



DATE: September 23, 2019

FROM: Wight & Company
2500 N. Frontage Road
Darien, IL 60561

SUBJECT: ADDENDUM #4 TO THE BIDDING DOCUMENTS FOR:
NORTH & SOUTH HIGH SCHOOL BID GROUP #5
MASTER FACILITY PLAN IMPLEMENTATION
COMMUNITY HIGH SCHOOL DISTRICT 99
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

Wight & Company

wightco.com

.....
2500 North Frontage Road

Darien, IL 60561

.....
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This addendum forms a part of the Bidding Contract Documents, dated July 1, 2019. Bidders must acknowledge receipt of this Addendum in the space provided on the Bid Form.

NORTH

I. Clarifications

1. **QUESTION:** As far as pipe specification do we use the spec book or schedule on p0.01? **ANSWER:** See revised plumbing specifications and drawings in Addendum #3.
2. **QUESTION:** South school plan A1.4.0 shows wall types 1C05. North school plan A1.03 shows wall types 1C17 and legend on A1.03 of north plan indicates to see A8 for partition types. There is no A8 drawings issued and there are no partition types indicated. Please clarify partition types for each building. **ANSWER: Partition types are included in addendum #3.**
3. **QUESTION:** There is a door schedule on the south building, but there is none shown on the north building plans. Please issue a door schedule for the north building. **ANSWER: Door schedule is included in addendum #3.**
4. **QUESTION:** Reference 3/A1.04, is there metal framing required at Metal Panel at underside of Vomitory and Press Box? **ANSWER: Metal panels are by others.**
5. **QUESTION:** Clarify 033660-Concrete Sealer locations. **ANSWER: The entirety of the interior concrete slab is sealed.**
6. **QUESTION:** Key note 17 calls for a 10' wide decorative metal double swing gate however when scaling the gate opening I'm coming up with a 16' opening. Please clarify. **ANSWER: Key note takes precedence. Double swing gates identified in key Note #17 shall be 10 feet wide.**
7. **QUESTION:** Please confirm key note 18,19 and 20 as highlighted confirms the limits of the 4' tall fence per the attached drawing is part of the general trades bid package. **ANSWER: The 4' black coated vinyl Fence directly in front of the bleacher system at both north and south is by the Bleacher**

Contractor and is part of their scope of work. Everything else you have highlighted is to be included in the bid package. Refer to Addendum #3 clarifying new site fence limits.

8. **QUESTION:** On drawing A1.03 in the squad rooms calls for a 9' tall chain link fence. Is this fence galvanized or vinyl coated? Should it include a top, middle and bottom rail? Are the posts base plated? **ANSWER: Interior fencing shall be mesh partitions per specification 102213 and not chain link fencing.**
9. **QUESTION:** The toilet accessory schedule is missing. Are toilet accessories required? **ANSWER: The toilet accessory schedule is on Sheet A1.04.**
10. **QUESTION:** Does the floor require 033660-Concrete Sealer? **ANSWER: The entirety of the interior concrete slab is sealed.**
11. **QUESTION:** Sheet C1.02 shows the fence on the west side of the bleacher to only have the south portion of the fence to be removed. Please confirm that the entire length of fence running along the bleachers are to be removed. **ANSWER: See revised sheet C1.02 in Addendum #3.**
12. **QUESTION:** On Drawing E3.01S there are two rows of F-2 Fixtures, but the fixture schedule says it's a can light and there looks to be (2) Can Lights in the Stairwell? Need Clarification on the Highlighted items on attached drawing.t **ANSWER: The two rows of F2 fixtures in the Low Storage areas should be F1 fixtures. The only F2 fixtures are the can lights in the entry door soffits.**
13. **QUESTION:** Are we to provide the fire protection RPZ for both North and South? It is in the schedule for South but not North. **ANSWER: Yes the Plumbing Bid Package should include the RPZ for both north and south and all piping up the flexible connection fitting.**
14. **QUESTION:** Is there any masonry work at Press Box? **ANSWER: No. Pressbox is fully furnished by Bleach contractor.**
15. **QUESTION:** Are all the Rooms to be painted at Downers North and South? There is no Finish Schedule. **ANSWER: Yes, all new masonry, hollow metal doors and frames, and gypsum ceilings shall be painted. Refer to specification 099100 for type of paint required for each substrate..**
16. **QUESTION:** Addendum 1 calls for sealed concrete, I am unable to find SC called out on the prints. What areas are to received SC? **ANSWER: The entirety of the interior concrete slab is sealed.**
17. **QUESTION:** For DGS please refer to the Mechanical Floor Plan Level 1-Squad Rooms on Drawing # M2.01.s wherein the following is noted between Columns S.5 & S.6: "Run Gas Piping In Ceiling Structure Above". For DGN please refer to the Mechanical Floor Plan-Squad Rooms on Drawing # M2.00.s wherein the 1-1/2" gas line routing between buildings is indicated. We assume that the same note for DGS applies to DGN regarding to: "Run Gas Piping in Ceiling Structure Above". We would be most appreciative if you (Wight Co.) could please confirm this assumption. **ANSWER: Correct. At North High, the gas line shall run between the two buildings.in the ceiling structure above**
18. **QUESTION:** I cannot find **1C17** wall type anywhere for all these 9' high walls. See below. Are these regular medium weight CMU walls or 8" burnished CMUs same as the exterior walls? Can you please help? **ANSWER: The partition schedule is attached within, Sheet A8.00.**

II. Specifications

1. Specification Section 221316 – See revised specification.
2. Specification Section 221319: Zurn and Josam have been added as acceptable manufacturers for floor cleanouts and floor drains. Paragraphs 2.6 and 2.7 have been removed.
3. Specification Section 221413 – delete this section in its entirety.
4. Specification Section 224216.13: Delete Paragraphs 1.4 and 1.6 in their entirety.
5. Specification Section 224216.13: Revise Paragraph 2.1.A.1.c to read "Kohler".

6. Specification Section 224216.13: Revise Paragraph 2.2.B.1.C to read "Zurn". Add paragraph 2.2.B.1 the following:
 - d. Moen.

III. Drawings

CIVIL

1. Sheet C1.02 DEMOLITION PLAN - NORTH (**Full size sheet reissued**): Clarification of fencing demolition

ARCHITECTURAL

1. Sheet A1.02 STADIUM BLEACHERS – SITE, COD, AND LIFE SAFETY INFORMATION (**Sheet re-issued**).
 - a. New fencing delineated.
2. Sheet A1.03 HOME STADIUM BLEACHERS & SQUAD ROOMS PLAN (**Sheet re-issued**).
 - a. Interior squad room fencing changed to steel mesh partitions.
 - b. Building dimensions adjusted to accommodate bleacher footprint.
 - c. Revised masonry walls around exit doors.
3. Sheet A1.05 SQUAD BUILDING – WALL DETAILS AND SLAB DETAILS (**Sheet re-issued**).
 - a. Foundations revised to formed in lieu of bank pour.
4. Sheet A8.00 PARTITION TYPES (**Sheet added**).
5. Sheet A8.10 DOOR SCHEDULE (**Sheet added**).
6. Sheet A8.11 DOOR ELEVATIONS AND FRAME TYPES (**Sheet added**).

MECHANICAL

1. Sheet M2.00.s (**Sheet re-issued**).
 - a. The drawing has been revised to show removal of EUH-8 & 11 from scope of work and to revise the capacity of all three Electric unit heaters EUH-7, 15 & 16 to 2 KW. The location of GUH- 3 & 11 has also been revised.
 - b. The gas piping routing and size has been revised.
2. Sheet 5.00.s (**Sheet re-issued**).
 - a. The schedule for Electric unit heaters has been revised to remove EUH-8 and EUH-14 from the scope of work and to revise the capacity of all three Electric unit heaters EUH-7, 15 & 16 to 2 KW.

PLUMBING

1. Sheet P0.00.s (**Full size sheet reissued**):
 - a. Delete the "Plumbing Piping Materials Schedule" in its entirety. Follow Specification Sections 221116 and 221316 for all domestic water and sanitary waste and vent piping.
 - b. Additional Plumbing Note #10: Revise "two years" to "one year".

2. Sheet P2.01.s (**Full size sheet reissued**)
 - a. Plan 1, Underground Plan: Provide a 2" vent for 4"FD-1 serving Toilet 1-907.
 - b. Plan 2: 2" FCO located in Storage 1-908 shall be 4" FCO.
3. Sheet P2.02.s (**Full size sheet reissued**)
 - a. Both 4" VTRs shall be routed up through the press box and terminate at the press box roof. Coordinate routing with press box manufacturer.
4. Sheet P3.01S(**Full size sheet reissued**)
 - a. The domestic water service shall be upsized to a 2-1/2" main. All 2" suspended cold water piping shall be upsized to 2-1/2".
5. Sheet P4.00.s (**Full size sheet reissued**)
 - a. All floor cleanouts shall be Mifab C1220-R-1 or equivalent. See Specification Section 221319 for acceptable manufacturers.
 - b. Floor Drain Schedule: standard p-traps are acceptable for floor drains. Provide "Sure Seal" floor drain trap seal (or equivalent) for all floor drains.
 - c. Lavatory Schedule: Revise fixture LAV-1 to be American Standard Lucerne 0355.912 with Sloan SF-2350-CP battery operated sensor faucet.
 - d. Water Fountain Schedule: Revise fixture WF-1A to be Elkay Model VRCTL8SC.
 - e. Janitor Sink Schedule: Revise fixture JS-1 to be Creative Terrazzo Industries Model MC2424-6 with Chicago Faucets model 897-RCF faucet.
 - f. Domestic Water Heater Schedule, note 1: Delete "Provide 15 year tank and heat exchange warranty".
 - g. Domestic Hot Water Return Pump Schedule: Revise RCP-1 to be Bell & Gossett model PL-30B.
 - h. Double Check Detector Assembly: Remove schedule and replace with Reduced Pressure Backflow Preventer Schedule. Incoming domestic water service backflow preventer shall be a 2-1/2" RPZ Watts LF009 with strainer and air gap fitting.
 - i. Hydrant Schedule: Replace HB-1 with Woodford B24.
 - j. hot/cold water distribution riser diagrams: Add a line sized ball valve for each hot water return branch line, adjacent to the balancing valve.
 - k. hot/cold water distribution riser diagrams: Provide ball valves on each side of RCP-1. Provide a line sized lead free bronze wye strainer on the suction side of RCP-1.
6. Sheet P6.00.s, (**Full size sheet reissued**)
 - a. detail #8 building water service detail: Added note states "Plumbing contractor is to furnish and install the backflow preventer for the fire protection service.

ELECTRICAL

1. Sheet E1.00.s :
 - a. Delete this sheet in its entirety. Electrical service has been revised. Site electrical information is now on Sheet E3.00.s.
2. Sheet E2.01.s SQUAD ROOMS POWER PLAN (**Full size sheet reissued**)
3. Sheet E3.00.s SITE POWER AND LIGHTING PLAN (**Full size sheet reissued and re-named**)
4. Sheet E5.00.s PARTIAL RISER DIAGRAM & PANEL SCHEDULE (**Full size sheet reissued**)

SOUTH

I. Clarifications

1. **QUESTION:** As far as pipe specification do we use the spec book or schedule on p0.01? **ANSWER:**
2. **QUESTION:** Can you clarify that the Fire Protection work is not in the Plumbing scope of Work? I did not see a bid form for them and nothing in plumbing SOW. Also, is BIM required for this project or just cad coordination? **ANSWER:**
3. **QUESTION:** South school plan A1.4.0 shows wall types 1C05.North school plan A1.03 shows wall types 1C17 and legend on A1.03 of north plan indicates to see A8 for partition types. There is no A8 drawings issued and there are no partion types indicated. Please clarify partition types for each building. **ANSWER:**
4. **QUESTION:** Which contractor is providing the pre engineered support structure as indicated on the north building section detail 6/A1.04 including metal framing, horizontal perlins,metal wall panels,pre engineered building insulation as shown on details on A1.05 and the south building section 2/A4.4.0 and A5.4.0 including metal framing, horizontal purlins,metal wall panels,pre engineered insulation as shown for the squad rooms? **ANSWER: Door hardware specification 087111 was provided in first addendum.**
5. **QUESTION:** Clarify the extent of 055213-Pipe and Tube Handrails the General Trades contractor is to furnish and install. I noticed handrails at the squad rooms at ramp/stairs leading to toilets. Are we to provide all handrails at bleachers? **ANSWER: Handrails related to the grandstand bleachers, stairs and ramps (above and outside the squad rooms).**
6. **QUESTION:** Clarify the chain link fence enclosure the bleacher contractor is providing. Reference 6/A1.04, is it in reference to the chain link skirting under the bleacher walk way? **ANSWER: Correct. This chain lik fence skirt at the front of each bleacher system is by others.**
7. **QUESTION:** Not clear if the visitors bleachers require chain link fence at perimeter? **ANSWER: No fence required for visitor bleachers.**
8. **QUESTION:** Reference 3/A1.04, is there metal framing required at Metal Panel at underside of Vomitory and Press Box? **ANSWER: Metal panels are by others.**
9. **QUESTION:** DG South door schedule is missing hardware set type per door. **ANSWER: Hardware assignments are provided in revised door schedule. Refer also to hardware specification 087111.**
10. **QUESTION:** DG North/South clarify wall types. **ANSWER: Partition schedule is attached.**
11. **QUESTION:** Clarify 033660-Concrete Sealer locations. **ANSWER: The entirety of the interior concrete slab is sealed.**

