

4/22/2016 3:28:23 PM



MANHATTAN WEST:  
NORTH TOWER

401 Ninth Avenue, New York, NY 10001

Client

**Brookfield**

Brookfield Place  
250 Vesey Street, 15th Floor, New York, NY 10021

Architecture/Structural Engineering

**SOM**

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

Civil Engineering

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

MEP Engineering

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

Vertical Transportation

Edgett Williams Consulting Group, Inc.  
102 East Blithedale Ave, Suite 1, Mill Valley, California 94041

Sustainable Design

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

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers  
14 Penn Plaza, 225 W, 34th Street #610,  
New York, NY 10122

Landscape Consultant

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

Security Consultant

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

Blast Consultant

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

Acoustical Consultant

Cerami & Associates  
404 Fifth Avenue #8, New York, NY 10016

Vibration Consultant

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

Code Consultant

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

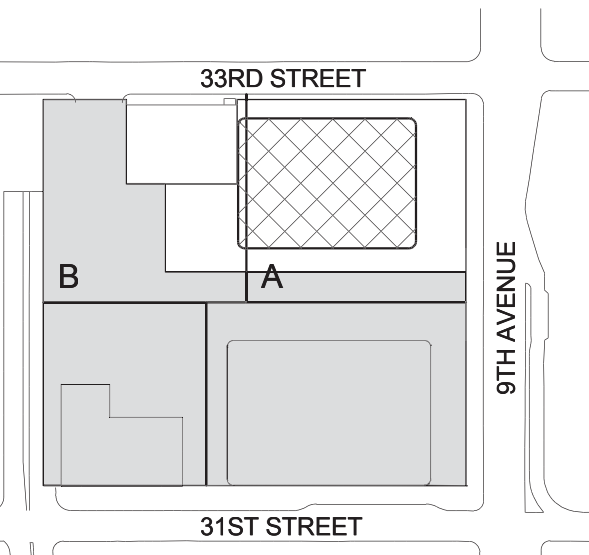
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1B6

Key Plan:



Seal & Signature:



2	22 APR 2016	ISSUED FOR PAA
1	20 JUN 2014	ISSUED FOR BUILDING PERMIT
No.	Date	Description
Sheet Name:		

MECHANICAL  
ROOF PLAN

Project No.:	14630 A.000	B-SCAN Sheet No.:	M-172.01
Date:	22 APR 2016	Sheet No.:	M-172
Scale:	1/8" = 1'-0"	Page No.:	51 OF 94
File No.:	M-172		





4/22/2016 3:17:25 PM

DEPT OF BLDGS 1218743 Job Number ES10535300 Bldg Code



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

Brookfield  
250 Vesey Street, 15th Floor, New York, NY 10021

Architecture/Structural Engineering

SOM

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

Civil Engineering

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

MEP Engineering

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

Vertical Transportation

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

Sustainable Design

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

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers  
14 Penn Plaza, 225 W, 34th Street #610,  
New York, NY 10122

Landscape Consultant

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

Security Consultant

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

Blast Consultant

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

Acoustical Consultant

Cerami & Associates  
404 Fifth Avenue #8, New York, NY 10016

Vibration Consultant

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

Code Consultant

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

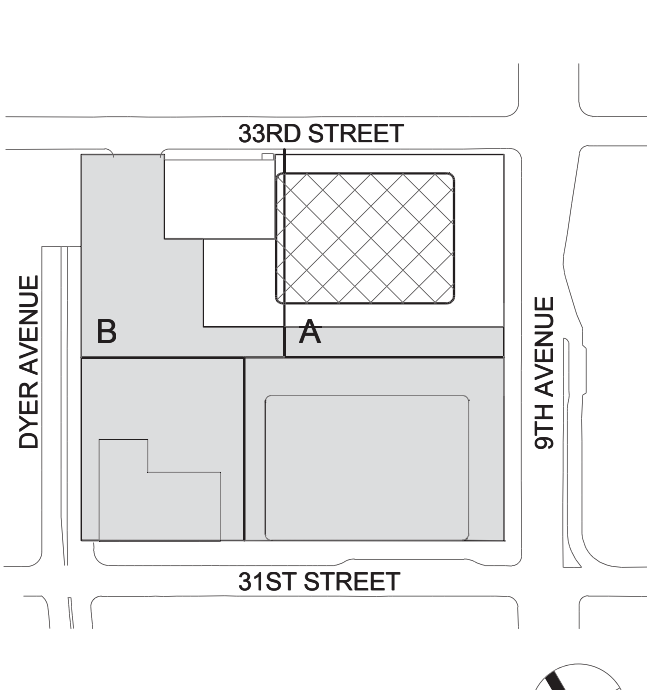
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

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

Key Plan:



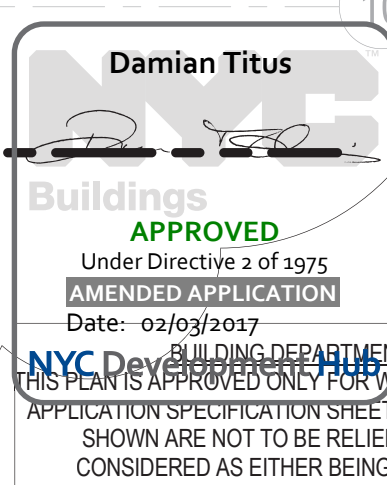
Seal & Signature



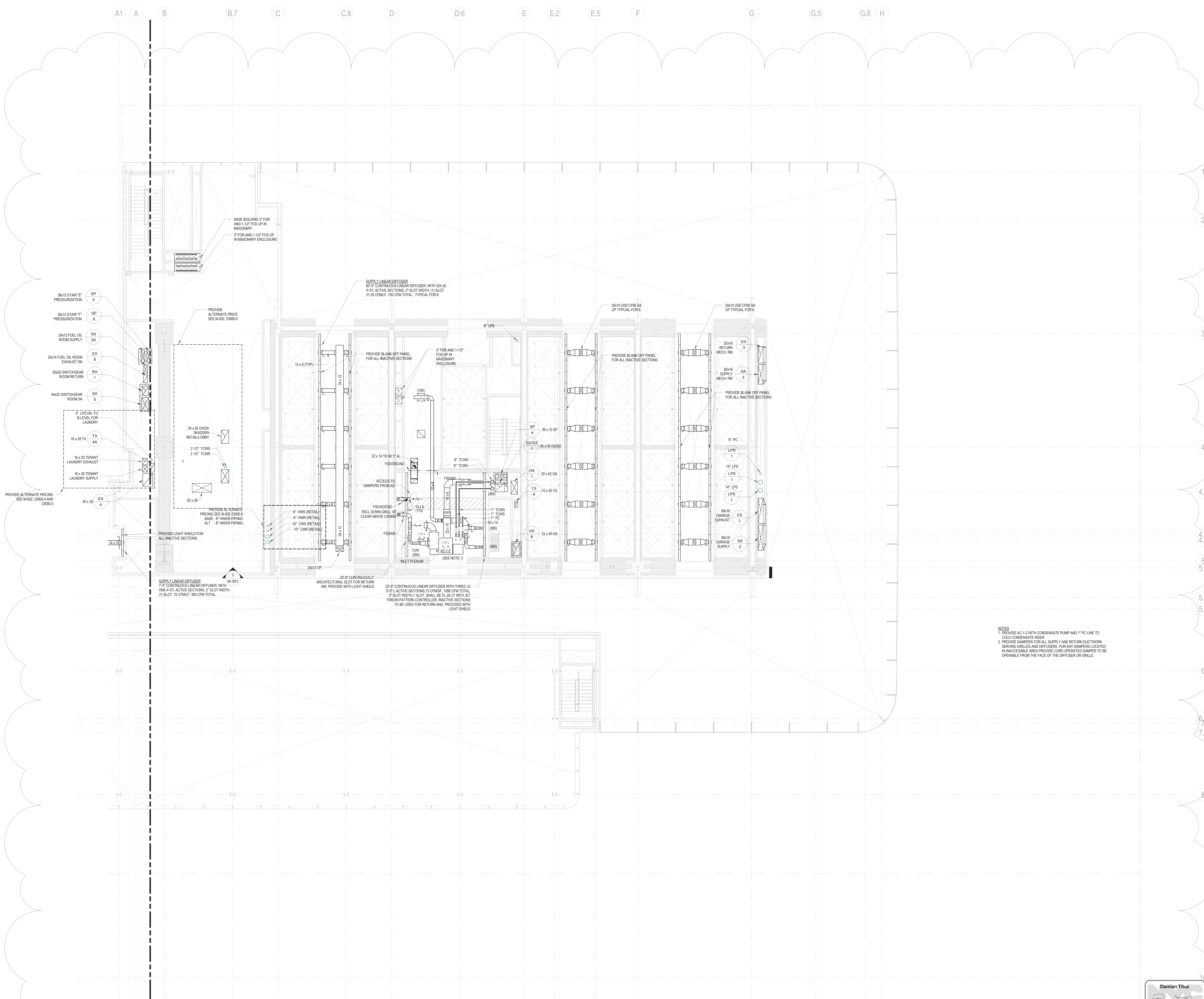
1 22 APR 2016 ISSUED FOR P&A  
No. Date Description  
Sheet Name:

MECHANICAL  
LEVEL 1M FLOOR  
PLAN - PART A

Project No.: 14830 A.000 B-SCAN Sheet No.:  
Date: 22 APR 2016 M-180.00  
Scale: 1/8" = 1'-0"  
File No.: M-101-M-A Page No.: 52 OF 94



NOTES  
1. PROVIDE AC-1.2 WITH CONDENSATE PUMP AND 1" PC LINE TO COLD CONDENSATE RISER  
2. PROVIDE DAMPERS FOR ALL SUPPLY AND RETURN DUCTWORK SERVING GRILLES AND DIFFUSERS. FOR ANY DAMPERS LOCATED IN INACCESSIBLE AREA PROVIDE COORD OPERATED DAMPER TO BE OPERABLE FROM THE FACE OF THE DIFFUSER OR GRILLE.





4/22/2016 3:17:34 PM

DEPT OF BLDGS 12187143 Job Number ES31124502 Job Code



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

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

Architecture/Structural Engineering

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

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

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

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

Geo-Technical Engineering  
Mueser Rutledge Consulting Engineers  
14 Penn Plaza, 225 W, 34th Street #610,  
New York, NY 10122

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

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

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

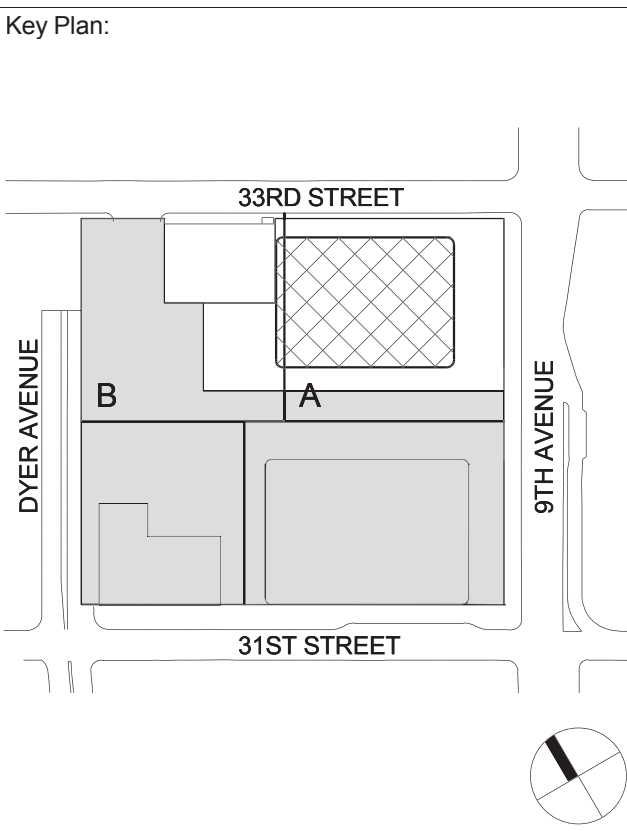
Acoustical Consultant  
Cerami & Associates  
404 Fifth Avenue #8, New York, NY 10016

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

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

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

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

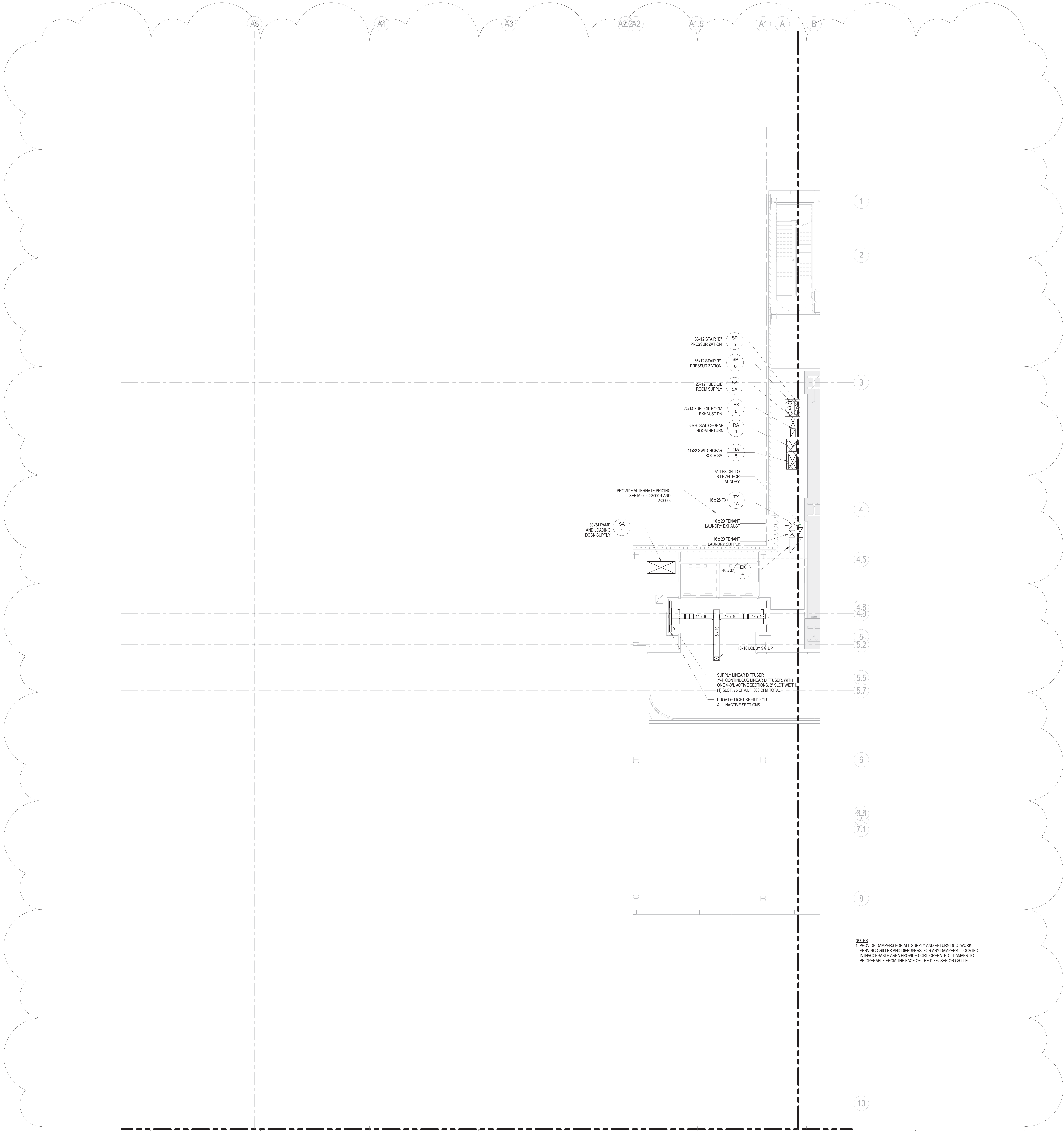


No.	Date	Description
1	22 APR 2016	ISSUED FOR P&A

MECHANICAL  
LEVEL 1M FLOOR  
PLAN - PART B

Project No.: 14830 A-000  
Date: 22 APR 2016  
Scale: 1/8" = 1'-0"  
File No.: M-101-M-B  
B-SCAN Sheet No.: M-181.00  
Sheet No.: M-101-M-B  
Page No.: 54 OF 94

Damian Titus  
Buildings  
APPROVED FOR P&A  
THIS PLAN AND PROPOSED WORK INDICATED ON THE  
APPLY TO THE CITY OF NEW YORK AND ALL OTHER MATTERS  
SHALL BE REVIEWED BY THE CITY OF NEW YORK  
CONSIDERED AS EITHER BEING APPROVED OR IN  
CONFORMANCE WITH THE CITY CODES.



NOTES  
1. PROVIDE DAMPERS FOR ALL SUPPLY AND RETURN DUCTWORK.  
2. PROVIDE GRILLES AND DIFFUSERS FOR ANY DAMPERS LOCATED  
IN UNACCESSIBLE AREA PROVIDE CORD OPERATED DAMPER TO  
BE OPERABLE FROM THE FACE OF THE DIFFUSER OR GRILLE



4/22/2016 3:30:51 PM

DEPT OF BLDGS 1218743 Job Number ES46021208 Job Code



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

Client  
**Brookfield**  
Brookfield Place  
250 Vesey Street, 15th Floor, New York, NY 10021

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

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

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

Vertical Transportation  
Edgett Williams Consulting Group, Inc.  
102 East Blithedale Ave, Suite 1, Mill Valley, California 94041

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

Geo-Technical Engineering  
Mueser Rutledge Consulting Engineers  
14 Penn Plaza, 225 W, 34th Street #610,  
New York, NY 10122

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

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

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

Acoustical Consultant  
Cerami & Associates  
404 Fifth Avenue #8, New York, NY 10016

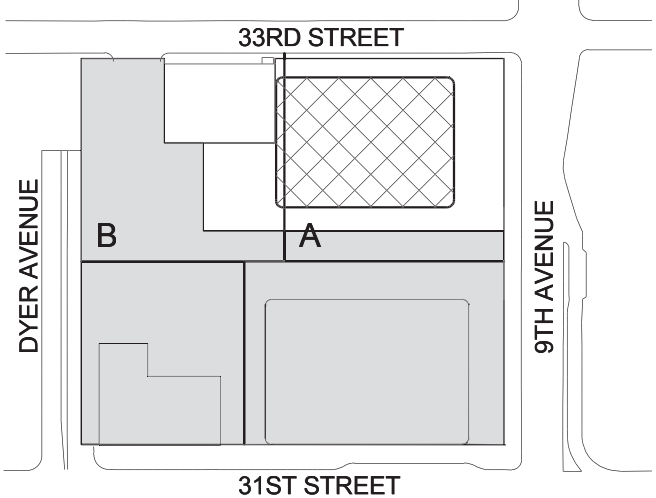
Vibration Consultant  
Wilson, Uhrig & Associates, Inc.  
65 Broadway, Suite 401, New York, NY 10006

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

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

Wind Tunnel Consultant  
Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1B6

Key Plan:



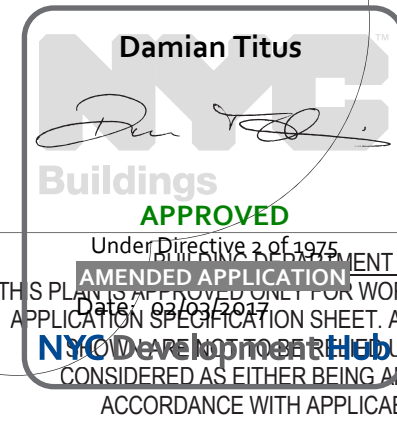
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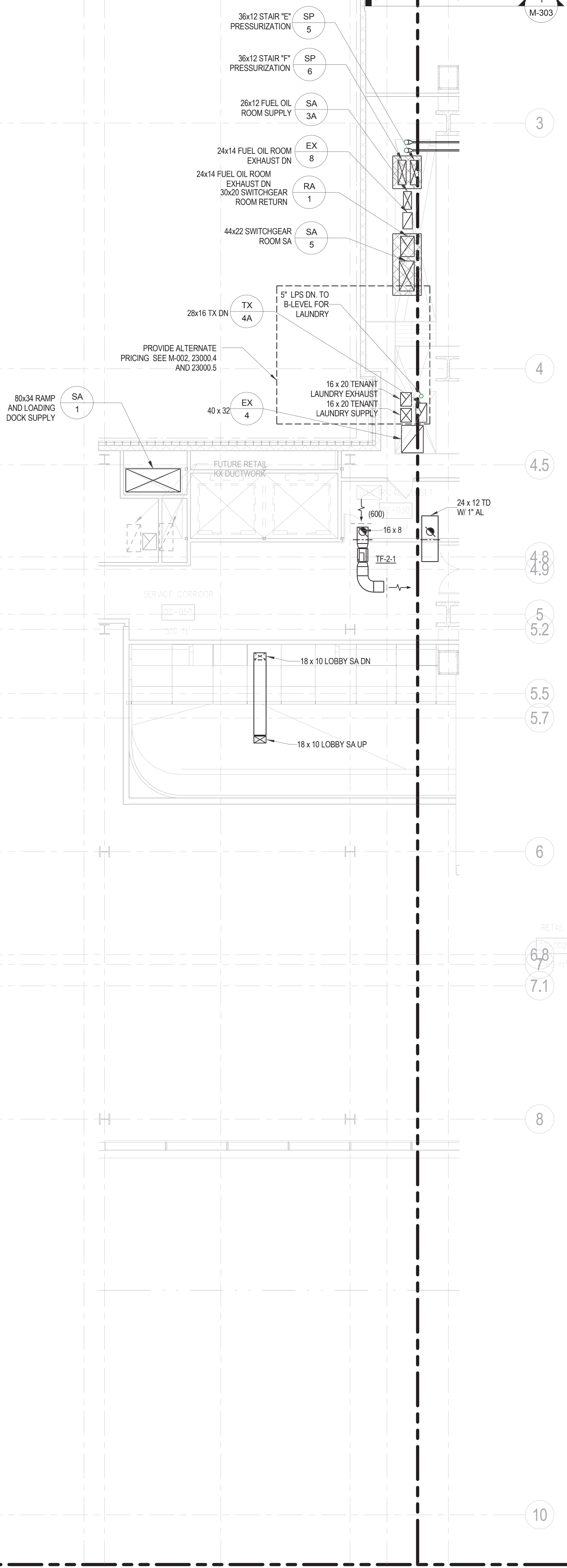
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Date: 22 APR 2016  
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File No.: M-102-B

B-SCAN Sheet No.:  
**M-182.00**  
Sheet No.:  
**M-102-B**  
Page No.: 54 OF 94

Project No.: 14801-A-000  
Date: 22 APR 2016  
Scale: 1/8" = 1'-0"  
File No.: M-102-B



NOTES  
1. PROVIDE DAMPERS FOR ALL SUPPLY AND RETURN DUCTWORK  
SERVING GRILLES AND DIFFUSERS FOR ANY DAMPERS  
LOCATED IN INACCESSIBLE AREA PROVIDE CORD OPERATED  
DAMPER TO BE OPERABLE FROM THE FACE OF THE DIFFUSER  
OR GRILLE.





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# Brookfield

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Architecture/Structural Engineering

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

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

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

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

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

Geo-Technical Engineering  
Mueser Rutledge Consulting Engineers  
14 Penn Plaza, 225 W. 34th Street #610,  
New York, NY 10001-2298  
Tel: 212 692 7600  
Fax: 212 692 7601  
www.mueser-rutledge.com

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

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

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

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

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

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

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

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

Key Plan:

33RD STREET

Figure 1 shows a schematic diagram of a building layout. The building is rectangular with a central corridor. On the left side, there is a large room labeled 'B' and a smaller room labeled 'A' at the top. On the right side, there is a large room labeled 'A' and a smaller room labeled 'B' at the top. The rooms are separated by a central corridor. The building is situated between 'DYER AVENUE' on the left and '9TH AVENUE' on the right.

A map showing the intersection of 31st Street and 1st Avenue. The property is located at the corner of 31st Street and 1st Avenue. The map includes a street grid and a north arrow.

Seal & Signature: 

Donna M. Moore


1	22 APR 2016	ISSUED FOR PAA
No.	Date	Description
Sheet Name: _____		

MECHANICAL  
LEVEL 3 FLOOR  
PLAN STAIR

### PLAN - STAIR TRANSFER - PART B

Project No.: 14910.6.000	B-SCAN Sheet No.:
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Date: 22 APR 2018  
Scale: 1/8" = 1'-0"

File No.: M-103-B	Page No.: 55 OF 94
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**GENERAL NOTES:**  
1. PROVIDE A VOLUME DAMPER ON ALL SUPPLY AND RETURN DUCTWORK WHICH SERVES DIFFUSERS/GRILLES. ALL DIFFUSERS IN INACCESSIBLE CEILING SHALL HAVE CORD OPERATED DAMPERS, OPERABLE THROUGH THE FACE OF THE DIFFUSER.

**Damian Titus**

**APPROVED** APARTMENT NOTE:  
THIS PLAN IS PROPOSED ONLY FOR WORK INDICATED ON THE  
APPLICANT'S APPLICATION. ALL OTHER MATTER  
SHOWN ON THE PLAN IS TO BE RELIED UPON OR TO BE  
CONSIDERED AS EITHER BEING APPROVED OR IN  
ACCORDANCE WITH APPLICABLE CODES.

Project No.: 14830 A.000	B-SCAN Sheet No.: <b>M-183.00</b>
Date: 22 APR 2018	

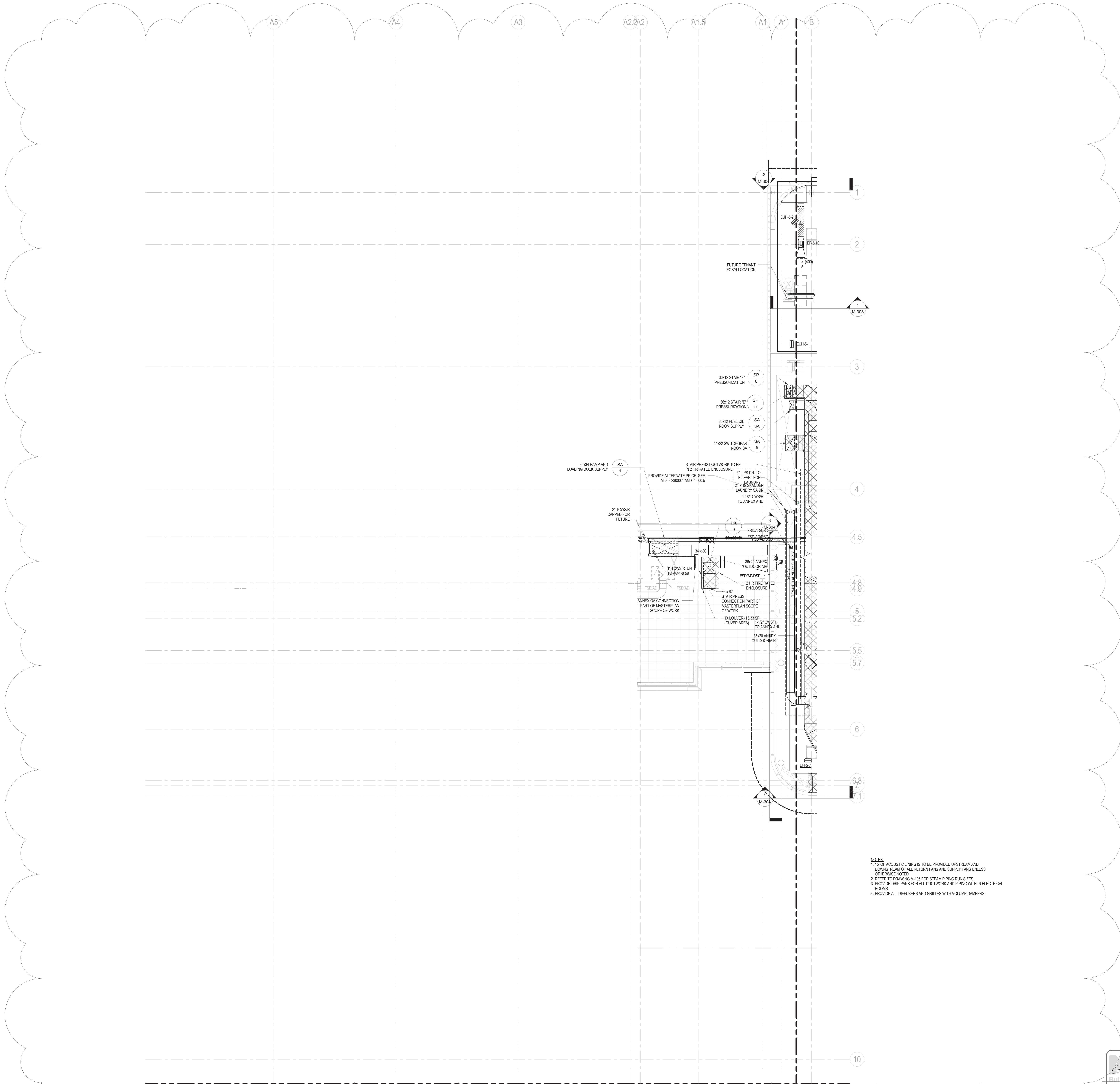
Scale: 1/8" = 1'-0"	Sheet No.: M-103-B
File No.:	Page No.: 55 OF 94

M-103-B	
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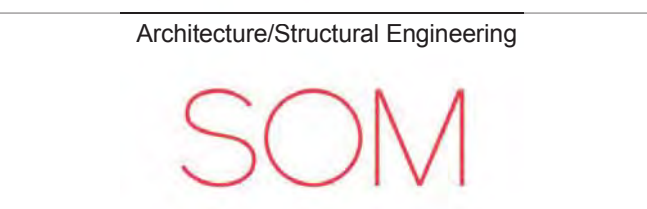




NOTES:  
1. 1\"/>



Architecture/Structural Engineering



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

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

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14 Penn Plaza, 225 W. 34th Street #610,  
New York, NY 10122

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

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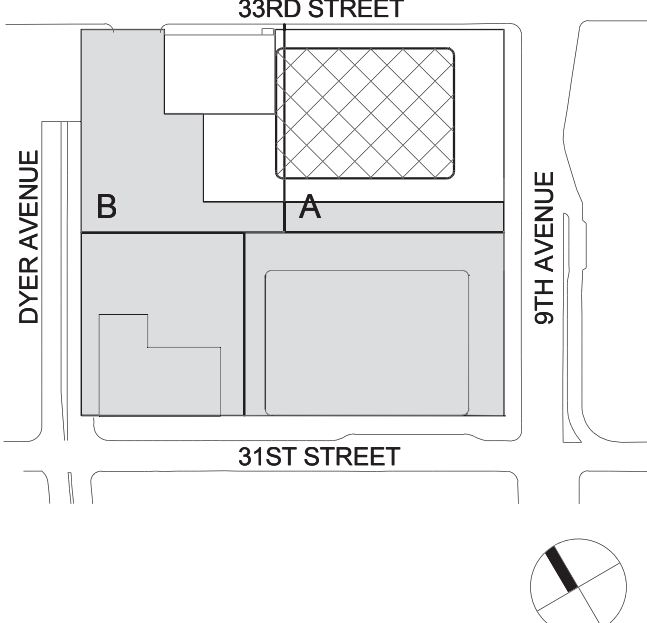
Vibration Consultant  
Wilson, Uhrig & Associates, Inc.  
65 Broadway, Suite 401, New York, NY 10006

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

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

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

Key Plan:



Seal & Signature



1. 22 APR 2016 ISSUED FOR PIA

No. Date Description

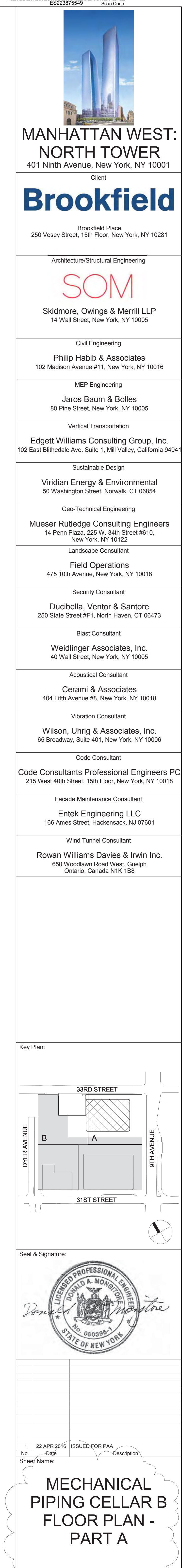
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MECHANICAL  
LEVEL 5 FLOOR  
PLAN -  
MECHANICAL  
MEZZANINE -  
PART B

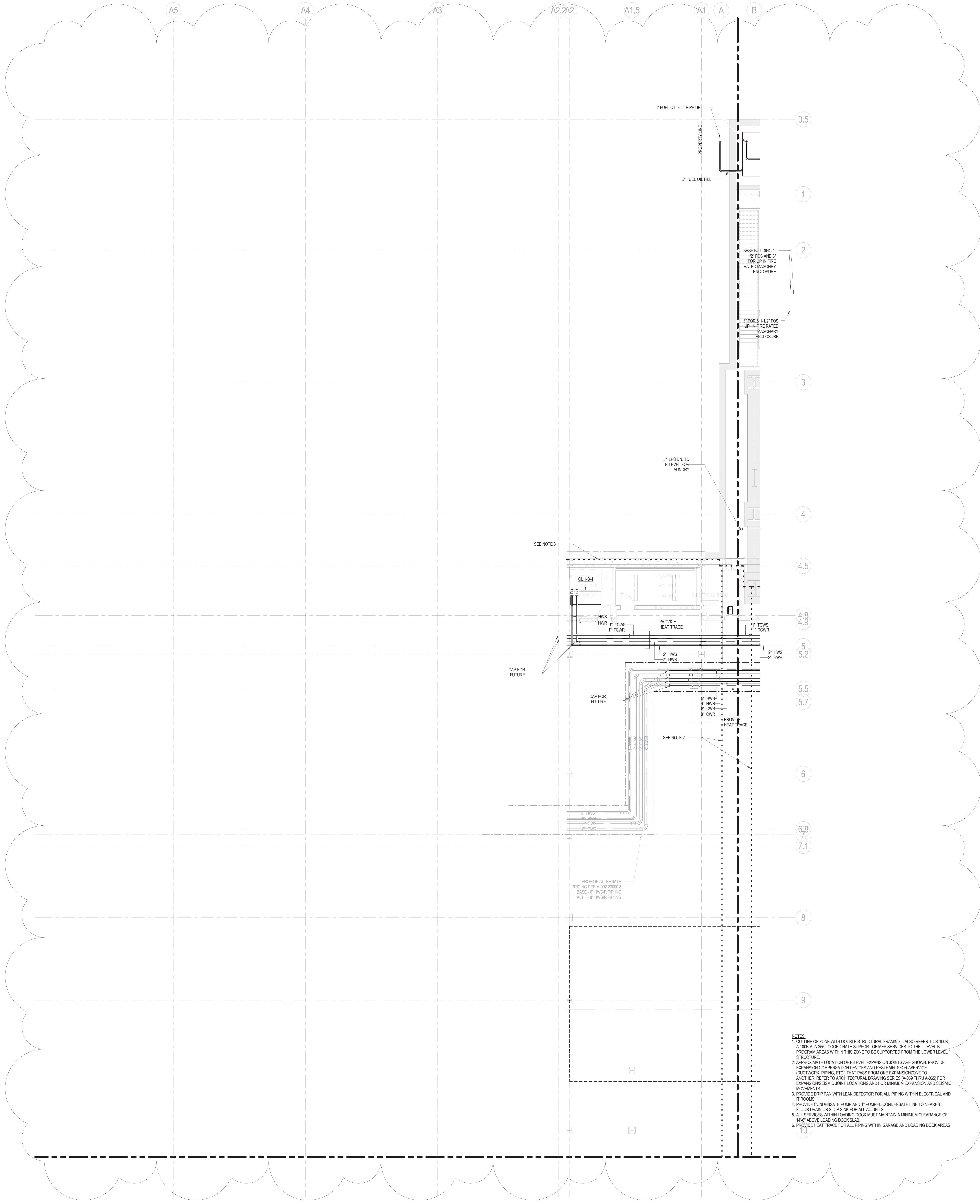
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Date: 22 APR 2016  
Scale: 1/8" = 1'-0"

File No.: M-105-B  
B-SCAN Sheet No.: M-185.00  
Sheet No.: M-105-B  
Page No.: 57 OF 94









- NOTES:
1. OUTLINE OF ZONE WITH DOUBLE STRUCTURAL FRAMING. (ALSO REFER TO S-100B, A-100A-A-100S). COORDINATE SUPPORT OF MEP SERVICES TO THE LEVEL 9 PROGRAM AREAS WITHIN THIS ZONE TO BE SUPPORTED FROM THE LOWER LEVEL STRUCTURE.
  2. APPROXIMATE LOCATION OF B-LEVEL EXPANSION JOINTS ARE SHOWN. PROVIDE EXPANSION COMPENSATION DEVICES AND RESTRAINTS FOR ABERVICE (ELECTRICAL, PIPING, ETC.) THAT PASS FROM ONE EXPANSION ZONE TO ANOTHER. REFER TO ARCHITECTURAL DRAWING SERIES (A-100 THRU A-105) FOR EXPANSION/SEISMIC JOINT LOCATIONS AND FOR MINIMUM EXPANSION AND SEISMIC MOVEMENTS.
  3. PROVIDE DRAIN PAN WITH LEAK DETECTOR FOR ALL PIPING WITHIN ELECTRICAL AND IT ROOMS.
  4. PROVIDE CONDENSATE PUMP AND 1\"/>
  5. ALL SERVICES WITHIN LOADING DOCK MUST MAINTAIN A MINIMUM CLEARANCE OF 14\"/>
  6. PROVIDE HEAT TRACE FOR ALL PIPING WITHIN GARAGE AND LOADING DOCK AREAS



MANHATTAN WEST:  
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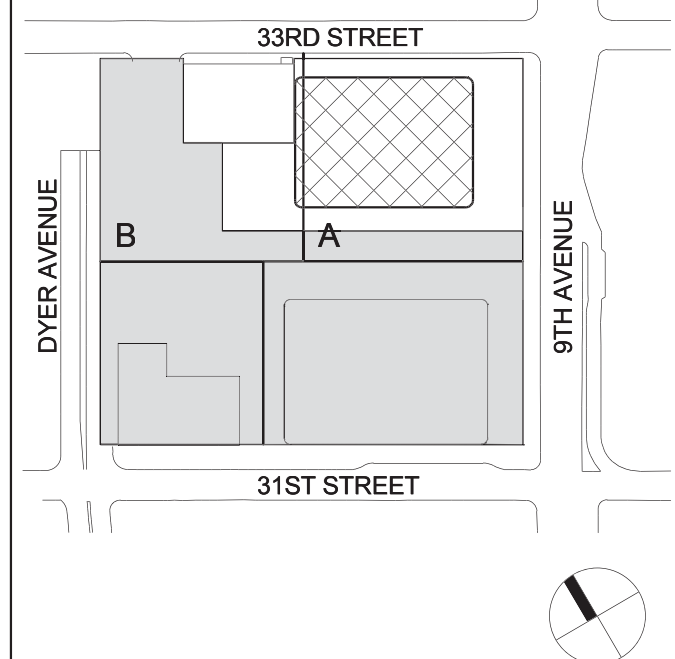
Facade Maintenance Consultant

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Ontario, Canada N1K 1B8

Key Plan:



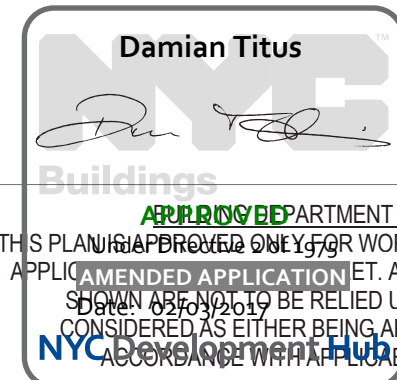
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Project No.: 14001A-000  
Date: 22 APR 2016  
Sheet Name: M-191.00

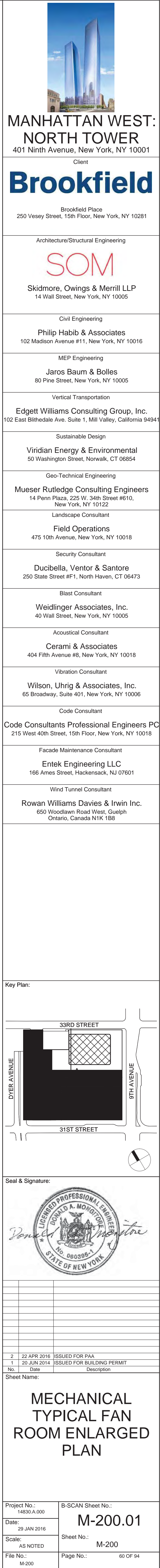
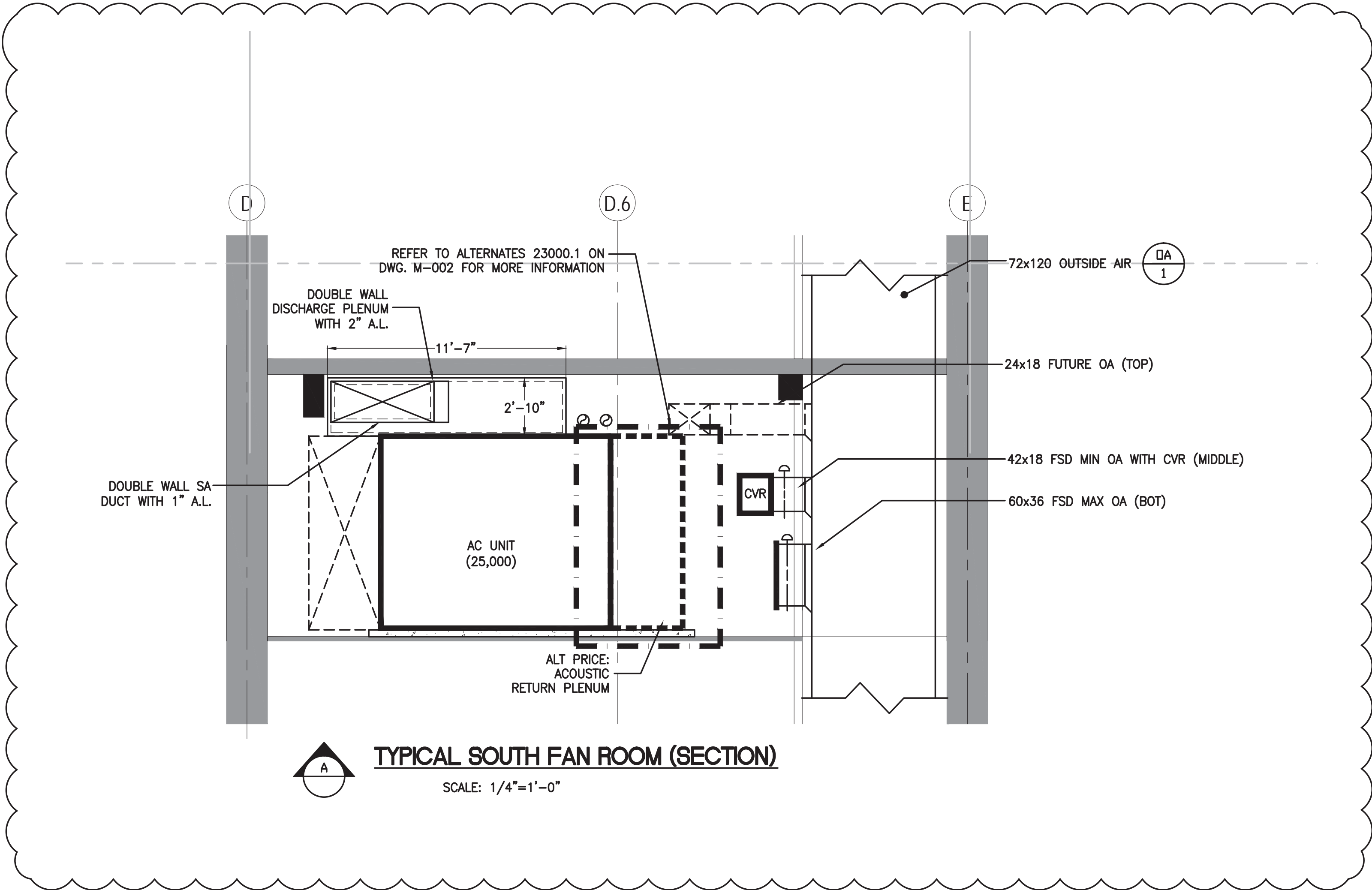
**MECHANICAL  
PIPING CELLAR B  
FLOOR PLAN -  
PART B**

Project No.: 14001A-000  
Date: 22 APR 2016  
Scale: 1/8" = 1'-0"  
File No.: M-100BP-B  
B-SCAN Sheet No.:  
M-191.00  
Sheet No.:  
M-100BP-B  
Page No.: 99 OF 94



**APPROVED** PARTMENT NOTE:  
THIS PLAN AND PROPOSED WORK INDICATED ON THE  
APPROVAL OF THE CITY OF NEW YORK. ALL OTHER MATTERS  
SHALL BE THE RESPONSIBILITY OF THE DESIGNER.  
NOTES: 1. THE CITY OF NEW YORK HAS REVIEWED AND  
APPROVED THIS PLAN FOR CONFORMANCE WITH THE  
BUILDING CODES.









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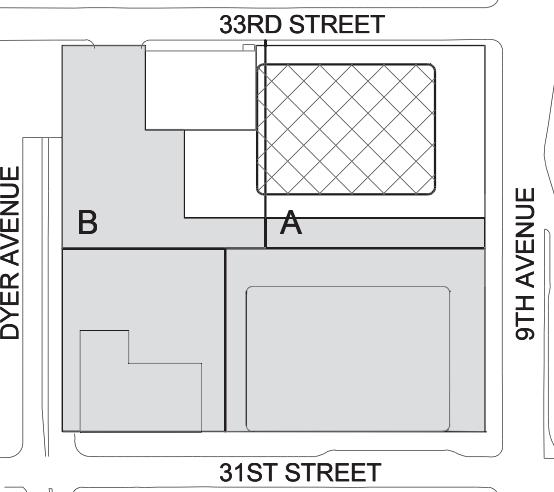
Facade Maintenance Consultant

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Wind Tunnel Consultant

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650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1B6

Key Plan:



Seal & Signature:



No. Date Description  
Sheet Name:

**MECHANICAL  
B-LEVEL RAISED  
SLAB HVAC  
SERVICES**

Project No.:

14830 A.000

Date:

22 APR 2016

Scale:

1/8" = 1'-0"

File No.:

M-201

B-SCAN Sheet No.:

M-201.00

Sheet No.:

M-201

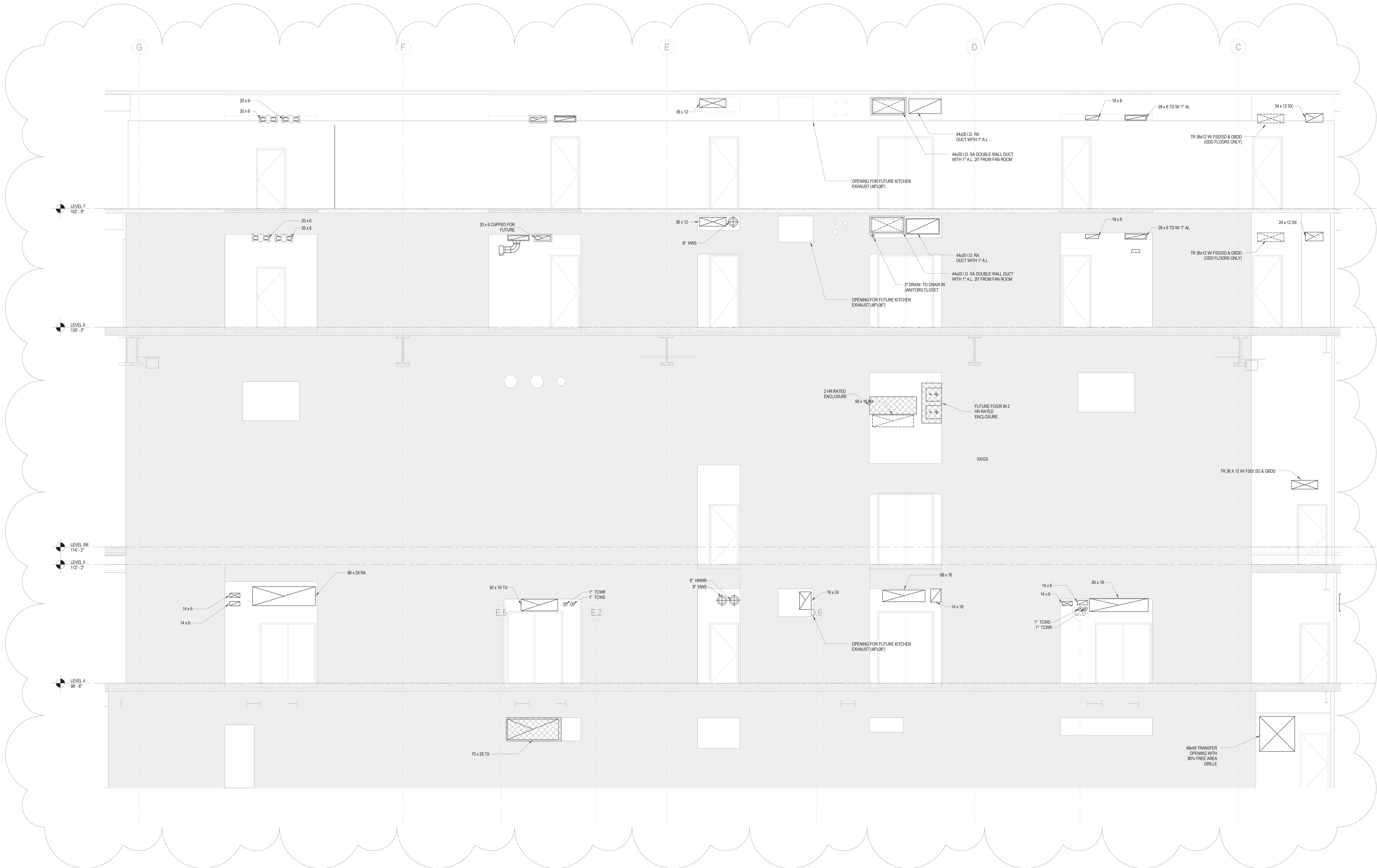
Page No.:

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4/22/2016 3:28:46 PM





**MANHATTAN WEST:  
NORTH TOWER**  
401 Ninth Avenue, New York, NY 10011  
Client



**Brookfield**  
250 Vesey Street, 15th Floor, New York, NY 10021

Architecture/Structural Engineering



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

Civil Engineering

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

MEP Engineering

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

Vertical Transportation

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

Sustainable Design

**Viridian Energy & Environmental**  
50 Washington Street, Newark, CT 06854

Geo-Technical Engineering

**Mueser Rutledge Consulting Engineers**  
14 Penn Plaza, 225 W. 34th Street #610,  
New York, NY 10122

Landscape Consultant

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

Security Consultant

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

Blast Consultant

**Weidinger Associates, Inc.**  
40 Wall Street, New York, NY 10005

Acoustical Consultant

**Cerami & Associates**  
404 Fifth Avenue #8, New York, NY 10016

Vibration Consultant

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

Code Consultant

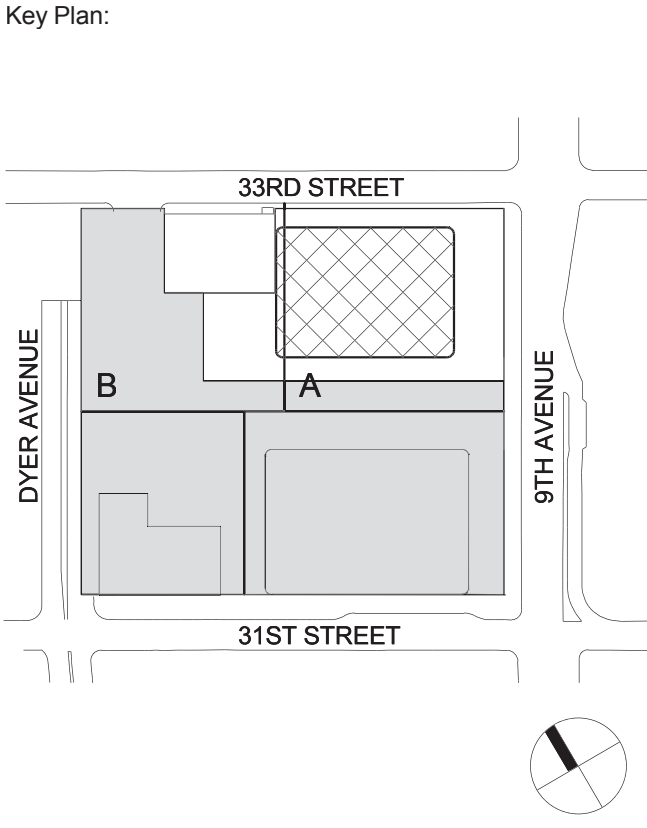
**Code Consultants Professional Engineers PC**  
215 West 40th Street, 15th Floor, New York, NY 10018

Facade Maintenance Consultant


**Entek Engineering LLC**  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

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



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No.	Date	Description
2	22 APR 2016	ISSUED FOR P&A
1	20 JUN 2014	ISSUED FOR BUILDING PERMIT
Sheet Name:		

**MECHANICAL  
NORTH SHEAR  
WALL SECTIONS**

Project No.: 14830 A-000

Date: 22 APR 2016

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

File No: M-300

B-SCAN Sheet No.: M-300.01

Sheet No.: M-300

Page No: 62 OF 94

**Damian Titus**

Buildings

**APPROVED**

UNDER PROFESSIONAL ENGINEER'S SUPERVISION AND SEAL

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Vibration Consultant

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Code Consultant

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

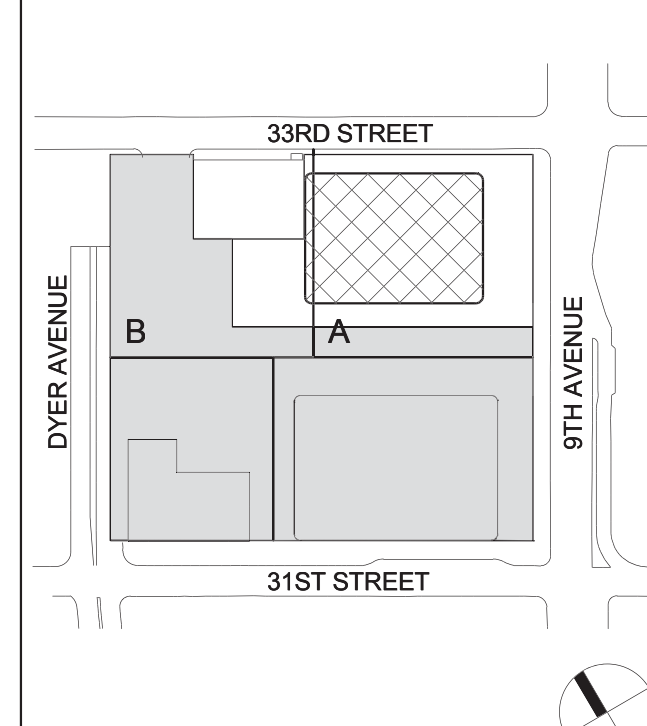
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

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

Key Plan:



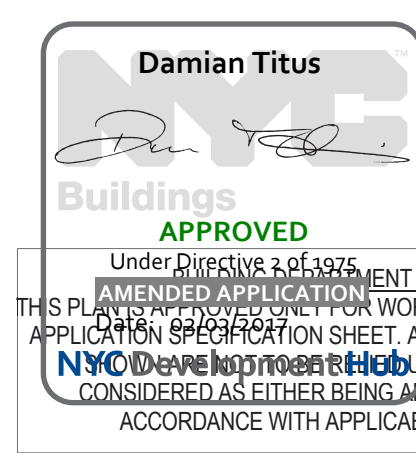
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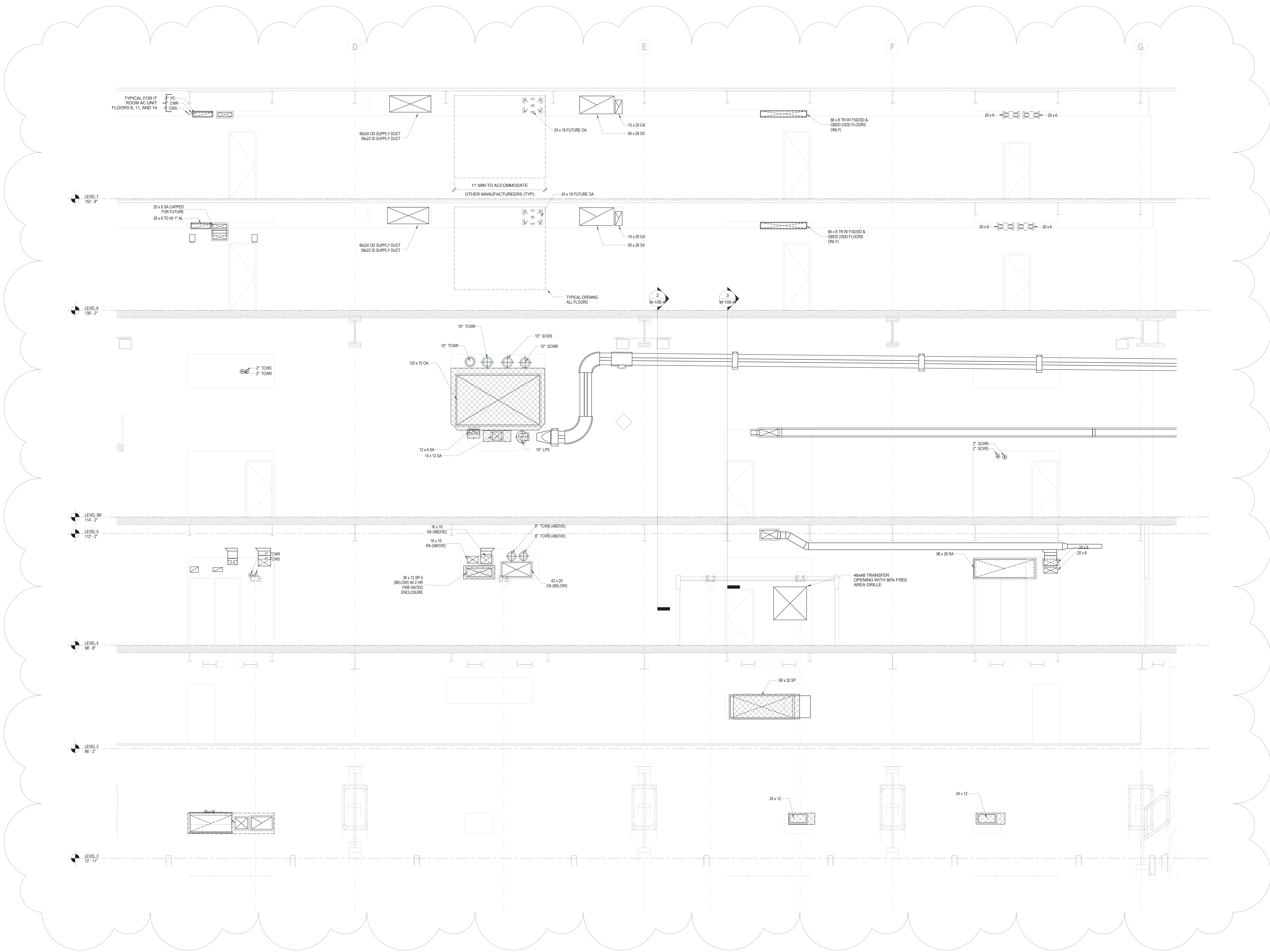
No.	Date	Description
1	22 APR 2016	ISSUED FOR P&A
2	20 JUN 2014	ISSUED FOR BUILDING PERMIT

## MECHANICAL SOUTH SHEAR WALL SECTIONS

Project No.: 14830 A-000	B-SCAN Sheet No.: M-301.01
Date: 22 APR 2016	Sheet No.: M-301
Scale: 1/4" = 1'-0"	Page No.: 63 OF 94
File No.: M-301	



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

Client

**Brookfield**

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

Architecture/Structural Engineering

**SOM**

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

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102 Madison Avenue #11, New York, NY 10016

MEP Engineering

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

Vertical Transportation

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

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

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Mueser Rutledge Consulting Engineers  
14 Penn Plaza, 220 W. 34th Street #610,  
New York, NY 10122

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Weidinger Associates, Inc.  
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Acoustical Consultant

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Vibration Consultant

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

Code Consultant

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

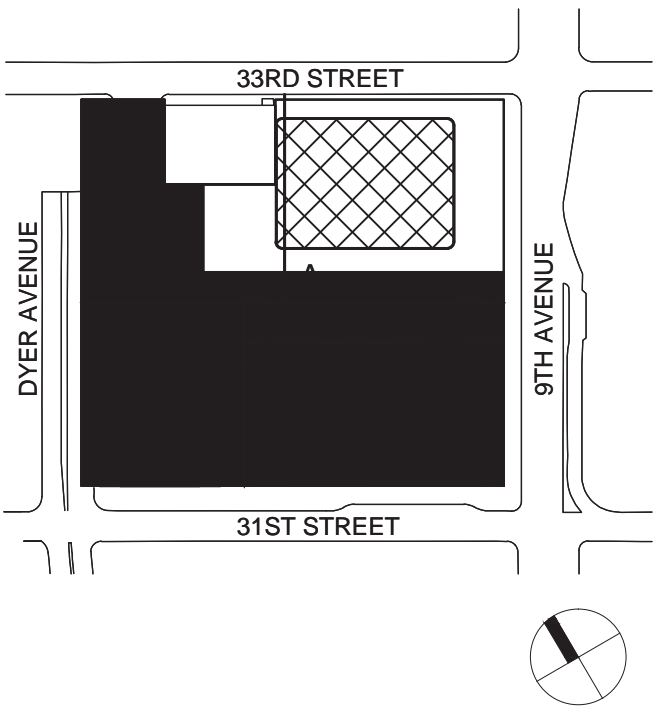
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



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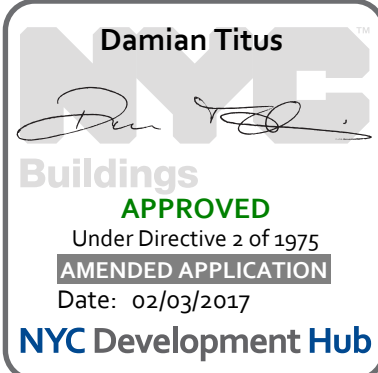


2 22 APR 2016 ISSUED FOR P&A  
1 22 APR 2014 ISSUED FOR BUILDING PERMIT

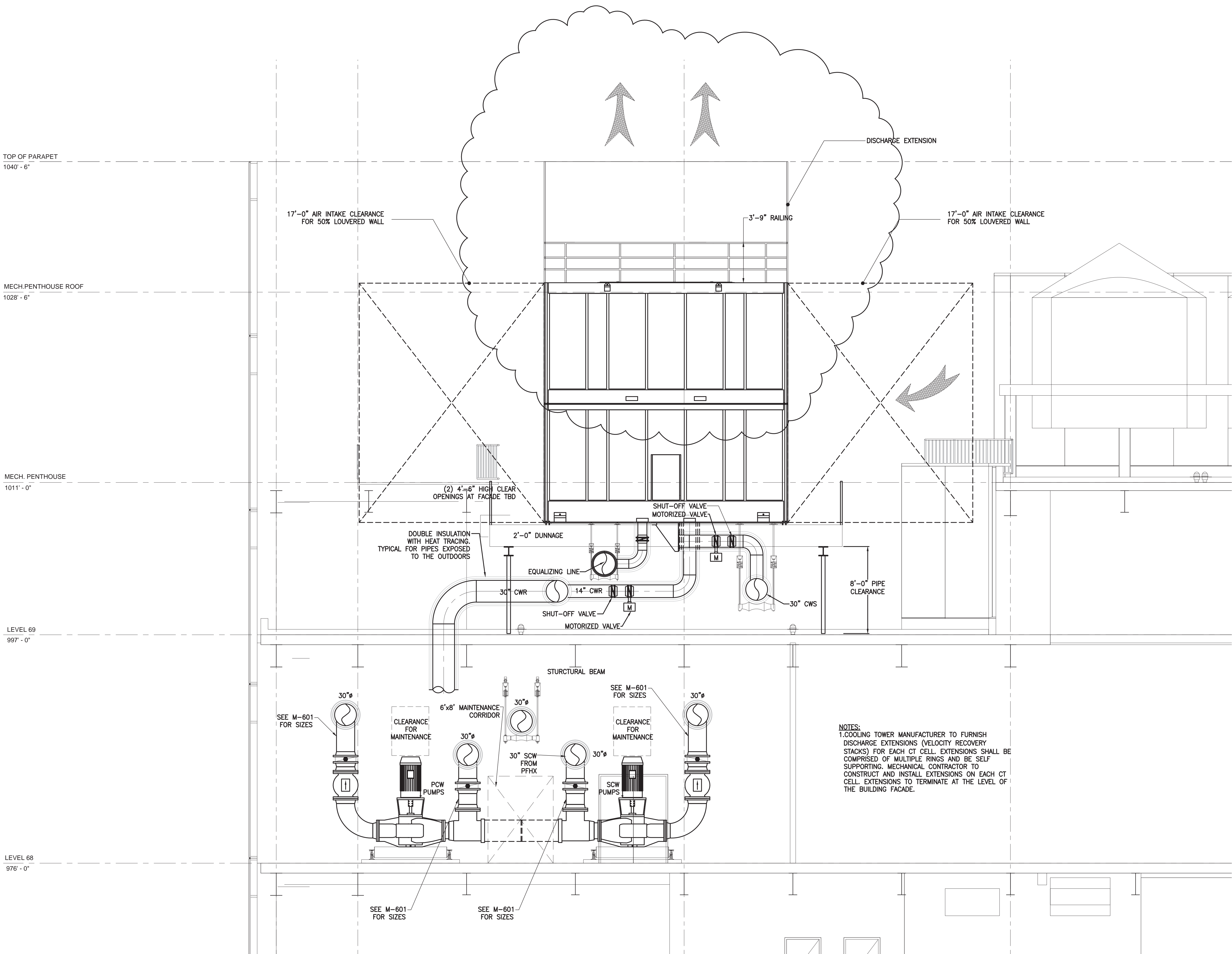
No. Date Description

Sheet Name:

**MECHANICAL  
COOLING TOWER  
ROOF SECTION**



Project No.: 1400A.000  
Date: 29 JAN 2016  
Scale: 1/4"=1'-0"  
File No.: M-302  
B-SCAN Sheet No.:  
M-302.01  
Sheet No.: M-302  
Page No.: 04 OF 04







MANHATTAN WEST:  
NORTH TOWER  
401 Ninth Avenue, New York, NY 10011  
Client

**Brookfield**

Brookfield Place  
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**SOM**  
Skidmore, Owings & Merrill LLP  
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Jaros Baum & Bolles  
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New York, NY 10122

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Field Operations  
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Security Consultant  
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250 State Street #F1, North Haven, CT 06473

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

Acoustical Consultant  
Cerami & Associates  
404 Fifth Avenue #8, New York, NY 10016

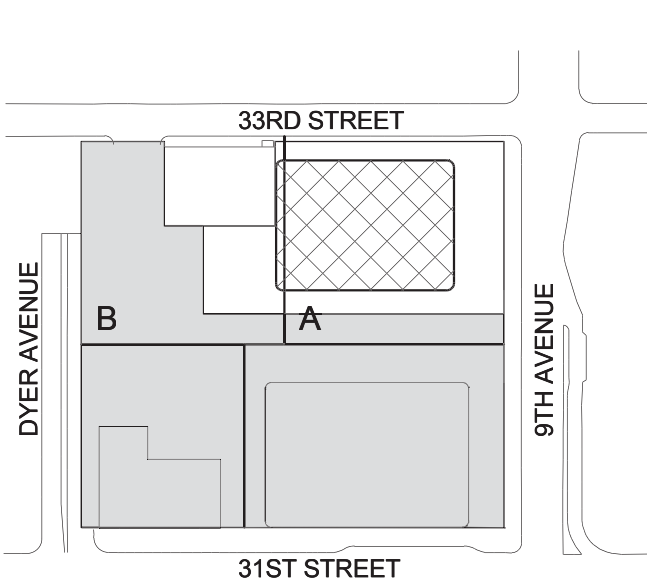
Vibration Consultant  
Wilson, Uhrig & Associates, Inc.  
65 Broadway, Suite 401, New York, NY 10006

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

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

Key Plan:



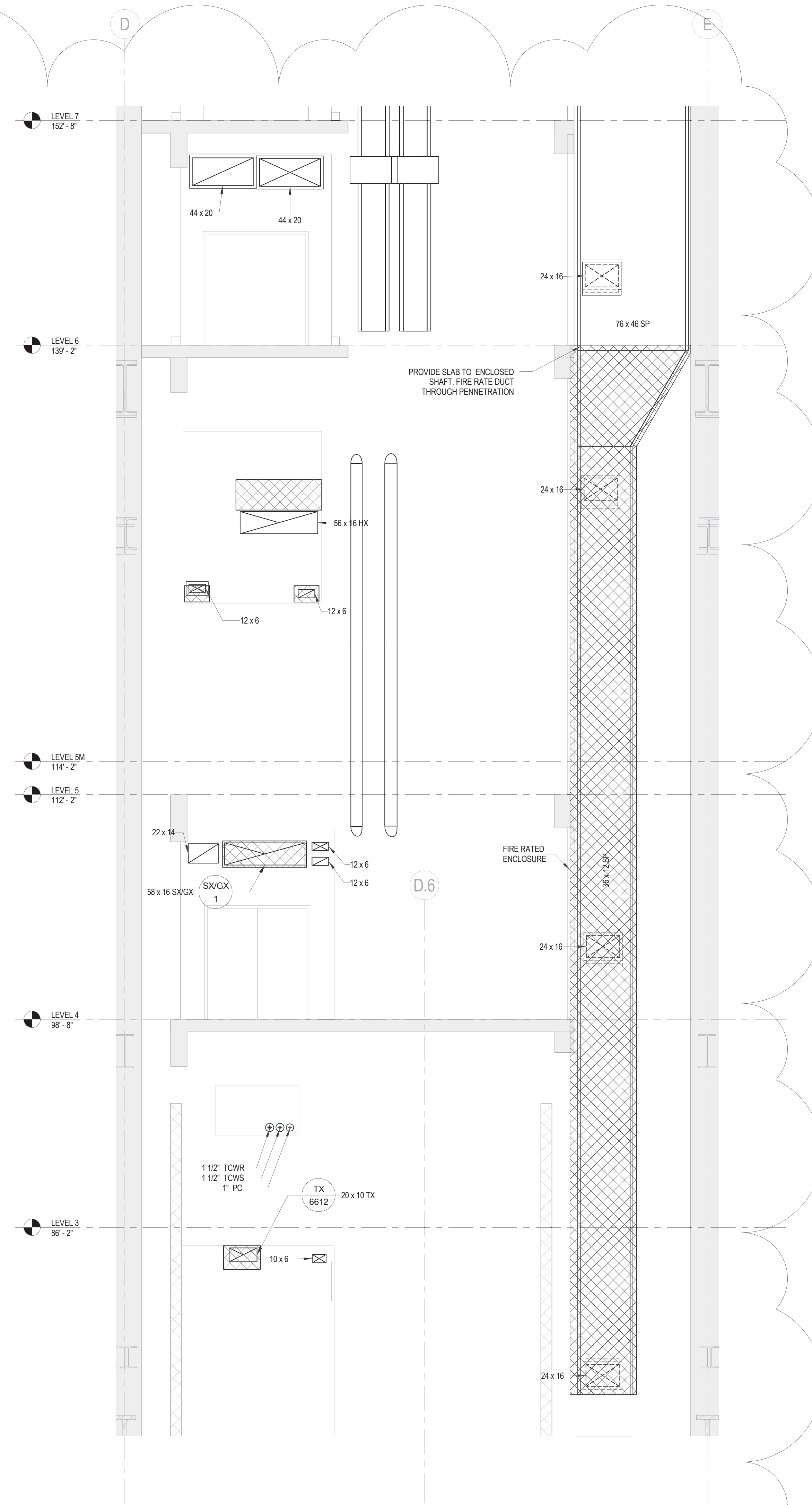
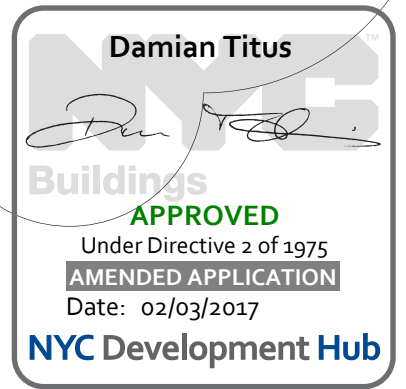
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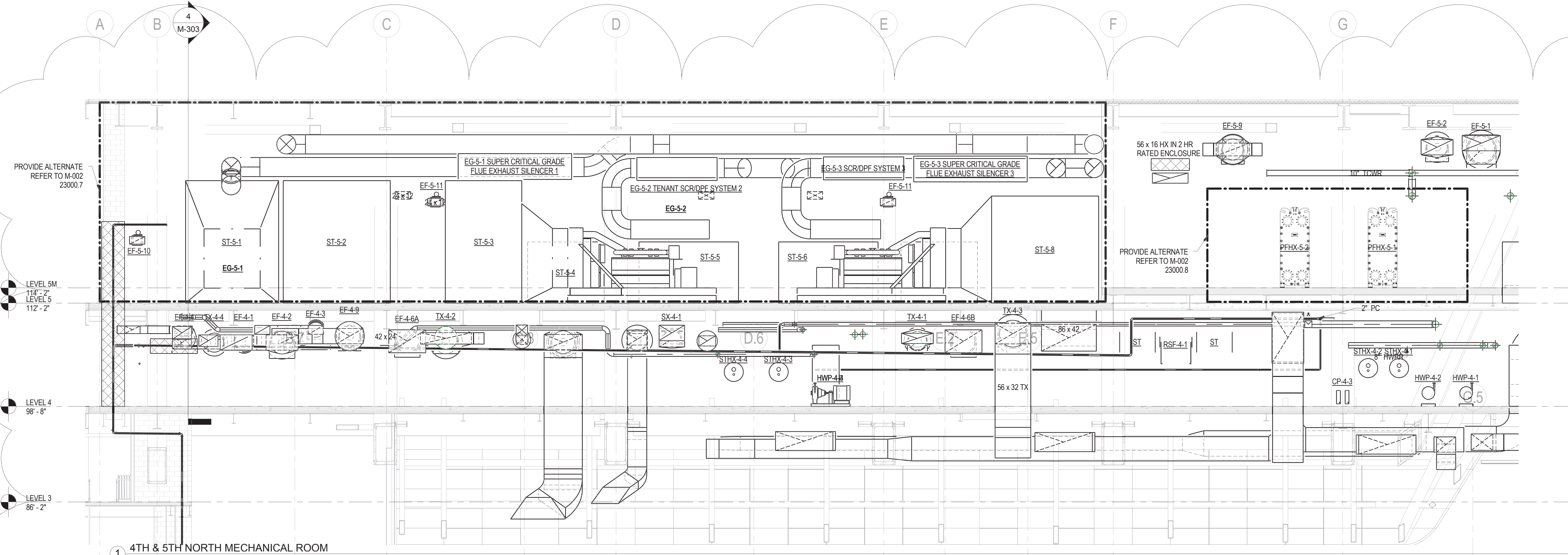
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No. Date Description  
Sheet Name:

**MECHANICAL  
LEVEL 4 & 5  
SECTIONS**

Project No.: 14830 A.000  
Date: 22 APR 2016  
Scale: As Indicated  
File No.: M-303  
B-SCAN Sheet No.:  
**M-303.00**  
Sheet No.: M-303  
Page No.: 48 OF 94



3 GL-4 SHEAR WALL SECTION  
1/4" = 1'-0"







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

Brookfield  
250 Vesey Street, 15th Floor, New York, NY 10021

Architecture/Structural Engineering  
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Philip Habb & Associates  
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MEP Engineering  
Jaros Baum & Bolles  
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Vertical Transportation  
Edgett Williams Consulting Group, Inc.  
102 East Blithedale Ave, Suite 1, Mill Valley, California 94041

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

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New York, NY 10122

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475 10th Avenue, New York, NY 10018

Security Consultant  
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250 State Street #F1, North Haven, CT 06473

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

Acoustical Consultant  
Cerami & Associates  
404 Fifth Avenue #8, New York, NY 10016

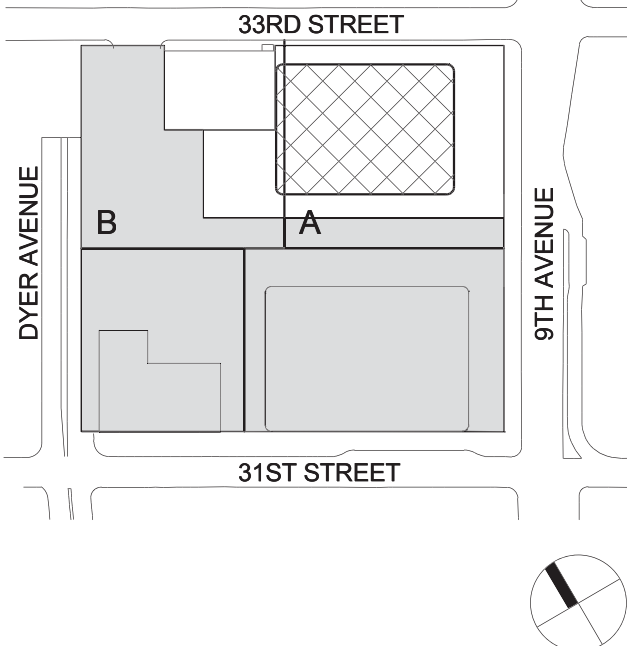
Vibration Consultant  
Wilson, Uhrig & Associates, Inc.  
65 Broadway, Suite 401, New York, NY 10006

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

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

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

Key Plan:



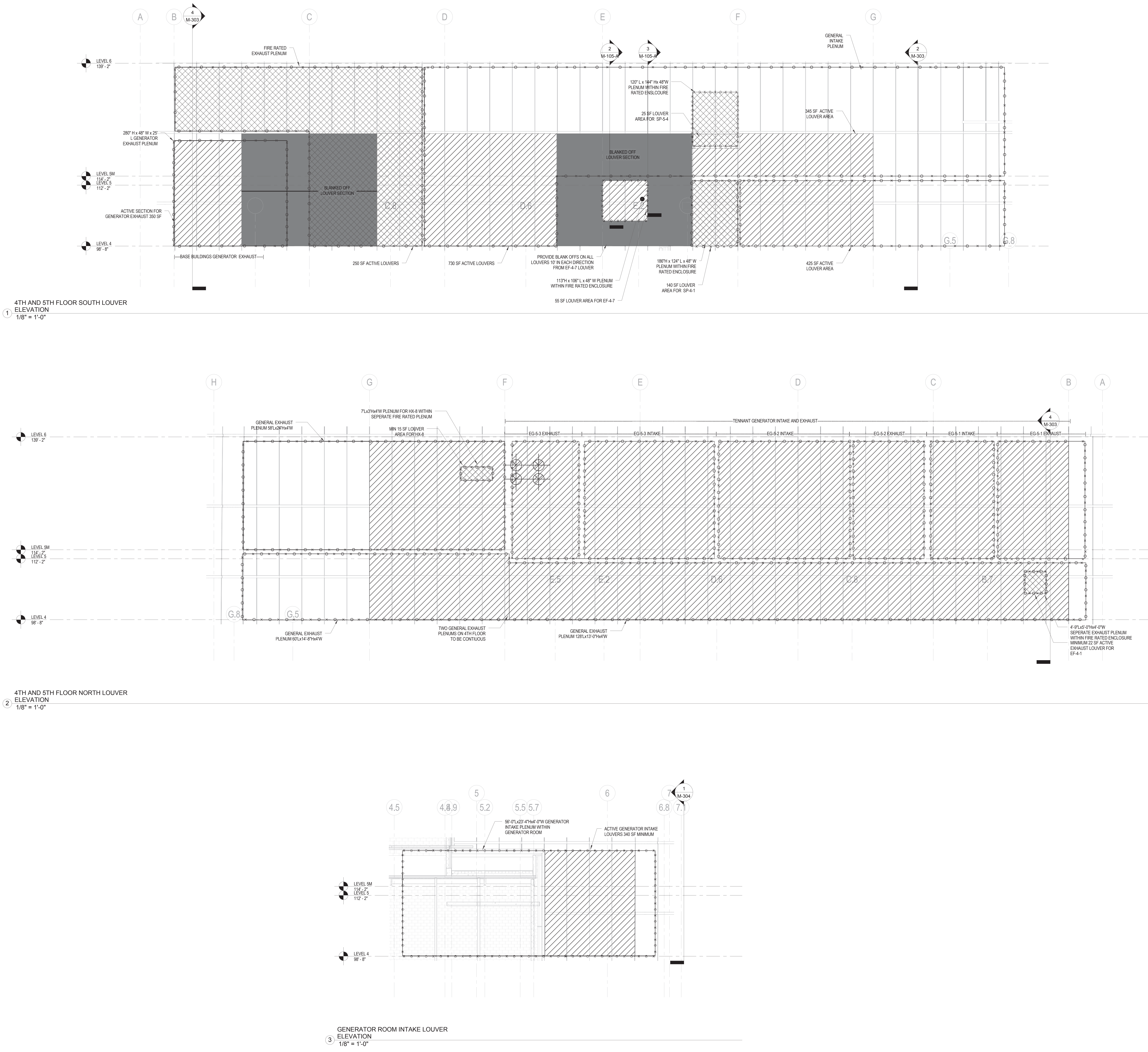
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1. 22 APR 2016 ISSUED FOR PAA  
No. Date Description  
Sheet Name:

**MECHANICAL  
NORTH, SOUTH,  
AND WEST 4TH  
AND 5TH FLOOR  
LOUVER  
ELEVATIONS**

Project No.: 14801A.000  
Date: 22 APR 2016  
Scale: 1/8" = 1'-0"  
File No.: M-304  
B-SCAN Sheet No.:  
M-304.00  
Sheet No.:  
Page No.: 66 OF 94

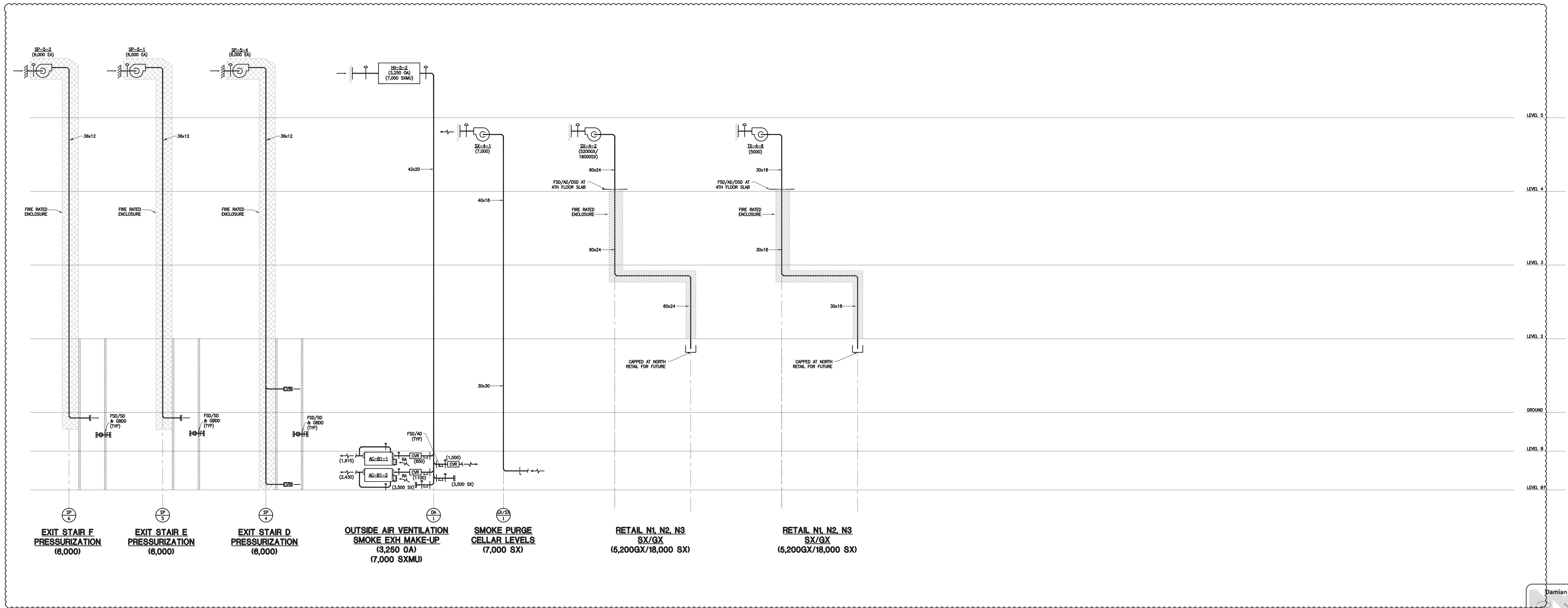
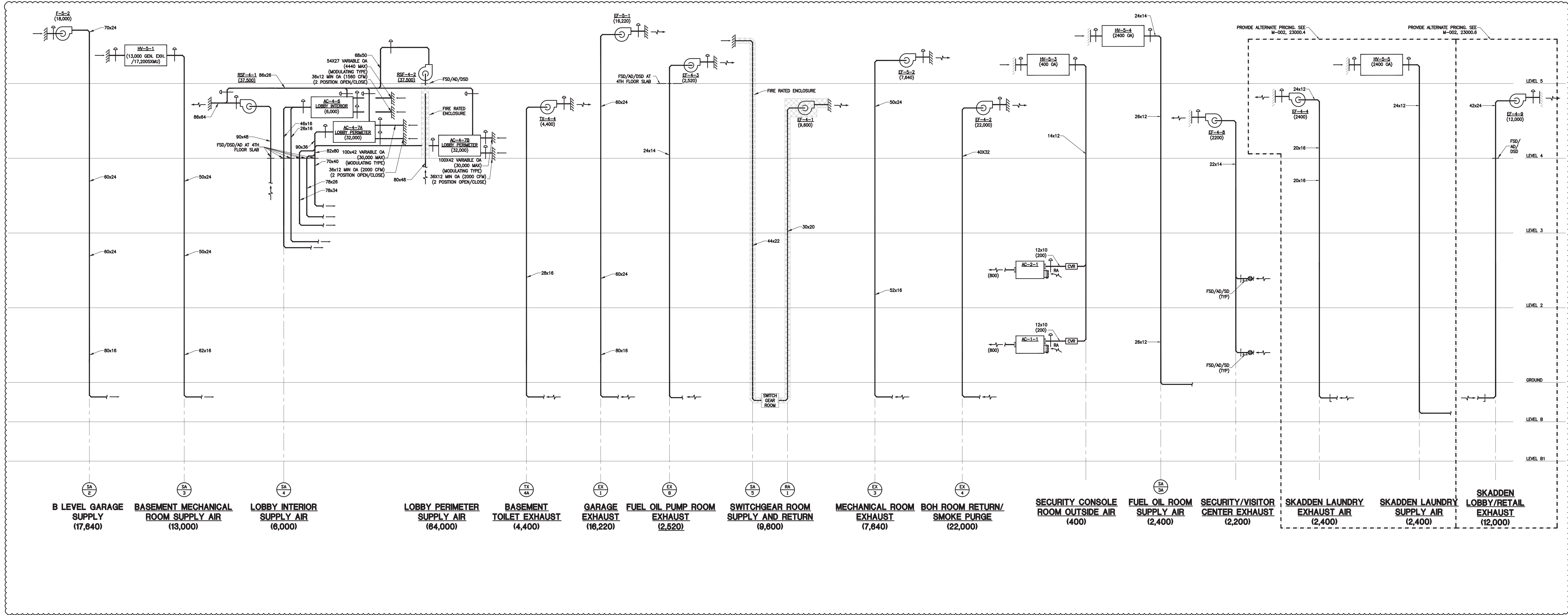


1 4TH AND 5TH FLOOR SOUTH LOUVER  
ELEVATION  
1/8" = 1'-0"

2 4TH AND 5TH FLOOR NORTH LOUVER  
ELEVATION  
1/8" = 1'-0"

3 GENERATOR ROOM INTAKE LOUVER  
ELEVATION  
1/8" = 1'-0"





**MANHATTAN WEST:  
NORTH TOWER**  
401 Ninth Avenue, New York, NY 10001  
Client

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

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

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

MEP Engineering  
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Edgett Williams Consulting Group, Inc.  
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Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S8

Key Plan:

Seal & Signature:

2 22 APR 2016 ISSUED FOR PAA  
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**MECHANICAL  
BASEMENT  
AIR RISER  
DIAGRAM**

Project No.: 1400A.000  
Date: 29 JAN 2016  
Scale: NTS  
File No.: M-400

B-SCAN Sheet No.:  
**M-400.01**  
Sheet No.:  
M-400  
Page No.: 67 OF 94





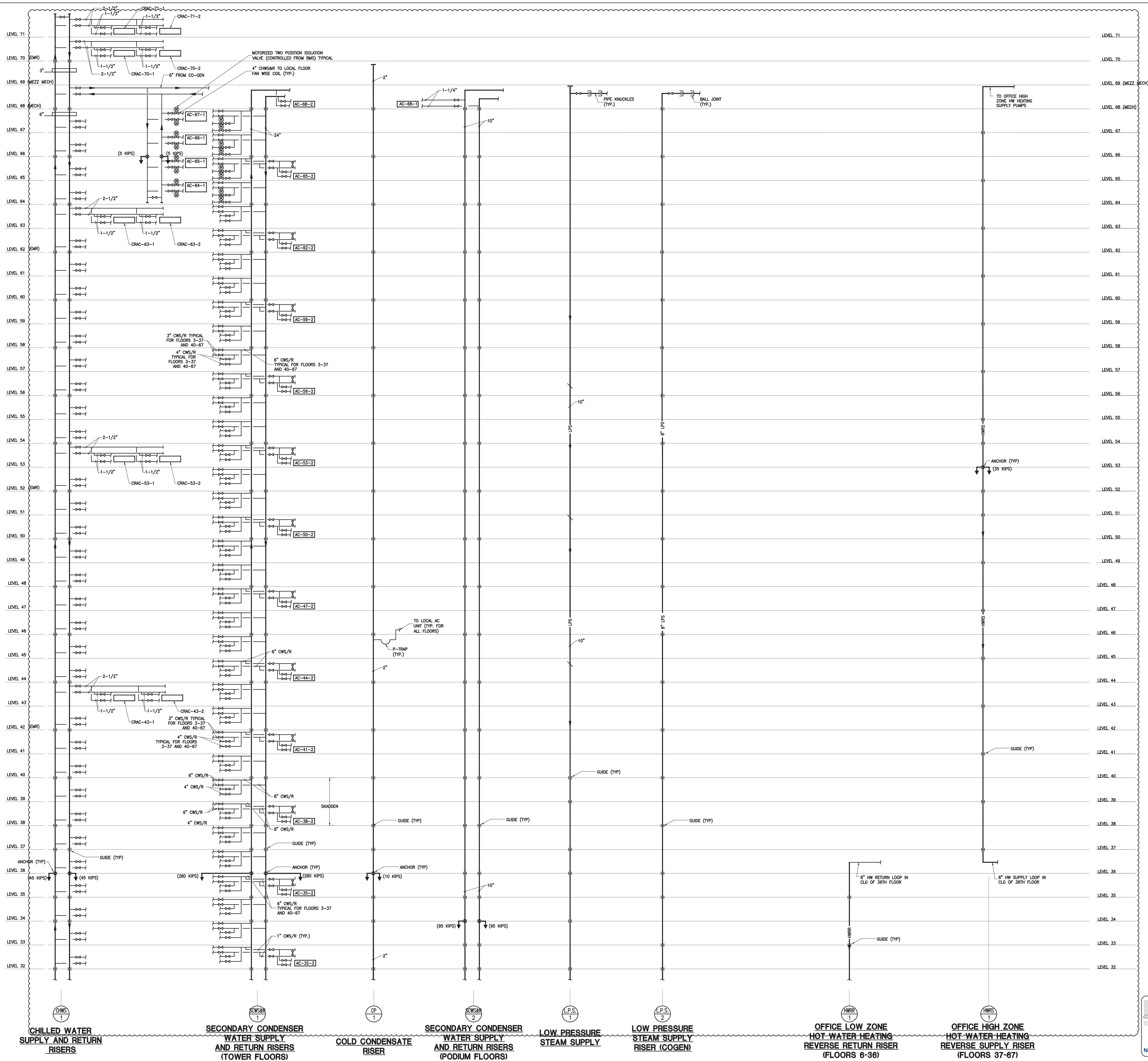












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401 Ninth Avenue, New York, NY 10001  
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650 Woodlawn Road West, Guelph  
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Key Plan:

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1 20 JUN 2014 ISSUED FOR BUILDING PERMIT  
No. Date Description  
Sheet Name:

**MECHANICAL  
PIPING RISER  
DIAGRAM  
SHEET 2**

Project No.: 14000 A-000  
Date: 22 JAN 2016  
Scale: NTS  
FIR No.: M-400

6-SCAN Sheet No.:  
M-404.01  
Sheet No.: M-404  
Page No.: 71 OF 94









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

Client  
**Brookfield**

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Vindian Energy & Environmental  
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250 State Street #F1, North Haven, CT 06473

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

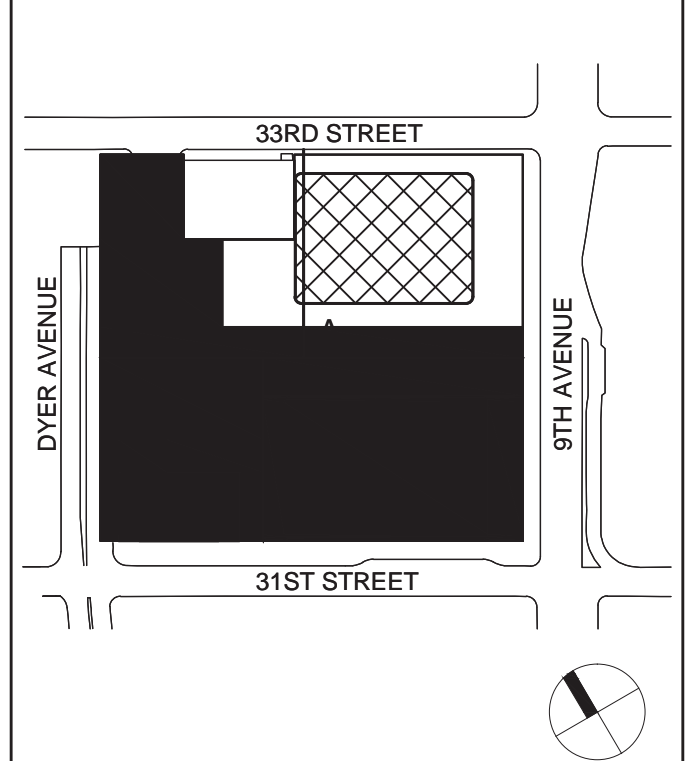
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Ontario, Canada N1K 1S8

Key Plan:



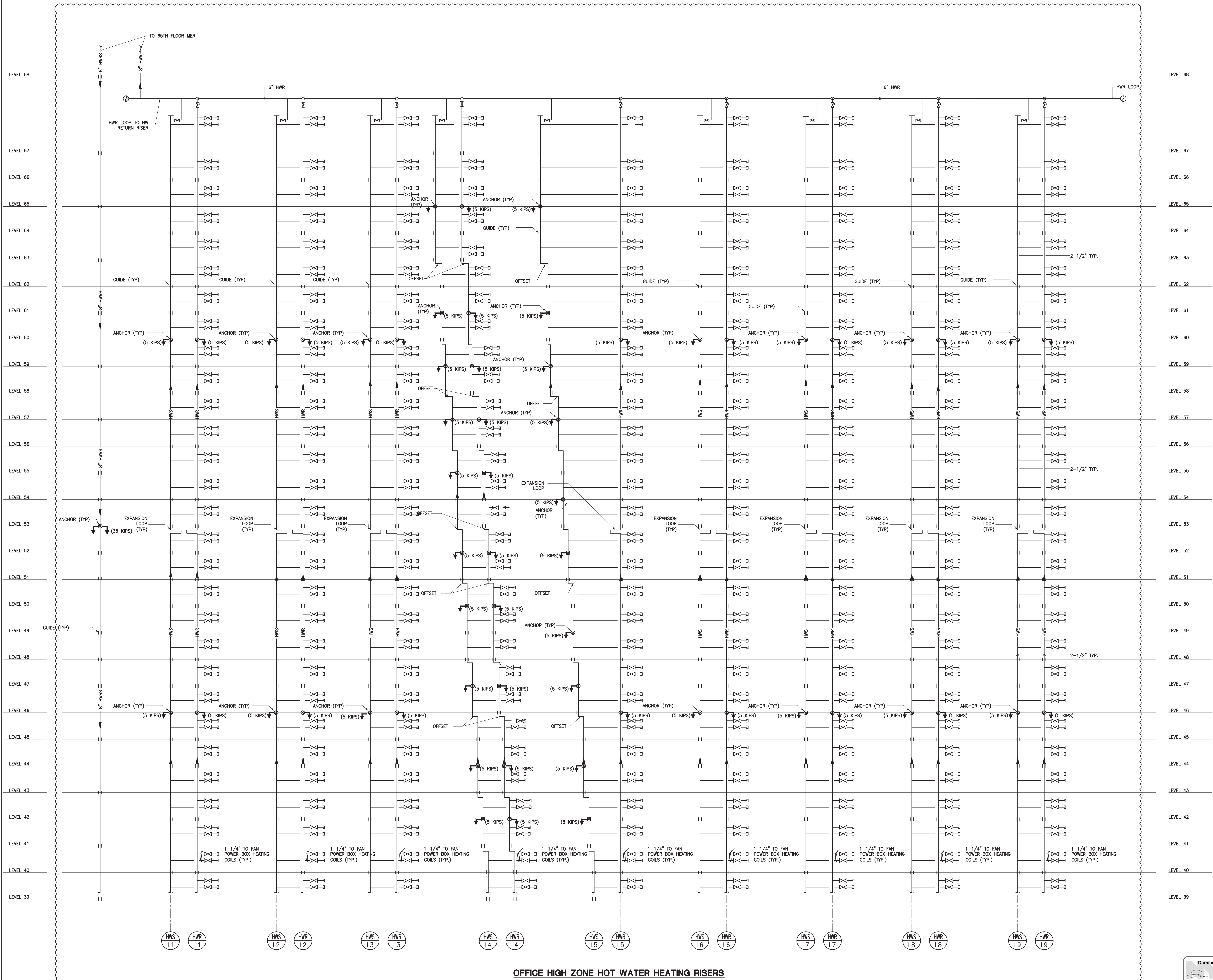
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2	22 APR 2016	ISSUED FOR P&A
1	20 JUN 2014	ISSUED FOR BUILDING PERMIT
No.	Date	Description
Sheet Name:		

## MECHANICAL HOT WATER RISER DIAGRAM SHEET 2

Damian Titus  
Buildings  
APPROVED  
Under Directive 2 of 975  
AMENDED APPLICATION  
Date: 02/03/2017  
NYC Development Hub

Project No.: 1400A.000  
Date: 29 JAN 2016  
Scale: NTS  
File No.: M-406  
B-SCAN Sheet No.:  
M-406.01  
Sheet No.:  
Page No.: 73 OF 94



OFFICE HIGH ZONE HOT WATER HEATING RISERS







PLATE AND FRAME HEAT EXCHANGERS																						(ALFA LAVAL AS STD.)		
UNIT NO.	LOCATION	SERVICE	COOLED/HEATED WATER								COOLING/HEATING WATER								OVERALL DIM. LENGTH x WIDTH x HEIGHT (IN.)	OPERATING WEIGHT (LBS.)	HEAT TRANSFER AREA (SQ. FT.)	NUMBER OF PLATES (ACTUAL/MAX.)	MODEL No.	REMARKS/COMMENTS
			GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (PSI)	DESIGN PRESS. (PSIG)	FOULING FACTOR	LIQUID CIRCULATED	GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (PSI)	DESIGN PRESS. (PSIG)	FOULING FACTOR	LIQUID CIRCULATED								
PFHX-5-1 THRU PFHX-5-2	5TH FLOOR MER	SECONDARY/ TERTIARY CONDENSER WATER	1,600	104	89	7.42	450	.0001	H2O	1,600	87	102	7.44	450	.0001	H2O	158x37x122	22700	7653.1	476/635	AQ10-FS	1 ACTIVE, 1 STANDBY		
PFHX-5-1 THRU PFHX-5-2	5TH FLOOR MER	SECONDARY/ TERTIARY CONDENSER WATER	2,100	104	89	7.82	450	.0001	H2O	2,100	87	102	7.9	450	.0001	H2O	181x37x122	27100	10026.6	623/760	MX25-BFS	ALTERNATE REFER TO M-002 23000.8 (1) STANDBY		
PFHX-68-1 THRU PFHX-68-5	68TH FLOOR MER	PRIMARY/ SECONDARY CONDENSER WATER	4,500	102	87	12	150	.0001	H2O	4,500	85	100	12	150	.0005	H2O	227x45x126	35,000	18507	798/956	TL35-BFG	PROVIDE W/ AUTOMATIC REVERSING VALVES		
PFHX-68-5 THRU PFHX-68-6	68TH FLOOR MER	COGEN HOT WATER	162	150	180	5	150	.0005	H2O	225	220	198	7	150	.0005	H2O	30x16x35	545	45.7	27/43	AQ3-MFG	PROVIDE W/ AUTOMATIC REVERSING VALVES		
PFHX-68-7 THRU PFHX-68-8	68TH FLOOR MER	CONDENSER WATER FREE COOLING	800	61	47	10	150	.0001	H2O	800	45	59	10	150	.0005	H2O	95x25x108	7060	3682.3	313/389	AQ6L-FG			

#### NOTES:

1. ALL PFHX PERFORMANCE SHALL BE ARI CERTIFIED (ARI STANDARD 400).
2. ALL PFHX'S SHALL BE INSULATED AND PROVIDED WITH SHEETMETAL PROTECTIVE JACKET.

