MEP AND ARCHITECTURAL DRAWINGS FOR SLEEVES REQUIRED.



A SHEARWALL KEY PLAN
1/16" = 1'-0"

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

HYE -TC -S2-0104

Drawing Title

C11.5 AND C12.5 SHEARWALL ELEVATIONS

Drawing Number

S2-0104

B-Scan Drawing Number

S-073.00 SHEET 61 OF 118

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S2-0104
2/15/2013 10:29:28 AM
C11.5 AND C12.5 SHEARWALL ELEVATIONS
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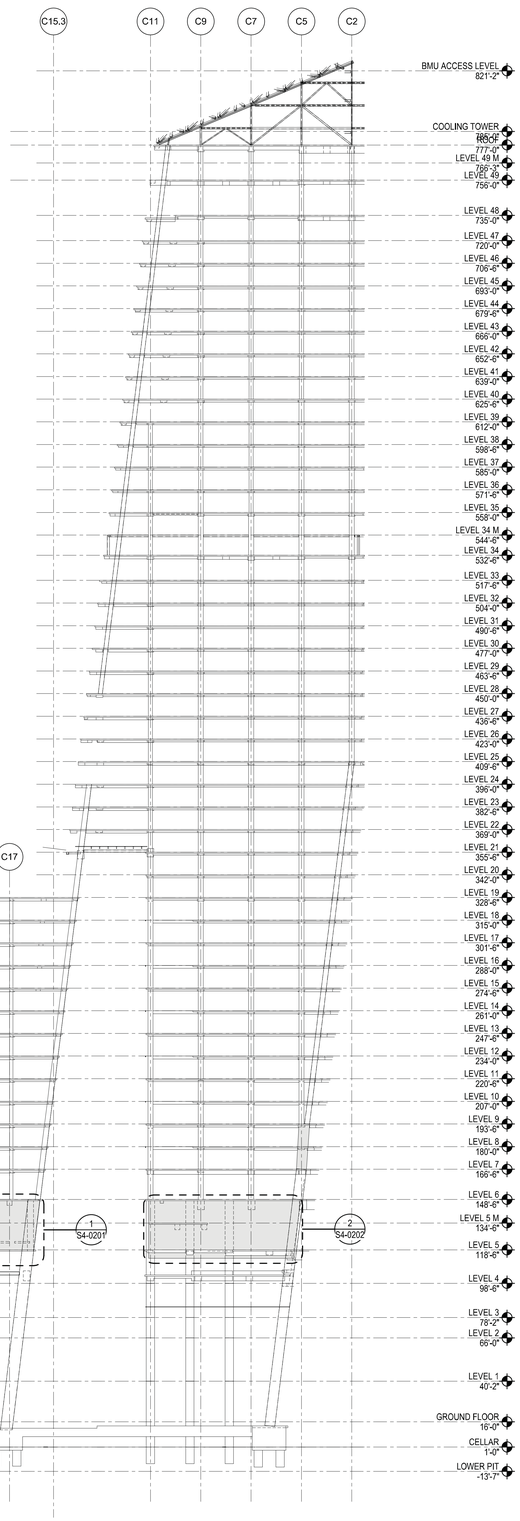
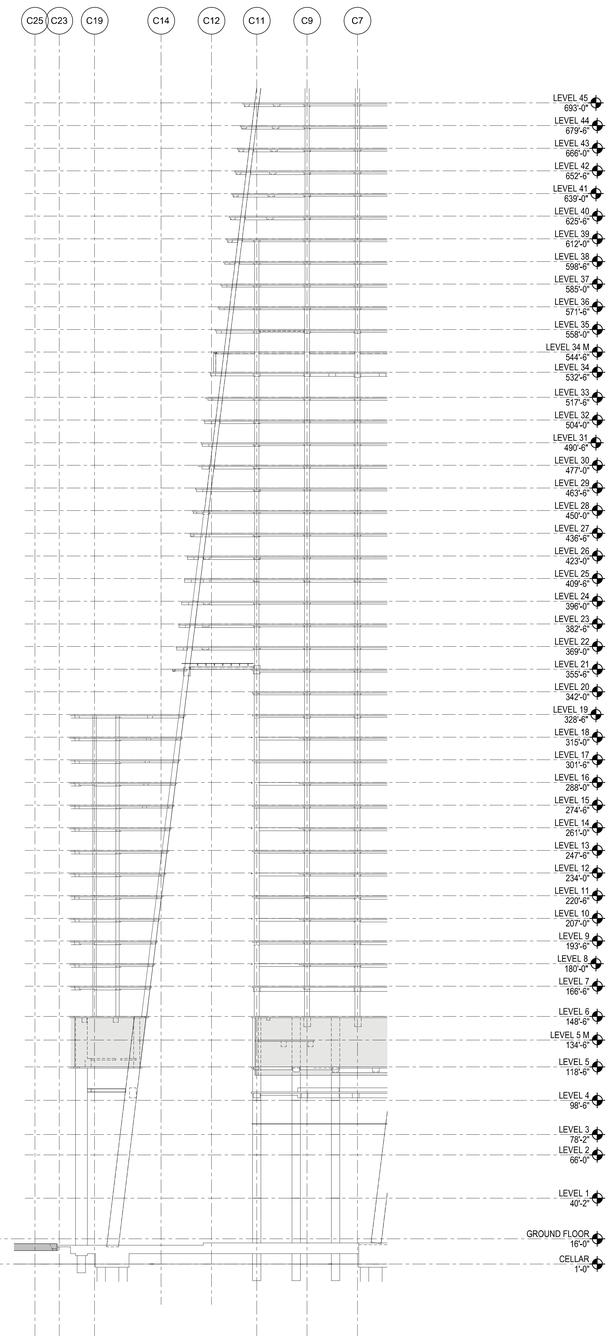
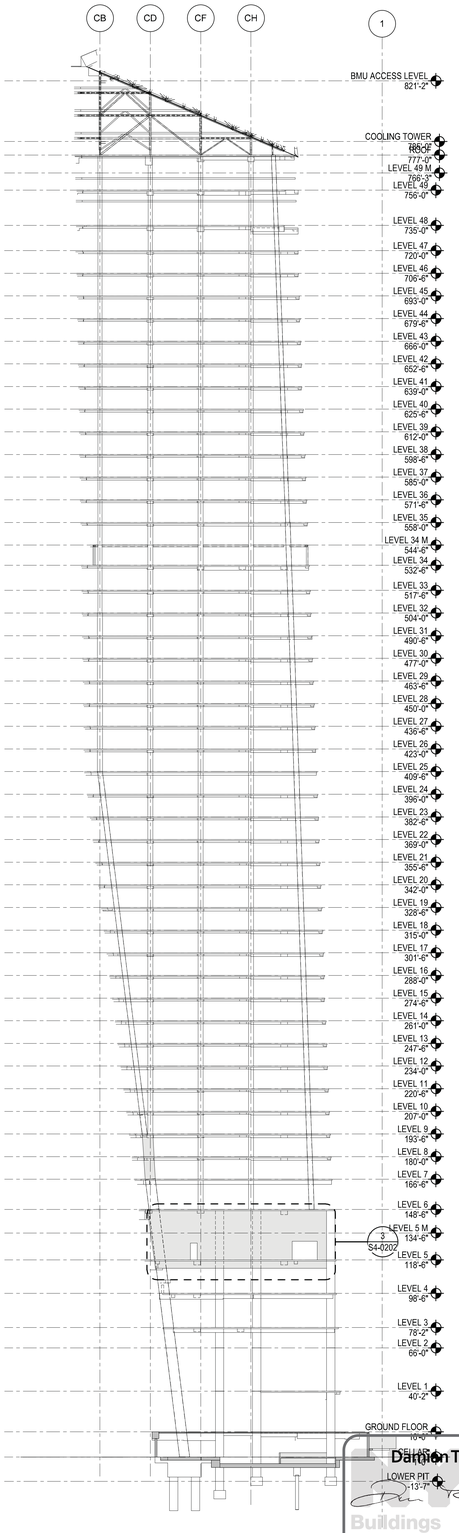
DEPT OF BUILDINGS 421224290 Job Number
E1641352289 Scan Code



1 ELEVATION ALONG GRID LINE CA
1/32" = 1'-0"



2 ELEVATION ALONG GRID LINE CN
1/32" = 1'-0"



3 ELEVATION ALONG GRID LINE C1
1/32" = 1'-0"

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DS-22- STRUCTURE	02/01/2013
1	DI-12- STRUCTURE	12/14/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By:
Sheet Number

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HYE -TC -S2-0105

Drawing Title

PERIMETER COLUMN LINES

Drawing Number
S2-0105

B-Scan Drawing Number
S-079.00

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2/15/2013 10:29:36 AM
PERIMETER COLUMN LINES
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DEPT OF BLDGS 421524290 Job Number
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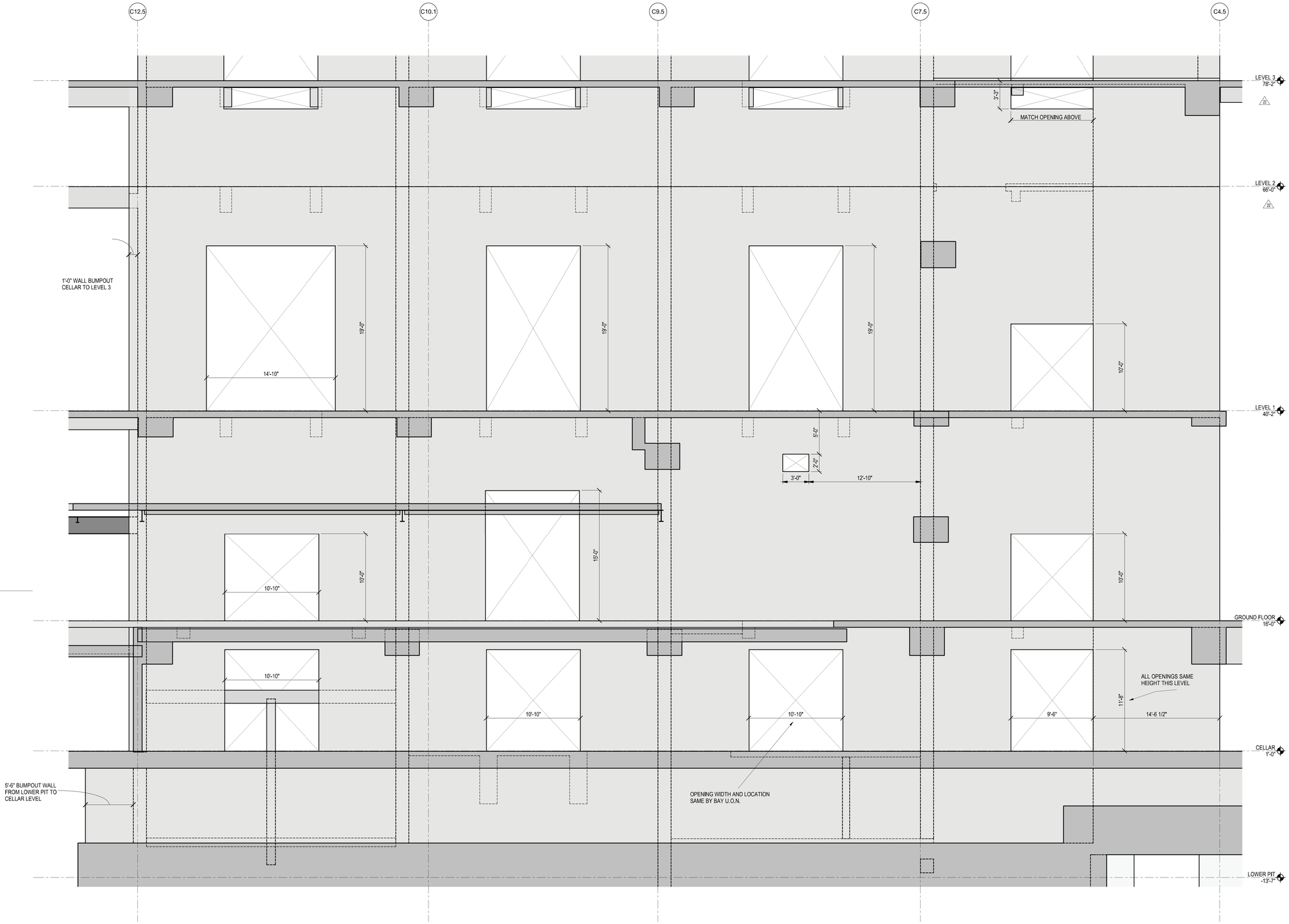


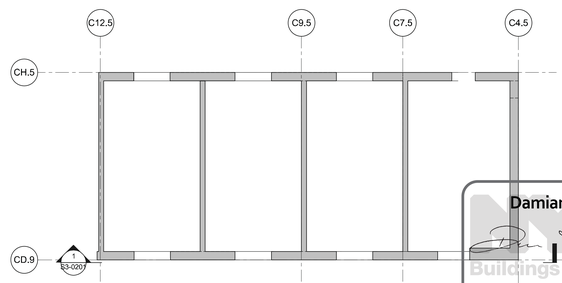
1 CD.9 CELLAR - LEVEL3 SHEARWALL ELEVATION
1/4" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
SHEARWALL ELEVATIONS	S2-0100 SERIES
SHEARWALL PART PLANS	S4-0100 SERIES
SHEARWALL DETAILS	S5-0500 SERIES
SHEARWALL SCHEDULE	S6-0200 SERIES

2. OPENINGS CENTERED U.O.N.
3. OPENINGS PER S3-0200 SERIES U.O.N. ON S2-0100 SERIES
4. FOR WALL THICKNESSES SEE SHEARWALL PART PLANS (S4-0100 SERIES)
5. REFER TO MEP AND ARCHITECTURAL DRAWINGS FOR SLEEVES REQUIRED.



A CELLAR - LEVEL 3 SHEARWALL KEY PLAN
1/16" = 1'-0"

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S3-0201

Drawing Title

SHEARWALL ELEVATION CD.9 CELLAR TO LEVEL 3

Drawing Number
S3-0201

B-Scan Drawing Number
S-080.00 SHEET 63 OF 118

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S3-0201
2/15/2013 10:29:49 AM
SHEARWALL ELEVATION CD.9 CELLAR TO LEVEL 3
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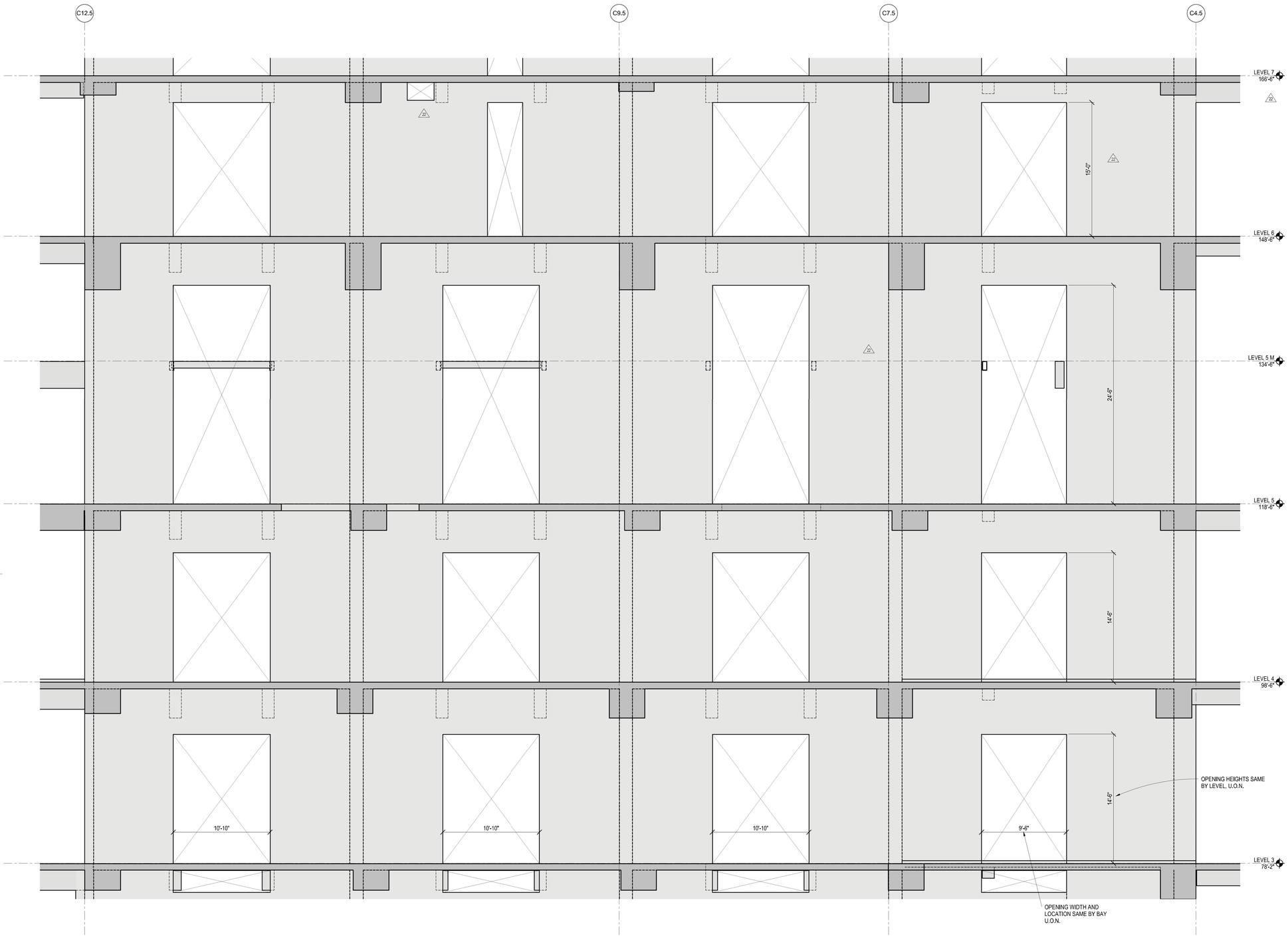

1 **CD.9 LEVEL 3 - LEVEL 7 SHEARWALL ELEVATION**
1/4" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
SHEARWALL ELEVATIONS	S2-0100 SERIES
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SHEARWALL SCHEDULE	S6-0200 SERIES

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4. FOR WALL THICKNESSES SEE SHEARWALL PART PLANS (S4-0100 SERIES)
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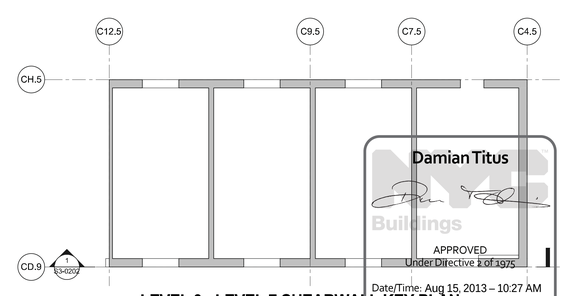

A **LEVEL 3 - LEVEL 7 SHEARWALL KEY PLAN**
1/16" = 1'-0"

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · DARYL M. BRAUN · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S3-0202

Drawing Title

SHEARWALL ELEVATION CD.9 LEVEL 3 TO LEVEL 7

Drawing Number

S3-0202

B-Scan Drawing Number

S-081.00 SHEET 64 OF 118

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S3-0202
2/15/2013 10:29:58 AM
SHEARWALL ELEVATION CD.9 LEVEL 3 TO LEVEL 7
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DEPT OF BLDGS 421524290 Job Number
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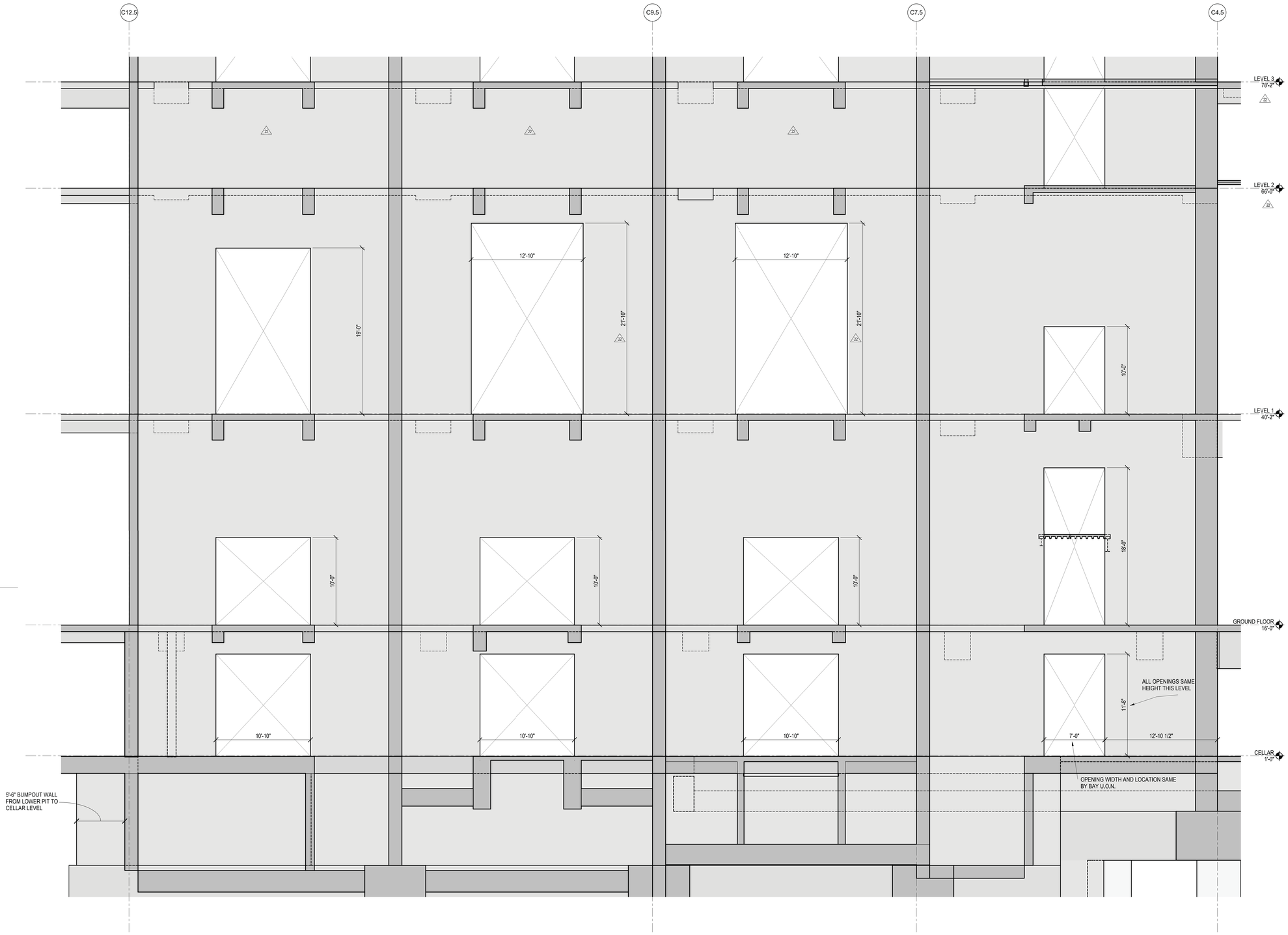

1 **CH.5 CELLAR - LEVEL3 SHEARWALL ELEVATION**
1/4" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

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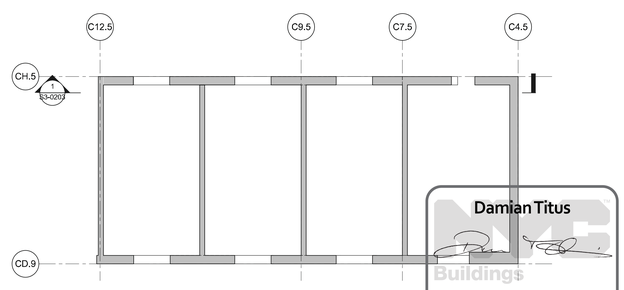
SHEARWALL DETAILS	S5-0500 SERIES
SHEARWALL SCHEDULE	S6-0200 SERIES

2. OPENINGS CENTERED U.O.N.
3. OPENINGS PER S3-0200 SERIES U.O.N. ON S2-0100 SERIES
4. FOR WALL THICKNESSES SEE SHEARWALL PART PLANS (S4-0100 SERIES)
5. REFER TO MEP AND ARCHITECTURAL DRAWINGS FOR SLEEVES REQUIRED.



A **CELLAR - LEVEL 3 SHEARWALL KEY PLAN**
1/16" = 1'-0"

Damian Titus
Buildings
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HUDSON YARDS - TOWER C

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60 Columbus Circle
New York, NY 10023
TEL: 212.801.1000 FAX: XXX.XXX.XXXX

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
TEL: 212.986.7514 FAX: 212.986.7510

Construction Manager
Construction Manager Name
Address
Address
TEL: XXX.XXX.XXXX FAX: XXX.XXX.XXXX

Architect
Kohn Pedersen Fox Associates
PCArchitects & Planning Consultants
11 West 42nd Street
New York, New York 10036
TEL: 212.977.6500 FAX: 212.956.2526
Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
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TEL: 917.661.7800 FAX: 718.661.7801

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: -
Project No. 1776.10
Drawn By: Author
Sheet Number

STATE OF NEW YORK · ALFRED M. BRAZIL · 065442-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S3-0203

Drawing Title

SHEARWALL ELEVATION CH.5 CELLAR TO LEVEL 3

Drawing Number
S3-0203

B-Scan Drawing Number
S-082.00 SHEET 65 OF 118

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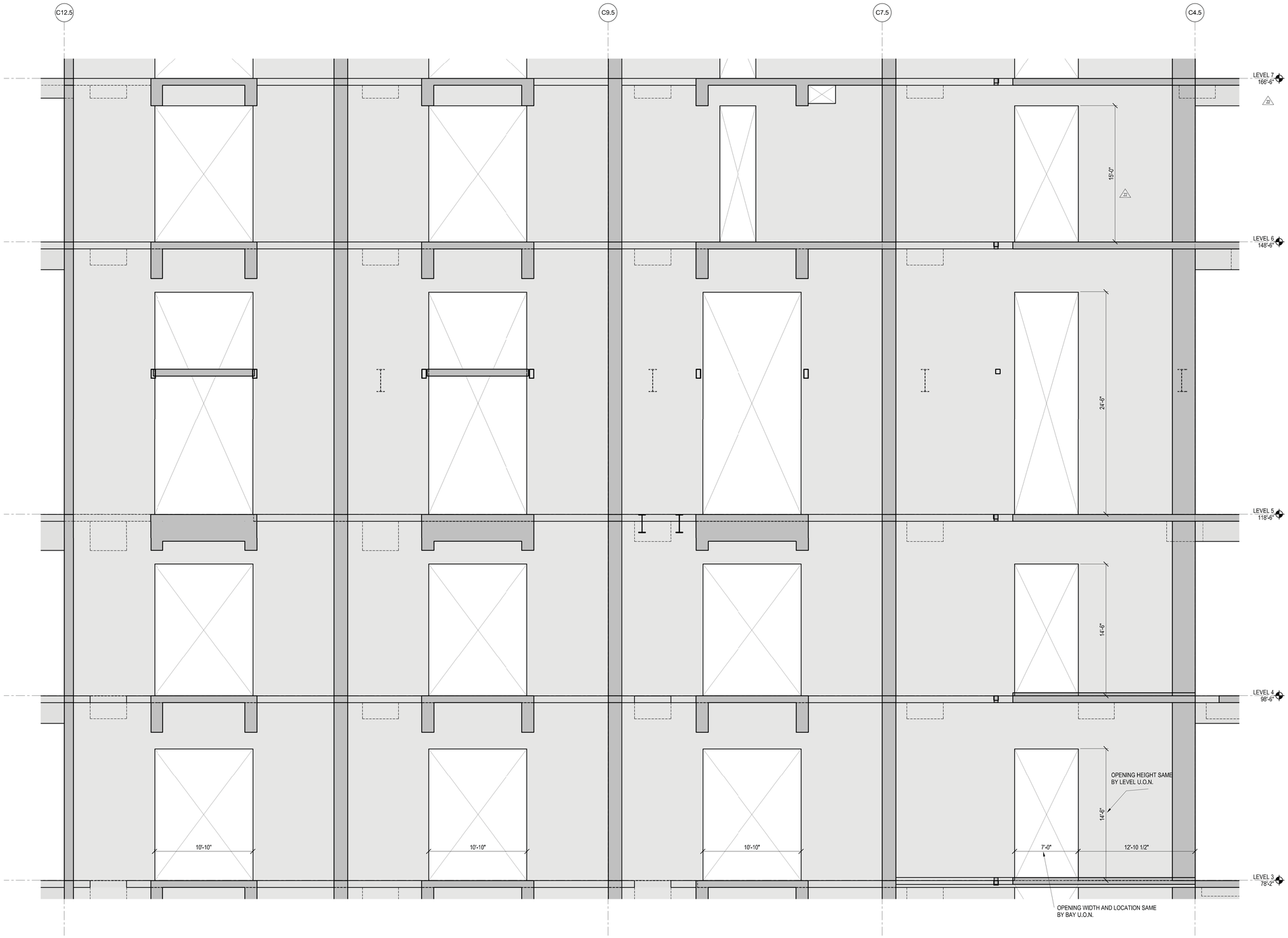
S3-0203
2/15/2013 10:30:07 AM
SHEARWALL ELEVATION: CH.5 CELLAR TO LEVEL 3
C:\Users\mcarney\Documents\NH1135\00.Rev\NH1135-00 - TOWER C - armicad.rvt

DEPT OF BLDGS 421524290 Job Number
E3000995235 Scan Code



1 **CH.5 LEVEL 3 - LEVEL 7 SHEARWALL ELEVATION**
1/4" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
SHEARWALL ELEVATIONS	S2-0100 SERIES
SHEARWALL PART PLANS	S4-0100 SERIES
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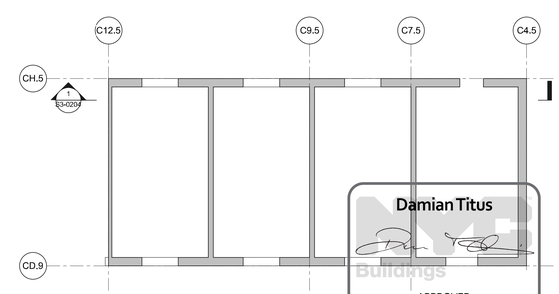

A **LEVEL 3 - LEVEL 7 SHEARWALL KEY PLAN**
1/16" = 1'-0"

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2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · TITUS M. BRAZIL · 022842-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S3-0204
Drawing Title

SHEARWALL ELEVATION CH.5 LEVEL 3 TO LEVEL 7

Drawing Number
S3-0204

B-Scan Drawing Number
S-083.00

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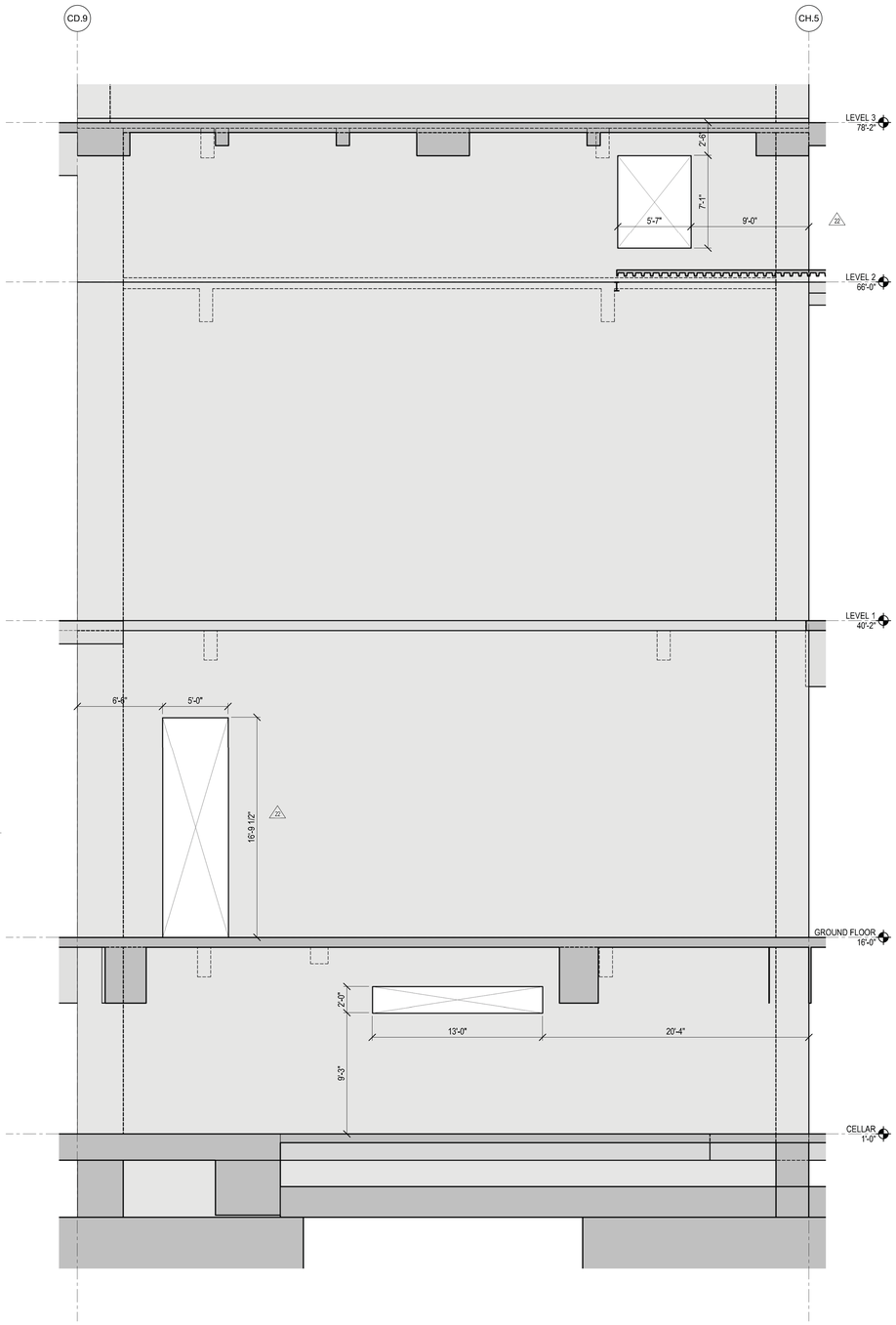
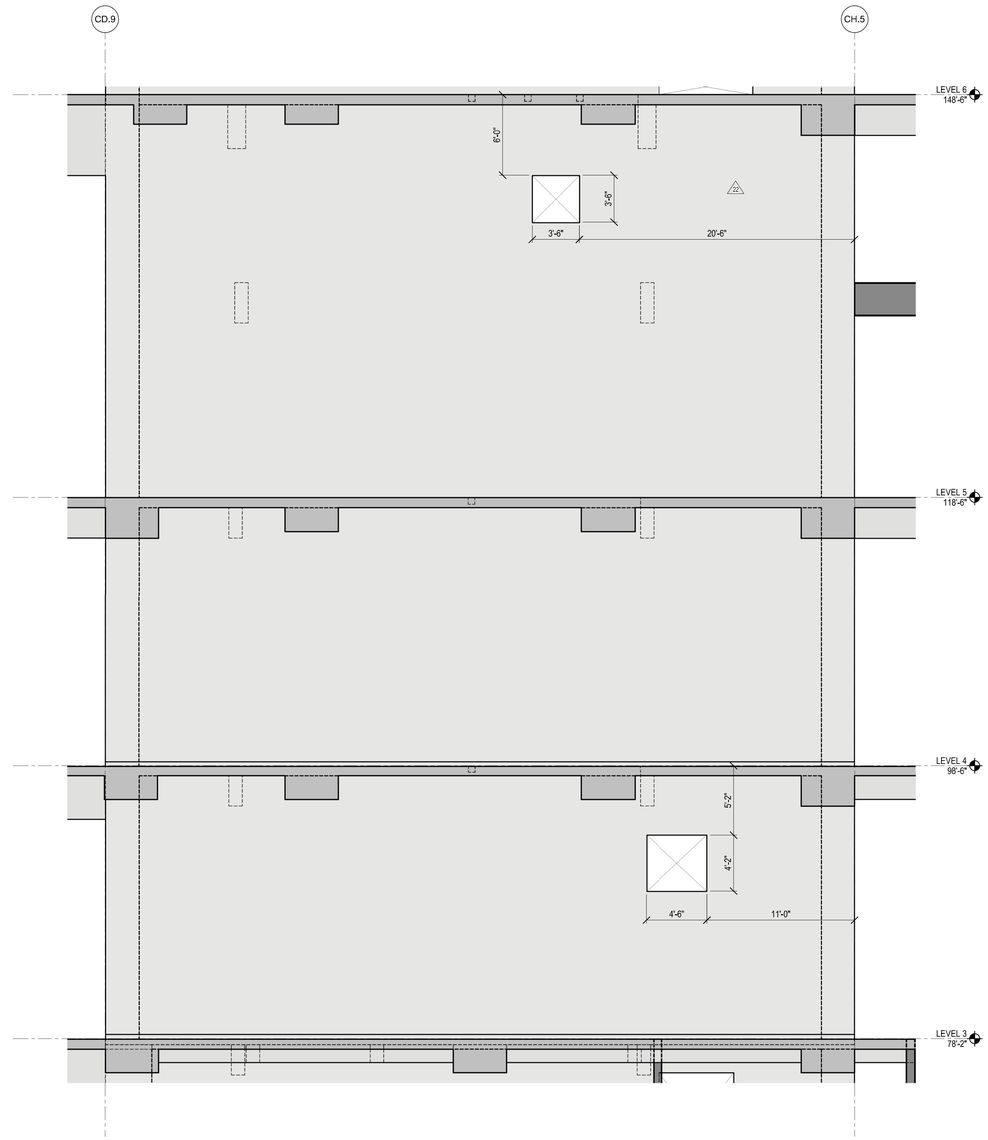
S3-0204
2/15/2013 10:30:16 AM
SHEARWALL ELEVATION CH.5 LEVEL 3 TO LEVEL 7
C:\Users\ceruleley\Documents\N1520.00-Revit\N1520.00 - TOWER C - ceruleal.rvt

DEPT OF BLDGS 421224290 Job Number
E1241950085 Scan Code



1 C4.5 CELLAR - LEVEL 3 SHEARWALL ELEVATION
1/4" = 1'-0"



2 C4.5 LEVEL 3 - LEVEL 6 SHEARWALL ELEVATION
1/4" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
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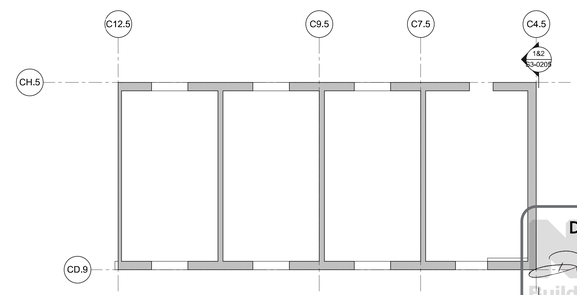

A CELLAR - LEVEL 6 SHEARWALL KEY PLAN
1/16" = 1'-0"

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2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: -
Project No. 1776.10
Drawn By: Author
Sheet Number

STATE OF NEW YORK · ARIC M. BRAUN · 048542-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S3-0205

Drawing Title

SHEARWALL ELEVATION C4.5 CELLAR TO LEVEL 6

Drawing Number

S3-0205

B-Scan Drawing Number

S-088.00 SHEET 67 OF 118

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S3-0205
2/15/2013 10:30:25 AM
SHEARWALL ELEVATION C4.5 CELLAR TO LEVEL 6
C:\Users\mauroney\Documents\N1123\00\Revit\N1123-00 - TOWER C – arnlocal.rvt

DEPT OF BLDGS 421524290 Job Number
E5742975653 Scan Code

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
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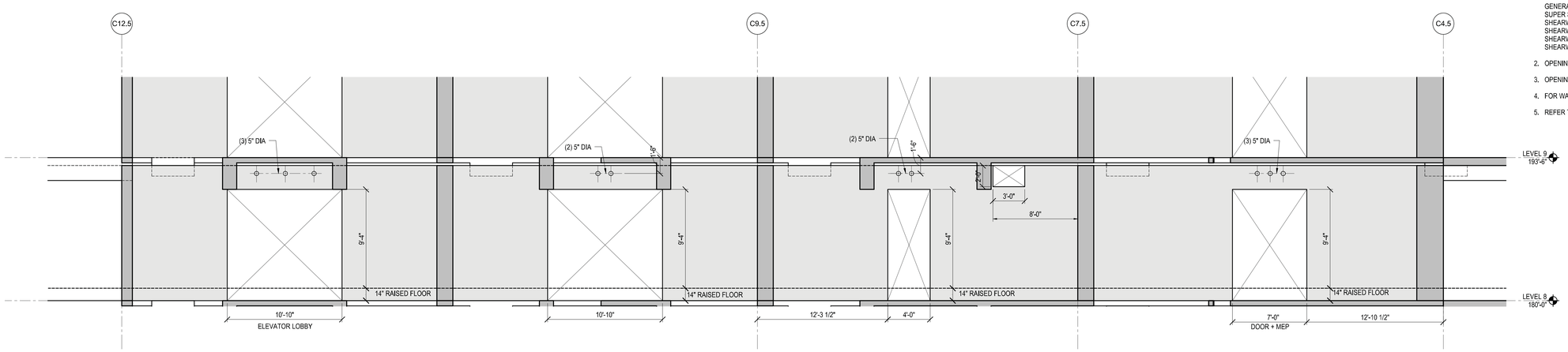
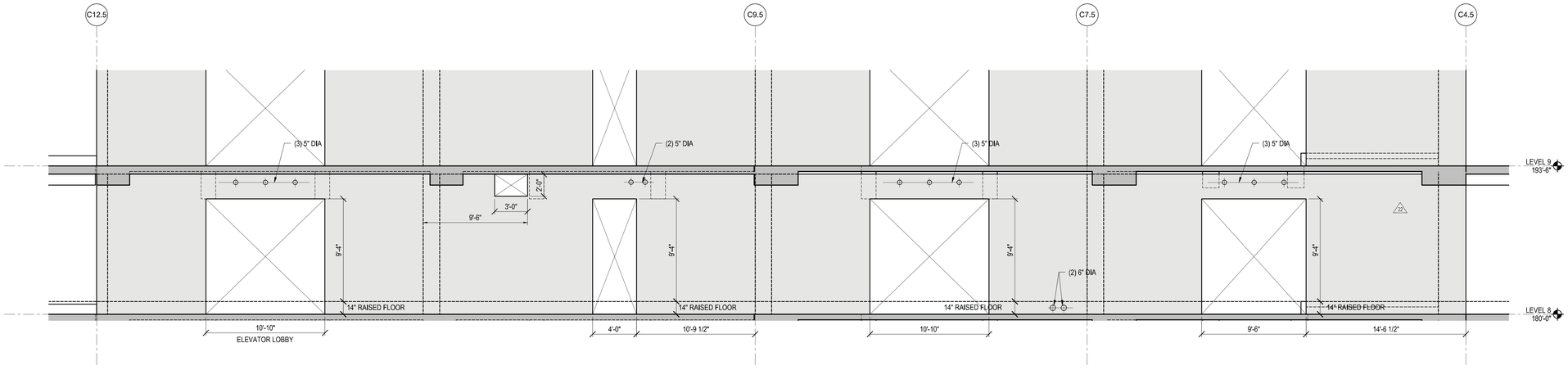
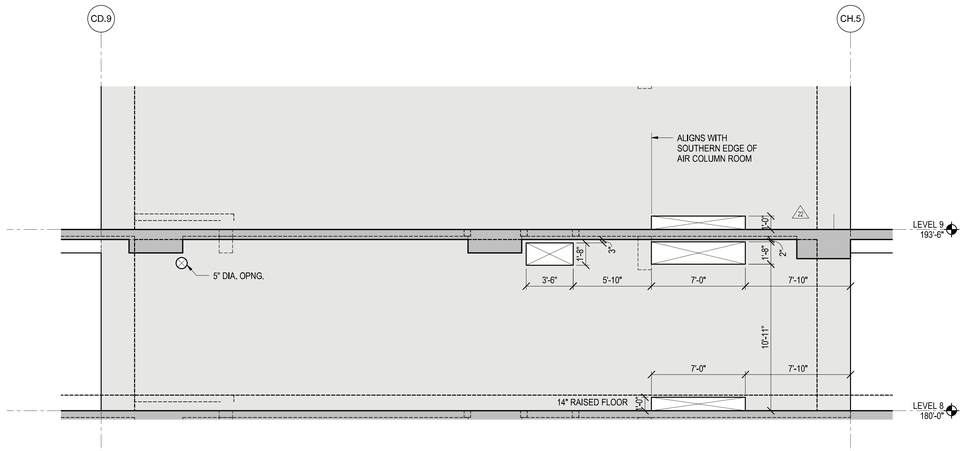


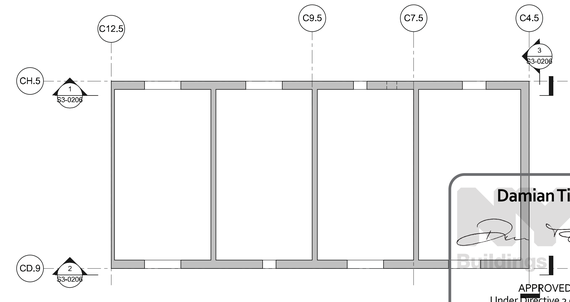
1 CH.5 - BANK 1 SHEARWALL ELEVATION
1/4" = 1'-0"



2 CD.9 - BANK 1 SHEARWALL ELEVATION
1/4" = 1'-0"



3 C4.5 - BANK 1 SHEARWALL ELEVATION
1/4" = 1'-0"



A BANK 1 SHEARWALL KEY PLAN
1/16" = 1'-0"

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APPROVED
Under Directive 2 of 1975
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HUDSON YARDS - TOWER C

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60 Columbus Circle
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Oxford Properties Group
320 Park Avenue, 17th Floor
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Construction Manager
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TEL: XXX.XXX.XXXX FAX: XXX.XXX.XXXX

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No.	Description	Date
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3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S3-0206

Drawing Title

SHEARWALL ELEVATIONS BANK 1

Drawing Number

S3-0206

B-Scan Drawing Number

S-089.00

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S3-0206
2/15/2013 10:30:31 AM
SHEARWALL ELEVATIONS BANK 1
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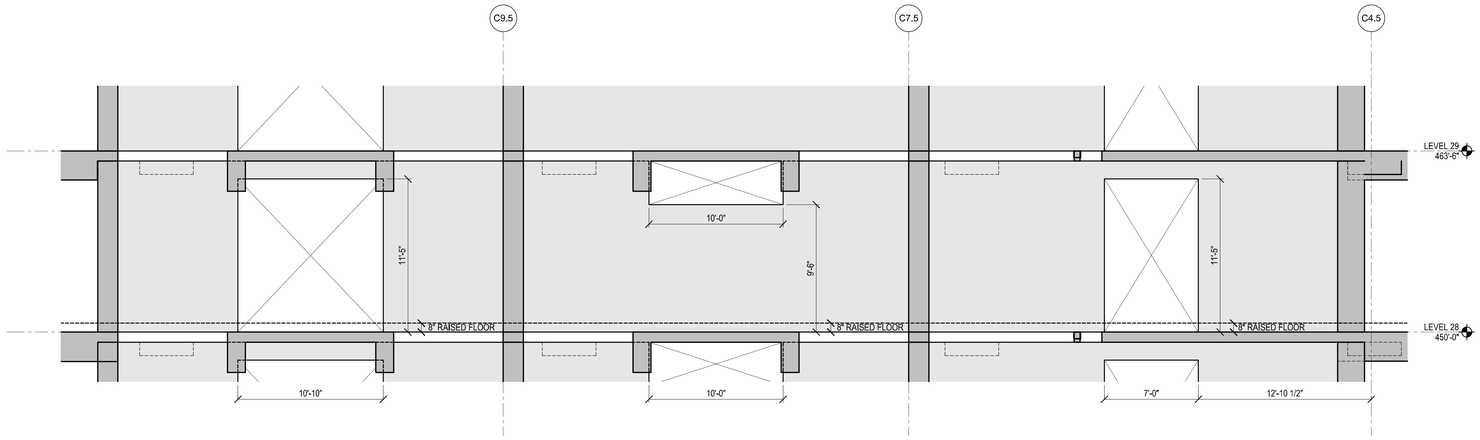
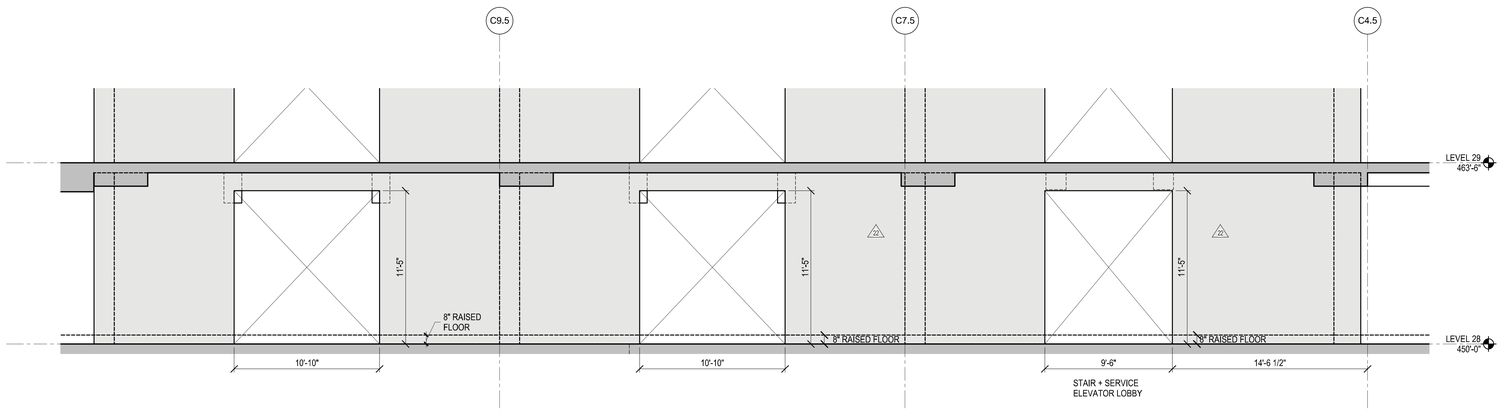


1 CH.5 - BANK 2 SHEARWALL ELEVATION
1/4" = 1'-0"



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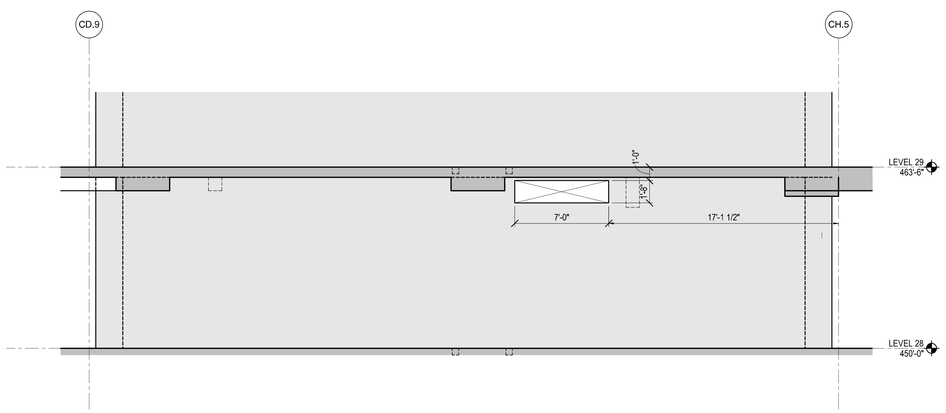

3 C4.5 - BANK 2 SHEARWALL ELEVATION
1/4" = 1'-0"

NOTES:

1. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

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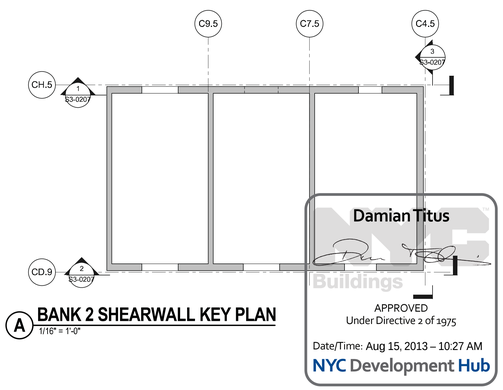

A BANK 2 SHEARWALL KEY PLAN
1/16" = 1'-0"

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1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S3-0207

Drawing Title

SHEARWALL ELEVATIONS BANK 2

Drawing Number

S3-0207

B-Scan Drawing Number

S-090.00

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S3-0207
2/15/2013 10:30:36 AM
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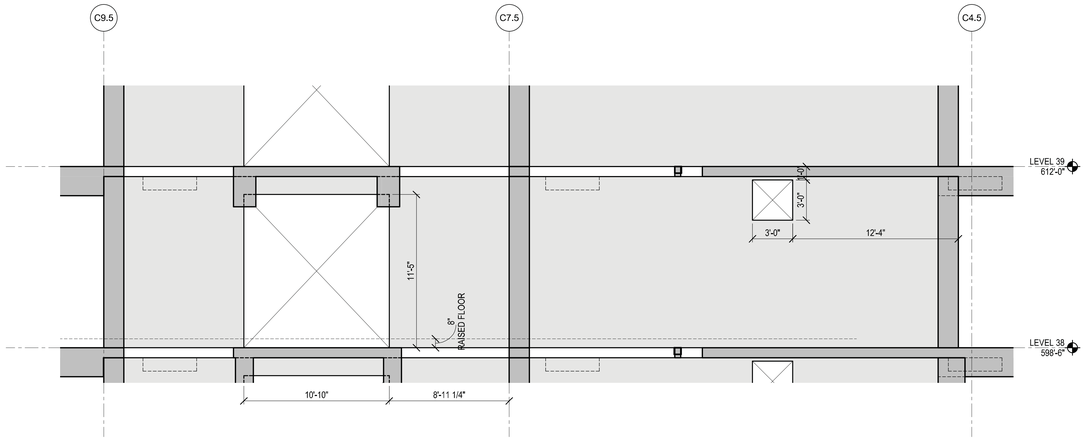
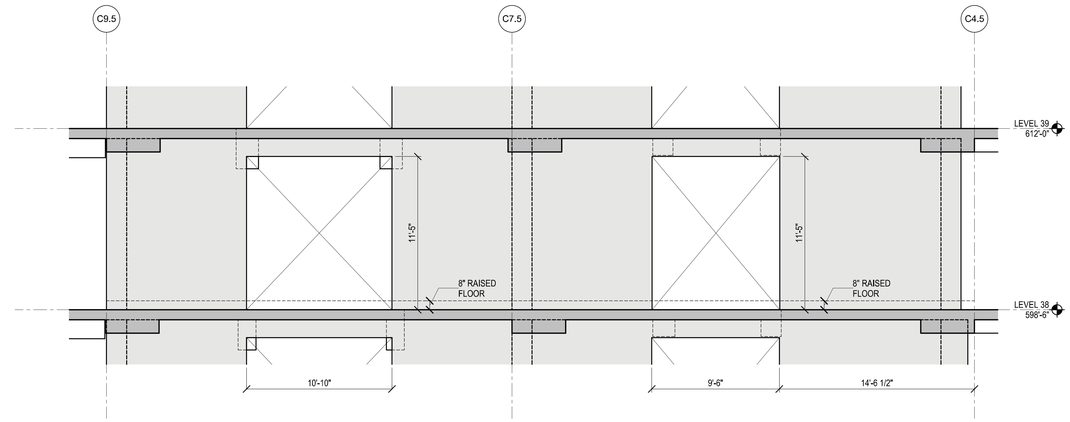
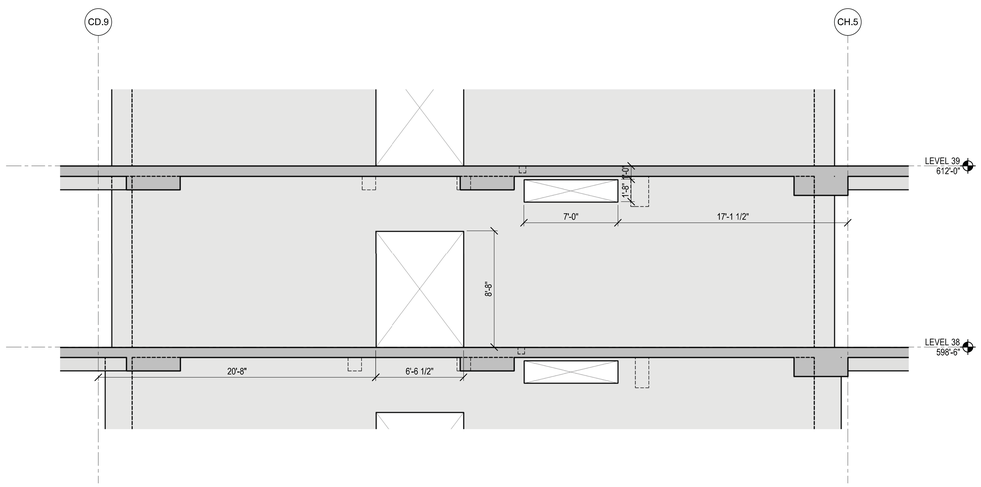


1 **CH.5 - BANK 3 SHEARWALL ELEVATION**
1/4" = 1'-0"



2 **CD.9 - BANK 3 SHEARWALL ELEVATION**
1/4" = 1'-0"



3 **C4.5 - BANK 3 SHEARWALL ELEVATION**
1/4" = 1'-0"

NOTES:

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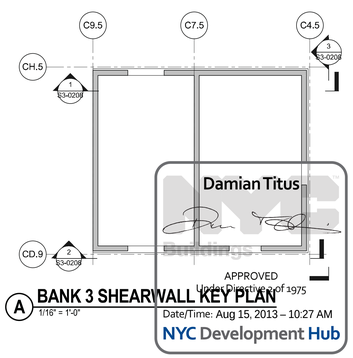

A **BANK 3 SHEARWALL KEY PLAN**
1/16" = 1'-0"

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1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: -
Project No. 1776.10
Drawn By: Author
Sheet Number

HYE -TC -S3-0208

Drawing Title

SHEARWALL ELEVATIONS BANK 3

Drawing Number

S3-0208

B-Scan Drawing Number

S-091.00 SHEET 70 OF 118

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S3-0208
2/15/2013 10:30:46 AM
SHEARWALL ELEVATIONS BANK 3
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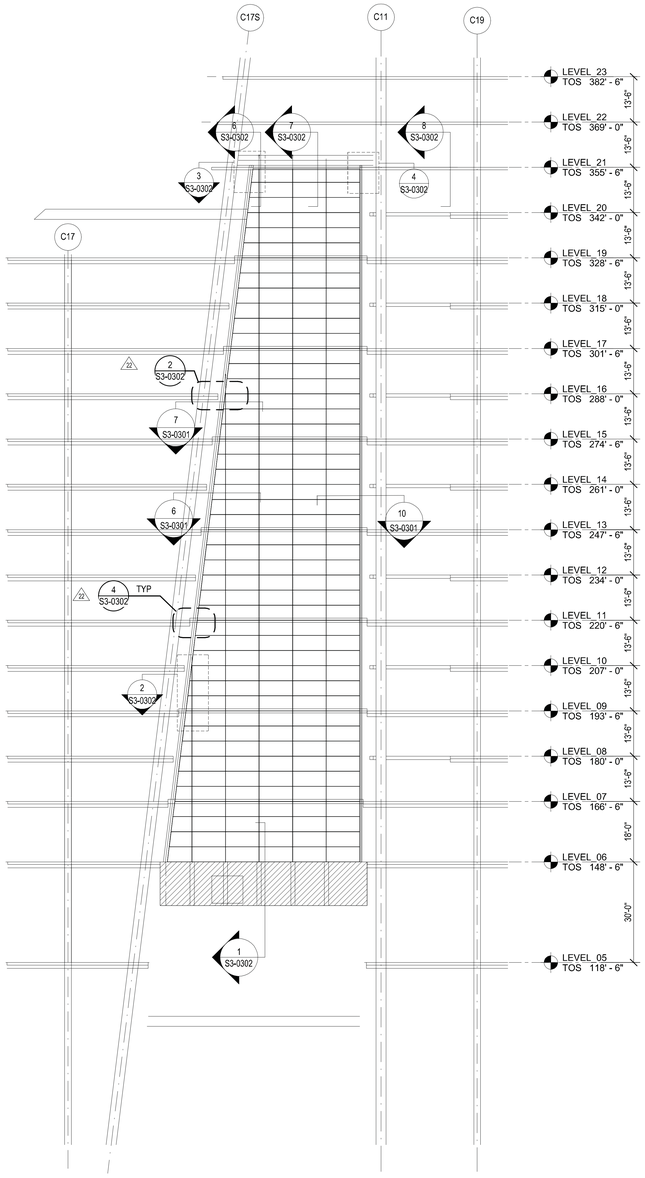
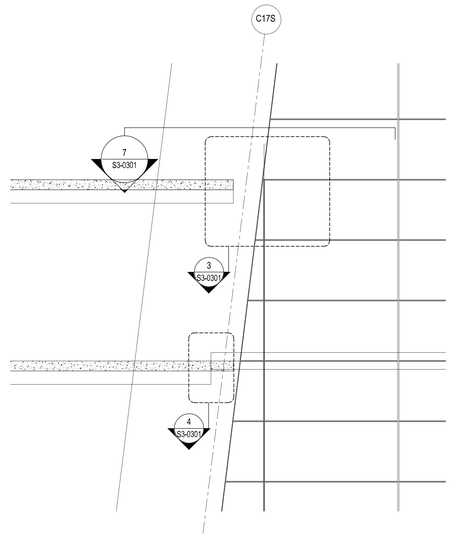
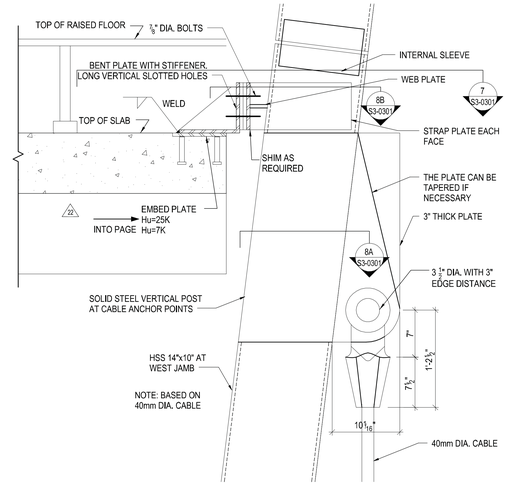


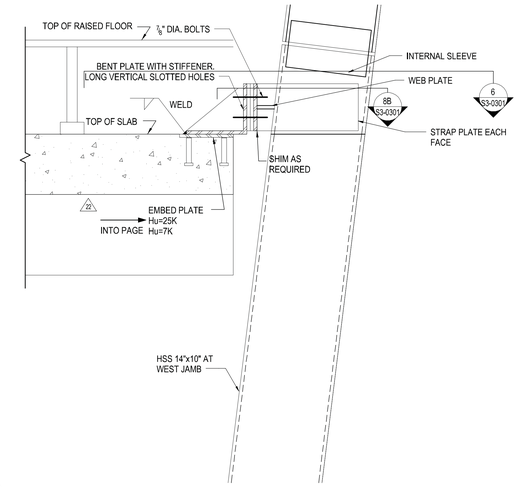
1 ATRIUM WALL ELEVATION1
1/16" = 1'-0"



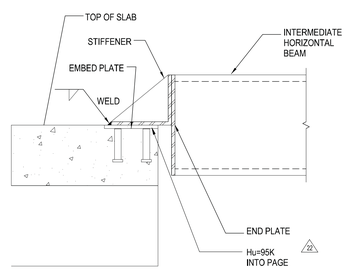
2 WEST JAMB ELEVATION
1/4" = 1'-0"



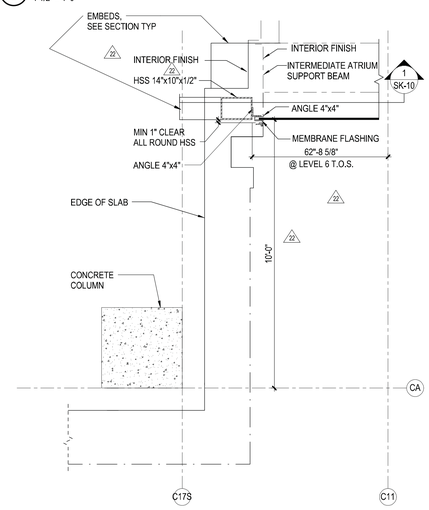
3 CABLE TERMINATION AT WEST JAMB
1 1/2" = 1'-0"



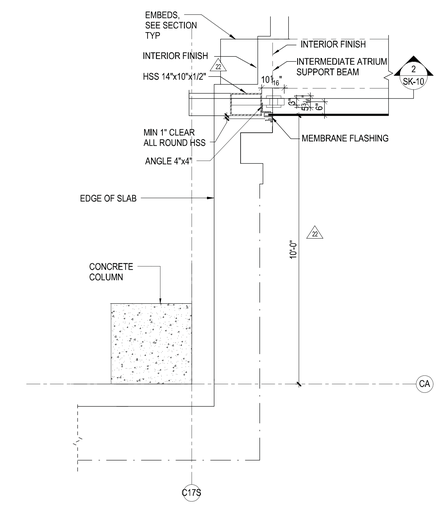
4 TUBE CONNECTION TYPICAL AT WEST JAMB
1 1/2" = 1'-0"



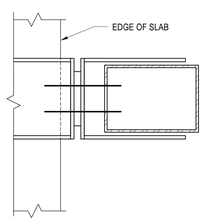
5 HORIZONTAL BEAM CONNECTION
1 1/2" = 1'-0"



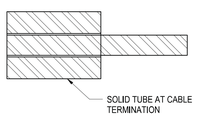
6 PLAN DETAIL WEST ATRIUM
1/2" = 1'-0"



7 PLAN DETAIL WEST ATRIUM AT CABLE TERMINATION
1/2" = 1'-0"

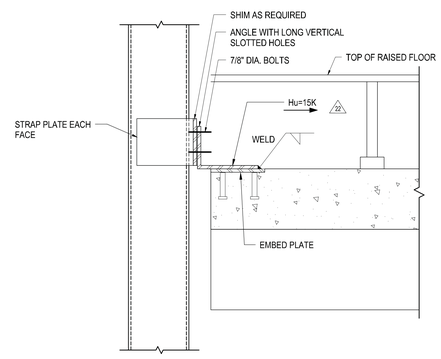


SECTION B-B

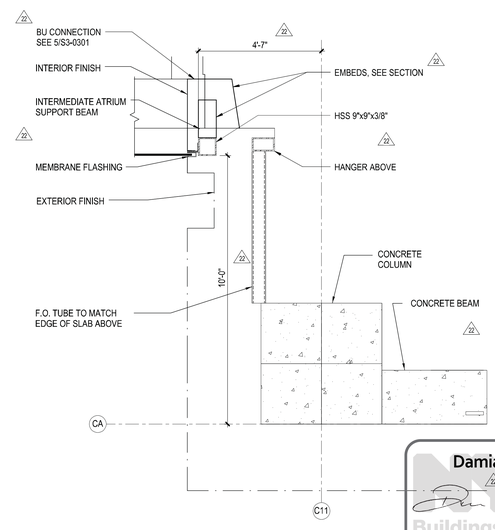


SECTION A-A

8 WEST JAMB POST
1 1/2" = 1'-0"



9 TUBE CONNECTION TYPICAL AT EAST JAMB
1 1/2" = 1'-0"



10 PLAN DETAIL EAST ATRIUM
1/2" = 1'-0"

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No.	Description	Date
2	ISSUE FOR FILING	02/15/2013
1	DI-22: STRUCTURE	02/01/2013

Key Plan

Issue Date: 12.07.12
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S3-0301

Drawing Title

ATRIUM CABLE WALL DETAILS I

Drawing Number

S3-0301

R.Koan Drawing Number

S-092.00

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S3-0301 ATRIUM CABLE WALL DETAILS 1
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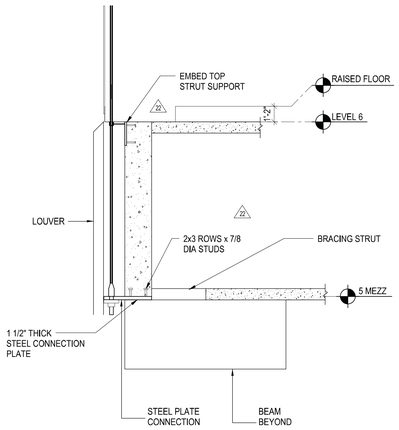
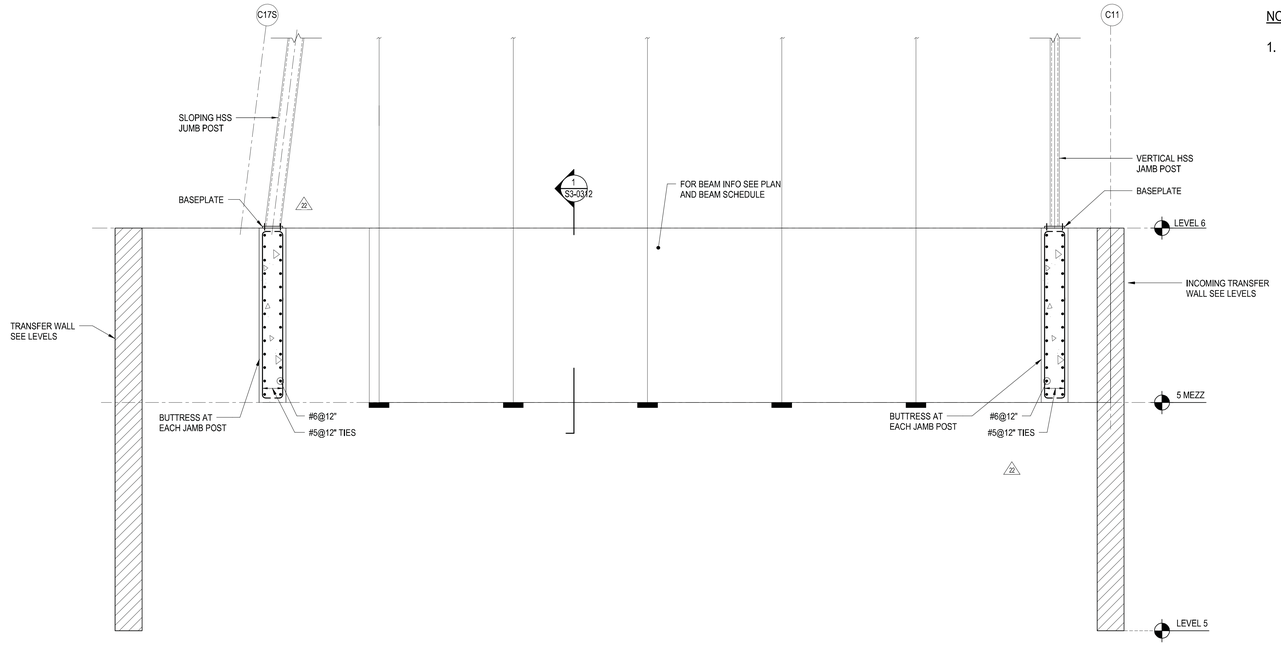


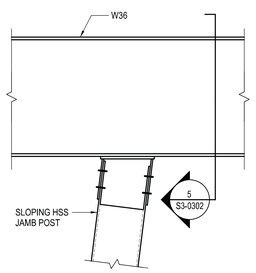
1 ATRIUM BOTTOM SECTION
1/4" = 1'-0"



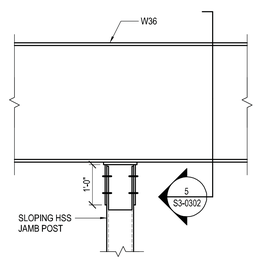
2 ATRIUM BOTTOM ELEVATION
1/4" = 1'-0"

NOTES

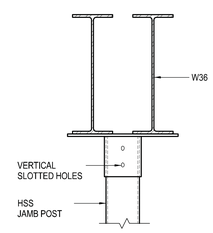
1. SEE S3-0301 FOR SECTION CALL OUT LOCATIONS



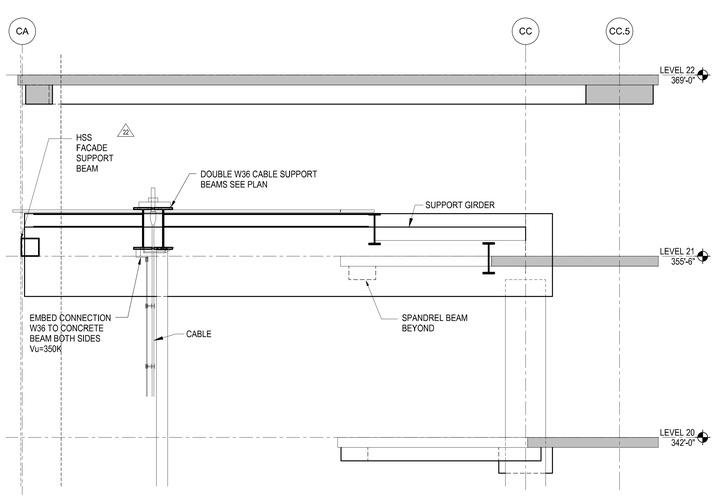
3 WEST HEADER CONNECTION
3/4" = 1'-0"



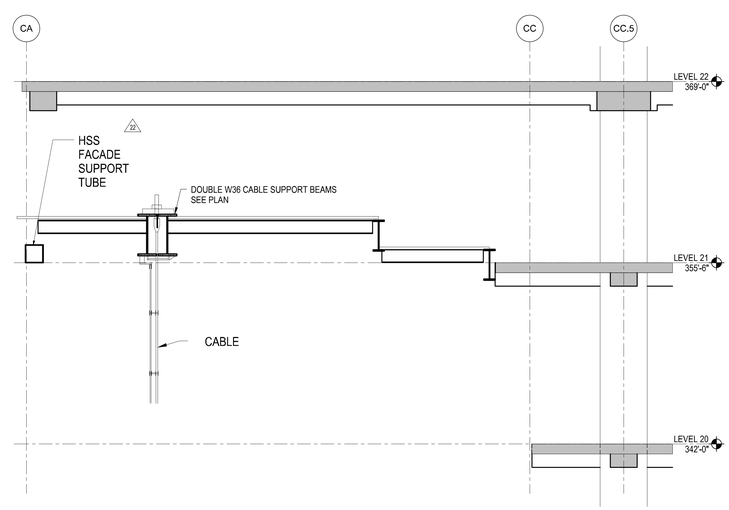
4 EAST HEADER CONNECTION
3/4" = 1'-0"



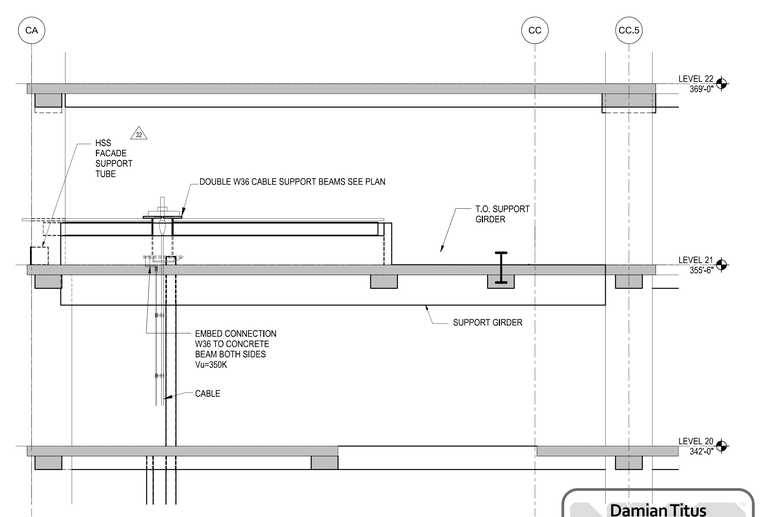
5 SECTION AT HEADER
3/4" = 1'-0"



6 ATRIUM TOP SECTION AT C17S
1/4" = 1'-0"



7 ATRIUM TOP SECTION THROUGH ATRIUM
1/4" = 1'-0"



8 ATRIUM TOP SECTION AT C11
1/4" = 1'-0"

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No.	Description	Date
2	ISSUE FOR FILING	02/15/2013
1	DI-22: STRUCTURE	02/01/2013

Key Plan

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HYE -TC -S3-0302

Drawing Title

ATRIUM CABLE WALL DETAILS II

Drawing Number
S3-0302

B-Scan Drawing Number
S-093.00

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S3-0302
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ATRIUM CABLE WALL DETAILS II
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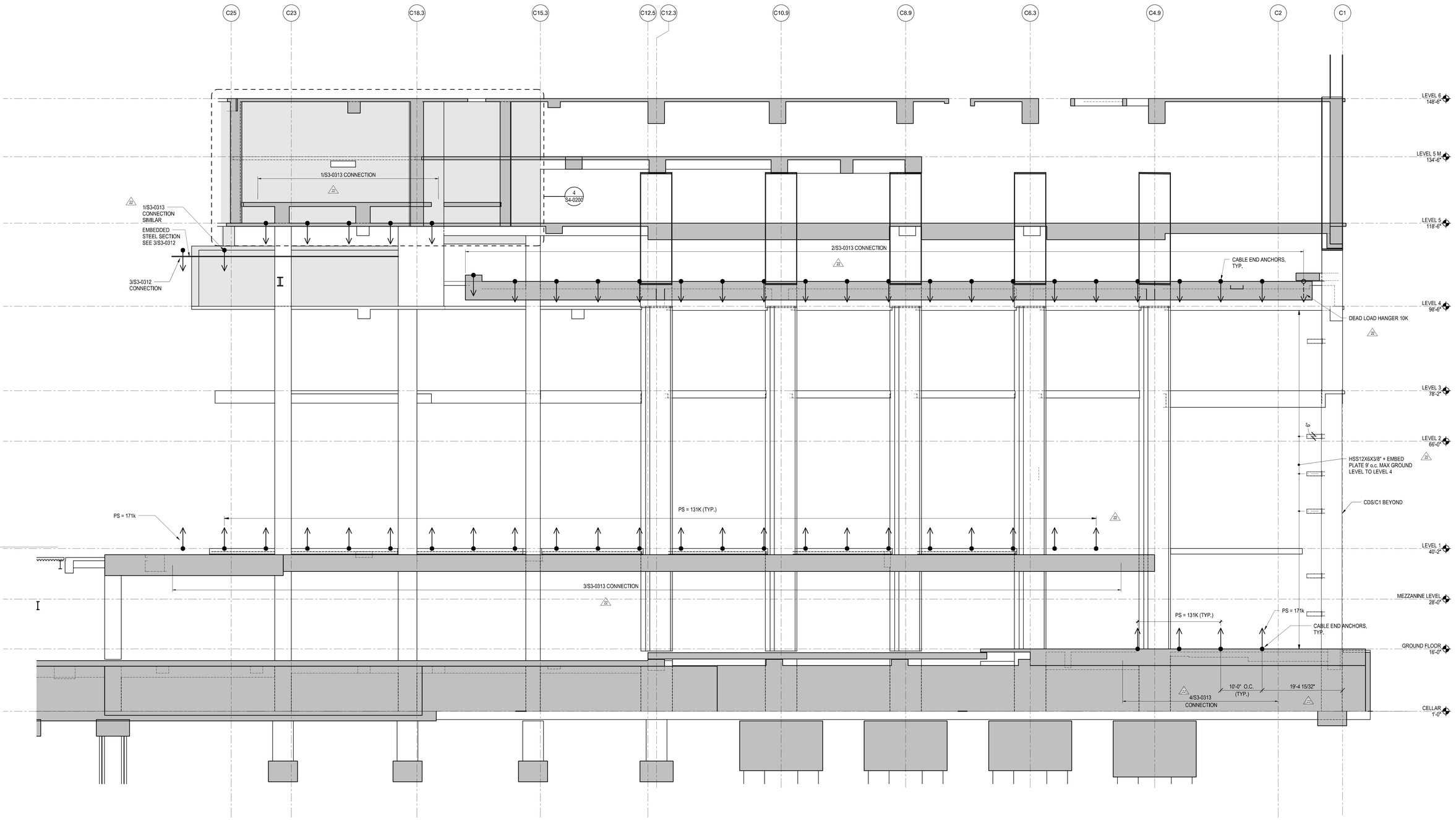

PS = DESIGN LOADS APPLIED FROM CABLES SUPPORTING LOBBY WALL AT COACH ENTRY BY OTHERS.

1 LOBBY CABLE WALL - CD.5 ELEVATION

1/8" = 1'-0"

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

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HYE -TC -S3-0311

Drawing Title

CABLE - LOBBY WALL LOADS I

Drawing Number

S3-0311

B-Scan Drawing Number

S-094.00 SHEET 73 OF 118

S3-0311
2/15/2013 10:30:59 AM
CABLE - LOBBY WALL LOADS I
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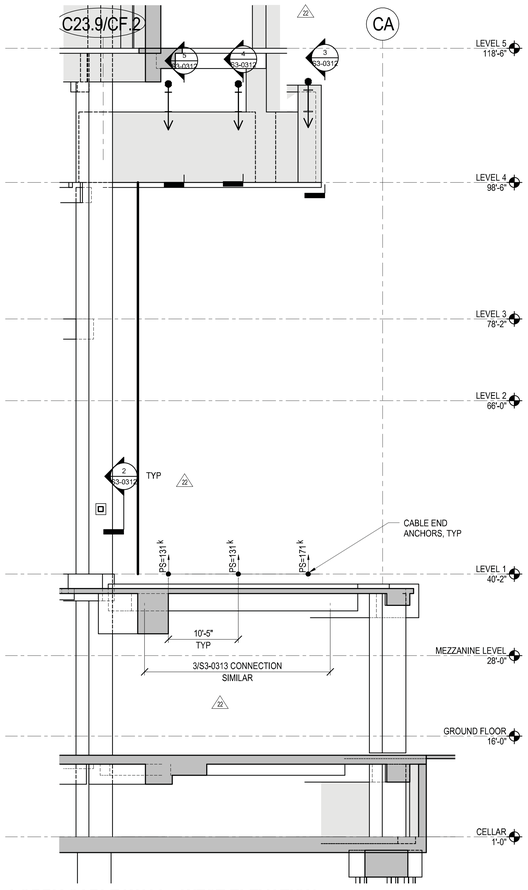
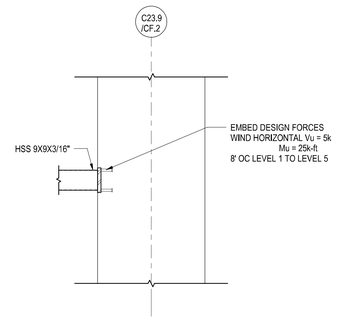
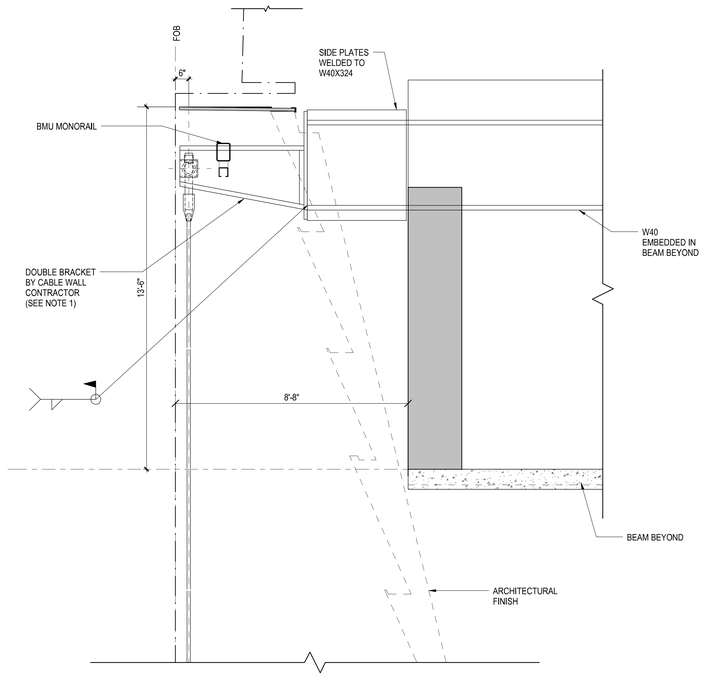


1 LOBBY CABLE WALL - WEST ELEVATION
1/8" = 1'-0"

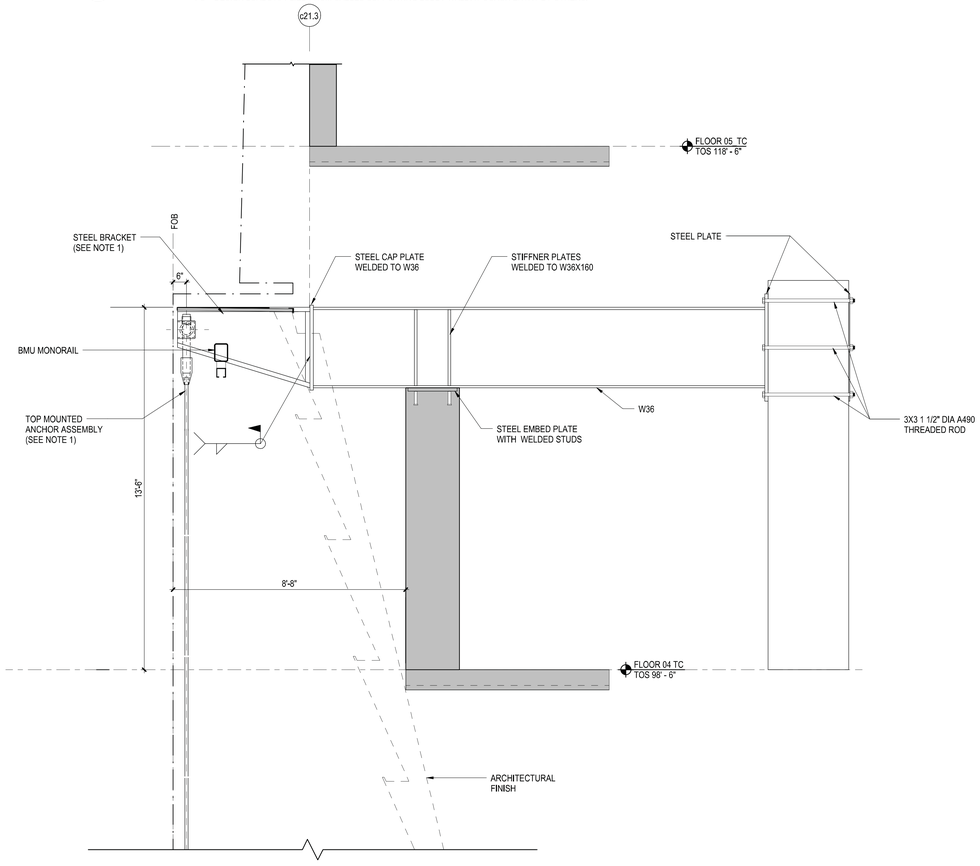
PS = DESIGN LOADS APPLIED FROM CABLES SUPPORTING LOBBY WALL AT COACH ENTRY BY OTHERS.



2 LATERAL CABLE WALL SUPPORT @ C23.9/CF.2
1/2" = 1'-0"



3 DETAIL B
1/2" = 1'-0"



4 DETAIL C
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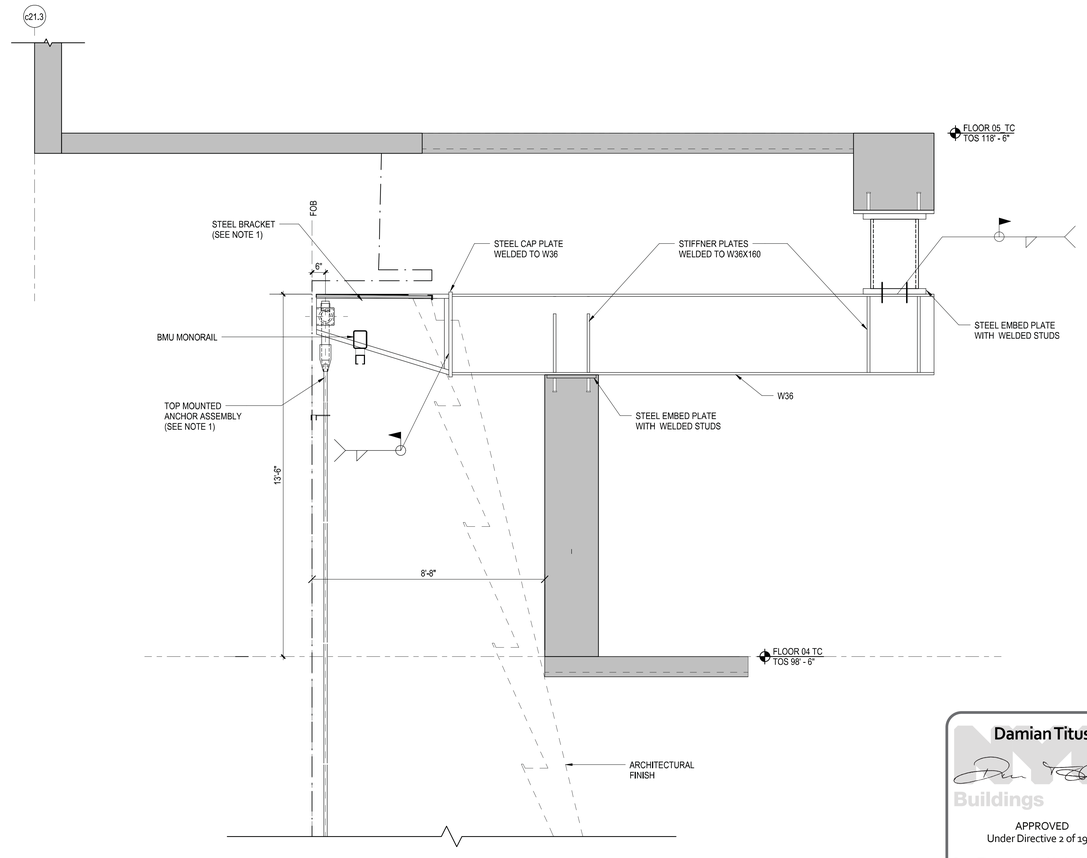

5 DETAIL D
1/2" = 1'-0"

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No.	Description	Date
2	ISSUE FOR FILING	02/15/2013
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Key Plan

Issue Date: 01/29/13
Project No. 1776.10
Drawn By: Author
Sheet Number HYE -TC -S3-0312
Drawing Title

CABLE - LOBBY WALL LOADS AND SECTIONS

Drawing Number
S3-0312

B-Scan Drawing Number
S-095.00 SHEET 74 OF 118

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CABLE - LOBBY WALL LOADS AND SECTIONS
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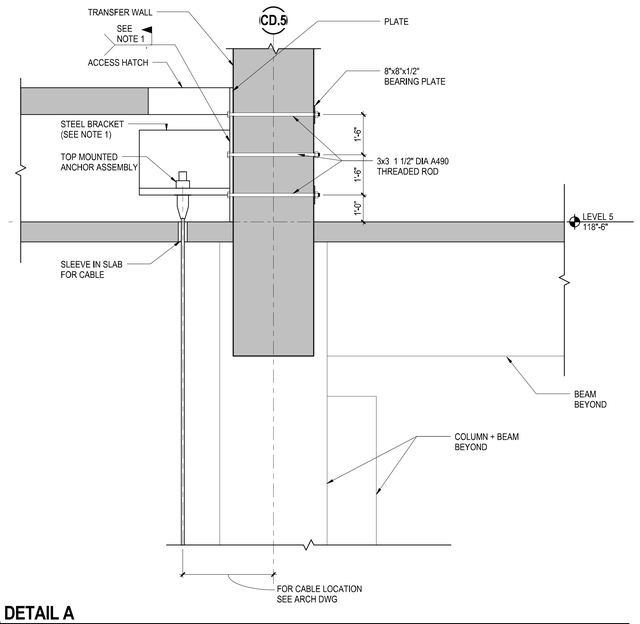
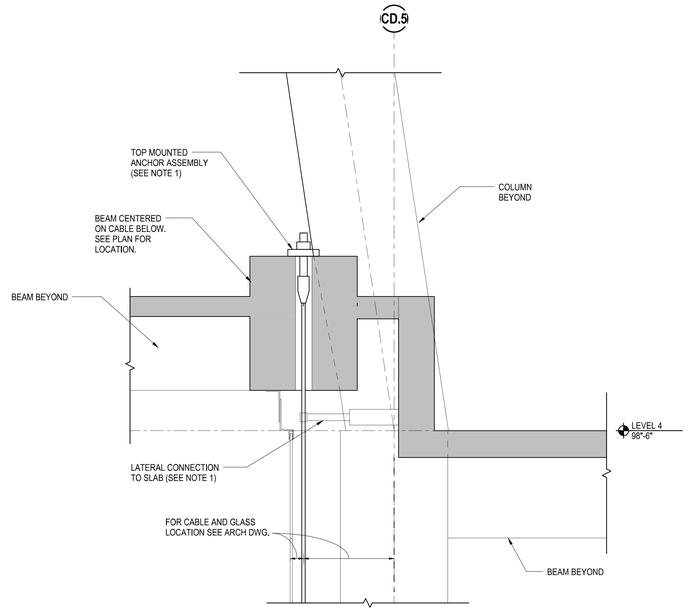
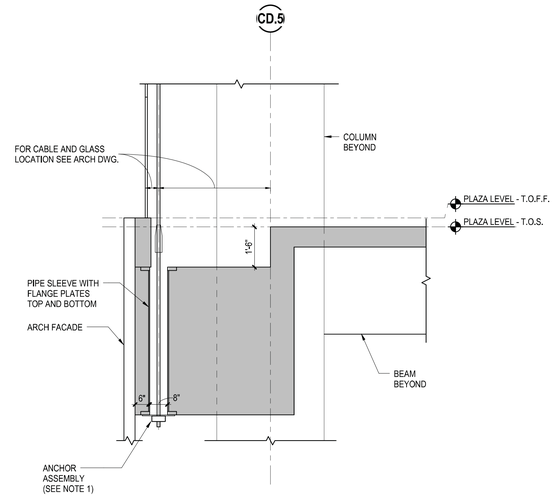


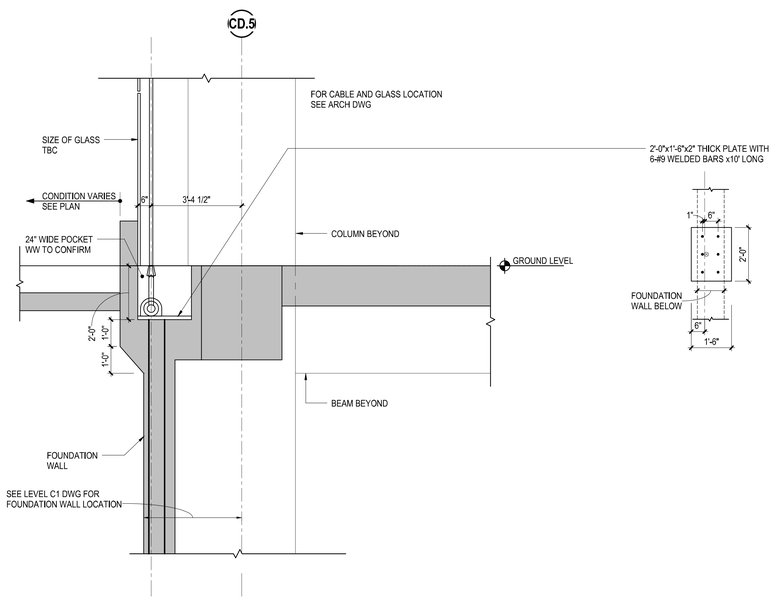
1 **DETAIL A**
1/2" = 1'-0"



2 **DETAIL B**
1/2" = 1'-0"



3 **DETAIL C**
1/2" = 1'-0"



4 **DETAIL D**
1/2" = 1'-0"

NOTE:
1. ALL CABLE CONNECTION ASSEMBLIES AND OTHER HARDWARE THAT ARE OUTSIDE OF CONCRETE BEAMS/WALLS AND THEIR CONNECTION TO THE STEEL EMBEDS ARE TO BE DESIGNED AND FURNISHED BY THE CABLE WALL CONTRACTOR.

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No.	Description	Date
2	ISSUE FOR FILING	02/15/2013
1	DI-22: STRUCTURE	02/01/2013

Key Plan

Issue Date: 01/21/13
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Drawing Title

LOBBY CABLE WALL SECTIONS

Drawing Number
S3-0313

B.Kean Drawing Number
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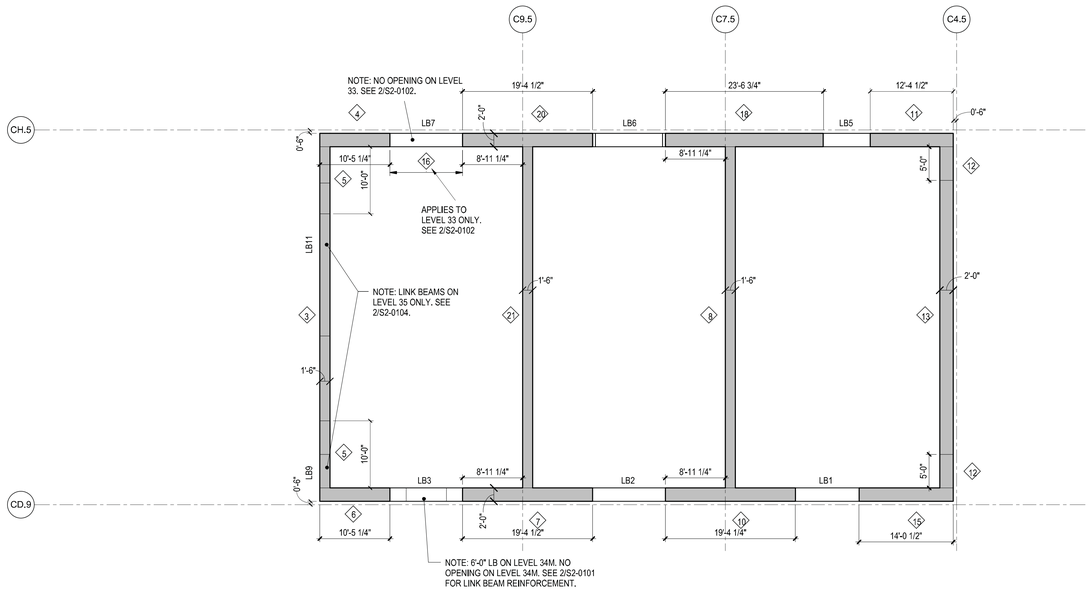
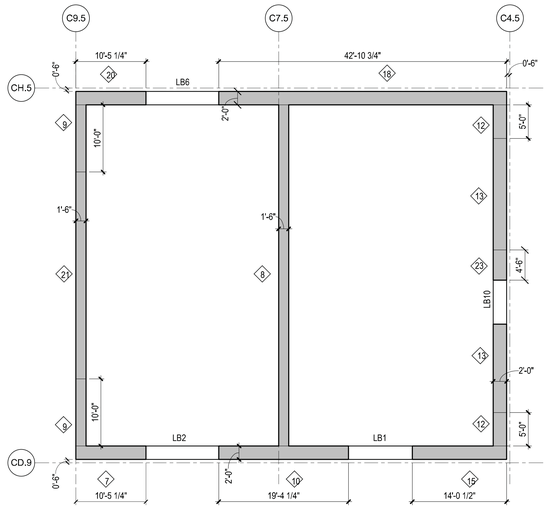


1 SHEARWALL PART PLAN - LEVEL 27 TO LEVEL 35

1/8" = 1'-0"



2 SHEARWALL PART PLAN - LEVEL 35 TO LEVEL 38

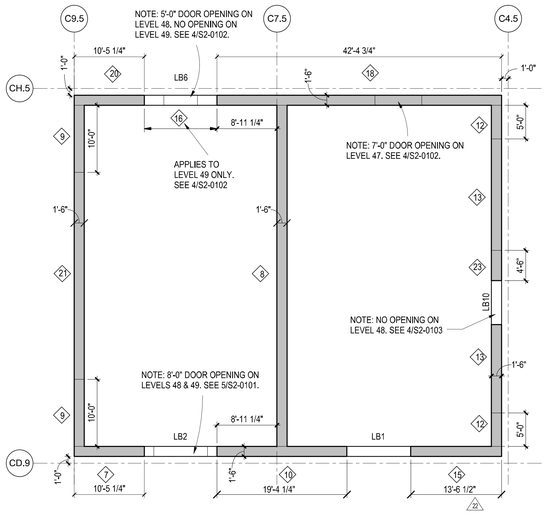
1/8" = 1'-0"

NOTES:

1. ◇ INDICATES ZONE NUMBER. SEE SHEARWALL SCHEDULES ON S6-0201 AND S6-0202
2. LBX INDICATES LINK BEAM SEE ELEVATION AND SCHEDULE FOR DIMENSIONS
3. FOR ADDITIONAL INFORMATION REFER TO THE FOLLOWING DRAWINGS:

GENERAL NOTES	S0 SERIES
SUPER STRUCTURE PLAN	S1 SERIES
SHEARWALL ELEVATIONS	S2-0100 SERIES
SHEARWALL DETAILS	S5-0500 SERIES
SHEARWALL SCHEDULE	S6-0200 SERIES

4. FINAL WALL OPENING/ PIER DIMENSIONS TO BE COORDINATED W/ ARCHITECTURAL AND STRUCTURAL TOLERANCES
5. DIMENSIONS FOR REFERENCE. SEE S2-0100 SERIES FOR DIMENSIONS



3 SHEARWALL PART PLAN - LEVEL 38 TO LEVEL 50

1/8" = 1'-0"

Damian Titus

Buildings

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Date/Time: Aug 15, 2013 – 10:27 AM

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:

Project No. 1776.10

Drawn By Author

Sheet Number

HYE -TC -S4-0102

Drawing Title

SHEARWALL PART PLANS II

Drawing Number

S4-0102

B-Scan Drawing Number

S-098.00

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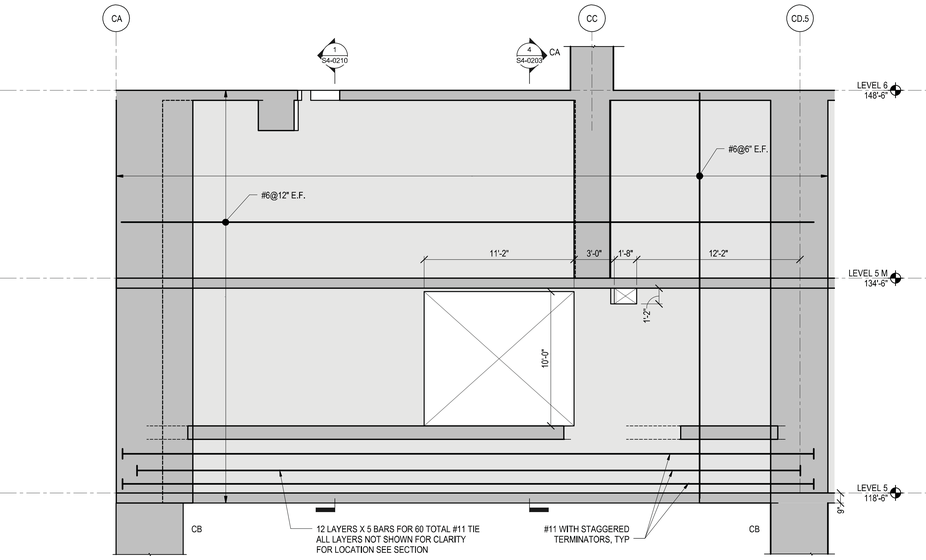
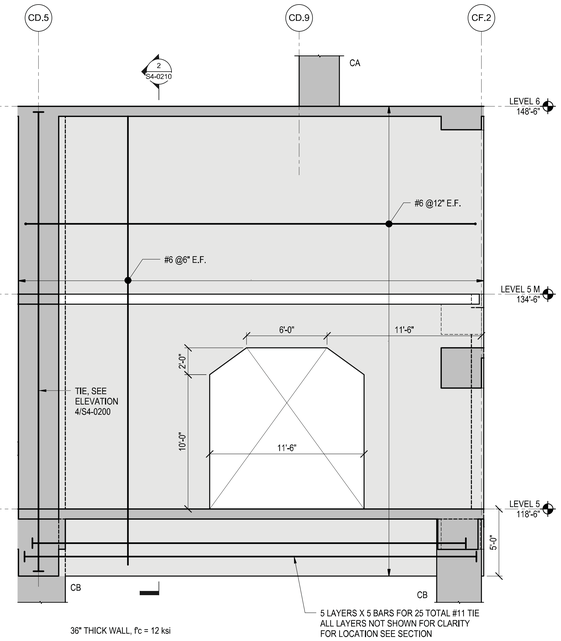
S4-0102
2/15/2013 10:31:09 AM
SHEARWALL PART PLANS
C:\Users\mesiney\Documents\KPF\13329.00\Revit\N13329.00 - TOWER C - ermicoal.rvt

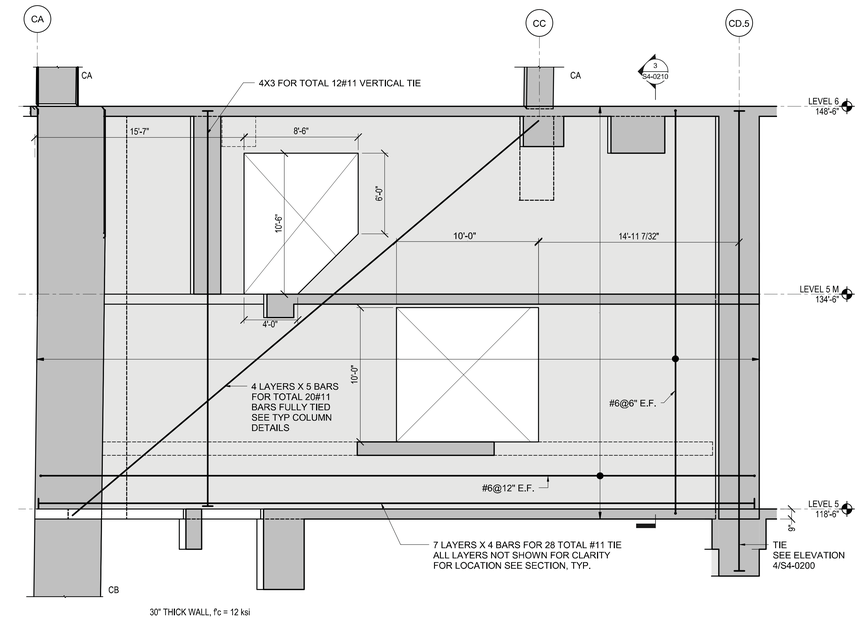
DEPT OF BLDGS 421524290 Job Number
E3006615000B0 Scan Code



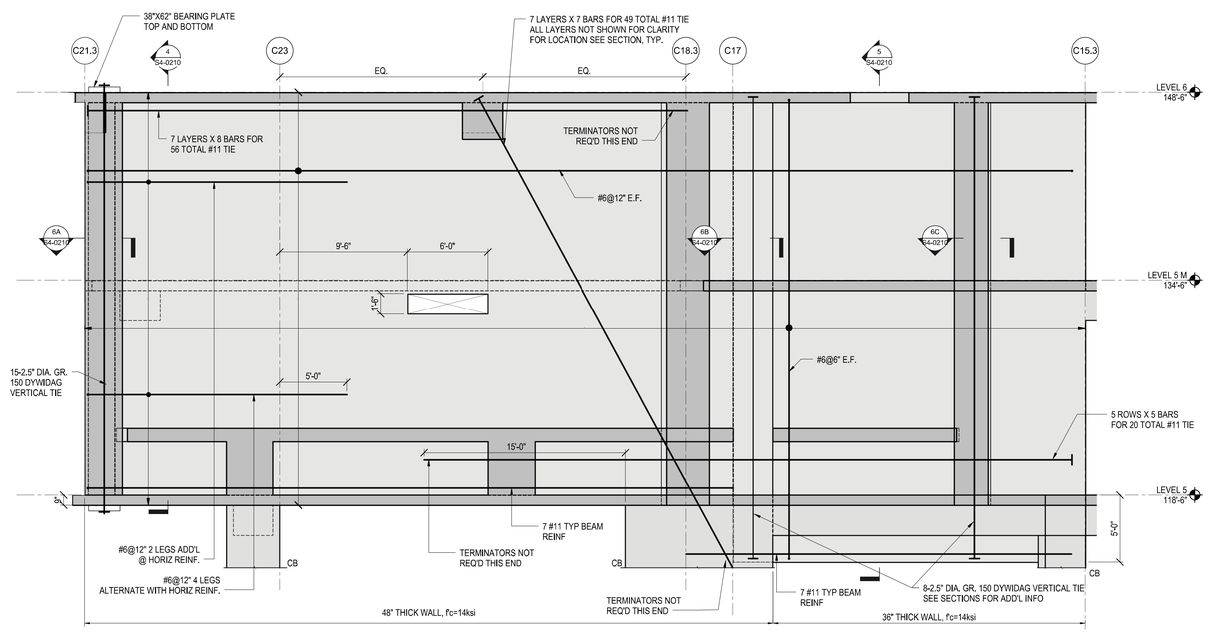
1 ELEVATION
1/4" = 1'-0"



2 ELEVATION
1/4" = 1'-0"



3 ELEVATION
1/4" = 1'-0"



4 ELEVATION
1/4" = 1'-0"

NOTES:

1. ALL TENSION TIE REINFORCEMENT SHALL BE CONTINUOUS AND SPLICED USING MECHANICAL COUPLERS. SPLICE LOCATIONS SHALL BE STAGGERED PER ACI STANDARDS AT LEAST THREE LOCATIONS.
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4. MINIMUM TIE BAR SPACING OF 4 BAR DIAMETERS CENTER-TO-CENTER
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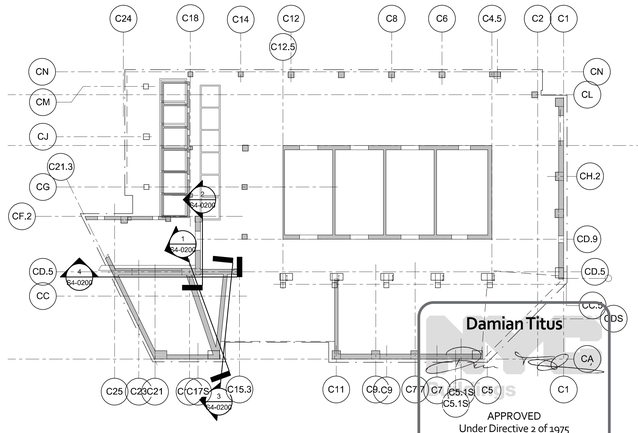
6. HOOK TYPICAL HORIZONTAL AND VERTICAL BARS EACH FACE



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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

ISSUE FOR FILING 08/20/2012

Issue Date:
Project No. 1776.10
Drawn By: Author
Sheet Number

STATE OF NEW YORK · DAMIAN A. TITUS · 025242-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S4-0200

Drawing Title

LEVEL 5 TRANSFER WALL ELEVATIONS I

Drawing Number

S4-0200

B-Scan Drawing Number

S-099.00 SHEET 77 OF 118

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S4-0200 LEVEL 5 TRANSFER WALL ELEVATIONS
2/15/2013 10:31:21 AM C:\Users\mwalsing\Documents\NY1329.00-Revit\411329.00 - TOWER C - amlocal.rvt

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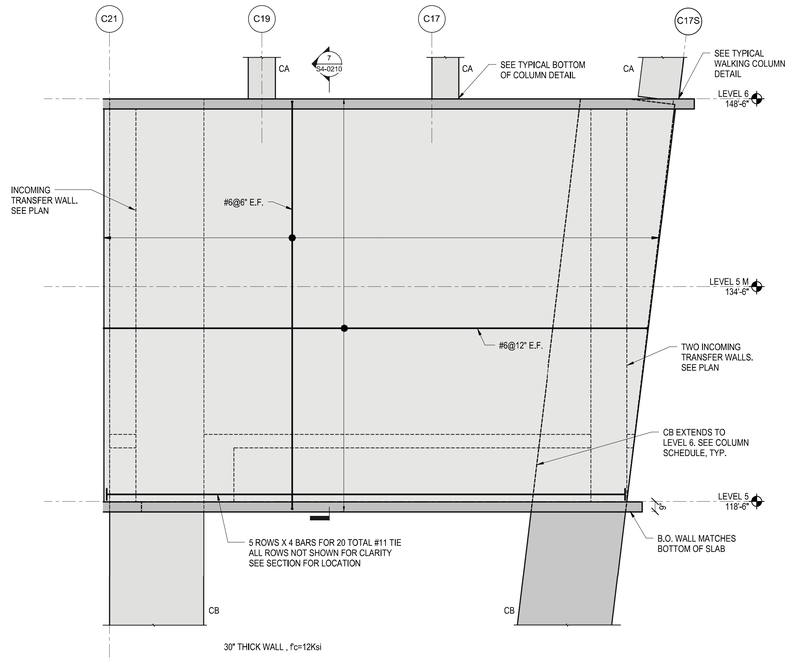
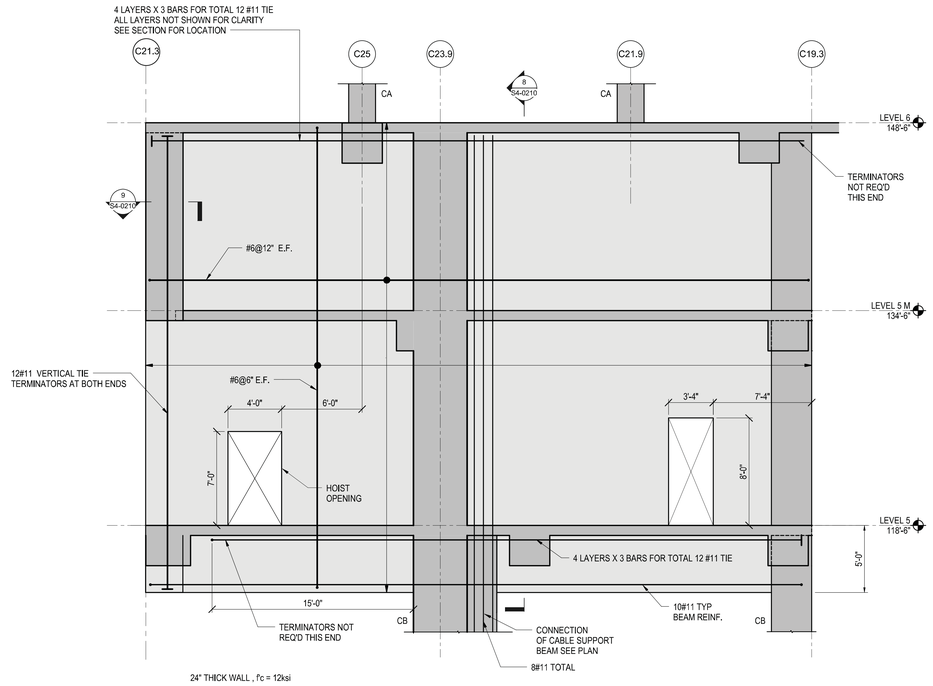
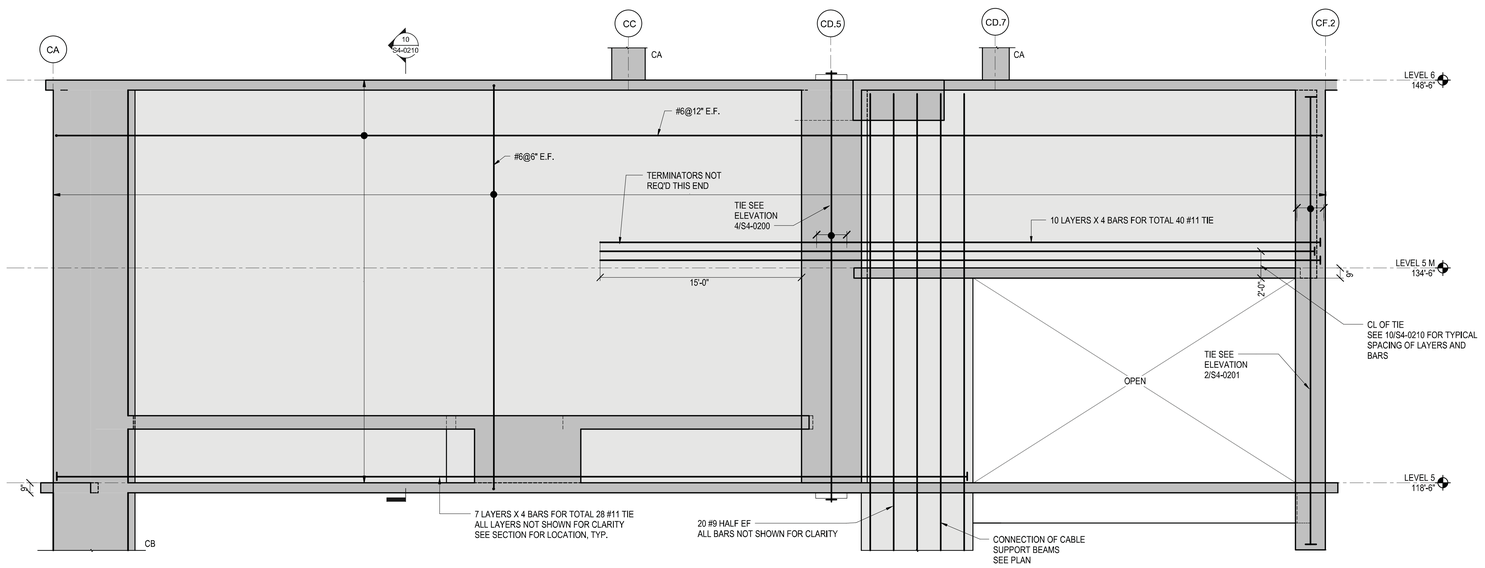


1 ELEVATION
1/4" = 1'-0"



2 ELEVATION
1/4" = 1'-0"



3 ELEVATION
1/4" = 1'-0"

30" THICK WALL , f'c=12Ksi

NOTES:
1. ALL TENSION TIE REINFORCEMENT SHALL BE CONTINUOUS AND SPLICED USING MECHANICAL COUPLERS. SPLICE LOCATIONS SHALL BE STAGGERED PER ACI STANDARDS AT LEAST THREE LOCATIONS.
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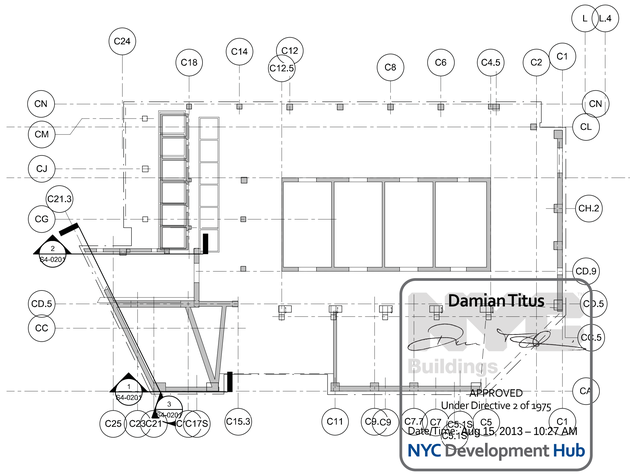

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S4-0201

Drawing Title

LEVEL 5 TRANFER WALL ELEVATIONS II

Drawing Number
S4-0201

B-Scan Drawing Number
S-100.00 SHEET 78 OF 118

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S4-0201
2/13/2013 10:59:59 AM
LEVEL 5 TRANFER WALL ELEVATIONS II
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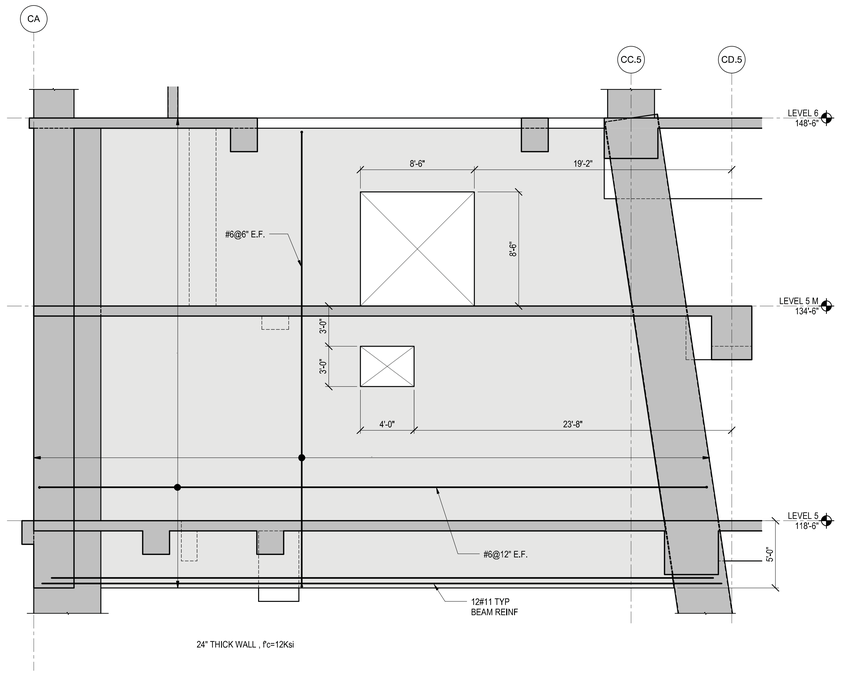
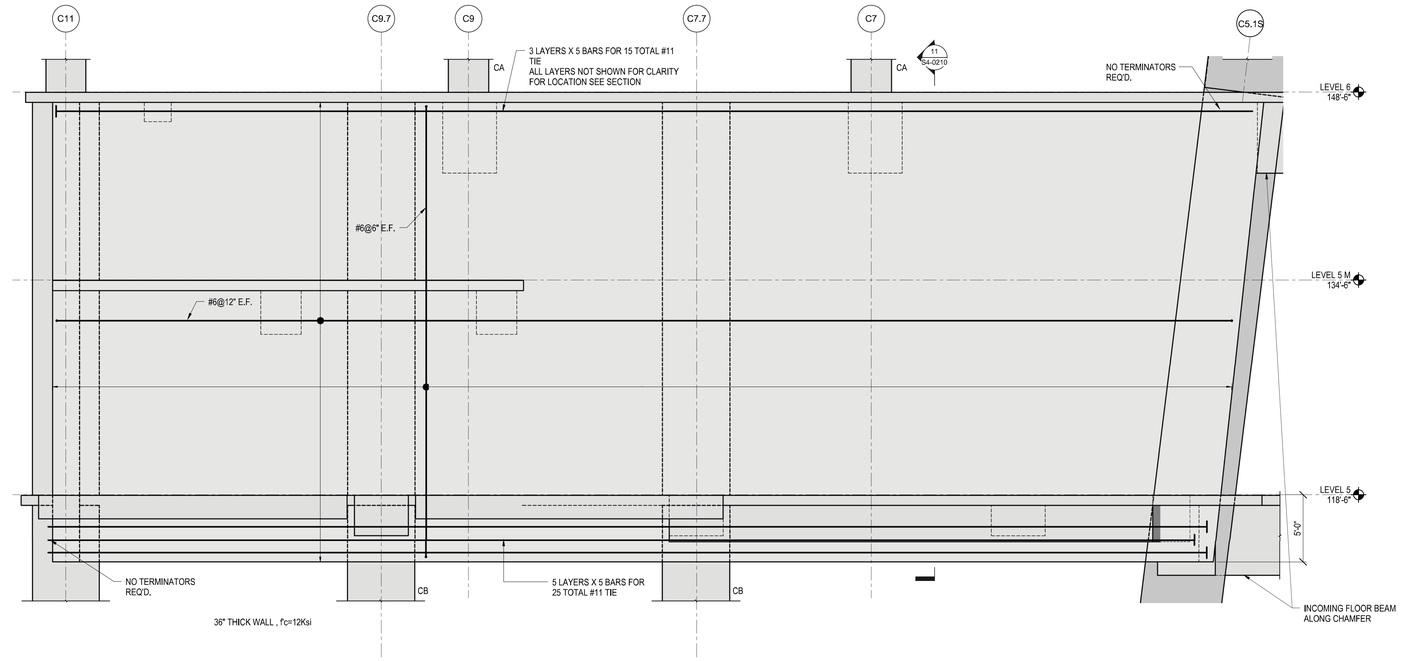
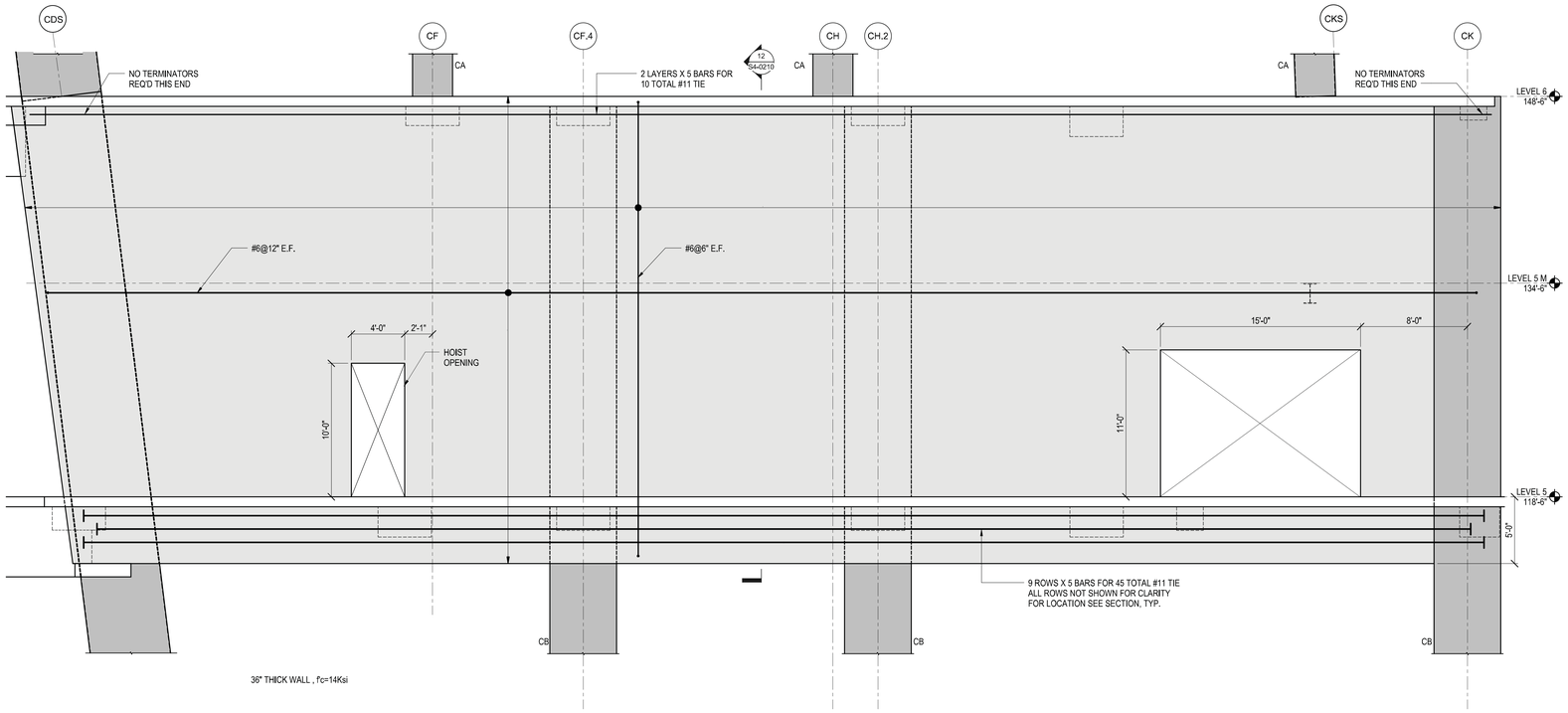


1 **ELEVATION**
1/4" = 1'-0"



2 **ELEVATION**
1/4" = 1'-0"



3 **ELEVATION**
1/4" = 1'-0"

NOTES:
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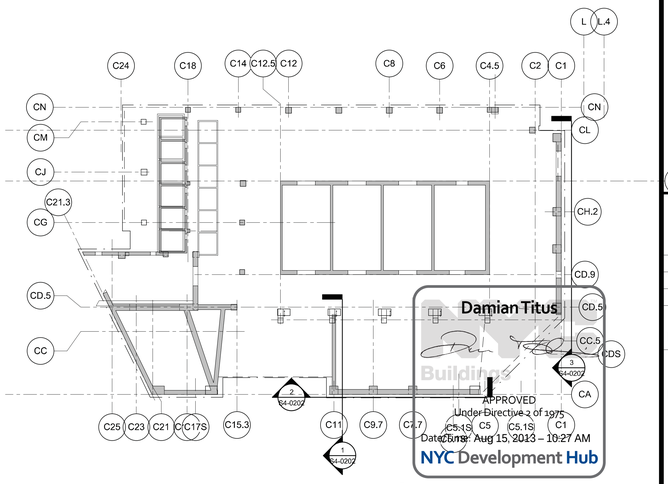

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	0k-22: STRUCTURE	02/01/2013
1	0k-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 12.05.12
Project No. 1776.10
Drawn By Author
Sheet Number
HYE -TC -S4-0202
Drawing Title

LEVEL 5 TRANFER WALL ELEVATIONS III

Drawing Number
S4-0202
B-Scan Drawing Number
S-101.00

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S4-0202
2/15/2013 10:31:40 AM
LEVEL 5 TRANSFER WALL ELEVATIONS III
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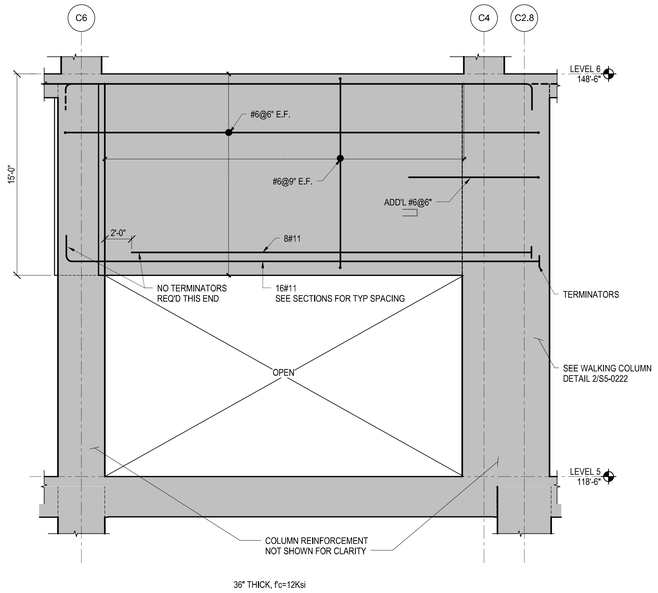
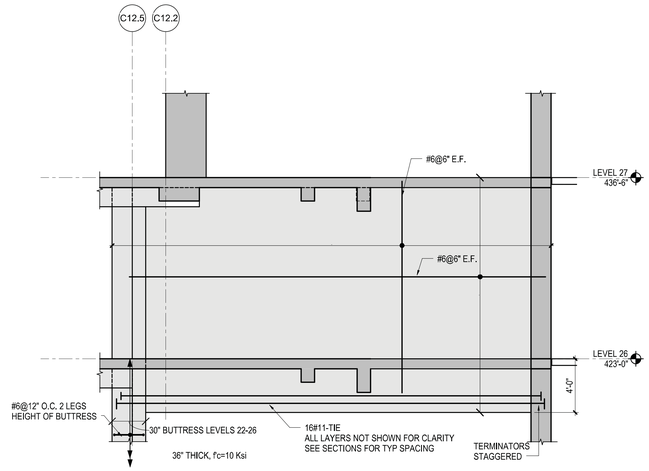
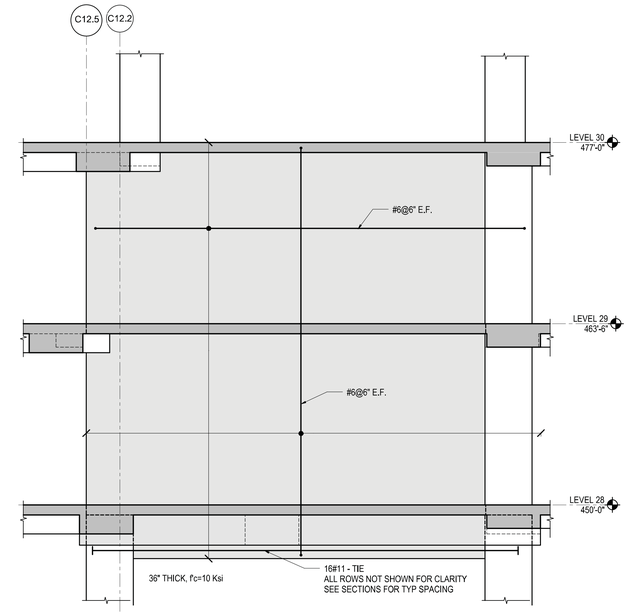


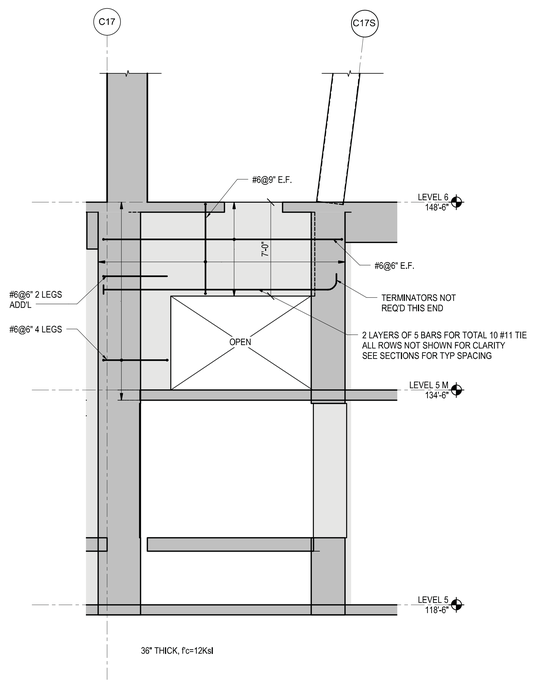
1 COL. C4/CN TRANSFER ELEVATION
1/4" = 1'-0"



2 GRID CG TRANSFER WALL AT LEVEL 26
1/4" = 1'-0"



3 GRID CC.5 TRANSFER WALL AT LEVEL 28
1/4" = 1'-0"



4 C17/CC DEEP BEAM TRANSFER
1/4" = 1'-0"

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: -
Project No. 1776.10
Drawn By: Author
Sheet Number HYE -TC -S4-0203
Drawing Title

LEVEL 5 & UPPER LEVEL TRANSFER WALL ELEVATION IV

Drawing Number
S4-0203

B-Scan Drawing Number
S-102.00 SHEET 80 OF 118

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S4-0203
2/15/2013 10:31:46 AM
LEVEL 5 & UPPER LEVEL TRANSFER WALL ELEVATION IV
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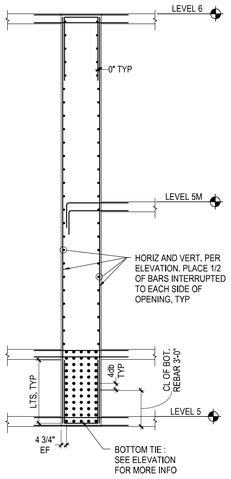
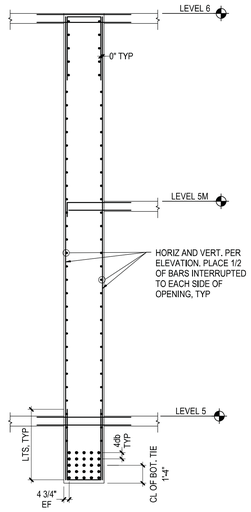
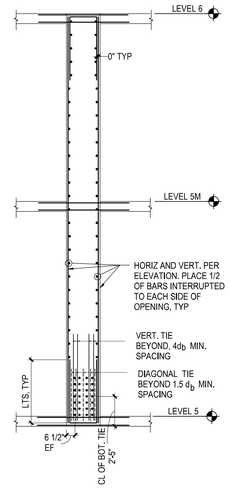


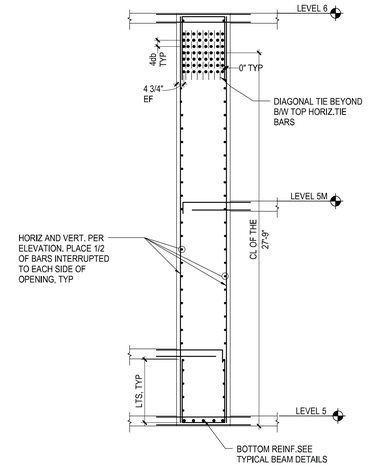
1 **SECTION**
1/4" = 1'-0"



2 **SECTION**
1/4" = 1'-0"



3 **SECTION**
1/4" = 1'-0"



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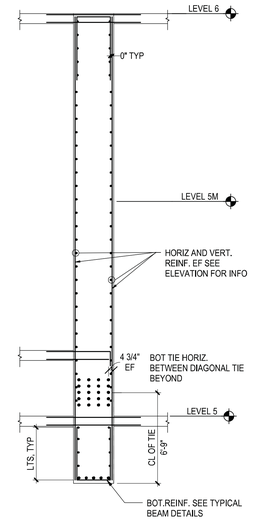

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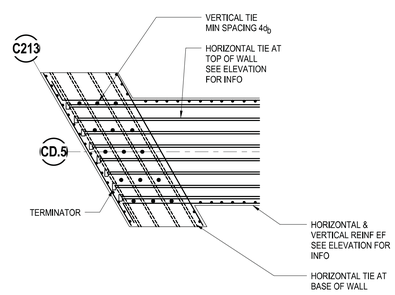

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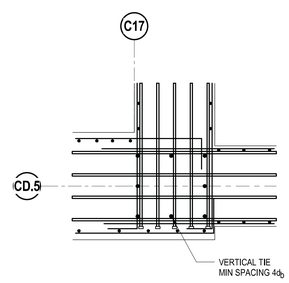

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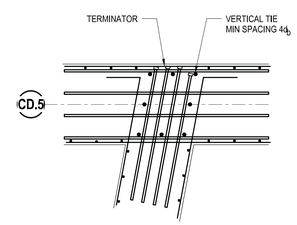
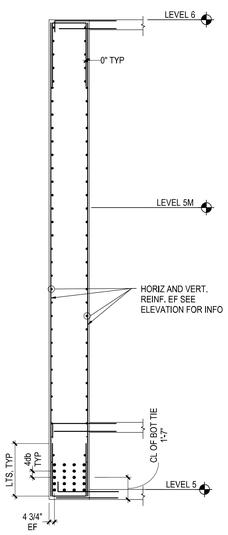
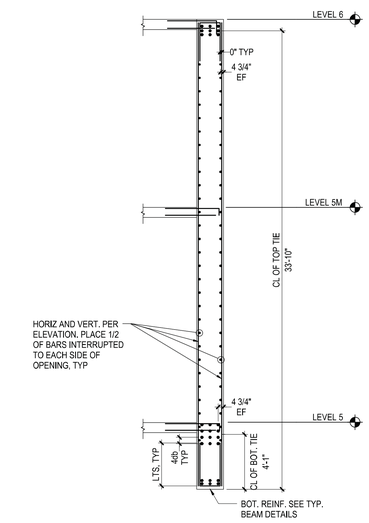


C

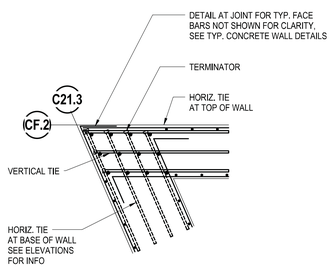
6 **VERTICAL TIE PLAN LAYOUT GRID CD.5**
1/2" = 1'-0"



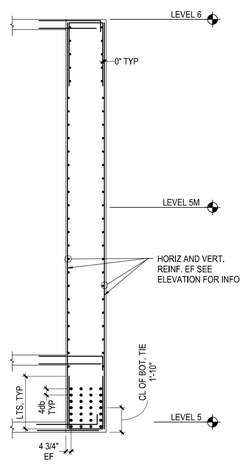
7 **SECTION**
1/4" = 1'-0"



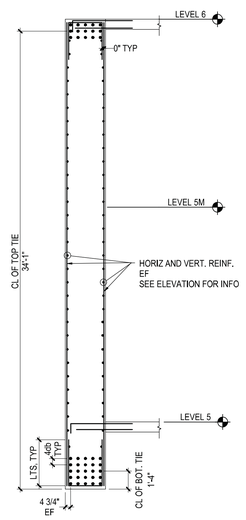
8 **SECTION**
1/4" = 1'-0"



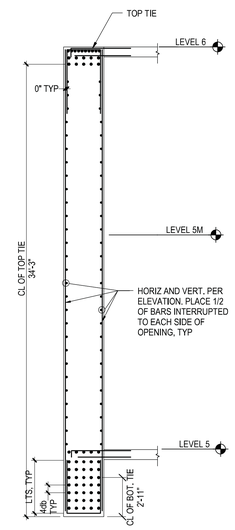
9 **PLAN OF VERTICAL TIES**
1/2" = 1'-0"



10 **SECTION**
1/4" = 1'-0"



11 **SECTION**
1/4" = 1'-0"



12 **SECTION**
1/4" = 1'-0"

NOTE:

1. SEE S4-0200 SERIES FOR SECTION LOCATION

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 12/07/12
Project No. 1776.10
Drawn By: Author
Sheet Number HYE -TC -S4-0210
Drawing Title

TRANSFER WALL SECTIONS

Drawing Number S4-0210
B-Scan Drawing Number S-104.00

SHEET 81 OF 118

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S4-0210 TRANSFER WALL SECTIONS
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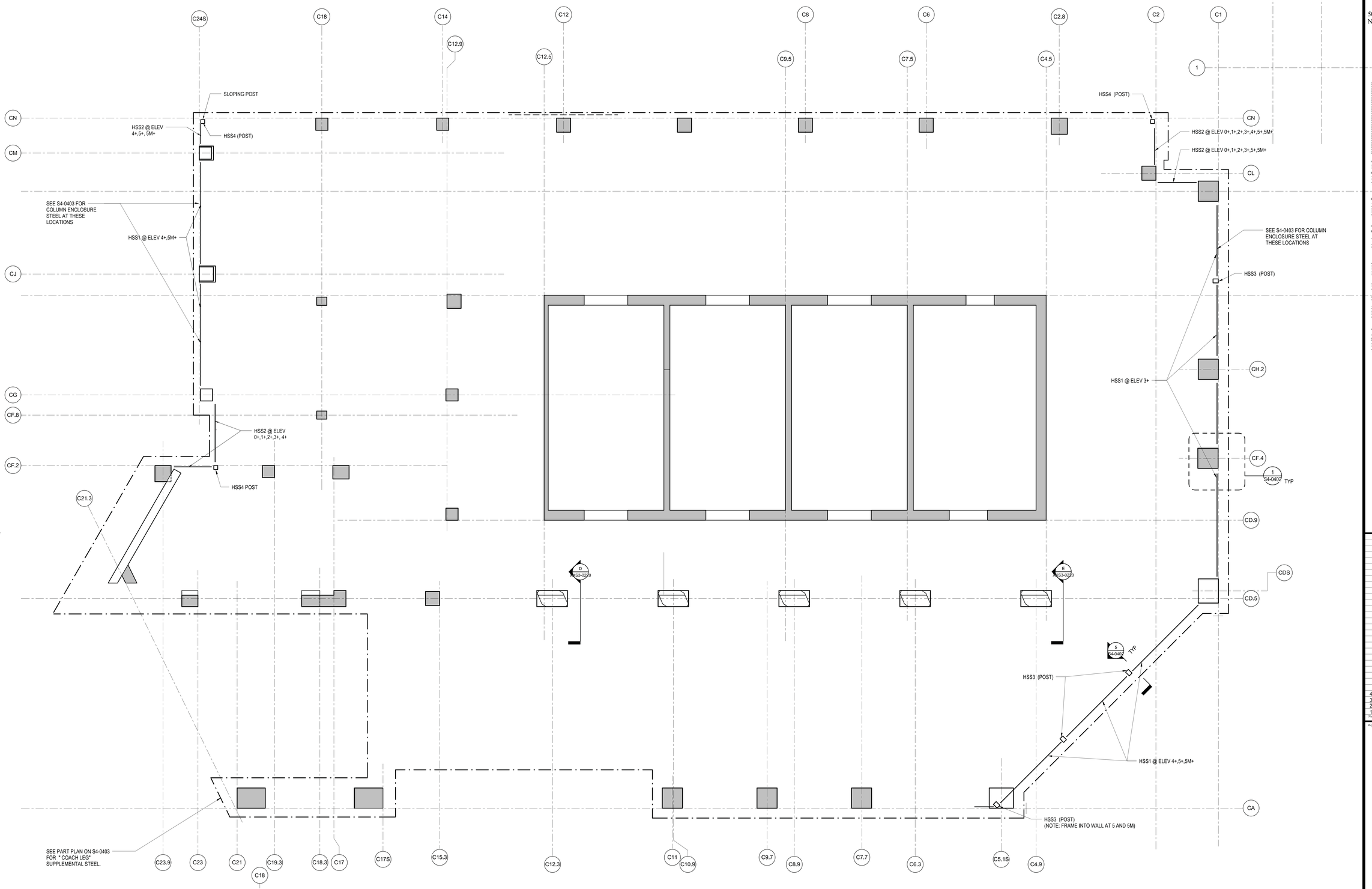

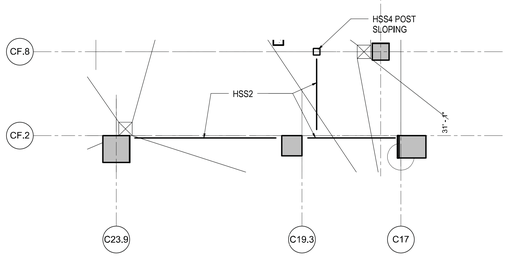

2 PART PLAN FOR ELEVATIONS BELOW 4TH FLOOR

1/8" = 1'-0"

NOTES:

1. HSS SYMBOLS
   HSS1 = HSS 16x12x5/16 (16" HORIZ.)
   HSS2 = HSS 12X12x1/4
   HSS3 POST = HSS 16x12x5/16 @ 5th FLOOR
   HSS 12x12x5/16 ALL OTHER FLOORS
   HSS4 POST = HSS 12x12x5/16 @ 5th FLOOR
   HSS 12X12x1/4 ALL OTHER FLOORS

2. ELEVATIONS.
   ELEVATIONS 1+,2+,3+ etc INDICATES ELEVATIONS ABOVE THE NOMINAL LEVEL 1, LEVEL 2, LEVEL 3 etc. (i.e. 1+ INDICATES AN ELEVATION BETWEEN LEVEL 1 AND LEVEL 2). THE EXACT T.O. TUBE ELEVATIONS AT THESE LOCATIONS SHALL BE COORDINATED WITH CURTAIN WALL DRAWINGS AND CONTRACTOR.

3. HSS POST CALLED OUT ON THIS PLAN, NEEDED TO SUPPORT HORIZONTAL TUBES, ARE SUPPORTED ON THE FLOOR SLAB IMMEDIATELY BELOW THE ELEVATIONS SHOWN AND ANCHORED AT FLOOR SLAB ABOVE SEE DETAILS ON S4-0402

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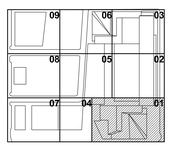
No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DN/ZZ: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan



Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S4-0401
Drawing Title

STATE OF NEW YORK · ALFRED M. BRAZIL · 082843-1 · LICENSED PROFESSIONAL ENGINEER

SUPPLEMENTAL FACADE SUPPORT STEEL

Drawing Number
S4-0401

R-Scan Drawing Number
S-111.00

SHEET 82 OF 118

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S4-0401
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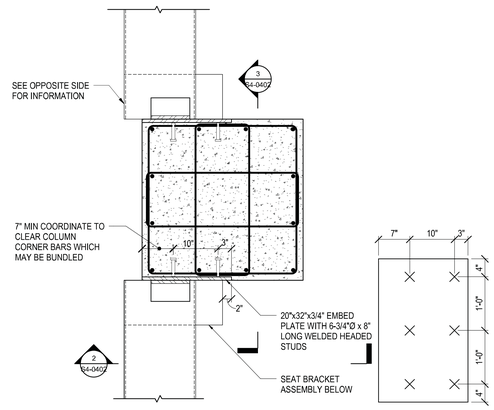
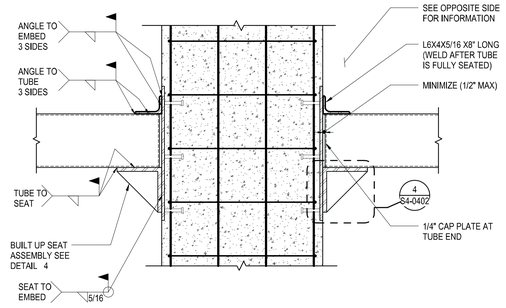
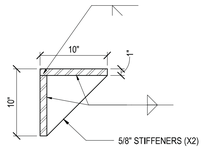


NOTE:
1. ALL WELDS ARE 1/4" FILLETS MIN, U.N.O.
2. INFORMATION SHOWN IS THE SAME ON BOTH SIDES OF COLUMN

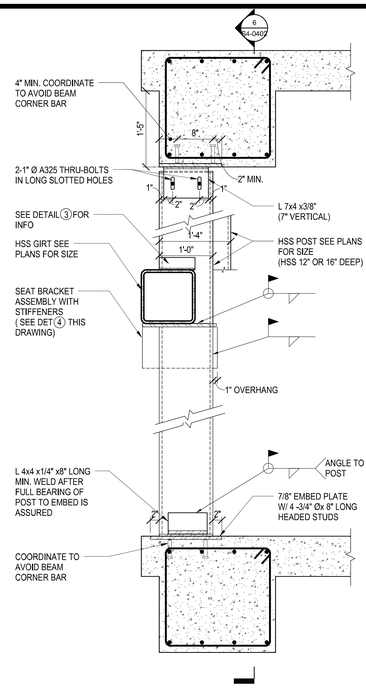
1 PLAN VIEW
1" = 1'-0"



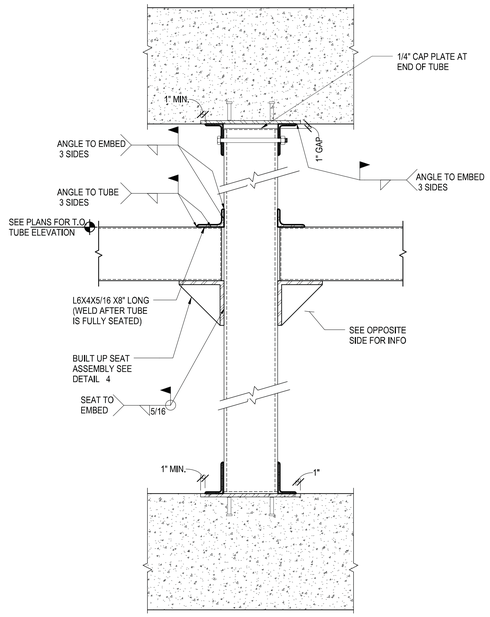
3 SECTION
1" = 1'-0"



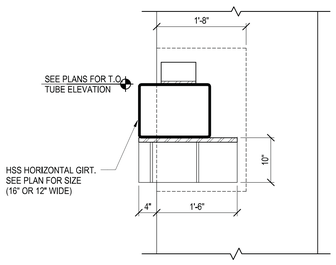
4 DETAIL (SEAT BRACKET ASSEMBLY)
1 1/2" = 1'-0"



5 SECTION
1" = 1'-0"



6 SECTION
1" = 1'-0"



2 SECTION
1" = 1'-0"

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DN22: STRUCTURE	02/01/2013
1	DN 12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 11/20/12
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S4-0402
Drawing Title

SUPPLEMENTAL FACADE SUPPORT STEEL SECTIONS AND DETAILS I

Drawing Number
S4-0402

B-Scan Drawing Number
S-112.00 SHEET 83 OF 118

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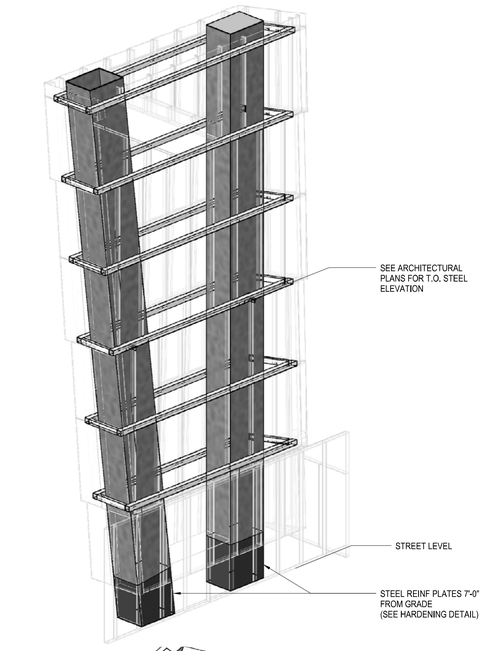

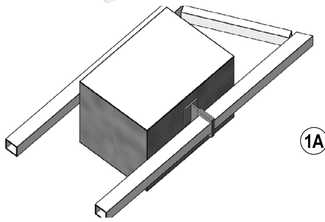

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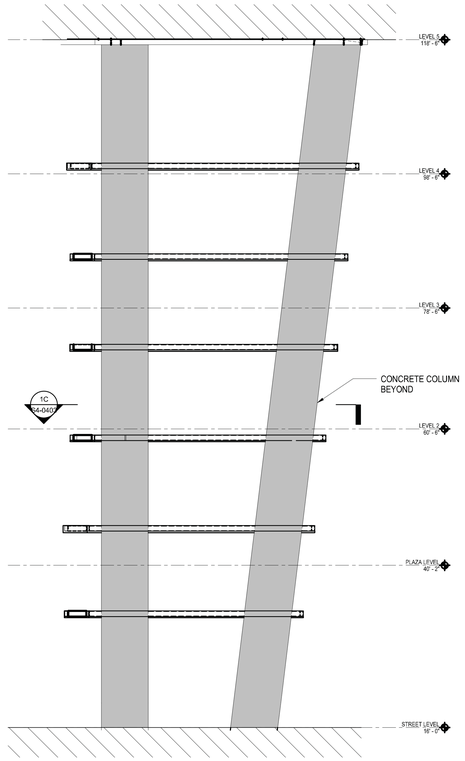

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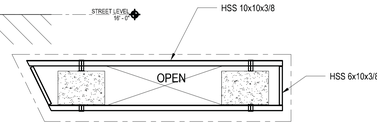
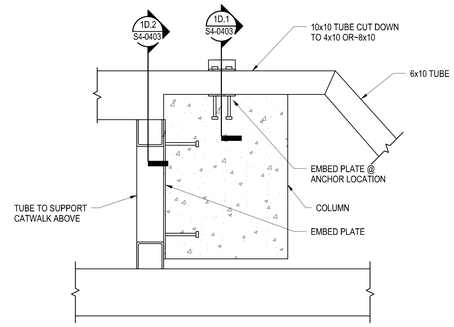
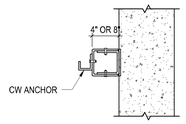


1C PLAN

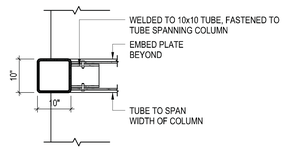
1 COACH LEG AT SOUTH FACADE SUPPLEMENTAL STEEL
1/8" = 1'-0"



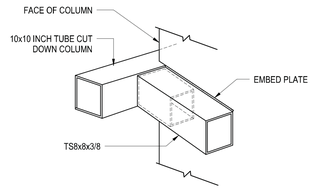
1D PART PLAN DETAIL 1D
3/4" = 1'-0"



D.1 SECTION 1D.1
3/4" = 1'-0"



D.2 SECTION1D.2
3/4" = 1'-0"



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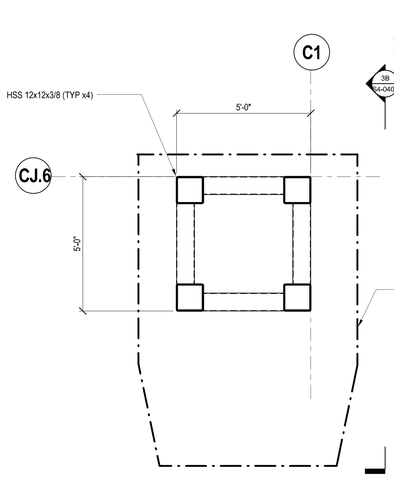
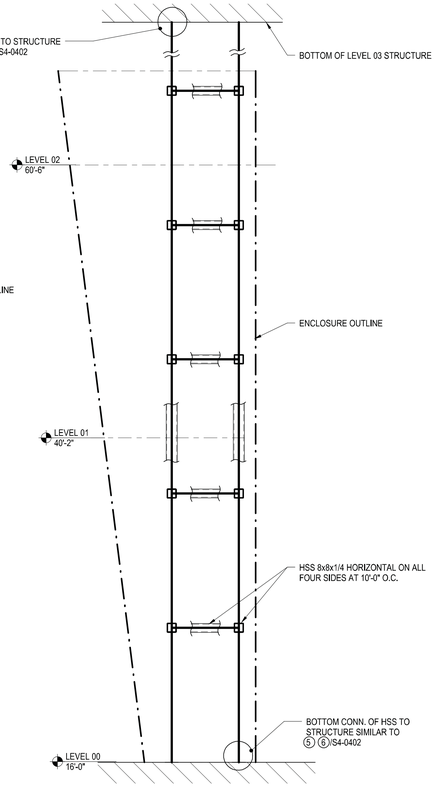


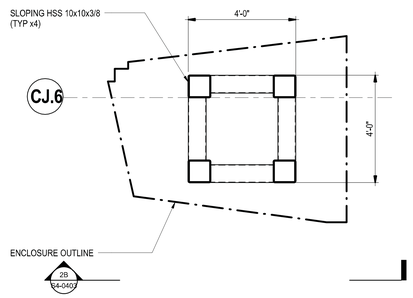
3A PLAN VIEW (ENLARGED)

NOTE:
1. OUTLINE OF VERTICAL HSS RESEMBLES THE EQUIVALENT OF ADJACENT 60"x60" CONCRETE COLUMN
2. SECONDARY STEEL FOR STONE SUPPORT NOT SHOWN



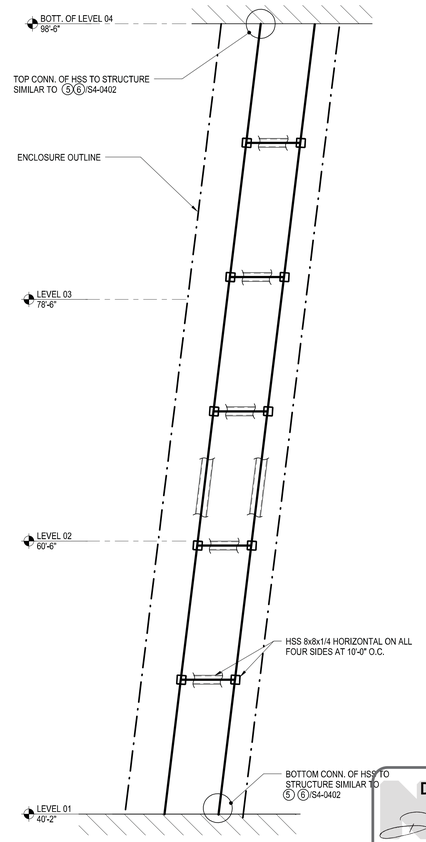
3B ELEVATION

3 DETAIL AT EAST FACADE COLUMN ENCLOSURE WHERE CONCRETE COLUMN IS NOT PRESENT (ONE SUCH COLUMN)



2A PLAN VIEW (ENLARGED)

NOTE:
1. OUTLINE OF VERTICAL HSS RESEMBLES THE EQUIVALENT OF ADJACENT 60"x60" CONCRETE COLUMN
2. SECONDARY STEEL FOR STONE SUPPORT NOT SHOWN



2B ELEVATION

2 DETAIL AT WEST FACADE COLUMN ENCLOSURE WHERE CONCRETE COLUMN IS NOT PRESENT (TWO SUCH COLUMNS)

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No.	Description	Date
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1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 12/10/12
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Drawn By Author
Sheet Number HYE -TC -S4-0403
Drawing Title

SUPPLEMENTAL FACADE SUPPORT STEEL SECTIONS AND DETAILS II

Drawing Number
S4-0403
B-Scan Drawing Number
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S4-0403
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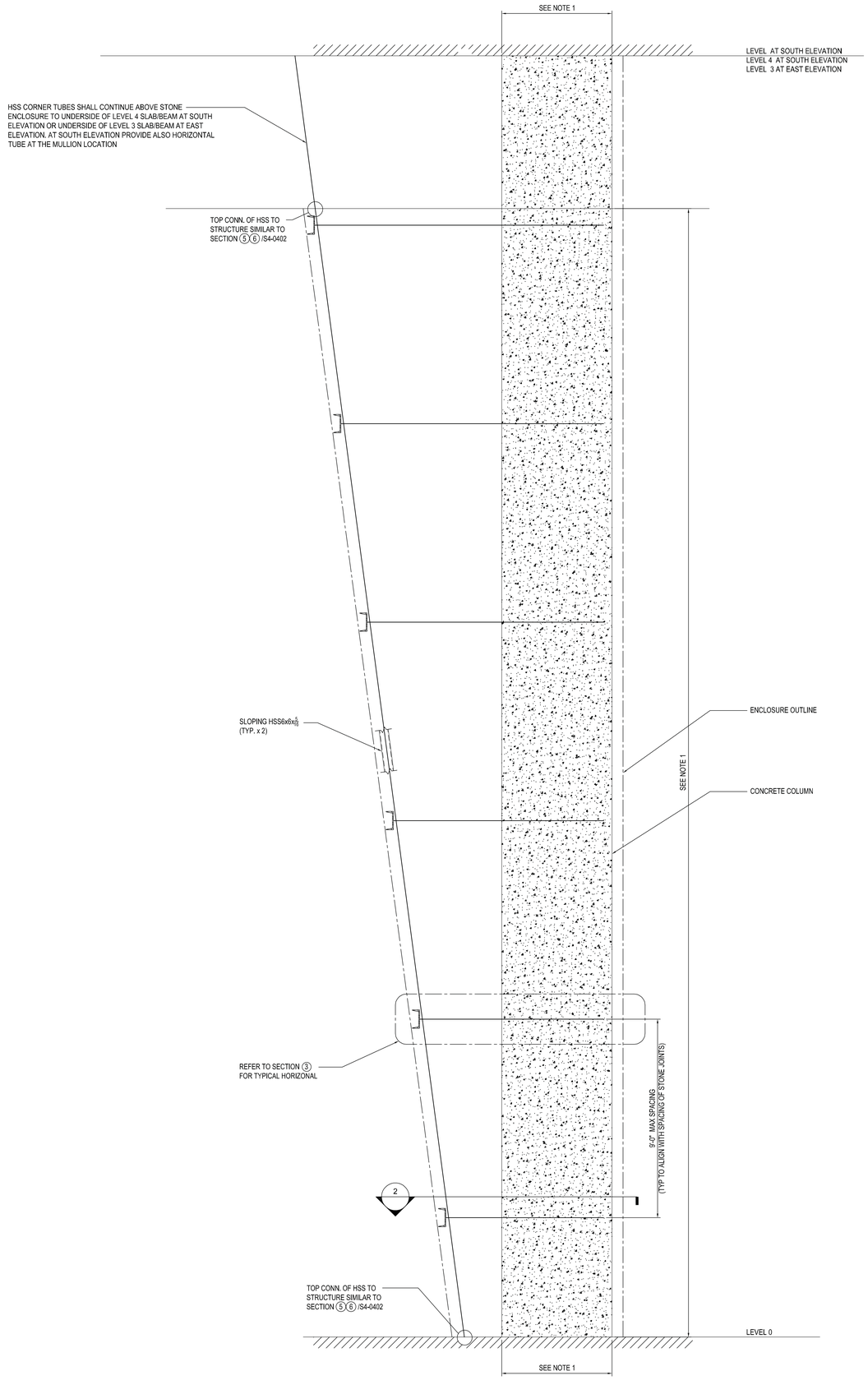
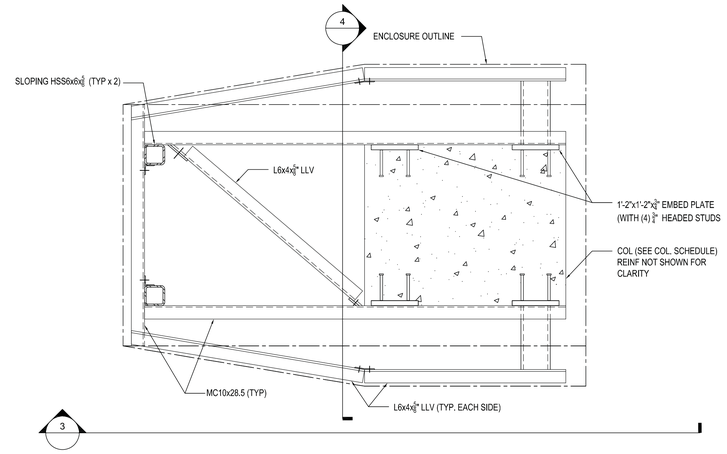
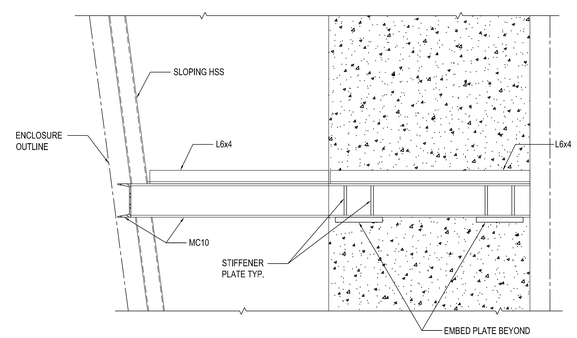


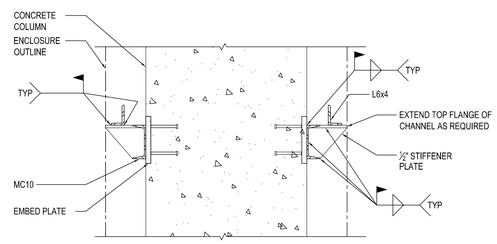
1 **TYPICAL SUPPORT DETAIL FOR COLUMN ENCLOSURES**



2 **PART PLAN**



3 **SECTION**



4 **SECTION**

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No.	Description	Date
2	ISSUE FOR FILING	02/15/2013
1	DI-22: STRUCTURE	02/01/2013

Key Plan

Issue Date: 01/28/13
Project No. 1776.10
Drawn By Author
Sheet Number
HYE -TC -S4-0404
Drawing Title

SUPPLEMENTAL FACADE SUPPORT STEEL SECTIONS AND DETAILS III
Number
S4-0404

B-Scan Drawing Number
S-114.00 SHEET 85 OF 118

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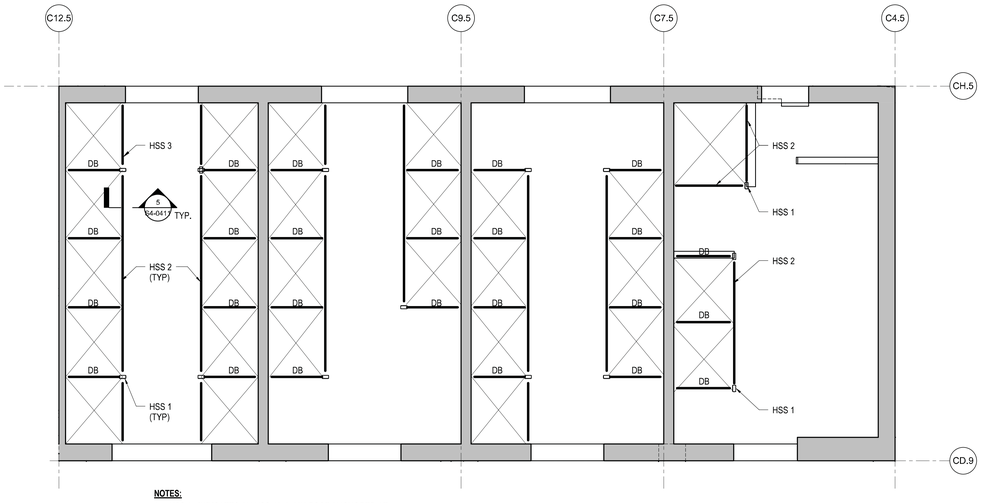
S4-0404
2/15/2013 10:30:08 AM
SUPPL EXTERNAL FACADE SUPPORT STEEL SECTIONS.rvt
DISTANCE Railway Documents\N11320.00 Revit\N11320.00_* TOWER C – architect.rvt

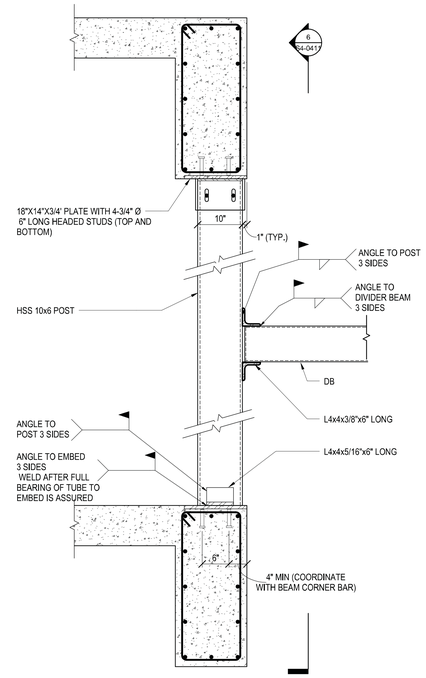


NOTES:

1. HSS 1 : INDICATES AN HSS 10x6x3/8" POST ANCHORED AT BOTTOM AND OVERHEAD LOBBY SLAB, PROVIDE VERTICAL SLOTTED HOLES AT TOP. SEE DETAIL ON THIS SHEET
2. HSS 2 : INDICATES AN HSS 12x6x3/8" (12" VERTICAL) HORIZONTAL SUPPORTS AT ELEVATORS TO MATCH ELEVATION OF DB'S
3. HSS 3 INDICATES AN HSS 8x4x1/4" (8" VERTICAL)
4. DB : INDICATES DIVIDER BEAM HSS 8x4x1/4" (8" VERTICAL)

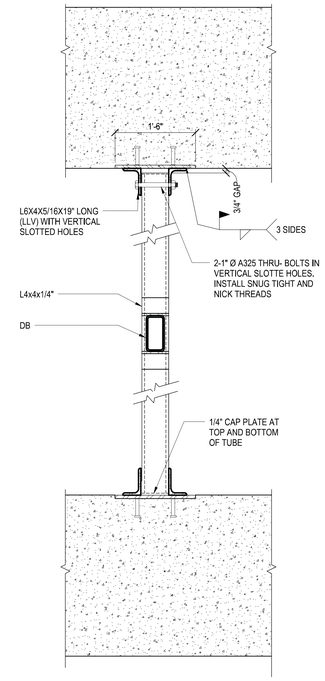
1 INTERMEDIATE STEEL FRAMING NEEDED TO SUPPORT ELEVATOR DIVIDER BEAMS AT STORIES TALLER THAN 13'-6" (SEE PART PLAN 2 FOR LEVEL 01 LOBBY ELEVATORS)

1/8" = 1'-0"



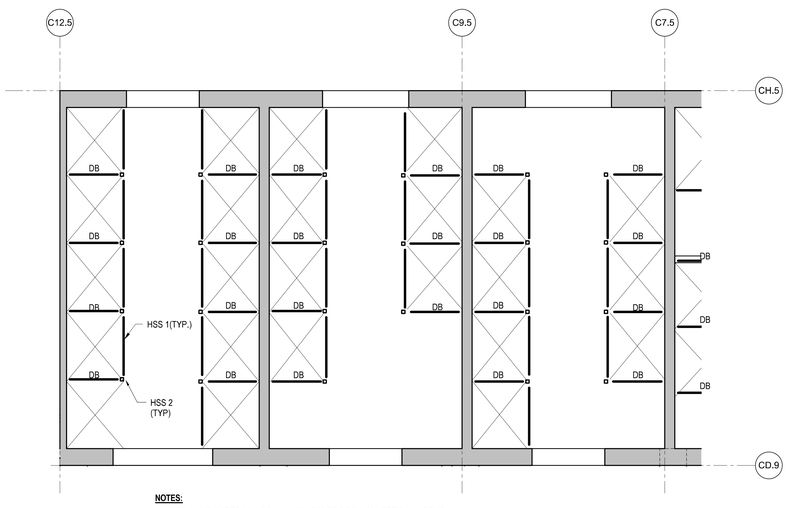
5 SECTION

1" = 1'-0"



6 SECTION

1" = 1'-0"

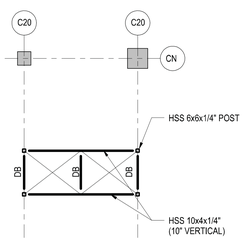


NOTES:

1. HSS 1 : INDICATES AN HSS 8x4x1/4" HEADER BEAM (8" VERTICAL) ABOVE ELEVATOR PORTALS AT LOBBY (SEE ARCH'L DWGS) HSS 1 ELEVATION IS ABOVE FIRST SET OF DIVIDER BEAMS.
2. HSS 2 : INDICATES AN HSS 6x6x1/4" POST SEE DETAIL ON THIS SHEET FOR ATTACHMENT TO FLOOR

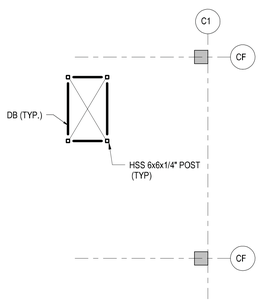
2 PART PLAN AT LEVEL 01 LOBBY ELEVATORS

1/8" = 1'-0"



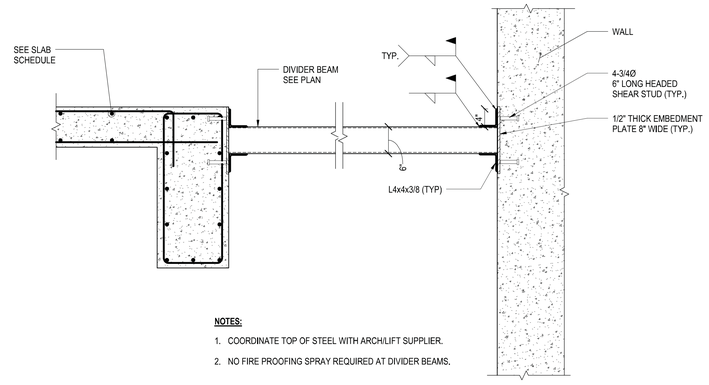
3 PART PLAN AT PARKING ELEVATORS (FROM CELLAR TO LEVEL 03)

1/8" = 1'-0"



4 PART PLAN AT COOLING TOWER ACCESS ELEVATORS (ABOVE 48th FLOOR)

1/8" = 1'-0"



NOTES:

1. COORDINATE TOP OF STEEL WITH ARCH/LIFT SUPPLIER.
2. NO FIRE PROOFING SPRAY REQUIRED AT DIVIDER BEAMS.

7 TYPICAL ELEVATOR DIVIDER BEAM CONNECTION DETAIL

1" = 1'-0"

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DN22: STRUCTURE	02/01/2013
1	DN12: STRUCTURE	12/14/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · ALAN M. BRAUN · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S4-0411

Drawing Title

SUPPLEMENTAL STEEL FOR ELEVATOR DIVIDERS

Drawing Number
S4-0411

B-Scan Drawing Number
S-115.00

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DEPT OF BLDGS 473524290 Job Number
E1635950010 Scan Code

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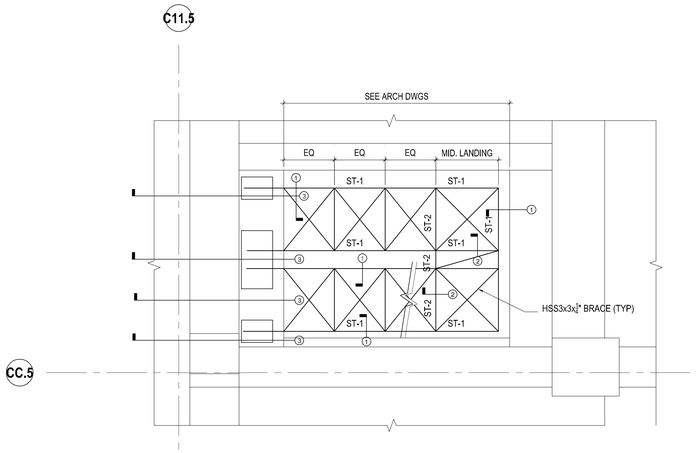
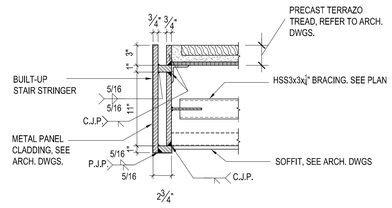
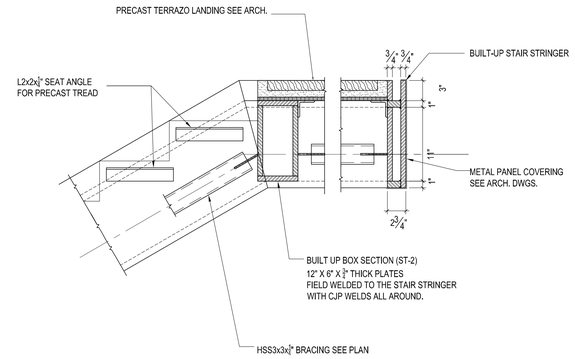
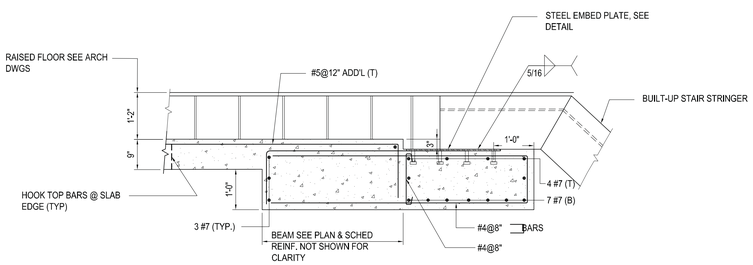


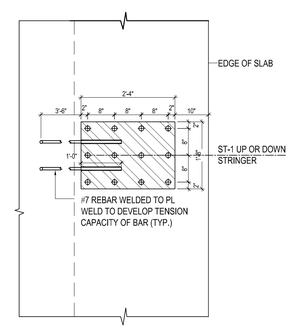




1 COACH STAIR PART PLAN
1/4" = 1'-0"

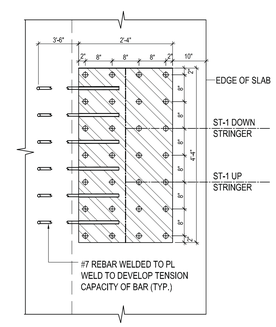


2 SECTION 1
1-1/2" = 1'-0"

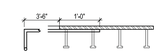


EP-1 PLAN

3 SECTION 2
1-1/2" = 1'-0"



EP-2 PLAN



SECTION

NOTES:
1. EMBED PL TO BE 3/4" THK (Fy=50Ksi)
W/12-3/4" Ø - 6" LONG HEADED NELSON STUDS
W / n - #7 REBAR WELDED TO THE PLATE AS SHOWN
(n = 2 FOR EP-1 AND 6 FOR EP-2)

4 SECTION 3
3/4" = 1'-0"

5 EMBED PLATE DETAIL AT STAIR LANDINGS
1/2" = 1'-0"

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3	ISSUE FOR FILING	02/15/2013
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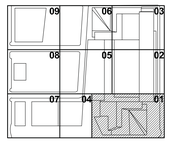
1	DI-12: STRUCTURE	12/14/2012

Key Plan



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Project No. 1776.10
Drawn By Author
Sheet Number
HYE -TC -S4-0420
Drawing Title
COACH STAIR
Drawing Number
S4-0420
B-Scan Drawing Number
S-116.00

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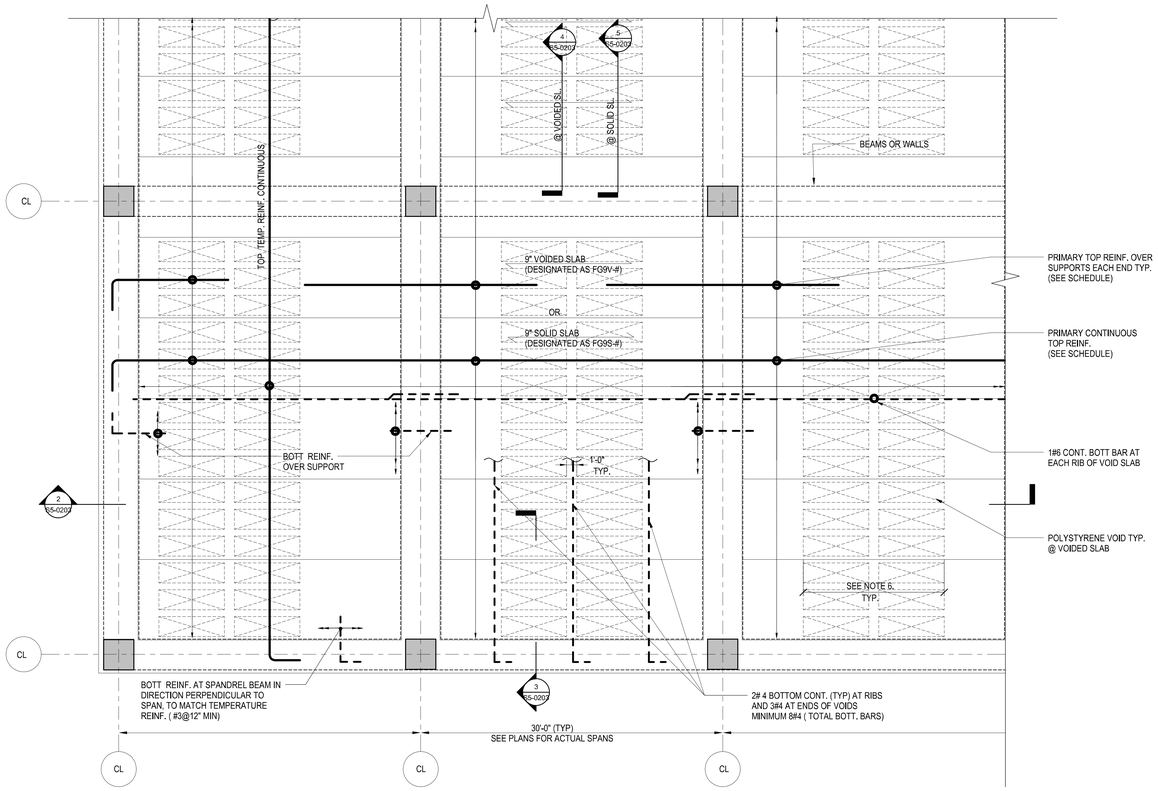


1 TYPICAL FILIGREE SLAB DETAIL - PLAN VIEW
3/16" = 1'-0"

FILIGREE SLAB SCHEDULE

TYPICAL OFFICE FLOORS- LEVELS 7-33, 36-46.-----9" VOIDED SLAB U.N.O. (AVERAGE UNIT WEIGHT NOT TO EXCEED 90 PSF)

SLAB MARK	INFORMATION FOR PLANK DESIGN		IN SITU REINFORCEMENT				REMARKS
			PRIMARY TOP REINFORCEMENT		TEMPERATURE REINF.	BOTT. REINF. OVER SUPPORTS	
	Mu+ (K-ft/ft)	Vu (Kips/ft)	EACH END	CONTINUOUS			
F9V-1	16.0	5.0	#6 @ 12"	#3@ 18"	#3 @ 12"	#4 @ 15"	TYP. INTERIOR SPANS
F9V-2	22.0	6.0	#6 @ 9" (Note 2)	#3@ 18"	#3 @ 12"	#4 @ 15"	EXTERIOR SPANS OR SPANS WHERE ADJACENT SPAN DIRECTION CHANGES
F9V-3	11.0/8.0	3.5	#4 @ 10"/12"	#3@ 18"	#3 @ 12"	#4 @ 15"	NON-TYPICAL SPANS. Mu+ AND As- PROVIDED FOR EXTER./INTERIOR SPANS

LOBBY AND ASSEMBLY FLOORS- LEVELS 2 , 19-----9" VOIDED SLAB U.N.O. (AVERAGE UNIT WEIGHT NOT TO EXCEED 90 PSF)

SLAB MARK	INFORMATION FOR PLANK DESIGN		IN SITU REINFORCEMENT				REMARKS
			PRIMARY TOP REINFORCEMENT		TEMPERATURE REINF.	BOTT. REINF. OVER SUPPORTS	
	Mu+ (K-ft)	Vu (Kips)	EACH END	CONTINUOUS			
F9V-11	18.5	6.0	#6 @ 11"	#3@ 18"	#3 @ 12"	#4 @ 15"	TYP. AT INTERIOR SPANS
F9V-12	25.5	7.0	#6 @ 8" (Note 2)	#3@ 18"	#3 @ 12"	#4 @ 15"	TYP. EXTERIOR SPANS OR SPANS WHERE ADJACENT SPAN DIRECTION CHANGES
F9V-13	12.5/9.0	4.0	#4 @ 9"/12"	#3@ 18"	#3 @ 12"	#4 @ 15"	NON-TYPICAL SPANS. Mu+ AND As- PROVIDED FOR EXTER./INTERIOR SPANS

NON TYPICAL OFFICE FLOORS- LEVELS 6 , 35-----9" SOLID SLAB U.N.O. (AVERAGE UNIT WEIGHT NOT TO EXCEED 113 PSF)

SLAB MARK	INFORMATION FOR PLANK DESIGN		IN SITU REINFORCEMENT				REMARKS
			PRIMARY TOP REINFORCEMENT		TEMPERATURE REINF.	BOTT. REINF. OVER SUPPORTS	
	Mu+ (K-ft)	Vu (Kips)	EACH END	CONTINUOUS			
F9S-1	22.0	7.0	#6 @ 12"	#4 @ 12"	#4 @ 12"	#4 @ 12"	TYP. INTERIOR SPANS
F9S-2	30.0	8.5	#6 @9" (Note 2)	#4 @ 12"	#4 @ 12"	#4 @ 12"	EXTERIOR SPANS OR SPANS WHERE ADJACENT SPAN DIRECTION CHANGES
F9S-3	15.0/11.0	5.0	#4 @ 10"/12"	#4 @ 12"	#4 @ 12"	#4 @ 12"	NON-TYPICAL SPANS. Mu+ AND As- PROVIDED FOR EXTER./INTERIOR SPANS

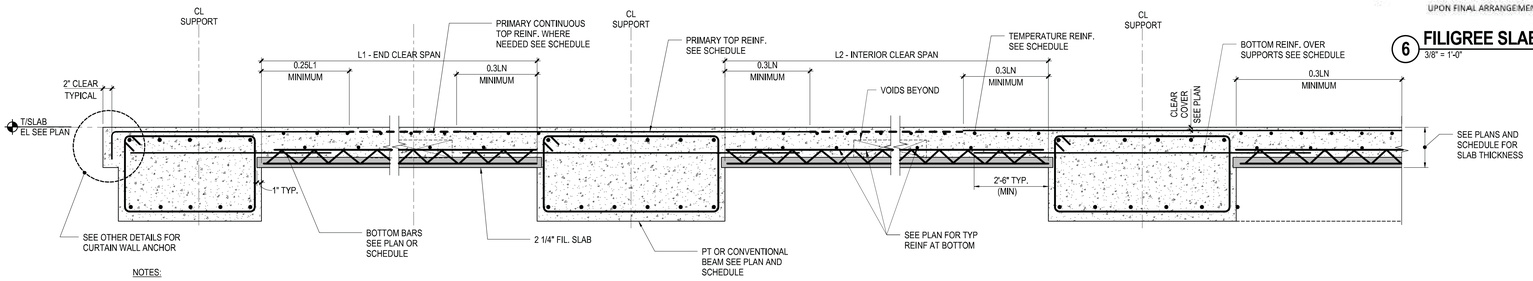
M.E.P. FLOORS AND ROOF- LEVELS 3, 4, 5, 34, 48, 49, 50-----9" SOLID SLAB U.N.O. (AVERAGE UNIT WEIGHT NOT TO EXCEED 113 PSF)

SLAB MARK	INFORMATION FOR PLANK DESIGN		IN SITU REINFORCEMENT				REMARKS
			PRIMARY TOP REINFORCEMENT		TEMPERATURE REINF.	BOTT. REINF. OVER SUPPORTS	
	Mu+ (K-ft)	Vu (Kips)	EACH END	CONTINUOUS			
F9S-11	37.0	11.0	#7 @ 7"	#5 @ 12"	#4 @ 12"	#4 @ 12"	TYP. INTERIOR SPANS
F9S-12	49.0	13.0	#7 @ 5" (Note 2)	#5 @ 12"	#4 @ 12"	#4 @ 12"	EXTERIOR SPANS OR SPANS WHERE ADJACENT SPAN DIRECTION CHANGES
F9S-13	25.0/18.0	7.0	#5 @ 6"/9"	#5 @ 12"	#4 @ 12"	#4 @ 12"	NON-TYPICAL SPANS. Mu+ AND As- PROVIDED FOR EXTER./INTERIOR SPANS

Notes:

1. WHEN SLABS OF DIFFERENT TYPE ARE SHOWN ON EITHER SIDE OF A COMMON SUPPORT, PROVIDE THE LARGEST OF THE TOP REINFORCING CALLED OUT ON SCHEDULE
2. AT DISCONTINUOUS SUPPORTS (AT EDGE CONDITIONS) TOP REINFORCING SHALL BE #5@12" FOR VOIDED SLABS AND #6@ 12" FOR SOLID SLABS, , U.N.O. ON PLANS.
3. THE TEMPERATURE AND THE PRIMARY CONTINUOUS TOP REINFORCING SHALL HAVE TENSION LAP SPLICES.
4. THE TEMPERATURE REINFORCING AT THE VOIDED SLABS SHALL BE PLACED AT THE TOP, WITHIN THE TOPPING SLAB PER DETAIL , AND SHALL RUN UNDER THE PRIMARY REINFORCING.
5. TOP TEMPERATURE REINFORCING THAT RUNS CONTINUOUS OVER SUPPORTS WHEN THE SLAB CHANGES DIRECTION, CAN BE USED AS PRIMARY REINFORCING IN THE TRANSVERSE SPAN., AND CAN BE SUBTRACTED FROM THE PRIMARY REINFORCING CALLED OUT FOR THAT SPAN.
6. REINFORCING SHOWN OR CALLED OUT ON PLANS IS IN ADDITION TO THE REINFORCING CALLED ON THIS SCHEDULE.
7. SEE PLANS FOR SOLID OR THICKENED SLAB ZONES, OR FOR THICKNESSES DIFFERENT FROM WHAT IS CALLED OUT ON SCHEDULE.
8. THE MOMENT AND SHEAR VALUES LISTED FOR PLANK DESIGN ARE THE MAXIMUM VALUES WITHIN THE CORRESPONDING SPANS, FOR THE TOTAL LOAD ON THE SPAN.
9. ALL OTHER REINFORCING SHOWN AND/OR CALLED OUT ON PLANS, IS IN ADDITION TO THE REINFORCING ON THIS SCHEDULI
10. PROVIDE DOWEL REINFORCING FROM ALL FOUR SIDES OF THE CORE WALL INTO THE SLABS, TO MATCH SLAB TOP BARS (MIN. #4 @12"
11. SLABS AT MEP FLOORS ARE DESIGNED FOR UNIFORM LOADS BASED ON AVERAGE EQUIPMENT WEIGHTS DISTRIBUTED ON THE FLOOR. ADJUSTMENTS TO REINF. MAY BE REQUIREI UPON FINAL ARRANGEMENT OF HEAVY EQUIPMENT AND/OR TO RESIST POINT LOADS

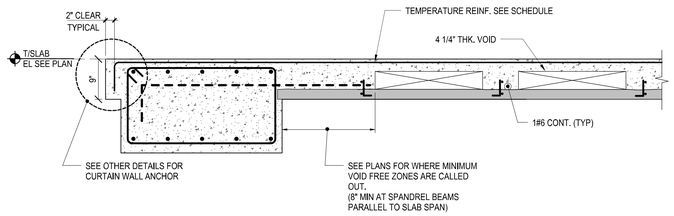
6 FILIGREE SLAB SCHEDULE
3/8" = 1'-0"



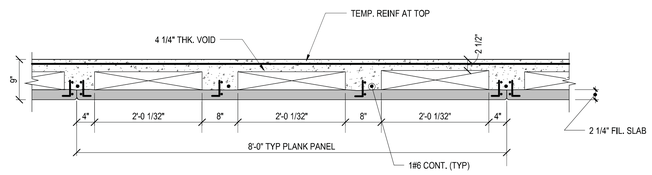
NOTES:

1. BAR LENGTHS TO BE LARGER OF LENGTH INDICATED ON PLAN AND LENGTH INDICATED ABOVE
2. LN DENOTES LARGER OF ADJACENT CLEAR SPANS
3. WHERE REINFORCEMENT IS SHOWN IN A SCHEDULE PROVIDE GREATER AREA OF STEEL SCHEDULED FOR TOP BARS AT ADJACENT SPANS
4. BEAM MAIN TOP BARS (NOT SHOWN) ARE BELOW PERPENDICULAR ONE-WAY SLAB TOP BARS
5. ALL TOP CONTINUOUS REINF SHALL BE TENSION LAP SLICED TYP
6. THE EXTENT OF VOIDS AND LOCATION OF RIBS SHALL BE DETERMINED BY FILIGREE CONTRACTOR, BUT AVERAGE WT OF SLAB SHALL NOT EXCEED VALUES LISTED IN SCHEDULE

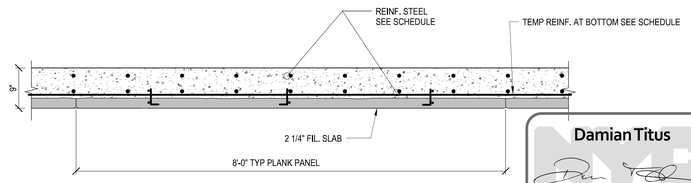
2 SECTION
1" = 1'-0"



3 SECTION
1" = 1'-0"



4 TYPICAL SECTION THRU VOIDED SLAB
1" = 1'-0"



NOTE:

WHEN SLAB SPANS PARALLEL TO SPANDREL BEAM PROVIDE ADDITIONAL # 4@12" PER DETAIL 2/S5-0202

5 TYPICAL SECTION THRU SOLID SLAB
1" = 1'-0"

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4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S5-0203
Drawing Title

TYPICAL FILIGREE SLAB SCHEDULE & DETAILS

Drawing Number
S5-0203

B-Scan Drawing Number
S-117.00 SHEET 88 OF 118

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S5-0203
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TYPICAL FILIGREE SLAB SCHEDULE & DETAILS
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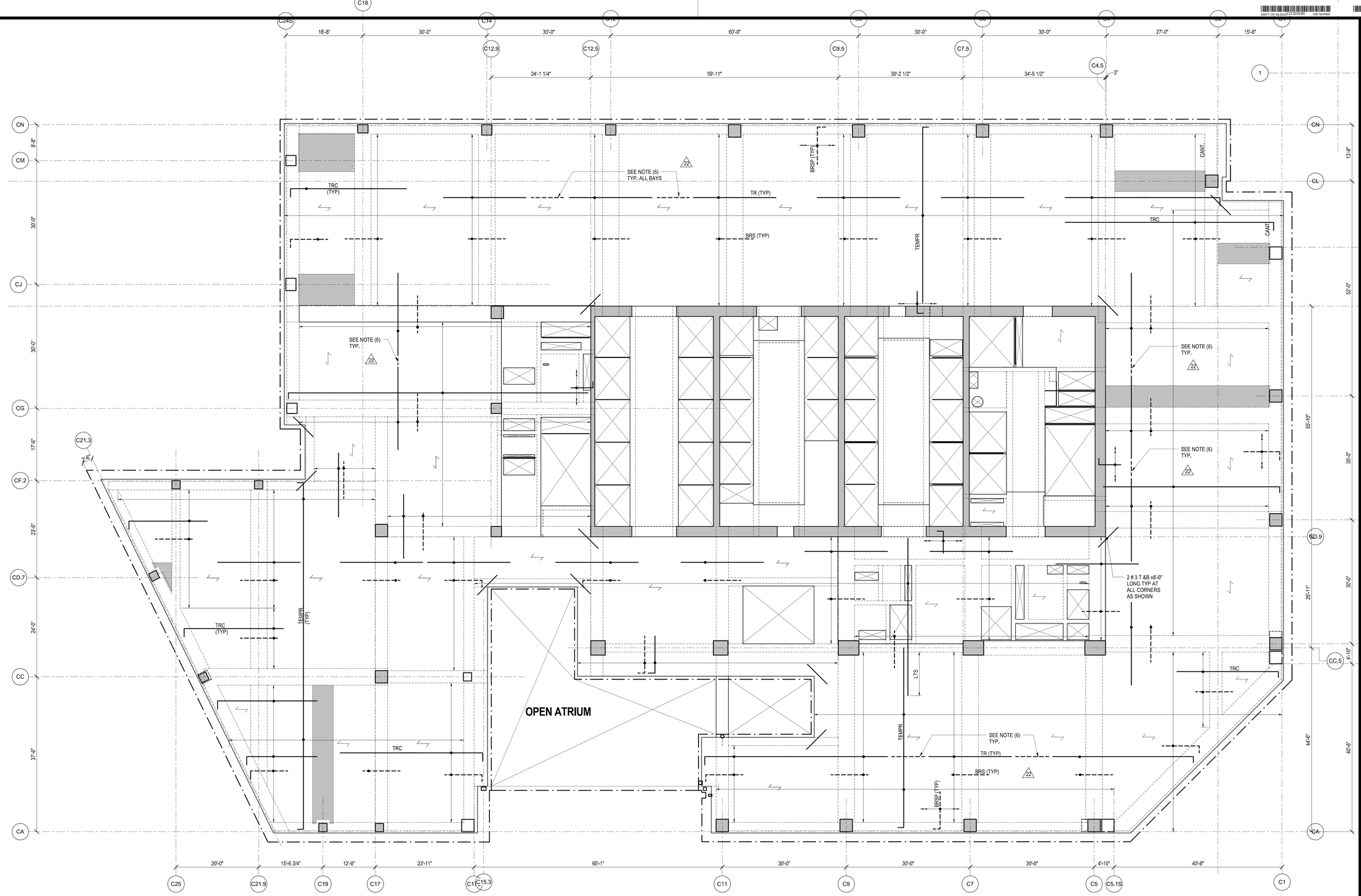

NOTES:

1. THE SLAB REINFORCMENT PLACEMENTO SHOWN ON THIS PLAN IS ONLY INTENDED TO AID THE CONTRACTOR AND ITS DETAILER WITH THE INTERPRETATION OF THE MAIN TYPICAL FILIGREE SLAB REINFORCEMENT DETAILS AND IT IS REPRESENTATIVE OF FLOORS OF THE PROJECT. IT IS NOT MEANT TO BE A COMPLETE SLAB REINFORMENT "SHOP DRAWING", NOR IS IT A SUBSTITUTE FOR SUCH DRAWING, WHICH WILL HAVE TO BE PREPARED BY THE CONTRACTOR AND BE SUBMITTED FOR APPRO VAL, AND WHICH HAS TO TAKE INTO ACCOUNT AND INCLUDE ALL OTHER RELEVANT REINF. DETAILS INCLUDED IN THE SET OF DOCUMENTS FOR FILIGREE AND FOR CONVENTIONAL FORMED SLABS. (e.g. ADDITIONAL REINF. AT SLAB OPENINGS, AT STEPS, AT CURTAIN WALL EMBEDS,AT GREY ZONES FOR COLUMN BRACING, ETC)
2. IN CASES OF CONFLICT BETWEEN THIS PLAN AND OTHER TYPICAL DETAILS, THE MOST SRINGENT REQUIREMENTS SHALL APPLY.
3. THE LENGTH OF REINFORCEMENT BARS SHALL BE DERIVED FROM THE TYPICAL DETAILS.
4. LEGEND:
   - TR — MAIN TOP REINF.
   - TRC — MAIN TOP REINF. CONTINUOUS
   - TEMPR — TEMPERATURE REINF.
   - BRS — BOTTOM REINF. OVER SUPPORTS
   - BRSP — BOTTOM REINF. AT SPANDRELS
5. THE BOTTOM REINFORCEMENT IN THE DIRECTION OF THE SPAN WITHIN THE RIBS (TYPICALLY #6 BAR) AND THE TRANSVERSE BOTTOM REINF. AT ENDS OF VOIDS AND CROSS-RIB (TYPICALLY 2#4) AS CALLED OUT ON THE DETAILS ARE NOT SHOWN ON THE PLAN FOR CLARITY.
6. THE TOP CONTINUOUS REINFORCEMENT IN THE DIRECTION OF SPAN AT TYP. INTERIOR BAYS NOT SHOWN FOR CLARITY.