12. **QUESTION:** Key note 17 calls for a 10' wide decorative metal double swing gate however when scaling the gate opening I'm coming up with a 16' opening. Please clarify. **ANSWER: Key note takes precedence.**
13. **QUESTION:** Please confirm key note 18,19 and 20 as highlighted confirms the limits of the 4' tall fence per the attached drawing is part of the general trades bid package. **ANSWER: The 4' black coated vinyl Fence directly in front of the bleacher system at both north and south is by the Bleacher Contractor and is part of their scope of work. Everything else you have highlighted is to be included in the bid package.**
14. **QUESTION:** The toilet accessory schedule is missing. Are toilet accessories required? **ANSWER: The toilet accessory schedule is included within.**
15. **QUESTION:** Does the floor require 033660-Concrete Sealer? **ANSWER: The entirety of the interior concrete slab is sealed.**
16. **QUESTION:** Are we to provide the fire protection RPZ for both North and South? It is in the schedule for South but not North. **ANSWER: Yes the Plumbing Bid Package should include the RPZ for both north and south and all piping up the flexible connection fitting.**
17. **QUESTION:** Is there any masonry work at Press Box? **ANSWER: No. Pressbox is fully furnished by Bleach contractor.**
18. **QUESTION:** What is the duration of the North project I need to know how many months for the road plate rental. Do you know the depth of the Piers both location or have an foundation plans for the bleachers. **ANSWER: 7 months for plates. Depth of footings to be finalize with grandstand installing contractor/engineer of record. Assume frost depth at -4-0"**
19. **QUESTION:** Are all the Rooms to be painted at Downers North and South? There is no Finish Schedule. **ANSWER: Yes. Refer to specification 099100.**
20. **QUESTION:** Addendum 1 calls for sealed concrete, I am unable to find SC called out on the prints. What areas are to received SC? **ANSWER: The entirety of the interior concrete slab is sealed.**
21. **QUESTION:** I cannot find **1C17** wall type anywhere for all these 9' high walls. See below. Are these regular medium weight CMU walls or 8" burnished CMUs same as the exterior walls? Can you please help? **ANSWER: The partition schedule is attached within, Sheet A8.00.**

II. Specifications

22. ADD attached specification 087111 – DOOR HARDWARE

III. Modified Drawings

ARCHITECTURAL

1. Sheet A1.40 SITE PLAN - HOME BLEACHERS & SQUAD ROOMS (**Full size sheet reissued**)
 - a. Hardware set assignments added to door schedule.
 - b. CMU wall at low side of grandstand structure labeled.
2. Sheet A4.40 EXTERIOR ELEVATIONS AND BUILDING SECTIONS - HOME BLEACHERS (**Full size sheet reissued**)

- a. Toilet accessory schedule and plan added.
 - b. CMU wall at low side of grandstand labeled and hatched correctly.
3. Sheet A5.40 EXTERIOR WALL SECTIONS & DETAILS – SQUAD ROOMS (**Full size sheet reissued**)
- a. Concrete foundation note revised to remove trench and bank pour. Foundation will need to be formed.
 - b. Foundation note clarified to apply to space between grandstand column piers. Grandstand column piers and footing by others.
4. Sheet A8.00 PARTITION TYPES (**Full size sheet issued**)
- a. Schedule sheet added to set of drawings for clarification.

PLUMBING

5. Sheet P0.01 SITE PLAN - HOME BLEACHERS & SQUAD ROOMS (**Full size sheet reissued**)
- a. Delete the “Plumbing Piping Materials Schedule” in its entirety. Follow Specification Sections 221116 and 221316 for all domestic water and sanitary waste and vent piping.
 - b. Additional Plumbing Note #10: Revise “two years” to “one year”.
6. Sheet 1.41 SANITARY & DRAINAGE FLOOR PLANS -SQUAD ROOMS (**Full size sheet reissued**)
- a. Provide individual vents for all floor drains and janitor sinks. Each individual vent shall rise a minimum of 6” above the flood rim of the fixture before connecting to other vents.
7. Sheet P1.42 SANITARY & DRAINAGE ROOF PLAN -SQUAD ROOMS (**Full size sheet reissued**)
- a. Both 4” VTRs shall be routed up through the press box and terminate at the press box roof. Coordinate routing with press box manufacturer.
8. Sheet P2.41 WATER DISTRIBUTION FLOOR PLAN -SQUAD ROOMS (**Full size sheet reissued**)
- a. The domestic water service shall be upsized to a 2-1/2” main. All 2” suspended cold water piping shall be upsized to 2-1/2”.
 - b. Revise “TYP 2” for WC-1 tag to read “TYP 4”.
 - c. Add tag LAV-1A to easternmost lavatory in Visitor Squad Room 1-702.
 - d. Add HB-1 adjacent to JS-1 in Home Squad Room 1-710.
9. Sheet P4.40 RISER DIAGRAMS & SCHEDULES (**Full size sheet reissued**)

- a. All floor cleanouts shall be Mifab C1220-R-1 or equivalent. See Specification Section 221319 for acceptable manufacturers.
 - b. Floor Drain Schedule: standard p-traps are acceptable for floor drains. Provide "Sure Seal" floor drain trap seal (or equivalent) for all floor drains.
 - c. Lavatory Schedule: Revise fixture LAV-1 to be American Standard Lucerne 0355.912 with Sloan SF-2350-CP battery operated sensor faucet.
 - d. Water Fountain Schedule: Revise fixture WF-1A to be Elkay Model VRC8S.
 - e. Janitor Sink Schedule: Revise fixture JS-1 to be Creative Terrazzo Industries Model MC2424-6 with Chicago Faucets model 897-RCF faucet. An elevated vacuum breaker is not required for this fixture.
 - f. Domestic Hot Water Return Pump Schedule: Revise RCP-1 to be Bell & Gossett model PL-30B.
 - g. Double Check Detector Assembly: Remove schedule and replace with Reduced Pressure Backflow Preventer Schedule. Incoming domestic water service backflow preventer shall be a 2-1/2" RPZ Watts LF009 with strainer and air gap fitting.
 - h. Hydrant Schedule: Replace HB-1 with Woodford B24.
 - i. Hot/cold water distribution riser diagrams: Add a line sized ball valve for each hot water return branch line, adjacent to the balancing valve.
 - j. Hot/cold water distribution riser diagrams: Provide ball valves on each side of RCP-1. Provide a line sized lead free bronze wye strainer on the suction side of RCP-1.
10. Sheet P6.40 PLUMBING DETAILS (**Full size sheet reissued**)
- a. Water service detail revised.

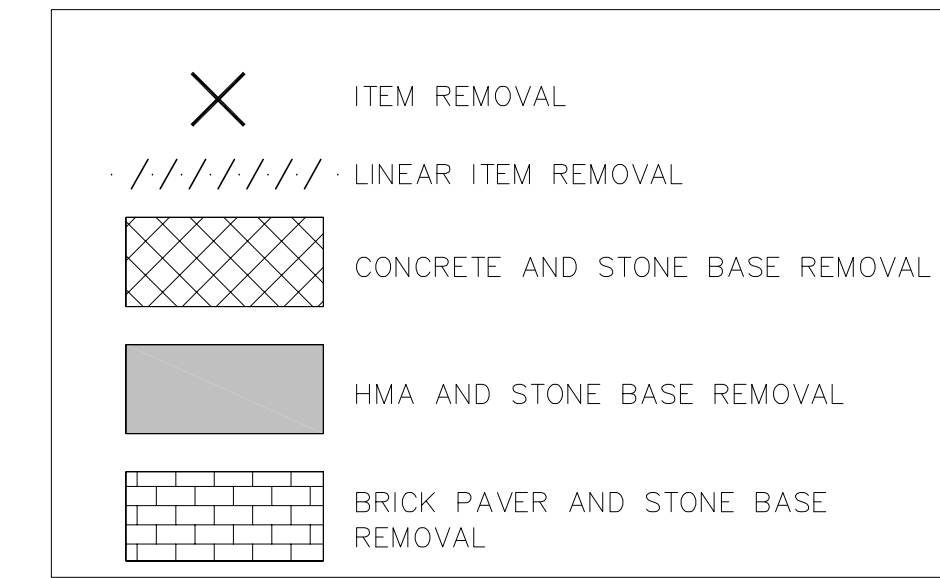
This addendum consists of: (2) Text Pages (1) Specification Sections and (10) Modified Drawing Sheets.

END OF ADDENDUM

S:\Darien\Downers Grove SD99\5274-42 CHSD99 Improvements\01\DWG\CD\5274-42-C1.01 DEMOLITION PLAN NORTH.dwg devans Sep 11, 2019 11:49:42 am
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LEGEND



KEY NOTES

- 1 SAW CUT PAVEMENT/SIDEWALK
- 2 REMOVE CURB
- 3 REMOVE TREE
- 4 REMOVE LANDSCAPING
- 5 REMOVE STORM SEWER
- 6 REMOVE STORM STRUCTURE
- 7 REMOVE SANITARY SEWER
- 8 REMOVE SANITARY STRUCTURE
- 9 REMOVE FENCE, POSTS AND FOUNDATIONS
- 10 REMOVE FENCE, CONCRETE PILLARS AND FOUNDATIONS
- 11 REMOVE CONCRETE PLANTER
- 12 REMOVE WOOD PLANTER
- 13 REMOVE WOOD DECK AND FOUNDATIONS
- 14 REMOVE BOLLARD AND FOUNDATIONS
- 15 REMOVE CONCRETE STAIRS
- 16 REMOVE FIELD LIGHT POLE, FOUNDATION, ETC. AND RELOCATE PER SITE PLAN

DEMOLITION NOTES

1. CONTRACTOR TO PROTECT ALL EXISTING UTILITIES DURING DEMOLITION & CONSTRUCTION ACTIVITIES, WHETHER SHOWN ON THE PLANS OR NOT, UNLESS OTHERWISE SPECIFIED. ANY RELOCATION, ADJUSTMENTS, CONFLICTS, ETC. SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY. CONTRACTOR TO LOCATE ALL PUBLIC & PRIVATE UTILITIES IN THE RIGHT-OF-WAY AND SITE PRIOR TO CONSTRUCTION.
2. ALL EXISTING CURB TO REMAIN UNLESS OTHERWISE SPECIFIED. ANY CURB DAMAGED DURING DEMOLITION SHALL BE REPLACED IN KIND.
3. ALL EXISTING SIGNS & LIGHT POLES TO REMAIN AND BE PROTECTED UNLESS OTHERWISE SPECIFIED. ANY SIGNS REMOVED SHALL BE SALVAGED AND RELOCATED OR RETURNED TO OWNER.
4. ANY UTILITY ADJUSTMENTS, CONFLICTS, RELOCATIONS, ETC. REQUIRED SHALL BE COORDINATED WITH ENGINEER AND UTILITY OWNER/PROVIDER.
5. ALL EXISTING TREES TO REMAIN AND TO BE PROTECTED UNLESS OTHERWISE SPECIFIED.
6. ALL DEMOLITION AND CONSTRUCTION IN THE RIGHT-OF-WAY SHALL BE COORDINATED AND APPROVED BY THE VILLAGE OF DOWNERS GROVE. THE CONTRACTOR IS TO CONTACT THE INSPECTORS AT THE VILLAGE OF DOWNERS GROVE PRIOR TO CONSTRUCTION.
7. COORDINATE ALL ELECTRICAL, CABLE FIBER, ETC. REMOVAL/RELOCATION WITH MEP PLANS. CONTRACTOR SHALL PROTECT ALL EXISTING ELECTRIC SERVICES DURING CONSTRUCTION AND NOTIFY ENGINEER IMMEDIATELY OF ANY CONFLICTS.
8. ALL EXISTING SHRUBS, BUSHES, AND LANDSCAPING IN CONFLICT WITH SITE IMPROVEMENTS SHALL BE REMOVED.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY DAMAGED PUBLIC/PRIVATE PROPERTY OR ROADWAY AS A RESULT OF CONSTRUCTION ON THIS SITE. THE RIGHT-OF-WAY MUST BE RESTORED TO EXISTING OR BETTER CONDITION.



