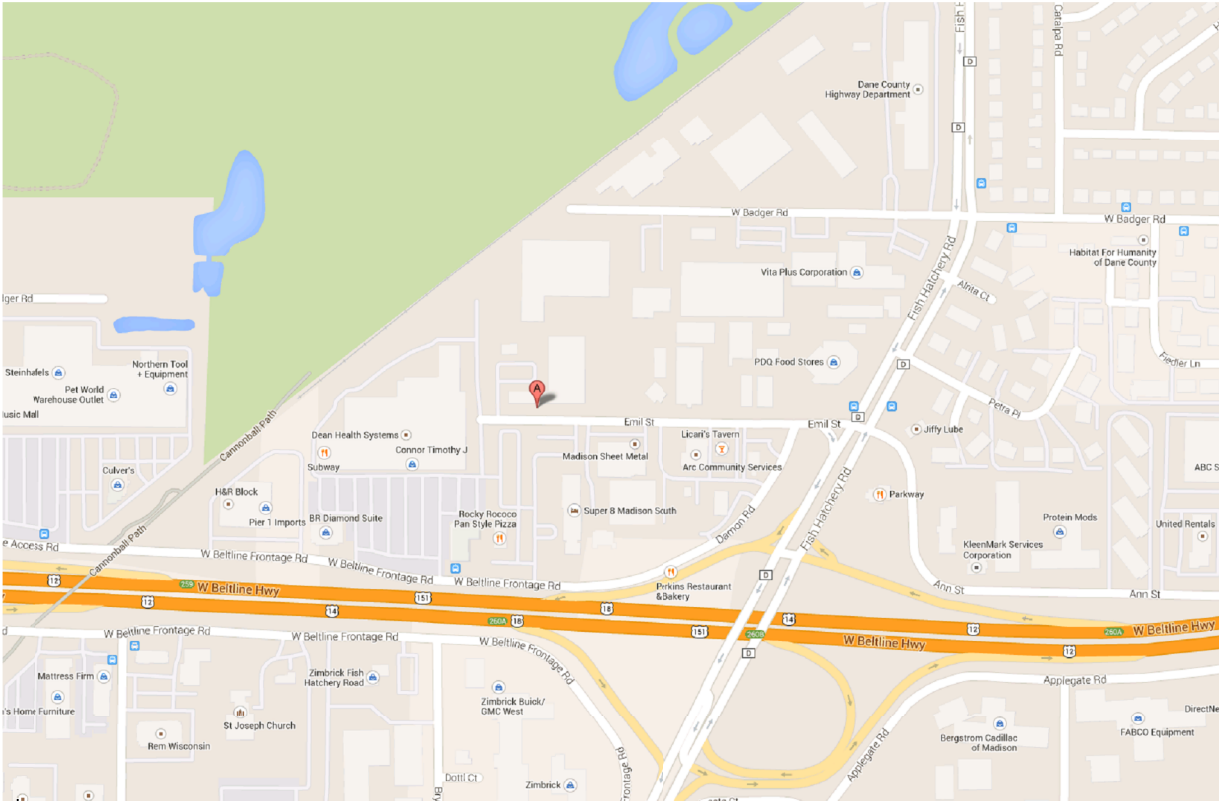
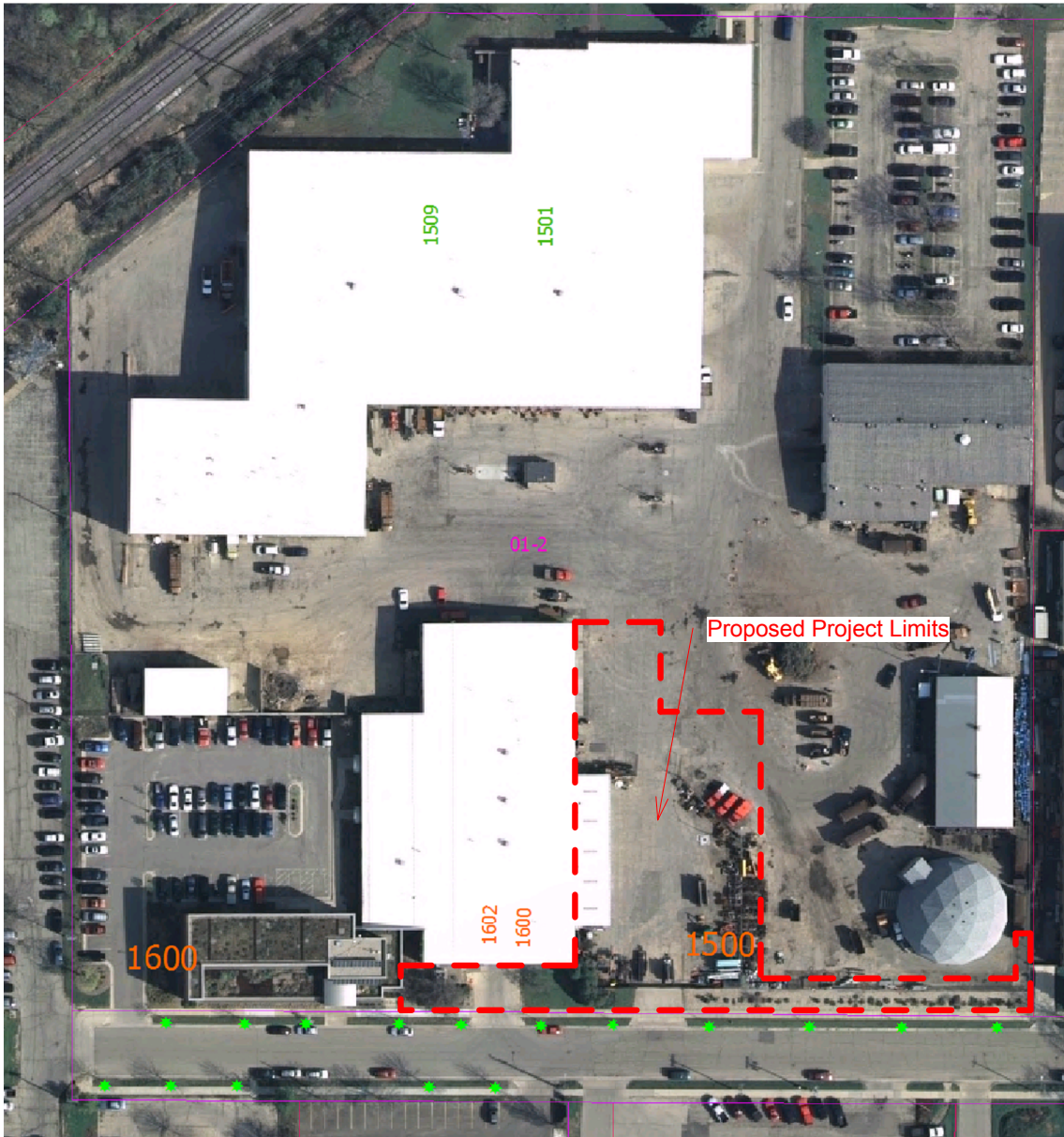


Engineering Operations Building Addition

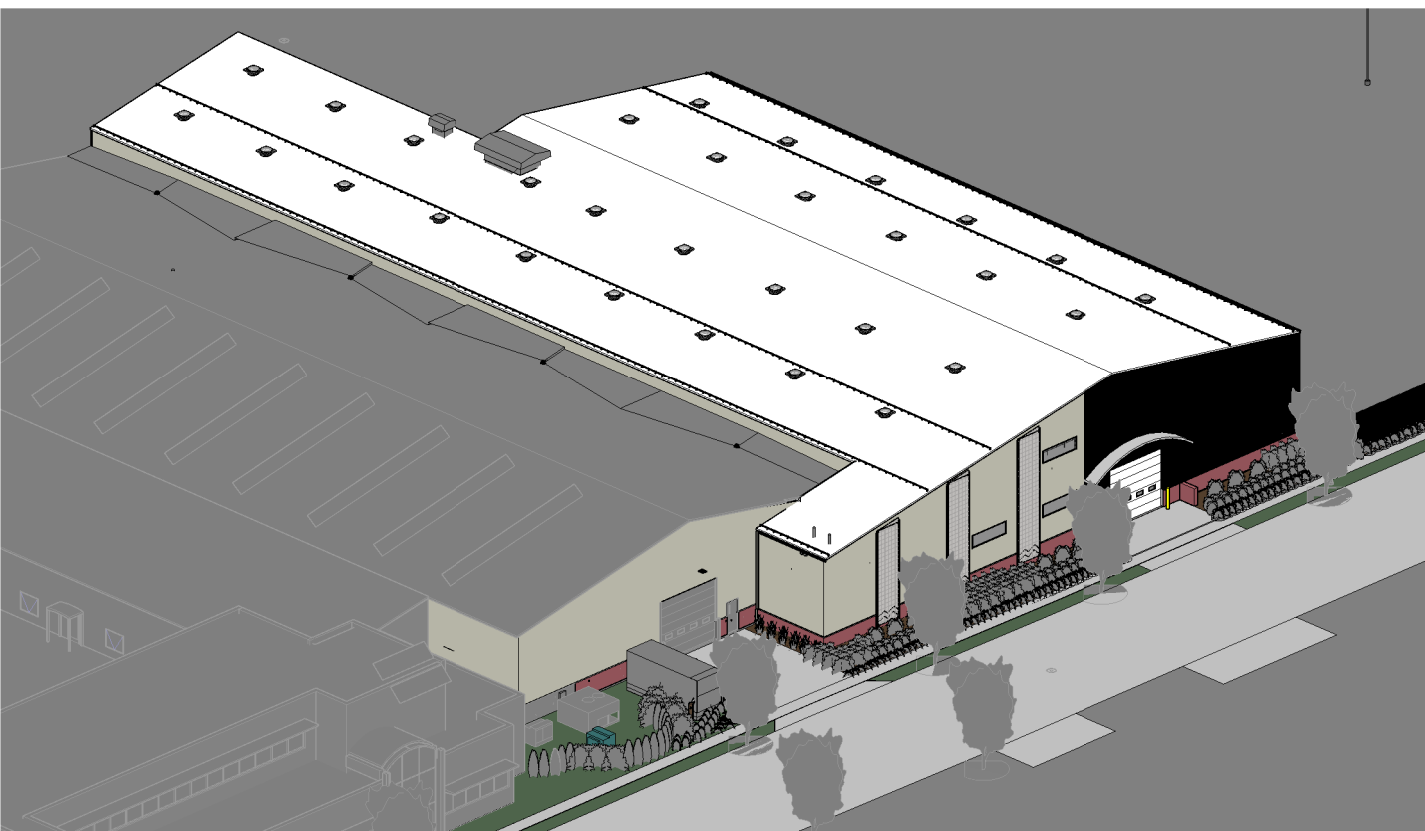
Sheetlist Construction Documents	
Sheet Number	Sheet Name
00	Cover
01	General Project Data
C 100	Existing Conditions
C 110	Proposed Conditions
C 120	Utilities
C 140	Erosion Control Plan
C 150	Site Details
C 160	Grading Plan
C 200	Utilities Supplemental Information
A 001 D	Demolition A and M
A 050	Architectural Schedules
A 105	First Floor - All
A 110	Elevations
A 150	Roofplan
A 200	Garage East 1st Floorplan
A 210	Garage East 2nd Floorplan
A 220	Garage West
A 230	Shop
A 240	Floor Details Garage East
A 300	Architectural Details
A 301	Architectural Details
A 302	Architectural Roof Details
A 303	Architectural Flashing Details
S 100	Foundation Plan
S 200	Mezzanine Framing Plan
S 201	Roof Framing Plan
S 202	Solar Panel and Crane Rail Structure
S 301	Building Sections
S 302	Building Sections
S 401	Wall Sections and Details
S 402	Wall Sections and Details
S 403	Wall Sections and Details
S 404	Wall Sections
S 501	Structural Details
EE 100	Existing First Floor Electrical
EE 110	Existing Second Floor Electrical
EE 130	Existing One-Line
EE 140	Existing Garage West Panel
EL 100	Garage East Lighting
EL 110	Garage Mezzanine Lighting
EL 130	Shop Lighting
EP 100	Garage West Power
EP 110	Garage Power Mezzanine
EP 120	Garage West Power
EP 130	Shop Power
ED 100	Schedules and Details
ED 110	Schedules and Details
ED 120	Schedules and Details
ED 130	Schedules and Details
ED 140	Schedules and Details
ED 150	Schedules and Details
ED 160	Schedules and Details
ED 170	Schedules and Details
FP 100	Fire Protection Overall Plan and Details
FP 101	Fire Protection Garage Plans
M 001	HVAC Equipment and Ventilation
M 005	HVAC Devices and Gas Piping
M 010	HVAC Controls
MD 200	Garage and Shop
MD 220	Shop & Garage Sections
MD 240	Ductwork 3D
MD 300	Ductwork Details
MP 200	Boiler Room Piping
MP 210	Garage Piping
MP 230	Garage and Shops Piping
MP 240	Piping 3D
MP 300	Piping Details
P 001 D	Plumbing Demo Plan
P 100	Plumbing Schedules and Calculations
P 110	Underground Plumbing
P 120	Above Ground Plumbing
P 130	Plumbing Sections
P 140	Sanitary DWV Isometric
P 150	Domestic Water Isometric
P 200	Roof Plan and Sections



Location Map



Existing Aerial View



8 Project - Bird's View from SW



7 Project - Bird's View from SE



5 Project - Bird's View from NE

City of Madison
Facilities Maintenance
1600 Emil St.
Madison, WI 53713



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Engineering Division

Engineering Operations
Building Addition

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Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

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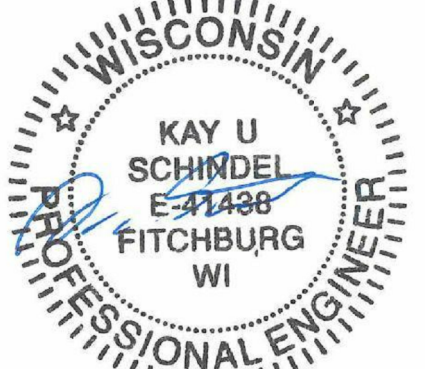
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kschindel@cityofmadison.com

Electrical, Structural and Fire Sprinkler Design
wasperformed by sub-consultants who have
stamped their respective plans.



Cover

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GENERAL NOTES:

1. All scheduled numbers and amounts of material and equipment are for contractor's convenience only. Contractor shall count and measure independently for bidding and ordering purposes. All scheduled numbers, lengths and other amounts may be incorrect and owner is not liable for mismatch.
2. Notes applied to single items may apply to all like items on view.
3. UTILITY CONNECTIONS: where work indicated includes installation of utilities (Gas, Power, Water, Sewer, Phone etc.) Provide all the required work that normally is not done by the Utility. Contractor shall inquire with Utilities to learn about the Scope of the Utility's work.

SPECIAL SITE CONDITIONS:

1. Hours of operation are limited to 7 a.m. to 7 p.m. Monday through Saturday and Sunday 10 a.m. through 7 p.m. unless approved otherwise.
2. Contractor trailer shall be parked on the Street. Contractor shall arrange for permit and shall coordinate location with owner.
3. The yard site needs to be secured at any time. Contractor may use the existing fence, or provide new fence until the actual fence and gate (part of this contract) are erected and functional.
4. Storage of equipment and material shall be coordinated with the owner. Space is limited and the building-footprint shall be used to the maxim possible degree. When storage is required outside building footprint, effort needs to be made to limit the times and to coordinate with owner. The site is an operational Public Works yard used by Engineering, Streets and Fleet to provide a variety of services. The site also provides a citizen yard waste drop off site. All existing yard operations are shall remain operational through construction.
5. Yard grading, piping, and earthwork shall be scheduled to have the least impact on yard operations. The yard shall not be left unusable for longer periods than necessary. Contractor shall coordinate with owner and shall ensure all labor and material are ready once yard work begins.
6. The existing garage and shop will be operational during construction. Contractor shall schedule any outages with owner and to minimize impact on operations. Closure of shop shall be kept to a minimum.
7. Contractor shall provide own Bathroom and Lunch Room Facilities. Contractor shall keep the facilities and building as clean as possible and limit dirt entry.

WORK PROVIDED BY OWNER (DON'T INCLUDE IN BID PRICE):

1. Balancing of HVAC (air and water flow)
2. Fire Alarm System
3. Communication Wiring for Intranet.

EQUIPMENT PROVIDED BY OWNER (DON'T INCLUDE IN BID PRICE):

1. Generator and transfer switches shall be provided by owner. Don't include the cost in bid price! Contractor is responsible for generator pad installation inc. coordination and installation of gas, electrical and control piping, wiring and conduit.

SPECIAL WARRANTIES:

1. Provide 5 year contractor warranty for membrane roof work

PROVISIONS FOR FUTURE WORK

1. A Photovoltaic (PV) System will be installed by owner at a later time. The on-roof metal structure (part of this contract) will be the support for that system. Contractor shall accommodate that future installation in layout, design and execution of that structure. Coordinate with owner. Don't include any PV installation in bid price.
2. Owner will install Communication Wiring and Fire Alarm Conduits. Install Sleeves as required for this work. Owner will provide Sleeves and Locations before Pouring of Concrete or CMU and other installation.

PERMIT REQUIREMENTS:

1. Conditional Plan Approval has been obtained by Owner.

UTILITIES:

1. TEMPORARY CONSTRUCTION SERVICES:

- a) WATER: Owner will provide water from owner service in existing garage. Contractor is responsible from piping downstream of that service.
- b) ELECTRICITY: Contractor will make arrangements with utility and install electrical service of necessary size. Owner will pay the utility fees for installation and consumption to utility directly (Contractor shall not include such utility fees in bid price). Contractor shall be responsible for installation downstream of utility.
- c) HEATING/FUEL: Contractor responsibility

2. PERMANENT SERVICES:

- a) Contractor shall make arrangements with utilities for installation of services. Owner will pay utility fees for installation and connection to utility directly (Contractor shall not include such utility fees in bid price)

CONTINUITY OF SERVICE:

1. Schedule work to ensure the existing garage and shop can be used as long as possible. Coordinate with owner when services or equipment serving the existing garage and shop are disrupted or demolished.

General Abbreviations	
AFF	Above Finished Floor
EQ	Equal Distance
Est	Estimated
JHA	Jurisdiction Having Authority
XTG	Existing

City of Madison

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Project: 10308
Common Council Approval:
6/2/2015

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General
Project Data

01

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Engineering Operations
Building Addition

Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

Civil Design:
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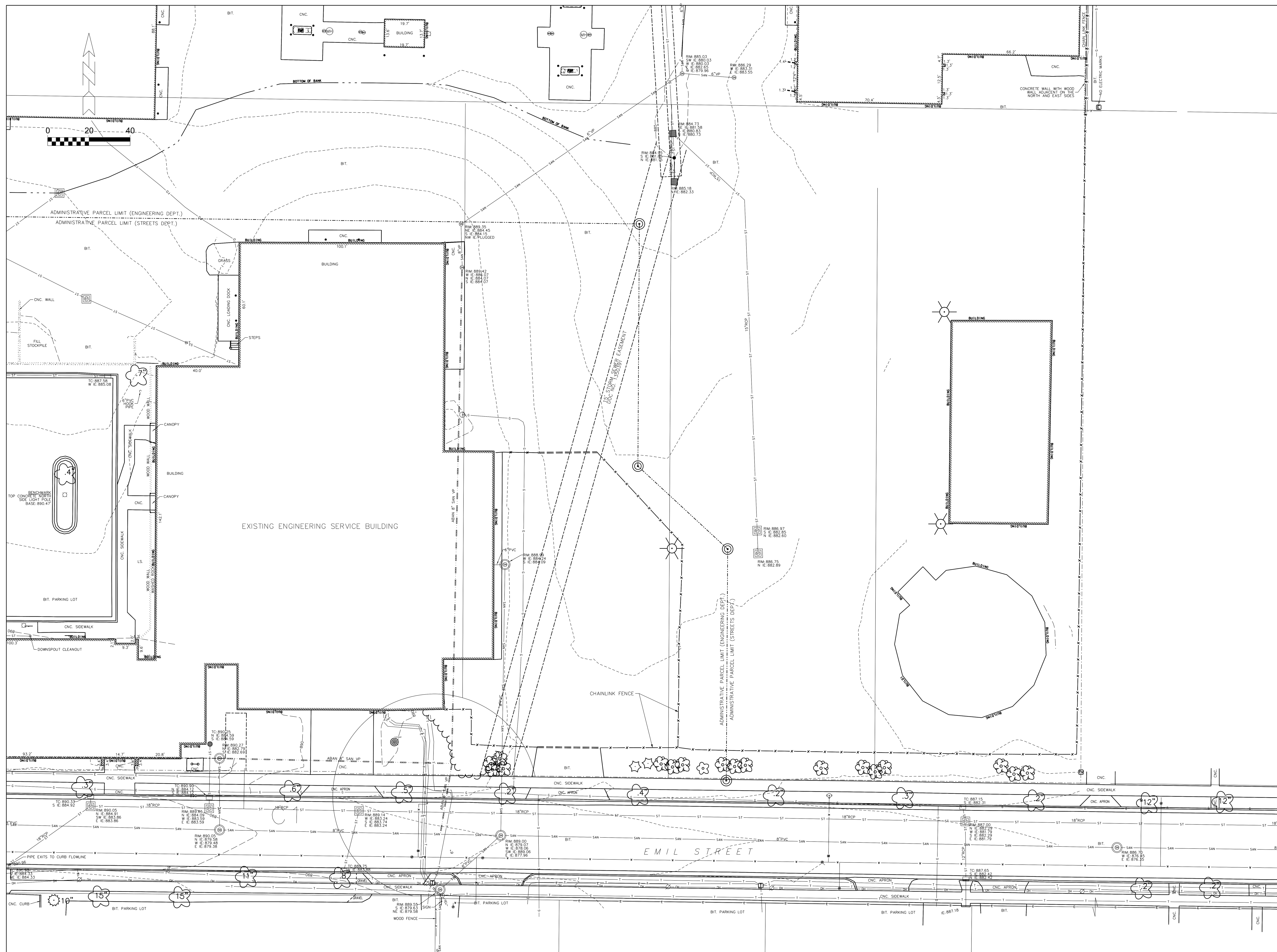
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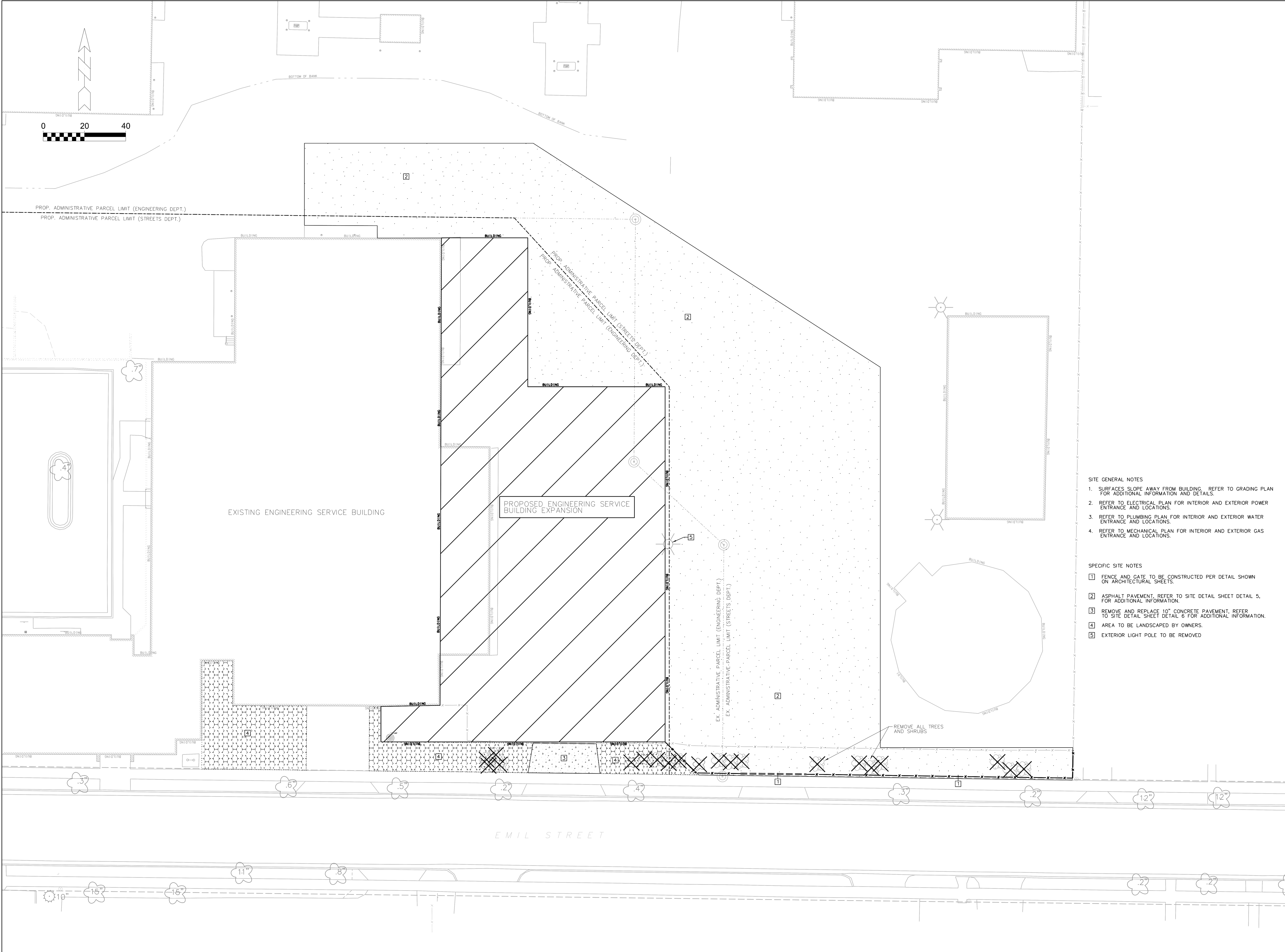
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- SITE GENERAL NOTES
1. SURFACES SLOPE AWAY FROM BUILDING. REFER TO GRADING PLAN FOR ADDITIONAL INFORMATION AND DETAILS.
 2. REFER TO ELECTRICAL PLAN FOR INTERIOR AND EXTERIOR POWER ENTRANCE AND LOCATIONS.
 3. REFER TO PLUMBING PLAN FOR INTERIOR AND EXTERIOR WATER ENTRANCE AND LOCATIONS.
 4. REFER TO MECHANICAL PLAN FOR INTERIOR AND EXTERIOR GAS ENTRANCE AND LOCATIONS.

- SPECIFIC SITE NOTES
- 1 FENCE AND GATE TO BE CONSTRUCTED PER DETAIL SHOWN ON ARCHITECTURAL SHEETS.
 - 2 ASPHALT PAVEMENT. REFER TO SITE DETAIL SHEET DETAIL 5, FOR ADDITIONAL INFORMATION.
 - 3 REMOVE AND REPLACE 10" CONCRETE PAVEMENT. REFER TO SITE DETAIL SHEET DETAIL 6 FOR ADDITIONAL INFORMATION.
 - 4 AREA TO BE LANDSCAPED BY OWNERS.
 - 5 EXTERIOR LIGHT POLE TO BE REMOVED

PROPOSED CONDITIONS PLAN

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Facilities Maintenance
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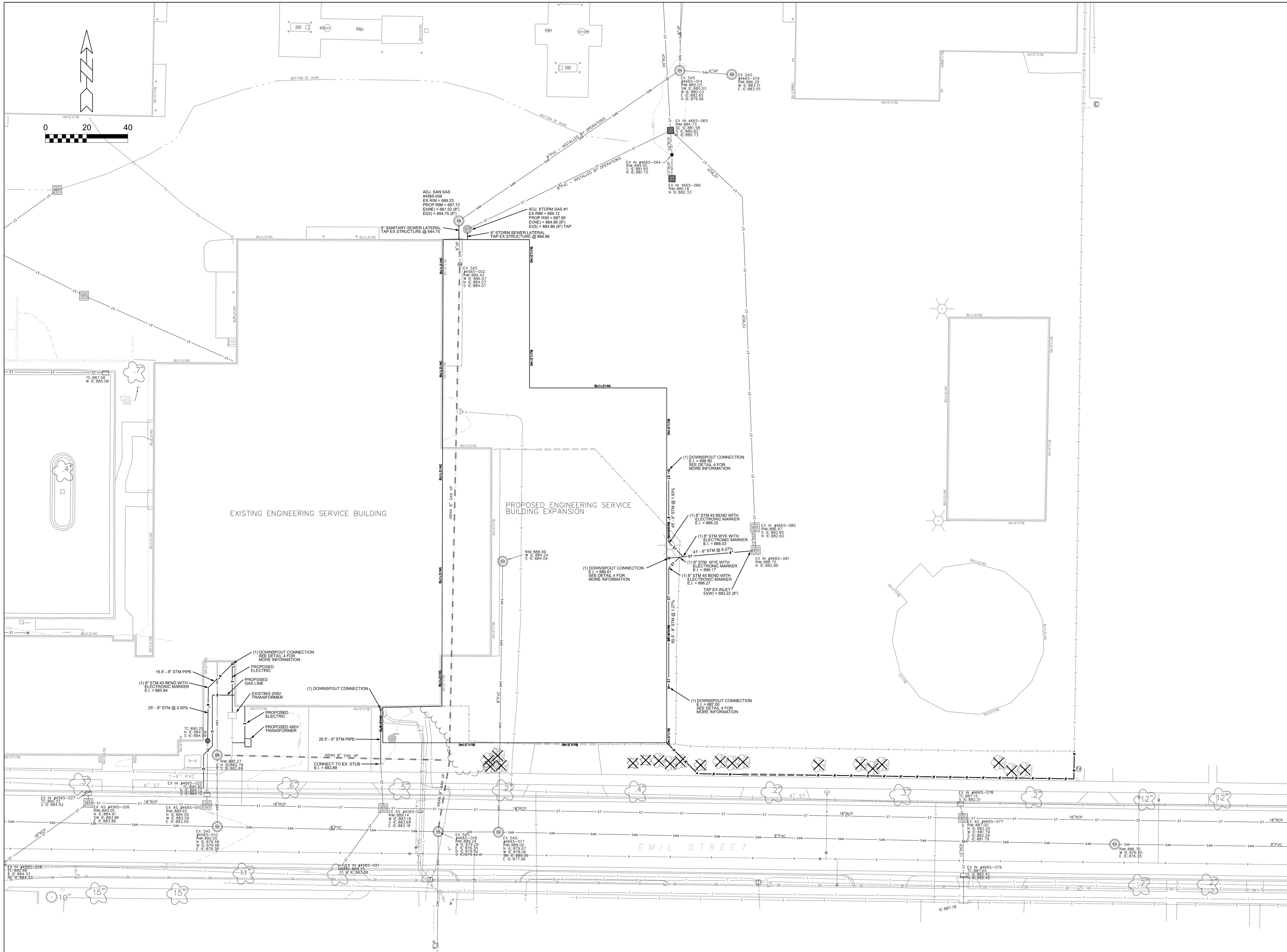
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Proposed
Conditions

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SITE UTILITIES PLAN



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Engineering Operations
Building Addition

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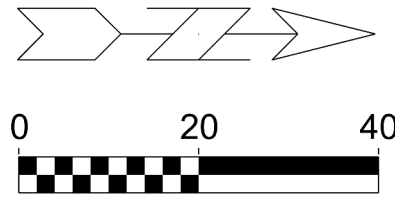
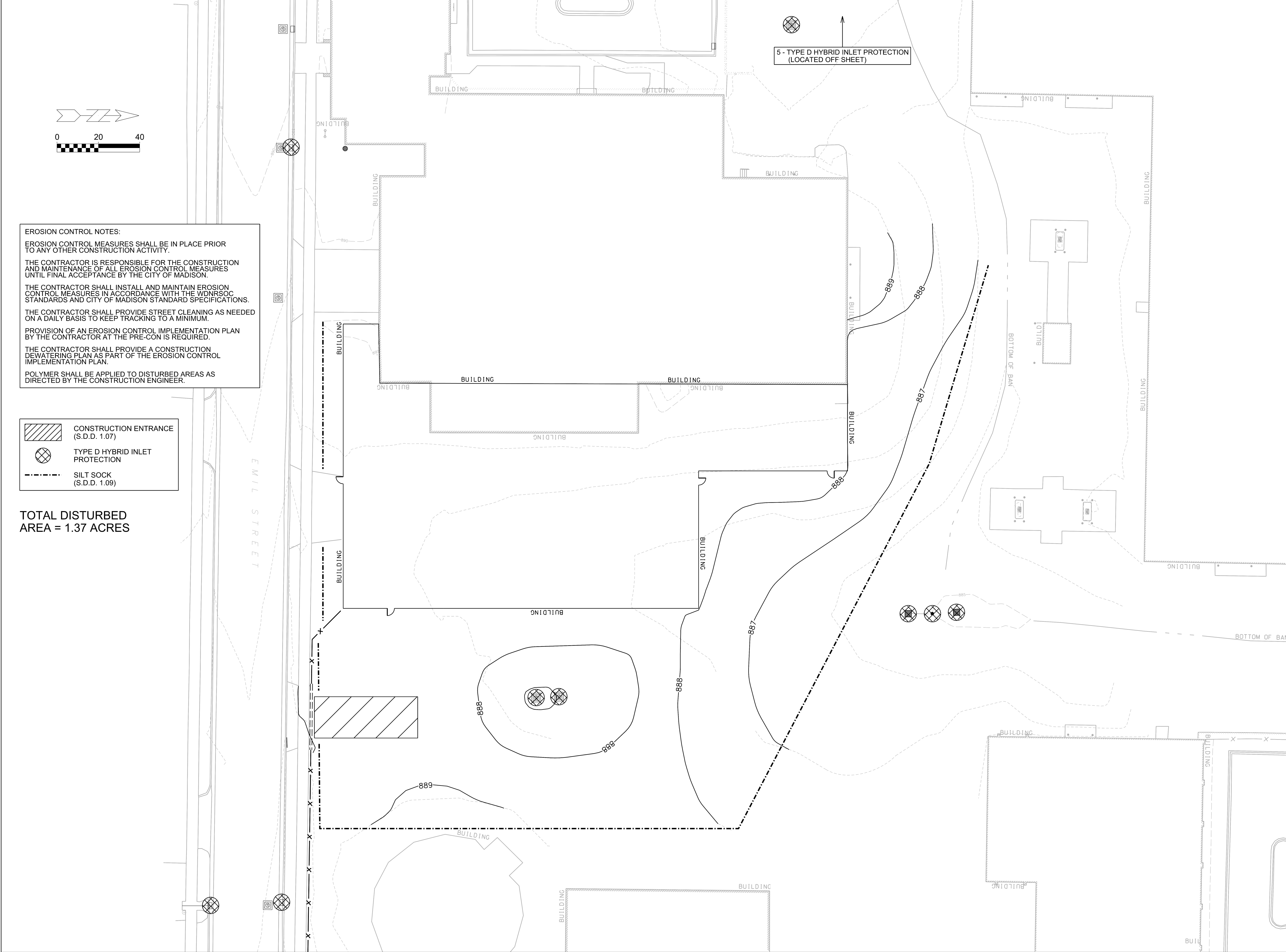
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Utilities

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EROSION CONTROL NOTES:

EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY.

THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL FINAL ACCEPTANCE BY THE CITY OF MADISON.

THE CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE WDNR SOC STANDARDS AND CITY OF MADISON STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL PROVIDE STREET CLEANING AS NEEDED ON A DAILY BASIS TO KEEP TRACKING TO A MINIMUM.

PROVISION OF AN EROSION CONTROL IMPLEMENTATION PLAN BY THE CONTRACTOR AT THE PRE-CON IS REQUIRED.

THE CONTRACTOR SHALL PROVIDE A CONSTRUCTION DEWATERING PLAN AS PART OF THE EROSION CONTROL IMPLEMENTATION PLAN.

POLYMER SHALL BE APPLIED TO DISTURBED AREAS AS DIRECTED BY THE CONSTRUCTION ENGINEER.

- CONSTRUCTION ENTRANCE (S.D.D. 1.07)
- TYPE D HYBRID INLET PROTECTION
- SILT SOCK (S.D.D. 1.09)

TOTAL DISTURBED AREA = 1.37 ACRES

EROSION CONTROL PLAN

City of Madison
Facilities Maintenance
1600 Emil St.
Madison, WI 53713



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Engineering Operations
Building Addition

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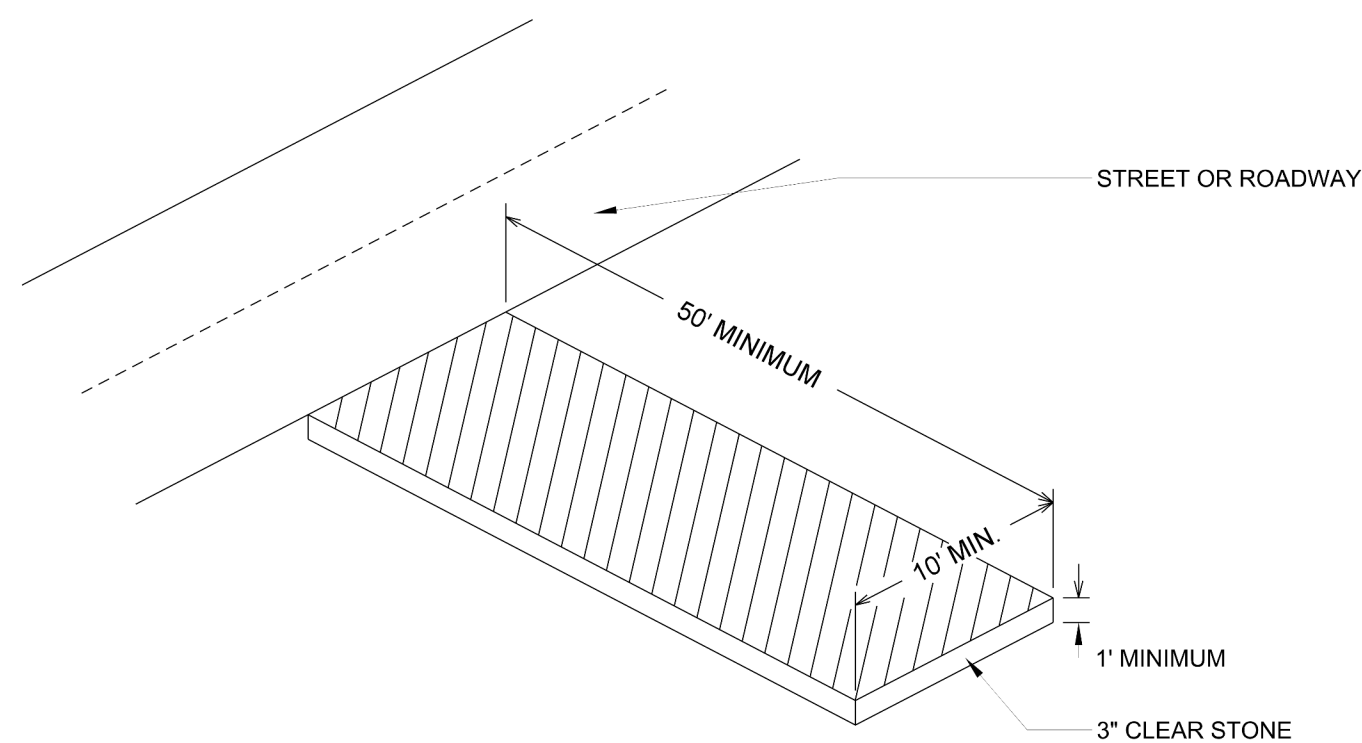
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Erosion
Control Plan

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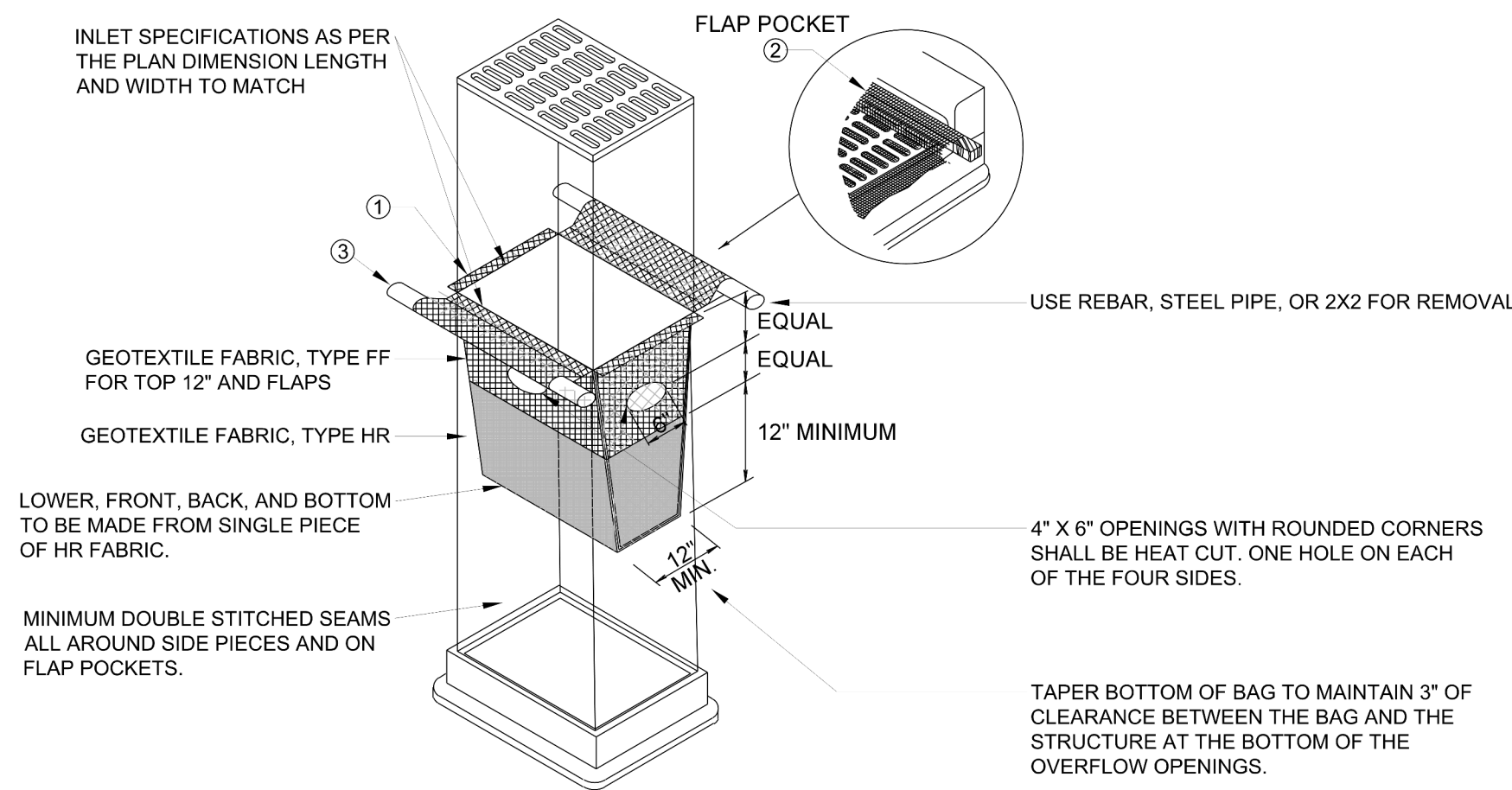
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1 CONSTRUCTION ENTRANCE

S.D.D. 1.07 - NOT TO SCALE
GENERAL NOTES:

1. CONSTRUCTION ENTRANCE TO BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING THE SITE.
2. THE AGGREGATE FOR THE CONSTRUCTION ENTRANCE SHALL BE 3 INCH CLEAR OR WASHED STONE.
3. AGGREGATE SHALL BE PLACED IN A LAYER AT LEAST 12 INCHES THICK.
4. THE CONSTRUCTION ENTRANCE SHALL BE UNDERLAIN WITH A WDOT TYPE HR OR FF GEOTEXTILE FABRIC TO PREVENT MIGRATION OF UNERLYING SOIL INTO THE STONE.
5. SURFACE WATERS MUST BE PREVENTED FROM PASSING THROUGH THE CONSTRUCTION ENTRANCE. FLOWS SHALL BE DIVERTED AWAY FROM THE CONSTRUCTION ENTRANCE OR CONVEYED UNDER AND AROUND THEM BY USE OF A CULVERT, DIVERSION BERM OR OTHER PRACTICES AS APPROVED BY THE CONSTRUCTION ENGINEER.
6. CLEANING BY SCRAPING OR ADDING NEW STONE SHALL BE REQUIRED IF ENTRANCE BECOMES MORE THAN 50% COVERED BY TRACKED MUD.



2 INLET PROTECTION TYPE D HYBRID

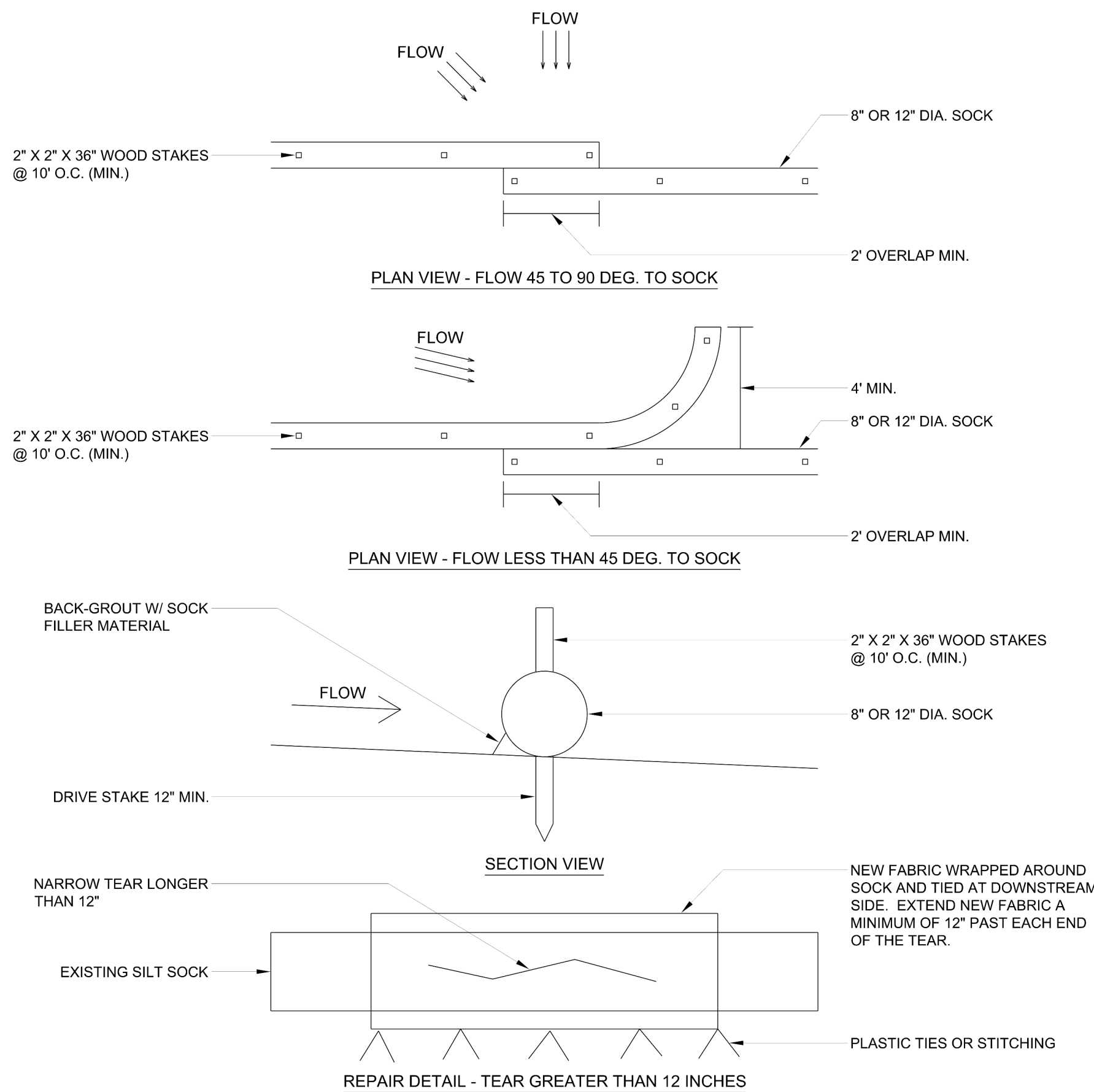
S.D.D. 1.11 - NOT TO SCALE
GENERAL NOTES:

CLEANING SHALL BE REQUIRED WHEN SEDIMENT OR STANDING WATER IS WITHIN 6" OF THE OVERFLOW HOLES OR AS DIRECTED BY THE CONSTRUCTION ENGINEER.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOE HOLES, OF 3".

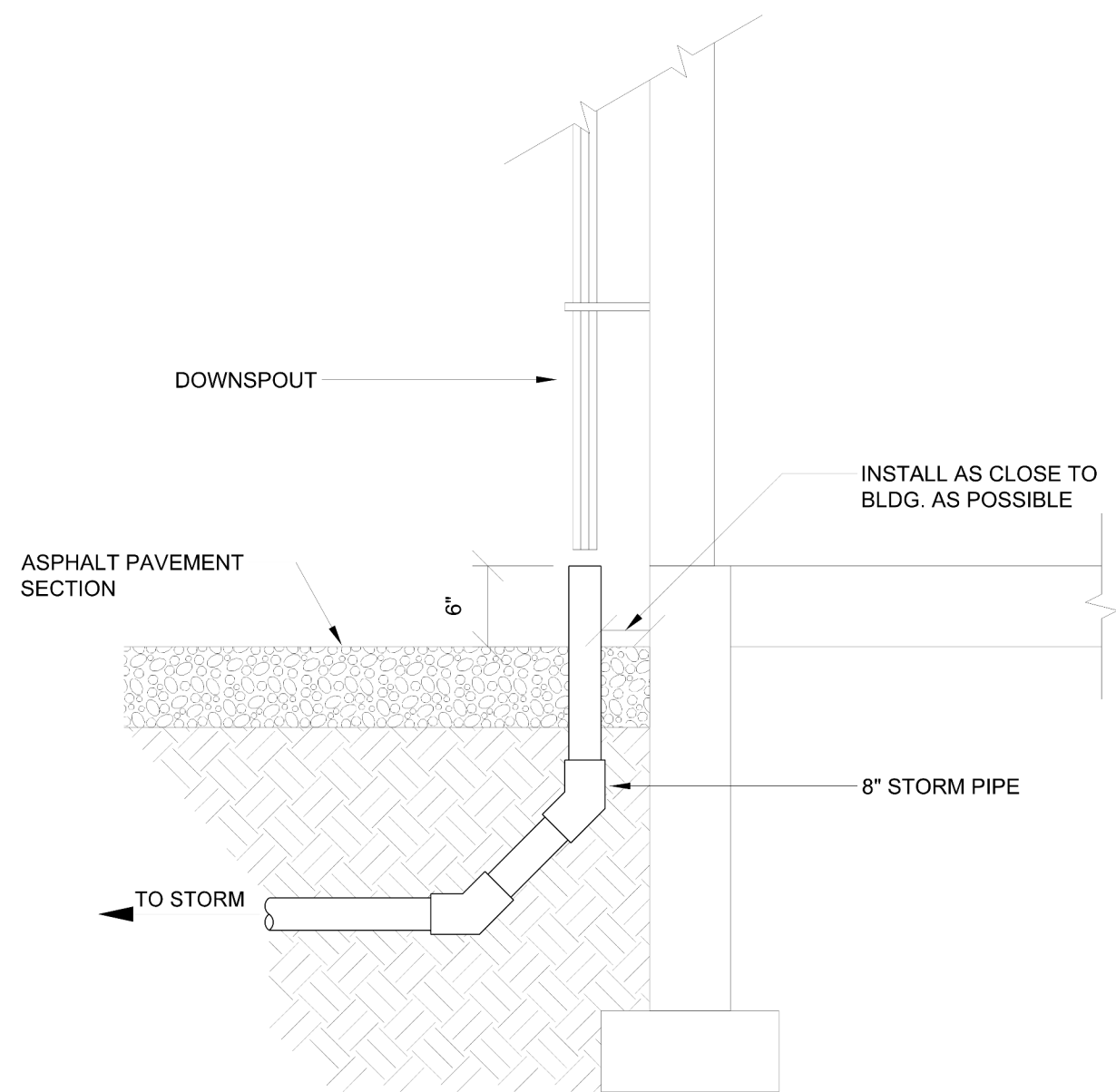
- ① SIDE FLAPS SHALL BE A MAXIMUM OF 2" LONG. FOLD THE FABRIC OVER AND REINFORCE WITH MULTIPLE STICHES.
- ② FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X2. THE 2X2 SHALL BE INSTALLED IN THE REAR FLAP AND SHALL NOT BLOCK THE TOP HALK OF THE CURB FACE OPENING.
- ③ FRONT LIFTING FLAP IS TO BE USED WHEN REMOVING AND MAINTAINING FILTER BAG.



3 SILT SOCK

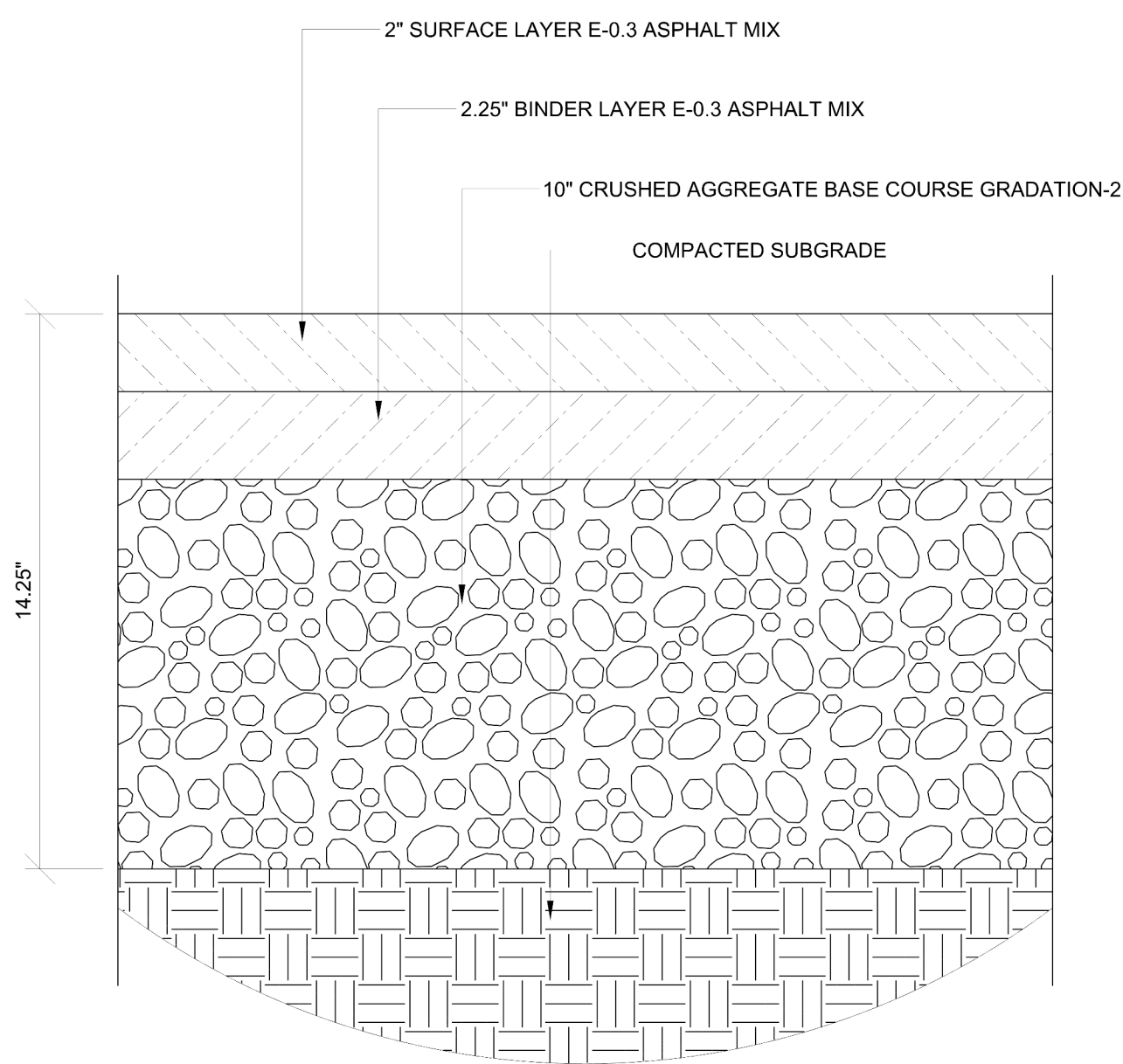
S.D.D. 1.09 - NOT TO SCALE
GENERAL NOTES:

1. SOCK MATERIAL PER STANDARD SPECIFICATIONS, SILT SOCK FILLER SHALL BE COMPOST OR WOOD CHIPS (2" MAX.)
2. WHEN SILT SOCK IS USED ON A PAVED SURFACE CONCRETE BLOCKS SHALL BE USED TO SECURE SILT SOCK IN PLACE OF STAKING
3. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT SOCK WHEN IT HAS REACHED A HEIGHT EQUAL TO HALF OF THE SOCK HEIGHT
4. SMALL HOLES OR NARROW RIPS LESS THAN 12' LONG MAY BE STICHED CLOSED USING PLASTIC ZIP TIES. LARGER RIPS SHALL BE FIXED PER THE REPAIR DETAIL. HEAVILY DAMAGED SECTIONS SHALL BE REPLACED ENTIRELY, MAINTAIN 2' MINIMUM OVERLAP AT EACH END.
5. 8" OR 12" DIAMETER SOCK AS SPECIFIED IN THE EROSION CONTROL PLAN OR AS DIRECTED BY THE CONSTRUCTION ENGINEER.



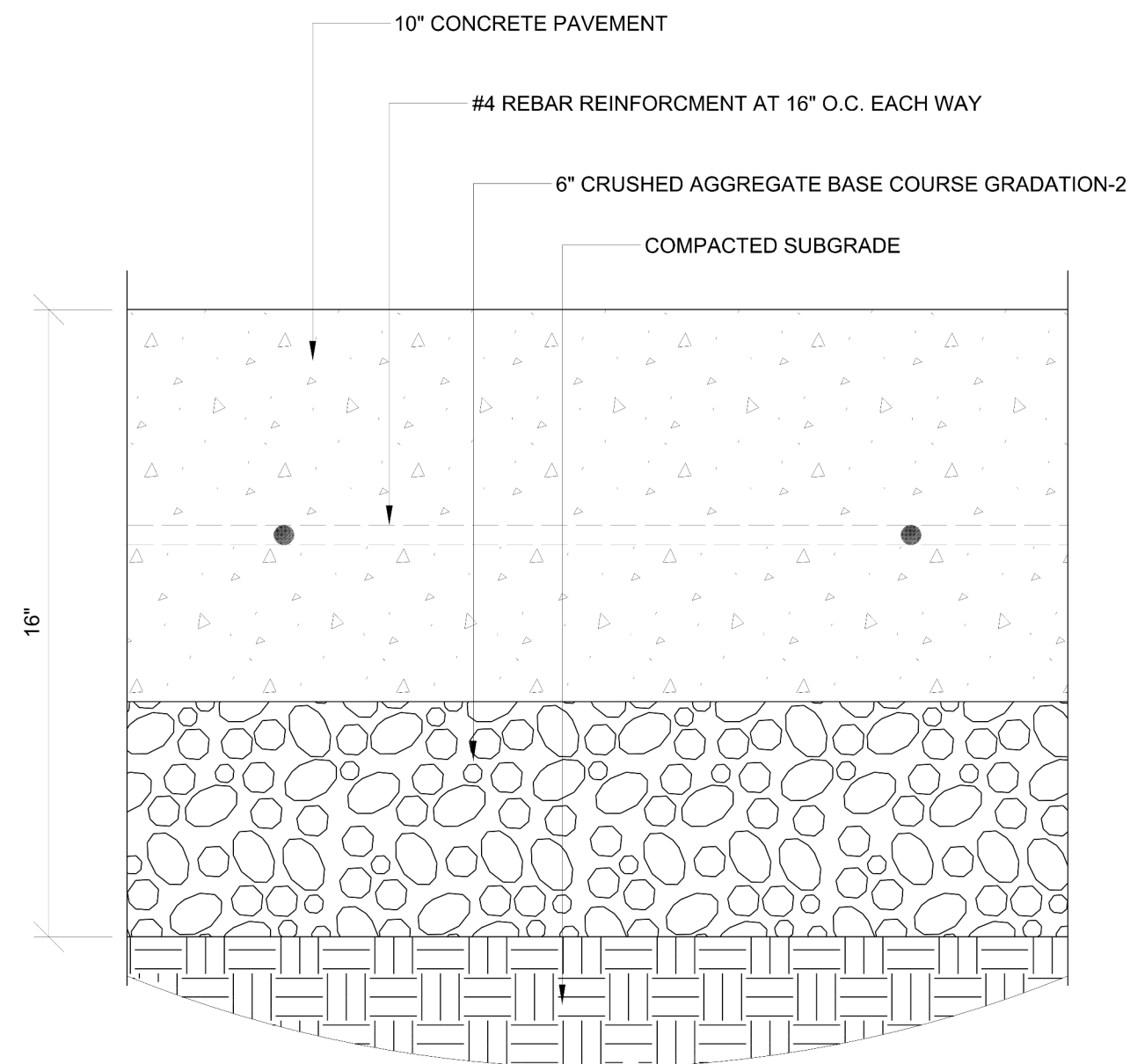
4 DOWNSPOUT CONNECTION

NOT TO SCALE



5 ASPHALT PAVEMENT SECTION

NOT TO SCALE



6 CONCRETE PAVEMENT SECTION

NOT TO SCALE

SITE DETAILS



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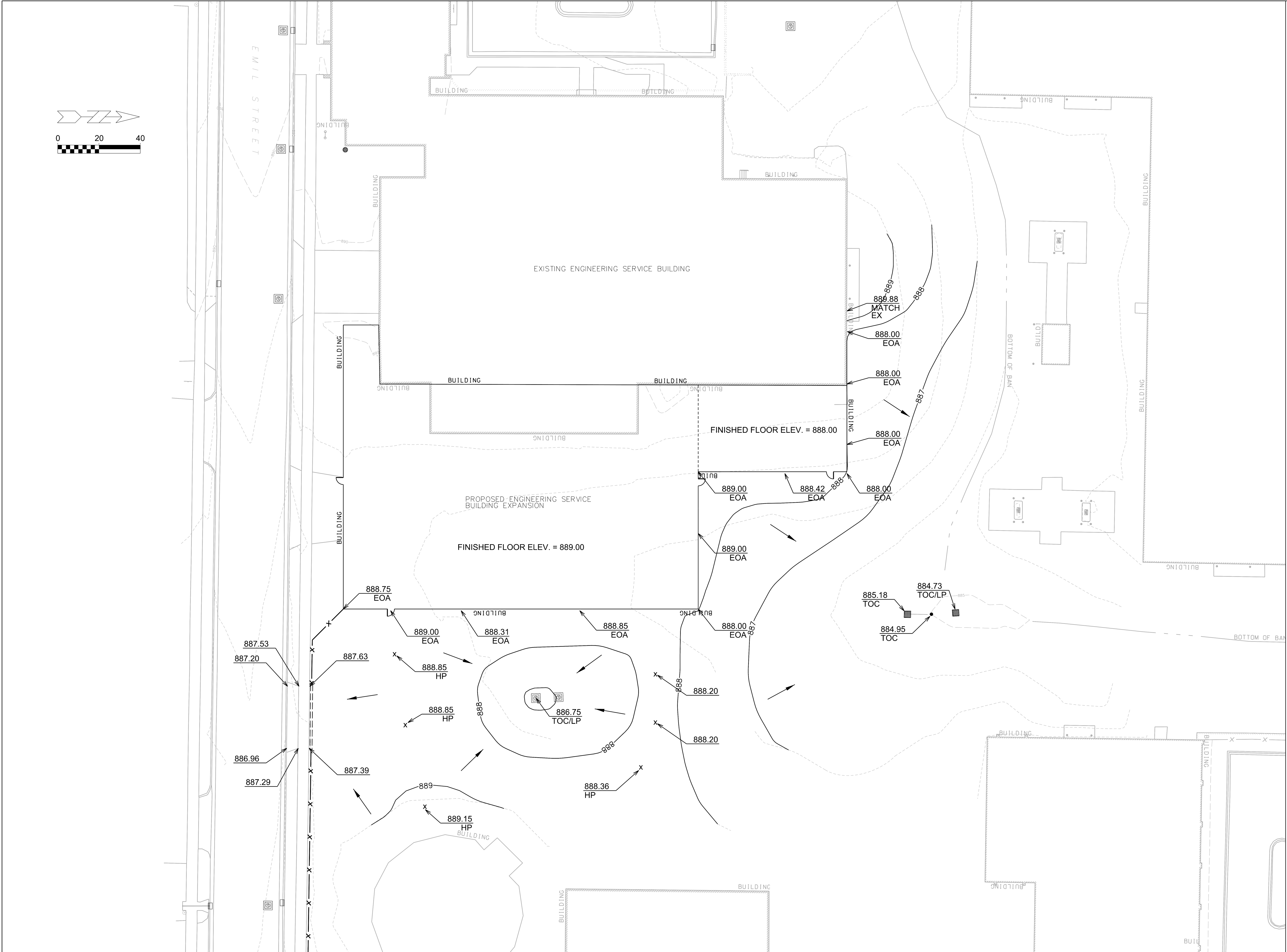
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Site Details

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GRADING PLAN



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Madison, WI 53713

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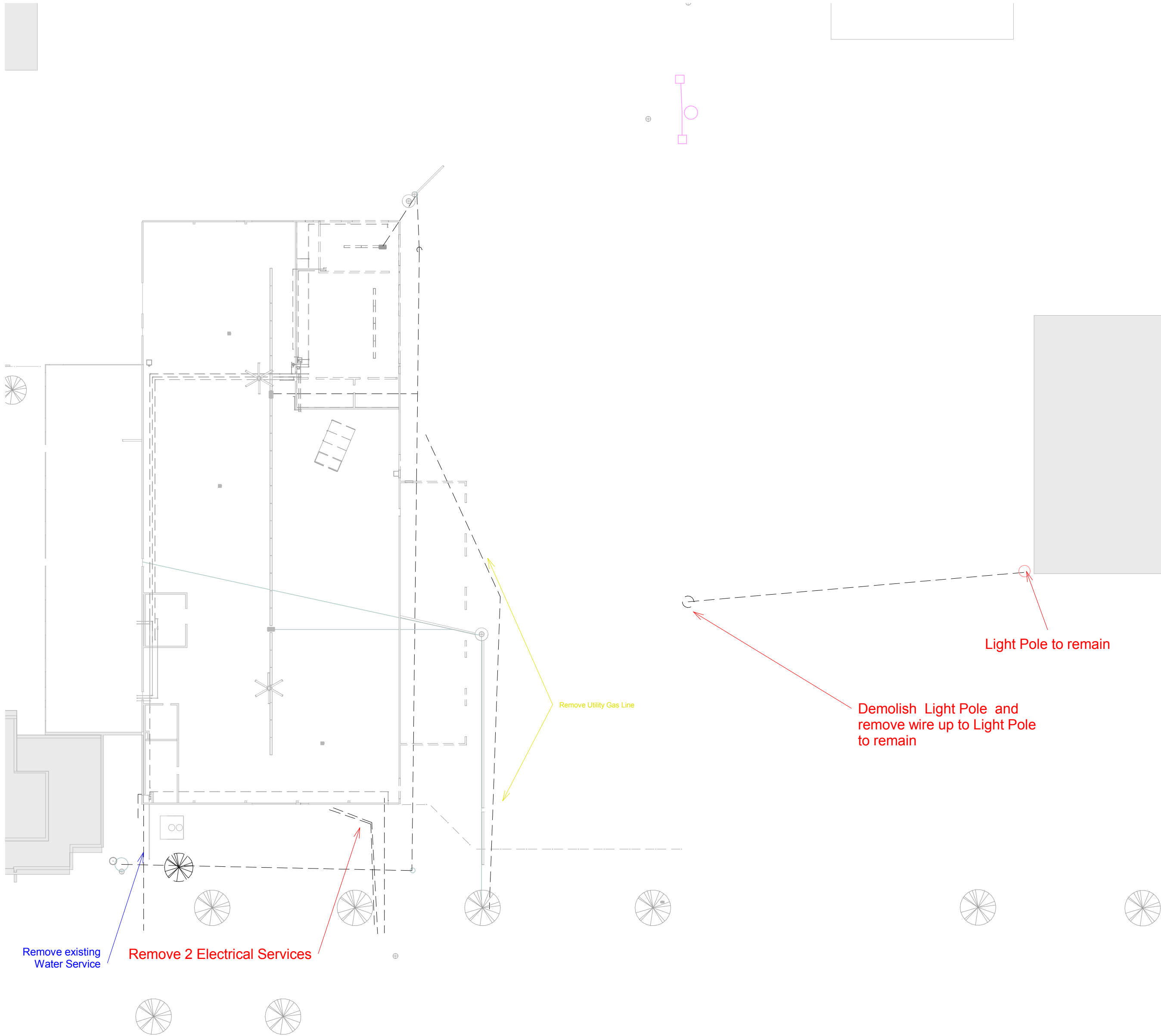
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Grading Plan

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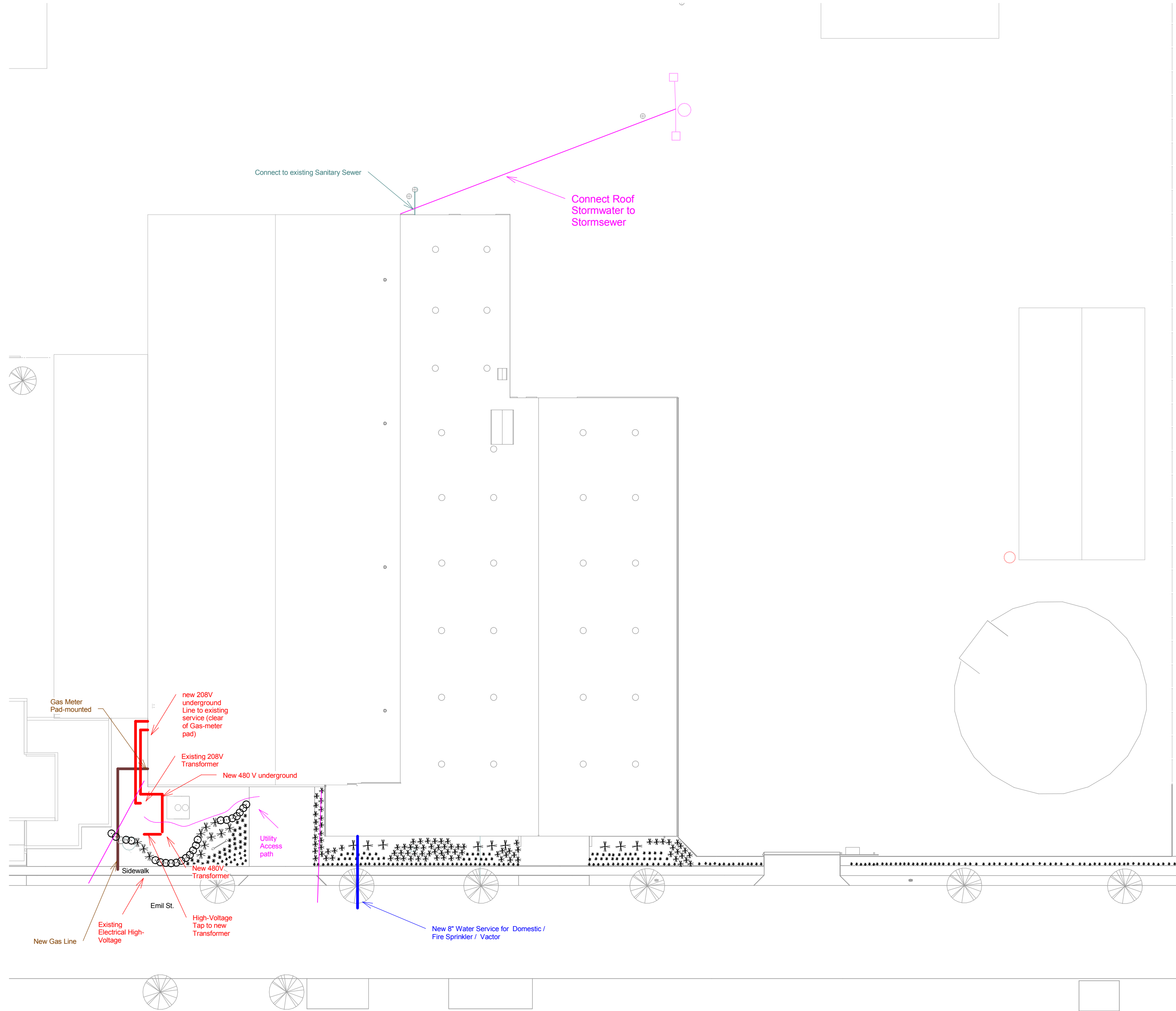
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1 C - Site Utilities Existing
1/32" = 1'-0"

Information on this sheet supplements other Civil Engineering Plans to clarify Scope of Work.

Keynote Legend	
Key Value	Keynote Text



2 C - Site Utilities Final
1/32" = 1'-0"

City of Madison
Facilities Maintenance
1600 Emil St.
Madison, WI 53713



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
Sarah Lerner, LPA., City of
Madison; 608-261-4281;
slerner@cityofmadison.com

Electrical Design:
Dave Hanson, P.E., Kueny
Architects

Plumbing Design:
Kay Schindel, P.E., City of
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kschindel@cityofmadison.com

HVAC Design:
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Madison; 608-266-4668;
kschindel@cityofmadison.com

Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
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Utilities
Supplemental
Information

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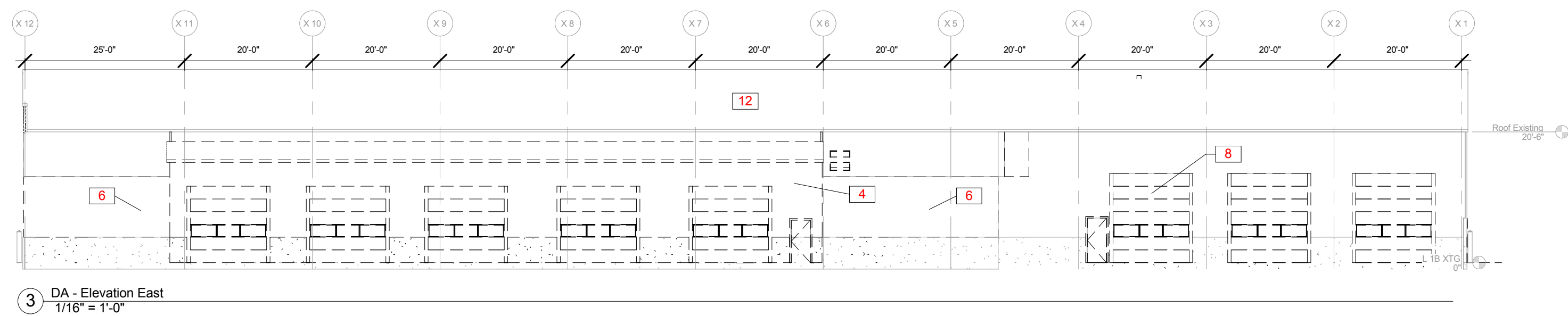
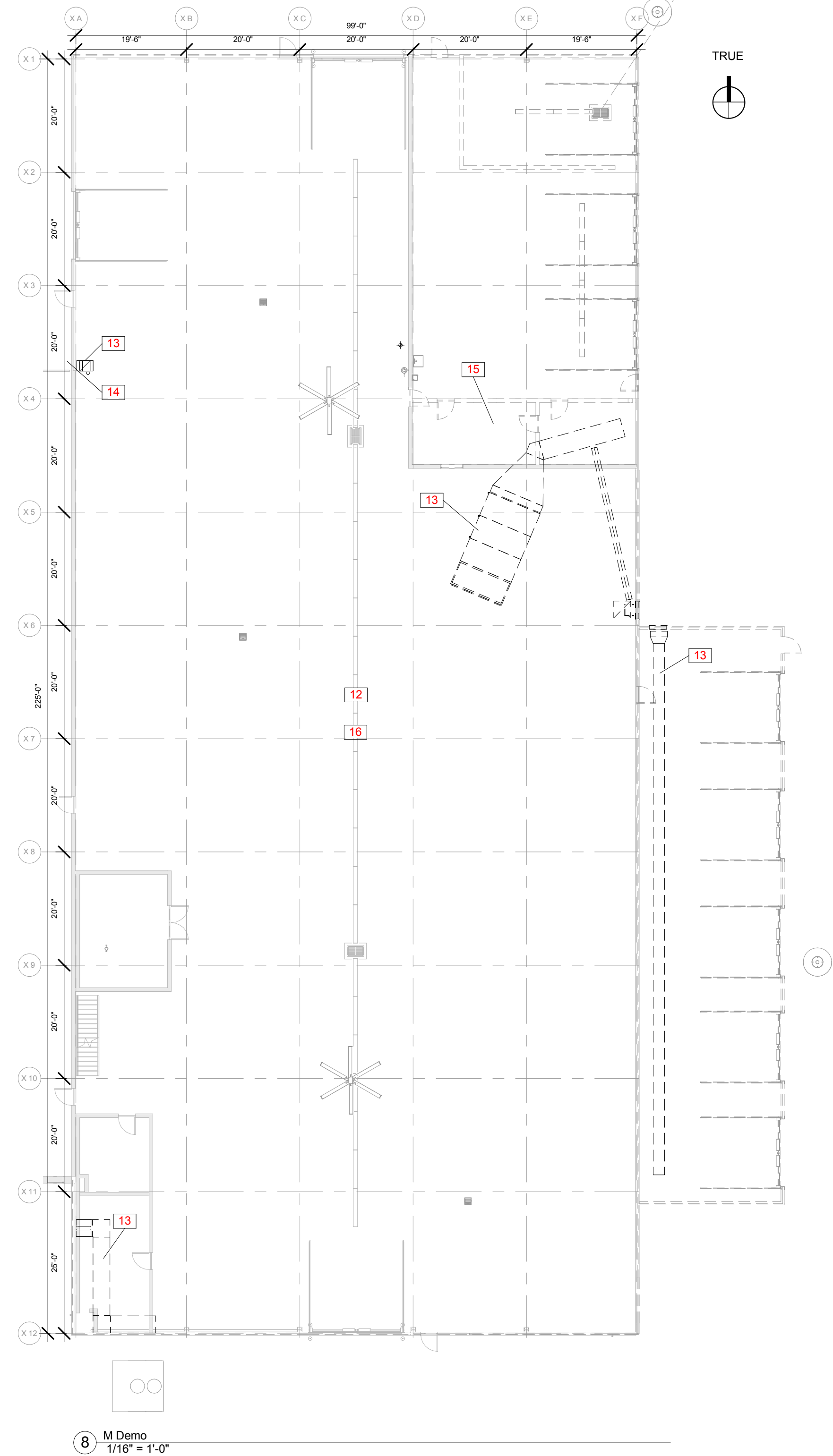
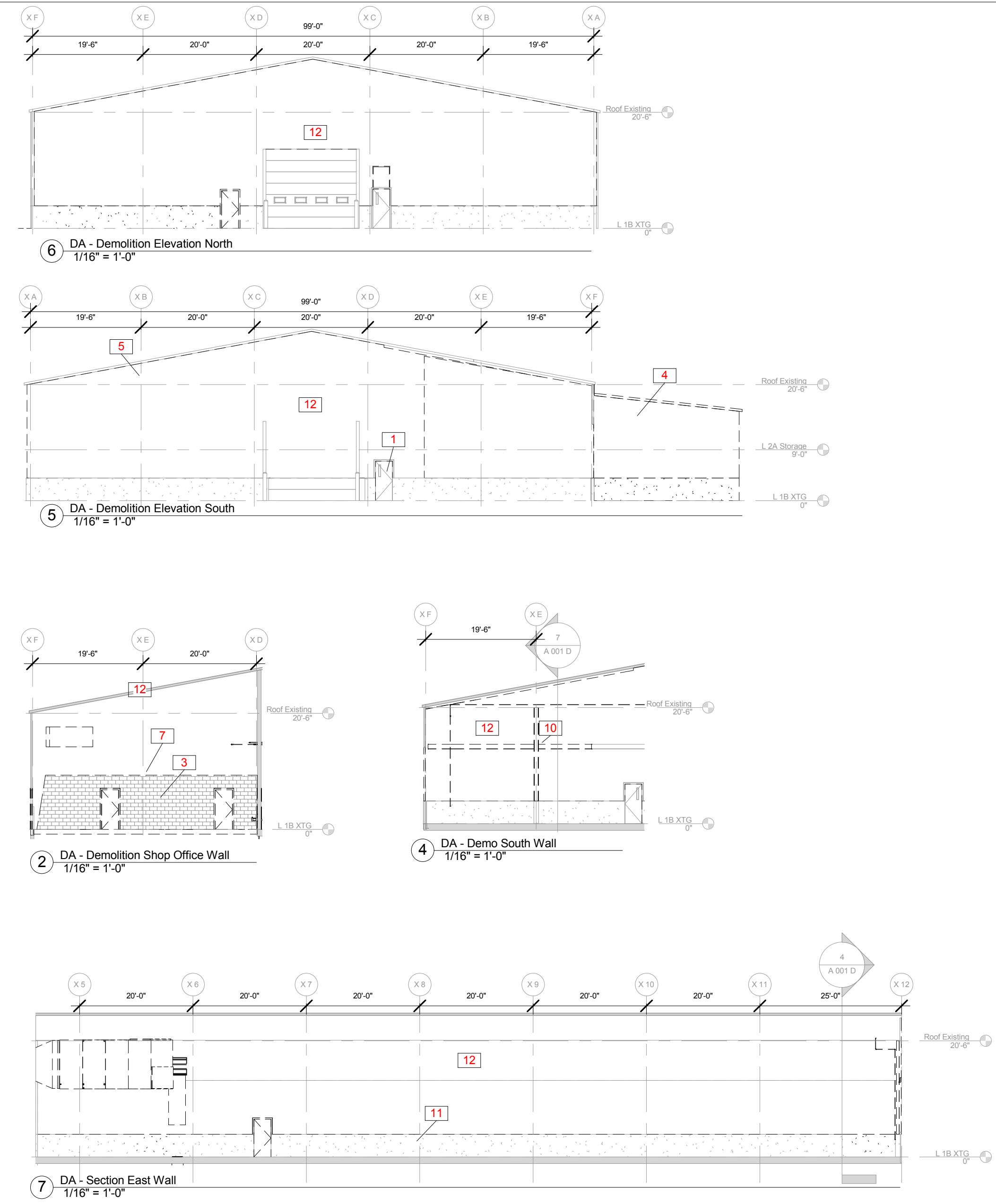
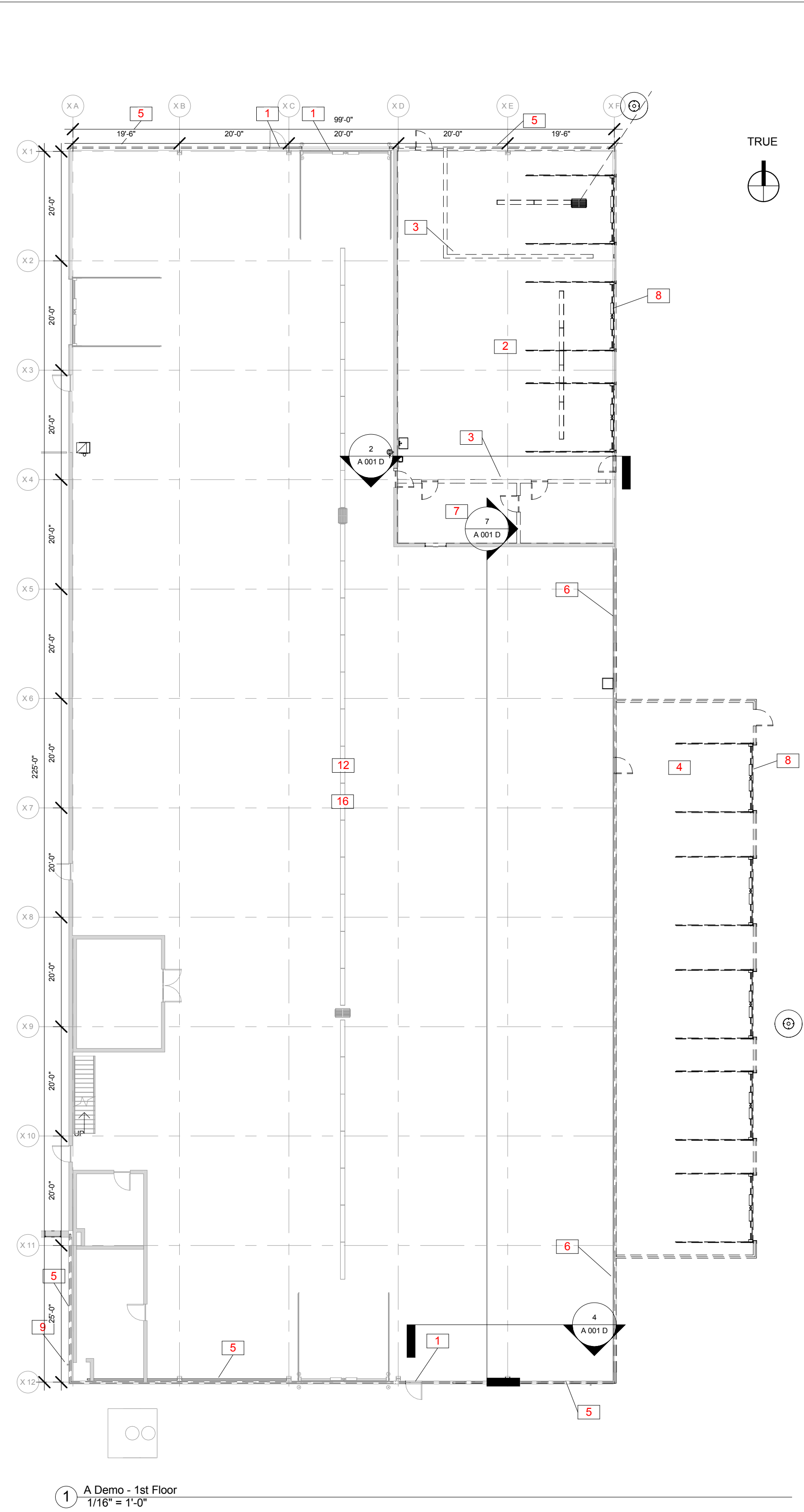
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Demolition A
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Keynote Legend	
Key Value	Keynote Text
1	DE INSTALL AND RE-INSTALL AS REQUIRED
2	DEMO FLOOR AND EXCAVATE FOR NEW SLAB, UTILITIES, AND OTHER ELEMENTS. REMOVE EXISTING UTILITIES
3	DEMO WALLS INC. FOOTING AS REQUIRED FOR NEW CONSTRUCTION
4	DEMO ENTIRE LEAN-TO AND ALL ITS PARTS, FOOTING, DOORS, ETC.
5	DEMO STEEL SIDING AND INSULATION FOR INSTALLATION OF NEW SIDING
6	DEMO METAL SIDING AND INSULATION UP TO NEW MEZZANINE HEIGHT
7	DEMO ENTIRE MEZZANINE INC. DECKING AND RAILING ETC.
8	DEMO DOORS AND OVERHEAD DOORS
9	REMOVE UTILITY METERS AND REINSTALL AS REQUIRED BY UTILITY
10	REMOVE SECTION OF EXISTING PURLIN TO INSTALL DOOR. DESIGN AND INSTALL NEW PURLIN STRUCTURE AROUND DOOR TO PROVIDE ADEQUATE SUPPORT
11	KEEP CONCRETE WALL IN PLACE AND MODIFY PER ARCHITECTURAL PLANS
12	GENERAL NOTE: CONTRACTOR SHALL VERIFY XTG DIMENSIONS. VALUES GIVEN ARE APPROXIMATE.
13	REMOVE COMPLETE ELECTRICAL WORK, LOUVER, FAN ETC.
14	KEEP LOUVER IN PLACE AND BLOCK OFF FROM INSIDE. INSULATE MAINTAINING FIRE RATING. SEAL AIRTIGHT.
15	DEMOLISH ALL MECHANICAL EQUIPMENT ON MEZZANINE INC. WATER HEATER
16	GENERAL NOTE: DEMOLISH ALL DASHED ITEMS

Railing Schedule				
Type Mark	Description	Railing Height	Est. Length	Keynote
GR-S	Guard Rail per 2012 IBC 1013.	3'-6"	661'	Paint Yellow, 4" Toeboard per OSHA 1910.23

Rolling Gate Schedule						
Type Mark	Manufacturer	URL	Model	Description	Clear Opening Width	Keynote
RG 08	Simplified Safety	www.simplifiedsafety.com	Manual Horizontal Mezzanine Gate	Rolling Gate. Provide scheduled model or built equal product. Paint to match Railing	8'	Provide Manual Release Lever and Gate Pull Handle
RG 14	Simplified Safety	www.simplifiedsafety.com	Manual Horizontal Mezzanine Gate	Rolling Gate. Provide scheduled model or built equal product. Paint to match Railing	14'	Provide Manual Release Lever and Gate Pull Handle

Security Fence Schedule						
Mark	Description	Manufacture r	Model	Fence Height	Est. Fence Length	OmniClass Title
FNC-1	1-3/4" Rail w/ 16ga pickets, 8'-0" panels	Ameristar Fence	Montage II	8'-0"	28'-11"	Ornamental Metal Fences
FNC-2	1-3/4" Rail w/ 16ga pickets, 8'-0" panels	Ameristar Fence	Montage II	8'-0"	131'-9"	Ornamental Metal Fences
FNC-3	1-3/4" Rail w/ 16ga pickets, 8'-0" panels	Ameristar Fence	Montage II	8'-0"	26'-11"	Ornamental Metal Fences
FNC-4	1-3/4" Rail w/ 16ga pickets, 8'-0" panels	Ameristar Fence	Montage II	8'-0"	10'-4"	Ornamental Metal Fences

Security Fence Cantilever Gate Schedule						
Mark	Description	Manufacturer	Model	Fence Height	Gate Opening	OmniClass Title
FNG-1	Cantilever gate	Ameristar Fence	Transport II, Genesis	8'-0"	30'-0"	Sliding Gates

Bollard Schedule				
Type Mark	Color	Height	Diameter	Est. Count
BG-5-4	yellow	5'-0"	4"	4
BG-5-8	yellow	5'-0"	8"	30

Roof Schedule		
Type Mark	Description	Est. Area
ISR 5.0	Insulated Standing Seam; 5" continuous Insulation = R41; White	23,079 ft²

Traffic Signals							
Type Mark	Description	Manufacturer	URL	Model	Est. Count	OmniClass Number	OmniClass Title
RG	Stop / Go Light controlled by OHD	Trilite	www.Triliteinc.com	Stop & Go LED / 24V	3	23.39.11.15.17	Traffic Signals

Exterior Wall Schedule						
Type Mark	Description	Manufacturer	URL	Model	Est. Area	Comments
TB	Thin Brick Thicket System	Brick it	www.Brickit.com	Red Beind Vel	135 ft²	Match existing Brick
SW	Solarwall Vertical	Solarwall	www.Solarwall.com	SW-150	1,597 ft²	Black
IMP 3	Insulated Metal Panel	All Weather Insulated Panels	www.Awipanel.com	Mesa DM40, PVDF Sandstone; 3"	16,757 ft²	
CIP 3 - TB	Cast-in-Place Concrete w/ Insulated Core and Thin Brick	Thermomass / Brick-It	www.thermomass.com	3" Polyiso	637 ft²	
CIP 3	Cast-in-Place Concrete w/ Insulated Core	Thermomass	www.Thermomass.com	3" Polyiso	1,573 ft²	

Floor Schedule			
Type Mark	Description	Est. Area	Comments
CSI - 4 - 2	Concrete Slab 4" - 2" Insulation	164 ft²	
CSI - 6 - 2	Concrete Slab 6" - 2" Insulation	1,070 ft²	
CSI - 8 - 2	Concrete Slab 8" - 2" Insulation	24,038 ft²	
HP-4	4" Concrete Hosuekeeping Pad	259 ft²	
MG	Steel Joist w/ Metal Grate - Painted	160 ft²	
MG - G	Steel Joist w/ Metal Grate - Galvanized	109 ft²	
SJ - SL	Steel Joist w/Slab	7,844 ft²	

Wall Schedule						
Type Mark	Description	Fire Rating	Manufacturer	URL	Model	Est. Area
TB	Thin Brick Thicket System	0	Brick it	www.Brickit.com	Red Beind Vel	135 ft²
SW	Solarwall Vertical	0	Solarwall	www.Solarwall.com	SW-150	1,597 ft²
IMP 3	Insulated Metal Panel	0	All Weather Insulated Panels	www.Awipanel.com	Mesa DM40, PVDF Sandstone; 3"	16,757 ft²
CMU 8 - 1h	CMU Wall - 1 hour Fire Rating	1 hour				5,635 ft²
CMU 8	CMU	0				5,151 ft²
CMU 6 LW	CMU Lightweight	0				84 ft²
CIP 3 - TB	Cast-in-Place Concrete w/ Insulated Core and Thin Brick	0	Thermomass / Brick-It	www.thermomass.com	3" Polyiso	637 ft²
CIP 3	Cast-in-Place Concrete w/ Insulated Core	0	Thermomass	www.Thermomass.com	3" Polyiso	1,573 ft²
						26,748 ft²

Skylight Schedule					
Type Mark	Description	Manufacturer	URL	Model	Est. Count
STO-A	Solatube for open Ceiling w/ Dual Dome and Amplifier.	Solatube	www.solatube.com	SM74-DS-0-DPP-FC-A-I	30

Snowguard Schedule					
Type Mark	Type Comments	Description	Est. Length	Omni Class Number	Omni Class Title
SG-SS	Snowguard	Snowguard - Standing Seam	857 ft	23.13.41.21	Roof Snow Guards

Gutter Schedule		
Type Mark	Description	Est. Length
GS-7x7	Aluminum Gutter, factory painted to match wall color	174'
GS-5x5	Aluminum Gutter, factory painted to match wall color	20'

Crane Schedule														
Mark	Manufacturer	URL	Model	Description	Lift Capacity	Approximate Span	Voltage	Poles	Power Factor	Apparent Power	Frame Color	Remark	OmniClass Number	OmniClass Title
C-1	Engineered Material Handling	www.emhcrane.com	ELV 2	Bridge Crane	2 Tons	37'-0"	480 V	3	0.8	6000 VA	yellow	Run entire length of shop	23.23.17.23.15.11	Electric Bridge Cranes

Window Schedule																
Mark	From Room	From Number	Description	Frame Width	Frame Height	Window Type	Manufacturer	URL	Model	Total U-Value	SHGC	VT	Frame Color	Fire Rating	Safety Glass Inside	Safety Glass Outside
E 10	Garage East	104	Gray Tint	10'-0"	2'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 11	Garage East	104	Gray Tint	10'-0"	2'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 12	Garage East	104	Gray Tint	10'-0"	2'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 13	Garage East	104	Gray Tint	10'-0"	2'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 14	Garage East	104	Gray Tint	10'-0"	2'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 15	Garage East	104	Gray Tint	10'-0"	2'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 20	Garage Mezzanine East	205	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 21	Garage Mezzanine East	205	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 22	Garage Mezzanine East	205	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 23	Garage Mezzanine East	205	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 24	Garage Mezzanine East	205	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 25	Garage Mezzanine East	205	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
E 26	Garage East	104	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - low SHGC	Alpen	thinkalpen.com	725L	0.14 BTU/(h·ft²·°F)	0.26	0.46	Sandstone	0	No	No
I 10	Shop Office	108	Gray Tint	4'-0"	3'-8"	Steel Single Pane Clear Glass							Gray - Light	0	Yes	Yes
S 12	Garage East	104	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - high SHGC	Alpen	thinkalpen.com	725H	0.16 BTU/(h·ft²·°F)	0.49	0.6	Sandstone	0	No	Yes
S 13	Garage East	104	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - high SHGC	Alpen	thinkalpen.com	725H	0.16 BTU/(h·ft²·°F)	0.49	0.6	Sandstone	0	No	Yes
S 20	Garage Mezzanine West	204	Gray Tint	10'-0"	3'-0"	Fiberglass Picture Window - high SHGC	Alpen	thinkalpen.com	725H	0.16 BTU/(h·ft²·°F)	0.49	0.6	Sandstone	0	No	Yes

Overhead Door Schedule																	
Mark	From Room	Room Number	Width	Height	Door Type	Manufacturer	URL	Model	U-Value	Fire Rating	Wet Location Rating	Frame Color	Door Color	Breakaway Height	Apparent Design Power	Poles	Voltage
OHD- 1	Garage East	104	16'-0"	14'-0"	Sectional Overhead Door - Insulated	Overhead Door	www.overheaddoor.com	Thermacore 850	0.14 BTU/(h·ft²·°F)	0		white	white	4'-0"	915 VA	3	480 V
OHD- 2	Garage East	104	16'-0"	14'-0"	Sectional Overhead Door - Insulated	Overhead Door	www.overheaddoor.com	Thermacore 850	0.14 BTU/(h·ft²·°F)	0		white	white	4'-0"	915 VA	3	480 V
OHD- 3	Repair Shop	109	14'-0"	14'-0"	Sectional Overhead Door - Insulated	Overhead Door	www.overheaddoor.com	Thermacore 850	0.14 BTU/(h·ft²·°F)	0		white	white	4'-0"	915 VA	3	480 V
OHD- 4	Repair Shop	109	14'-0"	14'-0"	Sectional Overhead Door - Insulated	Overhead Door	www.overheaddoor.com	Thermacore 850	0.14 BTU/(h·ft²·°F)	0		white	white	4'-0"	915 VA	3	480 V
OHD- 5	Wash Shop	107	14'-0"	14'-0"	Sectional Overhead Door - Insulated	Overhead Door	www.overheaddoor.com	Thermacore 850	0.14 BTU/(h·ft²·°F)	0	Washbay Rated	white	white	1'-0"	915 VA	3	480 V
OHD- 6	Wash Shop	107	14'-0"	14'-0"	Sectional Overhead Door - Insulated	Overhead Door	www.overheaddoor.com	Thermacore 850	0.14 BTU/(h·ft²·°F)	0	Washbay Rated	white	white	4'-0"	915 VA	3	480 V

Door Schedule													
Mark	From Room	From Number	To Room	To Number	Clear Width	Clear Height	Door Type	Panel Type	U Value	Fire Rating	ADA Hardware	Panel Finish	Frame Finish
104A	Garage East	104			3'-0"	7'-0"	Hollow Metal Steel Door - Insulated	Narrow Lite	0.29 BTU/(h·ft²·°F)	1	Yes	Match Siding (Sandstone)	Match Siding (Sandstone)
104B	Garage East	104			3'-0"	7'-0"	Hollow Metal Steel Door - Insulated	Narrow Lite	0.29 BTU/(h·ft²·°F)	0	Yes	Match Siding (Sandstone)	Match Siding (Sandstone)
105	Storage 1st Floor	105	Garage East	104	6'-0"	7'-0"	Hollow Metal Steel Door	Double Narrow Lite		1	Yes	Match Siding (Sandstone)	Match Siding (Sandstone)
106	Facilities Shop	106	Garage East	104	6'-0"	7'-0"	Hollow Metal Steel Door	Double Narrow Lite		1	Yes	Match Siding (Sandstone)	Match Siding (Sandstone)
107	Garage West	100	Wash Shop	107	3'-0"	7'-0"	Hollow Metal Steel Door	Narrow Lite		1	Yes	Match Siding (Sandstone)	Match Siding (Sandstone)
108	Wash Shop	107	Shop Office	108	3'-0"	7'-0"	Hollow Metal Steel Door	Narrow Lite		0	Yes	Match Siding (Sandstone)	Match Siding (Sandstone)
109A	Repair Shop	109			3'-0"	7'-0"	Hollow Metal Steel Door	Narrow Lite	0.29 BTU/(h·ft²·°F)	0	Yes	Match Siding (Sandstone)	Match Siding (Sandstone)
109B	Repair Shop	109	Garage East	104	3'-0"	7'-0"	Hollow Metal Steel Door	Narrow Lite		1	Yes	Match Siding (Sandstone)	Match Siding (Sandstone)
203	IT Closet	203	Shop Mezzanine	202	3'-0"	7'-0"	Hollow Metal Steel Door	Flush		0	No	Match Siding (Sandstone)	Match Siding (Sandstone)
206A	Garage Mezzanine West	204	Boiler Room 2nd Floor	206	3'-0"	7'-0"	Hollow Metal Steel Door	Narrow Lite		1	No	Match Siding (Sandstone)	Match Siding (Sandstone)
206B	Garage West	100	Boiler Room 2nd Floor	206	5'-0"	7'-0"	Hollow Metal Steel Door	Double Flush		1	No	Match Siding (Sandstone)	Match Siding (Sandstone)

Room Finish Schedule									
Number	Name	Est. Area	Est. Perimeter	Room Finish Style	Floor Finish	Wall Finish	Ceiling Finish	Exposed Structure	Paint Note
100	Garage West	18,430 ft²	743'	Existing	-	-	-	-	no Painting Work required
101	Storage Surveyor	309 ft²	73'	Existing	-	-	-	-	no Painting Work required
102	Electrical Room	157 ft²	51'	Existing	-	-	-	-	no Painting Work required
103	Storage Landfill	292 ft²	83'	Existing	-	-	-	-	no Painting Work required
104	Garage East	18,156 ft²	590'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
105	Storage 1st Floor	544 ft²	95'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
106	Facilities Shop	523 ft²	96'	Storage	Sealed Concrete	White; all areas	white	white	Factory-Finished Metal Panels not to be painted.
107	Wash Shop	2,646 ft²	234'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
108	Shop Office	158 ft²	52'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
109	Repair Shop	3,055 ft²	229'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
201	Electrical Room	506 ft²	103'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
202	Shop Mezzanine	1,703 ft²	208'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
203	IT Closet	39 ft²	25'	Storage	Sealed Concrete	White; all areas	white	white	Factory-Finished Metal Panels not to be painted.
204	Garage Mezzanine West	2,899 ft²	536'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
205	Garage Mezzanine East	2,521 ft²	468'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
206	Boiler Room 2nd Floor	566 ft²	97'	Storage in pre-finished metal building	Sealed Concrete	White; CMU and concrete only	-	white	Factory-Finished Metal Panels not to be painted.
207	Garage West Mezzanine	332 ft²	73'	Existing	-	-	-	-	no Painting Work required
208	Water Heater Room XTG	191 ft²	58'	Existing	-	-	-	-	no Painting Work required
209	File Storage XTG	515 ft²	92'	Existing	-	-	-	-	no Painting Work required

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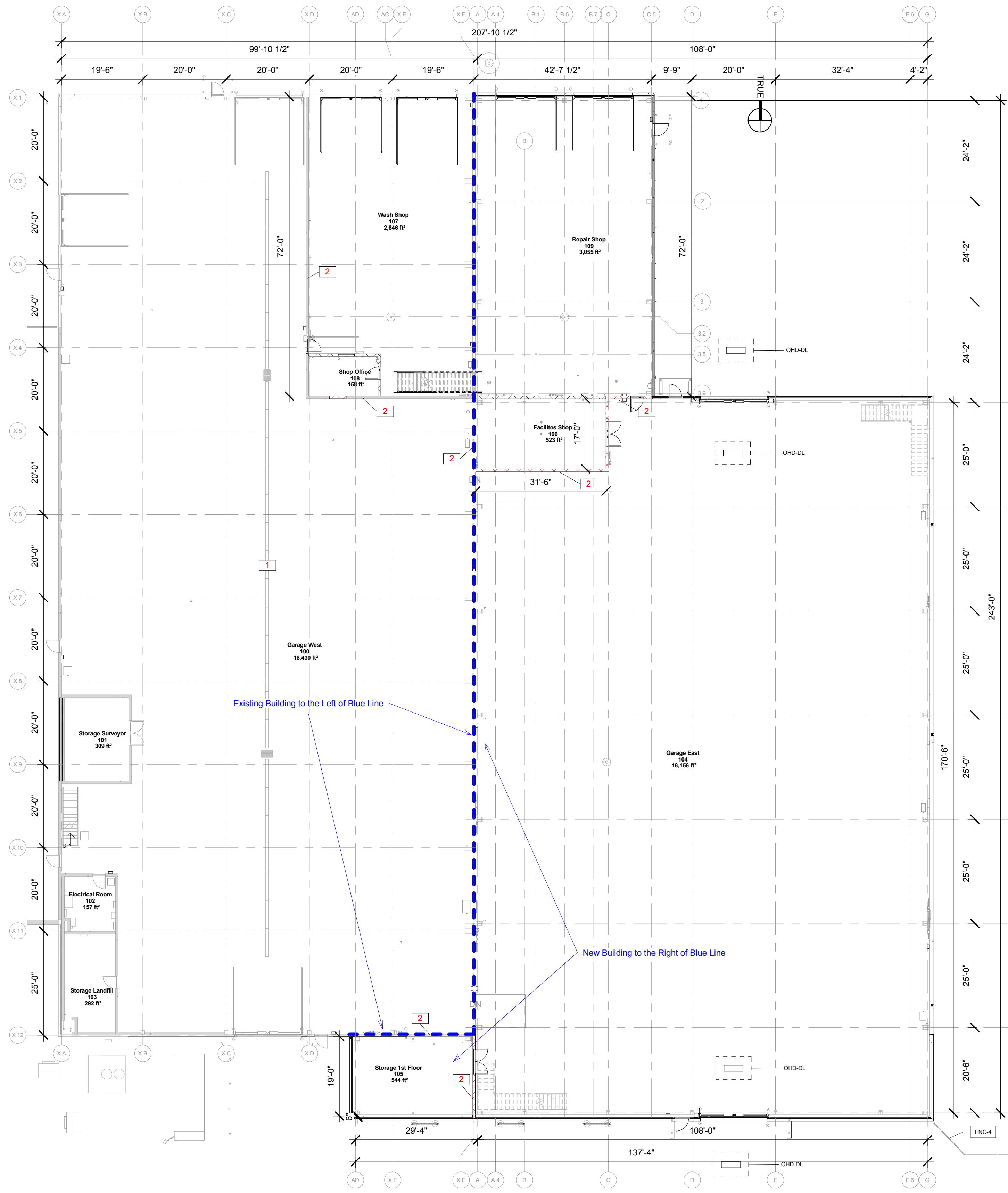
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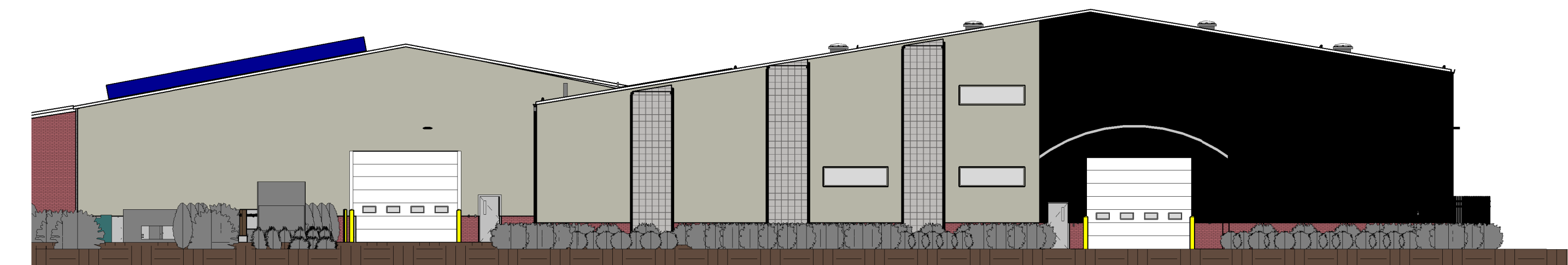
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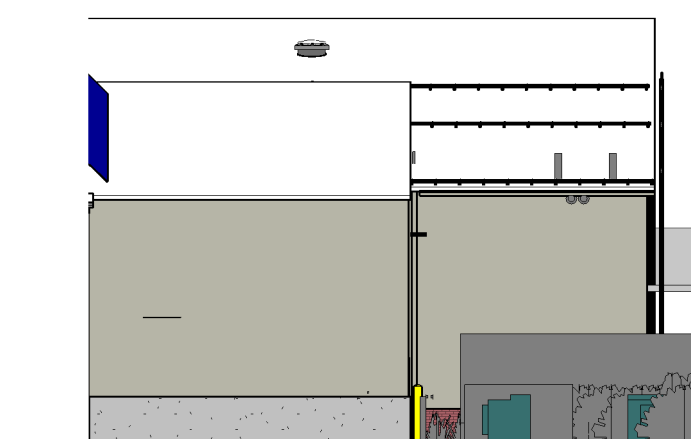
First Floor - All



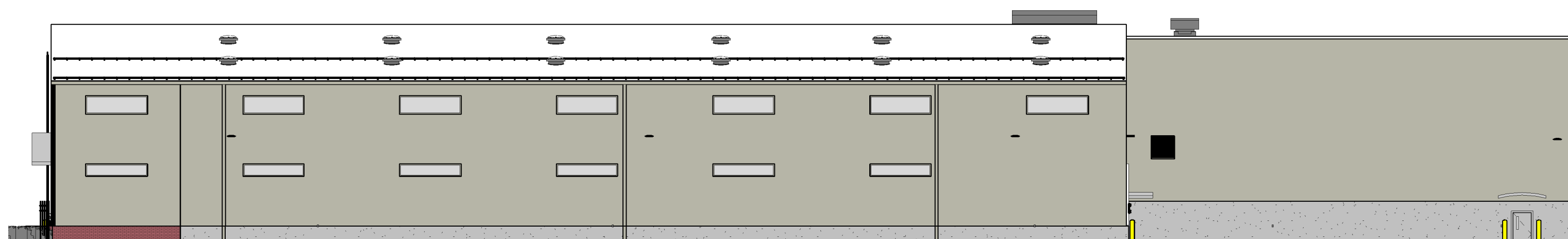
1 A - 1st Floor Complete
1/16" = 1'-0"



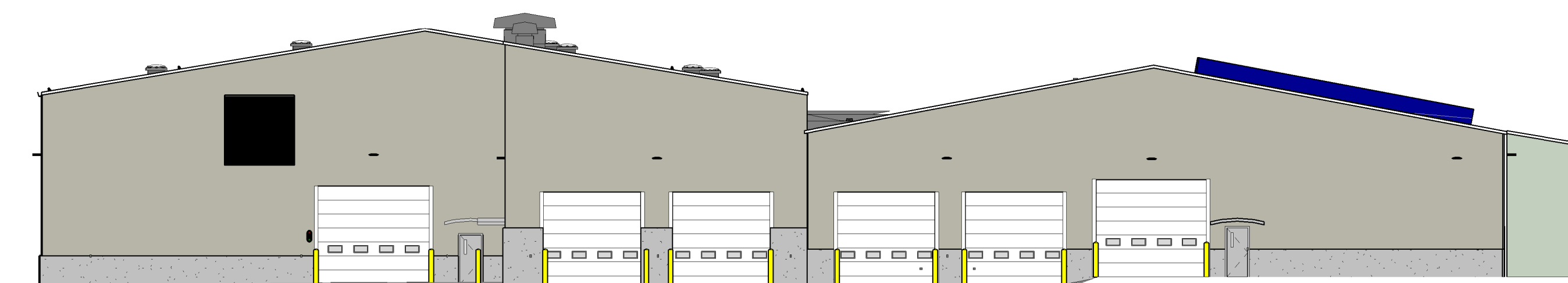
3 Presentation - Elevation South
1/16" = 1'-0"



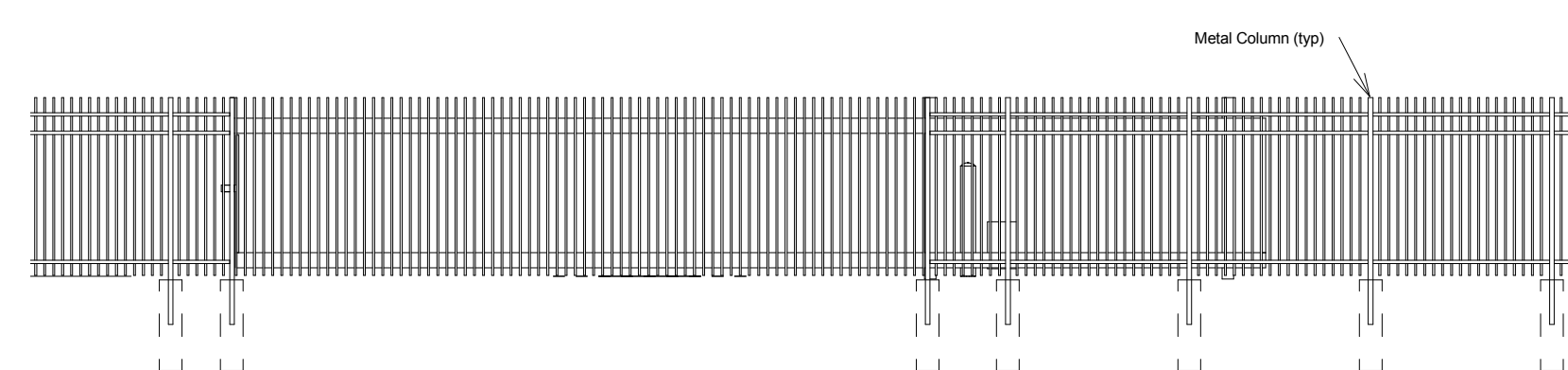
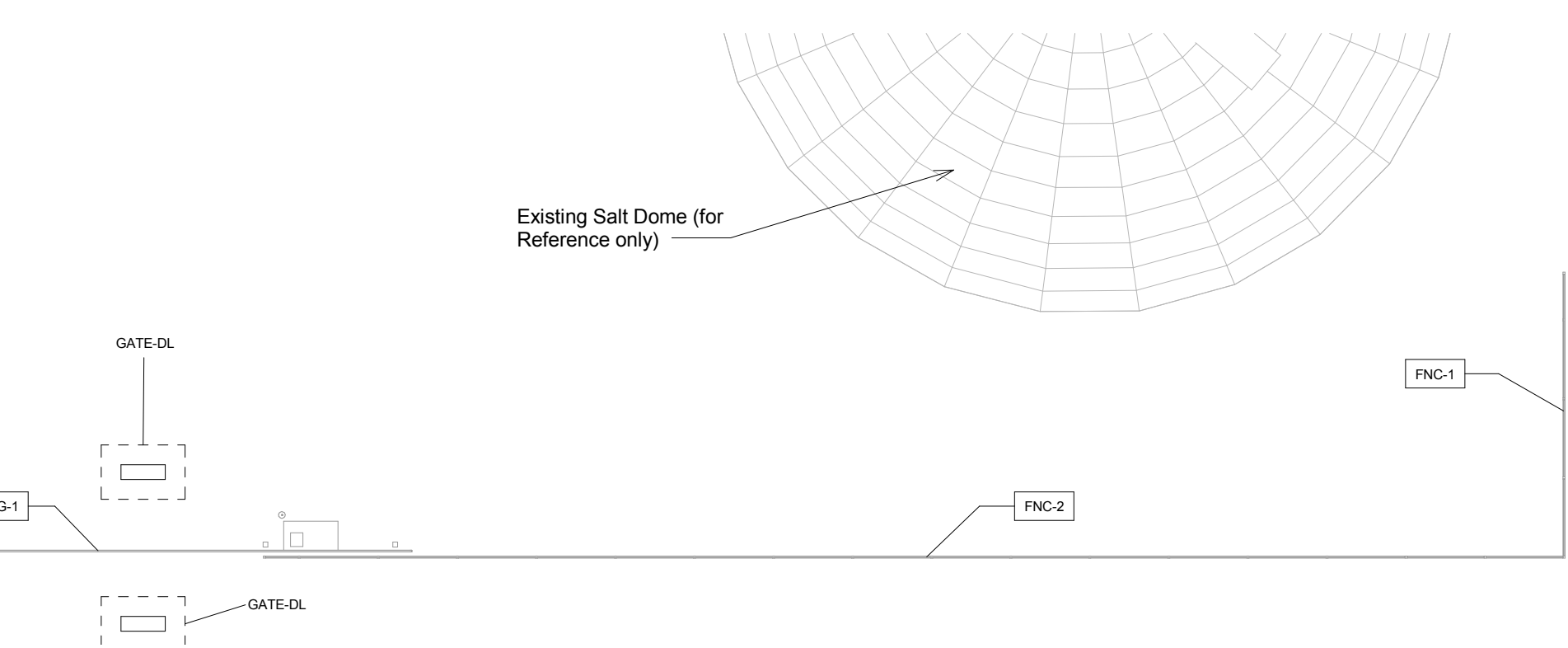
4 Presentation Elevation West S
1/16" = 1'-0"



5 Presentation - Elevation East
1/16" = 1'-0"



6 Presentation - Elevation North
1/16" = 1'-0"



2 A - Elevation Fence and Gate
1/8" = 1'-0"

1 A - Elevation Marker Plan
1" = 80'-0"

4 A - Elevation West S
1/8" = 1'-0"

② A - Elevation South
1/8" = 1'-0"

3 A - Elevation East
3/32" = 1'-0"

5 A - Elevation North
 $1/8" = 1'-0"$

Engineering Operations
Building Addition

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Landscaping Design:
Sarah Lerner, LPA., City of
Madison; 608-261-4281;
slerner@cityofmadison.com

Plumbing Design:
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kschindel@cityofmadison.com

HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

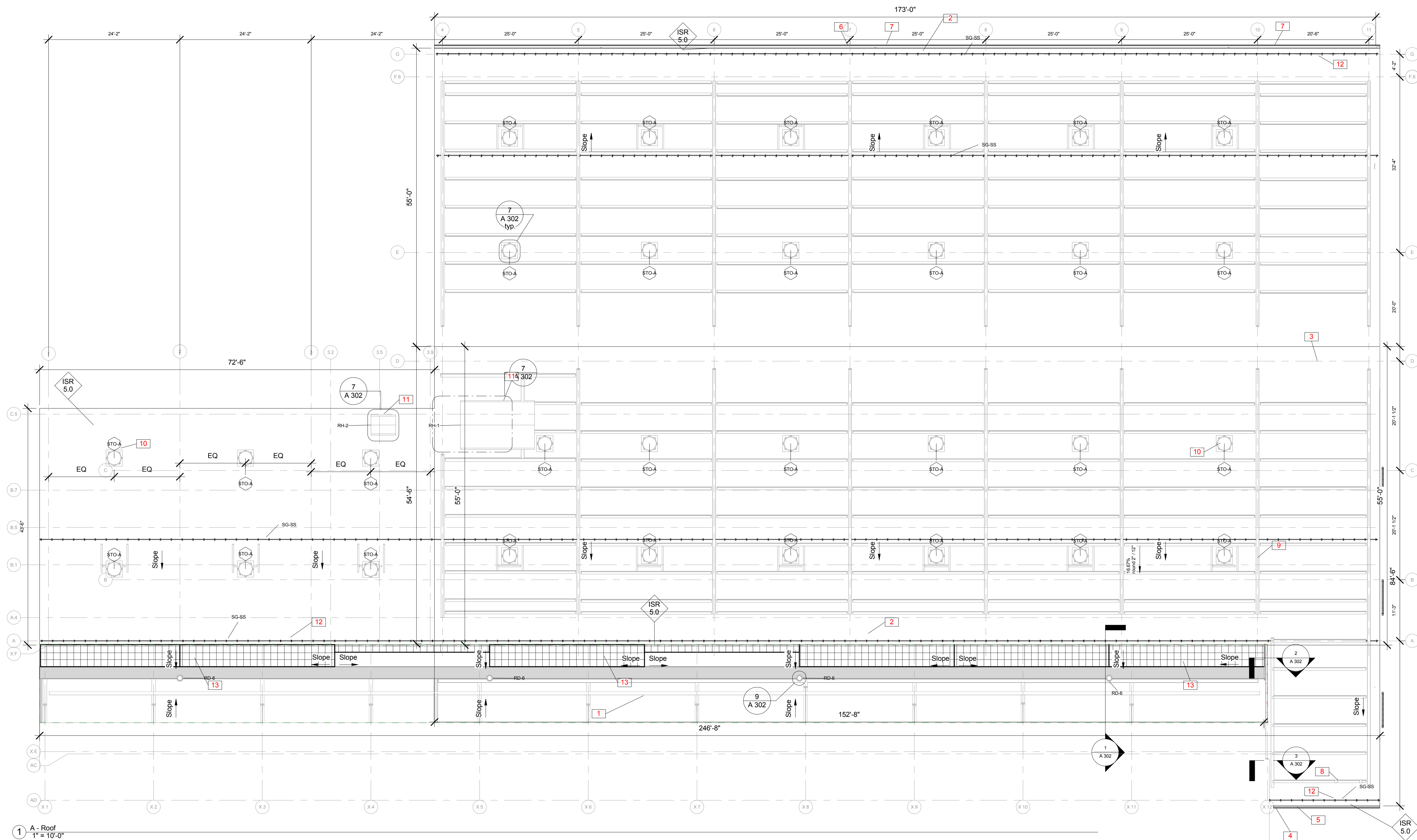
Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

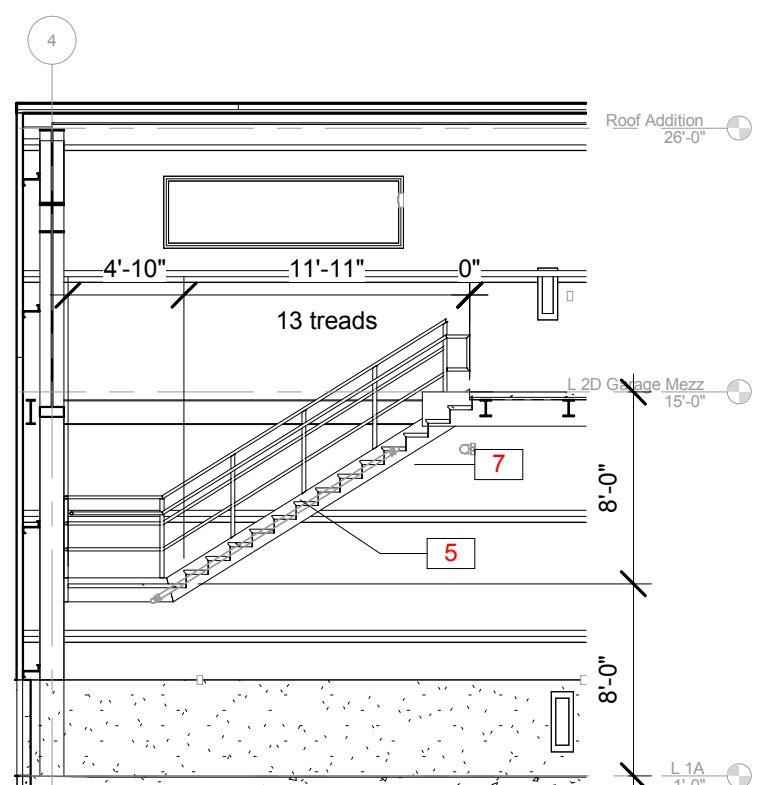
Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

A 150

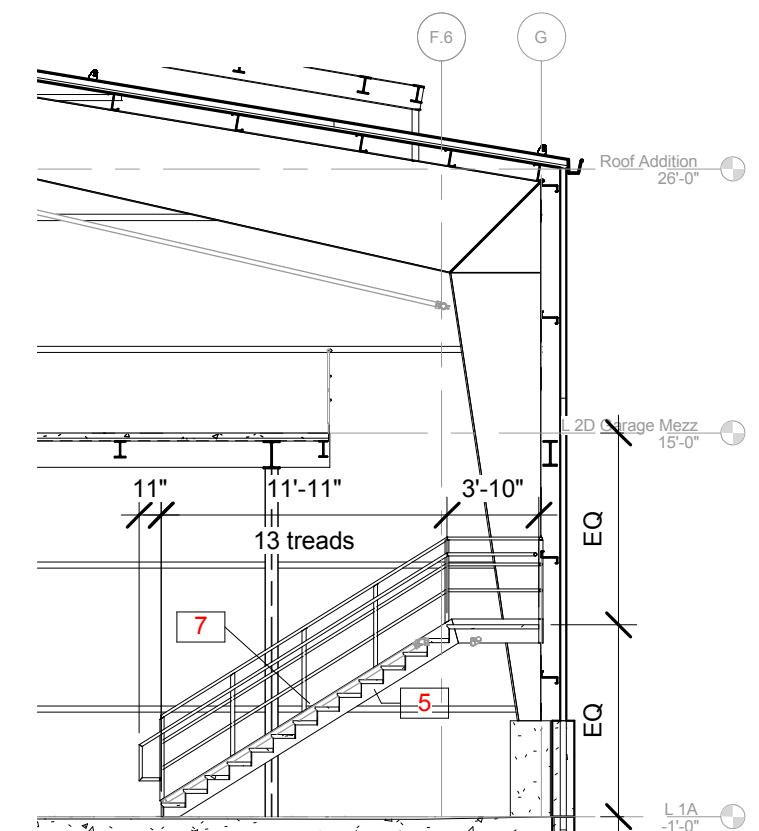
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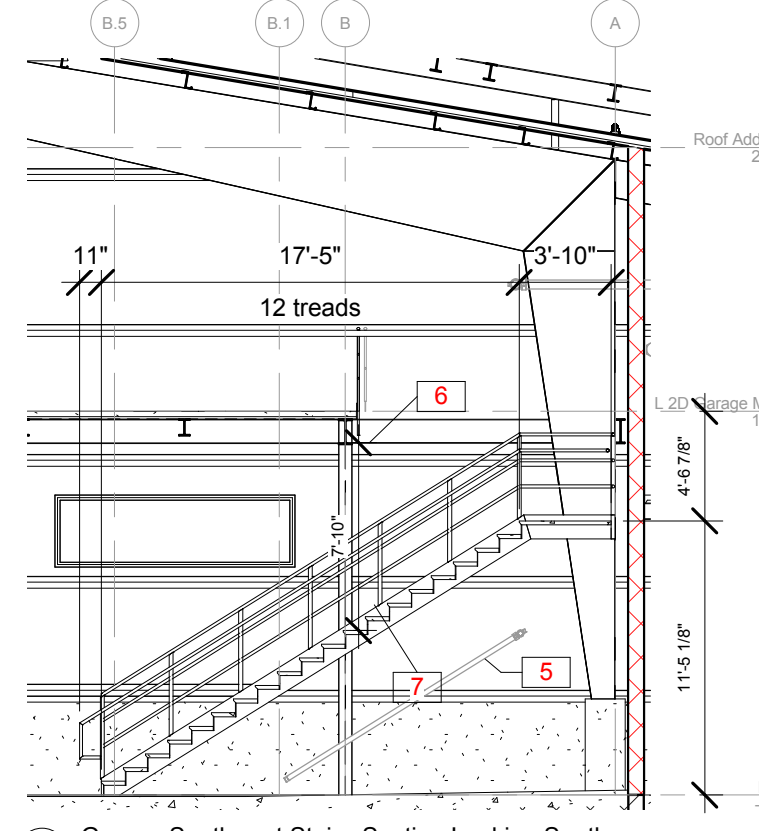
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Key Value	Keynote Text
	EXISTING WHITE POOR ROOF. REPAIR TO CORRESPOND ANY WORK UNDER THIS CONTRACT
2	MIN. 7 FEET ROOF EAVE MIN.
3	MIN. 4" PAIINTWY PER 2012 TO 608.11.3.2.
4	3/4" X DOWN SPOIL IN WALL COLOR. COORDINATE WITH CIVIL ENGINEERING DESIGN TO TERMINATE IN STORMWATER PIPE.
5	ROOF 5/8" SS MATCH WALL COLOR.
6	GUTTER 5/4" MATCH WALL COLOR.
7	4" X 6" DOWN SPOIL IN WALL COLOR. COORDINATE WITH CIVIL ENGINEERING DESIGN TO TERMINATE IN STORMWATER PIPE.
8	COORDINATE WITH ROOF EQUIPMENT AND RE-ROUTE AS REQUIRED.
9	SUPERSTRUCTURE FOR FUTURE SOLAR INSTALLATION. COORDINATE LOCATION WITH ROOF EQUIPMENT. COORDINATE EQUIPMENT WITH SUPERSTRUCTURE.
10	COORDINATE LOCATION WITH FUTURE SOLAR SUPERSTRUCTURE AND OTHER OBSTACLES.
11	COORDINATE ROOF EQUIPMENT WITH STRUCTURE AND OTHER ELEMENTS. REDESIGN AND RE-ARRANGE UNDERLAYING SYSTEMS AS REQUIRED.
12	INSTALL SNOWGUARD PER MANUFACTURERS INSTRUCTIONS. COORDINATE WITH ROOF EQUIPMENT AND ADJUST FINAL LAYOUT AS REQUIRED UPON APPROVAL OF THE ARCHITECT.
13	INSTALL BACK ROOF ROOF OVER TAPERED INSULATION TO CREATE 2" MIN. SLOPE.