22

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CKS

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3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 11/16/12
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S5-0204
Drawing Title

TYP FILIGREE SLAB REINF PLACEMENT DETAIL (REPRESENTATIVE OF LOWER FLOORS) S5-0204

B-Scan Drawing Number
S-118.00

SHEET 89 OF 118

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(REPRESENTATIVE OF LOWER FLOORS)
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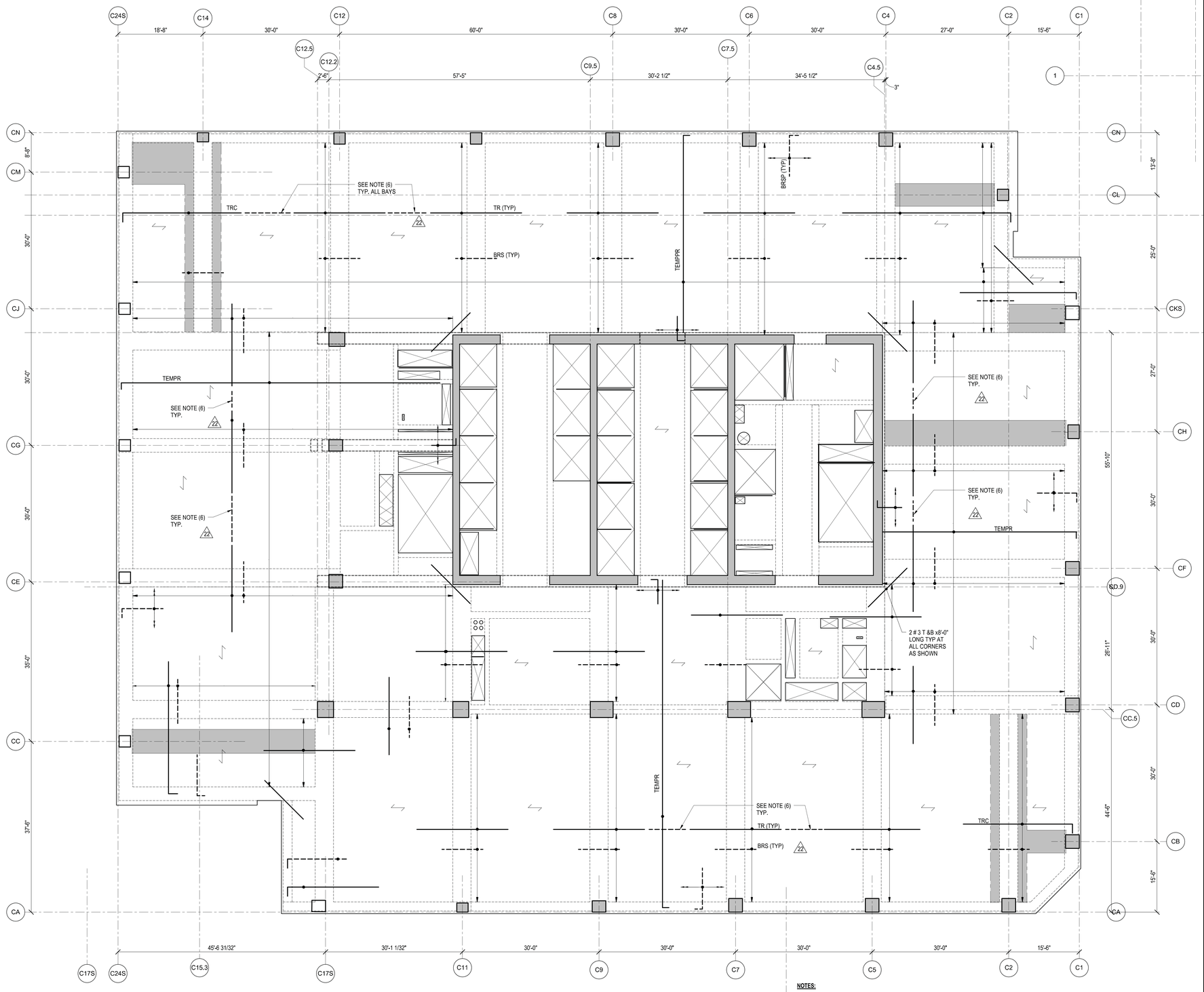

C5.1S

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1	DI-12: STRUCTURE	12/14/2012

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Issue Date: 11/19/12
Project No. 1776.10
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HYE -TC -S5-0205

Drawing Title

TYP FILIGREE SLAB REINF PLACEMENT DETAIL (REPRESENTATIVE OF UPPER FLOORS) S5-0205

B-Scan Drawing Number
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SHEET 90 OF 118

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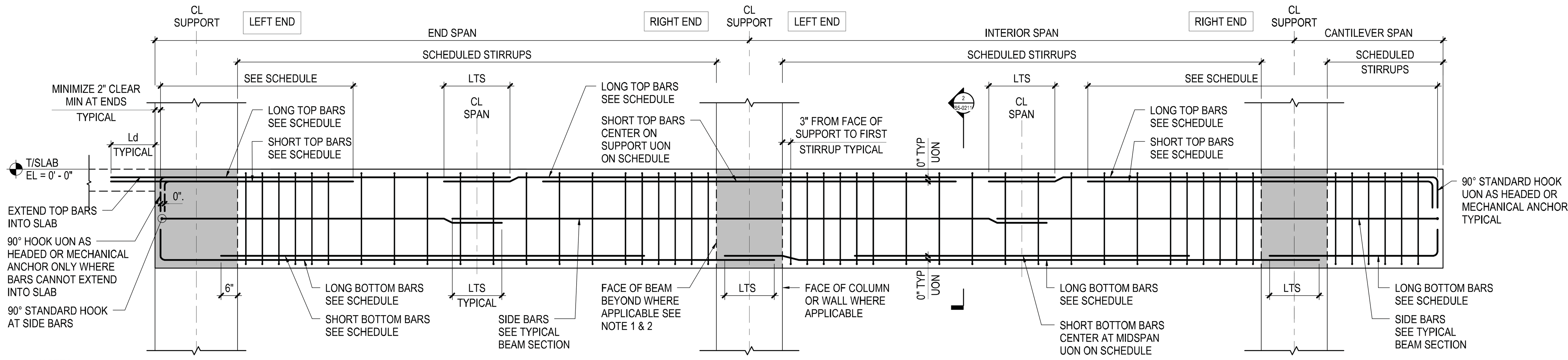
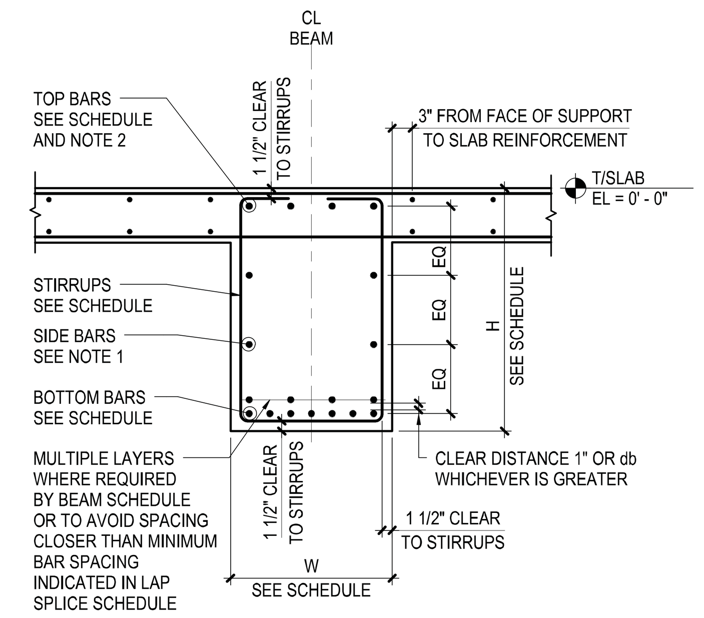


NOTES:

1. ELEVATION AS SHOWN REPRESENTS STIRRUP ARRANGEMENT AT COLUMN SUPPORTS
2. FOR STIRRUP ARRANGEMENT AT BEAM SUPPORT SEE TYPICAL DETAILS AT BEAM JOINT SUPPORT
3. CONTRACTOR TO MINIMIZE NUMBER OF SPLICES
4. IF SPLICES ARE REQUIRED THE SPLICES SHALL BE LOCATED WHERE INDICATED ON THIS DETAIL

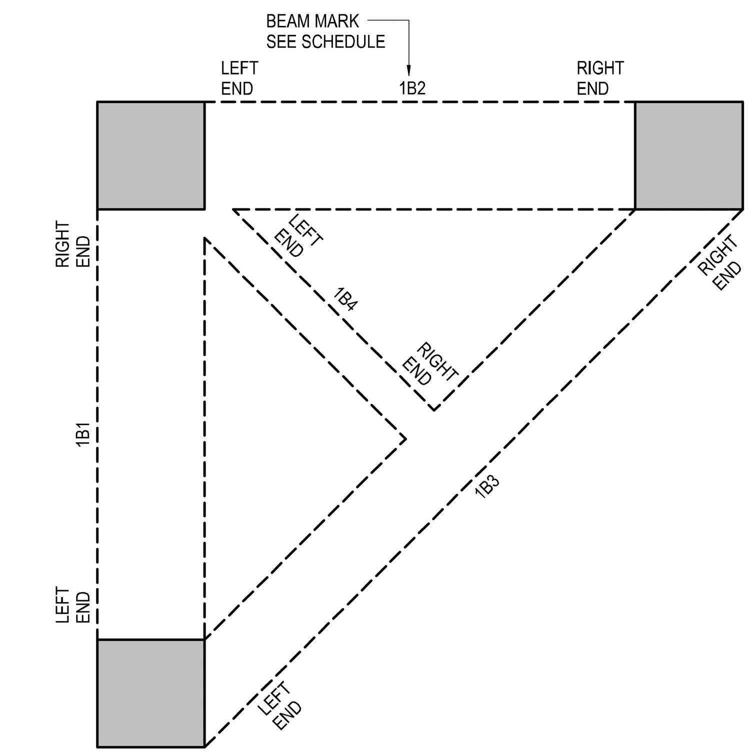
1 TYPICAL BEAM ELEVATION
NOT TO SCALE



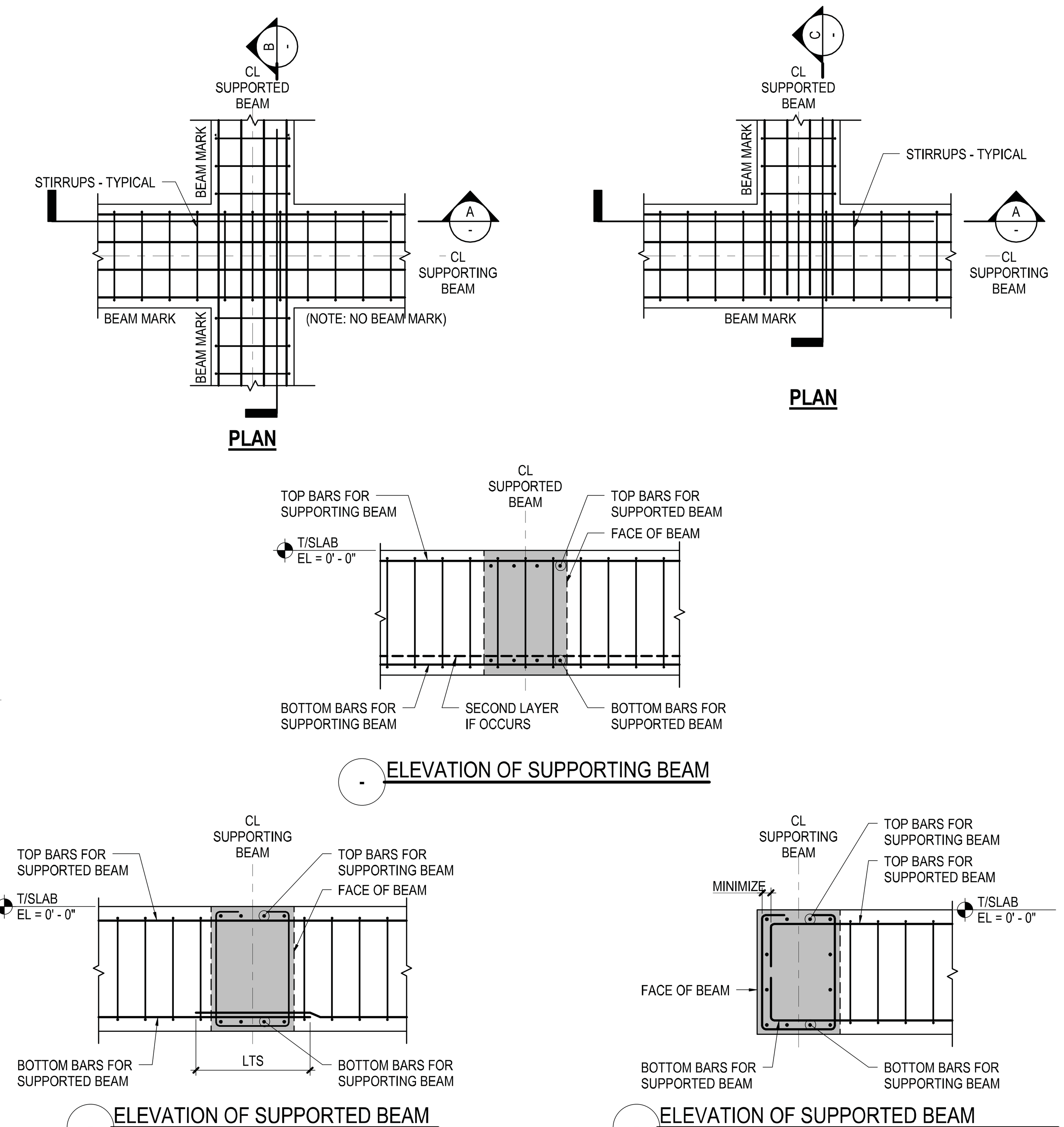
NOTES:

1. IF H IS GREATER THAN 36" PROVIDE SIDE BARS #5@10" MIN UON IN SCHEDULE
2. WHERE TWO LAYERS OF BARS ARE REQUIRED, TOP OR BOTTOM, PLACE SHORT BARS AS INNER LAYER

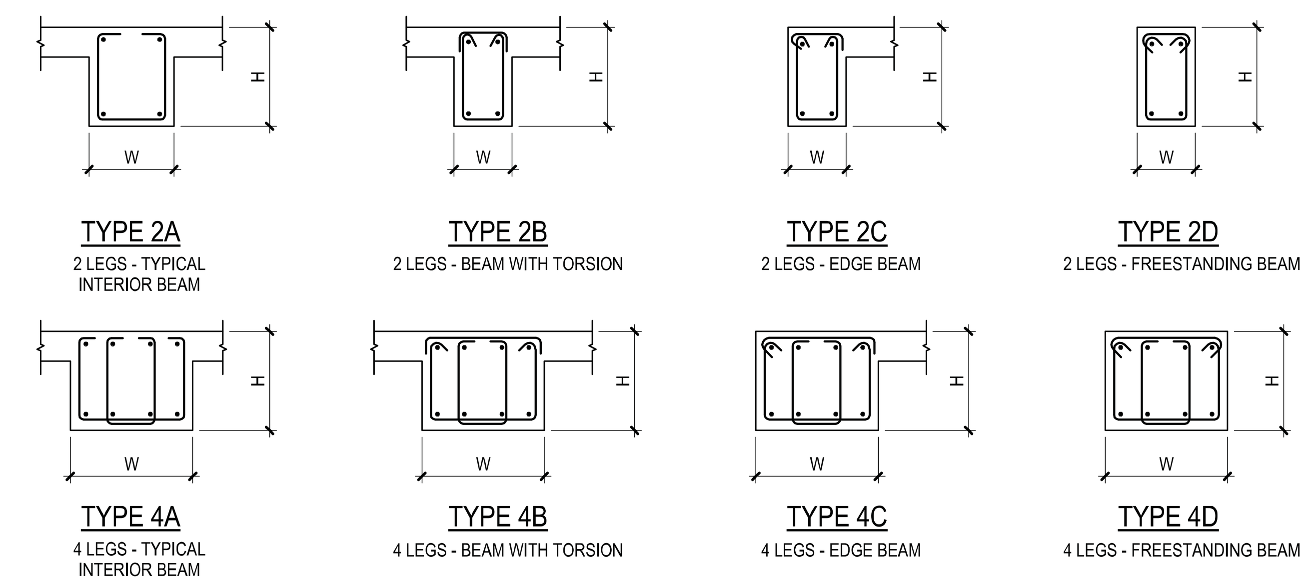
2 TYPICAL BEAM SECTION
NOT TO SCALE



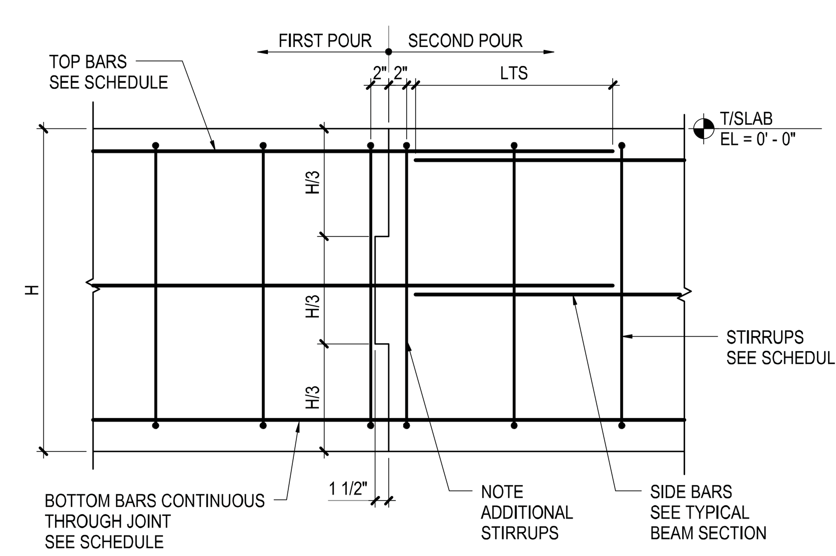
3 BEAM ORIENTATION KEY PLAN
NOT TO SCALE



4 TYPICAL DETAILS AT BEAM JOINT SUPPORT
NOT TO SCALE



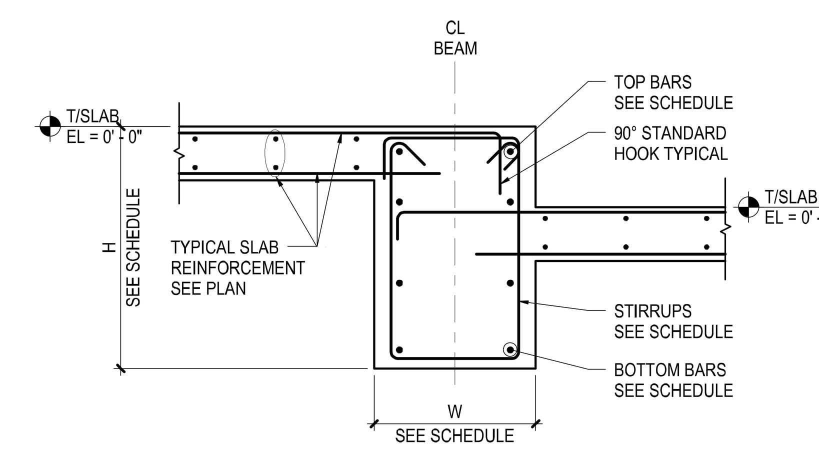
5 BEAM STIRRUP TYPES
NOT TO SCALE



NOTES:

1. CONTRACTOR SHALL SUBMIT CONCRETE CONSTRUCTION JOINT LAYOUT FOR REVIEW AND APPROVAL (REFER TO GENERAL NOTES AND SPECIFICATIONS) PRIOR TO REINFORCEMENT SUBMITTAL.
2. HORIZONTAL CONSTRUCTION JOINTS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL FROM SER.

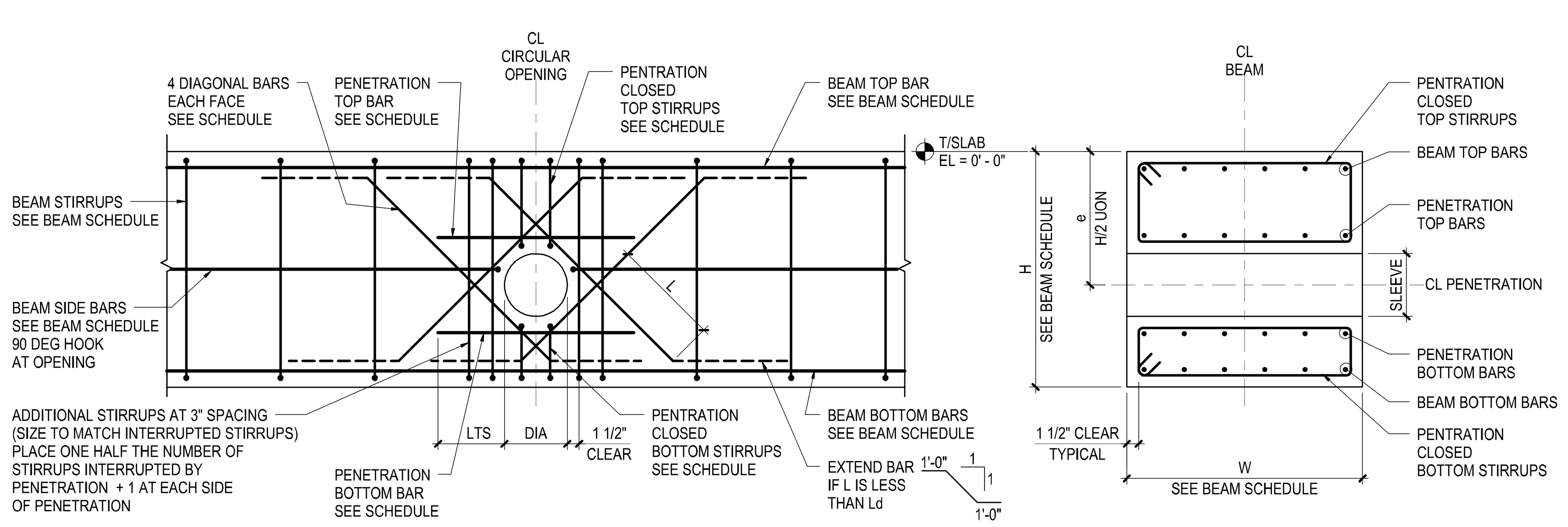
6 TYPICAL BEAM CONSTRUCTION JOINT - ELEVATION
NOT TO SCALE



NOTE:

1. SEE TYPICAL BEAM SECTION FOR INFORMATION NOT SHOWN

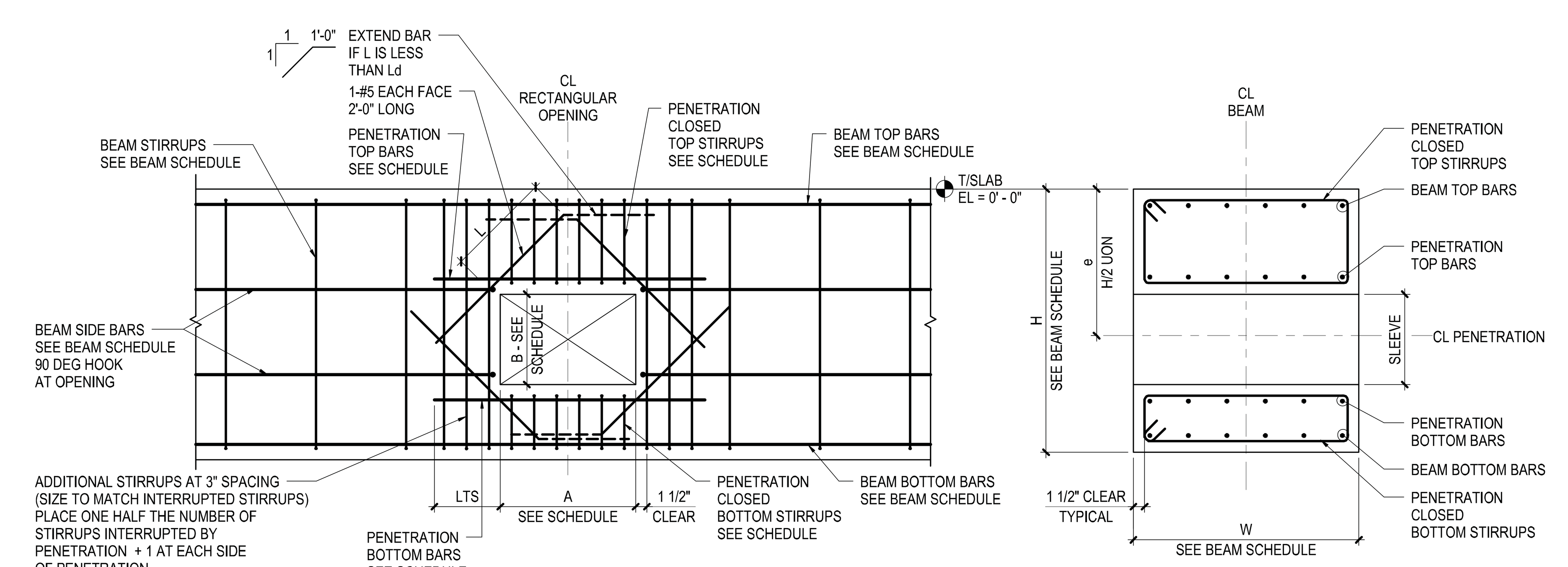
7 TYPICAL SLAB / BEAM DETAIL AT CHANGE OF SLAB ELEVATION
NOT TO SCALE



NOTES:

1. ALL BEAM PENETRATIONS SHALL BE SHOWN ON THE SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT/ENGINEER. NO PENETRATIONS SHALL BE MADE WITHOUT PRIOR REVIEW BY THE ARCHITECT AND WRITTEN APPROVAL FROM THE SER
2. THESE DETAILS SHALL BE USED IN CONJUNCTION WITH CONCRETE BEAM PENETRATION SCHEDULE
3. THE MINIMUM CLEAR SPACE BETWEEN TWO ADJACENT PENETRATIONS SHALL BE GREATER OF THE LARGEST PENETRATION DIMENSION OR TWO TIMES THE BEAM DEPTH
4. THE MINIMUM CLEAR DIMENSION BETWEEN THE EDGE OF A PENETRATION AND THE FACE OF SUPPORT , FACE OF SUPPORTED BEAM, OR POINT LOAD IMPOSED, SHALL BE THE BEAM DEPTH
5. SEE STRUCTURAL DRAWINGS FOR PENETRATIONS. GENERAL CONTRACTOR SHALL VERIFY QUANTITY, SIZE, AND LOCATION OF ALL PENETRATIONS WITH MEP DRAWINGS. NOTIFY SER IN WRITING OF ANY DISCREPANCIES FOR REVIEW AND APPROVAL
6. THE ADDITIONAL REINFORCEMENT SHOWN HERE IS NOT REQUIRED FOR OPENINGS 4" IN DIAMETER OR SMALLER PROVIDED NO BEAM REINFORCEMENT IS INTERRUPTED AND MINIMUM CONCRETE COVER IS PROVIDED AROUND ALL BARS. IT IS ACCEPTABLE TO ADJUST BEAM REINFORCEMENT WITHIN MAXIMUM SPACING LIMITS FOR STIRRUPS OR SIDE BARS

8 TYPICAL CONCRETE BEAM WITH CIRCULAR PENETRATION
NOT TO SCALE



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5. SEE STRUCTURAL DRAWINGS FOR PENETRATIONS. GENERAL CONTRACTOR SHALL VERIFY QUANTITY, SIZE, AND LOCATION OF ALL PENETRATIONS WITH MEP DRAWINGS. NOTIFY SER IN WRITING OF ANY DISCREPANCIES FOR REVIEW AND APPROVAL
6. THE ADDITIONAL REINFORCEMENT SHOWN HERE IS NOT REQUIRED FOR OPENINGS 4"x4" OR SMALLER PROVIDED NO BEAM REINFORCEMENT IS INTERRUPTED AND MINIMUM CONCRETE COVER IS PROVIDED AROUND ALL BARS. IT IS ACCEPTABLE TO ADJUST BEAM REINFORCEMENT WITHIN MAXIMUM SPACING LIMITS FOR STIRRUPS OR SIDE BARS

9 TYPICAL CONCRETE BEAM WITH RECTANGULAR PENETRATION
NOT TO SCALE

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5	ISSUE FOR FILING	02/15/2013
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3	DI-12: STRUCTURE	12/14/2012
2	D1-6: TF GF SLABS BP	10/19/2012
1	DI-3: LEVEL 00 SLAB BP	09/14/2012

Key Plan

Issue Date: -
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Sheet Number
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Drawing Title
TYPICAL CONCRETE BEAM DETAILS I

Drawing Number
S5-0211

B-Scan Drawing Number
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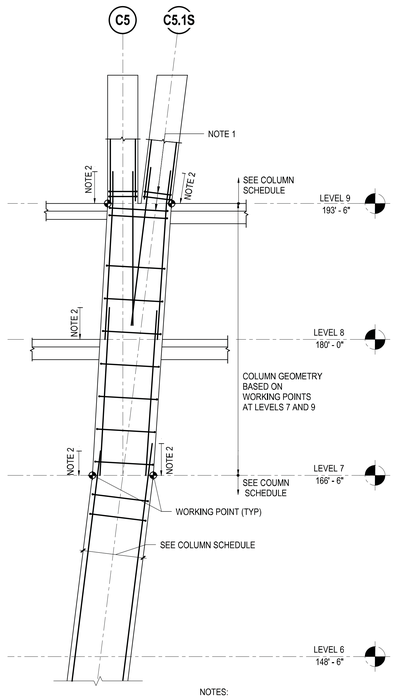
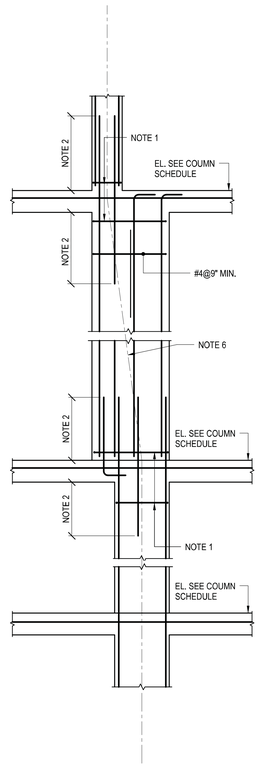


NOTES:

1. SEE 2/S5-0222 FOR NOTES
2. COLUMNS CD/C1 AND CDS/C1 SIMILAR

1 SOUTHEAST CAMFER COLUMNS TRANSITION SHAPE

NOT TO SCALE

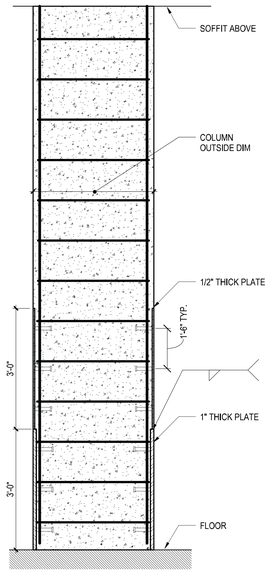


NOTES:

1. PROVIDE 6-#4@4" TIES & CROSS TIES (1 SET ABOVE & BELOW FLOOR SLAB) FOR BALANCE,SEE TYPICAL COLUMN DETAIL
2. PROVIDE MIN. LTS
3. "T" INDICATES ADDITIONAL MID DEPTH TENSION REINFORCEMENT. TO REACH ADJECENT COLUMNS ON EITHER SIDE OF THE WALKING COLUMN,IN THE DIRECTION OF THE WALK. UNLESS OTHERWISE NOTED ON PLAN. PROVIDE 5#7 MIN. "T" BARS

   FOR EXTERIOR CONDITIONS WHERE THE DIRECTION OF THE WALK IS PERPENDICULAR TO THE EDGE OF SLAB, TERMINATE "T" BARS WITH LENTON TERMINATORS.
4. FOR TIE ARRANGEMENT,SEE TYPICAL COLUMN DETAIL.
5. FOR BALANCE OF COLUMN REINF.SEE COLUMN SCHEDULE.
6. THE THEORETICAL COLUMN AXIS OFFSET SHALL NOT EXCEED A 6:1 VERTICAL TO HORIZONTAL OFFSET U.N.O ON PLAN

2 TYPICAL WALKING COLUMN DETAIL WITH TRANSITION SHAPE



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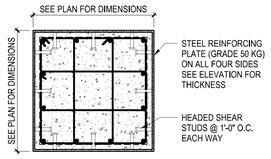
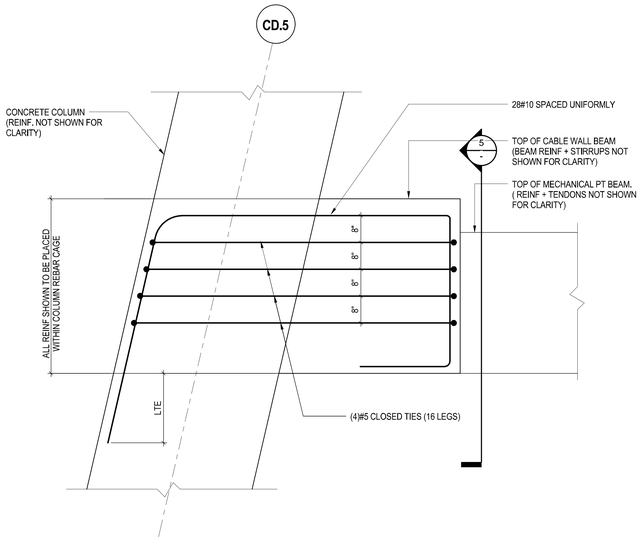


PLAN VIEW

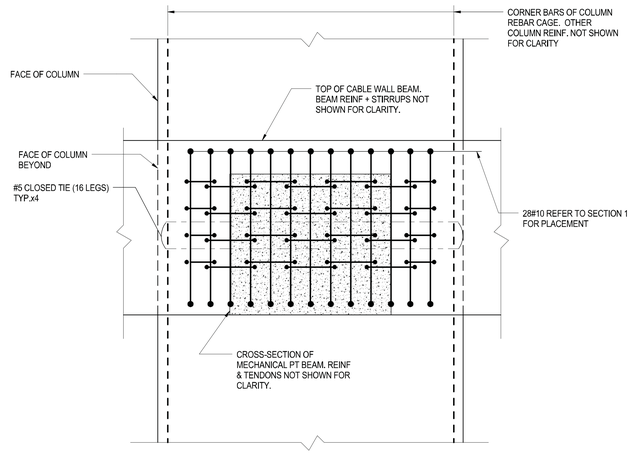
3 TYPICAL DETAIL FOR COLUMN "HARDENING"

3/4" = 1'-0"



4 CABLE WALL BEAM SUPPORT DETAIL

3/4" = 1'-0"



5 SECTION

3/4" = 1'-0"

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3	ISSUE FOR FILING	02/15/2013
2	DN22: STRUCTURE	02/01/2013
1	DN12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 12.05.12
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S5-0222
Drawing Title

STATE OF NEW YORK · ARIC M. BRAUN · 065442 · LICENSED PROFESSIONAL ENGINEER

TYPICAL CONCRETE COLUMN DETAILS II

Drawing Number
S5-0222

B-Scan Drawing Number
S-127.00

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DEPT OF BLDGS 421524290 Job Number
E3C0D6D7F78 Scan Code

S5-0222
2/13/2013 10:30:27 AM
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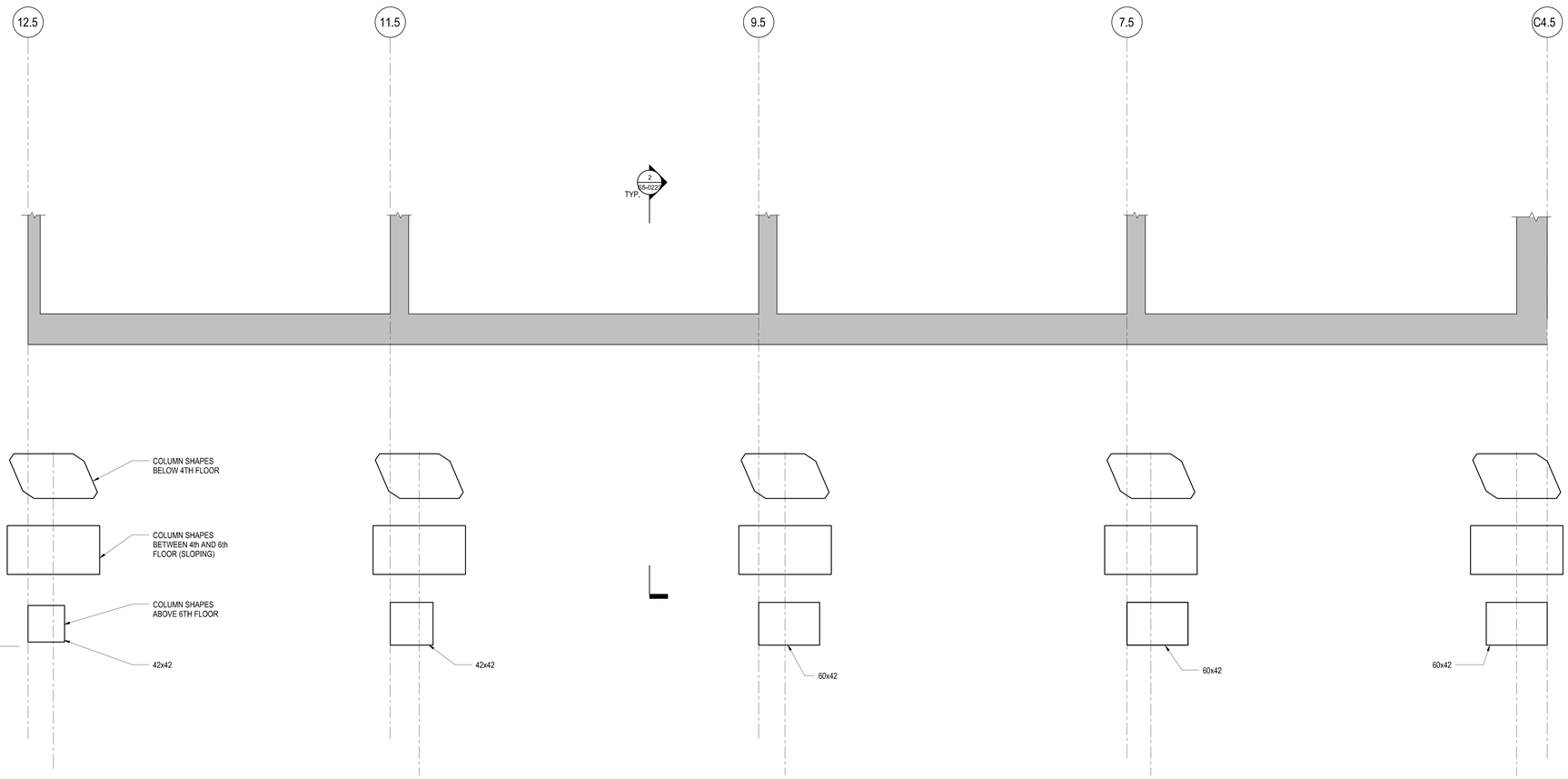
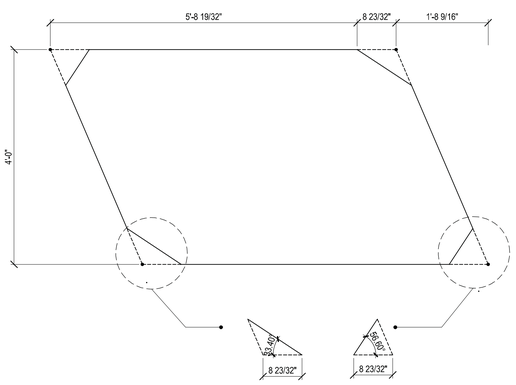
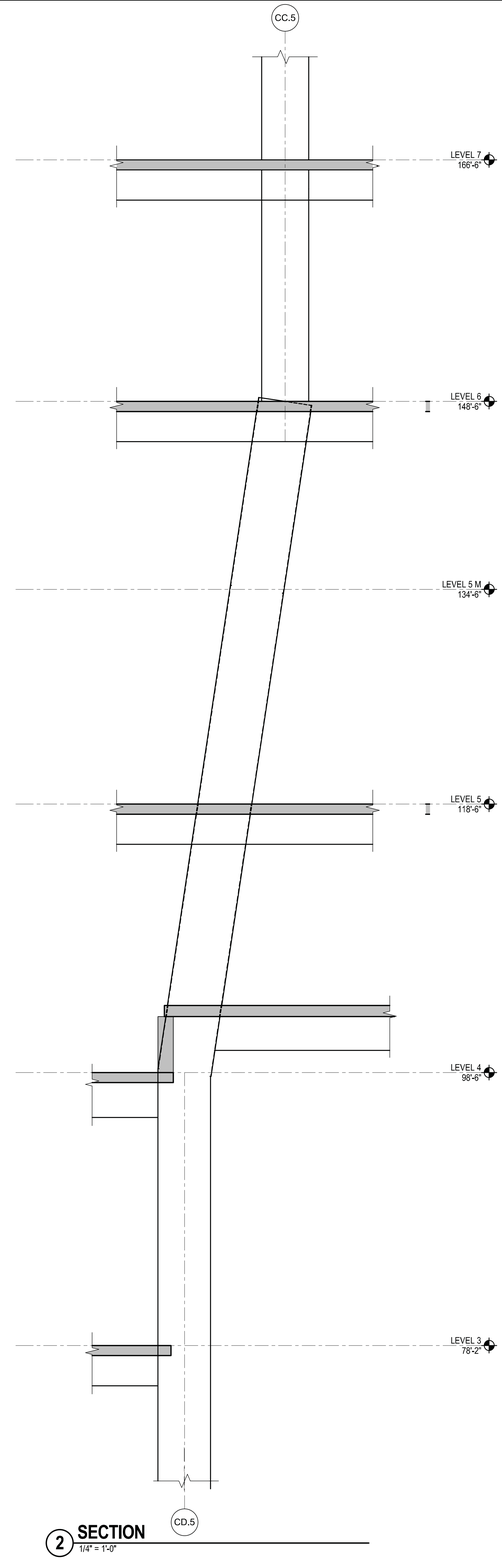


1 **PLAN**
1/4" = 1'-0"



3 COLUMN CROSS SECTION
1" = 1'-0"



2 **SECTION**
1/4" = 1'-0"

Damian Titus
NYC Buildings
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HUDSON YARDS - TOWER C

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60 Columbus Circle
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TEL: 212.986.7514 FAX: 212.986.7510

Construction Manager
Construction Manager Name
Address
Address
TEL: XXX.XXX.XXXX FAX: XXX.XXX.XXXX

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PCArchitects & Planning Consultants
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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
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1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 11/14/12
Project No. 1776.10
Drawn By: Author
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HYE -TC -S5-0223
Drawing Title

COLUMN TRANSITION AT GRID CC.5 LINE BETWEEN 4th-6th FLOOR
Drawing Number
S5-0223
B-Scan Drawing Number
S-128.00 SHEET 93 OF 118

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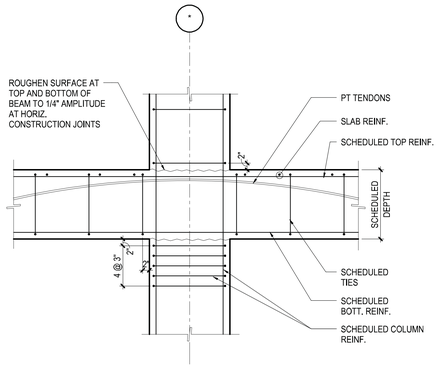
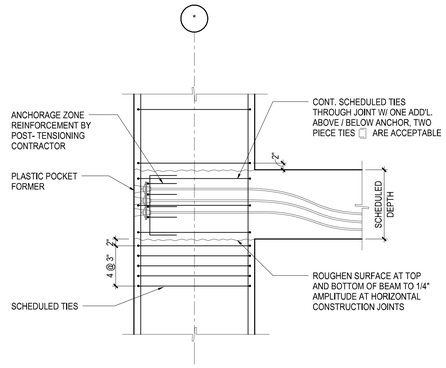
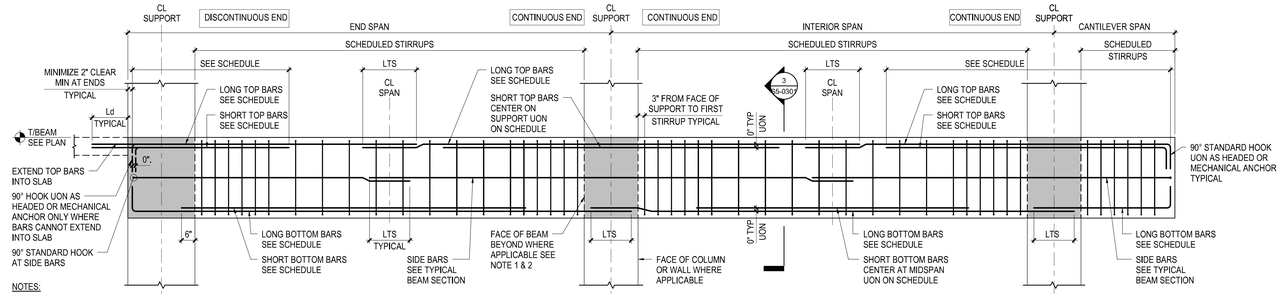
S5-0223
2/15/2013 10:32:33 AM
COLUMN TRANSITION AT GRID CC.5 LINE BETWEEN 4th-6th
FLOOR
C:\Users\ssmithey\Documents\N1103.07-Revit\N1103.07 - TOWER C - amlocal.rvt



1 TYPICAL COLUMN BEAM JOINT
NOT TO SCALE



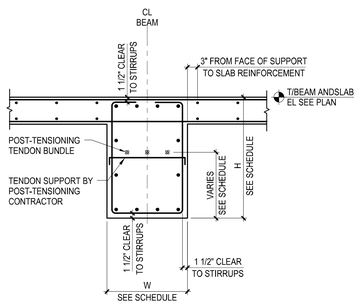
2 EXTERIOR BEAM COLUMN CONNECTION
NOT TO SCALE



NOTES:

1. ELEVATION AS SHOWN REPRESENTS STIRRUP ARRANGEMENT AT COLUMN SUPPORTS
2. FOR STIRRUP ARRANGEMENT AT BEAM SUPPORT SEE TYPICAL DETAILS AT POST-TENSIONED BEAM JOINT SUPPORT
3. SEE TYPICAL CONCRETE BEAM DETAILS SHEET FOR BEAM STIRRUPS TYPES
4. CONTRACTOR TO MINIMIZE NUMBER OF SPLICES
5. IF SPLICES ARE REQUIRED THE SPLICES SHALL BE LOCATED WHERE INDICATED ON THIS DETAIL

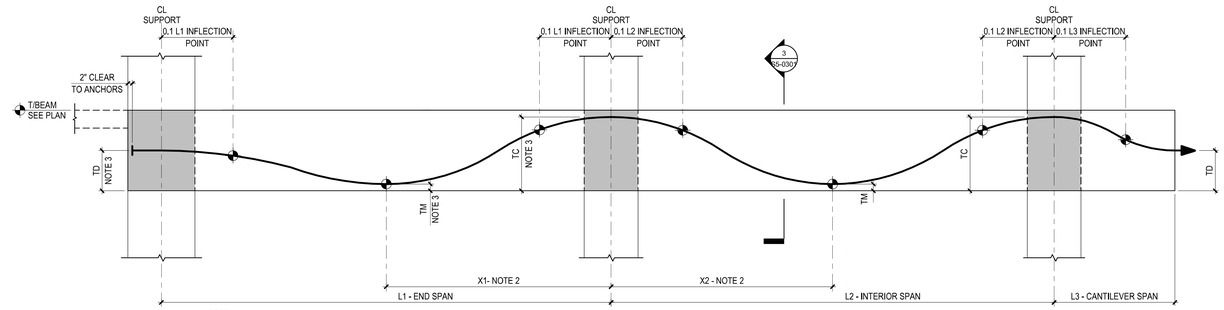
NONPRESTRESSED REINFORCEMENT ELEVATION



NOTE:

1. SEE TYPICAL BEAM SECTION ON TYPICAL CONCRETE BEAM DETAILS SHEET FOR INFORMATION NOT SHOWN

3 TYPICAL POST-TENSIONED BEAM SECTION
NOT TO SCALE

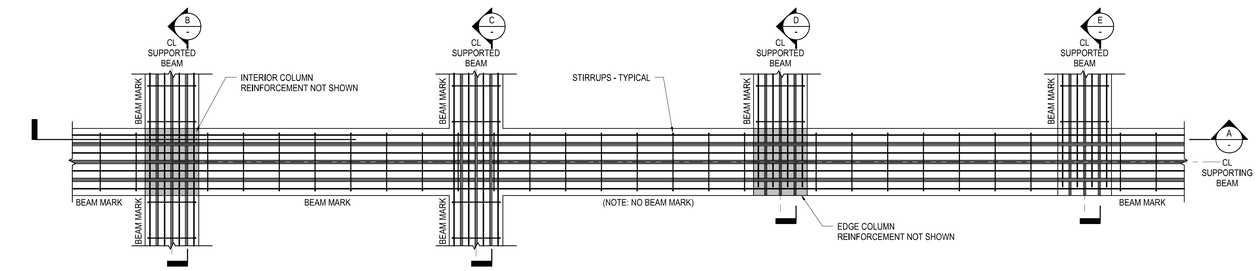


NOTES:

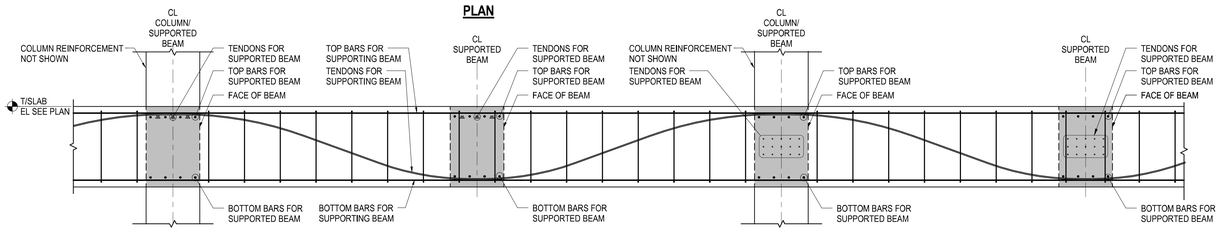
1. INFLECTION POINT IS LOCATION ALONG TENDON PROFILE WHERE TENDON CURVATURE REVERSES
2. X# LOCATES THE TENDON LOW POINT ALONG SPAN L#. THIS LOCATION IS DETERMINED FROM THE RATIO X/L AS SHOWN IN THE POST-TENSIONED BEAM SCHEDULE, FOR BEAMS WITH ONE CONTINUOUS END AND ONE DISCONTINUOUS END, X# IS MEASURED FROM THE CONTINUOUS END.
3. DIMENSIONS TD, TM,TC ARE MEASURED FROM BOTTOM OF BEAM TO CENTROID OF TENDON FORCE, SEE SCHEDULE

POST-TENSIONING REINFORCEMENT ELEVATION

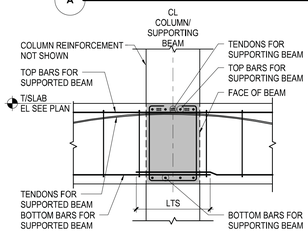
4 TYPICAL POST-TENSIONED BEAM ELEVATION
NOT TO SCALE



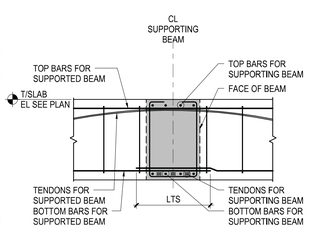
PLAN



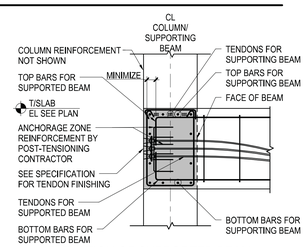
A ELEVATION OF SUPPORTING BEAM



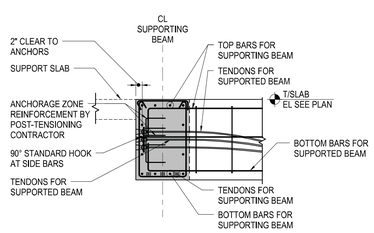
B ELEVATION OF SUPPORTED BEAM AT INTERIOR COLUMN



C ELEVATION OF CONTINUOUS BEAM SUPPORTED AT INTERIOR BEAM

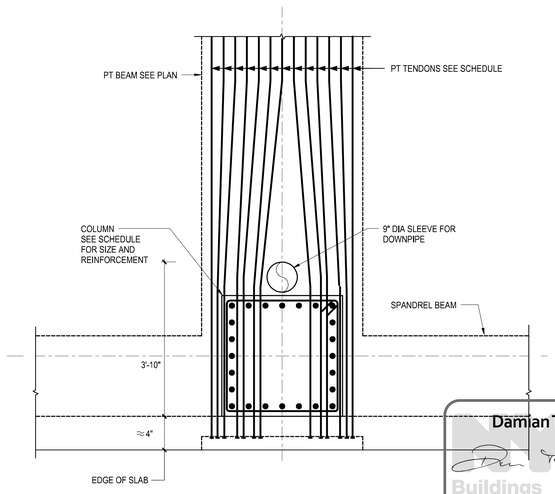


D ELEVATION OF SUPPORTED BEAM AT EDGE COLUMN / EDGE BEAM



E ELEVATION OF DISCONTINUOUS BEAM SUPPORTED AT INTERIOR BEAM

5 TYPICAL DETAILS AT POST-TENSIONED BEAM JOINT SUPPORT
NOT TO SCALE



6 PT BEAM WITH SINGLE DOWNSPOUT
NOT TO SCALE

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Oxford Properties Group
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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S5-0301

Drawing Title

TYPICAL POST TENSIONED DETAILS I

Drawing Number
S5-0301

B.Koan Drawing Number
S-129.00 SHEET 94 OF 118

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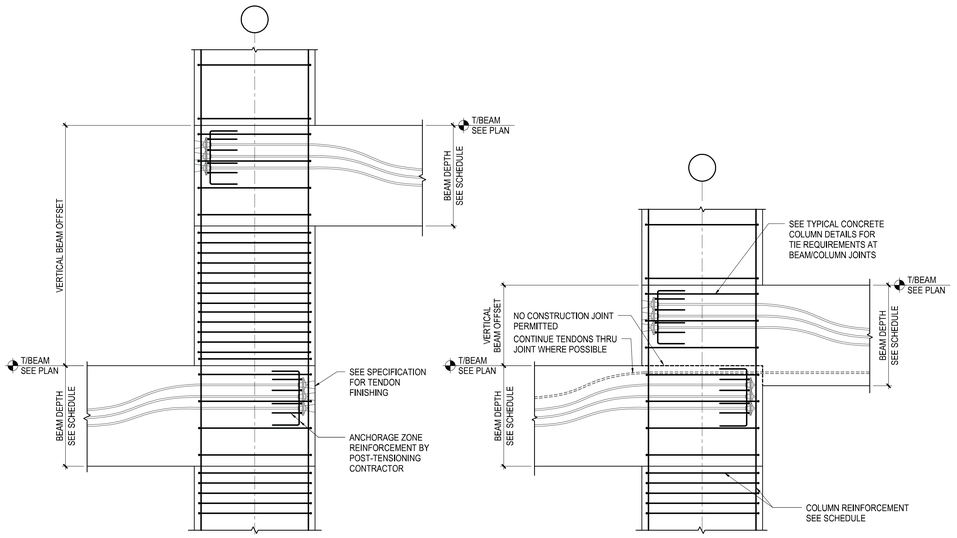
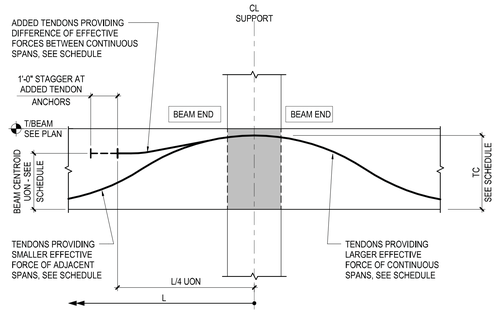


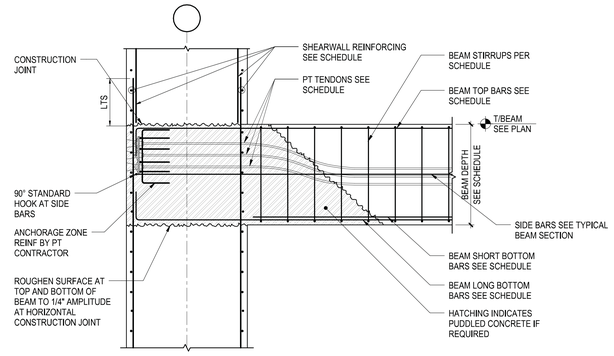
VERTICAL BEAM OFFSET ≥ BEAM DEPTH

VERTICAL BEAM OFFSET < BEAM DEPTH

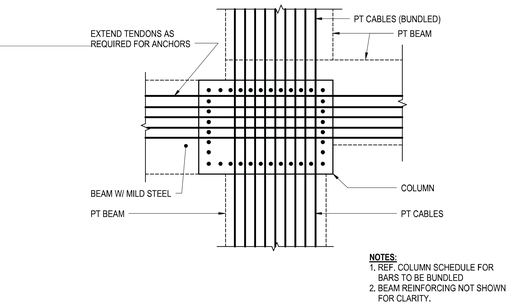
1 TYPICAL POST-TENSIONED BEAM / COLUMN JOINT DETAILS AT VERTICAL OFFSET BEAMS
NOT TO SCALE



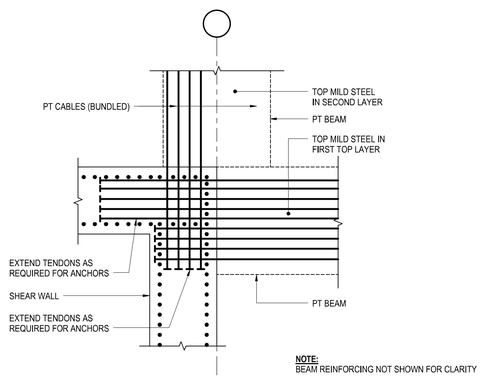
2 TYPICAL POST-TENSIONED BEAM WITH ADDED TENDONS
NOT TO SCALE



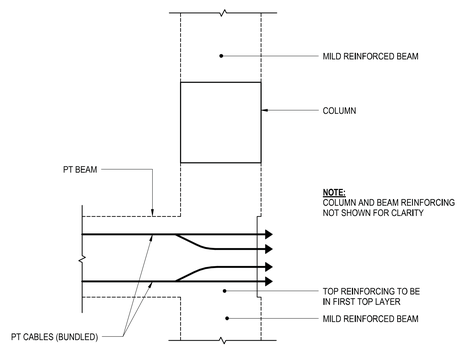
3 TYPICAL POST-TENSIONED BEAM SUPPORT DETAIL AT CORE WALL
NOT TO SCALE



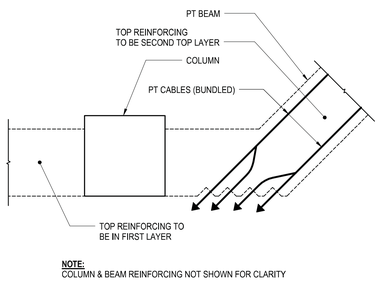
4 TYPICAL TENDON LAYOUT AT INTERIOR COLUMN & PT BEAMS
NOT TO SCALE



5 TYPICAL TENDON LAYOUT DETAIL AT CORNER OF SHEAR WALL AND PT BEAMS
NOT TO SCALE



6 TYPICAL TENDON LAYOUT AT PERIMETER PT BEAMS
NOT TO SCALE



7 TYPICAL TENDON LAYOUT AT BEVELED BUILDING CORNER
NOT TO SCALE

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1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 11/12/12
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S5-0302

STATE OF NEW YORK
ARIC M. BRAUN
082542
LICENSED PROFESSIONAL ENGINEER

Drawing Title

TYPICAL POST TENSIONED DETAILS II

Drawing Number
S5-0302

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S-132.00

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2/15/2013 10:32:41 AM
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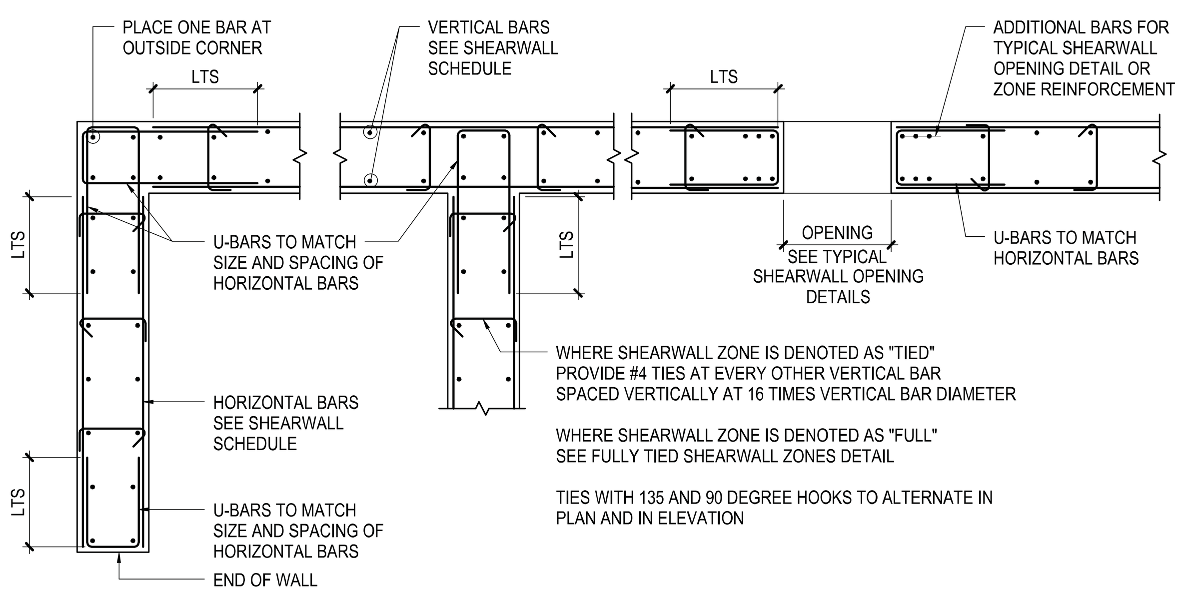
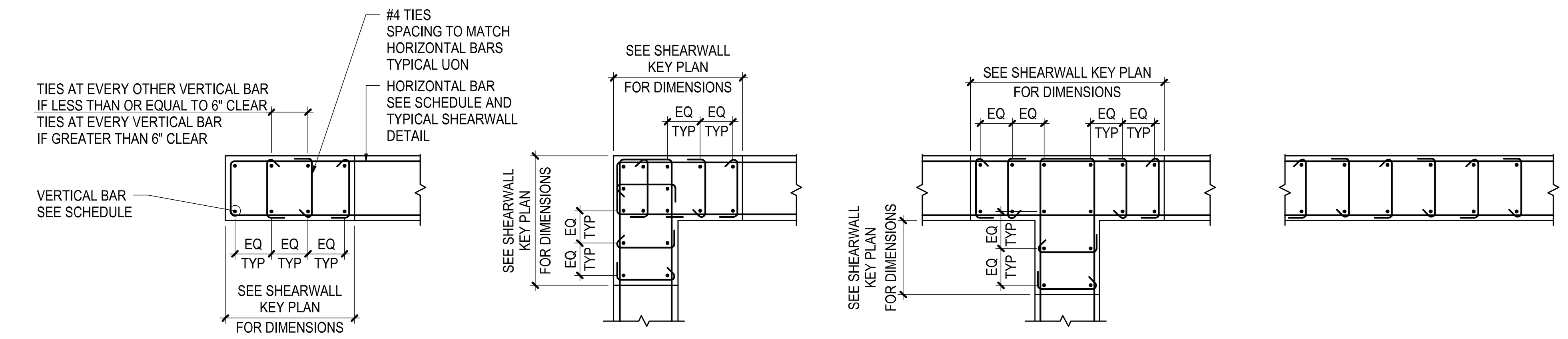


1 TYPICAL SHEARWALL REINFORCEMENT ARRANGEMENT - PLAN
NOT TO SCALE

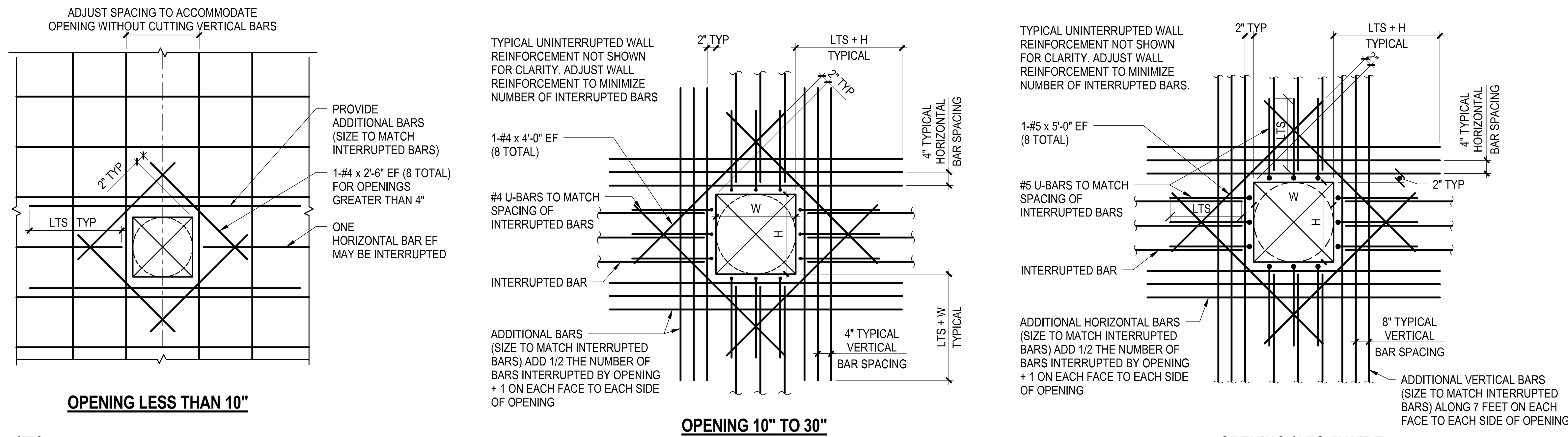


END OF WALL **CORNER INTERSECTION** **T- INTERSECTION** **TYPICAL WALL**

NOTES:

1. FOR INFORMATION NOT SHOWN, SEE END OF WALL DETAIL
2. TIES WITH 135 AND 90 DEGREE HOOKS TO ALTERNATE IN PLAN AND IN ELEVATION

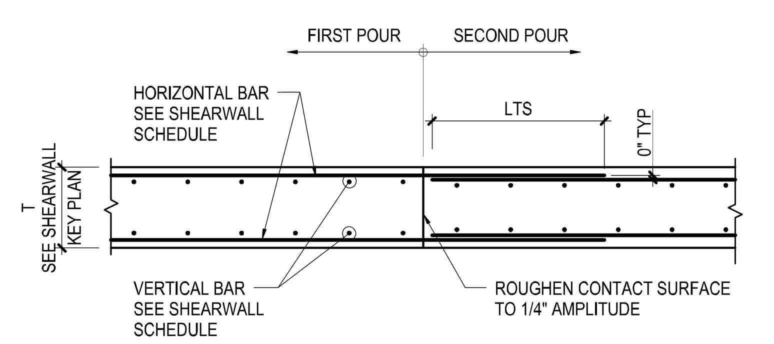
2 FULLY TIED SHEARWALL ZONES
NOT TO SCALE



NOTES:

1. SHEARWALL PENETRATIONS ARE SHOWN ON THE SHEARWALL ELEVATIONS ADDITIONAL PENETRATIONS ARE NOT ALLOWED UNLESS APPROVED IN WRITING BY THE SER
2. FOR OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS, CONTRACTOR TO SUBMIT LOCATIONS AND SPACING TO SER FOR WRITTEN APPROVAL

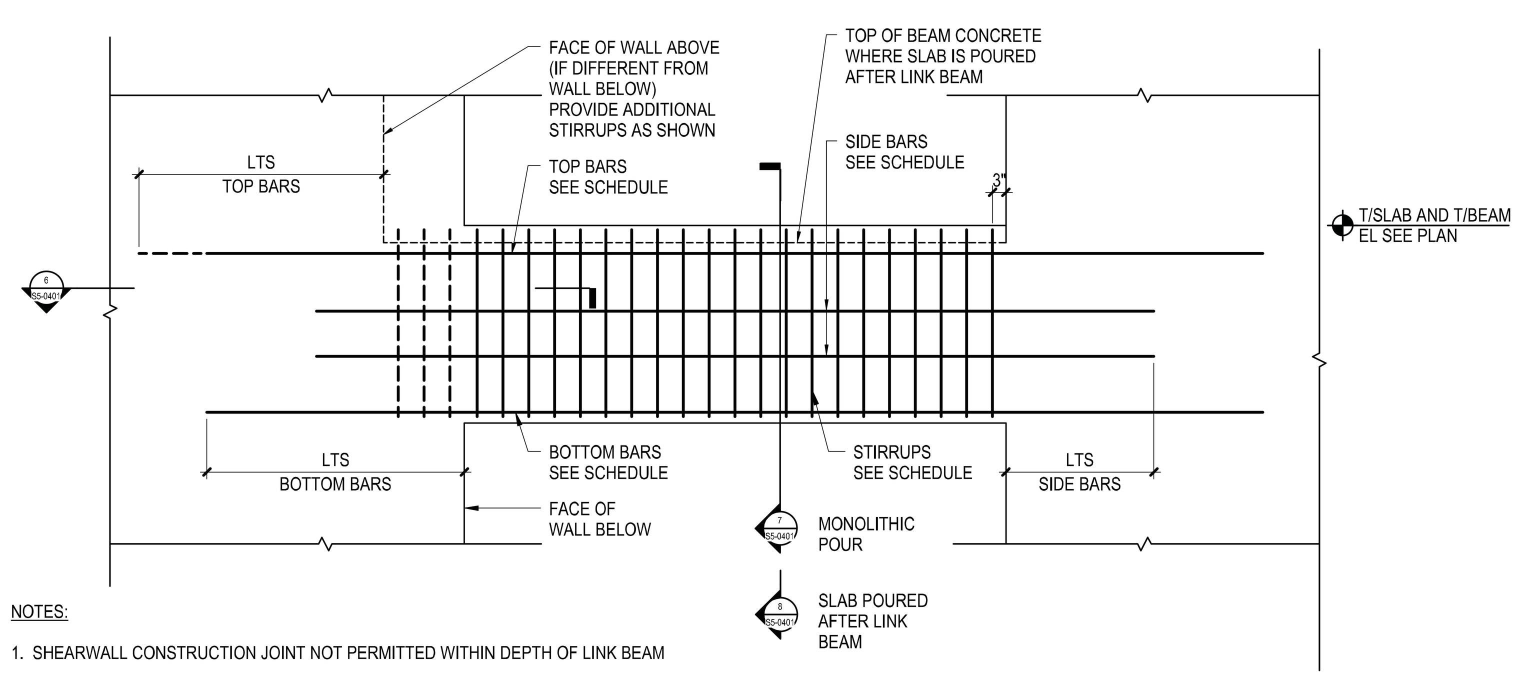
3 TYPICAL SHEARWALL OPENING DETAILS
NOT TO SCALE



NOTE:

1. VERTICAL CONSTRUCTION JOINTS AS INDICATED ON PLAN OR GENERAL NOTES ADDITIONAL JOINTS ARE NOT ALLOWED UNLESS APPROVED IN WRITING BY SER

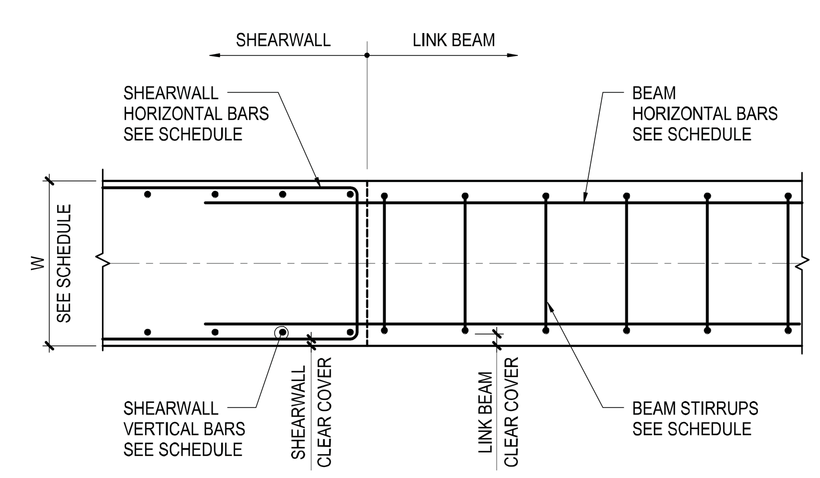
4 TYPICAL SHEARWALL CONSTRUCTION JOINT
NOT TO SCALE



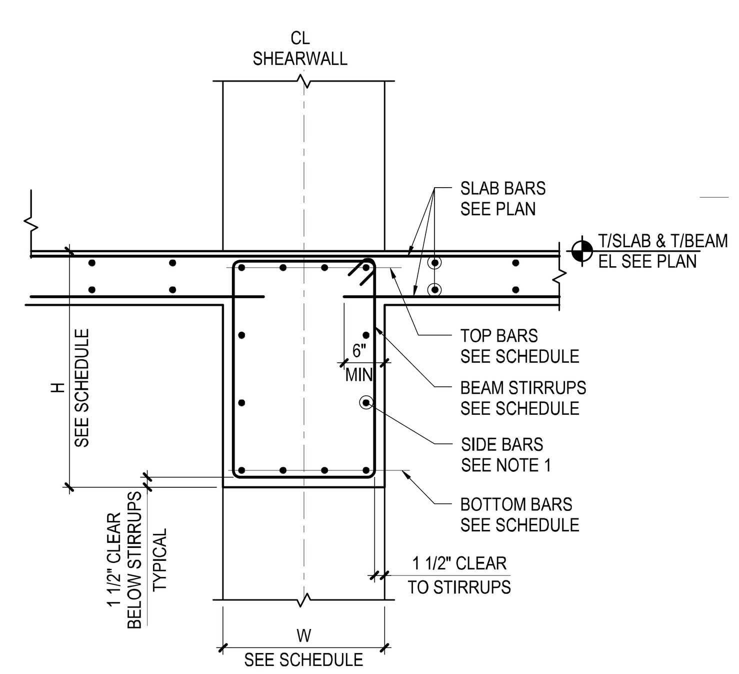
NOTES:

1. SHEARWALL CONSTRUCTION JOINT NOT PERMITTED WITHIN DEPTH OF LINK BEAM
2. SEE TYPICAL CONCRETE BEAM WITH PENETRATION DETAILS
3. SEE ELEVATIONS FOR SIZE AND LOCATION OF PENETRATIONS

5 TYPICAL LINK BEAM ELEVATION
NOT TO SCALE



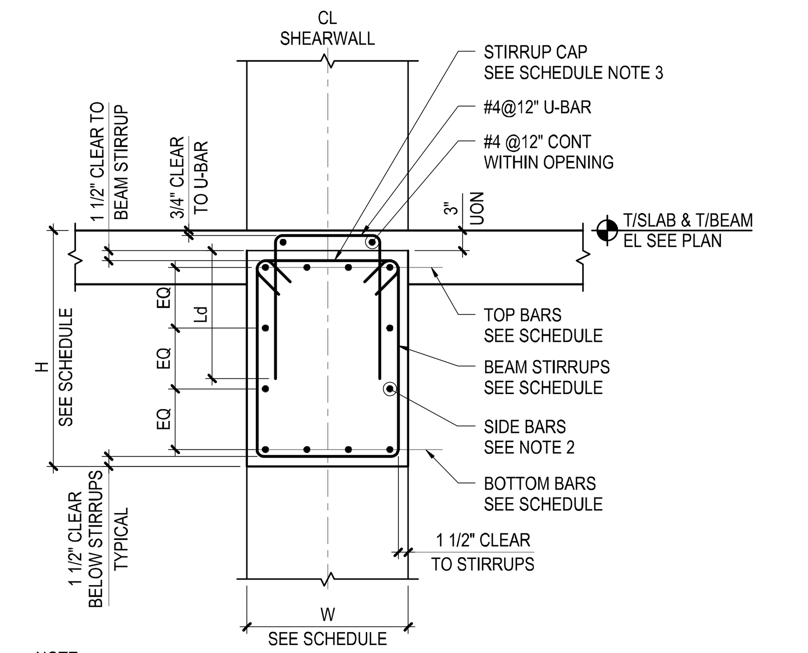
6 TYPICAL LINK BEAM PLAN
NOT TO SCALE



NOTES:

1. IF H IS GREATER THAN 36" PROVIDE SIDE BARS #5@10" MIN UON IN SCHEDULE

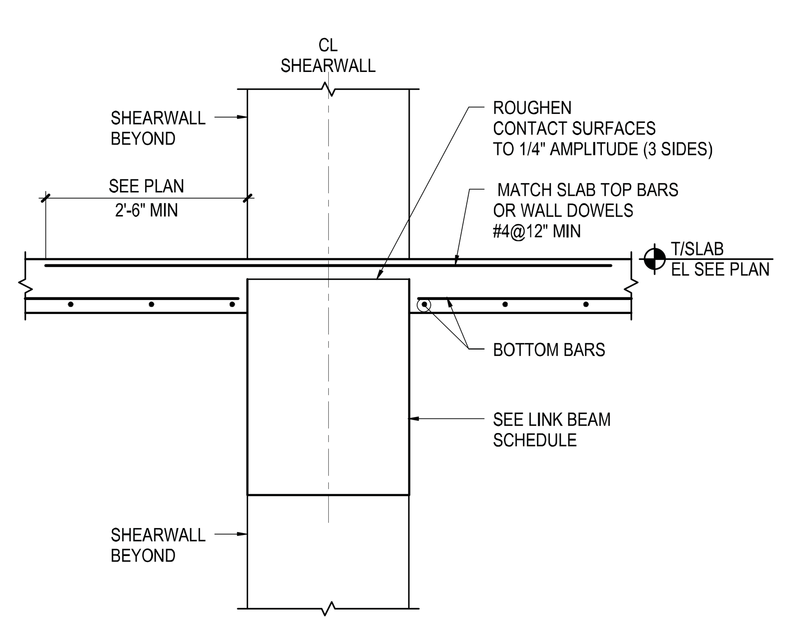
7 TYPICAL LINK BEAM SECTION SLAB POURED MONOLITHIC WITH LINK BEAM
NOT TO SCALE



NOTE:

1. SEE TYPICAL SLAB DETAIL AT LINK BEAM FOR INFORMATION NOT SHOWN
2. IF H IS GREATER THAN 36" PROVIDE SIDE BARS #5@10" MIN UON IN SCHEDULE

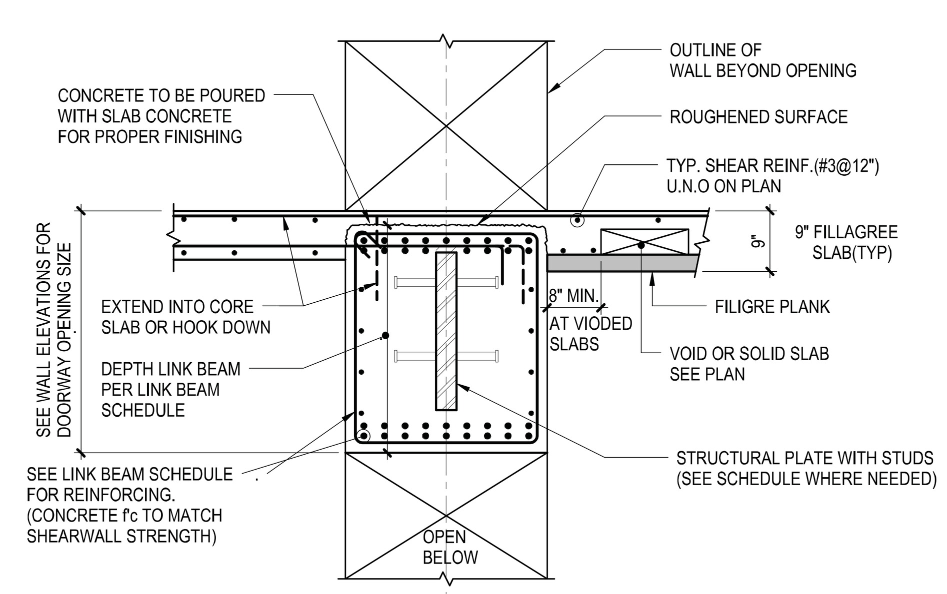
8 TYPICAL LINK BEAM SECTION SLAB POURED AFTER LINK BEAM
NOT TO SCALE
(SEE 10 FOR FILIGREE SLAB)



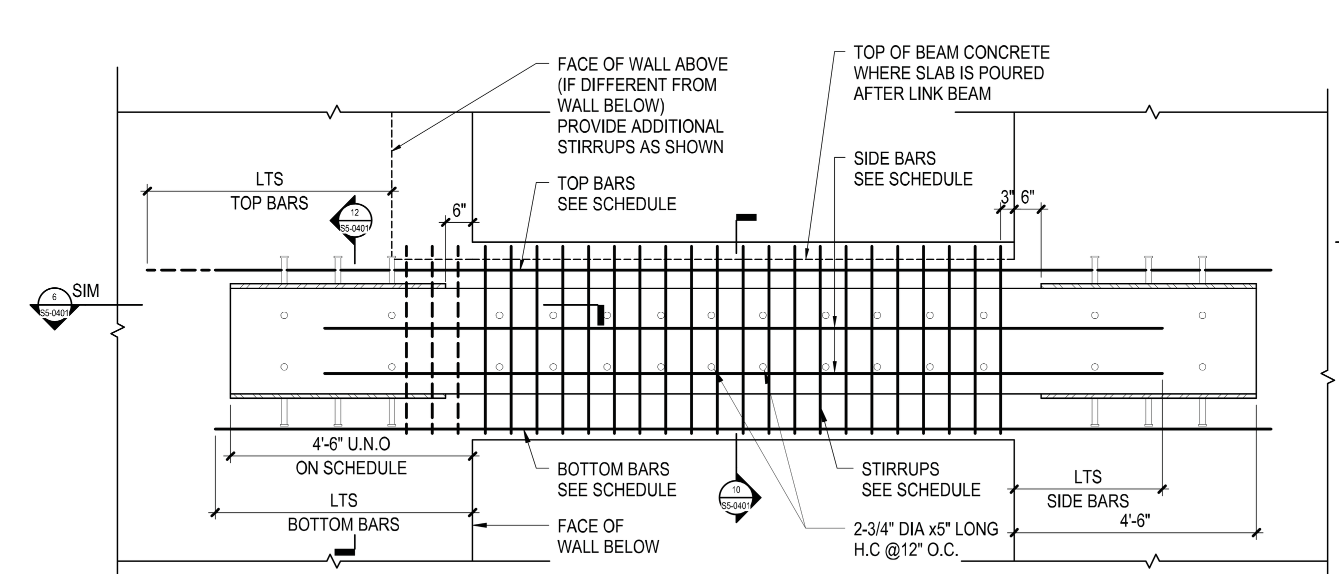
NOTES:

1. SEE TYPICAL LINK BEAM SECTION - SLAB POURED AFTER LINK BEAM FOR ADDITIONAL INFORMATION NOT SHOWN
2. DETAIL APPLIES ONLY FOR SLABS SPANNING PARALLEL TO WALL

9 TYPICAL SLAB DETAIL AT LINK BEAM SUPPORT
NOT TO SCALE



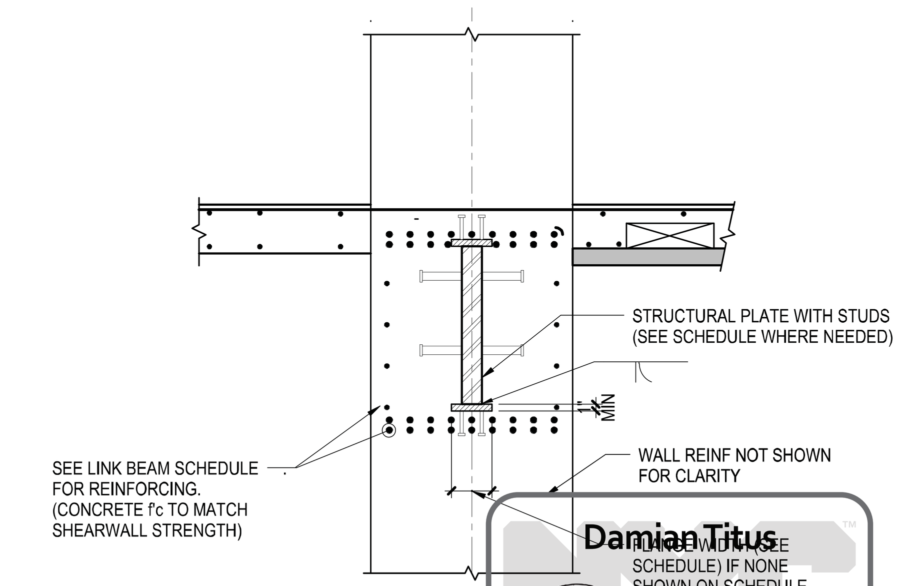
10 SECTION THROUGH LINK BEAM WITH STRUCTURAL PLATE
3/4" = 1'-0"



NOTES:

1. SHEARWALL CONSTRUCTION JOINT NOT PERMITTED WITHIN DEPTH OF LINK BEAM
2. SEE TYPICAL CONCRETE BEAM WITH PENETRATION DETAILS
3. SEE ELEVATIONS FOR SIZE AND LOCATION OF PENETRATIONS

11 TYPICAL LINK BEAM WITH STRUCTURAL PLATE ELEVATION
NOT TO SCALE



12 LINK BEAM WITH STRUCTURAL PLATE END CONDITION
3/4" = 1'-0"

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Date/Time: Aug 15, 2013 – 10:28 AM
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DEPT OF BLDGS 121324290 Job Number
ES208372698 Scan Code

HUDSON YARDS - TOWER C

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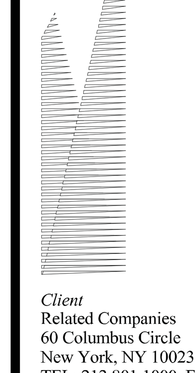
NEW YORK, NY



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60 Columbus Circle
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Oxford Properties Group
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TEL: 212.986.7514 FAX: 212.986.7510

Construction Manager
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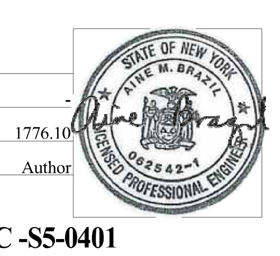
No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number



HYE -TC -S5-0401

Drawing Title

TYPICAL CONCRETE SHEARWALL DETAILS I

Drawing Number
S5-0401
B-Scan Drawing Number
S-134.00 SHEET 96 OF 118

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S5-0401
2/15/2013 10:32:47 AM
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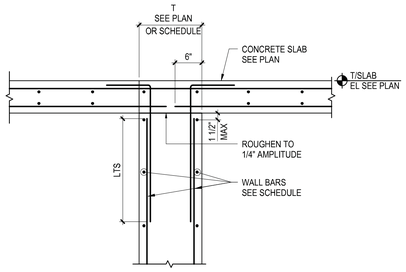
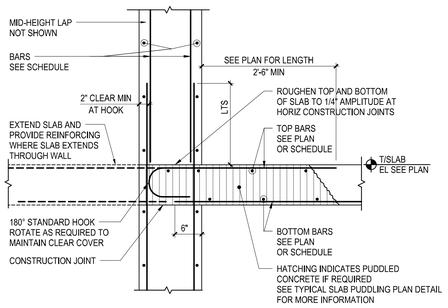
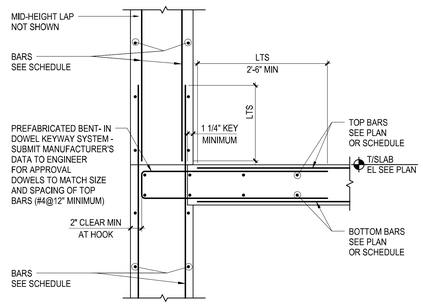


1 TYPICAL TOP OF WALL AND SHEARWALL WITH CONCRETE SLAB

NOT TO SCALE

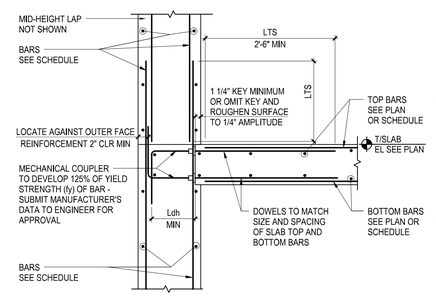


A OPTION A - WALL POURED TO UNDERSIDE OF SLAB



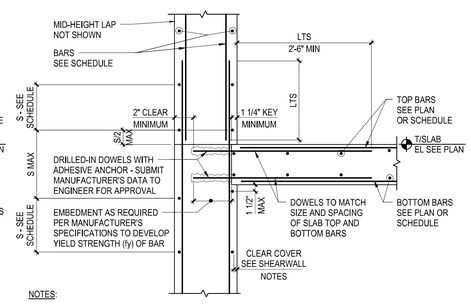
B OPTION B - PREFABRICATED DOWELS AND KEYWAY

(IN WALL POURED MONOLITHIC)



C OPTION C - MECHANICAL COUPLERS

(IN WALL POURED MONOLITHIC)



NOTES:

1. OPTION D IS NOT TO BE USED UNLESS APPROVED IN WRITING BY THE ENGINEER OF RECORD
   THE CONTRACTOR'S SUBMITTAL MUST CONSIDER AT A MINIMUM THE FOLLOWING:
   A. EMBEDMENT TO CONSIDER BAR SPACING AND EDGE CONDITION
   B. WALL REBAR CONGESTION INCLUDING LAPS
   C. WALL THICKNESS TO DEVELOP REINFORCEMENT
   D. DESCRIPTION OF QUALITY CONTROL PROGRAM TO DEMONSTRATE ANCHORS ACHIEVE FULL STRENGTH OF DOWELS
   E. ANCHORS SHALL BE PULL TESTED FOLLOWING ACI STATISTICAL SAMPLING METHOD FOR TESTING FREQUENCY

D OPTION D - DRILLED IN DOWELS (SLAB ONLY)

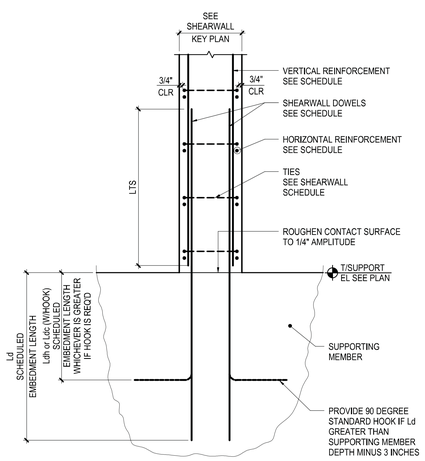
(IN WALL POURED MONOLITHIC)

NOTE:

1. FOR OPTIONS B, C, AND D MIRROR ALL DOWELS AND KEY FOR SLAB ON OPPOSITE SIDE

2 TYPICAL CONCRETE SLAB OR BEAM SUPPORT DETAILS AT WALL AND SHEARWALL

NOT TO SCALE



3 TYPICAL BOTTOM OF SHEARWALL

NOT TO SCALE

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4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: -
Project No. 1776.10
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Sheet Number HYE -TC -S5-0402

STATE OF NEW YORK · DAMIAN A. TITUS · 082542-1 · LICENSED PROFESSIONAL ENGINEER

Drawing Title

TYPICAL CONCRETE SHEARWALL DETAILS II

Drawing Number
S5-0402

B-Scan Drawing Number
S-135.00

SHEET 97 OF 118

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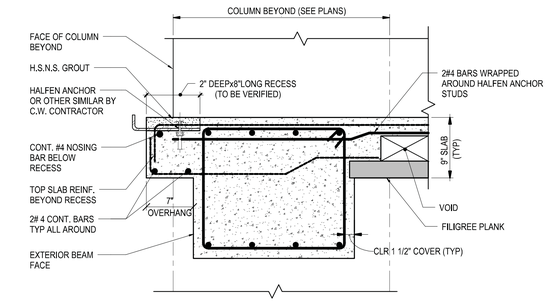
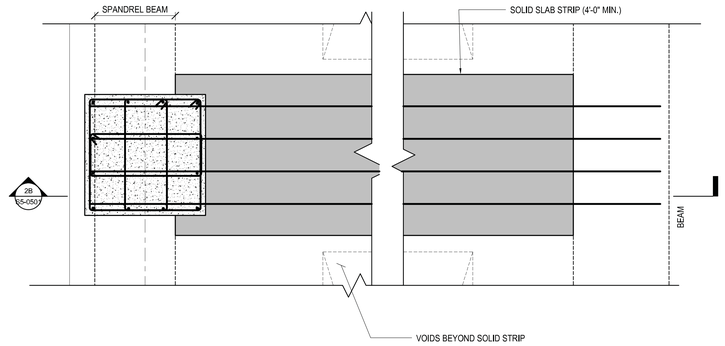
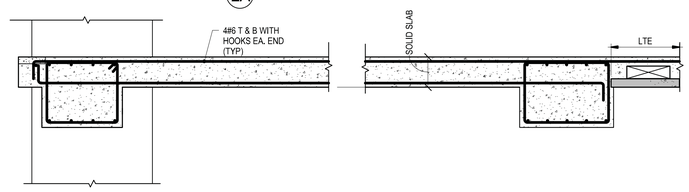


1 TYPICAL DETAIL AT EDGE OF SLAB / SPANDREL BEAM
1 1/2" = 1'-0"

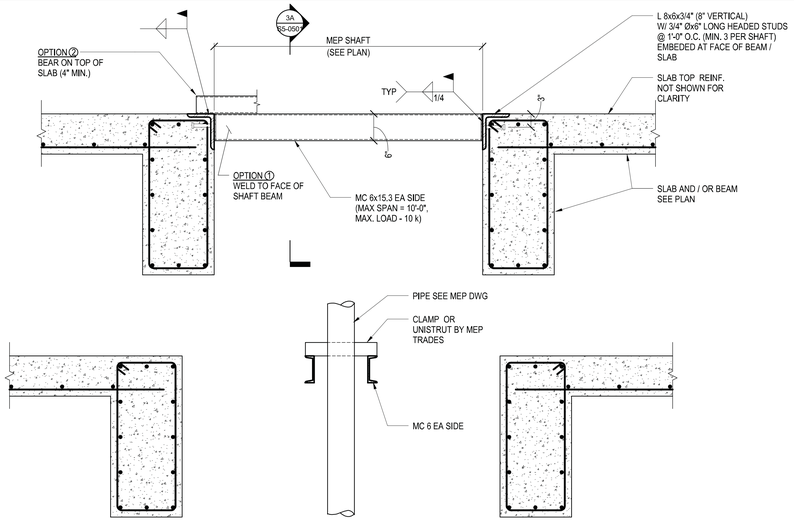


2A PLAN VIEW



2B SECTION

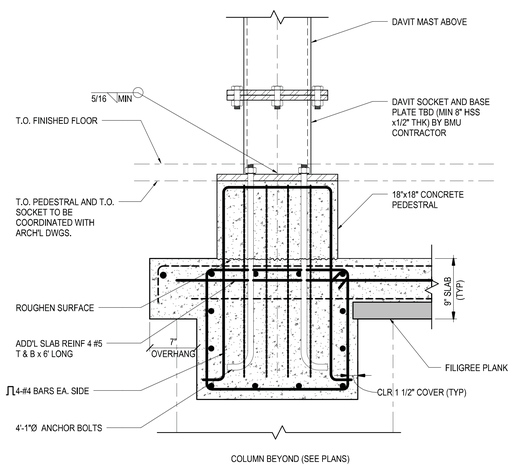
2B TYPICAL DETAIL OF ADDITIONAL REINF. AT SOLID FILIGREE SLAB STRIPS AT COLUMNS
3/4" = 1'-0"
(SHOWN AS GREY ZONES ON PLANS)



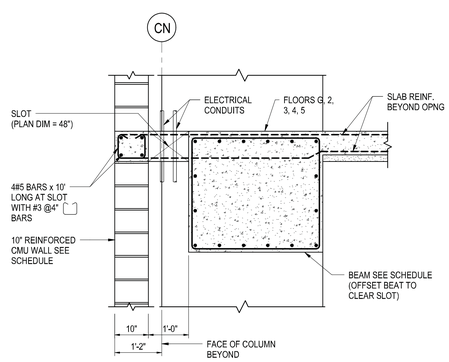
3A SECTION

NOTES:
1. ALWAYS RUN CHANNELS SHORT DIM OF SHAFT
2. NON TYPICAL HEAVY PIPE LOADS ARE SPECIFICALLY SHOWN ON PLAN
3. SEE MEP DRAWINGS FOR LOCATIONS OF SUCH SUPPORTS PER FLOOR AND PER SHAFT

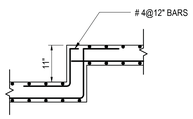
3 TYPICAL DETAIL OF MEP PIPE SUPPORTS AT SHAFTS
1" = 1'-0"
(SEE MEP DRAWINGS FOR LOCATIONS OF SUCH SUPPORTS PER FLOOR AND PER SHAFT)



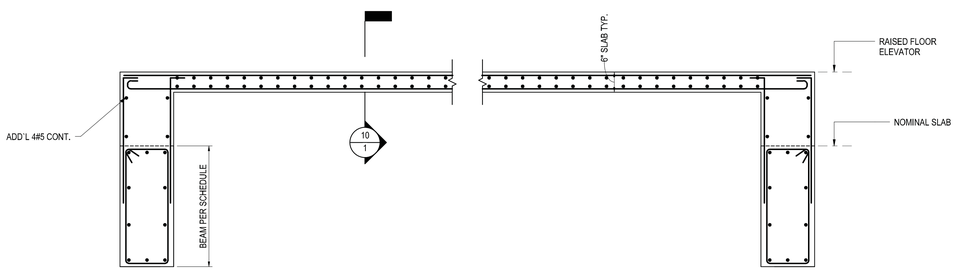
4 TYPICAL DAVIT SUPPORT DETAIL
1 1/2" = 1'-0"



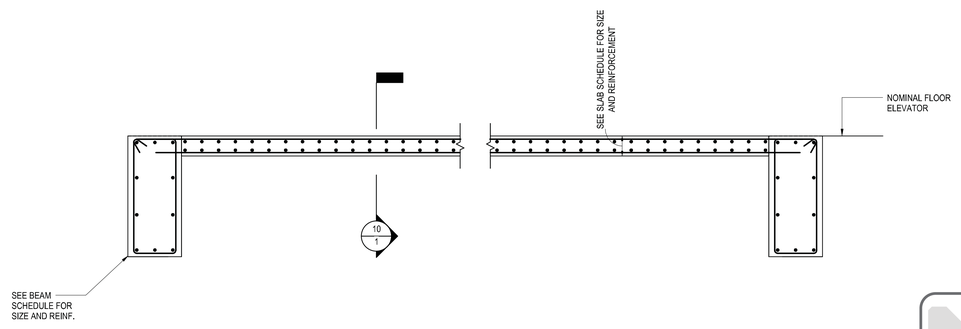
5 SECTION THRU ELECTRICAL SLOT RISER AT NORTH FACADE (FLOOR G, 2, 3, 4, 5)
3/4" = 1'-0"



6 SECTION AT SLAB
3/4" = 1'-0"



7 SECTION AT RAISED SLAB
3/4" = 1'-0"



8 SECTION AT LOW SIDE
3/4" = 1'-0"

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1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 12.04.12
Project No. 1776.10
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Drawing Title

SECTIONS AND DETAILS I

Drawing Number
S5-0501
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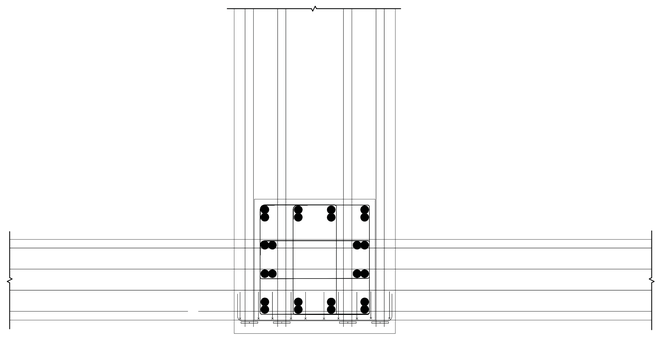
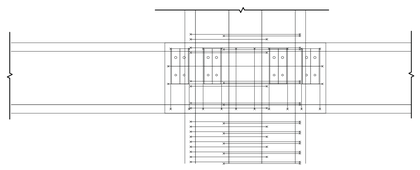
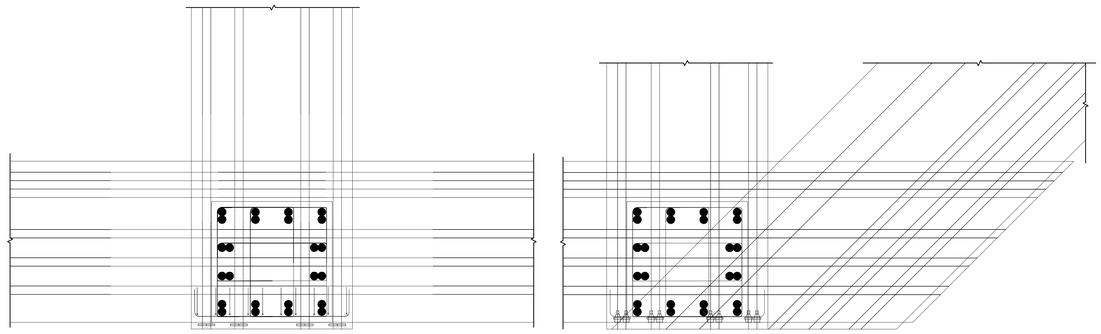


A PLAN VIEW

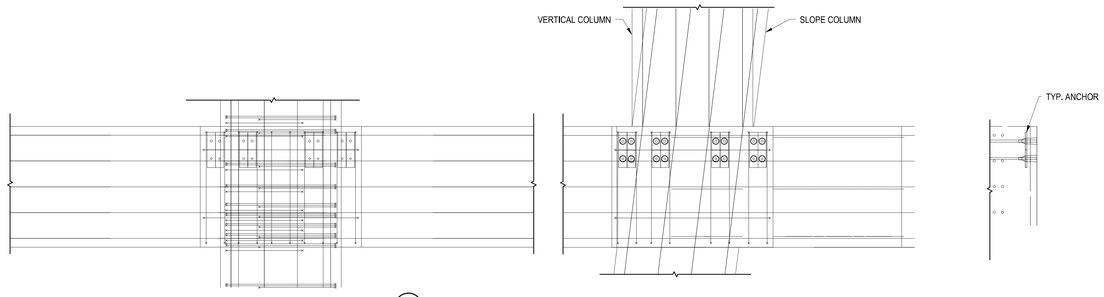


B ELEVATION

1 TYPICAL DETAIL OF PT BEAM TO EXTERIOR COLUMN CONNECTION AT DIAPHRAGM FLOORS
3/4" = 1'-0"
(SLAB REINFORCEMENT NOT SHOWN FOR CLARITY)
NOTE: INTENT OF DETAIL IS TO SHOW STRAND FIT-UP

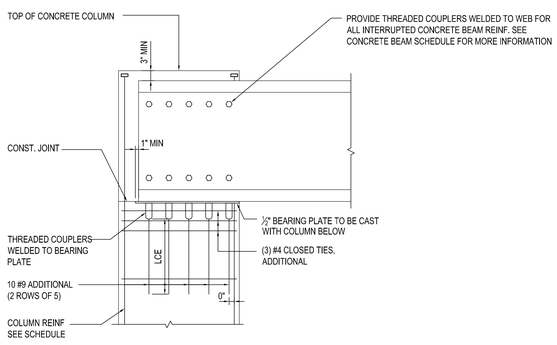


A PLAN VIEW

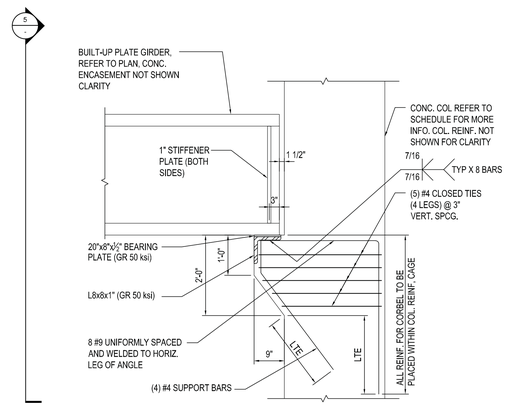


B ELEVATION

2 TYPICAL DETAIL OF PT BEAM TO EXTERIOR COLUMN CONNECTION AT TYP. FLOORS
3/4" = 1'-0"
(SLAB REINFORCEMENT NOT SHOWN FOR CLARITY)
NOTE: INTENT OF DETAIL IS TO SHOW STRAND FIT-UP

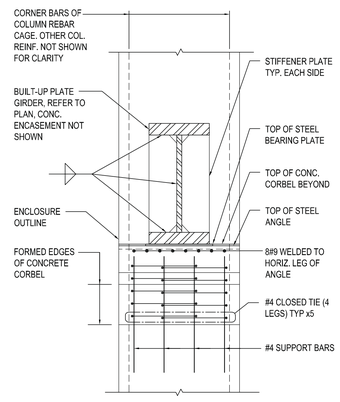


3 BUILT UP PLATE GIRDER SUPPORTED AT EXTERIOR COLUMN



NOTE:
ALL CONCRETE REINF. SHOWN IS IN ADDITON TO REINF PER TYPICAL CONCRETE DETAILS AND SCHEDULE.

4 CORBEL DETAIL FOR BUILT UP PLATE GIRDER SUPPORTED AT INTERIOR COLUMN



5 SECTION

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Key Plan

Issue Date: 12/12/12
Project No. 1776.10
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Drawing Title
SECTIONS AND DETAILS II

Drawing Number
S5-0502
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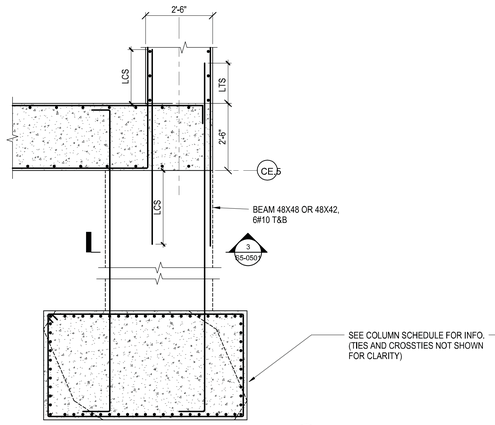
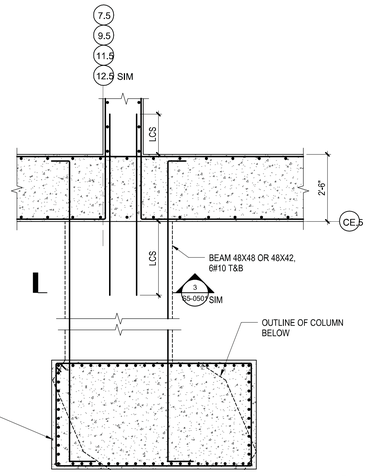
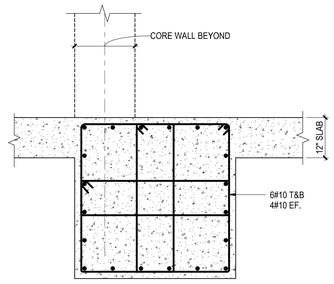


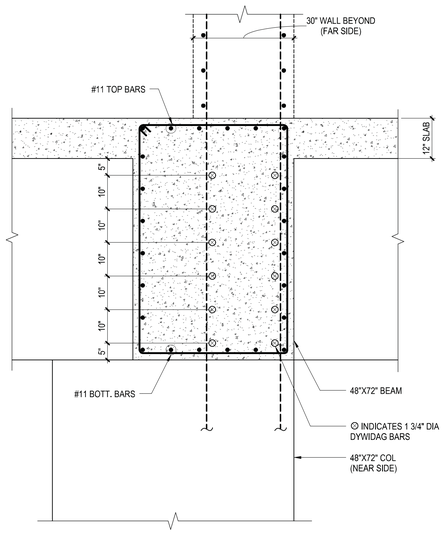
1 **PLAN VIEW AT 4TH FLOOR AT GRIDS 4.5**
1/2" = 1'-0"



2 **PLAN VIEW AT 4TH FLOOR AT GRIDS 7.5 9.5 11.5 12.5 SIM**
1/2" = 1'-0"



3 **SECTION**
3/4" = 1'-0"



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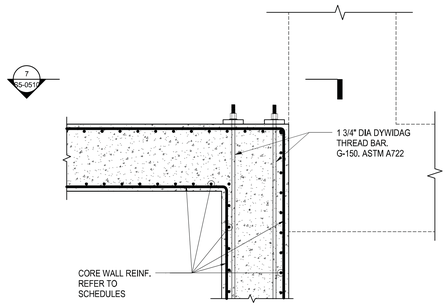
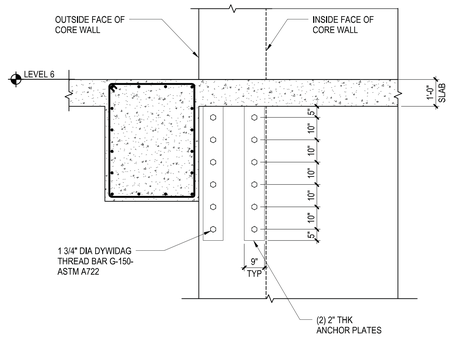
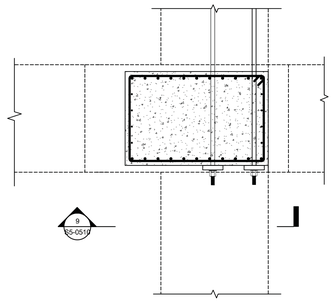
3/4" = 1'-0"



6 **PART PLAN**
1/2" = 1'-0"



7 **SECTION**
1/2" = 1'-0"



8 **PART PLAN**
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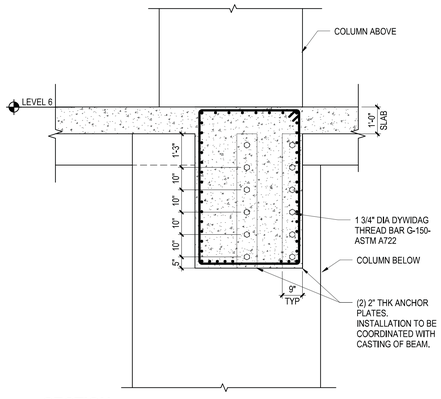

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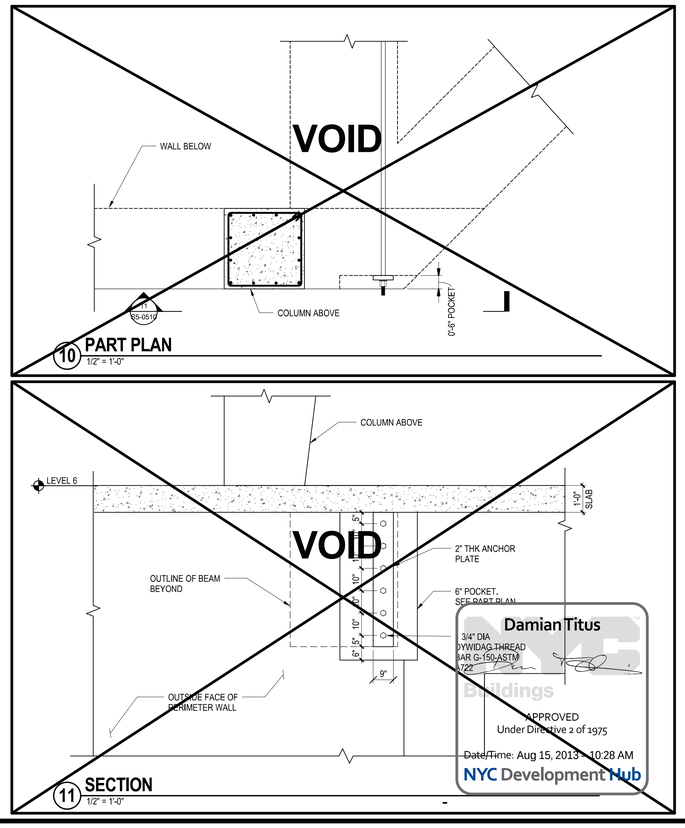
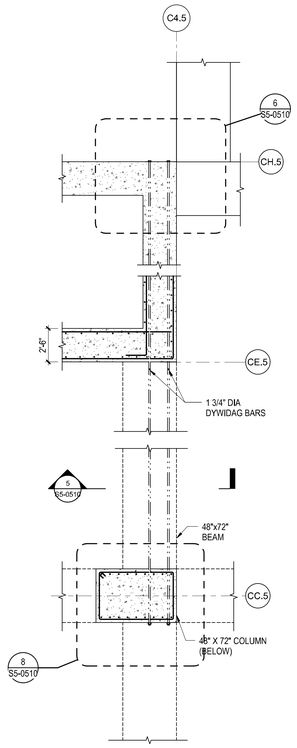


10 **PART PLAN**
1/2" = 1'-0"

11 **SECTION**
1/2" = 1'-0"



4 **6TH FLOOR PLAN VIEW AT GRID 4.5**
1/4" = 1'-0"

HUDSON YARDS - TOWER C

501 WEST 30TH STREET
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Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S5-0510

Drawing Title

LEVEL 4 & 6 SECTIONS I

Drawing Number
S5-0510

R-Scan Drawing Number
S-138.00 SHEET 100 OF 118

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S5-0510
2/15/2013 10:33:01 AM
LEVEL 4 & SECTIONS I
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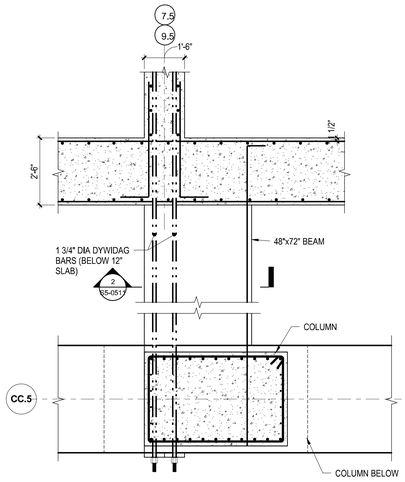

NOTE:
REFER TO DETAIL 4/S5-0510 FOR INFORMATION NOT SHOWN

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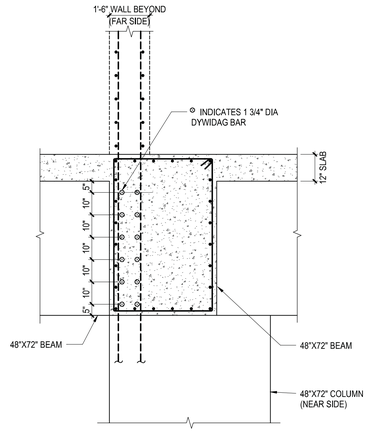
1/2" = 1'-0"



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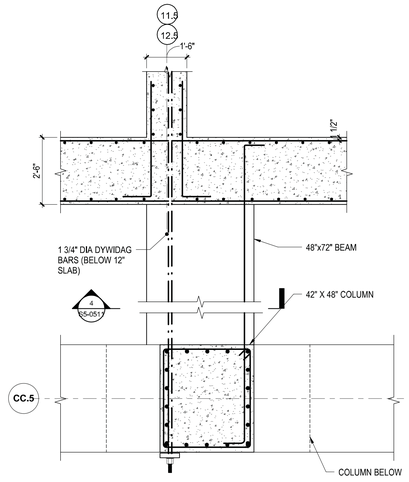

NOTE:
REFER TO DETAIL 4/S5-0510 FOR INFORMATION NOT SHOWN

3 PLAN VIEW AT 6TH FLOOR 11.5 12.5 SIM
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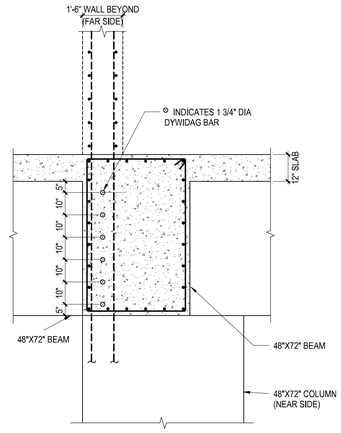

4 SECTION
1/2" = 1'-0"

HUDSON YARDS - TOWER C

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 12/10/12
Project No. 1776.10
Drawn By: Author
Sheet Number
HYE -TC -S5-0511
Drawing Title

LEVEL 4 & 6 SECTIONS II

Drawing Number
S5-0511
B-Scan Drawing Number
S-139.00 SHEET 101 OF 118

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:28 AM
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S5-0511
2/15/2013 10:33:04 AM
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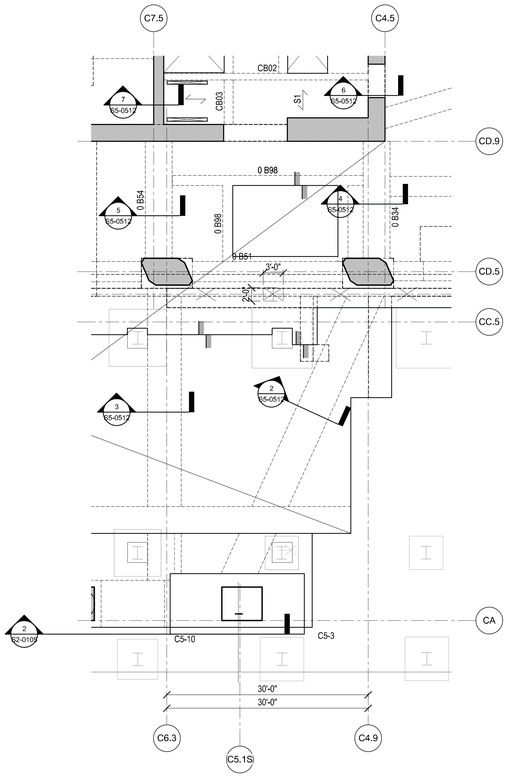
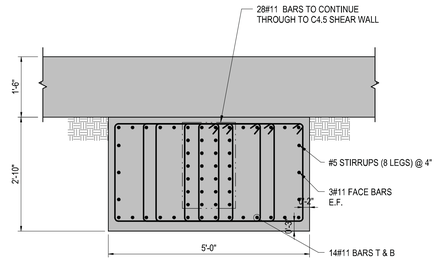
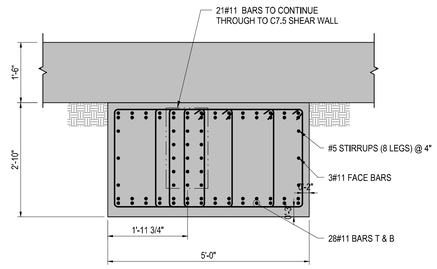


1 LEVEL 00 PART FRAMING PLAN
1/8" = 1'-0"



2 GRADE BEAM REINFORCEMENT
3/4" = 1'-0"



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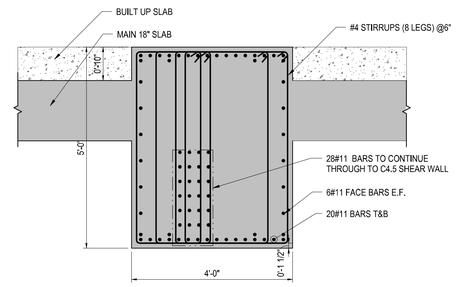

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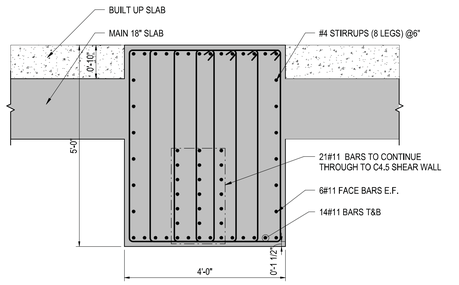

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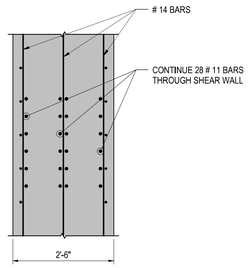
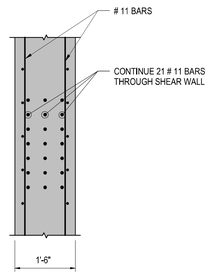
3/4" = 1'-0"



6 C4.5 SHEAR WALL REINFORCEMENT
3/4" = 1'-0"



7 C7.5 SHEAR WALL REINFORCEMENT
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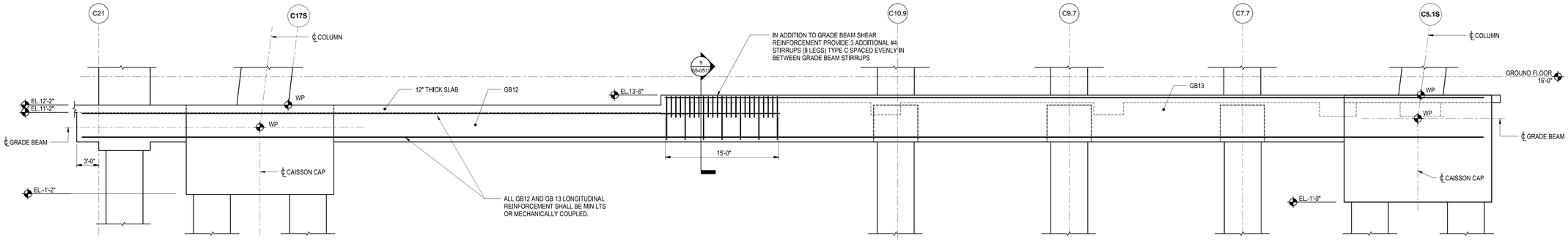
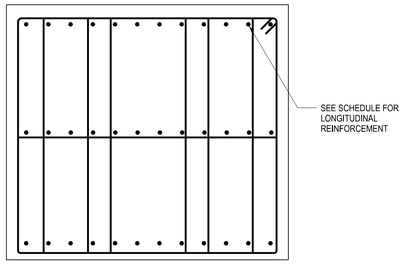


8 CA GRADE BEAM ELEVATION
3/16" = 1'-0"



9 SECTION 3
3/4" = 1'-0"

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:28 AM
NYC Development Hub

HUDSON YARDS - TOWER C

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22 STRUCTURE	02/01/2013
1	ASI #18	01/25/2013

Key Plan

Issue Date: 01/23/13
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S5-0512
Drawing Title

LEVEL 00 SECTIONS

Drawing Number
S5-0512
B-Scan Drawing Number
S-140.00

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S5-0512
2/15/2013 10:33:06 AM
LEVEL 00 SECTIONS
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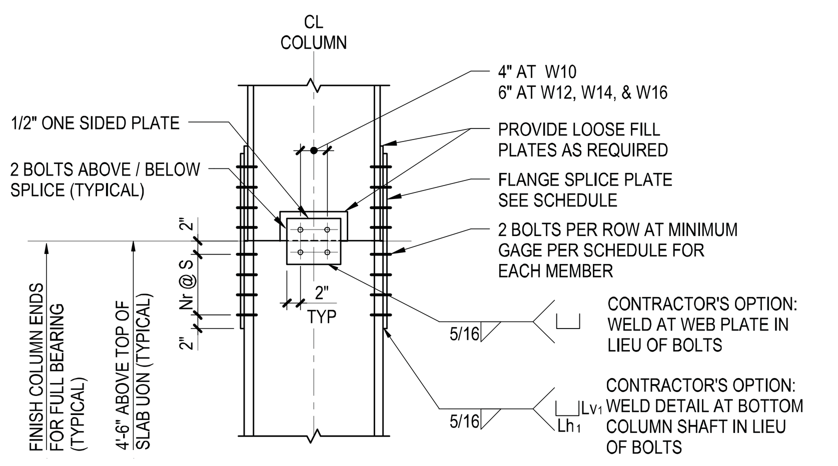
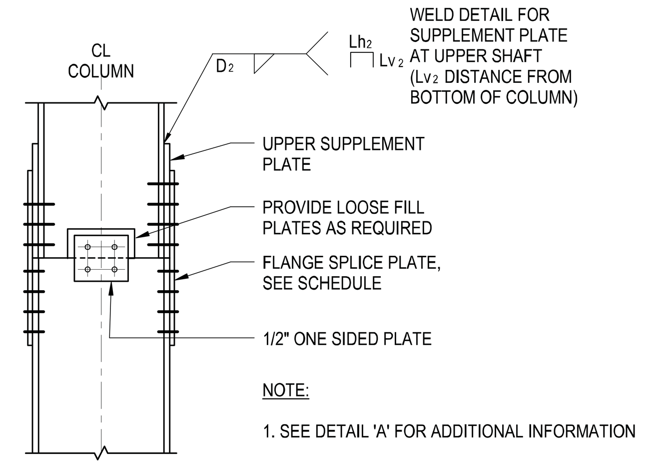
NOTES:

1. ALL PLATES SHALL BE ASTM A572 GRADE 50 MINIMUM
2. ALL BOLTS SHALL BE ASTM A325 MINIMUM PRE-TENSIONED IN STANDARD HOLES
3. LIFTING LUGS AND ERECTION AIDS ARE THE RESPONSIBILITY OF THE CONTRACTOR
4. THE CONTRACTOR MAY CHOOSE A BOLT DIAMETER BETWEEN 3/4" DIAMETER MINIMUM, 1-1/8" DIAMETER MAXIMUM (EXCEPT FOR b/f ≤ 9", THEN 7/8" DIAMETER MAXIMUM)
5. FAYING SURFACES SHALL MEET MINIMUM SC-A REQUIREMENTS
6. 3/4" MAXIMUM LOOSE FILL PLATE EACH FLANGE. WHERE THICKER PLATES ARE REQUIRED, USE 7/8" DIAMETER SLIP CRITICAL BOLTS MINIMUM
7. S=3" FOR BOLTS 1" DIAMETER OR LESS, S=3-1/2" FOR 1-1/8" DIAMETER BOLTS
8. THIS CONNECTION IS MINIMUM FOR FINAL DESIGN STRUCTURAL REQUIREMENTS. THE CONTRACTOR SHALL VERIFY CAPACITY FOR TEMPORARY CONDITIONS.
9. FOR NOMINAL SIZE DIFFERENCES > 2", SEE DETAIL SX.XX

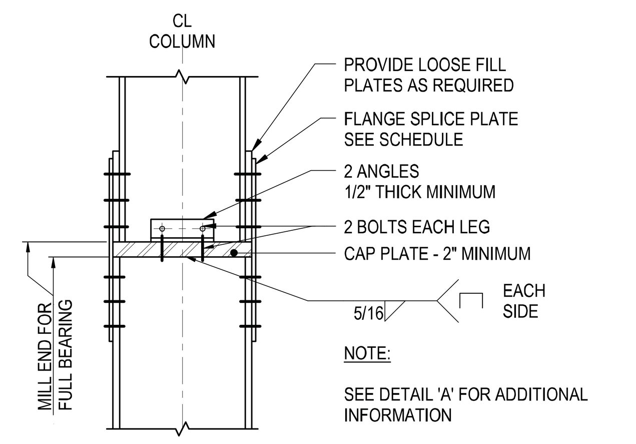


A UPPER COLUMN OF SAME NOMINAL SIZE

UPPER COLUMN SIZE	BOLT	FLANGE SPLICE PLATE			ALT WELD		WELD AT UPPER SUPPLEMENT PLATE		
	NO OF BOLT ROWS Nr	WIDTH	THICKNESS	MIN GAGE	MIN Lh_1	MIN Lv_1	MIN D_2	MIN Lh_2	MIN Lv_2
W16 X 67 TO 100	4	10"	3/8"	5 1/2"	4	6	7/16	8	26
W14 X 455 & OVER	4	16"	3/4"	13 1/2"	10	7	NA	NA	NA
W14 X 257 TO 426	4	14"	3/4"	11 1/2"	8	8	NA	NA	NA
W14 X 145 TO 233	4	14"	1/2"	11 1/2"	8	7	NA	NA	NA
W14 X 90 TO 132	3	14"	1/2"	11 1/2"	8	7	NA	NA	NA
W14 X 61 TO 82	3	10"	3/8"	5 1/2"	6	6	5/16	8	30
W14 X 43 TO 53	3	8"	3/8"	5 1/2"	4	6	5/16	7	19
W12 X 120 TO 336	4	12"	5/8"	5 1/2"	6	7	NA	NA	NA
W12 X 40 TO 106	3	8"	1/2"	5 1/2"	6	7	1/2	6	25
W10 X 33 TO 112	3	8"	3/8"	5 1/2"	6	6	1/2	6	26



B UPPER COLUMN 2" (MAX) NOMINAL SMALLER

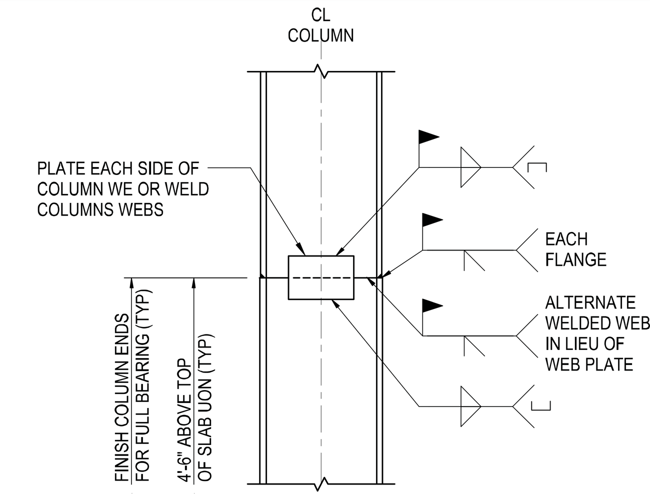


C UPPER COLUMN 2" (MAX) NOMINAL SMALLER

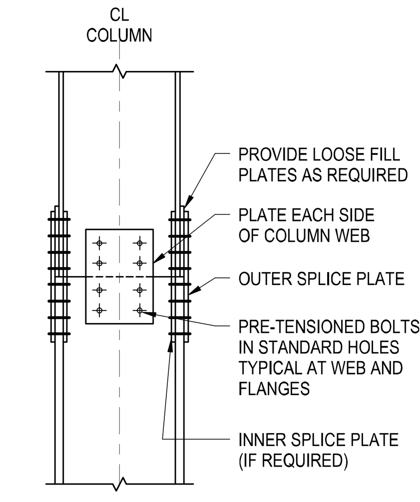
1 TYPICAL COLUMN SPLICE DETAIL

NOT TO SCALE

ST-CL-02



WELDED



BOLTED

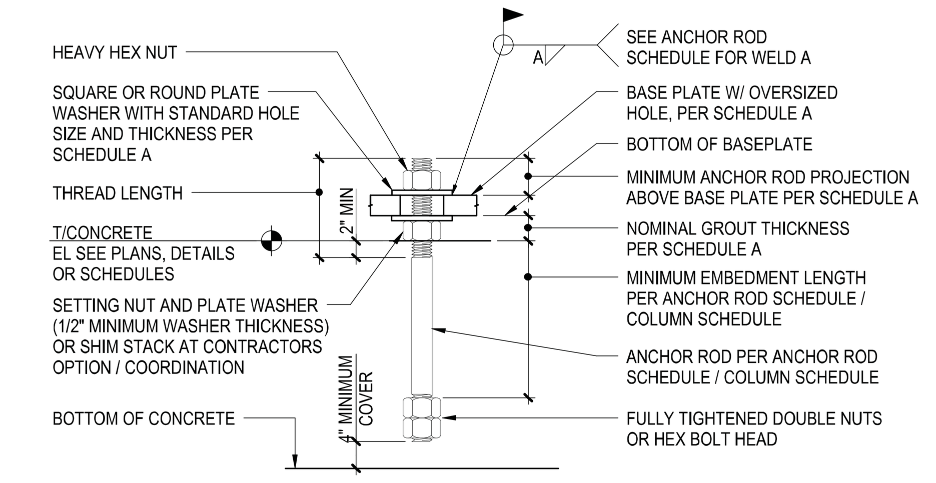
NOTES:

1. FOR LOCATIONS OF TENSION / MOMENT SPLICES SEE COLUMN SCHEDULE, MOMENT FRAME OR BRACED FRAME ELEVATIONS
2. PROVIDE CONNECTION TO DEVELOP THE LARGEST OF THE FOLLOWING:
   A. THE TENSION AND MOMENT CONNECTION FORCES INDICATED ON THE PLANS, ELEVATIONS OR SCHEDULES
   B. 150 KIPS TENSION MINIMUM (FACTORED)
3. INNER SPLICE PLATE (IF USED) SHALL HAVE THE SAME CROSS SECTIONAL AREA AS OUTER PLATES, INNER SPLICE PLATES REQUIRED WHERE SINGLE OUTER PLATE WOULD EXCEED 1" THICK
4. FOR TENSION COLUMN SPLICES THE WEB AND FLANGE CONNECTIONS OF BOLTED OR WELDED JOINTS SHALL BE PROPORTIONED BASED ON THEIR ASSOCIATED AREAS
5. IN NO CASE SHALL THE PLATE SIZE AND THE NUMBER OF BOLTS AND DIAMETER BE LESS THAN THOSE LISTED IN THE TYPICAL COLUMN SPLICE DETAIL
6. PROVIDE WEB SHEAR SPLICE TO DEVELOP:
   A. THE SHEAR FORCES SHOWN ON THE PLANS, ELEVATIONS OR SCHEDULES
   B. 60 KIPS MINIMUM (FACTORED)
7. ERECTION AIDS NOT SHOWN ARE THE RESPONSIBILITY OF THE CONTRACTOR. SEE GENERAL NOTES

2 TYPICAL TENSION / MOMENT COLUMN SPLICE DETAILS (CONTRACTOR - DESIGNED)

NOT TO SCALE

ST-CL-03



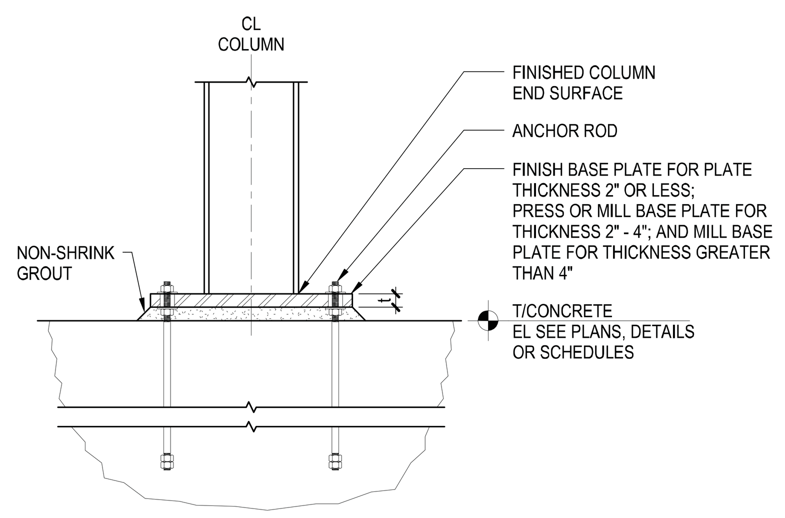
SCHEDULE A

ANCHOR ROD DIAMETER	BASE PL HOLE DIA	MIN WASHER SIZE	MIN WASHER t	MIN PROJ ABOVE BASE PL	NOMINAL GROUT THICKNESS
3/4"	1-5/16"	2"	1/4"	3"	2"
1"	1-13/16"	3"	3/8"	3-1/2"	2"
1-1/4"	2-1/16"	3"	1/2"	4"	3"
1-1/2"	2-5/16"	3-1/2"	1/2"	4"	3"
1-3/4"	2-3/4"	4"	3/4"	5"	3"
2"	3-1/4"	5"	3/4"	5"	4"
2-1/2"	3-3/4"	5-1/2"	1"	5-1/2"	4"

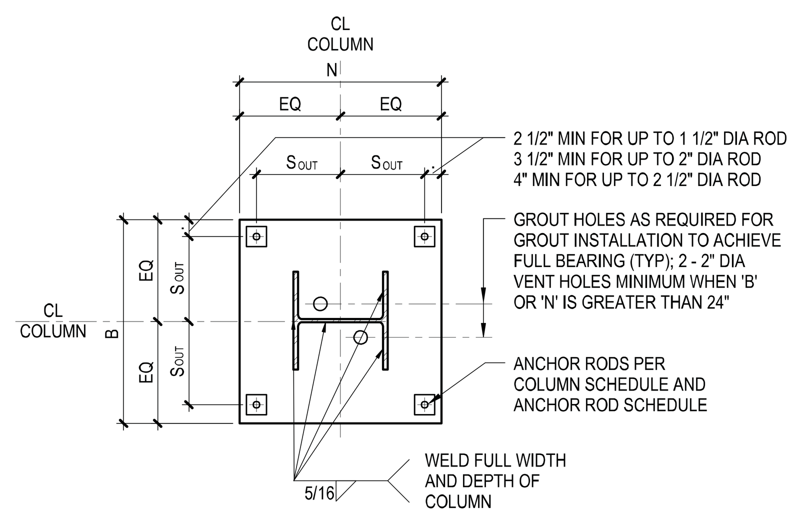
3 TYPICAL ANCHOR ROD DETAIL

NOT TO SCALE

ST-CL-04

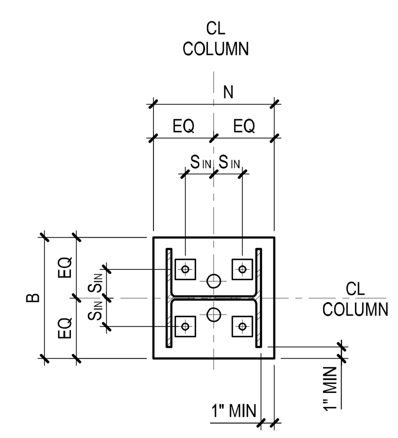


ELEVATION



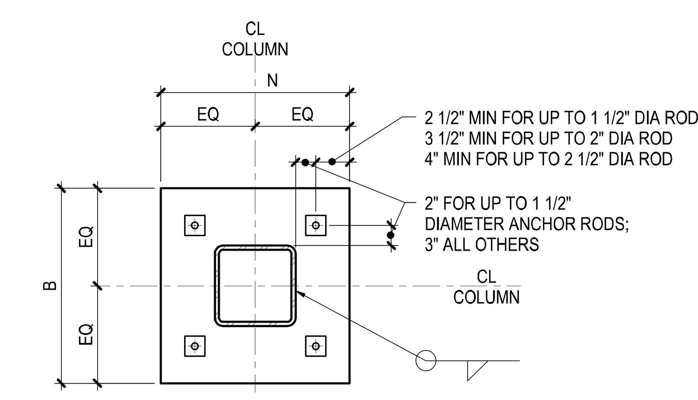
W8, W10, W12, W14 PLAN

WITH SQUARE ANCHOR ROD PATTERN OUTSIDE COLUMN - SEE TABLE 1



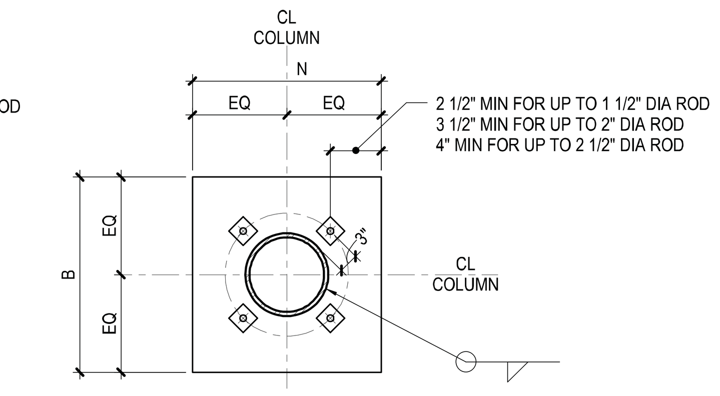
W10, W12, W14 PLAN

WITH SQUARE ANCHOR ROD PATTERN INSIDE COLUMN - SEE TABLE 2

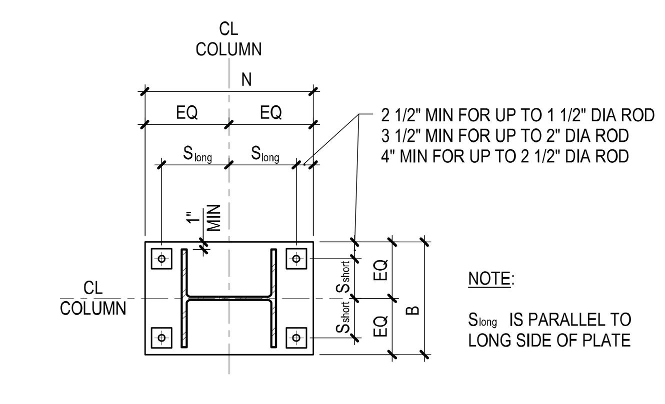


NOTE:
IT IS RECOMMENDED THAT A SQUARE BOLT CONFIGURATION BE MAINTAINED FOR A SQUARE AND RECTANGULAR HSS

RECTANGULAR HSS PLAN



ROUND HSS PLAN



RECTANGULAR BASE PLATE AT WIDE FLANGE COLUMN

WITH RECTANGULAR ANCHOR ROD PATTERN OUTSIDE COLUMN -SEE TABLE 3

NOTES:

1. SEE COLUMN SCHEDULE FOR BASE PLATE SIZE, ORIENTATION AND THICKNESS
2. BASE PLATE THICKNESS SHOWN ON SCHEDULE IS A MIN. DIMENSION AFTER ALL MILLING IS COMPLETED
3. COLUMN STABILITY DURING ERECTION IS RESPONSIBILITY OF CONTRACTOR
4. SEE ANCHOR ROD SCHEDULE AND TYPICAL ANCHOR ROD DETAIL FOR ADDITIONAL INFORMATION
5. CONTRACTOR'S OPTION TO FIELD WELD COLUMNS TO BASEPLATES FOR HEAVY BASEPLATES
6. ANCHOR ROD CONFIGURATION IS TO USE SQUARE PATTERN OUTSIDE COLUMN. IF SPECIFIED BASE PLATE SIZE DOES NOT PERMIT OUTSIDE PLACEMENT USE SQUARE PATTERN INSIDE COLUMN. USE RECTANGULAR ANCHOR ROD CONFIGURATION WHERE NOTED

TABLE 1

S_{out} FOR SQUARE ANCHOR ROD PATTERN OUTSIDE COLUMN

ANCHOR ROD DIAMETER	W8	W10	W12x40 THRU 106	W12x120 THRU 336	W14X43 THRU 82	W14x90 THRU 211	W14x233 THRU 398	W14x426 THRU 730
3/4"	6"	7"	8"	NA	8"	NA	NA	NA
1"	6 1/2"	7 1/2"	8 1/2"	9 1/2"	8 1/2"	10"	11"	12"
1 1/4"	6 1/2"	7 1/2"	8 1/2"	9 1/2"	8 1/2"	10"	11"	12"
1 1/2"	6 1/2"	7 1/2"	8 1/2"	10 1/2"	8 1/2"	10"	11"	13"
1 3/4"	7 1/2"	8 1/2"	9 1/2"	10 1/2"	8 1/2"	11"	11"	13"
2"	7 1/2"	8 1/2"	9 1/2"	10 1/2"	9 1/2"	11"	12"	13"
2 1/2"	7 1/2"	8 1/2"	9 1/2"	10 1/2"	9 1/2"	11"	12"	13"

TABLE 2

S_{IN} FOR SQUARE ANCHOR ROD PATTERN INSIDE COLUMN

SHAPE	S_{IN}
W8	NA
W10	2 1/2"
W12	3"
W14	4"

NOTES FOR TABLE 2:

1. INSIDE ANCHOR ROD CONFIGURATION NOT APPLICABLE TO ROD DIAMETERS GREATER THAN 1 1/4" FOR W14, 1" FOR W12, AND 3/4" FOR W10. INSIDE BOLT CONFIGURATION NOT APPLICABLE TO W8
2. INSIDE ANCHOR ROD CONFIGURATION NOT APPLICABLE TO COLUMNS HEAVIER THAN W14x426

TABLE 3

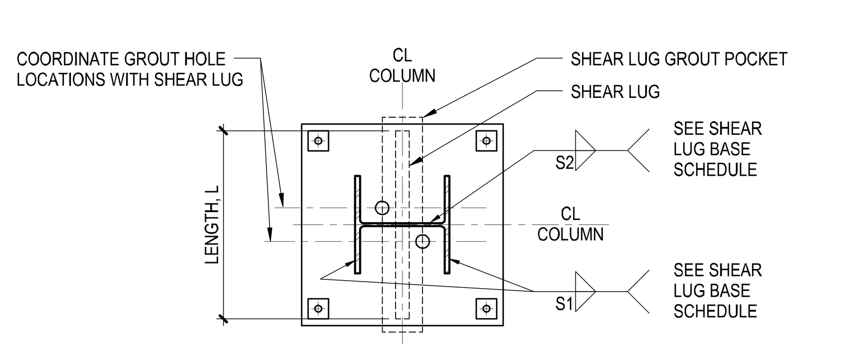
S_{long} AND S_{short} FOR RECTANGULAR ANCHOR ROD PATTERN

ANCHOR ROD DIAMETER	W8		W10		W12x40 THRU 106		W12x120 THRU 336		W14X43 THRU 82		W14x90 THRU 211		W14x233 THRU 398		W14x426 THRU 730	
	S_{long}	S_{short}	S_{long}	S_{short}	S_{long}	S_{short}	S_{long}	S_{short}	S_{long}	S_{short}	S_{long}	S_{short}	S_{long}	S_{short}	S_{long}	S_{short}
3/4"	6 1/2"	2 1/2"	8"	2 1/2"	8 1/2"	3"	NA	NA	9 1/2"	4"	NA	NA	NA	NA	NA	NA
1"	7 1/2"	2 1/2"	8 1/2"	2 1/2"	9 1/2"	3"	11"	4 1/2"	10"	4"	10 1/2"	5 1/2"	12"	6"	14"	6 1/2"
1 1/4"	7 1/2"	2 1/2"	8 1/2"	2 1/2"	9 1/2"	3"	11"	4 1/2"	10"	4"	10 1/2"	5 1/2"	12"	6"	14"	6 1/2"
1 1/2"	8"	2 1/2"	9"	2 1/2"	9 1/2"	3"	11 1/2"	4 1/2"	10"	4"	11"	5 1/2"	12"	6"	14 1/2"	6 1/2"
1 3/4"	8"	3"	9"	3"	10"	3"	12"	4"	10 1/2"	4"	11 1/2"	4"	12 1/2"	4 1/2"	14 1/2"	5"
2"	9"	4"	10"	4"	10 1/2"	4"	12 1/2"	4"	11"	4"	12"	4"	13"	4 1/2"	15 1/2"	5"
2 1/2"	9"	4"	10"	4"	11"	4"	12 1/2"	4"	11 1/2"	4"	12"	4"	13 1/2"	4 1/2"	15 1/2"	5"

4 TYPICAL BASE PLATE DETAIL

NOT TO SCALE

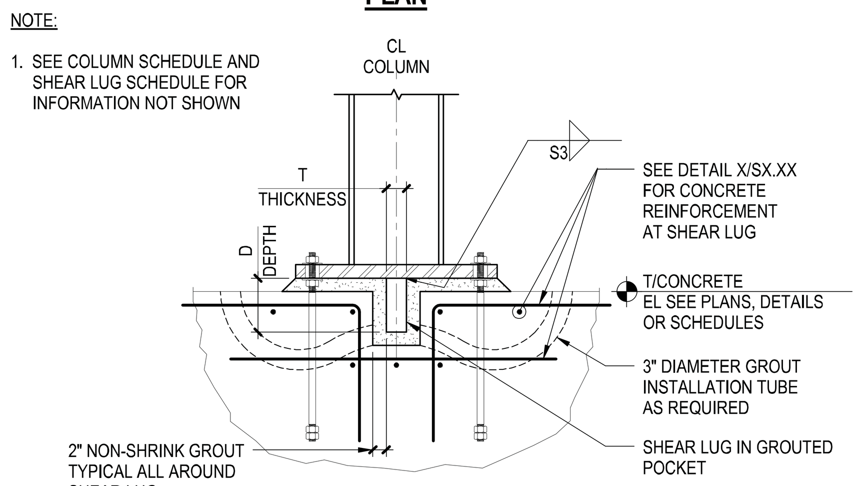
ST-CL-05



PLAN

NOTE:

1. SEE COLUMN SCHEDULE AND SHEAR LUG SCHEDULE FOR INFORMATION NOT SHOWN

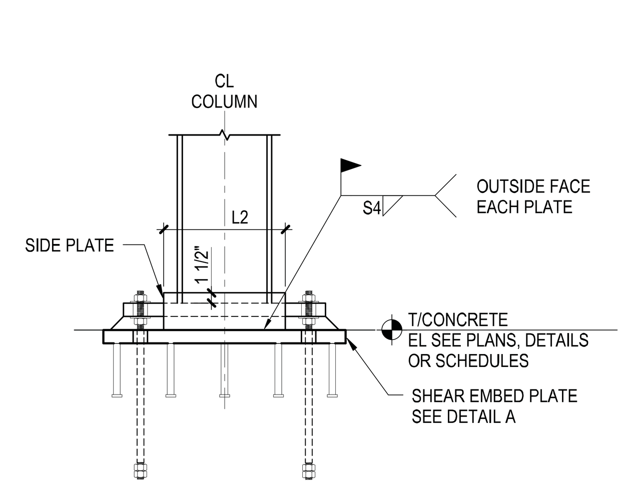


ELEVATION

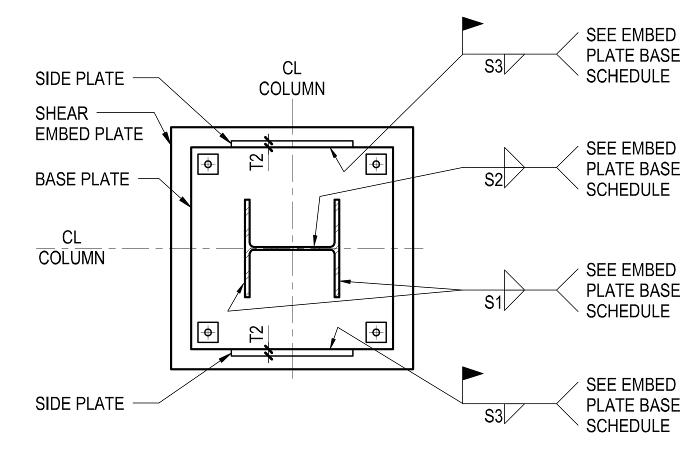
5 TYPICAL SHEAR LUG DETAIL

NOT TO SCALE

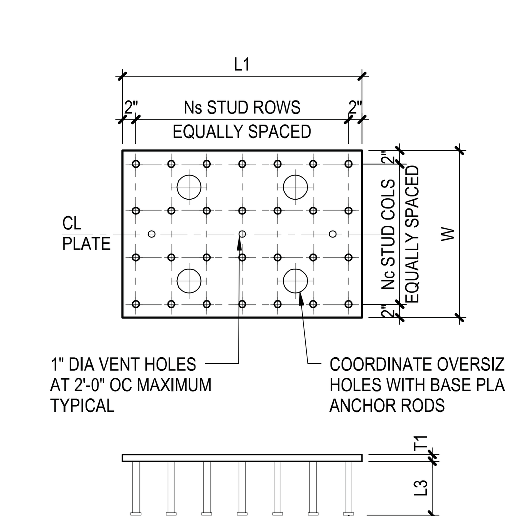
ST-CL-06



ELEVATION



PLAN



DETAIL A

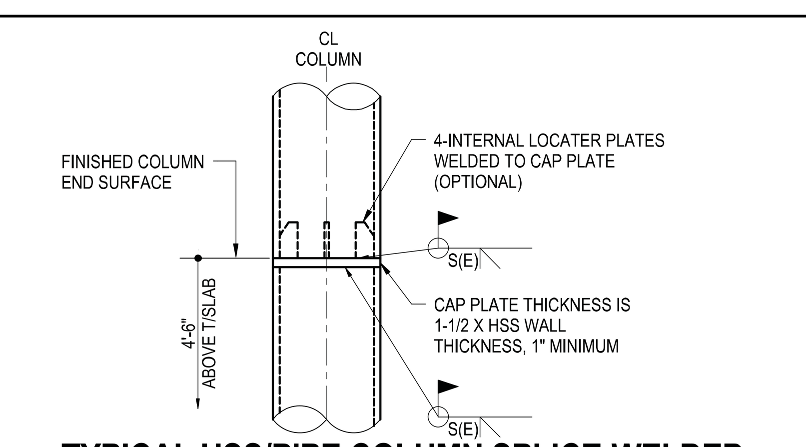
NOTES:

1. SEE SHEAR EMBED PLATE BASE SCHEDULE
2. FOR SHEAR EMBED PLATE SIZE W X L1 X T1, WIDTH "W" IS ORIENTED PARALLEL TO COLUMN FLANGE AND LENGTH "L1" IS ORIENTED PARALLEL TO COLUMN WEB
3. SIDE PLATES ARE LOCATED PARALLEL TO COLUMN WEB, UON
4. EMBEDDED PLATES SHALL CONFORM TO ASTM A572 GRADE 50 MINIMUM

6 TYPICAL SHEAR EMBED PLATE DETAIL

NOT TO SCALE

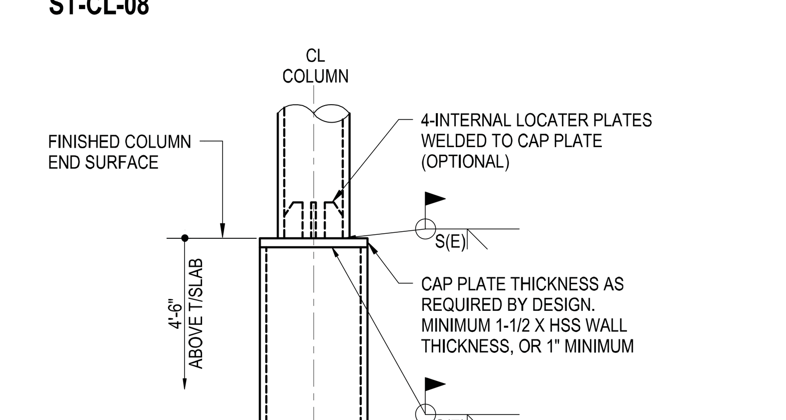
ST-CL-07



8 TYPICAL HSS/PIPE COLUMN SPLICE-WELDED- UPPER AND LOWER COLUMN SAME DEPTH

NOT TO SCALE

ST-CL-08



9 TYPICAL HSS/PIPE COLUMN SPLICE-WELDED- UPPER COLUMN SMALLER THAN LOWER COLUMN

NOT TO SCALE

ST-CL-09

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 08/15/2011
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · AINE M. BRAZIL · 062542-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S5-0601

Drawing Title

TYPICAL STEEL DETAILS I

Drawing Number

S5-0601

B-Scan Drawing Number

S-141.00 SHEET 103 OF 118

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S5-0601
2/15/2013 10:33:11 AM
TYPICAL STEEL DETAILS I
C:\Users\amaloney\Documents\N11329.00\Revit\N11329.00 - TOWER C - amlocal.rvt

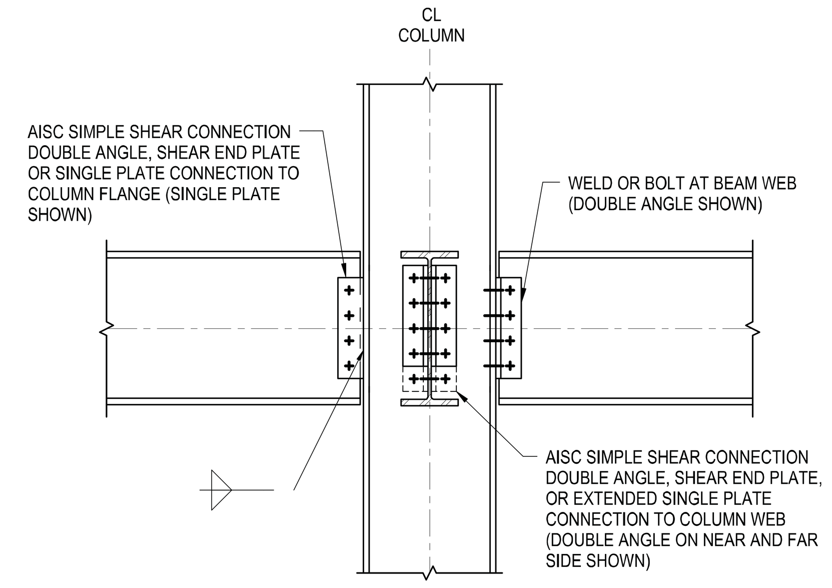
HUDSON YARDS - TOWER C

BEAM VERTICAL SHEAR REACTION SCHEDULE			
NOMINAL STEEL BEAM SIZE	FACTORED REACTION (KIPS)		
	A325 3/4" DIA BOLTS	A325 7/8" DIA BOLTS	A325 1" DIA BOLTS
W8	16	22	29
W10	16	22	29
W12	32	43	55
W14	32	43	55
W16	49	66	73
W18	66	90	91
W21	83	111	110
W24	100	129	128
W27	100	129	128
W30	116	147	146
W33	116	147	146
W36	133	166	165

BEAM END MOMENT SCHEDULE	
NOMINAL STEEL BEAM SIZE	FACTORED MOMENT (KIP - FEET)
W8	X
W10	X
W12	X
W14	X
W16	X
W18	X
W21	X
W24	X
W27	X
W30	X
W33	X
W36	X

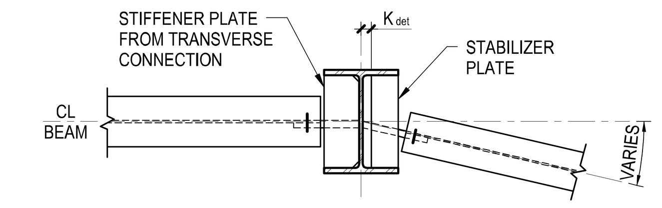
NOTE:
1. MOMENT APPLIES WHERE MOMENT SYMBOL APPEARS ON PLAN

1 TYPICAL BEAM CONNECTION SCHEDULE
NOT TO SCALE
ST-BM-01

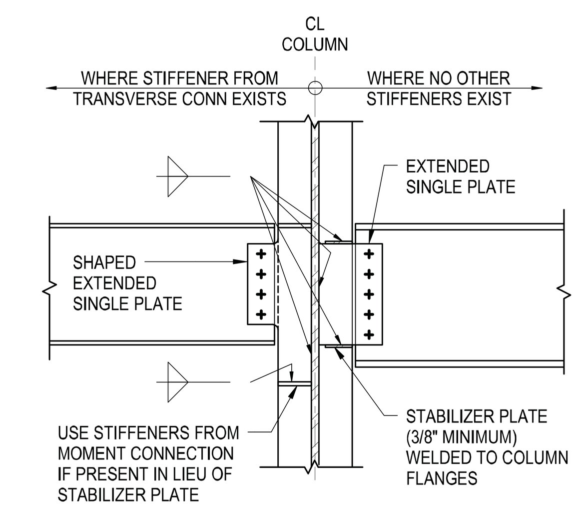


NOTE:
1. WHERE BEAM AXIAL FORCE IS INDICATED BY PLAN OR NOTES, SINGLE PLATE, DOUBLE ANGLE, OR SHEAR END PLATE CONNECTION SHALL BE USED

ST-BM-02

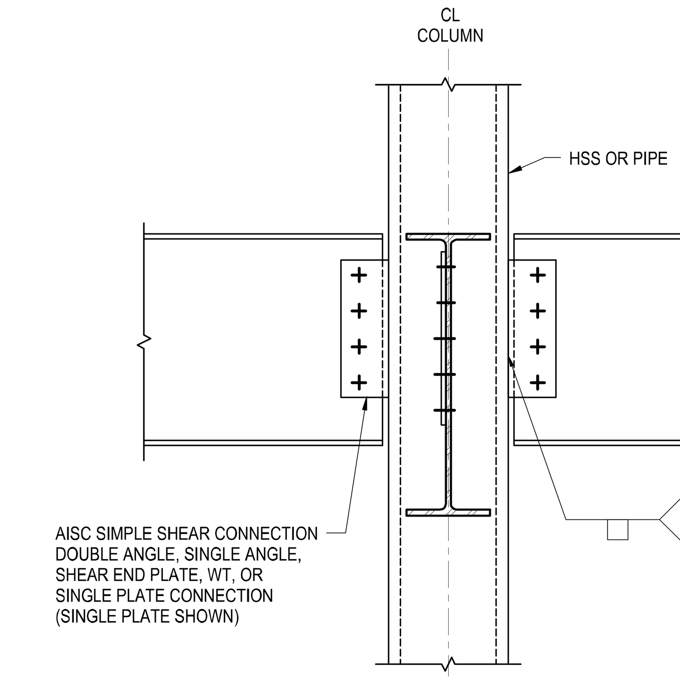


PLAN VIEW



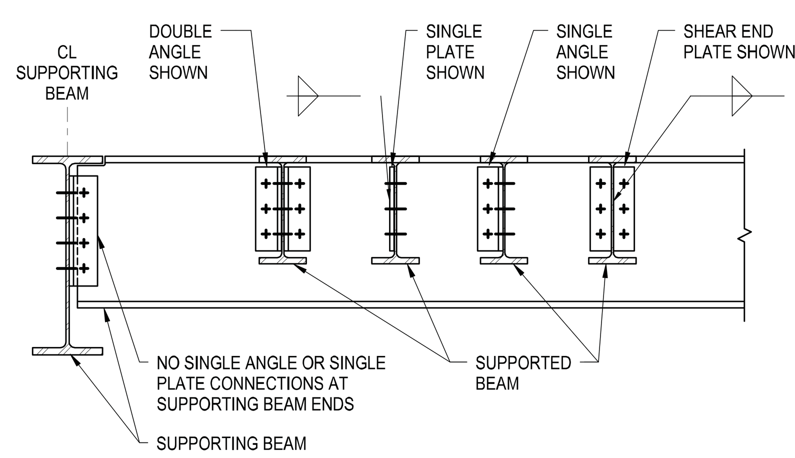
SECTION AT COLUMN WEB

3 TYPICAL EXTENDED PLATE BEAM TO COLUMN WEB SHEAR CONNECTION
NOT TO SCALE
ST-BM-03



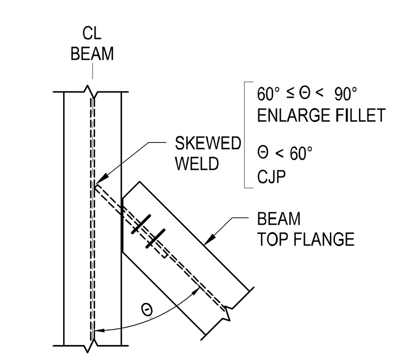
NOTE:
1. CONTRACTOR'S CALCULATIONS SHALL VERIFY HSS/PIPE WALL THICKNESS IS ADEQUATE FOR CONNECTION TYPE CHOSEN PER AISC

4 TYPICAL BEAM TO HSS/PIPE COLUMN SHEAR CONNECTION
NOT TO SCALE
ST-BM-04

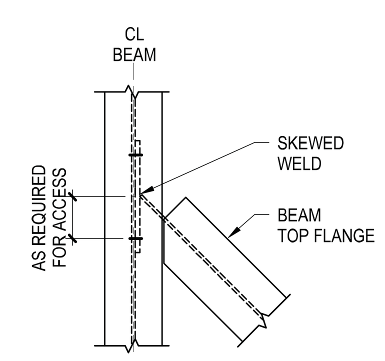


NOTES:
1. SUPPORTED BEAMS PRIMARILY SUPPORT DISTRIBUTED LOADS FROM SLABS OR DECKING
2. SUPPORTING BEAMS SUPPORT SIGNIFICANT POINT LOADS FROM ONE OR MORE SUPPORTED BEAMS OR FROM COLUMNS BEING TRANSFERRED. SUPPORTING BEAMS MAY BE SUPPORTED BY COLUMNS OR BY OTHER SUPPORTING BEAMS
3. FOR AISC SIMPLE SHEAR CONNECTIONS AT SUPPORTED BEAM ENDS, DOUBLE ANGLE, SINGLE PLATE, SINGLE ANGLE, OR SHEAR END PLATE MAY BE USED UON
4. WELDED/BOLTED OR BOLTED/BOLTED CONNECTIONS PER AISC ARE PERMITTED

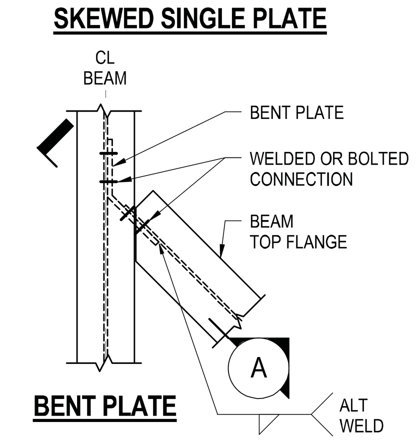
5 TYPICAL BEAM TO BEAM SHEAR CONNECTION (4 TYPES)
NOT TO SCALE
ST-BM-05



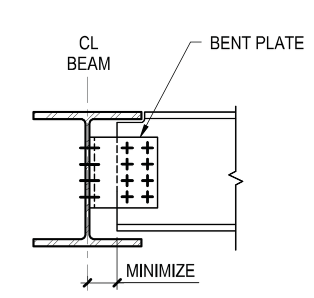
SKEWED SINGLE PLATE



SKEWED SHEAR END PLATE

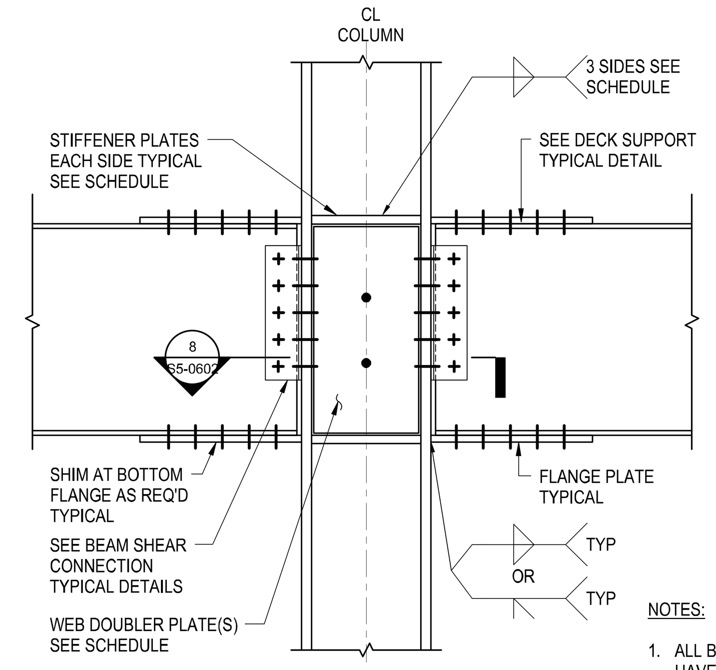


BENT PLATE



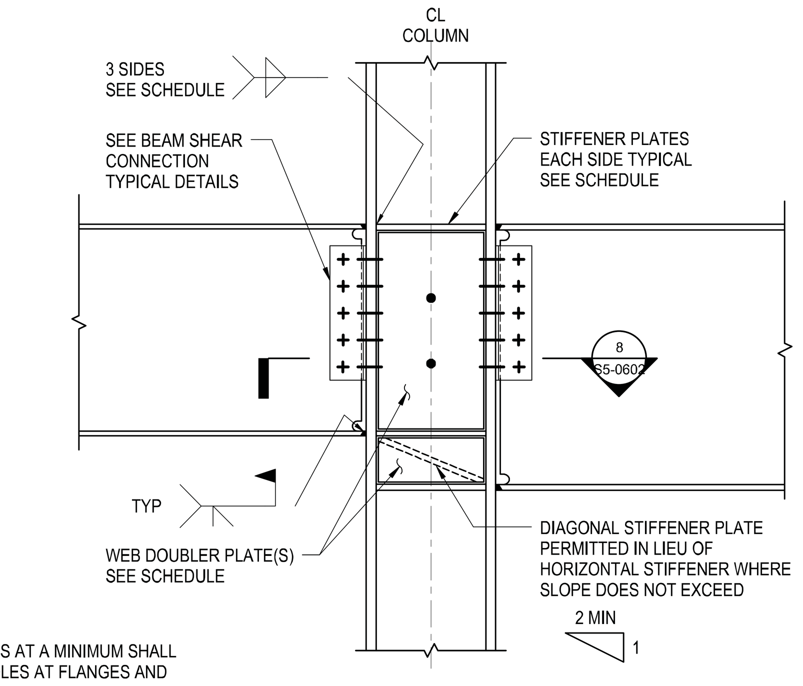
A SECTION

6 TYPICAL SKEWED BEAM SHEAR CONNECTION
NOT TO SCALE
ST-BM-06



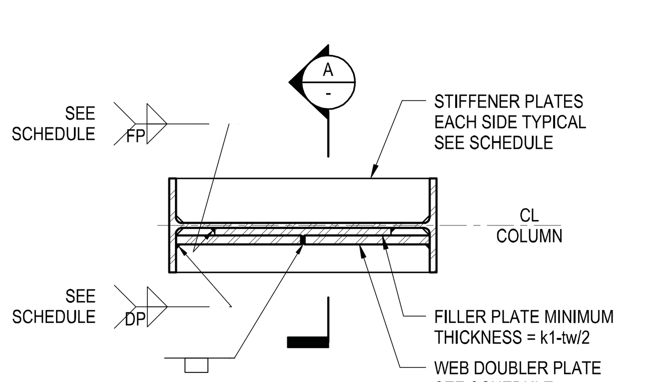
A BEAMS SAME DEPTH (BOLTED SHOWN)

NOTES:
1. ALL BOLTED MOMENT AND AXIAL CONNECTIONS AT A MINIMUM SHALL HAVE PRETENSIONED BOLTS IN STANDARD HOLES AT FLANGES AND WEBS UON
2. BOLTED MOMENT CONNECTIONS AT CANTILEVERS AND BACKSPANS SHALL USE SLIP CRITICAL BOLTS
3. AT CONTRACTOR'S OPTION, WEB DOUBLER PLATES CAN TERMINATE OUTSIDE STIFFENER PLATE. CONTRACTOR'S ENGINEER MUST FULLY DESIGN THE CONNECTION

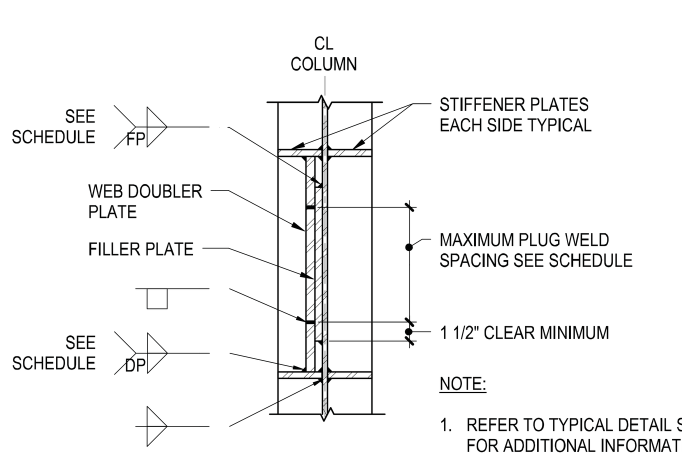


B BEAMS VARIABLE DEPTH (WELDED SHOWN)

7 TYPICAL BEAM TO COLUMN FLANGE MOMENT CONNECTION - BOLTED/WELDED
NOT TO SCALE
ST-BM-07



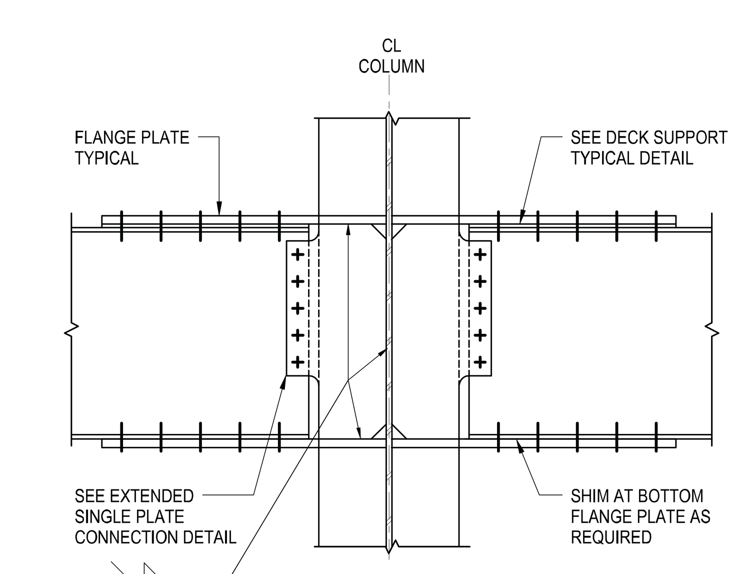
PLAN



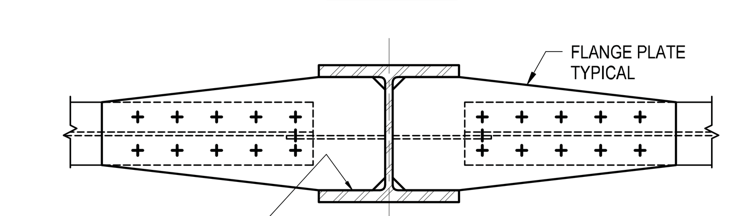
NOTE:
1. REFER TO TYPICAL DETAIL ST-BM-07 FOR ADDITIONAL INFORMATION

A SECTION

8 TYPICAL WEB DOUBLER PLATE CONNECTION
NOT TO SCALE
ST-BM-08



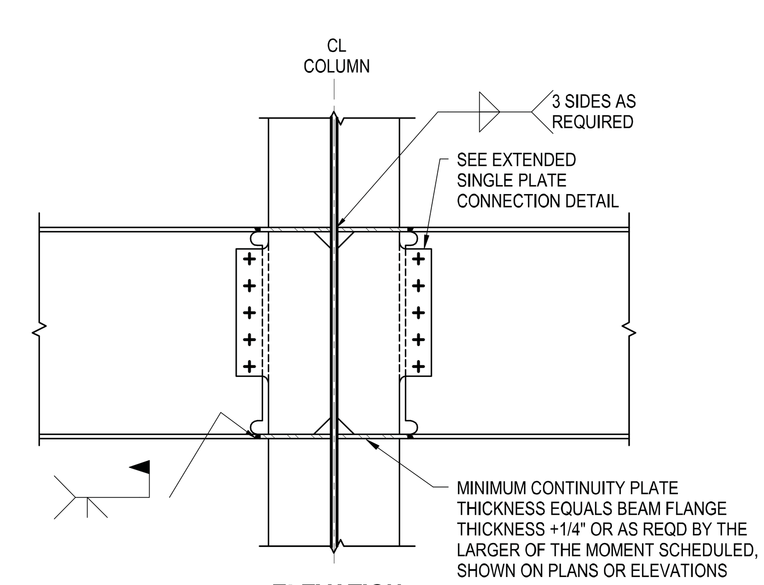
ELEVATION



PLAN

A BOLTED CONNECTION

NOTES:
1. ALL BOLTED MOMENT AND AXIAL CONNECTIONS AT A MINIMUM SHALL HAVE PRETENSIONED BOLTS IN STANDARD HOLES AT FLANGES AND WEBS UON
2. BOLTED MOMENT CONNECTIONS AT CANTILEVERS AND BACKSPANS SHALL USE SLIP CRITICAL BOLTS



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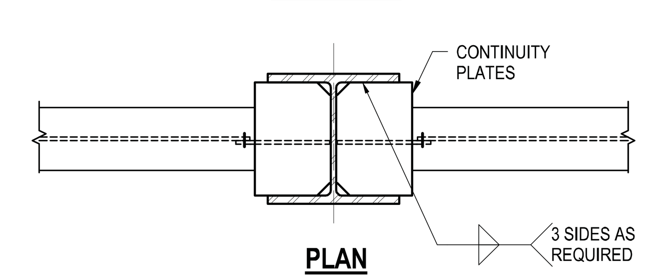
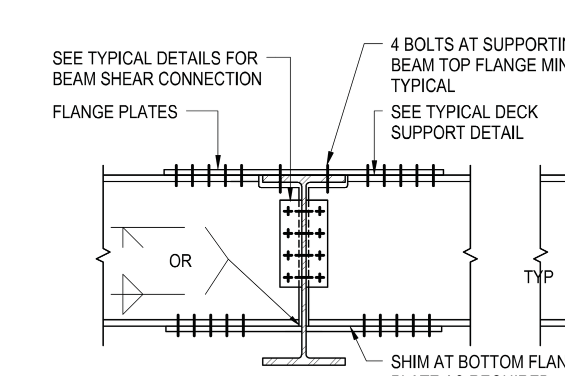


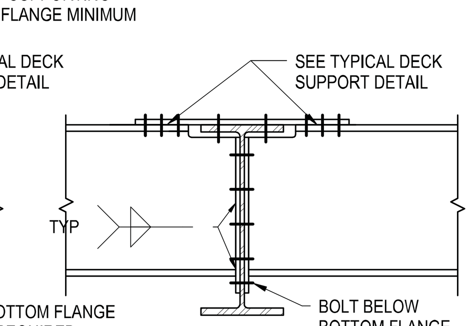
PLAN

B WELDED CONNECTION

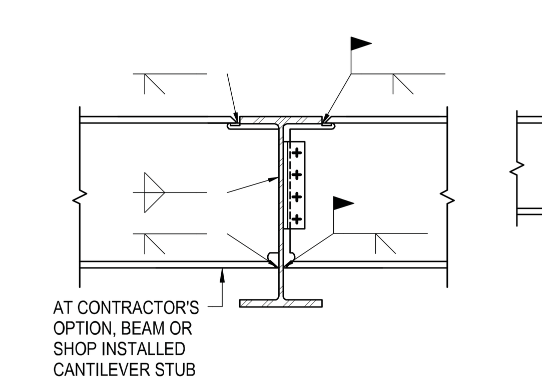
9 TYPICAL BEAM TO COLUMN WEB MOMENT CONNECTION - BOLTED / WELDED
NOT TO SCALE
ST-BM-09



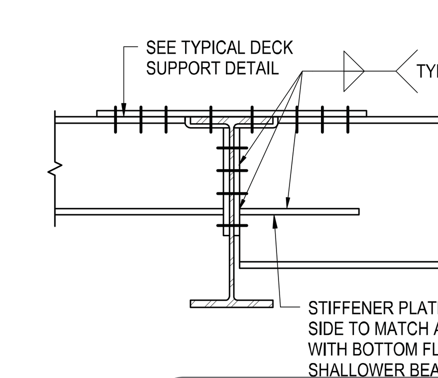
A ALL BOLTED WITH FLANGE PLATE



B ALL BOLTED WITH END PLATE



C ALL WELDED



D VARIED DEPTH / BOLTED WITH END PLATE

NOTES:
1. ALL BOLTED MOMENT AND AXIAL CONNECTIONS AT A MINIMUM SHALL HAVE PRETENSIONED BOLTS IN STANDARD HOLES AT FLANGES AND WEBS UON
2. BOLTED MOMENT CONNECTIONS AT CANTILEVERS AND BACKSPANS SHALL USE SLIP CRITICAL BOLTS

10 TYPICAL BEAM TO BEAM MOMENT CONNECTION
NOT TO SCALE
ST-BM-10

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No.	Description	Date
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2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 08/15/2011
Project No. 1776.10
Drawn By: Author
Sheet Number: HYE -TC -S5-0602

Drawing Title: TYPICAL STEEL DETAILS II

Drawing Number: S5-0602
B-Scan Drawing Number: S-142.00 SHEET 104 OF 118

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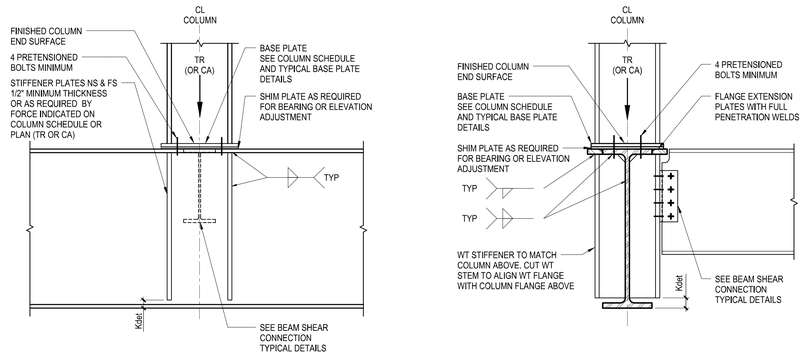
S5-0602 2/15/2013 10:33:16 AM TYPICAL STEEL DETAILS II C:\Users\amaloney\Documents\N11329.00\Revit\N11329.00 - TOWER C - amlocal.rvt



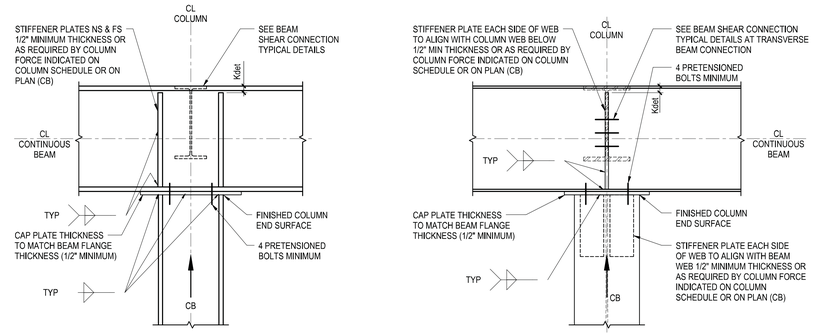
A COLUMN WEB PARALLEL TO BEAM WEB

B COLUMN WEB PERPENDICULAR TO BEAM WEB

1 TYPICAL COLUMN BEARING ON BEAM (COMPRESSION ONLY)

NOT TO SCALE

ST-BM-11



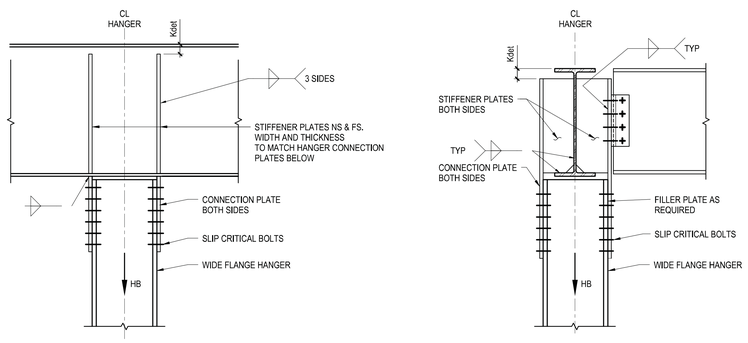
A COLUMN WEB PARALLEL TO BEAM WEB

B COLUMN WEB PERPENDICULAR TO BEAM WEB

2 TYPICAL BEAM BEARING ON COLUMN (AXIAL ONLY)

NOT TO SCALE

ST-BM-12



A HANGER WEB PARALLEL TO BEAM WEB

B HANGER WEB PERPENDICULAR TO BEAM WEB

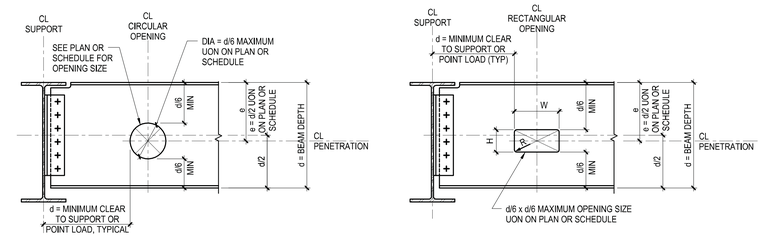
NOTE:

1. DEVELOP THE HANGER TENSION FORCE (HB) AS INDICATED ON COLUMN SCHEDULE OR FRAMING PLANS. IF HANGER FORCE (HB) IS NOT SHOWN, DESIGN FOR 90% OF TENSION CAPACITY OF HANGER.