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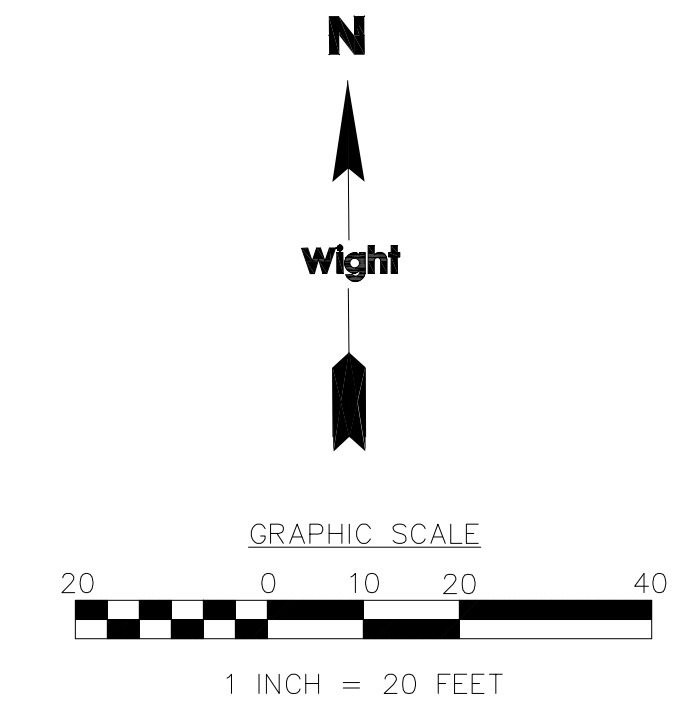
ISSUED FOR 25% CD - PHASE C	08.30.2019
ISSUED FOR CONSTRUCTION-PHASE B	07.26.2019
10 DOC MOD 10	07.23.2019
8 DOC MOD 8	06.26.2019
ISSUED FOR BID - BID GROUP 7	06.07.2019
A6.1 ISSUED FOR ADDENDUM A6.1 - BID GROUP 6	05.31.2019
FINAL PERMIT SUBMITTAL	05.13.2019
ISSUED FOR BID - BID GROUP 6	05.10.2019
ISSUED FOR BID - BID GROUP 5	05.10.2019
ISSUED FOR CONSTRUCTION-PHASE A	05.08.2019
REV	DESCRIPTION DATE

COMMUNITY SCHOOL DISTRICT 99 – MFP IMPLEMENTATION NORTH HIGH SCHOOL
 4436 MAIN STREET
 DOWNERS GROVE, IL 60516

DEMOLITION PLAN – NORTH

Project Number:
 5274-02
 Drawn By:
 DE
 Sheet:

C1.02



APPLICABLE CODES:

- 2015 ICC International Building Code
- 2015 ICC International Energy Conservation Code
- 2015 ICC International Mechanical Code
- 2015 ICC International Fuel Gas Code
- 2015 ICC International Fire Code
- 2014 Illinois Plumbing Code
- 2014 NFPA National Electric Code
- 2015 ICC 300 Standard for Bleachers, Folding and Telescoping Stands, and Grandstands.
- 2010 Illinois Accessibility Code

SPRINKLER CLASSIFICATION:

Fully Sprinklered

SEISMIC CLASSIFICATIONS:

Seismic Category: B
Seismic Occupancy Category: III

BUILDING OCCUPANCY CLASSIFICATIONS:

Squad Building:
Use Group E - Education - Squad Rooms
Use Group S Storage

ASSEMBLY REQUIREMENTS:

1029.1.1: Bleachers
Bleachers that are not building elements shall comply with ICC 300.

1029.1.1.1: Spaces Under Grandstands and Bleachers
Where spaces under grandstands are used for purposes other than ticket booths less than 100 SF and toilet rooms, such spaces shall be separated by fire barriers complying with Section 707 and horizontal assemblies complying with Section 711 with not less than 1 hour fire-resistance-rated construction.

CONSTRUCTION TYPE AND ALLOWABLE BUILDING AREAS:

Type 2B

Fire Ratings/Separations: (Note: Reductions taken for sprinklered building:
 Primary Structural Frame: 0 hour
 Bearing Walls (Exterior): 0 hour
 Bearing Walls (Interior): 0 hour
 Non-bearing (Interior): 0
 Floor Construction: 0 hour
 Columns supporting floor: 0 hour
 Roof Construction: 0 hour

Allowable Building Height Table 504.3.
75 feet for Construction Type IIB Sprinklered
Actual Building Height: 35 feet

Allowable Building Area Table 506.2.
58,000 SF for single story sprinklered building of Construction Type IIB
Actual Building Area: 8,200 SF

MEANS OF EGRESS:

1006.3.2 Sizing - Other Egress Components:
For other than Group H and I-2 occupancies, the capacity, in inches (mm), of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.15 inch (3.8 mm) per occupant in buildings

1006.2.1 Common Path of Travel
 A Assembly Occupancy: 75 feet
 S Storage Occupancy: 100 feet

1007.1 Exit Separation:
Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

1017.2 Travel Distance
 A and S1 Occupancy: 250 feet

1020.1 Corridor Fire Resistance Rating
 A and S Occupancy: 0 hour

1020.4 Dead ends.
Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet in length.

In occupancies in Groups B and S, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet.

OCCUPANT LOAD:

1004.1.2 Maximum Floor Area Allowances Per Occupant:

Function of Space	Occupant Load Factor
Accessory storage areas/ mechanical equipment room	300 gross sf
Assembly with fixed seats	See Section 1004.4
Assembly without fixed seats	5 net sf
Standing space	50 gross sf
Locker rooms	

1004.4 Fixed Seating
For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces, shall be determined in accordance with Section 1004.1.2 and added to the number of fixed seats.

The occupant load of wheelchair spaces and the associated companion seat shall be based on one occupant for each wheelchair space and one occupant for the associated companion seat provided in accordance with Section 1108.2.3.

For areas having fixed seating without dividing arms, the occupant load shall be not less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

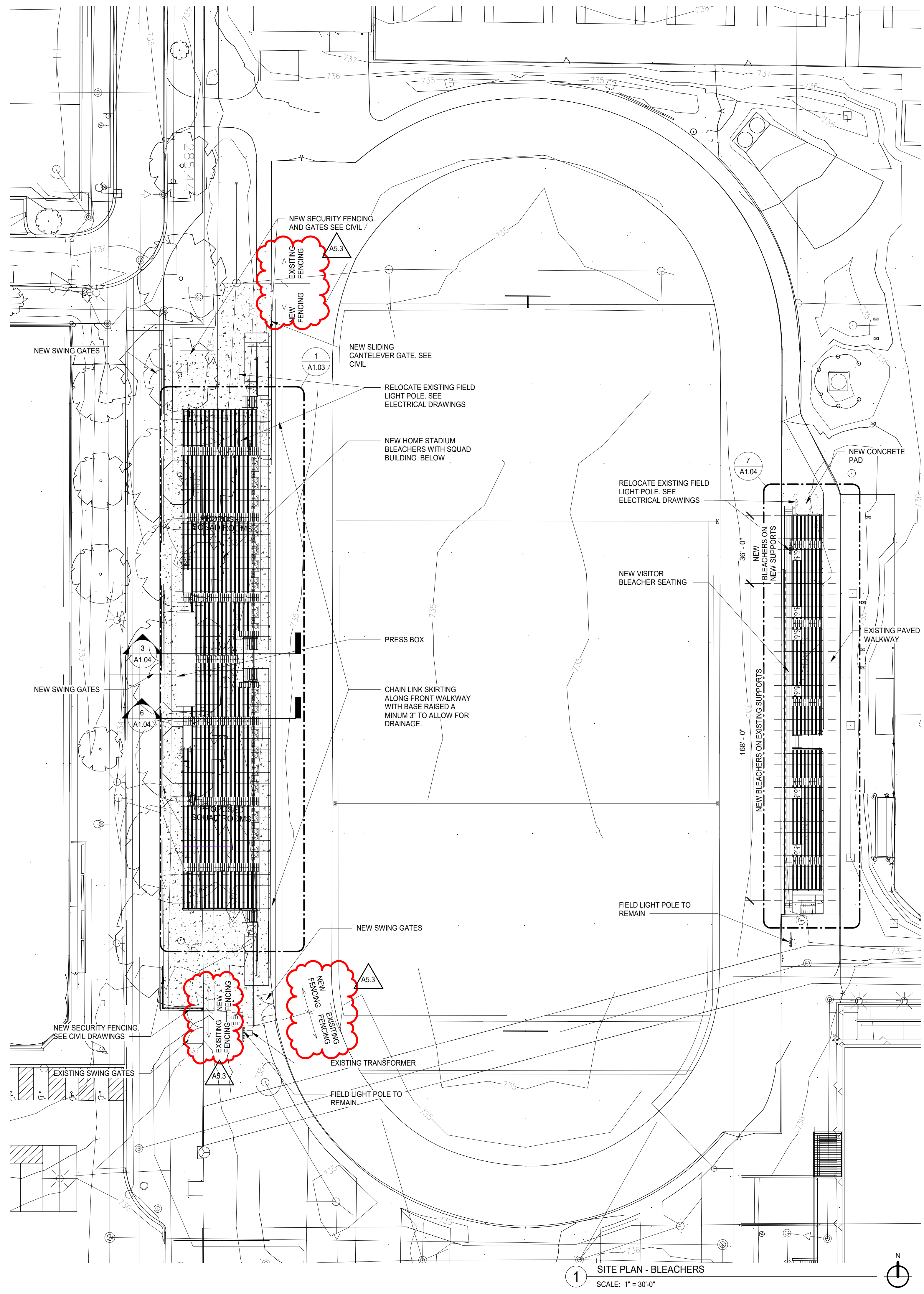
The occupant load of seating booths shall be based on one person for each 24 inches (610 mm) of both seat length measured at the backrest of the seating booth.

PLUMBING FIXTURE REQUIREMENTS - SQUAD BUILDING:
Based on Illinois Plumbing Code requirements for Schools-Student Use - Secondary

Expected Occupancy: 50

Fixture Type	#Required	#Provided
Water Closets	1/20 = 3	4
Urinals	N/A	
Lavatories	1/40 = 2	3
Drinking Fountains	1 per 75	1
Service Sink:	1 per floor	1

Note: Service sink located in adjacent stadium building



GENERAL NOTES - STADIUM SITE

- REFER TO CIVIL DRAWINGS FOR COORDINATION OF SURROUNDING SITE IMPROVEMENTS INCLUDING RE-GRADING, PAVING, UTILITIES, AND FENCING.
- REFER TO CIVIL DRAWINGS FOR COORDINATION OF ADA RAMPING.
- COORDINATE EXCAVATION WORK WITH RELOCATION OF EXISTING STADIUM LIGHT POLES AS INDICATED ON THE SITE PLANS AND ELECTRICAL DRAWINGS.
- SEE ELECTRICAL DRAWINGS FOR ELECTRICAL GROUNDING DETAIL AND REQUIREMENTS FOR A CONCRETE ENCASED GROUNDING ELECTRODE. COORDINATE WITH ELECTRICAL CONTRACTOR.

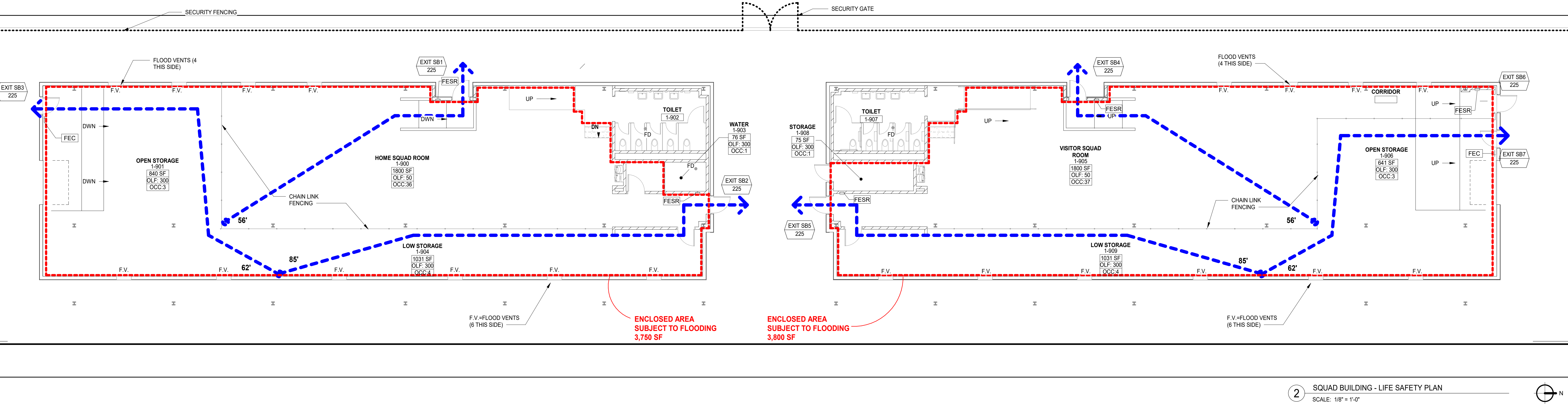
DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

Wight

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A5.3 BID GROUP 5 - ADDENDUM #3 09.18.2019
ISSUED FOR BID - BID GROUP 5 07.01.2019
A4.1 BID GROUP 4 - ADDENDUM #1 04.22.2019
REV. ISSUE DATE

MFP IMPLEMENTATION - NORTH

4436 MAIN STREET
DOWNERS GROVE, IL 60515

STADIUM BLEACHERS - SITE, CODE, AND LIFE SAFETY INFORMATION

Project Number:
5274-42
Drawn By:
Author
Sheet:

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GENERAL NOTES - BLEACHERS

1. REFER TO THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS FOR THE BLEACHERS AND PRESS BOX.
2. REFER TO CIVIL DRAWINGS FOR SITEWORK AND FENCING SURROUNDING THE BLEACHERS.
3. THE BLEACHER/PRESS BOX CONTRACTOR IS RESPONSIBLE FOR PROVIDING A FULLY ENGINEERED BLEACHER AND PRESS BOX SYSTEM INCLUDING SUPPORT STRUCTURE AND FOUNDATIONS. THE PRESS BOX DESIGN SHALL BE INTEGRATED WITH THE BLEACHERS FOR ACCESS TO THE BLEACHER SEATING AS SHOWN ON THE DRAWINGS. THE SUPPORT STRUCTURE SHALL ALSO BE ENGINEERED TO SUPPORT THE EXTERIOR WALLS, CLADDING SO THAT NO WALL LOAD IS IMPOSED ON THE SLAB FOUNDATIONS.
4. THE BLEACHER AND PRESS BOX SHALL BE DESIGNED TO MEET ALL APPLICABLE STATE AND LOCAL CODES.
5. BLEACHERS SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THE ILLINOIS ACCESSIBILITY CODE INCLUDING RAMPING, WHEEL CHAIR, AND COMPANION SPACES.
6. PRESS BOX SHALL BE PRE-WIRED FOR POWER AND LIGHTING. EXISTING LOW VOLTAGE SYSTEMS SHALL BE REFEED INTO NEW PRESS BOX. REFER TO ELECTRICAL AND LOW VOLTAGE DRAWINGS FOR ADDITIONAL INFORMATION.
7. BLEACHER SUPPORT STRUCTURE SHALL BE GALVANNEZED PER SPECIFICATIONS.