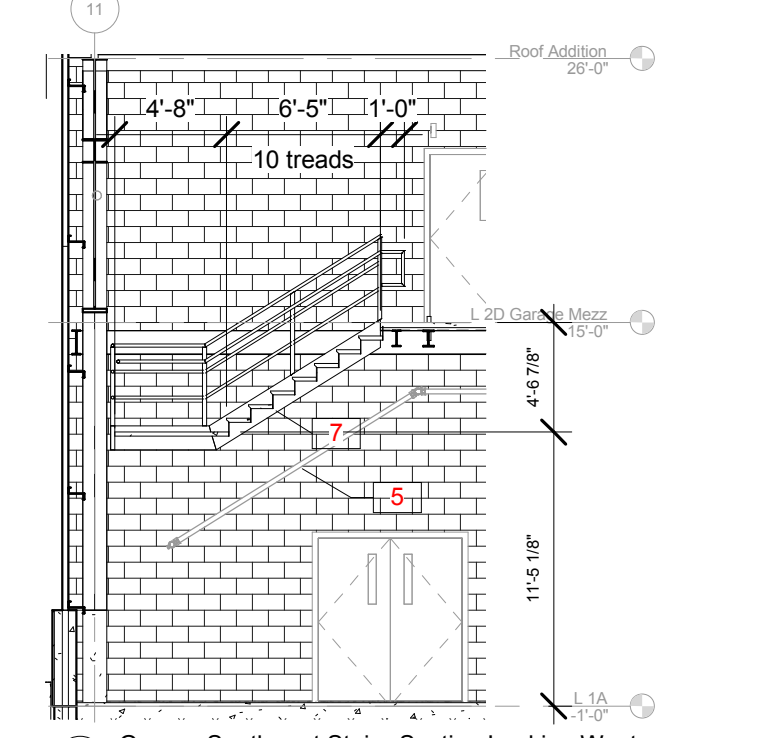
3 Garage Northeast Stair - Section Looking East
1/8" = 1'-0"



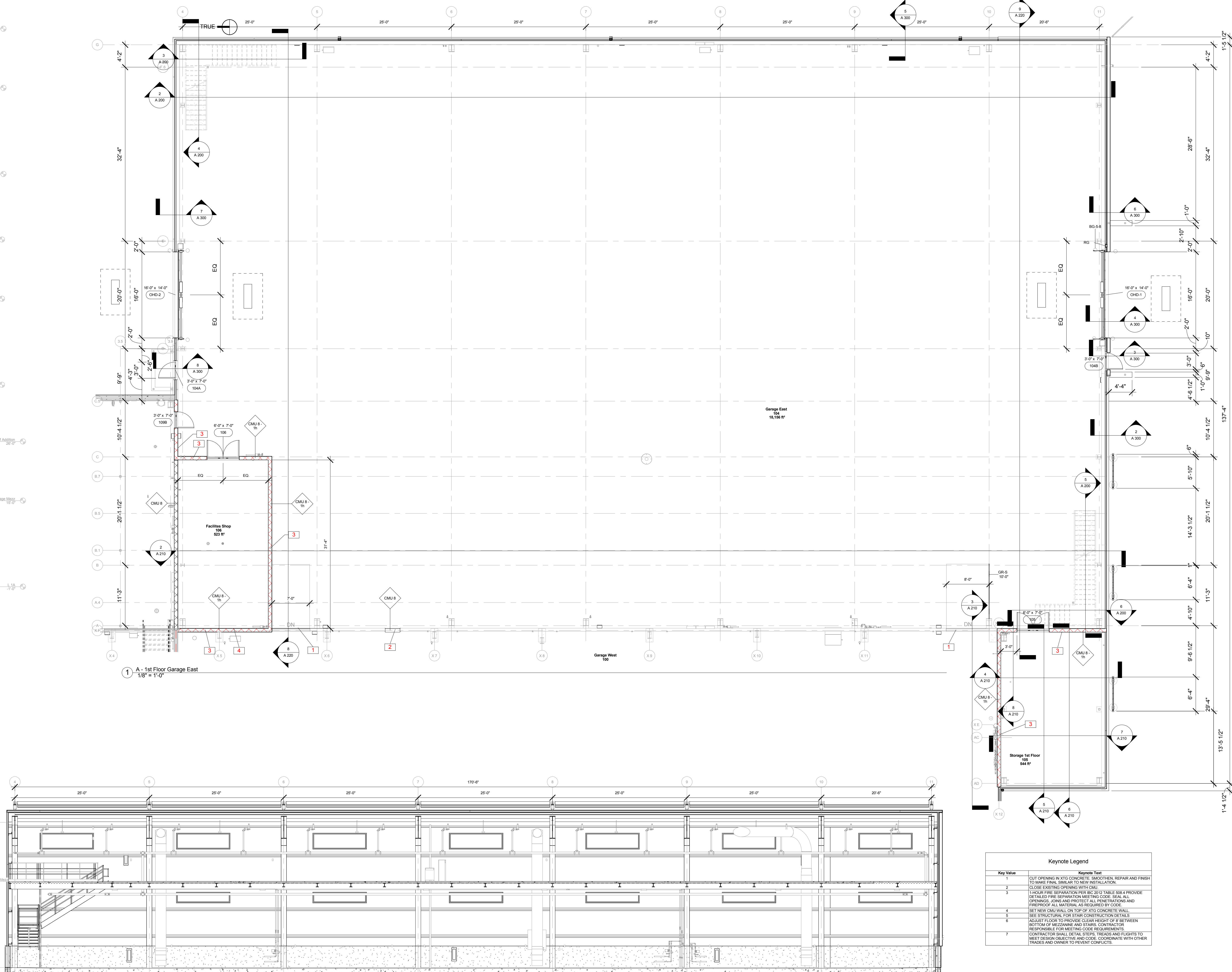
4 Garage Northeast Stair - Section Looking North
1/8" = 1'-0"



5 Garage Southwest Stair - Section Looking South
1/8" = 1'-0"

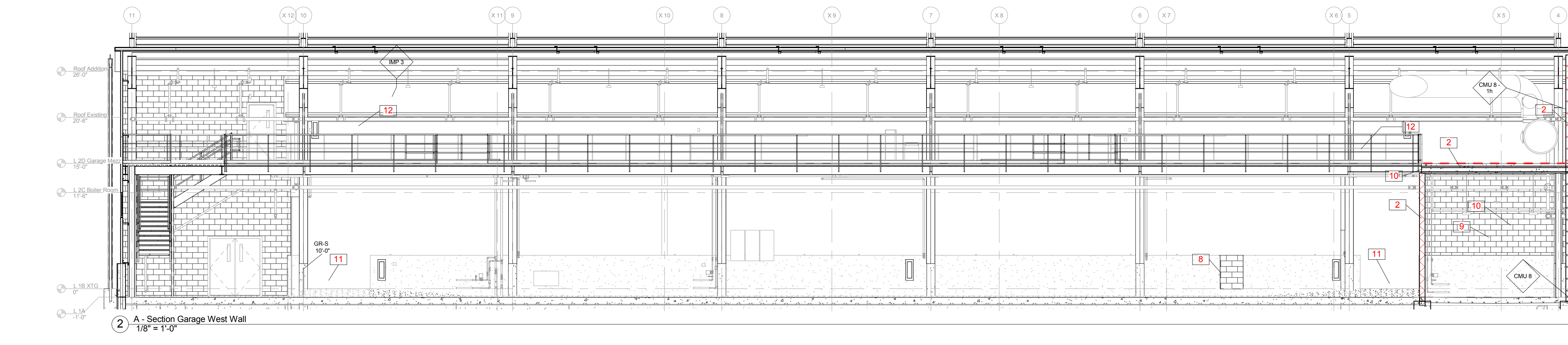
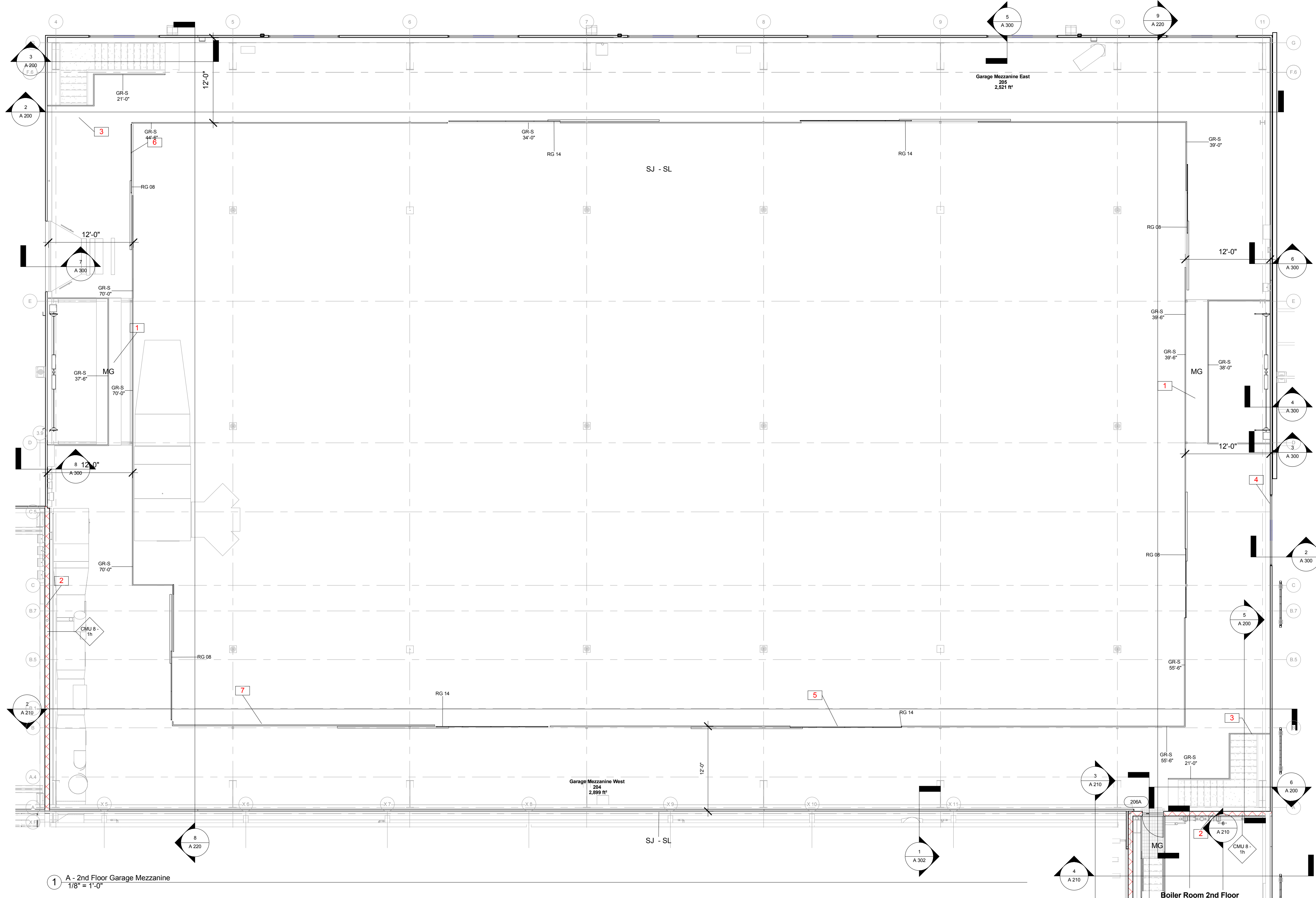
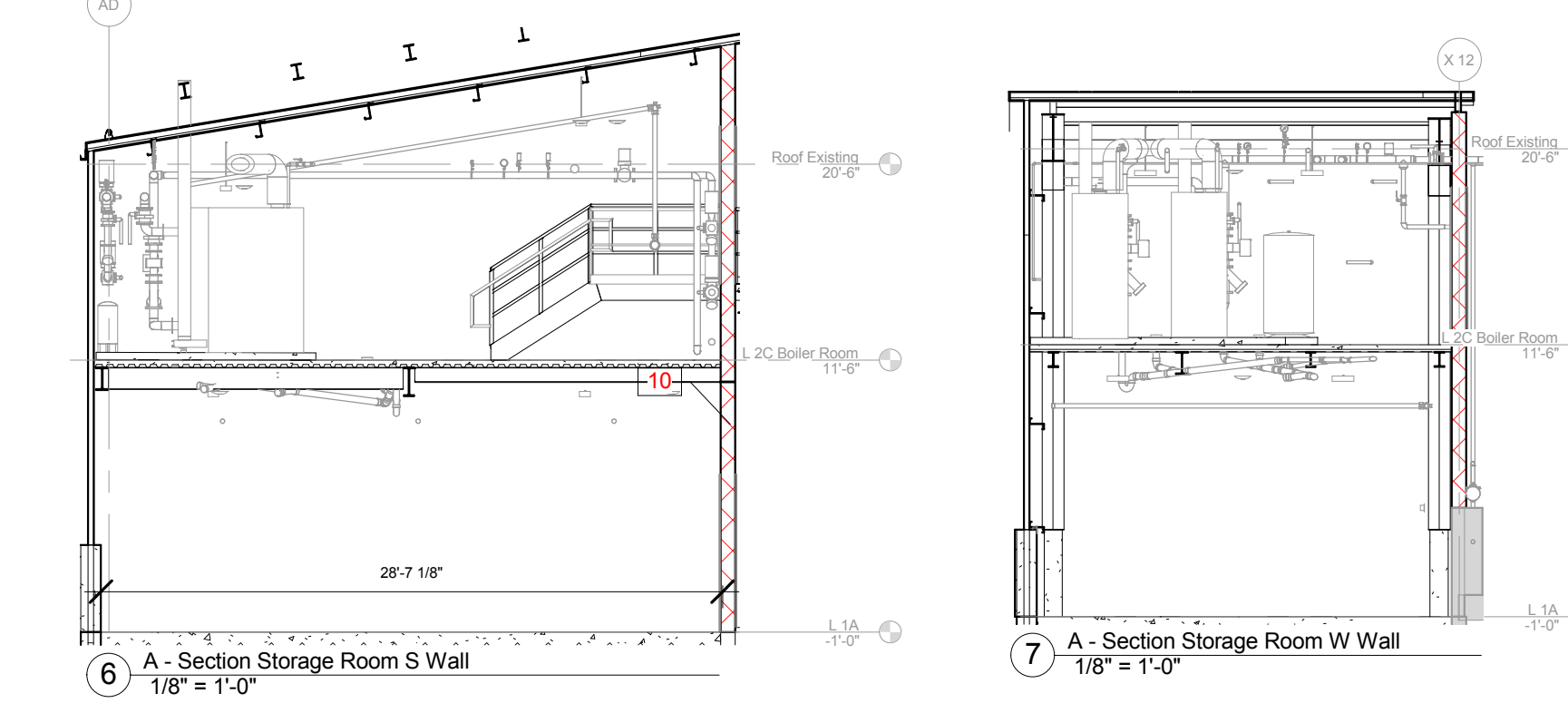
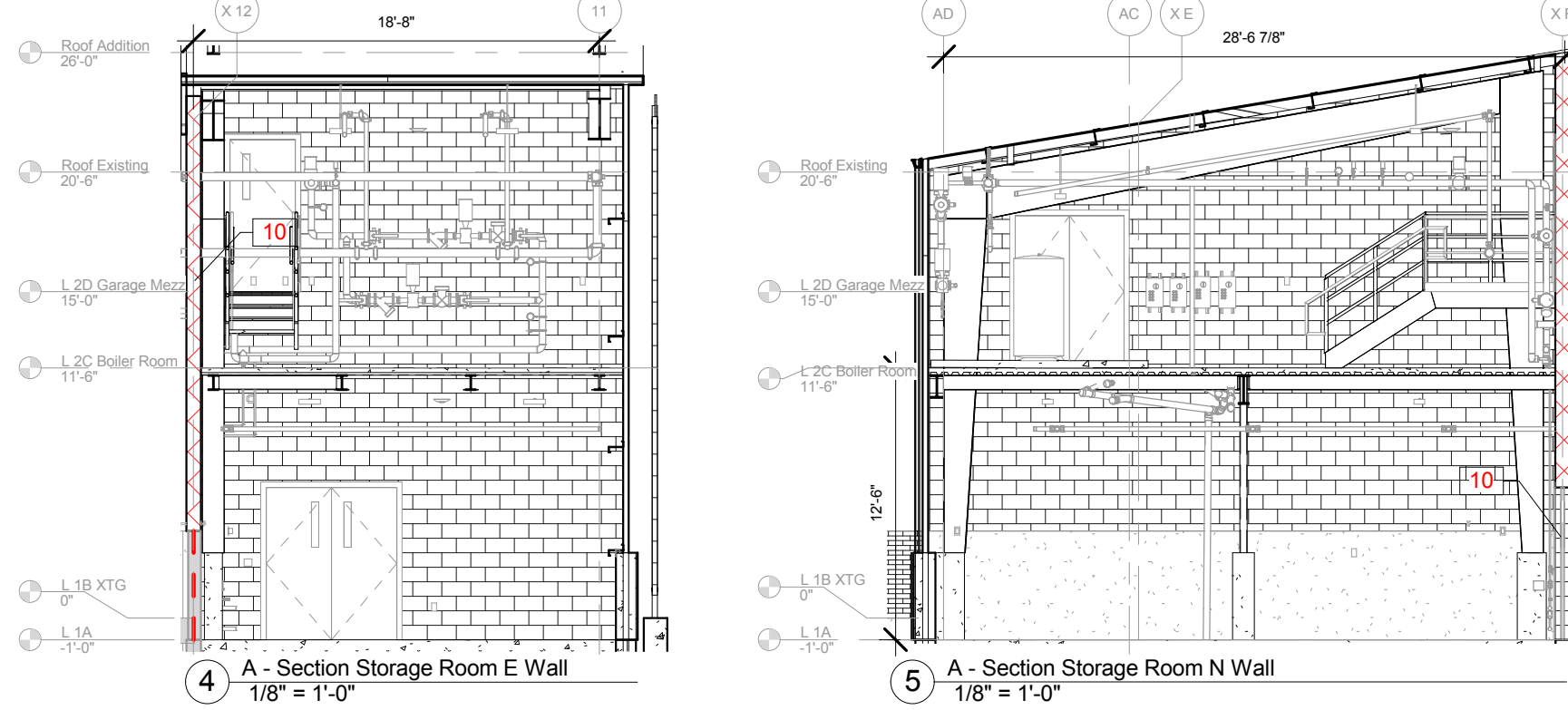
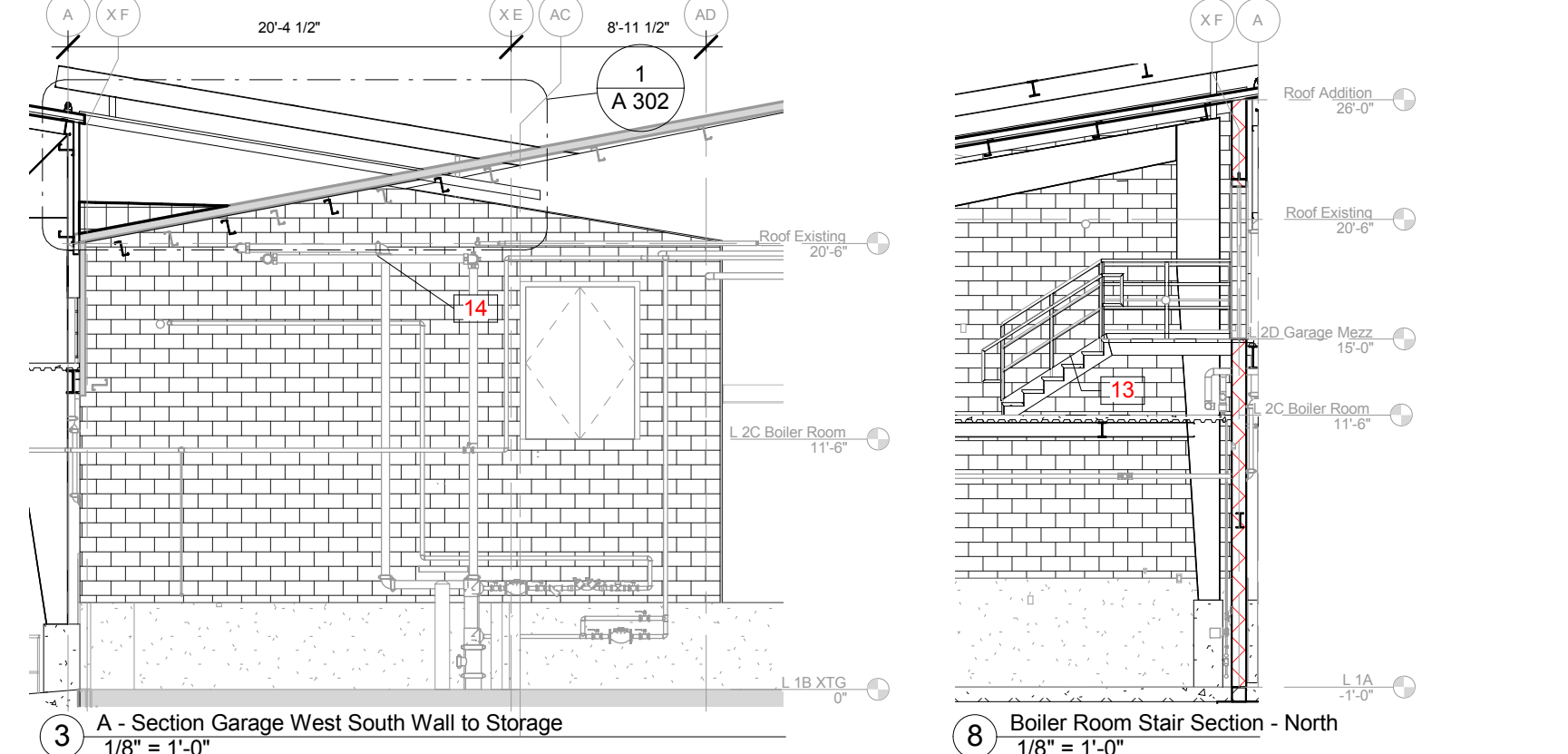


6 Garage Southwest Stair - Section Looking West
1/8" = 1'-0"



2 A - Section Garage East Wall
1/8" = 1'-0"

Keynote Legend	
Key Value	Keynote Text
1	CUT OPENING IN XTG CONCRETE. SMOOTHEN, REPAIR AND FINISH TO MAKE FINAL SIMILAR TO NEW INSTALLATION.
2	CLOSE EXISTING OPENING WITH CMU.
3	1 HOUR FIRE SEPARATION PER IBC 2012 TABLE 606.4 PROVIDE DETAILED FIRE SEPARATION MEETING CODE. SEAL ALL OPENINGS, JOINTS AND PROTECT ALL PENETRATIONS AND FIREPROOF ALL MATERIAL AS REQUIRED BY CODE.
4	SET NEW CMU WALL ON TOP OF XTG CONCRETE WALL.
5	SEE STRUCTURAL FOR STAIR CONSTRUCTION DETAILS.
6	ADJUST FLOOR TO PROVIDE CLEAR HEIGHT OF 8' BETWEEN BOTTOM OF MEZZANINE AND STAIRS. CONTRACTOR RESPONSIBLE FOR MEETING CODE REQUIREMENTS.
7	CONTRACTOR SHALL DETAIL STEPS, TREADS AND FLIGHTS TO MEET DESIGN OBJECTIVE AND CODE. COORDINATE WITH OTHER TRADES AND OWNER TO PREVENT CONFLICTS.



Keynote Legend	
Key Value	Keynote Text
1	SHORTCUT BRIDGE 3' CLEAR WIDTH BETWEEN RAILS.
2	1-HOUR FIRE SEPARATION PER IBC 2012 TABLE 508.4 PROVIDE DETAILED FIRE SEPARATION MEETING CODE. SEAL ALL OPENINGS, JOINS AND PROTECT ALL PENETRATIONS AND FIREPROOF ALL MATERIAL AS REQUIRED BY CODE.
3	ADJUST FLOOR TO PROVIDE CLEAR HEIGHT OF 8' BETWEEN BOTTOM OF MEZZANINE AND STAIRS. CONTRACTOR RESPONSIBLE FOR MEETING CODE REQUIREMENTS.
4	PROVIDE ATTACHMENT FOR SAFETY HARNESS.
5	CENTER GATE OPENING. REPOSITION TO NOT INTERFERE WITH OTHER GATES OR OCCUPIED SPACES. FLIP ROLLING DIRECTION IF REQUIRED AND APPROVED BY OWNER. APPLICABLE TO ALL GATES IN SPACE.
6	LOCATE GATE AWAY FROM OBSTRUCTION.
7	INSTALL RAILINGS AND ROLLING GATE.
8	CLOSE EXISTING OPENING WITH CMU.
9	SET NEW CMU WALL ON TOP OF XTS CONCRETE WALL.
10	PROVIDE DETAILED FIRE SEPARATION MEETING CODE. SEAL ALL OPENINGS, JOINS AND PROTECT ALL PENETRATIONS AND FIREPROOF ALL MATERIAL AS REQUIRED BY CODE.
11	CUT OPENING IN XTS CONCRETE. SMOOTHEN, REPAIR AND FINISH TO MAKE FINAL SIMILAR TO NEW INSTALLATION.
12	KEEP EXISTING SIDING IN PLACE. REMOVE AS REQUIRED FOR OTHER CONSTRUCTION.
13	SEE STRUCTURAL FOR STAIR CONSTRUCTION DETAILS.
14	REMOVE SECTION OF EXISTING PURLIN TO INSTALL DOOR. DESIGN AND INSTALL NEW PURLIN STRUCTURE AROUND DOOR TO PROVIDE ADEQUATE SUPPORT.

Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
Sarah Lerner, LPA., City of
Madison; 608-261-4281;
slerner@cityofmadison.com

Electrical Design:
Dave Hanson, P.E., Kueny
Architects

Plumbing Design:
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HVAC Design:
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Structural Design:
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Kueny Architects

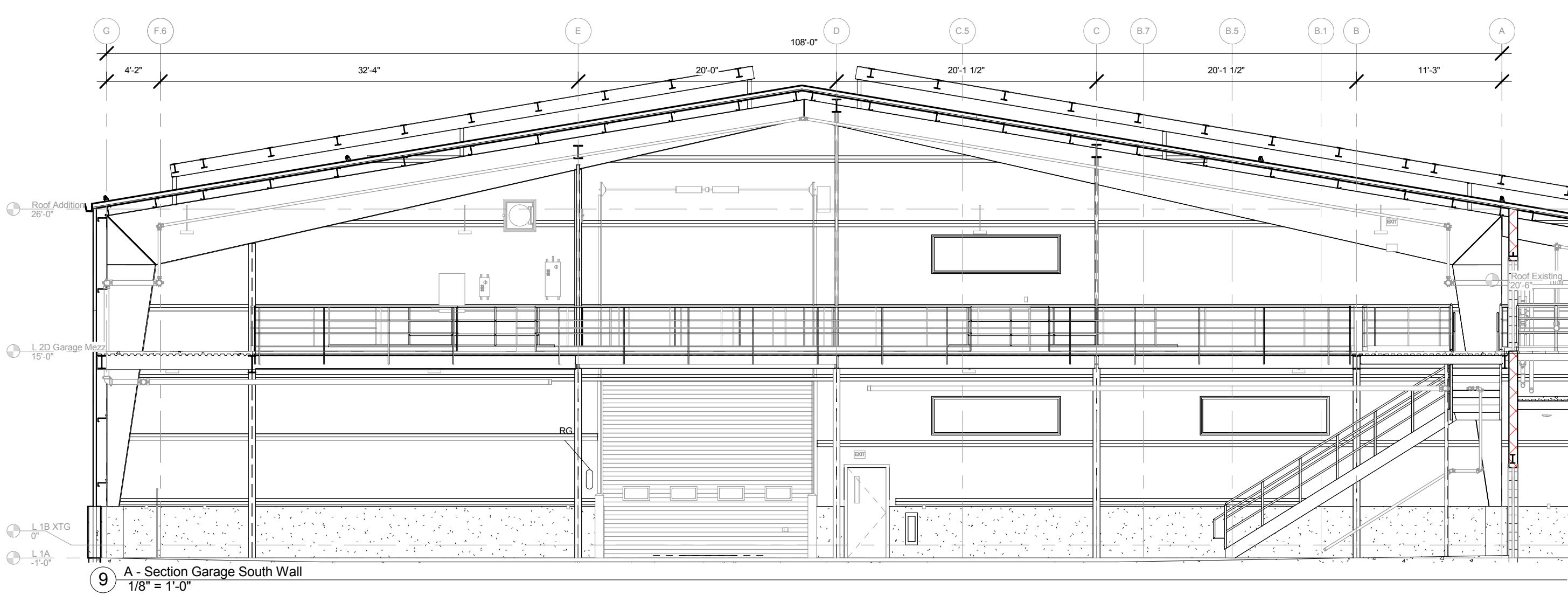
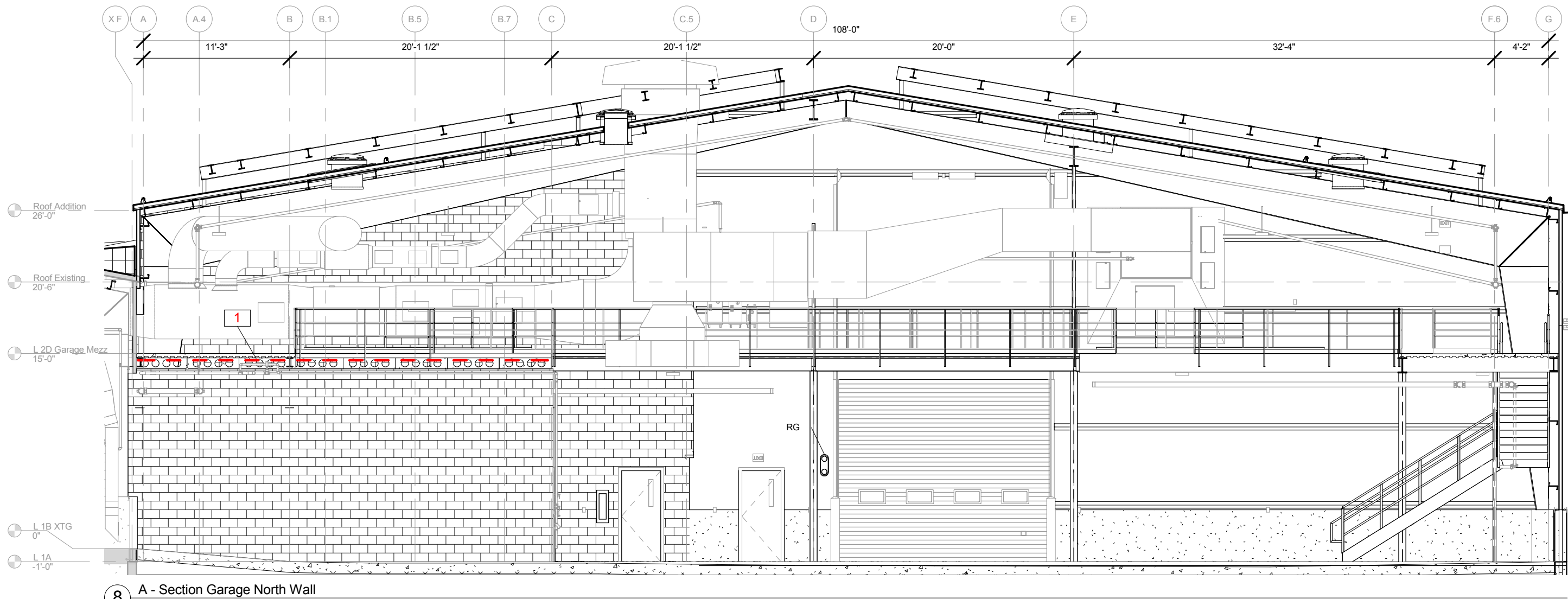
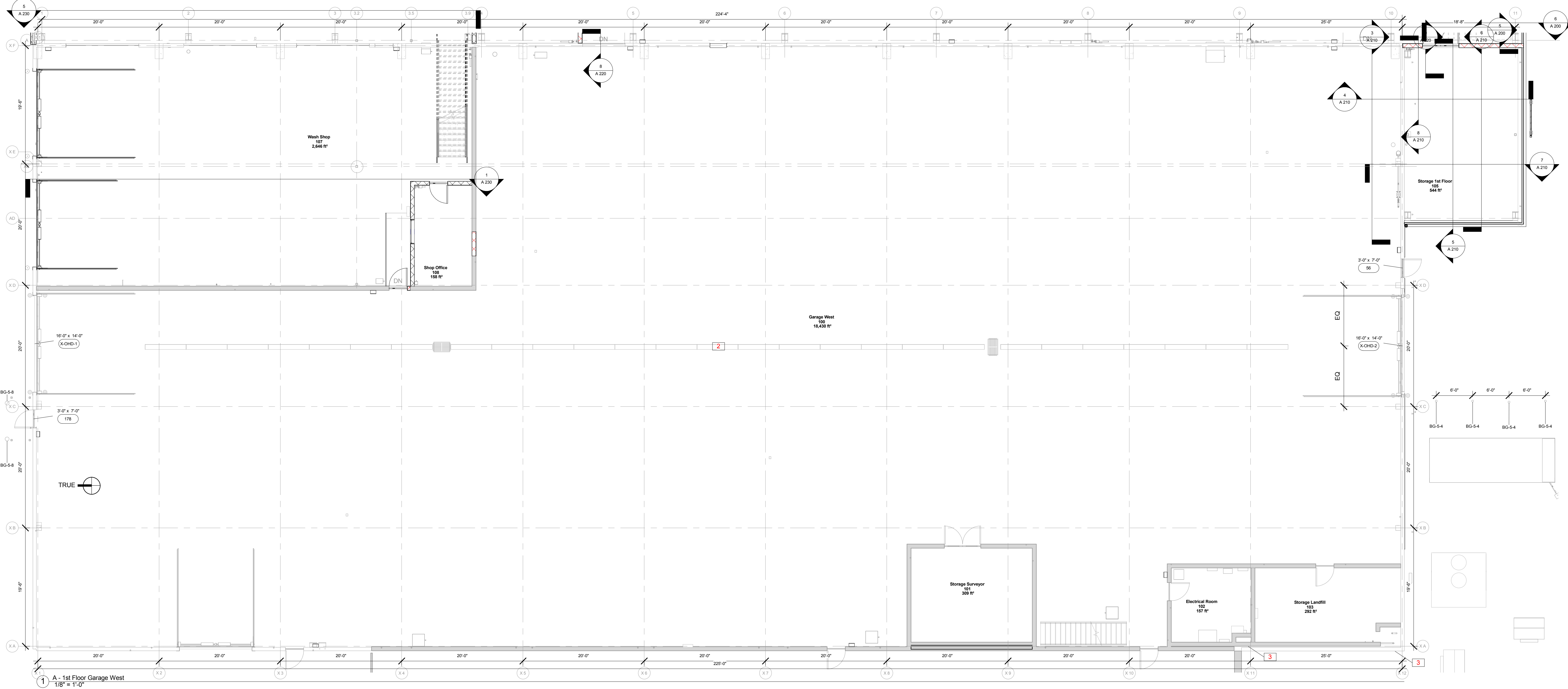
Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Garage East 2nd Floorplan

A 210

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Keynote Legend	
Key Value	Keynote Text
1	1-HOUR FIRE SEPARATION PER IBC 2012 TABLE 508.4 PROVIDE DETAILED FIRE SEPARATION MEETING CODE. SEAL ALL OPENINGS, JOINTS AND PROTECT ALL PENETRATIONS AND FIREPROOF ALL MATERIAL AS REQUIRED BY CODE.
2	GENERAL NOTE: CONTRACTOR SHALL VERIFY XTG DIMENSIONS. VALUES GIVEN ARE APPROXIMATE.
3	PROVIDE ALL EXCAVATION, DEMO, AND RE-INSTATEMENT FOR UTILITY INSTALLATION INCLUDING BUT NOT LIMITED TO EXCAVATION, CONCRETE, MASONRY, ETC.

City of Madison
Facilities Maintenance
1600 Emili St.
Madison, WI 53713

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Engineering Division

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Building Addition

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Common Council Approval:
6/2/2015

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HVAC Design:
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kschindel@cityofmadison.com

Structural Design:
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Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Garage West

A 220

Print Date:
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Engineering Operations
Building Addition

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Landscaping Design:
Sarah Lerner, LPA., City of
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Plumbing Design:
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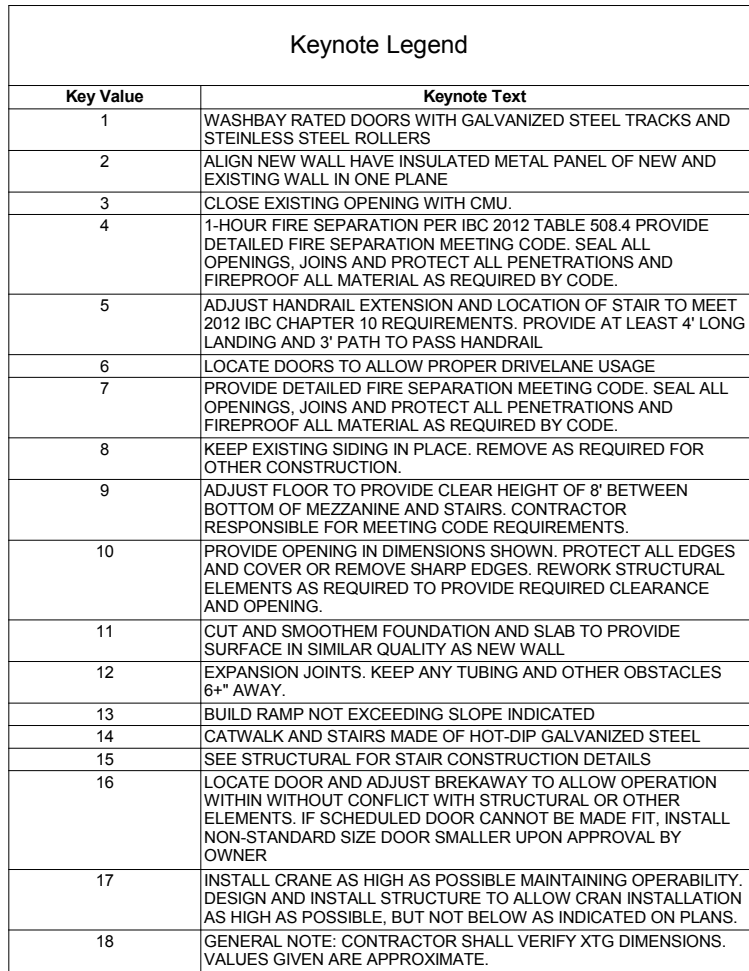
Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

A 230

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Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

Lighting Design:
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kschindel@cityofmadison.com

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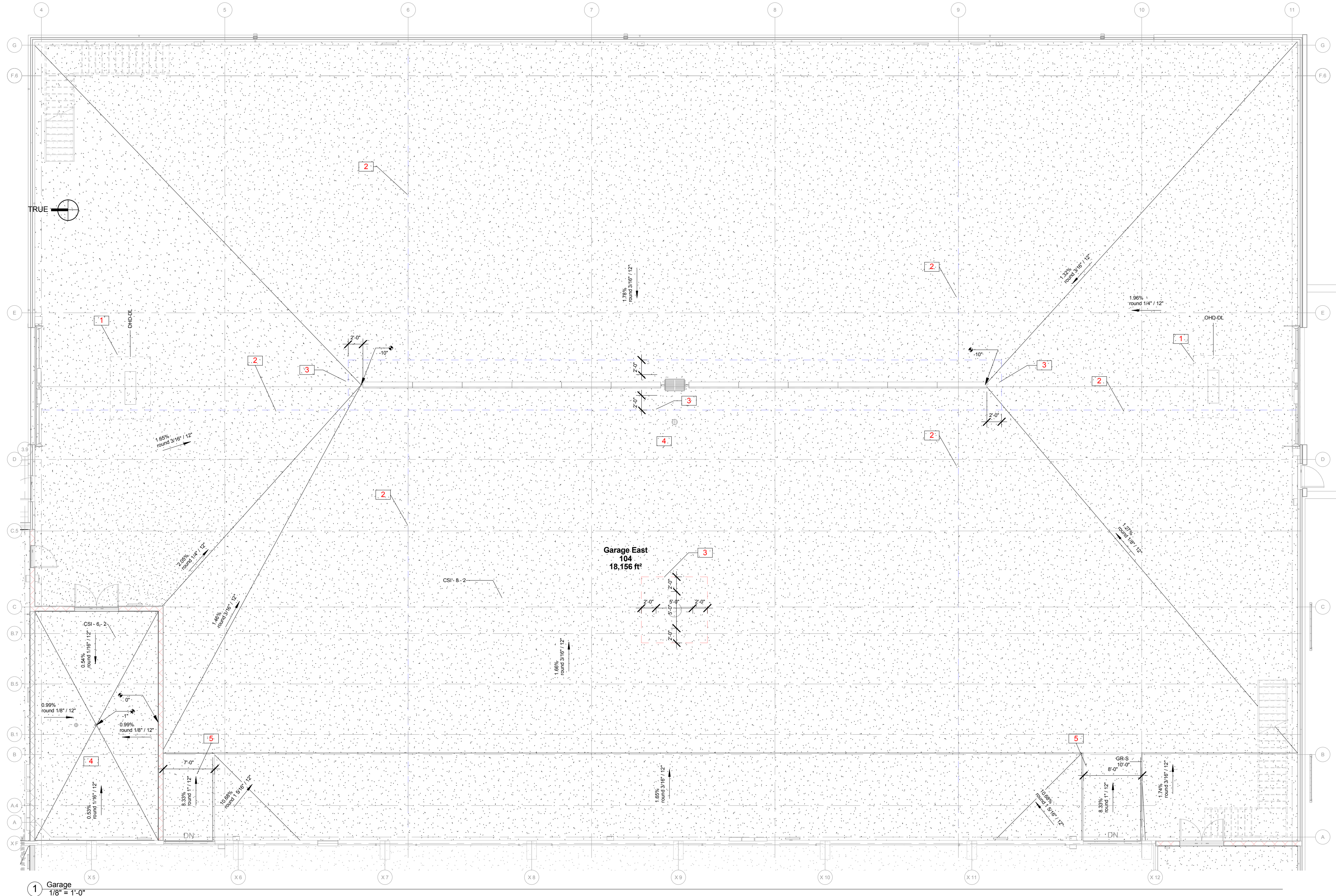
HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

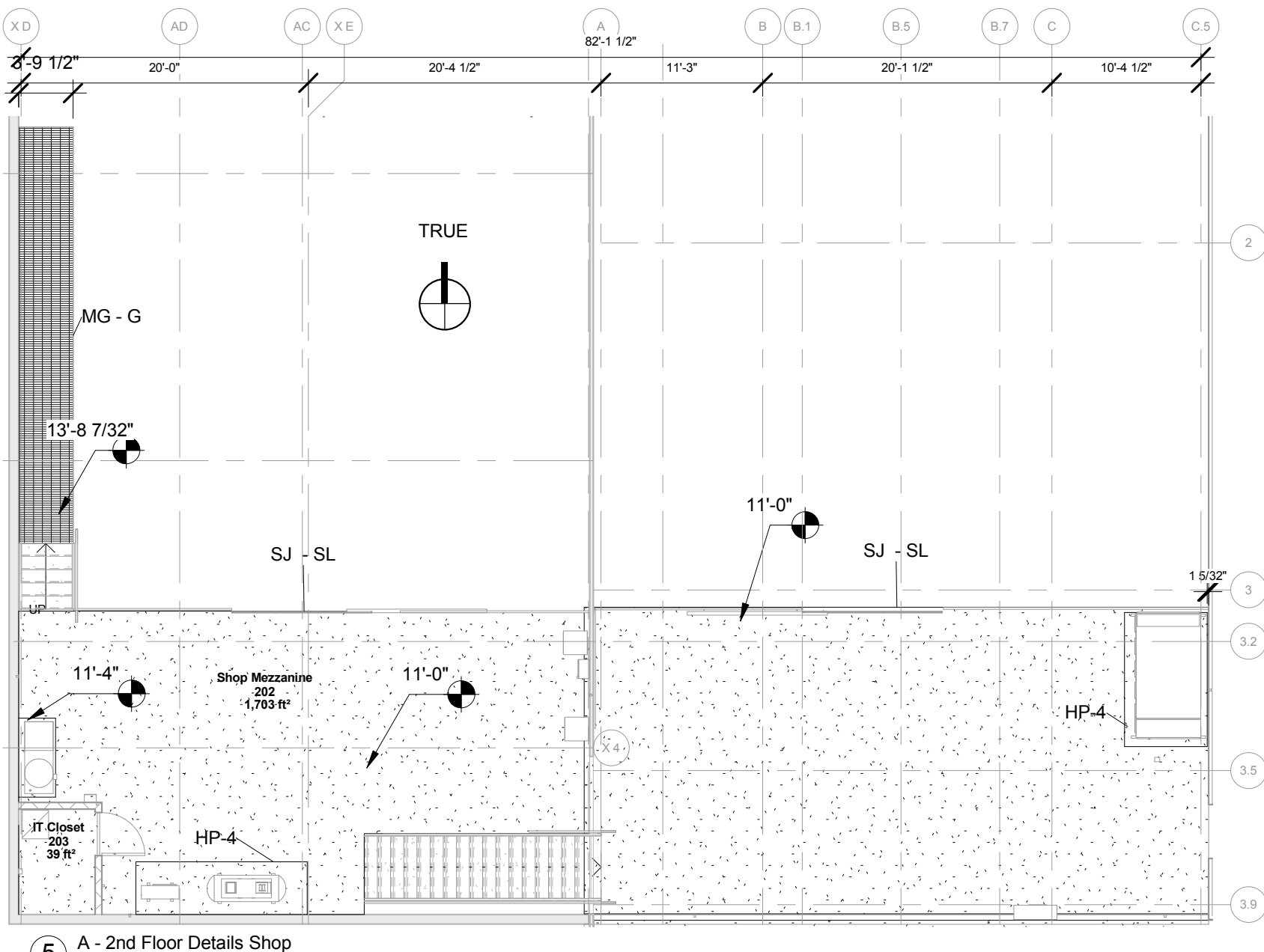
Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Floor Details Garage East

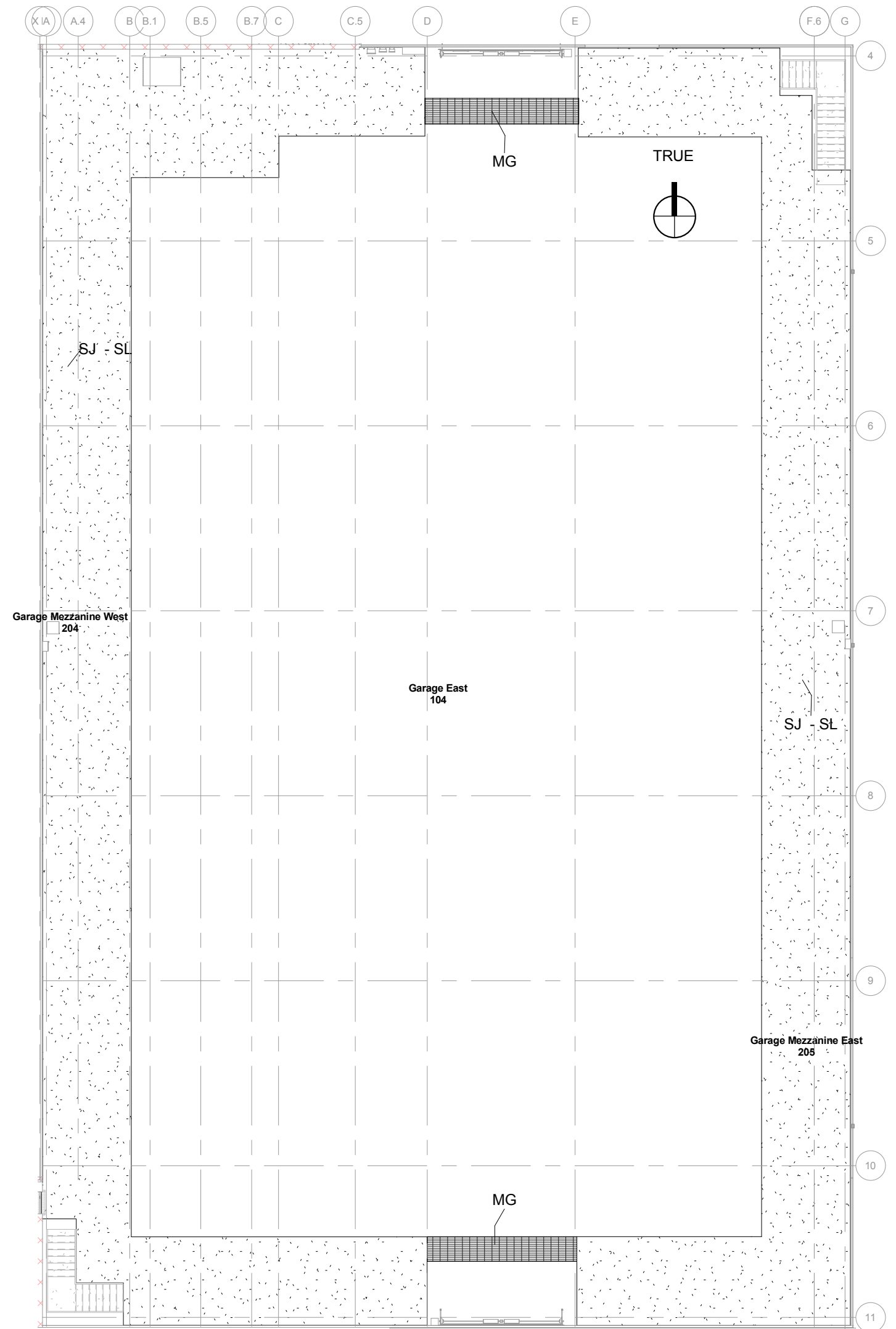


1 Garage
1/8" = 1'-0"

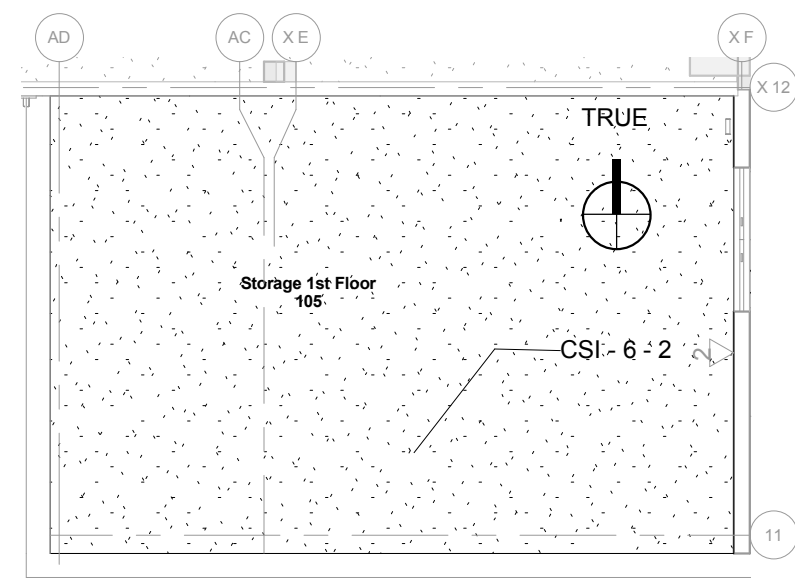
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1	INSTALL DETECTION LOOP WITH CLEARANCE TO METAL OBJECTS INC. REBAR, PIPES AND MULTILAYER TUBING. CUT CONTROL JOINT TO PERMANENTLY MARK THIS CLEARANCE.
2	EXPANSION JOINTS. KEEP ANY TUBING AND OTHER OBSTACLES 5" AWAY.
3	KEEP RADIANT TUBING AND ALL OTHER OBSTACLES AWAY FROM OUTSIDE OF UNDERGROUND STRUCTURE BY DISTANCE INDICATED. CUT CONTROL JOINT TO PERMANENTLY MARK THIS CLEARANCE.
4	INSTALL SLAB IN THIS SPACE TO PROVIDE SLOPE AS INDICATED. VERAGE OUT SLOPES WHERE INSTALLATION REQUIRES WHILE MAINTAINING INTENT OF SLOPE TO DRAIN LIQUIDS. EVENLY CENTER AND CUT CONTROL JOINTS EVERY 10'-15'.
5	BUILD RAMP NOT EXCEEDING SLOPE INDICATED.
6	COORDINATE DRAIN WITH STRUCTURAL ELEMENTS AND RELOCATE AS REQUIRED. COORDINATE WITH ENGINEER.



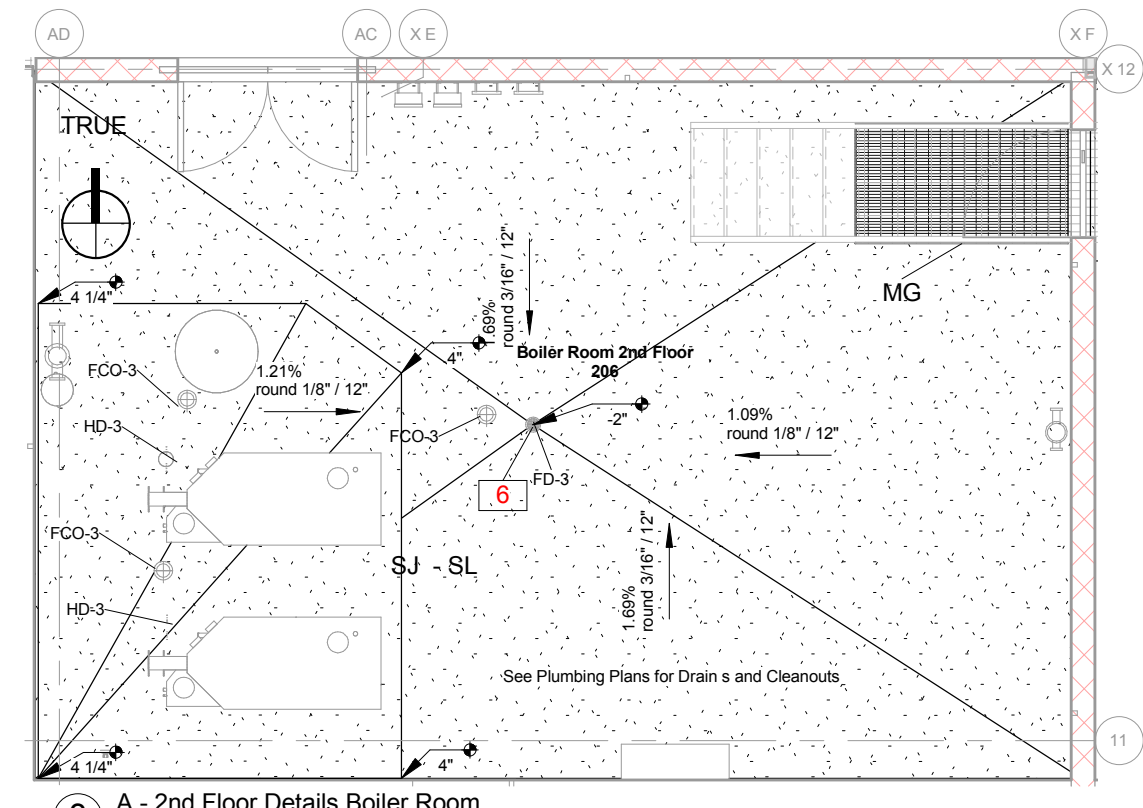
5 A - 2nd Floor Details Shop
1" = 10'-0"



4 A - 2nd Floor Details Garage East
1/16" = 1'-0"



2 A - 1st Floor Details Storage
1/8" = 1'-0"



3 A - 2nd Floor Details Boiler Room
3/16" = 1'-0"

Design prepared for:
Engineering Division

**Engineering Operations
Building Addition**

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Madison, WI 53713

Contract: 6484
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6/2/2015

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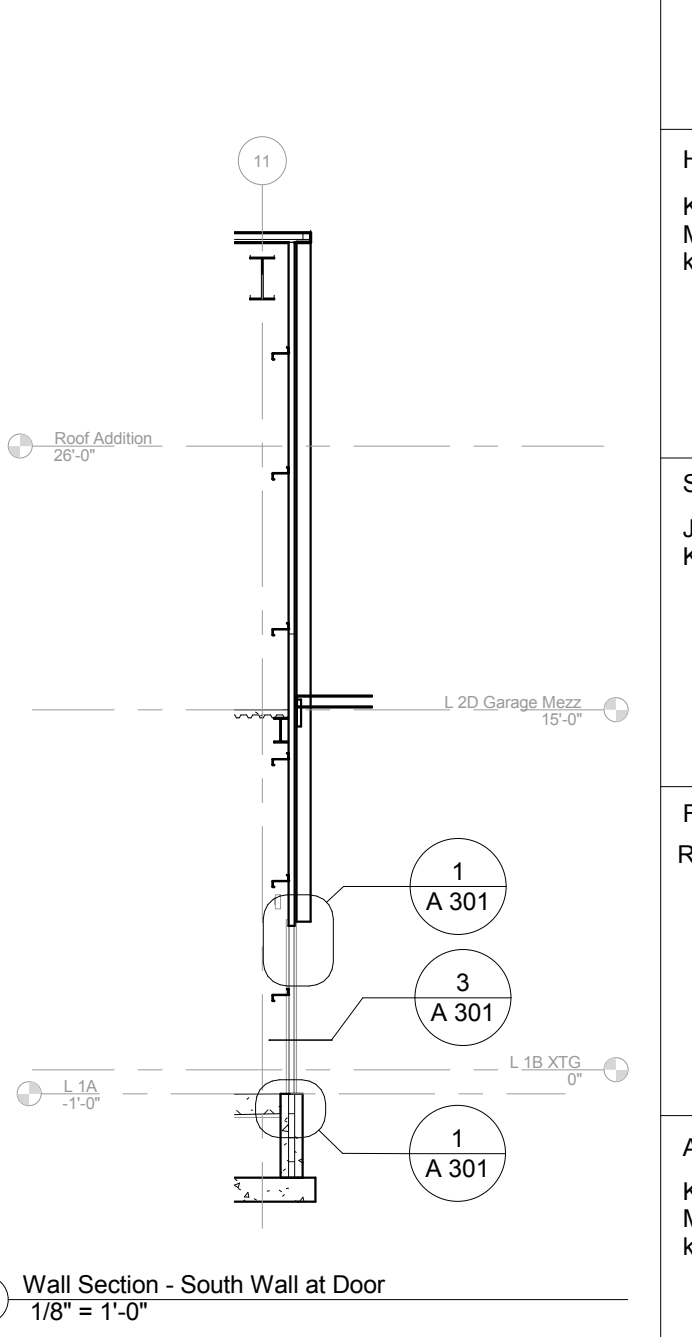
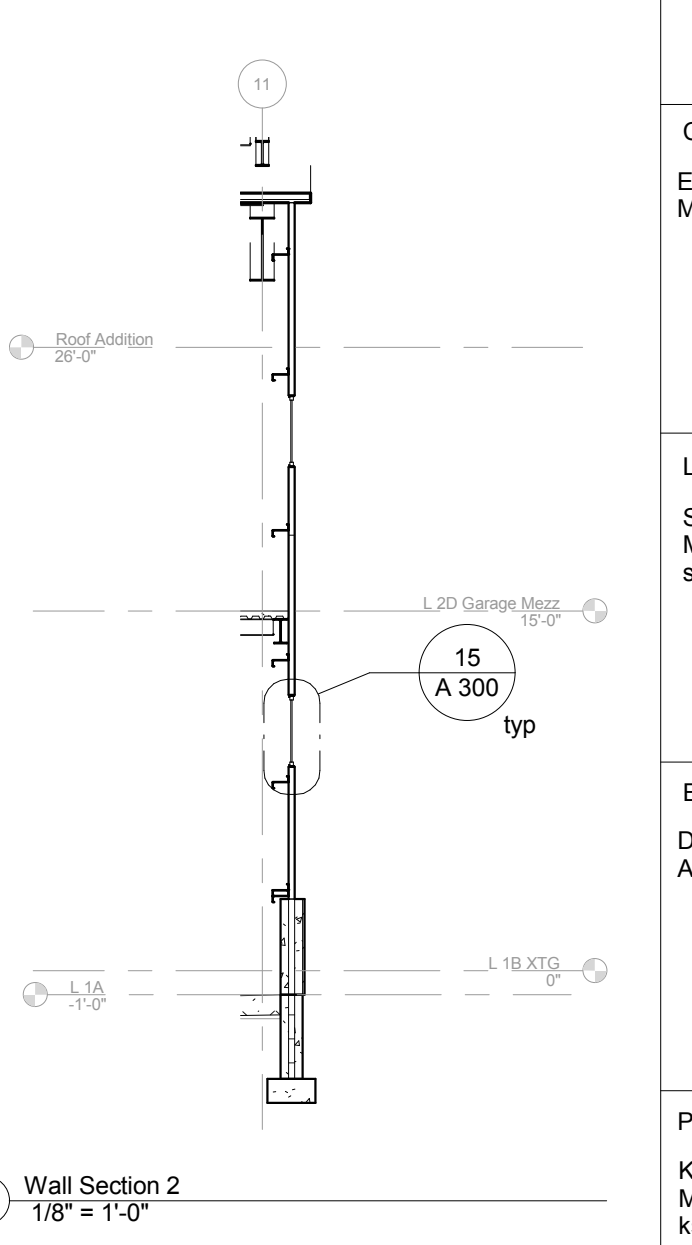
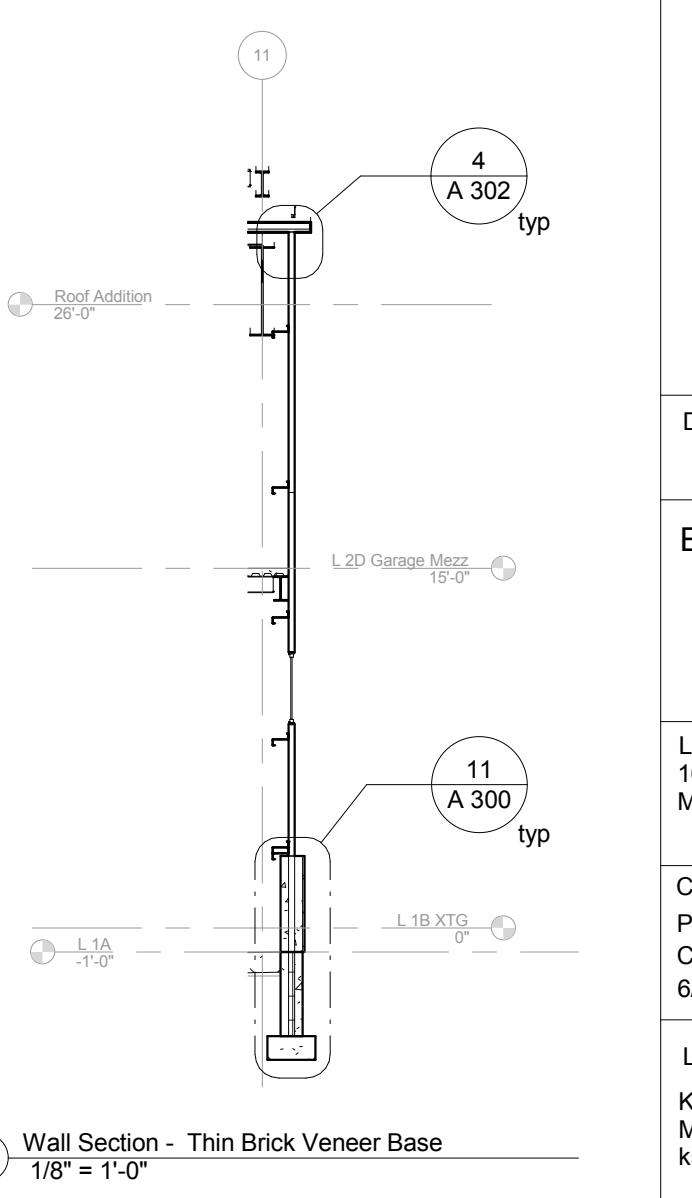
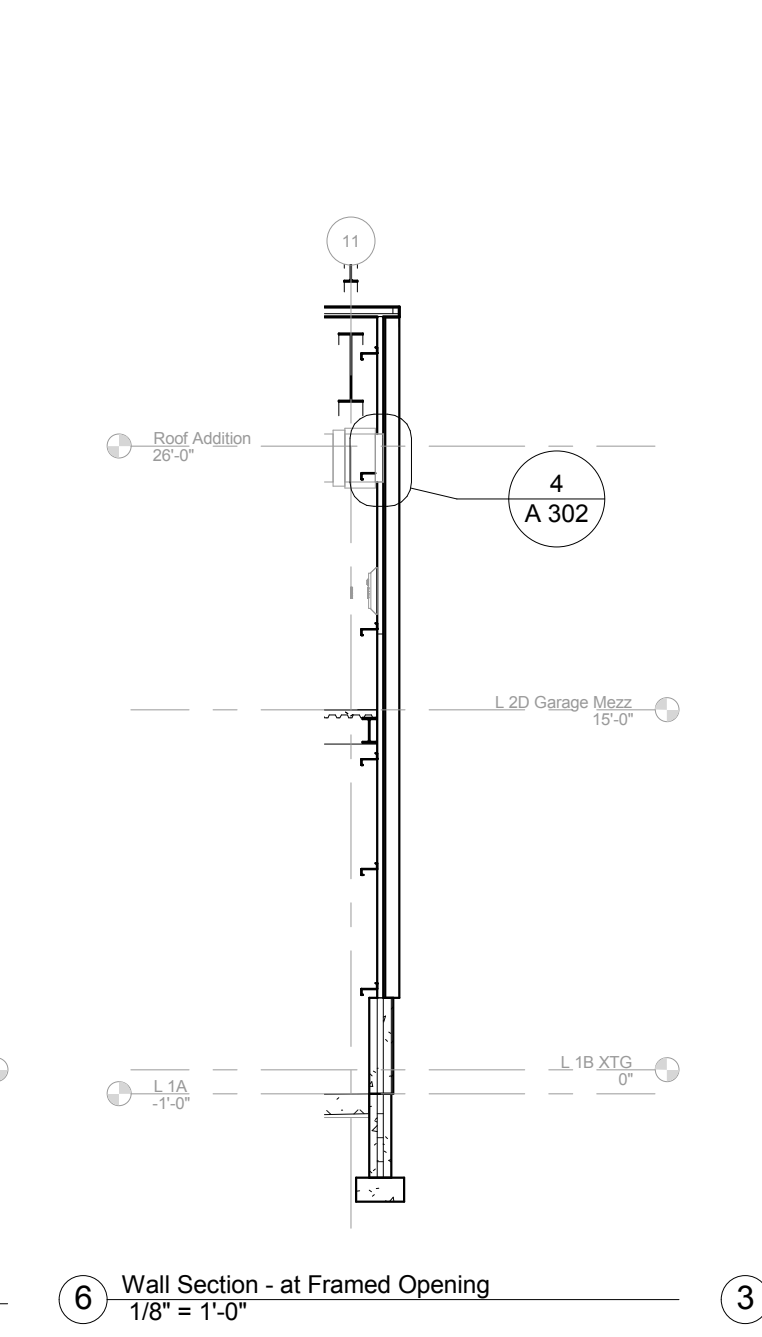
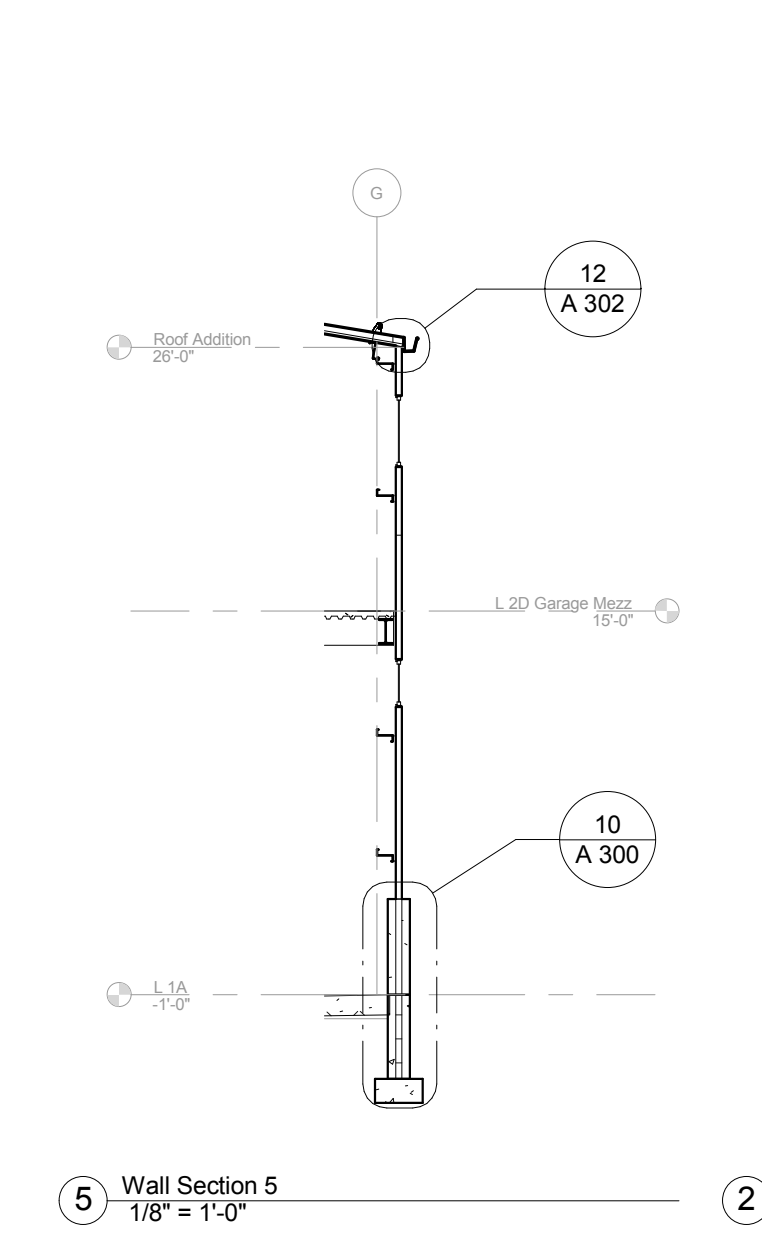
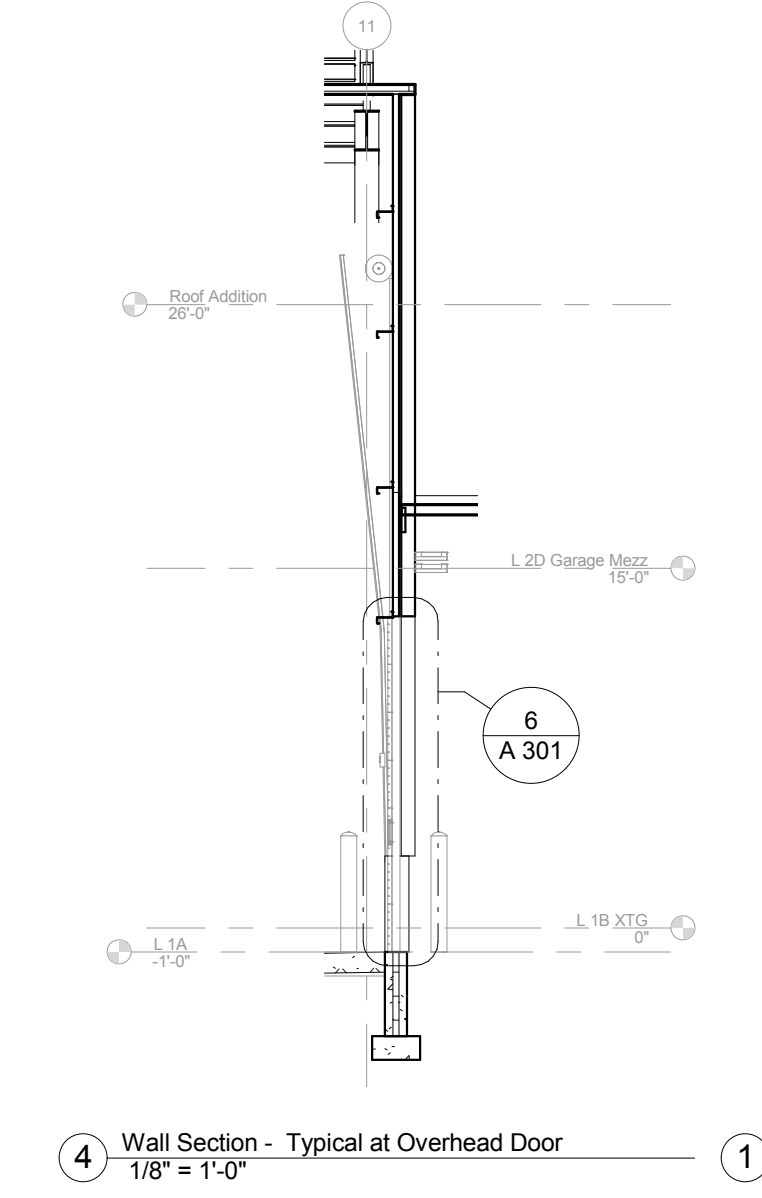
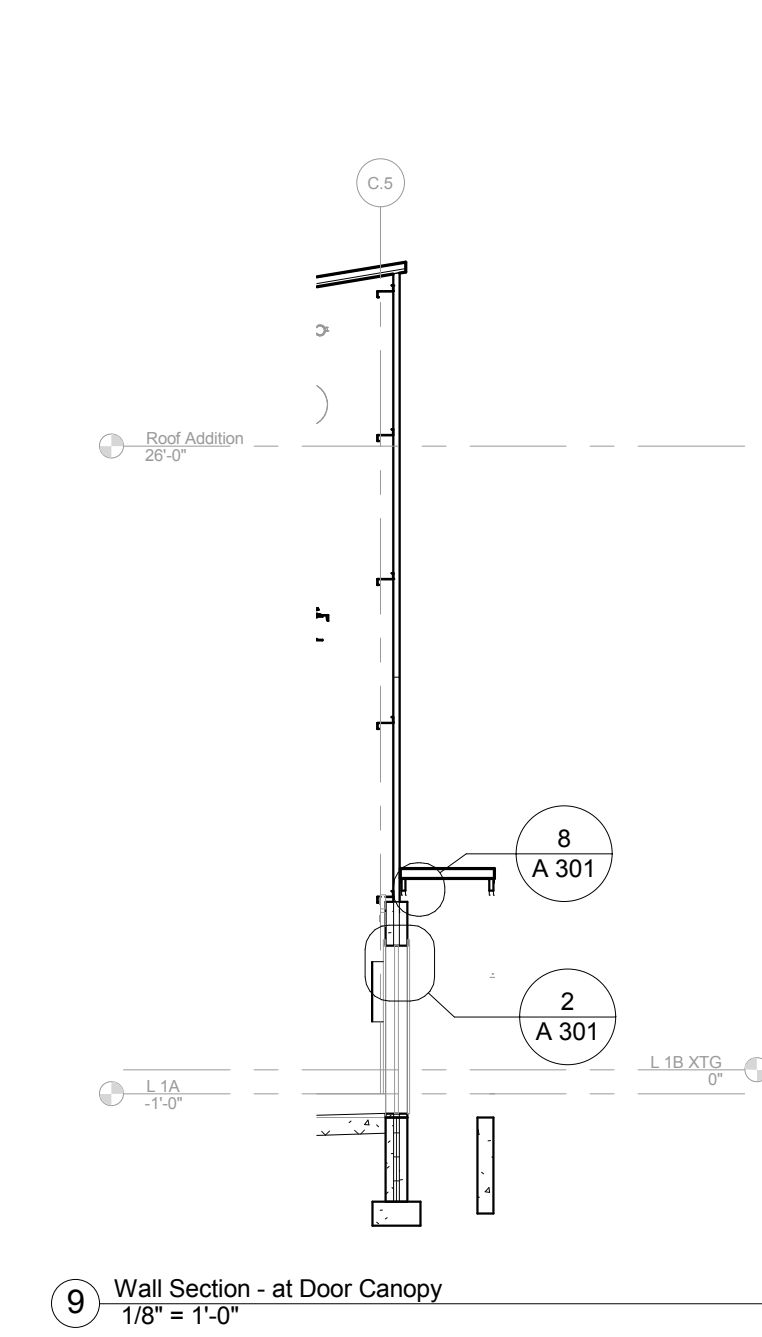
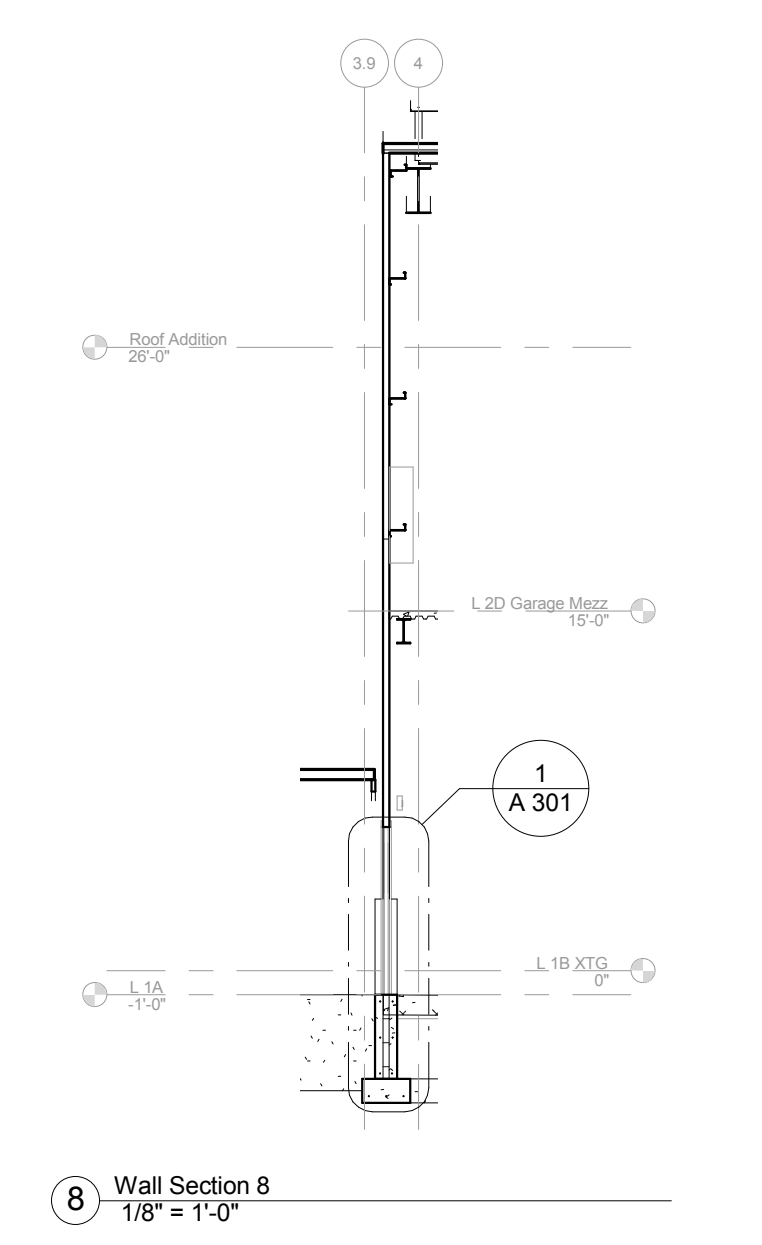
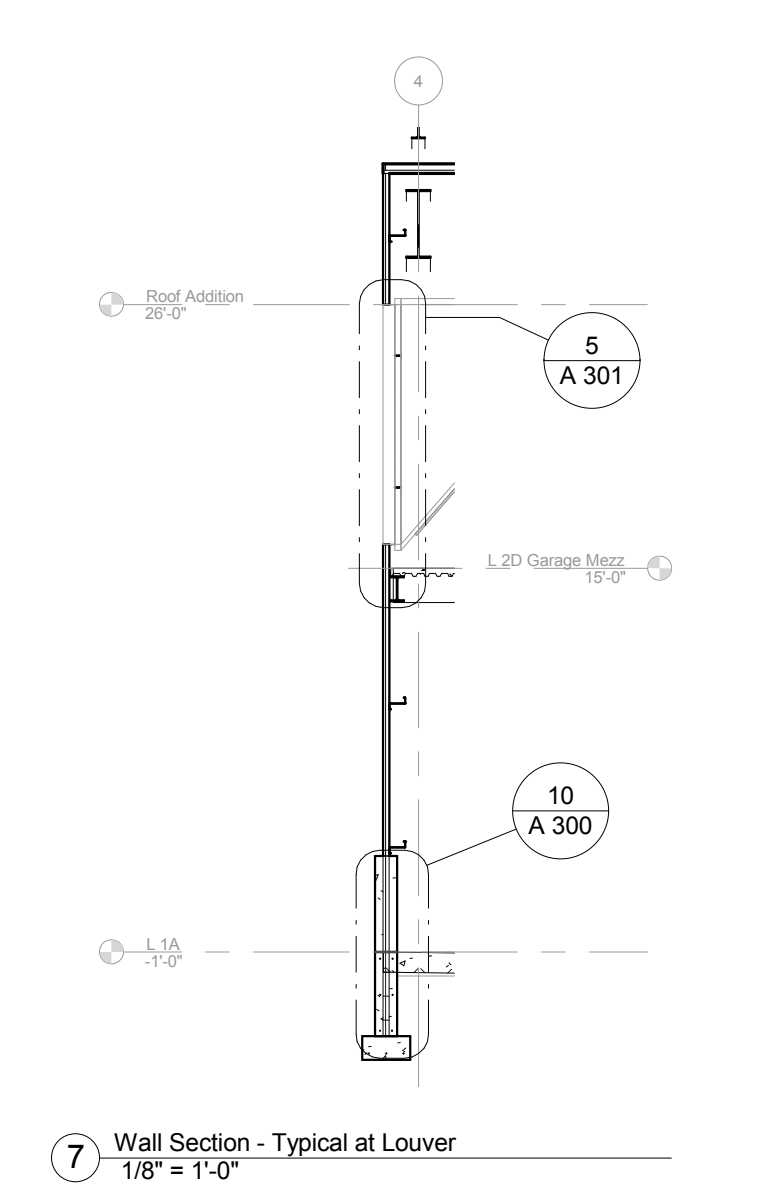
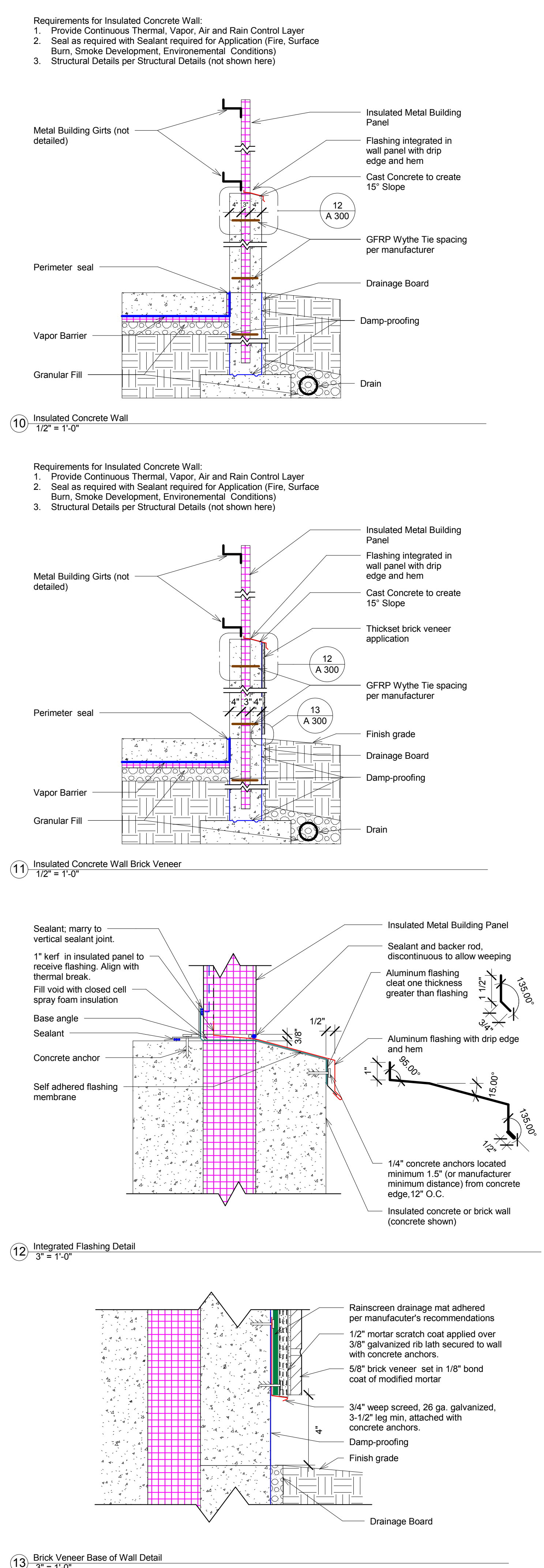
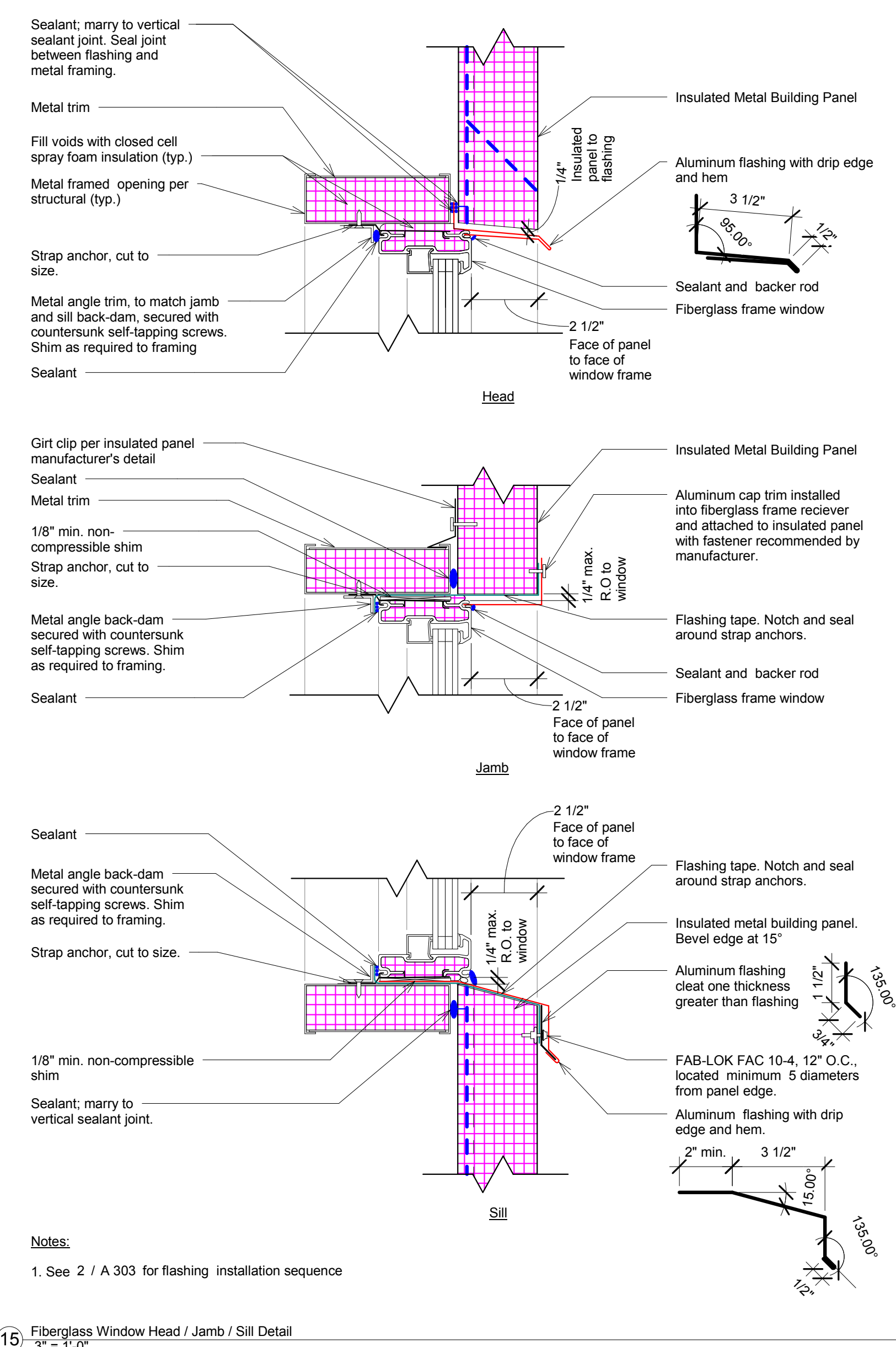
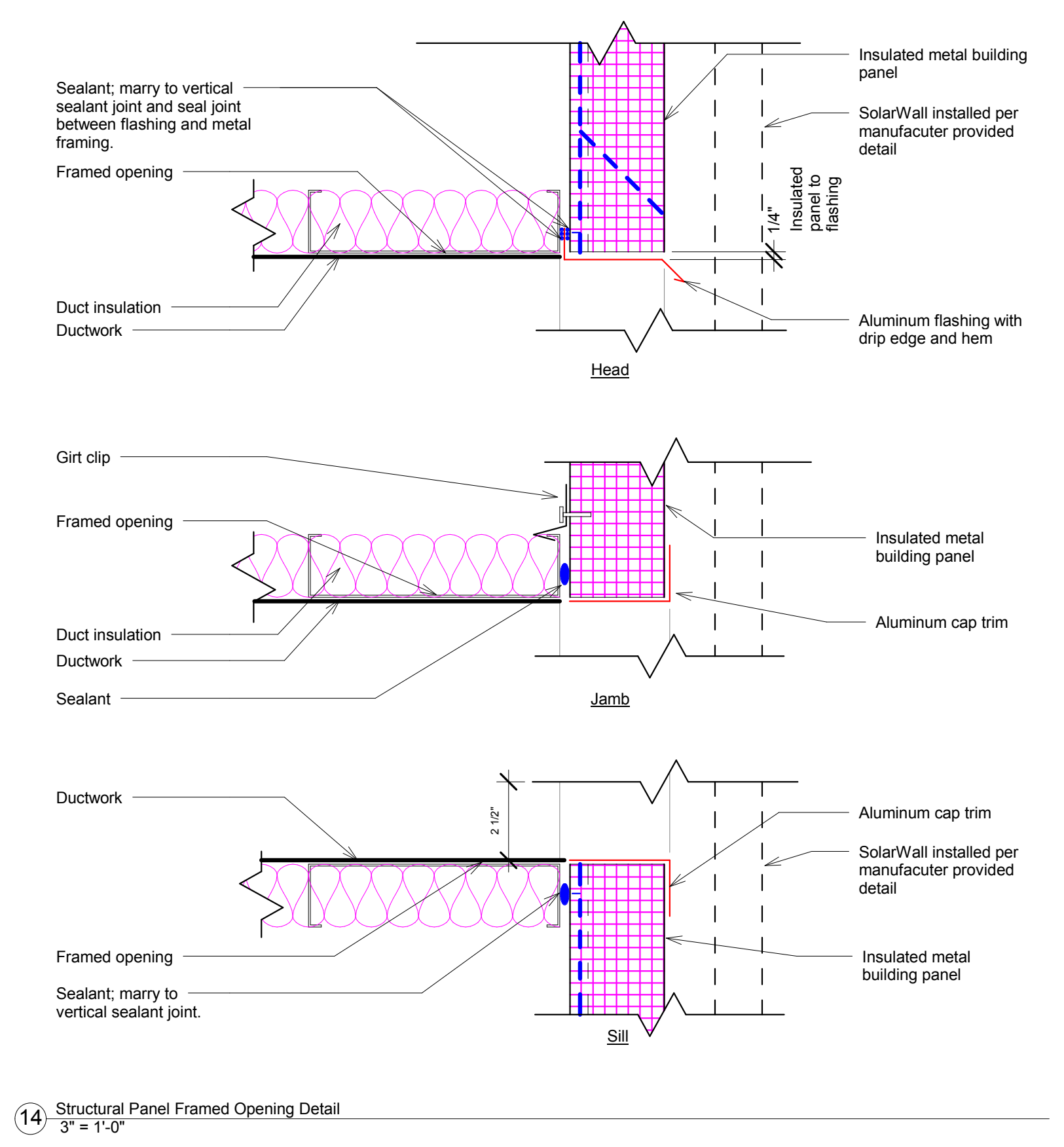
Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

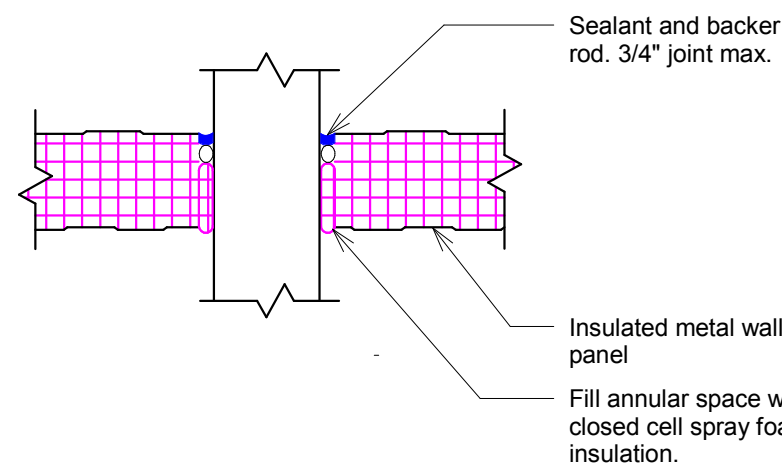
Fire Protection Design:
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Architectural Design:
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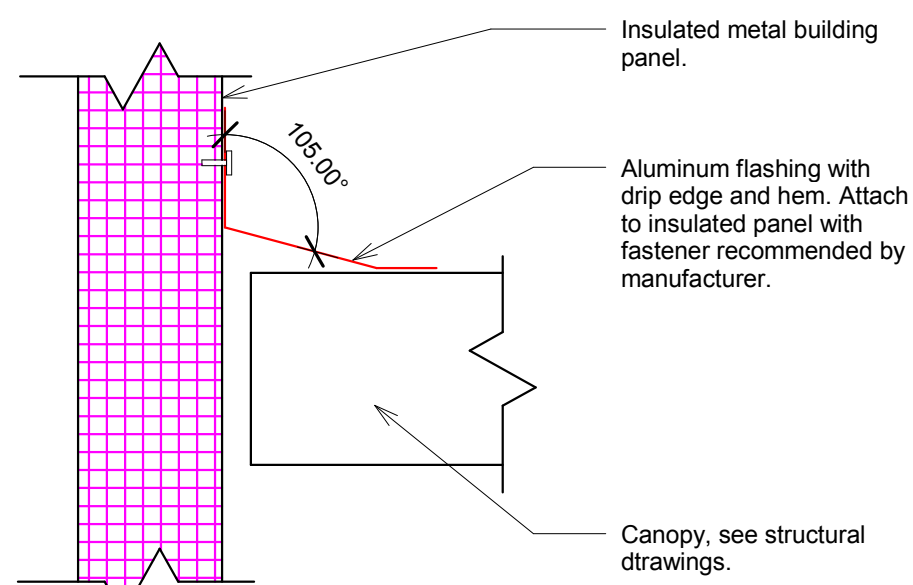
**Architectural
Details**

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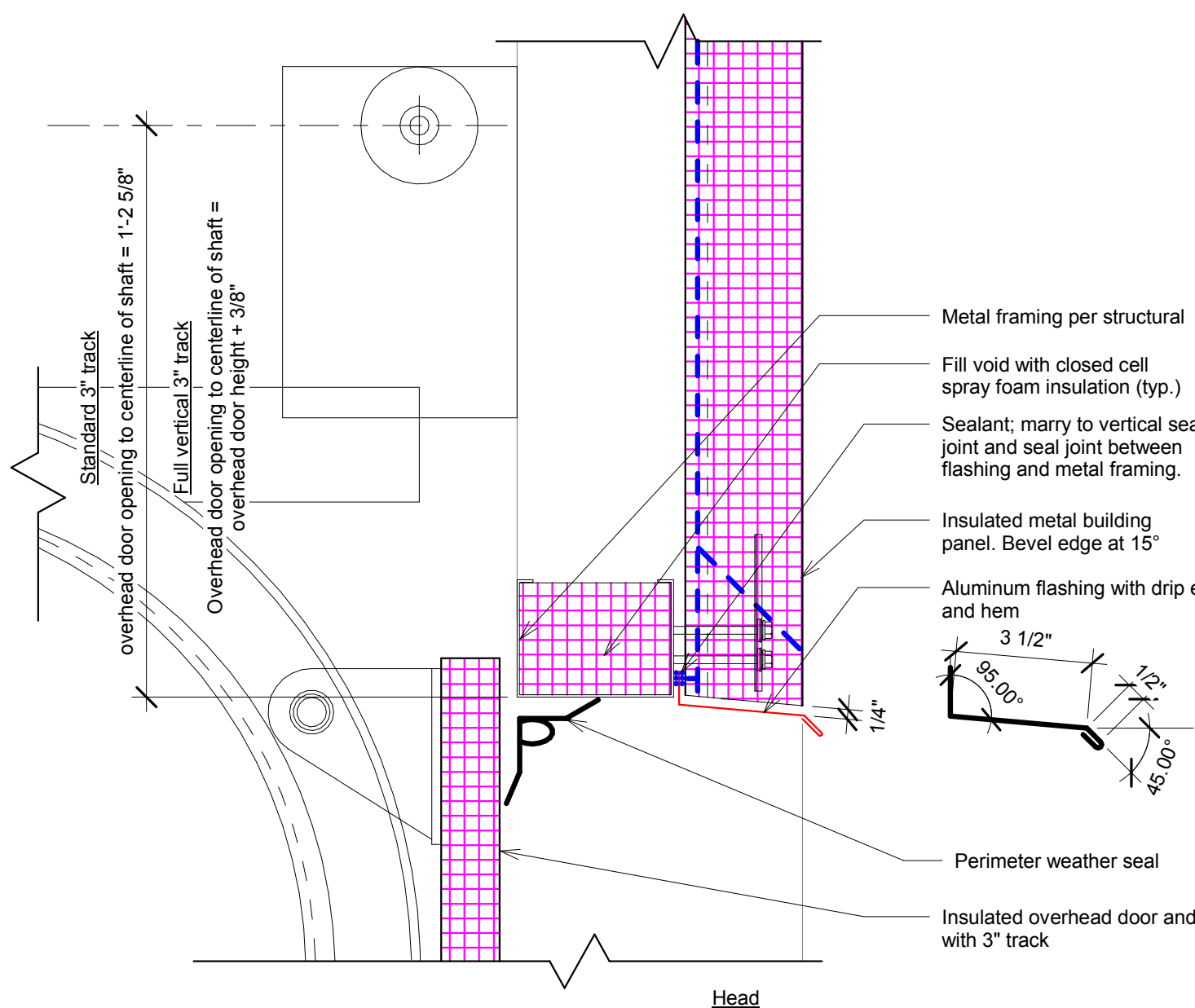