SHELL AND TUBE HEAT EXCHANGERS																							(THRUSH AS STD.)		
UNIT NO.	LOCATION	SERVICE	WATER (TUBE SIDE)						STEAM (SHELL SIDE)		WATER (SHELL SIDE)						HEAT TRANSFER AREA (SQ. FT.)	SHELL DIAMETER (IN.)	EFFECTIVE BUNDLE LENGTH (FT.)	NUMBER OF PASSES	LIQUID CIRCULATED	CONDENSATE INLET TEMP.	CONDENSATE OUTLET TEMP.	MODEL NO.	REMARKS
			GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (G.T. HEAD)	DESIGN PRESS. (PSIG)	FOULING FACTOR	STEAM PRESS. (PSIG)	STEAM (LBS./HR)	GPM	INLET TEMP. (°F)	OUTLET TEMP. (°F)	MAX. PRESS. DROP (G.T. HEAD)	DESIGN PRESS. (PSIG)	FOULING FACTOR									
STHX-B-1&2	LEVEL B	LOBBY/BOH HOT WATER	200	160	180	11.4	150	.0005	5	2,030	-	-	-	-	-	54	12	36	4	WATER	227	227	S12-36	(1) STANDBY	
STHX-B-3	LEVEL B	STEAM CONDENSATE COOLER	315	90	120	4.4	150	.0005	-	-	160	210	150	9	150	.0005	86	10	7	2	WATER	-	-	W10-84	-
STHX-4-1&2	4TH FLOOR MER	LOW RISE HEATING SYSTEM	900	150	180	12.1	300	.0005	5	13,782	-	-	-	-	-	341	26	48	4	WATER	227	227	S26-48	(1) STANDBY	
STHX-4-3&4	4TH FLOOR MER	RETAIL HEATING SYSTEM	560	150	180	8.7	150	.0005	5	8,576	-	-	-	-	-	291.5	14	10	2	WATER	227	227	S14-120	(1) STANDBY	
STHX-4-3&4	4TH FLOOR MER	RETAIL HEATING SYSTEM	1040	150	180	8.7	150	.0005	5	15,930	-	-	-	-	-	590	22	8	2	WATER	227	227	S22-096	ALTERNATE REFER TO M-002 23000.8 (1) STANDBY	
STHX-68-1&2	68TH FLOOR MER	HIGH RISE HEATING SYSTEM	900	150	180	12.1	150	.0005	5	13,782	-	-	-	-	-	341	26	48	4	WATER	227	227	S26-48	(1) STANDBY	
STHX-68-3	68TH FLOOR MER	CO-GEN BACKUP	500	150	180	11.1	150	.0005	5	7,656	-	-	-	-	-	131	20	36	4	WATER	227	227	S20-36	(1) STANDBY	
STHX-68-4	68TH FLOOR MER	STEAM CONDENSATE COOLER	236	90	120	1.9	150	.0005	-	-	120	210	150	5	150	.0005	73	10	5	2	WATER	-	-	W10-60	-

EXPANSION TANKS / MAKE-UP PUMPS																(AMTROL/PACO DOMESTIC AS STD)	
TANK NO. ET-	LOCATION	SERVICE	EXPANSION TANKS					MAKE-UP PUMPS							REMARKS		
			DIAMETER (IN.)	STRAIGHT SHELL LENGTH (IN.)	CAPACITY (GALLONS)	WORKING PRESS. (PSIG)	TYPE	MODEL	GPM PER PUMP	SUCTION TEMP. °F	DISCHARGE PRESS. (PSIG)	MOTOR RPM	RECEIVER (GALLONS)	MIN. MOTOR HP PER PUMP		PUMP TYPE	SIZE
ET-B-1	LEVEL B	LOBBY/BOH HOT WATER	48	72	422	150	DIAPHRAM	1600L	15	180	40	3500	15	3	DUPLEX	1070 1x6	
ET-4-1	4TH FLOOR MER	LOW RISE HOT WATER	48	85	480	150	DIAPHRAM	2000L	15	180	40	3500	15	3	DUPLEX	1070 1x6	
ET-4-2	4TH FLOOR MER	RETAIL HOT WATER	48	72	422	150	DIAPHRAM	1600L	15	180	40	3500	15	3	DUPLEX	1070 1x6	
ET-5-1	5TH FLOOR MER	TERTIARY CONDENSER WATER	48	85	480	150	DIAPHRAM	2000L	15	60	40	3500	15	3	DUPLEX	1070 1x6	
ET-68-5	68TH FLOOR MER	CHILLED WATER	48	72	422	150	DIAPHRAM	1600L	15	60	40	3500	15	3	DUPLEX	1070 1x6	
ET-68-2	68TH FLOOR MER	HIGH RISE HOT WATER	48	85	480	150	DIAPHRAM	2000L	15	180	40	3500	15	3	DUPLEX	1070 1x6	
ET-68-1	68TH FLOOR MER	BASE BUILDING SECONDARY CONDENSER WATER	48	85	480	150	DIAPHRAM	2000L	15	110	40	3500	15	3	DUPLEX	1070 1x6	
ET-68-3	68TH FLOOR MER	HEAT RECOVERY HOT WATER	24	66	106	150	DIAPHRAM	400L	15	180	40	3500	15	3	DUPLEX	1070 1x6	
ET-68-4	68TH FLOOR MER	CO-GEN SYSTEM HOT WATER	48	85	480	150	DIAPHRAM	2000L	15	220	40	3500	15	3	DUPLEX	1070 1x6	

#### NOTES:

1. PROVIDE AND INSTALL ALL REQUIRED COMPRESSED AIR VALVES, FITTINGS AND GUAGES REQUIRED FOR CHARGING.

ABSORPTION CHILLER																												(YORK AS STD)								
UNIT No.	LOCATION	TONS	CHILLER						CONDENSER						ELECTRICAL						HOT WATER															
			GPM	INLET WATER TEMP. (°F)	OUTLET WATER TEMP. (°F)	MAX. PRESSURE DROP (FT H2O)	WORKING PRESS. (PSIG)	FOULING	MAX. WATER VELOCITY (FPS)	No. OF PASSES	GPM	INLET WATER TEMP. (°F)	OUTLET WATER TEMP. (°F)	MAX. PRESSURE DROP (FT H2O)	WORKING PRESS. (PSIG)	FOULING	MAX. WATER VELOCITY (FPS)	No. OF PASSES	KW/TON	VOLTAGE	PHASE	FREQUENCY	KW	POWER FACTOR	GPM	INLET WATER TEMP. (°F)	OUTLET WATER TEMP. (°F)	MAX. PRESSURE DROP (FT H2O)	WORKING PRESS. (PSIG)	FOULING	MAX. WATER VELOCITY (FPS)	No. OF PASSES	COP	WEIGHT (LBS.)	MODEL No.	REMARKS
CH-68-1	68TH FLOOR MER	250	375	58	42	22	150	.0001		3	1250	85	97	27	150	.0005		1	-	460	3	60	7.3		540	220	203	11	150	.0001		1	.715	25,000	YIA-HW-3B3-49-C-S-D	(2) PASS ABSORBER

PUMPS																		(ARMSTRONG AS STD)	
PUMP NO.	LOCATION	SERVICE	GPM	TOTAL DYNAMIC HEAD (FT. H2O)	% EFFICIENCY	SHUT-OFF HEAD (FT. H2O)	IMPELLER (INCHES)	B.H.P.	MINIMUM MOTOR H.P.	R.P.M.	WORKING PRESS. (PSIG)	ELECTRICAL			MODEL #	PUMP TYPE	VIBRATION BASE SPEC. TYPE	VIBRATION BASE MAX. DEFLECTION (INCHES)	REMARKS
												VOLTS	PHASE	CYCLE					
CHWP-68-1 & 2	68TH FLOOR MER	CO-GEN SYSTEM (CHW)	800	125	78	-	12.34	32	40	1735	150	460	3	60	SERIES 4300 5X5X13	VERTICAL IN-LINE	-	-	(1) STANDBY
HWP-B-1 & 2	LEVEL B	LOBBY/BOH HOT WATER	200	95	73	-	9.76	6.6	10	1721	150	460	3	60	SERIES 4030 3X2X10	END SUCTION	-	-	(1) STANDBY
HWP-4-1&2	4TH FLOOR MER	LOW RISE HOT WATER	900	120	80	-	12.32	34.1	40	1764	300	460	3	60	SERIES 4030 6X4X13	END SUCTION	-	-	(1) STANDBY
HWP-4-3&4	4TH FLOOR MER	RETAIL HOT WATER	560	100	79.2	-	6	17.85	20	3551	300	460	3	60	SERIES 4280 4X3X6	END SUCTION	-	-	(1) STANDBY
HWP-4-3&4	4TH FLOOR MER	RETAIL HOT WATER	1040	100	84.75	-	11	30.99	40	1723	300	460	3	60	SERIES 4030 6X5X11	END SUCTION	-	-	ALTERNATE REFERENCE TO M-002 23000.8 (1) STANDBY
HWP-68-1&2	68TH FLOOR MER	HIGH RISE HOT WATER	900	120	80	-	12.32	34.1	40	1764	150	460	3	60	SERIES 4030 6X4X13	END SUCTION	-	-	(1) STANDBY
PCWP-68-1 THRU PCWP-68-4	68TH FLOOR MER	PRIMARY CONDENSER WATER	6000	100	80	-	12.6	175	200	1750	150	460	3	60	SERIES 4300 14X14X14H	VERTICAL IN-LINE	-	-	(1) STANDBY
PCWP-68-5 THRU PCWP-68-6	68TH FLOOR MER	PRIMARY CONDENSER WATER (CO-GEN)	2000	140	78	-	14.14	91	125	1658	150	460	3	60	SERIES 4300 8X8X15H	VERTICAL IN-LINE	-	-	(1) STANDBY
SCWP-68-1 THRU SCWP-68-4	68TH FLOOR MER	SECONDARY CONDENSER WATER (TOWER)	5200	150	88	-	14.15	236	300	1693	150	460	3	60	SERIES 4300 12X12X17H	VERTICAL IN-LINE	-	-	(1) STANDBY
SCWP-68-5 THRU SCWP-68-6	68TH FLOOR MER	SECONDARY CONDENSER WATER (PODIUM)	1600	140	79	-	14.14	71.57	100	1796	150	460	3	60	SERIES 4300 8X8X15H	VERTICAL IN-LINE	-	-	(1) STANDBY
SCWP-68-5 THRU SCWP-68-6	68TH FLOOR MER	SECONDARY CONDENSER WATER (PODIUM)	2100	140	77	-	14.14	96	125	1688	150	460	3	60	SERIES 4300 6X6X13H	VERTICAL IN-LINE	-	-	ALTERNATE REFERENCE TO M-002 23000.8 (1) STANDBY
TCWP-5-1 THRU TCWP-5-2	5TH FLOOR MER	TERTIARY CONDENSER WATER (PODIUM)	1600	100	80	-	14.14	50.42	60	1773	450	460	3	60	SERIES 4300 8X8X15H	VERTICAL IN-LINE	-	-	(1) STANDBY
TCWP-5-1 THRU TCWP-5-2	5TH FLOOR MER	TERTIARY CONDENSER WATER (PODIUM)	2100	100	82	-	14.14	64.85	75	1757	450	460	3	60	SERIES 4300 8X8X15H	VERTICAL IN-LINE	-	-	ALTERNATE REFERENCE TO M-002 23000.8 (1) STANDBY
HRHWP-68-1 THRU HRHWP-68-2	68TH FLOOR MER	CO-GEN SYSTEM (ABSORPTION)	800	100	77	-	11.5	26	30	1787	150	460	3	60	SERIES 4030 5X4X11.5	END SUCTION	-	-	(1) STANDBY
HRHWP-68-3 THRU HRHWP-68-4	68TH FLOOR MER	CO-GEN SYSTEM (HOT WATER PFHX)	500	120	74	-	12.52	21	30	1684	150	460	3	60	SERIES 4030 4X3X13L	END SUCTION	-	-	(1) STANDBY








**NOTES:**

1. ALL SUPPLY FANS SHALL HAVE ISOLATION DAMPERS FOR EACH FAN.
2. ALL FANS TO BE PROVIDED WITH VARIABLE FREQUENCY DRIVES UNLESS OTHERWISE NOTED.
3. ALL SUPPLY FANS SHALL BE MOUNTED ON NEOPRENE PADS IN ADDITION TO THE INTERNAL SPRINGS.
4. ALL ACCESSIBLE SECTIONS SHALL BE FURNISHED AND INSTALLED WITH INTERNAL LIGHTING (MARINE LIGHTS) AND CONTROL SWITCHING.
5. UNITS WITH FAN-ARRAY TECHNOLOGY SHALL ALSO BE PROVIDED WITH A FAN-ARRAY TOTALIZING SYSTEM (PARAGON CONTROLS INC MODEL FATMS-1000 OR AS APPROVED).
6. HV-4-1A SHALL BE CONSTRUCTED WITH INTERNAL BRACING TO SUPPORT THE FULL WEIGHT OF HV-4-1C.
7. HV-4-1B SHALL BE CONSTRUCTED WITH INTERNAL BRACING TO SUPPORT THE FULL WEIGHT OF HV-4-1D.

**NOTES:**

1. PROVIDE AUTOMATIC CONTROLS PACKAGE WITHIN NEMA 4X ENCLOSURE.(ALL CONTROLS AND SOLENOID VALVES SHALL OPERATE ON 120V/1Ø POWER.
2. FILTER MEDIA SHALL BE CAPABLE OF REMOVING SUSPENDED SOLIDS 1/2 MICRON AND LARGER. 50% BY COUNT OF 1/2 MICRON AND 80% OF 2 MICRONS AND LARGER WITHIN 30 DAYS OF STARTUP. PERFORMANCE ANALYSIS FROM SIMILAR SITES TO BE PROVIDED
3. FILTER UNIT SHALL INCLUDE A PLC CONTROLLER TO CONTROL THE BACKWASH CYCLE. PLC SHALL BE ABLE TO INTERFACE WITH THE EMS SYSTEM
4. W/4 DRY CONTACT OUTPUT INDICATING A COMMON ALARM.
5. FILTER SIZES FOR THE BASIS OF DESIGN ONLY. OTHER MANUFACTURERS TO PROVIDE A MINIMUM OF 5% OF THE REGUCLORATION RATE OF THE SYSTEMS

**Damian Titus**  
  
Buildings  
**APPROVED**  
Under Directive 2 of 1975  
**AMENDED APPLICATION**  
Date: 02/03/2017  
NYC Development Hub

Project No.: 14830 A.000	B-SCAN Sheet No.:  <b>M-502.01</b>
Date: 29 JAN 2016	Sheet No.:  <b>M-502</b>
Scale: NTS	
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MANHATTAN WEST:  
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MEP Engineering

Jaros Baum & Bolles  
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Vertical Transportation

Edgett Williams Consulting Group, Inc.  
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Sustainable Design

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

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers  
14 Penn Plaza, 22nd Fl., 34th Street #610,  
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Landscape Consultant

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

Security Consultant

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

Blast Consultant

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

Acoustical Consultant

Cerami & Associates  
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Vibration Consultant

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

Code Consultant

Code Consultants Professional Engineers PC  
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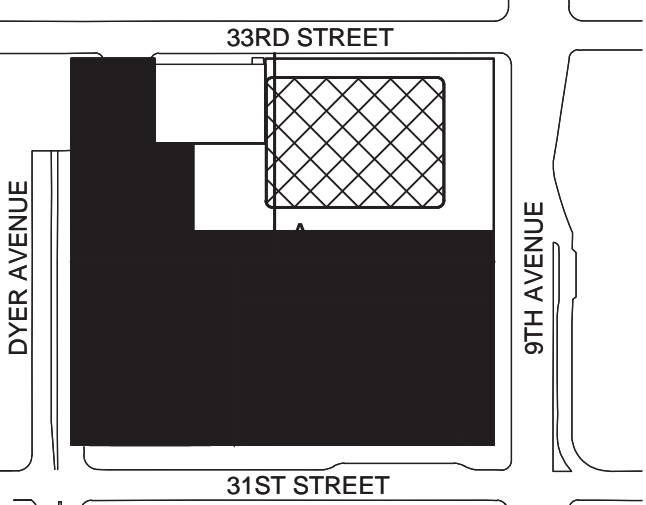
Facade Maintenance Consultant

Entek Engineering LLC  
186 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



Seal & Signature:



2 22 APR 2016 ISSUED FOR PAA  
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No. Date Description  
Sheet Name:

MECHANICAL  
SCHEDULE  
SHEET  
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Project No.: 14830-A-000  
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CONSTANT / VARIABLE VOLUME BOXES

TITUS (TYPE "DES" AS STD)

BOX SIZES (SEE DWGS)	MAXIMUM SET POINT CFM RANGE		MIN. SET POINT OF CFM SHOWN ON PLANS	MIN. SP @ BOX MAX. CFM	INLET AND OUTLET SIZES		BOXES WITH HEATING COIL							REMARKS	
	LOW	HIGH			IN	OUT	ENTERING AIR TEMP. (°F)	LEAVING AIR TEMP.(°F)	ENTERING WATER TEMP.(°F)	LEAVING WATER TEMP.(°F)	No. OF ROWS	GPM	MAX. COIL (FT²) DROP (°F/100)		MIN. SP @ BOX (°F) (Box & Coil)
7	90	500	65	0.14	7"ø	12x10	55	VARIES	140	VARIES	1	SEE NOTES	.10	.19	
8	245	800	120	0.20	8"ø	12x10	55	VARIES	140	VARIES	1	SEE NOTES	.10	.27	
10	385	1000	195	0.12	10"ø	14x12.5	55	VARIES	140	VARIES	1	SEE NOTES	.10	.19	
12	550	1500	280	0.15	12"ø	16x15	55	VARIES	140	VARIES	1	SEE NOTES	.10	.22	
14	880	2000	400	0.16	14"ø	20x17.5	55	VARIES	140	VARIES	1	SEE NOTES	.10	.22	
16	1000	2500	530	0.15	16"ø	24x18	55	VARIES	140	VARIES	1	SEE NOTES	.10	.22	
16	4000	4000	4000		16"ø	24x18	-	-	-	-	-	-	-	-	OUTSIDE AIR TO LOCAL FLOOR FAN ROOM
24X16	4500	4500	4500		24X16	38x18	-	-	-	-	-	-	-	-	STAIR PRESSURIZATION AESV AS STD

NOTES:

- REFER TO SPECIFICATIONS FOR ACOUSTICAL PERFORMANCE.
- ALL COILS SHALL BE ONE ROW UNLESS NOTED, REFER TO PLANS FOR LOCATIONS. HEATING PERFORMANCE OF ALL COILS SHALL BE BASED ON 2.0 GPM FLOW RATE.
- ALL COILS SHALL BE SUITABLE FOR A MINIMUM OF 300 PSIG. WATER WORKING PRESSURE.
- EACH VAV BOX SHALL BE PROVIDED WITH ACOUSTIC LINING IN DOWNSTREAM DUCTWORK AS PER SPECIFICATIONS.
- ALL BOXES SHALL BE PROVIDED WITH BOTTOM ACCESS DOOR. FOR INTERNAL ACCESS TO CONTROLS & TO HEATING COIL.

FAN POWERED TERMINAL UNITS

(TITUS TYPE DTQS STD)

BOX SIZES (SEE DWGS)	MAX. SET POINT CFM RANGE OF VALVE 45°F EAT		MINIMUM SET POINT CFM OF VALVE	SET POINT OF FAN			MIN. MOTOR H.P. HIGH SPEED	DISCHARGE S.P. OF FPTU (INCLUDING HEATING COIL)	INLET SIZES	BOXES WITH HEATING COIL								SOUND TRAP		REMARKS
	LOW	HIGH		LOW	OFFICE TRADING	HIGH				ENTERING AIR TEMP. (°F)	LEAVING AIR TEMP. (°F)	ENTERING WATER TEMP. (°F)	LEAVING WATER TEMP. (°F)	GPM	MAX. COIL PRESSURE DROP (FT. H <sub>2</sub> O)	MIN. SP @ BOX (COIL & BOX)	ELECTRICAL CHAR. (VOLTS/PHASE HERTZ)	IAC TYPE AND DIMENSIONS (WxHxL)	PRESS DROP INCH. WG.	
2	145	335	145	150	400 535	1/6	.40	8"ø	60	VARIES	170	140	SEE NOTE 2	.66	.08	277/1/60	3HL 12x12x36	.01		
3	200 336	480 900	160 260	401	1050 1150	1/4	.40	8"ø 10"ø	60	VARIES	170	140	SEE NOTE 2	.18 .20	.26	277/1/60	3HL 18x12x36	.03		
5	801	1130	375	951	1350 1600	1/3	.40	12"ø	60	VARIES	170	140	SEE NOTE 2	.43	.16	277/1/60	5HL 24x12x60	.04		
6	1131	1350	470	1351	1650 2000	3/4	.40	14"ø	60	VARIES	170	140	SEE NOTE 2	.93	.22	277/1/60	5HL 24x12x60	.06		

NOTES:

- REFER TO FLOOR PLANS FOR ACTUAL QUANTITY OF FAN POWERED BOXES WITH AND WITHOUT HOT WATER HEATING COILS AND UNIT LEFT/RIGHT HAND ARRANGEMENT.
- ALL COILS SHALL BE ONE ROW UNLESS NOTED, REFER TO PLANS FOR LOCATIONS. COILS ON FLOORS 15 THRU 69 SHALL HAVE 2.5 GPM FLOW RATE.
- KEY TO SYMBOL: FAN CFM  
(MAX. VALVE CFM)  
(MIN. VALVE CFM)
- REFER TO SPECIFICATIONS FOR ACOUSTICAL PERFORMANCE.
- FAN POWERED TERMINAL UNITS BASED ON MAXIMUM OF 1.5 INCHES INLET STATIC PRESSURE.
- ALL COILS SHALL BE SUITABLE FOR A MINIMUM OF 300 PSIG. WATER WORKING PRESSURE.
- FPB = FAN POWERED BOX  
FPBH = FAN POWERED BOX WITH HEATING COIL
- EACH FPB BOX SHALL BE PROVIDED WITH DUCT MOUNTED SOUND TRAP WHERE SHOWN ON PLANS. EACH FPB NOT PROVIDED WITH SOUND TRAP SHALL BE PROVIDED WITH ACOUSTIC LINING IN DOWNSTREAM DUCTWORK AS PER SPECIFICATIONS
- 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.

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 - 200	0 - 150	0 - 100	8"ø	24x24
201 - 380	151 - 290	101 - 190	10"ø	24x24
381 - 470	291 - 325	191 - 235	12"ø	24X24
471 - 640	326 - 470	236 - 320	14"ø	24X24
641 - 735	471 - 550	321 - 365	15"ø	24X24

NOTES:

- PMD MODEL FRAME SHALL BE SUITABLE FOR DOWN-FINE LAY-IN CEILINGS.
- NECKS SHALL BE BLANKED OFF IN FIELD WHERE PLANS INDICATE OTHER THAN WAY.
- ALL CEILING DIFFUSERS LOCATED WITHIN GYPSUM BOARD HUNG CEILING SHALL BE EQUIPPED WITH VOLUME CONTROLS OPERABLE THRU FACE OF DIFFUSER.

CEILING RETURN GRILLES AND REGISTERS

DUCTED (TITUS MODEL "OMNI")

CFM RANGE	NECK SIZE	NORMAL FACE SIZE
0-120	8"ø	12 x 12
0-330	12"ø	24 x 24
0-470	14"ø	24 x 24

NOTES:

- IN NO CASE SHALL MAXIMUM CFM AS INDICATED ABOVE BE EXCEEDED.
- REFER TO HVAC AND REFLECTED CEILING DRAWINGS FOR DIFFUSER FACE SIZES.
- TYPICAL FOR ALL OFFICES, CORRIDORS, CONFERENCE ROOMS, COMMON AREAS, PANTRY ROOMS, COPY ROOMS ETC.
- ALL DIFFUSERS SHALL BE FLUSH FACE UNLESS NOTED OTHERWISE.
- REFER TO SPECIFICATIONS AND DETAIL SHEETS FOR DIFFUSER AND REGISTER/GRILLE INSTALLATION REQUIREMENTS.
- ALL SUPPLY DIFFUSERS AND REGISTERS/GRILLES SHALL BE SELECTED TO PERFORM WITHIN THE ACOUSTICAL CRITERIA FOR THE SPACES SERVED. REFER TO SPECIFICATIONS.
- ALL CEILING REGISTERS SHALL BE EQUIPPED WITH OPPOSED BLADE DAMPERS.
- PROVIDE PERFORATED COLLAR (LIGHT SHIELD) TO NECK OF ALL CEILING REGISTERS.

FUEL OIL TRANSFER PUMPS

(MO DELAVAL AS STD.)

PUMP NO.	LOCATION	SERVICE	GPM	DISCHARGE HEAD, (PSIG)	SUCTION PRESSURE (IN HG.)	PUMP RPM	BHP	MINIMUM MOTOR H.P.	MODEL NO.	REMARKS
FOP-1	LEVEL B FO TANK RM	EMERGENCY GENERATOR	12	70	15	1,750	2.0	3.0	A30-156 DUPLEX	POSITIVE DISPLACEMENT
FOP-2	LEVEL B FO TANK RM 2	TENANT GENERATOR 1	6	70	15	1,750	3/4	1	SG-0519 DUPLEX	POSITIVE DISPLACEMENT VIKING AS STD
FOP-3	LEVEL B FO TANK RM 3	TENANT GENERATOR 2	6	70	15	1,750	3/4	1	SG-0519 DUPLEX	POSITIVE DISPLACEMENT VIKING AS STD
FOP-4	LEVEL B FO TANK RM 3	TENANT GENERATOR 3	6	70	15	1,750	3/4	1	SG-0519 DUPLEX	POSITIVE DISPLACEMENT VIKING AS STD

NOTE:

- PUMPS SHALL BE FURNISHED AS A DUPLEX SET ON A SINGLE SKID AND SHALL COME PREPARED WITH ALL VALVES, STARTERS, ALTERNATER, ETC.
- FUEL PUMP SHALL BE CONNECTED TO THE BUILDINGS LIFE SAFETY EMERGENCY GENERATORS.







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

Client

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC  
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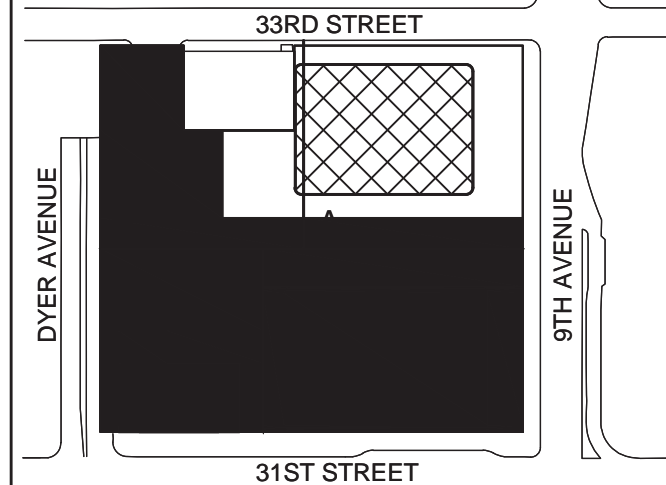
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Ontario, Canada N1K 1S8

Key Plan:

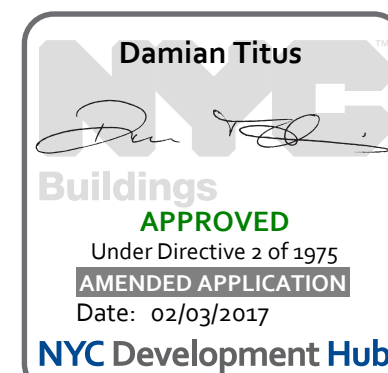


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No. Date Description  
Sheet Name:

**MECHANICAL  
SCHEDULE  
SHEET  
5 OF 6**



Project No.: 1400A.000  
B-SCAN Sheet No.:  
Date: 29 JAN 2016  
Scale: NTS  
Page No.: 79 OF 94  
M-504

UNIT AND ENTRANCE HEATERS

UNIT HEATER No.	LOCATION	FAN CFM (HIGH SPEED)	FAN R.P.M.	HEAT OUTPUT BTU'S PER HOUR (MBH)	ENTERING AIR TEMP. DB (°F)	FINAL AIR TEMP. DB (°F)	HOT WATER		STEAM CONDENSATE (LBS/HR)	STEAM @ 2 PSIG	ELECTRIC		MOTOR		TYPE	MODEL No.	REMARKS
							GPM	ENTERING WATER TEMP. (°F)			LEAVING WATER TEMP. (°F)	(DUAL HEAT) KW @ HIGH SETTING	VOLTS/PHASE/Hz	H.P.			
UH-B-1 THRU UH-B-4	LEVEL B	1400	1000	52	60	95	6	180	160	-	-	115/1/60	1/12	1000	HORIZ	S-84	TRANE AS STD. SEE NOTE 2
UH-B-5	LEVEL B	1200	1550	41.5	60	91.9	4.99	180	160	-	-	115/1/60	1/20	1550	VERTICAL	P-80	TRANE AS STD.
UH-B-6 & 7	LEVEL B	630	1000	26.8	60	99	3.5	180	160	-	-	115/1/60	1/20	1000	HORIZ	S-48	TRANE AS STD.
UH-B-8 THRU UH-B-12	LEVEL B	630	1000	26.8	60	99	3.5	180	160	-	-	115/1/60	1/20	1000	HORIZ	S-48	TRANE AS STD.
UH-4-1 THRU UH-4-11	LEVEL 4	900	1000	50	60	110	-	-	-	50	-	115/1/60	1/20	1000	HORIZ	S-60	TRANE AS STD.
UH-5-1 THRU UH-5-8	LEVEL 5	900	1000	50	60	110	-	-	-	50	-	115/1/60	1/20	1000	HORIZ	S-60	TRANE AS STD.
UH-68-1 THRU UH-68-8	LEVEL 68	900	1000	50	60	110	-	-	-	50	-	115/1/60	1/20	1000	HORIZ	S-60	TRANE AS STD.
UH-69-1 THRU UH-69-2	69TH FLOOR	900	1000	50	60	110	-	-	-	50	-	115/1/60	1/20	1000	HORIZ	S-60	TRANE AS STD.
EUH-70-1 THRU EUH 70-4	70TH FLOOR	1100	1550	-	-	-	-	-	-	-	20	480/3/60	1/20	1550	HORIZ	UHEC-20	ELECTRIC TRANE AS STD.
EUH-71-1 AND 71-2	71ST FLOOR	1100	1550	-	-	-	-	-	-	-	20	480/3/60	1/20	1550	HORIZ	UHEC-20	ELECTRIC TRANE AS STD.
EUH-B-1	LEVEL B	1100	1550	-	-	-	-	-	-	-	20	480/3/60	1/20	1550	HORIZ	UHEC-20	ELECTRIC TRANE AS STD.
EUH-1-1 THRU EUH-1-4	1ST FLOOR	1100	1550	-	-	-	-	-	-	-	20	480/3/60	1/20	1550	HORIZ	UHEC-20	ELECTRIC TRANE AS STD.
EUH-1-5 THRU EUH-1-6	1ST FLOOR	1100	1550	-	-	-	-	-	-	-	20	480/3/60	1/20	1550	HORIZ	UHEC-20	ELECTRIC TRANE AS STD. SEE NOTE 2
EUH-4-1 THRU EUH-4-2	4TH FLOOR GENERATOR ROOM	1100	1550	-	-	-	-	-	-	-	20	480/3/60	1/20	1550	HORIZ	UHEC-20	ELECTRIC TRANE AS STD. EMERGENCY
EUH-5-1 THRU EUH-5-4	5TH FLOOR GENERATOR ROOM	1100	1550	-	-	-	-	-	-	-	20	480/3/60	1/20	1550	HORIZ	UHEC-20	ELECTRIC TRANE AS STD.
CUH-B-1	LEVEL B	1430	1050	100.4	60	124.7	12.2	180	160	-	-	115/1/60	1/20	1050	CABINET	FC-014	MODINE AS STD.
CUH-B-2	LEVEL B	1240	1050	72.4	60	127	7.5	180	160	-	-	115/1/60	1/20	1050	HORIZ CABINET	WCC-012	MODINE AS STD. CEILING MOUNTED ARRANGEMENT 57
CUH-B-3	LEVEL B	1240	1050	72.4	60	114	7.5	180	160	-	-	115/1/60	1/20	1050	CABINET	WCC-012	MODINE AS STD. RECESSED CEILING ARRANGEMENT 57
CUH-B-4 THRU CUH-B-6	LEVEL B	1240	1050	72.4	60	114	7.5	180	160	-	-	115/1/60	1/20	1050	CABINET	WCC-012	MODINE AS STD. CEILING MOUNTED ARRANGEMENT 57
CUH-B-7	LEVEL B	1240	1050	72.4	60	114	7.5	180	160	-	-	115/1/60	1/20	1050	CABINET	WCC-012	MODINE AS STD. RECESSED CEILING ARRANGEMENT 57
CUH-B-8	LEVEL B	1240	1050	72.4	60	114	7.5	180	160	-	-	115/1/60	1/20	1050	CABINET	WCC-012	MODINE AS STD. CEILING MOUNTED ARRANGEMENT 57

NOTES:  
1. UNLESS OTHERWISE NOTED THERMOSTATS FOR ALL UNIT HEATERS SHALL BE UNIT MOUNTED.  
2. NOT IN SCOPE STILL UNDER COORDINATION WITH MASTERPLAN

SOUND TRAPS

(IAC AS STD.)

TRAP NO.	LOCATION	SERVICE	CFM	VELOCITY (FPM)	TRAP SIZE W x H x L (FT. x FT. x FT.)	MAX. PRESS. DROP (IN. H <sub>2</sub> O)	SPECIFICATION TYPE (IAC. MODEL NO.)	REMARKS
ST-4-1	BASE BUILDING GENERATOR	BASE BUILDING GENERATOR INTAKE	90,000	500	20'Wx10'Hx7'L	0.16	7LFS	
ST-4-1	BASE BUILDING GENERATOR	BASE BUILDING GENERATOR INTAKE	60000	500	11'Wx11'Hx7'L	0.16	7LFS	
ST-4-2	BASE BUILDING GENERATOR	BASE BUILDING GENERATOR DISCHARGE	140,000	500	16'Wx18'Hx7'L	0.16	7LFS	
ST-4-3	BASE BUILDING GENERATOR	BASE BUILDING GENERATOR VENTILATION INLET	400	500	24'Wx12'Hx7'L	0.13	7LFS	
ST-5-1	TENANT GENERATOR 1	TENANT GENERATOR EG-1 DISCHARGE	80000	500	16'Wx12'Hx7'L	0.16	7LFS	
ST-5-2	TENANT GENERATOR 1	TENANT GENERATOR EG-1 INTAKE	90000	500	14'Wx16'Hx7'L	0.16	7LFS	
ST-5-3	TENANT GENERATOR 2	TENANT GENERATOR EG-2 DISCHARGE	80000	500	16'Wx12'Hx7'L	0.16	7LFS	
ST-5-4	TENANT GENERATOR 2	TENANT GENERATOR EG-2 INTAKE 1	40000	500	10'Wx8'Hx7'L	0.16	7LFS	
ST-5-5	TENANT GENERATOR 2	TENANT GENERATOR EG-2 INTAKE 2	45500	500	13'Wx8'Hx7'L	0.16	7LFS	
ST-5-6	TENANT GENERATOR 2	TENANT GENERATOR EG-2 INTAKE 2	45500	500	13'Wx8'Hx7'L	0.16	7LFS	
ST-5-7	TENANT GENERATOR 2	TENANT GENERATOR EG-2 INTAKE 1	40000	500	10'Wx8'Hx7'L	0.16	7LFS	
ST-5-8	TENANT GENERATOR 3	TENANT GENERATOR EG-3 DISCHARGE	80000	500	14'Wx14'Hx7'L	0.16	7LFS	

1-REFER TO  
ALTERNATES  
23000.7 ON  
M-002 FOR MORE  
INFORMATION

LOBBY FAN COIL UNITS

(INTERNATIONAL-IEC AS STD. UNLESS NOTED)

LOBBY FAN COIL UNITS																														(INTERNATIONAL-IEC AS STD. UNLESS NOTED)									
TYPE	QUANTITY	LOCATION	SERVICE	FAN SECTION ● MEDIUM SPEED						COOLING COIL CAPACITY										HOT WATER COIL CAPACITY										FILTER			MODEL NUMBER	REMARKS					
				CFM	EXT. S.P. (IN.)	MIN. MOTOR HP	AMPS	RPM	VOLT/PH/Hz	SENSIBLE CAPACITY (BTU/HR)	TOTAL CAPACITY (BTU/HR)	EAT DB	EAT WB	EWI (°F)	LWT (°F)	GPM	MAX. WATER PRESSURE DROP (FT H2O)	NO. OF ROWS	NO. OF CIRCUITS	HEATING CAPACITY (BTU/HR)	ENT. AIR TEMP. (°F)	LEAVING AIR TEMP. (°F)	EWI/L WT	GPM	MAX WATER PRESSURE DROP (FT H2O)	NO. OF ROWS	NO. OF CIRCUITS	SURFACE AREA (SQ.FT)	SIZES (N X N)	ÆFF.									
TYPE A	26	LOBBY TRENCH	LOBBY	460	0.05	(2) 1/12	1	MED SPEED	277/1/60	—	—	—	—	—	—	—	—	41000	60	142	180 150	2.8	4	3	NA		1" THICK THROW-AWAY		LHW06										
TYPE B	4	LOBBY TRENCH	LOBBY	245	0.05	1/12	.5	MED SPEED	277/1/60	—	—	—	—	—	—	—	—	22400	60	143	180 150	1.5	5	3	NA		1" THICK THROW-AWAY		LHW03										

NOTES:  
1. THE FOLLOWING ACCESSORIES SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR:  
a. THERMOSTAT UNIT MOUNTED IN THE RETURN AIR STREAM.  
b. DISCONNECT SWITCH  
c. VIBRATION ISOLATION  
2. COOLING/HEATING COILS PROVIDED WITH THE FAN COIL UNITS SHALL BE SUITABLE FOR 250 PSIG  
WATER WORKING PRESSURE.  
3. CONTROL VALVES FOR CONTROL OF GROUPS OF FAN COIL UNITS SHALL BE AS SPECIFIED UNDER  
THE BATIC SECTION OF THE SPECIFICATIONS.









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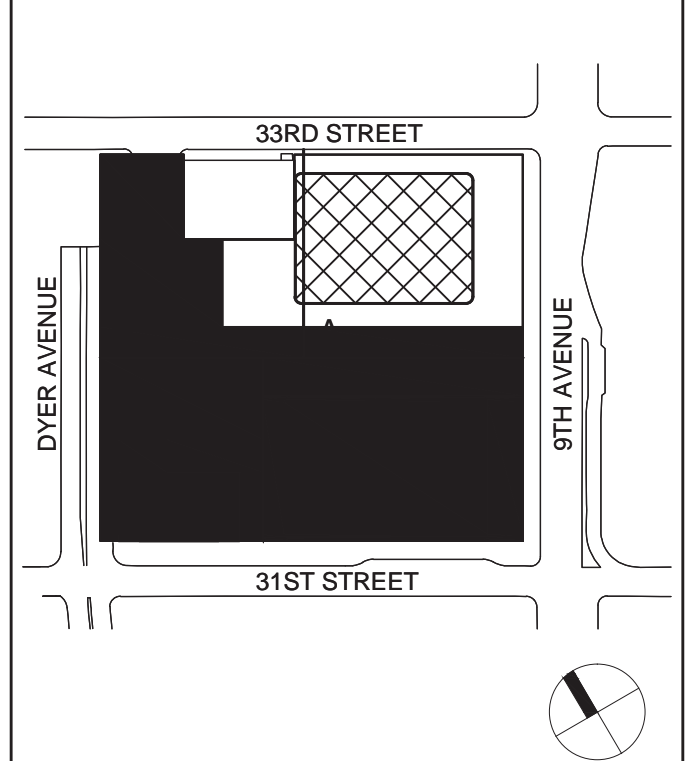
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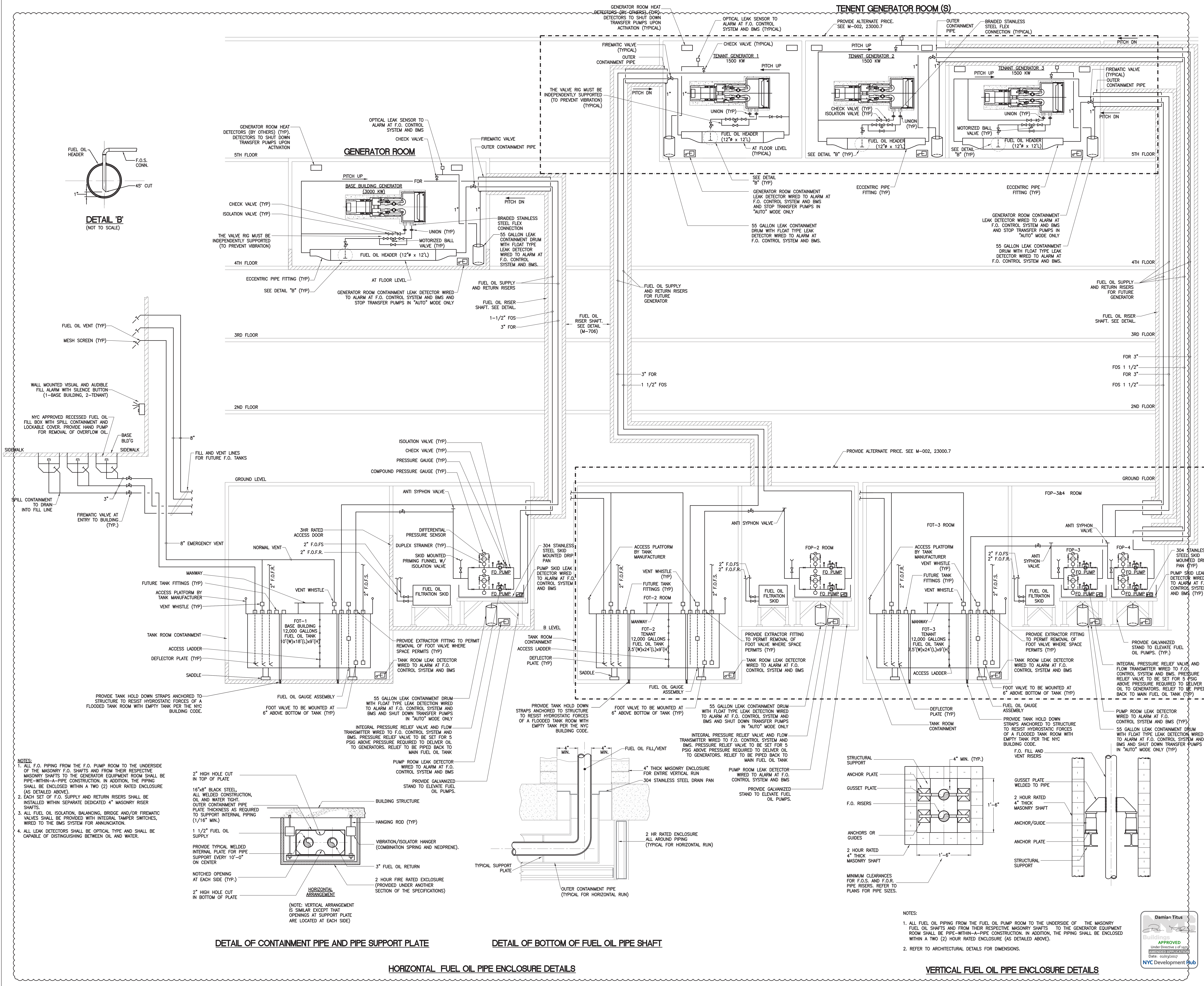
Key Plan:











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**MECHANICAL  
FUEL OIL FLOW  
DIAGRAM**

Project No.: 1400A.000  
Date: 29 JAN 2016  
Scale: NTS  
FIR No.: M-602

B-SCAN Sheet No.:  
**M-602.01**  
Sheet No.:  
**M-602.01**  
Page No.: 83 OF 94

NOTES:

1. ALL FUEL OIL PIPING FROM THE FUEL OIL PUMP ROOM TO THE UNDERSIDE OF THE MASONRY FUEL OIL SHAFTS AND FROM THEIR RESPECTIVE MASONRY SHAFTS TO THE GENERATOR EQUIPMENT ROOM SHALL BE PIPE-WITHIN-A-PIPE CONSTRUCTION. IN ADDITION, THE PIPING SHALL BE ENCLOSED WITHIN A TWO (2) HOUR RATED ENCLOSURE (AS DETAILED ABOVE).

2. REFER TO ARCHITECTURAL DETAILS FOR DIMENSIONS.

APPROVED  
Under Division 1 of 2015  
MAY 2015 APPLICATION  
Date: 02/09/2017  
NYC Development Hub





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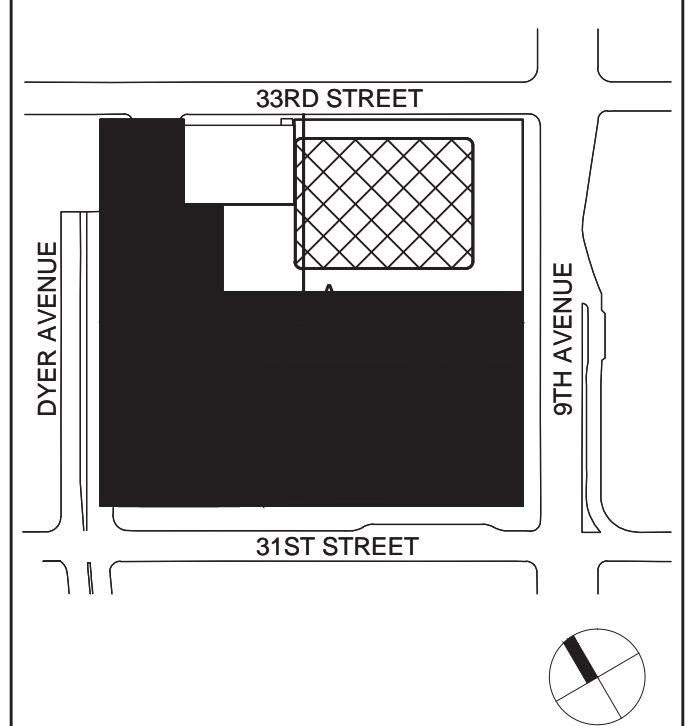
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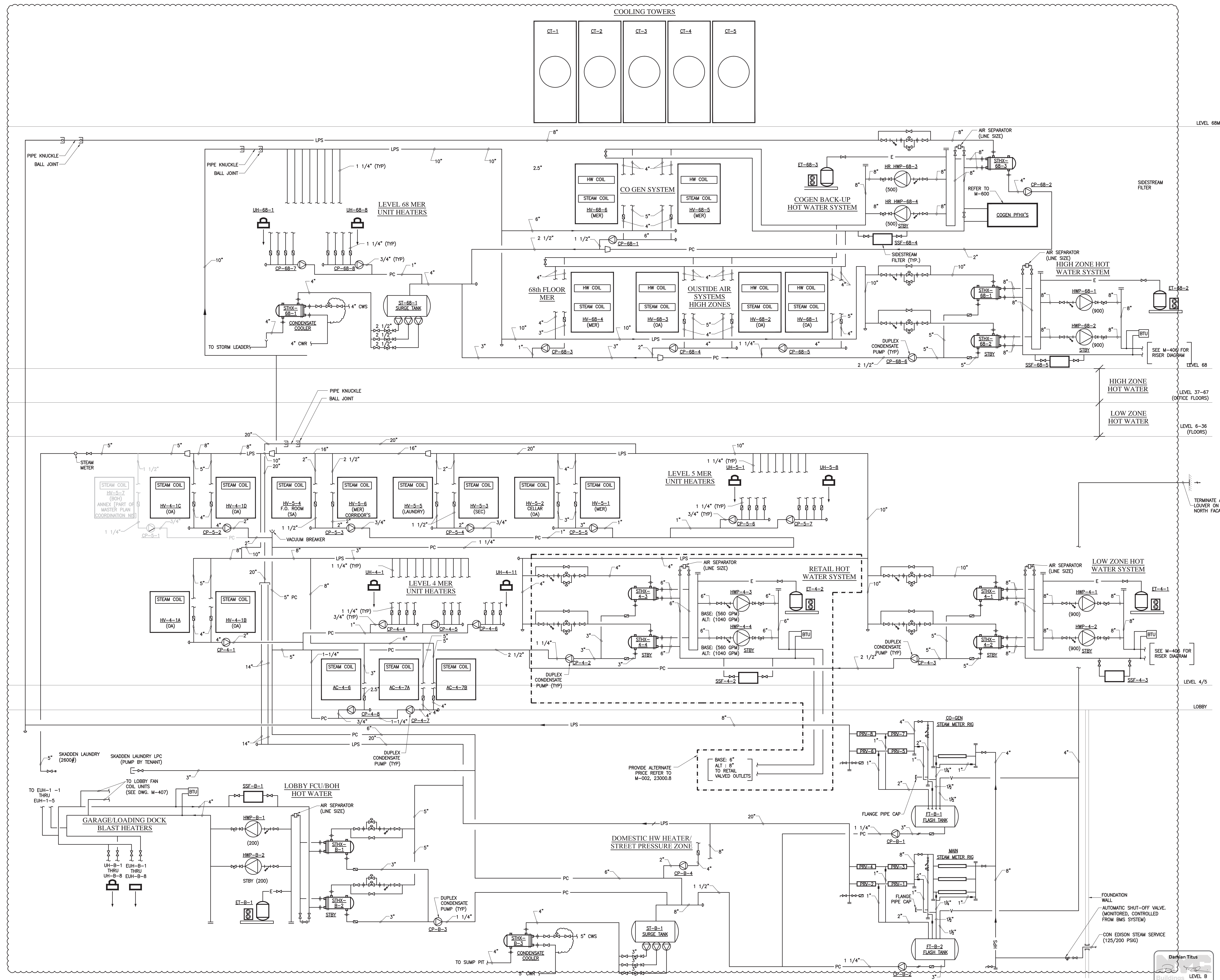


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1	22 APR 2014	ISSUED FOR BUILDING PERMIT
No.	Date	Description
Sheet Name:		

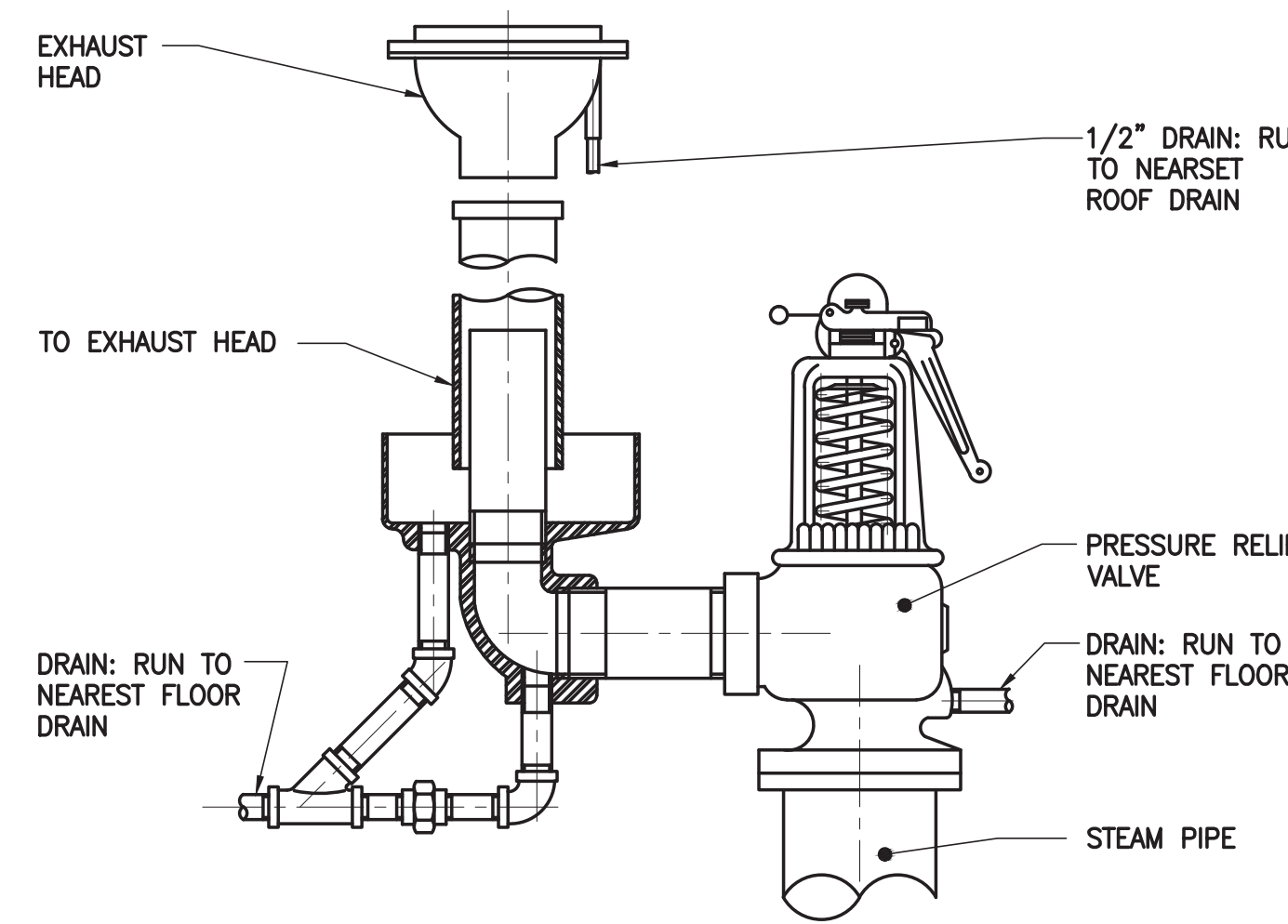
## MECHANICAL STEAM/HOT WATER FLOW DIAGRAM



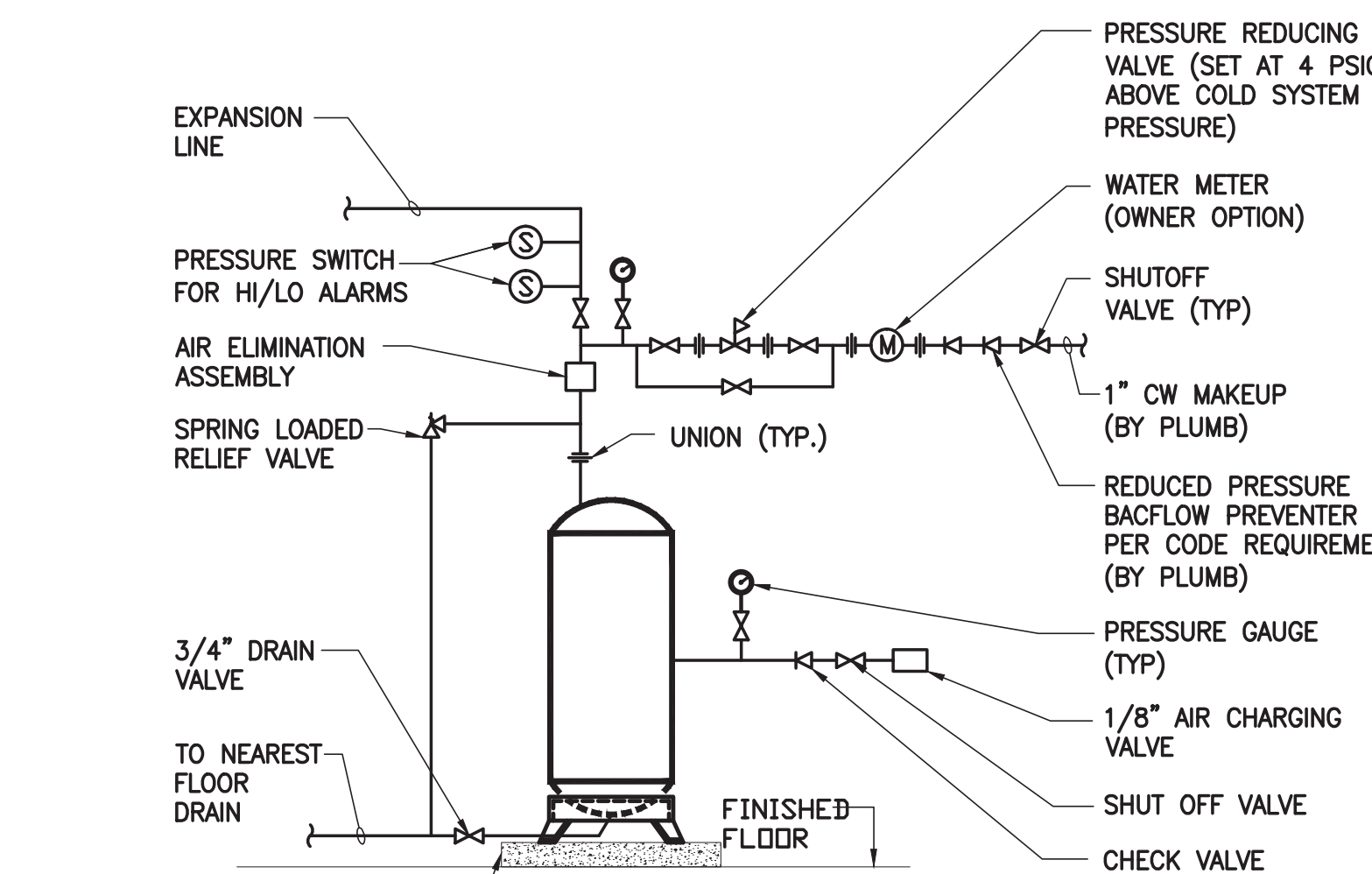




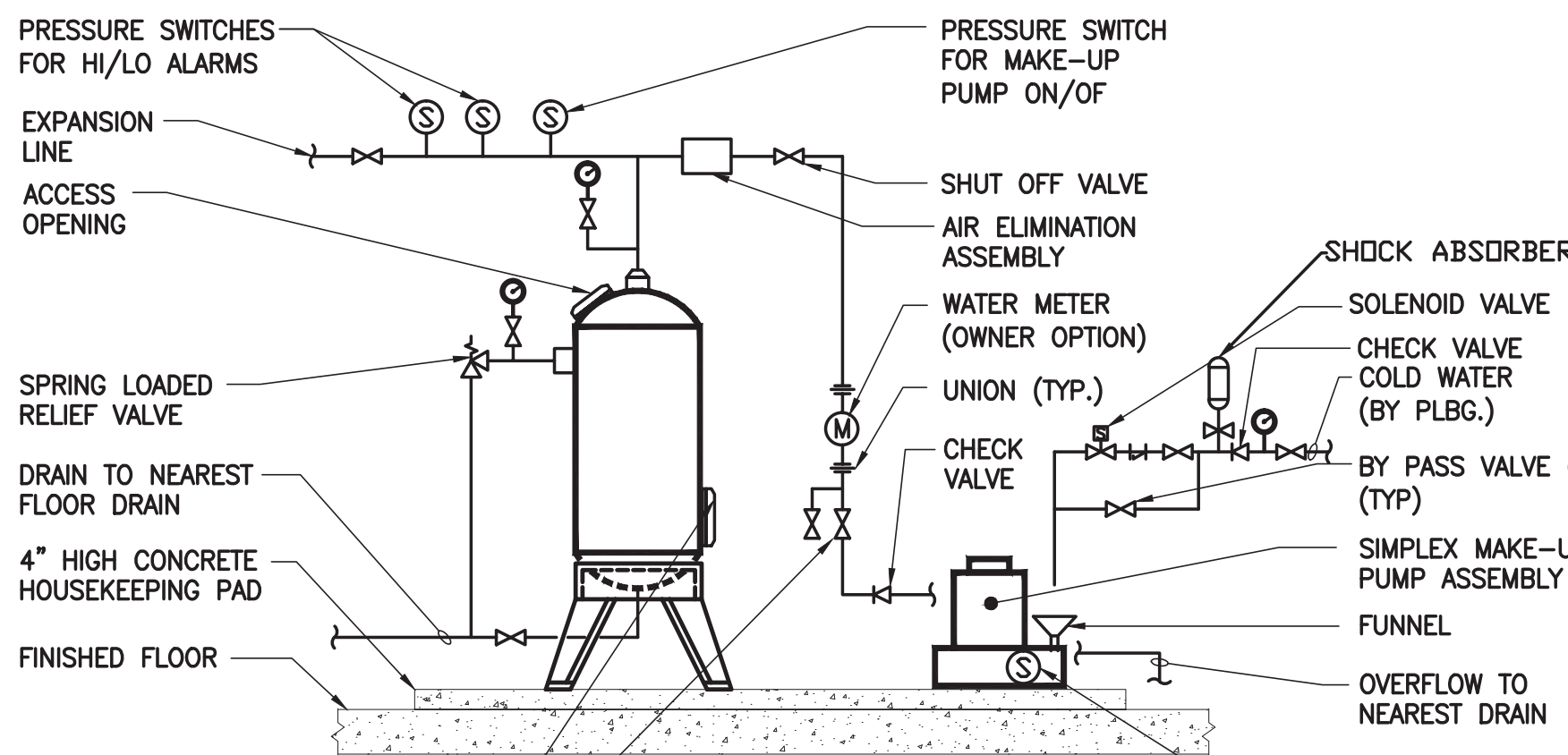




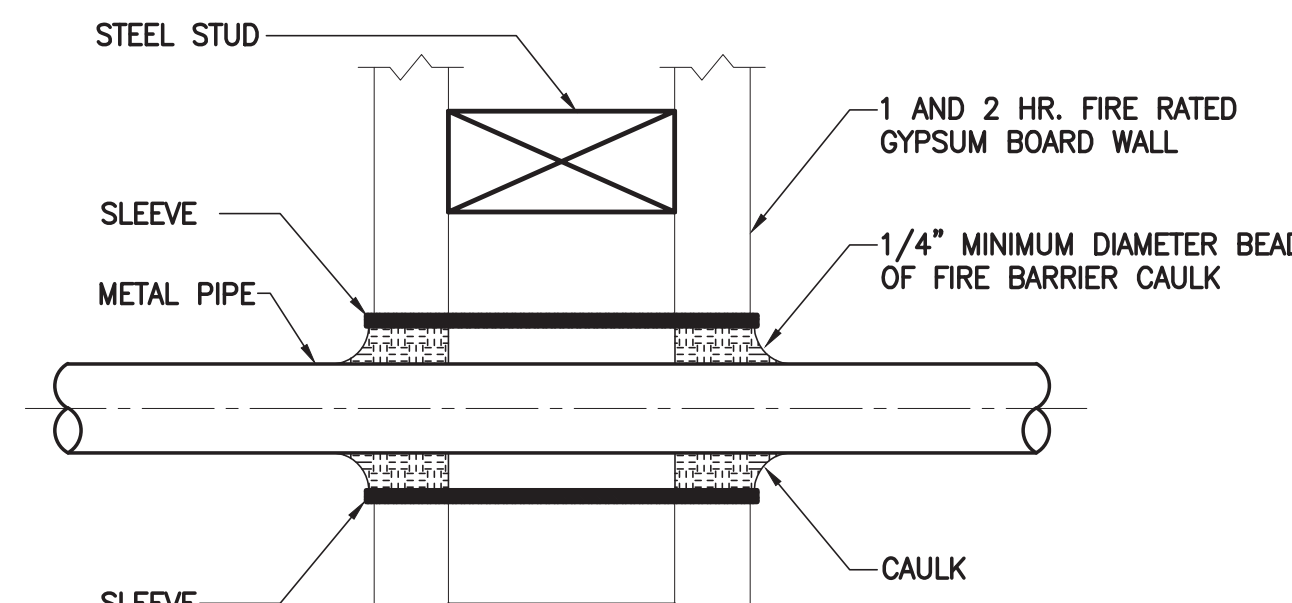
**STEAM PRESSURE RELIEF VALVE WITH DRIP PAN ELBOW**



**VERTICAL DIAPHRAGM EXPANSION TANK PIPING CONNECTION DETAIL**

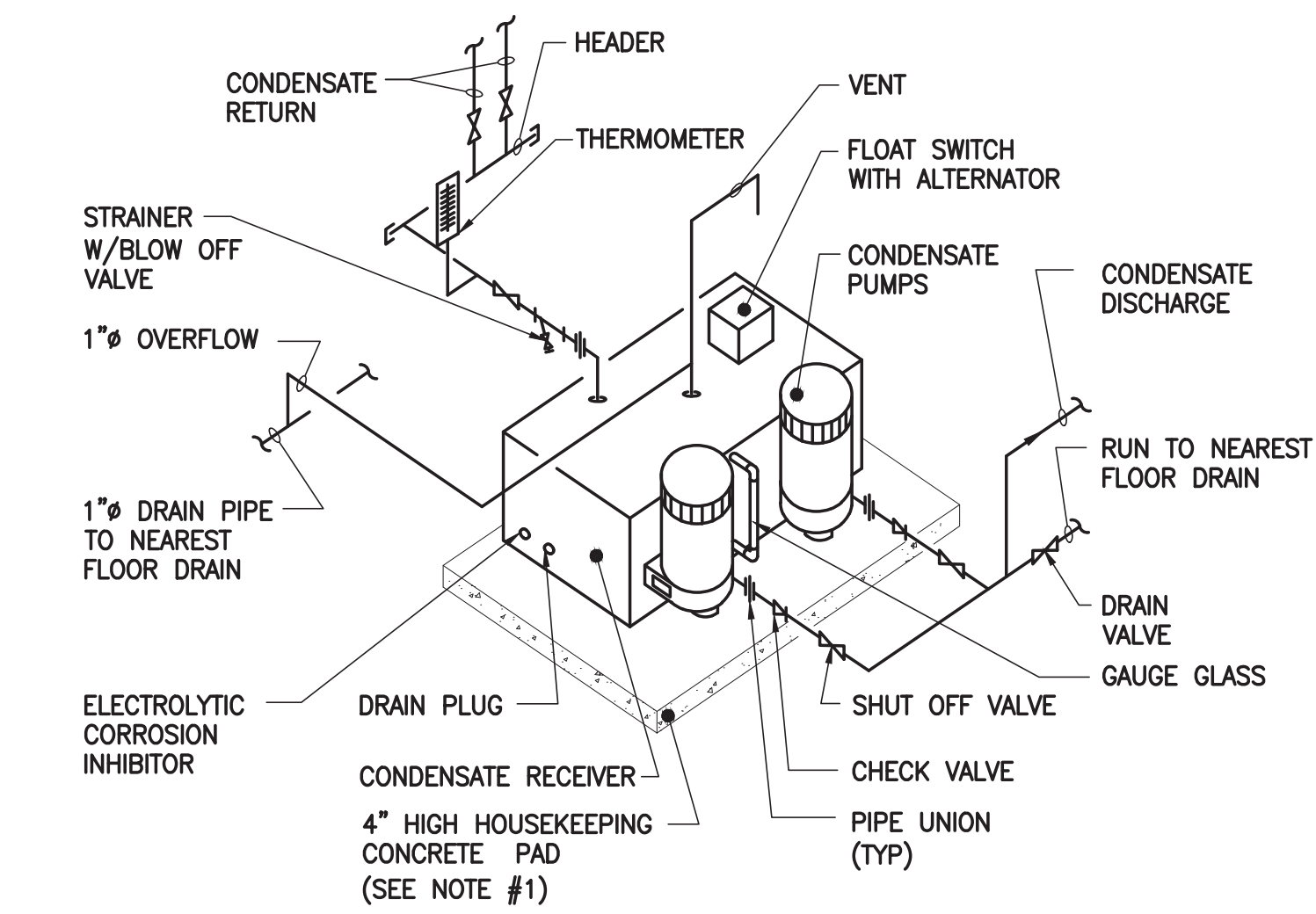


**DIAPHRAGM EXPANSION TANK WITH MAKE-UP PUMP**



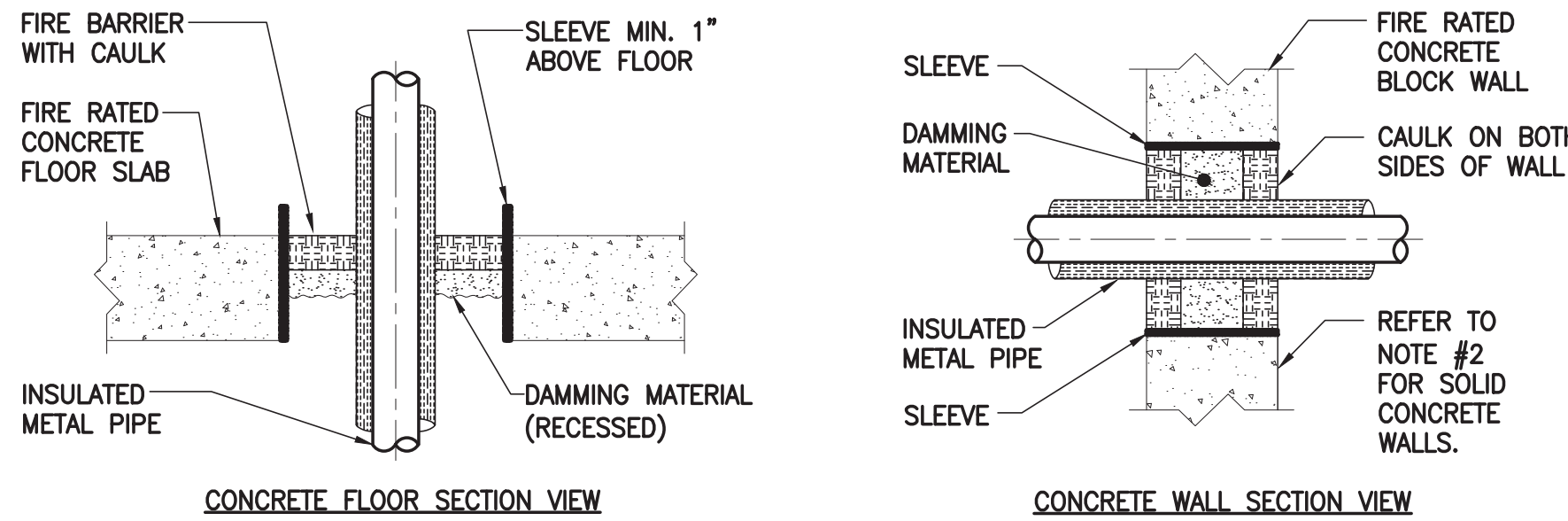
- NOTES:**
1. THE SPACE BETWEEN THE PENETRATING ITEM AND WALL BOARD MUST ACCOMMODATE AT LEAST ONE WRAP OF 1/4" FIRE BARRIER WRAP/STRIP.
  2. IF THE ANNULAR SPACE IS LESS THAN 1/2", ONE WRAP OF WRAP/STRIP IS REQUIRED. IF THE ANNULAR SPACE IS 1/2" OR GREATER, FILL WITH ADDITIONAL WRAPS OF WRAP/STRIP UNTIL THE SPACE IS LESS THAN 1/4". WRAP/STRIP MAY BE FRICITION FIT INTO OPENING SECURED WITH FOIL TAPE OR 16 GAUGE STEEL TIE WIRE.
  3. SLIDE THE WALL STRIPS INTO THE OPENING, LEAVING A MAXIMUM OF 3/4" EXPOSED WRAP BEYOND THE WALL SURFACE.
  4. SEAL THE WRAP/STRIP EDGES AND SEAMS WITH 1/4" MINIMUM BEAD OF FIRE BARRIER CAULK.
  5. INSTALL FIRESTOP ON BOTH SIDES OF THE WALL.
  6. INSTALLATION MUST CONFORM WITH PRODUCT MANUFACTURERS PERFORMANCE RATINGS PER ASTM E-814 (UL 1479) FIRE TEST AND UL RESPECTIVE CLASSIFICATION FOR FIRE STOPPING.
  7. IN ADDITION TO THE REQUIREMENTS OF THE APPROVED UL LISTED FIRE STOPPING ASSEMBLIES, ESCUTCHEON PLATES SHALL BE INSTALLED ON EACH SIDE OF THE FIRE RATED WALL AND SLAB CONSTRUCTION IN ACCORDANCE WITH ARTICLE 15005-1.25 OF THE SPECIFICATIONS AND AS REQUIRED BY THE NEW YORK CITY BUILDING CODE.

**PENETRATION FIRESTOP FOR METAL PIPE THROUGH GYPSUM BOARD WALL**



**DUPLEX CONDENSATE PUMP AND RECEIVER CONNECTIONS**

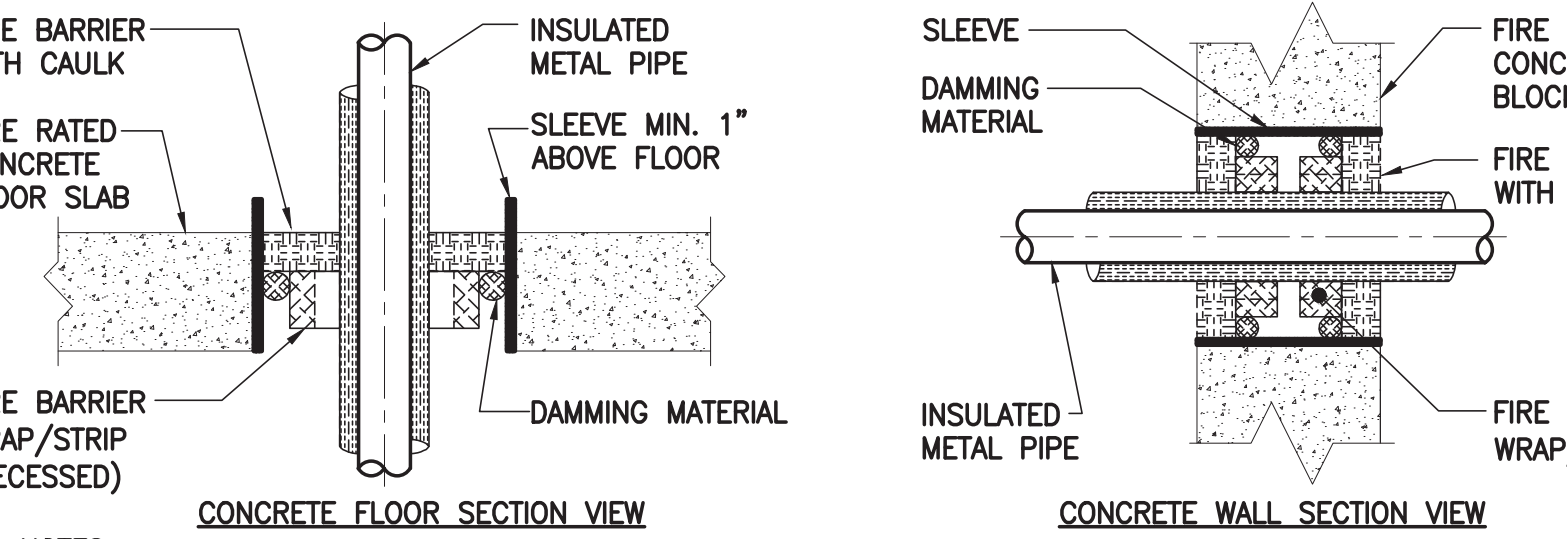
- NOTES:**
1. ALL PUMPS LOCATED ON MER LEVELS OR DIRECTLY ABOVE OCCUPIED AREAS SHALL BE MOUNTED ON MASON SUPER W (3/4") ISOLATION PADS. PADS SHALL BE THE SAME "FOOTPRINT" AS THE CONDENSATE RECEIVER AND BE PLACED ON TOP OF THE 4" H.C. PAD.