3 TYPICAL HANGER (AXIAL ONLY)

NOT TO SCALE

ST-BM-13



A CIRCULAR PENETRATION

B RECTANGULAR PENETRATION

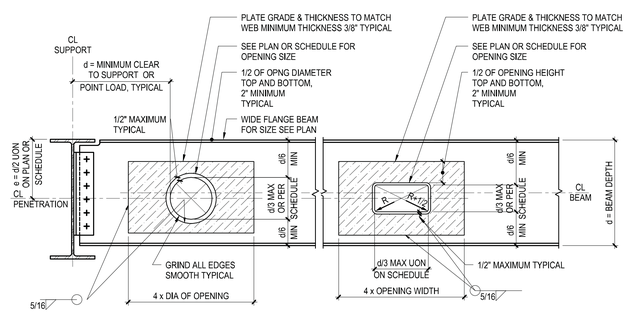
NOTES:

1. PROVIDE REINFORCEMENT AS NOTED FOR OPENING TYPE. SEE FRAMING PLANS FOR OPENING TYPE
2. SEE STRUCTURAL DRAWINGS FOR PENETRATIONS. CONTRACTOR SHALL VERIFY QUANTITY, SIZE, AND LOCATION OF ALL PENETRATIONS WITH MEP DRAWINGS
3. ALL BEAM PENETRATIONS SHALL BE SHOWN ON THE SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT/ENGINEER. NO PENETRATIONS SHALL BE MADE WITHOUT PRIOR REVIEW BY THE ARCHITECT AND WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER
4. R(MINIMUM) = 2 x WEB THICKNESS OR 5/8", WHICHEVER IS GREATER

4 BEAM WEB PENETRATION TYPE U (UNREINFORCED)

NOT TO SCALE

ST-BM-14



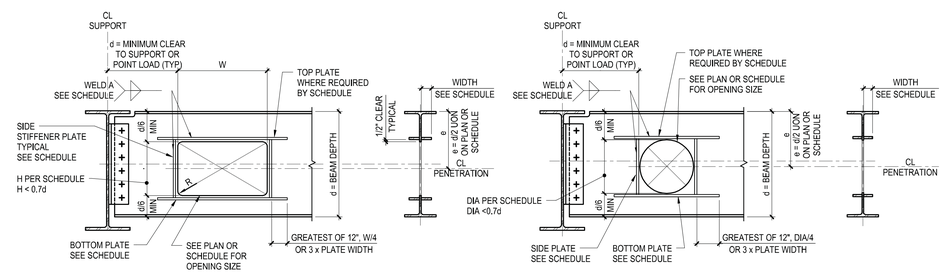
NOTES:

1. PROVIDE REINFORCEMENT AS NOTED FOR OPENING TYPE. SEE FRAMING PLANS FOR OPENING TYPE
2. SEE STRUCTURAL DRAWINGS FOR PENETRATIONS. CONTRACTOR SHALL VERIFY QUANTITY, SIZE AND LOCATION OF ALL PENETRATIONS WITH MEP DRAWINGS
3. ALL BEAM PENETRATIONS SHALL BE SHOWN ON THE SHOP DRAWINGS FOR REVIEW BY THE DESIGN PROFESSIONALS. NO PENETRATIONS SHALL BE MADE WITHOUT PRIOR REVIEW BY THE ARCHITECT AND WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER
4. R(MINIMUM) = 2 x WEB THICKNESS OR 5/8", WHICHEVER IS GREATER
   R = RADIUS OF OPENING
   R+1/2 = RADIUS OF REINFORCEMENT PLATE

5 BEAM WEB PENETRATIONS TYPE D (WEB DOUBLER PLATE REINFORCEMENT)

NOT TO SCALE

ST-BM-15



A RECTANGULAR PENETRATION

B CIRCULAR PENETRATION

NOTES:

1. PROVIDE REINFORCEMENT AS NOTED FOR OPENING TYPE. SEE FRAMING PLANS FOR OPENING TYPE
2. SEE STRUCTURAL DRAWINGS FOR PENETRATIONS. CONTRACTOR SHALL VERIFY QUANTITY, SIZE, AND LOCATION OF ALL PENETRATIONS WITH MEP DRAWINGS
3. ALL BEAM PENETRATIONS SHALL BE SHOWN ON THE SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT/ENGINEER. NO PENETRATIONS SHALL BE MADE WITHOUT PRIOR REVIEW BY THE ARCHITECT AND WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER
4. R(MINIMUM) = 2 x WEB THICKNESS OR 5/8", WHICHEVER IS GREATER

6 BEAM WEB PENETRATIONS TYPE S (STIFFENER REINFORCEMENT)

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Key Plan

Issue Date: 08/15/2013
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S5-0603
Drawing Title

TYPICAL STEEL DETAILS III

Drawing Number
S5-0603

B.Scan Drawing Number
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S5-0603 TYPICAL STEEL DETAILS III
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BEAM WEB PENETRATION SCHEDULE

PLATE REINFORCEMENT GRADE TO MATCH GRADE OF BEAM

MARK	TYPE	MAXIMUM SIZE (IN)				PLATES (t x WIDTH (IN))				ADDL SLAB REINF REQD SEE NOTE 4	REMARKS
		W	H	DIAMETER	e	TOP NS & FS	BOTTOM NS & FS	SIDE NS & FS	WELD A		
A	S	20	10	-	d/2	1/4 x 4	1/4 x 4	1/4 x 4	1/4	YES	XX
B	D	-	-	3	8	-	-	-	-	NO	XX
C	U	-	-	3	d/2	-	-	-	-	NO	XX

NOTES:

1. TYPE REFERS TO TYPICAL BEAM WEB PENETRATION DETAILS
2. THE MINIMUM CLEAR SPACE BETWEEN TWO ADJACENT PENETRATIONS SHALL BE GREATER OF THE LARGEST PENETRATION DIMENSION OR TWO TIMES THE BEAM DEPTH UON
3. SEE STRUCTURAL DRAWINGS FOR QUANTITY AND LOCATIONS OF PENETRATIONS ALL BEAM PENETRATIONS SHALL BE SHOWN ON THE SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT/ENGINEER. NO PENETRATIONS SHALL BE MADEWITHOUT PRIOR REVIEW OF THE ARCHITECT/ENGINEER
4. SEE TYPICAL COMPOSITE STEEL DECK DETAIL AT BEAM WEB PENETRATIONS WITH ADDITIONAL STUDS AND SLAB REINFORCEMENT

1 BEAM WEB PENETRATION SCHEDULE

NOT TO SCALE

ST-BM-17

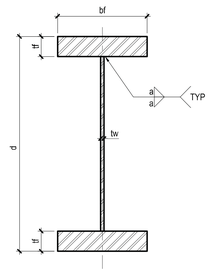


PLATE GIRDER SCHEDULE

MARK	d (in)	FLANGE		WEB	WELD	REMARKS
		bf (in)	tf (in)	tw (in)	a (in)	
PG1						

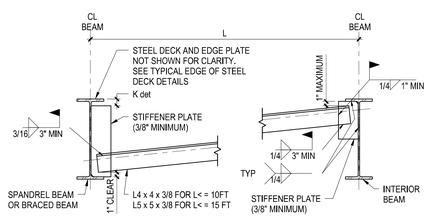
NOTES:

1. SIZE OF WELD a ASSUMES SHIELDED METAL ARC WELDING (SMAW)
2. ALL WELDS ARE CONTINUOUS UON
3. PLATE GIRDER DESIGNED FOR THE FOLLOWING PLATE GRADE:
   tf, tw < = 4", ASTM A572 Fy = 50KSI
   4" < tf < = 6", ASTM A572 Fy = 50KSI
   6" < tf < = 8", ASTM A36 Fy = 36KSI

2 TYPICAL PLATE GIRDER DETAIL AND SCHEDULE

NOT TO SCALE

ST-BM-18



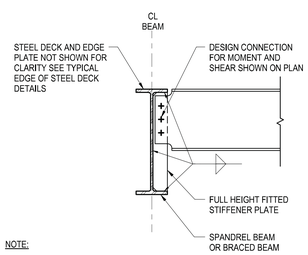
NOTE:

1. SEE PLAN FOR LOCATIONS OR SPACING

3 TYPICAL SPANDREL OR BRACED BEAM KICKER CONNECTION

NOT TO SCALE

ST-BM-19



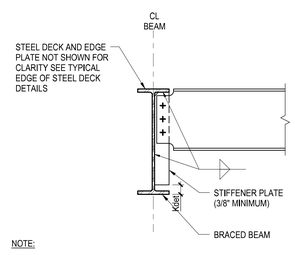
NOTE:

1. SEE PLAN FOR LOCATIONS

4 TYPICAL FULL HEIGHT FITTED STIFFENER AT SPANDREL OR BRACED BEAM CONNECTION

NOT TO SCALE

ST-BM-20



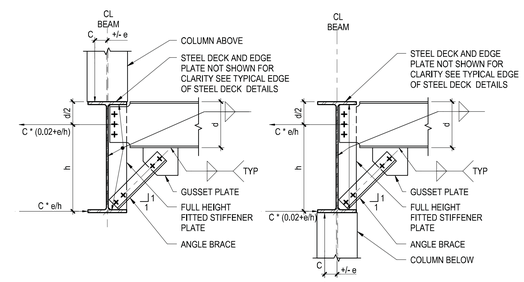
NOTE:

1. SEE PLAN FOR LOCATIONS

5 TYPICAL FULL HEIGHT UNFITTED STIFFENER AT BRACED BEAM CONNECTION

NOT TO SCALE

ST-BM-25



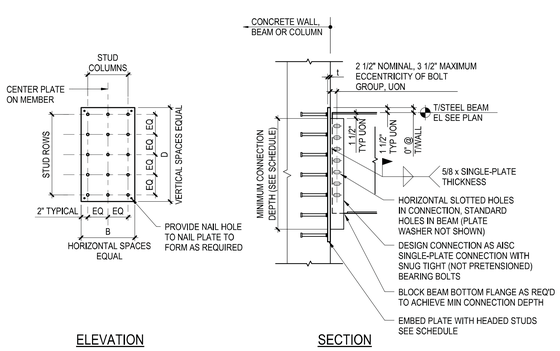
NOTES:

1. DESIGN CONNECTION FOR FORCES BASED ON COLUMN AXIAL LOAD AS SHOWN AND FOR FORCES SHOWN ON PLAN
2. C = COLUMN AXIAL FORCE
   e = 1/2" ACCIDENTAL ECCENTRICITY UON

6 TYPICAL DEEP BEAM BOTTOM FLANGE BRACING CONNECTION

NOT TO SCALE

ST-BM-21



7 TYPICAL EMBED PLATE CONNECTION (SHEAR ONLY)

NOT TO SCALE

ST-BM-24

EMBED PLATE SCHEDULE

MAXIMUM FACTORED VERTICAL BEAM SHEAR REACTION (KIPS)	MINIMUM CONNECTION DEPTH (IN)	EMBED PLATE SIZE t (in) X B (in) X D (in)	No STUD COLUMNS	No STUD ROWS	REMARKS
30	6	3/4 X 10 X 10	2	2	
50	9	3/4 X 10 X 16	2	3	
65	12	3/4 X 12 X 22	2	4	
80	15	3/4 X 12 X 28	2	5	
110	18	3/4 X 16 X 28	3	5	
130	21	3/4 X 16 X 28	3	5	
150	24	3/4 X 16 X 34	3	6	
165	27	3/4 X 16 X 34	3	6	
185	30	3/4 X 16 X 40	3	7	
200	33	3/4 X 16 X 40	3	7	
220	36	3/4 X 16 X 46	3	8	

NOTES:

1. USE SMALLEST EMBED PLATE SIZE FOR A SCHEDULED MAXIMUM SHEAR REACTION EQUAL TO OR GREATER THAN THE SHEAR REACTION REQUIRED ON PLAN
2. CONTRACTOR SHALL DESIGN SINGLE-PLATE GRADE, THICKNESS, BOLT QUANTITY AND TYPE (A325, A490, N OR X) TO RESIST THE SHEAR FORCE SHOWN IN TABLES OR PLANS WHILE SATISFYING GEOMETRIC REQUIREMENTS OF THE TYPICAL EMBED PLATE DETAIL AND SCHEDULE.SEE GENERAL NOTES FOR ADDITIONAL INFORMATION REGARDING THE DESIGN OF STRUCTURAL STEEL CONNECTIONS
3. EMBED PLATES SHALL CONFORM TO ASTM A572, Fy=50 ksi
4. STUDS SHALL BE 3/4" DIAMETER x 8" LONG NOMINAL (MINIMUM)
5. SEE TYPICAL EMBED DETAIL FOR ASSUMED CONNECTION LOCATION RELATIVE TO EMBED PLATE. REPORT ANY AS-BUILT DEVIATION FROM THE ASSUMED CONDITION TO THE SER AS FOLLOWS:
   HORIZONTAL DEVIATION GREATER THAN 2"
   VERTICAL DEVIATION GREATER THAN 1"

8 EMBED PLATE SCHEDULE (SHEAR ONLY)

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Key Plan

Issue Date: 09/28/2012
Project No. 1776.10
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Drawing Title

TYPICAL STEEL DETAILS IV

Drawing Number

S5-0604

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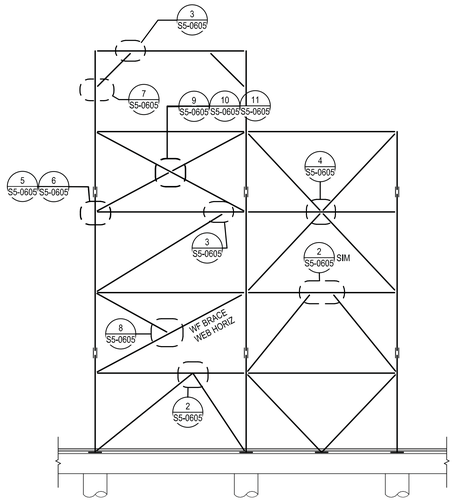
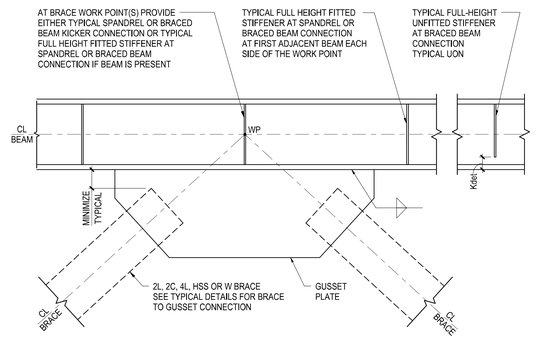


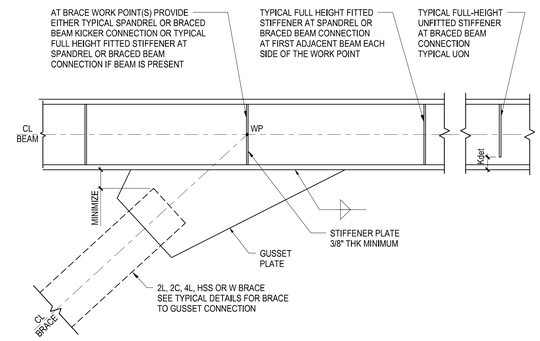
1 KEY ELEVATION TO BRACE CONNECTION TYPES
NOT TO SCALE



NOTE:

1. BRACE WORK POINTS ARE ECCENTRIC AT SIMILAR CONDITION

2 TYPICAL CONCENTRIC BRACE CONNECTION TO BEAM
NOT TO SCALE



3 TYPICAL ECCENTRIC BRACE CONNECTION TO BEAM
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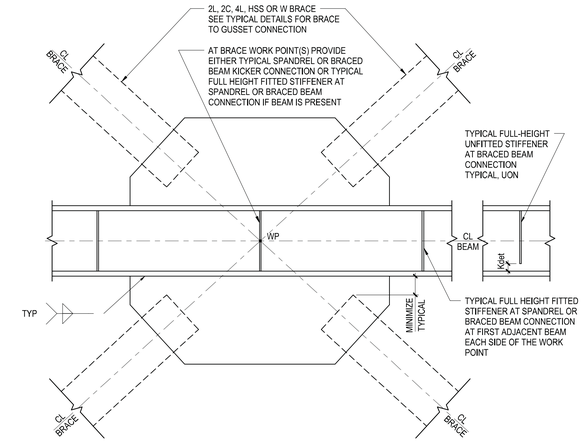

4 TYPICAL CONCENTRIC BRACE CONNECTION TO BEAM
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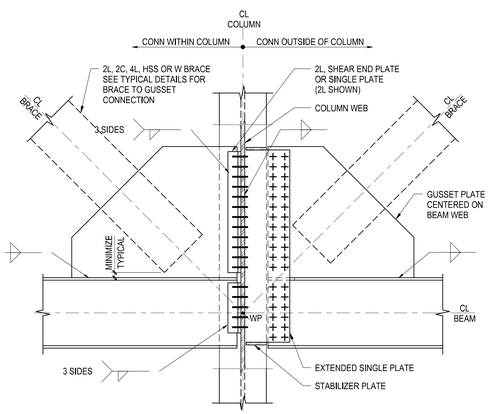
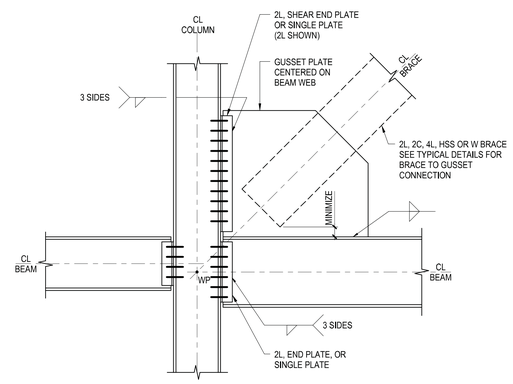
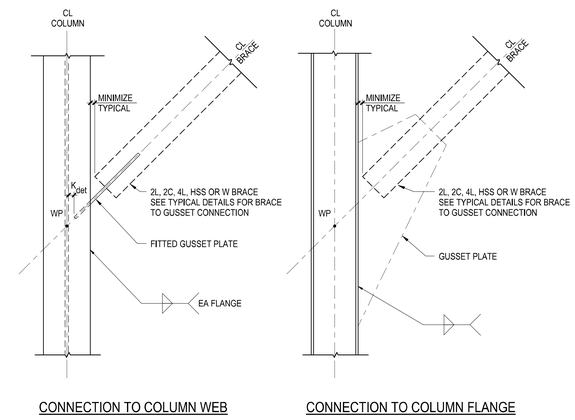


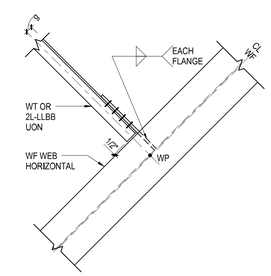
TYPICAL BRACE CONNECTION TO COLUMN WEB AND BEAM
NOT TO SCALE



TYPICAL BRACE CONNECTION TO COLUMN FLANGE AND BEAM
NOT TO SCALE



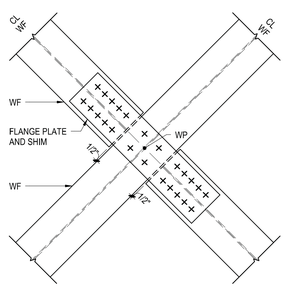
7 TYPICAL KNEE BRACE CONNECTION TO COLUMN
3/4" = 1'-0"



NOTES:

1. g IS PER AISC WORKABLE GAGES (TABLE 1-7 PG 1-46 13TH ED)
2. FOR 2L BRACE SEE TYPICAL SPACER PLATE DETAIL FOR 2L, 2C OR 4L

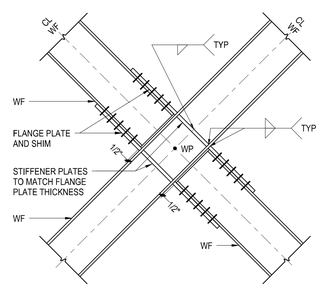
8 TYPICAL WT OR 2L BRACE TO WIDE FLANGE BRACE CONNECTION
NOT TO SCALE



NOTE:

1. PROVIDE WEB PLATES WHERE BRACE FORCE CAN NOT BE TRANSFERRED ENTIRELY THROUGH FLANGE PLATES

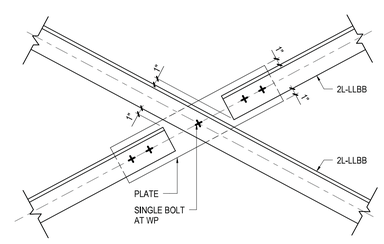
9 TYPICAL WF X-BRACE CONNECTION
NOT TO SCALE



NOTE:

1. PROVIDE WEB PLATES WHERE BRACE FORCE CAN NOT BE TRANSFERRED ENTIRELY THROUGH FLANGE PLATES

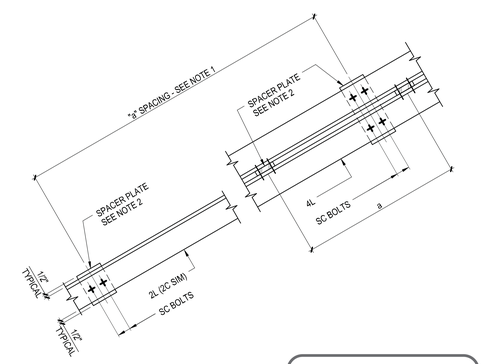
10 TYPICAL WF X-BRACE CONNECTION
NOT TO SCALE



NOTES:

1. SEE TYPICAL SPACER PLATE DETAIL FOR 2L, 2C OR 4L
2. PLATE TO BE SAME THICKNESS AS GUSSET PLATE AT EACH END OR 3/8" MINIMUM

11 TYPICAL 2L X-BRACE CONNECTION
NOT TO SCALE



NOTES:

1. SPACING "a" SHALL BE A MAXIMUM SLENDERNESS RATIO a/rz (MIN) OF 75% OF THE COMPOSITE SHAPES L/R (MIN) WITH NO LESS THAN 2 SPACERS PER SET OF ANGLES
2. SPACER TO BE SAME THICKNESS AS GUSSET PLATE AT EACH END OR 3/8" MINIMUM

12 TYPICAL SPACER PLATE DETAIL FOR 2L, 2C OR 4L
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Drawing Title TYPICAL STEEL DETAILS V
Drawing Number S5-0605
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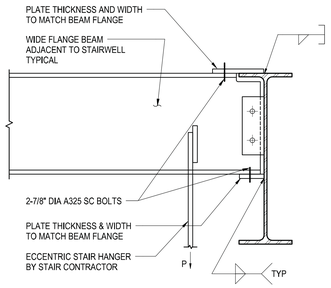
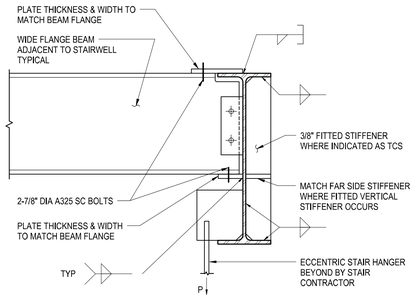


A TC CONNECTION



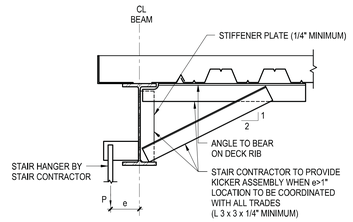
B TCS CONNECTION

NOTES:

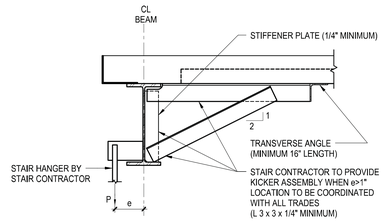
1. SEE TYPICAL PLAN DETAILS FOR STAIRWELLS
2. SUBMIT SHOP DRAWINGS THAT SHOW THE MAGNITUDES, DIRECTIONS, LOCATIONS, AND CONNECTION CONDITIONS OF ALL LOADS IMPOSED ON THE SUPPORTING STRUCTURE BY STAIR CONTRACTOR

1 TYPICAL TORSIONAL CONNECTION AT STAIRWELL / TC AND TCS LOCATIONS

NOT TO SCALE



A BEAM PARALLEL TO DECK



B BEAM PERPENDICULAR TO DECK

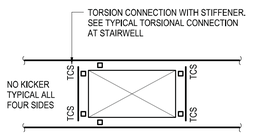
NOTES:

1. SEE TYPICAL PLAN DETAILS FOR STAIRWELLS
2. SUBMIT SHOP DRAWINGS THAT SHOW THE MAGNITUDES, DIRECTIONS, LOCATIONS, AND CONNECTION CONDITIONS OF ALL LOADS IMPOSED ON THE SUPPORTING STRUCTURE BY STAIR CONTRACTOR
3. CONNECT ANGLES TO STEEL DECK AS REQUIRED FOR ERECTION

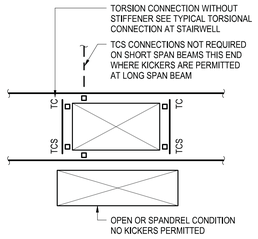
2 TYPICAL KICKER DETAIL AT STAIR HANGER

NOT TO SCALE

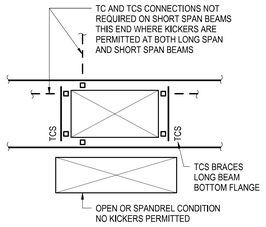
ST-BM-28



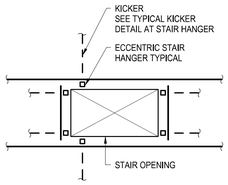
A NO KICKERS



B 1 SIDE KICKER



C 3 SIDES KICKERS



D ALL KICKERS NO TC

NOTES:

1. BID PRICE SHALL ASSUME THAT THIS DETAIL APPLIES, UNLESS COORDINATED BETWEEN CONTRACTOR AND STAIR SUPPLIER
2. DETAIL APPLIES WHERE KICKERS ARE NOT PERMITTED DUE TO CONFLICTS SUCH AS MEP REQUIREMENTS

NOTE:

1. REFER TO TYPICAL TORSIONAL CONNECTION AT STAIRWELL AND TYPICAL KICKER DETAIL AT STAIR HANGER

3 TYPICAL PLAN DETAILS FOR STAIRWELLS

NOT TO SCALE

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 08/15/2011
Project No. 1776.10
Drawn By: Author
Sheet Number
HYE -TC -S5-0606
Drawing Title
TYPICAL STEEL DETAILS VI
Drawing Number
S5-0606
B-Scan Drawing Number
S-146.00

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S5-0606 TYPICAL STEEL DETAILS.0.1
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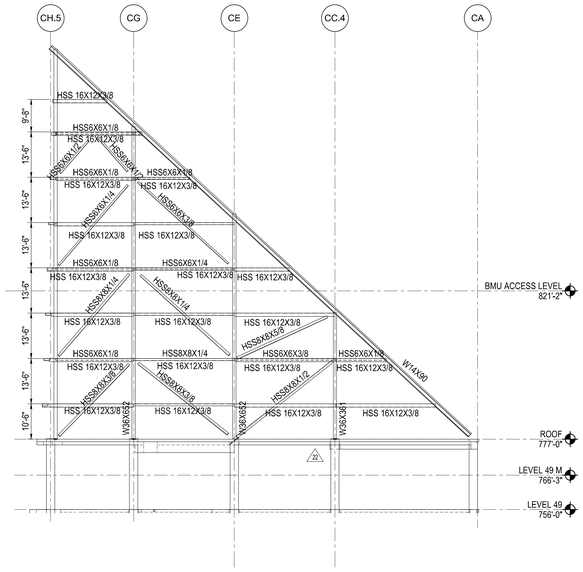
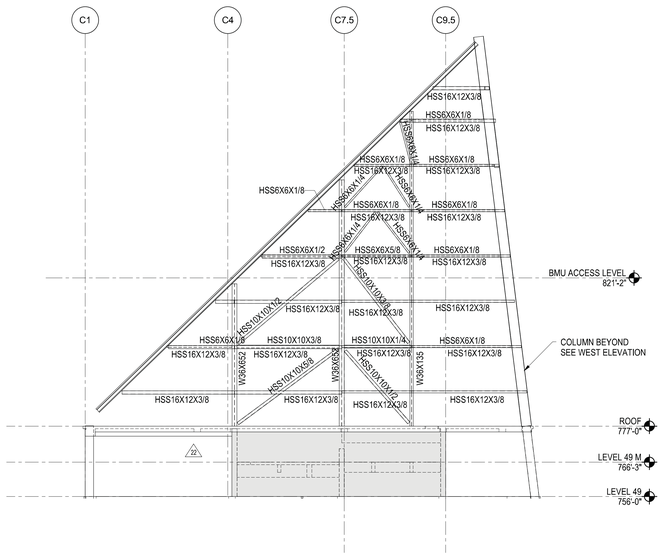
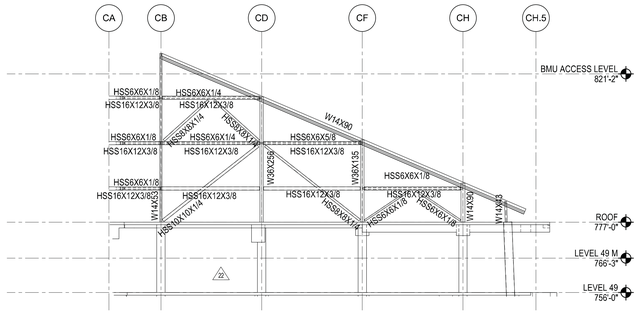


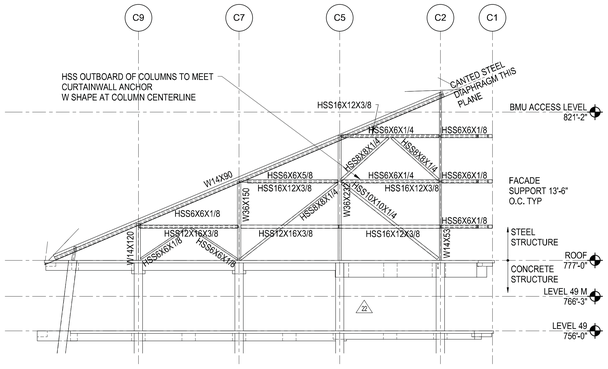
1 **WEST ELEVATION - GRIDLINE C10.6S**
1/16" = 1'-0"



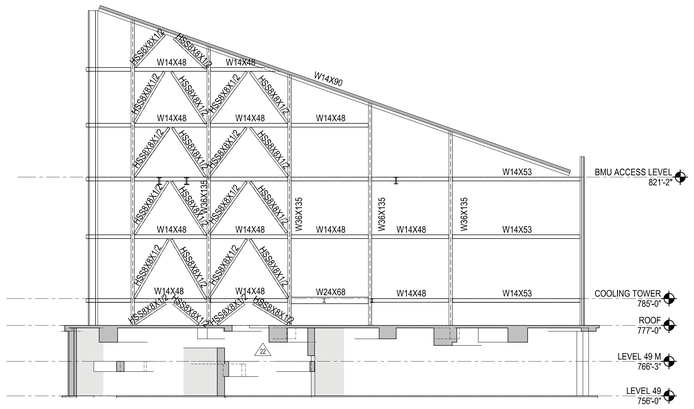
2 **NORTH ELEVATION - GRIDLINE CH.5**
1/16" = 1'-0"



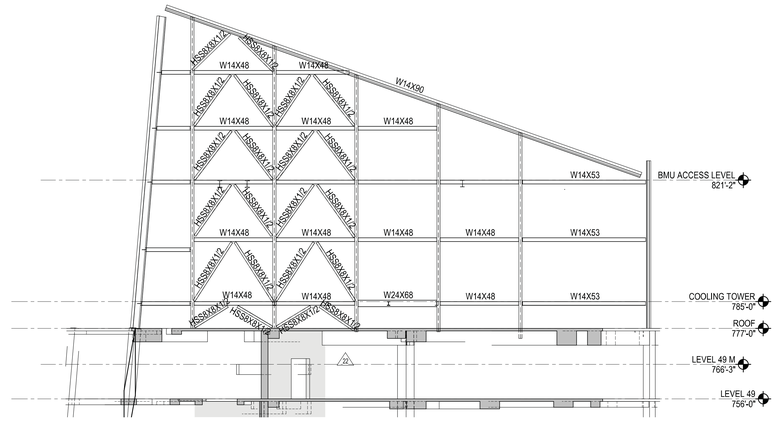
3 **EAST ELEVATION - GRIDLINE C1**
1/16" = 1'-0"



4 **SOUTH ELEVATION - GRIDLINE CA**
1/16" = 1'-0"



5 **NORTH MOST INTERIOR ELEV - GRIDLINE CX1**
1/16" = 1'-0"



6 **SOUTHERN MOST INTERIOR ELEV - GRIDLINE CX3**
1/16" = 1'-0"

CROWN NOTES:

1. PERIMETER BRACED FRAMES FOR LATERAL SUPPORT ABOVE LEVEL 50(ROOF). SEE S5-0610 FOR ELEVATIONS
2. SEE S1-5001 FOR BASE OF STEEL.
3. SEE S1-5101 FOR CANTED STEEL DIAPHRAGM
4. SEE S2-0002 FRO ISOMETRIC VIEW

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date:
Project No. 1776.10
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HYE -TC -S5-0610

Drawing Title

CROWN ELEVATIONS

Drawing Number
S5-0610

B-Scan Drawing Number
S-147.00 SHEET 109 OF 118

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S5-0610
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CROWN ELEVATIONS
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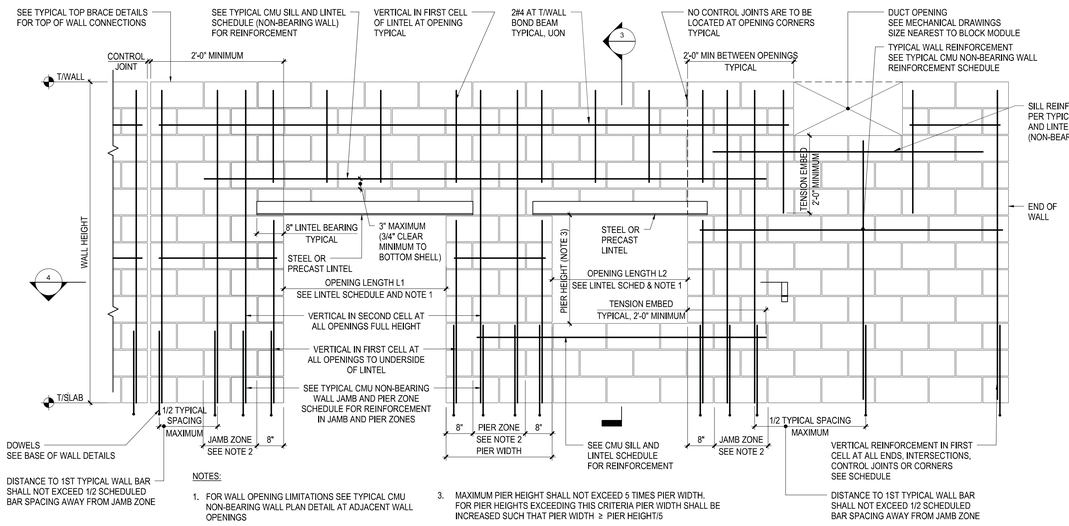
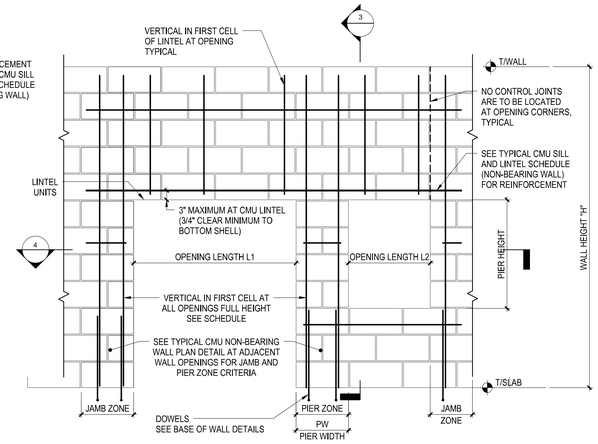


NOTES:

1. FOR WALL OPENING LIMITATIONS SEE TYPICAL CMU NON-BEARING WALL PLAN DETAIL AT ADJACENT WALL OPENINGS
2. FOR JAMB AND PIER ZONE CRITERIA SEE TYPICAL CMU NON-BEARING WALL PLAN DETAIL AT ADJACENT WALL OPENINGS
3. MAXIMUM PIER HEIGHT SHALL NOT EXCEED 5 TIMES PIER WIDTH. FOR PIER HEIGHTS EXCEEDING THIS CRITERIA PIER WIDTH SHALL BE INCREASED SUCH THAT PIER WIDTH ≥ PIER HEIGHT/5

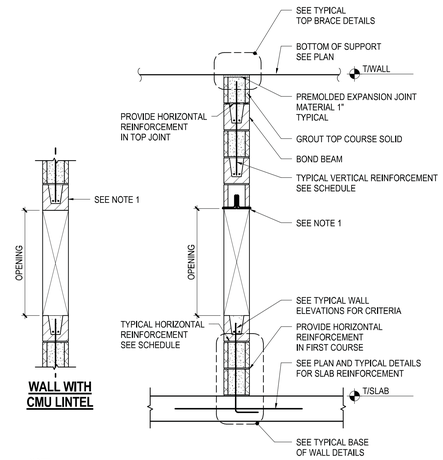
1 TYPICAL CMU NON-BEARING WALL ELEVATION WITH STEEL OR PRECAST LINTELS
NOT TO SCALE



NOTES:

1. FOR WALL INFORMATION NOT SHOWN, SEE TYPICAL CMU NON-BEARING WALL ELEVATION WITH STEEL OR PRECAST LINTELS
2. SEE TYPICAL CMU SILL AND LINTEL SCHEDULE (NON-BEARING WALL) FOR ADDITIONAL INFORMATION

2 TYPICAL CMU NON-BEARING WALL ELEVATION WITH CMU LINTELS
NOT TO SCALE

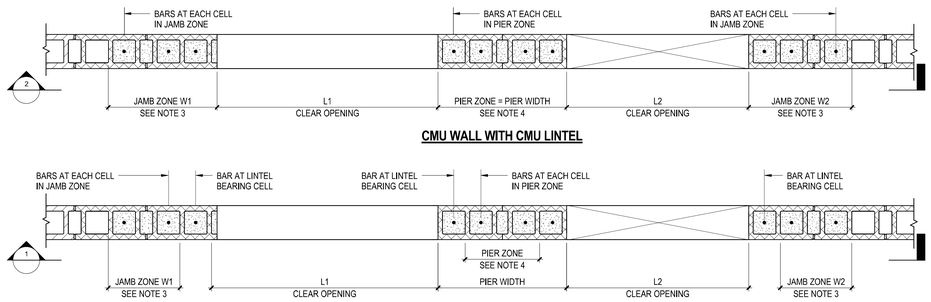


WALL WITH CMU LINTEL

NOTE:

1. SEE TYPICAL CMU SILL AND LINTEL SCHEDULE (NON-BEARING WALL) AND/OR TYPICAL STEEL LINTEL SCHEDULE (NON-BEARING WALL) FOR ADDITIONAL INFORMATION

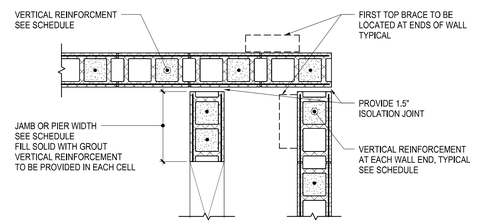
3 TYPICAL CMU NON-BEARING WALL SECTION
NOT TO SCALE



NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF MASONRY WALL OPENINGS
2. SUM OF OPENING WIDTHS L1 PLUS L2 ON EITHER SIDE OF PIER SHALL NOT EXCEED 24'-0", AND ANY INDIVIDUAL OPENING SHALL NOT EXCEED 12'-0" IN WIDTH. FOR CONDITIONS EXCEEDING THIS CRITERIA, ENGINEER OF RECORD SHALL BE NOTIFIED PRIOR TO CONSTRUCTION
3. W1 AND W2 REFERS TO WIDTH OF JAMB ZONE BASED ON ADJACENT CLEAR OPENING L1 AND L2, RESPECTIVELY AS PER TYPICAL CMU NON-BEARING WALL JAMB AND PIER ZONE SCHEDULE
4. PIER ZONE REFERS TO MINIMUM WIDTH OF PIER AS SCHEDULED ON TYPICAL CMU NON-BEARING WALL JAMB AND PIER ZONE SCHEDULE
5. SEE TYPICAL CMU NON-BEARING WALL JAMB AND PIER ZONE SCHEDULE FOR REINFORCEMENT

4 TYPICAL CMU NON-BEARING WALL PLAN DETAIL AT ADJACENT WALL OPENINGS
NOT TO SCALE



5 TYPICAL PLAN DETAIL AT FULL HEIGHT MASONRY WALL JOINT INTERSECTION
NOT TO SCALE

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 11/16/2012
Project No. 1776.10
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STATE OF NEW YORK · ALEX M. BRAZIE · 082242-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S5-0701
Drawing Title

TYPICAL MASONRY NON-BEARING WALL DETAILS
Drawing Number

S5-0701
B-Scan Drawing Number

S-148.00 SHEET 110 OF 118

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S5-0701
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TYPICAL MASONRY NON-BEARING WALL DETAILS
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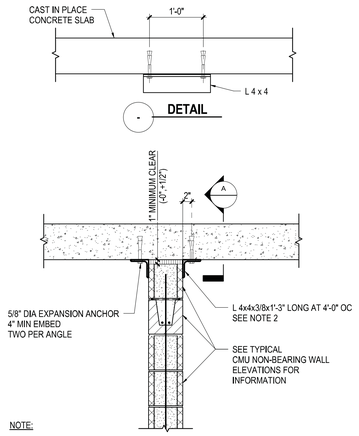
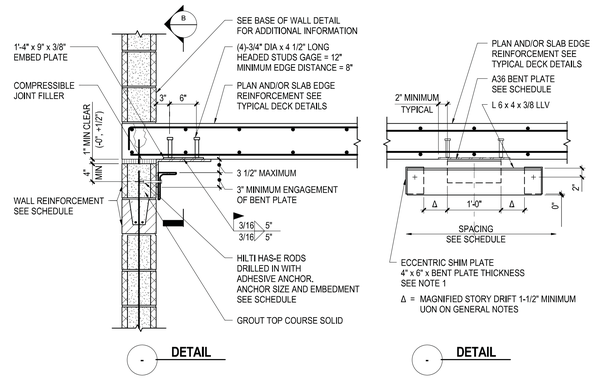


NOTE:

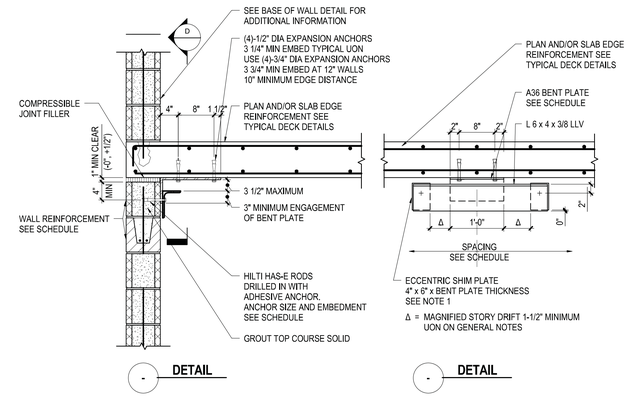
1. AT CONTINUOUS WALL INTERSECTIONS, SEE TYPICAL PLAN DETAIL AT MASONRY WALL WITH INTERLOCKED INTERSECTIONS FOR BRACE SPACING REQUIREMENTS

1 TYPICAL TOP BRACE DETAIL AT INTERIOR CMU WALL TO UNDERSIDE OF CONCRETE SLAB

NOT TO SCALE



EMBED PLATE AT EXTERIOR EDGE OF CONCRETE SLAB - OPTION 1



POST INSTALLED AT EXTERIOR EDGE OF CONCRETE SLAB - OPTION 2

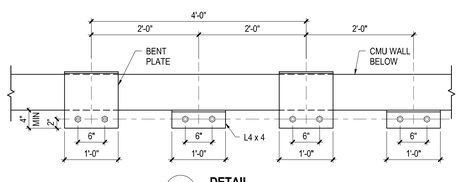
SEISMIC DESIGN CATEGORY	WALL TYPE	MAXIMUM WALL HEIGHT	ASSEMBLY SPACING	ANCHOR SIZE	ANCHOR EMBEDMENT	BENT PL THICKNESS
A, B, C	6"	14'-0"	4'-0"	3/8" DIA	3 1/2"	3/8"
A, B, C	8"	19'-0"	4'-0"	5/8" DIA	5"	3/8"
A, B, C	10"	17'-0"	4'-0"	3/4" DIA	6 5/8"	3/8"
A, B, C	10"	23'-6"	4'-0"	3/4" DIA	6 5/8"	1/2"
A, B, C	12"	26'-0"	4'-0"	3/4" DIA	6 5/8"	1/2"
A, B, C	12"	29'-0"	4'-0"	3/4" DIA	6 5/8"	5/8"
D,E, F	6"	14'-0"	4'-0"	3/8" DIA	3 1/2"	3/8"
D,E, F	8"	15'-0"	4'-0"	5/8" DIA	5"	3/8"
D,E, F	8"	19'-0"	4'-0"	5/8" DIA	5"	1/2"
D,E, F	10"	23'-6"	4'-0"	3/4" DIA	6 5/8"	1/2"
D,E, F	12"	18'-0"	4'-0"	3/4" DIA	6 5/8"	1/2"
D,E, F	12"	29'-0"	3'-0"	3/4" DIA	6 5/8"	5/8"

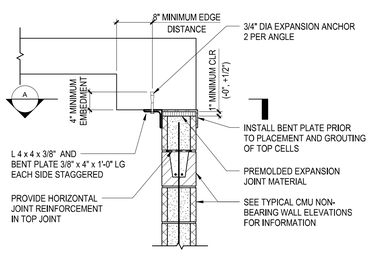
NOTE:

1. PROVIDE ADDITIONAL SHIMS IN 1/16" MAXIMUM INCREMENTS SO BENT PLATE CAN SLIDE WITHOUT BINDING OR SHOWING SIGNIFICANT TRANSVERSE PLAY

2 TYPICAL TOP BRACE DETAIL OF NON-BEARING CMU WALL AT EXTERIOR EDGE OF CONCRETE SLAB

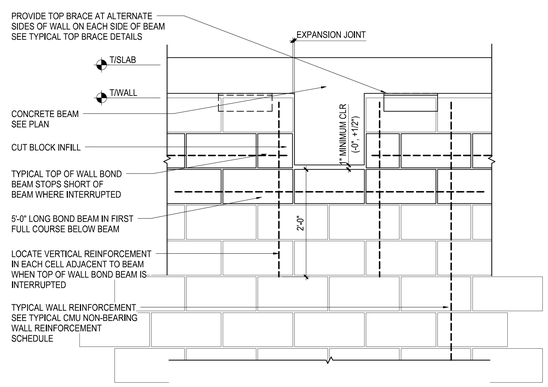
NOT TO SCALE





3 TYPICAL TOP BRACE DETAIL AT INTERIOR CMU WALL TO UNDERSIDE OF CONCRETE BEAM

NOT TO SCALE

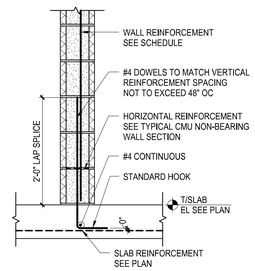


4 TYPICAL DETAIL OF CMU NON-BEARING WALL AT PERPENDICULAR CONCRETE BEAM

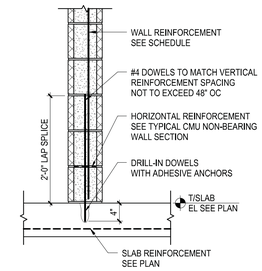
NOT TO SCALE

EDGE OF SLAB DOWEL SCHEDULE

SEISMIC DESIGN CATEGORY	IMPORTANCE FACTOR Ip	DOWEL TYPE	MAX #4 DOWEL SPACING (SEE NOTE 1)	HAIRPIN PER DETAIL D
A, B	1.0/1.5	CIP OR DRILLED IN	48"	NO
C	1.0	CIP	48"	YES
C	1.5	CIP	48" TYP UON 24" FOR WALLS H>20'-0"	YES
D,E,F	1.0/1.5	CIP	48" FOR 6" & 8" WALLS 32" FOR 10" & 12" WALLS	YES



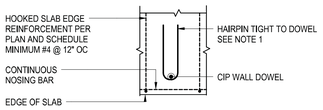
A CAST-IN DOWELS - OPTION 1 (INTERIOR WALL)



B DRILLED-IN DOWELS - OPTION 2 (INTERIOR WALL)

NOTE:

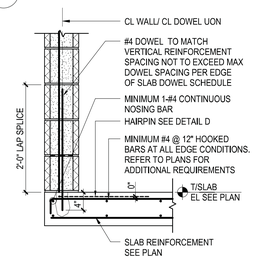
1. DETAILS ONLY APPLY WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:
   - VERTICALLY SPANNING NON-STRUCTURAL WALL BRACED AT TOP
   - NORMAL WEIGHT CONCRETE SLABS



NOTE:

1. PROVIDE #3 x 1'-8" LONG HAIRPIN FOR SEISMIC DESIGN CATEGORY C; AND #4 x 2'-0" LONG HAIRPIN FOR SEISMIC DESIGN CATEGORY D, E & F

D TYPICAL ANCHOR REINFORCEMENT - PLAN



C TYPICAL DETAIL AT EDGE OF SLAB

5 TYPICAL BASE OF CMU NON-BEARING WALL DETAIL AT CONCRETE SLAB

NOT TO SCALE

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:28 AM
NYC Development Hub

HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 09/28/2012
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · DAMIAN R. TITUS · 065842-1 · LICENSED PROFESSIONAL ENGINEER

HYE -TC -S5-0702

Drawing Title

TYPICAL MASONRY NON-BEARING WALL TO CONCRETE DETAILS

Drawing Number

S5-0702

B-Scan Drawing Number

S-149.00 SHEET 111 OF 118

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S5-0702
2/15/2013 10:33:48 AM
TYPICAL MASONRY NON-BEARING WALL TO CONCRETE
DESIGN\Masonry\Documents\N11293-00\Revit\N11293-00 - TOWER C - architect.rvt

LINK BEAM SCHEDULE

f'c= SEE SHEARWALL SCHEDULE

LINK BEAM MARK	LB1					LB2					LB3					LINK BEAM MARK
		REINFORCEMENT		STIRRUPS	REMARKS		REINFORCEMENT		STIRRUPS	REMARKS		REINFORCEMENT		STIRRUPS	REMARKS	
FLOOR	DEPTH (IN)	BOTTOM BARS	TOP BARS			DEPTH (IN)	BOTTOM BARS	TOP BARS			DEPTH (IN)	BOTTOM BARS	TOP BARS			FLOOR
LEVEL 50	108	8-#9 IN 2 LAYERS	8-#9 IN 2 LAYERS	#6@10" (2 LEGS)	SIDE BARS ZONE 10	108	8-#9 IN 2 LAYERS	8-#9 IN 2 LAYERS	#6@6" (2 LEGS)	SIDE BARS ZONE 7						LEVEL 50
LEVEL 49	72	8-#9 IN 2 LAYERS	8-#9 IN 2 LAYERS	#8@8" (2 LEGS)	SIDE BARS ZONE 10	72	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#9@9" (2 LEGS)	SIDE BARS ZONE 7						LEVEL 49
LEVEL 48	40	8-#9 IN 2 LAYERS	8-#9 IN 2 LAYERS	#4@6" (4 LEGS)		40	8-#9 IN 2 LAYERS	8-#9 IN 2 LAYERS	#4@6" (4 LEGS)							LEVEL 48
LEVEL 47	24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 47
LEVEL 46	24	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 46
LEVEL 45	24	8-#9 IN 2 LAYERS	8-#9 IN 2 LAYERS	#4@6" (4 LEGS)		24	8-#9 IN 2 LAYERS	8-#9 IN 2 LAYERS	#4@6" (4 LEGS)							LEVEL 45
LEVEL 44	24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@6" (4 LEGS)							LEVEL 44
LEVEL 43	24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 43
LEVEL 42	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@12" (2 LEGS)	SP 17"D x 0.5"W	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 42
LEVEL 41	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@12" (2 LEGS)	SP 17"D x 0.5"W	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 41
LEVEL 40	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@12" (2 LEGS)	SP 17"D x 0.5"W	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 40
LEVEL 39	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@12" (2 LEGS)	SP 17"D x 0.5"W	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 39
LEVEL 38	24	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@12" (2 LEGS)	SP 17"D x 0.75"W	24	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 38
LEVEL 37	24	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 37
LEVEL 36	24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 36
LEVEL 35	66	35-#9 IN 5 LAYERS	35-#9 IN 5 LAYERS	#4@12" (2 LEGS)	SP 56"D x 1.5"W	66	48-#9 IN 6 LAYERS	48-#9 IN 6 LAYERS	#4@12" (2 LEGS)	SP 55"D x 1.5"W						LEVEL 35
LEVEL 34	40	21-#9 IN 3 LAYERS	21-#9 IN 3 LAYERS	#4@12" (2 LEGS)	SP 32"D x 1"W	40	24-#9 IN 3 LAYERS	24-#9 IN 3 LAYERS	#4@12" (2 LEGS)	SP 32"D x 1"W	40	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 34
LEVEL 33	24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@6" (4 LEGS)		24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 33
LEVEL 32	24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@6" (4 LEGS)		24	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 32
LEVEL 31	24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@6" (4 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 31
LEVEL 30	24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@6" (4 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 30
LEVEL 29	24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@4" (4 LEGS)		24	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#4@6" (4 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 29
LEVEL 28	24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 28
LEVEL 27	24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 27
LEVEL 26	24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 26
LEVEL 25	24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 25
LEVEL 24	24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 24
LEVEL 23	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#5@4" (4 LEGS)		33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@4" (4 LEGS)		LEVEL 23
LEVEL 22	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@6" (4 LEGS)		LEVEL 22
LEVEL 21	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	18-#11 IN 2 LAYERS	18-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.75"W	LEVEL 21
LEVEL 20	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	21-#11 IN 3 LAYERS	21-#11 IN 3 LAYERS	#4@12" (2 LEGS)	SP 25"D x 3"W	LEVEL 20
LEVEL 19	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#11 IN 2 LAYERS	16-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.5"W	LEVEL 19
LEVEL 18	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#11 IN 2 LAYERS	16-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.5"W	LEVEL 18
LEVEL 17	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.5"W	LEVEL 17
LEVEL 16	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 16
LEVEL 15	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 15
LEVEL 14	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 14
LEVEL 13	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#5@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 13
LEVEL 12	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#5@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 12
LEVEL 11	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	18-#9 IN 2 LAYERS	18-#9 IN 2 LAYERS	#5@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 11
LEVEL 10	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	18-#9 IN 2 LAYERS	18-#9 IN 2 LAYERS	#5@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 10
LEVEL 9	33	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 9
LEVEL 8	33	11-#9 IN 1 LAYER	11-#9 IN 1 LAYER	#4@4" (4 LEGS)		33	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#4@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 8
LEVEL 7	33	7-#11 IN 2 LAYERS	7-#11 IN 2 LAYERS	#4@4" (4 LEGS)		33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2.25"W	LEVEL 7
LEVEL 6	66	20-#9 IN 2 LAYERS	20-#9 IN 2 LAYERS	#6@4" (4 LEGS)		66	18-#11 IN 2 LAYERS	18-#11 IN 2 LAYERS	#6@4" (4 LEGS)		66	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@12" (2 LEGS)		LEVEL 6
LEVEL 5	66	20-#9 IN 2 LAYERS	20-#9 IN 2 LAYERS	#6@4" (4 LEGS)		66	16-#11 IN 2 LAYERS	16-#11 IN 2 LAYERS	#6@4" (4 LEGS)		66	18-#9 IN 2 LAYERS	18-#9 IN 2 LAYERS	#5@4" (4 LEGS)		LEVEL 5
LEVEL 4	66	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#5@4" (4 LEGS)		66	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#6@4" (4 LEGS)		66	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#5@4" (4 LEGS)		LEVEL 4
LEVEL 3	297	40-#9 IN 3 LAYERS	40-#9 IN 3 LAYERS	#9@10" (2 LEGS)	SIDE BARS ZONE 10	189	27-#9 IN 3 LAYERS	27-#9 IN 3 LAYERS	#9@6" (2 LEGS)	SIDE BARS ZONE 7	189	27-#9 IN 3 LAYERS	27-#9 IN 3 LAYERS	#8@6" (2 LEGS)	SIDE BARS ZONE 6	LEVEL 3
LEVEL 2																LEVEL 2
LEVEL 1	170	22-#9 IN 2 LAYERS	22-#9 IN 2 LAYERS	#8@10" (2 LEGS)	SIDE BARS ZONE 10	330	18-#9 IN 2 LAYERS	18-#9 IN 2 LAYERS	#9@10" (2 LEGS)	SIDE BARS ZONE 7	110	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#8@6" (2 LEGS)	SIDE BARS ZONE 6	LEVEL 1
LEVEL 0	36	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		36	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		36	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 0

1 LINK BEAM SCHEDULE - I

LINK BEAM SCHEDULE

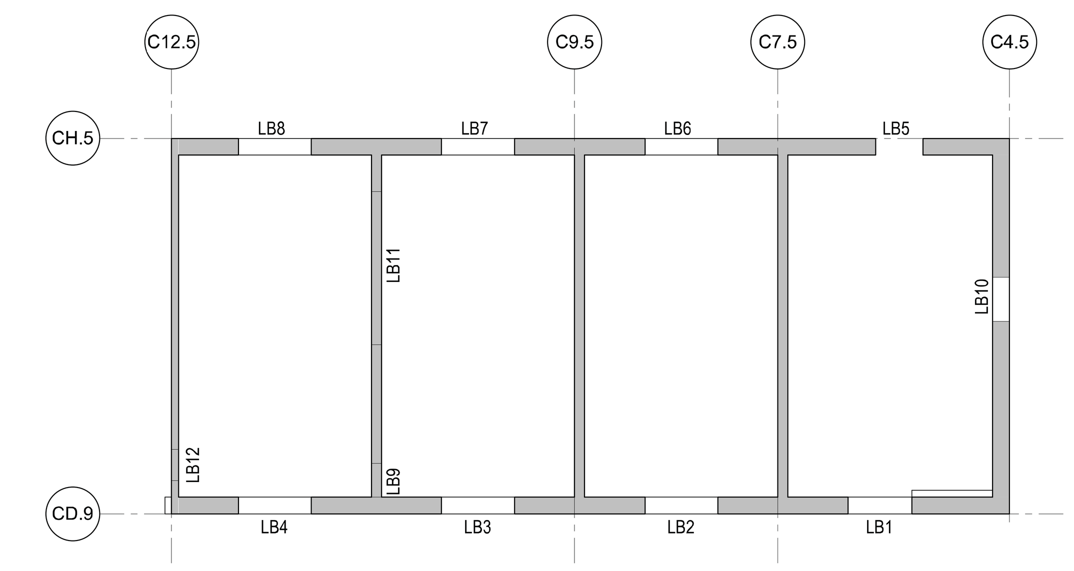
f'c= SEE SHEARWALL SCHEDULE

LINK BEAM MARK	LB4					LB5					LB6					LINK BEAM MARK
		REINFORCEMENT		STIRRUPS	REMARKS		REINFORCEMENT		STIRRUPS	REMARKS		REINFORCEMENT		STIRRUPS	REMARKS	
FLOOR	DEPTH (IN)	BOTTOM BARS	TOP BARS			DEPTH (IN)	BOTTOM BARS	TOP BARS			DEPTH (IN)	BOTTOM BARS	TOP BARS			FLOOR
LEVEL 50																LEVEL 50
LEVEL 49											148	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#6@12" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 49
LEVEL 48						40	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@7" (2 LEGS)		40	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@12" (2 LEGS)		LEVEL 48
LEVEL 47											24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 47
LEVEL 46											24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 46
LEVEL 45											24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 45
LEVEL 44											24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 44
LEVEL 43											24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 43
LEVEL 42											24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 42
LEVEL 41											24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 41
LEVEL 40											24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 40
LEVEL 39											24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 39
LEVEL 38											24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 38
LEVEL 37											24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 37
LEVEL 36											24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 36
LEVEL 35											66	7-#11 IN 1 LAYER	7-#11 IN 1 LAYER	#4@6" (4 LEGS)		LEVEL 35
LEVEL 34						138	8-#11 IN 2 LAYERS	8-#11 IN 2 LAYERS	#6@10" (2 LEGS)	SIDE BARS ZONE 18	40	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@12" (2 LEGS)		LEVEL 34
LEVEL 33						24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@4" (4 LEGS)		24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 33
LEVEL 32						24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@4" (2 LEGS)		114	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#8@6" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 32
LEVEL 31						24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@4" (2 LEGS)		114	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#8@10" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 31
LEVEL 30						24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@4" (2 LEGS)		114	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#8@10" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 30
LEVEL 29						24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (4 LEGS)		114	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#8@10" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 29
LEVEL 28						24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (4 LEGS)		114	10-#9 IN 2 LAYERS	10-#9 IN 2 LAYERS	#8@10" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 28
LEVEL 27						24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@4" (4 LEGS)		114	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#8@10" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 27
LEVEL 26						24	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@4" (4 LEGS)		114	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#8@10" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 26
LEVEL 25	24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@4" (2 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@4" (4 LEGS)		114	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#8@10" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 25
LEVEL 24	24	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		24	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@4" (4 LEGS)		114	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#8@6" (2 LEGS)	SIDE BARS ZONE 18	LEVEL 24
LEVEL 23	33	20-#9 IN 2 LAYERS	20-#9 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 1.5"W	33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#6@4" (4 LEGS)	SP 28"D x 1.25"W	LEVEL 23
LEVEL 22	33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#5@4" (4 LEGS)	SP 28"D x 1"W	LEVEL 22
LEVEL 21	33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	6-#11 IN 1 LAYER	6-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1"W	LEVEL 21
LEVEL 20	33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	6-#11 IN 1 LAYER	6-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1"W	LEVEL 20
LEVEL 19	33	11-#9 IN 1 LAYER	11-#9 IN 1 LAYER	#4@4" (4 LEGS)		33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@4" (4 LEGS)		33	7-#11 IN 1 LAYER	7-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.25"W	LEVEL 19
LEVEL 18	33	7-#11 IN 1 LAYER	7-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@4" (4 LEGS)		33	7-#11 IN 1 LAYER	7-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.25"W	LEVEL 18
LEVEL 17	33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.25"W	LEVEL 17
LEVEL 16	33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.25"W	LEVEL 16
LEVEL 15	33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.5"W	LEVEL 15
LEVEL 14	33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.5"W	LEVEL 14
LEVEL 13	33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.5"W	LEVEL 13
LEVEL 12	33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.5"W	LEVEL 12
LEVEL 11	33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	12-#11 IN 2 LAYERS	12-#11 IN 2 LAYERS	#4@12" (2 LEGS)	SP 26"D x 2"W	LEVEL 11
LEVEL 10	33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@4" (4 LEGS)		33	11-#9 IN 1 LAYER	11-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.5"W	LEVEL 10
LEVEL 9	33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.5"W	LEVEL 9
LEVEL 8	33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.5"W	LEVEL 8
LEVEL 7	33	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@4" (4 LEGS)		33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#5@4" (4 LEGS)		33	9-#11 IN 1 LAYER	9-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 28"D x 1.5"W	LEVEL 7
LEVEL 6	66	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#6@4" (4 LEGS)		66	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#6@4" (4 LEGS)		66	8-#11 IN 1 LAYER	8-#11 IN 1 LAYER	#4@12" (2 LEGS)	SP 61"D x 1.5"W	LEVEL 6
LEVEL 5	66	14-#11 IN 2 LAYERS	14-#11 IN 2 LAYERS	#5@4" (4 LEGS)		66	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#6@4" (4 LEGS)		66	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)		LEVEL 5
LEVEL 4	66	12-#11 IN 2 LAYERS	12-#11 IN 2 LAYERS	#5@4" (4 LEGS)		66	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#6@4" (4 LEGS)		66	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@4" (4 LEGS)		LEVEL 4
LEVEL 3	189	27-#9 IN 3 LAYERS	27-#9 IN 3 LAYERS	#8@9" (2 LEGS)	SIDE BARS ZONE 6	190	27-#9 IN 3 LAYERS	27-#9 IN 3 LAYERS	#8@6" (2 LEGS)	SIDE BARS ZONE 18	194	27-#9 IN 3 LAYERS	27-#9 IN 3 LAYERS	#4@4" (4 LEGS)		LEVEL 3
LEVEL 2																LEVEL 2
LEVEL 1	170	16-#11 IN 2 LAYERS	16-#11 IN 2 LAYERS	#6@6" (2 LEGS)	SIDE BARS ZONE 6	74	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@4" (4 LEGS)		170	16-#11 IN 2 LAYERS	16-#11 IN 2 LAYERS	#4@4" (4 LEGS)		LEVEL 1
LEVEL 0	36	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@4" (4 LEGS)		36	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		36	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 0

2 LINK BEAM SCHEDULE - II

NOTES:

1. SEE S5-0400 SERIES TYPICAL CONCRETE SHEARWALL DETAILS
2. USE 135 DEGREE HOOKS FOR ALL LINK BEAM STIRRUPS UON. AT STIRRUP CAP USE 135 AND 90 HOOKS ON ALTERNATING ENDS
3. BEAM PENETRATIONS ARE NOT PERMITTED IN LINK BEAMS WITHOUT THE REVIEW AND WRITTEN APPROVAL OF THE SER
4. "SP" INDICATES STRUCTURAL PLATE. SEE 10/S5-0401
5. FOR SIDE BARS SEE S5-0401 TYPICAL CONCRETE SHEARWALL DETAILS, UON IN THE REMARKS COLUMN.
6. BEAM SIDE BAR REINFORCEMENT TO MATCH ADJACENT SHEARWALL ZONE HORIZONTAL REINFORCEMENT WHEN SIDE BAR ZONE NUMBERS ARE PROVIDED IN THE REMARKS COLUMN. SEE S6-0201 AND S6-0202 FOR SHEARWALL ZONE REINFORCEMENT.
7. LINK BEAM CONCRETE STRENGTH TO MATCH THAT OF THE SHEARWALL U.O.N.



NOTES:
1. FOR REFERENCE ONLY.
2. REFER TO SHEARWALL PART PLAN SHEETS (S4-0101, S4-0102) FOR DIMENSIONS.

3 LINK BEAM KEY PLAN

NOT TO SCALE

DEPT OF BLDGS 121324290 Job Number
ES293308650 Scan Code

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: -
Project No. 1776.10
Drawn By Author
Sheet Number

STATE OF NEW YORK · AINE M. BRAZIL · 062542-1 · LICENSED PROFESSIONAL ENGINEER

Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:28 AM
NYC Development Hub

HYE -TC -S6-0203

Drawing Title

LINK BEAM SCHEDULE I

Drawing Number
S6-0203

B-Scan Drawing Number
S-150.00 SHEET 112 OF 118

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LINK BEAM SCHEDULE

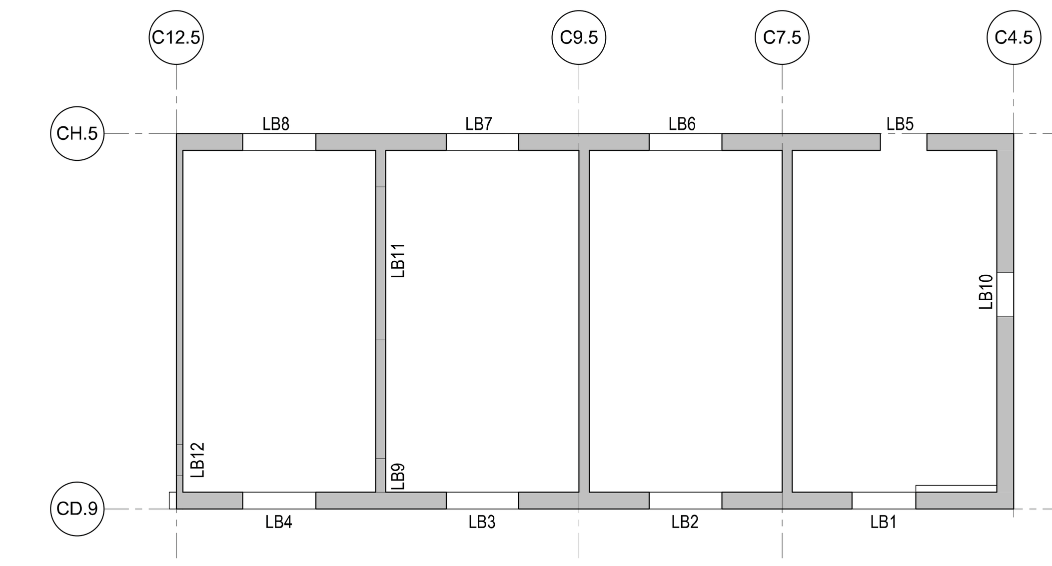
f'c= SEE SHEARWALL SCHEDULE

LINK BEAM MARK / FLOOR	LB7 DEPTH (IN)	LB7 REINFORCEMENT BOTTOM BARS	LB7 REINFORCEMENT TOP BARS	LB7 STIRRUPS	LB7 REMARKS	LB8 DEPTH (IN)	LB8 REINFORCEMENT BOTTOM BARS	LB8 REINFORCEMENT TOP BARS	LB8 STIRRUPS	LB8 REMARKS	LB10 DEPTH (IN)	LB10 REINFORCEMENT BOTTOM BARS	LB10 REINFORCEMENT TOP BARS	LB10 STIRRUPS	LB10 REMARKS	LINK BEAM MARK / FLOOR
LEVEL 50																LEVEL 50
LEVEL 49																LEVEL 49
LEVEL 48											73	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@12" (2 LEGS)		LEVEL 48
LEVEL 47											55	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 47
LEVEL 46											55	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)		LEVEL 46
LEVEL 45											55	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 45
LEVEL 44											55	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@6" (4 LEGS)		LEVEL 44
LEVEL 43											55	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (4 LEGS)		LEVEL 43
LEVEL 42											55	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (4 LEGS)		LEVEL 42
LEVEL 41											55	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (4 LEGS)		LEVEL 41
LEVEL 40											55	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@4" (4 LEGS)		LEVEL 40
LEVEL 39											55	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (4 LEGS)		LEVEL 39
LEVEL 38											55	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@4" (4 LEGS)		LEVEL 38
LEVEL 37											55	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (4 LEGS)		LEVEL 37
LEVEL 36											55	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		LEVEL 36
LEVEL 35	162	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#6@6" (2 LEGS)	SIDE BARS ZONE 4											LEVEL 35
LEVEL 34																LEVEL 34
LEVEL 33	24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 33
LEVEL 32	24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 32
LEVEL 31	24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 31
LEVEL 30	24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 30
LEVEL 29	24	3-#9 IN 1 LAYER	3-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 29
LEVEL 28	24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 28
LEVEL 27	24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@10" (2 LEGS)		162	18-#9 IN 2 LAYERS	18-#9 IN 2 LAYERS	#5@4" (4 LEGS)							LEVEL 27
LEVEL 26	24	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 26
LEVEL 25	24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 25
LEVEL 24	24	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@10" (2 LEGS)												LEVEL 24
LEVEL 23	33	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		33	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@12" (2 LEGS)							LEVEL 23
LEVEL 22	33	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)		33	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@12" (2 LEGS)							LEVEL 22
LEVEL 21	33	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@12" (2 LEGS)							LEVEL 21
LEVEL 20	33	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 20
LEVEL 19	33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 19
LEVEL 18	33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 18
LEVEL 17	33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	6-#9 IN 1 LAYER	6-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 17
LEVEL 16	33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 16
LEVEL 15	33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 15
LEVEL 14	33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 14
LEVEL 13	33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 13
LEVEL 12	33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 12
LEVEL 11	33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 11
LEVEL 10	33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 10
LEVEL 9	33	10-#9 IN 1 LAYER	10-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 9
LEVEL 8	33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#4@6" (4 LEGS)		33	7-#9 IN 1 LAYER	7-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 8
LEVEL 7	33	9-#9 IN 1 LAYER	9-#9 IN 1 LAYER	#5@4" (2 LEGS)		33	8-#9 IN 1 LAYER	8-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 7
LEVEL 6	66	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#5@4" (4 LEGS)		66	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 6
LEVEL 5	66	16-#9 IN 2 LAYERS	16-#9 IN 2 LAYERS	#5@4" (4 LEGS)		66	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 5
LEVEL 4	66	14-#9 IN 2 LAYERS	14-#9 IN 2 LAYERS	#5@4" (4 LEGS)		66	12-#9 IN 2 LAYERS	12-#9 IN 2 LAYERS	#4@4" (4 LEGS)							LEVEL 4
LEVEL 3	194	27-#9 IN 3 LAYERS	27-#9 IN 3 LAYERS	#8@5" (2 LEGS)	SIDE BARS ZONE 4	228	21-#11 IN 3 LAYERS	21-#11 IN 3 LAYERS	#6@6" (2 LEGS)	SIDE BARS ZONE 4						LEVEL 3
LEVEL 2																LEVEL 2
LEVEL 1	170	16-#11 IN 2 LAYERS	16-#11 IN 2 LAYERS	#8@6" (2 LEGS)	SIDE BARS ZONE 4	170	16-#11 IN 2 LAYERS	16-#11 IN 2 LAYERS	#8@12" (2 LEGS)	SIDE BARS ZONE 4						LEVEL 1
LEVEL 0	36	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)		36	5-#9 IN 1 LAYER	5-#9 IN 1 LAYER	#4@6" (2 LEGS)							LEVEL 0

1 LINK BEAM SCHEDULE - III

NOTES:

1. SEE S5-0400 SERIES TYPICAL CONCRETE SHEARWALL DETAILS
2. USE 135 DEGREE HOOKS FOR ALL LINK BEAM STIRRUPS UON. AT STIRRUP CAP USE 135 AND 90 HOOKS ON ALTERNATING ENDS
3. BEAM PENETRATIONS ARE NOT PERMITTED IN LINK BEAMS WITHOUT THE REVIEW AND WRITTEN APPROVAL OF THE SER
4. "SP" INDICATES STRUCTURAL PLATE. SEE 10/S5-0401
5. FOR SIDE BARS SEE S5-0401 TYPICAL CONCRETE SHEARWALL DETAILS, UON IN THE REMARKS COLUMN.
6. BEAM SIDE BAR REINFORCEMENT TO MATCH ADJACENT SHEARWALL ZONE HORIZONTAL REINFORCEMENT WHEN SIDE BAR ZONE NUMBERS ARE PROVIDED IN THE REMARKS COLUMN. SEE S6-0201 AND S6-0202 FOR SHEARWALL ZONE REINFORCEMENT.
7. LINK BEAM CONCRETE STRENGTH TO MATCH THAT OF THE SHEARWALL U.O.N.



NOTES:
1. FOR REFERENCE ONLY.
2. REFER TO SHEARWALL PART PLAN SHEETS (S4-0101, S4-0102) FOR DIMENSIONS.

3 LINK BEAM KEY PLAN

NOT TO SCALE

LINK BEAM MARK	DEPTH (IN)	REINFORCEMENT BOTTOM BARS	REINFORCEMENT TOP BARS	STIRRUPS	REMARKS
LB9	33	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@6" (4 LEGS)	
LB11	33	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@12" (2 LEGS)	
LB12	66	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@12" (2 LEGS)	SP 32"D x 1"W
LB13	11	4-#9 IN 1 LAYER	4-#9 IN 1 LAYER	#4@12" (2 LEGS)	

(MISCELLANEOUS LINK BEAMS)

2 MISCELLENAEOUS LINK BEAMS

S6-0204
2/15/2013 10:33:54 AM
LINK BEAM SCHEDULE II
C:\Users\amaloney\Documents\N11329.00\Revit\N11329.00 - TOWER C - amlocal.rvt

DEPT OF BLDGS 121324290 Job Number
ES627721101 Scan Code

HUDSON YARDS - TOWER C

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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:28 AM
NYC Development Hub

STATE OF NEW YORK · AINE M. BRAZIL · 062542-1 · LICENSED PROFESSIONAL ENGINEER

Issue Date: 12/06/12
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S6-0204

Drawing Title

LINK BEAM SCHEDULE II

Drawing Number

S6-0204

B-Scan Drawing Number

S-151.00 SHEET 113 OF 118

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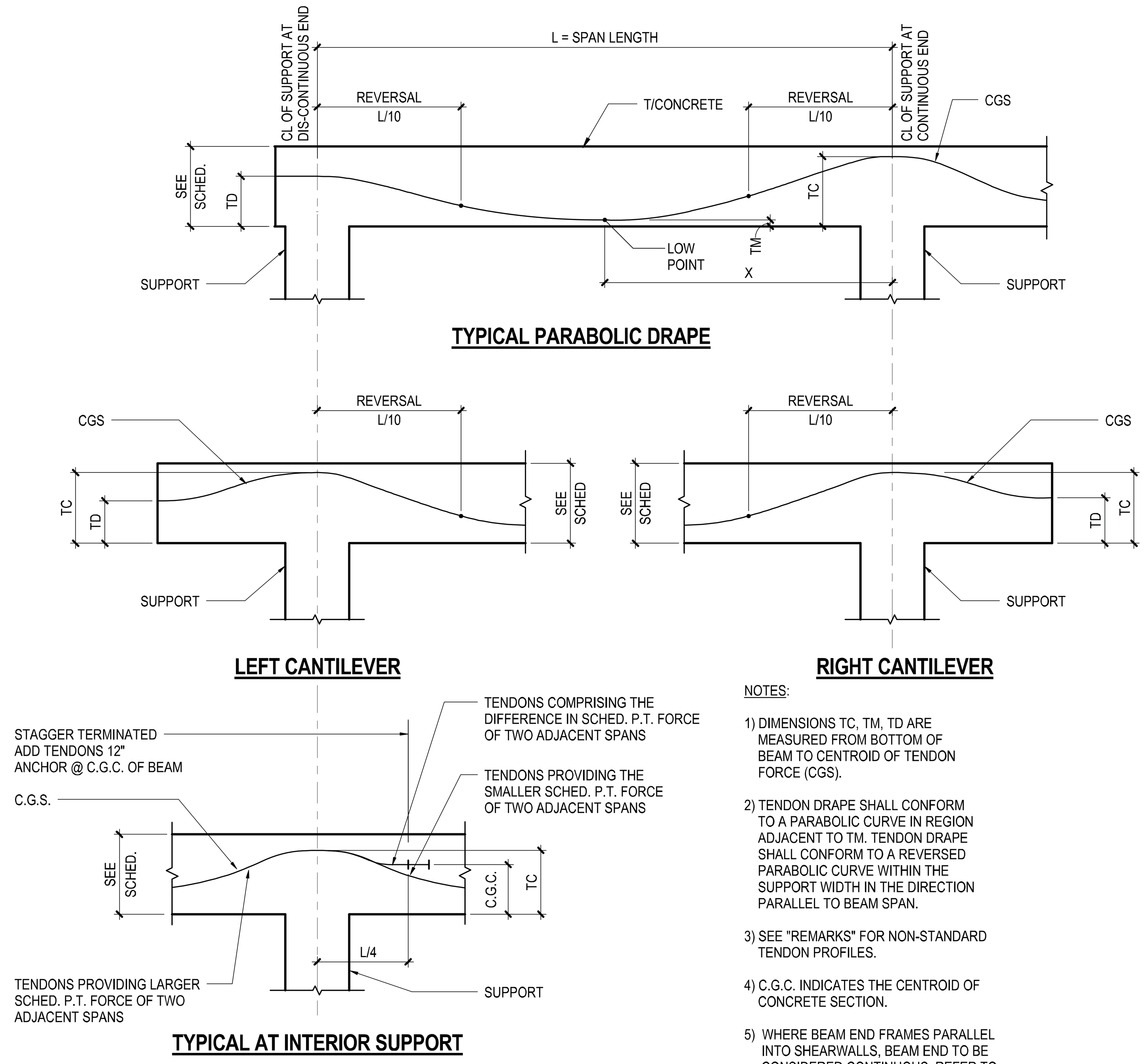
DEPT OF BLDGS 121324290 Job Number
ES876437397 Scan Code

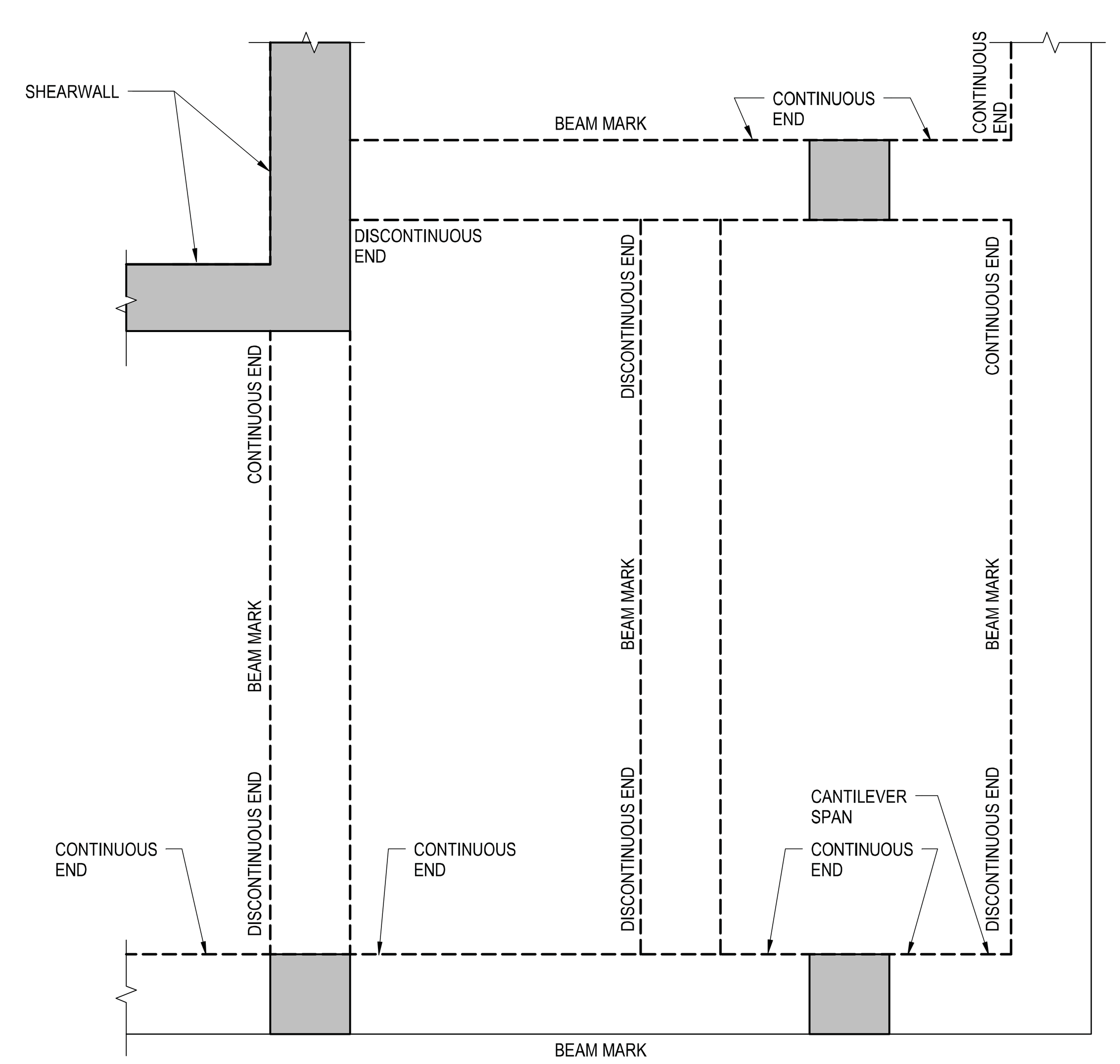


NOTES:

1) DIMENSIONS TC, TM, TD ARE MEASURED FROM BOTTOM OF BEAM TO CENTROID OF TENDON FORCE (CGS).
2) TENDON DRAPE SHALL CONFORM TO A PARABOLIC CURVE IN REGION ADJACENT TO TM. TENDON DRAPE SHALL CONFORM TO A REVERSED PARABOLIC CURVE WITHIN THE SUPPORT WIDTH IN THE DIRECTION PARALLEL TO BEAM SPAN.
3) SEE "REMARKS" FOR NON-STANDARD TENDON PROFILES.
4) C.G.C. INDICATES THE CENTROID OF CONCRETE SECTION.
5) WHERE BEAM END FRAMES PARALLEL INTO SHEARWALLS, BEAM END TO BE CONSIDERED CONTINUOUS. REFER TO BEAM ORIENTATION KEY PLAN

POST-TENSIONED BEAM TENDON PROFILES

1 POST-TENSIONED BEAM TENDON PROFILES
NOT TO SCALE



2 POST- TENSIONED BEAM ORIENTATION KEY PLAN
NOT TO SCALE

NOTES: (22)

1. TOP OF BEAM IS TOP OF SLAB UON
2. CONTINUOUS END AND DIS-CONTINUOUS END OF BEAM ARE DEFINED ON BEAM ORIENTATION KEY PLAN
3. X/L IS RATIO OF TENDON LOW POINT LOCATION (MEASURED FROM THE CONTINUOUS END OF THE SPAN) TO THE SPAN LENGTH. SEE TYPICAL POST-TENSIONED BEAM ELEVATION.
4. SEE TYPICAL CONCRETE BEAM SECTION DETAIL WHERE NO SIDE BARS ARE INDICATED
5. SEE TYPICAL CONCRETE BEAM DETAILS FOR BEAM STIRRUP TYPES
6. ADJ INDICATES SEE ADJACENT BEAM
   - INDICATES CELL INTENTIONALLY LEFT BLANK
7. WHERE SCHEDULED EFFECTIVE PRESTRESSED FORCE DIFFERS BETWEEN CONTINUOUS SPANS SEE TYPICAL POST-TENSIONED BEAM DETAIL WITH ADDED TENDONS

NONPRESTRESSED REINFORCEMENT LEGEND:

NUMBER OF BARS — BAR SIZE — BAR LENGTH
3-#9x7'-2"

POST-TENSIONED BEAM SCHEDULE

f'c= SEE GENERAL NOTES

BEAM MARK	SIZE W (IN)	SIZE H (IN)	POST-TENSION TENDONS EFFECTIVE FORCE (KIPS)	TC (IN)	TM (IN)	TD (IN)	X/L	CONTINUOUS END TOP BARS LONG	CONTINUOUS END TOP BARS SHORT	DIS-CONTINUOUS END TOP BARS LONG	DIS-CONTINUOUS END TOP BARS SHORT	BOTTOM BARS LONG	BOTTOM BARS SHORT	SIDE BARS EACH FACE SEE NOTE 4	STIRRUPS TYPE	STIRRUPS SIZE	STIRRUPS SPACING FROM EACH END	REMARKS
XPTB01	48	21	570	–	2 1/4	14 1/2	0.5	–	–	4#6	2#6	4#6	2#6	–	2C	#3	1@3", BAL @ 15"	
XPTB02	48	21	500	18 3/4	2 1/4	14 1/2	0.5	4#7	4#7	4#7	4#7	4#7	2#7	–	2C	#3	1@ 3", BAL @ 14"	AT GRID 9 LOCATIONS: PROVIDE ADDITIONAL 2 #7 TOP SHORT BARS EACH END. AT LEVEL 2: PROVIDE ADDITIONAL 2 #7 TOP LONG BARS AND 2 #7 BOTTOM LONG BARS. AT LEVEL 7: PROVIDE ADDITIONAL 2 #7 TOP SHORT BARS AT EACH END.
XPTB03	48	21	526	18 3/4	2 1/4	14 1/2	0.5	4#7	2#7	4#7	2#7	4#7	2#7	–	2C	#3	1@ 3", BAL @ 15"	AT LEVEL 22 & 25: PROVIDE ADDITIONAL 2 #7 TOP SHORT BARS EACH END; PROVIDE ADDITIONAL 2 #6 SHORT BOTTOM BARS; #3 STIRRUPS (6 LEGS) @15" SPACING REQUIRED WITHIN 6 FT FROM SUPPORTS. AT LEVEL 18: PROVIDE AN EFFECTIVE FORCE OF 534K.
XPTB04	48	26	364	23 3/4	2 1/4	18	0.5	4#7	4#7	4#7	4#7	4#8	4#8	–	2C	#3	1@ 3", BAL @ 18"	AT LEVEL 19: PROVIDE AN EFFECTIVE FORCE OF 215K. AT LEVEL 47: PROVIDE ADDITIONAL 2 #7 TOP LONG BARS AT EACH END.
XPTB05	30	21	184	18 3/4	2 1/4	15 1/2	0.5	4#6	4#6	4#6	4#6	4#7	2#7	–	2C	#3	1@ 3", BAL @ 15"	AT LEVEL 19: PROVIDE AN EFFECTIVE FORCE OF 192K.
XPTB06	36	21	252	18 3/4	2 1/4	13 1/2	0.5	6#6	4#6	6#6	4#6	4#7	2#7	–	2C	#4	1@ 3", BAL @ 8"	AT LEVEL 48: PROVIDE AN EFFECTIVE FORCE OF 314K; PROVIDE ADDITIONAL 4 #6 TOP LONG BARS; PROVIDE ADDITIONAL 4 #7 BOTTOM LONG BARS AND 4 #7 BOTTOM SHORT BARS.
XPTB07	48	21	554	18 3/4	2 1/4	14 1/2	0.5	4#7	4#7	4#7	4#7	4#7	2#7	–	2C	#3	1@ 3", 3 @ 10", BAL @ 15"	
XPTB08	48	26	504	23 3/4	2 1/4	18	0.5	4#7	4#7	4#7	4#7	4#7	4#7	–	2C	#3	1@ 3", BAL @ 18"	AT LEVEL 22 & 25: PROVIDE ADDITIONAL 2 #7 TOP SHORT BARS EACH END; PROVIDE ADDITIONAL 2 #7 SHORT BOTTOM BARS AT LEVEL 16 & 17: PROVIDE ADDITIONAL 2 #7 BOTTOM LONG BARS. AT LEVEL 40 & 41: PROVIDE ADDITIONAL 2 #7 BOTTOM LONG BARS.
XPTB09	36	21	328	18 3/4	2 1/4	14 1/2	0.5	4#7	4#7	4#7	4#7	4#7	2#7	–	2C	#3	1@ 3", BAL @ 15"	AT LEVEL 19: PROVIDE AN EFFECTIVE FORCE OF 379K.
XPTB10	48	26	278	23 3/4	2 1/4	18	0.5	4#7	4#7	4#7	4#7	4#7	4#7	–	2C	#3	1@ 3", BAL @ 18"	AT LEVEL 42 & 43: PROVIDE ADDITIONAL 2 #7 BOTTOM LONG BARS AND PROVIDE AN EFFECTIVE FORCE OF 305K.
XPTB11	48	21	622	18 3/4	2 1/4	14 1/2	0.5	4#7	4#7	4#7	4#7	4#8	4#8	–	2C	#3	1 @ 3", 10 @ 6", BAL @ 15"	AT LEVEL 22, 25 & 38: PROVIDE ADDITIONAL 2 #7 TOP SHORT BARS EACH END; #3 STIRRUPS (6 LEGS) @15" SPACING REQUIRED WITHIN 6 FT FROM SUPPORTS.
XPTB12	48	21	275	18 3/4	2 1/4	14 1/2	0.5	4#8	2#8	4#8	2#8	4#7	2#7	–	2C	#3	1@ 3", BAL @ 15"	
XPTB13	48	32	296	29 3/4	2 1/4	20	0.5	4#8	2#8	4#8	2#8	4#7	4#7	–	2C	#3	1@ 3", BAL @ 20"	
XPTB14	36	26	140	23 3/4	2 1/4	14 1/2	0.5	4#7	4#7	4#7	2#7	4#6	2#6	–	2C	#3	1@ 3", BAL @ 18"	AT LEVEL 19: PROVIDE AN EFECTIVE FORCE OF 282K. AT LEVEL 7: PROVIDE ADDITIONAL 2 #7 TOP SHORT BARS AT EACH END.
XPTB15	48	32	480	29 3/4	2 1/4	20	0.5	4#8	4#8	4#8	4#8	4#8	4#8	–	2C	#3	1@ 3", BAL @20"	AT LEVEL 21: PROVIDE AN EFFECTIVE FORCE OF 495K.
XPTB16	60	26	677	23 3/4	2 1/4	16	0.5	4#7	2#7	4#7	2#7	4#8	4#8	–	2C	#3	1@ 3", BAL @ 18"	8' - 6" VOID FREE ZONE REQUIRED WITHIN FLANGE. AT LEVEL 15: PROVIDE AN EFFECTIVE FORCE OF 540K
XPTB17	48	26	446	23 3/4	2 1/4	18	0.5	5#7	5#7	5#7	5#7	4#8	4#8	–	2C	#3	1@ 3", 4 @ 12", BAL @ 18"	AT LEVEL 28: PROVIDE 5#8 TOP SHORT BARS AND 5#8 TOP LONG BARS AT EACH END. AT LEVEL 29: PROVIDE ADDITIONAL 4 #7 TOP LONG BARS AT EACH END. AT LEVEL 32: PROVIDE ADDITIONAL 2 #7 TOP LONG BARS AT EACH END.
XPTB18	48	26	690	23 3/4	2 1/4	17 1/2	0.5	4#7	4#7	4#7	4#7	4#8	4#8	–	2C	#3	1@ 3", 12 @ 8", BAL @ 18"	8' - 6" VOID FREE ZONE REQUIRED WITHIN FLANGE. AT LEVEL 15: PROVIDE AN EFFECTIVE FORCE OF 540K AT LEVEL 19: PROVIDE VOIDED FLANGE FOR BEAMS
XPTB19	48	26	911	23 3/4	2 1/4	18 1/2	0.5	4#7	4#7	4#7	4#7	4#7	2#7	–	2C	#4	1@ 3", 30@ 6", BAL @ 18"	AT LEVEL 30: PROVIDE ADDITIONAL 1 #7 BOTTOM LONG BAR AND 3 #7 BOTTOM SHORT BARS.
XPTB20	30	21	300	18 3/4	2 1/4	13 1/2	0.5	4#6	2#6	4#6	2#6	4#6	2#6	–	2C	#3	1@ 3", 6 @ 6", BAL @ 15"	AT LEVEL 11, 12, 13, & 14: PROVIDE AN EFFECTIVE FORCE OF 347K AND PROVIDE ADDITIONAL 2 #6 BOTTOM SHORT BARS.
XPTB21	48	26	209	23 3/4	22 1/4	–	0.5	4#7	2#7	–	–	4#6	2#6	–	2C	#3	1@ 3", BAL @ 18"	
XPTB22	36	26	136	23 3/4	22 1/4	–	0.5	4#7	2#7	–	–	4#6	2#6	–	2C	#3	1@ 3", BAL @ 18"	
XPTB23	48	21	203	18 3/4	2 1/4	13 1/2	0.5	4#7	2#7	4#7	2#7	4#6	2#6	–	2C	#3	1@ 3", BAL @ 15"	PROVIDE ADDITIONAL 2 #7 SHORT TOP BARS FOR SPANS GREATER THAN 26 FT.
XPTB24	48	21	590	–	2 1/4	14 1/2	0.5	–	–	4#7	2#7	4#8	4#8	–	2C	#3	1@ 3", BAL @ 15"	
XPTB25	36	21	475	18 3/4	6 1/4	14 1/4	0.5	4#7	2#7	4#7	2#7	4#6	2#6	–	2C	#3	1@ 3", BAL @ 15"	
XPTB26	48	21	408	18 3/4	2 1/4	15 1/2	0.5	4#8	4#8	4#8	4#8	4#8	2#8	–	2C	#4	1@ 3", 3@ 12", BAL @ 15"	
XPTB27	48	21	300	18 3/4	4 1/4	–	0.5	4#7	4#7	–	–	6#6	4#6	3#9	2C	#3	1@ 3", BAL @ 15"	
XPTB28	48	21	389	18 3/4	4 1/4	–	0.5	4#7	4#7	–	–	6#6	4#6	3#9	2C	#3	1@ 3", BAL @ 15"	
XPTB29	48	26	467	23 3/4	4 1/4	19	0.5	5#8	5#8	5#8	5#8	4#7	4#7	–	2C	#4	1@ 3", 6@ 10", BAL @ 18"	
XPTB30	36	26	300	23 3/4	4 1/4	19	0.5	4#7	2#7	4#7	2#7	4#6	2#6	–	2C	#3	1@ 3", BAL @ 18"	AT LEVEL 7: TM = 2 1/4"
XPTB31	48	26	642	23 3/4	4 1/4	19	0.625	4#7	2#7	4#7	2#7	5#8	5#8	–	2C	#3	1@ 3", BAL @ 18"	X/L MEASURED FROM COLUMN-SUPPORTED END.
XPTB32	48	26	490	23 3/4	4 1/4	19	0.5	4#7	4#7	4#7	4#7	4#7	4#7	–	2C	#3	1@ 3", BAL @ 16"	AT LEVEL 6: PROVIDE ADDITIONAL 2 #7 TOP LONG BARS.
XPTB33	48	26	420	23 3/4	4 1/4	19	0.5	4#8	4#8	4#8	4#8	6#7	4#7	–	2C	#3	1@ 3", BAL @ 18"	TM = 6 1/4" FOR ALL SPANS LESS THAN 30 FT. AT LEVEL 35: PROVIDE ADDITIONAL 2 #7 LONG BOTTOM BARS.
XPTB34	48	72	1026	–	4 1/4	43	0.5	–	–	6#8	6#8	9#8	9#8		2C	#3	1@ 3", BAL @ 20"	
XPTB35	48	21	750	–	2 1/4	13 1/2	0.5	–	–	4#7	4#7	4#7	4#7	–	2C	#4	1@ 3", 8 (4 LEGS) @ 10", BAL @ 12"	AT LEVEL 2 & 19: PROVIDE AN EFFECTIVE FORCE OF 774K.
XPTB36	36	26	230	18 3/4	2 1/4	15 1/2	0.5	4#7	4#7	4#7	4#7	4#8	4#8	–	2C	#3	1@ 3", BAL @ 18"	AT LEVEL 19: PROVIDE AN EFFECTIVE FORCE OF 402K. AT LEVEL 33: PROVIDE AN EFFECTIVE FORCE OF 315K.
XPTB37	36	26	447	23 3/4	2 1/4	19 1/2	0.5	4#7	4#7	4#7	4#7	4#8	2#8	–	2C	#3	1@ 3", BAL @ 18"	AT LEVEL 6 & 35: TM = 4 1/4"
XPTB38	48	26	574	23 3/4	2 1/4	18 1/2	0.5	6#8	6#8	6#8	2#8	5#7	5#7	–	4C	#4	1@ 3", BAL @ 16"	AT LEVEL 24, 25 & 26: PROVIDE ADDITIONAL 2 #7 BOTTOM LONG BARS. AT LEVEL 7: PROVIDE ADDITIONAL 2 #8 TOP SHORT BARS
XPTB39	48	26	1122	–	4 1/4	19 1/2	0.625	–	–	4#8	4#8	4#8	4#8	–	6C	#4	1@ 3", BAL @ 12"	X/L MEASURED FROM COLUMN-SUPPORTED END.
XPTB40	48	26	642	23 3/4	4 1/4	18 1/2	0.5	4#8	4#8	4#8	4#8	4#8	4#8	–	2C	#4	1 (6 LEGS) @ 3", 12 (6 LEGS) @ 18", BAL @ 18"	
XPTB41	48	26	602	–	4 1/4	18 1/2	0.625	–	–	5#8	5#8	4#8	2#8	–	2C	#4	1@ 3", 12 @ 8", BAL @ 18"	X/L MEASURED FROM WALL-SUPPORTED END.
XPTB42	48	26	560	23 3/4	4 1/4	18 1/2	0.5	4#8	4#8	4#8	4#8	4#8	4#8	–	2C	#3	1@ 3", 6 @ 16", BAL @ 18"	
XPTB43	48	26	371	23 3/4	2 1/4	18 1/2	0.625	4#7	2#7	4#7	2#7	4#8	4#8	–	2C	#3	1@ 3", 4 @ 6", BAL @ 18"	AT LEVEL 19: PROVIDE AN EFFECTIVE FORCE OF 268K. X/L MEASURED FROM WALL-SUPPORTED END.
XPTB44	24	26	366	23 3/4	2 1/4	18 3/4	0.5	4#6	2#6	4#6	2#6	4#6	4#6	–	2C	#3	1@ 3", BAL @ 10"	
XPTB45	48	32	695	29 3/4	2 1/4	21 1/2	0.5	4#8	4#8	4#8	4#8	5#8	5#8	–	2C	#3	1@ 3", BAL @ 20"	
XPTB46	48	26	935	23 3/4	2 1/4	19 1/2	0.625	4#8	4#8	4#8	4#8	4#8	4#8	–	4C	#4	1@ 3", 26 @ 6", BAL @ 12"	AT LEVEL 19: PROVIDE AN EFFECTIVE FORCE OF 820K. X/L MEASURED FROM WALL-SUPPORTED END.
XPTB47	48	26	622	23 3/4	2 1/4	18 3/4	0.5	6#8	6#8	6#8	6#8	5#7	5#7	–	2C	#4	1@ 3", 18 @ 4", BAL @ 18"	
XPTB48	48	26	455	11	22 1/2	–	0.5	4#7	4#7	–	–	4#7	4#7	–	2C	#3	1@ 3", BAL @ 18"	
XPTB49	48	21	224	18 3/4	2 1/4	–	0.5	4#7	4#7	–	–	4#7	4#7	–	2C	#3	1@ 3", BAL @ 15"	
XPTB50	36	21	409	18 3/4	2 1/4	14 1/2	0.625	4#7	2#7	4#7	2#7	4#7	4#7	–	2C	#3	1@ 3", BAL @ 15"	X/L MEASURED FROM WALL-SUPPORTED END.
XPTB51	48	26	633	23 3/4	2 1/4	18	0.625	4#7	4#7	4#7	4#7	6#7	6#7	–	2C	#3	1@ 3", BAL @ 18"	X/L MEASURED FROM WALL-SUPPORTED END.
XPTB52	48	26	198	23 3/4	2 1/4	–	0.5	4#7	2#7	–	–	4#7	2#7	–	2C	#3	1@ 3", BAL @ 15"	
XPTB53	48	26	742	23 3/4	2 1/4	18 3/4	0.5	5#8	5#8	5#8	5#8	5#7	5#7	–	2C	#4	1@ 3", 6 @ 10", BAL @ 18"	AT LEVEL 6: TM = 4 1/4"
XPTB54	48	21	340	18 3/4	2 1/4	–	0.5	4#7	4#7	–	–	4#7	2#7	–	2C	#3	1@ 3", BAL @ 15"	
XPTB55	48	26	198	23 3/4	2 1/4	–	0.5	4#7	2#7	–	–	4#7	4#7	–	2C	#3	1@ 3", BAL @ 18"	
XPTB56	30	21	234	18 3/4	2 1/4	15 1/2	0.5	4#7	2#7	4#7	2#7	4#7	2#7	–	2C	#3	1@ 3", BAL @ 15"	
XPTB57	36	26	560	23 3/4	2 1/4	18 1/2	0.5	4#7	2#7	4#7	2#7	4#7	4#7	–	2C	#3	1@ 3", BAL @ 15"	AT LEVEL 34: PROVIDE ADDITIONAL 4 #7 BOTTOM LONG BARS AND 2 #7 BOTTOM SHORT BARS.
XPTB58	36	26	252	23 3/4	2 1/4	18	0.5	4#7	4#7	4#7	4#7	4#7	2#7	–	2C	#3	1@ 3", BAL @ 18"	AT LEVEL 47: PROVIDE AN EFFECTIVE FORCE OF 304K.
XPTB59	48	21	565	–	2 1/4	14 1/2	0.5	–	–	4#7	2#7	4#7	2#7	–	2C	#3	1@ 3", BAL @ 15"	
XPTB60	60	36	400	–	2 1/4	22	0.5	–	–	6#7	6#7	10#7	–	–	2C	#3	1@ 3", BAL @22"	
XPTB61	48	26	770	23 3/4	4 1/4	18 3/4	0.625	4#8	4#8	4#8	4#8	4#8	4#8	–	4C	#4	1@ 3", 8 @8", BAL @18"	X/L MEASURED FROM WALL-SUPPORTED END.
XPTB62	60	21	1178	–	2 1/4	14 1/2	0.5	–	–	4#8	4#8	8#8	6#8	–	4C	#4	1@ 3", BAL @12"	
XPTB63	36	36	530	33 3/4	2 1/4	25	0.5	4#8	4#8	4#8	4#8	6#8	6#8	–	2C	#3	1@ 3", BAL @22"	AT LEVEL 2: PROVIDE AN EFFECTIVE FORCE OF 360K
XPTB64	48	30	733	–	4 1/4	22	0.5	–	–	6#8	4#8	4#8	4#8	–	4C	#4	1@ 3", 12 @ 10", BAL @ 20"	
MPTB01	48	30	458	27 3/4	2 1/4	22	0.5	6#8	6#8	6#8	6#8	6#8	4#8	–	2C	#4	1@ 3", BAL @ 15"	AT LEVEL 4: TM = 4 1/4", PROVIDE ADDITIONAL 2 #8 SHORT BOTTOM BARS.
MPTB02	48	30	423	27 3/4	2 1/4	22	0.5	6#8	4#8	6#8	4#8	6#8	4#8	–	2C	#4	1@ 3", BAL @ 20"	AT LEVEL 4: TM = 4 1/4"
MPTB03	48	30	579	27 3/4	2 1/4	22	0.5	6#8	4#8	6#8	4#8	6#8	4#8	–	2C	#4	1@ 3", 15 @ 12", BAL @ 20"	AT LEVEL 4: TM = 4 1/4"
MPTB04	48	30	329	27 3/4	2 1/4	20	0.5	6#8	4#8	6#8	4#8	6#8	4#8	–	2C	#4	1@ 3", 14@ 10"BAL @ 20"	AT LEVEL 4 AND LEVEL 5: TM = 4 1/4" AT LEVEL 49: TM = 4 1/4"
MPTB05	48	30	316	27 3/4	6 1/4	20	0.5	6#8	4#8	6#8	4#8	4#8	2#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB06	48	42	450	39 3/4	2 1/4	28 1/2	0.5	6#8	2#8	6#8	2#8	6#8	2#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB07	48	42	828	–	2 1/4	26 1/2	0.5	–	–	6#8	2#8	8#8	6#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB08	48	42	364	39 3/4	2 1/4	26 1/2	0.5	6#8	2#8	6#8	2#8	6#8	2#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB09	48	30	659	27 3/4	2 1/4	20	0.5	6#8	2#8	6#8	2#8	6#8	2#8	–	2C	#4	1@ 3", BAL @ 20"	PROVIDE 30 #4 STIRRUPS (4 LEGS) @ 6" FROM DISCONTINUOUS END.
MPTB10	48	42	668	39 3/4	2 1/4	29 3/4	0.5	6#8	2#8	6#8	2#8	8#8	6#8	–	2C	#4	1@ 3", 16 @ 8", BAL @ 20"	
MPTB11	48	36	544	33 3/4	2 1/4	25	0.5	6#8	4#8	6#8	4#8	8#8	6#8	–	2C	#4	1@ 3", 24 @ 8", BAL @ 20"	AT LEVEL 5: TM = 4 1/4", PROVIDE 2 ADDITIONAL #8 SHORT TOP BARS. AT LEVEL 49: TM = 4 1/4"; PROVIDE ADDITIONAL 2#8 TOP LONG BARS
MPTB12	48	30	566	27 3/4	2 1/4	21 1/2	0.625	6#8	6#8	6#8	6#8	6#8	6#8	–	2C	#4	1@ 3", 16 @ 10", BAL @ 20"	AT LEVEL 3: ON GRID CH.5 PROVIDE 20 STIRRUPS @ 6" (6 LEGS) AT CONTINUOUS END AT LEVEL 4: TM = 4 1/4"
MPTB13	48	42	418	39 3/4	37	–	0.5	6#8	2#8	6#8	2#8	6#8	2#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB14	48	30	482	-	2 1/4	17 1/2	0.5	-	-	8#8	6#8	6#8	4#8	–	2C	#4	1@ 3", BAL @ 18"	
MPTB15	48	72	660	-	4 1/4	47 1/4	0.5	-	-	6#8	6#8	12#8	-	–	2C	#4	1@ 3", BAL @ 20"	
MPTB16	48	72	1130	-	4 1/4	36	0.5	-	-	6#8	6#8	8#8	8#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB17	48	36	714	33 3/4	2 1/4	25 1/2	0.5	-	-	6#8	6#8	8#8	6#8	–	2C	#4	1@ 3", BAL @ 10"	AT LEVEL 4: TM = 4 1/4"
MPTB18	48	72	1310	-	4 1/4	36	0.5	-	-	6#8	6#8	10#8	10#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB19	48	36	416	33 3/4	4 1/4	21 1/4	0.5	6#8	4#8	6#8	4#8	8#8	6#8	–	2C	#4	1@ 3", BAL @ 20"	AT LEVEL 34: TM = 2 1/4"
MPTB20	48	30	616	27 3/4	4 1/4	21 1/2	0.5	6#8	4#8	6#8	4#8	6#8	4#8	–	6C	#4	1@ 3", 10@ 12", BAL @ 20"	
MPTB21	48	36	429	33 3/4	2 1/4	24 3/4	0.625	6#8	4#8	6#8	2#8	8#8	6#8	–	6C	#4	1@ 3", 12@ 12", BAL @ 20"	AT LEVEL 4 AND LEVEL 5: TM = 4 1/4"
MPTB22	48	30	388	27 3/4	2 1/4	20 3/4	0.625	6#8	4#8	6#8	2#8	8#8	6#8	–	2C	#4	1@ 3", BAL @ 20"	AT LEVEL 4: TM = 4 1/4"
MPTB23	48	42	621	-	4 1/4	291/4	0.5	-	-	10#8	10#8	6#8	4#8	–	6C	#4	1@ 3", 40@ 4", BAL @ 20"	
MPTB24	48	36	333	-	4 1/4	23	0.5	-	-	8#8	6#8	6#8	6#8	–	4C	#4	1@ 3", BAL @ 20"	
MPTB25	48	36	480	33 3/4	4 1/4	25	0.625	6#8	6#8	6#8	2#8	8#8	8#8	–	4C	#4	1@ 3", BAL @ 20"	PROVIDE 14 #4 STIRRUPS (8 LEGS) @6" FROM CONTINUOUS END. AT LEVEL 5: PROVIDE AN EFFETIVE FORCE OF 822 K.
MPTB26	48	36	750	33 3/4	4 1/4	25	0.625	8#8	8#8	8#8	8#8	8#8	6#8	5#9	6C	#4	1@ 3" (6 LEGS), 16@ 8" (6 LEGS), BAL @ 20"	
MPTB27	48	36	444	33 3/4	16	-	0.5	8#8	8#8	-	-	6#8	-	5#9	4C	#4	1@ 3", BAL @ 20"	
MPTB28	48	30	500	27 3/4	4 1/4	20	0.5	6#8	4#8	6#8	4#8	6#8	4#8	–	4C	#4	1@ 3", BAL @ 20"	AT LEVEL 49: TD= [illegible]" AND PROVIDE AN EFFECTIVE FORCE OF 525K
MPTB29	48	44	500	-	2 1/4	30 3/4	0.5	-	-	6#7	6#7	8#7	8#7	–	2C	#4	1@ 3", BAL @ 22"	
MPTB30	48	30	442	27 3/4	6 1/4	-	0.5	6#8	6#8	-	-	6#8	6#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB31	48	36	494	-	4 1/4	25	0.5	-	-	8#8	6#8	6#8	6#8	–	2C	#4	1@ 3", BAL @ 20"	
MPTB32	48	36	1092	-	4 1/4	26	0.5	-	-	4#8	4#8	8#8	6#8	–	6C	#4	1@ 3", 30@ 6", BAL @ 20"	

POST - TENSIONED BEAM SCHEDULE

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NYC Development Hub

HUDSON YARDS - TOWER C

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No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Issue Date: -
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S6-0301

Drawing Title

POST-TENSIONED BEAM SCHEDULE I (22)

Drawing Number
S6-0301

B-Scan Drawing Number
S-152.00 SHEET 114 OF 118

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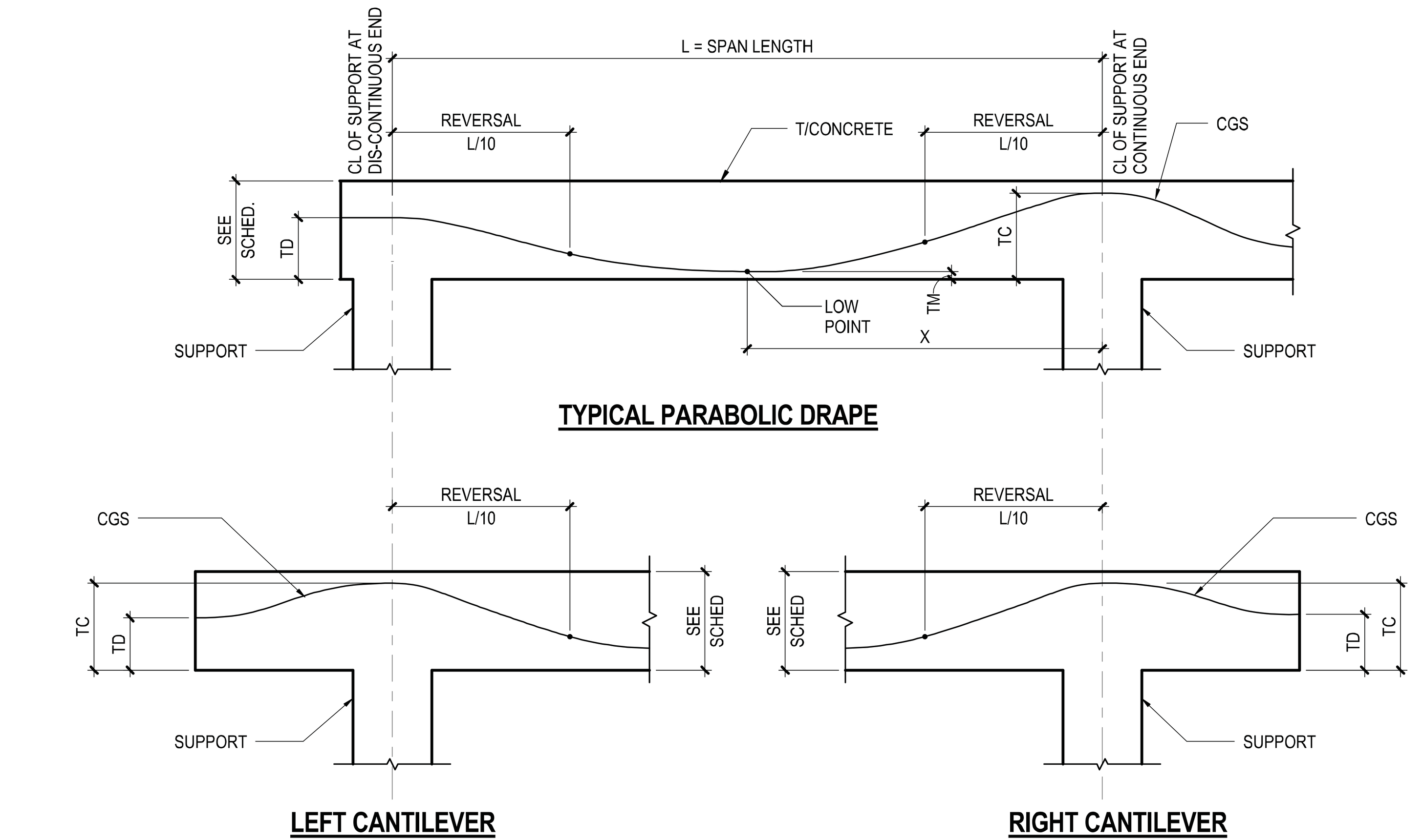
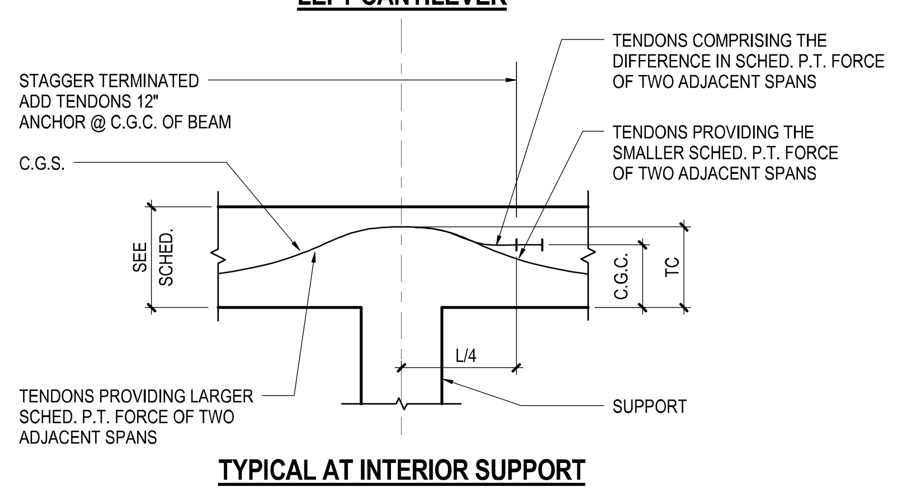
S6-0301 2/13/2013 10:31:49 AM POST-TENSIONED BEAM SCHEDULE I C:\Users\amaloney\Documents\N11329.00\Revit\N11329.00 - TOWER C - amlocal.rvt





NOTES:

1) DIMENSIONS TC, TM, TD ARE MEASURED FROM BOTTOM OF BEAM TO CENTROID OF TENDON FORCE (CGS).

2) TENDON DRAPE SHALL CONFORM TO A PARABOLIC CURVE IN REGION ADJACENT TO TM. TENDON DRAPE SHALL CONFORM TO A REVERSED PARABOLIC CURVE WITHIN THE SUPPORT WIDTH IN THE DIRECTION PARALLEL TO BEAM SPAN.

3) SEE "REMARKS" FOR NON-STANDARD TENDON PROFILES.

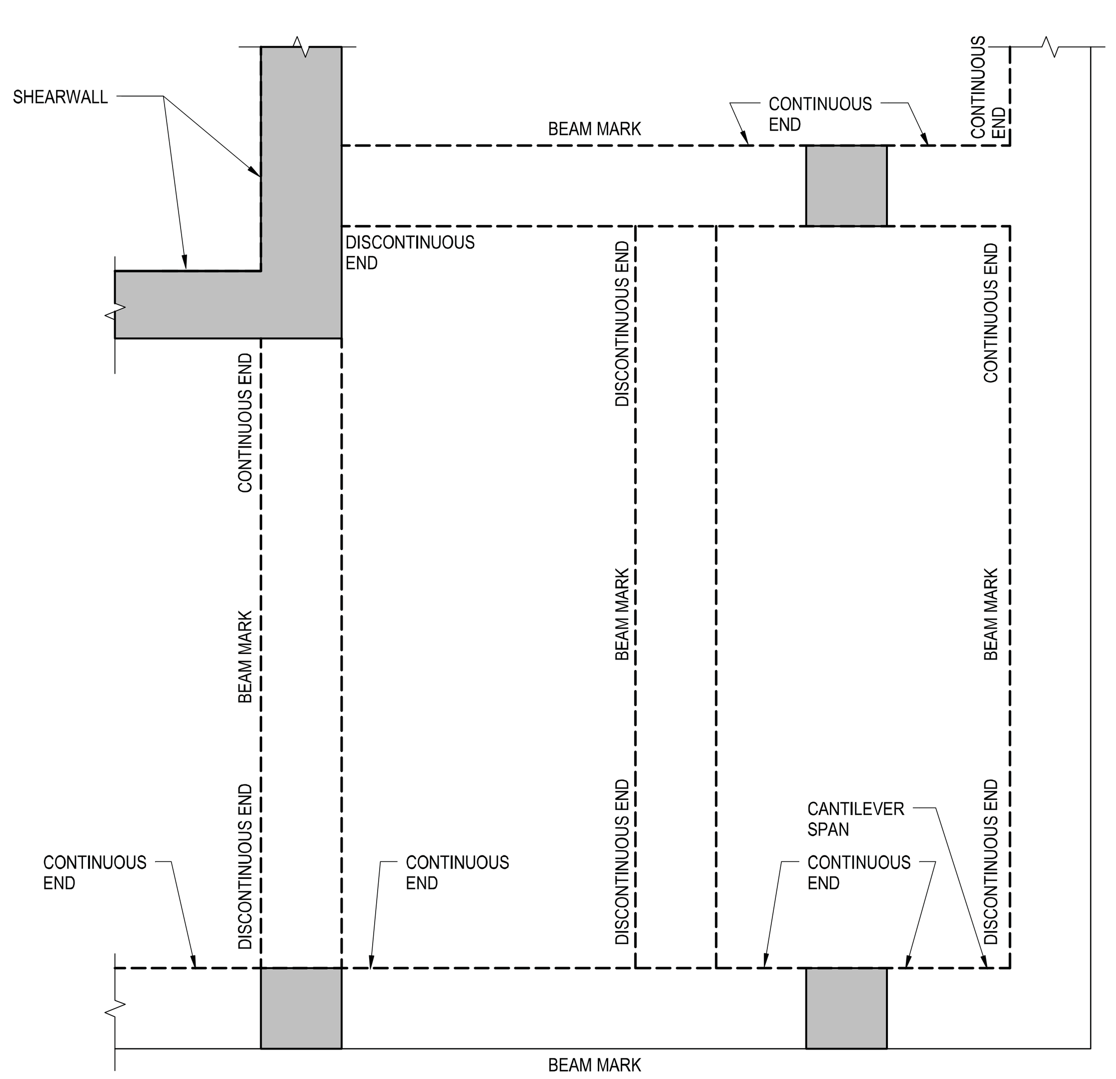
4) C.G.C. INDICATES THE CENTROID OF CONCRETE SECTION.

5) WHERE BEAM END FRAMES PARALLEL INTO SHEARWALLS, BEAM END TO BE CONSIDERED CONTINUOUS. REFER TO BEAM ORIENTATION KEY PLAN

POST-TENSIONED BEAM TENDON PROFILES

1 POST-TENSIONED BEAM TENDON PROFILES

3/8" = 1'-0"



2 POST- TENSIONED BEAM ORIENTATION KEY PLAN

1/4" = 1'-0"

POST-TENSION BEAM SCHEDULE

f'c= SEE GENERAL NOTES

BEAM MARK	SIZE W (IN)	SIZE H (IN)	POST-TENSION TENDONS EFFECTIVE FORCE (KIPS)	TC (IN)	TM (IN)	TD (IN)	X/L	REINFORCEMENT CONTINUOUS END TOP BARS LONG	CONTINUOUS END TOP BARS SHORT	DIS-CONTINUOUS END TOP BARS LONG	DIS-CONTINUOUS END TOP BARS SHORT	BOTTOM BARS LONG	BOTTOM BARS SHORT	SIDE BARS EACH FACE SEE NOTE 4	STIRRUPS TYPE	STIRRUPS SIZE	STIRRUPS SPACING FROM EACH END	REMARKS
APTB01	48	26	985	23 3/4	2 1/4	18 1/2	0.5	7#8	7#8	7#8	4#8	5#8	5#8	5#9	2C	#3	1@ 3", 12@ 6", BAL @ 18"	
			440		18 1/2		–											
APTB02	60	26	780		18 1/2		–	6#7	6#7	6#7	6#7	5#7	5#7	6#9	2C	#4	1@ 3", BAL @ 6"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
APTB03	48	26	460		18 1/2		–	5#7	5#7	5#7	5#7	5#7	5#7	3#9	2C	#4	1@ 3", BAL @ 8"	
APTB04	48	26	482	23 3/4	2 1/4	18 1/2	0.5	4#7	4#7	4#7	4#7	4#7	4#7	3#9	2C	#3	1@ 3", BAL @ 18"	
			460		18 1/2		–											
APTB05	48	26	500		18 1/2		–	6#8	6#8	6#8	4#8	4#8	4#8	3#9	2C	#4	1@ 3", BAL @ 8"	
APTB06	48	26	389	–	2 1/4	18 3/4	0.5	–	–	4#7	4#7	4#7	4#7	3#9	2C	#3	1@ 3", BAL @ 18"	
			315		18 3/4		–											
APTB07	48	26	419	23 3/4	2 1/4	18 1/2	0.5	4#7	6#7	4#7	4#7	4#7	4#7	3#9	2C	#3	1@ 3", BAL @ 18"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
			570		18 1/2		–											
APTB08	48	26	665		19 1/2		–	6#8	4#8	6#8	4#8	4#8	4#8	3#9	2C	#4	1@3", BAL @ 8"	AT CANTILEVER: PROVIDE #4 STIRRUPS @ 4"
APTB09	48	26	650		19 1/2		–	6#8	4#8	6#8	4#8	5#7	5#7	3#9	2C	#4	1@ 3", BAL @ 8"	
APTB10	48	26	390		19 1/2		–	6#7	6#7	6#7	6#7	5#7	5#7	2#9	2C	#4	1@ 3", BAL @ 8"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
APTB11	48	26	480	23 3/4	2 1/4	19 1/2	0.5	4#7	4#7	4#7	4#7	4#7	4#7	2#9	2C	#3	1@ 3", BAL @ 12"	
			504		19 1/2		–											
APTB12	60	26	875		18 1/2		–	6#8	8#8	6#8	6#8	4#8	4#8	5#9	2C	#4	1 (4 LEGS) @ 3", 12 (4 LEGS) @ 6", BAL @ 6"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
APTB13	48	26	504	23 3/4	2 1/4	18 1/2	0.5	4#8	4#8	4#8	4#8	4#8	4#8	3#9	2C	#3	1@ 3", BAL @ 18"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
			460		18 1/2		–											
APTB14	48	26	354	23 3/4	2 1/4	18 1/2	0.625	4#7	4#7	4#7	4#7	4#7	2#7	4#9	2C	#3	1@ 3", BAL @ 18"	
			520		18 1/2		–											
APTB15	48	26	419	23 3/4	8	–	0.5	4#7	4#7	–	–	6#7	4#7	4#9	2C	#3	1@ 3", BAL @ 18"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
			520		18 1/2		–											
APTB16	48	36	1350		25		–	6#8	8#8	6#8	6#8	6#8	6#8	8#9	2C	#4	1 (4 LEGS) @ 3", 12 (4 LEGS) @ 6", BAL @ 10"	PROVIDE STIRRUPS @ 6" SPACING MAX FOR CANTILEVERS.
APTB17	48	36	468	33 3/4	2 1/4	25	0.5	6#8	8#8	6#8	6#8	6#8	6#8	8#9	2C	#4	1@ 3", BAL @ 18"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
			1350		25		–											
APTB18	36	26	460		18 1/2		–	5#8	5#8	5#8	5#8	4#8	2#8	2#9	2C	#4	1@3", BAL @ 8"	
APTB19	36	21	348		13 1/2		–	12#8	–	–	–	12#8	–	2#9	2C	#5	1@3", BAL @ 12"	
APTB20	48	36	429	33 3/4	2 1/4	–	0.5	4#8	4#8	–	–	6#8	4#8	5#9	2C	#4	1@ 3", BAL @ 18"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
			854		26		–											
APTB21	48	36	480	33 3/4	2 1/4	26	0.5	4#8	4#8	4#8	4#8	4#8	4#8	5#9	2C	#4	1@ 3", BAL @ 18"	
			854		26		–											
APTB22	48	36	385	33 3/4	2 1/4	–	0.5	6#8	8#8	–	–	6#8	6#8	8#9	2C	#4	1@ 3", BAL @ 18"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
			1350		25		–											
APTB23	48	26	350	23 3/4	2 1/4	–	0.5	4#8	4#8	–	–	4#8	2#8	2#9	2C	#3	1@ 3", BAL @ 18"	WHERE BEAM FRAMES INTO CORE WALL, DEAD-END ANCHORS SHALL BE EMBEDDED 8 FT INTO CORE WALL.
			480		18 1/2		–											

POST - TENSIONED BEAM SCHEDULE-A

22

NOTES: 22

1. TOP OF BEAM IS TOP OF SLAB UON
2. CONTINUOUS END AND DIS-CONTINUOUS END OF BEAM ARE DEFINED ON BEAM ORIENTATION KEY PLAN
3. X/L IS RATIO OF TENDON LOW POINT LOCATION (MEASURED FROM THE CONTINUOUS END OF THE SPAN) TO THE SPAN LENGTH. SEE TYPICAL POST-TENSIONED BEAM ELEVATION.
4. SEE TYPICAL CONCRETE BEAM SECTION DETAIL WHERE NO SIDE BARS ARE INDICATED
5. SEE TYPICAL CONCRETE BEAM DETAILS FOR BEAM STIRRUP TYPES
6. ADJ INDICATES SEE ADJACENT BEAM
   - INDICATES CELL INTENTIONALLY LEFT BLANK
7. WHERE SCHEDULED EFFECTIVE PRESTRESSED FORCE DIFFERS BETWEEN CONTINUOUS SPANS SEE TYPICAL POST-TENSIONED BEAM DETAIL WITH ADDED TENDONS

NONPRESTRESSED REINFORCEMENT LEGEND:

NUMBER OF BARS — BAR SIZE — BAR LENGTH

3-#9x7'-2"

S6-0302
2/15/2013 10:34:03 AM
POST-TENSIONED BEAM SCHEDULE II
C:\Users\amaloney\Documents\N11329.00\Revit\N11329.00 - TOWER C - amlocal.rvt

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Buildings
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Mechanical, Electrical, Plumbing, Fire Protection
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No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013 (22)
1	DI-12: STRUCTURE	12/14/2012

Key Plan

STATE OF NEW YORK · AINE M. BRAZIL · 062542-1 · LICENSED PROFESSIONAL ENGINEER

Issue Date: 12/11/12
Project No. 1776.10
Drawn By Author
Sheet Number

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Drawing Title

22

POST-TENSIONED BEAM SCHEDULE II

Drawing Number

S6-0302

B-Scan Drawing Number

S-153.00 SHEET 115 OF 118

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Each cell: load (dead) / load (live) / column size and vertical reinforcement.

FLOOR	CONCRETE STRENGTH	C2-CA C5.1S-CA	C5-CA	C7-CA	C7.7-CA	C9-CA	C9.7-CA	C11-CA	C17-CA
51									
50	6 KSI	*	*	*		*			
49	6 KSI	280 35 30X30 12 #9	320 340 30X30 12 #9	290 65 30X30 12 #9		220 30 30X30 12 #9			
48	6 KSI	480 200	565 555	530 280		425 215			
47	6 KSI	640 340	760 725	730 455		595 360			
46	6 KSI	765 375	915 775	880 500		730 400			
45	6 KSI	890 410	1065 810	1030 540		865 435			
44	6 KSI	1015 440	1220 850	1185 575		1010 470			
43	6 KSI	1140 465	1370 885	1335 610		1155 505			
42	6 KSI	1265 495	1520 915 12 #9	1490 645		1310 540			
41	6 KSI	1390 520 30X30 12 #9	1675 950 16 #9	1640 680		1465 575			
40	6 KSI	1520 550 36X30 12 #9	1825 985 30X30 16 #9 (22)	1795 715 12 #9		1630 610			
39	6 KSI	1650 575	1980 1020 36X30 12 #9	1945 750 16 #9		1800 650			
38	6 KSI	1780 605	2135 1055	2095 780 16 #9		1950 685		120 40 30X24 8 #9	
37	8 KSI	1905 630	2290 1090	2250 815 12 #9		2105 720		240 75	
36	8 KSI	2035 655	2445 1125 12 #9	2400 850		2255 755 30X30 12 #9		365 105	
35	8 KSI	2190 685	2635 1160 16 #10	2585 885 30X30 12 #9		2440 790 36X30 12 #9		520 135	
34	8 KSI	2390 710 12 #9	2875 1195 36X30 16 #10	2825 920 36X30 12 #11		2685 820		725 165	
33	8 KSI	2555 845 16 #10	3080 1365 36X36 16 #10	3025 1095		2885 995		905 365	
32	8 KSI	2685 875 16 #10	3240 1400	3185 1130		3040 1030		1050 400	
31	10 KSI	2810 900 12 #10	3395 1435	3340 1160		3195 1065		1195 435	
30	10 KSI	2940 930	3555 1470	3495 1195		3350 1100		1345 470	
29	10 KSI	3070 955	3715 1505	3650 1230		3505 1135		1500 505	
28	10 KSI	3195 985 36X30 12 #10	3875 1540	3805 1265 36X30 12 #11		3660 1170 12 #9		1660 540	
27	10 KSI	3330 1010 36X36 12 #10	4030 1575	3960 1300 36X36 12 #11		3815 1200 16 #10		1825 580	
26	10 KSI	3460 1035	4190 1610	4120 1335		3970 1235 36X30 16 #10		1990 620	
25	10 KSI	3595 1065	4350 1645	4280 1370		4130 1270 36X36 12 #10		2160 660	
24	10 KSI	3740 1090 36X36 12 #10	4525 1680 36X36 16 #10	4455 1405 36X36 12 #11		4305 1305 36X36 12 #10		2355 700 30X24 8 #9	

FLOOR	C17S-CA	C19-CA	C21-CA	C1-CB C1-CDS	C17-CC C24S-CC	C17S-CC	C21.3-CC	C12.2S-CC.4
51								
50	*			*				*
49	210 35 30X30 12 #9			185 15 30X30 12 #9				280 55 30X30 12 #9
48	415 75			285 90				505 250
47	600 265			370 145				695 405
46	750 305			435 170				860 450
45	900 335			505 185				1030 490
44	1050 370			575 200				1210 530
43	1210 405			645 215				1395 565
42	1370 440			710 230				1585 605 12 #9
41	1540 475			780 240				1785 650 12 #10
40	1710 515			850 255				1990 690 30X30 12 #10
39	1805 535			915 265				2200 735 30X36 12 #10
38	1910 555			985 280				2420 780
37	2020 575			1055 290				2640 825
36	2130 595 12 #9			1120 300				2870 875
35	2245 620 16 #9			1200 315				3145 925 30X36 12 #10
34	2415 645			1305 325				3330 945 36X36 12 #10
33	2565 670			1390 385				3485 1065 36X36 12 #10
32	2720 700			1460 395				3645 1095 36X60 20 #10 WK
31	2880 725			1525 405	245 140 30X30 8 #10			3900 1195 36X60 20 #10 WK
30	3040 755			1595 415	465 200			4125 1245 36X36 12 #10
29	3210 785			1665 430	690 250			TRANSFER WALL
28	3380 815 30X30 16 #9			1730 440	920 300			TRANSFER WALL (22)
27	3560 845 36X30 12 #9			1800 450	1160 350			X
26	3750 880 12 #9			1870 465	1405 400			
25	3945 915 16 #9			1935 475	1605 440			
24	4145 950 36X30 16 #9			2015 485 30X30 12 #9	1815 485 30X30 8 #10			

FLOOR	C4.5-CC.5 C4.9-CD.5	C7.5-CC.5 C6.3-CD.5	C9.5-CC.5 C8.3-CD.5	C11.5-CC.5 C10.9-CD.5	C12.5-CC.5 C12.3-CD.5	C1-CD	C15.3-CD.5	C18.3-CD.5
51								
50						*		
49	615 955 42X42 16 #10	495 670 42X42 16 #10	295 115 42X42 16 #10			365 345 30X30 12 #9		
48	1030 1345	840 990	610 405			650 610		
47	1375 1660	1125 1245	880 645			885 820		
46	1645 1740	1360 1310	1095 705			1065 870		
45	1915 1805	1595 1360	1310 760			1240 915		
44	2185 1865 42X42 16 #10	1835 1415	1535 815			1420 960 12 #9		
43	2470 1930 60X42 24 #10	2070 1465	1765 870			1600 1000 16 #9		
42	2750 1995	2305 1515	2000 925			1780 1045 30X30 16 #9		
41	3035 2055	2540 1565	2245 980			1965 1085 30X36 16 #9		
40	3315 2120	2780 1620 42X42 16 #10	2490 1040			2145 1125 16 #9		
39	3600 2180	3025 1670 60X42 24 #10	2740 1100			2330 1170 20 #11		
38	3880 2245	3275 1720	3000 1165			2510 1210 20 #11		
37	4165 2310	3525 1770	3265 1225			2690 1255 16 #11		
36	4450 2370	3755 1825	3535 1290 42X42 16 #10			2875 1295 30X36 16 #11	(22)	
35	4790 2435	4035 1875	3885 1360 60X42 24 #10			3100 1335 36X36 16 #11		
34	5210 2495	4395 1925	4260 1415	280 60 36X36 12 #10		3390 1380 16 #11		
33	5570 2810	4690 2180	4575 1685	520 330		3630 1590 20 #11		
32	5880 2875	4945 2230	4840 1740	715 375		3835 1630 20 #11		
31	6160 2935	5195 2285	5085 1795	915 420		4020 1675 16 #11		
30	6445 3000	5445 2335	5325 1845	1110 465 36X36 12 #10		4210 1715		
29	6725 3065	5695 2385	5565 1900	1340 520 42X42 12 #11		4395 1755		
28	7010 3125	5945 2435	5810 1955	1570 570		4580 1800 16 #11		
27	7295 3190	6190 2490	6050 2010	2435 740	4620 1295 42X42 12 #11	4765 1840 16 #14		
26	7575 3250	6440 2540	6295 2065	2665 790	4830 1345	4950 1885 16 #14		
25	7860 3315	6690 2590	6535 2120	2895 845	5050 1395	5140 1925 16 #18		
24	8170 3380 60X42 24 #10	6945 2640 60X42 24 #10	6805 2175 60X42 24 #10	3150 900 42X42 12 #11	5305 1450 42X42 12 #11	5345 1965 36X36 16 #18		

FLOOR	C23-CD.5	C27-CD.5	C21.3-CD.7	C12.2-CD.9 C12.2S-CE	C12.9-CD.9	C17-CD.9 C24S-CE	C1-CF	C17-CF.2	C19.3-CF.2	CONCRETE STRENGTH
51										
50				*			*			6 KSI
49				325 45 30X30 12 #9			310 65 30X30 12 #9			6 KSI
48				540 230			575 305			6 KSI
47				720 385			795 500			6 KSI
46				865 430			960 550			6 KSI
45				1015 470			1125 590			6 KSI
44				1165 505			1290 630			6 KSI
43				1325 540			1455 670			6 KSI
42				1485 575			1625 705 12 #9			6 KSI
41				1655 615			1790 745 16 #9			6 KSI
40				1825 655 30X30 12 #9			1955 785 16 #9			6 KSI
39				2010 695 36X30 12 #9 (22)			2120 820 16 #11			6 KSI
38				2195 740			2290 860 16 #11			6 KSI
37				2385 785			2455 900 16 #10			8 KSI
36				2585 830			2620 935 30X30 16 #10			8 KSI
35				2830 875 12 #9			2825 975 30X36 20 #10			8 KSI
34				2960 890 16 #10			3090 1015 20 #10			8 KSI
33				3080 990 36X30 16 #10			3310 1205 20 #11			8 KSI
32			(22)	3190 1015 36X32 16 #10 WK			3495 1245 20 #11			8 KSI
31				3420 1115 36X30 12 #10		235 140 30X30 8 #10	3665 1285 16 #11			10 KSI
30				3640 1165 36X30 12 #10		450 200	3835 1320 30X36 16 #11			10 KSI
29				3875 1215 36X36 12 #10		665 250	4005 1360 36X36 16 #11			10 KSI
28				4105 1270		885 300	4180 1400			10 KSI
27				4465 1325 36X36 12 #10		1115 350	4350 1435			10 KSI
26				TRANSFER WALL		1350 400	4525 1475 16 #11			10 KSI
25				X		1540 440	4700 1515 20 #11			10 KSI
24						1740 485 30X30 8 #10	4890 1550 36X36 20 #11			10 KSI

COLUMN NOTES:

1. FOR TOP OF STRUCTURAL SLAB ELEVATIONS SEE PLANS
2. PROVIDE COMPRESSION LAP SPLICE AT ALL VERTICAL BARS UNLESS OTHERWISE NOTED
   SEE COLUMN LAP SPLICE SCHEDULE FOR SPLICE LENGTH
3. AT COLUMNS DESIGNATED AS TENSION (T) PROVIDE TENSION LAP SPLICE AT ALL VERTICAL BARS
   SEE COLUMN LAP SPLICE LENGTH SCHEDULE FOR SPLICE LENGTH
4. PROVIDE #4@12" TIES UNLESS OTHERWISE NOTED
   TIE SPACING IS NOT TO EXCEED LEAST COLUMN DIMENSION OR 16 VERICAL BAR DIAMETERS
5. COLUMN SIZES SHOWN ARE MEASURED PERPENDICULAR TO THE AXIS OF THE GRIDLINE AND ARE IN INCHES. FOR STRAIGHT COLUMNS THIS CORRESPONDS TO THE DIMENSION IN PLAN. FOR SLOPING COLUMNS IT VARIES BY GRIDLINE SLOPE. FOR COLUMN ORIENTATION SEE PLAN. (TYPICALLY FIRST NUMBER INDICATES DIMENSION IN EAST-WEST DIRECTION AND SECOND NUMBER INDICATES DIMENSION IN NORTH-SOUTH DIRECTION.)
6. COLUMN LOADS SHOWN ON SCHEDULE ARE AS FOLLOWS:

   XXX = SERVICE AXIAL DEAD LOAD IN KIPS x 1.2
   XXX = SERVICE AXIAL REDUCED LIVE LOAD IN KIPS x 1.6
7. WHERE SCHEDULED INFORMATION IS NOT SHOWN SEE FLOOR BELOW

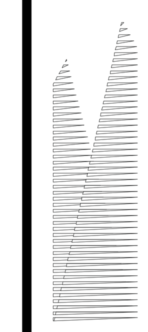
COLUMN LEGEND:

COLUMN LOAD SEE NOTE 6 → 200 / 115
COLUMN SIZE SEE NOTE 5 → 24x24
VERTICAL REINFORCEMENT → 8 #8 T
TENSION DESIGNATION SEE NOTE 3 → T
COLUMN TIES SEE NOTE 4 → #4@16
COLUMN TYPE SEE TYPICAL COLUMN DETAILS → D

8. *: FOR CROWN COLUMN SIZES SEE S3-0320
9. TWO GRID LABELS THAT APPEAR IN ONE CELL INDICATE SAME COLUMN SHIFTS.
10. FOR COMPOSITE COLUMN REINFORCEMENT SEE DETAIL 8 ON S5-0221
    SEE COLUMN SCHEDULE FOR LOCATIONS
11. NOTATION:
    - BH INDICATES COLUMNS THAT NEED BLAST HARDENING SEE DETAIL 4 ON S5-0222
    - WK INDICATES COLUMNS THAT WALK SEE DETAIL 2 ON S5-0222
    - BD INDICATES COLUMNS WITH BUNDLED BARS SEE DETAIL 2 ON S5-0221
    - EX INDICATES COLUMN BELOW EXTENDING INTO TRANSFER WALL SEE S4-0200 SERIES

HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY



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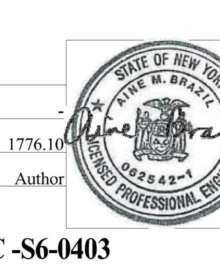
No.	Description	Date
4	ISSUE FOR FILING	02/15/2013
3	DI-22: STRUCTURE	02/01/2013 (22)
2	DI-12: STRUCTURE	12/14/2012
1	ISSUE FOR FILING	08/20/2012

Key Plan

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:28 AM
NYC Development Hub



Issue Date: -
Project No. 1776.10
Drawn By Author
Sheet Number

HYE -TC -S6-0403

Drawing Title

COLUMN SCHEDULE III

Drawing Number

S6-0403

B-Scan Drawing Number

S-154.00 SHEET 116 OF 118

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FLOOR	CONCRETE STRENGTH	C21.9-CF.2	C23.9-CF.2	C25-CF.2	C1-CF.4	C18-CF.8	C12.2-CG C12.2S-CG	C12.9-CG	C20-CG	C24S-CG	C1-CH	C1-CH.2	C12.2-CH.5 C12.2S-CH.5	C12.9-CH.5	C18-CH.5	C24S-CJ	C1-CJ.2	C8-CJ.6	C10-CJ.6	C12-CJ.6	C12.9-CJ.6	C18-CJ.6	C20-CJ.6	C1-CK	C1-CKS	C2-CL	C24S-CM	C2.8-CN	C4-CN	C6-CN	C8-CN	C10-CN C10.2S-CN	C12-CN	C14-CN	C18-CN	C20-CN
51																																				
50	6 KSI						*				*		*												*											
49	6 KSI						275 90 30X30 12 #9				230 40 30X30 12 #9		335 25 30X30 12 #9												205 30 30X30 12 #9											
48	6 KSI						455 240				435 215		525 180												420 215											
47	6 KSI						610 370				610 365		685 315												595 360											
46	6 KSI						735 410				740 405		845 400												760 405	165 95 24X24 8 #9			190 115 24X24 8 #9	200 120 24X24 8 #9	200 120 24X24 8 #9	115 65 24X24 12 #9				
45	6 KSI						860 440				875 440		1005 440												925 440	300 135			345 165	360 170	360 170	205 95 8 #9				
44	6 KSI						985 470				1010 470		1170 475 12 #9												1090 470	430 170			500 205	515 215	515 215	300 120				
43	6 KSI						1120 500				1150 500		1345 510 12 #10												1260 500	565 200			650 245	675 250	675 250	395 145				
42	6 KSI						1255 535				1285 530		1525 540 30X30 12 #10												1425 530	700 230			805 280	835 290	835 290	500 165				
41	6 KSI						1395 565				1425 565		1715 575 36X36 12 #10												1595 560	830 260			955 315	995 325 8 #9	995 325	605 190				
40	6 KSI						1540 595				1565 595		1915 610												1765 590 12 #9	965 290			1110 350 24X24 8 #9	1155 365 12 #9	1155 365 24X24 8 #9	715 215				
39	6 KSI						1690 630				1705 625		2115 645												1935 625 16 #9	1100 320			1270 390 30X30 8 #10	1310 405 24X24 12 #9	1315 405 30X30 8 #10	830 240				
38	6 KSI						1845 665				1850 655		2320 680												2105 655	1230 345			1425 425	1475 440 30X30 8 #10	1480 440	950 265				
37	8 KSI						2005 705				1990 690		2515 715												2280 685	1365 375			1585 460	1640 480	1645 480	1070 290				
36	8 KSI						2175 740				2135 720 30X30 12 #9		2710 755												2425 715	1500 405 24X24 8 #9			1745 495	1805 515	1810 515	1195 320 24X24 8 #9				
35	8 KSI						2380 780 30X30 12 #9				2310 755 30X36 12 #9		2950 795												2570 750 30X30 16 #9	1640 435 30X30 12 #9			1935 535	2005 555	2010 555	1345 345 30X30 12 #9				
34	8 KSI						2510 795 36X30 12 #9				2540 785		3095 805												2775 780 30X36 16 #9	1820 465			2180 570	2255 595 8 #10	2265 595 8 #10	1550 370				
33	8 KSI						2630 895				2730 950		3210 875 36X36 12 #10												2955 810 12 #9	1970 495			2385 795	2470 830 12 #10	2475 830 12 #10	1760 610				
32	8 KSI						2735 920 12 #9				2895 980		3320 890 36X54 20 #10 WK												3135 845	2120 520			2545 835	2635 865	2640 865	1925 645				
31	10 KSI						3005 1035 12 #10			220 130 30X30 12 #10	3045 1015	22	3690 1050 36X54 20 #10 WK			220 130 30X30 8 #10									3315 875	2270 550	165 90 30X30 8 #10		2700 870	2800 905	2805 905	2090 685	235 140 30X30 12 #9	145 85 30X24 8 #9		
30	10 KSI						3255 1095			415 185 8 #10	3200 1050		4025 1125 42X36 12 #10			415 185									3495 910	2420 580	265 120		2860 905 8 #10	2965 945	2970 945 12 #10	2255 720	425 195	270 120		
29	10 KSI						3505 1150 12 #10			615 230	3350 1080		4360 1205			615 230									3670 940	2570 610	365 145		3020 940 12 #10	3130 980	3135 980 12 #11	2420 760	590 235	400 155		
28	10 KSI						3755 1210 16 #11			825 275	3505 1115 12 #9		4695 1280 12 #10			825 275									3850 970 30X36 12 #9	2720 640	465 165		3175 980 30X30 12 #10	3295 1020 30X30 12 #10	3300 1020 30X30 12 #11	2585 795	750 275	530 185		
27	10 KSI						4005 1265 36X30 16 #11			1035 325	3660 1150 12 #10		5030 1360 42X36 16 #10			1035 325									4030 1005 36X36 12 #10	2870 670	560 185		3340 1015 36X36 12 #10	3465 1055 36X36 12 #10	3470 1055 36X36 12 #11	2750 835	915 310	670 215		
26	10 KSI						TRANSFER WALL			1250 370	3820 1185 30X36 12 #10		TRANSFER WALL			1250 370									4215 1035	3015 695	660 205		3505 1050	3635 1095	3640 1095	2915 875	1080 350	810 245		
25	10 KSI									1430 410	3980 1220 36X36 12 #10					1430 410									4395 1065	3165 725	760 225		3670 1090	3805 1130	3810 1130	3075 910	1245 390	955 275		
24	10 KSI									1615 450 30X30 8 #10	4160 1255 36X36 12 #10					1615 450 30X30 8 #10									4580 1100 36X36 12 #10	3315 755 30X30 12 #9	860 245 30X30 8 #10		3855 1125 36X36 12 #10	3975 1170 36X36 12 #10	3985 1170 36X36 12 #11	3240 950 30X30 12 #9	1410 425 30X30 12 #9	1105 310 30X24 8 #9		

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1. FOR TOP OF STRUCTURAL SLAB ELEVATIONS SEE PLANS
2. PROVIDE COMPRESSION LAP SPLICE AT ALL VERTICAL BARS UNLESS OTHERWISE NOTED
   SEE COLUMN LAP SPLICE SCHEDULE FOR SPLICE LENGTH
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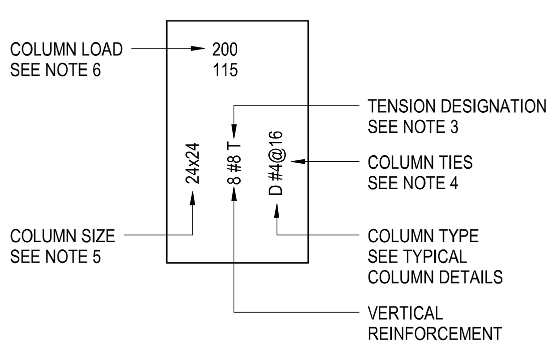
7. WHERE SCHEDULED INFORMATION IS NOT SHOWN SEE FLOOR BELOW

COLUMN LEGEND:



8. *: FOR CROWN COLUMN SIZES SEE S3-0320
9. TWO GRID LABELS THAT APPEAR IN ONE CELL INDICATE SAME COLUMN SHIFTS.
10. FOR COMPOSITE COLUMN REINFORCEMENT SEE DETAIL 8 ON S5-0221
    SEE COLUMN SCHEDULE FOR LOCATIONS
11. NOTATION:

    BH INDICATES COLUMNS THAT NEED BLAST HARDENING
    SEE DETAIL 4 ON S5-0222

    WK INDICATES COLUMNS THAT WALK
    SEE DETAIL 2 ON S5-0222

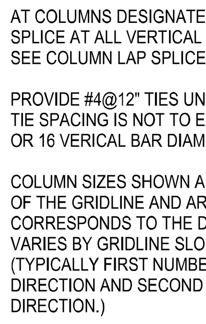
    BD INDICATES COLUMNS WITH BUNDLED BARS
    SEE DETAIL 2 ON S5-0221

    EX INDICATES COLUMN BELOW EXTENDING INTO TRANSFER WALL
    SEE S4-0200 SERIES

DEPT OF BLDGS 121324290 Job Number
ES510337850 Scan Code

HUDSON YARDS - TOWER C

501 WEST 30TH STREET
NEW YORK, NY



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320 Park Avenue, 17th Floor
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Construction Manager
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Address
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Mechanical, Electrical, Plumbing, Fire Protection
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80 Pine Street
New York, NY 10013
TEL: 212.530.9300 FAX: 212.269.5894

No.	Description	Date
3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

Key Plan

Issue Date: 12/06/12
Project No. 1776.10
Drawn By Author
Sheet Number HYE -TC -S6-0404
Drawing Title COLUMN SCHEDULE IV
Drawing Number S6-0404
B-Scan Drawing Number S-156.00 SHEET 117 OF 118

STATE OF NEW YORK · AINE M. BRAZIL · 062542-1 · LICENSED PROFESSIONAL ENGINEER

Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 10:28 AM
NYC Development Hub

S6-0404
2/15/2013 10:34:06 AM
COLUMN SCHEDULE IV
C:\Users\amaloney\Documents\N11329.00\Revit\N11329.00 - TOWER C - amlocal.rvt

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1 TYPICAL CMU NON-BEARING WALL REINFORCEMENT SCHEDULE
NOT TO SCALE

VERTICAL REINFORCEMENT SCHEDULE

WALL THICKNESS t	MAXIMUM WALL HEIGHT H	VERTICAL REINFORCEMENT (SEE NOTE 1) 5 PSF	10 PSF	30 PSF
6"	12'-0"	#4 @ 120"	#4 @ 96"	#4 @ 32"
	14'-0"	#4 @ 120"	#4 @ 64"	#5 @ 32"
8"	12'-0"	#4 @ 120"	#4 @ 120"	#4 @ 48"
	14'-6"	#4 @ 120"	#4 @ 96"	#4 @ 32"
	17'-0"	#4 @ 120"	#4 @ 72"	#5 @ 32"
	19'-0"	#4 @ 96"	#4 @ 56"	#6 @ 32"
10"	13'-6"	#4 @ 120"	#4 @ 120"	#4 @ 48"
	16'-0"	#4 @ 120"	#4 @ 112"	#4 @ 32"
	20'-0"	#4 @ 120"	#4 @ 64"	#5 @ 32"
	23'-6"	#4 @ 88"	#4 @ 48"	2-#6 @ 48"
12"	14'-0"	#4 @ 120"	#4 @ 120"	#4 @ 48"
	18'-0"	#4 @ 120"	#4 @ 112"	#4 @ 32"
	22'-6"	#4 @ 120"	#4 @ 72"	#5 @ 32"
	26'-0"	#4 @ 104"	#4 @ 48"	#6 @ 32"
	29'-0"	#4 @ 72"	#4 @ 32"	2-#6 @ 40"

NOTES:

1. PROVIDE THE GREATER QUANTITY OF TYPICAL MINIMUM VERTICAL REINFORCEMENT AS SHOWN IN THE VERTICAL REINFORCEMENT SCHEDULE OR THE SEISMIC SCHEDULE AS FOLLOWS FOR THE FOLLOWING WALL TYPE AND DESIGN PRESSURE, UON
   - TYPICAL INTERIOR WALLS 5 PSF
   - INTERIOR ELEVATOR SHAFT WALLS 10 PSF
   - EXTERIOR WALLS 30 PSF
   - SEISMIC
     SEE MINIMUM SEISMIC REINFORCEMENT SCHEDULE
2. PROVIDE THE FOLLOWING TYPICAL MINIMUM HORIZONTAL REINFORCEMENT:
   - INTERIOR WALLS: 2 - 9 GAGE WIRES AT EVERY OTHER COURSE
   - EXTERIOR WALLS: 2 - 3/16" DIA WIRES AT EVERY OTHER COURSE
   - SEISMIC DESIGN CATEGORY D, E, AND F PROVIDE HORIZONTAL REINFORCEMENT USING BOND BEAMS AS FOLLOWS:
     - 1-# 4 @ 48" OC FOR 6" THICK WALL
     - 2-# 4 @ 48" OC FOR WALLS > 6" THICK
3. FOR LOCATION AND THICKNESS OF MASONRY WALLS SEE ARCHITECTURAL DRAWINGS
4. VERTICAL REINFORCEMENT SCHEDULE IS BASED ON DESIGN SERVICE LOAD PRESSURE AS NOTED
5. 'H' INDICATES HEIGHT OF WALL BETWEEN LATERAL SUPPORT POINTS
6. DESIGN OF MASONRY WALL IS BASED ON PARTIALLY GROUTED WALLS WITH REINFORCEMENT AS SCHEDULED
7. DESIGN IS BASED ON A MINIMUM COMPRESSIVE STRENGTH f'm = 1500 PSI MIN FOR PROJECT SPECIFIC f'm REFER TO GENERAL NOTES ON S0 SERIES DRAWINGS
8. VERTICAL REINFORCEMENT SHALL BE SECURED WITH WIRE POSITIONERS ETC., AT INTERVALS NOT TO EXCEED 48," AND BE LOCATED AT THE CENTER OF THE WALL UON
9. SEE ELEVATIONS AND DETAILS FOR ADDITIONAL REINFORCEMENT AT OPENINGS AND JOINTS

MINIMUM SEISMIC REINFORCEMENT SCHEDULE

SEISMIC DESIGN CATEGORY	S_{DS}	DESIGN PRESSURE (PSF) OR REINFORCEMENT 6" WALL	8" WALL	10" WALL	12" WALL
A OR B [A ONLY]	ALL	5	5	5	5
C [OR B]	<0.25	5	5[10]	5 [10]	10
	<0.33	5 [10]	10	10	10 [30]
	<0.50	10	10 [30]	10 [30]	30
D, E, OR F	<1.0 [<0.67]	#5 @ 32"	#5 @ 32"	#6 @ 32"	#6 @ 24"

SEISMIC TABLE NOTES:

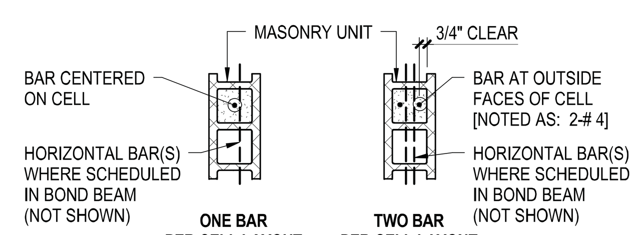
A. REFER TO GENERAL NOTES ON S0 SERIES DRAWINGS FOR APPLICABLE SEISMIC DESIGN CATEGORY

B. FOR SEISMIC USE GROUP IV FACILITIES AND FOR WALLS WITH COMPONENT IMPORTANCE FACTOR, Ip=1.5, VALUES INDICATED IN [ ] SHALL BE USED

C. REINFORCEMENT IS BASED ON THE FOLLOWING CRITERIA, UON: FULL HEIGHT WALLS WITHIN LIMITS OF VERTICAL REINFORCEMENT SCHEDULE
ap=1.0
Rp=2.5
z/H=1 (WALL AT TOP OF STRUCTURE)

D. FOR WALL TYPES NOT INDICATED IN THE SCHEDULE SER SHALL BE IMMEDIATELY NOTIFIED

E. SEISMIC MASS IS BASED ON PARTIALLY GROUTED WALLS



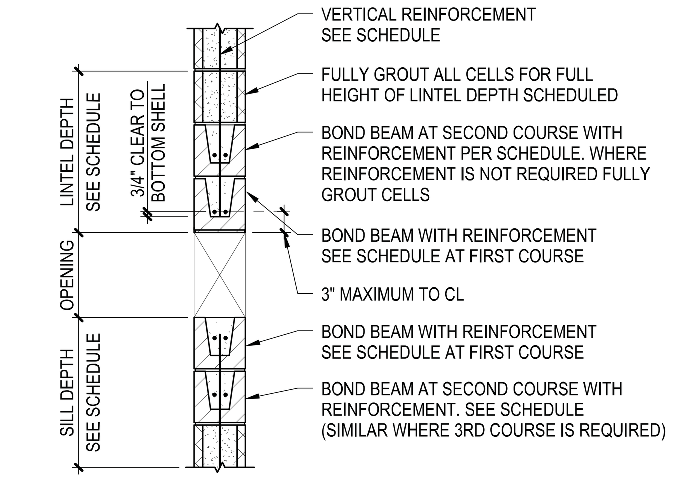
TYPICAL REINFORCEMENT LAYOUT

2 TYPICAL CMU SILL AND LINTEL SCHEDULE (NON-BEARING WALL)
NOT TO SCALE

	DESIGN PRESSURE	MAXIMUM MASONRY OPENING 'L'	6" WALL (NOTE 5) LINTEL OR SILL DEPTH	6" WALL 1ST COURSE REINF	6" WALL 2ND COURSE REINF	8" WALL LINTEL OR SILL DEPTH	8" WALL 1ST COURSE REINF	8" WALL 2ND COURSE REINF	10" WALL LINTEL OR SILL DEPTH	10" WALL 1ST COURSE REINF	10" WALL 2ND COURSE REINF	12" WALL LINTEL OR SILL DEPTH	12" WALL 1ST COURSE REINF	12" WALL 2ND COURSE REINF
LINTEL SCHEDULE	10 PSF	4'-0"	8	2 -# 4	-	8	2 -# 5	-	8	2 -# 6	-	16	2 -# 4	-
		7'-0"	16	2 -# 4	-	16	2 -# 4	-	16	2 -# 5	-	16	2 -# 6	-
		12'-0"	24	2 -# 5	2 -# 4	24	2 -# 6	2 -# 4	32	2 -# 6	2 -# 4	32	2 -# 6	2 -# 4
	30 PSF	4'-0"	8	2 -# 4	-	8	2 -# 5	-	8	2 -# 6	-	16	2 -# 4	-
		7'-0"	16	2 -# 5	2 -# 4	16	2 -# 6	-	16	2 -# 6	-	24	2 -# 6	-
		12'-0"	40	2 -# 6	2 -# 6	40	2 -# 6	2 -# 6	40	2 -# 6	2 -# 6	48	2 -# 6	2 -# 6
SILL SCHEDULE	10 PSF	12'-0"	8	2 -# 4	-	8	2 -# 4	-	8	2 -# 4	-	8	2 -# 4	-
	30 PSF	7'-0"	8	2 -# 5	-	8	2 -# 5	-	8	2 -# 5	-	8	2 -# 5	-
		12'-0"	24	2 -# 5	2 -# 5 (NOTE 5)	16	2 -# 6	2 -# 6	16	2 -# 5	2 -# 5	16	2 -# 5	2 -# 5

NOTES:

1. SEE NOTE 1 OF TYPICAL CMU NON-BEARING WALL REINFORCEMENT SCHEDULE FOR DESIGN PRESSURE TO BE USED. FOR SEISMIC DESIGN CATERGORY D, E AND F UP TO Sds VALUE SCHEDULED, USE 30 PSF DESIGN PRESSURE
2. MASONRY LINTELS SHALL BE SHORED DURING CONSTRUCTION AND SHALL REMAIN SHORED UNTIL MASONRY HAS GAINED 100% OF FULL SPECIFIED STRENGTH (f'm)
3. DESIGN BASED ON DESIGN SERVICE LOAD PRESSURE NOTED
4. SEE TYPICAL CMU NON-BEARING WALL ELEVATIONS FOR ADDITIONAL INFORMATION
5. FOR 6" WALLS WITH 30 PSF DESIGN PRESSURE, PROVIDE 3 BOND BEAM COURSES WITH 2-#5 IN EACH COURSE



TYPICAL MASONRY SECTION AT OPENING

3 TYPICAL CMU NON-BEARING WALL JAMB AND PIER ZONE SCHEDULE
NOT TO SCALE

WALL THICKNESS t	MAXIMUM WALL HEIGHT 'H'	MAX CLEAR MASONRY OPENING (SEE NOTE 4)	5 PSF JAMB ZONE WIDTH W1 OR W2	5 PSF PIER ZONE LENGTH (NOTE 2)	5 PSF WALL REINF EACH CELL	10 PSF JAMB ZONE WIDTH W1 OR W2	10 PSF PIER ZONE LENGTH (NOTE 2)	10 PSF WALL REINF EACH CELL	30 PSF JAMB ZONE WIDTH W1 OR W2	30 PSF PIER ZONE LENGTH (NOTE 2)	30 PSF WALL REINF EACH CELL
6"	12'-0"	4'-0"	8"	16"	# 4	8"	16"	# 4	16"	32"	# 4
		7'-0"	8"	16"	# 4	8"	16"	# 4	24"	40"	# 4
		12'-0"	8"	16"	# 4	16"	24"	# 4	40"	64"	# 4
	14'-0"	4'-0"	8"	16"	# 4	8"	16"	# 4	24"	32"	# 5
		7'-0"	8"	16"	# 4	16"	16"	# 4	32"	48"	# 5
		12'-0"	8"	16"/24"	# 4	16"	32"	# 4	40"	72"	# 5
8"	12'-0"	4'-0"	8"	16"	# 4	8"	16"	# 4	16"	16"	# 4
		7'-0"	8"	16"	# 4	8"	16"	# 4	16"	24"	# 4
		12'-0"	8"	16"	# 4	8"	16"	# 4	24"	40"	# 4
	14'-6"	4'-0"	8"	16"	# 4	8"	16"	# 4	16"	24"	# 4
		7'-0"	8"	16"	# 4	8"	16"	# 4	24"	40"	# 4
		12'-0"	8"	16"/24"	# 4	16"	16"/24"	# 4	32"	56"	# 4
	17'-0"	4'-0"	8"	16"	# 4	8"	16"	# 4	16"	32"	# 5
		7'-0"	8"	16"	# 4	16"	16"	# 4	24"	40"	# 5
		12'-0"	8"	16"/24"	# 4	16"	24"	# 4	40"	64"	# 5
	19'-0"	4'-0"	8"	16"	# 4	16"	16"	# 4	16"	32"	# 6
		7'-0"	8"	16"	# 4	16"	24"	# 4	24"	40"	# 6
		12'-0"	16"	16"/24"	# 4	24"	40"	# 4	40"	64"	# 6
10"	13'-6"	4'-0"	8"	16"	# 4	8"	16"	# 4	16"	16"	# 4
		7'-0"	8"	16"	# 4	8"	16"	# 4	16"	24"	# 4
		12'-0"	8"	16"/24"	# 4	8"	16"/24"	# 4	16"	24"	2-# 4
	16'-0"	4'-0"	8"	16"	# 4	8"	16"	# 4	16"	24"	# 4
		7'-0"	8"	16"	# 4	8"	16"	# 4	16"	24"	2-# 4
		12'-0"	8"	16"/24"	# 4	16"	16"/24"	# 4	16"	32"	2-# 4
	20'-0"	4'-0"	8"	16"	# 4	8"	16"	# 4	8"	16"	2-# 5
		7'-0"	8"	16"/24"	# 4	16"	16"/24"	# 4	16"	24"	2-# 5
		12'-0"	8"	16"/32"	# 4	16"	24"/32"	# 4	24"	32"	2-# 5
	23'-6"	4'-0"	8"	16"	# 4	16"	16"	# 4	16"	16"	2-# 6
		7'-0"	16"	16"/24"	# 4	16"	24"	# 4	16"	24"	2-# 6
		12'-0"	16"	24"/32"	# 4	24"	40"	# 4	24"	40"	2-# 6
12"	14'-0"	4'-0"	8"	16"	# 4	8"	16"	# 4	8"	16"	# 4
		7'-0"	8"	16"	# 4	8"	16"	# 4	16"	16"	# 4
		12'-0"	8"	16"/24"	# 4	8"	16"/24"	# 4	16"	16"/24"	2-# 4
	18'-0"	4'-0"	8"	16"	# 4	8"	16"	# 4	8"	16"	2-# 4
		7'-0"	8"	16"	# 4	8"	16"	# 4	16"	16"	2-# 4
		12'-0"	8"	16"/24"	# 4	16"	16"/24"	# 4	16"	24"	2-# 4
	22'-6"	4'-0"	8"	16"	# 4	8"	16"	# 4	8"	16"	2-# 5
		7'-0"	8"	16"/24"	# 4	16"	16"/24"	# 4	16"	24"	2-# 5
		12'-0"	8"	16"/32"	# 4	16"	24"/32"	# 4	16"	32"	2-# 5
	26'-0"	4'-0"	8"	16"	# 4	16"	16"	# 4	8"	16"	2-# 6
		7'-0"	8"	16"/24"	# 4	16"	24"	# 4	16"	24"	2-# 6
		12'-0"	16"	16"/40"	# 4	24"	32"/40"	# 4	24"	32"/40"	2-# 6
	29'-0"	4'-0"	8"	16"/24"	# 4	16"	24"	# 4	16"	16"/24"	2-# 6
		7'-0"	16"	24"/32"	# 4	24"	32"	# 4	16"	32"	2-# 6
		12'-0"	16"	32"/40"	# 4	32"	48"	# 4	24"	40"	2-# 6

NOTES:

1. SEE NOTE 1 OF TYPICAL CMU NON-BEARING WALL REINFORCEMENT SCHEDULE FOR DESIGN PRESSURE TO BE USED. FOR SEISMIC DESIGN CATERGORY D, E, AND F UP TO Sds VALUE SCHEDULED, USE 30 PSF DESIGN PRESSURE
2. SINGLE NUMBER FOR PIER REFERS TO PIER ZONE LENGTH. WHEN PIER WIDTH IS DENOTED AS ##/##, PROVIDE PIER AS FOLLOWS:

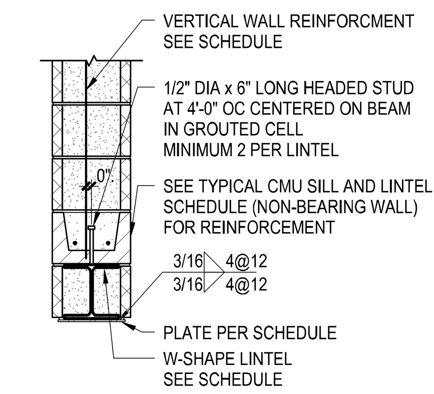
   EX. 16"/24"
   - MINIMUM TOTAL PIER WIDTH, PW, INCLUDING ANY NON-CONTINUOUS CELLS INTERRUPTED BY LINTELS
   - MINIMUM PIER ZONE WIDTH WITH CONTINUOUS VERTICAL BARS FULL HEIGHT OF WALL
3. PROVIDE FULLY GROUTED JAMB AND PIER WITH VERTICAL BARS(S) IN EACH CELL OVER FULL WIDTH AS SCHEDULED. SEE TYPICAL CMU NON-BEARING WALL REINFORCEMENT SCHEDULE FOR REINFORCEMENT LAYOUT
4. FOR PIER ZONE SCHEDULE USE MAXIMUM CLEAR MASONRY OPENING AT LEAST EQUAL TO AVERAGE WIDTH OF ADJACENT OPENINGS
5. SEE TYPICAL CMU NON-BEARING WALL PLAN DETAIL AT ADJACENT WALL OPENINGS FOR ADDITIONAL INFORMATION
6. NOTIFY ENGINEER OF RECORD IF JAMB AND/OR PIER WIDTH NOTED CANNOT BE SATISFIED
7. AT PIERS WIDER THAN REQUIRED PER SCHEDULE, IT IS ACCEPTABLE TO REINFORCE EDGES AS JAMB ZONES

4 TYPICAL STEEL LINTEL SCHEDULE (NON-BEARING WALL)
NOT TO SCALE

MAXIMUM MASONRY OPENING 'L'	WALL THICKNESS 6" WALL LINTEL	8" WALL LINTEL	10" WALL LINTEL	12" WALL LINTEL
4'-0"	2L - 2.5 x 2.5 x 1/4	2L - 3.5 x 3 x 1/4 LLV	2L - 4 x 4 x 1/4	2L - 5 x 5 x 5/16
5'-0"	2L - 3 x 2.5 x 1/4 LLV	2L - 3.5 x 3 x 1/4 LLV	2L - 4 x 4 x 1/4	2L - 5 x 5 x 5/16
6'-0"	2L - 3 x 2.5 x 1/4 LLV	2L - 3.5 x 3 x 1/4 LLV	2L - 4 x 4 x 1/4	2L - 5 x 5 x 5/16
7'-0"	2L - 3.5 x 2.5 x 5/16 LLV	2L - 5 x 3 x 1/4 LLV	2L - 4 x 4 x 5/16	2L - 5 x 5 x 5/16
8'-0"	2L - 3.5 x 2.5 x 3/8 LLV	2L - 5 x 3 x 5/16 LLV	2L - 6 x 4 x 3/8 LLV	2L - 5 x 5 x 5/16
10'-0"	W8 x 10	2L - 5 x 3 x 3/8 LLV	2L - 6 x 4 x 3/8 LLV	W8 x 24 + 1/4"x10" PLATE
12'-0"	W8 x 10	2L - 6 x 3.5 x 3/8 LLV	2L - 7 x 4 x 3/8 LLV	W8 x 24 + 1/4"x10" PLATE

NOTES:

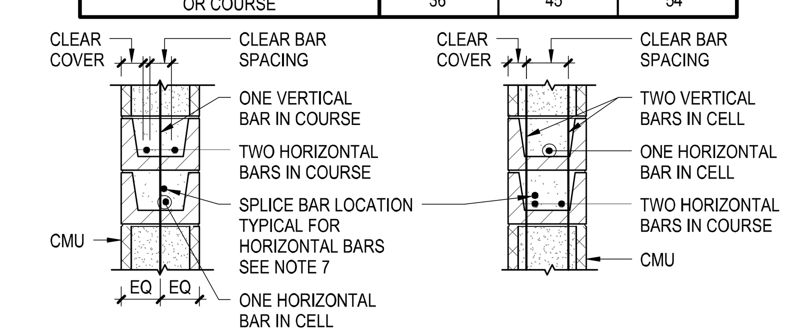
1. LINTEL ANGLES AND W-SHAPE LINTELS SHALL BE ASTM A36 STEEL MINIMUM
2. NO MORE THAN SIX COURSES OF CMU MAY BE PLACED, REINFORCED, GROUTED AND CURED AT ONE TIME ABOVE LINTEL BEFORE PROCEEDING FURTHER
3. PROVIDE MINIMUM 8" BEARING EACH END
4. 2L LINTELS SHALL BE WELDED OR BOLTED TOGETHER AT INTERVALS NOT EXCEEDING 2'-0" OC, WITH A MINIMUM OF TWO CONNECTIONS BETWEEN ENDS
5. AT EXTERIOR WALL SYSTEMS AND AT HUMID LOCATIONS LINTELS SHALL BE GALVANIZED, REFER TO SPECIFICATIONS FOR FURTHER INFORMATION
6. SEE ARCHITECTURAL DRAWINGS FOR FIREPROOFING REQUIREMENTS
7. SEE TYPICAL CMU NON-BEARING WALL ELEVATION WITH STEEL OR PRECAST LINTELS FOR DETAILS OF REINFORCEMENT AROUND OPENINGS



STEEL LINTEL WITH PLATE

5 CMU LAP SPLICE AND TENSION EMBEDMENT LENGTH SCHEDULE
NOT TO SCALE

CMU LAP SPLICE AND TENSION EMBEDMENT LENGTH (f'm = 1500 psi & fy = 60 ksi) SCHEDULED REINFORCEMENT CONDITION	BAR SIZE #4	#5	#6
ONE BAR IN CELL OR COURSE (NOTE 1)	24"	26"	40"
TWO BARS IN CELL OR COURSE	36"	45"	54"



REINFORCEMENT CONDITIONS

NOTES:

1. FOR 6" AND 8" WALLS WITH ONE HORIZONTAL BAR IN COURSE, USE SPLICE LENGTHS FOR TWO BARS IN CELL OR COURSE
2. WHERE EPOXY-COATED REINFORCMENT IS USED, INCREASE LAP SPLICE LENGTH BY 50%
3. SPLICES OF HORIZONTAL REINFORCEMENT IN WALLS CONTAINING TWO BARS PER COURSE SHALL BE STAGGERED
4. TYPE 1 OR TYPE 2 MECHANICAL SPLICES MAY BE SUBSTITUTED UON, PROVIDED THEY DEVELOP 125% OF THE YIELD STRENGTH OF THE BAR AND ARE APPROVED BY THE EOR
5. WHERE BARS OF DIFFERENT SIZES ARE TO BE SPLICED, THE SPLICE LENGTH SHALL BE THAT REQUIRED FOR THE LARGEST
6. SEE TYPICAL REINFORCEMENT LAYOUT DETAIL FOR MINIMUM CLEAR COVER TO INSIDE OF FACESHELL
7. SPLICES OF HORIZONTAL REINFORCEMENT SHOULD BE PLACED VERTICALLY OVER MAIN BAR

Damian Titus
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TEL: 212.801.1000 FAX: XXX.XXX.XXXX

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
TEL: 212.986.7514 FAX: 212.986.7510

Construction Manager
Construction Manager Name
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3	ISSUE FOR FILING	02/15/2013
2	DI-22: STRUCTURE	02/01/2013
1	DI-12: STRUCTURE	12/14/2012

22

Key Plan

Issue Date: 11/16/2012
Project No. 1776.10
Drawn By Author
Sheet Number
HYE -TC -S6-0501

STATE OF NEW YORK · AINE M. BRAZIL · 062542-1 · LICENSED PROFESSIONAL ENGINEER

Drawing Title
TYPICAL MASONRY NON-BEARING WALL SCHEDULES

Drawing Number
S6-0501

B-Scan Drawing Number
S-157.00 SHEET 118 OF 118

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TYPICAL MASONRY NON-BEARING WALL SCHEDULES
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DRAWING INDEX

SHEET No.	DRAWING No.	B-SCAN DRAWING No.	DRAWING NAME	1	2	3	4	5	6	7	8	9	10	11	12	13
			ISSUE DATE	04/13/2012 50% DESIGN DOCUMENTS	08/01/2012 FOUNDATION AND UTILITIES	08/06/2012 ISSUED FOR FILING	08/06/2012 ADD-1: FNDN & UTIL BP	08/17/2012 100% DESIGN DOCUMENTS	08/20/2012 ISSUED FOR FILING	10/12/2012 ADD-2: FNDN & UTIL IFC	12/07/2012 DI-10 PLUMBING	12/14/2012 DI-11 PLBG UNDG	01/11/2013 DI-20 PLUMBING	02/01/2013 DI-23 PLBG UNDG	02/11/2013 DI-27 PLUMBING	02/12/2013 ISSUED FOR FILING
HYE-TC-P0-0001	P0-0001	P-100.00	PLUMBING DRAWING LIST	●	●	●	●	●	●	●	●	●	●	●	●	●
HYE-TC-P0-0002	P0-0002	P-101.00	PLUMBING GENERAL NOTES, ABBREVIATIONS AND SYMBOLS	●				●	●		●		●		●	●
HYE-TC-P1-C101	P1-C101	P-102.00	PLUMBING PLAN C1 SECTOR 01	●				●	●		●		●		●	●
HYE-TC-P1-C104	P1-C104	P-103.00	PLUMBING PLAN C1 SECTOR 04	●				●	●		●		●		●	●
HYE-TC-P1-C107	P1-C107	P-104.00	PLUMBING PLAN C1 SECTOR 07	●				●	●		●		●		●	●
HYE-TC-P1-0001	P1-0001	P-105.00	GROUND FLOOR PLUMBING PLAN SECTOR 01	●				●	●		●		●		●	●
HYE-TC-P1-0004	P1-0004	P-106.00	GROUND FLOOR PLUMBING PLAN SECTOR 04	●				●	●		●		●		●	●
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HYE-TC-P1-0001M	P1-0001M	P-108.00	GROUND FLOOR MEZZANINE PLUMBING PLAN SECTOR 01								●		●		●	●
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HYE-TC-P1-0107	P1-0107	P-113.00	PLUMBING PLAN 01 SECTOR 07	●				●	●		●				●	●
HYE-TC-P1-0201	P1-0201	P-114.00	PLUMBING PLAN 02 SECTOR 01	●				●	●		●		●		●	●
HYE-TC-P1-0301	P1-0301	P-115.00	PLUMBING PLAN 03 SECTOR 01	●				●	●		●		●		●	●
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HYE-TC-P1-1801	P1-1801	P-120.00	PLUMBING PLAN 18 SECTOR 01	●				●	●		●		●		●	●
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HYE-TC-P1-3801	P1-3801	P-140.00	PLUMBING PLAN 38 SECTOR 01	●				●	●		●				●	●
HYE-TC-P1-3901	P1-3901	P-141.00	PLUMBING PLAN 39 SECTOR 01	●				●	●		●				●	●
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HYE-TC-P1-4101	P1-4101	P-143.00	PLUMBING PLAN 41 SECTOR 01	●				●	●		●				●	●
HYE-TC-P1-4201	P1-4201	P-144.00	PLUMBING PLAN 42 THRU 43 SECTOR 01	●				●	●		●				●	●
HYE-TC-P1-4401	P1-4401	P1-45.00	PLUMBING PLAN 44 SECTOR 01					●	●		●				●	●
HYE-TC-P1-4501	P1-4501	P-146.00	PLUMBING PLAN 45 SECTOR 01					●	●		●				●	●
HYE-TC-P1-4601	P1-4601	P-147.00	PLUMBING PLAN 46 SECTOR 01	●				●	●		●				●	●
HYE-TC-P1-4701	P1-4701	P-148.00	PLUMBING PLAN 47 SECTOR 01	●				●	●		●		●		●	●
HYE-TC-P1-4801	P1-4801	P-149.00	PLUMBING PLAN 48 SECTOR 01	●				●	●		●		●		●	●
HYE-TC-P1-4901	P1-4901	P-150.00	PLUMBING PLAN 49 SECTOR 01	●				●	●		●				●	●
HYE-TC-P1-5001	P1-5001	P-151.00	PLUMBING PLAN 50 SECTOR 01								●				●	●
~~HYE-TC-P1-5701~~	~~P1-5701~~		~~PLUMBING PLAN 57 SECTOR 01~~	●												
~~HYE-TC-P1-5801~~	~~P1-5801~~		~~PLUMBING PLAN 58 SECTOR 01~~	●												
~~HYE-TC-P1-5901~~	~~P1-5901~~		~~PLUMBING PLAN 59 SECTOR 01~~	●												
HYE-TC-P6-0101	P6-0101	P-152.00	PLUMBING SCHEDULE SHEET	●				●	●		●		●		●	●
HYE-TC-P6-0102	P6-0102	P-153.00	PLUMBING DETAIL SHEET	●				●	●		●				●	●
HYE-TC-P6-0201	P6-0201	P-154.00	PLUMBING LOW-RISE DOMESTIC WATER RISER DIAGRAM	●				●	●		●		●		●	●
HYE-TC-P6-0202	P6-0202	P-155.00	PLUMBING MID-RISE DOMESTIC WATER RISER DIAGRAM					●	●		●				●	●
HYE-TC-P6-0203	P6-0203	P-156.00	PLUMBING HIGH-RISE DOMESTIC WATER RISER DIAGRAM	●				●	●		●				●	●
HYE-TC-P6-0204	P6-0204	P-157.00	PLUMBING LOW-RISE SANITARY RISER DIAGRAM	●				●	●		●		●		●	●
HYE-TC-P6-0205	P6-0205	P-158.00	PLUMBING HIGH-RISE SANITARY RISER DIAGRAM					●	●		●				●	●
HYE-TC-P6-0206	P6-0206	P-159.00	PLUMBING LOW-RISE STORM WATER RISER DIAGRAM	●				●	●		●				●	●
HYE-TC-P6-0207	P6-0207	P-160.00	PLUMBING LOW-RISE PLAZA LEVEL STORM WATER RISER DIAGRAM					●	●		●				●	●
HYE-TC-P6-0208	P6-0208	P-161.00	PLUMBING HIGH-RISE STORM WATER RISER DIAGRAM					●	●		●				●	●
HYE-TC-P6-0209	P6-0209	P-162.00	PLUMBING GAS RISER DIAGRAM	●				●	●		●				●	●
HYE-TC-P6-0501	P6-0501	P-163.00	PLUMBING BACKFLOW PREVENTER PLAN					●	●		●				●	●
			FOUNDATION PACKAGE													
HYE-TC-PU0-0001	PU0-0001	P-002.00	PLUMBING UNDERGROUND GENERAL NOTES, ABBREVIATIONS AND SYMBOLS		●	●	●	●		●		●		●	●	
HYE-TC-PU1-C101	PU1-C101	P-003.00	PLUMBING UNDERGROUND PLAN C1 SECTOR 01		●	●	●	●		●		●		●	●	
HYE-TC-PU1-C104	PU1-C104	P-004.00	PLUMBING UNDERGROUND PLAN C1 SECTOR 04		●	●	●	●		●		●		●	●	
HYE-TC-PU1-C107	PU1-C107	P-005.00	PLUMBING UNDERGROUND PLAN C1 SECTOR 07		●	●	●	●		●		●		●	●	
HYE-TC-PU6-0101	PU6-0101	P-006.00	PLUMBING UNDERGROUND SCHEDULE SHEET		●	●	●	●		●		●		●	●	
HYE-TC-PU6-0201	PU6-0201	P-007.00	PLUMBING UNDERGROUND SANITARY AND STORM RISER DIAGRAM		●	●	●	●		●		●		●	●	

DEPT OF BLDGS 121324290 Job Number
ES331370819 Scan Code

HUDSON YARDS - TOWER C

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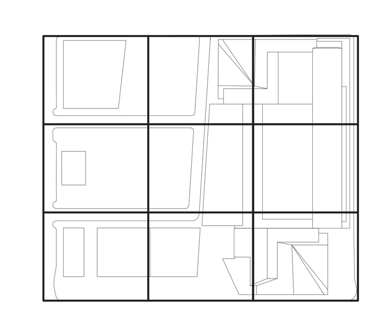
No.	Issue	Date
12	ISSUED FOR FILING	02-12-2013
11	DI-27 PLUMBING	02-11-2013
10	DI-23 PLBG UNDG	02-01-2013
9	DI-20 PLUMBING	01-11-2013
8	DI-11: PLBG UNDG	12-14-2012
7	DI-10 PLUMBING	12-07-2012
6	ADD-2: FNDN & UTIL IFC	10-12-2012
5	ISSUED FOR FILING	08-20-2012
4	100% DD	08-17-2012
3	ADD-1: FNDN & UTIL BP	08-10-2012
2	ISSUED FOR FILING	08-06-2012
1	DI-2: FNDN & UTIL BP	08-01-2012

Key Plan



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Buildings
APPROVED
Under Directive 2 of 1975
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NYC Development Hub

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STATE OF NEW YORK · AUGUSTINE A. DIGIACOMO · LICENSED PROFESSIONAL ENGINEER · NO. 052475

Date

Project No. 14752.A.000

Drawn By

Sheet Number
HYE-TC-P0-0001

Drawing Title
PLUMBING DRAWING LIST

Drawing Number
P0-0001

B-SCAN Drawing Number
P-100.00

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Filename: T:\projects\14752.a.hudson yards-east yards-twr c\pfp\ISSUED FOR FILING 02-12-2013 DOB\PLUMBING\HYE-TC-P0-0001.dwg Plotted by: Roberto Quintana Plot Time: 2/13/2013 11:54 AM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

DEPT OF BLDGS 121324290 Job Number
ES304399536 Scan Code

PLUMBING SYMBOLS

SERVICE	DWG. SYMBOL
STORM	L
SANITARY, SOIL OR WASTE PIPING	
VENT	
COOLING TOWER PUMP DISCHARGE	C.T.P.D.
OVERFLOW PIPING	L(O.F.)
GAS PIPING	G.
RELIEF VENT	RV
EJECTOR DISCHARGE	EJ
PUMP DISCHARGE	PD
SUMP DISCHARGE	SD
BURIED PIPING (SERVICE NOTED)	
COLD WATER	
HOT WATER	
CIRCULATION PIPING (SERVICE NOTED)	
FRESH AIR INLET	FAI
SINGLE C.O. RUNNING TRAP	
DOUBLE C.O. RUNNING HOUSE TRAP	
CLEANOUT DECK PLATE/WALL PLATE	
FRESH AIR INTAKE	
HOSE BIBB	
CONNECT TO EXISTING (#)	(#)
POINT OF DEMOLITION (#)	
HEAT TRACE (SERVICE NOTED)	
CHECK VALVE	
SHUT OFF VALVE	
VALVE ON VERTICAL	
BALANCE VALVE	
OS&Y VALVE	
MOTORIZED CONTROL VALVE	
ISOLATION CONTROL VALVE	
ROOF DRAIN (RD)	
OVERFLOW ROOF DRAIN (OF)	
PLENUMN DRAIN (PD)	
AREA DRAIN (AD)	

SERVICE	DWG. SYMBOL
OS&Y VALVE ON VERTICAL	
PRESSURE REDUCING VALVE	
CHECK VALVE	
FLOOR DRAIN/AREA DRAIN/ROOF DRAIN	
VACUUM BREAKER	
AIR VENT VALVE	
PUMP	
DOUBLE CHECK VALVE ASSEMBLY	DCVA
REDUCED PRESSURE ZONE BACKFLOW PREVENTER	RPZ
STRAINER & WATER METER ASSEMBLY	S M
BALANCING VALVE ASSEMBLY	
PIPE DOWN	
PIPE UP	
CONTINUATION OF PIPING	
P-TRAP	
CLEAN OUT	
CAPPED CONNECTION	
CONNECTION POINT	
TAMPER SWITCH	TS

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.

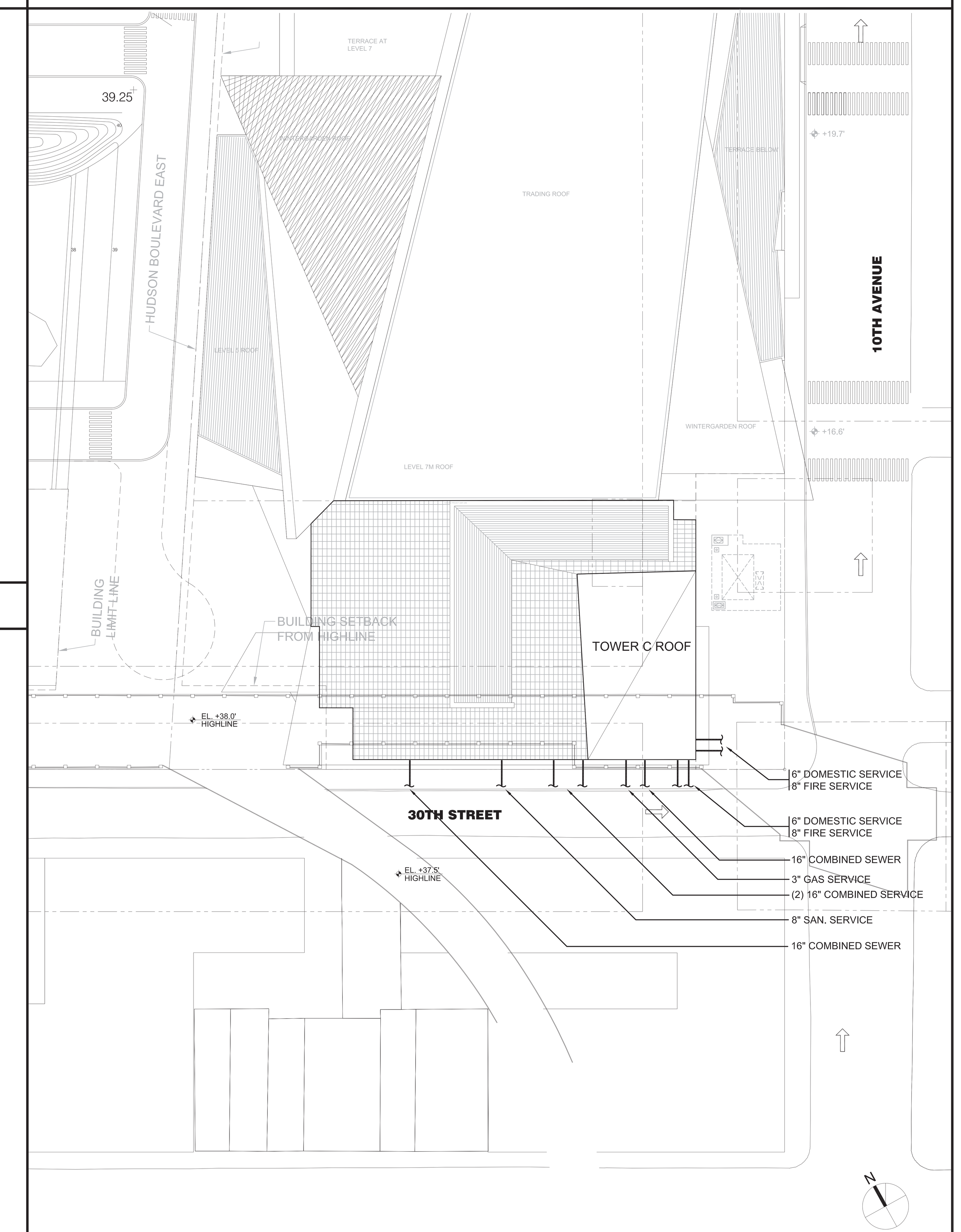
1. THE SANITARY SYSTEM SHALL BE PROVIDED IN FULL ACCORDANCE WITH THE GENERAL PROVISIONS OF SECTION PC 701.
2. THE MATERIALS USED IN THE PLUMBING SYSTEM WILL BE PROVIDED IN FULL ACCORDANCE WITH SECTION PC 303.
3. EQUIPMENT HOOK-UP AND THE JOINING OF PIPING WILL BE IN FULL COMPLIANCE WITH CHAPTER 4.
4. 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 IINSTALLED 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 PLUMBING NOTES

1. REFER TO STRUCTURAL DRAWINGS FOR SILT, SUMP AND EJECTOR PITS WALL CONSTRUCTION AND DIMENSIONS.
2. ALL UNDERGROUND DRAINAGE PIPING SHALL BE PITCHED TOWARDS DESIGNATED PIT @ MINIMUM OF 1/8 OF INCH PER FOOT UNLESS OTHERWISE NOTED.
3. REFER TO STRUCTURAL DRAWINGS FOR HOUSEKEEPING PADS CONSTRUCTION AND DIMENSIONS.
4. PROVIDE RESTRAINTS & SUPPORTS AT BASE OF ALL STACKS & LEADERS.
5. SANITARY & STORM PIPING 8" & LARGER SHALL BE RODDED & CLAMPED AT EACH CHANGE OF DIRECTION.
6. ALL PIPING AT COLUMNS SHALL BE INSTALLED AS CLOSE TO COLUMNS AS POSSIBLE. PROVIDE DETAILS ON SHOP DARWINGS FOR APPROVAL BY ARCHITECT.
7. PROVIDE EXPANSION LOOPS & ANCHORS EVERY 100'-0" ON ALL HOT WATER PIPING.
8. PROVIDE DEEP SEAL TRAPS ON ALL FLOOR DRAINS.

PLOT PLAN

NOT TO SCALE



ABBREVIATIONS

AIR	COMPRESSED AIR
AC	AIR CONDITIONING UNIT
ABD	AUTOMATIC BALL DRIP
ABV	ABOVE
AD	AREA DRAIN
ADJ	ADJUSTABLE
AC-D	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMP	AMPERE
AP	ACCESS PANEL
ARCH	ARCHITECTURAL
ASD	ADJUSTABLE SPEED DRIVE
AUTO	AUTOMATIC
@	AT
A V V	AIR VENT VALVE
AW	ACID WASTE
BFP	BACK FLOW PREVENTOR
BFV	BUTTERFLY VALVE
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BR	BRANCH
BTU	BRITISH THERMAL UNIT
BV	BALANCING VALVE
CAB	CABINET
CAD	COMPRESSED AIR DRYER
CB	CATCH BASIN
CC	COOLING COIL
CF	CUBIC FEET
CLG	CEILING
℄	CENTERLINE
CH-V	CHECK VALVE
CO	CLEANOUT
CODP	CLEANOUT DECK PLATE
COWP	CLEANOUT WALL PLATE
CL	CLOSET
COL	COLUMN
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUATION
CORR	CORRIDOR
CP	CIRCULATING PUMP
CW	COLD WATER
C.T.	COOLING TOWER
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DET.	DETAIL
DEG.	DEGREE
DF	DRINKING FOUNTAIN
DH	DECK HYDRANT
DIAM. Ø	DIAMETER

DIM.	DIMENSION
DIP	DUCTILE IRON PIPING
DN	DOWN (PENETRATES FLOOR SLAB)
DPL	DUPLEX
DR	DRAIN
DWG.	DRAWING
EA.	EACH
EJ	EJECTOR DISCHARGE
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMER.	EMERGENCY
E.M.R.	ELEVATOR MACHINE ROOM
ENCL.	ENCLOSURE
ENGR.	ENGINEER
ENTR.	ENTRANCE
E.O.S.	END OF SLAB
EQ.	EQUAL
EQUIP.	EQUIPMENT
ESP	ELEVATOR SUMP PUMP
EW	EYE WASH
EWC	ELECTRIC WATER COOLER
EXIST. (EX)	EXISTING
EXH.	EXHAUST
EXP.	EXPRESS
EXT.	EXTERIOR
EVAC	EVACUATION VACUUM
F	FILTER
FAI	FRESH AIR INTAKE
F.D.	FLOOR DRAIN
FDN	FOUNDATION
FFD	FLUSHING FLOOR DRAIN
F HYD	FLOOR HYDRANT
FIN	FINISH(ED)
FIN FL	FINISH(ED) FLOOR
FIN GR	FINISHED GRADE
FL	FLOOR
FPRF	FIREPROOFING
F.P.S.C.	FIREPROOF SELF CLOSING
FT	FOOT, FEET
FTG	FITTING
FU	FIXTURE UNIT
FXT	FIXTURE
FPBH	FROST PROOF BOX HYDRANT
G	GAS
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GD	GARAGE DRAIN
GEN	GENERAL
GPM	GALLONS PER MINUTE
GR	GRADE
GRE	GREASE
GW	GREY WATER

HB	HOSE BIBB
HGT	HEIGHT
HORIZ	HORIZONTAL
HP	HIGH POINT
HR	HOUR
HT	HOUSE TRAP
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATION AND AIR CONDTIONING
HW	HOT WATER
HWC	HOT WATER CIRCULATION
HWR	HOT WATER RETURN
ICV	ISOLATION CONTROL VALVE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
INSUL	INSULATION
IW	INDIRECT WASTE
JAN	JANITOR
JC	JANITOR'S CLOSET
JT	JOINT
L	LEADER
LAV	LAVATORY
LO	LOCKED OPEN
M	METER
MACH	MACHINE
MAX	MAXIMUM
MCV	MOTORIZED CONTROL VALVE
MECH	MECHANICAL
MEMB	MEMBRANE
MER	MECHANICAL EQUIPMENT ROOM
MEZZ	MEZZANINE
MFG	MANUFACTURE
MH	MANHOLE
MIN	MINIMUM
MCIV	METER CONTROL INLET VALVE
MISC	MISCELLANEOUS
MOCV	METER OUTLET CONTROL VALVE
MR	MOP RECEPTOR
MTD	MOUNTED
MTG	MEETING
MTL	METAL
N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
N.O.	NORMALLY OPEN
No.	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE

OC	ON CENTER
OF	OVERFLOW
OFF	OFFICE
OPNG	OPENING
OPP	OPPOSITE
OS&Y	OUTSIDE STEM & YOKE GATE VALVE
OVHD	OVERHEAD
O2	OXYGEN
P	PUMP
PA	PREACTION
PAN	PANEL
PART	PARTITION
PD	PLENUM DRIAN
PE	PROFESSIONAL ENGINEER
PERF	PERFORATED
PEJ	PNEUMATIC EJECTOR DISCHARGE
PL	PLATE
PLAS	PLASTER
PLBG	PLUMBING
PO	PLUGGED OUTLET
POL	POLISH(ED)
PR	PAIR
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH (GAUGE)
PSIA	POUNDS PER SQUARE INCH (ABSOLUTE)
PTN	PARTITION
RA	RETURN AIR
RD	ROOF DRAIN
REFR	REFRIGERATOR
REINF	REINFORCED
REQT'S	REQUIREMENTS
REV	REVISED
RM.	ROOM
RO	REVERSE OSMOSIS
ROR	REVERSE OSMOSIS RETURN
RPZ	REDUCE PRESSURE ZONE
RS	RISE
RT	RUNNING TRAP
RV	RELIEF VENT
S	SANITARY
SAN	SANITARY
SK	SINK
SA	SHOCK ABSORBER
SAN	SANITARY
SCHED.	SCHEDULE
SD	SUMP PUMP DISCHARGE
S.E.	SERVICE ELEVATOR
S.EJ	SEWAGE EJECTOR
SECT.	SECTION
SHT.	SHEET
SIM.	SIMILAR (TO)
SLV.	SLEEVE

SP	SUMP PUMP
SPFCA.	FLOOR CONTROL VALVE ASSEMBLY
S.P.O.	SANITARY PLUGGED OUTLET
ST	STORM
SQ	SQUARE
SQ FT ⌀	SQUARE FEET
SS	SERVICE SINK
S ST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SW	SIDE WALL
SYMM	SYMMETRICAL
TS	TAMPER SWITCH
TCO	TEMPORARY CERTIFICATE OF OCCUPANCY
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY
TER	TERRACE
THRU	THROUGH
TMV	TEMP. MIXING VALVE
TOS	TOP OF SLAB
TTB	TIGHT TO BEAM
TW	TEMPERED WATER
TWR	TEMPERED WATER RETURN
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UP (PENETRATES FLOOR SLAB)
UR	URINAL
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
V.E.E.	VENT EXHAUST
VERT.	VERTICAL
VEST.	VESTIBULE
V.O.	VALVED OUTLET
V.P.O.	VENT PLUGGED OUTLET
V.T.R.	VENT THROUGH ROOF
V.T.W.	VENT THROUGH WALL
VOV	VALVE ON VERTICAL
W	WASTE
WC	WATER CLOSET
WFS	WATER FLOW SWITCH
WF	WIDE FLANGE
WH	WALL HYDRANT
W/	WITH
WPG	WATERPROOFING
WTS	WATER TIGHT SLEEVE

SUFFIX "X" REFERS TO DRAIN SCHEDULE ON PLUMBING SCHEDULE SHEET.
FD"X", AD"X", RD"X"

P/# STACK/RISER DESIGNATION (SOIL, VENT, H.W. & C.W.)