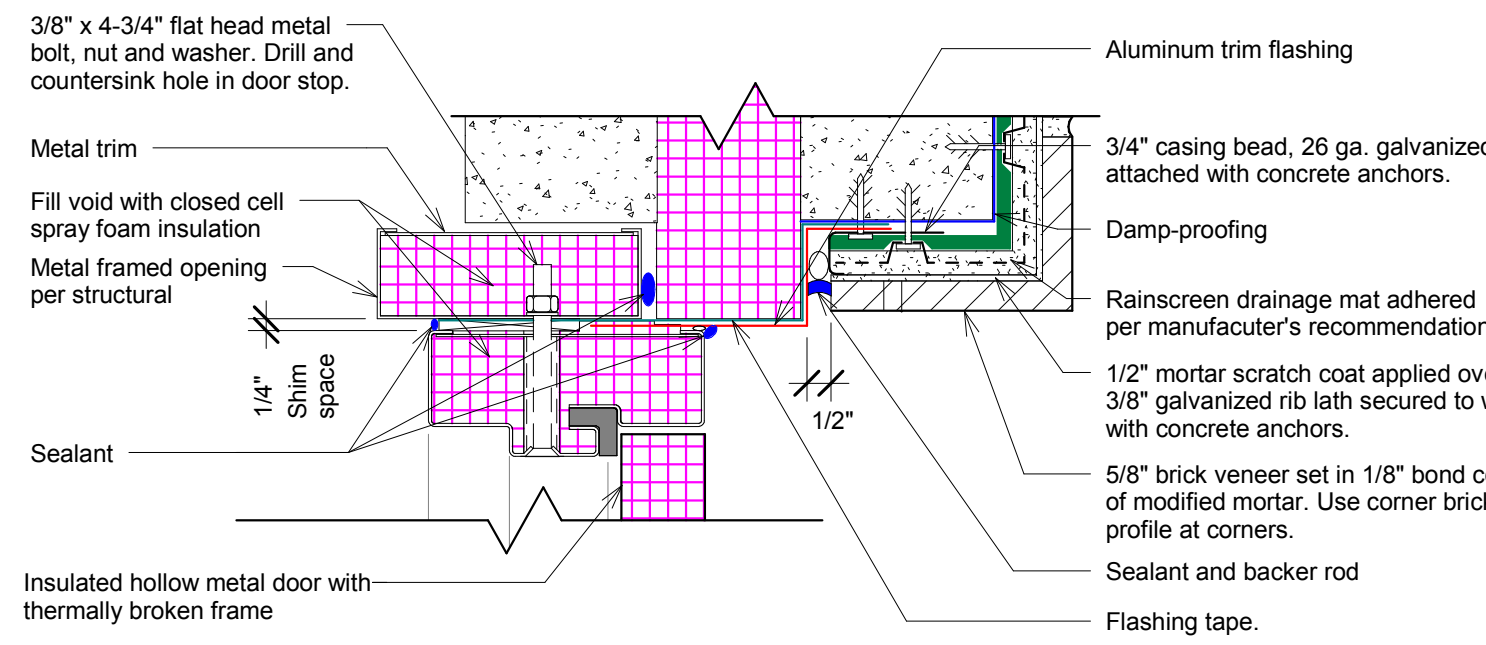
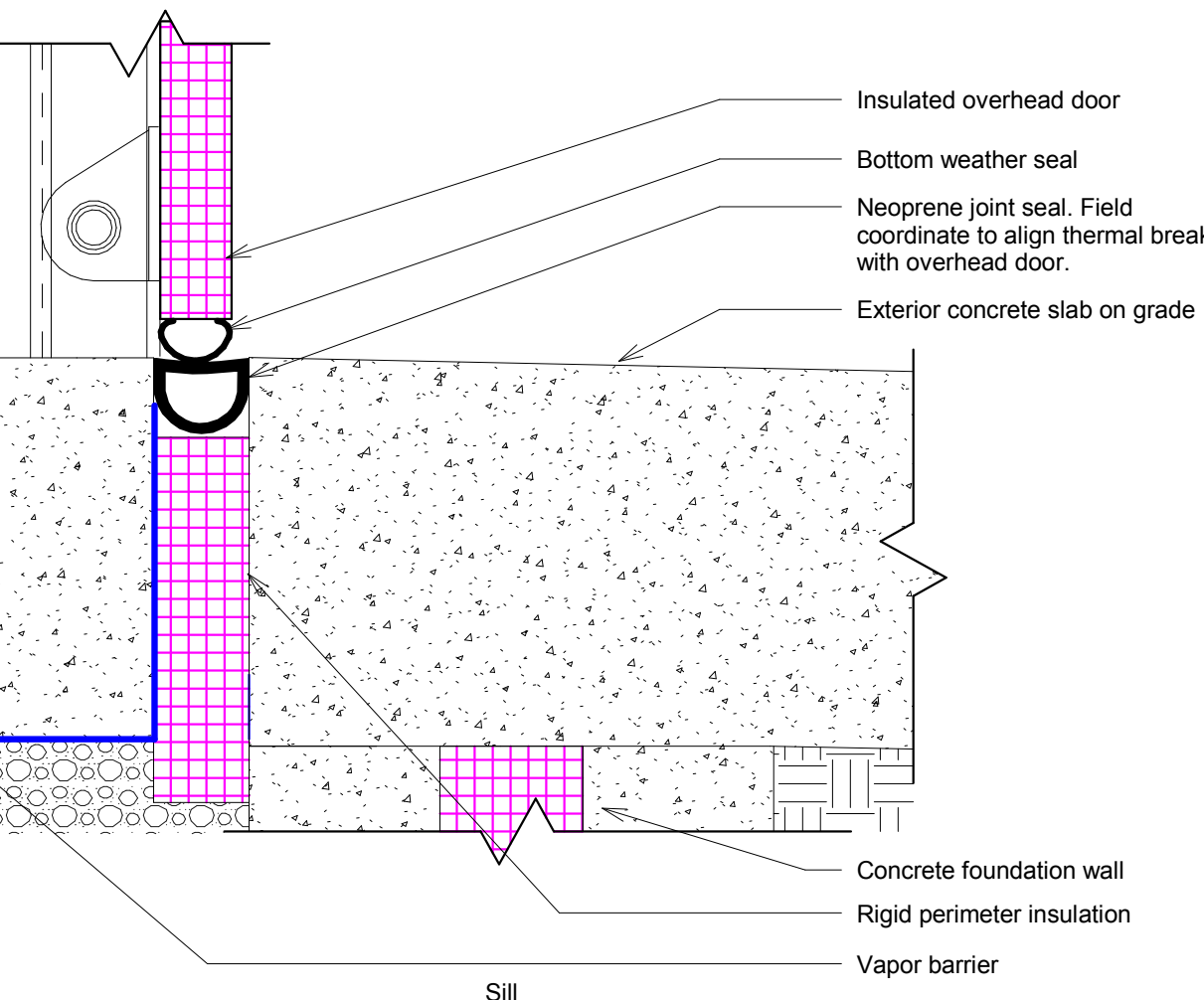
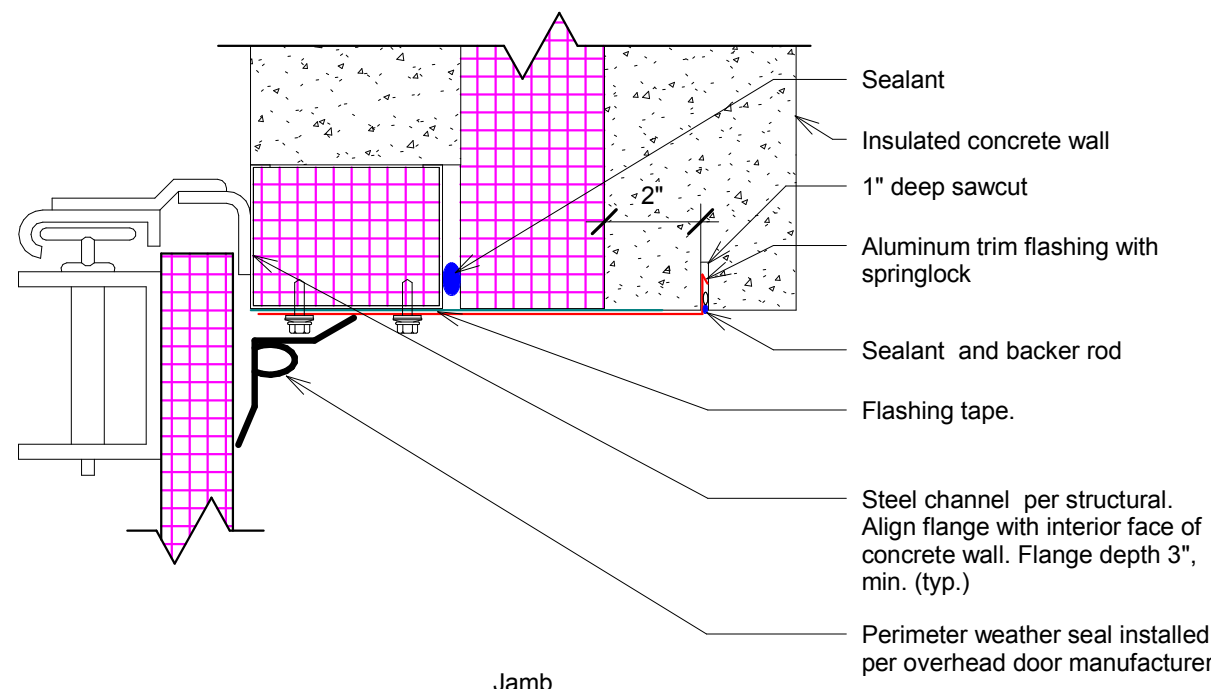
7 Structural Wall Panel Penetration - opening less than 4"
1 1/2" = 1'-0"



8 Flashing at Canopy
3" = 1'-0"

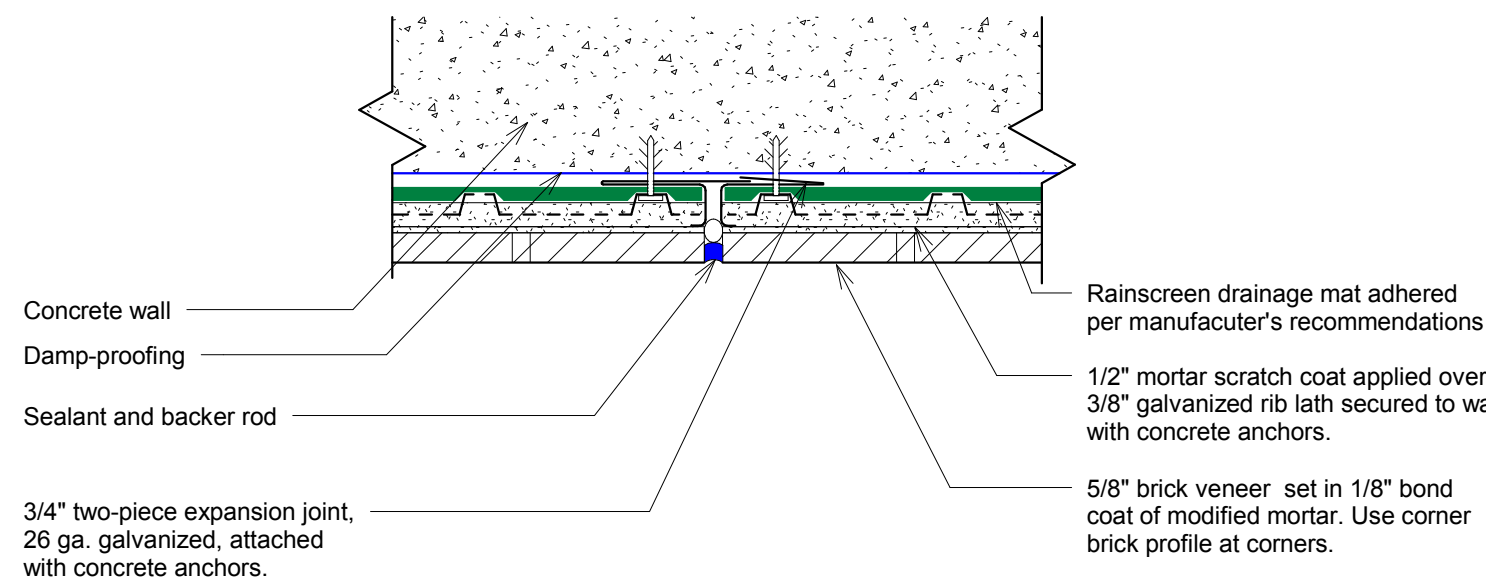


6 Overhead Door Head / Jamb / Sill
3" = 1'-0"

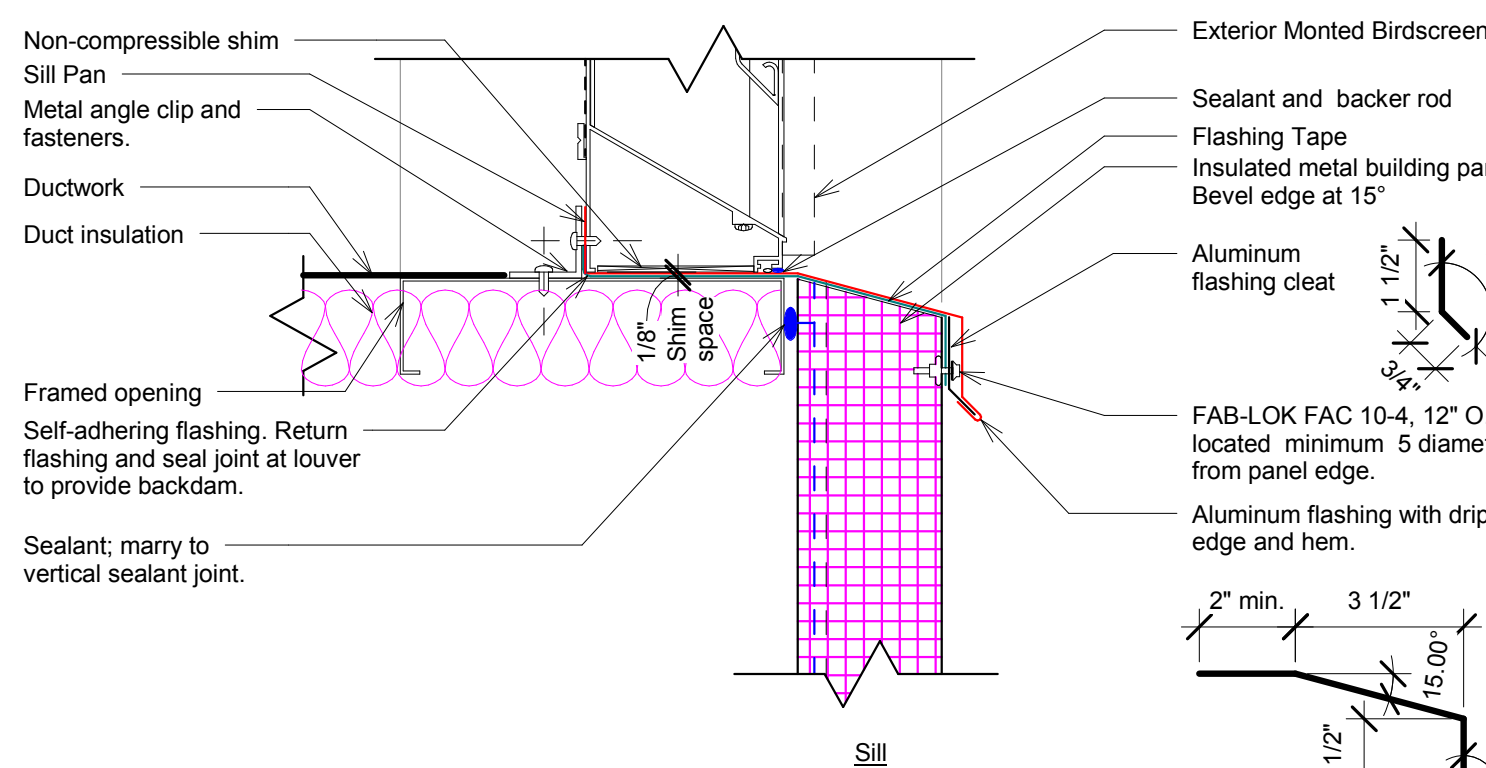
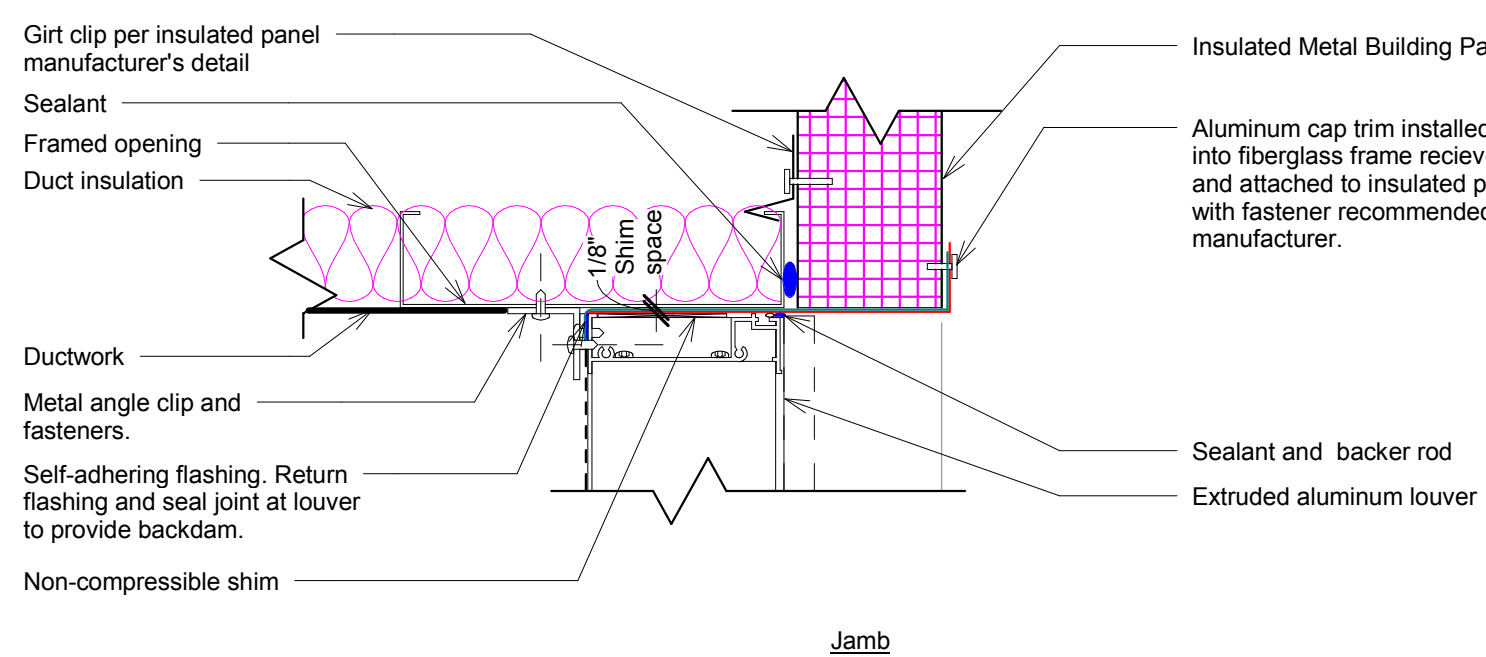
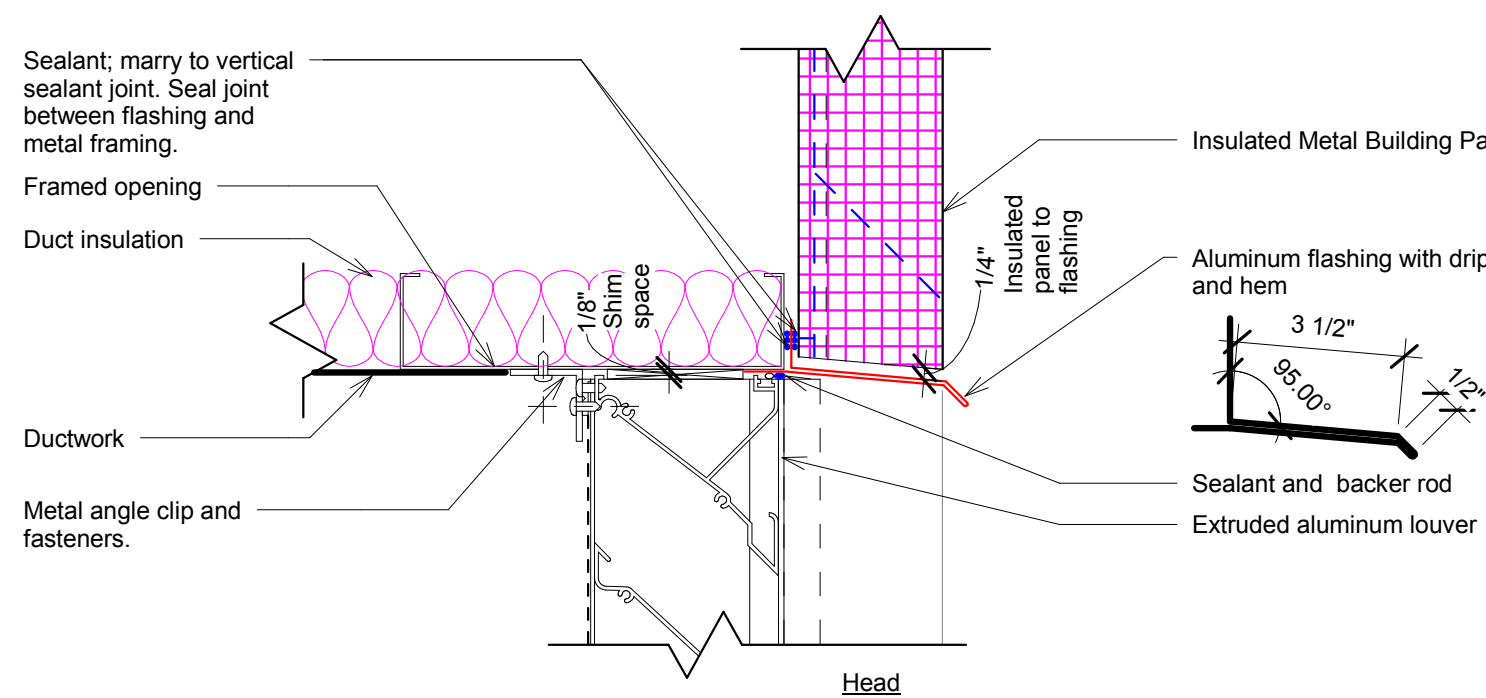


Notes:
1. See 1 / A 303 for flashing installation sequence

3 Thin Brick Veneer Wall Door Jamb Detail
3" = 1'-0"

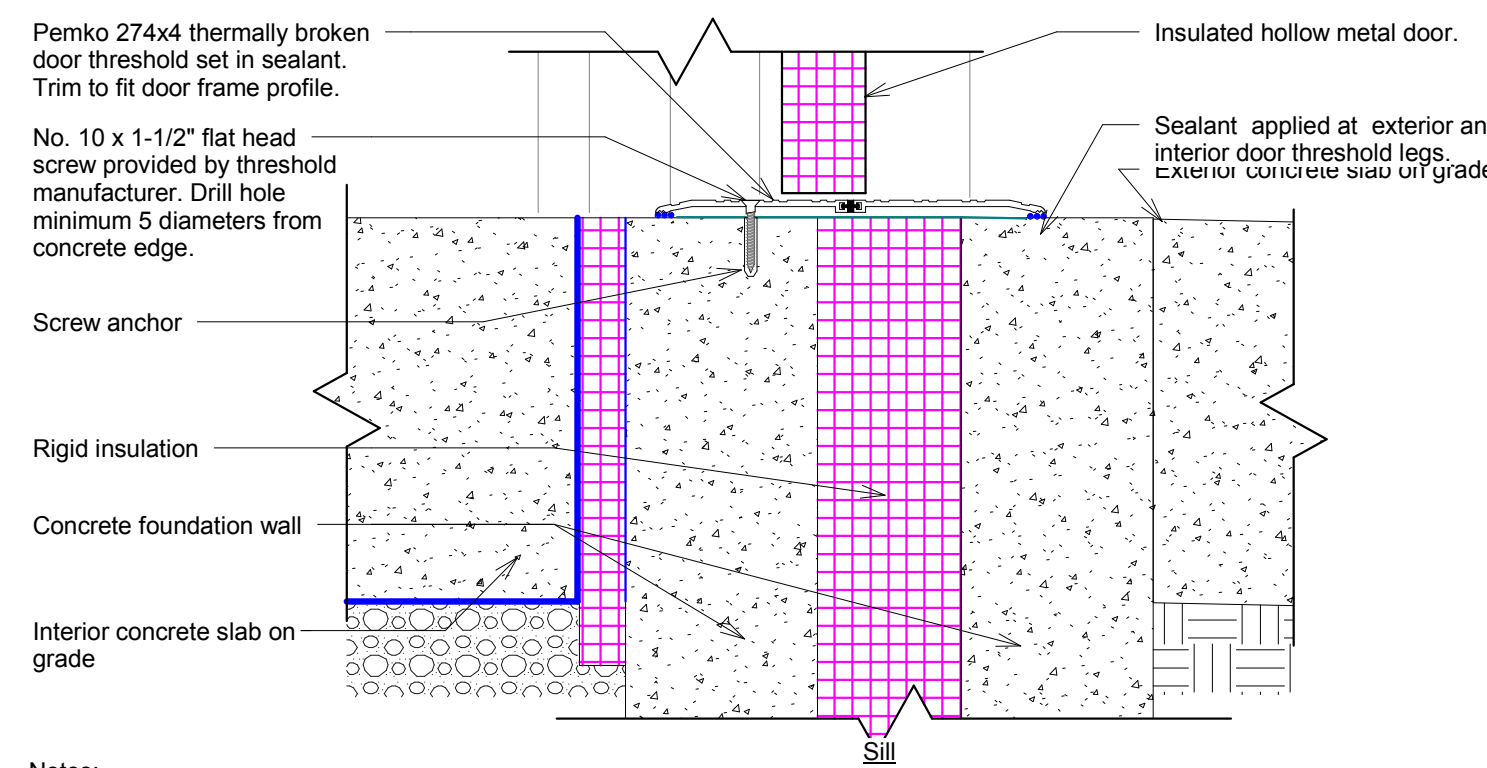
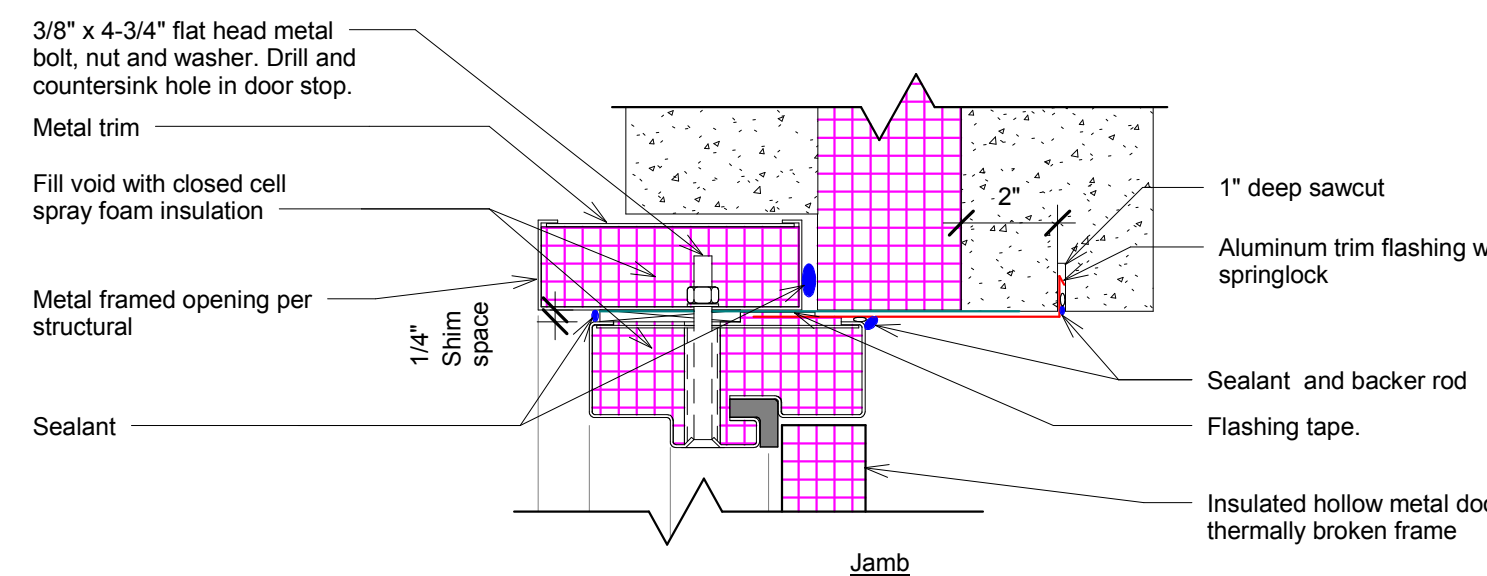
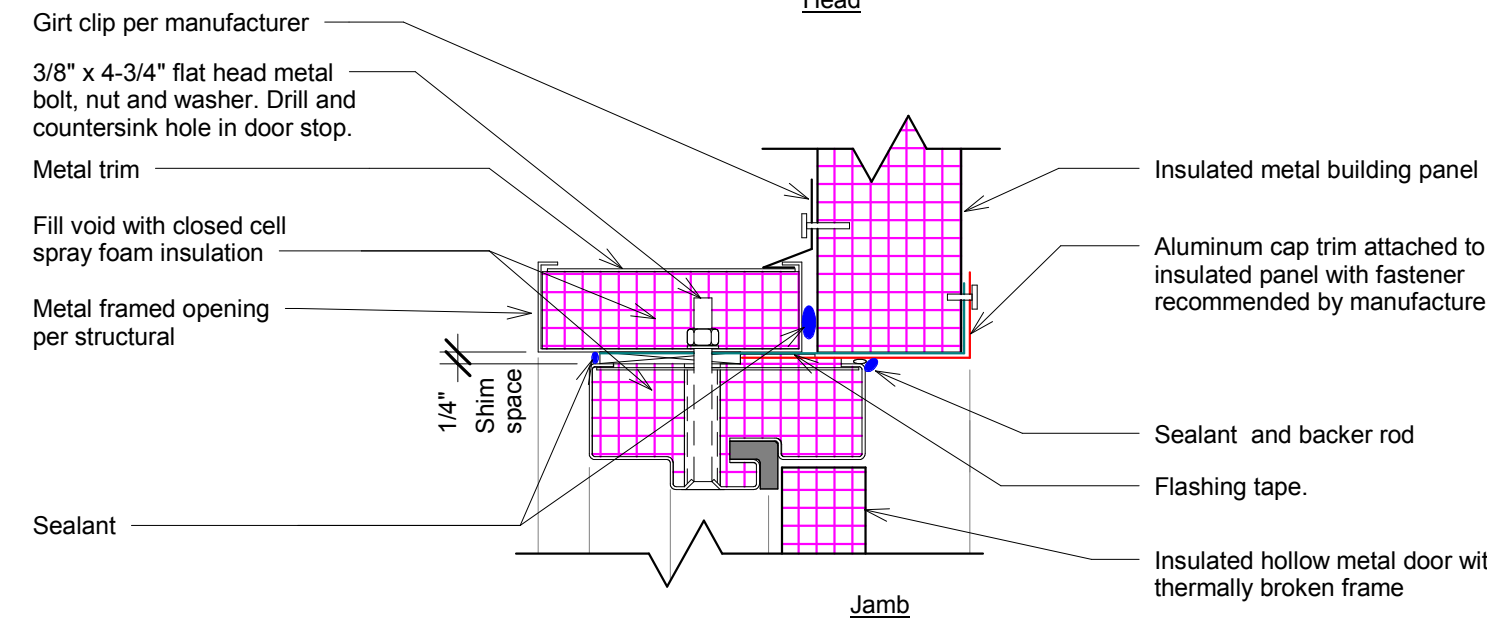
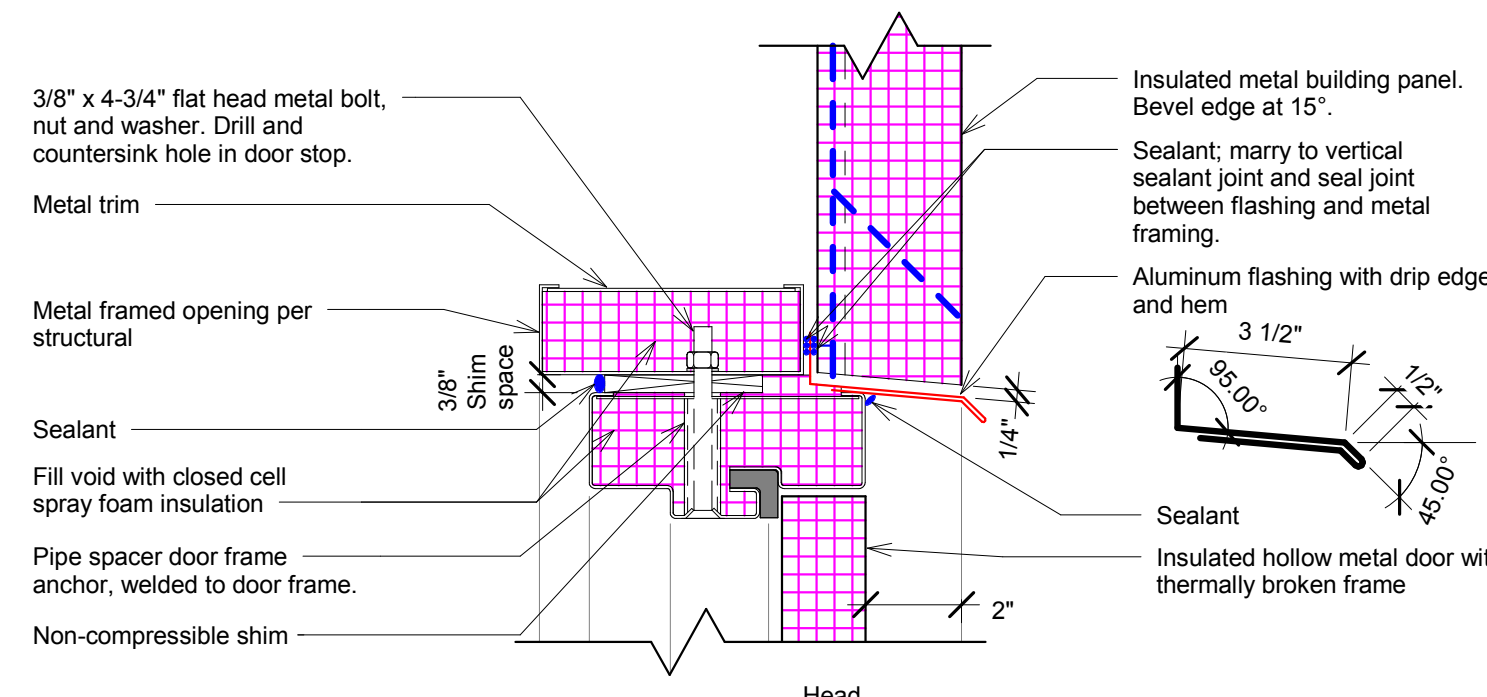


4 Expansion Joint in Thick Brick Veneer
3" = 1'-0"



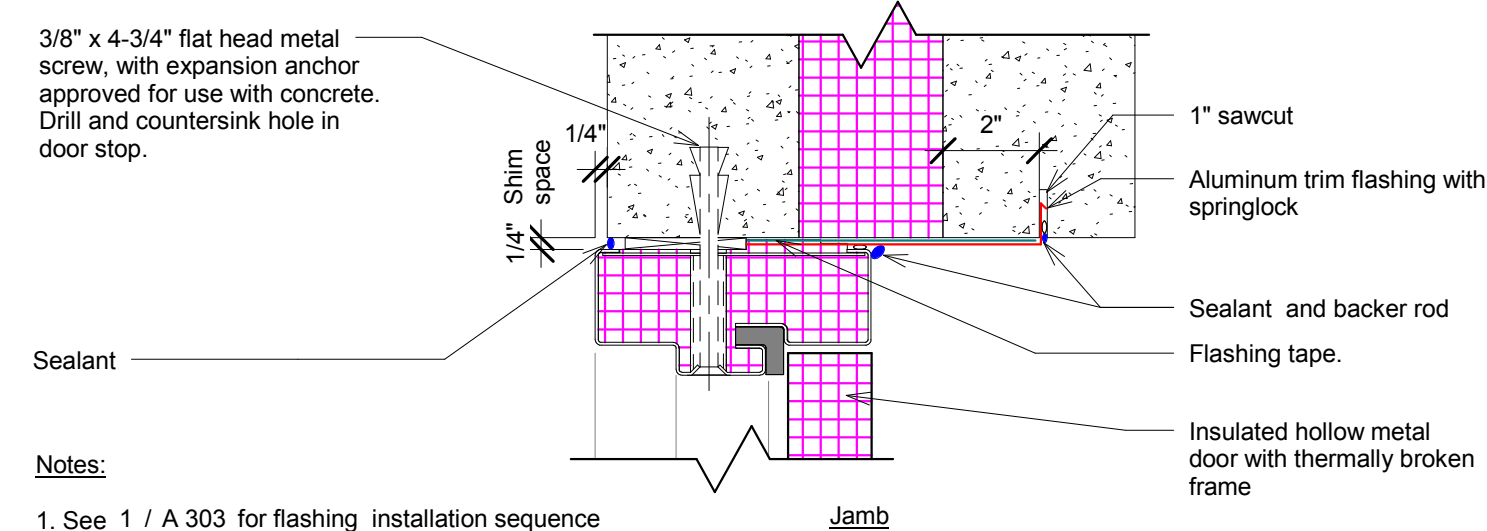
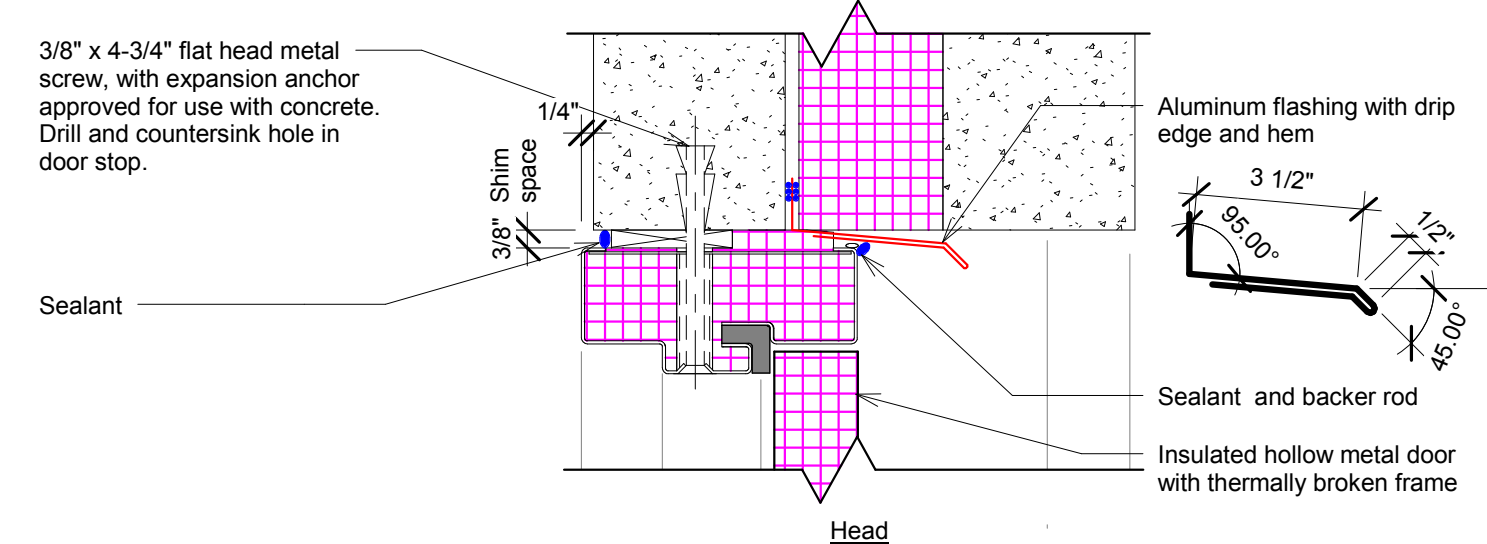
Notes:
1. See 2 / A 303 for flashing installation sequence
Use same detail for Solar Wall Air Intake, but delete the actual louver and and adjust detail as needed

5 Extruded Aluminum Louver Head / Jamb / Sill
3" = 1'-0"



Notes:
1. See 1 / A 303 for flashing installation sequence

1 Structural Panel Door Head / Jamb / Sill detail
3" = 1'-0"



Notes:
1. See 1 / A 303 for flashing installation sequence

2 Concrete Wall Door / Head Detail
3" = 1'-0"



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
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slerner@cityofmadison.com

Electrical Design:
Dave Hanson, P.E., Kueny
Architects

Plumbing Design:
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HVAC Design:
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Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Architectural
Details

A 301

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Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

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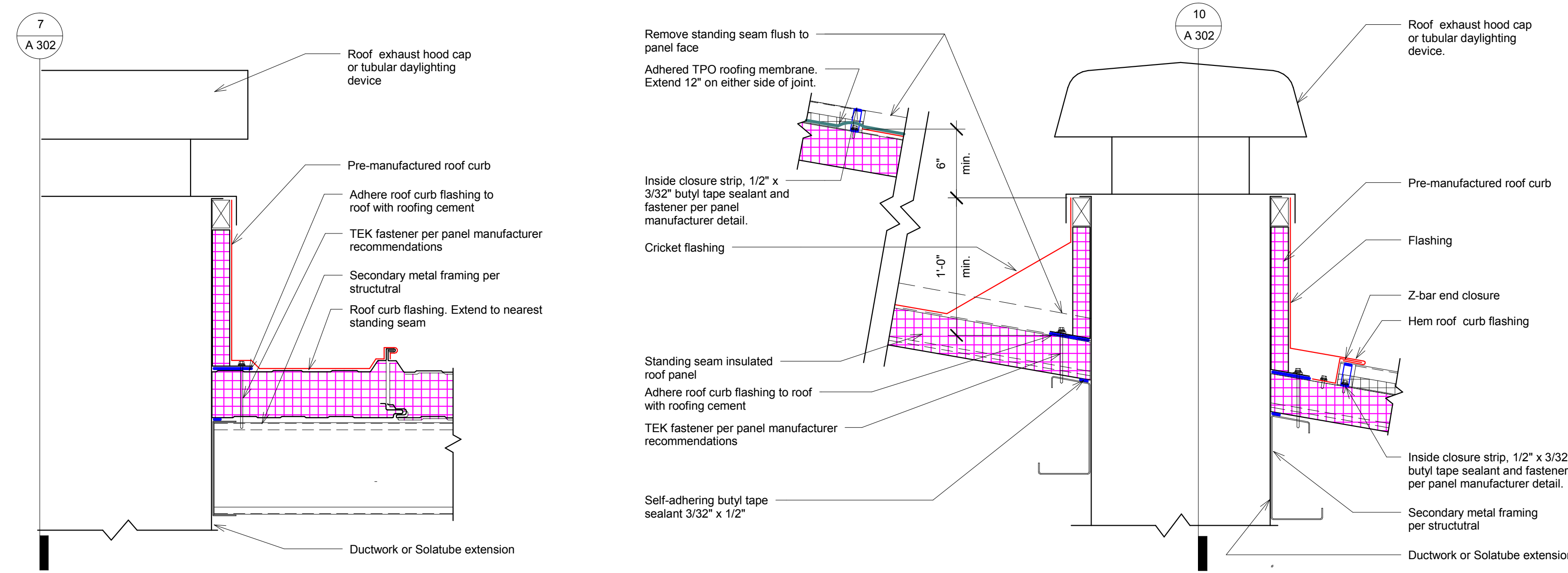
Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Architectural
Roof Details

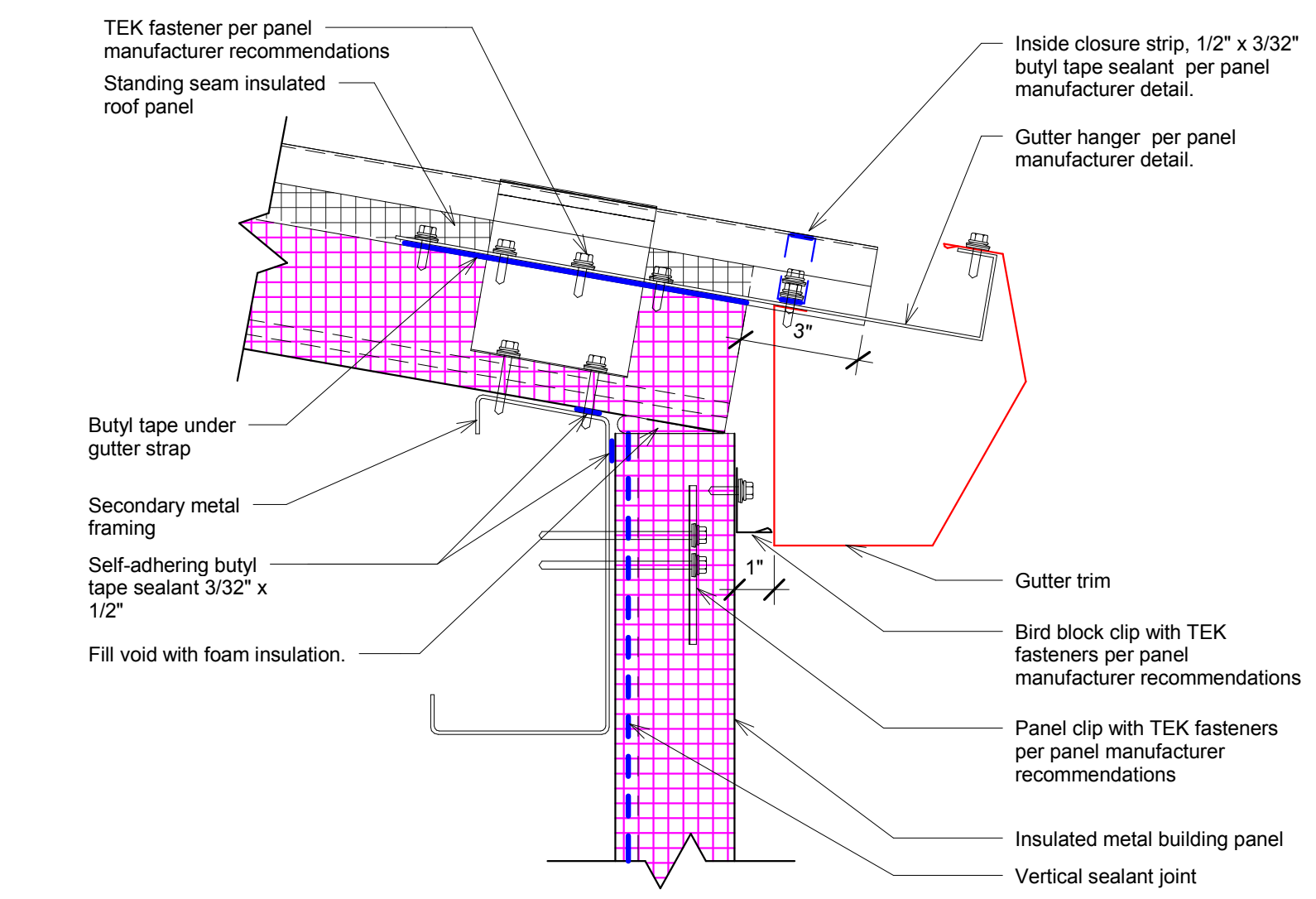
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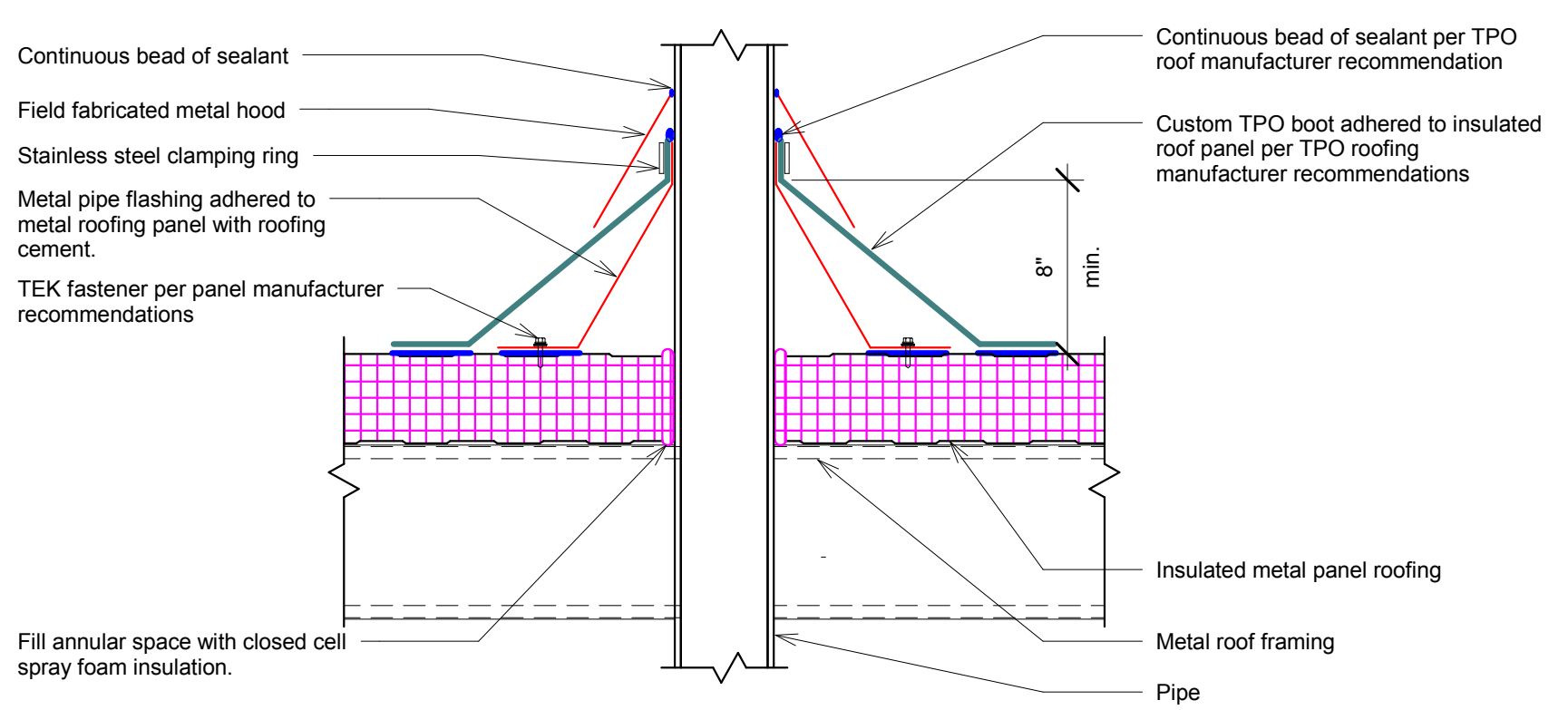


10 Roof Curb at Insulated Roof Panel - Section
1 1/2" = 1'-0"

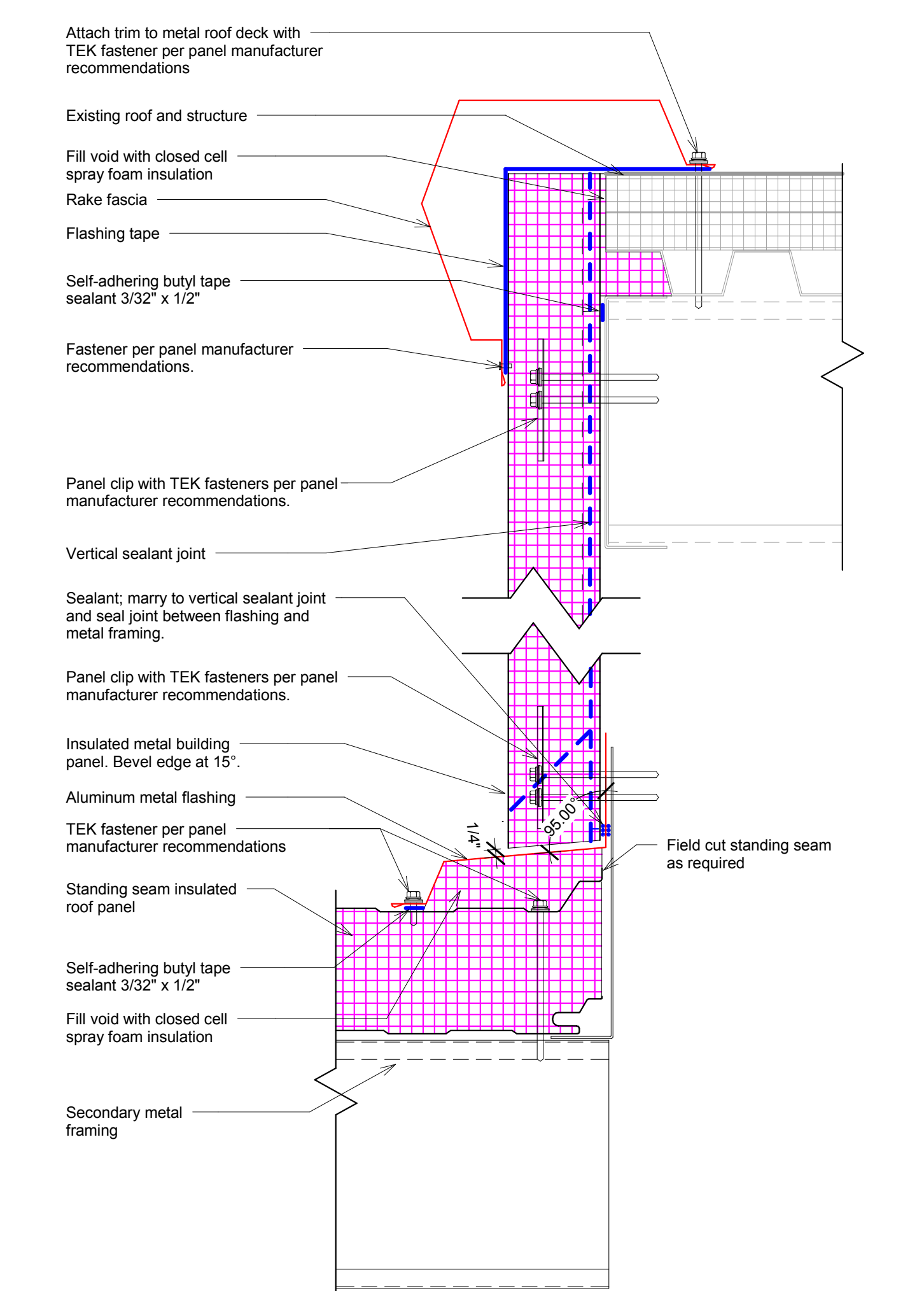
7 Roof Curb at Insulated Roof Panel
1 1/2" = 1'-0"



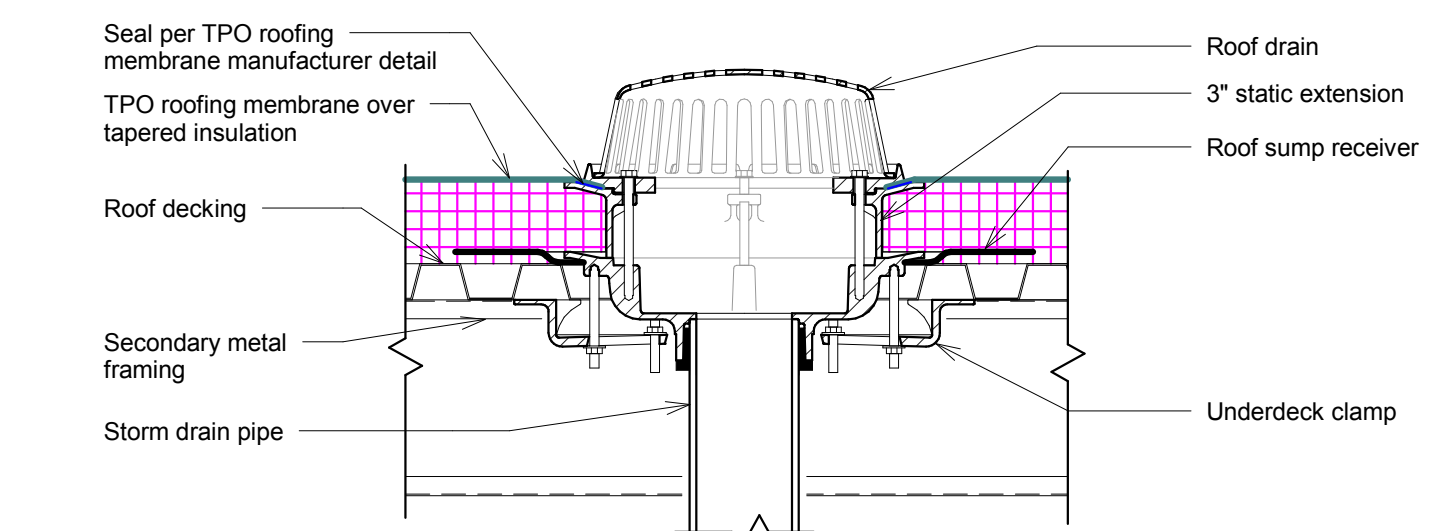
12 Typical Eave with Gutter
3" = 1'-0"



13 Pipe Penetration Flashing
1 1/2" = 1'-0"

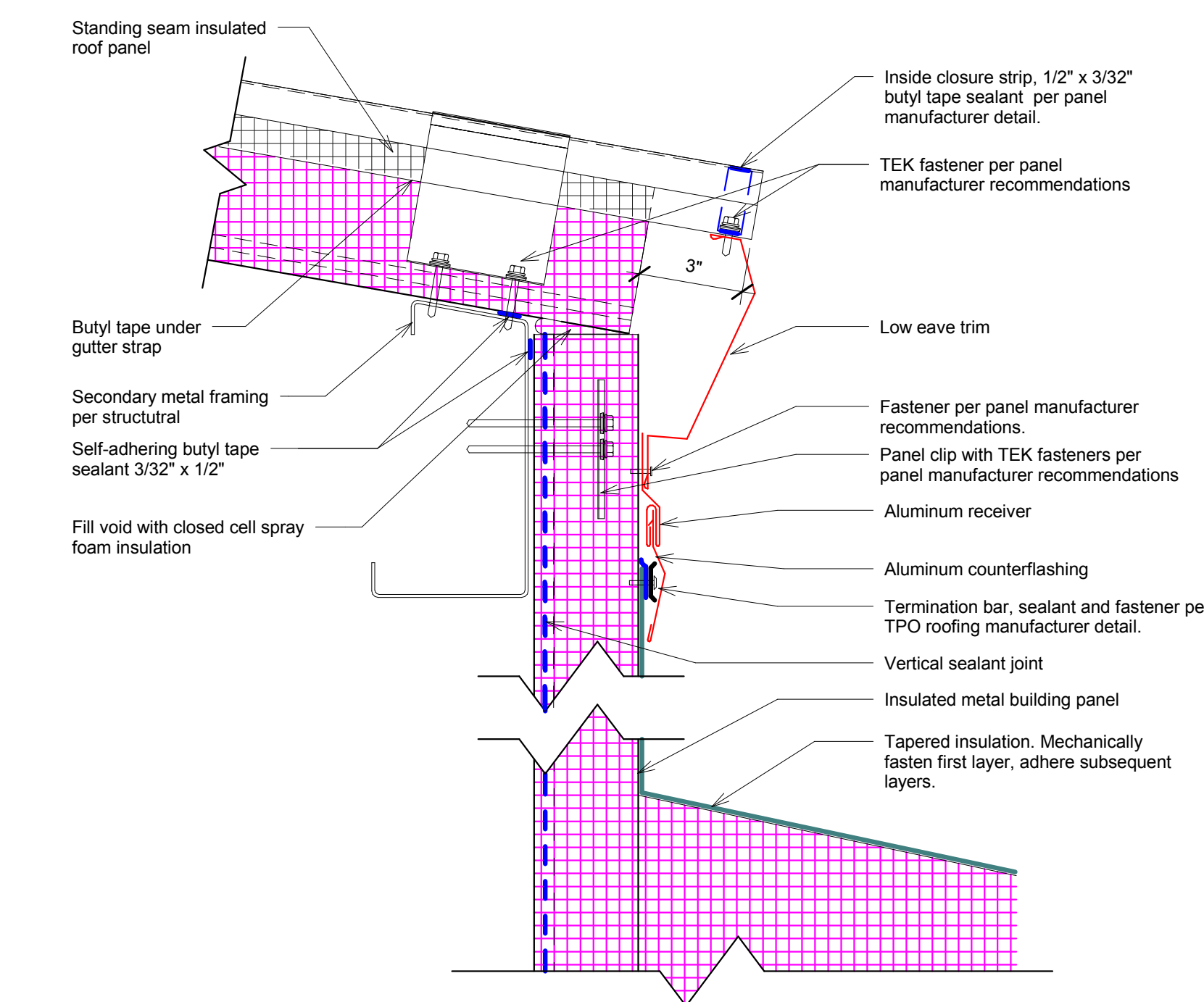
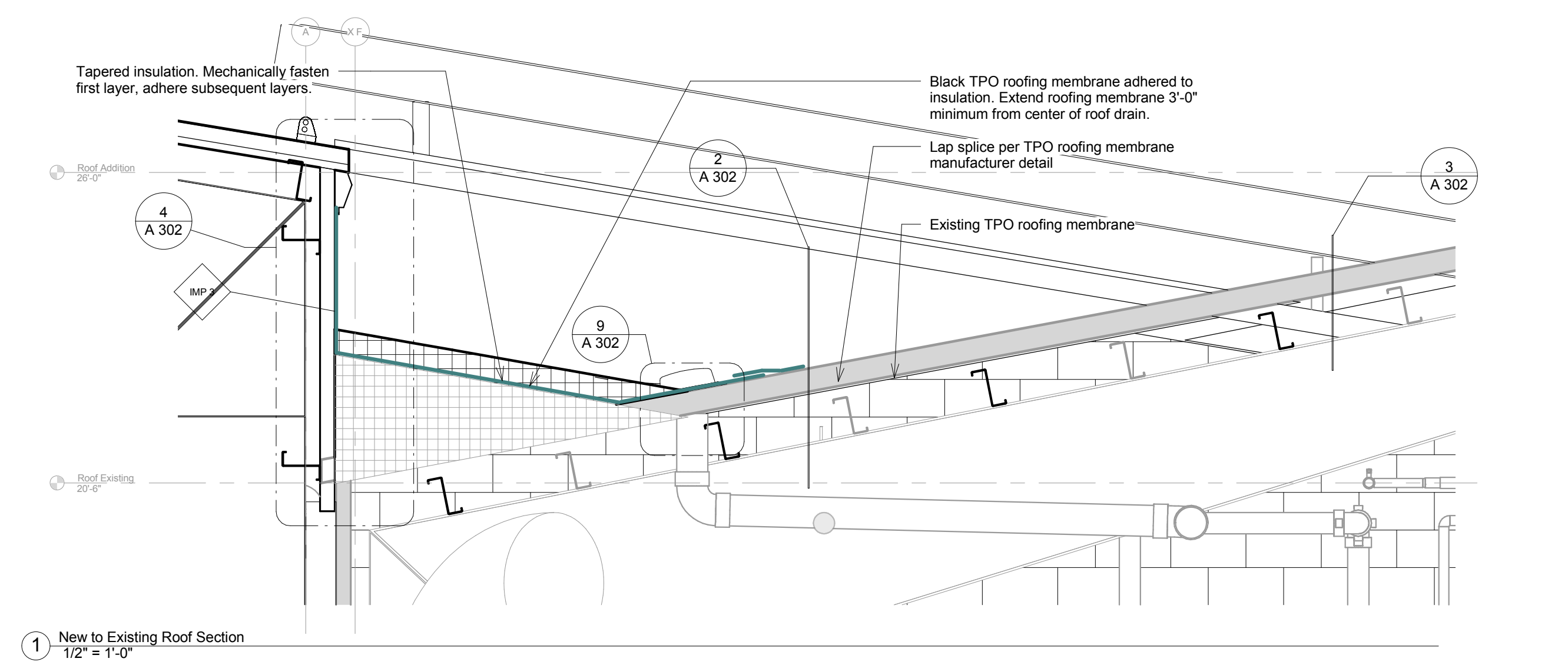


8 Metal Insulated Panel Wall to Roof - Rake Side
3" = 1'-0"

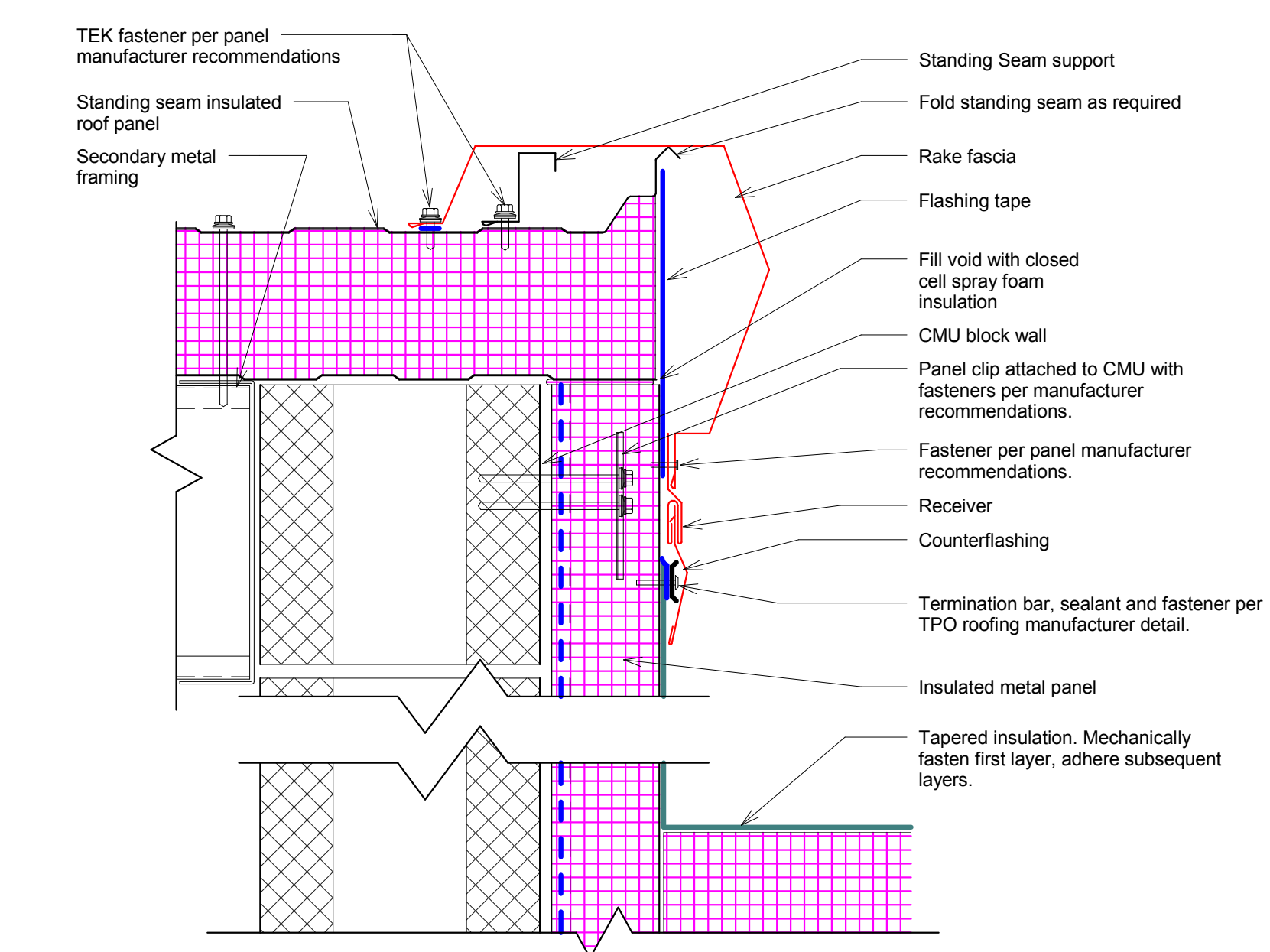


Notes:
1. See structural drawings for framing requirements.

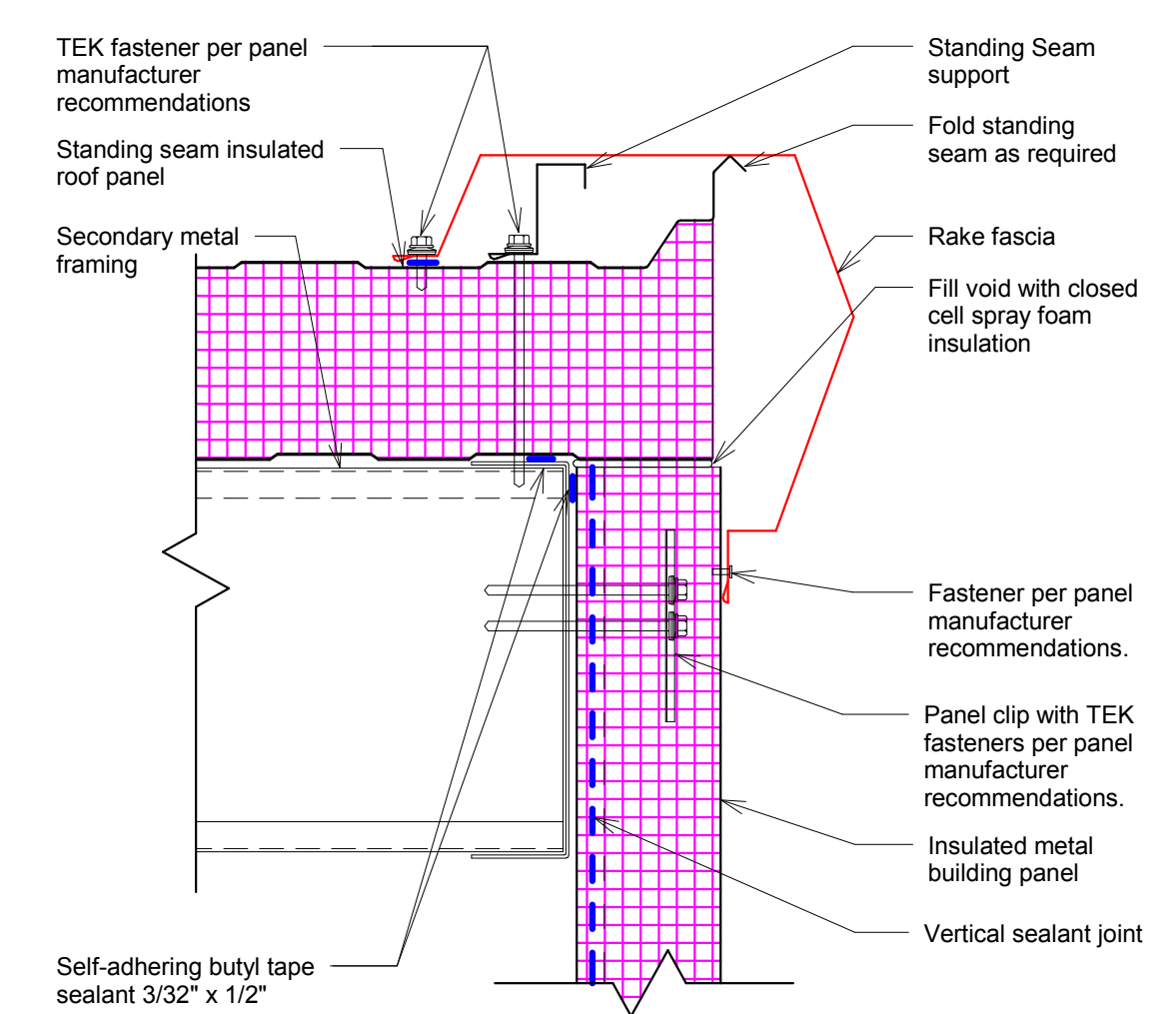
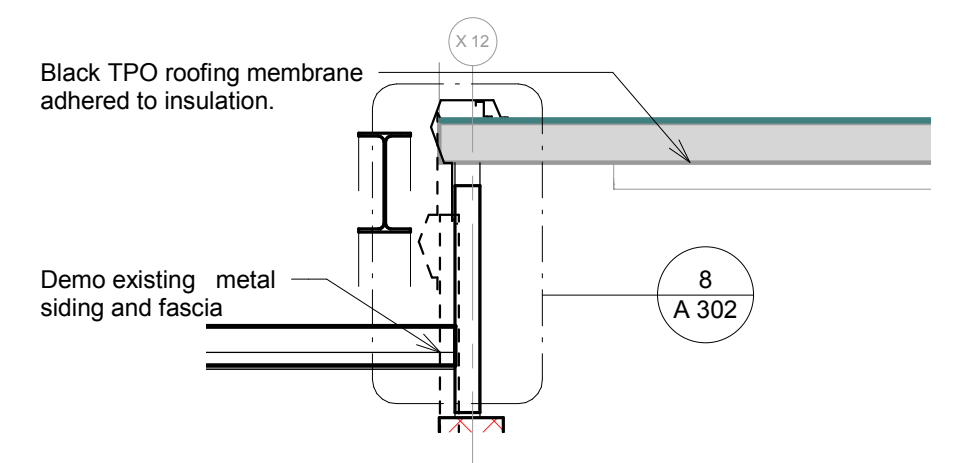
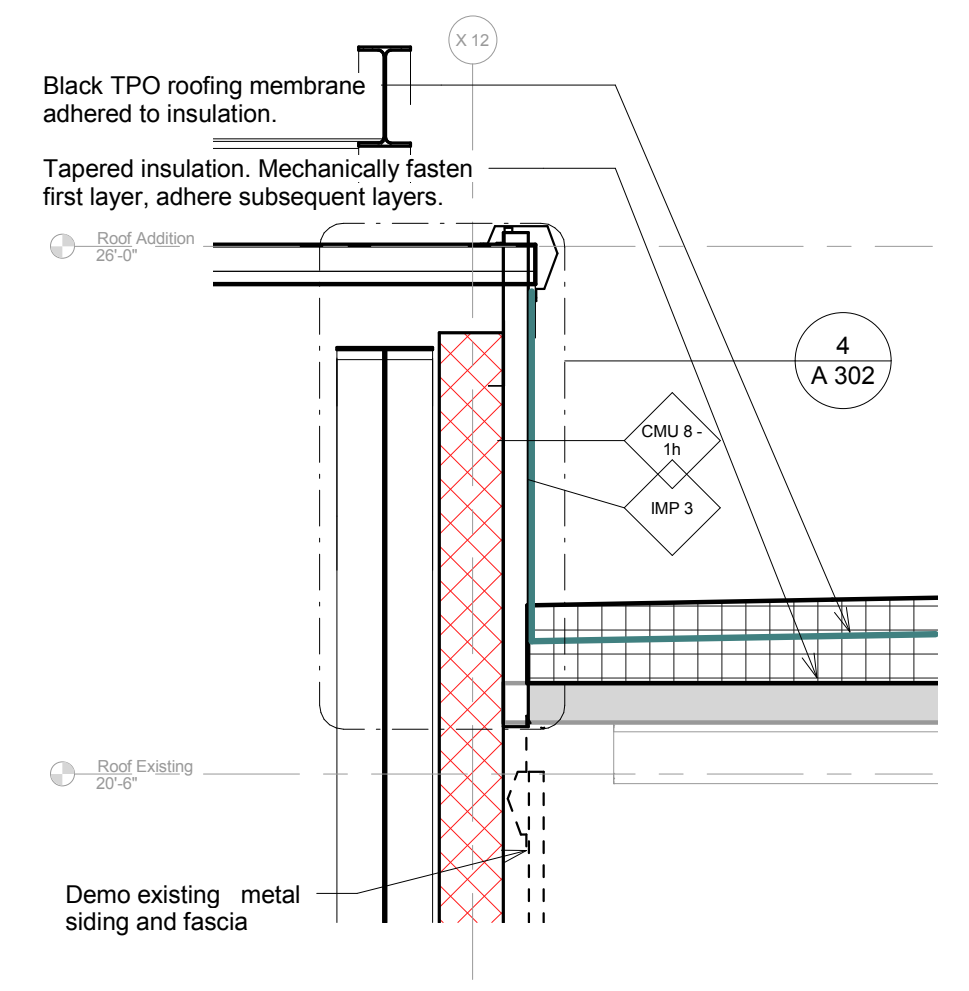
9 Roof Drain
1 1/2" = 1'-0"



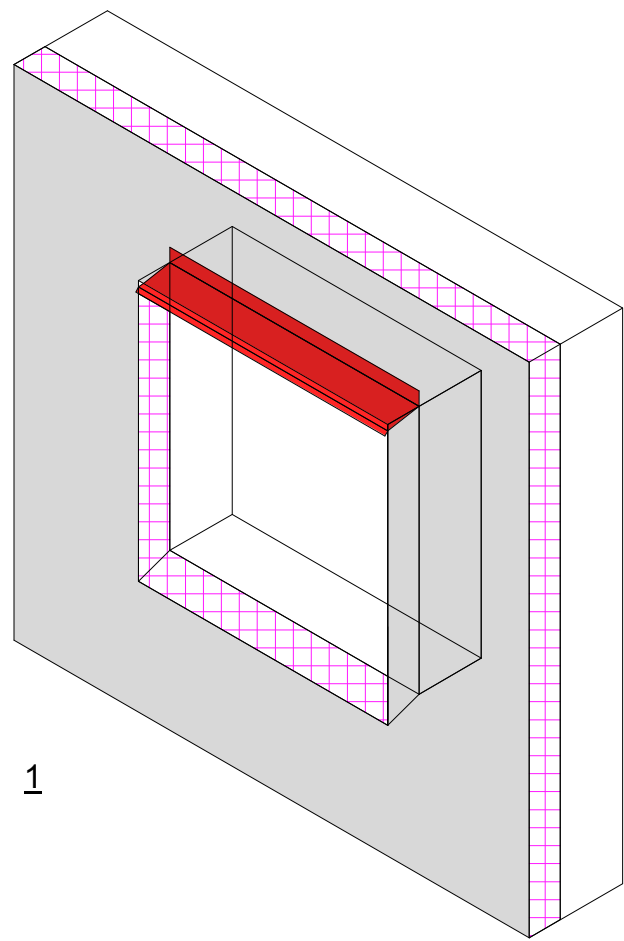
5 New to Existing Roof at Metal Insulated Panel
3" = 1'-0"



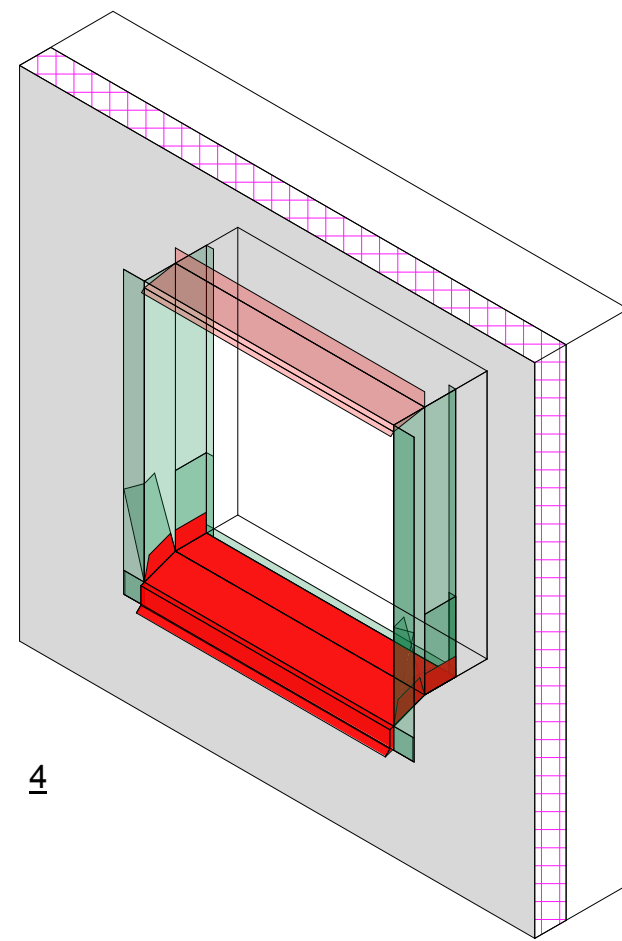
6 Rake Fascia at CMU Wall
3" = 1'-0"



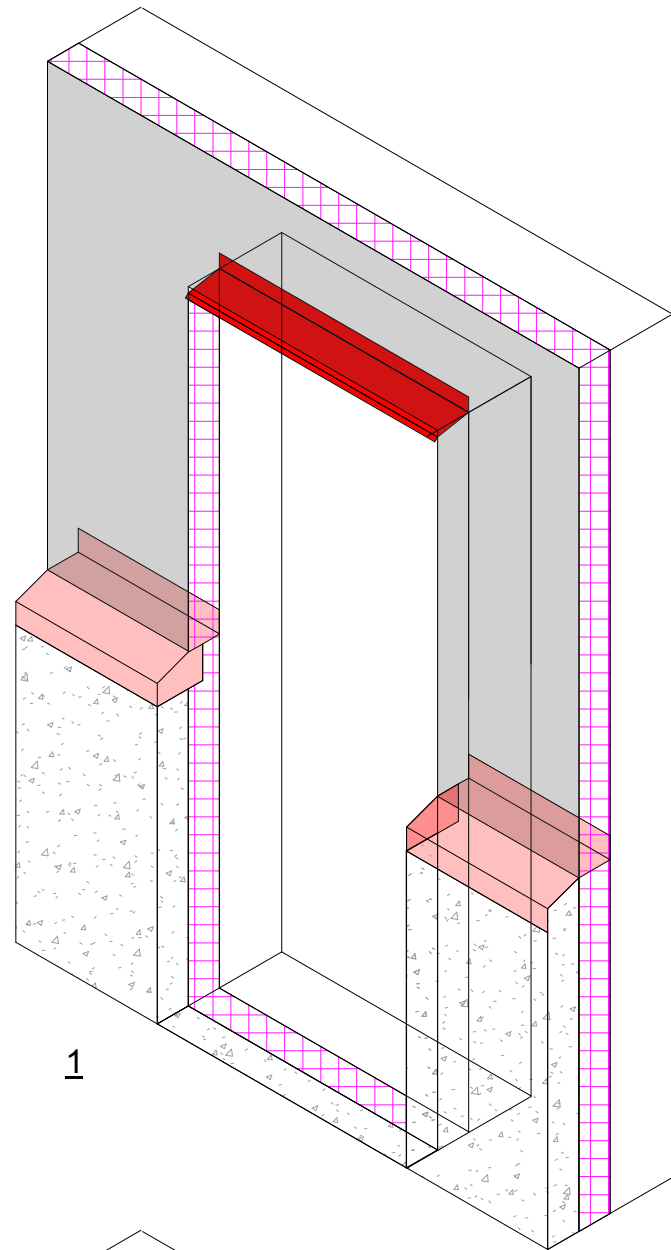
4 Typical Rake Fascia
3" = 1'-0"



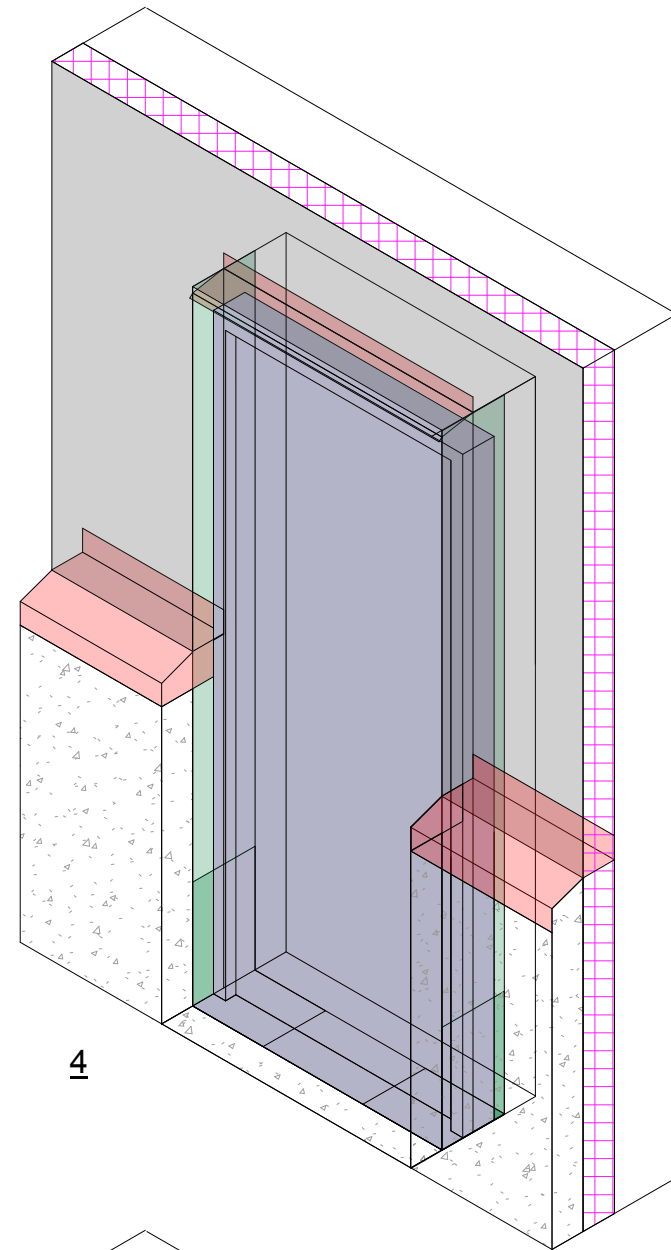
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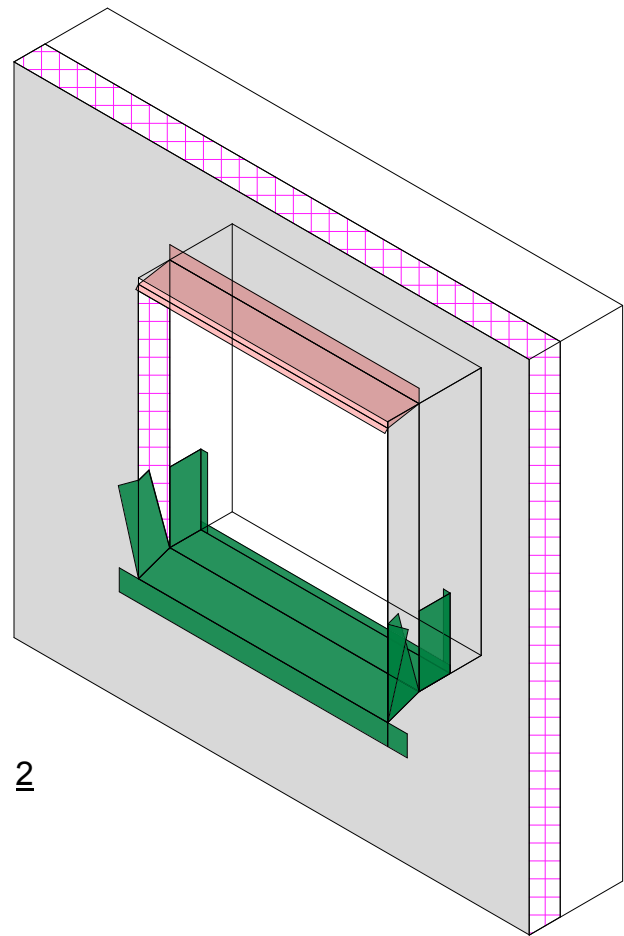
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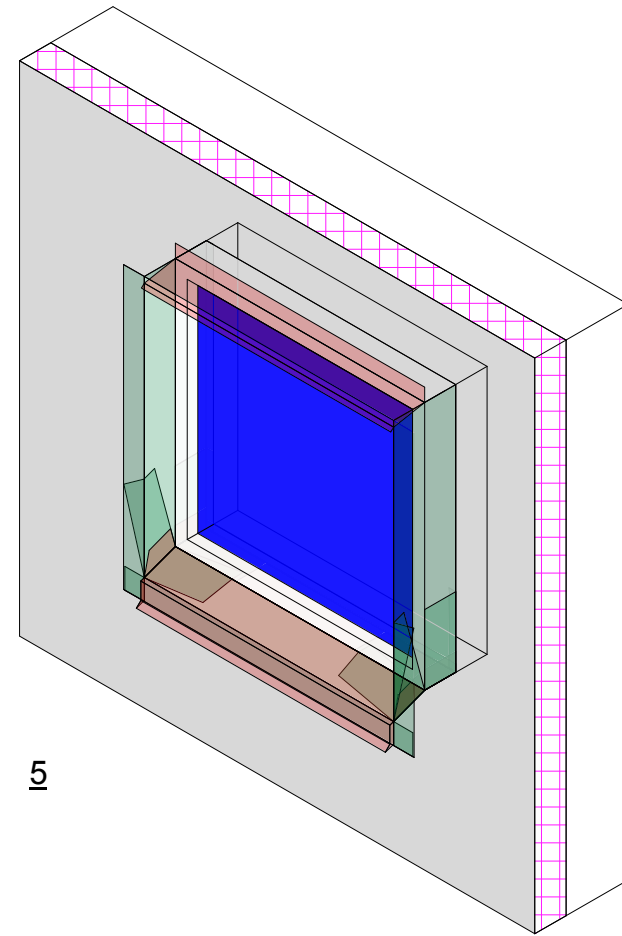
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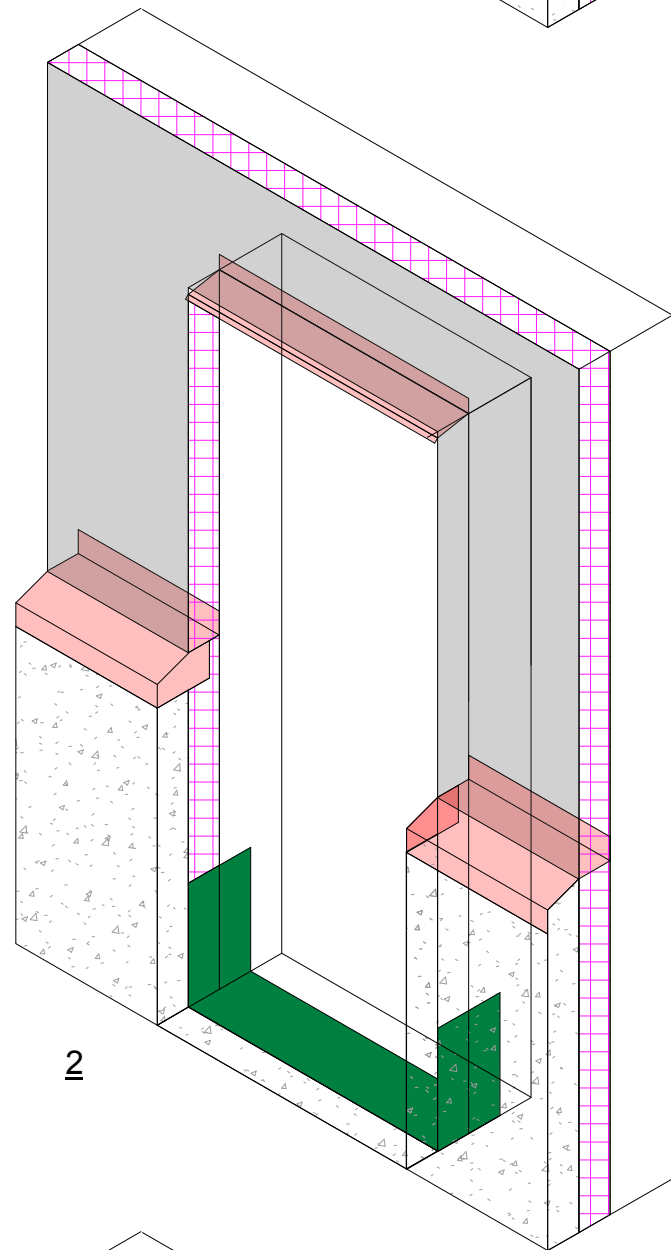
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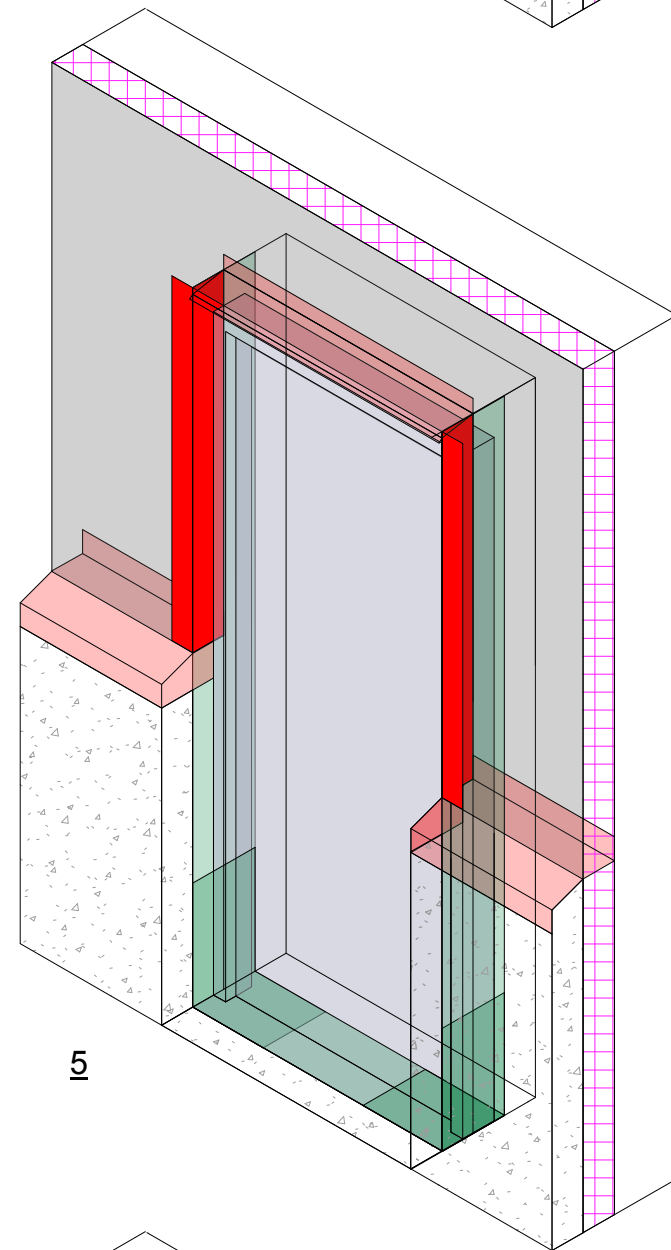
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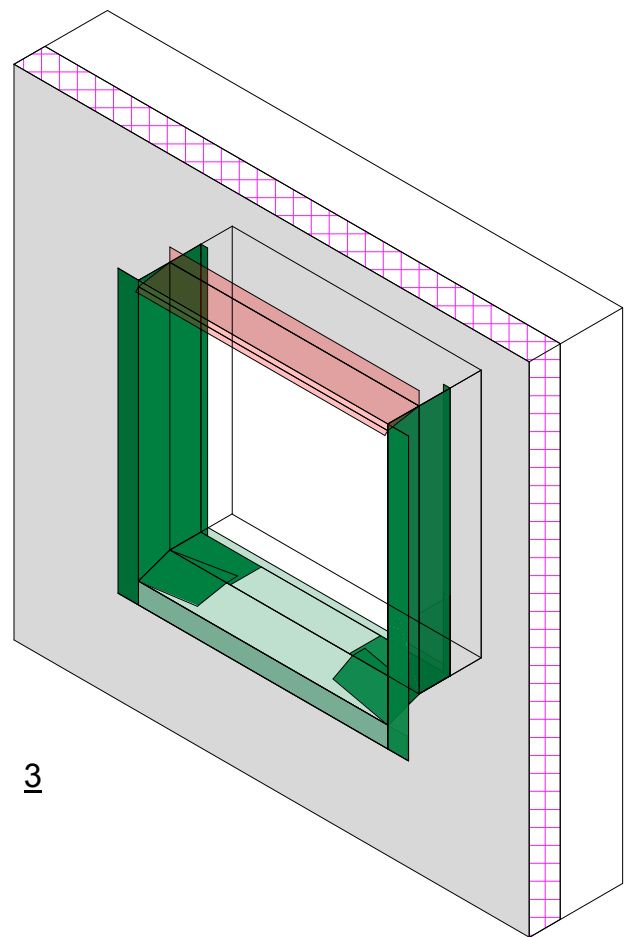
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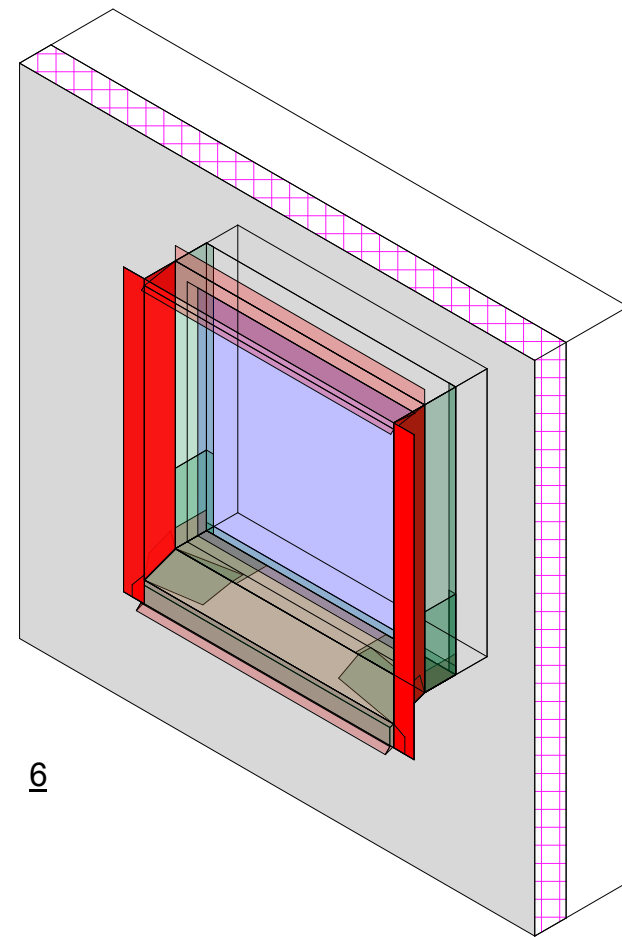
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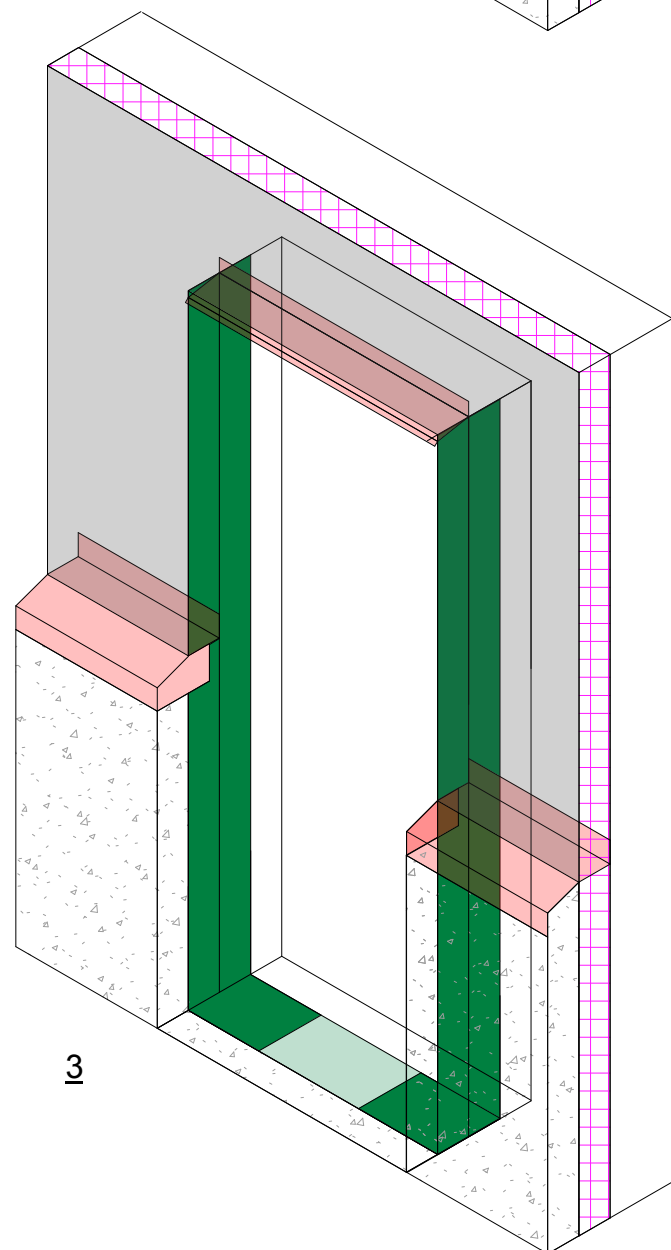
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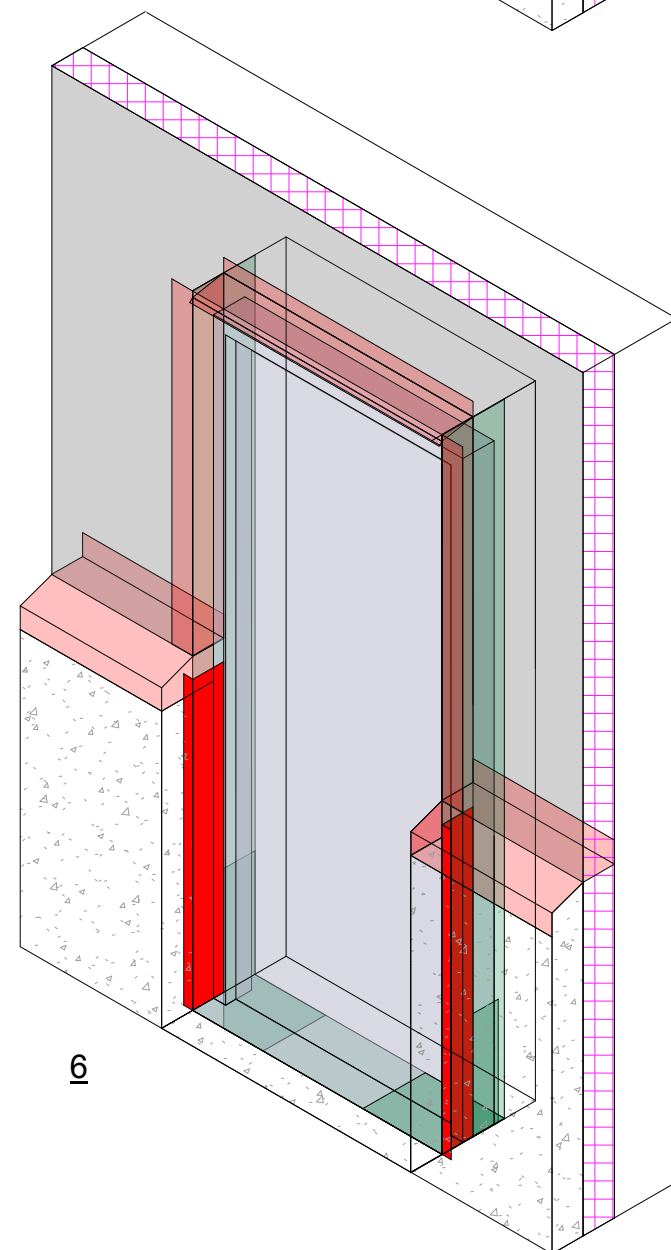
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6



3



6

WINDOW FLASHING INSTALLATION SEQUENCE

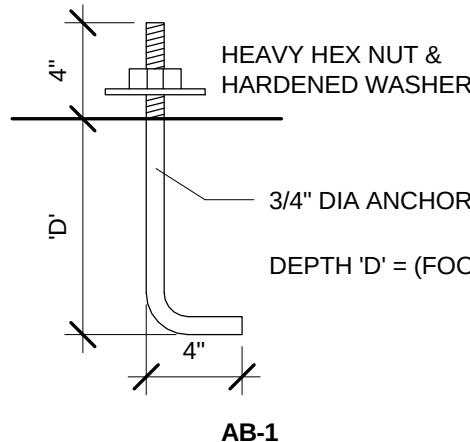
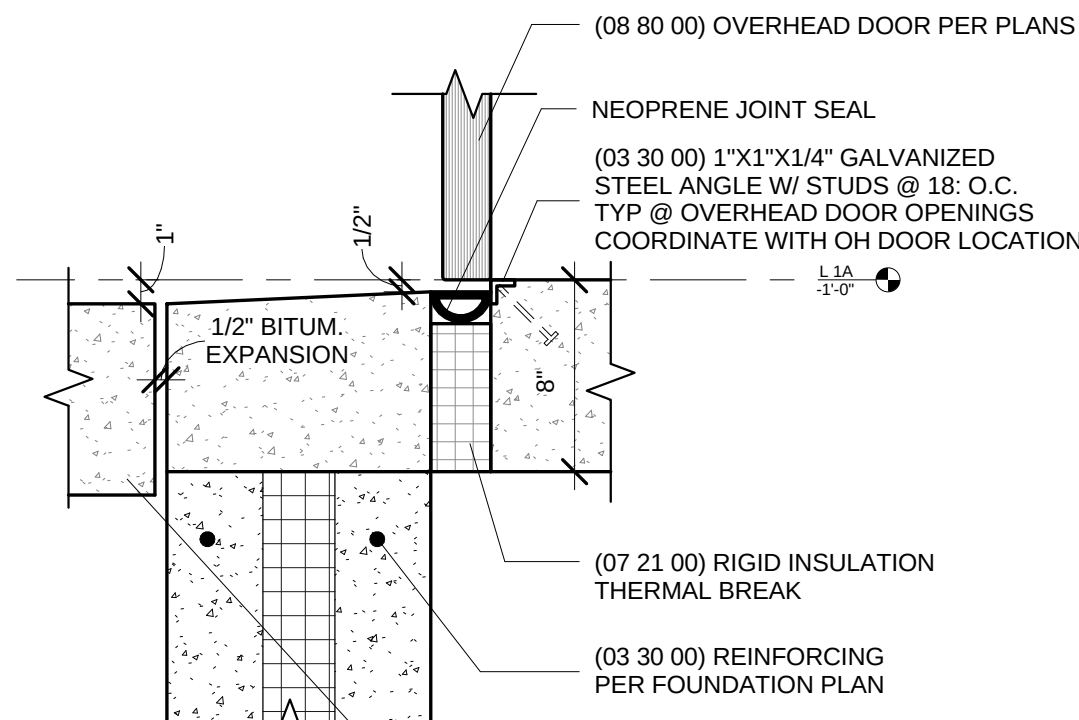
1. Metal flashing at window opening head
2. Flashing tape at sill.
3. Flashing tape at jambs.
4. Metal sill flashing.
5. Fiberglass window.
6. Metal jamb flashings.

2 Typical Window Flashing Installation
3/4" = 1'-0"

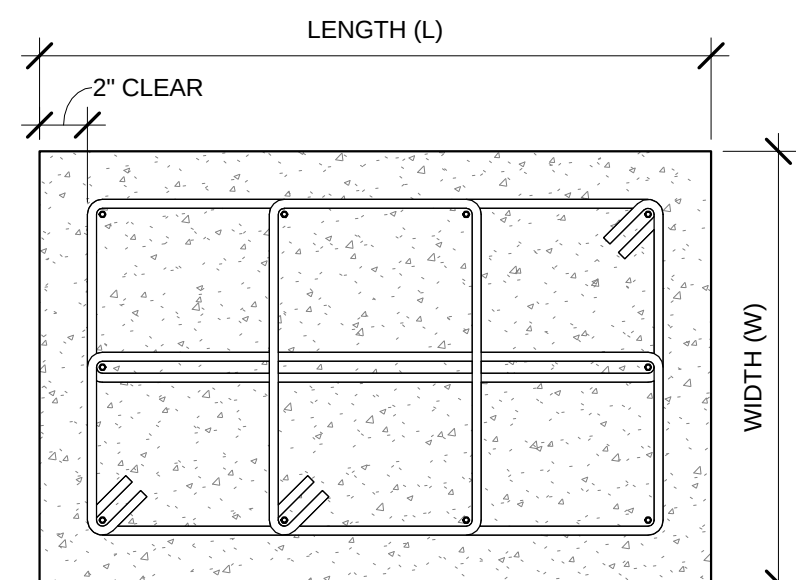
DOOR FLASHING INSTALLATION SEQUENCE

1. Metal flashing at door opening head
2. Flashing tape at sill.
3. Flashing tape at jambs.
4. Insulated metal door.
5. Metal jamb flashings (upper).
6. Metal jamb flashings (lower).

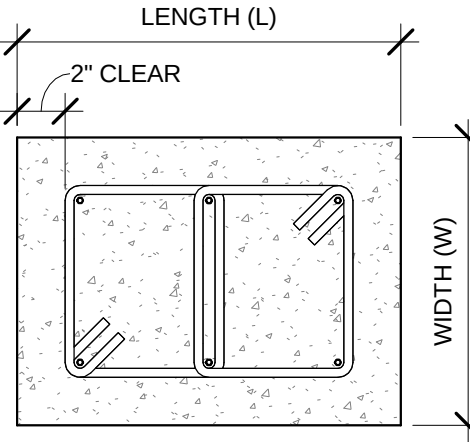
1 Typical door Flashing Installation
3/4" = 1'-0"



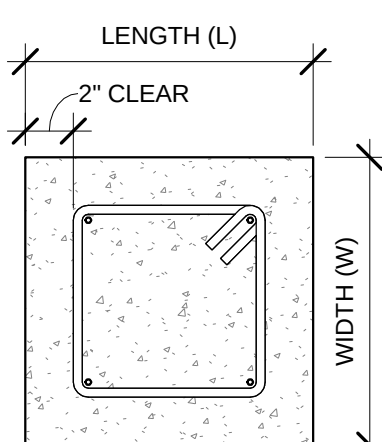
14 Anchor Bolts
1 1/2" = 1'-0"



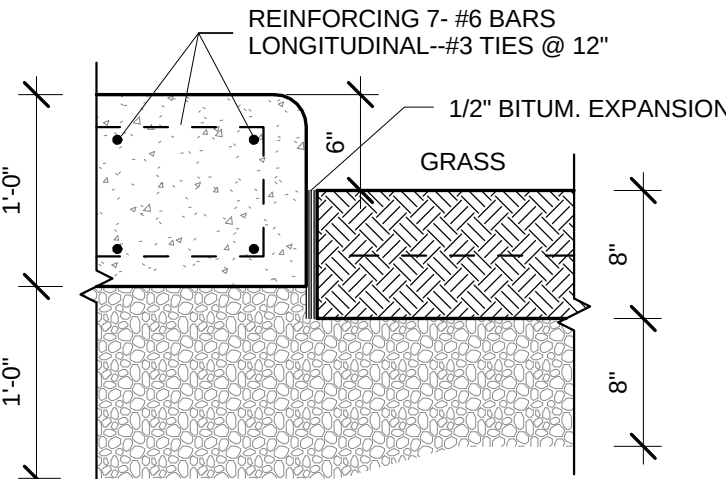
13 Pier Reinforcing - 10 Bars
1 1/2" = 1'-0"



12 Pier Reinforcing - 6 Bars
1 1/2" = 1'-0"

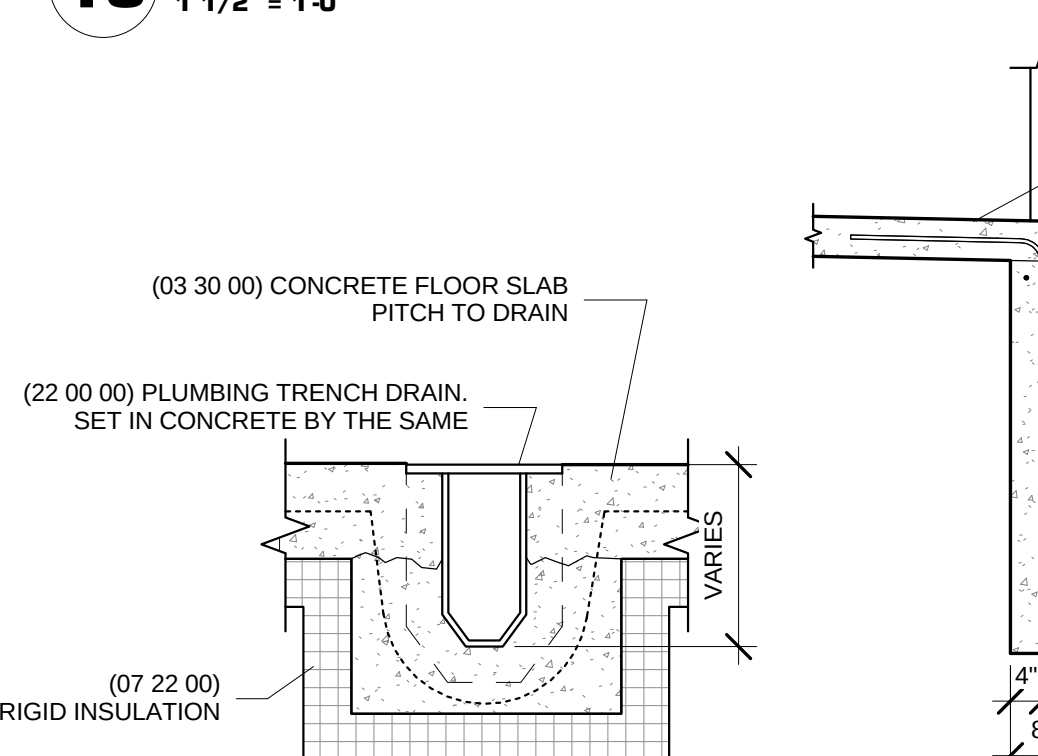


11 Pier Reinforcing - 4 Bars
1 1/2" = 1'-0"

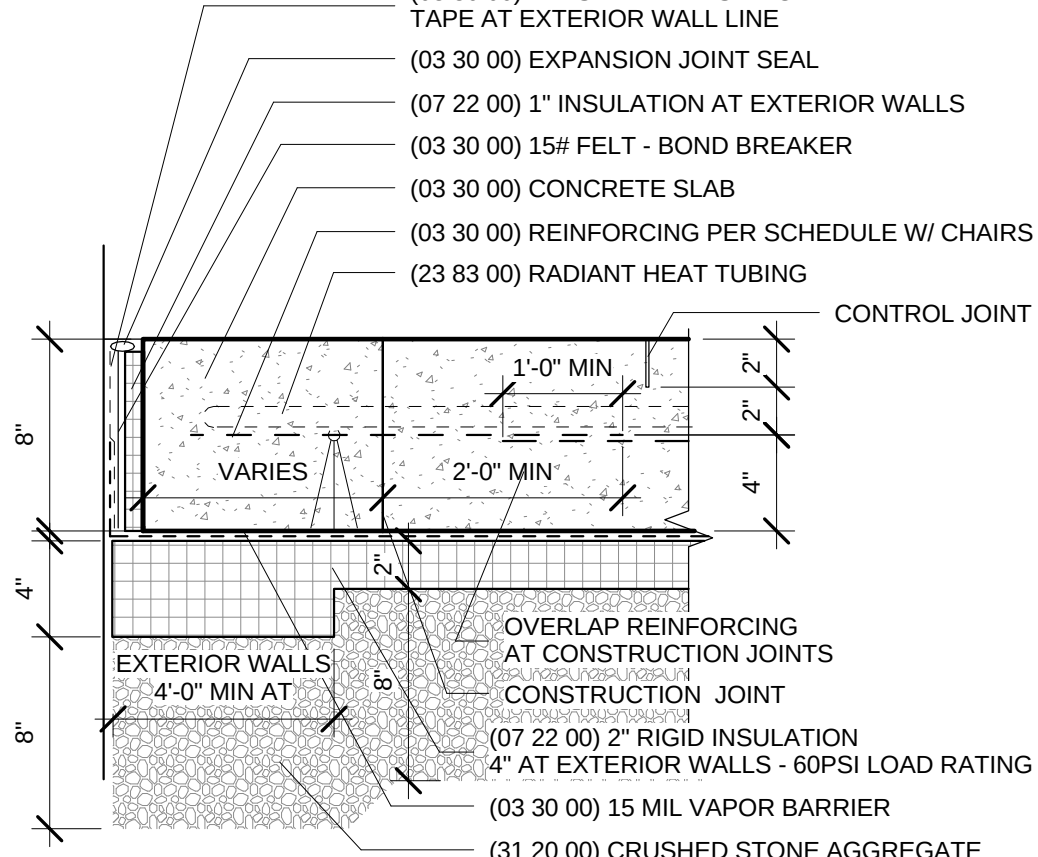
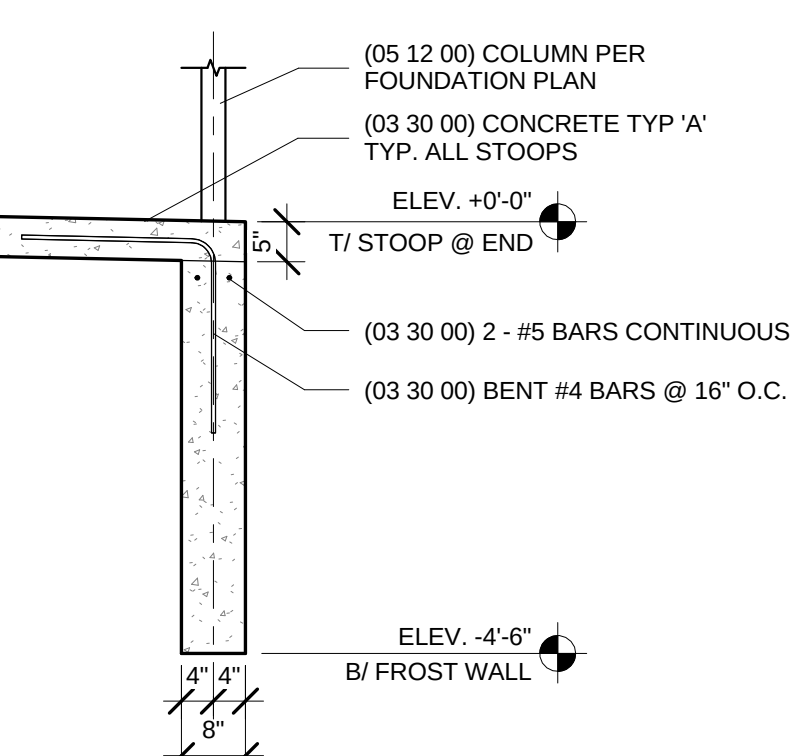


10 Generator Pad
1" = 1'-0"

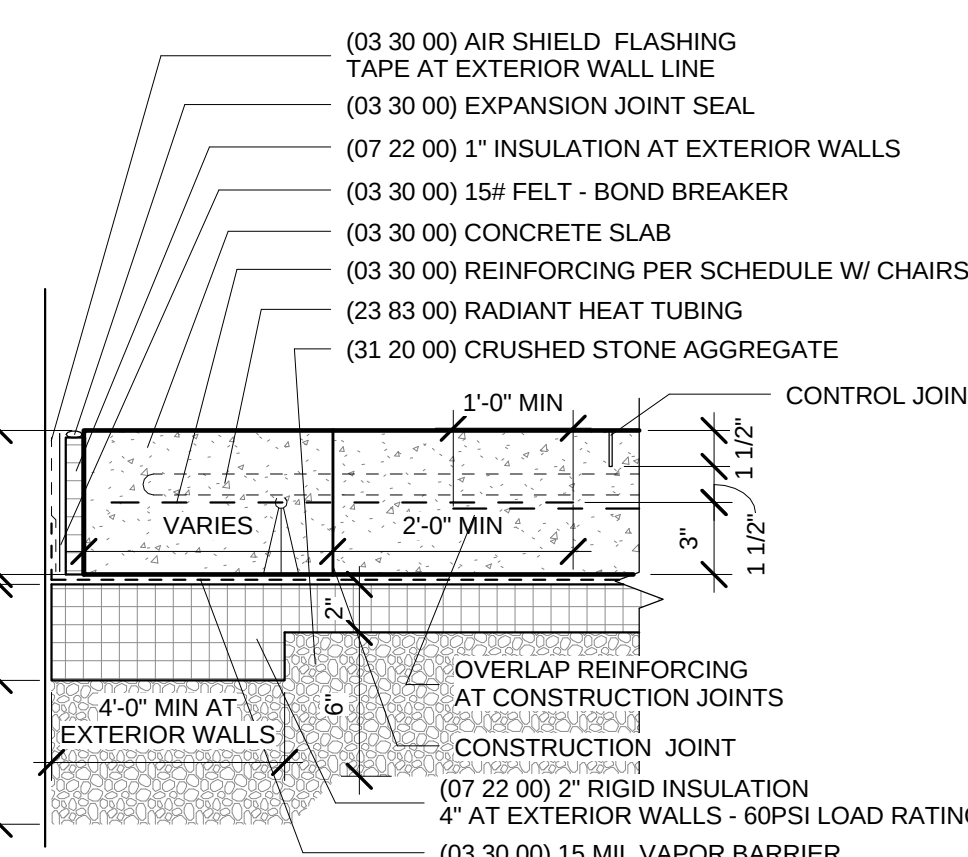
15 OH Door Threshold
1 1/2" = 1'-0"



8 Stoop Frost Wall
1/2" = 1'-0"



7 Concrete Slab - Type B
1 1/2" = 1'-0"



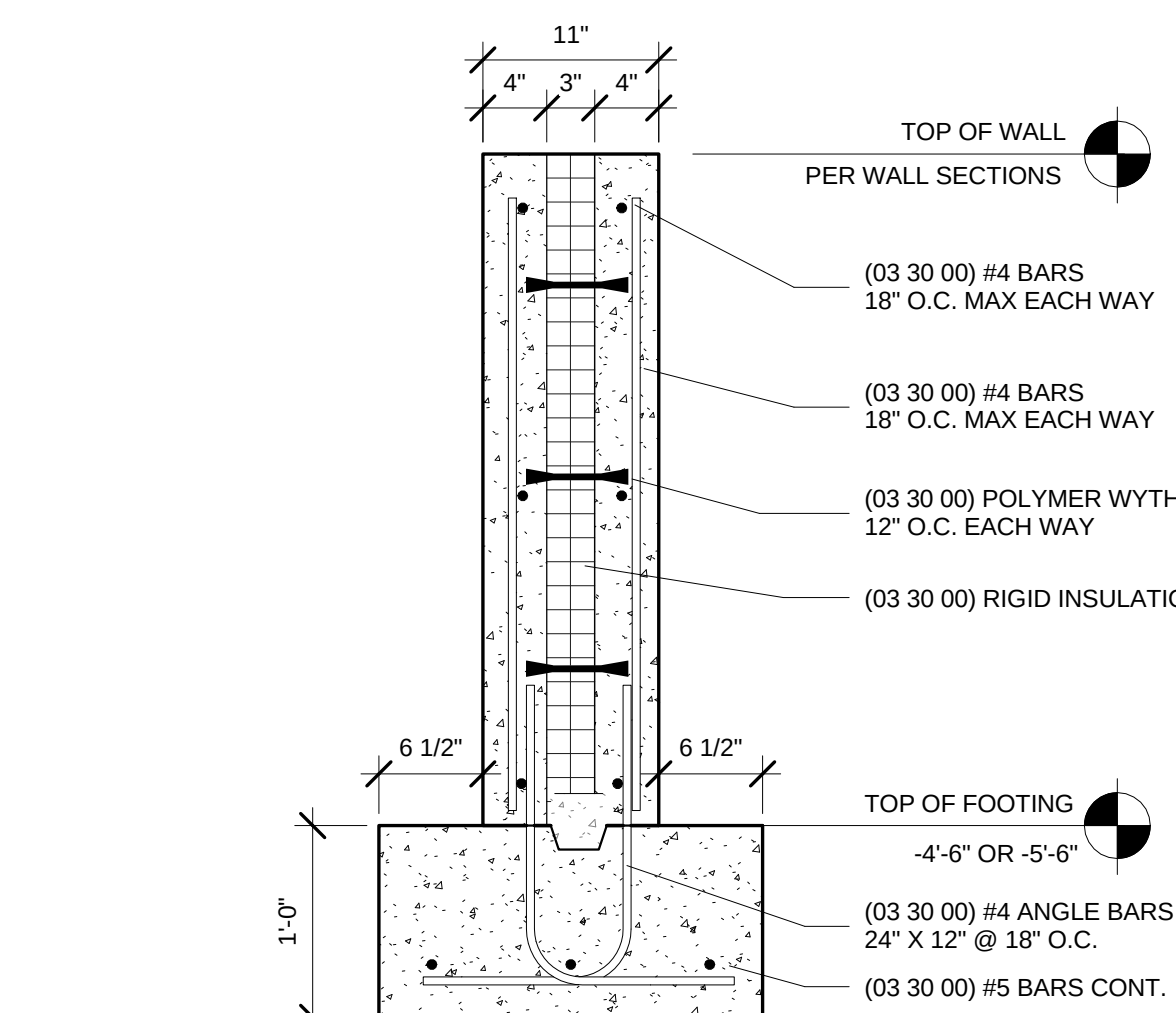
6 Concrete Slab - Type A
1 1/2" = 1'-0"

FOOTING SCHEDULE		
NOTE: ALL STRIP FOOTINGS ARE "ST-1" UNLESS NOTED OTHERWISE		
MARK	SIZE	REINFORCING
F-1	36" x 36" x 12"	(4) #5 BARS E. W.
F-2	51" x 51" x 12"	(5) #5 BARS E. W.
F-2A	51" x 51" x 12" (Uplift)	(5) #5 BARS E. W. / T & B
F-3	66" x 66" x 12"	(6) #5 BARS E. W. / T & B
F-4	87" x 87" x 12"	(8) #5 BARS E. W. / T & B
F-5	96" x 96" x 13"	(10) #6 BARS TOP AND BOTTOM
F-6	108" x 60" x 12"	(6) #5 BARS LONG. - (10) #5 BARS TRANS. - T & B
F-7	162" x 48" x 24"	(6) #7 BARS LONG. - (18) #7 BARS TRANS. - T & B
F-8	144" x 120" x 21"	(13) #7 BARS LONG. - (14) #7 BARS TRANS. - T & B
F-9	54" x 42" x 14"	(4) #5 BARS LONG. - (6) #5 BARS TRANS.
F-10	72" x 36" x 18"	(4) #6 BARS LONG. - (8) #6 BARS TRANS. - T & B
F-11	108" x 108" x 16"	(8) #7 BARS E. W. / T & B
ST-1	24" x 12"	(3) #5 BARS CONT.