**CONCRETE FLOOR SECTION VIEW CONCRETE WALL SECTION VIEW**

- NOTES:**
1. THE MAXIMUM ANNULAR SPACE TO BE FILLED IS 2", THE MINIMUM ANNULAR SPACE IS 3/4", THE MAXIMUM PIPE SIZE IS A NOMINAL 4" DIAMETER.
  2. FOR SOLID CONCRETE WALLS, THE CAULK MAY BE CENTERED IN THE WALL WITH DAMMING MATERIAL ON BOTH SIDES OF THE CAULK.
  3. PENETRATIONS SHALL BE CAULKED ON BOTH SIDES. SELF LEVELING CAULK SHALL BE USED ON ALL HORIZONTAL SURFACES.
  4. THE DEPTH OF THE CAULK SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE:

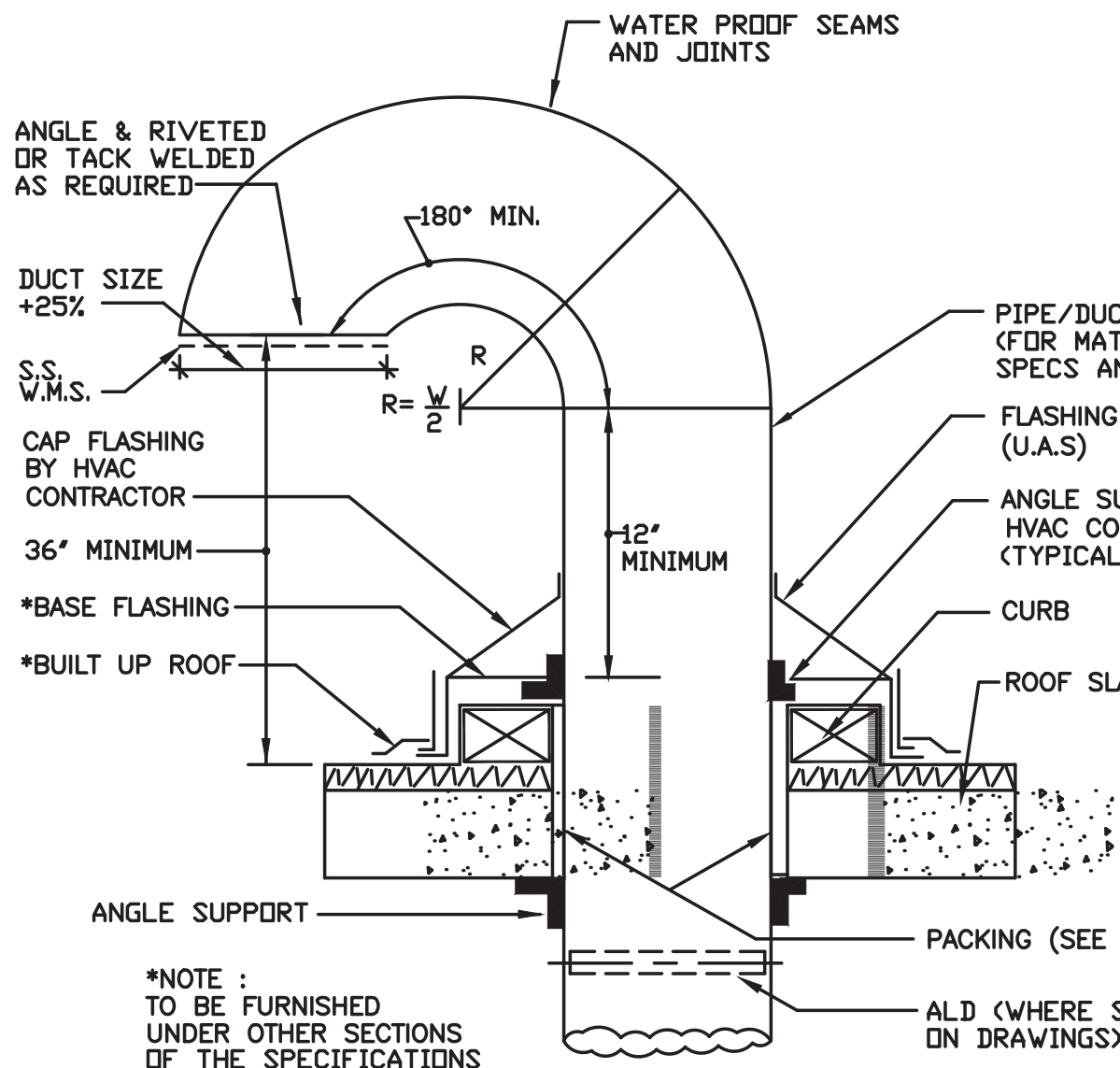
**PENETRATION FIRESTOP FOR INSULATED METAL PIPE THROUGH A CONCRETE FLOOR OR WALL**



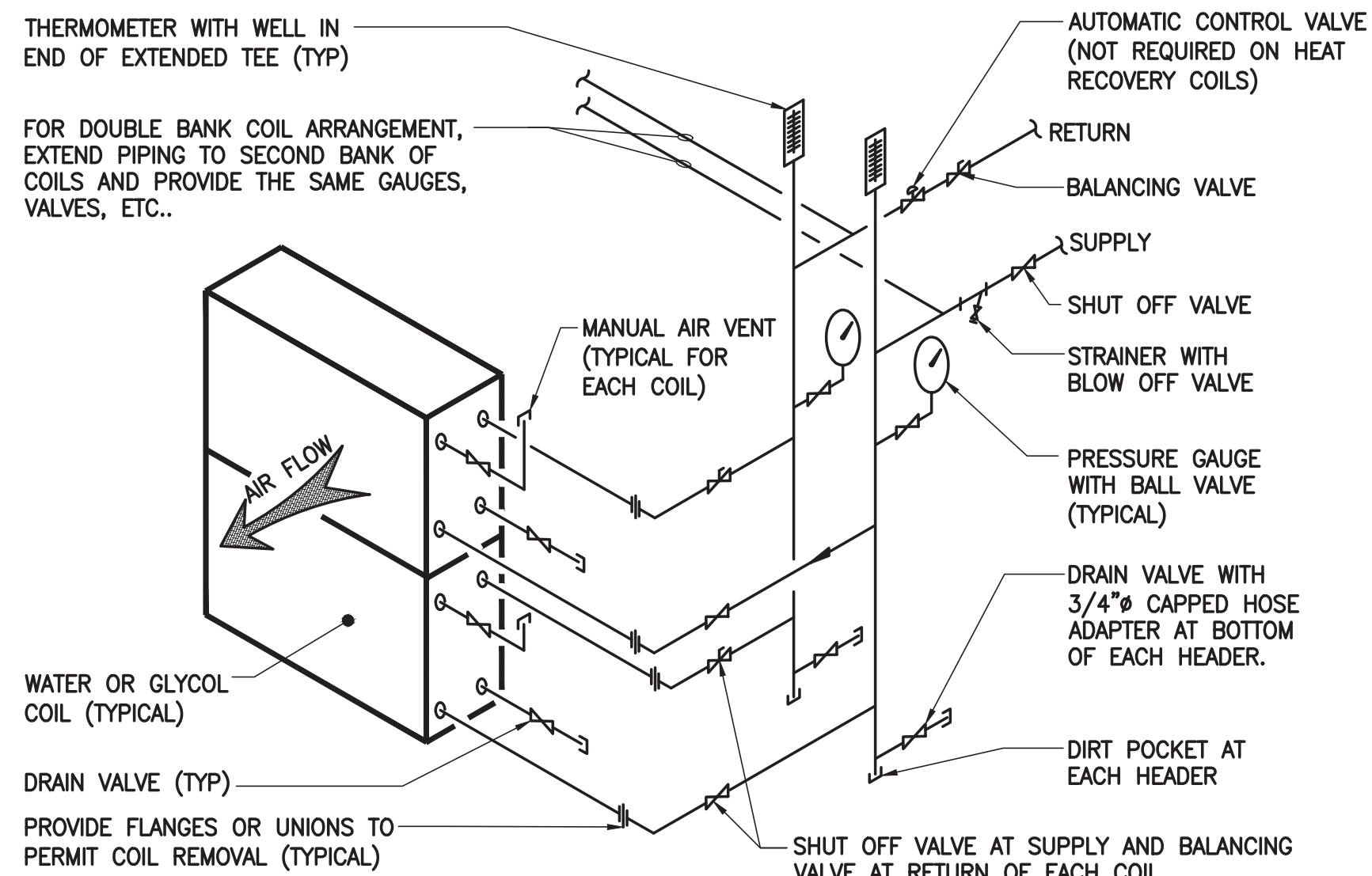
- NOTES:**
1. WALL PENETRATION FIRESTOPS MUST BE INSTALLED ON BOTH SIDES OF THE WALL, THE FLOOR PENETRATION FIRESTOP IS TO BE INSTALLED FOR THE TOP OF THE FLOOR SURFACE.
  2. THE ANNULAR SPACE MUST BE LARGE ENOUGH TO ACCOMMODATE THE MIN. NUMBER OF WRAP/STRIPS REQUIRED IN BOTH THE FLOOR OR WALL. THE MINIMUM ANNULAR SPACE MUST ACCOMMODATE THE MINIMUM NUMBER OF WRAP/STRIPS REQUIRED PER INSULATION THICKNESS. (SEE TABLE BELOW)

WRAP	CAULK (MIN.)	INSULATION	HOURLY RATING
2 WRAPS	1/2" DEPTH	1" THICK	3
3 WRAPS	1/2" DEPTH	2" THICK	2
4 WRAPS	1/2" DEPTH	3" THICK	2

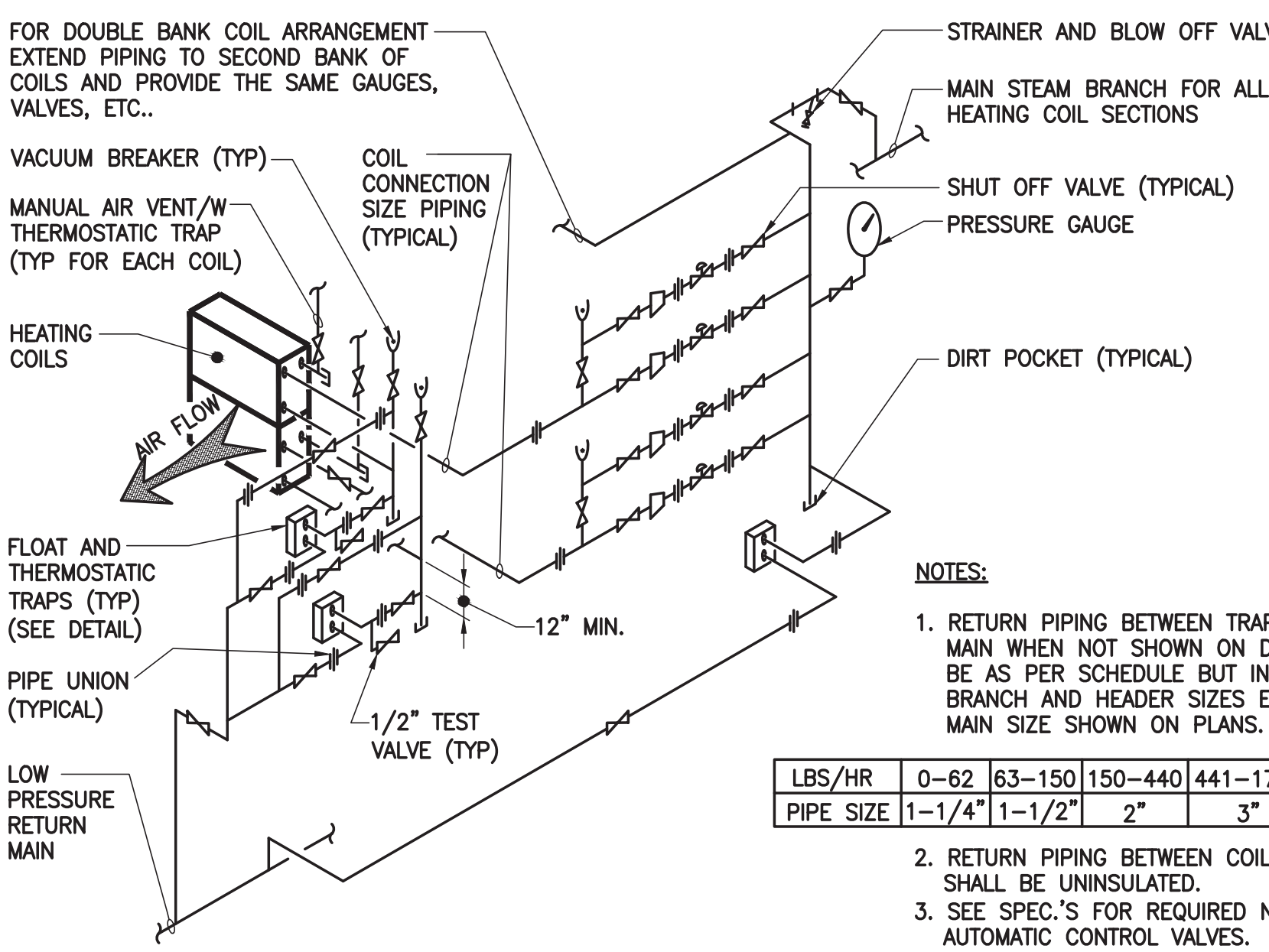
**PENETRATION FIRESTOP FOR 20" MAXIMUM INSULATED METAL PIPE THROUGH A CONCRETE FLOOR OR WALL**



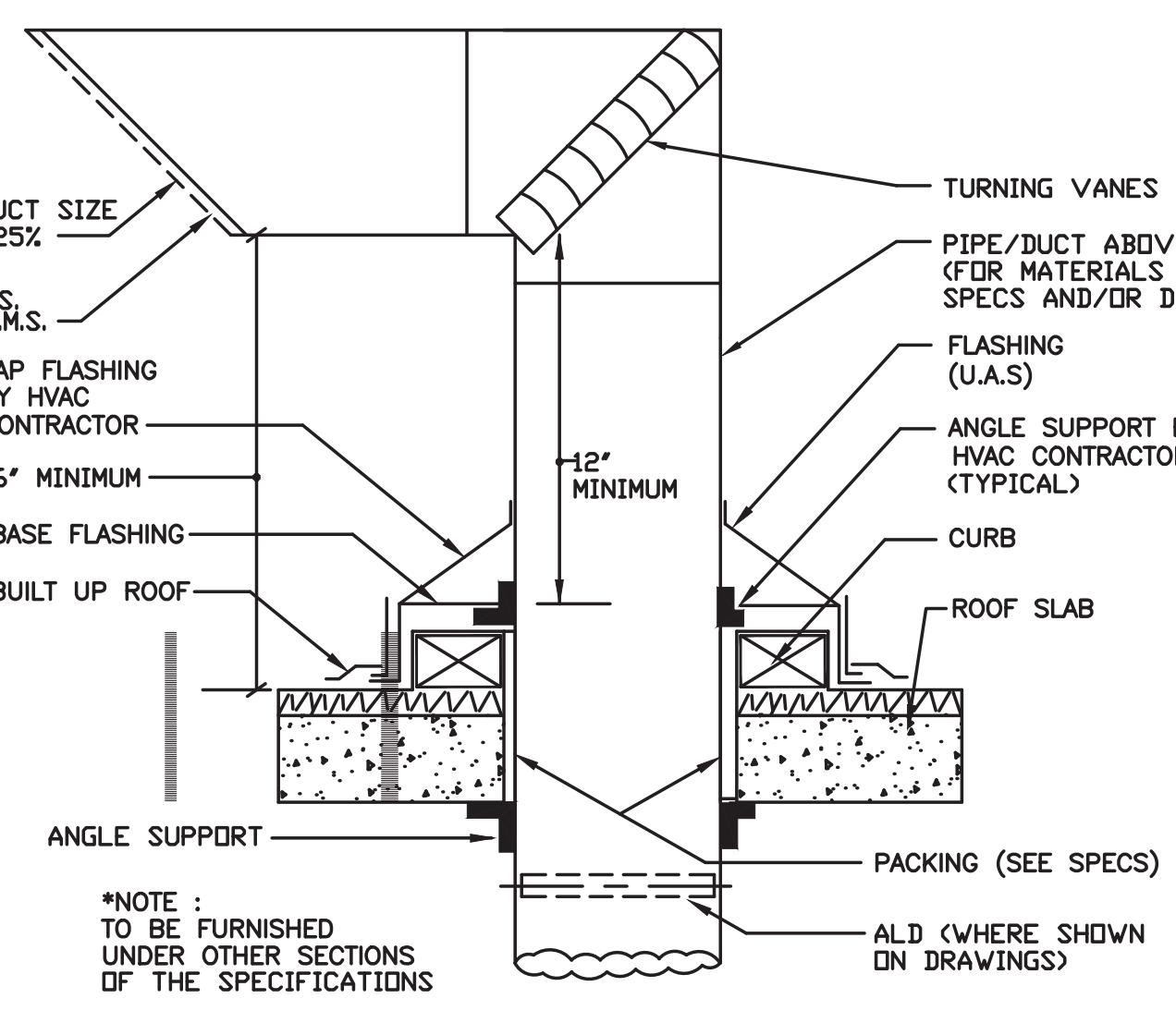
**CURB AND FLASHING DETAIL FOR GOOSENECK AT ROOF**



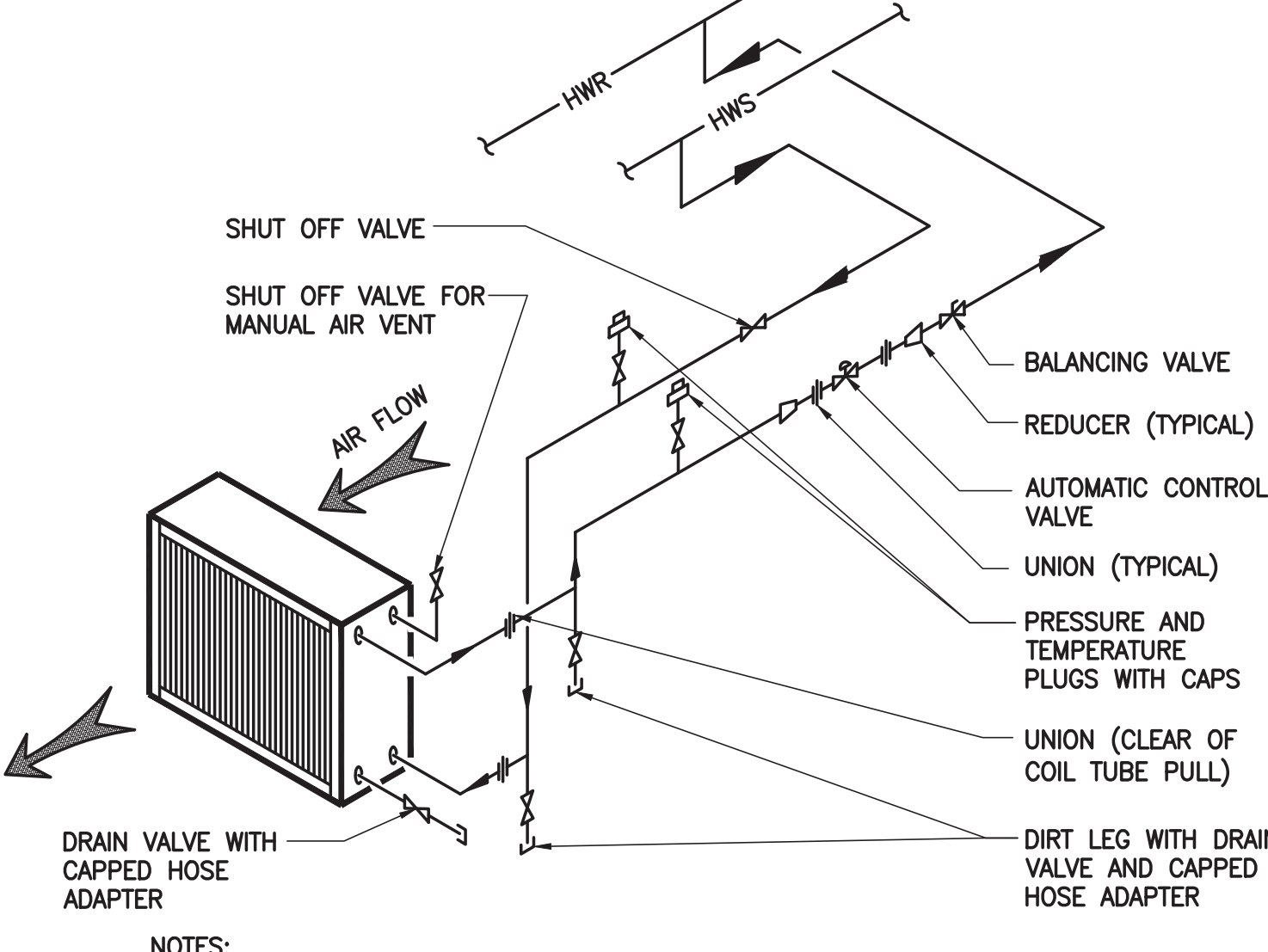
**CHILLED WATER AND HEAT RECOVERY COIL END PIPED CONNECTIONS**



**STEAM COIL PIPING CONNECTIONS DETAIL (NON-FREEZE TYPE)**



**CURB AND FLASHING DETAIL FOR GOOSENECK AT ROOF**



**REHEAT COIL PIPING CONNECTION DETAIL**

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Code Consultants Professional Engineers PC  
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Facade Maintenance Consultant  
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166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant  
Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph, Ontario, Canada N1K 1S8

Key Plan:

Seal & Signature:

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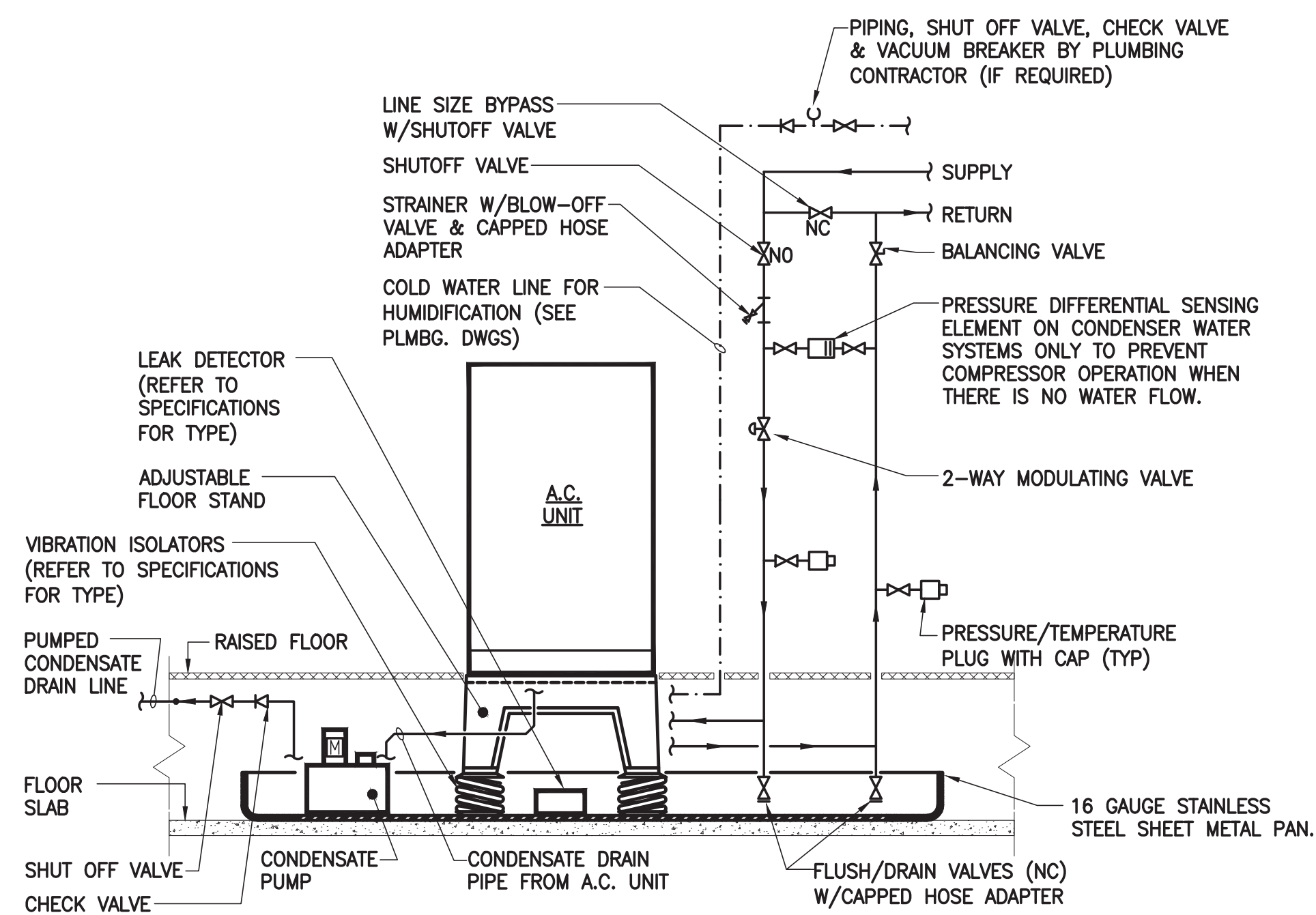
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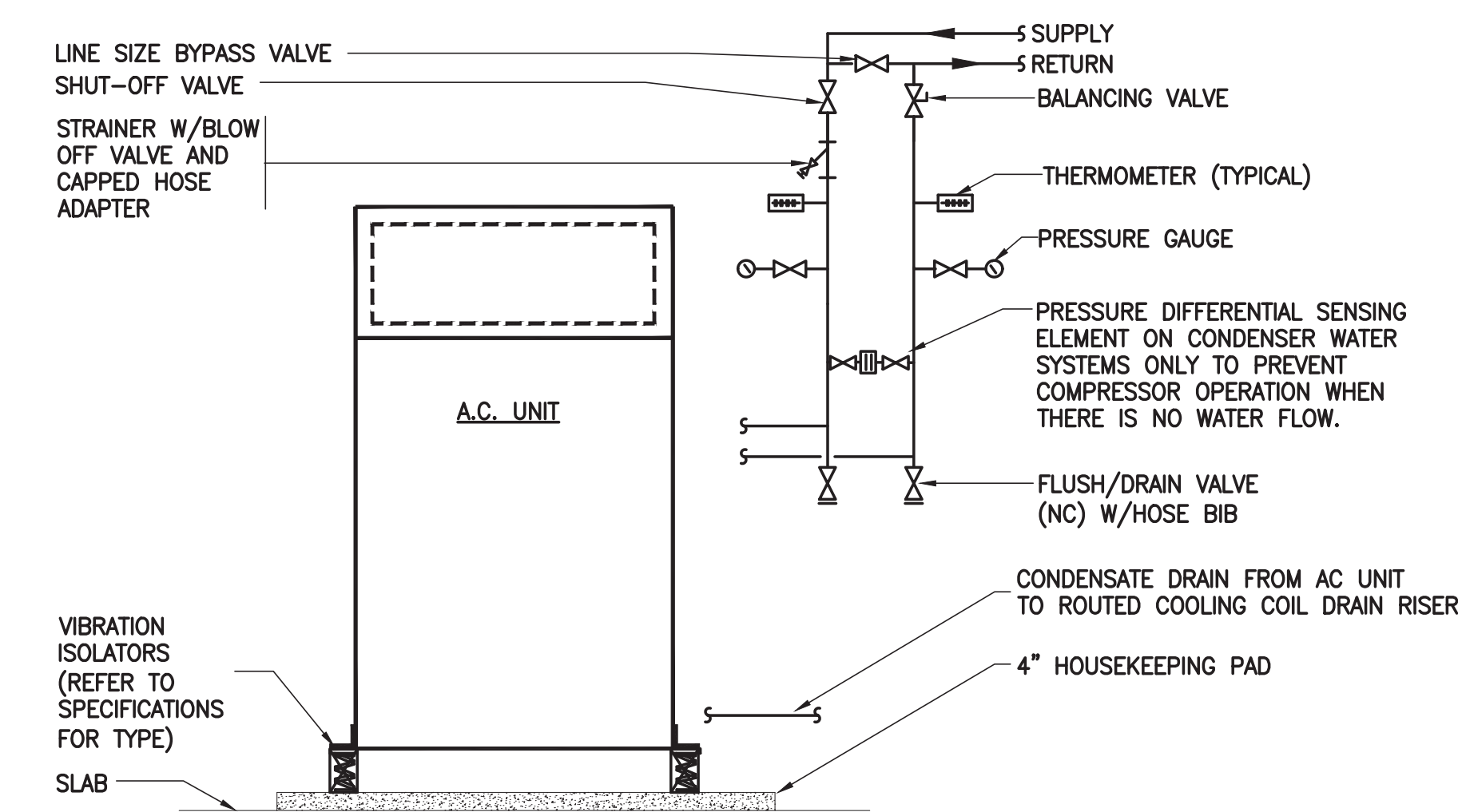
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Date: 29 JAN 2016  
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File No.: M-701

B-SCAN Sheet No.:  
**M-701.01**  
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Page No.: 86 OF 94



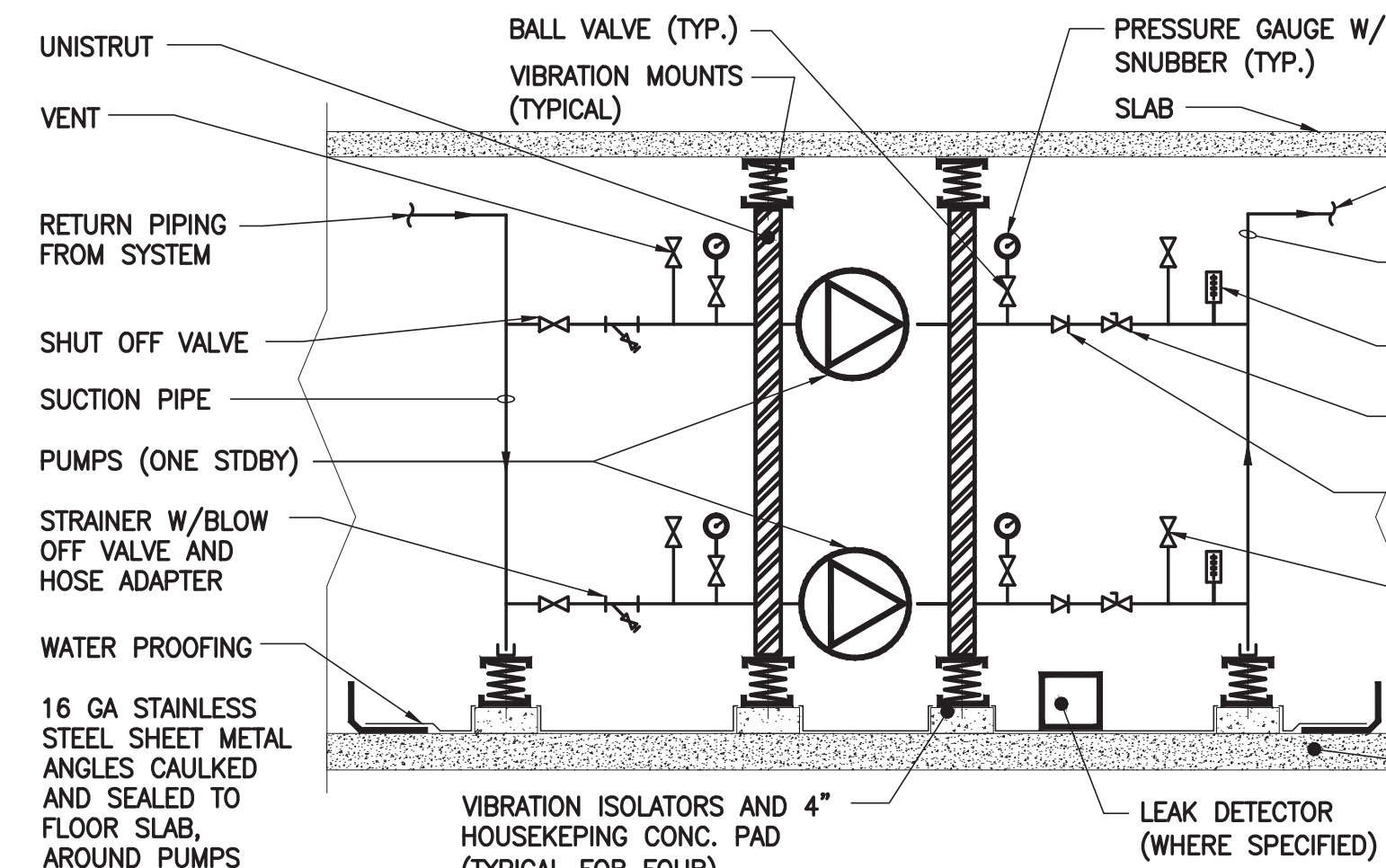


**FLOOR MOUNTED A.C. UNIT, OVERHEAD  
WATER PIPING CONNECTION DETAIL**



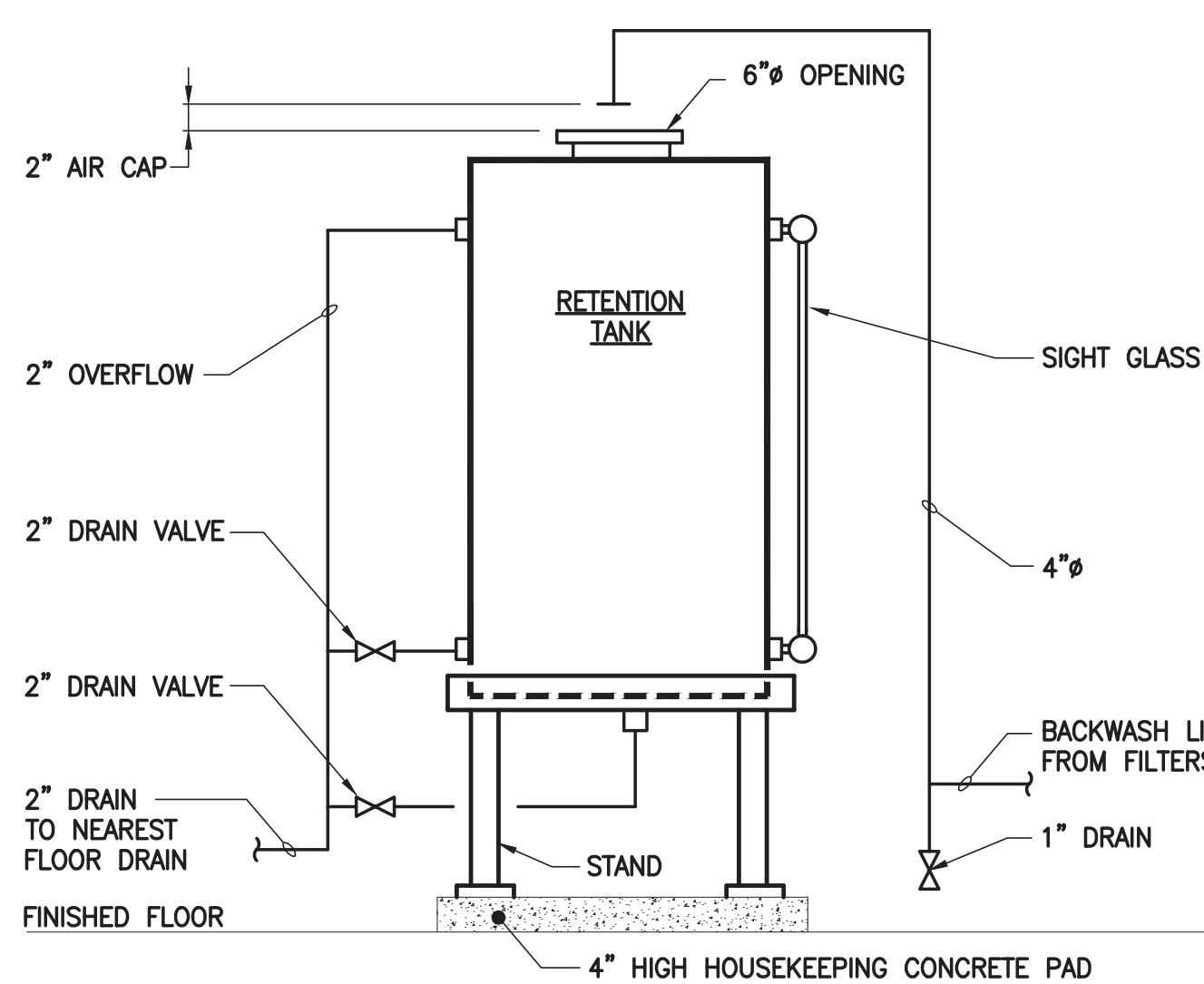
**SCHEMATIC PIPING CONNECTIONS  
TO TYPICAL FLOOR A.C. UNITS**

- NOTES:
1. ALL REQUIRED. CONTROL VALVES TO BE PROVIDED BY A/C UNIT MANUFACTURERS AND LOCATED WITHIN UNIT.

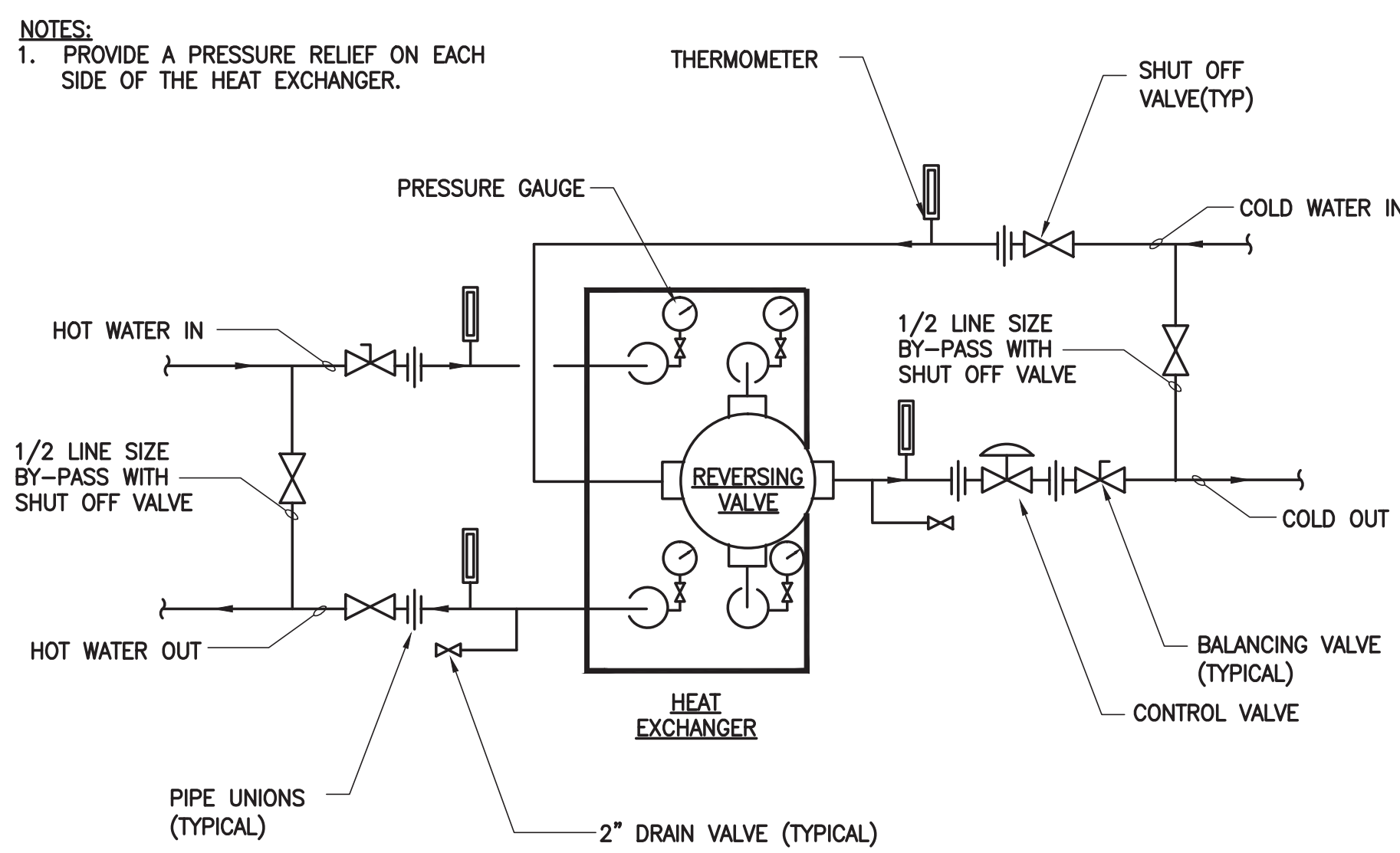


- NOTES:
1. ALL PIPING AND EQUIPMENT SHALL BE RESILIENTLY SUPPORTED AS PER SPECIFICATIONS.
  2. REFER TO DETAIL FOR CYCLONE SEPARATOR PIPING ARRANGEMENT.

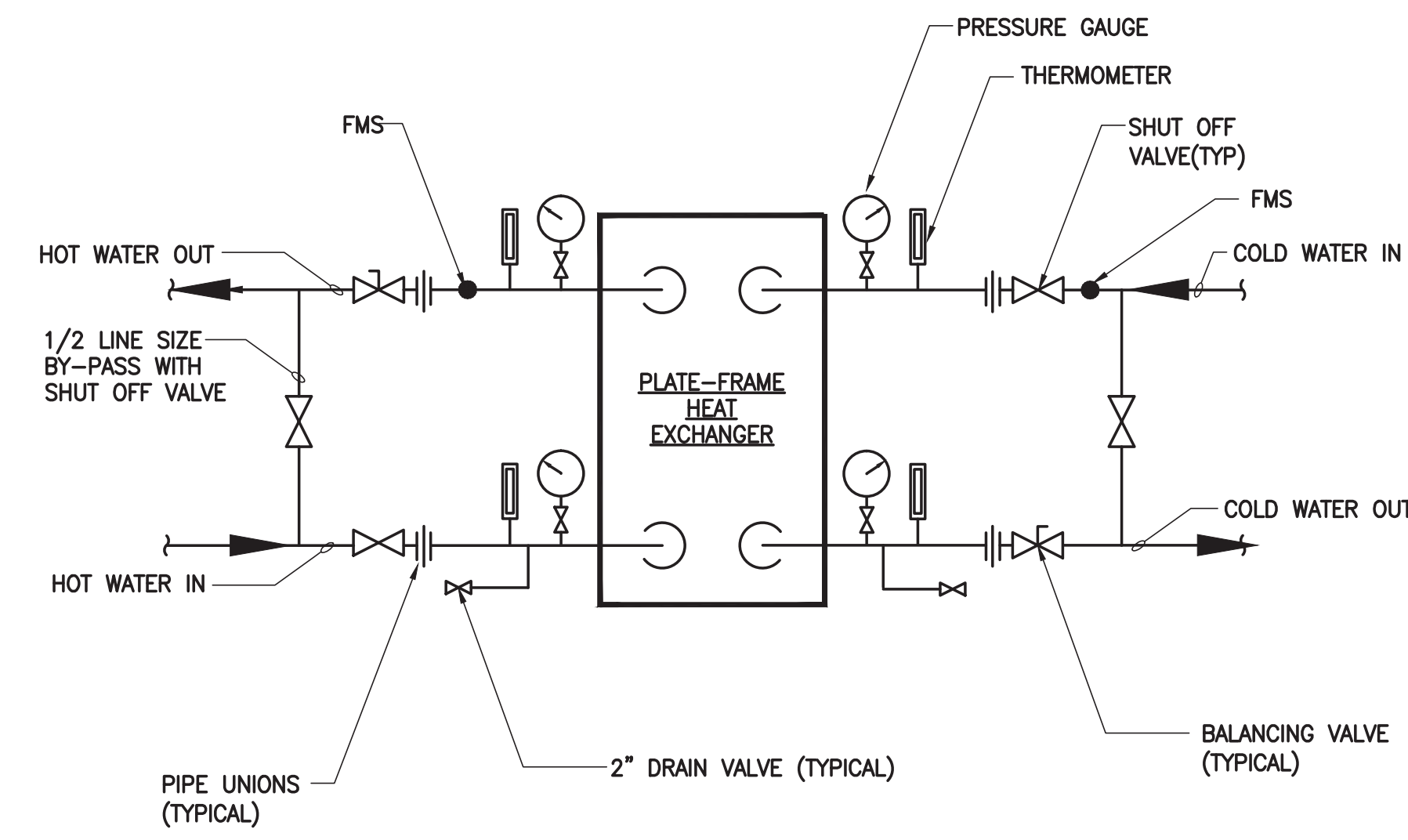
**INLINE PUMP ASSEMBLY DETAIL**



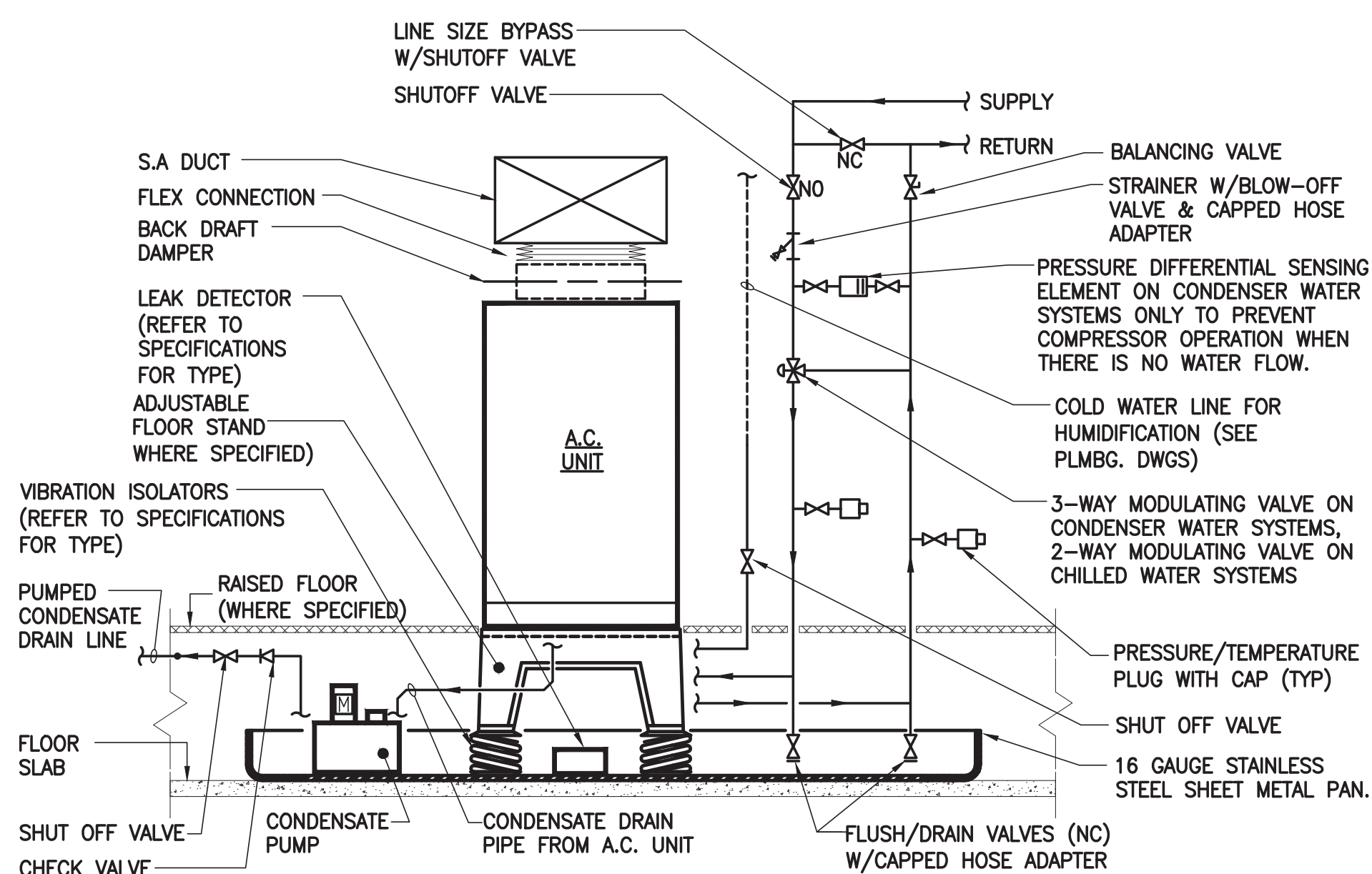
**COOLING TOWER FILTRATION SYSTEM  
BACKWASH AND RETENTION TANK DETAIL**



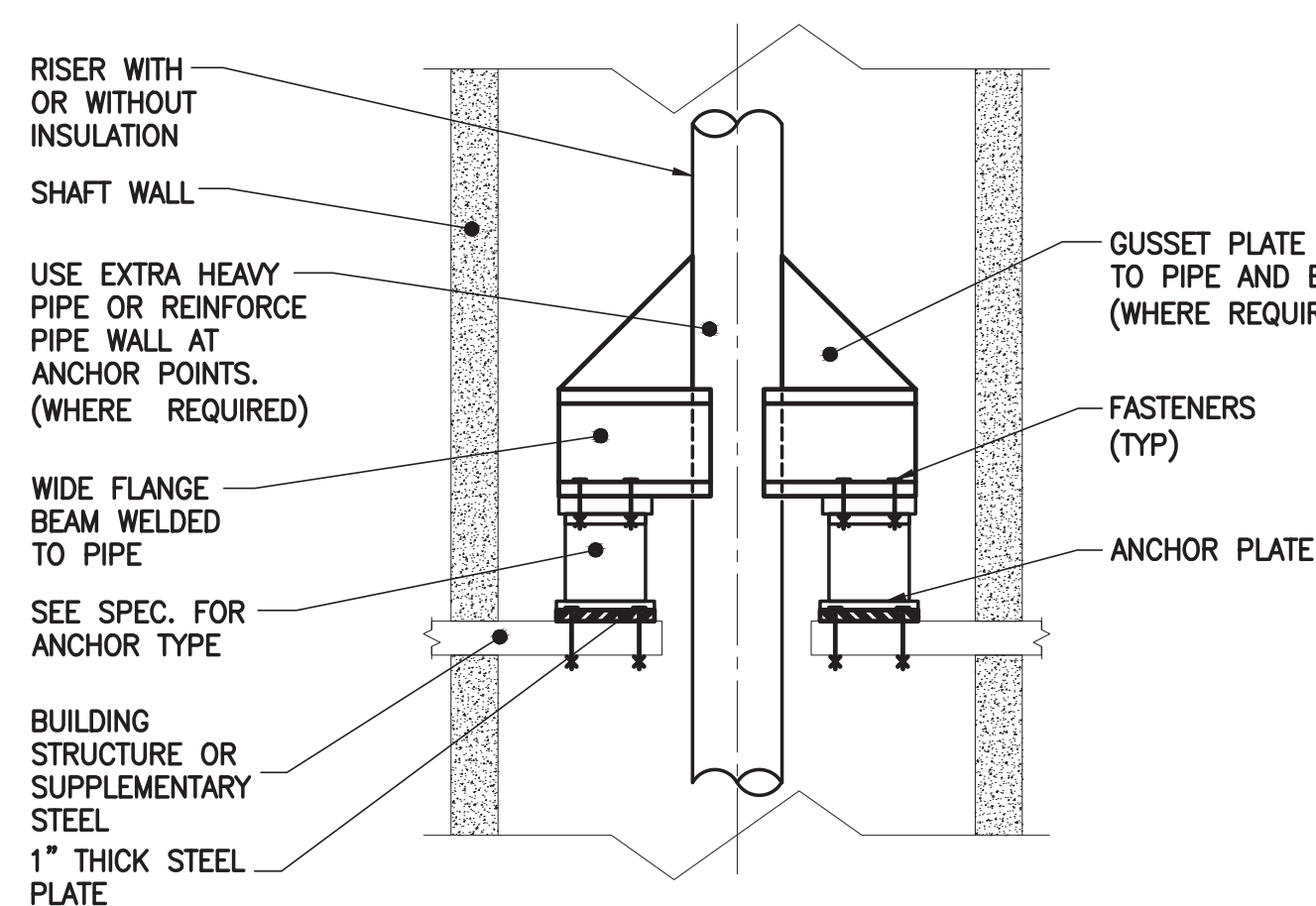
**DETAIL OF PLATE-AND-FRAME HX WITH REVERSING VALVE  
AND CONTROL VALVE  
(OPEN CONDENSER WATER SIDE)**



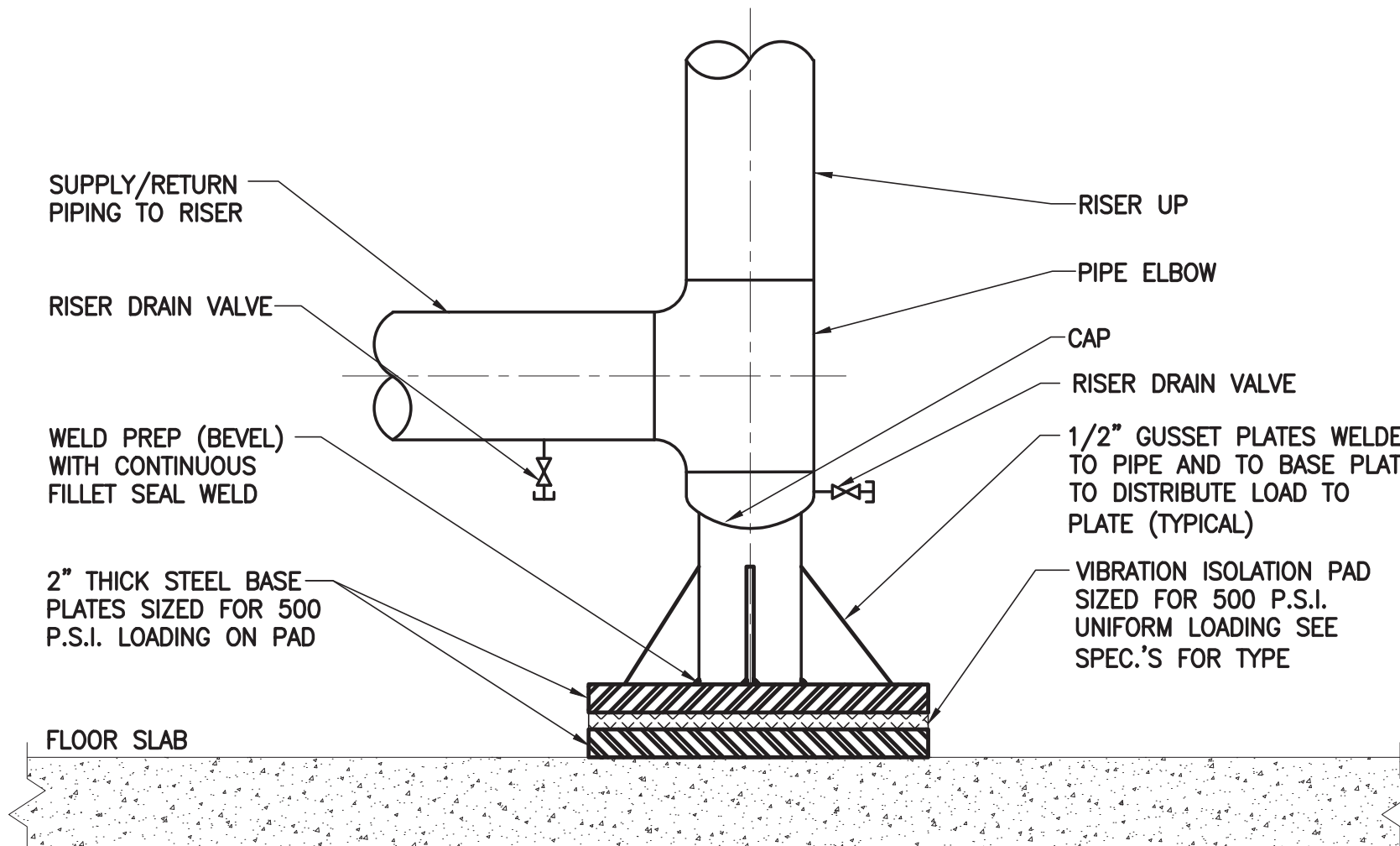
**TYPICAL PLATE-AND-FRAME HX PIPING CONNECTION DETAIL  
(CLOSED SYSTEM)**



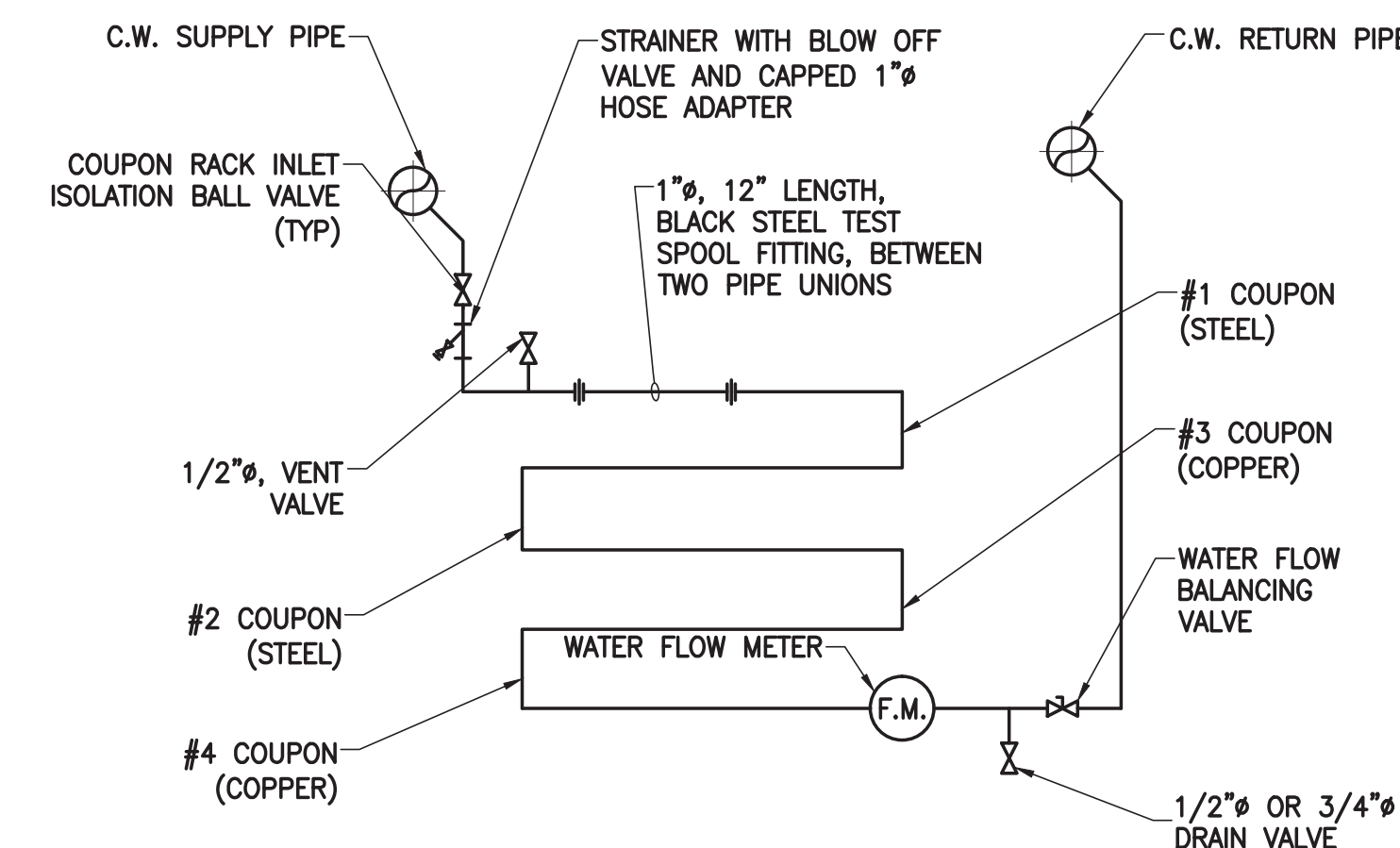
**FLOOR MOUNTED TOP DISCHARGE A.C. UNIT, OVERHEAD  
WATER PIPING CONNECTION DETAIL**



**TYPICAL ANCHOR AND GUIDE  
SUPPORT DETAILS FOR PIPE RISERS**

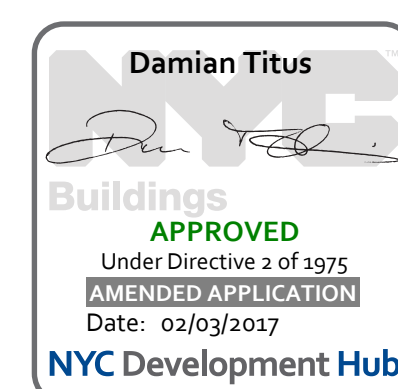


**TYPICAL BASE SUPPORT DETAIL FOR PIPE RISERS**



- NOTE:
1. METERED WATER FLOW THROUGH 1" BLACK STEEL PIPING TO BE MAINTAINED AT 4 TO 6 G.P.M., WHICH PROVIDES FLOW VELOCITY OF 3 TO 5 F.P.S.

**OPEN C.W. SYSTEM 1" BLACK STEEL  
CORROSION COUPON RACK PIPE DETAIL**



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**MECHANICAL  
DETAIL  
SHEET  
NO. 3**

Project No.: 14800-A-000  
Date: 29 JAN 2016  
Scale: NTS  
FIR No.: M-702

B-SCAN Sheet No.:  
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SECTION

LEVEL B SLAB

GX/SX EXHAUST DUCT

DUCT SUPPORT  
(DUCT TO BE HELD ABOVE SLAB)

KNEE WALL

LOWER FLOOR SLAB

Diagram illustrating a piping system configuration for a Thermal/Seismic Expansion Joint (TSEJ) and Isolation Valves.

The diagram shows a horizontal pipe section divided into two zones, Zone "A" and Zone "B", by a Thermal/Seismic Expansion Joint (TSEJ). The TSEJ is represented by a dashed line with a zigzag pattern.

On the left side of Zone "A", there is an "ANCHOR PIPE TO STRUCTURE IN ZONE 'A'".

On the right side of Zone "B", there is an "ANCHOR PIPE TO STRUCTURE IN ZONE 'B'".

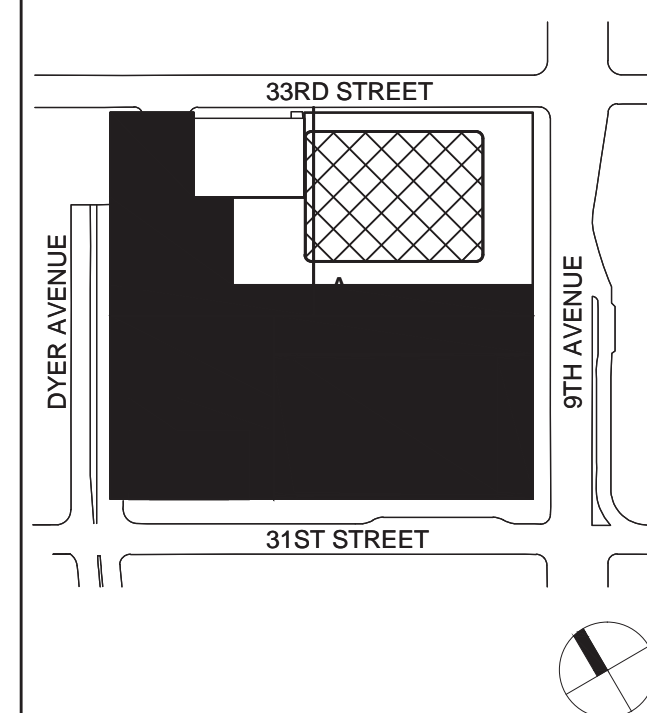
Isolation Valves are indicated by symbols (a circle with a cross) on the pipe. One isolation valve is located in Zone "A", and another is located in Zone "B".

A note (3) points to the ball joints in the piping, stating: "BALL JOINTS IN SERIES TO PERMIT MOVEMENT IN 3 AXES. REFER TO SCHEDULE FOR BALL JOINT SIZING."

Technical drawing of a ball joint detail. The drawing shows a horizontal pipe assembly with various components labeled. At the top, a concrete slab is shown with a 'THERMAL/SEISMIC JOINT'. Below the slab, the pipe is supported by 'ANCHOR' blocks. The pipe contains a 'BALL JOINT (2)' and is guided by a 'PLANAR GUIDE'. Isolation valves are located on either side of the ball joint. A 'DRAIN VALVE' is shown at the bottom right. The title 'BALL JOINT DETAIL' is centered at the bottom.

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650 Woodlawn Road West, Guelph

Key Plan



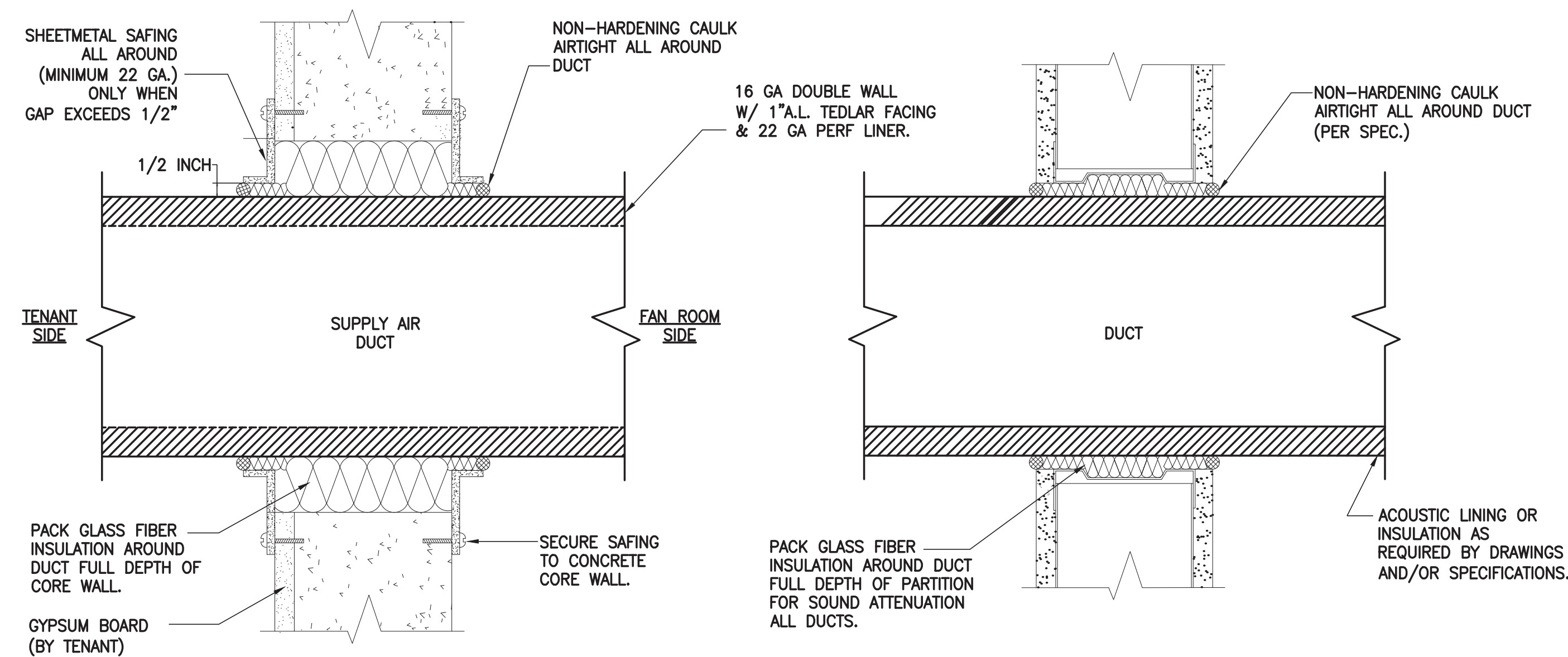
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**Damian Titus**  
Buildings  
**APPROVED**  
Under Directive 2 of 1975  
**AMENDED APPLICATION**  
Date: 02/03/2017  
NYC Development Hub

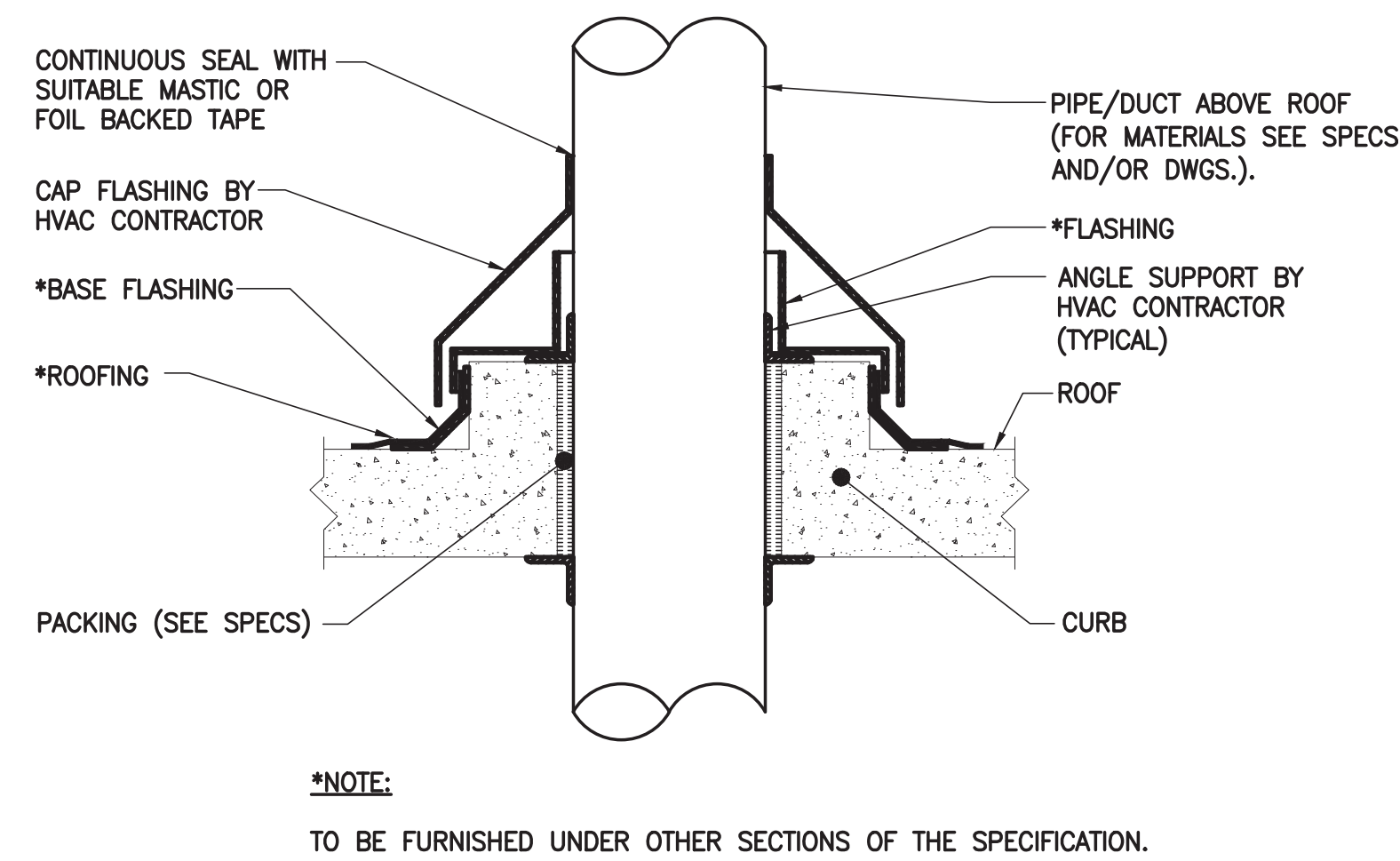
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Scale: NTS	Sheet No.:
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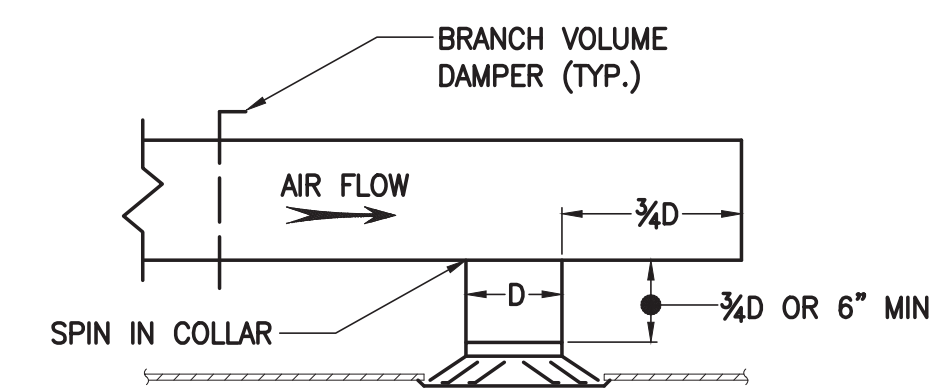


**FAN ROOM DUCT PENETRATION (NON-RATED PARTITIONS)**

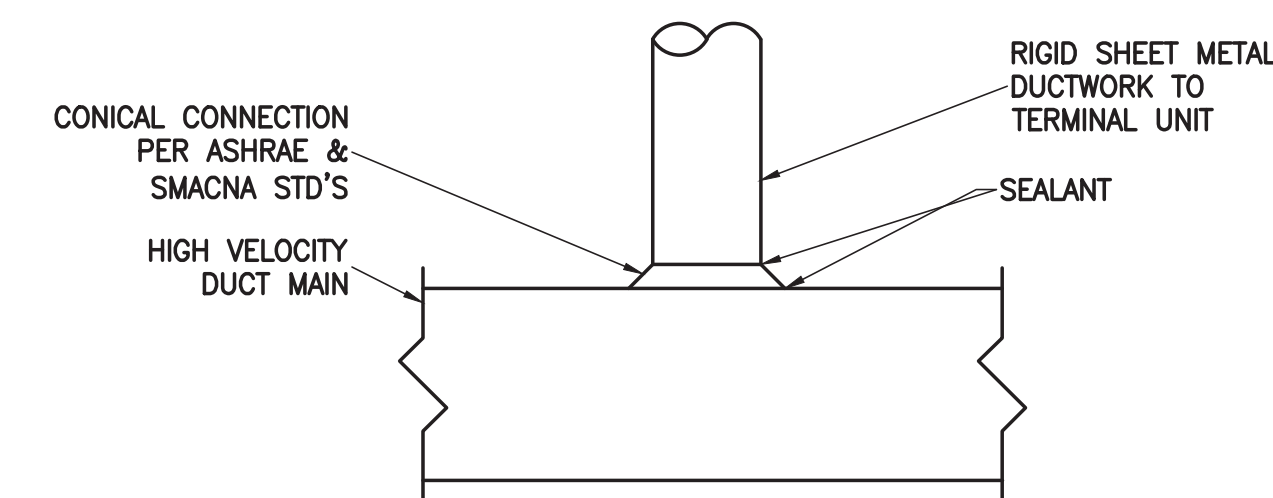
**TYPICAL DUCT AT WALL PENETRATION (NON-RATED PARTITIONS)**



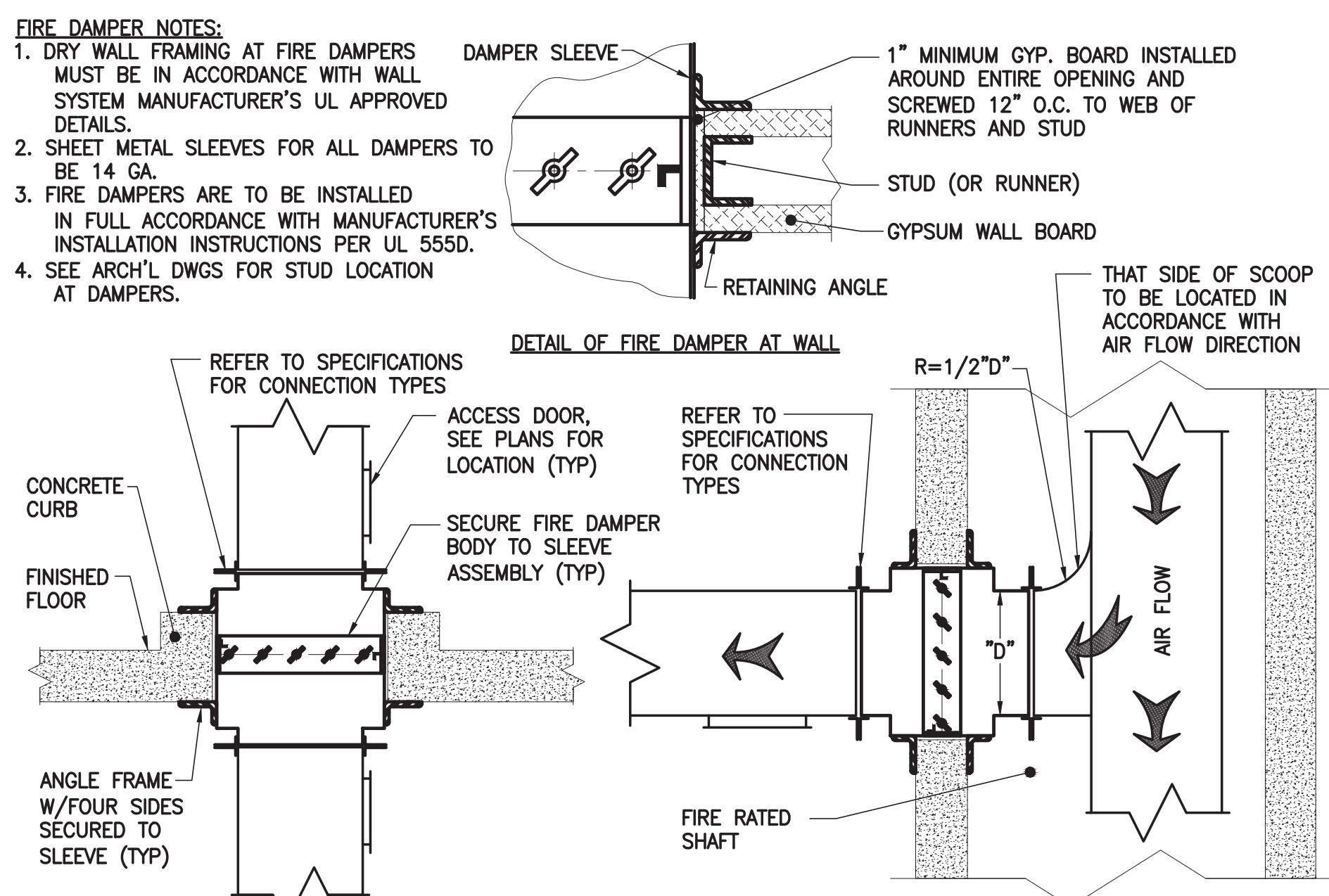
**CURB AND FLASHING DETAIL FOR PIPE/DUCT PENETRATIONS AT ROOF**



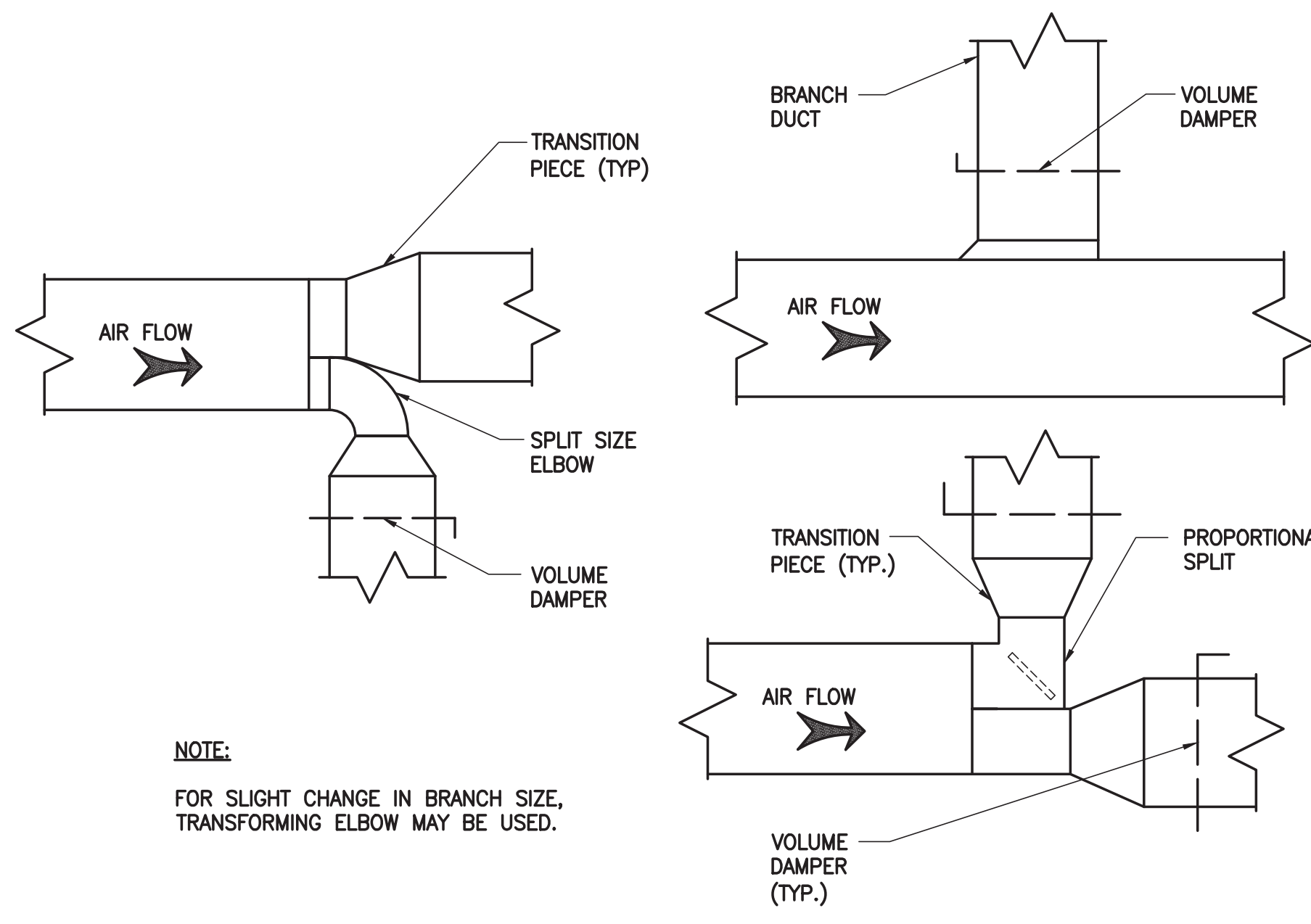
**TYPICAL DIFFUSER INSTALLATION**



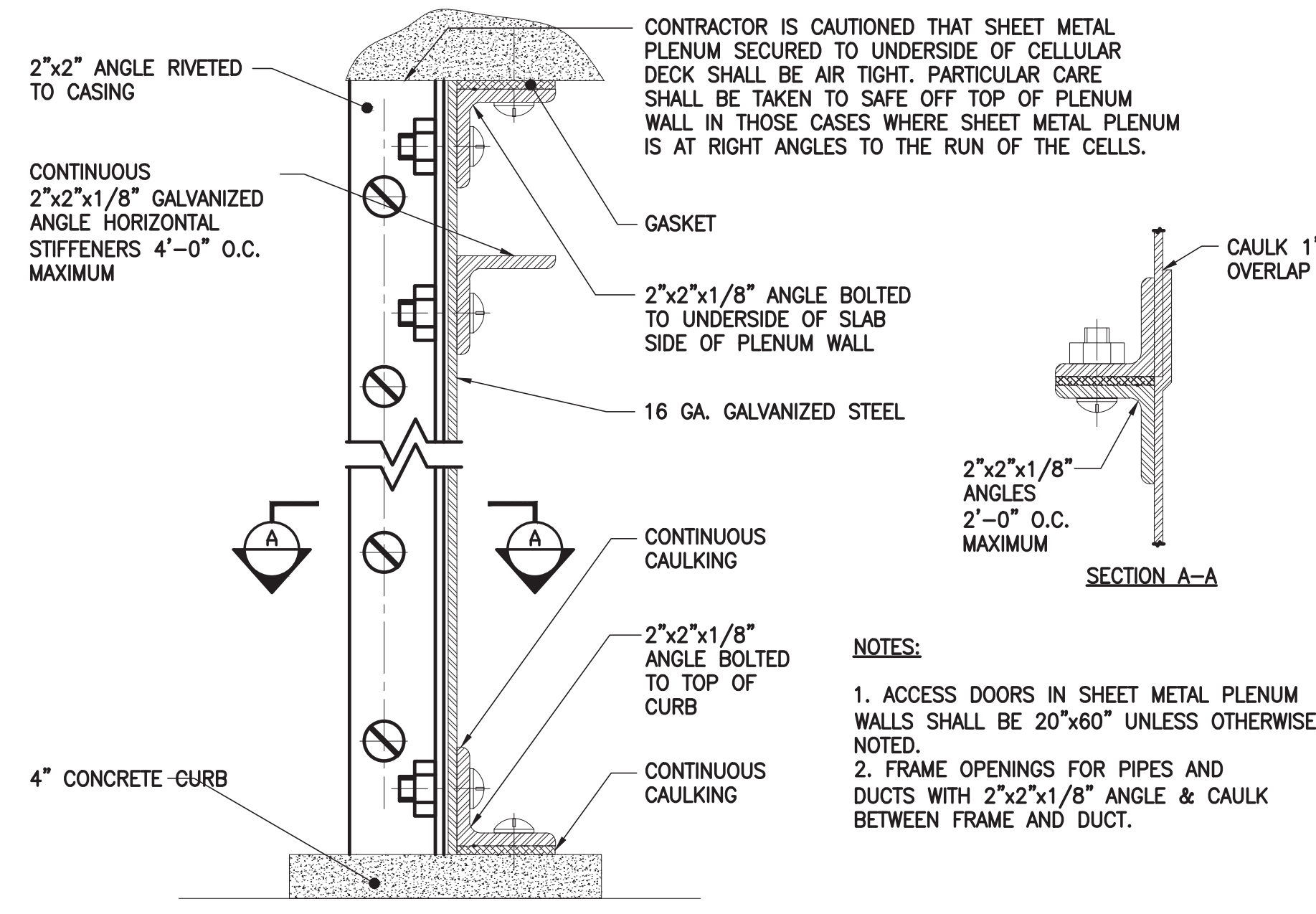
**HIGH VELOCITY DUCT CONNECTION**



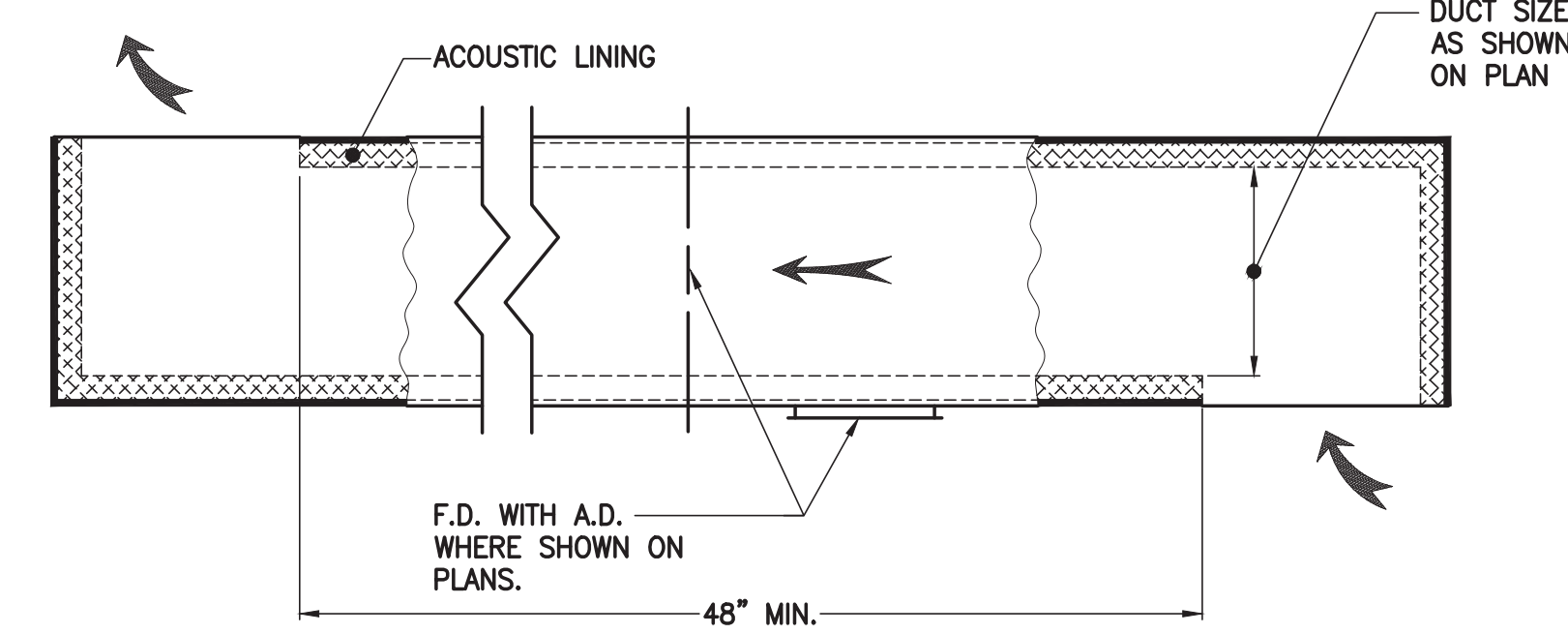
**HORIZONTAL AND VERTICAL FIRE OR FIRE SMOKE DAMPERS INSTALLATION DETAIL**



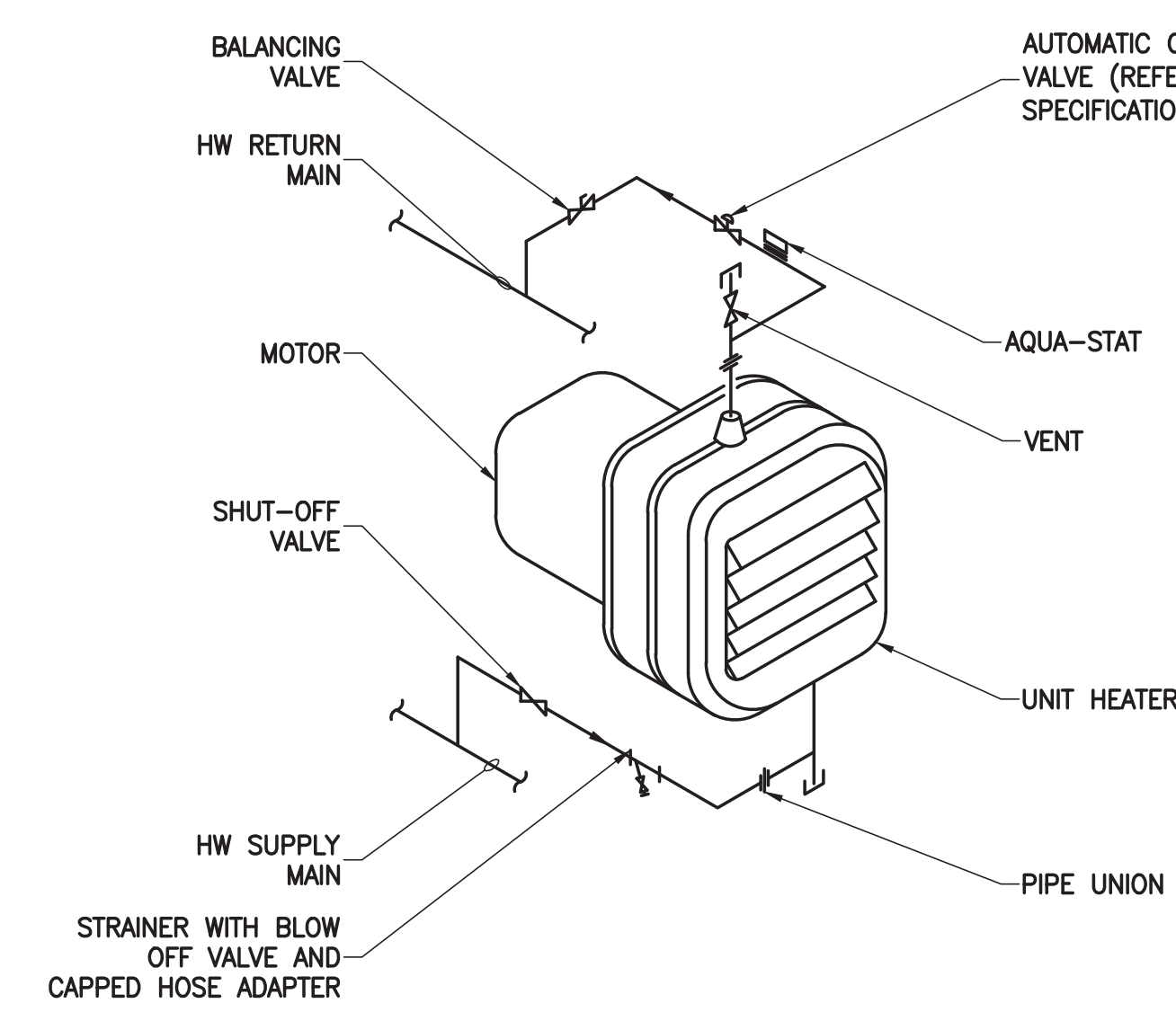
**LOW VELOCITY DUCT CONNECTIONS**



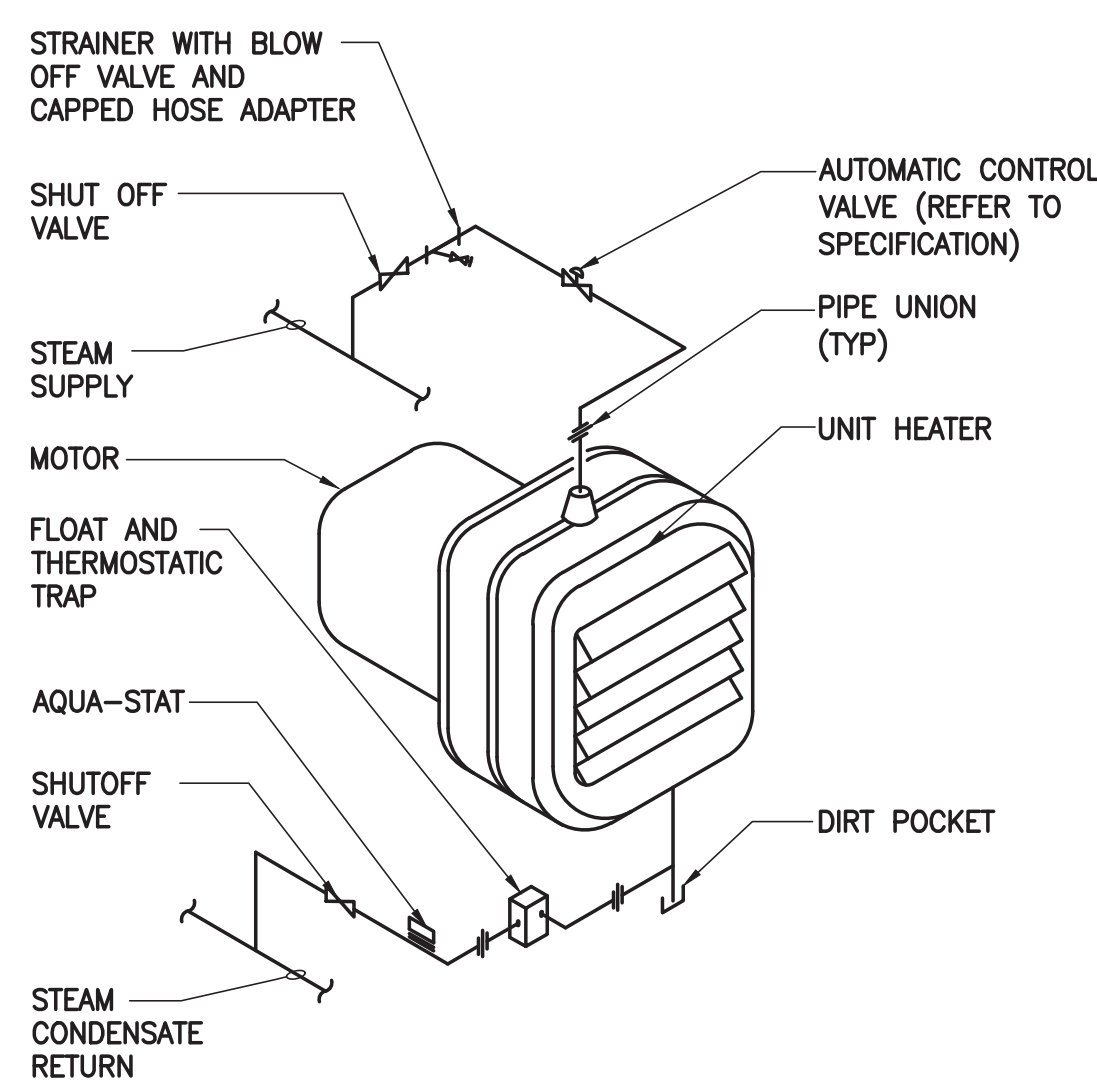
**SHEET METAL PLENUM DETAIL**



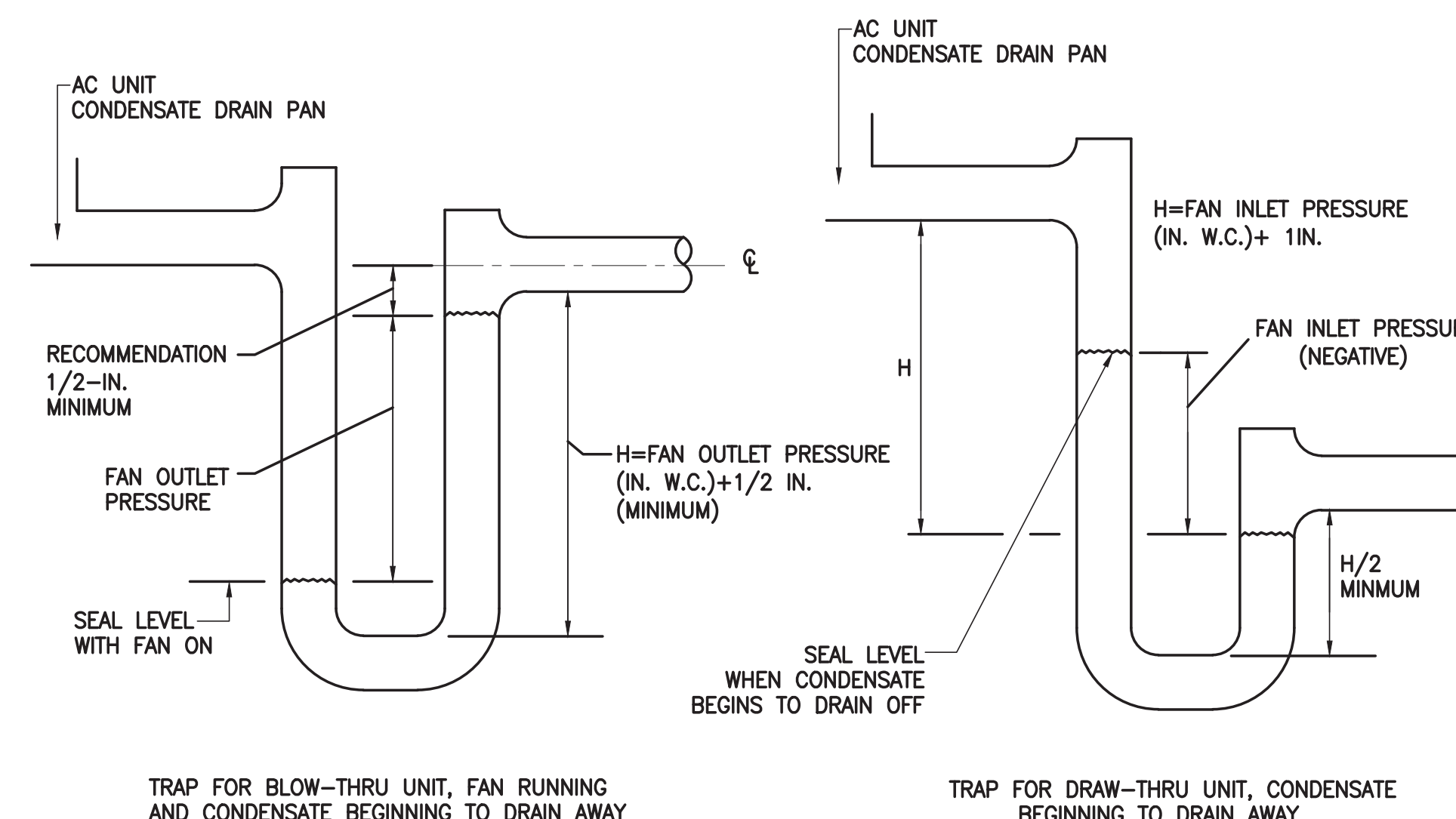
**TRANSFER DUCT DETAIL**



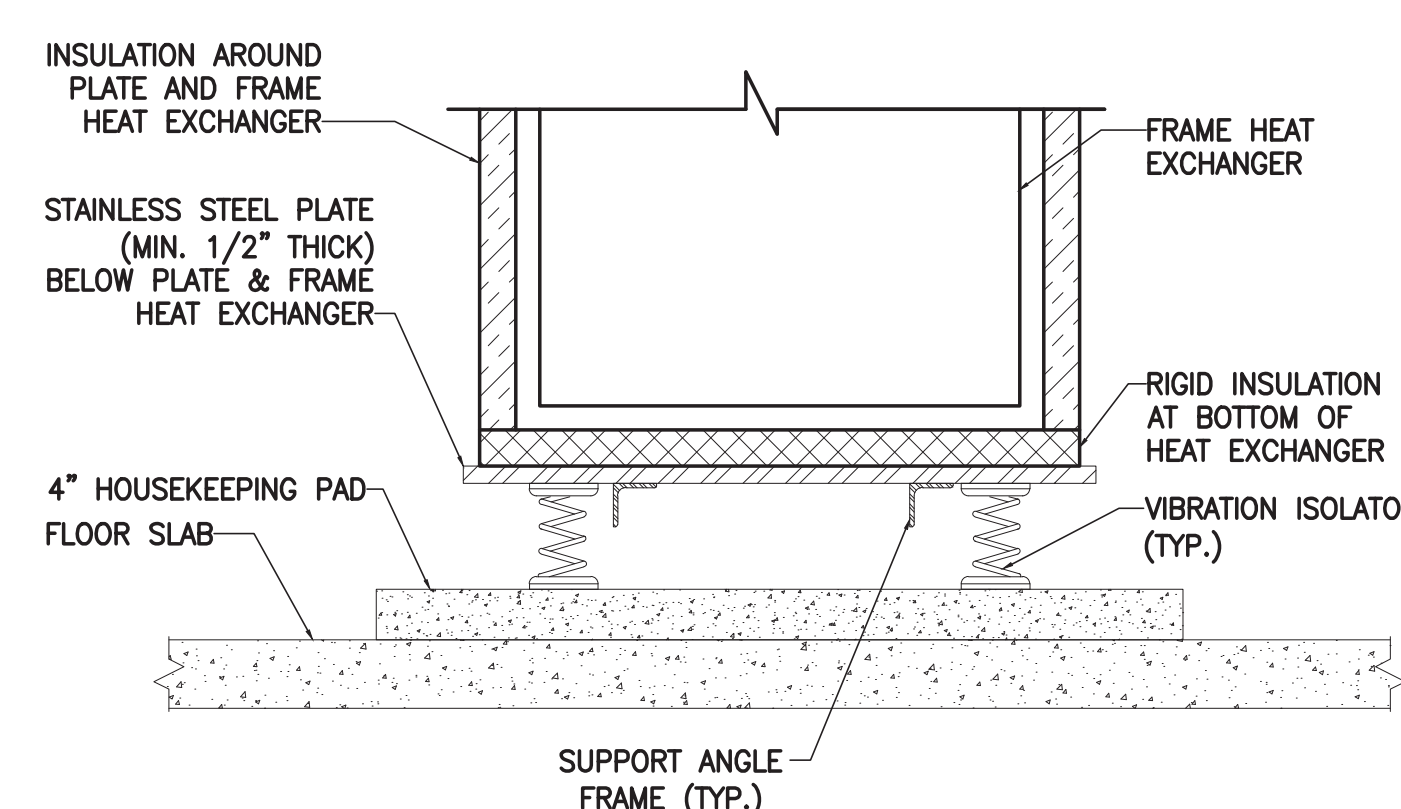
**HW UNIT HEATER PIPING CONNECTION**



**STEAM UNIT HEATER PIPING CONNECTION**

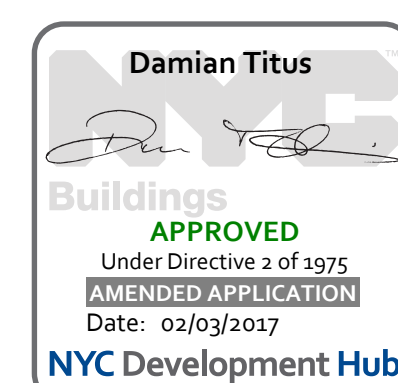


**CONDENSATE TRAPS FOR COOLING COILS**



**SUPPORT DETAIL FOR FLAT PLATE HEAT EXCHANGER WITH INSULATION**

**NOTE:**  
REQUIREMENT FOR SUPPORT ANCHORS AND FOR THE THICKNESS OF THE SUPPORT PLATE BELOW THE PLATE & FRAME HEAT EXCHANGER SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND SHALL BE AS SPECIFIED BY THE STRUCTURAL ENGINEER.