GENERAL NOTES - SQUAD BUILDING

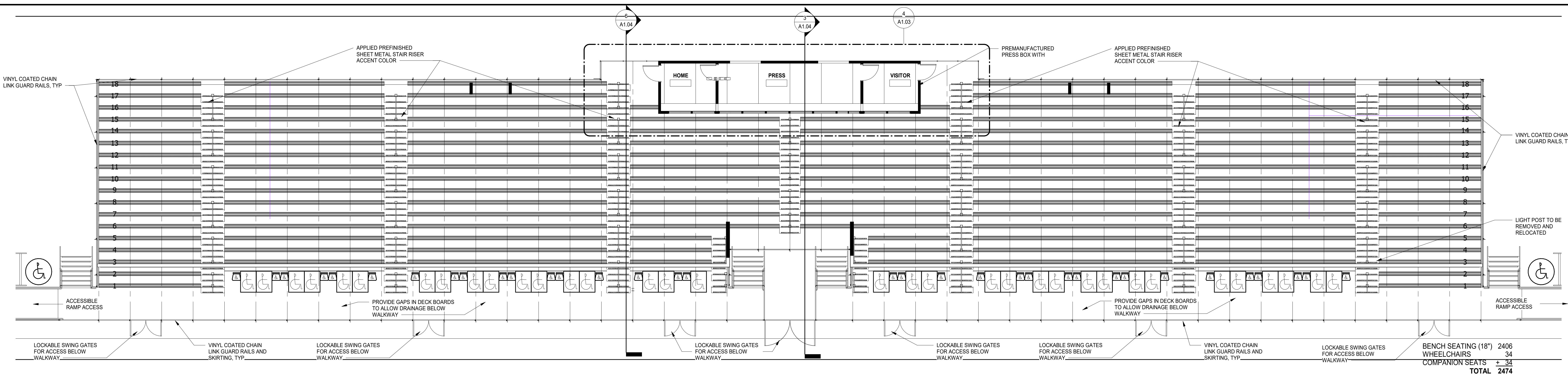
1. BUILDING IS CONSTRUCTED WITHIN A LOCALIZED POOR DRAINAGE AREA WITH AN ESTABLISHED BASE FLOOD ELEVATION OF 735.7. ALL CONSTRUCTION MATERIALS SHALL BE WATER RESISTANT TO A MINIMUM OF 3 FEET ABOVE THE BASE FLOOD ELEVATION (738.7) OR 4 FEET ABOVE FINISHED FLOOR.
2. ALL ELECTRICAL, HEATING, VENTILATION, AIR CONDITIONING, PLUMBING, AND OTHER APPLIANCES, OR FIXED MECHANICAL OR ELECTRICAL DEVICES SHALL BE LOCATED A MINIMUM OF 3 FEET ABOVE THE BASE FLOOD ELEVATION (738.7) OR 4 FEET ABOVE FINISHED FLOOR.
3. PROVIDE PERMANENT SIGNAGE AT ALL BUILDING ENTRANCES INDICATING THAT ALL FLAMMABLE OR TOXIC MATERIALS (GASOLINE, PAINT, INSECTICIDES, FERTILIZERS, ETC.) SHALL BE STORED ABOVE THE FLOOD PROTECTION ELEVATION OF 738.7.

GENERAL NOTES - CONCRETE SLAB

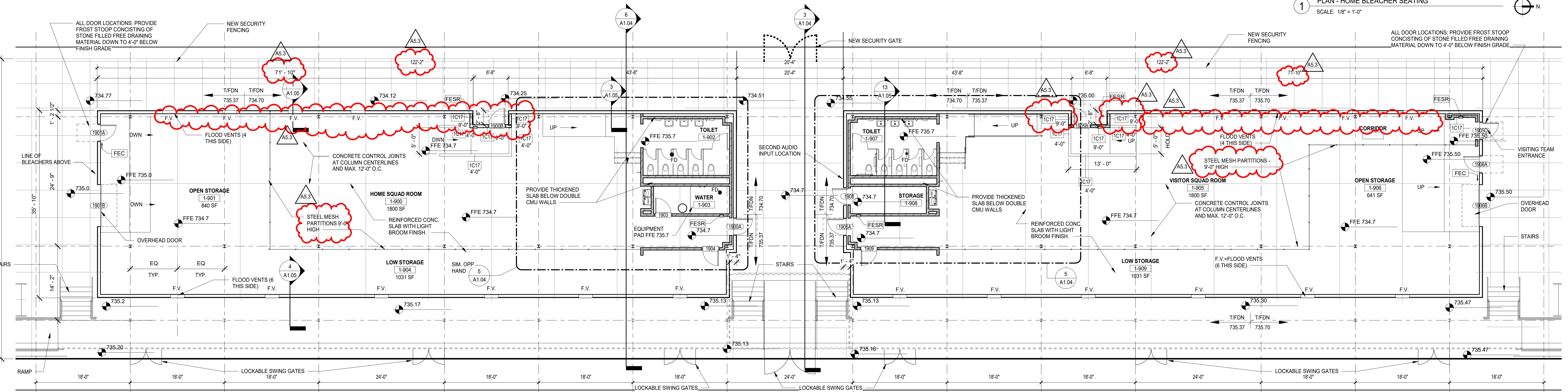
1. REFER TO TYPICAL CONCRETE SLAB DETAILS ON SHEET A1.05.
2. SLAB-ON-GRADE SHALL BE 5" THICK CONCRETE OVER PREPARED SUBGRADE. REINFORCE WITH #4 @ 18" O.C. OF STEEL BARS OR MACROSYNTHETIC FIBERS OR EQUIVALENT.
3. SLAB-ON-GRADE SHALL BE UNDERLAIN BY A MINIMUM OF 6 INCHES OF GRANULAR BASE COURSE LAYER OVER PROPERLY PREPARED SUBGRADE AND A 15 MIL CONTINUOUS VAPOR RETARDER (NO ON PLANS). SEE GEOTECHNICAL REPORT FOR SPECIFIC DRAINAGE LAYER MATERIAL REQUIREMENTS. COMPACT THE SUBGRADE TO AT LEAST THE 95 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557.
4. THE INITIAL SUBGRADE PREPARATION SHALL CONSIST OF REMOVING THE EXISTING TOPSOIL AND PAVEMENTS ALONG WITH ANY OTHER SOFT OR UNSUBSISTIBLE MATERIALS FROM THE 10' FOOT EXPANDED BUILDING AREAS AND 5 FEET BEYOND THE TOE OF ENGINEERED FILLS.
5. THE GEOTECHNICAL REPORT RECOMMENDS AGAINST THE FINAL SLAB SOILS REMAINING EXPOSED TO THE ELEMENTS FOR A PROLONGED PERIOD OF TIME AS THE SUBGRADE MAY BE DISTURBED AND/OR SOFTENED. IF THE SLAB SECTION IS NOT CONSTRUCTED WITHIN A FEW DAYS AFTER EXPOSING THE FINAL DESIGN SUBGRADE, CONSIDERATION SHALL BE GIVEN TO LEAVING THE SUBGRADE APPROXIMATELY 1 FOOT ABOVE THE FINAL DESIGN SUBGRADE TO HELP REDUCE DISTURBANCE OF THE SUBGRADE SOILS.
6. PER GEOTECHNICAL REPORT, IF THE EXISTING FILLS SOILS ARE TO REMAIN IN PLACE, THEY SHALL BE COMPACTED PER THE PROOFROLLING REQUIREMENTS IN THE GEOTECHNICAL REPORT.

LEGEND

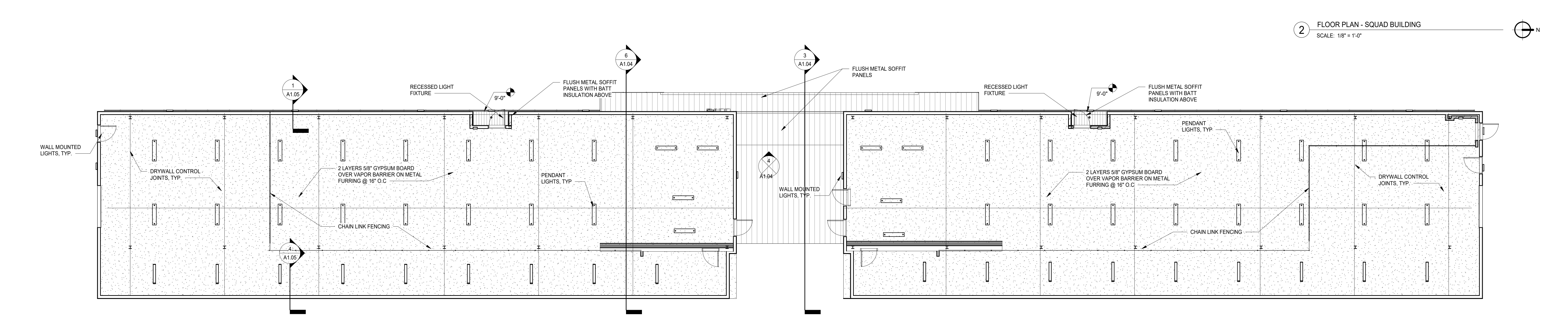
- NEW DOOR & HARDWARE
- PARTITION TYPE. REFER TO AS SERIES SHEETS
- DOOR TAG. REFER TO SHEET AS SERIES SHEETS
- FESR FIRE EXTINGUISHER SEMI RECESSED
- FE FIRE EXTINGUISHER ON BRACKETS
- F.V. FLOOD VENT - SET ON TOP OF FOUNDATION WALL. SEE SPECIFICATIONS AND DRAWING 21A1.02



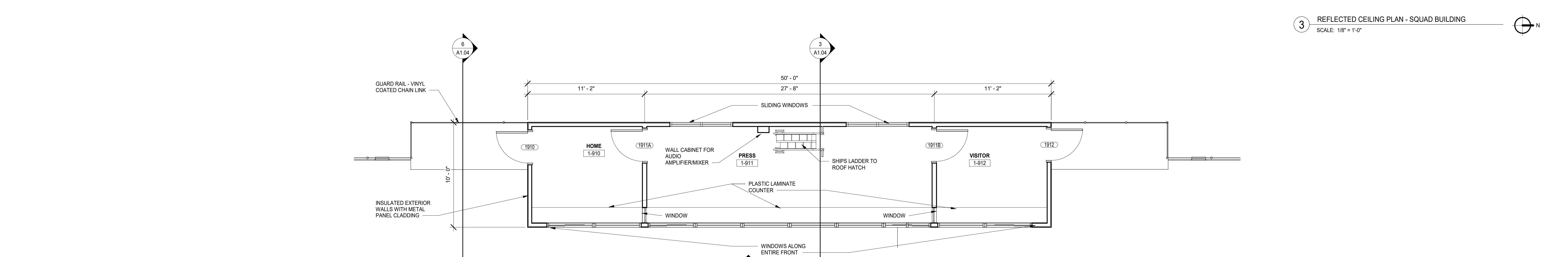
1 PLAN - HOME BLEACHER SEATING
SCALE: 1/8" = 1'-0"



2 FLOOR PLAN - SQUAD BUILDING
SCALE: 1/8" = 1'-0"



3 REFLECTED CEILING PLAN - SQUAD BUILDING
SCALE: 1/8" = 1'-0"



4 FLOOR PLAN - PRESS BOX
SCALE: 1/4" = 1'-0"

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A5.3 BID GROUP 5 - ADDENDUM #3 09.18.2019
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MFP IMPLEMENTATION - NORTH