L/# STORM LEADER

G/# GAS

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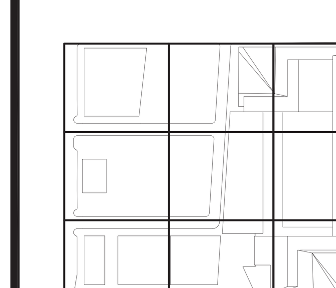
No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Damian Titus
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14752.A.000
Drawn By

Sheet Number
HYE-TC-P0-0002

Drawing Title
PLUMBING GENERAL NOTES, ABBREVIATIONS AND SYMBOLS

Drawing Number
P0-0002

B-SCAN Drawing Number
P-101.00

SHEET 2 OF 64

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HUDSON YARDS - TOWER C

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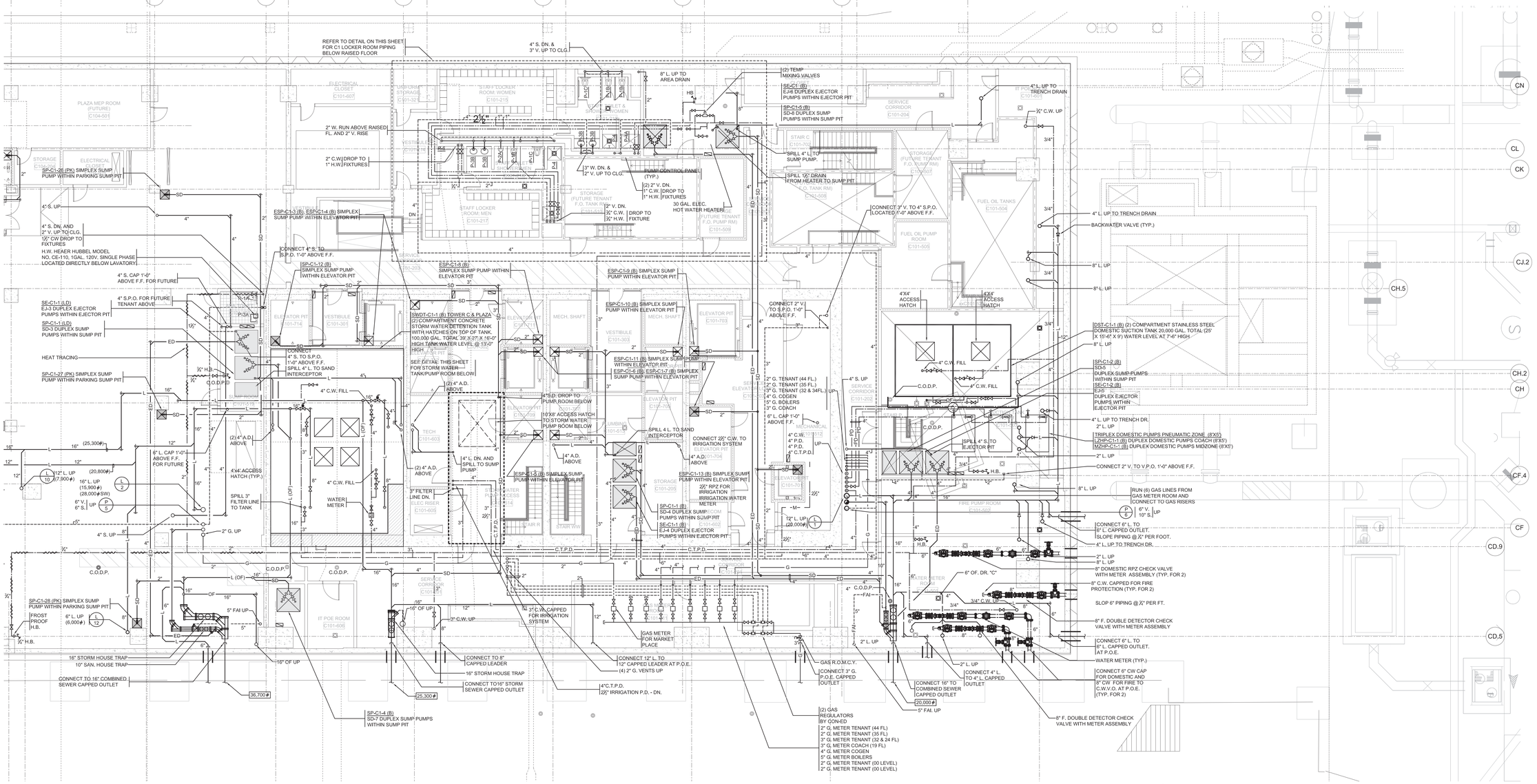
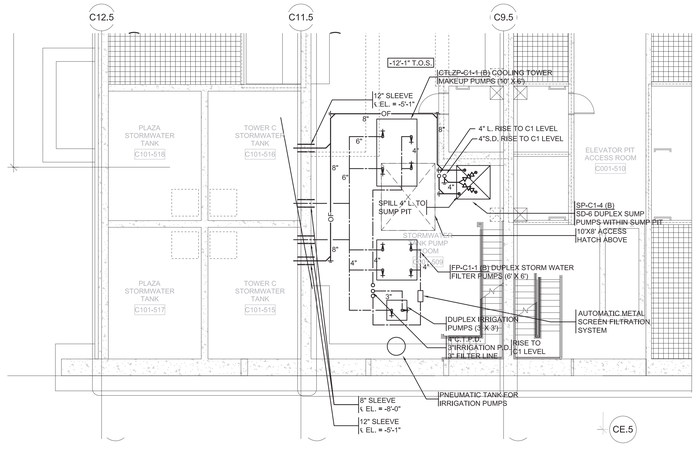
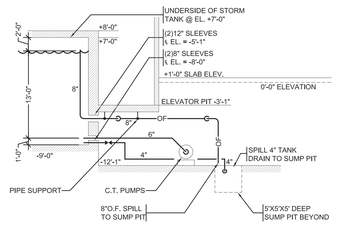




STORM WATER TANK/PUMP ROOM AT SLAB BELOW (EL. -12'-1")

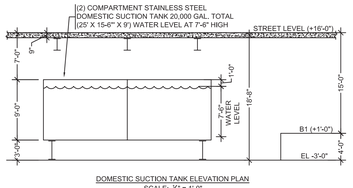
SCALE ¼"=1'-0"



STORM TANK ELEVATION

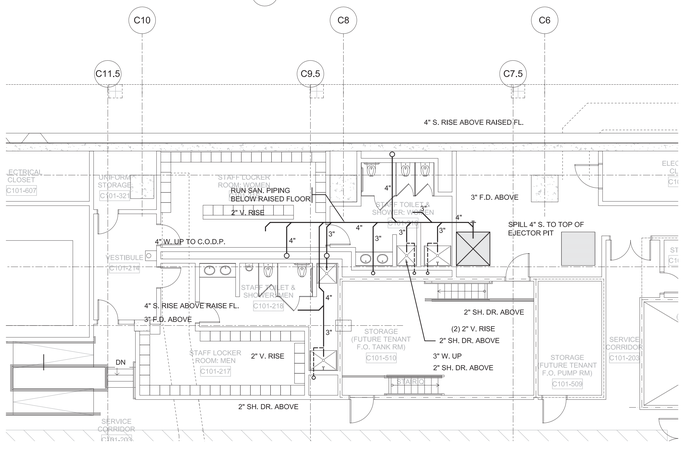
NOTE: ALL ELEVATIONS TAKEN FROM EVEVATION 0'-0"

SCALE ¼"=1'-0"



DOMESTIC SUCTION TANK ELEVATION PLAN

SCALE: ¼" = 1'-0"



C1 LEVEL LOCKER ROOM BELOW RAISED FLOOR PLUMBING PART PLAN

SCALE ¼"=1'-0"

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NOTE:
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2. ALL ELEVATIONS ARE TAKEN FROM 0'-0" TO THE CENTERLINE OF PIPE.
3. APPROVED FOUNDATION PACKAGE DRAWINGS FOR WORK BELOW SLAB

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2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No. 14752.A.000

Drawn By

Sheet Number

HYE-TC-P1-C101

Drawing Title

PLUMBING PLAN C1 SECTOR 01

Drawing Number

P1-C101

B-SCAN Drawing Number

P-102.00

SHEET 3 OF 64

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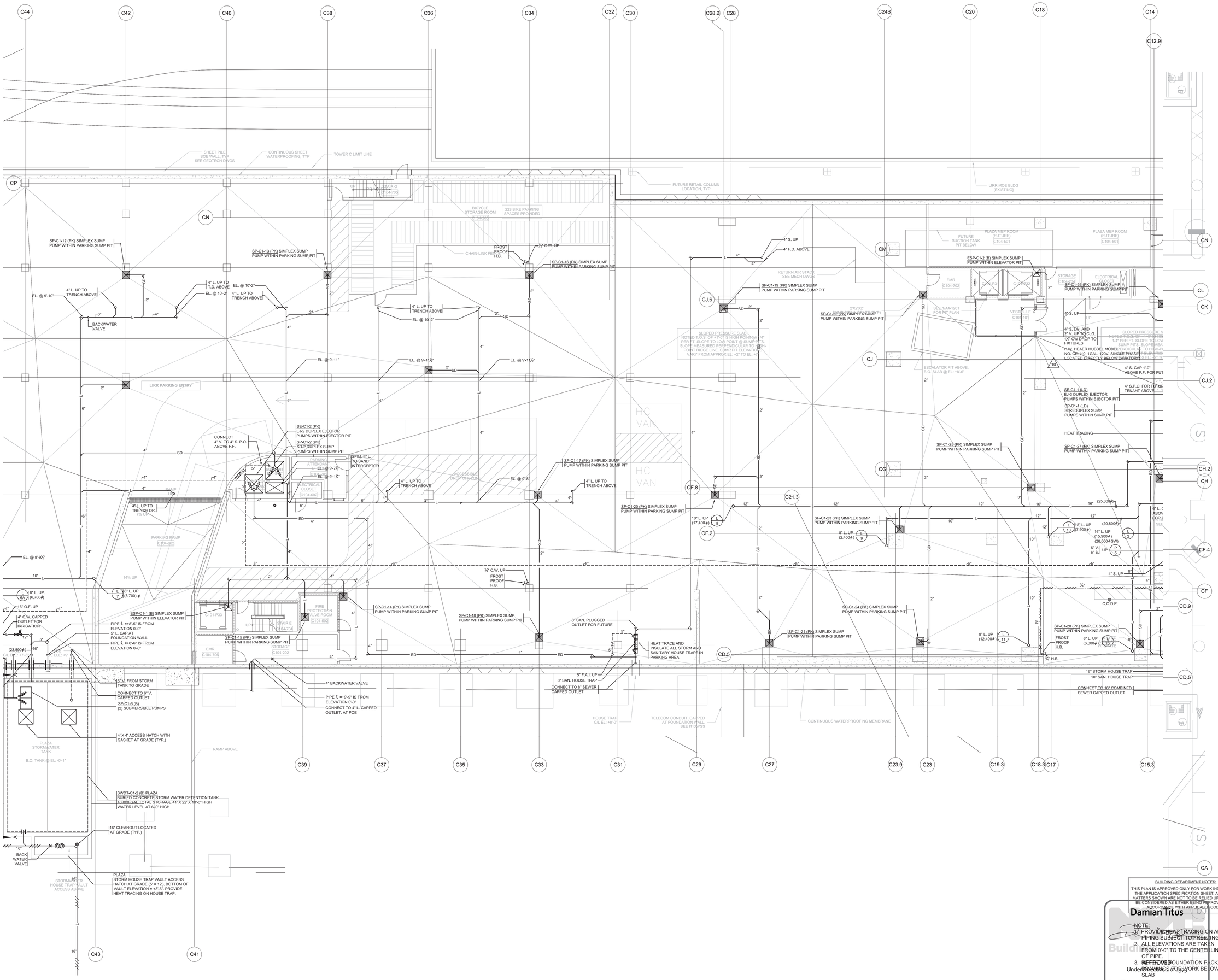
Filename: T:\projects\14752.a.hudson yards-east yards\ker cp\dp\ISSUED FOR FILING 02-12-2013 DOB\PLUMBING\HYE-TC-P1-C101.dwg Plotted by: Roberto Quintana Plot Time: 2/13/2013 11:05 AM



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2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No. 14752.A.000

Drawn By

Sheet Number

HYE-TC-P1-C104

Drawing Title

PLUMBING
PLAN C1
SECTOR 04

Drawing Number
P1-C104

RAE/M Drawing Number
P-103.00

SHEET 4 OF 64

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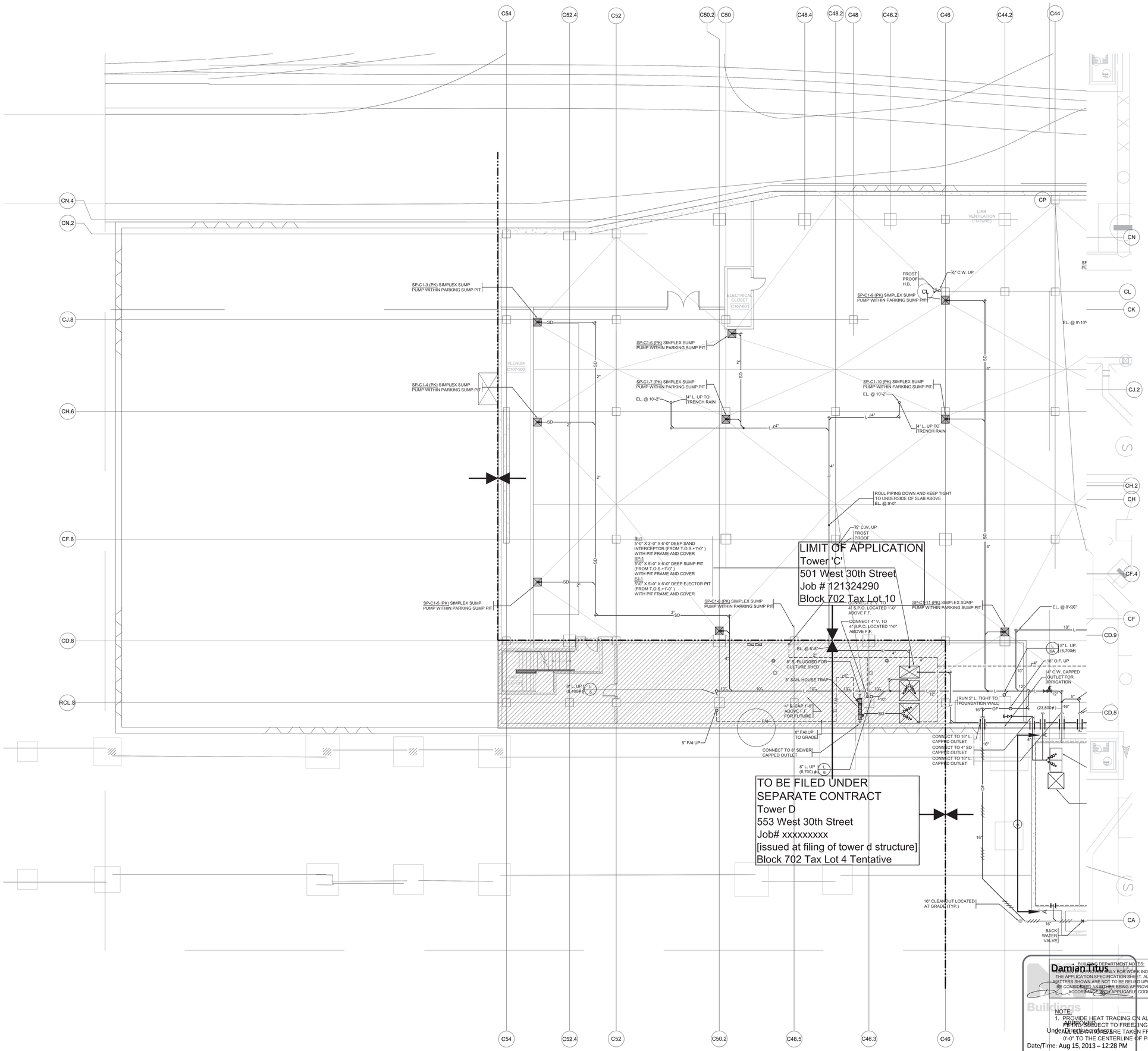

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1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-C107

Drawing Title
PLUMBING
PLAN C1
SECTOR 07

Drawing Number
P1-C107

B-SCAN Drawing Number
P-104.00

SHEET 5 OF 64

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Job Number
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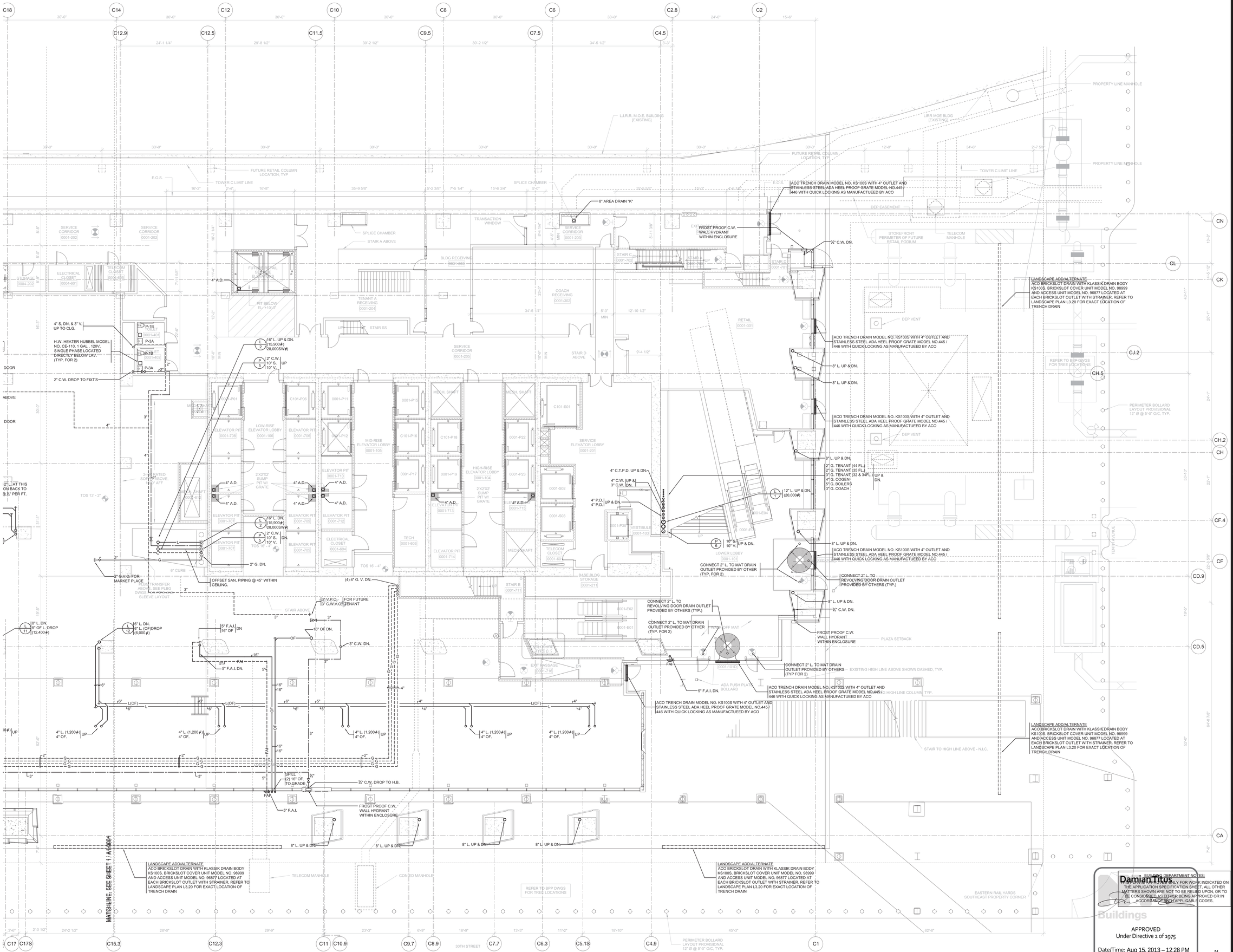

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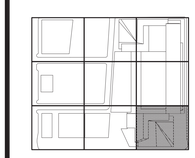
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Project No. 14752.A.000
Drawn By

Sheet Number HYE-TC-P1-0001

Drawing Title
GROUND FLOOR PLUMBING PLAN SECTOR 01

Drawing Number P1-0001

KSCAY Drawing Number P-105.00

SHEET 6 OF 64

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CITY OF BUILDINGS 21224290 Job Number
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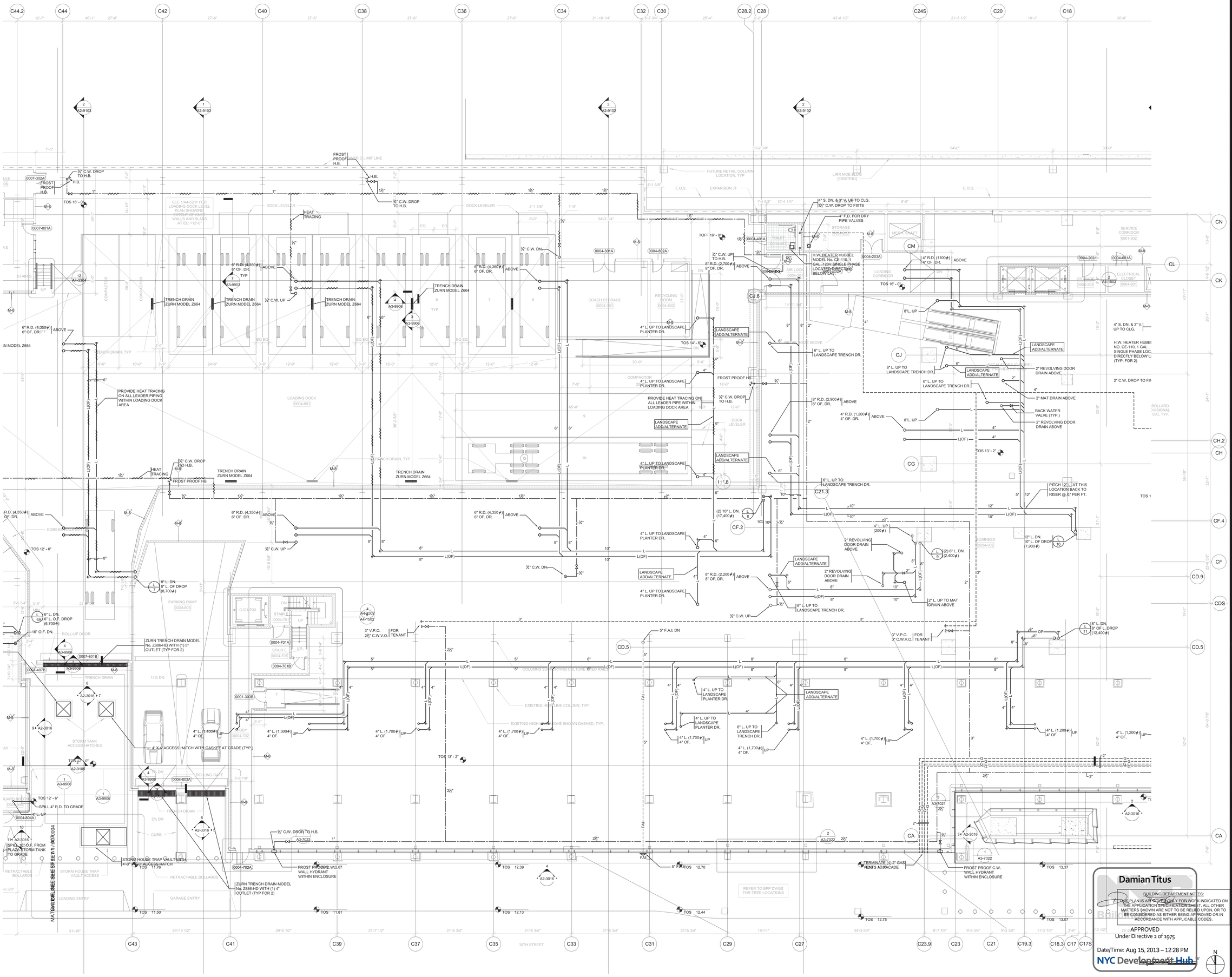

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Key Plan

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Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-0004

Drawing Title
GROUND FLOOR PLUMBING PLAN SECTOR 04

Drawing Number
P1-0004

R-SCAN Drawing Number
P-106.00

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Scan Code

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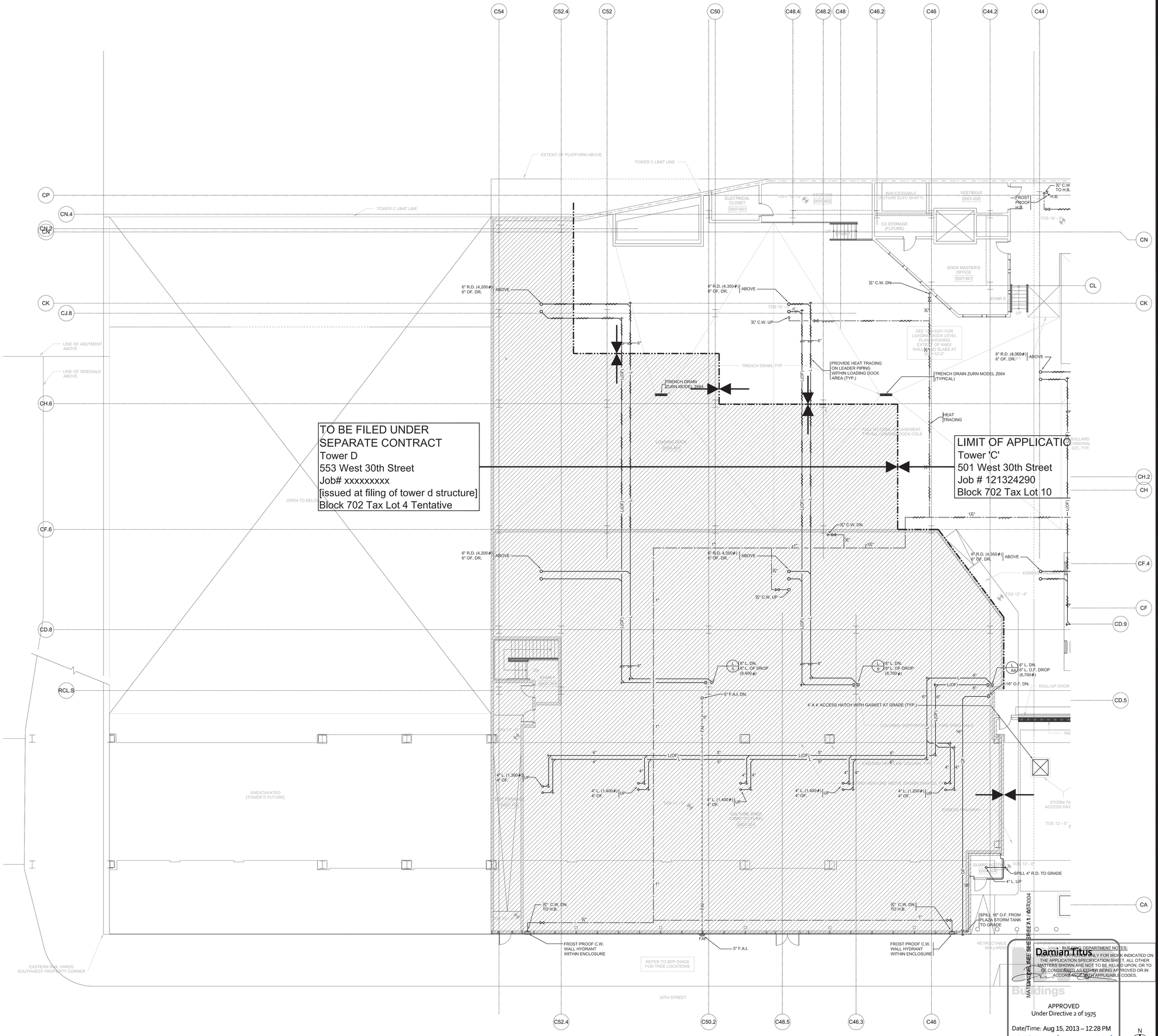

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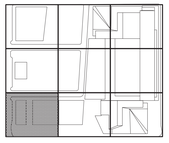

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Sheet Number
HYE-TC-P1-0007

Drawing Title
GROUND FLOOR PLUMBING PLAN SECTOR 07

Drawing Number
P1-0007

B-SCAN Drawing Number
P-107.00

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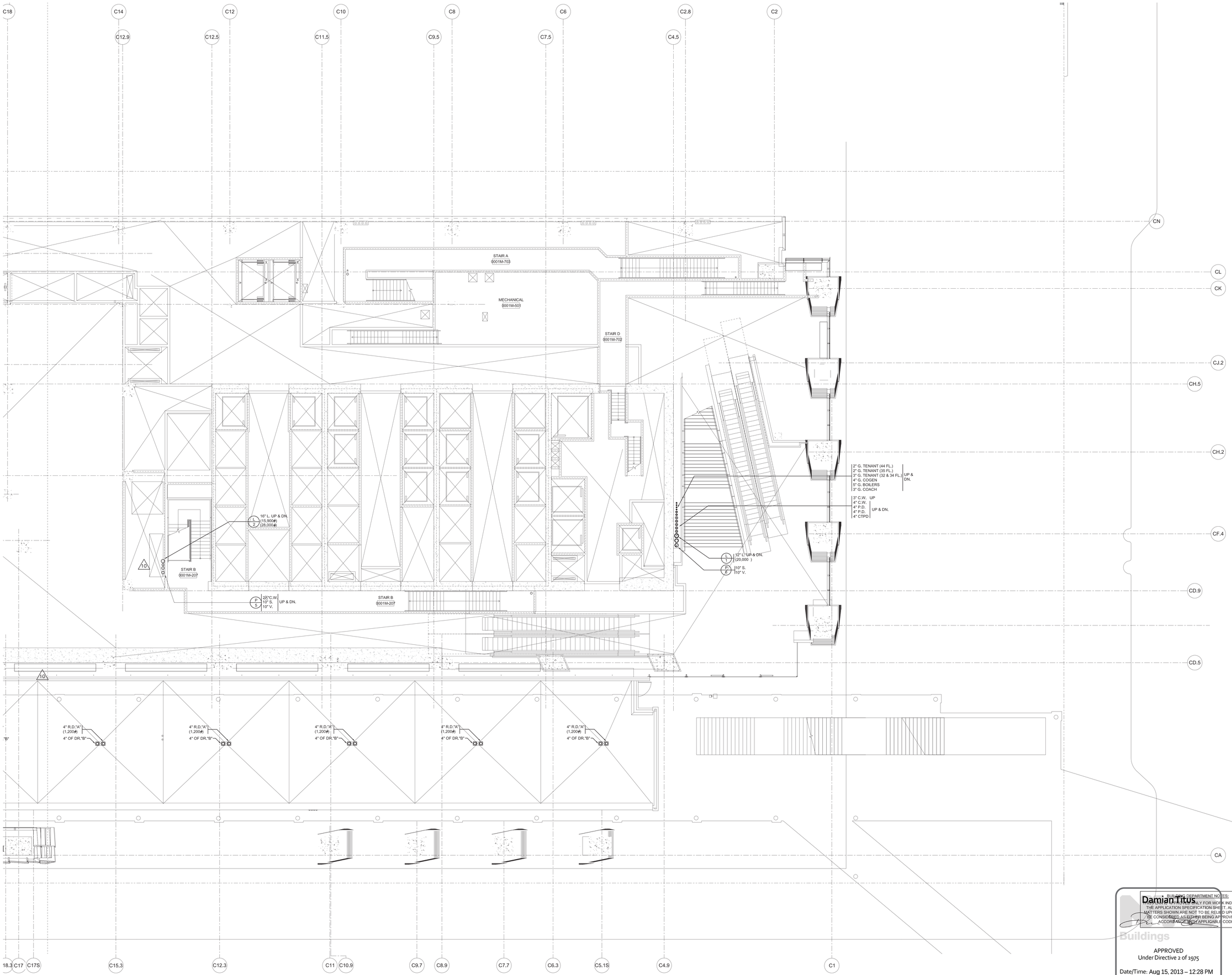

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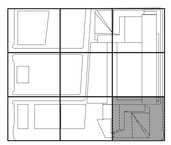

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Project No.
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Drawing Title
GROUND FLOOR
MEZZANINE PLUMBING
PLAN
SECTOR 01

Drawing Number
P1-0001M

R-SCAN Drawing Number
P-108.00

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DEPT OF BLDGS 421224290

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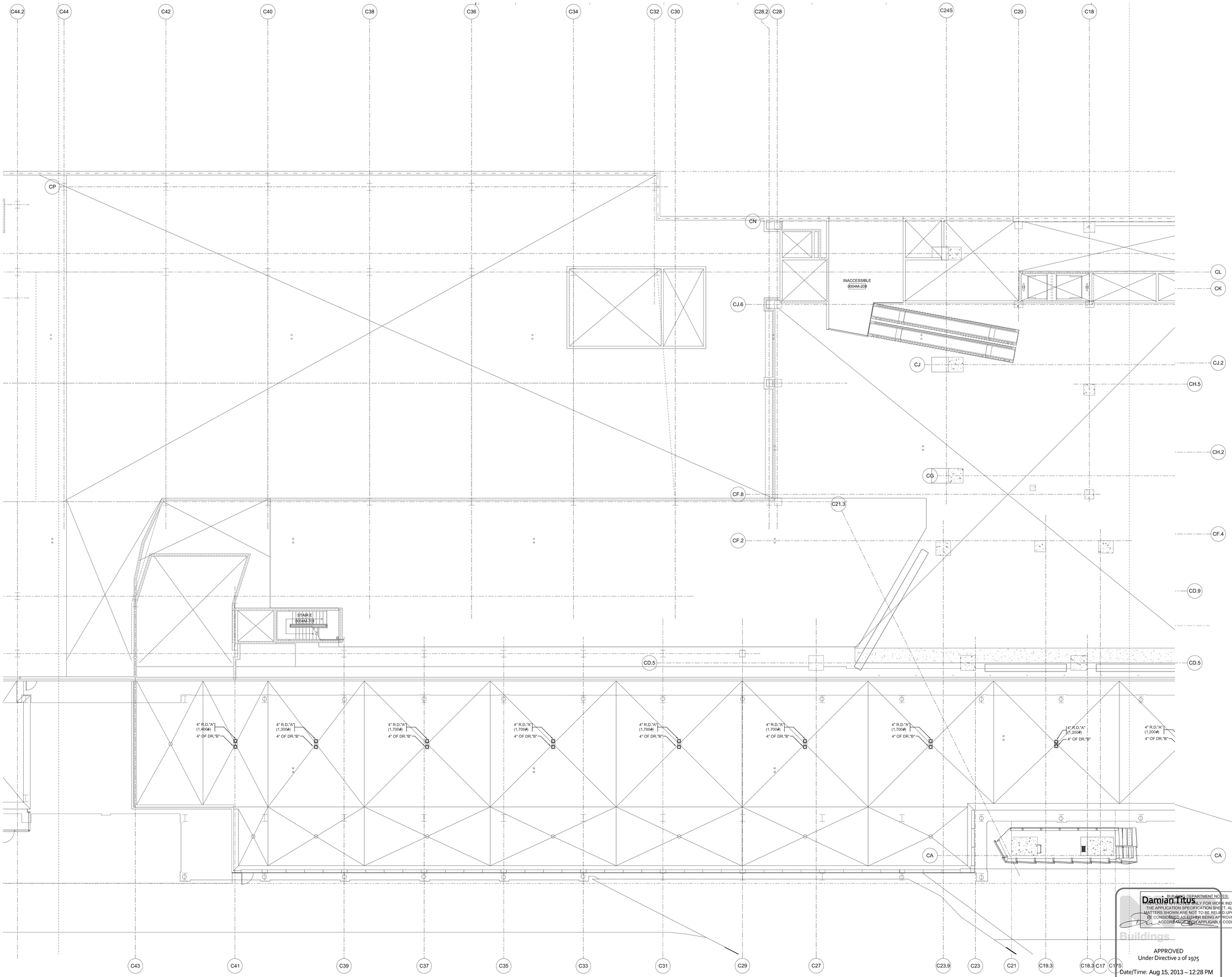

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No.	Issue	Date
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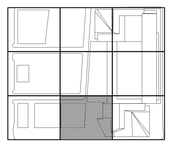
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Project No.
14752.A.000
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Sheet Number
HYE-TC-P1-0004M

Drawing Title
GROUND FLOOR
MEZZANINE PLUMBING
PLAN
SECTOR 04

Drawing Number
P1-0004M

KOCAY Drawing Number
P-109.00

SHEET 10 OF 64

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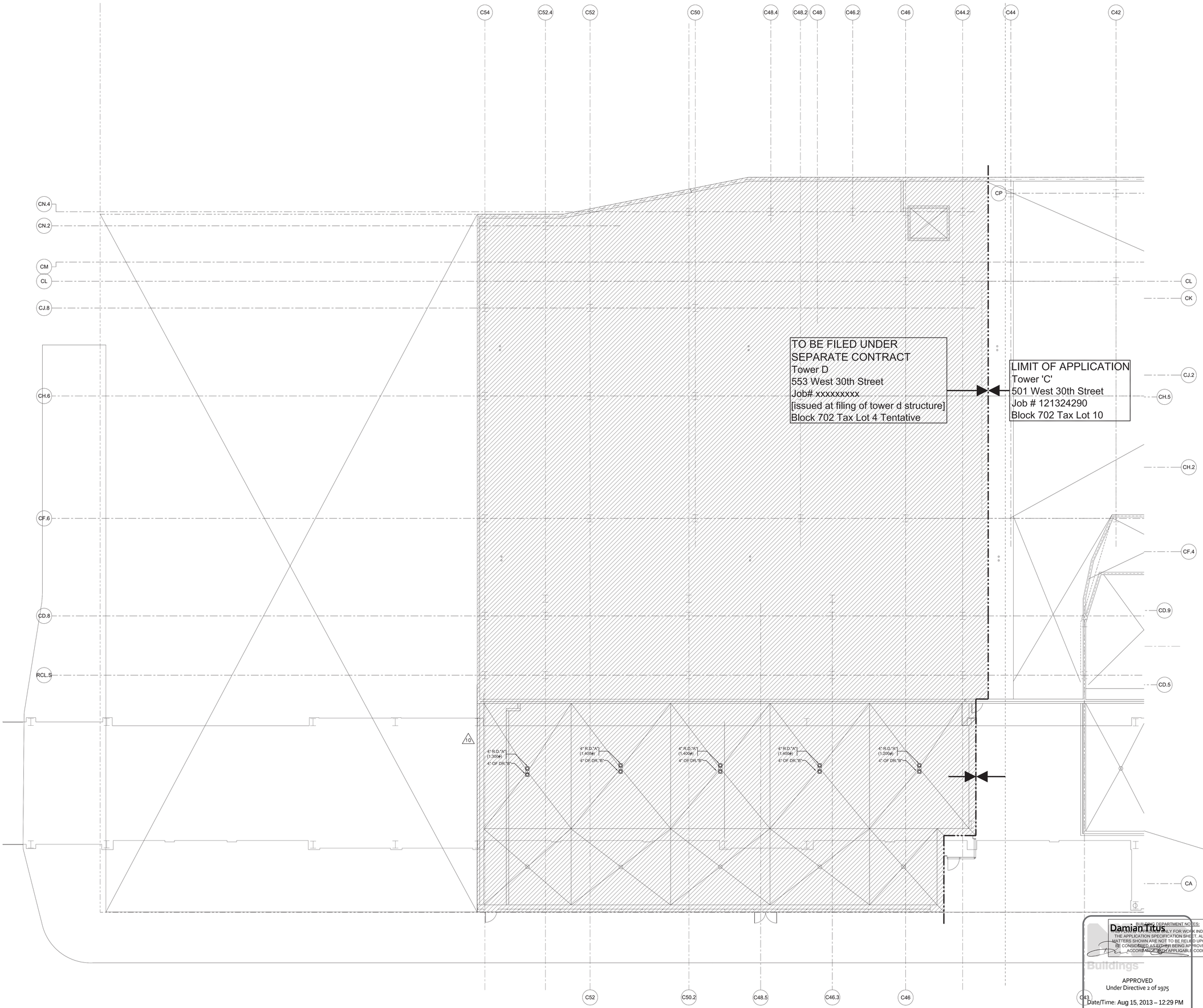

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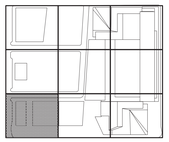
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-0007M

Drawing Title
GROUND FLOOR
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PLAN
SECTOR 07

Drawing Number
P1-0007M

B-SCAN Drawing Number
P-110.00

SHEET 11 OF 64

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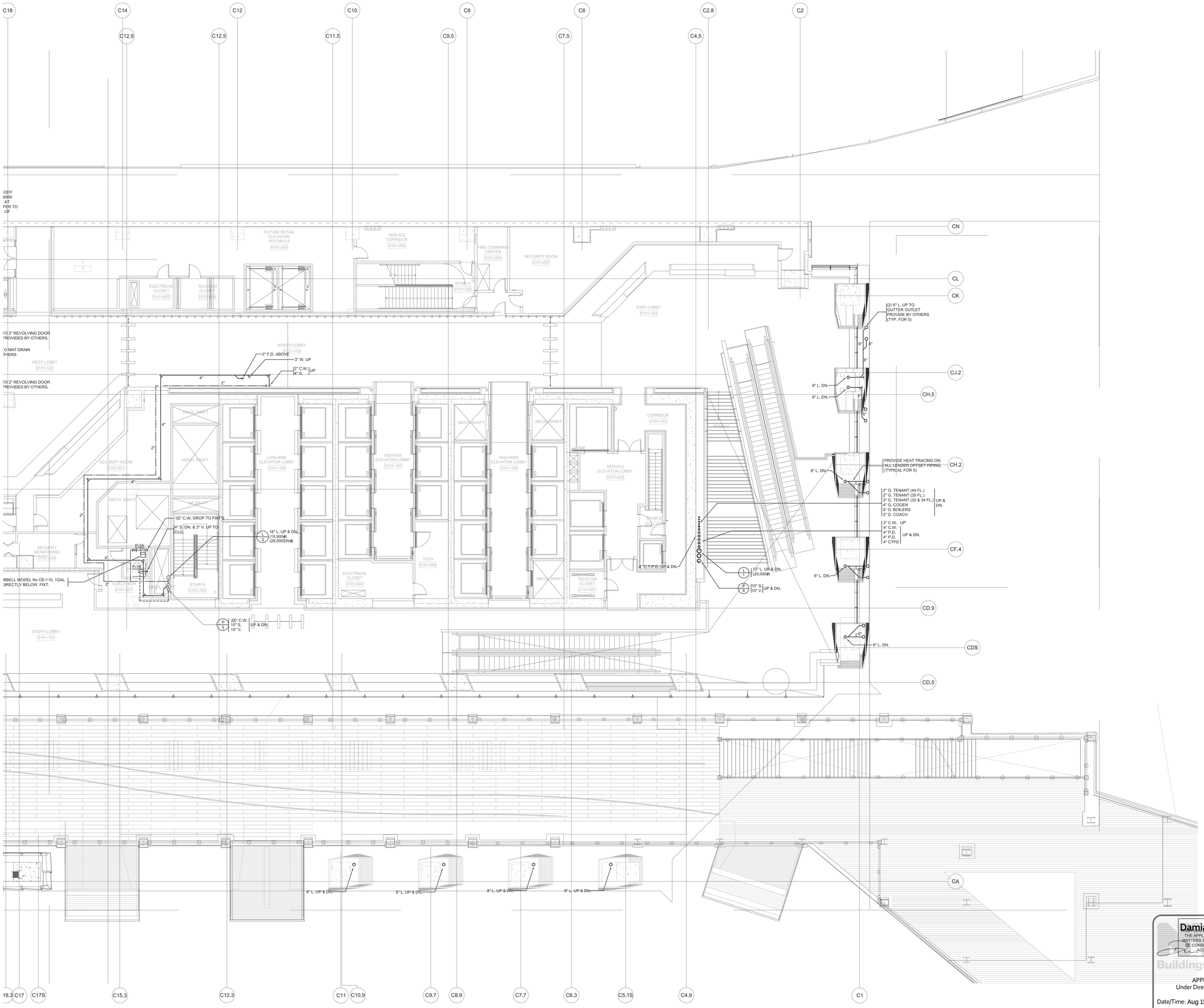

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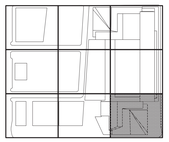
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-0101

Drawing Title
PLUMBING
PLAN 01
SECTOR 01

Drawing Number
P1-0101

B-SCAN Drawing Number
P-111.00

SHEET 12 OF 64

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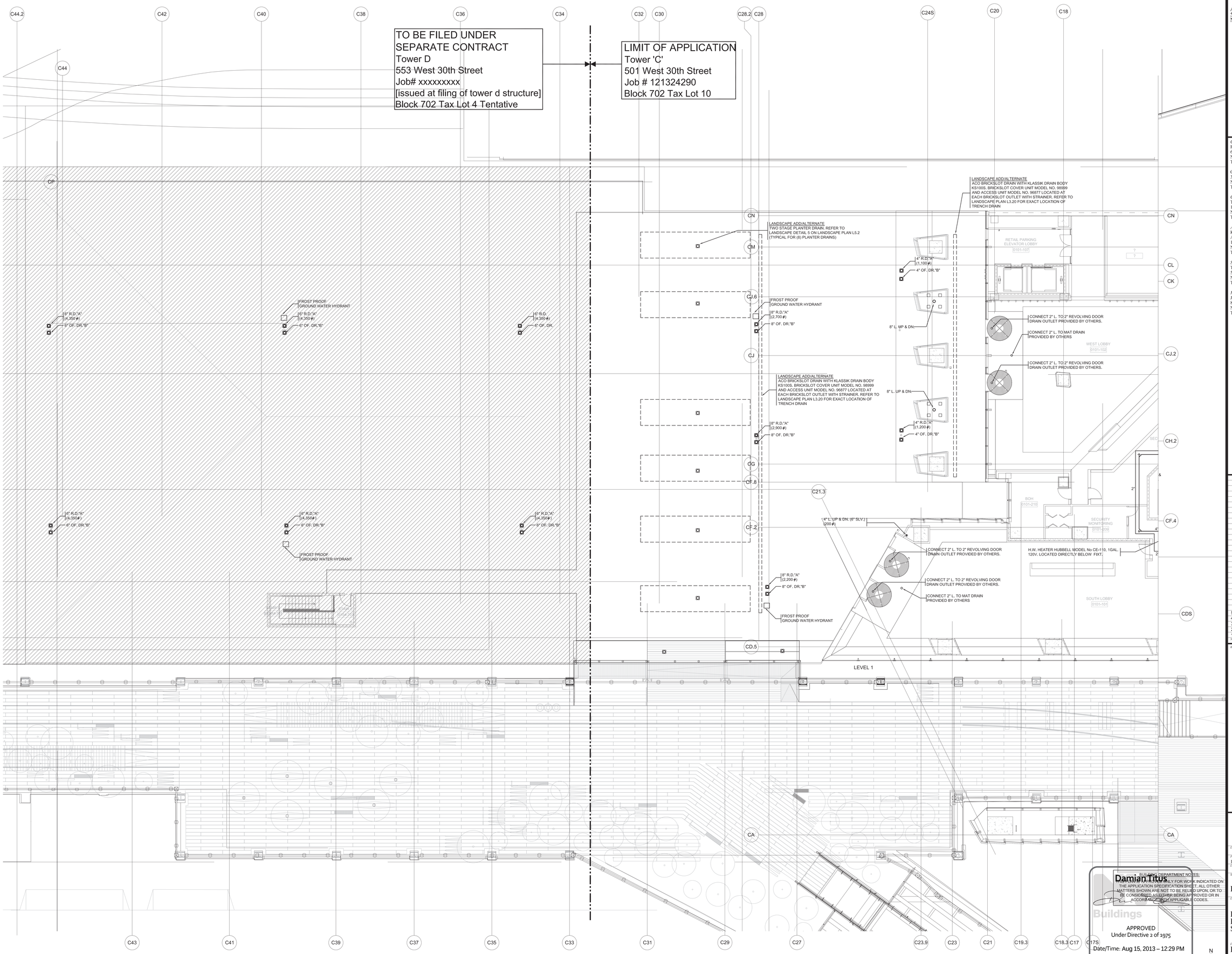

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Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-0104

Drawing Title
PLUMBING
PLAN 01
SECTOR 04

Drawing Number
P1-0104

B-SCAN Drawing Number
P-112.00

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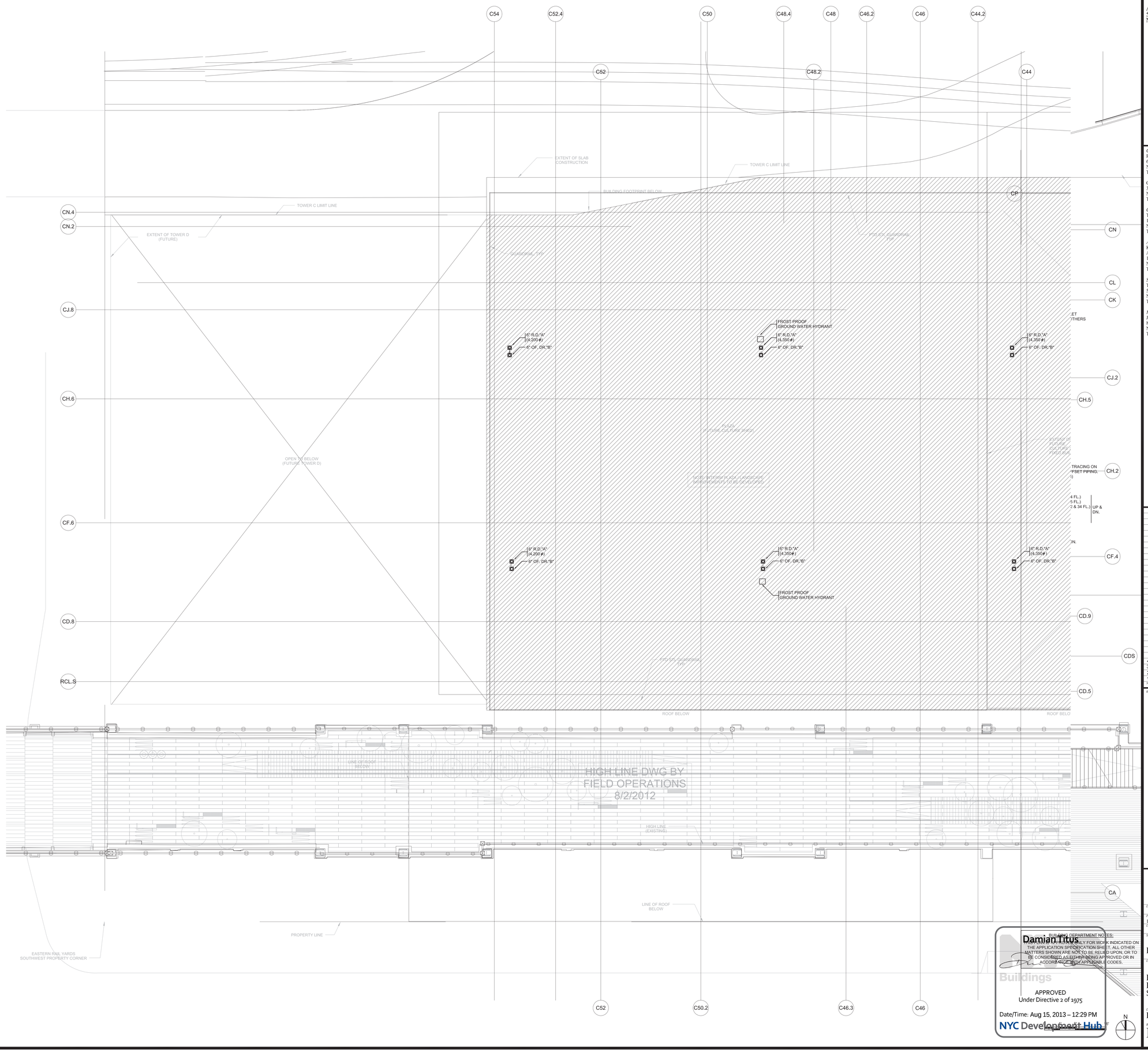

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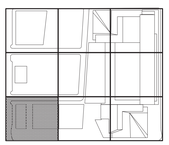

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Project No.
14752.A.000

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Sheet Number
HYE-TC-P1-0107

Drawing Title
PLUMBING
PLAN 01
SECTOR 07

Drawing Number
P1-0107

RSCAN Drawing Number
P-113.00

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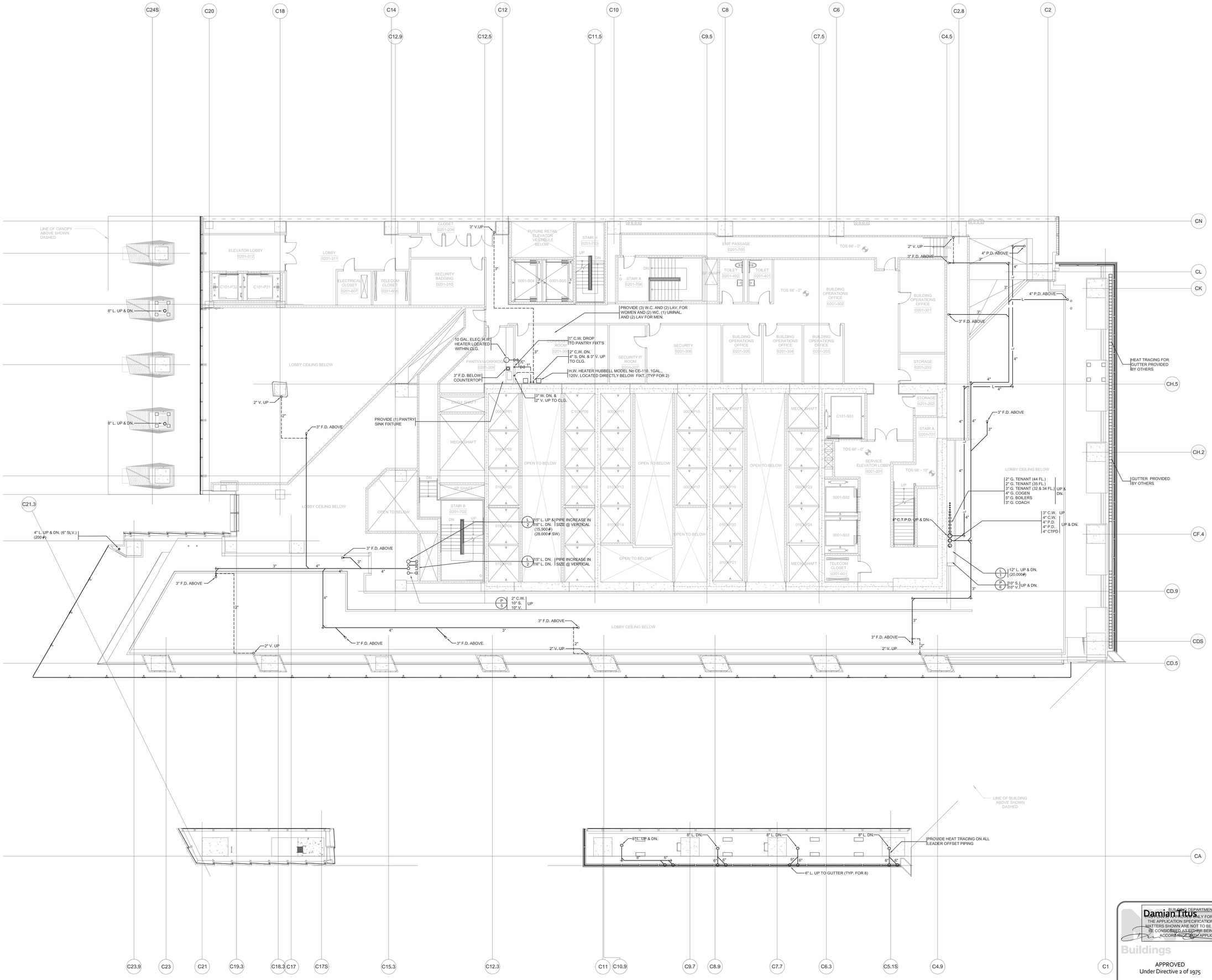

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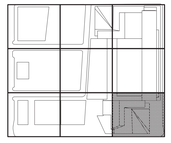
Key Plan



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Project No.
14752.A.000
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Sheet Number
HYE-TC-P1-0201

Drawing Title
PLUMBING
PLAN 02
SECTOR 1

Drawing Number
P1-0201
B.S.C.A.V. Drawing Number
P-114.00

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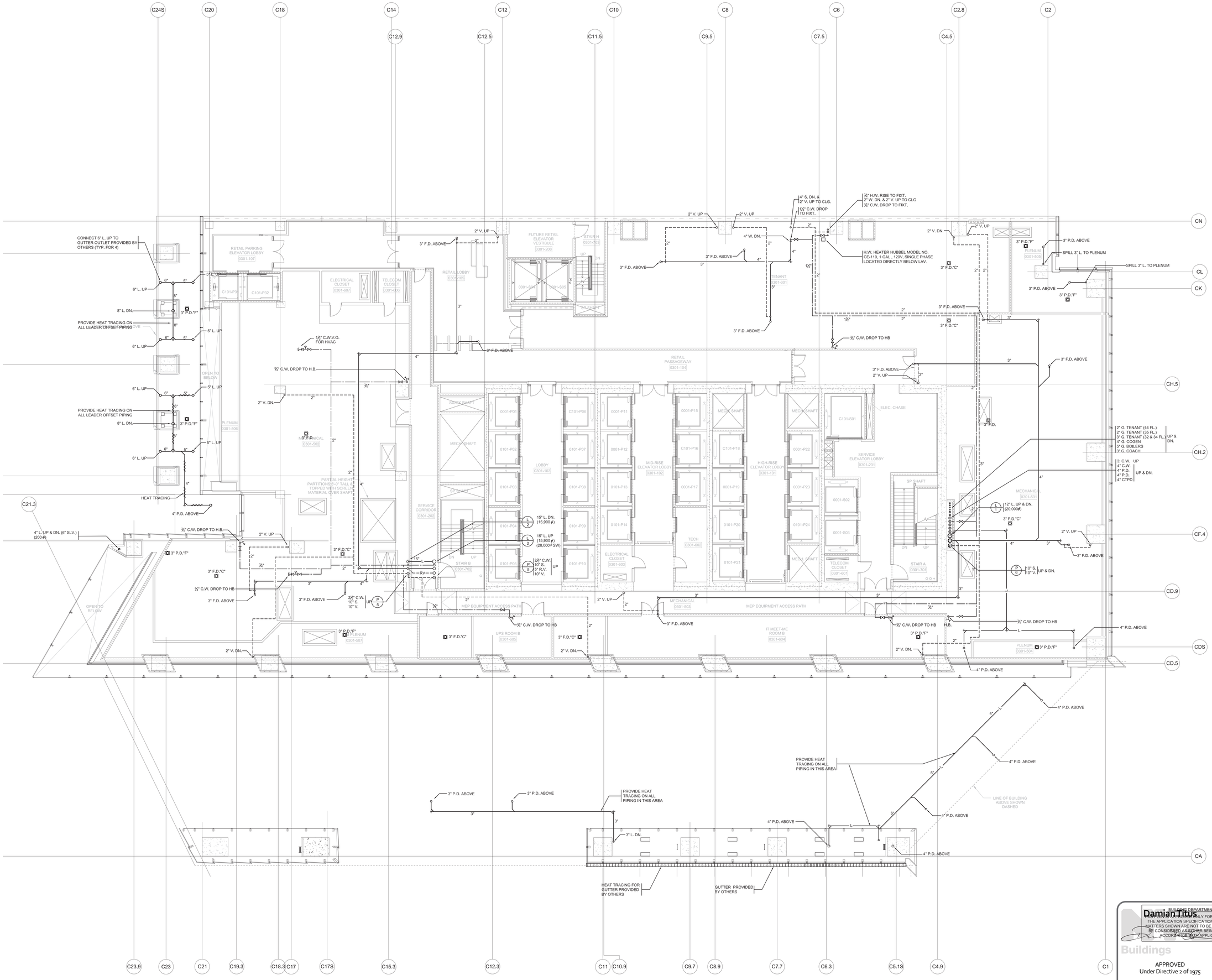

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Project No.
14752.A.000

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Sheet Number
HYE-TC-P1-0301

Drawing Title
PLUMBING
PLAN 03
SECTOR 01

Drawing Number
P1-0301

R.S.C.J.V. Drawing Number
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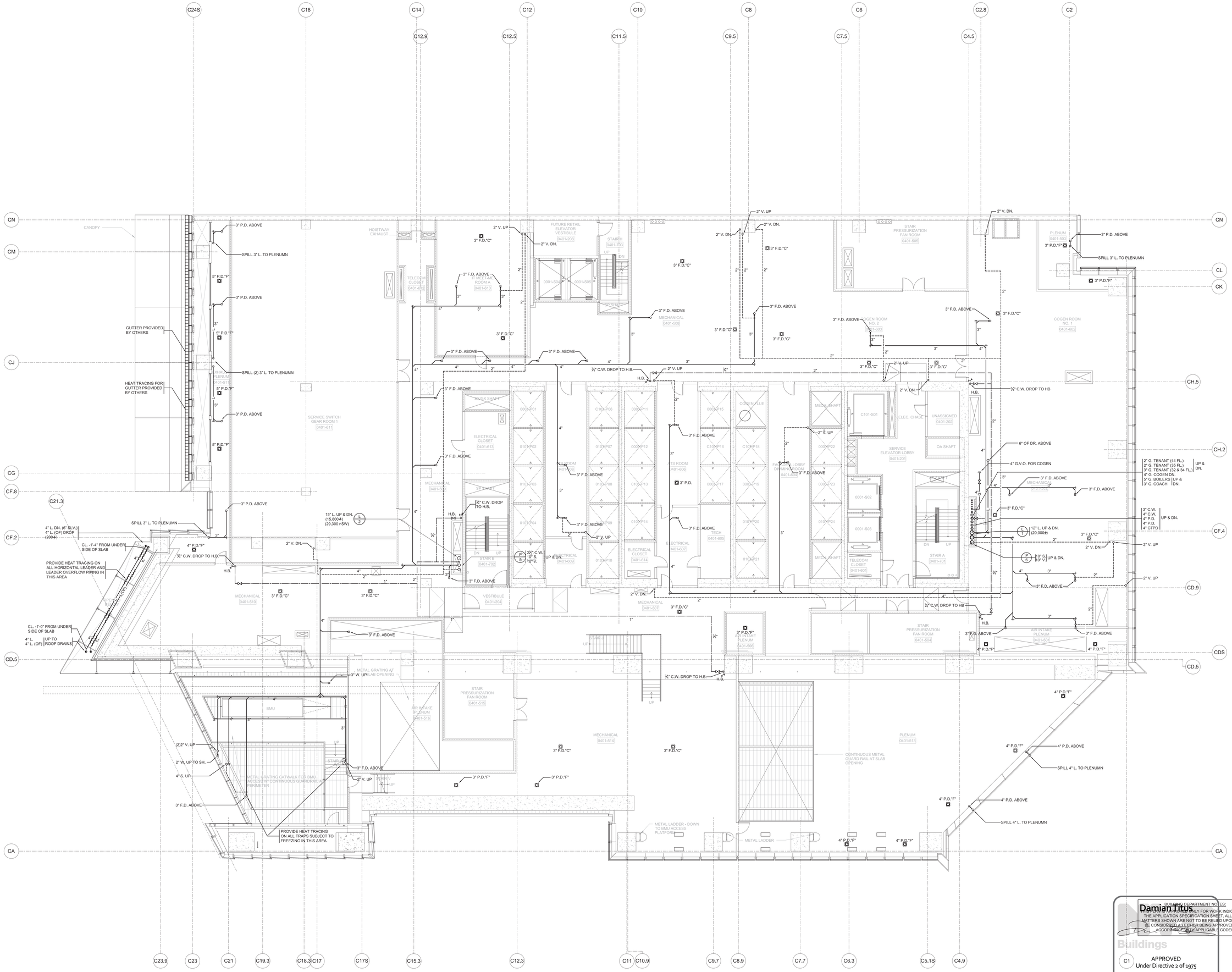

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Key Plan

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Project No.
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Drawn By

Sheet Number
HYE-TC-P1-0401

Drawing Title
PLUMBING
PLAN 04
SECTOR 01

Drawing Number
P1-0401

R/SCAN Drawing Number
P-116.00

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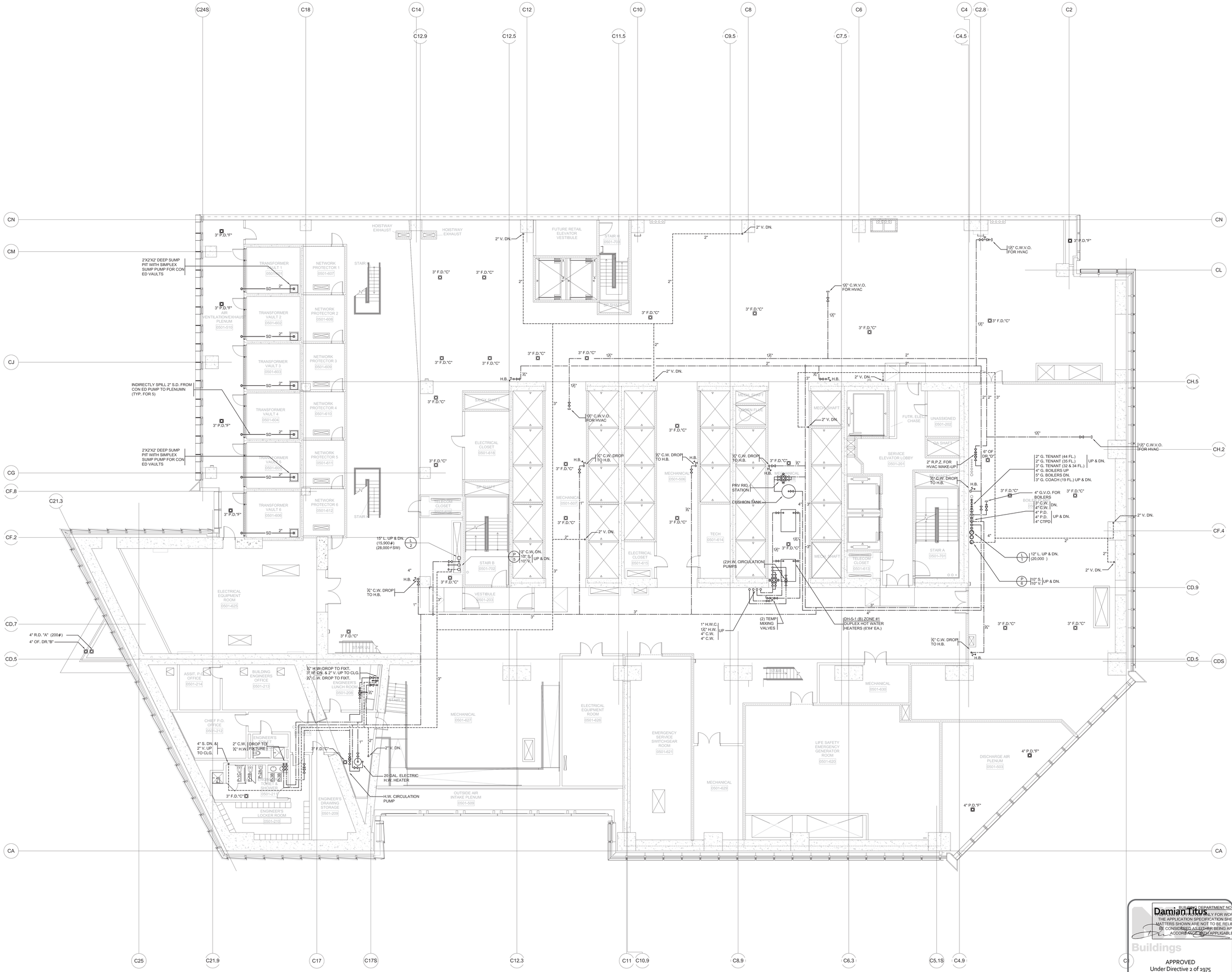

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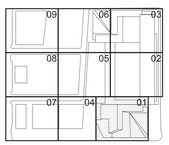

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Project No.
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Drawn By

Sheet Number
HYE-TC-P1-0501

Drawing Title
PLUMBING
PLAN 05
SECTOR 01

Drawing Number
P1-0501

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SHEET 18 OF 64

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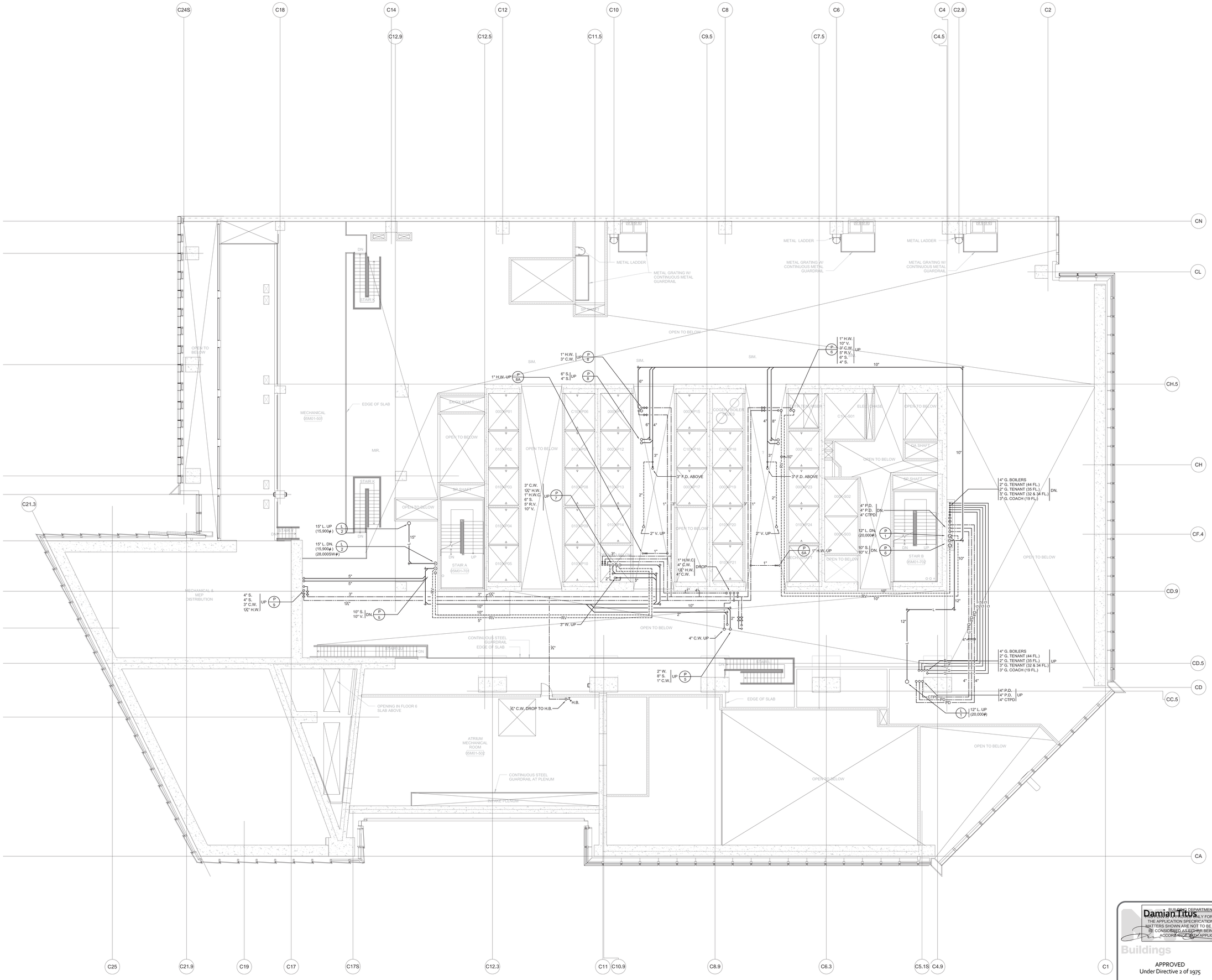

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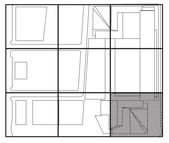
No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



STATE OF NEW YORK · AUGUSTINE A. RIGHEMBATO · LICENSED PROFESSIONAL ENGINEER · No. 085442

Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-0501M

Drawing Title
PLUMBING
PLAN 05M
SECTOR 01

Drawing Number
P1-0501M

R.S.C.I.N. Drawing Number
P-118.00

SHEET 19 OF 64

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CITY OF BLDGS 121224290 Job Number
E3940541341 Scan Code

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Address
501 WEST 30TH STREET
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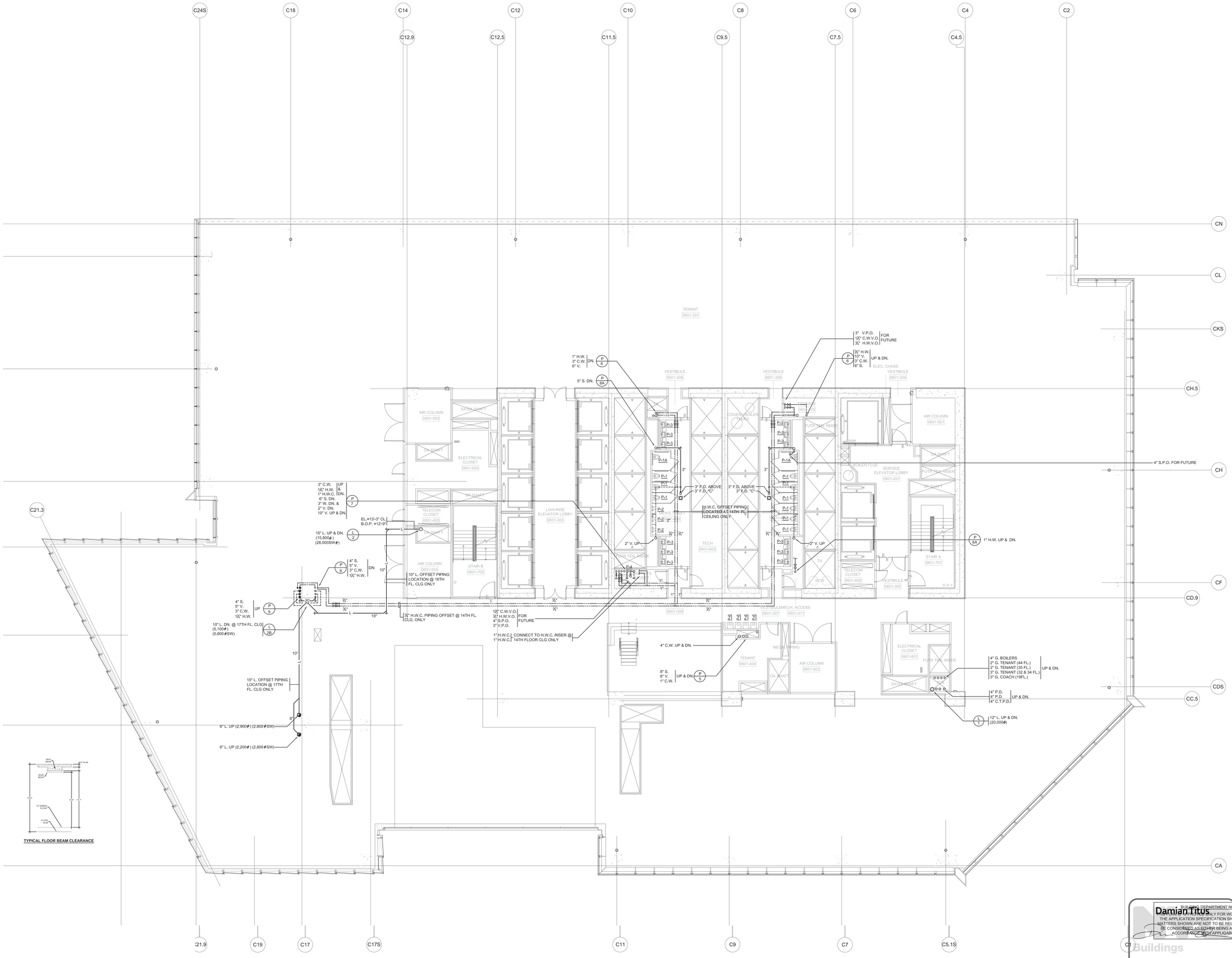

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Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

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Tel: 212.986.7514 Fax: 212.986.7510

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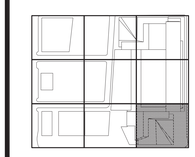
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-0601

Drawing Title
PLUMBING
PLAN 06 THRU 17
SECTOR 01

Drawing Number
P1-0601

R.K.F.M. Drawing Number
P-119.00

SHEET 20 OF 64

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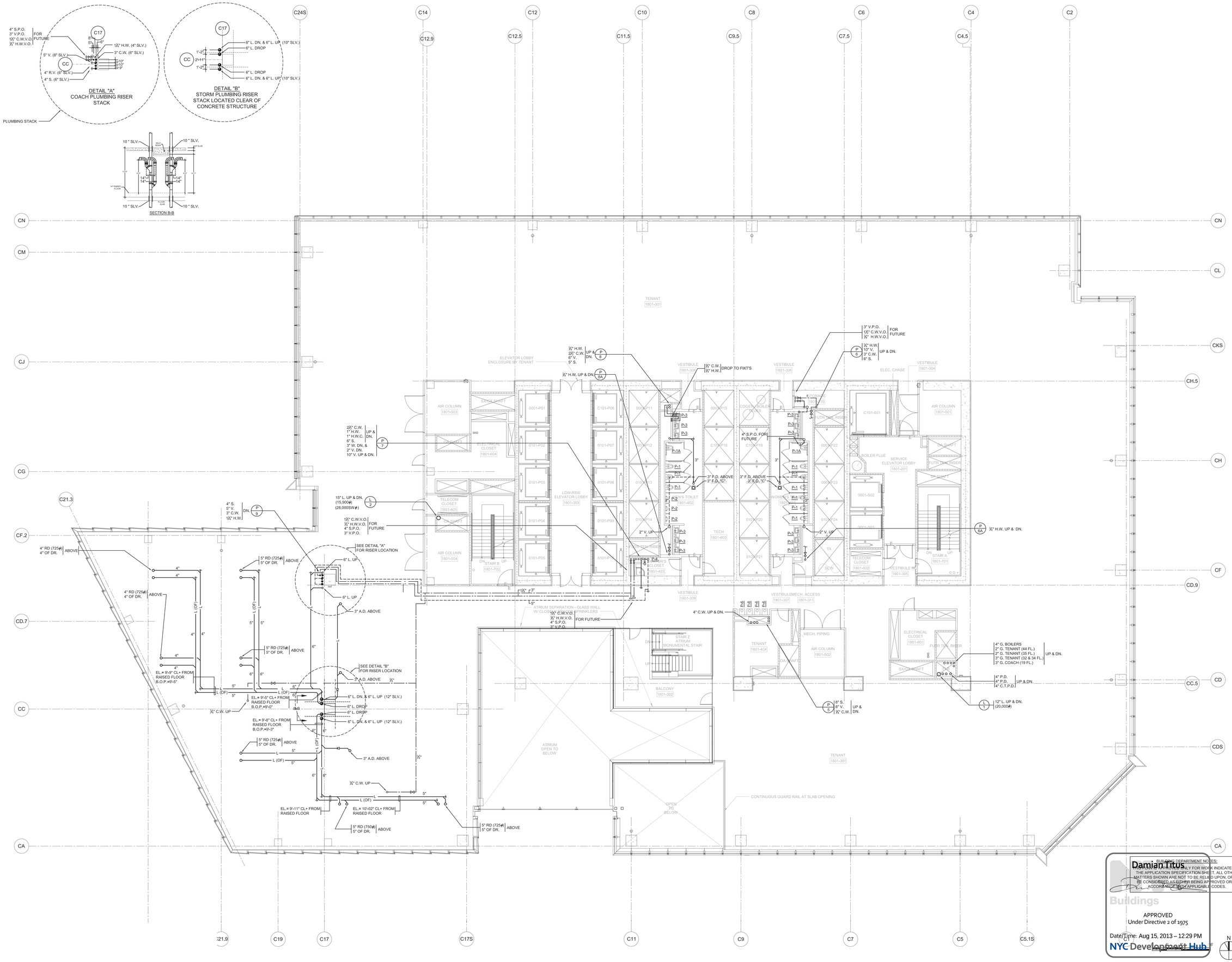
DEPT OF BLDGS 21324290 Job Number



HUDSON YARDS - TOWER C

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No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No. 14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-1801

Drawing Title
PLUMBING
PLAN 18
SECTOR 01

Drawing Number
P1-1801
R-SCAN Drawing Number
P-120.00

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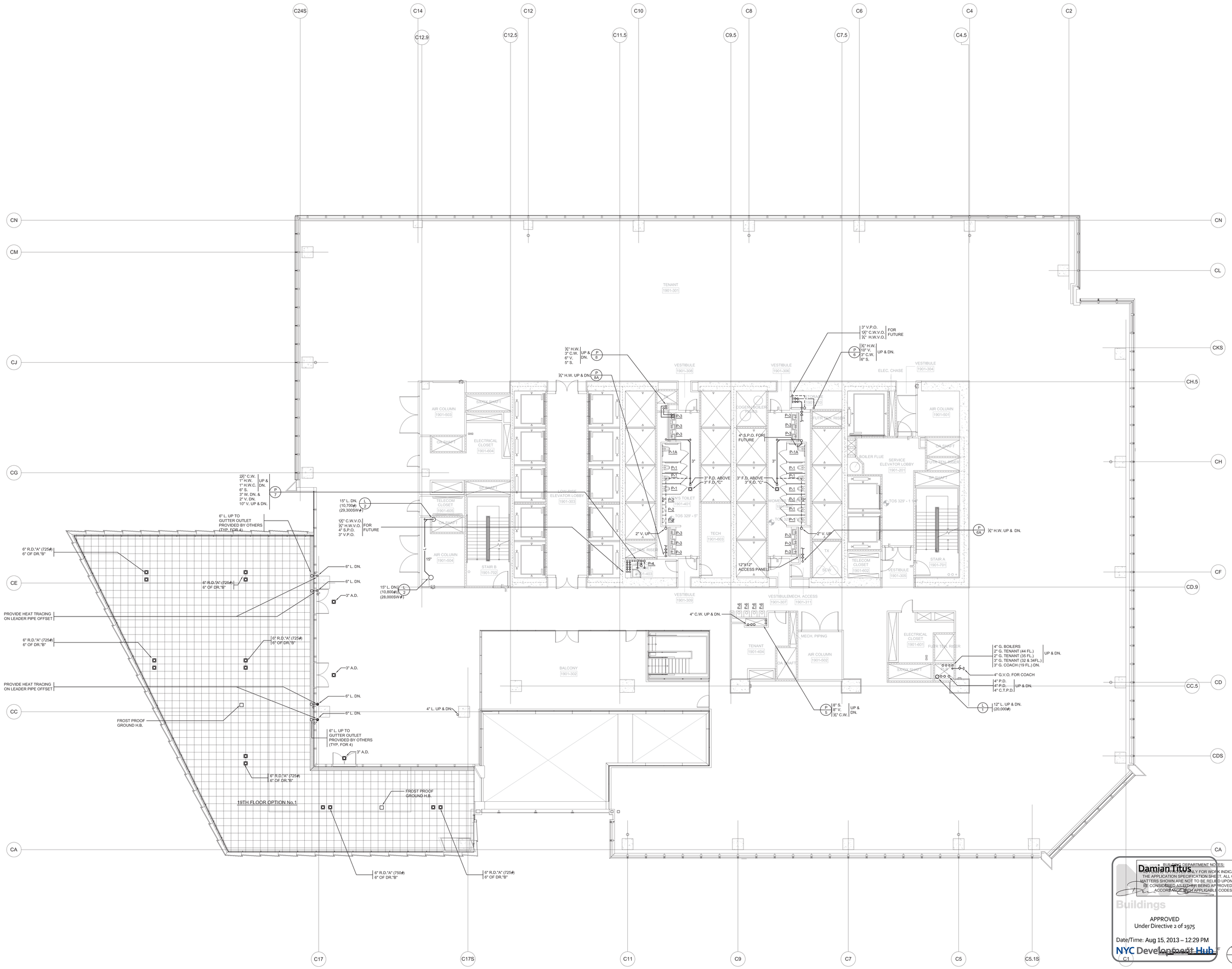

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No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No. 14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-1901

Drawing Title
PLUMBING
PLAN 19
SECTOR 01

Drawing Number
P1-1901
R.SCAN Drawing Number
P-121.00

SHEET 22 OF 64

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E3903650874 Scan Code
SUFF OF BLDGS 121242490 Job Number

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New York, NY 10013
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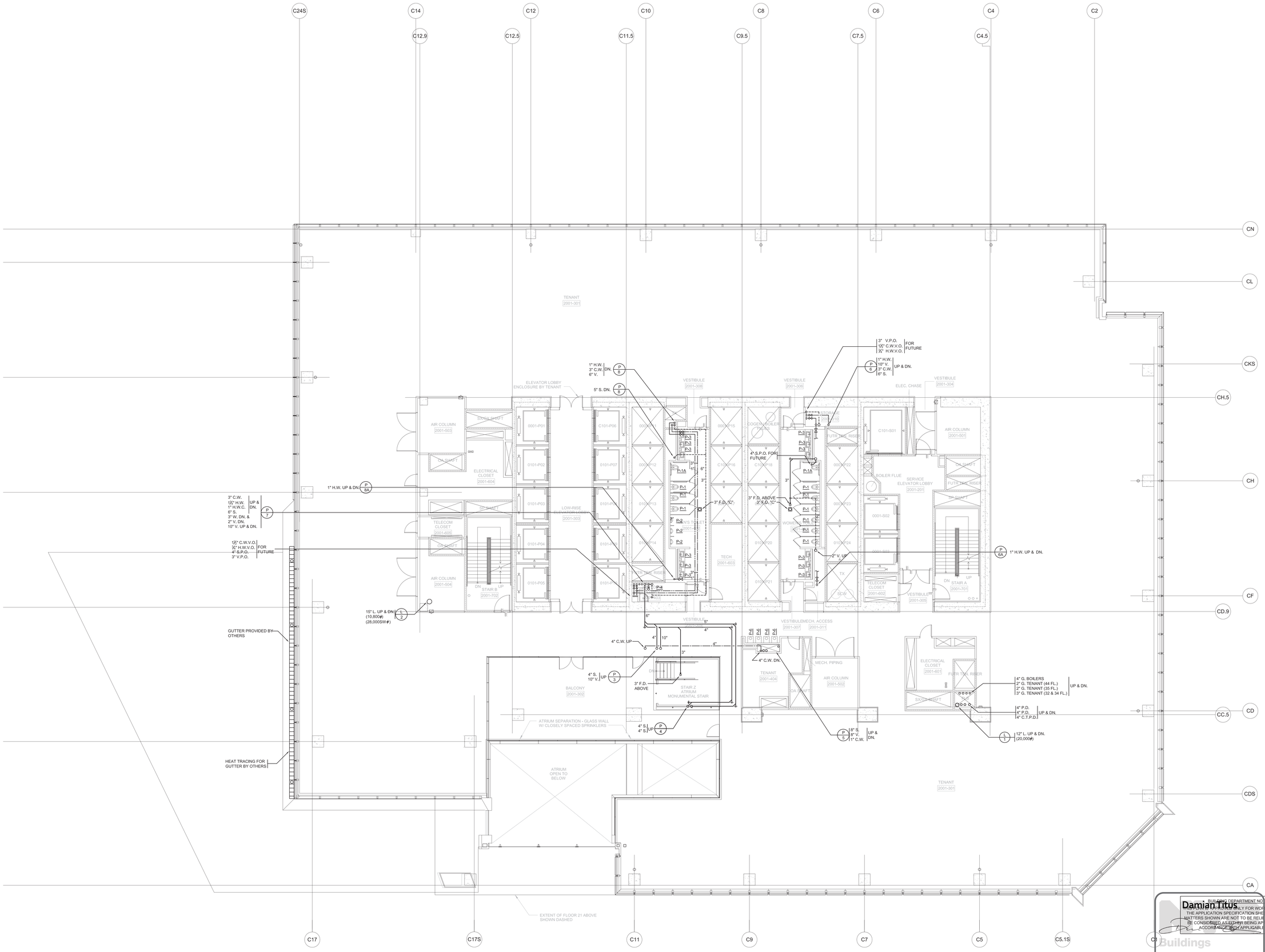

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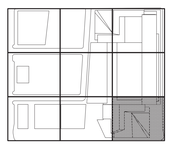
No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-2001

Drawing Title
PLUMBING
PLAN 20
SECTOR 01

Drawing Number
P1-2001
R.SCAN Drawing Number
P-122.00

SHEET 23 OF 64

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Scan Code: CERT OF BLDG 2412242290
Scan Code: E5236594166 Job Number

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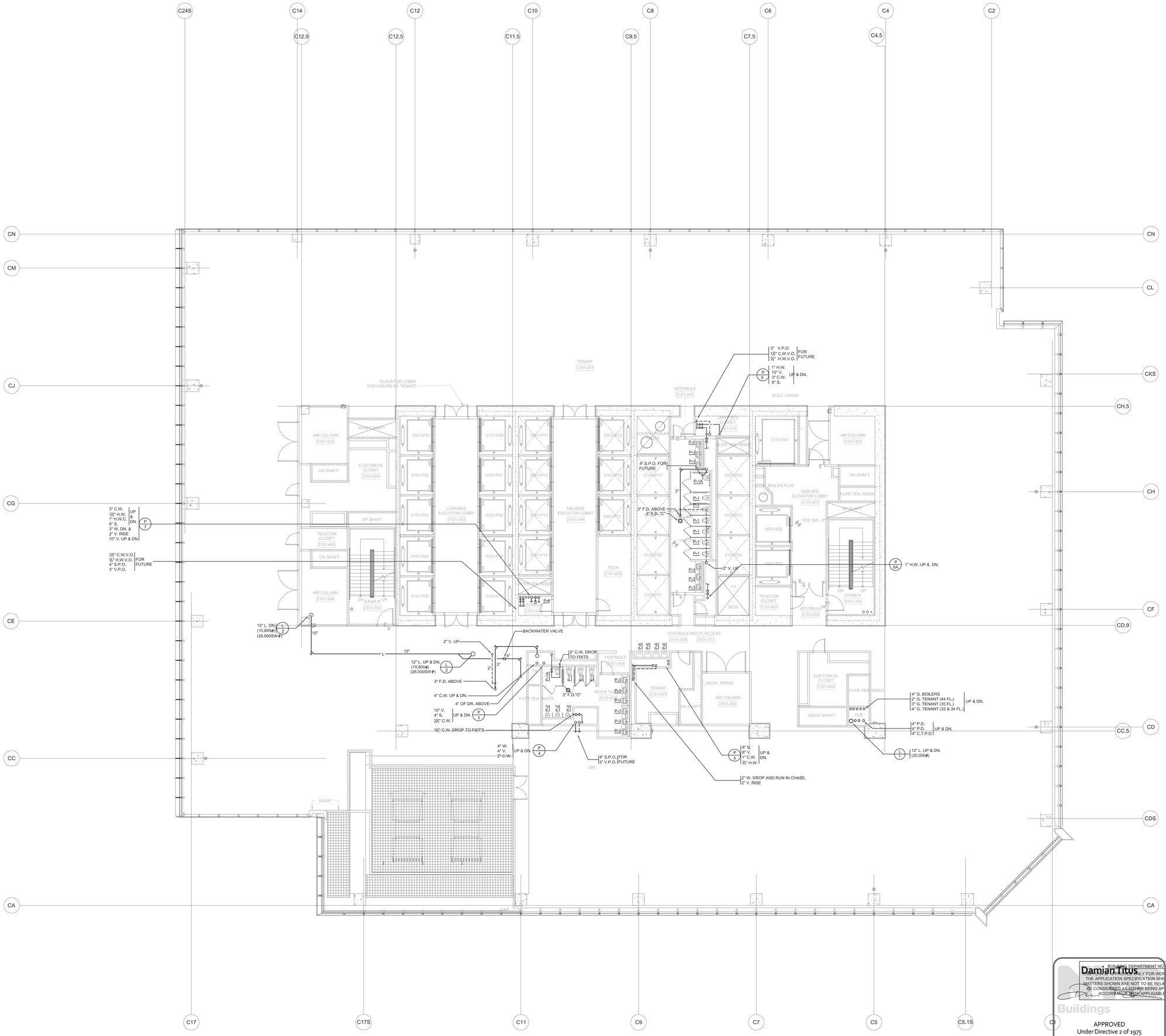

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4	DI-27 PLUMBING	02-11-2013
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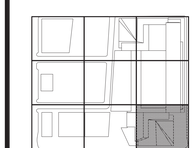
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-2101

Drawing Title
PLUMBING
PLAN 21
SECTOR 01

Drawing Number
P1-2101

BIRCH Drawing Number
P-123.00

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CERT OF BLDG 2012024290 Job Number

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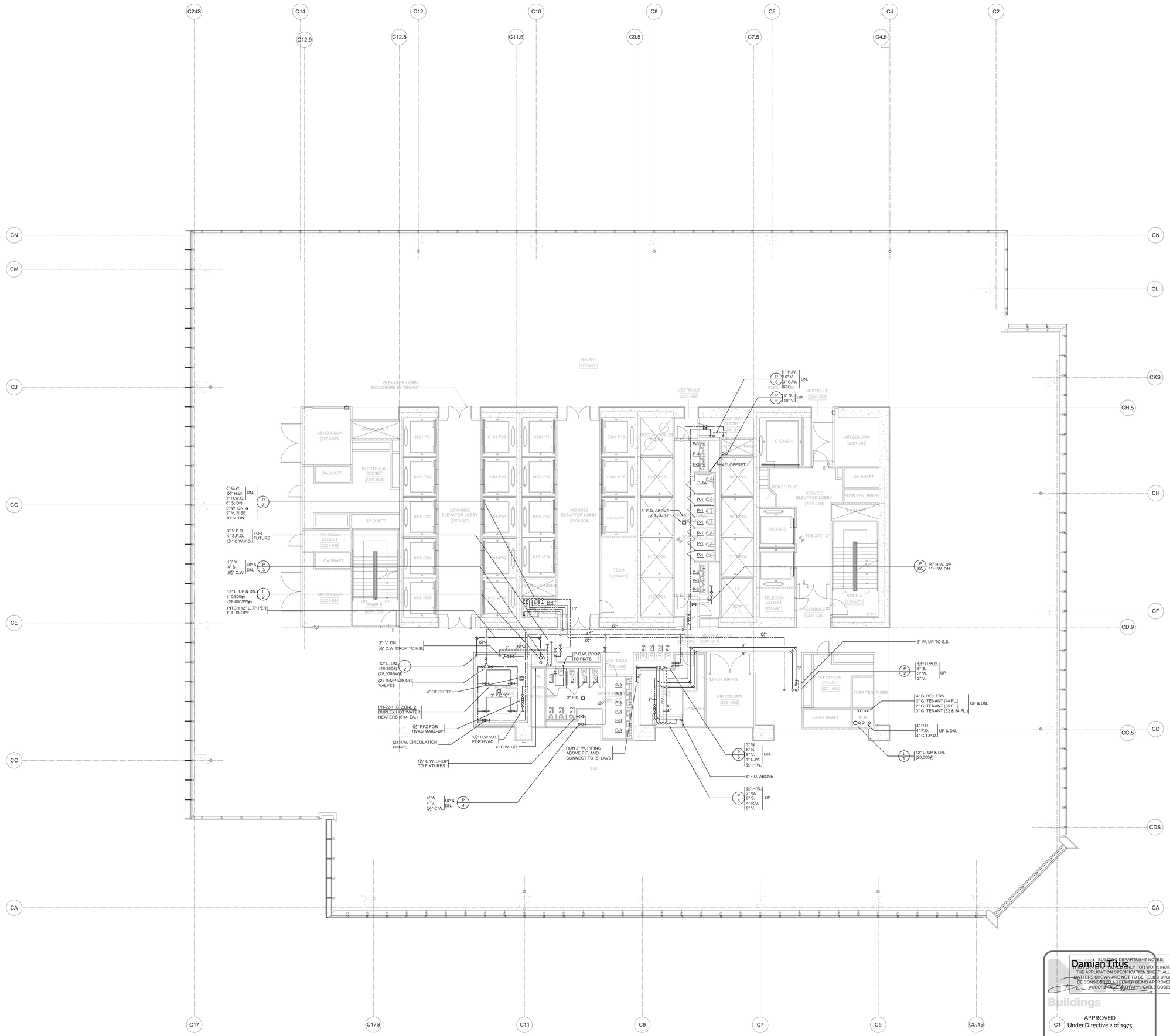
NEW YORK, NY



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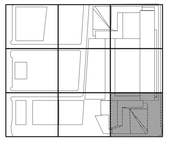
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-2201

Drawing Title
PLUMBING
PLAN 22
SECTOR 01

Drawing Number
P1-2201

BSEAV Drawing Number
P-124.00

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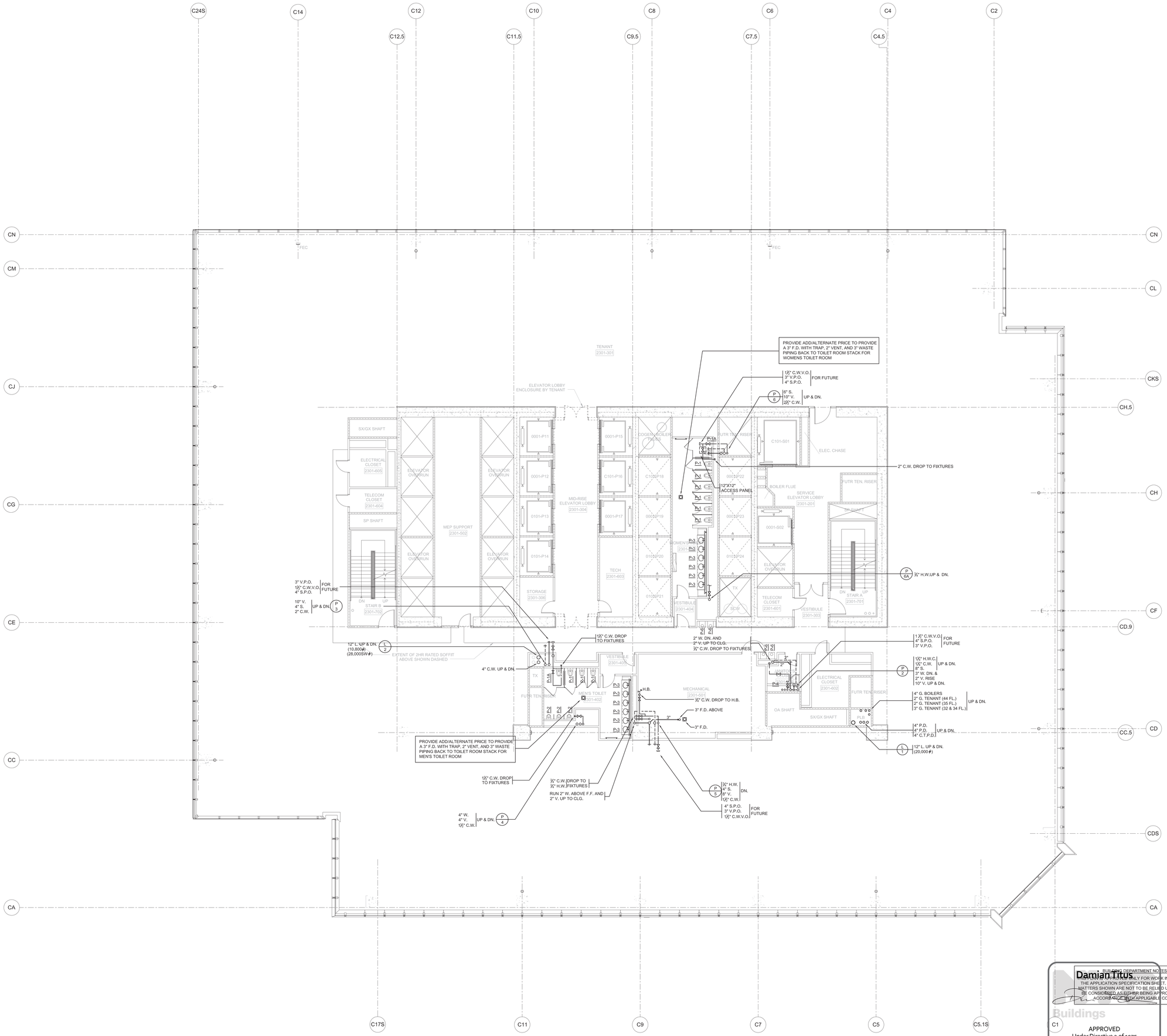

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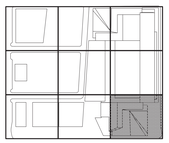
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-2301

Drawing Title
PLUMBING
PLAN 23
SECTOR 01

Drawing Number
P1-2301

B-SCAN Drawing Number
P-125.00

SHEET 26 OF 64

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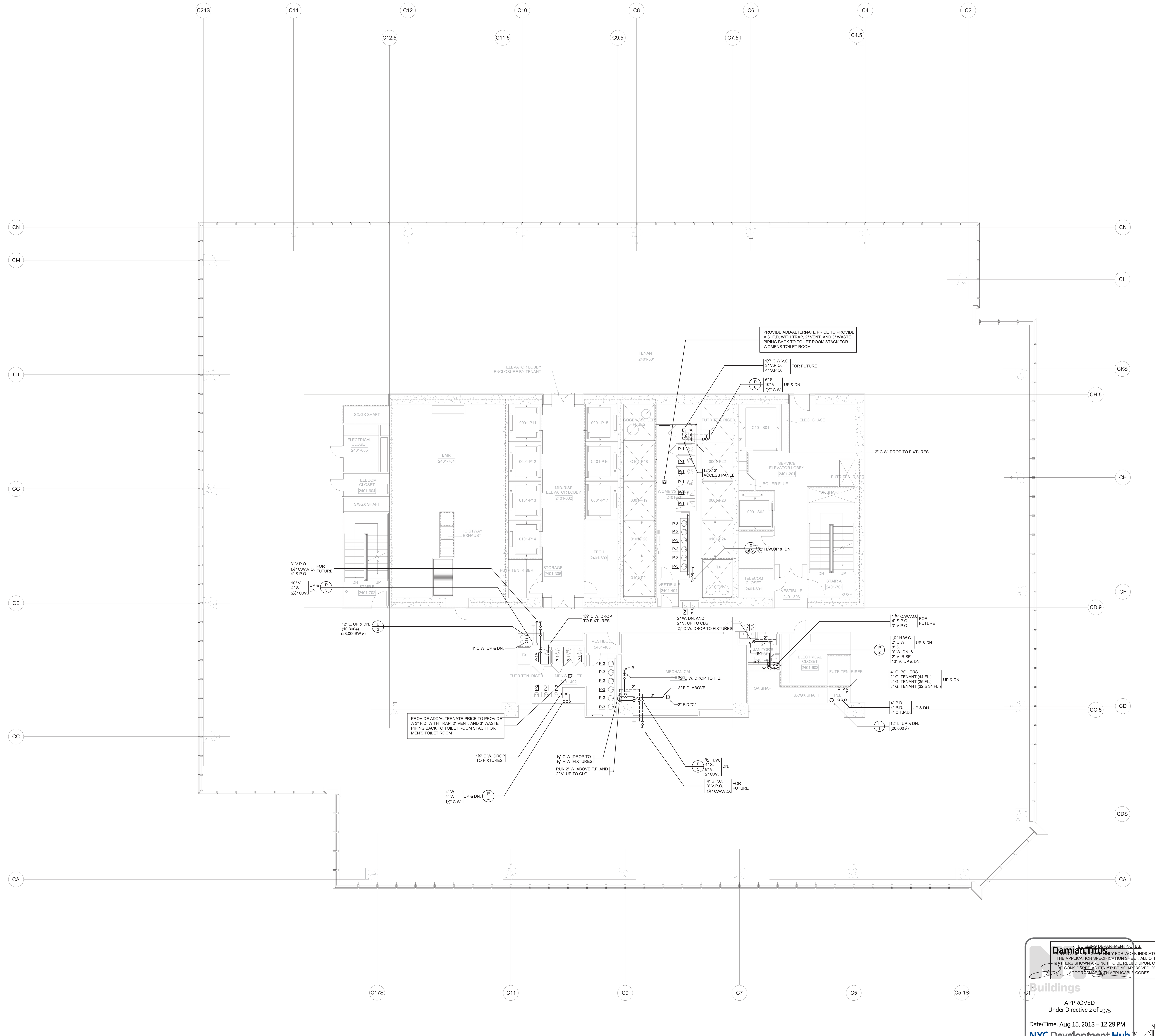

DEPT OF BLDGS 121324290 Job Number

ES832282086 Scan Code

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No.	Issue	Date
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3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-2401

Drawing Title
PLUMBING
PLAN 24
SECTOR 01

Drawing Number
P1-2401

B-SCAN Drawing Number
P-126.00

SHEET 27 OF 64

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E350135799 Scan Code
CERT OF BLDG 121224290 Job Number

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

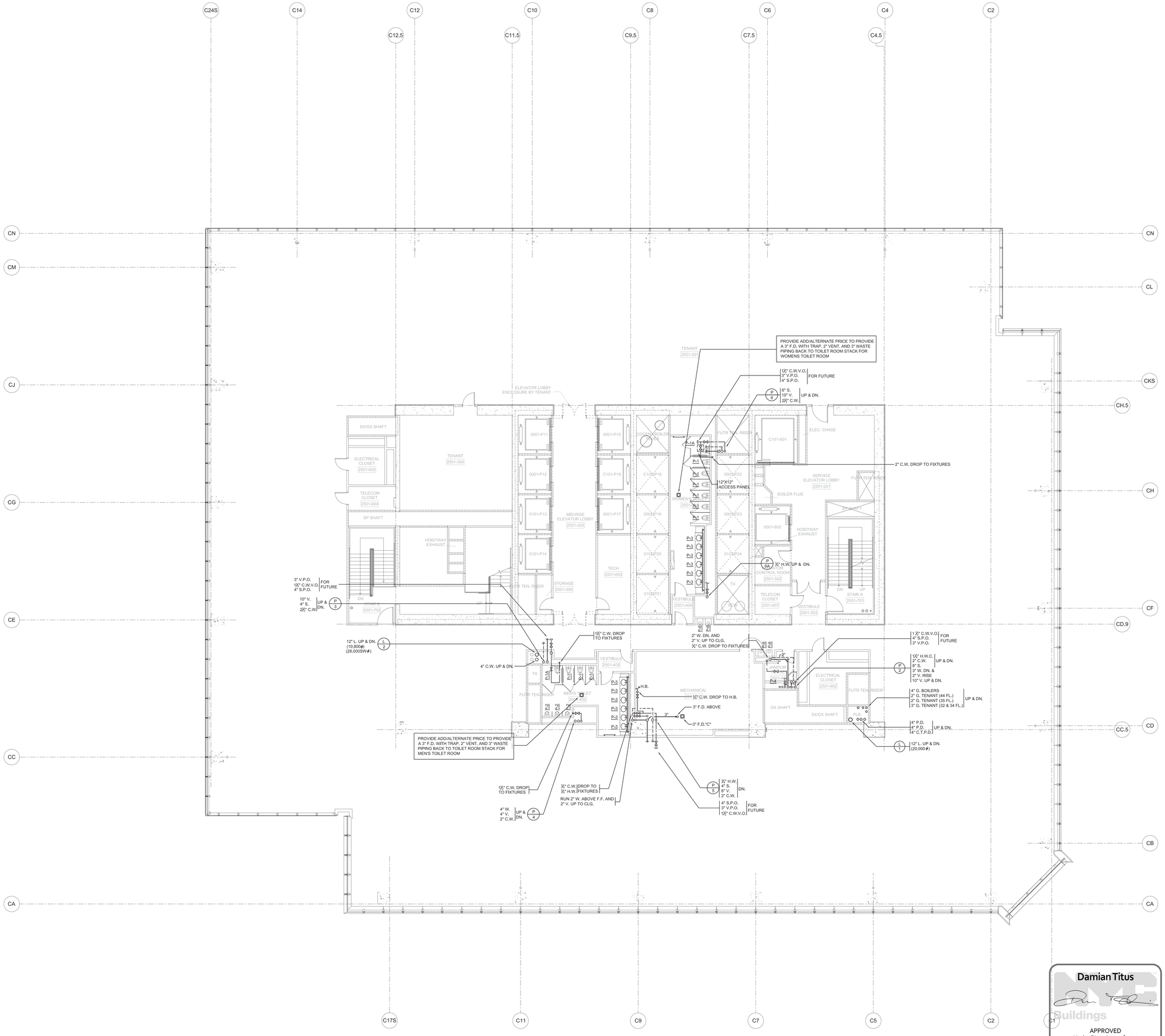
Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894



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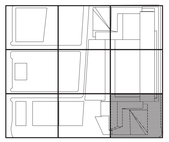
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number

HYE-TC-P1-2501

Drawing Title

PLUMBING
PLAN 25
SECTOR 01

Drawing Number
P1-2501

B.R.C.N.Y. Drawing Number
P-127.00

SHEET 28 OF 64

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CITY OF BLDGS 421224290 Job Number
E388495003 Scan Code

HUDSON YARDS - TOWER C

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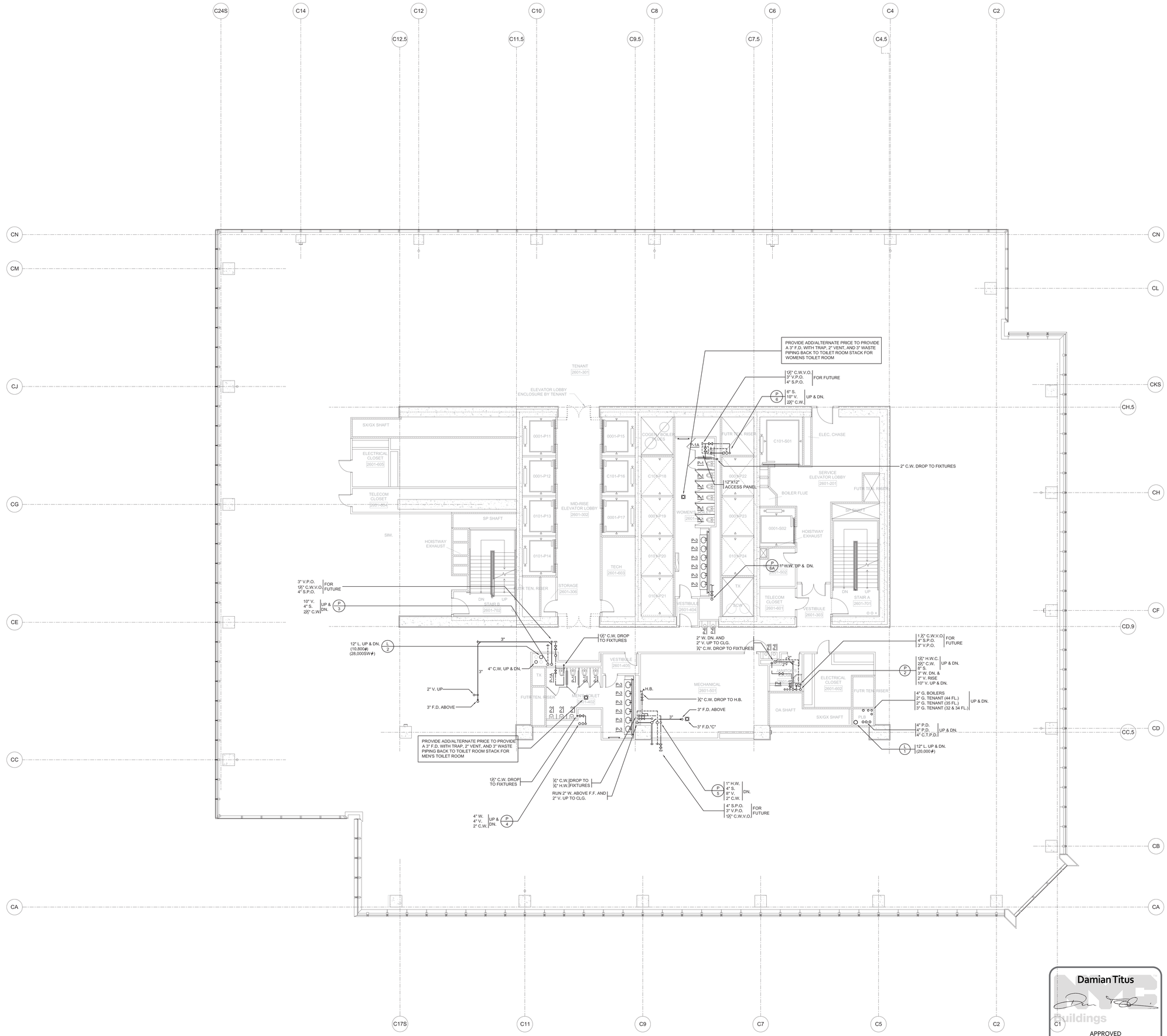

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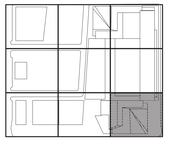
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-2601

Drawing Title
PLUMBING
PLAN 26
SECTOR 01

Drawing Number
P1-2601
B.O.C.A.Y. Drawing Number
P-128.00

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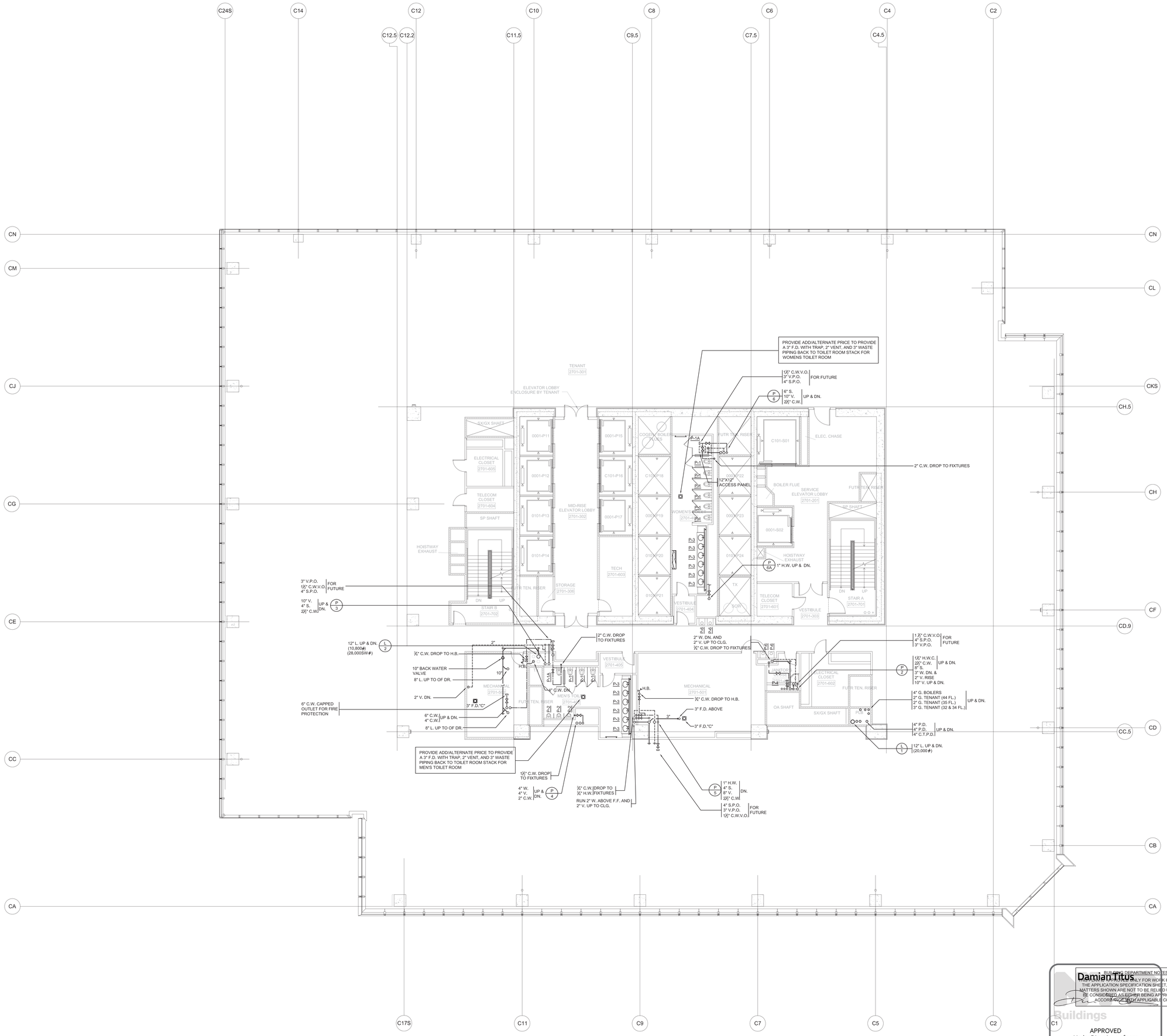

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Scan Code: ES0087525 Job Number: 421242290 Sort Of Bldgs

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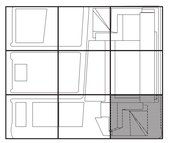
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-2701

Drawing Title
PLUMBING
PLAN 27
SECTOR 01

Drawing Number
P1-2701

BOCAN Drawing Number
P-129.00

SHEET 30 OF 64

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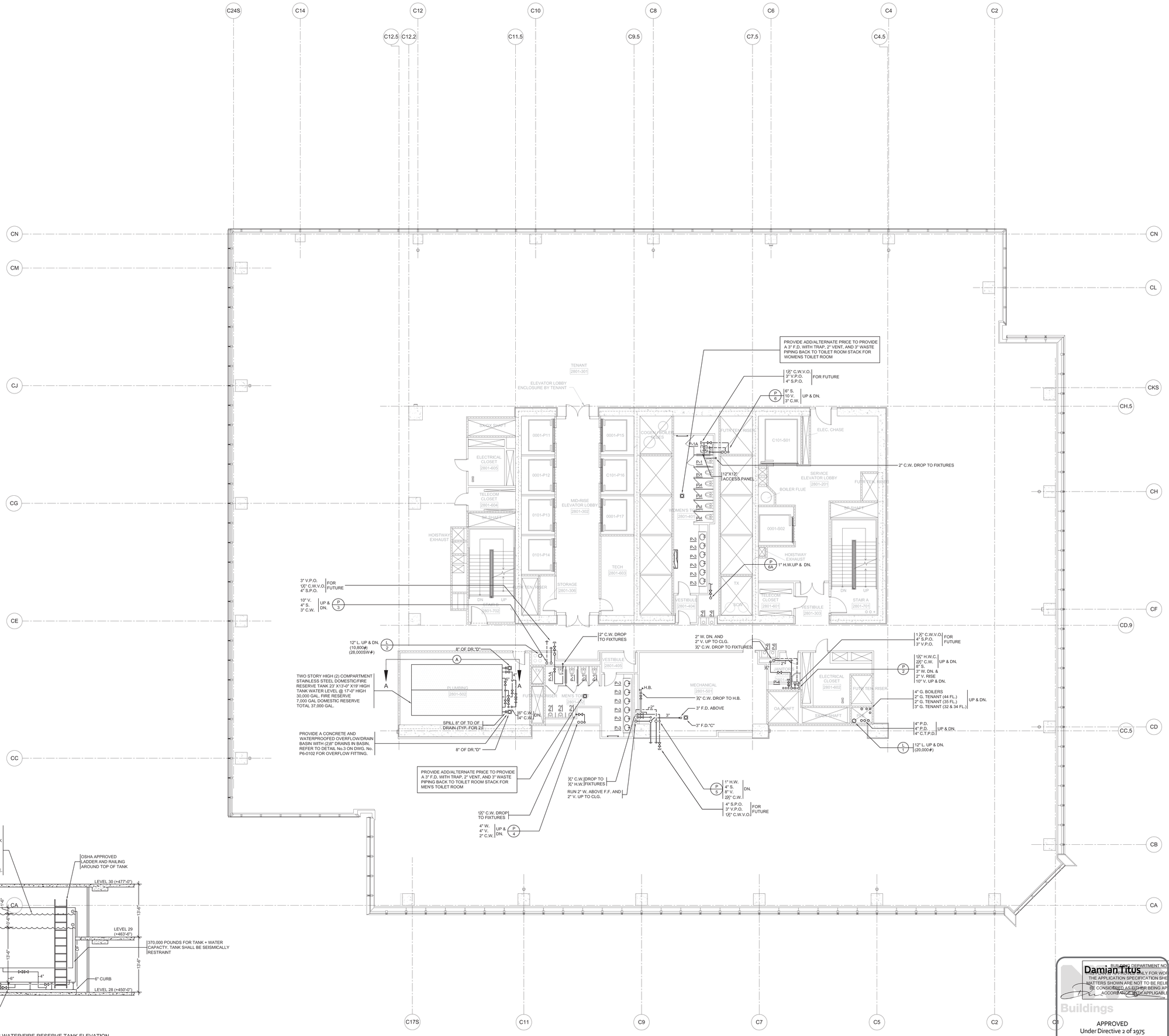

No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-2801

Drawing Title
PLUMBING
PLAN 28
SECTOR 01

Drawing Number
P1-2801

B.SCAN Drawing Number
P-130.00

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Filename: T:\projects\14752.a_hudson yards-east yards-wr cp\ISSUED FOR FILING 02-12-2013 DOB\PLUMBING\HYE-TC-P1-2901.dwg Plotted by: Roberto Quintana Plot Time: 2/13/2013 11:01 AM

DEPT OF BLDGS 437524290 Job Number
E575877421 Scan Code

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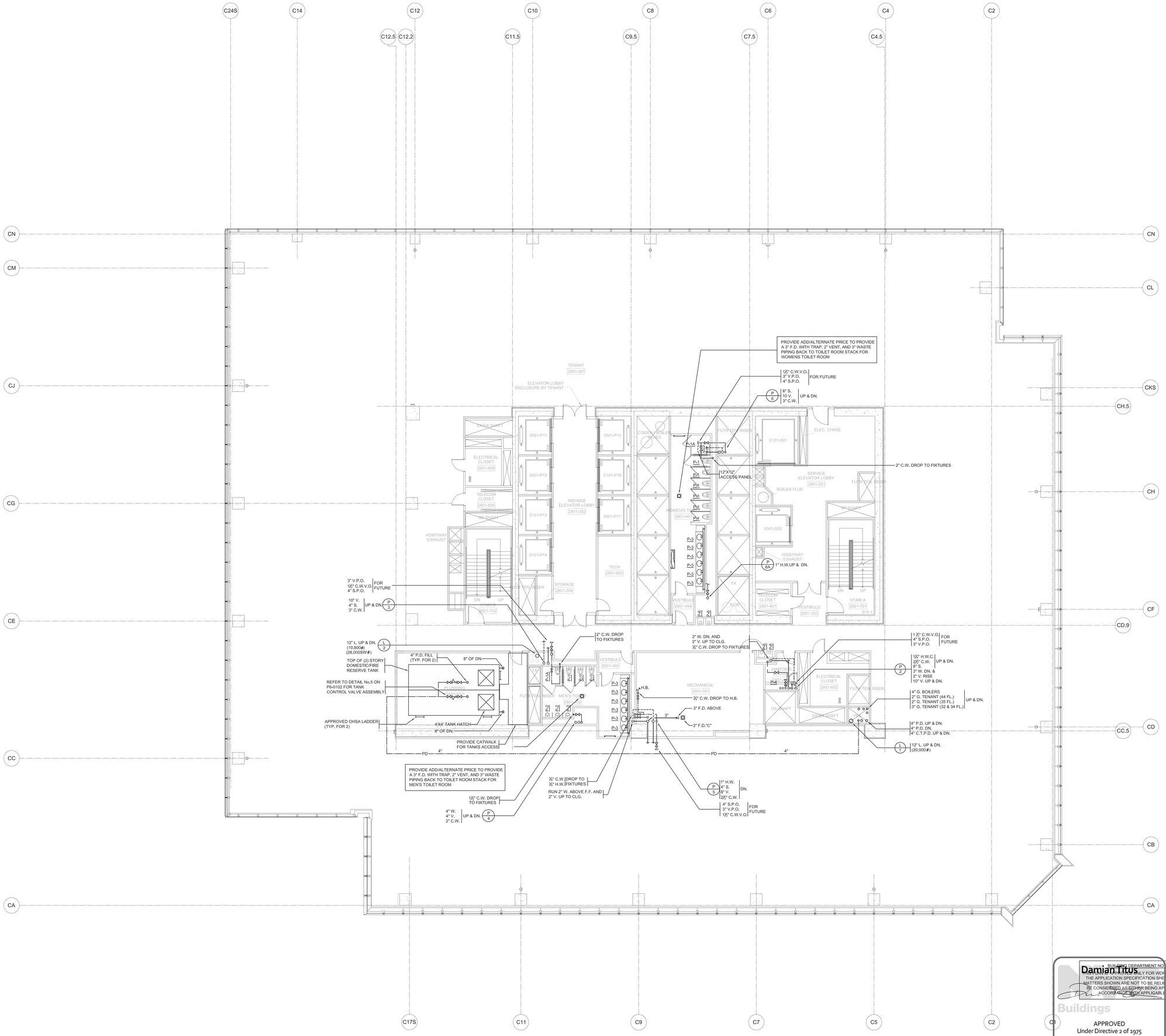
501 WEST 30TH STREET
NEW YORK, NY



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Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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New York, NY 10022
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Mechanical, Electrical, Plumbing, Fire Protection
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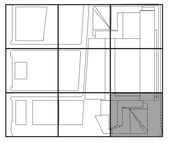
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-2901

Drawing Title
PLUMBING
PLAN 29
SECTOR 01

Drawing Number
P1-2901

B.S.C.A.V. Drawing Number
P-131.00

SHEET 32 OF 64

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CITY OF BLDGS 421524290 Job Number
E3080021282 Scan Code

HUDSON YARDS - TOWER C

Address
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NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
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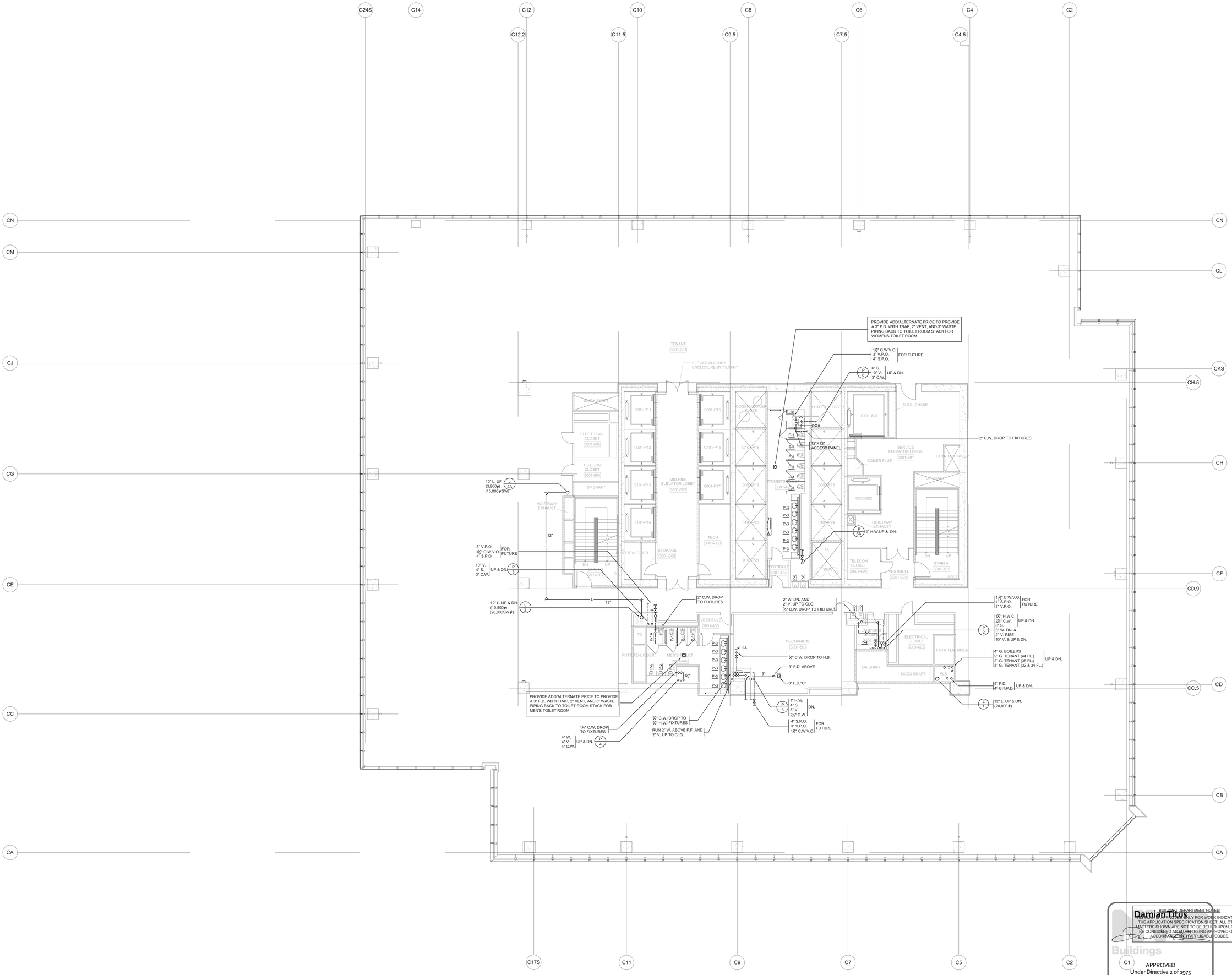
Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894



No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
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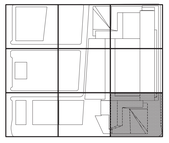
Key Plan



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Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-3001

Drawing Title
PLUMBING
PLAN 30
SECTOR 01

Drawing Number
P1-3001

B.SCAY Drawing Number
P-132.00

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E321791334 Scan Code
DEPT OF BLDGS 21324290 Job Number

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501 WEST 30TH STREET
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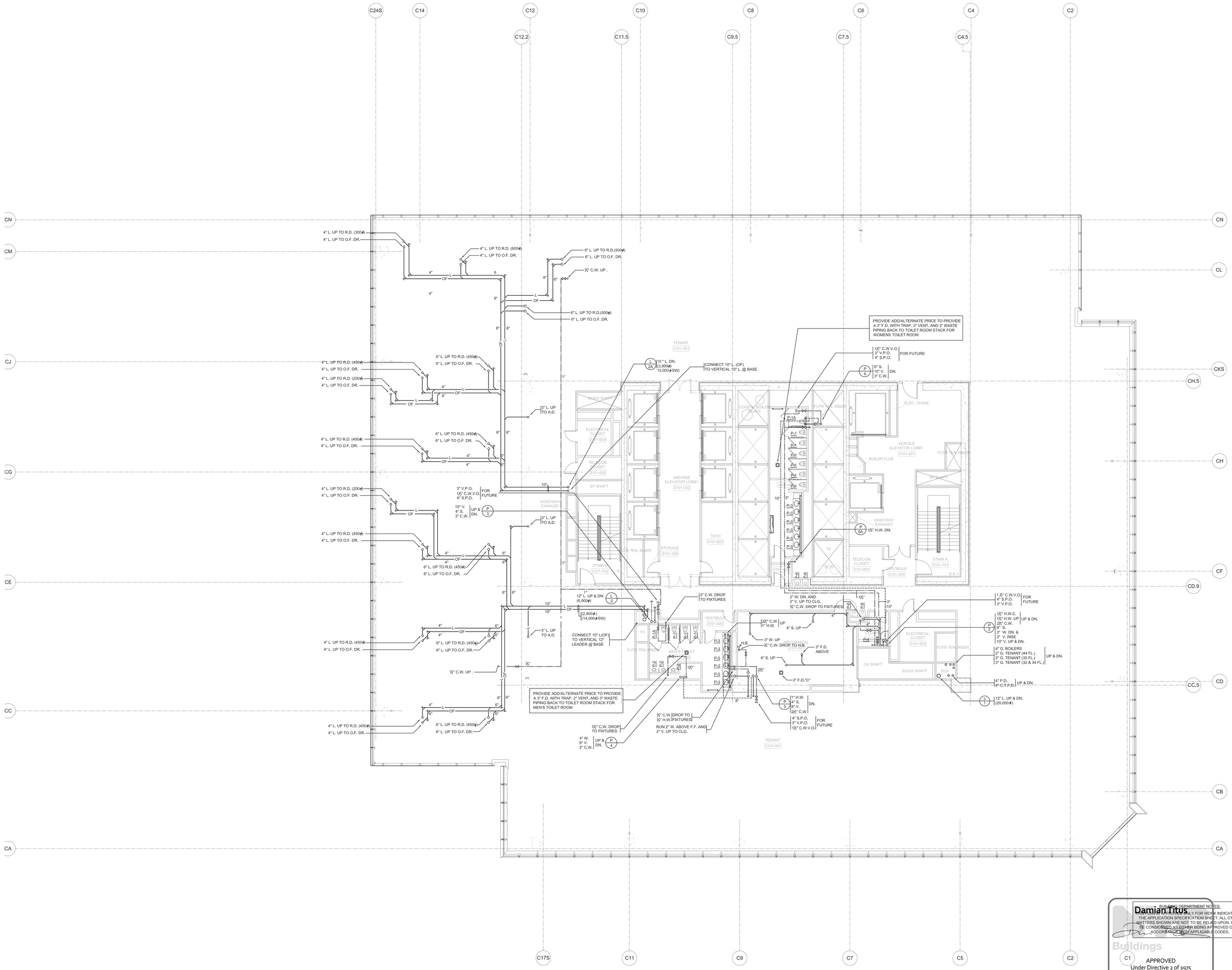

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Related Companies
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No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
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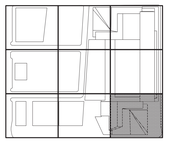
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-3101

Drawing Title
PLUMBING
PLAN 31
SECTOR 01

Drawing Number
P1-3101

B-SCAN Drawing Number
P-133.00

SHEET 34 OF 64

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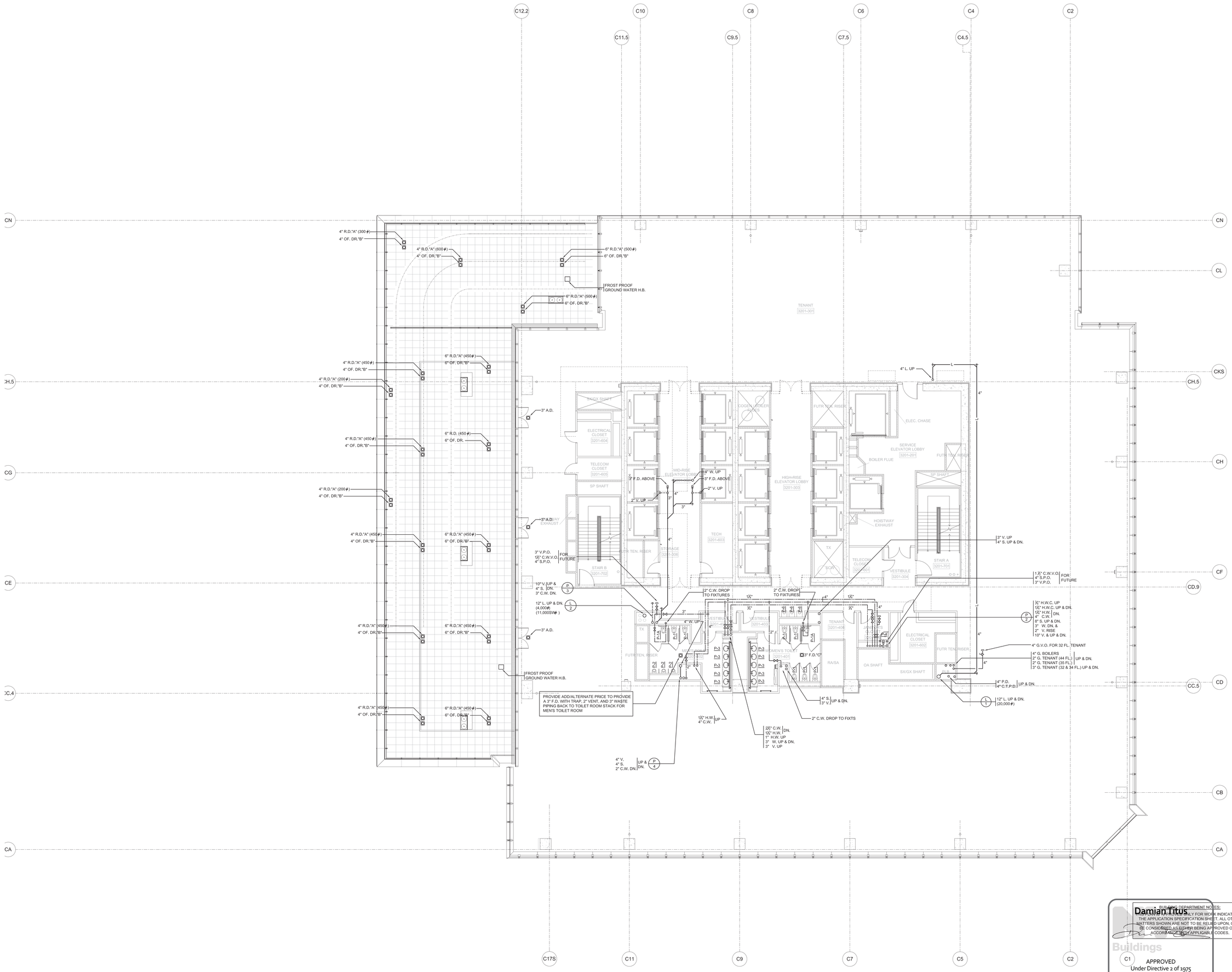

HUDSON YARDS - TOWER C

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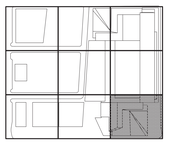
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-3201

Drawing Title
PLUMBING
PLAN 32
SECTOR 01

Drawing Number
P1-3201

B-SCAN Drawing Number
P-134.00

SHEET 35 OF 64

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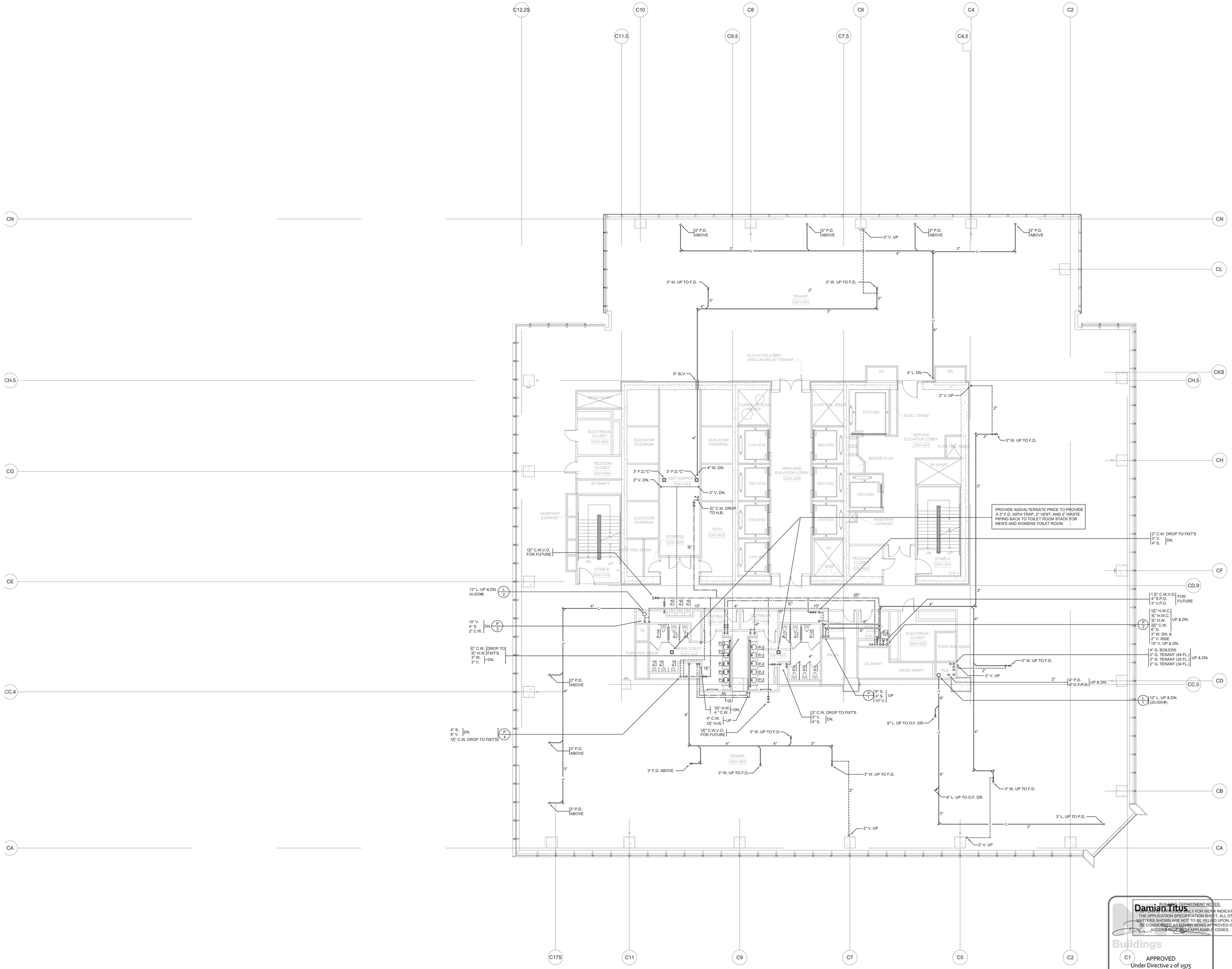

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HUDSON YARDS - TOWER C

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Oxford Properties Group
320 Park Avenue, 17th Floor
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Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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Tel: 212.708.3600

Architect
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Architects & Planning Consultants
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Tel: 212.977.6500 Fax: 212.956.2526

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Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
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No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No. 14752.A.000

Drawn By

Sheet Number HYE-TC-P1-3301

Drawing Title
PLUMBING
PLAN 33
SECTOR 01

Drawing Number P1-3301

B-SCAN Drawing Number P-135.00

SHEET 36 OF 64

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CITY OF BLDGS 21324290 Job Number
E3421099773 Scan Code

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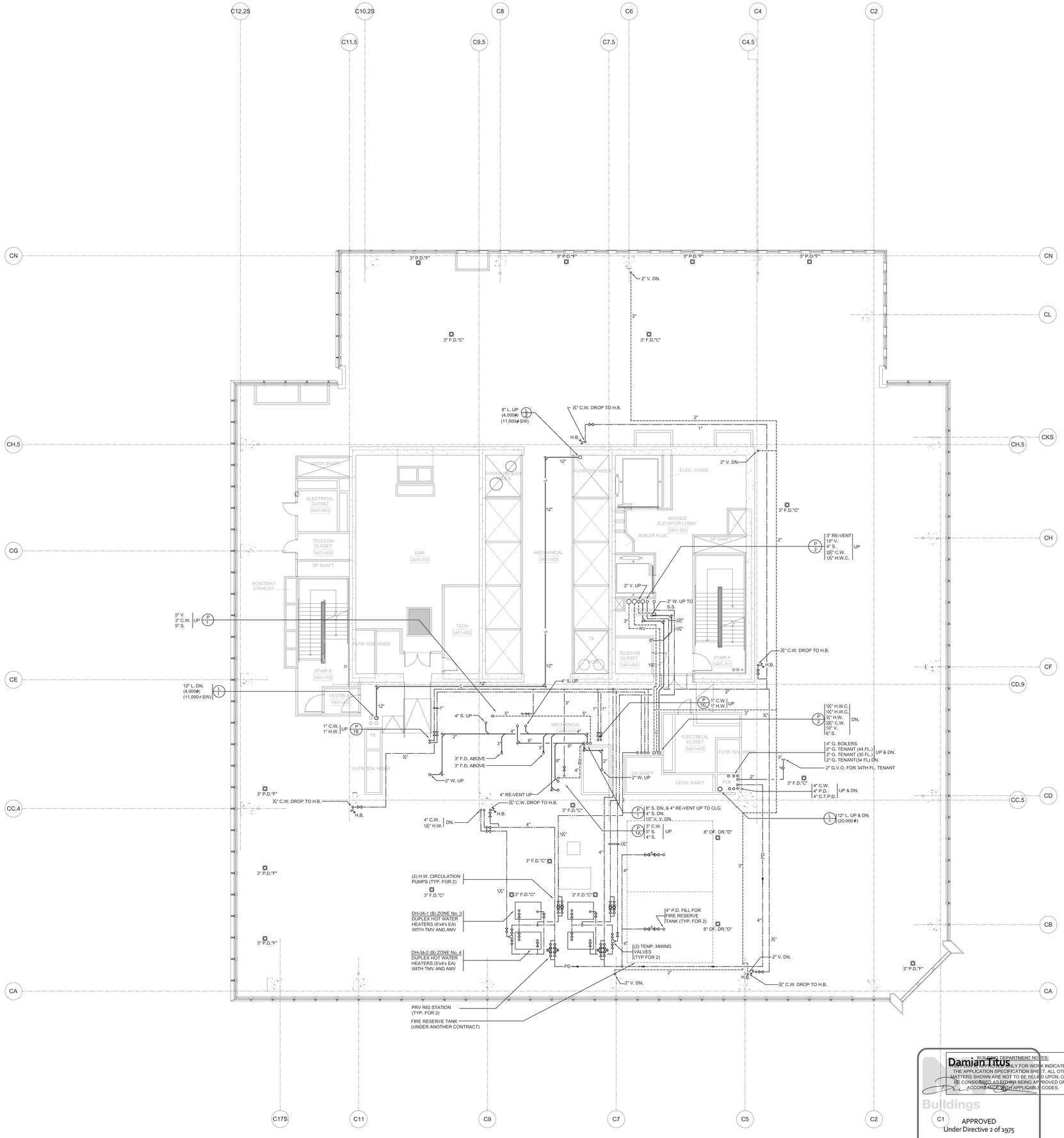

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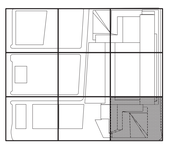
Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-3401

Drawing Title
PLUMBING
PLAN 34
SECTOR 01

Drawing Number
P1-3401

R.S.C.A.V. Drawing Number
P-136.00

SHEET 37 OF 64

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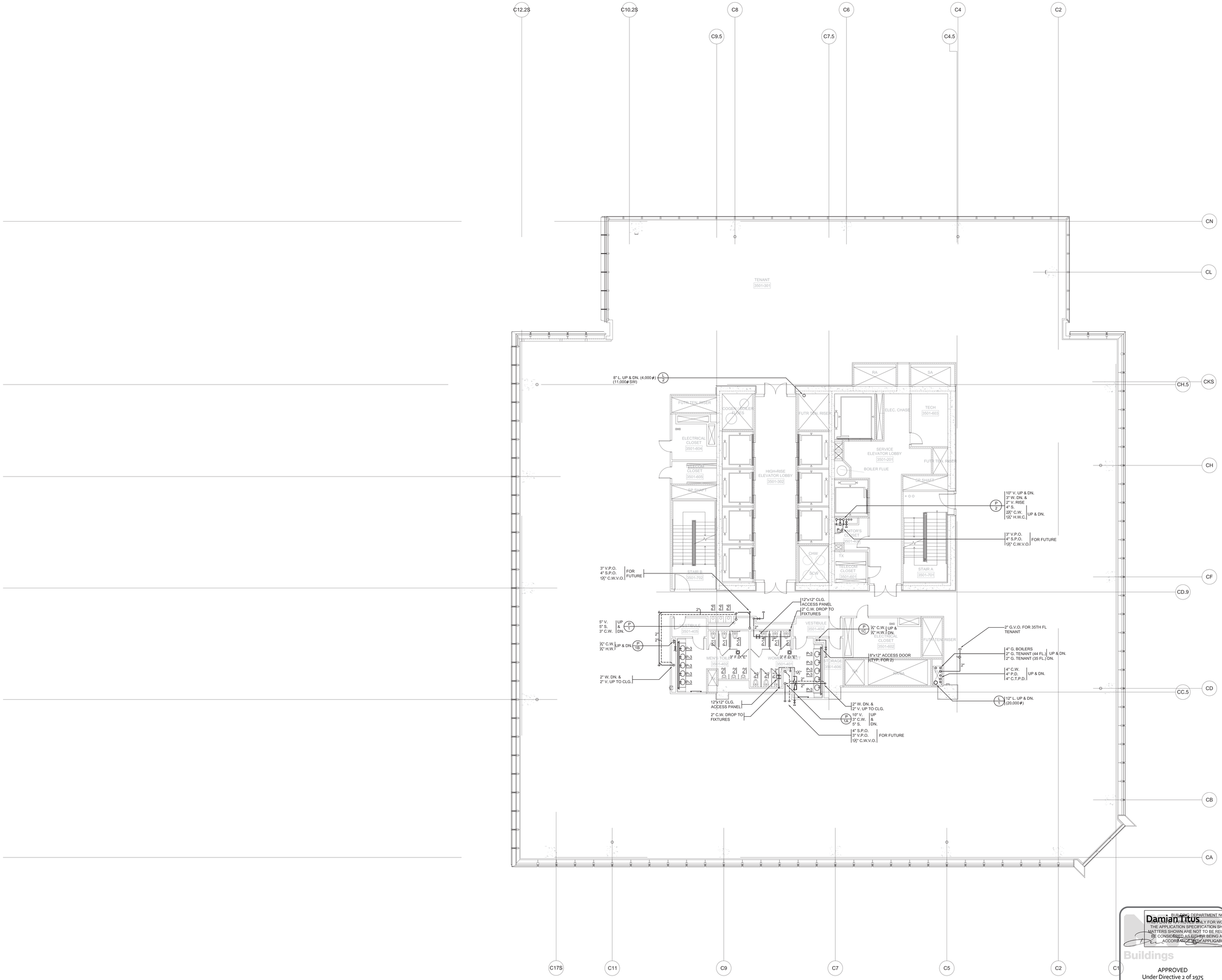

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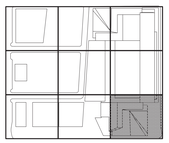

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Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-3501

Drawing Title
PLUMBING
PLAN 35
SECTOR 01

Drawing Number
P1-3501

RSCAN Drawing Number
P-137.00

SHEET 38 OF 64

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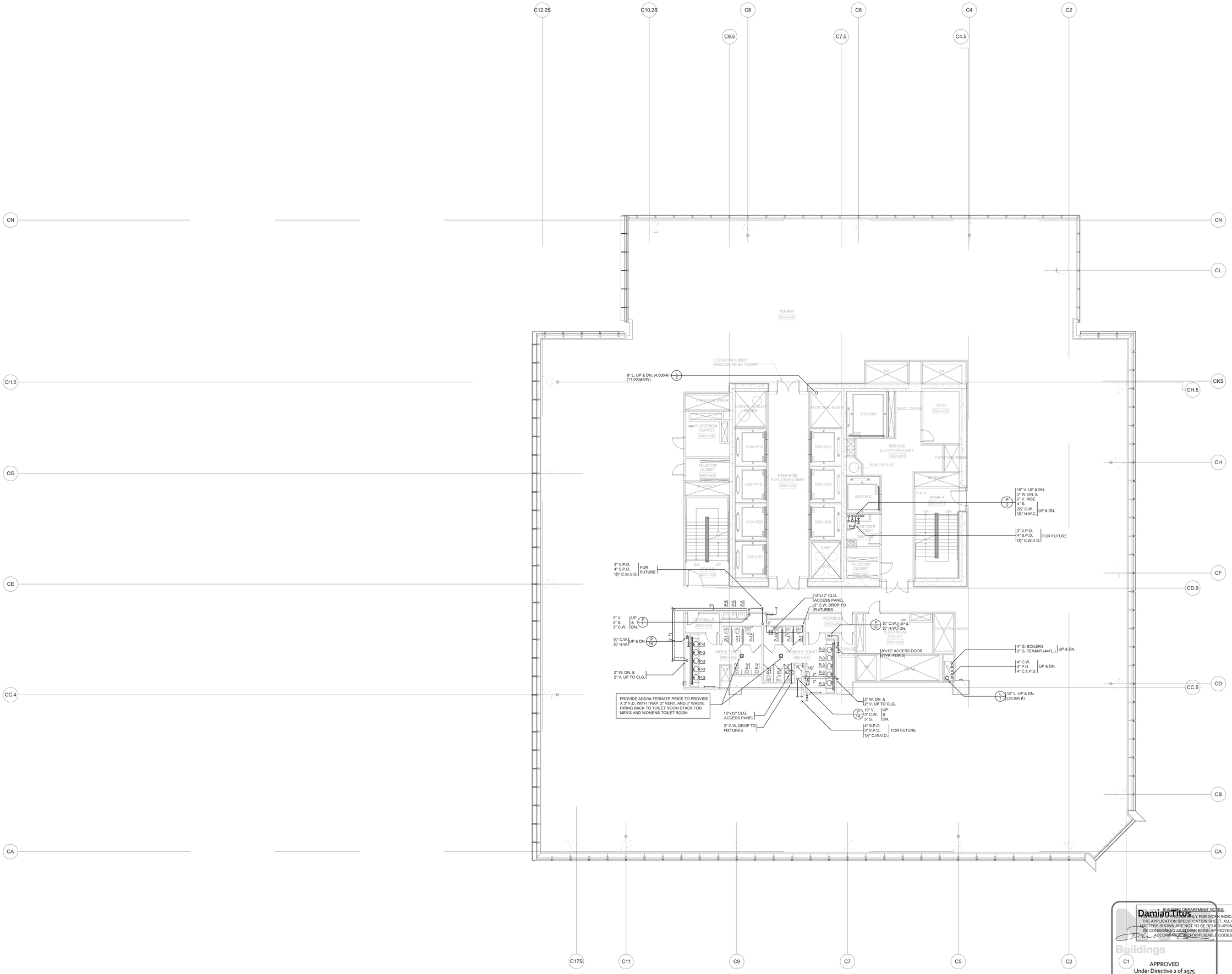

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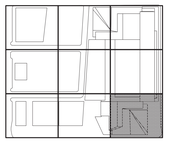

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14752.A.000

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Sheet Number
HYE-TC-P1-3601

Drawing Title
PLUMBING
PLAN 36
SECTOR 01

Drawing Number
P1-3601

B/SCAN Drawing Number
P-138.00

SHEET 39 OF 64

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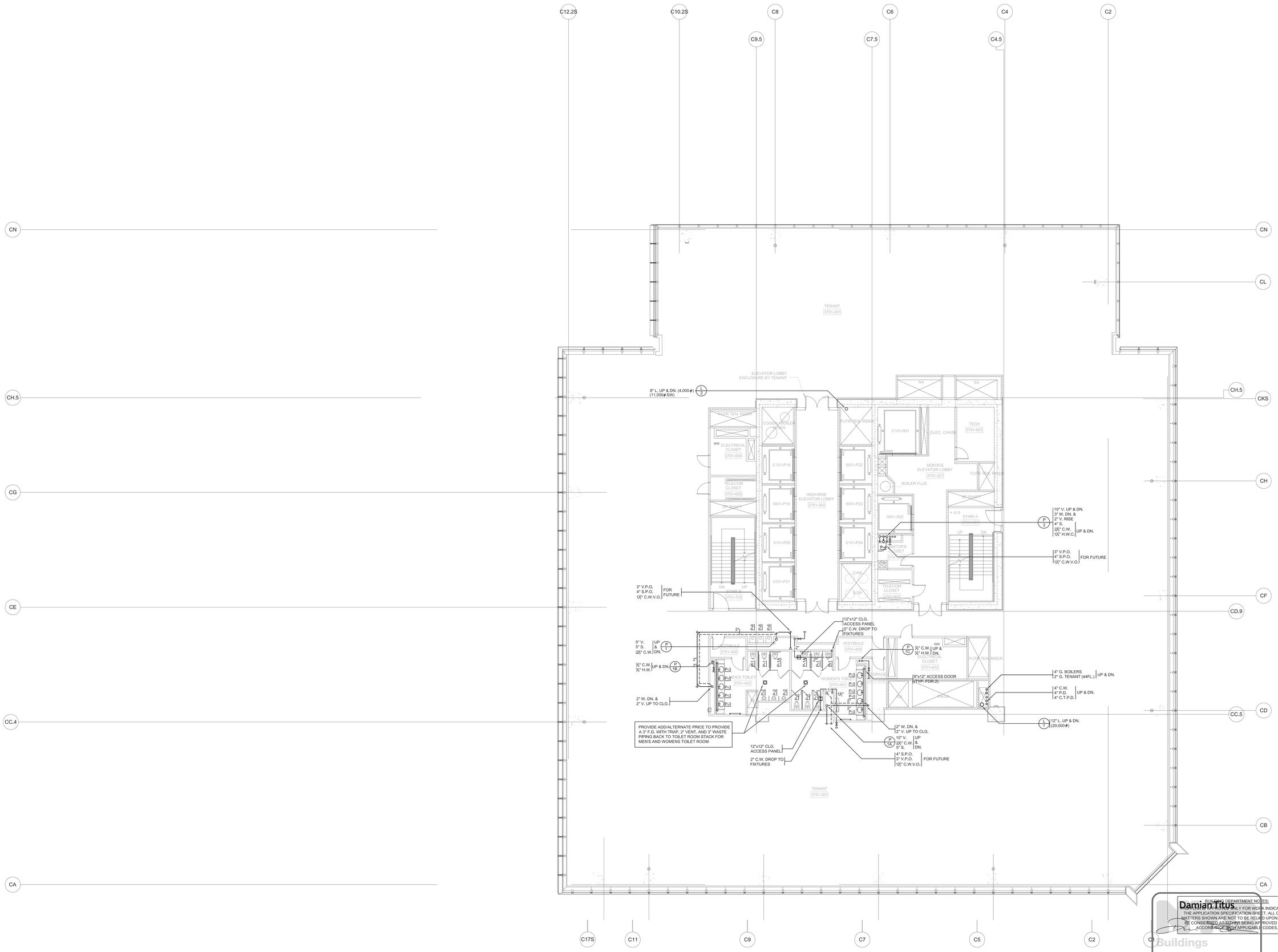

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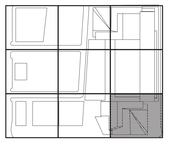
Key Plan



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Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-3701

Drawing Title
PLUMBING
PLAN 37
SECTOR 01

Drawing Number
P1-3701

RSCAN Drawing Number
P-139.00

SHEET 40 OF 64

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E5202133139 Scan Code

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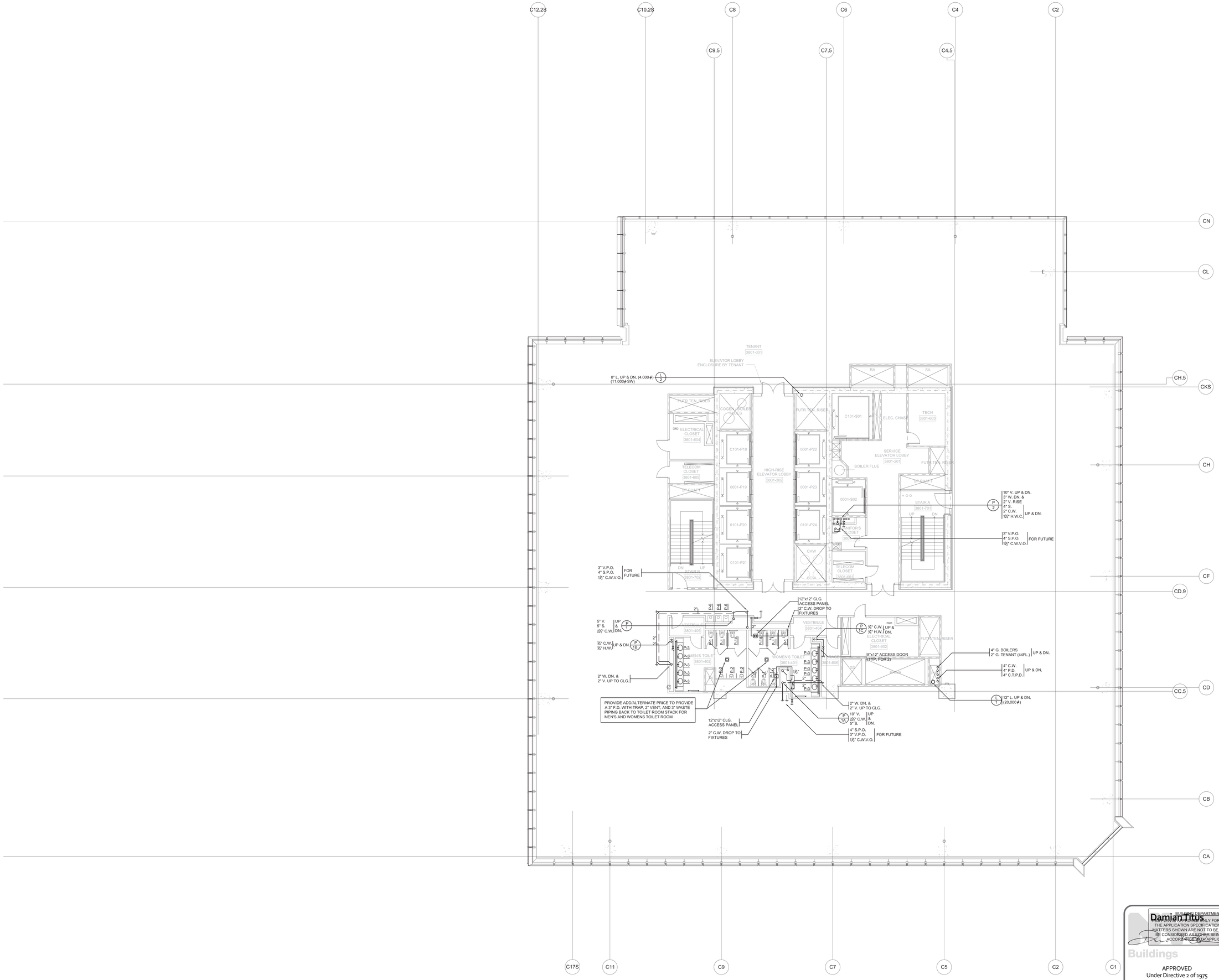

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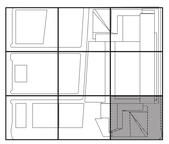

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Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-3801

Drawing Title
PLUMBING
PLAN 38
SECTOR 01

Drawing Number
P1-3801

B-SCAN Drawing Number
P-140.00

SHEET 41 OF 64

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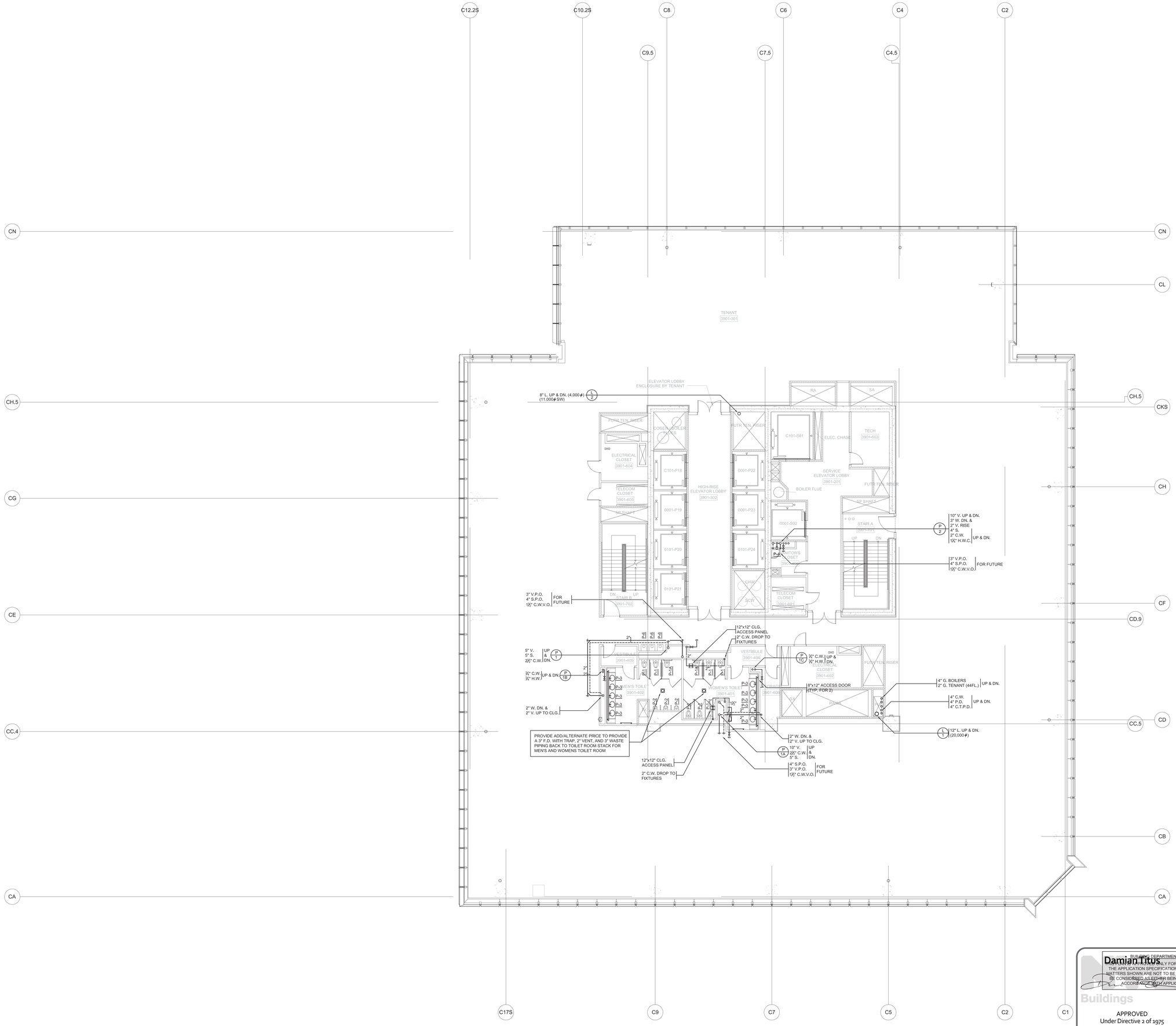

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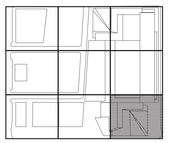

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Sheet Number
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Drawing Title
PLUMBING
PLAN 39
SECTOR 01

Drawing Number
P1-3901

B-SCAN Drawing Number
P-141.00

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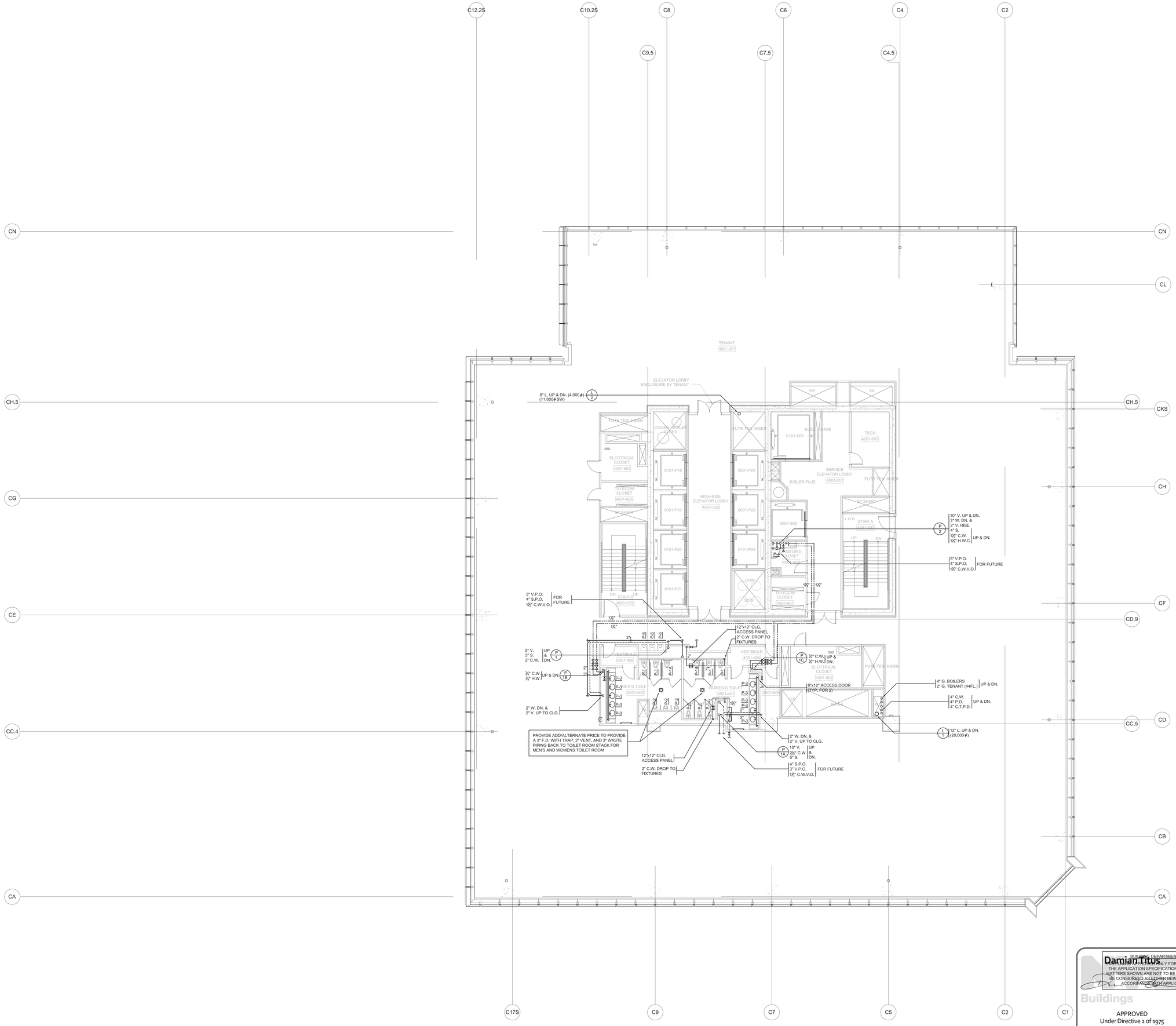

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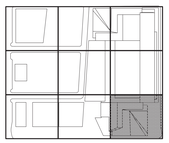

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Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-4001

Drawing Title
PLUMBING
PLAN 40
SECTOR 01

Drawing Number
P1-4001

B-SCAN Drawing Number
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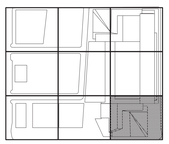
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-4101

Drawing Title
PLUMBING
PLAN 41
SECTOR 01

Drawing Number
P1-4101

B-SCAN Drawing Number
P-143.00

SHEET 44 OF 64

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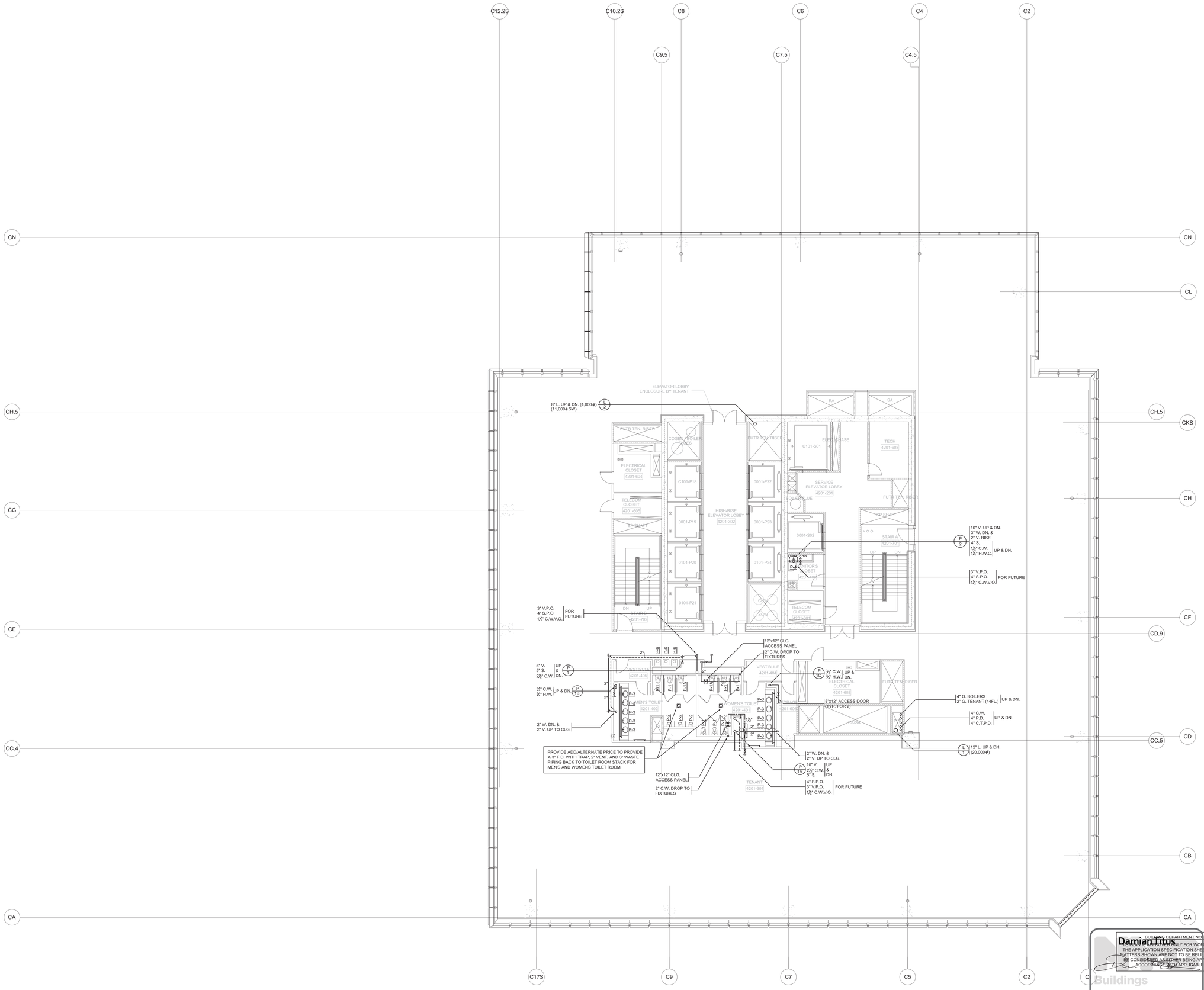

HUDSON YARDS - TOWER C

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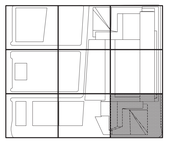
No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-4201

Drawing Title
PLUMBING
PLAN 42 THRU 43
SECTOR 01

Drawing Number
P1-4201
B-SCAN Drawing Number
P-144.00

SHEET 45 OF 64

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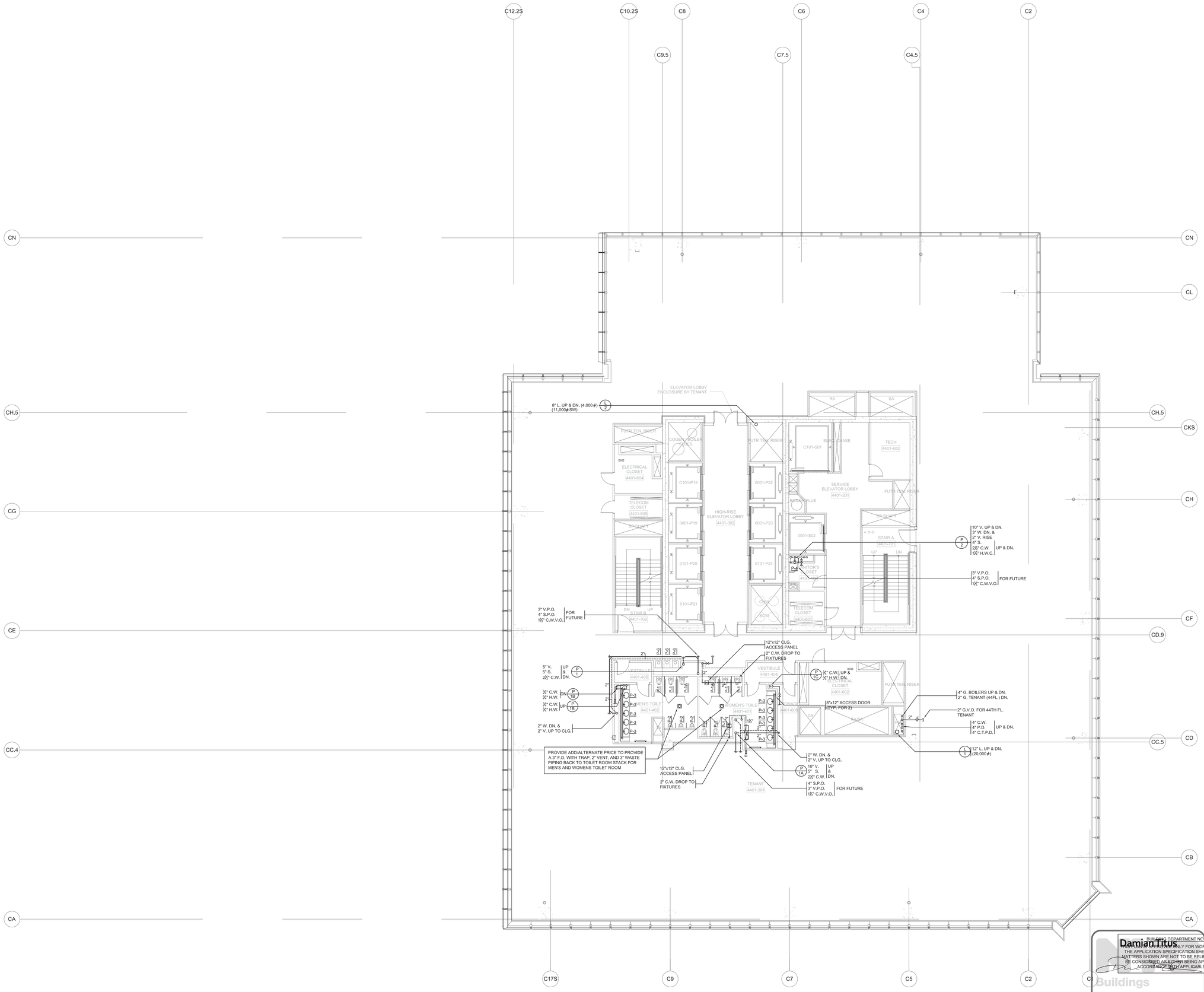

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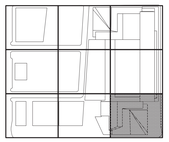
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-4401

Drawing Title
PLUMBING
PLAN 44
SECTOR 01

Drawing Number
P1-4401
B-SCAN Drawing Number
P-145.00

SHEET 46 OF 64

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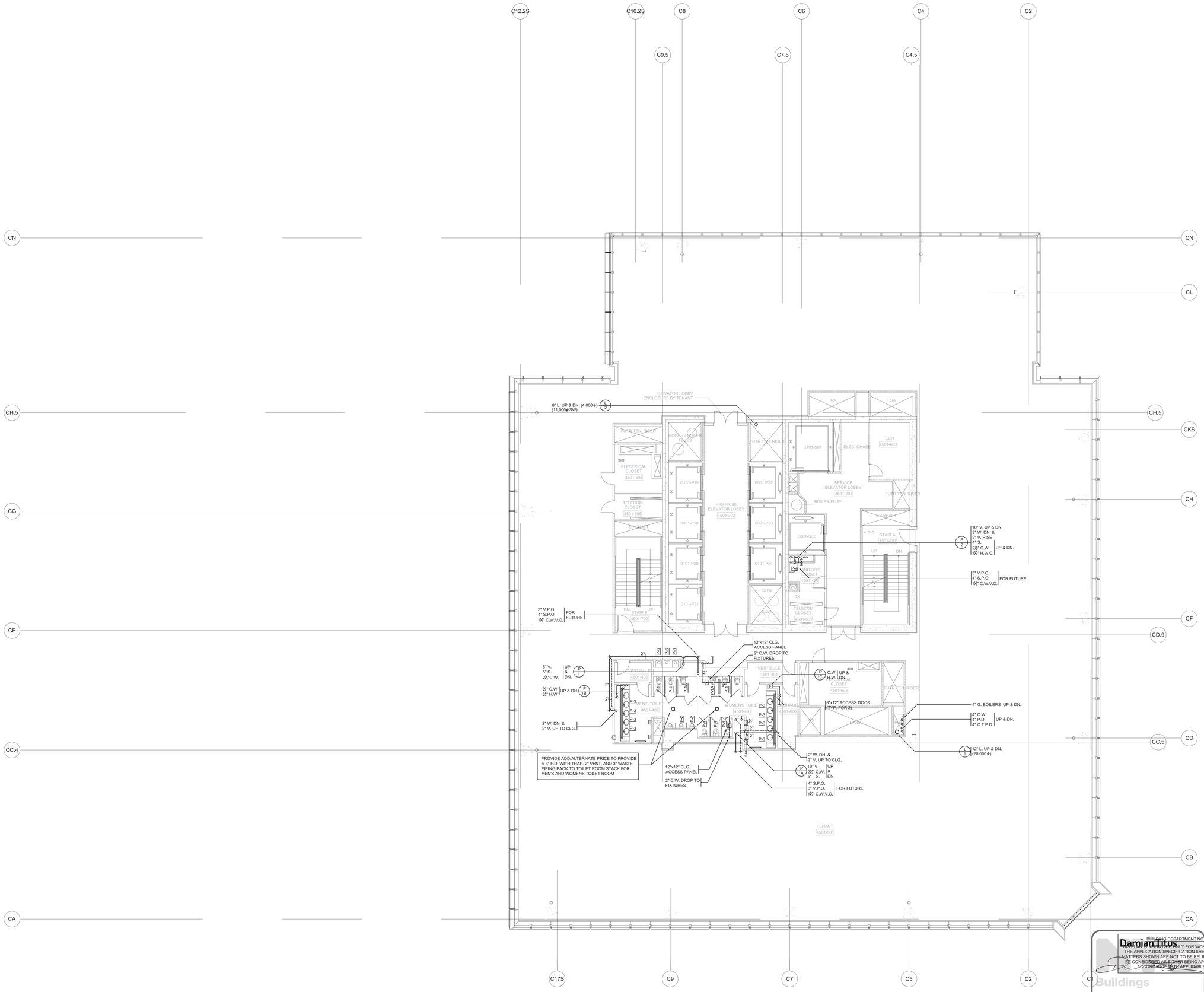
CITY OF BLDGS 121224290 Job Number
ES1343135 Scan Code



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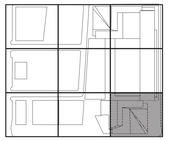
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-4501

Drawing Title
PLUMBING
PLAN 45
SECTOR 01

Drawing Number
P1-4501

RSCAN Drawing Number
P-146.00

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E2012060054 Job Number

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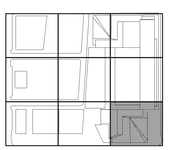
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-4601

Drawing Title
PLUMBING
PLAN 46
SECTOR 01

Drawing Number
P1-4601

B-SCAN Drawing Number
P-147.00

SHEET 48 OF 64

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E5505054736 Scan Code

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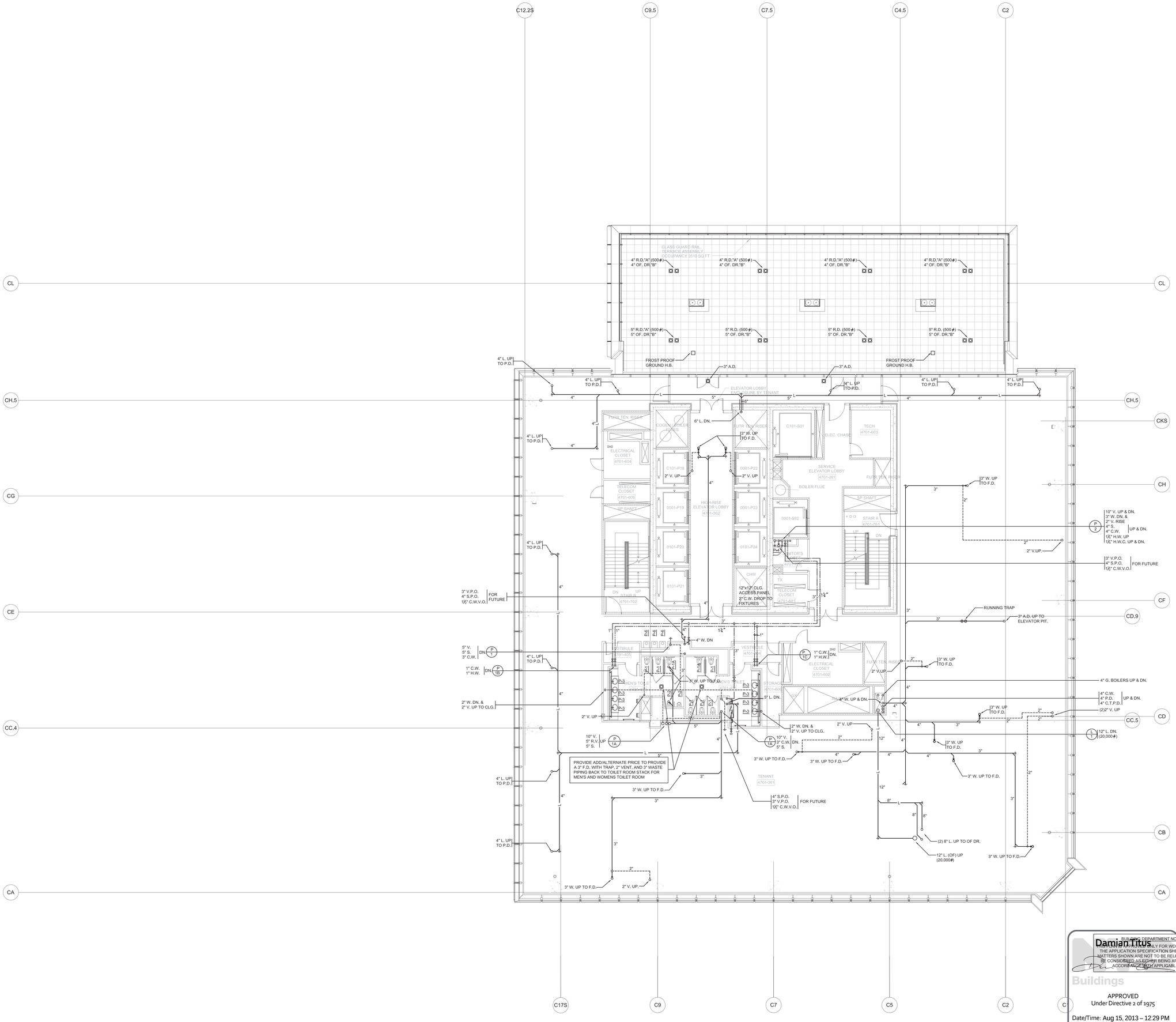

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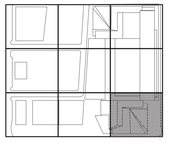
No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-4701

Drawing Title
PLUMBING
PLAN 47
SECTOR 01

Drawing Number
P1-4701

R.S.C.I.V. Drawing Number
P-148.00

SHEET 49 OF 64

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ESD20176335 Scan Code
DEPT OF BLDGS 421224290 Job Number

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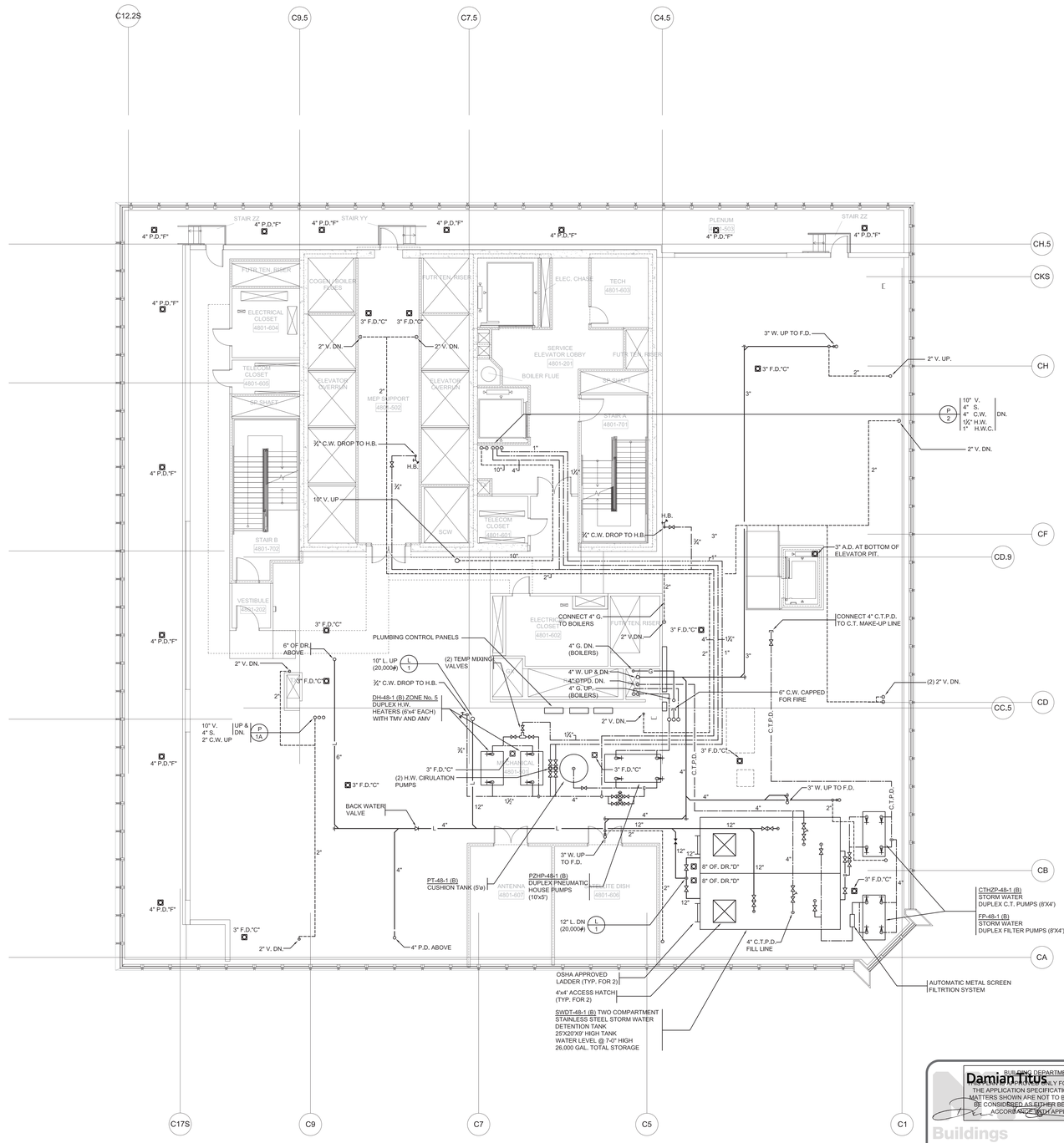
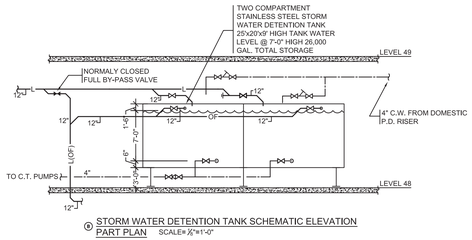
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

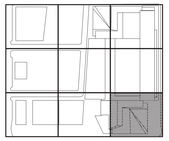




⑥ STORM WATER DETENTION TANK SCHEMATIC ELEVATION PART PLAN SCALE= ¾"=1'-0"

No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P1-4801

Drawing Title
PLUMBING
PLAN 48
SECTOR 01

Drawing Number
P1-4801

BASCH Drawing Number
P-149.00

SHEET 50 OF 64

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ES171799585 Scan Code
CITY OF BLDGS 21324290 Job Number

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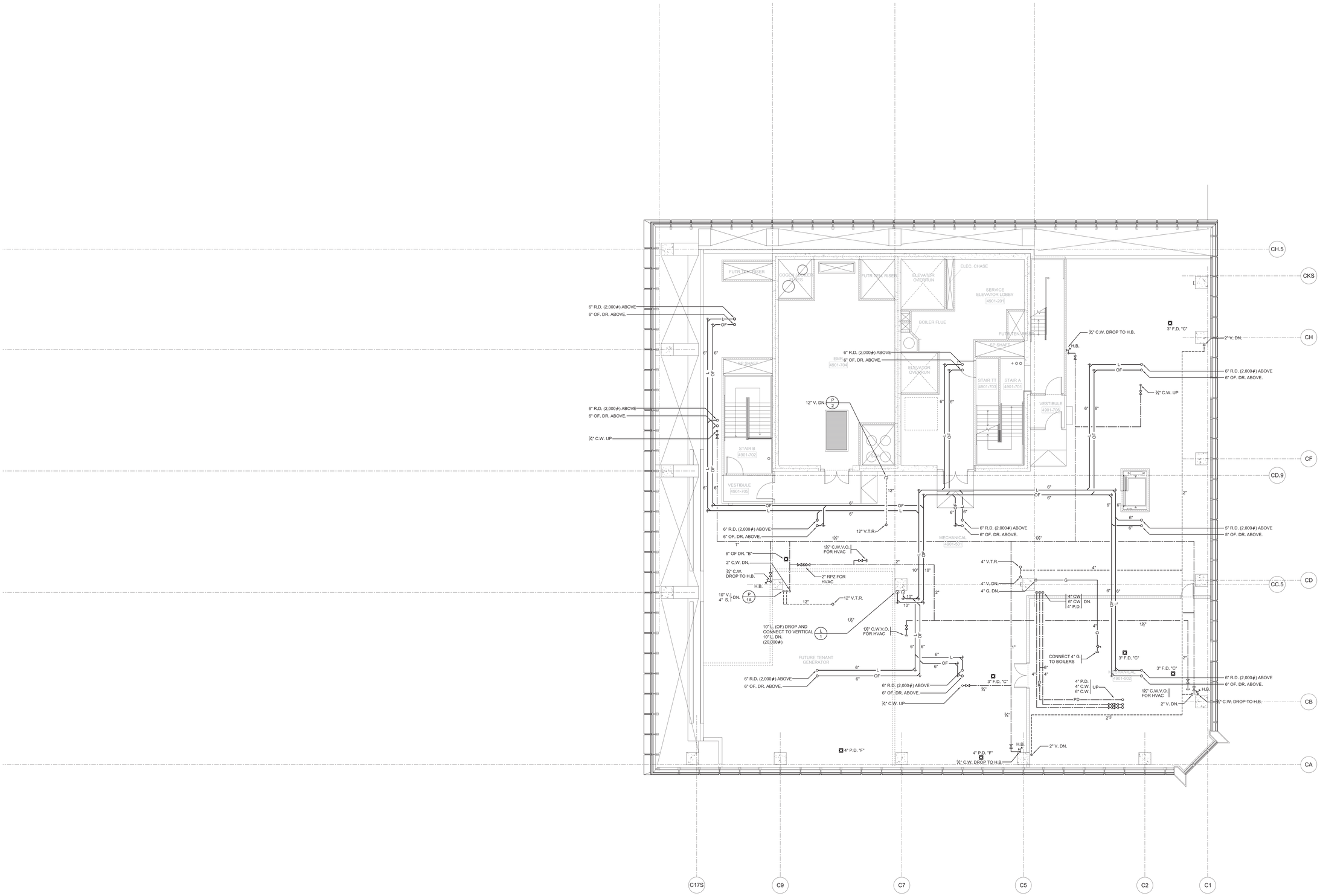

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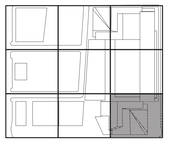
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Sheet Number
HYE-TC-P1-4901

Drawing Title
PLUMBING
PLAN 49
SECTOR 01

Drawing Number
P1-4901

RSCM Drawing Number
P-150.00

SHEET 51 OF 64

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CITY OF BLDGS 421524290 Job Number
E525126016 Scan Code

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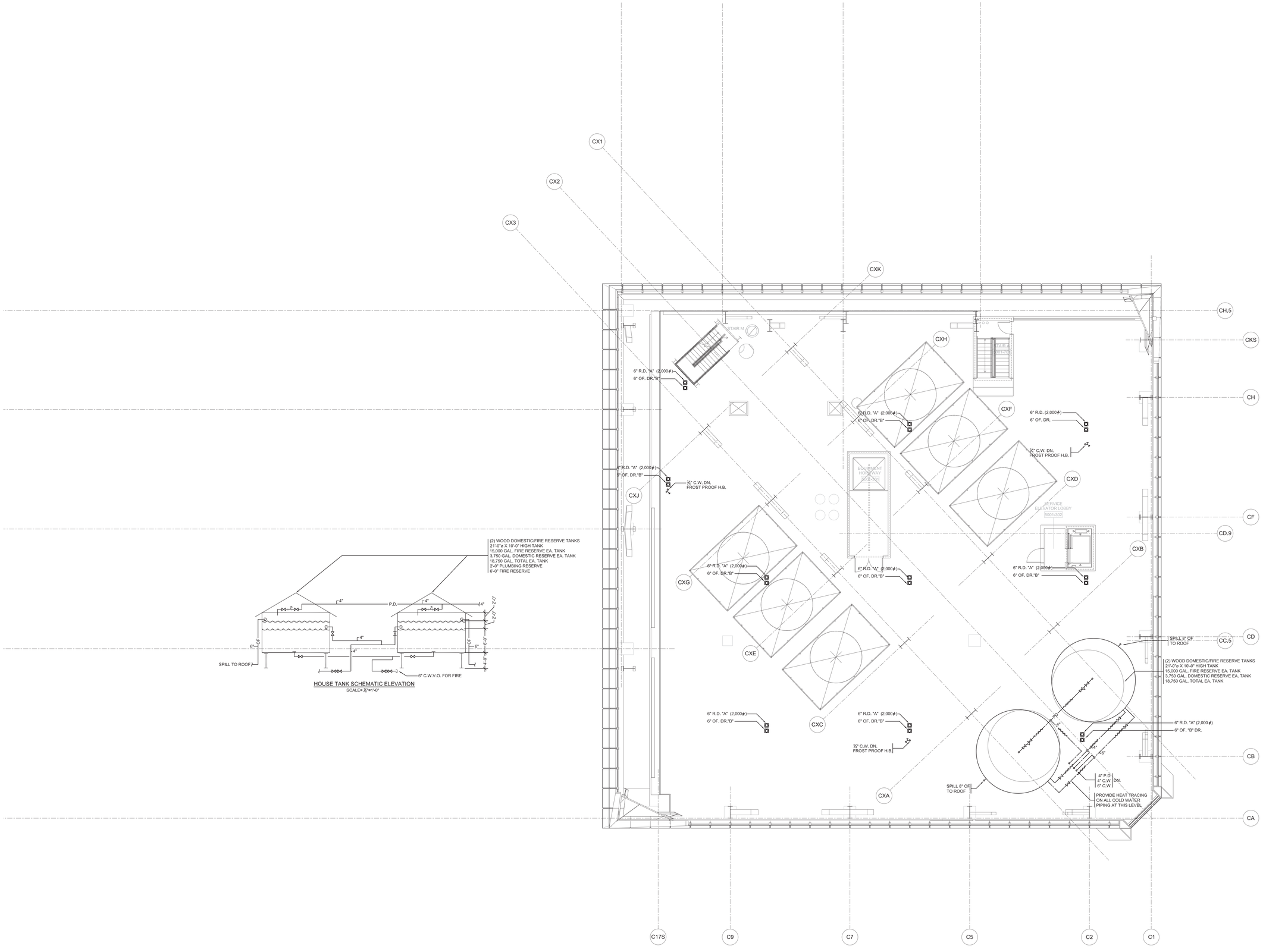

HOUSE TANK SCHEMATIC ELEVATION
SCALE= 1/8"=1'-0"

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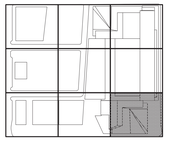
No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P1-5001

Drawing Title
PLUMBING
PLAN 50
SECTOR 01

Drawing Number
P1-5001
R/SCAN Drawing Number
P-151.00

BUILDING DEPARTMENT NOTES:
THIS APPROVAL IS 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.