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**M-704.01**  
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MANHATTAN WEST:  
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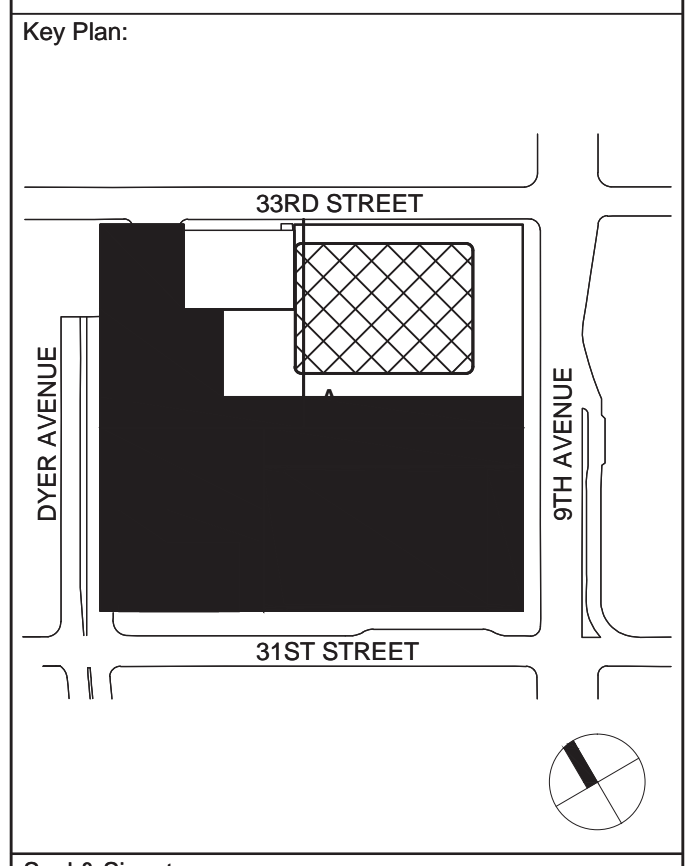
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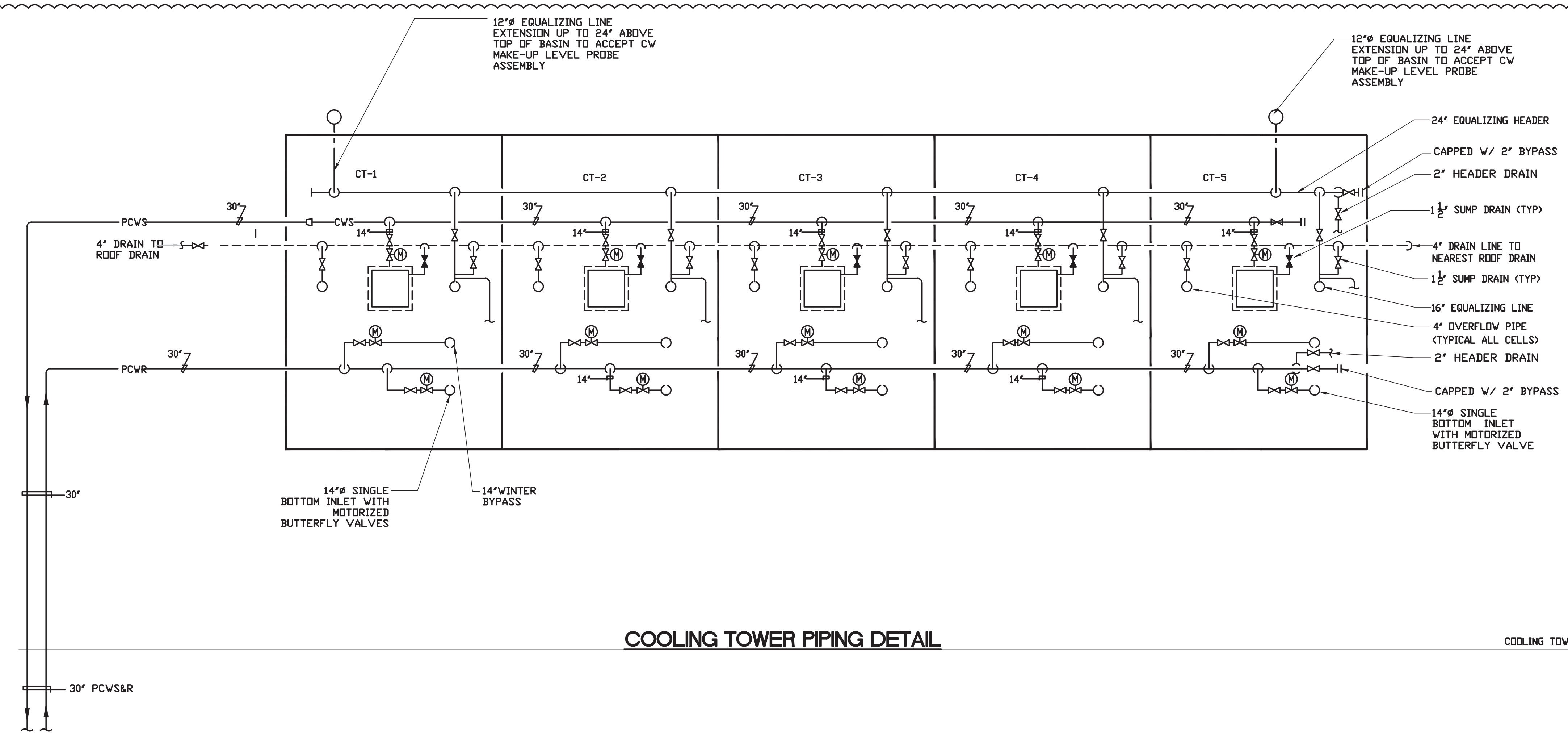
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**MECHANICAL  
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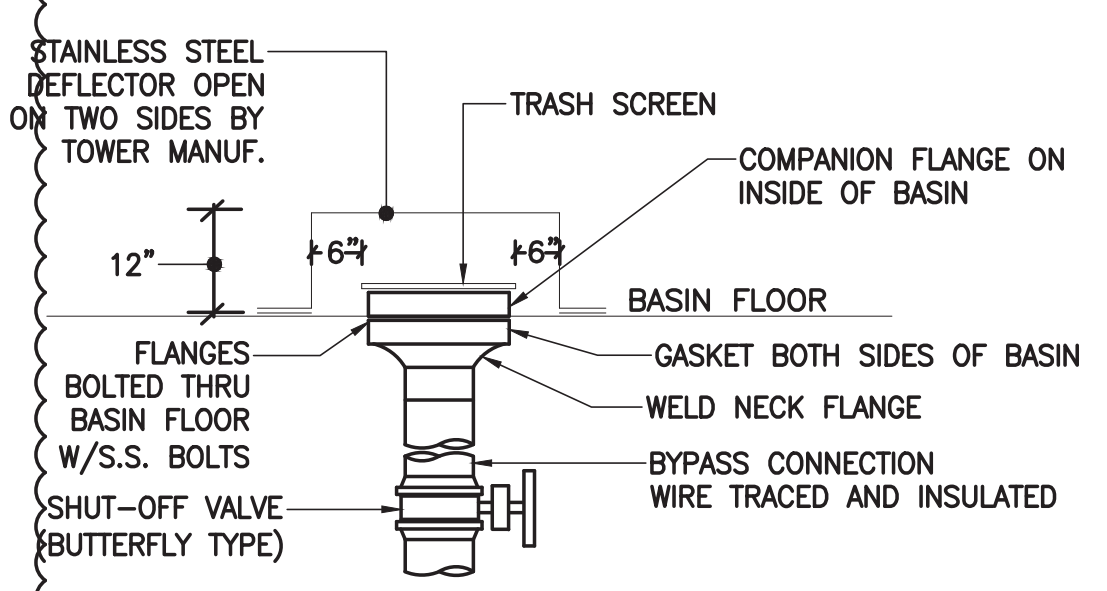
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Date: 29 JAN 2016	Sheet No.: M-705
Scale: NTS	Page No.: 90 OF 94
File No.: M-705	

Damian Titus  
Buildings  
APPROVED  
Under Ordinance 24 of 2015  
AMENDED APPLICATION  
Date: 02/03/2017  
NYC Development Hub

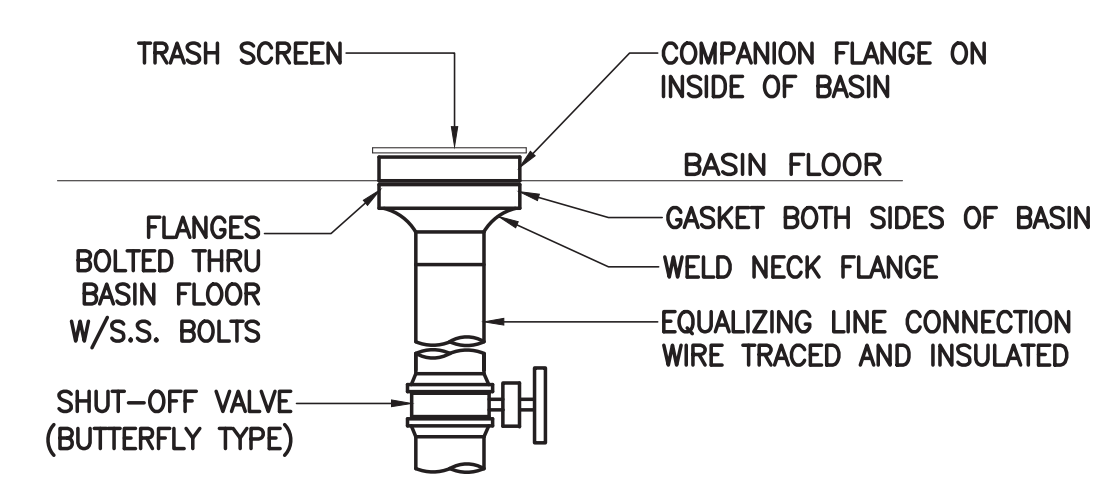


COOLING TOWER PIPING DETAIL

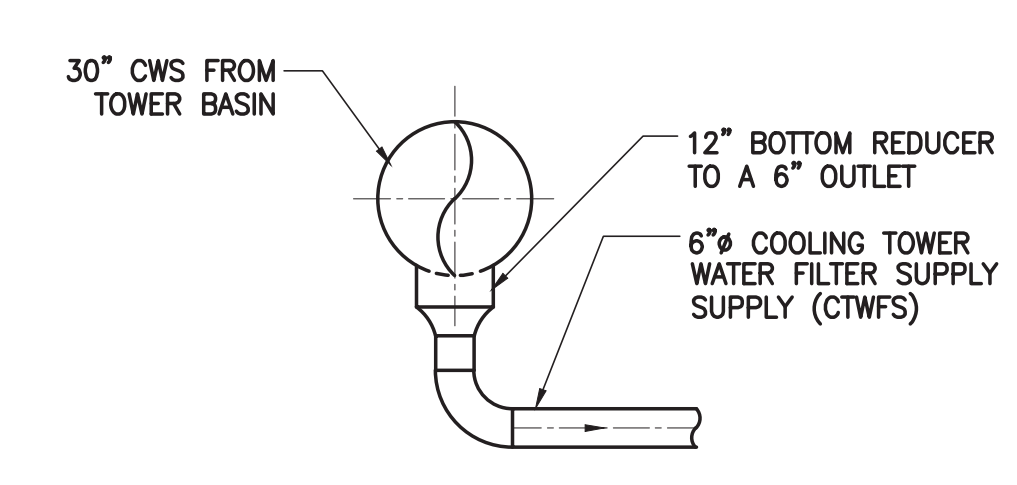
COOLING TOWER - ROOF LEVEL



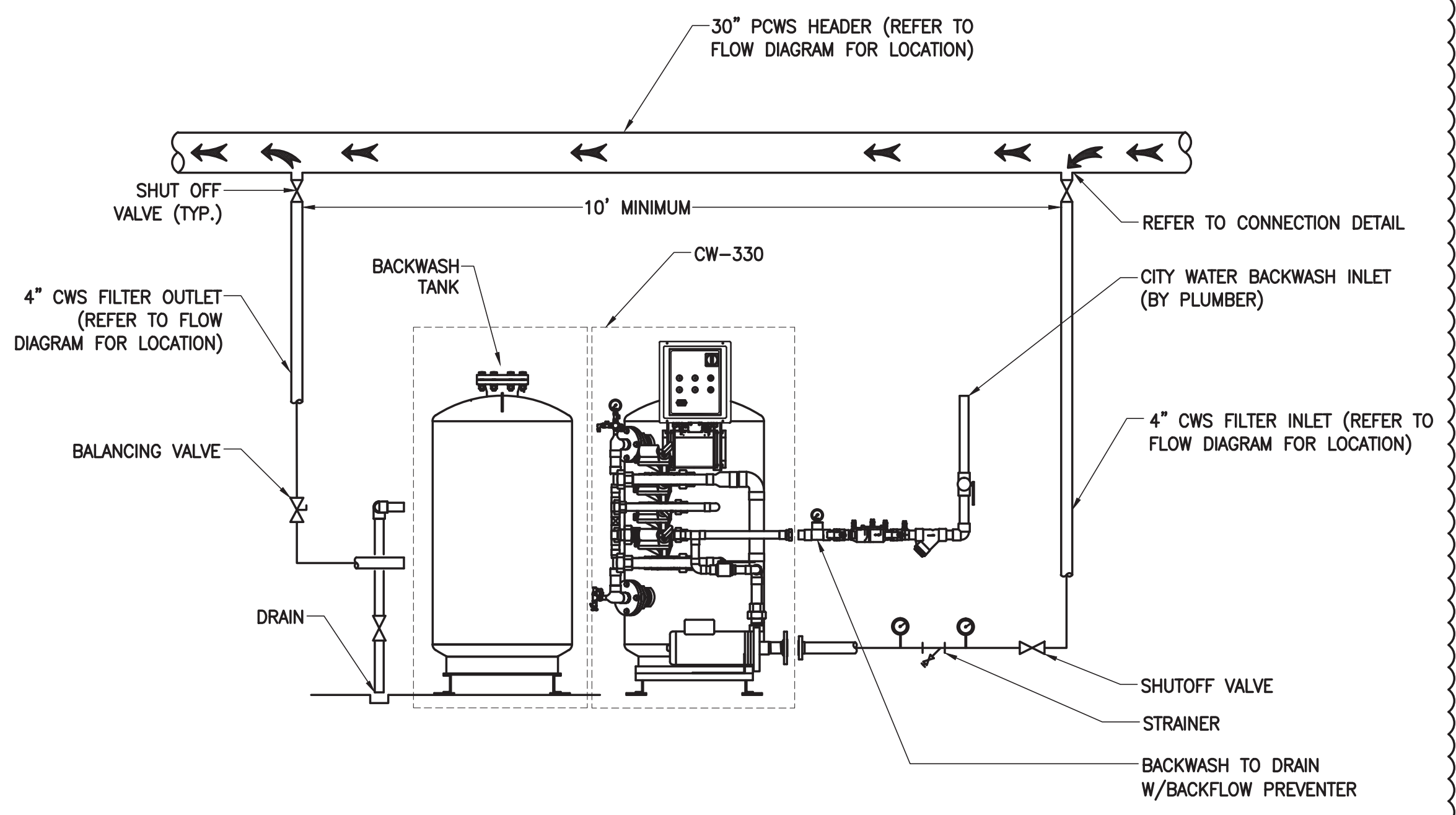
WINTER BYPASS CONNECTION DETAIL



EQUALIZING LINE CONNECTION

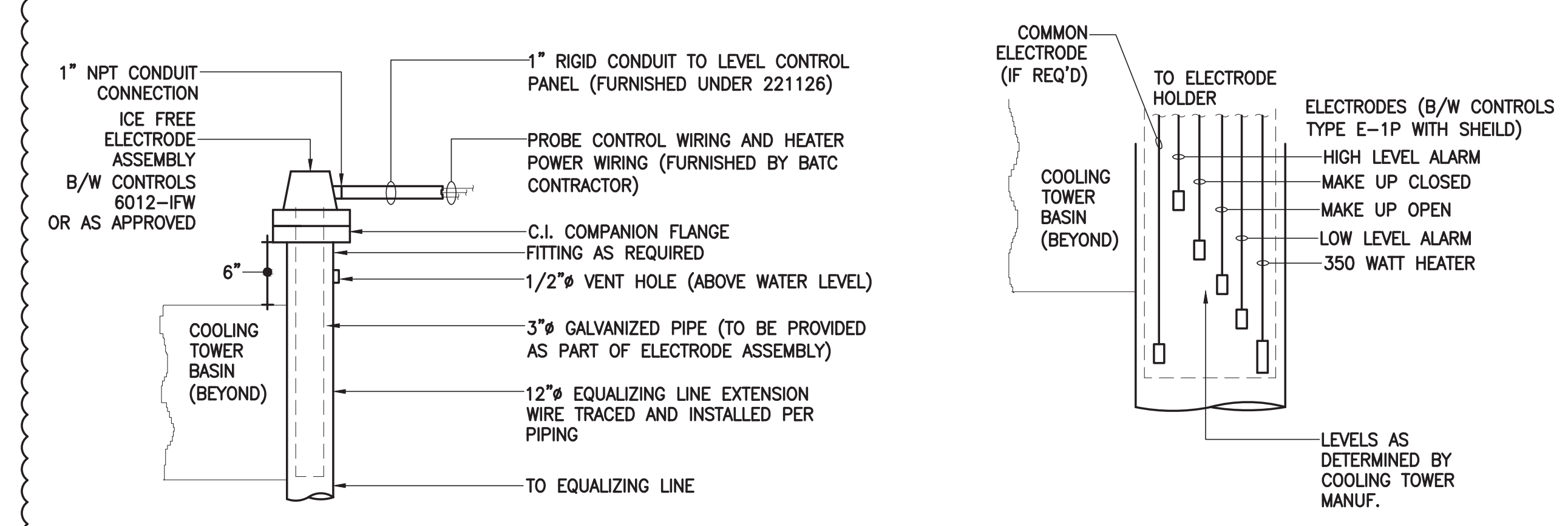


CONDENSER WATER SIDESTREAM  
FILTRATION DETAIL



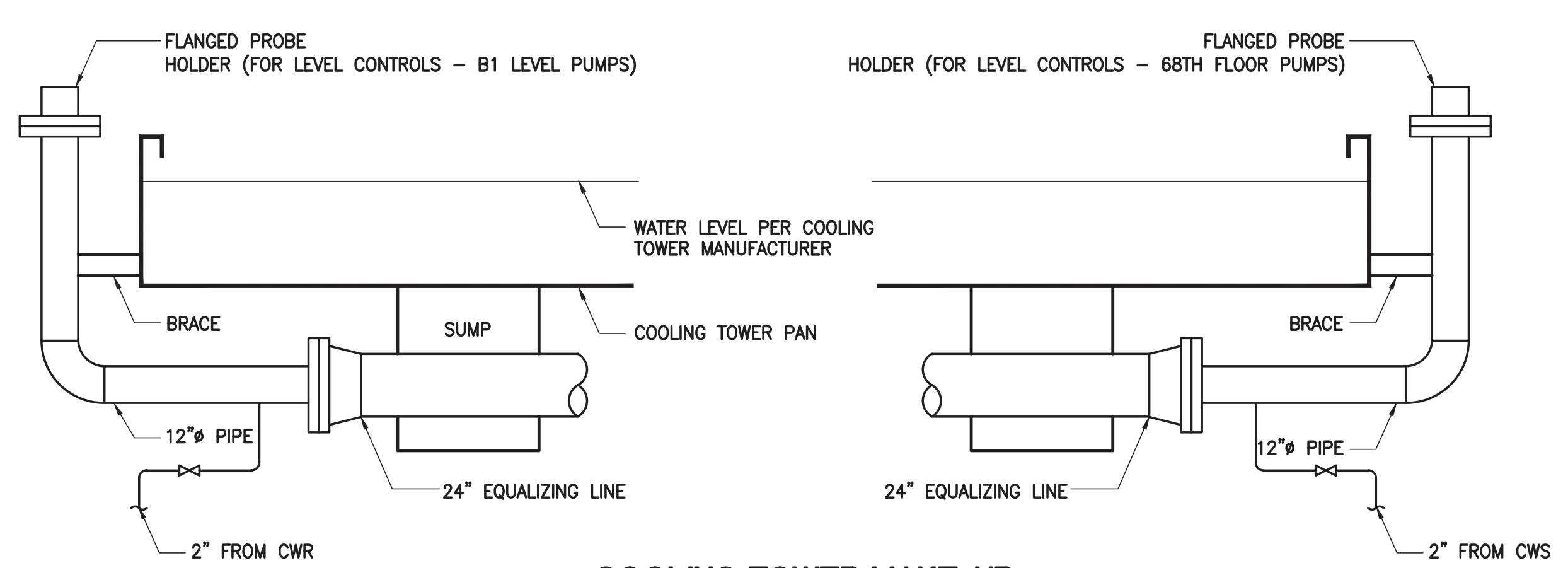
CONDENSER WATER SIDESTREAM FILTRATION PIPING 30"

- NOTES:  
1. DETAIL APPLIES TO ALL SIDESTREAM FILTERS  
2. REFER TO SCHEDULE SHEET M-502 FOR FILTER SIZES



COOLING TOWER LEVEL CONTROL PROBE DETAILS

TYPICAL FOR TWO SETS - B1 + 68 PUMPS



COOLING TOWER MAKE-UP  
PROBE ARRANGEMENT





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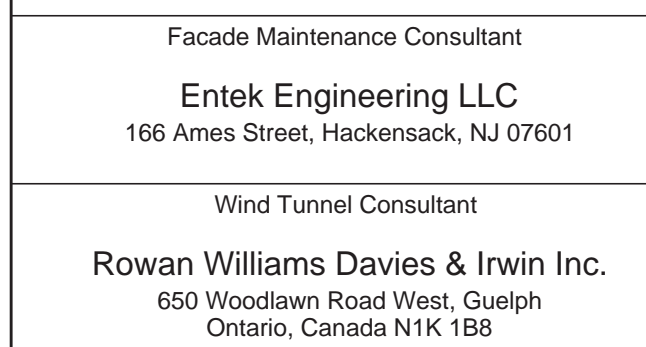
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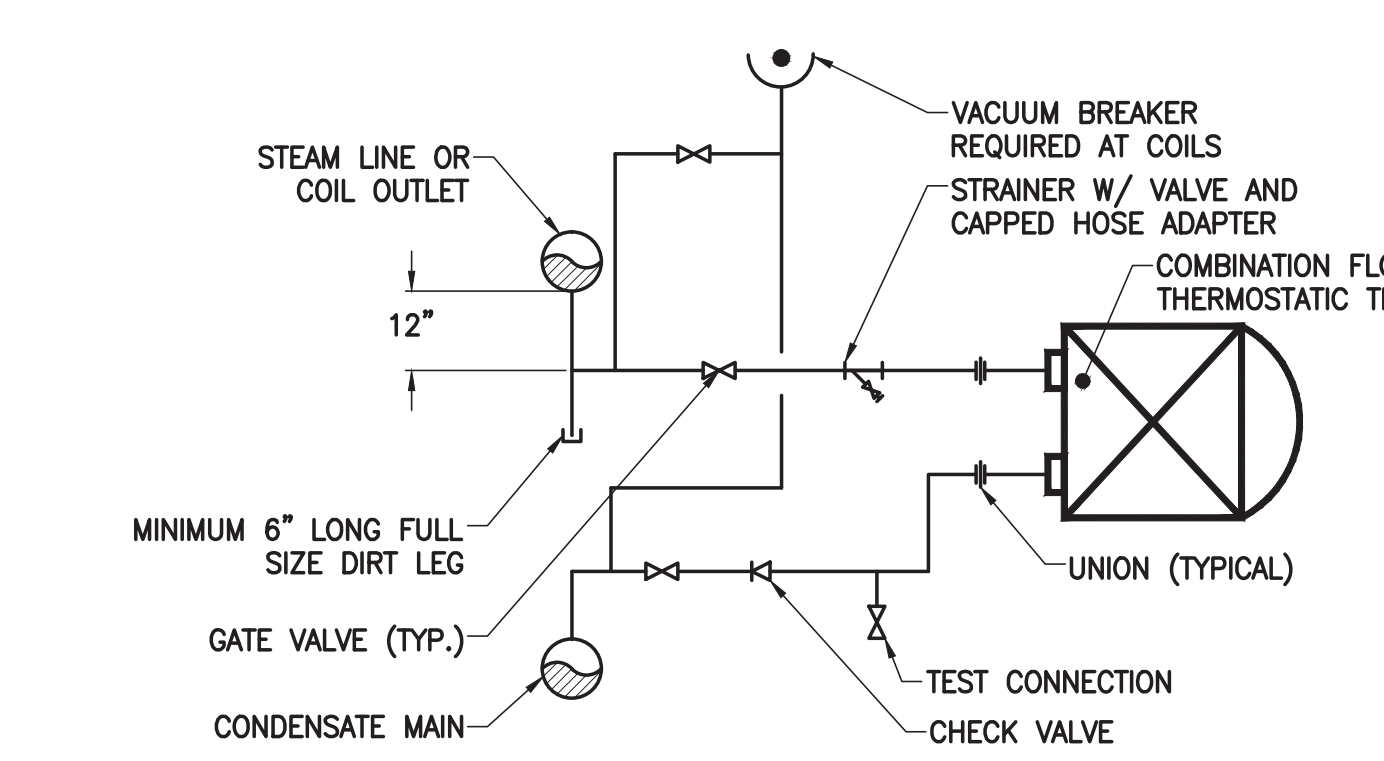
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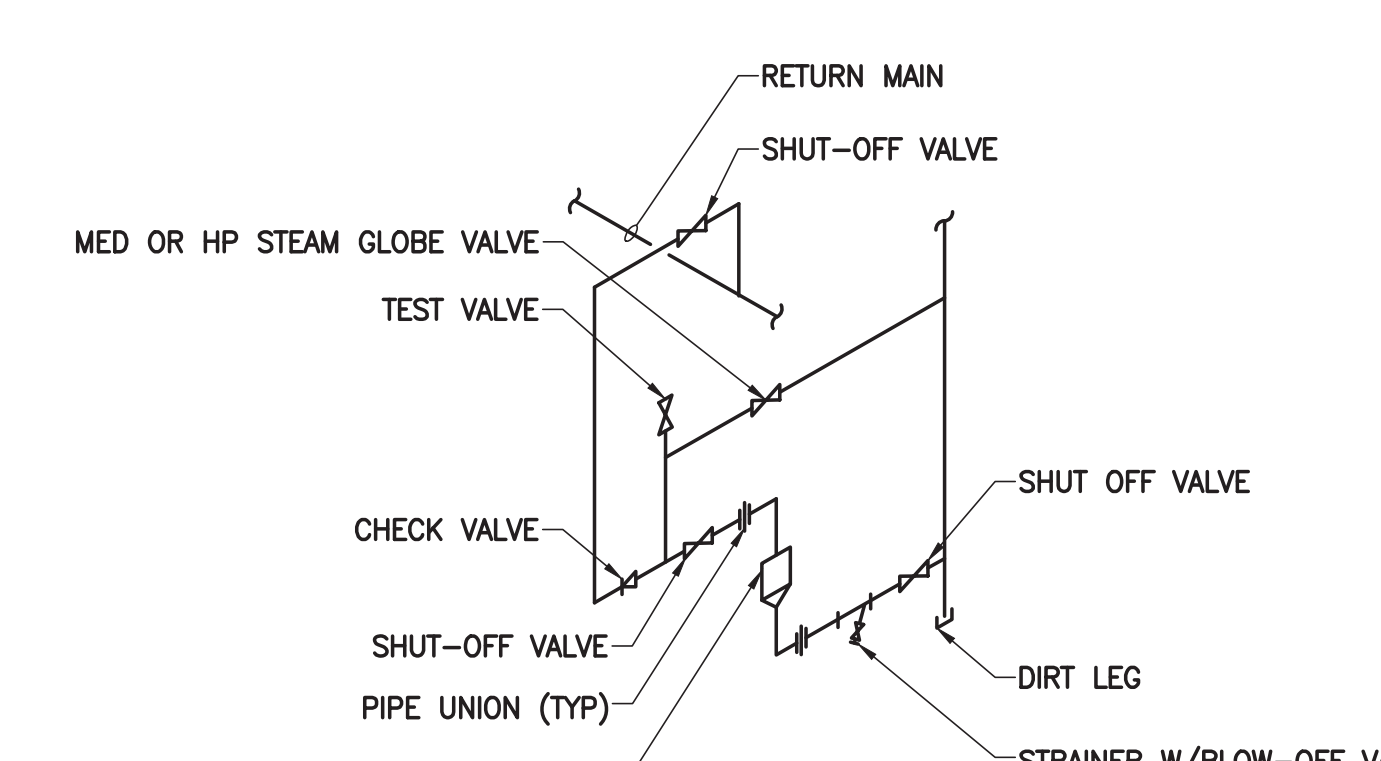
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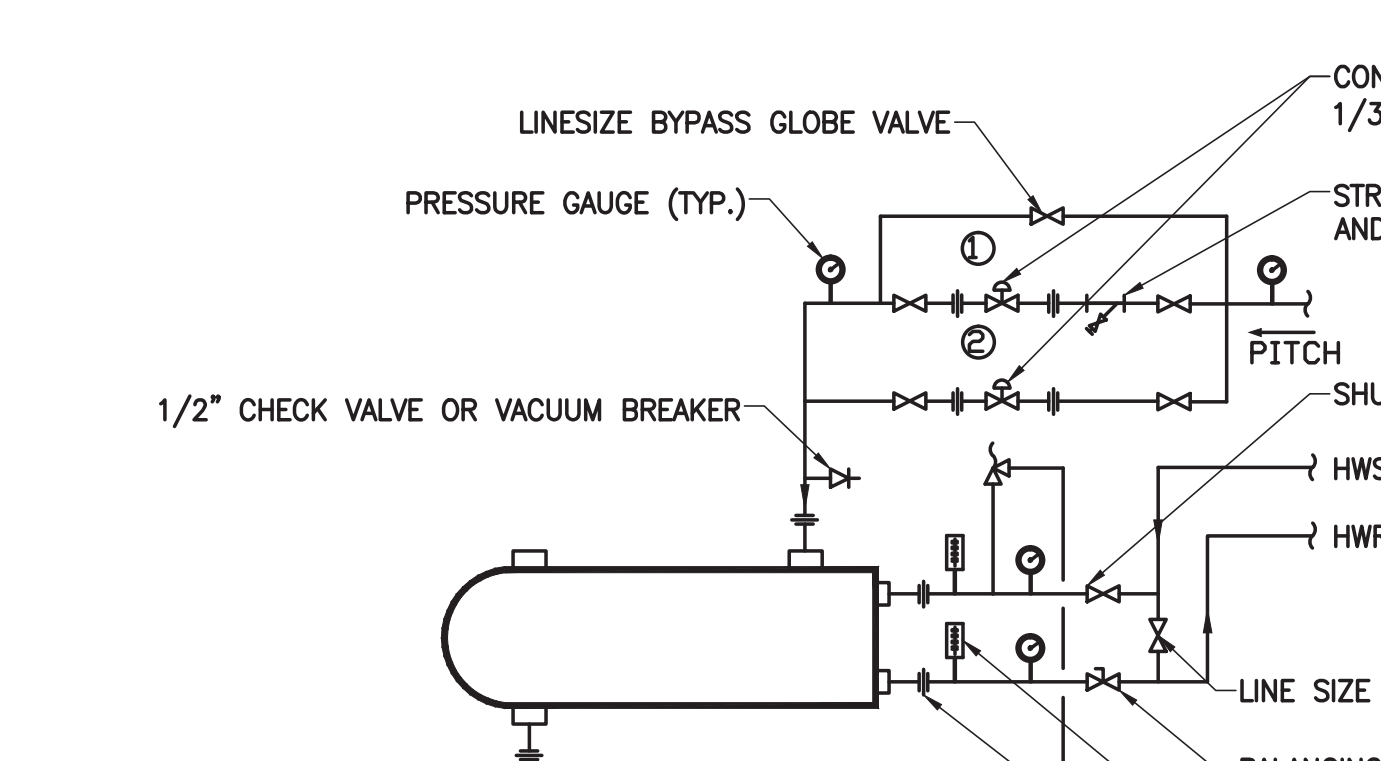
NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## LOW PRESSURE STEAM TRAP CONNECTION DETAIL



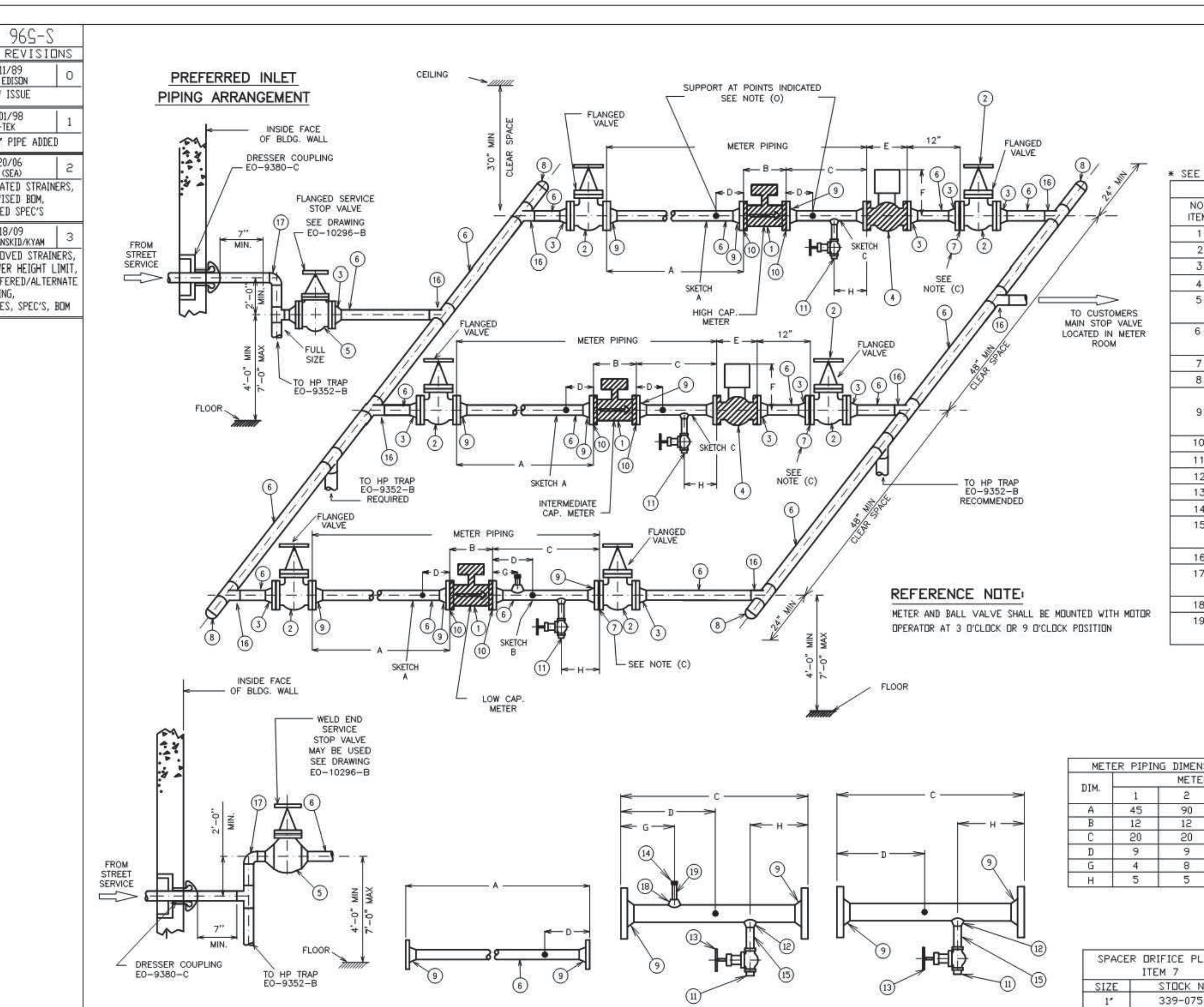
NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## MEDIUM AND HIGH PRESSURE DRIP CONNECTION



NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## TYPICAL STEAM CONVERTOR PIPING DETAIL



## PREFERRED INLET PIPING ARRANGEMENT

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## ALTERNATE INLET PIPING ARRANGEMENT

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## SKETCH A METER INLET SPOOL

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## SKETCH B LOW CAPACITY METER OUTLET SPOOL

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## SKETCH C INTERMEDIATE & HIGH CAPACITY METER OUTLET SPOOL

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

SIZE	DIM. 1"	DIM. 2"	STOCK NO.
2"	8 1/2"	20"	377-3249
3"	11 1/8"	23"	377-3256
4"	12"	24"	377-3264

## METER REGULATING VALVE BALL-TYPE ITEM 4

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## \* SEE APPROVED STEAM SERVICE EQUIPMENT "BOOKLET"

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## BILL OF MATERIALS

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## NO. DESCRIPTION

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

1 STEAM METER - SEE NOTES (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb) (pc) (pd) (pe) (pf) (pg) (ph) (pi) (pj) (pk) (pl) (pm) (pn) (po) (pp) (pq) (pr) (ps) (pt) (pu) (pv) (pw) (px) (py) (pz) (qa) (qb) (qc) (qd) (qe) (qf) (qg) (qh) (qi) (qj) (qk) (ql) (qm) (qn) (qo) (qp) (qq) (qr) (qs) (qt) (qu) (qv) (qw) (qx) (qy) (qz) (ra) (rb) (rc) (rd) (re) (rf) (rg) (rh) (ri) (rj) (rk) (rl) (rm) (rn) (ro) (rp) (rq) (rr) (rs) (rt) (ru) (rv) (rw) (rx) (ry) (rz) (sa) (sb) (sc) (sd) (se) (sf) (sg) (sh) (si) (sj) (sk) (sl) (sm) (sn) (so) (sp) (sq) (sr) (ss) (st) (su) (sv) (sw) (sx) (sy) (sz) (ta) (tb) (tc) (td) (te) (tf) (tg) (th) (ti) (tj) (tk) (tl) (tm) (tn) (to) (tp) (tq) (tr) (ts) (tt) (tu) (tv) (tw) (tx) (ty) (tz) (ua) (ub) (uc) (ud) (ue) (uf) (ug) (uh) (ui) (uj) (uk) (ul) (um) (un) (uo) (up) (uq) (ur) (us) (ut) (uu) (uv) (uw) (ux) (uy) (uz) (va) (vb) (vc) (vd) (ve) (vf) (vg) (vh) (vi) (vj) (vk) (vl) (vm) (vn) (vo) (vp) (vq) (vr) (vs) (vt) (vu) (vv) (vw) (vx) (vy) (vz) (wa) (wb) (wc) (wd) (we) (wf) (wg) (wh) (wi) (wj) (wk) (wl) (wm) (wn) (wo) (wp) (wq) (wr) (ws) (wt) (wu) (wv) (ww) (wx) (wy) (wz) (xa) (xb) (xc) (xd) (xe) (xf) (xg) (xh) (xi) (xj) (xk) (xl) (xm) (xn) (xo) (xp) (xq) (xr) (xs) (xt) (xu) (xv) (xw) (xx) (xy) (xz) (ya) (yb) (yc) (yd) (ye) (yf) (yg) (yh) (yi) (yj) (yk) (yl) (ym) (yn) (yo) (yp) (yq) (yr) (ys) (yt) (yu) (yv) (yw) (yx) (yy) (yz) (za) (zb) (zc) (zd) (ze) (zf) (zg) (zh) (zi) (zj) (zk) (zl) (zm) (zn) (zo) (zp) (zq) (zr) (zs) (zt) (zu) (zv) (zw) (zx) (zy) (zz)

## REFERENCE NOTE:

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## REFERENCE SPEC'S:

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## SPECIFICATION:

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## TYPICAL INSTALLATION OF THREE VORTEX STEAM METERS (1" TO 4") WITH TWO MOTOR OPERATED BALL-TYPE METER REG. VALVES

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## CONSOLIDATED EDISON COMPANY OF N.Y., INC. STEAM ENGINEERING DEPT.

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## \* SEE "APPROVED STEAM SERVICE EQUIPMENT" BOOKLET.

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## STEAM DISTRIBUTION ENGINEERING SPECIFICATION NO. S-596

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## SPACER DRIFTE PLATE ITEM 7

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## SIZE STOCK NO.

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## 1" 339-0754

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## 2" 455-1982

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## 3" 455-1990

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## 4" 455-2006

SIZE	DIM. 1"	DIM. 2"	STOCK NO.
2"	8 1/2"	20"	377-3249
3"	11 1/8"	23"	377-3256
4"	12"	24"	377-3264

## METER REGULATING VALVE BALL-TYPE ITEM 4

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## \* SEE APPROVED STEAM SERVICE EQUIPMENT "BOOKLET"

NOTE:  
ALL DRIP POINTS ON STEAM MAINS SHALL BE PROVIDED WITH A MINIMUM 12" HIGH DRIP LEG FROM BOTTOM OF STEAM MAIN TO TRAP INLET. DRIP LEG SHALL HAVE 6" SCALE ROCKET BELOW TRAP INLET.

## BILL OF MATERIALS

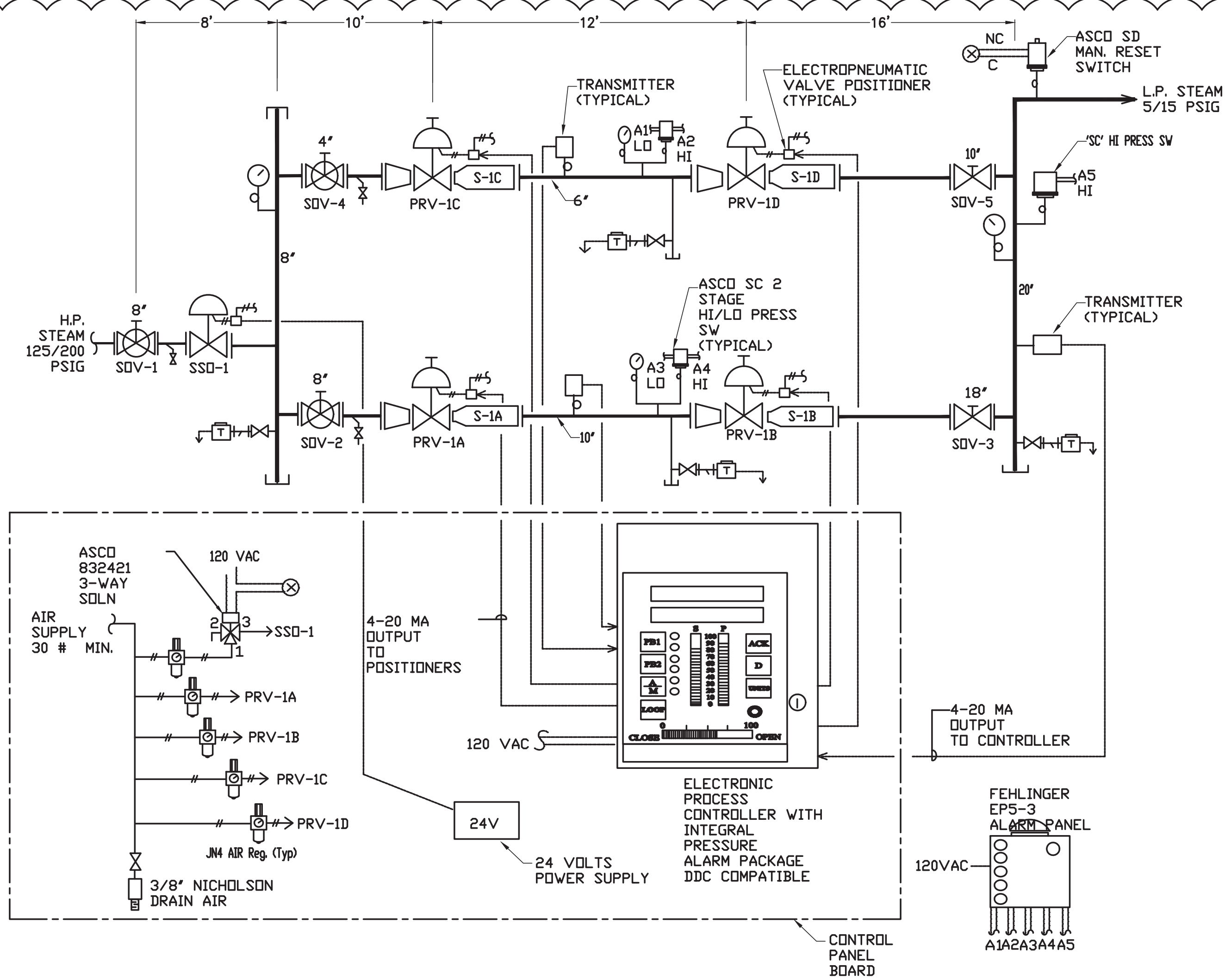
NOTE:  
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## NO. DESCRIPTION

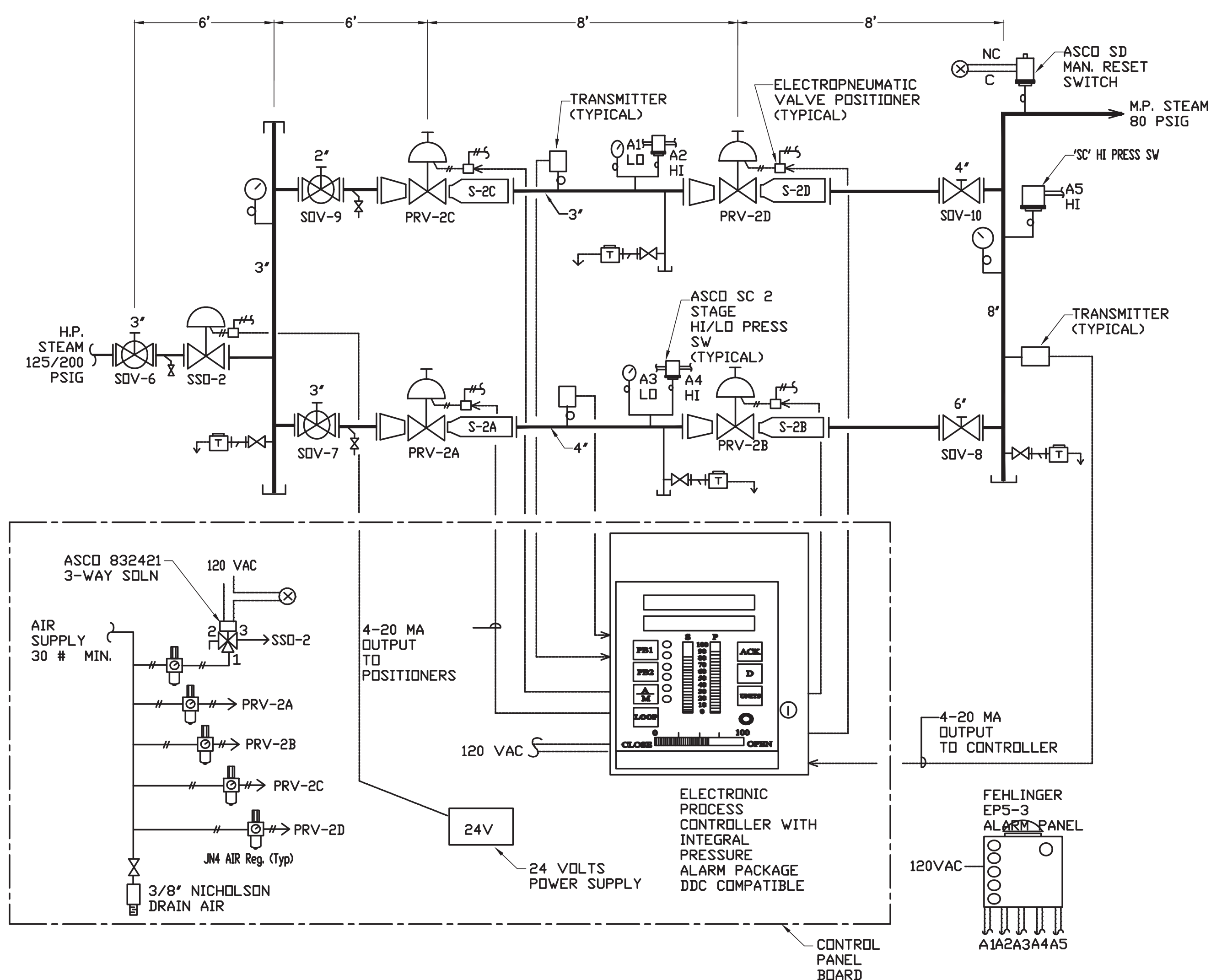
NOTE:  
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1 STEAM METER - SEE NOTES (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb)

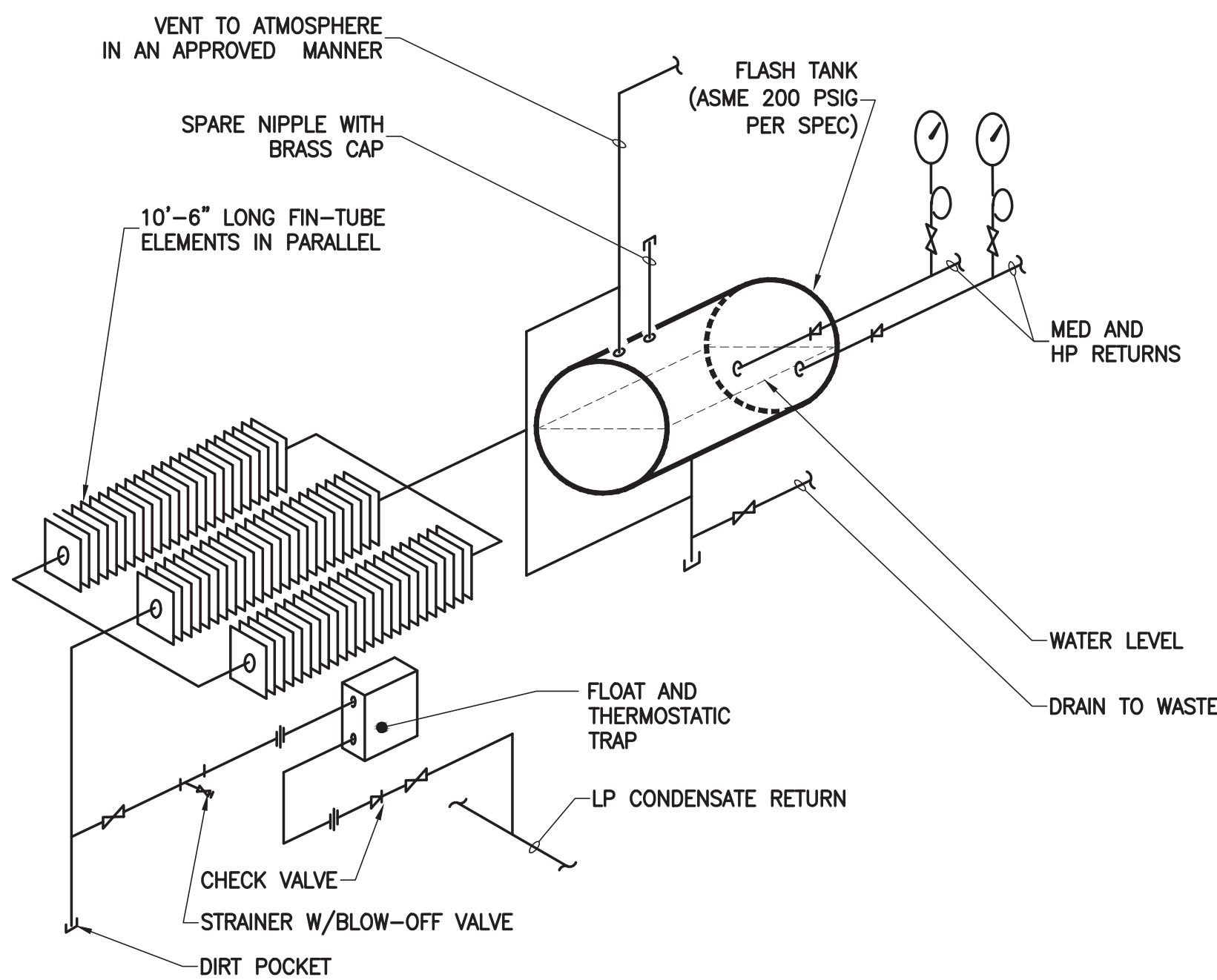




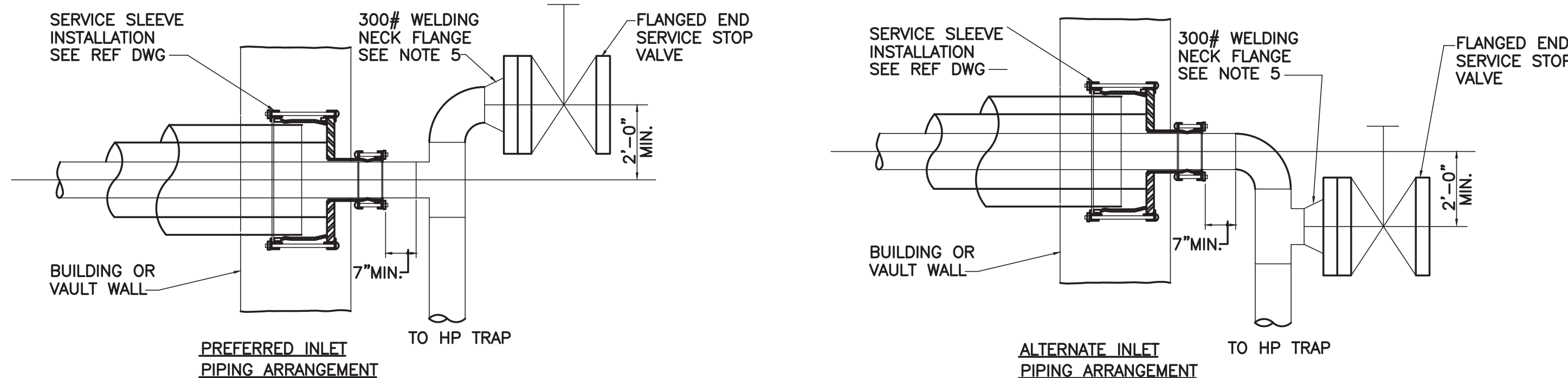
**PRESSURE REDUCING VALVE STATION #1 FOR LOW PRESSURE STEAM (MAIN BUILDING)**



**PRESSURE REDUCING VALVE STATION #2 FOR MEDIUM PRESSURE STEAM (CO-GEN)**



**DETAIL OF FLASH TANK VENTED TO ATMOSPHERE**



**NOTES:**

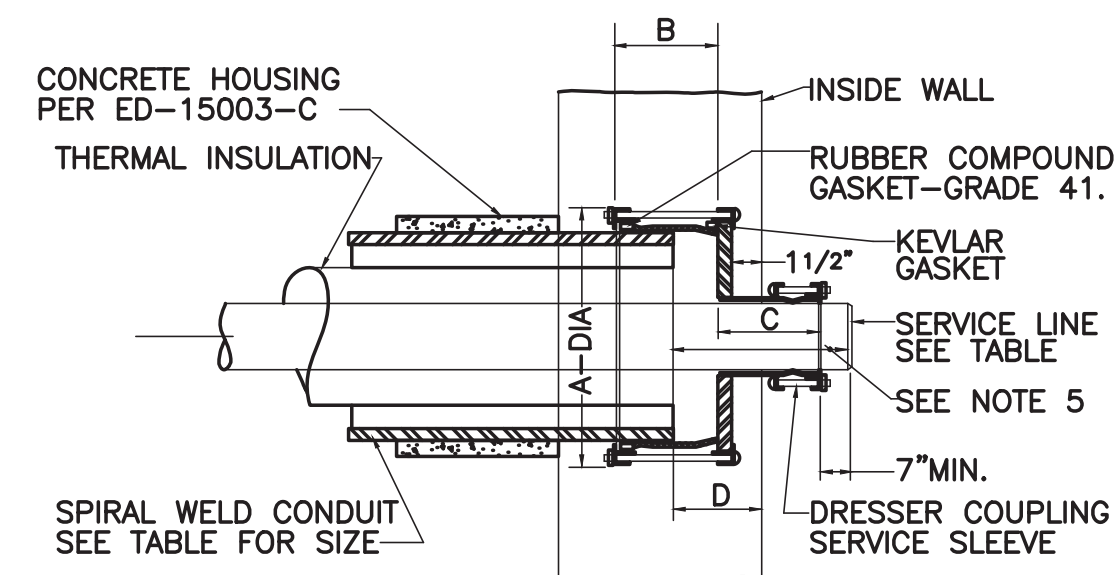
- FLANGE SHALL CONFORM TO A.S.T.M. SPEC DES ANSI, GRADE 1, AND TO ANSI 361 S.
- BOLTS SHALL BE CARBON STEEL A.S.T.M. SPEC DES A 307 GRADE A, SQUARE HEAD.
- NUTS SHALL BE CARBON STEEL A.S.T.M. SPEC A 307, HEXAGONAL.
- GASKET SHALL CONFORM TO CON EDISON CO. SPEC 9.9091
- ALL WELDING SHALL CONFORM TO CON EDISON CO. SPEC G-106-4.
- THE COMPANY WILL SEAL THE SERVICE STOP VALVE.
- IF THE SERVICE VALVE IS LOCATED MORE THAN 8 FEET ABOVE THE FLOOR, OR IF THE FLOOR BELOW THE VALVE IS OBSTRUCTED, A PERMANENT PLATFORM AND LADDER PROVIDING ACCESS TO THE VALVE SHALL BE PROVIDED BY THE CUSTOMER.
- SEE APPROVED STEAM SERVICE EQUIPMENT BOOKLET.

**INSTALLATION OF CUSTOMERS SERVICE STOP VALVE FOR 200 PSI SERVICE**  
(REFERENCE CON. ED. DWG.NO. EO-10296-B, REV. 7)

P.R.V. STATION VALVE SCHEDULE									
TAG No.	SERVICE	LOCATION	PRESSURE (PSIG)		CAPACITY (#/HR)		VALVE DATA		REMARKS
			INLET	OUTLET	REQ'D	RATED	SIZE	MODEL	
SDV-1	MAIN	BASEMENT MECHANICAL B LEVEL	200	200/0	N/A	N/A	8"	12F3H	NOT REQUIRED
SSD-1	MAIN	BASEMENT MECHANICAL B LEVEL	200	200/0	N/A	N/A	8"	18J43	NOT REQUIRED
SDV-2	MAIN	BASEMENT MECHANICAL B LEVEL	180	180/0	N/A	N/A	8"	12F3H	NOT REQUIRED
PRV-1A	MAIN	BASEMENT MECHANICAL B LEVEL	200	60	55,000	70,000	6"	18J43EP	LAS-MD
PRV-1B	MAIN	BASEMENT MECHANICAL B LEVEL	60	15	55,000	70,000	8"	18J43EP	LASS
SDV-3	MAIN	BASEMENT MECHANICAL B LEVEL	15	15/0	N/A	N/A	18"	J300NF	NOT REQUIRED
SDV-4	MAIN	BASEMENT MECHANICAL B LEVEL	200	200/0	N/A	N/A	4"	12F3H	NOT REQUIRED
PRV-1C	MAIN	BASEMENT MECHANICAL B LEVEL	200	60	15,000	24,000	3"	58443EP	LASH
PRV-1D	MAIN	BASEMENT MECHANICAL B LEVEL	60	15	15,000	22,000	4"	58443EP	LASH
SDV-5	MAIN	BASEMENT MECHANICAL B LEVEL	15	15/0	N/A	N/A	10"	J300NF	NOT REQUIRED
SDV-6	CO-GEN	BASEMENT MECHANICAL B LEVEL	200	200/0	N/A	N/A	3"	12F3H	NOT REQUIRED
SSD-2	CO-GEN	BASEMENT MECHANICAL B LEVEL	200	200/0	5,500	N/A	3"	58H43	NOT REQUIRED
SDV-7	CO-GEN	BASEMENT MECHANICAL B LEVEL	200	200/0	N/A	N/A	3"	12F3H	NOT REQUIRED
PRV-2A	CO-GEN	BASEMENT MECHANICAL B LEVEL	200	60	5,500	5,900	1-1/2"	N40EP	NOT REQUIRED
PRV-2B	CO-GEN	BASEMENT MECHANICAL B LEVEL	60	15	5,500	5,700	2"	N40EP	NOT REQUIRED
SDV-8	CO-GEN	BASEMENT MECHANICAL B LEVEL	15	15/0	N/A	N/A	6"	J300NF	NOT REQUIRED
SDV-9	CO-GEN	BASEMENT MECHANICAL B LEVEL	200	200/0	N/A	N/A	2"	12F3H	NOT REQUIRED
PRV-2C	CO-GEN	BASEMENT MECHANICAL B LEVEL	200	60	2,000	2,900	2"	58N40EP	LDF-IV
PRV-2D	CO-GEN	BASEMENT MECHANICAL B LEVEL	60	15	2,000	3,200	1 1/2"	58N40EP	LDF-IV
SDV-10	CO-GEN	BASEMENT MECHANICAL B LEVEL	15	15/0	N/A	N/A	4"	J300NF	NOT REQUIRED

**NOTES:**

- ALL SCHEDULED VALVES SHALL HAVE STAINLESS STEEL TRIM WITH HARD FACING, WELDED OVERLAY ON PLUG AND SEATING SURFACES. HIGH PERFORMANCE BUTTERFLY VALVES AND STANDARD GATE VALVES ARE NOT ACCEPTABLE.
- SCHEDULED VALVES SHALL HAVE MANUFACTURERS 2 YEAR WARRANTY STANDARD.
- FURNISH ALL REDUCING VALVES WITH SAFETY SYSTEM SUCH THAT SHOULD THE SECOND STAGE PRV FAIL TO MAINTAIN PROPER PRESSURE, THE FIRST STAGE PRV WILL AUTOMATICALLY RESET TO LOW PRESSURE AND GENERATE AN ALARM TO THE LOCAL ALARM PANEL AND BMS.
- ALL SCHEDULED VALVES SHALL HAVE CARBON STEEL BODIES ANSI CLASS 300 PSIG MINIMUM PRESSURE RATING. CAST IRON WILL NOT BE CONSIDERED.
- FURNISH MANUAL HAND-WHEEL OVERRIDE ON PRV FOR EMERGENCY OPERATION ON LOSS OF ELECTRICAL OR COMPRESSED AIR SIGNAL. NO HAND-WHEEL PERMITTED ON SAFETY SHUT OFF VALVE (SSD-1, SSD-2).



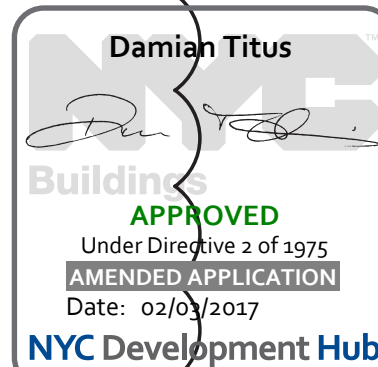
\* SEE APPROVED STEAM SERVICE EQUIPMENT "BOOKLET"

ITEM NO	SERVICE LINE SIZE	DRESSER COUPLING/CONDUIT STYLE 62 TYPE II	CONDUIT SIZE	DIMENSIONS IN INCHES			
				A	B	C	D
1	1"	1"x6"	6 5/8"	10 1/2"	5 3/8"	6 1/8"	4"
2	2"	2"x8"	8 5/8"	10 7/16"	5 3/4"	7 3/8"	4"
3	3"	3"x10"	10 3/4"	14 5/8"	5 3/4"	7 3/8"	4"
4	4"	4"x12"	12 3/4"	16 3/4"	5 3/4"	7 3/8"	4"
5	6"	6"x16"	16"	20	7 5/16"	7 9/16"	5"
6	8"	8"x18"	18"	22	7 5/16"	7 9/16"	5"
7	10"	10"x20"	20"	24 1/16"	7 5/16"	7 9/16"	5"
8	12"	12"x24"	24"	28	7 5/16"	7 9/16"	5"
9	16"	16"x28"	28"	33	7 5/16"	8 1/16"	5"

**NOTES:**

- INSTALL AND COMPRESS GASKETS BEFORE THE WALL IS POURED.
- MATERIAL FOR SPIRAL WELD CONDUIT SHALL BE IN ACCORDANCE WITH CON EDISON SPEC.
- DURING INSTALLATION, REINFORCING RODS IN WALL ARE TO CLEAR SPIRAL WELD CONDUIT AND DRESSER COUPLING BY 8 INCHES.
- DRESSER COUPLING SERVICE SLEEVE FURNISHED AND INSTALLED BY CUSTOMER.
- WHEN INSTALLING SERVICE LINE THROUGH WALL, A MINIMUM EXTENSION OF 19 INCHES REQUIRED TO ALLOW FOR CUT OFF STEEL BLANKS OR END CAPS.
- COUPLING BOLTS MAY BE REVERSED TO FACILITATE INSTALLATION.

**CUSTOMERS INSTALLATION OF DRESSER COUPLING SLEEVE STEAM SERVICE 1" TO 12"**  
(REFERENCE CON ED DWG.NO. EO-9380-C, REV.14)



**MANHATTAN WEST:  
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Key Plan:

Seal & Signature:

1. 22 APR 2016 ISSUED FOR P&A  
No. Date Description  
Sheet Name:

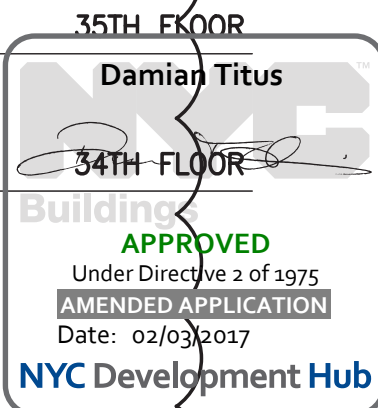
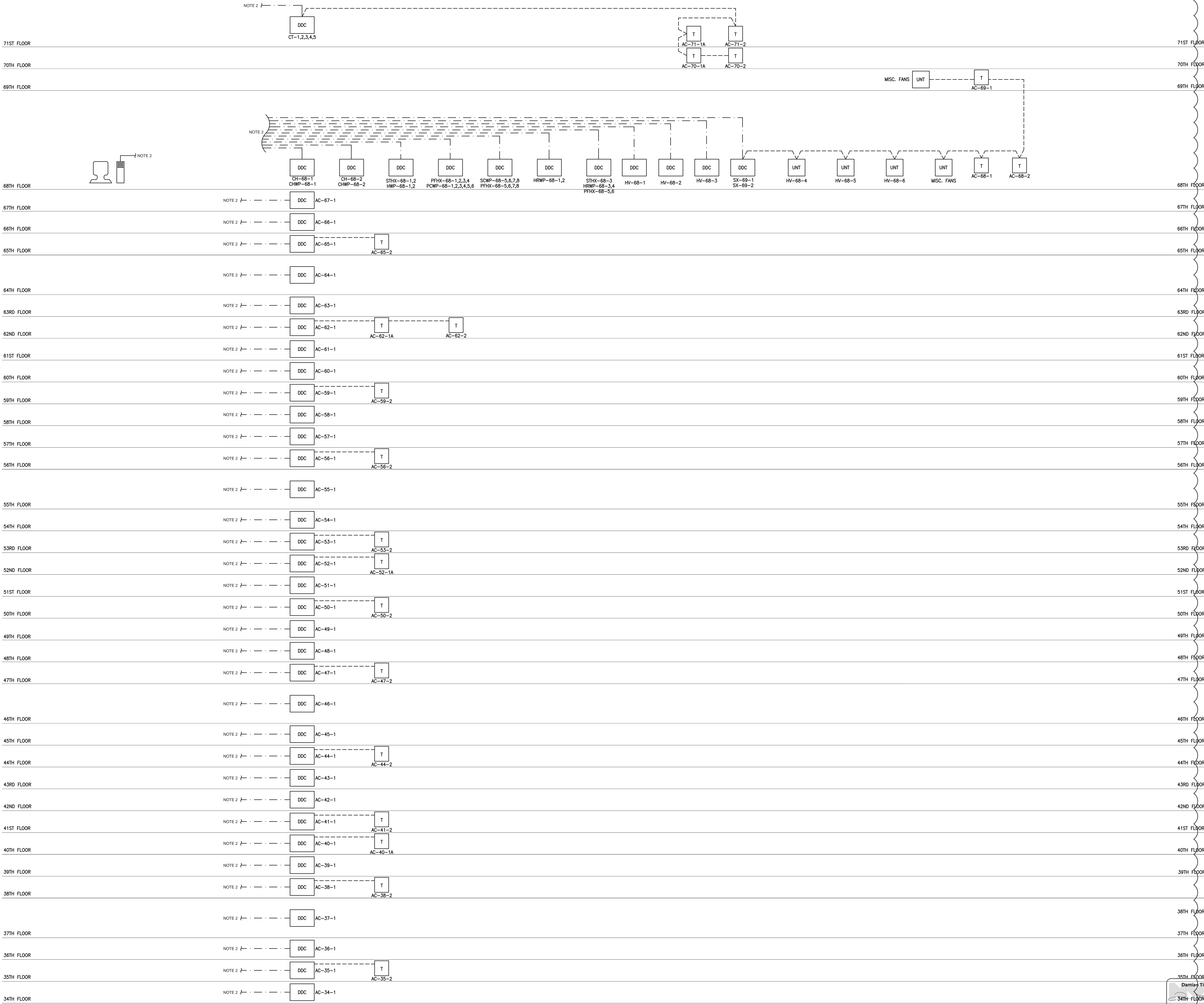
**MECHANICAL  
DETAIL  
SHEET  
NO. 8**

Project No.: 14330-A-000  
B-SCAN Sheet No.: M-707.00  
Date: 02/03/2017  
Sheet No.: M-707  
Scale: NTS  
File No.: M-707









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Key Plan:

33RD STREET

31ST STREET

DYER AVENUE

5TH AVENUE

Seal & Signature:

**Daniel A. Monaghan**  
LICENSED PROFESSIONAL ENGINEER  
No. 14830-A-000  
Date: 29 JAN 2016  
Description: BMS RISER DIAGRAM NO.2

Project No.: 14830-A-000  
B-SCAN Sheet No.: M-801.00  
Date: 29 JAN 2016  
Sheet No.: M-801  
Scale: NTS  
Page No.: 64 OF 84











A1 A B B.7 C C.8 D D.6 E E.2 E.5 F F.2 G G.5 G.8 H K K.7 L

KEY NOTES



MANHATTAN WEST:  
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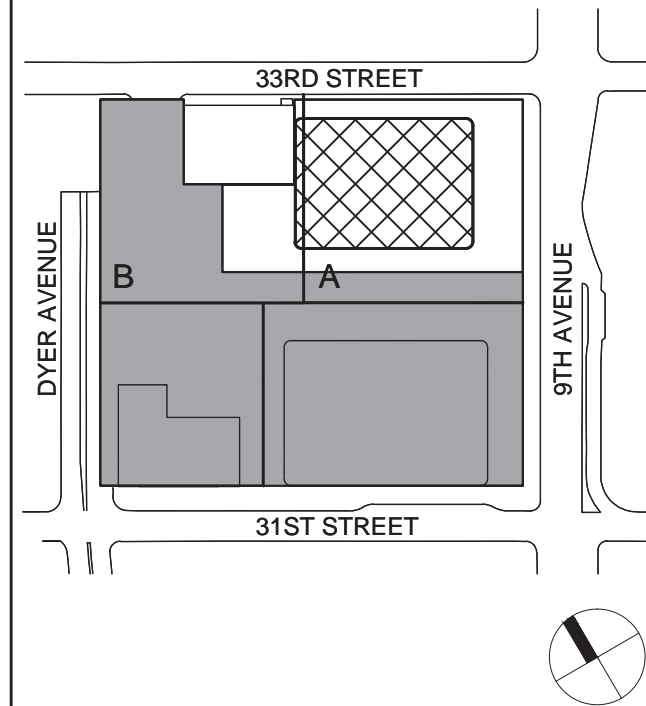
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Key Plan:

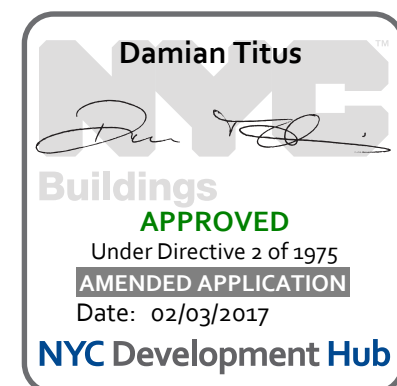


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SHEET NOTES

- 1- REFER TO NOTES & DESIGN CRITERIA ON DWG. P1-0002 FOR ADDITIONAL INFORMATION, REQUIREMENTS & CLARIFICATIONS.
- 2- REFER TO RISER DIAGRAMS, PART PLANS & DETAILS FOR ADDITIONAL INFORMATION & REQUIREMENTS.
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PLUMBING  
CELLAR B1  
PIT PART PLAN

Project No.:

1483A.000

Date:

27 JUN 2014

File No.:

P-098B1P

B-SCAN Sheet No.:

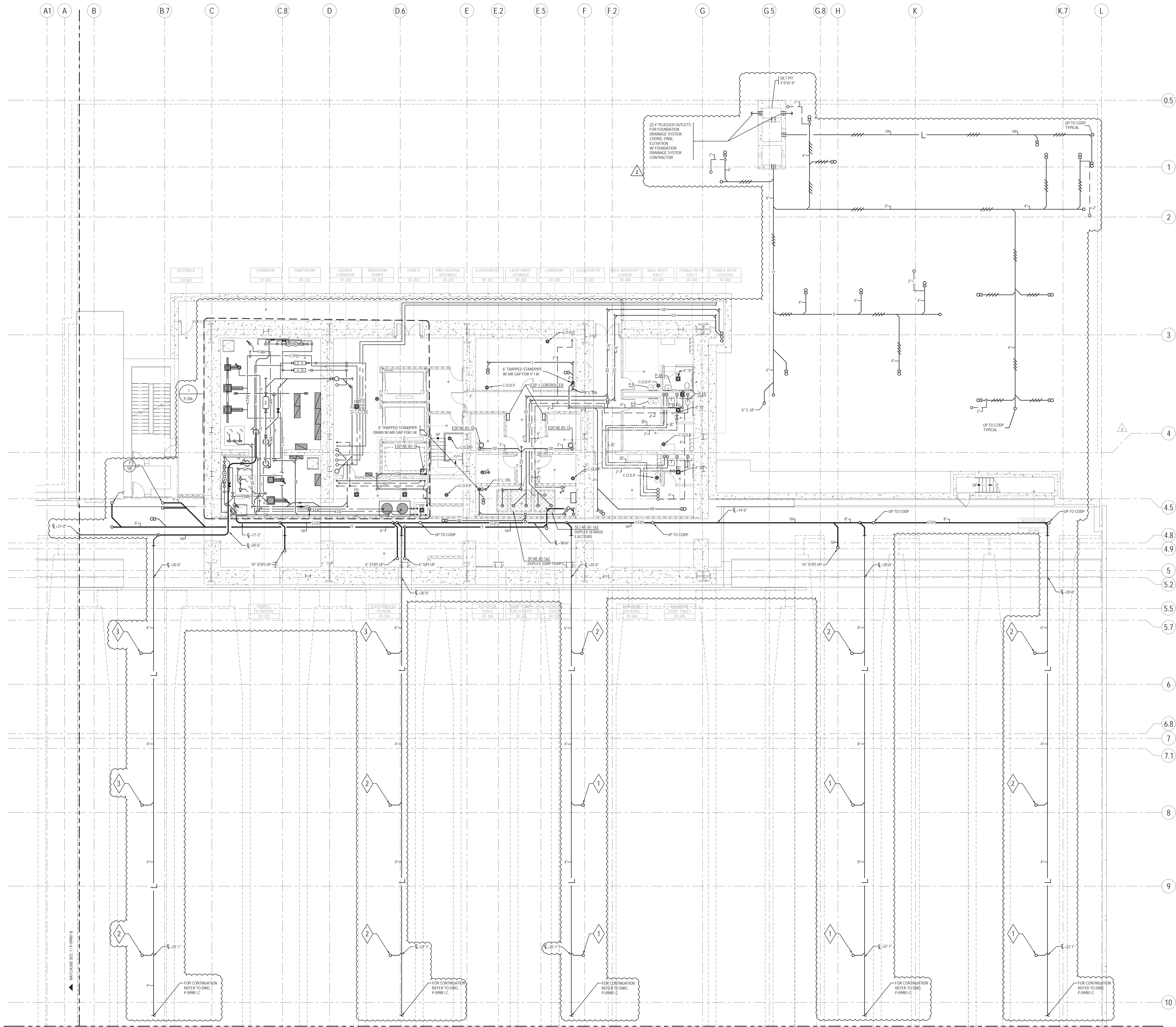
P-093.01

Sheet No.:

P-098B1P

Page No.:





KEY NOTES

- CONNECT TO EXISTING 4" PLATFORM DRAIN WITH TAIL PIECE. CUT BACK TAIL PIECE TO ALLOW 4" STORM PIPING TO BE INSTALLED TIGHT TO SLAB.
- CONNECT TO EXISTING 5" PLATFORM DRAIN WITH TAIL PIECE. REMOVE EXISTING TAIL PIECE AND PROVIDE 5"x4" REDUCER ON VERTICAL TO ALLOW 4" STORM PIPING TO BE INSTALLED TIGHT TO SLAB. REDUCER FITTING SHALL BE EQUAL TO FIELD CONDITIONS AT SOUTHWEST TOWER.
- CONNECT TO EXISTING 6" PLATFORM DRAIN WITH TAIL PIECE. REMOVE EXISTING TAIL PIECE AND PROVIDE 6"x4" REDUCER ON VERTICAL TO ALLOW 4" STORM PIPING TO BE INSTALLED TIGHT TO SLAB. REDUCER FITTING SHALL BE EQUAL TO FIELD CONDITIONS AT SOUTHWEST TOWER.