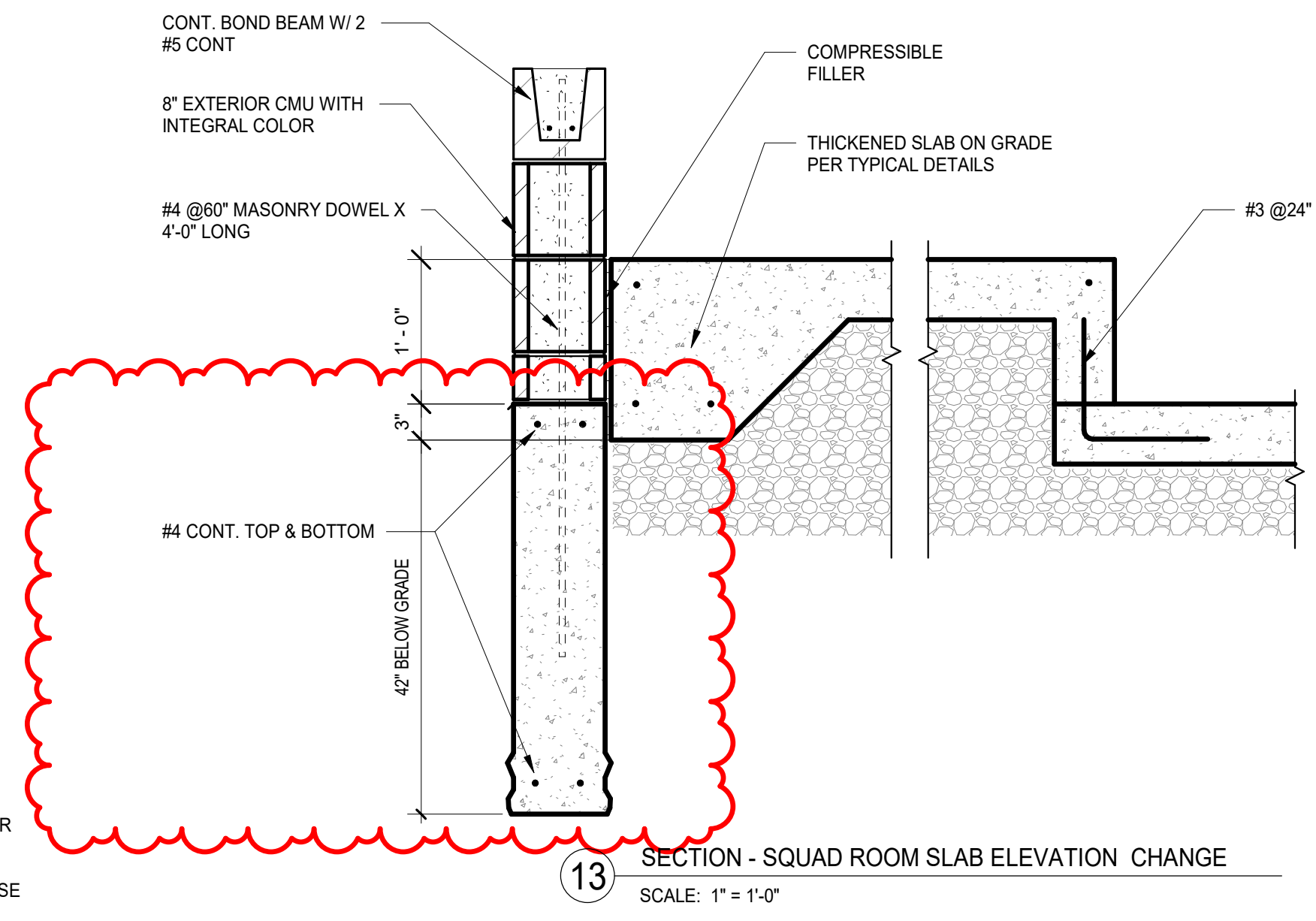
4436 MAIN STREET
DOWNERS GROVE, IL 60515

HOME STADIUM BLEACHERS & SQUAD ROOMS PLAN

Project Number:
5274-42
Drawn By:
Author
Sheet:

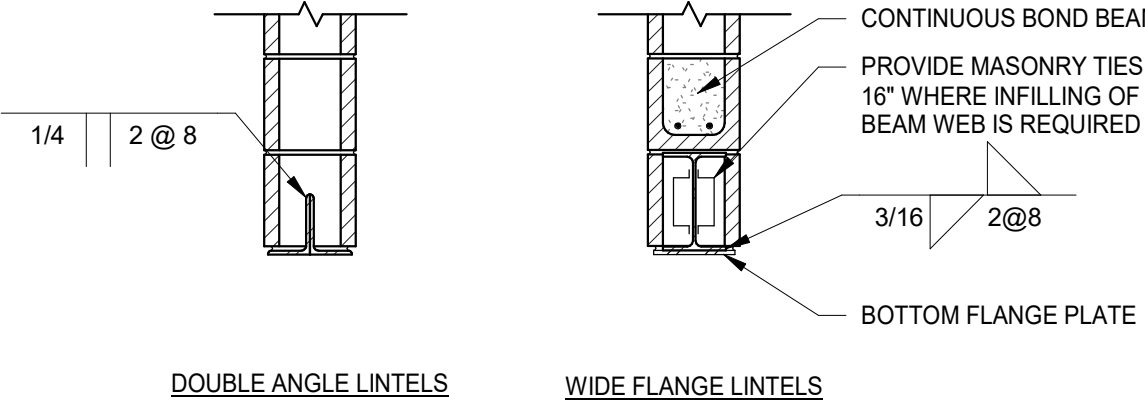
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NOMINAL ELEMENT WIDTH	SPAN	STEEL LINTEL
4"	6'-0" or LESS	L3 1/2 x 3 1/2 x 5/16
	OVER 6'-0" to 8'-0"	L5 x 3 1/2 x 5/16 (LLV)
	OVER 8'-0" to 10'-0"	L6 x 3 1/2 x 3/8 (LLV)
6"	6'-0" or LESS	2 - L3 1/2 x 2 1/2 x 5/16 (LLV)
	OVER 6'-0" to 8'-0"	2 - L3 1/2 x 2 1/2 x 3/8 (LLV)
	OVER 8'-0" to 10'-0"	W8 x 18
8"	6'-0" or LESS	2 - L3 1/2 x 3 1/2 x 5/16
	OVER 6'-0" to 8'-0"	2 - L5 x 3 1/2 x 5/16 (LLV)
	OVER 8'-0" to 10'-0"	2 - L6 x 3 1/2 x 5/16 (LLV)
10"	6'-0" or LESS	4 x 3 x 5/16 (LLH) W/ L5 x 3 x 5/16 (LLH)
	OVER 6'-0" to 8'-0"	W8 x 15 W/ PL 1/4 x 8 1/2
	OVER 8'-0" to 10'-0"	W8 x 15 W/ PL 1/4 x 10 1/2
12"	6'-0" or LESS	W8 x 15 W/ PL 1/4 x 10 1/2
	OVER 6'-0" to 8'-0"	W8 x 15 W/ PL 1/4 x 10 1/2
	OVER 8'-0" to 10'-0"	W8 x 15 W/ PL 1/4 x 10 1/2

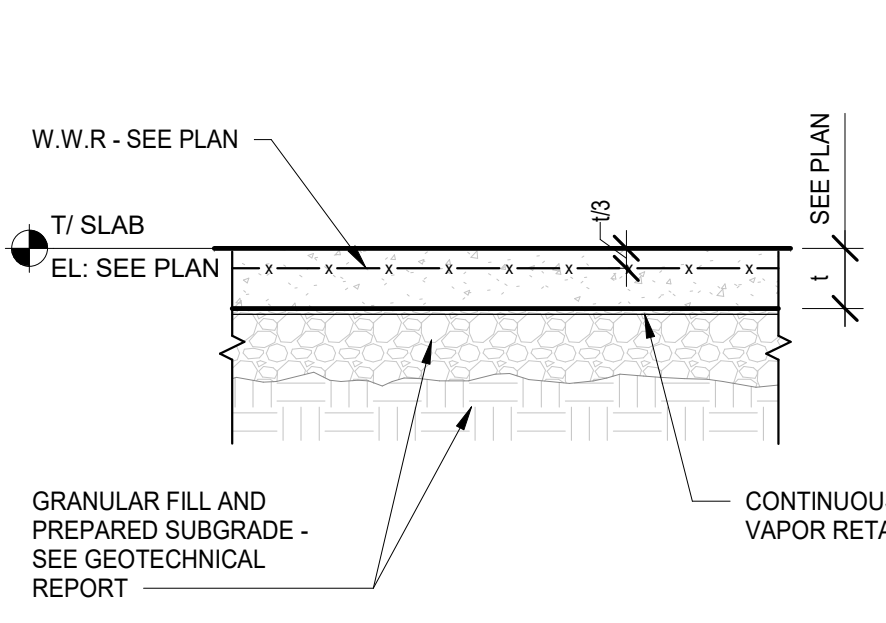


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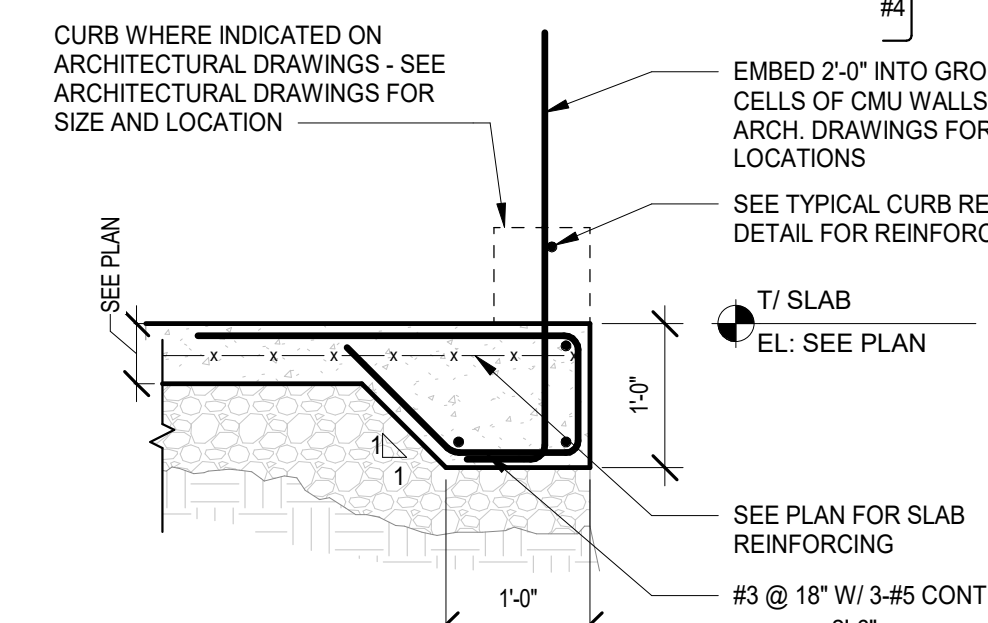
- A. SCHEDULED LINTELS ARE TO BE USED IN ALL MASONRY WALLS INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS (U N O) WHERE OPENINGS ARE REQUIRED. COORDINATE WITH MECHANICAL/ELECTRICAL/PLUMBING DRAWINGS FOR ADDITIONAL REQUIRED OPENINGS IN WALLS. OPENINGS LESS THAN 16" IN WIDTH DO NOT REQUIRE LINTELS.
- B. SCHEDULED LINTELS ARE INTENDED ONLY FOR EACH INDEPENDENT WALL ELEMENTS. FOR EXAMPLE, THE PROPER SELECTION FOR A 4" BRICK VENEER WITH AN 8" CMU BACKUP WOULD CONSIST OF THE SINGLE ANGLE SELECTION FOR BRICK VENEER PLUS THE DOUBLE ANGLE SELECTION FOR THE CMU BACKUP.
- C. UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL OR STRUCTURAL PLANS OR DETAILS, CONTRACTOR MAY USE STEEL LINTELS OR CMU LINTELS IN NON-LOAD BEARING WALLS AT THEIR OPTION.
- D. STEEL LINTELS SHALL BEAR MINIMUM OF 4" EACH END.
- E. PROVIDE LINTEL ASSEMBLIES IN ACCORDANCE WITH DETAILS BELOW.
- F. LINTELS AT EXTERIOR MASONRY WALLS SHALL BE GALVANIZED. LINTELS AT INTERIOR WALLS MAY BE PAINTED.



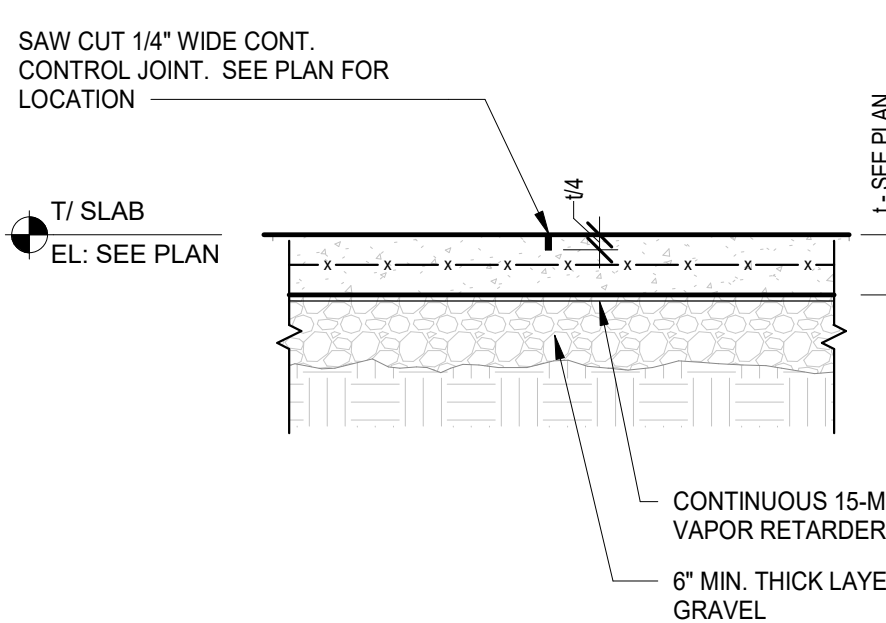
11 TYPICAL STRUCTURAL STEEL LOOSE LINTEL SCHEDULE
SCALE: 3/4" = 1'-0"