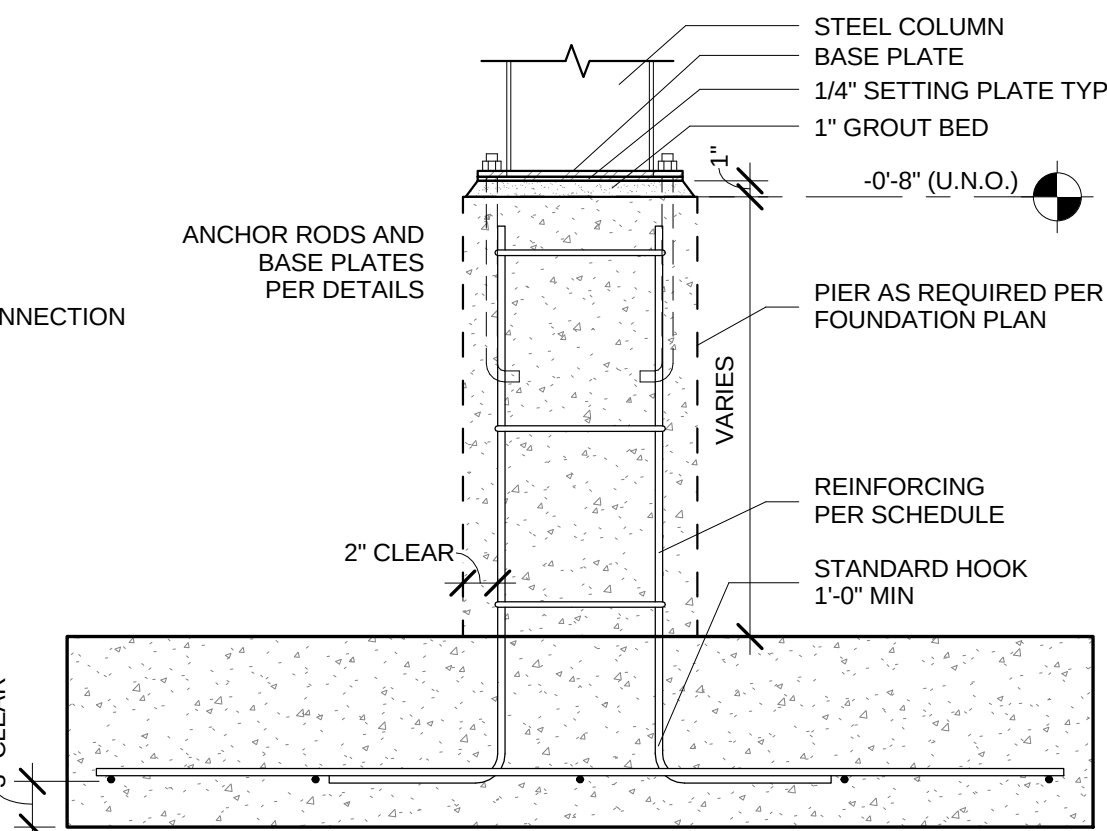
PIER SCHEDULE			
MARK	SIZE	REINFORCING	TIES
P-1	12 x 12	4 - #6 BARS	#3 TIES @ 12" O.C.
P-2	10 x 16	6 - #5 BARS	#3 TIES @ 10" O.C.
P-3	12 x 20	6 - #8 BARS	#3 TIES @ 16" O.C.
P-4	38" x 20"	10 - #8 BARS	#3 TIES @ 16" O.C.
P-5	18" DIA	6 - #6 BARS	#3 TIES @ 12" O.C.

COLUMN SCHEDULE		
MARK	TYPE	BASE PLATE
C-1	HSS3X3X1/4	9" x 1/2" x 0'-9"
C-2	HSS4X4X1/4	10" x 3/4" x 0'-10"
C-3	Pipe3STD	6" x 1/2" x 0'-6"
C-4	HSS6X6X1/4	12" x 1/2" x 1'-0"

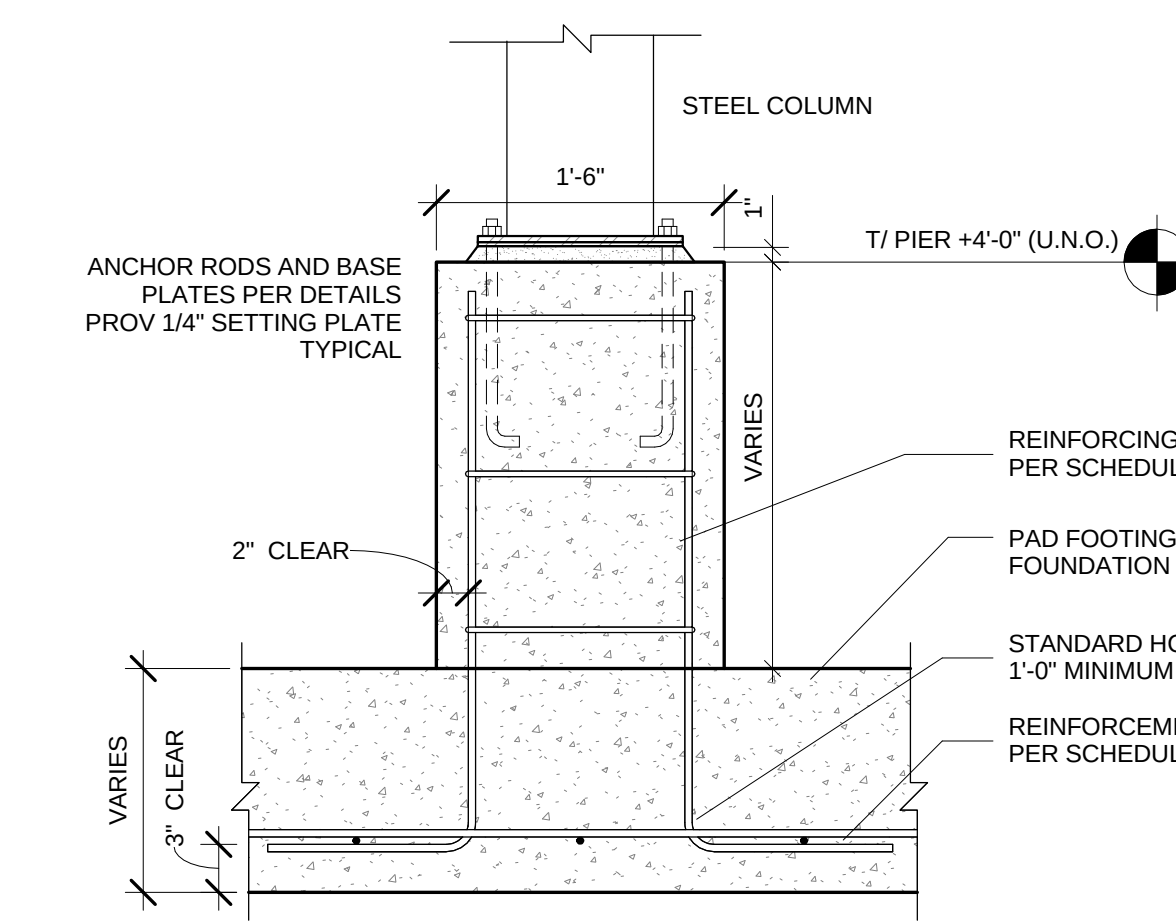
CONCRETE SLAB SCHEDULE	
CONCRETE TYPE "A" 6" CONCRETE SLAB - #3 EPOXY COATED REINF. @ 18" O.C. EACH WAY w/ 15 MIL POLYETHYLENE VAPOR BARRIER OVER 6" COMPACTED CRUSHED STONE	
CONCRETE TYPE "B" 8" CONCRETE SLAB - #3 EPOXY COATED REINF. @ 16" O.C. EACH WAY w/ 15 MIL POLYETHYLENE VAPOR BARRIER OVER 8" COMPACTED LIMESTONE. #5 EPOXY COATED BARS REQ @ EXPANSION JOINTS OR END OF CONSTRUCTION JOINTS 16" O.C. 2'-0" LONG	



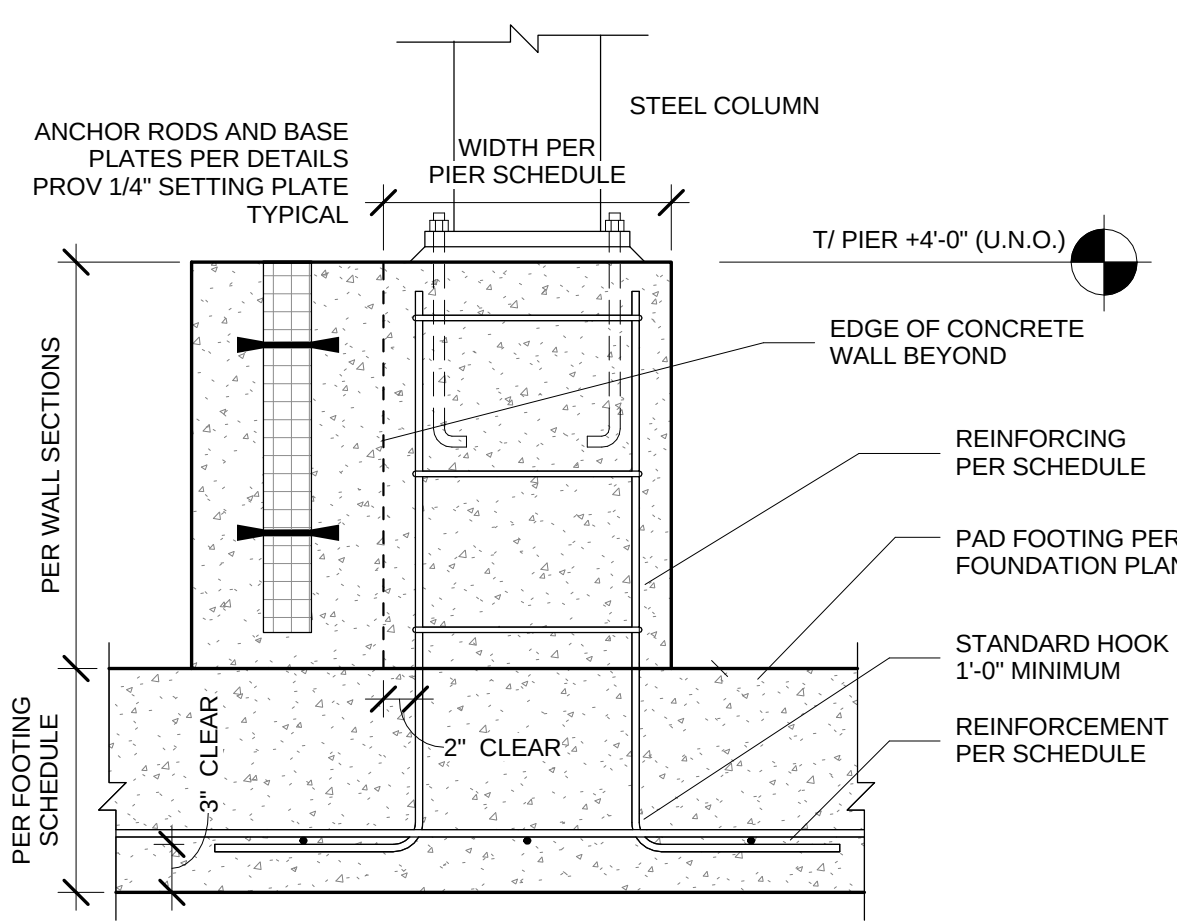
5 Typical Foundation Wall
1" = 1'-0"



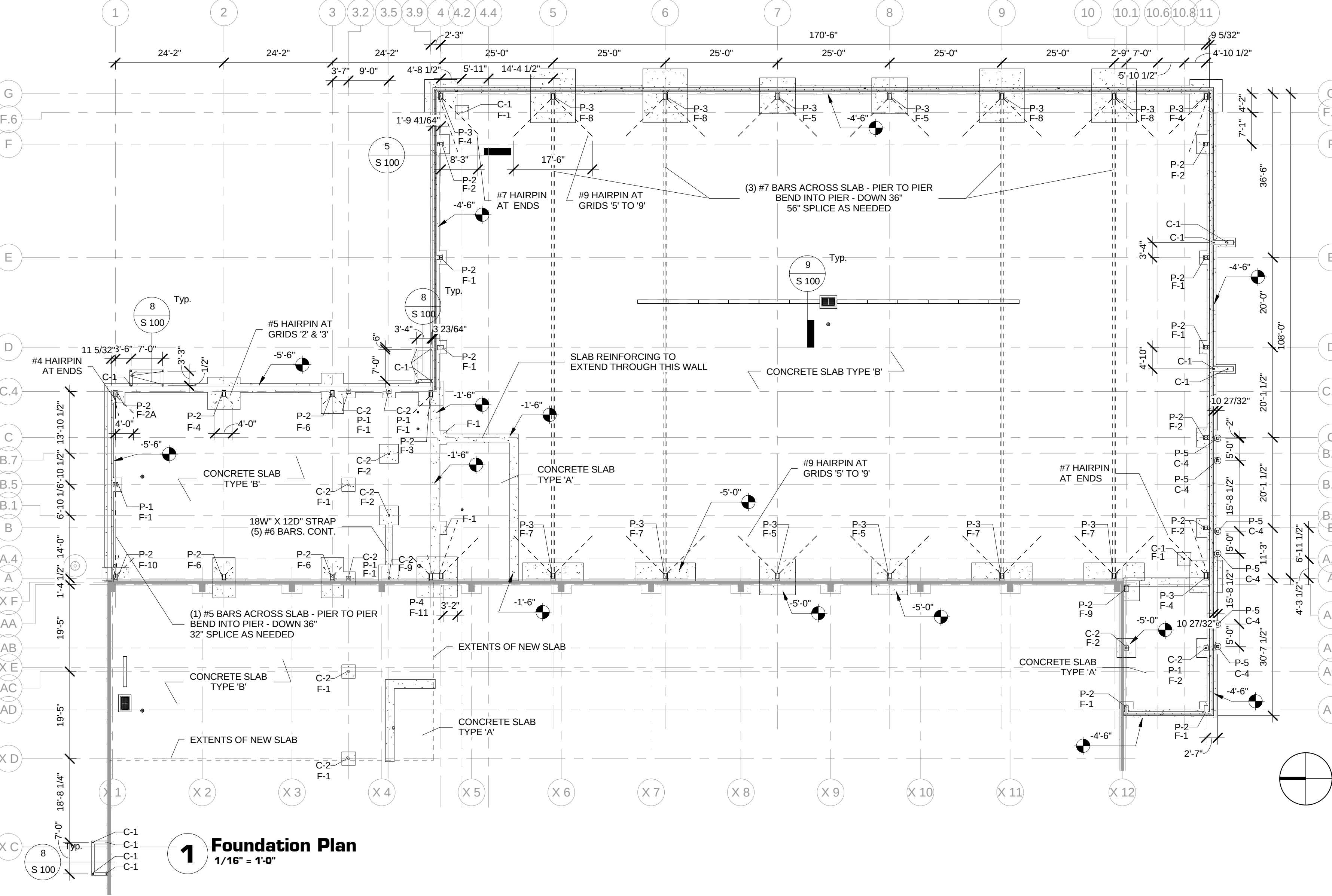
4 Pad Footing Detail
1" = 1'-0"



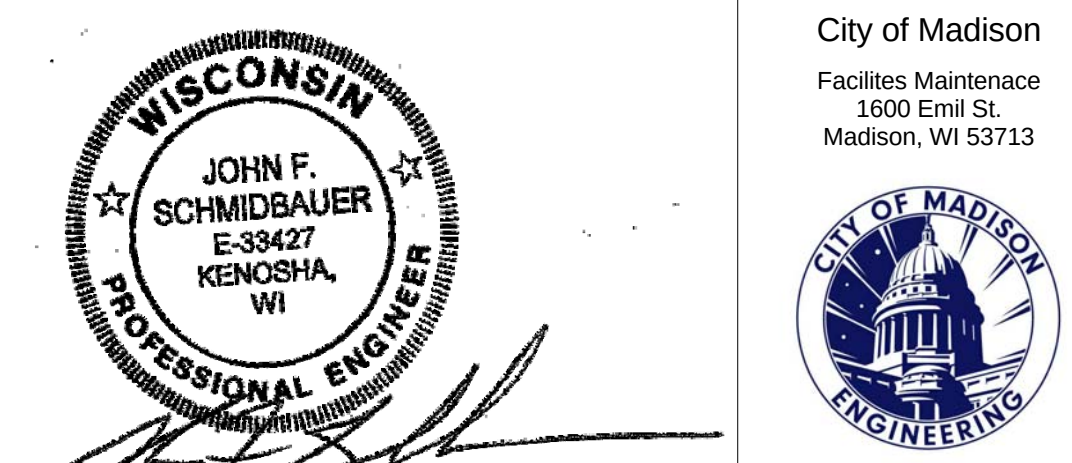
3 Typical Pier @ Interior Location
1" = 1'-0"



2 Typical Pier @ Exterior Walls
1" = 1'-0"



1 Foundation Plan
1/16" = 1'-0"



SHEET LIST	
S 100	Foundation Plan
S 200	Mezzanine Framing Plan
S 201	Roof Framing Plan
S 202	Solar Panel and Crane Rail Structure
S 301	Building Sections
S 302	Building Sections
S 401	Wall Sections and Details
S 402	Wall Sections and Details
S 403	Wall Sections and Details
S 404	Wall Sections
S 501	Structural Details



Design prepared for:
Engineering Division

Engineering Operations
Building Addition - 2015

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
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Civil Design:
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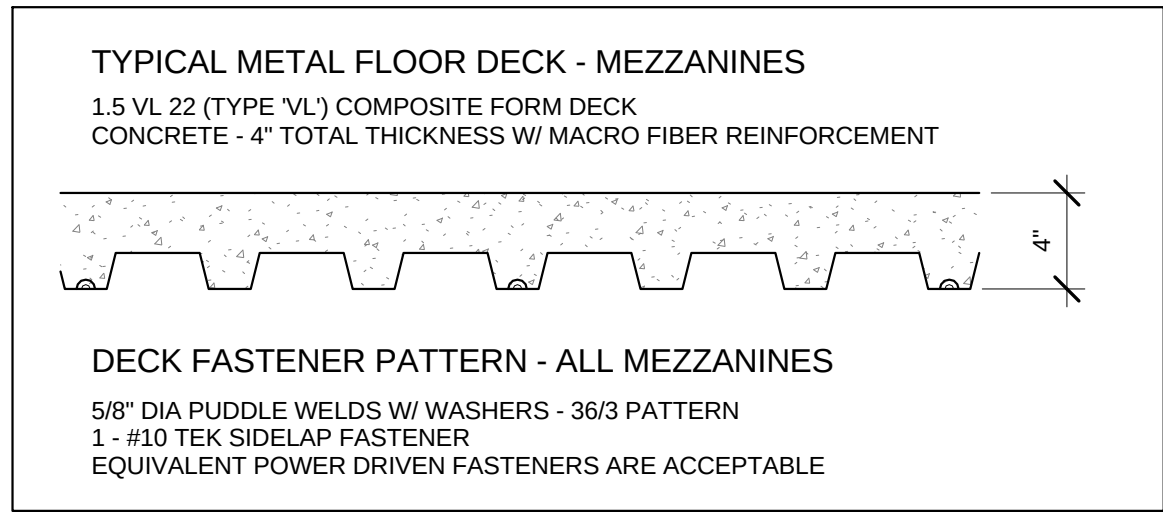
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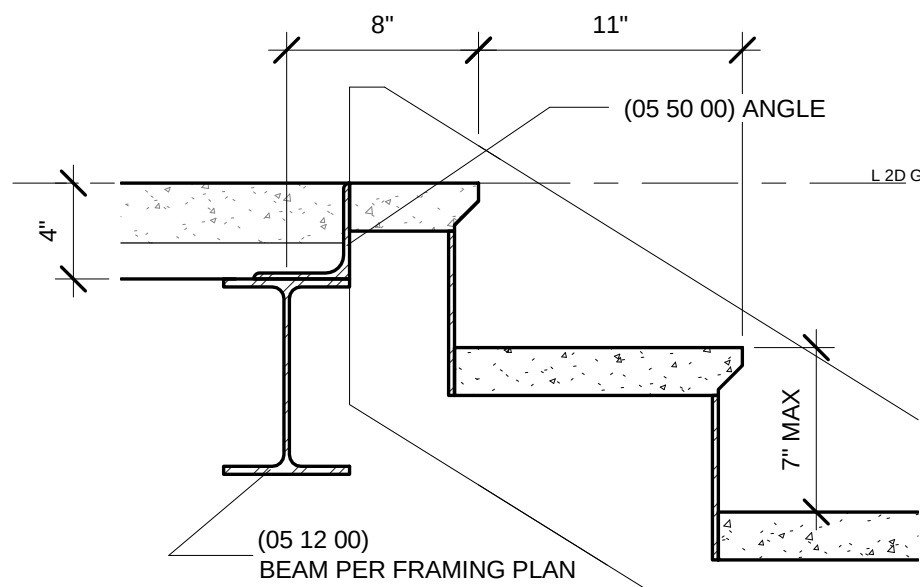
Architectural Design:
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Foundation
Plan

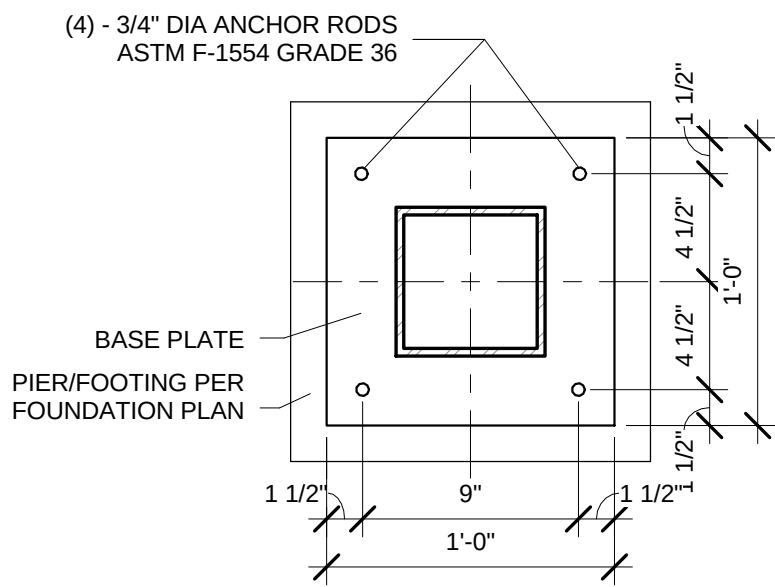
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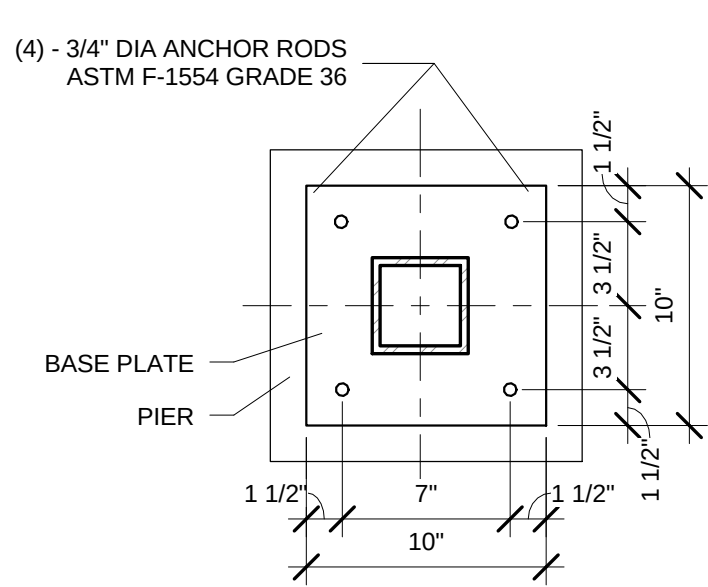
6 Metal Deck Fastening
1 1/2" = 1'-0"



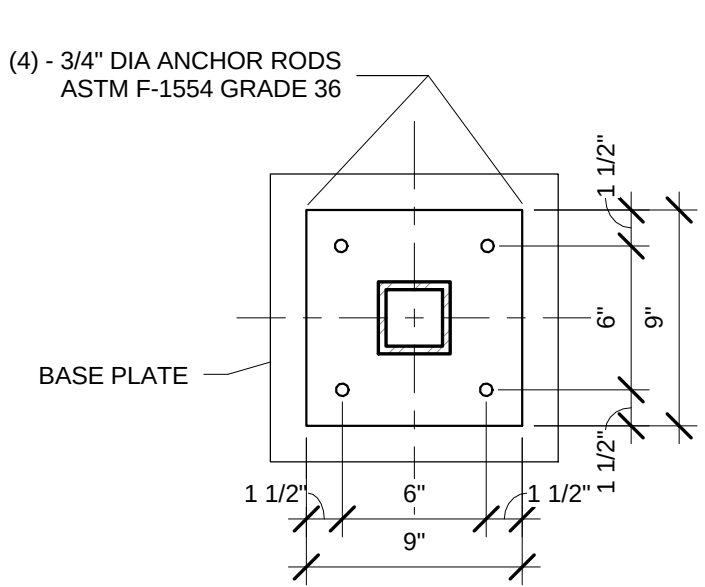
5 Stair Connection - Typ.
1 1/2" = 1'-0"



4 Base Plate - 6" HSS
1 1/2" = 1'-0"



3 Base Plate - 4" HSS
1 1/2" = 1'-0"



2 Base Plate - 3" HSS
1 1/2" = 1'-0"

COLUMN SCHEDULE

MARK	TYPE	BASE PLATE
C-1	HSS3X3X1/4	9" x 1/2" x 0'19"
C-2	HSS4X4X1/4	10" x 3/4" x 0'10"
C-3	Pipe3STD	6" x 1/2" x 0'16"
C-4	HSS6X6X1/4	12" x 1/2" x 1'-0"

LINTEL SCHEDULE

MARK	SIZE	END BEARING/REINFORCING
BP-1	8"X7-1/2"X1/4"	GROUTED CORE W/ 5 BAR INTO FOOTING
L-1	2L3-1/2X3-1/2X1/4	8" END BEARING, GROUT SOLID (3) CORES
L-2	W8X10 w/ 1/4" x 7" PLATE	8" END BEARING, GROUT SOLID (3) CORES W/ #5 BAR INTO FOOTING

City of Madison

Maintenance
Emil St.
Madison WI 53713



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Engineering Division

Engineering Operations

Building Addition - 2015

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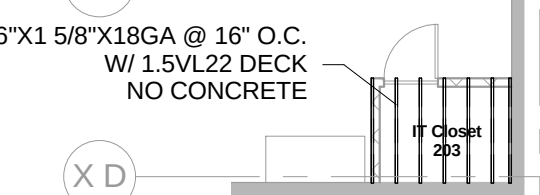
Architectural Design:
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kschindel@cityofmadison.com

Mezzanine
Framing Plan

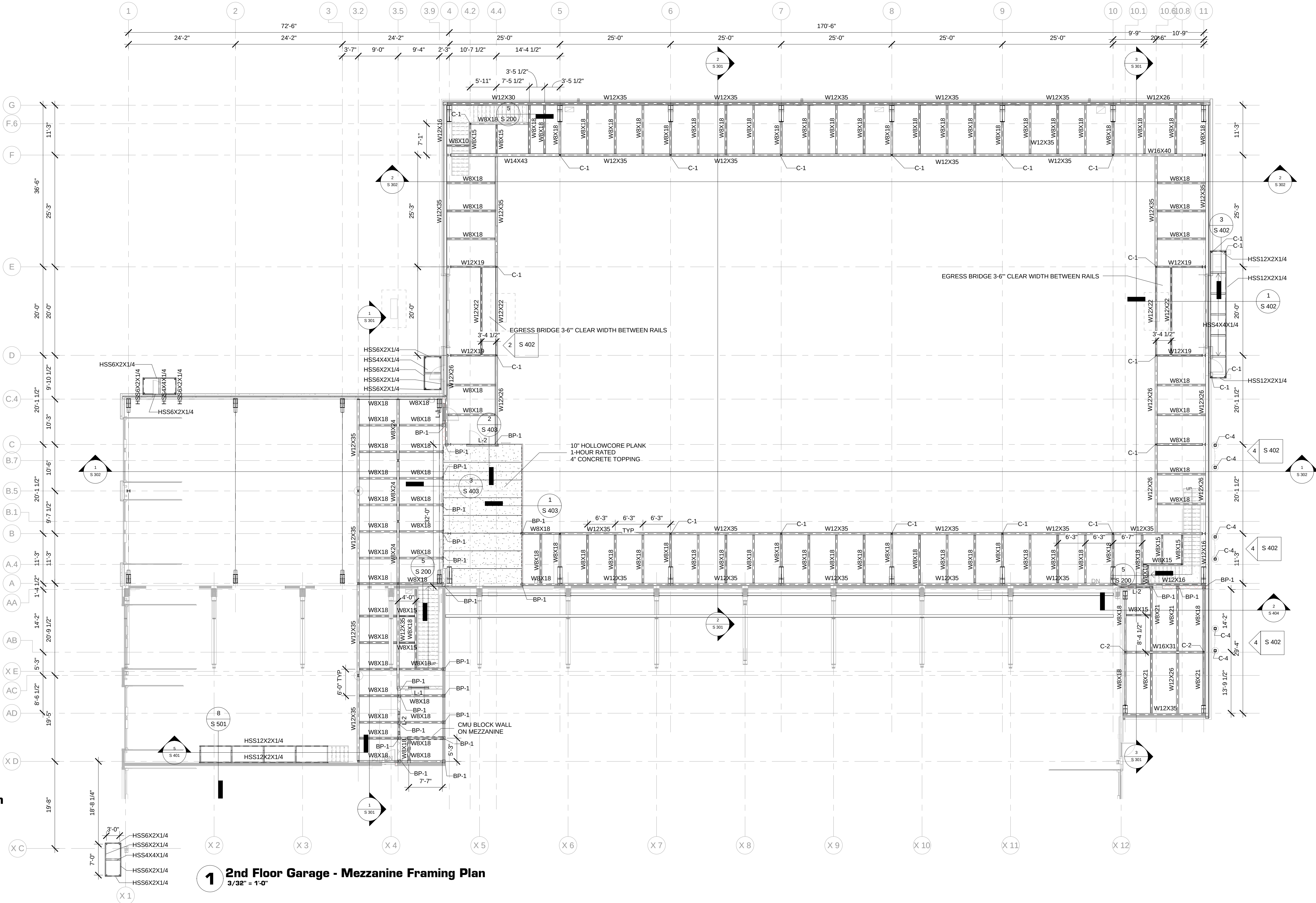
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7 IT Closet Framing Plan
3/32" = 1'-0"

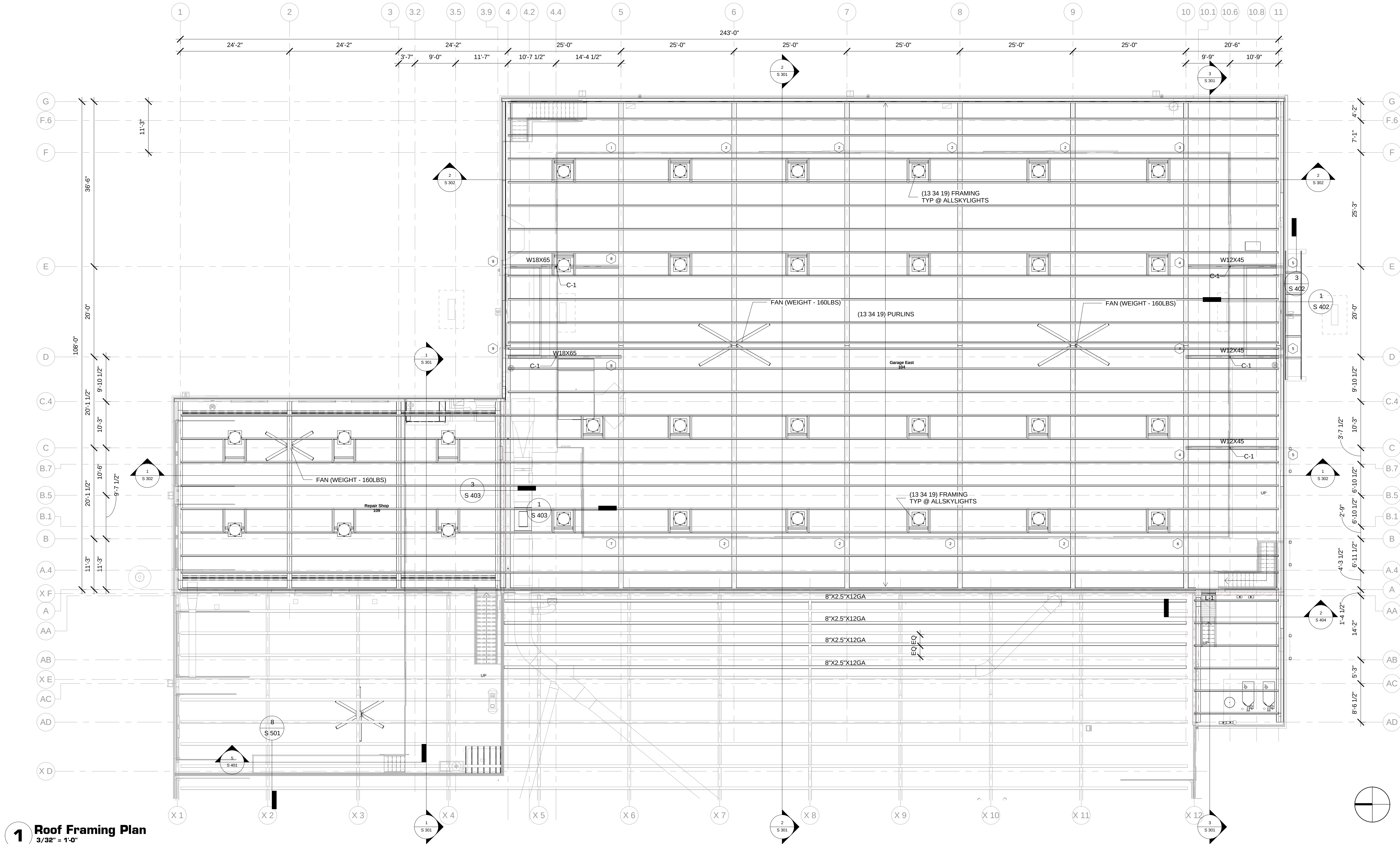


1 2nd Floor Garage - Mezzanine Framing Plan
3/32" = 1'-0"

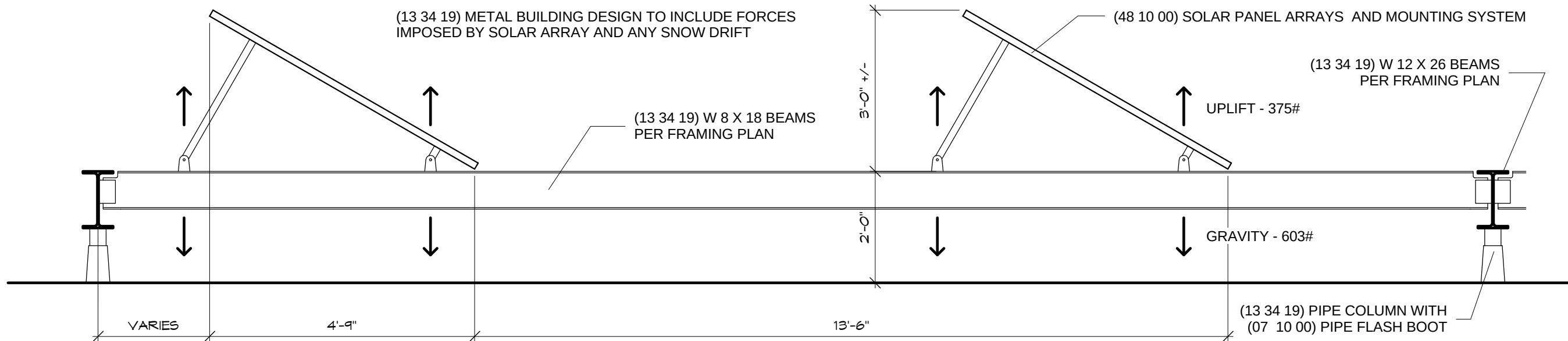


ROOF LOAD SYSTEM @ METAL BUILDING	
LIVE LOAD	21 P.S.F.
DEAD LOAD	15 P.S.F.
INSULATED ROOF PANEL	3.0
SOLAR PANEL SYSTEM (1)	5.0
MECHANICAL	2.0
MISCELLANEOUS	3.0
	14.8
(1) DESIGN FOR ACTUAL SOLAR PANEL LOADS AND IMPOSED SNOW DRIFT	
DESIGN LOAD	36 P.S.F.
METAL BUILDING SYSTEMS CONTRACTOR IS RESPONSIBLE FOR THE ENTIRE BUILDING SYSTEM INCLUDING SECTIONS 05 12 00, 05 30 00, 05 50 00, AND 13 34 19. FRAMING SHOWN ON THE CONTRACT DRAWINGS FOR THE SOLAR PANEL ARRAY, SUSPENDED MAIN BUILDING MEZZANINE, AND SHOP MEZZANINES CAN BE CONSTRUCTED AS SHOWN INCORPORATING ALL CONNECTIONS TO THE METAL BUILDING SYSTEM. ALTERNATIVELY, THE METAL BUILDING DESIGNER CAN DESIGN THOSE COMPONENTS FOR THE LOADS SHOWN ON THE DRAWINGS.	

LOAD CHART			
Tag	Live Load (k)	Dead Load (k)	Total Load (k)
1	21.2	9.2	30.4
2	18.1	7.7	25.8
3	26.1	10.8	36.9
4	6.6	3.4	10.0
5	6.0	3.1	9.1
6	18.6	8.0	26.6
7	12.0	5.0	17.0
8	5.3	3.1	8.4
9	7.3	4.0	11.3

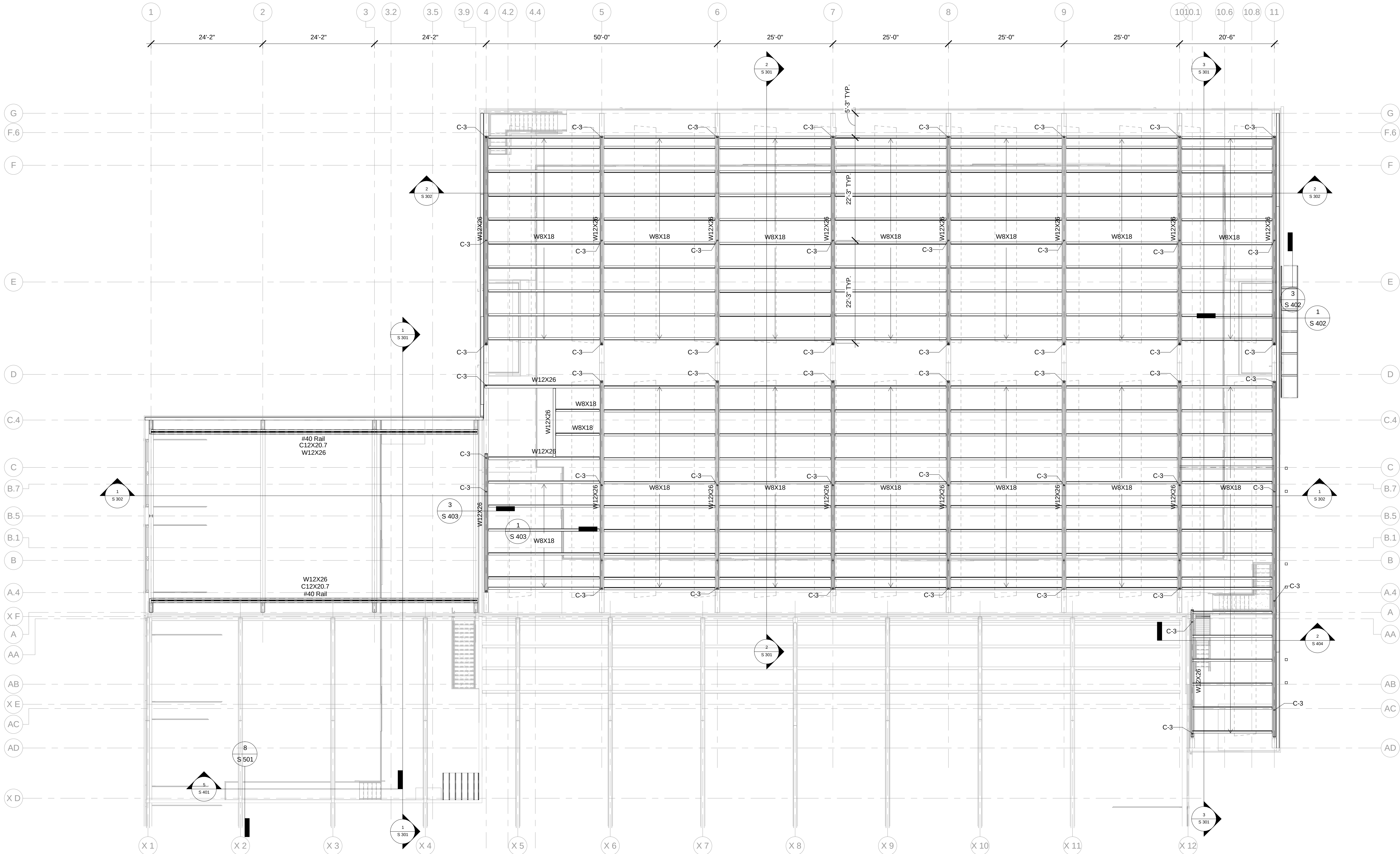


DESIGN DATA - OVERHEAD BRIDGE CRANE
CRANE DATA: 2 TON BRIDGE CRANE WHEEL LOAD = 3.4k HOIST / TROLLEY WEIGHT = 470#
CRANE BEAM REACTIONS: VERTICAL = 5.8k LATERAL = 1.2k LONGITUDINAL = 0.7k
COORDINATE ACTUAL CRANE PROPERTIES WITH BUILDING GEOMETRY INCLUDING LOADS AND CLEARANCES.



2 Solar Array Mounting

1/2" = 1'-0"



1 Solar Panel Structure and Crane Rail

3/32" = 1'-0"



Design prepared for:
Engineering Division

Engineering Operations
Building Addition - 2015

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
Sarah Lerner, LPA., City of
Madison; 608-261-4281;
slerner@cityofmadison.com

Electrical Design:
Dave Hanson, P.E., Kueny
Architects

Plumbing Design:
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Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

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Madison; 608-266-4668;
kschindel@cityofmadison.com

Solar Panel
and Crane Rail
Structure

S 202

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Design prepared for:
Engineering Division

**Engineering Operations
Building Addition - 2015**

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1600 Emil St.
Madison, WI 53713

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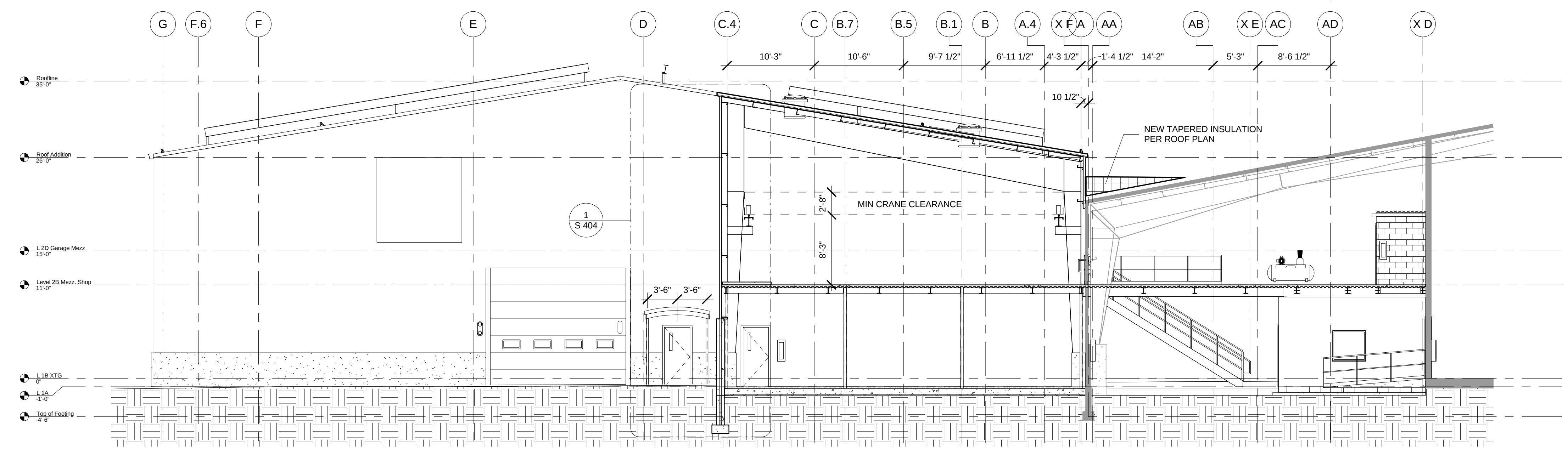
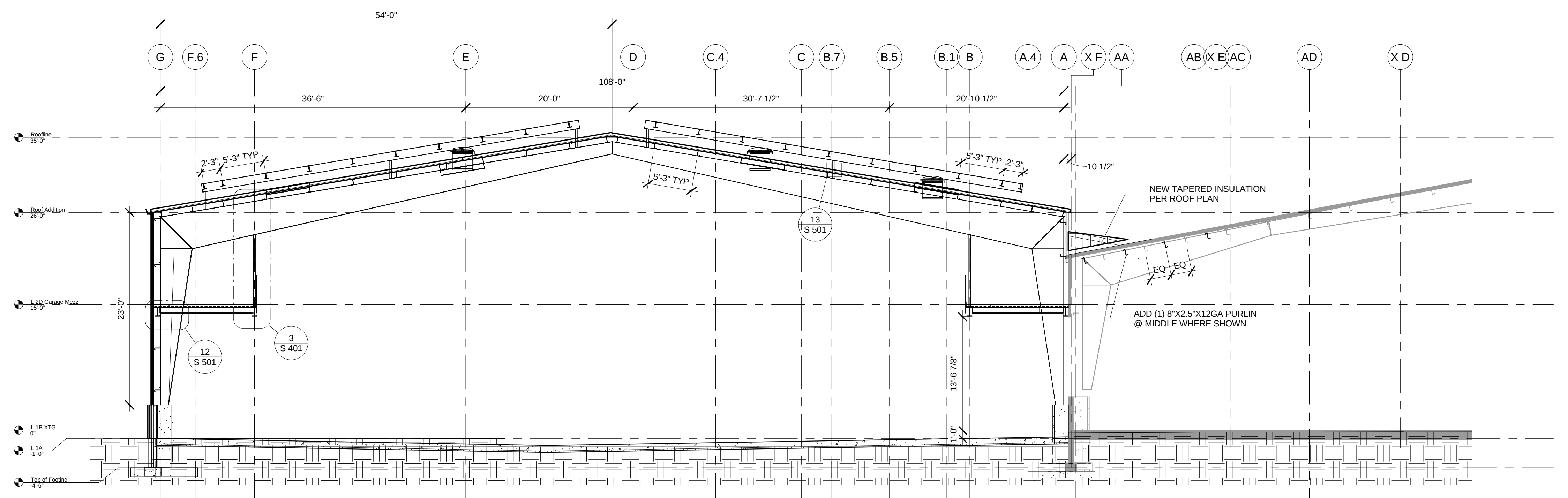
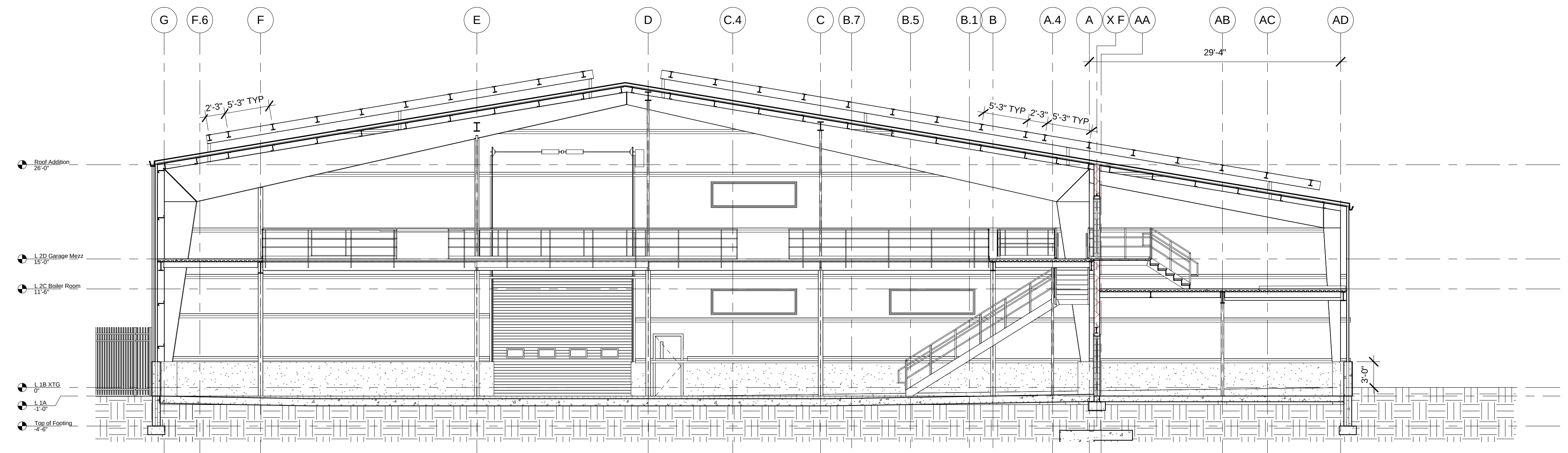
HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Structural Design:
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Building Sections



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Engineering Operations
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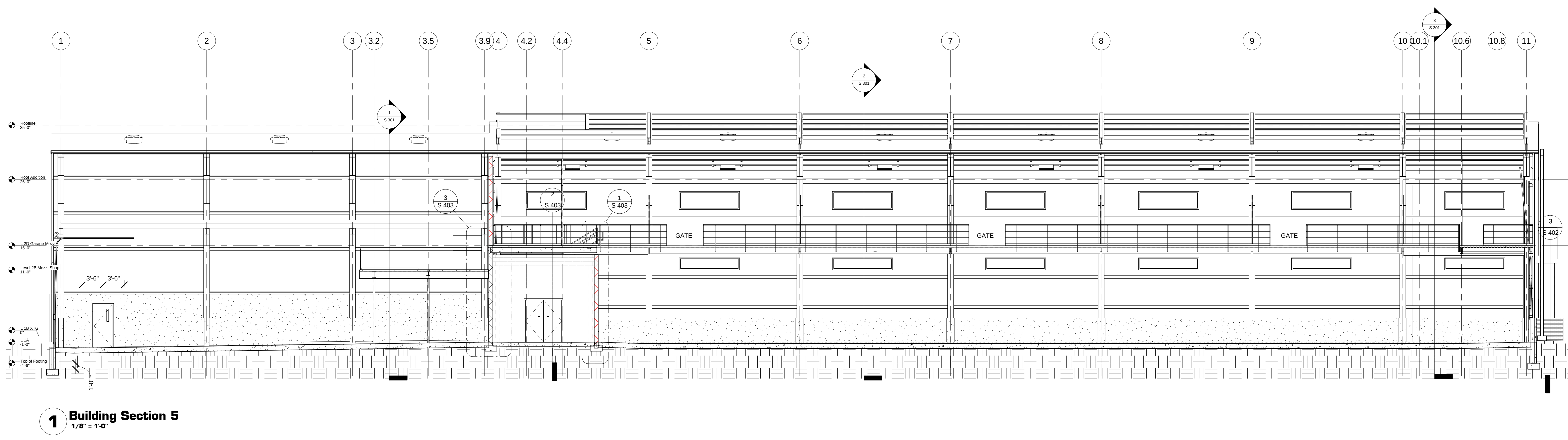
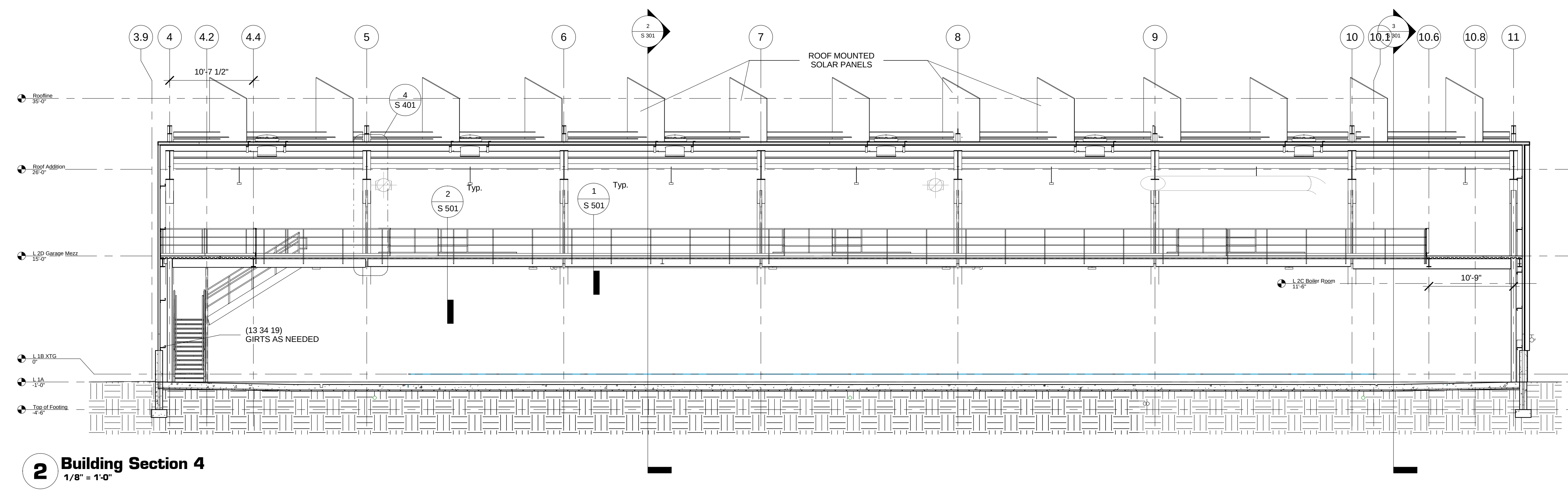
Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

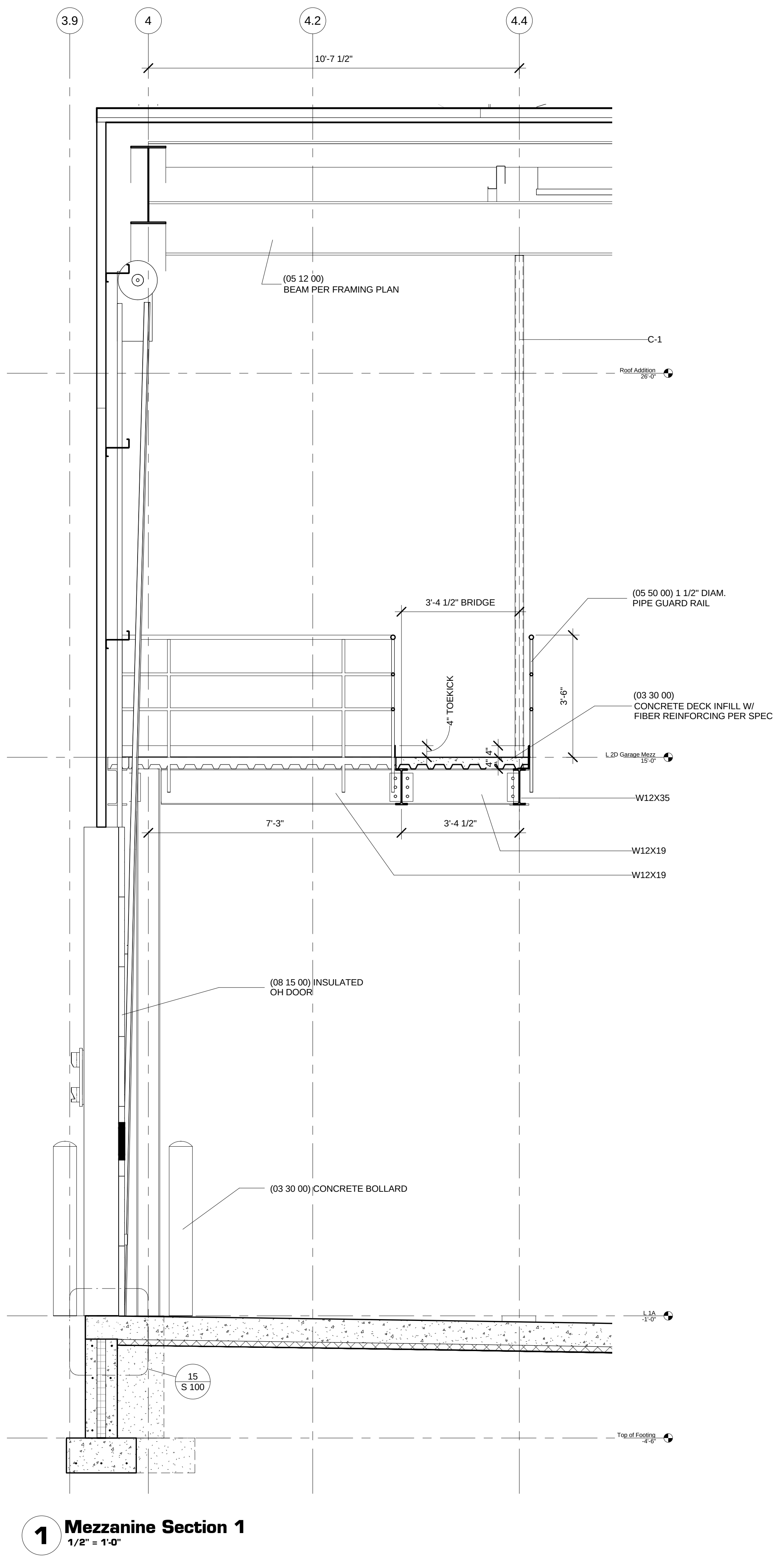
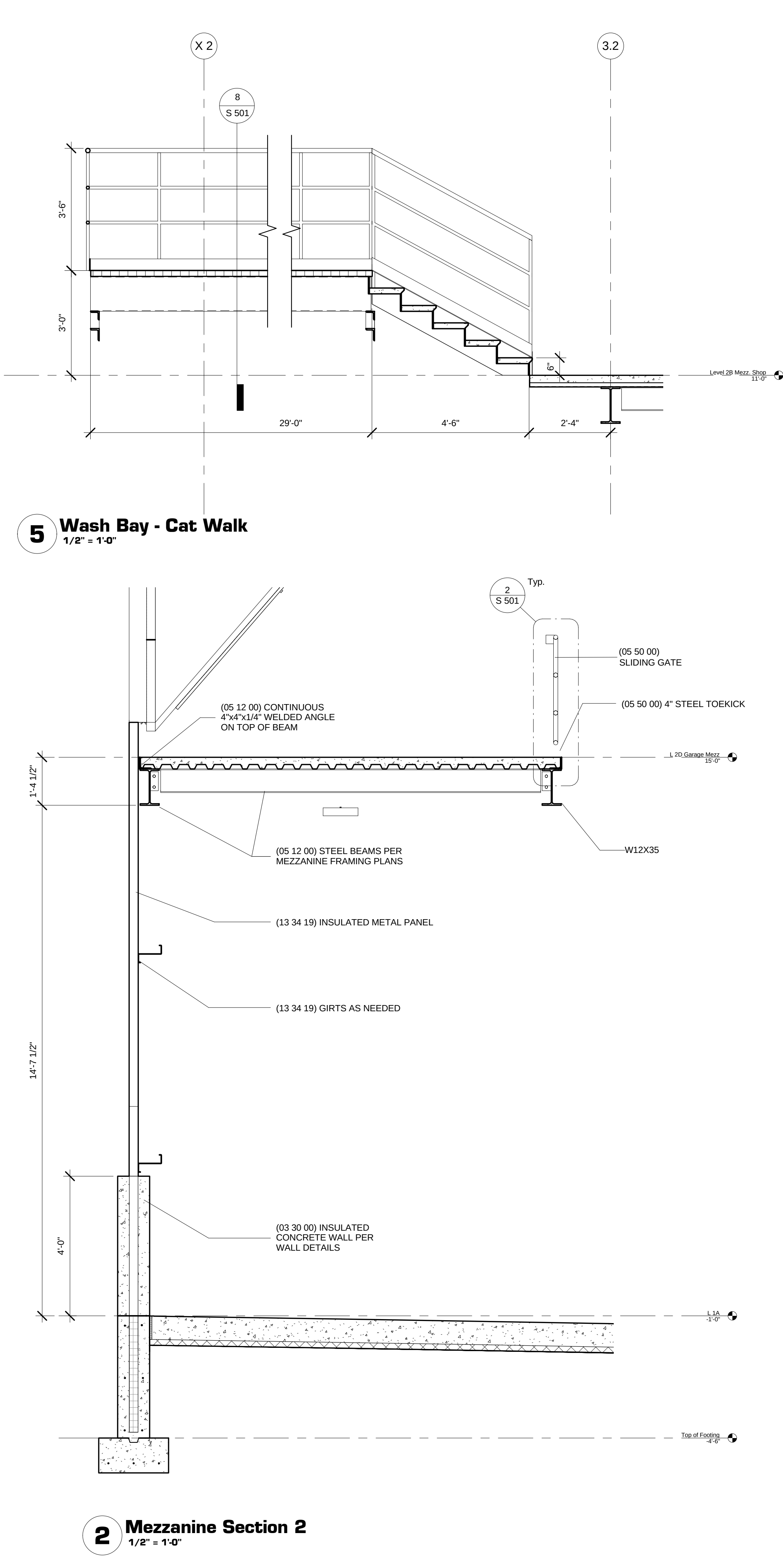
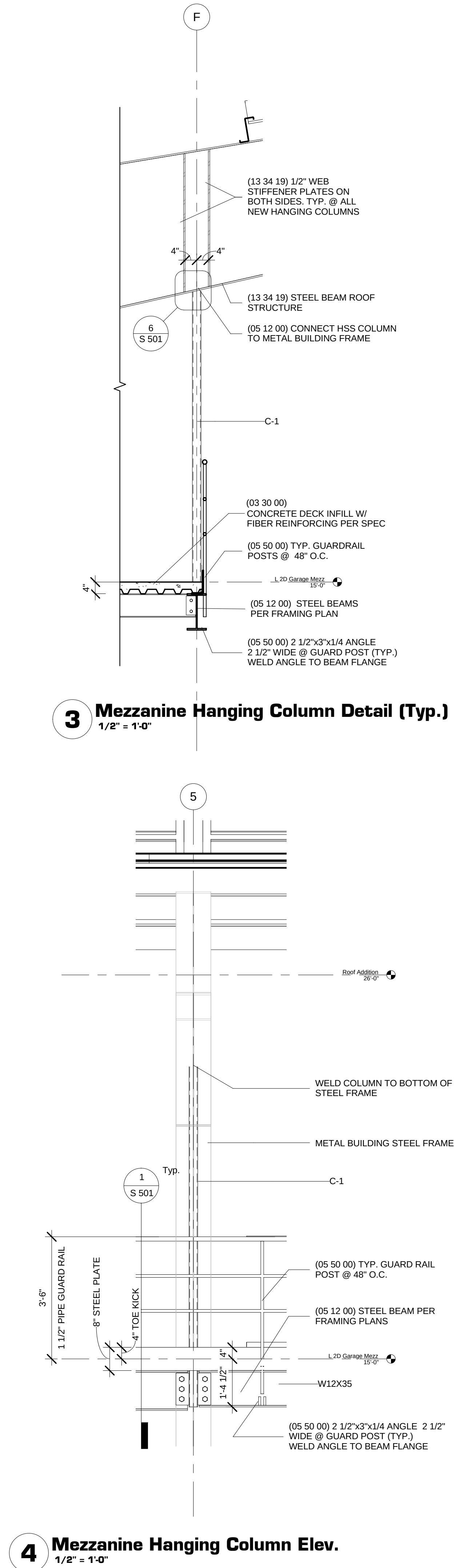
Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Building
Sections

S 302
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Engineering Operations
Building Addition - 2015

Contract: TBD Project: 10349 Common Council Approval:

Civil Design:
Eric Dundee, P.E., City of
Madison

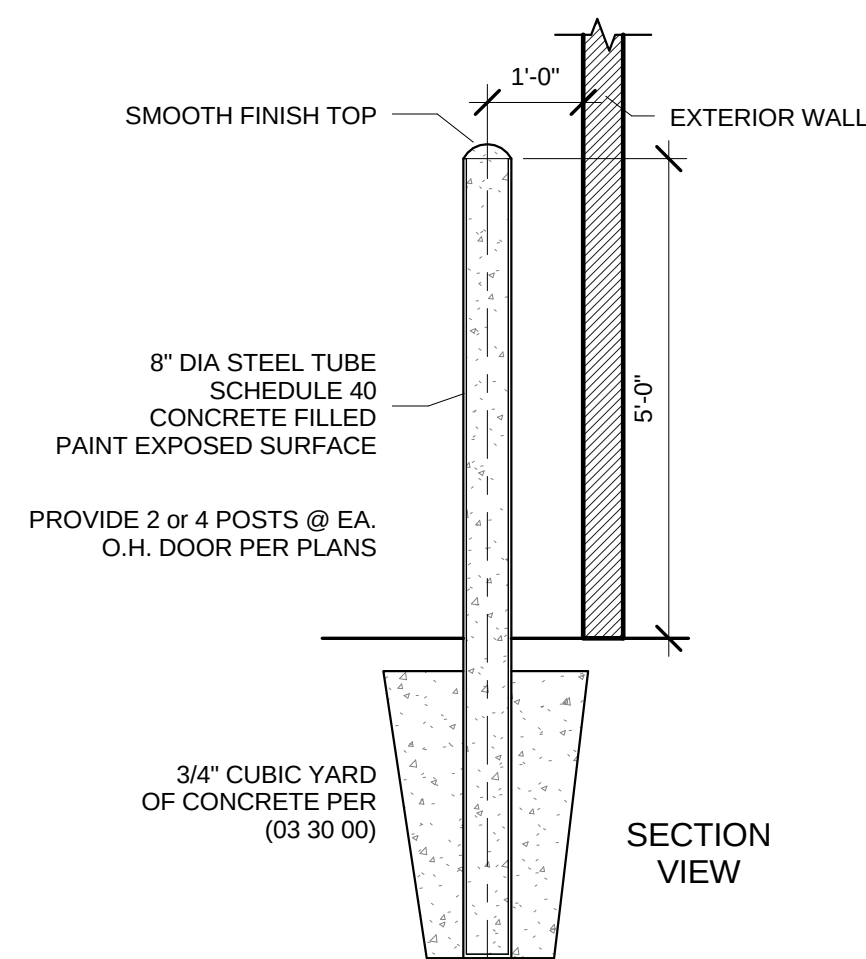
Electrical Design:
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HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

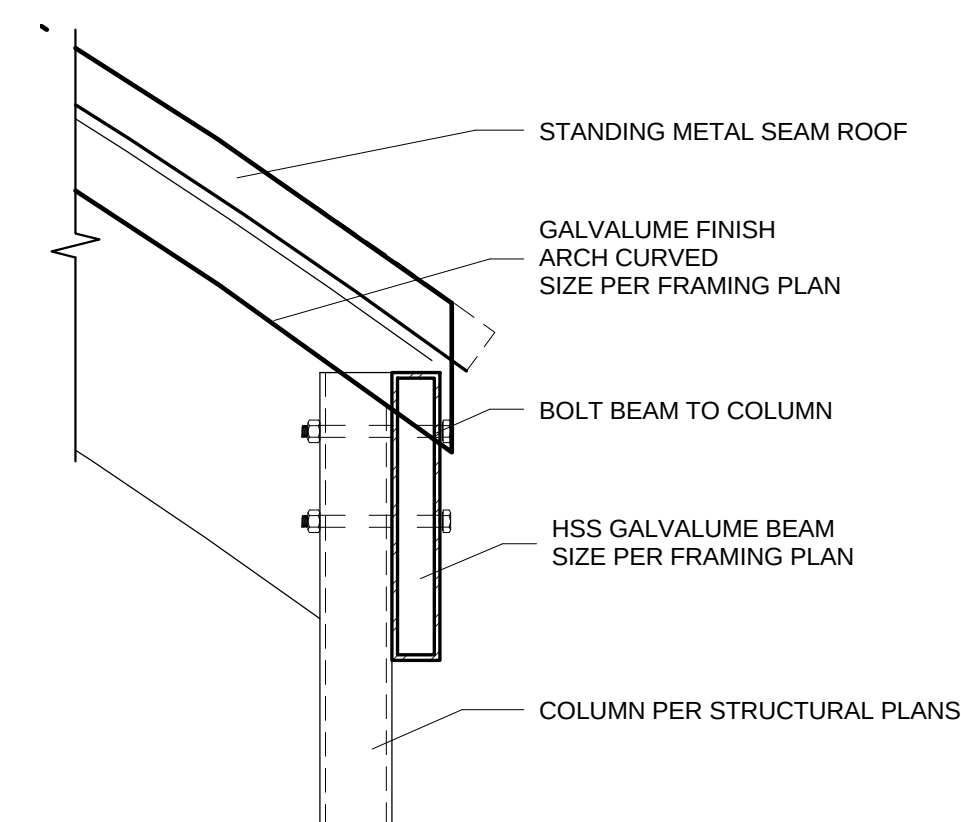
Fire Protection Design:
Robert Novak, Kueny Architects

Wall Sections and Details

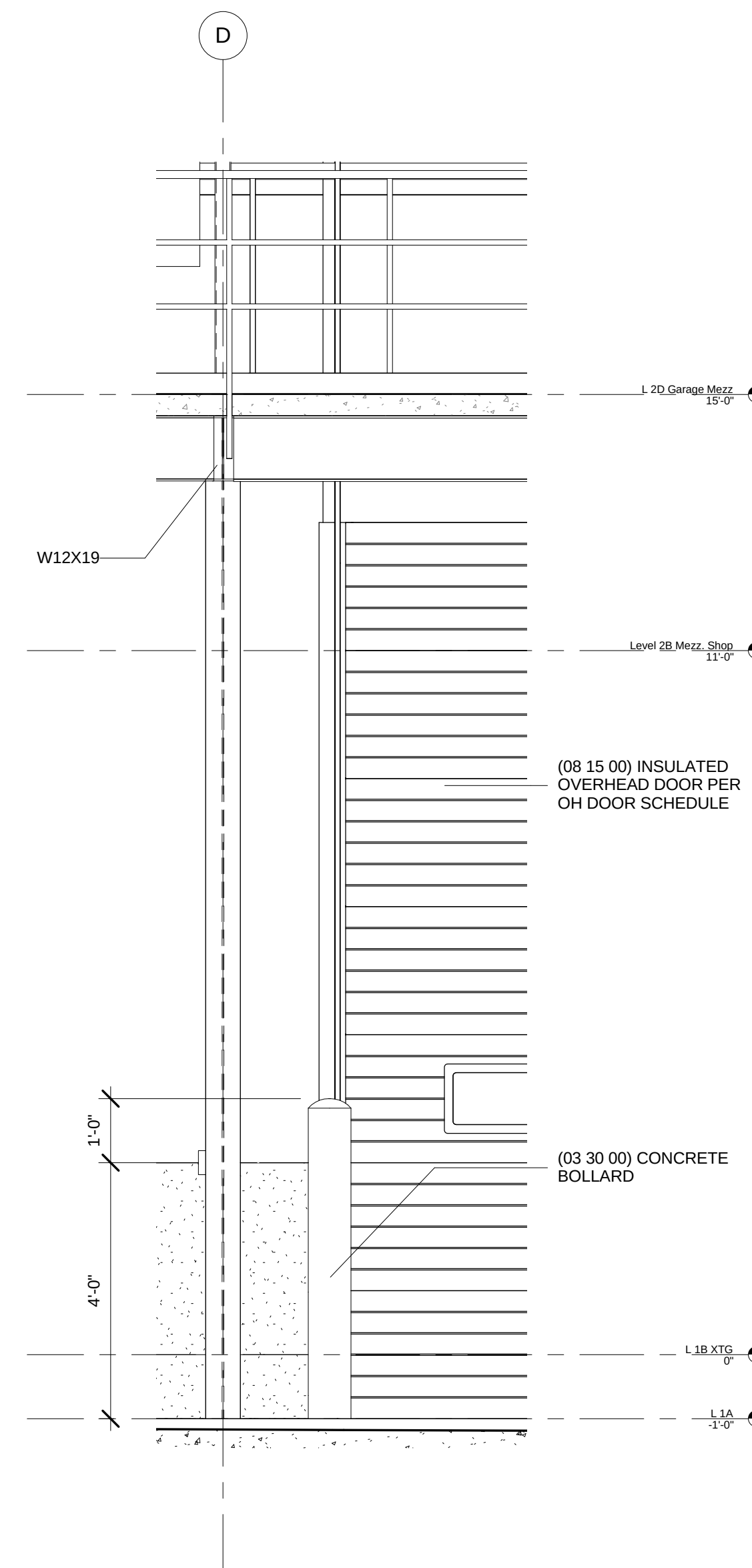
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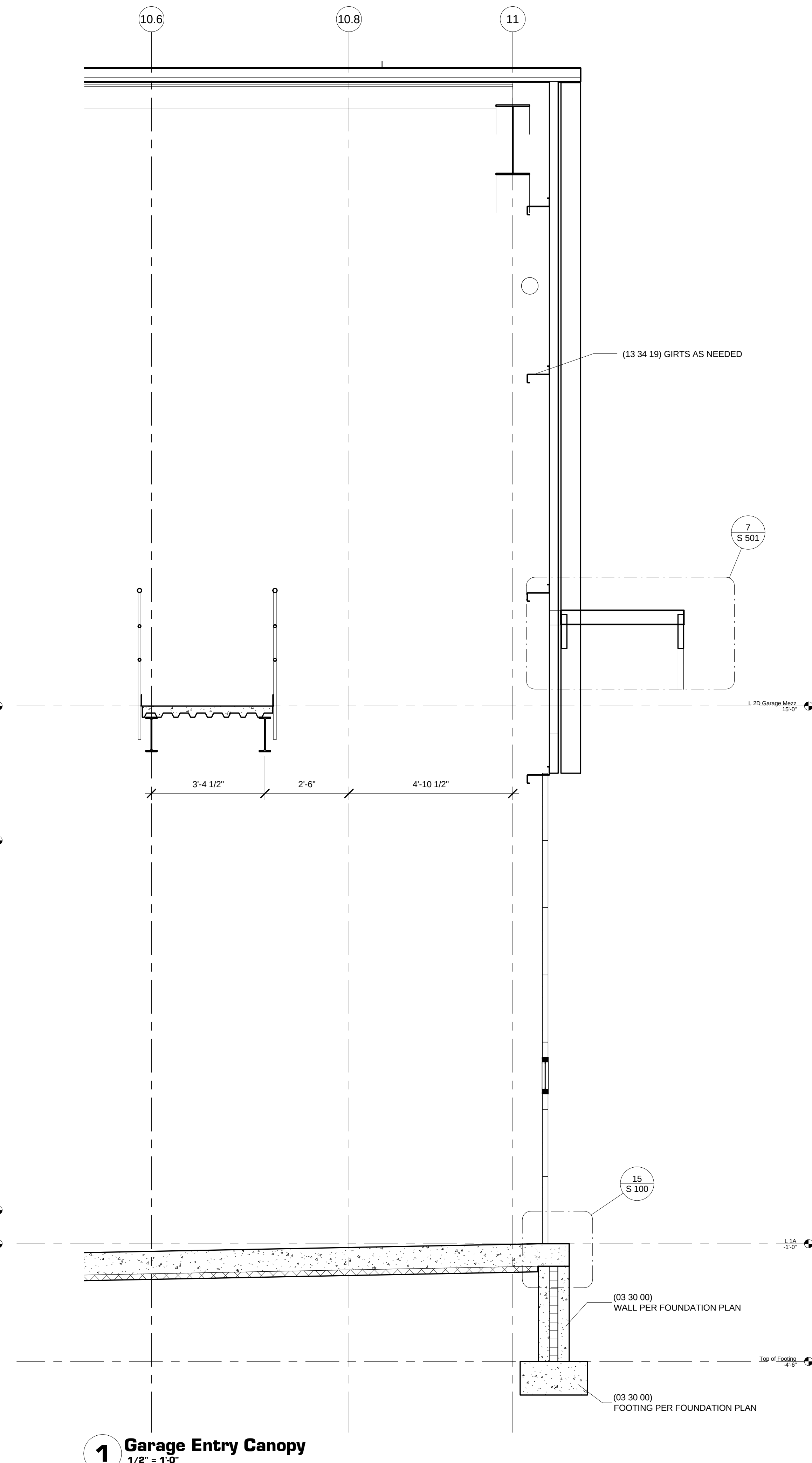
6 Bollard
1/2" = 1'-0"



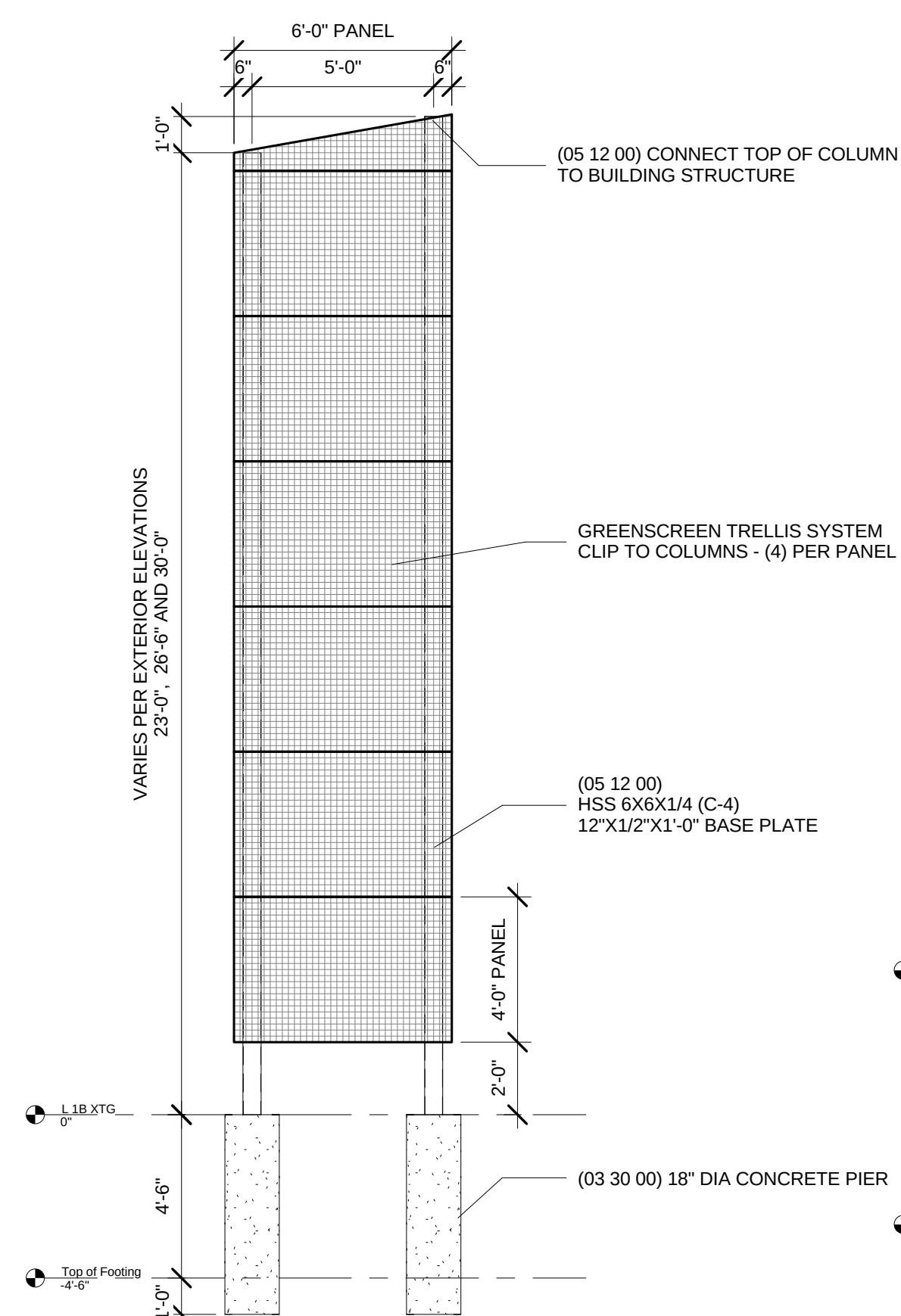
5 Canopy Edge Detail



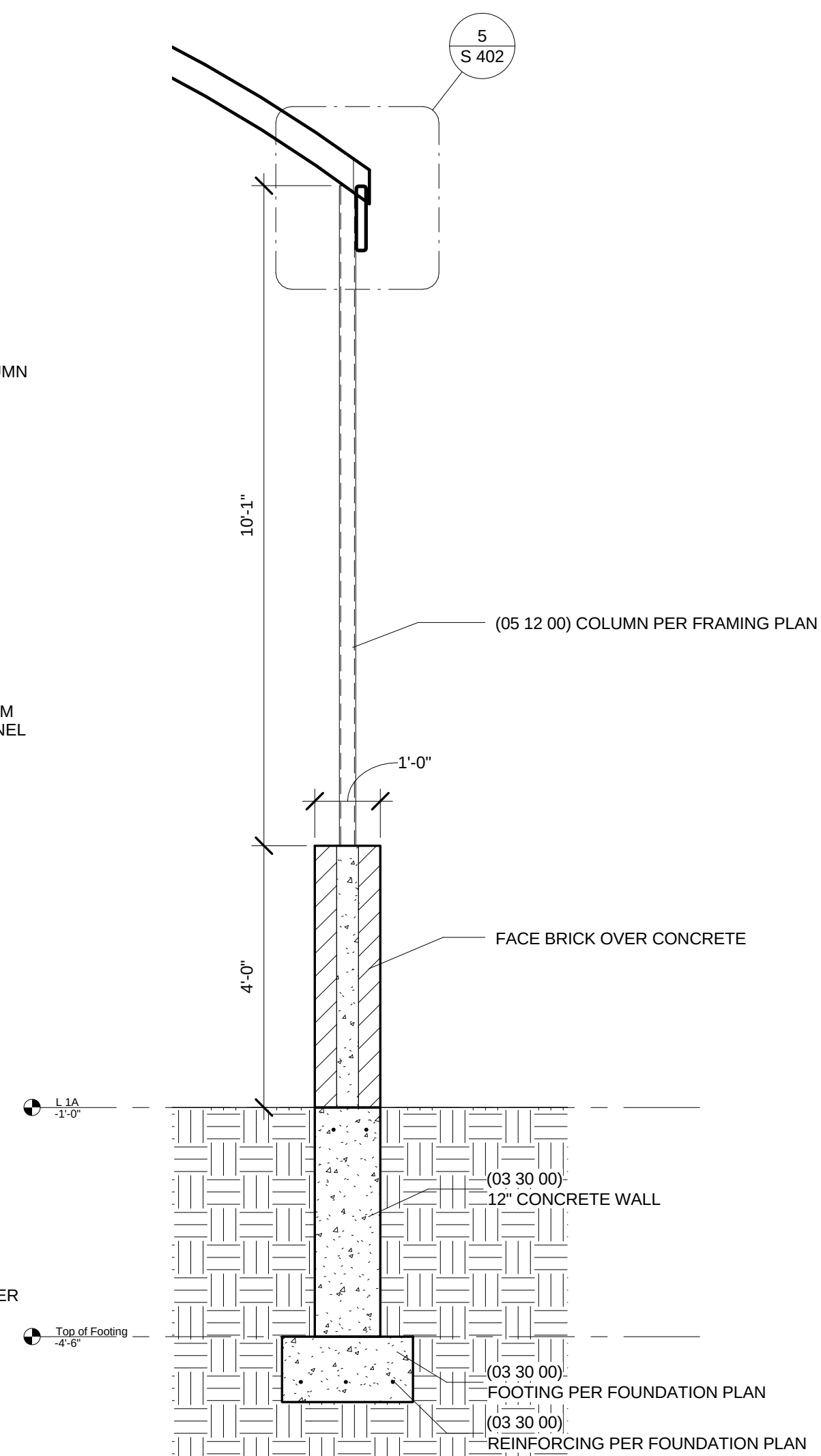
2 Mezzanine Walkway
1/2" = 1'-0"



1 Garage Entry Canopy



4 GreenScreen Structure



3 Canopy Support

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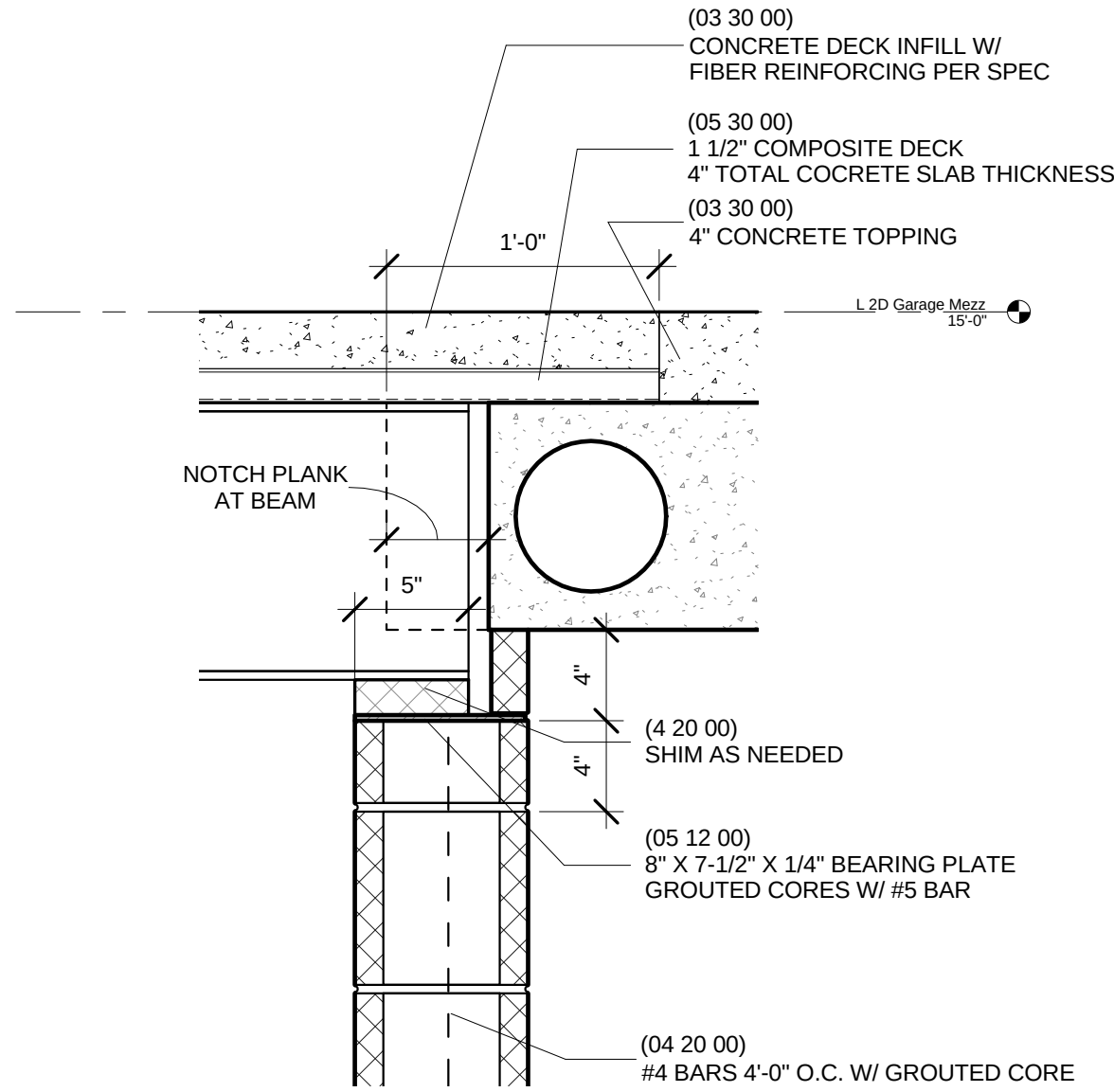
Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

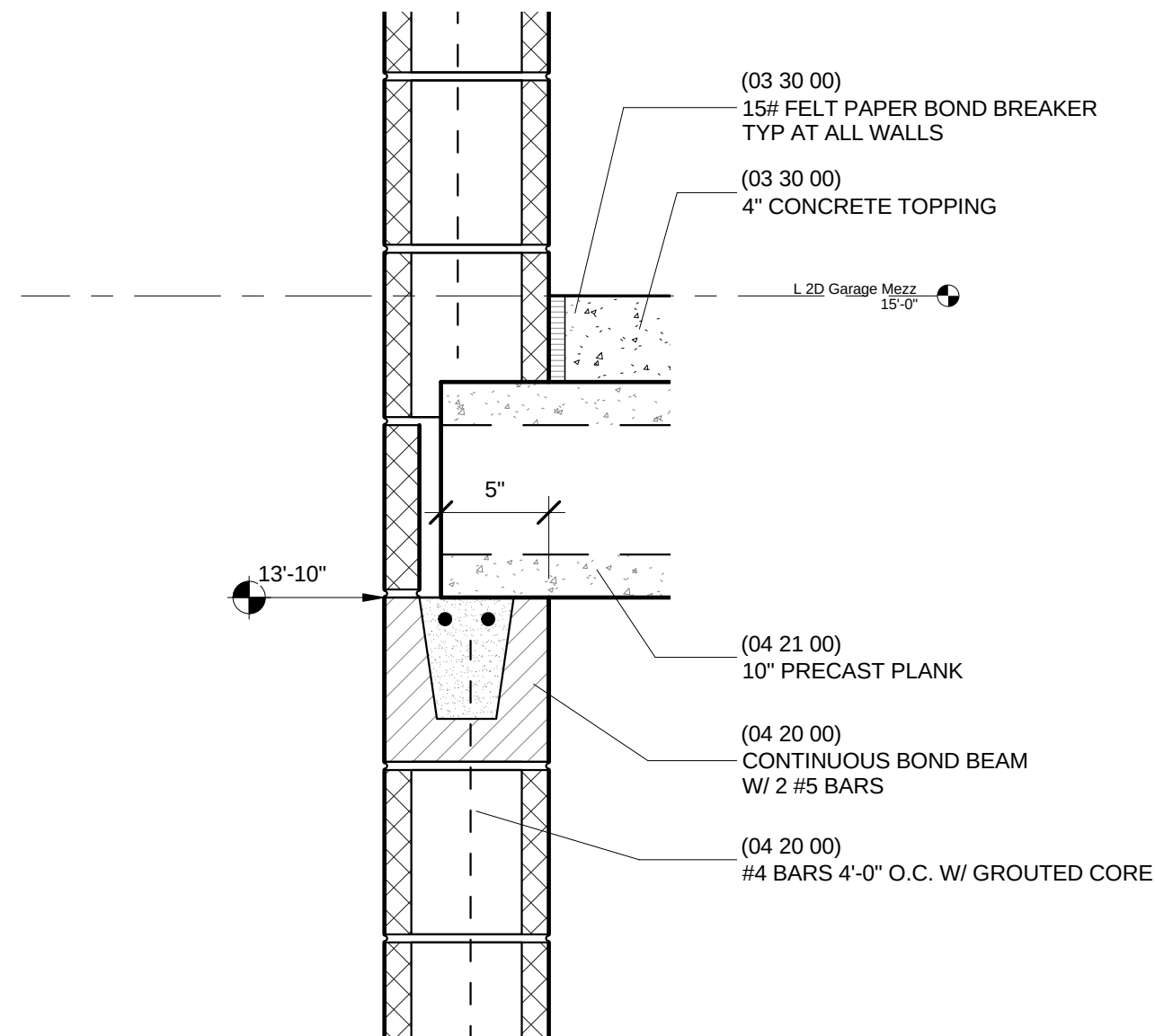
Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Wall Sections
and Details

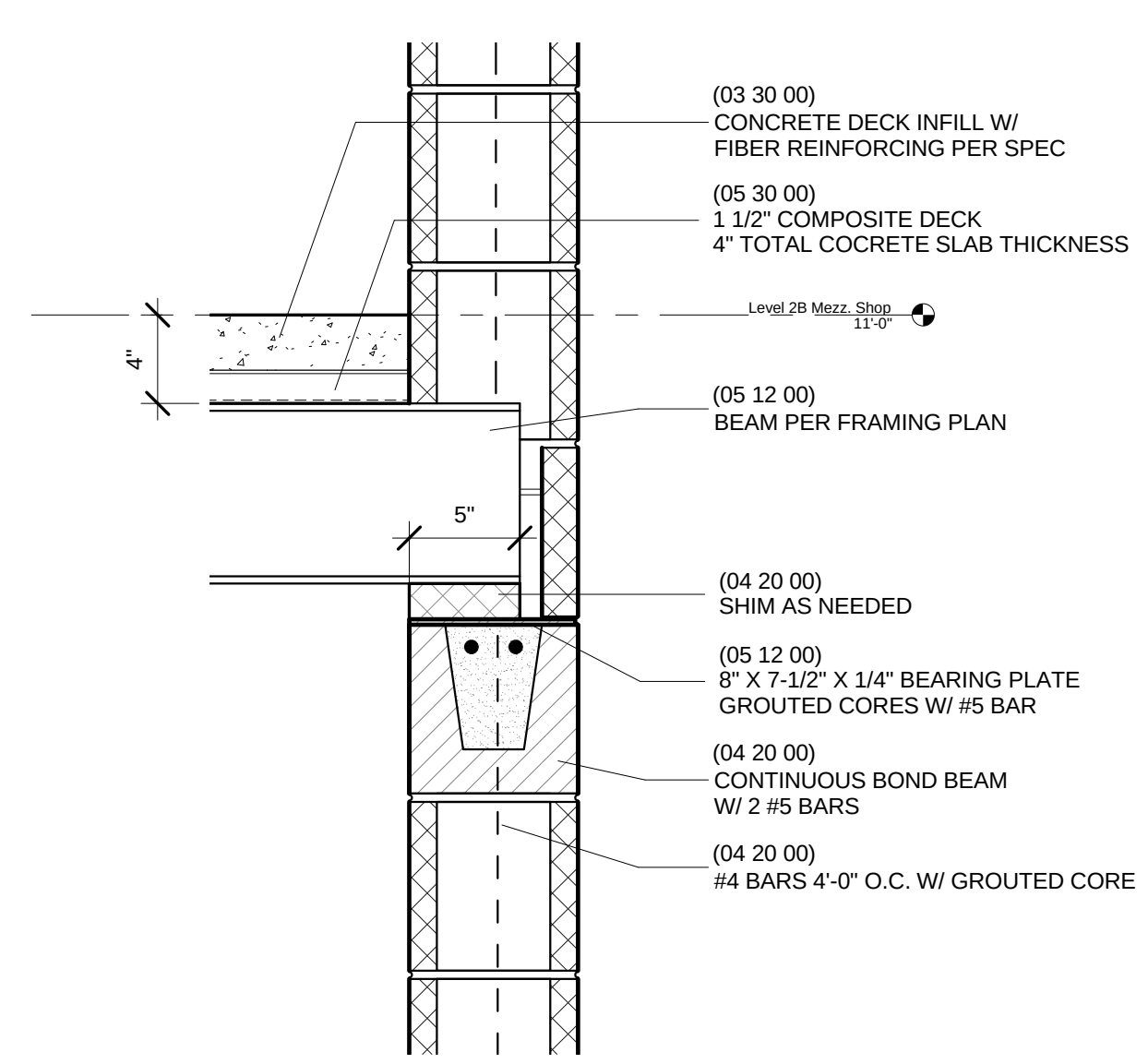
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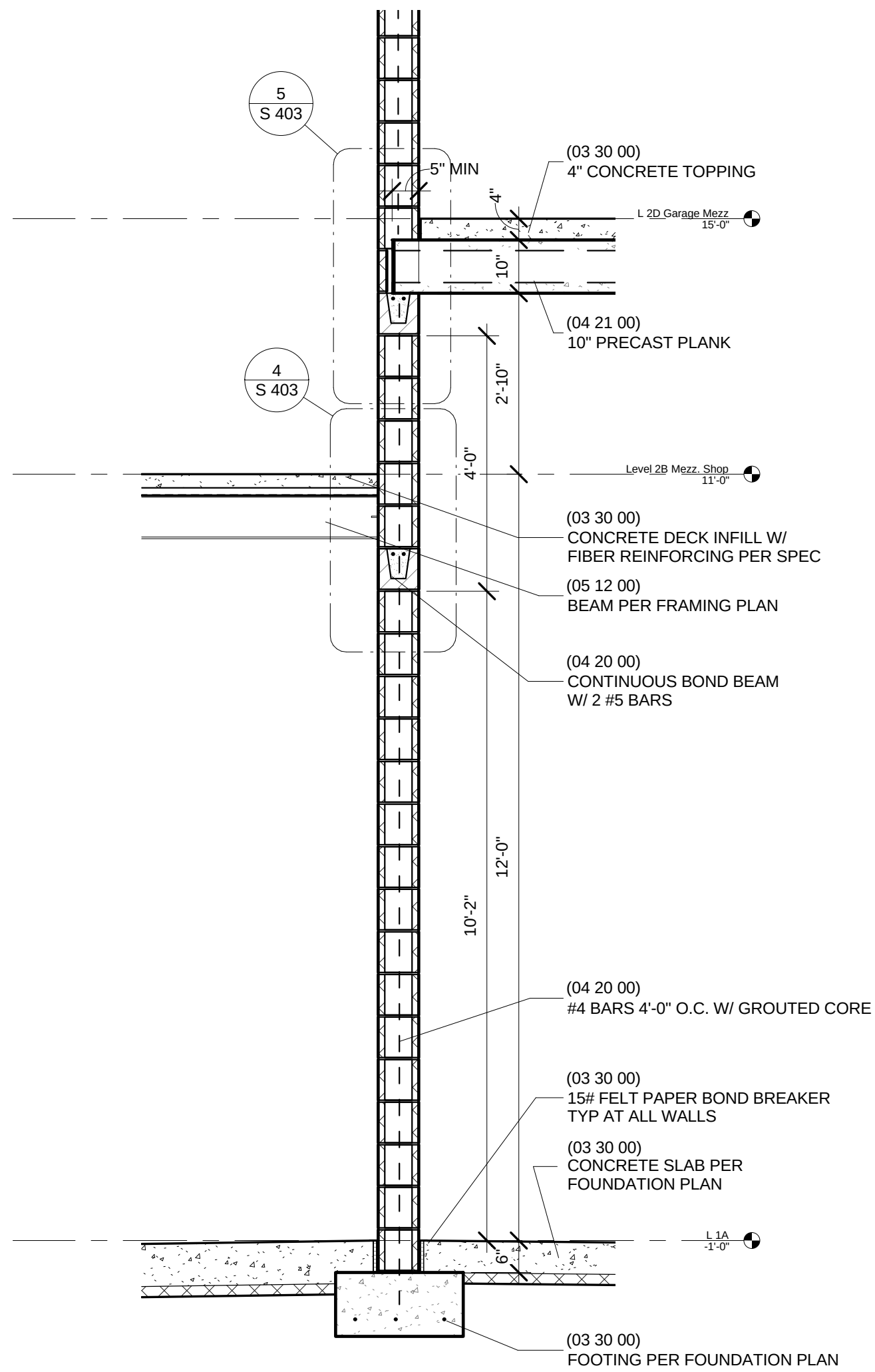
6 Beam Bearing
1 1/2" = 1'-0"



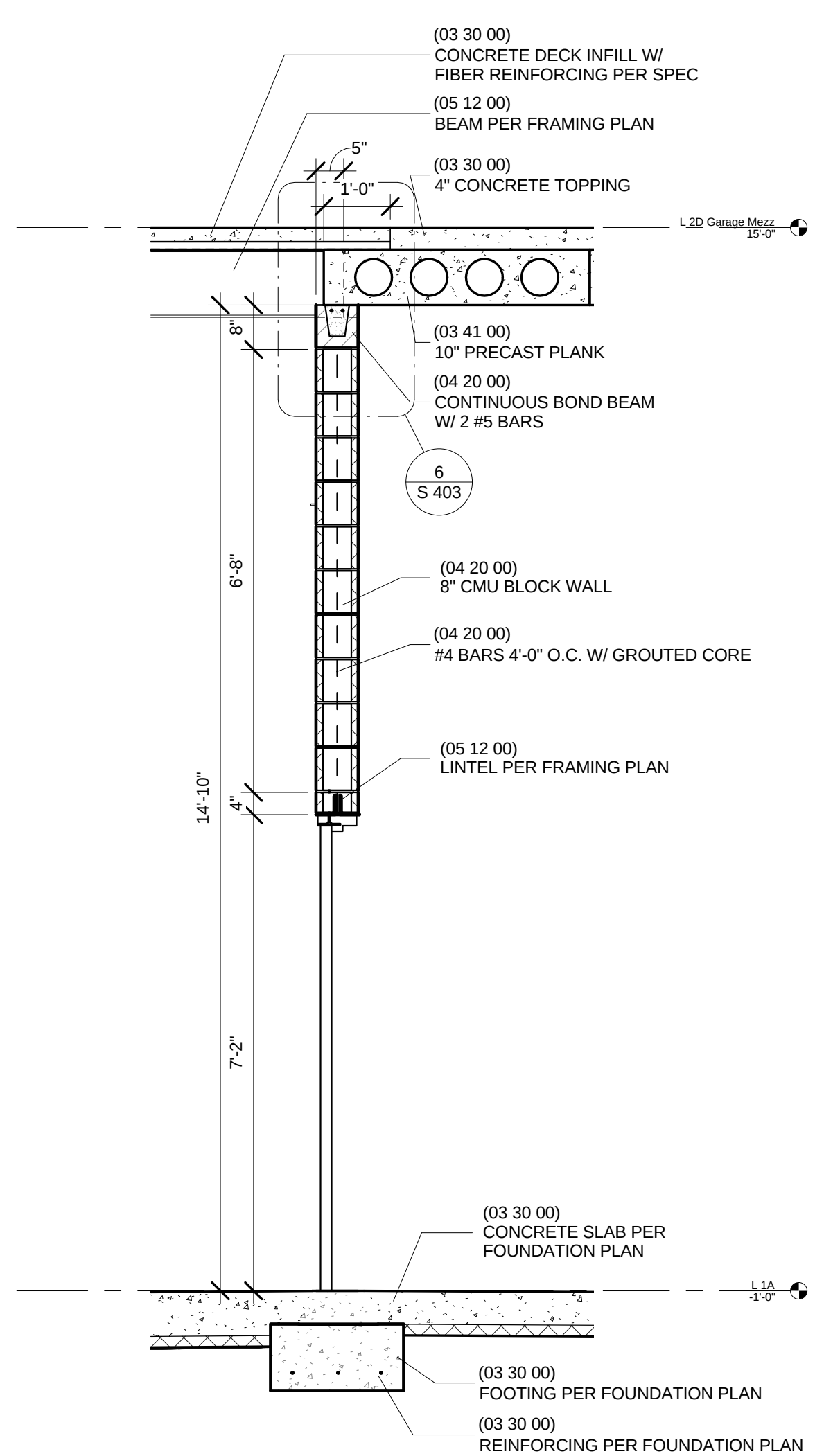
5 Precast Plank Bearing
1 1/2" = 1'-0"



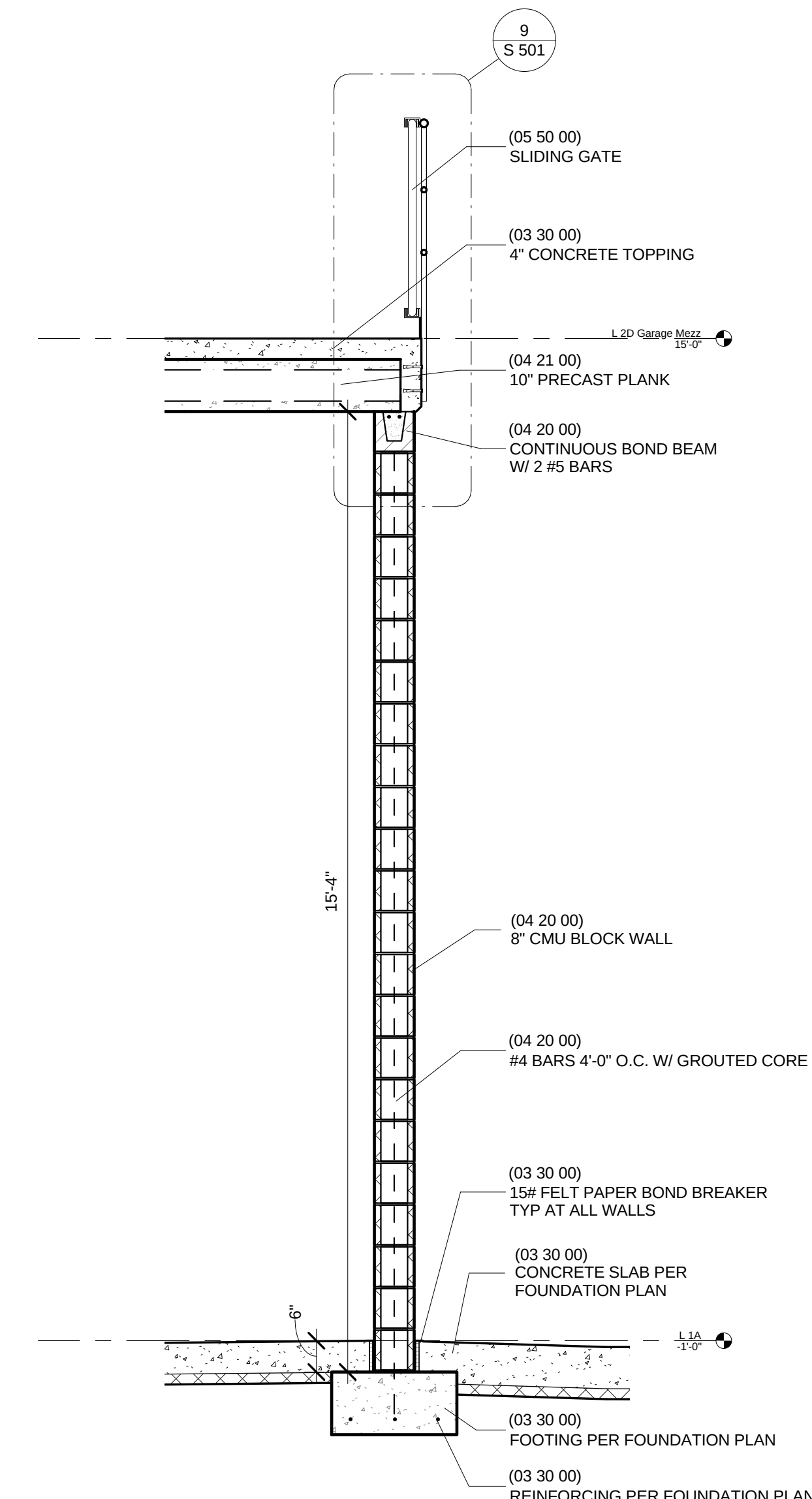
4 Steel Beam Bearing
1 1/2" = 1'-0"



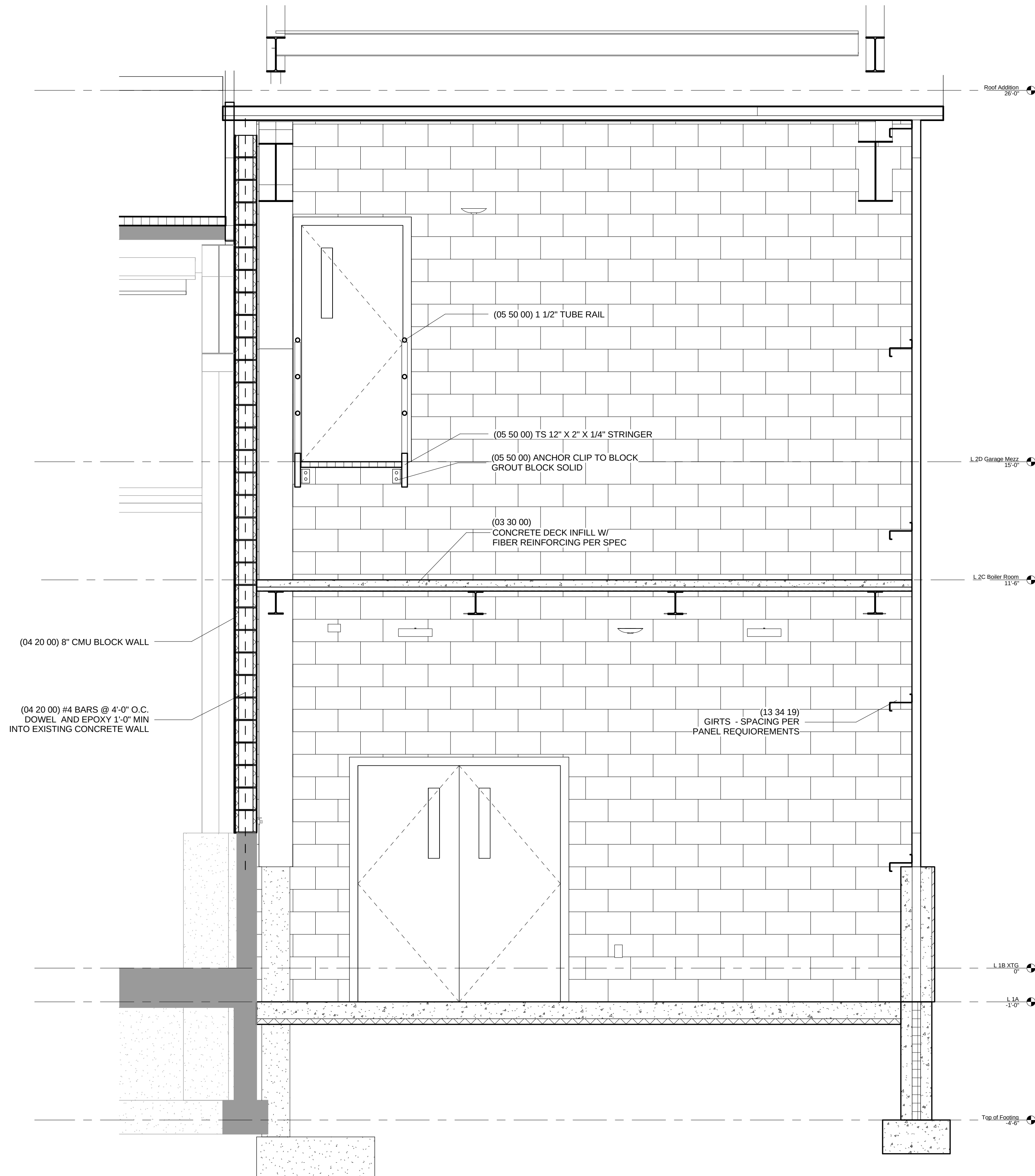
3 Precast Plank Bearing1
1/2" = 1'-0"