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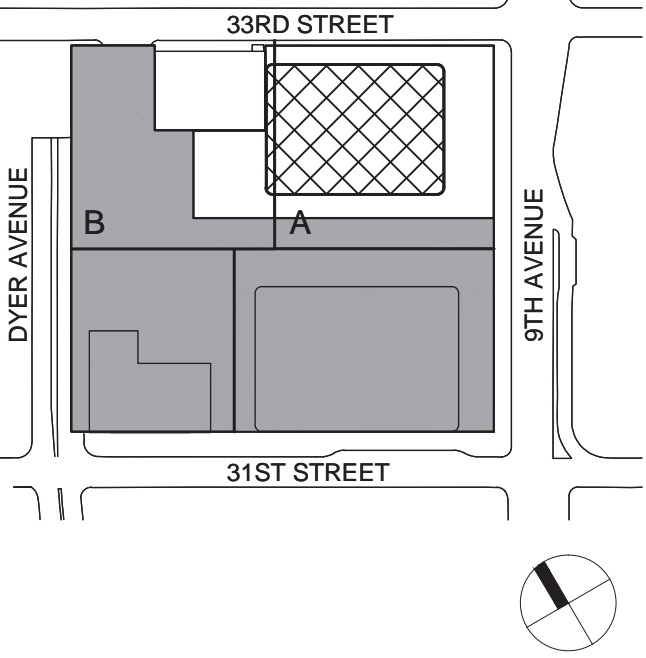
**Wilson, Uhrig & Associates, Inc.**  
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215 West 40th Street, 15th Floor, New York, NY 10018  
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**Rowan Williams Davies & Irwin Inc.**  
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Key Plan:



Seal & Signature:



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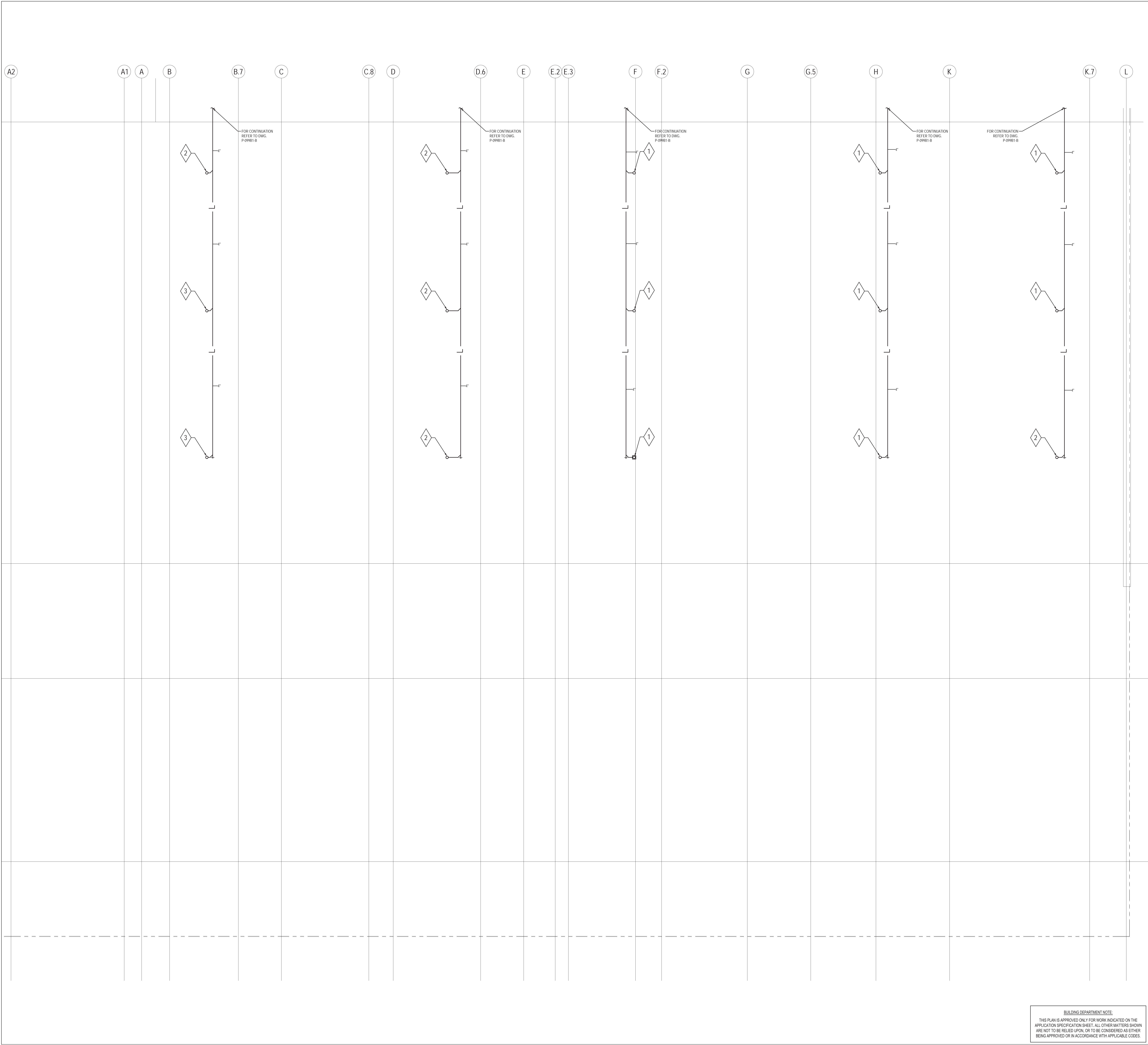
PLUMBING  
CELLAR B1  
FLOOR PLAN -  
PART A

Project No.: 1400A.000  
Date: 20 JUN 2014  
Scale: 1/8" = 1'-0"  
Filing No.: P-099B1-A  
B-SCAN Sheet No.: P-094.01  
Sheet No.: P-099B1-A  
Page No.:









KEY NOTES

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- CONNECT TO EXISTING 5" PLATFORM DRAIN WITH TAIL PIECE. REMOVE EXISTING TAIL PIECE AND PROVIDE 5"x4" REDUCER ON VERTICAL TO ALLOW 4" STORM PIPING TO BE INSTALLED TIGHT TO SLAB. REDUCER FITTING SHALL BE EQUAL TO FIELD CONDITIONS AT SOUTHWEST TOWER.
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Key Plan:

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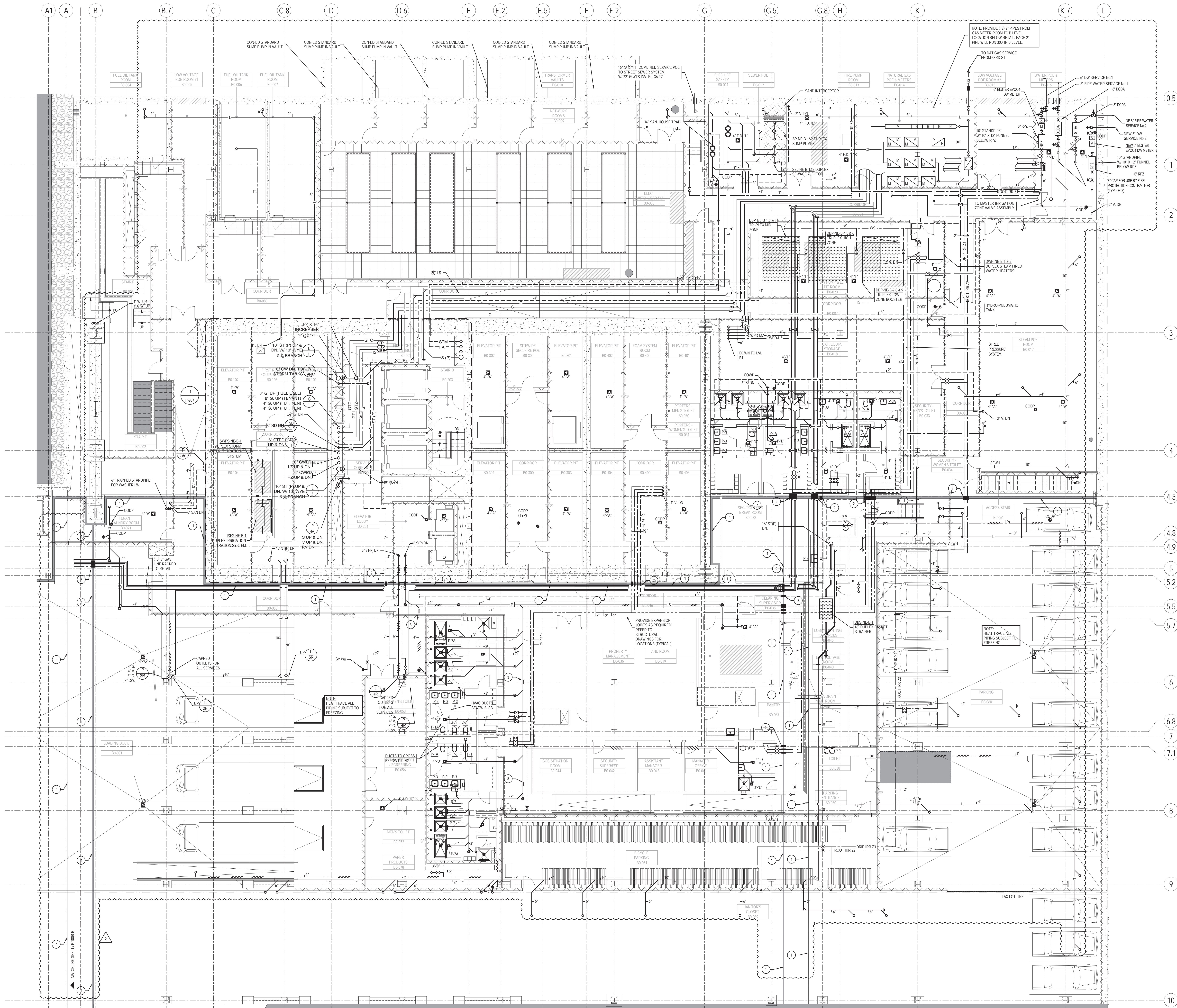
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**APPROVED**  
Under Directive 2 of 2015  
DATE: 02/03/2017  
NYC Development Hub

Project No.: 1403A.000  
Date: 22 APR 2016  
Scale: 1/8" = 1'-0"  
File No.: P-099B1-C

B-SCAN Sheet No.:  
**P-096.00**  
Sheet No.:  
**P-099B1-C**  
Page No.:





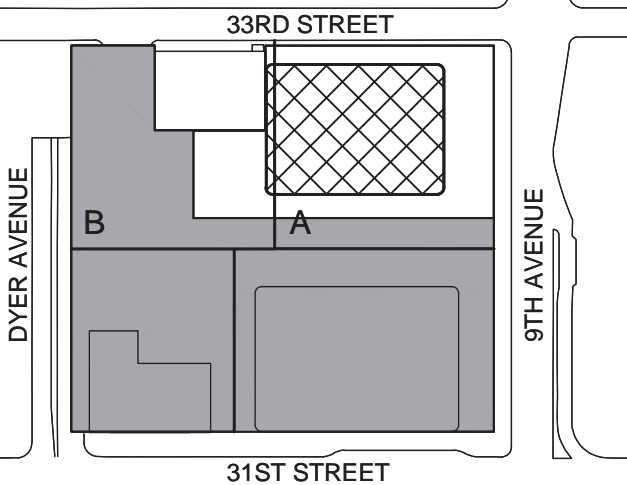
KEY NOTES

- 1 EXPANSION JOINT WITH INTEGRAL DRAINS 10'-0" O.C. MAX. PROVIDE INDIRECT WASTE PIPING CONNECTING TO EACH WEEP DRAIN & EXTEND TO NEAREST FLOOR DRAIN OR TRAPPED STANDPIPE DRAIN.
- 2 EXPANSION JOINT- PROVIDE EXPANSION JOINTS ON ALL PIPING CROSSING EXPANSION JOINTS.
- 3 TYPICAL SLEEVE IN KNEEL WALL.

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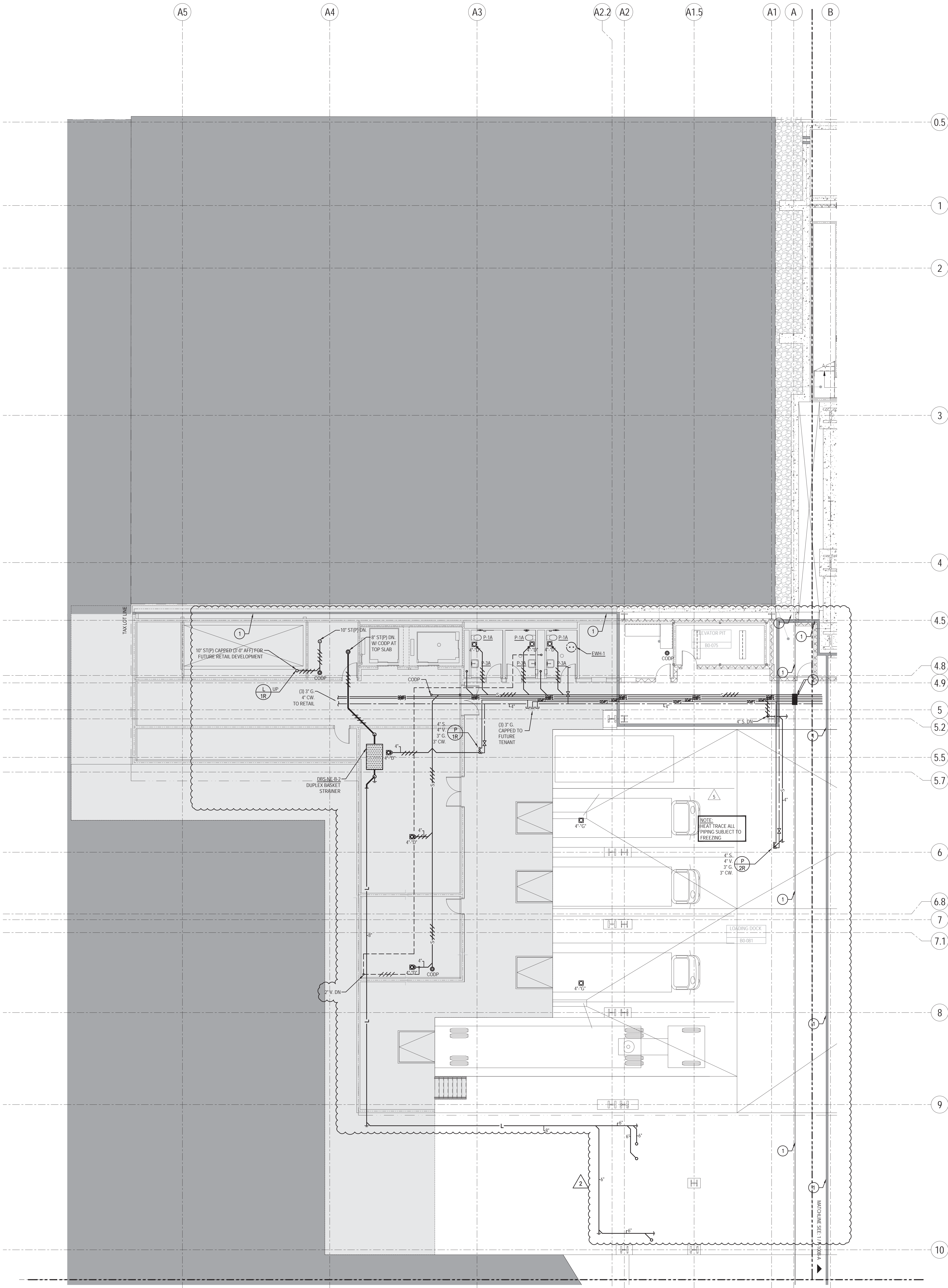
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Under Directive L-87-075  
Date: 02/03/2017  
NYC Development Hub

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PLUMBING  
CELLAR B  
FLOOR PLAN -  
PART A

Project No.: 1400A.000	B-SCAN Sheet No.: P-97.01
Date: 20 JUN 2014	Sheet No.: P-100B-A
Scale: 1/8" = 1'-0"	Page No.:
File No.: P-100B-A	





KEY NOTES

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102 East Blithedale Ave. Suite 1, Mill Valley, California 94941

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

Geo-Technical Engineering  
**Mueser Rutledge Consulting Engineers**  
14 Penn Plaza, 22nd W. 34th Street #610,  
New York, NY 10122

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

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

Blast Consultant  
**Weidinger Associates, Inc.**  
40 West Street, New York, NY 10005

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

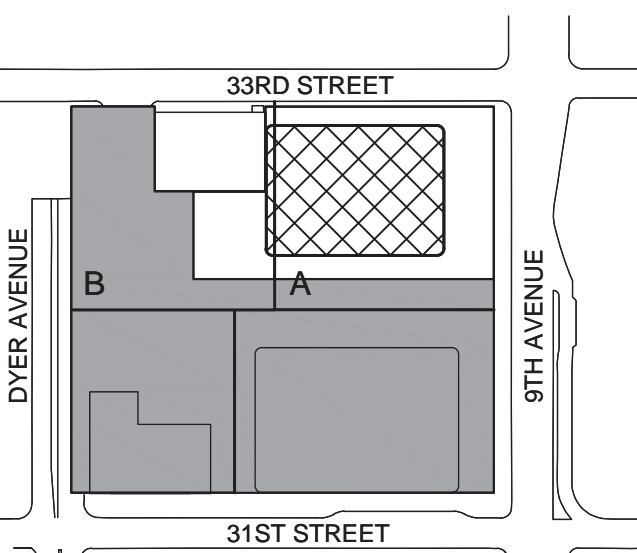
Vibration Consultant  
**Wilson, Uhrig & Associates, Inc.**  
65 Broadway, Suite 401, New York, NY 10006

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

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

Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:

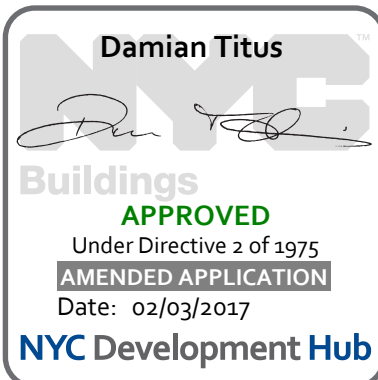


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- 1 - REFER TO NOTES & DESIGN CRITERIA ON DWG. P1-002 FOR ADDITIONAL INFORMATION, REQUIREMENTS & CLARIFICATIONS.
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- 3 - ALL PIPE ELEVATIONS ARE TAKEN FROM TOP OF STEEL.

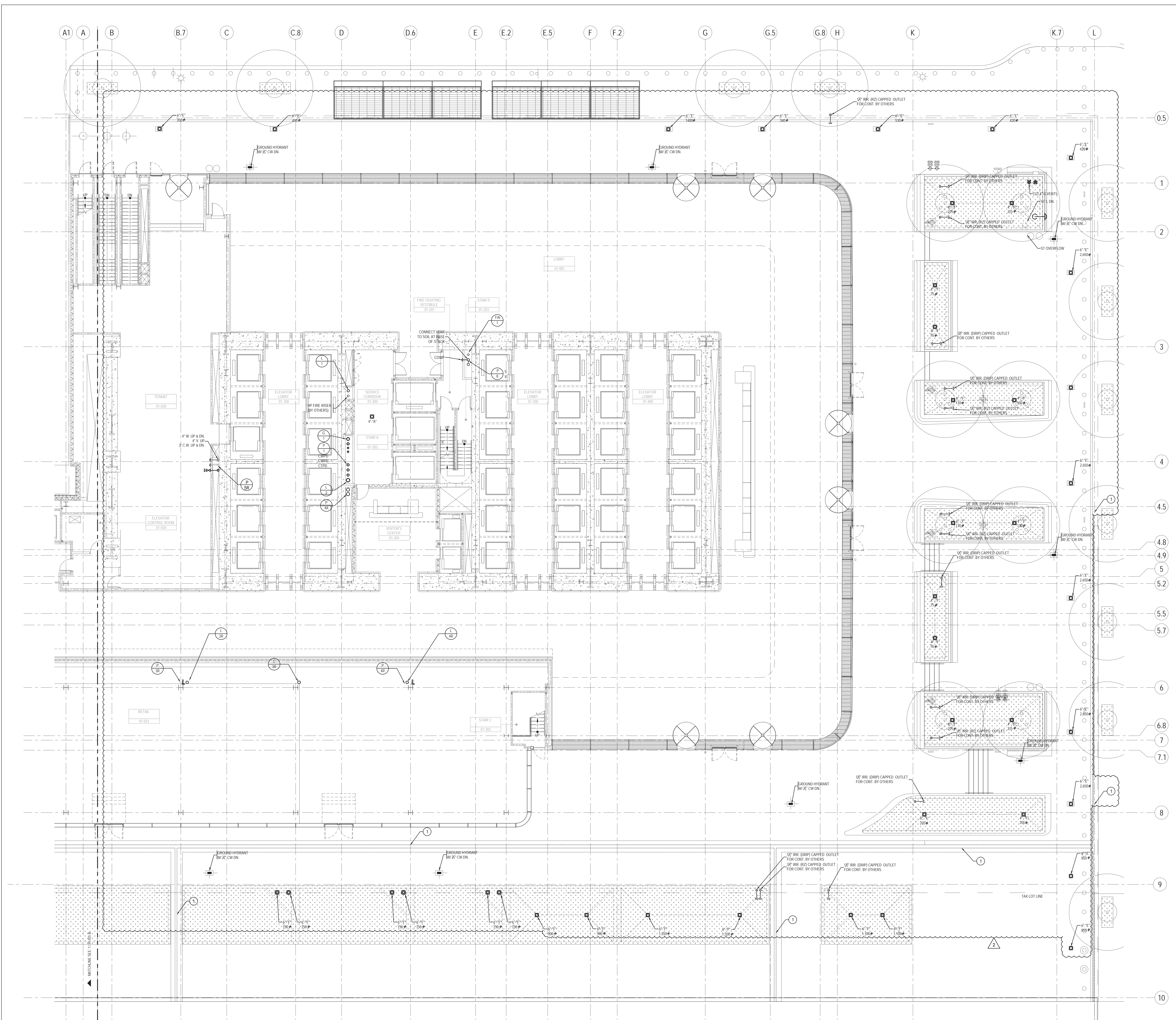


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PLUMBING  
CELLAR B  
FLOOR PLAN -  
PART B

Project No.: 1400A.000  
Date: 20 JUN 2014  
Scale: 1/8" = 1'-0"  
File No.: P-100B-B  
B-SCAN Sheet No.: P-098.01  
Sheet No.: P-100B-B  
Page No.:





### KEY NOTES

1. EXPANSION JOINT WITH INTEGRAL DRAINS 10'-0" O.C. MAX. PROVIDE INDIRECT WASTE PIPING CONNECTING TO EACH WEEP DRAIN & EXTEND TO NEAREST FLOOR DRAIN OR TRAPPED STANDPIPE DRAIN.

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3. ALL PIPE ELEVATIONS ARE TAKEN FROM TOP OF STEEL.

**Damian Titus**  
Buildings

APPROVED  
Under Directive L-07-075  
AMENDED APPLICATION  
Date: 02/03/2017  
NYC Development Hub

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

**Brookfield**  
Brookfield Place  
15th Floor, New York, NY 10281

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

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

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

Vertical Transportation  
**Edgett Williams Consulting Group, Inc.**  
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Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:

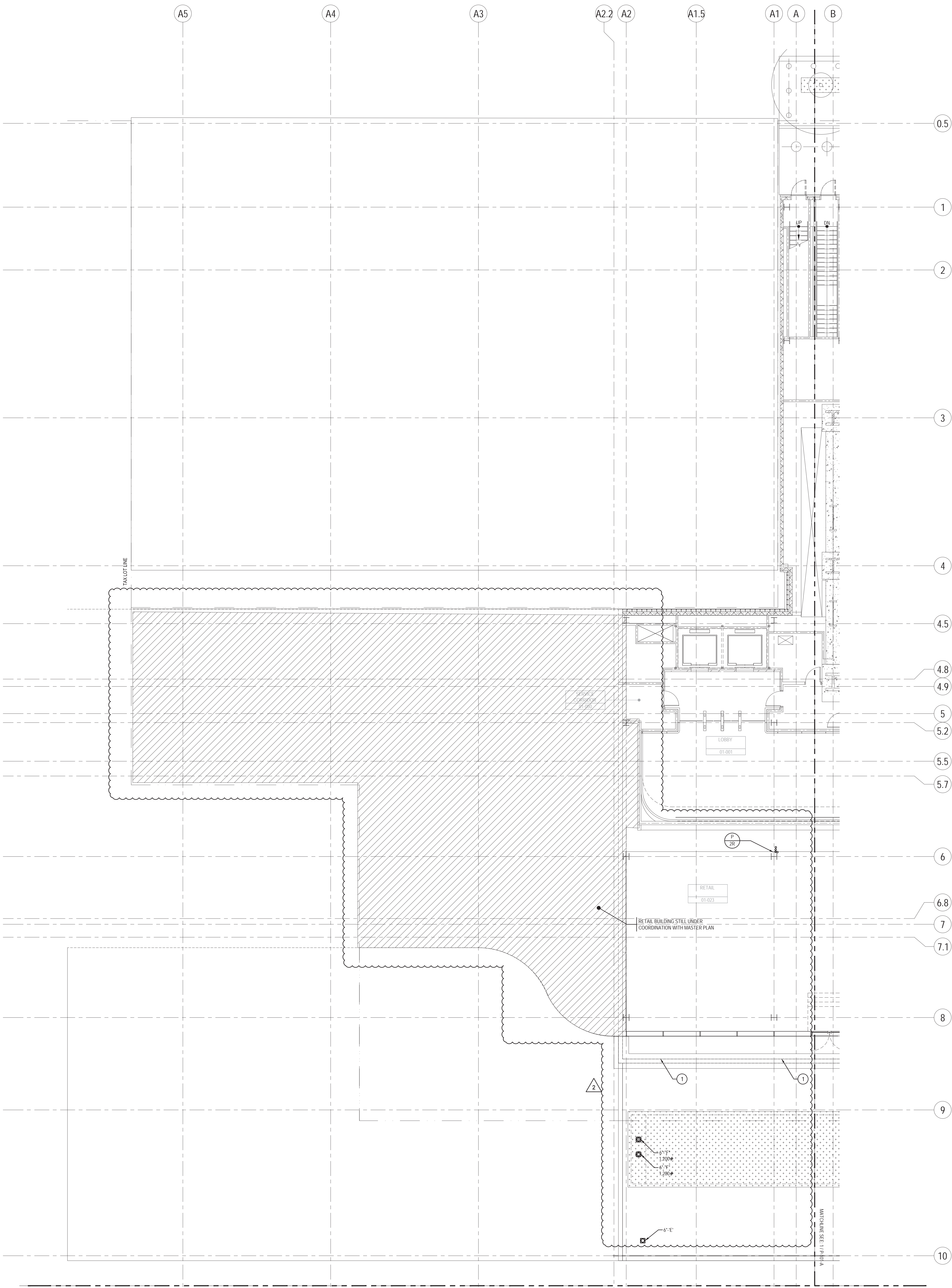
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1	20 JUN 2014	ISSUED FOR BUILDING PERMIT
No.		Date
Sheet Name:		Description

**PLUMBING  
GROUND FLOOR  
PLAN - PART A**

Project No.: 1400A.000	B-SCAN Sheet No.: <b>P-100.01</b>
Date: 20 JUN 2014	Sheet No.: P-101-A
Scale: 1/8" = 1'-0"	Page No.: P-101-A
File No.: P-101-A	





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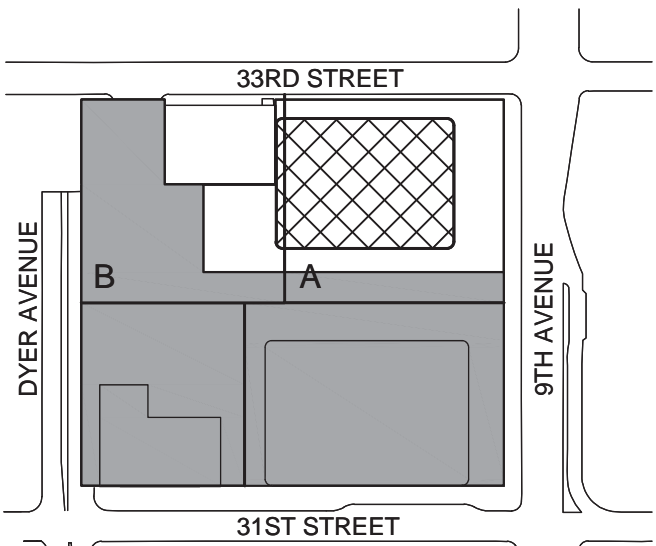
Vibration Consultant  
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Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph, Ontario, Canada N1K 1S8

Key Plan:



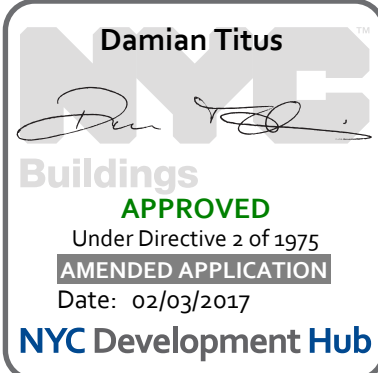
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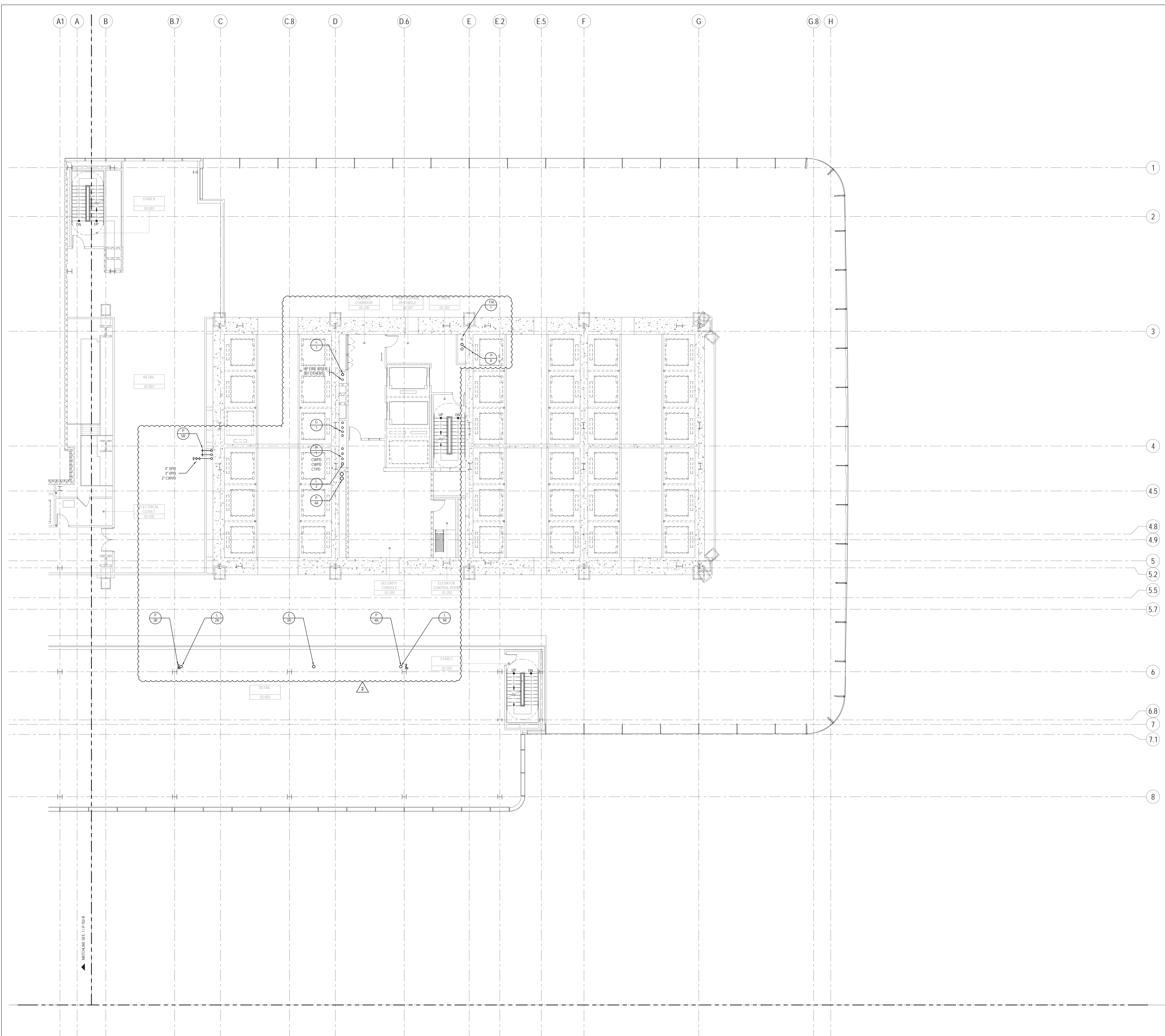


PLUMBING  
GROUND FLOOR  
PLAN - PART B

Project No.: 1400A.000  
Date: 20 JUN 2014  
Scale: 1/8" = 1'-0"  
File No.: P-101-B

B-SCAN Sheet No.:  
**P-101.01**  
Sheet No.: P-101-B  
Page No.:





KEY NOTES

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**MANHATTAN WEST: NORTH TOWER**  
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Client

**Brookfield**  
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**Field Operations**  
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**Weidinger Associates, Inc.**  
40 West Street, New York, NY 10005

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

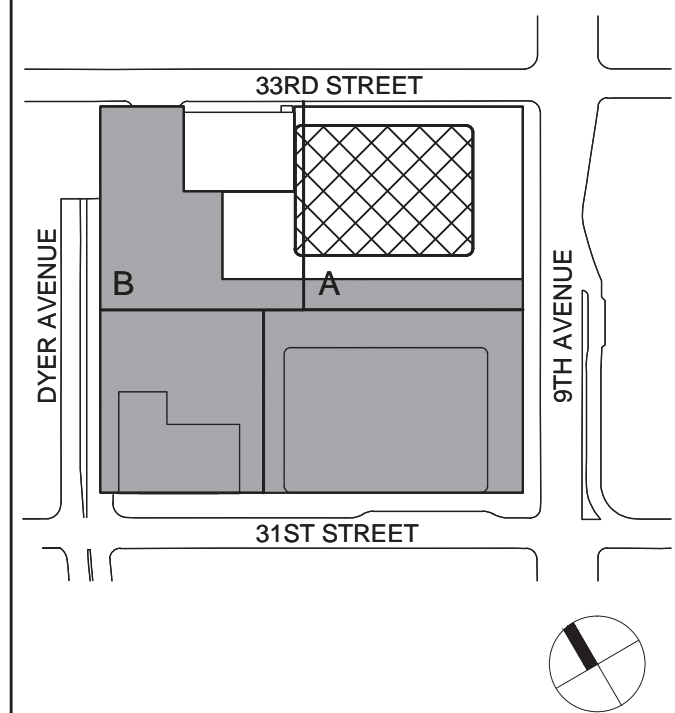
Vibration Consultant  
**Wilson, Uhrig & Associates, Inc.**  
65 Broadway, Suite 401, New York, NY 10006

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

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186 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph, Ontario, Canada N1K 1S5

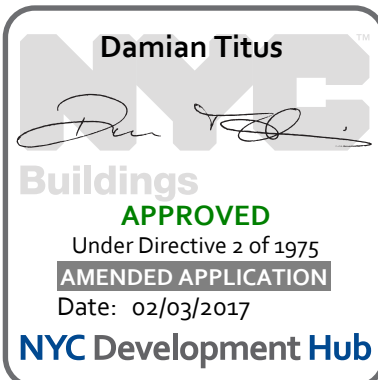
Key Plan:



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**PLUMBING  
LEVEL 2 FLOOR  
PLAN - RETAIL -  
PART A**



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Project No.: 1403A.000  
Date: 20 JUN 2014  
Scale: 1/8" = 1'-0"  
Filing No.: P-102-A

B-SCAN Sheet No.:  
**P-102.01**  
Sheet No.: P-102-A  
Page No.:





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

Client  
**Brookfield**

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

Architecture/Structural Engineering  
**SOM**

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

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

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

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

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

Geo-Technical Engineering  
**Mueser Rutledge Consulting Engineers**  
14 Penn Plaza, 22nd W. 34th Street #610,  
New York, NY 10122

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

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

Blast Consultant  
**Weidinger Associates, Inc.**  
40 West Street, New York, NY 10005

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

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

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

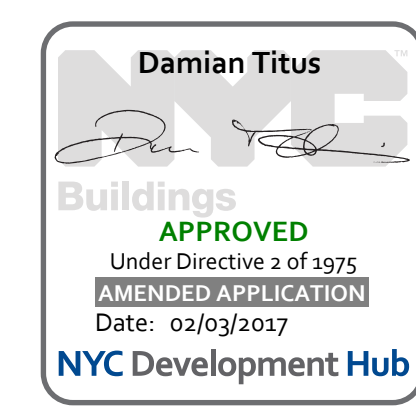
Facade Maintenance Consultant  
**Entek Engineering LLC**  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S8

KEY NOTES

SHEET NOTES

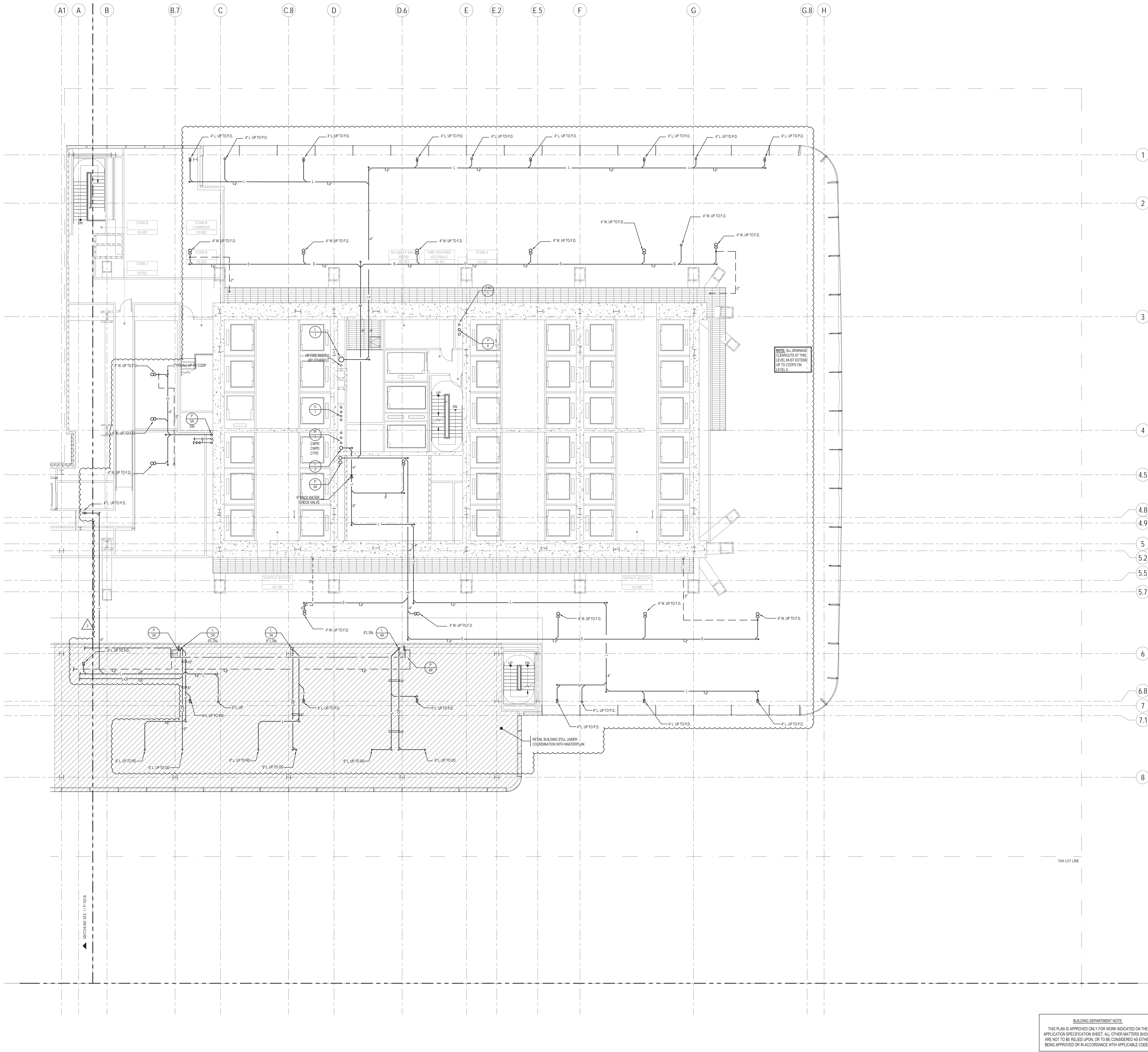
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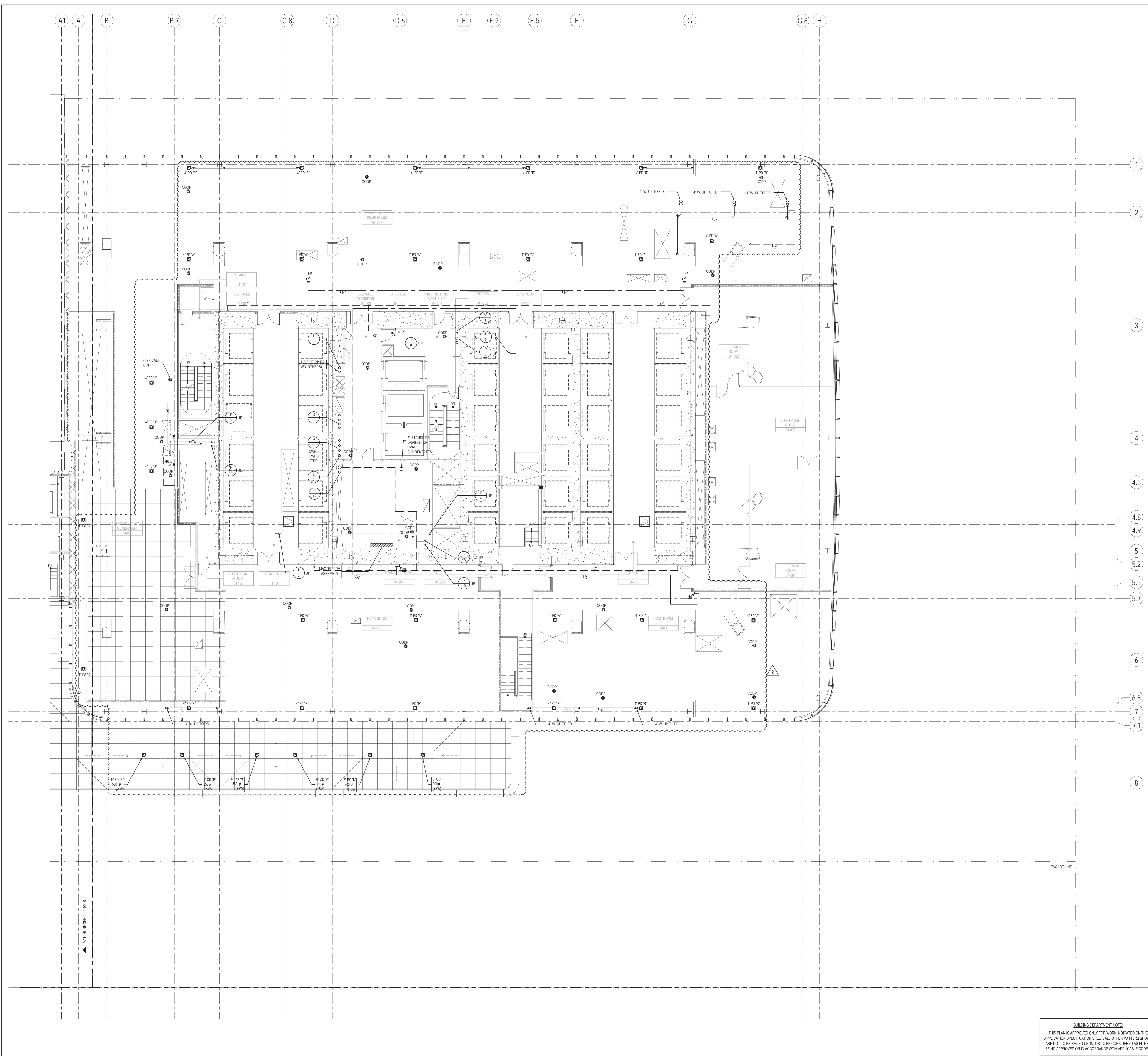
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PLUMBING  
LEVEL 3  
FLOOR PLAN -  
STAIR TRANSFER -  
PART A

Project No.: 1400A.000  
Date: 20 JUN 2014  
Scale: 1/8" = 1'-0"  
Filing No.: P-103-A  
B-SCAN Sheet No.: P-103.01  
Sheet No.: P-103-A  
Page No.: 1



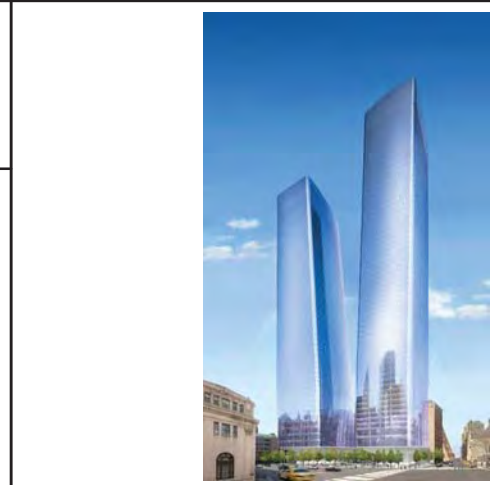




KEY NOTES

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

Client

**Brookfield**

Brookfield Place  
250 Vesey Street, 15th Floor, New York, NY 10021

Architecture/Structural Engineering

**SOM**

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

Civil Engineering

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

MEP Engineering

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

Vertical Transportation

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102 East 8th Street, Suite 1, Mill Valley, California 94941

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

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Field Operations  
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Security Consultant

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250 State Street #F1, North Haven, CT 06473

Blast Consultant

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Vibration Consultant

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Code Consultant

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

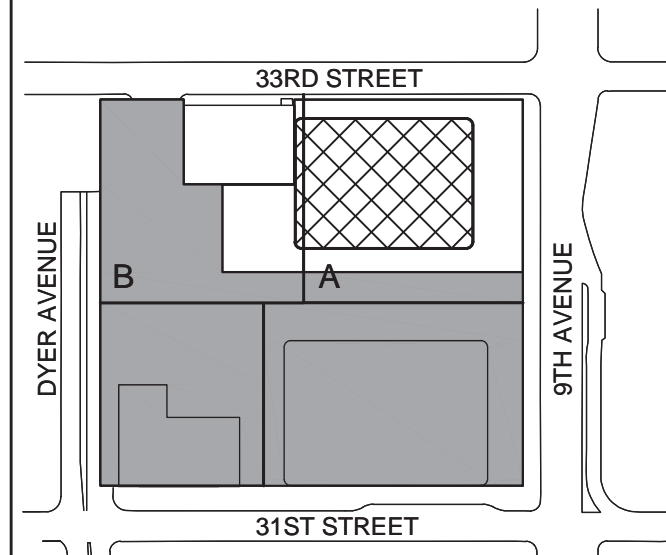
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



Seal & Signature:



**PLUMBING  
LEVEL 4  
FLOOR PLAN -  
MECHANICAL -  
PART A**

Project No.: 1400A.000

Date: 20 JUN 2014

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

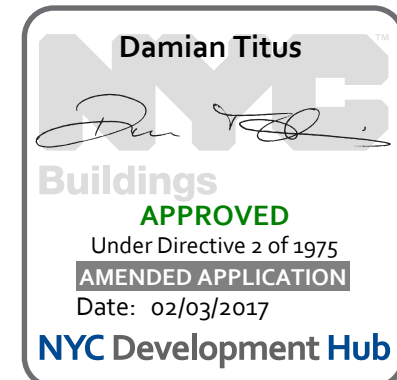
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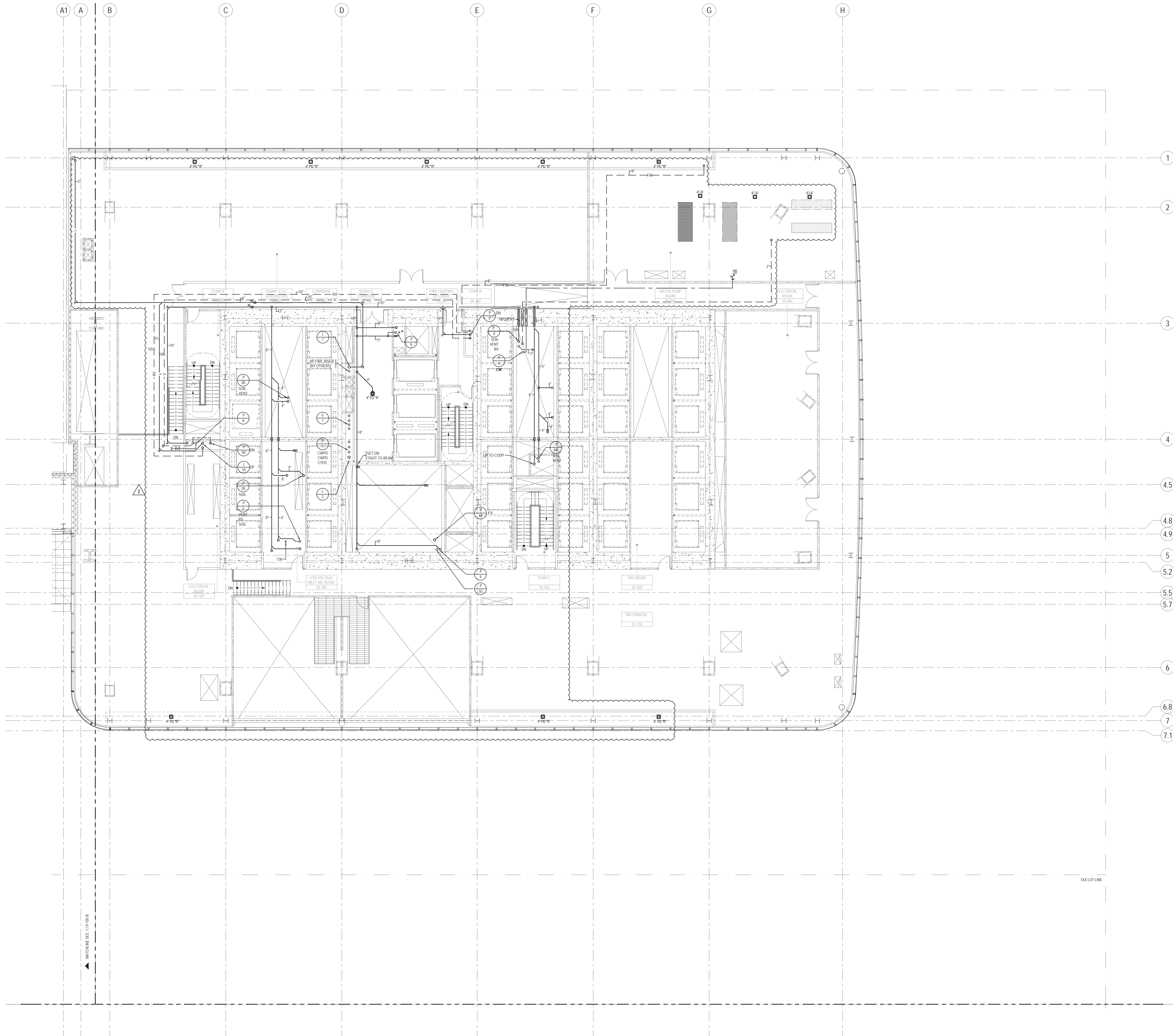
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KEY NOTES

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- 2 EXPANSION JOINT- PROVIDE EXPANSION JOINTS ON ALL PIPING CROSSING EXPANSION JOINTS.

  
**MANHATTAN WEST:  
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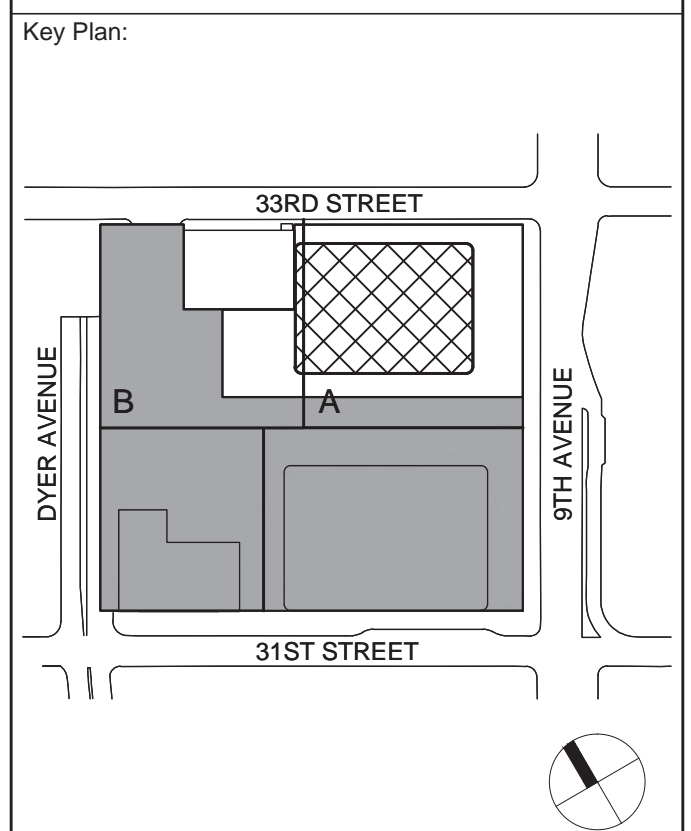
Acoustical Consultant  
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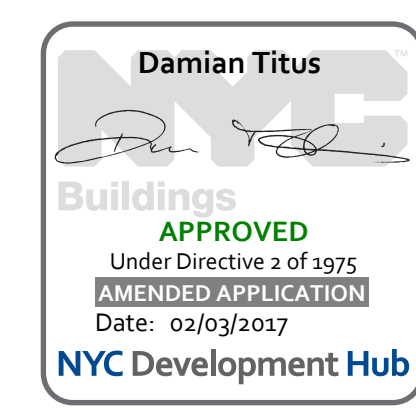


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No.	Date	Description
Sheet Name:		

**PLUMBING  
LEVEL 5  
FLOOR PLAN -  
MECHANICAL  
MEZZANINE -  
PART A**

Project No.: 1400A.000	B-SCAN Sheet No.: P-105.01
Date: 20 JUN 2014	Sheet No.: P-105-A
Scale: 1/8" = 1'-0"	Page No.:
File No: P-105-A	

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MANHATTAN WEST:  
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MEP Engineering

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

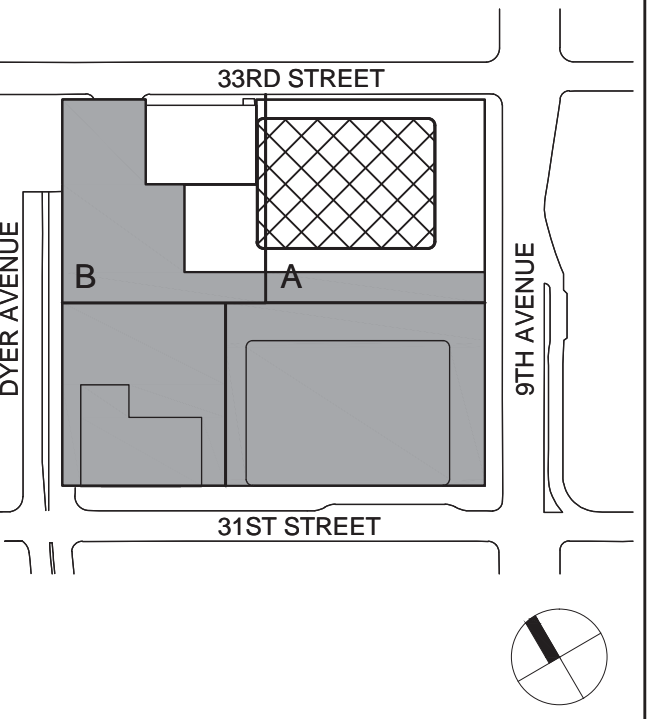
Facade Maintenance Consultant

**Entek Engineering LLC**  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:

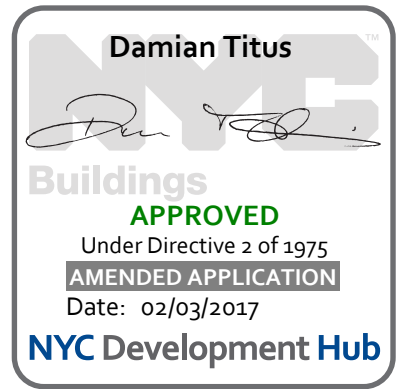


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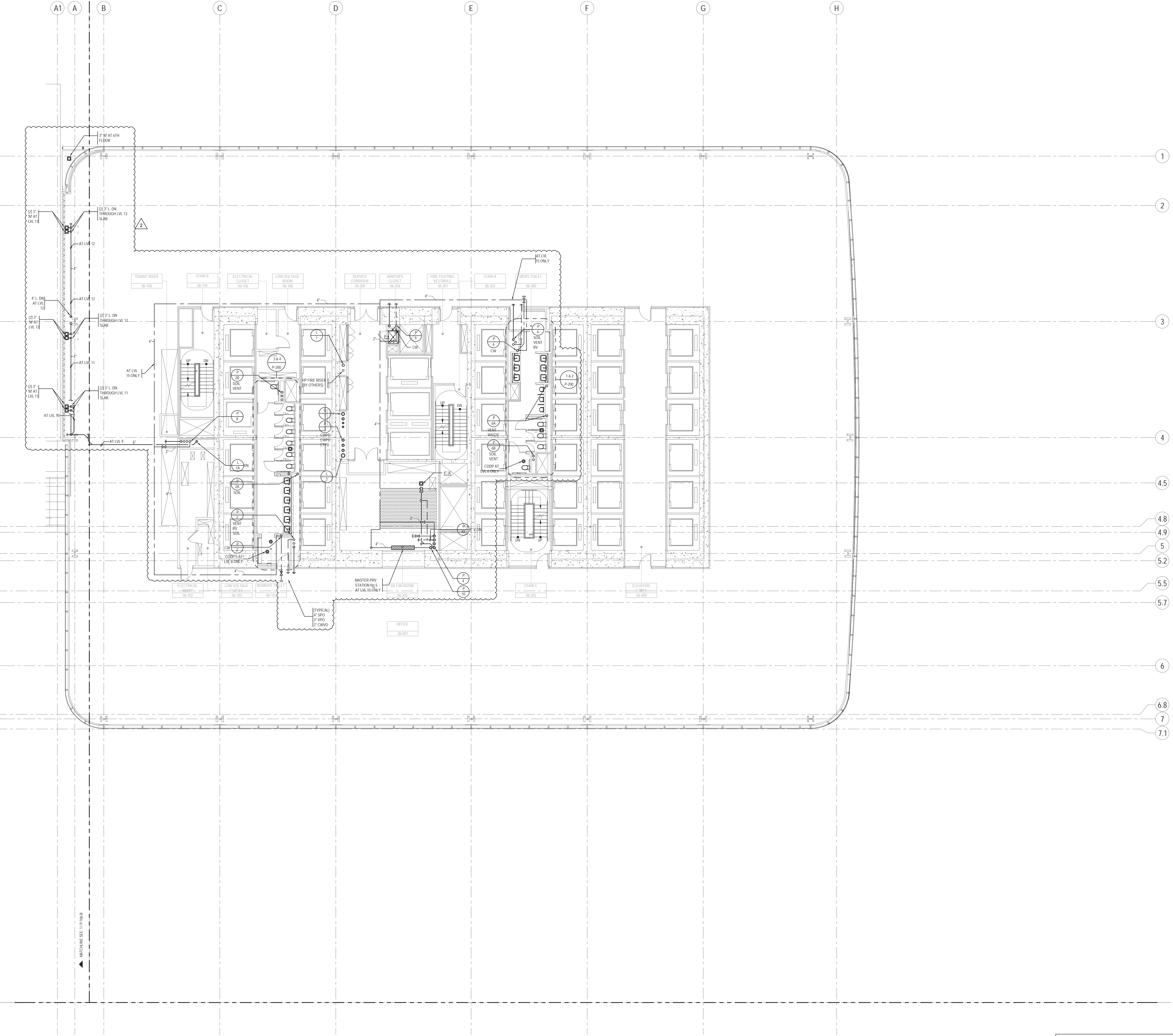
SHEET NOTES

- 1- REFER TO NOTES & DESIGN CRITERIA ON DWG. P1-0002 FOR ADDITIONAL INFORMATION, REQUIREMENTS & CLARIFICATIONS.
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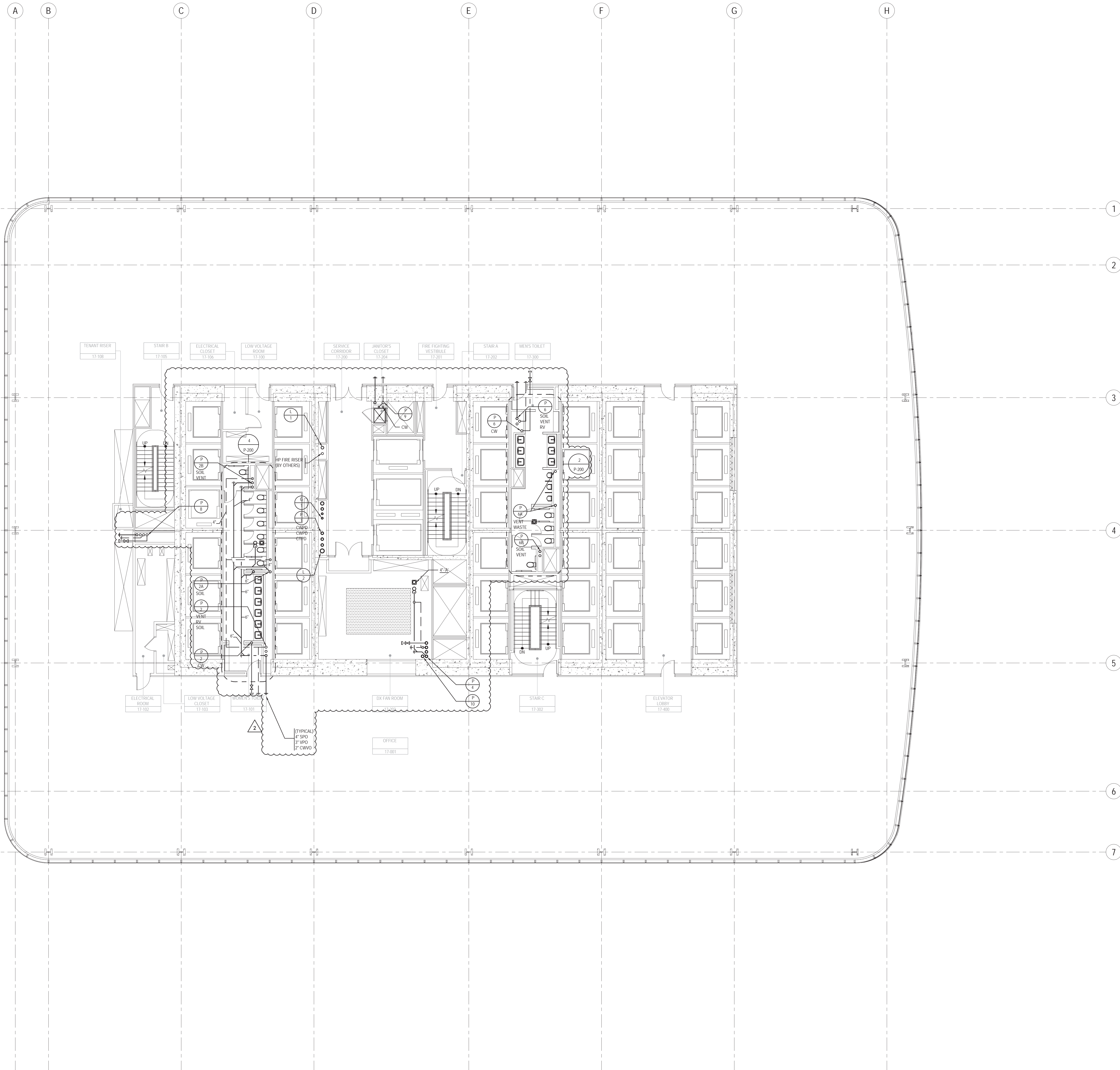


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Project No.: 1403A.000		B-SCAN Sheet No.: P-106.00	
Date: 22 APR 2016		Sheet No.: P-106A	
Scale: 1/8" = 1'-0"		Page No.: P-106-A	
File No.: P-106-A			








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

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

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

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

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

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

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

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**Mueser Rutledge Consulting Engineers**  
14 Penn Plaza, 22nd W. 34th Street #610,  
New York, NY 10122

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

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

Blast Consultant  
**Weidinger Associates, Inc.**  
40 West Street, New York, NY 10005

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

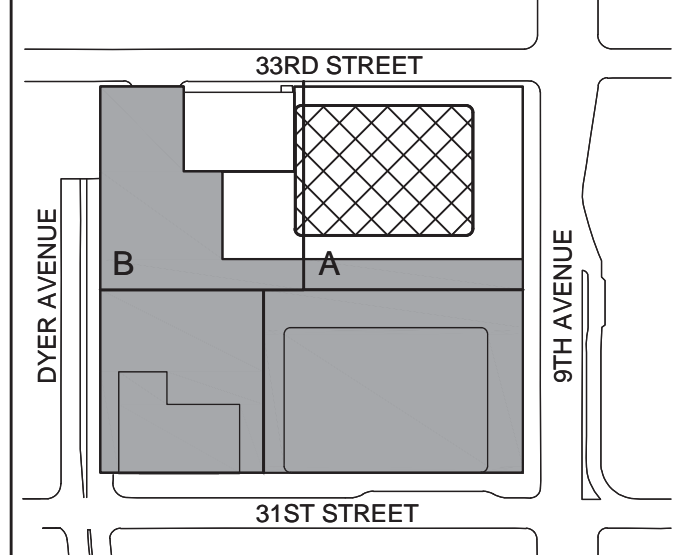
Vibration Consultant  
**Wilson, Uhrig & Associates, Inc.**  
65 Broadway, Suite 401, New York, NY 10006

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

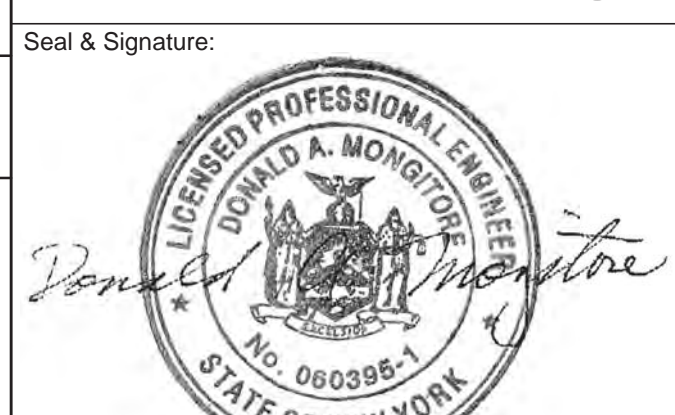
Facade Maintenance Consultant  
**Entek Engineering LLC**  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



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Project No.: 1400A.000  
Date: 20 JUN 2014  
Sheet No.: P-117

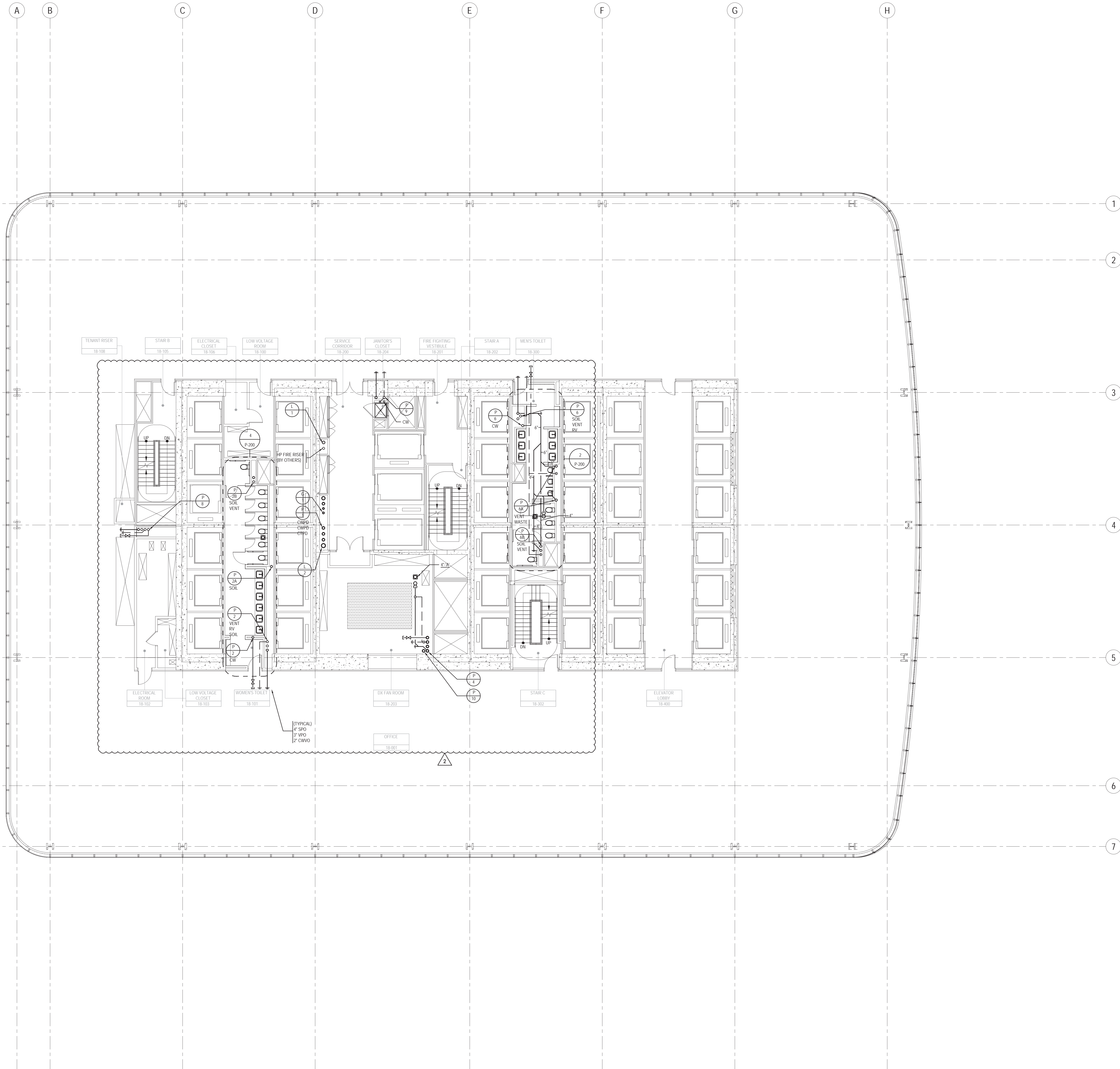
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**P-117.01**  
Sheet No.: P-117  
Page No.: P-117

**PLUMBING  
LEVEL 17 FLOOR  
PLAN - LOW-RISE**

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**Brookfield**  
Brookfield Place  
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**Vindian Energy & Environmental**  
50 Washington Street, Norwalk, CT 06854

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**Field Operations**  
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250 State Street #F1, North Haven, CT 06473

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40 Wall Street, New York, NY 10005

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

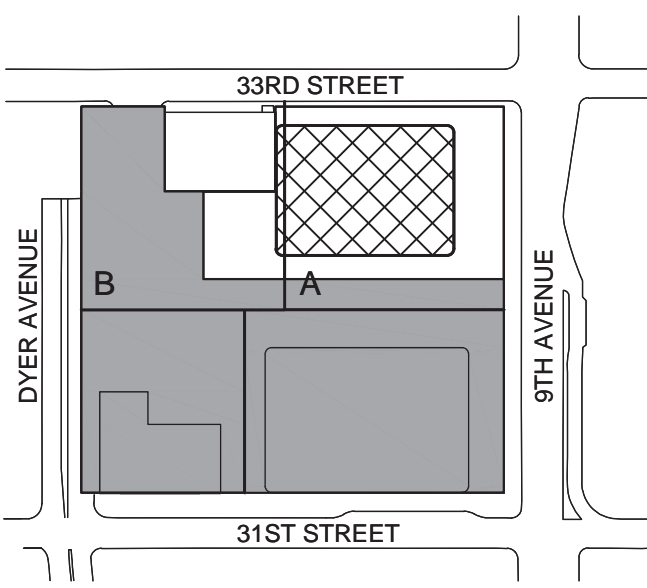
Vibration Consultant  
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**Code Consultants Professional Engineers PC**  
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186 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph Ontario, Canada N1K 1S5

Key Plan:



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Project No.: 1400A.000  
Date: 20 JUN 2014  
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**PLUMBING  
LEVEL 18 FLOOR  
PLAN - LOW-RISE  
OVERRUN**

B-SCAN Sheet No.: P-118.01  
Sheet No.: P-118  
Page No.: P-118





**Damian Titus**  
  
**Buildings**  
**APPROVED**  
Under Directive 2 of 1975  
**AMENDED APPLICATION**  
Date: 02/03/2017  
**NYC Development Hub**

- 1 - REFER TO NOTES & DESIGN CRITERIA ON DWG. P1-0002 FOR ADDITIONAL INFORMATION, REQUIREMENTS & CLARIFICATIONS.
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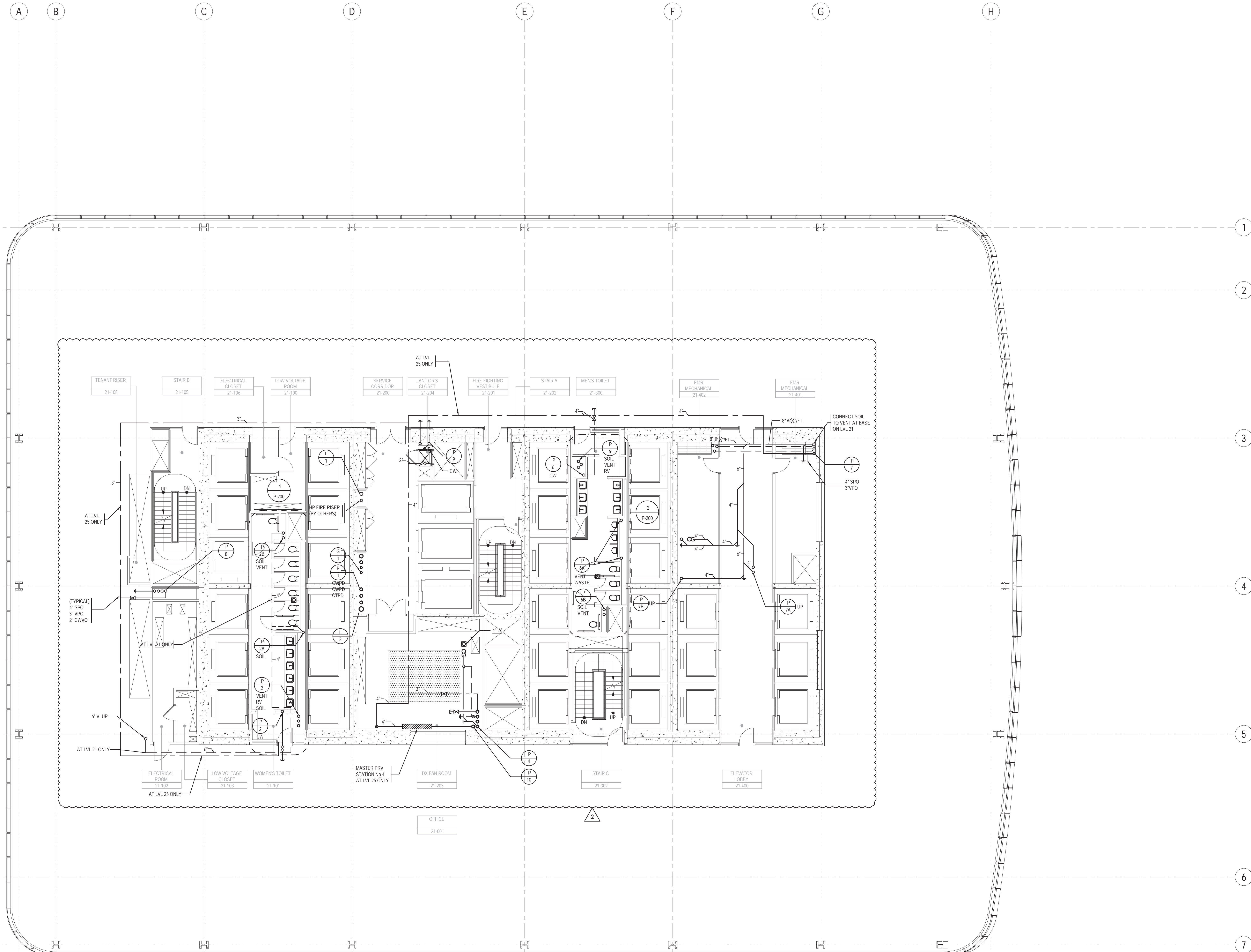
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1	20 JUN 2014	ISSUED FOR BUILDING PERMIT
No.	Date	Description

Sheet Name:

PLUMBING  
LEVEL 19-20  
FLOOR PLAN -  
LOW-RISE EMR

Project No.: 14830 A 000	B-SCAN Sheet No.:
Date: 20 JUN 2014	P-119.01
Scale: 1/8" = 1'-0"	
File No.: P-119	Sheet No.: P-119
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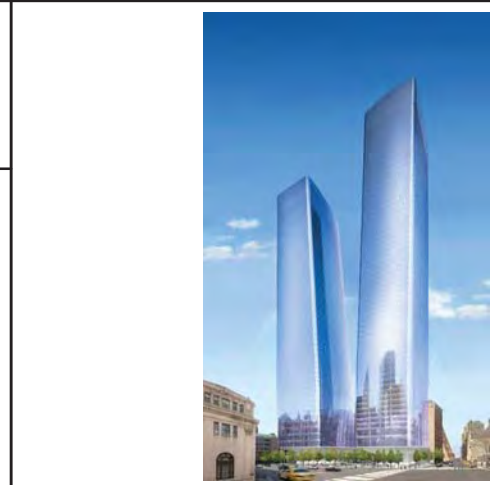




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MANHATTAN WEST:  
NORTH TOWER  
375 Ninth Avenue, New York, NY 10001

Client

**Brookfield**

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

Architecture/Structural Engineering

**SOM**

Skidmore, Owings & Merrill LLP  
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Civil Engineering

Philip Habib & Associates  
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MEP Engineering

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Vertical Transportation

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Sustainable Design

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50 Washington Street, Norwalk, CT 06854

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Field Operations  
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65 Broadway, Suite 401, New York, NY 10006

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

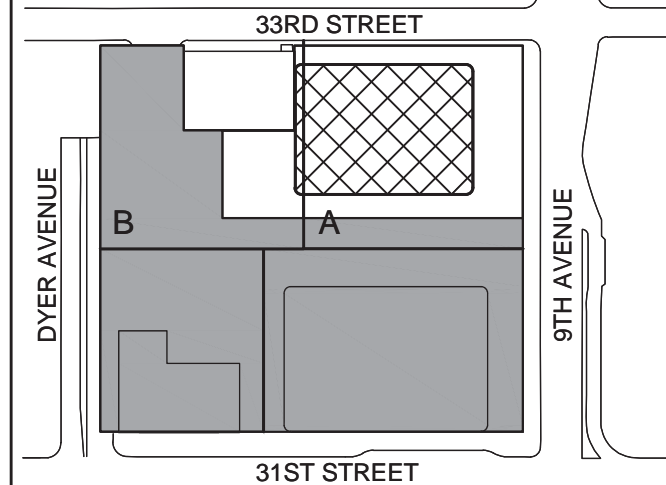
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

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1 22 JUN 2014 ISSUED FOR BUILDING PERMIT

No. Date Description

Sheet Name:

**PLUMBING  
LEVEL 21-27  
FLOOR PLAN -  
LOW-RISE**

Project No.:

1400A.000

Date:

20 JUN 2014

File No.:

P-121

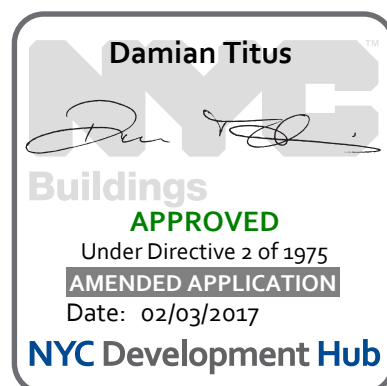
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**P-121.01**

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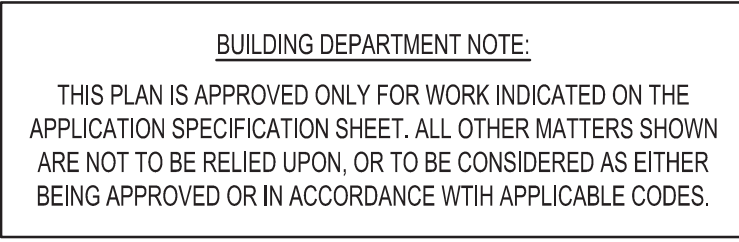
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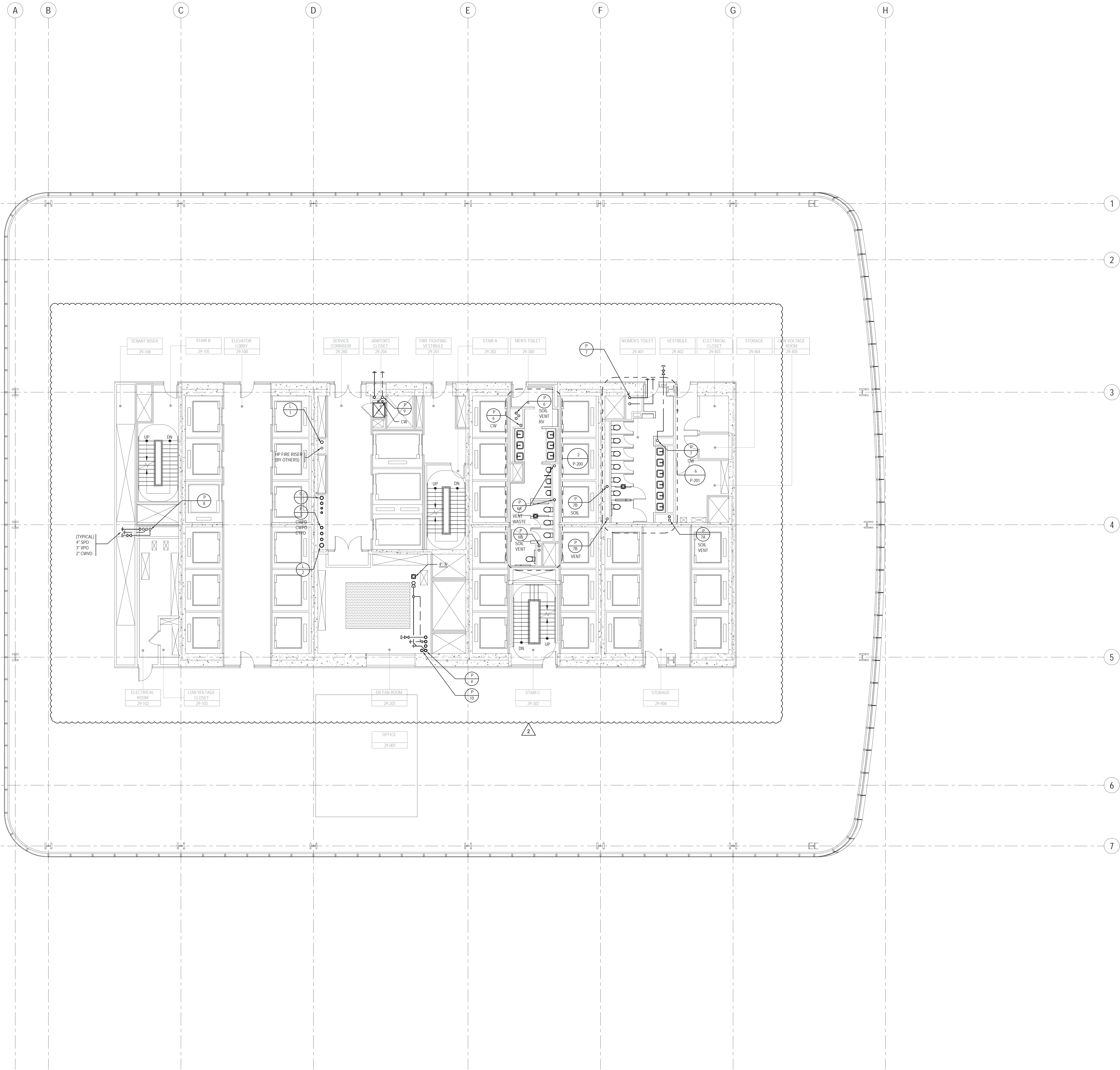




Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph

Project No.: 14830.A.000	B-SCAN Sheet No.:
Date:	P-128.01





KEY NOTES

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

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

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

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

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

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

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

Geo-Technical Engineering  
**Mueser Rutledge Consulting Engineers**  
14 Penn Plaza, 22d W. 34th Street #610,  
New York, NY 10122

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

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

Blast Consultant  
**Weidinger Associates, Inc.**  
40 West Street, New York, NY 10005

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

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

Code Consultant  
**Code Consultants Professional Engineers PC**  
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Facade Maintenance Consultant  
**Entek Engineering LLC**  
186 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:

Seal & Signature:

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1	22 JUN 2014	ISSUED FOR BUILDING PERMIT
No.	Date	Description
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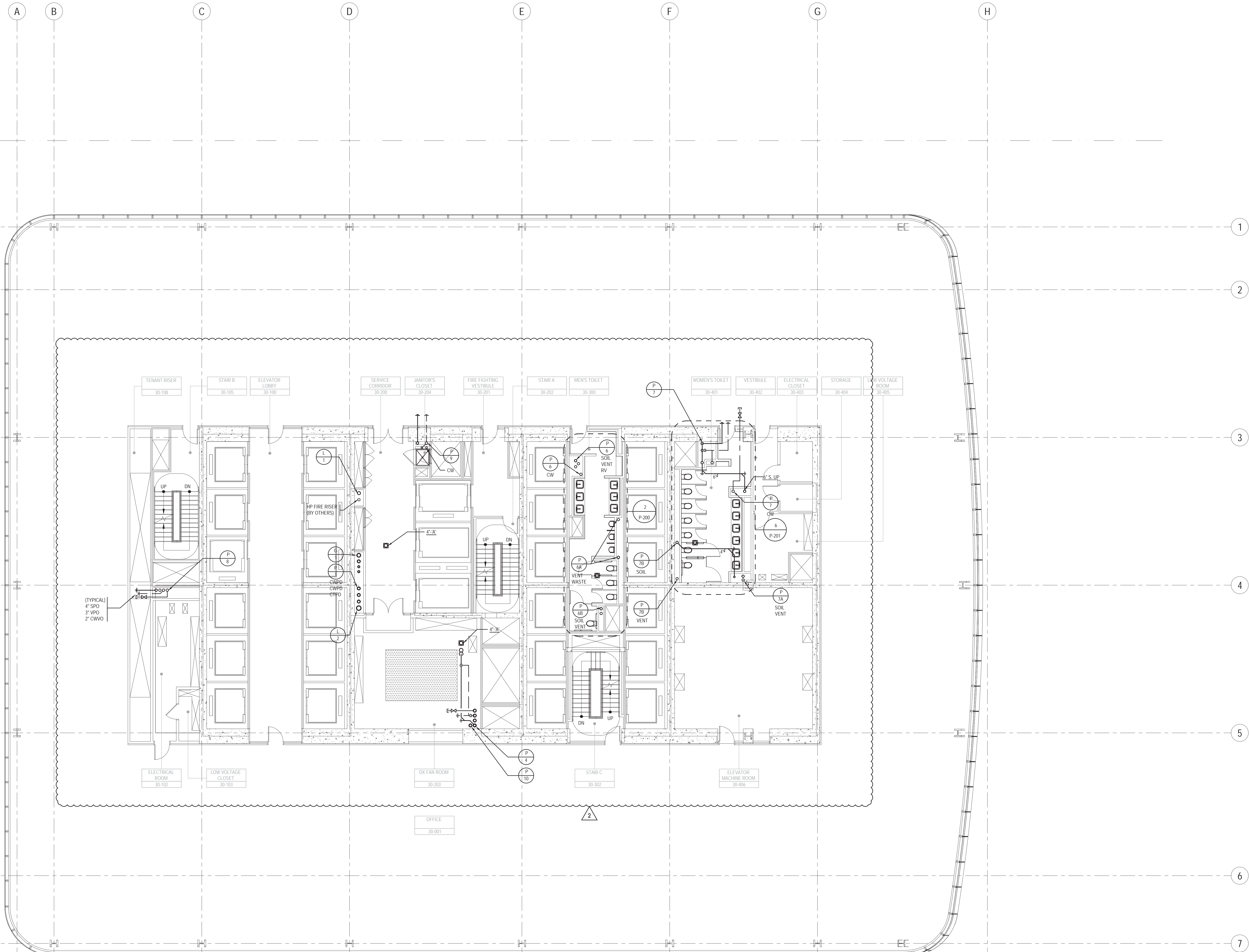
**PLUMBING  
LEVEL 29 FLOOR  
PLAN - MID-RISE  
OVERRUN**

Project No.: 1400A.000	B-SCAN Sheet No.: <b>P-129.01</b>
Date: 20 JUN 2014	Sheet No.: <b>P-129</b>
Scale: 1/8" = 1'-0"	Page No.:
File No.: P-129	

**Damian Titus**  
Buildings  
APPROVED  
Under Directive 1 of 2015  
PLUMBING APPLICATION  
Date: 02/03/2017  
NYC Development Hub

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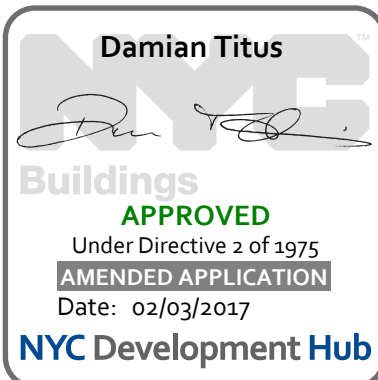




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375 Ninth Avenue, New York, NY 10001  
Client

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Brookfield Place  
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Architecture/Structural Engineering  
**SOM**  
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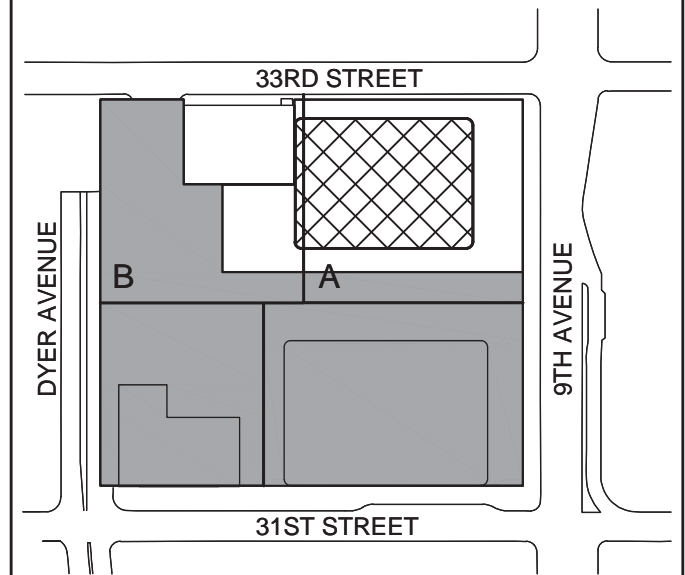
Vibration Consultant  
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650 Woodlawn Road West, Guelph Ontario, Canada N1K 1S5

Key Plan:



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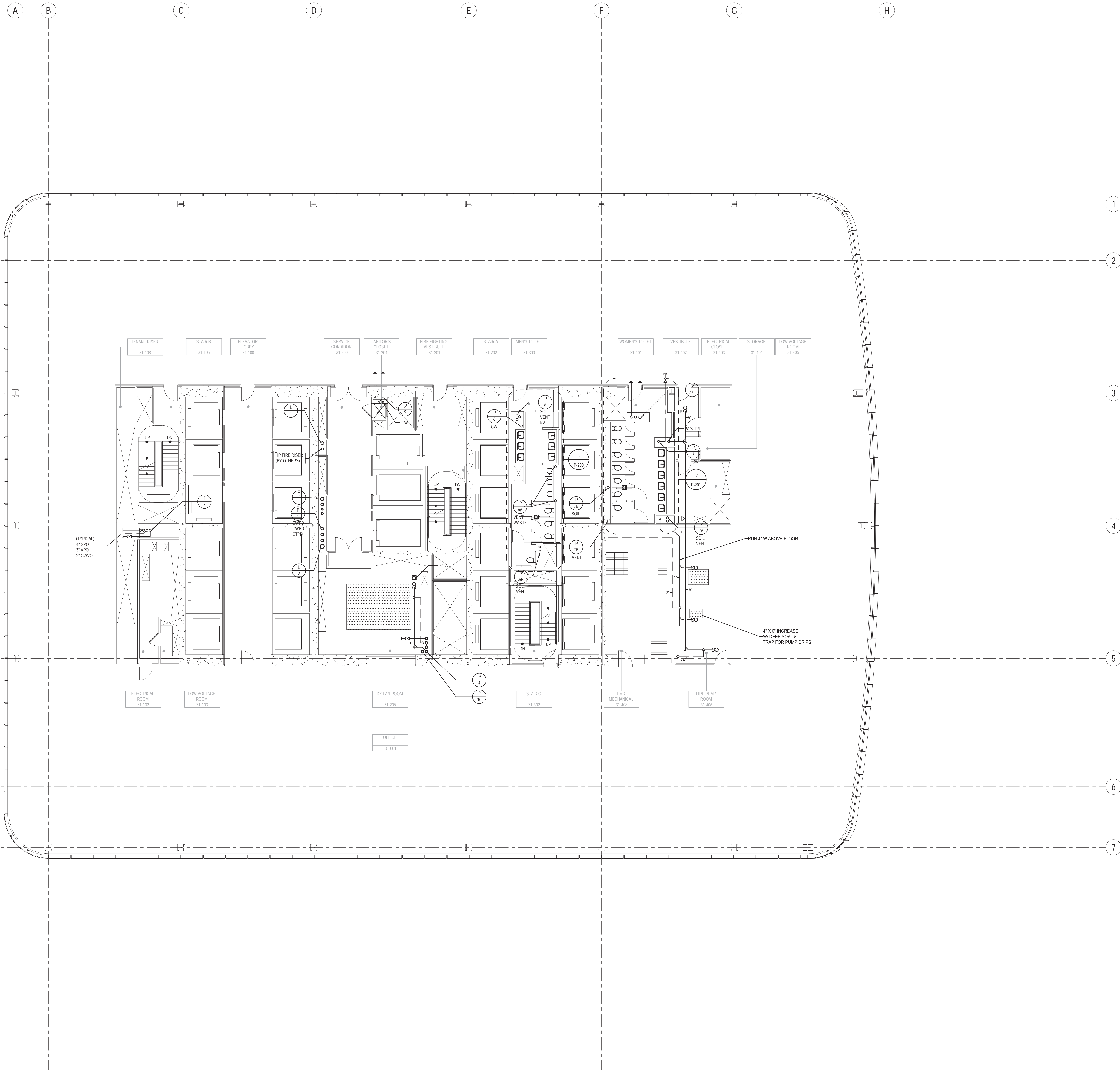