Damian Tikus

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SHEET 52 OF 64

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Filename: T:\projects\14752.a.hudson yards-east yards-twr c\pl\ISSUED FOR FILING 02-12-2013 DOB\PLUMB\HGHYE-TC-P1-5001.dwg Plotted by: Roberto Quintana Plot Time: 2/13/2013 11:04 AM

PUMP SCHEDULE

	UNIT TAG	LOCATION	SERVICE	NO. REQIORED	G.P.M.	MAX. T.D.H.	MIN. T.D.H.	MECH. SEAL	MODEL	STAGES	SUBMERSIBLE	INLINE	END SUCTION	HORIZONTAL SPLIT	MAX. WORKING PRESSURE/P.S.I.	H.P.	R.P.M.	VOLTS	PHASE	CYCLE	MANUAL CONT'L.	STARTING STEPS	AUTO CONT'L.	PILOT LIGHT	PRESSURE GAUGE RANGE	METAL BASIN	CONCRETE PIT	CONTROL CENTER
* COOLING TOWER MAKE UP PUMP (LOW ZONE)	TC-CTLZP-C1-1 (B)	C1 LEVEL	BASE BUILDING	2	200	820		●	PPC 2TUT-8-4	4				●	500	75	3500	460	3	60			●	●				
* COOLING TOWER MAKE UP PUMP (HIGH ZONE)	TC-CTHZP-34-1 (B)	48TH FLOOR MER	BASE BUILDING	2	200	136		●	PPC C80AM	1				●	175	15	3500	460	3	60			●	●				
DOMESTIC HOUSE PUMP (HIGH ZONE)	TC-HZHP-C1-1 (B)	C1 LEVEL MER	BASE BUILDING	2	230	876		●	PPC 3TUT9A-4	4			●		500	125	3500	460	3	60			●	●				
DOMESTIC HOUSE PUMP (MID ZONE)	TC-MZHP-C1-1 (B)	C1 LEVEL MER	BASE BUILDING	2	270	546		●	PPC 2TU10A-2	2				●	250	75	3500	460	3	60			●	●				
DOMESTIC PNEUMATIC ZONE	TC-PZHP-47-1 (B)	48TH FLOOR MER	BASE BUILDING	2	160	100		●	PPC C615AM	1			●		175	7.5	3500	460	3	60			●					
DOMESTIC BOOSTER (LOW ZONE)	TC-LZHP-C1-1 (B)	C1 LEVEL MER	BASE BUILDING	3	100	230		●	PPC C815GM	1			●		175	15	3500	460	3	60			●					
PARKING EJECTOR PUMP (EJ-1)	TC-SE-C1-1 (PK)	C1 LEVEL (SECTOR 7)	PARKING	2	120	30		●	FL 4" NP3085-WL	1	●					3	1750	460	3	60			●				●	
PARKING EJECTOR PUMP (EJ-2)	TC-SE-C1-2 (PK)	C1 LEVEL (SECTOR 7)	PARKING	2	125	30		●	FL 4" NP3085-WL	1	●					3	1750	460	3	60			●				●	
LOADING DOCK (EJ-3)	TC-SE-C1-1 (LD)	C1 LEVEL (SECTOR 4)	LOADING DOCK	2	125	30		●	FL 4" NP3085-WL	1	●					3	1750	460	3	60			●				●	
TOWER C EJECTOR PUMP (EJ-3)	TC-SE-C1-3 (B)	C1 LEVEL (SECTOR 4)	BASE BUILDING	2	125	30		●	FL 4" NP3085-WL	1	●					3	1750	460	3	60			●				●	
TOWER C EJECTOR PUMP (EJ-4)	TC-SE-C1-4 (B)	C1 LEVEL	BASE BUILDING	2	125	30		●	FL 4" NP3085-WL	1	●					3	1750	460	3	60			●				●	
TOWER C EJECTOR PUMP (EJ-5)	TC-SE-C1-5 (B)	C1 LEVEL	BASE BUILDING	2	125	30		●	FL 4" NP3085-WL	1	●					3	1750	460	3	60			●				●	
TOWER C EJECTOR PUMP (EJ-6)	TC-SE-C1-5 (B)	C1 LEVEL	BASE BUILDING	2	125	30		●	FL 4" NP3085-WL	1	●					3	1750	460	3	60			●				●	
SUMP PUMP (SD-1)	TC-SP-C1-1 (PK)	C1 LEVEL (SECTOR 7)	PARKING	2	100	30		●	FL 4" NP3085	1	●					3	1750	460	3	60			●				●	
PARKING SUMP PUMP (SD-2)	TC-SP-C1-2 (PK)	C1 LEVEL (SECTOR 4)	PARKING	2	100	30		●	FL 4" NP3085	1	●					3	1750	460	3	60			●				●	
LOADING DOCK SUMP PUMP (SD-3)	TC-SP-C1-1 (LD)	C1 LEVEL (SECTOR 4)	LOADING DOCK	2	100	30		●	FL 4" NP3085	1	●					3	1750	460	3	60			●				●	
TOWER C SUMP PUMP (SD-4)	TC-SP-C1-1 (B)	C1 LEVEL (SECTOR 1)	BASE BUILDING	2	100	30		●	FL 4" NP3085	1	●					3	1750	460	3	60			●				●	
TOWER C SUMP PUMP (SD-5)	TC-SP-C1-2 (B)	C1 LEVEL (SECTOR 1)	BASE BUILDING	2	100	30		●	FL 4" NP3085	1	●					3	1750	460	3	60			●				●	
TOWER C SUMP PUMP (SD-6 THRU SD-8)	TC-SP-C1-3 (B) THRU TC-SP-C1-5 (B)	C1 LEVEL (SECTOR 1)	BASE BUILDING	6	100	30		●	FL 4" NP3085	1	●					3	1750	460	3	60			●				●	
PARKING SUMP PUMP	TC-SP-C1-3 (PK) THRU TC-SP-C1-29 (PK)	C1 LEVEL PARKING	PARKING	27	20	25		●	ST SE50	1	●					1/2	3500	460	3	60							●	
STORM WATER SUBMERSIBLE PUMP	TC-SP-C1-6 (B)	C1 LEVEL BURIED STORM TANKS	BASE BUILDING	4	200	70		●	FL 4" CP3127	1	●					10	1750	460	3	60							●	
FILTER PUMP (STORM WATER)	TC-FP-C1-1 (B), TC-FP-34-1 (B)	C1 LEVEL AND 48TH FLOOR	BASE BUILDING	4	200	50		●	PPC C825AM	1			●			5	3500	460	3	60								
ELEVATOR SUMP PUMP	TC-ESP-C1-1 (B) THRU TC-ESP-C1-15 (B)	C1 LEVEL	BASE BUILDING		20	30			ST SE50OM	1						1/2	3500	460	3	60								
HW CIRCULATING PUMPS (SEE FLOOR PLANS)	TC-HWCP-5-1 (B), TC-HWCP-23-1 (B), TC-HWCP-34-1 (B), TC-HWCP-34-2 (B), TC-HWCP-47-1 (B)	5TH, 22RD, 34TH, 49TH FLOOR	BASE BUILDING	12	5	20			B & G PRAB	1			●			1/8	1750	460	3	60								
IRRIGATION PUMPS	TC-ESP-C1-1	C-1 LEVEL	BASE BUILDING	2	100	150		●	PPCC 8156	1			●			10	3500	460	3	60			●				●	

ELEVATOR SUMP PUMP - OIL MINDER

B&G = BELL & GOSSETT PUMP CO.
FL = FLYGT PUMP CO.
PPC = PEERLESS PUMP CO.
A = AURORA

ST = STANCOR PUMP CO. (*PROVIDE WITH OIL MINDER CONTROL SYSTEM)
LG = LITTLE GIANT PUMP CO.

COOLING TOWER MAKE-UP PUMP, LOW ZONE HOUSE PUMPS, AND MID ZONE HOUSE PUMPS SHALL INCLUDE SOFT START/SOFT STOP STARTERS IN A NEMA ENCLOSURE SUITABLE FOR INDOOR INSTALLATION.

PROVIDE ONE (1) SPARE CONTROL PANEL FOR EACH SUMP & EJECTOR PUMP LARGER THAN 2 HP FOR REPLACEMENT AFTER A FLOOD CONDITION ON LEVEL C1 (ELEVATION +1'-0").

FIXTURE CONNECTION SCHEDULE

FIXTURES		FIXTURE NO.					S	W	V	HW	CW	DW	RIM HT.	REMARKS
WATER CLOSET		P-1	P-1A	P-1B	P-1C	P-1D								
WALL HUNG	FLUSH VALVE	●					4"		1½"		1¼"		1'-4"	
	FLUSH VALVE		●				4"		1½"		1¼"		1'-6"	HANDICAPPED
	FLUSH VALVE			●			4"		1½"		¾"		1'-4"	BACK OF HOUSE
	FLUSH TANK						4"		1½"		¾"		1'-6"	HANDICAPPED
FLOOR STANDING	FLUSH VALVE						4"		1½"		1¼"			
	FLUSH VALVE						4"		1½"		1¼"			HANDICAPPED
	FLUSH TANK						4"		1½"		¾"			
	FLUSH TANK						4"		1½"		¾"			HANDICAPPED
URINALS		P-2	P-2A	P-2B										
	WASH-OUT							2"	1½"		1"		2'-0"	
	BLOW-OUT							2"	1½"		1¼"		2'-0"	
	SIPHON-JET	●						2"	1½"		1"		2'-0"	
	BLOW-OUT							2"	1½"		1¼"		1'-3"	HANDICAPPED
LAVATORIES		P-3	P-3A	P-3B										
		●						1½"	1½"	½"	½"		2'-10"	
			●					1½"	1½"	½"	½"		2'-10"	BACK OF HOUSE
SLOP SINKS		P-4	P-4A	P-4B										
	WALL HUNG							3"	1½"	¾"	¾"			
	FLOOR RECESSED							3"	1½"	¾"	¾"			
	RECEPTOR	●						3"	1½"	¾"	¾"			
SHOWERS		P-5	P-5A											
		●						2"	1½"	¾"	¾"		6'-6"	HEIGHT TO SHOWER HEAD
								2"	1½"	¾"	¾"			HANDICAPPED
DRINKING FOUNTAINS		P-6	P-6A											
								1½"	1½"			½"	3'-4"	
			●					1½"	1½"			½"		HANDICAPPED
BATH TUBS		P-7	P-7A											
								2"	1½"	¾"	¾"			
								2"	1½"	¾"	¾"			HANDICAPPED
SINKS		P-8	P-8A	P-8B	P-8C									
	KITCHEN	●						2"	1½"	¾"	¾"			PANTRY
	LABORATORY							2"	1½"	¾"	¾"			

MATERIAL SCHEDULE

NOTES:
1.) FOR REQUIRED PRESSURE RATINGS SEE RISER DIAGRAM.
2.) ALL MATERIAL SELECTED ON THIS SCHEDULE MUST BE APPROVED BY AUTHORITIES HAVING JURISDICTION.
3.) PROVIDE SUPPORTS & RESTRAINTS AT BASE OF STACKS & ALL OFFSETS. REFER TO DETAIL ON DWG. NO P6-0102.
4.) STARTING AT THE 6TH FLOOR SLAB & BELOW AND WHERE NOTED ON THE DWGS.
* INDICATES ALTERNATE PRICING COMPARISON TO BASE STANDARD SELECTION.

SYSTEMS	PIPE																FITTINGS																				JOINTS										
	EXTRA HEAVY CAST IRON (E.H.C.I.)	CAST IRON SOIL PIPE (C.I.S.P.)	DUCTILE IRON AWWA/C151	SCH. 10, 316 STAINLESS STL	SCH. 40, 304 STAINLESS STL	SCHEDULE 10 STEEL GALVANIZED	SCHEDULE 40 BLACK STEEL	SCHEDULE 40 GALVANIZED STEEL	TYPE "K" COPPER TUBING	TYPE "L" COPPER TUBING	TYPE "M" COPPER TUBING	D.I.W.P. (CEMENT LINED)	D.I.W.P. (GROOVED ENDS)	GLASS	POLYPROPYLENE P.P.	C.P.V.C. SCHEDULE 80	C.I. NO-HUB	EXTRA HEAVY CAST IRON (E.H.C.I.)	C.I. SOIL	DUCTILE IRON AWWA C110/C153	DUCTILE IRON (GROOVED ENDS)	DUCTILE IRON CLASS 350 (LINED)	STD.C.I.-175# W.W.P.	EX. H. C.I. 400# W.W.P.	BRAZED FITTING	STD. MALL.-300# W.W.P.	SOLDERED DRAINAGE PATTERN	CAST BRONZE-175# W.W.P.	CAST BRONZE-400# W.W.P.	POLYPROPYLENE P.P.	SOLDER FITTINGS	SCHEDULE 10 STEEL GALVANIZED	SCHEDULE 10 STAINLESS STEEL	SCHEDULE 40 BLACK STEEL	SCHEDULE 40 GALVANIZED	SCHEDULE 40 304 STAINLESS STEEL	VICTAULIC STYLE 31	THREADED	SCH. 40 WELDED	SOLDERED 95-5 (LEAD FREE)	GROOVED SCHEDULE 40 GALVANIZED/VICTAULIC ZERO-FLEX	PUSH-ON JOINT - AWWA C11	VICTAULIC STYLE 607 RIGID COUPLING	BRAZED	GROOVED SCH. 40 STAINLESS STEEL/VICTAULIC STYLE 89	NO-HUB S.S. COUPLING (HEAVY DUTY HUSKY SERIES 4000 OR AS APPROVED)	GASKETED
DRAINAGE (BURIED)	●																	●																													●
VENTS (BURIED)	●																	●																													●
SANITARY HOUSE DRAINS (SEE NOTE #3)		●																	●																												●
SANITARY HOUSE DRAINS ALTERNATE (SEE NOTE #4)*			●																		●																●										
SANITARY STACKS (6" & SMALLER)		●															●																													●	
SANITARY STACKS (8" & LARGER) (SEE NOTE #3)		●																	●																												●
SANITARY STACKS ALTERNATE (8" & LARGER) (SEE NOTE #4)*			●																		●																●										
SANITARY STACKS ALTERNATE (8" & LARGER) (SEE NOTE #3)*		●															●																													●	
SANITARY BRANCHES		●															●																													●	
VENTS		●															●																													●	
LEADER DRAINS ALTERNATE (SEE NOTE #4)*			●																		●																●										
LEADER		●																	●																												●
LEADER RUNOUTS		●															●																													●	
LEADER HOUSE DRAINS (SEE NOTE #3)		●																	●																												●
C.W. & H.W. (3" & LARGER)										●															●																			●			
PUMP DISCHARGE (HOUSE PUMP & C.T. DISCHARGE) *					●																															●									●		
C.W., H.W. & H.W.C. (2 1/2" & SMALLER)										●																					●									●							
BURIED C.W.																																															
STORM WATER COLLECTION SYSTEM (C-1 & 48TH FLOOR)			●																		●																●										
GAS SYSTEM (1/2" TO 3" & PRESSURES AT OR LESS THAN 1/2 PSI)							●																											●				●									
GAS SYSTEM (4" & LARGER & PRESSURES GREATER THAN 1/2 PSI)							●																											●					●								
EJECTOR DISCHARGE								●																											●						●						
SUMP DISCHARGE								●																											●						●						
IRRIGATION SUPPLY										●																					●									●							
SUCTION TANK & STORM WATER TANK OVERFLOW						●																										●									●						
INDIRECT WASTE										●																	●				●									●							
INDIRECT STACKS		●																	●																											●	

PRESSURE VESSELS AND HEATERS

	UNIT TAG	LOCATION	SERVICE	NO. REQUIRED	TANK MODEL	DOMESTIC WATER TEMP. MAX °F	CAPACITY (GALS./HTR.)	SIZE	W.W.P.(PSI)	VOLTAGE	PHASE	HEATING H.W. BOILER PRESURE DROP (PSI)	HEATING HW PRESSURE DROP (PSI)	G.P.M./HTR. BOILER	DOMESTIC WATER TEMP. RISE (°F)	BOILER WATER TEMP (IN) (°F)	BOILER WATER TEMP (OUT) (°F)		DOMESTIC WATER FLOW (GPM)	HEATING SECTION (kW)
DOMESTIC HOT WATER HEATER (ZONE 1 FLOOR ZONE)	TC-DH-5-1 (B)	5TH FLOOR MER	BASE BUILDING	2	ASP SP DW 23-HP	140			160	120	60	5	4	27	100	180	96		20	
DOMESTIC HOT WATER HEATER (ZONE 2 FLOOR ZONE)	TC-DH-22-1 (B)	22ND FLOOR	BASE BUILDING	2	ASP SP DW 23	140			150	120	60	5	4	27	100	180	96		20	
DOMESTIC HOT WATER HEATER (ZONE 3 FLOOR ZONE)	TC-DH-34-1 (B)	34TH FLOOR	BASE BUILDING	2	ASP SP DW 23	140			150	120	60	5	4	27	100	180	96		20	
DOMESTIC HOT WATER HEATER (ZONE 4 FLOOR ZONE)	TC-DH-34-2 (B)	34TH FLOOR MER	BASE BUILDING	2	ASP SP DW 23	140			150	120	60	5	4	27	100	180	96		20	
DOMESTIC HOT WATER HEATER (ZONE 5 PNEUMATIC ZONE)	TC-DH-48-1 (B)	48TH FLOOR MER	BASE BUILDING	2	ASP SP DW 23	140			150	120	60	5	4	27	100	180	96		20	
PNEUMATIC TANK	TC-PT-48-1 (B)	48TH FLOOR	BASE BUILDING	1	AMTROL	40	528													
PNEUMATIC TANK	TC-PT-5-1 (B)	5TH FLOOR	BASE BUILDING	1	AMTROL	40	528													
PNEUMATIC TANK/IRRIGATION SYSTEM	TC-PT-5-1 C-1	C-1 LEVEL	BASE BUILDING	1	AMTROL WX 405C	40	88													
LOCAL ELECTRIC HEATER	TC-LEH-C1-1 (B), TC-LEH-2-1 (B), TC-LEH-5-1 (B)	C1 LEVEL, 2ND, 5TH	BASE BUILDING	5	HUBBELL CE10-110	140	1		150						100					1
LOCAL ELECTRIC HEATER	TC-LEH-C1-1 (B), TC-LEH-2-1 (B), TC-LEH-5-1 (B)	C1 LEVEL, 2ND, 5TH	BASE BUILDING	1	HUBBELL SE20-110	140	20		150						100					5

ASP = AERCO SMART PLATE
PK = PATTERSON KELLEY CO.
AX = AMTROL EXPANSION TANK

NOTE:
PROVIDE (2) HOT WATER CIRCULATION PUMPS FOR EACH SET OF DUPLEX HOT WATER HEATERS.

DRAIN SCHEDULE

			BODY																	STRAINER																								REMARKS
DESIGNATION	REQUIRED	SERIES NO. J.R. SMITH	CAST IRON	LACQUER COATED	GALVANIZED	ALL BRONZE	NICKEL BRONZE	BOTTOM OUTLET	45° OUTLET	SIDE OUTLET (90°)	OTHER OUTLET	CLAMPING DEVICE	STAINLESS STEEL EXTENSION	THREADED OUTLET	NO HUB	INSIDE GASKET	CAULKED	ACID RESISTANT COATED	RD RECIEVER PLATE	CAST IRON	LACQUER COATED	GALVANIZED	SEDIMENT BUCKET	SECONDARY STRAINER	BRONZE	NICKEL BRONZE	CHROME PLATED	POLISHED FINISH	SATIN FINISH	TRACTOR GRATE	SOLID COVER	FUNNEL TOP	FLAT TOP	HIGH DOME	LOW DOME	EXTENSION PIECE	VERTICAL ADJUSTMENT	VANDAL PROOF	TOP SIZE	ANGLE TYPE	WATER DAM (O. FLOW)	BACK WATER VALVE	FLUSHING CONNECTION	GENERAL AREA OR LOCATION
A	●	1419	●	●				●				●	●			●			●	●	●															●	●		14" SQ.					MAIN ROOF DRAINS
B	●	1070	●	●				●				●				●			●	●	●													●		●	●				●			MAIN ROOF OVERFLOW DRAINS
C	●	2120	●	●				●							●					●	●									●			●			●		●	12" SQ.					M.E.R.
D	●	2250-08	●	●				●								●				●	●											●							15" SQ.					OVERFLOW AT TANKS
E	●	2130	●	●				●							●					●	●			●	●								●			●								TOILET ROOM DRAINS
F	●	2110-YD	●	●				●							●									●											●									PLENUM DRAINS
G	●	1920	●	●				●								●				●	●				●																			AREA DRAINS AT GRADE/PLAZA/PLANTER DRAINS
H	●																																											
I	●	2810	●	●				●								●				●	●									●			●		●			●	6" SQ.					LOADING DOCK/TRENCH
J	●	1017	●	●				●				●	●			●			●	●	●													●										PLAZA ROOF
	●	1070	●	●				●				●				●			●	●	●													●							●			PLAZA ROOF OVERFLOW
	●	2810	●	●				●				●				●				●	●				●								●								●			AREA TRENCH DRAIN
K	●	Z536		●					●				●				●				●	●									●			●					15"					ELECTRICAL POE ROOMS

PLUMBING NON-PRESSURE VESSELS, PITS AND PADS

	UNIT TAG	LOCATION	SERVICE	NO. REQUIRED	COMPARTMENTS	USABLE DOMESTIC WATER (GALLONS)	USABLE FSP/SPRINKLER (GALLONS)	USABLE COOLING TOWER MAKE-UP (GALLONS)	TOTAL USABLE WATER STORAGE (GALLONS)	SIZE	MATERIAL
DOMESTIC/FIRE HOUSE TANK	TC-DHT-50-1 (B)	ROOF MER	BASE BUILDING	2	1	3,750	15,000		18,750	21'-0"ø X 10'-0" HIGH	WOOD
DOMESTIC/FIRE HOUSE TANK	TC-DHT-28-1 (B)	28TH/29TH FLOOR	BASE BUILDING	1	2	6,500	30,000		36,500	23'X13'-0"X19'-0" HIGH	(2) COMPARTMENT STAINLESS STEEL
DOMESTIC SUCTION TANK	TC-DST-C1-1 (B)	C1 LEVEL (SECTOR 1)	BASE BUILDING	1	2	20,000				25'X15'-6"X9'-0" HIGH	(2) COMPARTMENT STAINLESS STEEL
TOWER C STORM WATER DETENTION	TC-SWDT-C1-1 (B)	C1 LEVEL (SECTOR 1)	BASE BUILDING	1	4			100,000		39'X27'X16'-0" HIGH	(2) COMPARTMENT CONCRETE
PLAZA BURIED STORM WATER DETENTION	TC-SWDT-C1-2 (B)	C1 LEVEL (SECTOR 4/7)	BASE BUILDING	1	1			40,000		41'X22'X10'-0" HIGH	CONCRETE
TOWER C STORM WATER DETENTION	TC-SWDT-48-1 (B)	48TH FLOOR	BASE BUILDING	1	2			24,000		34'X14X10'-0" HIGH	(2) COMPARTMENT STAINLESS STEEL

Damian Titus
Buildings
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Under Directive 2 of 1975
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Filename: T:\projects\14752.a.hudson yards-east yards-twr c\pfp\ISSUED FOR FILING 02-12-2013 DOB\PLUMBING\HYE-TC-P6-0101.dwg Plotted by: Roberto Quintana Plot Time: 2/13/2013 11:06 AM

DEPT OF BLDGS 121324290 Job Number
ES610519663 Scan Code

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
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Structural Engineer
Thornton Tomasetti, Inc.
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No.	Issue	Date
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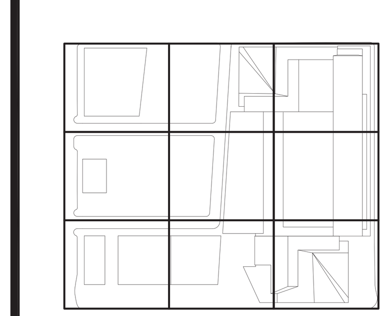
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



STATE OF NEW YORK · AUGUSTINE A. DIGIACOMO · LICENSED PROFESSIONAL ENGINEER · NO. 062475

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Project No.
14752.A.000

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Sheet Number
HYE-TC-P6-0101

Drawing Title
PLUMBING SCHEDULE SHEET

Drawing Number
P6-0101

B-SCAN Drawing Number
P-152.00

SHEET 53 OF 64

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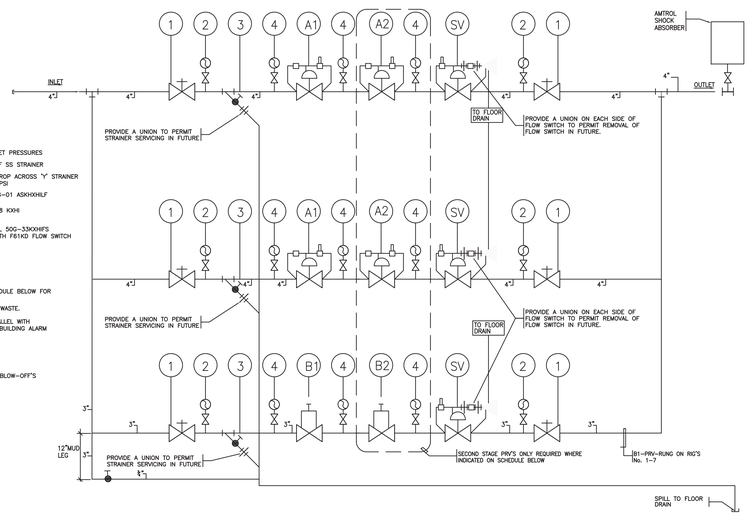


LEGEND

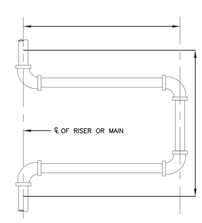
1. = ISOLATION VALVE
2. = PRESSURE GAUGE SHOWING INLET & OUTLET PRESSURES
3. = BRONZE Y STRAINER, 300S, FIG 352, PERF SS STRAINER
4. = PRESSURE GAUGE MEASURES PRESSURE DROP ACROSS 'Y' STRAINER & PRV (GLYCERIN FILLED), 4 ½"DIAL 0-400PSI
A1 & A2 = PRESSURE REDUCING VALVE, CLA-VAL 90G-01 ASKHXHLF 300 F, BBSST, 30-300 PSI
B1 & B2 = PRESSURE REDUCING VALVE, JRG NO. 1338 KXH 300 LB SCR'D, BBSST, 70-140 PSI
SV = EXCESS PRESSURE SAFETY VALVE, CLA-VAL 50G-33KXHFS 300F, BB, BBST, 20-200 PSI, PROVIDE WITH F61HD 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-OF TO SAFE WASTE.
5. ALL ELECTRICAL WORK BY OTHERS.
6. PROVIDE SIGNAGE ON STRANER & MUD LEG BLOW-OFF'S INDICATING "CAUTION- HIGH PRESSURE"

PRESSURE REDUCING VALVE SCHEDULE

PRV RIG NO.	LOCATION	AREA SERVED	MAX. GPM	MAXIMUM INLET PRESSURE (P.S.I)	PRV "A1" 1ST STAGE SIZE	PRV "A1" 1ST STAGE OUTLET PRESSURE (P.S.I.)	PRV "A2" 2ND STAGE SIZE	PRV "A2" 2ND STAGE OUTLET PRESSURE (P.S.I.)	PRV "B1" 1ST STAGE SIZE	PRV "B1" 1ST STAGE OUTLET PRESSURE (P.S.I.)	PRV "B2" 2ND STAGE SIZE	PRV "B2" 2ND STAGE OUTLET PRESSURE (P.S.I.)	SV SAFETY VALVE SET POINT (PSI)	SAFETY VALVE SIZES BY PRV RUNG A1	SAFETY VALVE SIZES BY PRV RUNG A1	SAFETY VALVE SIZES BY PRV RUNG B1
1	FLOOR 5 MER	OFFICE	218	150	—	98	—	—	—	—	—	—	—	3"	3"	2"
2	FLOOR 5 MER	OFFICE	180	85	—	35	—	—	—	—	—	—	—	3"	3"	2"
3	FLOOR 34 MER	OFFICE	185	109	—	79	—	—	—	—	—	—	—	3"	3"	2"
4	FLOOR 34 MER	OFFICE	225	109	—	25	—	—	—	—	—	—	—	3"	3"	2"
5	FLOOR 48 MER	OFFICE	175	60	—	37	—	—	—	—	—	—	—	3"	3"	2"

4 MAIN PRV STATION DETAIL

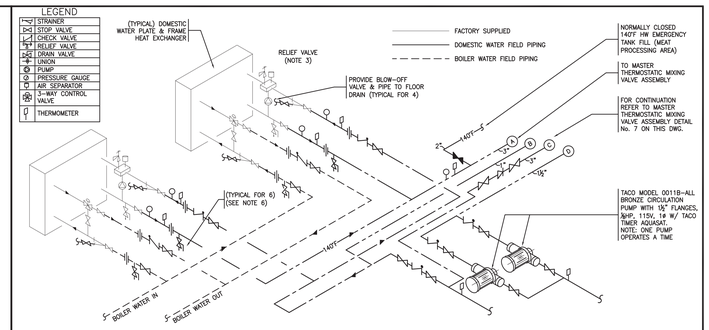


PIPE SIZE	DIMEN. "L"
¾"	8'-3"
1"	9'-3"
1¼"	11'-3"
2"	12'-6"
2½"	13'-9"
3"	15'-3"
4"	17'-3"

NOTES:
A DOUBLE OFFSET "U" BENT PIPE LOOP MAY BE USED PROVIDED IT'S DEVELOPED LENGTH IS EQUAL TO THAT GIVEN FOR "L".

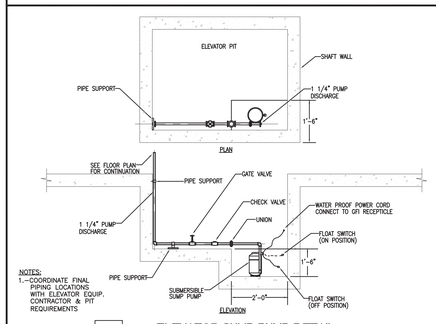
NOTES:
THIS LOOP LENGTH FIGURED FOR MAXIMUM OF 1 ½" EXPANSION.

1 FOUR ELBOW SWING EXPANTION LOOP
NO SCALE



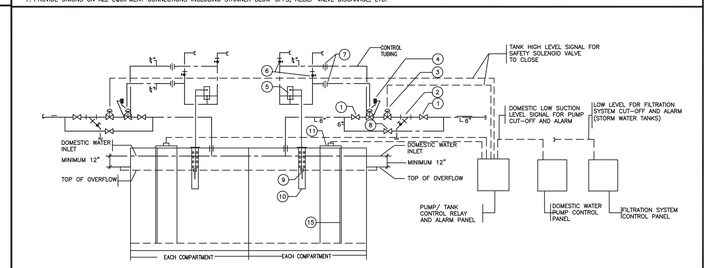
4 DUPLEX DOMESTIC WATER PLATE AND FRAME HEAT EXCHANGERS
NO SCALE

NOTES:
1. DETAIL IS INTENDED TO SHOW THE SCHEMATIC PIPING ARRANGEMENT. PREPARE AND SUBMIT PIPING & EQUIPMENT DETAILS, SECTIONS & ELEVATIONS TO INDICATE THE LOCATIONS OF PIPING AND OTHER CONNECTIONS TO THE HEATER & EQUIPMENT.
2. REDUCERS, ON THE WATER INLET SIDE, SHOULD BE LOCATED ADJACENT TO THE HEATER. EXPANSION FITTINGS, ON THE WATER INLET SIDE, SHOULD BE LOCATED AS FAR AS POSSIBLE FROM THE HEATER.
3. DRAIN VALVE SHOULD BE PIPED DIRECTLY TO A FLOOR DRAIN. RELIEF VALVE SHOULD BE PIPED VERTICALLY TO A HEIGHT 19" ABOVE THE FLOOR. PROVIDE UNION FITTING ON DISCHARGE PIPE.
4. HEATERS SHOULD BE PIPED REVERSE RETURN OR BALANCING DEVICES ON THE OUTLETS SHOULD BE EMPLOYED
5. INSTALL A HOSE CONNECTION AT THE HOT WATER OUTLET
6. PIPING DROPS TO EQUIPMENT SHALL BE POSITIONED TO ALLOW PROPER MAINTENANCE & SERVICE TO BE PERFORMED WITHOUT PIPING MODIFICATIONS.
7. PROVIDE UNIONS ON ALL EQUIPMENT CONNECTIONS INCLUDING STRANER BLOW-OFFS, RELIEF VALVE DISCHARGE, ETC.



NOTES:
1.-COORDINATE FINAL PIPING LOCATIONS WITH ELEVATOR EQUIP. CONTRACTOR & PIT REQUIREMENTS

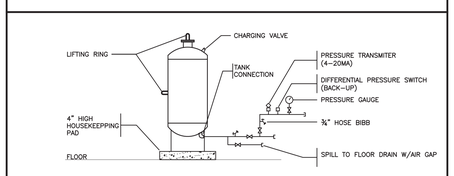
2 ELEVATOR SUMP PUMP DETAIL
N.T.S.



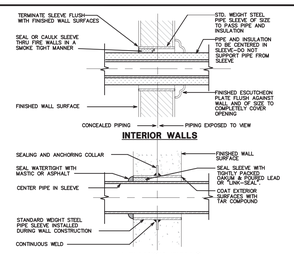
EQUIPMENT KEY

1. GATE VALVE (FULL SIZE)
2. CAST BRONZE STRAINER MUELLER No.851 OR 852 FITTED W/BLOW OFF BALL VALVE AND PIPED TO OVER-FLOW BASIN.(FULL SIZE)
3. SAFETY SOLENOID SHUT-OFF VALVE- CLA-VAL CO. 136 DG-01AKXHXH x HL 150F, BBBT, 120/60
4. SUPPLY FILL VALVE- MODULATING FLOAT VALVE CLA-VAL CO. 42BG-01 AKXHL150F,BBSST WITH 4' SS ROD & SS FLOAT AND REMOTE MOUNTED CF1-SET FLOAT AS BACK-UP TO SAFETY SOLENOID.
5. FLOAT CONTROL-CLA VAL CO. No.CFMXKXHI PIPED IN SERIES. IF ONE TANK IS BEING CLEANED THE OTHER TANK WILL CONTROL THE WATER LEVEL.REMOTE MOUNTED FROM VALVE.
6. AT ALL HIGH POINTS INSTALL A PIPE TEE WITH SIDE OUTLET FACING UP WITH BALL VALVES PIPED TO OVERFLOW BASIN.
7. UNION
8. FULL SIZED VALVED BY-PASS(NORMALLY CLOSED) FOR EMERGENCY FILL.
9. STAINLESS STEEL FLOAT & ROD. PROVIDE FLOAT ROD COUNTER WEIGHT IF REQUIRED.
10. STILLING WELL-STAINLESS STEEL, BRASS OR COPPER W/ ¼" VENT HOLES LOCATED ABOVE HIGH WATER LEVEL 10" DIAMETER SET PLUMB. INSURE THAT ROD HAS FREE PLAY FOR HORIZONTAL MOVEMENT AND STILLING WELL IS LONG ENOUGH TO AVOID CATCHING FLOAT ON LOWER RIM
11. PUMP CONTROL & TANK ALARM SYSTEM. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
12. STILLING WELL

5 SCHEMATIC DIAGRAM OF SUPPLY PIPING AND CONTROLS FOR THE DOMESTIC WATER HOUSE TANKS AND STORM WATER HOLDING TANKS
SCALE: NONE

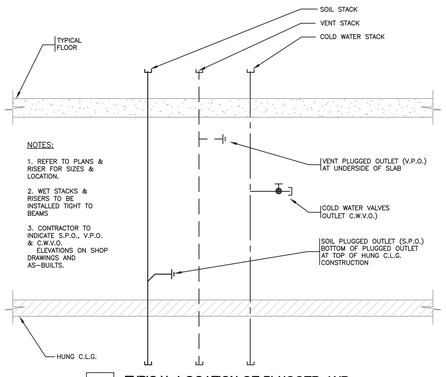


3 HYDROPNEUMATIC TANK
(NTS)



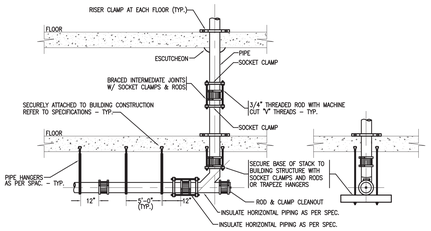
NOTES:
1. PIPE SLEEVE FOR EXTERIOR WALL ABOVE OR BELOW GRADE.
2. FOR GAS SERVICE, EXTEND SLEEVE 1" PAST INSIDE FACE OF & 4" PAST OUTSIDE FACE OF WALL.

TYPICAL PIPE SLEEVES THRU WALL
N.T.S.

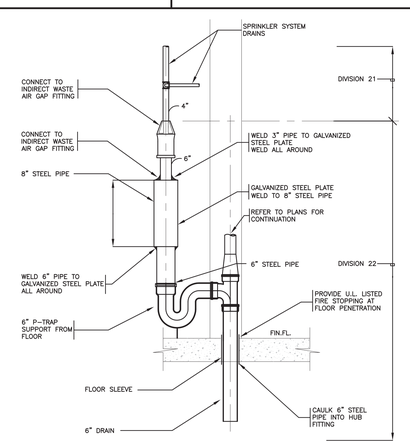


NOTES:
1. REFER TO PLANS & RISER FOR SIZES & LOCATION.
2. WET STACKS & RISERS TO BE INSTALLED TIGHT TO BEAMS
3. CONTRACTOR TO INDICATE S.P.O., V.P.O. & C.W.V.O. ELEVATIONS ON SHOP DRAWINGS AND AS-BUILTS.

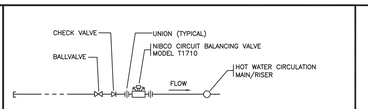
2 TYPICAL LOCATION OF PLUGGED AND CAPPED OUTLETS ABOVE HUNG CEILING
NO SCALE



8 NO-HUB PIPE BRACING FOR VERTICAL TO HORIZONTAL PIPING TRANSITION AT BASE OF STACK
N.T.S.

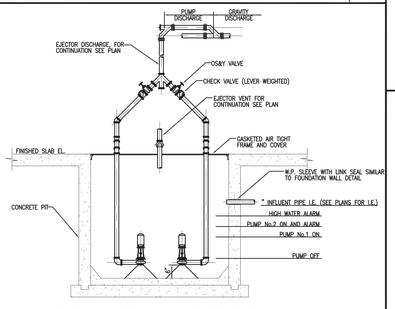


1 TYPICAL SPRINKLER FUNNEL DRAIN
NO SCALE

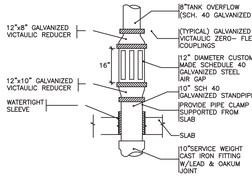


6 BALANCING VALVE RIG
(NTS)

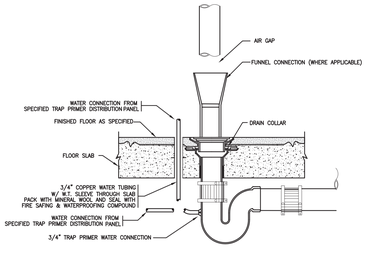
NOTE: PROVIDE A NIBCO DIFFERENTIAL PRESSURE TEST KIT MODEL No.1022 FOR BALANCING-TURN TEST KIT OVER TO BUILDING ENGINEER AT COMPLETION OF PROJECT.



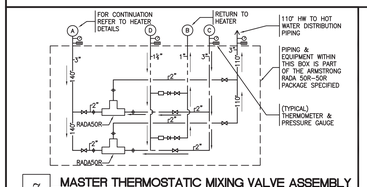
TYPICAL DETAIL OF SUBMERSIBLE EJECTOR, SUMP PUMPS IN CONCRETE PIT
N.T.S.



3 TANK OVERFLOW DRAIN AIR- GAP ASSEMBLY
SCALE: NONE



TYPICAL TRAP W/ WATER PRIMER & FUNNEL CONNECTION
NO SCALE



7 MASTER THERMOSTATIC MIXING VALVE ASSEMBLY
NO SCALE
NOTES: DETAIL SHOWN IS BASED ON PLATE & FRAME HEAT EXCHANGERS,

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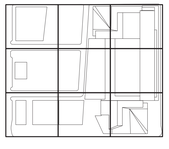

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Project No. 14752.A.000
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Sheet Number HYE-TC-P6-0102

Drawing Title PLUMBING DETAIL SHEET

Drawing Number P6-0102
B.S.C.A.V. Drawing Number P-153.00

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Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:29 PM
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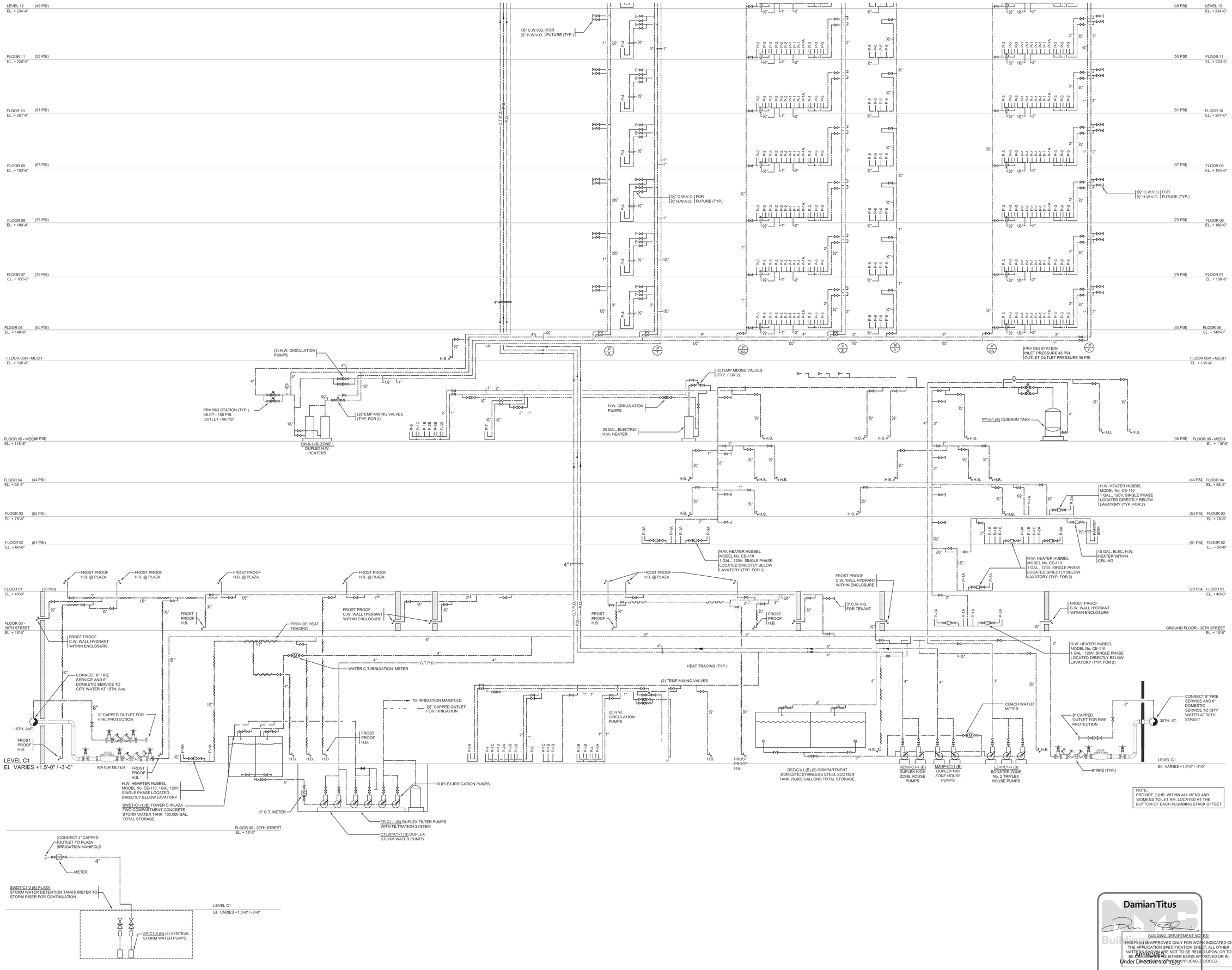

NOTE:
PROVIDE (1)HB. WITHIN ALL MENS AND WOMENS TOILET RM. LOCATED AT THE BOTTOM OF EACH PLUMBING STACK OFFSET

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1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No. 14752.A.000

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Sheet Number

HYE-TC-P6-0201

Drawing Title

PLUMBING
LOW-RISE
DOMESTIC WATER
RISER DIAGRAM

Drawing Number
P6-0201

B.S.C.D.V. Drawing Number
P-154.00

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Building Commissioner
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Project No.
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Sheet Number
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Drawing Title
PLUMBING
MID-RISE
DOMESTIC WATER
RISER DIAGRAM

Drawing Number
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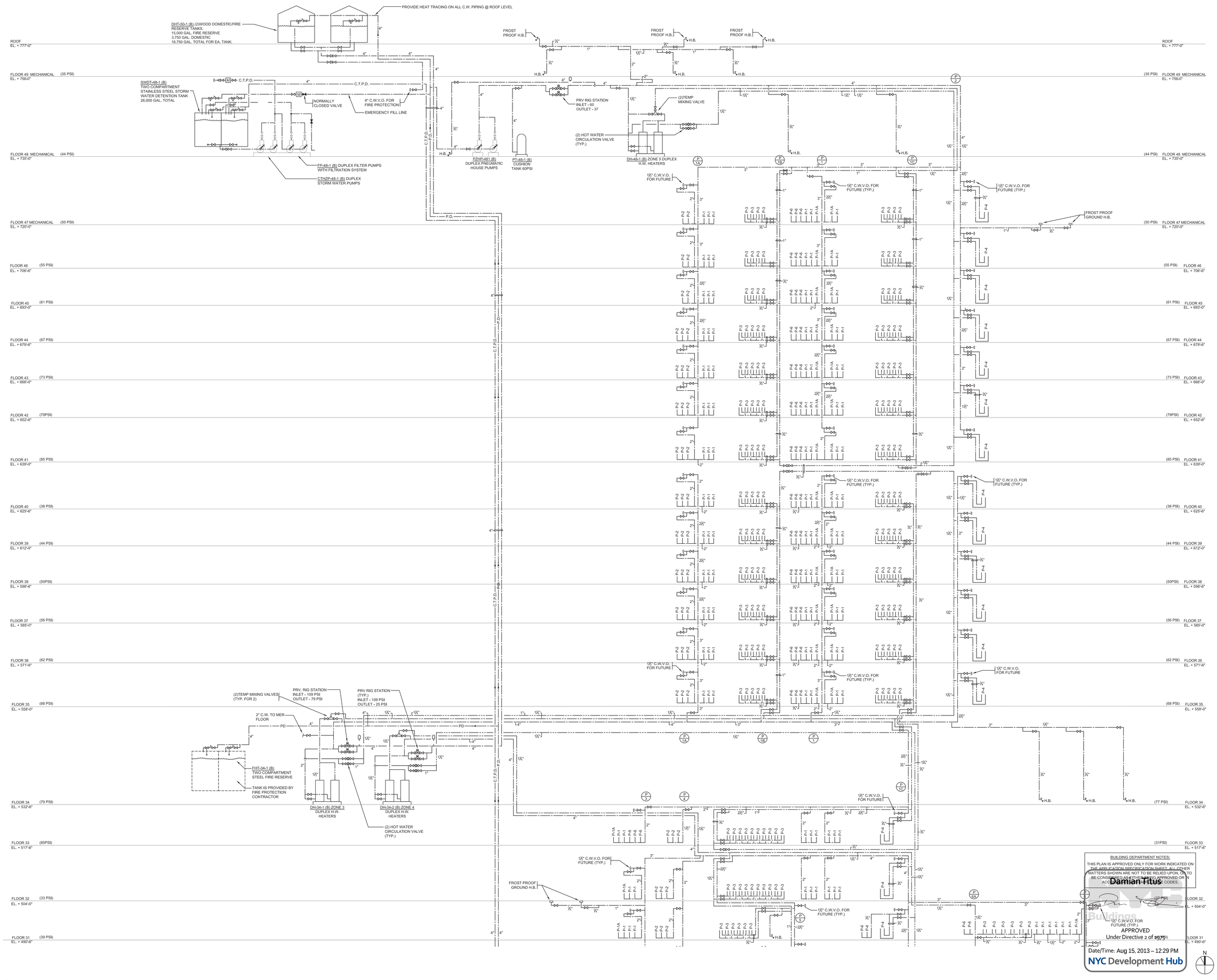

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1	ISSUED FOR FILING	08-20-2012

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Sheet Number

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Drawing Title

PLUMBING
HIGH-RISE
DOMESTIC WATER
RISER DIAGRAM

Drawing Number
P6-0203

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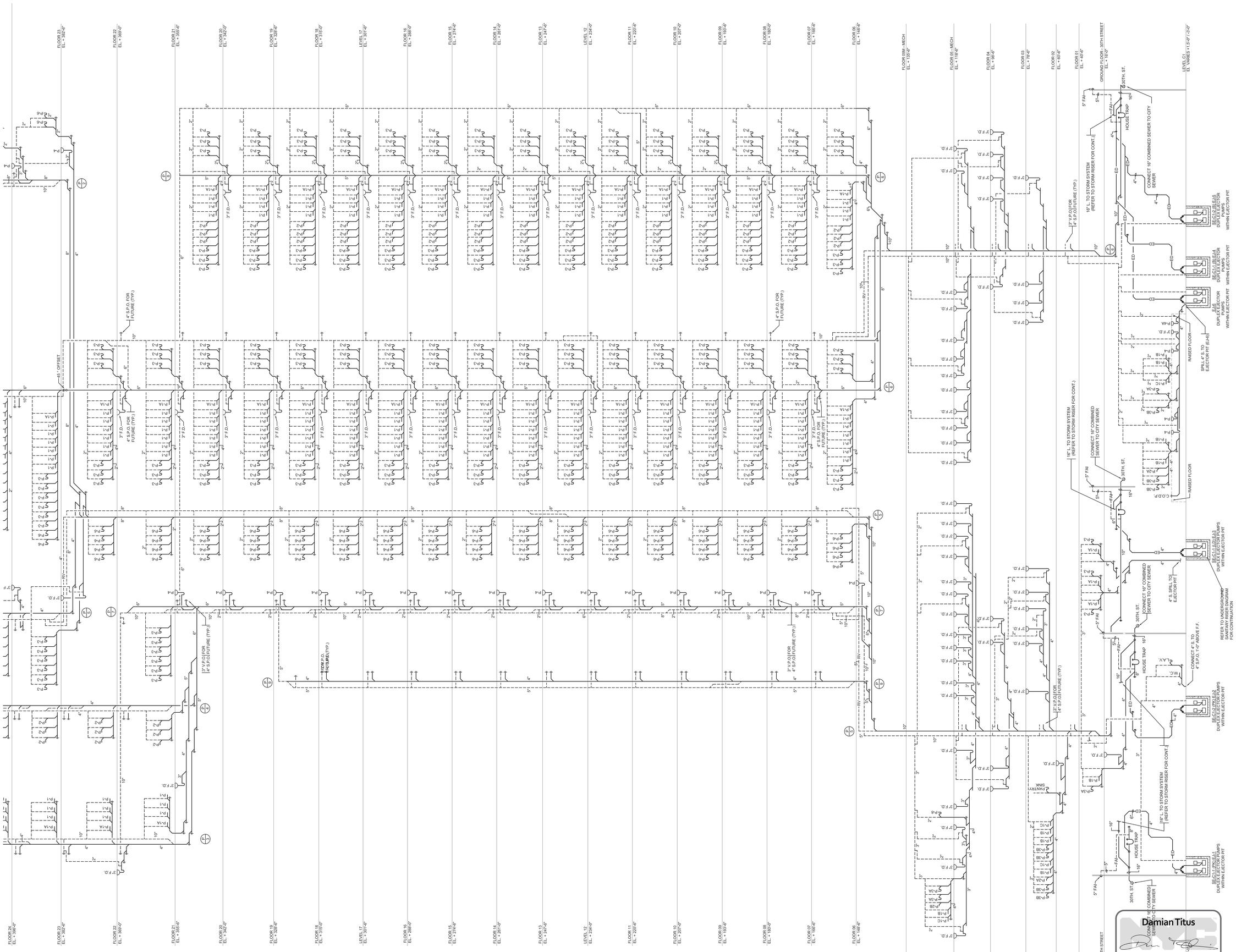

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80 Pine Street
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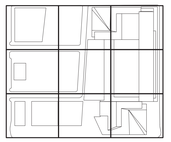
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
5	ISSUED FOR FILING	02-12-2013
4	DI-27 PLUMBING	02-11-2013
3	DI-20 PLUMBING	01-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P6-0204

Drawing Title
PLUMBING
LOW-RISE
SANITARY RISER
DIAGRAM

Drawing Number
P6-0204

B-SCAN Drawing Number
P-157.00

SHEET 58 OF 64

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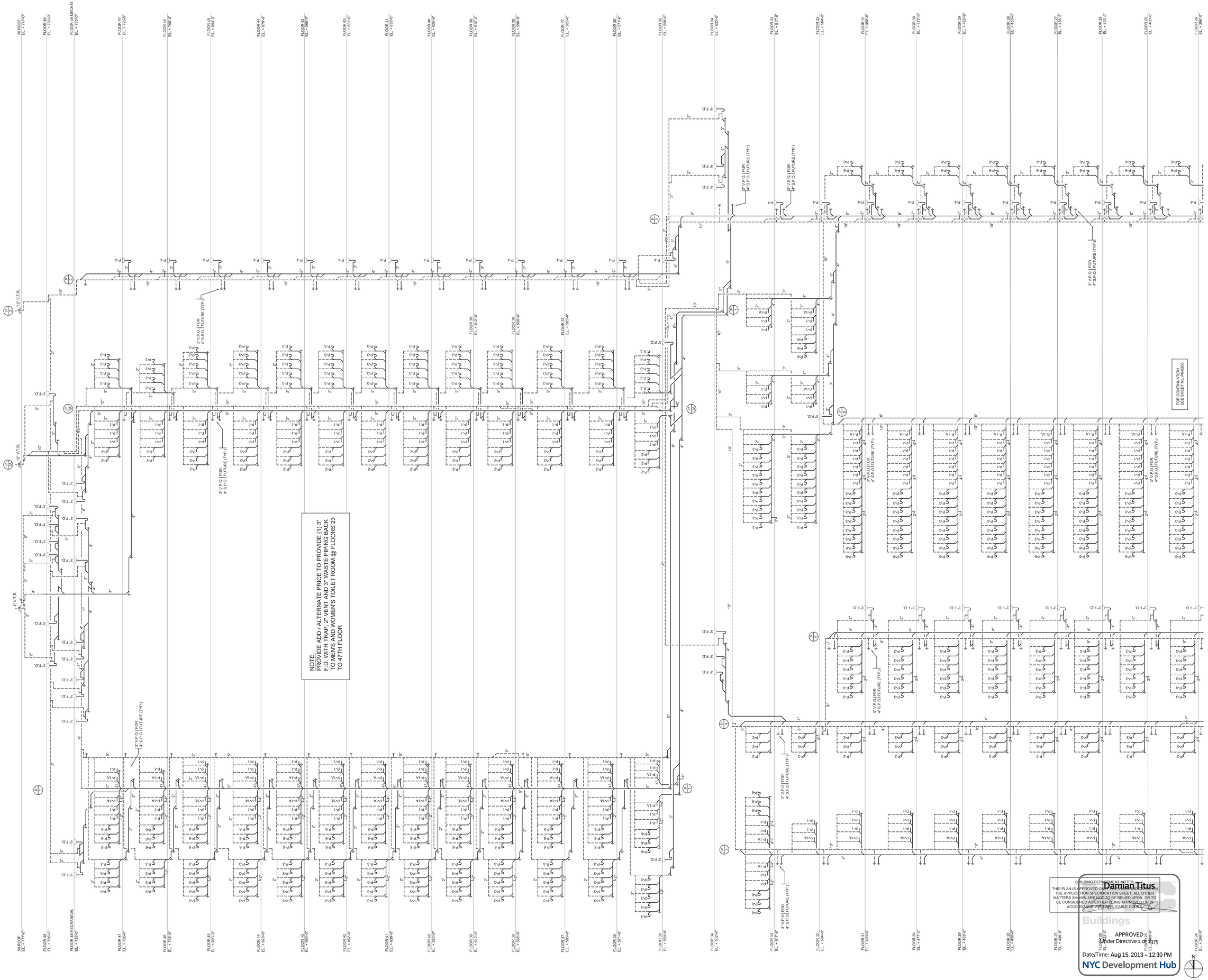

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No.	Issue	Date
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3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P6-0205

Drawing Title
PLUMBING
HIGH-RISE
SANITARY RISER
DIAGRAM

Drawing Number
P6-0205

B-SCAN Drawing Number
P-158.00

SHEET 59 OF 64

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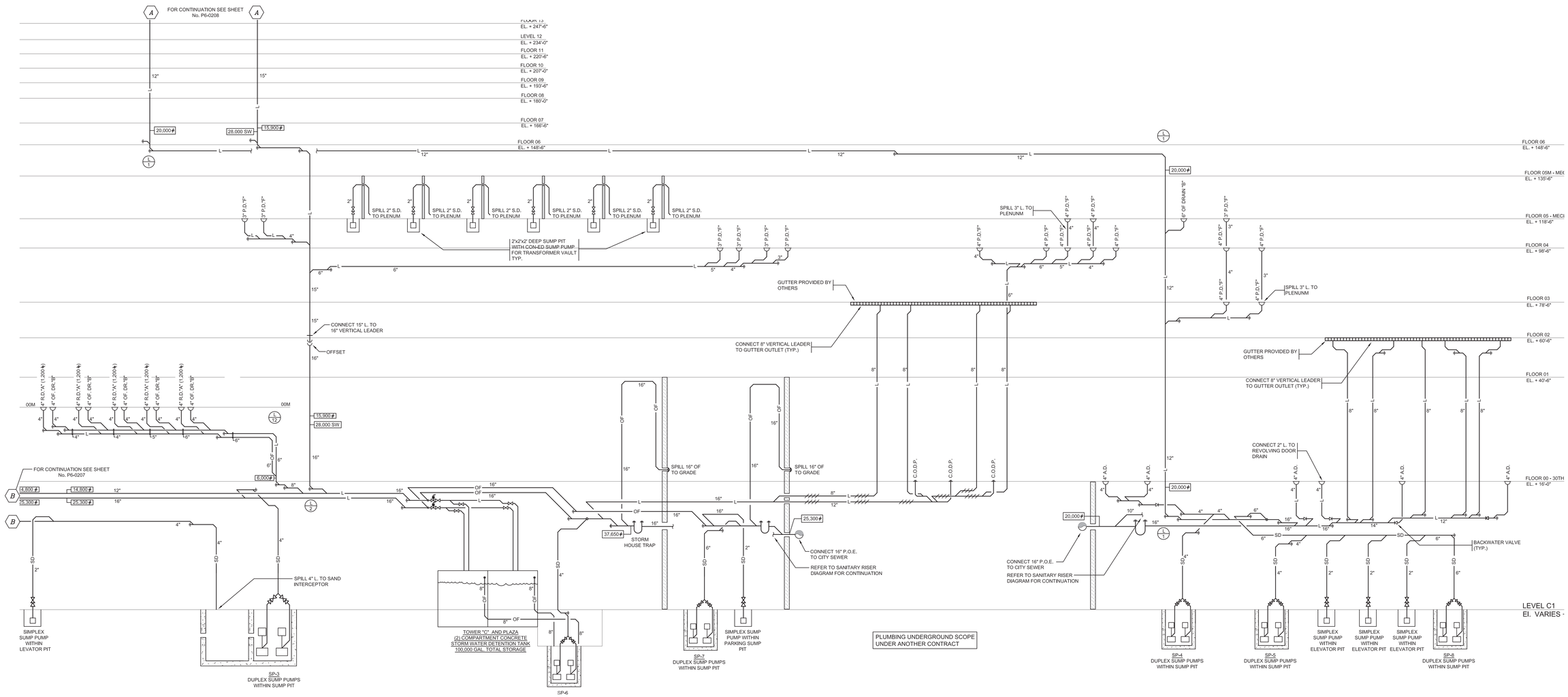

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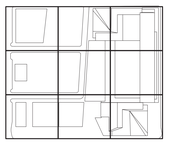
Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P6-0206

Drawing Title
PLUMBING
LOW-RISE
STORM WATER
RISER DIAGRAM

Drawing Number
P6-0206

B/SCAN Drawing Number
P-159.00

SHEET 60 OF 64

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E3076162204 Scan Code

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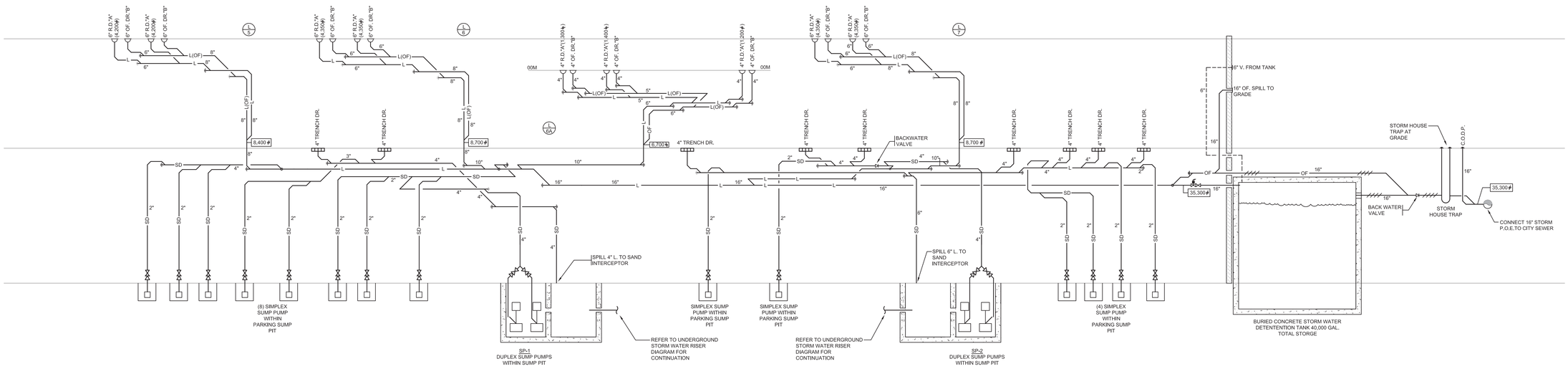
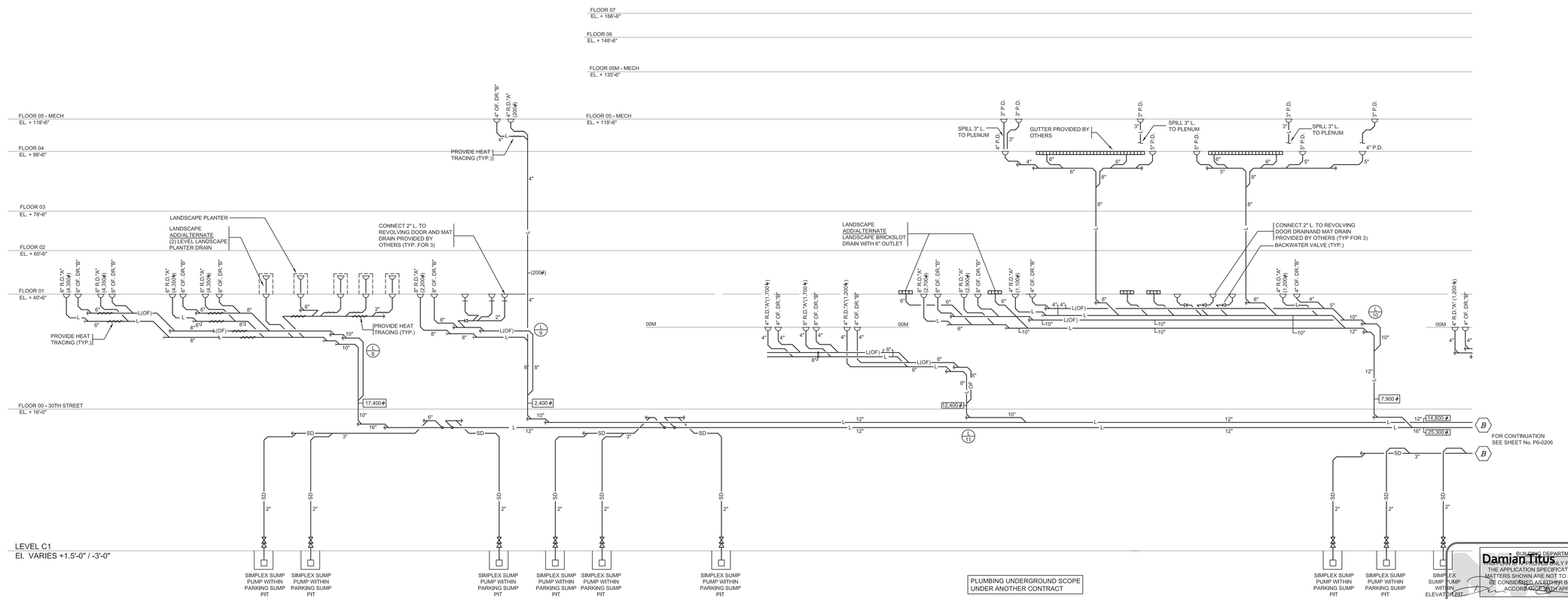
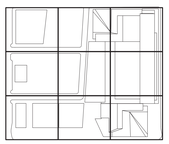




PLUMBING UNDERGROUND SCOPE UNDER ANOTHER CONTRACT

No.	Issue	Date
4	ISSUED FOR FILING	02-12-2013
3	DI-27 PLUMBING	02-11-2013
2	DI-10 PLUMBING	12-07-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P6-0207

Drawing Title
PLUMBING
LOW-RISE PLAZA LEVEL
STORM WATER
RISER DIAGRAM

Drawing Number
P6-0207
B-SCAN Drawing Number
P-160.00

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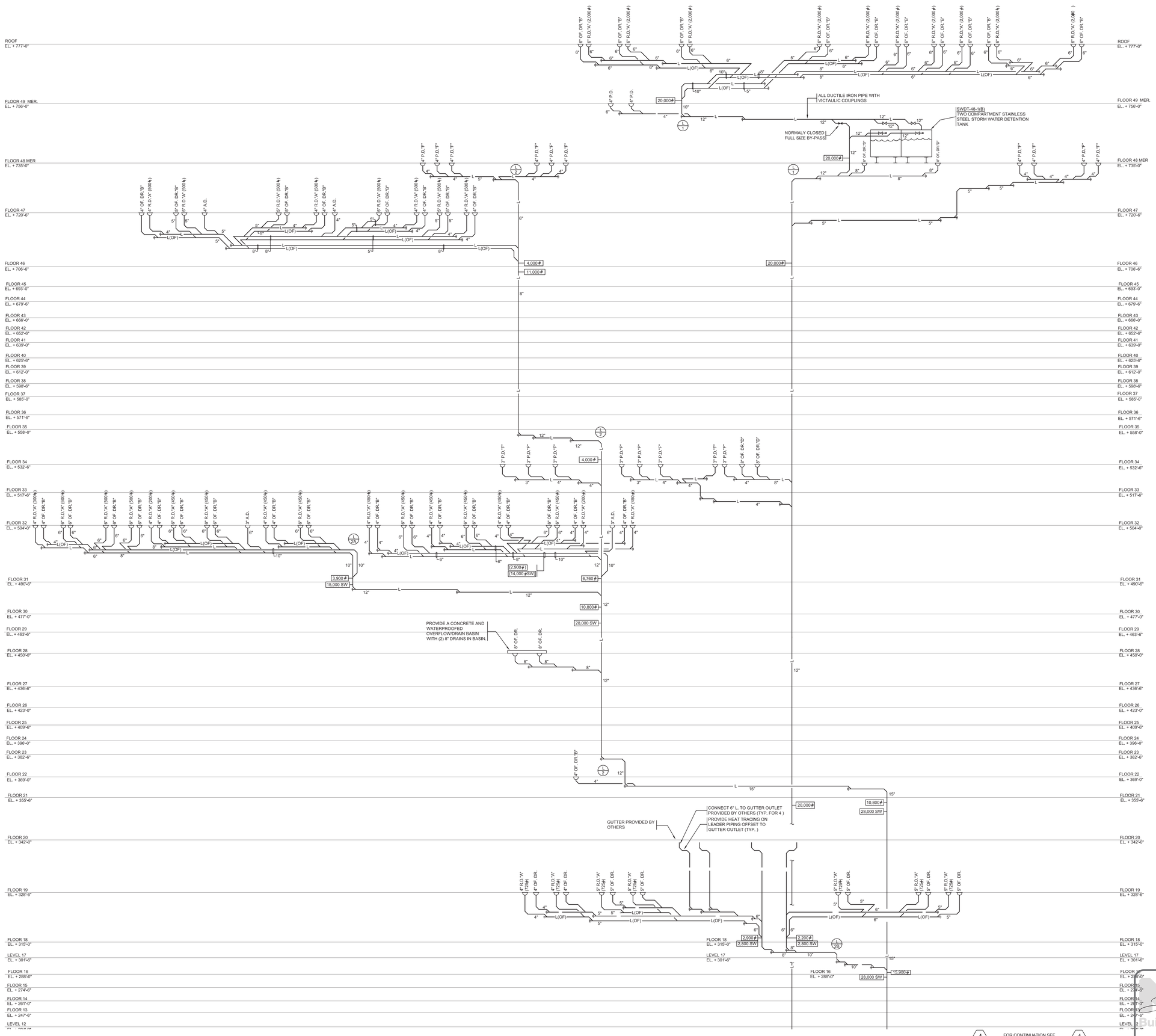

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1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P6-0208

Drawing Title
PLUMBING
HIGH-RISE
STORM WATER
RISER DIAGRAM

Drawing Number
P6-0208
B.SCAN Drawing Number
P-161.00

SHEET 62 OF 64

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E300503008B
Job Number
CITY OF BLDGS
Scan Code

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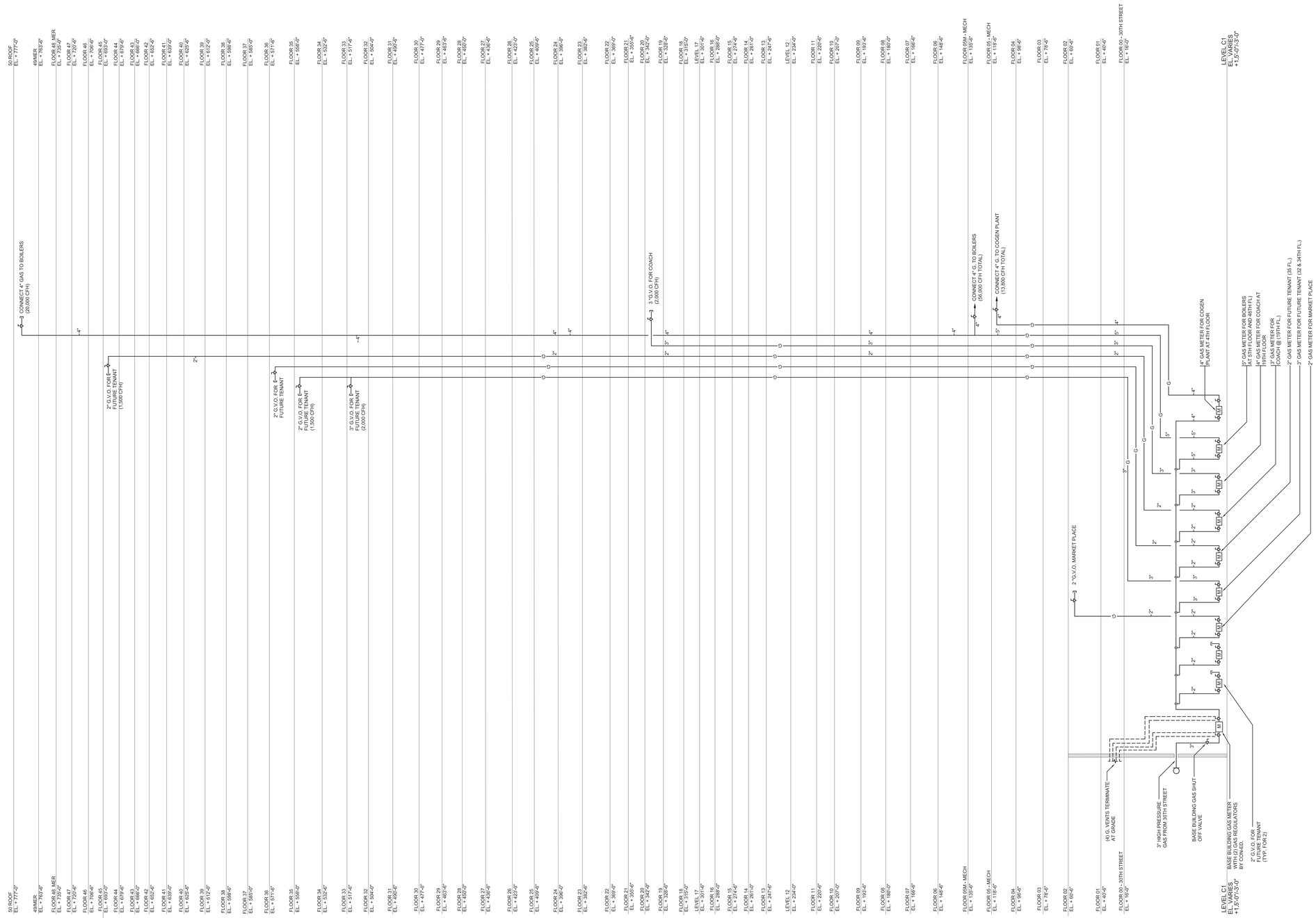

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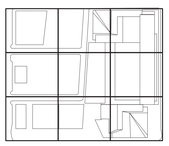
Key Plan



Date

Project No.
14752.A.000

Drawn By

Sheet Number
HYE-TC-P6-0209

Drawing Title
PLUMBING
GAS RISER
DIAGRAM

Drawing Number
P6-0209

R.K.F. #Drawing Number
P-162.00

SHEET 63 OF 64

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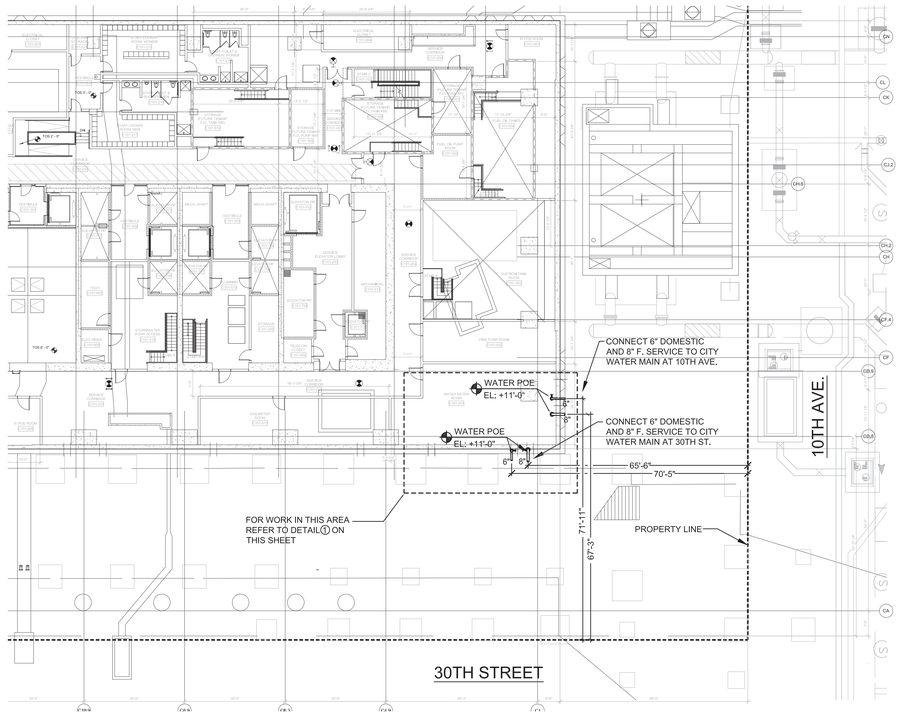
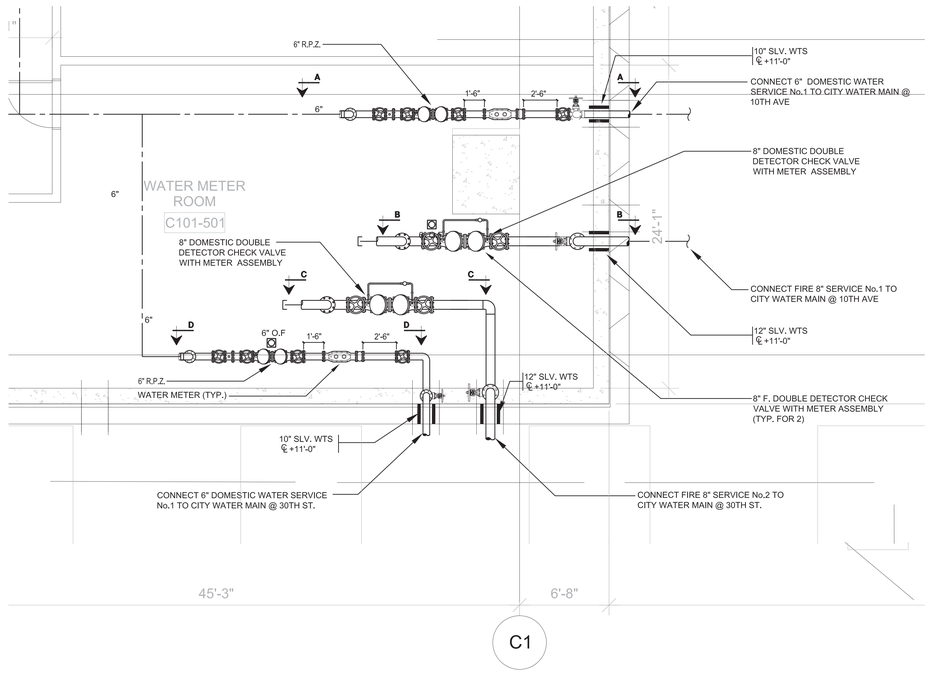
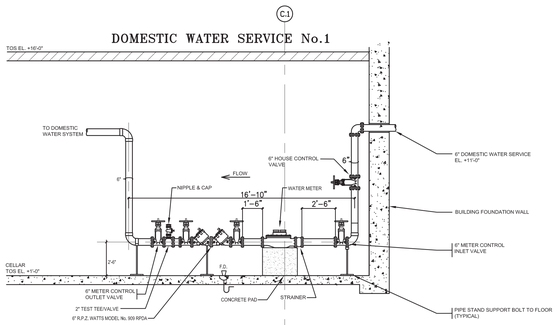
ENGINEER'S REPORT
THE PROJECT CONSISTS OF A NEW 47 STORY OFFICE BUILDING (1.8 MILLION SQ.FT.) WHICH INCLUDES RETAIL AND LOWER LEVEL PARKING. THE BASE BUILDING WILL CONSIST OF BOILER AND CO-GEN PLANT.



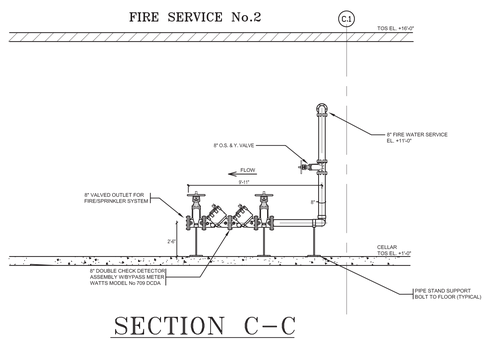
C1 LEVEL WATER METER ROOM
SCALE: 1/16" = 1'-0"



1 C1 LEVEL DOMESTIC/FIRE SERVICE DETAIL PLAN
SCALE: 1/4" = 1'-0"

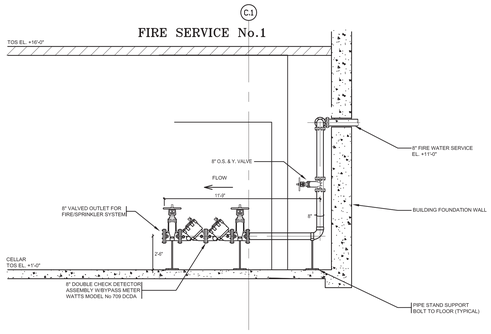


SECTION A–A
SCALE: 1/4" = 1'-0"



SECTION C–C
SCALE: 1/4" = 1'-0"

SITE PLAN
NO SCALE



SECTION B–B
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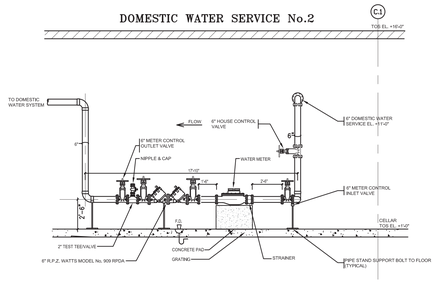

SOUTH SECTION D–D
SCALE: 1/4" = 1'-0"

NOTES:

1. BETWEEN POINT OF ENTRY AND BFP. THE PIPES MUST BE STENCILED "FEED TO BACKFLOW PREVENTER, DO NOT TAP OR CONNECT TO THIS LINE". AT FIVE FOOT (5') INTERVALS AND AT ALL WALL AND FLOOR PENETRATIONS.
2. THERE IS NO TREATED BOILER INSTALLED IN THIS BUILDING.
3. THERE IS NO CROSS CONNECTION BETWEEN FIRE AND DOMESTIC SERVICES.
4. IT IS UNLAWFUL TO REMOVE THIS DEVICE FOR ANY REASON UNLESS DEP IS NOTIFIED.
5. EACH BFP DEVICE SHALL BE TESTED ANNUALLY BY NEW YORK STATE CERTIFIED TESTER.
6. BACKFLOW PREVENTER IS LOCATED ONE LEVEL BELOW GRADE AND DRAINS BY GRAVITY TO A SUMP PIT. THE SUMP PUMPS WILL BE POWERED BY NORMAL AND EMERGENCY POWER FROM A BACKUP GENERATOR LOCATED WITHIN THE BUILDING.
7. THE FIRE SERVICE IS A CLASS IV SYSTEM.

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1	ISSUED FOR FILING	08-20-2012

Key Plan

Date

Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-P6-0501

Drawing Title
PLUMBING BACKFLOW PREVENTER PLAN

Drawing Number
P6-0501

R-SCAN Drawing Number
P-163.00

SHEET 64 OF 64

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ES061470813 Scan Code

NYC BLDG. CODE NOTES

GENERAL N.Y.C. BUILDING CODE NOTES
(BUILDING CODE CITY OF NEW YORK EFFECTIVE JULY, 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. HEATING SYSTEMS - CODE/SECTION: BC 1704.23

   - FINAL INSPECTION PER 28-116.2.4, 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 608.2.3 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	1301.1 THROUGH 1308.3 INCLUSIVE

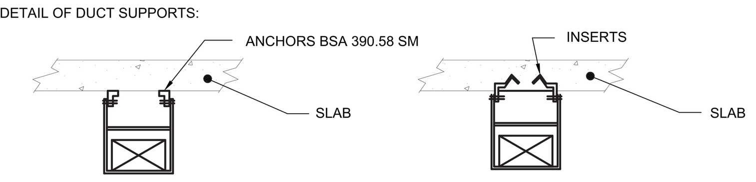
3. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALL COMPOSITIONS.

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, PROM 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.

GENERAL NOTES

1. ALL LOW PRESSURE BRANCH DUCTWORK (SUPPLY AND RETURN) SHALL BE PROVIDED WITH VOLUME DAMPERS RESPECTIVELY.
2. PROVIDE COMBINATION FIRE/SMOKE DAMPER AT ALL 2 HOURS OR MORE 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) SUPPORTED INDEPENDENTLY OF THE DUCTWORK OR PIPING AND SHALL BE THE WORK OF ANOTHER CONTRACTOR.
4. EACH FAN POWERED BOX AND VARIABLE AIR VOLUME BOX SHALL BE PROVIDED WITH A THERMOSTAT. THERMOSTATS SHALL BE LOCATED AS SHOWN OR AS DIRECTED. FINAL LOCATIONS TO BE VERIFIED WITH THE ARCHITECT. FINISH AND COLOR TO BE SELECTED BY THE ARCHITECT.
5. FAN POWERED BOXES AND VARIABLE AIR VOLUME BOXES SHOWN ON DRAWINGS ARE SCHEMATIC. SEE DETAIL OF INSTALLATION ON DRAWING FOR ACTUAL TYPICAL ARRANGEMENT REQUIRED.
6. BORDER TYPES, COLOR, FINISHES, AND METHOD OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH THE ARCHITECTURAL CEILING DETAILS AND SPECIFICATIONS.
7. ALL SLOT AND LINEAR DIFFUSERS ARE TO BE COORDINATED WITH ARCHITECTURAL PLANS FOR EXACT LENGTHS AND LOCATIONS. EACH BRANCH TAP SERVING THE SLOT AND LINEAR DIFFUSERS SHALL BE PROVIDED WITH A VOLUME DAMPER WHICH SHALL BE CABLE OPERATED THROUGH THE ROOM SIDE FACE OF EACH DIFFUSER. SLOT AND LINEAR DIFFUSERS SHALL BE PROVIDED WITH PATTERN CONTROL DEVICES AND EQUALIZING GRIDS. SLOT 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.
8. WHERE PIPING CONNECTIONS FOR EQUIPMENT 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.
9. ALL PRESSURE AND TEMPERATURE GAUGES ARE SCHEMATICALLY SHOWN ON THE PLANS. REFER TO SPECIFICATIONS FOR EXACT TYPES AND LOCATIONS.
10. ALL STRUCTURE FOR BUILDING FRAMING SHOWN ON MECHANICAL DRAWINGS IS FOR CLARIFICATION AND COORDINATION PURPOSES ONLY. ALL STRUCTURE REQUIRED TO SUPPORT MECHANICAL EQUIPMENT, PIPING, ETC. (WHETHER SHOWN ON DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS) SHALL BE FURNISHED AND INSTALLED UNDER THIS CONTRACT.

SPECIAL INSPECTIONS

SPECIAL INSPECTION CATEGORY	SPECIAL INSPECTION SUB-CATEGORY	REFERENCED NYC CODE SECTION
SMOKE CONTROL	ATRIUM SMOKE EXHAUST	BC 1704.14 & BC 909.1 THRU 19
	STAIR PRESSURIZATION	BC 1704.14 & BC 909.20
MECHANICAL SYSTEMS	TEST FOR MECHANICAL SYSTEMS	BC 1704.15.1
	VISUAL CERTIFICATION THAT REQUIRED COMPONENTS OF SUCH SYSTEMS ARE COMPLETE IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION GUIDELINES AND THE APPROVED CONSTRUCTION DOCUMENTS.	BC 1704.15.2.1
	SUPPORTS, HANGERS, SEISMIC BRACING, AND VIBRATION ISOLATION EQUIPMENT ARE PROPERLY SPACED AND ANCHORED TO SUPPORTING STRUCTURE.	BC 1704.15.2.2
	INSTALLATION OF REQUIRED SIGNAGE AND SAFETY INSTRUCTIONS.	BC 1704.15.2.3
	ELECTRICAL COMPONENTS ARE INSTALLED AND ELECTRICAL SIGN-OFF ISSUED.	BC 1704.15.2.4
	VENTILATION BALANCING REPORT IS COMPLETE AND IN ACCORDANCE WITH DESIGN DOCUMENTS.	BC 1704.15.2.5
	REQUIRED LABELING, OPERATIONAL INSTRUCTIONS AND SAFETY SIGNAGE PROPERLY POSTED.	BC 1704.15.2.6
	ALL RELATED SPECIAL INSPECTIONS FOR SUCH SYSTEMS ARE COMPLETE.	BC 1704.15.2.7
	NOISE PRODUCING MECHANICAL EQUIPMENT LOCATED WITHIN 100 FEET (30 480 MM) OF HABITABLE ROOM WINDOWS SHALL BE TESTED AT THE EQUIPMENT FOR COMPLIANCE WITH THE DESIGN STC RATING OF THE EQUIPMENT.	BC 1704.15.2.8
	REQUIRED FIRE AND SMOKE DAMPERS ARE INSTALLED AND FUNCTIONING PROPERLY.	BC 1704.15.2.9
FUEL STORAGE AND FUEL PIPING SYSTEMS		BC 1704.16
HEATING SYSTEMS		BC 1704.23
CHIMNEYS		BC 1704.24
THROUGH-PENETRATION FIRESTOP SYSTEMS		BC 1704.25
SEISMIC RESISTANCE		BC 1707

DRAWING INDEX

SHEET NUMBER AND TITLE

B-SCAN No.	DWG No.	SHEET TITLE
M-001.00	HYE-TC-M0-0001	MECHANICAL GENERAL NOTES
M-002.00	HYE-TC-M0-0002	MECHANICAL ABBREVIATIONS AND SYMBOLS
M-101.00	HYE-TC-M1-C101	MECHANICAL PLAN C1 SECTOR 01
M-102.00	HYE-TC-M1-C104	MECHANICAL PLAN C1 SECTOR 04
M-103.00	HYE-TC-M1-C107	MECHANICAL PLAN C1 SECTOR 07
M-104.00	HYE-TC-M1-0001	MECHANICAL PLAN 00 SECTOR 01
M-105.00	HYE-TC-M1-0004	MECHANICAL PLAN 00 SECTOR 04
M-106.00	HYE-TC-M1-0007	MECHANICAL PLAN 00 SECTOR 07
M-107.00	HYE-TC-M1-0101	MECHANICAL PLAN 01 SECTOR 01
M-109.00	HYE-TC-M1-0201	MECHANICAL PLAN 02 SECTOR 01
M-110.00	HYE-TC-M1-0301	MECHANICAL PLAN 03 MER SECTOR 01
M-111.00	HYE-TC-M1-0401	MECHANICAL PLAN 04 MER SECTOR 01
M-112.00	HYE-TC-M1-0501	MECHANICAL PLAN 05 MER SECTOR 01
M-113.00	HYE-TC-M1-0501M	MECHANICAL PLAN 05M MER SECTOR 01
M-206.00	HYE-TC-M1-0601	MECHANICAL PLAN 06 SECTOR 01
M-207.00	HYE-TC-M1-0701	MECHANICAL PLAN 07-18 SECTOR 01
M-219.00	HYE-TC-M1-1901	MECHANICAL PLAN 19 SECTOR 01
M-220.00	HYE-TC-M1-2001	MECHANICAL PLAN 20 SECTOR 01
M-221.00	HYE-TC-M1-2101	MECHANICAL PLAN 21 SECTOR 01
M-222.00	HYE-TC-M1-2201	MECHANICAL PLAN 22 SECTOR 01
M-223.00	HYE-TC-M1-2301	MECHANICAL PLAN 23 SECTOR 01
M-224.00	HYE-TC-M1-2401	MECHANICAL PLAN 24 SECTOR 01
M-225.00	HYE-TC-M1-2501	MECHANICAL PLAN 25 SECTOR 01
M-226.00	HYE-TC-M1-2601	MECHANICAL PLAN 26 SECTOR 01
M-227.00	HYE-TC-M1-2701	MECHANICAL PLAN 27 SECTOR 01
M-232.00	HYE-TC-M1-3201	MECHANICAL PLAN 32 SECTOR 01
M-233.00	HYE-TC-M1-3301	MECHANICAL PLAN 33 SECTOR 01
M-234.00	HYE-TC-M1-3401	MECHANICAL PLAN 34 MER SECTOR 01
M-236.00	HYE-TC-M1-3501	MECHANICAL PLAN 35 SECTOR 01
M-238.00	HYE-TC-M1-3701	MECHANICAL PLAN 37 SECTOR 01
M-247.00	HYE-TC-M1-4601	MECHANICAL PLAN 46 SECTOR 01
M-248.00	HYE-TC-M1-4701	MECHANICAL PLAN 47 MER SECTOR 01
M-249.00	HYE-TC-M1-4801	MECHANICAL PLAN 48 MER SECTOR 01
M-250.00	HYE-TC-M1-4901	MECHANICAL PLAN 49 SECTOR 01
M-251.00	HYE-TC-M1-5001	MECHANICAL PLAN 50 SECTOR 01
M-252.00	HYE-TC-M1-5101	MECHANICAL PLAN 51 SECTOR 01
M-301.00	HYE-TC-M2-0101	MECHANICAL SECTION SHEET NO.1
M-302.00	HYE-TC-M2-0102	MECHANICAL SECTION SHEET NO.2
M-303.00	HYE-TC-M2-0103	MECHANICAL SECTION SHEET NO.3
M-304.00	HYE-TC-M2-0104	MECHANICAL SECTION SHEET NO.4
M-401.00	HYE-TC-M4-0101	MECHANICAL ENLARGED TYPICAL UFAD DETAILS
M-402.00	HYE-TC-M4-0102	MECHANICAL ENLARGED TYPICAL AHU ROOM DETAILS
M-501.00	HYE-TC-M5-0101	MECHANICAL DETAIL SHEET NO.1
M-502.00	HYE-TC-M5-0102	MECHANICAL DETAIL SHEET NO.2
M-503.00	HYE-TC-M5-0103	MECHANICAL DETAIL SHEET NO.3
M-504.00	HYE-TC-M5-0104	MECHANICAL DETAIL SHEET NO.4
M-505.00	HYE-TC-M5-0105	MECHANICAL DETAIL SHEET NO.5
M-506.00	HYE-TC-M5-0106	MECHANICAL DETAIL SHEET NO.6
M-601.00	HYE-TC-M6-0101	MECHANICAL SCHEDULE SHEET NO.1
M-602.00	HYE-TC-M6-0102	MECHANICAL SCHEDULE SHEET NO.2
M-603.00	HYE-TC-M6-0103	MECHANICAL SCHEDULE SHEET NO.3
M-604.00	HYE-TC-M6-0104	MECHANICAL SCHEDULE SHEET NO.4
M-605.00	HYE-TC-M6-0105	MECHANICAL SCHEDULE SHEET NO.5
M-611.00	HYE-TC-M6-0201	MECHANICAL AIR AND WATER RISER DIAGRAM NO.1
M-612.00	HYE-TC-M6-0202	MECHANICAL AIR AND WATER RISER DIAGRAM NO.2
M-613.00	HYE-TC-M6-0203	MECHANICAL AIR AND WATER RISER DIAGRAM NO.3
M-614.00	HYE-TC-M6-0204	MECHANICAL AIR AND WATER RISER DIAGRAM NO.4
M-615.00	HYE-TC-M6-0205	MECHANICAL AIR AND WATER RISER DIAGRAM NO.5
M-616.00	HYE-TC-M6-0206	MECHANICAL PERIMETER HW RISER DIAGRAM NO.1
M-617.00	HYE-TC-M6-0207	MECHANICAL PERIMETER HW RISER DIAGRAM NO.2
M-618.00	HYE-TC-M6-0208	MECHANICAL PERIMETER HW RISER DIAGRAM NO.3
M-619.00	HYE-TC-M6-0209	MECHANICAL PERIMETER HW RISER DIAGRAM NO.4
M-621.00	HYE-TC-M6-0221	BMS RISER DIAGRAM NO.1
M-622.00	HYE-TC-M6-0222	BMS RISER DIAGRAM NO.2
M-623.00	HYE-TC-M6-0223	BMS RISER DIAGRAM NO.3
M-631.00	HYE-TC-M6-0301	MECHANICAL CW AND CHW FLOW DIAGRAM NO.1
M-632.00	HYE-TC-M6-0302	MECHANICAL CW AND CHW FLOW DIAGRAM NO.2
M-633.00	HYE-TC-M6-0303	MECHANICAL HOT WATER FLOW DIAGRAM NO.1
M-634.00	HYE-TC-M6-0304	MECHANICAL HOT WATER FLOW DIAGRAM NO.2
M-635.00	HYE-TC-M6-0305	MECHANICAL HEAT RECOVERY FLOW DIAGRAM
M-636.00	HYE-TC-M6-0306	MECHANICAL FUEL OIL FLOW DIAGRAM

NOTE:

WHERE CONFLICTS EXIST BETWEEN THE ABOVE DRAWING LIST AND THE DRAWING LIST ISSUED BY THE ARCHITECT, THE DRAWING LIST ISSUED BY THE ARCHITECT SHALL GOVERN.

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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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M0-0001.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:13 AM

Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:09 PM
NYC Development Hub

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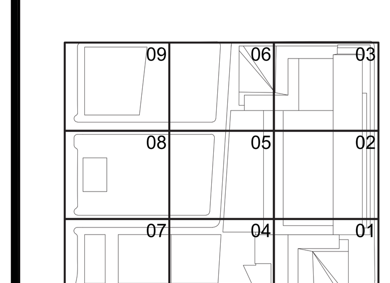
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M0-0001

Drawing Title
MECHANICAL GENERAL NOTES

Drawing Number
M0-0001
B-SCAN Drawing Number
M-001.00

SHEET 1 OF 71

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KEY TO EQUIPMENT TAGS

EQUIPMENT TAG EXAMPLE:

TC-ACS-3-2 (B)

BUILDING NAME DESIGNATOR

EQUIPMENT DESIGNATOR (REFER TO SCHEDULES)

SERVICE DESIGNATOR

UNIT NO.

FLOOR NO.

Building Name	Designator
Tower A	TA
Tower C	TC
Tower D	TD
Tower E	TE
Retail	TR
Platform	PL
Cultural Shed	CS
LIRR	RR
Plaza	PZ
All Buildings	ERY

Service	Designator
Base Building	B
Coach	C
Common Yards	ERY
Cutural Shed	CS
LIRR	RR
Parking	PK
Plaza	PZ
Retail	R
Tenant Office	TO
Tower A	A
Tower D	D
Tower E	E

KEY TO SYMBOLS

ABBREVIATIONS

ACS	AIR CONDITIONING UNIT
ACU	AIR COLUMN UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
AL	ACOUSTICAL LINING
ALD	AUTOMATIC LOUVER DAMPER (REFER TO SPEC.)
BB	BASE BUILDING
BHP	BRAKE HORSE POWER
BR(G)	BOTTOM REGISTER (GRILLE)
BTUH	BRITISH THERMAL UNITS PER HOUR (BTU/HR)
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE - AIR
COD	CLEAN OUT DOOR
CR(G)	CEILING REGISTER (GRILLE)
CVR	CONSTANT AIR VOLUME REGULATOR BOX
DB	DRY BULB TEMPERATURE
DSD	DUCT SMOKE DETECTOR
E	EXHAUST
EAT	ENTERING AIR TEMPERATURE
EWT	ENTER WATER TEMPERATURE
FAI	FRESH AIR INTAKE
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FMS	FLOW MEASURING STATION
FO	FUEL OIL
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FPB	FAN POWERED BOX
FPM	FEET PER MINUTE
FR(G)	FLOOR REGISTER (GRILLE)
FSB	FIRE ALARM, SECURITY & BMW
FSD	COMBINATION FIRE SMOKE DAMPER
GBDD	GRAVITY BACK DRAFT DAMPER
GPM	GALLONS PER MINUTE
GX	GENERAL EXHAUST
HRWR	HEAT RECOVERY WATER RETURN
HRWS	HEAT RECOVERY WATER SUPPLY
HX	HEAT EXCHANGER
JD	JUMPER DUCT
KX	KITCHEN EXHAUST
KXMU	KITCHEN EXHAUST MAKE-UP
LS	LIFE SAFETY
LWT	LEAVING WATER TEMPERATURE
M	MOTOR
MER	MECHANICAL EQUIPMENT ROOM
MLWS	METAL LOUVER WITH WIRE MESH SCREEN
MO	MASONRY OR WALL OPENING (3 SQ. FT. UON)
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NK	NECK SIZE
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
P	PUMP
PC	PUMPED CONDENSATE
PCHWR	PRIMARY CHILLED WATER RETURN
PCHWS	PRIMARY CHILLED WATER SUPPLY
PCWR	PRIMARY CONDENSER WATER RETURN
PCWS	PRIMARY CONDENSER WATER SUPPLY
PFHX	PLATE AND FRAME HEAT EXCHANGER
PHWR	PRIMARY HOT WATER RETURN
PHWS	PRIMARY HOT WATER SUPPLY
R/S	RETURN/SPILL
RA	RETURN AIR
RR	REFRIGERANT RELIEF
SA	SUPPLY AIR
SCHWR	SECONDARY CHILLED WATER RETURN
SCHWS	SECONDARY CHILLED WATER SUPPLY
SCWR	SECONDARY CONDENSER WATER RETURN
SCWS	SECONDARY CONDENSER WATER SUPPLY
SD	SMOKE DAMPER (REFER TO SPEC.)
SF	SQUARE FEET
SHWR	SECONDARY HOT WATER RETURN
SHWS	SECONDARY HOT WATER SUPPLY
SP	STAIR PRESSURIZATION
SWR	SECONDARY WATER RETURN
SWS	SECONDARY WATER SUPPLY
SX	SMOKE EXHAUST
TD	TRANSFER DUCT
TF	TRANSFER FAN
TR(G)	TOP REGISTER (GRILLE)
TX	TOILET EXHAUST
UAS	UNDER ANOTHER SECTION OF THE CONTRACT DRAWINGS
UFAD	UNDER FLOOR AIR DISTRIBUTION
UON	UNLESS OTHERWISE NOTED
V	VENTILATION
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD/VSD	VARIABLE FREQUENCY (SPEED) DRIVE
VO	VALVED OUTLET
WB	WET BULB

PIPING AND DUCTWORK

- REDUCER
- DIRECTION OF FLOW
- EXPANSION LINE
- UNION
- PUMPED CONDENSATE
- DRAIN LINE
- VENT
- SHUT OFF VALVE
- BUTTERFLY VALVE (SHUT OFF ONLY)
- BUTTERFLY VALVE (MOTORIZED)
- BALANCING VALVE
- AUTOMATIC CONTROL VALVE
- SOLENOID VALVE
- DUCT SMOKE DETECTOR
- PRESSURE GAUGE
- STRAINER WITH BLOW OFF VALVE
- CHECK VALVE
- PIPE ANCHOR
- PIPE GUIDE
- PIPE TURNING DOWN
- PIPE TURNING UP
- SUPPLY AIR DUCT UP
- EXHAUST OR RETURN AIR DUCT UP
- SUPPLY AIR DUCT DOWN
- EXHAUST OR RETURN AIR DUCT DOWN
- NEW DUCTWORK
- DUCT WITH ACOUSTIC LINING (1" THICK U.O.N.)
- DUCT (OR PIPE) WITHIN FIRE RATED ENCLOSURE (BY ARCHITECT)
- 2 HOUR FIRE RATED BLAST RESISTANT DUCT SYSTEM ("DURA-DUCT" AS STD.) SEE SPEC
- 10 GA B.I. KITCHEN EXHAUST
- WELDED STAINLESS STEEL DUCT
- ACCESS DOOR
- ARCHITECTURAL GRATING
- AUTOMATIC LOUVER DAMPER
- SHEET METAL PLENUM WALL
- CEILING DIFFUSER (2-WAY BLOW)
- CEILING DIFFUSER (3-WAY BLOW)
- CEILING DIFFUSER (4-WAY BLOW)
- CEILING GRILLE (CEILING REGISTER WHERE NOTED AS CR)
- THERMOSTAT (WALL)
- THERMOSTAT IN HUNG CEILING AT RETURN AIR OPENING (SLOT OR GRILLE)
- BEAM OPENING (EXISTING U.O.N.)
- DOOR LOUVER (SQ. FT.)
- UNDERCUT DOOR
- OFFSET IN DUCT ELEVATION
- FLEXIBLE DUCT
- FAN SPEED SWITCH
- COMBINATION THERMOSTAT AND ON/OFF SWITCH FOR FAN CONTROL
- FAN POWERED VAV BOX
- VAV BOX WITH REHEAT
- FLEXIBLE CONNECTION
- VOLUME DAMPER
- COMBINATION FIRE/SMOKE DAMPER
- FMS — FLOW MEASURING STATION
- SOUND ATTENUATOR

PROFESSIONAL'S STATEMENT

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Damian Titus
NYC Buildings
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NEW YORK, NY

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New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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Tel: 212.708.3600

Architect
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Architects & Planning Consultants
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Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
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Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
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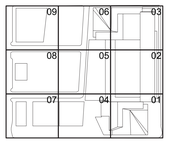
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M0-0002
Drawing Title
MECHANICAL ABBREVIATIONS AND SYMBOLS

Drawing Number
M0-0002
B-SCAN Drawing Number
M-002.00

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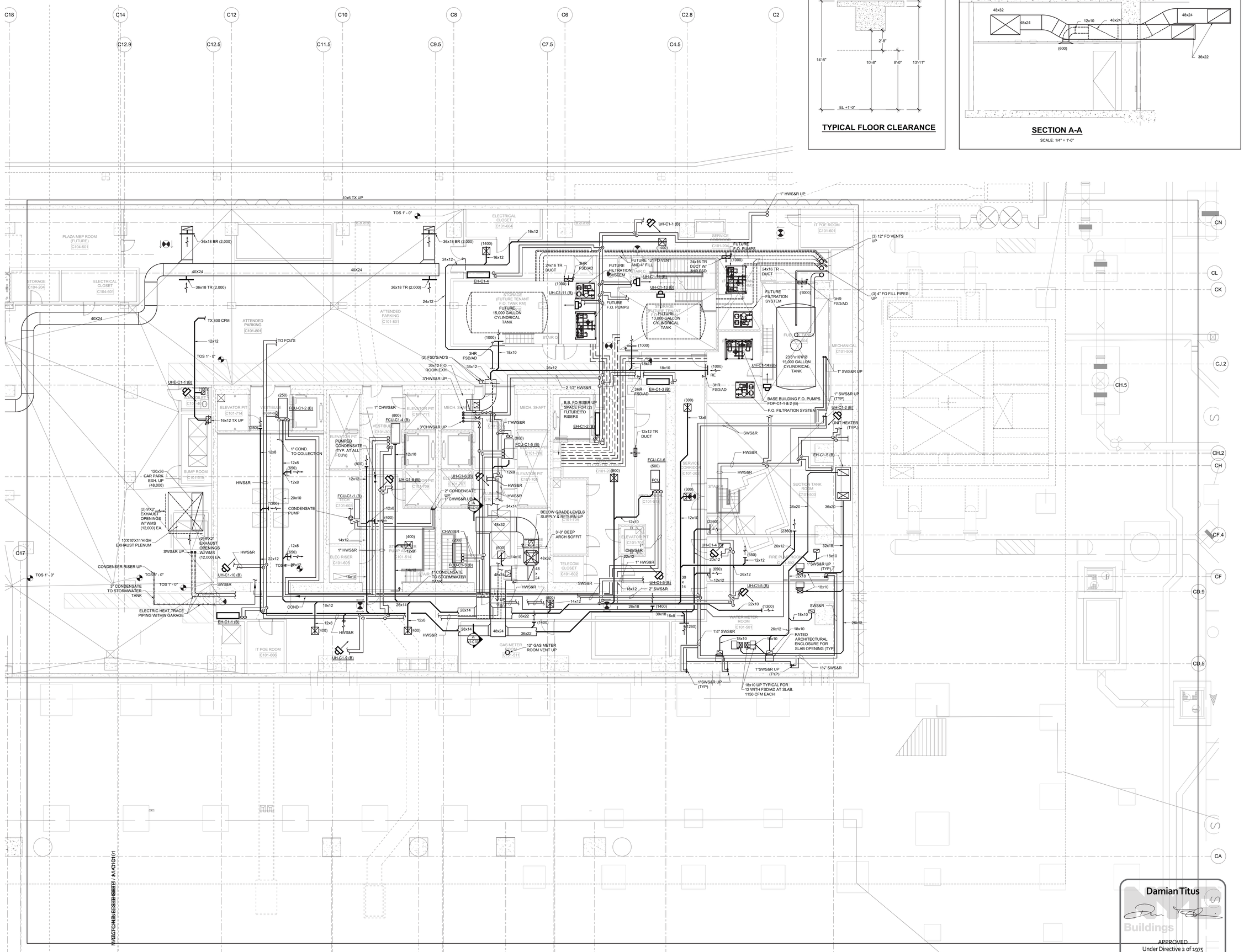

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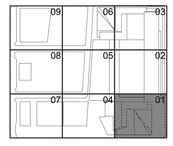

Date
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Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-C101

Drawing Title
MECHANICAL
PLAN C1
SECTOR 01

Drawing Number
M1-C101
RCAD Drawing Number
M-101.00

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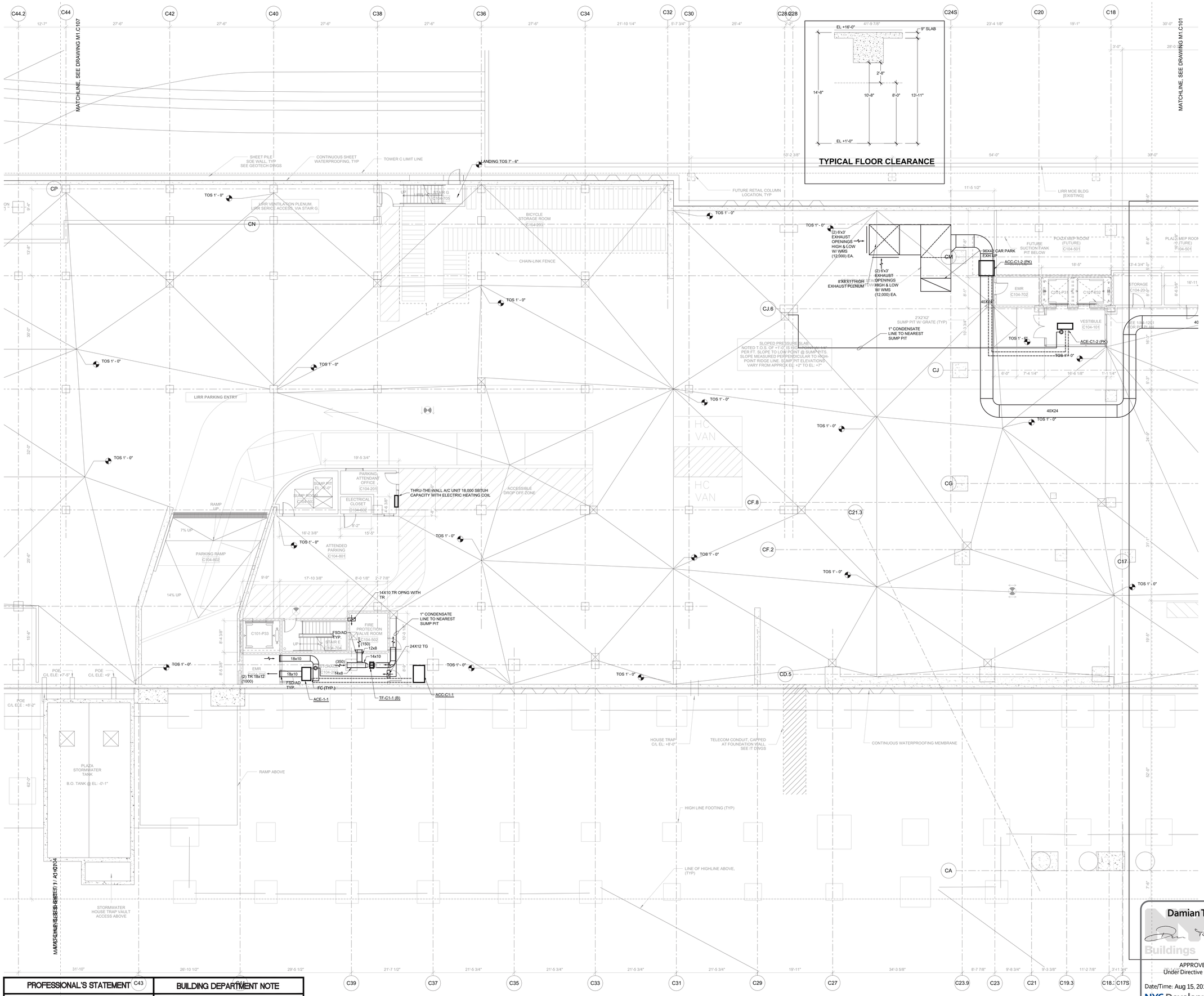

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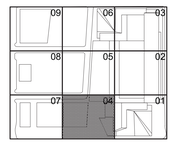
Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-C104
Drawing Title
MECHANICAL
PLAN C1
SECTOR 04

Drawing Number
M1-C104
B-SCAN Drawing Number
M-102.00

SHEET 4 OF 71

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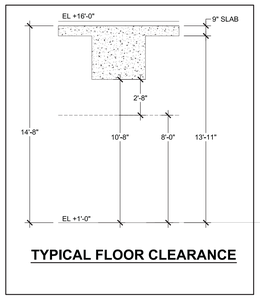

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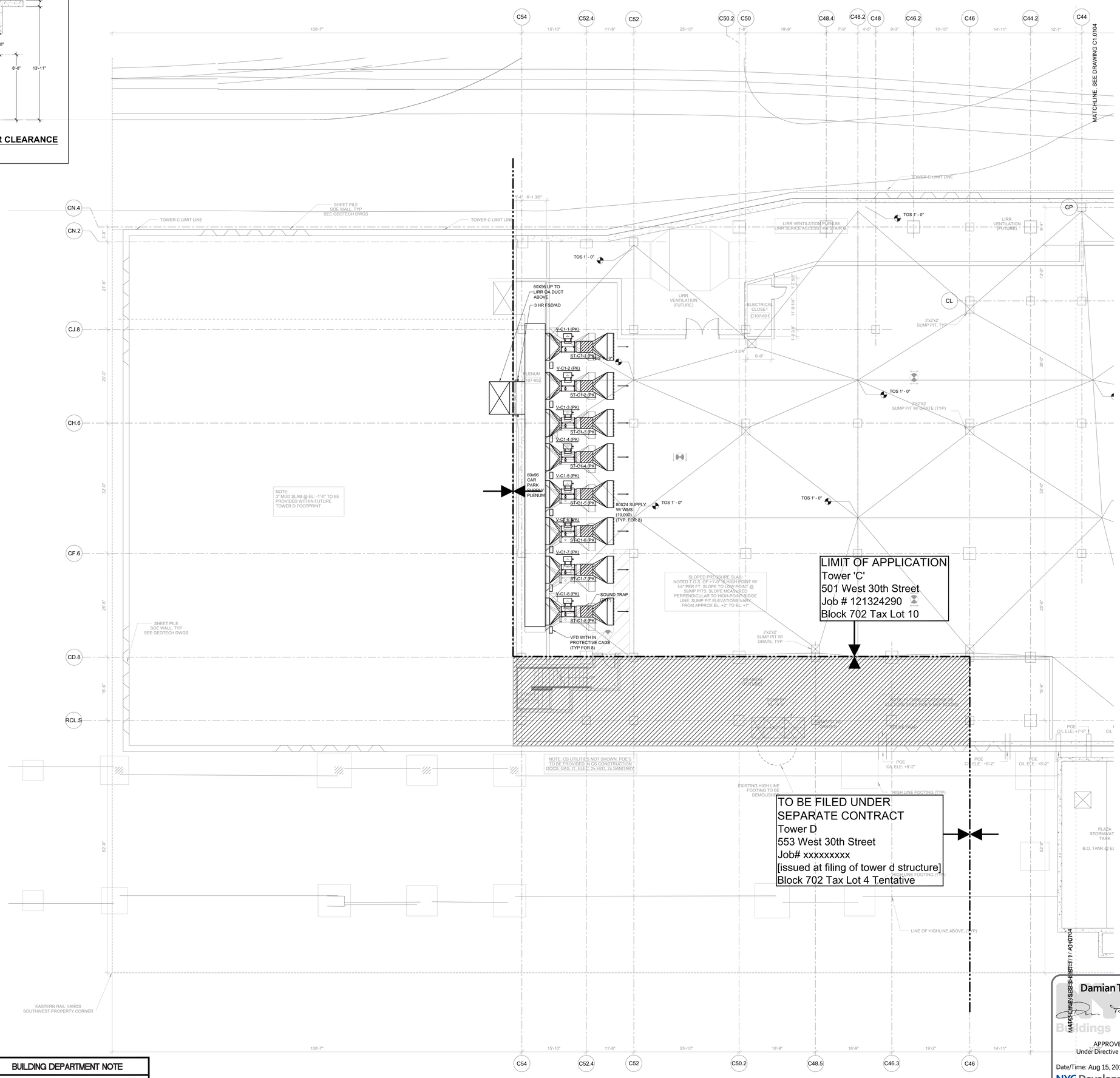

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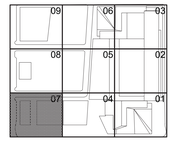
Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-C107

Drawing Title
MECHANICAL
PLAN C1
SECTOR 07

Drawing Number
M1-C107
B-SCAN Drawing Number
M-103.00

SHEET 5 OF 71

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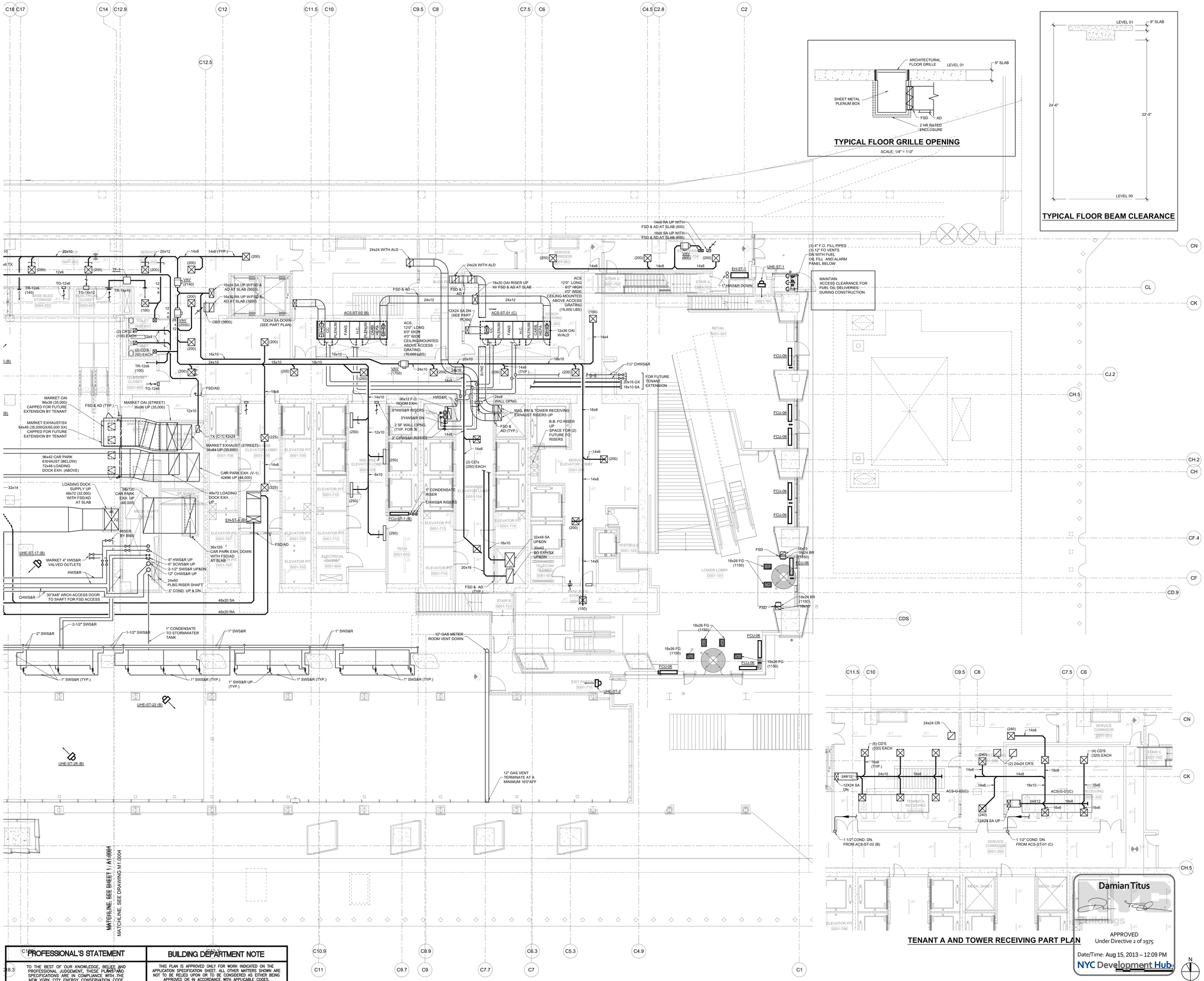

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No.	Issue	Date
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3	DI-21 MECHANICAL	01-25-2013
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Key Plan

Date 01-25-2013
Project No. 14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-0001

Drawing Title
MECHANICAL
PLAN 00
SECTOR 01

Drawing Number
M1-0001
B-SCAN Drawing Number
M-104.00

SHEET 6 OF 71

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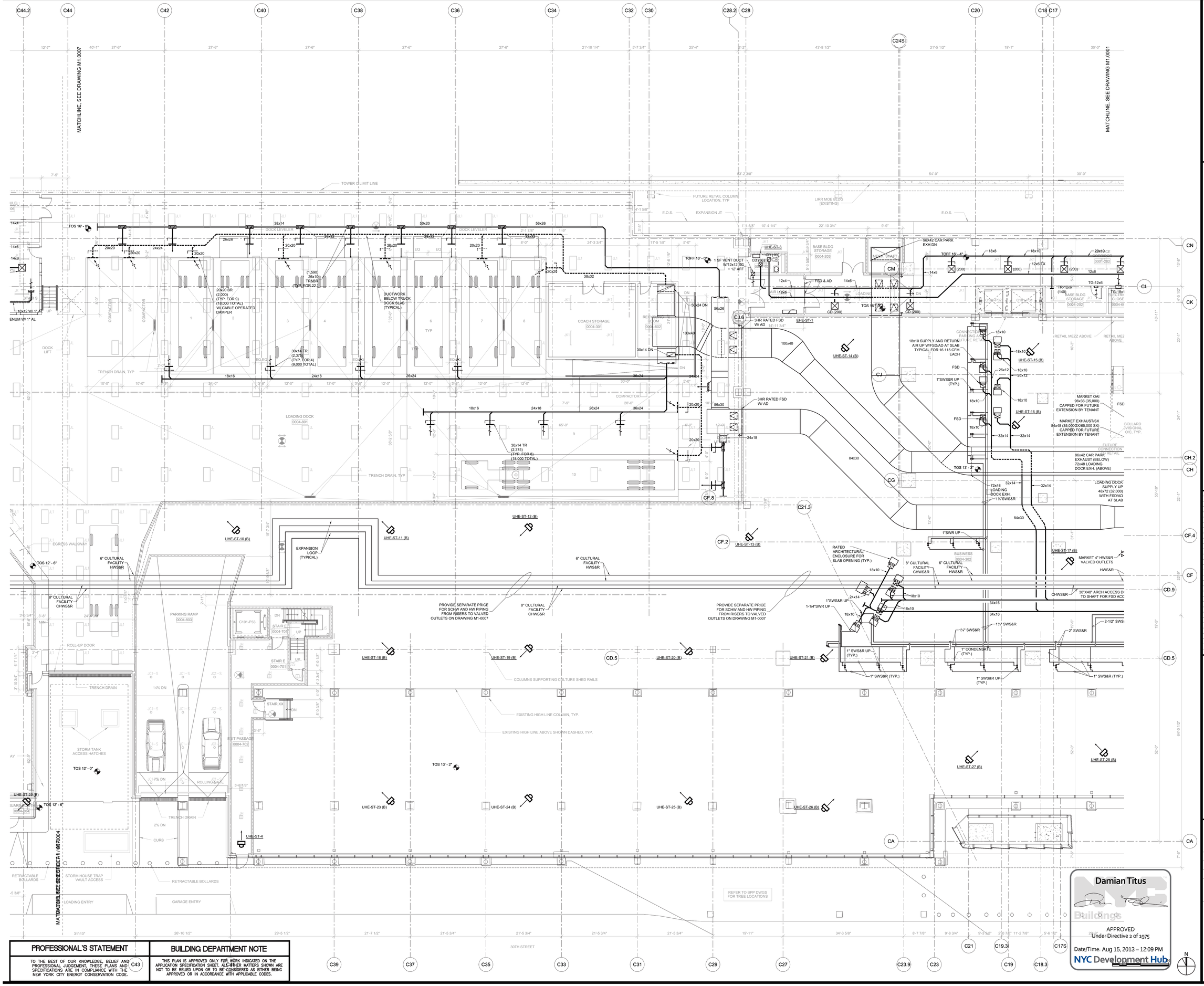

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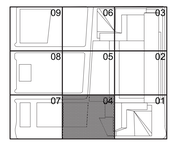
Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-0004
Drawing Title

MECHANICAL
PLAN 00
SECTOR 04

Drawing Number
M1-0004
B-SCAN Drawing Number
M-105.00

SHEET 7 OF 71

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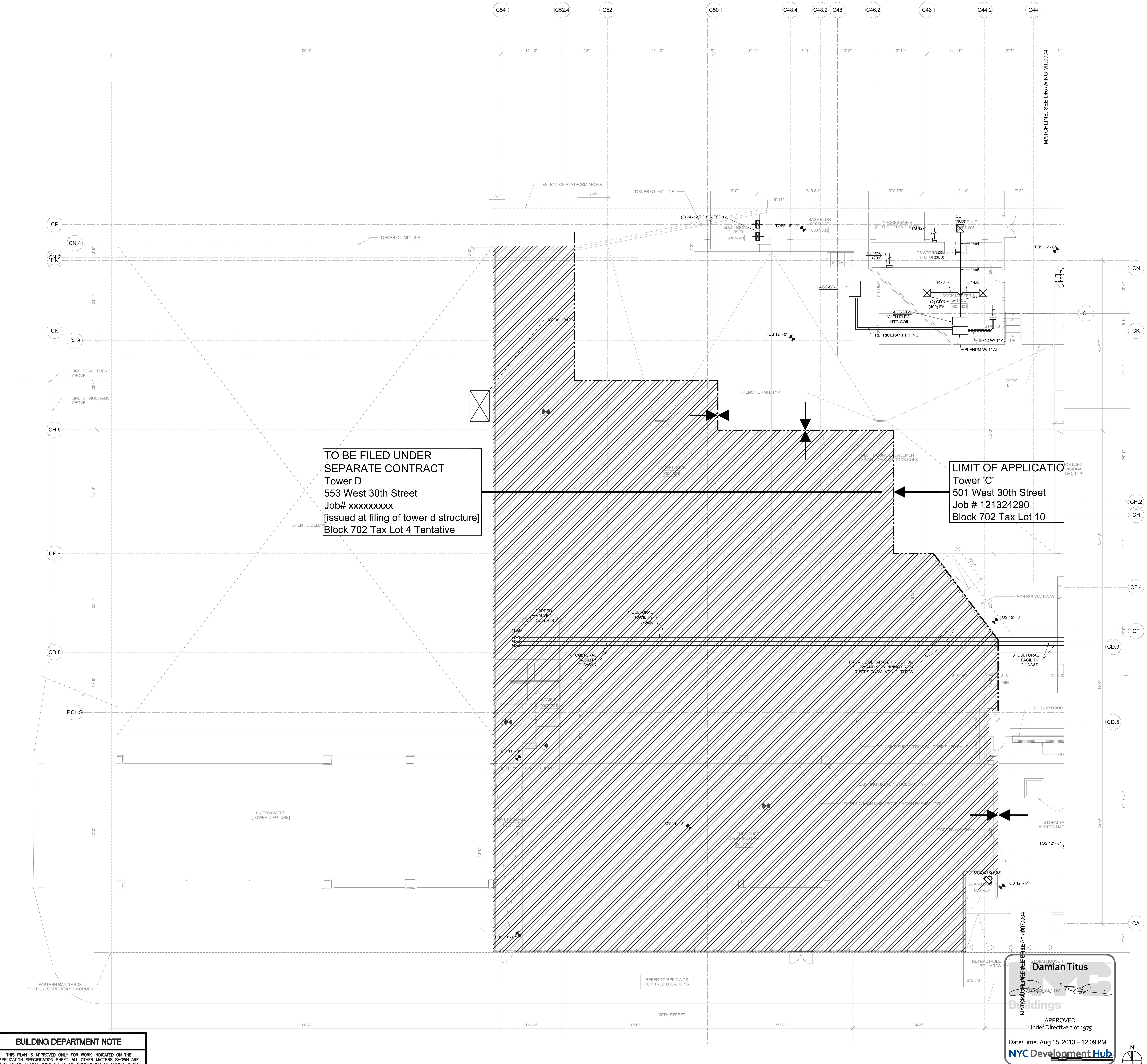

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Key Plan

09	06	03
08	05	02
07	04	01

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Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number
HYE-TC-M1-0007

Drawing Title
MECHANICAL
PLAN 00
SECTOR 07

Drawing Number M1-0007
B-SCAN Drawing Number
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SHEET 8 OF 71

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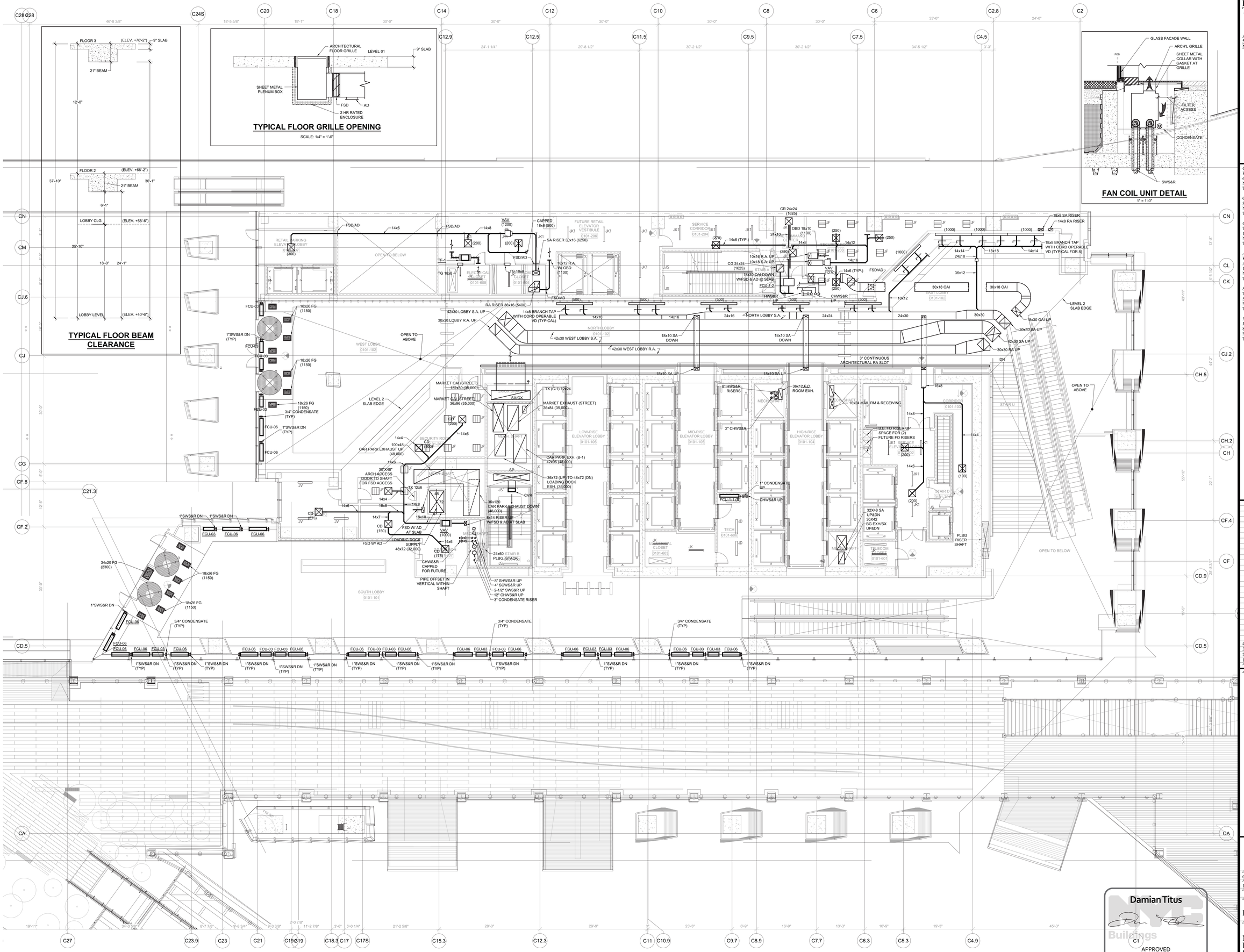

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Key Plan

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08	05	02
07	04	01

Date
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Drawing Title

MECHANICAL
PLAN 01
SECTOR 01

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M-107.00

SHEET 9 OF 71

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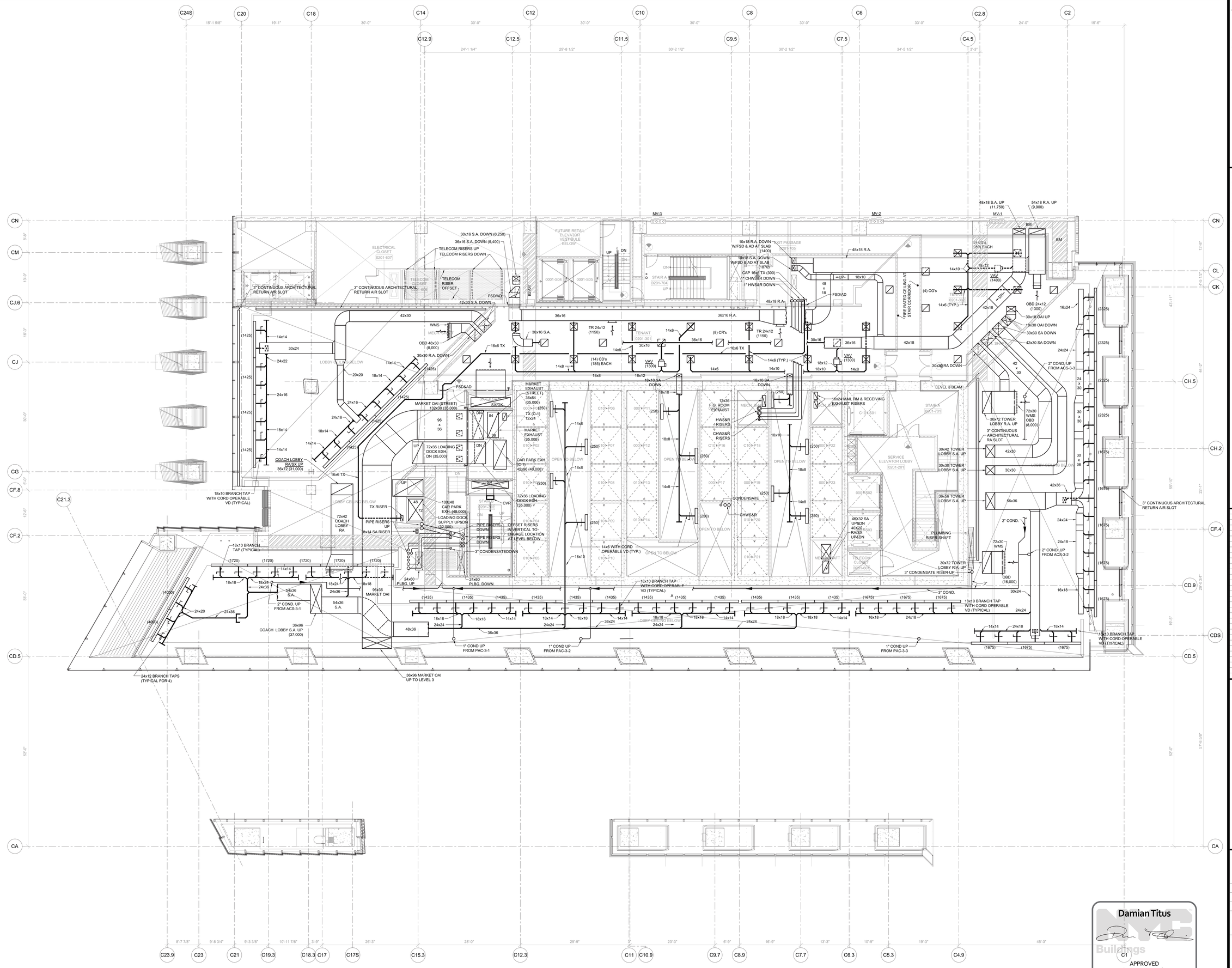

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Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-0201

Drawing Title
MECHANICAL
PLAN 02
SECTOR 01

Drawing Number
M1-0201
B-SCAN Drawing Number
M-109.00

SHEET 10 OF 71

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Application No. 421212124 Job Number
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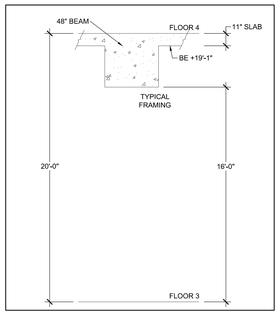
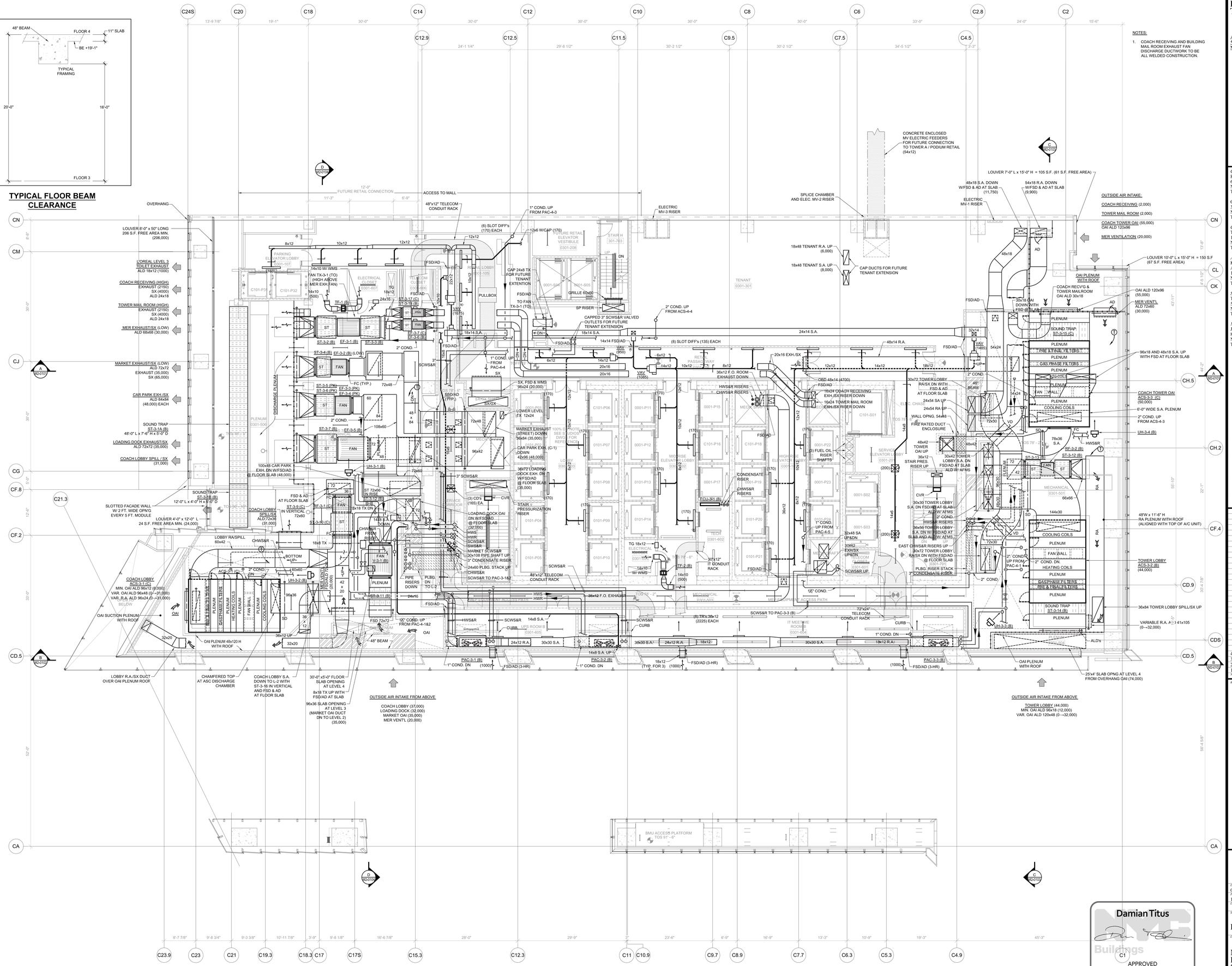


TYPICAL FLOOR BEAM CLEARANCE



NOTES:

1. COACH RECEIVING AND BUILDING MAIL ROOM EXHAUST FAN DISCHARGE DUCTWORK TO BE ALL WELDED CONSTRUCTION.

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4	ISSUE FOR FILING	02-08-2013
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2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUE FOR FILING	08-20-2012

Key Plan

Date	01-25-2013
Project No.	14752.A.000
Drawn By	
Sheet Number	HYE-TC-M1-0301

Drawing Title

MECHANICAL
PLAN 03 MER
SECTOR 01

Drawing Number
M1-0301

B-SCAN Drawing Number
M-110.00

SHEET 11 OF 71

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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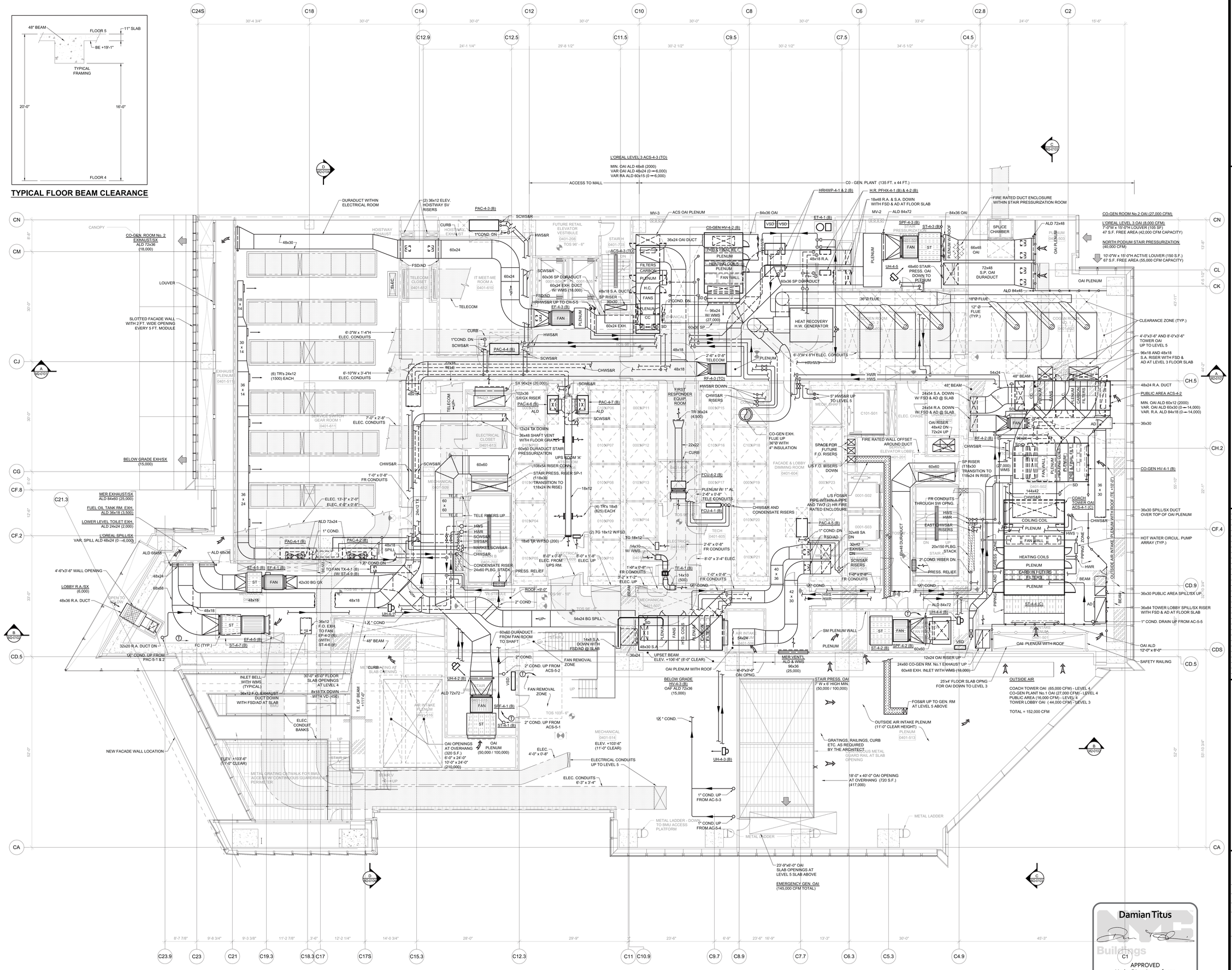
TYPICAL FLOOR BEAM CLEARANCE



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2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M1-0401
Drawing Title

MECHANICAL
PLAN 04 MER
SECTOR 01

Drawing Number
M1-0401
B-SCAN Drawing Number
M-111.00

SHEET 12 OF 71

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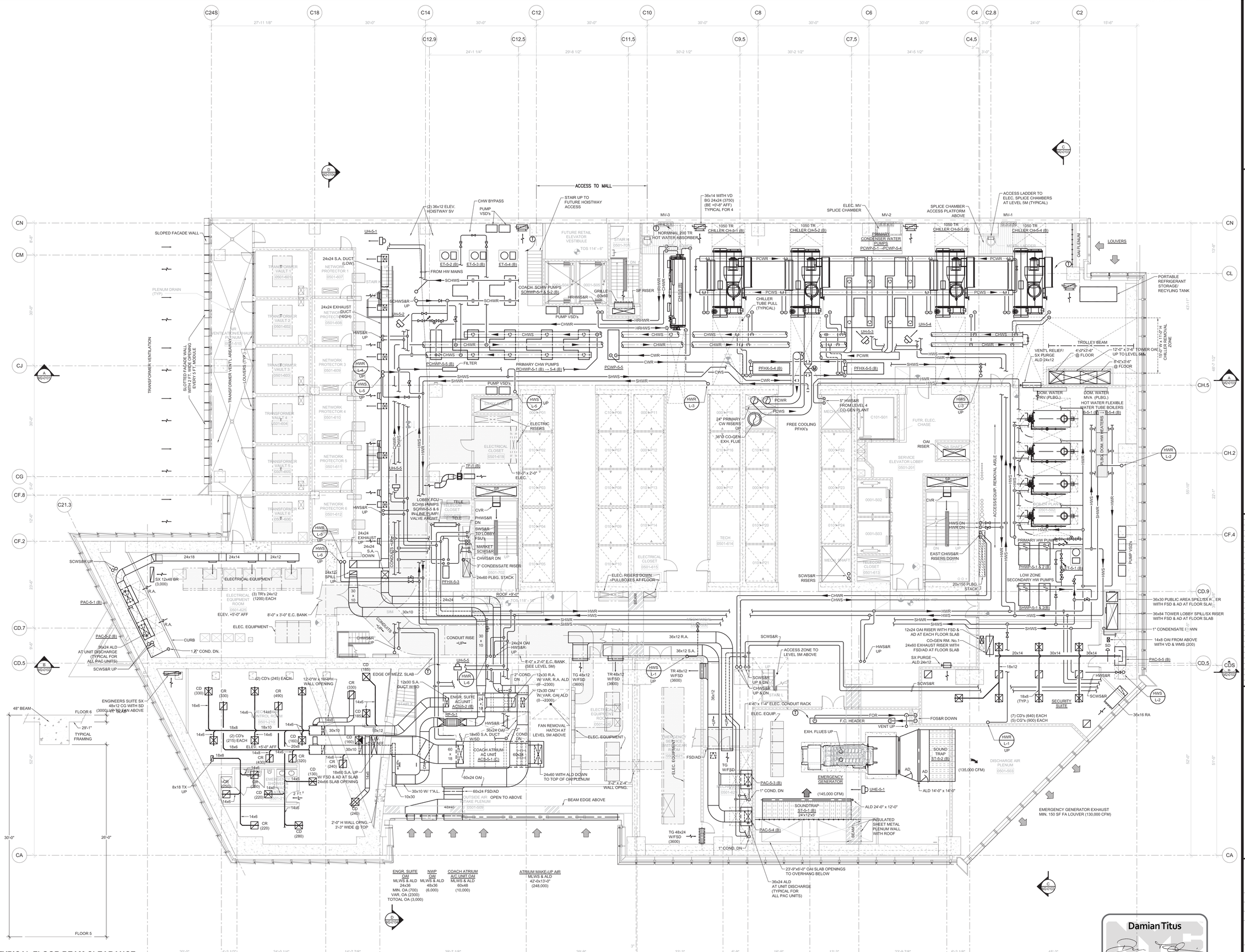

TYPICAL FLOOR BEAM CLEARANCE

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

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M1-0501
Drawing Title MECHANICAL PLAN 05 MER SECTOR 01
Drawing Number M1-0501
R-SCAN Drawing Number M-112.00

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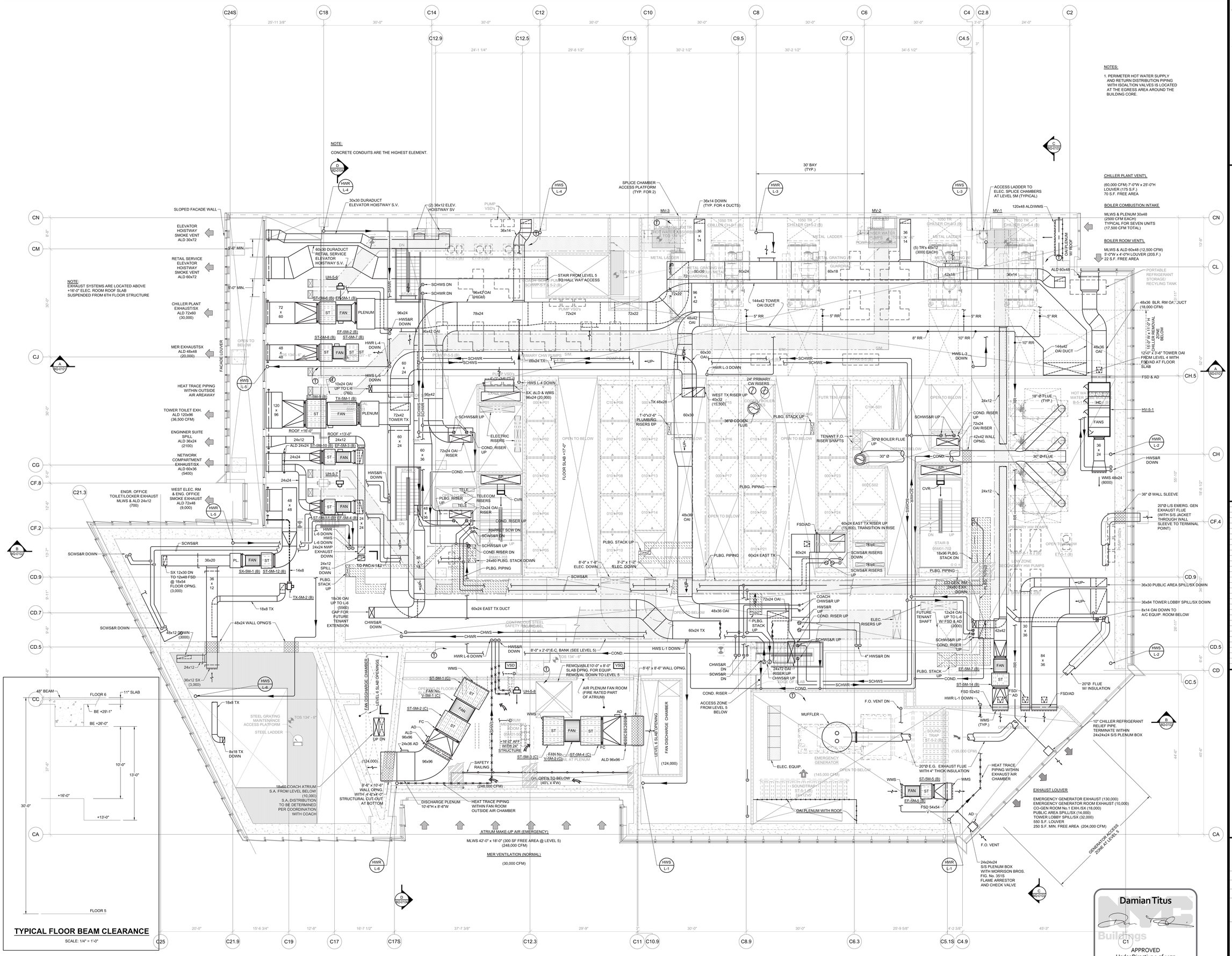

TYPICAL FLOOR BEAM CLEARANCE

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

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
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Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-0501M

Drawing Title
MECHANICAL PLAN 05M MER SECTOR 01

Drawing Number
M1-0501M
B-SCAN Drawing Number
M-113.00

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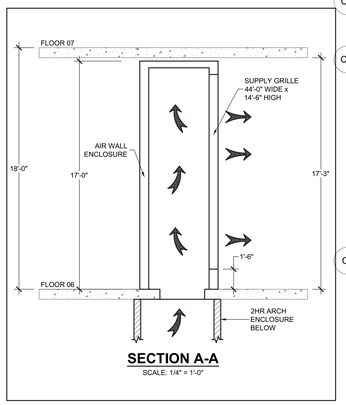
TYPICAL FLOOR BEAM CLEARANCE

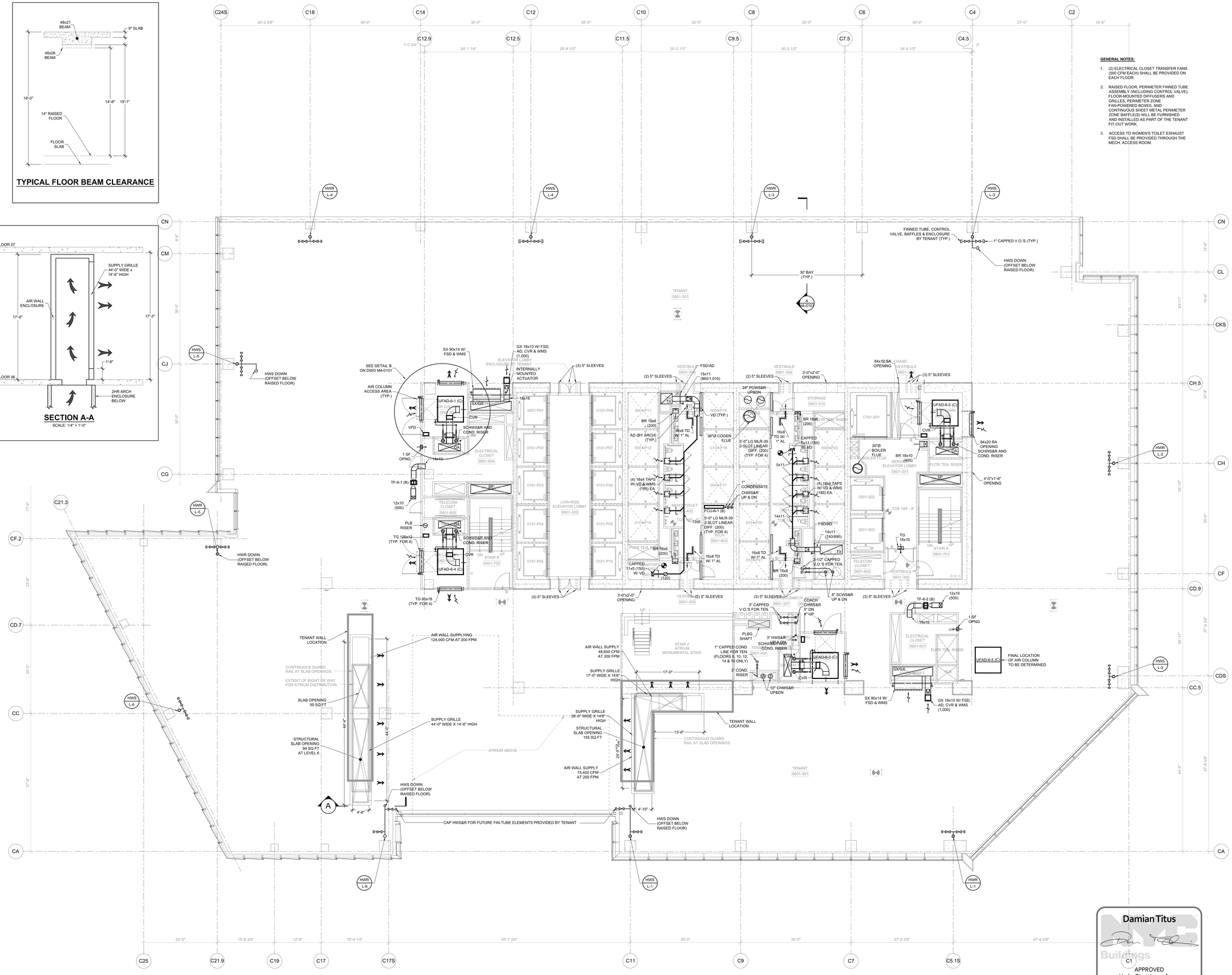


SECTION A-A

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

GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR.
2. RAISED FLOOR, PERIMETER FINNED TUBE ASSEMBLY (INCLUDING CONTROL VALVE), FLOOR-MOUNTED DIFFUSERS AND GRILLES, PERIMETER ZONE FAN-POWERED BOXES, AND CONTINUOUS SHEET METAL PERIMETER ZONE BAFFLE(S) WILL BE FURNISHED AND INSTALLED AS PART OF THE TENANT FIT-OUT WORK.
3. ACCESS TO WOMEN'S TOILET EXHAUST FSD SHALL BE PROVIDED THROUGH THE MECH. ACCESS ROOM.



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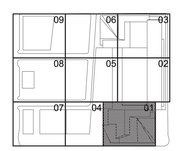
1	ISSUED FOR FILING	08-20-2012

Key Plan



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01-25-2013
Project No.
14752.A.000
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Sheet Number
HYE-TC-M1-0601
Drawing Title

MECHANICAL
PLAN 06
SECTOR 01

Drawing Number
M1-0601
B/SCAN Drawing Number
M-206.00

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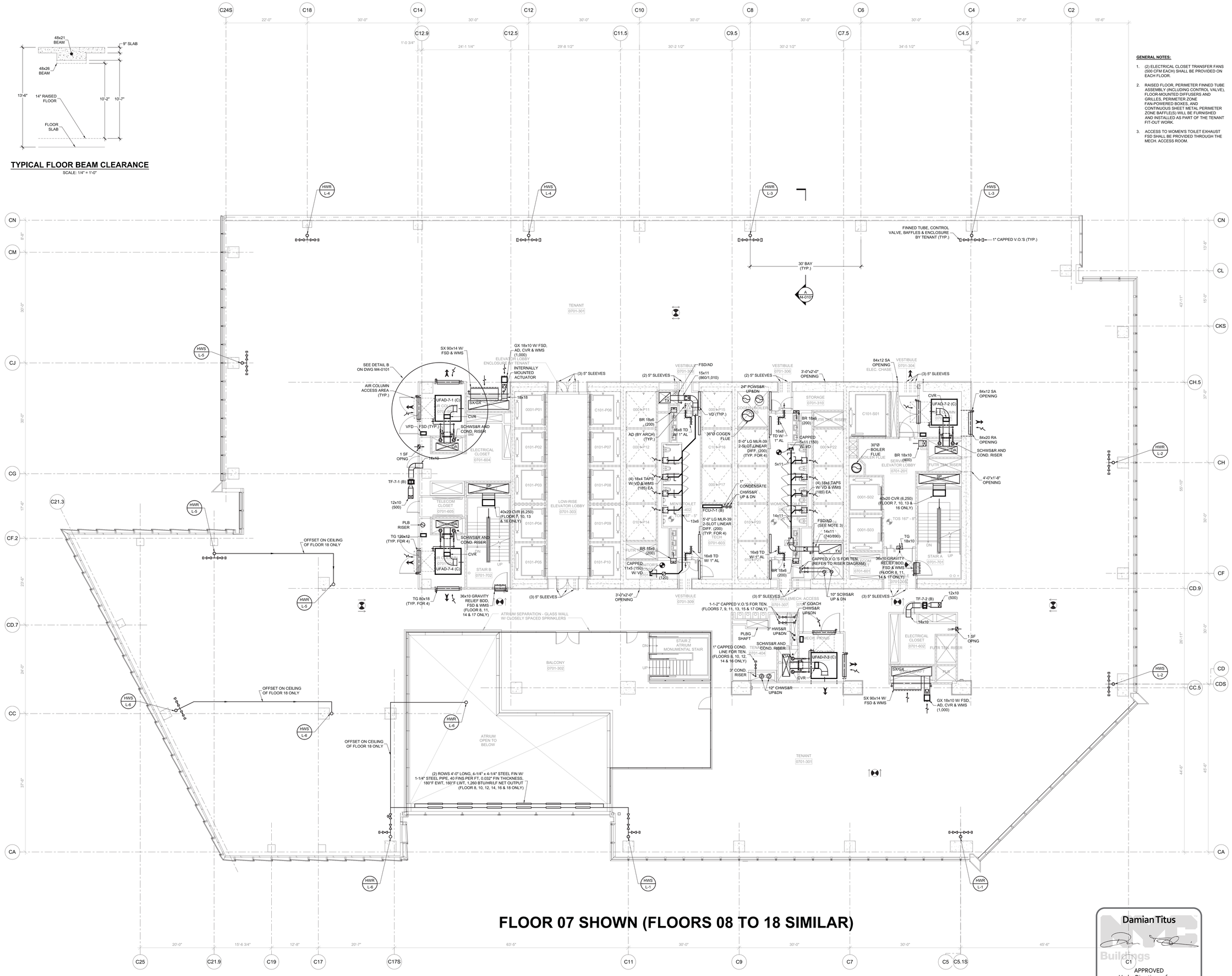
TYPICAL FLOOR BEAM CLEARANCE

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

GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR.
2. RAISED FLOOR, PERIMETER FINNED TUBE ASSEMBLY (INCLUDING CONTROL VALVE), FLOOR-MOUNTED DIFFUSERS AND GRILLES, PERIMETER ZONE FAN-POWERED BOXES, AND CONTINUOUS SHEET METAL PERIMETER ZONE BAFFLE(S) WILL BE FURNISHED AND INSTALLED AS PART OF THE TENANT FIT-OUT WORK.
3. ACCESS TO WOMEN'S TOILET EXHAUST FOD SHALL BE PROVIDED THROUGH THE MECH. ACCESS ROOM.



FLOOR 07 SHOWN (FLOORS 08 TO 18 SIMILAR)

GENERAL NOTES:

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No.	Issue	Date
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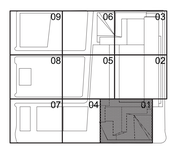
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Drawing Title
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SECTOR 01
Drawing Number
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TYPICAL FLOOR BEAM CLEARANCE

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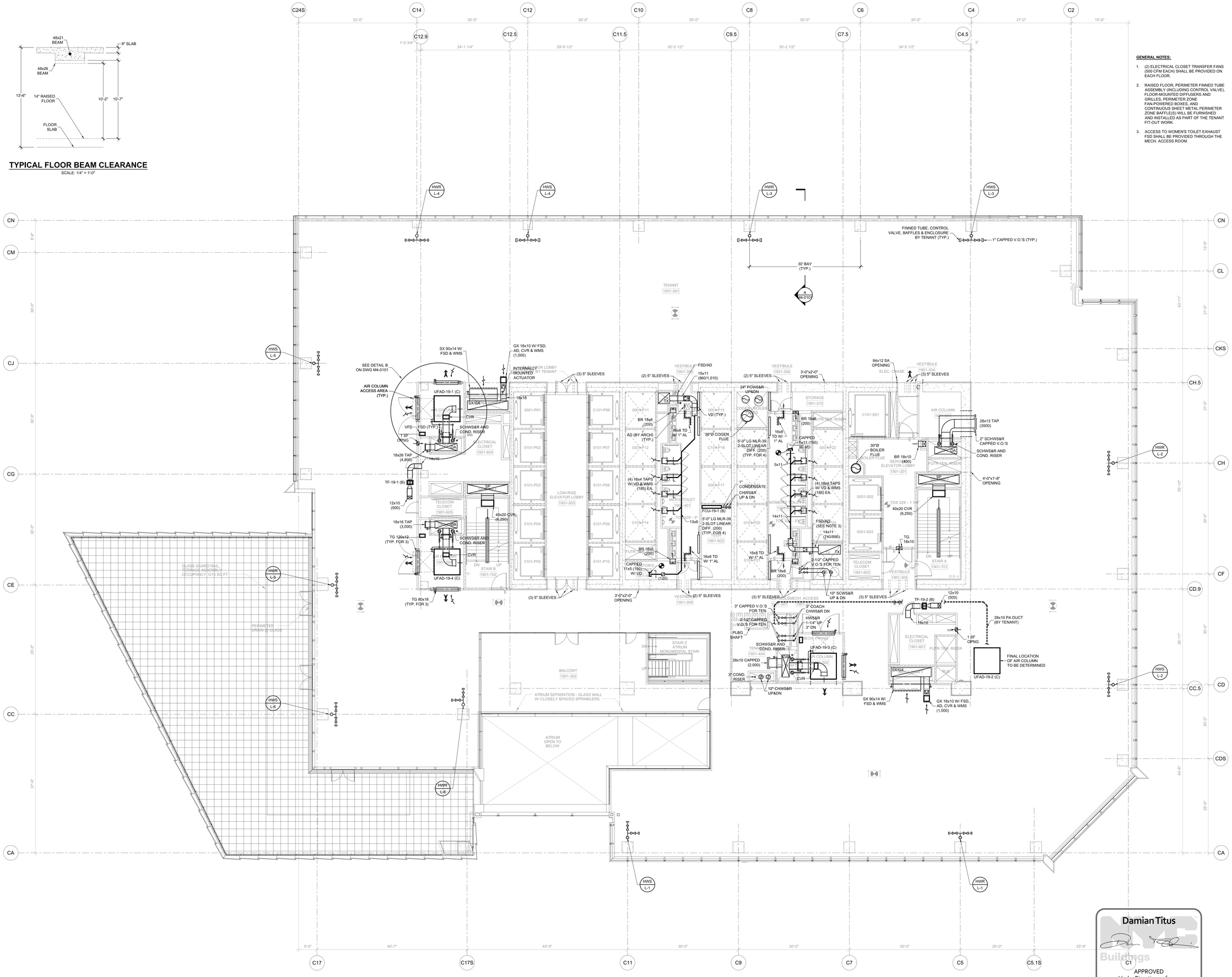

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Client
Related Companies
60 Columbus Circle
New York, NY 10023
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Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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Tel: 212.708.3600

Architect
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Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
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Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
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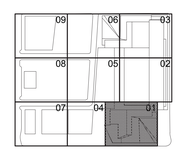
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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.	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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Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:09 PM
NYC Development Hub

Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M1-1901
Drawing Title
MECHANICAL
PLAN 19
SECTOR 01
Drawing Number
M1-1901
B/SCAN Drawing Number
M-219.00

SHEET 17 OF 71

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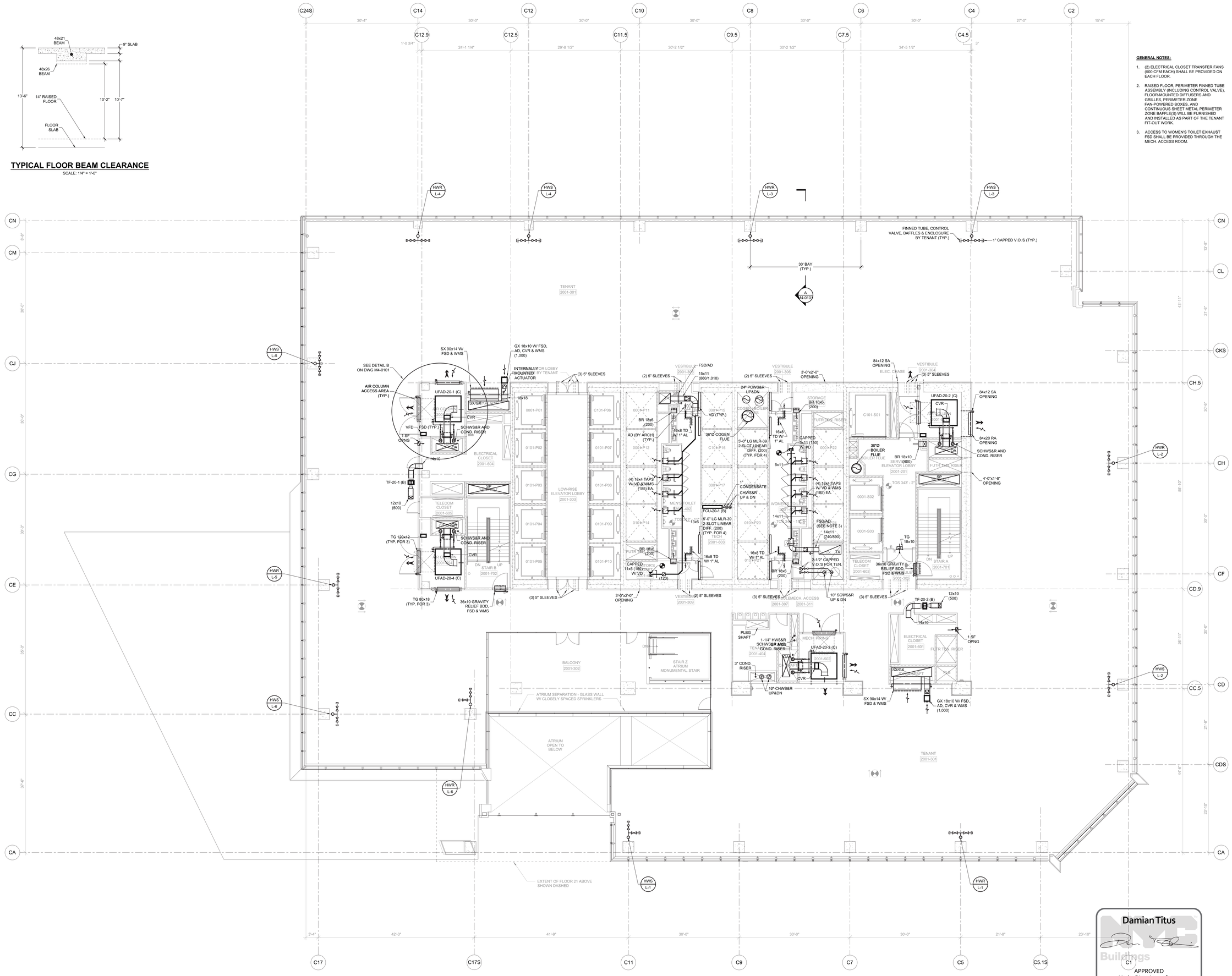
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-08-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-1901.dwg Plotted by: alan turnstead Plot Time: 8/3/2013 10:16 AM

Filename: U:\projects\14752.a hudson yards-east yards-tw\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-2001.dwg Plotted by: alan lundeen Plot Time: 6/3/2013 10:16 AM

TYPICAL FLOOR BEAM CLEARANCE

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



GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR.
2. RAISED FLOOR, PERIMETER FINNED TUBE ASSEMBLY (INCLUDING CONTROL VALVE), FLOOR-MOUNTED DIFFUSERS AND GRILLES, PERIMETER ZONE FAN-POWERED BOXES, AND CONTINUOUS SHEET METAL PERIMETER ZONE BAFFLE(S) WILL BE FURNISHED AND INSTALLED AS PART OF THE TENANT FIT-OUT WORK.
3. ACCESS TO WOMEN'S TOILET EXHAUST FSD SHALL BE PROVIDED THROUGH THE MECH. ACCESS ROOM.

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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HUDSON YARDS - TOWER C

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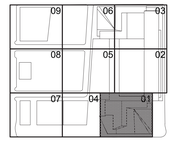
No.	Issue	Date
2	ISSUED FOR FILING	02-08-2013
1	DF-21 MECHANICAL	01-25-2013

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-2001

Drawing Title
MECHANICAL
PLAN 20
SECTOR 01

Drawing Number
M1-2001
B-SCAN Drawing Number
M-220.00

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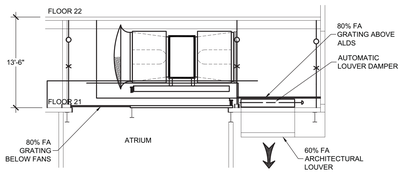

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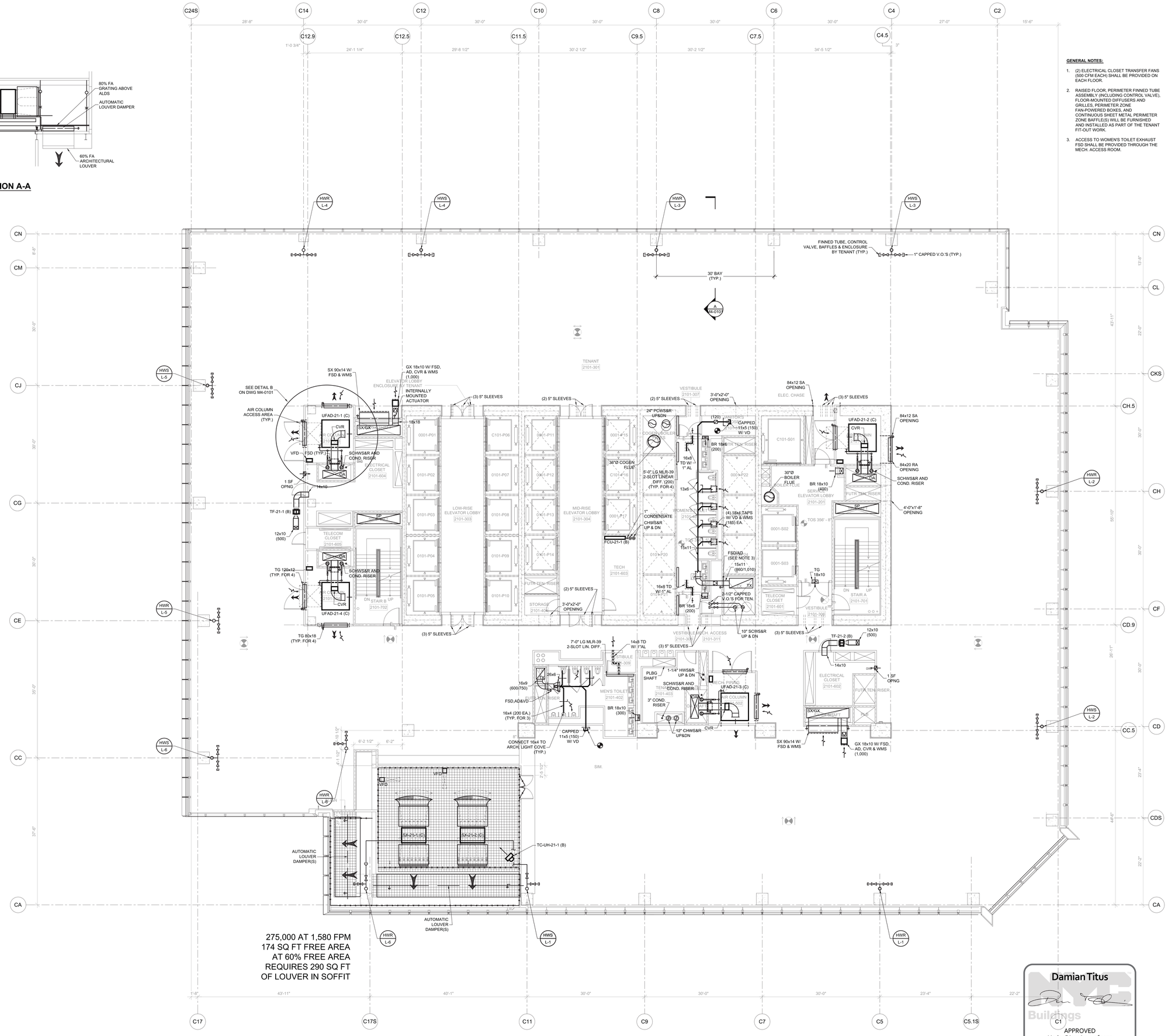

275,000 AT 1,580 FPM
174 SQ FT FREE AREA
AT 60% FREE AREA
REQUIRES 290 SQ FT
OF LOUVER IN SOFFIT

GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR.
2. RAISED FLOOR, PERIMETER FINNED TUBE ASSEMBLY (INCLUDING CONTROL VALVE), FLOOR-MOUNTED DIFFUSERS AND GRILLES, PERIMETER ZONE FAN-POWERED BOXES, AND CONTINUOUS SHEET METAL PERIMETER ZONE BAFFLE(S) WILL BE FURNISHED AND INSTALLED AS PART OF THE TENANT FIT-OUT WORK.
3. ACCESS TO WOMEN'S TOILET EXHAUST FSD SHALL BE PROVIDED THROUGH THE MECH. ACCESS ROOM.

HUDSON YARDS - TOWER C

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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number

HYE-TC-M1-2101

Drawing Title

MECHANICAL
PLAN 21
SECTOR 01

Drawing Number
M1-2101
B-SCAN Drawing Number
M-221.00

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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.	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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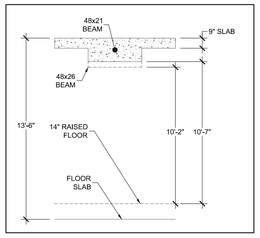
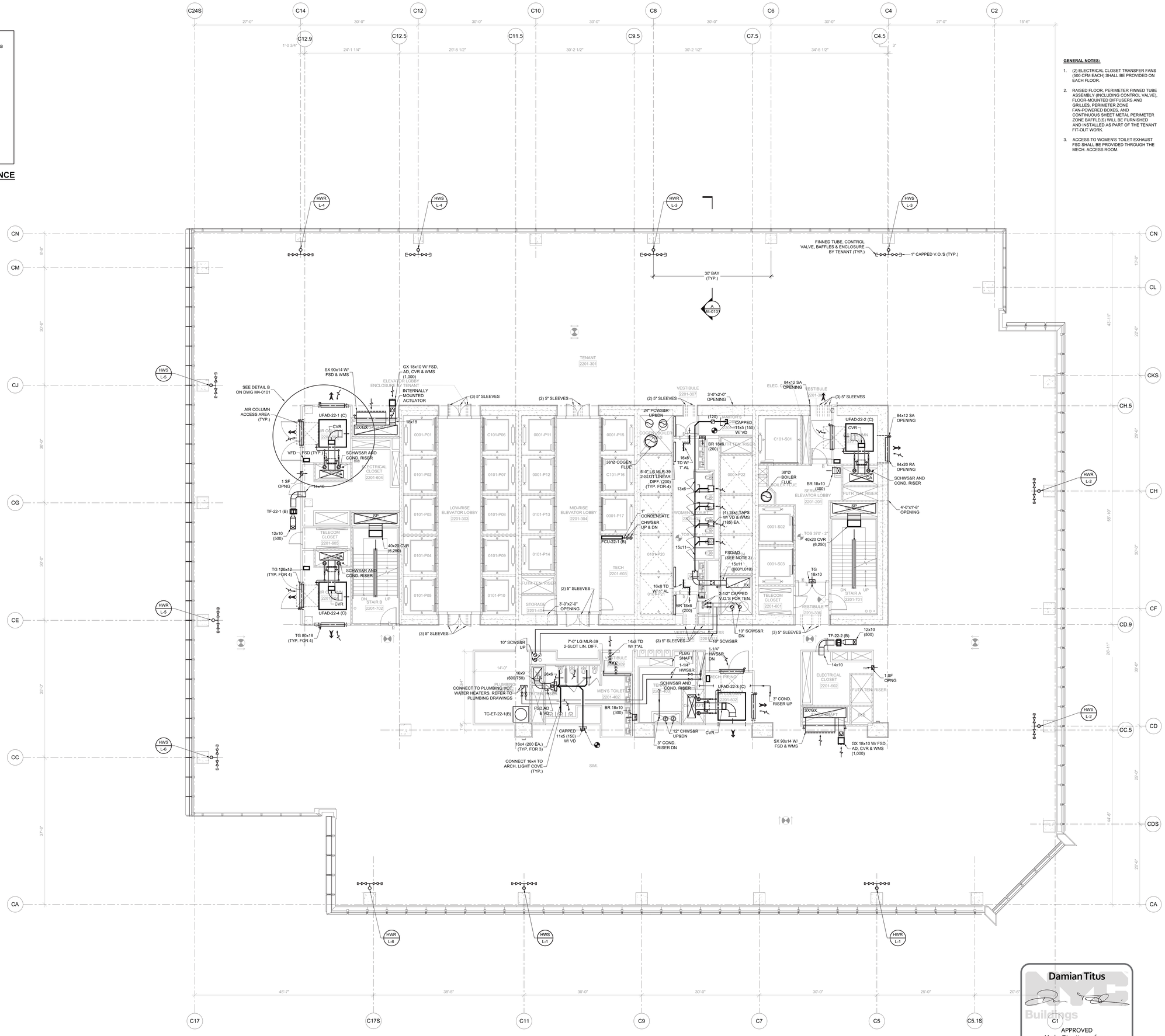
Filename: U:\projects\14752.a.hudson yards-east yards\vet (\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-2101.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:16 AM

Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-2201.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:16 AM



TYPICAL FLOOR BEAM CLEARANCE

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



GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR.
2. RAISED FLOOR, PERIMETER FINNED TUBE ASSEMBLY (INCLUDING CONTROL VALVE), FLOOR-MOUNTED DIFFUSERS AND GRILLES, PERIMETER ZONE FAN-POWERED BOXES, AND CONTINUOUS SHEET METAL PERIMETER ZONE BAFFLE(S) WILL BE FURNISHED AND INSTALLED AS PART OF THE TENANT FIT-OUT WORK.
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HUDSON YARDS - TOWER C

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Architects & Planning Consultants
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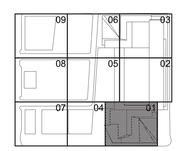
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
2	ISSUED FOR FILING	02-08-2013
1	DI-21 MECHANICAL	01-25-2013

Key Plan



PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-2201

Drawing Title
MECHANICAL
PLAN 22
SECTOR 01

Drawing Number
M1-2201
B/SCAN Drawing Number
M-222.00

SHEET 20 OF 71

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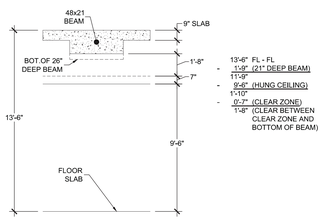
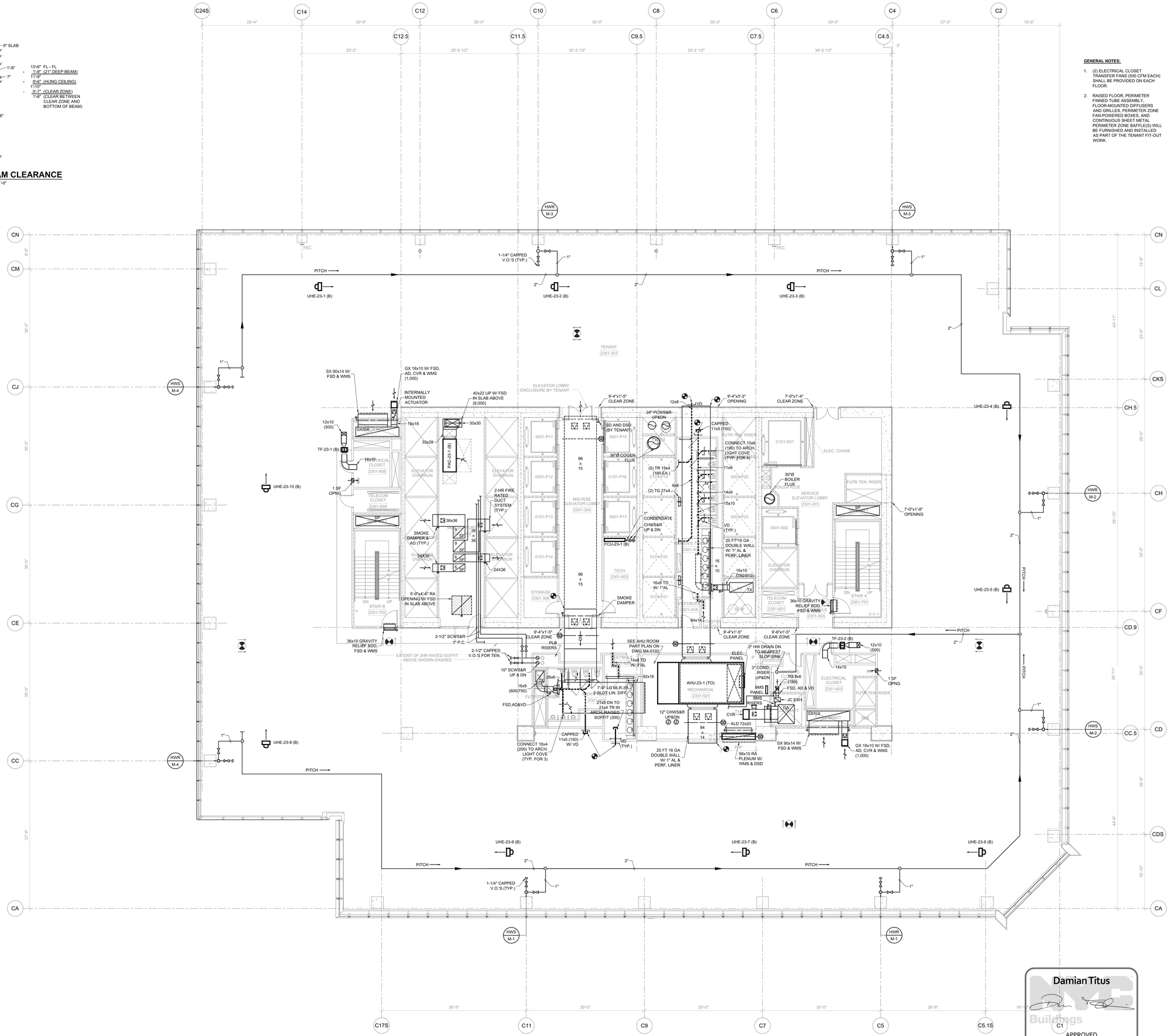
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-2301.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:16 AM



TYPICAL FLOOR BEAM CLEARANCE

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



GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR.
2. RAISED FLOOR, PERIMETER FINNED TUBE ASSEMBLY, FLOOR-MOUNTED DIFFUSERS AND GRILLES, PERIMETER ZONE FAN-POWERED BOXES, AND CONTINUOUS SHEET METAL PERIMETER ZONE BAFFLE(S) WILL BE FURNISHED AND INSTALLED AS PART OF THE TENANT FIT-OUT WORK.