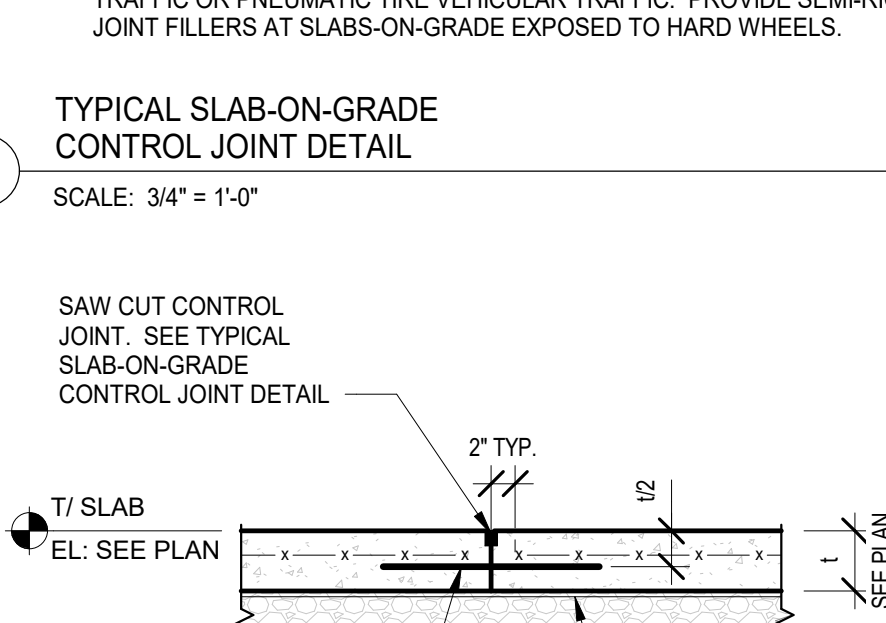
5 TYPICAL SLAB-ON-GRADE DETAIL
SCALE: 3/4" = 1'-0"



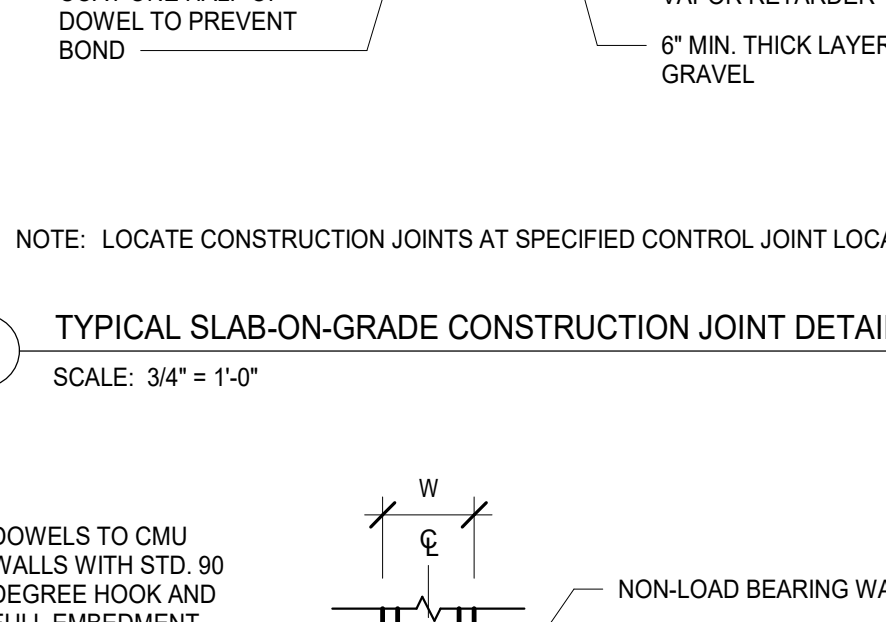
10 TYPICAL SLAB EDGE DETAIL
SCALE: 3/4" = 1'-0"



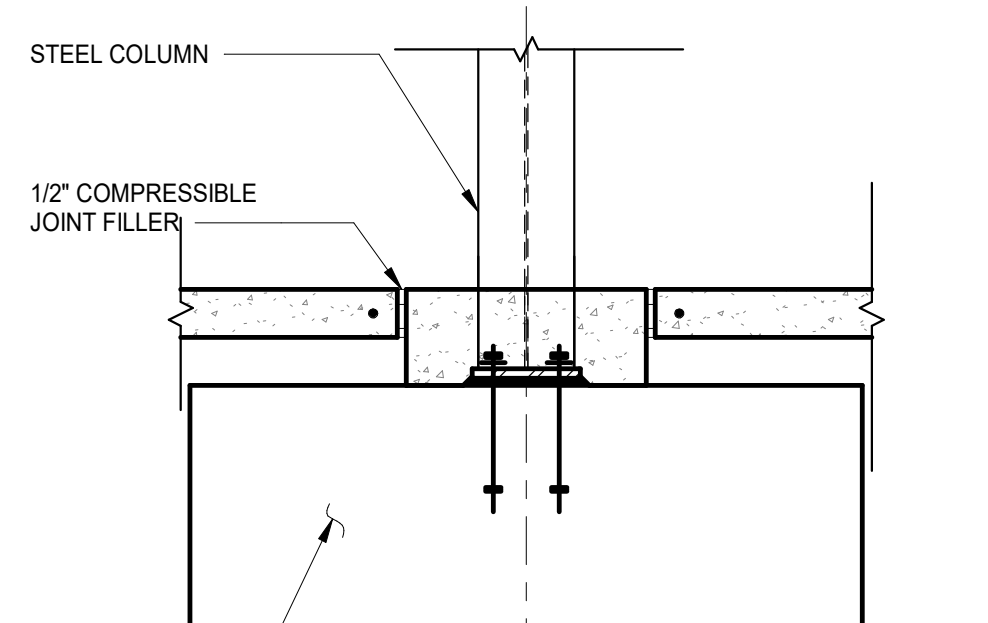
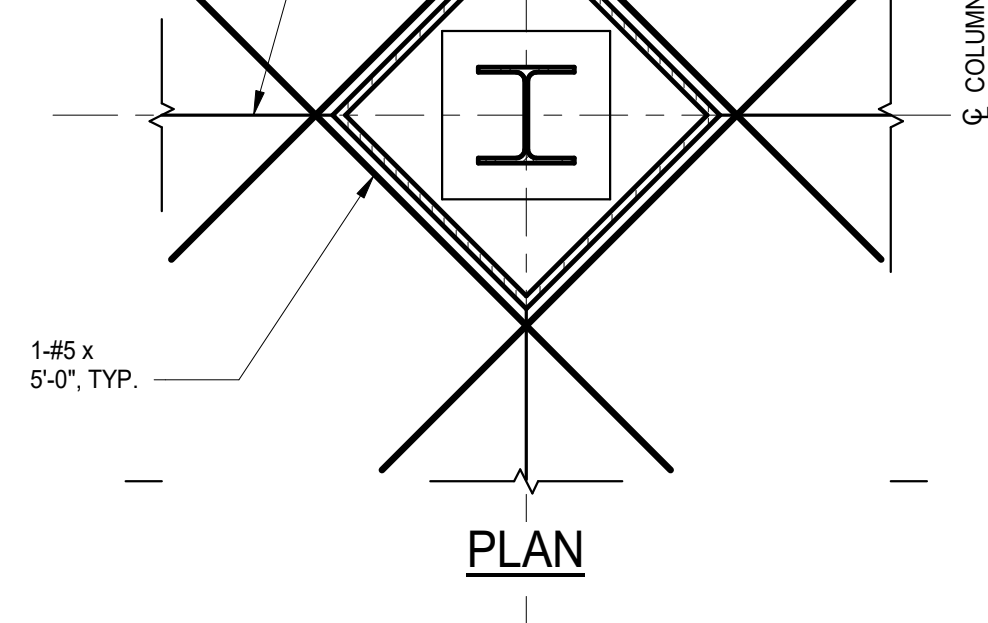
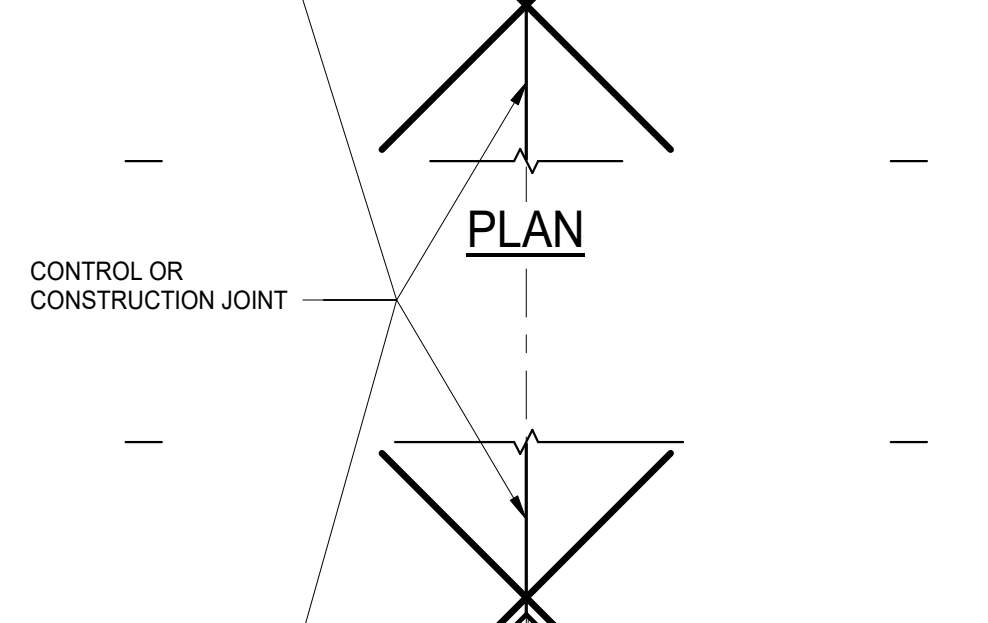
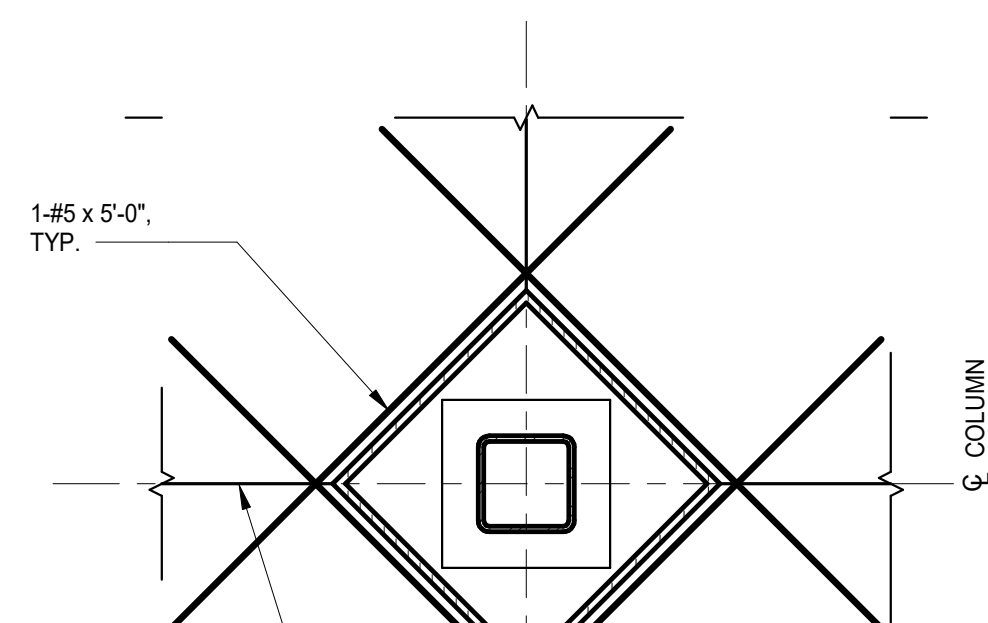
6 TYPICAL SLAB-ON-GRADE CONTROL JOINT DETAIL
SCALE: 3/4" = 1'-0"



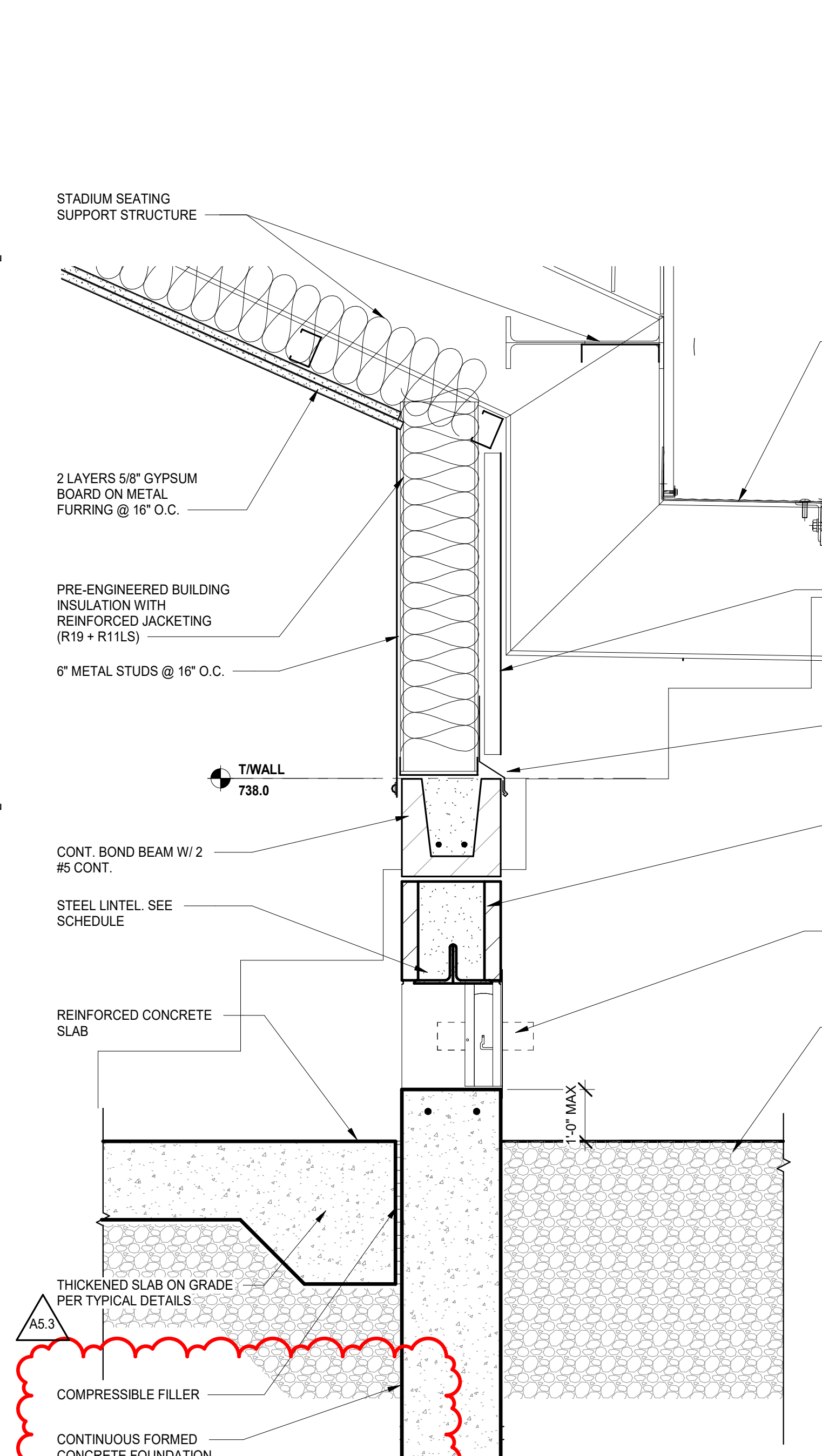
7 TYPICAL SLAB-ON-GRADE CONSTRUCTION JOINT DETAIL
SCALE: 3/4" = 1'-0"