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Sheet Name:

**PLUMBING  
LEVEL 30 FLOOR  
PLAN - MID-RISE  
EMR**

Project No.: 1400A.000  
Date: 27 JUN 2014  
Sheet No.: P-130  
Page No.: P-130

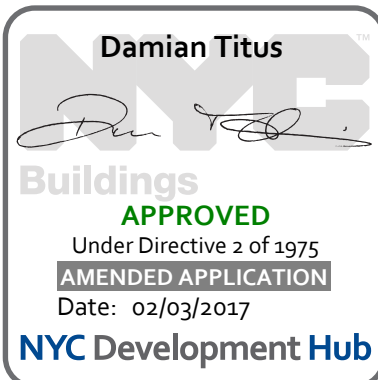




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Ontario, Canada N1K 1S5

Key Plan:

Seal & Signature:

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**PLUMBING  
LEVEL 31 FLOOR  
PLAN - MID-RISE  
PUMP ROOM**

Project No.: 1400A.000  
Date: 27 APR 2016  
Scale: 1/8" = 1'-0"  
File No.: P-131

B-SCAN Sheet No.:  
**P-131.00**  
Sheet No.: P-131  
Page No.:

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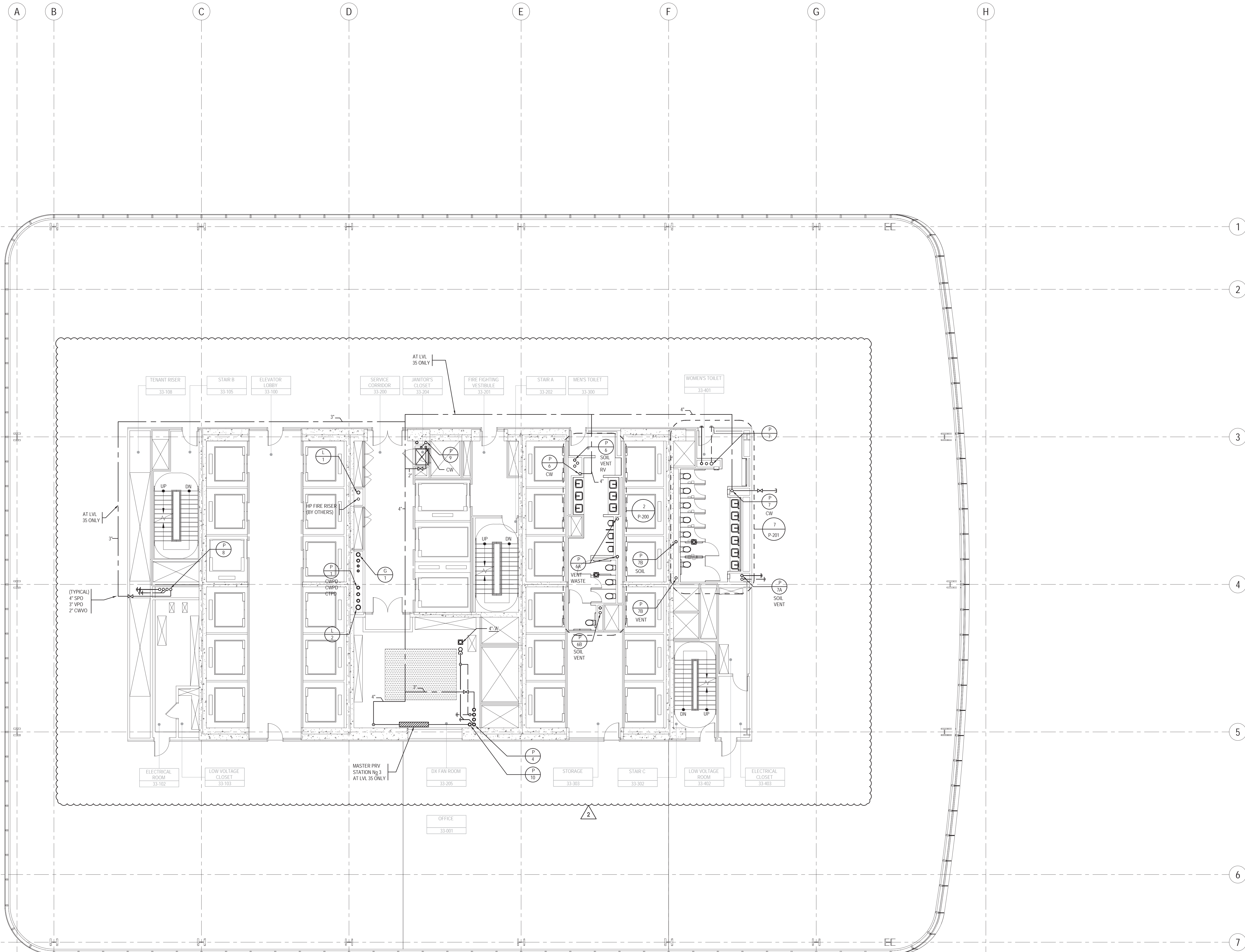


**Damian Titus**  
  
 Buildings  
**APPROVED**  
 Under Directive 2 of 1975  
**AMENDED APPLICATION**  
 Date: 02/03/2017  
 NYC Development Hub

File No.: P-132	Page No.:
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## KEY NOTES





KEY NOTES

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Client  
**Brookfield**

Brookfield Place  
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Architecture/Structural Engineering

**SOM**

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102 Madison Avenue #11, New York, NY 10016

MEP Engineering

Jaros Baum & Bolles  
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Vertical Transportation

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Sustainable Design

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Security Consultant

Ducibella, Ventor & Santore  
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Blast Consultant

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Acoustical Consultant

Cerami & Associates  
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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

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

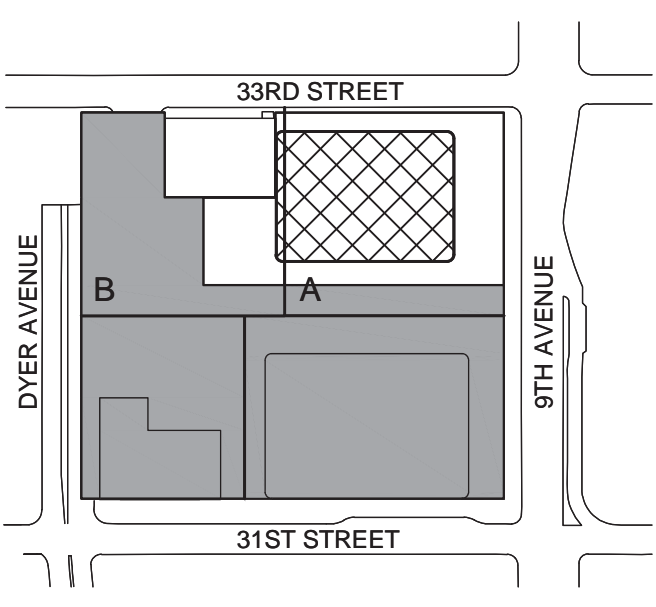
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1B5

Key Plan:



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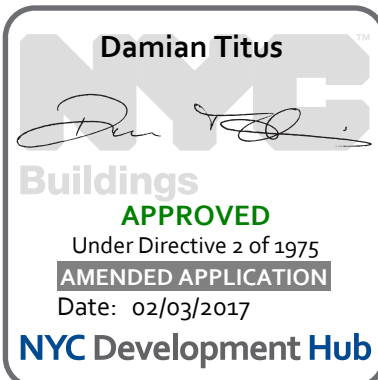
Project No.: 1400A.000  
Date: 20 JUN 2014  
Sheet No.: P-133

**PLUMBING  
LEVEL 33-37  
FLOOR PLAN -  
TYPICAL  
MID-RISE**

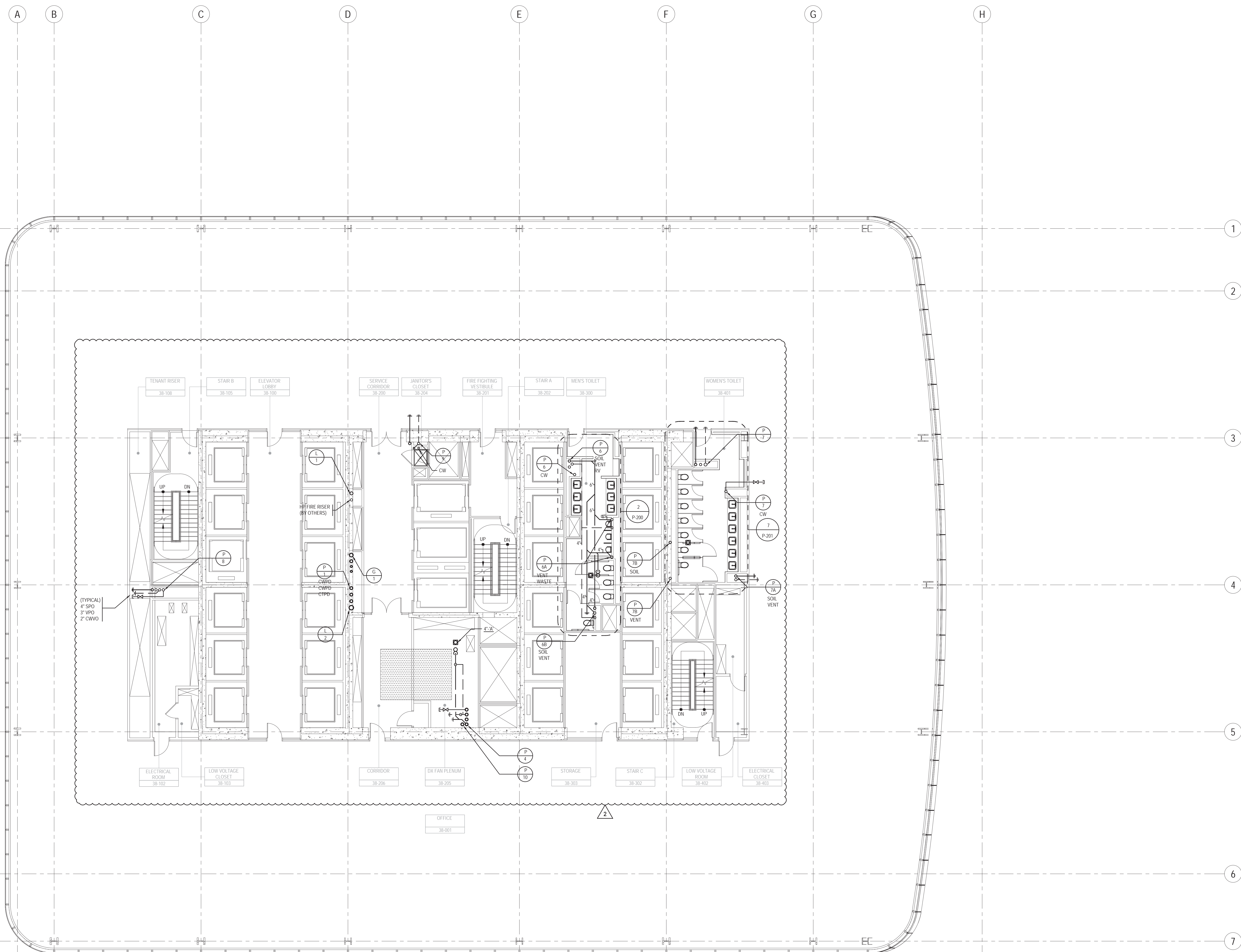
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Page No.:  
P-133

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Wind Tunnel Consultant  
Rowan Williams Davies & Irwin Inc.  
650 Woodtown Road West, Guelph  
Ontario, Canada N1K 1S8

Key Plan:

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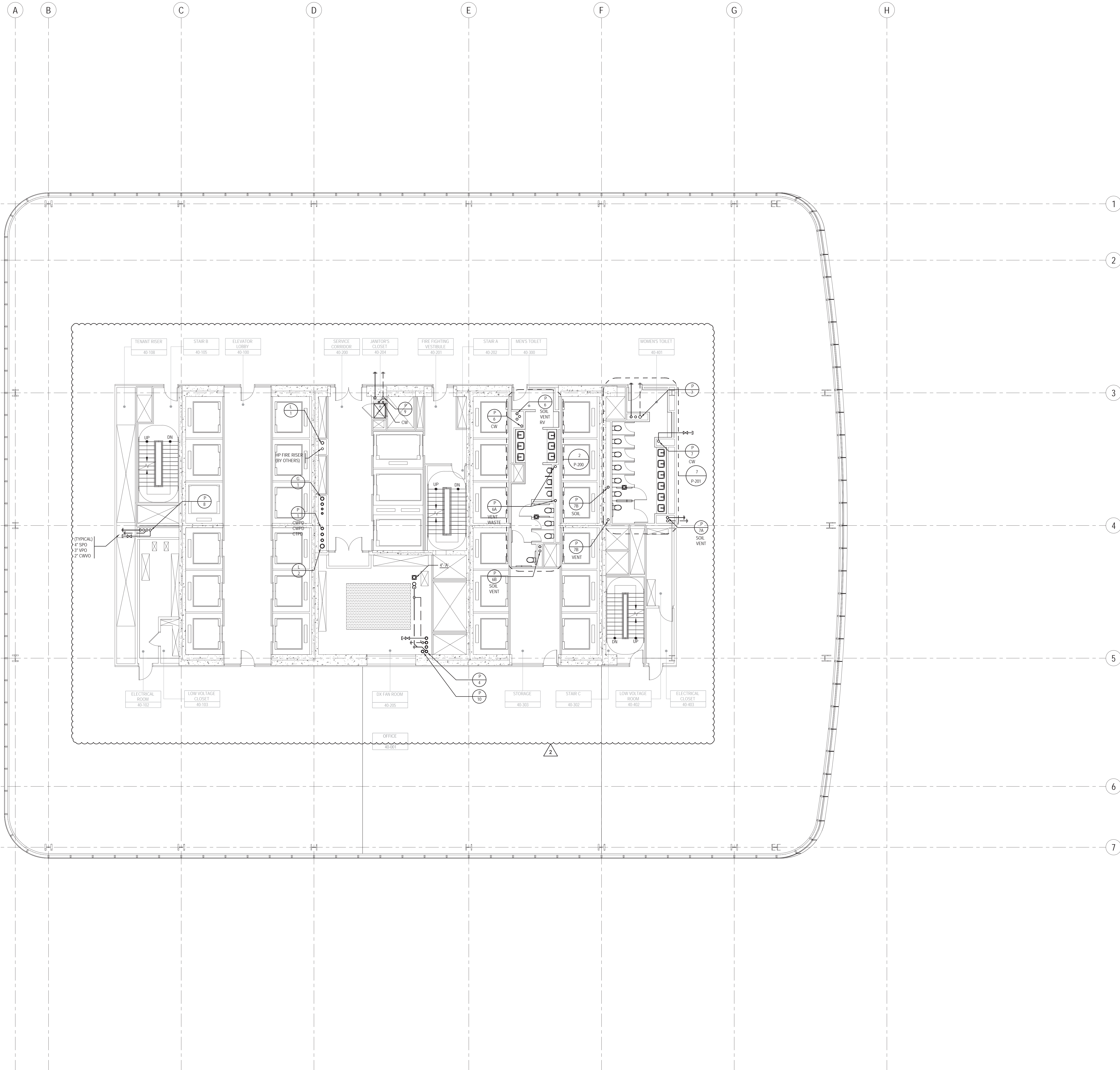
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Date: 20 JUN 2014  
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B-SCAN Sheet No.:  
Sheet No.: P-138

PLUMBING  
LEVEL 38-39  
FLOOR PLAN  
- MID-RISE

P-138.01





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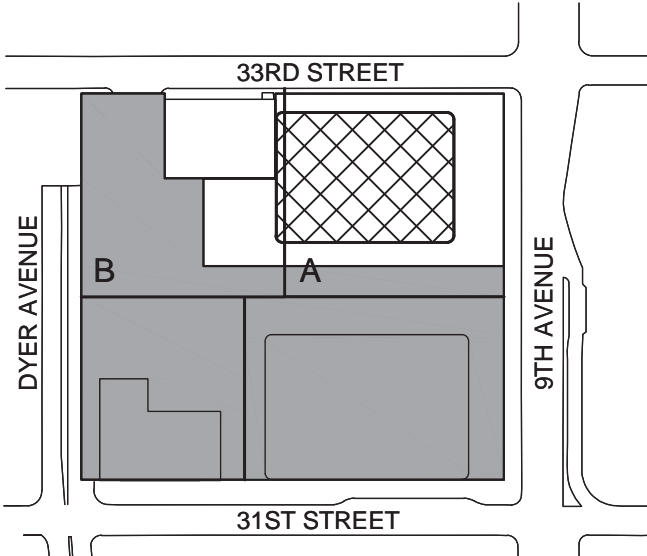
Vibration Consultant  
**Wilson, Uhrig & Associates, Inc.**  
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**Code Consultants Professional Engineers PC**  
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**Rowan Williams Davies & Irwin Inc.**  
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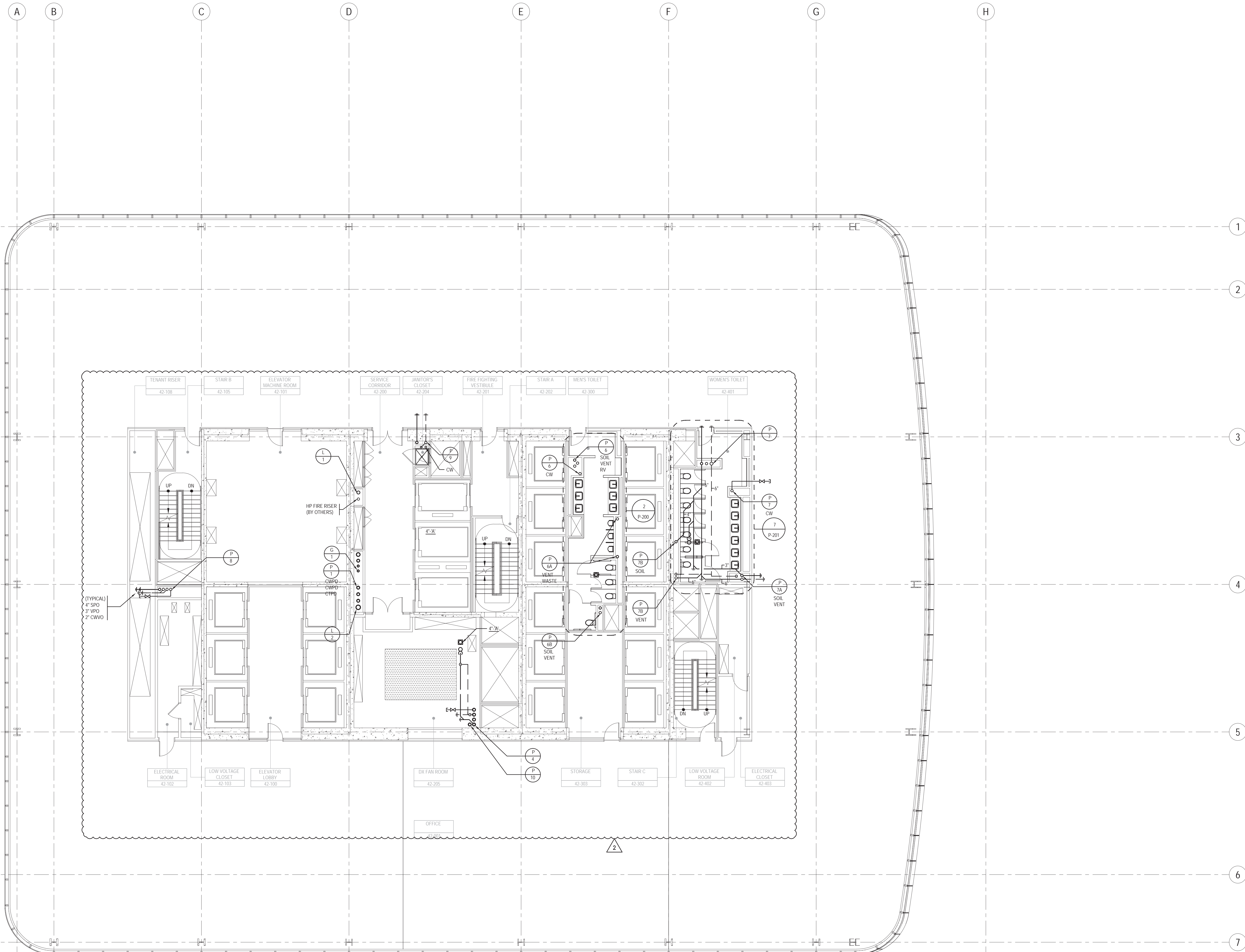
**PLUMBING  
LEVEL 40-41  
FLOOR PLAN -  
MID-RISE  
OVERRUN**

Project No.: 1400A.000  
Date: 20 JUN 2014  
Scale: 1/8" = 1'-0"  
File No.: P-140  
B-SCAN Sheet No.:  
**P-140.01**  
Sheet No.: P-140  
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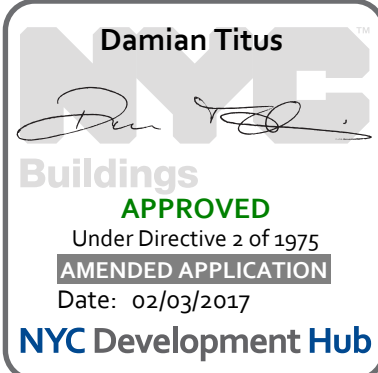


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**Weidinger Associates, Inc.**  
40 West Street, New York, NY 10005

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

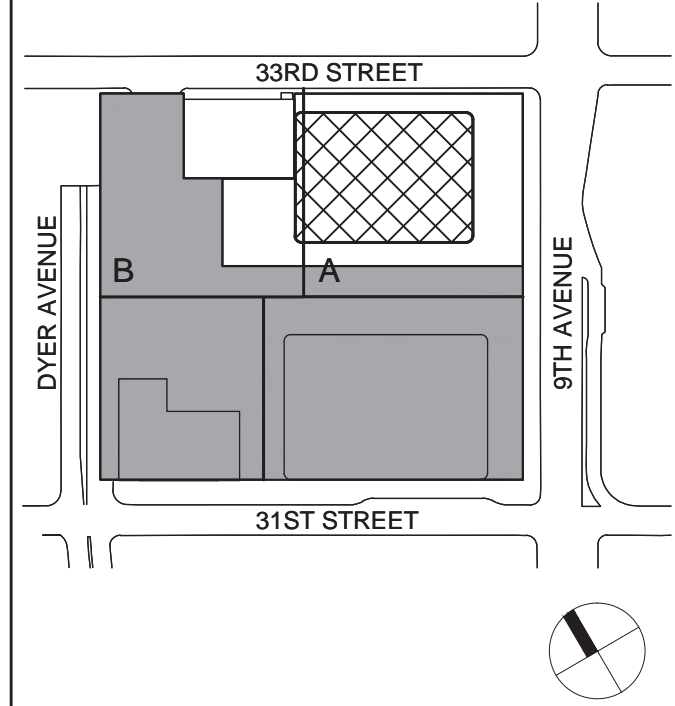
Vibration Consultant  
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**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph, Ontario, Canada N1K 1S5

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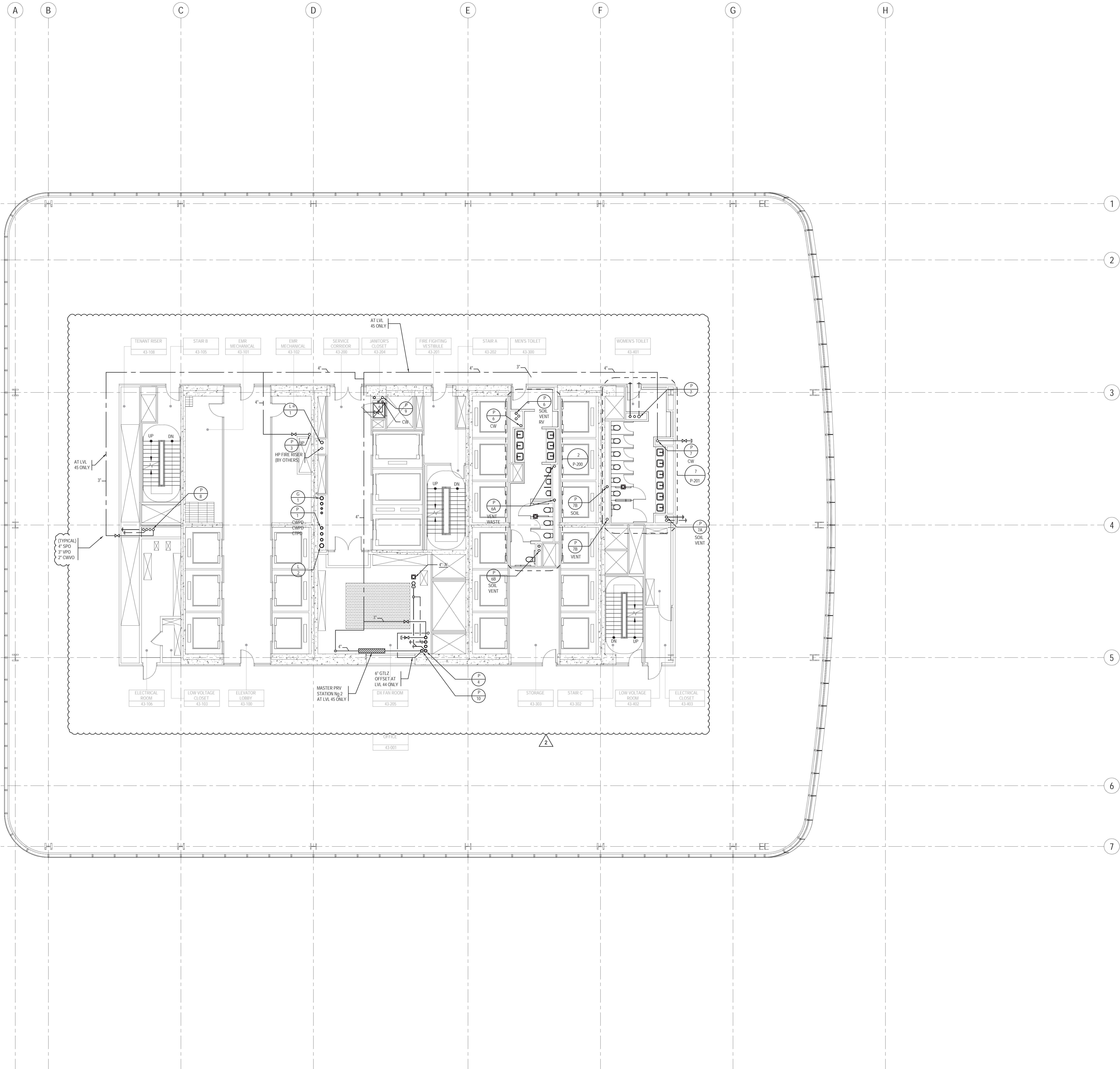


Project No.: 1400A.000  
Date: 20 JUN 2014  
Sheet No.: P-142

**PLUMBING  
LEVEL 42 FLOOR  
PLAN - MID-RISE  
EMR**

B-SCAN Sheet No.: P-142.01  
Page No.: P-142





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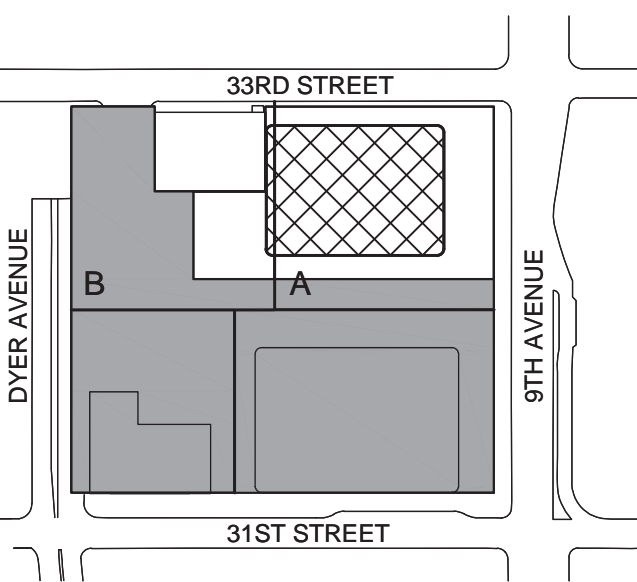
Vibration Consultant  
**Wilson, Uhrig & Associates, Inc.**  
65 Broadway, Suite 401, New York, NY 10006

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

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Wind Tunnel Consultant  
**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



Seal & Signature:



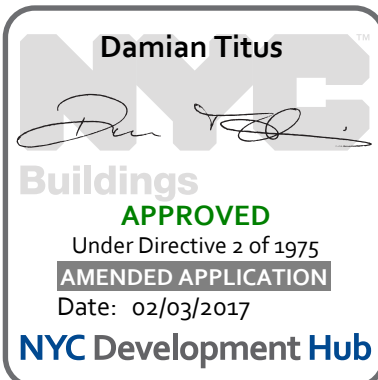
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Project No.: 1400A.000  
Date: 22 JUN 2014  
Sheet No.: P-143

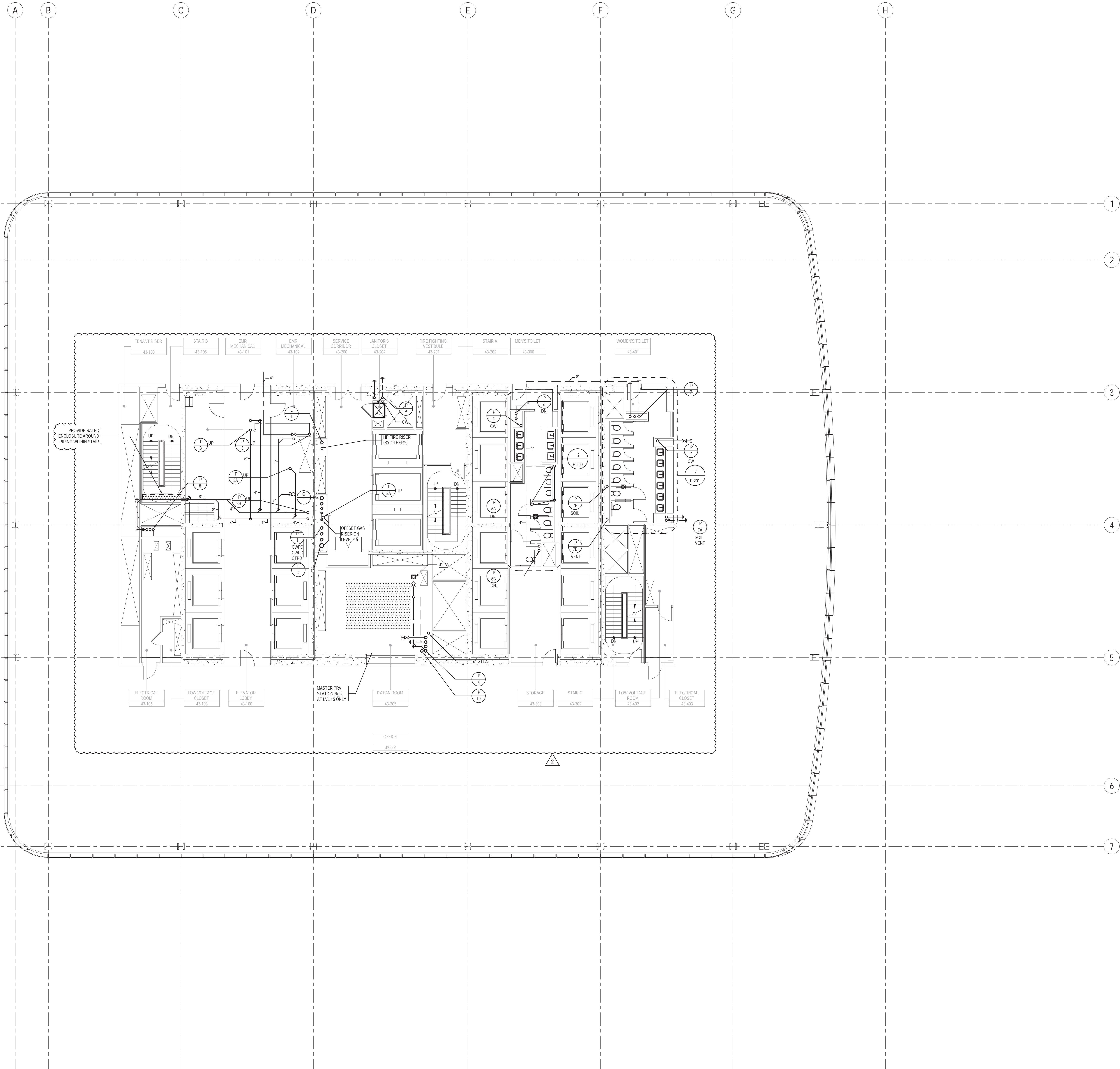
**PLUMBING  
LEVEL 43-47  
FLOOR PLAN -  
TYPICAL  
MID-RISE**

Project No.: 1400A.000  
Date: 22 JUN 2014  
Sheet No.: P-143  
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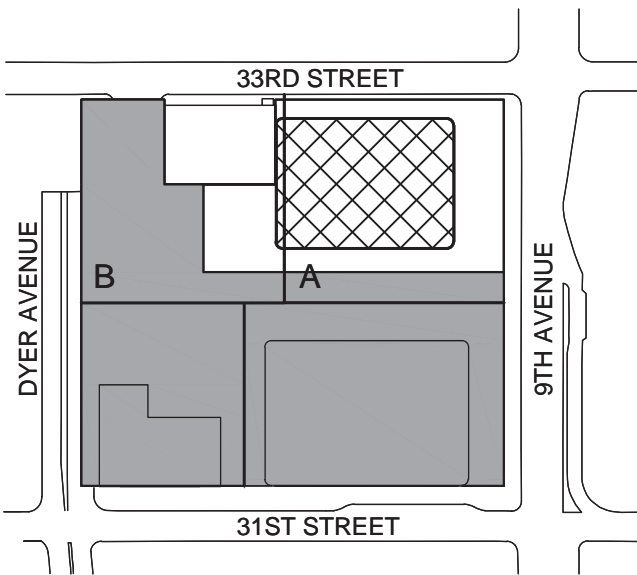
Facade Maintenance Consultant

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650 Woodlawn Road West, Guelph  
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Key Plan:

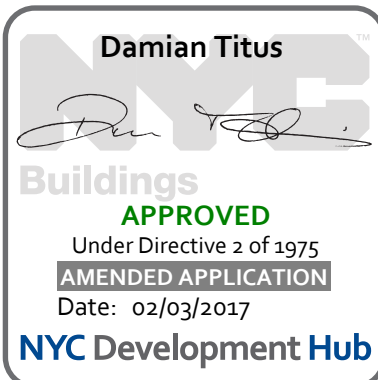


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Project No.: 1400A.000  
Date: 27 JUN 2014  
Sheet No.: P-148

**PLUMBING  
LEVEL 48  
FLOOR PLAN  
- TYPICAL MID-RISE**



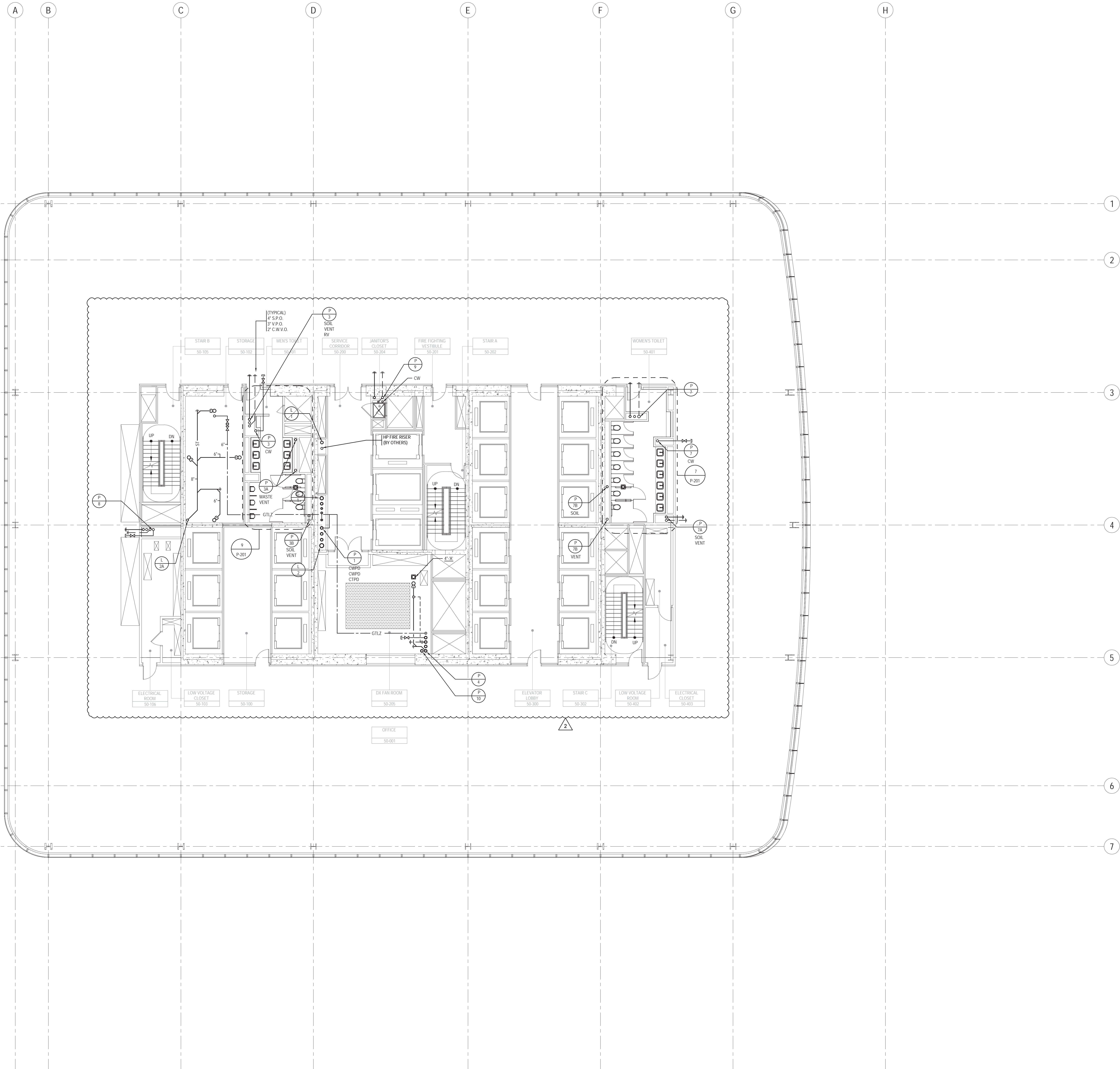
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Date: 27 JUN 2014  
Sheet No.: P-148  
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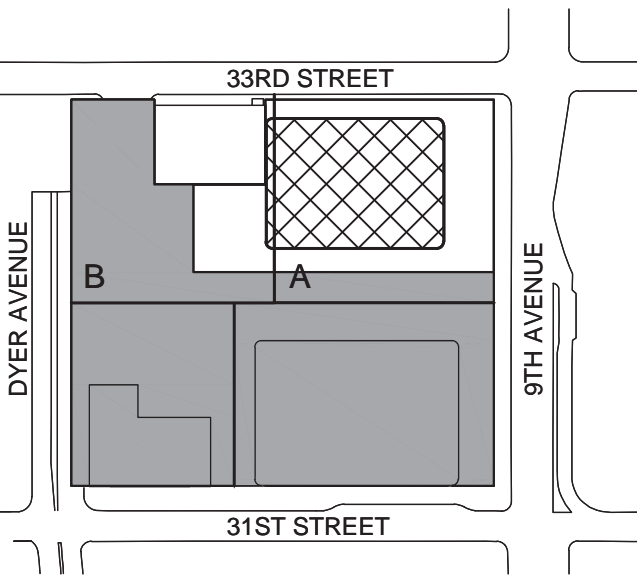
Facade Maintenance Consultant

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Key Plan:



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Project No.: 1400A.000

Date: 27 JUN 2014

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File No.: P-150

B-SCAN Sheet No.: P-150.01

Sheet No.: P-150

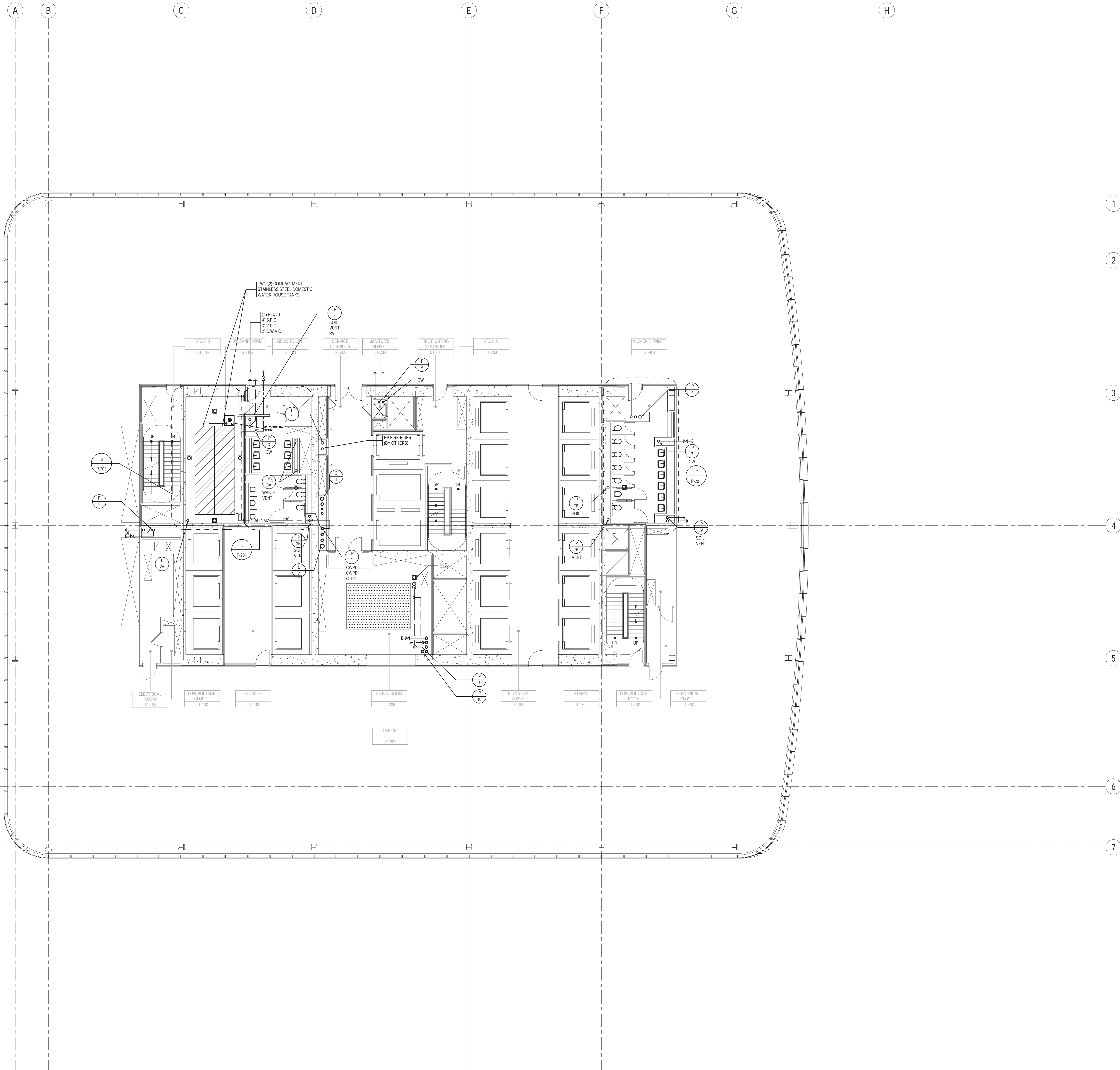
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PLUMBING  
LEVEL 50 FLOOR  
PLAN - HIGH-RISE  
OVERRUN



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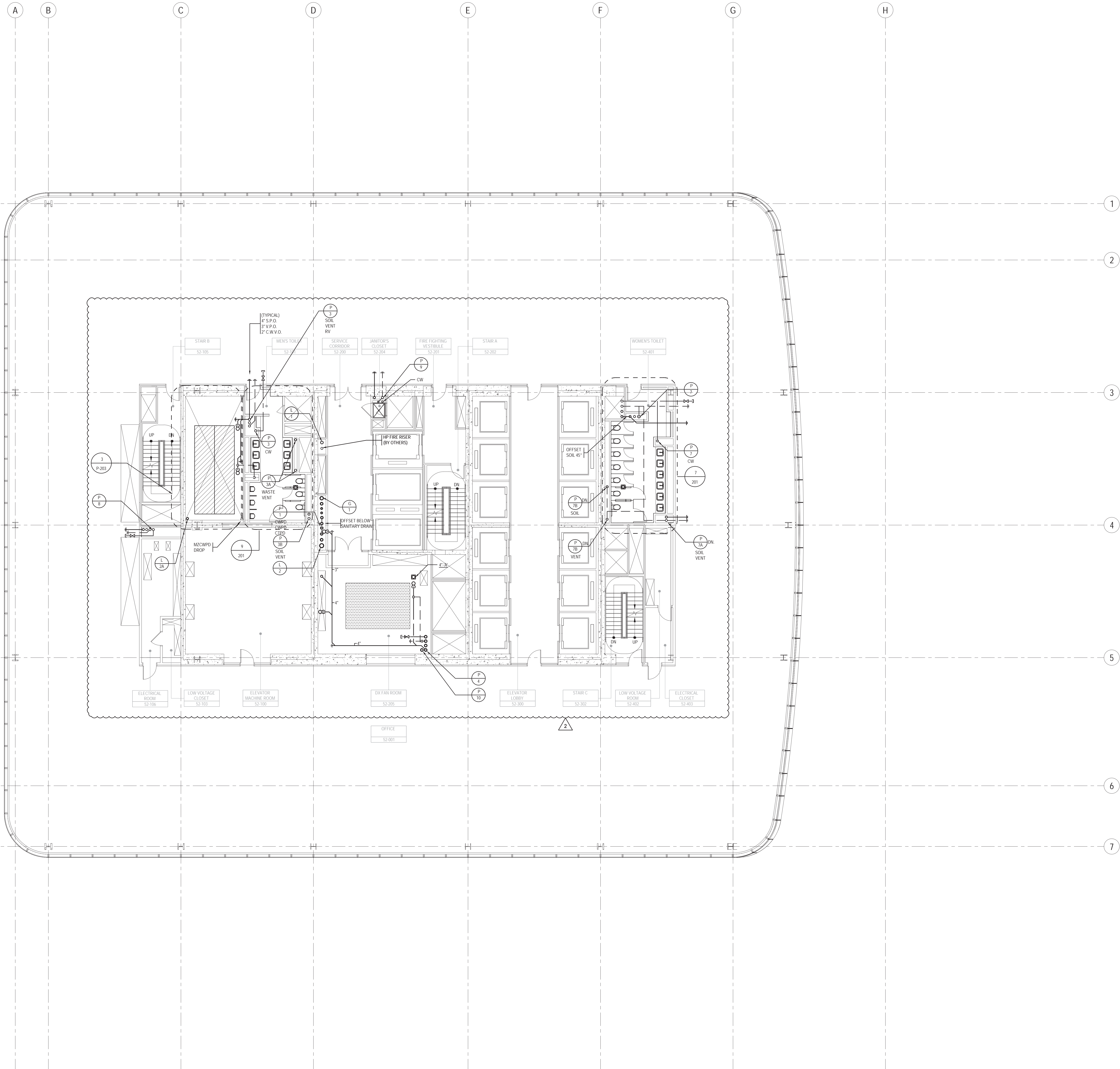
Key Plan:

Seal & Signature:

Project No.: 1400A.000  
Date: 27 APR 2016  
Scale: 1/8" = 1'-0"  
File No.: P-151

B-SCAN Sheet No.:  
P-151.00  
Sheet No.: P-151  
Page No.:





KEY NOTES

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

Client

**Brookfield**

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

Architecture/Structural Engineering

**SOM**

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

Civil Engineering

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

MEP Engineering

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

Vertical Transportation

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

Sustainable Design

Viridian Energy & Environmental  
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Geo-Technical Engineering

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Landscape Consultant

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

Security Consultant

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

Blast Consultant

Weidinger Associates, Inc.  
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Acoustical Consultant

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

Vibration Consultant

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

Code Consultant

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

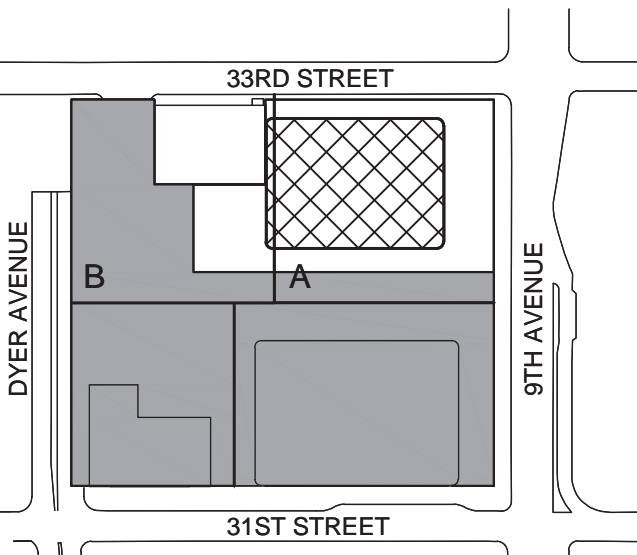
Facade Maintenance Consultant

Entek Engineering LLC  
186 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



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No. Date Description

Sheet Name:

**PLUMBING  
LEVEL 52 FLOOR  
PLAN - HIGH-RISE  
EMR**

Project No.: 1400A.000

Date: 20 JUN 2014

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

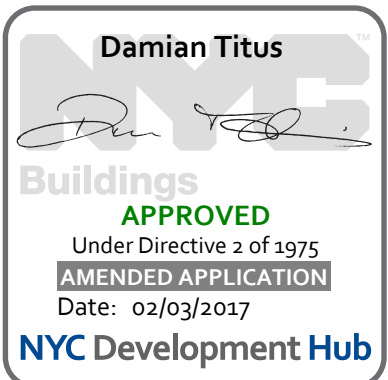
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Sheet No.: P-152

Page No.:

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

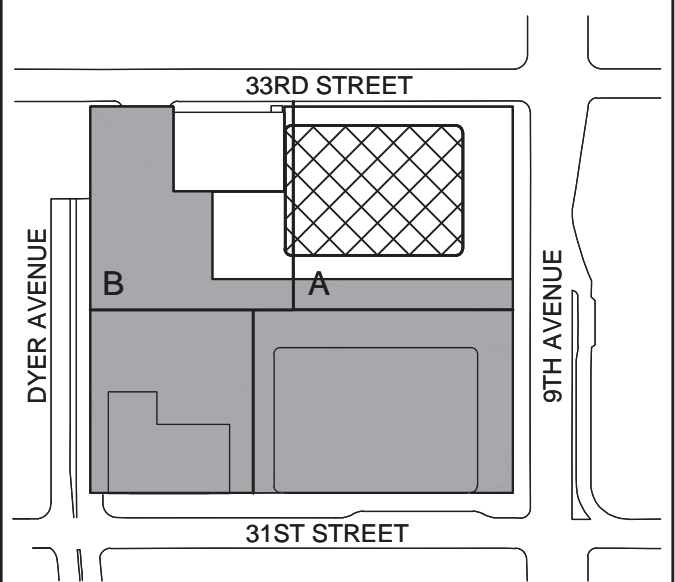
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



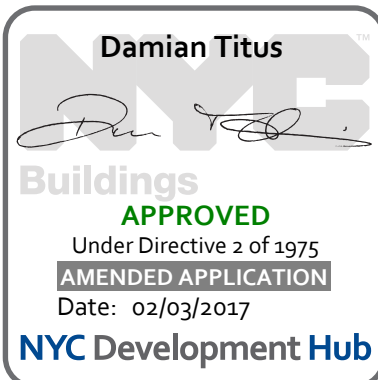
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PLUMBING  
LEVEL 53 FLOOR  
PLAN - HIGH-RISE  
PUMP ROOM

Project No.:  
1400A.000

Date:  
20 JUN 2014

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

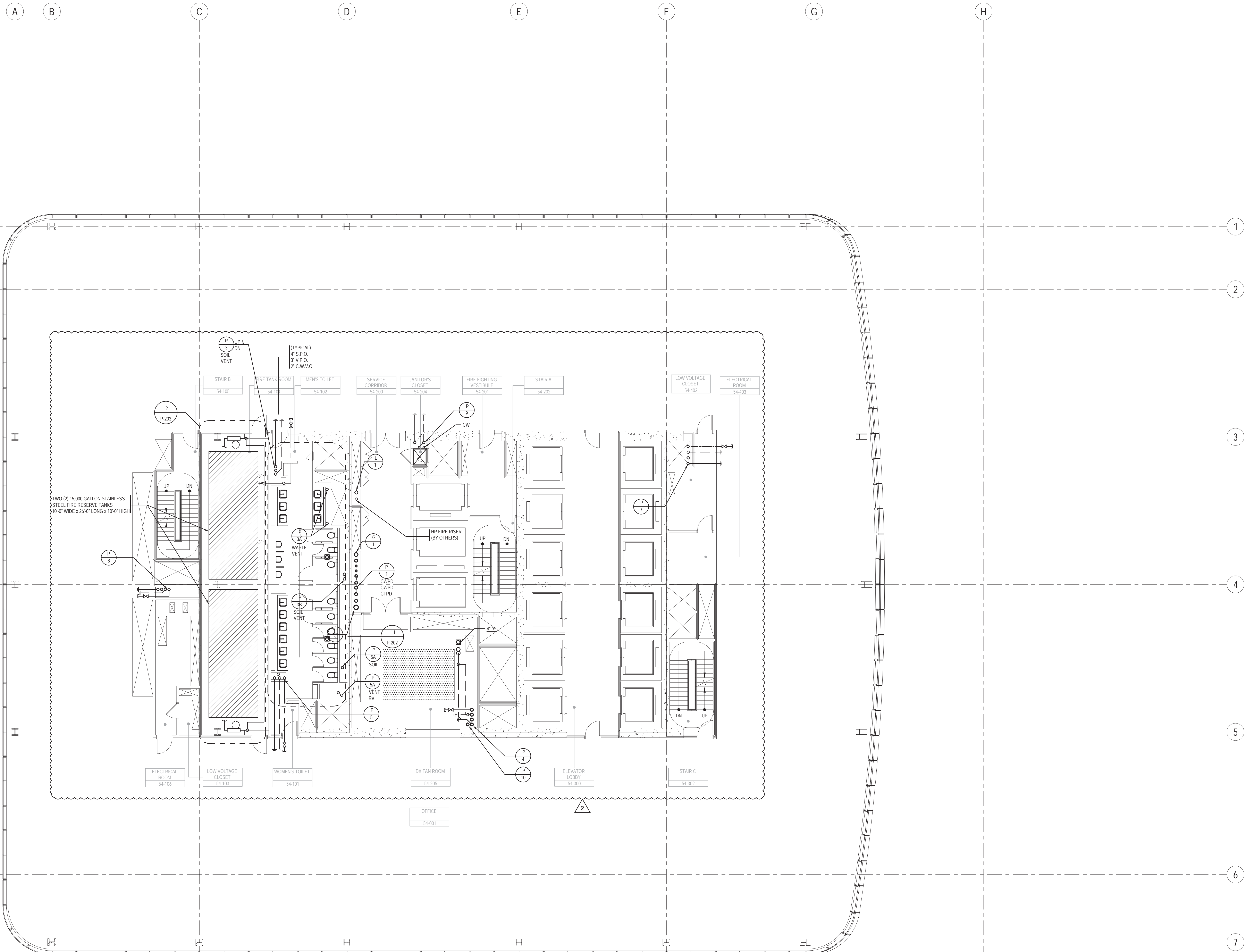
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P-153

B-SCAN Sheet No.:  
P-153.01

Sheet No.:  
P-153

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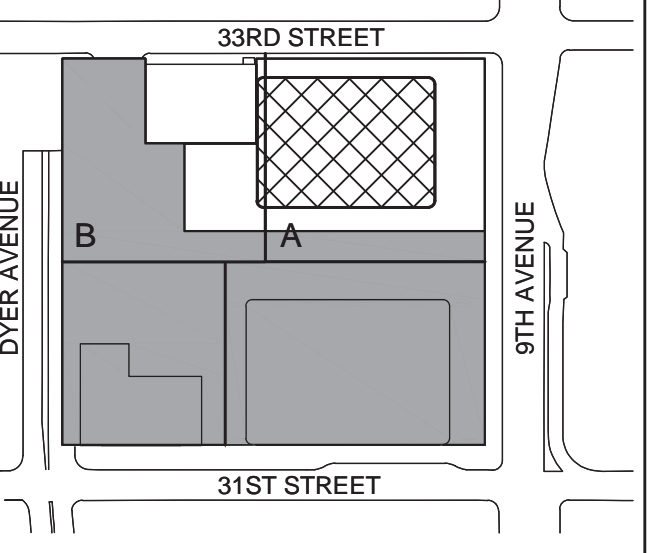
Vibration Consultant  
**Wilson, Uhrig & Associates, Inc.**  
65 Broadway, Suite 401, New York, NY 10006

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

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**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



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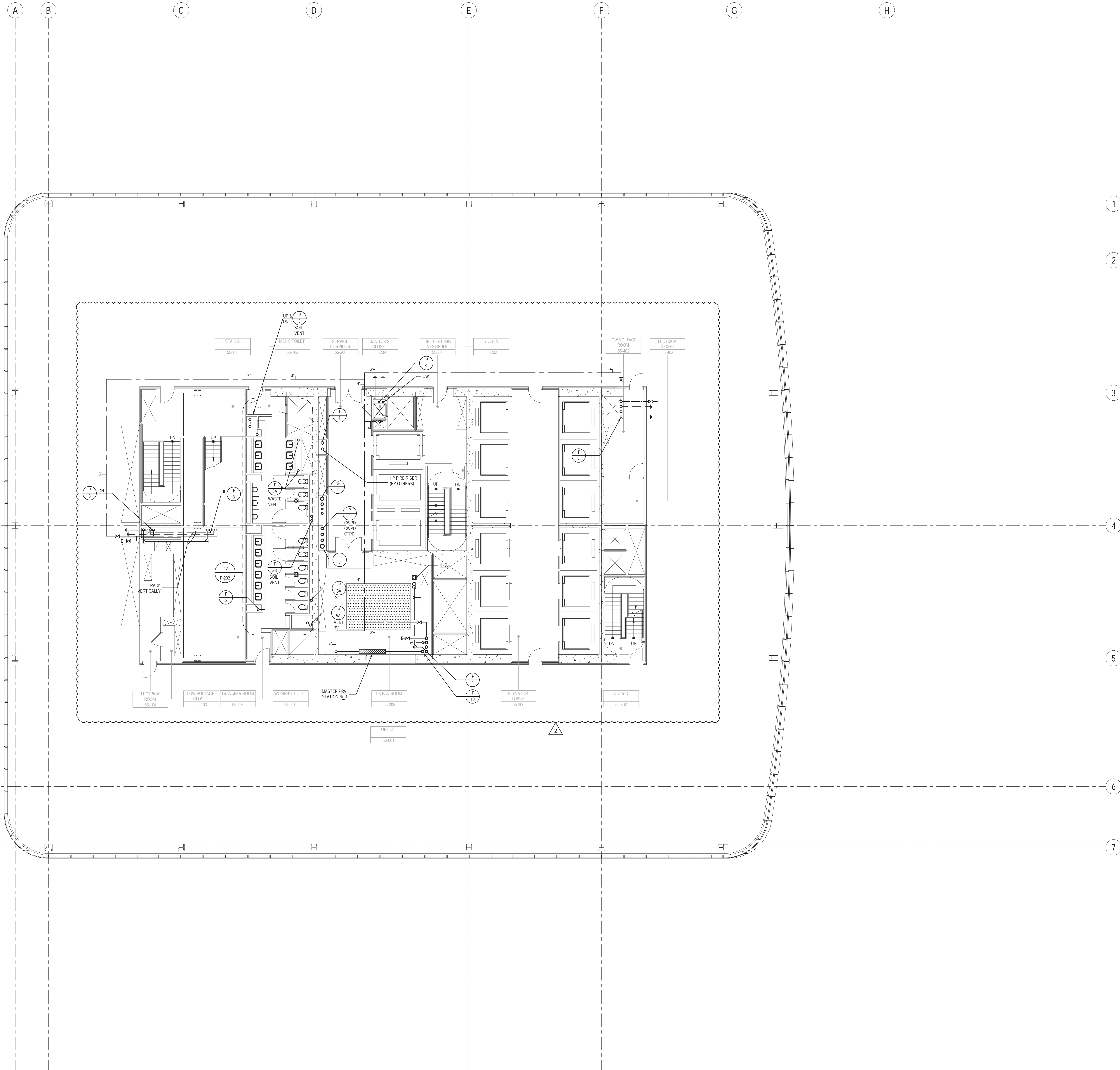
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Date: 27 JUN 2014  
Sheet Name: PLUMBING LEVEL 54 FLOOR PLAN - HIGH-RISE WATER TANK

B-SCAN Sheet No.: P-154.01  
Sheet No.: P-154  
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**Code Consultants Professional Engineers PC**  
215 West 40th Street, 15th Floor, New York, NY 10018

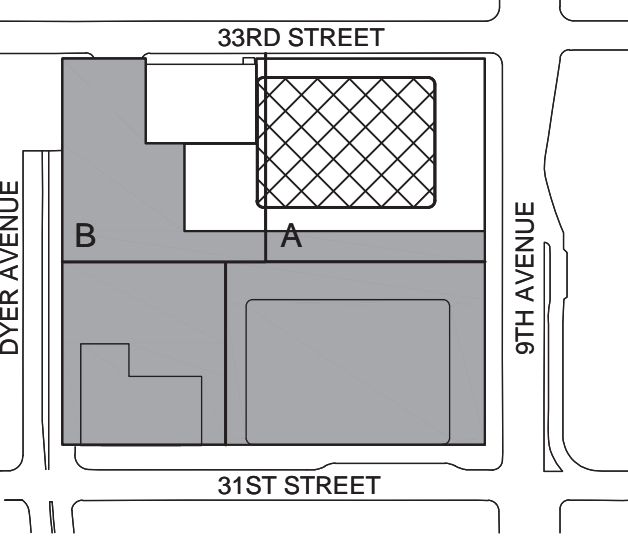
Facade Maintenance Consultant

**Entek Engineering LLC**  
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Wind Tunnel Consultant

**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
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Key Plan:



Seal & Signature:



Project No.: 1400A.000

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File No.: P-155

B-SCAN Sheet No.: P-155.01

Sheet No.: P-155

Page No.: P-155

Project No.: 1400A.000

Date: 20 JUN 2014

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File No.: P-155

B-SCAN Sheet No.: P-155.01

Sheet No.: P-155

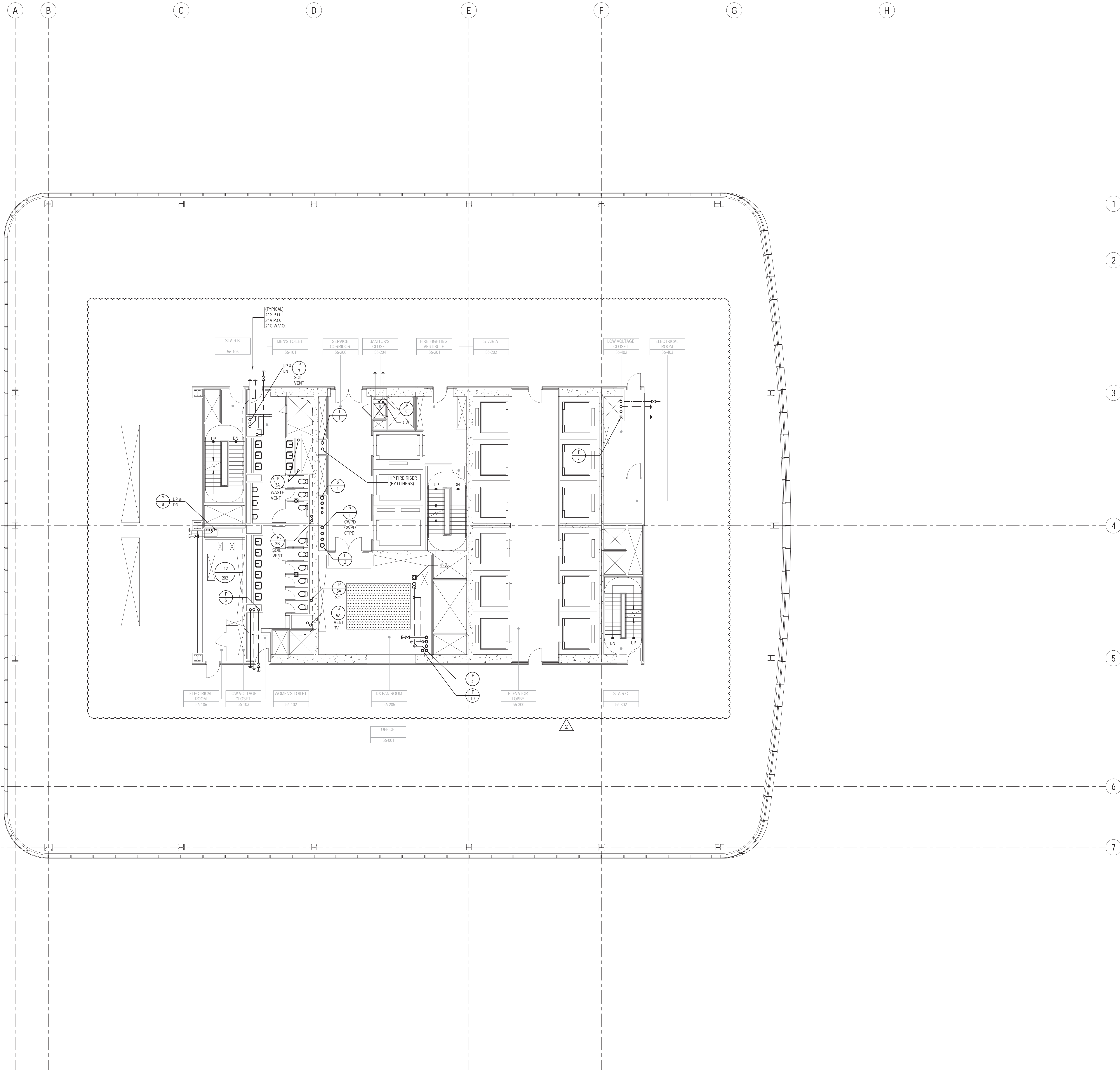
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APPROVED  
Under Ordinance L-28 1975  
DATE OF APPLICATION  
Date: 02/03/2017  
NYC Development Hub





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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

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

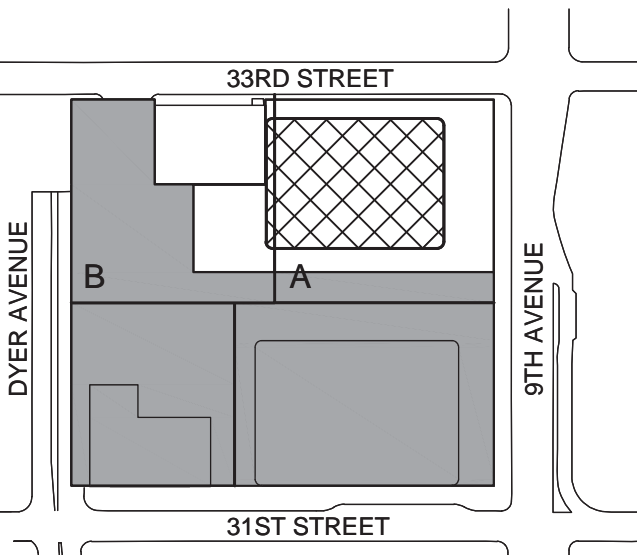
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



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Sheet Name:

Project No.: 1400A.000

Date: 27 JUN 2014

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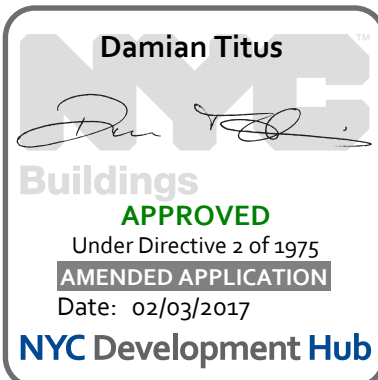
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PLUMBING  
LEVEL 56 FLOOR  
PLAN - HIGH-RISE



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**Damian Titus**  
  
Buildings  
**APPROVED**  
Under Directive 2 of 1975  
**AMENDED APPLICATION**  
Date: 02/03/2017  
**NYC Development Hub**

 <p><b>MANHATTAN WEST: NORTH TOWER</b> 375 Ninth Avenue, New York, NY 10001</p> <p>Client</p> <p><b>Brookfield</b></p> <p>Brookfield Place 250 Vesey Street, 15th Floor, New York, NY 10281</p>
<p>Architecture/Structural Engineering</p> <p><b>SOM</b></p> <p>Skidmore, Owings &amp; Merrill LLP 14 Wall Street, New York, NY 10005</p> <p>Civil Engineering</p> <p><b>Philip Habbib &amp; Associates</b> 102 Madison Avenue #11, New York, NY 10016</p> <p>MEP Engineering</p> <p><b>Jaros Baum &amp; Bolles</b> 80 Pine Street, New York, NY 10005</p> <p>Vertical Transportation</p> <p><b>Edgett Williams Consulting Group, Inc.</b> 102 East Biddlehale Ave. Suite 1, Mill Valley, California 94041</p> <p>Sustainable Design</p> <p><b>Viridian Energy &amp; Environmental</b> 50 Washington Street, Newark, CT 06854</p> <p>Geo-Technical Engineering</p> <p><b>Mueser Rutledge Consulting Engineers</b> 14 Penn Plaza, 225 W. 34th Street #610, New York, NY 10122</p> <p>Landscape Consultant</p> <p><b>Field Operations</b> 475 10th Avenue, New York, NY 10018</p> <p>Security Consultant</p> <p><b>Ducibella, Vantor &amp; Santoro</b> 250 State Street #F1, North Haven, CT 06473</p> <p>Best Consultant</p> <p><b>Weldinger Associates, Inc.</b> 40 West Street, New York, NY 10005</p> <p>Acoustical Consultant</p> <p><b>Cerami &amp; Associates</b> 404 Fifth Avenue #8, New York, NY 10018</p> <p>Vibration Consultant</p> <p><b>Wilson, Uhrig &amp; Associates, Inc.</b> 65 Broadway, Suite 401, New York, NY 10006</p> <p>Code Consultant</p> <p><b>Code Consultants Professional Engineers PC</b> 215 West 48th Street, 15th Floor, New York, NY 10018</p> <p>Facade Maintenance Consultant</p> <p><b>Entek Engineering LLC</b> 166 Ames Street, Hackensack, NJ 07601</p> <p>Wind Tunnel Consultant</p> <p><b>Rowan Williams Davies &amp; Irwin Inc.</b> 650 Woodlawn Road West, Guelph Ontario, Canada N1K 1B6</p>

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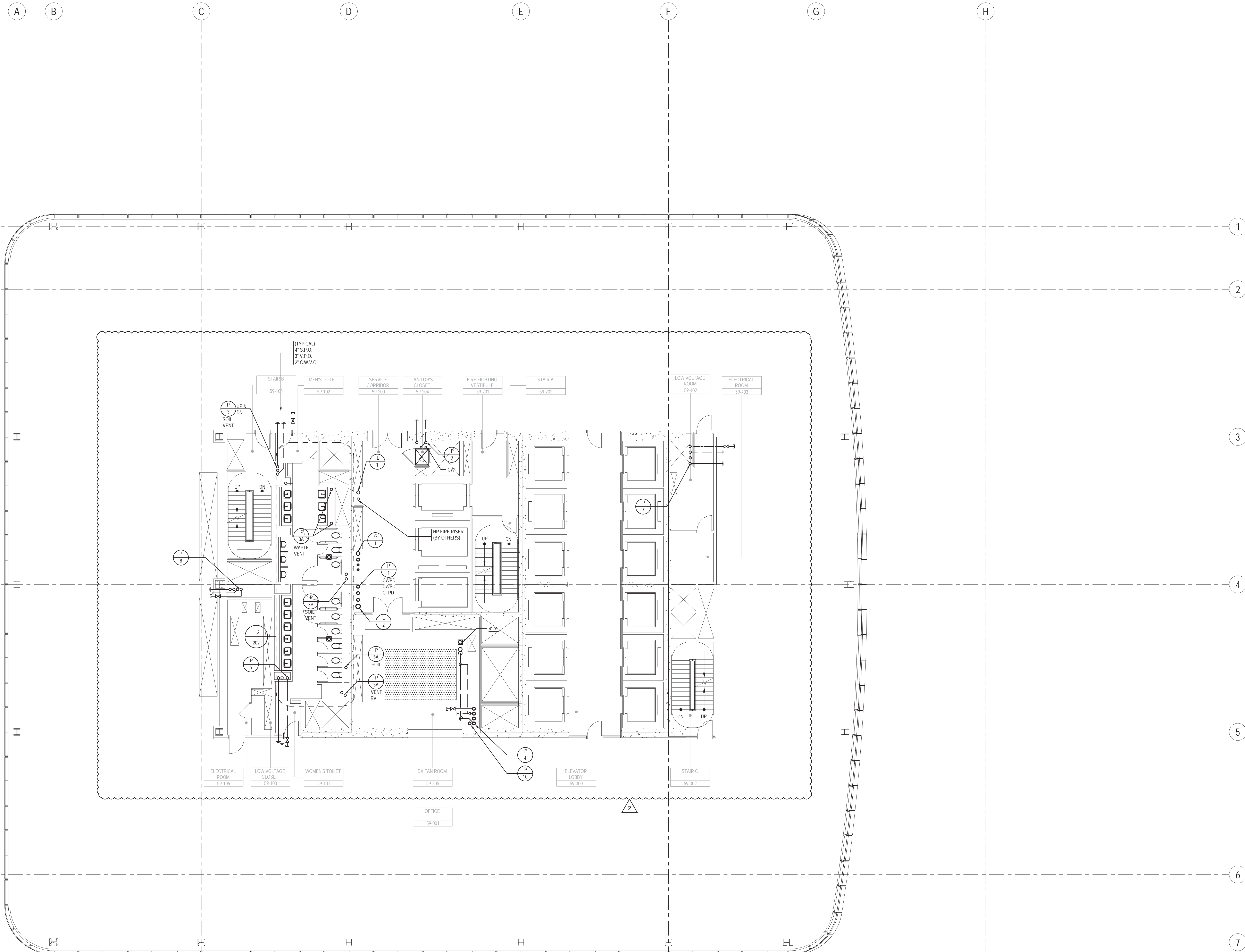
PLUMBING  
LEVEL 57-58  
FLOOR PLAN -  
TYPICAL  
HIGH-RISE

P-157 01

107.01

Set No.:





KEY NOTES

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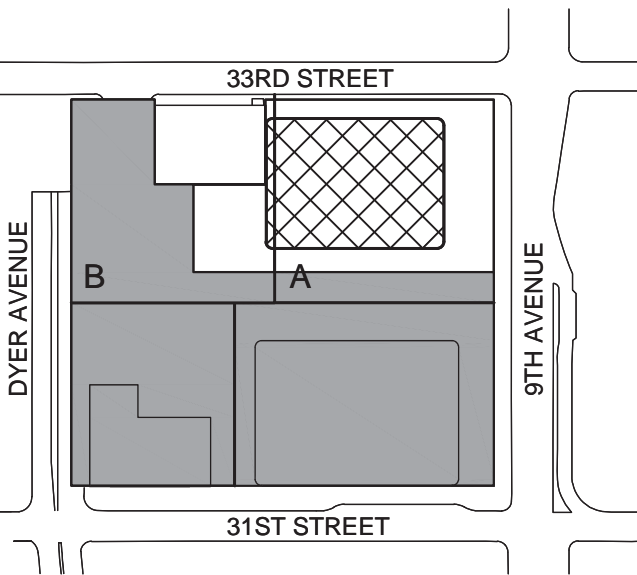
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**PLUMBING  
LEVEL 59 FLOOR  
PLAN - HIGH-RISE**

Project No.: 1400A.000

Date: 20 JUN 2014

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

File No.: P-159

B-SCAN Sheet No.: P-159.01

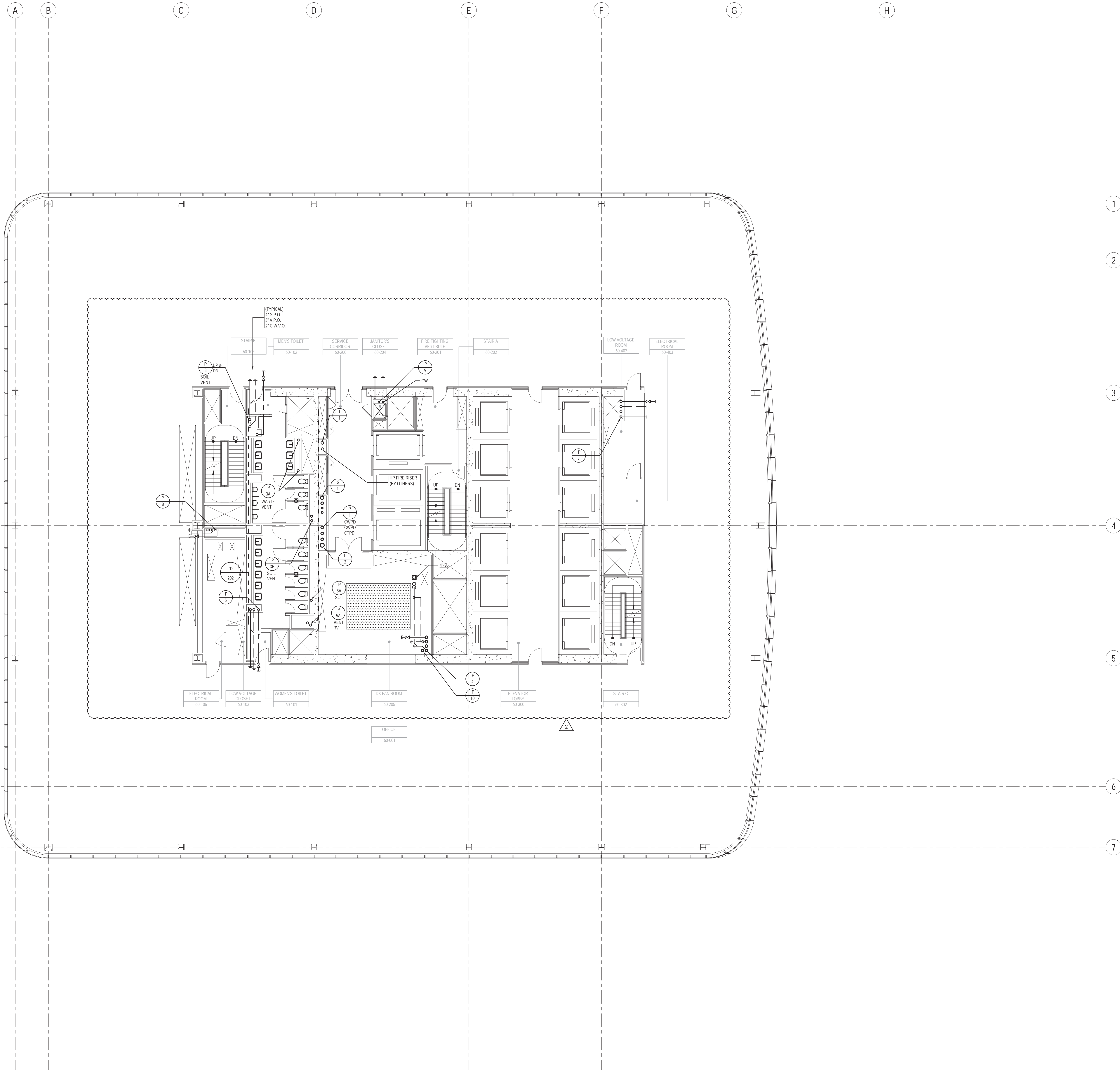
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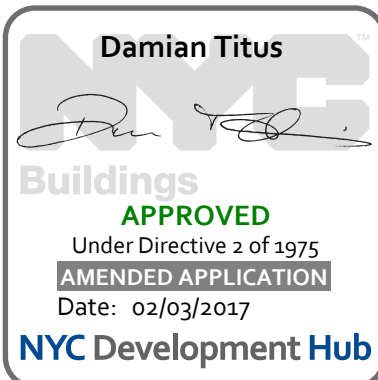


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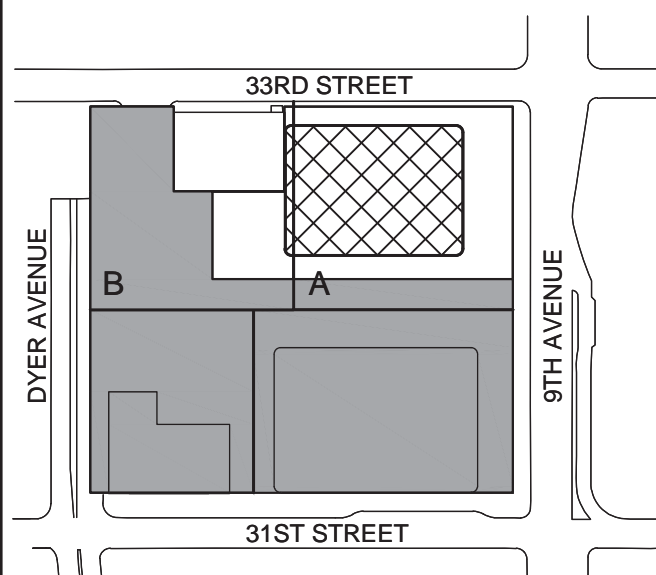
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No. Date Description

Sheet Name:

Project No.: 1400A.000

Date: 27 JUN 2014

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File No.: P-160

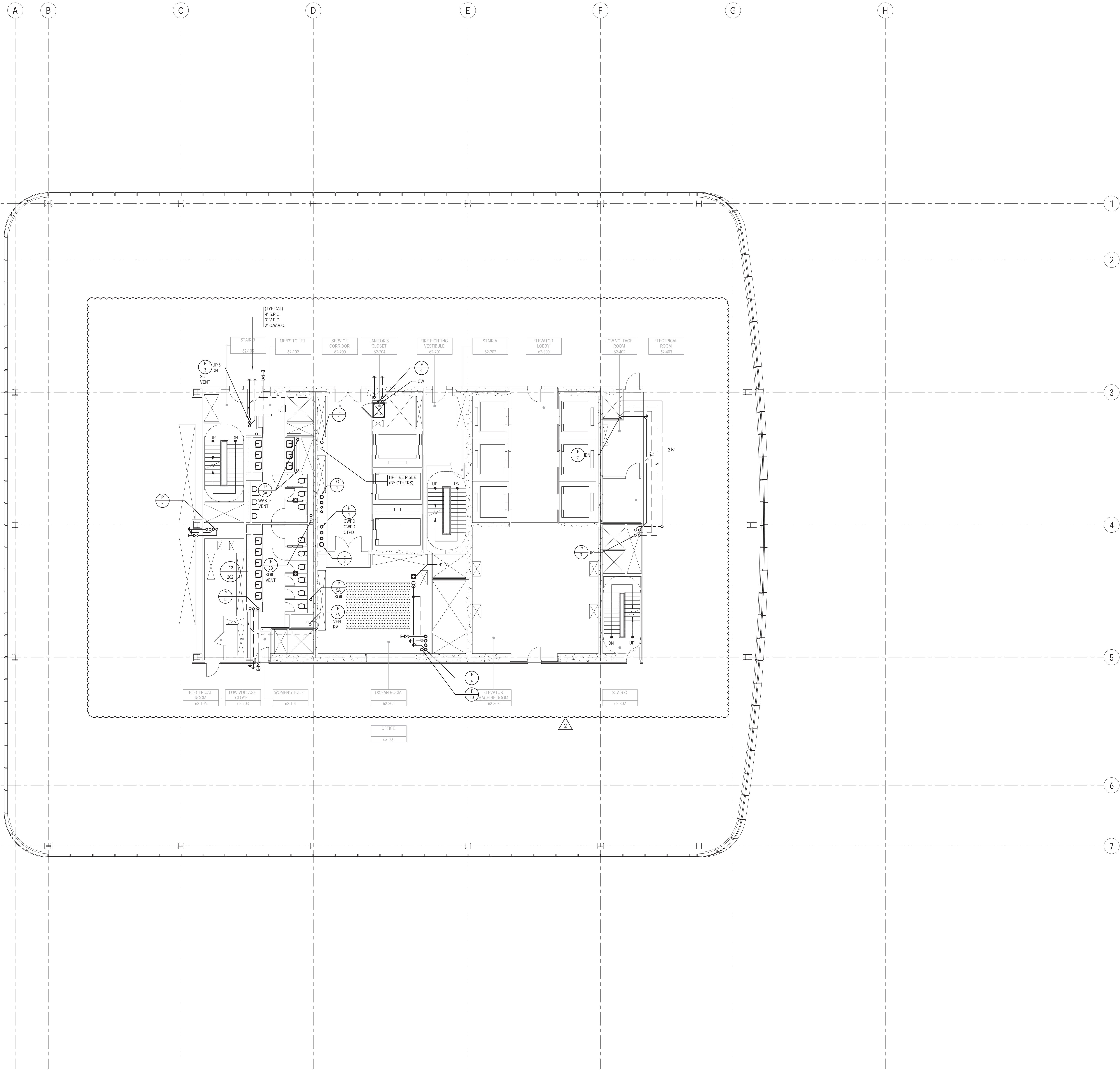
B-SCAN Sheet No.: P-160.01

Sheet No.: P-160

Page No.:

PLUMBING  
LEVEL 60-1  
FLOOR PLAN -  
HIGH-RISE  
OVERRUN





KEY NOTES

SHEET NOTES

- 1- REFER TO NOTES & DESIGN CRITERIA ON DWG. P1-0002 FOR ADDITIONAL INFORMATION, REQUIREMENTS & CLARIFICATIONS.
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NORTH TOWER  
375 Ninth Avenue, New York, NY 10001

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**Brookfield**

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**SOM**

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

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Field Operations  
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Security Consultant

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Acoustical Consultant

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Vibration Consultant

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

Code Consultants Professional Engineers PC  
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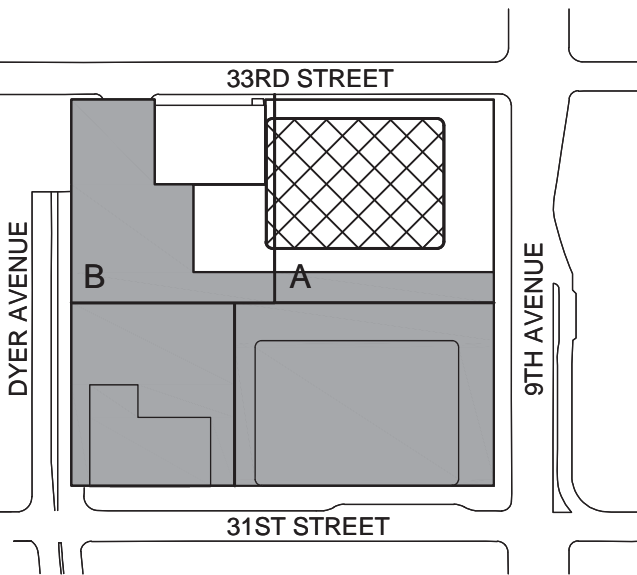
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

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650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:



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No. Date Description

Sheet Name:

PLUMBING

LEVEL 62 FLOOR

PLAN - HIGH-RISE

EMR

Project No.:

1400A.000

Date:

27 JUN 2014

Scale:

1/8" = 1'-0"

File No.:

P-162

B-SCAN Sheet No.:

P-162.01

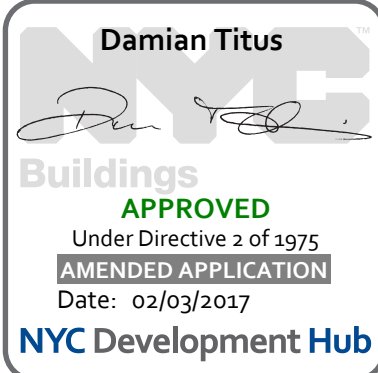
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P-162

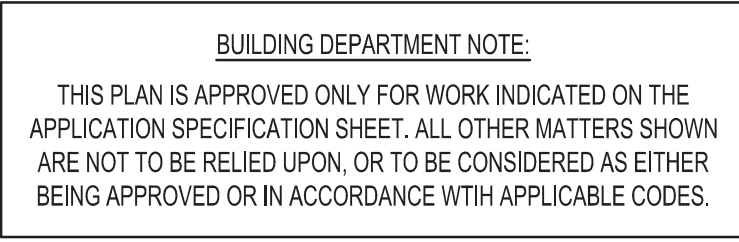
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P-162

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	<p>PLUMBING LEVEL 63 FLOOR PLAN - HIGH-RISE</p>
<p>Project No.: 14633.0.000</p> <p>Date: 29 JUN 2014</p> <p>Scale: 1/8" = 1'-0"</p> <p>File No: P-163</p>	<p>B-SCAN Sheet No.: P-163.01</p> <p>Sheet No.: P-163</p> <p>Page No.:</p>

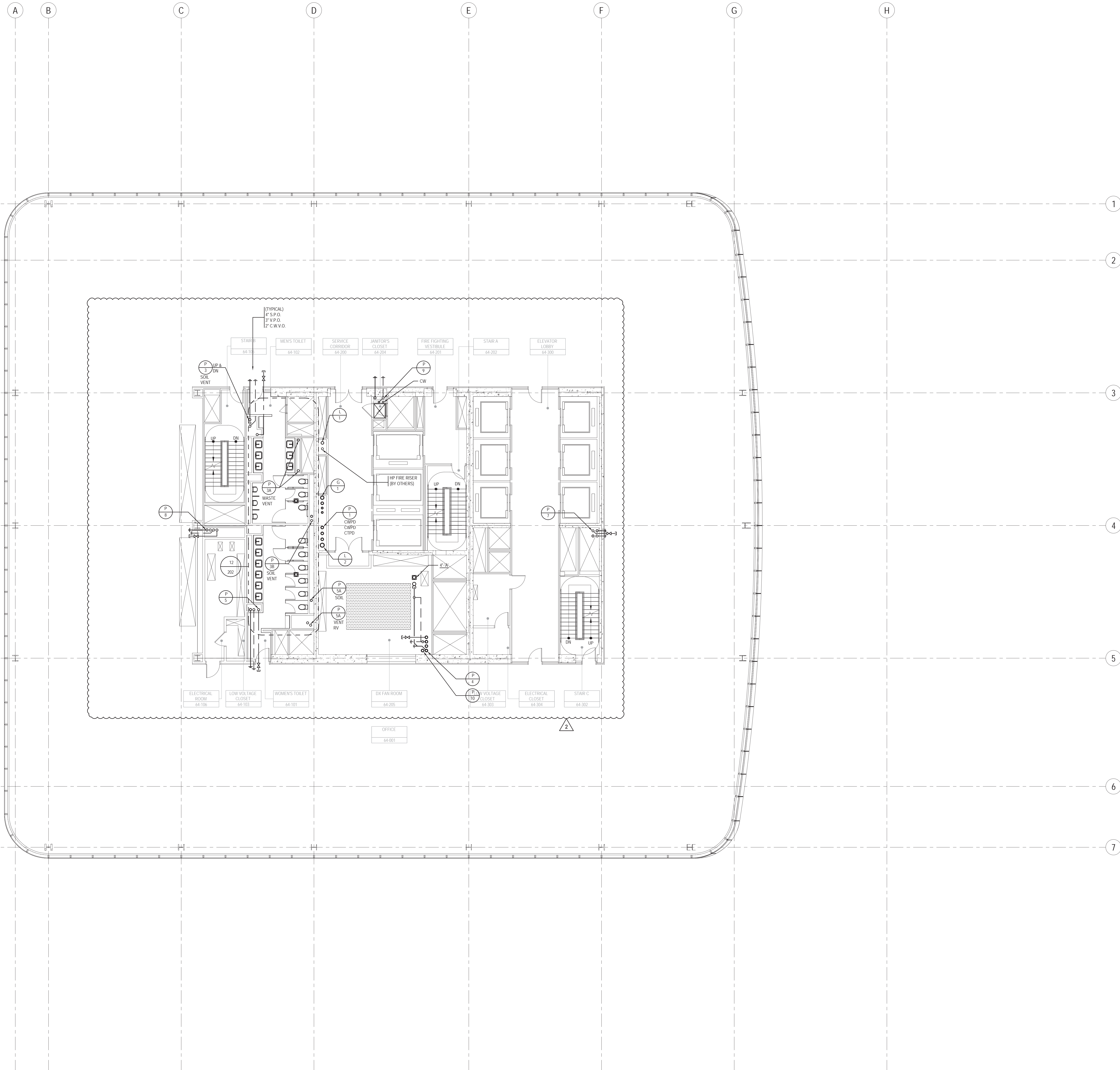
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Donald A. Montore

Project No.: 14830.A.000	B-SCAN Sheet No.:  <b>P-163.01</b>
Date: 20 JUN 2014	Sheet No.:  <b>P-163</b>
Scale: 1/8" = 1'-0"	
File No.: 0.163	Page No.:

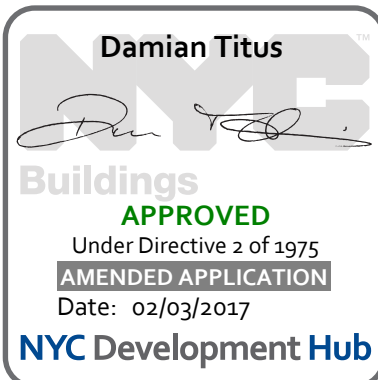




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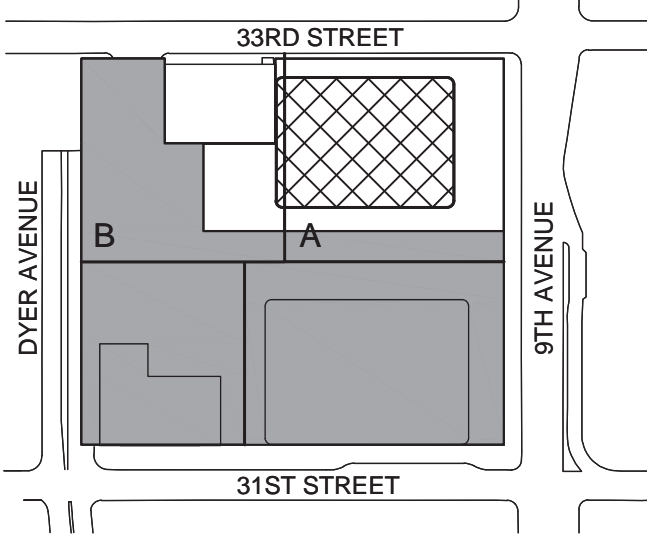
Facade Maintenance Consultant

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Seal & Signature:



Project No.: 1400A.000

Date: 20 JUN 2014

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

File No.: P-164

B-SCAN Sheet No.: P-164.01

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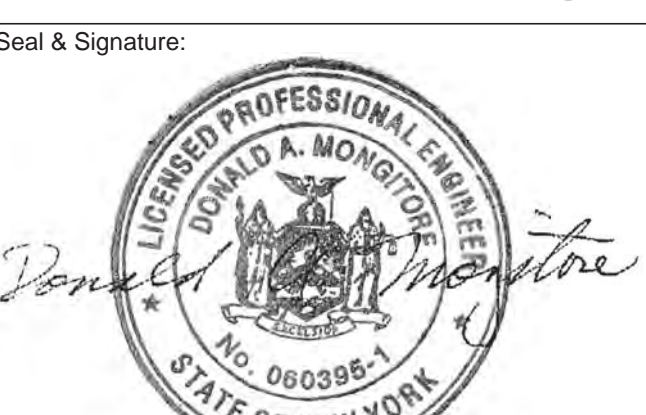
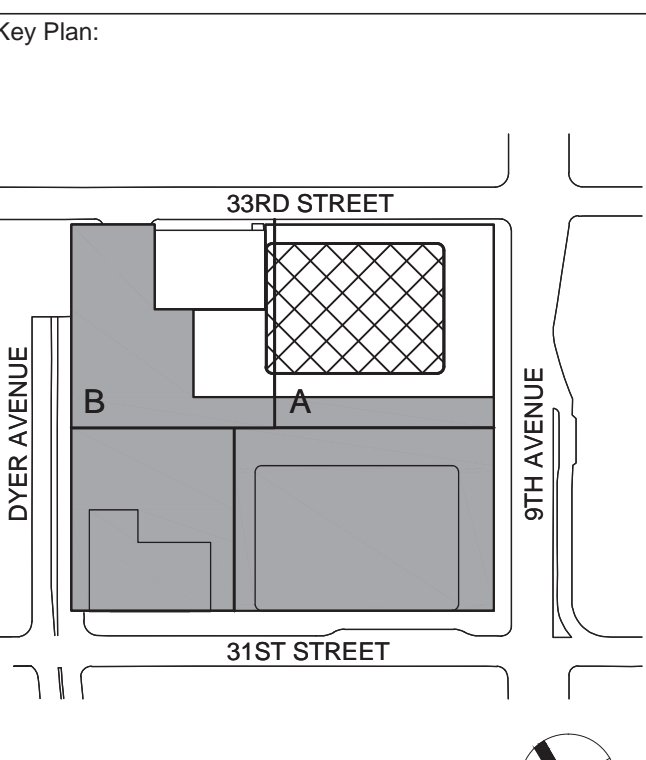
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Ontario, Canada N1K 1S5



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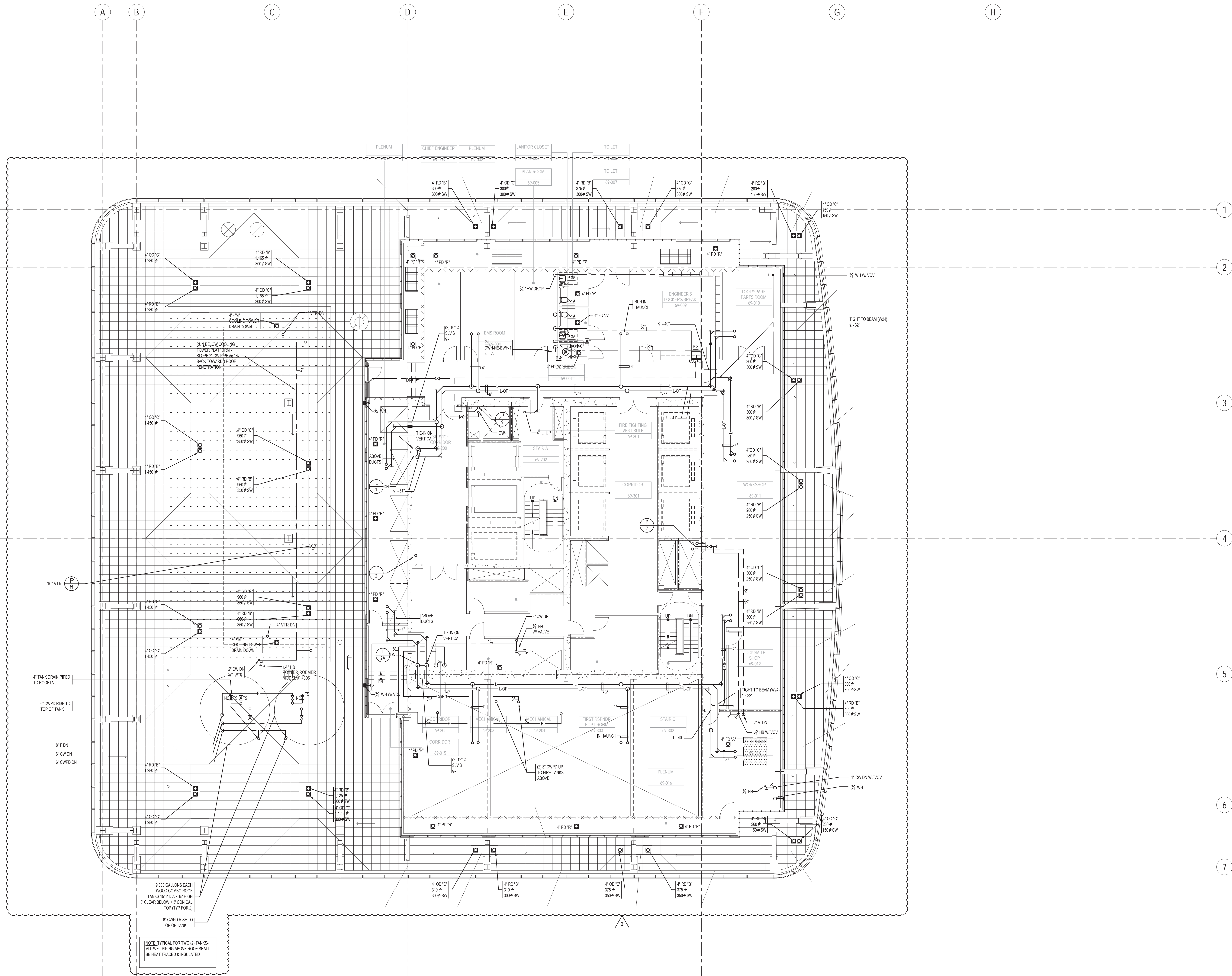


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PLUMBING  
LEVEL 68 FLOOR  
PLAN -  
MECHANICAL

Project No.: 1400A.000  
Date: 20 JUN 2014  
Scale: 1/8" = 1'-0"  
File No.: P-168  
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Sheet No.:  
**P-168**  
Page No.:





NOTE: TYPICAL FOR TWO (2) TANKS.  
ALL WET PIPING ABOVE ROOF SHALL  
BE HEAT TRACED & INSULATED.