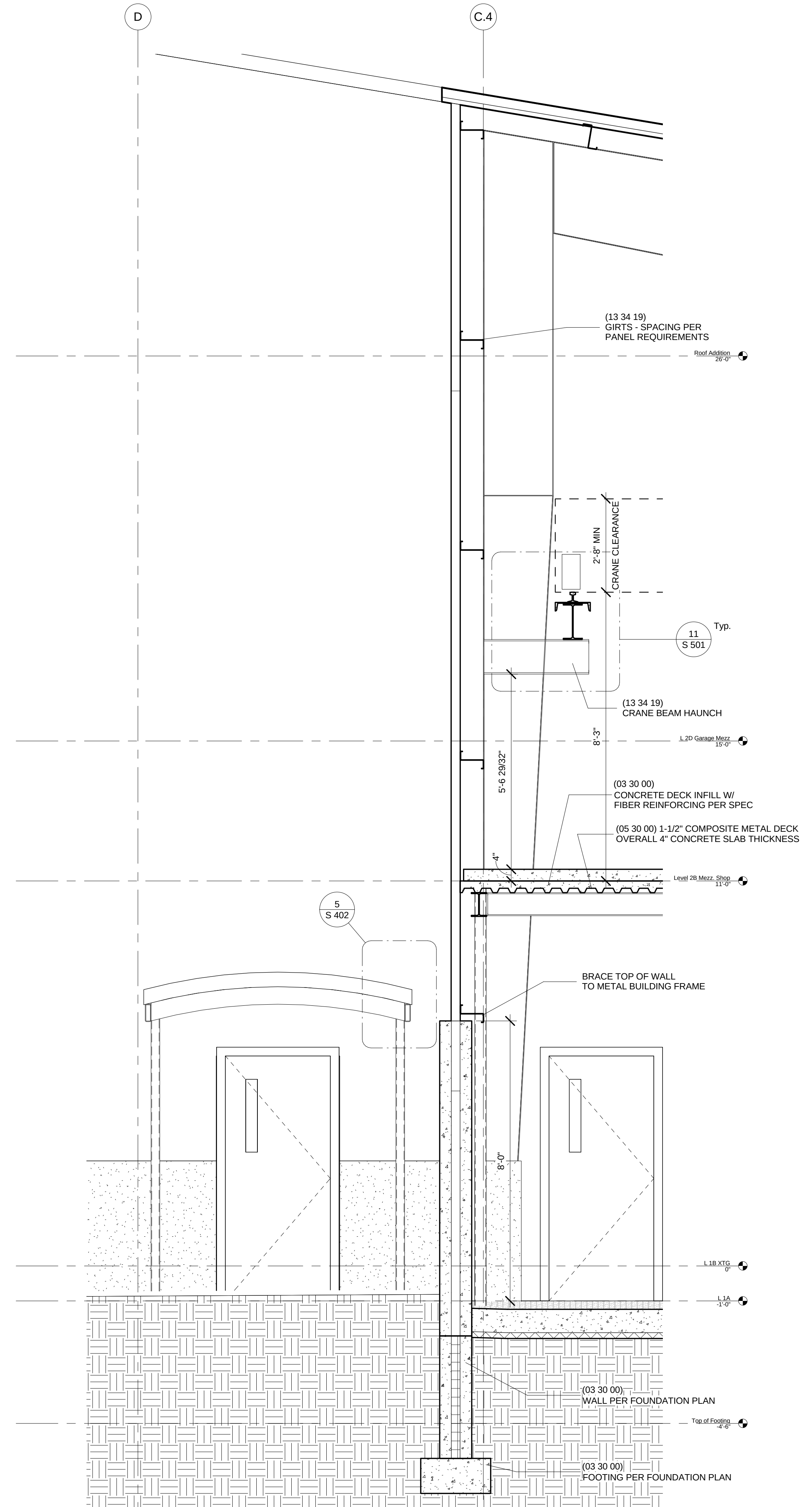
2 CMU Block Wall
1/2" = 1'-0"



1 Precast Plank Bearing
1/2" = 1'-0"



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



1 Repair Shop Wall Section
1/2" = 1'-0"

City of Madison
Facilities Maintenance
1600 Emil St.
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Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Wall Sections

S 404

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Design prepared for:
Engineering Division

Engineering Operations
Building Addition - 2015

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
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Architects

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Structural Design:
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Kueny Architects

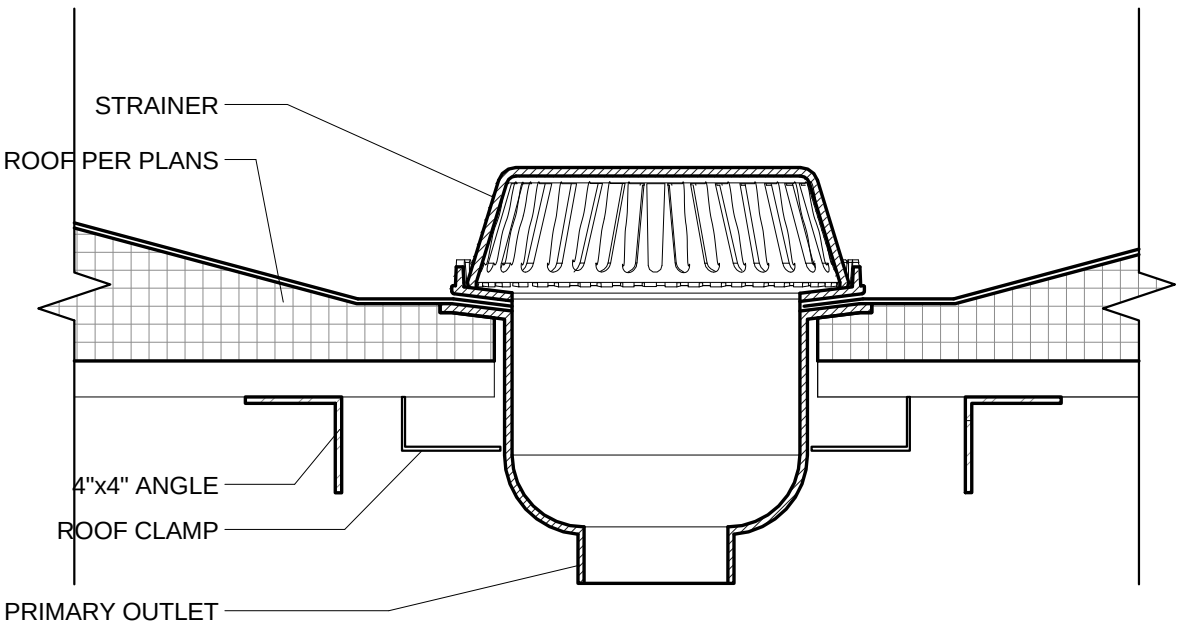
Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

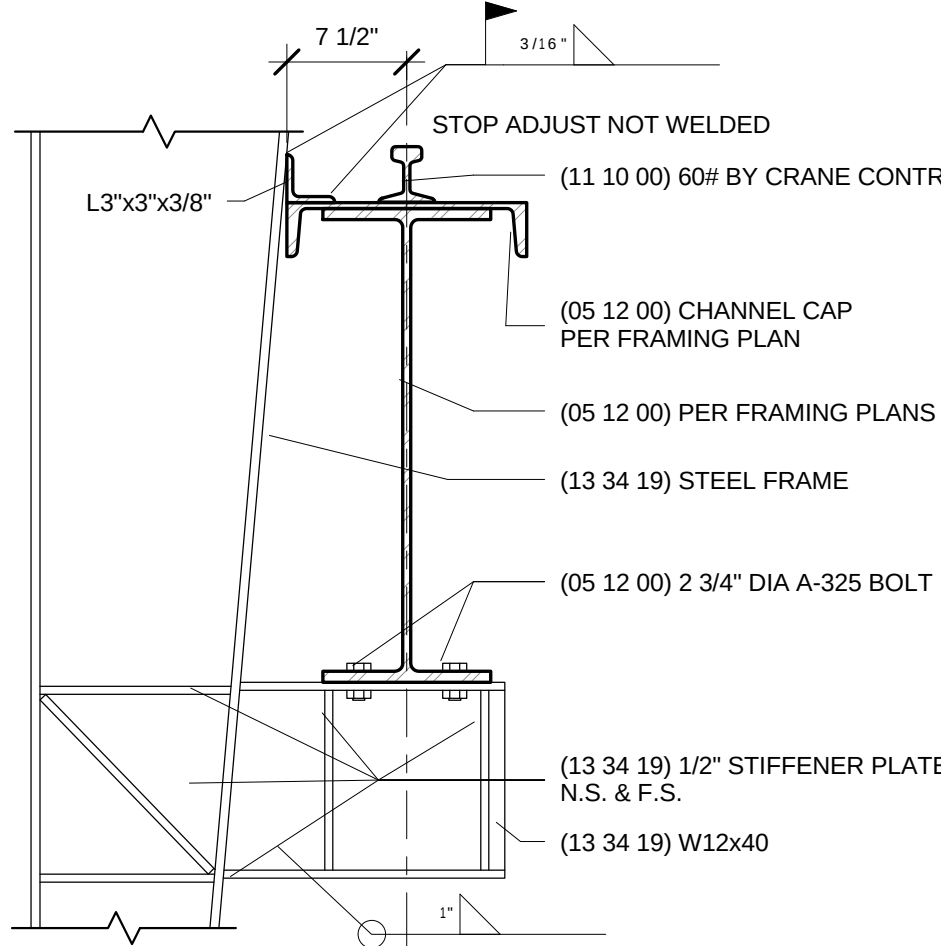
Structural
Details

S 501

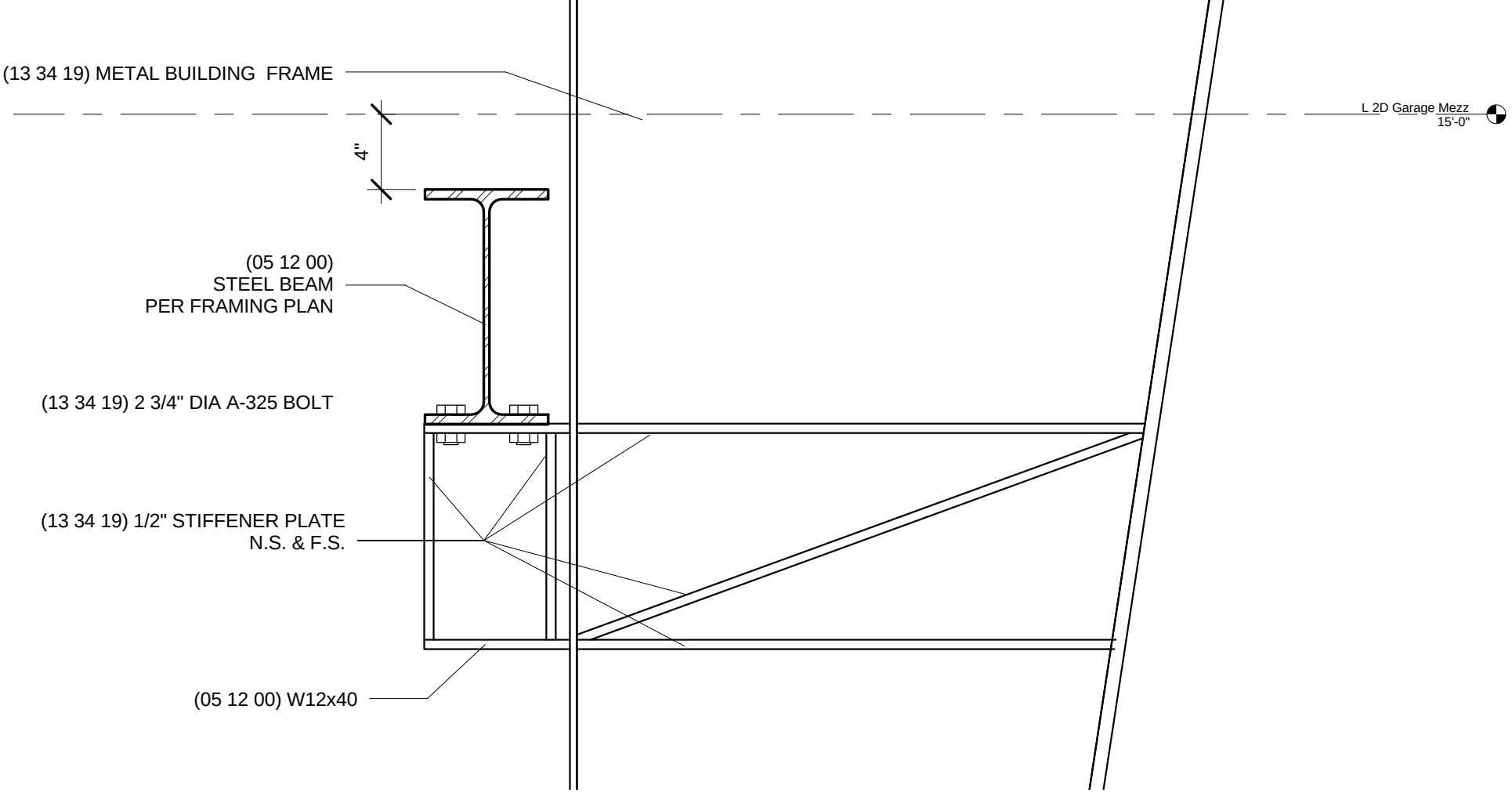
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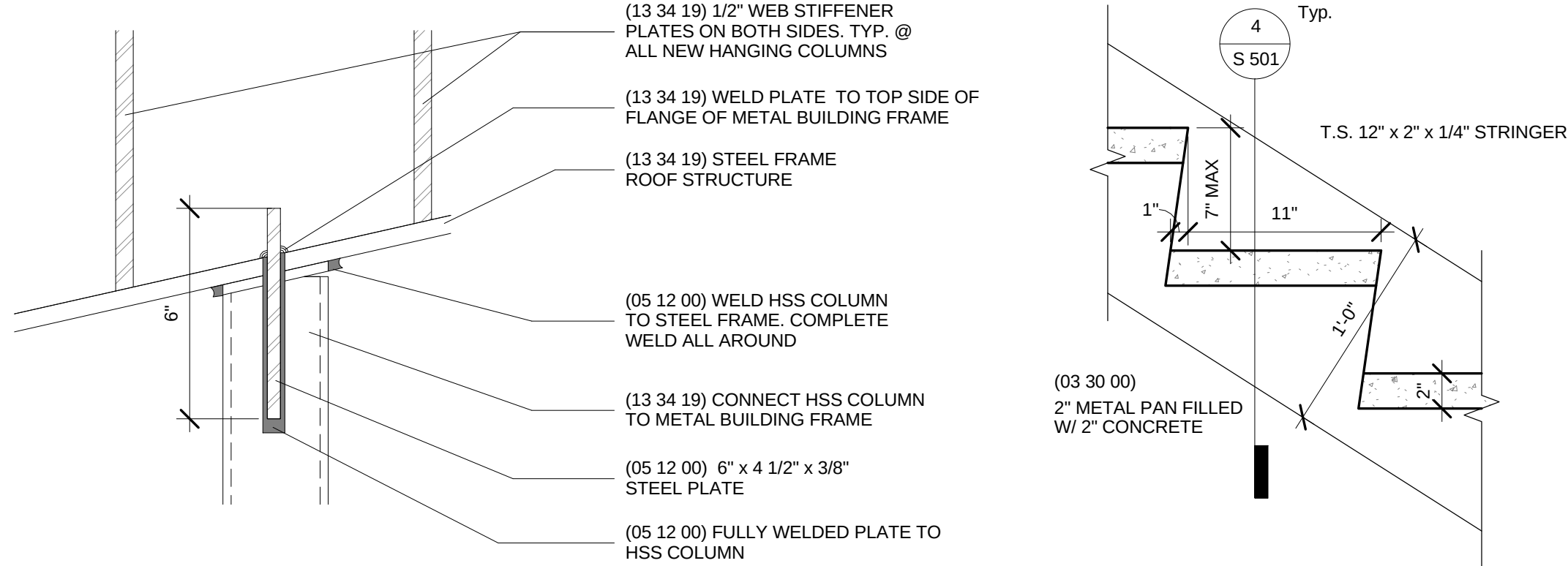
10 Roof Drain
1 1/2" = 1'-0"



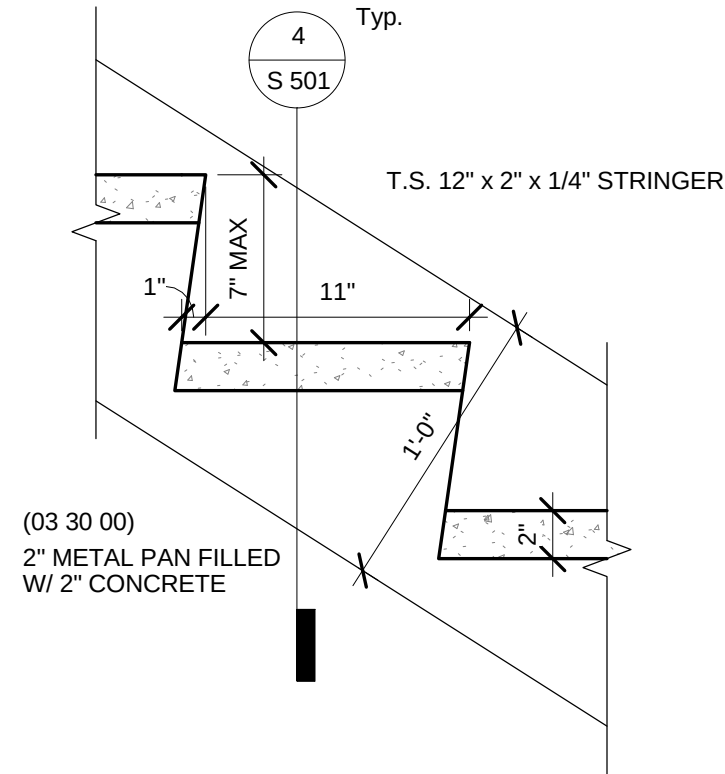
11 Crane Beam Haunch
1" = 1'-0"



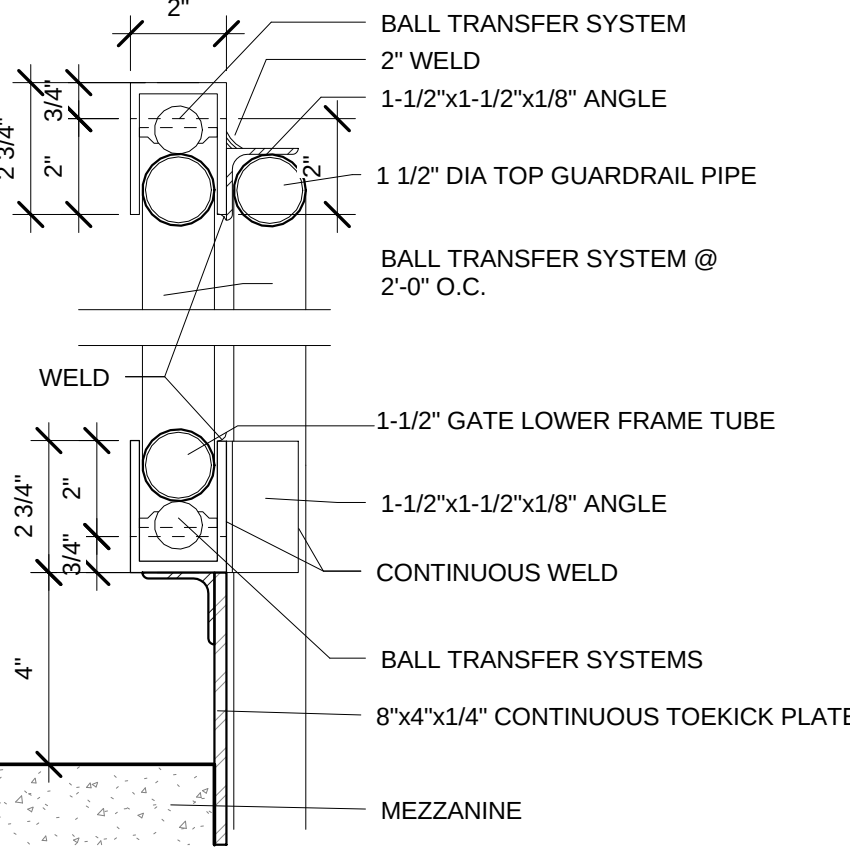
12 Mezzanine Haunch
1 1/2" = 1'-0"



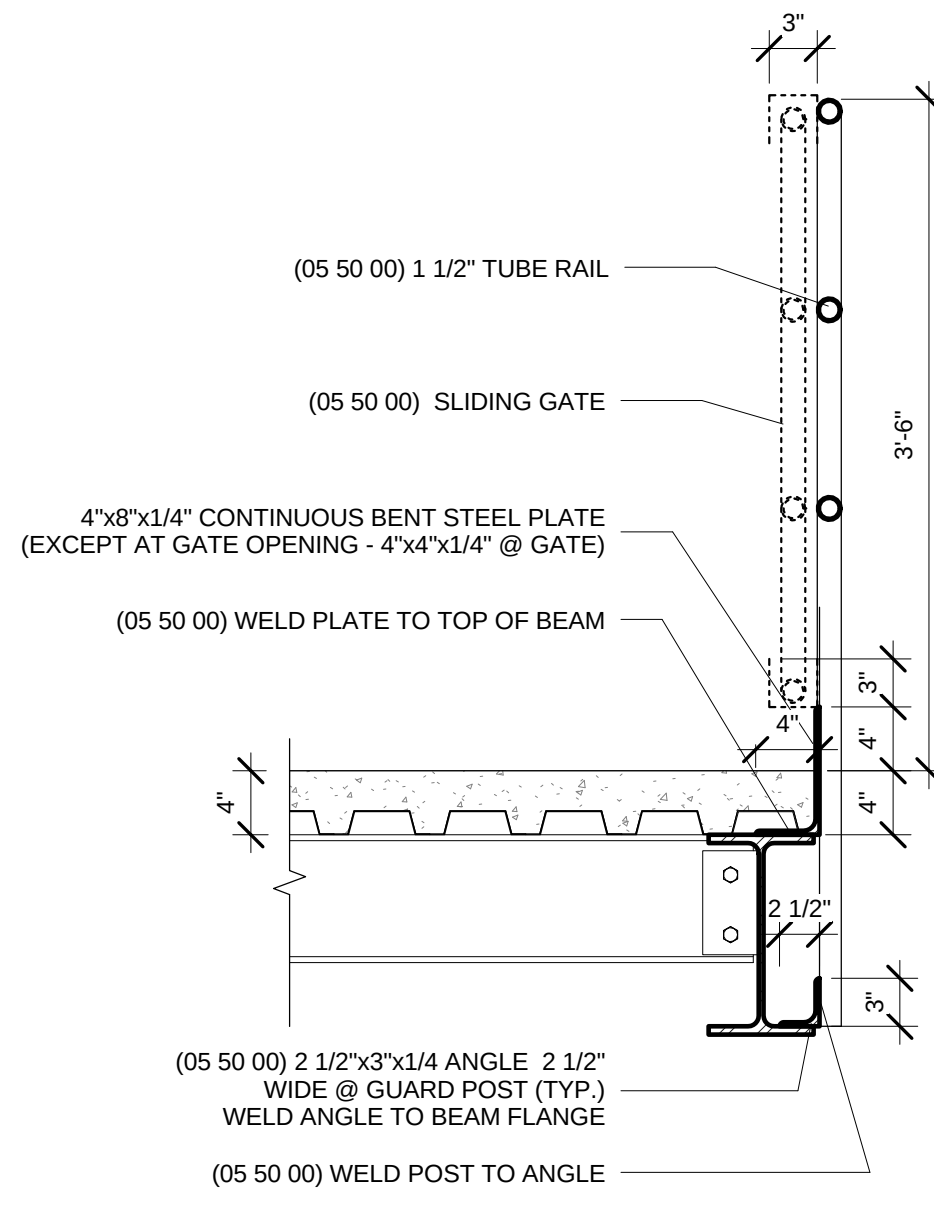
6 Mezzanine Hanging Column Connection Detail
3" = 1'-0"



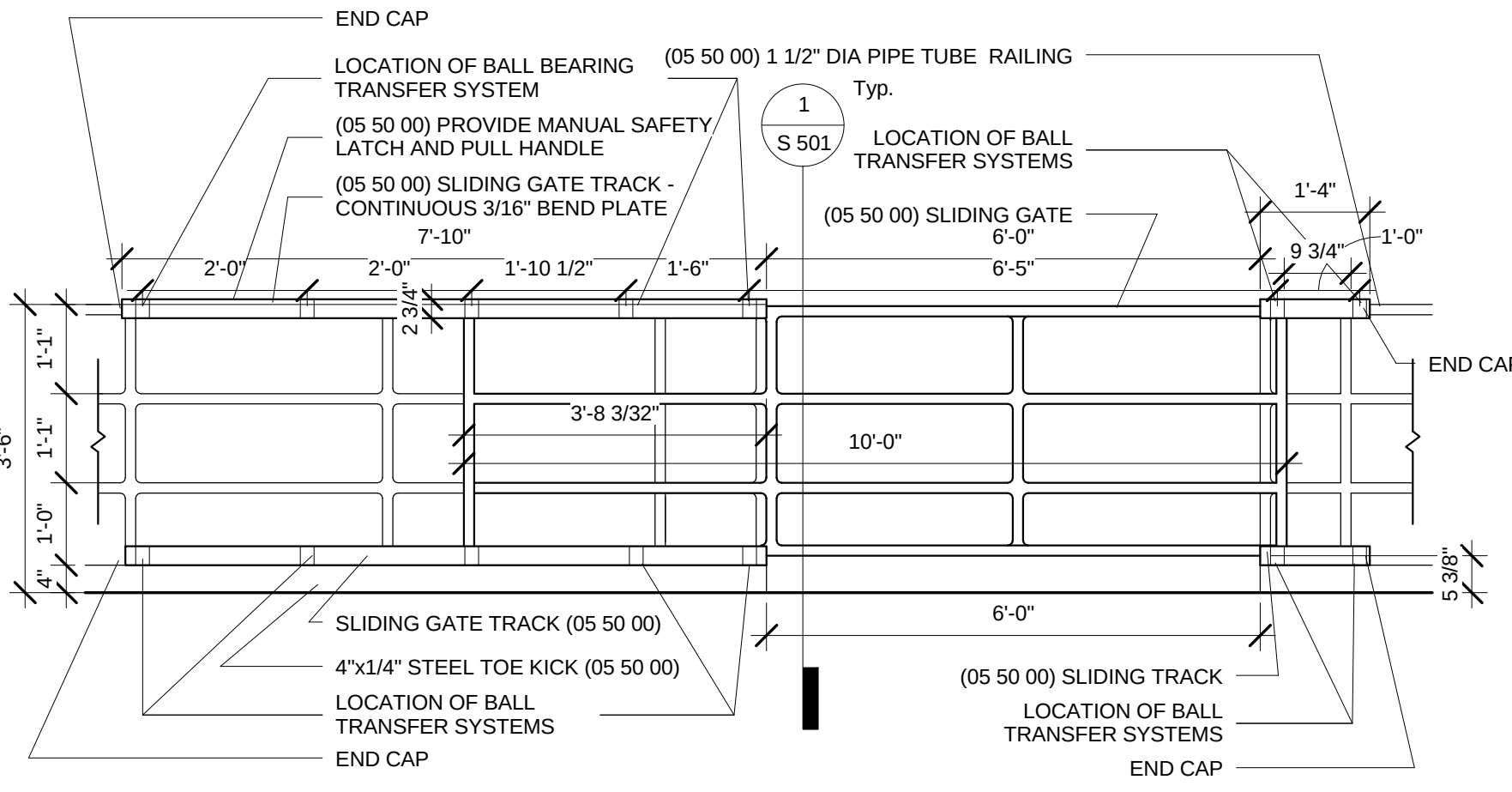
5 Stair Typ.
1 1/2" = 1'-0"



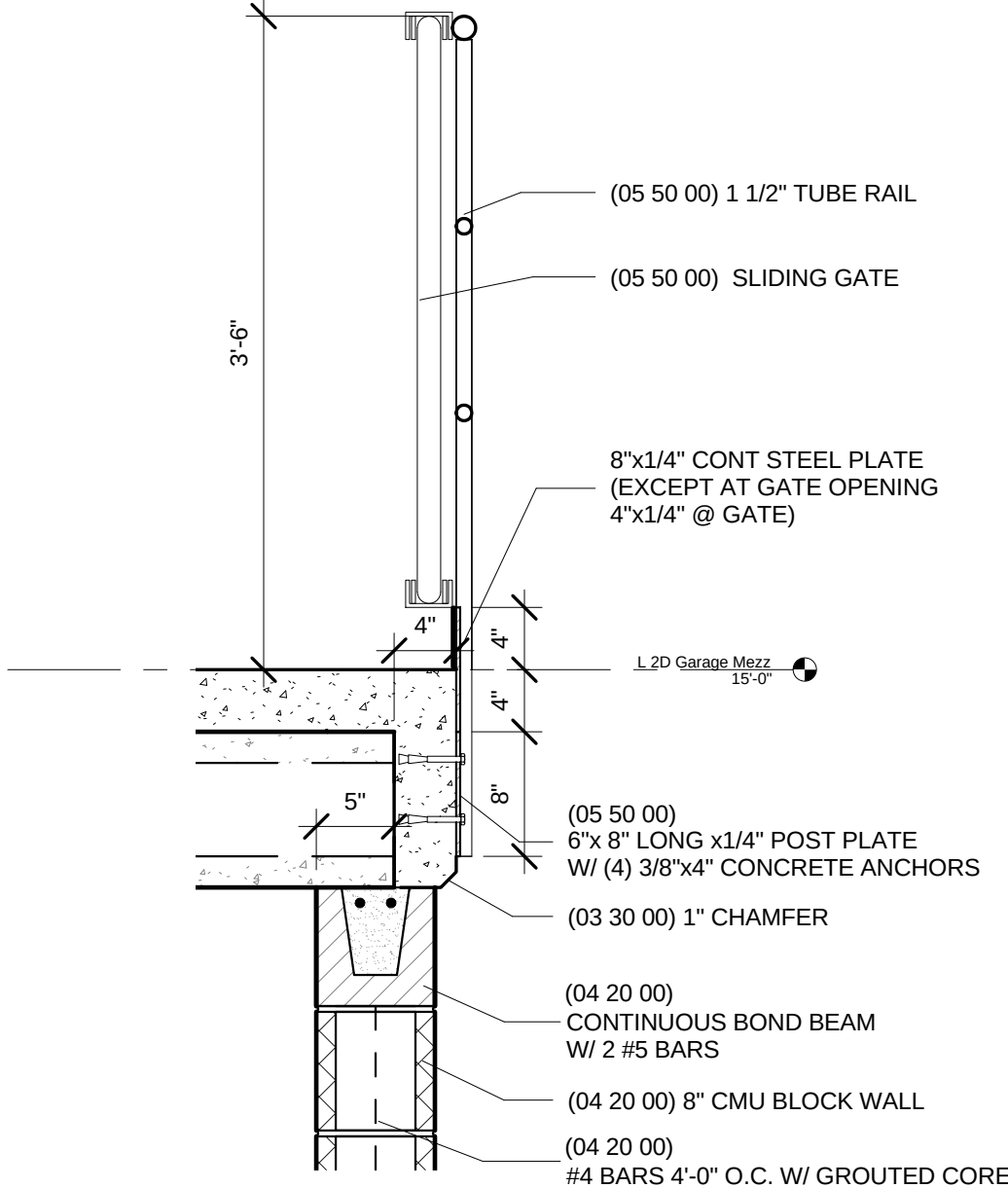
2 Sliding Gate Detail
3" = 1'-0"



1 Mezzanine Gate Section
1" = 1'-0"

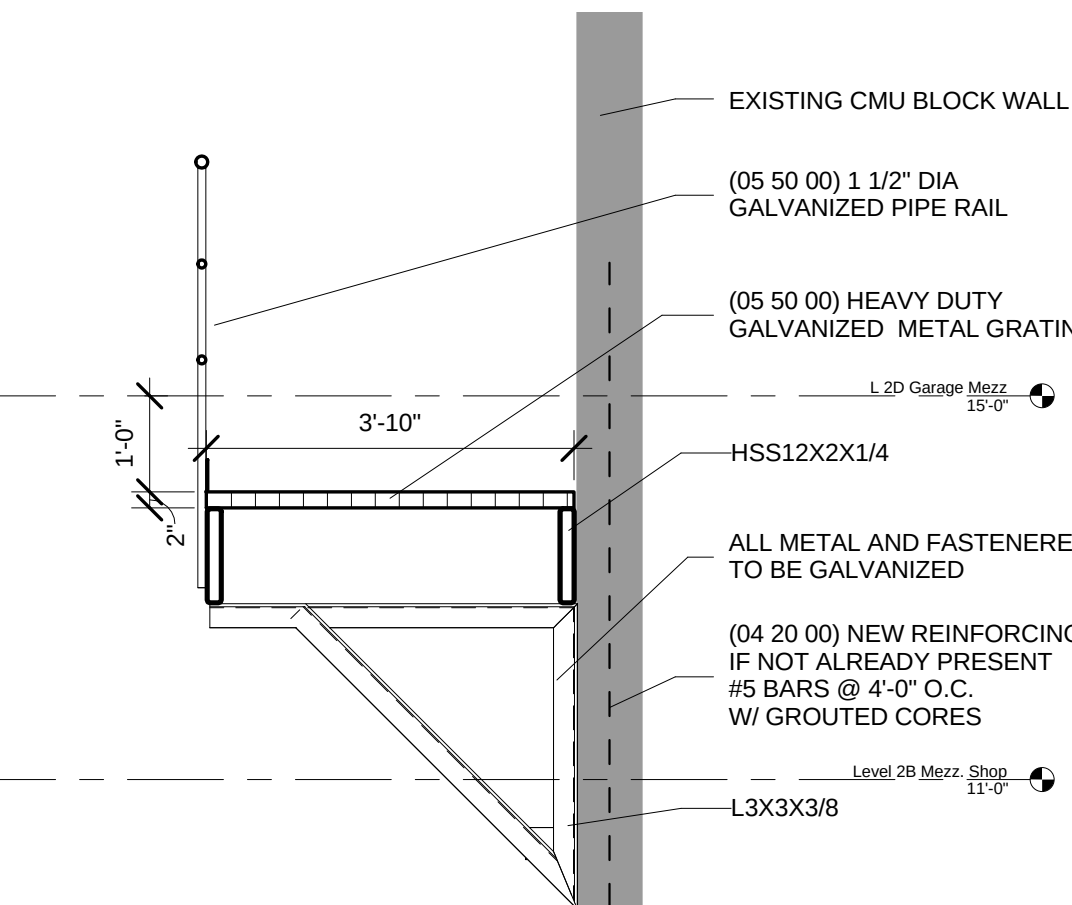


3 Mezzanine Sliding Gate - Typ. Elevation
1/2" = 1'-0"

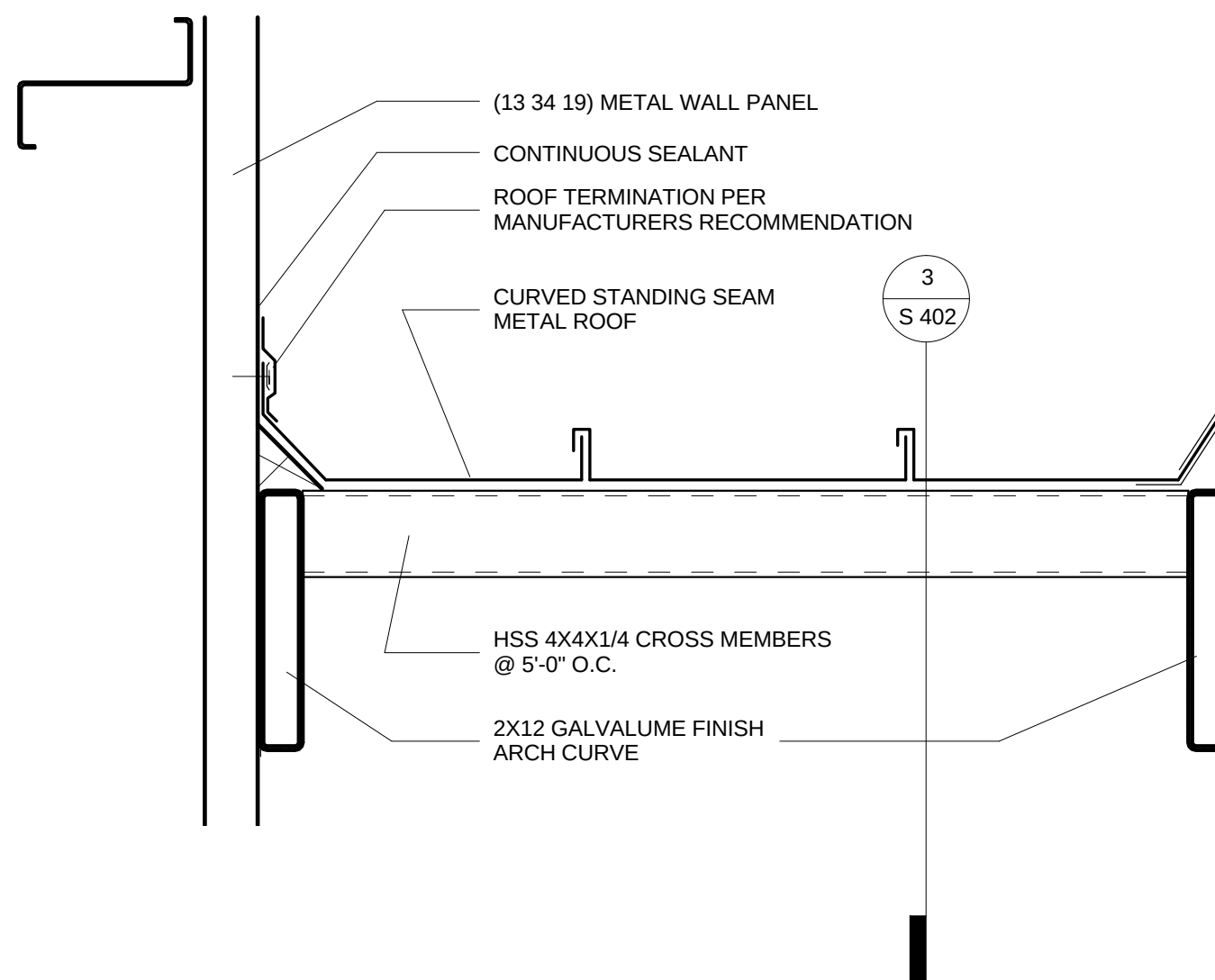


9 Precast Plank Nosing
1" = 1'-0"

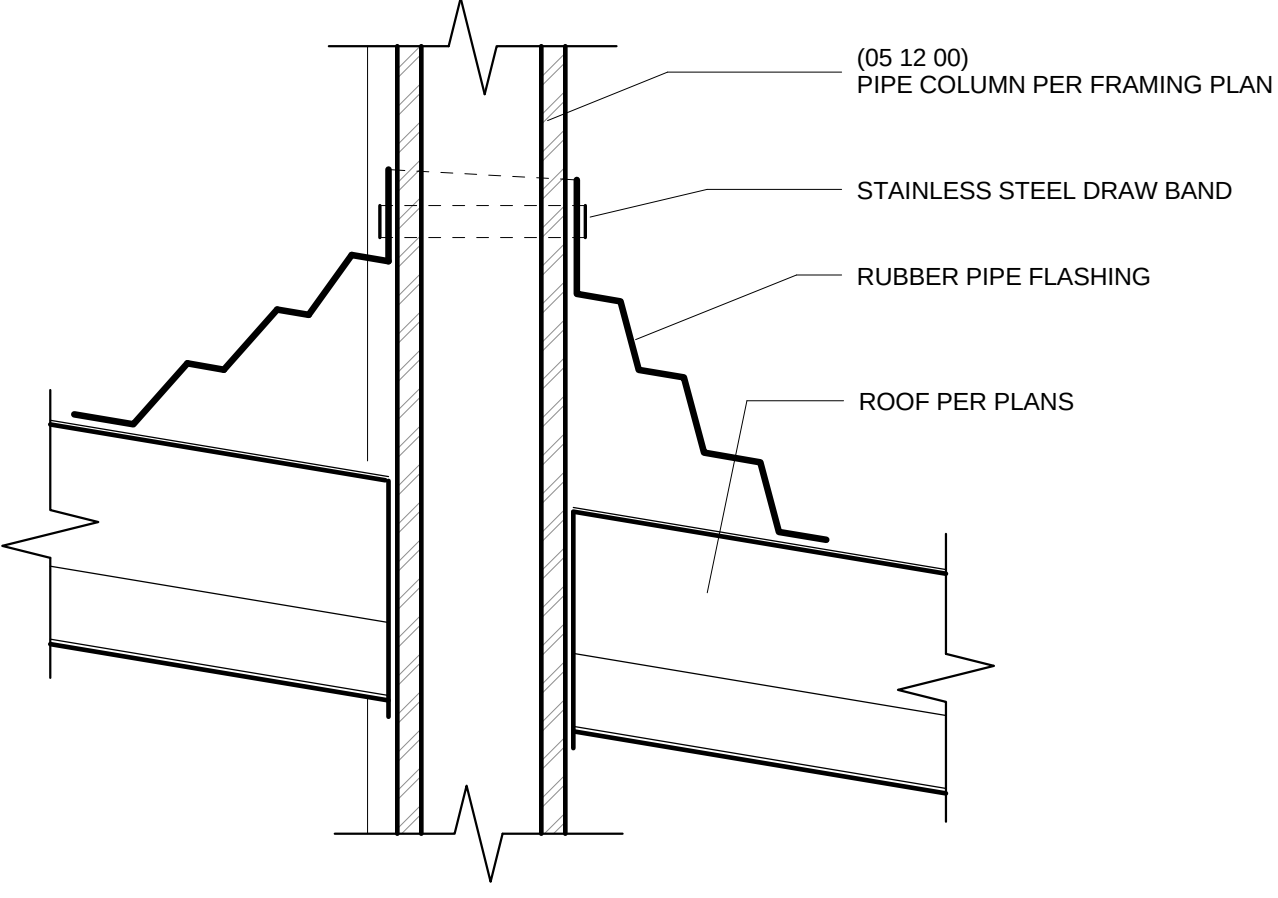
8 Wash Bay Catwalk
1/2" = 1'-0"



7 Garage Entry Canopy Detail
1 1/2" = 1'-0"



13 Roof Column Penetration
3" = 1'-0"



Engineering Operations
Building Addition

Contract: TBD
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Eric Dundee, P.E., City of
Madison

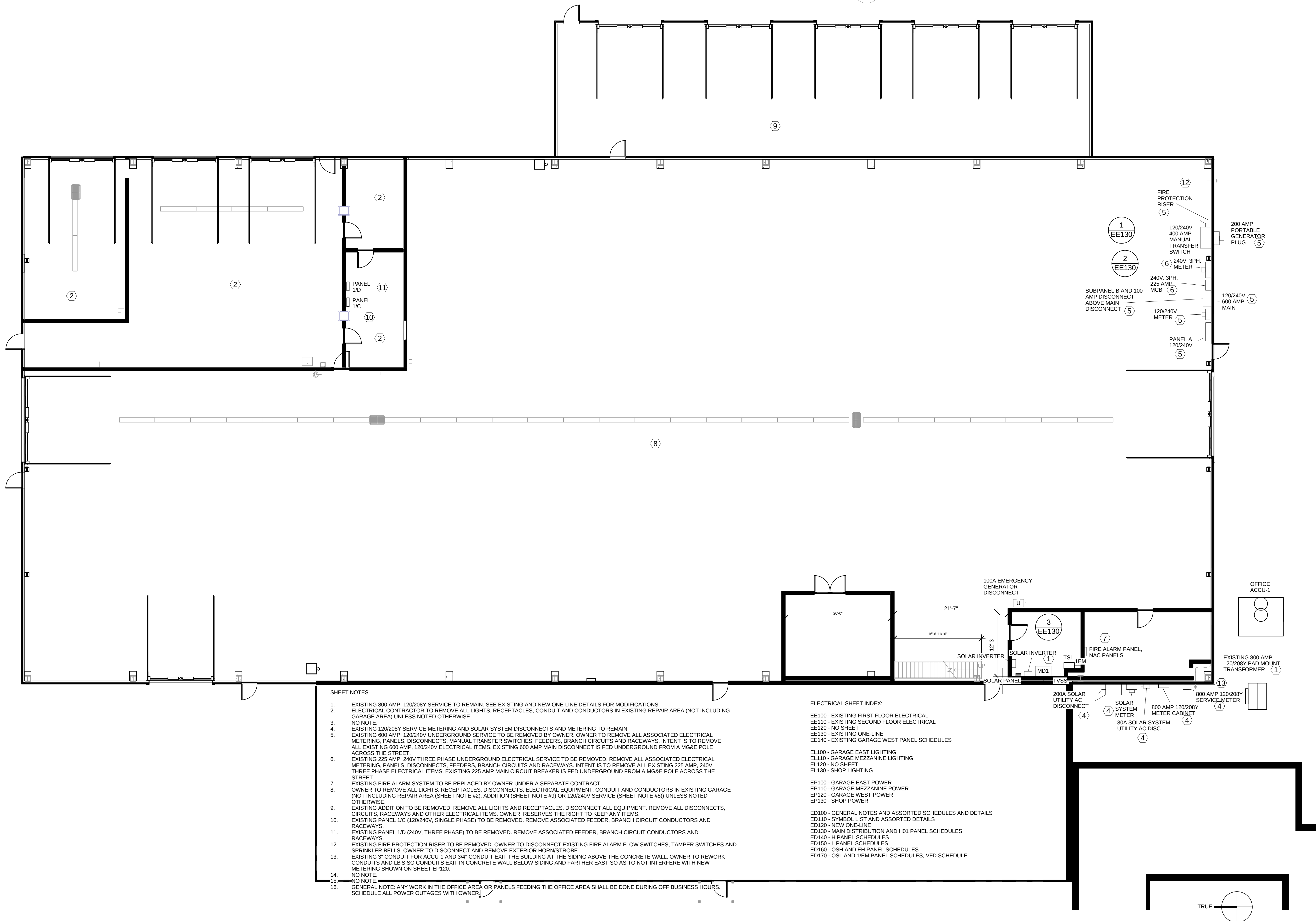
Electrical Design:
Dave Hanson, P.E., Kueny
Architects

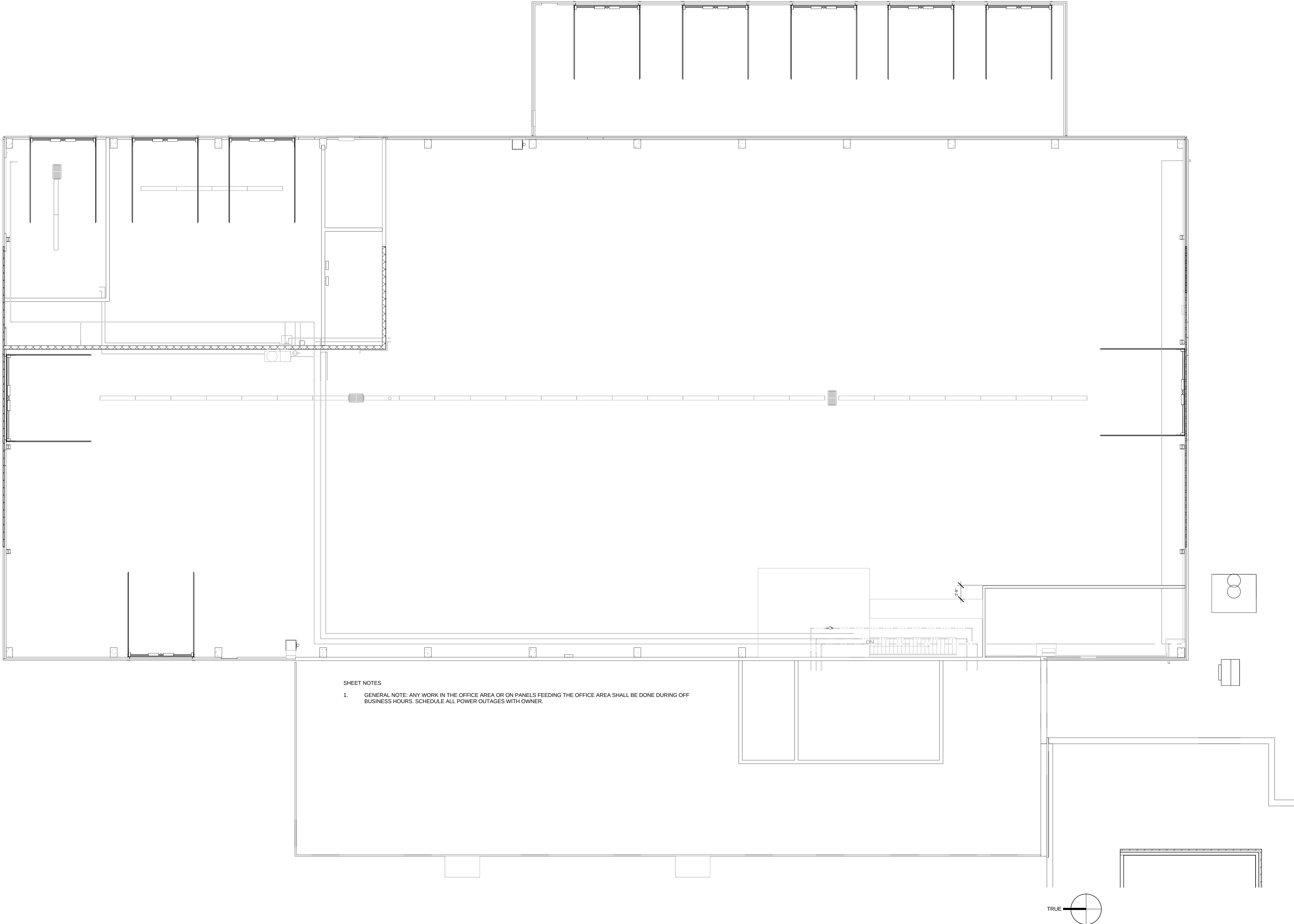
HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Fire Protection Design:
Robert Novak, Kueny Architects

Existing First Floor Electrical

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SHEET NOTES

1. GENERAL NOTE: ANY WORK IN THE OFFICE AREA OR ON PANELS FEEDING THE OFFICE AREA SHALL BE DONE DURING OFF BUSINESS HOURS. SCHEDULE ALL POWER OUTAGES WITH OWNER.

1 Existing Garage Second Floor Electrical
1/8" = 1'-0"

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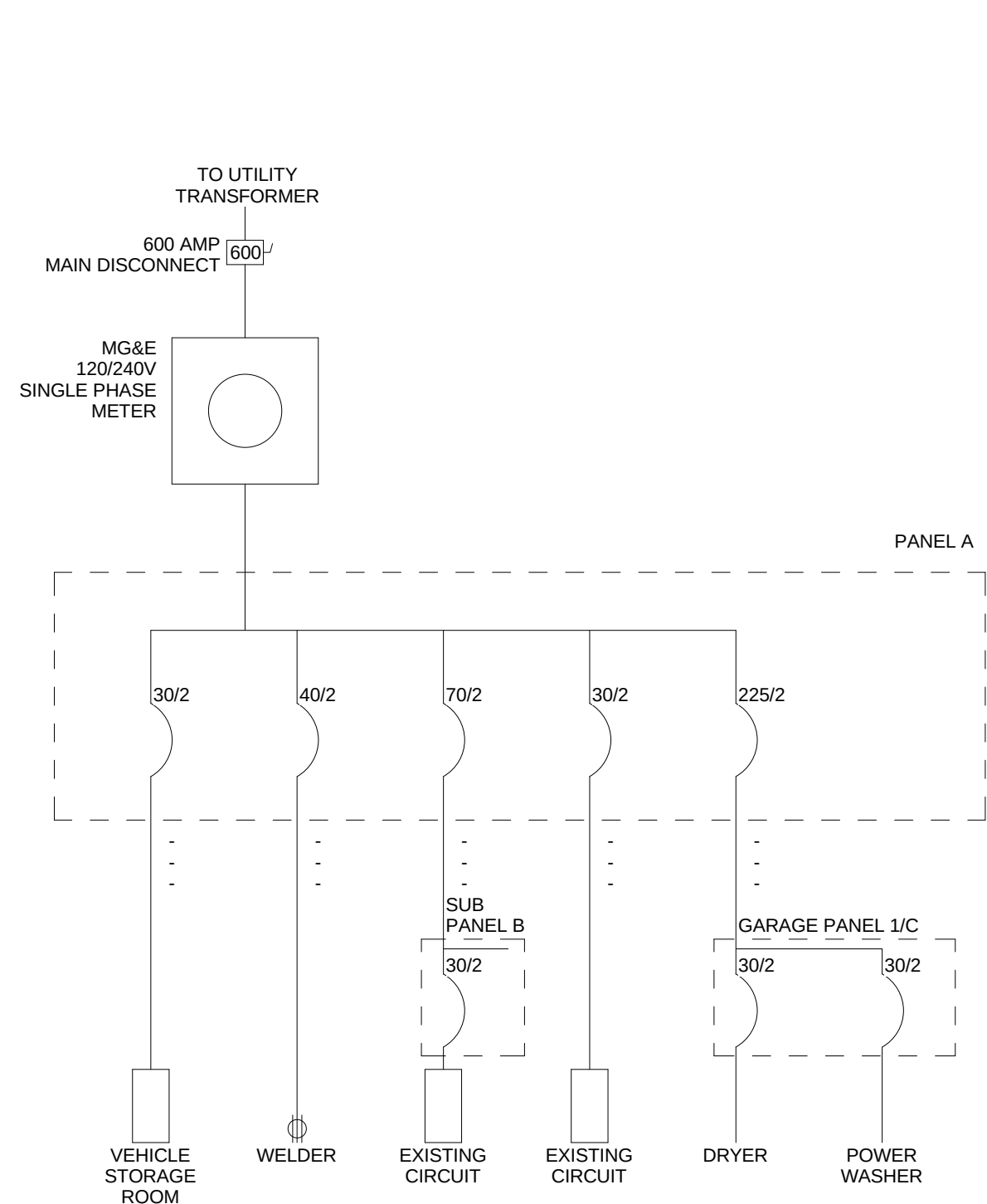
Fire Protection Design:
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Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
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Existing
Second Floor
Electrical

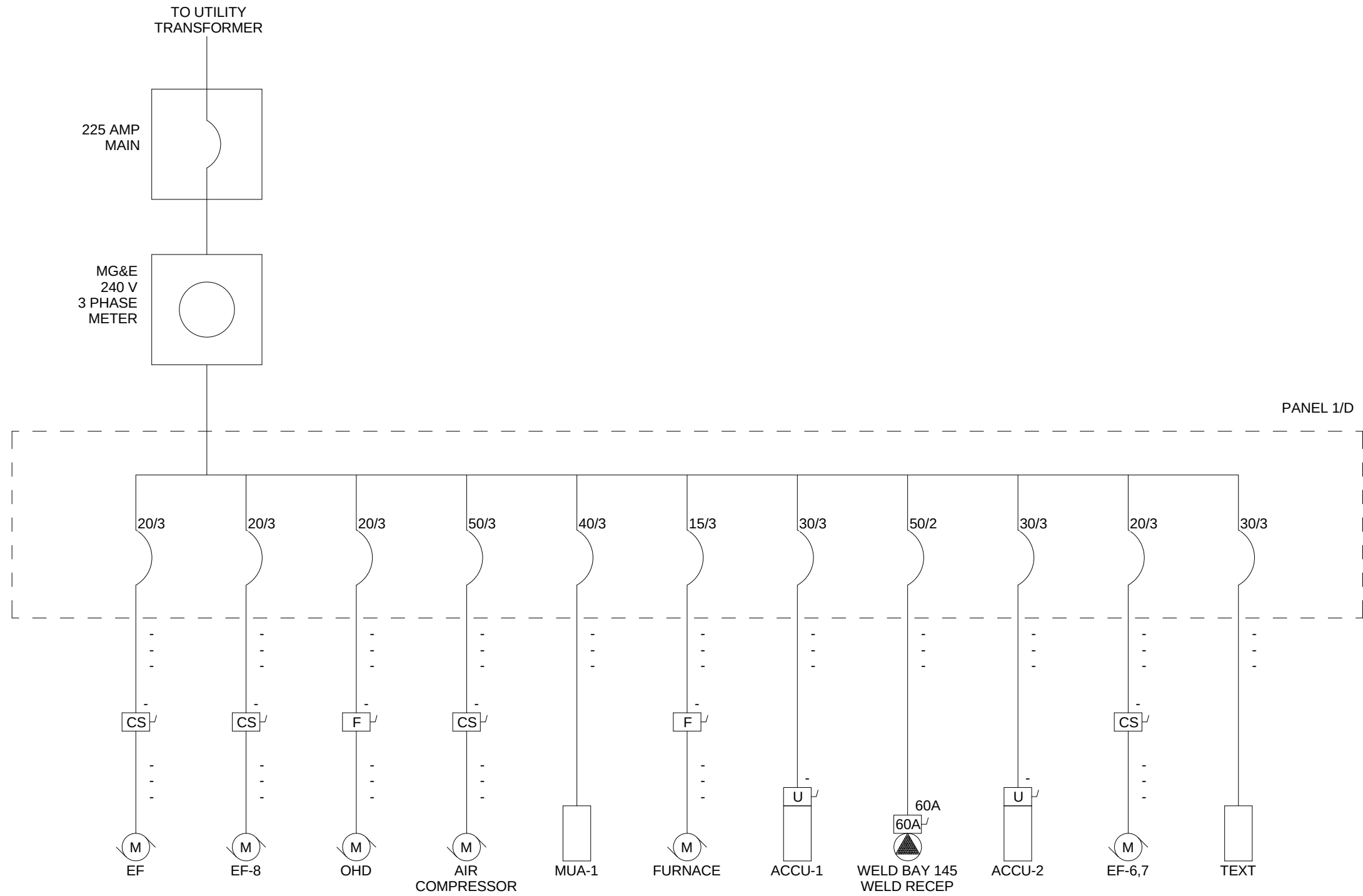
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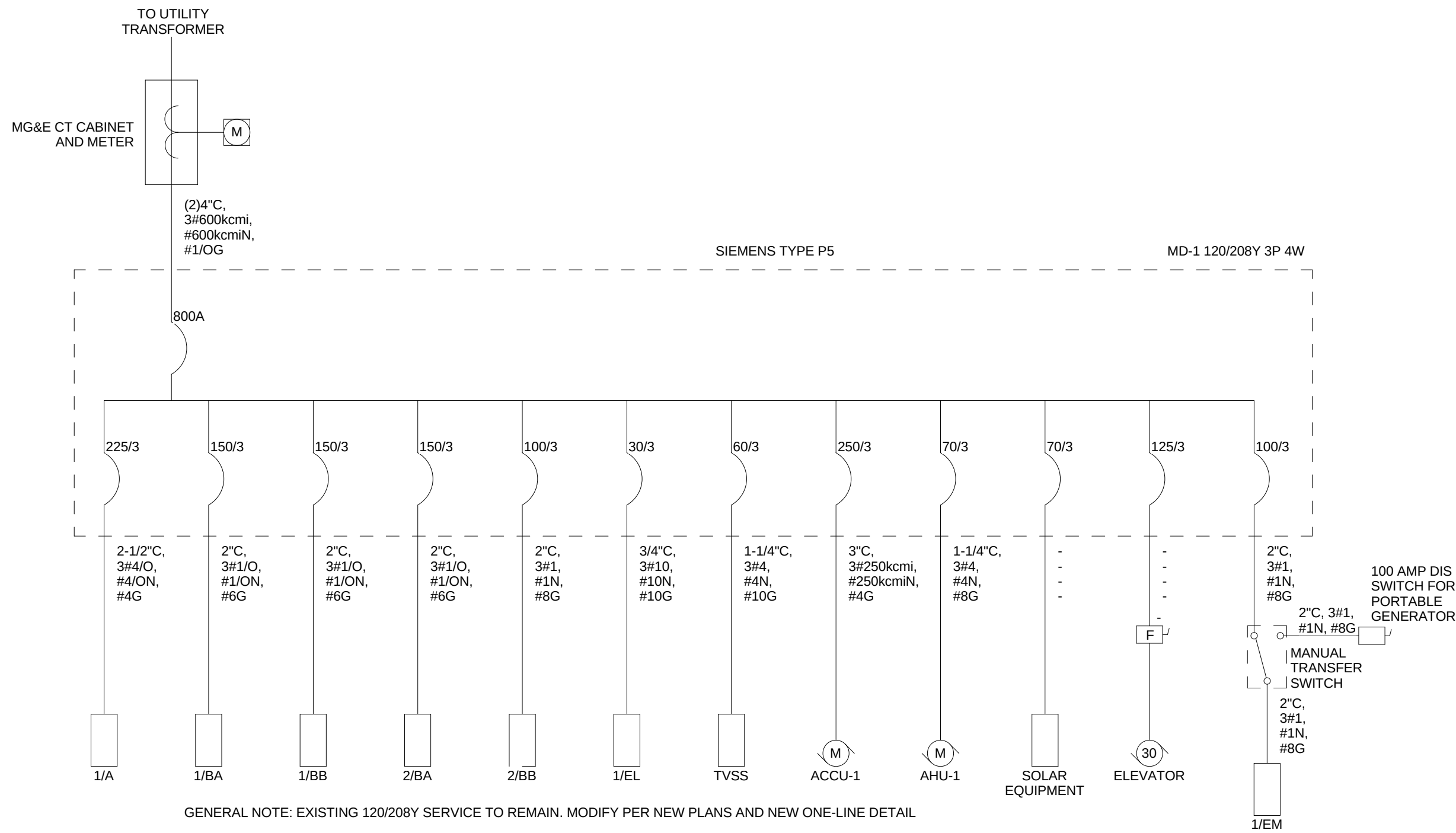
GENERAL NOTE: EXISTING 120/240V SERVICE TO BE REMOVED. LARGER LOADS SHOWN ON ONE-LINE. SEE EXISTING PANEL SCHEDULES FOR ALL CIRCUITS.

1 EXISTING 120/240 V SINGLE PHASE ONE-LINE



GENERAL NOTE: EXISTING 240V THREE PHASE SERVICE TO BE REMOVED.

2 EXISTING 240V THREE PHASE ONE-LINE



GENERAL NOTE: EXISTING 120/208Y SERVICE TO REMAIN. MODIFY PER NEW PLANS AND NEW ONE-LINE DETAIL.

3 EXISTING OFFICE SERVICE ONE-LINE DIAGRAM - 120/208V 3P 4W - 800 AMPS

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Existing
One-Line

EE 130

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Madison

Landscaping Design:
Sarah Lerner, LPA., City of
Madison; 608-261-4261;
slerner@cityofmadison.com

Electrical Design:
Dave Hanson, P.E., Kueny
Architects

Plumbing Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Existing
Garage West
Panel
Schedules
EE 140

Print Date:
11/19/2015 11:19:11 PM

Branch Panel: PANEL A (EXISTING)

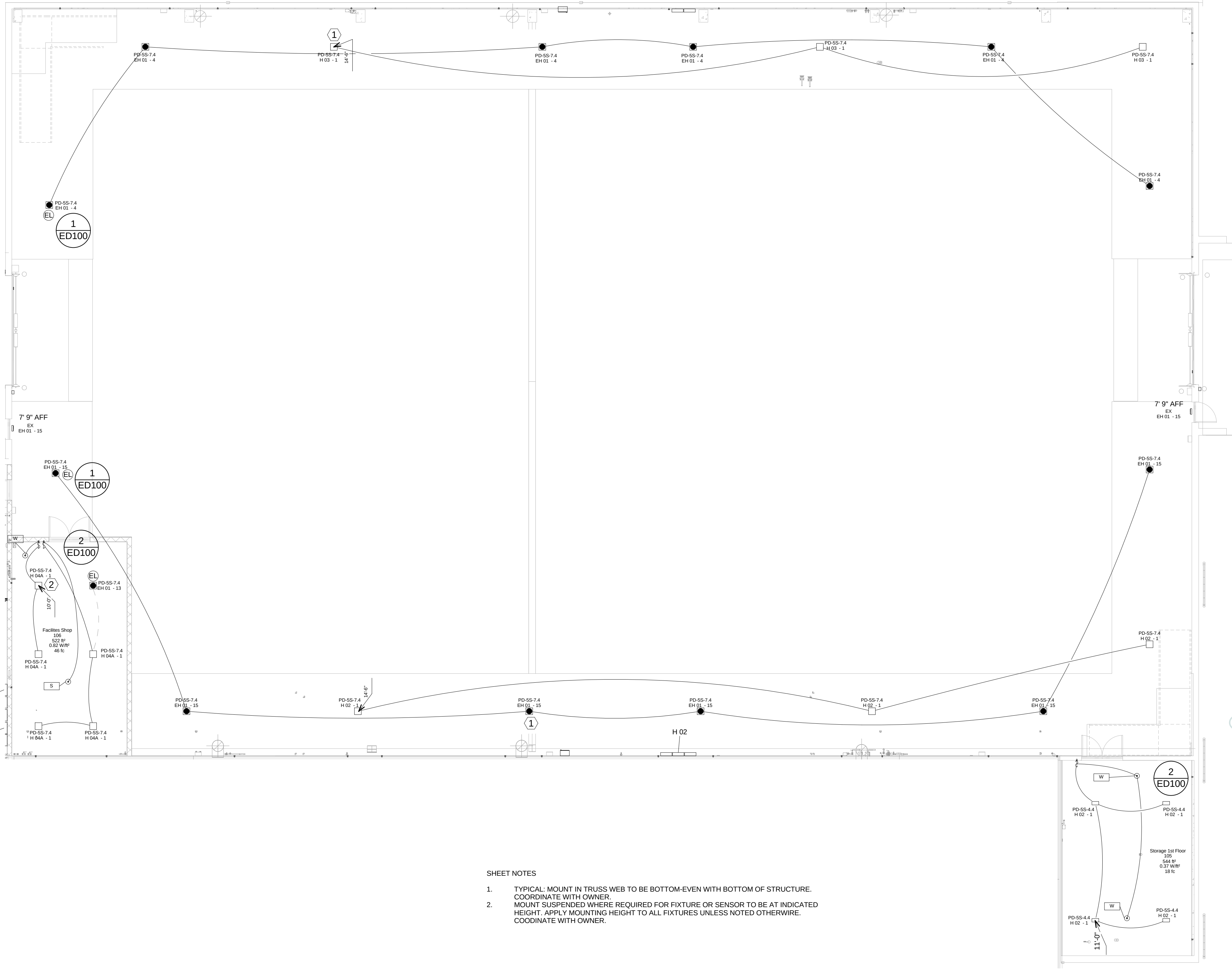
Location: Garage West 100
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts:
Phases: Not Computed
Wires: Not Computed

A.I.C. Rating:
Mains Type:
Mains Rating: 100 A
MCB Rating: 600 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Vehicle Storage Room	20 A	1	0	0					3	30 A	Vehicle Storage Room	2
3	Vehicle Storage Room	20 A	1			0	0			--	--		4
5	Vehicle Storage Room	20 A	1					0	0	--	--		6
7	Vehicle Storage Room	20 A	1	0	0					1	20 A	Vehicle Storage Room	8
9	Vehicle Storage Room	20 A	1			0	0			1	20 A	Vehicle Storage Room	10
11	Vehicle Storage Room	20 A	1					0	0	1	20 A	Vehicle Storage Room	12
13	Vehicle Storage Room	20 A	1	0	0					1	20 A	Unit Heater	14
15	Exhaust Fan	20 A	1			0	0			1	20 A	Heat Trace - East Storage Room	16
17	Outside Lights	20 A	1					0	0	1	20 A	Vehicle Storage Room	18
19	Exhaust Fan - Mezz	20 A	1	0	0					1	20 A	Exhaust Fan - Restroom	20
21	Lights - Mezz	20 A	1			0	0			1	20 A	Plugs - S.W.	22
23	Plugs - East Phone	20 A	1					0	0	1	20 A	W.P. Plugs	24
25	Exhaust Fan - Mezz	20 A	1	0	0					1	20 A	Exhaust Fan - Washing Machine	26
27	Unit Heater	20 A	1			0	0			1	20 A	Vehicle Storage Room	28
29	Welder	40 A	2					0	0	1	20 A	Vehicle Storage Room	30
31	--	--	--	0	0					2	70 A	Sub Panel B	32
33	Outside Storage Lights	20 A	1			0	0			--	--		34
35	Outside Storage Lighting	20 A	1					0	0	1	20 A	Outside Storage Outlets	36
37	Outside Storage Outlets	20 A	1	0	0					1	20 A	Outside Storage Outlets	38
39	Outside Storage Outlets	20 A	1			0	0			1	20 A	Existing Circuit	40
41	Heat Trace - East Wall	20 A	1					0	0	1	20 A	Heat Trace - East Wall	42
Total Load:				0 VA		0 VA		0 VA					
Total Amps:													
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
								Total Conn. Load: 0 VA					
								Total Est. Demand: 0 VA					
								Total Conn.: Not Computed					
								Total Est. Demand: Not Computed					



SHEET NOTES

1. TYPICAL: MOUNT IN TRUSS WEB TO BE BOTTOM-EVEN WITH BOTTOM OF STRUCTURE. COORDINATE WITH OWNER.
2. MOUNT SUSPENDED WHERE REQUIRED FOR FIXTURE OR SENSOR TO BE AT INDICATED HEIGHT. APPLY MOUNTING HEIGHT TO ALL FIXTURES UNLESS NOTED OTHERWISE. COORDINATE WITH OWNER.

PD-SS-2.6
EH 01 - 9

1 EL - 1st Floor Garage East
1/8" = 1'-0"

City of Madison

Facilities Maintenance
1600 Emil St.
Madison, WI 53713



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
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Landscaping Design:
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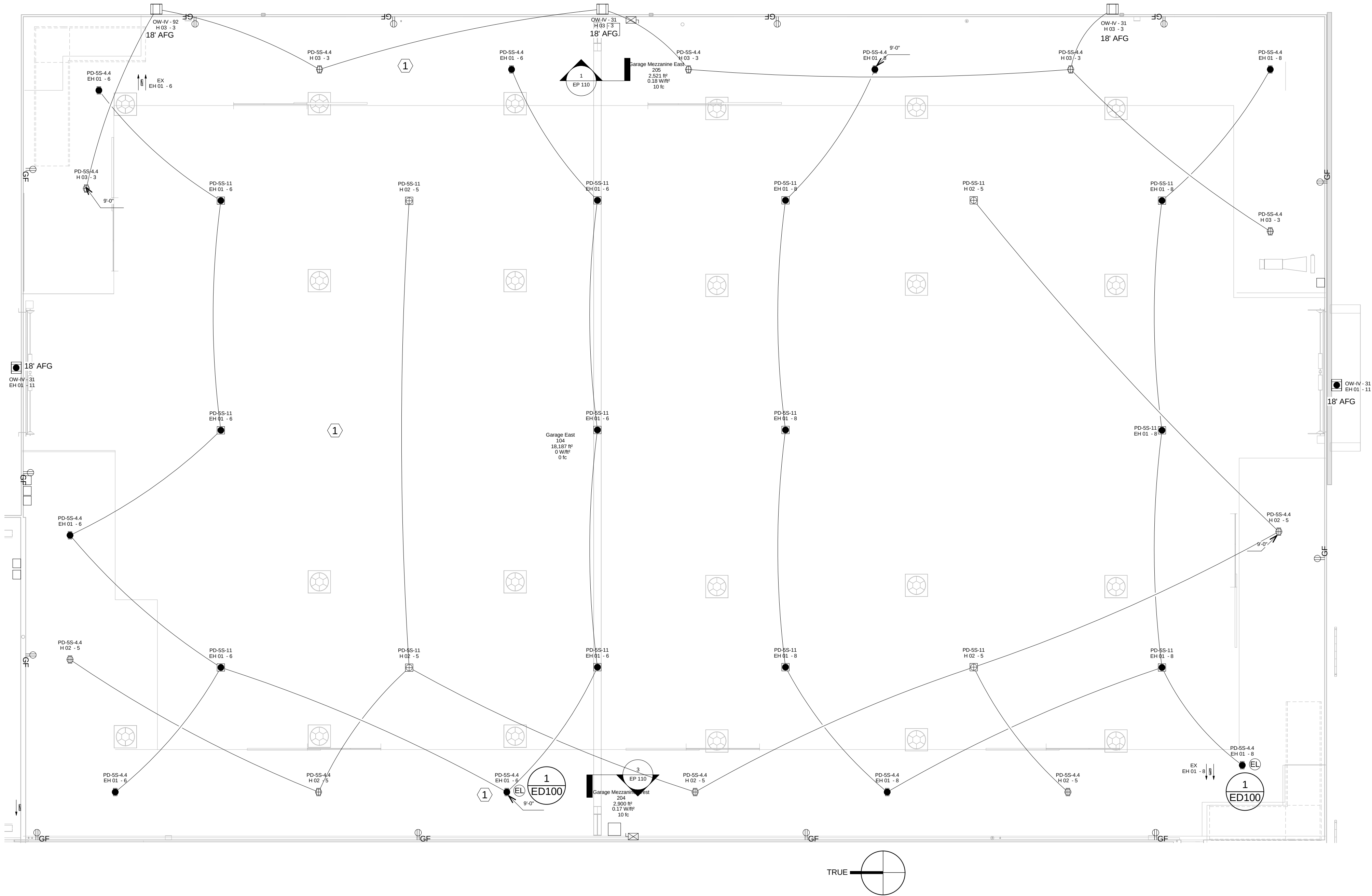
Fire Protection Design:
Robert Novak, Kuerny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

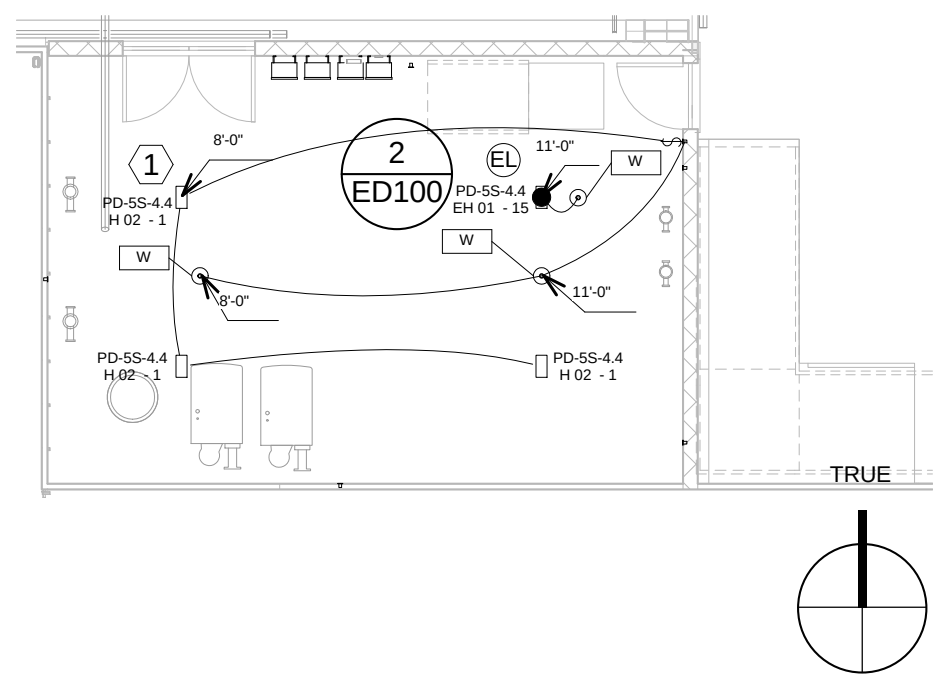
Garage East
Lighting

EL 100

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11/19/2015 11:19:46 PM



1 EL - 2nd Floor Garage Mezzanine
1/8" = 1'-0"

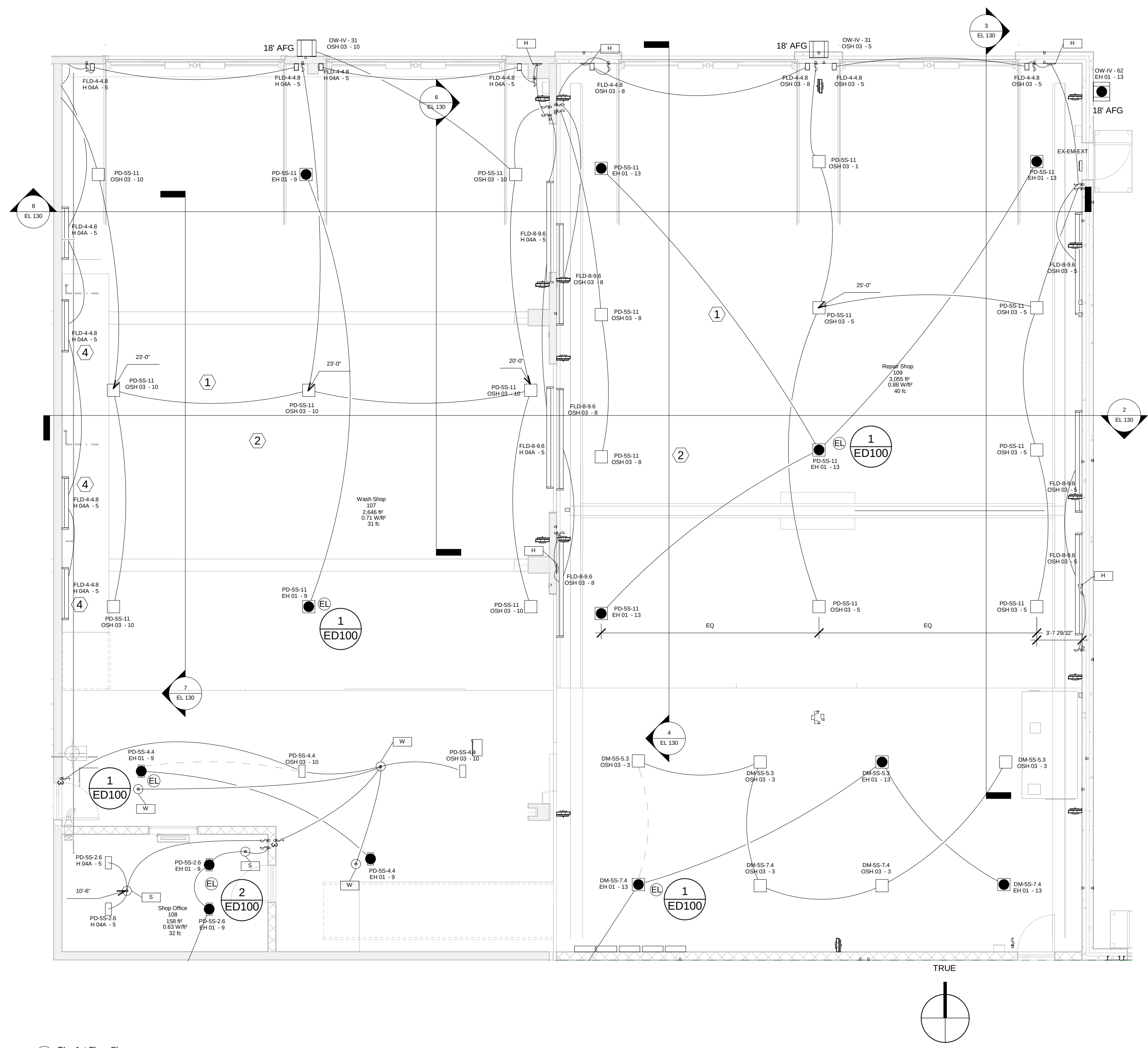


2 EL - Boiler Room 2nd Floor
1/8" = 1'-0"

SHEET NOTES

1. MOUNT SUSPENDED WHERE REQUIRED FOR FIXTURE OR SENSOR TO BE AT INDICATED HEIGHT. APPLY MOUNTING HEIGHT TO ALL FIXTURES UNLESS NOTED OTHERWISE. COORDINATE WITH OWNER.

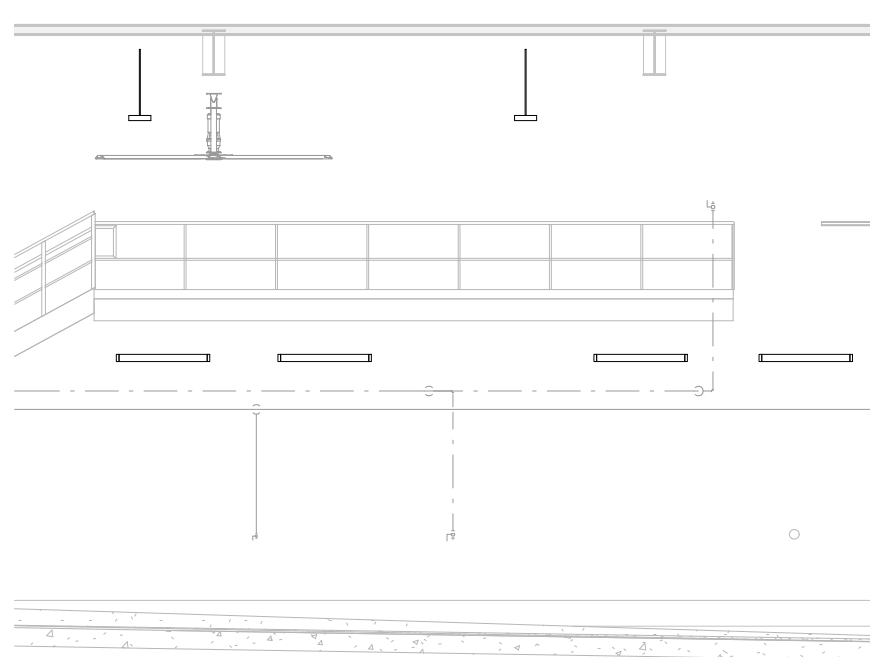
City of Madison Facilities Maintenance 1600 Emil St. Madison, WI 53713
Design prepared for: Engineering Division
Engineering Operations Building Addition
Location: 1600 Emil St. Madison, WI 53713
Contract: TBD Project: 10349 Common Council Approval:
Lighting Design: Kay Schindel, P.E., City of Madison; 608-266-4668; kschindel@cityofmadison.com
Civil Design: Eric Dundee, P.E., City of Madison
Landscaping Design: Sarah Lerner, LPA., City of Madison; 608-261-4251; slerner@cityofmadison.com
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HVAC Design: Kay Schindel, P.E., City of Madison; 608-266-4668; kschindel@cityofmadison.com
Structural Design: John Schmidbauer, P.E., Kuerny Architects
Fire Protection Design: Robert Novak, Kuerny Architects
Architectural Design: Kay Schindel, P.E., City of Madison; 608-266-4668; kschindel@cityofmadison.com
Garage Mezzanine Lighting
EL 110
Print Date: 11/19/2015 11:20:06 PM



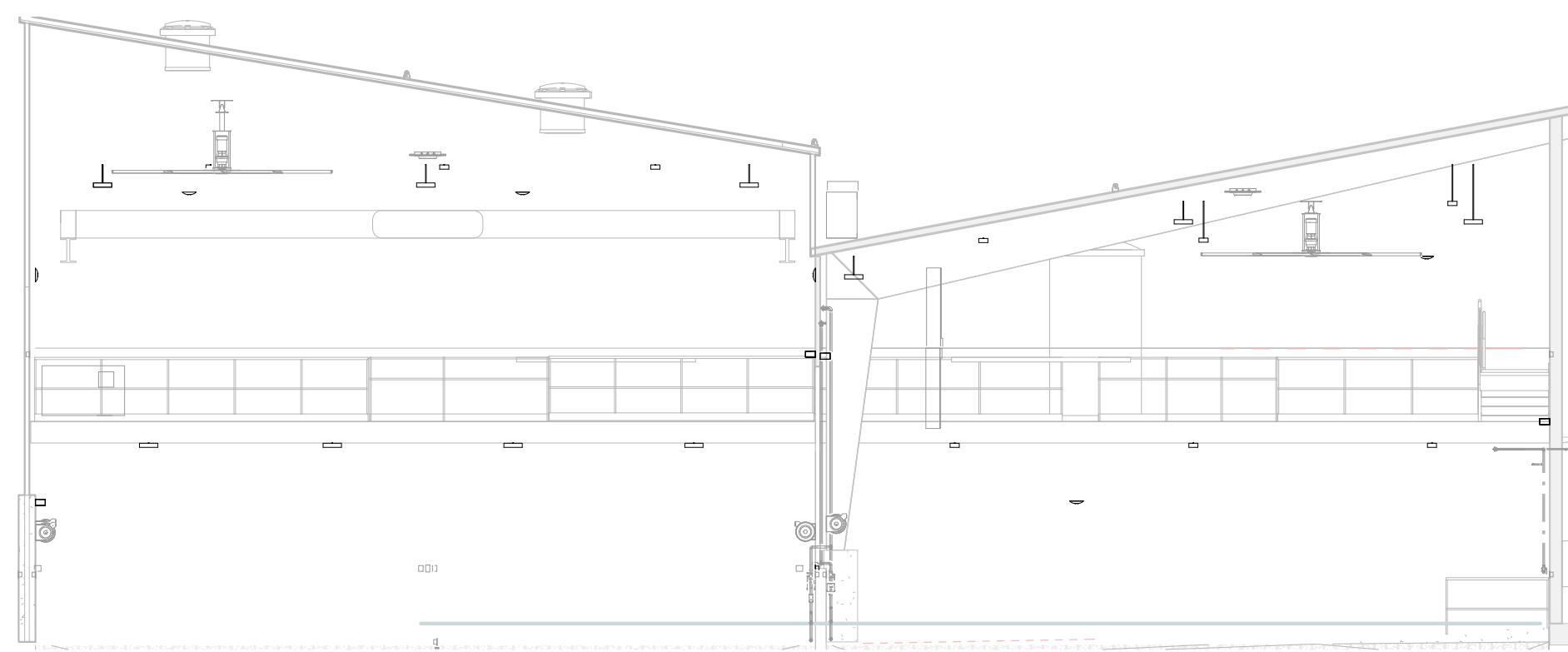
1 EL - 1st Floor Shop
3/16" = 1'-0"

SHEET NOTES

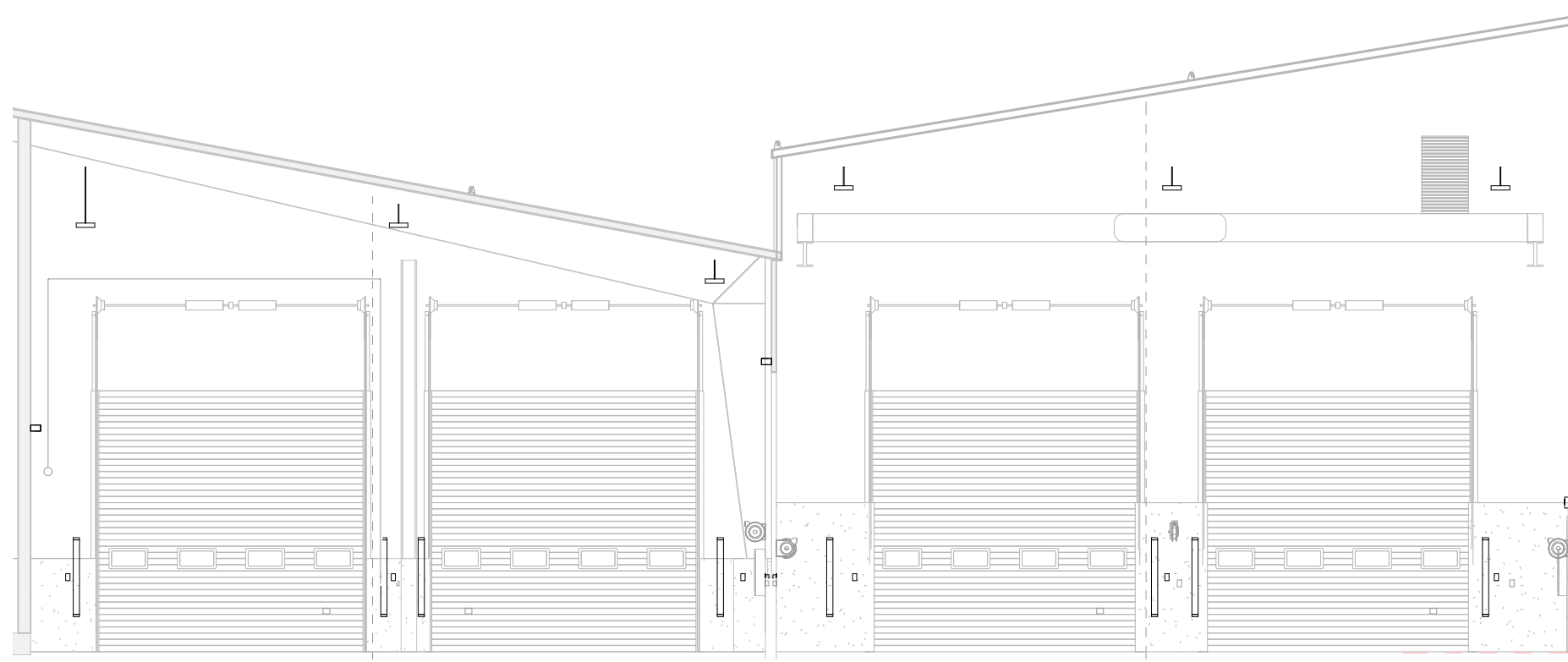
1. MOUNT SUSPENDED WHERE REQUIRED FOR FIXTURE OR SENSOR TO BE AT INDICATED HEIGHT. APPLY MOUNTING HEIGHT TO ALL FIXTURES UNLESS NOTED OTHERWISE. COORDINATE WITH OWNER.
2. FIXTURES WITH BLACK DOT CONNECTED TO EMERGENCY CIRCUIT. ADD FIRE ALARM RELAY.
3. NEC 500 CLASS 1, DIVISION 1 LOCATION. INSTALL ALL ELECTRICAL EQUIPMENT PER CODE OR AHJ REQUIREMENTS. UP TO A LEVEL OF 18' AFF. THE REPAIR SHOP AND WASH SHOP ARE CONSIDERED CLASS 1, DIVISION 1 LOCATIONS. PROVIDE EXPLOSION PROOF FITTINGS. SEAL OFFS AND RIGID CONDUIT AS REQUIRED BY CODE. SEALS ARE NOT REQUIRED ON CONDUITS THAT PASS UNBROKEN THRU THE CLASS 1 AREA PER NEC SECTION 511 IF THE CONDUIT EXTENDS MORE THAN 12" ABOVE THE CLASSIFIED AREA.
4. CENTER LIGHTS BETWEEN PLATFORM BRACING.



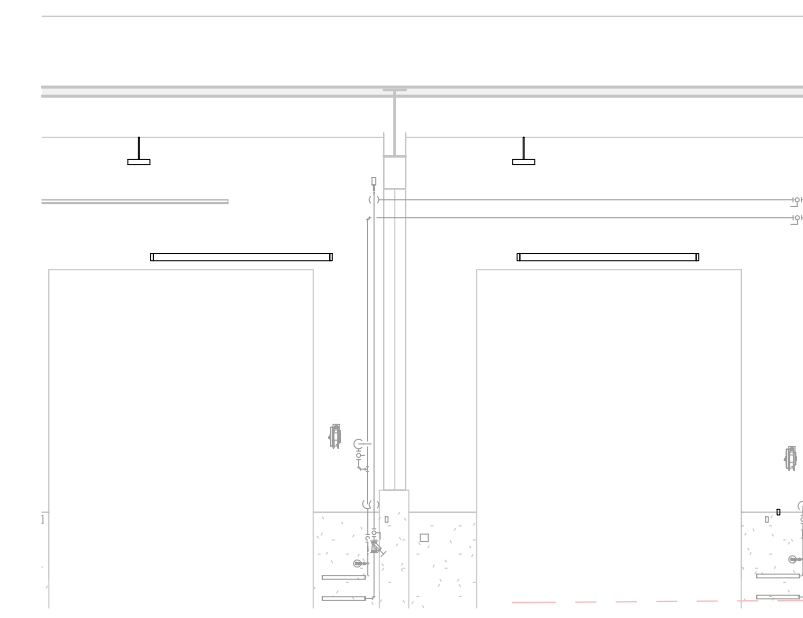
7 EL - Section Shop West Wall West
1/8" = 1'-0"



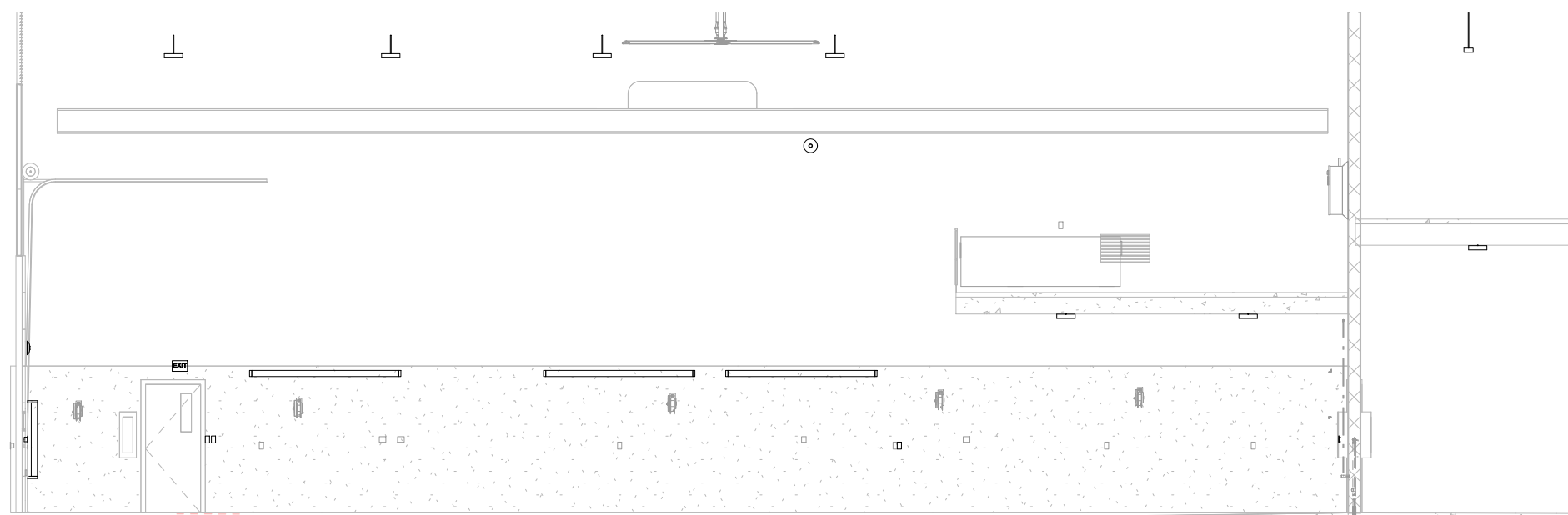
2 EL - Section Shop South Wall
1/8" = 1'-0"



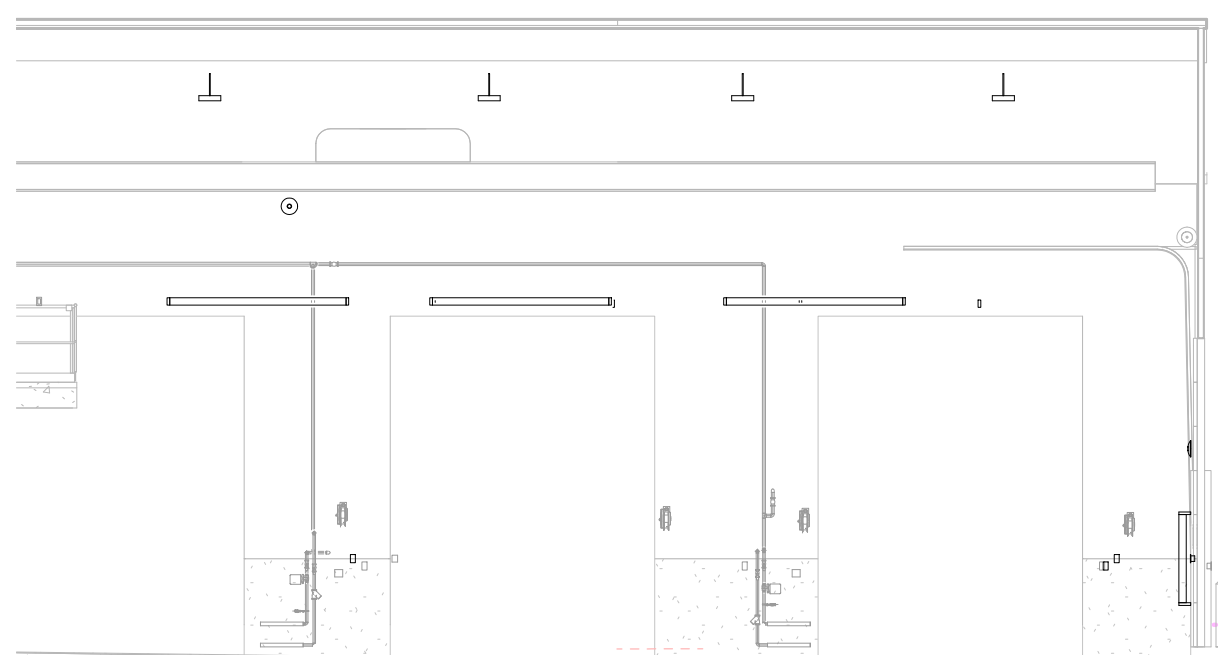
8 EL - Section Shop North Wall
1/8" = 1'-0"



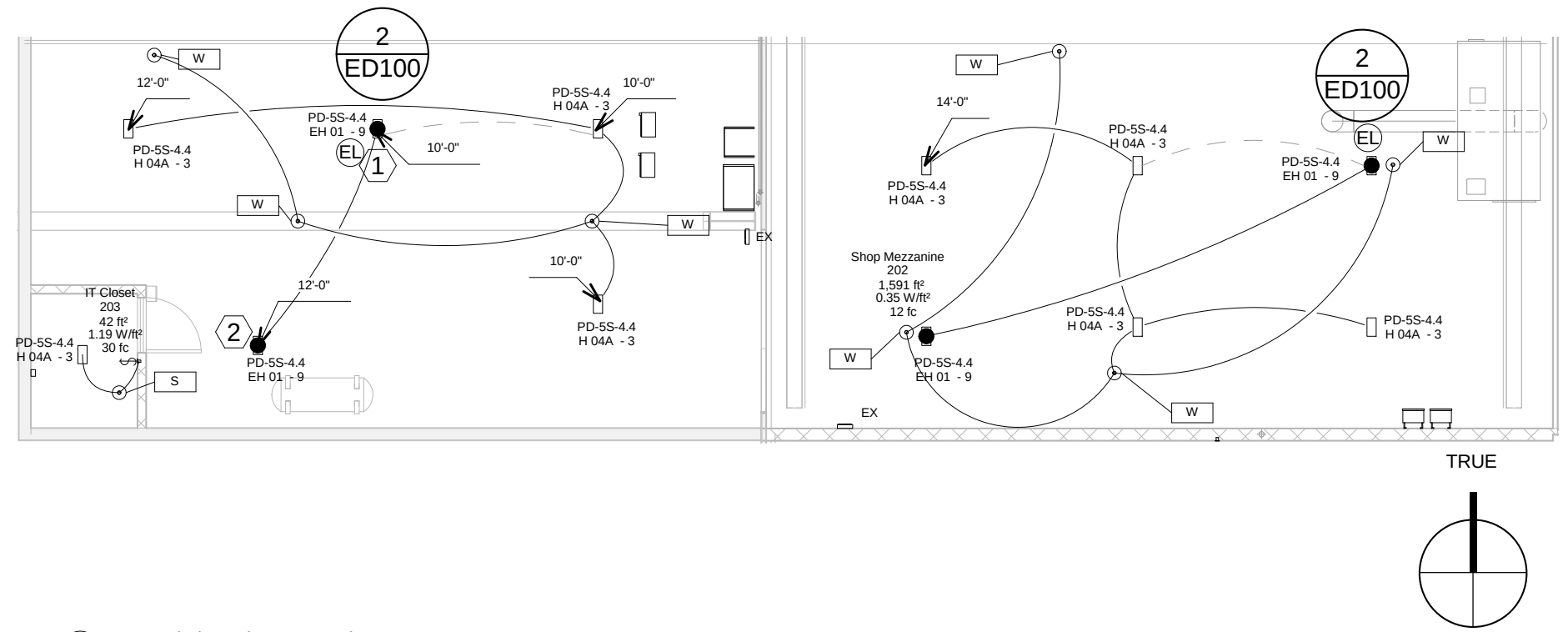
6 EL - Section Wash Shop Wall East
1/8" = 1'-0"



3 EL - Section Repair Shop Wall East
1/8" = 1'-0"



4 EL - Repair Shop Wall West
1/8" = 1'-0"



5 EL - 2nd Floor Shop Mezzanine
1/8" = 1'-0"

Engineering Operations
Building Addition

Contract: TBD
Project: 10349
Common Council Approval:

Civil Design:
Eric Dundee, P.E., City of
Madison

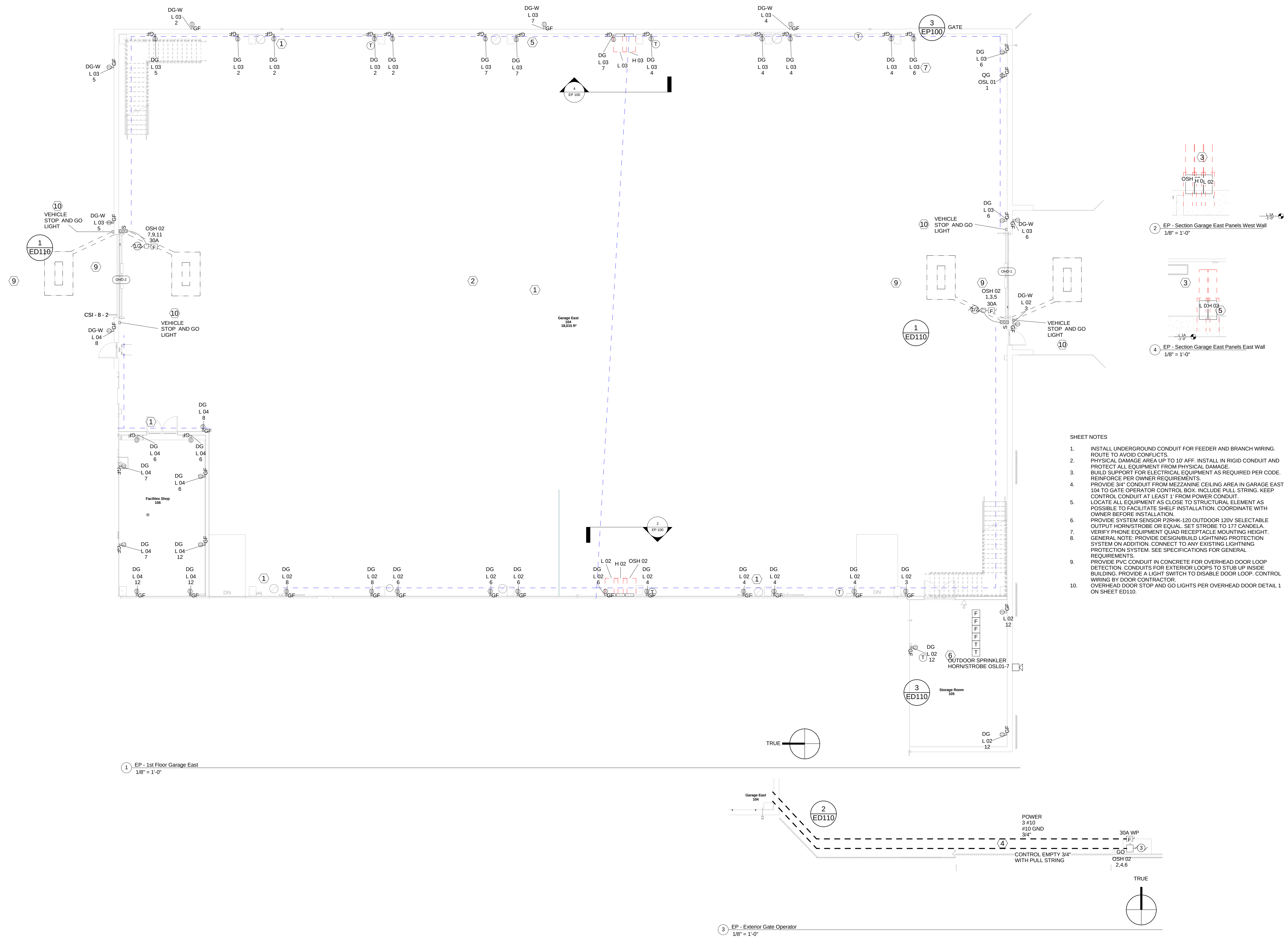
Electrical Design:
Dave Hanson, P.E., Kueny
Architects

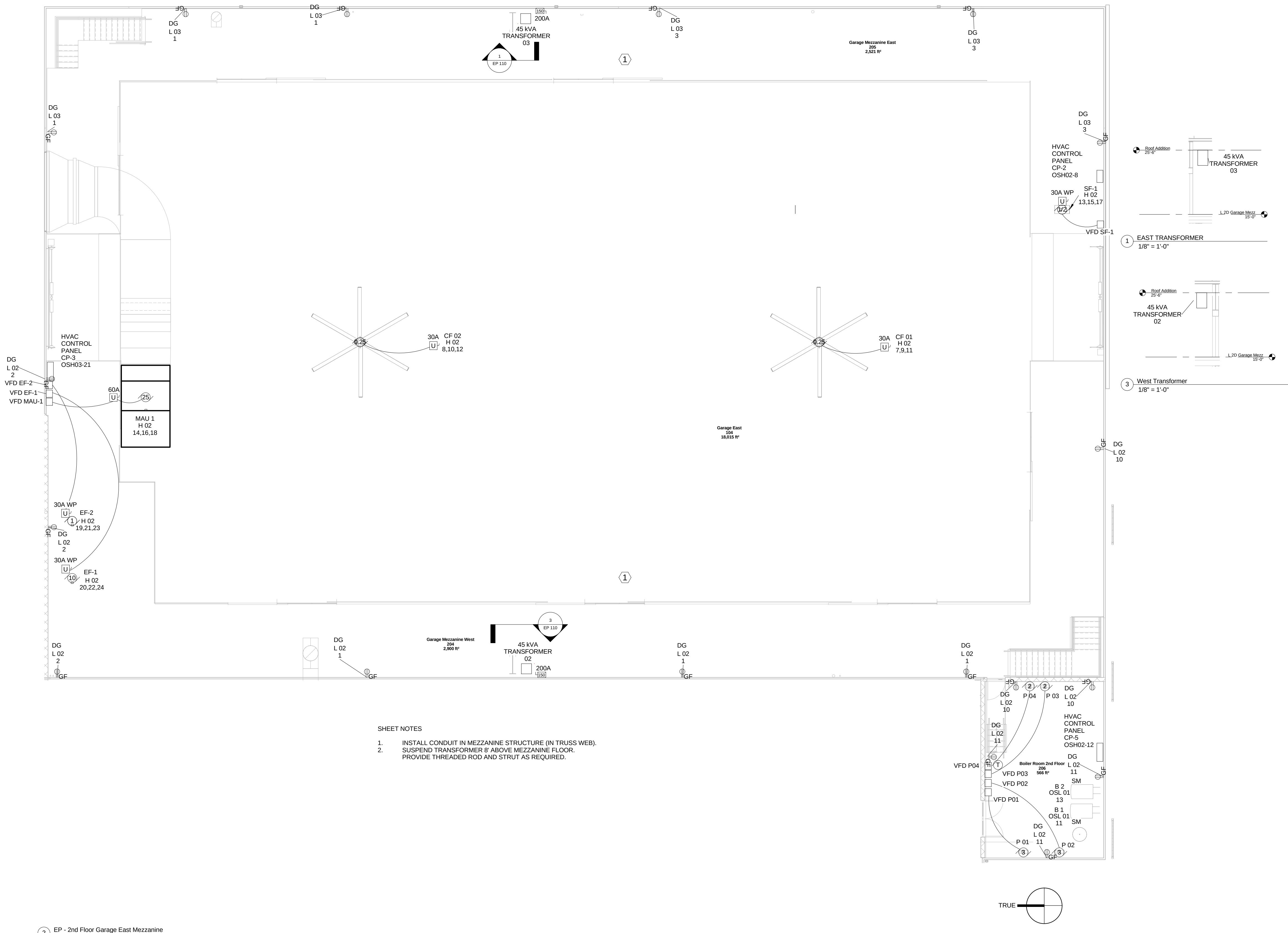
HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Fire Protection Design:
Robert Novak, Kueny Architects

Garage East
Power

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② EP - 2nd Floor Garage East Mezzanine
1/8" = 1'-0"

- SHEET NOTES
1. INSTALL CONDUIT IN MEZZANINE STRUCTURE (IN TRUSS WEB).
 2. SUSPEND TRANSFORMER 8' ABOVE MEZZANINE FLOOR.
PROVIDE THREADED ROD AND STRUT AS REQUIRED.