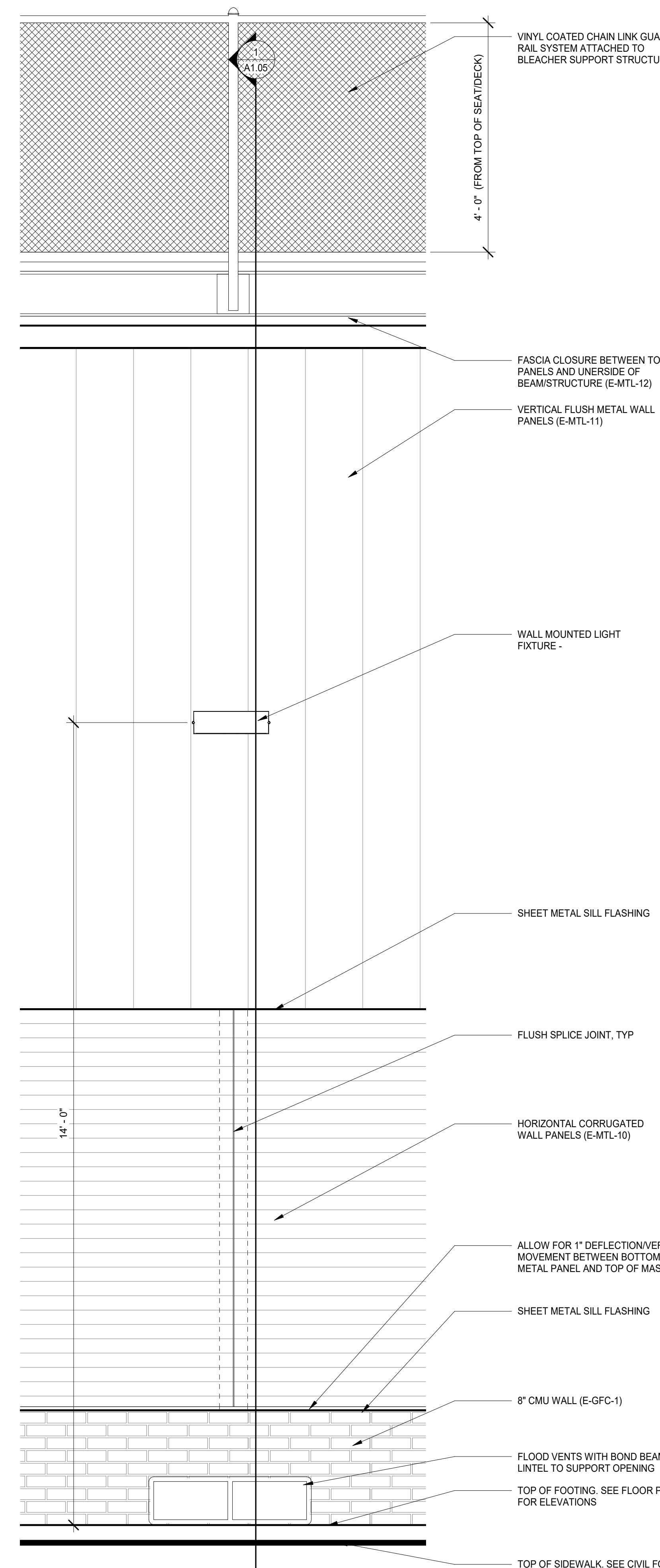
8 TYPICAL THICKENED SLAB-ON-GRADE DETAIL
SCALE: 3/4" = 1'-0"



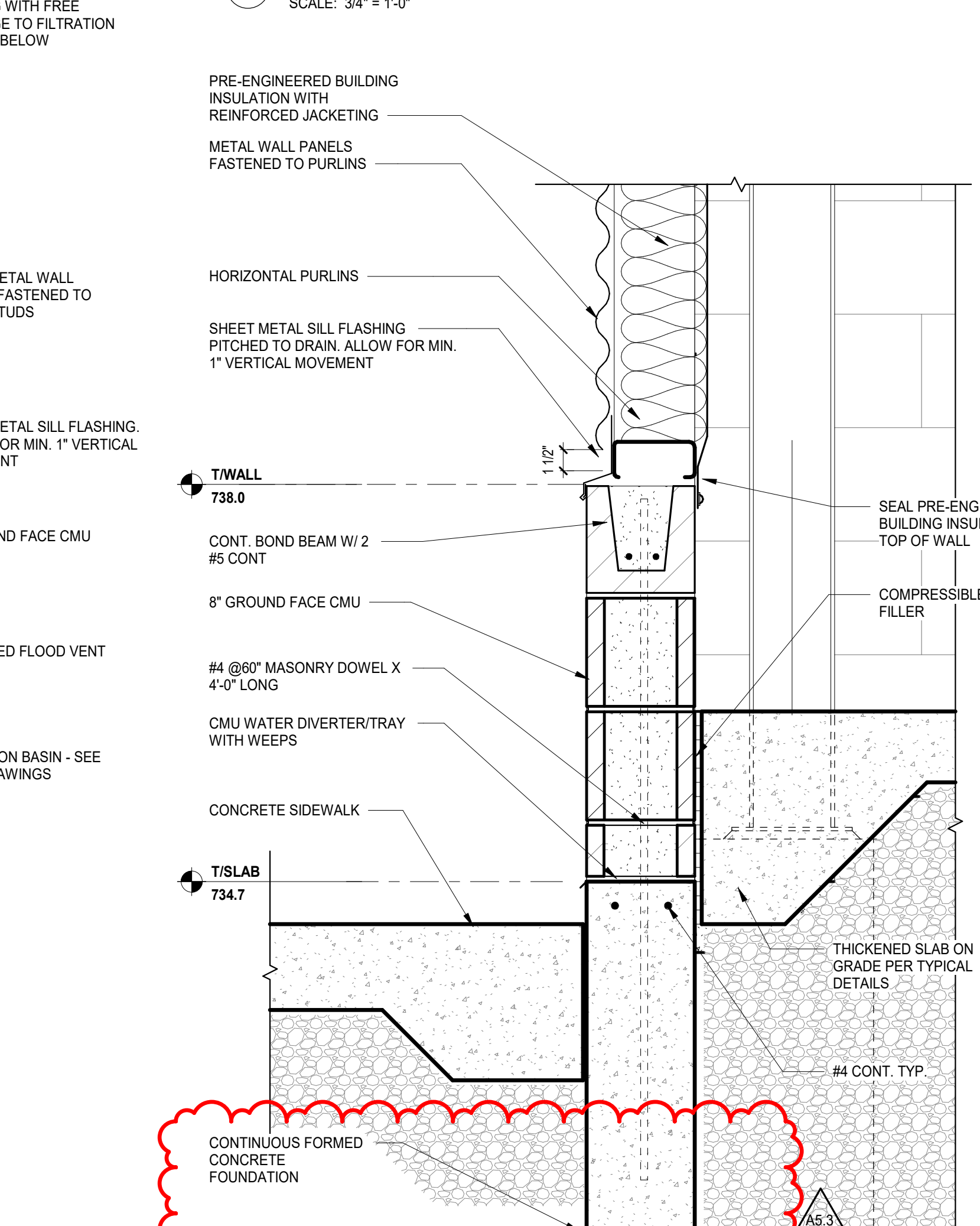
9 TYPICAL ISOLATION JOINT DETAIL (STEEL COLUMN)
SCALE: 3/4" = 1'-0"



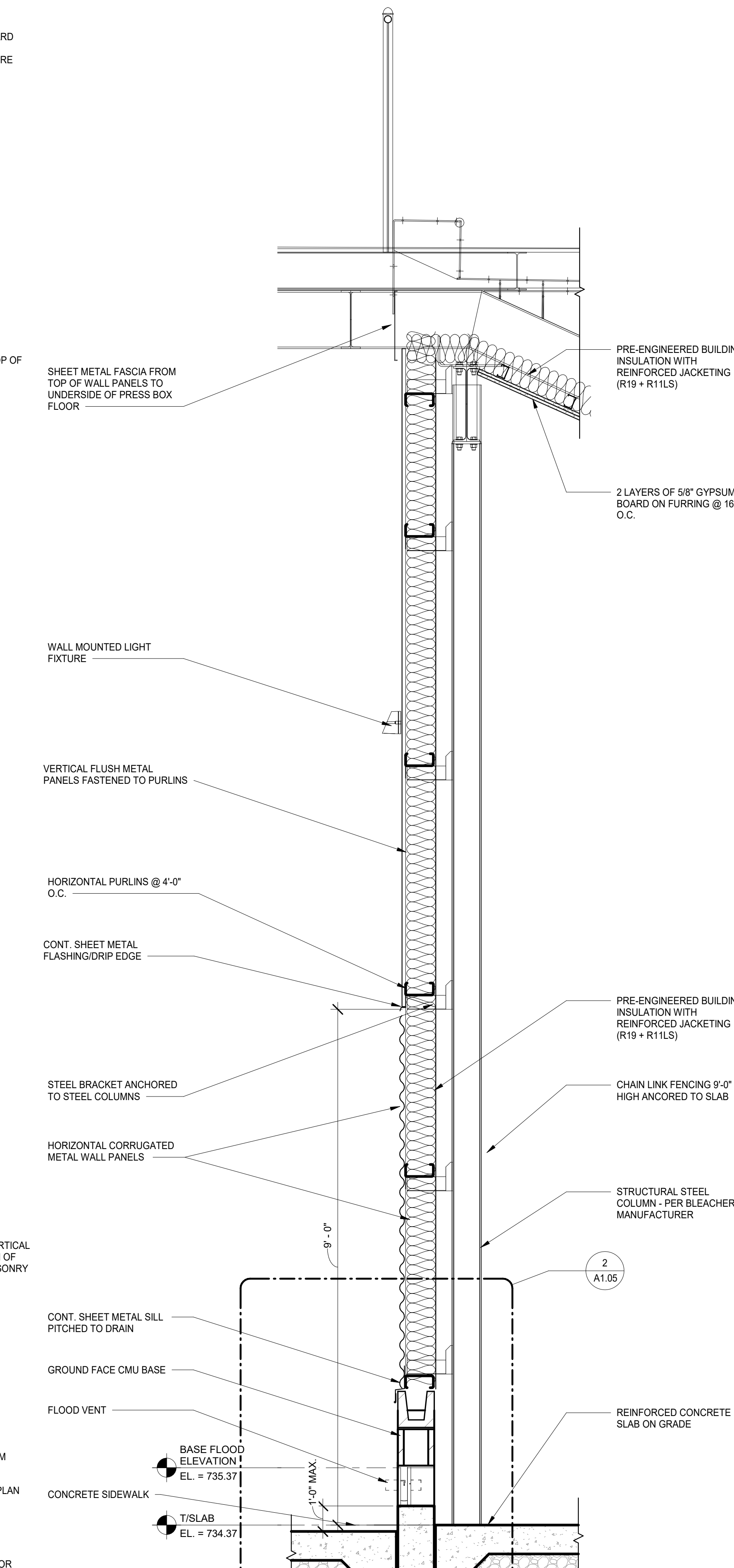
4 DETAIL - SQUAD BUILDING - EAST WALL
SCALE: 1 1/2" = 1'-0"