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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Under Directive 2 of 1975
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HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number

HYE-TC-M1-2301

Drawing Title

MECHANICAL
PLAN 23
SECTOR 01

Drawing Number
M1-2301
B/SCAN Drawing Number
M-223.00

SHEET 21 OF 71

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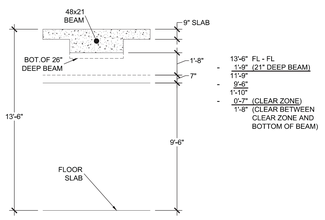
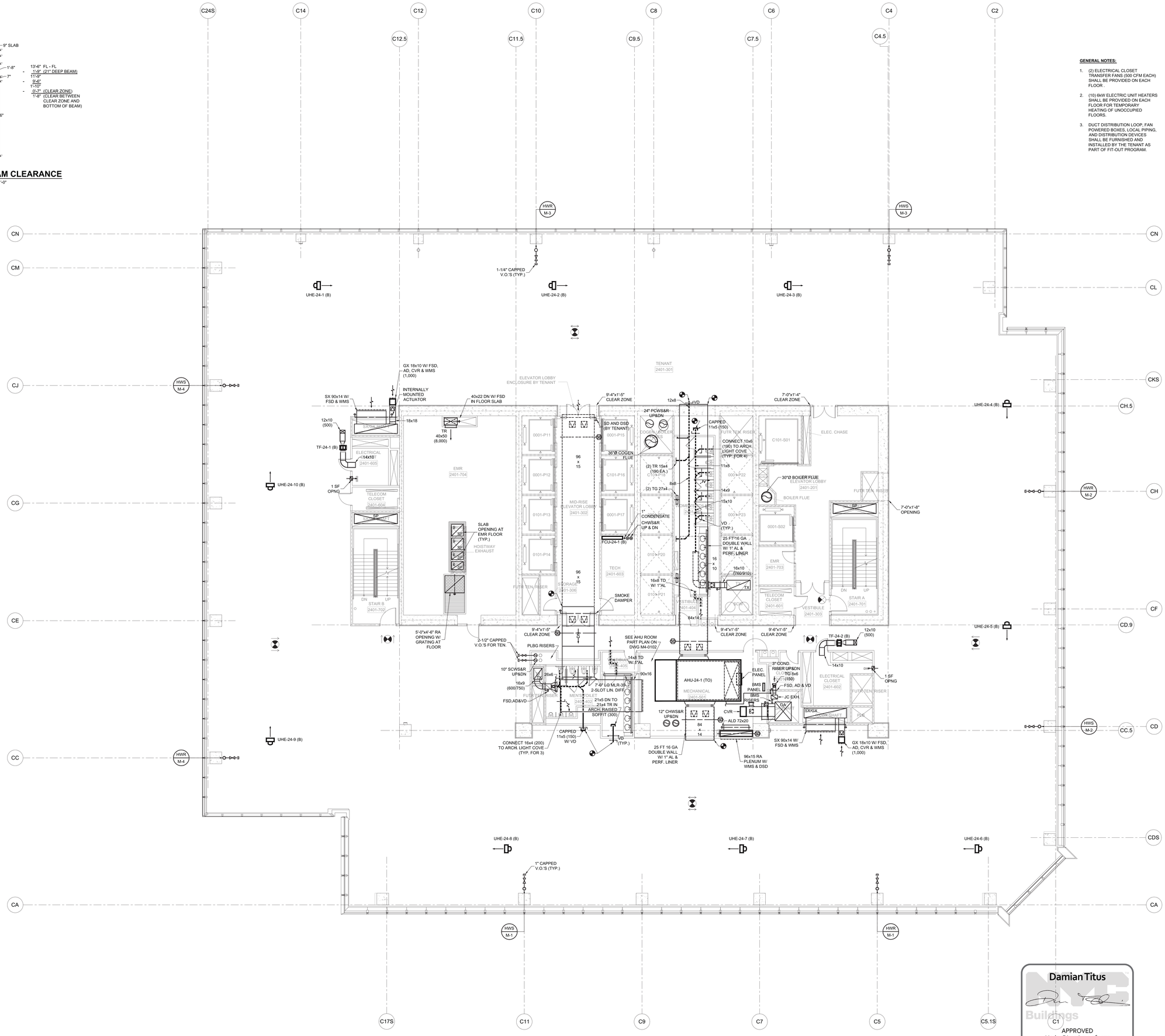


TYPICAL FLOOR BEAM CLEARANCE

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

GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR .
2. (10) 6kW ELECTRIC UNIT HEATERS SHALL BE PROVIDED ON EACH FLOOR FOR TEMPORARY HEATING OF UNOCCUPIED FLOORS.
3. DUCT DISTRIBUTION LOOP, FAN POWERED BOXES, LOCAL PIPING, AND DISTRIBUTION DEVICES SHALL BE FURNISHED AND INSTALLED BY THE TENANT AS PART OF FIT-OUT PROGRAM.



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No.	Issue	Date
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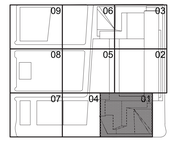
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-2401

Drawing Title
MECHANICAL
PLAN 24
SECTOR 01

Drawing Number
M1-2401
B-SCAN Drawing Number
M-224.00

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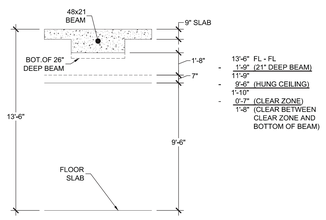
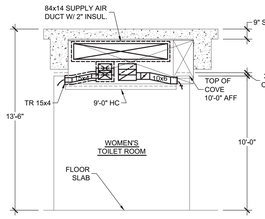
Filename: U:\projects\14752.a-hudson yards-east yards-tw\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-2701.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:17 AM



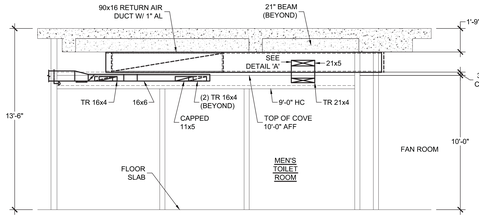
TYPICAL FLOOR BEAM CLEARANCE

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



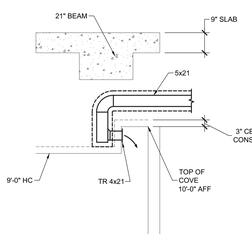
SECTION AT WOMEN'S TOILET ROOM

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



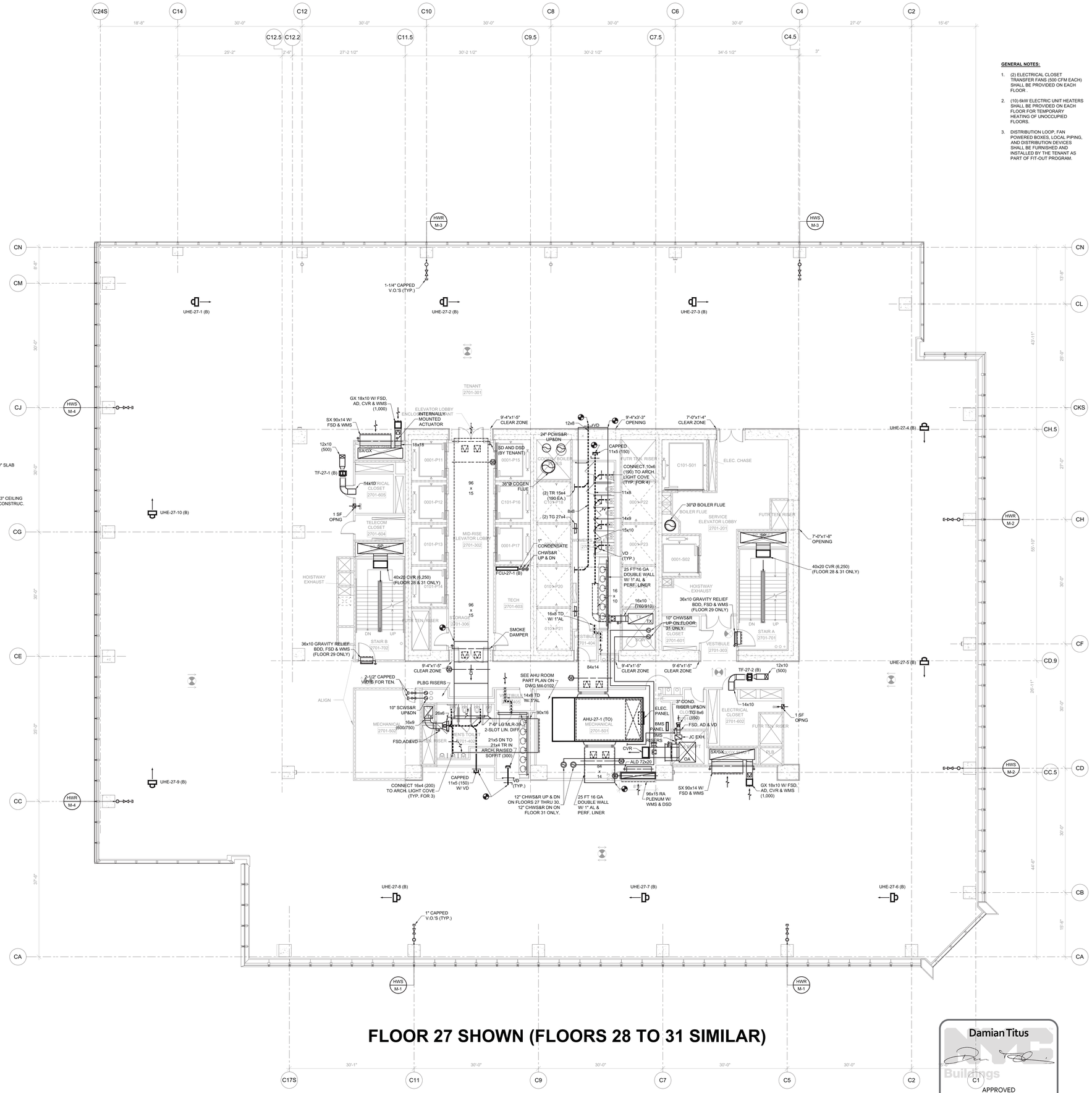
SECTION AT MEN'S TOILET ROOM

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



DETAIL 'A'

SCALE: 1/2" = 1'-0"



FLOOR 27 SHOWN (FLOORS 28 TO 31 SIMILAR)

GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR .
2. (10) 6kW ELECTRIC UNIT HEATERS SHALL BE PROVIDED ON EACH FLOOR FOR TEMPORARY HEATING OF UNOCCUPIED FLOORS.
3. DISTRIBUTION LOOP, FAN POWERED BOXES, LOCAL PIPING, AND DISTRIBUTION DEVICES SHALL BE FURNISHED AND INSTALLED BY THE TENANT AS PART OF FIT-OUT PROGRAM.

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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Architect
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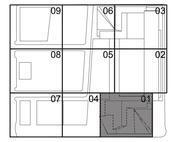
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M1-2701
Drawing Title

MECHANICAL
PLAN 27
SECTOR 01

Drawing Number
M1-2701
B-SCAN Drawing Number
M-227.00

SHEET 25 OF 71

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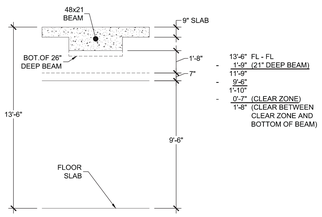
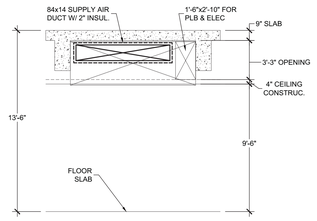
Filename: U:\projects\14752.a hudson yards-east yards-tw\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-2501.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:17 AM



TYPICAL FLOOR BEAM CLEARANCE

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



SECTION AT WATER CLOSET

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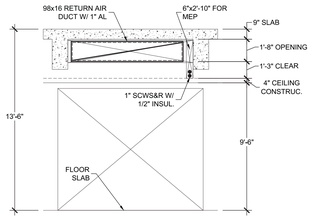

SECTION AT ELEVATOR LOBBY

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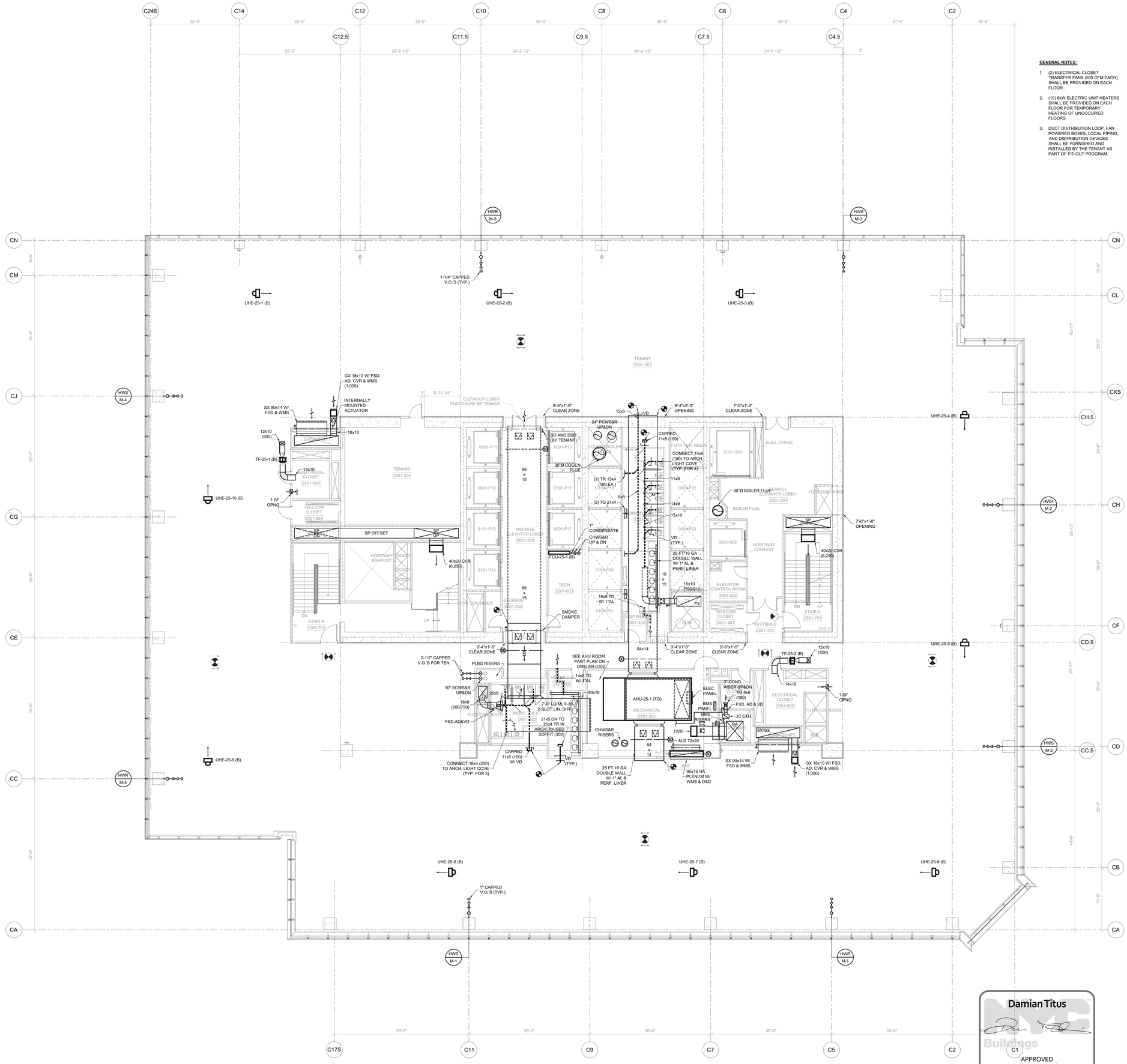

GENERAL NOTES:

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2. (10) 6kW ELECTRIC UNIT HEATERS SHALL BE PROVIDED ON EACH FLOOR FOR TEMPORARY HEATING OF UNOCCUPIED FLOORS.
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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-2501

Drawing Title
MECHANICAL
PLAN 25
SECTOR 01

Drawing Number
M1-2501
B-SCAN Drawing Number
M-225.00

SHEET 23 OF 71

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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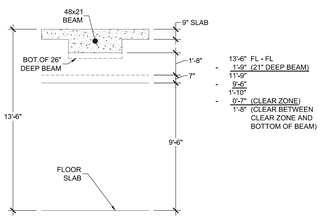
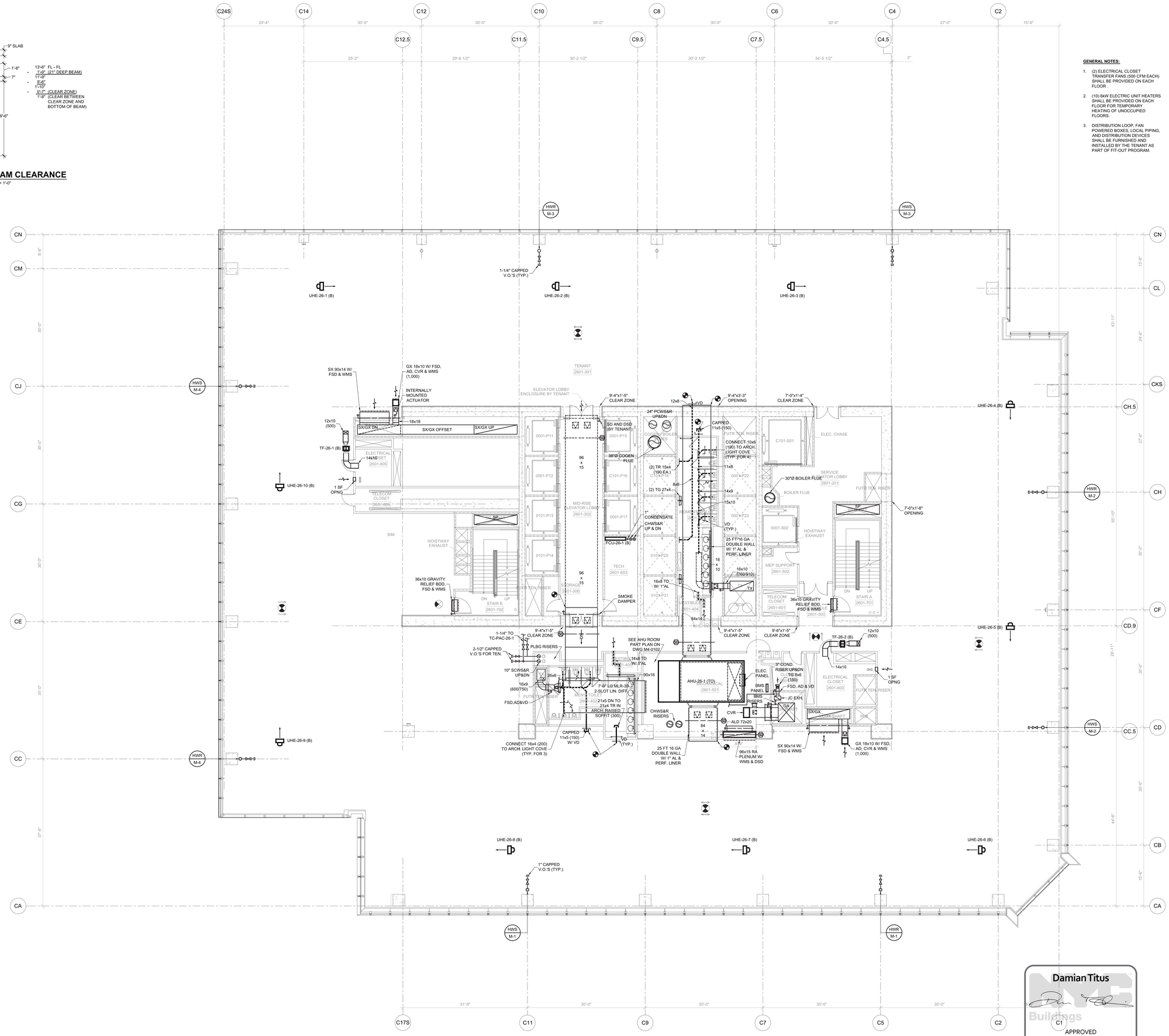
Filename: U:\projects\14752.a_hudson yards-east yards-tw\ccommon\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-2601.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:17 AM



TYPICAL FLOOR BEAM CLEARANCE

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



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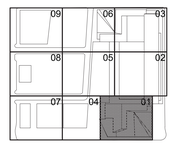
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-2601
Drawing Title

MECHANICAL
PLAN 26
SECTOR 01

Drawing Number
M1-2601
B-SCAN Drawing Number
M-226.00

SHEET 24 OF 71

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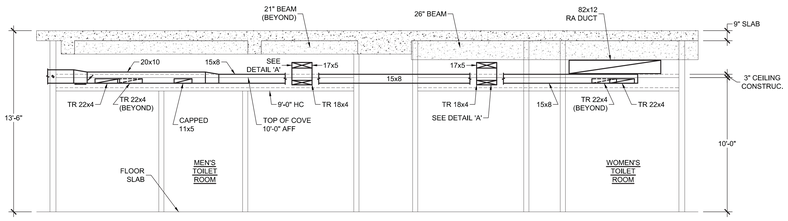
Filename: U:\projects\14752.a hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-3201.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:17 AM



SECTION AT TOILET ROOMS

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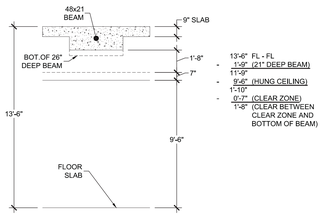
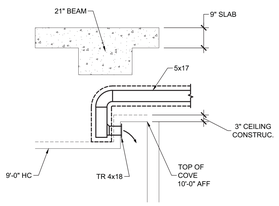


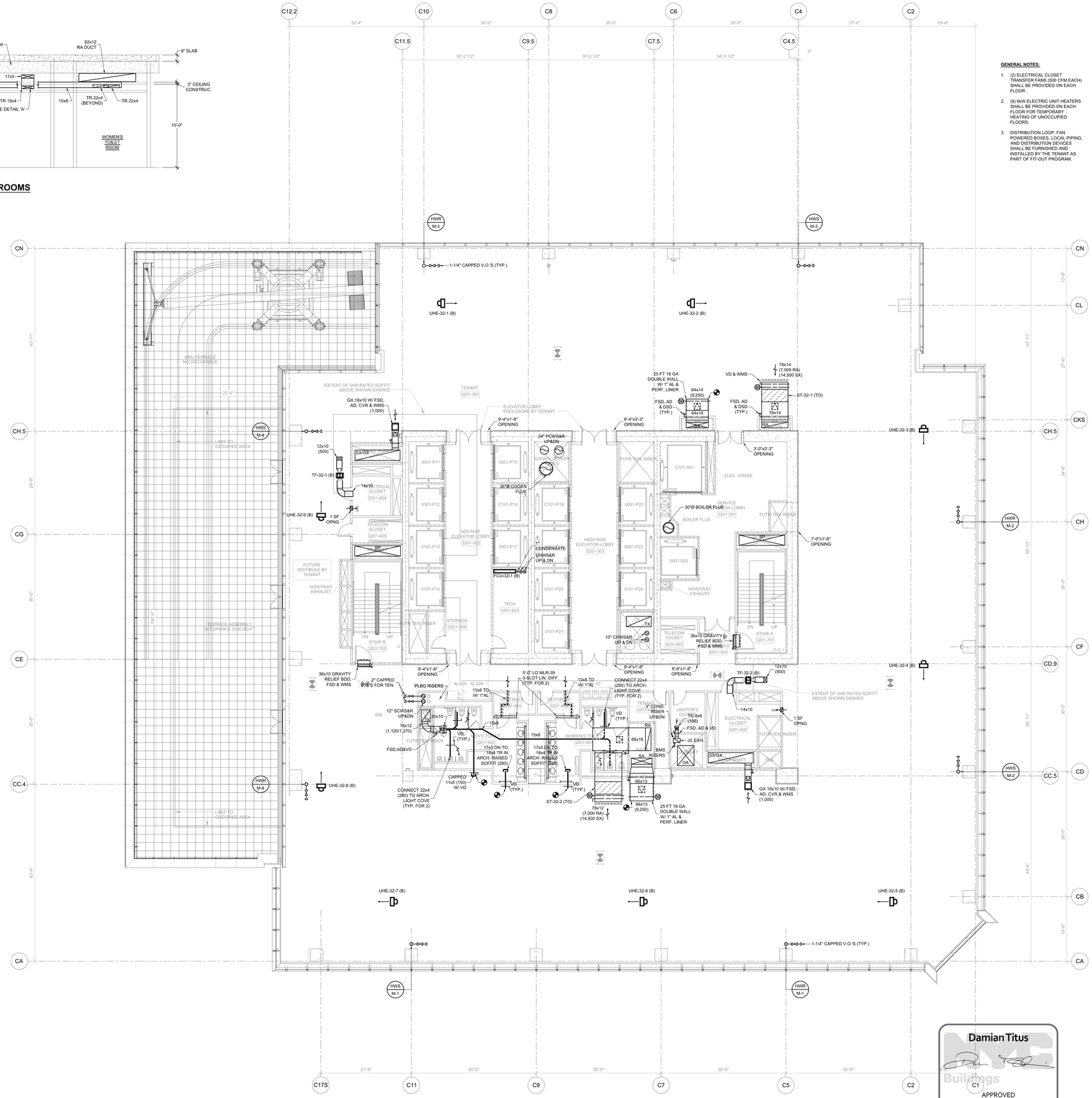
TYPICAL FLOOR BEAM CLEARANCE

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



DETAIL 'A'

SCALE: 1/2" = 1'-0"



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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-3201

Drawing Title
MECHANICAL
PLAN 32
SECTOR 01

Drawing Number
M1-3201
R-SCAN Drawing Number
M-232.00

SHEET 26 OF 71

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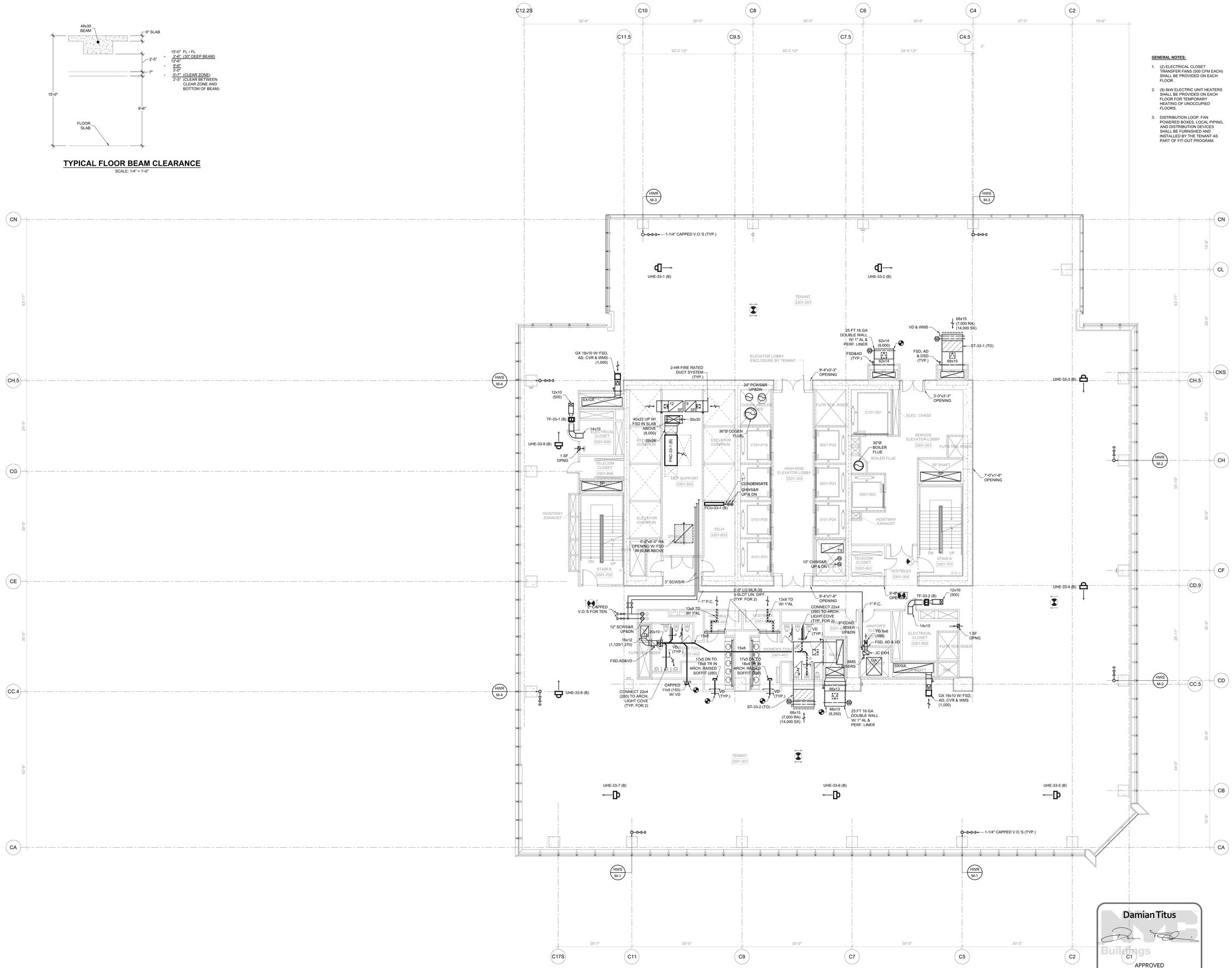
Filename: U:\projects\14752.a.hudson yards-east yards-lwr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-3301.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:17 AM

TYPICAL FLOOR BEAM CLEARANCE

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



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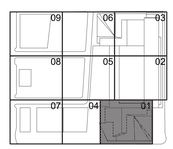
Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-3301

Drawing Title
MECHANICAL
PLAN 33
SECTOR 01

Drawing Number
M1-3301
B-SCAN Drawing Number
M-233.00

SHEET 27 OF 71

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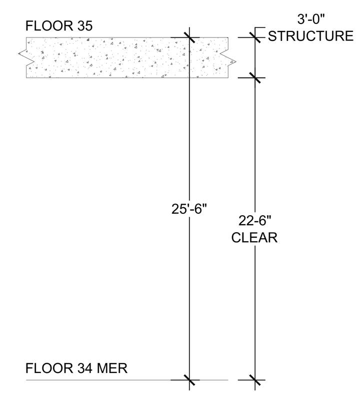
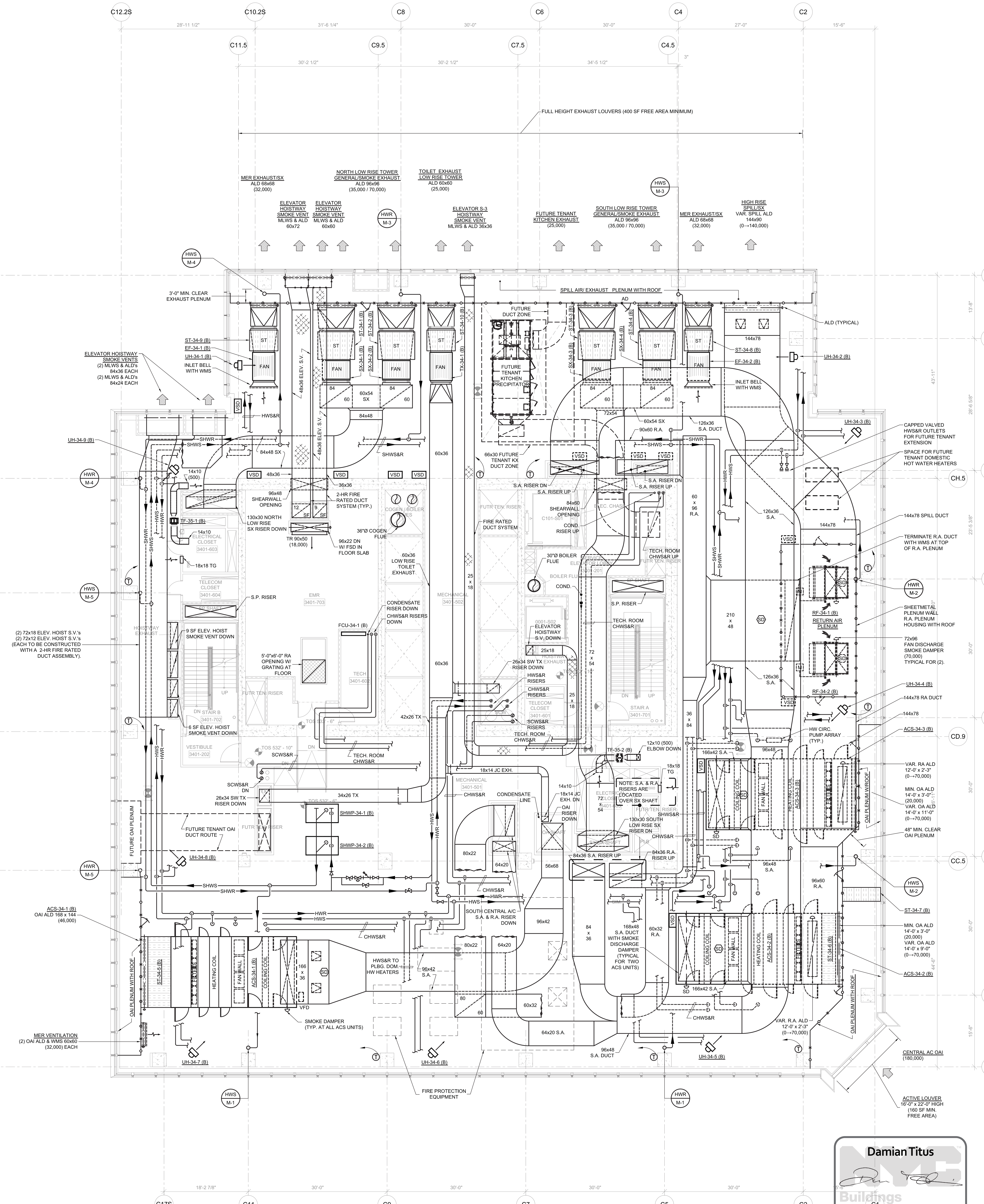


FLOOR 34 BEAM CLEARANCE

NOTES:

1. ALL PERIMETER SECONDARY HOT WATER SUPPLY AND RETURN RISER ISOLATION VALVES ARE TO BE LOCATED AT CONNECTION TO DISTRIBUTION HEADER PIPING.
2. PROVIDE SECONDARY HOT WATER DISTRIBUTION HEADER EXPANSION LOOPS AS REQUIRED.



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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-3401.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:17 AM

DEPT OF BLDGS 121324290 Job Number
ES602758063 Scan Code

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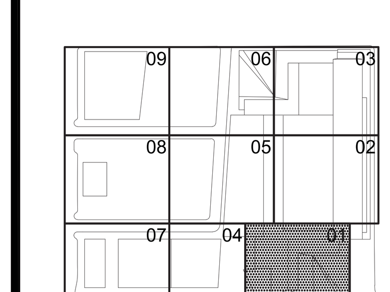

STATE OF NEW YORK · AUGUSTINE A. DIGIACOMO · LICENSED PROFESSIONAL ENGINEER · NO. 062475

Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-3401
Drawing Title

MECHANICAL PLAN 34 MER SECTOR 01

Drawing Number
M1-3401
B-SCAN Drawing Number
M-234.00

SHEET 28 OF 71

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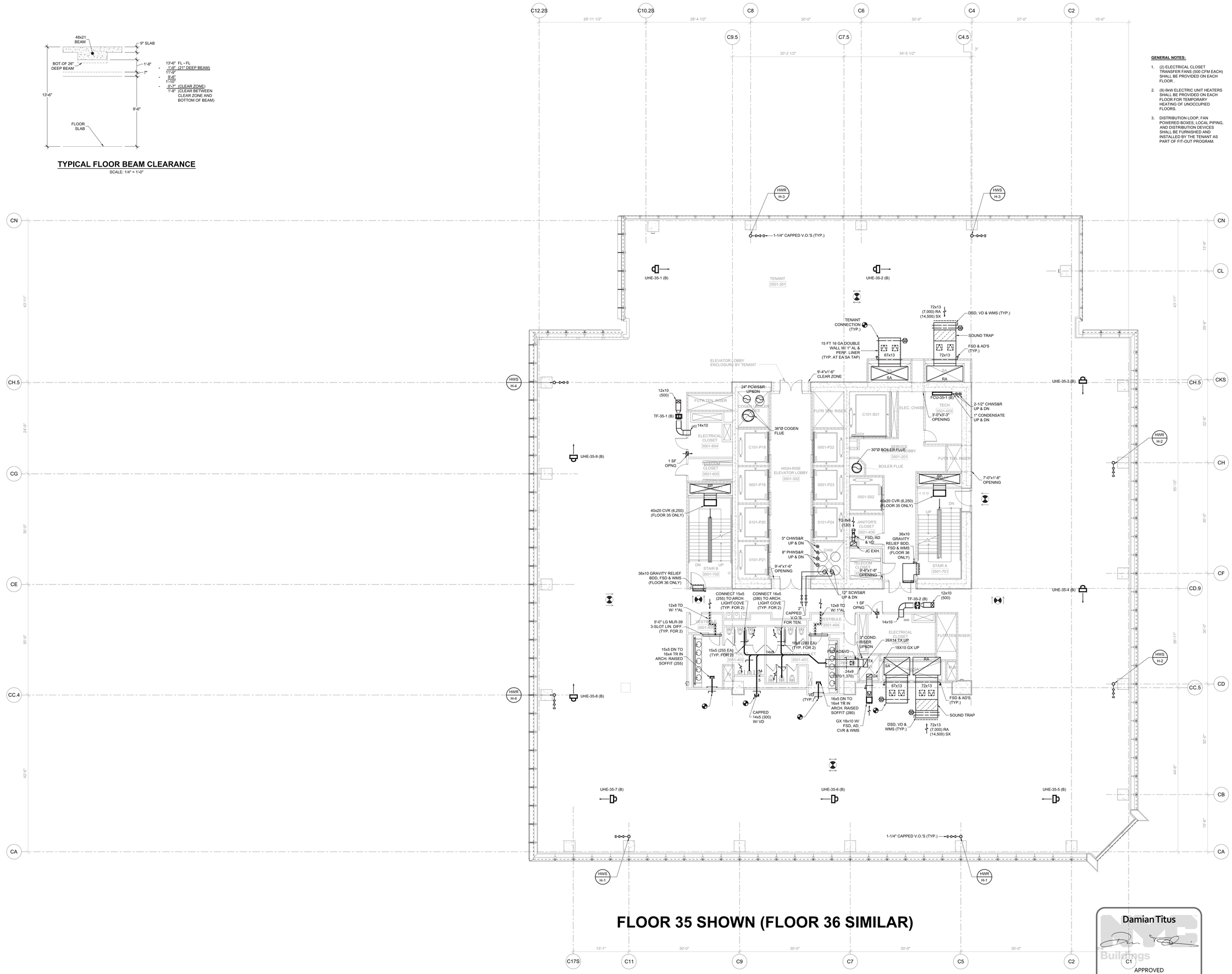
Filename: U:\projects\14752.a.hudson yards-east yards\ver 0\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-3501.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:17 AM

TYPICAL FLOOR BEAM CLEARANCE

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

GENERAL NOTES:

1. (2) ELECTRICAL CLOSET TRANSFER FANS (500 CFM EACH) SHALL BE PROVIDED ON EACH FLOOR .
2. (9) 6kW ELECTRIC UNIT HEATERS SHALL BE PROVIDED ON EACH FLOOR FOR TEMPORARY HEATING OF UNOCCUPIED FLOORS.
3. DISTRIBUTION LOOP, FAN POWERED BOXES, LOCAL PIPING, AND DISTRIBUTION DEVICES SHALL BE FURNISHED AND INSTALLED BY THE TENANT AS PART OF FIT-OUT PROGRAM.



FLOOR 35 SHOWN (FLOOR 36 SIMILAR)

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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.	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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Mechanical, Electrical, Plumbing, Fire Protection
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80 Pine Street
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Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-3501

Drawing Title
MECHANICAL
PLAN 35
SECTOR 01

Drawing Number
M1-3501
B-SCAN Drawing Number
M-236.00

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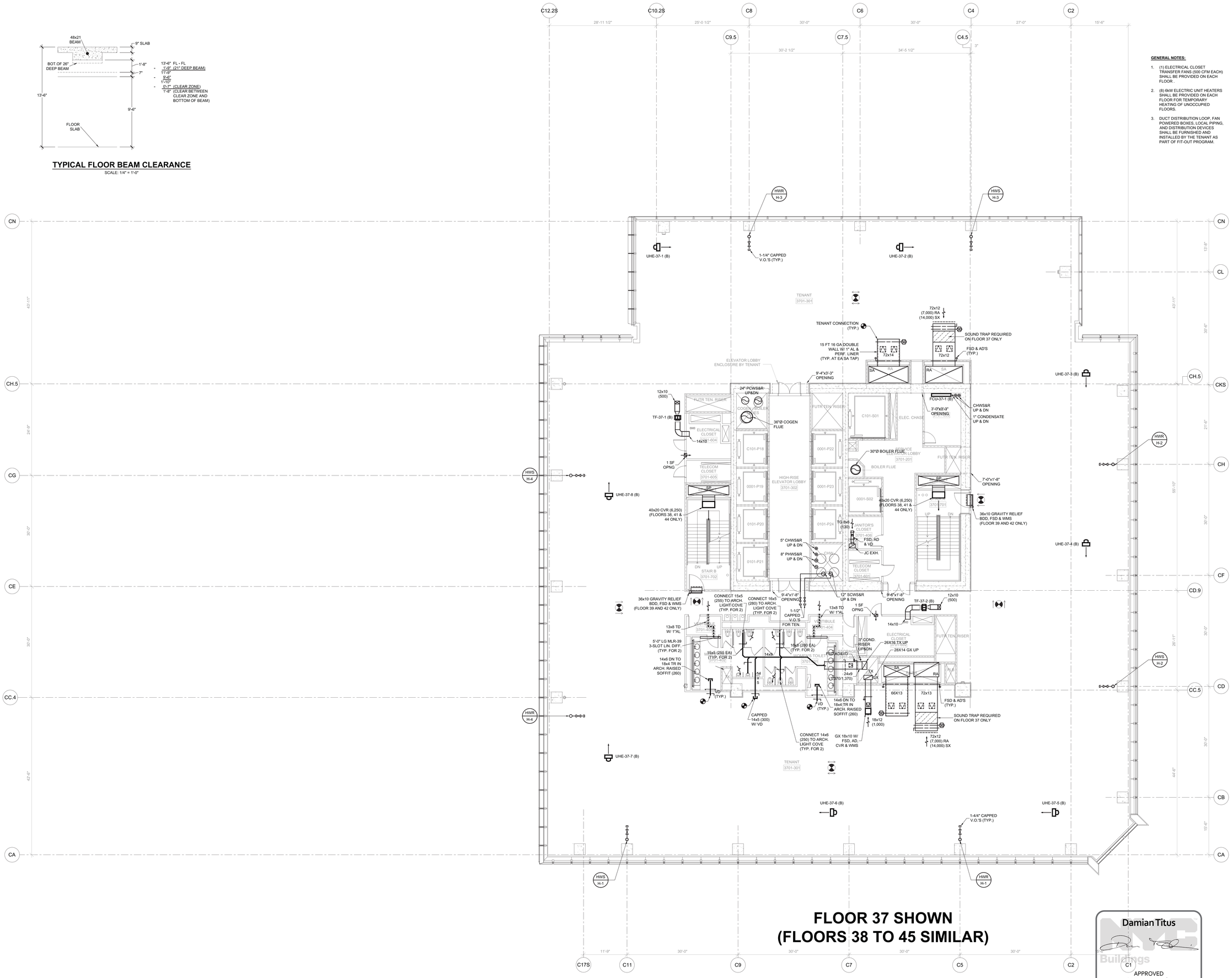
TYPICAL FLOOR BEAM CLEARANCE

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



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FLOOR 37 SHOWN
(FLOORS 38 TO 45 SIMILAR)

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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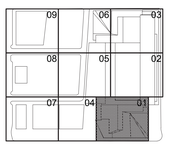
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-3701

Drawing Title
MECHANICAL
PLAN 37
SECTOR 01

Drawing Number
M1-3701
R-SCAN Drawing Number
M-238.00

SHEET 30 OF 71

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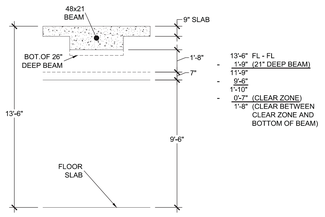
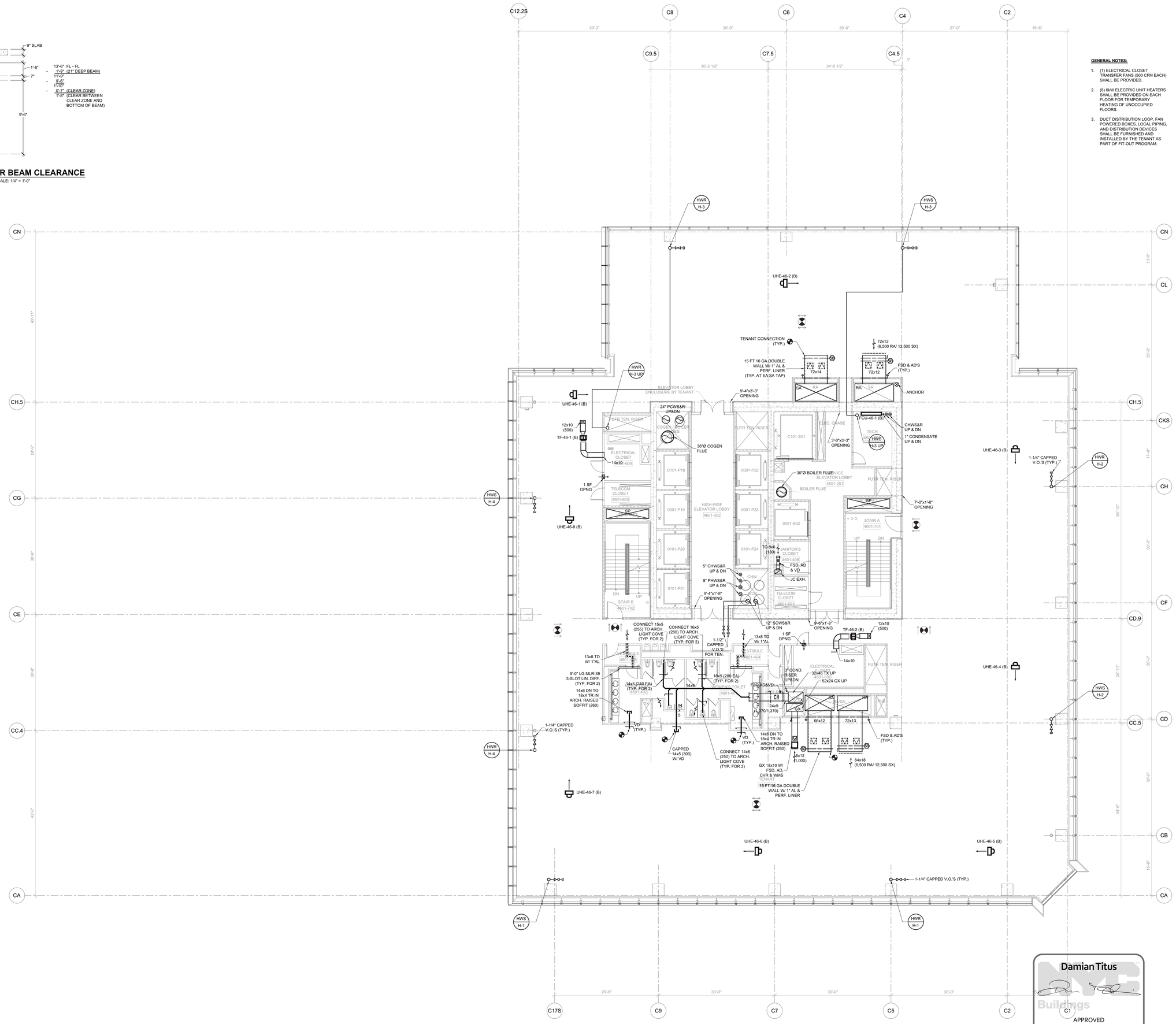


TYPICAL FLOOR BEAM CLEARANCE

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



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PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M1-4601
Drawing Title

MECHANICAL
PLAN 46
SECTOR 01

Drawing Number
M1-4601
B-SCAN Drawing Number
M-247.00

SHEET 31 OF 71

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Job Number E3021556895 Job Name CODE
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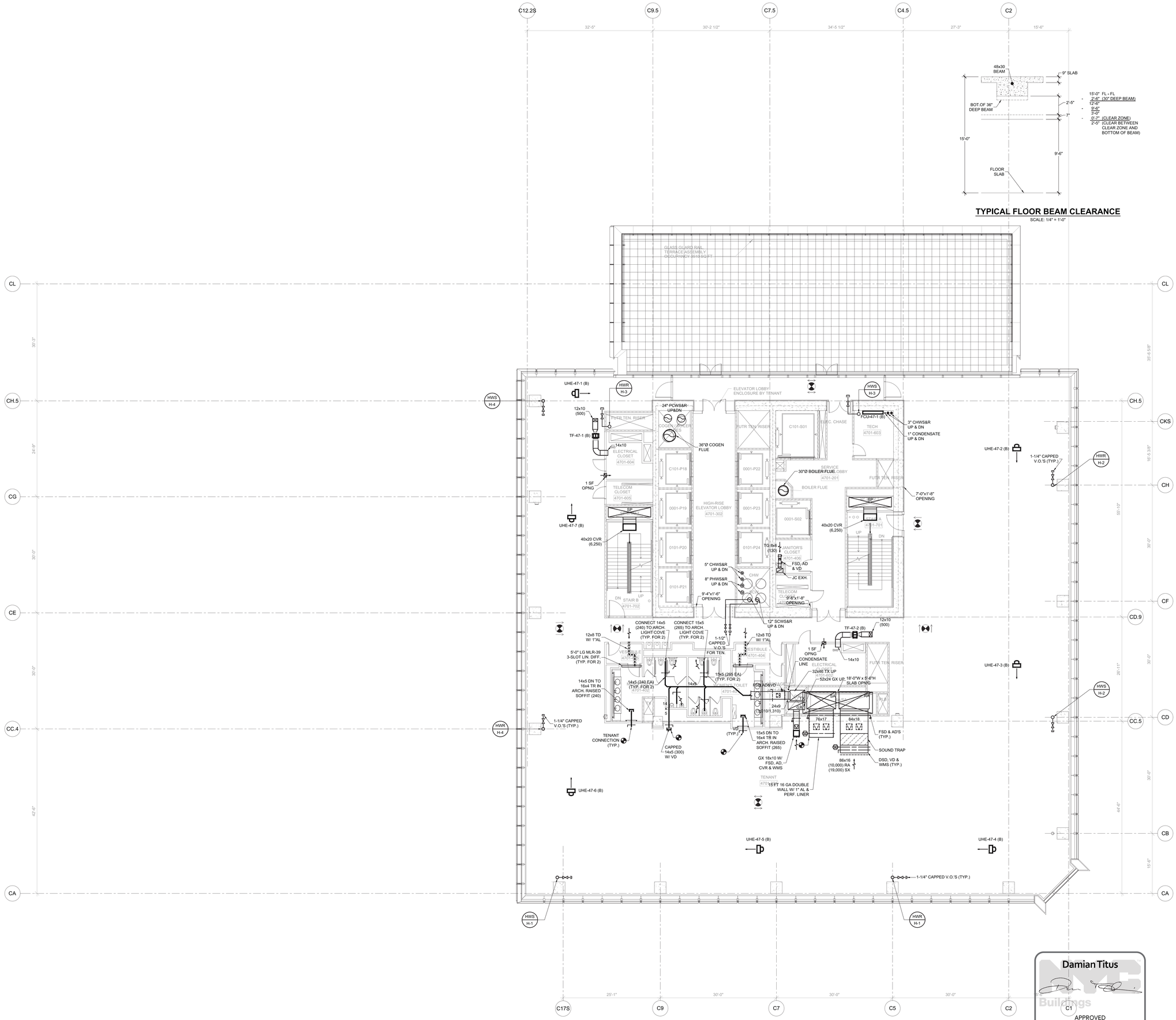

TYPICAL FLOOR BEAM CLEARANCE

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

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M1-4701
Drawing Title

MECHANICAL
PLAN 47
SECTOR 01

Drawing Number
M1-4701
B-SCAN Drawing Number
M-248.00

SHEET 32 OF 71

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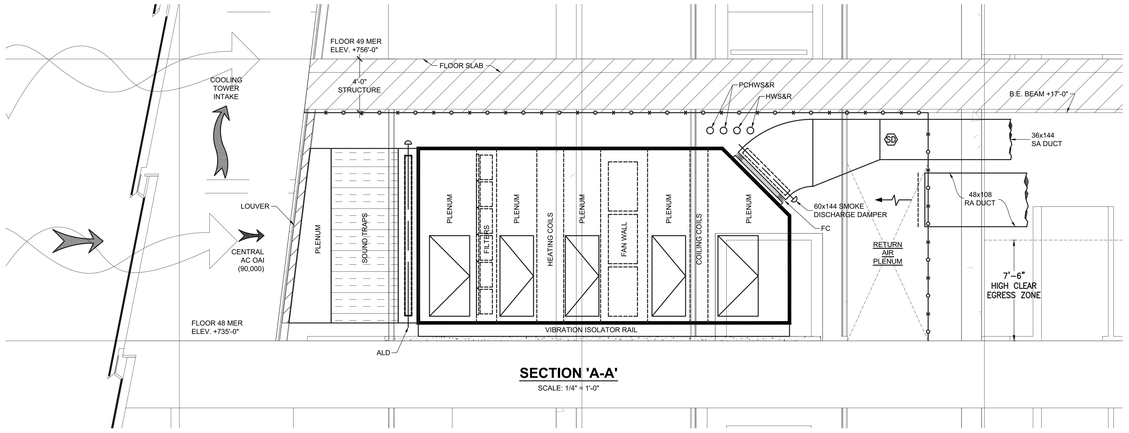
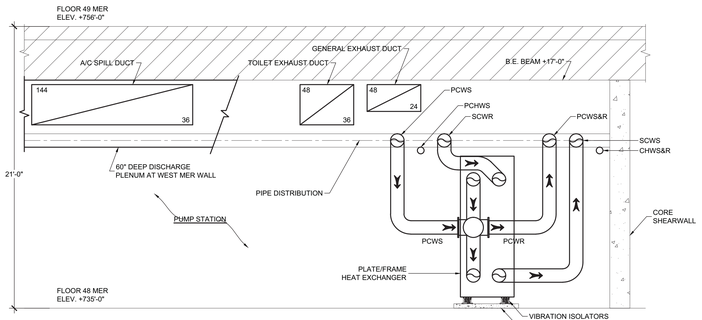


SECTION 'A-A'

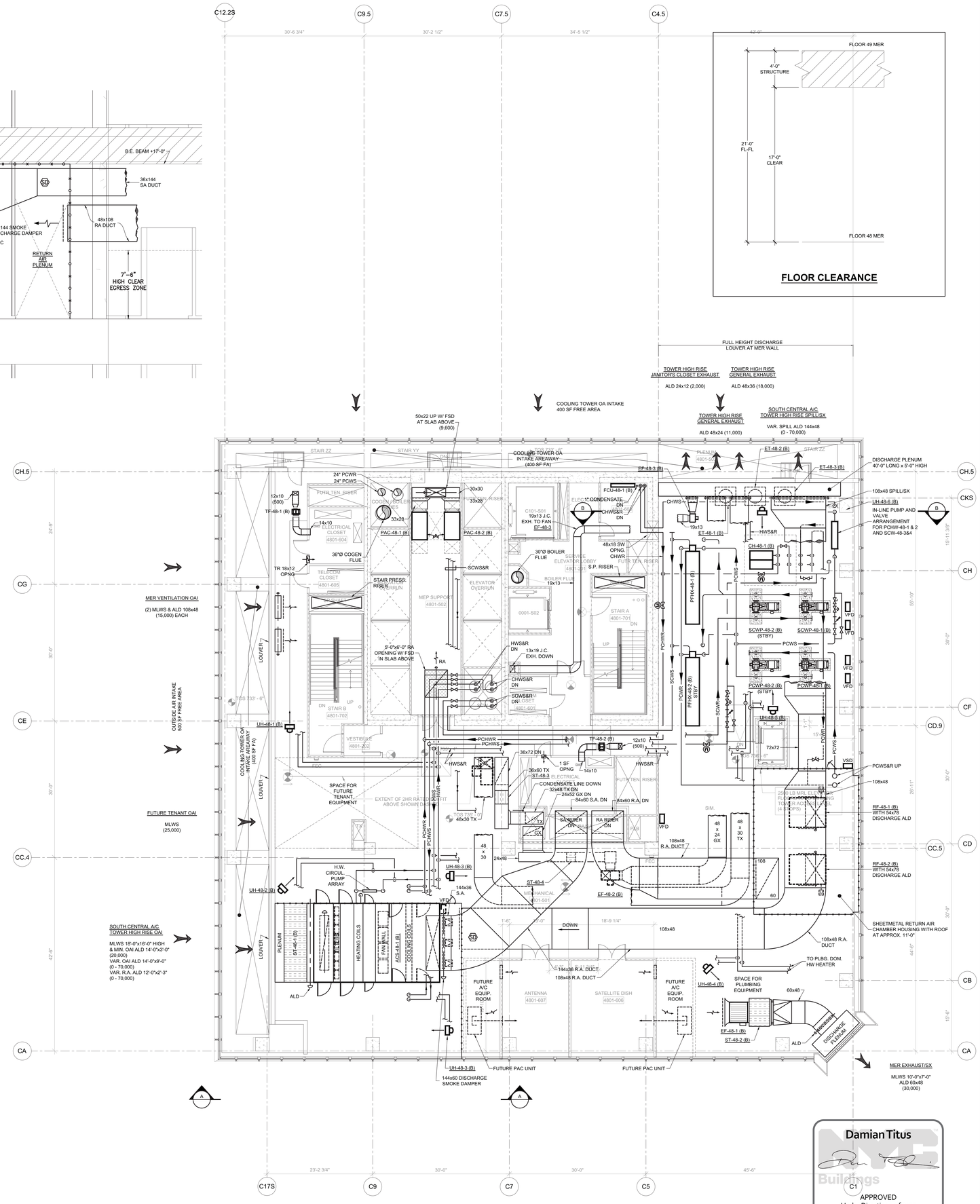
SCALE: 1/4" = 1'-0"

FLOOR CLEARANCE



SECTION 'B-B'

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



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No.	Issue	Date
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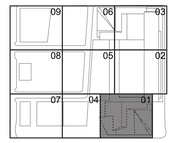
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-4801
Drawing Title

MECHANICAL
PLAN 48 MER
SECTOR 01

Drawing Number
M1-4801
B-SCAN Drawing Number
M-249.00

SHEET 33 OF 71

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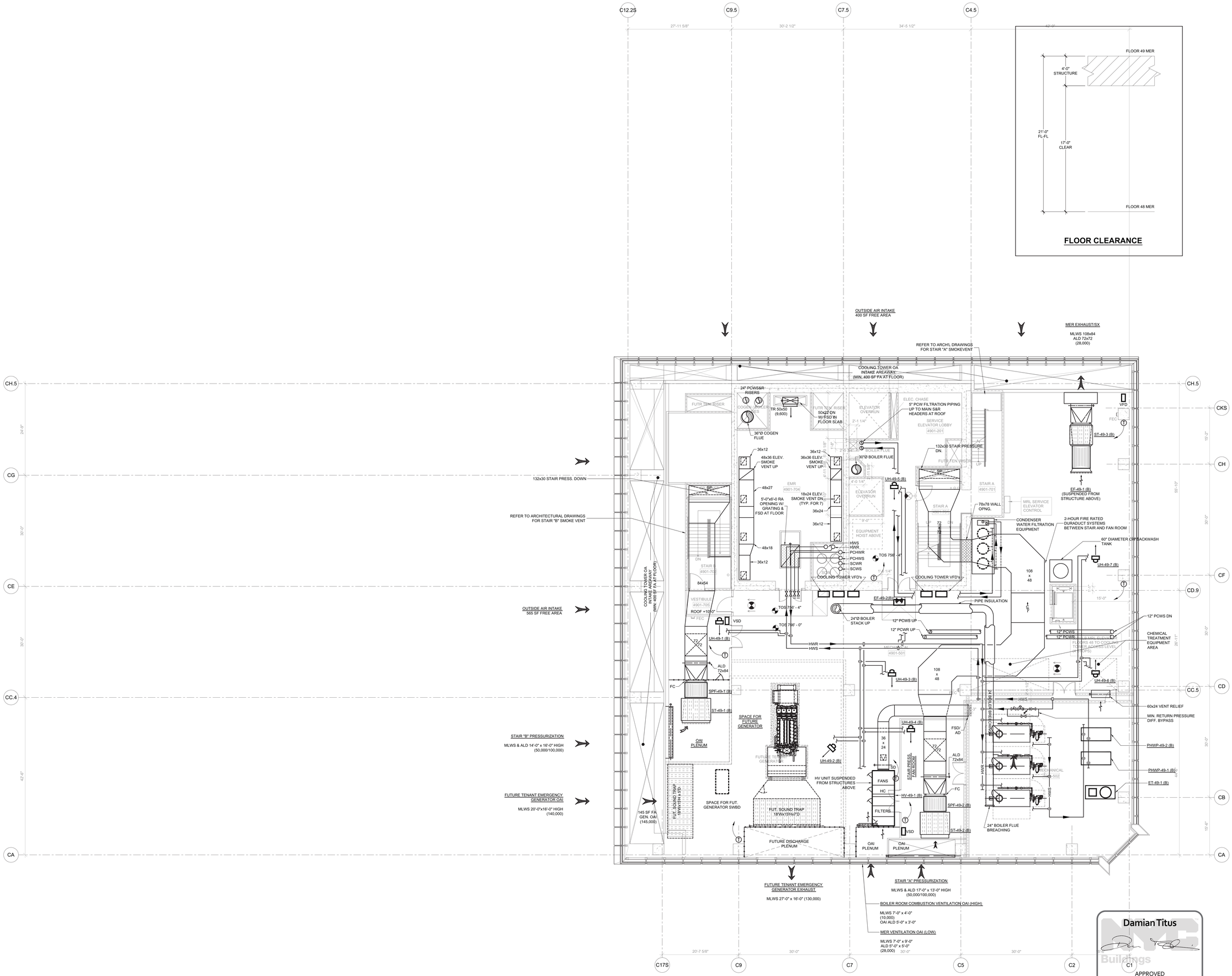

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No.	Issue	Date
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1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M1-4901
Drawing Title
MECHANICAL
PLAN 49 MER
SECTOR 01
Drawing Number
M1-4901
B-SCAN Drawing Number
M-250.00

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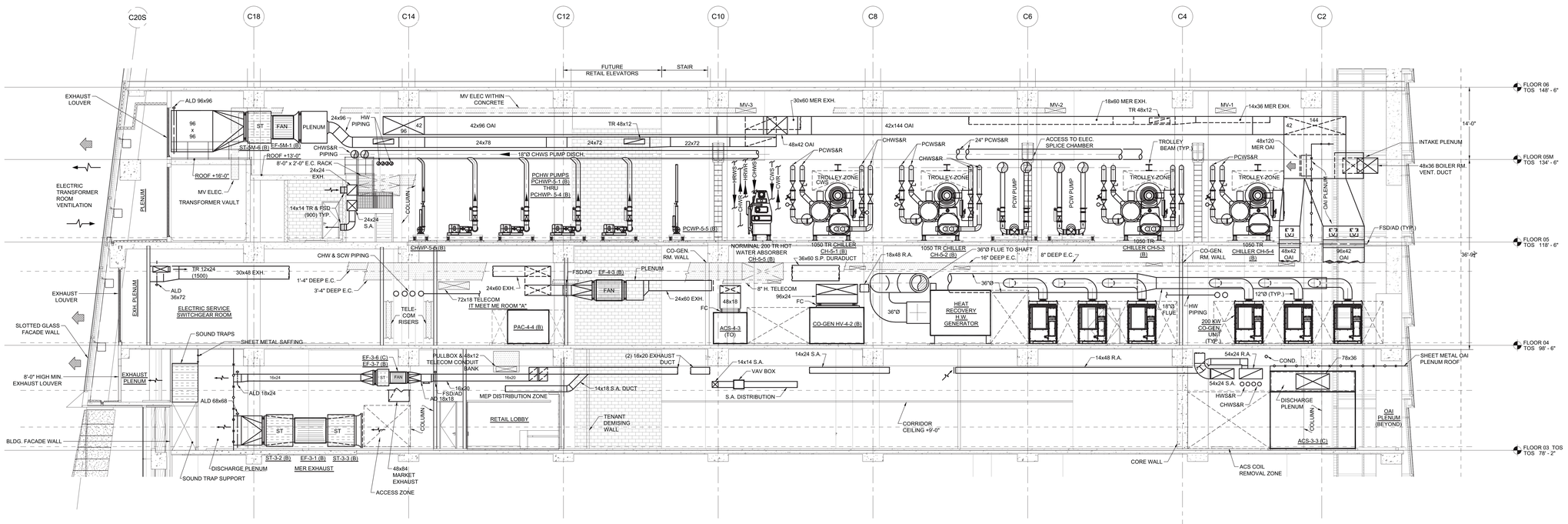

SECTION 'A-A' - NORTH OF CORE LOOKING NORTH FLOORS 3 TO 6

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

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No.	Issue	Date
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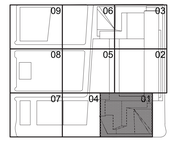
1	DF-21 MECHANICAL	01-25-2013

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M2-0101

Drawing Title
MECHANICAL SECTIONS SHEET NO.1

Drawing Number
M2-0101

B-SCAN Drawing Number
M-301.00

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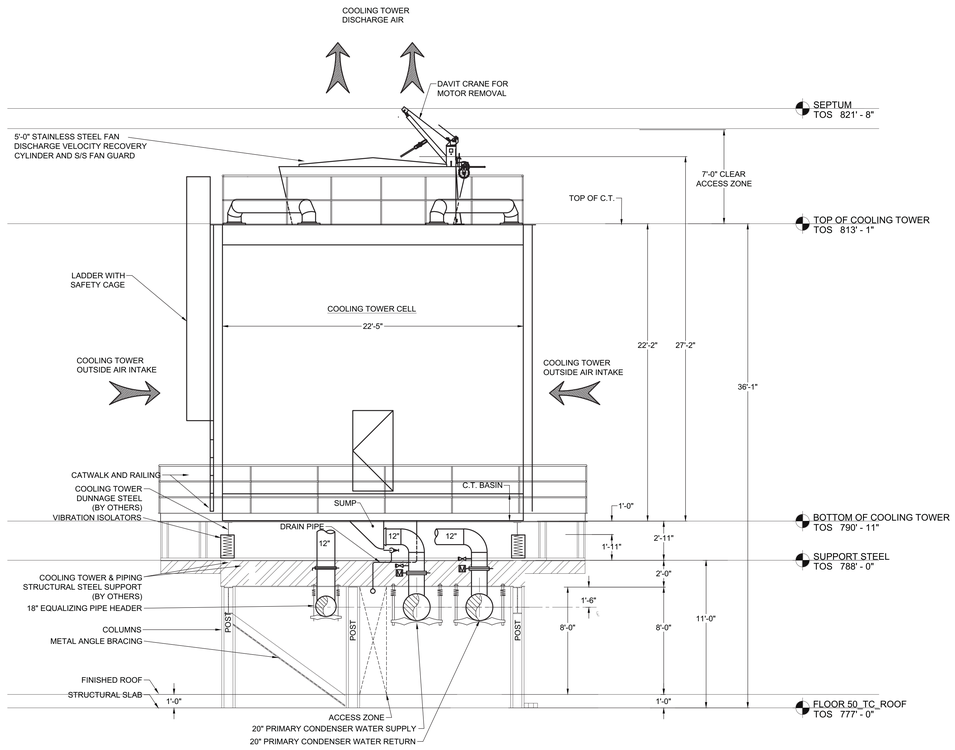
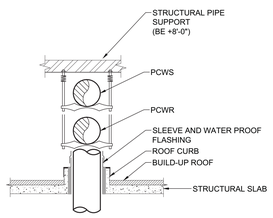
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M1-5001.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:18 AM



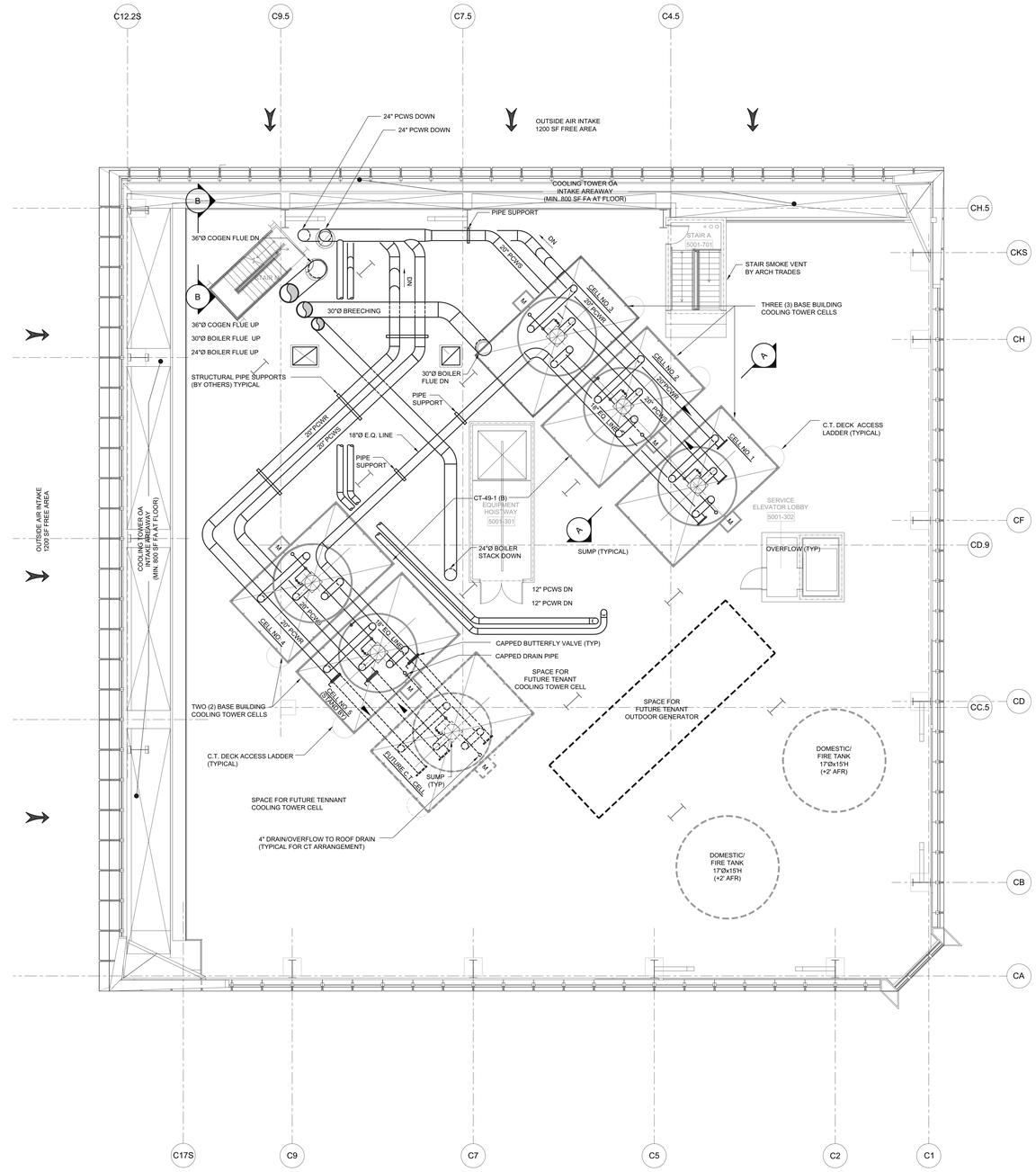
SECTION A-A

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



SECTION B-B

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



NOTES:

1. PROVIDE PRIMARY CONDENSER WATER FILTRATION PIPING CONNECTIONS AT ROOF LEVEL WITH ELECTRIC HEAT TRACE CABLE.
2. COOLING TOWER ACCESS STAIRS AND GRADING WITH HANDRAILS TO BE PROVIDED BY ARCHITECTURAL TRADE.

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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M1-5001

Drawing Title
MECHANICAL
PLAN 50 ROOF
SECTOR 01

Drawing Number
M1-5001
B-SCAN Drawing Number
M-251.00

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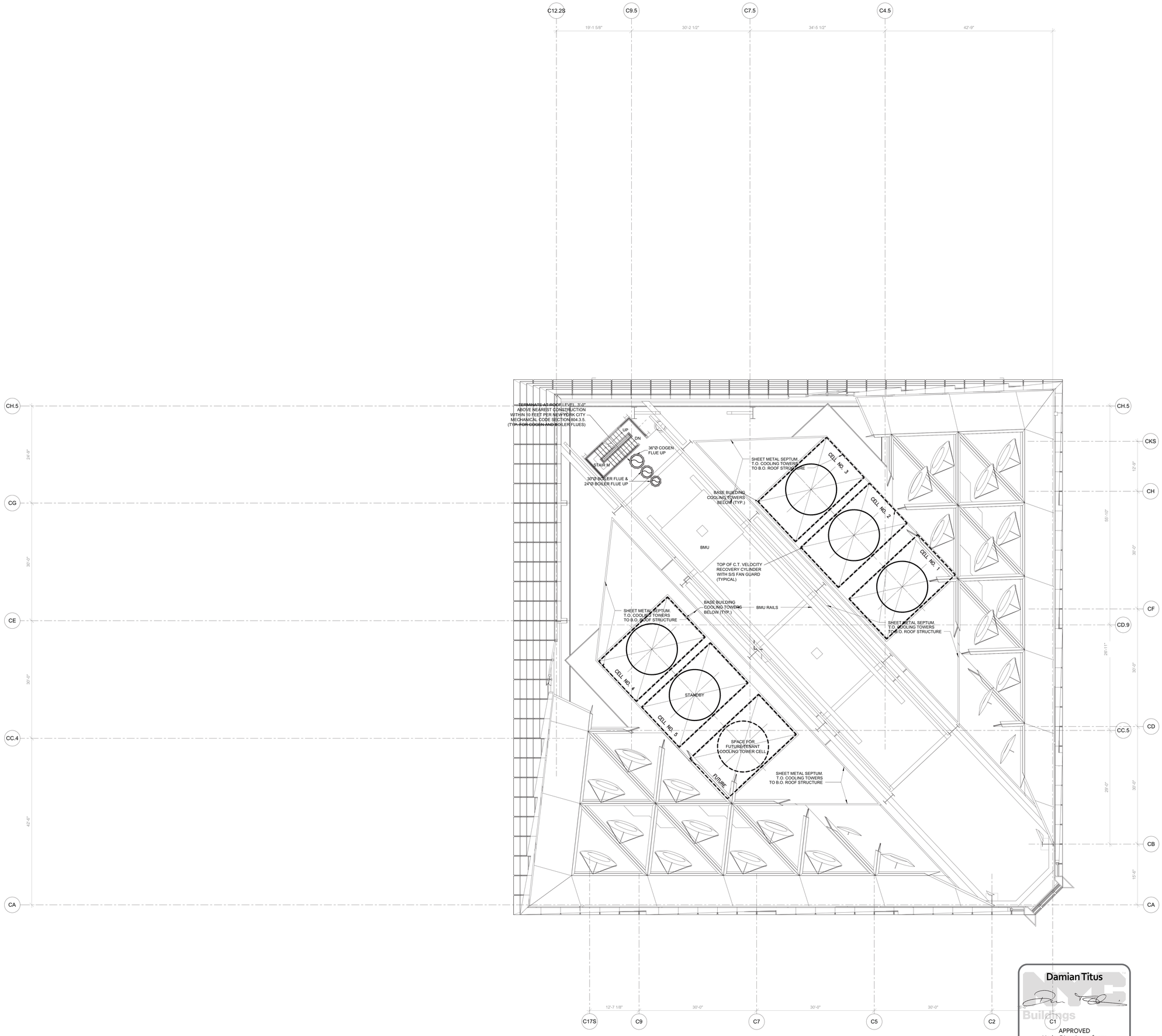

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1	ISSUED FOR FILING	08-20-2012

Key Plan

Date
01-25-2013
Project No.
14752.A.000
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Sheet Number
HYE-TC-M1-5101

Drawing Title
MECHANICAL
PLAN 51 BMU
SECTOR 01

Drawing Number
M1-5101
B-SCAN Drawing Number
M-252.00

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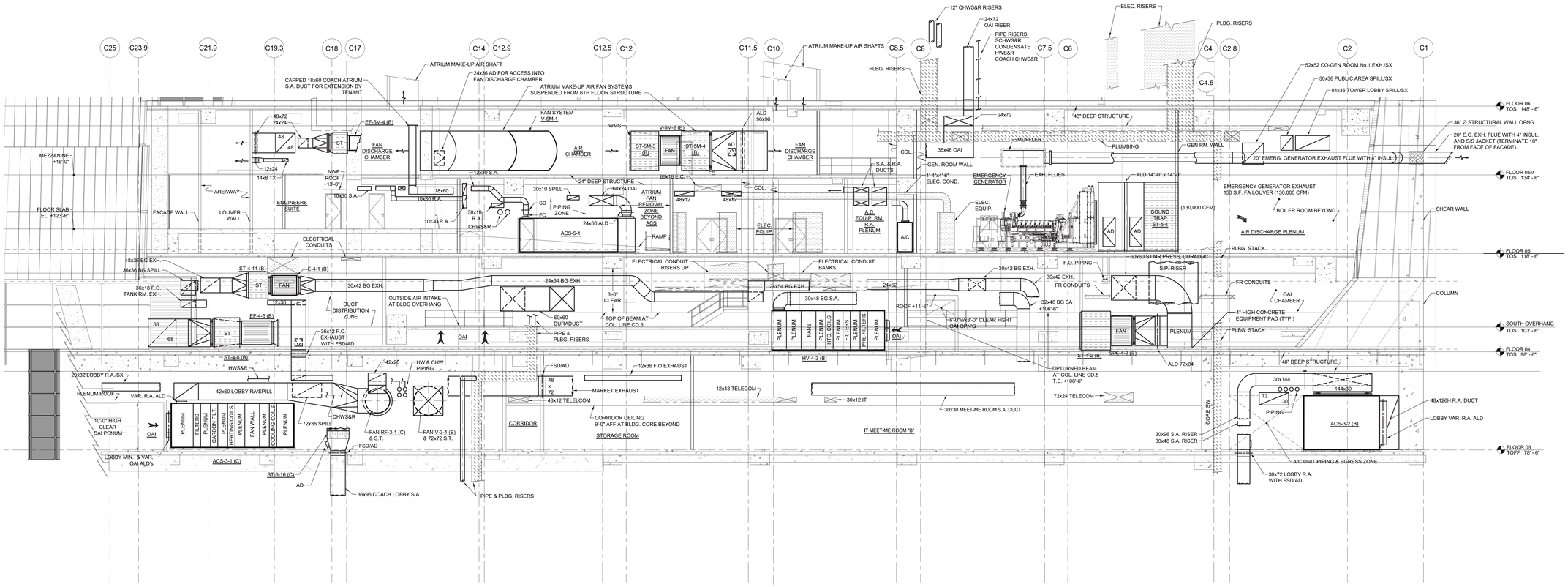

SECTION 'B-B' - SOUTH OF CORE LOOKING NORTH FLOORS 3 TO 6

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

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1	DI-21 MECHANICAL	01-25-2013

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14752.A.000
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Sheet Number
HYE-TC-M2-0101

Drawing Title
MECHANICAL SECTIONS SHEET NO.2

Drawing Number
M2-0102

R.K.P. Drawing Number
M-302.00

SHEET 38 OF 71

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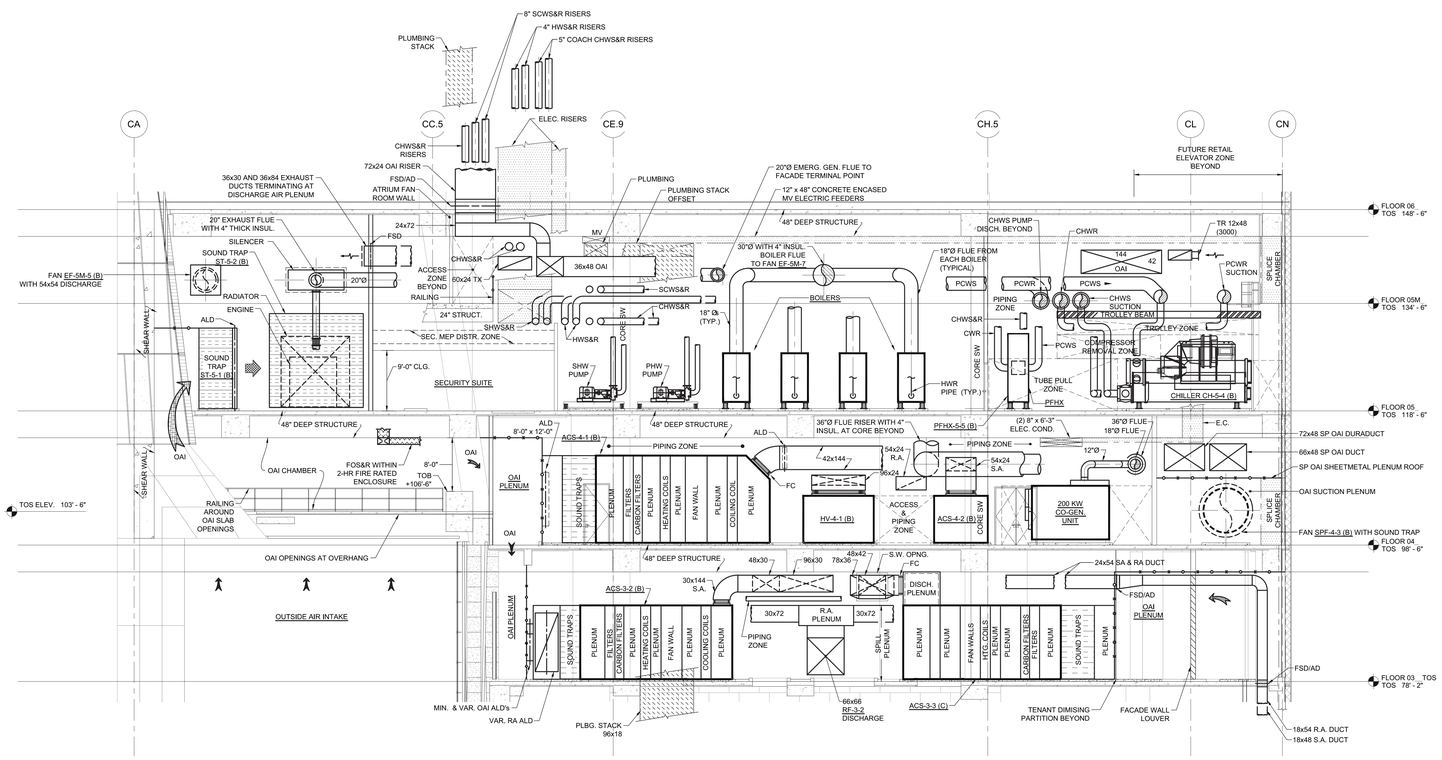

SECTION 'C-C' - EAST OF CORE LOOKING WEST FLOORS 3 TO 6

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

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1	DF-21 MECHANICAL	01-25-2013

Key Plan

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Project No.
14752.A.000
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Sheet Number
HYE-TC-M2-0101

Drawing Title
MECHANICAL SECTIONS SHEET NO.3

Drawing Number
M2-0103

B-SCAN Drawing Number
M-303.00

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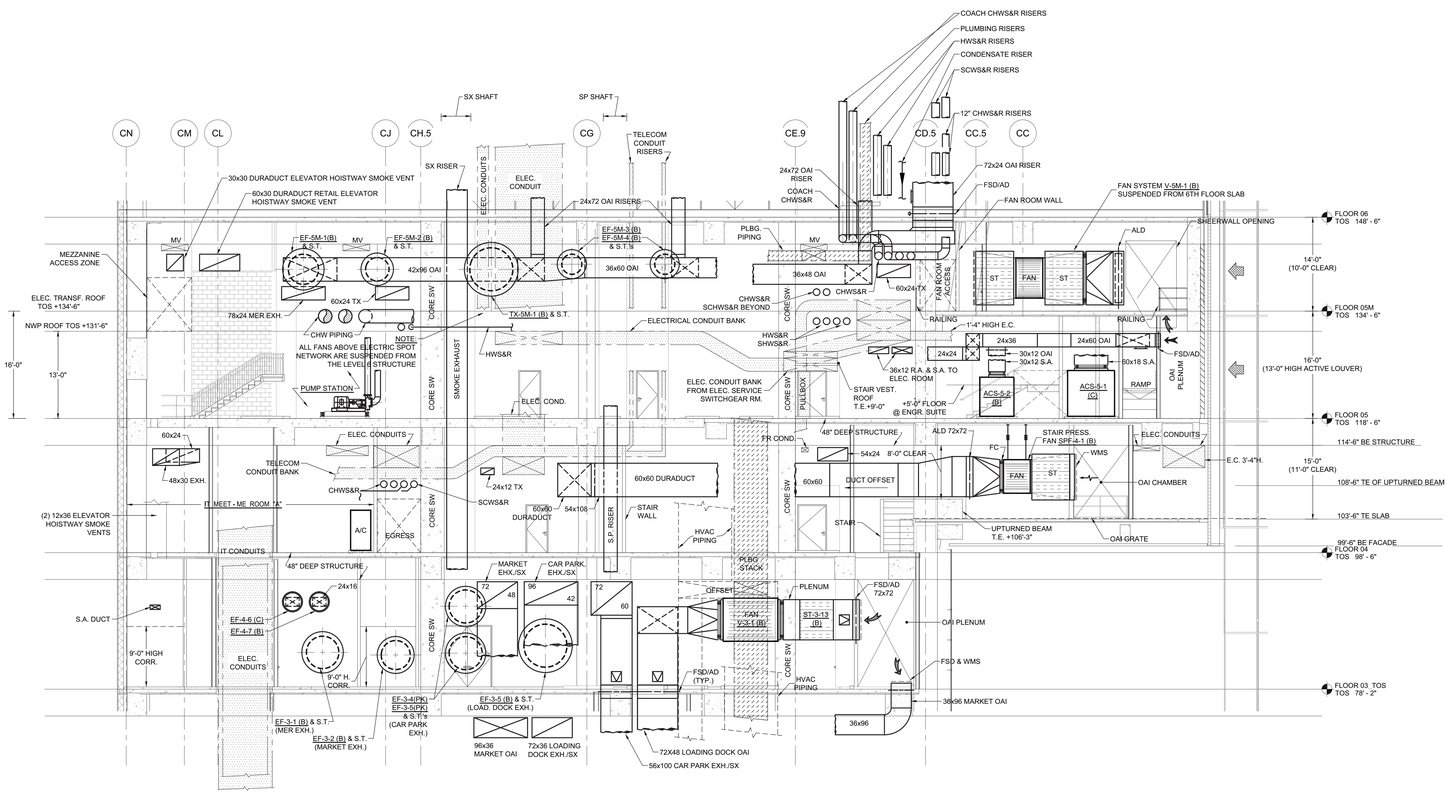

SECTION 'D-D' - WEST OF CORE LOOKING EAST FLOORS 3 TO 6

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

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No.	Issue	Date
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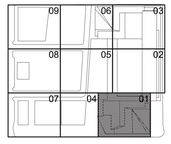
1	DI-21 MECHANICAL	01-25-2013

Key Plan



Date
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Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M2-0101

Drawing Title
MECHANICAL SECTIONS SHEET NO.4

Drawing Number
M2-0104
R-SCAN Drawing Number
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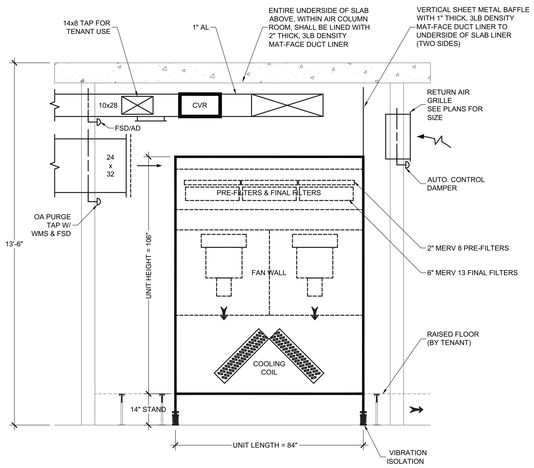
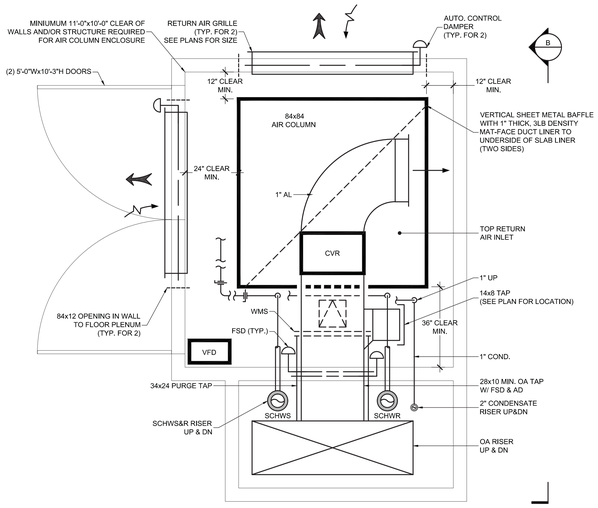
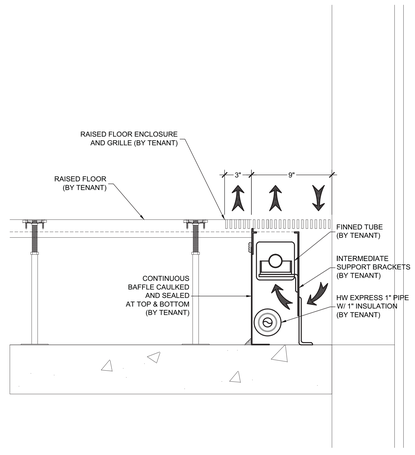


SECTION B
AIR COLUMN SECTION
SCALE: 1/2" = 1'-0"

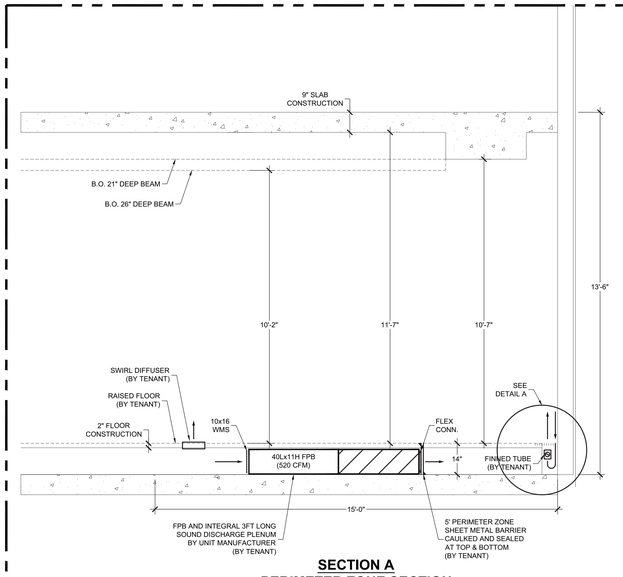


DETAIL B
AIR COLUMN ENCLOSURE
SCALE: 1/2" = 1'-0"



DETAIL A
PERIMETER FINNED TUBE
SCALE: 2" = 1'-0"

FOR REFERENCE ONLY
DETAIL DESIGN BY TENANT



SECTION A
PERIMETER ZONE SECTION
SCALE: 1/2" = 1'-0"

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DETAIL DESIGN BY TENANT

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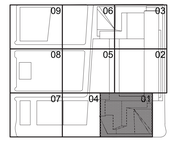
1	ISSUED FOR FILING	08-20-2012

Key Plan



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01-25-2013
Project No.
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Sheet Number
HYE-TC-M4-0101

Drawing Title
MECHANICAL
ENLARGED TYPICAL
UNDERFLOOR AIR
DISTRIBUTION DETAILS

Drawing Number
M4-0101
B-SCAN Drawing Number
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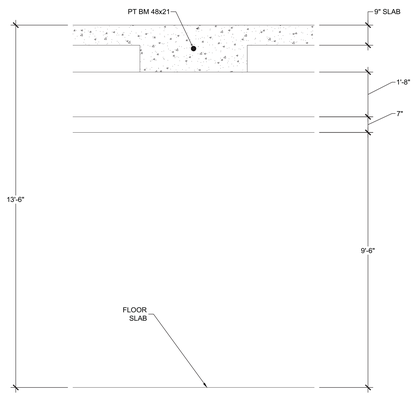
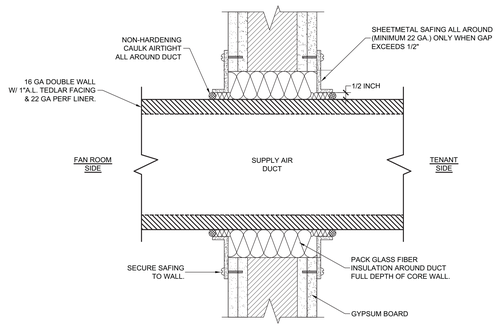


13'-6" FL - FL
- 1'-9" (21" DEEP BEAM)
11'-9"
- 9'-6" (HUNG CEILING)
1'-10"
- 0'-7" (CLEAR ZONE)
1'-8" (CLEAR BETWEEN CLEAR ZONE AND BOTTOM OF BEAM)

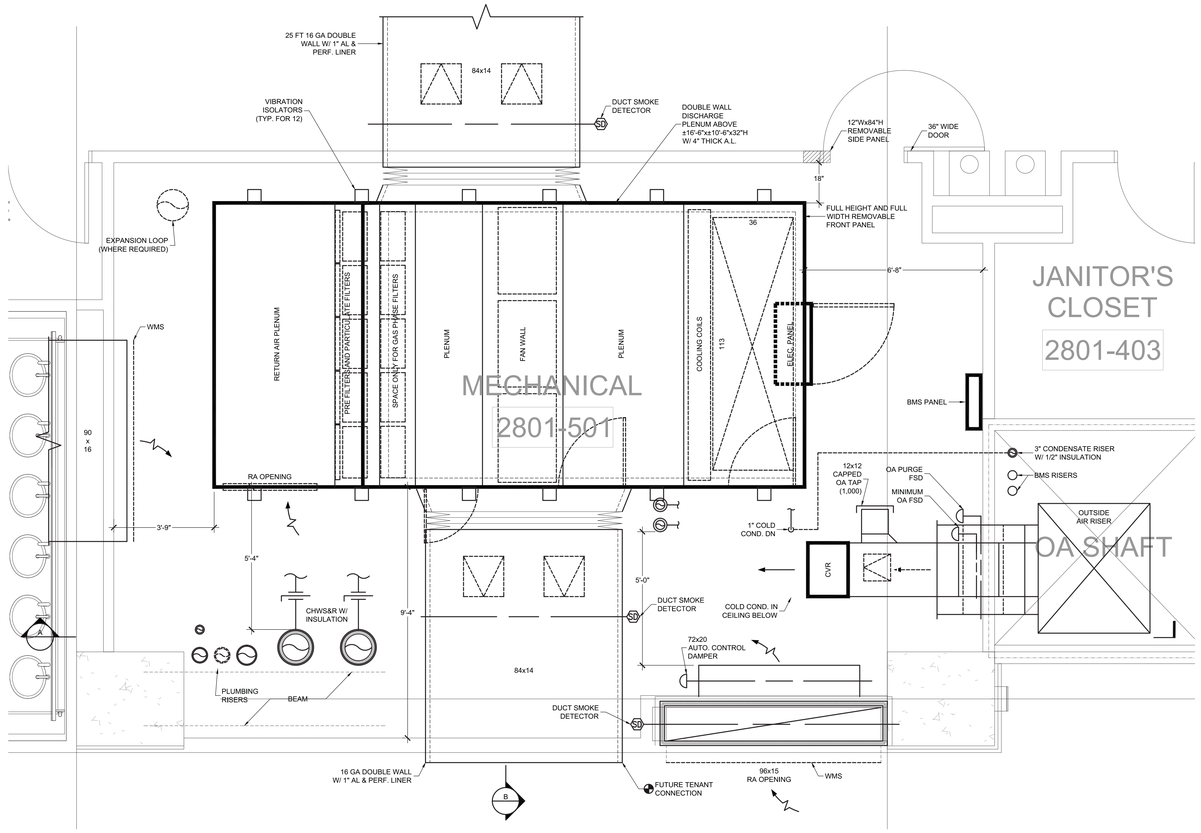
TYPICAL FLOOR BEAM CLEARANCE

SCALE: 1/2" = 1'-0"



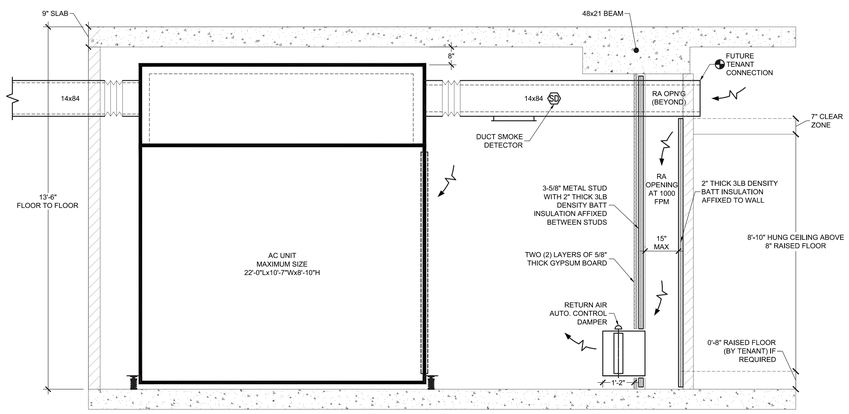
FAN ROOM DUCT PENETRATION (NON-RATED PARTITIONS)

NOT TO SCALE



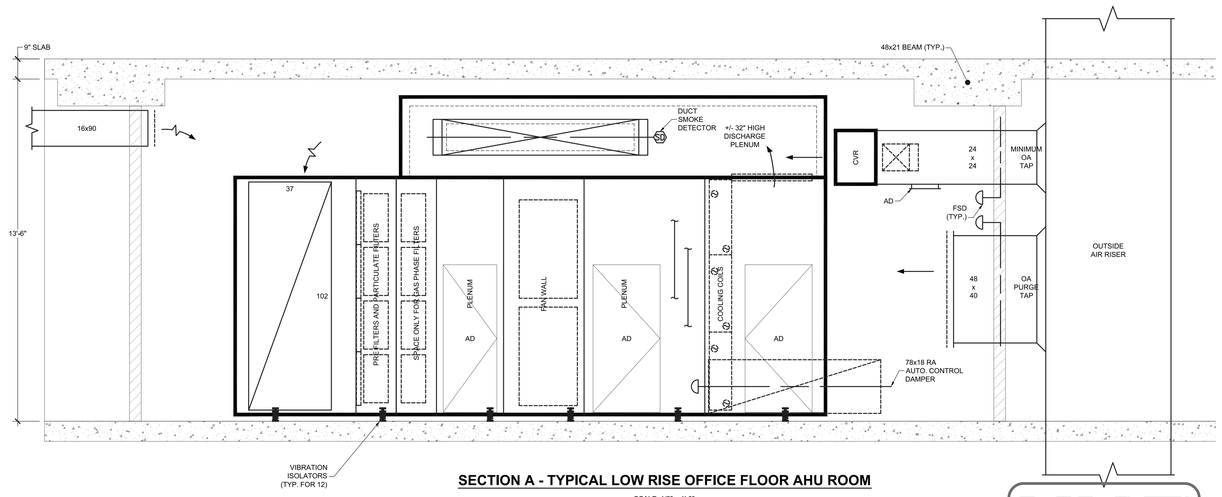
PART PLAN - TYPICAL LOW RISE OFFICE FLOOR AHU ROOM

SCALE: 1/2" = 1'-0"



SECTION B - TYPICAL LOW RISE OFFICE FLOOR AHU ROOM

SCALE: 1/2" = 1'-0"



SECTION A - TYPICAL LOW RISE OFFICE FLOOR AHU ROOM

SCALE: 1/2" = 1'-0"

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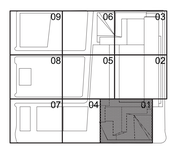
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M4-0102

Drawing Title
MECHANICAL
ENLARGED TYPICAL
AHU ROOM DETAILS

Drawing Number
M4-0102
B-SCAN Drawing Number
M-402.00

SHEET 42 OF 71

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-08-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M4-0102.dwg Plotted by: alan turnstead Plot Time: 8/3/2013 10:19 AM

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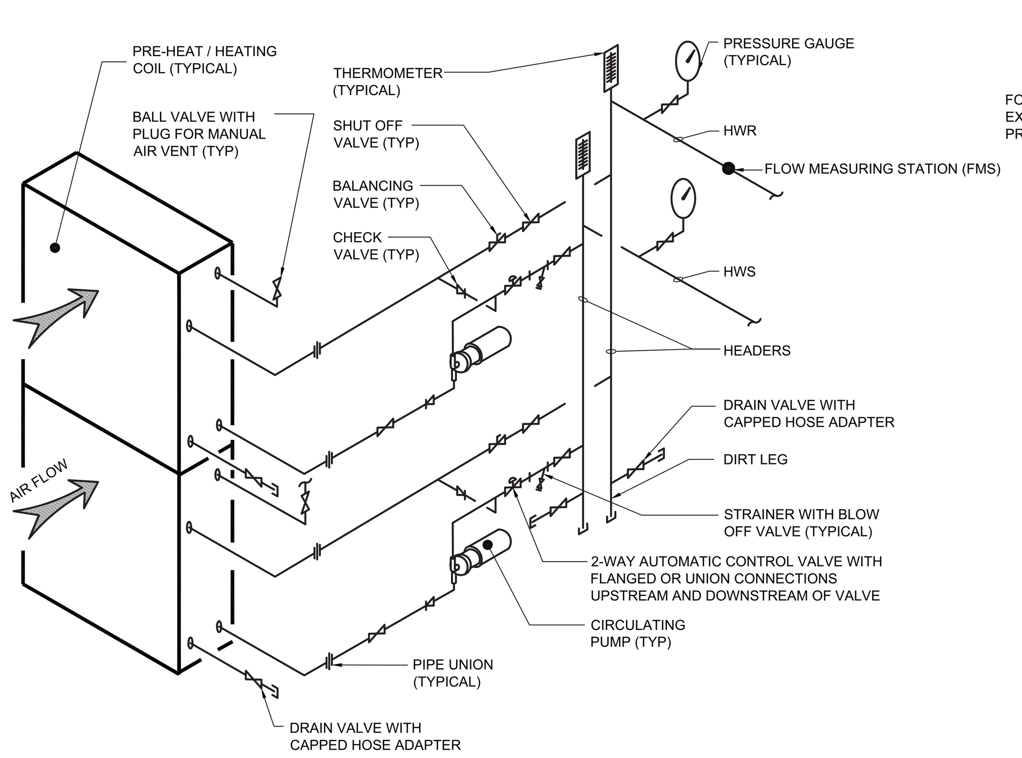
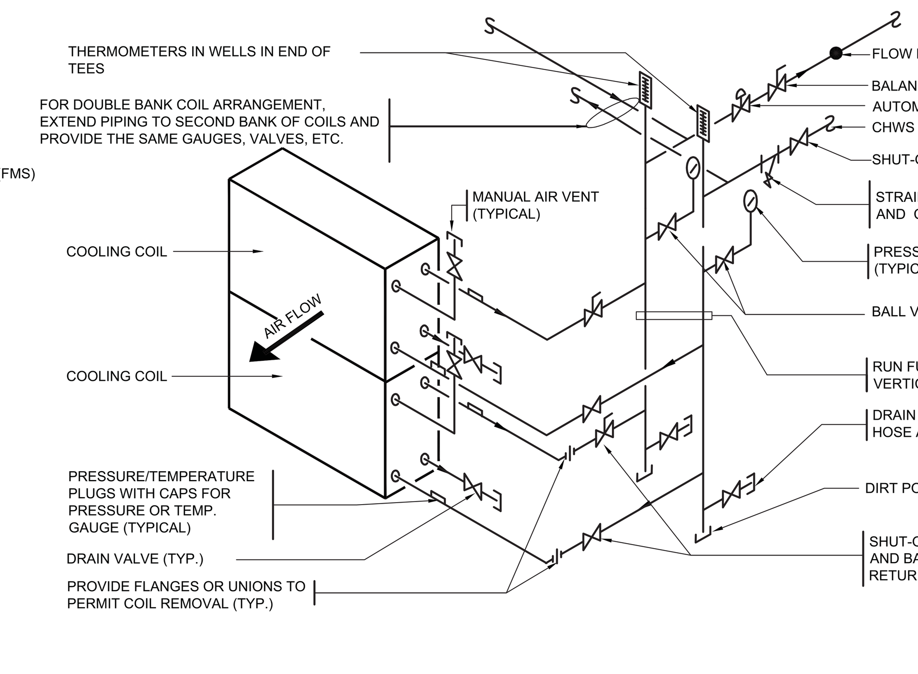
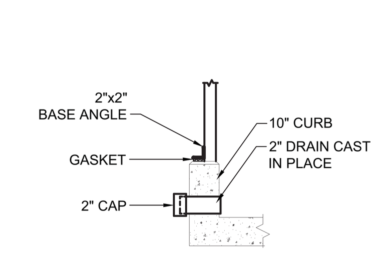


HOT WATER PRE-HEAT / HEATING COIL PIPING CONNECTION DETAIL



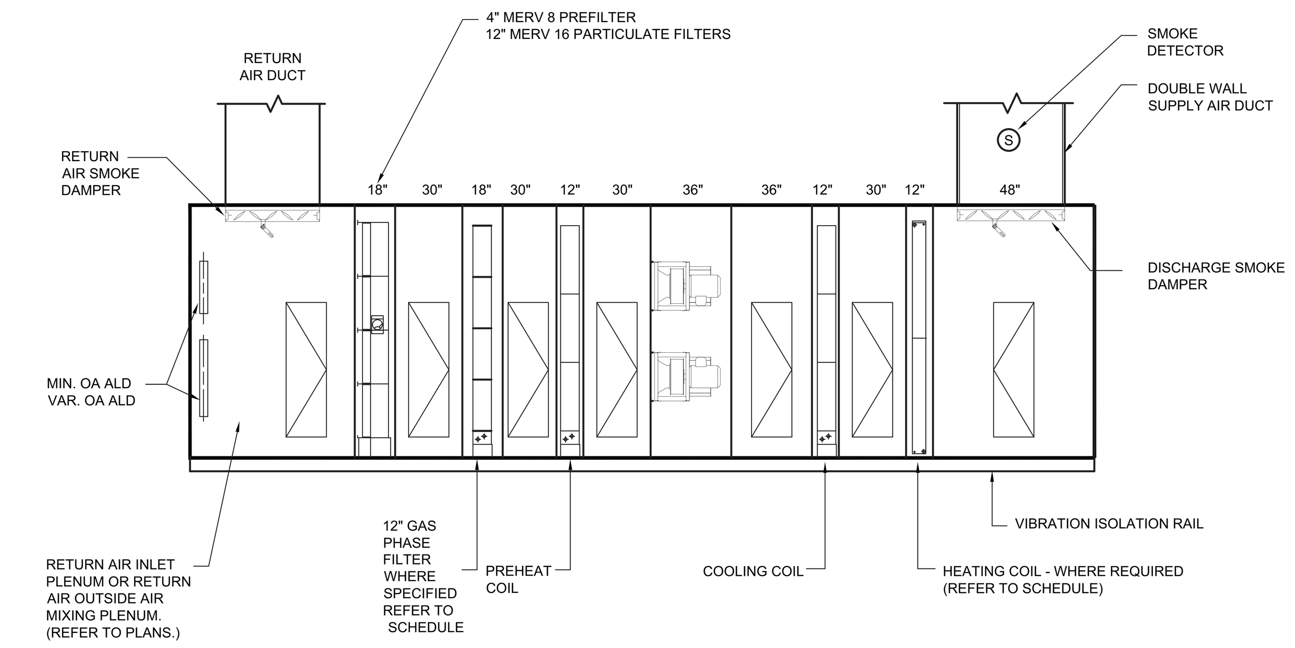
NOTES:
1. ALL VERTICAL HEADERS TO RUN FULL SIZE FROM BRANCH CONNECTION TO VERTICAL RISERS.
2. ALL HORIZONTAL RUNOUTS BETWEEN COILS AND VERTICAL HEADER SHALL BE COIL CONNECTION SIZE.

CHILLED WATER COIL END PIPED CONNECTIONS

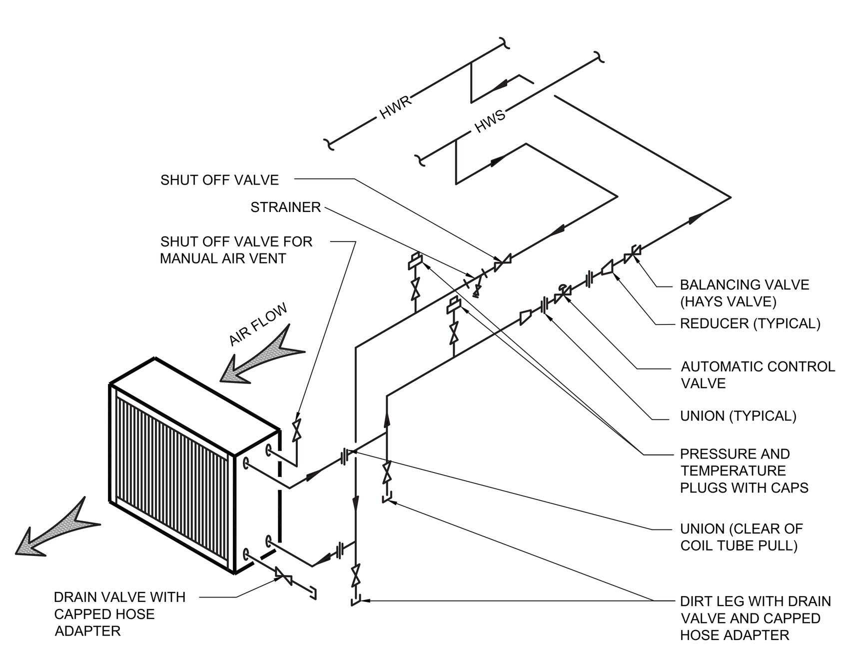


DETAIL 'A'

NOTES:
1. ALL CONCRETE BASES SHALL BE HYDROLYTIC AND MONOLITHIC.
2. BASE DRAINS SHALL BE PROVIDED WITH FLAPPER VALVES AND RUN TO FLOOR OR FUNNEL DRAIN AS SHOWN.
3. ALL DRAIN LINES TO BE 2"Ø.
4. PROVIDE STAINLESS STEEL SAFING BETWEEN CASING AND ALL COIL AND FILTER BANKS AND CAULK AIR TIGHT TO PREVENT ANY BY-PASS OF AIR.
5. ACCESS DOOR IN FAN SECTION SHALL BE LOCATED ON DRIVE SIDE OF FAN.



PACKAGED MODULAR CENTRAL OUTSIDE AIR AND CENTRAL AIR CONDITIONING UNIT DETAILS



NOTES:

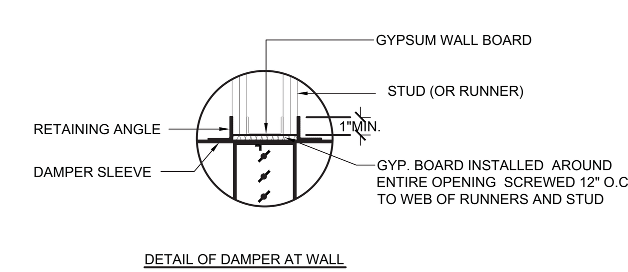
1. PROVIDE ACCESS DOORS UPSTREAM AND DOWNSTREAM OF ALL HEATING COILS.

2. FOR DUCT MOUNTED REHEAT COILS PROVIDE PRESSURE TEMPERATURE PLUGS WITH CAPS IN LIEU OF THERMOMETERS AND TEMPERATURE GAUGES.

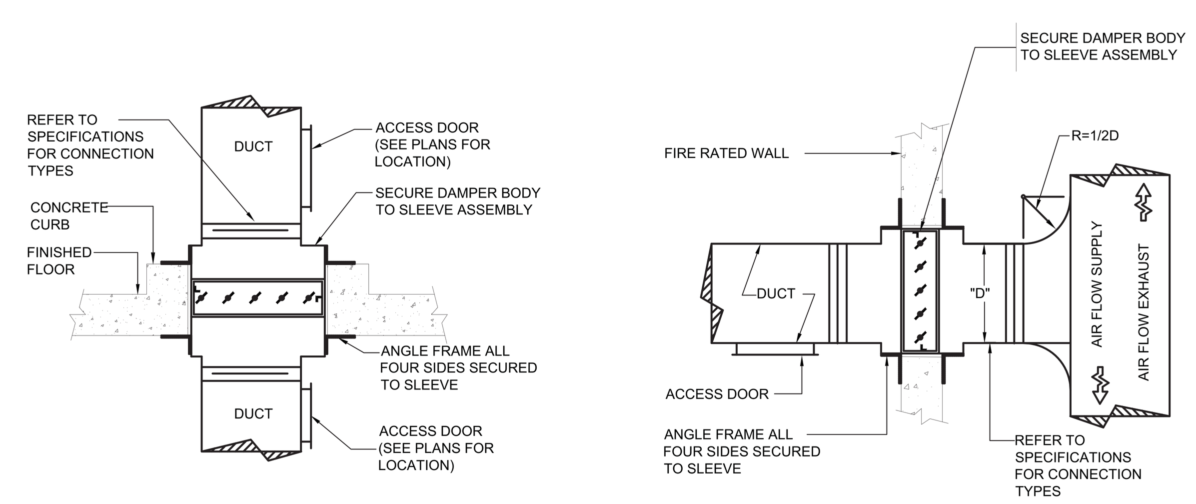
CVR, VAV, FPB OR TERMINAL UNIT HEATING COIL PIPING CONNECTION DETAIL

FIRE/SMOKE DAMPER NOTES:

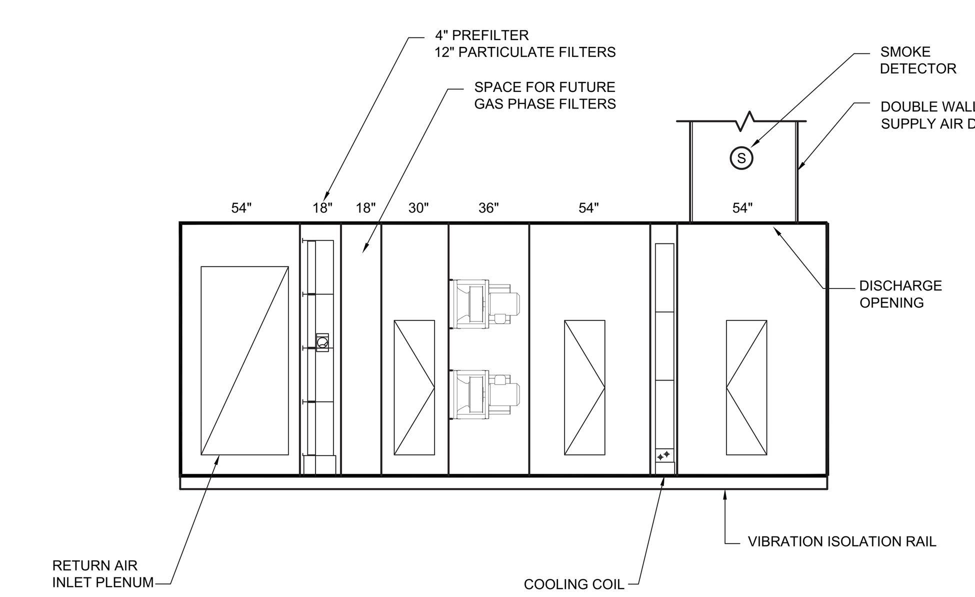
1. DRY WALL FRAMING AT DAMPERS MUST BE IN ACCORDANCE WITH WALL SYSTEM MANUFACTURER'S UL APPROVED DETAILS
2. ALL SLEEVES SHALL BE A MINIMUM OF 14 GAUGE.
3. FIRE DAMPERS ARE TO BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PER UL 555D.
4. FIRE/SMOKE DAMPERS ARE TO BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS PER UL 555S.
5. SEE ARCH'L DWGS FOR STUD LOCATION AT DAMPERS.



DETAIL OF DAMPER AT WALL

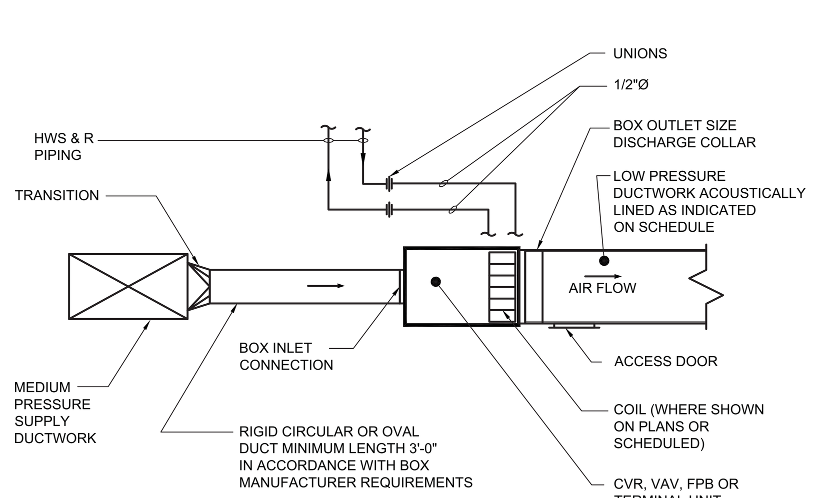


HORIZONTAL AND VERTICAL FIRE/SMOKE DAMPERS



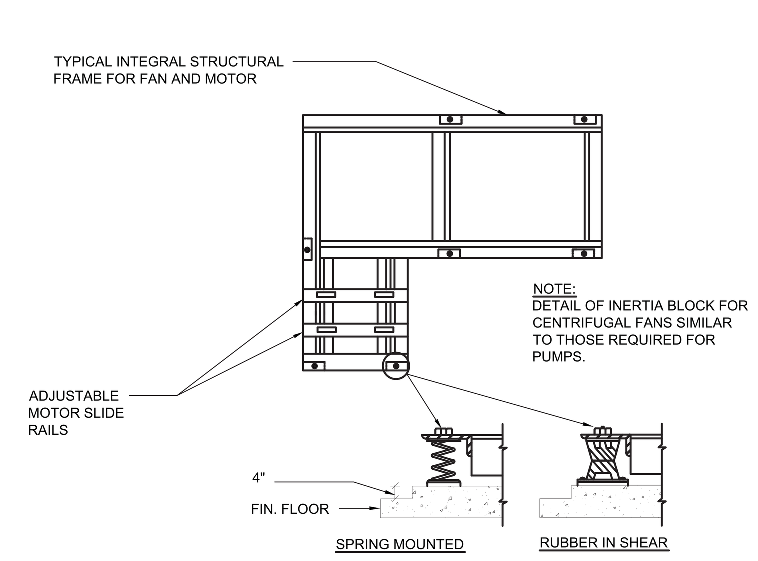
LOCAL FLOOR AIR CONDITIONING UNIT DETAIL

(NOTES: SPACE ONLY WILL BE PROVIDED FOR FUTURE INSTALLATION OF GAS PHASE FILTERS ON LOCAL FLOOR AC UNITS SERVING THE TYPICAL TOWER OFFICE FLOORS)



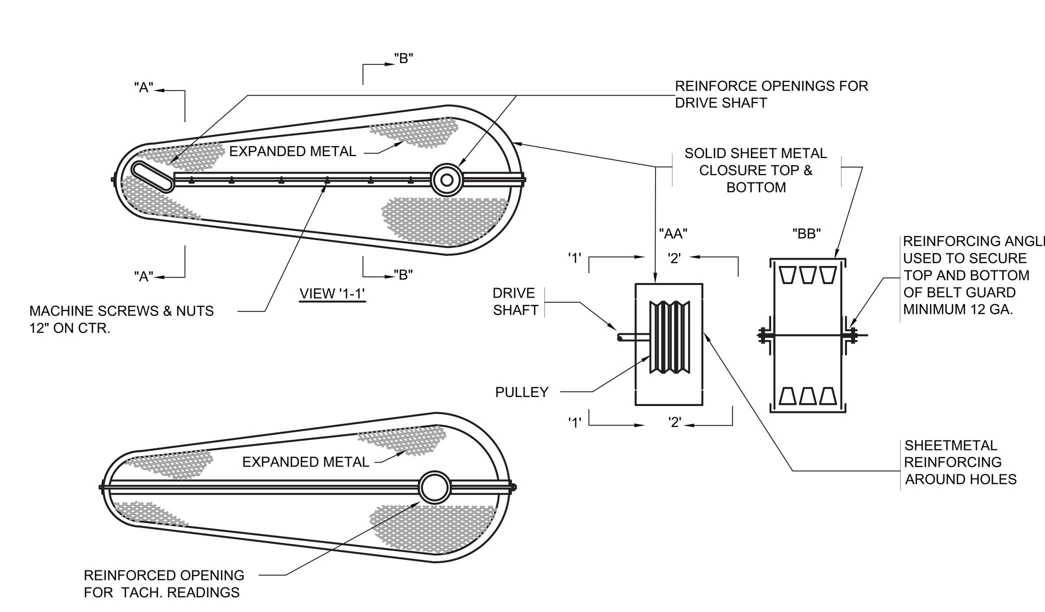
NOTES:
1. SEE HOT WATER HEATING COIL PIPING CONNECTION DETAIL FOR VALVE ARRANGEMENT.
2. ALLOW CLEARANCE ON BOTH SIDES OF COIL FOR PIPING CONNECTIONS AND COIL REMOVAL.

CVR, VAV, FPB OR TERMINAL UNIT WITH REHEAT COIL CONNECTION DETAIL

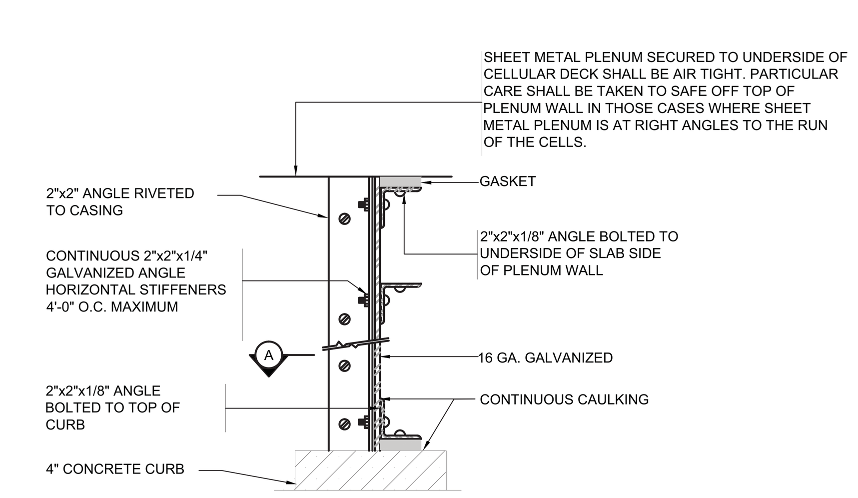


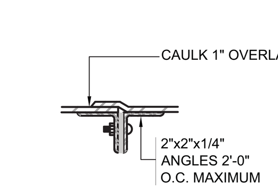
FOR VIBRATION MOUNTING REQUIREMENTS SEE SPECIFICATIONS

TYPICAL CENTRIFUGAL FAN ISOLATION



DRIVE GUARD DETAILS





SECTION A-A

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

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:10 PM
NYC Development Hub

Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M5-0101.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:19 AM

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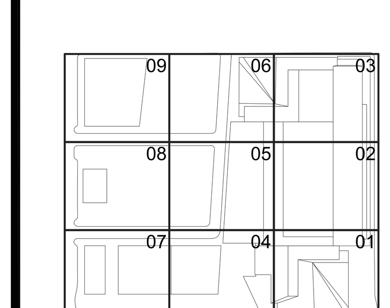

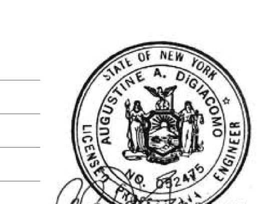

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M5-0101
Drawing Title
MECHANICAL DETAIL SHEET NO.1
Drawing Number M5-0101
B-SCAN Drawing Number M-501.00

SHEET 43 OF 71

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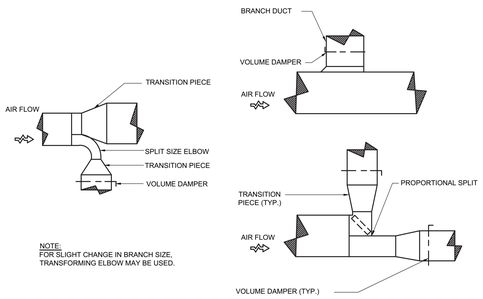
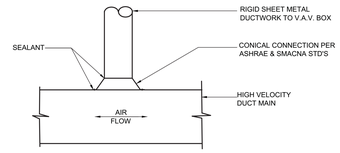
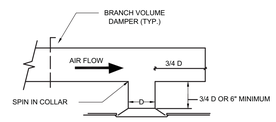


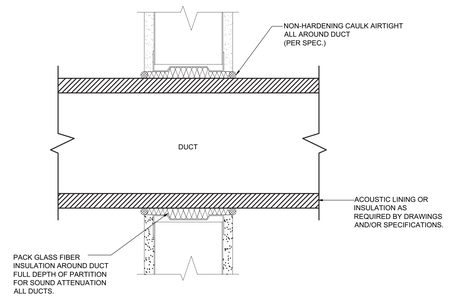
LOW VELOCITY DUCT CONNECTIONS



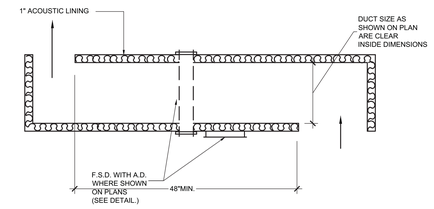
HIGH VELOCITY DUCT CONNECTION



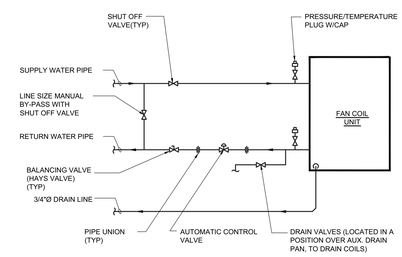
TYPICAL DIFFUSER INSTALLATION



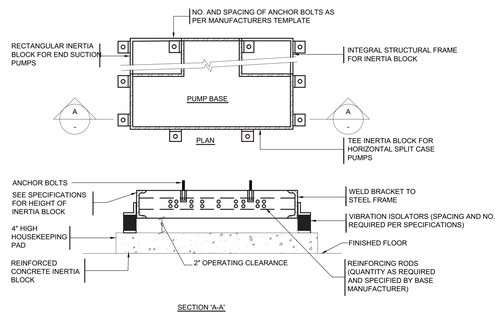
TYPICAL DUCT AT WALL PENETRATION (NON-RATED PARTITIONS)



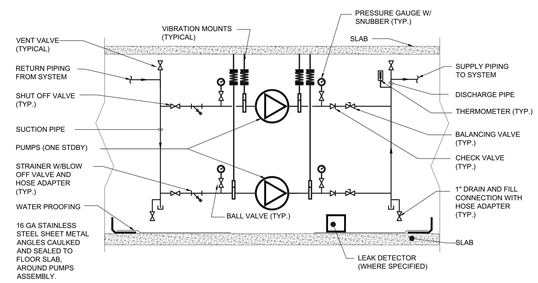
TRANSFER DUCT DETAIL



TYPICAL TWO PIPE FAN COIL UNIT PIPING CONNECTION DETAIL



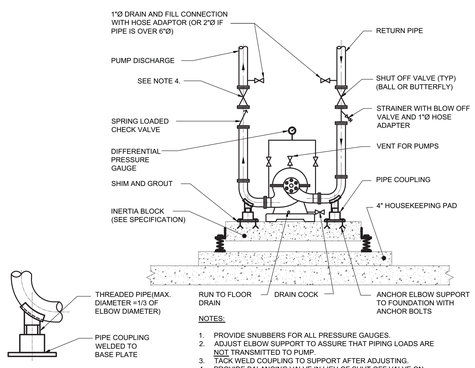
TYPICAL PUMP ISOLATION



NOTES:

1. ALL PIPING AND EQUIPMENT SHALL BE RESILIENTLY SUPPORTED AS PER SPECIFICATIONS.
2. REFER TO DETAIL FOR CYCLONE SEPARATOR PIPING ARRANGEMENT.

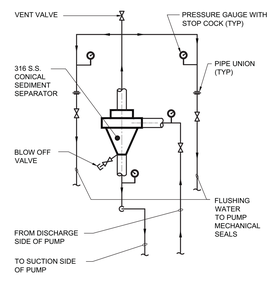
INLINE PUMP ASSEMBLY DETAIL



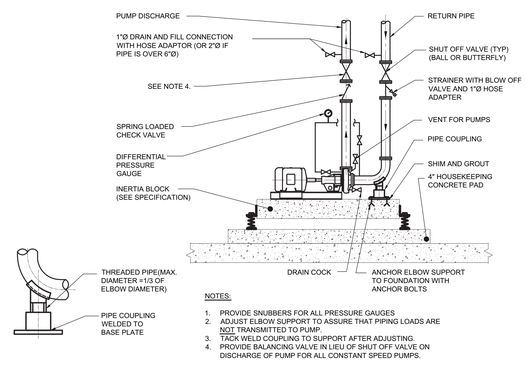
NOTES:

1. PROVIDE SNUBBERS FOR ALL PRESSURE GAUGES.
2. ADJUST ELBOW SUPPORT TO ASSURE THAT PIPING LOADS ARE NOT TRANSMITTED TO PUMP.
3. TACK WELD COUPLING TO SUPPORT AFTER ADJUSTING.
4. PROVIDE BALANCING VALVE IN LIEU OF SHUT OFF VALVE ON DISCHARGE OF PUMP FOR ALL CONSTANT SPEED PUMPS.

HORIZONTAL SPLIT-CASE PUMP DETAIL WITH VARIABLE SPEED DRIVE



PIPING ASSEMBLY FOR EXTERNALLY FLUSHED MECHANICAL SEALS AT VERTICAL AND HORIZONTAL SPLIT CASE PUMP



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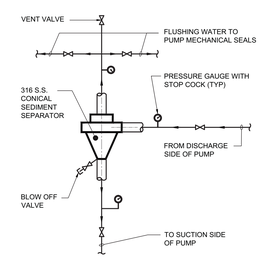
END SUCTION PUMP DETAIL WITH VARIABLE SPEED DRIVE



PIPING ASSEMBLY FOR EXTERNALLY FLUSHED MECHANICAL SEALS AT END SUCTION PUMP

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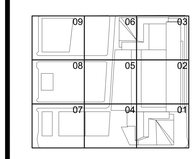

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01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M5-0102

Drawing Title
MECHANICAL DETAIL SHEET NO.2

Drawing Number
M5-0102

R-ICAN Drawing Number
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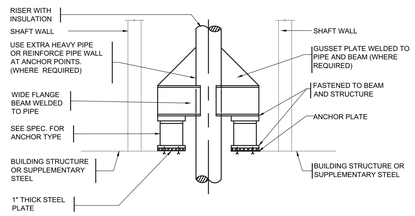
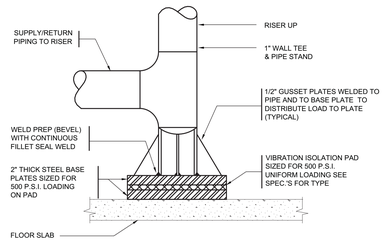
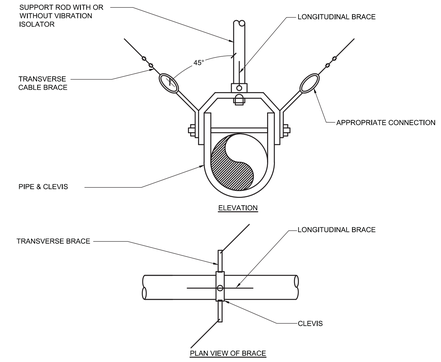


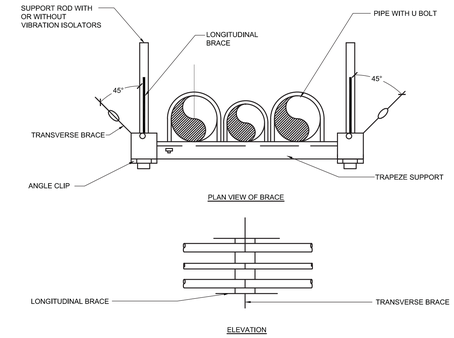
TYPICAL ANCHOR AND GUIDE SUPPORT DETAILS FOR PIPE RISERS



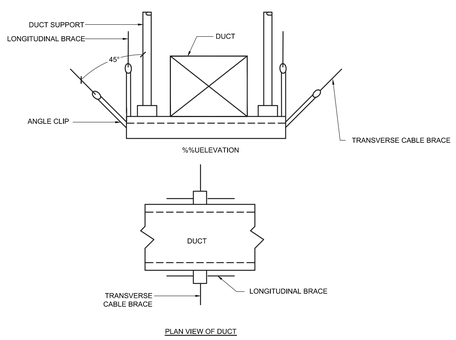
TYPICAL BASE SUPPORT DETAIL FOR PIPE RISERS



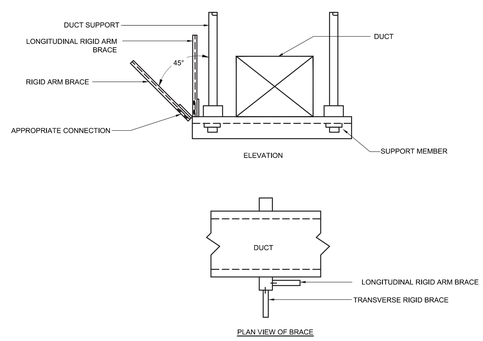
SEISMIC CABLE BRACE FOR PIPEWORK



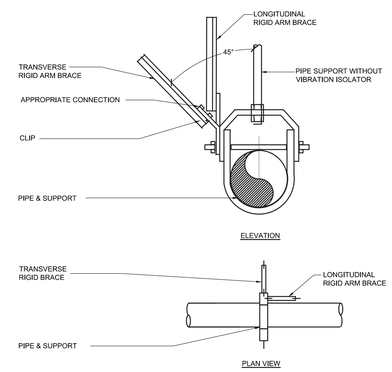
SEISMIC TWO DIRECTIONAL CABLE BRACE FOR PIPEWORK ON TRAPEZE



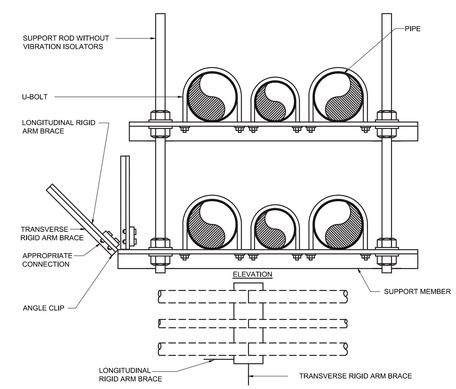
SEISMIC TWO DIRECTIONAL CABLE BRACE FOR DUCT



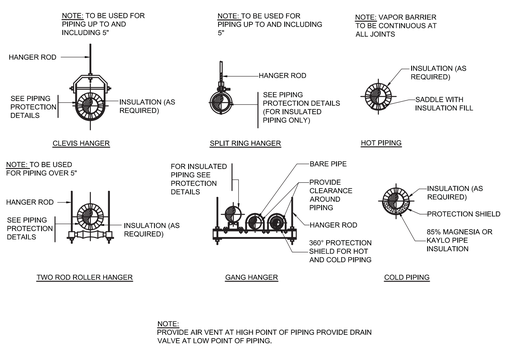
SEISMIC SINGLE RIGID ARM BRACE FOR DUCTS



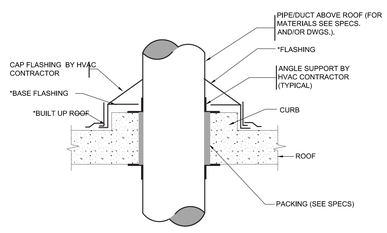
SEISMIC RIGID ARM NON-INSULATED PIPE BRACE



SEISMIC RIGID ARM BRACE FOR NON-ISOLATED PIPES

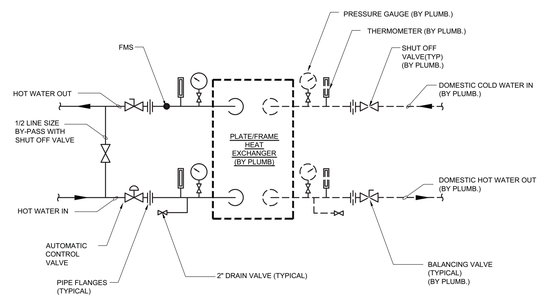


NON-SEISMIC PIPING SUPPORT AND INSULATION DETAILS



*NOTE: TO BE FURNISHED UNDER OTHER SECTIONS OF THE SPECIFICATION.

CURB AND FLASHING DETAIL FOR PIPE/DUCT PENETRATIONS AT ROOF



TYPICAL DOMESTIC HOT WATER PLATE-AND-FRAME HX PIPING CONNECTION DETAIL

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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No.	Issue	Date
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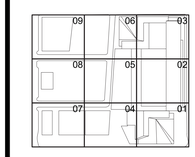
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M5-0103

Drawing Title
MECHANICAL DETAIL SHEET NO.3

Drawing Number
M5-0103
B-SCAN Drawing Number
M-503.00

SHEET 45 OF 71

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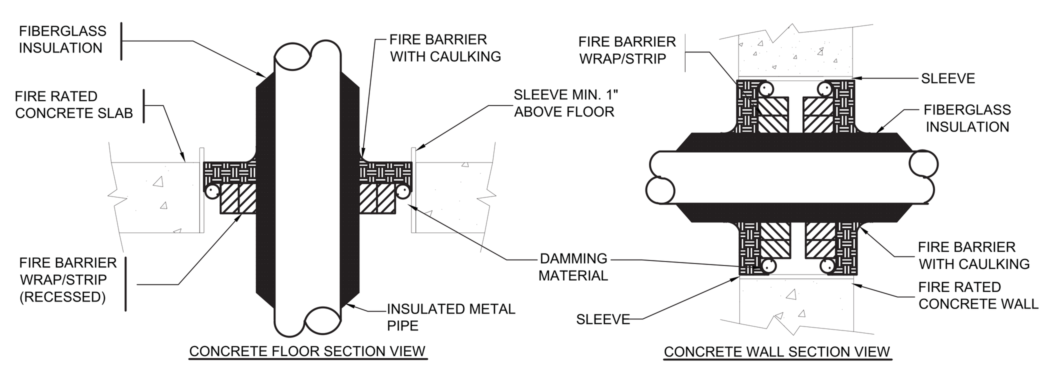
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M5-0103.dwg Plotted by: alan.tunstead Plot Time: 6/3/2013 10:19 AM



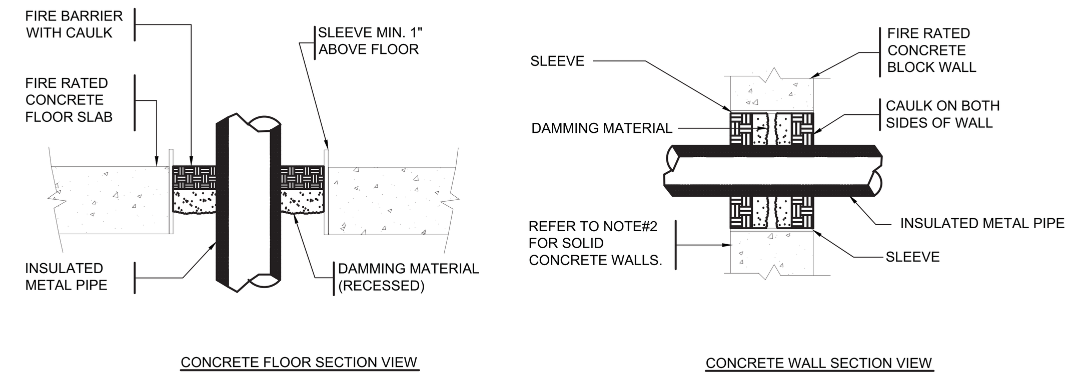
NOTES:
1. WALL PENETRATION FIRESTOPS MUST BE INSTALLED ON BOTH SIDES OF THE WALL, THE FLOOR PENETRATION FIRESTOP IS TO BE INSTALLED FOR THE TOP OF THE FLOOR SURFACE.
2. THE ANNULAR SPACE MUST BE LARGE ENOUGH TO ACCOMODATE THE MIN. NUMBER OF WRAP/STRIPS REQUIRED IN BOTH THE FLOOR OR WALL. THE MINIMUM 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 WRAP	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-20" MAXIMUM INSULATED METAL PIPE THROUGH CONCRETE FLOOR OR WALL



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.

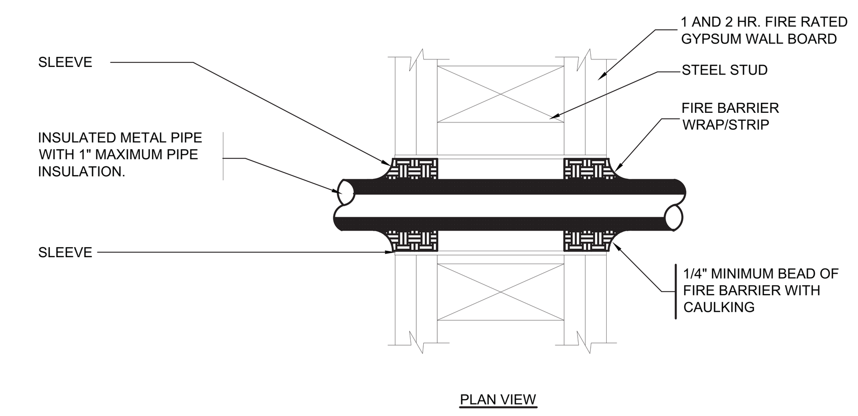
3. PENETRATIONS SHALL BE CAULKED ON BOTH SIDES. SELF LEVELING CAULK SHALL BE USED ON ALL HORIZONTAL SURFACES.

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.

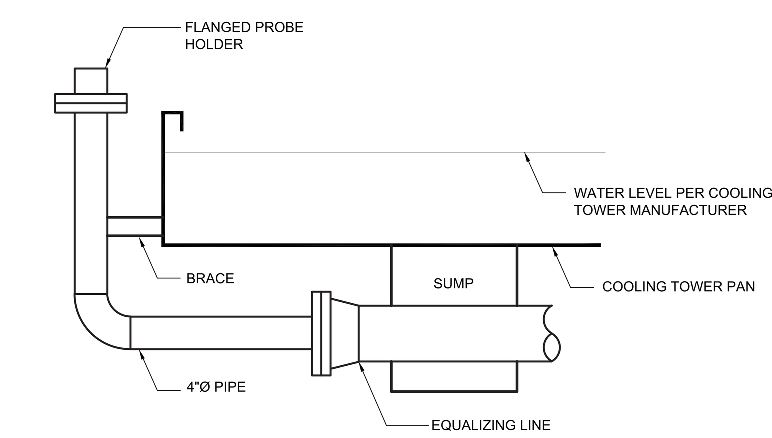
PENETRATION FIRESTOP FOR INSULATED METAL PIPE THROUGH A CONCRETE FLOOR OR WALL



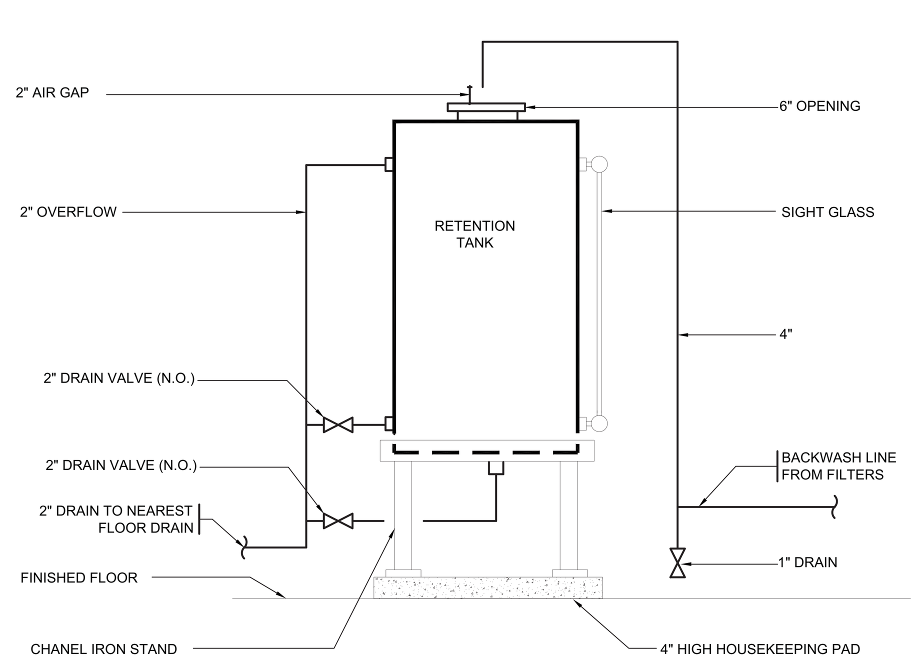
NOTES:

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.

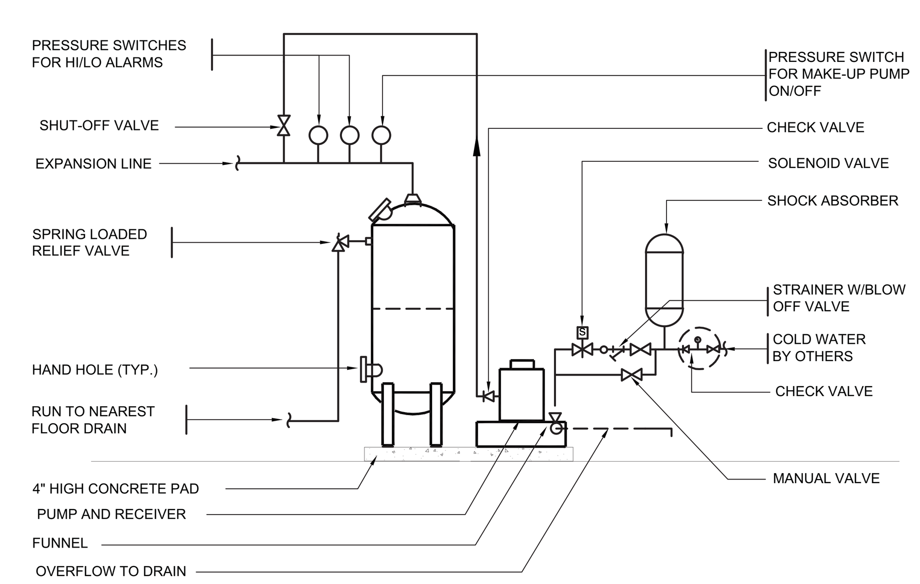
PENETRATION FIRESTOP FOR INSULATED METAL PIPE THROUGH GYPSUM WALL BOARD



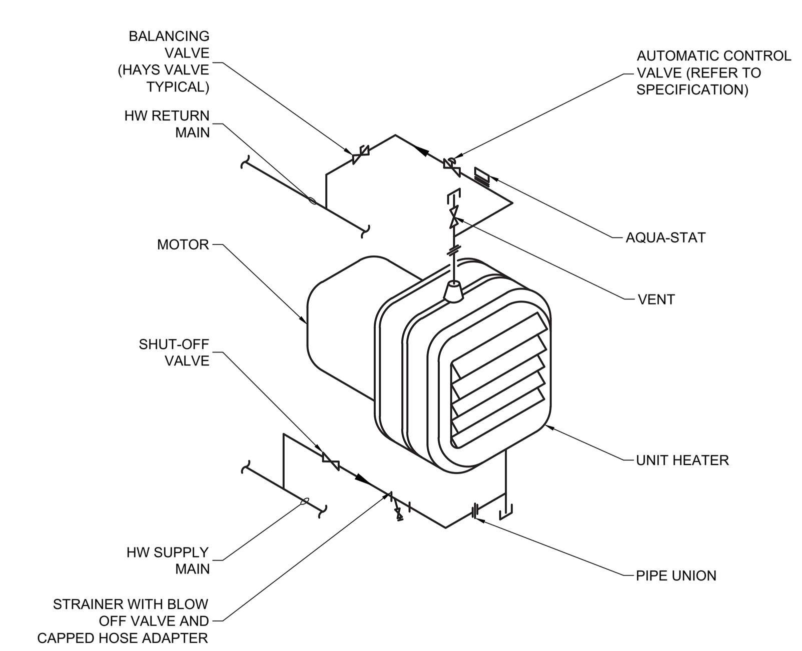
COOLING TOWER MAKE-UP PROBE ARRANGEMENT



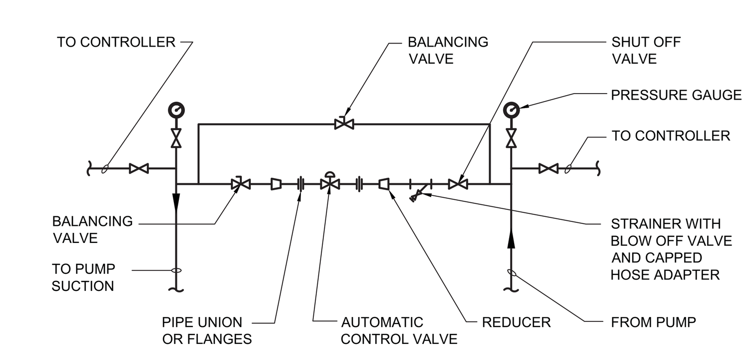
COOLING TOWER FILTRATION SYSTEM BACKWASH AND RETENTION TANK DETAIL



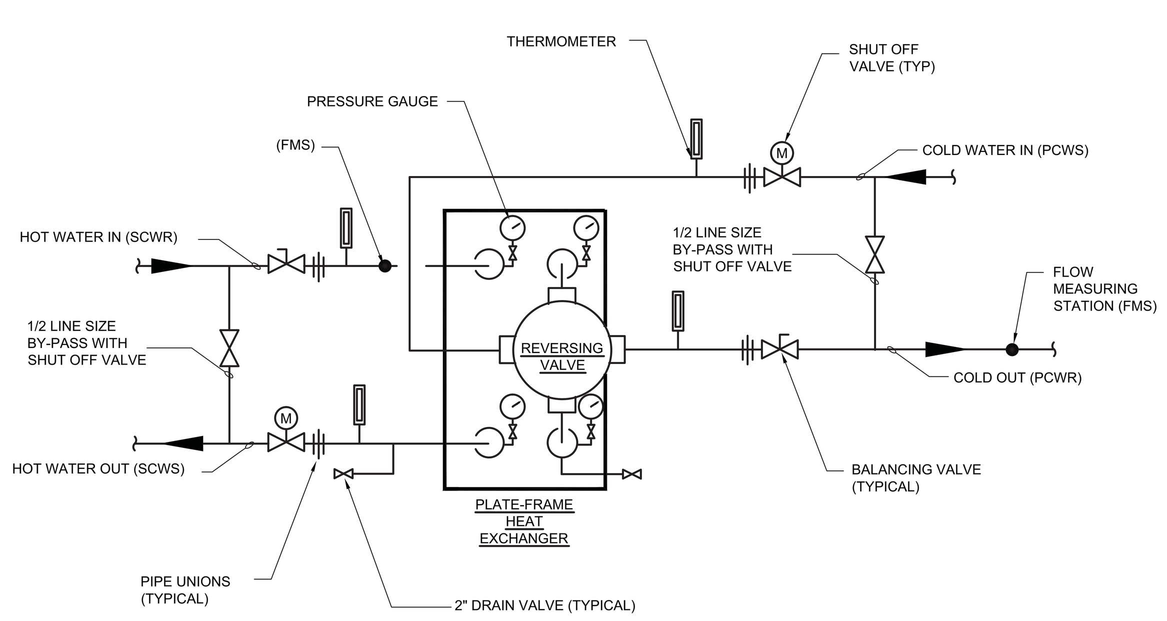
DIAPHRAGM EXPANSION TANK W/ MAKE UP PUMP



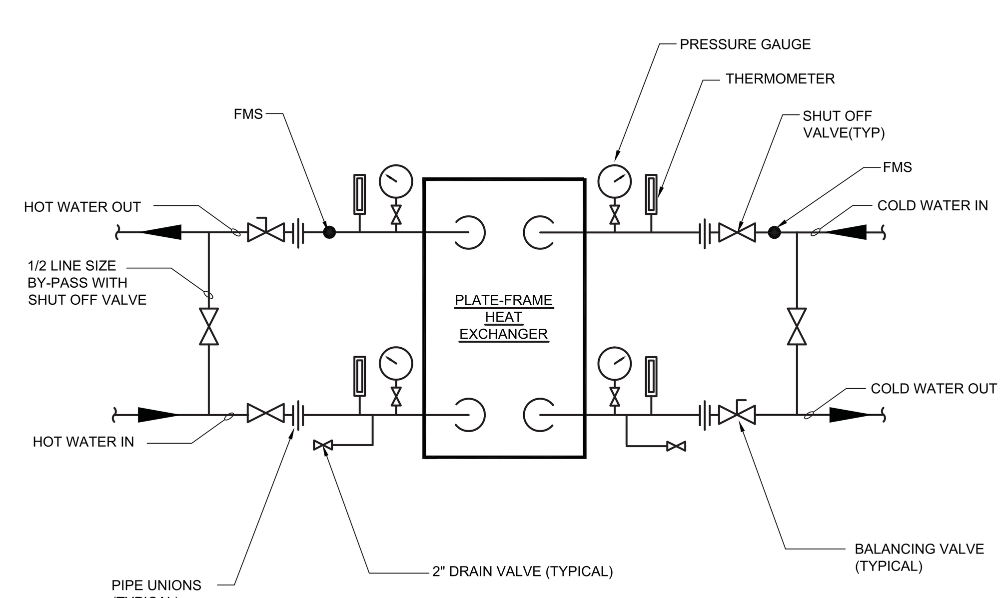
HW UNIT HEATER PIPING CONNECTION



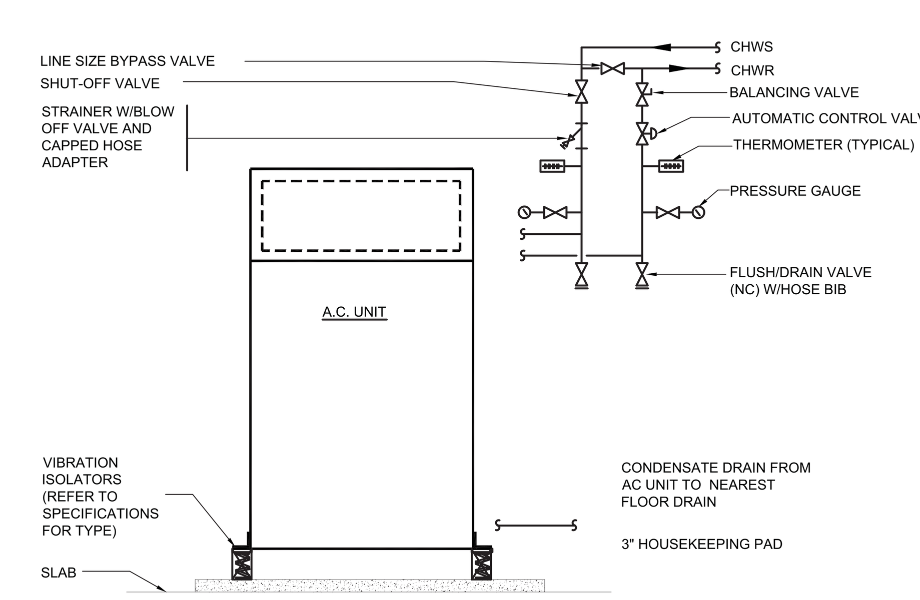
PRESSURE DIFFERENTIAL BYPASS OR INJECTION CONTROL VALVE ARRANGEMENT



DETAIL OF PLATE-AND-FRAME HX WITH REVERSING VALVE (OPEN CONDENSER WATER SIDE)

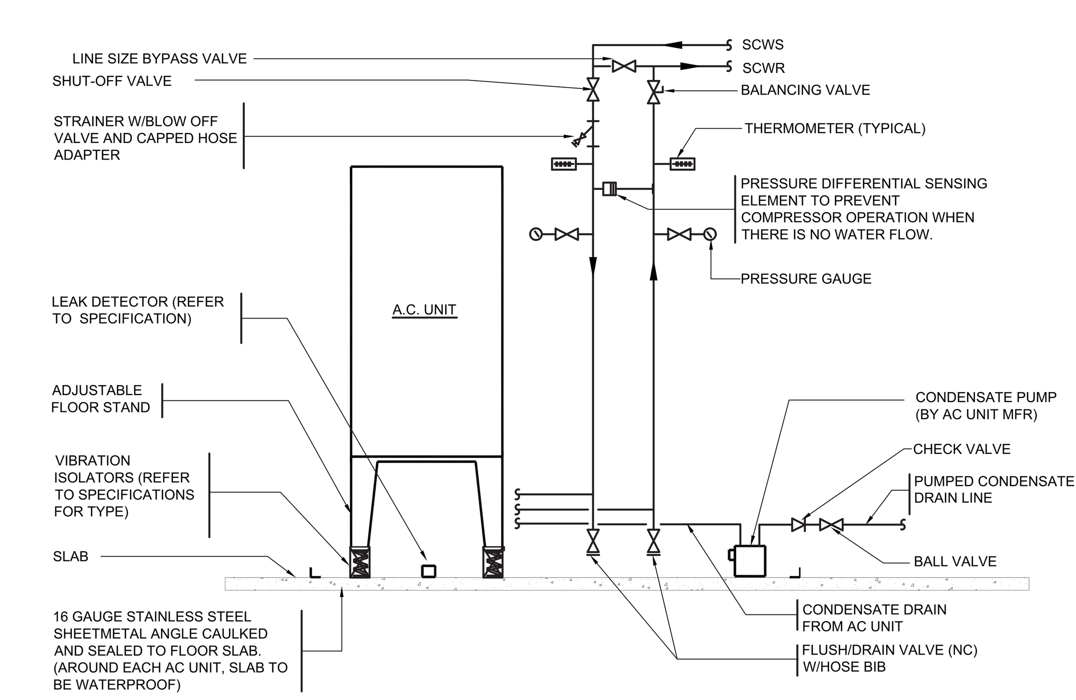


TYPICAL PLATE-AND-FRAME HX PIPING CONNECTION DETAIL (CLOSED SYSTEM)



SCHEMATIC PIPING CONNECTIONS TO PACKAGED CHW FLOOR A.C. UNITS

(PIPING CONNECTIONS TO AIR COLUMN UNITS ARE SIMILAR)



SCHEMATIC PIPING CONNECTIONS TO PACKAGED DX A.C. UNITS

(ELECTRICAL ROOMS, ELEVATOR MACHINE ROOM)

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M5-0104.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:19 AM

DEPT OF BLDGS 121324290 Job Number
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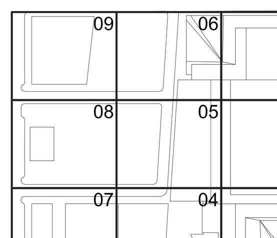
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Project No. 14752.A.000
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Sheet Number HYE-TC-M5-0104
Drawing Title
MECHANICAL DETAIL SHEET NO.4
Drawing Number M5-0104
B-SCAN Drawing Number M-504.00

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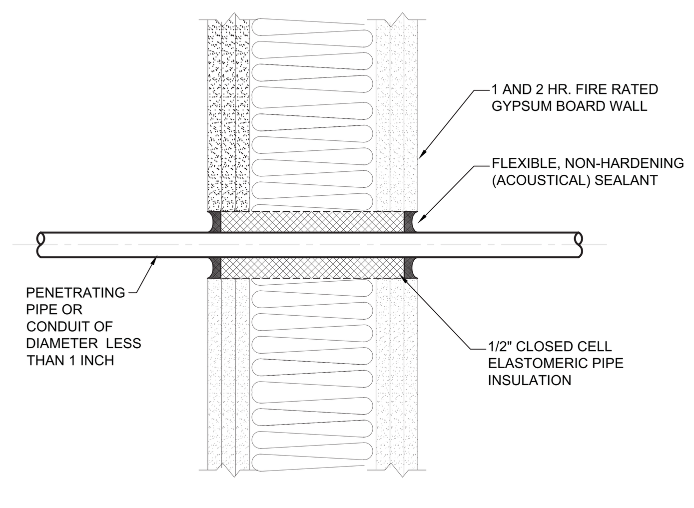
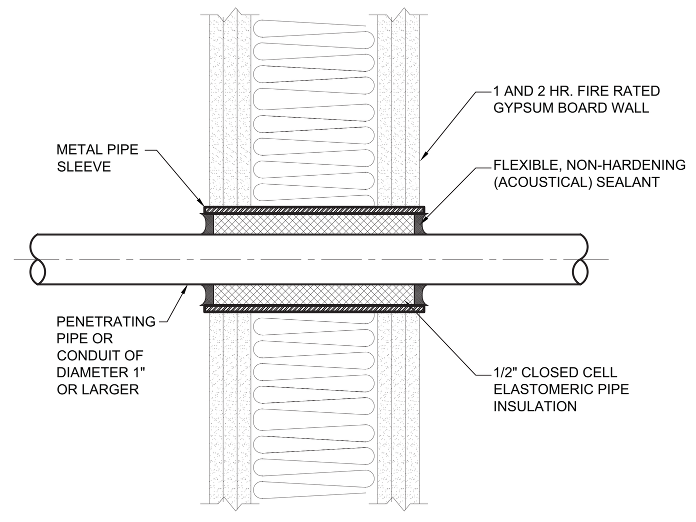
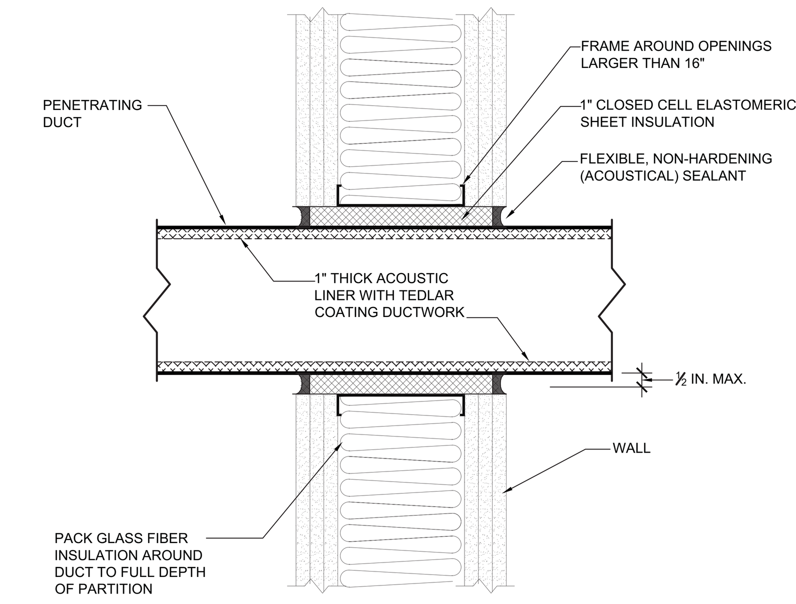


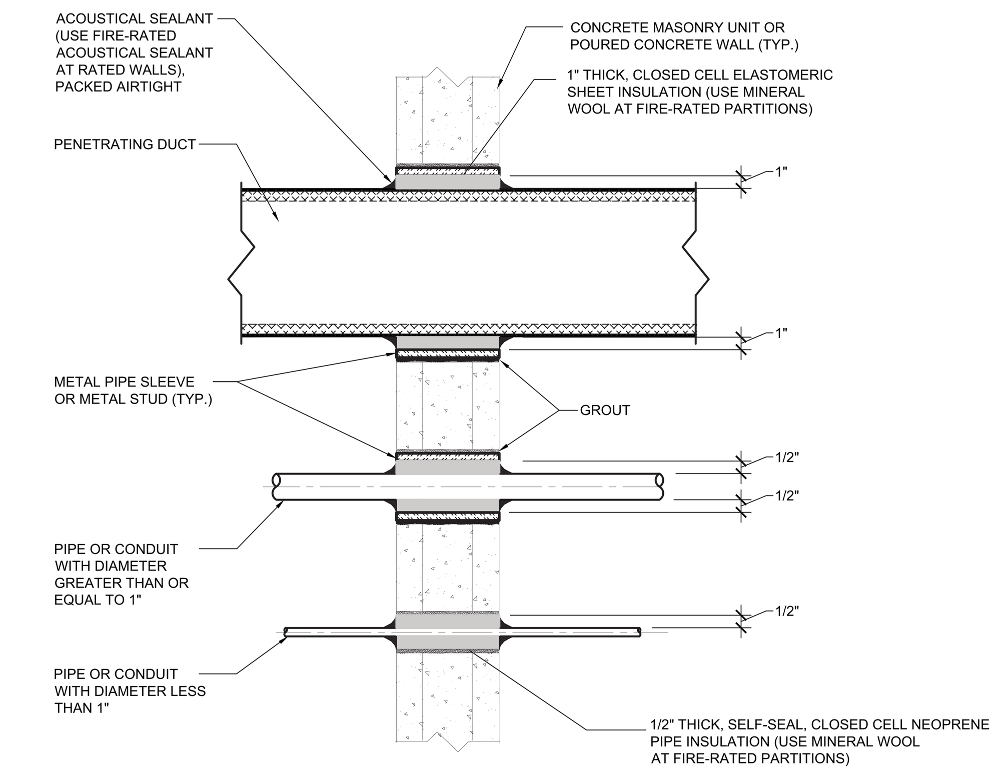
PENETRATION OF GYPSUM BOARD PARTITION BY PIPE OR CONDUIT SMALLER THAN 1 INCH



PENETRATION OF GYPSUM BOARD PARTITION BY PIPE OR CONDUIT 1 INCH OR LARGER

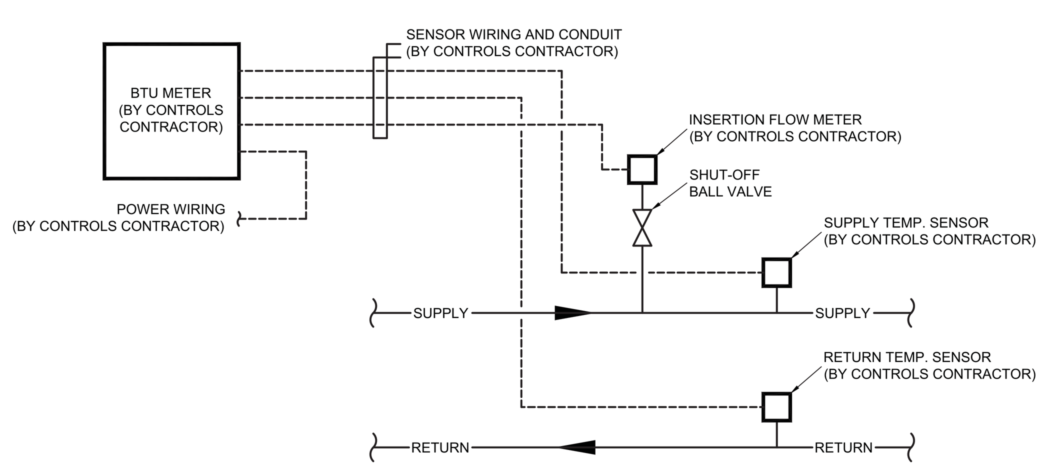


PENETRATION OF GYPSUM BOARD PARTITION BY DUCT

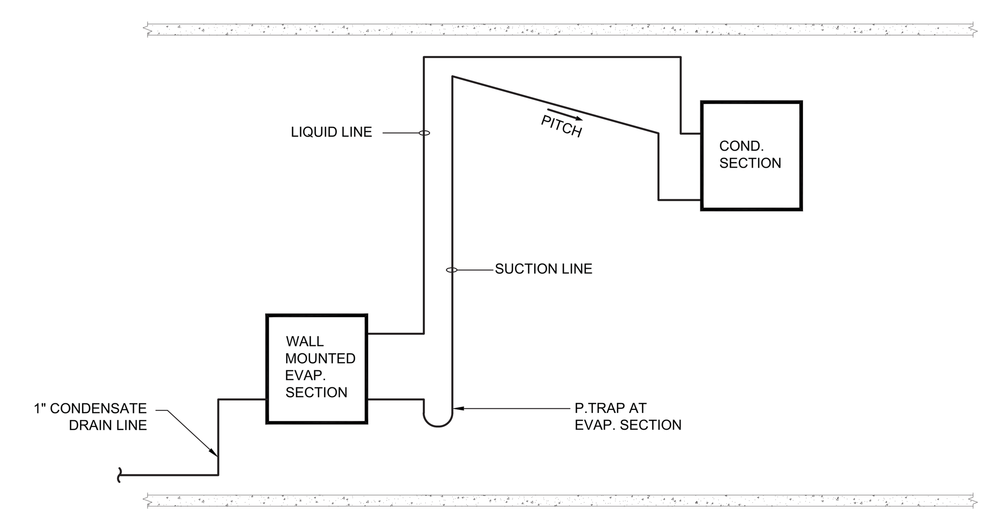


PENETRATION OF CONCRETE OR MASONRY PARTITIONS BY DUCTS, PIPES OR CONDUIT

DUCTWORK AND PIPING PENETRATION ACOUSTIC DETAILS



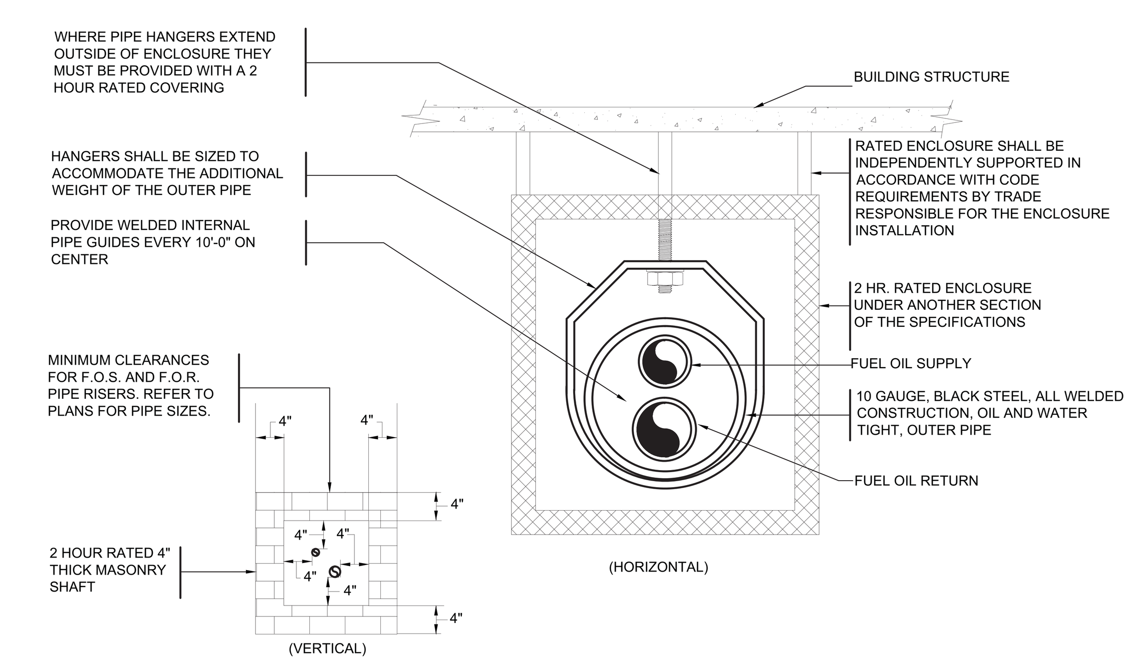
BTU METER CONNECTION DETAIL



NOTES:

1. SUCTION LINE P-TRAPS SHALL BE MADE FROM 2 BACK TO BACK, LINE SIZE STANDARD RADIUS, 45° ELBOWS ON THE INLET SIDE AND A 90° STANDARD RADIUS ELBOW ON THE OUTLET SIDE.
2. THE INSTALLED REFRIGERANT PIPING SYSTEM SHALL COMPLY WITH AC UNIT MFR'S RECOMMENDATIONS AND REQUIREMENTS.

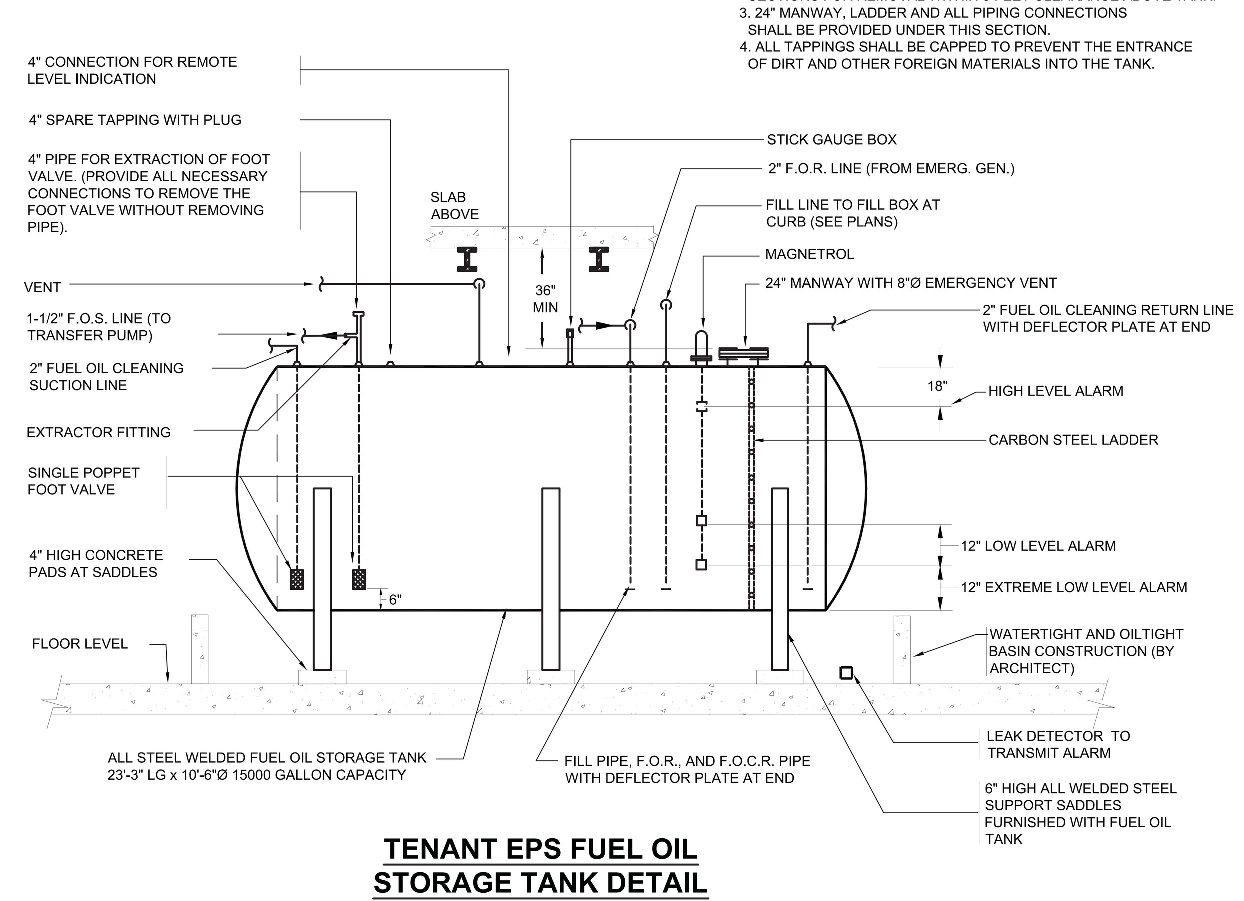
REFRIGERANT PIPING FOR AIR COOLED AC UNITS



HORIZONTAL AND VERTICAL FUEL OIL PIPE ENCLOSURE DETAIL

NOTES:

1. ALL TAPPINGS ON TOP OF TANK SHALL BE 4" THREADED.
2. ALL INTERNAL F.O. SUCTION PIPE SHALL BE SCHEDULE 40, BLACK STEEL, CONSTRUCTED OF 24 INCH LONG SCREWED SECTIONS FOR REMOVAL WITHIN 3 FEET CLEARANCE ABOVE TANK.
3. 24" MANWAY, LADDER AND ALL PIPING CONNECTIONS SHALL BE PROVIDED UNDER THIS SECTION.
4. ALL TAPPINGS SHALL BE CAPPED TO PREVENT THE ENTRANCE OF DIRT AND OTHER FOREIGN MATERIALS INTO THE TANK.



TENANT EPS FUEL OIL STORAGE TANK DETAIL

NOTE: PROVIDE AN ADD ALTERNATE PRICE TO FURNISH AND INSTALL THE TENANT EPS FUEL OIL STORAGE TANK, PUMPS, PIPING, AND ALL ASSOCIATED APPURTENANCES.

NOTES:

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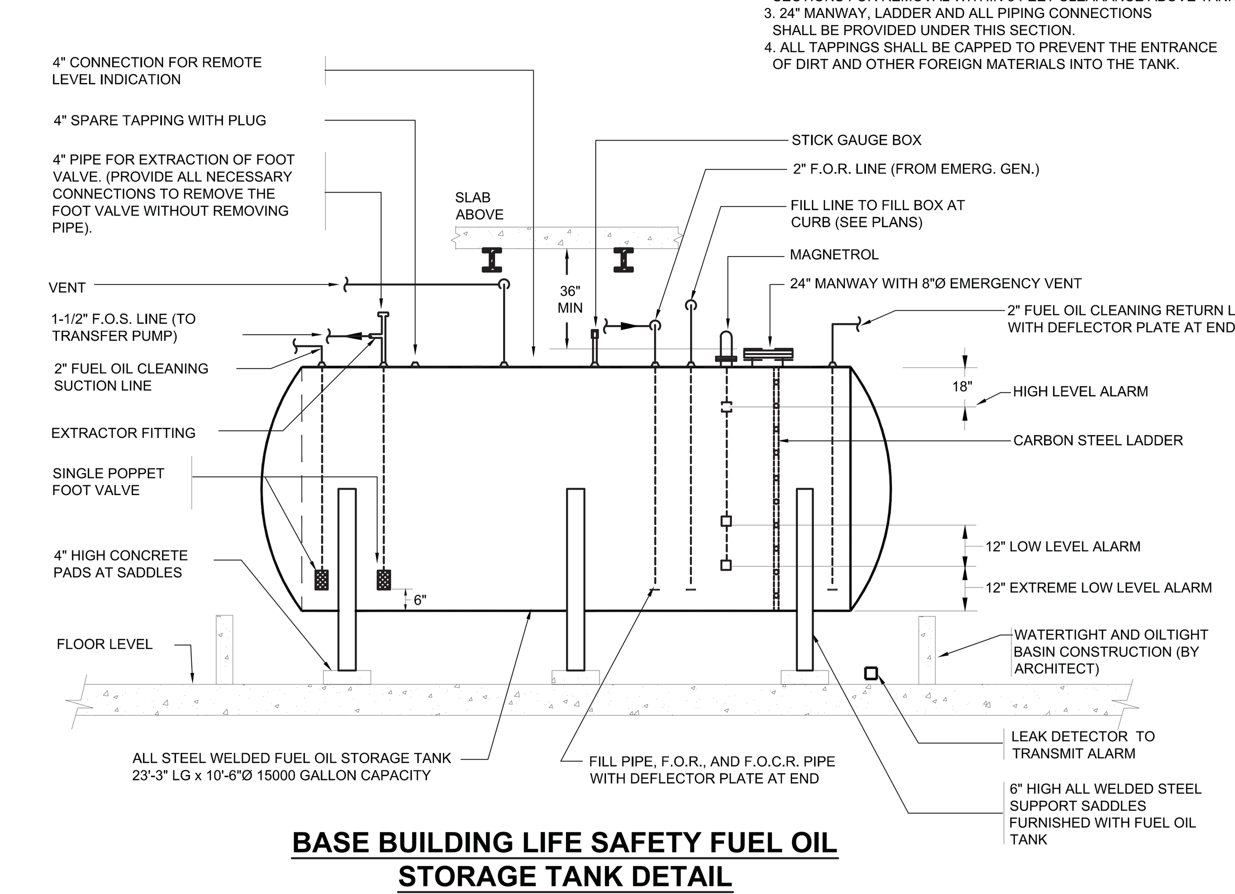

BASE BUILDING LIFE SAFETY FUEL OIL STORAGE TANK DETAIL

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3	DI-18 MECH PROG DWGS	12-21-2012
2	12-03-2012	DI-08 MECH. PROGRESS
1	ISSUED FOR FILING	08-20-2012

Key Plan

STATE OF NEW YORK
AUGUSTINE A. DIGIACOMO
NO. 062475
LICENSED PROFESSIONAL ENGINEER

Date
01-25-2013
Project No.
14752.A.000
Drawn By

Sheet Number
HYE-TC-M5-0105

Drawing Title
MECHANICAL DETAIL SHEET NO.5

Drawing Number
M5-0105
B-SCAN Drawing Number
M-505.00

SHEET 47 OF 71

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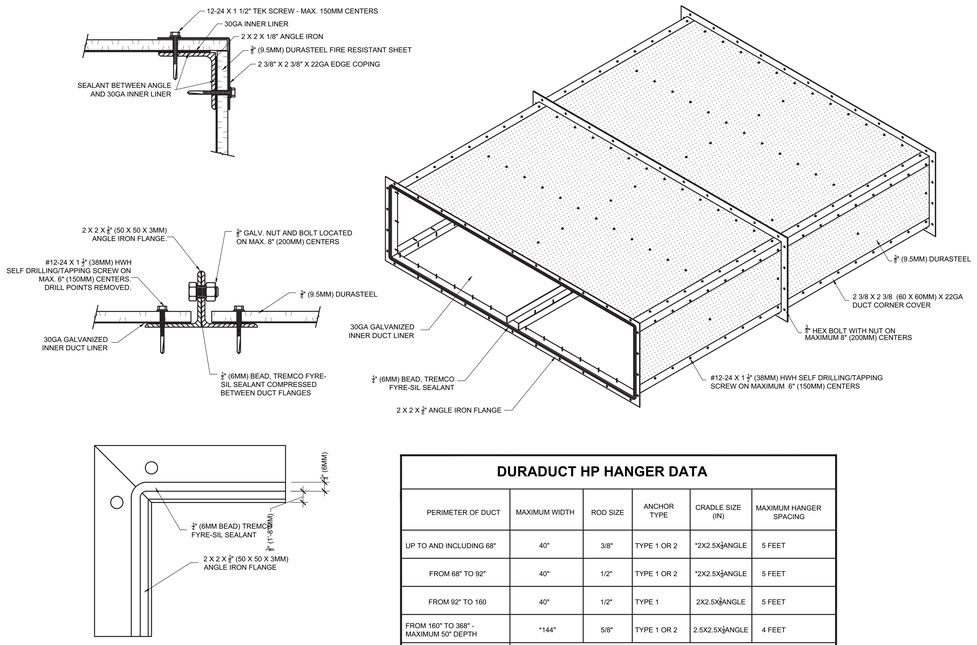


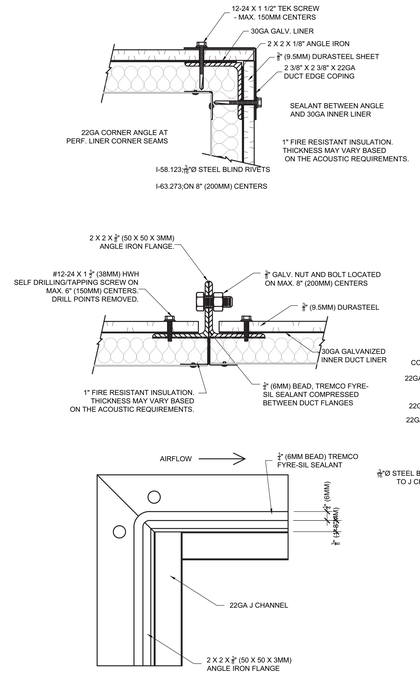
DURADUCT HP HANGER DATA

PERIMETER OF DUCT	MAXIMUM WIDTH	ROD SIZE	ANCHOR TYPE	CRADLE SIZE (IN)	MAXIMUM HANGER SPACING
UP TO AND INCLUDING 68"	40"	3/8"	TYPE 1 OR 2	*2X2.5X⅛ANGLE	5 FEET
FROM 68" TO 92"	40"	1/2"	TYPE 1 OR 2	*2X2.5X⅛ANGLE	5 FEET
FROM 92" TO 160	40"	1/2"	TYPE 1	2X2.5X⅛ANGLE	5 FEET
FROM 160" TO 368" - MAXIMUM 50" DEPTH	*144"	5/8"	TYPE 1 OR 2	2.5X2.5X⅛ANGLE	4 FEET
EXCEEDING 368" AND/OR 50" DUCT DEPTH	TO BE REVIEWED MANUFACTURER				

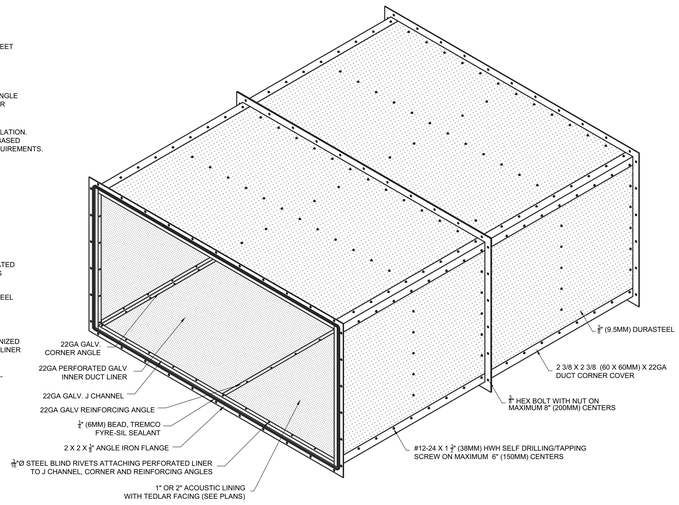
NOTES:
* DUCTS AND CRADLES OVER 40" WIDE MUST BE SUPPORTED WITH RODS ON MAXIMUM 40" CENTERS ACROSS THE DUCT WIDTH
ANCHOR TYPE 1 = 3-3/4" LONG WEDGE ANCHOR
ANCHOR TYPE 2 = DROP IN ANCHOR INSTALLED IN A 3" DEEP HOLE

UNLINED 2-HOUR FIRE RATED DUCT ASSEMBLY
"DURADUCT HP" AS STANDARD

MEA-162-05-M



MEA-162-05-M



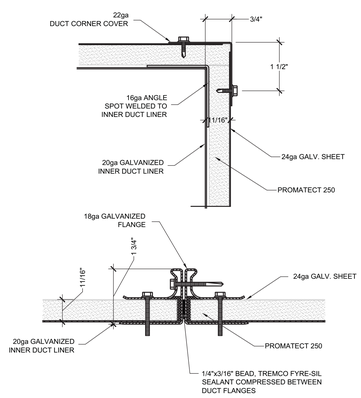
DURADUCT HP HANGER DATA

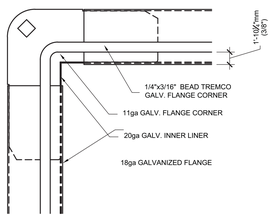
PERIMETER OF DUCT	MAXIMUM WIDTH	ROD SIZE	ANCHOR TYPE	CRADLE SIZE (IN)	MAXIMUM HANGER SPACING
FROM 160" TO 368" - MAXIMUM 50" DEPTH	*144"	5/8"	TYPE 1 OR 2	2½X2½X¼ANGLE	4 FEET

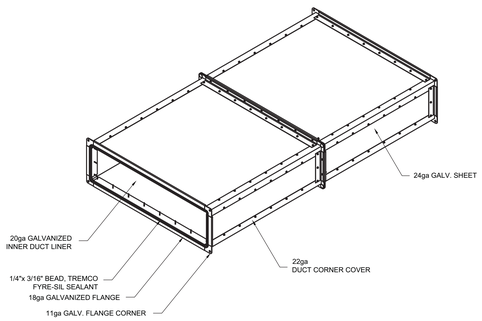
NOTES:
* DUCTS AND CRADLES OVER 40" WIDE MUST BE SUPPORTED WITH RODS ON MAXIMUM 40" CENTERS ACROOS THE DUCT WIDTH
ANCHOR TYPE 1 = 3-3/4" LONG WEDGE ANCHOR
ANCHOR TYPE 2 = DROP IN ANCHOR INSTALLED IN A 3" DEEP HOLE

ACOUSTICALLY LINED 2-HOUR FIRE RATED DUCT ASSEMBLY
"ACOUSTIC DURADUCT HP" AS STANDARD

NOTE: REFER TO FLOOR PLANS FOR LOCATION AND EXTENT OF ACOUSTICALLY LINED FIRE-RATED DUCTWORK





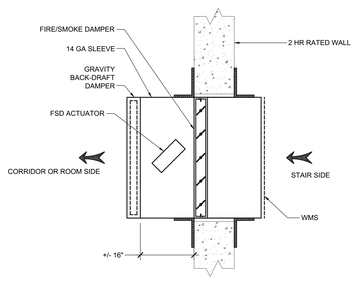


DURADUCT GNX HANGER DATA

PERIMETER OF DUCT	MAXIMUM WIDTH	ROD SIZE	ANCHOR TYPE	CRADLE SIZE (IN)	MAXIMUM HANGER SPACING
UP TO AND INCLUDING 90"	40"	3/8"	TYPE 1 OR 2	*2X2X¼ANGLE	4 FEET
FROM 90" TO 128"	40"	1/2"	TYPE 1 OR 2	*2X2X¼ANGLE	4 FEET
FROM 128" TO 156"	48"	1/2"	TYPE 1	2X2X¼ANGLE	4 FEET
FROM 120" TO 172"	66"	1/2"	TYPE 1	2.5X2.5X¼ANGLE	4 FEET
FROM 172" TO 272"	80"	1/2"	TYPE 1 OR 2	2X2.5X¼ANGLE	**2 FEET
EXCEEDING 272" OR 40" DUCT DEPTH	DURADUCT HP SHOULD BE USED FOR THIS SIZE RANGE				

NOTES:
* 2"X2"X1/4" ANGLE CAN BE REPLACED WITH 1-5/8"X1-5/8"X11GA UNISTRUT CRADLE.
** EACH DUCT SECTION REQUIRES A SUPPORT CRADLE. DUCT SECTION LENGTHS CANNOT EXCEED THE MAXIMUM HANGER SPACING.
ANCHOR TYPE 1 = 3-3/4" LONG WEDGE ANCHOR
ANCHOR TYPE 2 = DROP IN ANCHOR INSTALLED IN A 3" DEEP HOLE

DURADUCT GNX - SYSTEM CONSTRUCTION
AS STANDARD



TYPICAL STAIR PRESSURIZATION
RELIEF ASSEMBLY

NOTES:
1. WHERE A HUNG CEILING EXISTS IN THE CORRIDOR OR ROOM SIDE OF THE 2 HR RATED WALL THE RELIEF ASSEMBLY SHALL BE INSTALLED TO A MINIMUM OF 6" ABOVE THE HUNG CEILING ELEVATION.

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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.	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.

Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:10 PM
NYC Development Hub

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Jaros Baum & Bolles Consulting Engineers
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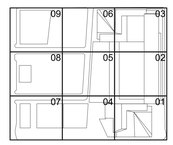
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M5-0106
Drawing Title
MECHANICAL DETAIL SHEET NO.6
Drawing Number M5-0106
B-SCAN Drawing Number M-506.00

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M5-0106.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:19 AM

DEPT OF BLDGS 121324290 Job Number · ES732591404 Scan Code

CHILLED WATER AIR CONDITIONING

(VENTROL AS STANDARD)

General and filter data, pre-heat coils (type "WC")

ACS SYSTEM No.	LOCATION	SERVICE	TOTAL AIR (CFM)	MINIMUM OUTSIDE AIR (CFM)	GENERAL FILTER DATA: SURFACE AREA (SQ. FT.) PER SYSTEM	N0. OF SECTIONS-WIDE PER FILTER TYPE	NO. OF SECTIONS-HIGH PER FILTER TYPE	MAX. PRESSURE DROP-DIRTY (IN.H2O)	FILTER 1: MAX. PRESSURE DROP-CLEAN (IN.H2O)	FILTER TYPE NO.	FILTER 2: MAX. PRESSURE DROP-CLEAN (IN.H2O)	FILTER TYPE NO.	FILTER 3: MAX. PRESSURE DROP-CLEAN (IN.H2O)	FILTER TYPE NO.	PRE-HEAT AIR-SIDE: ENTERING TEMP. (°F) (SEE NOTE 3)	LEAVING TEMP. (°F) (SEE NOTE 4)	MAX. PRESSURE DROP (IN. H2O)	WATER SIDE: FLOW RATE (GPM)	ENTERING TEMP. (°F)	LEAVING TEMP. (°F)	MAXIMUM PRESSURE DROP (FT)	NUMBER OF SECTIONS	FINNED LENGTH (IN.)	CASING HEIGHT (IN.)	TOTAL FACE AREA (SQ. FT)	FACE VELOCITY (FPM)	ROW DEEP	FIN SPACING (FIN/IN.)	CIRCUITING
TC-ACS-ST-1 (C)	STREET LEVEL	COACH RECEIVING	2,000	2,000	12	2.0	1.5	3.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	0	55.3	0.11	6.2	180	140	2.7	1	32	19.5	4	500	1	11	
TC-ACS-ST-2 (B)	STREET LEVEL	TOWER RECEIVING	2,000	2,000	12	2.0	1.5	3.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	0	55.3	0.11	6.2	180	140	2.7	1	32	19.5	4	500	1	11	
TC-ACS-3-1 (C)	FLOOR 3 MER	COACH LOBBY	37,000	7,500	112	7	4	2.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	25 / 0	61.3	0.12	126	180	140	2.9	2	142	39	74.0	500	2	6	
TC-ACS-3-2 (B)	FLOOR 3 MER	TOWER LOBBY	37,000	7,500	112	7	4	2.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	25 / 0	61.3	0.12	126	180	140	2.9	2	142	39	74.0	500	2	6	
TC-ACS-3-3 (C)	FLOOR 3 MER	COACH OUTSIDE AIR	50,000	50,000	160	8	5	2.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	0	62.4	0.11	191	180	140	5.8	3	152	37.5	114	483	2	6	
TC-ACS-4-1 (C)	FLOOR 4 MER	COACH OUTSIDE AIR	65,000	65,000	192	8	6	2.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	0	61.9	0.11	224	180	140	5.6	3	156	42	132	494	2	6	
TC-ACS-4-2 (B)	FLOOR 4 MER	STREET THRU LEVEL 3 PUBLIC AREA	20,000	3,000	64	4	4	2.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	25	56.9	0.07	35	180	140	1.8	2	64	45	40	500	1	7	
TC-ACS-4-3 (TO)	FLOOR 4 MER	L'OREAL LEVEL 3	8,000	2,000	24	3	2																						
TC-ACS-5-1 (C)	FLOOR 5 MER	COACH ATRIUM	10,000	10,000	30	3	2.5	2.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	0	56.0	0.08	31.2	180	140	5.1	2	64	27	24	417	1	10	
TC-ACS-5-2 (B)	FLOOR 5 MER	ENGINEER'S OFFICE	3,000	700	12	2	1.5	2.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	0	55.3	0.05	12.3	180	140	2.4	1	41.5	43.5	12.1	331	1	9	
TC-AHU-23-1 (TO)	FLOOR 23	FLOOR 23	24,500	4,200	80	5	4	2.0	0.15	4" MERV 8	0.56	12" MERV 13	—	SEE NOTE 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TC-AHU-24-1 (TO) THRU TC-AHU-31-1 (TO)	FLOOR 24 THRU FLOOR 31	FLOOR 24 THRU FLOOR 31	23,000	4,200	80	5	4	2.0	0.15	4" MERV 8	0.56	12" MERV 13	—	SEE NOTE 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TC-ACS-34-1 (B)	FLOOR 34 MER	TOWER OUTSIDE AIR	46,000	46,000	168	7	6	2.0	0.15	4" MERV 8	0.56	12" MERV 13	—	—	0	59.5	0.13	152	180	140	4.5	3	144	30	85.5	538	2	6	
TC-ACS-34-2 (B) TC-ACS-34-3 (B)	FLOOR 34 MER	HIGH RISE CENTRAL AC SUPPLY	90,000	20,000	196	7	6.5	2.0	0.15	4" MERV 8	0.56	12" MERV 13	—	—	40 / 0	62.1	0.12	311	180	140	10.2	6	93	48	180	500	2	6	
TC-ACS-48-1 (B)	FLOOR 48 MER	HIGH RISE CENTRAL AC SUPPLY	90,000	20,000	196	7	6.5	2.0	0.15	4" MERV 8	0.56	12" MERV 13	—	—	40 / 0	62.1	0.12	311	180	140	10.2	6	93	48	180	500	2	6	

Cooling coils (type "WC")

ACS SYSTEM No.	AIR SIDE: MBH TOTAL	MBH SENSIBLE	ENTERING TEMP. DB (°F)	ENTERING TEMP. WB (°F)	LEAVING TEMP. DB (°F)	LEAVING TEMP. WB (°F)	MAX. PRESSURE DROP (IN. H2O)	WATER SIDE: GPM	ENTERING TEMP. (°F)	LEAVING TEMP. (°F)	MAX. PRESSURE DROP (FT H2O)	WORKING PRESSURE (PSIG)	NUMBER OF SECTIONS	CASING HEIGHT (IN.)	FINNED LENGTH (IN.) PER SECTION	TOTAL FACE AREA (SQ. FT)	FACE VELOCITY (FPM)	ROW DEEP	FINS PER IN.	CIRCUITING
TC-ACS-ST-1 (C)	153.5	98.0	99.0	76.4	55	54.0	0.75	19.14	42	58	23.6	175	1	19.5	32	4	500	6	9	
TC-ACS-ST-2 (B)	153.5	98.0	99.0	76.4	55	54.0	0.75	19.14	42	58	23.6	175	1	19.5	32	4	500	6	9	
TC-ACS-3-1 (C)	1,542	1,226	85.5	67.3	55	53.7	0.62	192	42	58	15.2	175	2	39	142	74	500	4	12	
TC-ACS-3-2 (B)	1,556	1,271	85.9	67.4	55	53.6	0.62	194	42	58	12.1	175	2	43.5	152	88.7	496	4	11	
TC-ACS-3-3 (C)	4,683	3,027	98.8	76.3	49	48.8	0.75	583	42	58	19.1	175	3	37.5	180	135	407	8	9	
TC-ACS-4-1 (C)	5,865	3,601	98.7	76.3	49	48.8	0.64	700	42	58	20.0	175	3	48	185.5	179.7	362	8	9	
TC-ACS-4-2 (B)	644	542	79.7	64.6	55	53.8	0.50	80	42	58	17.0	175	2	45	64	40	500	4	10	
TC-ACS-4-3 (TO)																				
TC-ACS-5-1 (C)	768.6	487.4	98.5	76.2	55	54.1	0.51	95.8	42	58	16.4	175	2	28.5	64	24	417	6	8	
TC-ACS-5-2 (B)	145.5	115.9	80.4	65.1	55	53.8	0.25	18.2	42	58	11.5	175	1	43.5	41.25	12	333	4	9	
TC-AHU-23-1 (TO)	935.6	760.1	77.1	62.4	49	48.8	0.88	113	42	58	20.0	225	2	32.5	99	49.5	495	8	9	
TC-AHU-24-1 (TO) THRU TC-AHU-31-1 (TO)	794.2	718.9	77.1	61.0	49	48.8	0.71	99.0	42	58	16.6	225	2	32.5	99	49.5	465	6	11	
TC-ACS-34-1 (B)	4,153	2,574	99.7	76.6	49	48.8	0.95	517	42	58	18.5	175	3	34.5	152	104.5	440	8	10	
TC-ACS-34-2 (B) TC-ACS-34-3 (B)	5,113	3,858	88.3	68.3	49	48.8	1.1	609	42	58	12.0	175	6	48	90	180.2	500	8	10	
TC-ACS-48-1 (B)	5,113	3,858	88.3	68.3	49	48.8	1.1	609	42	58	12.0	175	6	48	90	180.2	500	8	10	

Supply fan data (fan wall)

ACS SYSTEM No.	TOTAL STATIC PRESSURE (IN. H20)	EXTERNAL STATIC PRESSURE (IN. H20)	MAX. OUTLET VELOCITY (FPM)	DISCHARGE DIRECTION	ARRANGEMENT	FAN R.P.M.	FAN ROTATION	WIDTH & INLET	WHEEL DIAMETER (IN.)	UNIT TYPE	UNIT SIZE	NO. OF FANS	B.H.P. PER FAN	MIN. MOTOR H.P. PER FAN	MOTOR R.P.M.	VOLTS/PHASE/HERTZ	VFD TYPE	VFD BYPASS	MOTOR LOCATION	VIB. BASE SPEC. TYPE	VIB. BASE MIN. STATIC DEFL. (IN.)	CLASS	REMARKS
TC-ACS-ST-1 (C)	4.6	2.0	652	HORIZ.	4	3,493	—	—	14	PLENUM		1	2.33	3	3,493	460/3/60	B	•	—	V	2	II	SEE NOTE 7 SEE NOTE 8
TC-ACS-ST-2 (B)	4.6	2.0	652	HORIZ.	4	3,493	—	—	14	PLENUM		1	2.33	3	3,493	460/3/60	B	•	—	V	2	II	SEE NOTE 7 SEE NOTE 8
TC-ACS-3-1 (C)	5.75	2.0	505	HORIZ.	4	2,216	—	—	22	PLENUM		6	7.84	10	2,216	460/3/60	B	•	—	V	2	II	
TC-ACS-3-2 (B)	5.75	2.0	474	HORIZ.	4	2,440	—	—	20	PLENUM		8	6.98	10	2,440	460/3/60	B	•	—	V	2	II	
TC-ACS-3-3 (C)	5.90	1.75	452	HORIZ.	4	2,754	—	—	18	PLENUM		12	5.96	7.5	3,513	460/3/60	A	•	—	V	2	II	
TC-ACS-4-1 (C)	5.10	1.75	411	HORIZ.	4	2,307	—	—	20	PLENUM		15	4.86	7.5	2,307	460/3/60	A	•	—	V	2	II	
TC-ACS-4-2 (B)	5.75	2.5	422	HORIZ.	4	3,633	—	—	14	PLENUM		4	9.06	10	3,633	460/3/60	B	•	—	V	2	II	
TC-ACS-4-3 (TO)																							FUTURE UNIT BY TENANT
TC-ACS-5-1 (C)	4.50	1.75	352	HORIZ.	4	3,529	—	—	14	PLENUM		4	2.49	5	3,529	460/3/60	B	•	—	V	2	II	SEE NOTE 6
TC-ACS-5-2 (B)	4.10	1.5	450	HORIZ.	4	3,468	—	—	14	PLENUM		2	1.87	3	3,468	460/3/60	B	•	—	V	2	II	SEE NOTE 7
TC-AHU-23-1 (TO)	5.60	2.5	501	HORIZ.	4	2,412	—	—	20	PLENUM		4	7.53	10	2,412	460/3/60	B	•	—	V	2	II	
TC-AHU-24-1 (TO) THRU TC-AHU-31-1 (TO)	5.30	2.5	535	HORIZ.	4	2,330	—	—	20	PLENUM		4	6.80	10	2,330	460/3/60	B	•	—	V	2	II	
TC-ACS-34-1 (B)	5.50	1.75	495	HORIZ.	4	2,447	—	—	20	PLENUM		8	7.00	10	2,447	460/3/60	A	•	—	V	2	II	
TC-ACS-34-2 (B) TC-ACS-34-3 (B)	6.2	2.55	988	HORIZ.	4	1,720	—	—	27	PLENUM		8	15.92	20	1,750	460/3/60	A	—	—	V	2	II	
TC-ACS-48-1 (B)	6.2	2.55	988	HORIZ.	4	1,720	—	—	27	PLENUM		8	15.92	20	1,750	460/3/60	A	—	—	V	2	II	

NOTES:

1. THE SCHEDULED CHILLED WATER AIR CONDITIONING UNITS ARE FURNISHED UNDER ANOTHER CONTRACT. REFER TO SECTION 237313 LOCAL FLOOR AHU. THE SCHEDULED DATA IS FOR BALANCING PURPOSES AND INFORMATION ONLY.
2. LOCAL FLOOR AIR CONDITIONING UNITS TC-AHU-23-1 THRU TC-AHU-31-1 SHALL BE PROVIDED WITH SPACE ONLY FOR 12" GAS PHASE FILTERS.
3. MAXIMUM FILTER PRESSURE DROP (DIRTY) SCHEDULED INCLUDES PRE-FILTERS, FINAL FILTERS, AND GAS PHASE FILTERS.
4. (upper dot) NORMAL OPERATING HEATING DUTY; (lower dot) MAXIMUM OPERATING HEATING CAPACITY (FREEZE PROTECTION)
5. EACH PRE-HEAT COIL SHALL BE SUPPLIED WITH A HOT WATER CIRCULATION PUMP THAT IS CONNECTED TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM.
6. PROVIDE SEPARATE PRICE TO FURNISH AND INSTALL TC-ACS-5-1, INCLUDING DUCTWORK AND PIPING CONNECTIONS, ELECTRICAL POWER, AND ALL REQUIRED AUXILIARIES TO MAKE THE AC UNIT FULLY OPERATIONAL.
7. ONE (1) FAN WALL CELL SHALL BE STANDBY.
8. PROVIDE HEPA FILTERS (FILTER BED 4) TWO (2) 24x24 PER SYSTEM.

HEATING & VENTILATING SYSTEMS

(VENTROL AS STANDARD)

General, filter data and heating coils

HV SYSTEM No.	LOCATION	SERVICE	TOTAL AIR (CFM)	GENERAL FILTER DATA: SURFACE AREA (SQ. FT.) PER SYSTEM	N0. OF SECTIONS-WIDE PER FILTER TYPE	NO. OF SECTIONS-HIGH PER FILTER TYPE	MAX. PRESSURE DROP-DIRTY (IN.H2O)	FILTER 1: MAX. PRESSURE DROP-CLEAN (IN.H2O)	FILTER TYPE NO.	FILTER 2: MAX. PRESSURE DROP-CLEAN (IN.H2O)	FILTER TYPE NO.	FILTER 3: MAX. PRESSURE DROP-CLEAN (IN.H2O)	FILTER TYPE NO.	AIR-SIDE: ENTERING TEMP. (°F)	LEAVING TEMP. (°F)	MAX. PRESSURE DROP (IN. H2O)	WATER SIDE: FLOW RATE (GPM)	ENTERING TEMP. (°F)	LEAVING TEMP. (°F)	PRESSURE DROP (FT)	NUMBER OF SECTIONS	FINNED LENGTH (IN.)	CASING HEIGHT (IN.)	TOTAL FACE AREA (SQ. FT)	FACE VELOCITY (FPM)	ROW DEEP	FIN SPACING (FIN/IN.)	CIRCUITING
TC-HV-4-1 (B) TC-HV-4-2 (B)	FLOOR 4 MER	COGEN. VENTILATION	27,000	80	5	4	2.0	0.15	4" MERV 8			—	—	0	60	0.14	84.0	180	140	5.3	2	100	39	54	500	2	7	
TC-HV-4-3 (B)	FLOOR 4 MER	B.O.H. SPACE AND BELOW GRADE	15,000	48	4	3	2.0	0.15	4" MERV 8	0.56	12" MERV 16	0.50	12" GAS PHASE	25	58.3	0.07	27.8	180	140	4.3	2	87	27	30.8	487	1	7	
TC-HV-5-1 (B)	FLOOR 5 MER	BOILER RM COMBUSTION VENTILATION	12,500	16	3	3	2.0	0.15	4" MERV 8			—	—	0	60	0.14	27.8	180	140	2.6	2	47.25	25.5	15.8	508	1	13	
TC-HV-49-1 (B)	FLOOR 49 MER	BOILER RM COMBUSTION VENTILATION	10,000	12	3	2	2.0	0.15	4" MERV 8			—	—	0	60	0.12	20.4	180	140	4.8	1	41.25	45	12.5	482	1	12	

Supply fan data (fan wall)

HV SYSTEM No.	TOTAL STATIC PRESSURE (IN. H20)	EXTERNAL STATIC PRESSURE (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	NO. OF FANS	B.H.P. PER FAN	MIN. MOTOR H.P. PER FAN	MOTOR R.P.M.	VOLTS/PHASE/HERTZ	VFD TYPE	VFD BYPASS	MOTOR LOCATION	VIB. BASE SPEC. TYPE	VIB. BASE MIN. STATIC DEFL. (IN.)	CLASS	REMARKS
TC-HV-4-1 (B) TC-HV-4-2 (B)	3.0	0.75	406	HORIZ.	4	1,811	—	—	20	—	PLENUM		6	3.0	5	1811	460/3/60	B	•	—	VI	1-1/2	I	
TC-HV-4-3 (B)	5.30	3.0	412	HORIZ.	4	3,587	—	—	16	—	PLENUM		4	4.81	7.5	3,594	460/3/60	B	•	—	V	2	II	
TC-HV-5-1 (B)	2.84	1.0	655	HORIZ.	4	1,782	—	—	22	—	PLENUM		1	5.42	7.5	1,782	460/3/60	B	•	—	VI	1-1/2	I	
TC-HV-49-1 (B)	2.81	1.0	520	HORIZ.	4	1,893	—	—	20	—	PLENUM		1	3.88	5	1,893	460/3/60	B	•	—	VI	1-1/2	I	

AIR COLUMN UNITS

(TEMTROL AS STANDARD)

General, filter data and cooling coils (type "WC")

AIR COLUMN UNIT TAG NUMBER	LOCATION	SERVICE	TOTAL SUPPLY AIR CFM	GENERAL FILTER DATA: SURFACE AREA (SQ. FT.) PER FILTER TYPE	NO. OF SECTIONS-WIDE PER FILTER TYPE	NO. OF SECTIONS-DEEP PER FILTER TYPE	MAX. PRESSURE DROP-DIRTY (IN.H2O)	FILTER 1: MAX. PRESSURE DROP-CLEAN IN.H2O)	FILTER TYPE	FILTER 2: MAX. PRESSURE DROP-CLEAN IN.H2O)	FILTER TYPE	FILTER 3: MAX. PRESSURE DROP-CLEAN IN.H2O)	FILTER TYPE	AIR SIDE: MBH TOTAL	MBH SENSIBLE	ENTERING TEMP. DB (°F)	ENTERING TEMP. WB (°F)	LEAVING TEMP. DB (°F)	LEAVING TEMP. WB (°F)	MAX. PRESSURE DROP (IN. H2O)	WATER SIDE: GPM	ENTERING TEMP. (°F)	LEAVING TEMP. (°F)	MAX. PRESSURE DROP (FT H2O)	WORKING PRESSURE (PSIG)	NUMBER OF SECTIONS	CASING HEIGHT (IN.)	FINNED LENGTH (IN.) PER SECTION	TOTAL FACE AREA (SQ. FT)	FACE VELOCITY (FPM)	ROW DEEP	FINS PER IN.	CIRCUITING
TC-UFAD-6-1 (C) THRU TC-UFAD-6-5 (C)	FLOOR 6	FLOOR 6	11,000	36	3	3	1.3	0.15	2" MERV 8	0.35	6" MERV 13	—	—	215.5	215.5	78.2	63.0	59.8	56.2	0.29	45.0	50	59.6	8.63	350	2	27.0	68.0	25.5	431.4	3	11	
TC-UFAD-##-1 (C) THRU TC-UFAD-##-4 (C)	FLOOR 7 THRU FLOOR 18	FLOOR 7 THRU FLOOR 18	11,000	36	3	3	1.3	0.15	2" MERV 8	0.35	6" MERV 13	—	—	215.5	215.5	78.2	63.0	59.8	56.2	0.29	45.0	50	59.6	8.63	350	2	27.0	68.0	25.5	431.4	3	11	
TC-UFAD-19-1 (C) THRU TC-UFAD-19-2 (C)	FLOOR 19	FLOOR 19	11,000	36	3	3	1.3	0.15	2" MERV 8	0.35	6" MERV 13	—	—	215.5	215.5	78.2	63.0	59.8	56.2	0.29	45.0	50	59.6	8.63	350	2	27.0	68.0	25.5	431.4	3	11	
TC-UFAD-##-1 (C) THRU TC-UFAD-##-4 (C)	FLOOR 20 THRU FLOOR 22	FLOOR 20 THRU FLOOR 22	11,000	36	3	3	1.3	0.15	2" MERV 8	0.35	6" MERV 13	—	—	215.5	215.5	78.2	63.0	59.8	56.2	0.29	45.0	50	59.6	8.63	350	2	27.0	68.0	25.5	431.4	3	11	

Supply fan data

AIR COLUMN UNIT TAG NUMBER	TOTAL STATIC PRESSURE (IN. H_2O)	EXTERNAL STATIC PRESSURE (IN. H_2O)	MAXIMUM OUTLET VELOCITY (FPM)	DISCHARGE CONFIGURATION	RAISED FLOOR HEIGHT (IN.)	OUTDOOR AIR INLET TEMP. (°F)	OUTDOOR AIR CFM	SUPPLY AIR TEMP. LEAVING UNIT (°F)	NUMBER OF FANS	FAN R.P.M.	B.H.P. PER FAN	MIN. MOTOR H.P. PER FAN	MOTOR R.P.M.	VOLTS	PHASE	HERTZ	VFD TYPE	VFD BYPASS	VIB. BASE SPEC. TYPE	VIB. BASE MIN. STATIC DEFL. (IN.)	CLASS	No. OF R.A. OPENINGS WITH GRILLES	R.A. GRILLE & OPENING SIZE (IN. x IN.)	MAXIMUM DIMENSION L x W x H (IN. x IN. x IN)	REMARKS
TC-UFAD-6-1 (C) THRU TC-UFAD-6-5 (C)	2.6	0.5	800	2-WAY	14	49	1,200	60.9	4	2,137	1.9	2	1,750	460	3	60	B	•	V	2	I	2	80x18	84 x 84 x 106	SEE NOTE 3
TC-UFAD-##-1 (C) THRU TC-UFAD-##-4 (C) (FLOOR 7 THRU FLOOR 18)	2.6	0.5	800	2-WAY	14	49	1,200	60.9	4	2,137	1.9	2	1,750	460	3	60	B	•	V	2	I	2	80x18	84 x 84 x 106	SEE NOTE 3
TC-UFAD-19-1 (C) THRU TC-UFAD-19-2 (C)	2.6	0.5	800	2-WAY	14	49	1,200	60.9	4	2,137	1.9	2	1,750	460	3	60	B	•	V	2	I	2	80x18	84 x 84 x 106	SEE NOTE 3
TC-UFAD-##-1 (C) THRU TC-UFAD-##-4 (C) (FLOOR 20 THRU FLOOR 22)	2.6	0.5	800	2-WAY	14	49	1,200	60.9	4	2,137	1.9	2	1,750	460	3	60	B	•	V	2	I	2	80x18	84 x 84 x 106	SEE NOTE 3

NOTES:

1. THE SCHEDULED AIR COLUMN UNITS ARE FURNISHED UNDER ANOTHER CONTRACT. REFER TO SECTION 237323 RAISED FLOOR AIR COLUMN AHU. THE SCHEDULED DATA IS FOR BALANCING PURPOSES AND INFORMATION ONLY.
2. MAXIMUM FILTER PRESSURE DROP (DIRTY) SCHEDULED INCLUDES PRE-FILTERS, FINAL FILTERS, AND GAS PHASE FILTERS.
3. NOT USED.
4. AIR COLUMNS TO BE FURNISHED WITH INTEGRAL SMOKE DETECTORS AT SUPPLY AIR DISCHARGE.
5. REFER TO SECTION & DETAILS ON DRAWING M4-0101 FOR LOCATIONS OF OPENINGS IN RETURN PLENUM AND RETURN AIR PLENUM SIZES.

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.

Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15 2013 PM
NYC Development Hub

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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

STATE OF NEW YORK · AUGUSTINE A. DIGIACOMO · LICENSED PROFESSIONAL ENGINEER · No. 052475

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0101

Drawing Title
MECHANICAL SCHEDULE SHEET NO.1

Drawing Number M6-0101
B-SCAN Drawing Number M-601.00

SHEET 49 OF 71

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0101.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:20 AM

SOUND TRAPS

(IAC AS STANDARD)

TRAP No.	LOCATION	SERVICE	CFM	TRAP SIZE W x H x L (FT x FT x FT)	MAX. PRESSURE DROP (IN. H2O)	SPECIFICATION TYPE (IAC. MODEL No.)	REMARKS
TC-ST-C1-1 (PK) THRU TC-ST-C1-8 (PK)	LEVEL C1	TC-V-C1-1 TO 8 DISCHARGE	10,000	6 x 6 x 3	0.10		
TC-ST-3-1A (B)	FLOOR 3 MER	EXHAUST AT WEST FACADE	206,000	48 x 7'-6" x 5	0.10		
TC-ST-3-1B (B)	FLOOR 3 MER	EXHAUST AT WEST FACADE	24,000	12 x 4 x 5	0.10		
TC-ST-3-2 (B)	FLOOR 3 MER	TC-EF-3-1 DISCHARGE	30,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-3 (B)	FLOOR 3 MER	TC-EF-3-1 SUCTION	30,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-4 (B)	FLOOR 3 MER	TC-EF-3-2 DISCHARGE	35,000/65,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-5 (PK) TC-ST-3-6 (PK)	FLOOR 3 MER	TC-EF-3-3 & 4 DISCHARGE	48,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-7 (B)	FLOOR 3 MER	TC-EF-3-5 DISCHARGE	35,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-8 (C)	FLOOR 3 MER	TC-RF-3-1 DISCHARGE	31,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-9 (C)	FLOOR 3 MER	TC-RF-3-1 SUCTION	31,000	6 x 5 x 3	0.10		
TC-ST-3-10 (B)	FLOOR 3 MER	TC-V-3-1 DISCHARGE	32,000	6 x 4 x 5	0.10		
TC-ST-3-11 (B)	FLOOR 3 MER	TC-V-3-1 SUCTION	32,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-12 (B)	FLOOR 3 MER	TC-RF-3-2 DISCHARGE	30,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-13 (B)	FLOOR 3 MER	TC-RF-3-2 SUCTION	30,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-14 (B)	FLOOR 3 MER	TC-ACS-3-2 SUCTION	37,000	14 x 10 x 3	0.10		TO FIT ACS UNIT
TC-ST-3-15 (C)	FLOOR 3 MER	TC-ACS-3-3 SUCTION	55,000	16 x 10 x 5	0.10		TO FIT ACS UNIT
TC-ST-3-16 (C)	FLOOR 3 MER	TC-ACS-3-1 DISCHARGE	37,000	8 x 4.5 x 5	0.15		
TC-ST-3-17 (C)	FLOOR 3 MER	TC-EF-3-6 DISCHARGE	2,150/4,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-3-18 (B)	FLOOR 3 MER	TC-EF-3-7 DISCHARGE	2,150/4,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-4-1 (B) TC-ST-4-2 (B)	FLOOR 4 MER	TC-SPF-4-1 & 2 SUCTION	100,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-4-3 (B)	FLOOR 4 MER	TC-SPF-4-3 SUCTION	40,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-4-4 (C)	FLOOR 4 MER	TC-ACS-4-1 SUCTION	65,000	16 x 12 x 5			TO FIT ACS UNIT
TC-ST-4-5 (B)	FLOOR 4 MER	TC-EF-4-1 DISCHARGE	15,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-4-6 (B)	FLOOR 4 MER	TC-EF-4-2 DISCHARGE	3,500	3 x 1.5 x 3			
TC-ST-4-7 (B)	FLOOR 4 MER	TC-EF-4-5 DISCHARGE	25,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-4-8 (B)	FLOOR 4 MER	TC-TX-4-1 DISCHARGE	1,000	2 x 1 x 3			
TC-ST-5-1 (B)	FLOOR 5 MER	EMERGENCY GENERATOR SUCTION	140,000	24 x12 x5	0.10		
TC-ST-5-2 (B)	FLOOR 5 MER	EMERGENCY GENERATOR DISCHARGE	130,000	14 x14 x7	0.10		
TC-ST-5M-1 (C)	FLOOR 5M MER	TC-V-5M-1 SUCTION	124,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-2 (C)	FLOOR 5M MER	TC-V-5M-1 DISCHARGE	124,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-3 (C)	FLOOR 5M MER	TC-V-5M-2 SUCTION	124,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-4 (C)	FLOOR 5M MER	TC-V-5M-2 DISCHARGE	124,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-5 (B)	FLOOR 5M MER	TC-EF-5M-5 DISCHARGE	10,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-6 (B)	FLOOR 5M MER	TC-EF-5M-1 DISCHARGE	30,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-7 (B)	FLOOR 5M MER	TC-EF-5M-2 SUCTION	20,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-8 (B)	FLOOR 5M MER	TC-EF-5M-2 DISCHARGE	20,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-9 (B)	FLOOR 5M MER	TC-TX-5M-1 DISCHARGE	36,500	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-10 (B) TC-ST-5M-11 (B)	FLOOR 5M MER	TC-EF-5M-3 & 4 DISCHARGE	6,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-12 (B)	FLOOR 5M MER	TC-SX-5M-1 DISCHARGE	9,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-5M-13 (B)	FLOOR 5M MER	TC-EF-5M-7 DISCHARGE	18,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER

SOUND TRAPS

(IAC AS STANDARD)

TRAP No.	LOCATION	SERVICE	CFM	TRAP SIZE W x H x L (FT x FT x FT)	MAX. PRESSURE DROP (IN. H2O)	SPECIFICATION TYPE (IAC. MODEL No.)	REMARKS
TC-ST-21-1 (C) TC-ST-21-2 (C)	FLOOR 21	TC-SX-21-1 & TC-SX-21-2 INLET	137,500	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-21-3 (C) TC-ST-21-4 (C)	FLOOR 21	TC-SX-21-1 & TC-SX-21-2 DISCHARGE	137,500	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-21-5 (C)	FLOOR 21	TC-EF-21-1 INLET	15,000	SIZE TO FIT FAN 7FT LONG	0.10		CONE DIFFUSER SILENCER
TC-ST-21-6 (C)	FLOOR 21	TC-EF-21-1 DISCHARGE	15,000	SIZE TO FIT FAN 3FT LONG	0.10		CONE DIFFUSER SILENCER
TC-ST-32-1 (TO)	FLOOR 32	FLOOR 32 RETURN TAP	7,000/14,500	6'-6" x 1 x 3	0.10		
TC-ST-32-2 (TO)	FLOOR 32	FLOOR 32 RETURN TAP	7,000/14,500	6 x 1'-6" x 3	0.10		
TC-ST-33-1 (TO)	FLOOR 33	FLOOR 33 RETURN TAP	7,000/14,500	5'-8" x 1'-3" x 3	0.10		
TC-ST-33-2 (TO)	FLOOR 33	FLOOR 33 RETURN TAP	7,000/14,500	6 x 1'-6" x 3	0.10		
TC-ST-34-1 (B) THRU TC-ST-34-4 (B)	FLOOR 34 MER	TC-SX-34-1,2,3,4 DISCHARGE	35,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-34-5 (B)	FLOOR 34 MER	TC-ACS-34-1 INLET	46,000	14 x 12 x 5	0.10		
TC-ST-34-6 (B) TC-ST-34-7 (B)	FLOOR 34 MER	TC-ACS-34-2 & 3 INLET	90,000	14 x 13 x 3 8 x 12 x 5	0.10		
TC-ST-34-8 (B) TC-ST-34-9 (B)	FLOOR 34 MER	TC-EF-34-1&2 DISCHARGE	30,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-34-10 (B)	FLOOR 34 MER	FAN TX-34-1 DISCHARGE	25,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-35-1 (TO)	FLOOR 35	FLOOR 35 RETURN TAP	7,000/14,500	6 x 1'-1" x 3	0.10		
TC-ST-35-2 (TO)	FLOOR 35	FLOOR 35 RETURN TAP	7,000/14,500	6 x 1'-1" x 3	0.10		
TC-ST-36-1 (TO)	FLOOR 36	FLOOR 36 RETURN TAP	7,000/14,000	6 x 1'-1" x 3	0.10		
TC-ST-36-2 (TO)	FLOOR 36	FLOOR 36 RETURN TAP	7,000/14,000	6 x 1'-1" x 3	0.10		
TC-ST-37-1 (TO)	FLOOR 37	FLOOR 37 RETURN TAP	7,000/14,000	6 x 1'-1" x 3	0.10		
TC-ST-37-2 (TO)	FLOOR 37	FLOOR 37 RETURN TAP	7,000/14,000	6 x 1'-1" x 3	0.10		
TC-ST-45-1 (TO)	FLOOR 45	FLOOR 45 RETURN TAP	6,500/12,500	6 x 1'-1" x 3	0.10		
TC-ST-46-1 (TO)	FLOOR 46	FLOOR 46 RETURN TAP	6,500/12,500	6 x 1'-1" x 3	0.10		
TC-ST-47-1 (TO)	FLOOR 47	FLOOR 47 RETURN TAP	10,000/19,000	7 x 1'-4" x 3	0.10		
TC-ST-48-1 (B)	FLOOR 48 MER	TC-ACS-48-1 INLET	58,000	14 x 12 x 5	0.10		
TC-ST-48-2 (B)	FLOOR 48 MER	TC-EF-48-1 DISCHARGE	30,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-48-3 (B)	FLOOR 48 MER	TC-TX-48-1 SUCTION	18,000	3 x 5 x 3	0.10		
TC-ST-48-4 (B)	FLOOR 48	TC-EF-48-2 SUCTION	11,000	2 x 4 x 3	0.10		
TC-ST-49-1 (B)	FLOOR 49 MER	TC-SPF-49-1 INLET	100,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-49-2 (B)	FLOOR 49 MER	TC-SPF-49-2 INLET	100,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER
TC-ST-49-3 (B)	FLOOR 49 MER	TC-EF-49-1 DISCHARGE	10,000	SIZE TO FIT FAN	0.10		CONE DIFFUSER SILENCER

RETURN, EXHAUST AND VENTILATION FANS

(TWIN CITY AS STANDARD U.O.N)

FAN No.	LOCATION	SERVICE	CFM	STATIC PRESSURE (IN. H2O)	MAX. OUTLET VELOCITY (FPM)	DISCHARGE DIRECTION	ARRANGEMENT	FAN R.P.M.	FAN ROTATION	WIDTH AND INLET	WHEEL DIAMETER (INCHES)	UNIT TYPE	UNIT MODEL	UNIT SIZE	B.H.P.	MIN. MOTOR H.P.	MOTOR R.P.M.	MOTOR LOCATION	VOLTS	PHASE	Hz	VFD TYPE	VFD BYPASS	VIBRATION BASE SPECIFICATION TYPE	VIBRATION BASE MIN. STATIC DEFLECTION (IN.)	CLASS	REMARKS
TC-RF-3-1 (C)	FLOOR 3 MER	COACH LOBBY RETURN / SX	30,000	2.0	1,251	HORIZ.	9	556		—	60	MIXED FLOW	QSLSH	490	13.2	15	1,750		460	3	60	B	•	VI	1-1/2	I	
TC-RF-3-2 (B)	FLOOR 3 MER	TOWER LOBBY RETURN / SX	30,000	2.0/2.3	3,326	HORIZ.	4	1,185	—	—	42	VANE AXIAL	2000	42-21	14.5	20	1,185	—	460	3	60	B	•	IV	2	I	HOWDEN BUFFALO AS STD.
TC-RF-4-2 (B)	FLOOR 4 MER	STREET THRU LEVEL 3 PUBLIC AREA RA / SX	17,000	2.0	1,436	UB	3	556		SWSI	44.5	CENTR.	BAE	445	6.5	7.5	1,750		460	3	60	B	•	I	1-1/2	I	
TC-RF-4-3 (TO)	LEVEL 4 MER	FLOOR 3 L'OREAL RETURN / SX	6,000	1.5	1,207	HORIZ.	9	1,153		—	27	MIXED FLOW	QSLSH	222	2.02	3	1,750		460	3	60	B	•	VI	1-1/2	I	FUTURE FAN BY TENANT
TC-RF-5-1 (B)	LEVEL 5MER	FLOOR 5 RETURN	2,300	1.25	1,207	HORIZ.	9	846		—	20	MIXED FLOW	QSL	165	0.7	1	1,750		460	3	60	B	•	VI	1-1/2	I	
TC-RF-34-1 (B) TC-RF-34-2 (B)	FLOOR 34 MER	HIGH RISE CENTRAL AC RETURN / SX	70,000	1.5	1,553	UB	3	352	CCW	DWDI	60	CENTR.	BAE	660	21.5	25	1,750	Y	460	3	60	B	—	I	2	I	
TC-RF-48-1 (B) TC-RF-48-2 (B)	FLOOR 48 MER	HIGH RISE CENTRAL AC RETURN / SX	35,000	1.5	1,408	UB	3	454	CCW	DWDI	60	CENTR.	BAE	490	10.42	15	1,750	Y	460	3	60	B	•	I	2	I	
TC-EF-3-1 (B)	FLOOR 3 MER	EAST MER EXHAUST / SX	30,000	1.0	1,856	HORIZ.	9	707	—	—	49	MIXED FLOW	QSLSH	402	9.35	15	1,750	—	460	3	60	—	—	VI	1-1/2	I	
TC-EF-3-2 (B)	FLOOR 3 MER	MARKET EXHAUST / SX	35,000/65,000	2.5/3.3	3,330	HORIZ.	4	1185	—	—	48	VANE AXIAL	2000	48-26	51.0	60	1,185	—	460	3	60	B	•	IV	2	I	HOWDEN BUFFALO AS STD.
TC-EF-3-3 (PK) TC-EF-3-4 (PK)	FLOOR 3 MER	CAR PARK EXHAUST / SX	48,000	2.5/3.0	4,352	HORIZ.	4	1780	—	—	45	VANE AXIAL	2000	45-21	34.7	40	1,780	—	460	3	60	B	•	IV	2	I	HOWDEN BUFFALO AS STD.
TC-EF-3-5 (B)	FLOOR 3 MER	LOADING DOCK EXHAUST / SX	35,000	2.0	1,260	HORIZ.	9	508		—	66	MIXED FLOW	QSLSH	542	16.2	20	1,750		460	3	60	B	•	IV	2	I	
TC-EF-3-6 (C) TC-EF-3-7 (B)	FLOOR 4 MER	COACH RECVG. TOWER MAILROOM RA / SX	2,150/4,000	2.0	805	HORIZ.	9	1,839		—	27	MIXED FLOW	QSLSH	222	1.9	3	1,750		460	3	60	B	•	VI	1-1/2	I	
TC-EF-4-1 (B)	FLOOR 4 MER	BELOW GRADE GENERAL EXHAUST / SMOKE EXHAUST	15,000	2.75	1,207	HORIZ.	9	1,416		—	36.5	MIXED FLOW	QSLSH	300	9.27	15	1,750		460	3	60	—	—	VI	1-1/2	I	
TC-EF-4-2 (B)	FLOOR 4 MER	LIFE SAFETY FUEL OIL TANK RM EXHAUST / SX	3,500	2.5	1,522	TAU	3	1,378		SWSI	20	CENTR.	BAE	200	1.8	3	1,750		460	3	60	—	—	VI	1-1/2	I	
TC-EF-4-3 (B)	FLOOR 4 MER	COGEN ROOM No.2 EXHAUST / SX	18,000	0.75	751	HORIZ.	9	338		—	60	MIXED FLOW	QSLSH	490	3.15	5	1,750		460	3	60	B		VI	1-1/2	I	
TC-EF-4-5 (B)	FLOOR 4 MER	MER EXHAUST / SX	25,000	1.0	864	HORIZ.	9	240		—	89	MIXED FLOW	QSLSH	730	7.57	10	1,750		460	3	60	—	—	IV	1-1/2	I	
TC-EF-5M-1 (B)	FLOOR 5M MER	CHILLER PLANT EXHAUST / SX	30,000	1.0/1.3	4,235	HORIZ.	4	1,780	—	—	36	VANE AXIAL	1000	36-14	9.9	15	1,780	—	460	3	60	—	—	VI	2	I	HOWDEN BUFFALO AS STD.
TC-EF-5M-2 (B)	LEVEL 5M MER	MER EXHAUST / SX	20,000	1.0	735	HORIZ.	9	1,163		—	20	MIXED FLOW	QSLSH	165	0.49	1.0	1,750		460	3	60	—	—	VI	2	I	
TC-EF-5M-3 (B) TC-EF-5M-4 (B)	FLOOR 5M MER	NETWORK PROTECTOR EXHAUST	5,000	0.75	824	HORIZ.	9	653		—	33	MIXED FLOW	QSL	270	1.01	1.5	1,750		460	3	60	—	—	VI	2	I	SEE NOTE 10.
TC-EF-5M-5 (B)	FLOOR 5M MER	GENERATOR ROOM EXHAUST / SX	10,000	0.75	750	HORIZ.	9	457		—	44.5	MIXED FLOW	QSLSH	365	1.65	2	1,750		460	3	60	—	—	VI	2	I	
TC-EF-5M-7(B)	FLOOR 4 MER	COGEN ROOM No.1 EXHAUST	18,000	1.0	751	HORIZ.	9	338		—	60	MIXED FLOW	QSL	490	3.15	5	1,750		460	3	60	B		VI	1-1/2	I	
TC-EF-21-1(C)	FLOOR 21 MER	ATRIUM RELIEF FAN	15,000	1.0	928	HORIZ.	9	338		—	60	MIXED FLOW	QSL	330	3.15	5	1,750		460	3	60	B		VI	1-1/2	I	
TC-EF-34-1 (B) TC-EF-34-2 (B)	FLOOR 34 MER	MER EXHAUST / SX	32,000	1.0	1,980	HORIZ.	9	774		—	49	MIXED FLOW	QSLSH	402	10.6	15	1,750		460	3	60	—	—	VI	2	I	
TC-EF-48-1 (B)	FLOOR 48 MER	MER EXHAUST / SX	30,000	1.0/1.3	3,120	HORIZ.	4	1,185		—	42	VANE AXIAL	1000	42-17	7.9	10	1,185	—	460	3	60	—	—	VI	1 -1/2	I	HOWDEN BUFFALO AS STD.
TC-EF-48-2 (B)	FLOOR 48 MER	TOWER HIGH RISE GENERAL EXHAUST	11,000	2.0	1,436	TAU	9	683		SWSI	36.5	CENTR.	BAF	365	4.3	5.0	1,750	Z	460	3	60	—	—	VI	1-1/2	I	
TC-EF-48-3 (B)	LEVEL 48 MER	HIGH RISE TOWER JANITOR'S CLOSET EXHAUST	2,000	1.75	1,042	TH	9	1,242		SWSI	18.25	CENTR.	BAF	182	0.74	1	1,750	Z	460	3	60	—	—	VI	1-1/2	I	
TC-EF-49-1 (B)	FLOOR 49 MER	MER EXHAUST/SX	28,000	1.0	1,022	HORIZ.	9	378		—	66	MIXED FLOW	QSLSH	542	6.2	7.5	1,750		460	3	60	—	—	VI	1-1/2	I	
TC-EF-50-1 (B)	FLOOR 50 ROOF	LEVEL 4 COGEN FLUE EXHAUST	14,064	1.0		HORIZ.				—		CENTR. IMPELLER	TDF	620-10		10			460	3	60	B	•	VI	2	I	ENERVEX AS STD. SEE NOTE 5
TC-EF-50-2 (B)	FLOOR 50 ROOF	LEVEL 5 BOILER FLUE EXHAUST	9,968	1.5		HORIZ.				—		CENTR. IMPELLER	TDF	620-7.5		7.5			460	3	60	B	•	VI	2	I	ENERVEX AS STD. SEE NOTE 5
TC-TF-#-1 (B) TC-TF-#-2 (B)	REFER TO PLANS MULTI. FLOORS	BELOW GRADE AND TOWER ELECTRIC CLOSETS	500	0.375	1,788	HORIZ.		1,550	—	—		INLINE	Z10H (TDA)		—	372 WATTS	1,750		115	1	60	—	—	VI	1-1/2	I	PENNBARRY AS STD. REFER TO PLAN FOR QTY.
TC-SPF-4-1 (B) TC-SPF-4-2 (B)	FLOOR 4 MER	TOWER STAIR PRESSURIZATION	100,000	4.5/4.9	3,537	HORIZ.	4	1,185	—	—	72	VANE AXIAL	2000	72-30	101.2	125	1,185	—	460	3	60	B	•	IV	1-1/2	II	HOWDEN BUFFALO AS STD.
TC-SPF-4-3 (B)	FLOOR 4 MER	NORTH PODIUM STAIR PRESSURIZATION	40,000	4.0/4.2	2,515	HORIZ.	4	1,780		—	54	VANE AXIAL	1000	54-26	38.3	50	1,780	—	460	3	60	B	•	IV	1-1/2	II	HOWDEN BUFFALO AS STD.
TC-SPF-49-1 (B) TC-SPF-49-2 (B)	FLOOR 49 MER	TOWER STAIR PRESSURIZATION	100,000	4.5/4.9	3,537	HORIZ.	4	1,185	—	—	72	VANE AXIAL	2000	72-30	101.2	125	1,185	—	460	3	60	B	•	IV	1-1/2	II	HOWDEN BUFFALO AS STD.
TC-SX-5M-1 (B)	FLOOR 5 MEZZ. MER	WEST ELEC. ROOM AND ENGR'S SUITE	9,000	1.0	1,000	HORIZ.	9	698		—	36.5	MIXED FLOW	QSLSH	300	2.02	3	1,750		460	3	60	B	•	VI	2	I	
TC-SX-21-1 (C) TC-SX-21-2 (C)	FLOOR 21	ATRIUM SMOKE EXHAUST	137,500	2.5/3.0	4,144	HORIZ.	4	890	—	—	78	VANE AXIAL	2000	78-30	83.6	100	890	—	460	3	60	A	•	IV	2	II	HOWDEN BUFFALO AS STD.
TC-SX-34-1 (B) TC-SX-34-2 (B)	FLOOR 34 MER	TOWER GENERAL/SMOKE EXHAUST	35,000	2.75/3.0	2,785	HORIZ.	4	1,185	—	—	48	VANE AXIAL	1000	48-26	20.6	25	1,185	—	460	3	60	B	•	IV	1-1/2	II	HOWDEN BUFFALO AS STD.
TC-SX-34-3 (B) TC-SX-34-4 (B)	FLOOR 34 MER	TOWER GENERAL/SMOKE EXHAUST	35,000	2.75/3.0	2,785	HORIZ.	4	1,185	—	—	48	VANE AXIAL	1000	48-26	20.6	25	1,185	—	460	3	60	B	•	IV	1-1/2	II	HOWDEN BUFFALO AS STD.
TC-TX-3-1 (TO)	FLOOR 3 MER	FLOOR 3 TENANT	1,000	1.5	952	TH	3	1,622		SWSI	13.5	CENTR.	BAF	135	0.34	0.5	1,750		460	3	60	B	•	VI	1-1/2	I	FUTURE FAN BY TENANT
TC-TX-4-1 (B)	FLOOR 4 MER	LOWER LEVEL TOILET EXHAUST	2,500	2.0	1,087	TH	3	1,207		SWSI	20.0	CENTR.	BAF	200	1.05	1.5	1,750		460	3	60	B	•	VI	1-1/2	I	
TC-TX-5M-1 (B)	FLOOR 5 MEZZ. MER	LOW RISE TOWER TOILET EXHAUST	36,500	1.75	1,243	HORIZ.	9	484		—	36.5	MIXED FLOW	QSL	542	15.5	20	1,750		460	3	60	B	•	VI	1-1/2	I	
TC-TX-5M-2 (B)	FLOOR 5 MER	ENGINEER'S OFFICE TOILET EXHAUST	700	0.75	952	TH	3	1,270		SWSI	13.5	CENTR.	BAF	135	0.17	0.25	1,750		120	1	60	B	•	VI	1-1/2	I	
TC-TX-34-1 (B)	FLOOR 34 MER	MID RISE TOWER TOILET EXHAUST	25,000	1.75	1,263	HORIZ.	9	592		—	54.25	MIXED FLOW	QSL	445	10.1	15	1,750		460	3	60	B	•	VI	1-1/2	I	
TC-TX-48-1 (B)	FLOOR 48 MER	HIGH RISE TOWER TOILET EXHAUST	18,000	1.75	1,304	TAU	9	472		SWSI	49	CENTR.	BAF	490	6.18	7.5	1,750		460	3	60	B	•	[illegible]	1-1/2	[illegible]	
TC-V-C1-1 (PK) THRU TC-V-C1-8 (PK)	LEVEL C1	LEVEL C1 PARKING SUPPLY AIR	10,000	2.5	2,012	HORIZ.	9	1,691		—	27	MIXED FLOW	QSL	222	6.04	7.5	1,750		460	3	60	B	—	[illegible]	[illegible]	I	
TC-V-3-1 (B)	LEVEL 3 MER	LOADING DOCK OUTSIDE AIR	32,000	2.0	1,334	HORIZ.	9	568		—	60	MIXED FLOW	QSL	490	10	15	1,750		460	3	60	B	•	[illegible]	2	I	
TC-V-5M-1 (C) TC-V-5M-2 (C)	FLOOR 5 MEZZ. MER	ATRIUM SUPPLY MAKE UP AIR	124,000	1.0/1.5	3,737	HORIZ.	4	890		—	78	VANE AXIAL	1000	78-26	52.7	60	890		460	3	60	B	•	IV	[illegible]	[illegible]	HOWDEN BUFFALO AS STD.

NOTES (RETURN, EXHAUST, AND VENTILATION FANS):

1. STATIC PRESSURE LISTED IN SCHEDULE IS EXCLUSIVE OF DRIVE LOSSES, BELT GUARDS, FAN CAGES, VELOCITY PRESSURE, ETC.
2. ALL RETURN (RF), EXHAUST (EF) (EXCEPT TC-EF-5M-1, 5M-2, 5M-7 AND 48-2), SMOKE EXHAUST (SX), AND STAIR PRESSURIZATION (SPF) FANS SHALL BE CONNECTED TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM.
3. VANE AXIAL: STATIC PRESSURE / TOTAL PRESSURE
4. TOILET EXHAUST: PRESENT DUTY / FUTURE DUTY
5. PROVIDE WITH MODS DRAFT CONTROL & BAROMETRIC DAMPER.
6. ALL VANE AXIAL FANS WITH A VELOCITY GREATER THAN 3,500 FPM AND/OR 3.0 INCHES TOTAL PRESSURE, REQUIRE THRUST RESTRAINTS.
7. ALL VANE AXIAL FANS GREAT THAN 42 INCH DIAMETER TO BE PROVIDED WITH A CLAM SHELL SPLIT HOUSING.
8. ALL VANE AXIAL FANS ARE TO BE PROVIDED WITH MOUNTING CLIPS AT CENTERLINE OF FAN BARREL TO SUPPORT VIBRATION ISOLATORS AND THRUST RESTRAINTS.
9. THE VIBRATION ISOLATION APPLICATION NEEDS TO TAKE INTO ACCOUNT THAT A CONE MOUNTED SOUND TRAP IS AN EXTENSION OF THE FAN SYSTEM AND WILL BE MOVING BETWEEN THE FLEXIBLE CONNECTIONS AS ONE UNIT. WHERE THE FAN IS SUSPENDED FROM STRUCTURE ABOVE, THE ROD TYPE ISOLATORS ARE THE SAME FOR THE FAN AND THE SOUND TRAP.WHERE THE FAN IS FLOOR MOUNTED, THE ISOLATORS ARE THE SAME FOR THE FAN AND THE SOUND TRAP AND CAN BE MOUNTED DIRECTLY BELOW THE TRAP OR IN A CENTER LINE SIMILAR TO THE FAN ARRANGEMENT.
10. FANS TO OPERATE CONTINUOUSLY IN PARALLEL. PROVIDE A DEDCUT ALTERNATE PRICE TO FURNISH AND INSTALL A SINGLE 10,000 CFM MIXED FLOW EXHAUST FAN IN LIEU OF TWO 6,000 CFM EXHAUST FANS. ALTERNATE SHALL COST OF REVISED ELECTRICAL CIRCUITING.

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.

Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0102.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:20 AM

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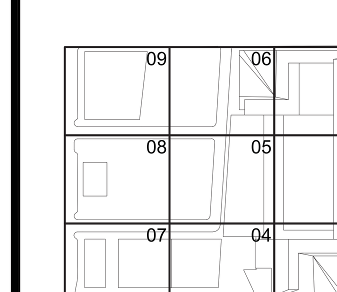
No.	Issue	Date
5	ISSUED FOR FILING	02-08-2013
4	DI-21 MECHANICAL	01-25-2013
3	DI-18 MECH PROG DWGS	12-21-2012
2	DI-08 MECH. PROGRESS	12-03-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 - 12:10 PM
NYC Development Hub

STATE OF NEW YORK · AUGUSTINE A. DIGIACOMO · LICENSED PROFESSIONAL ENGINEER · NO. 052475

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0102
Drawing Title MECHANICAL SCHEDULE SHEET NO.2
Drawing Number M6-0102
B-SCAN Drawing Number M-602.00

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DEPT OF BLDGS 121324290 Job Number
ES602777965 Scan Code

CONSTANT / VARIABLE VOLUME BOXES

(TITUS TYPE 'DESV' AS STANDARD)

BOX SIZES (SEE DWGS)	MAXIMUM SET POINT CFM RANGE LOW	MAXIMUM SET POINT CFM RANGE HIGH	SET POINT ON PLANS OF CFM SHOWN MIN.	MIN. SP @ BOX MAX. CFM	INLET AND OUTLET SIZES IN	INLET AND OUTLET SIZES OUT	BOXES WITH HEATING COIL: TEMP. (°F) ENTERING AIR	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	SOUND TRAP: (IAC MODEL NUMBER & SIZES)	PRESSURE DROP INCHES W.G.	REMARKS
7	90	500	65	0.14	7"Ø	12x10	55	VARIES	150	VARIES	1	SEE NOTES	.10	.19	3HL 12x12x36	.01	
8	245	800	120	0.20	8"Ø	12x10	55	VARIES	150	VARIES	1	SEE NOTES	.10	.27	3HL 18x12x36	.01	
10	385	1000	195	0.12	10"Ø	14x12.5	55	VARIES	150	VARIES	1	SEE NOTES	.10	.19	3HL 18x12x36	.02	
12	550	1500	280	0.15	12"Ø	16x15	55	VARIES	150	VARIES	1	SEE NOTES	.10	.22	3HL 24x12x36	.04	
14	880	2000	400	0.16	14"Ø	20x17.5	55	VARIES	150	VARIES	1	SEE NOTES	.10	.22	5HL 24x12x60	.06	
16	1000	2500	530	0.15	16"Ø	24x18	55	VARIES	150	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 AND FLOW RATES.
3. ALL COILS SHALL BE SUITABLE FOR WORKING PRESSURES AS NOTED ON THE PLANS.
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 REGULATOR

(TITUS AQCV/DQCV AS STANDARD)

BOX SIZES (SEE DWGS)	CFM RANGE LOW	CFM RANGE HIGH	DAMPER SIZE (IN)	MIN. SP @ BOX MAX. CFM	RADIATED NC RATING FOR 2" WC INLET PRESSURE	DISCHARGE NC RATING FOR 2" WC INLET PRESSURE	REMARKS
F	250	500	18x6	0.155	35	26	
H	435	1000	18x10	0.172	37	22	
K	725	2000	20x14	0.165	38	22	
M	970	3500	22x16	0.165	43	25	
N	1220	5000	24x18	0.165	44	26	
P	1860	6000	30x20	0.162	42	24	
R	2750	8000	40x20	0.152	42	24	
S	8001	10,000	40x20	0.210	43	25	

NOTES:

1. ALL STAIR PRESSURIZATION AND SERVICE ELEVATOR LOBBY PRESSURIZATION CVR'S SHALL BE ANALOG TYPE AQCV
2. ALL CVR'S SERVING AIR CONDITIONING AND VENTILATED AREAS SHALL BE DIGITAL TYPE DQCV.

UNIT AND ENTRANCE HEATERS

UNIT HEATER No.	LOCATION	SERVICE	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: GPM	WORKING PRESSURE (PSIG)	ENTERING WATER TEMP. (°F)	LEAVING WATER TEMP. (°F)	ELECTRIC: kW @ HIGH SETTING	VOLTS/PHASE/Hz	MOTOR: H.P.	R.P.M.	TYPE	MODEL No.	REMARKS
TC-UH-C1-1 (B) THRU TC-UH-C1-14 (B)	C1 LEVEL	SPACE HEATING	550	1,350	20.1	60	94	1.6	150	180	150	—	115/1/60	25 W	1,550	HORIZ.	S-36	TRANE AS STANDARD
TC-UH-03-1 (B) THRU TC-UH-03-10 (B)	FLOOR 3 MER	SPACE HEATING	1,800	1,000	60.5	60	91	3.1	150	180	150	—	115/1/60	1/12	1,000	HORIZ.	S-108	TRANE AS STANDARD
TC-UH-04-1 (B) THRU TC-UH-04-10 (B)	FLOOR 4 MER	SPACE HEATING	1,800	1,000	60.5	60	91	3.1	150	180	150	—	115/1/60	1/12	1,000	HORIZ.	S-108	TRANE AS STANDARD
TC-UH-05-1 (B) THRU TC-UH-05-14 (B)	FLOOR 5 MER	SPACE HEATING	1,800	1,000	60.5	60	91	3.1	150	180	150	—	115/1/60	1/12	1,000	HORIZ.	S-108	TRANE AS STANDARD
TC-UH-05M-1 (B) THRU TC-UH-05M-4 (B)	FLOOR 5M MER	SPACE HEATING	1,800	1,000	60.5	60	91	3.1	150	180	150	—	115/1/60	1/12	1,000	HORIZ.	S-108	TRANE AS STANDARD
TC-UH-21-1 (B)	FLOOR 21	FAN ROOM SPACE HEATING	550	1,550	20.1	60	94	1.6	150	180	150	—	115/1/60	25 W	1,550	HORIZ.	S-36	TRANE AS STANDARD
TC-UH-34-1 (B) THRU TC-UH-34-9 (B)	FLOOR 34 MER	SPACE HEATING	1,100	1,000	40.3	60	94	4.7	150	180	150	—	115/1/60	1/20	1,000	HORIZ.	S-72	TRANE AS STANDARD
TC-UH-48-1 (B) THRU TC-UH-48-6 (B)	FLOOR 48 MER	SPACE HEATING	1,100	1,000	40.3	60	94	4.7	150	180	150	—	115/1/60	1/20	1,000	HORIZ.	S-72	TRANE AS STANDARD
TC-UH-49-1 (B) THRU TC-UH-49-7 (B)	FLOOR 49 MER	SPACE HEATING	1,100	1,000	40.3	60	94	4.7	150	180	150	—	115/1/60	1/20	1,000	HORIZ.	S-72	TRANE AS STANDARD
TC-UHE-ST-1 (B) TC-UHE-ST-2 (B)	STREET LEVEL	STAIR "B" & "D" ENTRANCE HEATING	1,400	1,725				—	—	—	—	15	460/3/60	1/6	1,725		926U15	INDEECO AS STANDARD
TC-UHE-ST-4 (B)	STREET LEVEL	STAIR "E" ENTRANCE HEATING	1,400	1,725				—	—	—	—	15	460/3/60	1/6	1,725		926U15	INDEECO AS STANDARD
TC-UHE-ST-10 (B) THRU TC-UHE-ST-28 (B)	STREET LEVEL MARKET PLACE	MARKET PLACE TEMPORARY SPACE HEATING	700	1,550				—	—	—	—	10	460/3/60	1/30	1,550		926U10	INDEECO AS STANDARD
TC-UHE-ST-29 (B)	STREET LEVEL	GUARD BOOTH SPACE HEATING	700	1,550				—	—	—	—	5	460/3/60	1/30	1,550		926U05	INDEECO AS STANDARD
TC-UHE-5-1 (B)	FLOOR 5 MER	EMERGENCY GENERATOR ROOM HEATING	700	1,550				—	—	—	—	10	460/3/60	1/30	1,550		926U10	INDEECO AS STANDARD
TC-UHE-##-1 (B) THRU TC-UHE-##-10 (B)	FLOOR 23 THRU FLOOR 33	TEMPORARY SPACE HEATING						—	—	—	—	6.0	460/3/60					
TC-UHE-##-1 (B) THRU TC-UHE-##-9 (B)	FLOOR 35 FLOOR 36	TEMPORARY SPACE HEATING						—	—	—	—	6.0	460/3/60					
TC-UHE-##-1 (B) THRU TC-UHE-##-6 (B)	FLOOR 37 THRU FLOOR 47	TEMPORARY SPACE HEATING						—	—	—	—	6.0	460/3/60					
TC-EH-C1-1 (B) THRU TC-EH-C1-4 (B)	C1 LEVEL	ENTRANCE HEATING	856	1,050	59.3	70	98.8	4.0	300	180	150	—	115/1/60	(2) @ 0.22	1,050		FFJB100	TRANE AS STANDARD
TC-EH-C1-5 (B)	C1 LEVEL SUCTION TANK ROOM	LOBBY ENTRANCE HEATING	4,200		244.0	70	123.1	13.7		180	160	—	460/3/60	5			VBA 40	IEC AS STANDARD
TC-EH-ST-1 (B)	STREET LEVEL	STAIR "A" & "C" EXIT PASSAGE SPACE HEATING	856	1,050	59.3	70	98.8	4.0	300	180	150	—	115/1/60	(2) @ 0.22	1,050		FFJB100	PROVIDE UNIT MOUNTED THERMOSTAT
TC-EH-ST-2 (C) TC-EH-ST-3 (B)	STREET LEVEL	LOBBY ENTRANCE HEATING	4,200		244.0	70	123.1	13.7		180	160	—	460/3/60	5			VBA 40	IEC AS STANDARD
TC-EHE-ST-1 (B)	STREET LEVEL	LOADING DOCK AIR LOCK SPACE HEATING	500					—	—	—	—	10	460/3/60	10			922U10	INDEECO AS STANDARD
TC-EHE-ST-2 (B)	STREET LEVEL	TOILET ROOM SPACE HEATING	250					—	—	—	—	5	460/3/60	1/30			922U05	INDEECO AS STANDARD
TC-UHE-C1-1 (B)	C1 LEVEL	ADA TOILET ROOM SPACE HEATING	250					—	—	—	—	5	460/3/60	1/30			922U05	INDEECO AS STANDARD

NOTES:

1. BOTTOM ELEVATION OF ALL UNIT HEATERS WITHIN MECHANICAL EQUIPMENT ROOMS SHALL BE MOUNTED AT +9'-0" A.F.F.

CEILING RETURN GRILLES AND REGISTERS

(TITUS AS STANDARD)

NON-DUCTED CFM RANGE	NON-DUCTED NECK SIZE	NON-DUCTED NOMINAL FACE SIZE	DUCTED CFM RANGE	DUCTED NECK SIZE	DUCTED NOMINAL FACE SIZE
0-125	10 x 10	12 x 12	0-250	10 x 10	12 x 12
0-325	10 x 22	12 x 24	0-600	10 x 22	12 x 24
0-700	22 x 22	24 x 24	0-1200	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 PLANTS FOR SIZES.
3. THE ABOVE SCHEDULED GRILLES AND REGISTERS ARE FURNISHED BY THE OWNER, TO BE INSTALLED UNDER THIS SECTION OF THE SPECIFICATIONS.

CEILING SUPPLY DIFFUSERS

(TITUS "OMNI-NT" AS STANDARD)

CFM RANGE (4 WAY)	CFM RANGE (3 WAY)	CFM RANGE (2 WAY)	NECK SIZE	FACE SIZE
0 - 150	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 INDICATED OTHER THAN WAY.
3. ALL CEILING DIFFUSERS LOCATED WITHIN GYPSUM BOARD HUNG CEILING SHALL BE EQUIPPED WITH VOLUME CONTROLS OPERABLE THROUGH FACE OF DIFFUSER.

FAN COIL UNITS

(INTERNATIONAL AS STANDARD)

UNIT TYPE	LOCATION	SERVICE	AIR CAPACITY (CFM MED. SPEED)	MEDIUM SPEED FAN R.P.M.	EXTERNAL S.P. (IN.)	SENS. COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	COOLING CAPACITY AT MEDIUM SPEED: ENTERING TEMP. (°F) DB	ENTERING TEMP. (°F) WB	ENTERING WATER TEMP. (°F)	COOLING WATER CAPACITY (GPM)	MAXIMUM WATER PRESS. DROP (FT H2O)	No. OF ROWS	WORKING PRESSURE (PSI)	HEATING CAPACITY: ENTERING AIR TEMP. (°F)	ENTERING WATER TEMP. (°F)	HEATING WATER CAPACITY (GPM)	MAXIMUM WATER PRESS. DROP (FT H2O)	FILTER: SURFACE AREA (SQ FT)	SIZE (IN x IN)	EFFICIENCY (%)	MOTOR R.P.M.	MOTOR HP	VOLTS/PHASE/FREQ.	MODEL No.	REMARKS
FCU-C1-2	C1 LEVEL		250		0.1	4.4	14.8	75	63	50	0.9	2.0	3	375	60	150	1.7	2.0	1.3	7x26-3/4	30		1/12	115/1/60	CPY-03	SEE NOTE 1
FCU-C1-3	C1 LEVEL		250		0.1	4.4	14.8	75	63	50	0.9	2.0	3	375	—	—	—	—	1.3	7x26-3/4	30		1/12	115/1/60	CPY-03	SEE NOTE 1
FCU-C1-4 FCU-C1-5	C1 LEVEL		800		0.1	22.0	31.0	75	63	50	4.9	2.0	3	375	60	150	4.9	2.0	3.8	7x48-3/4	30		(2) 1/12	115/1/60	CXB-10	SEE NOTE 1
FCU-C1-6	C1 LEVEL		500		0.1	8.4	28.2	75	63	50	1.7	2.0	3	375	—	—	—	—	2.4	7x48-3/4	30		(2) 1/12	115/1/60	LHA-06	SEE NOTE 1
TYPE FCU-03	STREET LEVEL AND PLAZA LEVEL	LOBBY	265		0.1	4.4	14.8	75	63	50	0.9	2.0	3	375	60	150	1.7	2.0	1.3	7x26-3/4	30		1/12	115/1/60	LHA-03	REFER TO PLAN FOR QUANTITY AND LOCATION
TYPE FCU-06	STREET LEVEL AND PLAZA LEVEL	LOBBY	510		0.1	8.4	28.2	75	63	50	1.7	2.0	3	375	60	150	0.9	2.0	2.4	7x48-3/4	30		(2) 1/12	115/1/60	LHA-06	REFER TO PLAN FOR QUANTITY AND LOCATION
FCU-1-2 (B)	PLAZA LEVEL	FIRE COMMAND CENTER	1625		0.1	22.3	—	72	60	50	4.5	1.0	4	375	—	—	—	—	2.4	7x48-3/4	30			115/1/60	HPY-20	SEE NOTE 1
FCU-4-2 (B)	FLOOR 4 MER	FIRST RESPONDER ROOM	910		0.1	22.3	—	72	60	50	4.5	0.8	4	375	—	—	—	—	2.4	7x48-3/4	30			115/1/60	FXY-12	SEE NOTE 1
FCU-48-2 (B)	FLOOR 48 MER	FIRST RESPONDER ROOM	1625		0.1	22.3	—	72	60	50	4.5	1.0	4	125	—	—	—	—	2.4	7x48-3/4	30			115/1/60	HPY-20	
FCU-C1-1 (B) THRU FCU-1-1 (B)	C1 LEVEL THRU PLAZA LEVEL	TECH ROOM	570		0.1	8.8	—	72	60	50	1.8	2.0	4	375	—	—	—	—	2.4	7x48-3/4	30			115/1/60	FXY-08	SEE NOTE 1
FCU-3-1 (B) THRU FCU-7-1 (B)	FLOOR 3 THRU FLOOR 7	TECH ROOM	570		0.1	8.8	—	72	60	50	1.8	2.0	4	350	—	—	—	—	2.4	7x48-3/4	30			115/1/60	FXY-08	SEE NOTE 1
FCU-8-1 (B) THRU FCU-23-1 (B)	FLOOR 8 THRU FLOOR 23	TECH ROOM	570		0.1	8.8	—	72	60	50	1.8	2.0	4	300	—	—	—	—	2.4	7x48-3/4	30			115/1/60	FXY-08	SEE NOTE 2
FCU-24-1 (B) THRU FCU-35-1 (B)	FLOOR 24 THRU FLOOR 35	TECH ROOM	570		0.1	8.8	—	72	60	50	1.8	2.0	4	200	—	—	—	—	2.4	7x48-3/4	30			115/1/60	FXY-08	SEE NOTE 2
FCU-36-1 (B) THRU FCU-48-1 (B)	FLOOR 36 THRU FLOOR 48	TECH ROOM	570		0.1	8.8	—	72	60	50	1.8	2.0	4	125	—	—	—	—	2.4	7x48-3/4	30			115/1/60	FXY-08	SEE NOTE 2

NOTES:

1. CONTRACTOR TO FURNISH AND INSTALL CONTROL VALVE PACKAGE RATED AT 375 PSI(G) FOR FAN COIL UNITS ON LEVELS C1 THROUGH 6.
2. PROVIDE FACTORY VALVE PACKAGE AT REQUIRED PRESSURE RATING AS SCHEDULED.

FAN POWERED TERMINAL UNITS

(TITUS TYPE 'DTQS' AS STANDARD)

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	MIN. SET POINT CFM OF VALVE	SET POINT OF FAN LOW	SET POINT OF FAN HIGH	MIN. MOTOR HP 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 H_2O)	MIN. S.P. @ BOX @ MAX CFM (COIL & BOX)	ELECTRICAL CHAR. (VOLTS/ PHASE/ HERTZ)	SOUND TRAP: (IAC MODEL NUMBER & SIZES)	PRESSURE DROP INCHES W.G.	REMARKS
2	145	335	145	150	400	1/6	.30	8"Ø	65	VARIES	180	VARIES	SEE NOTE 2	6.0		277/1/60	3HL 12x12x36	.01	
3	200 336	480 900	145 230	401	1,050	1/4	.30	8"Ø 10"Ø	65	VARIES	180	VARIES	SEE NOTE 2	6.0		277/1/60	3HL 18x12x36	.03	
5	801	1,130	325	951	1,350	1/3	.30	12"Ø	65	VARIES	180	VARIES	SEE NOTE 2	6.0		277/1/60	3HL 24x12x36	.04	
6	1,131	1,350	450	1,351	1,650	3/4	.30	14"Ø	65	VARIES	180	VARIES	SEE NOTE 2	6.0		277/1/60	3HL 24x12x36	.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 AND FLOW RATES.
3. KEY TO SYMBOL: FAN CFM $\left(\frac{\text{MAX VALVE CFM}}{\text{MIN VALVE CFM}}\right)$
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 WORKING PRESSURES AS NOTED ON PLANS.
7. FPB = FAN POWERED BOX
   FPBR = 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.

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:10 PM
NYC Development Hub

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.

Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0103.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:20 AM

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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

STATE OF NEW YORK · AUGUSTINE A. DIGIACOMO · LICENSED PROFESSIONAL ENGINEER · NO. 062475

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0103
Drawing Title
MECHANICAL SCHEDULE SHEET NO.3
Drawing Number
M6-0103
B-SCAN Drawing Number
M-603.00
SHEET 51 OF 71

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DEPT OF BLDGS 121324290 Job Number

ES133026877 Scan Code

WATER COOLED PACKAGED AIR CONDITIONING SYSTEM

(DATA AIRE AS STANDARD)

UNIT No.	LOCATION	SERVICE	SENSIBLE CAPACITY (BTU/HR)	TOTAL CAPACITY (BTU/HR)	ENTER. AIR TEMP. (F°) DB	ENTER. AIR TEMP. (F°) WB	FAN SECTION CFM	FAN SECTION EXT. S.P. (IN.)	FAN SECTION MIN. MOTOR HP	FAN SECTION NO. OF FANS	LEAVING AIR TEMP. (°F) DB	LEAVING AIR TEMP. (°F) WB	CONDENSER EWT (°F)	CONDENSER LWT (°F)	CONDENSER GPM	ECONOMIZER COOLING COIL NO. OF ROWS	ECONOMIZER COOLING COIL AREA (SQ.FT)	WORKING PRESS. (PSIG)	HOT WATER COIL AIR SIDE MBH TOTAL	HOT WATER COIL AIR SIDE ENTERING TEMP. (°F)	HOT WATER COIL AIR SIDE LEAVING TEMP. (°F)	HOT WATER COIL WATER SIDE GPM	HOT WATER COIL WATER SIDE ENTERING TEMP. (°F)	HOT WATER COIL WATER SIDE LEAVING TEMP. (°F)	COMPRESSOR NUMBER OF COMP.	COMPRESSOR FLA PER COMP.	FILTER SURFACE AREA (SQ.FT)	FILTER % EFF.	INFRARED HUMID. LBS/HR	INFRARED HUMID. KW	REHEAT KW	ELECTRICAL TOTAL FLA	ELECTRICAL VOLTS	ELECTRICAL PHASE	ELECTRICAL Hz	MINIMUM ENERGY EFFICIENCY (EER)	VIB. BASE SPEC. TYPE	VIB. BASE MIN. STATIC DEFL. (IN.)	MODEL NUMBER	REMARKS
TC-PAC-3-1 (B) THRU TC-PAC-3-3 (B)	LEVEL 3 MER	MEET-ME ROOM B AND UPS ROOM B	121,000	165,600	85	69	4,800	0.5	7.5	1	61.6	58.4	87.5	102.5	42.0	3	7.1	350	195	65	100	13	180	150	2	12.8	3.47	MERV 8	—	—	—	30	460	3	60	10.8	XI	0.375	GFWD-04634-E	1-STBY
TC-PAC-4-1 (B) TC-PAC-4-2 (B)	FLOOR 4 MER	ELECTRICAL SERVICE SWGR ROOM No. 1	62,100	83,100	85	69	2,700	0.5	5	1	63.7	59.6	87.5	102.5	15.8	4	6.0	350	90	65	100	6.0	180	150	2	6.1	3.47	MERV 8	—	—	—	14	460	3	60	11.3	XI	0.375	GFWD-02134-E	1-STBY
TC-PAC-4-3 (B) TC-PAC-4-4 (B)	FLOOR 4 MER	MEET-ME ROOM A	121,000	165,600	85	69	4,800	0.5	7.5	1	61.6	58.4	87.5	102.5	42.0	3	7.1	350	195	65	100	13	180	150	2	12.8	3.47	MERV 8	—	—	—	30	460	3	60	10.8	XI	0.375	GFWD-04634-E	1-STBY
TC-PAC-4-5 (B)	FLOOR 4 MER	FACADE & LOBBY LIGHTING CONTROL ROOM	62,100	83,100	85	69	2,700	0.5	5	1	63.7	59.6	87.5	102.5	15.8	4	6.0	350	—	—	—	—	—	—	2	6.1	3.47	MERV 8	—	—	—	14	460	3	60	11.5	XI	0.375	GFWD-02134-E	
TC-PAC-4-6 (B) TC-PAC-4-7 (B)	FLOOR 4 MER	UPS ROOM A	62,100	83,100	85	69	2,700	0.5	5	1	63.7	59.6	87.5	102.5	15.8	4	6.0	350	—	—	—	—	—	—	2	6.1	3.47	MERV 8	—	—	—	14	460	3	60	11.5	XI	0.375	GFWD-02134-E	1-STBY
TC-PAC-5-1 (B) TC-PAC-5-2 (B)	FLOOR 5 MER	ELECTRICAL ROOM 625	24,300	36,600	85	69	1,200	0.5	2	1	66.3	59.8	87.5	102.5	9.0	2	2.1	350	—	—	—	—	—	—	1	6.1	2.78	MERV 8	—	—	—	7.7	460	3	60	12.1	XI	0.375	GTWD-01134-E	1-STBY
TC-PAC-5-3 (B) TC-PAC-5-4 (B)	FLOOR 5 MER	ELECTRICAL ROOM 622 & 627	14,800	20,500	85	69	800	0.5	2	1	66.6	60.0	87.5	102.5	6.0	2	2.1	350	—	—	—	—	—	—	1	4.5	2.78	MERV 8	—	—	—	6.1	460	3	60	12.1	XI	0.375	GTWD-00734-E	1-STBY
TC-PAC-5-5 (B)	FLOOR 5 MER	SECURITY SUITE	121,000	165,600	75	62.5	4,800	0.5	7.5	1	61.6	58.4	87.5	102.5	42.0	3	7.1	350	195	65	100	13	180	150	2	12.8	3.47	MERV 8	—	—	—	14	460	3	60	10.8	XI	0.375	GFWD-04634-E	1-STBY
TC-PAC-23-1 (B)	FLOOR 23	FLOOR 24 EMR	180,800	243,500	85	69	8,000	0.5	7.5	2	64.1	59.8	87.5	102.5	52.5	4	12.0	225	—	—	—	—	—	—	2	17.9	3.47	MERV 8	—	—	—	43	460	3	60	11.5	XI	0.375	GFWD-07034-E	
TC-PAC-26-2 (B)	FLOOR 26	FLOOR 25 SERVICE EMR	24,300	36,600	85	69	1,200	0.5	2	1	66.3	59.8	87.5	102.5	9.0	2	2.1	225	—	—	—	—	—	—	1	6.1	2.78	MERV 8	—	—	—	7.7	460	3	60	11.5	XI	0.375	GTWD-01134-E	
TC-PAC-34-1 (B)	FLOOR 34 MER	FLOOR 34M EMR	180,800	243,500	85	69	8,000	0.5	7.5	2	64.1	59.8	87.5	102.5	52.5	4	12.0	150	—	—	—	—	—	—	2	17.9	3.47	MERV 8	—	—	—	43	460	3	60	11.5	XI	0.375	GFWD-07034-E	
TC-PAC-48-1 (B) TC-PAC-48-2 (B)	FLOOR 48 MER	FLOOR 49 EMR	121,000	165,600	85	69	4,800	0.5	7.5	1	61.6	58.4	87.5	102.5	42.0	3	7.1	150	—	—	—	—	—	—	2	12.8	3.47	MERV 8	—	—	—	30	460	3	60	11.0	XI	0.375	GFWD-04634-E	
TC-PAC-49-1 (B)	FLOOR 49 MER	FLOOR 49M EMR	121,000	165,600	85	69	4,800	0.5	7.5	1	61.6	58.4	87.5	102.5	42.0	3	7.1	150	—	—	—	—	—	—	2	12.8	3.47	MERV 8	—	—	—	30	460	3	60	11.0	XI	0.375	GFWD-04634-E	

NOTES:

1. ALL PAC UNITS SERVING FIRE COMMAND CENTER, BUILDING ENGINEER'S OFFICE, FIRST RESPONDER ROOMS, ATS ROOMS, EMR'S, AND ELECTRICAL SWITCHGEAR ROOMS SHALL BE CONNECTED TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM.

COOLING TOWERS

(MARLEY AS STANDARD)

TOWER No.	LOCATION	No. OF CELLS	GPM/CELL	INLET WATER TEMP. (°F)	OUTLET WATER TEMP. (°F)	AIR WB TEMP.(°F)	MIN. MOTOR HP/CELL	VFD TYPE	VFD BYPASS	CONTROLS	MAX. OPERATING WT. PER CELL (LBS)	CFM/CELL	MAXIMUM WIDTH x LENGTH x HEIGHT (PER CELL)	MODEL No.	REMARKS
TC-CT-50-1 (B)	FLOOR 50 (ROOF)	5	2440 / 3050	100	85	78	100	A	—	SEE SPEC.	55,000	318,200	22'-5" x 13'-11" x 27'-2" SEE NOTE 3	NC8414WAS	PROVIDE VSD'S (1) STANDBY CELL

NOTES:

1. EACH CELL SHALL BE PROVIDED WITH TWO (2) 9.0kW ELECTRIC BASIN HEATERS.
2. CONNECT TWO (2) CELLS TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM. ONLY ONE (1) CELL WILL OPERATE DURING A POWER OUTAGE
3. MAXIMUM HEIGHT INCLUDE VELOCITY STACK, RAILINGS, ETC.
4. COOLING TOWER CELLS SHALL BE ALL STAINLESS STEEL CONSTRUCTION.
5. (upper-left dot) WITH FIVE (5)-CELLS IN OPERATION; (lower-right dot) WITH FOUR (4)-CELLS IN OPERATION
6. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.

AIR COOLED PACKAGED AIR CONDITIONING UNITS

(DATA AIRE AS STANDARD)

UNIT No.	LOCATION	SERVICE	SENSIBLE CAPACITY (BTU/HR)	TOTAL CAPACITY (BTU/HR)	ENTER. AIR TEMP. (°F) DB	ENTER. AIR TEMP. (°F) WB	EVAPORATOR FAN SECTION CFM	EVAPORATOR FAN SECTION EXT. S.P. (IN.)	EVAPORATOR FAN SECTION MIN. MOTOR HP	EVAPORATOR FAN SECTION NO. OF FAN	LEAVING AIR TEMP. (°F) DB	LEAVING AIR TEMP. (°F) WB	COMPRESSOR No.	COMPRESSOR REFRIG.	COMPRESSOR FLA	FILTER SIZE	FILTER %EFF.	CONDENSER FAN SECTION CFM	CONDENSER FAN SECTION AMBIENT AIR TEMP (°F)	CONDENSER FAN SECTION MIN. MOTOR HP	CONDENSER FAN SECTION NO. OF FANS	HEATING COIL KW	ELECTRICAL TOTAL FLA	ELECTRICAL VOLTS	ELECTRICAL PHASE	ELECTRICAL Hz	VIB. BASE SPEC. TYPE	VIB. BASE MIN. STATIC DEFL. (IN.)	MODEL NUMBER
TC-ACE-C1-1 (PK) TC-ACC-C1-1 (PK)	C1 LEVEL	C1 LEVEL EMR	21,600	27,000	80	67	600	0.5	0.5	1	61.8	59.2	1	R-410A	10.0	20x20x2	30%	5,000	105	0.75	1	4.0	18.7	277	1	60	—	—	DAMA-0212-AO
																							19.5	208	1	60			DRCU-0312-2
TC-ACE-C1-2 (PK) TC-ACC-C1-2 (PK)	C1 LEVEL	C1 LEVEL EMR	21,600	27,000	80	67	600	0.5	0.5	1	61.8	59.2	1	R-410A	10.0	20x20x2	30%	5,000	105	0.75	1	4.0	18.7	277	1	60	—	—	DAMA-0212-AO
																							19.5	208	1	60			DRCU-0312-2
TC-ACE-00-1 (PK) TC-ACC-00-1 (PK)	STREET LEVEL	DOCK MASTER	44,000	56,000	80	67	1,000	0.5	0.75	1	61.8	59.2	1	R-410A	14.7	20x20x2	30%	5,000	105	0.75	1	4.0	18.7	277	1	60	—	—	DAMA-0212-AO
																							19.5	208	1	60			DRCU-0312-2

NOTE:

1. EACH AIR COOLED EVAPORATOR (ACE) SHALL BE PROVIDED WITH A CONDENSATE PUMP.

ABSORPTION CHILLER

(YORK AS STANDARD)

UNIT No.	LOCATION	TONS	CHILLER GPM	CHILLER INLET WATER TEMP. (°F)	CHILLER OUTLET WATER TEMP. (°F)	CHILLER MAX. PRESSURE DROP (FT H2O)	CHILLER WORKING PRESS. (PSIG)	CHILLER FOULING	CHILLER MAX. WATER VELOCITY (FPS)	CHILLER No. OF PASSES	CONDENSER GPM	CONDENSER INLET WATER TEMP. (°F)	CONDENSER OUTLET WATER TEMP. (°F)	CONDENSER MAX. PRESSURE DROP (FT H2O)	CONDENSER WORKING PRESS. (PSIG)	CONDENSER FOULING	CONDENSER MAX. WATER VELOCITY (FPS)	CONDENSER No. OF PASSES	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	ELECTRICAL FREQUENCY	ELECTRICAL kW	HOT WATER FLOW RATE (GPM)	HOT WATER ENTERING WATER TEMPERATURE (°F)	HOT WATER OUTLET WATER TEMP. (°F)	HOT WATER MAX. PRESSURE DROP (FT H2O)	HOT WATER WORKING PRESS. (PSIG)	HOT WATER FOULING	HOT WATER MAX. WATER VELOCITY (FPS)	HOT WATER No. OF PASSES	COP	OPERATING WEIGHT PER CHILLER (LBS)	MODEL No.	REMARKS
TC-CH-5-5 (B)	FLOOR 05 MER	250	375	58	42	22.2	350	0.0001		3	1,250	85	96.6	26.8	350	0.0005		1	460	3	60	7.3	537.1	220	203.8	10.5	150	0.0001		1	0.715	22,000	YIA-HW-3B3-46-C-S-D	(2) PASS ABSORBER

NOTE:

1. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.

ELECTRIC DRIVE CHILLERS

(YORK AS STANDARD)

UNIT No.	LOCATION	TONS	REFRIGERANT TYPE	REFRIGERANT CHARGE (LBS)	CHILLER GPM	CHILLER INLET WATER TEMP. (°F)	CHILLER OUTLET WATER TEMP. (°F)	CHILLER MAX. PRESS. DROP (FT H2O)	CHILLER WORKING PRESS. (PSIG)	CHILLER FOULING FACTOR	CHILLER MAX. WATER VELOCITY (FPS)	CHILLER NUMBER OF PASSES	CONDENSER GPM	CONDENSER INLET WATER TEMP. (°F)	CONDENSER OUTLET WATER TEMP. (°F)	CONDENSER MAX. PRESS. DROP (FT H2O)	CONDENSER WORKING PRESS. (PSIG)	CONDENSER FOULING FACTOR	CONDENSER MAX. WATER VELOCITY (FPS)	CONDENSER NUMBER OF PASSES	ELECTRICAL MAXIMUM kW	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	ELECTRICAL FREQUENCY	ELECTRICAL kW/TON	ELECTRICAL NPLV (kW/TON)	ELECTRICAL TOTAL FULL LOAD AMPS	MAX. OPERATING WEIGHT PER CHILLER (LBS)	MODEL No.	REMARKS
TC-CH-5-1 (B) THRU TC-CH-5-4 (B)	FLOOR 05 MER	1,050	R-134A	2,985	1575	58	42	19.5	350	0.0001		2	2,100	85	100	13.4	350	0.00025		2	676	460	3	60	0.643	0.404	930	60,000	YKKTKSK1-CBG	

NOTES:

1. CHILLERS SHALL BE CAPABLE OF OPERATING IN THE FOLLOWING THREE MODES:
   A. MECHANICAL COOLING AS SCHEDULED
   B. FREE COOLING
   C. PARTIAL FREE COOLING
2. CHILLERS SHALL BE CAPABLE OF OPERATING WITH 59° CONDENSER WATER SUPPLY TEMPERATURE.
3. PROVIDE VFD'S FOR TWO (2) CHILLERS.
4. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.

HOT WATER BOILERS

(UNILUX AS STANDARD)

BOILER No.	LOCATION	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	INLET WATER TEMP. (°F)	OUTLET WATER TEMP. (°F)	HOT WATER OUTPUT AT NOZZLE (BHP)	HOT WATER FLOW RATE (GPM)	WATER PRESSURE DROP (PSI)	MINIMUM WATER FLOW RATE (GPM)	FIRESIDE HEATING SURFACE (SQ FT)	COMBUSTION CHAMBER VOLUME (CU. FT)	COMBUSTION CHAMBER HEAT (BTU/HR-SQ. FT)	No. OF GAS PASSES	MINIMUM DRUM OUTSIDE DIAMETER (IN.)	BOILER TUBE DIAMETER MIN. (IN.)	FUEL TYPE	BURN RATE (GAS) CFH	EFFICIENCY % GAS	GAS PRESSURE AT GAS TRAIN (IN. WC)	STACK GAS (ACFM)	COMBUSTION CONTROLS	FAN HP.	ELECTRICAL (V/Ø/Hz)	BOILER TYPE	MINIMUM BOILER TURNDOWN RATIO	MIN. DESIGN WORKING PRESSURE (PSIG)	MODEL No.	MAX. OPERATING WEIGHT PER BOILER (LBS)	REMARKS
TC-B-5-1 (B) THRU TC-B-5-4 (B)	FLOOR 05 MER	7,235	6,150	150	180	184	410	1.2	123	722	104.2	10,020	5	10.75	1.50	NATURAL GAS	7,235	85.0%	21.2	1,557	SEE SPEC.	10	460/3/60	FLEXIBLE WATER TUBE	6:1	160	ZF 700W-G	12,000	
TC-B-49-1 (B) THRU TC-B-49-3 (B)	FLOOR 49 MER	7,235	6,150	150	180	184	410	1.2	123	722	104.2	10,020	5	10.75	1.50	NATURAL GAS	7,235	85.0%	21.2	1,557	SEE SPEC.	10	460/3/60	FLEXIBLE WATER TUBE	6:1	125	ZF 700W-G	12,000	

NOTES:

1. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.
2. PROVIDE BURNER WITH MAXIMUM 30 PPM NOx LEVELS.

MODULAR WATER COOLED CHILLER

(CLIMACOOL AS STANDARD)

UNIT No.	LOCATION	TONS	REFRIGERANT TYPE	REFRIGERANT CHARGE PER MODULE (LBS)	CHILLER GPM	CHILLER INLET WATER TEMP. (°F)	CHILLER OUTLET WATER TEMP. (°F)	CHILLER MAX. PRESS. DROP (FT H2O)	CHILLER WORKING PRESS. (PSIG)	CHILLER FOULING FACTOR	CONDENSER GPM	CONDENSER INLET WATER TEMP. (°F)	CONDENSER OUTLET WATER TEMP. (°F)	CONDENSER MAX. PRESS. DROP (FT H2O)	CONDENSER WORKING PRESS. (PSIG)	CONDENSER FOULING FACTOR	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	ELECTRICAL FREQUENCY	ELECTRICAL kW/TON	ELECTRICAL MCA	ELECTRICAL NPLV (EER)	OPERATING WEIGHT PER CHILLER (LBS)	MAXIMUM DIMENSIONS (IN x IN x IN)	MODEL No.	REMARKS
TC-CH-48-1 (B)	FLOOR 48 MER	34.4	R-410A	32	82.3	60	50	8.1	200	0.0001	66.9	85	100	6.1	200	0.00025	480	3	60	0.722	43.4	21.0	3,000	74"L x 56"W x 65"H	UCW030AF - ASAC00S	(1) MODULE STANDBY

NOTES:

1. CHILLER CONSISTS OF TWO (2) MODULES, ONE OF WHICH IS A STANDBY.
2. PROVIDE FACTORY INSTALLED MOTORIZED ISOLATION VALVES ON ALL (2) MODULES WITH PROGRAMMING TO ALLOW (1) MODULE TO OPERATE AT ONE TIME. STAND BY MODULE SHALL BE ROTATED EFFECTIVELY TO MAINTAIN EQUAL RUN TIME ON BOTH MODULES.
3. CONNECT TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM.
4. PROVIDE VIBRATION ISOLATION AS PER SPECIFICATIONS.

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.

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:10 PM
NYC Development Hub

Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0104.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:20 AM

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No.	Issue	Date
5	ISSUED FOR FILING	02-08-2013
4	DI-21 MECHANICAL	01-25-2013
3	DI-18 MECH PROG DWGS	12-21-2012
2	DI-08 MECH. PROGRESS	12-03-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

STATE OF NEW YORK · AUGUSTINE A. DIGIACOMO · LICENSED PROFESSIONAL ENGINEER · No. 062475

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0104
Drawing Title MECHANICAL SCHEDULE SHEET NO.4
Drawing Number M6-0104
B-SCAN Drawing Number M-604.00

SHEET 52 OF 71

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DEPT OF BLDGS 121324290 Job Number
ES221274592 Scan Code

PLATE AND FRAME HEAT EXCHANGERS

(ALFA LAVAL AS STANDARD)

UNIT No.	LOCATION	SERVICE	COOLED/HEATED FLUID GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (PSI)	DESIGN PRESS. (PSIG)	FOULING FACTOR	LIQUID CIRCULATED	COOLING/HEATING FLUID GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (PSI)	DESIGN PRESS. (PSIG)	FOULING FACTOR	LIQUID CIRCULATED	HEAT TRANSFER AREA (SQ. FT)	# OF PLATES	OVERALL DIM. LENGTH x WIDTH x HEIGHT (IN.)	OPERATING WEIGHT (LBS)	MODEL No.	REMARKS
TC-PFHX-4-1 (B) TC-PFHX-4-2 (B)	FLOOR 04 MER	COGEN HEAT RECOVERY EXCHANGERS	162	150	180	4.21	150	.0005	WATER	221	220	198	6.56	150	.0005	WATER	52.1	24	34 x 19 x 43	820	AQ4-MFG	
TC-PFHX-5-1 (B) TC-PFHX-5-2 (B)	FLOOR 05 MER	FREE COOLING CHILLED WATER	1,050	61	47.5	9.86	350	.0005	WATER	1,050	45	58.5	9.95	350	.0005	WATER	3,710	385	110 x 31 x 87	11,000	AQ8-FS	SEE NOTE 1
TC-PFHX-5-3 (B)	FLOOR 05 MER	LOBBY SECONDARY CHILLED WATER	60	60	50	8.44	350	.0005	WATER	37.5	42	58	4.23	350	.0005	WATER	96.9	20	47 x 20 x 76	2,000	AQ4L-PFS	
TC-PFHX-48-1 (B) TC-PFHX-48-2 (B)	FLOOR 48 MER	SECONDARY CONDENSER WATER	3,000	102.5	87.5	9.88	150	.0005	WATER	3,000	85	100	9.99	150	.0005	WATER	12,224	759	204 x 36 x 122	22,000	AQ10-FG	(1) STANDBY SEE NOTE 1

NOTE:

1. PLATE AND FRAME HEAT EXCHANGERS PFHX-5-1&2 AND PFHX-48-1&2 SHALL EACH BE PROVIDED WITH AN AUTOMATIC REVERSING VALVE ON THE OPEN CONDENSER WATER SIDE .

EXPANSION TANKS / MAKE-UP PUMPS

(AMTROL/PACO AS STANDARD)

TANK No.	LOCATION	SERVICE	EXPANSION TANKS DIAMETER (IN.)	STRAIGHT SHELL LENGTH (IN.)	CAPACITY (GALLONS)	WORKING PRESS. (PSIG)	AIR PRESSURE CHARGE	TYPE	MODEL	MAKE-UP PUMPS GPM PER PUMP	SUCTION TEMP. (°F)	DISHARGE PRESS. (PSIG)	MOTOR RPM	RECEIVER CAPACITY (GALLONS)	MIN. MOTOR HP PER PUMP	PUMP TYPE	SIZE	REMARKS
TC-ET-4-1 (B)	FLOOR 04 MER	HEAT RECOVERY HOT WATER	48	72	422	125	12	DIAPHRAM	1600L	—	—	—	—	—	—	—	—	
TC-ET-5-2 (B)	FLOOR 05 MER	LOBBY SECONDARY CHILLED WATER	24	38	53	125	12	DIAPHRAM	200L	—	—	—	—	—	—	—	—	
TC-ET-22-1 (B)	FLOOR 22	PRIMARY HOT WATER	48	72	422	125	12	DIAPHRAM	1600L	—	—	—	—	—	—	—	—	
TC-ET-48-1 (B)	FLOOR 48 MER	SECONDARY CONDENSER WATER	48	72	422	125	12	DIAPHRAM	1600L	—	—	—	—	—	—	—	—	SEE NOTE 1
TC-ET-48-2 (B)	FLOOR 48 MER	PRIMARY CHILLED WATER	24	64	106	125	12	DIAPHRAM	400L	—	—	—	—	—	—	—	—	
TC-ET-48-3 (B)	FLOOR 48 MER	TECH ROOM CHILLED WATER	24	38	53	125	12	DIAPHRAM	200L	—	—	—	—	—	—	—	—	
TC-ET-49-1 (B)	FLOOR 49 MER	PRIMARY HOT WATER	48	85	480	125	12	DIAPHRAM	2000L	—	—	—	—	—	—	—	—	

NOTES:

1. WATER MAKE-UP CONTROLS SHALL BE CONNECTED TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM.

FUEL OIL TRANSFER PUMPS

(IMO DELAVAL AS STANDARD)

PUMP No.	LOCATION	SERVICE	GPM	DISCHARGE HEAD (PSIG)	SUCTION PRESSURE (IN HG.)	PUMP R.P.M.	B.H.P.	MINIMUM MOTOR H.P.	ELECTRICAL VOLTS	PHASE	HERTZ	MODEL No.	REMARKS
TC-FOP-C1-1 (B) TC-FOP-C1-2 (B)	LEVEL C1	LIFE SAFETY GENERATOR(S)	15	100	15	1,750	2.0	3	460	3	60	A3D-156 DUPLEX	POSITIVE DISPLACEMENT
TC-FOP-C1-3 (TO) TC-FOP-C1-4 (TO)	LEVEL C1	TENANT EPS GENERATOR(S)	15	300	15	1,750	4.0	5	460	3	60	A3D-118	POSITIVE DISPLACEMENT SEE NOTE 2

NOTES:

1. FUEL OIL PUMPS TC-FOP-C1-1 THRU TC-FOP-C1-4 SHALL BE CONNECTED TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM.
2. PROVIDE AN ALTERNATE PRICE TO FURNISH AND INSTALL TC-FOP-C1-3 AND C1-4 INCLUDING ALL PIPING CONNECTIONS, ELECTRIC POWER AND ALL REQUIRED AUXILIARIES TO MAKE THE DUPLEX PUMP SET FULLY OPERATIONAL,

PUMPS

(PACO AS STANDARD)

PUMP No.	LOCATION	SERVICE	GPM	TOTAL DYNAMIC HEAD (FT H2O)	% EFFICIENCY	SHUT-OFF HEAD (FT H2O)	IMPELLER DIA. (IN.)	B.H.P.	MINIMUM MOTOR H.P.	R.P.M.	ELECTRICAL VOLTS	PHASE	CYCLES	WORKING PRESS. (PSIG)	MODEL No.	PUMP TYPE	VFD TYPE	VFD BYPASS	VIBRATION BASE SPEC. TYPE	STATIC DEFL. (IN.)	REMARKS
TC-HRWP-4-1 (B) TC-HRWP-4-2 (B)	FLOOR 04 MER	HEAT RECOVERY HOT WATER	537 / 442	80	85.1	94.1	9.60	10.90	15	1,750	460	3	60	150	4012A LF	END SUCTION	B	—	VIII	2	(1) STANDBY SEE NOTE 4
TC-PCHWP-5-1 (B) THRU TC-PCHWP-5-4 (B)	FLOOR 05 MER	PRIMARY CHILLED WATER	1,575	180	85.0	207.2	13.79	84.23	100	1,750	460	3	60	400	5015-9/0 KP	HORIZ. SPLIT	A	—	VIII	2	
TC-PCHWP-5-5 (B)	FLOOR 05 MER	ABSORPTION CHILLER PRIMARY CHILLED WATER	375	180	62.0	187.4	13.15	27.5	40	1,750	460	3	60	150	3014-7/8 KP	HORIZ. SPLIT	B	—	VIII	2	
TC-PCWP-5-1 (B) THRU TC-PCWP-5-4 (B)	FLOOR 05 MER	PRIMARY CONDENSER WATER	2,100	130	85.3	153.2	11.95	80.77	100	1,750	460	3	60	400	6015-3/4 KP	HORIZ. SPLIT	A	—	VIII	2	
TC-PCWP-5-5 (B)	FLOOR 05 MER	ABSORPTION CHILLER PRIMARY CONDENSER WATER	1,250	130	81.8	151.8	12.32	50.12	60	1,750	460	3	60	400	50157 LF	END SUCTION	B	—	VIII	2	
TC-PHWP-5-1 (B) TC-PHWP-5-2 (B)	FLOOR 05 MER	PRIMARY HOT WATER	1,640	110	88.7	120.8	11.26	51.37	60	1,750	460	3	60	150	60123 LF	END SUCTION	A	—	VIII	2	(1) STANDBY
TC-SCHWP-5-1 (C) TC-SCHWP-5-2 (C)	FLOOR 05 MER	COACH SECONDARY CHILLED WATER	3,275	120	86.3	152.0	11.92	115.0	150	1,750	460	3	60	400	8015-3/4 KP	HORIZ. SPLIT	A	—	VIII	2	(1) STANDBY
TC-SCHWP-5-5 (B) TC-SCHWP-5-6 (B)	FLOOR 05 MER	LOBBY FCU'S SECONDARY CHILLED WATER	85	120	39.8	124.0	10.91	6.48	10	1,750	460	3	60	150	25121 VL	INLINE	B	—	XII	1/2	(1) STANDBY
TC-SHWP-5-1 (C) TC-SHWP-5-2 (C)	FLOOR 05 MER	LOW ZONE SECONDARY HOT WATER	760	100	82.6	116.0	10.66	17.11	25	1,750	460	3	60	200	4012A LF	END SUCTION	B	—	VIII	2	(1) STANDBY
TC-SHWP-34-1 (B) TC-SHWP-34-2 (B)	FLOOR 34 MER	HIGH ZONE SECONDARY HOT WATER	860	90	83.14	101.0	10.03	23.5	30	1,750	460	3	60	150	50123 LF	END SUCTION	B	—	VIII	2	(1) STANDBY
TC-PCHW-48-1 (B) TC-PCHW-48-2 (B)	FLOOR 48 MER	MODULAR CHILLER PRIMARY CHILLED WATER	85	100	53.4	135.7	15.56	3.88	5	1,750	460	3	60	150	12707 VL	IN-LINE	B	—	XII	1/2	(1) STANDBY
TC-PCWP-48-1 (B) TC-PCWP-48-2 (B)	FLOOR 48 MER	PRIMARY CONDENSER WATER	3,070	120	85.5	148.4	11.74	109	125	1,750	460	3	60	150	8015-3/4 KP	HORIZ. SPLIT	A	—	VIII	2	(1) STANDBY SEE NOTE 1
TC-SCWP-48-3 (B) TC-SCWP-48-4 (B)	FLOOR 48 MER	MODULAR CHILLER PRIMARY CONDENSER WATER	70	60	55.1	68.0	8.05	1.84	3	1,750	460	3	60	150	20955 VL	INLINE	B	—	XII	1/2	(1) STANDBY
TC-SCWP-48-1 (B) TC-SCWP-48-2 (B)	FLOOR 48 MER	SECONDARY CONDENSER WATER	3,000	180	84.6	203.3	13.62	161	250	1,750	460	3	60	150	8015-3/4 KP	HORIZ. SPLIT	A	—	VIII	2	(1) STANDBY SEE NOTE 1
TC-PHWP-49-1 (B) TC-PHWP-49-2 (B)	FLOOR 49 MER	PRIMARY HOT WATER	1,230	110	82.8	113.7	10.98	41.23	60	1,750	460	3	60	150	60123 LF	END SUCTION	B	—	VIII	2	(1) STANDBY
TC-HWP-ST-1 (C)	STREET LEVEL	TC-ACS-ST-1 HEATING COIL CIRCULATION	6.2	20					1/4	1,750	120	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-ST-2 (B)	STREET LEVEL	TC-ACS-ST-2 HEATING COIL CIRCULATION	6.2	20					1/4	1,750	120	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-3-1 (C) TC-HWP-3-2 (C)	FLOOR 03 MER	TC-ACS-3-1 HEATING COIL CIRCULATION	63.0	20					3/4	1,750	460	3	60	175	1050 2B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-3-3 (B) TC-HWP-3-4 (B)	FLOOR 03 MER	TC-ACS-3-2 HEATING COIL CIRCULATION	75.5	20					3/4	1,750	460	3	60	175	1050 2B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-3-5 (C) THRU TC-HWP-3-7 (C)	FLOOR 03 MER	TC-ACS-3-3 HEATING COIL CIRCULATION	63.7	20					3/4	1,750	460	3	60	175	1050 2B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-4-1 (C) THRU TC-HWP-4-3 (C)	FLOOR 04 MER	TC-ACS-4-1 HEATING COIL CIRCULATION	74.6	20					3/4	1,800	460	3	60	175	1050 2B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-4-4 (B) TC-HWP-4-5 (B)	FLOOR 04 MER	TC-ACS-4-2 HEATING COIL CIRCULATION	14.0	20					1/3	1,800	115	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-4-5 (B) TC-HWP-4-6 (B)	FLOOR 04 MER	TC-ACS-4-3 HEATING COIL CIRCULATION	10.0	20					1/3	1,800	115	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-4-7 (B) TC-HWP-4-8 (B)	FLOOR 04 MER	TC-HV-4-1 HEATING COIL CIRCULATION	42	20					1/2	1,800	460	3	60	175	1050 1.5B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-4-9 (B) TC-HWP-4-10 (B)	FLOOR 04 MER	TC-HV-4-2 HEATING COIL CIRCULATION	42	20					1/2	1,800	460	3	60	175	1050 1.5B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-4-11 (B) TC-HWP-4-12 (B)	FLOOR 04 MER	TC-HV-4-3 HEATING COIL CIRCULATION	13.9	20					1/3	1,800	115	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-5-1 (B) TC-HWP-5-2 (B)	FLOOR 05 MER	TC-ACS-5-1 HEATING COIL CIRCULATION	15.6	20					1/3	1,800	115	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-5-3 (B)	FLOOR 05 MER	TC-ACS-5-2 HEATING COIL CIRCULATION	12.2	20					1/3	1,800	115	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-5-3 (B)	FLOOR 05 MER	TC-HV-5-1 HEATING COIL CIRCULATION	13.9	20					1/3	1,800	115	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-34-1 (B) THRU TC-HWP-34-3 (B)	FLOOR 34 MER	TC-ACS-34-1 HEATING COIL CIRCULATION	50.7	20					1/2	1,800	460	3	60	175	1050 1.5B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-34-4 (B) THRU TC-HWP-34-9 (B)	FLOOR 34 MER	TC-ACS-34-2 HEATING COIL CIRCULATION	51.8	20					1/2	1,800	460	3	60	175	1050 1.5B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-34-10 (B) THRU TC-HWP-34-15 (B)	FLOOR 34 MER	TC-ACS-34-3 HEATING COIL CIRCULATION	51.8	20					1/2	1,800	460	3	60	175	1050 1.5B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-48-1 (B) THRU TC-HWP-48-6 (B)	FLOOR 48 MER	TC-ACS-48-1 HEATING COIL CIRCULATION	51.8	20					1/2	1,800	460	3	60	175	1050 1.5B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2
TC-HWP-49-1 (B)	FLOOR 49 MER	TC-HV-49-1 HEATING COIL CIRCULATION	20.4	20					1/3	1,800	115	1	60	175	1050 1B	INLINE CIRC.	—	—			ARMSTRONG AS STD SEE NOTE 2

NOTES:

1. CONNECT ONE (1) PRIMARY CONDENSER WATER PUMP AND ONE (1) SECONDARY CONDENSER WATER PUMP TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM.
2. ALL HOT WATER COIL CIRCULATING PUMPS SHALL BE CONNECTED TO THE BUILDING'S EMERGENCY POWER DISTRIBUTION SYSTEM.
3. PROVIDE BALANCED MECHANICAL SEALS FOR ALL PUMPS OPERATING AT A WORKING PRESSURE (PSIG) 200 # AND HIGHER.
4. PUMP SHALL RUN AT 537 GPM WHEN SERVING ABSORPTION CHILLER IN SUMMER MODE AND 442 GPM WHEN SERVING HEAT RECOVERY PLATE AND FRAME HEAT EXCHANGERS (PFHX-4-1&2) IN WINTER MODE.

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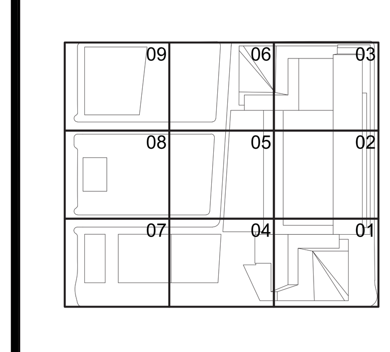
No.	Issue	Date
5	ISSUED FOR FILING	02-08-2013
4	DI-21 MECHANICAL	01-25-2013
3	DI-18 MECH PROG DWGS	12-21-2012
2	DI-08 MECH. PROGRESS	12-03-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



STATE OF NEW YORK · AUGUSTINE A. DIGIACOMO · LICENSED PROFESSIONAL ENGINEER · NO. 062475

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Sheet Number
HYE-TC-M6-0105
Drawing Title
MECHANICAL SCHEDULE SHEET NO.5
Drawing Number
M6-0105
B-SCAN Drawing Number
M-605.00

SHEET 53 OF 71

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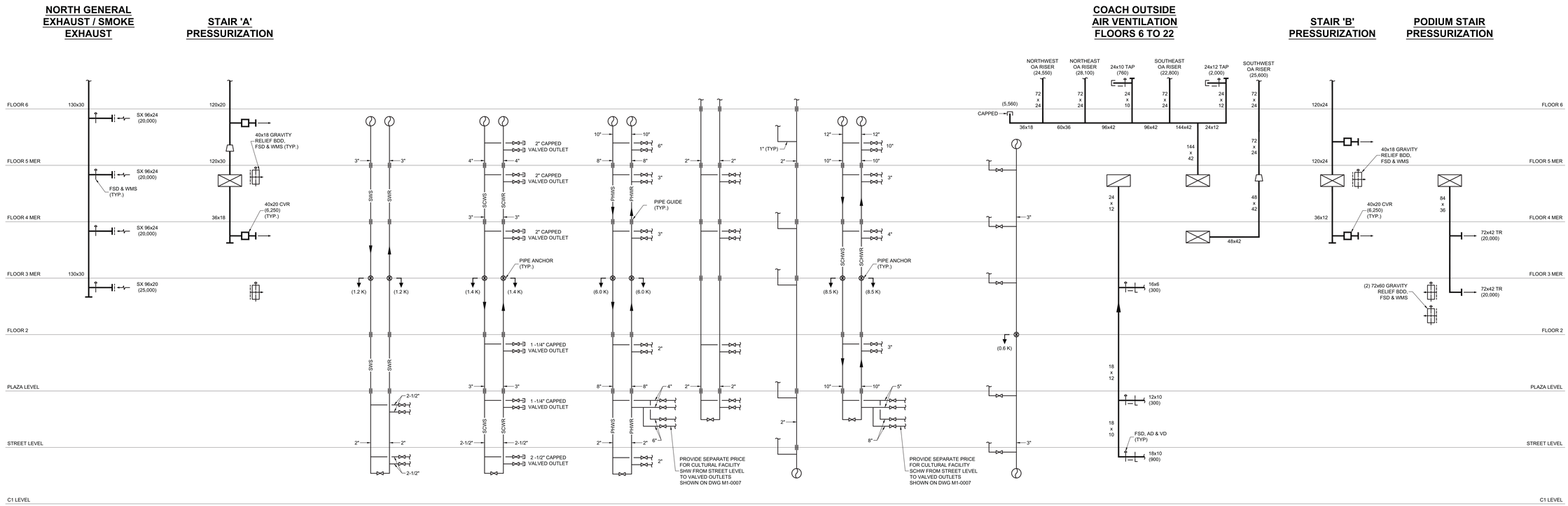

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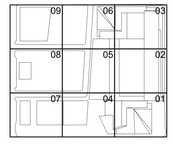
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Sheet Number
HYE-TC-M6-0201

Drawing Title
MECHANICAL AIR AND WATER RISER DIAGRAM NO.1

Drawing Number
M6-0201

B-SCAN Drawing Number
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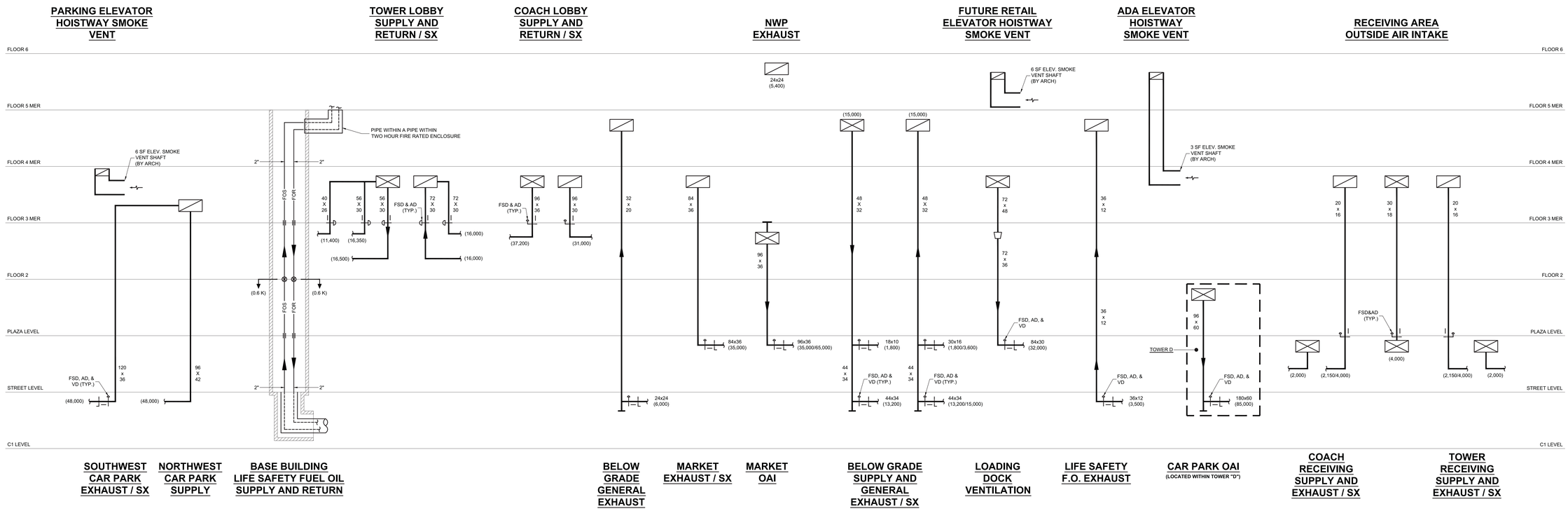

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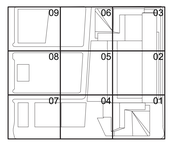
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Sheet Number
HYE-TC-M6-0202

Drawing Title
MECHANICAL
AIR AND WATER
RISER DIAGRAM
NO.2

Drawing Number
M6-0202

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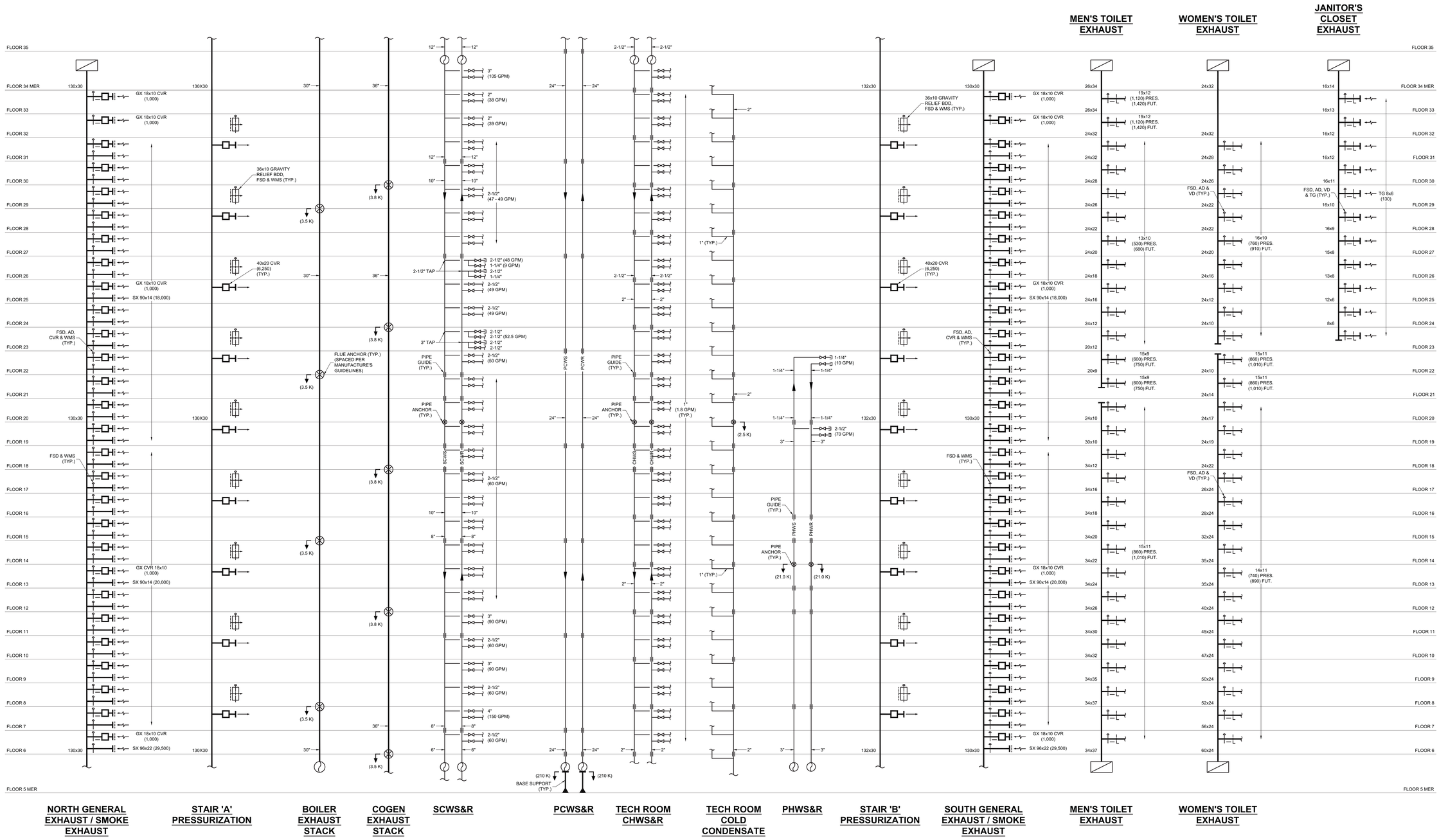

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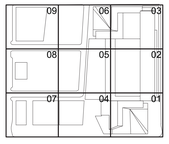
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Drawing Title
MECHANICAL
AIR AND WATER
RISER DIAGRAM
NO.3

Drawing Number
M6-0203

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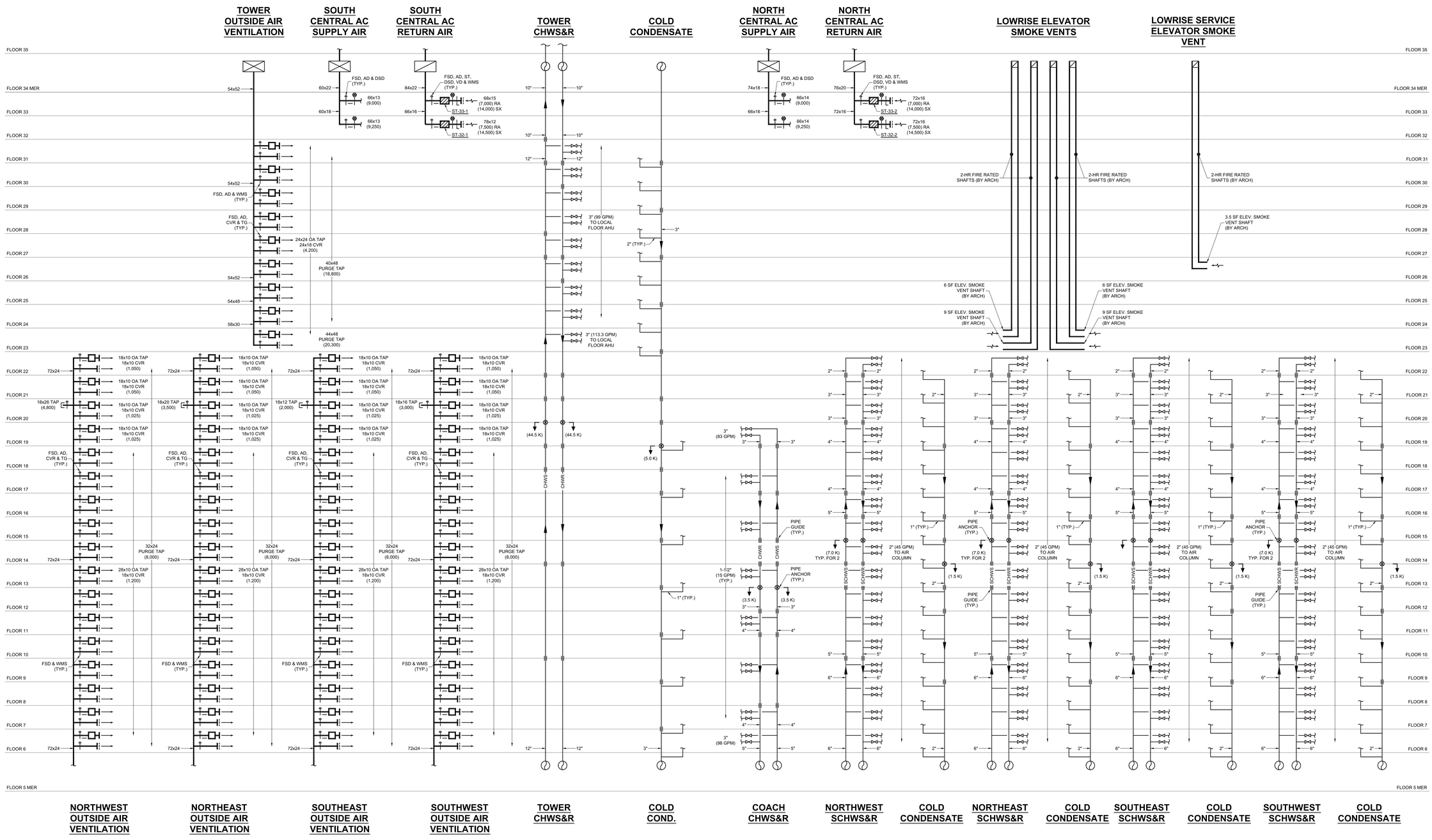

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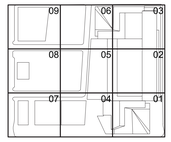
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



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Sheet Number
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Drawing Title
MECHANICAL AIR AND WATER RISER DIAGRAM NO.4

Drawing Number
M6-0204

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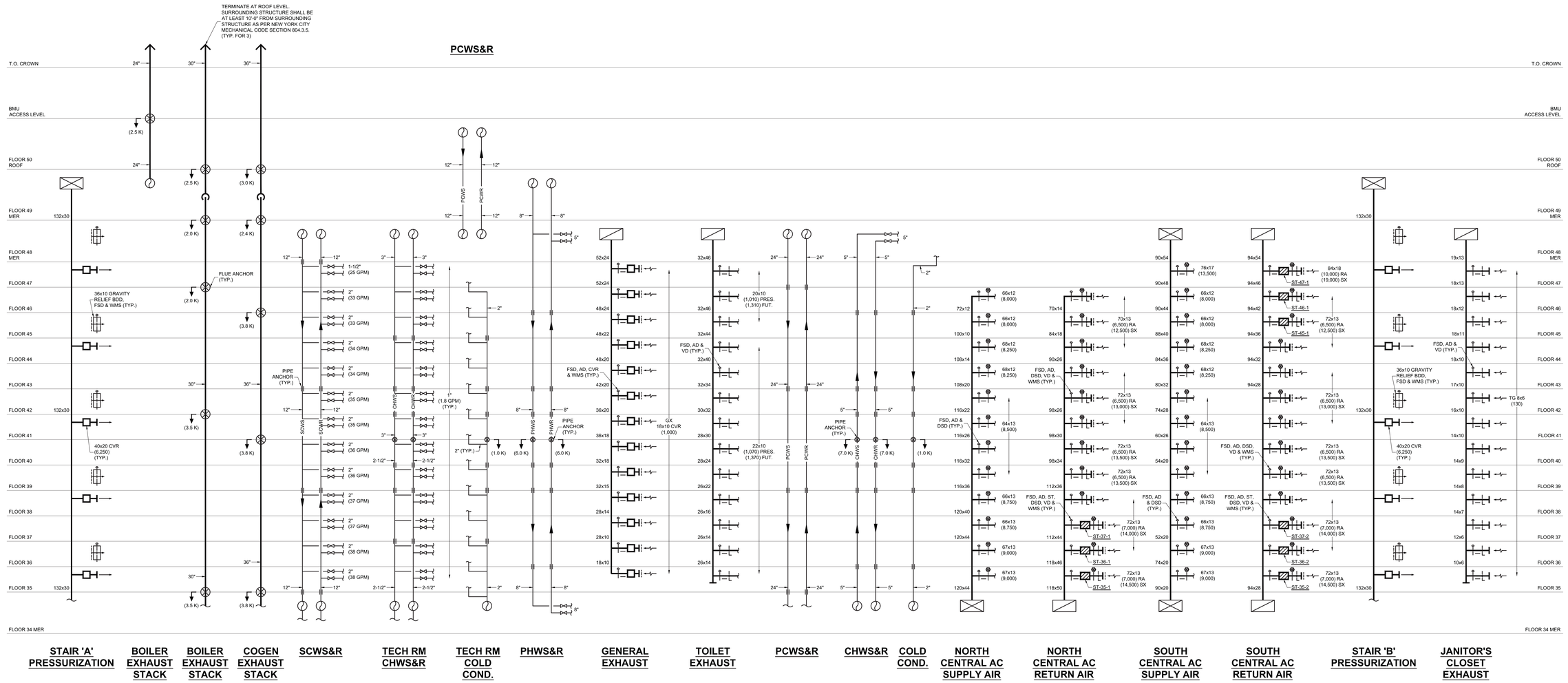

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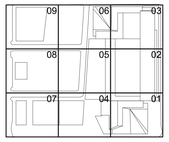
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI 21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0205
Drawing Title

MECHANICAL AIR AND WATER RISER DIAGRAM NO.5

Drawing Number M6-0205
R-SCAN Drawing Number M-615.00

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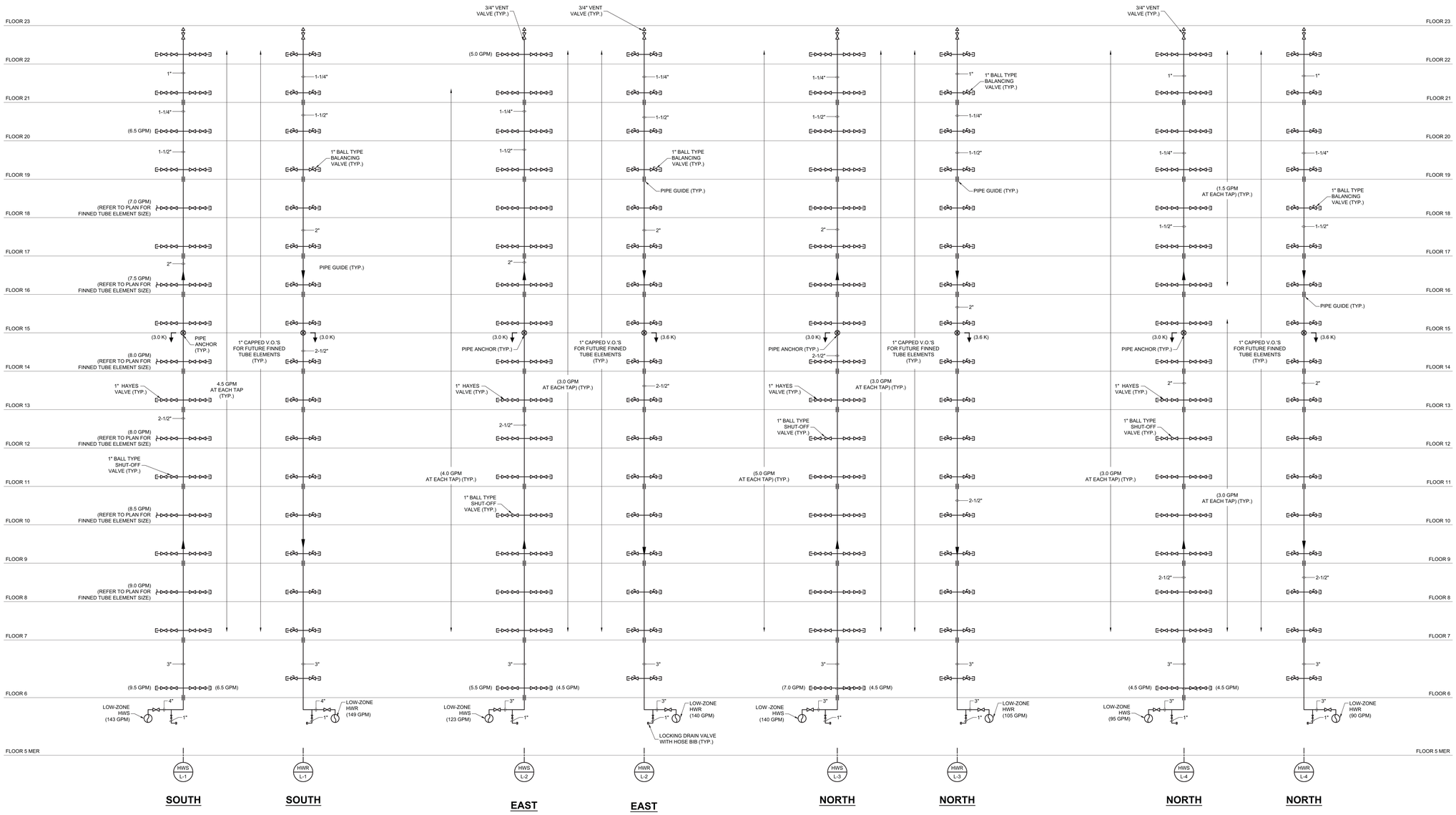
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0205.dwg Plotted by: allan turnstead Plot Time: 6/3/2013 10:21 AM

Filename: U:\projects\14752.a.hudson yards-east yards-lwr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0206.dwg Plotted by: alan turstead Plot Time: 6/3/2013 10:21 AM



LOW-ZONE PERIMETER HOT WATER RISERS

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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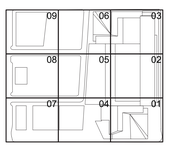
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0206
Drawing Title

MECHANICAL PERIMETER HOT WATER RISER DIAGRAM NO.1

Drawing Number
M6-0206
RICAN Drawing Number
M-616.00

SHEET 59 OF 71

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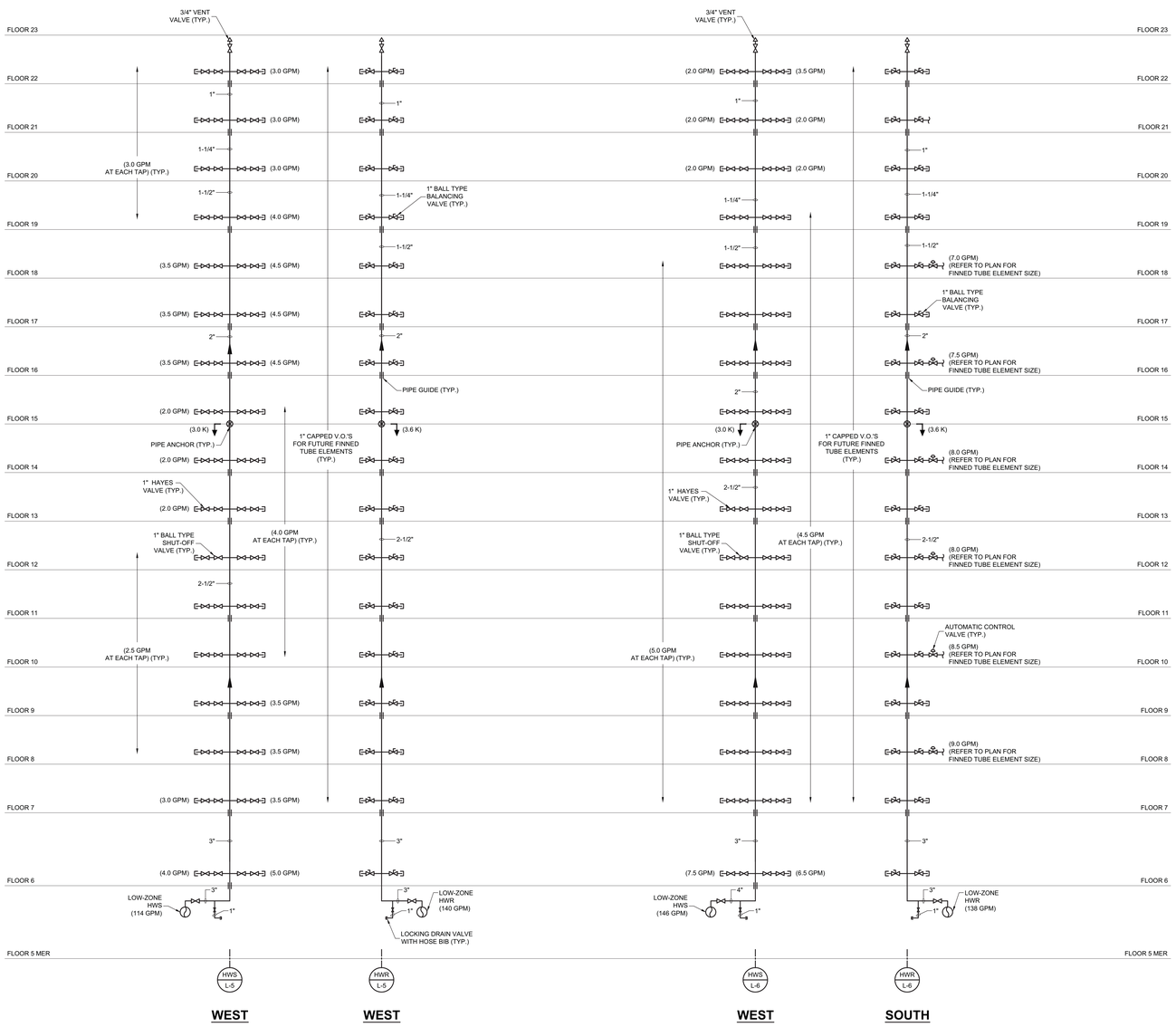

LOW-ZONE PERIMETER
HOT WATER RISERS

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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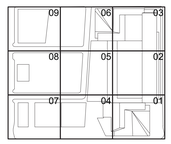
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0207
Drawing Title
MECHANICAL PERIMETER HOT WATER RISER DIAGRAM NO.2
Drawing Number
M6-0207
B-SCAN Drawing Number
M-617.00

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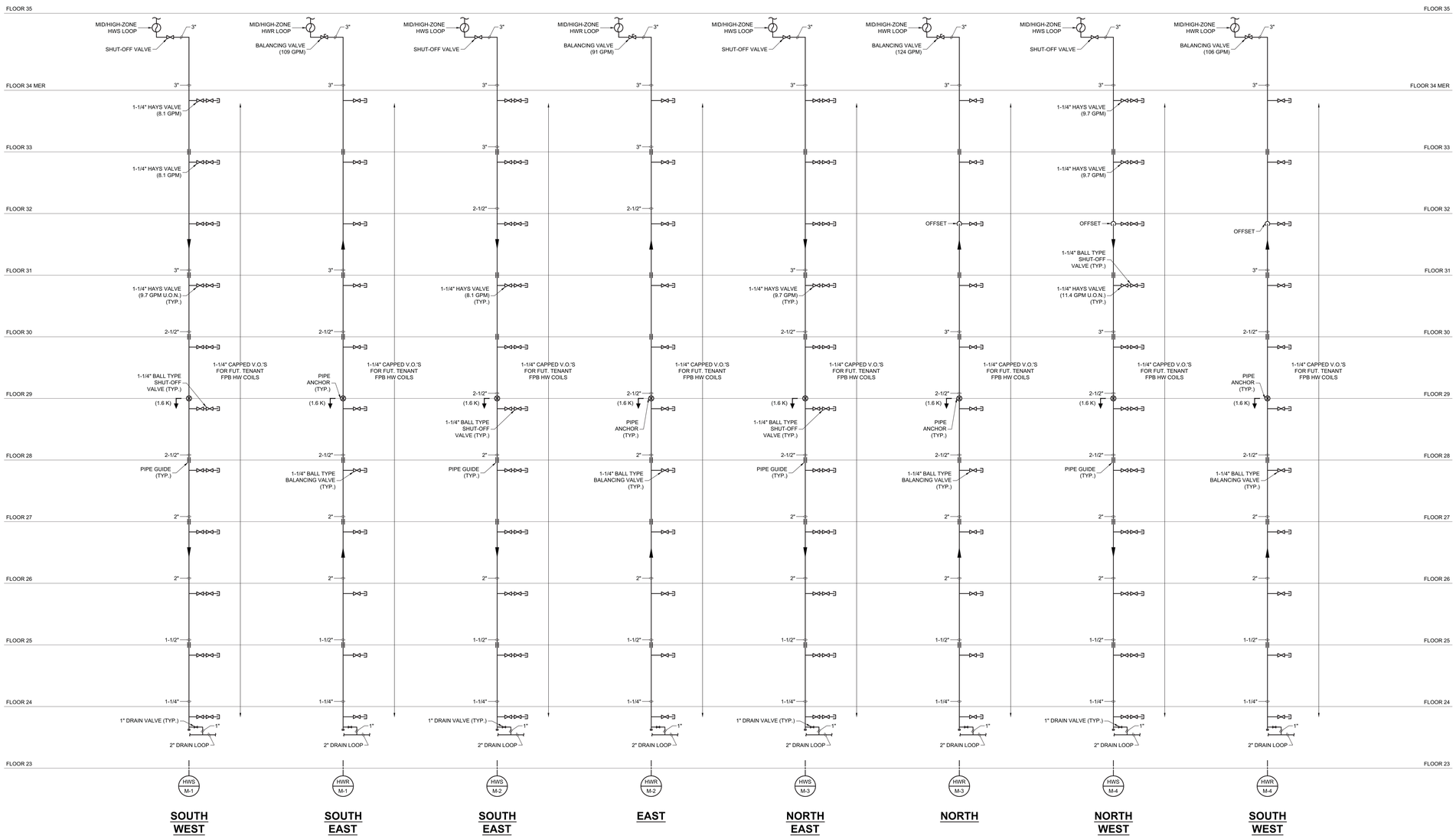

MID-ZONE PERIMETER HOT WATER RISERS

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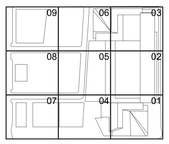
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0208
Drawing Title

MECHANICAL
PERIMETER
HOT WATER RISER
DIAGRAM NO.3

Drawing Number
M6-0208
B-SCAN Drawing Number
M-618.00

SHEET 61 OF 71

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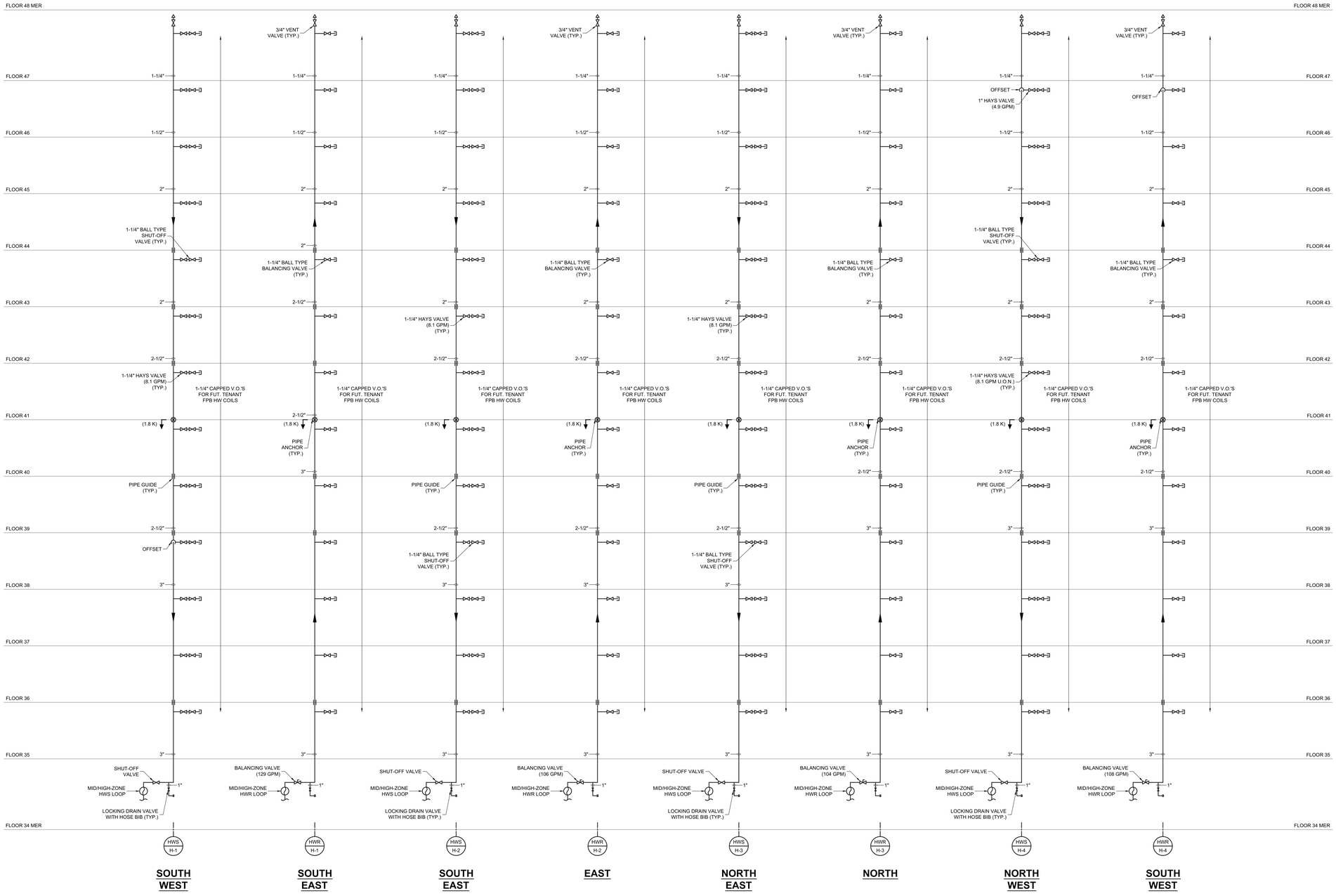

HIGH-ZONE PERIMETER HOT WATER RISERS

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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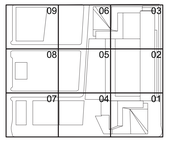
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0209
Drawing Title
MECHANICAL PERIMETER HOT WATER RISER DIAGRAM NO.4
Drawing Number
M6-0209
B/SCAN Drawing Number
M-619.00

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NOTE:

1. REFER TO M6-0222 FOR NOTES AND LEGEND.

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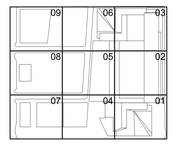
No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0221
Drawing Title
BMS
RISER DIAGRAM
NO.1
Drawing Number
M6-0221
B-SCAN Drawing Number
M-621.00

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0222.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:21 AM

FLOOR 35	DDC AHU-35-1 (B)	DDC FCU-35-1 (B)						FLOOR 35
FLOOR 34 MER	DDC TOWER OA ACS	DDC TOWER CENTRAL AIR ACS & R/S	DDC TOWER CENTRAL AIR ACS & R/S	DDC HIGH ZONE SHWP	DDC FCU-34-1 (B)	UNT EMR PAC	UNT MISC EXH FANS	FLOOR 34 MER
FLOOR 33	DDC AHU-33-1 (B)	DDC FCU-33-1 (B)						FLOOR 33
FLOOR 32	DDC AHU-32-1 (B)	DDC FCU-32-1 (B)						FLOOR 32
FLOOR 31	DDC AHU-31-1 (B)	DDC FCU-31-1 (B)						FLOOR 31
FLOOR 30	DDC AHU-30-1 (B)	DDC FCU-30-1 (B)						FLOOR 30
FLOOR 29	DDC AHU-29-1 (B)	DDC FCU-29-1 (B)						FLOOR 29
FLOOR 28	DDC AHU-28-1 (B)	DDC FCU-28-1 (B)						FLOOR 28
FLOOR 27	DDC AHU-27-1 (B)	DDC FCU-27-1 (B)						FLOOR 27
FLOOR 26	DDC AHU-26-1 (B)	DDC PAC-26-1 (B)	UNT FCU-26-2 (B)					FLOOR 26
FLOOR 25	DDC AHU-25-1 (B)	DDC PAC-25-1 (B)	UNT FCU-25-2 (B)					FLOOR 25
FLOOR 24	DDC AHU-24-1 (B)	DDC FCU-24-1 (B)						FLOOR 24
FLOOR 23	DDC AHU-23-1 (B)	DDC FCU-23-1 (B)						FLOOR 23
FLOOR 22	DDC UFAD-22-1 (B)	DDC UFAD-22-2 (B)	DDC UFAD-22-3 (B)	DDC UFAD-22-4 (B)	DDC FCU-22-1 (B)			FLOOR 22
FLOOR 21	DDC UFAD-21-1 (B)	DDC UFAD-21-2 (B)	DDC UFAD-21-3 (B)	DDC UFAD-21-4 (B)	DDC FCU-21-1 (B)			FLOOR 21
FLOOR 20	DDC UFAD-20-1 (B)	DDC UFAD-20-2 (B)	DDC UFAD-20-3 (B)	DDC UFAD-20-4 (B)	DDC FCU-20-1 (B)			FLOOR 20
FLOOR 19	DDC UFAD-19-1 (B)	DDC UFAD-19-2 (B)	DDC UFAD-19-3 (B)	DDC UFAD-19-4 (B)	DDC FCU-19-1 (B)			FLOOR 19
FLOOR 18	DDC UFAD-18-1 (B)	DDC UFAD-18-2 (B)	DDC UFAD-18-3 (B)	DDC UFAD-18-4 (B)	DDC FCU-18-1 (B)			FLOOR 18
FLOOR 17	DDC UFAD-17-1 (B)	DDC UFAD-17-2 (B)	DDC UFAD-17-3 (B)	DDC UFAD-17-4 (B)	DDC FCU-17-1 (B)			FLOOR 17

BACNET MSTP CABLING IN CONDUIT (TYPICAL)

NOTES :

1. PROVIDE ONE (1) WORKSTATION. LOCATE IN 5TH FLOOR ENGINEER'S OFFICE.
2. PROVIDE ONE (1) SERVER. LOCATE IN 3RD FLOOR MEET-ME ROOM
3. REFER TO MECHANICAL DRAWINGS FOR QUANTITY OF VAV TERMINAL UNITS. PROVIDE A "UNT" FOR EACH TERMINAL UNIT AND INTERFACE "UNT" TO NEAREST "DDC" UNIT.
4. PROVIDE CAT6a CABLING AND CONDUIT BETWEEN EACH "DDC" UNIT AND NEAREST BUILDING LAN MULTIPORT JACK DEDICATED FOR BMS USE. REFER TO TELECOMMUNICATION DRAWING FOR QUAUTITY AND LOCATION OF MULTIPORT JACK.
5. REFER TO MECHANICAL DRAWING FOR LOCATION AND QUANTITY OF EXHAUST FANS, VAV BOXES AND FAN COIL UNITS. PROVIDE "UNT" CONTROLLER AS REQUIRED AND INTERFACE "UNT" CONTROLLER TO NEAREST "DDC" UNIT. NOT ALL EXHAUST FANS, VAV BOXES AND FAN COIL UNITS ARE INDICATED ON BMS RISER DIAGRAMS.

LEGEND

DDC	DIRECT DIGITAL CONTROL UNIT SERVING PRIMARY EQUIPMENT SUCH AS AIR HANDLER, CHILLERS, BOILERS, PUMPS, AIR COLUMNS, ETC
UNT	UNITARY CONTROLLER SERVING SECONDARY EQUIPMENT SUCH AS FAN COIL UNITS, PACKAGED AIR CONDITIONING UNITS, EXHAUST FANS AND VAV BOXES.
	PC BASED WORKSTATION
	SERVER
— · — · — · — · —	CAT 6a CABLE IN CONDUIT
----------	#18 2C TSP IN CONDUIT

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Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
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51 Madison Avenue
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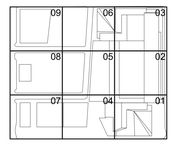
Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0222
Drawing Title
BMS
RISER DIAGRAM
NO.2
Drawing Number
M6-0222
B-SCAN Drawing Number
M-622.00

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0223.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:22 AM

BOEST OF BLOCKS 21,22,23,25 Job Number
E350553173 Scan Code

NOTE:

1. REFER TO M6-0222 FOR NOTES AND LEGEND.

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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.	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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HUDSON YARDS - TOWER C

Address
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NEW YORK, NY

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60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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Tel: 212.986.7514 Fax: 212.986.7510

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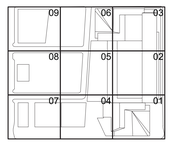
Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0223
Drawing Title
BMS
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NO.3
Drawing Number
M6-0223
B/SCAN Drawing Number
M-623.00

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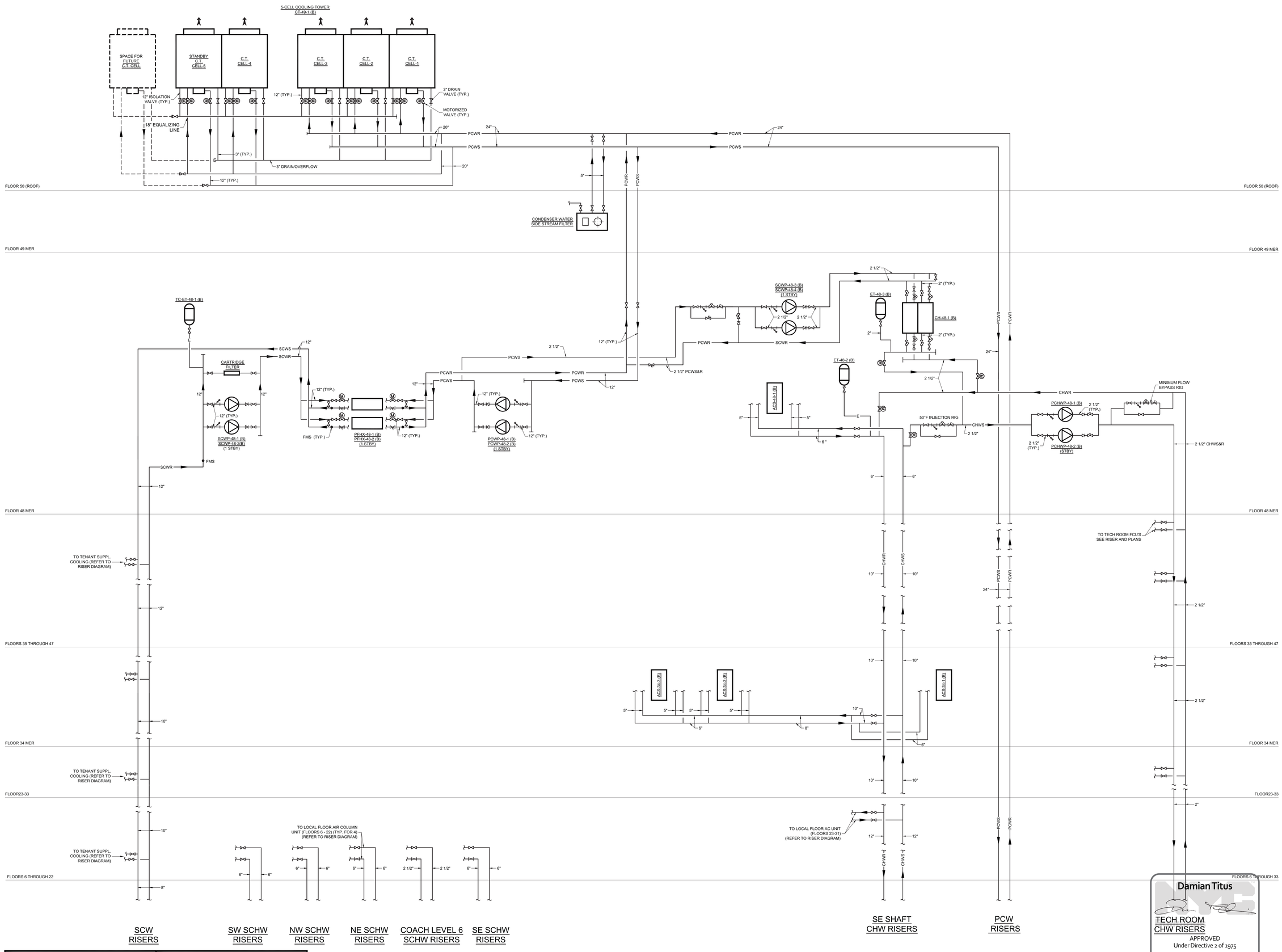
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0301.dwg Plotted by: alan turnstead Plot Time: 6/3/2013 10:22 AM



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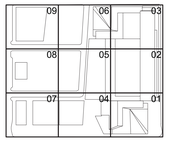
Key Plan



Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0301
Drawing Title

MECHANICAL CONDENSER WATER AND CHILLED WATER FLOW DIAGRAM NO.1

Drawing Number M6-0301
B/SCAN Drawing Number M-631.00

SHEET 66 OF 71

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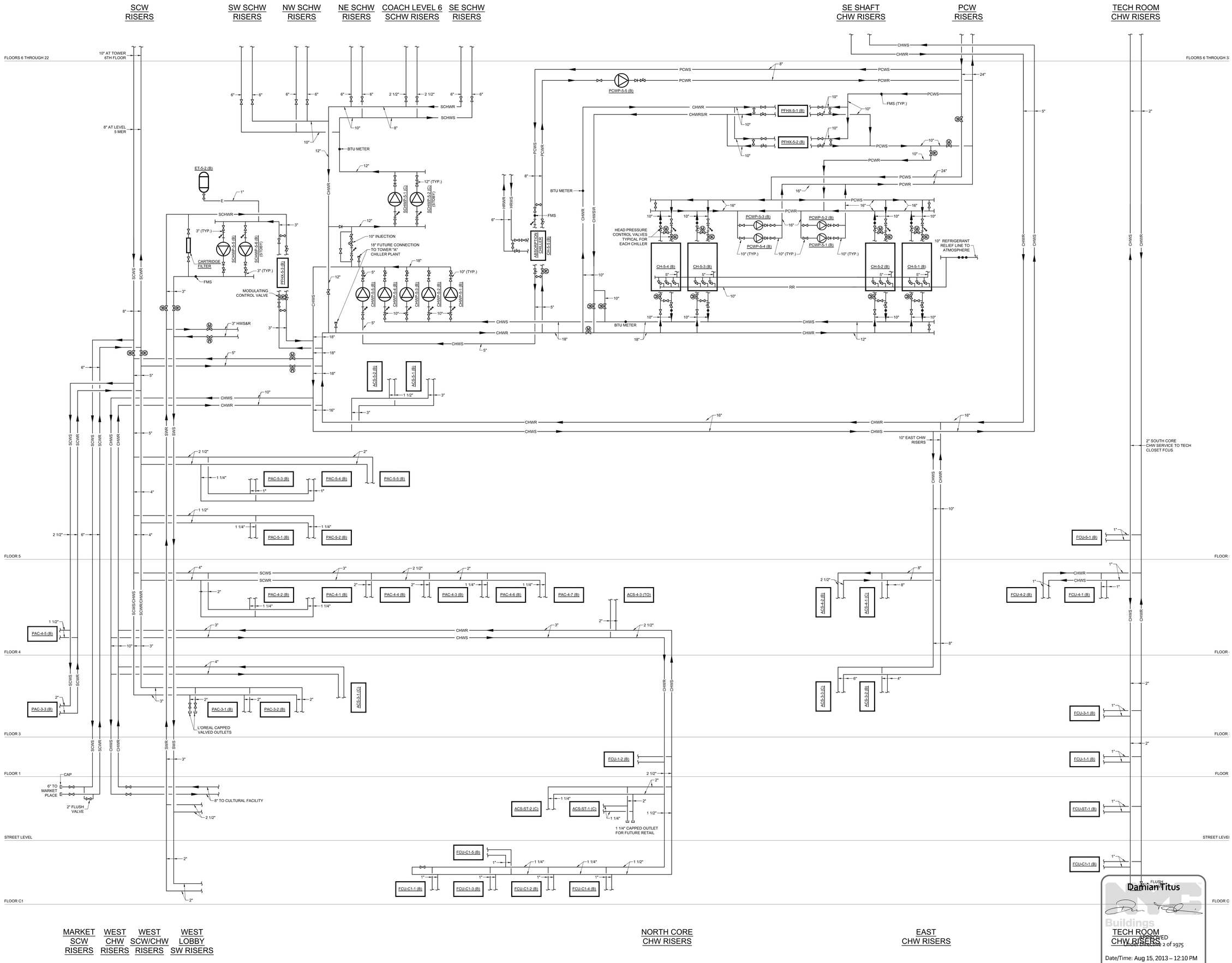

HUDSON YARDS - TOWER C

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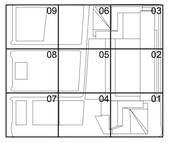
No.	Issue	Date
2	ISSUED FOR FILING	02-08-2013
1	DI-21 MECHANICAL	01-25-2013

Key Plan



Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0301
Drawing Title

MECHANICAL CONDENSER WATER AND CHILLED WATER FLOW DIAGRAM NO.2

Drawing Number M6-0302
B-SCAN Drawing Number M-632.00

Damian Titus
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SHEET 67 OF 71

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0301.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:22 AM

HUDSON YARDS - TOWER C

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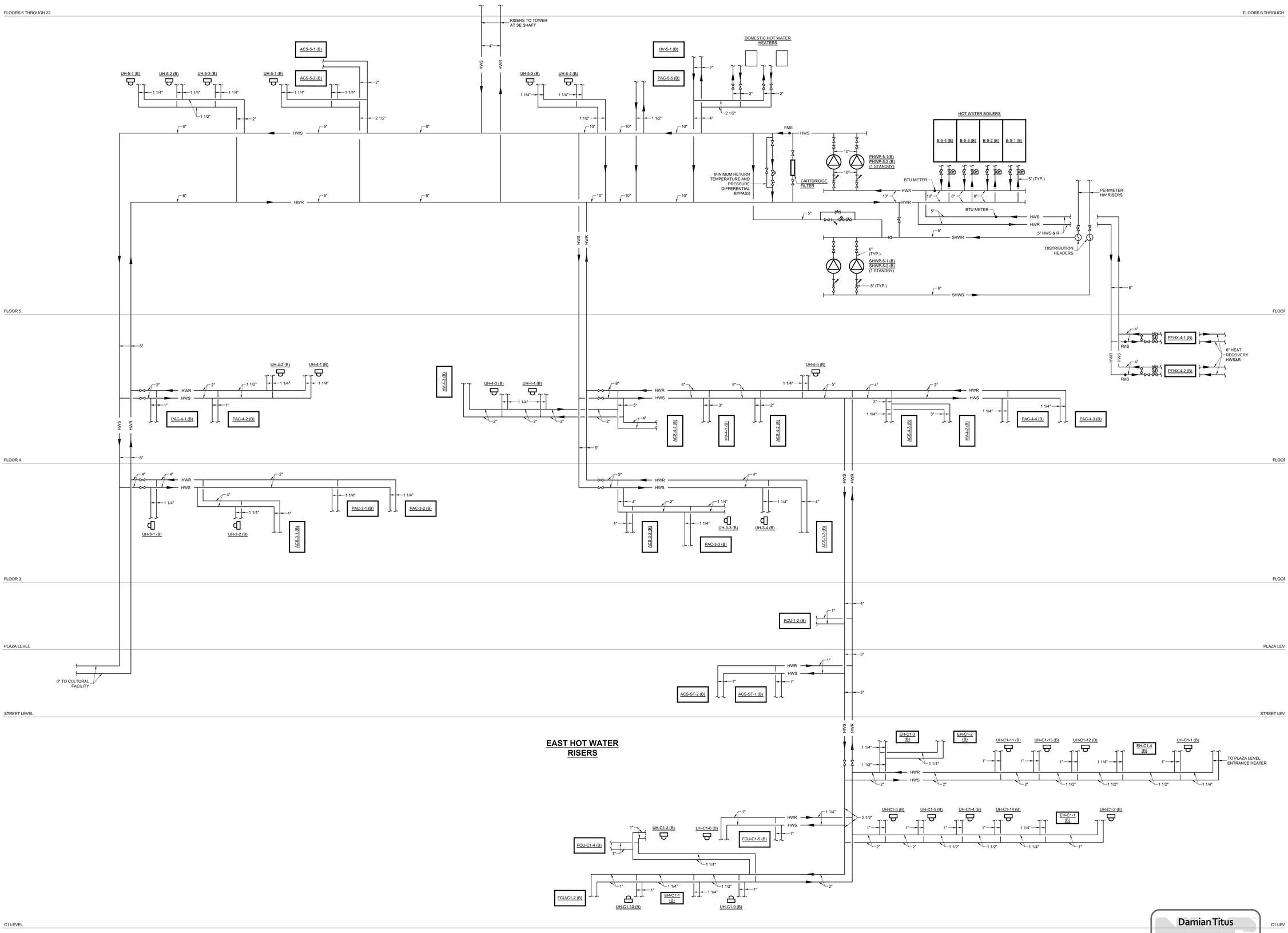
NEW YORK, NY



Client
Related Companies
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No.	Issue	Date
4	ISSUED FOR FILING	02-08-2013
3	DI-21 MECHANICAL	01-25-2013
2	DI-18 MECH PROG DWGS	12-21-2012
1	ISSUED FOR FILING	08-20-2012

Key Plan

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0303
Drawing Title MECHANICAL HOT WATER FLOW DIAGRAM NO.1
Drawing Number M6-0303
B-SCAN Drawing Number M-633.00

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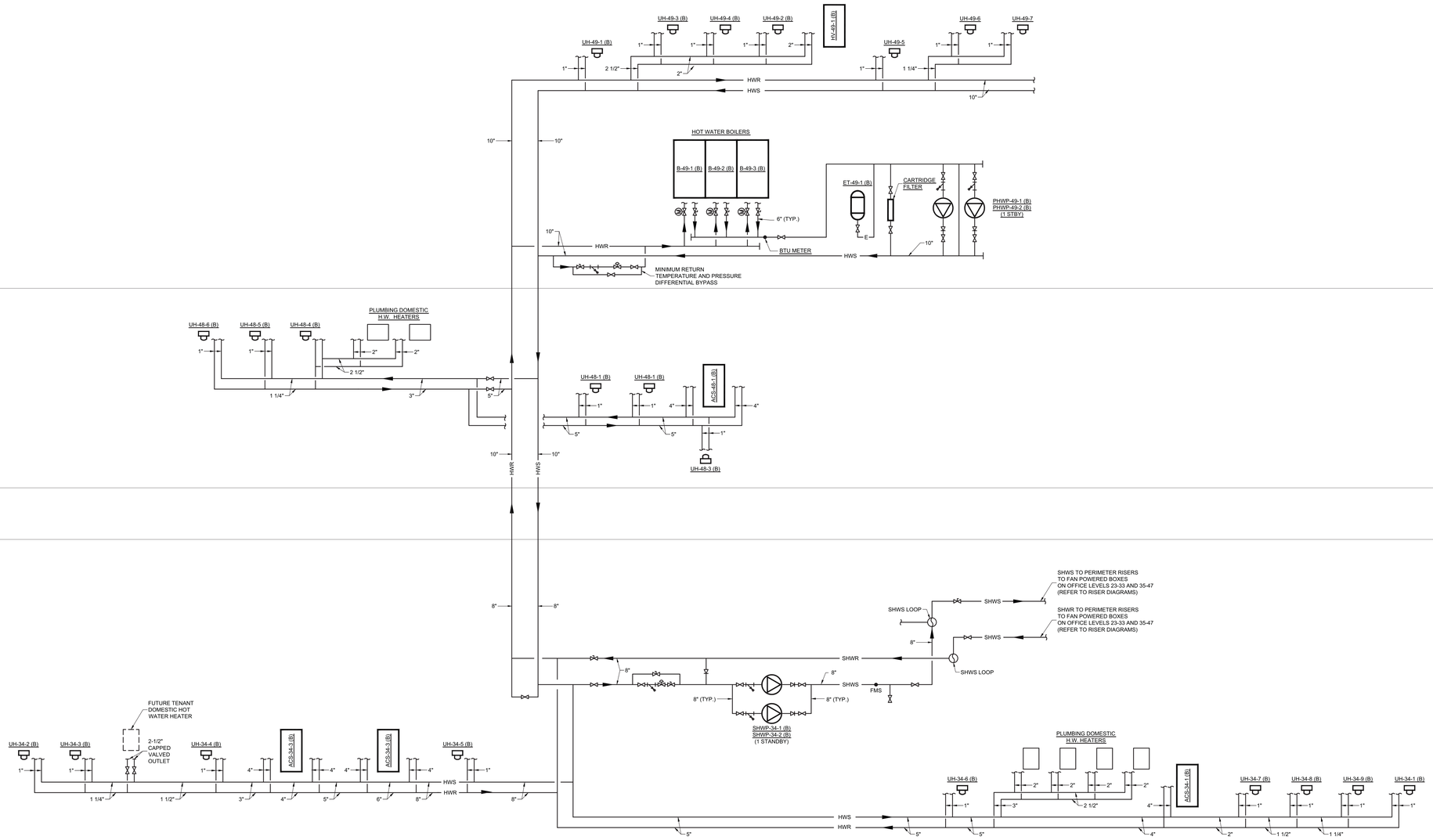
Job Number 14752.000 Sheet Code M6-0303

FLOOR 50 (ROOF)



FLOOR 49 MER

FLOOR 48 MER

FLOOR 35 THROUGH 47

FLOOR 34 MER

FLOORS 23 THROUGH 33

FLOOR 22

FLOOR 21

FLOORS 6 THROUGH 20

SE HOT WATER RISERS

PROFESSIONAL'S STATEMENT	BUILDING DEPARTMENT NOTE
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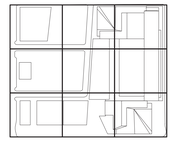
No.	Issue	Date
2	ISSUED FOR FILING	02-08-2013
1	DI-21 MECHANICAL	01-25-2013

Key Plan



Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0303
Drawing Title

MECHANICAL
HOT WATER
FLOW DIAGRAM
NO.2

Drawing Number M6-0304
B-SCAN Drawing Number M-634.00

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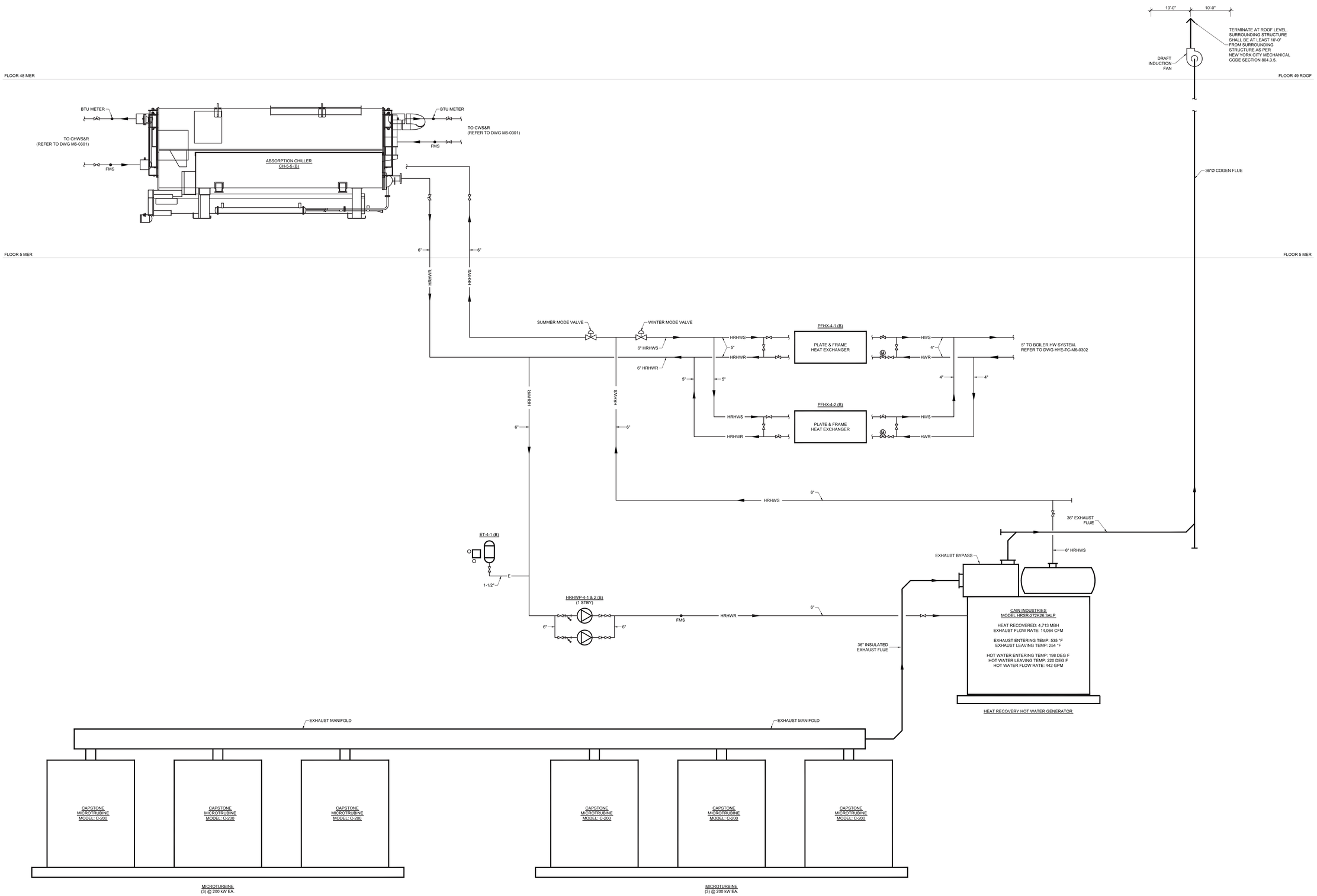

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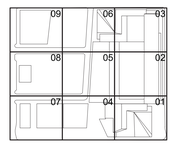
1	ISSUED FOR FILING	08-20-2012

Key Plan



Date
01-25-2013
Project No.
14752.A.000
Drawn By
Sheet Number
HYE-TC-M6-0305
Drawing Title

MECHANICAL
HEAT RECOVERY
FLOW DIAGRAM

Drawing Number
M6-0305
R-SCAN Drawing Number
M-635.00

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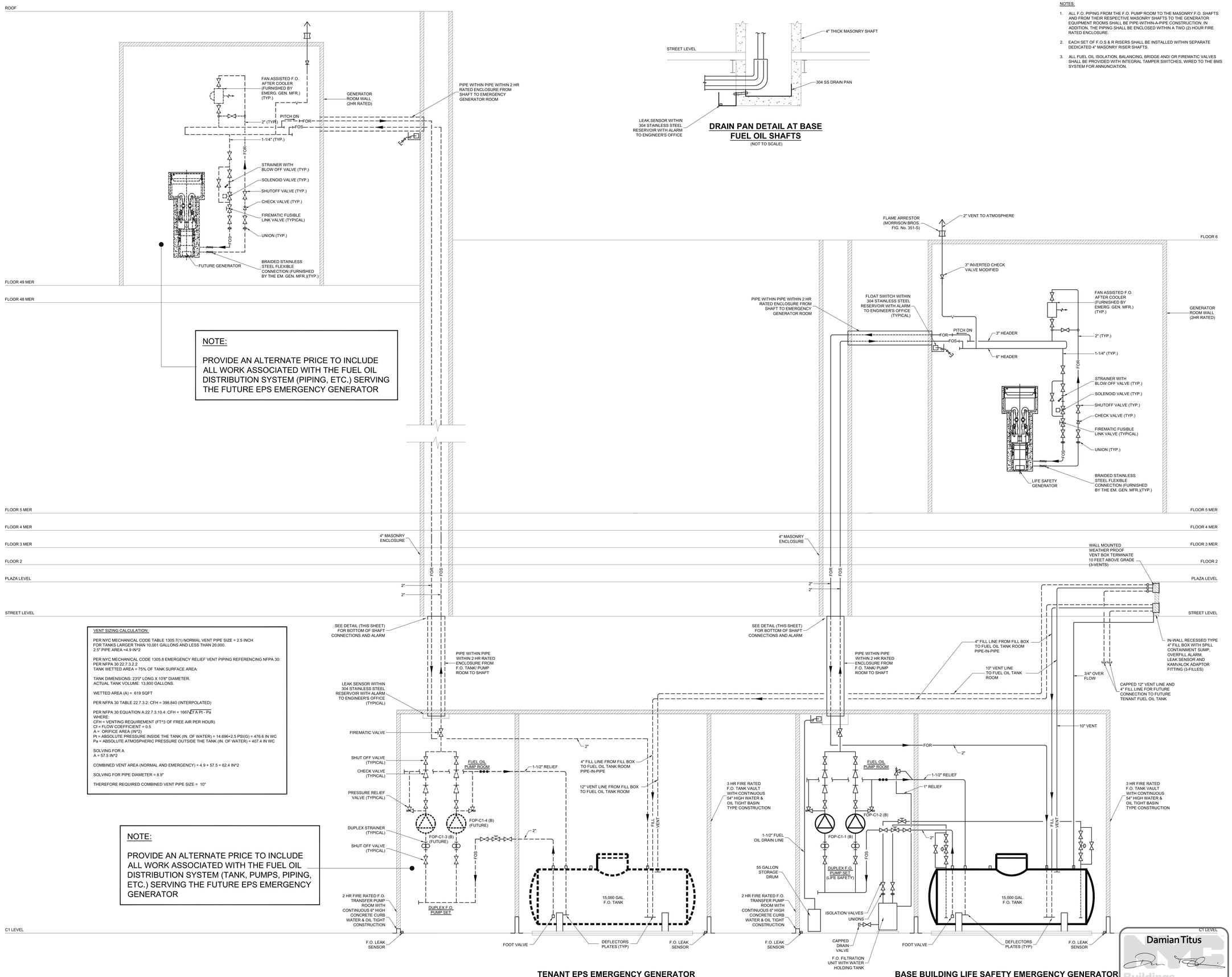
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\common\DOB\2013-06-03 DOB Filing Replacement Set\Cad\Mechanical\HYE-TC-M6-0305.dwg Plotted by: alan tunstead Plot Time: 6/3/2013 10:22 AM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. ALL F.O. PIPING FROM THE F.O. PUMP ROOM TO THE MASONRY F.O. SHAFTS AND FROM THEIR RESPECTIVE MASONRY SHAFTS TO THE GENERATOR EQUIPMENT ROOMS SHALL BE PIPE-WITHIN-A-PIPE CONSTRUCTION. IN ADDITION, THE PIPING SHALL BE ENCLOSED WITHIN A TWO (2) HOUR FIRE RATED ENCLOSURE.
2. EACH SET OF F.O.S & R 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.



DRAIN PAN DETAIL AT BASE FUEL OIL SHAFTS
(NOT TO SCALE)

TENANT EPS EMERGENCY GENERATOR FUEL OIL SYSTEM

BASE BUILDING LIFE SAFETY EMERGENCY GENERATOR FUEL OIL SYSTEM

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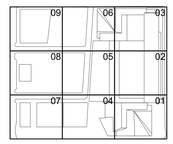

Date 01-25-2013
Project No. 14752.A.000
Drawn By
Sheet Number HYE-TC-M6-0306
Drawing Title

MECHANICAL FUEL OIL FLOW DIAGRAM

Drawing Number M6-0306
B-SCAN Drawing Number M-636.00

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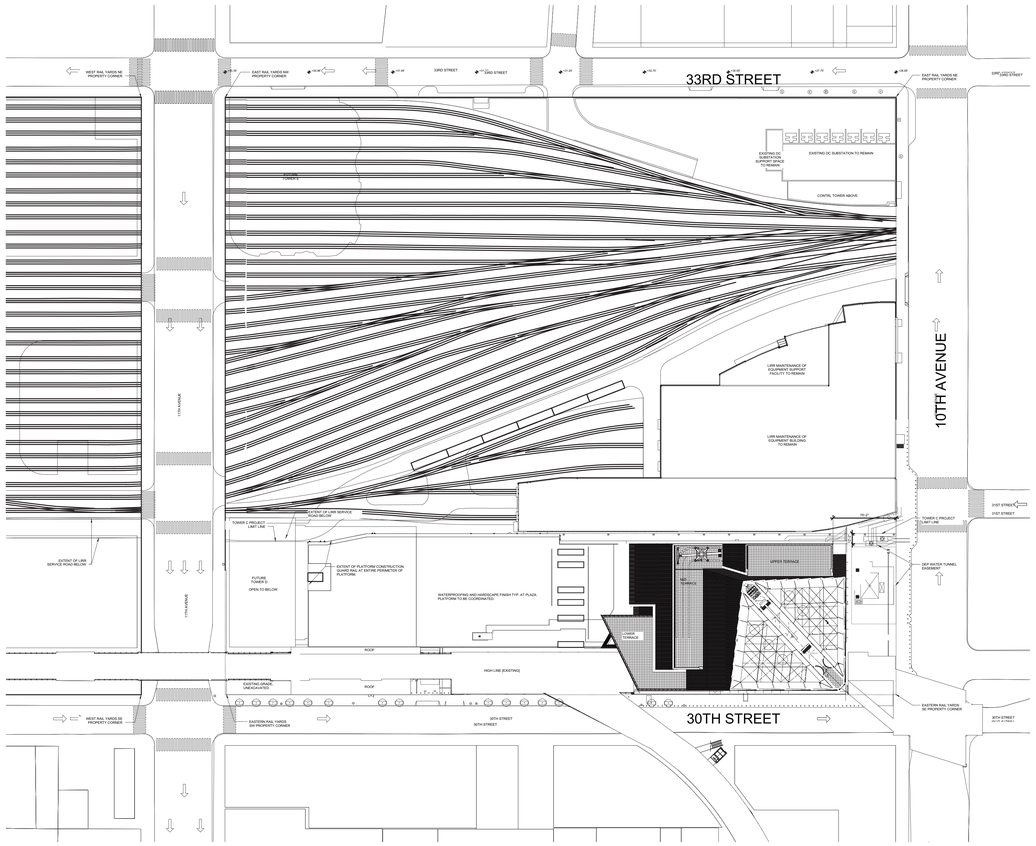
HUDSON YARDS
TOWER C

BLOCK 702

LOT 50

ZONING DISTRICT: C6-4/HY (SPECIAL HUDSON YARDS DISTRICT)



PLOT PLAN

NOT TO SCALE

DRAWING INDEX

SHEET NUMBER AND TITLE

EN-001.00	NYCECC CONFORMANCE COVER SHEET
EN-101.00	NYCECC CONFORMANCE ENERGY MODEL
EN-102.00	NYCECC CONFORMANCE ENERGY MODEL
EN-103.00	NYCECC CONFORMANCE PROGRESS COMPLIANCE AND MECHANICAL ENERGY CODE NOTES
EN-201.00	NYCECC CONFORMANCE LIGHTING COMPLIANCE SHEET NO. 1
EN-202.00	NYCECC CONFORMANCE LIGHTING COMPLIANCE SHEET NO. 2
EN-203.00	NYCECC CONFORMANCE LIGHTING COMPLIANCE SHEET NO. 3
EN-204.00	NYCECC CONFORMANCE LIGHTING COMPLIANCE SHEET NO. 4
EN-205.00	NYCECC CONFORMANCE LIGHTING COMPLIANCE SHEET NO. 5
EN-206.00	NYCECC CONFORMANCE LIGHTING COMPLIANCE SHEET NO. 6
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EN-244.00	NYCECC CONFORMANCE LIGHTING COMPLIANCE SHEET NO. 44

Damian Titus

Buildings

APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:10 PM
NYC Buildings

PROFESSIONAL'S STATEMENT

To the best of my knowledge and belief and professional judgement, these plans and specifications are in compliance with the New York City Energy Conservation Code.

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No.	Issue	Date
1	ISSUE FOR FILING	05/31/2013

Key Plan

Date
02/08/2013
Project No.
14752.A.000
Drawn By

Sheet Number
EN-102

Drawing Title
NYCECC CONFORMANCE COVER SHEET

Drawing Number
EN-001

B-SCAN Drawing Number
EN-001.00

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March 2013

COMPLIANCE WITH THE 2011 NEW YORK CITY ENERGY CONSERVATION CONSTRUCTION CODE FOR HUDSON YARDS OFFICE TOWER C NEW YORK, NY 10001

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REPORT OVERVIEW

The Hudson Yards Office Tower C is an approximately 1.7-million ft², 48-story building located on the west side in New York City. The area includes offices, retail and parking.

Viridian modeled the design case and the 2011 New York City Energy Conservation Construction Code (NYCECCC 2011) case.

As currently designed, the building (with a 1,200 kW cogeneration plant) has a total regulated annual energy cost of $3,750,916, which is 13.14% lower than the NYCECCC 2011 baseline against which it is compared for compliance.

Building energy modeling software DOE-2.1E was used to model the building's envelope design, mechanical systems and lighting power densities, among other relevant building attributes.

Note on Actual Energy Use
This report is developed for the purpose of calculating NYCECCC 2011 compliance only. Actual energy use and cost will be greater, since the modeling rules do not account for many real-life issues, such as quality of construction, equipment functionality, building operation and other factors.

DESIGN BUILDING ENERGY PERFORMANCE

	Annual Energy Cost [$]	Annual Regulated Energy Cost [$]	Regulated Energy Cost Savings Vs. Code Case [$]	Regulated Energy Cost Savings Vs. Code Case [%]	Compliance
New York City Energy Conservation Construction Code baseline	6,067,981	4,318,152			
BaseC. Design Case without cogeneration	5,912,036	4,139,931	178,221	4.13%	Yes
AInps: Design Case with 1200 kW cogeneration & 220 ton absorption chiller	**5,424,167**	**3,750,916**	**567,236**	**13.14%**	**Yes**

COMPARISON OF DESIGN BUILDING TO NYCECCC 2011 Baseline

The following table shows the comparison of the Proposed Design Case and the NYCECCC 2011 Baseline Case:

Design	NYCECCC 2011 Baseline	Reference Drawing
Climate Zone 4A	Climate Zone 4A	
TMY2 NY, NY	TMY2 NY, NY	
Exterior Wall Construction • Spandrel panel glass • Mineral fiber board insulation • Interior Finish • U-Factor = 0.21 (after accounting for thermal bridging) The U for the combination spandrel/vision glazing is U=0.34, per THERM analyses	**Exterior Wall Construction** • Steel-Framed Wall • U-Factor = 0.064	DOB 2012-12-27; DWG A2-1001; DWG A3-0010 DETAIL 4
Roof construction • Concrete pavers • 4" Polystyrene insulation • EPDM • Concrete slab • Steel deck • Fireproofing • U-factor = U-0.044	**Roof construction** • Insulation Entirely Above Deck • U-Factor = 0.048	DI-14 2012-12-14; DWG A3-5013; DETAIL 4

Design	NYCECCC 2011 Baseline	Reference Drawing
Slab-on-grade • Concrete Slab • F-Factor = 0.73	**Slab-on-grade** • Concrete Slab • F-Factor = 0.73	DI-14 2012-12-14; DWG A3-5902; DETAIL 2
Fenestration 52% vision glazing Typical (tower) glazing: • Solar Heat Gain Coefficient (SHGC) = 0.30 • U-fenestration = U-0.42 Atrium glazing: • Solar Heat Gain Coefficient (SHGC) = 0.71 • U-fenestration = U-0.96 Lobby glazing: • Solar Heat Gain Coefficient (SHGC) = 0.84 • U-fenestration = U-0.96 The U for the combination spandrel/vision glazing is U=0.34, per THERM analyses	**Fenestration** 40% vision glazing **Code glazing for Climate Zone 4A:** • Solar Heat Gain Coefficient = 0.40 • U-Factor = 0.50 (curtain wall)	DOB 2012-12-27; DWG A2-1001
Lighting — LPD Tenant Offices (unregulated) 1.1 W/ft² Atrium 4.0 W/ft² Lobby (w/decorative) 2.18 W/ft² Mechanical 0.25 W/ft² Electrical 0.20 W/ft² Corridors 1.09 W/ft² Restrooms (w/decorative lighting) for Coach floors 3.52 W/ft² Restrooms (w/decorative lighting) for other floors 1.9 W/ft² Stairwells 0.42 W/ft² Parking 0.22 W/ft² Retail 1.70 W/ft² Telecom & similar rooms 0.56 W/ft²	**Lighting** — LPD Tenant Offices (unregulated) 1.1 W/ft² Core & Shell building (Office) 1.0 W/ft² Parking 0.3 W/ft²	DI-14 2012-12-14; DWG E2-0001 to E2-5101 100% DD COACH LIGHTING ADDENDUM, A4, A5 SERIES

Design	NYCECCC 2011 Baseline	Reference Drawing
Occupancy sensors Occupancy sensors in the following areas: • Restrooms: 30% lighting energy use reduction for all hours • Stairwells: 45% lighting energy use reduction for all hours. One lamp out of two is turned off 90% of the time. • Service corridors: 30% lighting energy use reduction for all hours	**Occupancy sensors** No occupancy sensors except in conference areas	DI-14 2012-12-14; DWG E2-0001 to E2-5101
Daylight dimming Daylight dimming controls for main lobbies and atrium. 50% of atrium lighting and lobby lighting is on daylight dimming controls.	**Daylight dimming** No daylight dimming in above-grade public spaces.	DI-14 2012-12-14; DWG E2-0001 to E2-5101
Occupancy density — Area/person Open Offices 140 Encl. Offices 140 Atrium 50 Lobby (w/decorative) 50 Mechanical 5000 Electrical 5000 Corridors 140 Restrooms (w/decorative lighting) 140 Stairwells 5000 Parking 5000 Retail 50 Telecom & similar rooms 5000	**Occupancy density** Same as design.	N/A
Receptacle load — W/ft² Open Offices 1.5 Encl. Offices 1.5 Atrium 0.5 Lobby 0.5 Mechanical 0.25 Electrical 5.0 UPS, EMR rooms 10.0 Restrooms 0.25 Retail 0.5 Telecom & similar rooms 15.0	**Receptacle load** Same as design.	N/A

Design	NYCECCC 2011 Baseline	Reference Drawing
Exterior lighting Canopy 8,806 2,645 Plaza 15,100 3,560 Main Entries 56 2,848 Total 8,053	**Exterior lighting** Canopy 8,806 3,522 Plaza 15,100 3,020 Main Entries 56 1,680 Total 8,222 Additional 1,300 W 9,522	DI-14 2012-12-14; DWG E2-0001 to E2-5101
Outside Air: • Separate outside air supply systems are provided to serve Floor 6 through 22 and 23 through 31, respectively. Outside air (166,000 cfm) is heated separately and then provided to each Tenant Floor via risers located adjacent to the local Fan Rooms and local floor air column enclosures.	**Outside Air:** • Outside air is not conditioned separately. Each air handling unit is provided with outside air.	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Tower Office Floors 6 thru 22: • Under-floor delivery system for floors 6 thru 22. There are four (4) factory assembled packaged chilled water, air column mixing units on each floor. The air columns fan systems are capable of varying from 100% of design air flow down to 25% of design air flow with a variable speed drive. • Outside air is supplied to each air column enclosure via dedicated supply air risers located adjacent to each air column enclosure. The air column enclosure is utilized as a mixed air chamber. A constant volume regulator (CVR) is provided to supply minimum outside air to each air column. • Heating is provided by hot water finned-tube heating elements within Tenant furnished architectural enclosure located within the raised floor at the base of the façade wall at each tower office floor.	**Tower Office Floors 6 thru 22:** • Heating and cooling is provided by variable air volume chilled and hot water system overhead system. • The cooling systems have air economizer control. • Each fan unit has variable speed control. The fan systems are capable of varying from 100% of the design air flow down to 0.4 cfm per square foot.	DI-18 2012-12-21; DWG M6-0101 to M6-0304

Design	NYCECCC 2011 Baseline	Reference Drawing
Tower Office Floors 23 thru 31 • The air conditioning systems are low temperature all-air variable air volume type. Supply air systems will be factory assembled packaged chilled water air conditioning units (ACU's). Supply air temperature leaving air handling units is 49°F. • Overhead fan powered boxes by tenant will provide perimeter heating via linear diffusers. • The fan systems are capable of varying from 100% of design air flow down to 35% of design air flow with a variable speed drive. • Outside air is supplied to each floor via supply air riser(s) located within each local floor Fan Room. The local Fan Room is utilized as mixed air chamber. A constant volume regulator (CVR) is provided to supply minimum outside air to each air AHU.	**Tower Office Floors 23 thru 31** • Heating and cooling is provided by variable air volume chilled and hot water system overhead system. • The cooling systems have air economizer control. • Each fan unit has variable speed control. The fan systems are capable of varying from 100% of the design air flow down to 0.4 cfm per square foot.	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Tower Office Floors 32, 33 and 35 thru 47 • Central AHU system is provided to condition and pressurize these floors. Air side economizer air conditioning systems serving the office floors will be similar in construction to the AJC systems serving Tower Office Floors. • All systems will have air-side economizer and will be capable of 100% spill and 100% outside air intake. Supply air temperature leaving air handling units is 49°F. • Overhead fan powered boxes by tenant will provide perimeter heating via linear diffusers.	**Tower Office Floors 32, 33 and 35 thru 47** • Heating and cooling is provided by variable air volume chilled and hot water overhead system. • All systems will have air-side economizer and will be capable of 100% outside air intake. Supply air temperature leaving air handling units is 55°F. • Each fan unit has variable speed control. The fan systems are capable of varying from 100% of the design air flow down to 0.4 cfm per square foot.	DI-18 2012-12-21; DWG M6-0101 to M6-0304

Design	NYCECCC 2011 Baseline	Reference Drawing
Ground Floor Coach Lobby and Tower Office Lobby: • Separate air handling system(s) are provided to condition the Coach Lobby and the Main Office Lobby on the Ground Floor and Plaza Lobby. Air-side economizer systems (Enthalpy Control) serve the Lobby systems. The air-side economizers are capable of 100% outside air intake. Supply air temperature leaving air handling units is 55°F. The fan systems are capable of varying from 100% of design air flow down to 50% of design air flow with a variable speed drive. • Perimeter zones of the Lobbies are conditioned with a combination of overhead linear diffusers and two-pipe fan coil units located beneath the vision glass or within a recessed trench around the perimeter of the Lobby.	**Ground Floor Coach Lobby and Tower Office Floor Lobby:** • Heating and cooling is provided by variable air volume system with hot water overhead heating system. The fan systems are capable of varying from 100% of design air flow down to 50% of design air flow with a variable speed drive. • Air-side economizer systems (Enthalpy Control) serve the Lobby systems.	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Miscellaneous Below-Grade and Above-Grade Air Conditioning Systems: • Fan coil units with local area thermostats. • OA delivered to the space	**Miscellaneous Below-Grade and Above-Grade Air Conditioning Systems:** • Heating and cooling is provided by variable air volume chilled and hot water system overhead system. • The outside air has fixed control. • Each fan unit has variable speed control. The fan systems are capable of varying from 100% of the design air flow down to 0.4 cfm per square foot.	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Water cooled DX units – EMR, UPS, MeetMe Rooms, Electrical Switchgear Rooms • Cooling provided by packaged water cooled DX units with waterside economizer, served from the building secondary condenser water system. The cooling efficiency of DX units is EER=12.1.	**Four Pipe Fan Coil Units – EMR, UPS, MeetMe Rooms, Electrical Switchgear Rooms** Cooling is provided by four pipe fan coil units. The fan coil units have hot water and chilled water coils. Waterside economizer for the fan coils is provided from the cooling tower.	DI-18 2012-12-21; DWG M6-0101 to M6-0304

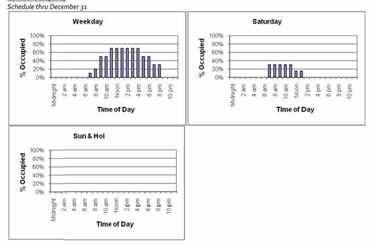
Design	NYCECCC 2011 Baseline	Reference Drawing
Fans All the HVAC system fans having a total fan system motor nameplate horsepower (hp) exceeding 5 horsepower (hp) meet the provisions of Section 503.2.10.1 through 503.2.10.2. The supply fan Watts/cfm information is listed in the following table: System — Fan W/CFM COACH-LOBBY-SYS 1.3044 BOH-SYS 1.4378 TOWER-LOBBY-SYS 1.2841 RETAIL-SYS 0.9661 ATRIUM-SYS 0.8126 6-22-FLR-SYS 0.5398 23-24-FLR-SYS 0.9841 25-31-FLR-SYS 0.9570 32-47-FLR-SYS 1.2373	**Fans** Since the Design meets the provisions of Section 503.2.10.1 through 503.2.10.2, the fan power is same as Design.	
Data Rooms • Cooling provided by packaged water cooled DX units with waterside economizer, served from the building secondary condenser water system. The cooling efficiency of DX units is EER=12.1.	**Data Rooms** • Cooling provided by packaged water cooled DX units with waterside economizer, served from the building secondary condenser water system. The cooling efficiency of DX units is EER=12.1.	
CO sensors • CO sensors in Parking Garage. The fans operate for 10 FLE (Full Load Equivalent) hours every day	**CO sensors** • No CO sensors in Parking Garage. The fans operate for 24 hours every day	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Hot Water Boiler • Heating is provided by seven (7) 190 HP boilers. The boiler efficiency is 85% with modulating flame burners	**Hot Water Boiler** • Heating is provided by two 30.15 MMBH boilers. The boiler efficiency is 80% with ON-OFF control	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Hot water pumps • Variable speed, with 30% turndown ratio • Pump head = 140 ft • Pump efficiency = 83.6%	**Hot water pumps** • Variable speed, with 30% turndown ratio • Pump head = 140 ft • Pump efficiency = 83.6%	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Domestic hot water • Service water is heated by plate and frame heat exchangers per zone. • DHW is served via boiler water.	**Domestic hot water** • Service water is heated by a hot water heater. The heater has 80% efficiency and ON-OFF control.	DI-18 2012-12-21; DWG M6-0101 to M6-0304

Design	NYCECCC 2011 Baseline	Reference Drawing
Electric centrifugal chillers • Four 1050 ton electric chillers (0.643 kW/ton; NPLV=0.404) at 44°F	**Electric centrifugal chillers** • Six 713 ton electric chillers (COP=6.1; 6.4 IPV;0.576 kW/ton) at ARI conditions	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Chilled water pumps • Variable speed, with 70% turndown ratio of one pump • Pump head = 140 ft • Pump motor efficiency = 95.4% • Pump impeller efficiency = 84.9% at 60 Hz	**Chilled water pumps** • Variable speed, with 70% turndown ratio of one pump • Pump head = 140 ft. • Pump motor efficiency = 95.4% • Pump impeller efficiency = 84.9% at 60 HZ	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Cooling towers • Variable speed fans with a minimum turndown ratio of 30% • Wetbulb reset control for condenser water temperature with minimum tower setpoint temperature of 65°F • Maximum cell control • Water side economizer	**Cooling towers** • Two speed fans • Wetbulb reset control for condenser water temperature with minimum tower setpoint temperature of 70°F • Minimum cell control • Water side economizer	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Condenser water pumps • Pump Head = 150 ft • Pump motor efficiency = 95.8% • Pump impeller efficiency = 85.7% at 60 Hz	**Condenser water pumps** • Pump Head = 150 ft • Pump motor efficiency = 95.8% • Pump impeller efficiency = 85.7% at 60 Hz	DI-18 2012-12-21; DWG M6-0101 to M6-0304
Motors • NEMA premium efficiency motors for pumps and fans	**Motors** • NEMA premium efficiency motors for pumps and fans	DI-18 2012-12-21; DWG M6-0101 to M6-0304
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 220 Ton single-effect absorption chiller. • Heat recovered from cogeneration plant is also used for service hot water heating and space heating.	• No Cogeneration Plant	DI-18 2012-12-21; DWG M6-0101 to M6-0304

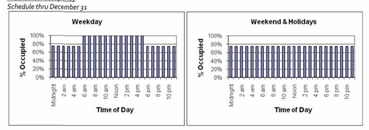
SCHEDULES FOR OCCUPANCY, LIGHTING AND EQUIPMENT

Occupancy Patterns

Corridor occupancy
Schedule thru December 31



Mechanical occupancy
Schedule thru December 31



Damian Titus
NYC Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:10 PM
NYC DEPARTMENT OF BUILDINGS

PROFESSIONAL'S STATEMENT
TO THE BEST OF MY KNOWLEDGE AND BELIEF AND PROFESSIONAL JUDGEMENT THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

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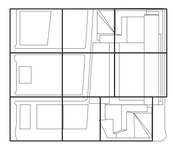
No.	Issue	Date
1	ISSUE FOR FILING	02/08/2013

Key Plan



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Project No. 14752.A.000
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Sheet Number

Drawing Title
NYCECC CONFORMANCE ENERGY MODEL

Drawing Number
EN-101
BCAD Drawing Number
EN-101.00

SHEET 2 OF 48

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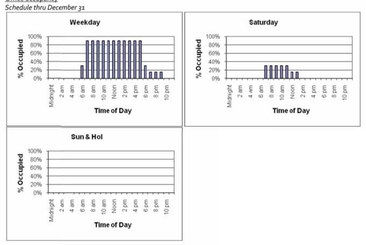
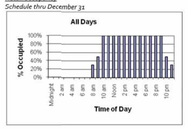
Office occupancy
Schedule thru December 31

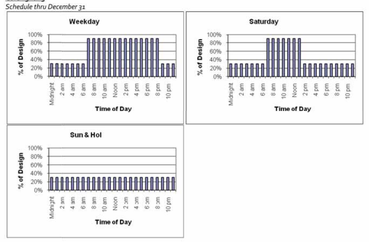


Retail occupancy
Schedule thru December 31

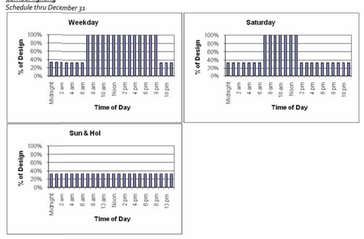


Lighting Use Patterns

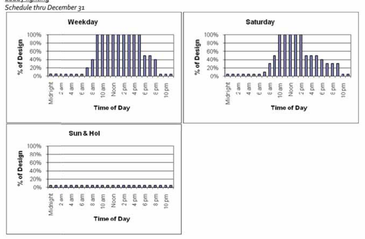
Core lighting
Schedule thru December 31



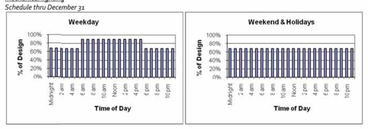
Corridor lighting
Schedule thru December 31



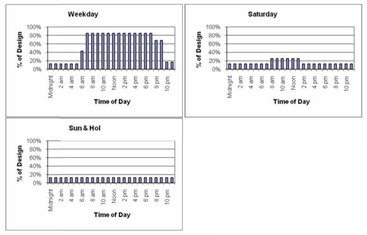
Lobby lighting
Schedule thru December 31



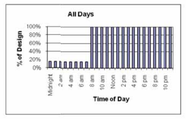
Mechanical lighting
Schedule thru December 31



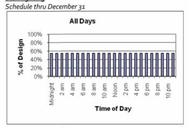
Office lighting
Schedule thru December 31



Retail lighting
Schedule thru December 31



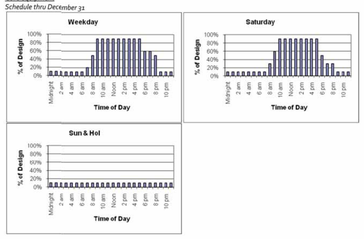
Stair lighting
Schedule thru December 31



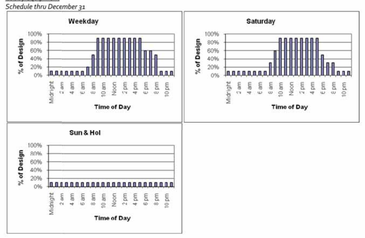
Equipment Use Patterns

Office equipment
Schedule thru December 31

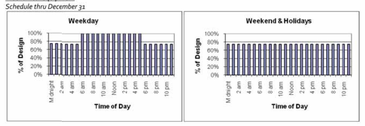
Core equipment
Schedule thru December 31



Lobby equipment
Schedule thru December 31



Mechanical equipment
Schedule thru December 31



Data equipment
Schedule thru December 31

Retail equipment: *Schedule thru December 31*

APPENDIX A - UTILITY RATES

The energy model uses the following utility rates to calculate the building's energy cost.