City of Madison
Facilities Maintenance
1600 Emil St.
Madison, WI 53713

Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
Sarah Lerner, L.P.A., City of
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slerner@cityofmadison.com

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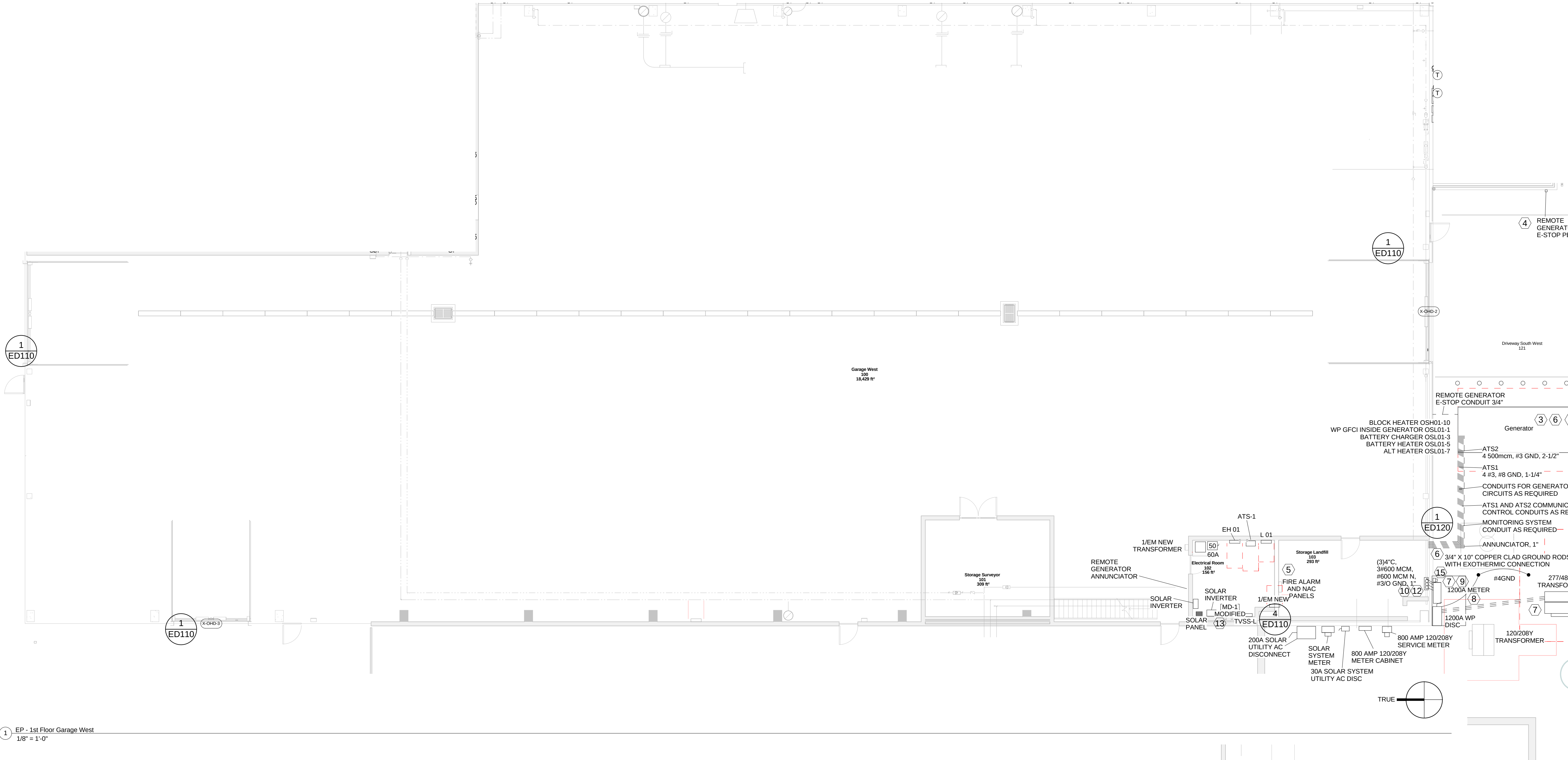
Fire Protection Design:
Robert Novak, Kuerny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Garage
Mezzanine
Power

EP 110

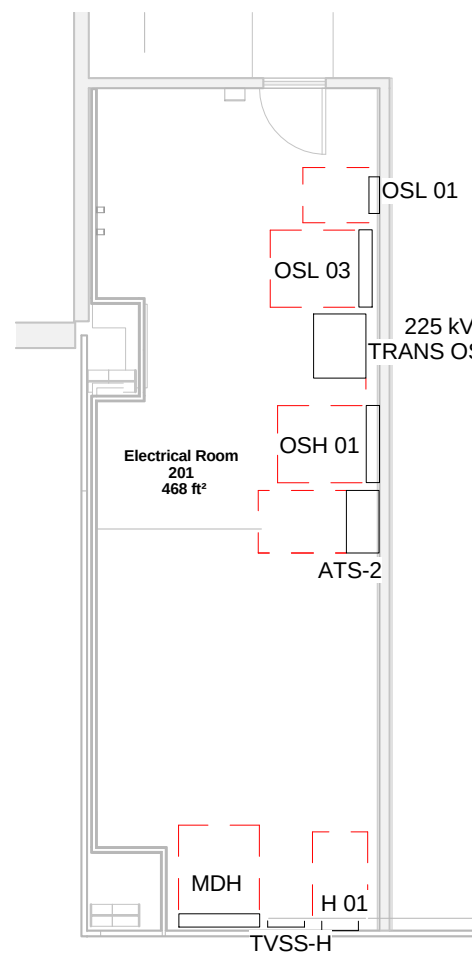
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11/19/2015 11:21:53 PM



1 EP - 1st Floor Garage West
1/8" = 1'-0"

SHEET NOTES

1. APPROXIMATE UTILITY PAD MOUNT TRANSFORMER LOCATION SHOWN. VERIFY LOCATION. COORDINATE ALL SERVICE WORK WITH UTILITY.
2. GENERAL CONTRACTOR TO PROVIDE CONCRETE PAD FOR MG&E ENERGY PAD MOUNT TRANSFORMER AS REQUIRED.
3. GENERAL CONTRACTOR TO PROVIDE CONCRETE PAD AND BOLLARDS FOR GENERATOR AS REQUIRED.
4. ROUTE REMOTE GENERATOR EMERGENCY STOP PB CONDUIT NORTH INTO BUILDING AND OVER TO STORAGE 105.
5. EXISTING FIRE ALARM SYSTEM TO BE REPLACED BY OWNER UNDER A SEPARATE CONTRACT.
6. SEE ONE-LINE ON SHEET ED120 FOR ALL GROUNDING REQUIREMENTS. RUN GROUND CONDUCTORS INSIDE CONDUIT.
7. EMERGENCY GENERATOR MUST BE AT LEAST 20' FROM AN OUTDOOR ELECTRICAL TRANSFORMER, ELECTRICAL METERING, SERVICE EQUIPMENT OR NORMAL POWER DISTRIBUTION EQUIPMENT.
8. GENERAL CONTRACTOR TO PROVIDE CONCRETE PAD UNDER AND 3'-6" IN FRONT OF DISCONNECT, METER AND METER CABINET. VERIFY METERING HAS AT LEAST 3'-6" WORKING CLEARANCE IN ALL DIRECTIONS.
9. MOUNT DISCONNECT, METER AND METER CABINET TO BUILDING. PROVIDE METER SHIELD ABOVE METER PER MG&E REQUIREMENTS.
10. CONDUITS TO ENTER BUILDING BENEATH THE FLOOR AND ELBOW STRAIGHT UP INTO BOTTOM OF PANEL MDH. SAW CUT AND PATCH FLOOR AS REQUIRED.
11. NO NOTE.
12. PROVIDE 2" MINIMUM CONCRETE ENCASUREMENT AROUND SERVICE LATERAL CONDUITS UP TO PANEL MDH.
13. OWNER TO PROVIDE PROVIDE NEW 3/0 GROUND FROM EXISTING PANEL MD1 TO NEW FIRE PROTECTION/WATER SERVICE LOCATION.
14. GENERAL NOTE: LIGHTNING PROTECTION CONTRACTOR TO PROVIDE LIGHTNING PROTECTION ON A DESIGN/BUILD BASIS PER SPECIFICATION SECTION 26 41 0



2 EP - 2nd Floor Electrical Room
1/8" = 1'-0"

City of Madison

Facilities Maintenance
1600 Emil St.
Madison, WI 53713



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

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1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

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Garage West
Power

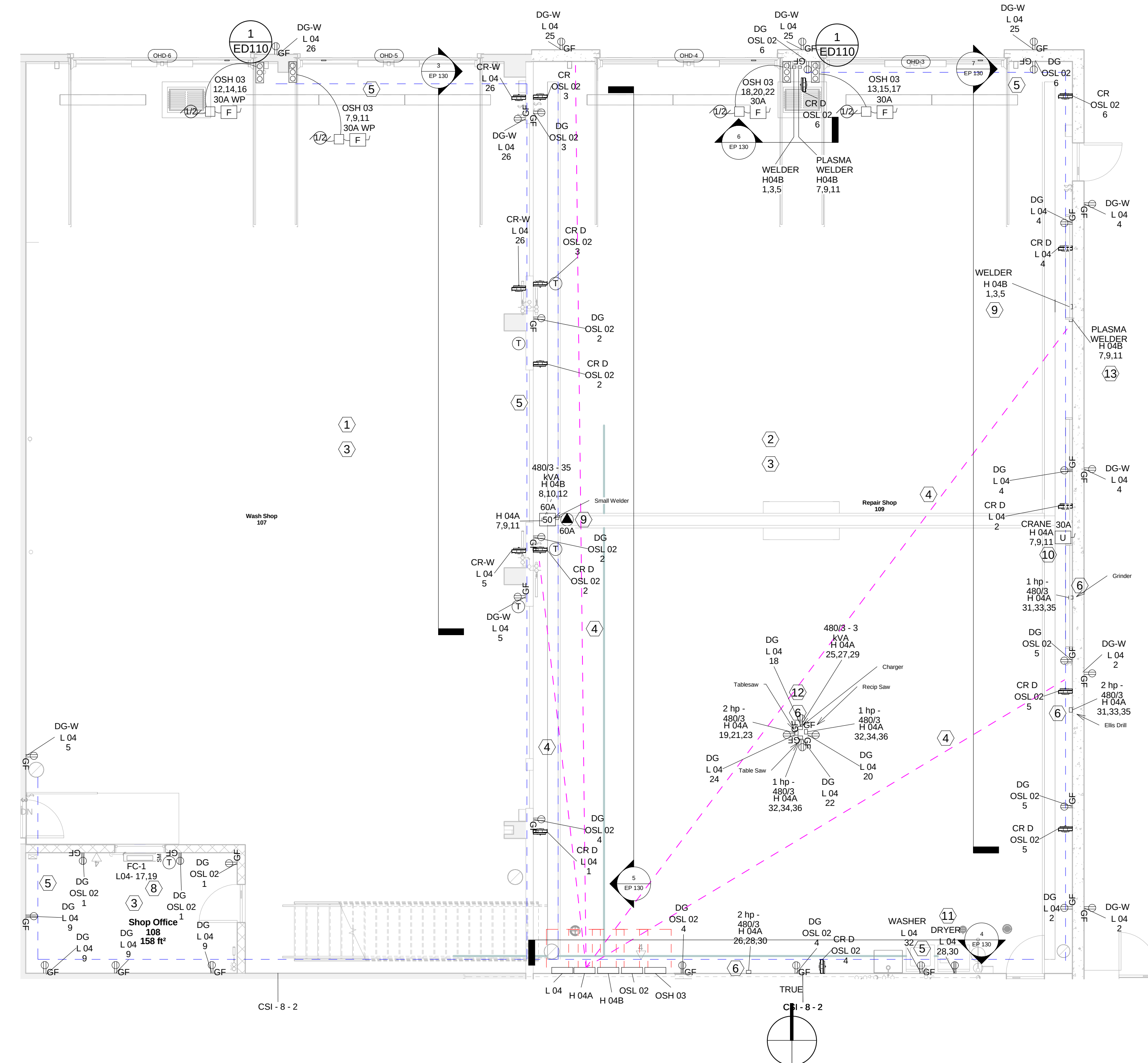
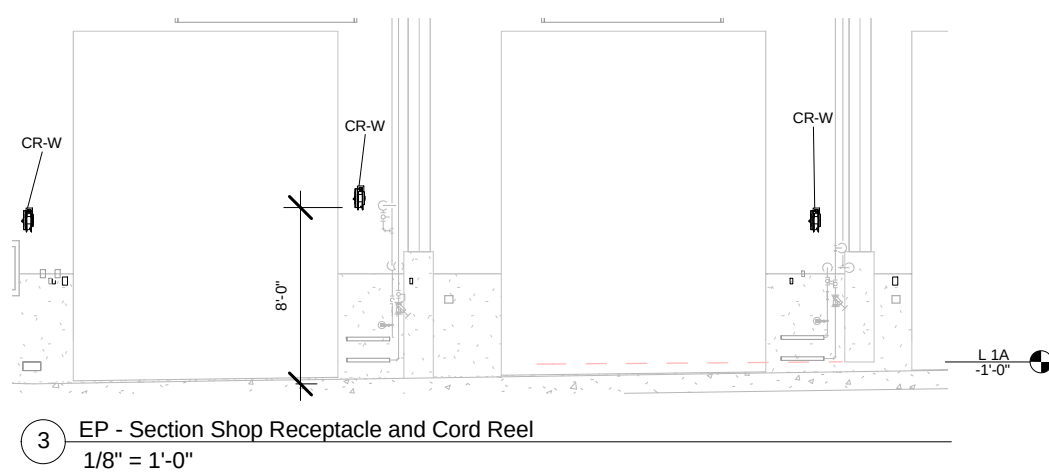
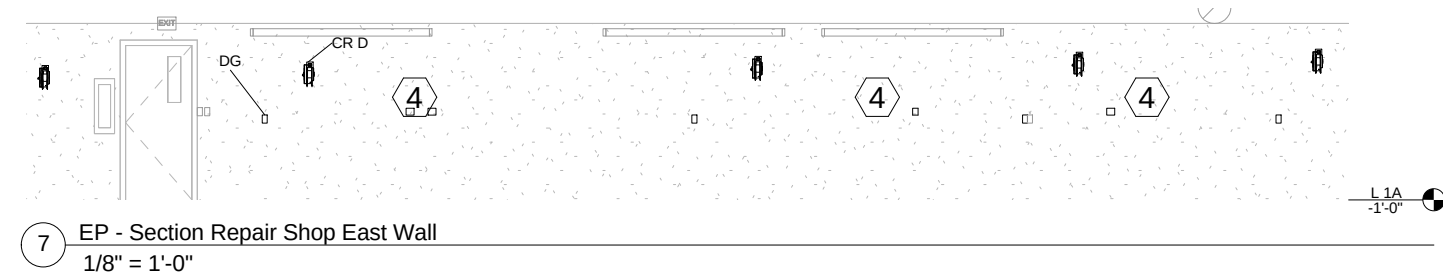
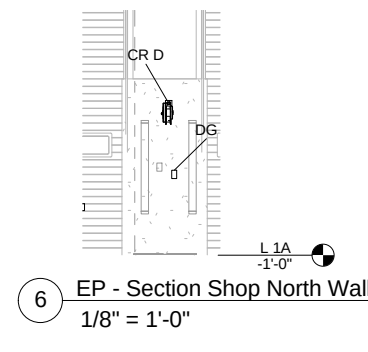
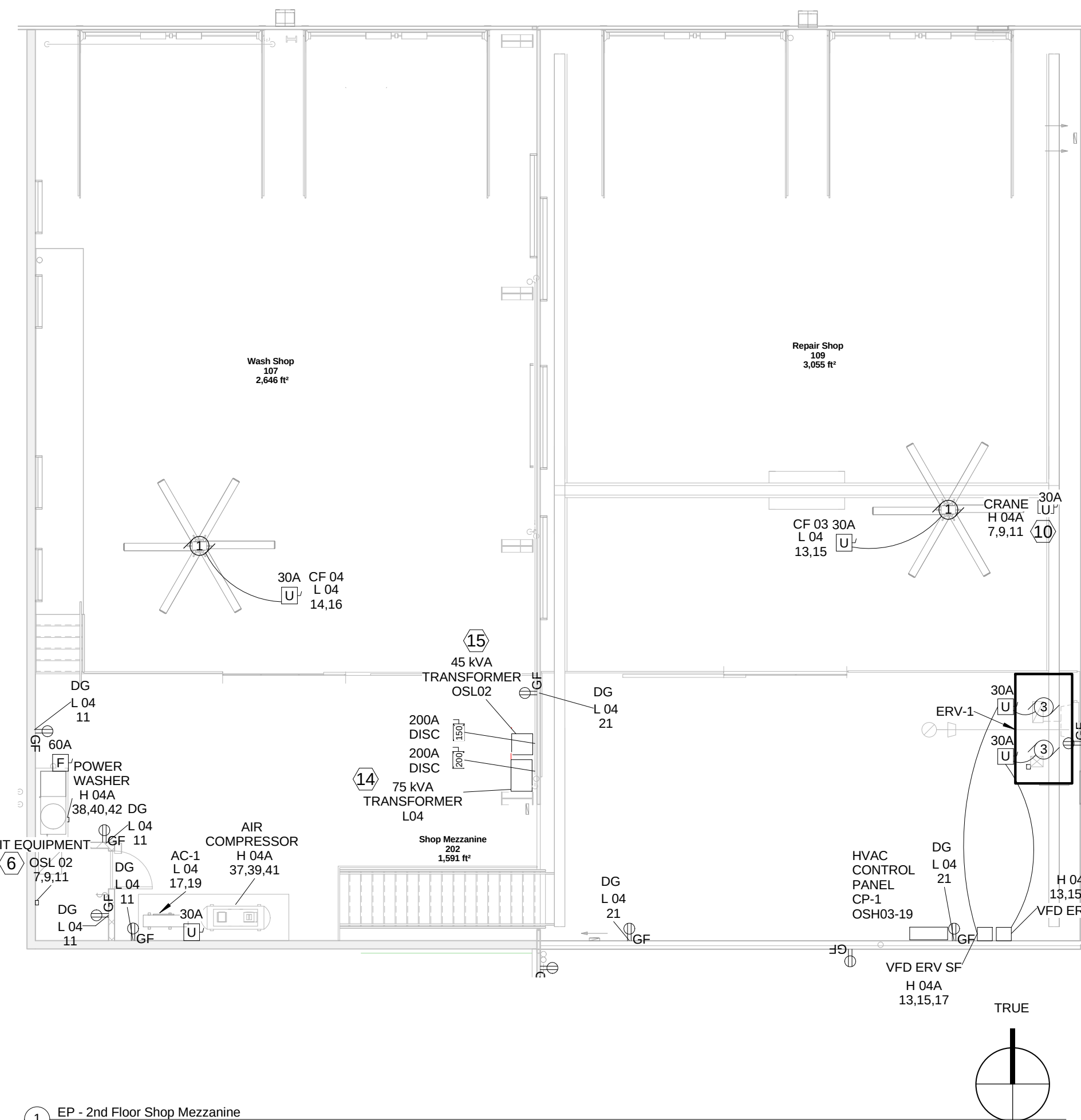
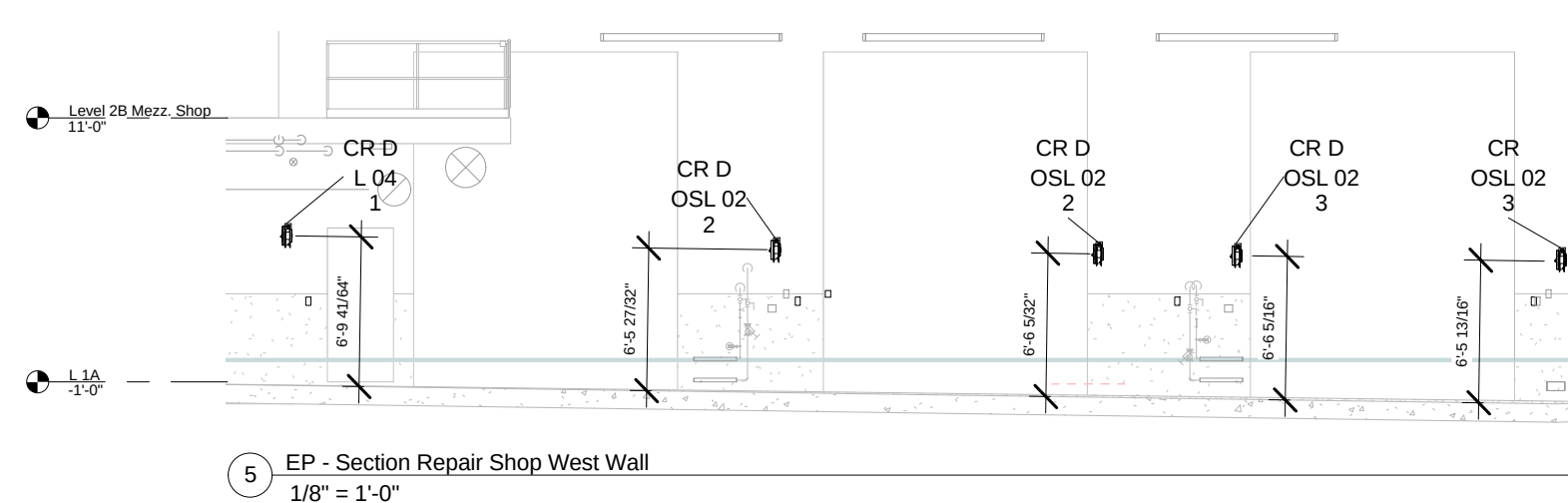
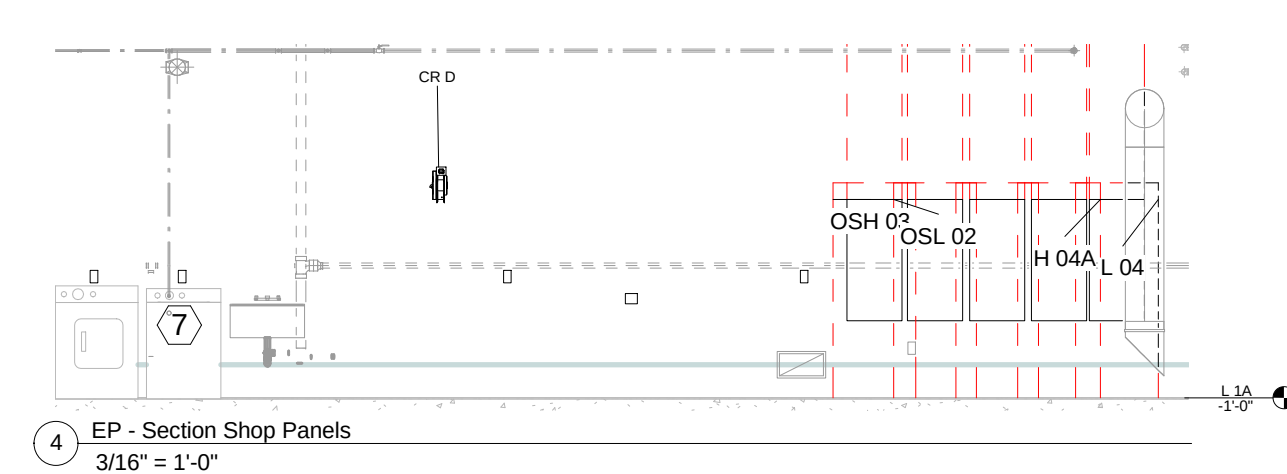
EP 120

Print Date:
11/19/2015 11:22:06 PM

Designed for:
Engineering DivisionEngineering Operations
Building AdditionLocation:
1600 Emil St.
Madison, WI 53713Contract: TBD
Project: 10349
Common Council Approval:Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.comCivil Design:
Eric Dundee, P.E., City of
MadisonLandscaping Design:
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ArchitectsPlumbing Design:
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John Schmidbauer, P.E.,
Kuerny ArchitectsFire Protection Design:
Robert Novak, Kuerny ArchitectsArchitectural Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Shop Power

EP 130

Print Date:
11/19/2015 11:22:27 PM2 EP - 1st Floor Shop
3/16" = 1'-0"3 EP - Section Shop Receptacle and Cord Reel
1/8" = 1'-0"7 EP - Section Repair Shop East Wall
1/8" = 1'-0"6 EP - Section Shop North Wall
1/8" = 1'-0"1 EP - 2nd Floor Shop Mezzanine
1/8" = 1'-0"5 EP - Section Repair Shop West Wall
1/8" = 1'-0"4 EP - Section Shop Panels
3/16" = 1'-0"

SHEET NOTES

- NEMA 6 CLASSIFICATION. INSTALL ALL ELECTRICAL EQUIPMENT PER CODE OR AHJ REQUIREMENTS. ALL RACEWAYS IN WET LOCATION AREAS SHALL BE PVC COATED RIGID OR LIQUID TIGHT.
- PHYSICAL DAMAGE AREA UP TO 10' AFF. INSTALL IN RIGID CONDUIT AND PROTECT ALL EQUIPMENT FROM PHYSICAL DAMAGE.
- NEC 500 CLASS 1, DIVISION 1 LOCATION. INSTALL ALL ELECTRICAL EQUIPMENT PER CODE OR AHJ REQUIREMENTS. UP TO A LEVEL OF 18" AFF, THE REPAIR SHOP AND WASH SHOP ARE CONSIDERED CLASS 1, DIVISION 1 LOCATIONS. PROVIDE EXPLOSION PROOF FITTINGS, SEAL OFFS AND RIGID CONDUIT AS REQUIRED BY CODE. SEALS ARE NOT REQUIRED ON CONDUITS THAT PASS UNBROKEN THRU THE CLASS 1 AREA PER NEC SECTION 511 IF THE CONDUIT EXTENDS MORE THAN 12" ABOVE THE CLASSIFIED AREA.
- INSTALL 2" EMPTY CONDUIT FOR LATER USE. CAP AND SEAL ABOVE FLOOR PER OWNER REQUIREMENTS. COORDINATE WITH OWNER.
- INSTALL UNDERGROUND CONDUIT FOR FEEDER AND BRANCH WIRING. ROUTE TO AVOID CONFLICTS. PROVIDE CONDUCTORS TO A JUNCTION BOX AT A LOCATION DETERMINED BY THE OWNER. OWNER TO TERMINATE WITH A RECEPTACLE OR CONTINUE CONDUIT TO MACHINE.
- COORDINATE LOCATION WITH OWNER.
- FC-1 IS WIRED THRU AC-1 ON MEZZANINE.
- PROVIDE BOX ON WALL FOR WELDER RECEPTACLE. PULL CONDUCTORS TO WELDER BOX. OWNER TO PROVIDE RECEPTACLE AND TERMINATE.
- PROVIDE DISCONNECT AT FLOOR LEVEL AND AT CRANE RAILS FOR OVERHEAD CRANE.
- PROVIDE 120/208, 4 WIRE CONNECTION TO DRYER. DRYER IS CURRENTLY WIRE AS 120/240. CHECK DRYER WIRING AND REWIRE AS 120/208 AS REQUIRED.
- MOUNT JUNCTION BOXES TO COLUMN FOR INDICATED MACHINES.
- PROVIDE BOX ON WALL FOR PLASMA WELDER RECEPTACLE. PULL CONDUCTORS TO PLASMA WELDER BOX. OWNER TO PROVIDE RECEPTACLE AND TERMINATE.
- SUSPEND 75 KVA TRANSFORMER FROM CEILING AT 10' AFF. PROVIDE THREADED ROD AND STRUT AS REQUIRED.
- SUSPEND 45 KVA TRANSFORMER FROM CEILING AT 10' AFF. PROVIDE THREADED ROD AND STRUT AS REQUIRED.



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
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Common Council Approval:

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Schedules and
Details

ED 100

Print Date:
11/19/2015 11:16:08 PM

Interior Lighting Fixture Schedule

Type Mark	Manufacturer	Model	URL	Color	Apparent Load	Voltage	Lamp	Initial Color Temperature	Luminous Flux	Lumen Maintenance 50,000 hrs	Count	OmniClass Number	OmniClass Title
DM-5S-5.3	Cree	PKG-304-5S-DM-04-E-UL-WH-350-ML	www.Cree.com	white	46 VA	277 V	LED	5700 K	5302 lm	0.92	4	23.80.70.11.11	General Luminaires, Non Directional
DM-5S-7.4	Cree	PKG-304-5S-DM-04-E-UL-WH-525-ML	www.Cree.com	white	71 VA	277 V	LED	5700 K	7422 lm	0.92	4	23.80.70.11.11	General Luminaires, Non Directional
EX	Lithonia	LQM-S-3-R-120/277-ELN-SD	www.Lithonia.com		3 VA	277 V	LED				8	23.35.47.15.11	
EX-EM-EXT	Lithonia	LHQ-M-LED-R-SD-HO-ELA-T-QWP-L0309-SD	www.Lithonia.com		3 VA	277 V	LED				1	23.35.47.15.11	
FLD-4-4-8	Cree	FLD-OL-N6-D4-07-D-UL-SV-700	www.Cree.com	Silver	66 VA	277 V	LED	5700 K	4846 lm	0.9	12		
FLD-8-8-6	Cree	FLD-OL-N6-D8-07-D-UL-SV-700	www.Cree.com	Silver	126 VA	277 V	LED	5700 K	9692 lm	0.9	8		
PD-5S-2.6	Cree	PKG-EDG-5S-PD-02-E-UL-WH-350	www.Cree.com	white	25 VA	277 V	LED	5700 K	2595 lm	0.92	4	23.80.70.11.11	General Luminaires, Non Directional
PD-5S-4.4	Cree	PKG-EDG-5S-PD-02-E-UL-WH-350	www.Cree.com	white	50 VA	277 V	LED	5700 K	4437 lm	0.92	43	23.80.70.11.11	General Luminaires, Non Directional
PD-5S-7.4	Cree	PKG-304-5S-PD-04-E-UL-WH-525-ML	www.Cree.com	white	71 VA	277 V	LED	5700 K	7422 lm	0.92	24	23.80.70.11.11	General Luminaires, Non Directional
PD-5S-11	Cree	PKG-304-5S-PD-06-E-UL-WH-525-ML	www.Cree.com	white	101 VA	277 V	LED	5700 K	11046 lm	0.92	37	23.80.70.11.11	General Luminaires, Non Directional

TYPICAL:

IN ROOMS WITH MULTIPLE OCCUPANCY SENSORS, THE SENSORS SHALL BE WIRED TO A COMMON POWER PACK OR POWER PACKS AS REQUIRED UNLESS SHOWN OR NOTED OTHERWISE. KEEP ULTRASONIC AND MULTI TECHNOLOGY SENSORS AT LEAST 6" FROM HVAC DUCT OPENINGS. VERIFY OCCUPANCY SENSOR LOCATIONS WITH OWNER AND ARCHITECT FOR ANY FUTURE SHELVING OR OTHER ITEMS THAT MAY BLOCK THE SENSING RANGE. "OR EQUAL" MEANS SENSORS AND POWER PACKS WITH THE SAME SENSING RANGE, FUNCTIONS AND NUMBER OF SENSORS PER POWER PACK AS SPECIFIED ABOVE.

OCCUPANCY TIME DELAY

SET ALL OFFICE, HALL, SMALL STORAGE, AND PARTS OCCUPANCY SENSOR TIME DELAYS TO 5 MINUTES. SET ALL VEHICLE STORAGE, AND SHOP OCCUPANCY SENSOR TIME DELAYS TO 10 MINUTES.

Lighting Sensor Schedule

Type Mark	Description	Manufacturer	Model	Comments	Count
H	IR sensor, 28" range at 9' height, Photosensor	Sensorswitch	SBOR-6-ODP-P-WH		5
S	IR sensor, 12" range at 9' height, Photosensor	Sensorswitch	CMR-9-P-LT		4
W	IR sensor, 28" range at 9' height, Photosensor	Sensorswitch	CMR-10-P-LT		16

GENERAL NOTES

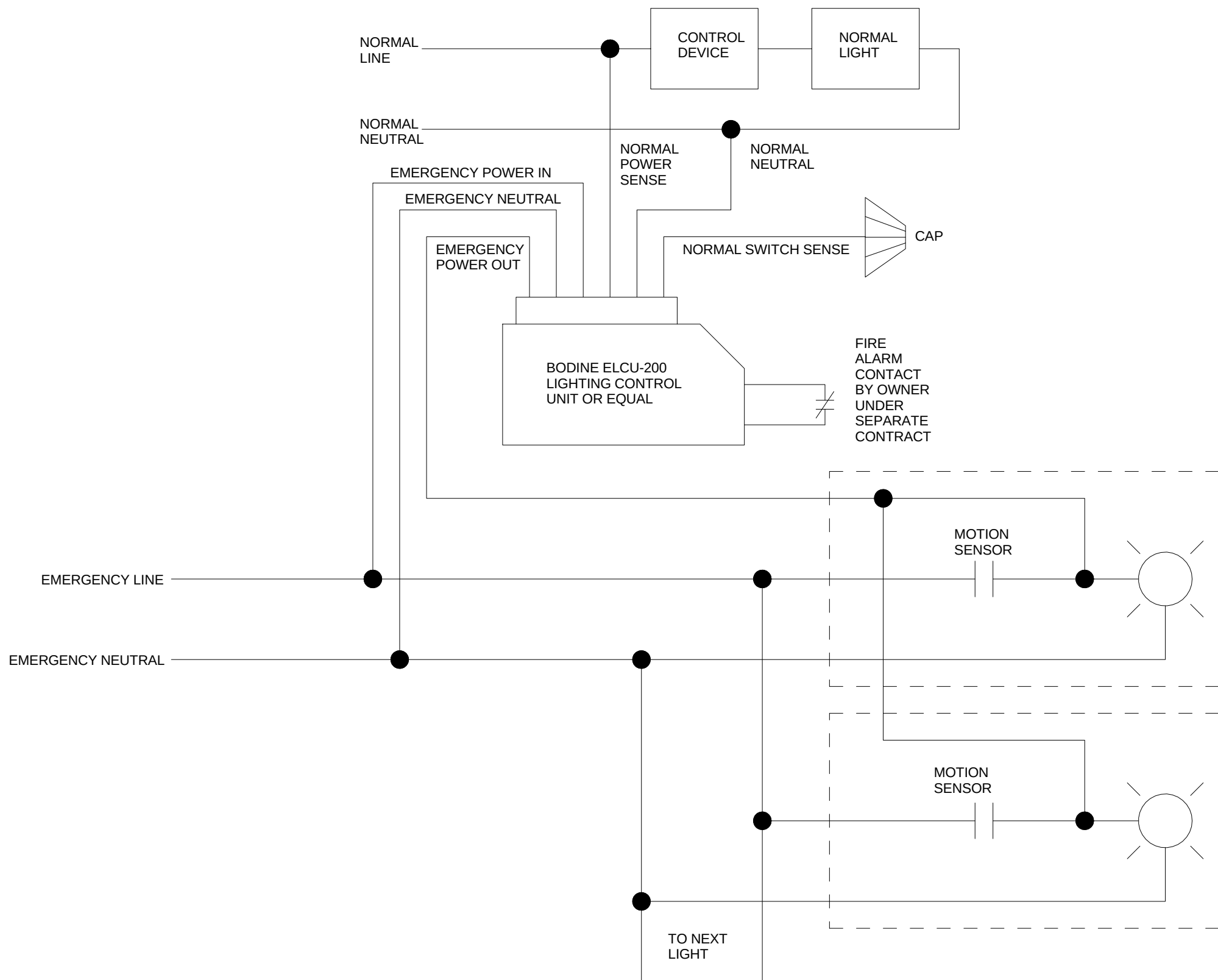
- EMERGENCY LIGHTING CIRCUITS SHALL BE RUN IN SEPARATE CONDUIT FOR EMERGENCY LIGHTING ONLY. ALL EMERGENCY CIRCUITS WILL HAVE SEPARATE NEUTRAL CONDUCTORS.
- VERIFY ALL EQUIPMENT, RECEPTACLE AND SWITCH LOCATIONS WITH OWNER.
- ELECTRICAL CONTRACTOR TO PROVIDE A COMPLETE GENERATOR SYSTEM.
- ALL DEVICES SHALL BE 20 AMP COMMERCIAL SPECIFICATION GRADE
- CONDUIT WILL BE RECESSED IN FINISHED AREAS AND AT ALL OTHER AREAS WITH BLOCK WALLS. CONDUIT IN MECHANICAL ROOMS, WELD SHOP, MEZZANINE AND VEHICLE STORAGE AREAS SHALL BE SURFACE MOUNTED ON PRECAST/CONCRETE WALLS AND METAL SKIN STRUCTURE WALLS AND RECESSED IN BLOCK WALLS. ALL CONDUIT SHALL BE RECESSED IN DRYWALL OR BLOCK WALLS. ELIMINATE SURFACE CONDUITS PASSING WINDOWS BY RUNNING AROUND GLASS OR BY RUNNING CONDUITS CLOSE TO COLUMNS. NO CONDUITS WILL BE RUN AT MEZZANINE ALONG THE MEZZANINE RAIL EDGE OR UP FROM THE MEZZANINE RAILING TO THE JOISTS.
- ALL BOXES TO BE WELDED 4" SQUARE MINIMUM.
- ALL CIRCUITS TO HAVE A MAXIMUM VOLTAGE DROP OF 3%, 120V CIRCUITS: 0-50FT, #12; 51-100FT, #10; 101-150, #8; 151FT AND UP, SIZE LESS THAN 3%. LIGHTING CIRCUITS ABOVE 200V: 0-100FT, #12; 101-200FT, #10; 201-300FT, #8; 300FT AND UP, SIZE LESS THAN 3%. POWER: SIZE LESS THAN 3%. EC TO LABEL ALL RECEPTACLES AND DISCONNECTS WITH WITH LOAD DESCRIPTION AND CIRCUIT NUMBERS. LABEL FRONT OF RECEPTACLE COVER PLATE WITH CIRCUIT NUMBER. USE BROTHER OR KROY OR EQUAL, SELF LAMINATING ADHESIVE LABELS. IN SHOP AREAS, USE BLACK LETTERS ON WHITE BACKGROUND. IN FINISHED AREAS, USE BLACK LETTERS ON CLEAR BACKGROUND. DO NOT LABEL BY HAND. ALL PANELS AND TRANSFORMERS SHALL HAVE LABELS. INCLUDE CIRCUIT NUMBER FOR THE FEED TO THE PANEL OR TRANSFORMER.
- ALL CONDUCTORS SHALL BE COPPER (#12 MINIMUM).
- SECURE ALL CHAIN, CABLE OR PENDANT HUNG LIGHTS NEAR HVAC DUCT OPENINGS AS REQUIRED TO PREVENT MOVEMENT.
- RECEPTACLES ON EMERGENCY POWER SHALL BE RED IN COLOR.
- MAINTAIN FIRE RATING AT ALL PENETRATIONS. CAULK CONDUITS AT ALL WALL AND ROOF PENETRATIONS.
- OCCUPANCY SENSOR LOW VOLTAGE WIRING SHALL BE RUN IN CONDUIT.
- THE WORD "PROVIDE" ON THE DRAWINGS AND SPECIFICATIONS MEANS TO PROVIDE AND INSTALL UNLESS NOTED OTHERWISE.
- ALL NORMAL POWER AND EMERGENCY POWER BRANCH CIRCUITS SHALL HAVE SEPARATE NEUTRALS. NO MULTIWIRE BRANCH CIRCUITS ARE ALLOWED.
- CONDUIT SHALL BE COLOR CODED AS FOLLOWS:
NORMAL POWER 277/480Y - GALVANIZED. ALL BOX COVERS TO BE LABELED "277/480Y".
NORMAL POWER 120/208Y - GALVANIZED. ALL BOX COVERS TO BE LABELED "120/208Y".
FIRE ALARM - RED
SOLAR POWER SYSTEM - ORANGE
EMERGENCY - GREEN
- ALL CONDUCTORS SHALL BE LABELED BY PANEL AND CIRCUIT PER SPECIFICATIONS.
- CONDUCTOR INSULATION COLOR SHALL BE PER SPECIFICATIONS.
- ALL UNDER FLOOR CONDUITS SHALL BE AT LEAST 18" BELOW FINISHED FLOOR SLAB.

Interior Lighting Levels

Number	Name	Area	Lighting Calculation Workplane	IECC Space Type	Floor Reflectance	Wall Reflectance	Ceiling Reflectance	Max. allowed Power Density	Actual Lighting Power Density	Actual Lighting Load	Min. avg. Illumination	Average Estimated Illumination	% of Code Power Allowance used
100	Garage West	18,416 ft²	0"	Automotive Repair	15.00%	50.00%	60.00%	0.70 W/ft²	0 W/ft²		30 fc	0 fc	0%
101	Storage Surveyor	309 ft²	2'-6"	Storage	15.00%	50.00%	70.00%	0.80 W/ft²	0 W/ft²		10 fc	0 fc	0%
102	Electrical Room	156 ft²	2'-6"	Electrical / Mechanical	15.00%	40.00%	70.00%	1.10 W/ft²	0 W/ft²		10 fc	0 fc	0%
103	Storage Landfill	293 ft²	2'-6"	Storage	15.00%	50.00%	70.00%	0.80 W/ft²	0 W/ft²		10 fc	0 fc	0%
104	Garage East	18,187 ft²	0"	Automotive Repair	15.00%	50.00%	70.00%	0.70 W/ft²	0 W/ft²		30 fc	0 fc	0%
105	Storage 1st Floor	544 ft²	2'-6"	Storage	15.00%	50.00%	70.00%	0.80 W/ft²	0.37 W/ft²	0.2 kVA	10 fc	18 fc	46%
106	Facilities Shop	522 ft²	2'-6"	Workshop	15.00%	50.00%	70.00%	1.60 W/ft²	0.82 W/ft²	0.43 kVA	30 fc	46 fc	51%
107	Wash Shop	2,646 ft²	2'-6"	Automotive Repair	15.00%	50.00%	70.00%	0.70 W/ft²	0.71 W/ft²	1.89 kVA	30 fc	31 fc	102%
108	Shop Office	158 ft²	2'-6"	Office - enclosed	20.00%	60.00%	70.00%	1.10 W/ft²	0.63 W/ft²	0.1 kVA	30 fc	32 fc	57%
109	Repair Shop	3,055 ft²	2'-6"	Workshop	20.00%	50.00%	75.00%	1.60 W/ft²	0.88 W/ft²	2.7 kVA	30 fc	40 fc	55%
201	Electrical Room	468 ft²	2'-6"	Electrical / Mechanical	15.00%	40.00%	70.00%	1.10 W/ft²	0 W/ft²		10 fc	0 fc	0%
202	Shop Mezzanine	1,591 ft²	0"	Warehouse, bulky	20.00%	50.00%	70.00%	0.60 W/ft²	0.35 W/ft²	0.56 kVA	10 fc	12 fc	58%
203	IT Closet	42 ft²	2'-6"	Electical / Mechanical	20.00%	50.00%	70.00%	1.10 W/ft²	1.19 W/ft²	0.05 kVA	10 fc	30 fc	108%
204	Garage Mezzanine West	2,900 ft²	2'-6"	Warehouse, bulky	20.00%	60.00%	80.00%	0.60 W/ft²	0.17 W/ft²	0.51 kVA	10 fc	10 fc	29%
205	Garage Mezzanine East	2,521 ft²	2'-6"	Warehouse, bulky	20.00%	60.00%	80.00%	0.60 W/ft²	0.18 W/ft²	0.46 kVA	10 fc	10 fc	30%
206	Storage 2nd Floor	566 ft²	0"	Storage	15.00%	50.00%	70.00%	0.80 W/ft²	0.35 W/ft²	0.2 kVA	10 fc	15 fc	44%
207	Garage West Mezzanine	333 ft²	2'-6"	(none)	15.00%	40.00%	70.00%	0.80 W/ft²	0 W/ft²			0 fc	

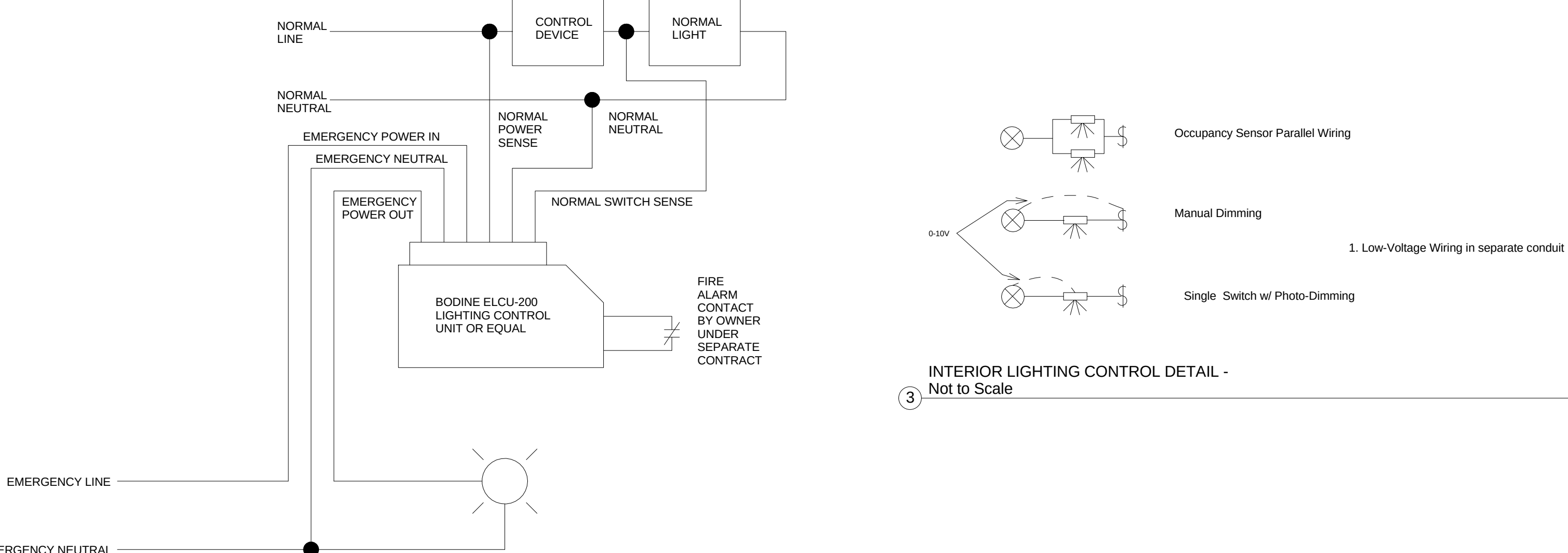
Exterior Lighting Fixture Schedule

Type Mark	Manufacturer	Model	URL	Apparent Load	Color	Voltage	Power Factor	Lamp	Initial Color Temperature	Luminous Flux	Lumen Maintenance 50,000 hrs	Count	OmniClass Number	OmniClass Title
OW-IV - 31	Cree	SEC-EDG-4M-WM-02-E-BK-525-ML	www.Cree.com	37 VA	black	277 V	0.9	LED	5700 K	3108 lm	0.92	6	23.35.47.11.15.19	
OW-IV - 62	Cree	SEC-EDG-4M-WM-04-E-BK-525-ML	www.Cree.com	70 VA	black	277 V	0.9	LED	5700 K	6216 lm	0.92	1	23.35.47.11.15.19	
OW-IV - 92	Cree	SEC-EDG-4M-WM-06-E-BK-525-ML	www.Cree.com	101 VA	black	277 V	0.9	LED	5700 K	9218 lm	0.92	1	23.35.47.11.15.19	



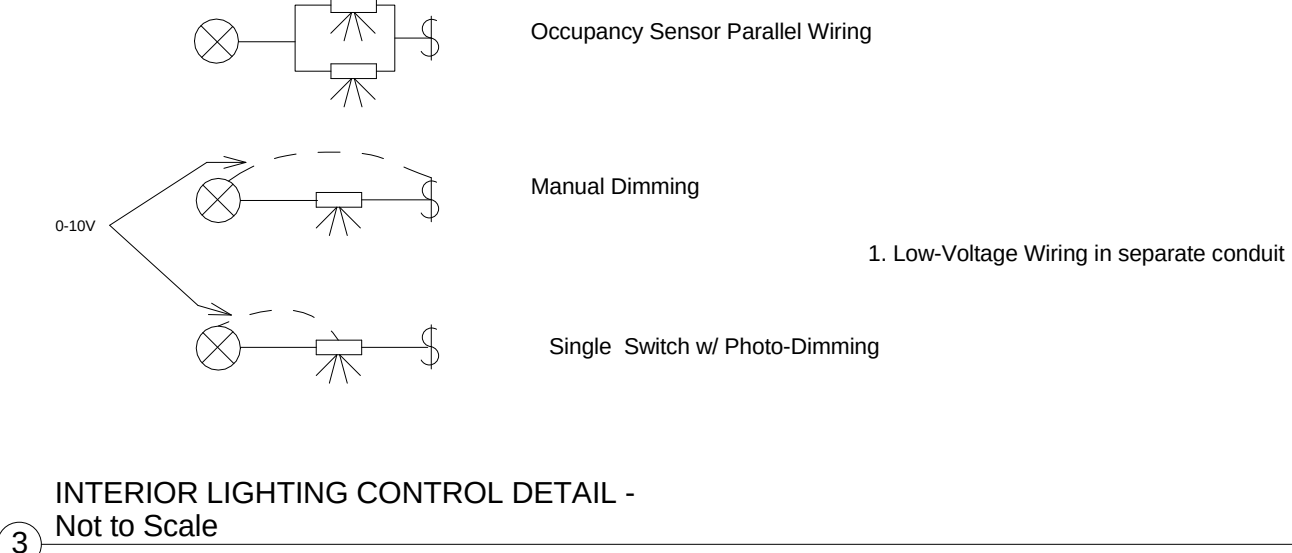
EMERGENCY HIGH BAY LIGHTING
CONTROL DETAIL - Not to Scale

1



EMERGENCY SMALL ROOM LIGHTING
CONTROL DETAIL - Not to Scale

2



INTERIOR LIGHTING CONTROL DETAIL -
Not to Scale

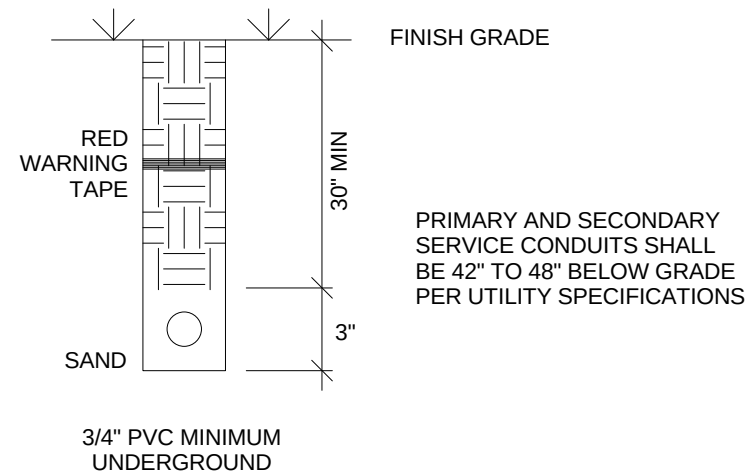
3

VOICEDATA: WALL, FLOOR
EC TO INSTALL 3/4" CONDUIT STUBBED ABOVE WALL OR OTHER ACCESSIBLE AREA. EXTEND CONDUIT UP TO JOISTS IN MECHANICAL BAY AREAS. 4" SQUARE STEEL BOX WITH 1 GANG PLASTER RING UNLESS NOTED OTHERWISE. ELEC. CONTRACTOR TO USE CONDUIT AT SURFACE MOUNT LOCATIONS (SHOP AREAS, MECHANICAL ROOMS, VEHICLE AREAS) AND WHERE CONCEALED IN WALLS AND STUBBED ABOVE CEILING GRID (OFFICE AREAS). SYSTEMS CONTRACTOR TO PULL CABLE, TERMINATE, AND PROVIDE JACKS AND COVER PLATES. SEE ELECTRICAL DRAWINGS FOR VOICEDATA LOCATIONS. MOUNT 18" AFF UNLESS NOTED OTHERWISE. "W" INDICATES WALL PHONE AT 54". VERIFY MOUNTING HEIGHT WITH SYSTEMS CONTRACTOR.

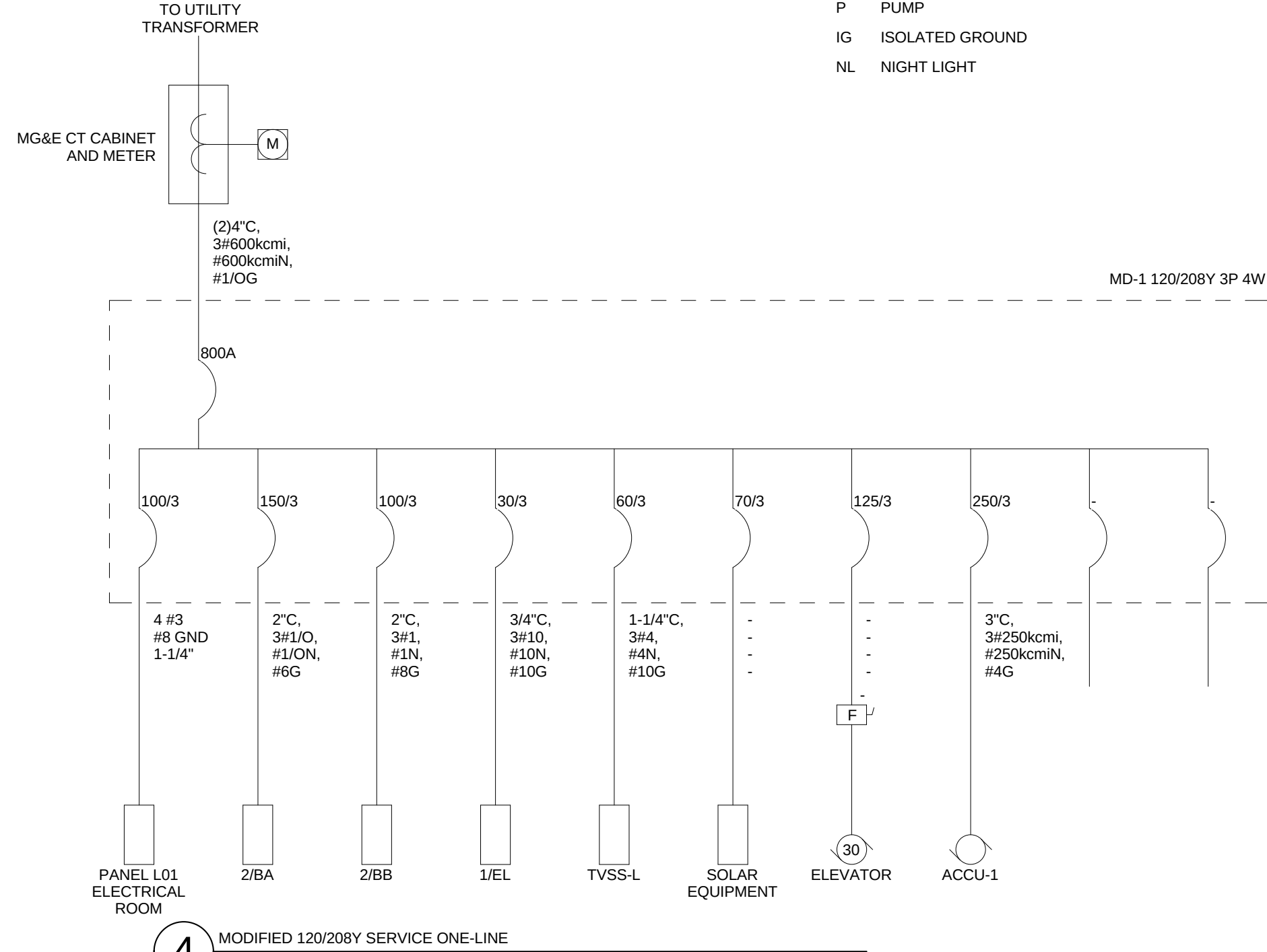
TV: WALL
EC TO INSTALL 3/4" CONDUIT STUBBED ABOVE WALL OR OTHER ACCESSIBLE AREA. 4" SQUARE STEEL BOX WITH 1 GANG PLASTER RING UNLESS NOTED OTHERWISE. ELECTRICAL CONTRACTOR TO USE CONDUIT AT SURFACE MOUNT LOCATIONS AND WHERE CONCEALED IN WALLS AND STUBBED ABOVE CEILING GRID (OFFICE AREAS). SYSTEMS CONTRACTOR TO PULL CABLE, TERMINATE, AND PROVIDE JACKS AND COVER PLATES. SEE ELECTRICAL DRAWINGS FOR TV LOCATIONS.

C CARD READER:
EC TO INSTALL 1/2" CONDUIT STUBBED ABOVE WALL OR OTHER ACCESSIBLE AREA. EXTEND CONDUITS UP TO JOISTS IN HIGH BAY AREAS. PROVIDE BOX WITH PLASTER RING OR SURFACE COVER AS REQUIRED. ENT MAY BE USED WHERE CONCEALED PER CODE. ALARM CONTRACTOR TO INSTALL CARD READER AND PULL CABLE AND TERMINATE. SEE SYSTEMS DRAWINGS FOR LOCATIONS. VERIFY MOUNTING HEIGHT.

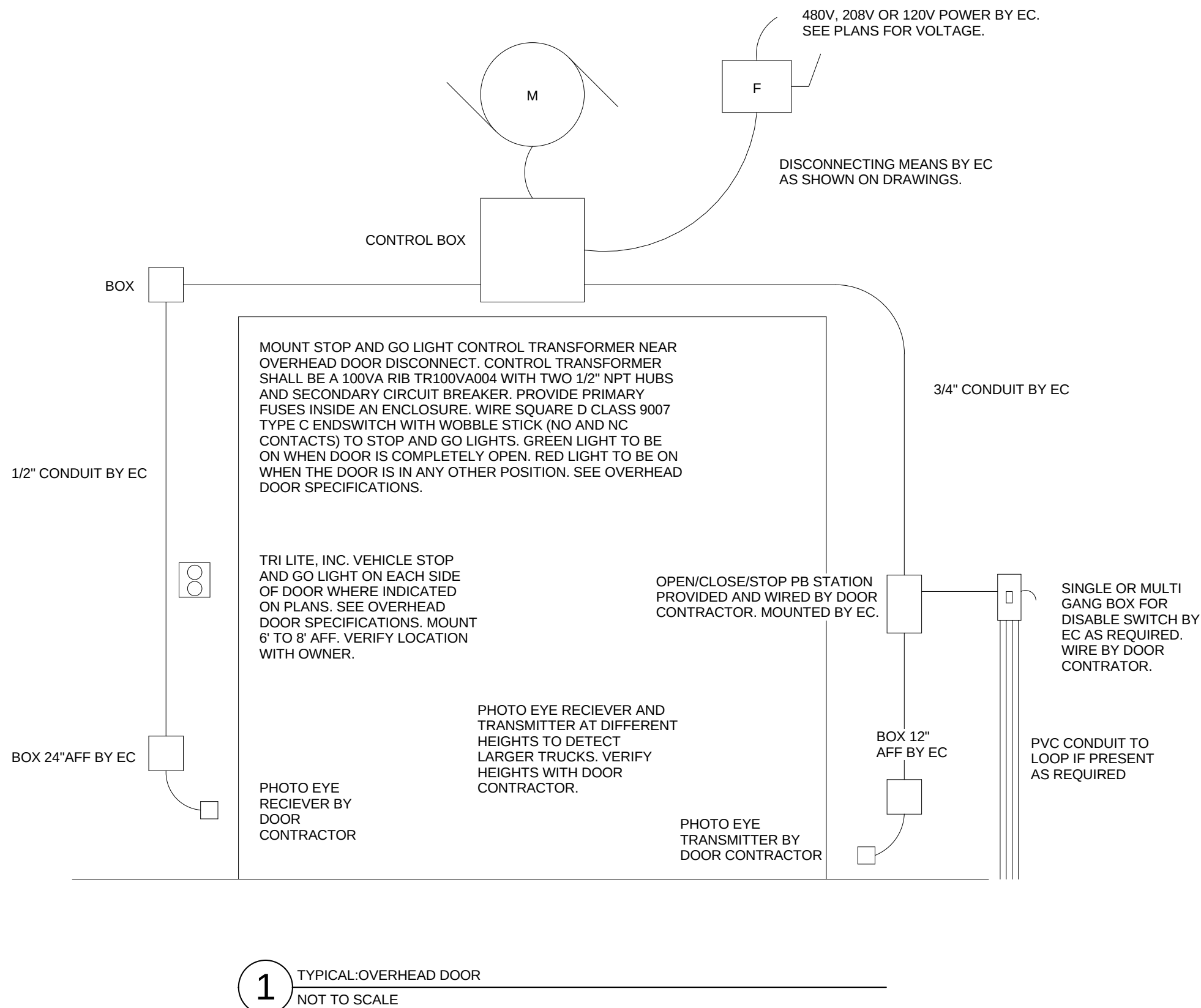
W WI-FI:
PROVIDE BOX FOR WI-FI. MOUNT BOX TO BOTTOM OF JOISTS IN HIGH BAY ARAS OR JUST ABOVE BOTTOM OF JOISTS IN CEILING GRID IN OFFICE AREAS. UNIT DOES NOT REQUIRE POWER. VERIFY LOCATIONS WITH SYSTEMS CONTRACTOR. LOW VOLTAGE WIRING BY SYSTEMS CONTRACTOR.



2 TYPICAL TRENCHING DETAIL



S2 20A TWO POLE SWITCH - TOP OF BOX 3' 10" AFF
S3 20A THREE WAY SWITCH - TOP OF BOX 3' 10" AFF
SD 20A DIMMER SWITCH - TOP OF BOX 3' 10" AFF
SL 20A LIGHTED SWITCH - LIGHT ON W/LOAD - TOP 3' 10" AFF
SL3 20A THREE THREE WAY SWITCH - LIGHT ON W/LOAD - TOP 3' 10" AFF
C SW COMMERCIAL 30 MINUTE ELECTRONIC TIMER SWITCH INTERMATIC EI205 SERIES OR EQUAL
SWT COMMERCIAL 12 HOUR SPRING WOUND TIMER SWITCH INTERMATIC FD2H SERIES OR EQUAL
⌚ 20A DUPLEX RECEPTACLE - NEMA 5-20R, OFFICE TOP OF BOX 18" AFF, SHOP TOP OF BOX 3' 10" AFF UNLESS NOTED OTHERWISE.
C COUNTER MOUNT 6" ABOVE COUNTER BACKSPLASH
B BELOW COUNTER
DG DUPLEX GFCI
DP-W WEATHER PROOF DUPLEX GFCI WITH CAST ALUMINUM IN-USE COVER
TV 1' BELOW CEILING
⌚ 20A FLOOR DUPLEX RECEPTACLE NEMA 5-20R
⌚ 208V, 1 PHASE RECEPTACLE 18" AFF OFFICE, TOP OF BOX 48" AFF SHOP
⌚ 20A TWO DUPLEX RECEPTACLES NEMA 5-20R, TOP OF BOX 48" AFF SHOP, VENDING
CR CORD REEL
CR D CORD REEL DRY LOCATION
CR-W CORD REEL WET LOCATION
SM MANUAL MOTOR SWITCH PADLOCKABLE IN THE OFF POSITION
⚡ 208V RECEPTACLE WITH FUSIBLE DISCONNECT - HEIGHT AS INDICATED
▲ 480V RECEPTACLE WITH FUSIBLE DISCONNECT - HEIGHT AS INDICATED
EC ELECTRICAL CONTRACTOR
MC MECHANICAL CONTRACTOR
GC GENERAL CONTRACTOR
WP WEATHER PROOF
C51 MOTOR COMBINATION STARTER, FUSIBLE HAND-OFF-AUTO SEL. SW., PILOT LIGHT, STARTER SIZE INDICATED. UNFUSED OVERLOADS. TOP OF HANDLE NO MORE THAN 54" AFF
50 AMP 30 AMP UNFUSED DISCONNECT - TOP OF HANDLE NO MORE THAN 54" AFF
50 AMP 60 AMP FUSED DISCONNECT WITH 50 AMP FUSES - TOP OF HANDLE NO MORE THAN 54" AFF
P POWER BOX
D DATA BOX
SC LOW VOLTAGE SPEED CONTROL SWITCH
60A INTERLOCKED DISCONNECT/RECEPTACLE
CP1 CONTROL PANEL
1/2 1/2 HP MOTOR
EWC ELECTRIC WATER COOLER
VIF VERIFY IN FIELD
EWH ELECTRIC WATER HEATER
EBB ELECTRIC BASEBOARD HEATER
RH RADIANT HEATERS
UH UNIT HEATER
FC FAN COIL
MUA MAKE UP AIR UNIT
P PUMP
IG ISOLATED GROUND
NL NIGHT LIGHT



1 TYPICAL OVERHEAD DOOR
NOT TO SCALE

(LC) LIGHTING CONTRACTOR
 (P) PHOTOCELL
 (TC) TIME CLOCK
 (R) RELAY
 (F) WATER FLOW SWITCH
 (T) TAMPER SWITCH

SF FAN SPEED CONTROL SWITCH - TOP 48" AFF PROVIDE BOX AND 1/2" CONDUIT TO ABOVE BOTTOM OF JOIST IN HIGH BAY AREAS OR ABOVE CEILING GRID IN OFFICE AREAS IN LOW BAY SHOP AREAS,
 (S) CONDUIT SHALL BE RUN FROM THE THERMOSTAT TO THE HVAC EQUIPMENT. THERMOSTAT SENSOR
 AND LOW VOLTAGE WIRING BY HVAC CONTRACTOR. PROVIDE BOX AND 1/2" CONDUIT TO ABOVE
 (PR) BOTTOM OF JOIST IN HIGH BAY AREAS OR ABOVE CEILING GRID IN OFFICE AREAS. IN LOW BAY SHOP
 AREAS, CONDUIT SHALL BE RUN FROM THE PRESSURE SENSOR TO THE HVAC EQUIPMENT. PRESSURE
 SENSOR AND LOW VOLTAGE WIRING BY HVAC CONTRACTOR.

CP PROVIDE BOX (IF NEEDED) AND 3/4" CONDUIT UP TO CEILING FOR MUA CONTROL PANEL. LOW VOLTAGE WIRING BY HVAC CONTRACTOR.

EX EXPLOSION PROOF

EMERGENCY LIGHTING CONTROL UNIT WATTSTOPPER ELCU-200 OR EQUAL

ELECTRICAL CONTRACTOR TO PROVIDE POWER TO OVERHEAD DOOR BOXES (FOR PHOTO EYES) AND MOUNT PUSH BUTTON STATION. ELECTRICAL CONTRACTOR WILL ALSO PROVIDE CONDUIT FROM OVERHEAD DOOR CONTROL BOX TO PUSH BUTTON STATIONS AND BOXES. A SINGLE POLE LIGHT SWITCH IS ALSO REQUIRED TO DISABLE THE OVERHEAD DOOR. ELECTRICAL CONTRACTOR TO PROVIDE SWITCH AND LABEL "DISABLE OVERHEAD DOOR".

SOME DOORS REQUIRE A LOOP DETECTOR TO SENSE VEHICLES APPROACHING (SEE PLANS). PROVIDE A PVC CONDUIT FROM A BOX INSIDE THE BUILDING TO THE LOOP. VERIFY LOCATION WITH DOOR CONTRACTOR.

DOOR CONTRACTOR TO PROVIDE AND MOUNT MOTOR AND PHOTO EYES. DOOR CONTRACTOR TO PROVIDE PUSH BUTTON TO EC TO MOUNT. DOOR CONTRACTOR TO WIRE PHOTO EYES AND PUSH BUTTON STATION. DOOR CONTRACTOR TO WIRE DISABLE SWITCH. DOOR CONTRACTOR TO WIRE LOOP DETECTOR(S) IF PRESENT.

480V, 208V OR 120V POWER BY EC
SEE PLANS FOR VOLTAGE.

DISCONNECTING MEANS B
AS SHOWN ON DRAWINGS.

MOUNT STOP AND GO LIGHT CONTROL TRANSFORMER NEAR OVERHEAD DOOR DISCONNECT. CONTROL TRANSFORMER SHALL BE A 100VA RIB TR100VA004 WITH TWO 1/2" NPT HUBS AND SECONDARY CIRCUIT BREAKER. PROVIDE PRIMARY FUSES INSIDE AN ENCLOSURE. WIRE SQUARE D CLASS 9007 TYPE C END SWITCH WITH WOBBLE STICK (NO AND NC CONTACTS) TO STOP AND GO LIGHTS. GREEN LIGHT TO BE ON WHEN DOOR IS COMPLETELY OPEN. RED LIGHT TO BE ON WHEN THE DOOR IS IN ANY OTHER POSITION. SEE OVERHEAD DOOR SPECIFICATIONS.

TRI LITE, INC. VEHICLE STOP
AND GO LIGHT ON EACH SIDE
OF DOOR WHERE INDICATED
ON PLANS. SEE OVERHEAD
DOOR SPECIFICATIONS. MOUNT
6' TO 8' AFF. VERIFY LOCATION
WITH OWNER.

OPEN/CLOSE/STOP PB STATION
PROVIDED AND WIRED BY DOOR
CONTRACTOR. MOUNTED BY EC.

PHOTO EYE RECIEVER AND TRANSMITTER AT DIFFERENT HEIGHTS TO DETECT LARGER TRUCKS. VERIFY HEIGHTS WITH DOOR CONTRACTOR.

PHOTO EYE
TRANSMITTER BY
DOOR CONTRACTOR

SINGLE OR MULTI
GANG BOX FOR
DISABLE SWITCH BY
EC AS REQUIRED.
WIRE BY DOOR
CONTRACTOR.

VC CONDUIT T
OP IF PRESE
S REQUIRED

The diagram illustrates the electrical wiring for a fire alarm system. It features two input boxes at the top: 'TYPICAL OF 4 FLOW SWITCHES' and 'TYPICAL OF 6 TAMPER SWITCHES'. The flow switch box contains two parallel switch symbols. The tamper switch box contains two parallel switch symbols. A 120V power source is connected to the flow switch box. Wires from both switch boxes lead to a central junction point. From this junction, one wire goes to a 'TO FIRE ALARM' terminal, and another wire goes to a 'SPRINKLER BELL' (represented by a circle) and a 'SPRINKLER STROBE' (represented by a rectangle). A neutral line 'N' is also shown at the bottom.

120V

TYPICAL OF 4 FLOW SWITCHES

TO FIRE ALARM

TYPICAL OF 6 TAMPER SWITCHES

TO FIRE ALARM

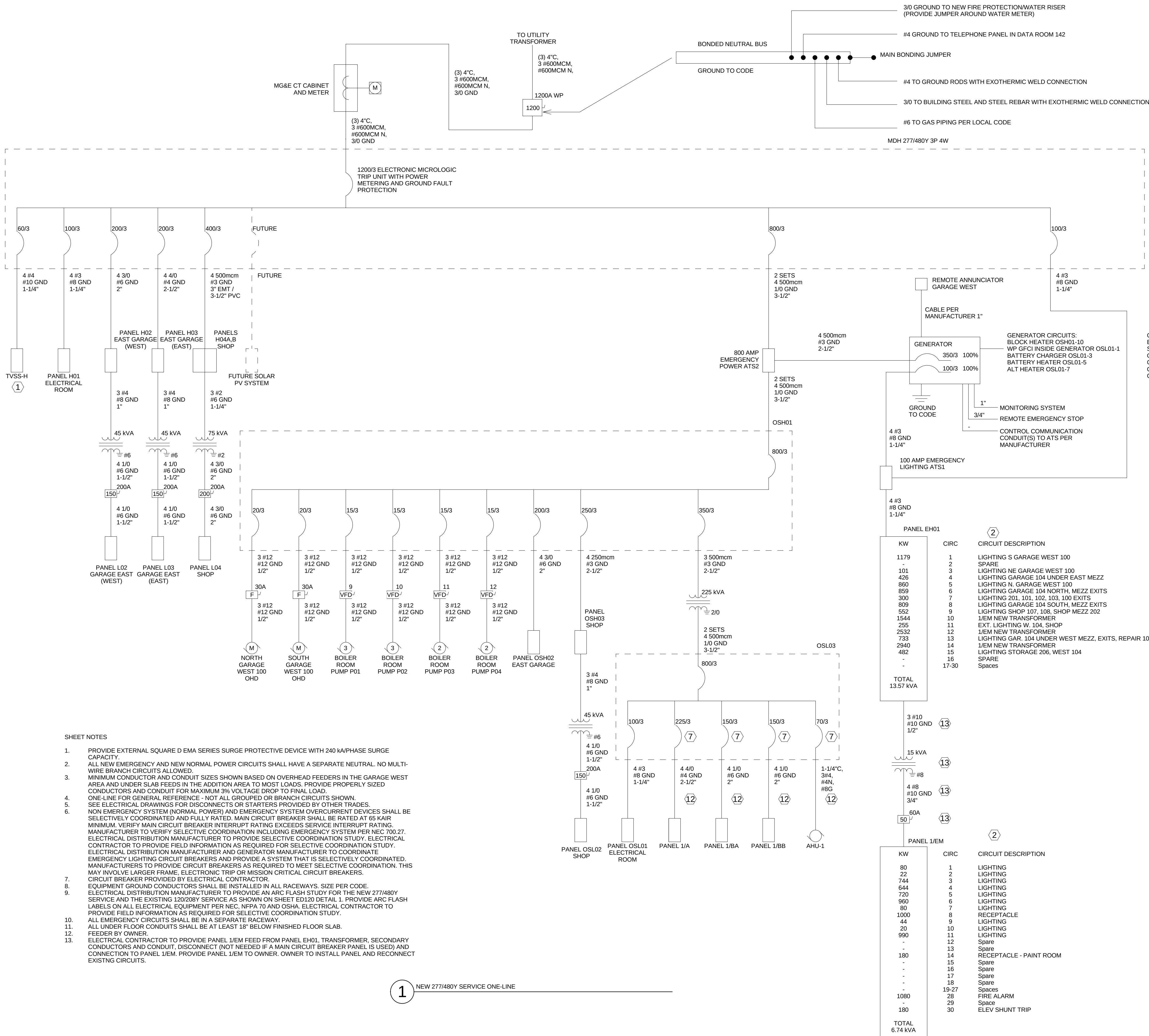
SPRINKLER BELL

SPRINKLER STROBE

N

FLOW AND TAMPER SWITCHES PROVIDED AND MOUNTED BY FIRE PROTECTION CONTRACTOR. FLOW AND TAMPER SWITCH FIRE ALARM WIRING BY ELECTRICAL CONTRACTOR. OUTDOOR SPRINKLER BELL PROVIDED BY FIRE PROTECTION CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR. OUTDOOR STROBE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

3 MAIN BUILDING SPRINKLER BELL/STROBE



SHEET NOTES

1. PROVIDE EXTERNAL SQUARE D EMA SERIES SURGE PROTECTIVE DEVICE WITH 240 kVPHASE SURGE CAPACITY.
2. ALL NEW EMERGENCY AND NEW NORMAL POWER CIRCUITS SHALL HAVE A SEPARATE NEUTRAL. NO MULTI-WIRE BRANCH CIRCUITS ALLOWED.
3. MINIMUM CONDUCTOR AND CONDUIT SIZES SHOWN BASED ON OVERHEAD FEEDERS IN THE GARAGE WEST AREA AND UNDER SLAB FEEDS IN THE ADDITION AREA TO MOST LOADS. PROVIDE PROPERLY SIZED CONDUCTORS AND CONDUIT FOR MAXIMUM 3% VOLTAGE DROP TO FINAL LOAD.
4. ONE-LINE FOR GENERAL REFERENCE - NOT ALL GROUPED OR BRANCH CIRCUITS SHOWN. SEE ELECTRICAL DRAWINGS FOR DISCONNECTS OR STARTERS PROVIDED BY OTHER TRADES.
5. NON EMERGENCY SYSTEM (NORMAL POWER) AND EMERGENCY SYSTEM OVERCURRENT DEVICES SHALL BE SELECTIVELY COORDINATED AND FULLY RATED. MAIN CIRCUIT BREAKER SHALL BE RATED AT 65 KAIR MINIMUM. VERIFY MAIN CIRCUIT BREAKER INTERRUPT RATING EXCEEDS SERVICE INTERRUPT RATING.
6. MANUFACTURER TO VERIFY SELECTIVE COORDINATION INCLUDING EMERGENCY SYSTEM PER NEC 700.27. ELECTRICAL DISTRIBUTION MANUFACTURER TO PROVIDE SELECTIVE COORDINATION STUDY. ELECTRICAL CONTRACTOR TO PROVIDE FIELD INFORMATION AS REQUIRED FOR SELECTIVE COORDINATION STUDY. ELECTRICAL DISTRIBUTION MANUFACTURER AND GENERATOR MANUFACTURER TO COORDINATE EMERGENCY LIGHTING CIRCUIT BREAKERS AND PROVIDE A SYSTEM THAT IS SELECTIVELY COORDINATED. MANUFACTURERS TO PROVIDE CIRCUIT BREAKERS AS REQUIRED TO MEET SELECTIVE COORDINATION. THIS MAY INVOLVE LARGER FRAME, ELECTRONIC TRIP OR MISSION CRITICAL CIRCUIT BREAKERS.
7. CIRCUIT BREAKER PROVIDED BY ELECTRICAL CONTRACTOR.
8. EQUIPMENT GROUND CONDUCTORS SHALL BE INSTALLED IN ALL RACEWAYS. SIZE PER CODE.
9. ELECTRICAL DISTRIBUTION MANUFACTURER TO PROVIDE AN ARC FLASH STUDY FOR THE NEW 277/480Y SERVICE AND THE EXISTING 120/208Y SERVICE AS SHOWN ON SHEET ED120 DETAIL 1. PROVIDE ARC FLASH LABELS ON ALL ELECTRICAL EQUIPMENT PER NEC, NFPA 70 AND OSHA. ELECTRICAL CONTRACTOR TO PROVIDE FIELD INFORMATION AS REQUIRED FOR SELECTIVE COORDINATION STUDY.
10. ALL EMERGENCY CIRCUITS SHALL BE IN A SEPARATE RACEWAY.
11. ALL UNDER FLOOR CONDUITS SHALL BE AT LEAST 18" BELOW FINISHED FLOOR SLAB.
12. FEEDER BY OWNER.
13. ELECTRICAL CONTRACTOR TO PROVIDE PANEL 1/JEM FEED FROM PANEL EH01, TRANSFORMER, SECONDARY CONDUCTORS AND CONDUIT. DISCONNECT (NOT NEEDED IF A MAIN CIRCUIT BREAKER PANEL IS USED) AND CONNECTION TO PANEL 1/JEM. PROVIDE PANEL 1/JEM TO OWNER. OWNER TO INSTALL PANEL AND RECONNECT EXISTING CIRCUITS.



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

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kschindel@cityofmadison.com

Structural Design:
John Schmidbauer, P.E.,
Kuerny Architects

Fire Protection Design:
Robert Novak, Kuerny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Schedules and
Details

ED 130

Print Date:
11/19/2015 11:17:49 PM

Panelboard: MDH

Location: Electrical Room 201
Supply From: MG&E PAD MOUNT TRANSFORMER
Mounting: WALL
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65KA
Mains Type: MLO
Mains Rating: 1200 A
MCB Rating: 1200 A

Notes:

SQUARE D HCR-U-I-LINE PANELBOARD WITH 108" OF CIRCUIT BREAKER MOUNTING SPACE.
1200 AMP COPPER BUS. INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR.

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks
1	MAIN WITH ELECTRONIC TRIP, AMMETER AND GROUND FAULT...	3	1200 A	0 VA	65 KAIR
2	TVSS-H	3	60 A	0 VA	65 KAIR
3	H 01	3	100 A	915 VA	65 KAIR
4	H 02	3	200 A	52711 VA	65 KAIR
5	H 03	3	200 A	5441 VA	65 KAIR
6	H 04	3	400 A	170667 VA	65 KAIR
7	ATS2 (OSH 01)	3	800 A	152172 VA	65 KAIR
8	ATS1 (EH 01)	3	100 A	10696 VA	65 KAIR
9	SPACE FOR FUTURE SOLAR PV CIRCUIT BREAKER	3	0 A	0 VA	65 KAIR
10	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
11	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
12	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
13	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
14	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
15	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
16	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
17	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
18	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
19	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
20	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
21	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
22	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
23	SPACE FOR 250A CIRCUIT BREAKER	3	0 A	0 VA	
Total Conn. Load:				402538 VA	
Total Amps:				484 A	
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Equipment	35000 VA	100.00%	35000 VA		
HVAC	25200 VA	100.00%	25200 VA	Total Conn. Load: 402538 VA	
Lighting	27399 VA	125.00%	34249 VA	Total Est. Demand: 370713 VA	
Motor	98302 VA	100.00%	98302 VA	Total Conn.: 484 A	
Other	30603 VA	100.00%	30603 VA	Total Est. Demand: 446 A	
Power	16216 VA	100.00%	16216 VA		
Receptacle	87350 VA	55.72%	48675 VA		
Spare	2000 VA	100.00%	2000 VA		

Panelboard: MD-1 EXISTING

Location:
Supply From: MG&E PAD MOUNT TRANSFORMER
Mounting:
Enclosure:

Volts:
Phases: Not Computed
Wires: Not Computed

A.I.C. Rating:
Mains Type: MCB
Mains Rating: 800 A
MCB Rating: 800 A

Notes:

EXISTING PANEL MD-1 IS A SIEMENS TYPE P5.

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks
1	1/A	1	225 A	0 VA	
2	1/BA	1	150 A	0 VA	
3	1/BB	1	150 A	0 VA	
4	2/BA	1	150 A	0 VA	
5	2/BB	1	100 A	0 VA	
6	1/EL	1	30 A	0 VA	
7	TVSS	1	60 A	0 VA	
8	ACCU-1	1	250 A	0 VA	
9	AHU-1	1	70 A	0 VA	
10	SOLAR EQUIPMENT	1	70 A	0 VA	
11	ELEVATOR	1	125 A	0 VA	
12	1/EM	1	100 A	0 VA	
13	Space	--	--	0 VA	--
14	Space	--	--	0 VA	--
15	Space	--	--	0 VA	--
16	Space	--	--	0 VA	--
Total Conn. Load:				0 VA	
Total Amps:				Not Computed	
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
				Total Conn. Load: 0 VA	
				Total Est. Demand: 0 VA	
				Total Conn.: Not Computed	
				Total Est. Demand: Not Computed	

Branch Panel: H 01

Location: Storage Landfill 103
Supply From: MDH
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65KA
Mains Type: MCB
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

SQUARE D NF PANELBOARD.
125 AMP COPPER BUS. INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR.
MAIN CIRCUIT BREAKER: 65 KAIR MINIMUM. BRANCH CIRCUIT BREAKER: 65 KAIR MINIMUM

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	SPARE	20 A	1	0	305					3	20 A	SPARE	2
3	SPARE	20 A	1			0	305			--	--		4
5	SPARE	20 A	1					0	305	--	--		6
7	Spare	20 A	1	0	0					1	20 A	Spare	8
9	Spare	20 A	1			0	0			1	20 A	Spare	10
11	Spare	20 A	1					0	0	1	20 A	Spare	12
13	Spare	20 A	1	0	0					1	20 A	Spare	14
15	Spare	20 A	1			0	0			1	20 A	Spare	16
17	Spare	20 A	1					0	0	1	20 A	Spare	18
19	Space	--	--	0	0					--	--	Space	20
21	Space	--	--			0	0			--	--	Space	22
23	Space	--	--					0	0	--	--	Space	24
25	Space	--	--	0	0					--	--	Space	26
27	Space	--	--			0	0			--	--	Space	28
29	Space	--	--					0	0	--	--	Space	30
Total Load:				305 VA		305 VA		305 VA					
Total Amps:				1 A		1 A		1 A					
Load Classification	Connected Load	Demand Factor		Estimated Demand		Panel Totals							
Power	915 VA	100.00%		915 VA		Total Conn. Load: 915 VA							
						Total Est. Demand: 915 VA							
						Total Conn.: 1 A							
						Total Est. Demand: 1 A							

Panelboard: MD-1 MODIFIED

Location: Electrical Room 102
Supply From: MG&E PAD MOUNT TRANSFORMER
Mounting: WALL
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: EXISTING
Mains Type: MCB
Mains Rating: 800 A
MCB Rating: 800 A

Notes:

EXISTING PANEL MD-1 IS A SIEMENS TYPE P5.

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks
1	L 01	3	100 A	0 VA	65 KAIR.
2	TVSS-L	3	60 A	0 VA	
3	2/BA	3	150 A	0 VA	
4	2/BB	3	0 A	0 VA	
5	1/EL	3	30 A	0 VA	
6	ACCU-1	3	250 A	0 VA	
7	SOLAR EQUIPMENT	3	70 A	0 VA	
8	ELEVATOR	3	125 A	0 VA	
9	Space	--	--	0 VA	--
10	Space	--	--	0 VA	--
11	Space	--	--	0 VA	--
12	Space	--	--	0 VA	--
13	Space	--	--	0 VA	--
14	Space	--	--	0 VA	--
15	Space	--	--	0 VA	--
16	Space	--	--	0 VA	--
Total Conn. Load:				0 VA	
Total Amps:				0 A	
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
				Total Conn. Load: 0 VA	
				Total Est. Demand: 0 VA	
				Total Conn.: 0 A	
				Total Est. Demand: 0 A	

SHEET NOTES

- CIRCUIT BREAKER PROVIDED BY ELECTRICAL CONTRACTOR. CIRCUIT BY OWNER.



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
Sarah Lerner, LPA., City of
Madison; 608-261-4261;
slerner@cityofmadison.com

Electrical Design:
Dave Hanson, P.E., Kuerny
Architects

Plumbing Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Structural Design:
John Schmidbauer, P.E.,
Kuerny Architects

Fire Protection Design:
Robert Novak, Kuerny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Schedules and
Details

ED 140

Print Date:
11/19/2015 11:17:52 PM

Branch Panel: H 02

Location: Garage East 104
Supply From: MDH
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65kA
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 200 A

Notes:

SQUARE D NF PANELBOARD.
250 AMP COPPER BUS. INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR.
MAIN CIRCUIT BREAKER: 65 KAIR MINIMUM. BRANCH CIRCUIT BREAKER: 65 KAIR MINIMUM

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LIGHTING STORAGE 206, 105, EAST GARAGE...	15 A	1	563	1440				45 KVA TRANSFORMER TO L02	2
3					1620			--		--
5	LIGHTING GARAGE EAST 104	15 A	1			654	1800	--		--
7	SOUTH CEILING FAN GARAGE EAST 104	20 A	3	693	693			3	15 A	NORTH CEILING FAN GARAGE EAST 104
9	--	--	--		693	693		--		--
11	--	--	--			693	693	--		--
13	SF1 S. GARAGE MEZZ EAST 205	15 A	3	582	9422			3	70 A	MAU1 NORTH GARAGE EAST 104
15	--	--	--		582	9422		--		--
17	--	--	--			582	9422	--		--
19	VFD EF-2	15 A	3	582	3880			3	25 A	VFD EF-1
21	--	--	--		582	3880		--		--
23	--	--	--			582	3880	--		--
25	Space	--	--	0	0			--		Space
27	Space	--	--		0	0		--		Space
29	Space	--	--			0	0	--		Space
31	Space	--	--	0	0			--		Space
33	Space	--	--		0	0		--		Space
35	Space	--	--			0	0	--		Space
37	Space	--	--	0	0			--		Space
39	Space	--	--		0	0		--		Space
41	Space	--	--			0	0	--		Space
Total Load:				17856 VA	17473 VA	18307 VA				
Total Amps:				65 A	63 A	66 A				
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals		
Motor		17545 VA		100.00%		17545 VA		Total Conn. Load: 53635 VA		
Receptacle		4860 VA		100.00%		4860 VA		Total Est. Demand: 53939 VA		
Lighting		1217 VA		125.00%		1521 VA		Total Conn.: 65 A		
								Total Est. Demand: 65 A		



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
Sarah Lerner, LPA., City of
Madison; 608-261-4261;
slerner@cityofmadison.com

Electrical Design:
Dave Hanson, P.E., Kueny
Architects

Plumbing Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Schedules and
Details

ED 150

Print Date:
11/19/2015 11:17:56 PM

Branch Panel: L 01

Location: Electrical Room 102
Supply From: MD-1 MODIFIED
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

SQUARE D NQ PANELBOARD.
100 AMP COPPER BUS INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR.
MAIN CIRCUIT BREAKER: 25 KAIR MINIMUM. BRANCH CIRCUIT BREAKER: 22 KAIR MINIMUM.

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Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
Sarah Lerner, L.P.A., City of
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Electrical Design:
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Architects

Plumbing Design:
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kschindel@cityofmadison.com

HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-265-4668;
kschindel@cityofmadison.com

Schedules and Details

ED 160

Print Date:
11/19/2015 11:17:58 PM

Panelboard: OSH 01

Location: Electrical Room 201
Supply From: MDH
Mounting: SURFACE
Enclosure: TYPE 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65kA
Mains Type: MCB
Mains Rating: 800 A
MCB Rating: 800 A

Notes:
SQUARE D HCP I-LINE PANELBOARD.
800 AMP COPPER BUS INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR.
MAIN CIRCUIT BREAKER: 65 KAIR MINIMUM. BRANCH CIRCUIT BREAKER: 65 KAIR MINIMUM.

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks	
1	SPARE	3	20 A	915 VA	65 KAIR	
2	SPARE	3	20 A	915 VA	65 KAIR	
3	PUMP 9	3	20 A	3990 VA	65 KAIR	
4	PUMP 10	3	20 A	3990 VA	65 KAIR	
5	PUMP 12	3	20 A	2827 VA	65 KAIR	
6	PUMP 11	3	20 A	2827 VA	65 KAIR	
7	OSH 02	3	200 A	6670 VA	65 KAIR	
8	OSH 03	3	250 A	7619 VA	65 KAIR	
9	225 KVA TRANS OSL 03	3	350 A	122597 VA	65 KAIR	
10	GENERATOR BLOCK HEATER	3	15 A	6000 VA	65 KAIR	
11	SPACE FOR 3 POLE 250 AMP FRAME CIRCUIT BREAKER	--	--	0 VA	--	
12	SPACE FOR 3 POLE 250 AMP FRAME CIRCUIT BREAKER	--	--	0 VA	--	
13	SPACE FOR 3 POLE 250 AMP FRAME CIRCUIT BREAKER	--	--	0 VA	--	
14	SPACE FOR 3 POLE 250 AMP FRAME CIRCUIT BREAKER	--	--	0 VA	--	
15	SPACE FOR 3 POLE 250 AMP FRAME CIRCUIT BREAKER	--	--	0 VA	--	
16	SPACE FOR 2 POLE 250 AMP FRAME CIRCUIT BREAKER	--	--	0 VA	--	
Total Conn. Load:				158786 VA		
Total Amps:				191 A		
Load Classification		Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC		25200 VA	100.00%	25200 VA		
Lighting		15448 VA	125.00%	19310 VA	Total Conn. Load: 158786 VA	
Other		29343 VA	100.00%	29343 VA	Total Est. Demand: 136647 VA	
Power		7320 VA	100.00%	7320 VA	Total Conn.: 191 A	
Receptacle		62002 VA	58.06%	36001 VA	Total Est. Demand: 164 A	
Spare		2000 VA	100.00%	2000 VA		

Branch Panel: OSH 03

Location: Repair Shop 109
Supply From: OSH 01
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65kA
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 250 A

Notes:
SQUARE D NQ PANELBOARD.
250 AMP COPPER BUS INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR.
MAIN CIRCUIT BREAKER: 65 KAIR MINIMUM. BRANCH CIRCUIT BREAKER: 65 KAIR MINIMUM.

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LIGHTING REPAIR SHOP 109	20 A	1	101	0			3	70 A	45 kVA TRANSFORMER TO OSL02
3	LIGHTING S. REPAIR SHOP 109	20 A	1		280	0		--	--	--
5	LIGHTING N. REPAIR SHOP 109	20 A	1			1052	0	--	--	--
7	EAST OHD WASH SHOP 107	20 A	3	305	712			1	20 A	LIGHTING NW REPAIR SHOP 109
9	--	--	--		305	844		1	20 A	LIGHTING WASH SHOP 107
11	--	--	--			305	305	3	20 A	WEST OHD WASH SHOP 107
13	EAST OHD REPAIR SHOP 108	20 A	3	305	305			--	--	--
15	--	--	--		305	305		--	--	--
17	--	--	--			305	305	3	20 A	WEST OHD REPAIR SHOP 108
19	SHOP HVAC CONTROL PANEL CP-1	15 A	1	500	305			--	--	--
21	NORTH EAST GARAGE HVAC PANEL CP-3	15 A	1		500	305		--	--	--
23	Space	--	--			0	0	--	--	Space
25	Space	--	--	0	0			--	--	Space
27	Space	--	--		0	0		--	--	Space
29	Space	--	--			0	0	--	--	Space
31	Space	--	--	0	0			--	--	Space
33	Space	--	--		0	0		--	--	Space
35	Space	--	--			0	0	--	--	Space
37	Space	--	--	0	0			--	--	Space
39	Space	--	--		0	0		--	--	Space
41	Space	--	--			0	0	--	--	Space
Total Load:				2533 VA	2844 VA	2272 VA				
Total Amps:				9 A	10 A	8 A				
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals		
Spare		1000 VA		100.00%		1000 VA		Total Conn. Load: 7649 VA		
Power		3660 VA		100.00%		3660 VA		Total Est. Demand: 8396 VA		
Lighting		2989 VA		125.00%		3736 VA		Total Conn.: 9 A		
								Total Est. Demand: 10 A		

Branch Panel: OSH 02

Location: Garage East 104
Supply From: OSH 01
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65 KAIC
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 200 A

Notes:
SQUARE D NQ PANELBOARD.
250 AMP COPPER BUS INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR.
MAIN CIRCUIT BREAKER: 65 KAIR MINIMUM. BRANCH CIRCUIT BREAKER: 65 KAIR MINIMUM.

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	SOUTH OHD GARAGE EAST 104	20 A	3	305	1280			3	20 A	GATE OPENER
3	--	--	--		305	1280		--	--	--
5	--	--	--			305	1280	--	--	--
7	NORTH OHD GARAGE EAST 104	20 A	3	305	500			1	15 A	SOUTH EAST GARAGE HVAC PANEL CP-2
9	--	--	--		305	0		1	15 A	Space
11	--	--	--			305	500	1	15 A	BOILER ROOM HVAC PANEL CP-5
13	Space	--	--	0	0			--	--	Space
15	Space	--	--		0	0		--	--	Space
17	Space	--	--			0	0	--	--	Space
19	Space	--	--	0	0			--	--	Space
21	Space	--	--		0	0		--	--	Space
23	Space	--	--			0	0	--	--	Space
25	Space	--	--	0	0			--	--	Space
27	Space	--	--		0	0		--	--	Space
29	Space	--	--			0	0	--	--	Space
31	Space	--	--	0	0			--	--	Space
33	Space	--	--		0	0		--	--	Space
35	Space	--	--			0	0	--	--	Space
37	Space	--	--	0	0			--	--	Space
39	Space	--	--		0	0		--	--	Space
41	Space	--	--			0	0	--	--	Space
Total Load:				2390 VA	1890 VA	2390 VA				
Total Amps:				9 A	7 A	9 A				
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals		
Spare		1000 VA		100.00%		1000 VA		Total Conn. Load: 6670 VA		
Power		1830 VA		100.00%		1830 VA		Total Est. Demand: 6670 VA		
								Total Conn.: 8 A		
								Total Est. Demand: 8 A		

Branch Panel: EH 01

Location: Electrical Room 102
Supply From: ATS1
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 65kA
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:
COOPER BUSSMAN QUICK SPEC COORDINATION PANEL QSCP. 200 AMP COPPER BUS. INCLUDE NEUTRAL AND GROUND BAR.
BUSSMANN CCPB BRANCH DISCONNECTS WITH INDICATING CUBE FUSES. AMP SIZE AND POLES AS INDICATED.
INCLUDE SIX SPARE 20 AMP INDICATING CUBE FUSES.
ALL FUSES HAVE 200,000 AMP INTERRUPTING RATING. PANEL IEM NEW MAY BE A SQUARE D NF PANELBOARD IF ALL CIRCUIT BREAKERS SELECTIVELY COORDINATE (MAIN CIRCUIT BREAKER 65 KAIC MINIMUM. BRANCH CIRCUIT BREAKERS 65 KAIC MINIMUM).

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	LIGHTING S. GARAGE WEST 100	15 A	1	0						2
3	LIGHTING NE GARAGE WEST 100	15 A	1		0	426		1	15 A	LIGHTING GARAGE 104 UNDER EAST MEZZ
5	LIGHTING N. GARAGE WEST 100	15 A	1				0	859	1	15 A
7	LIGHTING 201, 101, 102, 103, 100 EXITS	15 A	1	0	809			1	15 A	LIGHTING GARAGE 104 SOUTH, MEZZ EXITS
9	LIGHTING SHOP 107, 108, SHOP MEZZ 202	15 A	1		552	1544		3	25 A	1/EM NEW TRANSFORMER
11	EXT. LIGHTING W. 104, SHOP	15 A	1				74	2532	--	--
13	LIGHTING GARAGE 104 UNDER WEST MEZZ,....	15 A	1	733	2940			--	--	--
15	LIGHTING STORAGE 206, WEST 104	15 A	1		482	0		1	20 A	Space
17	Space	20 A	1				0	0	1	20 A
19	Space	20 A	1	0	0			1	20 A	Space
21	Space	20 A	1		0	0		--	--	Space
23	Space	--	--				0	0	--	Space
25	Space	--	--	0	0			--	--	Space
27	Space	--	--		0	0		--	--	Space
29	Space	--	--				0	0	--	Space
Total Load:				4482 VA	3004 VA	3465 VA				
Total Amps:				16 A	11 A	13 A				
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals		
Other		1260 VA		100.00%		1260 VA		Total Conn. Load: 10951 VA		
Receptacle		1180 VA		100.00%		1180 VA		Total Est. Demand: 13079 VA		
Lighting		8511 VA		125.00%		10639 VA		Total Conn.: 13 A		
								Total Est. Demand: 16 A		

Branch Panel: OSL 01													
Location: Electrical Room 201				Volts: 120/208 Wye				A.I.C. Rating: 65 KAIC					
Supply From: OSL 03				Phases: 3				Mains Type: MCB					
Mounting: Surface				Wires: 4				Mains Rating: 100 A					
Enclosure: Type 1				MCB Rating: 100 A									
Notes: SQUARE D NQ PANELBOARD. 100 AMP COPPER BUS INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR. MAIN CIRCUIT BREAKER: 65 KAIR MINIMUM. BRANCH CIRCUIT BREAKER: 65 KAIR MINIMUM.													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Spare	20 A	1	360	180					1	20 A	GENERATOR RECEPTACLE	2
3	Spare	20 A	1			0	720			1	20 A	GENERATOR BATTERY CHARGER	4
5	Spare	20 A	1					0	120	1	20 A	GENERATOR BATTERY HEATER	6
7	SPRINKLER BELLS	15 A	1	180	100					1	20 A	GENERATOR ALT HEATER	8
9	Spare	20 A	1			0	0			1	20 A	Spare	10
11	BOILER 1	20 A	1					1920	0	1	20 A	Spare	12
13	BOILER 2	20 A	1	1920	0					1	20 A	Spare	14
15	Spare	20 A	1			0	0			1	20 A	Spare	16
17	Spare	20 A	1					0	0	1	20 A	Spare	18
19	Spare	20 A	1	0	0					1	20 A	Spare	20
21	Spare	20 A	1			0	0			1	20 A	Spare	22
23	Spare	20 A	1					0	0	1	20 A	Spare	24
Total Load:				2740 VA		720 VA		2040 VA					
Total Amps:				25 A		6 A		19 A					
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
HVAC		3840 VA		100.00%		3840 VA							
Other		180 VA		100.00%		180 VA		Total Conn. Load: 5500 VA					
Receptacle		1480 VA		100.00%		1480 VA		Total Est. Demand: 5500 VA					
								Total Conn.: 15 A					
								Total Est. Demand: 15 A					

Branch Panel: 1/EM EXISTING													
Location:				Volts: 120/208 Wye				A.I.C. Rating:					
Supply From:				Phases: 3				Mains Type:					
Mounting: Surface				Wires: 4				Mains Rating: 100 A					
Enclosure: Type 1				MCB Rating: 70 A									
Notes:													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	80	22					1	20 A	LIGHTING	2
3	LIGHTING	20 A	1			744	644			1	20 A	LIGHTING	4
5	LIGHTING	20 A	1					720	960	1	20 A	LIGHTING	6
7	LIGHTING	20 A	1	80	1000					1	20 A	RECEPTACLE	8
9	LIGHTING	20 A	1			44	20			1	20 A	LIGHTING	10
11	LIGHTING	20 A	1					990	0	1	20 A	Spare	12
13	BIG A** FAN	20 A	3	1320	180					1	20 A	RECEPTACLE - PAINT ROOM	14
15	--	--	--			1320	0			1	20 A	Spare	16
17	--	--	--					1320	0	1	20 A	Spare	18
19	Space	--	--	0	0					--	--	Space	20
21	Space	--	--			0	0			--	--	Space	22
23	Space	--	--					0	0	--	--	Space	24
25	Space	--	--	0	0					--	--	Space	26
27	Space	--	--			0	1080			1	20 A	FIRE ALARM	28
29	Space	--	--					0	180	1	20 A	ELEV SHUNT TRIP	30
Total Load:				2682 VA		3852 VA		4170 VA					
Total Amps:				22 A		34 A		36 A					
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
Spare		10704 VA		100.00%		10704 VA							
								Total Conn. Load: 10704 VA					
								Total Est. Demand: 10704 VA					
								Total Conn.: 30 A					
								Total Est. Demand: 30 A					

Branch Panel: 1/EM NEW													
Location:				Volts: 120/208 Wye				A.I.C. Rating: 50kA					
Supply From:				Phases: 3				Mains Type: MCB					
Mounting: Surface				Wires: 4				Mains Rating: 100 A					
Enclosure: Type 1				MCB Rating: 50 A									
Notes:													
COOPER BUSSMAN QUICK SPEC COORDINATION PANEL QSCP. 200 AMP COPPER BUS. INCLUDE NEUTRAL AND GROUND BAR. BUSSMANN CCPB BRANCH DISCONNECTS WITH INDICATING CUBE FUSES. AMP SIZE AND POLES AS INDICATED.													
INCLUDE SIX SPARE 20 AMP INDICATING CUBE FUSES.													
ALL FUSES HAVE 200,000 AMP INTERRUPTING RATING. PANEL 1/EM NEW MAY BE A SQUARE D NQ PANELBOARD IF ALL CIRCUIT BREAKERS SELECTIVELY COORDINATE (MAIN CIRCUIT BREAKER 25 KAIC MINIMUM, BRANCH CIRCUIT BREAKERS 22 KAIC MINIMUM).													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	LIGHTING	20 A	1	80	22					1	20 A	LIGHTING	2
3	LIGHTING	20 A	1			744	644			1	20 A	LIGHTING	4
5	LIGHTING	20 A	1					720	960	1	20 A	LIGHTING	6
7	LIGHTING	20 A	1	80	1000					1	20 A	RECEPTACLE	8
9	LIGHTING	20 A	1			44	20			1	20 A	LIGHTING	10
11	LIGHTING	20 A	1					990	0	1	20 A	Spare	12
13	Space	20 A	1	0	180					1	20 A	RECEPTACLE - PAINT ROOM	14
15	Space	20 A	1			0	0			1	20 A	Spare	16
17	Space	20 A	1					0	0	1	20 A	Spare	18
19	Space	--	--	0	0					--	--	Space	20
21	Space	--	--			0	0			--	--	Space	22
23	Space	--	--					0	0	--	--	Space	24
25	Space	--	--	0	0					--	--	Space	26
27	Space	--	--			0	1080			1	20 A	FIRE ALARM	28
29	Space	--	--					0	180	1	20 A	ELEV SHUNT TRIP	30
Total Load:		1362 VA		2532 VA		2850 VA							
Total Amps:		11 A		23 A		25 A							
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
Spare		6744 VA		100.00%		6744 VA							
								Total Conn. Load: 6744 VA					
								Total Est. Demand: 6744 VA					
								Total Conn.: 19 A					
								Total Est. Demand: 19 A					

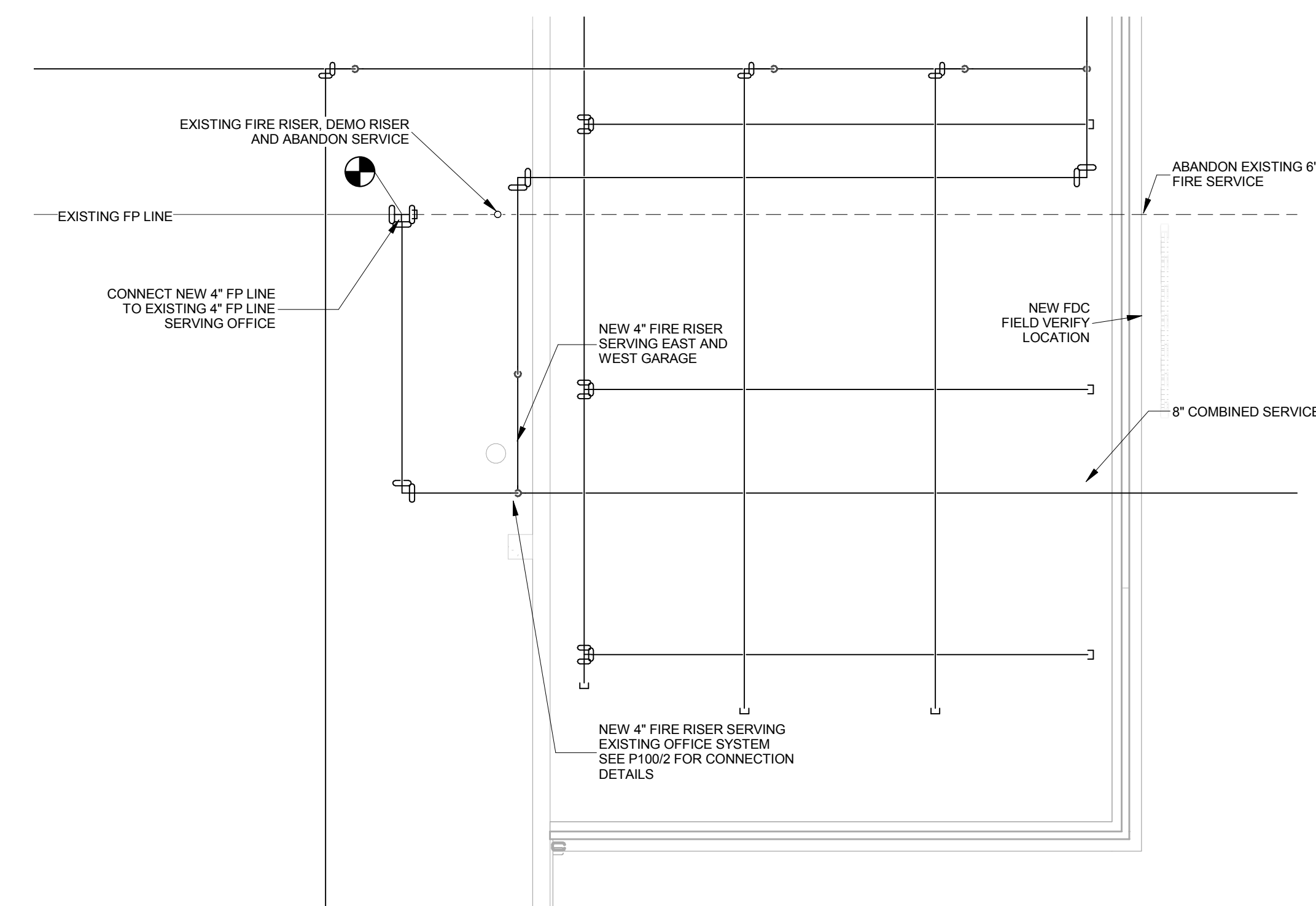
Branch Panel: OSL 02													
Location: Repair Shop 109				Volts: 120/208 Wye				A.I.C. Rating: 25 KAIR					
Supply From:				Phases: 3				Mains Type: MCB					
Mounting: Surface				Wires: 4				Mains Rating: 225 A					
Enclosure: Type 1				MCB Rating: 150 A									
Notes:													
SQUARE D NQ PANELBOARD.													
225 AMP COPPER BUS INCLUDE COPPER NEUTRAL AND COPPER GROUND BAR.													
MAIN CIRCUIT BREAKER: 25 KAIR MINIMUM. BRANCH CIRCUIT BREAKER: 22 KAIR MINIMUM.													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	RECEP NORTH SHOP OFFICE 108	20 A	1	540	720					1	20 A	RECEP WEST REPAIR SHOP 109	2
3	RECEP NW REPAIR SHOP 108	20 A	1			450	720			1	20 A	RECEP SW REPAIR SHOP 108	4
5	RECEP SE REPAIR SHOP 108	20 A	1					720	630	1	20 A	RECEP NE REPAIR SHOP 108	6
7	208/3 CABLE IT CLOSET 203	30 A	3	67	0					1	20 A	Spare	8
9	--	--	--			67	0			1	20 A	Spare	10
11	--	--	--					67	0	1	20 A	Spare	12
13	Spare	20 A	1	0	0					1	20 A	Spare	14
15	Spare	20 A	1			0	0			1	20 A	Spare	16
17	Spare	20 A	1					0	0	1	20 A	Spare	18
19	Spare	20 A	1	0	0					1	20 A	Spare	20
21	Spare	20 A	1			0	0			1	20 A	Spare	22
23	Spare	20 A	1					0	0	1	20 A	Spare	24
25	Space	--	--	0	0					--	--	Space	26
27	Space	--	--			0	0			--	--	Space	28
29	Space	--	--					0	0	--	--	Space	30
31	Space	--	--	0	0					--	--	Space	32
33	Space	--	--			0	0			--	--	Space	34
35	Space	--	--					0	0	--	--	Space	36
37	Space	--	--	0	0					--	--	Space	38
39	Space	--	--			0	0			--	--	Space	40
41	Space	--	--					0	0	--	--	Space	42
		Total Load:		1327 VA		1237 VA		1417 VA					
		Total Amps:		11 A		10 A		12 A					
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
Receptacle		3780 VA		100.00%		3780 VA		Total Conn. Load: 3980 VA					
Power		200 VA		100.00%		200 VA		Total Est. Demand: 3980 VA					
								Total Conn.: 11 A					
								Total Est. Demand: 11 A					

FIRE PROTECTION SYMBOLS AND ABBREVIATIONS

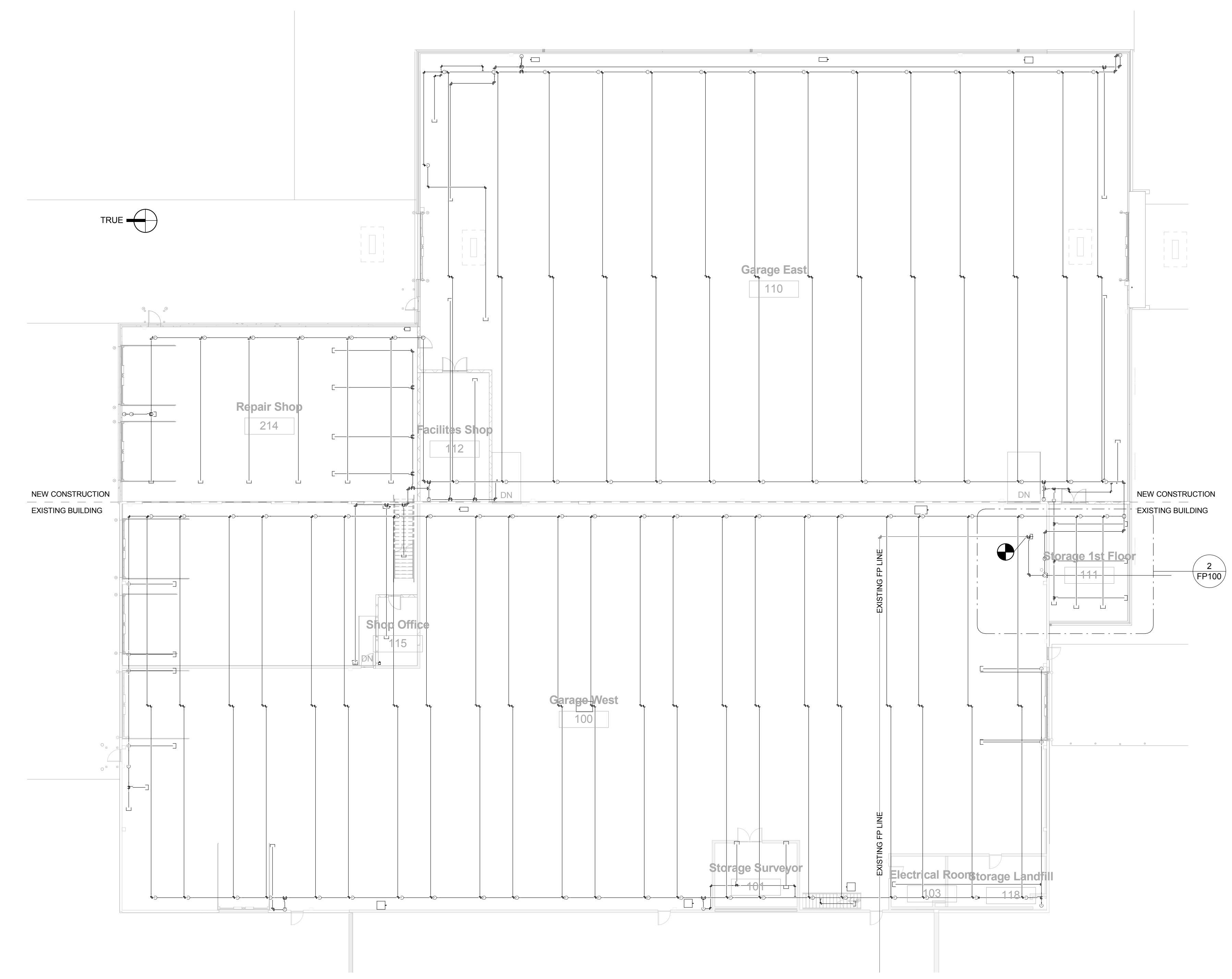
FP	FIRE PROTECTION PIPING
FP	DRY FIRE PROTECTION PIPING
	CAPPED PIPING
	CHECK VALVE
	FIRE DEPARTMENT CONNECTION
	PITCH OR FLOW
	RISER DOWN
	RISER UP
	P-TRAP
	VALVES
	UNION
	DOUBLE CHECK VALVE PREVENTER (ASSE 1015)
	PRESSURE GAUGE
	BRASS CHROME UPRIGHT
	CONCEALED PENDENT
	PENDENT SEMI-RECESSED
	DRY-TYPE PENDENT
	HORIZONTAL SIDEWALL
	HORIZONTAL SIDEWALL SEMI-RECESSED
	HORIZONTAL SIDEWALL RECESSED
	ATTIC TYPE SPRINKLER
	CONNECTION TO EXISTING

GENERAL NOTES:

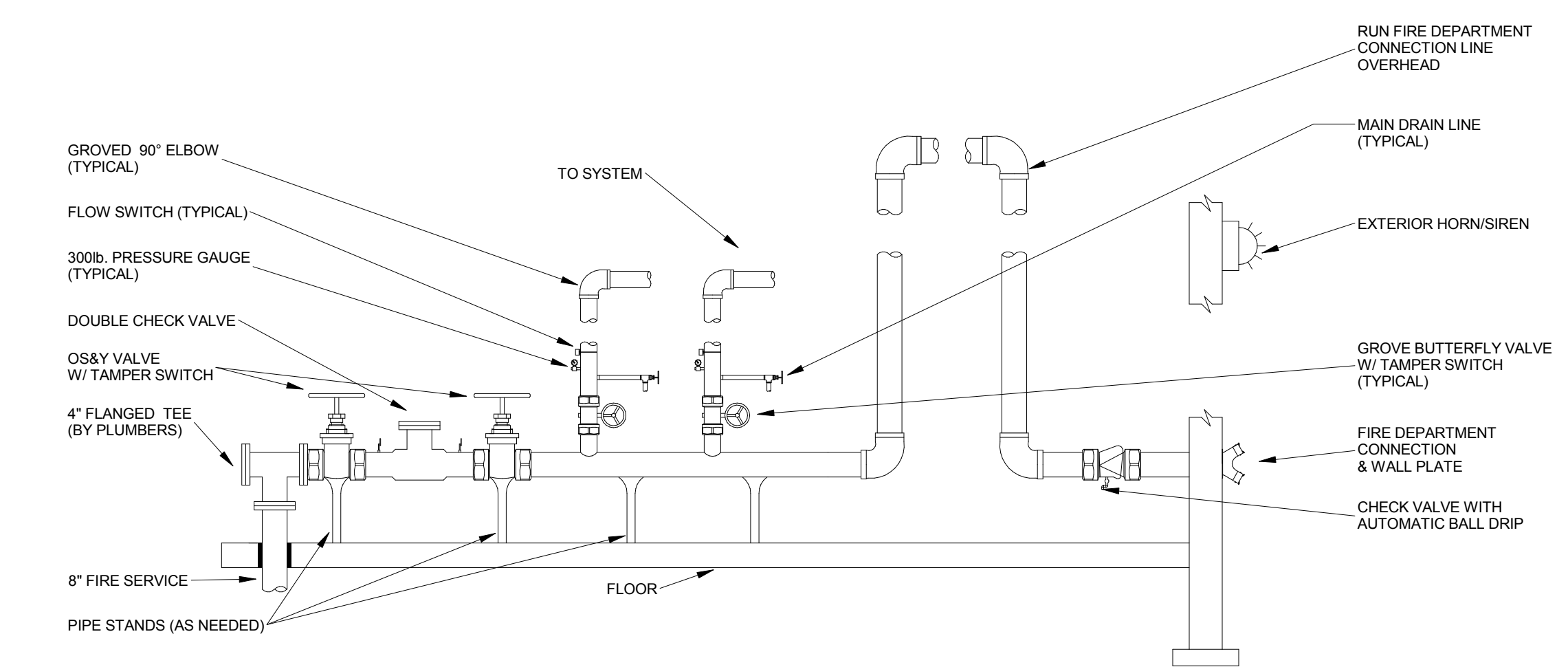
GENERAL DESCRIPTION OF THE FIRE PROTECTION SYSTEM:
AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13.
THIS IS A BID PLAN ONLY, CONTRACTOR SHALL PREPARE SHOP DRAWING PLANS. HEAD LOCATIONS SHOWN SHALL BE VERIFIED.
PART OF THIS PROJECT IS AN EXISTING BUILDING, CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. SEE PLANS FOR DIVISION OF EXISTING VS. NEW.
CONTRACTOR SHALL VERIFY LOCATIONS OF ALL SPRINKLER HEADS AND PIPING BEFORE INSTALLATION, ADJUST DRAIN/VALVE LOCATIONS TO AVOID LIGHTING, SOUND SYSTEMS, AND HVAC DIFFUSERS/GRILLES, ETC.
ALL EXPOSED PIPING/FITTINGS/DRAINS SHALL BE INSTALLED NEATLY AND CLEANLY.
ALL WORK, LABOR, AND MATERIALS SHALL CONFORM TO NFPA 13.
THIS CONTRACTOR SHALL COORDINATE LOCATIONS ALL PIPING AND EQUIPMENT WITH EXISTING CONDITIONS.
THIS CONTRACTOR SHALL RISE/DROP AND OFFSET AS REQUIRED TO AVOID DUCTS, LIGHTING, ELECTRICAL CONDUITS, HVAC PIPES AND PLUMBING PIPING.
CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT EXISTING BUILDING AND CONTENTS FROM WATER DAMAGE DUE TO THIS WORK.