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Ontario, Canada N1K 1S8

Key Plan:

Seal & Signature:

**PLUMBING  
LEVEL 69 FLOOR  
PLAN -  
MECHANICAL  
MEZZANINE**

Project No.: 14030.A.000  
Date: 20 JUN 2014  
Scale: 1/8" = 1'-0"  
File No.: P-169

6-SCAN Sheet No.:  
**P-169.01**  
Sheet No.:  
**P-169**  
Page No.:



KEY NOTES



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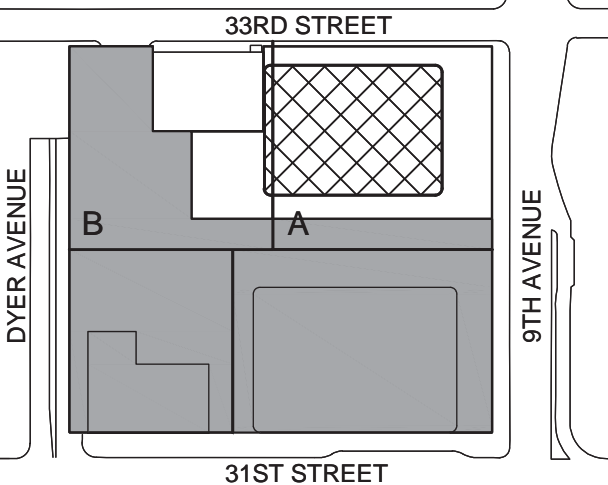
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Wind Tunnel Consultant

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650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S8

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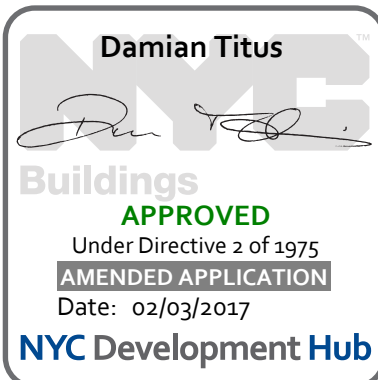


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Project No.:

14030.A.000

Date:

20 JUN 2014

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File No.:

P-170

B-SCAN Sheet No.:

P-170.01

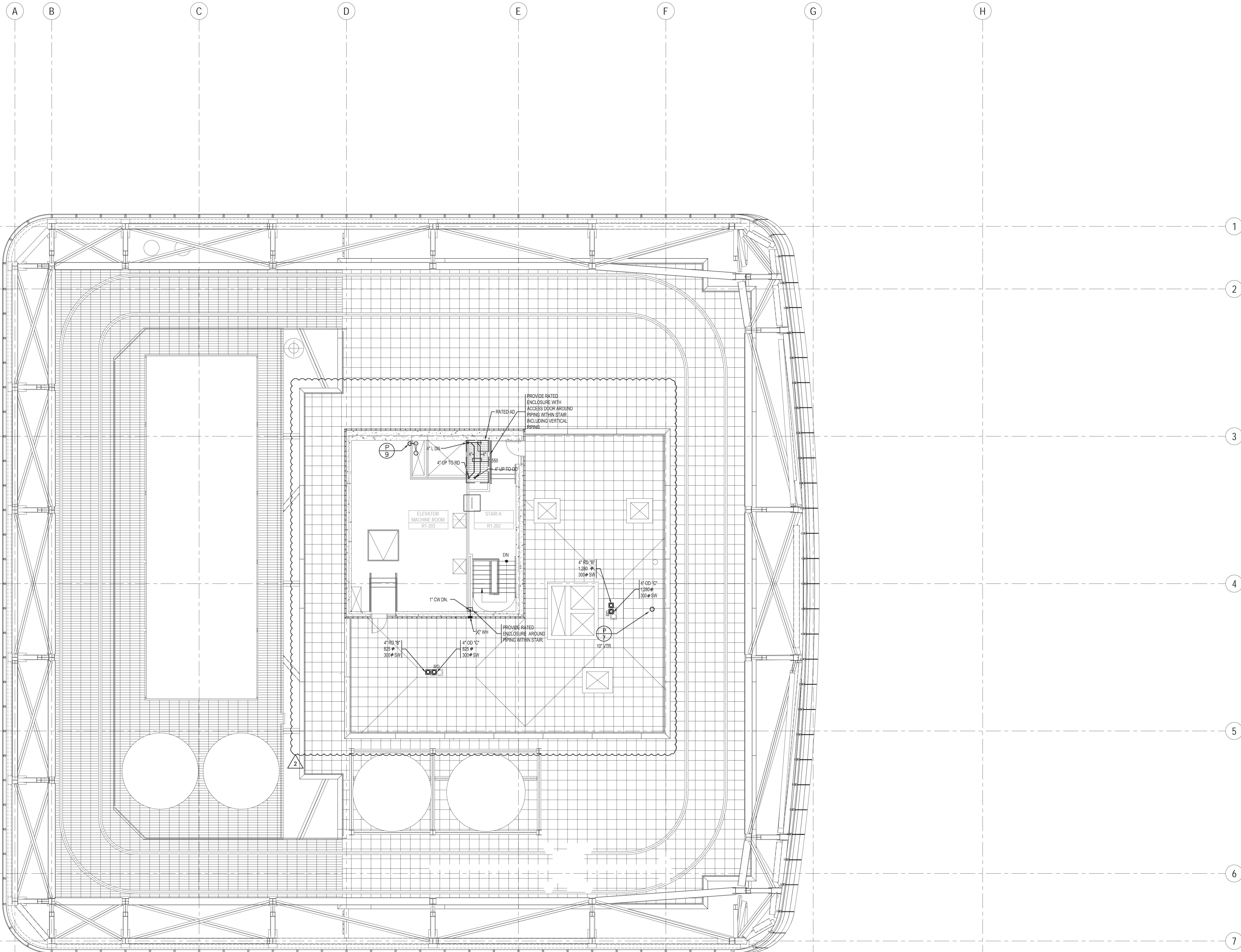
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P-170

Page No.:

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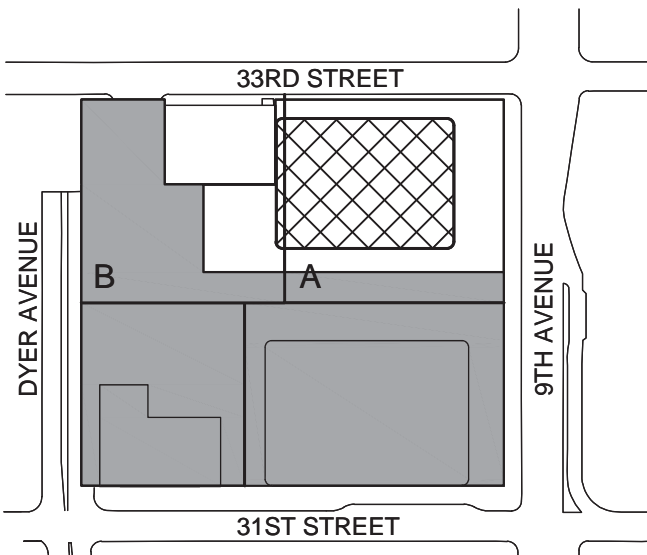
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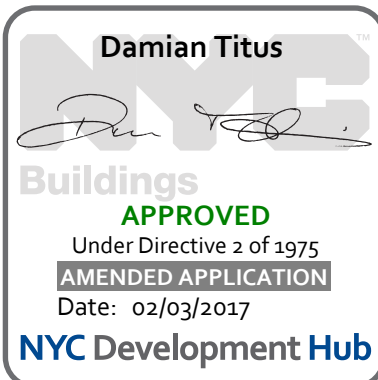
Project No.: 1400A.000  
Date: 20 JUN 2014  
Sheet No.: P-171

**PLUMBING  
ROOF PLAN -  
MECHANICAL  
PENTHOUSE  
ROOF**

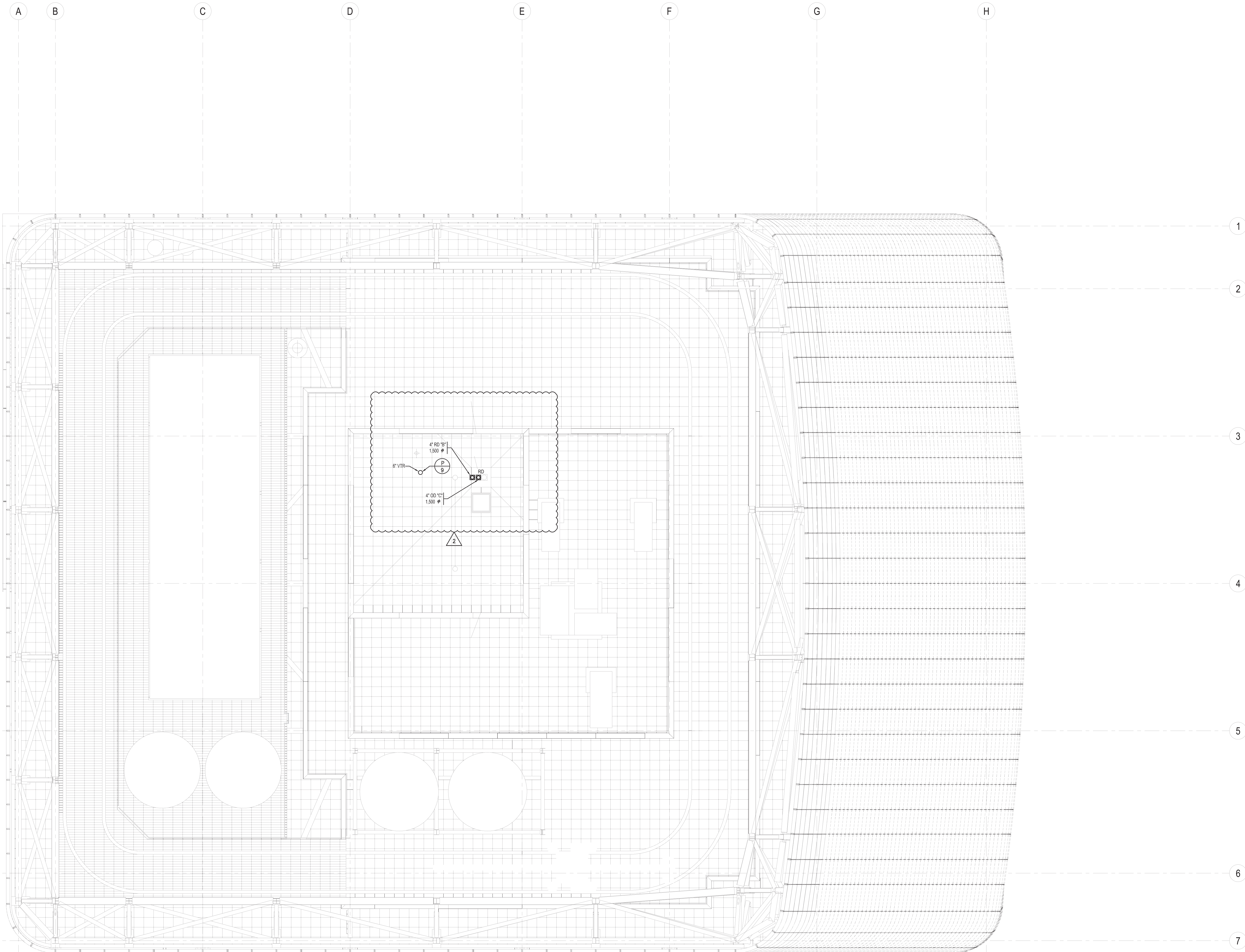
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Scale: 1/8" = 1'-0"  
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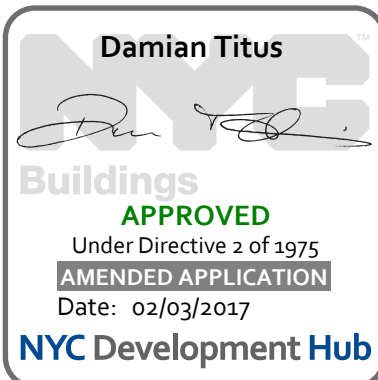



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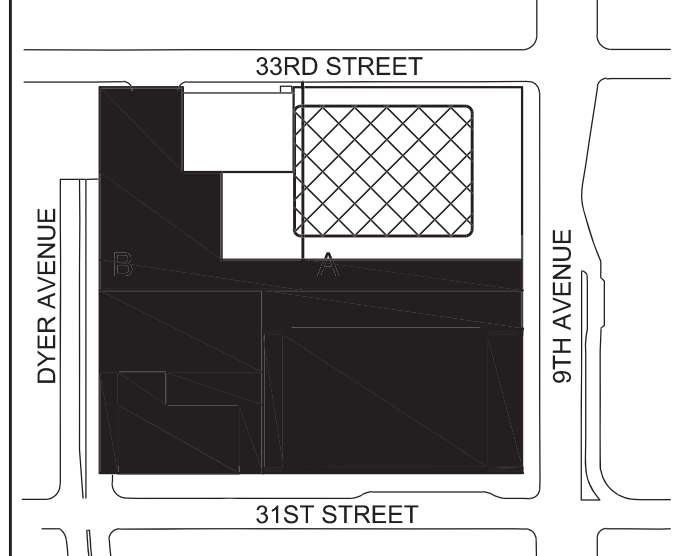
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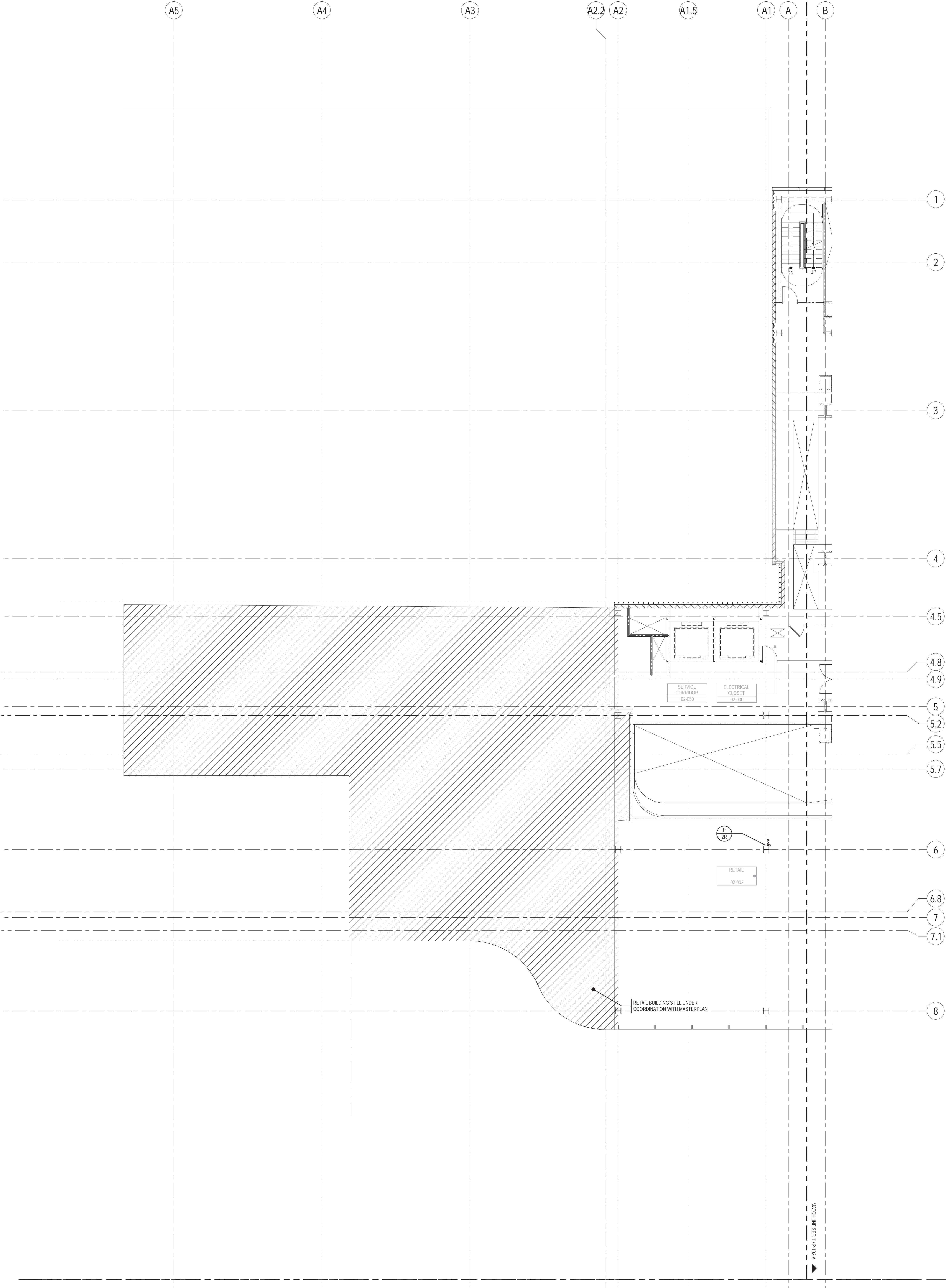
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Project No.: 14830.A.000  
Date: 29 APR 2016  
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B-SCAN Sheet No.: **P-172**  
Sheet No.: **P-172.00**  
Page No.:





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**Edgett Williams Consulting Group, Inc.**  
102 East 81st Street, Suite 1, Mill Valley, California 94041

Sustainable Design

**Vindian Energy & Environmental**  
50 Washington Street, Norwalk, CT 06854

Geo-Technical Engineering

**Mueser Rutledge Consulting Engineers**  
14 Penn Plaza, 22nd W. 34th Street #610,  
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Landscape Consultant

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

Security Consultant

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

Blast Consultant

**Weidinger Associates, Inc.**  
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Acoustical Consultant

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

Vibration Consultant

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65 Broadway, Suite 401, New York, NY 10006

Code Consultant

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

Facade Maintenance Consultant

**Entek Engineering LLC**  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

**Rowan Williams Davies & Irwin Inc.**  
650 Woodlawn Road West, Guelph  
Ontario, Canada N1K 1S5

Key Plan:

Seal & Signature:

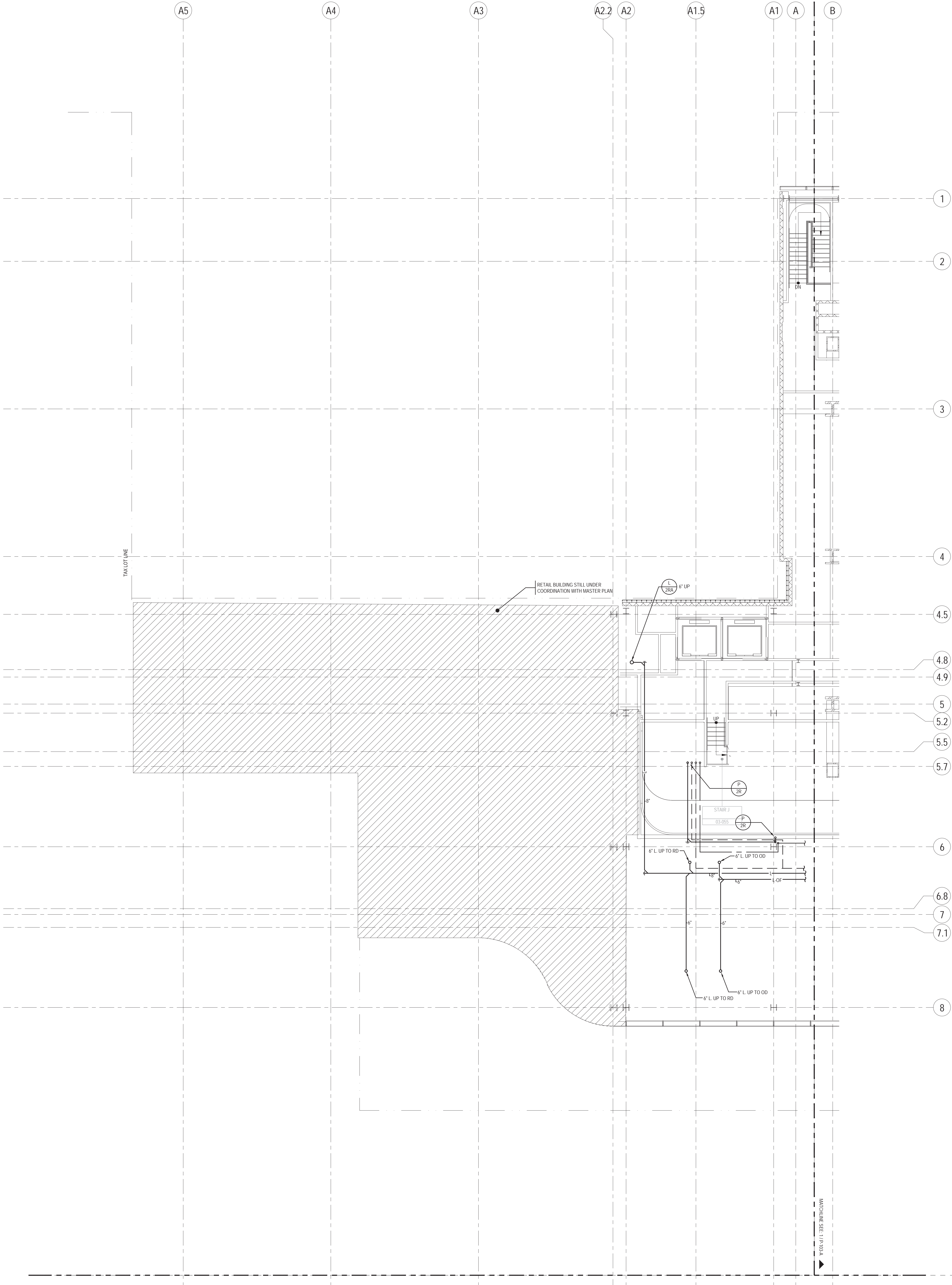
Project No.: 1400A.000  
Date: 22 APR 2016  
Scale: 1/8" = 1'-0"  
File No.: P-102-B

B-SCAN Sheet No.:  
**P-182.00**  
Sheet No.: P-102-B  
Page No.:

**Damian Titus**  
Buildings  
APPROVED  
Under Directive 2 of 2015  
AMENDED APPLICATION  
Date: 02/03/2017  
NYC Development Hub

**BUILDING DEPARTMENT NOTE:**  
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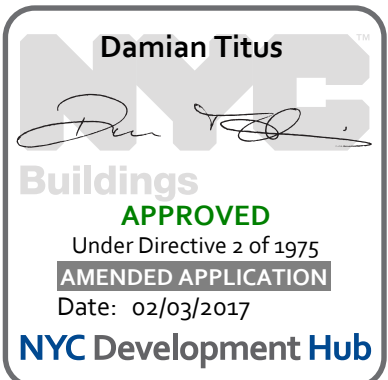


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## KEY NOTES

## SHEET NOTES

- 1- REFER TO NOTES & DESIGN CRITERIA ON DWG. P1-0002 FOR ADDITIONAL INFORMATION, REQUIREMENTS & CLARIFICATIONS.
- 2- REFER TO RISER DIAGRAMS, PART PLANS & DETAILS FOR ADDITIONAL INFORMATION & REQUIREMENTS..
- 3- ALL PIPE ELEVATIONS ARE TAKEN FROM TOP OF STEEL.



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

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

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**SOM**  
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MEP Engineering  
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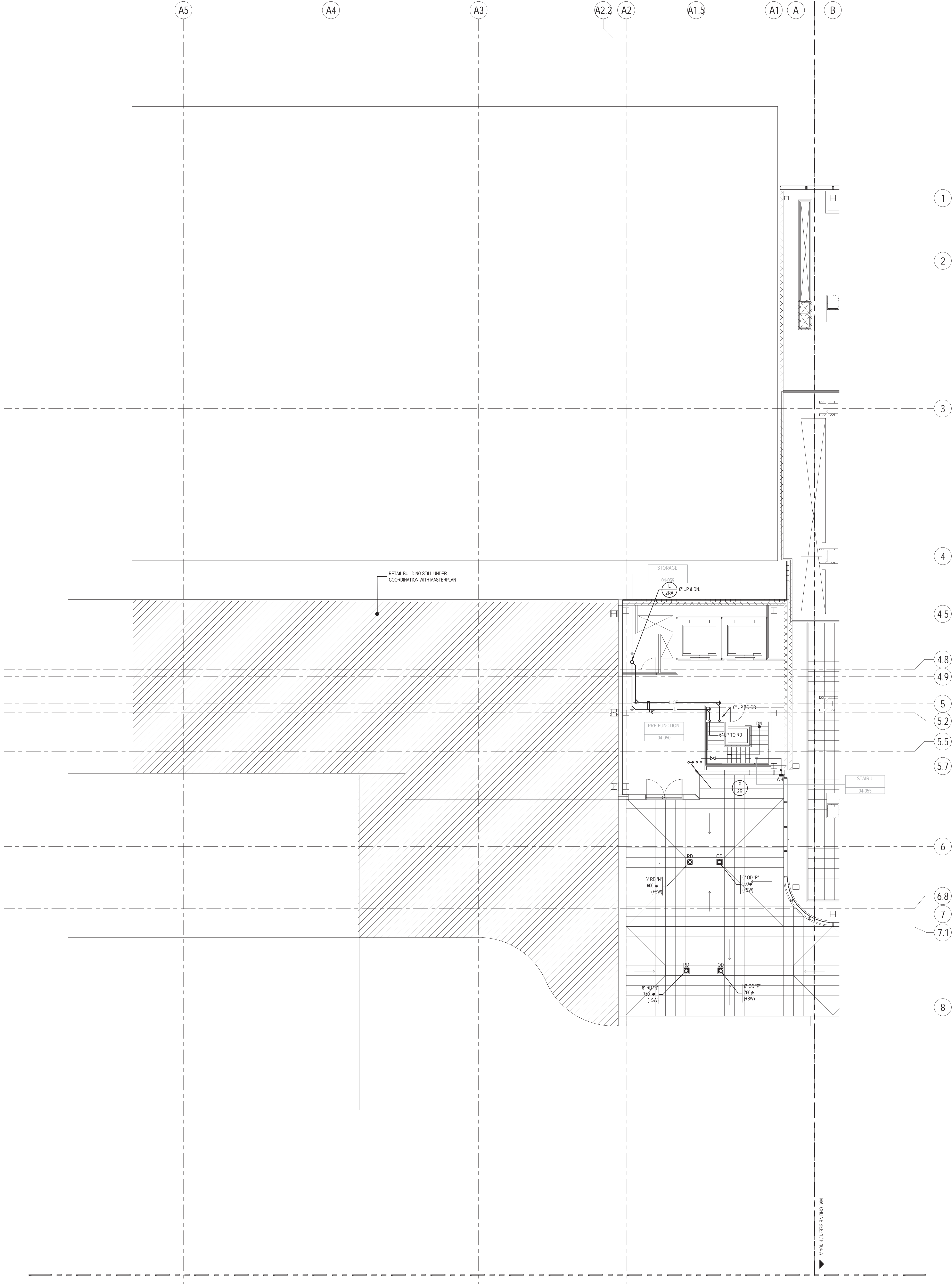
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**PLUMBING  
LEVEL 3  
FLOOR PLAN -  
STAIR TRANSFER -  
PART B**

Project No.: 1403A.000  
Diag: 22 APR 2016  
Scale: 1/8" = 1'-0"  
File No: P-103-B

B-SCAN Sheet No.:  
**P-183.00**  
Sheet No.: P-103-B  
Page No.:





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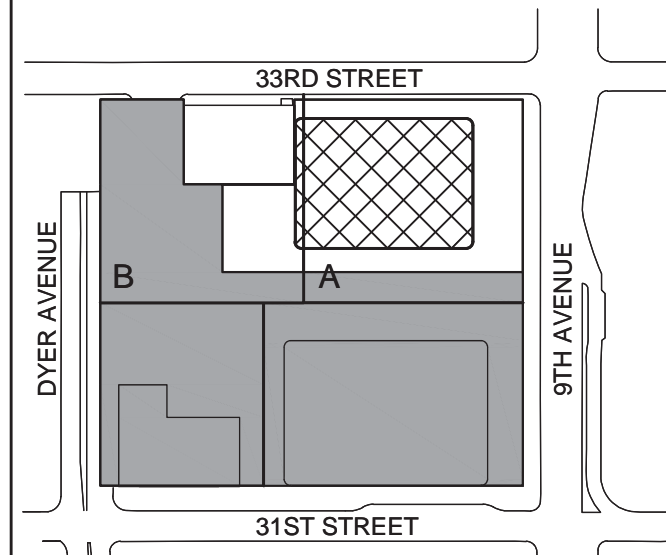
Vibration Consultant  
**Wilson, Uhrig & Associates, Inc.**  
65 Broadway, Suite 401, New York, NY 10006

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

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Ontario, Canada N1K 1S5

Key Plan:



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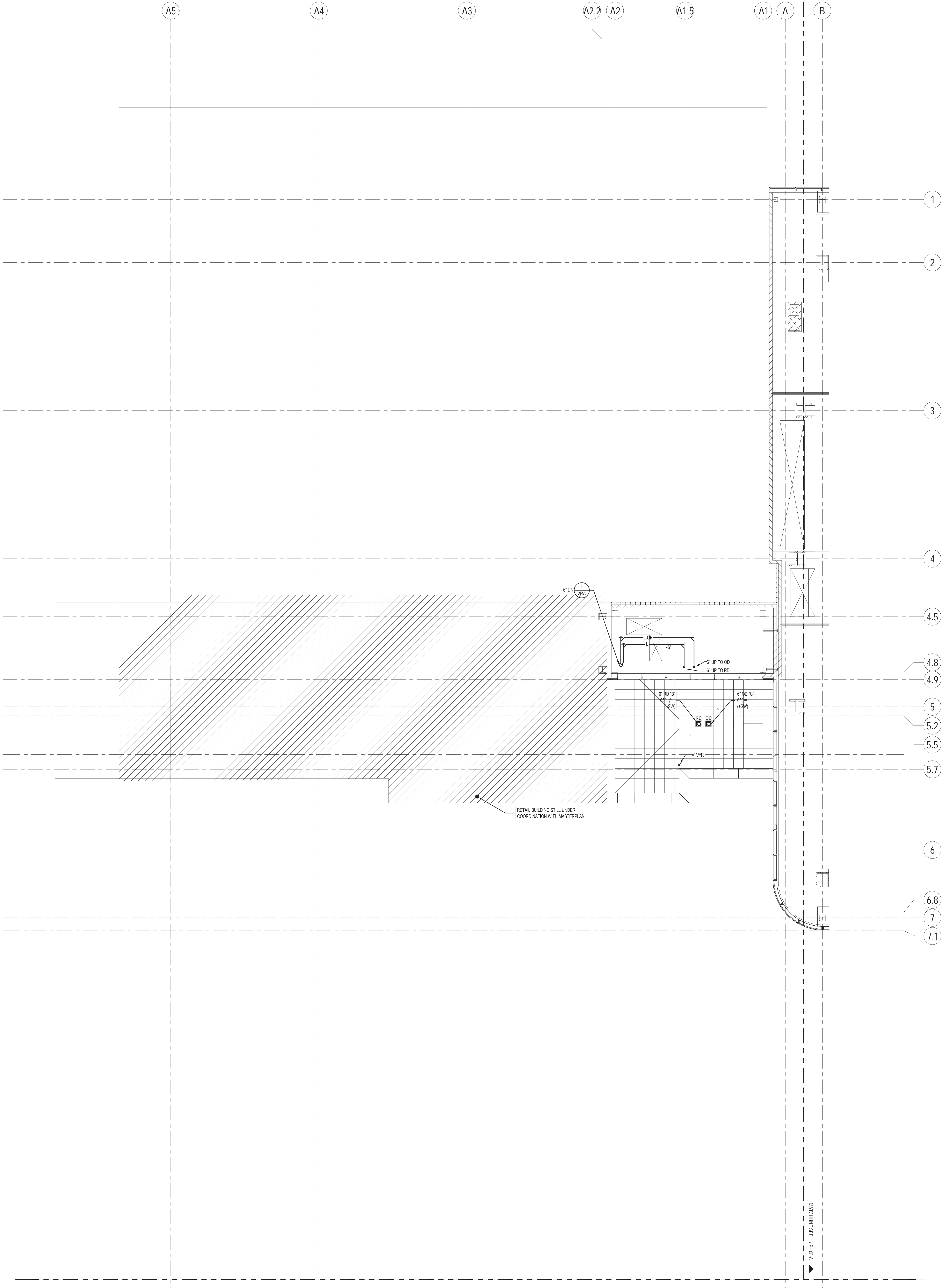
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**PLUMBING  
LEVEL 4  
FLOOR PLAN -  
MECHANICAL -  
PART B**

Project No.: 1400A.000  
Diag: 22 APR 2016  
Scale: 1/8" = 1'-0"  
File No: P-104-B  
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**P-184.00**  
Sheet No.: P-104-B  
Page No.:







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NORTH TOWER

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

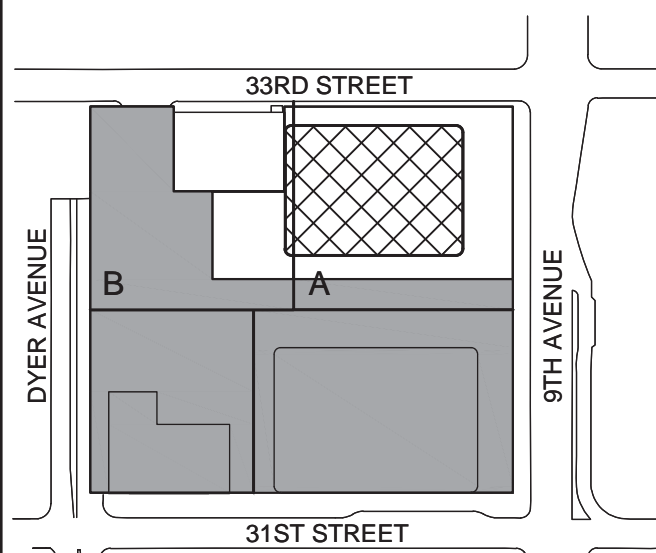
Facade Maintenance Consultant

Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

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650 Woodlawn Road West, Guelph  
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Key Plan:



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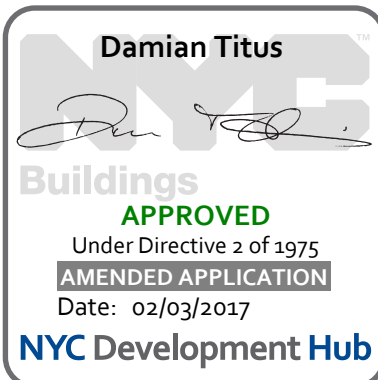
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PLUMBING  
LEVEL 5  
FLOOR PLAN -  
MECHANICAL  
MEZZANINE -  
PART B

Project No.:

1403A.000

Date:

22 APR 2016

Scale:

1/8" = 1'-0"

File No.:

P-105-B

B-SCAN Sheet No.:

P-185.00

Sheet No.:

P-105-B

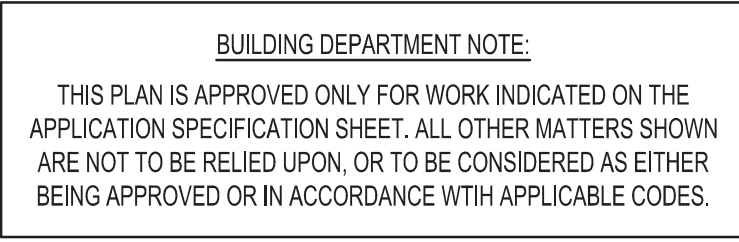
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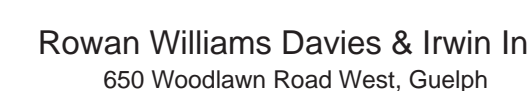
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Date: 22 APR 2016	
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Date: 22 APR 2016	
Scale: 1/8" = 1'-0"	Sheet No.:  <b>P-106-B</b>
File No.:	Page No.:









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

Facade Maintenance Consultant

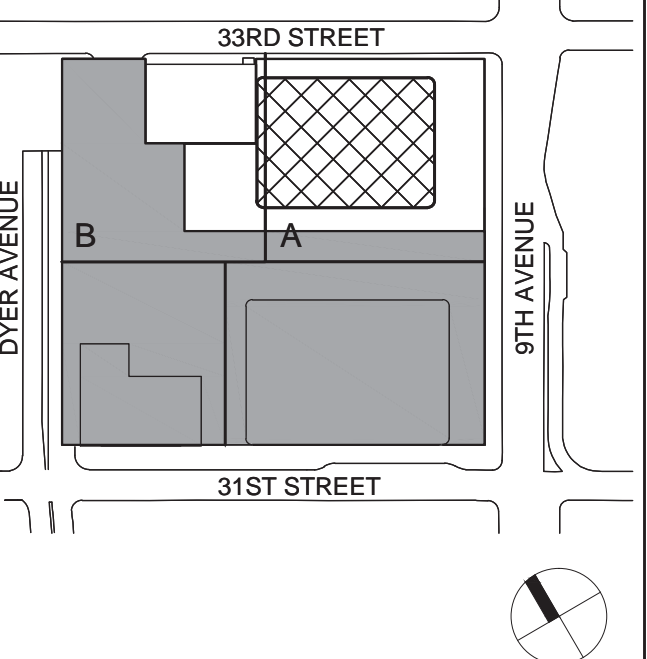
Entek Engineering LLC  
166 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodtown Road West, Guelph  
Ontario, Canada N1K 1S8

KEY NOTES

Key Plan:



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SHEET NOTES

1. REFER TO PLANS, RISER DIAGRAMS & SPECIFICATIONS FOR ADDITIONAL INFORMATION & REQUIREMENTS

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**PLUMBING TOILET  
DETAILS  
SHEET 2**



Project No.:

14030.A.000

Date:

22 APR 2016

Scale:

1/4" = 1'-0"

File No.:

P-201

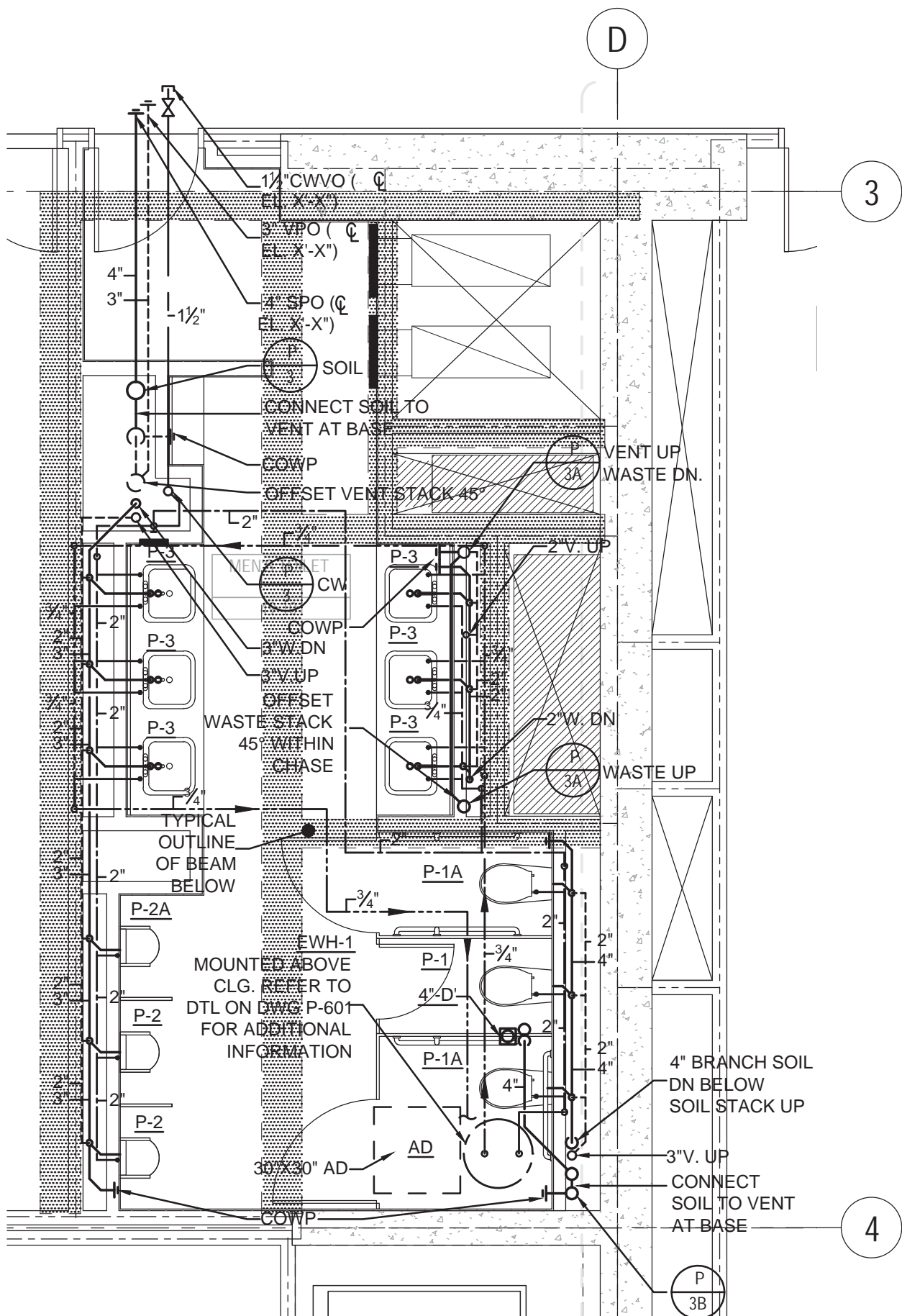
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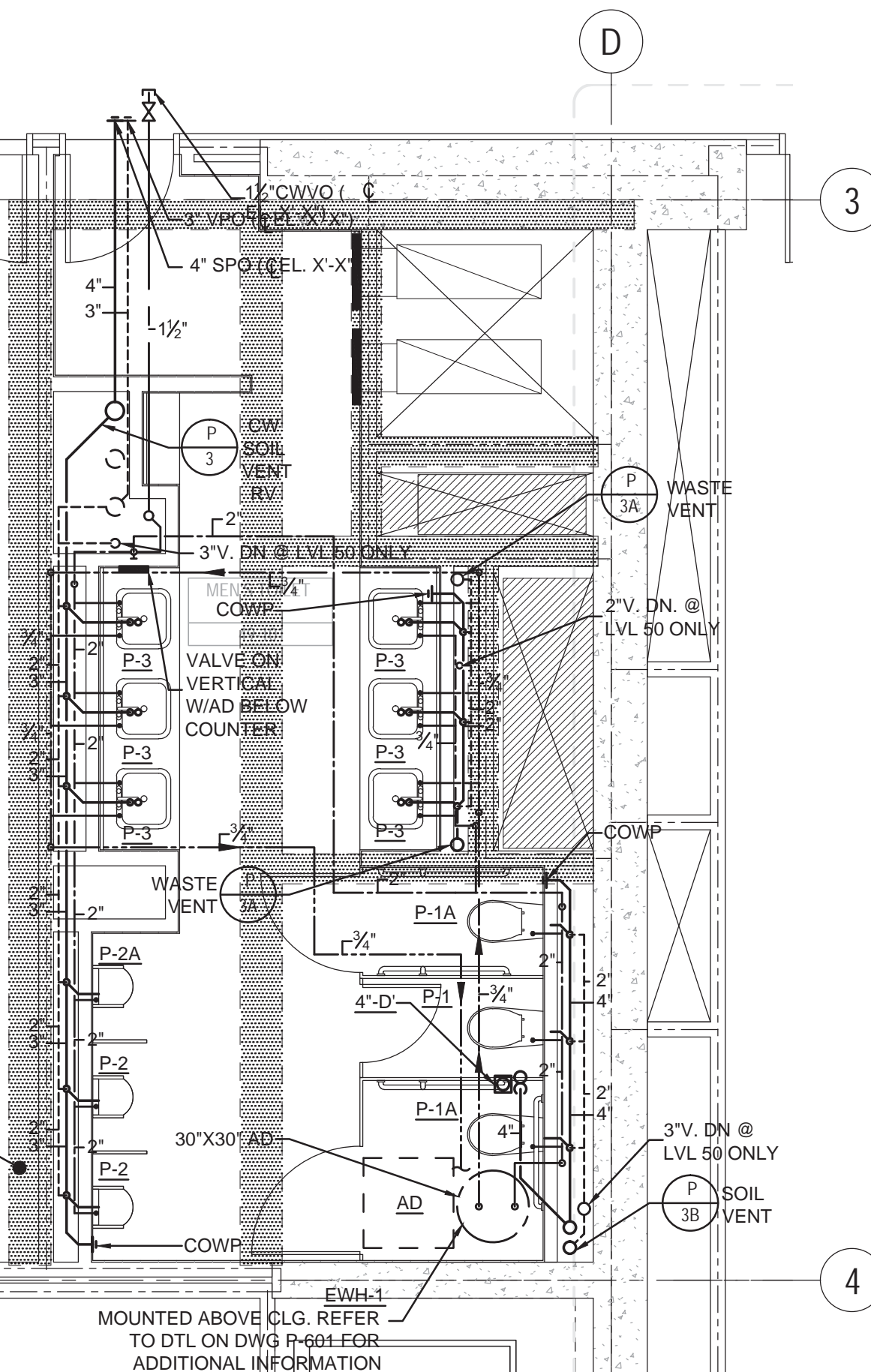
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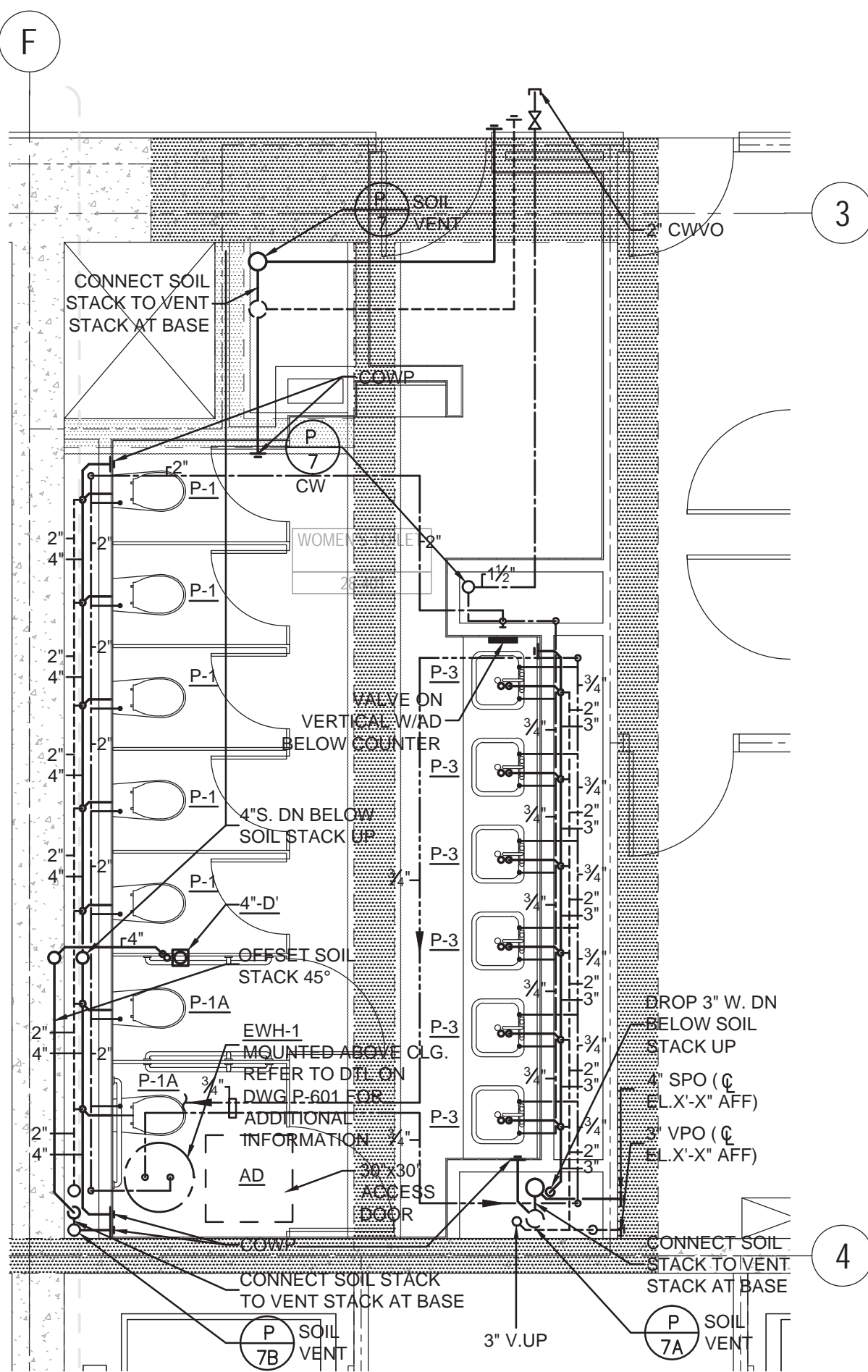
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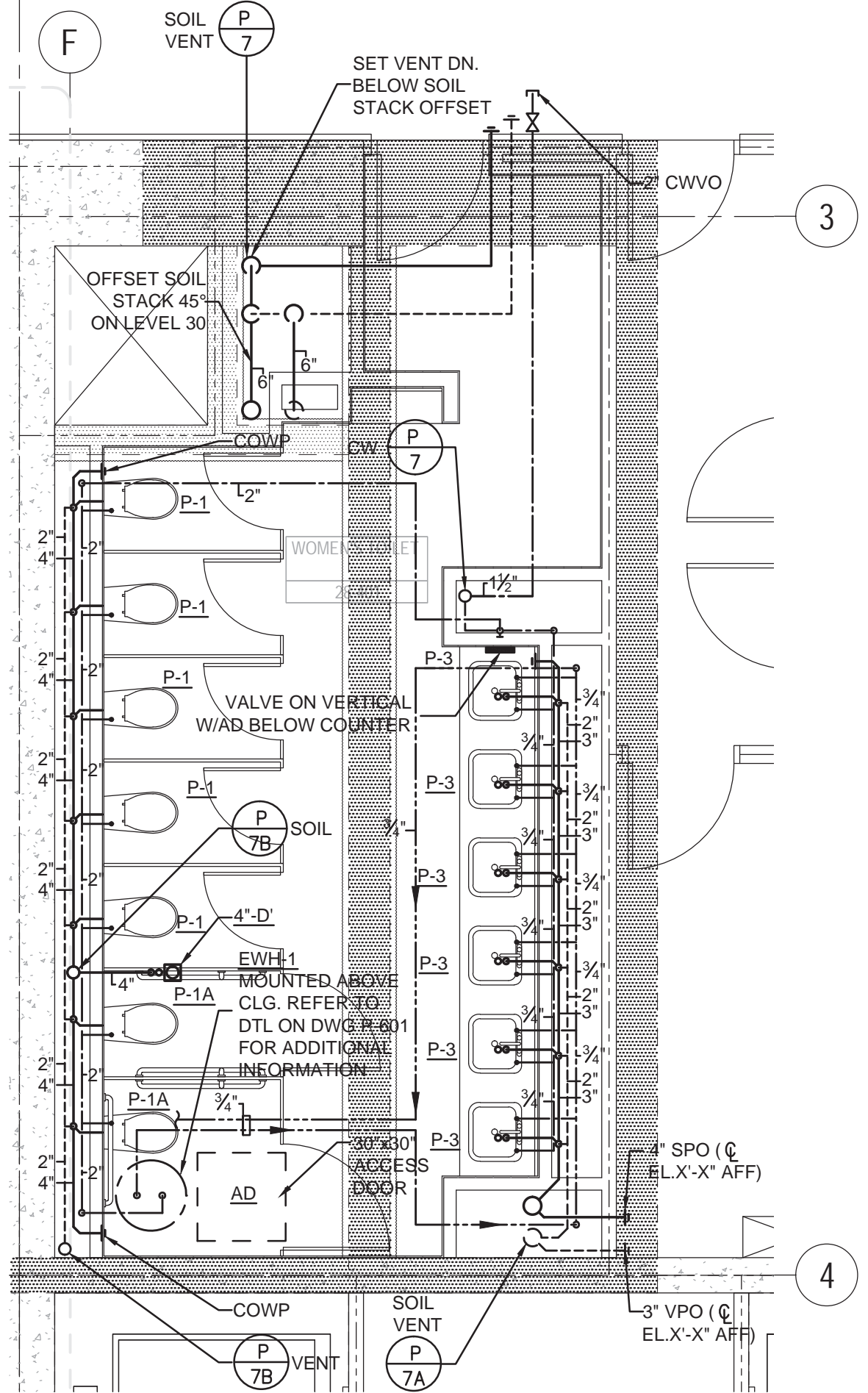
**8 PART PLAN DETAIL OF  
49TH FLOOR MEN'S TOILET**  
SCALE: 1/4" = 1'-0"



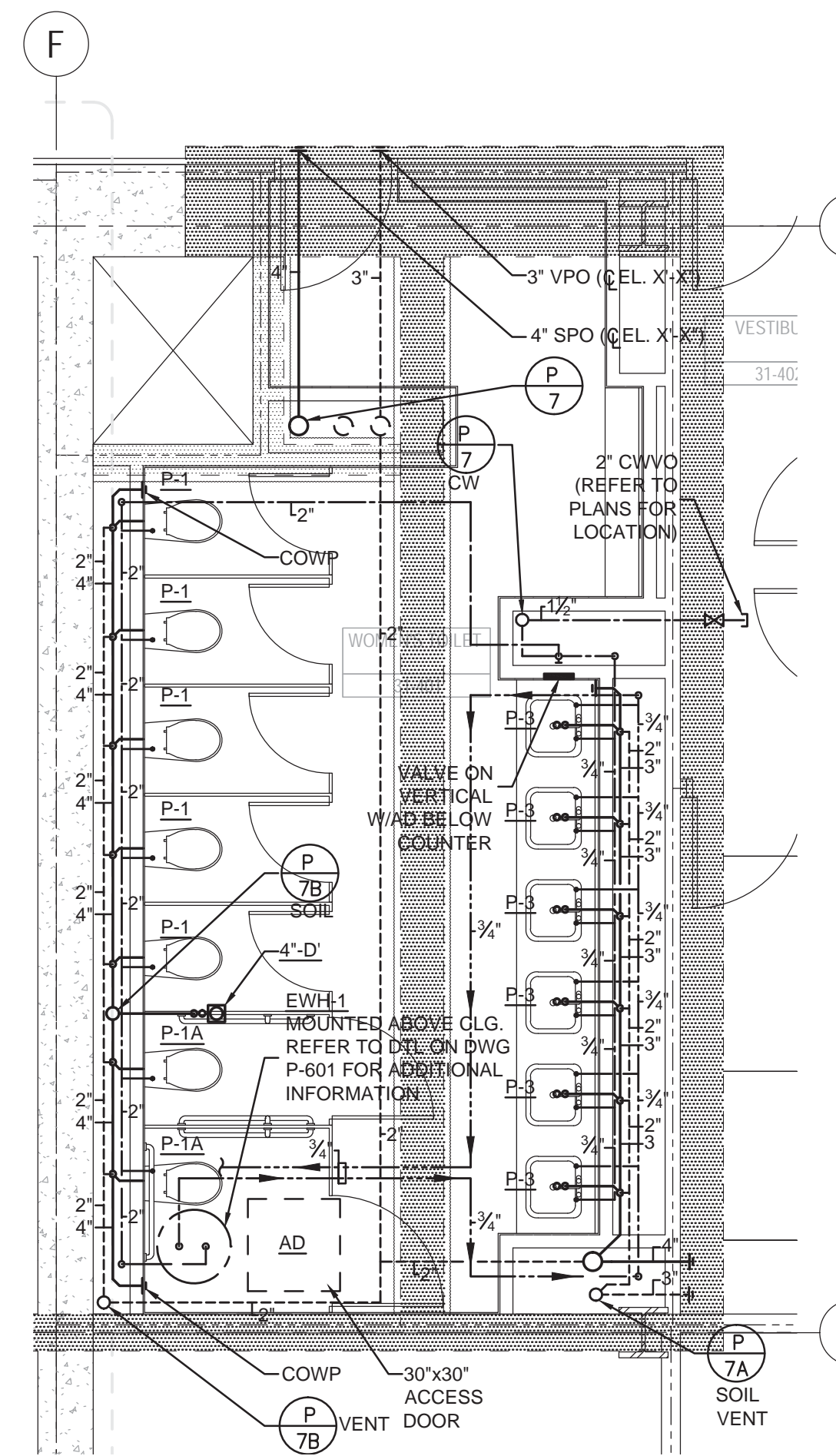
**9 PART PLAN DETAIL OF  
50-52 FLOOR MEN'S  
TOILET**  
SCALE: 1/4" = 1'-0"



**5 PART PLAN DETAIL OF  
28TH FLOOR WOMEN'S  
TOILET**  
SCALE: 1/4" = 1'-0"



**6 PART PLAN DETAIL OF 29TH &  
30TH FLOOR WOMEN'S TOILET**  
SCALE: 1/4" = 1'-0"



**7 PART PLAN DETAIL OF 31ST -  
52ND FLOOR WOMEN'S TOILET**  
SCALE: 1/4" = 1'-0"





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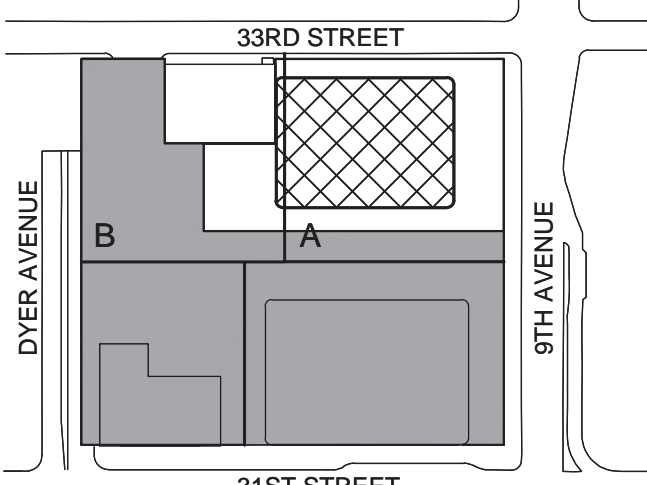
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Key Plan:



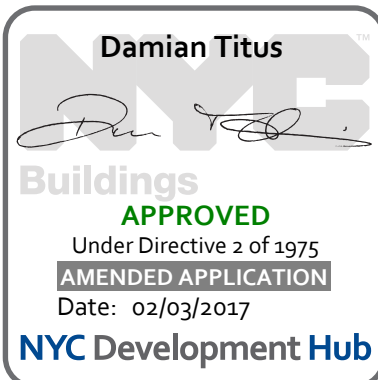
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KEY NOTES

SHEET NOTES

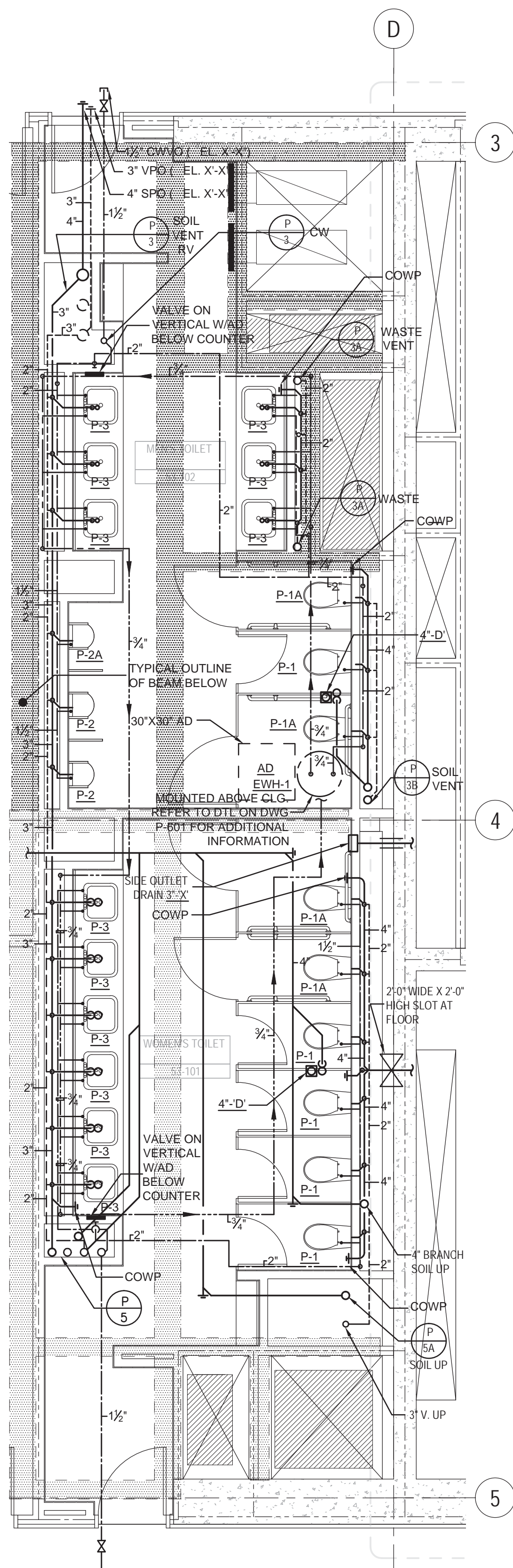
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DIAGRAMS & SPECIFICATIONS  
FOR ADDITIONAL INFORMATION  
& REQUIREMENTS



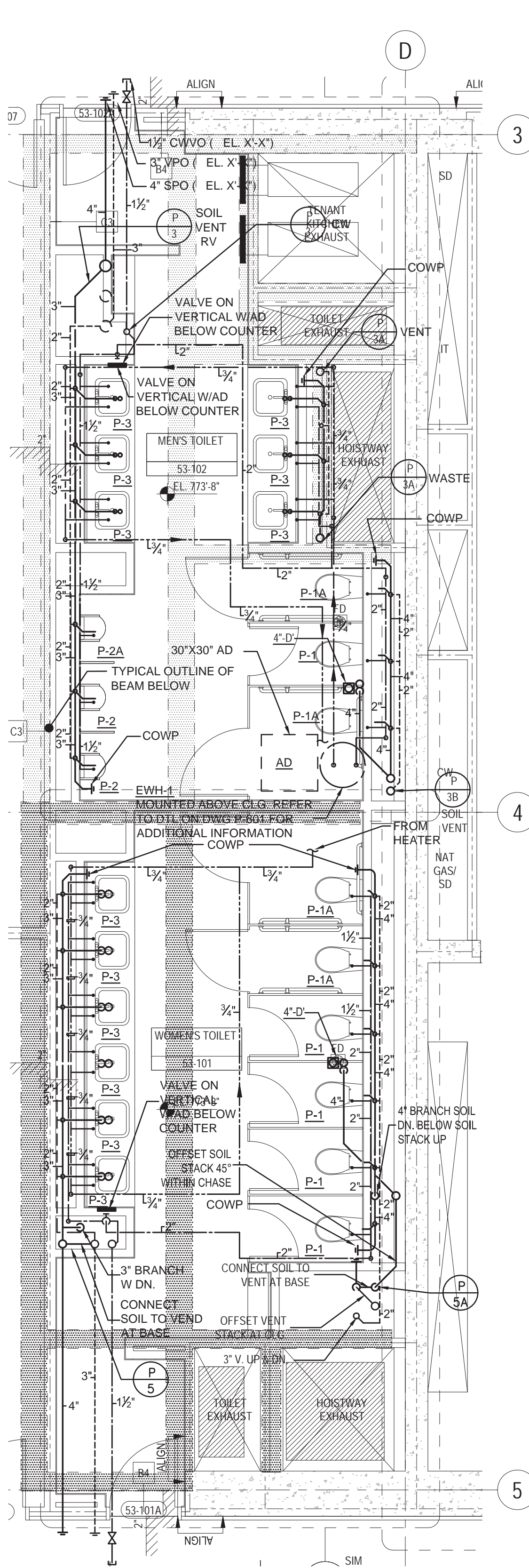
**PLUMBING TOILET  
DETAILS  
SHEET 3**

Project No.: 1400A.000  
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File No.: P-202

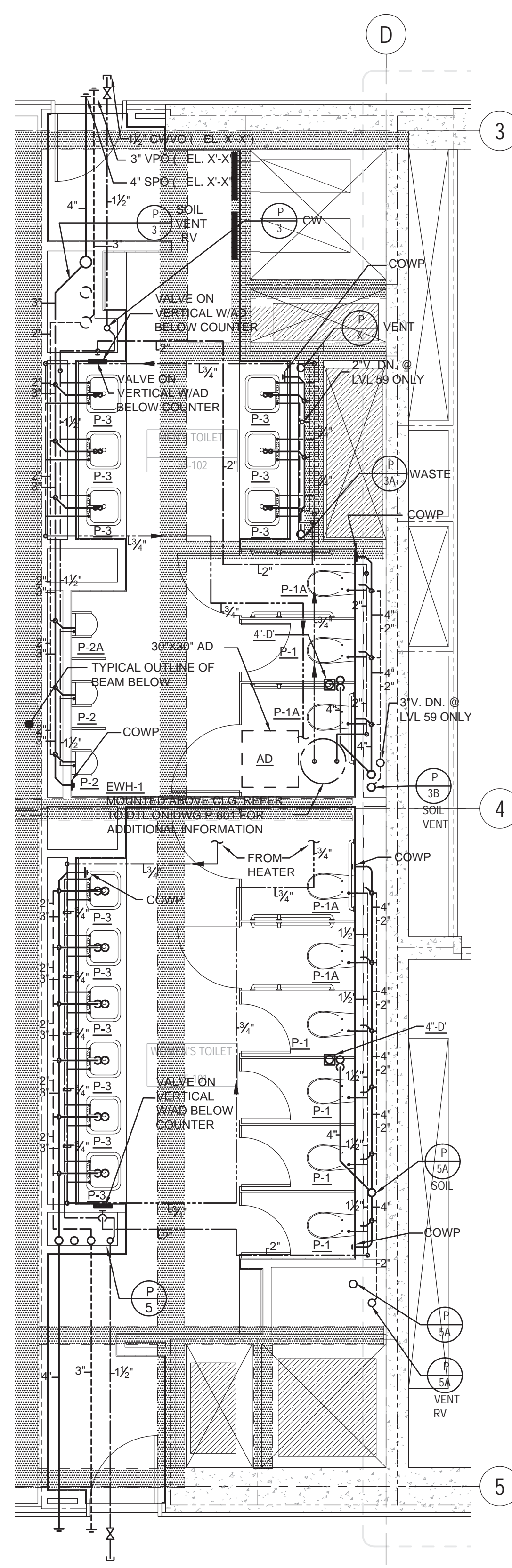
B-SCAN Sheet No.:  
**P-202.00**  
Sheet No.:  
**P-202**  
Page No.:



10 PART PLAN DETAIL OF  
53RD FLOOR MEN'S &  
WOMEN'S TOILET  
SCALE: 1/4" = 1'-0"

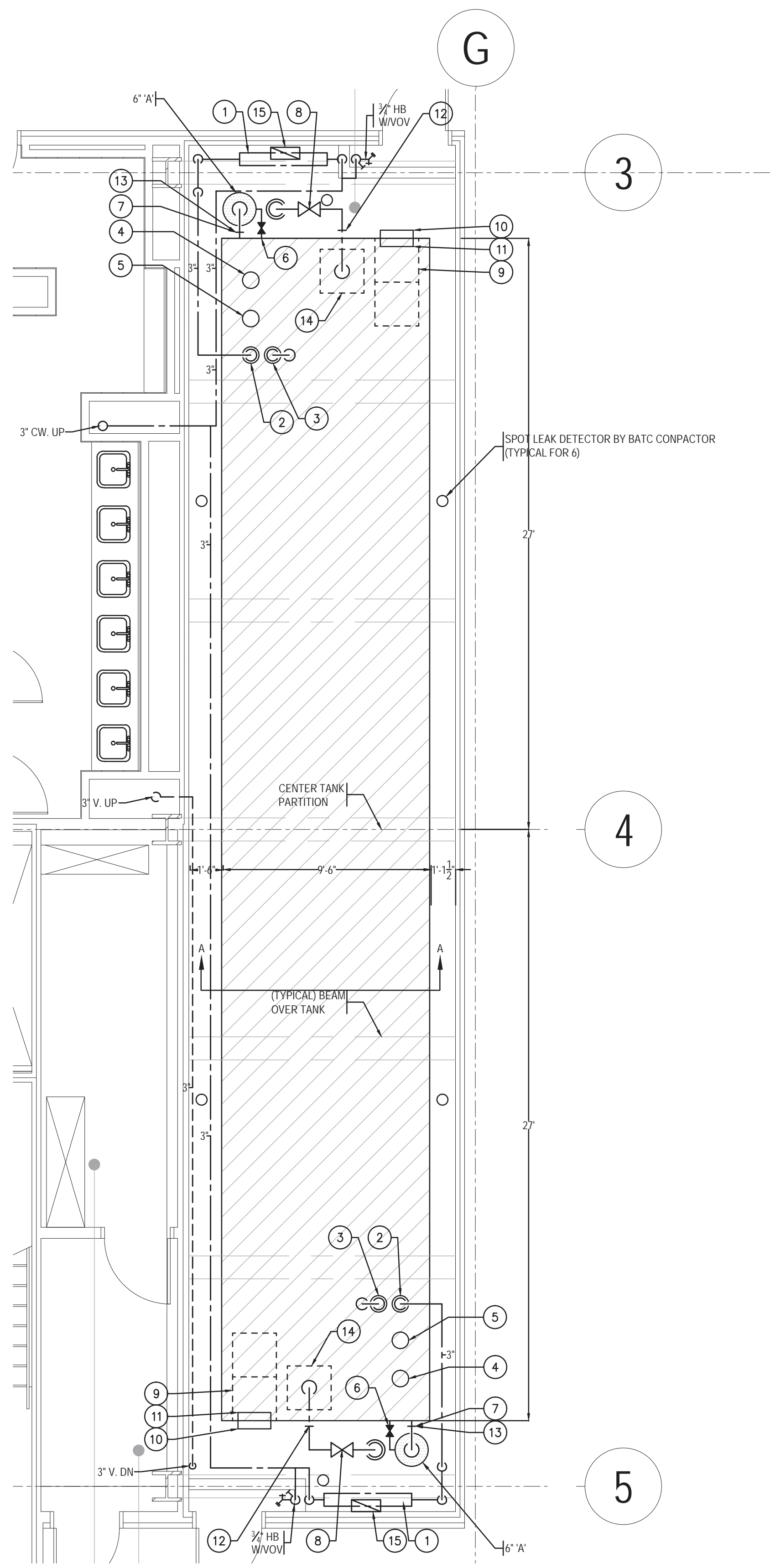


11 PART PLAN DETAIL OF  
54TH FLOOR MEN'S &  
WOMEN'S TOILET  
SCALE: 1/4" = 1'-0"



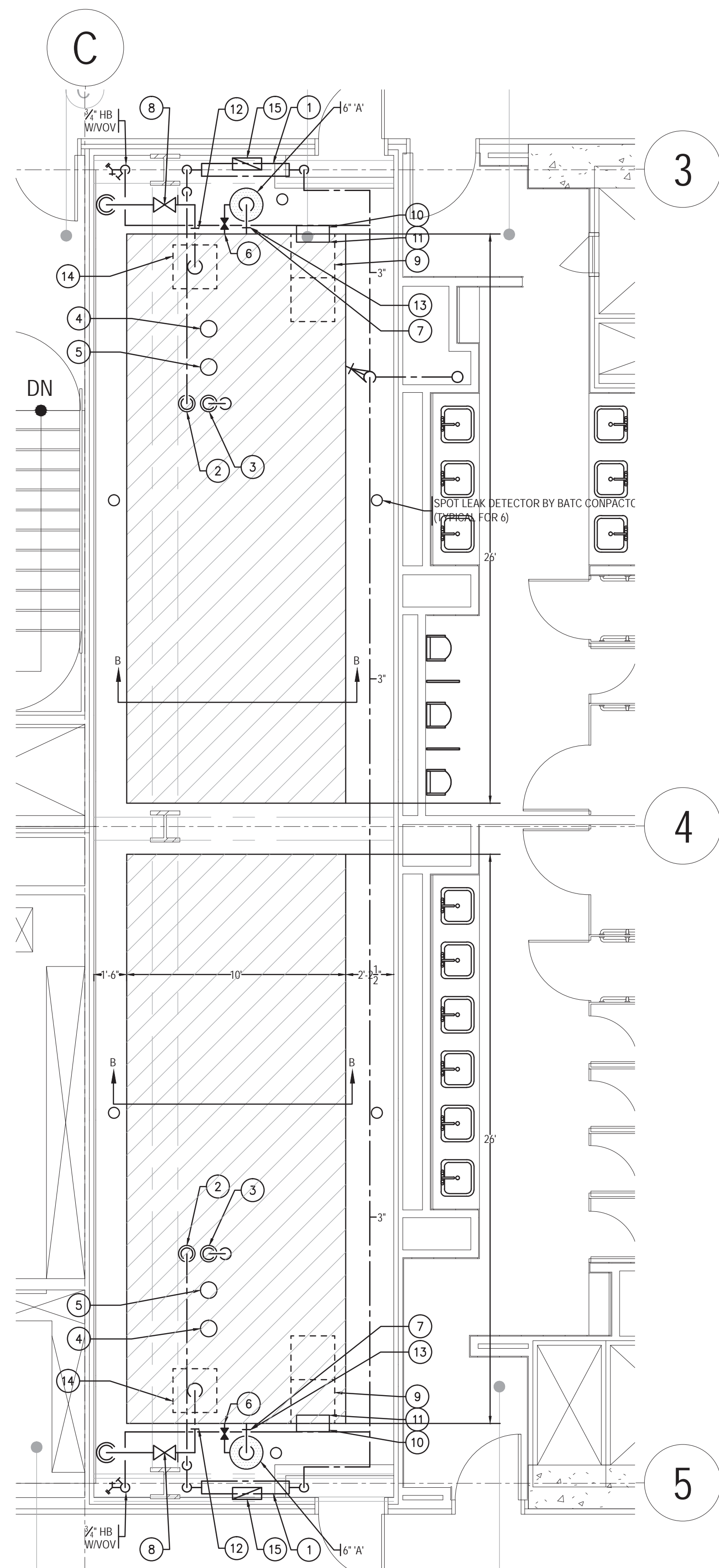
12 PART PLAN DETAIL OF  
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WOMEN'S TOILET  
SCALE: 1/4" = 1'-0"





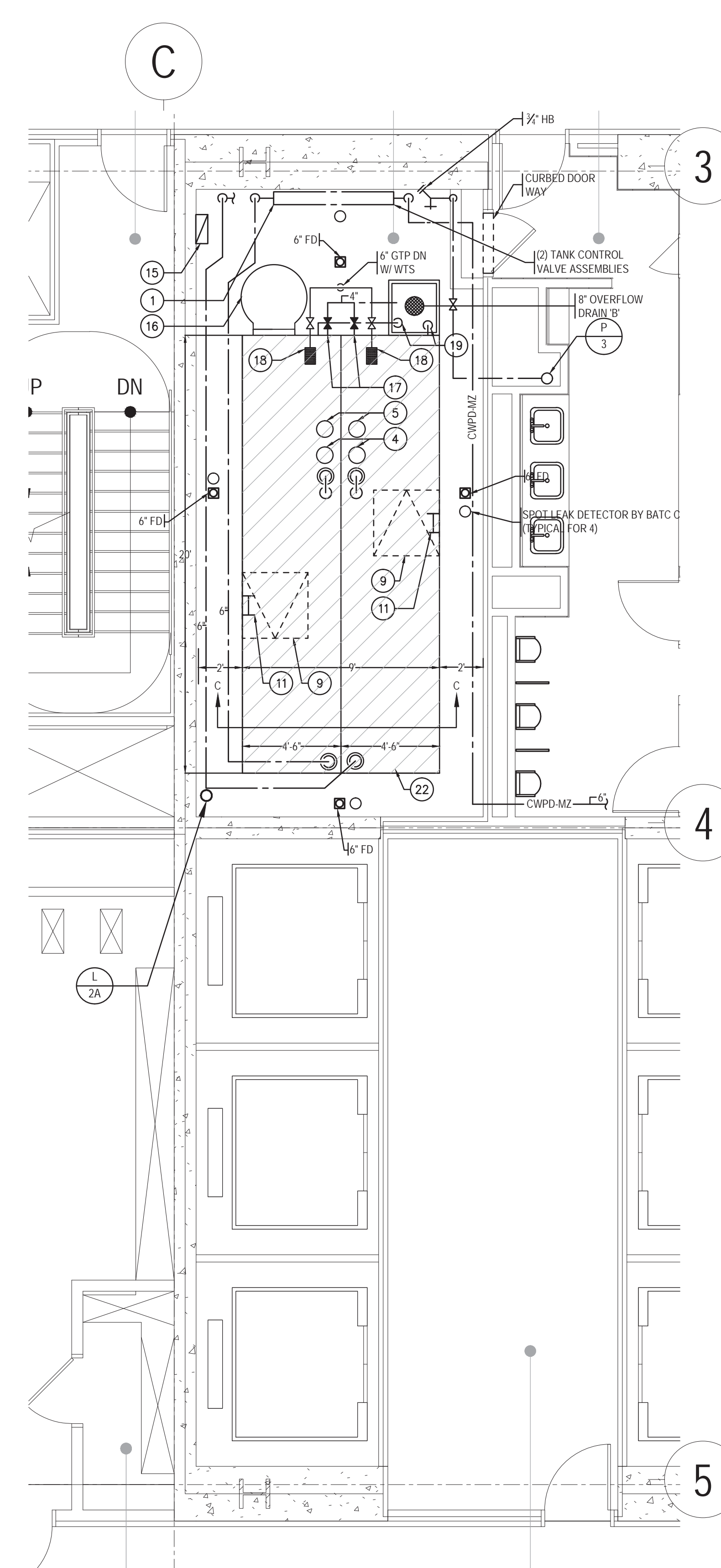
**PART PLAN OF LEVEL 32  
FIRE RESERVE HOUSE  
TANK ROOM**

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



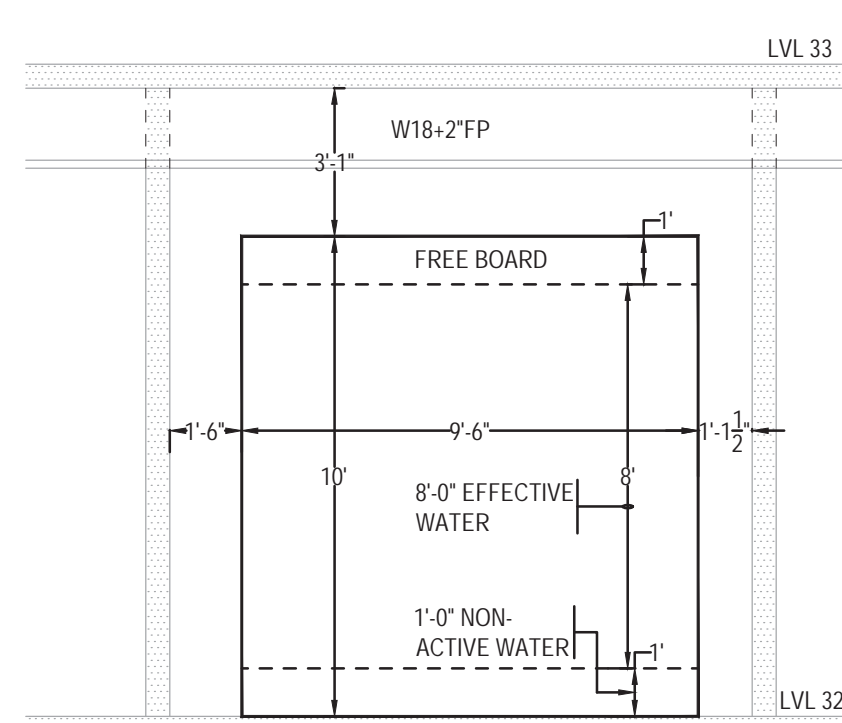
**PART PLAN OF LEVEL 54  
FIRE RESERVE HOUSE  
TANK ROOM**

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



**PART PLAN OF LEVEL 51  
DOMESTIC WATER HOUSE TANKS**

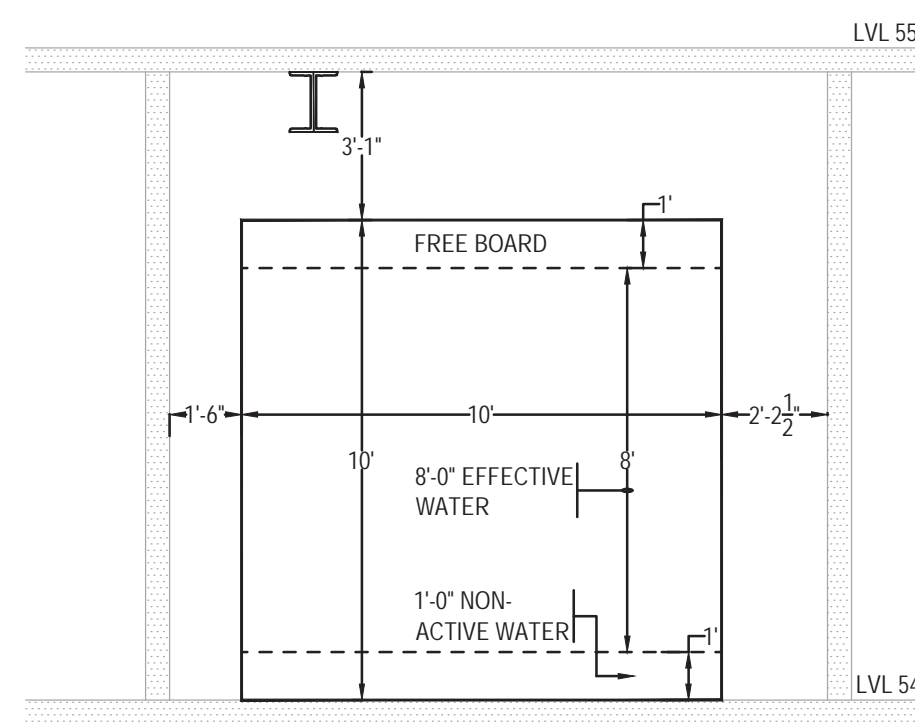
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**SECTION -A-A'**

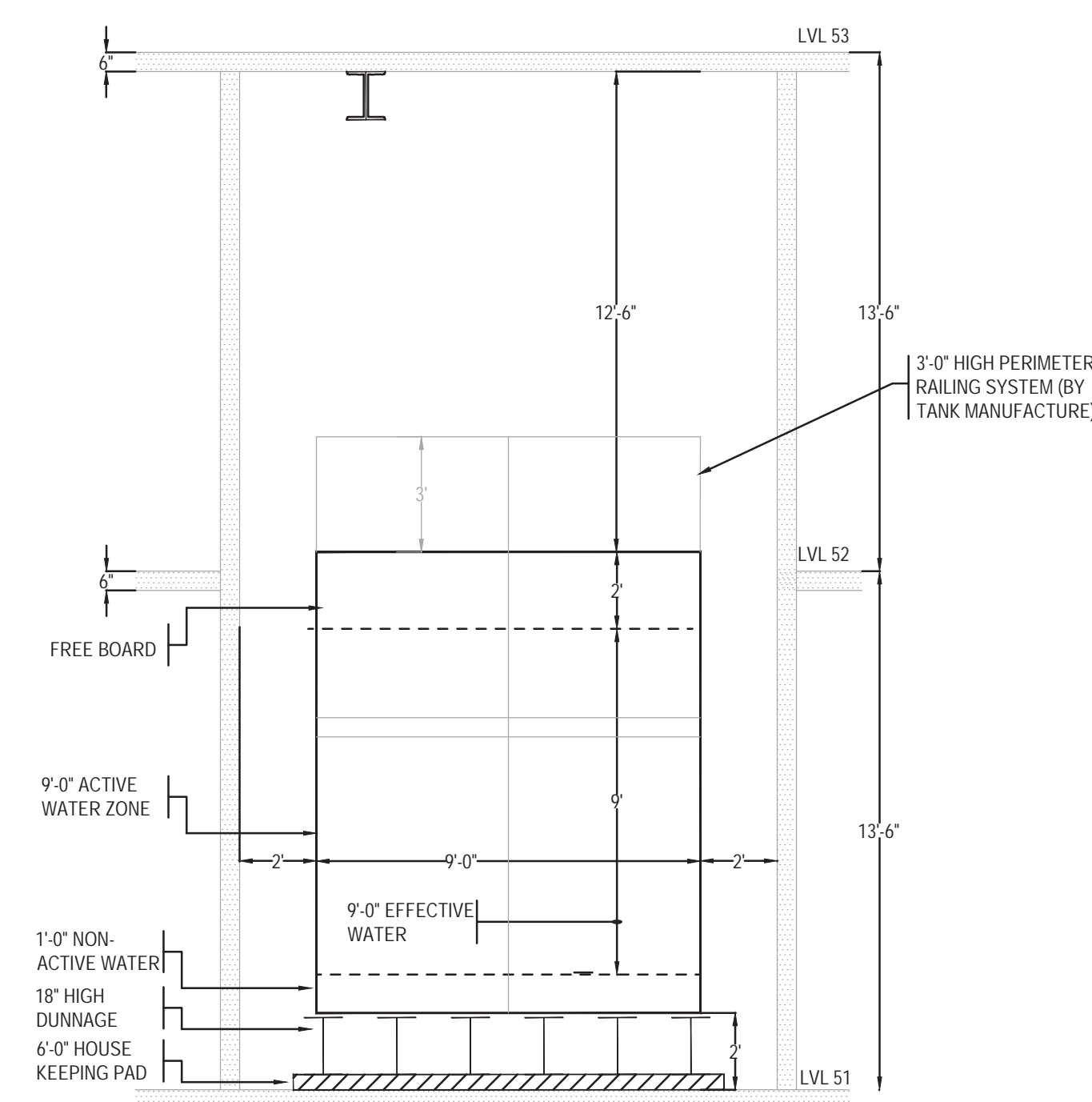
SCALE: 1/2" = 1'-0"

NOTE:  
EAST WALL TO BE BUILT AFTER TANK IS CONSTRUCTED



**SECTION -B-B'**

SCALE: 1/2" = 1'-0"



**SECTION -C-C'**

SCALE: 1/2" = 1'-0"

## KEY NOTES

- 1 TANK CONTROL SYSTEM, REFER TO DETAIL ON DWG. P-602 FOR ADDITIONAL INFORMATION
- 2 3" TANK FILL W/3" FLANGE CONNECTION
- 3 6" GALVANIZED TANK VENT WITH INSECT SCREEN, 6" FLANGED CONNECTION
- 4 10"Ø PERFORATED STAINLESS STEEL STILLING WELL FOR FLOAT CONTROLS
- 5 8" STAINLESS STEEL PROBE IN STILLING WELL FOR LEVEL MONITORING SYSTEM.
- 6 4" TANK DRAIN & VALVE. EL. (BY FIRE PROTECTION CONTRACTOR - FIRE PROTECTION CONTRACTOR SHALL CONNECT TO TANK OUTLET PROVIDED BY PLUMBING CONTRACTOR)
- 7 4" TANK OVERFLOW. EL. (BY FIRE PROTECTION CONTRACTOR - FIRE PROTECTION CONTRACTOR SHALL CONNECT TO TANK OUTLET PROVIDED BY PLUMBING CONTRACTOR)
- 8 8"Ø S&Y CONTROL VALVE & PIPING EL. (BY FIRE PROTECTION CONTRACTOR - FIRE PROTECTION CONTRACTOR SHALL CONNECT TO TANK OUTLET PROVIDED BY PLUMBING CONTRACTOR)
- 9 3'-0" X 3'-0" STAINLESS STEEL BILCO TANK ACCESS DOOR WITH HINGE & GAS TIGHT COVER.
- 10 STEEL ACCESS LADDER FROM FLOOR TO TOP OF TANK
- 11 STAINLESS STEEL LADDER INSIDE TANK
- 12 FIRE PROTECTION CONTRACTOR SHALL CONNECT TO TANK OUTLET & PROVIDE VALVES & EXTEND 8" FIRE PUMP SUCTION LINE DN. W/12"ØWTS
- 13 8" TANK OVERFLOW (BY FIRE PROTECTION CONTRACTOR - FIRE PROTECTION CONTRACTOR SHALL CONNECT TO TANK OUTLET PROVIDED BY PLUMBING CONTRACTOR & CONNECT TO 10"Ø STANDPIPE W/AIR GAP PROVIDED BY PLUMBING CONTRACTOR.)
- 14 8" FIRE SUCTION W/ ANTI-VORTEX PLATE
- 15 TANK LEVEL MONITORING SYSTEM - REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION
- 16 OSHA APPROVED LADDER & CAGE
- 17 4" TANK DRAIN & VALVE
- 18 6" BRONZE STRAINER POTTER-ROEMER No. 5956 W/ 6" VALVE
- 19 6" OVERFLOW PIPED TO OVERFLOW BASIN
- 20 3'-0" X 2'-0" X 2'-0" HIGH OVERFLOW BASIN W/ 8" FLOOR DRAIN
- 21 6" TANK FILL W/ 6" FLANGE CONNECTION
- 22 PERIMETER RAILING SYSTEM BY MANUFACTURE

## SHEET NOTES

1. ALL PIPING CONNECTION TO OR FROM BOTH TANKS SHALL BE MADE AT MID-POINTS TO MAINTAIN EQUAL FRICTION LOSSES.
2. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL LOCATION, SIZE, TYPE & QUALITY OF TANK OPENINGS. ALL OPENINGS SHALL BE INDICATED ON SHOP DRAWINGS & TANKS SUBMITTALS.
3. PROVIDE A PULL HOOK IN SLAB DIRECTLY OVER HATCH DESIGNED TO HOLD A MOTORIZED HOIST ASSEMBLY SUITABLE FOR A 2000 LB LOAD. COORDINATE FINAL TANK HATCH LOCATION WITH ALL TRADES TO MAINTAIN CLEAR ACCESS UP TO SLAB SUBMIT SUPPORT DETAILS FOR APPROVAL.
4. ALL SLEEVES THROUGH FLOOR OF PUMP OR TANK ROOMS SHALL BE WATER TIGHT.
5. REFER TO PLANS & RISER DIAGRAMS FOR ADDITIONAL INFORMATION AND REQUIREMENTS FOR TANK WORK.
6. REFER TO PLANS & RISER DIAGRAMS FOR ADDITIONAL INFORMATION AND REQUIREMENTS FOR TANK WORK.