1.1. Electricity

ConEdison PSC-9, 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	$26.74	$21.58	$10.52	$0.1331	$0.1077
February	$26.71	$21.54	$10.48	$0.1325	$0.0926
March	$27.32	$22.15	$11.09	$0.1254	$0.1090
April	$27.78	$22.61	$11.55	$0.1250	$0.1053
May	$34.59	$29.43	$18.37	$0.1260	$0.1016
June	$36.34	$40.24	$25.24	$0.1291	$0.0928
July	$55.23	$39.13	$24.12	$0.1444	$0.1024
August	$57.38	$41.28	$26.27	$0.1241	$0.0878
September	$57.83	$41.73	$26.73	$0.1212	$0.0994
October	$35.31	$30.14	$19.08	$0.1149	$0.1006
November	$27.44	$22.28	$11.21	$0.1326	$0.1209
December	$27.07	$21.91	$10.84	$0.1536	$0.1234

1.2. Gas

ConEdison PSC-9 Gas, SC-2 Rate I (General Firm Sales - Heating)

Monthly customer charge: $23.10
NY Sales Tax: 8.875 %

Time Period	Energy Charge		
	First 90 therms	Next 2,910 therms	over 3000 therms
	per therm	*per therm*	*per therm*
January	$1.406	$1.210	$1.062
February	$1.446	$1.250	$1.102
March	$1.374	$1.178	$1.030
April	$1.357	$1.161	$1.013
May	$1.355	$1.159	$1.011
June	$1.301	$1.105	$0.957
July	$1.325	$1.128	$0.980
August	$1.324	$1.127	$0.979
September	$1.441	$1.245	$1.097
October	$1.420	$1.224	$1.076
November	$1.335	$1.139	$0.991
December	$1.383	$1.187	$1.039

ConEdison PSC-9 Gas, Rider H Rate I (Distributed Generation Rule for less than 5,000 kW)

Monthly customer charge: $234.49 includes electric standby rate (PSC 2, SC 14-RA)
NY Sales Tax: 8.875 %

Time Period	Energy Charge		
	First 90 therms	Next 2,910 therms	over 3 therms
	per therm	*per therm*	*per therm*
January	$0.953	$0.953	$0.953
February	$0.993	$0.993	$0.993
March	$0.921	$0.921	$0.921
April	$0.863	$0.863	$0.863
May	$0.861	$0.861	$0.861
June	$0.807	$0.807	$0.807
July	$0.830	$0.830	$0.830
August	$0.829	$0.829	$0.829
September	$0.946	$0.946	$0.946
October	$0.926	$0.926	$0.926
November	$0.882	$0.882	$0.882
December	$0.930	$0.930	$0.930

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

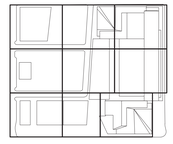
Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUE FOR FILING	02/08/2013

Key Plan



Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:10 PM
NYC Buildings Approved Hub

PROFESSIONAL'S STATEMENT
TO THE BEST OF MY KNOWLEDGE AND BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

Date 02/08/2013
Project No. 14752.A.000
Drawn By
Sheet Number

Drawing Title
NYCECC CONFORMANCE ENERGY MODEL

Drawing Number EN-102
B-SCAN Drawing Number EN-102.00

SHEET 3 OF 48

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Filename: U:\projects\14752.a hudson yards-east yards-tw\common\DOB\2013-06-03 DOB Filing Replacement Set\EN Drawings\EN-101.dwg Plotted by: alan.lundstad Plot Time: 6/3/2013 3:47 PM

NEW YORK CITY ENERGY CONSERVATION CODE COMPLIANCE
PROGRESS INSPECTIONS

	INSPECTION/TEST	PERIODIC (MINIMUM)	REFERENCE STANDARD (SEE ECC CHAPTER 6) OR OTHER CRITERIA	ECC OR OTHER CITATION
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-SPACEWALLS AND/OR PERIMETER SLAB-ON-GRADE FLOORS.	AS REQUIRED DURING 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 JUCTIONS BETWEEN COMPONENTS SHALL BE VISUALLY INSPECTED TO ENSURE THE R-VALUES ARE MARKED, THAT SUCH R-VALUES CONFORM TO THE R-VALUES IDENTIFIED IN THE CONSTRUCTION DOCUMENTS AND THAT INSULATION IS PROPERLY INSTALLED. CERTIFICATIONS FOR UNMARKED INSULATION SHALL BE SIMILIARLY 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 VALUES AND PRODUCT RATINGS: U-VALUES AND SHGC VALUES OF THE INSTALLED FENESTRATION SHALL BE VISUALLY INSPECTED FOR CONFORMANCE WITH THE U-FACTORS AND SHGC VALUES INDENTIFIED 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-BUILD WINDOWS AND/OR DOORS, SHALL BE VISUALLY INSPECTED TO VERIFY THAT INSTALLED ASSEMBLIES ARE LISTED AND LABELED BY THE MANUFACTURER TO THE REFERENCE 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 VERFIED BY VISUAL INSPECTION.	PRIOR TO FINAL CONSTRUCTION INSPECTION	APPROVED CONSTRUCTION DOCUMENTS	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 ENVELOP 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 E238	502.4.3, 502.4.7; ASHRAE 90.1-5.4.3.1
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
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 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.	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; 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. CONTROLS WITH SEASONALLY DEPENDANT 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 PROGRESS INSPECTION APPROVED AGENCY OF ANY UNRESOLVED WORK WITHIN 180 DAYS OF THE 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 PREFORMED BEFORE SIGN-OFF OR ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING CONTROL SYSTEM NARRATIVES ASHRAE GUIDELINE 1: THE HVAC COMMISSIONING PROCESS WHERE APPLICABLE	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 CONSTRACTION 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 DUCT HIGH-PRESSURE DUCT SYSTEMS: FOR DUCT SYSTEMS DESIGNED TO OPERATE AT STATIC PRESSURE 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
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
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; 1RCNY101-07(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, 9.5.5; 1RCNY101-07(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
IID1	MAINTENANCE INFORMATION: MAINTENANCE MANUALS FOR 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 AND FOR COMPLIANCE WITH ECC 102.3	PRIOR TO SIGN-OFF OR ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ELECTRICAL DRAWINGS; ASHRAE GUIDELINE 4: PREPARATION OF OPERATING AND MAINTENANCE DOCUMENTATION FOR BUILDING SYSTEMS	102.3; 803.3.8.3; ASHRAE 90.1-9.1-6.7.2.2,8.7.2

NOTES:
1. IN ACCORDANCE WITH SECTIONS BC 109.9 AND ECC 104.2.3, WHERE AN INSPECTION OR TEST FAILS, THE CONSTRUCTION SHALL BE CORRECTED, AND SHALL BE MADE AVAILABLE FOR REINSPECTION AND/OR RETESTING BY THE PROGRESS INSPECTOR UNTIL IT COMPLIES.
2. IN ACCORDANCE WITH ARTICLE 116 OF TITLE 28 AND SECTION BC 109, CONSTRUCTION SHALL BE SCHEDULED TO ALLOW REQUIRED PROGRESS INSPECTIONS TO TAKE PLACE, AND THAT ROOFS, CEILINGS, EXTERIOR WALLS, INTERIOR WALLS, FLOORS, FOUNDATIONS, BASEMENTS AND ANY OTHER CONSTRUCTION SHALL NOT BE COVERED OR ENCLOSED UNTIL REQUIRED PROGRESS INSPECTIONS ARE COMPLETED OR THE PROGRESS INSPECTOR INDICATES THAT SUCH COVERING OR ENCLOSURE MAY PROCEED, AT EACH STAGE OF CONSTRUCTION, AS APPLICABLE.

MECHANICAL ENERGY CODE NOTES

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 GREATER THAN 5°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.

11. 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.

12. THE AIR SIDE ECONOMIZER SHALL BE CAPABLE OF BEING SEQUENCED WITH THE MECHANICAL COOLING EQUIPMENT AND SHALL BE NOT CONTROLLED BY MIXED AIR TEMPERATURE.

13. THE AIR SIDE ECONOMIZER 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.

14. ZONE THERMOSTATIC CONTROLS SHALL PREVENT REHEATING, RECOOLING, MIXING OR SIMULTANEOUS SUPPLYING AIR THAT HAS BEEN PREVIOUSLY MECHANICALLY HEATED AND PREVIOUSLY MECHANICALLY COOLED.

15. A THREE PIPE CHANGEOVER HYDRONIC SYSTEM SHALL NOT USED.

16. 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.

17. 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.

18. THE CHILLED WATER SYSTEM AND HOT WATER SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT AUTOMATICALLY RESET SUPPLY TEMPERATURE WITH THE OUTDOOR AIR TEMPERATURE.

Damian Titus
Buildings
APPROVED
Under Directive 2 of 1975
Date/Time: Aug 15, 2013 – 12:10 PM
NYC Development Hub

PROFESSIONAL'S STATEMENT
TO THE BEST OF MY BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY ENERGY CONSERVATION CODE.

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No.	Issue	Date
1	ISSUE FOR FILING	05/31/2013

Key Plan

Date 02/08/2013
Project No. 14752.A.000
Drawn By
Sheet Number

Drawing Title
NYCECC CONFORMANCE PROGRESS COMPLIANCE AND MECHANICAL ENERGY CODE NOTES

Drawing Number
EN-103

B/SCAN Drawing Number
EN-103.00

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INTERIOR LIGHTING CONTROL NARRATIVE

LIGHTING FIXTURES WILL CONTAIN DIMMABLE, ADDRESSABLE BALLASTS, DRIVERS, OR MODULES FOR AUTOMATIC CONTROL VIA PROGRAMMABLE HEAD END WITH ASTRONOMICAL TIMECLOCK. DAYLIGHT HARVESTING AT PERIMETER IS PROVIDED VIA PHOTOSENSOR INPUT AND DIGITAL DIMMING OF LIGHT FIXTURES. OVERRIDE SWITCHES ARE LOCATED THROUGHOUT SPACE TO PROVIDE 4-HOUR OVERRIDE OF PROGRAMMED TIMECLOCK SETTINGS. FURTHER LOCAL CONTROL IS PROVIDED VIA WALL SWITCHES AND DIMMERS. ALL ENCLOSED OFFICES, CONFERENCE ROOMS, AND BREAK ROOMS ARE CONTROLLED VIA MANUAL ON/AUTO-OFF VACANCY SENSOR. TASK LIGHTING IN ENCLOSED OFFICES AND PANTRIES IS CONTROLLED VIA ROOM VACANCY SENSOR AND INTEGRAL SWITCH.

SYMBOL LIST (POWER AND LIGHTING)

SYMBOL	DESCRIPTION
S_o	WALL MOUNTED SINGLE POLE LIGHT SWITCH LOWERCASE LETTER INDICATES SWITCHING GROUP
S_o^3	LIGHT SWITCH WITH 3-WAY OPERATION, LOWERCASE LETTER INDICATES SWITCHING GROUP
S_o^4	WALL MOUNTED 4-WAY SWITCH LOWERCASE LETTER INDICATES SWITCHING
S^P	LIGHT SWITCH WITH PILOT LIGHT
S^{TS}	STAND ALONE WALL MOUNTED TIMER SWITCH WITH INTEGRAL ASTRONOMICAL TIME CLOCK
S^{KS}	WALL MOUNTED KEY SWITCH
	DIGITAL WIRELESS SWITCH, SUBSCRIPT INDICATES SWITCHING GROUP
TC-1-XX	LIGHTING CONTROL WIRELESS SENSOR MODULE
	DIGITAL WIRELESS PHOTOCELL

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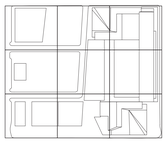

Damian Titus

PROFESSIONAL STATEMENT

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Under Direct Supervision

Date/Time: Aug 15, 2013 12:10 PM

NYC Development Hub

Date
08/01/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-201
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.1
Drawing Number
EN-201
B-SCAN Drawing Number
EN-201.00

SHEET 5 OF 48

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LOB FRONT OF HOUSE LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE DESIGNATION	SYMBOL	FIXTURE DESCRIPTION	LOCATION	UNITS	LAMPS: QNTY. PER FIXTURE	LAMPS: TYPE	LAMPS: WATTS	BALLAST/ TRANSFORMER: VOLTS	BALLAST/ TRANSFORMER: TYPE	TOTAL SYSTEM WATTS
DL02		RECESSED FLANGELESS METAL HALIDE MR 16 SQUARE PINHOLE DOWNLIGHT	LIFT LOBBY	EA	1	HID	22W	277V	-	22W
DL03		RECESSED FLANGELESS METAL HALIDE MR 16 ROUND PINHOLE DOWNLIGHT	LOWER LOBBY	EA	1	HID	22W	277V	-	22W
DL04		RECESSED FLANGELESS METAL HALIDE AR 111 ROUND PINHOLE DOWNLIGHT	SHARED LOBBY	EA	1	HID	77W	277V	-	77W
DL05		RECESSED TRIMLESS METAL HALIDE MR16 SQUARE DOWNLIGHT - FOR WOOD CEILING	VARIOUS	EA	1	HID	22W	277V	-	22W
DLE01		EXTERIOR-RATED RECESSED FLANGE OVERLAY METAL HALIDE AR111 ROUND DOWNLIGHT	EXTERIOR COLUMN	EA	1	HID	77W	277V	-	77W
PR01	-	DELETED	-	-	-	-	-	-	-	-
PR02	-	DELETED	-	-	-	-	-	-	-	-
PRE01		EXTERIOR-RATED SURFACE MOUNTED METAL HALIDE VERY NARROW BEAM FLOODLIGHT WITH CUSTOM 360° SHIELD	FACADE UPLIGHT	EA	1	HID	1100W	277V	-	1100W
PRE02 A		EXTERIOR RATED SURFACE MOUNTED LED NARROW SPOT BEAM FLOODLIGHT WITH CUSTOM 360 SHIELD - DIMMABLE IP66 RATED.	FACADE UPLIGHT	EA	1	LED	140W	277V	-	140W
PRE02 B		EXTERIOR RATED SURFACE MOUNTED LED FLOOD BEAM FLOODLIGHT WITH CUSTOM 360 SHIELD - DIMMABLE IP66 RATED.	FACADE UPLIGHT	EA	1	LED	140W	277V	-	140W
PRE03	-	DELETED	-	-	-	-	-	-	-	-
ST01		SURFACE MOUNTED SEAMLESS LINE T5 FLUORESCENT STRIP - DIMMABLE	VARIOUS	LF	1	FD	10W	277V	-	10W
ST02		SURFACE MOUNT LINEAR LED WITH FROSTED DIFFUSER - DIMMABLE	VARIOUS	LF	N/A	LED	5W	277V	-	5W
ST03	-	DELETED	-	-	-	-	-	-	-	-
ST04 A/B		SURFACE MOUNTED LINEAR LED GRAZING LIGHT - DIMMABLE	SHARED LOBBY	LF	N/A	LED	16W	277V	-	16W
ST05	-	DELETED	-	-	-	-	-	-	-	-
ST06		SURFACE MOUNTED LINEAR DYNAMIC WHITE LED - DIMMABLE	TENANAT A LOBBY PASSAGEWAY	LF	N/A	LED	13W	277V	-	13W
ST07 A/B		PAPER LIGHT LED LIGHTING SYSTEM	ELEVATOR JAMB ELEVATOR LOBBY	LF	N/A	LED	26.6W	277V	-	26.6W
STE01	-	DELETED	-	-	-	-	-	-	-	-
STE02	-	DELETED	-	-	-	-	-	-	-	-
STE03 A		EXTERIOR-RATED SURFACE MOUNTED DIMMABLE LED GRAZING LIGHT - DIMMABLE IP66 RATED	FACADE UPLIGHT	LF	N/A	LED	19W	277V	-	19W
STE03 B		EXTERIOR-RATED SURFACE MOUNTED DIMMABLE LED GRAZING LIGHT - DIMMABLE IP66 RATED	FACADE UPLIGHT	LF	N/A	LED	19W	277V	-	19W
TR01	-	DELETED	-	-	-	-	-	-	-	-
ULE01	-	DELETED	-	-	-	-	-	-	-	-

FMS FRONT OF HOUSE LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE DESIGNATION	SYMBOL	FIXTURE DESCRIPTION	LOCATION	UNITS	LAMPS: QNTY. PER FIXTURE	LAMPS: TYPE	LAMPS: WATTS	BALLAST/ TRANSFORMER: VOLTS	BALLAST/ TRANSFORMER: TYPE	TOTAL SYSTEM WATTS
CO-FA		SURFACE MOUNTED IN ARCHITECTURAL COVE CERAMIC METAL HALIDE CONTINUOUS WALLGRAZER WITH MATTE BLACK HOUSING, LAMP SOCKETS WITH INTEGRAL SPREAD LENSES AND PARABOLIC ALUMINUM BAFFLES SPACED 15" O.C., 10° LOCKING ADJUSTABILITY, WHITE VEILING PANEL TO SHIELD HOUSING AND BALLASTS FROM VIEW, AND INTEGRAL ELECTRONIC BALLASTS.	COACH LOBBY CORE WALL	EA		ALTO	25W/ IF	277V	ELECTRONIC DIMMING	25W
CO-FB		SURFACE MOUNTED ADJUSTABLE ACCENT LIGHT WITH 130° TILT AND 240° ROTATIONAL ADJUSTABILITY, CAST ALUMINUM HOUSING, SILVER ANODIZED ALUMINUM SPECULAR SPOT REFLECTOR FOR 17° BEAM DISTRIBUTION, SAFETY GLASS LENS, AND INTEGRAL ELECTRONIC DIGITAL DIMMING POWER SUPPLY.	BASE BUILDING CURTAIN WALL ALONG COACH LOBBY ESCALATORS	EA		LED	40W	277V		40W
CO-FC		RECESSED LED DOWNLIGHT WITH NOMINAL 4.5" SQUARE FLUSH TRIM BEVELED TO 3.5" SQUARE APERTURE WITH SOLITE LENS, POLYCARBONATE SPECULAR REFLECTOR WITH 30° BEAM DISTRIBUTION, DIE-CAST ALUMINUM HOUSING, AND INTEGRAL ELECTRONIC DIGITAL DIMMING POWER SUPPLY.	COACH LOBBY	EA		LED	33W	277V		33W
CO-FD		RECESSED LED ADJUSTABLE ACCENT LIGHT WITH NOMINAL 4.5" SQUARE FLUSH TRIM BEVELED TO 3.5" SQUARE APERTURE WITH SOLITE LENS, 40° TILT AND 362° ROTATIONAL ADJUSTABILITY, POLYCARBONATE SPECULAR REFLECTOR WITH 30° BEAM DISTRIBUTION, DIE-CAST ALUMINUM HOUSING, AND INTEGRAL ELECTRONIC DIGITAL DIMMING POWER SUPPLY.	COACH LOBBY CHOCOLATE WALL	EA		LED	33W	277V		33W
CO-FF OPTION 1		SURFACE MOUNTED IN ARCHITECTURAL COVE BEHIND TRANSLUCENT GLASS PANEL CONTINUOUS LINEAR FLUORESCENT STRIPLIGHT WITH FOURLAMP STAGGERED PROFILE WITH 4" OVERLAP, INTEGRAL ELECTRONIC SEPARATELY SWITCHED TWO-LAMP DIGITAL DIMMING BALLASTS, AND STEEL HOUSING WITH THROUGHWIRING. SAMPLE AND MOCK-UP REQUIRED.	COACH ELEVATOR LOBBY	EA		LED	30W/ IF	277V		30W
CO-FF OPTION 2		SURFACE MOUNTED IN ARCHITECTURAL COVE BEHIND TRANSLUCENT GLASS PANEL ARRAY OF LED MODULES EACH WITH (6) DIODES 4" O.C., OPTICAL LENSES FOR 120° BEAM DISTRIBUTION, AND REMOTE 0-10V DIMMING POWER SUPPLY INSTALLED ALONGSIDE. SAMPLE AND MOCK-UP REQUIRED.	COACH ELEVATOR LOBBY	EA		LED	17W/ IF	277V		17W
CO-FG		SURFACE MOUNTED BEHIND BUSH HAMMERED MARBLE ELEVATOR JAMB 6"X6"X1.375" SQUARE ANODIZED ALUMINUM PANEL ASSEMBLY WITH RIGID PVC FRONT AND BACK PLATES, CUSTOM END-EMITTING FIBER OPTIC ARRAY TO OPTIMIZE BACKLIGHTING OF ARCHITECTURAL INDICATOR LETTERS IN MARBLE, STRANDED 1.0MMDIAMETER POLYMETHYL METHACRYLATE FIBERS (QUANTITY TO VARY PER LETTER WITH (1) 1.0MM FIBER PER LIGHT POINT), REMOTE LED ILLUMINATOR WITH ANODIZED ALUMINUM HOUSING, 28MM HARNESS ADAPTER, AND SYNJET VENTILATOR, AND REMOTE ELECTRONIC DIMMING DRIVER TO BE INSTALLED ABOVE DOOR HEADER, ACCESSIBLE FOR MAINTENANCE. HARNESSING OF FIBER OPTIC CABLE INTO HARNESS ADAPTER TO INCLUDE RANDOMIZING, CRIMPING, FUSING, AND POLISHING FOR MAXIMUM LIGHT OUTPUT. SAMPLE REQUIRED.	INDICATORS AT COACH ELEVATOR JAMBS	EA		LED	25.4W /IF	277V		25.4W /IF
CO-FH	SEE ASI 24	RECESSED LED DOWNLIGHT WITH NOMINAL 1.75" SQUARE APERTURE, ALUMINUM REFLECTOR CONE WITH 47° BEAM SPREAD, TRIM OVERLAP FLANGE, MOUNTING PAN, AND DIGITAL ELECTRONIC POWER SUPPLY.	COACH ELEVATOR CABS	EA		LED	11W	277V		11W
CO-FJ		POWER TO BE PROVIDED FOR PORTABLE TASK LIGHTING, TO BE SELECTED WITH / BY ARCHITECT.	COACH LOBBY RECEPTION SEATION	EA		TBD	100W	277V		100W
CO-FM		SURFACE MOUNTED ALONG ARCHITECTURAL SPANDREL LINEAR FLEXIBLE ENCAPSULATED .6" X .57" DIFFUSED LED STRIP WITH MOUNTING CHANNEL AND REMOTE ELECTRONIC DIGITAL DIMMING POWER SUPPLY. MOCKUP REQUIRED.	COACH ATRIUM SPANDRELS	EA		LED	3.5W /IF	277V		3.5W /IF
CO-FN		SURFACE MOUNTED IN ARCHITECTURAL COVE BEHIND TRANSLUCENT GLASS PANEL CONTINUOUS LINEAR FLUORESCENT STRIPLIGHT WITH FOURLAMP STAGGERED PROFILE WITH 4" OVERLAP, INTEGRAL ELECTRONIC SEPARATELY SWITCHED TWO-LAMP DIGITAL DIMMING BALLASTS, AND STEEL HOUSING WITH THROUGHWIRING. SAMPLE AND MOCK-UP REQUIRED.	COACH CORE RESTROOMS	EA		LED	7W /IF	277V		7W /IF
CO-FP		RECESSED LED DOWNLIGHT WITH NOMINAL 4.5" SQUARE FLUSH TRIM BEVELED TO 3.5" SQUARE APERTURE WITH SOLITE LENS, POLYCARBONATE SPECULAR REFLECTOR WITH 50° BEAM DISTRIBUTION, DIE-CAST ALUMINUM HOUSING, AND INTEGRAL ELECTRONIC DIGITAL DIMMING POWER SUPPLY.	COACH CORE RESTROOMS	EA		LED	16W	277V		16W
CO-FQ		SURFACE MOUNTED IN CEILING CAVITY BEHIND TRANSLUCENT ACRYLIC PANEL ARRAY OF LED GRID MODULES EACH WITH (6) DIODES 4" O.C., OPTICAL LENSES FOR 120° BEAM DISTRIBUTION, AND REMOTE 0-10V DIMMING POWER SUPPLY INSTALLED ALONGSIDE. SAMPLE REQUIRED.	RESTROOMS VANITY CEILING	EA		LED	4.2W /PER	277V		4.2W /PER
CO-FQ -1		SURFACE MOUNTED IN VERTICAL SIDE CAVITIES BEHIND TRANSLUCENT ACRYLIC PANEL ARRAY OF LED GRID MODULES EACH WITH (6) DIODES 4" O.C., OPTICAL LENSES FOR 120° BEAM DISTRIBUTION, AND REMOTE 0-10V DIMMING POWER SUPPLY INSTALLED ALONGSIDE. SAMPLE REQUIRED.	RESTROOMS VANITY VERTICAL PANEL	EA		LED	4.2W /PER	277V		4.2W /PER

BACK OF HOUSE LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE DESIGNATION	SYMBOL	FIXTURE DESCRIPTION	LOCATION	UNITS	LAMPS: QNTY. PER FIXTURE	LAMPS: TYPE	LAMPS: WATTS	BALLAST/ TRANSFORMER: VOLTS	BALLAST/ TRANSFORMER: TYPE	TOTAL SYSTEM WATTS
JA	JA	RECESSED, LED DOWNLIGHT	CORRIDORS	EA	-	LED	27	277V	ELECTRONIC DIMMABLE	27W
JA1	JA1	RECESSED, LED DOWNLIGHT	TOILET ROOMS	EA	-	LED	18	277V	ELECTRONIC DIMMABLE	18W
JB	JB	RECESSED, LED DOWNLIGHT	GARAGE RAMP ENTRANCE	EA	-	LED	83	277V	0-10V DRIVER	83W
JB1	JB1	RECESSED, LED DOWNLIGHT	GARAGE RAMP ENTRANCE	EA	-	LED	64	277V	0-10V DRIVER	64W
JC		NOT USED								
JC1		NOT USED								
JC2	JC2	SURFACE MOUNTED CYLINDER DOWNLIGHT.	GARAGE	EA	1	PL-T	32W	277V	ELECTRONIC	34W
JC3	JC3	SURFACE MOUNTED CYLINDER DOWNLIGHT.	GARAGE	EA	2	PL-T	32W	277V	ELECTRONIC	66W
JD	JD	PENDANT MOUNTED LINEAR FLUORESCENT FIXTURE.	IT ROOMS	EA	1	T8	32W	277V	ELECTRONIC DIMMABLE	32W
JF	JF	RECESSED 2X2 FLUORESCENT FIXTURE.	GENERAL	EA	2	TT5	40W	277V	ELECTRONIC DIMMABLE	75W
JF1	JF1	RECESSED 2X2 FLUORESCENT FIXTURE.	GENERAL	EA	1	TT5	40W	277V	ELECTRONIC DIMMABLE	44W
JG	JG	SURFACE MOUNTED FLUORESCENT LENSED FIXTURE.	GARAGE	EA	2	T8	32W	277V	ELECTRONIC	60W
JH	JH	RECESSED 1X1 COMPACT FLUORESCENT FIXTURE.	GENERAL	EA	1	PL-T	32W	277V	ELECTRONIC DIMMABLE	36W
JJ	JJ	WALL MOUNTED JELLY JAR FIXTURE	GENERAL	EA	1	PL-T	32W	277V	ELECTRONIC	36W
JJ1	JJ1	RAIL MOUNTED JELLY JAR FIXTURE	ROOF	EA	1	PL-T	32W	277V	ELECTRONIC	36W
JJ2	JJ2	WALL MOUNTED JELLY JAR FIXTURE WITH BLUE GLOBE	GARAGE	EA	1	PL-T	32W	277V	ELECTRONIC	36W
JK	JK	SURFACE OR PENDANT MOUNTED INDUSTRIAL FIXTURE USING A FLUORESCENT LAMP.	GENERAL	EA	2	T8	32W	277V	ELECTRONIC DIMMABLE	60W
JK1	JK1	SURFACE OR PENDANT MOUNTED INDUSTRIAL FIXTURE USING A FLUORESCENT LAMP.	GENERAL	EA	1	T8	32W	277V	ELECTRONIC DIMMABLE	32W
JL		NOT USED								
JL1	JL1	PENDANT MOUNTED, LENSED 2X4 FLUORESCENT FIXTURE	LOADING DOCK	EA	4	T8	32W	277V	ELECTRONIC	110W
JL2	JL2	PENDANT MOUNTED LENSED 2X4 FLUORESCENT FIXTURE	LOADING DOCK	EA	3	T8	32W	277V	ELECTRONIC	85W
JP	JP	SURFACE OR PENDANT MOUNTED, ENCLOSED AND GASKETED FLUORESCENT FIXTURE	ELEVATOR PIT	EA	2	T8	32W	277V	ELECTRONIC	65W
JS	JS	SURFACE MOUNTED, LENSED WRAPAROUND FIXTURE WITH OCCUPANCY SENSOR	STAIRWELLS	EA	2	T8	32W	277V	ELECTRONIC	65W
JV	JV	SURFACE OR PENDANT MOUNTED, ENCLOSED AND GASKETED FLUORESCENT FIXTURE	GENERAL	EA	2	T8	32W	277V	ELECTRONIC DIMMABLE	60W
JV1	JV1	SURFACE OR PENDANT MOUNTED, ENCLOSED AND GASKETED FLUORESCENT FIXTURE	GENERAL	EA	1	T8	32W	277V	ELECTRONIC DIMMABLE	32W
JX	JX	SURFACE OR PENDANT MOUNTED, EXPLOSION PROOR AND FACTORY SEALED FLUORESCENT FIXTURE.	GAS METER ROOM	EA	2	T8	32W	277V	ELECTRONIC	65W
EXIT		EDGE-LIT EXIT SIGN	GENERAL	PER FACE	-	LED	5W	277V	ELECTRONIC	5W PER FACE
EX-W		WET LOCATION EXIT SIGN	GENERAL	PER FACE	-	LED	5W	277V	ELECTRONIC	5W PER FACE
OB	OB	SURFACE MOUNTED LED OBSTRUCTION LIGHT	ROOF	EA	-	LED	-	120V	-	-

Damian Titus

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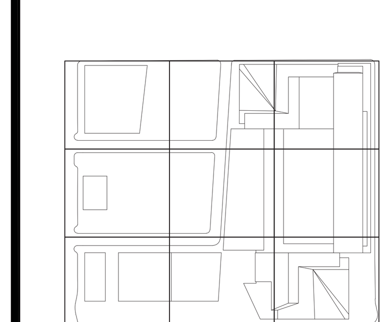
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date: 12/14/2012
Project No.: 14752.A.000
Drawn By: R.S. / D.H.
Sheet Number: EN-202

Drawing Title: NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.2

Drawing Number: EN-202
B-SCAN Drawing Number: EN-202.00

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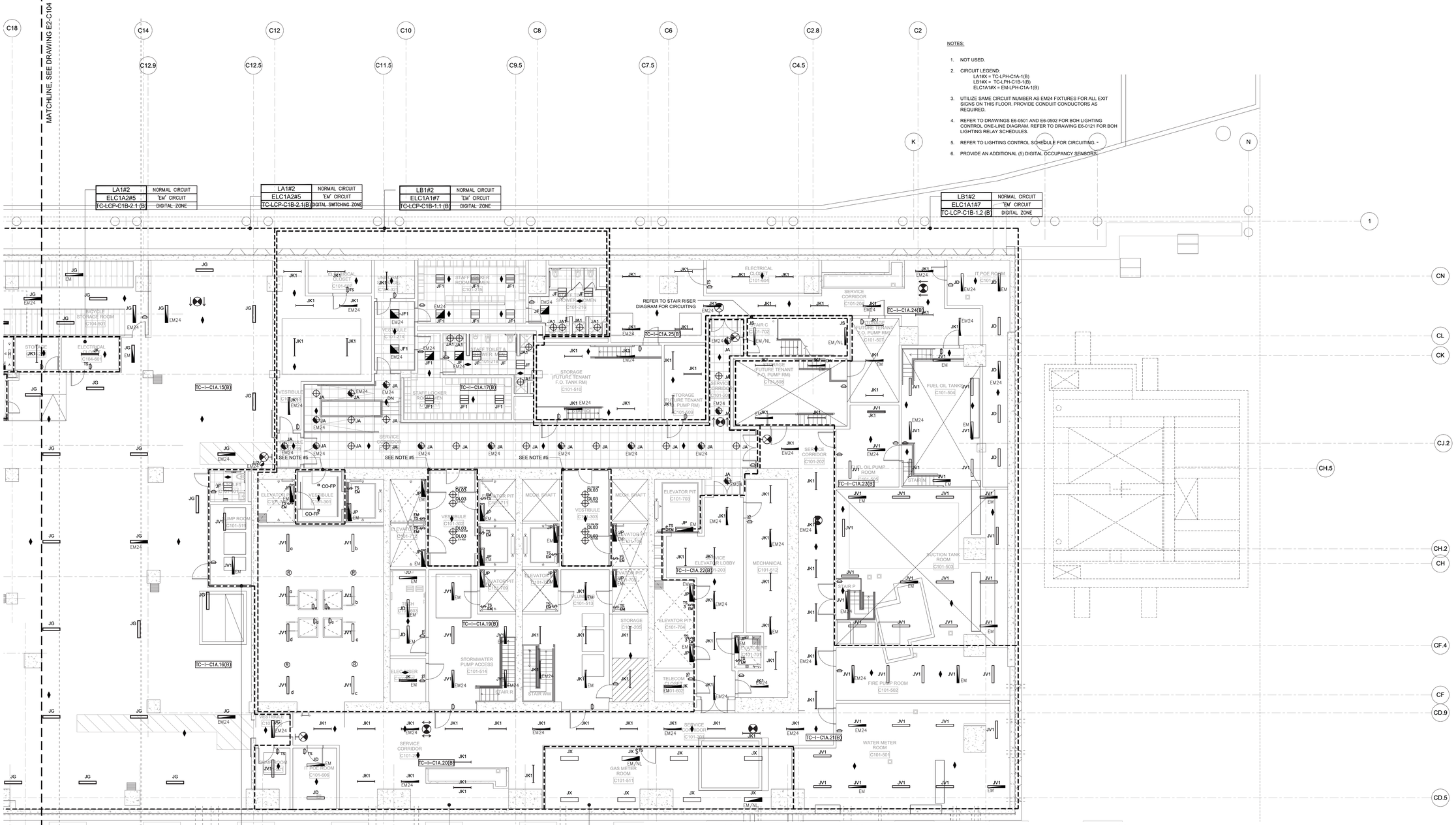
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWING\EN-202.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:08 PM

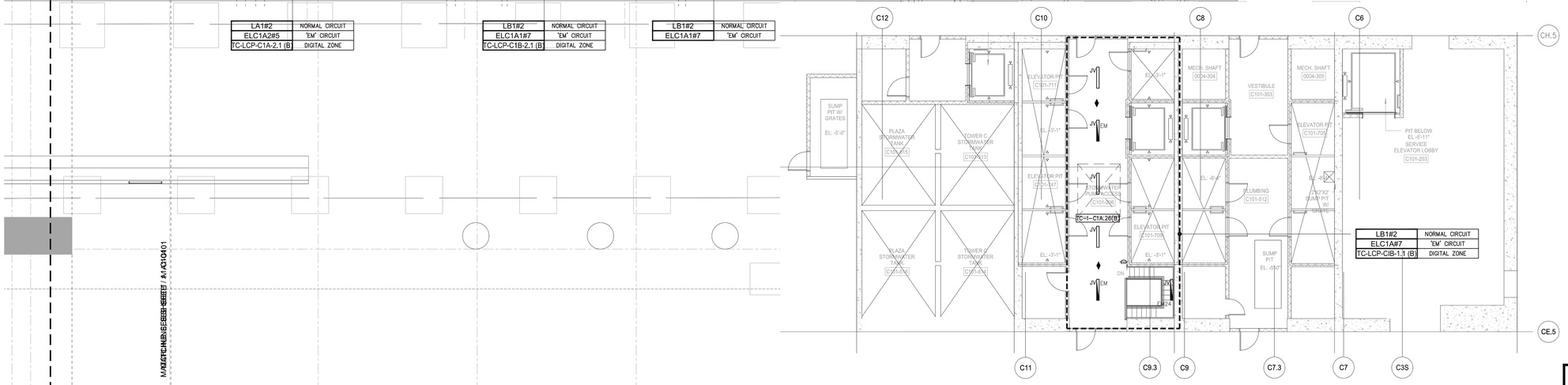
HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA1#X = TC-LPH-C1A-1(B)
   LB1#X = TC-LPH-C1B-1(B)
   ELC1A1#X = EM-LPH-C1A-1(B)
3. UTILIZE SAME CIRCUIT NUMBER AS EM24 FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING. *
6. PROVIDE AN ADDITIONAL (5) DIGITAL OCCUPANCY SENSORS.





STORM WATER TANK/PUMP ROOM AT SLAB BELOW (EL. -12'-1")
SCALE: 1/8" = 1'-0"

LIGHTING PLAN C1 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number EN-203

Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.3

Damian Titus
PROFESSIONAL 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.
Date/Time: Aug 15, 2013 - 12:10 PM
NYC Development Hub

Drawing Number EN-203
B-SCAN Drawing Number EN-203.00

SHEET 7 OF 48

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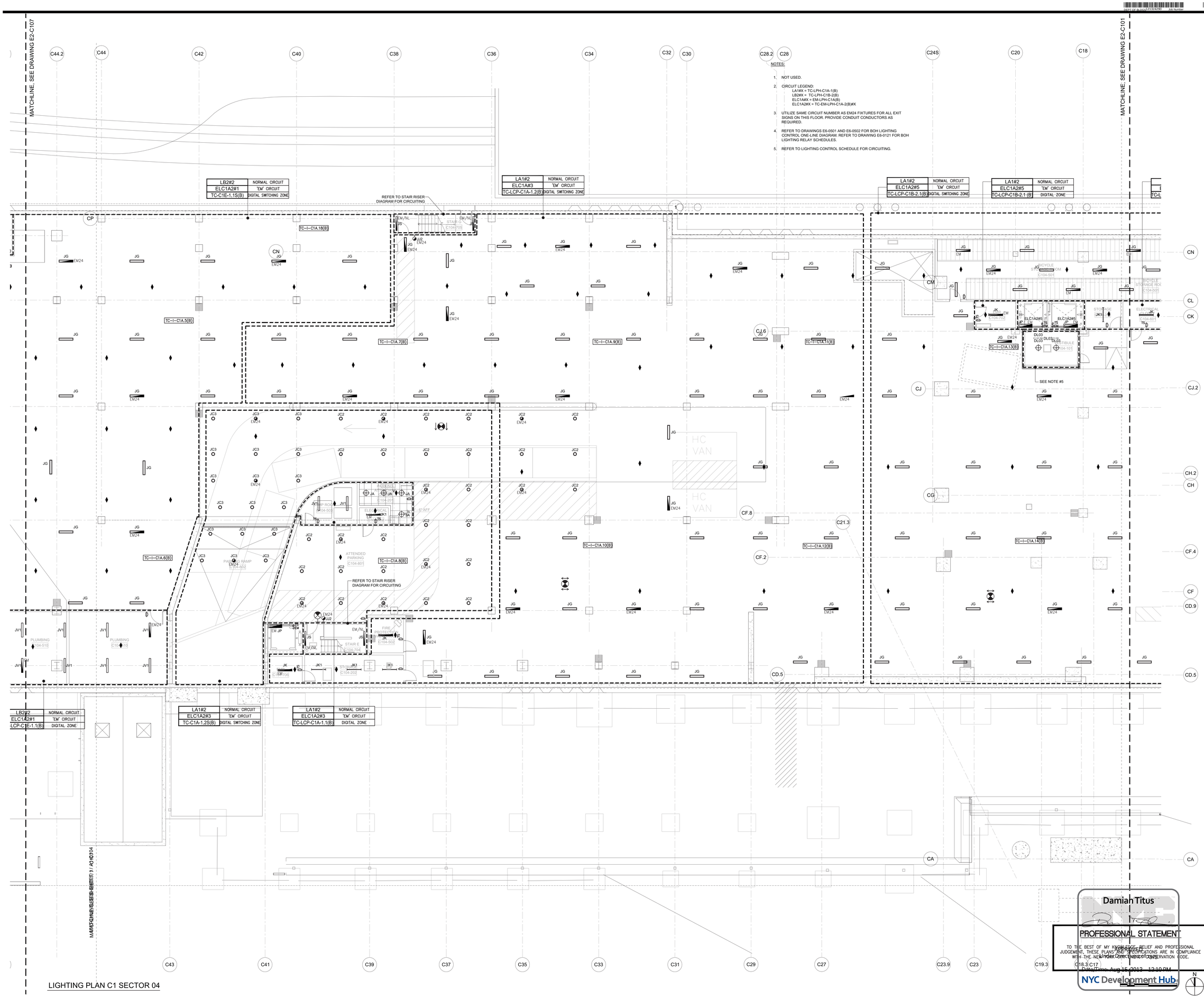
Filename: U:\projects\14752.a.hudson yards-east yards-tw cele\2013-06-03 Lighting Filing\EN DRAWING\EN-203.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:08 PM



NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA1#X = TC-LPH-C1A-1(B)
   LB2#X = TC-LPH-C1B-2(B)
   ELC1A#X = EM-LPH-C1A(B)
   ELC1A2#X = TC-EM-LPH-C1A-2(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM24 FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.

LIGHTING PLAN C1 SECTOR 04

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-204
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.4
Drawing Number
EN-204
B-SCAN Drawing Number
EN-204.00

Damian Titus

PROFESSIONAL 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.

APPROVED
Under Direct Supervision
C18.3 C17
Date/Time: Aug 15, 2013 12:10 PM

NYC Development Hub

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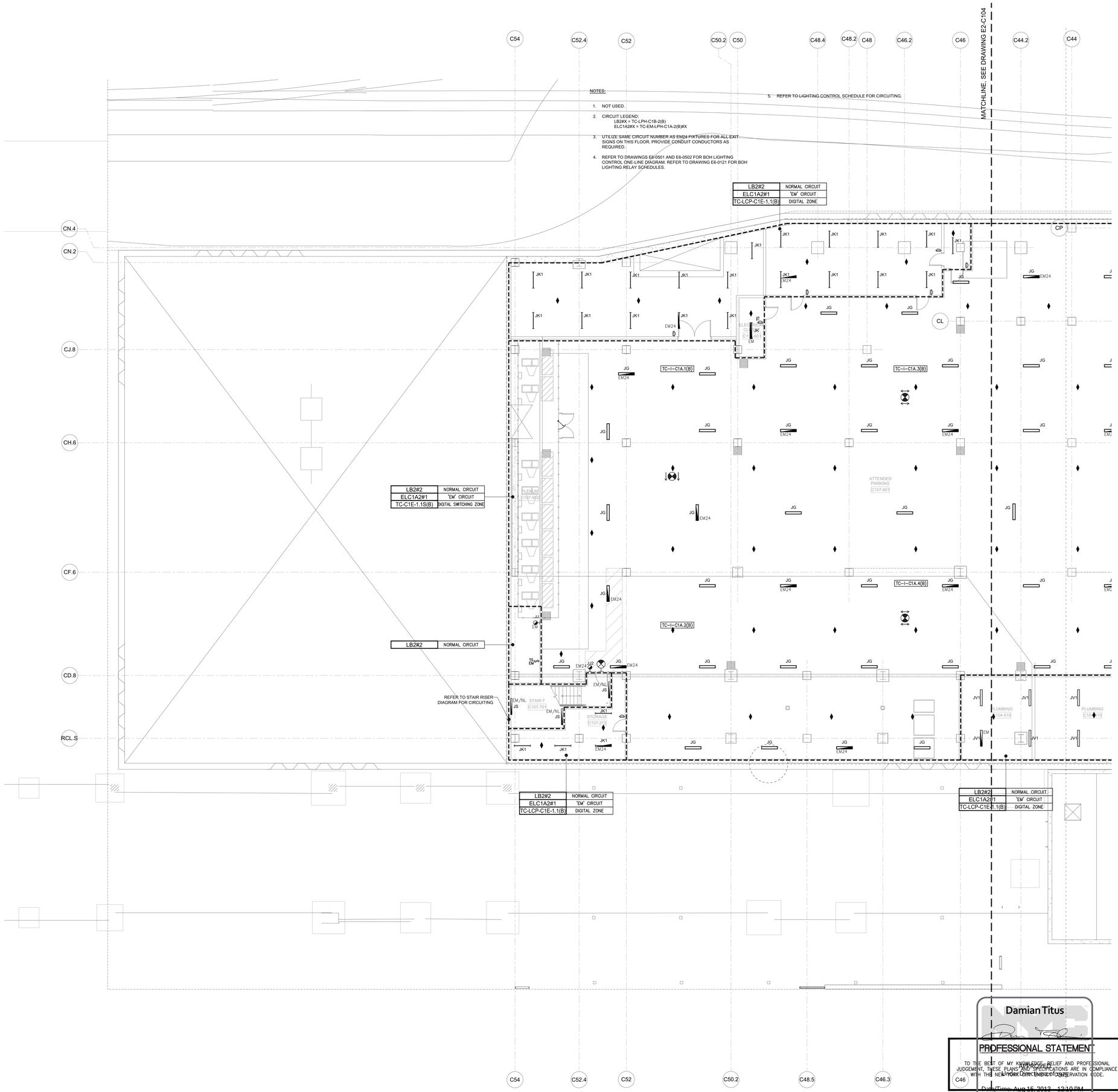
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWING\EN-204.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:08 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB2#X = TC-LPH-C1B-2(B)
   ELC1A2#X = TC-EM-LPH-C1A-2(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM24 FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.



LIGHTING PLAN C1 SECTOR 07

Damian Titus

PROFESSIONAL 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.

APPROVED
NYC Development Hub
Date/Time: Aug 15, 2013 - 12:10 PM
Number: DOB-121012-0375

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

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Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

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New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-205
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.5

Drawing Number
EN-205
B-SCAN Drawing Number
EN-205.00

SHEET 9 OF 48

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Filename: U:\projects\14752.a\hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWING\EN-205.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:08 PM

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-STB(TO)#X
   EL3A#X = EM-LPH-3A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE WEATHER PROOF FIXTURE ON EXTERIOR OF BUILDING AT EACH DOOR THAT EXITS TO OUTSIDE OF BUILDING. UTILIZE SAME CIRCUIT AS EM/NL FIXTURES. COORDINATE FIXTURE TYPE AND LOCATION WITH ARCHITECT AND LIGHTING CONSULTANT.
6. PROVIDE AN ADDITIONAL (5) DIGITAL OCCUPANCY SENSORS.
7. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
8. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

MATCHLINE, SEE DRAWING E2-0004

LA#2	NORMAL CIRCUIT
EL3A#8	'EM' CIRCUIT
TC-LCP-STA.2 (TO)	DIGITAL ZONE

SPACE FOR FUTURE ELEVATOR SERVICE. AVOID CONDUIT ROUTING IN THIS AREA.

LB#2	NORMAL CIRCUIT
EL3A#9	'EM' CIRCUIT
TC-LCP-STB.1 (TO)	DIGITAL ZONE

SEE STAIR RISER DIAGRAM FOR CIRCUITING

SEE NOTE #7

REFER TO STAIR RISER DIAGRAM FOR CIRCUITING

Related has excluded all lobby finishes, lighting and security equipment from the April 30, 2013 issuance of the 100% CD Set. This information will be issued separately at a later date.

LIGHTING PLAN 00 SECTOR 01

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
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Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
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51 Madison Avenue
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Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number EN-206

Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.6

Damian Titus

PROFESSIONAL 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.

DATE/TIME: Aug 15, 2013 - 12:10 PM

NYC Development Hub

Drawing Number EN-206
@SCAN Drawing Number EN-206.00

SHEET 10 OF 48

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Filename: U:\projects\14752.a.hudson yards-east yards-twr cwlec\2013-06-03 Lighting Filing\EN DRAWING\EN-206.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:08 PM

Filename: U:\projects\14752.a.hudson yards-tower c\elec\2013-06-03 Lighting Filing\EN DRAWINGS\EN-207.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:09 PM

MATCHLINE, SEE DRAWING E2-0007

MATCHLINE, SEE DRAWING E2-0001

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-STA(TO)#X
   EL3A#X = EM-LPH-3A(B)#X
   LST#X = TC-LPH-ST(LD)#X
   ELSTB#X = TC-EM-LPH-STB(PZ)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE WEATHER PROOF FIXTURE ON EXTERIOR OF BUILDING AT EACH DOOR THAT EXITS TO OUTSIDE OF BUILDING. UTILIZE SAME CIRCUIT AS EM/NL FIXTURES. COORDINATE FIXTURE TYPE AND LOCATION WITH ARCHITECT AND LIGHTING CONSULTANT.
6. PROVIDE AN ADDITIONAL (5) DIGITAL OCCUPANCY SENSORS.
7. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
8. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

LST#6	NORMAL CIRCUIT
ELSTB#4	'EM' CIRCUIT
TC-LCP-ST3.1 (LD)	SWITCHING ZONE

LB#8	NORMAL CIRCUIT
ELSTB#3	'EM' CIRCUIT
TC-LCP-STA.1 (TO)	DIGITAL ZONE

LA#2	NORMAL CIRCUIT
EL3A#8	'EM' CIRCUIT
TC-LCP-STA.1 (TO)	DIGITAL ZONE

LST#6	NORMAL CIRCUIT
ELSTB#4	'EM' CIRCUIT
TC-LCP-ST-3.S(LD)	DIGITAL SWITCHING ZONE

LST#3	NORMAL CIRCUIT
ELSTB#3	'EM' CIRCUIT
TC-LCP-ST2.3 (LD)	SWITCHING ZONE

LST#4	NORMAL CIRCUIT
ELSTB#3	'EM' CIRCUIT
TC-LCP-ST3.2 (LD)	SWITCHING ZONE

LST#5	NORMAL CIRCUIT
ELSTB#4	'EM' CIRCUIT
TC-LCP-ST3.3 (LD)	SWITCHING ZONE

LST#7	NORMAL CIRCUIT
ELSTB#4	'EM' CIRCUIT
TC-LCP-ST3A (LD)	SWITCHING ZONE

LST#3	NORMAL CIRCUIT
ELSTB#3	'EM' CIRCUIT
TC-LCP-ST2.4 (LD)	SWITCHING ZONE

LST#8	NORMAL CIRCUIT
ELSTB#3	'EM' CIRCUIT
TC-LCP-ST1.1 (LD)	DIGITAL ZONE

LST#3	NORMAL CIRCUIT
ELSTB#3	'EM' CIRCUIT
TC-LCP-ST1.2T(LD)	DIGITAL 0-10V ZONE

TC-LCP-ST3.2 (LD) DIGITAL ZONE

REFER TO STAIR RISER DIAGRAM FOR CIRCUITING

SEE NOTE #7

SEE NOTE #7

LIGHTING PLAN 00 SECTOR 04

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number EN-207
Drawing Title

NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.7

Damian Titus

PROFESSIONAL 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.

APPROVED

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

Drawing Number EN-207
B.O.C.A.N. Drawing Number EN-207.00

SHEET 11 O48

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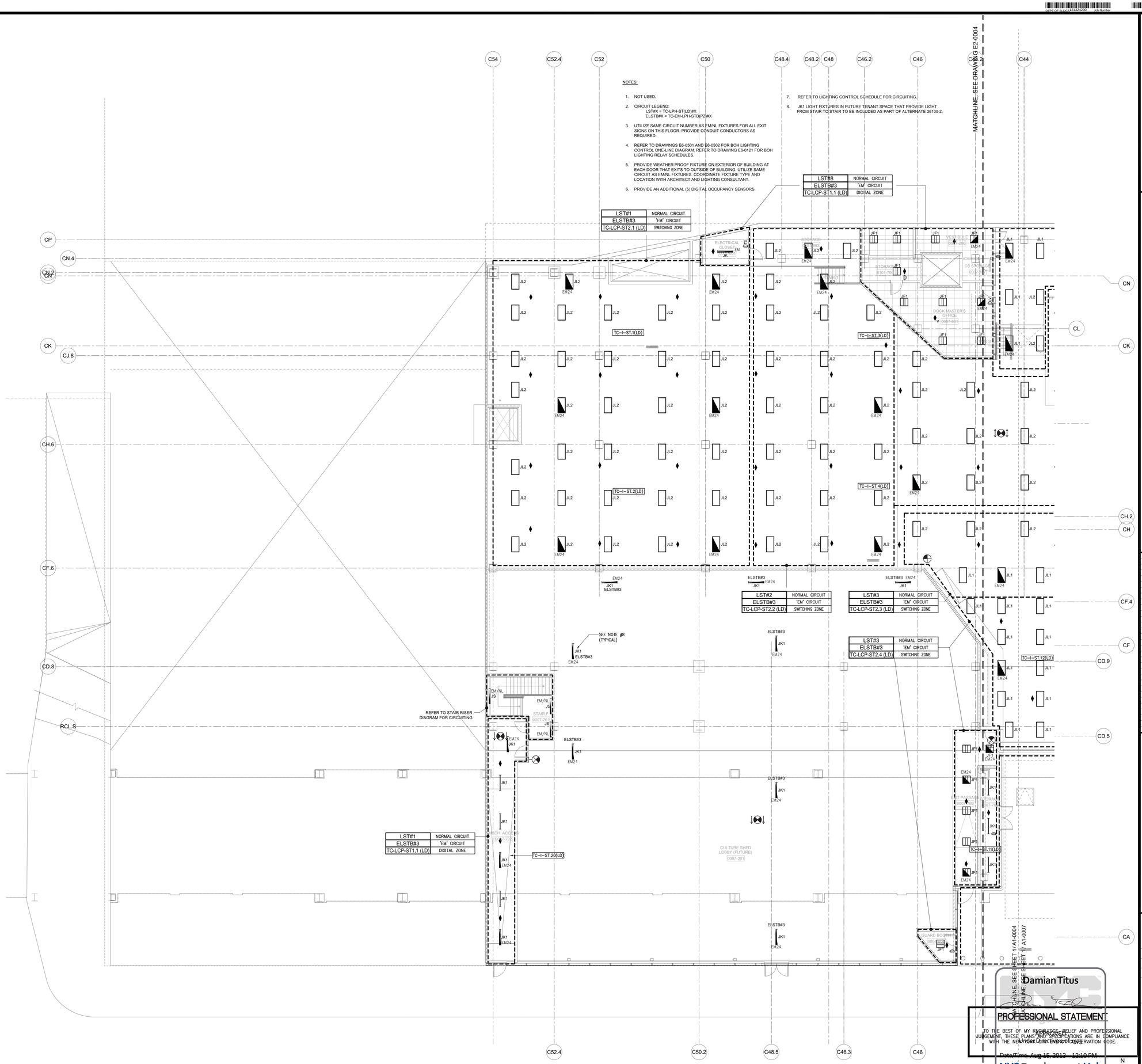
HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LSTIX = TC-LPH-ST(LD)#X
   ELSTBIX = TC-EM-LPH-STB(PZ)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE WEATHER PROOF FIXTURE ON EXTERIOR OF BUILDING AT EACH DOOR THAT EXITS TO OUTSIDE OF BUILDING. UTILIZE SAME CIRCUIT AS EM/NL FIXTURES. COORDINATE FIXTURE TYPE AND LOCATION WITH ARCHITECT AND LIGHTING CONSULTANT.
6. PROVIDE AN ADDITIONAL (5) DIGITAL OCCUPANCY SENSORS.
7. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
8. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 00 SECTOR 07

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
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Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
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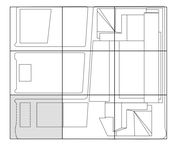
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-208
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.8

PROFESSIONAL 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.

Damian Titus
TITLE OF SIGNER
NYC Development Hub
DATE/TIME: Aug 15, 2013 - 12:10 PM

Drawing Number
EN-208
B-SCAN Drawing Number
EN-208.00

SHEET 12 OF 48

Filename: U:\projects\14752.a.hudson yards-east yards-tw\ cdetec\2013-06-03 Lighting Filing\EN DRAWING\EN-208.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:09 PM
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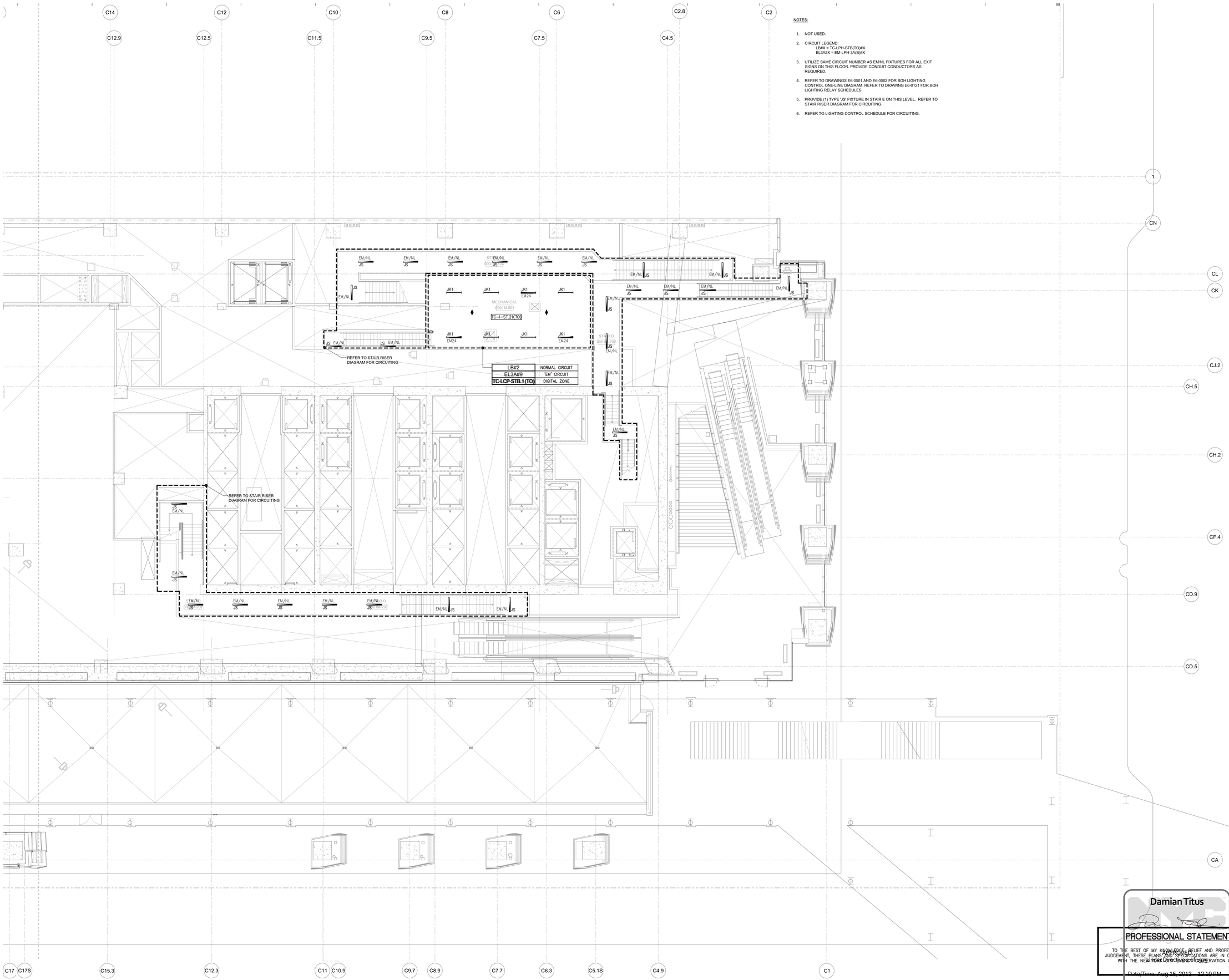
NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-STB(TO)#X
   EL3#X = EM-LPH-3A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE (1) TYPE 'JS' FIXTURE IN STAIR E ON THIS LEVEL. REFER TO STAIR RISER DIAGRAM FOR CIRCUITING.
6. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.



LIGHTING PLAN 00M SECTOR 01

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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Mechanical, Electrical, Plumbing, Fire Protection
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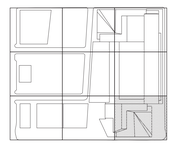
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
02/08/2013
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-209
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.9

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

Drawing Number
EN-209
B-SCAN Drawing Number
EN-209.00

SHEET 13 OF 48

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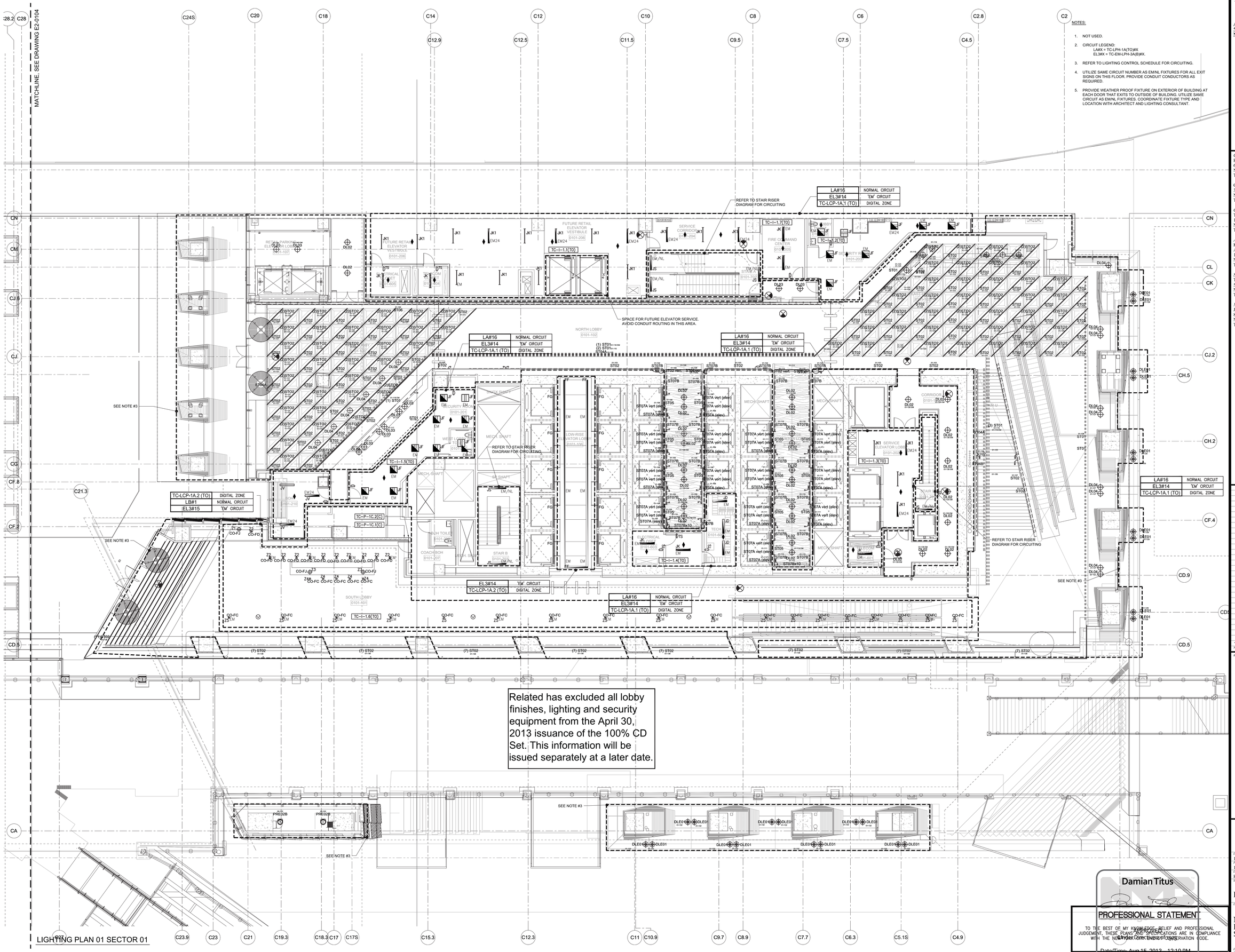
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWING\EN-209.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:09 PM



Related has excluded all lobby finishes, lighting and security equipment from the April 30, 2013 issuance of the 100% CD Set. This information will be issued separately at a later date.

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-1A(TO)#X
   EL3#X = TC-EM-LPH-3A(B)#X.
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. PROVIDE WEATHER PROOF FIXTURE ON EXTERIOR OF BUILDING AT EACH DOOR THAT EXITS TO OUTSIDE OF BUILDING. UTILIZE SAME CIRCUIT AS EM/NL FIXTURES. COORDINATE FIXTURE TYPE AND LOCATION WITH ARCHITECT AND LIGHTING CONSULTANT.

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-210
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.10
Drawing Number
EN-210
B-SCAN Drawing Number
EN-210.00

Damian Titus

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE.

Approved
Order Date: Aug 15, 2013 12:10 PM
Date/Time: Aug 15, 2013 12:10 PM

NYC Development Hub

SHEET 14 OF 48

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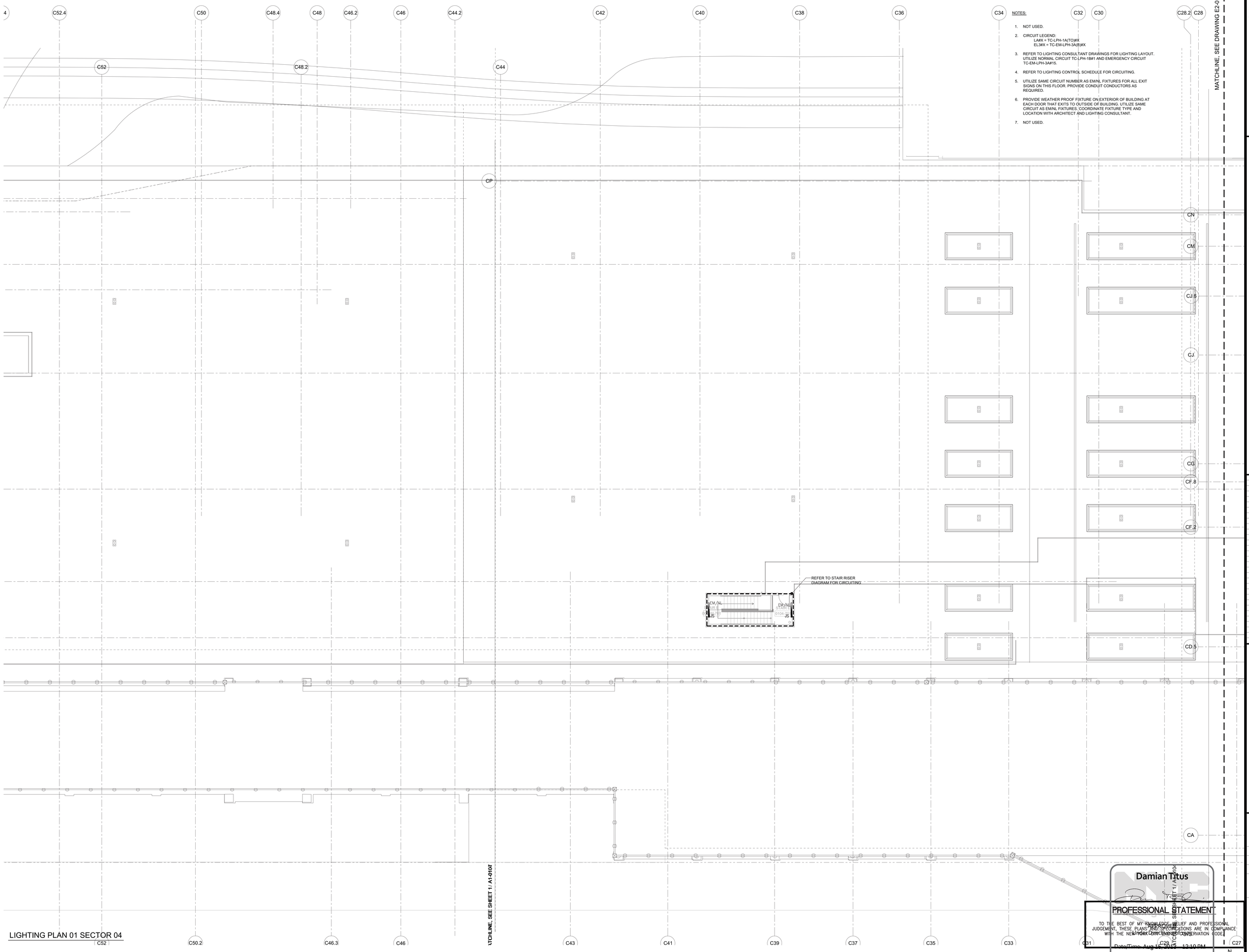

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-1A(TO)#X
   EL3#X = TC-EM-LPH-3A(B)#X
3. REFER TO LIGHTING CONSULTANT DRAWINGS FOR LIGHTING LAYOUT. UTILIZE NORMAL CIRCUIT TC-LPH-1B#1 AND EMERGENCY CIRCUIT TC-EM-LPH-3A#15.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
6. PROVIDE WEATHER PROOF FIXTURE ON EXTERIOR OF BUILDING AT EACH DOOR THAT EXITS TO OUTSIDE OF BUILDING. UTILIZE SAME CIRCUIT AS EM/NL FIXTURES. COORDINATE FIXTURE TYPE AND LOCATION WITH ARCHITECT AND LIGHTING CONSULTANT.
7. NOT USED.

LIGHTING PLAN 01 SECTOR 04

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 16, 2013 12:10 PM

NYC Development Hub

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
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51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

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Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
02/08/2013
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-211

Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.11

Drawing Number
EN-211
B-SCAN Drawing Number
EN-211.00

SHEET 15 OF 48

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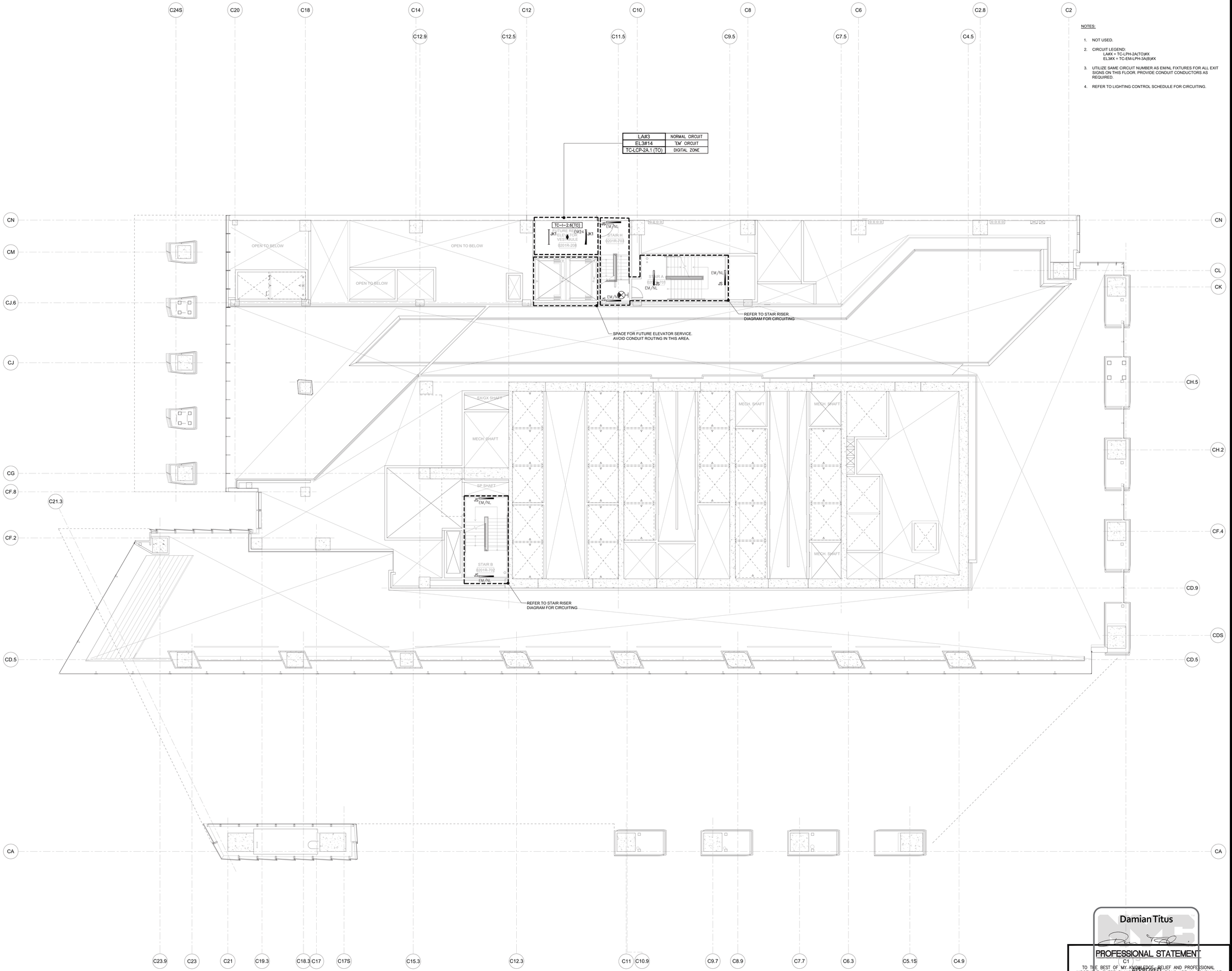
Filename: U:\projects\14752.a.hudson yards-east yards-twr cielec\2013-06-03 Lighting Filing\EN DRAWING\EN-211.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:09 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-2A(TO)#X
   EL3#X = TC-EM-LPH-3A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.



LIGHTING PLAN 02R SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

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Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

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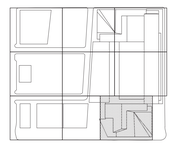
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Damian Titus

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

Date
02/08/2013
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-212
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.12

Drawing Number
EN-212
B.SCAN Drawing Number
EN-212.00

SHEET 16 OF 48

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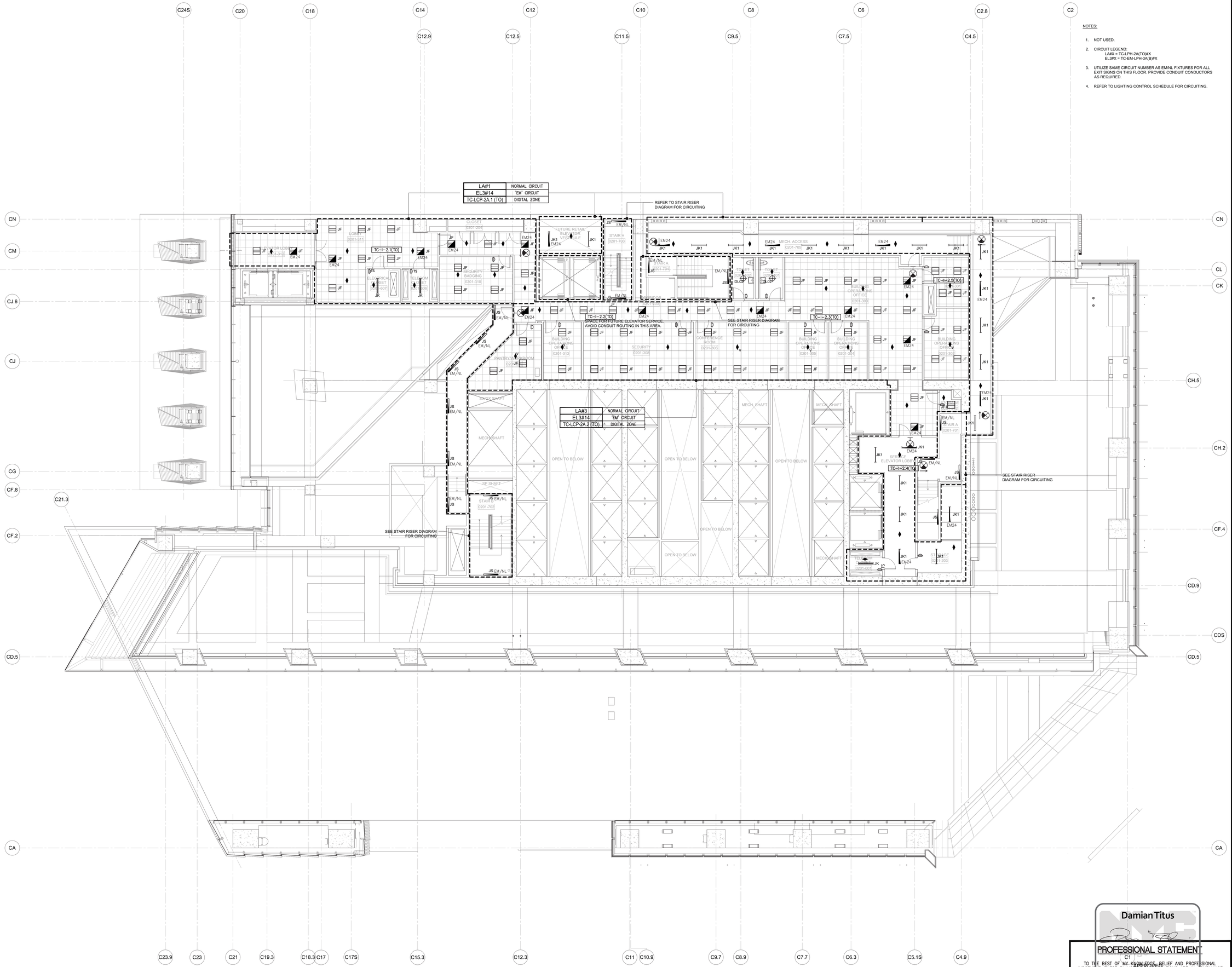
Filename: U:\projects\14752.a.hudson yards-east yards\er celec\2013-06-03 Lighting Filing\EN DRAWING\EN-212_TRUE.dwg Plotted by: david hsemann Plot Time: 6/3/2013 7:09 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-2A(TO)#X
   EL3#X = TC-EM-LPH-3A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.



LIGHTING PLAN 02 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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Architects & Planning Consultants
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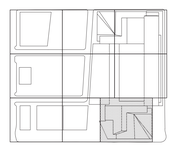
Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-213
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.13

Damian Titus

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

Drawing Number
EN-213
AACAD Drawing Number
EN-213.00

SHEET 17 OF 48

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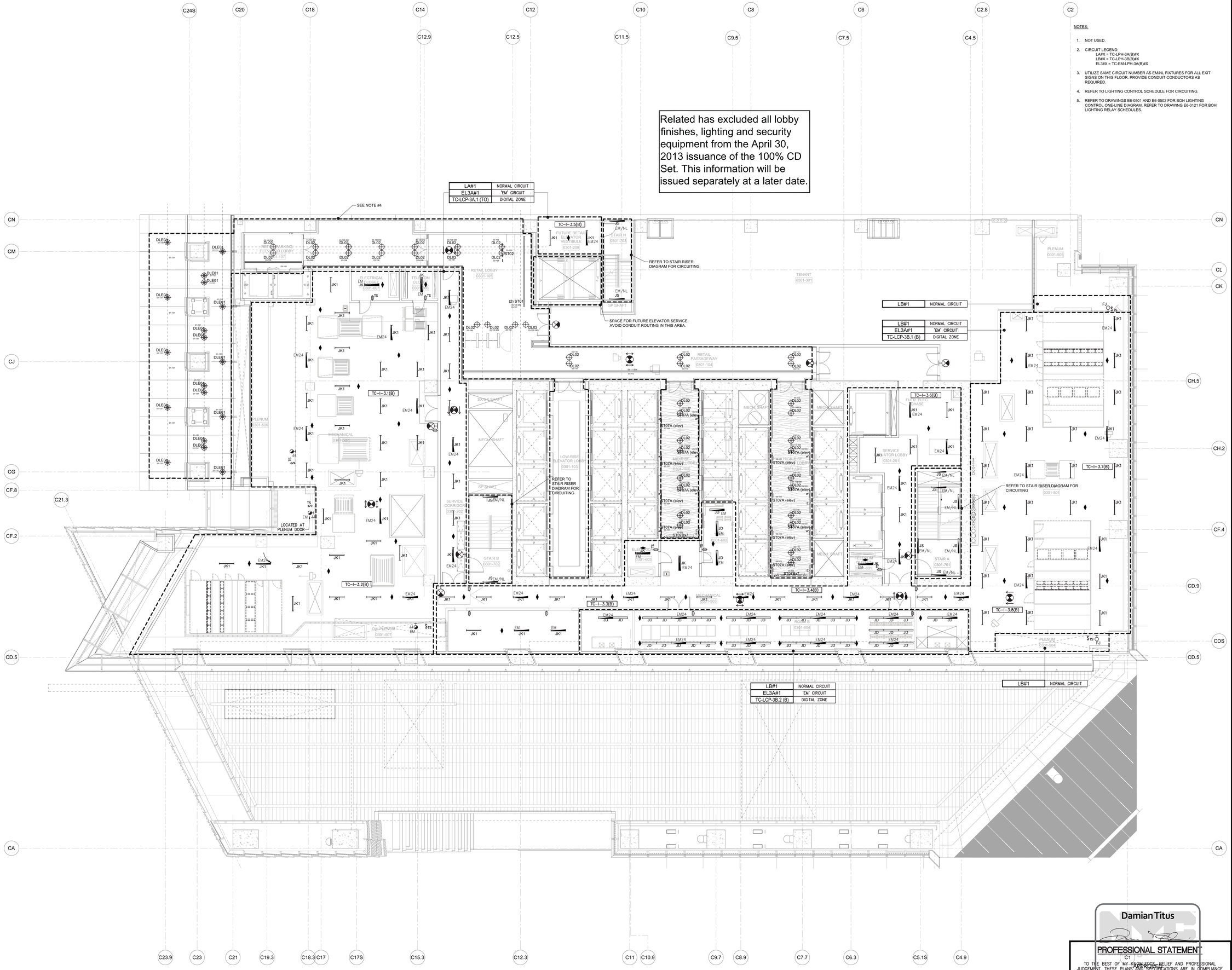
Filename: U:\projects\14752.a.hudson yards-east yards-tw celec\2013-06-03 Lighting Filing\EN DRAWING\EN-213.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:09 PM



Related has excluded all lobby finishes, lighting and security equipment from the April 30, 2013 issuance of the 100% CD Set. This information will be issued separately at a later date.

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-3A(B)#X
   LB#X = TC-LPH-3B(B)#X
   EL3#X = TC-EM-LPH-3A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.

LIGHTING PLAN 03 SECTOR 01

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-214

Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.14

Drawing Number
EN-214
B-SCAN Drawing Number
EN-214.00

Damian Titus
PROFESSIONAL STATEMENT
TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE.
APPROVED
Under Direct Supervision
Date/Time: Aug 15, 2013 12:10 PM
NYC Development Hub

SHEET 18 OF 48

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWING\EN-214.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:10 PM

HUDSON YARDS - TOWER C

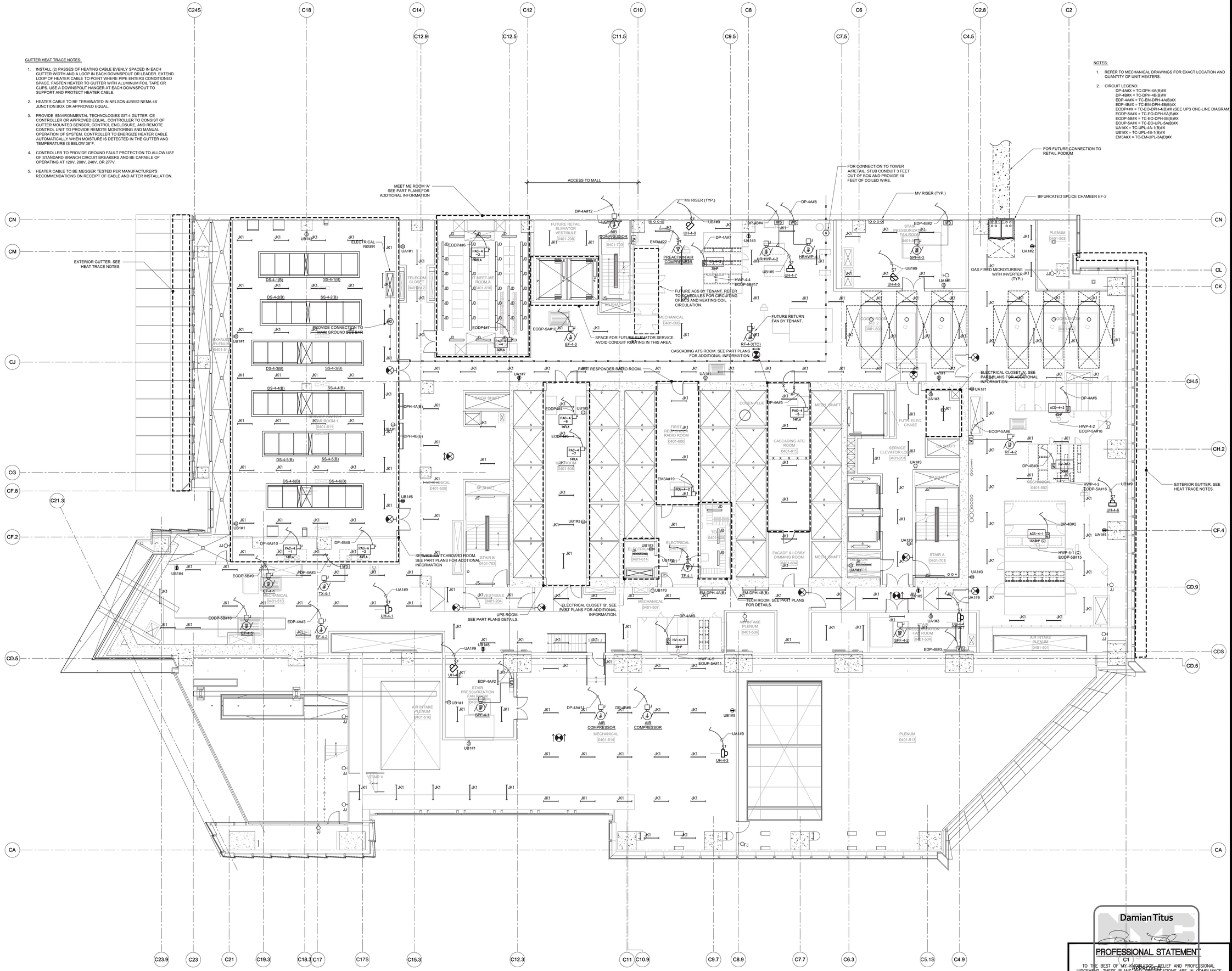
Address
501 WEST 30TH STREET
NEW YORK, NY

GUTTER HEAT TRACE NOTES:

1. INSTALL (2) PASSES OF HEATING CABLE EVENLY SPACED IN EACH GUTTER WIDTH AND A LOOP IN EACH DOWNSPOUT OR LEADER. EXTEND LOOP OF HEATER CABLE TO POINT WHERE PIPE ENTERS CONDITIONED SPACE. FASTEN HEATER TO GUTTER WITH ALUMINUM FOIL TAPE OR CLIPS. USE A DOWNSPOUT HANGER AT EACH DOWNSPOUT TO SUPPORT AND PROTECT HEATER CABLE.
2. HEATER CABLE TO BE TERMINATED IN NELSON #JB552 NEMA 4X JUNCTION BOX OR APPROVED EQUAL.
3. PROVIDE ENVIRONMENTAL TECHNOLOGIES GIT-4 GUTTER ICE CONTROLLER OR APPROVED EQUAL. CONTROLLER TO CONSIST OF GUTTER MOUNTED SENSOR, CONTROL ENCLOSURE, AND REMOTE CONTROL UNIT TO PROVIDE REMOTE MONITORING AND MANUAL OPERATION OF SYSTEM. CONTROLLER TO ENERGIZE HEATER CABLE AUTOMATICALLY WHEN MOISTURE IS DETECTED IN THE GUTTER AND TEMPERATURE IS BELOW 38°F.
4. CONTROLLER TO PROVIDE GROUND FAULT PROTECTION TO ALLOW USE OF STANDARD BRANCH CIRCUIT BREAKERS AND BE CAPABLE OF OPERATING AT 120V, 208V, 240V, OR 277V.
5. HEATER CABLE TO BE MEGGER TESTED PER MANUFACTURER'S RECOMMENDATIONS ON RECEIPT OF CABLE AND AFTER INSTALLATION.

NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND QUANTITY OF UNIT HEATERS.
2. CIRCUIT LEGEND:
   - DP-4A#X = TC-DPH-4A(B)#X
   - DP-4B#X = TC-DPH-4B(B)#X
   - EDP-4A#X = TC-EM-DPH-4A(B)#X
   - EDP-4B#X = TC-EM-DPH-4B(B)#X
   - EODP4#X = TC-EO-DPH-4(B)#X (SEE UPS ONE-LINE DIAGRAM)
   - EODP-5A#X = TC-EO-DPH-5A(B)#X
   - EODP-5B#X = TC-EO-DPH-5B(B)#X
   - EOUP-5A#X = TC-EO-UPL-5A(B)#X
   - UA1#X = TC-UPL-4A-1(B)#X
   - UB1#X = TC-UPL-4B-1(B)#X
   - EM3A#X = TC-EM-UPL-3A(B)#X



LIGHTING PLAN 04 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
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Tel: 212.986.7514 Fax: 212.986.7510

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11 West 42nd Street
New York, NY 10036
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51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No.

Drawn By R.S. / D.H.
Sheet Number

EN-215
Drawing Title

NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.15

Drawing Number EN-215
B.C.A.I. Drawing Number
EN-215.00

Damian Titus
PROFESSIONAL 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.
APPROVED
Date/Time: Aug 15, 2013 - 12:10 PM
NYC Development Hub

SHEET 19 OF 48

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWINGS\EN-215.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:10 PM

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-5A(B)#X
   LB#X = TC-LPH-5B(B)#X
   EL3#X = TC-EM-LPH-3A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE AN ADDITIONAL (5) DIGITAL OCCUPANCY SENSORS.

LIGHTING PLAN 05 SECTOR 01

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

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Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number EN-216
Drawing Title NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.16

Damian Titus

PROFESSIONAL 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.

APPROVED
NYC Department of Buildings
Date/Time: Aug 15, 2013 - 12:10 PM
NYC Development Hub

Drawing Number EN-216
B-SCAN Drawing Number EN-216.00

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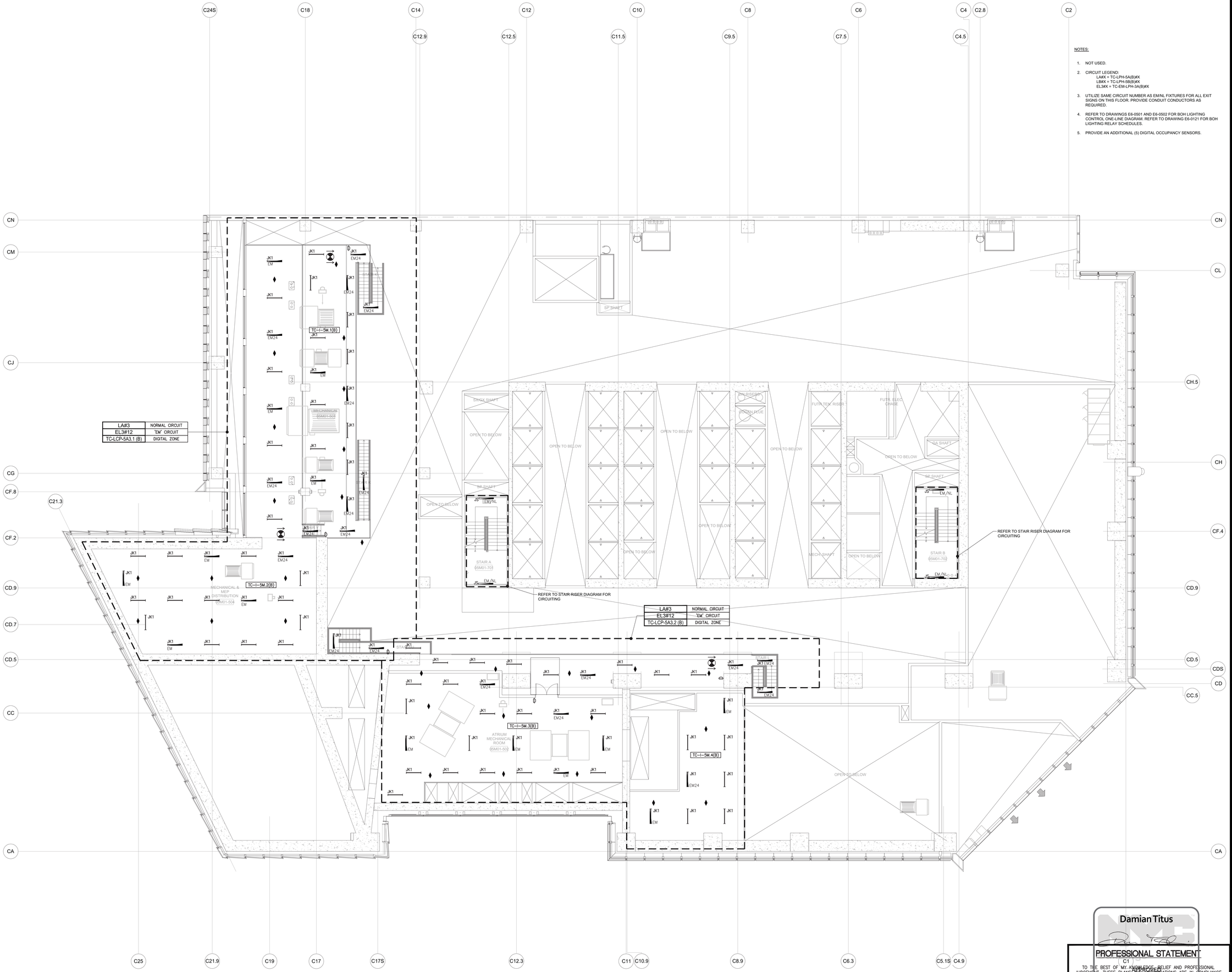
Filename: U:\projects\14752.a hudson yards-east yards-twr cladec\2013-06-03 Lighting Filing\EN DRAWING\EN-216.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:19 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-5A(B)#X
   LB#X = TC-LPH-5B(B)#X
   EL3#X = TC-EM-LPH-3A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE AN ADDITIONAL (5) DIGITAL OCCUPANCY SENSORS.



LIGHTING PLAN 05M SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
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New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-217
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.17

Damian Titus
PROFESSIONAL STATEMENT
I, C1 HEREBY CERTIFY
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.
Date/Time: Aug 15, 2013 - 12:10 PM
NYC Development Hub

Drawing Number
EN-217
B-SCAN Drawing Number
EN-217.00

SHEET 21 OF 48

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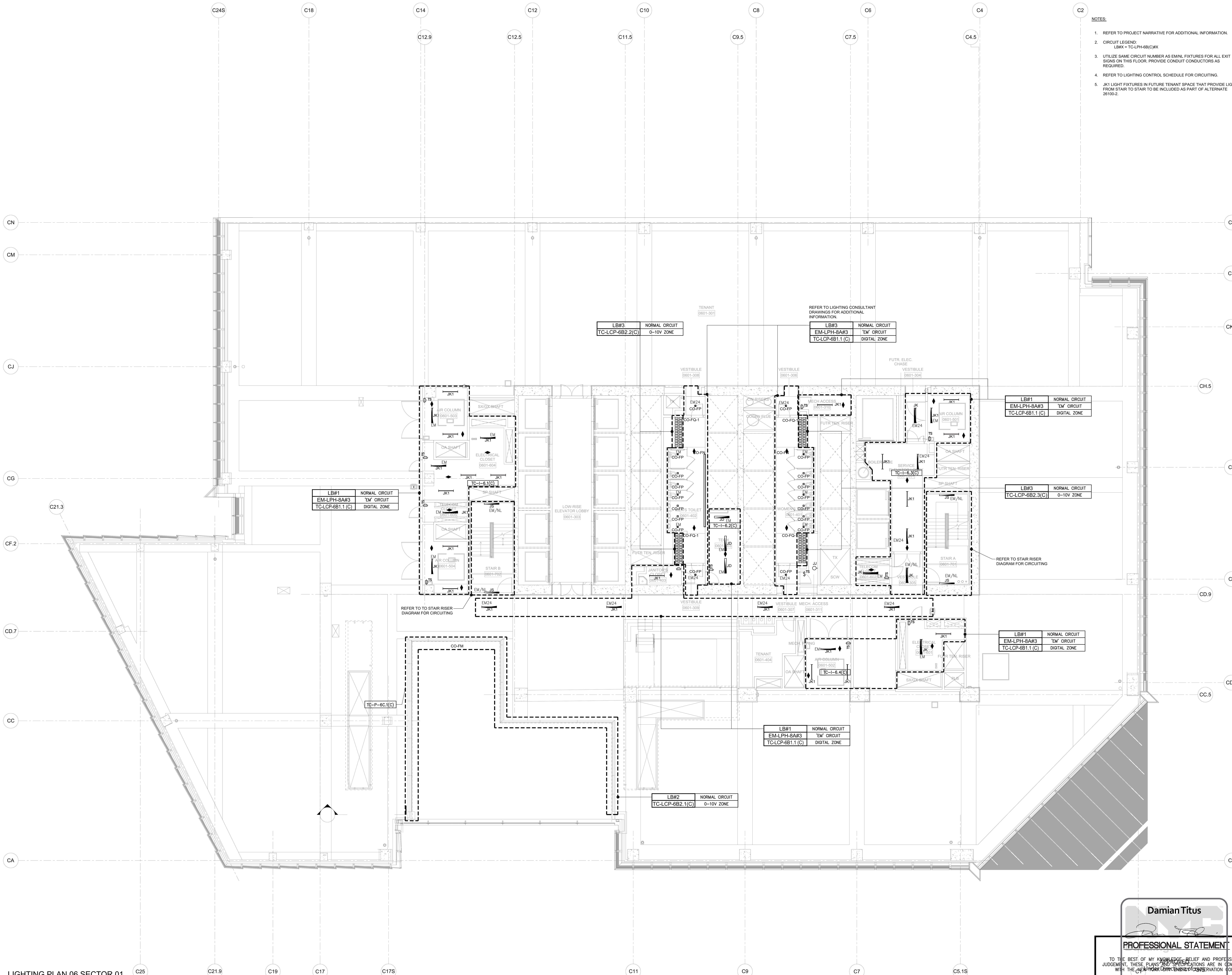
Filename: U:\projects\14752.a.hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWING\EN-217.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:10 PM



LIGHTING PLAN 06 SECTOR 01

NOTES:

1. REFER TO PROJECT NARRATIVE FOR ADDITIONAL INFORMATION.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-6B(C)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

DEPT OF BLDGS 121324290 Job Number
ES845936296 Scan Code

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
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Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
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No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number EN-218

Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.18

Drawing Number EN-218
B-SCAN Drawing Number
EN-218.00

SHEET 22 OF 48

PROFESSIONAL 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.

Damian Titus
APPROVED
Under Direction of
Date/Time: Aug 15, 2013 12:10 PM
NYC Development Hub

STATE OF NEW YORK · LICENSED PROFESSIONAL ENGINEER

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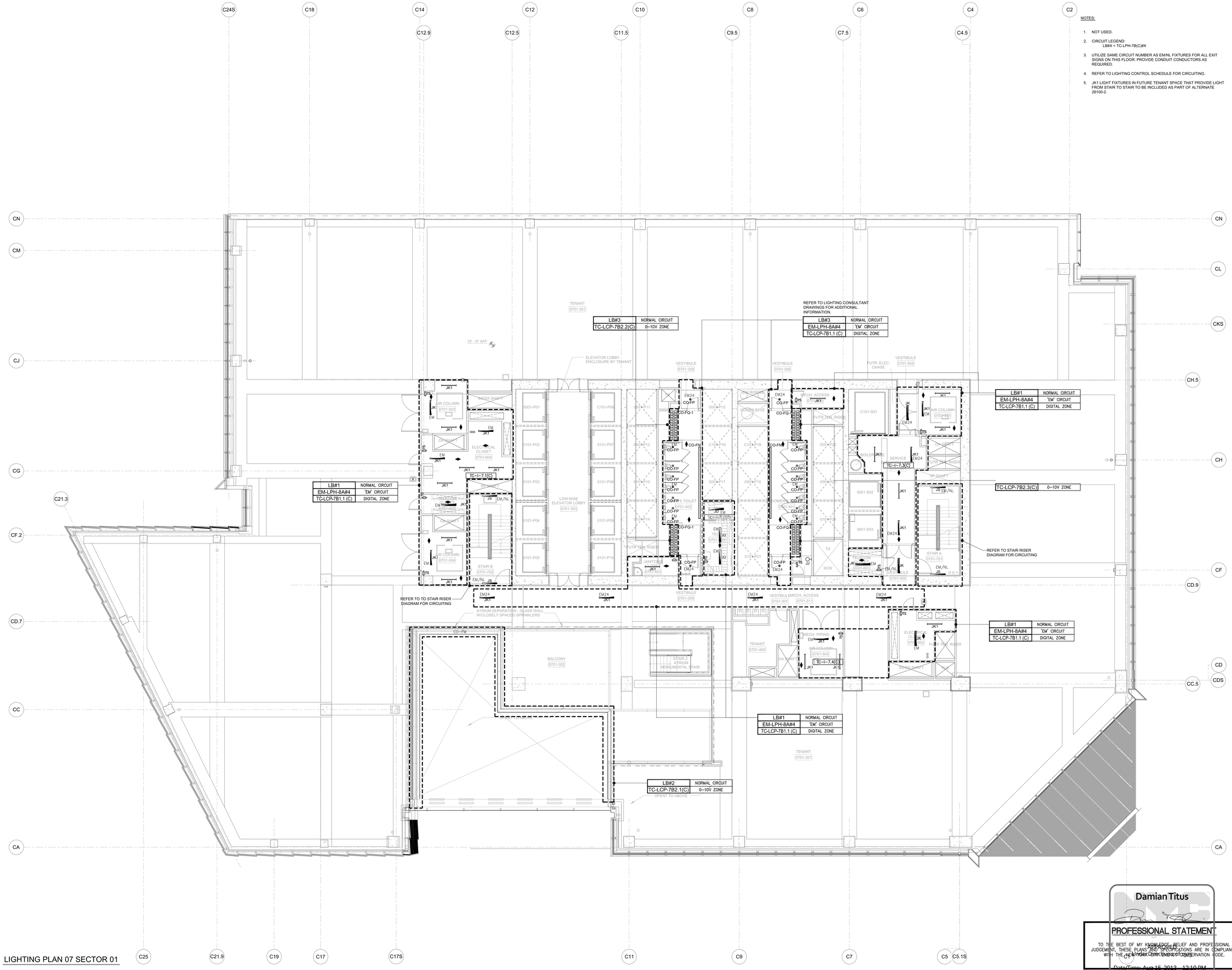
HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-7B(C)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 07 SECTOR 01

Damian Titus

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK CITY CONSERVATION CODE.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

Client
Related Companies
60 Columbus Circle
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Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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New York, NY 10013
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No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
04/30/2013
Project No.

Drawn By
R.S. / D.H.
Sheet Number

EN-219

Drawing Title

NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.19

Drawing Number
EN-219
B-SCAN Drawing Number
EN-219.00

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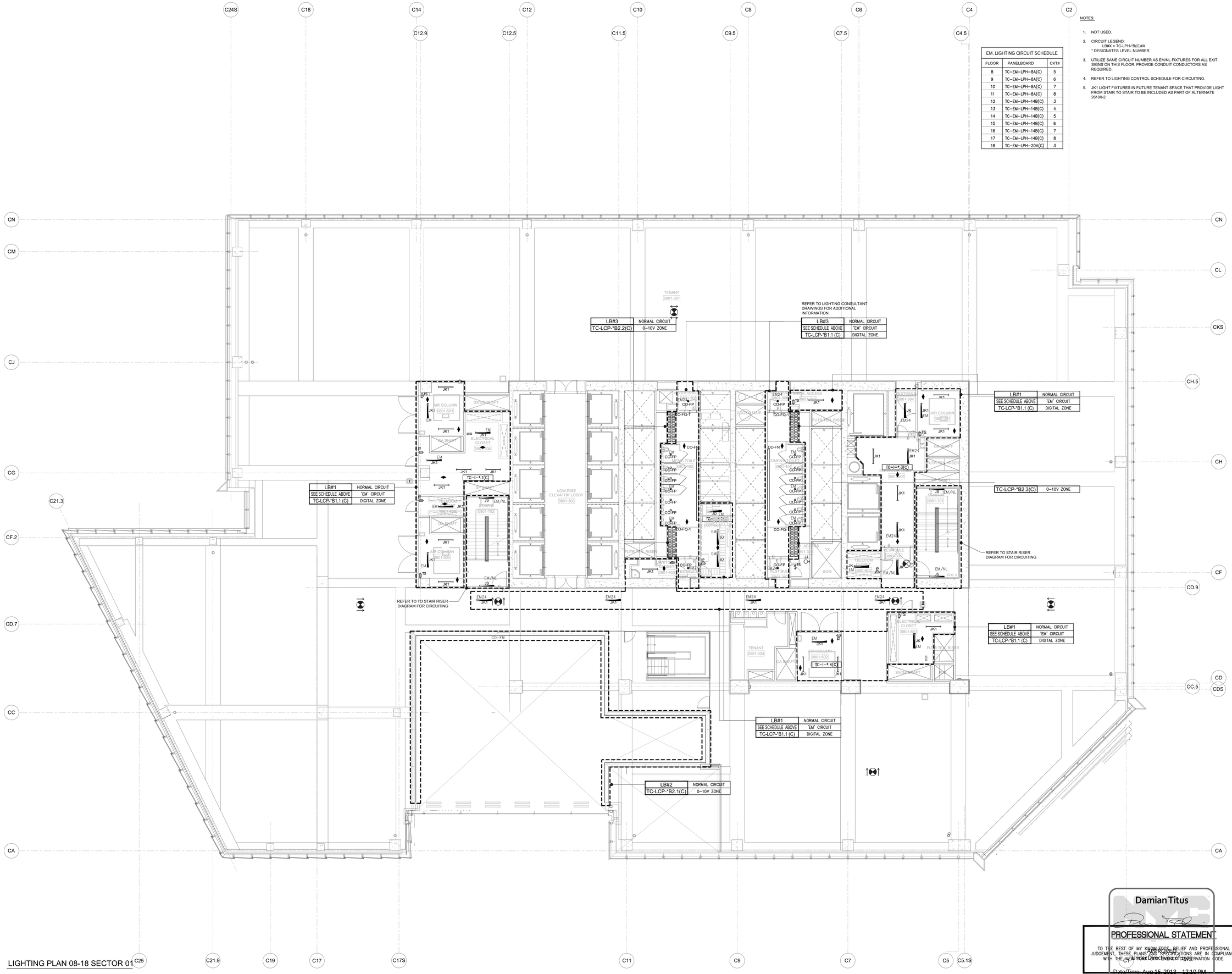
HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

EM. LIGHTING CIRCUIT SCHEDULE		
FLOOR	PANELBOARD	CKT#
8	TC–EM–LPH–8A(C)	5
9	TC–EM–LPH–8A(C)	6
10	TC–EM–LPH–8A(C)	7
11	TC–EM–LPH–8A(C)	8
12	TC–EM–LPH–14B(C)	3
13	TC–EM–LPH–14B(C)	4
14	TC–EM–LPH–14B(C)	5
15	TC–EM–LPH–14B(C)	6
16	TC–EM–LPH–14B(C)	7
17	TC–EM–LPH–14B(C)	8
18	TC–EM–LPH–20A(C)	3

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-*B/C)#X
   * DESIGNATES LEVEL NUMBER
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 08-18 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
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New York, NY 10013
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No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
04/30/2013
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-220
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.20

Damian Titus

PROFESSIONAL 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.

APPROVED
NYC Buildings
Number Direct Urban Development
DateTime: Aug 15, 2013 - 12:10 PM
NYC Development Hub

Drawing Number
EN-220
B-SCAN Drawing Number
EN-220.00

SHEET 24 OF 48

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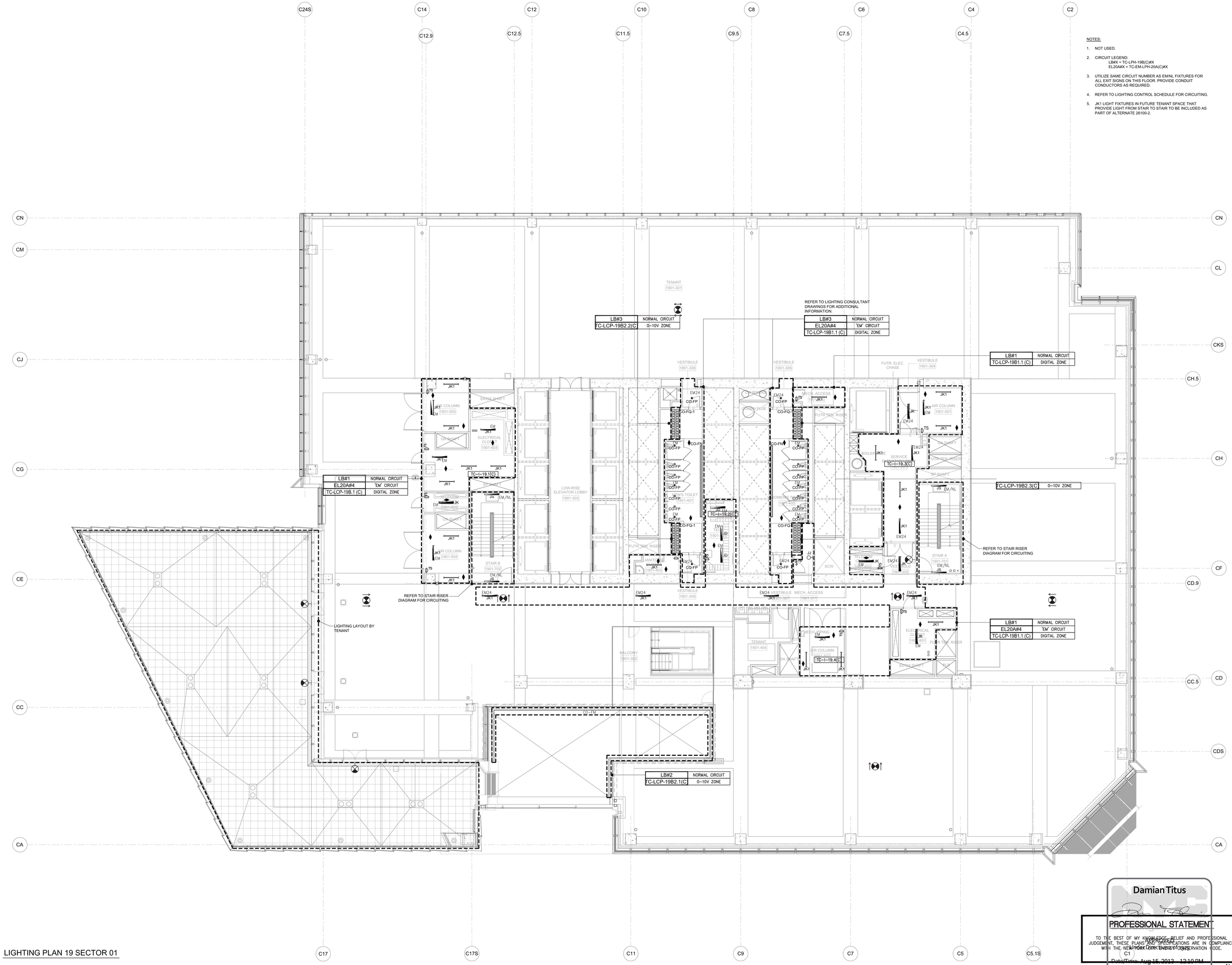
HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-19B(C)#X
   EL20A#X = TC-EM-LPH-20A(C)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 19 SECTOR 01

Damian Titus

PROFESSIONAL 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.

APPROVED
NYC Development Hub
Date/Time: Aug 15, 2013 - 12:10 PM

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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Tel: 212.530.9300 Fax: 212.269.5894

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number EN-221
Drawing Title

NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.21

Drawing Number EN-221
B-NCA01 Drawing Number EN-221.00

SHEET 25 OF 48

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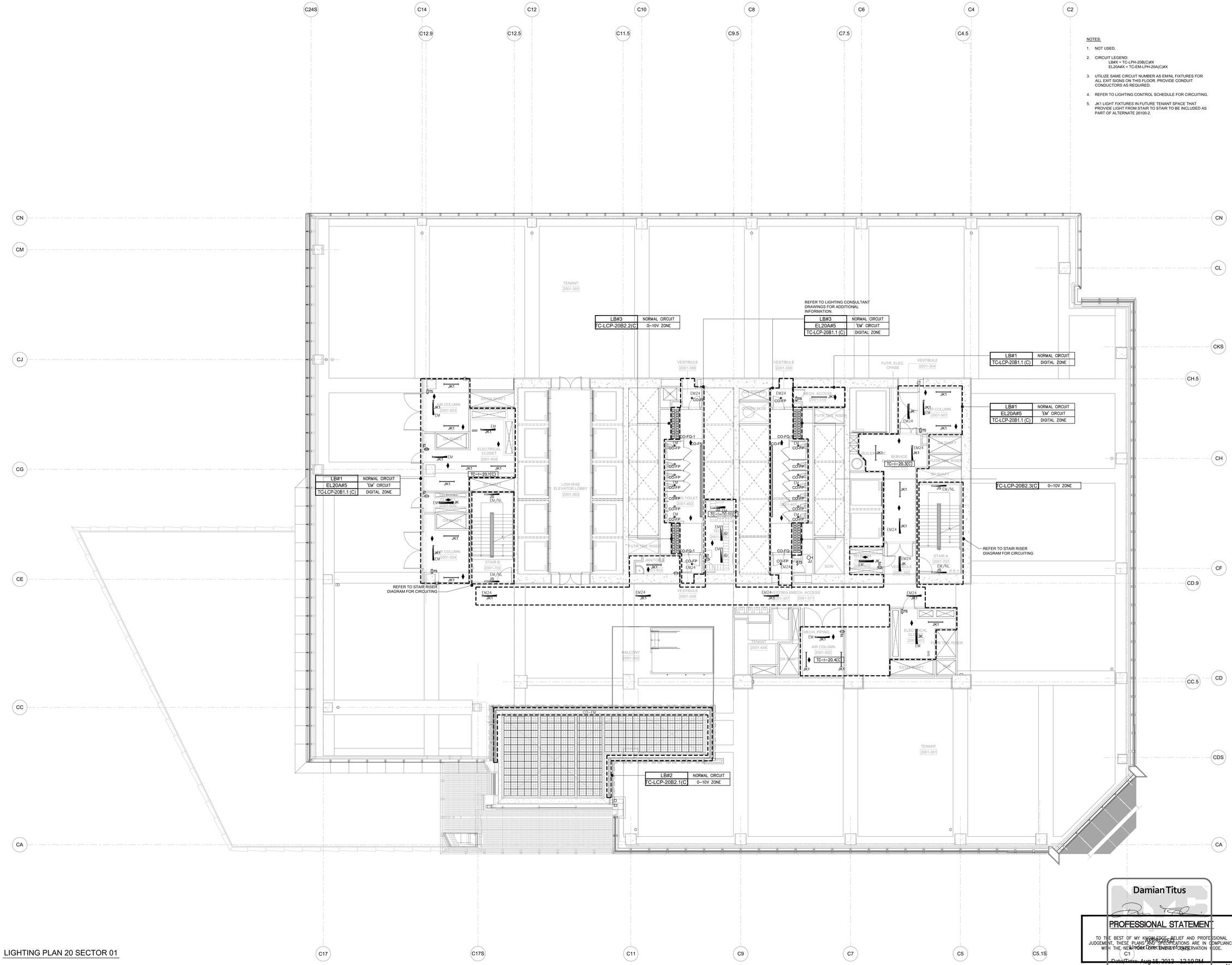
HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-20B(C)#X
   EL20A#X = TC-EM-LPH-20A(C)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 20 SECTOR 01

Damian Titus

PROFESSIONAL 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.

APPROVED
NEW YORK CITY DEPARTMENT OF BUILDINGS
Date/Time: Aug 15, 2013 - 12:10 PM
NYC Development Hub

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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Architects & Planning Consultants
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Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number

EN-222
Drawing Title

NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.22

Drawing Number EN-222
B.S.C.A.I. Drawing Number
EN-222.00

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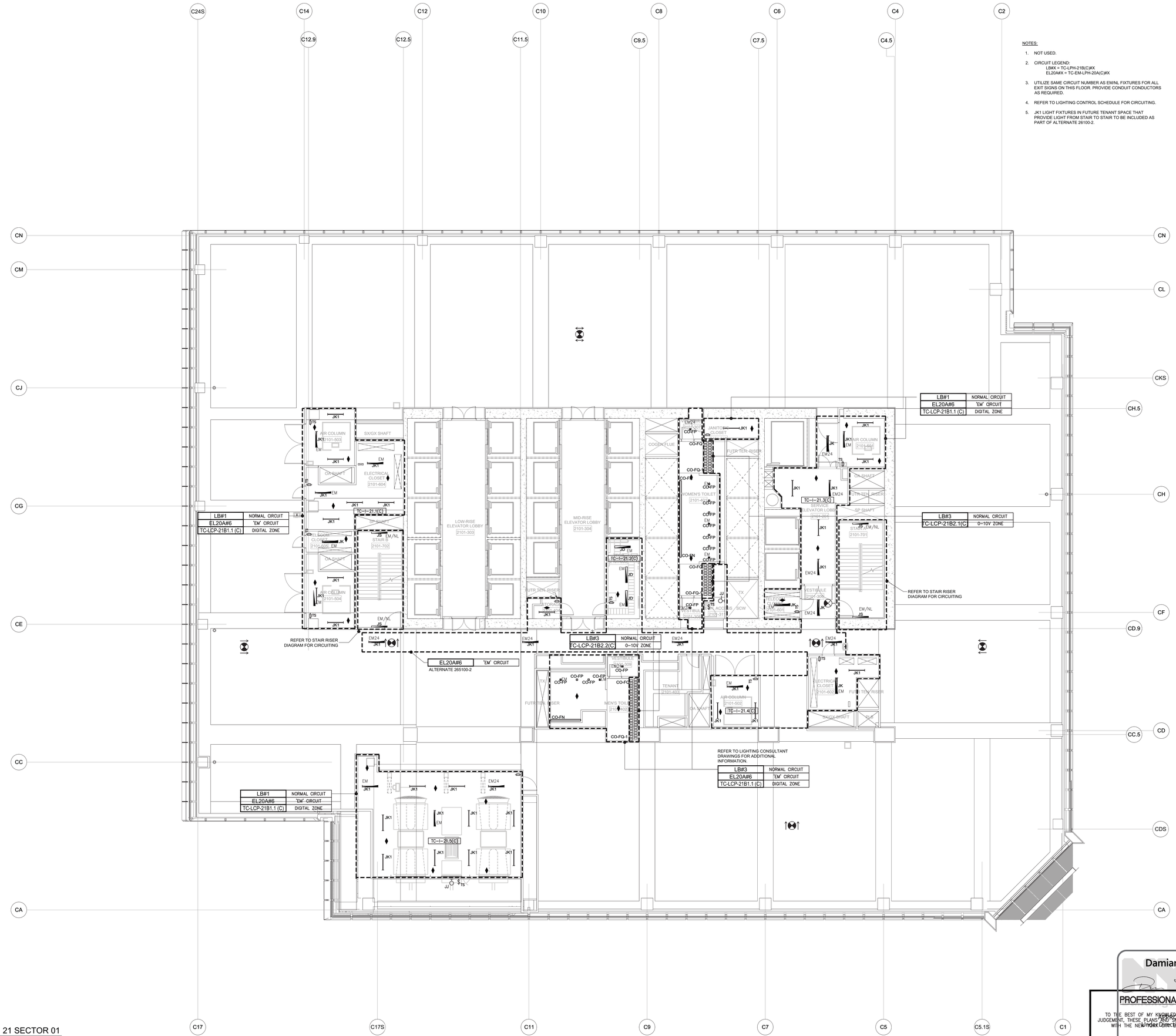

LIGHTING PLAN 21 SECTOR 01

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-21B(C)#X
   EL20A#X = TC-EM-LPH-20A(C)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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100 Park Avenue, 5th Floor
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Tel: 212.708.3600

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Architects & Planning Consultants
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Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
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51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-223
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.23
Drawing Number
EN-223
B-SCAN Drawing Number
EN-223

Damian Titus

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE.

Date/Time: Aug 15, 2013 - 12:10 PM

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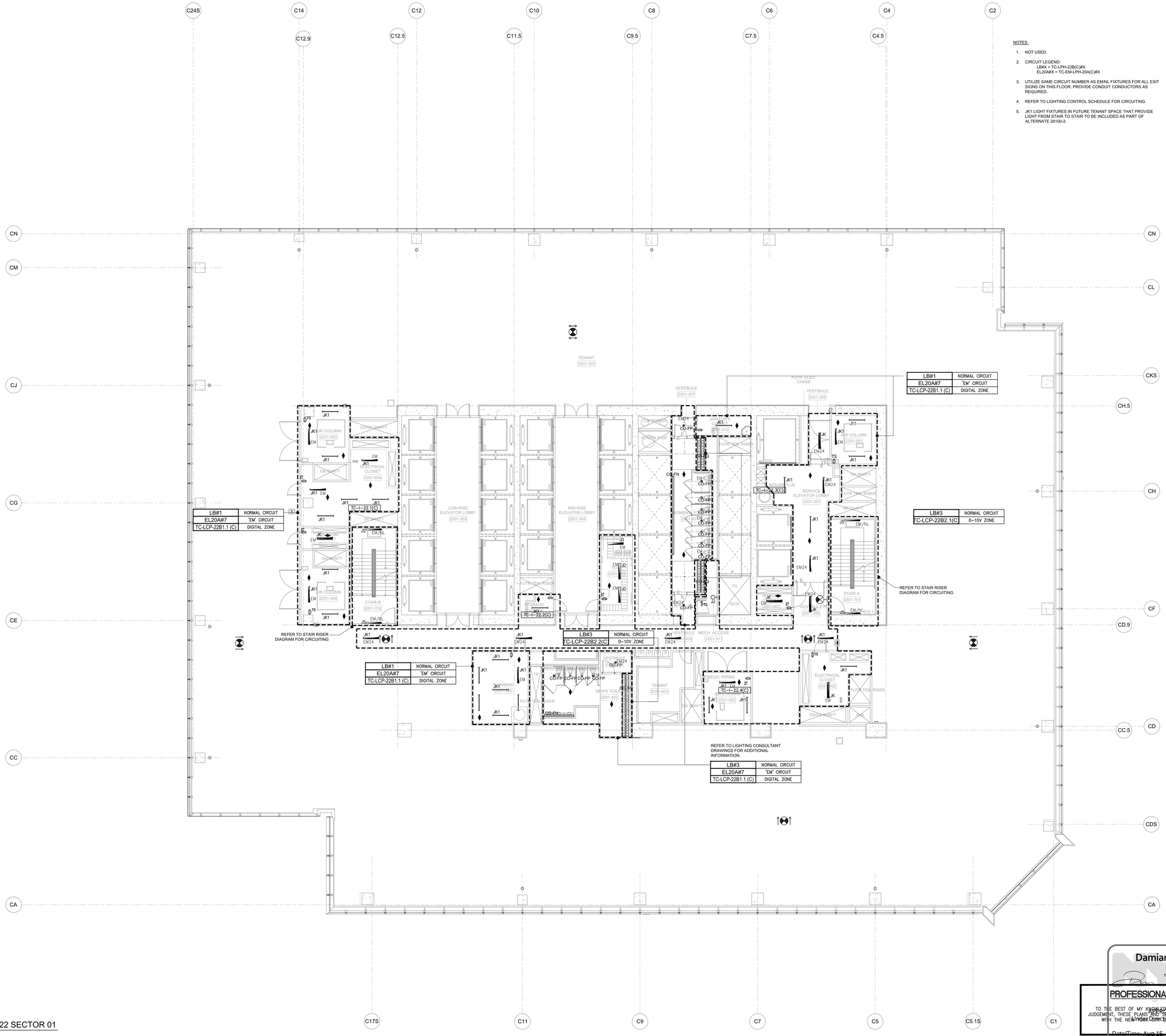
Filename: U:\projects\14752.a.hudson yards-east yards-twr celec\2013-06-03 Lighting Filing\EN DRAWING\EN-223.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:11 PM



LB#1	NORMAL CIRCUIT
EL20A#7	'EM' CIRCUIT
TC-LCP-22B1.1 (C)	DIGITAL ZONE

LB#3	NORMAL CIRCUIT
TC-LCP-22B2.1(C)	0–10V ZONE

LB#3	NORMAL CIRCUIT
TC-LCP-22B2.2(C)	0–10V ZONE

LB#3	NORMAL CIRCUIT
EL20A#7	'EM' CIRCUIT
TC-LCP-22B1.1 (C)	DIGITAL ZONE

LIGHTING PLAN 22 SECTOR 01

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-22B(C)#X
   EL20A#X = TC-EM-LPH-20A(C)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

Damian Titus

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE.

Date/Time: Aug 15, 2013 12:10 PM

NYC Development Hub

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
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Tel: 212.986.7514 Fax: 212.986.7510

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New York, NY 10017
Tel: 212.708.3600

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Architects & Planning Consultants
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Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-224
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.24
Drawing Number
EN-224
B-SCAN Drawing Number
EN-224.00

SHEET 28 OF 48

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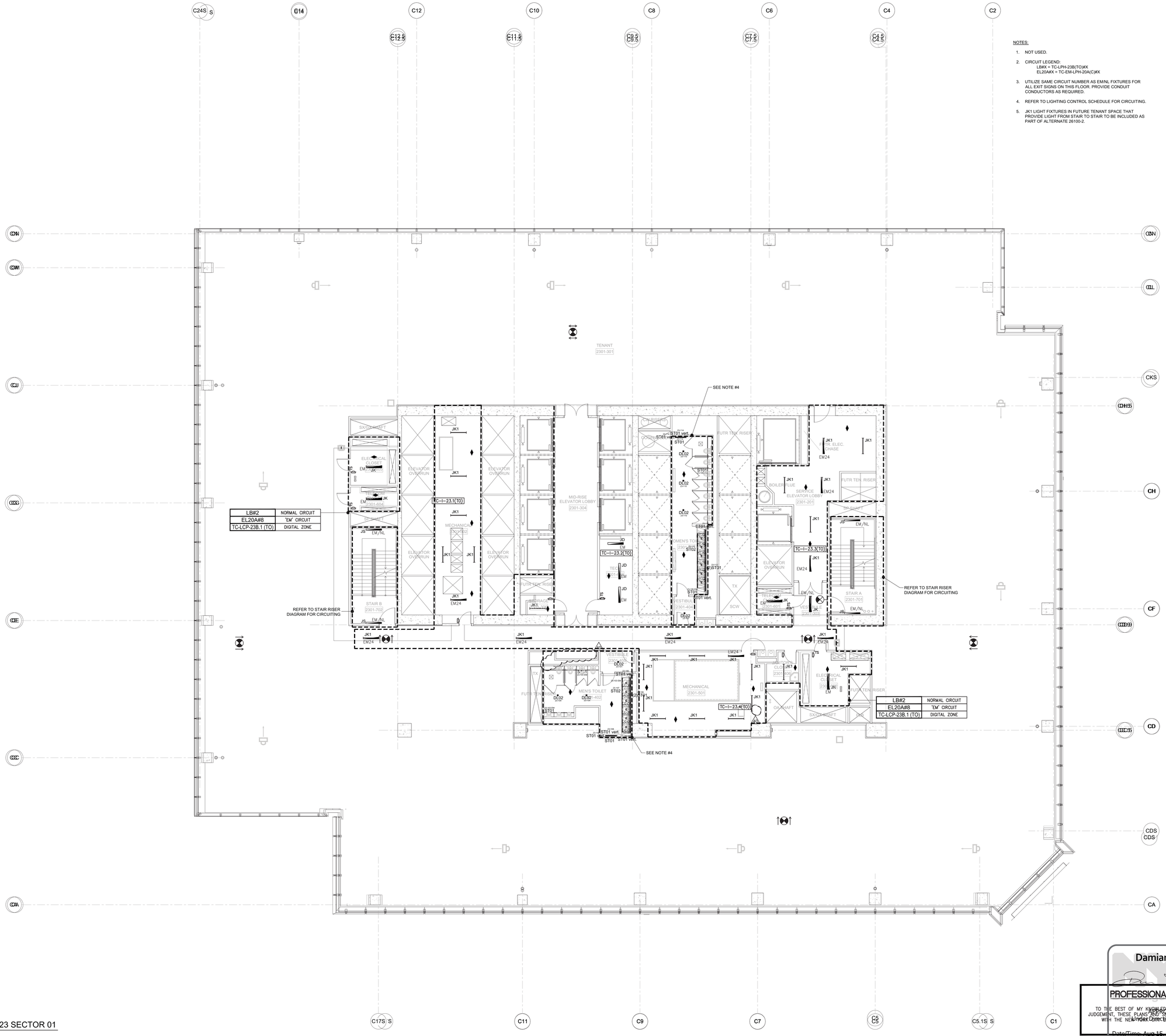
HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-23B(TO)#X
   EL20A#X = TC-EM-LPH-20A(C)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 23 SECTOR 01

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
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Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
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Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-225
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.25

Drawing Number
EN-225
B-SCAN Drawing Number
EN-225.00

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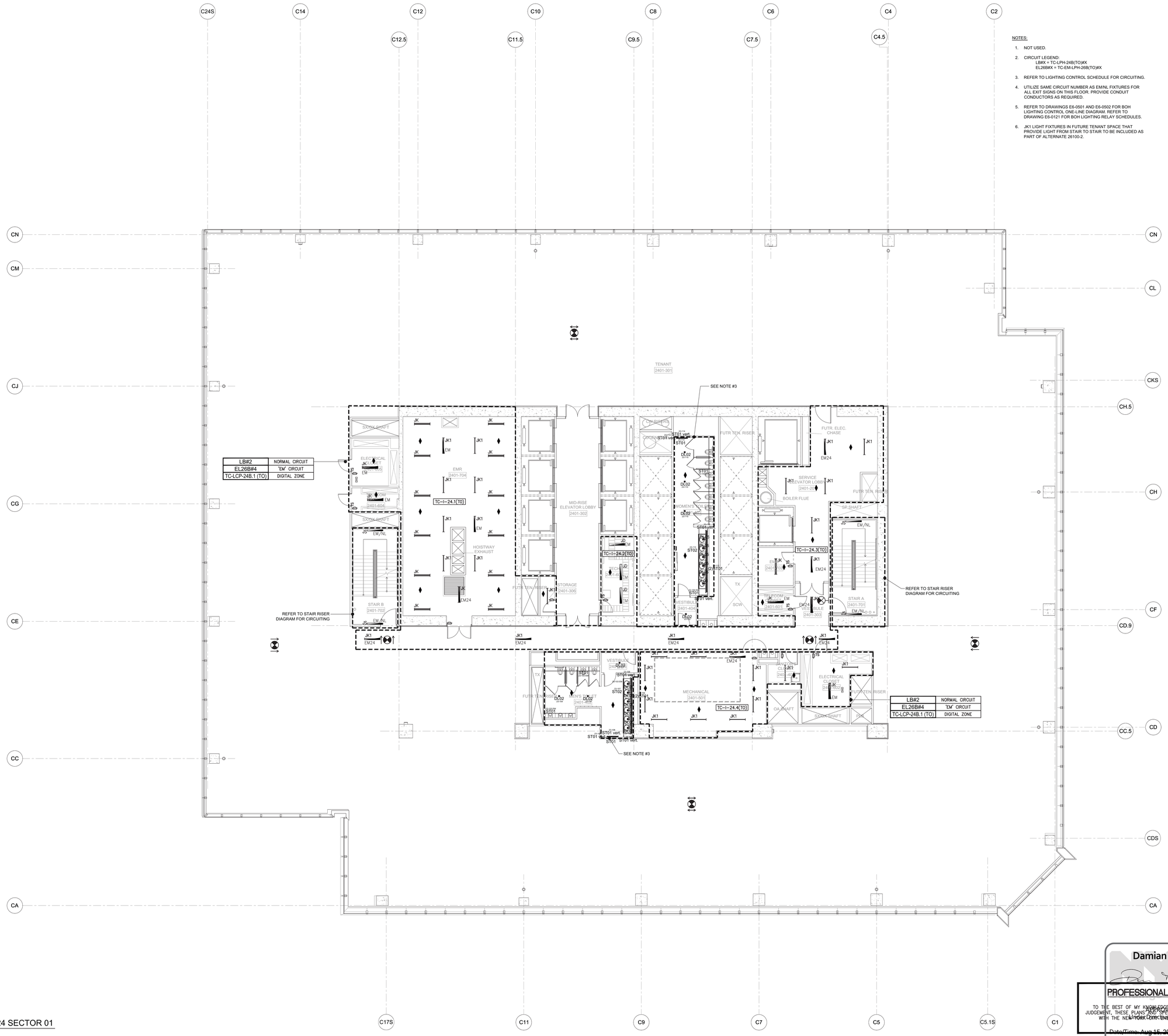
Filename: U:\projects\14752.a.hudson yards-east yards-twr cdes\2013-06-03 Lighting Filing\EN DRAWING\EN-225.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:11 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-24B(TO)#X
   EL26B#X = TC-EM-LPH-26B(TO)#X
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
6. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 24 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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New York, NY 10036
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Structural Engineer
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New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number EN-226

Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.26

Damian Titus

PROFESSIONAL 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.

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Date/Time: Aug 15, 2013 - 12:10 PM

Drawing Number EN-226
@SCAN Drawing Number EN-226.00

SHEET 30 OF 48

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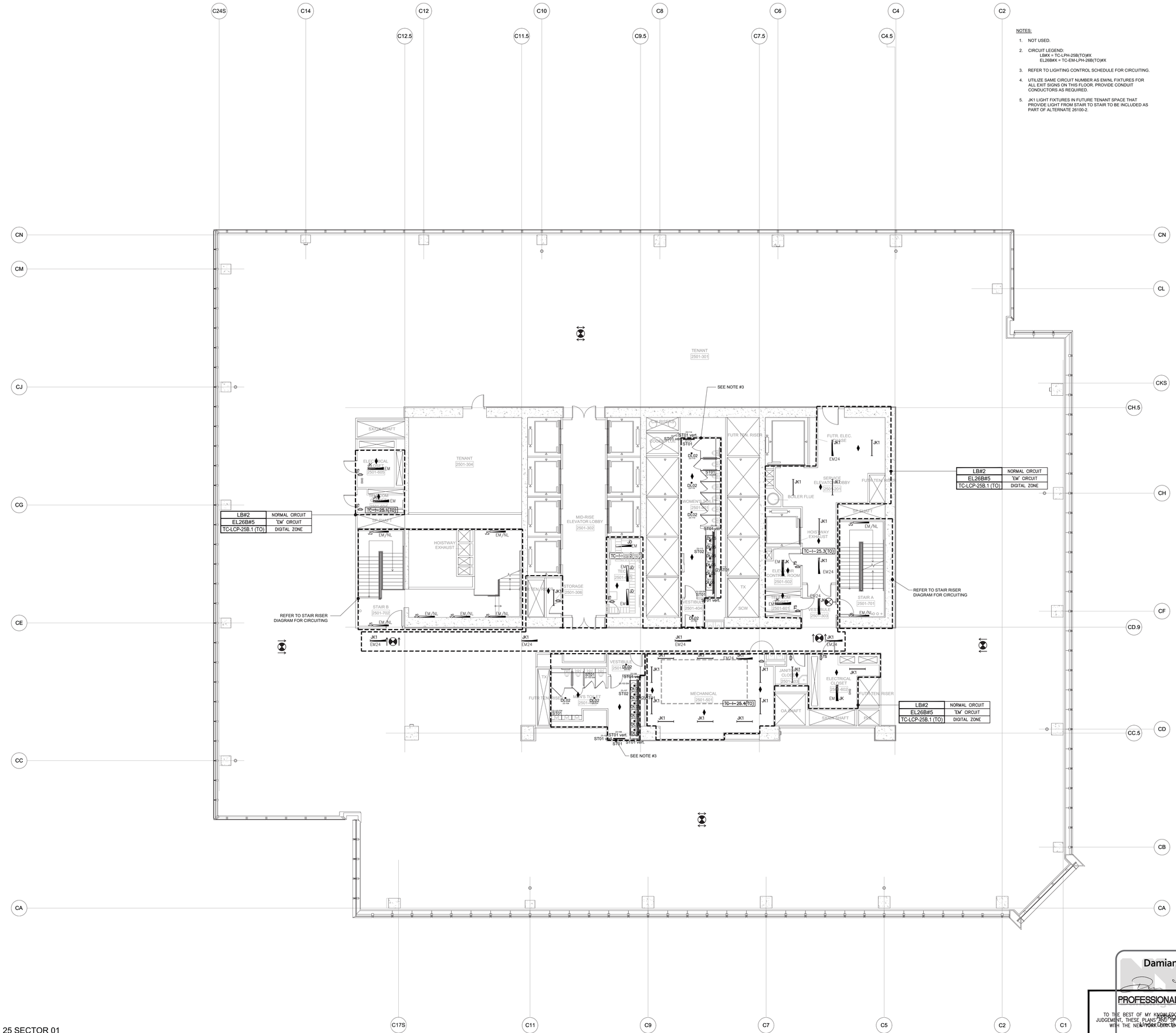
Filename: U:\projects\14752.a.hudson yards-east yards-twr cwtc\2013-06-03 Lighting Filing\EN DRAWINGS\EN-226.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:11 PM

Filename: U:\projects\14752.a.hudson yards-east yards-lwr cities\2013-06-03 Lighting Filing\EN DRAWING\EN-227.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:11 PM

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-25B(TO)#X
   EL26B#X = TC-EM-LPH-26B(TO)#X
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 25 SECTOR 01

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

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Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-227
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.27

Drawing Number
EN-227
KCAD Drawing Number
EN-227.00

SHEET 31 OF 48

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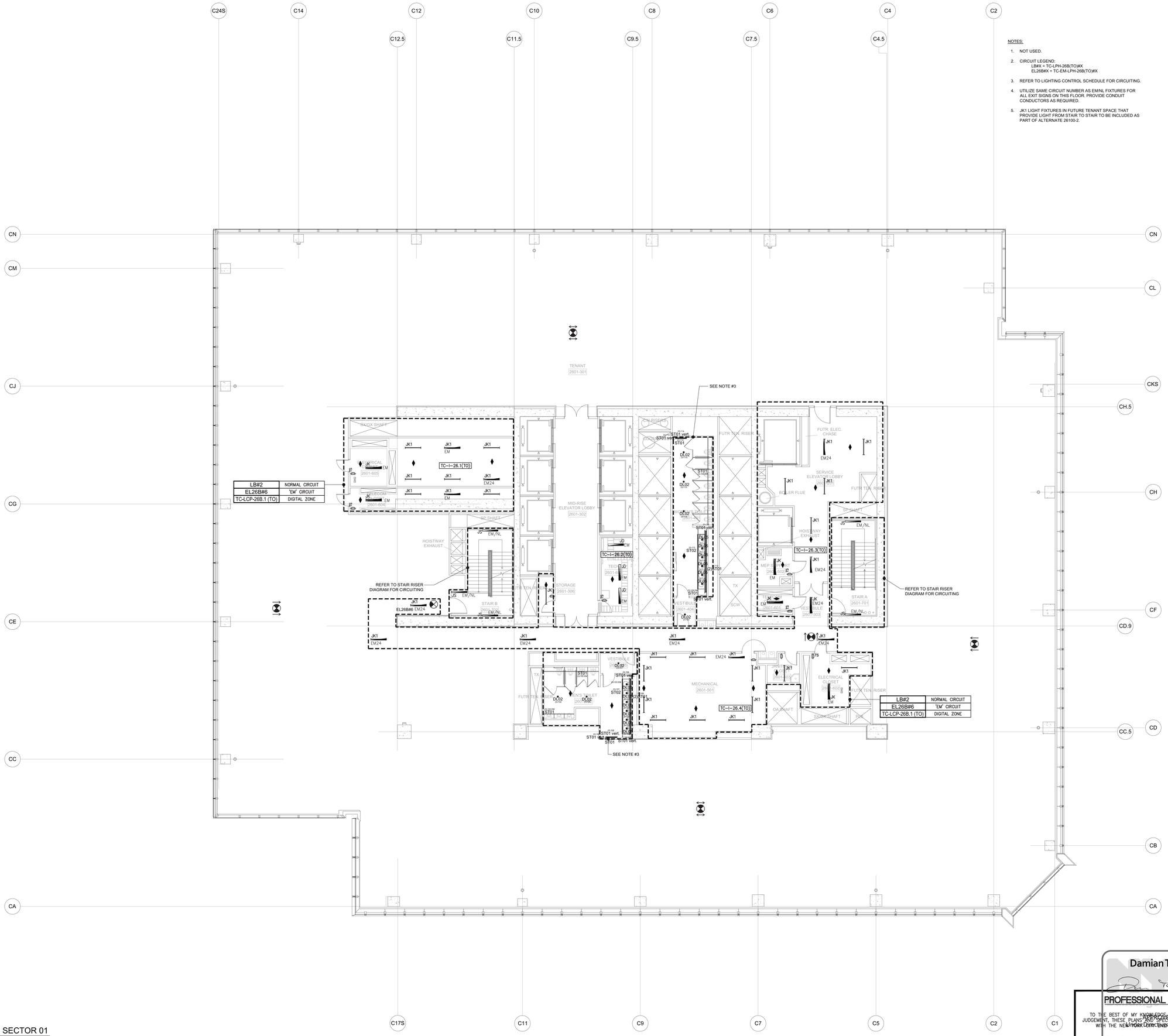

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-26B(TO)#X
   EL26B#X = TC-EM-LPH-26B(TO)#X
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EMNL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

LIGHTING PLAN 26 SECTOR 01

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
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Tel: 212.986.7514 Fax: 212.986.7510

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100 Park Avenue, 5th Floor
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Tel: 212.708.3600

Architect
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Architects & Planning Consultants
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Tel: 212.977.6500 Fax: 212.956.2526

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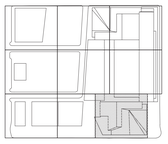
Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-228
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.28
Drawing Number
EN-228
B-SCAN Drawing Number
EN-228.00

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 15, 2013 12:10 PM

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SHEET 32 OF 48

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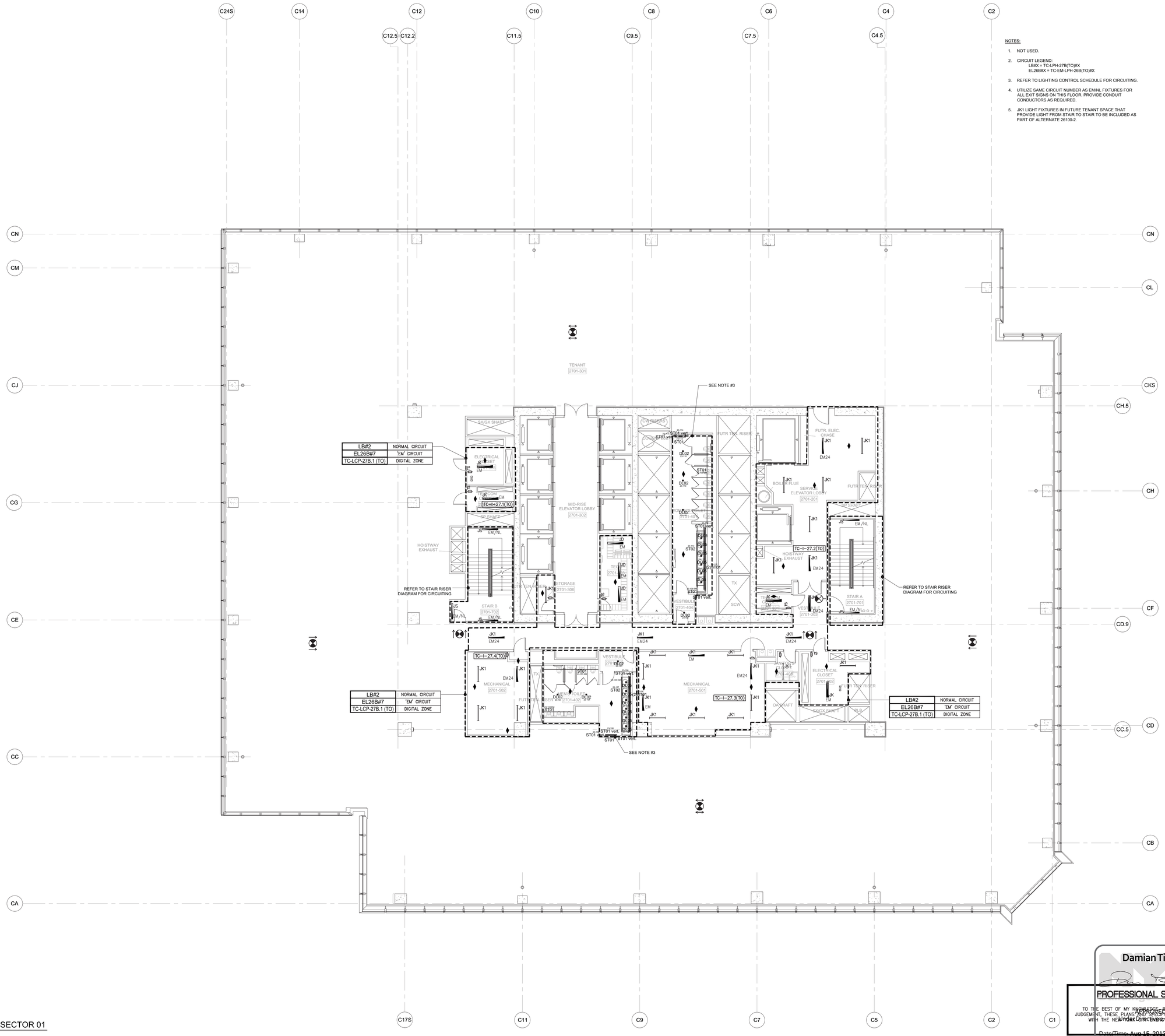
Filename: U:\projects\14752.a.hudson yards-east yards-twr cielec\2013-06-03 Lighting Filing\EN DRAWING\EN-228.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:11 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-27B(TO)#X
   EL26B#X = TC-EM-LPH-26B(TO)#X
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 27 SECTOR 01

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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New York, NY 10017
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Architect
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Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-229
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.29

Drawing Number
EN-229
B-SCAN Drawing Number
EN-229.00

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Filename: U:\projects\14752.a.hudson yards-east yards-twr cities\2013-06-03 Lighting Filing\EN DRAWING\EN-229.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:11 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-28B(TO)#X
   EL26B#X = TC-EM-LPH-26B(TO)#X
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

LIGHTING PLAN 28 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

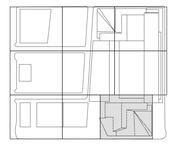
Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-230
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.30

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 15, 2013 - 12:10 PM

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Drawing Number
EN-230
B-DCAN Drawing Number
EN-230.00

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Filename: U:\projects\14752.a.hudson yards-east yards-twr cladec\2013-06-03 Lighting Filing\EN DRAWING\EN-230.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:11 PM

HUDSON YARDS - TOWER C

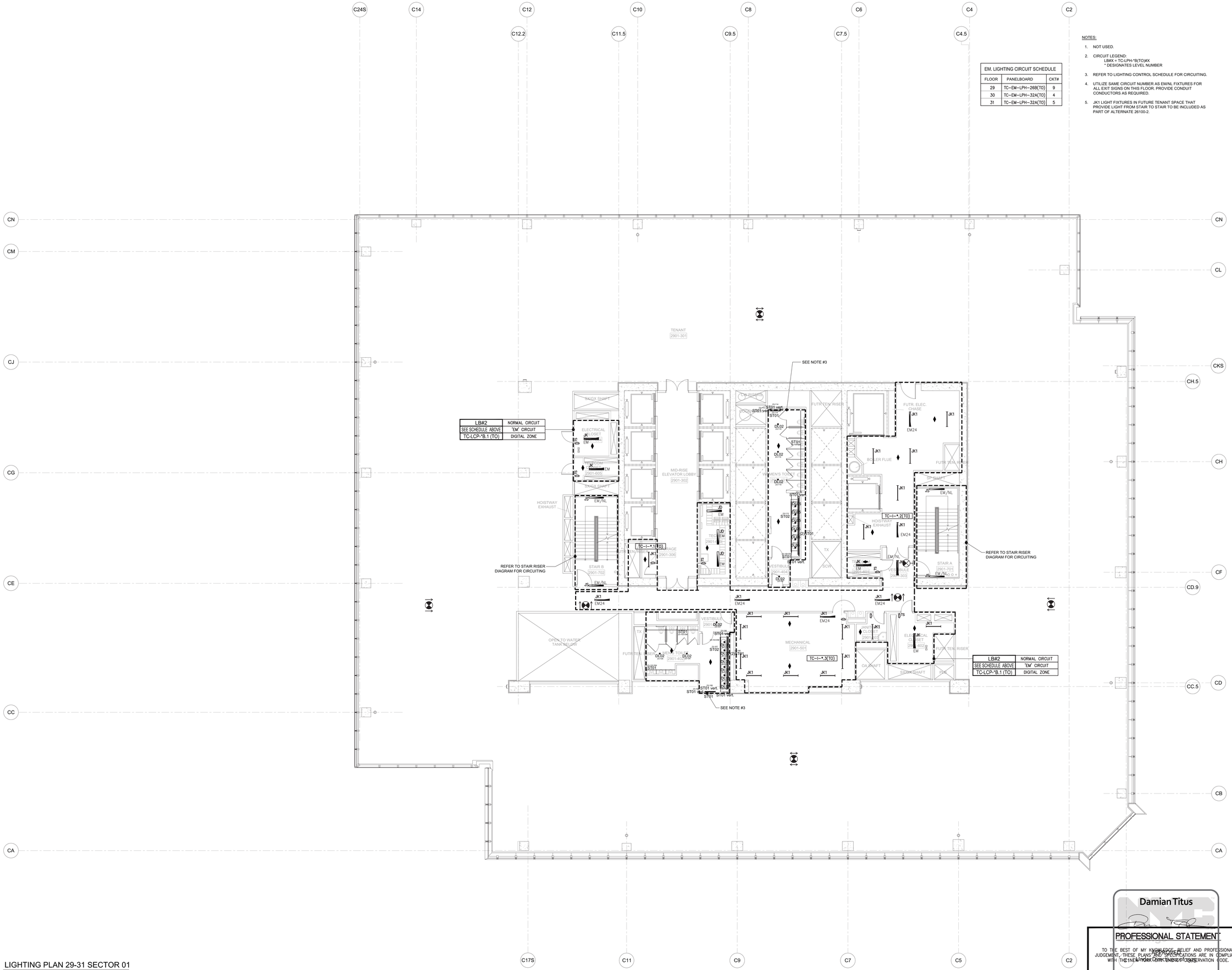
Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-L-PH-*B(TO)#X
   * DESIGNATES LEVEL NUMBER
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

EM. LIGHTING CIRCUIT SCHEDULE

FLOOR	PANELBOARD	CKT#
29	TC-EM-LPH-26B(TO)	9
30	TC-EM-LPH-32A(TO)	4
31	TC-EM-LPH-32A(TO)	5



LIGHTING PLAN 29-31 SECTOR 01

Damian Titus

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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New York, NY 10017
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Architect
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Architects & Planning Consultants
11 West 42nd Street
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New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date 12/14/2012
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number

EN-231

Drawing Title

NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.31

Drawing Number
EN-231

BIM/CAD Drawing Number
EN-231.00

SHEET 35 OF 48

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Filename: U:\projects\14752.a.hudson yards-east yards-lvr celec\2013-06-03 Lighting Filing\EN DRAWING\EN-231.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:12 PM

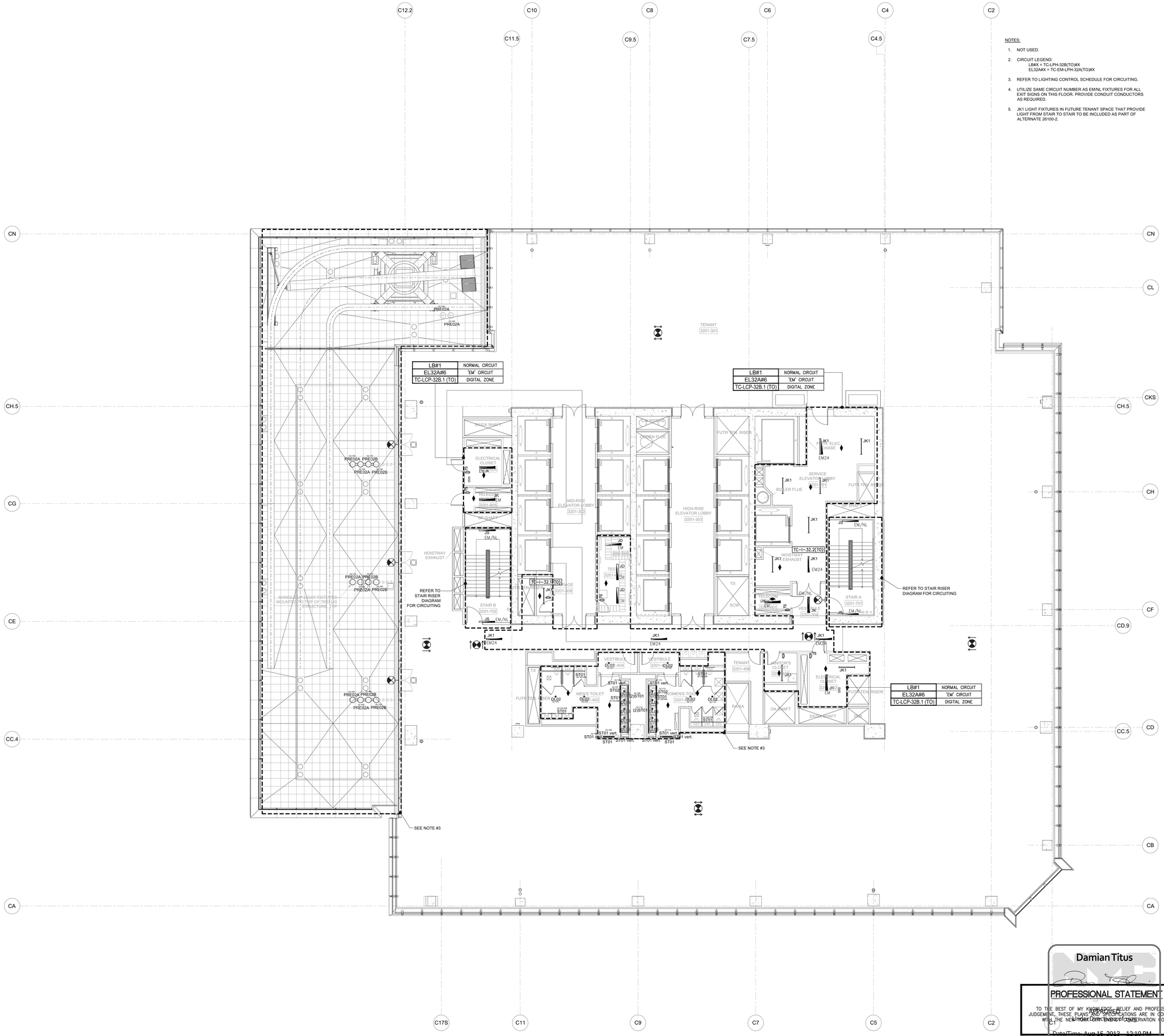
DEPT OF BLDGS 121324290 Job Number E32970556003 Scan Code

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-32B(TO)#X
   EL32A#X = TC-EM-LPH-32A(TO)#X
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 32 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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100 Park Avenue, 5th Floor
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Tel: 212.708.3600

Architect
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Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
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New York, NY 10010
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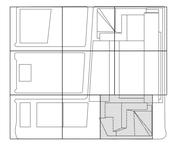
Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-232
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.32
Drawing Number
EN-232
B-SCAN Drawing Number
EN-232

Damian Titus
NYC
PROFESSIONAL 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.
Date/Time: Aug 15, 2013 12:10 PM
NYC Development Hub

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWING\EN-232.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:12 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-33B(TO)#X
   EL32A#X = TC-EM-LPH-32A(TO)#X
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.

LIGHTING PLAN 33 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

Structural Engineer
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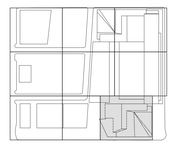
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-233
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.33

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 15, 2013 - 12:10 PM

NYC Development Hub

Drawing Number
EN-233
B-SCAN Drawing Number
EN-233.00

SHEET 37 OF 48

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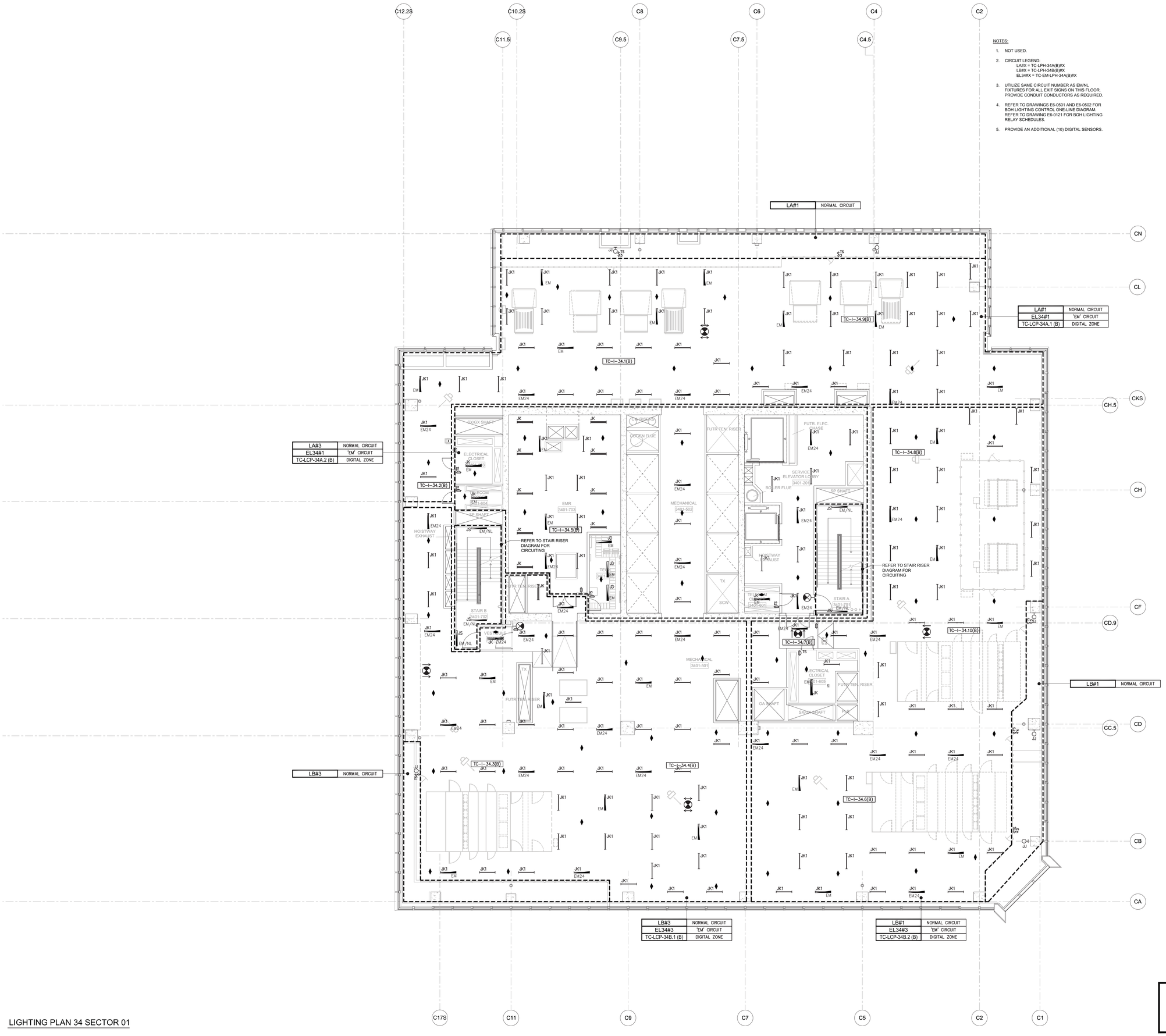
Filename: U:\projects\14752.a.hudson yards-east yards-tw cxlec\2013-06-03 Lighting Filing\EN DRAWING\EN-233.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:12 PM



NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-34A(B)#X
   LB#X = TC-LPH-34B(B)#X
   EL34#X = TC-EM-LPH-34A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE AN ADDITIONAL (10) DIGITAL SENSORS.

LIGHTING PLAN 34 SECTOR 01

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
Tishman Construction Corporation
100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
Kohn Pedersen Fox Associates PC
Architects & Planning Consultants
11 West 42nd Street
New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

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Thornton Tomasetti, Inc.
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

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Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-234
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.34
Drawing Number
EN-234
B-SCAN Drawing Number
EN-234.00

Damian Titus

PROFESSIONAL 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.

APPROVED
Under Direction of Commissioner
Date/Time: Aug 15, 2013 12:10 PM

NYC Development Hub

SHEET 38 OF 48

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Filename: U:\projects\14752.a.hudson yards-east yards-twr c\elec\2013-06-03 Lighting Filing\EN DRAWING\EN-234.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:12 PM

Filename: U:\projects\14752.a.hudson yards-east yards-tw\ cities\2013-06-03 Lighting Filing\EN DRAWING\EN-235.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:12 PM

LIGHTING PLAN 34M SECTOR 01

Damian Titus

PROFESSIONAL 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.

APPROVED
NYC Buildings
Date/Time: Aug 15, 2013 - 12:10 PM
Number: 121362275

NYC Development Hub

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

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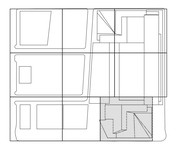
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-235
Drawing Title

NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.35

Drawing Number
EN-235
B-SCAN Drawing Number
EN-235.00

SHEET 39 OF 48

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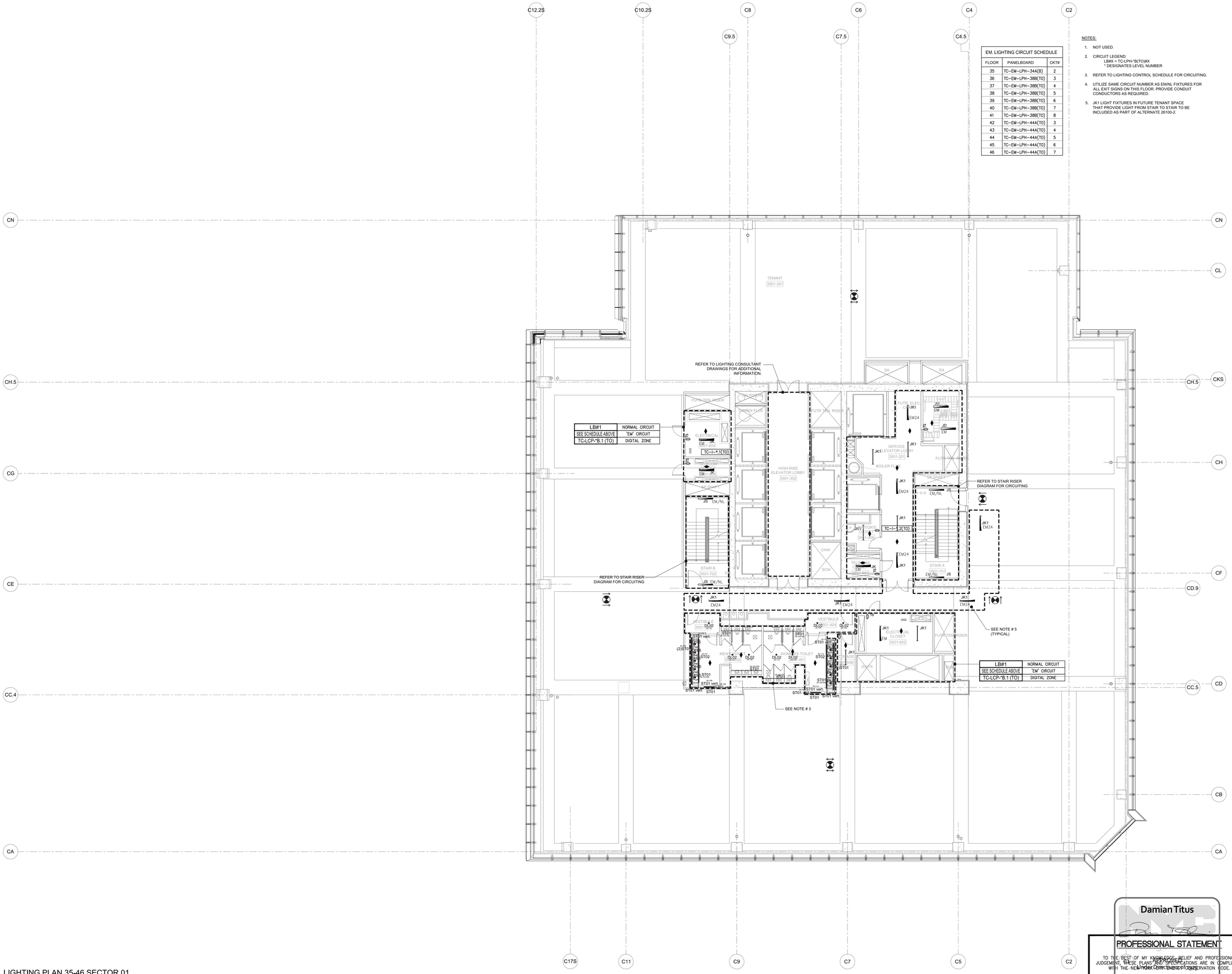
HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

EM. LIGHTING CIRCUIT SCHEDULE		
FLOOR	PANELBOARD	CKT#
35	TC-EM-LPH-34A(B)	2
36	TC-EM-LPH-38B(TO)	3
37	TC-EM-LPH-38B(TO)	4
38	TC-EM-LPH-38B(TO)	5
39	TC-EM-LPH-38B(TO)	6
40	TC-EM-LPH-38B(TO)	7
41	TC-EM-LPH-38B(TO)	8
42	TC-EM-LPH-44A(TO)	3
43	TC-EM-LPH-44A(TO)	4
44	TC-EM-LPH-44A(TO)	5
45	TC-EM-LPH-44A(TO)	6
46	TC-EM-LPH-44A(TO)	7

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-*B(TO)#X
   * DESIGNATES LEVEL NUMBER
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE THAT PROVIDE LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 26100-2.



LIGHTING PLAN 35-46 SECTOR 01

Damian Titus

PROFESSIONAL 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.

APPROVED
NYC Dept. of Buildings
Date/Time: Aug 15, 2013 - 12:10 PM
NYC Development Hub

Client
Related Companies
60 Columbus Circle
New York, NY 10023
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Oxford Properties Group
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New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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Tel: 212.708.3600

Architect
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Architects & Planning Consultants
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New York, NY 10036
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80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-236
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.36

Drawing Number
EN-236
B-SCAN Drawing Number
EN-236.00

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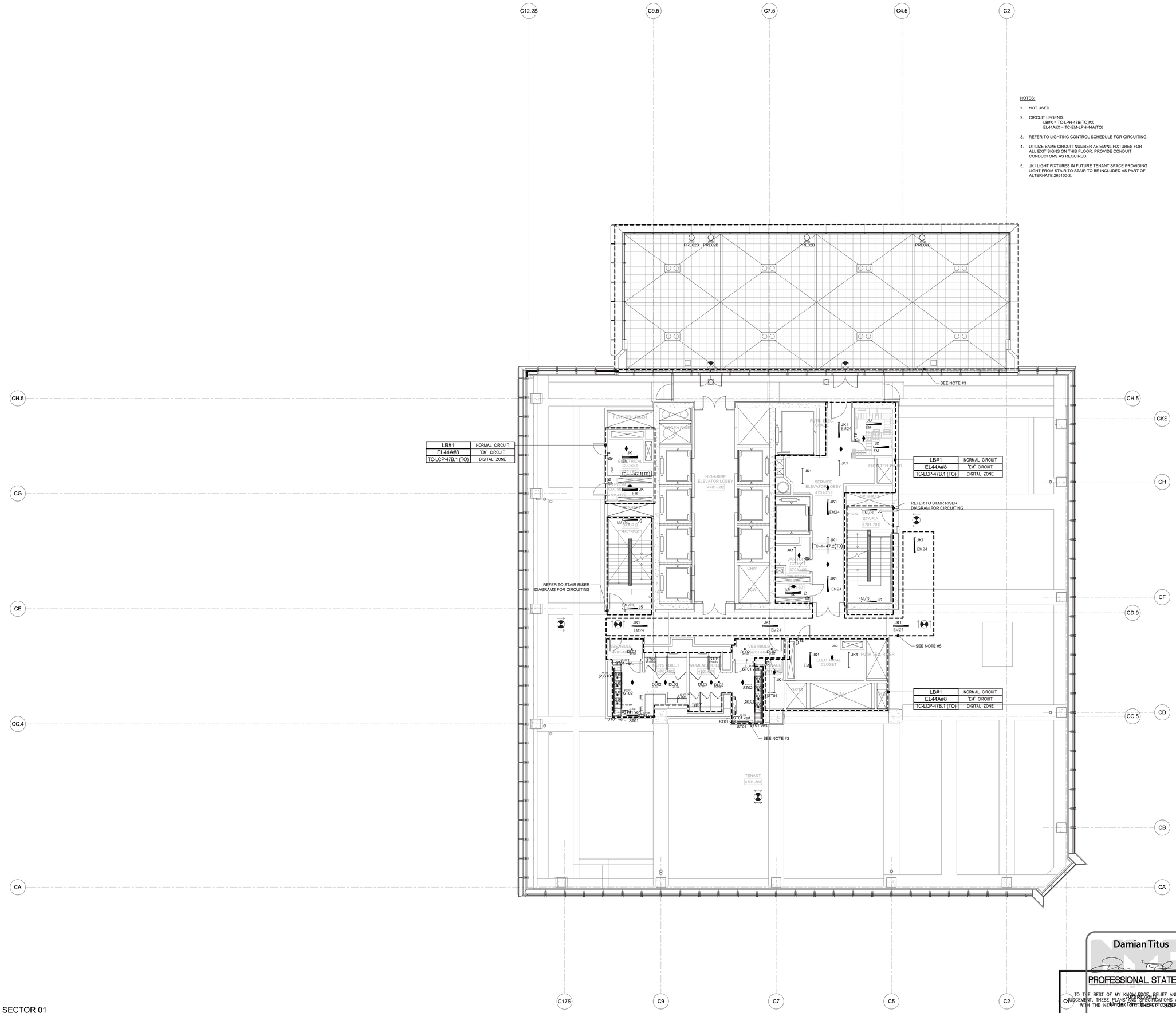
Filename: U:\projects\14752.a.hudson yards-east yards-tw\ cities\2013-06-03 Lighting Filing\EN DRAWING\EN-236.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:12 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-47B(TO)#X
   EL44A#X = TC-EM-LPH-44A(TO)
3. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
4. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
5. JK1 LIGHT FIXTURES IN FUTURE TENANT SPACE PROVIDING LIGHT FROM STAIR TO STAIR TO BE INCLUDED AS PART OF ALTERNATE 265100-2.



LIGHTING PLAN 47 SECTOR 01

Damian Titus

PROFESSIONAL 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.

APPROVED
Date/Time: Aug 15, 2013 - 12:10 PM
NYC Development Hub

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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New York, NY 10017
Tel: 212.708.3600

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Architects & Planning Consultants
11 West 42nd Street
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New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-237
Drawing Title

NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.37

Drawing Number
EN-237
R-SCAN Drawing Number
EN-237.00

SHEET 41 OF48

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Filename: U:\projects\14752.a.hudson yards-east yards\ver Celes\2013-06-03 Lighting Filing\EN DRAWINGS\EN-237.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:12 PM

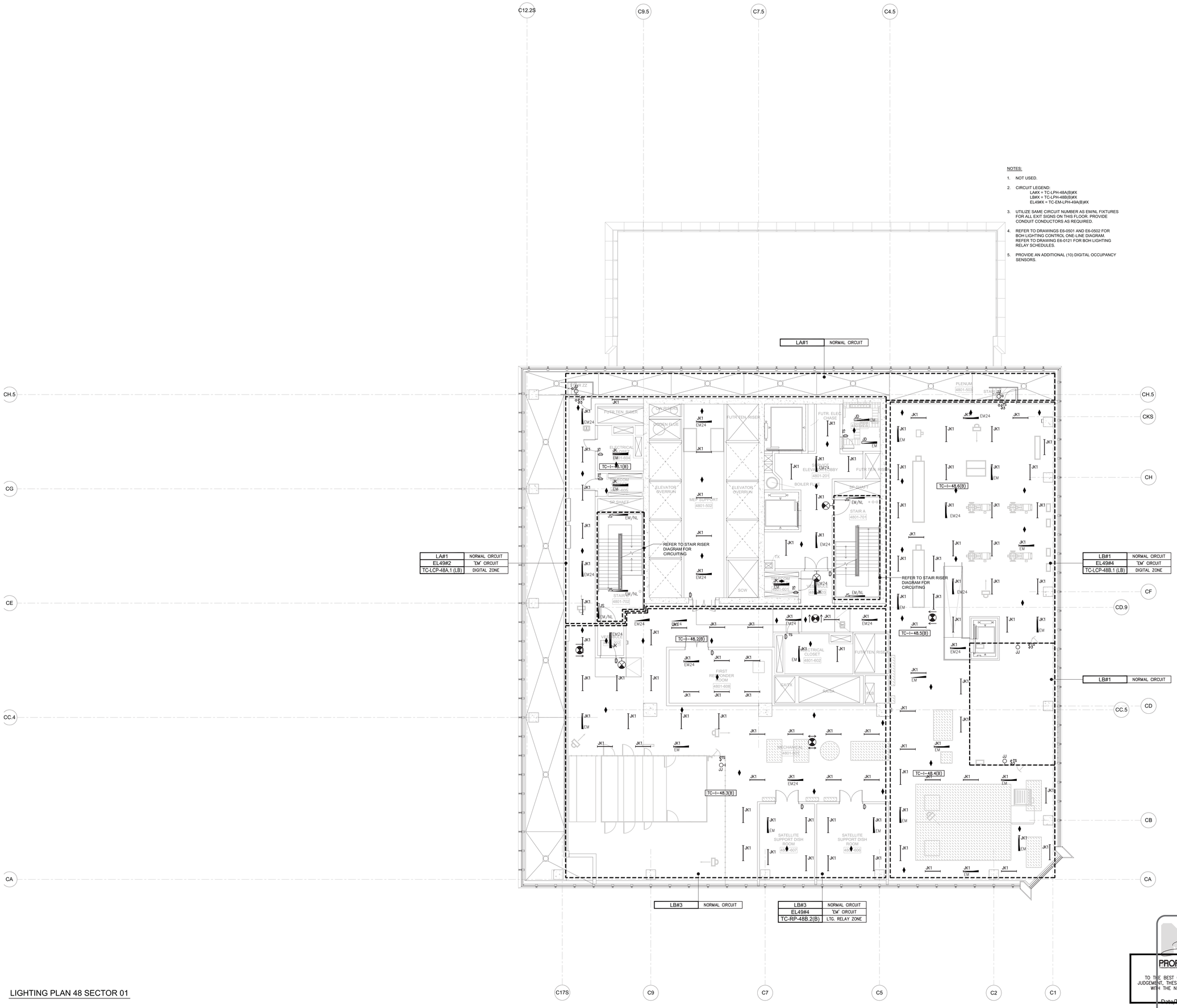
Filename: U:\projects\14752.a hudson yards-east yards-tw\ cielec\2013-06-03 Lighting Filing\EN DRAWING\EN-238.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:12 PM

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-48A(B)#X
   LB#X = TC-LPH-48B(B)#X
   EL49#X = TC-EM-LPH-49A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE AN ADDITIONAL (10) DIGITAL OCCUPANCY SENSORS.



LIGHTING PLAN 48 SECTOR 01

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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100 Park Avenue, 5th Floor
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Architects & Planning Consultants
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Structural Engineer
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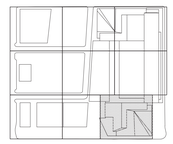
51 Madison Avenue
New York, NY 10010
Tel: 917.661.7800 Fax: 917.661.7801

Mechanical, Electrical, Plumbing, Fire Protection
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-238
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.38

Damian Titus

PROFESSIONAL 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.

APPROVED
Under Direct Supervision of

Date/Time: Aug 15, 2013 - 12:11 PM

NYC Development Hub

Drawing Number
EN-238
B-SCAN Drawing Number
EN-238.00

N

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HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LA#X = TC-LPH-49A(B)#X
   LB#X = TC-LPH-49B(B)#X
   EL49#X = TC-EM-LPH-49A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO DRAWINGS E6-0501 AND E6-0502 FOR BOH LIGHTING CONTROL ONE-LINE DIAGRAM. REFER TO DRAWING E6-0121 FOR BOH LIGHTING RELAY SCHEDULES.
5. PROVIDE AN ADDITIONAL (10) DIGITAL OCCUPANCY SENSORS.

LA#1	NORMAL CIRCUIT
EL49#3	"EM" CIRCUIT
TC-LCP-49A.1 (B)	DIGITAL ZONE

LB#1	NORMAL CIRCUIT
EL49#5	"EM" CIRCUIT
TC-LCP-49B.1 (B)	DIGITAL ZONE

LIGHTING PLAN 49 SECTOR 01

Damian Titus

PROFESSIONAL STATEMENT

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE.

Date/Time: Aug 15, 2013 - 12:11 PM

NYC Development Hub

Client
Related Companies
60 Columbus Circle
New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

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New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

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New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-239
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.39

Drawing Number
EN-239
R.K.A. Drawing Number
EN-239.00

SHEET 39 OF 48

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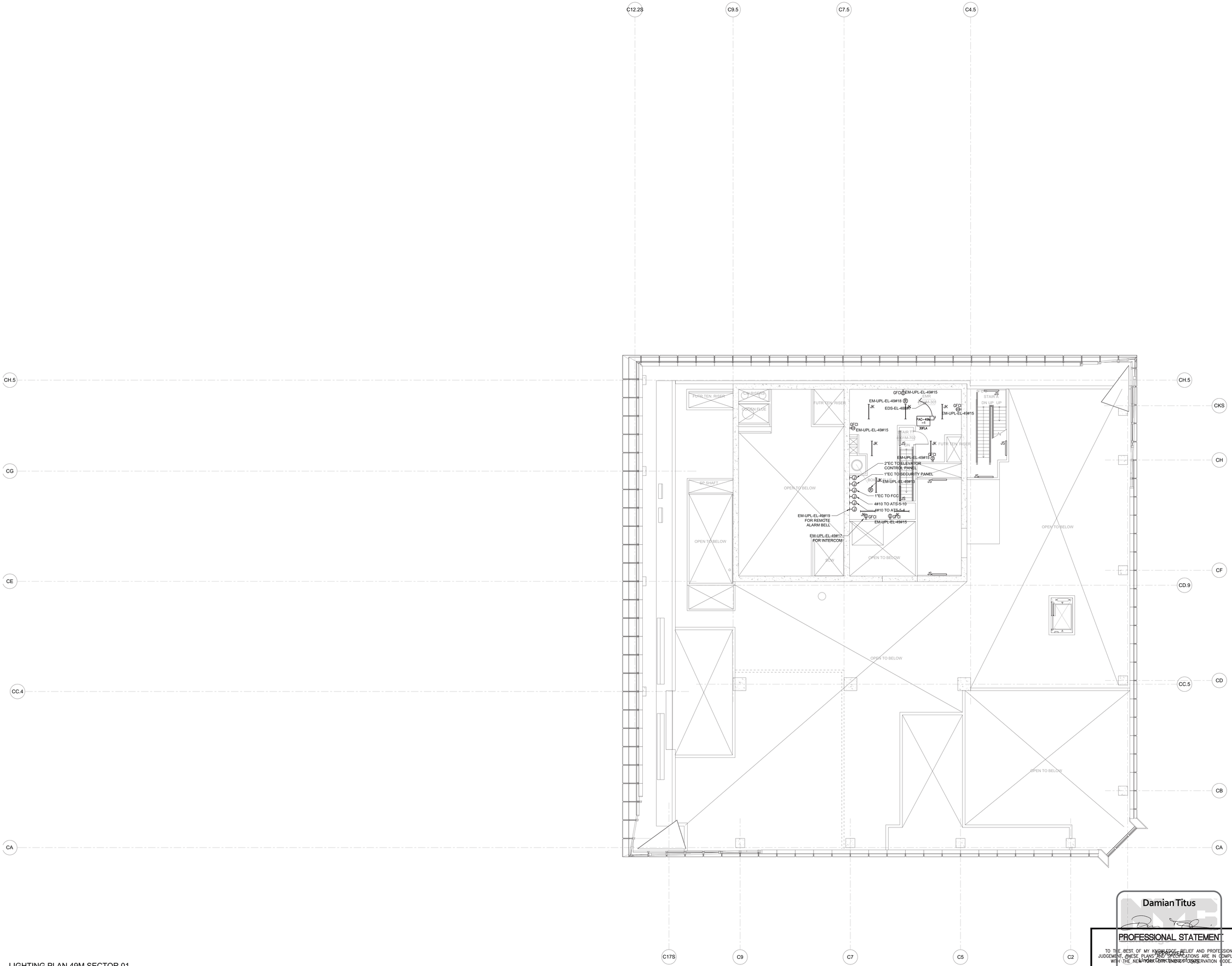
Filename: U:\projects\14752.a.hudson yards-east yards-twr cele\2013-06-03 Lighting Filing\EN DRAWING\EN-239.dwg Plotted by: david.heimann Plot Time: 6/3/2013 7:12 PM

ESD0000002 Job Number
45012 DF BLOCK 01 12-24-2012 Job Number

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY



LIGHTING PLAN 49M SECTOR 01

Damian Titus

PROFESSIONAL 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.

DateTime: Aug 15, 2013 - 12:11 PM

NYC Development Hub

N

Client
Related Companies
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New York, NY 10023
Tel: 212.801.1000 Fax: 212.801.1048

Oxford Properties Group
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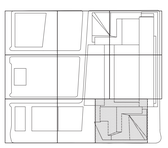
Jaros Baum & Bolles Consulting Engineers
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
02/08/2013
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-240
Drawing Title
NYCECC COMPLIANCE LIGHTING CONFORMANCE SHEET NO.40

Drawing Number
EN-240
B-SCAN Drawing Number
EN-240.00

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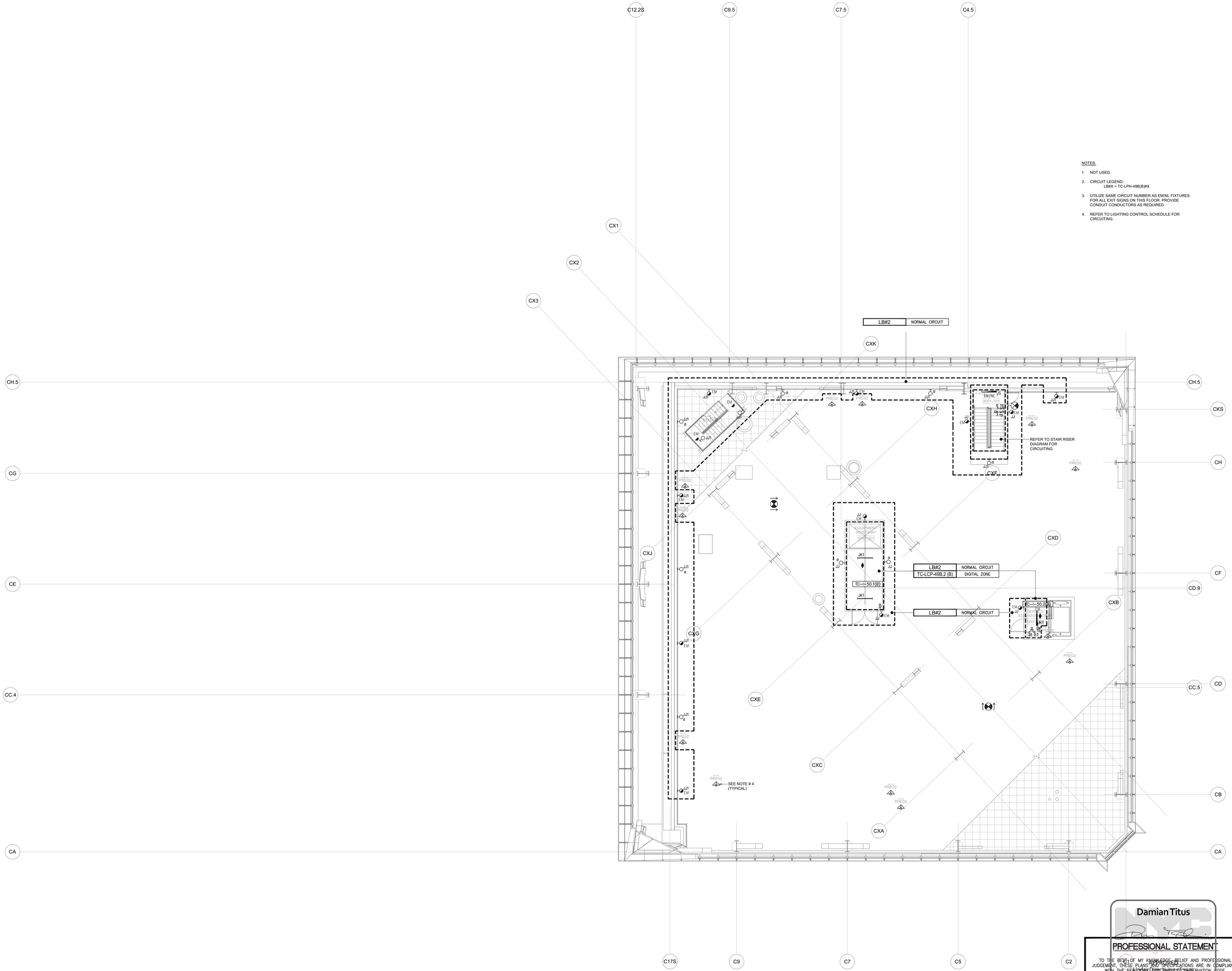
Filename: U:\projects\14752.a.hudson yards-east yards-twr cellar\2013-06-03 Lighting Filing\EN DRAWING\EN-240.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:12 PM

Filename: U:\projects\14752.a.hudson yards-twr celec\2013-06-03 Lighting Filing\EN DRAWINGS\EN-241.dwg Plotted by: david heimann Plot Time: 6/3/2013 7:13 PM



NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-49B(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.

LIGHTING PLAN 50 SECTOR 01

Damian Titus

PROFESSIONAL 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.

Date/Time: Aug 15, 2013 - 12:11 PM

NYC Development Hub

HUDSON YARDS - TOWER C

Address
501 WEST 30TH STREET
NEW YORK, NY

Client
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320 Park Avenue, 17th Floor
New York, NY 10022
Tel: 212.986.7514 Fax: 212.986.7510

Construction Manager
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100 Park Avenue, 5th Floor
New York, NY 10017
Tel: 212.708.3600

Architect
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Architects & Planning Consultants
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New York, NY 10036
Tel: 212.977.6500 Fax: 212.956.2526

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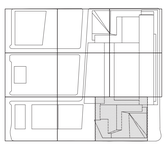
80 Pine Street
New York, NY 10013
Tel: 212.530.9300 Fax: 212.269.5894

No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan



Date
12/14/2012
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-241
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.41

Drawing Number
EN-241
B.E.CAM Drawing Number
EN-241.00

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NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-49B(B)#X
   EL#X = TC-EM-LPH-49A(B)#X
3. UTILIZE SAME CIRCUIT NUMBER AS EM/NL FIXTURES FOR ALL EXIT SIGNS ON THIS FLOOR. PROVIDE CONDUIT CONDUCTORS AS REQUIRED.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. SWITCHES TO BE PROVIDED WITH WEATHER PROOF COVER.

LIGHTING PLAN 50M SECTOR 01

Damian Titus

PROFESSIONAL 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.

APPROVED

Date/Time: Aug 15, 2013 - 12:11 PM

NYC Development Hub

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No.	Issue	Date
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Key Plan

Date 02/08/2013
Project No. 14752.A.000
Drawn By R.S. / D.H.
Sheet Number EN-242

Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.42

Drawing Number EN-242
BCAD Drawing Number EN-242.00

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NOTES:

1. NOT USED.
2. CIRCUIT LEGEND:
   LB#X = TC-LPH-49B(B)#X
3. FAA OBSTRUCTION LIGHTING. COORDINATE EXACT LOCATION WITH ARCHITECT.
4. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.
5. SWITCHES TO BE PROVIDED WITH WEATHER PROOF COVER.

LIGHTING PLAN 51 SECTOR 01

Damian Titus

PROFESSIONAL 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.

APPROVED
NYC Department of Buildings
Date/Time: Aug 15, 2013 - 12:11 PM
Number Date: 1/1/2012 - 12/31/2013

NYC Development Hub

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No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
12/14/2012
Project No.
14752.A.000
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Sheet Number
EN-243
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.43

Drawing Number
EN-243
B-SCAN Drawing Number
EN-243.00

SHEET 47 OF 48

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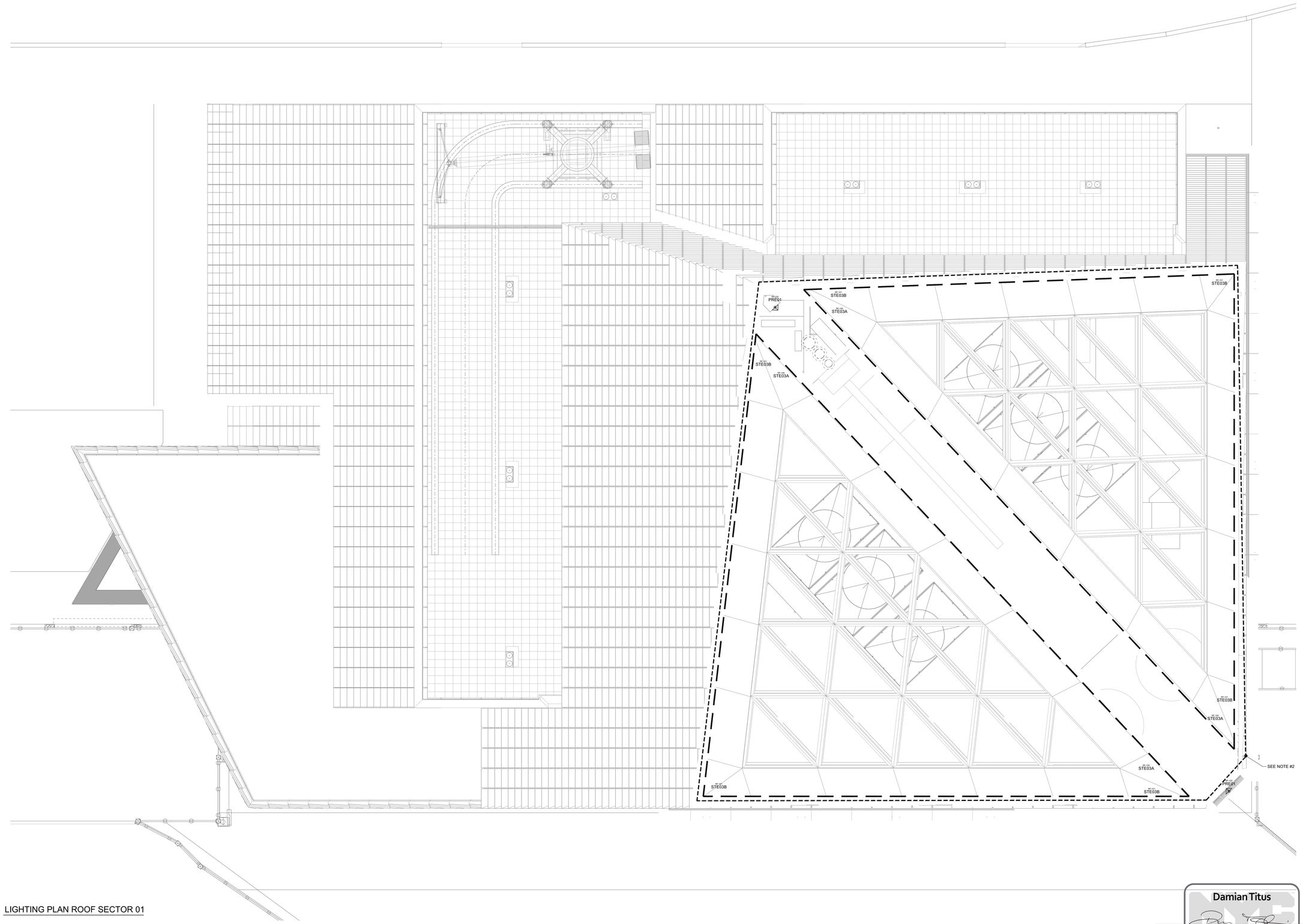
Filed at the Office of the City Register of the City of New York for Property at 501 WEST 30TH STREET
Barcode: E100307059 Job Number: 121242250

NOTES:

1. PROVIDE APPROPRIATE LINK-SEAL PRODUCTS FOR ALL SLEEVE PENETRATIONS IN FOUNDATION WALLS, ROOFS, AND ROOF SETBACKS.
2. REFER TO LIGHTING CONTROL SCHEDULE FOR CIRCUITING.



LIGHTING PLAN ROOF SECTOR 01

Damian Titus

PROFESSIONAL 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.

APPROVED

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No.	Issue	Date
1	ISSUED FOR FILING	05/31/2013

Key Plan

Date
02/08/2013
Project No.
14752.A.000
Drawn By
R.S. / D.H.
Sheet Number
EN-244
Drawing Title
NYCECC COMPLIANCE
LIGHTING CONFORMANCE
SHEET NO.44

Drawing Number
EN-244
R-CAD Drawing Number
EN-244.00

SHEET 48 O48

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