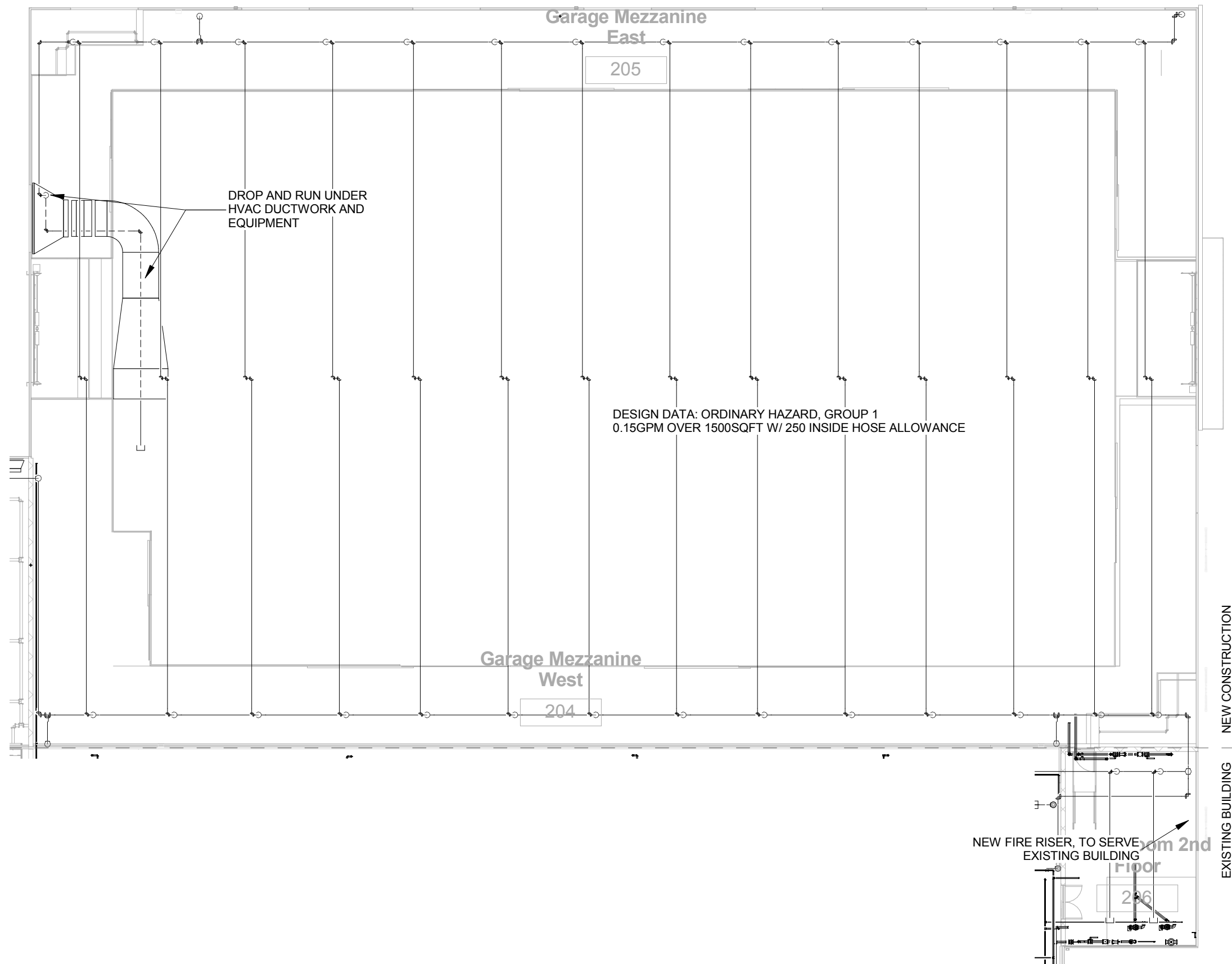
2 Fire Protection Demo and Riser Plan
FP100 SCALE: 1/4" = 1'-0"



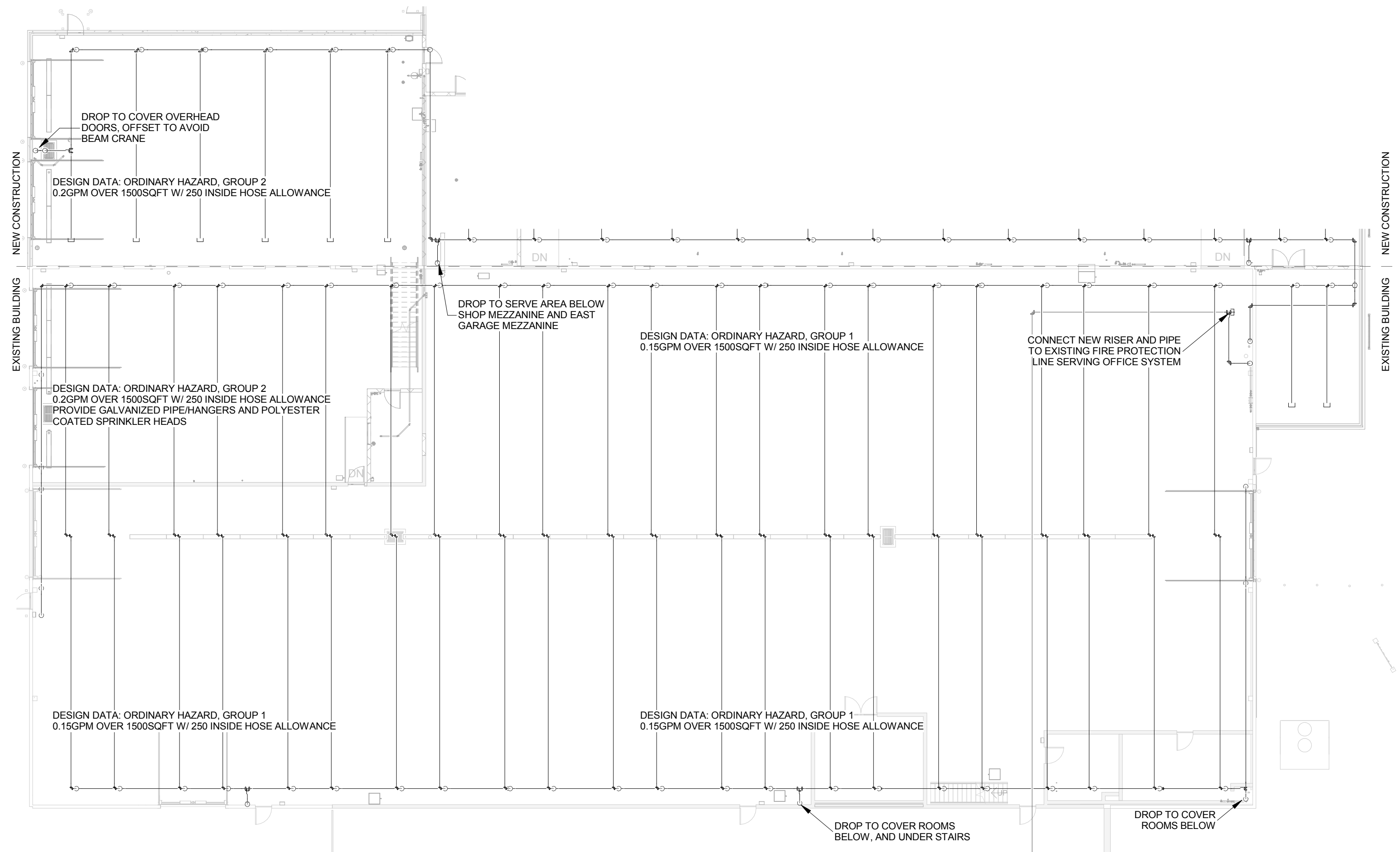
1 Fire Protection - First Floor Overall
FP100 SCALE: 1/16" = 1'-0"



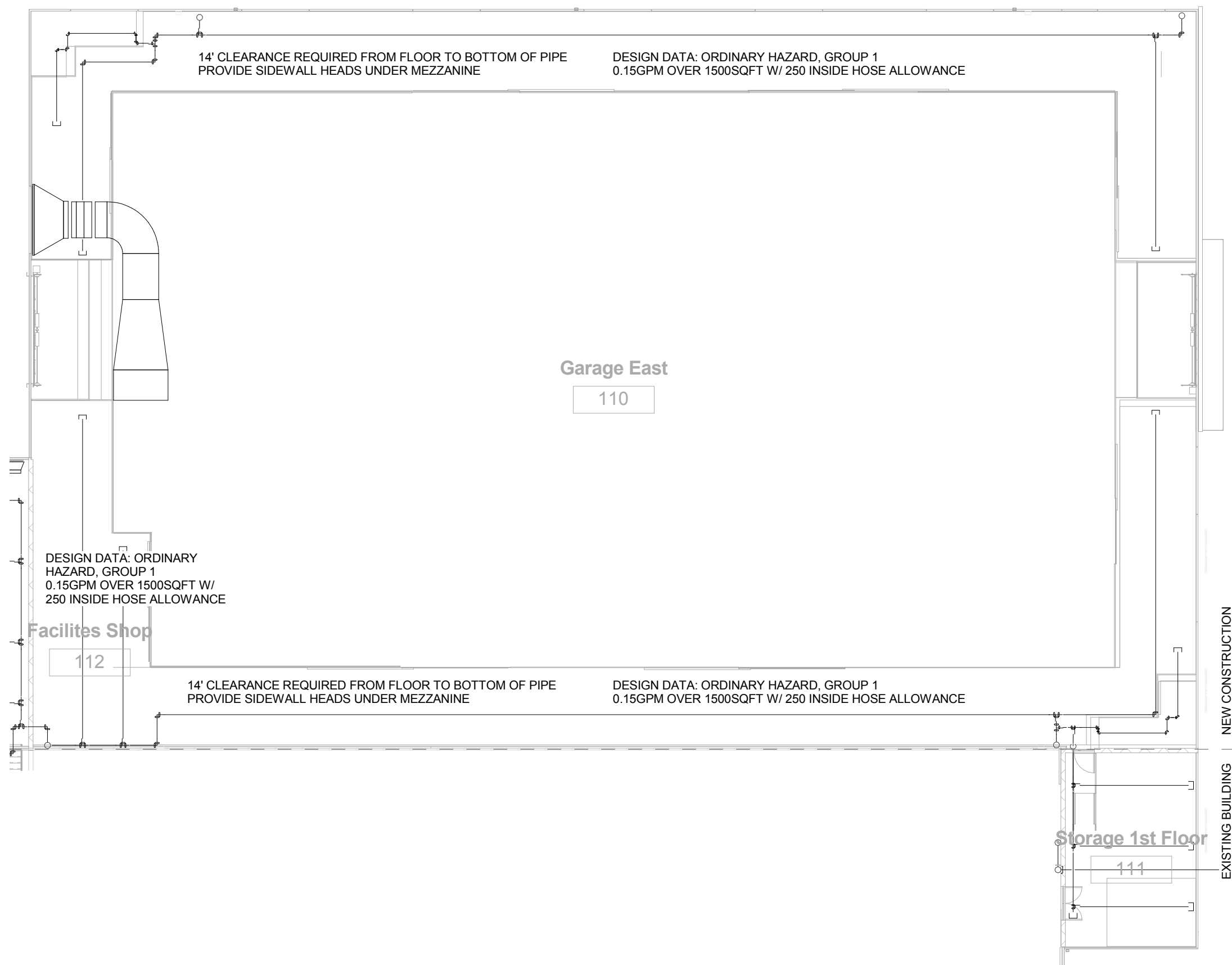
3 CONTROL RISER DETAIL ASSY.
FP100 SCALE: NO SCALE



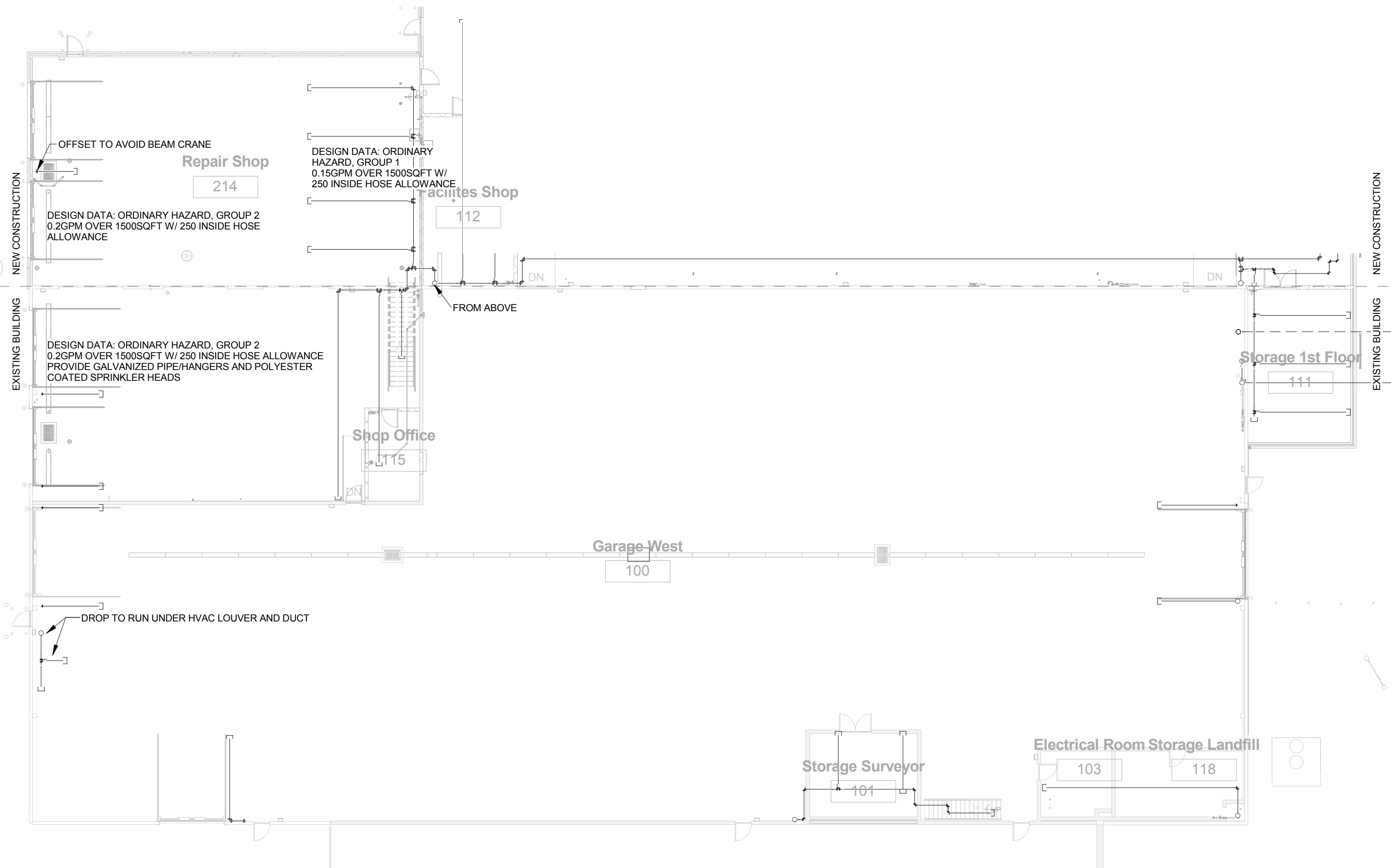
2 Fire Protection - Garage East 2nd Floor Plan
FP101 SCALE: 1/16" = 1'-0"



4 Fire Protection - Garage West 2nd Floor Plan
FP101 SCALE: 1/16" = 1'-0"



1 Fire Protection - Garage East 1st Floor Plan
FP101 SCALE: 1/16" = 1'-0"



3 Fire Protection - Garage West 1st Floor Plan
FP101 SCALE: 1/16" = 1'-0"



Design prepared for:
Engineering Division

Engineering Operations
Building Addition 2015

Location:
1600 Emil St.
Madison, WI 53713

Contract: TBD
Project: 10349
Common Council Approval:

Lighting Design:
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Civil Design:
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Landscaping Design:
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Electrical Design:
Dave Hanson, P.E., Kueny
Architects

Plumbing Design:
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HVAC Design:
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Structural Design:
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Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
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kschindel@cityofmadison.com

Fire Protection
Garage Plans

FP101

Print Date:
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VFD Schedule									
Mark	Room Name	Room Number	Description	Enclosure	Manufacturer	URL	Model	Keynote	
VFD EF 1	Garage Mezzanine West	204	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 12	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD EF 2	Garage Mezzanine West	204	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 12	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD ERV 1 EF	Shop Mezzanine	202	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 12	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD ERV 1 SF	Shop Mezzanine	202	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 12	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD MAU 1	Garage Mezzanine West	204	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 12	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD P 01	Boiler Room 2nd Floor	206	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 1	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD P 02	Boiler Room 2nd Floor	206	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 1	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD P 03	Boiler Room 2nd Floor	206	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 1	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD P 04	Boiler Room 2nd Floor	206	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 1	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	
VFD SF 1	Garage Mezzanine East	205	Variable Frequency Drive w/Tourque Failure Recognition	NEMA 12	Danfoss	www.Danfossdrives.com	VLT w/ Fused Disconnect Option	Select Model based on Device Requirements. Install LC Filter for lead lengths causing Peak Voltage in excess of 1000V	

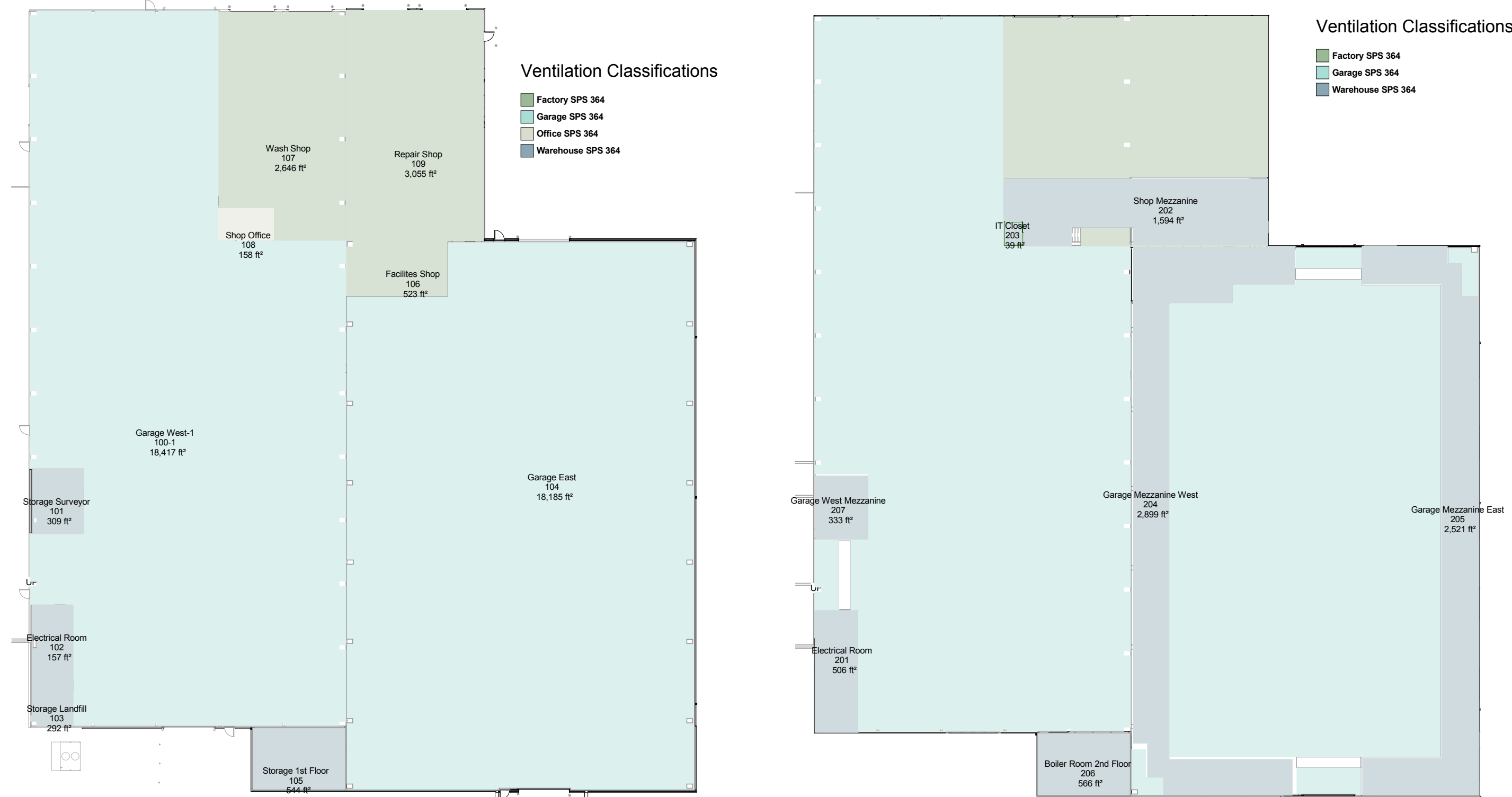
Ceiling Fan Schedule															
Mark	Room Name	Room Number	Description	Manufacturer	URL	Model	Fan Diameter	Weight	Voltage	Apparent Power	Poles	Panel	Circuit Number	OmniClass Number	OmniClass Title
CF 01	Garage East	104	Ceiling Fan, Gearless DC Motor with Modbus Control, IP66 rated	MacroAir	www.macro-air.com	570-18	18'-0"	160 lb	480 V	2080 VA	3	H 02	7,9.11	23.33.31.19.11.15	Ceiling Fans
CF 02	Garage East	104	Ceiling Fan, Gearless DC Motor with Modbus Control, IP66 rated	MacroAir	www.macro-air.com	570-18	18'-0"	160 lb	480 V	2080 VA	3	H 02	2,4.6	23.33.31.19.11.15	Ceiling Fans
CF 03	Repair Shop	109	Ceiling Fan, Gearless DC Motor with Modbus Control, IP66 rated	MacroAir	www.macro-air.com	370-12	12'-0"	87 lb	208 V	208 VA	2	L 04	13,15	23.33.31.19.11.15	Ceiling Fans
CF 04	Wash Shop	107	Ceiling Fan, Gearless DC Motor with Modbus Control, IP66 rated	MacroAir	www.macro-air.com	370-12	12'-0"	87 lb	208 V	208 VA	2	L 04	14,16	23.33.31.19.11.15	Ceiling Fans

Fan Schedule																						
Mark	Manufacturer	URL	Model	Special Features	Room Name	Room Number	Fan			Motor			Electrical			Circuit Number	Weight	Length	Remark	OmniClass Number	OmniClass Title	
							Airflow	Static Pressure	Fan Type	Design Fan RPM	Motor Type	Nominal Power	Brake Horsepower	Voltage	Poles							Panel
EF-1	Greenheck	www.greenheck.com	AX-113	275-0917	Garage Mezzanine West	204	26,000 CFM	1.30 in-wg	160 cm Propeller	1,170	TEFC, NEMA Premium Efficiency, VFD approved	10 hp	8.34 hp	480 V	3	H 02	14,16,18	1,385 lb	5'-1"	Horizontally mounted	23.33.31.19.11.19	Tube Axial Fans
EF-2	Greenheck	www.greenheck.com	AX-054	275-0611	Garage Mezzanine West	204	2,000 CFM	1.30 in-wg	54 cm Propeller	1,770	TEFC, NEMA Premium Efficiency, VFD approved	1 hp	0.72 hp	480 V	3	H 02	19,21,23	270 lb	3'-4 1/2"		23.33.31.19.11.19	Tube Axial Fans
SF-1	Greenheck	www.greenheck.com	AX-036	0607	Garage Mezzanine East	205	2,000 CFM	1.50 in-wg	36 cm Propeller	3500	TEFC, NEMA Premium Efficiency, VFD approved	1 hp	0.78 hp	480 V	3	H 02	13,15,17	195 lb	3'-4 1/2"	Horizontally mounted	23.33.31.19.11.19	Tube Axial Fans

Energy Recovery Ventilator Schedule																																					
Mark	Manufacturer	URL	Model	Room Name	Room Number	Energy Recovery Type	Filter	Special Features	Supply Fan								Exhaust Fan								Electrical (Whole Unit)				Dimensions and Weight				Omni Class Number	Omni Class Title			
									Airflow SF	External Static Pressure SF	Fan Type SF	Design RPM SF	Motor Type SF	Nominal Horsepower SF	Brake Horse Power SF	Full Load Amp SF	Max. V/FD Frequency SF	Airflow EF	External Static Pressure EF	Fan Type EF	Design RPM EF	Motor Type EF	Nominal Horsepower EF	Brake Horse Power EF	Full Load Amp EF	Max. V/FD Frequency EF	Apparent Design Power	Voltage	Poles	Panel	Circuit Number	Weight			Height	Width	Length
ERV-1	Daikin	www.daikinapplied.com	CAH0006GVGM	Shop Mezzanine	202	NovelAire 42"	Return: MERV 13/4" Supply MERV 8/2" Design Pressure: drop 0.6 in-wg	6" channel base; R13 insulation, no damper	2,700 CFM	1 in-wg	12"38" / 2/1 Aluminum / 9 Blades	3713	TEFC / 3500 rpm / NEMA Premium Efficiency	3 hp	2.3 hp	3.8 A	68 Hz	2,700 CFM	1 in-wg	12"38" / 3500 rpm / Aluminum / 9 Blades	3713	TEFC / 3500 rpm / NEMA Premium Efficiency	3 hp	2.3 hp	3.8 A	68 Hz	5.14 kVA	480 V	3	H 03	2,4,6	1,887 lbf	5'-0"	4'-6"	8'-8"	23.33.55.13	Heat Wheels

Pump Schedule																							
Mark	Description	Room Name	Room Number	Manufacturer	URL	Model	Max. Pressure	Design Flowrate	Design Pressure Gain	Efficiency (Motor+Pump)	Horsepower	Motor / Starter Type	Nominal RPM	Flange Size	Voltage	Apparent Power	Poles	Panel	Circuit Number	Weight	Remark	Omni Class Number	Omni Class Title
P 01	Inline Pump w/ SS Impeller	Boiler Room 2nd Floor	206	Grundfos	www.Grundfos.com	TP 80-240/2 BUBE	145 psi	115 GPM	60 ftH2O	47.6 %	3	TEFC, NEMA Premium Efficiency, VFD approved	3450	3"	480 V	3990 VA	3	OSH 02	13,15,17	148 lbf	P1 and P2 parallel	23.27.17.13	Centrifugal Pumps
P 02	Inline Pump w/ SS Impeller	Boiler Room 2nd Floor	206	Grundfos	www.Grundfos.com	TP 80-240/2 BUBE	145 psi	115 GPM	60 ftH2O	47.6 %	3	TEFC, NEMA Premium Efficiency, VFD approved	3450	3"	480 V	3990 VA	3	OSH 02	14,16,18	148 lbf	P1 and P2 parallel	23.27.17.13	Centrifugal Pumps
P 03	Inline Pump w/ SS Impeller	Boiler Room 2nd Floor	206	Grundfos	www.Grundfos.com	TP 50-240/2 BUBE	145 psi	86 GPM	58 ftH2O	45.8 %	2	TEFC, NEMA Premium Efficiency, VFD approved	3450	2"	480 V	22827 VA	3	OSH 02	20,22,24	72 lbf	P3 and P4 parallel	23.27.17.13	Centrifugal Pumps
P 04	Inline Pump w/ SS Impeller	Boiler Room 2nd Floor	206	Grundfos	www.Grundfos.com	TP 50-240/2 BUBE	145 psi	86 GPM	58 ftH2O	45.8 %	2	TEFC, NEMA Premium Efficiency, VFD approved	3450	2"	480 V	22827 VA	3	OSH 02	19,21,23	72 lbf	P3 and P4 parallel	23.27.17.13	Centrifugal Pumps

Make Up Air Unit Schedule																															
Mark	Manufacturer	URL	Model	Room Name	Room Number	Filter	Special Features	Burner					Fan					Motor			Electrical				Dimension and Weight				Remark	Omni Class Number	Omni Class Title
								Fuel	Input	Output	Modulation	Efficiency	Airflow	External Static Pressure (ESP)	Fan	Fan Modulation	Design Fan RPM	Motor Type	Nominal Power	Brake Horsepower	Voltage	Poles	Panel	Circuit Number	Weight	Height	Width	Length			
MAU-1	Greenheck	www.greenheck.com	DGX-130-H38	Garage East	104	MERV 8		Natural Gas	1,991,500 Btu/h	1,832,200 Btu/h	1:18	92%	26,000 CFM	1.75 in-wg	1'-30"	25%	541	TEFC, NEMA Premium Efficiency, VFD approved	25 hp	21.06 hp	480 V	3	H 02	8,10,12	3,124 lbf	5'-4"	8'-0"	13'-4"	Supply direct-drive fan if available at time of ordering. Engineer to approve selection.	23.33.39.15.11	Make Up Air Units With Heat



Gravity Ventilator Schedule									
Mark	Description	Manufacturer	Model	URL	Airflow	Throat Length	Throat Width	OmniClass Number	OmniClass Title
RH-1	Relief Hood with Curb	Greenheck	FGR	www.greenheck.com	28,000 CFM	10'-0"	5'-6"	23.33.49.27.11	Gravity Ventilators
RH-2	Relief Hood with Curb	Greenheck	FGR	www.greenheck.com	2,700 CFM	3'-0"	2'-0"	23.33.49.27.11	Gravity Ventilators

Diffusers, Registers and Grilles									
Type Mark	Neck Size	Manufacturer	URL	Model	Description	Keynote	Est. Count	Omni Class Number	Omni Class Title
3-Way 60x24	60"x24"	MAU Manufacturer		per MAU Manufacturer	3-way Diffuser		1	23.33.49.23.15	Supply Air Grilles
DD-GV-06 x26	26"x6"	Price Industries	www.priceindustries.com	SDG GV	Duct Diffuser Galvanized, 0"		3	23.33.49.23.15	Supply Air Grilles
DD-GV-06 x30	30"x6"	Price Industries	www.priceindustries.com	SDG AL	Duct Diffuser Galvanized, 0"		1	23.33.49.23.15	Supply Air Grilles
DD-GV-06 x34	34"x6"	Price Industries	www.priceindustries.com	SDG AL	Duct Diffuser Aluminum, 0"		7	23.33.49.23.15	Supply Air Grilles
OE	6"x6"	Contractor Shop	NA	NA	Open Duct End w/ 1/2 in. screen		1	23.33.49.23.15	Supply Air Grilles
RE-14x10	14"x10"	Contractor Shop	NA	NA	Rectangular Return Grille with 1/2 in. Birdscreen	Air Inlets as indicated on Plan	1	23.33.49.23.13	Return Air Grilles
RE-16x10	16"x10"	Contractor Shop	NA	NA	Rectangular Return Grille with 1/2 in. Birdscreen	Air Inlets as indicated on Plan	1	23.33.49.23.13	Return Air Grilles
RE-18x10	18"x10"	Contractor Shop	NA	NA	Rectangular Return Grille with 1/2 in. Birdscreen	Air Inlets as indicated on Plan	1	23.33.49.23.13	Return Air Grilles
RE-24x12	24"x12"	Contractor Shop	NA	NA	Rectangular Return Grille with 1/2 in. Birdscreen	Air Inlets as indicated on Plan	3	23.33.49.23.13	Return Air Grilles
RE-24x18	24"x18"	Contractor Shop	NA	NA	Rectangular Return Grille with 1/2 in. Birdscreen	Air Inlets as indicated on Plan	1	23.33.49.23.13	Return Air Grilles
RE-24x24	24"x24"	Contractor Shop	NA	NA	Rectangular Return Grille with 1/2 in. Birdscreen	Air Inlets as indicated on Plan	3	23.33.49.23.13	Return Air Grilles
RE-36x24	36"x24"	Contractor Shop		NA	Rectangular Return Grille with 1/2 in. Birdscreen	Air Inlets as indicated on Plan	1	23.33.49.23.13	Return Air Grilles
TG-1	16"x8"	Price Industries	www.priceindustries.com	530	Return Grill, 3/4 in spacing, 45° Deflection		2	23.33.49.23.13	Return Air Grilles

Control Valve Schedule														
Mark	Description	Comments	Manufacturer	URL	Model	Pressure Rating	Size	Cv Value (for non PICV)	Flowrate	Pressuredrop	Keynote	OmniClass Number	OmniClass Title	
CV M 01	2-Way Control Valve; Pressure Independent 2 15 gpm		Honeywell	www.Honeywell.com	VRN2E	360 psi	1"ø-1"ø	0	15 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 02	2-Way Control Valve; Pressure Independent 2 15 gpm		Honeywell	www.Honeywell.com	VRN2E	360 psi	1"ø-1"ø	0	15 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 03	2-Way Control Valve; Pressure Independent 1-5 gpm		Honeywell	www.Honeywell.com	VRN2A	360 psi	1/2"ø-1/2"ø	0	1 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 04	2-Way Control Valve; Pressure Independent 1-5 gpm		Honeywell	www.Honeywell.com	VRN2A	360 psi	1/2"ø-1/2"ø	0	2 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 05	2-Way Control Valve; Pressure Independent 10 gpm		Honeywell	www.Honeywell.com	VRN2C	360 psi	1"ø-1"ø	0	10 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 06	2-Way Control Valve; Pressure Independent 1-5 gpm		Honeywell	www.Honeywell.com	VRN2A	360 psi	1/2"ø-1/2"ø	0	5 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 07	2-Way Control Valve; Pressure Independent 10 gpm		Honeywell	www.Honeywell.com	VRN2C	360 psi	1"ø-1"ø	0	10 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 08	2-Way Control Valve; Pressure Independent 11-19 gpm		Belimo	www.Belimo.us	PICCV-25	360 psi	1"ø-1"ø	0	11 GPM	5.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 09	2-Way Control Valve; Pressure Independent 1-5 gpm		Honeywell	www.Honeywell.com	VRN2A	360 psi	1/2"ø-1/2"ø	0	5 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 10	2-Way Control Valve; Pressure Independent 11-19 gpm		Belimo	www.Belimo.us	PICCV-25	360 psi	1"ø-1"ø	0	11 GPM	5.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV M 11	2-Way Control Valve; Pressure Independent 1-5 gpm		Honeywell	www.Honeywell.com	VRN2A	360 psi	1/2"ø-1/2"ø	0	1 GPM	3.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	
CV TM	3-Way Flanged Control Valve	Radiant Floor Mixing	Honeywell	www.Honeywell.com	VBF 5011/5013	240 psi	3"ø-3"ø-3"ø	100	10 GPM	0.01 psi		23.27.31.29.15	Thermostatically Controlled Mixing Valves	
CV-B1	2-Way Control Valve - Full Port	Boiler Isolation	Belimo	www.Belimo.com	B2	240 psi	4"ø-4"ø	350	115 GPM	0.11 psi		23.27.33.15	Motor Operated Valve Actuators	
CV-B2	2-Way Control Valve - Full Port	Boiler Isolation	Belimo	www.Belimo.com	B2	240 psi	4"ø-4"ø	350	115 GPM	0.11 psi		23.27.33.15	Motor Operated Valve Actuators	
CV-MF	2-Way Control Valve; Pressure Independent 35 gpm	Min. Boiler Flow	Honeywell	www.Honeywell.com	VRN2F	360 psi	2"ø-2"ø	0	35 GPM	4.00 psi	Select for indicated Flowrate. Use Honeywell / Belimo Valve of lowest Pressuredrop available	23.27.33.15	Motor Operated Valve Actuators	

Radiant Manifold Schedule															
Mark	Room Name	Room Number	Manufacturer	URL	Model	Pex Type / Size	Average Estimated Loop Length (< 5% Deviation)	Number of Loops	Tube Spacing and Layout	Water Volume	Total Flowrate	Flow per Loop	Pressure Drop	Pressure Rating	Comments
M 01	Wash Shop	107	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 3/4"	321'-0"	11	9" Spacing / 6" for 4" by perimeter / Counterflow	15 GPM	1.4 GPM	6 ftH2O	145 psi		
M 02	Repair Shop	109	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 3/4"	391'-0"	11	9" Spacing / 6" for 4" by perimeter / Counterflow	15 GPM	1.4 GPM	7 ftH2O	145 psi		
M 03	Shop Office	108	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 5/8"	178'-0"	1	12" Spacing / 9" for 4" by perimeter / Counterflow	1 GPM	1 GPM	2 ftH2O	145 psi		
M 04	Facilities Shop	106	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 5/8"	275'-0"	2	12" Spacing / 9" for 4" by perimeter / Counterflow	2 GPM	1 GPM	5 ftH2O	145 psi		
M 05	Garage East	104	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 3/4"	389'-0"	5	15" Spacing / 12" for 4" by perimeter / Counterflow	10 GPM	2 GPM	10 ftH2O	145 psi		
M 06	Garage East	104	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 3/4"	509'-0"	6	18" Spacing / 15" for 4" by perimeter / Counterflow	5 GPM	0.8 GPM	3 ftH2O	145 psi		
M 07	Garage East	104	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 3/4"	368'-0"	6	15" Spacing / 12" for 4" by perimeter / Counterflow	10 GPM	1.7 GPM	9 ftH2O	145 psi		
M 08	Garage East	104	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 3/4"	360'-0"	9	9" Spacing / 6" for 4" by perimeter / Counterflow	11 GPM	1.2 GPM	6 ftH2O	145 psi		
M 09	Garage East	104	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 3/4"	397'-0"	6	18" Spacing / 15" for 4" by perimeter / Counterflow	5 GPM	0.8 GPM	3 ftH2O	145 psi		
M 10	Garage East	104	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 3/4"	291'-0"	8	15" Spacing / 12" for 4" by perimeter / Counterflow	11 GPM	1.4 GPM	7 ftH2O	145 psi		
M 11	Storage 1st Floor	105	Uponor	www.Uponorpro.com	TruFLOW Jr. or Classic	PEX-AL-PEX 5/8"	214'-0"	2	18" Spacing / 15" for 4" by perimeter / Counterflow	1 GPM	0.5 GPM	1 ftH2O	145 psi		
										86 GPM					

Fuel Valve Schedule									
Type Mark	Description	Size	Manufacturer	URL	Model	Est. Count	Miscellaneous Pipe Accessories		
FGV-0.75	Fuel Gas Valve	3/4"ø-3/4"ø	Apollo Valves	www.apollovalves.com	GB50	1	AV	Air Vent w/ Isolation Valve	12
FGV-1	Fuel Gas Valve	1"ø-1"ø	Apollo Valves	www.apollovalves.com	GB50	1	FM	Insertion Flowmeter	1
FGV-1.5	Fuel Gas Valve	1 1/2"ø-1 1/2"ø	Apollo Valves	www.apollovalves.com	GB50	4	PG	Pressure Gauge	4
FGV-1.25	Fuel Gas Valve	1 1/4"ø-1 1/4"ø	Apollo Valves	www.apollovalves.com	GB50	1	TG	Temperature Gauge	5
FGV-2	Fuel Gas Valve	2"ø-2"ø	Apollo Valves	www.apollovalves.com	GB50	2	TW	Temperature Well	19
FGV-2.5	Fuel Gas Valve	2 1/2"ø-2 1/2"ø	Apollo Valves	www.apollovalves.com	80-100	1			

Pipe Accesories Schedule									
Type Mark	Description	Size	Manufacturer	URL	Model	Weight	Pressure Rating	Est. Count	
CF 3	Flanged Swing Check Valve	3"ø-3"ø	Watts	www.Watts.com	411	47 lbf	175 psi	4	
SF 3	Flanged Y Strainer 20 Mesh; epoxy-coated	3"ø-3"ø	Watts	www.Watts.com	77F-DI-FDA-125	34 lbf	200 psi	4	
SF 4	Flanged Y Strainer 20 Mesh; epoxy-coated	4"ø-4"ø	Watts	www.Watts.com	77F-DI-FDA-125	60 lbf	200 psi	2	
SS 0.75	Soldered Y Strainer, 30 mesh, Bronze	3/4"ø-3/4"ø	Watts	www.Watts.com	LFS77S	2 lbf	400 psi	3	
SS 1	Soldered Y Strainer, 30 mesh, Bronze	1"ø-1"ø	Watts	www.Watts.com	LFS77S	3 lbf	400 psi	2	
SS 1.5	Soldered Y Strainer, 30 mesh, Bronze	1 1/2"ø-1 1/2"ø	Watts	www.Watts.com	LFS77S	4 lbf	400 psi	4	
YS 1.25	Soldered Y Strainer, 30 mesh, Bronze	1 1/4"ø-1 1/4"ø	Watts	www.Watts.com	LFS77S	3 lbf	400 psi	2	

Air and Dirt Separator Schedule									
Mark	Description	Manufacturer	URL	Model	Size	Weight	Water Volume	Pressure Rating	OmniClass Number
ADS-1	Air Eliminator and Dirt Separator w/ Removable Head	Bell & Gossett	www.bellgossett.com	CRS-4F	4"ø-4"ø	233 lbf	6.6 gal	150 psi	23.27.55.29.21
							Solid Separators		

Access Door Schedule									
Type Mark	Description	Width	Height	Est. Count	Omni Class Number	Omni Class Title	Model	Manufacturer	URL
RE 12x12	Rectangular Hinged Access Door for Rectangular Duct	1'-0"	1'-0"	1	23.33.49.15	Duct Access Panels	FD-H-GA	Ductmate	www.Ductmate.com
RE 16x16	Rectangular Hinged Access Door for Rectangular Duct	4'-0"	4'-0"	3	23.33.49.15	Duct Access Panels	FD-H-GA	Ductmate	www.Ductmate.com
RE 18x18	Rectangular Hinged Access Door for Rectangular Duct	1'-6"	1'-6"	1	23.33.49.15	Duct Access Panels	FD-H-GA	Ductmate	www.Ductmate.com
RE 24x24	Rectangular Hinged Access Door for Rectangular Duct	20'-0"	20'-0"	10	23.33.49.15	Duct Access Panels	FD-H-GA	Ductmate	www.Ductmate.com
RO 30x54	Rectangular Hinged Access Door for Rectangular Duct	3'-0"	5'-0"	1	23.33.49.15	Duct Access Panels	FD-H-GA	Ductmate	www.Ductmate.com
RO-16x12	Rectangular Hinged Access Door for Round Duct	6'-4"	4'-0"	4	23.33.49.15	Duct Access Panels	DR-GA	Ductmate	www.Ductmate.com
RO-24x18	Rectangular Hinged Access Door for Round Duct	8'-0"	6'-0"	4	23.33.49.15	Duct Access Panels	DR-GA	Ductmate	www.Ductmate.com

Balancing Damper Schedule									
Mark	Description	Manufacturer	URL	Model	Size	OmniClass Number	OmniClass Title	Type Mark	Size
MD-1	Thermally broken Frame, thermally Insulated damper. Leakage Class 1A	Tamco	www.Tamco.ca	9000 BF-ECT	60"x60"-20"x20"	23.33.29.19.11	Automatically Control Dampers	BD-RE	6"x6"-6"x6"
MD-2	Thermally broken Frame, thermally Insulated damper. Leakage Class 1A	Tamco	www.Tamco.ca	9000 BF-ECT	20"x20"-20"x20"	23.33.29.19.11	Automatically Control Dampers	BD-RE	14"x10"-14"x10"
MD-3	Thermally broken Frame, thermally Insulated damper. Leakage Class 1A	Tamco	www.Tamco.ca	9000 BF-ECT	60"x60"-20"x20"	23.33.29.19.11	Automatically Control Dampers	BD-RE	16"x10"-16"x10"
MD-4	Thermally broken Frame, thermally Insulated damper. Leakage Class 1A	Tamco	www.Tamco.ca	9000 BF-ECT	24"x24"-24"x24"	23.33.29.19.11	Automatically Control Dampers	BD-RE	18"x10"-18"x10"
MD-5	Thermally broken Frame, thermally Insulated damper. Leakage Class 1A	Tamco	www.Tamco.ca	9000 BF-ECT	16"x26"-16"x26"	23.33.29.19.11	Automatically Control Dampers	BD-RE	24"x12"-24"x12"
MD-6	Thermally broken Frame, thermally Insulated damper. Leakage Class 1A	Tamco	www.Tamco.ca	9000 BF-ECT	30"x30"-30"x30"	23.33.29.19.11	Automatically Control Dampers	BD-RE	24"x18"-24"x18"
								BD-RE	24"x24"-24"x24"
								BD-RE	36"x24"-36"x24"

Louver Schedule									
Mark	Manufacturer	Model	URL	Airflow	Depth	Height	Width	Color	OmniClass Number
L-1	Greenheck	ESD 635	www.greenheck.com	26,000 CFM	6"	10'-0"	10'-0"	Sandstone	23.33.49.23
L-2	Greenheck	ESD 635	www.greenheck.com	2,700 CFM	6"	3'-9"	3'-9"	Sandstone	23.33.49.23
									Grilles

Hydronic Valve Schedule										
Type Mark	Description	Size	Manufacturer	URL	Model	Weight	Pressure Rating	Cv Value	Est. Count	
VF 3	Ball Valve Flanged w/ SS Ball; epoxy-coated	3"ø-3"ø	American Valves Valves	www.Americanvalve.com	4000D Series	46 lbf	200 psi	1245	14	
VF 4	Ball Valve Flanged w/ SS Ball; epoxy-coated	4"ø-4"ø	American Valves Valves	www.Americanvalve.com	4000D Series	75 lbf	200 psi	2500	4	
VS 0.75	Ball Valve Soldered, SS Ball, Extended Lever	3/4"ø-3/4"ø	Milwaukee Valve	www.milwaukeevalve.com	UPBA450S	1 lbf	200 psi	35	11	
VS 1	Ball Valve Soldered, SS Ball, Extended Lever	1"ø-1"	Milwaukee Valve	www.milwaukeevalve.com	UPBA450S	1 lbf	200 psi	60	4	
VS 1.5	Ball Valve Soldered, SS Ball, Extended Lever	1 1/2"ø-1 1/2"	Milwaukee Valve	www.milwaukeevalve.com	UPBA450S	3 lbf	200 psi	185	12	
VS 1.25	Ball Valve Soldered, SS Ball, Extended Lever	1 1/4"ø-1 1/4"	Milwaukee Valve	www.milwaukeevalve.com	UPBA450S	2 lbf	200 psi	110	11	4
VS 2	Ball Valve Soldered, SS Ball, Extended Lever	2"ø-2"	Milwaukee Valve	www.milwaukeevalve.com	UPBA450S	5 lbf	200 psi	360	6	

Engineering Operations
Building Addition

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Electrical Design:
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Architects

Architectural Design:
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rschindel@cityofmadison.com

MD 200

Keynote Legend	
Key Value	Keynote Text
	LOCATE DUCT AS CLOSE AS POSSIBLE TO STRUCTURE WHILE KEEPING CLEAR OF BAR STAIRS AND OTHER ELEMENTS
	INSTALL AS CLOSE TO STRUCTURE AS IS POSSIBLE. ARRANGE TO ALLOW AS MUCH STORAGE SPACE AS POSSIBLE. COORDINATE WITH OTHER TRADES AND/OR ARCHITECT WITH REGARDING THE GENERAL APPROVAL AS REQUIRED.
3	ENGINE NOTE: CONTRACTOR SHALL VERIFY X/Y DIMENSIONS. VALUES GIVEN ARE APPROXIMATE.
4	LOCAT DCAT SENSOR HERE OR WHERE REQUIRED BY OWNER
5	LOCATE VENTILATION PUSH BUTTON HERE OR WHERE REQUIRED BY OWNER
6	ALL OPENINGS > 4" FROM CORNER AND/OR DAMPER
7	INSULATE DUCT UP TO INCLUDING DAMPER
	AT TIME OF STRUCTURE CONSTRUCTION, THE SCHEDULED MAJOR WALL BE AVAILABLE. IT IS EXPECTED DISCHARGE IS POSSIBLE THROUGH SIDE OF MAJOR ORDER DIRECT DRIVE UNIT AND SIDE-DISCHARGE BASED ON UPDATED DATE AT THAT TIME.

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6/2/2015

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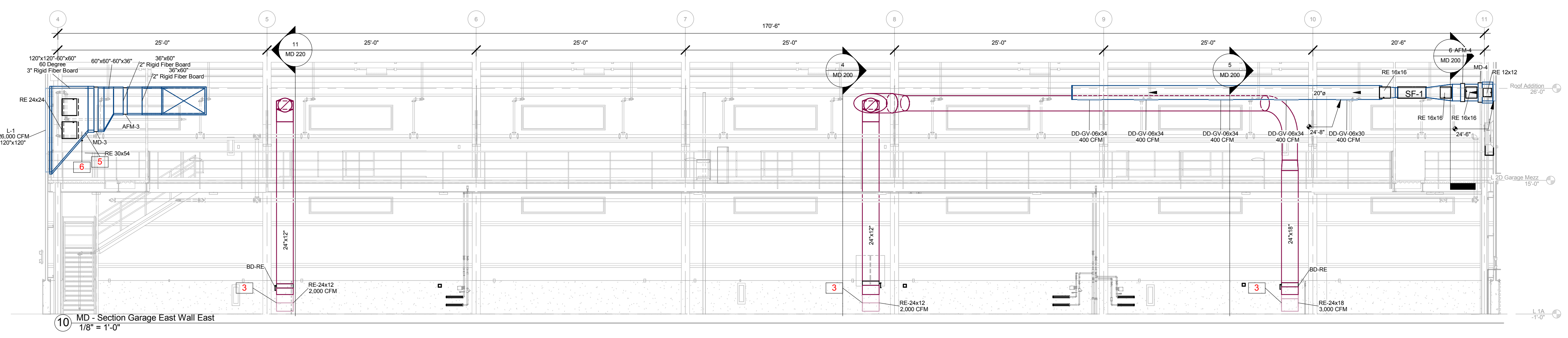
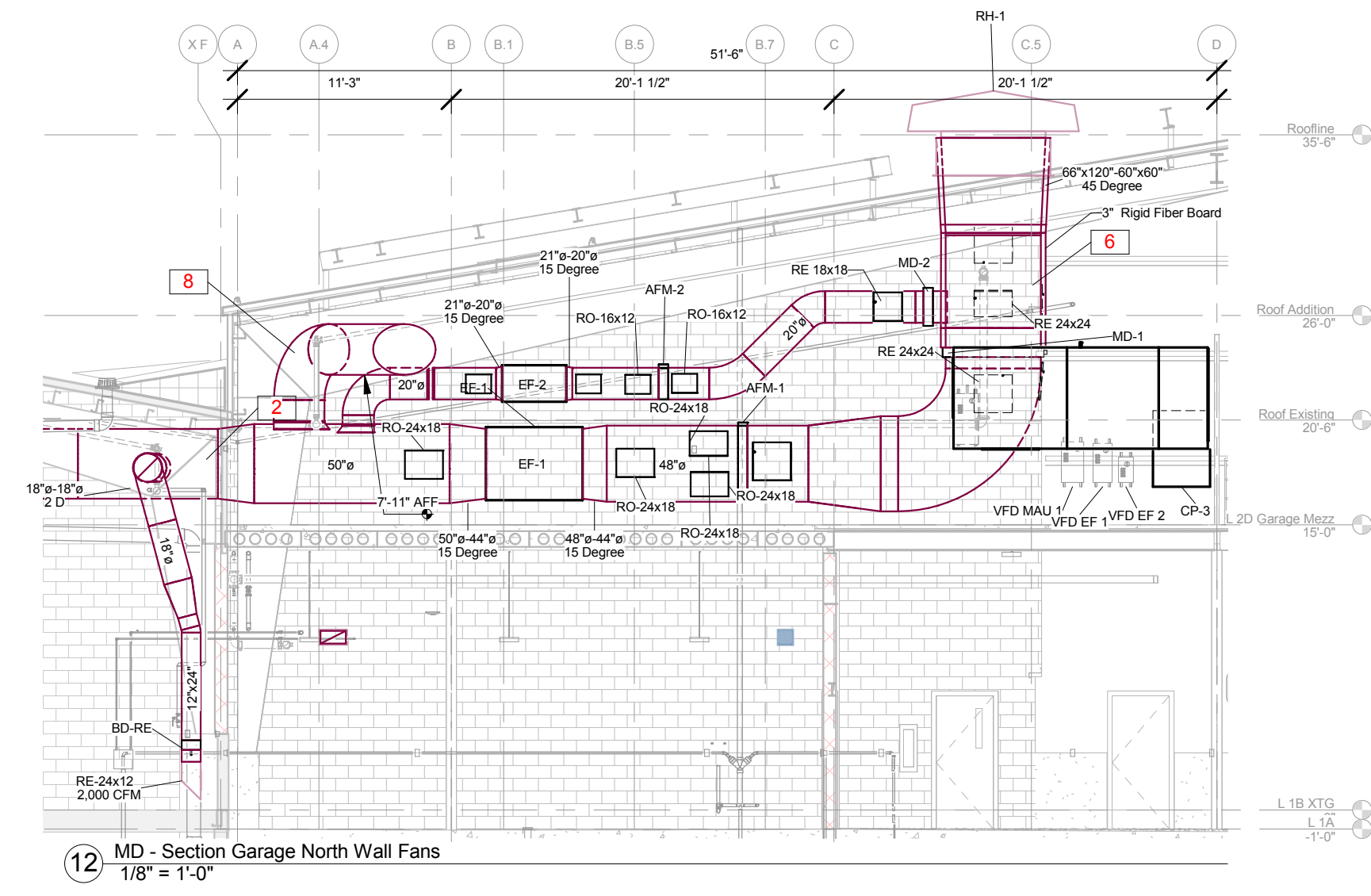
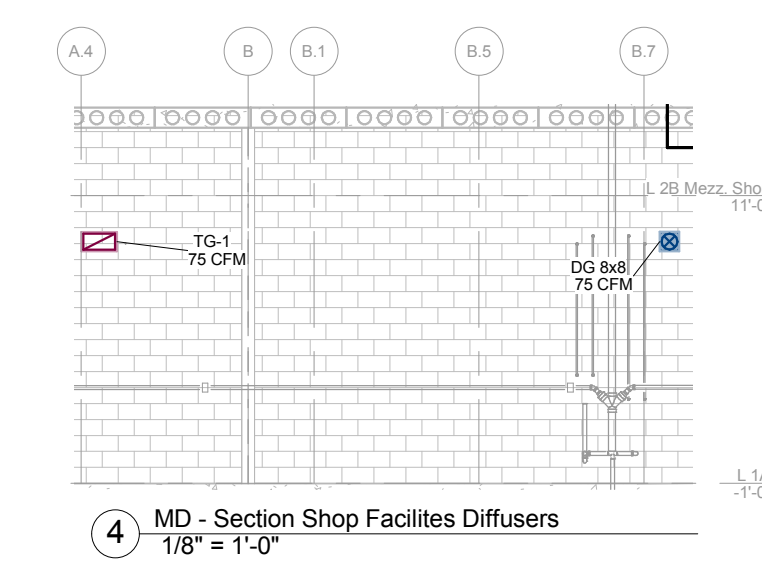
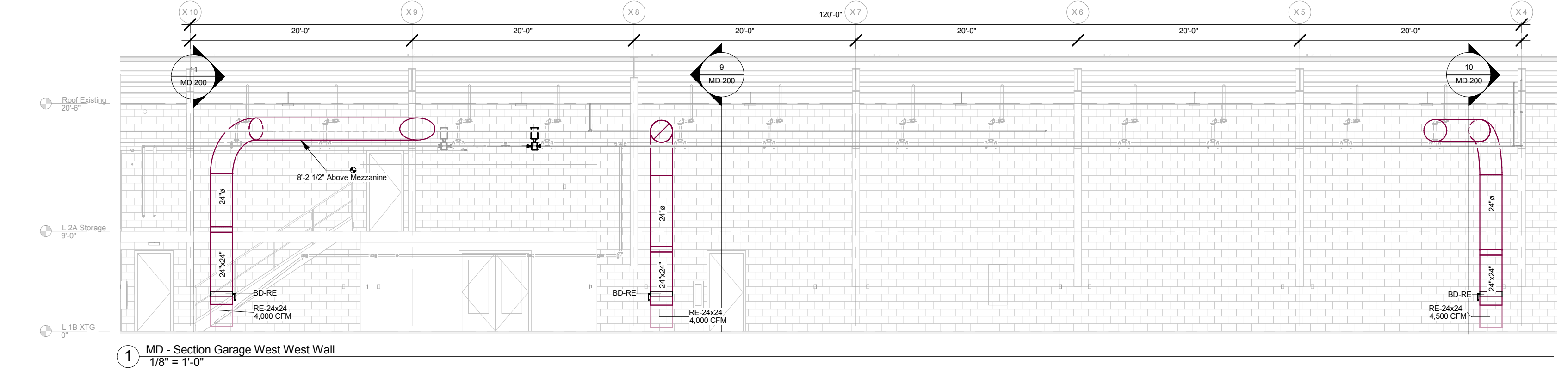
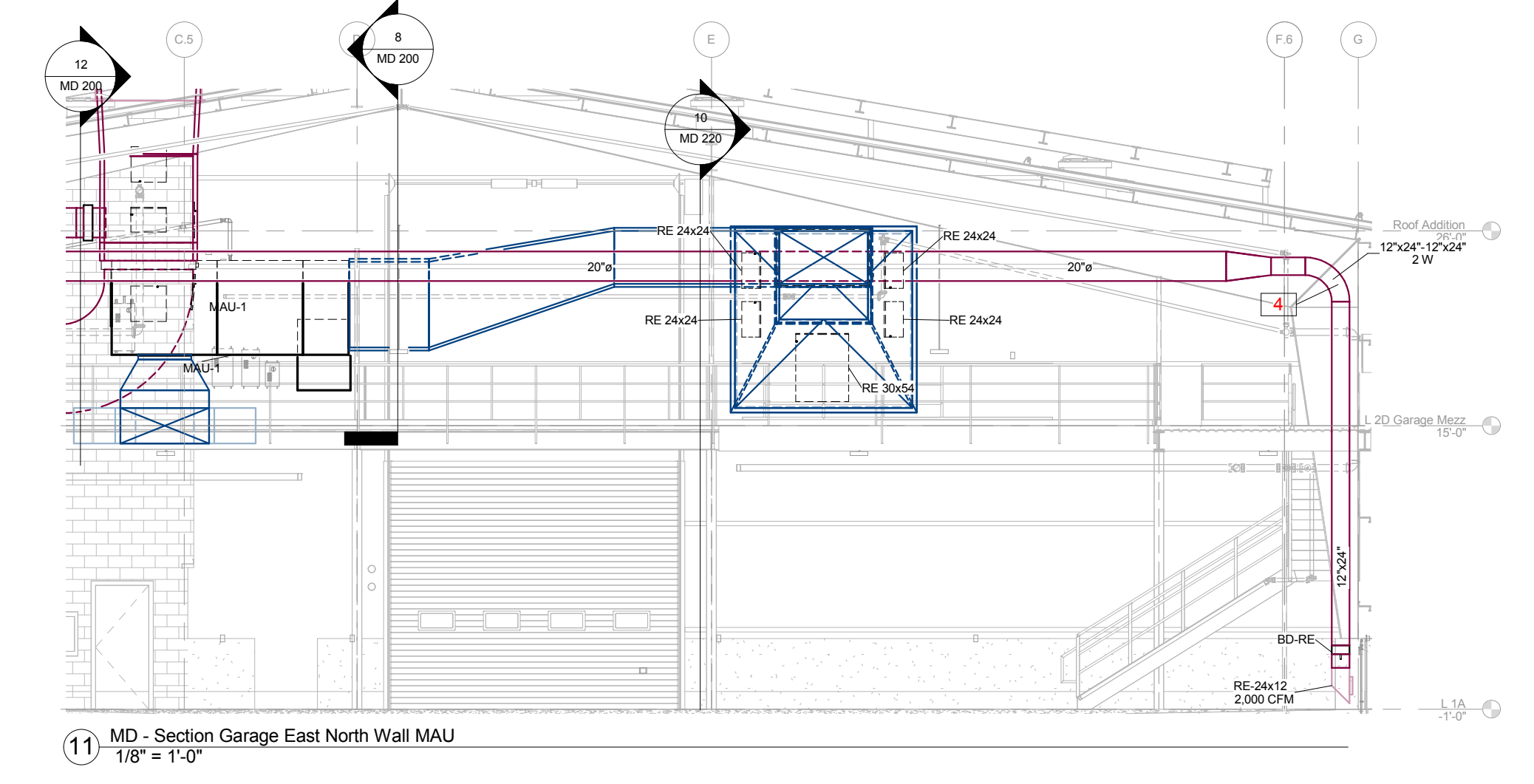
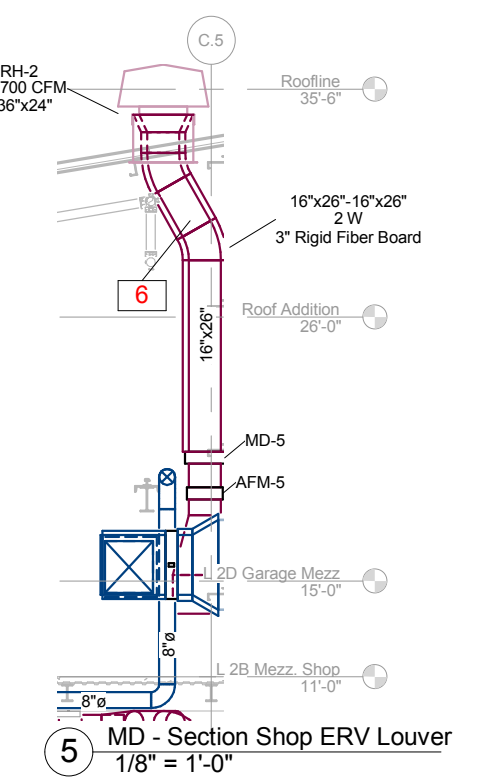
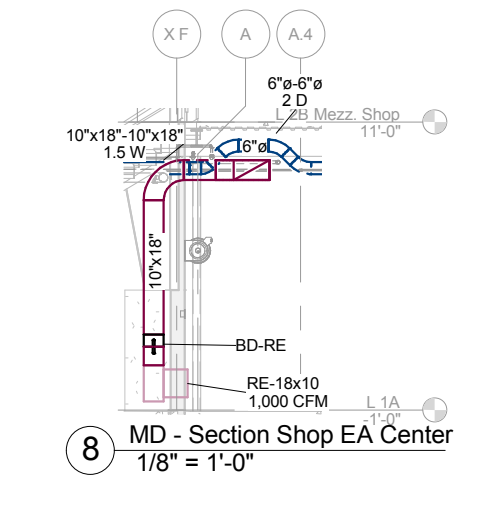
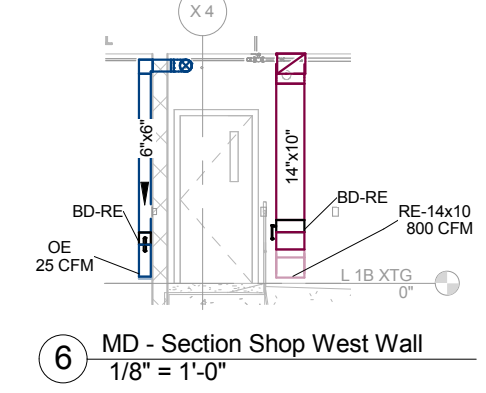
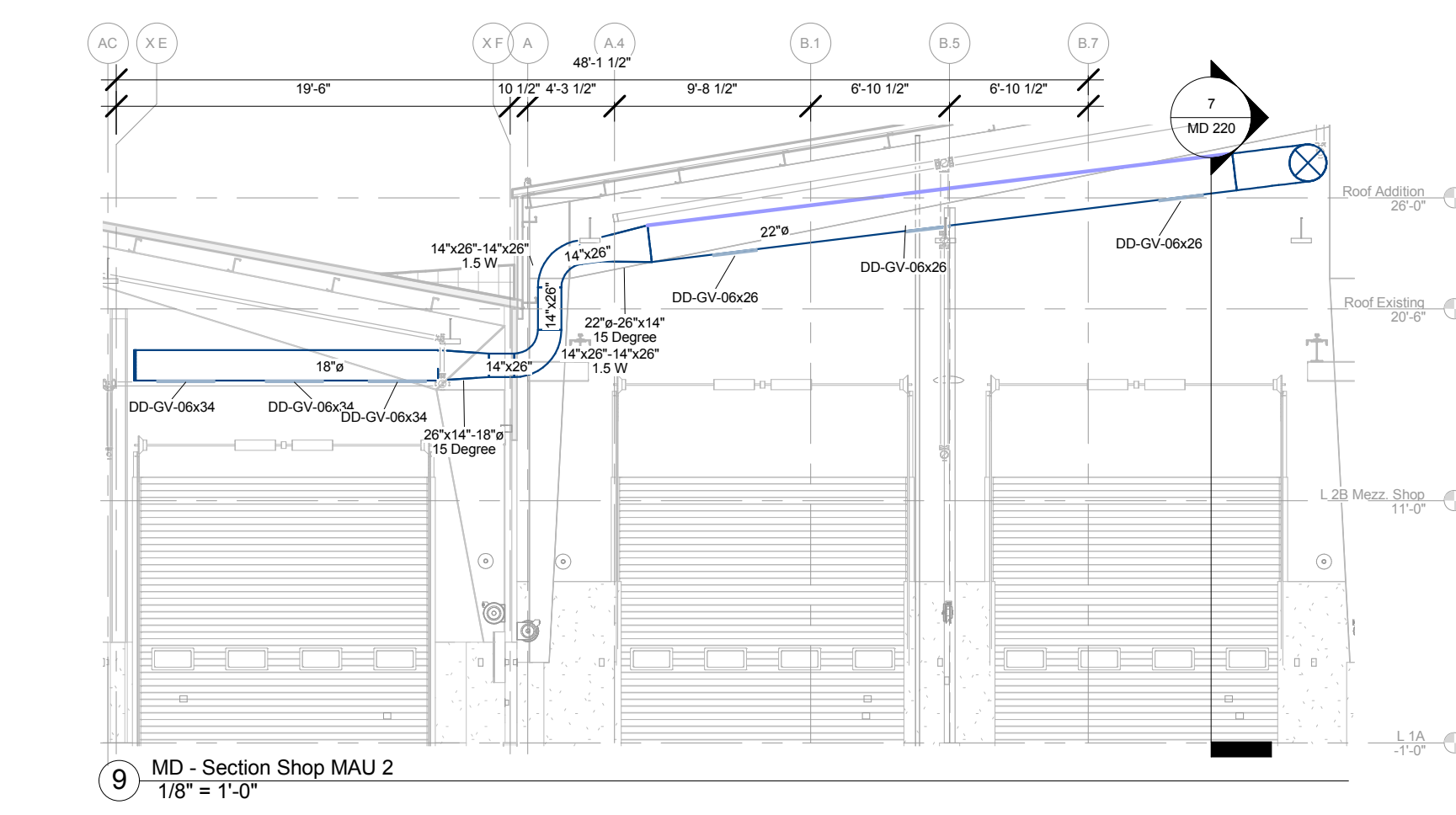
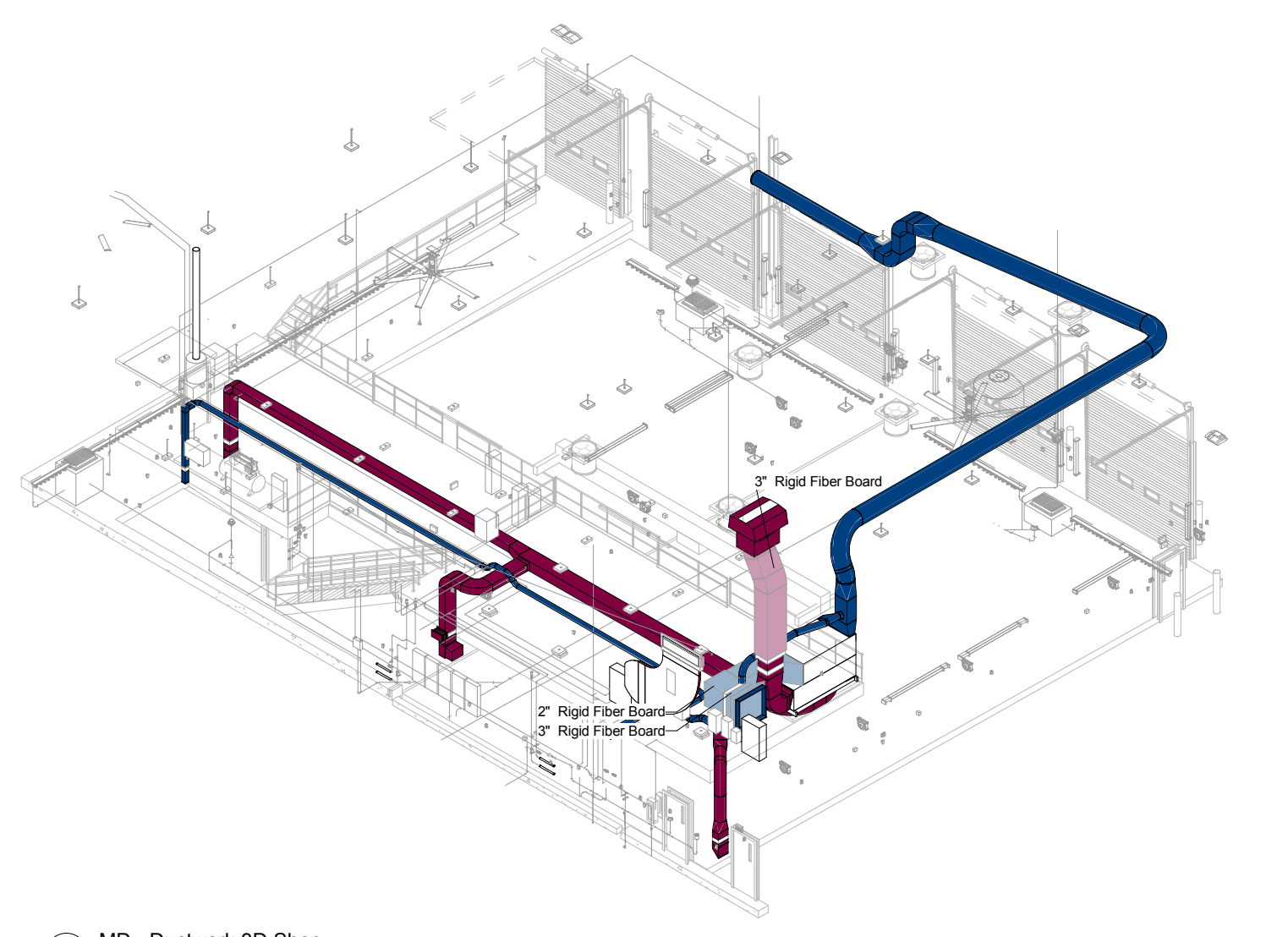
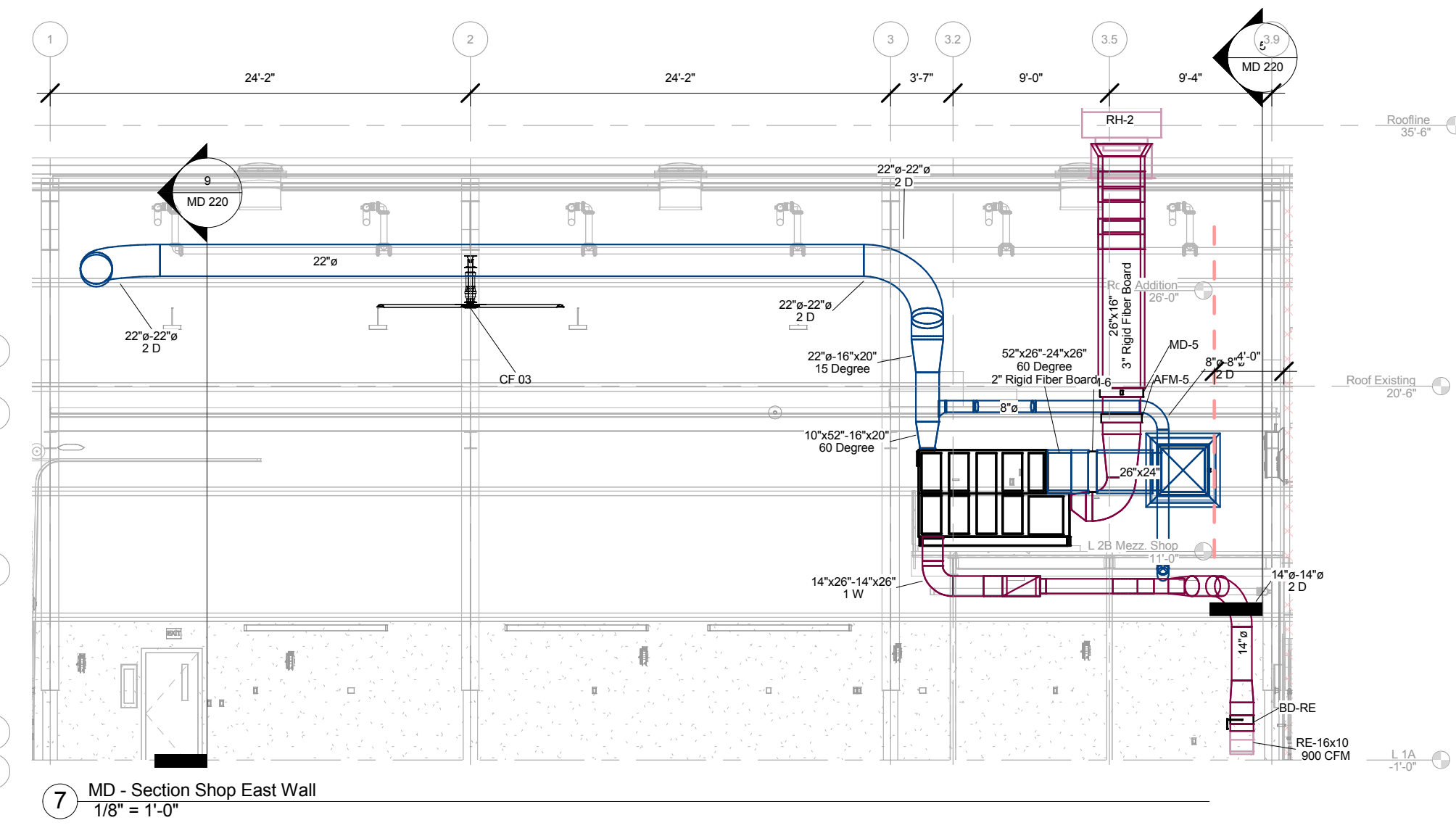
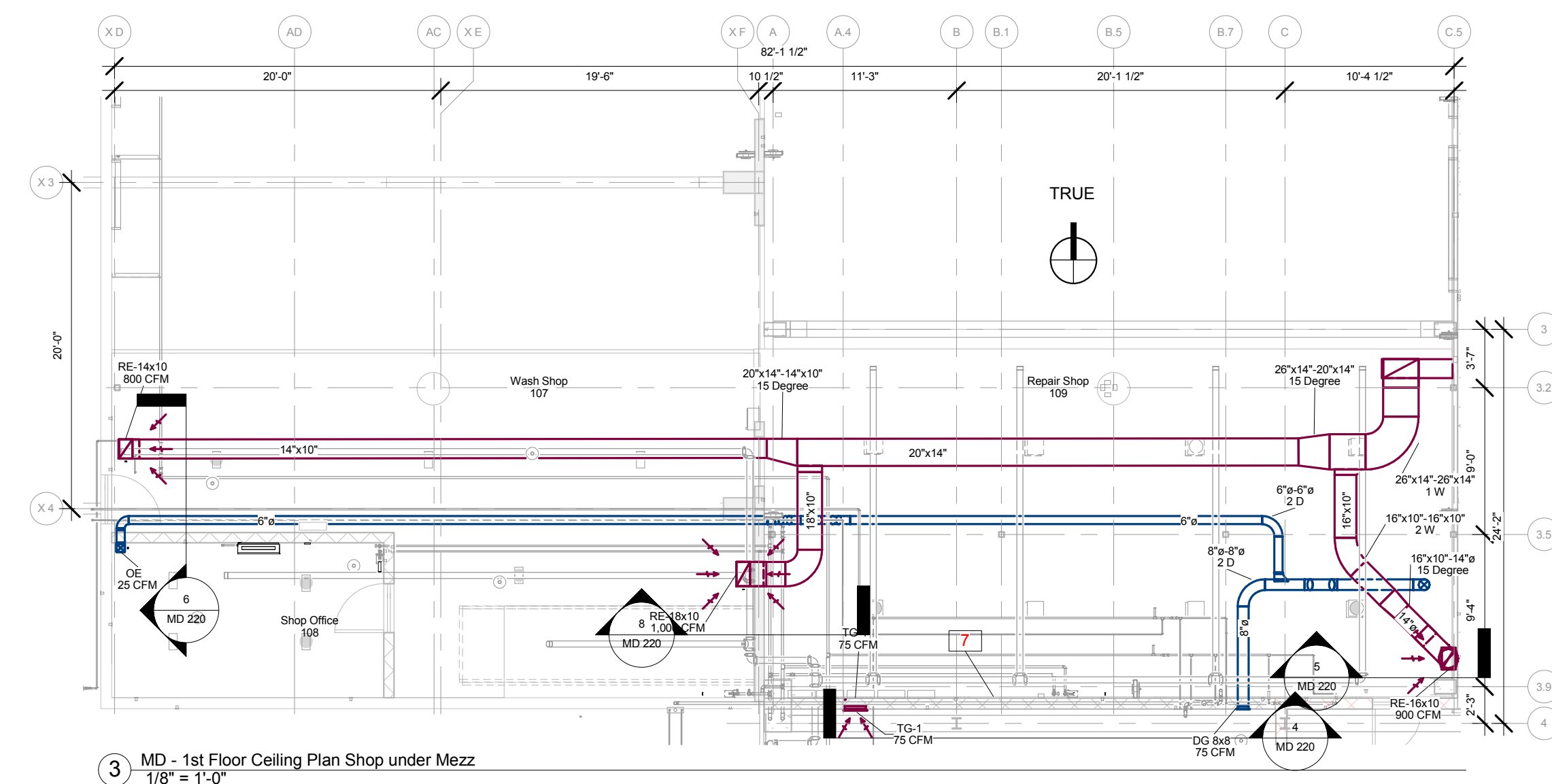
Fire Protection Design:
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Kay Schindel, P.E., City of
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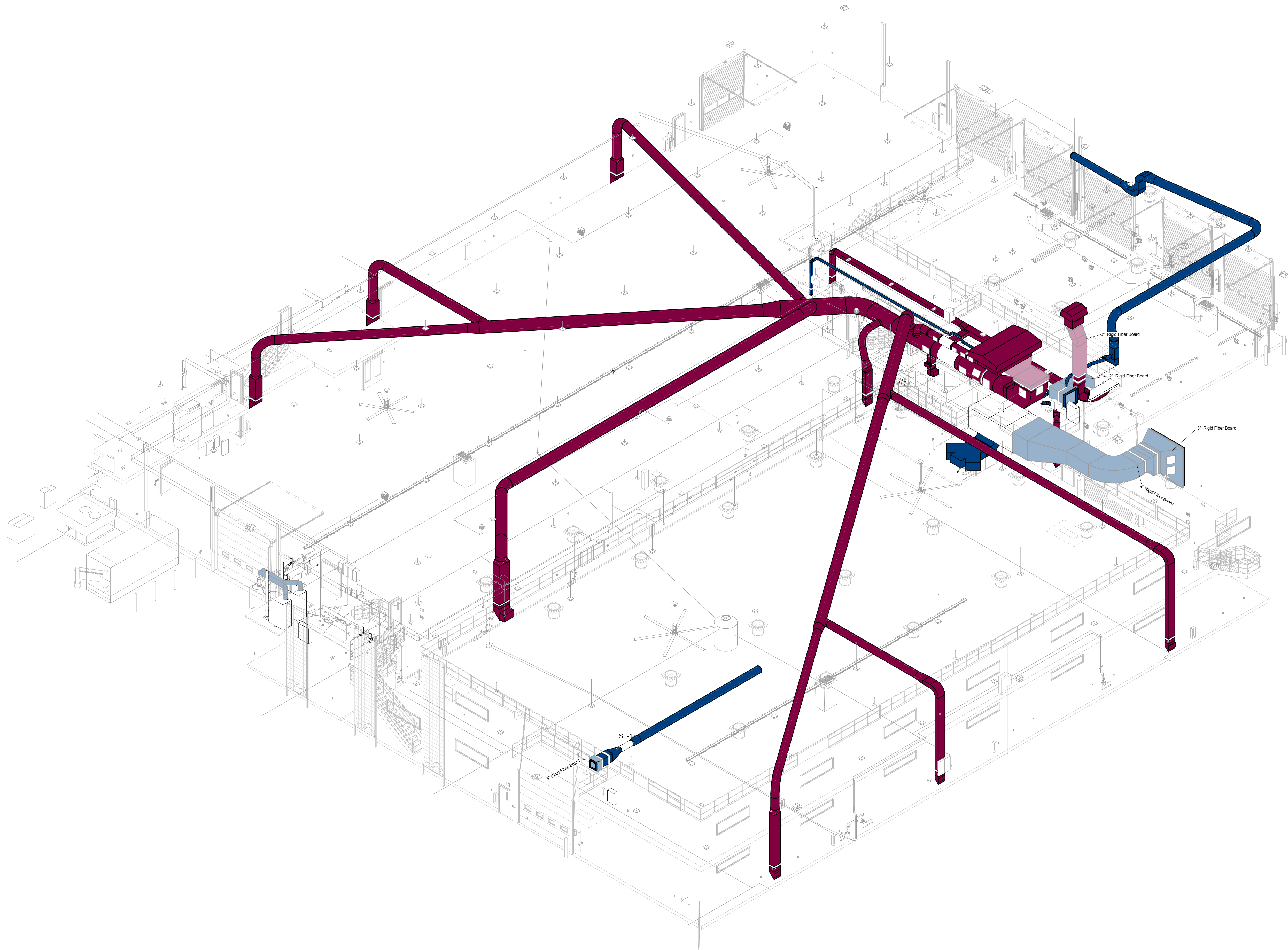
Shop &
Garage
Sections

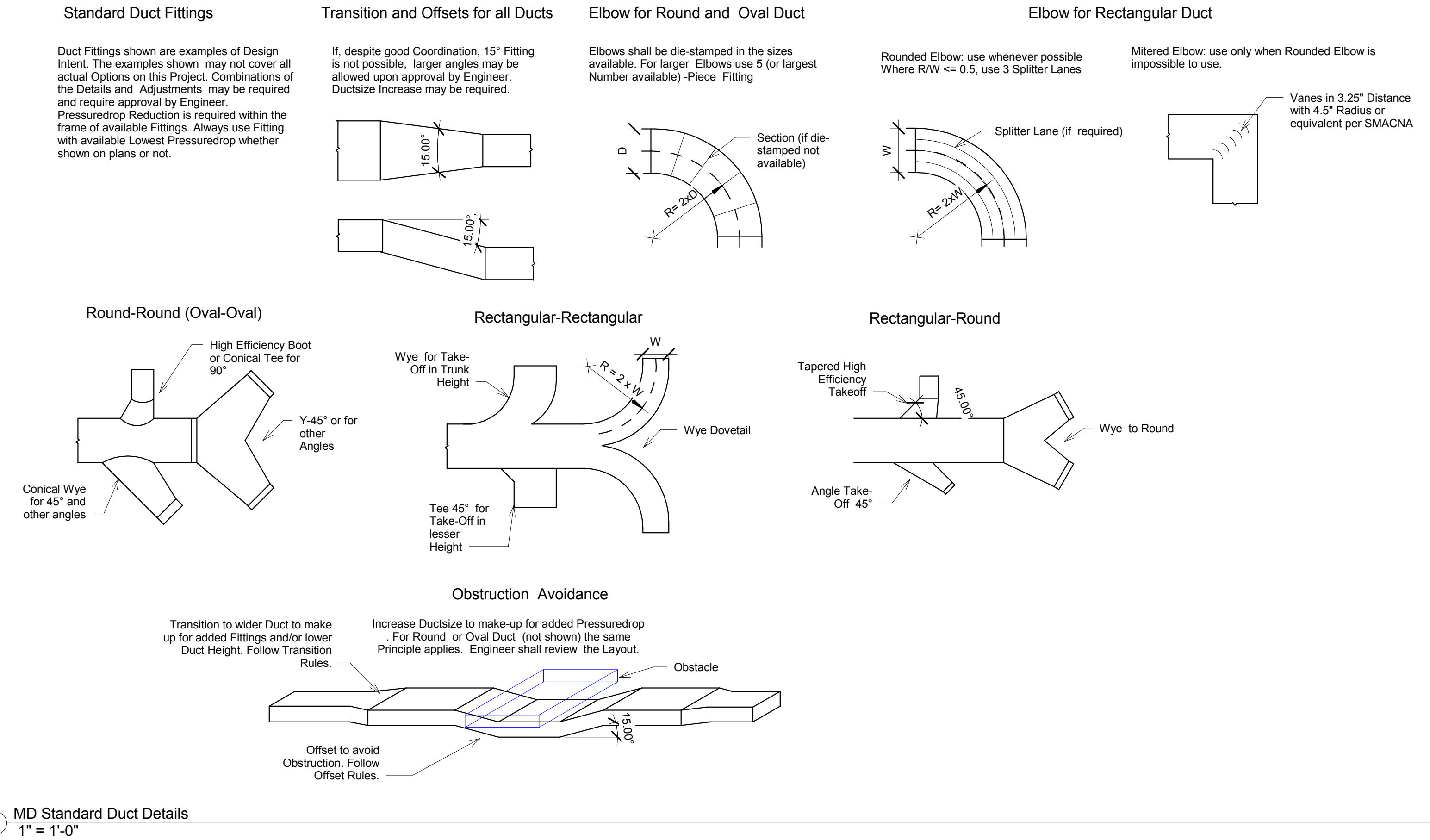
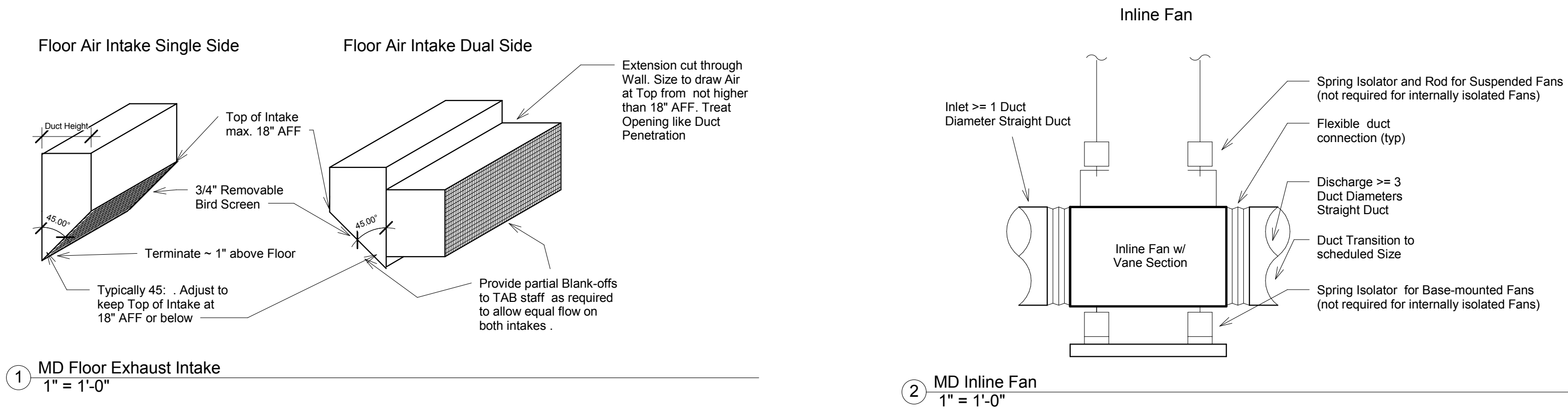
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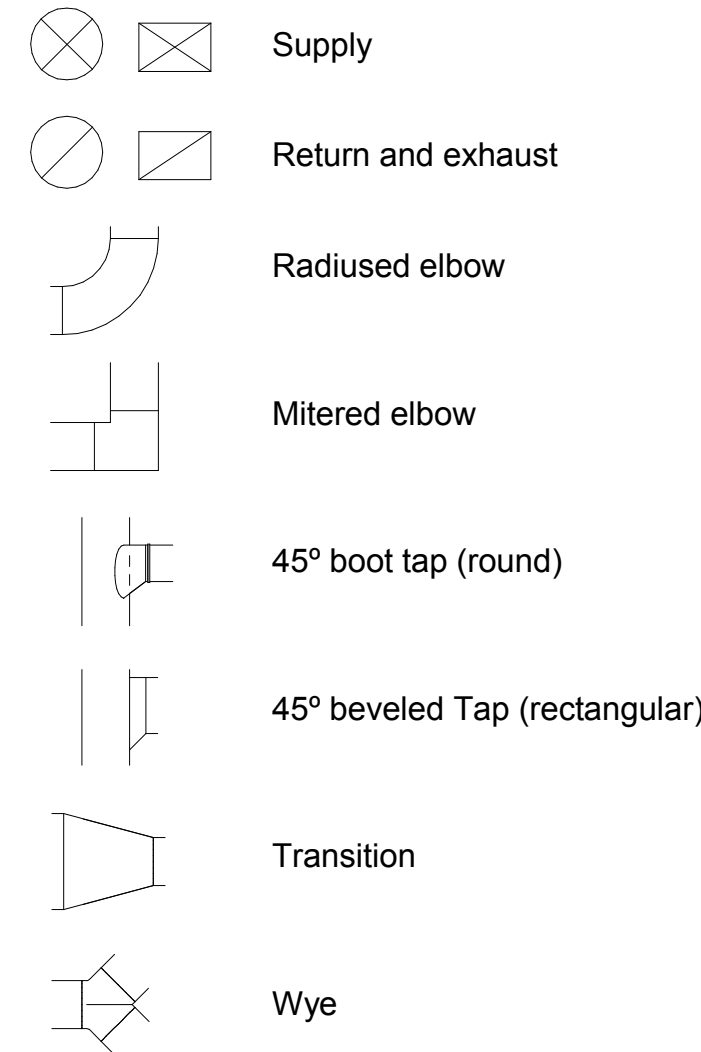
Keynote Legend	
Key Value	Keynote Text
1	NEW FLUE TO ROOF
2	USE RECTANGULAR DUCT IF STRUCTURE OR OTHER OBSTACLES PREVENT DUCT IN SIZE INDICATED. USE 18\"
3	LOCATE DUCT AS CLOSE AS POSSIBLE TO STRUCTURE WHILE KEEPING CLEAR OF BAR STRUTS AND OTHER ELEMENTS
4	INSTALL AS CLOSE TO STRUCTURE AS POSSIBLE. ARRANGE TO ALLOW AS MUCH STORAGE SPACE AS POSSIBLE. COORDINATE WITH OTHER TRADES AND OWNERS ADJUST ROUTING WITH ENGINEER APPROVAL AS REQUIRED.
5	INSULATE DUCT UP TO INCLUDING DAMPER.
7	LOCATE VENTILATION PUSH BUTTON HERE OR WHERE REQUIRED BY OWNER.
8	ATTACH DUCT IN OFF-VERTICAL AXIS TO ALLOW 20\"



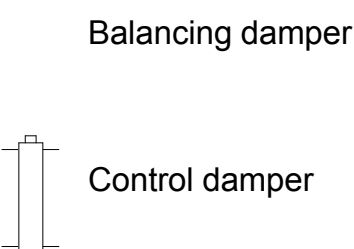


MECHANICAL LEGEND

DUCTWORK AND FITTINGS



DUCT ACCESSORIES



Mechanical Legend
1/4" = 1'-0"

City of Madison
Facilities Maintenance
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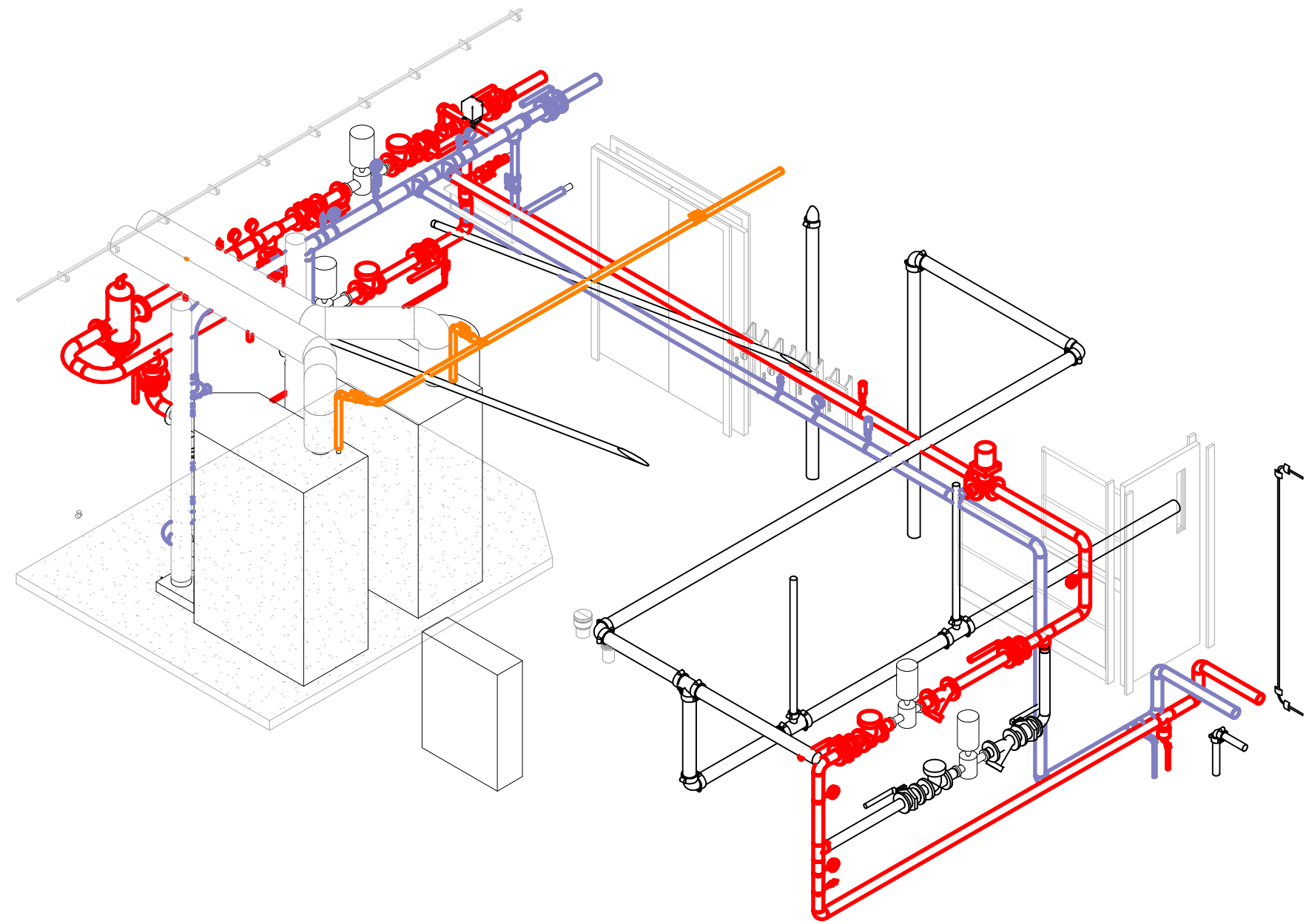
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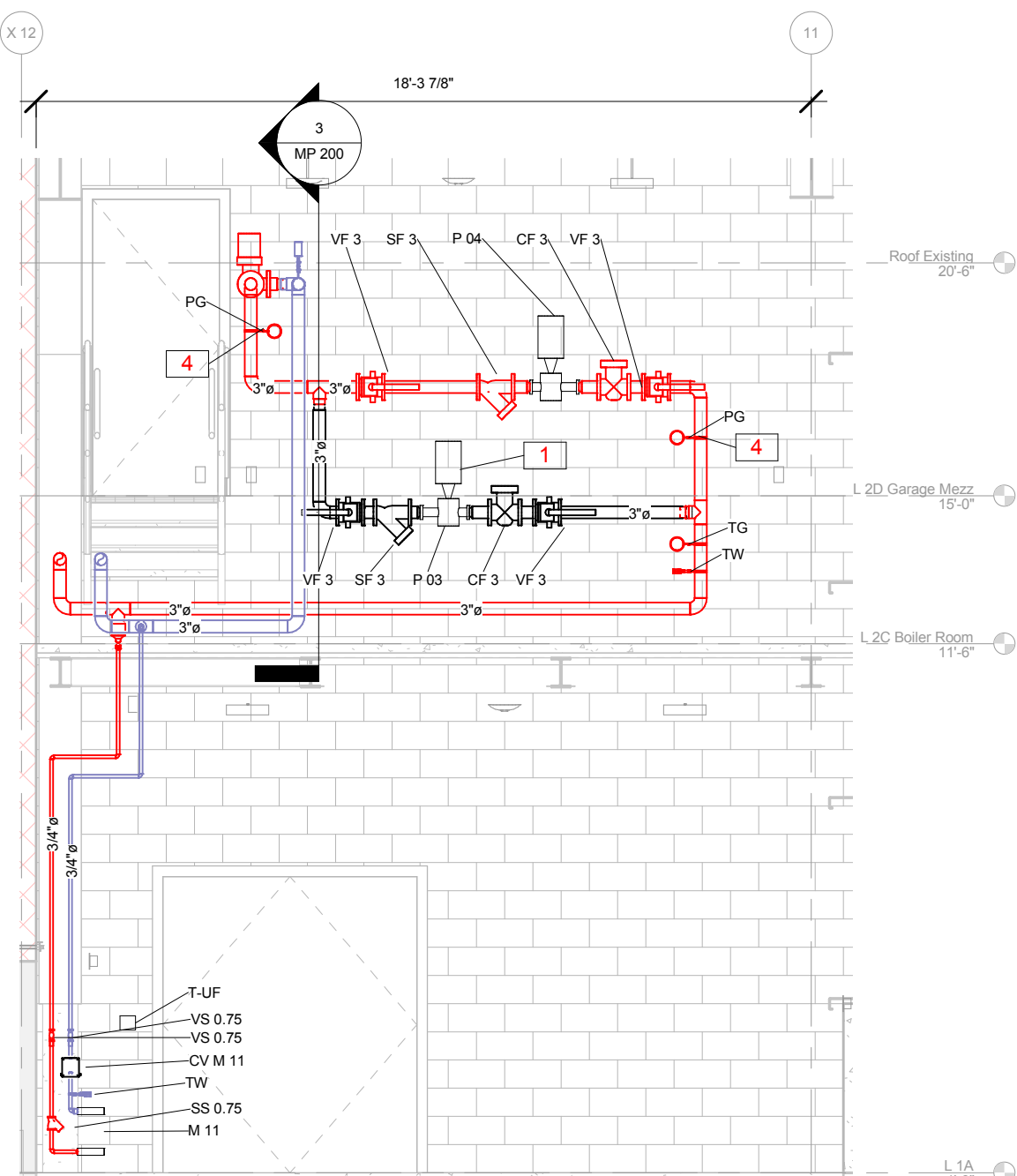
Ductwork
Details

MD 300

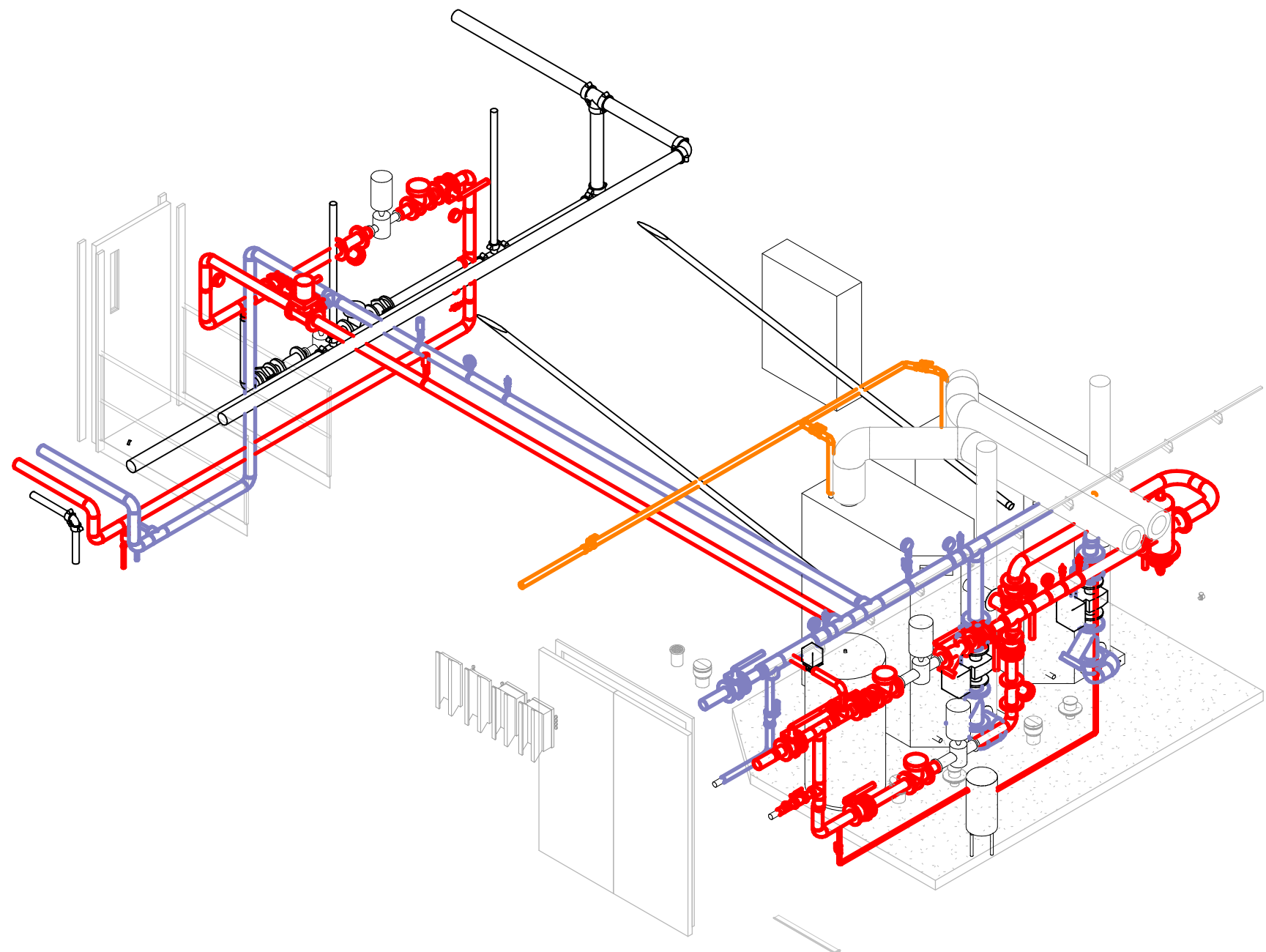
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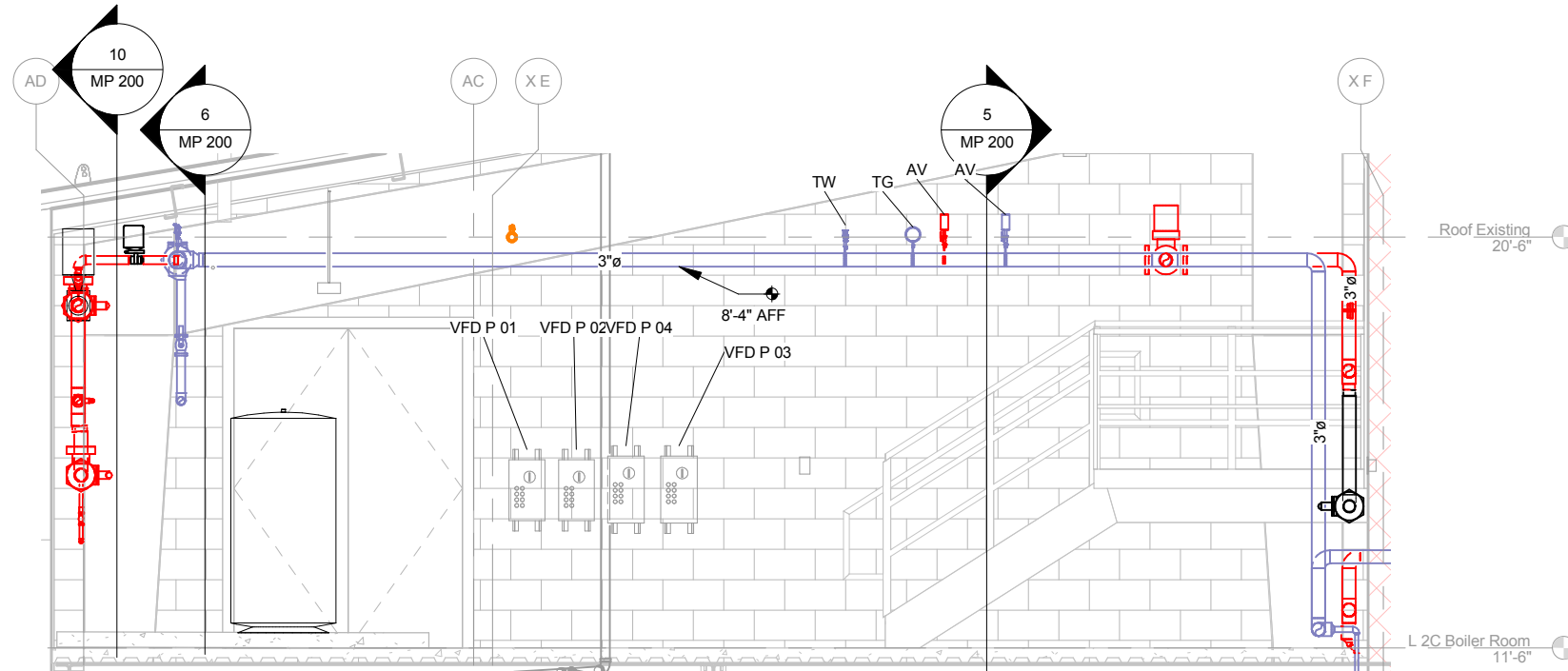
4 MP - 3D Boiler from SE



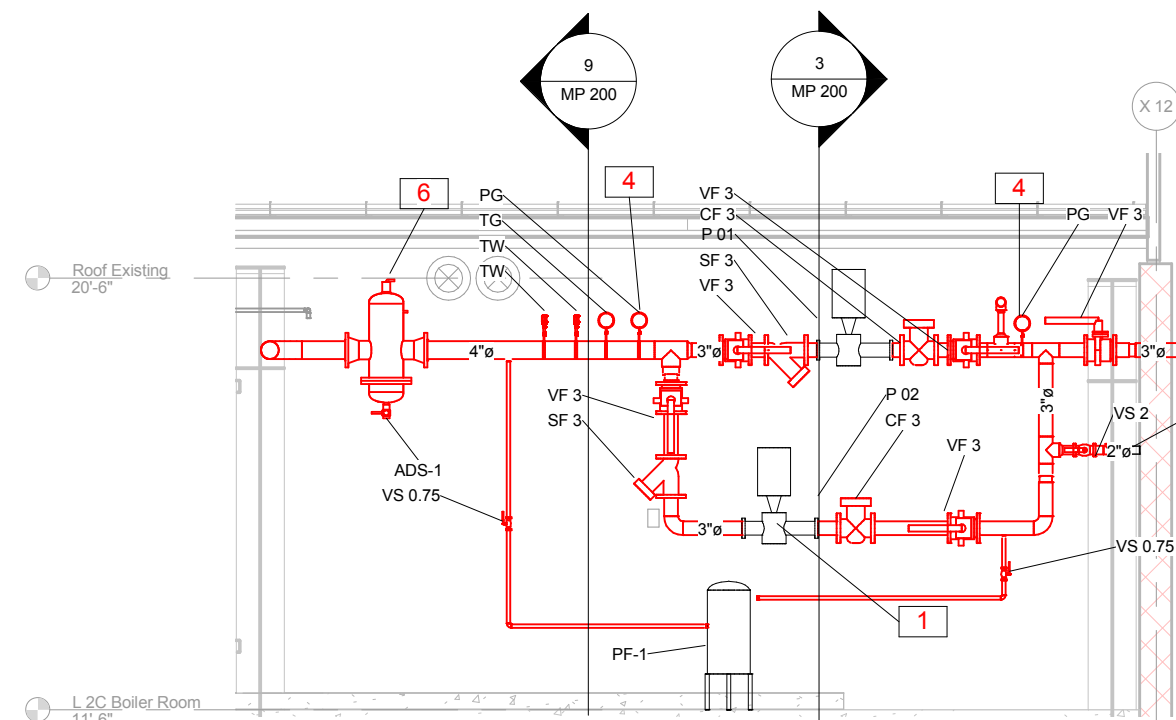
5 MP - Section Boiler Room East Wall
1/4" = 1'-0"



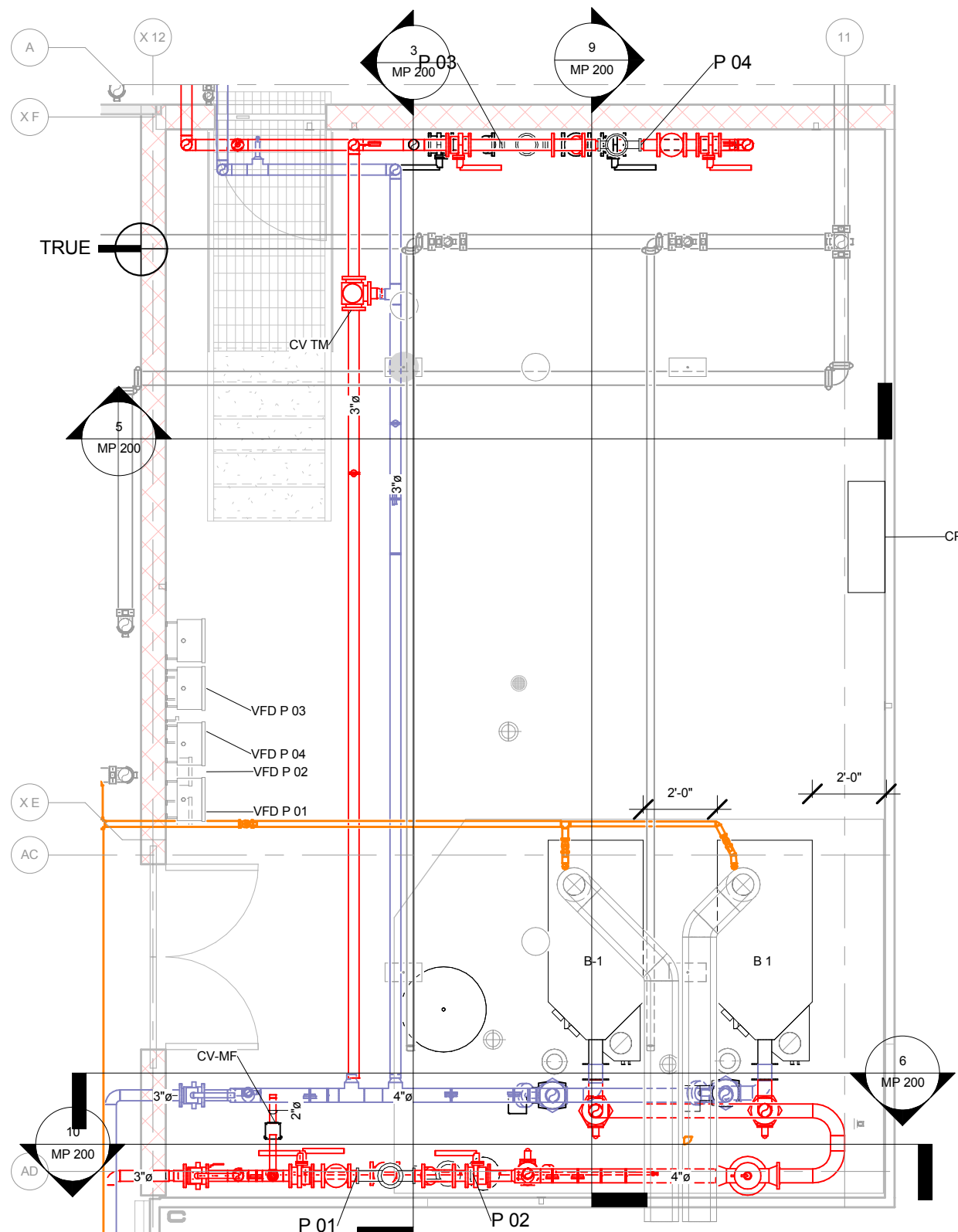
7 MP - 3D Boiler from NW



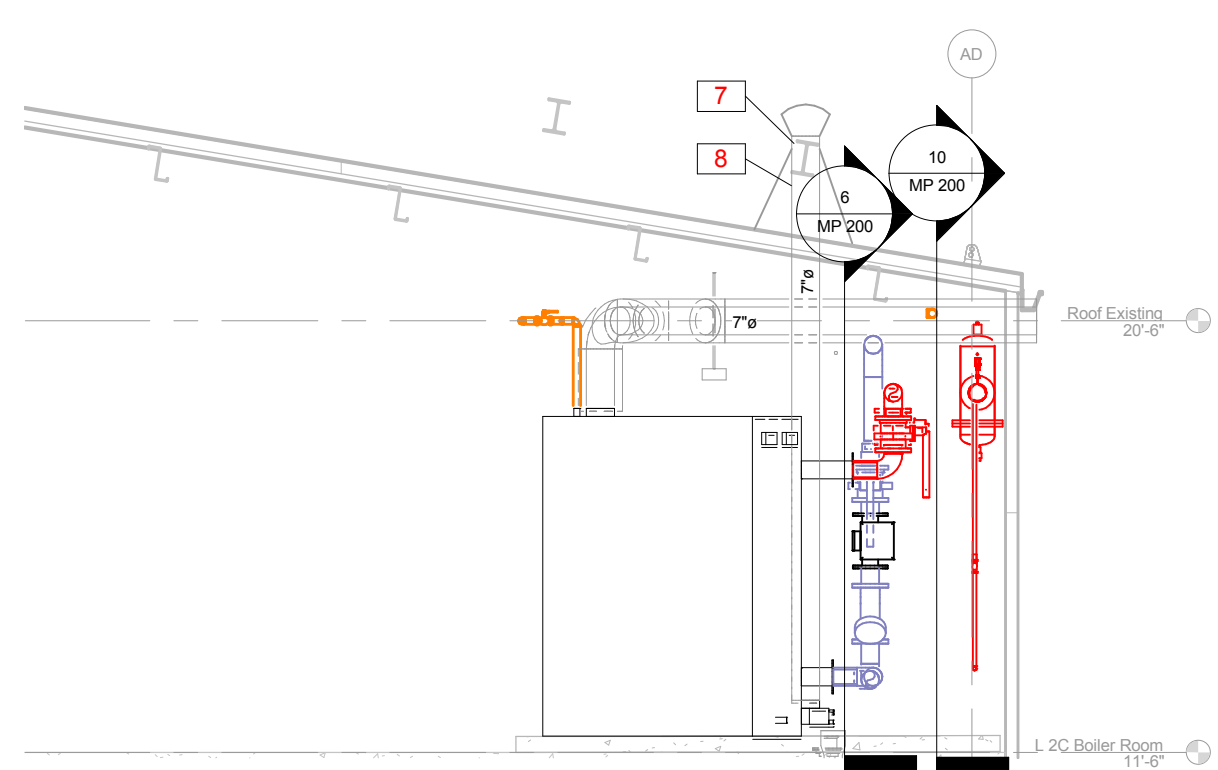
3 MP - Section Boiler Room North Wall
1/4" = 1'-0"



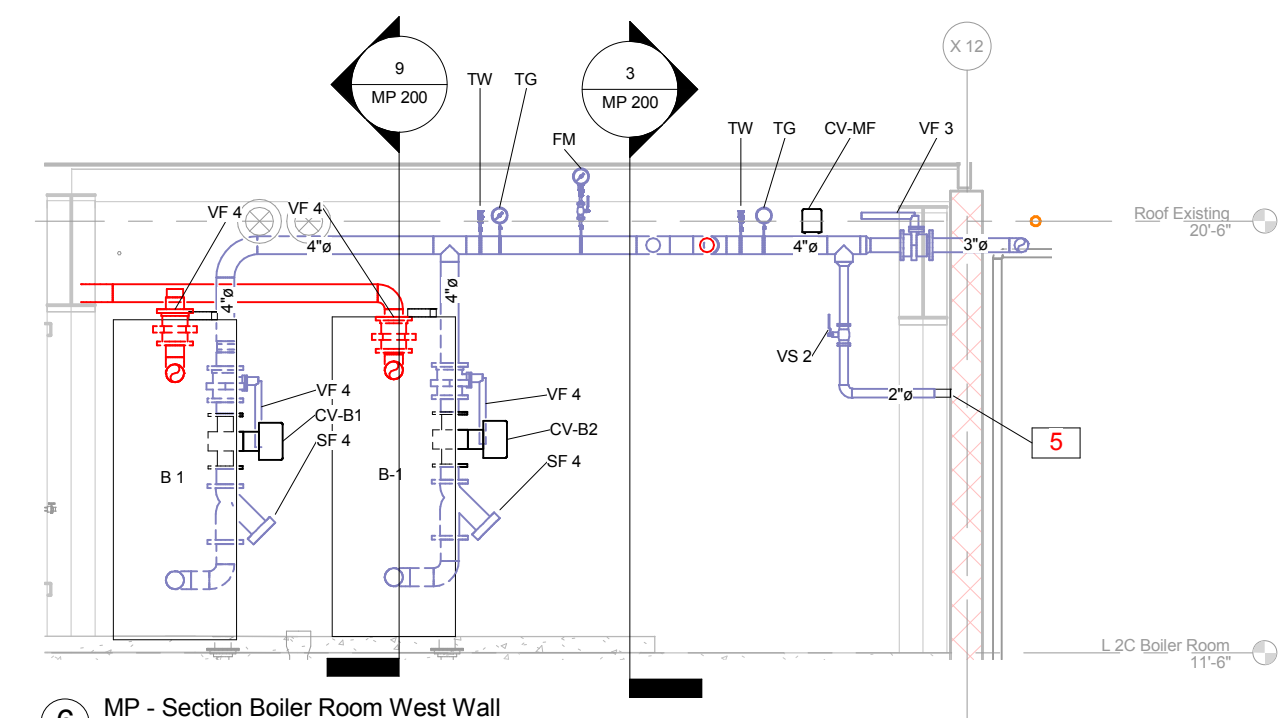
10 MP - Section Boiler Room Boilers
1/4" = 1'-0"



2 MP - Floorplan 2nd Floor Boiler Room
1/4" = 1'-0"



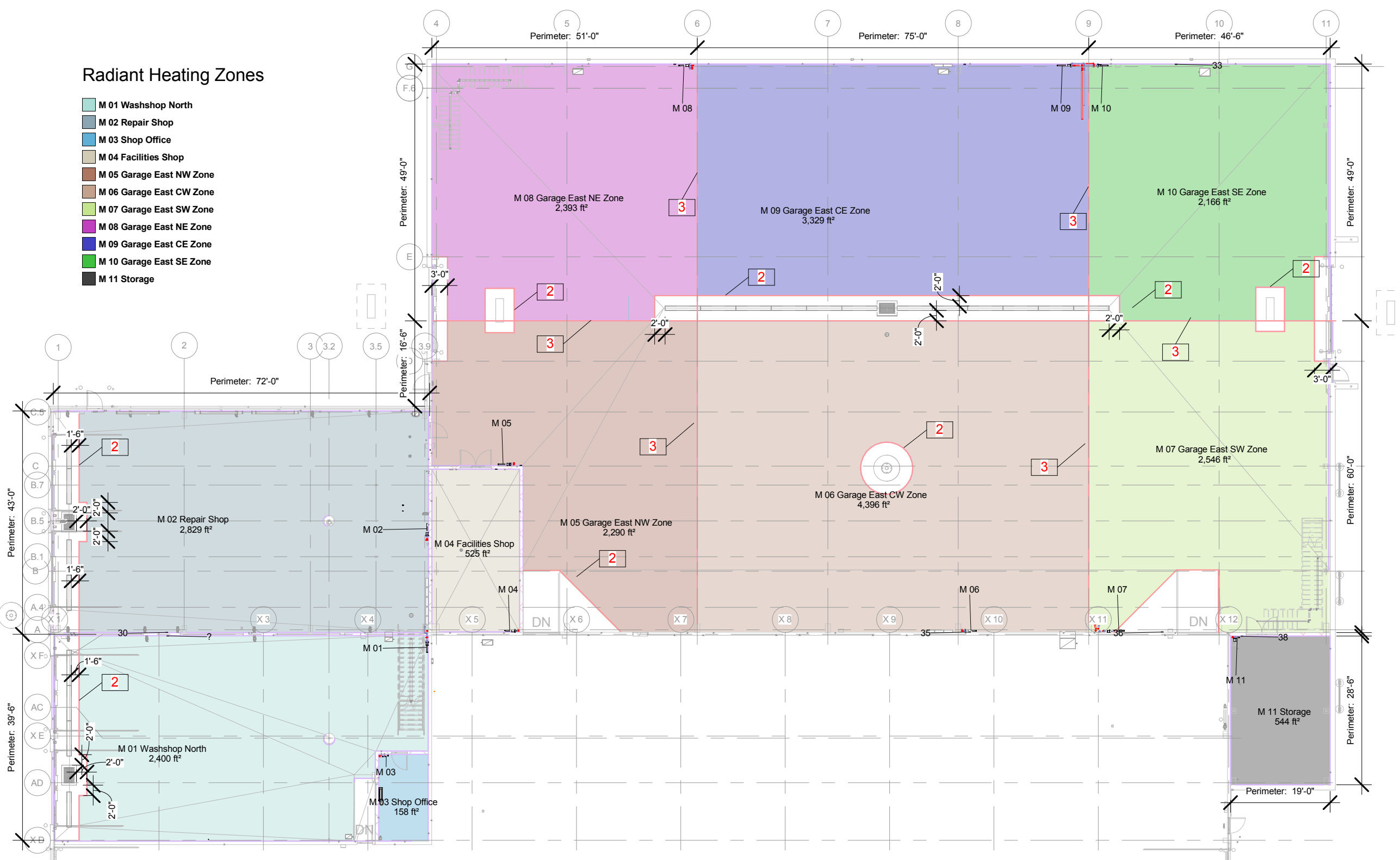
9 MP - Section Boiler Room South Wall
1/4" = 1'-0"



6 MP - Section Boiler Room West Wall
1/4" = 1'-0"

Radiant Heating Zones

- M 01 Washshop North
- M 02 Repair Shop
- M 03 Shop Office
- M 04 Facilities Shop
- M 05 Garage East NW Zone
- M 06 Garage East CW Zone
- M 07 Garage East SW Zone
- M 08 Garage East NE Zone
- M 09 Garage East CE Zone
- M 10 Garage East SE Zone
- M 11 Storage



1 MP - Radiant Floor
1" = 20'-0"

Keynote Legend	
Key Value	Keynote Text
1	OFFSET PUMPS TO PREVENT PUMP LEAK AFFECTING OTHER PUMPS. ARRANGE PIPING TO PROVIDE ENOUGH CLEARANCE AND ACCESS.
2	KEEP RADIANT TUBING CLEAR OFF STRUCTURAL ELEMENTS, DRAINS, ETC.
3	RADIANT FLOOR ZONES SEPARATED BY EXPANSION JOINT.
4	CONNECT DIFFERENTIAL PRESSURE SENSOR. STUB OUT THROUGH WALL BY MIN. 2" AND CAP FOR FUTURE EXPANSION. PROVIDE THREADED END IN CASE OF STEEL PIPE. S.E.A. AND FIRE PROOF WALL AS REQUIRED TO REINSTATE REQUIRED CONDITION.
5	COORDINATE WITH ROOF EQUIPMENT AND RE-ROUTE AS REQUIRED.
6	COORDINATE WITH ROOF EQUIPMENT AND RE-ROUTE AS REQUIRED.
7	COORDINATE WITH ROOF EQUIPMENT AND RE-ROUTE AS REQUIRED.
8	INSTALL TALL CONE FLASHING AND STORM COLLAR. INSTALL RAIN CAP.