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Key Plan:

Seal & Signature:

Signature: *Donald J. Montone*

Project No.: 1403A.000

Date: 22 APR 2016

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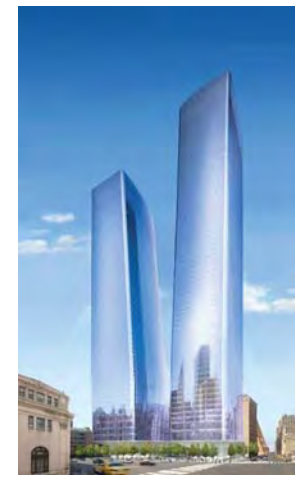
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Sheet No.: P-203

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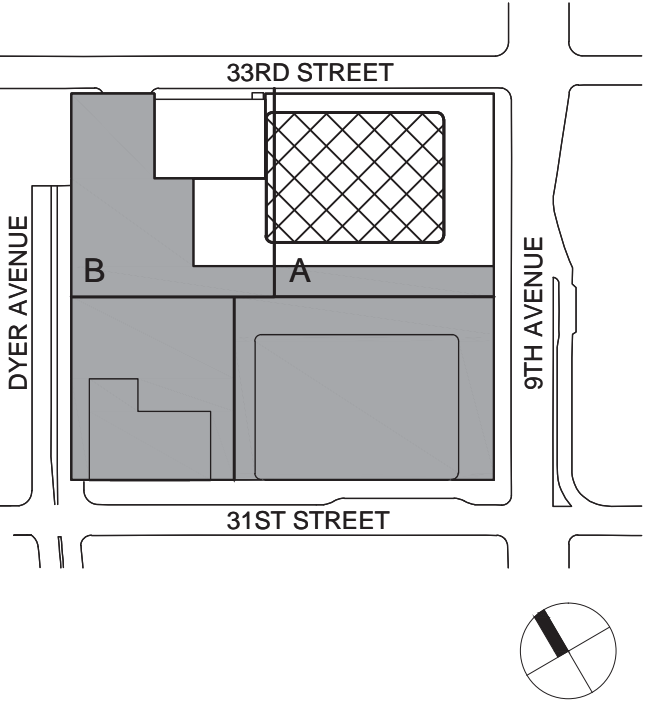
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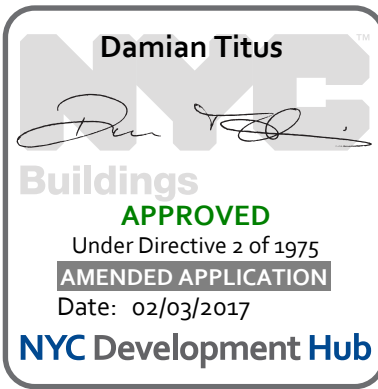
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## KEY NOTES

## SHEET NOTES

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2. FOR ADDITIONAL INFORMATION AND REQUIREMENTS REFER TO PLANS, RISER DIAGRAMS, DETAILS AND SPECIFICATIONS.
3. PLUMBING CONTRACTOR SHALL PREPARE 1/4" SCALE DETAILED PLANS AND SECTIONS OF EQUIPMENT ROOMS FOR REVIEW AND APPROVAL PRIOR TO POURING EQUIPMENT PADS OR SETTING SLEEVES. EQUIPMENT AND VALVES SHALL BE POSITIONED TO PROVIDE MAXIMUM AVAILABLE CLEARANCE AROUND AND BETWEEN ALL EQUIPMENT AND VALVES.
4. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL LOCATION, SIZE, TYPE & QUANTITY OF TANK OPENINGS. ALL OPENINGS SHALL BE INDICATED ON SHOP DWGS



PLUMBING CELLAR  
B1 PIT PUMP ROOM  
DETAIL

Project No.:

14030 A-000

Date:

27 APR 2016

Scale:

1/4" = 1'-0"

File No.:

P-205

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P-205

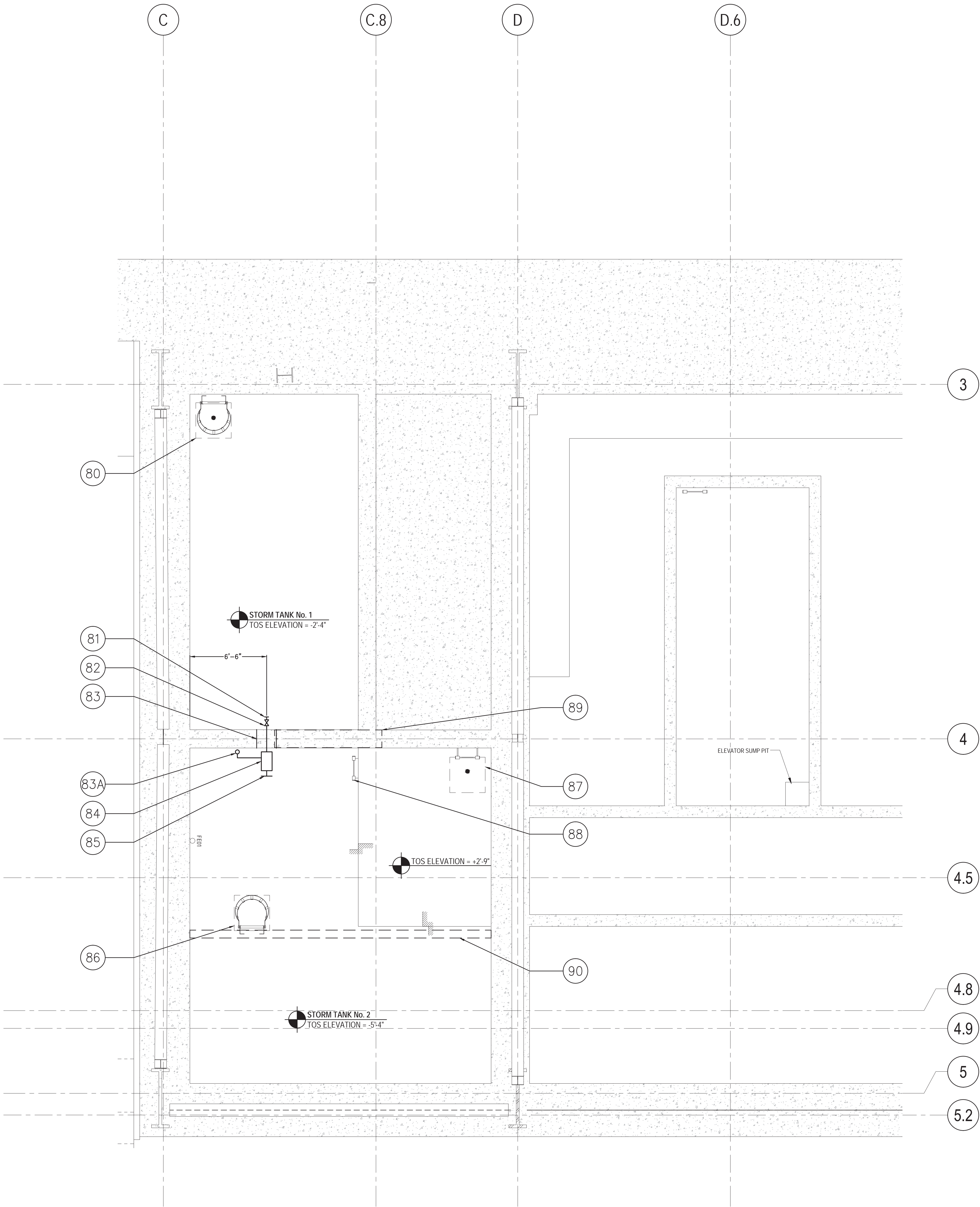
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P-205

## STORMWATER PIT LEVEL EQUIPMENT KEY

### No. DESCRIPTION

80. 3'-0" X 3'-0" ACCESS HATCH ABOVE WITH STAINLESS STEEL LADDER DOWN TO TANK FLOOR (BY OTHERS)
81. 16" NORMALLY OPEN END OF EQUALIZATION PIPE OUTLET.
82. 6" NORMALLY OPEN TANK EQUALIZATION PIPE (SCHEDULE 40-310 STAINLESS STEEL) WITH HIGH PERFORMANCE STAINLESS STEEL VALVE.
83. 20" WATERTIGHT SLEEVE ASSEMBLY (WTS) @ ELEVATION = -1'-0".
- 83A. COPPER CONTROL AIR LINE FROM PINCH VALVE UP TO AIR COMPRESSOR.
84. 16" STORM WATER DIVERSION VALVE TO ALLOW EQUALIZATION BETWEEN THE TWO TANK COMPARTMENTS OR TO ISOLATE EACH COMPARTMENT. PINCH VALVE - CLAWVAL MODEL NO. PVD016E6KXICS1.
85. 16" NORMALLY OPEN END EQUALIZATION PIPE OUTLET.
86. 3'-0" X 3'-0" ACCESS HATCH ABOVE WITH STAINLESS STEEL LADDER DOWN TO TANK FLOOR (BY OTHERS). LADDER TO BE SUPPORTED TOP AND BOTTOM WITHOUT RELYING ON A CONNECTION TO THE WALL.
87. 3'-0" X 3'-0" ACCESS HATCH ABOVE WITH STAINLESS STEEL LADDER DOWN TO TANK FLOOR (BY OTHERS).
88. 2'-0" WIDE STAINLESS STEEL LADDER DOWN FROM ELEVATION +2'-9" TO -5'-4" (BY OTHERS).
89. LOCATION OF SHEARWALL OPENING ABOVE.
90. LINE OF PUMP ROOM WALL ABOVE.



1 PART PLAN OF PIT LEVEL  
SCALE 1/2" = 1'-0"

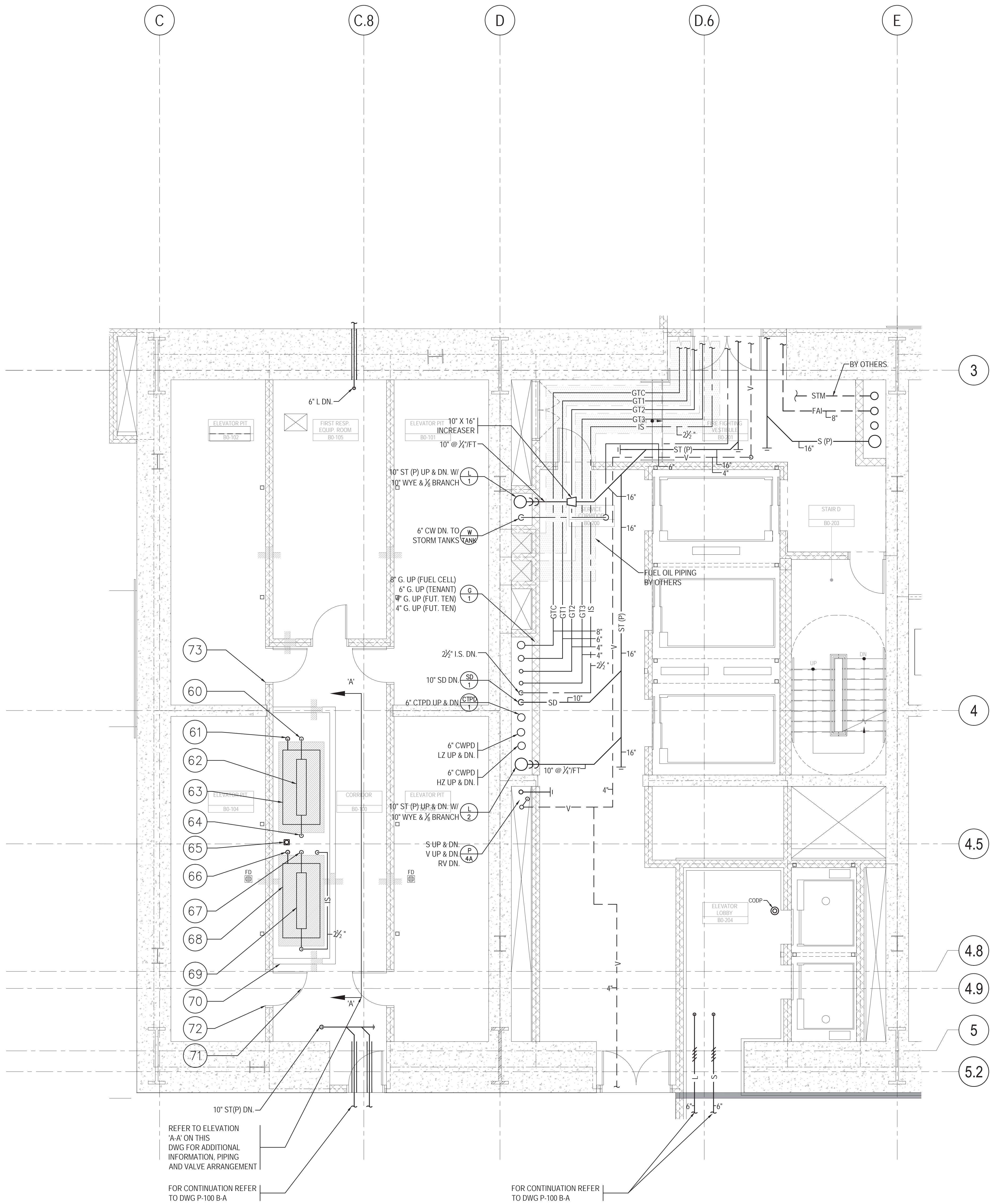
### NOTES

1. ALL PIPE, FITTINGS, SUPPORT, ETC. WITHIN TANK SHALL BE SCH. 40 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.
2. PROVIDE SUPPORTS FOR VALVES & PIPING FROM BOTTOM OF TANK WITHOUT PENETRATING OR DAMAGING WATERPROOFING SYSTEM. SUBMIT DETAIL FOR REVIEW & APPROVAL
3. STORM WATER DIVERSION (PINCH) VALVES
  - 3.A. ALL FLANGED CONNECTIONS TO ASSOCIATED PIPING MUST BE WITH A SINGLE PIECE (NO SPLIT FLANGES) FULL FACE METAL FLANGE OF SUITABLE MATERIAL. SUBMERGED PIPING SHOULD BE CONSTRUCTED OF NON-CORRODING MATERIAL (SUCH AS STAINLESS STEEL) AS DIRECTED BY THE ENGINEER.
  - 3.B. VALVES INSTALLED FOR SUBMERGED SERVICE SHOULD ALSO BE FURNISHED WITH A STAINLESS STEEL RETAINER AND STAINLESS STEEL HARDWARE

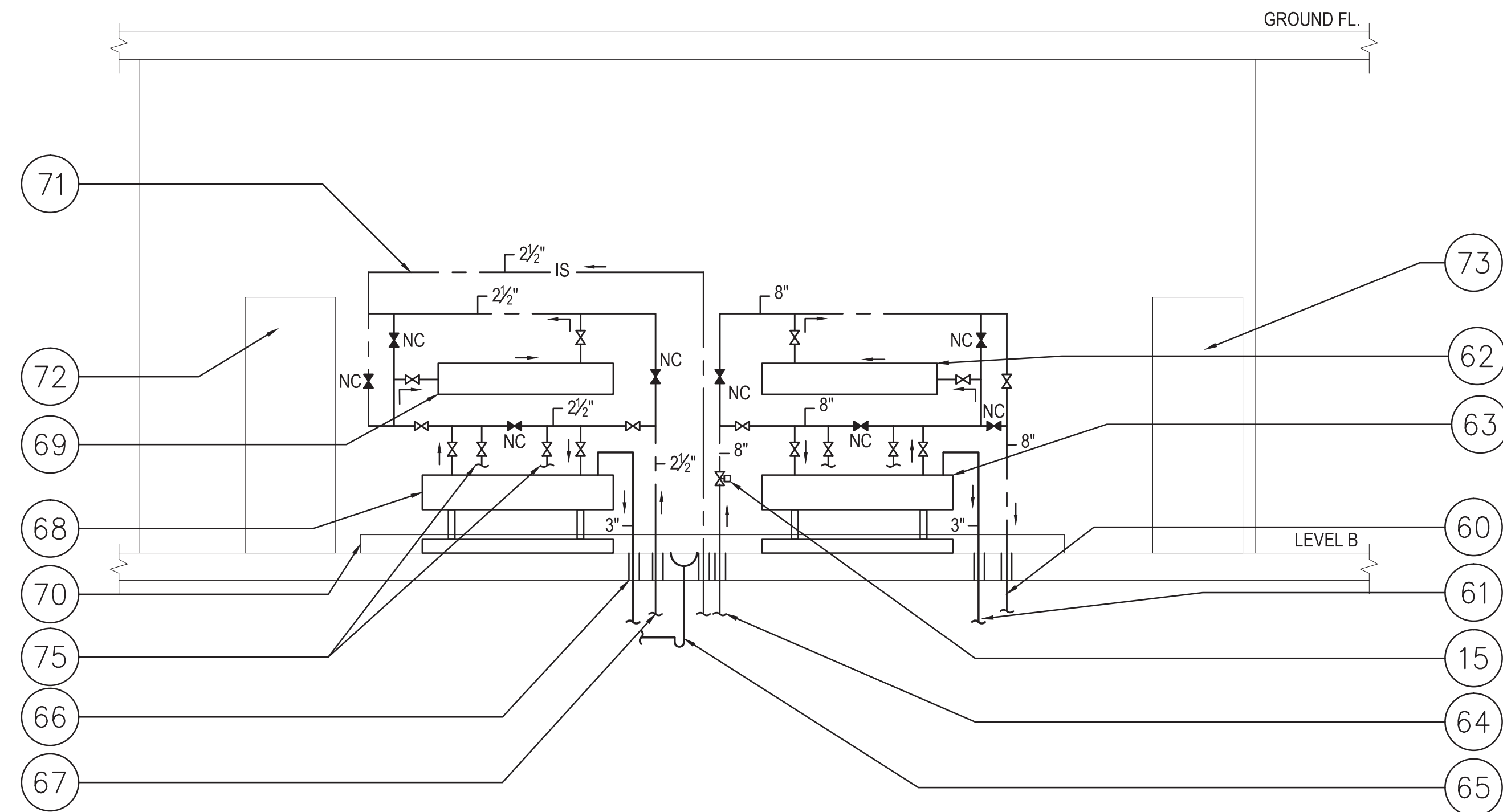








1 PART PLAN OF LEVEL B FILTRATION ROOM  
SCALE: 1/8" = 1'-0"



2 ELEVATION 'A-A' OF FILTRATION AND UV EQUIPMENT  
NOT TO SCALE


STORMWATER AND IRRIGATION FILTRATION EQUIPMENT KEY	
No.	DESCRIPTION
60	8" FILTRATION WATER RETURN (FWR) DOWN
61	3" FILTER FLUSH DISCHARGE (FFD) DOWN
62	UV SYSTEM - SWUV-NE-B-1
63	DUPLEX STORM WATER FILTRATION SYSTEM - SWFS-NE-B-1
64	8" SUMP DISCHARGE (FILTRATION MODE) DOWN
65	4" FLOOR DRAIN WITHIN CURBED AREA
66	2.5" IRRIGATION SUPPLY (IS) DOWN
67	3" FILTER FLUSH DISCHARGE (FFD) DOWN
68	DUPLEX IRRIGATION FILTRATION SYSTEM - ISFS-NE-B-1
69	UV SYSTEM - ISUV-NE-B-1
70	4" HIGH CURB AROUND FILTRATION EQUIPMENT
71	2.5" IRRIGATION SUPPLY (IS) TO SYSTEM
72	ELEVATOR PIT ACCESS DOOR BEYOND
73	ELEVATOR PIT ACCESS DOOR BEYOND
74	MOTORIZED PLUG VALVE WITH CONNECTION TO STORM WATER SUMP PUMP CONTROLLERS
75	PIPES & VALVES TO FILTER UNIT BEYOND

KEY NOTES

1. REFER TO PLUMBING NOTES ON DWG P-002 FOR ADDITIONAL INFORMATION, REQUIREMENTS AND CLARIFICATIONS.
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4. ALL FLOOR MOUNTED EQUIPMENT AND CONTROLLERS SHALL BE MOUNTED ON HOUSEKEEPING PADS AS REQUIRED BY THE SPECIFICATIONS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND VIBRATION ISOLATION REQUIREMENTS.
5. PROVIDE DRIP PANS BELOW ALL PIPING WITHIN 2'-0" FROM A VERTICAL LINE TO ELECTRIC CONTROLLERS, MOTORS, ETC. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
6. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL LOCATION, SIZE, TYPE & QUANTITY OF TANK OPENINGS. ALL OPENINGS SHALL BE INDICATED ON SHOP DWGS.
7. TROLLEY BEAMS BY PLUMBING CONTRACTOR - TROLLEY BEAM DESIGN INCLUDING SUPPORTS TO STRUCTURE SHALL BE SUBMITTED TO STRUCTURAL ENGINEER FOR APPROVAL & COORDINATION. FINAL ELEVATION SHALL BE BASED ON FIELD CONDITIONS & ACCESS REQUIREMENTS.

SHEET NOTES

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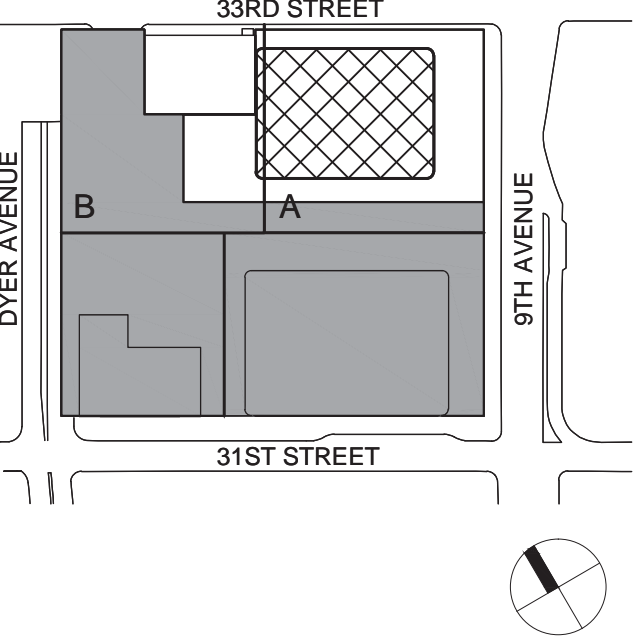
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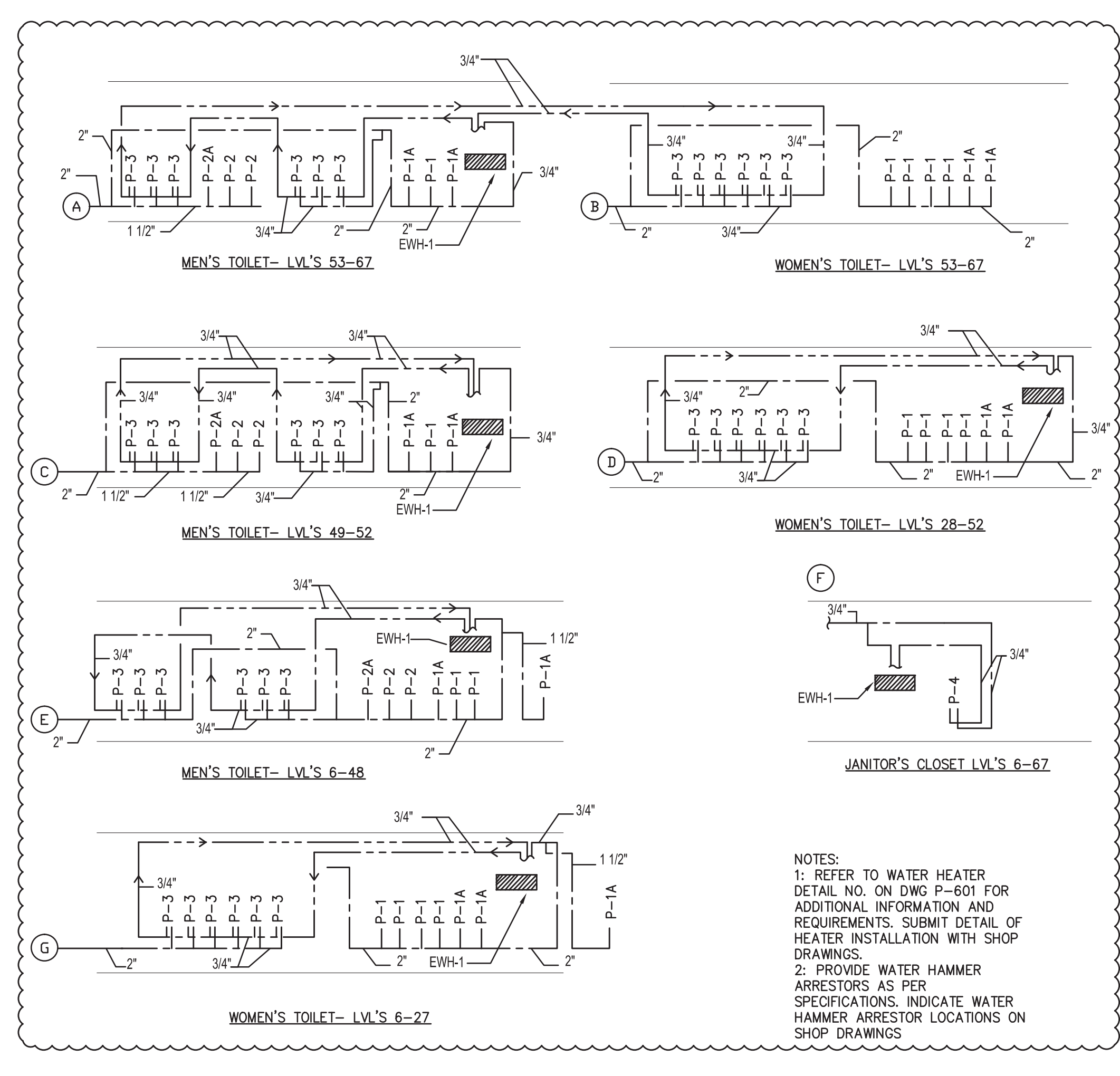
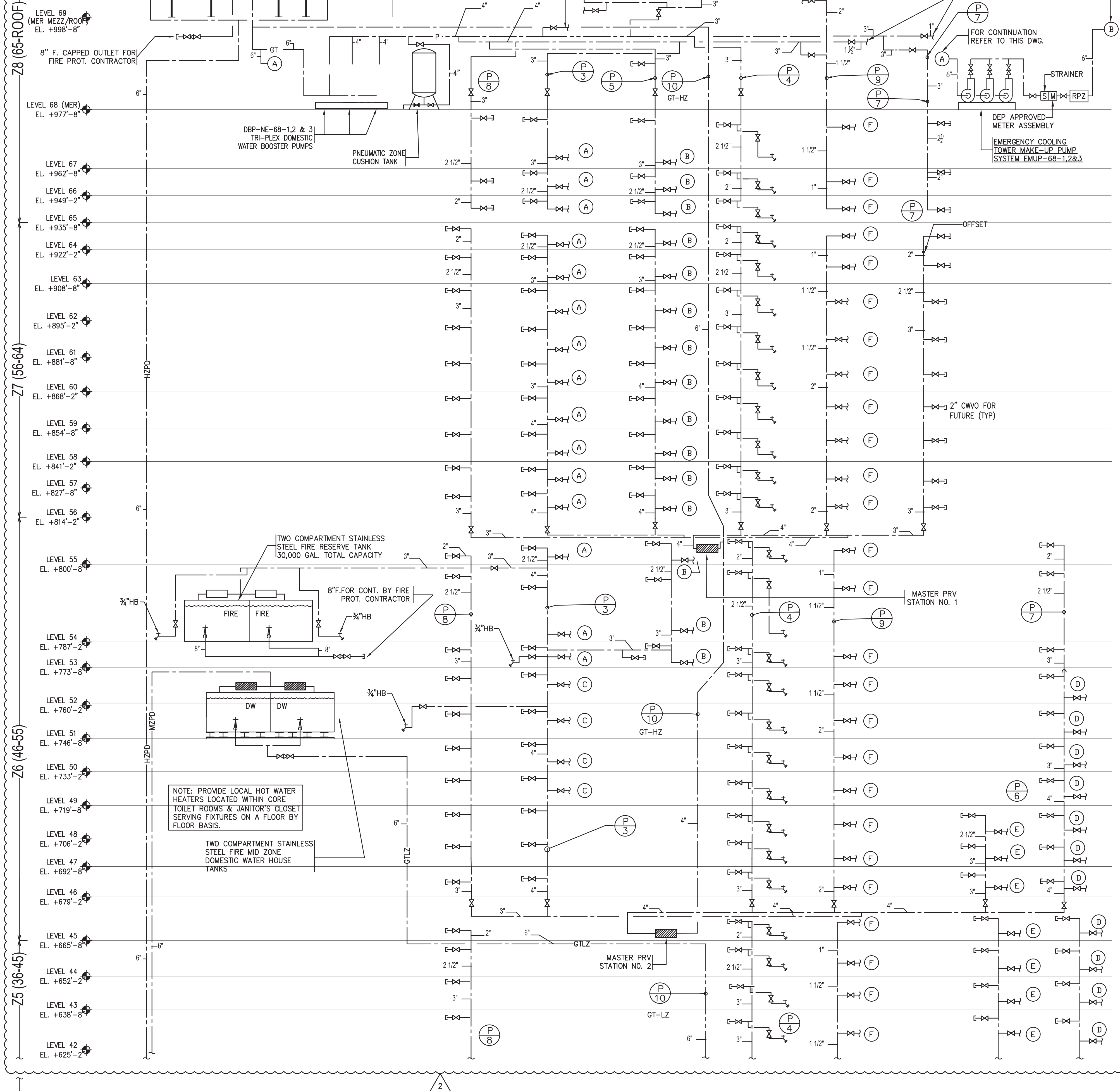
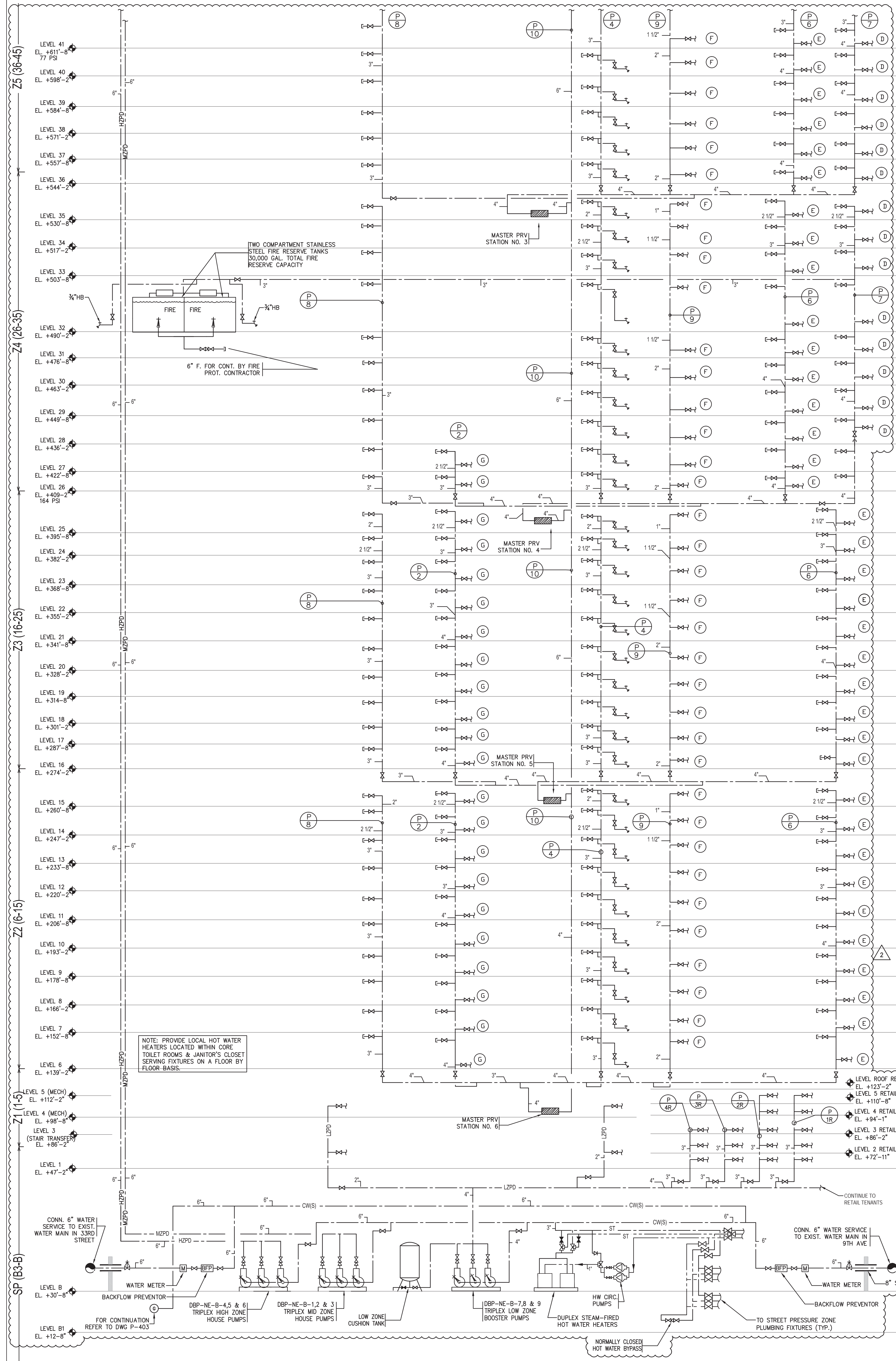
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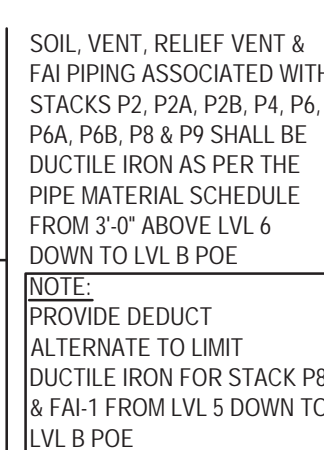
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**PLUMBING  
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RISER  
DIAGRAM**

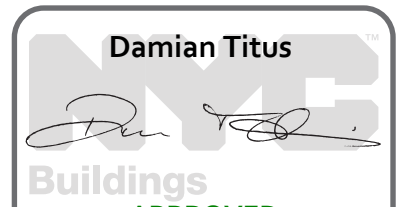
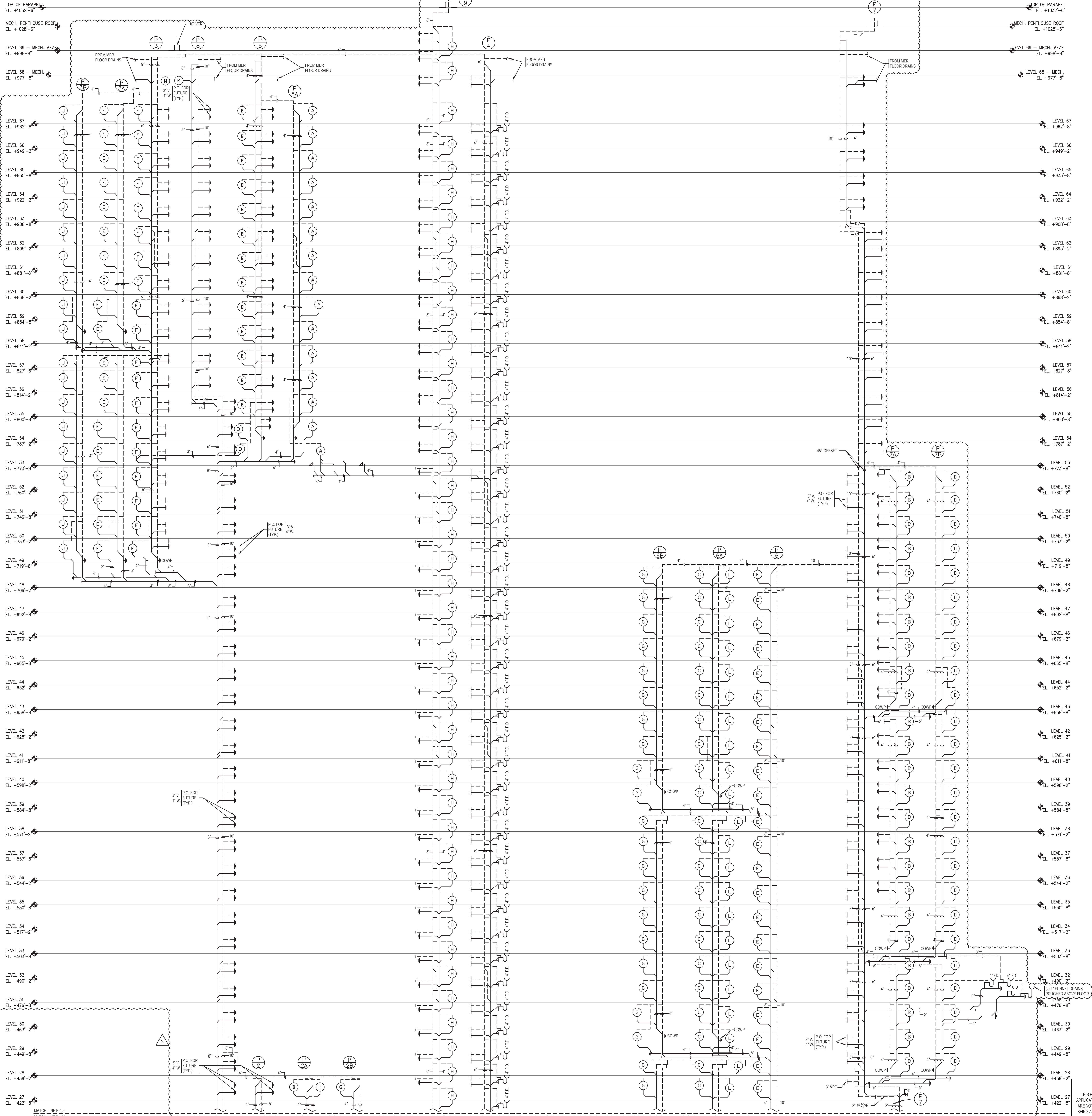
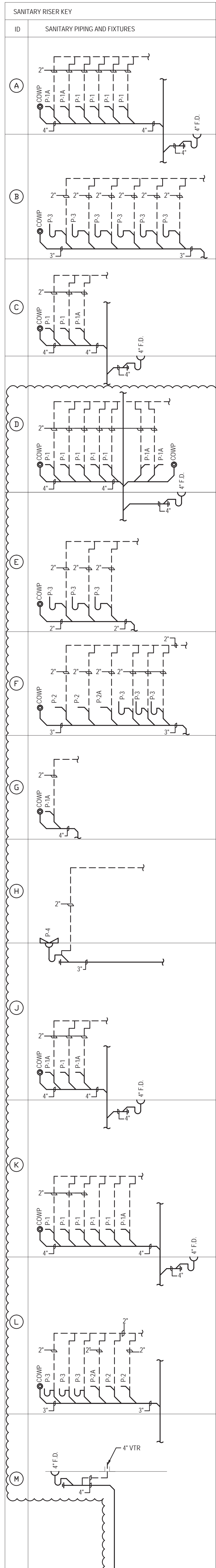
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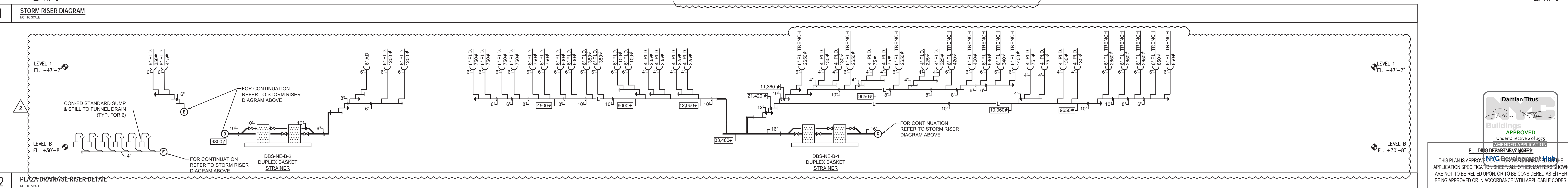
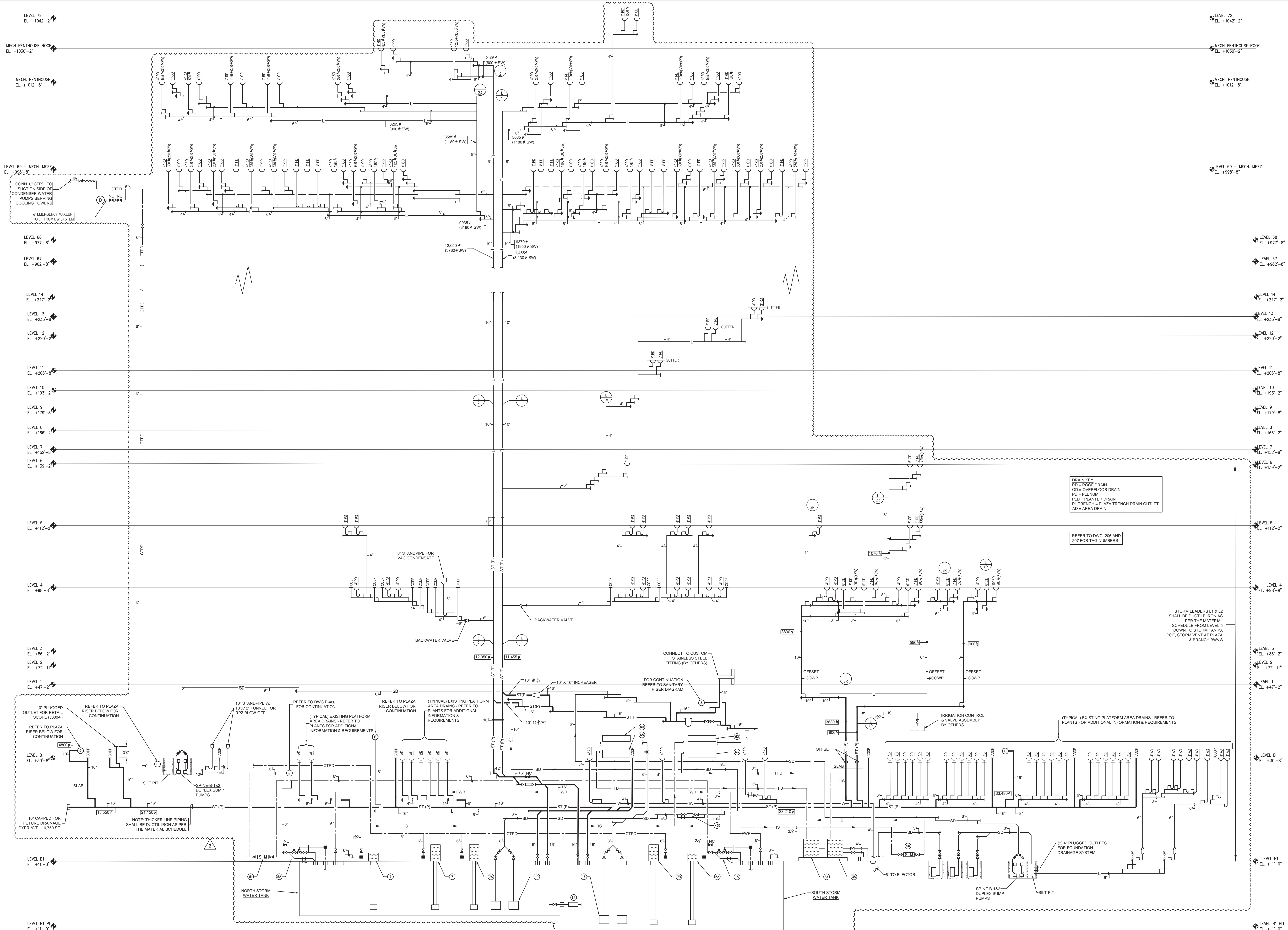
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**PLUMBING  
SANITARY RISER  
DIAGRAM -  
SHEET 2**

Project No.: 1400A.000  
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**PLUMBING STORM  
RISER DIAGRAMS**

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Page No.:







PUMP SCHEDULE													
PUMP DESIGNATIONS	SYSTEM	No. REQUIRED	GPM. / SFPH 60°F	MAX. TDH / P.S.I.	MECH. SEAL	MANUFACTURER	MODEL NUMBER	STAGES	VERT. CAP. / HORIZ. SPLIT	MAX. SPLIT PRESSURE (PSI)	H.P.	R.P.M.	VOLTS
DBP-NE-68-1,2 & 3	TRI-PLEX DOMESTIC WATER BOOSTER PUMP SYSTEM	3	75	185	●	P.P.C.	2TU12A-2	2	●	350 15	1800	460	3
DBP-NE-B-4,5 & 6	HIGH ZONE HOUSE PUMPS	3	195	1085	●	P.P.C.	3TU19A-4	4	●	800 150	3500	460	3
DBP-NE-B-1,2 & 3	MID ZONE HOUSE PUMPS	3	100	805	●	P.P.C.	2TU18A-4	4	●	400 60	3500	460	3
DBP-NE-B-7,8 & 9	LOW ZONE BOOSTER PUMPS	3	50	160	●	P.P.C.	1.5TU17G-4	4	●	400 5	1800	460	3
SP-NE-B-1,2	DUPLEX SUMP PUMPS	2	300	46	FLYGT	NP3102-256A		1	150	6.5	3600	460	3
SP-NE-B1-1,2	DUPLEX SUMP PUMPS	2	250	56	FLYGT	NP3102-256A		1	150	6.5	3600	460	3
STSP-NE-B1-1&2	STORM WATER TANK SUMP PUMPS (NORTH)	2	400	123	FLYGT	NP3153-274			175	23	3600	460	3
STSP-NE-B1-3&4	STORM WATER TANK SUMP PUMPS (SOUTH)	2	400	123	FLYGT	NP3153-274			175	23	3600	460	3
SEJ-NE-B1-1,2	DUPLEX SWAGE EJECTORS	2	250	45	FLYGT	FP3127-438		1	150	10	1750	460	3
SEJ-NE-B1-1,2	DUPLEX SWAGE EJECTORS	2	490	57	FLYGT	FP3153WL-485		1	150	15	1750	460	3
ESP-NE-B1-1	ELEVATOR SUMP PUMP (ONE PER PIT)	3	50	38	STANCOR	GAF-SE-100		1	150	1	3600	460	3
EMUP-NE-68-1,2&3	EMERGENCY CT MAKEUP PUMPS	3	165	140	●	P.P.C.	C1215AM		175	15	1800	460	3
NGP-NE-68-1,2	NATURAL GAS BOOSTER PUMP	2	20,000	15	ECLIPSE	AE0-5-5-20-15-35-SEQ-COM-N4		1	150	35	3600	460	3
HWC-NE-B-1,2	HOT WATER CIRCULATION PUMP	2	10	15	B&G	SERIES 60		1	175	1/2	1750	460	3
CTP-NE-B1-1,2&3	VERTICAL COOLING TOWER MAKEUP PUMPS	3	170	1130	●	P.P.C.	6 LB-16	16	175	100	3500	460	3
IBP-NE-B1-1&2	VERTICAL IRRIGATION PUMPS	2	75	15	●	P.P.C.	6 LB-5	5	150	7.5	3500	460	3

P.P.C. = Peerless Pump Co. (Packaged Pump Plant); B&G = BELL & GOSSETT

NOTES:  
1-PROVIDE ALTERNATE ADD PRICE FOR ONE (1) ADDITIONAL VERTICAL IRRIGATION PUMP. REFER TO DWG P-306 FOR ADDITIONAL INFORMATION

PLUMBING MATERIAL SCHEDULE													
SYSTEMS		PIPE			FITTINGS					JOINTS			
NOTES: 1. FOR REQUIRED PRESSURE RATINGS SEE RISER DIAGRAM. 2. ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE AUTHORITIES. 3. PROVIDE SUPPORTS & RESTRAINTS AT BASE OF STACKS - REFER TO DTL ON DWGS. 4. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. 5. INCLUDES PUMP DISCHARGE, (CWPD) COOLING TOWER MAKE-UP (CTPU), INCLUDES FILTERED WATER RETURN (FWR) PIPING, FILTRATION WATER SUCTION (FWS), PUMP SUCTION HEADER (PSH) AND IRRIGATION SUPPLY (I.S.) PIPING. 7. STARTING AT THE 5TH FL AND BELOW		* REQUIRED	STIL SCHED. 40 DUCTILE IRON ANMA/C151 BLACK GALVANIZED TYPE "X" PIPE TUBING DUCTILE IRON WATER PIPE (GEMANT UNED) SCHEDULE 40, 30# STAINLESS STEEL SCHEDULE 10, 30# STAINLESS STEEL SCHEDULE 40, 31# STAINLESS STEEL C.I. NO-HUB DUCTILE IRON ANMA C110/C163 SCHEDULE 40, 31# STAINLESS STEEL STD. C.I. EL-175# W.W.P. STD. WALL-300# W.W.P. VICTALUC SCH. 40 GALVANIZED STEEL CAST BRONZE-175# W.W.P. 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BASKET STRAINER SCHEDULE			
EQUIPMENT DESIGNATION	EQUIPMENT DESCRIPTION	UNIT SIZE	UV MODEL No.
DBS-NE-B-1	LARGE CAPACITY DUPLEX BASKET STRAINERS	16"	EATON FILTRATION LLC MODEL 52-DUCTILE IRON W/ 30 BASKET PERFORATIONS, DRAIN VALVES, VENT VALVES & GAUGES TAPS
DBS-NE-B1-1	LARGE CAPACITY DUPLEX BASKET STRAINERS	10"	

PRESSURE VESSELS AND HEATERS													
EQUIPMENT TAG	EQUIPMENT	No. REQUIRED	MODEL	STORAGE WATER TEMP (°F)	SIZE (GALS.)	SIZE	W.W.P.	TEST PRESSURE	SHELL THICKNESS	HEAD THICKNESS	BTU/HOUR/HEATER	HW	TEMP. RISE (°F)
DWH-NE-EWH-1	ELECTRIC HOT WATER HEATER	120	HUBBELL 20 GAL.	140°	----	3"x5"	150	300	----	----	----	4	100°
DWH-NE-B-1,2	STEAM-FIRED HOT WATER HEATER	2	P.K. 06 S	----	----	----	150	300	----	----	750,000	----	100°
PT-NE-B-1	PNEUMATIC TANK	1	AMTROL WX-457C	60°	528	48x96H	125	225	----	----	----	----	----
PT-NE-68-1	PNEUMATIC TANK	1	AMTROL WX-457C	60°	528	48x96H	125	225	----	----	----	----	----

P.K.: PATTERSON KELLEY (PROVIDE A LEAK DETECTION SYSTEM FOR THE WATER HEATERS TO BE PLACED ON FLOOR BENEATH WATER HEATERS. CONNECT LEAK DETECTION SYSTEM TO BMS.)  
NOTE: PROVIDE HOLBY TEMPERING VALVE AT EACH SET OF H.W. HEATERS

DRAIN SCHEDULE													
DESIGNATION	DRN. SERIES NO. (UNLESS OTHERWISE NOTED)	BODY	STRAINER	REMARKS	DESIGNATION	DRN. SERIES NO. (UNLESS OTHERWISE NOTED)	BODY	STRAINER	REMARKS	DESIGNATION	DRN. SERIES NO. (UNLESS OTHERWISE NOTED)	BODY	STRAINER
A	Z-530-DG	●	●	9"	●	Z-530-DG	●	●	9"	●	Z-530-DG	●	●
B	Z-100-C-EE-R	●	●	12"	●	Z-100-C-EE-R	●	●	12"	●	Z-100-C-EE-R	●	●
C	Z-100-C-EE-R-89	●	●	12"	●	Z-100-C-EE-R-89	●	●	12"	●	Z-100-C-EE-R-89	●	●
D	Z-415-0	●	●	6"	●	Z-415-0	●	●	6"	●	Z-415-0	●	●
E	Z-100-C-EE-R	●	●	12"	●	Z-100-C-EE-R	●	●	12"	●	Z-100-C-EE-R	●	●
F	Z-110-C-HD-VP	●	●	12"	●	Z-110-C-HD-VP	●	●	12"	●	Z-110-C-HD-VP	●	●
G	Z-533	●	●	12"	●	Z-533	●	●	12"	●	Z-533	●	●
H	Z-122	●	●	12"	●	Z-122	●	●	12"	●	Z-122	●	●
J	Z882-U4-NS	●	●	12"	●	Z882-U4-NS	●	●	12"	●	Z882-U4-NS	●	●
K	Z520-P-Y W/ Z328	●	●	9"	●	Z520-P-Y W/ Z328	●	●	9"	●	Z520-P-Y W/ Z328	●	●
L	Z-520-F-DG-Y	●	●	12"	●	Z-520-F-DG-Y	●	●	12"	●	Z-520-F-DG-Y	●	●
M	Z-180	●	●	12"	●	Z-180	●	●	12"	●	Z-180	●	●
N	Z-100-CE-R-84	●	●	12"	●	Z-100-CE-R-84	●	●	12"	●	Z-100-CE-R-84	●	●
P	Z-100-CE-R-84-89	●	●	12"	●	Z-100-CE-R-84-89	●	●	12"	●	Z-100-CE-R-84-89	●	●
R	Z-530-DG	●	●	9"	●	Z-530-DG	●	●	9"	●	Z-530-DG	●	●

NOTE: THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DRAIN TYPES & OPTIONS WITH CONSTRUCTION MANAGER AND CONFIRMING THE CONSTRUCTION MATERIALS, THICKNESS, LENGTHS FOR UNDER TRENCH DRAINS, AND FINISHED FLOOR ELEVATIONS (I.E. EXTENSION HEIGHTS, GRAVEL TOP HEIGHTS, WATERPROOFING MATERIALS, ETC.) PRIOR TO PURCHASING EQUIPMENT.

ID#	ARCH ID#	FIXTURE TYPE	LOCATION	SIZE	MANUFACTURER	MODEL #	FAUCET / FLUSHOMETER / VALVE	NOTES
P-1	PF01	TOILET	TENANT, BIKE ROOM, BOH/STAFF	1.28 GPF	TOTO	CT708E(G)	TOTO TET1LN32	WALL HUNG, TOP SPUD: ECOPOWER
P-1A	PF02	TOILET - ADA	TENANT, BIKE ROOM, BOH/STAFF	1.28 GPF	TOTO	CT708E(G)	TOTO TET1LN32	WALL HUNG, TOP SPUD: ECOPOWER, MOUNTED AT ADA HEIGHT
P-2	PF03	CORE TOILET ROOMS	CORE TOILET ROOMS	1.8 GPF	TOTO	UT105U(G)	TOTO TET1UN12	TOP SPUD: EXPOSED AUTOMATIC FLUSH VALVE: ECOPOWER
P-2A	PF04	URINAL - ADA	CORE TOILET ROOMS	1.8 GPF	TOTO	UT105U(G)	TOTO TET1UN12	TOP SPUD: EXPOSED AUTOMATIC FLUSH VALVE: ECOPOWER, MOUNTED AT ADA HEIGHT
P-3	PF05	LAVATORY	CORE TOILET ROOMS	0.17 GPC	TOTO	LT221	TOTO TEL125 W/ TH559EDV432	SELF-CLOSING, UNDERCOUNTER MOUNT SINK: THERMAL MIXING FAUCET; LAMINAR FLOW: 1 GPM W/ 10 SEC CYCLE
P-3A	PF06	LAVATORY - ADA	CORE TOILET ROOMS	0.17 GPC	TOTO	LT221	TOTO TEL125 W/ TH559EDV432	SELF-CLOSING, UNDERCOUNTER MOUNT SINK: THERMAL MIXING FAUCET; MOUNTED AT ADA HEIGHT; LAMINAR FLOW: 1 GPM W/ 10 SEC CYCLE
P-4	PF07	MOP SINK	JANITOR CLOSET	---	JUST MANUFACTURING	C-2523	FIAT 830-AA	STAINLESS STEEL
P-7	PF08	SHOWER	LOCKER ROOMS	1.5 GPM	MOEN	52716EP15	MOEN 8370 MIXING VALVE	FIXED SHOWERHEAD
P-7A	PF09	SHOWER - ADA	LOCKER ROOMS ADA STALL BOH ADA LOCATIONS	1.5 GPM	MOEN	52236GBM15	MOEN 8370 MIXING VALVE	MOUNTED AT ADA HEIGHT
P-8	PF10	PANTRY SINK	BREAK ROOMS	1.5 GPM	ELKAY	LR2022	ELKAY LKE4121	DROP IN SINK: SINGLE LEVER MANUAL FAUCET
P-9		DRINKING FOUNTAIN	VARIABLE	---	ELKAY	EZ5TLGRWSSK		

## FILTRATION AND UV SYSTEM SCHEDULE

EQUIPMENT DESIGNATION	EQUIPMENT DESCRIPTION	OUTLET SIZE	TOTAL SYSTEM FLOW (GPM)	NUMBER OF UNITS PER SYSTEM	FLOW RATE PER FILTER/UV	BACKWASH VOLUME/FLOW RATE	FILTER MODEL No.	UV MODEL No.
SWFS-NE-B-1&2	STORM WATER FILTRATION SYSTEM	8"	800 GPM	2	800 GPM	30/250	DUPLEX TEKLEEN-MODEL 2UPF4-UP-GAF, 800 GPM AT 50 MICRONS COMPLETE WITH ELECTRONIC CONTROLLER 2" ELECTRIC BALL VALVE WITH 150 GAL. SURGE TANK	TROJAN TECH INC. UV LOGIC MODEL No. 08AL30-GAF
SWUV-NE-B-1	STORM WATER UV SYSTEM	10"	200 GPM	1	200 GPM	20/200	DUPLEX TEKLEEN-MODEL 2UPF4-UP-GAF, 200 GPM AT 50 MICRONS COMPLETE WITH ELECTRONIC CONTROLLER 1.5" ELECTRIC BALL VALVE WITH 150 GAL. SURGE TANK	TROJAN TECH INC. UV LOGIC MODEL No. 08AS20-GAF

NOTES:  
1-REFER TO SPECIFICATIONS ON THIS DWG. FOR ADDITIONAL INFORMATION & REQUIREMENTS  
2-DUPLEX FILTER SHALL BE MOUNTED SIDE-BY-SIDE WITH UV ABOVE. ENTIRE SYSTEM TO BE PREPACKAGED WITH VALVING AS SHOWN ON DWG P-207



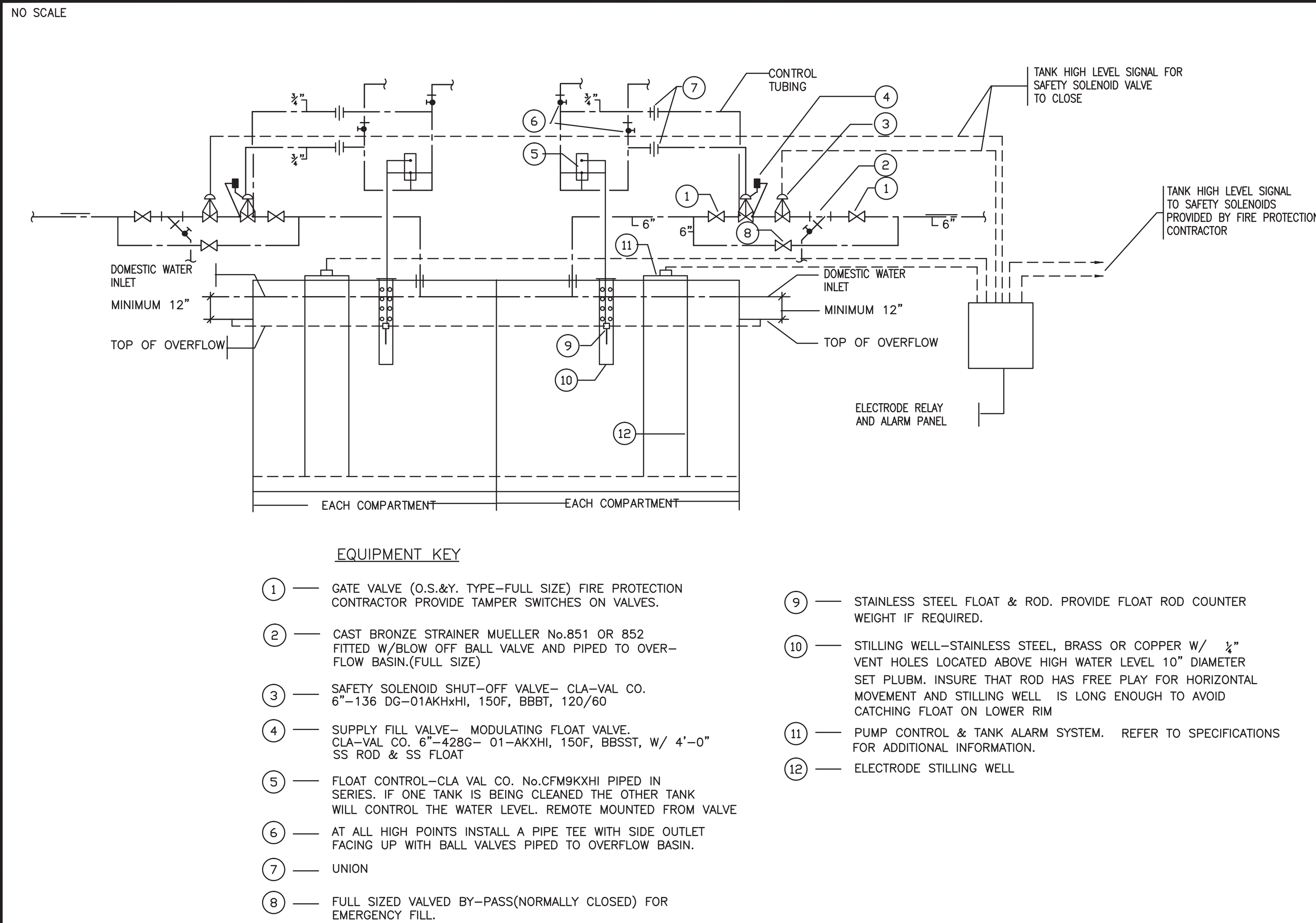




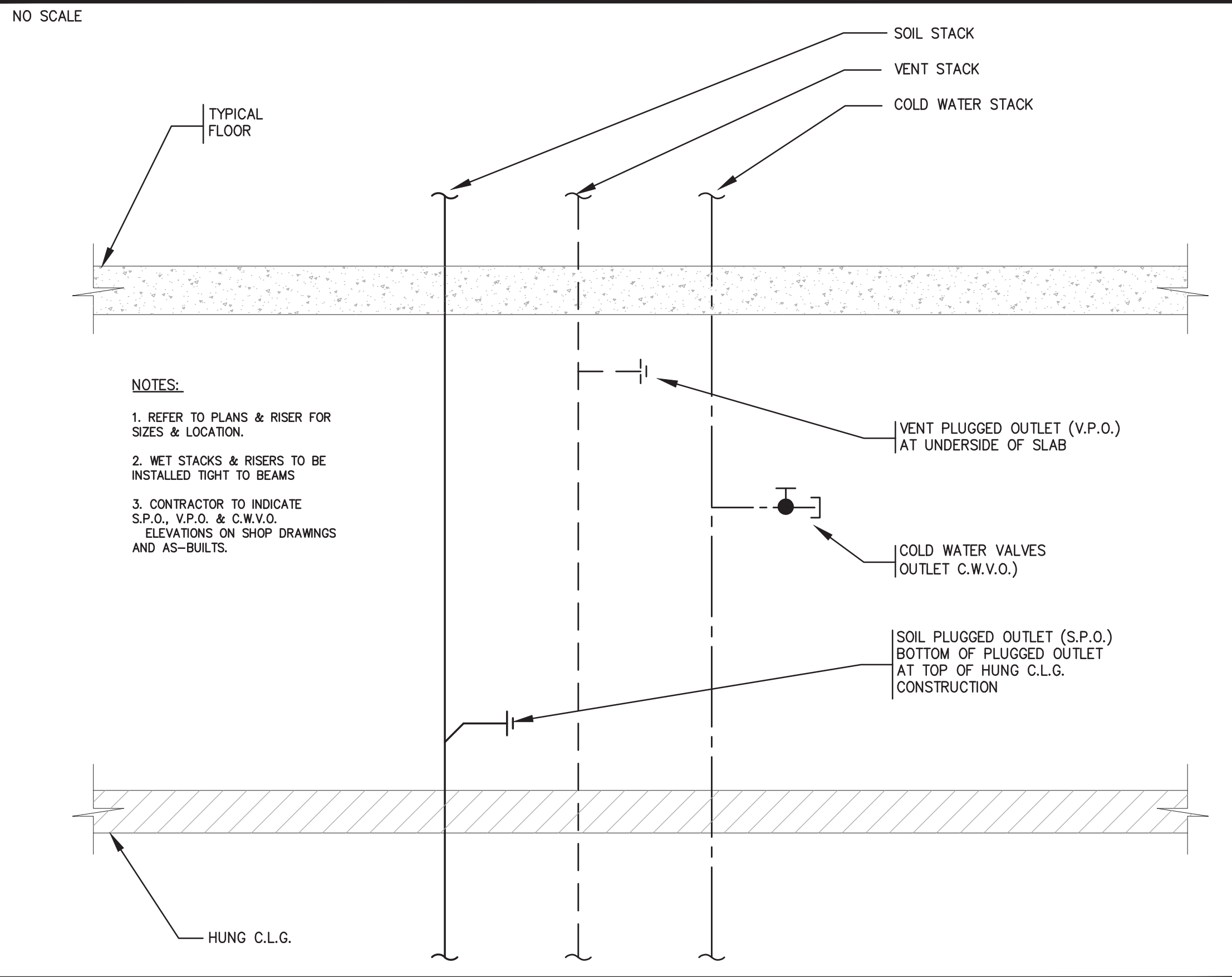




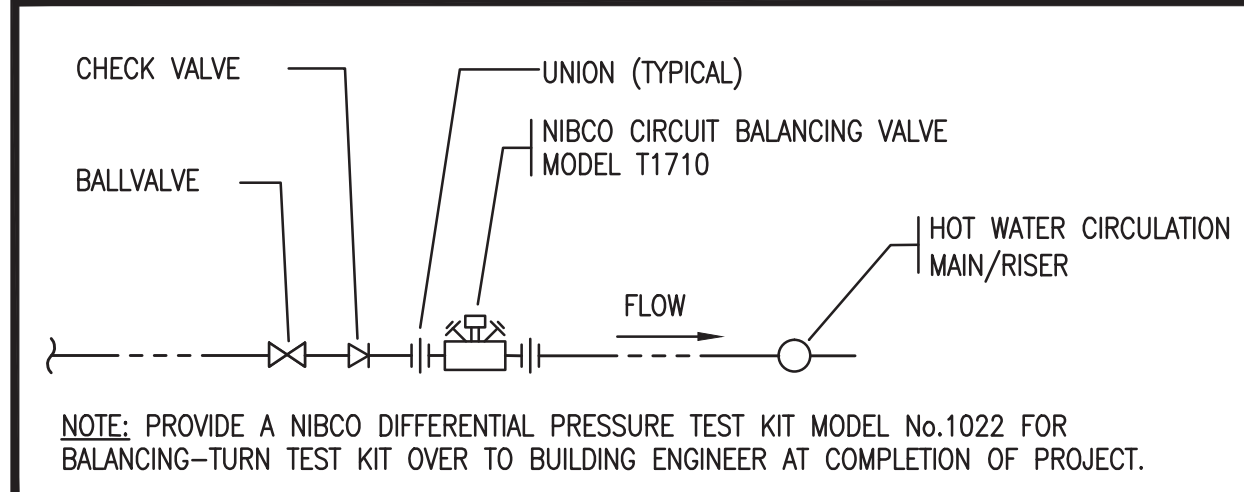
# SCHEMATIC DIAGRAM OF SUPPLY PIPING AND CONTROLS FOR THE FIRE RESERVE TANKS



# TYPICAL LOCATION OF PLUGGED AND CAPPED OUTLETS ABOVE HUNG CEILING

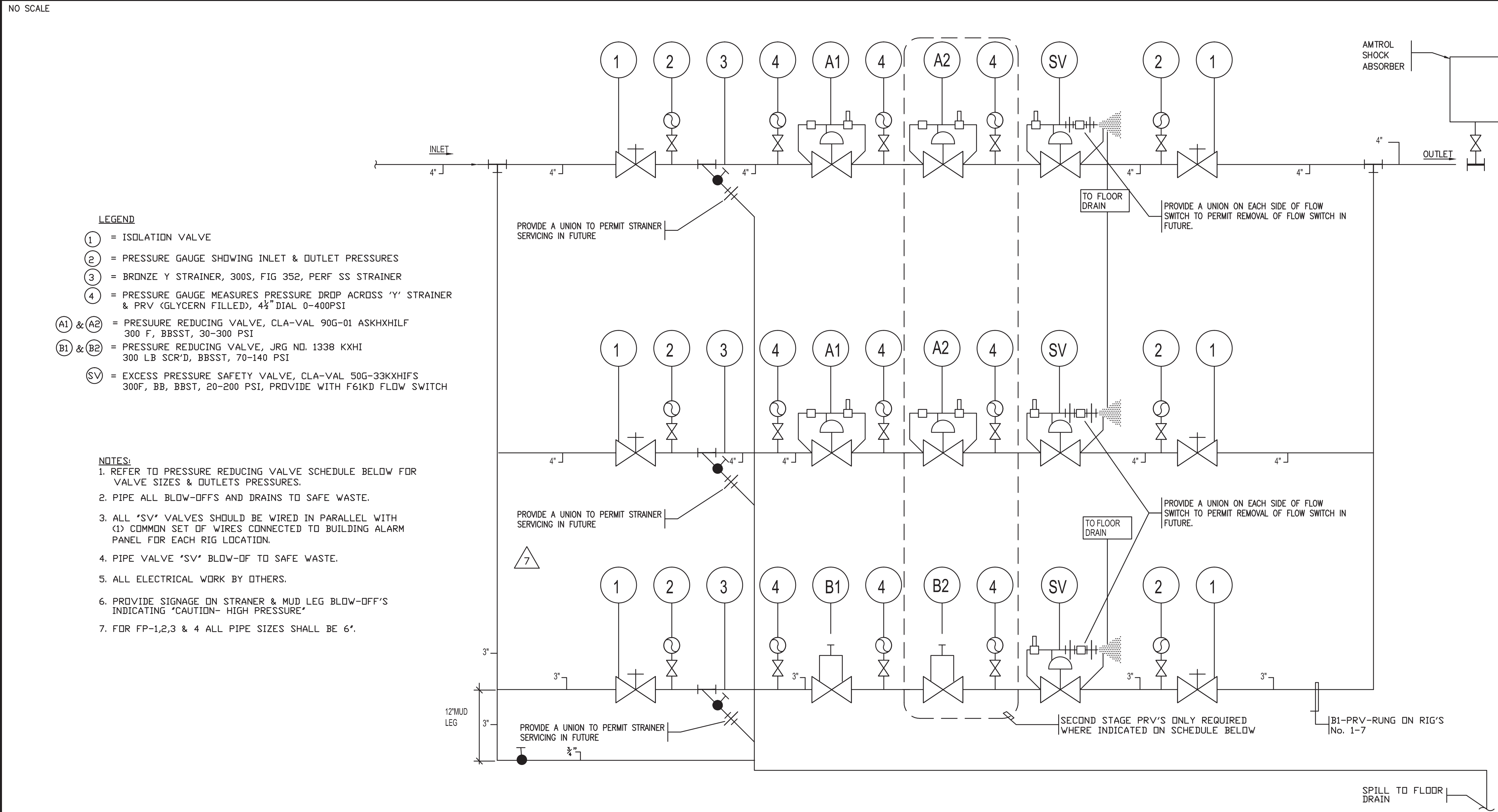


# BALANCING VALVE RIG ( - - - )



# KEY NOTES

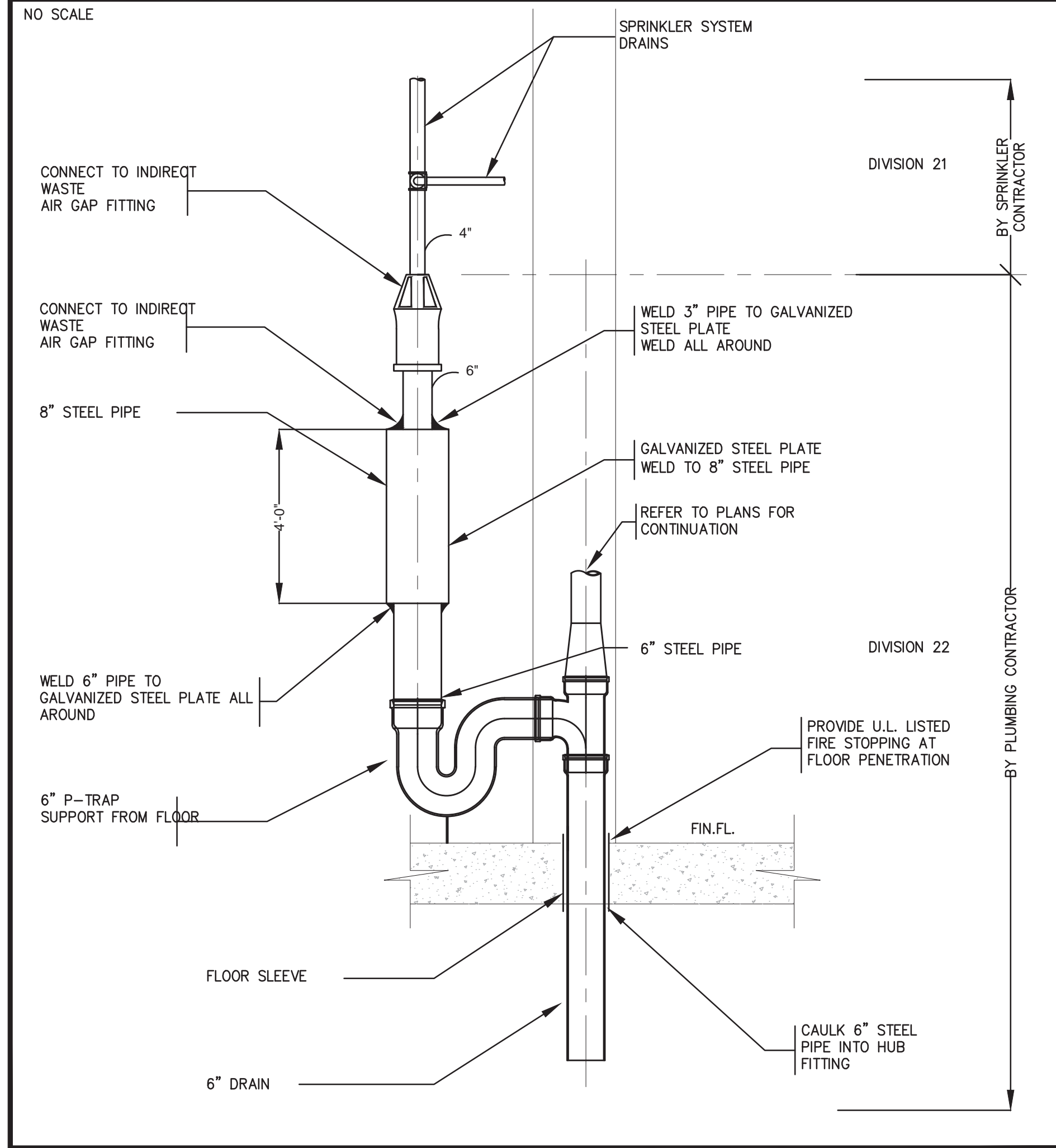
# MAIN PRV STATION DETAIL



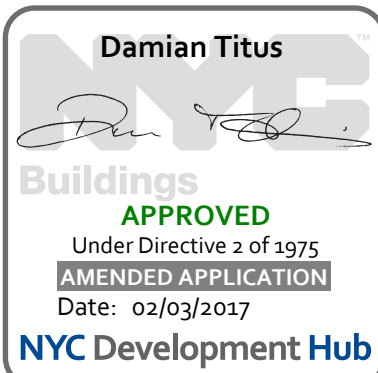
# PRESSURE REDUCING VALVE SCHEDULE

PRV RIG NO.	LOCATION	AREA SERVED	MAX. GPM	MAXIMUM INLET PRESSURE (P.S.I.)	PRV "A1"		PRV "A2"		PRV "B1"		PRV "B2"		SV	SAFETY VALVE SIZES BY PRV RUNG		
					1ST STAGE	2ND STAGE	1ST STAGE	2ND STAGE	1ST STAGE	2ND STAGE	1ST STAGE	2ND STAGE		A1	A1	B1
1	55TH FLOOR	ZONE 7	200	100	3"	83	3"	—	2"	—	2"	85	95	3"	3"	2"
2	45TH FLOOR	ZONE 6	200	150	3"	140	3"	83	2"	140	2"	85	100	3"	3"	2"
3	35TH FLOOR	ZONE 5	200	100	3"	140	3"	83	2"	140	2"	85	95	3"	3"	2"
4	25TH FLOOR	ZONE 4	200	160	3"	160	3"	83	2"	140	2"	85	100	3"	3"	2"
5	15TH FLOOR	ZONE 3	200	215	3"	83	3"	—	2"	—	2"	85	100	3"	3"	2"
6	4TH FLOOR	ZONE 2	200	285	3"	83	3"	—	2"	—	2"	85	100	3"	3"	2"

# TYPICAL SPRINKLER FUNNEL DRAIN



# SHEET NOTES



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.



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

Client  
**Brookfield**

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

Architecture/Structural Engineering

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

Civil Engineering

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

MEP Engineering

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

Vertical Transportation

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

Sustainable Design

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

Geo-Technical Engineering

Mueser Rutledge Consulting Engineers  
14 Penn Plaza, 225 W. 34th Street #810,  
New York, NY 10122

Landscape Consultant

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

Security Consultant

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

Blast Consultant

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

Acoustical Consultant

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

Vibration Consultant

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

Code Consultant

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

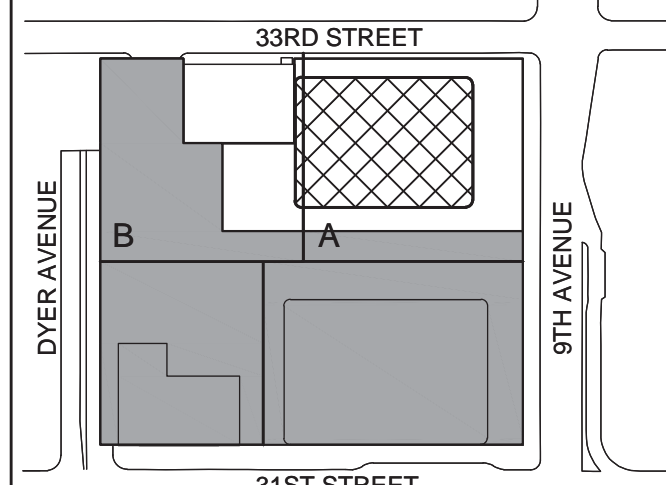
Facade Maintenance Consultant

Entek Engineering LLC  
186 Ames Street, Hackensack, NJ 07601

Wind Tunnel Consultant

Rowan Williams Davies & Irwin Inc.  
650 Woodlawn Road West, Guelph  
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Key Plan:



Seal & Signature:



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PLUMBING  
DETAILS - SHEET 3

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