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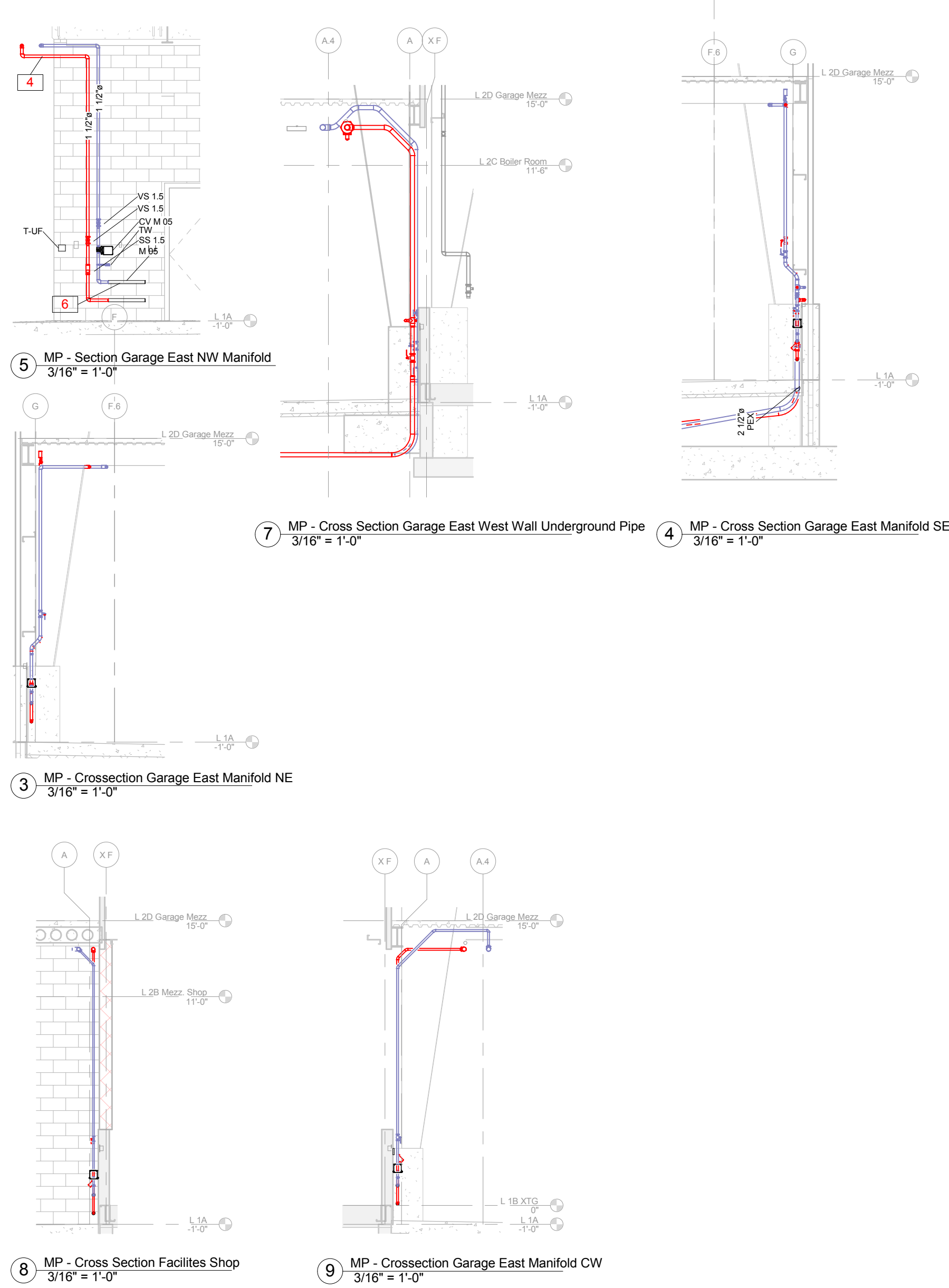
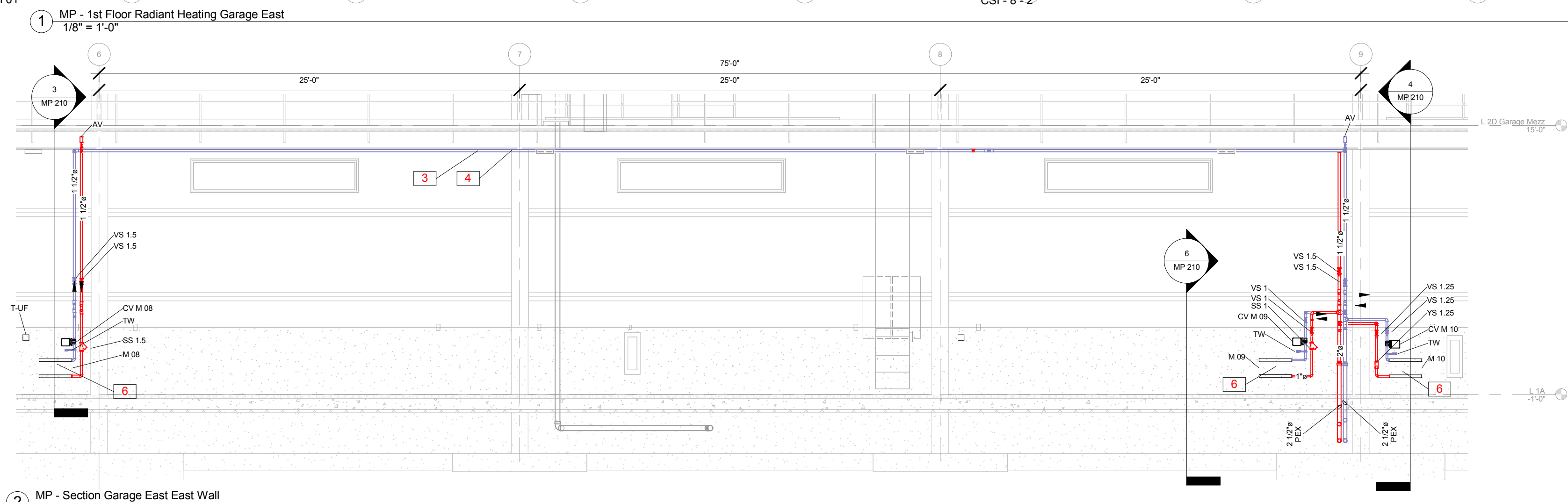
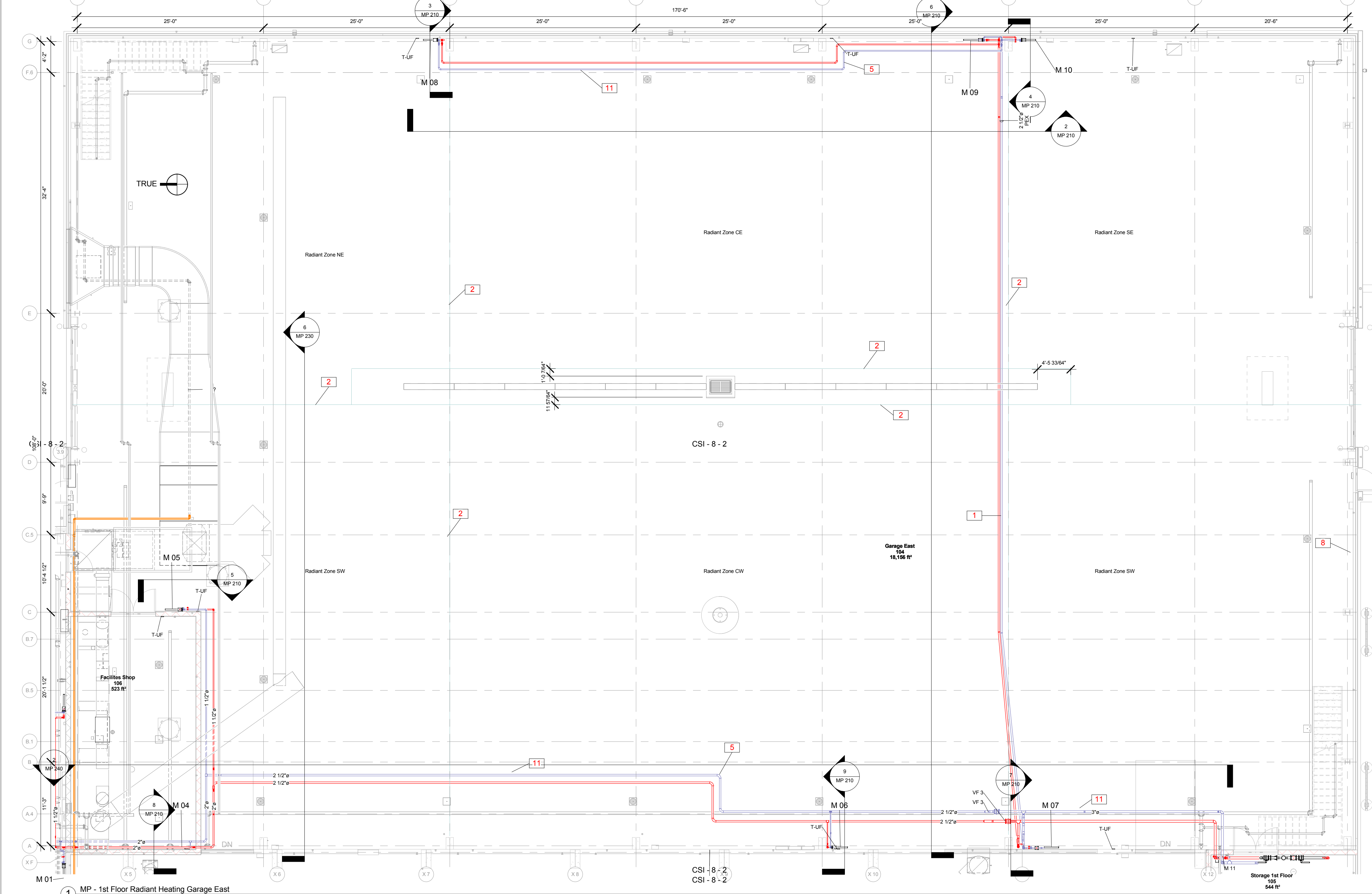
Fire Protection Design:
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Boiler Room Piping

MP 200

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Keynote Legend	
Key Value	Keynote Text
1	PEX PIPE UNDERGROUND INSTALLATION. INSTALL AT LEAST 12" BELOW SLAB AND AWAY FROM ALL OTHER PIPES AND OTHER OBSTACLES. INSULATE.
2	RADIANT FLOOR ZONES SEPARATED BY EXPANSION JOINT.
3	INSTALL EVERYTHING HIGH ENOUGH TO NOT PENETRATE 14" CLEARANCE A/F.
4	INSTALL PIPE IN AND UNDER STRUCTURE TO NOT CAUSE ANY INTERFERENCE UNDER DECK OR ANY OTHER INSTALLATION.
5	PIPE BENT TO ALLOW THERMAL CONTRACTION/ EXPANSION. CONTRACTOR MAY SUGGEST ALTERNATIVE ROUTES FOR APPROVAL.
6	PROVIDE WATERTIGHT CORROSION-PROOF CABINET TO HOUSE MANIFOLD, SENSORS AND CONTROL VALVE. PAINT WHITE.
7	INSTALL 2" RIGID INSULATION EXTENDING 2' ON EACH SIDE OF PIPE. SAME INSULATION AS FOR UNDER SLAB. INSULATE UP TO AFFROM PERIMETER.
8	LOCATE MANIFOLD HERE AT NO COST TO OWNER IF SHOWN. LOCATION IS NOT PRACTICAL.
9	UNDERGROUND GASLINE TO GENERATOR, D/G, CORE. DRILL THROUGH CONCRETE AS REQUIRED. REPAIR CONCRETE TO NEW CONDITION.
10	GAS SERVICE CONNECTION FROM UTILITY.
11	CONTRACTOR MAY INSTALL INSULATED PEX INSTEAD OF STEEL/COPPER PIPE. ENGINEER TO APPROVE REQUIRED SIZE AND NEW OUTLET.

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Garage Piping

MP 210

Print Date:
11/23/2015 2:04:22 PM



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Project: 10308
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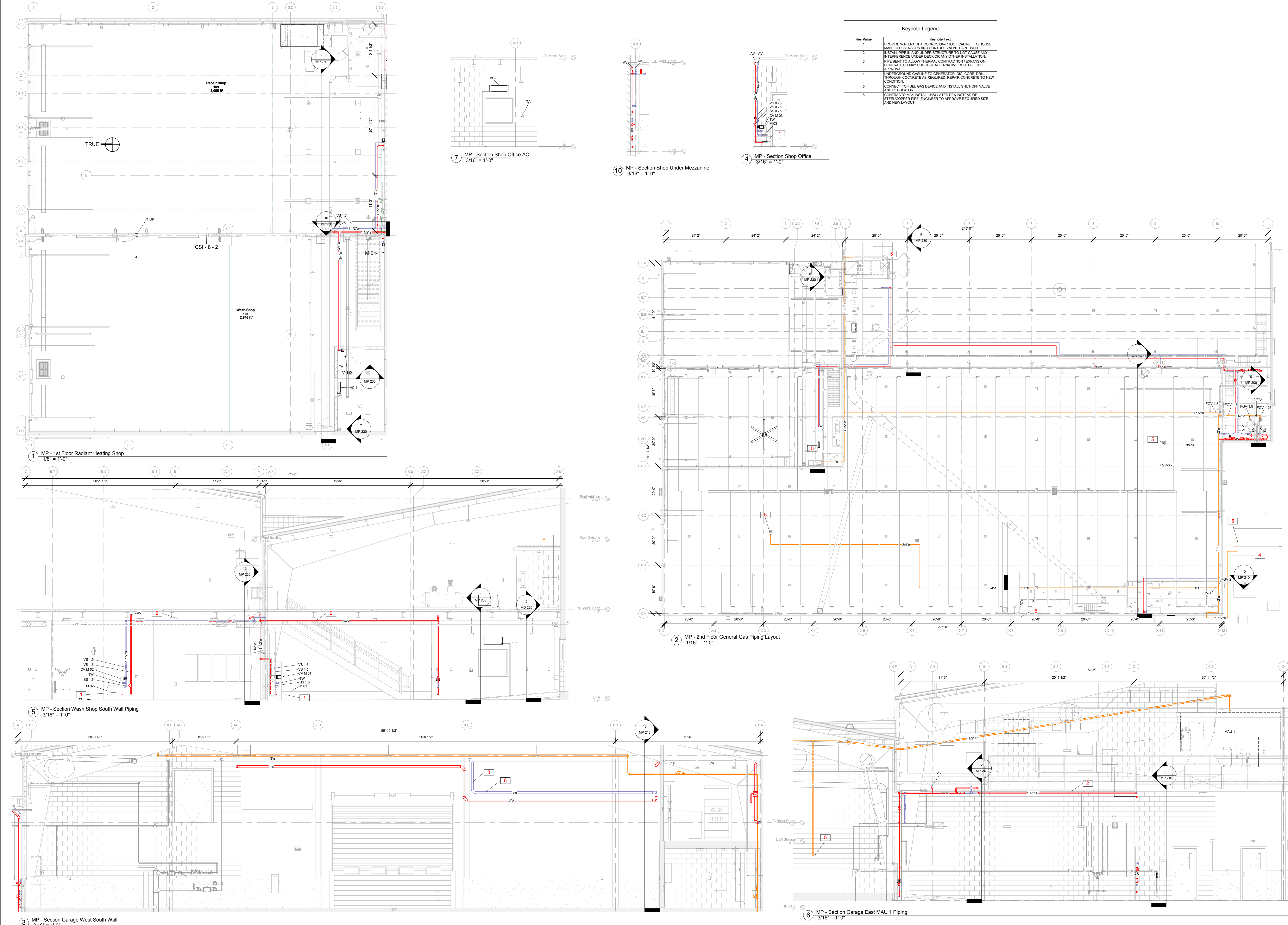
Fire Protection Design:
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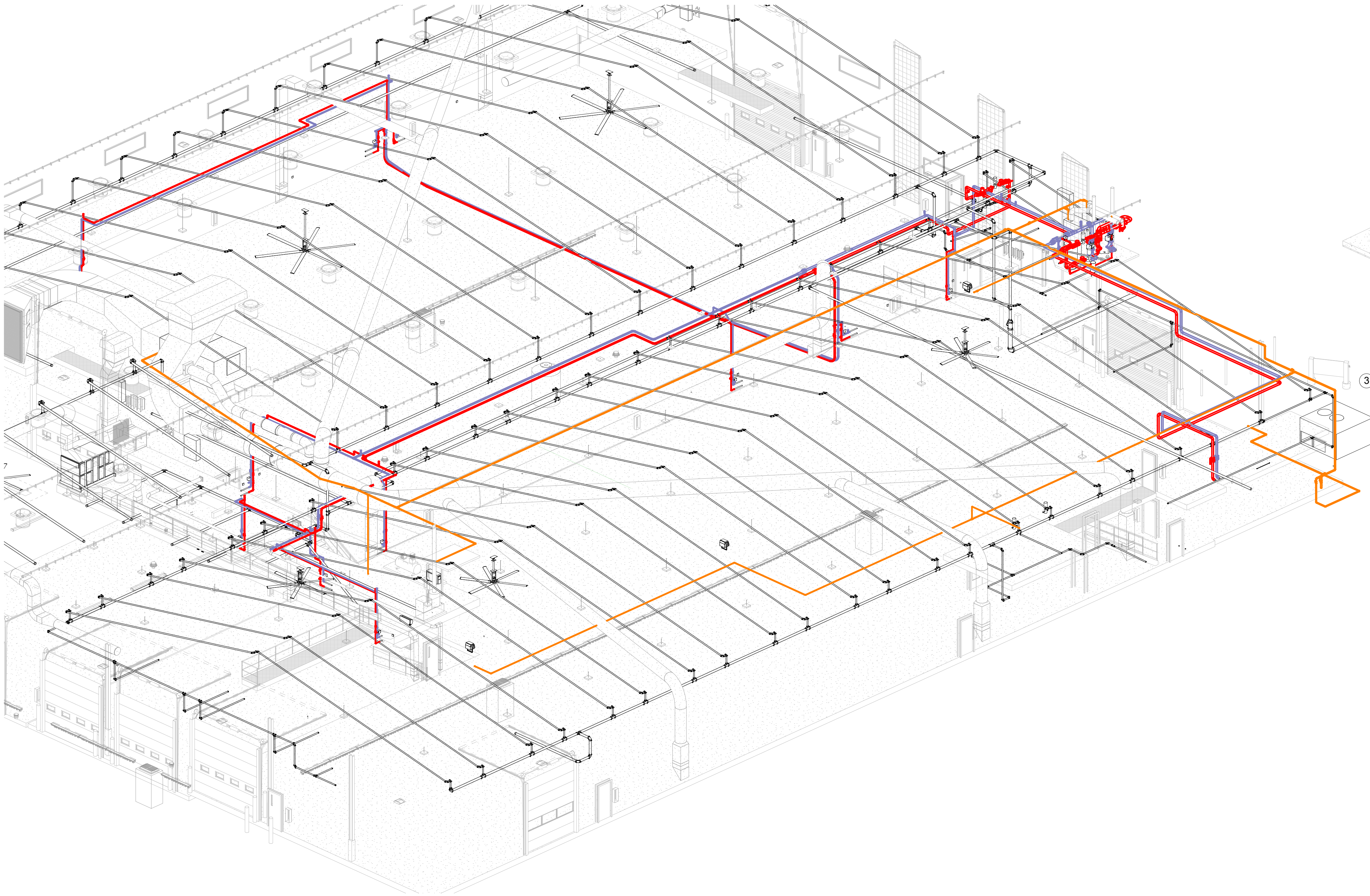
Architectural Design:
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Garage and
Shops Piping

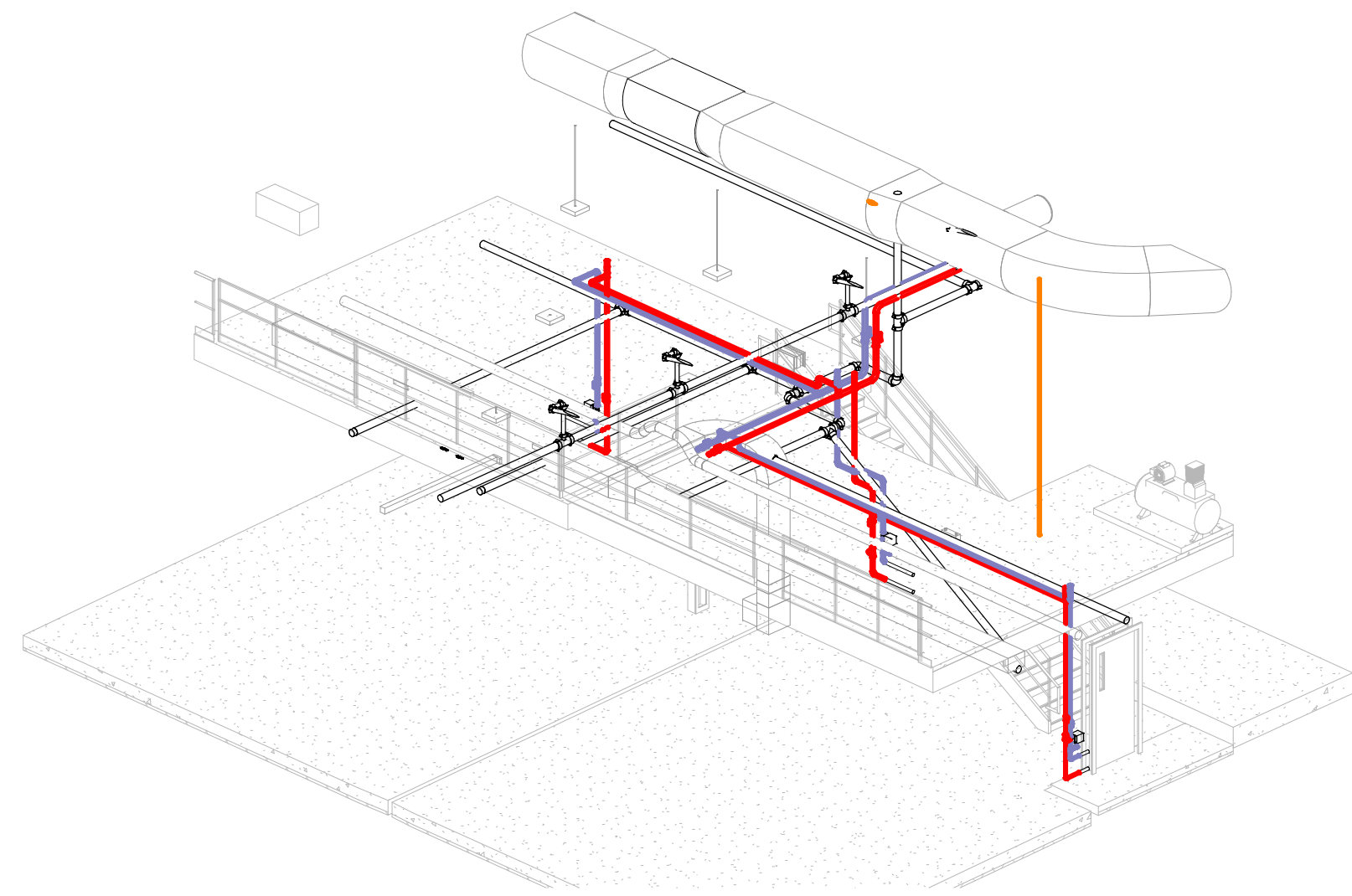
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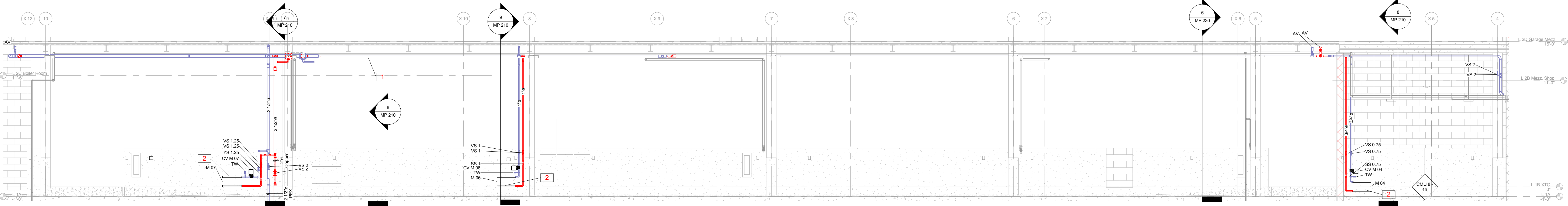




1 MP - 3D Garage East



3 MP - 3D Shop



2 MP - Section Garage East West Wall
3/16" = 1'-0"

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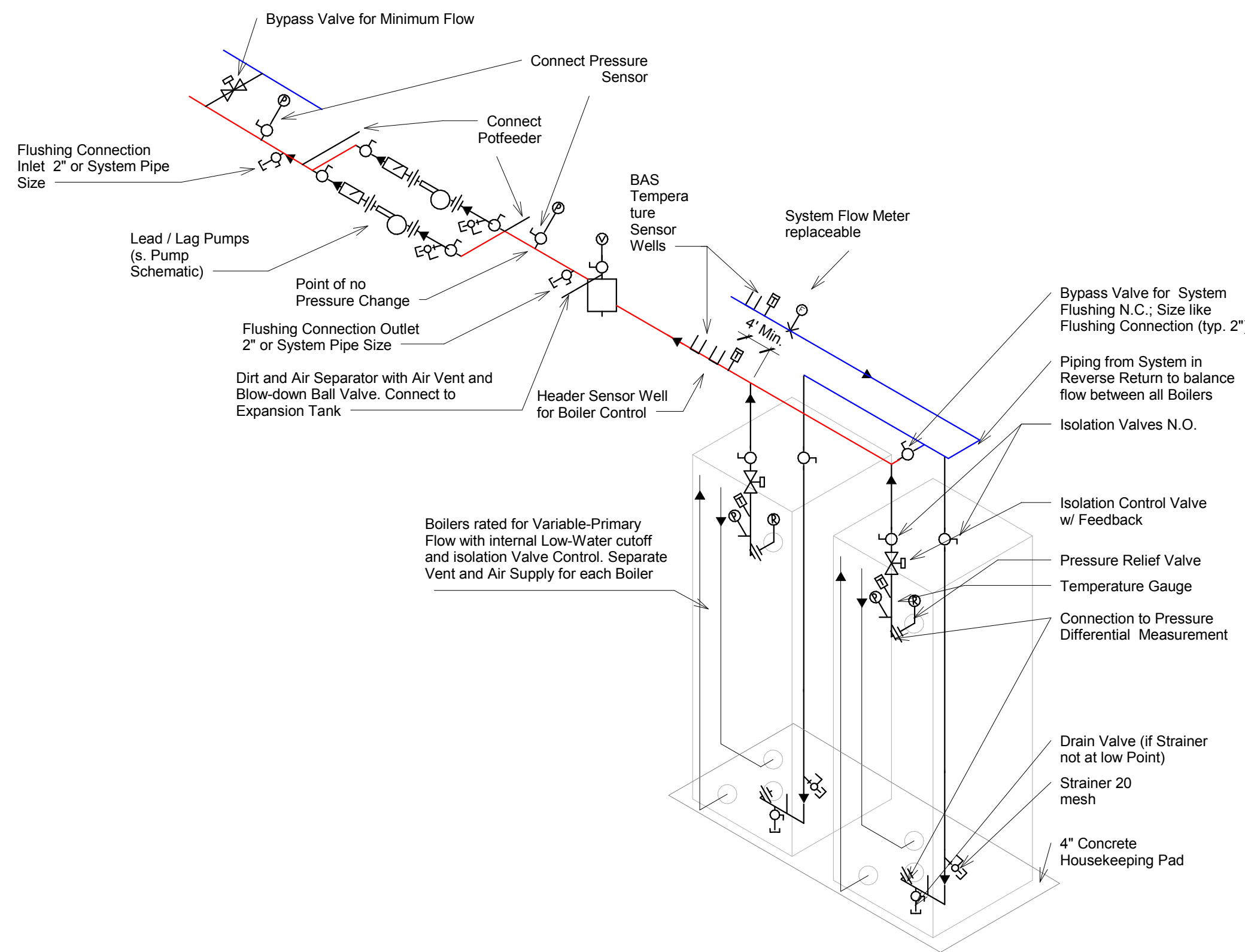
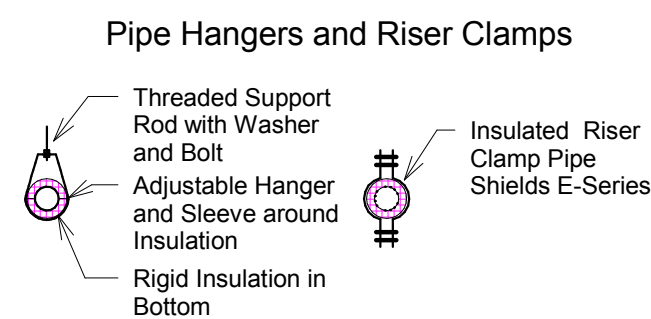
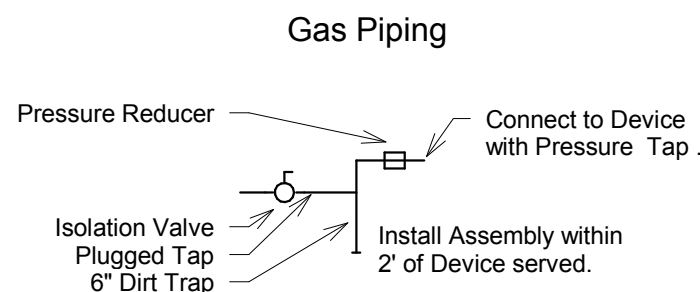
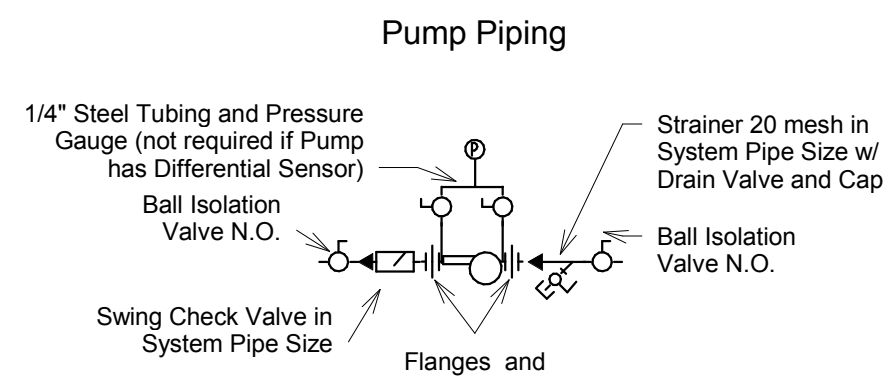
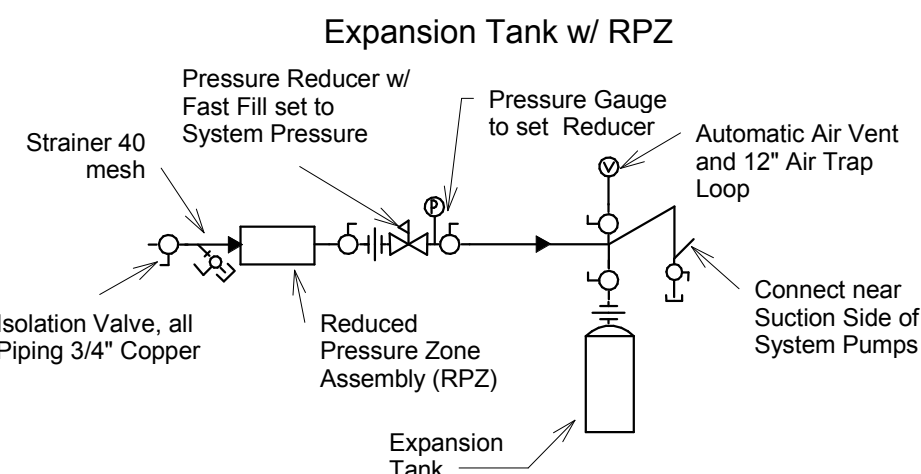
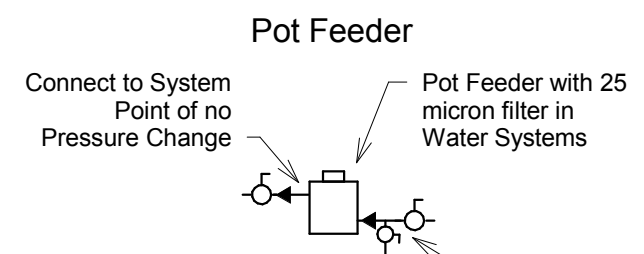
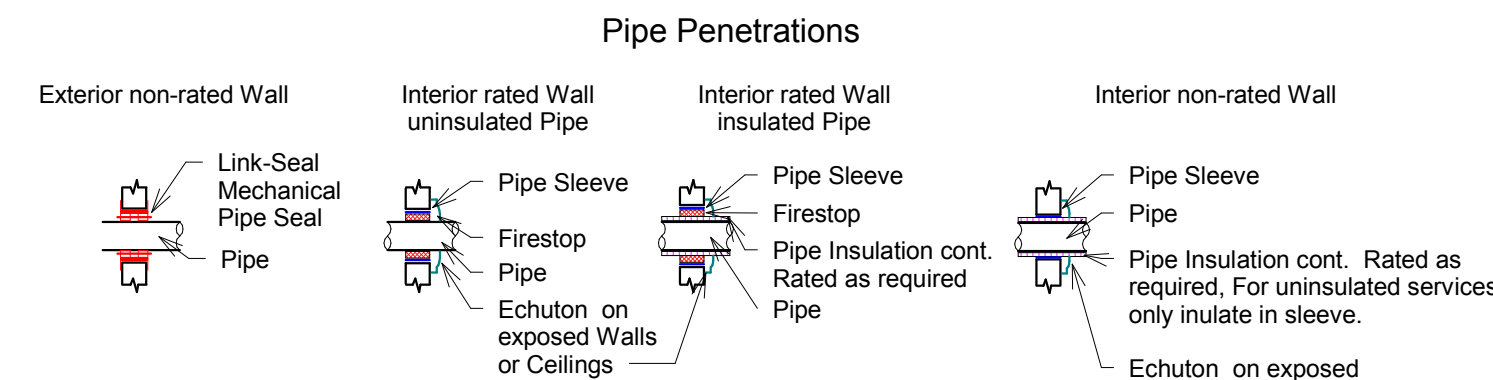
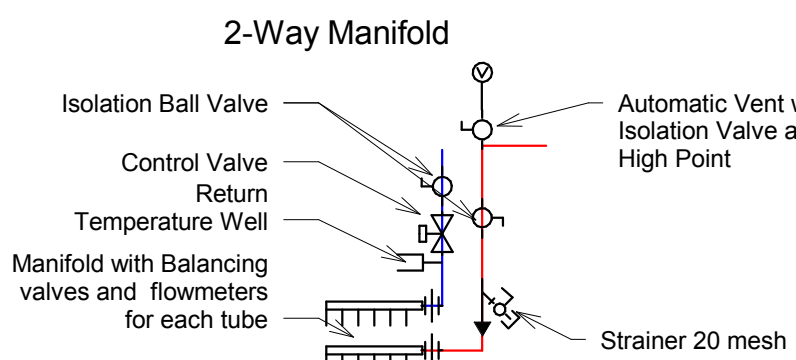
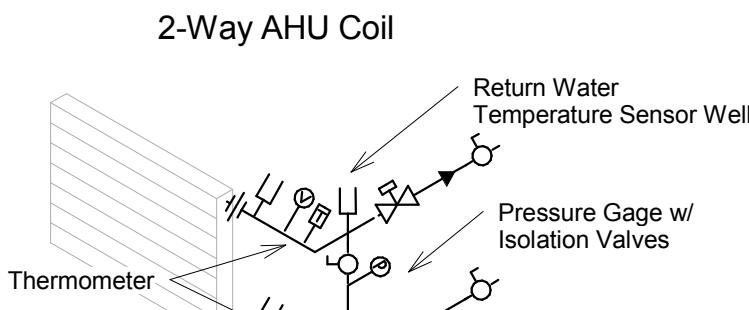
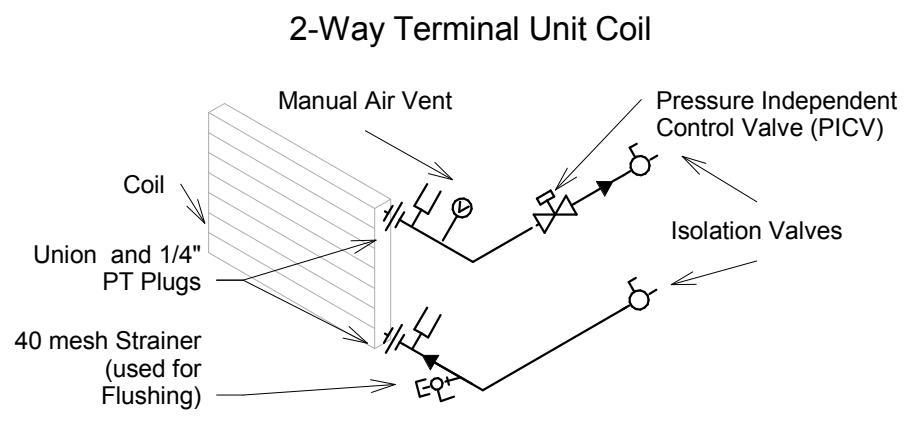
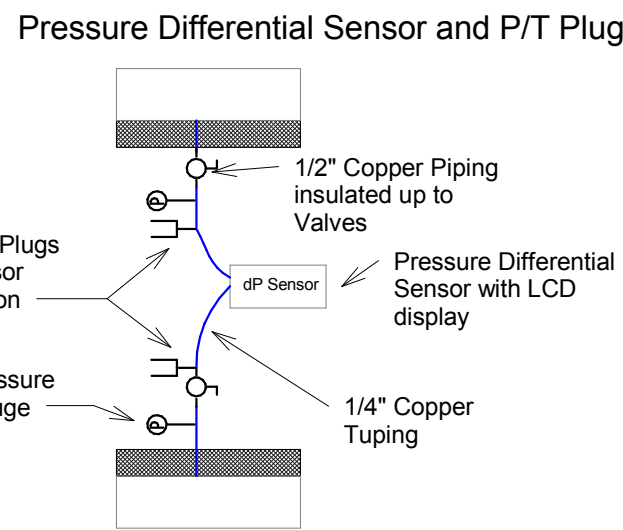
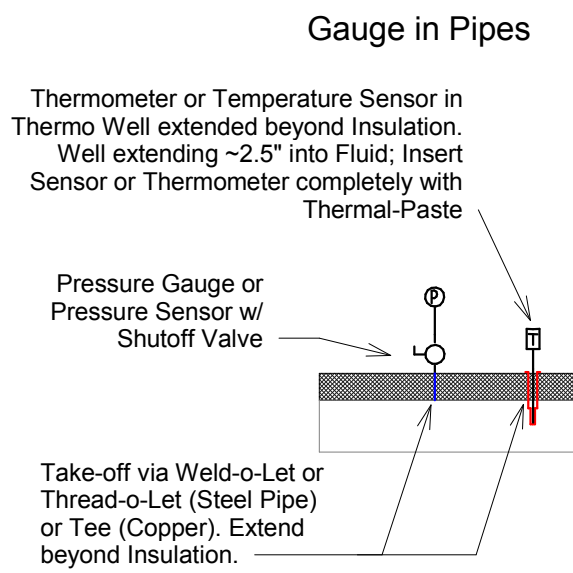
Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Piping 3D

MP 240

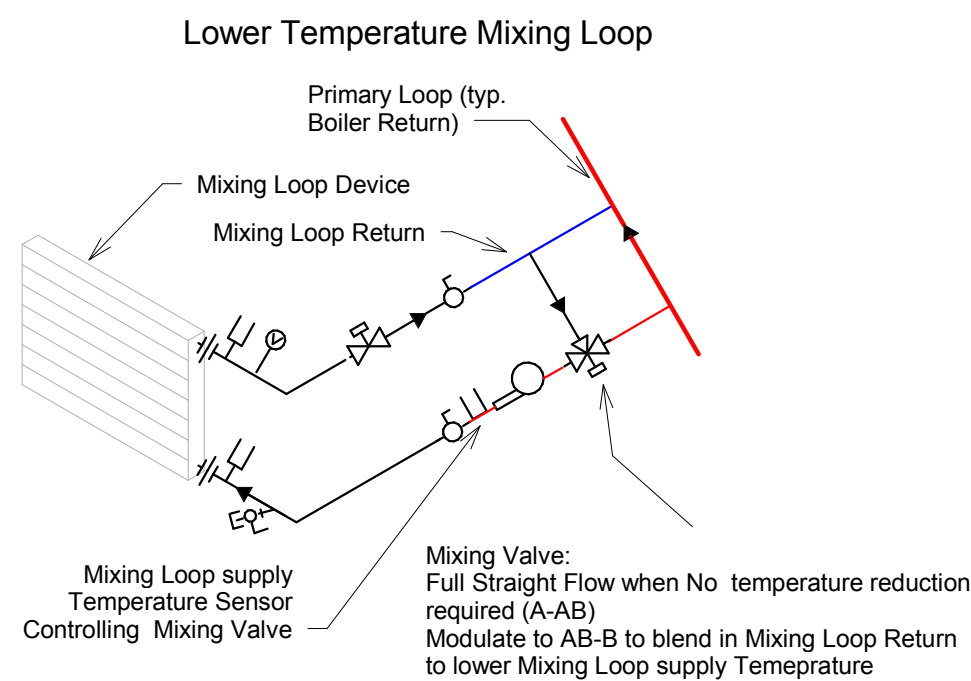
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- Air Vent
- Silent Check Valve
- Swing Check Valve
- Flow Meter
- Pressure Gauge
- Thermometer; angled
- Relief Valve
- Basket Strainer
- Y-Strainer with valved and capped Service Opening
- 1/4" P/T Plug
- Union or Flange
- 2-Way Control Valve
- 3-Way Control Valve
- Ball Valve
- Capped Drain Valve
- Pressure Reducing Valve
- Temperature Well for BAS



- PRE-FLUSH:**
1. Isolate System Pumps. Open all Control valves and remove pressure-independent cartridges.
 2. Connect City Water (2" line) to system downstream of system Pumps; extract water upstream of Pumps
 3. Close all Coil and heating and cooling plant isolation valves; open plant bypass valves
 4. Close all terminal device Return isolation valves
 5. Open Drain Valves upstream of terminal devices or open up strainer flush-valves.
 6. Starting with devices close to the system pumps, flush and fill the system.
 - a. Open valves to automatic air vents, and open manual air-vents to de-aerate
 - b. Open drain valves in a number that provides highest possible flow for the water supply capacity.
 - c. Once clear water expels for 15 minutes, close the drain valves and repeat procedure with the remaining drain valves.
 7. Remove and Clean all Strainers and re-insert
 8. Open individual device isolation valves to flush water out to system return line.
 - a. Starting with devices close to the system pumps ensure the number of devices at one time provides high flowrate in each branch.
 - b. De-aerate entire system as described above.
 - c. Once expelled water has been clear for 15 minutes, close the isolation valves and repeat procedure with remaining devices.
 - d. Once all expelled water has been clear for 15 minutes, close the drain valves and repeat procedure with the remaining drain valves.
 - e. Once all terminal devices have been flushed out clean, open all isolation valves and flush until expelled water has been clear for 1 hour.
 9. Close Cooling or Boiler Plant bypass valve and open Plant Return isolation valves to flush plant through drain valve or strainer until expelled water has been clear for 15 minutes. Open Supply Valve and flush through device until expelled water has been clear for 15 minutes.
 10. Remove and clean all device strainers Blow down dirt-separator.
 11. Hydraulically de-coupled loops (Primary Pump systems, mixing loops etc.) will require above procedure to be applied to the decoupled systems separately and the required valves shall be installed whether shown on plans or not.
- CLEANING:**
1. Add cleaner to the system water until the M alkalinity value is 250 above that of the initial fill water. Verify the M alkalinity level before and after the addition of the cleaner by means of chemical tests that are observed by the Owner's construction representative; include results of all tests in the Operating and Maintenance manuals.
 - a. Open all Isolation Valves and Operate System and Device Pumps to circulate cleaning solution. Adjust detergent until Alkalinity stabilizes
 - b. Open and close individual device valves one after another to allow high flow through each branch at some pint to ensure proper cleaning. Open all at once for continued cleaning.
 2. For systems with Aluminum Heat exchanger (i.e. AERCO EXT boilers); isolate device that contains aluminum for time of cleaning.
 3. For cold systems clean for 96 hours (4 days)
 4. For hot systems (boiler without Aluminum HX) circulate at 180°F for 24 hours unless recommended differently by manufacturer.
 5. Drain entire system, refill with clear water, recirculate for two hours with all isolation valves open, drain and fill with clear water again. Drain by opening all drain valves and letting air into the system to prevent water-clogging
- POST-FLUSH:** Flush after Cleaning applying same procedure as for Pre-Flush.

MP Standard Pipe Details



MP Mixed Loops

MP Variable System Pump Boiler

City of Madison

Facilities Maintenance
1600 Emil St.
Madison, WI 53713



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

Lighting Design:
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Fire Protection Design:
Robert Novak, Kueny Architects

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Piping Details

MP 300

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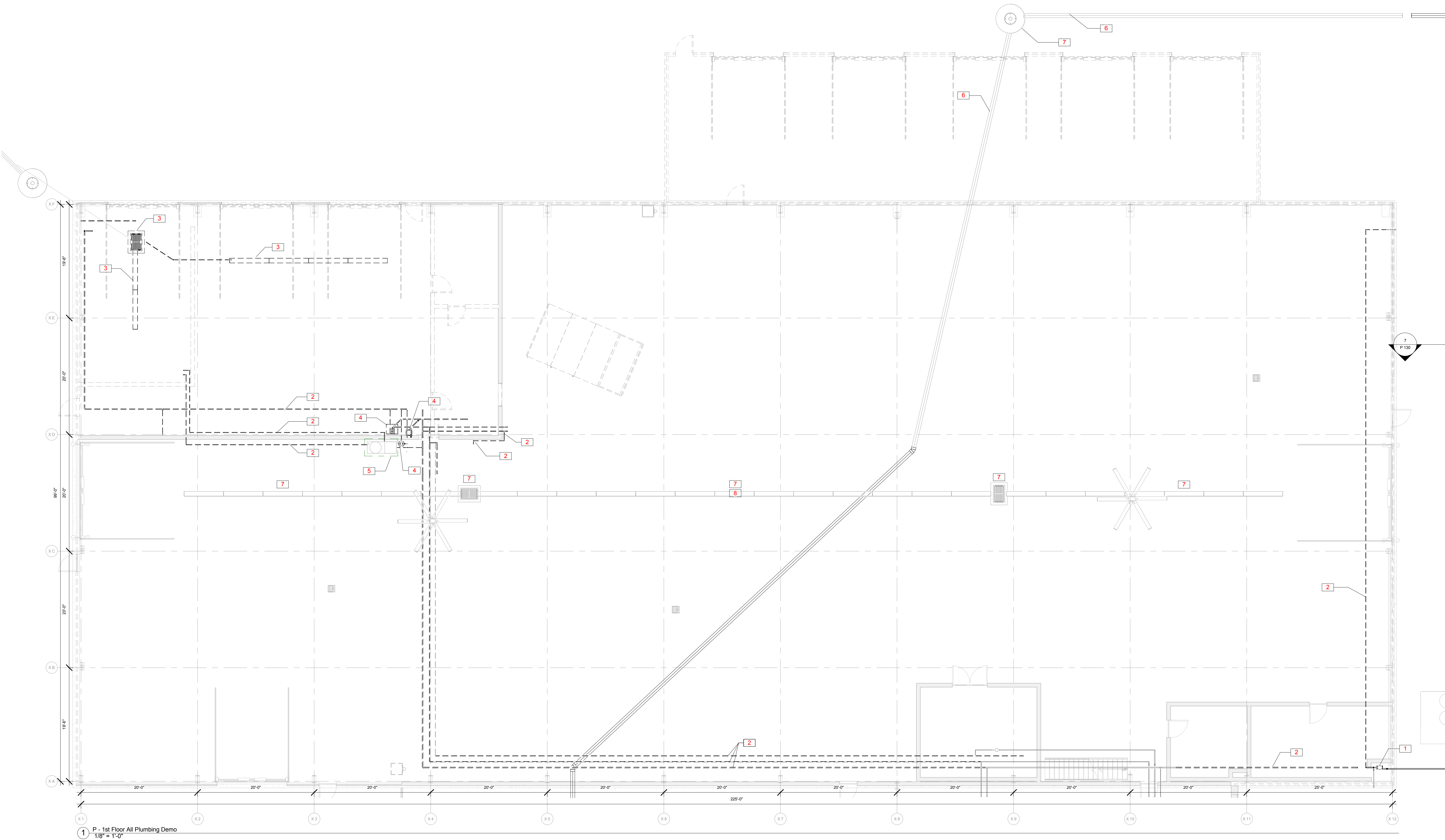
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Plumbing
Demo Plan

P 001 D

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1 P - 1st Floor All Plumbing Demo
1/8" = 1'-0"

Keynote Legend	
Key Value	Keynote Text
1	DEMO EXISTING WATER METER, METER AND CAP SERVICE
2	DEMO DOMESTIC WATER PIPING
3	DEMO DRAIN, WASTE, AND VENT PLUMBING
4	DEMO EXISTING PLUMBING FIXTURES AND ASSOCIATED PIPING
5	RELOCATE EXISTING HIGH PRESSURE WATER HEATER. SEE PLUMBING PLANS
6	EXISTING SANITARY SEWER
7	EXISTING TO REMAIN
8	GENERAL NOTE: CONTRACTOR SHALL VERIFY XTO DIMENSIONS. VALUES GIVEN ARE APPROXIMATE.

Return Hot Water Circulator Pump Schedule											
Mark	Description	Manufacturer	URL	Model	Weight	Horsepower	Max. Pressure	Max Flowrate	Connection Size	Voltage	Phases
CP-1	Inline Pump, automatic Circulation Control	Grundfos	www.Grundfos.com	UP10-16PM-A-BU/LC	8 lbf	0.04	145 psi	9 GPM	1/2"	115 V	1
											OmniClass Number 23.27.17.13
											OmniClass Title Centrifugal Pumps

Plumbing Fixture Schedule											
Mark	Description	ADA Compliant	HW Connection	CW Connection	Waste Connection	Fixture Manufacturer	Fixture Model	URL	Est. Count	Omni Class Number	Omni Class Title
EWCR-1	Electric water cooler rough-in			1/2"	1 1/2"				1	23.31.31.00	Drinking Fountains
HB-1	Hose Bibb, interior			3/4"		Matco-Norca	205FLF	www.matco-norca.com	2	23.31.11.00	Faucets
HB-2	Hose Bibb, tamperproof			3/4"		Woodford	65PB-12	www.woodfordmfg.com	1	23.31.11.00	Faucets
HRI-1	Hose reel rough-in			3/4"					4	23.31.00.00	Plumbing Specific Products and Equipment
HRI-3	Hose reel rough-in			1"					2	23.31.00.00	Plumbing Specific Products and Equipment
HRI-2	Truck hose rough-in			2"					7	23.31.00.00	Plumbing Specific Products and Equipment
WM-1	Clothes washer box		1/2"	1/2"	2"	Guy Gray	MWB16	www.ipscorp.com	1	23.31.00.00	Plumbing Specific Products and Equipment

Catch-basin Schedule											
Type Mark	Description	Waste Connection	Depth	Length	Width	Est. Count	Omni Class Number	Omni Class Title			
CB 24-36-36	Catchbasin - Rectangular: Concrete Structure and Cast Iron Grate. See Detail.	6"	6'-0"	3'-0"	2'-0"	3	23.39.29.13.19.11	Surface Water Catch Basins, Grates, and Frames			

Plumbing Valve Schedule									
Type Mark	Type Comments	Description	Size	Manufacturer	URL	Model	Est. Count	Omni Class Number	Omni Class Title
BVS 0.5	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Solder	1/2"ø-1/2"ø	Nibco	www.Nibco.com	S-585-66-LF	4	23.27.31.15	Ball Valves
BVS 0.75	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Solder	3/4"ø-3/4"ø	Nibco	www.Nibco.com	S-585-66-LF	2	23.27.31.15	Ball Valves
BVS 1.0	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Solder	1"ø-1"ø	Nibco	www.Nibco.com	S-585-66-LF	2	23.27.31.15	Ball Valves
BVS 1.5	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Solder	1 1/2"ø-1 1/2"ø	Nibco	www.Nibco.com	S-585-66-LF	1	23.27.31.15	Ball Valves
BVS 2.0	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Solder	2"ø-2"ø	Nibco	www.Nibco.com	S-585-66-LF	5	23.27.31.15	Ball Valves
BVT 0.75	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Threaded	3/4"ø-3/4"ø	Nibco	www.Nibco.com	T-585-66-LF	1	23.27.31.15	Ball Valves
BVT 1.0	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Threaded	1"ø-1"ø	Nibco	www.Nibco.com	T-585-66-LF	2	23.27.31.15	Ball Valves
BVT 2.0	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Threaded	2"ø-2"ø	Nibco	www.Nibco.com	T-585-66-LF	9	23.27.31.15	Ball Valves
BVT .05	Plumbing Valve	Two-Piece Bronze Ball Valve – Lead-Free, Full Port, Threaded	1/2"ø-1/2"ø	Nibco	www.Nibco.com	T-585-66-LF	2	23.27.31.15	Ball Valves
CVS 0.5	Plumbing Valve	Check Valve – Lead-Free, PTFE Seat Disc, Solder	1/2"ø-1/2"ø	Nibco	www.Nibco.com	S-413-Y-LF	1	23.27.31.19.27	Swing Check Valves
CVT 2.0	Plumbing Valve	Check Valve – Lead-Free, PTFE Seat Disc, Threaded	2"ø-2"ø	Nibco	www.Nibco.com	T-413-Y-LF	1	23.27.31.19.27	Swing Check Valves
RPZ 2.0	Plumbing Valve	Reduced pressure zone assembly, Lead-free cast copper silicon alloy	2"ø-2"ø	Watts	www.watts.com	LF909	1	23.27.31.11	Backflow Preventors
YST 2.0	Plumbing Valve	Threaded,Wye pattern strainer, 40 mesh, Lead-free bronze	2"ø-2"ø	Watts	www.Watts.com	LFS77	1	23.27.55.29.17	Y Strainers

Plumbing Drain and Cleanout Schedule									
Type Mark	Description	Waste Connection	Manufacturer	Model	URL	Est. Count	Omni Class Number	Omni Class Title	
FCO-3	Heavy Duty Adjustable Floor Cleanout		Zurn Industries	ZN1400-HD-IC3	www.zurn.com	5	23.31.00.00	Plumbing Specific Products and Equipment	
FCO-6	Heavy Duty Adjustable Floor Cleanout	6"	Zurn Industries	ZN1400-HD-IC6	www.zurn.com	5	23.31.00.00	Plumbing Specific Products and Equipment	
FD-3	5" strainer, Nickel-bronze grate	3"	Zurn Industries	FD2210-PV3-NT	www.zurn.com	3	23.31.27.00	Floor Drains	
HD-2	PVC hub drain, SCH 40 PVC, no foam core	2"				1	23.31.27.00	Floor Drains	
HD-3	PVC hub drain, SCH 40 PVC, no foam core	3"				2	23.31.27.00	Floor Drains	
RD-6	Plain Bronze dome, no-hub outlet, 3" static extension, Roof sump receiver, Underdeck clamp	6"	Zurn Industries	ZRB-Z100-NH-E-R-C	www.zurn.com	4	23.31.00.00	Plumbing Specific Products and Equipment	
TD-625	Trench Drain	6"	Zurn Industries	Z886-8601	www.zurn.com	20	23.31.27.00	Floor Drains	

WATER SERVICE CALCULATIONS - PLUMBING FIXTURE CONNECTION AND FIXTURE UNIT SCHEDULE													
TAG	PHASE	Key Name	Connection Size			DFU	HWFU	CWFU	SFU	Est. Count	Total DFU	Total HWFU	Total CWFU
CB 24-36-36 01	NEW	CATCH BASIN	6"			9.0	0.0	0.0	3	27	0	0	
ES 01	NEW	EMERGENCY EYE WASH / DRENCH SHOWER	1-1/4"	1/2"	1.0			2.0	2.0	1	1		2 2
EWCR 01	NEW	DRINKING FOUNTAIN	1-1/4"	1/2"	0.5			0.3	0.3	1	0.5		0.25 0.25
FD 01	NEW	FLOOR DRAIN	3"		3.0				1	3			
HB 01	NEW	HOSE BIBB 3/4", TAMPERPROOF		3/4"					4.0	4.0	1		4 4
HB 02	NEW	HOSE BIBB 3/4"		3/4"					4.0	4.0	2		8 8
HB (EXISTING)	NEW	HOSE BIBB		3/4"					4.0	4.0	2		8 8
HD 01	NEW	HUB DRAIN	2"		2.0					1	2		
HD 02	NEW	HUB DRAIN	3"		3.0					1	3		
HPW (EXISTING)	NEW	HOT WATER PRESSURE WASHER		3/4"					4.0	4.0	1		4 4
HRI 01	NEW	HOSE REEL ROUGH-IN 3/4"		3/4"					4.0	4.0	4		16 16
HRI 02	NEW	TRUCK FILL HOSE ROUGH-IN 2" (300 GPM)		2"					85.0	85.0	1		85 85
HRI 03	NEW	HOSE REEL ROUGH-IN 1"		1"					6.0	6.0	2		12 12
US 01	NEW	SERVICE SINK	2"	1/2" 1/2"	2.0 2.0	2.0 2.0	3.0 2	4	4	4	4	4	6
WM 01	NEW	WASHING MACHINE WALL BOX	2"	1/2" 1/2"	4.0 2.0	2.0 3.0	1 4	2	2	3			
	EXISTING	COFFEEMAKER			1.5		0.5 0.5	1 1.5		0.5 0.5			
	EXISTING	DRINKING FOUNTAIN			0.5		0.3 0.3	6 3		1.5 1.5			
	EXISTING	FLOOR DRAIN	4"		4.0			3 12					
	EXISTING	FLOOR DRAIN	2"		2.0 2.0			8 16					
	EXISTING	HOSE BIBB		3/4"			4.0 4.0	6				24	24
	EXISTING	ICEMAKER			0.5		0.5 0.5	1 0.5			0.5 0.5		
	EXISTING	LAVATORY			1.0		0.5 0.5	8 8				4	4
	EXISTING	SHOWER			2.0 2.0	2.0 3.0	4 8	8 8			8 12		
	EXISTING	SINK, KITCHEN			3.0 2.0	2.0 3.0	1 3	2 2			2 3		
	EXISTING	SINK, SERVICE	3		3.0 2.0	2.0 3.0	1 3	2 2			2 3		
	EXISTING	URINAL, SIPHON JET			2.0		4.0 4.0	3 6			12 12		
	EXISTING	WASH FOUNTAIN			2.0 1.5	1.5		1 2		1.5 1.5			
	EXISTING	WATER CLOSET, GRAVITY FLUSH TANK			6.0		3.0 8	48			24	24	
Grand total: 28									75	155.5	35.5	225.25	232.75

PLUMBING LEGEND

PIPE FITTINGS

- Cap
- ↘ Elbow
- Riser up
- ↘ Riser down
- ⊥ Tee
- ÷ Tee down
- ↘ Sanitary wye
- ↘ Sanitary tee

PIPE ACCESSORIES

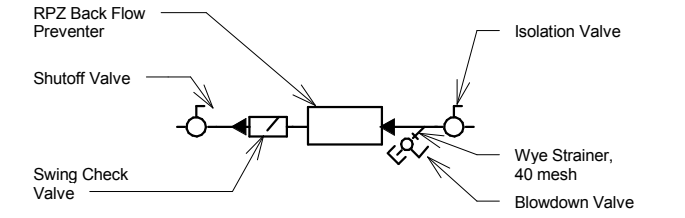
- ↘ Ball valve
- ↘ Check valve
- ↘ Wye strainer
- ↘ Water meter

PIPE TYPES

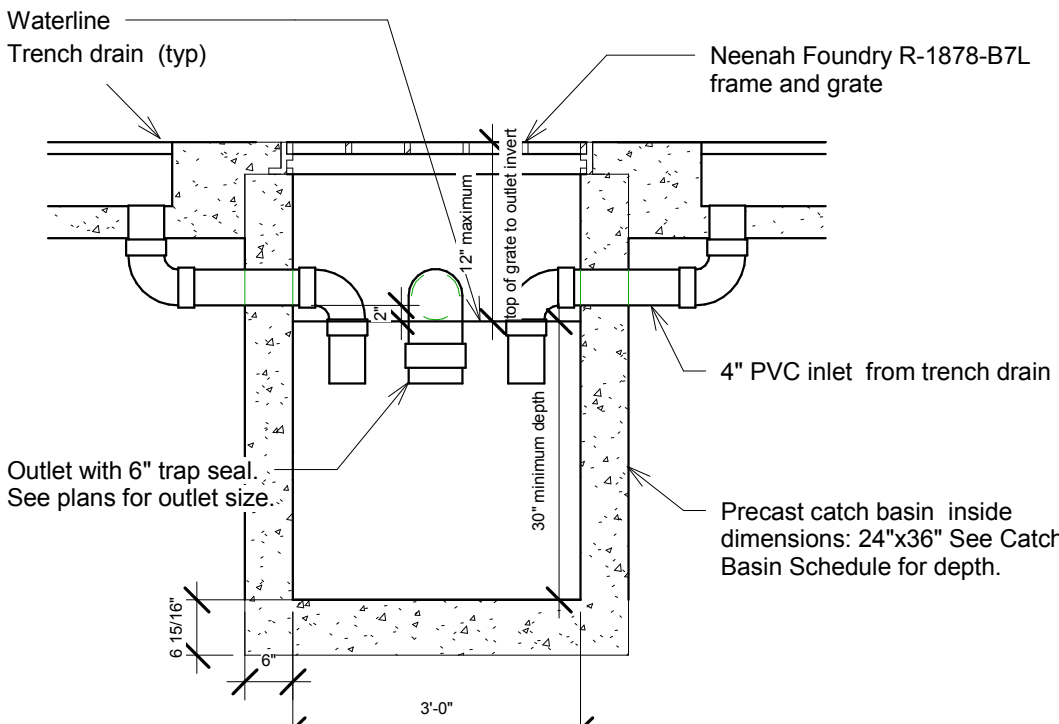
- SS— Sanitary drain, waste, or sewer
Material: PVC, Schedule 40
- SSU— Underfloor sanitary drain, waste, or sewer
Material: PVC, Schedule 40
- SD— Storm drain, waste, or sewer
Material: PVC, Schedule 40
- SDU— Underfloor storm drain, waste, or sewer
Material: PVC, Schedule 40
- V— Sanitary vent
Material: PVC, Schedule 40
- CW— Cold water, domestic
Material:Copper, Type L, Schedule 40
- HW— Hot water, domestic
Material:Copper, Type L, Schedule 40
- HWR— Hot water return, domestic
Material:Copper, Type L, Schedule 40
- HW-HP— Hot water, high pressure
Material: Steel, Schedule 80
- PEX— Cold water, underground domestic
Material:PEX-a

PLUMBING ABBREVIATIONS

- AFF Above Finished Floor
- CW Cold Water
- CW Cold Water
- HP High Pressure
- HW Hot Water
- HWR Hot Water Return
- IE Invert Elevation
- MAX Maximum
- MIN Minimum
- RI Rough-in
- RPZ Reduced Pressure Zone
- SIM Similar
- SS Sanitary Sewer
- SSU Sanitary Sewer Underfloor
- TYP Typical
- V Vent
- VTR Vent to Roof

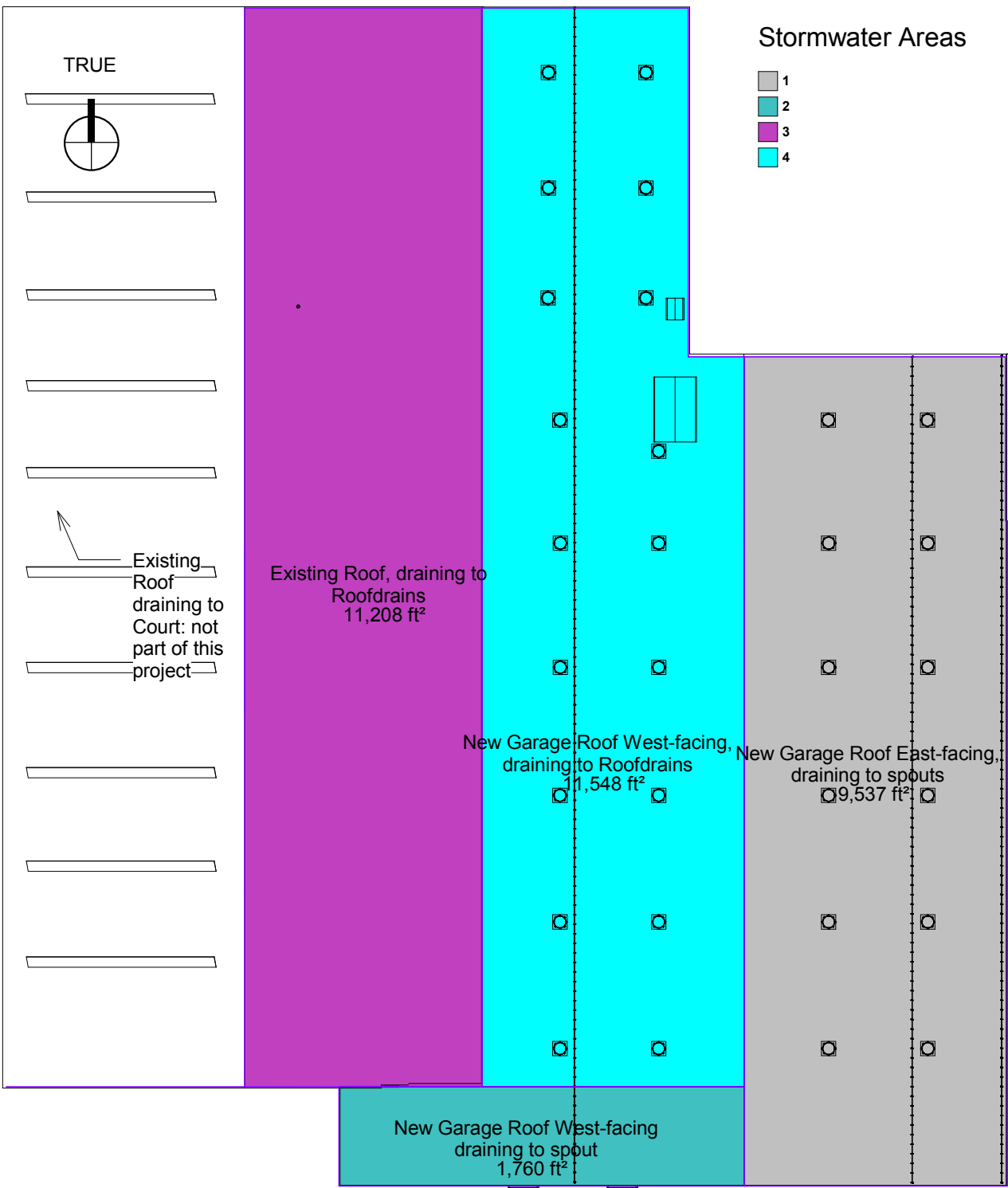


① Reduce Pressure Zone Backflow Preventer
1" = 1'-0"



② Catch Basin Detail
1/2" = 1'-0"

Plumbing Sheet List	
Sheet Number	Sheet Name
P 001 D	Plumbing Demo Plan
P 100	Plumbing Schedules and Calculations
P 110	Underground Plumbing
P 120	Above Ground Plumbing
P 130	Plumbing Sections
P 140	Sanitary DWV Isometric
P 150	Domestic Water Isometric
P 200	Roof Plan and Sections



Roof Stormwater per SPS 382.36			
Number	Description	Area	Stormwater
1	New Garage Roof East-facing, draining to spouts	9,537 ft²	367 GPM
2	New Garage Roof West-facing, draining to spout	1,760 ft²	68 GPM
3	Existing Roof, draining to Roofdrains	11,208 ft²	431 GPM
4	New Garage Roof West-facing, draining to Roofdrains	11,548 ft²	444 GPM
		34,052 ft²	1310 GPM

③ CR - Stormwater Roof Areas
1/32" = 1'-0"

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Plumbing
Schedules and
Calculations

P 100

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Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

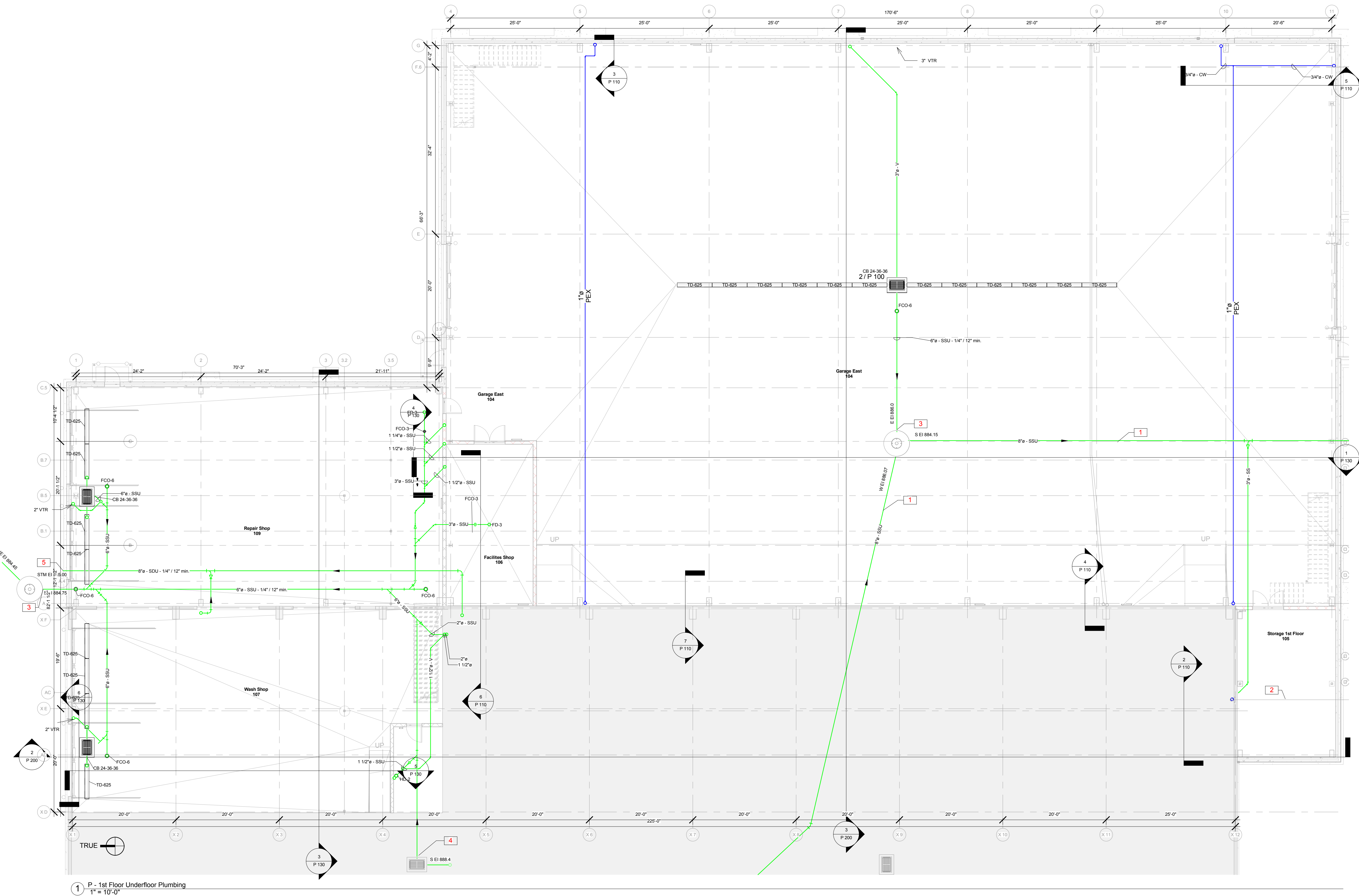
Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Underground Plumbing

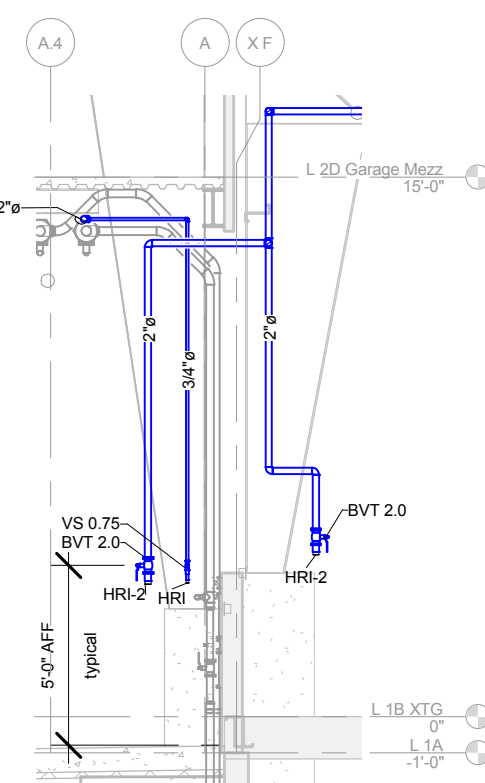
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11/23/2015 2:06:36 PM

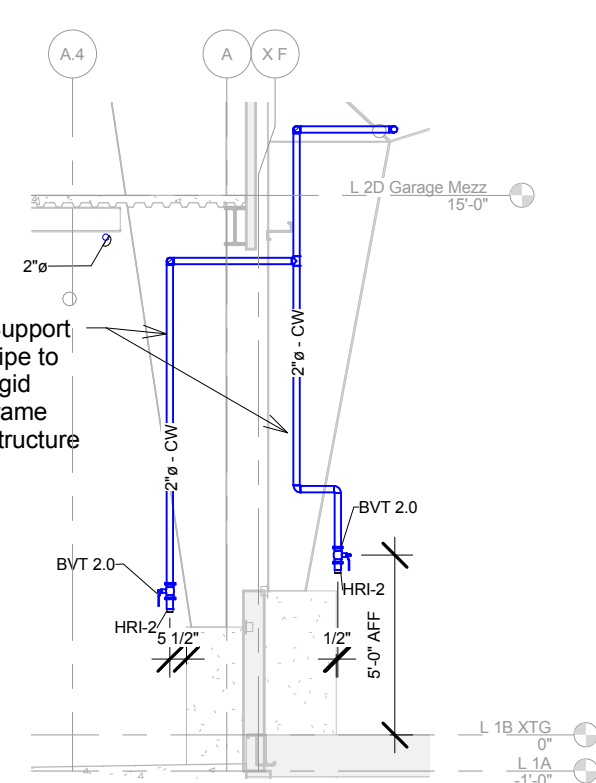
Keynote Legend	
Key Value	Keynote Text
1	EXISTING SANITARY SEWER
2	NEW 8" DIA. CONNECTION TO WATER MAIN
3	CONNECT TO EXISTING
4	CONNECT TO EXISTING CATCH BASIN, CUT CONCRETE, EXCAVATE AND REINSTALL CONCRETE TO ORIGINAL CONDITION
5	CONNECT TO NEW 8" STORM SEWER
6	WATER SERVICE PRESSURE IS BY PSI OR HIGHER. PROVIDE PRESSURE REDUCER AS REQUIRED BY CODE.



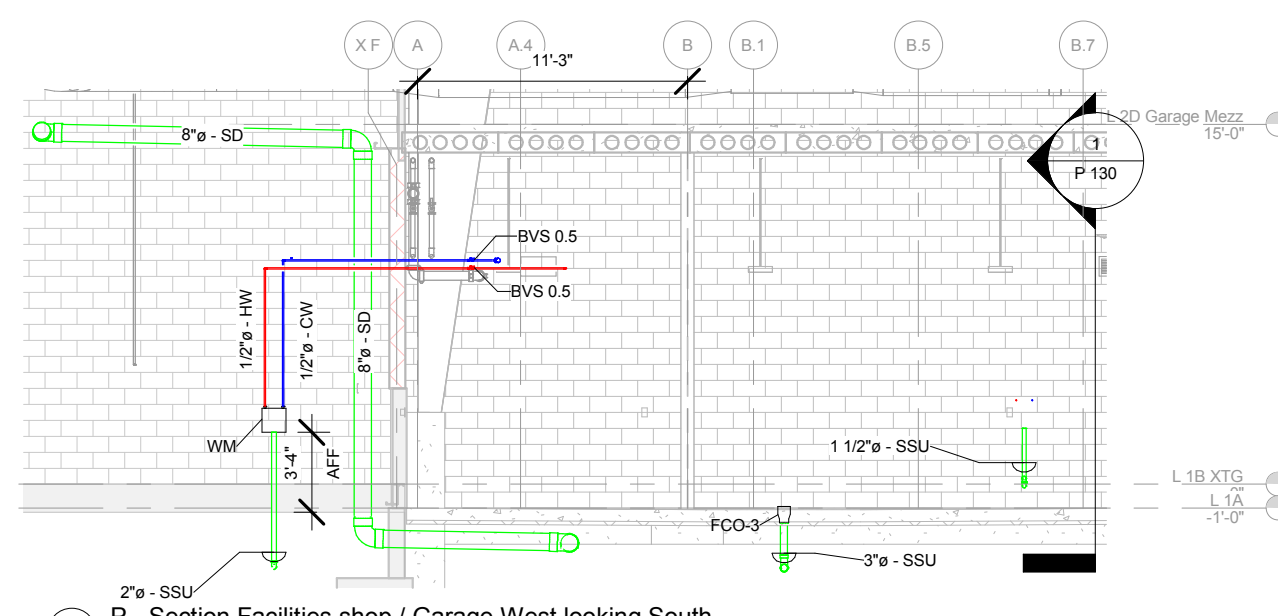
1 P - 1st Floor Underfloor Plumbing
1" = 10'-0"



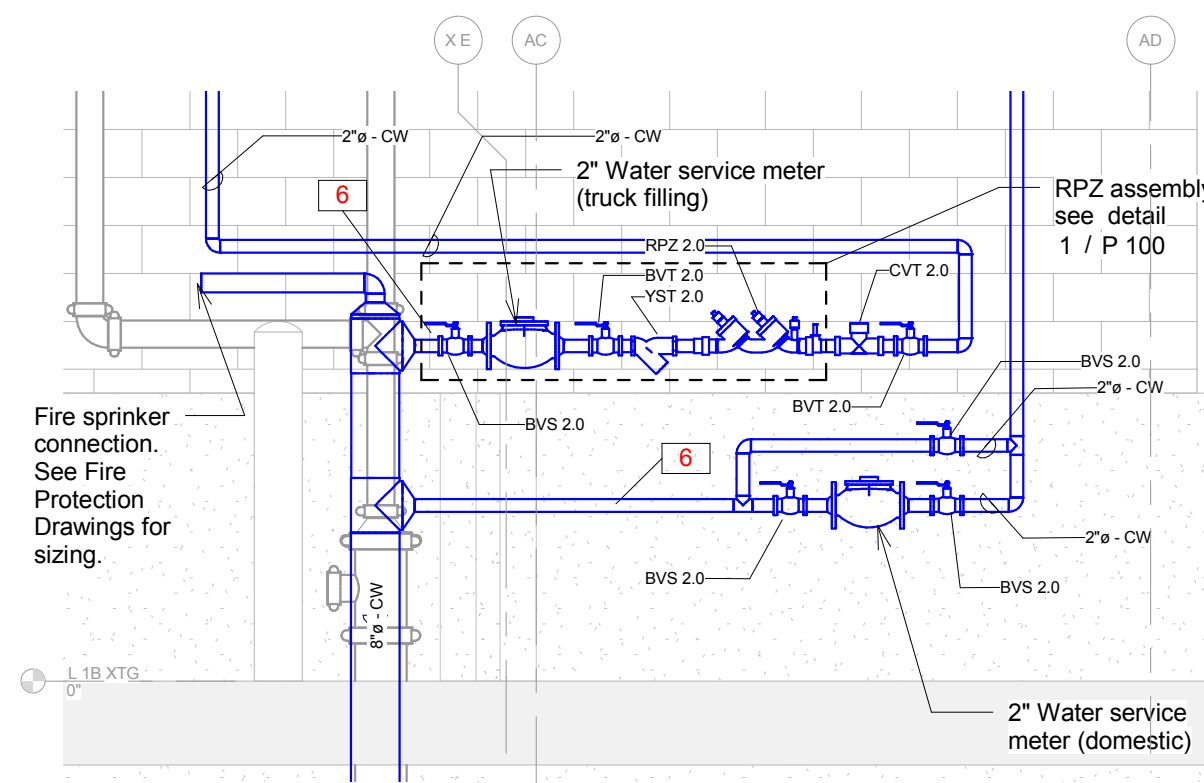
4 Hose Reel Rough-in Garage West Wall (typical)
3/16" = 1'-0"



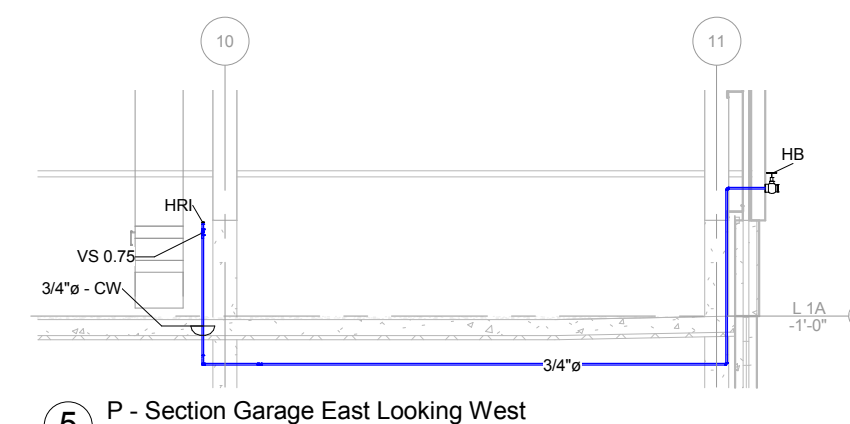
7 P - Section Truck Fill Station Hose Rough-in
3/16" = 1'-0"



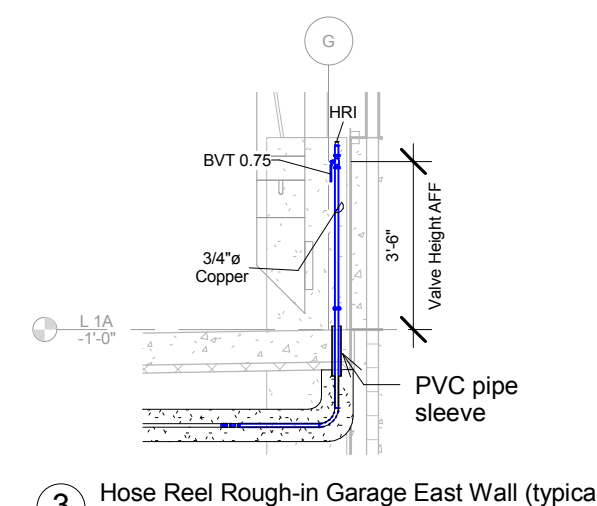
6 P - Section Facilities shop / Garage West looking South
1/8" = 1'-0"



2 P - Section Waterservice
3/8" = 1'-0"



5 P - Section Garage East Looking West
1/8" = 1'-0"



3 Hose Reel Rough-in Garage East Wall (typical)
1/4" = 1'-0"

Engineering Operations
Building Addition

Contract: 6484
Project: 10308
Common Council Approval:
2/2015

ivil Design:
c Dundee, P.E., City of
adison

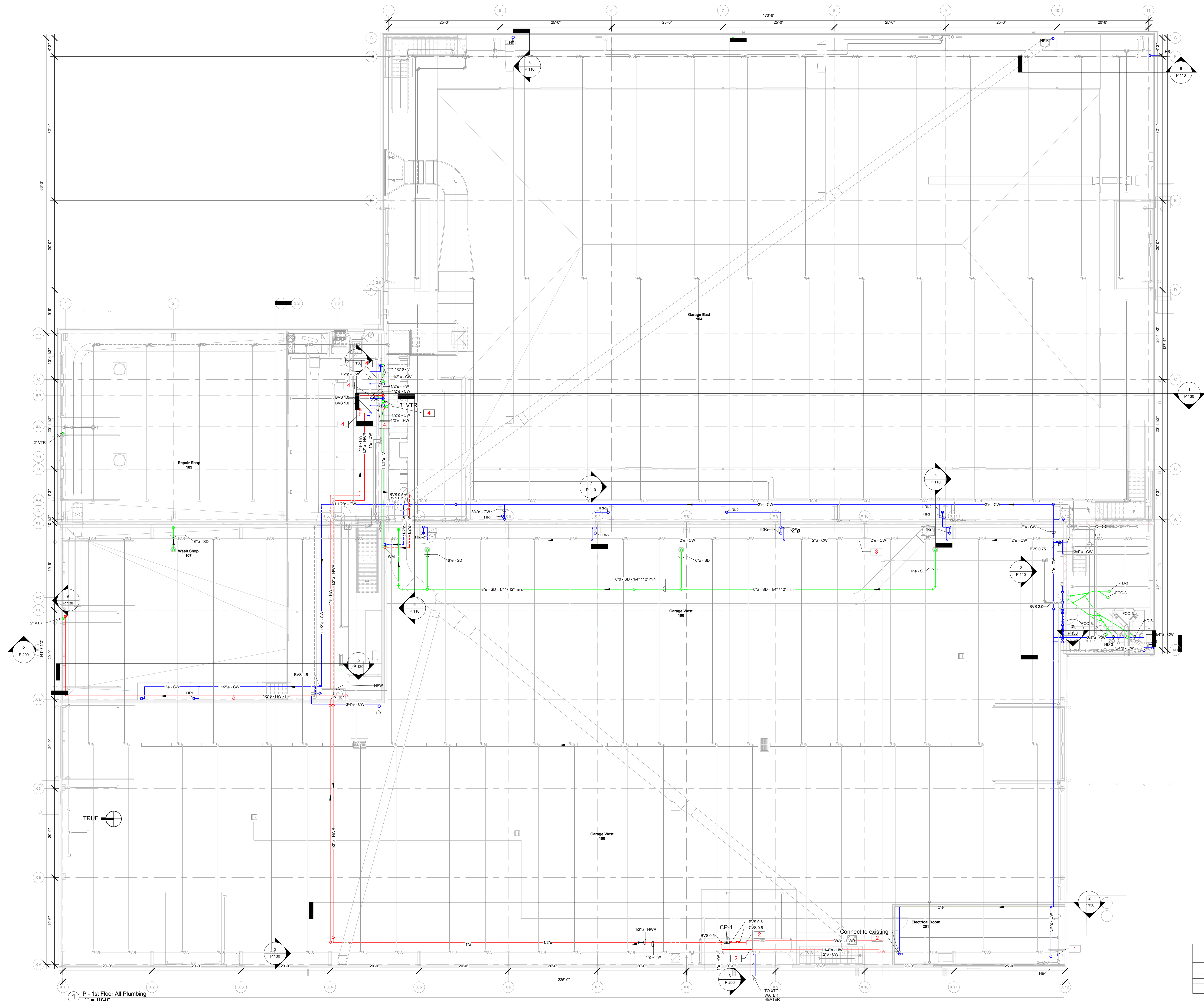
Electrical Design:
Steve Hanson, P.E., Kuenty
Architects

Structural Design:
John Schmidbauer, P.E.,
Queny Architects

Architectural Design:
Ray Schindel, P.E., City of
Madison; 608-266-4668;
rschindel@cityofmadison.com

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Keynote Legend	
Key Value	Keynote Text
1	CAP EXISTING WATER SERVICE
2	CONNECT TO EXISTING
3	VACTOR FILL SUPPLY LINE (FROM SEWER DEDUCT METER)
4	PROVIDE STUBOUT FOR FIXTURES. OWNER WILL INSTALL FIXTURE AND CONNECT TO STUBOUT.



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

Contract: 6484
Project: 10308
Common Council Approval:
6/2/2015

Lighting Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Civil Design:
Eric Dundee, P.E., City of
Madison

Landscaping Design:
Sarah Lerner, LPA, City of
Madison; 608-261-4281;
slerner@cityofmadison.com

Electrical Design:
Dave Hanson, P.E., Kueny
Architects

Plumbing Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

HVAC Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

Structural Design:
John Schmidbauer, P.E.,
Kueny Architects

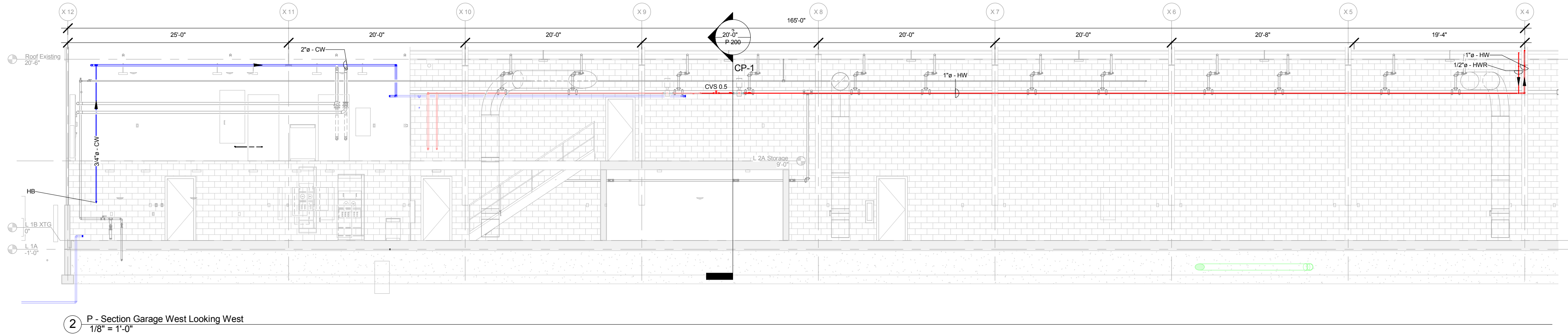
Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
Kay Schindel, P.E., City of
Madison; 608-266-4668;
kschindel@cityofmadison.com

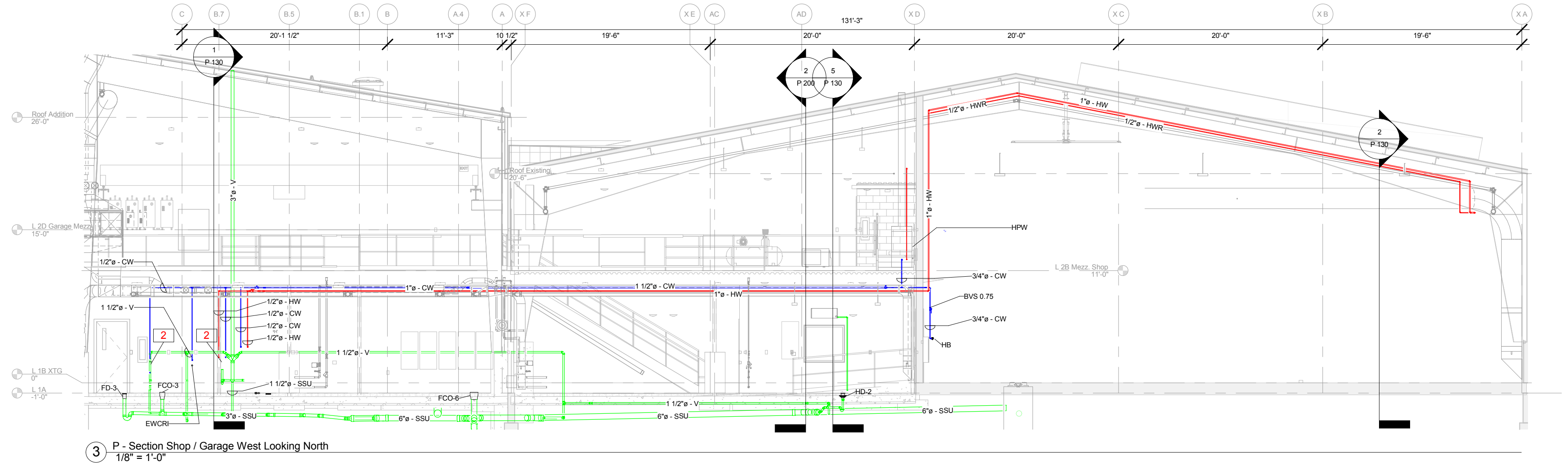
Plumbing
Sections

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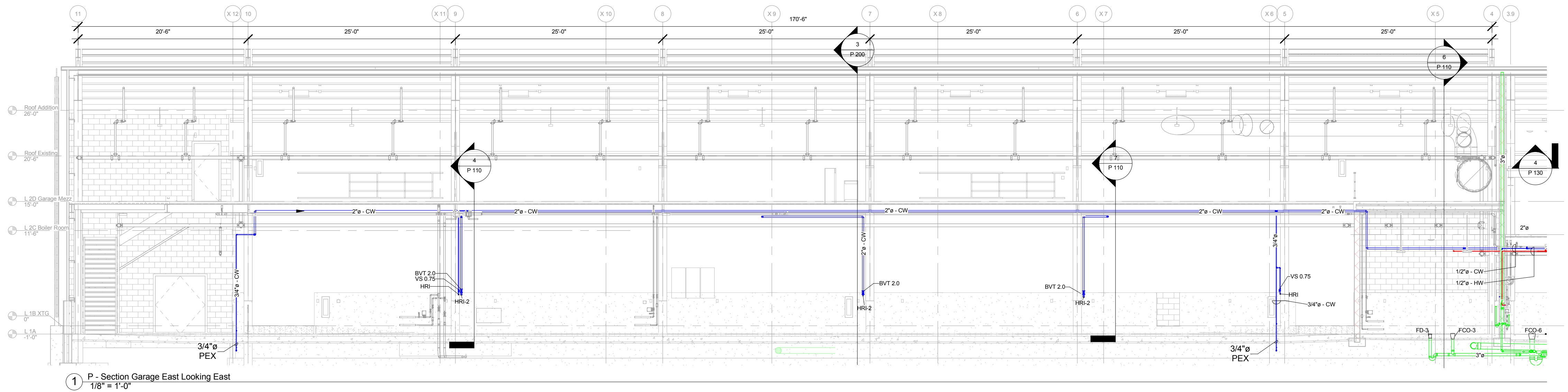
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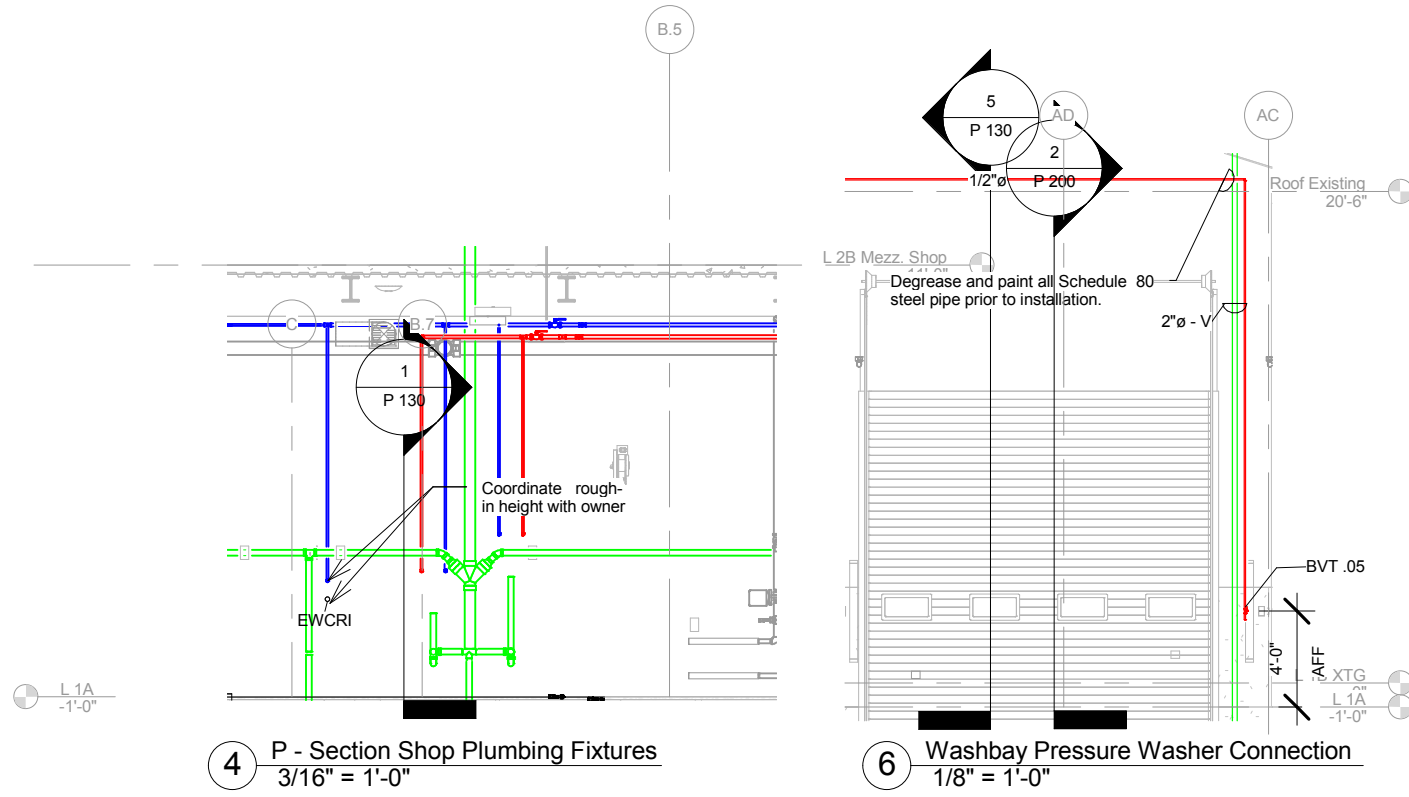
2 P-Section Garage West Looking West
1/8" = 1'-0"



3 P-Section Shop / Garage West Looking North
1/8" = 1'-0"

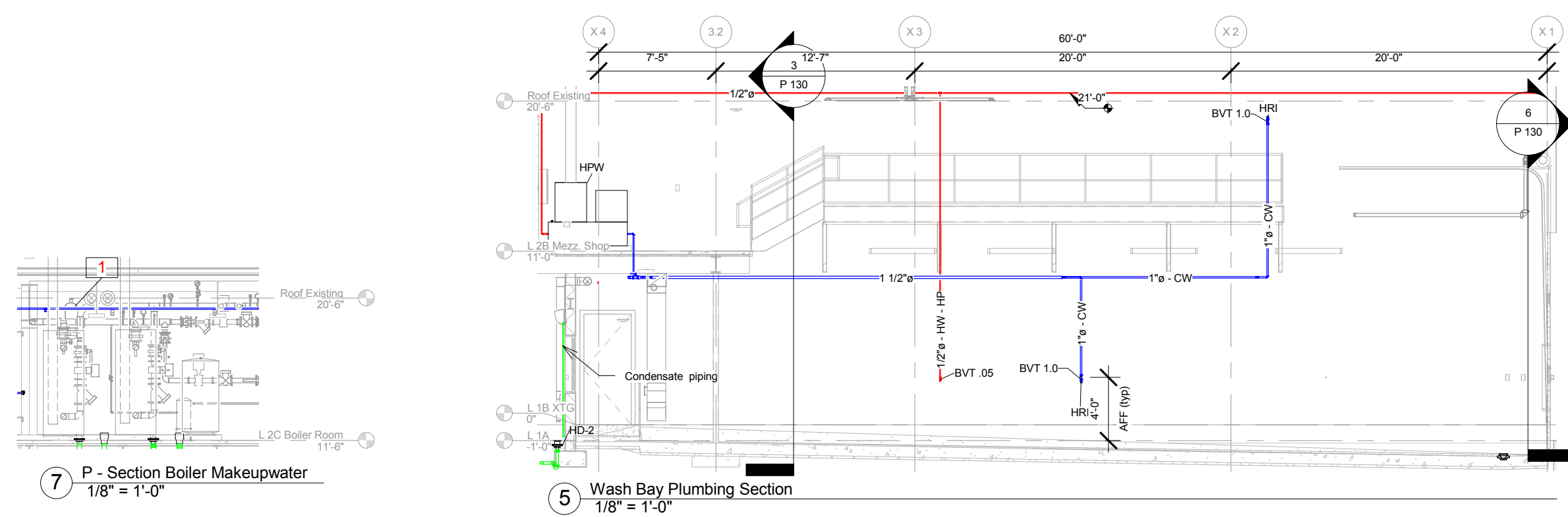


1 P-Section Garage East Looking East
1/8" = 1'-0"



4 P-Section Shop Plumbing Fixtures
3/16" = 1'-0"

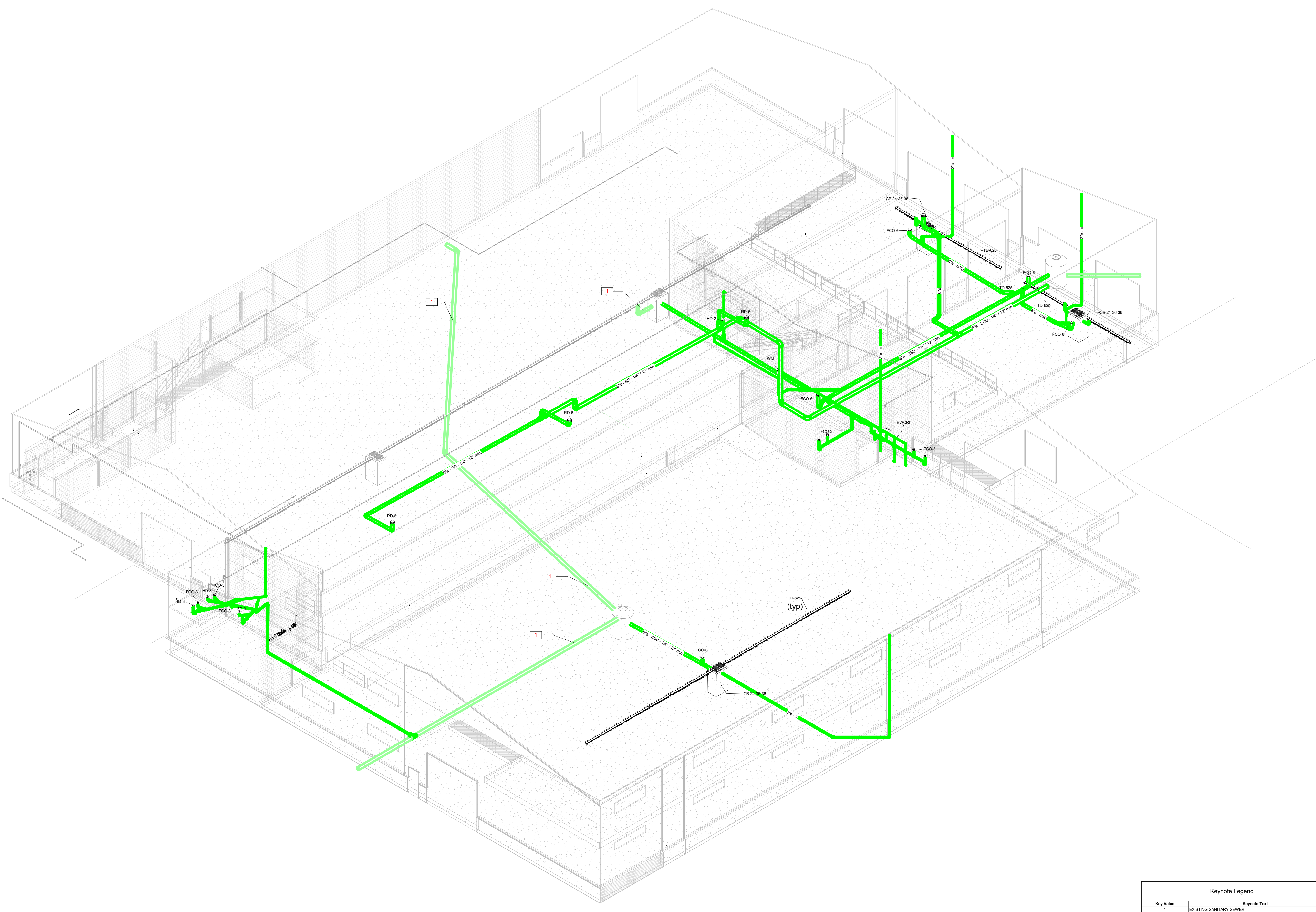
6 Washbay Pressure Washer Connection
1/8" = 1'-0"



7 P-Section Boiler Makeupwater
1/8" = 1'-0"

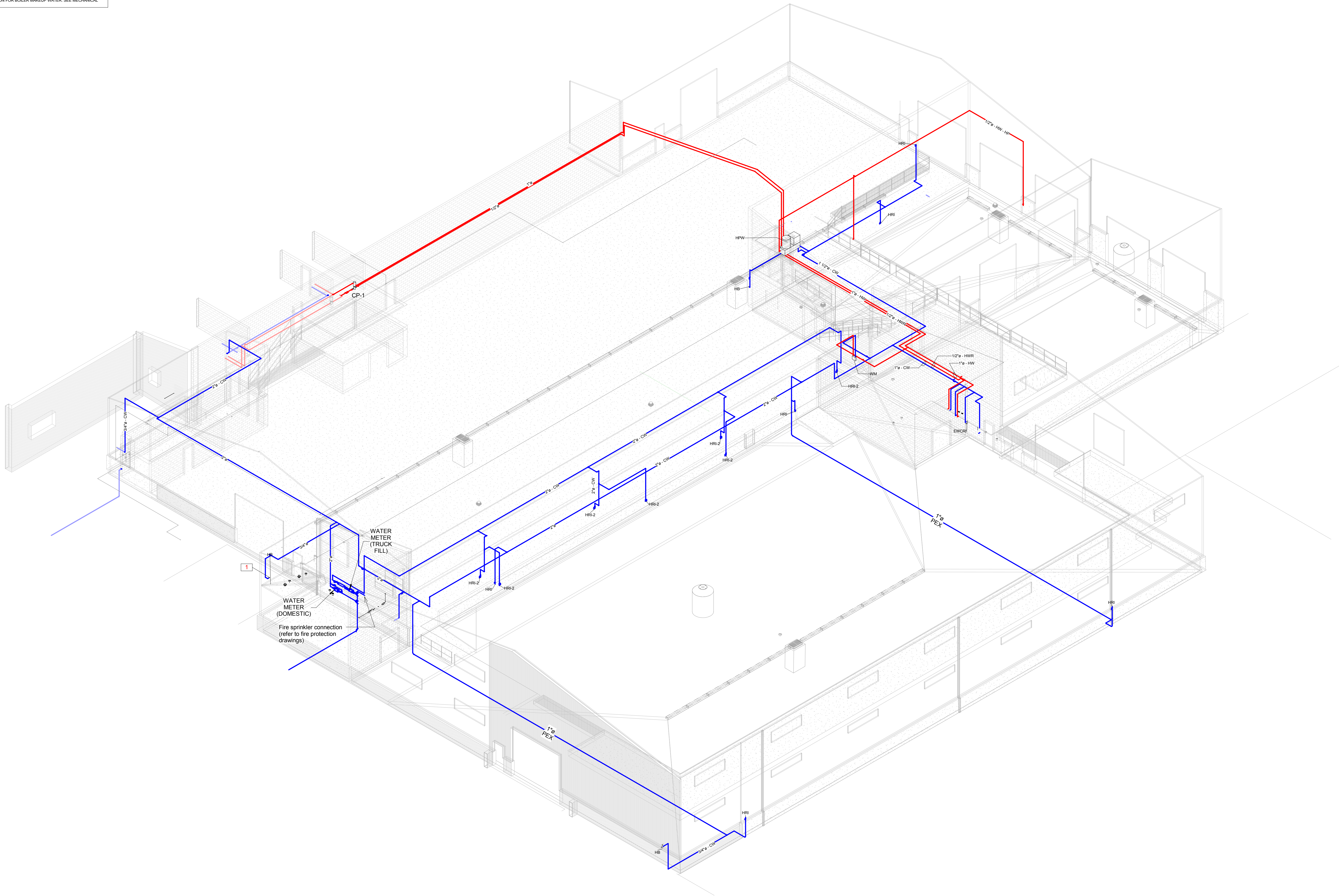
5 Wash Bay Plumbing Section
1/8" = 1'-0"

Keynote Legend	
Key Value	Keynote Text
2	CONNECTION FOR BOILER MAKEUP WATER. SEE MECHANICAL DRAWINGS. PROVIDE STUBOUT FOR FIXTURES. OWNER WILL INSTALL FIXTURE AND CONNECT TO STUBOUT.



Keynote Legend	
Key Value	Keynote Text
1	EXISTING SANITARY SEWER

Keynote Legend	
Key Value	Keynote Text
1	CONNECTION FOR BOILER MAKEUP WATER. SEE MECHANICAL DRAWINGS



City of Madison
Facilities Maintenance
1600 Emil St.
Madison, WI 53713



Design prepared for:
Engineering Division

Engineering Operations
Building Addition

Location:
1600 Emil St.
Madison, WI 53713

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6/2/2015

Lighting Design:
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kschindel@cityofmadison.com

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Kueny Architects

Fire Protection Design:
Robert Novak, Kueny Architects

Architectural Design:
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Domestic
Water
Isometric

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