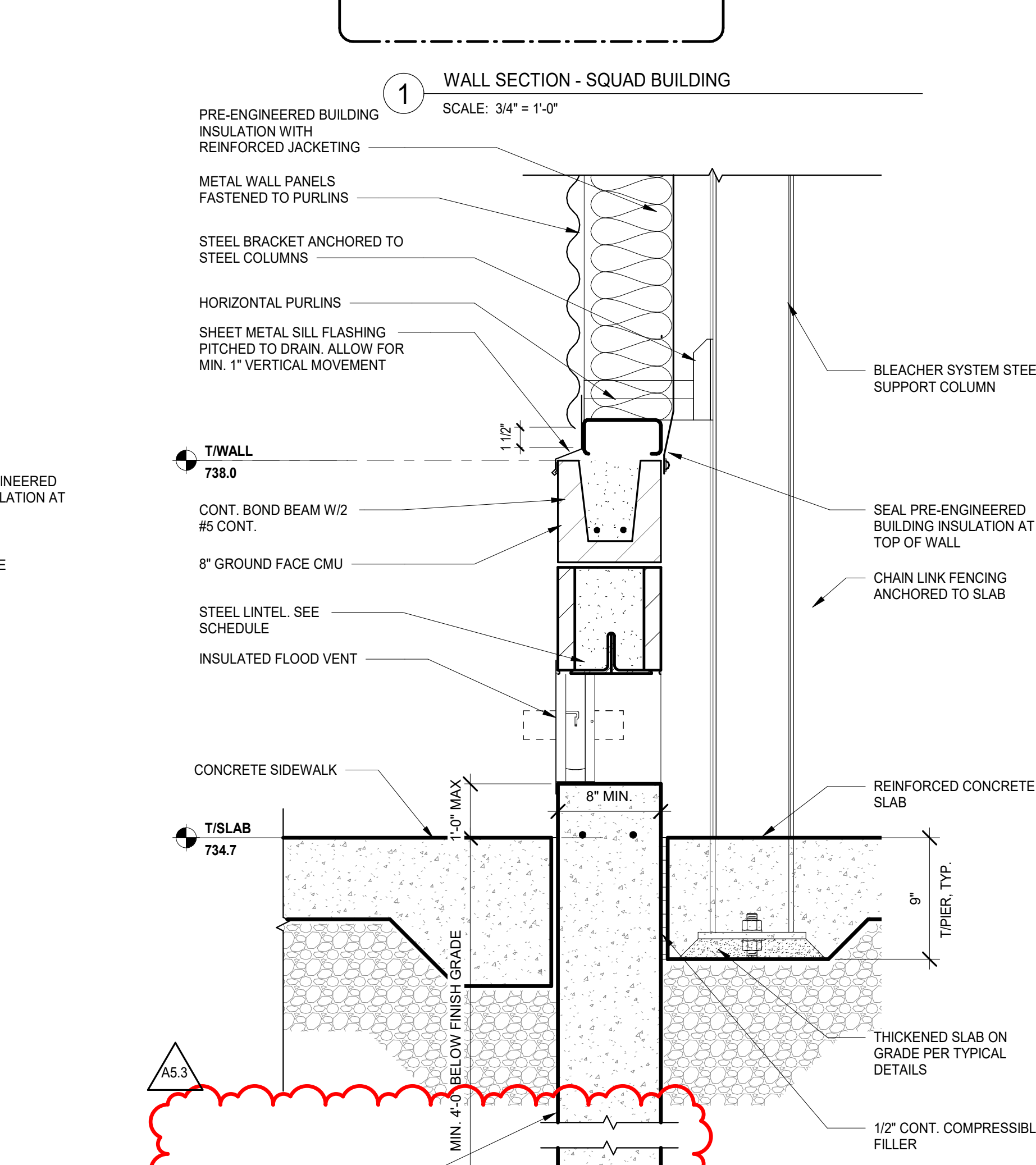
12 ENLARGED ELEVATION - SQUAD BUILDING
SCALE: 3/4" = 1'-0"



3 DETAIL - SQUAD BUILDING - WEST WALL AT TOILET ROOMS
SCALE: 1 1/2" = 1'-0"



1 WALL SECTION - SQUAD BUILDING
SCALE: 3/4" = 1'-0"



2 DETAIL - SQUAD ROOMS - WALL BASE AT FLOOD VENT
SCALE: 1 1/2" = 1'-0"

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DOOR SCHEDULE GENERAL NOTES

- REFER TO PROJECT SPECIFICATION SECTION 08112 FOR DOOR HARDWARE SET ASSIGNMENTS FOR EACH OPENING AND SECTION 08111 FOR DOOR HARDWARE SETS.
- REFER TO SECURITY DRAWINGS FOR DOOR ACCESS CONTROL LOCATIONS. COORDINATE HARDWARE AND FRAME PREP WITH HARDWARE REQUIRED FOR ACCESS CONTROL.
- PROVIDE 1/4" TEMPERED GLASS FOR DOOR LITES AND SIDE LITES AT NON-FIRE RATED DOORS. PROVIDE FIRE RESISTANT GLAZING FOR DOOR LITES AND SIDE LITES AT ALL FIRE RATED DOORS. REFER TO SPECIFICATION 08800.

DOOR SCHEDULE REMARKS

- PROVIDE GALVANIZED DOOR AND FRAME FOR WET LOCATION
- DOORS ARE WITH A STOREFRONT OR CURTAINWALL SYSTEM. SEE ELEVATIONS, PLANS AND DETAILS FOR FURTHER INFORMATION.
- DOOR TO BE REMOTELY RELEASED WITH PUSH BUTTON.
- PROVIDE ELECTROMAGNETIC HOLD OPEN HARDWARE.
- OVERHEAD COILING DOOR SYSTEM PER SPECIFICATION 08332. DOOR TO HAVE PUSH BUTTON AND REMOTE CONTROL.
- PROVIDE POWER ASSIST AND ACTUATOR ON EXTERIOR AND INTERIOR SIDES OF DOOR.
- ACCUSTICALLY RATED DOOR ASSEMBLY PER SPECIFICATION 08347. DOOR THICKNESS AS REQUIRED BY MANUFACTURER TO ACHIEVE STC RATING INDICATED.
- FOLDING PANEL PARTITION WITH OVERHEAD TRACK PER SPECIFICATION 10239.
- FLEXIBLE TRAFFIC SERVICE DOOR PER SPECIFICATION 08380.
- UNDERCUT DOOR 3/4" (DIMENSION FROM FINISH FLOOR TO UNDERSIDE OF DOOR).
- OVERHEAD COILING GRILLE PER SPECIFICATION 08326.
- FIRE RATED STEEL FRAMING ENTRANCE PER SPECIFICATION 08113.23.
- INTERIOR ALUMINUM FRAMING SYSTEM PER SPECIFICATION 0911.16. SEE INTERIOR ELEVATIONS AND DETAILS FOR FURTHER INFORMATION.
- NEW DOOR AND FRAME IN EXISTING OPENING. FIELD VERIFY EXISTING OPENING SIZE.
- ACOUSTICAL GASKETING - SEE DOOR HARDWARE SPECIFICATIONS
- NEW DOOR OPENING IN EXISTING WALL. FIELD VERIFY HEIGHT TO ALIGN WITH MASONRY COURSE.
- LOCKABLE GATE IN WIRE MESH PARTITION SYSTEM PER SPECIFICATION 102113. PROVIDE LOCK CYLINDER FOR BUILDING KEY SYSTEM.
- DOORS PROVIDED BY PRESS BOX MANUFACTURER. HARDWARE SUB-CONTRACTOR TO FURNISH AND INSTALL. LOCKSETS KEYS TO MATCH KEY SYSTEM.
- SLIDING DOOR WITH OVERHEAD TRACK HARDWARE AND PULLER.
- DOORS WITH HOLLOW METAL WINDOW FRAME SYSTEM. SEE INTERIOR ELEVATIONS AND DETAILS.
- SECTIONAL OVERHEAD DOOR PER SPECIFICATION



COMMUNITY HIGH SCHOOL
DISTRICT 99



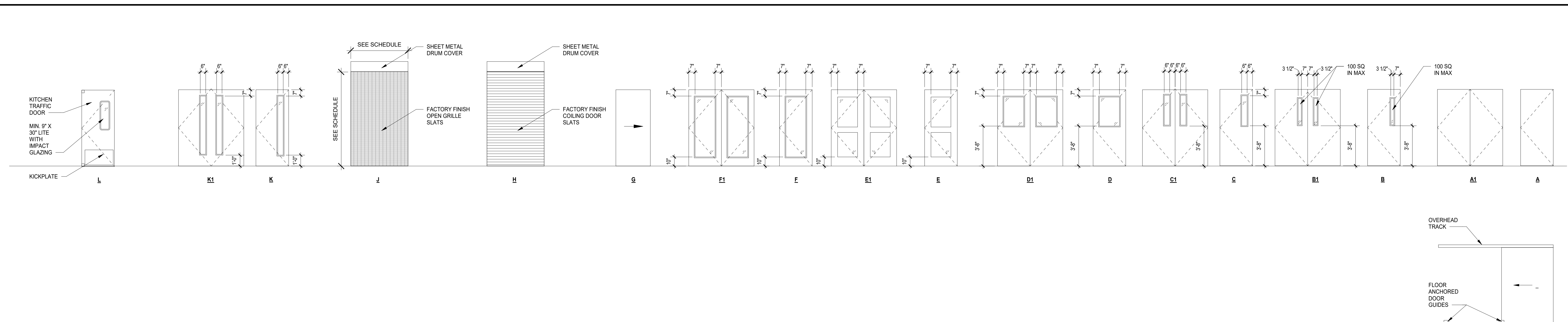
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2500 North Forge Road
Danier, IL 60561
P 630.969.7000
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MARK	ELEVATION TYPE	DOOR			DETAIL		TYPE	FRAME		FIRE RATING	REMARKS	
		SIZE			MATERIAL	FINISH		MATERIAL	FINISH			
		WIDTH	HEIGHT	THICKNESS								
090A	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	9/48.20	-	4
090AA	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	7/48.20	-	5
090AB	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	7/48.20	-	5
090B	A	3'-0"	6'-8"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	8/48.20	60 MIN	-
1351A	F	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	-	ALUM	FACTORY	-	-	13
1351B	F	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	-	ALUM	FACTORY	-	-	13
1351C	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	8/48.20	90 MIN	-
1352A	F	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	F8	ALUM	FACTORY	-	-	13
1352B	F	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	F8	ALUM	FACTORY	-	-	13
1352C	A	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	F8	ALUM	FACTORY	-	-	13
1353A	F	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	-	ALUM	FACTORY	-	-	13
1353B	F	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	-	ALUM	FACTORY	-	-	13
1353C	F	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	F8	ALUM	FACTORY	-	-	13
1360A	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	7/48.20	-	13
1360B	F	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	13/48.20	-	20
1361	F	3'-0"	7'-0"	1 3/4"	FACTORY	FACTORY	-	H METAL	PAINT	1/48.20	-	9
1362	C	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	17
1364	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	17
1365	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	1/48.20	-	17
2351A	F	6'-1"	8'-10"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	13/48.20	-	20
2351B	F	6'-1"	8'-10"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	13/48.20	-	20
2352A	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	7/48.20	-	20
2352B	A	3'-0 1/2"	7'-8 1/2"	1 3/4"	SC WOOD	STAIN	EX H METAL	PAINT	13/48.20	-	20	
2355	F	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
2357	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
2358	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
2358A	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	13/48.20	-	20
2359B	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	20
2360	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
2361	D	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
2362	D	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
2364	D	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
2365	F	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	20
2366B	C1	6'-0"	8'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	90 MIN	-
C1-5A	B	7'-4"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	7/48.20	-	-
C2-20A	C1	6'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	7/48.20	-	-
C2-20B	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	-
C122A	B1	6'-0"	7'-0"	1 3/4"	H METAL	PAINT	F7	H METAL	PAINT	9/48.20	90 MIN	1,14
C122B	B1	6'-0"	7'-0"	1 3/4"	H METAL	PAINT	F7	H METAL	PAINT	9/48.20	90 MIN	1,14
731	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	4/48.20	-	-
732	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	4/48.20	-	-
7115	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	2/48.20	-	-
7116	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	2/48.20	-	-
7122	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	2/48.20	-	-
7123	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	2/48.20	-	-

DOOR SCHEDULE (BID GROUP #10 - PHASE C)

MARK	ELEVATION TYPE	DOOR			DETAIL		TYPE	FRAME		FIRE RATING	REMARKS	
		SIZE			MATERIAL	FINISH		MATERIAL	FINISH			
		WIDTH	HEIGHT	THICKNESS								
1355C	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	8/48.20	90 MIN	-
1355F	A	6'-0"	10'-4 1/2"	1 1/2"	STEEL	FACTORY	F1	H METAL	PAINT	14/48.20	-	21
1401	C	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	-
1402	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	-
1403	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	-
1405	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	-
1406	F	3'-0"	7'-0"	1 3/4"	ALUM	FACTORY	-	ALUM	FACTORY	15/48.20	-	13
1407	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	-
1408	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	-	-	20
1409	C	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
1420B	A	3'-0 1/2"	8'-0 1/2"	1 3/4"	ALUM	FACTORY	-	ALUM	FACTORY	-	-	2
1421	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	20
1422	A	3'-1 1/2"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	-	-	20
1423	A	3'-1 1/2"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	-	-	20
1424	A	3'-1 1/2"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	-	-	20
1425	A	3'-1 1/2"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	-	-	20
1426	A	3'-4"	8'-4"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	-	-	20
1450A	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	17
1450B	A	3'-0"	7'-0"	1 3/4"	WIRE MESH	FACTORY	-	STEEL	FACTORY	-	-	17
1450C	A	3'-0"	7'-0"	1 3/4"	WIRE MESH	FACTORY	-	STEEL	FACTORY	-	-	17
1450D	C	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	17
1453A	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	1
1453B	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	-	-	1
1454	A1	6'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	7/48.20	90 MIN	-
1455	C	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	1/48.20	-	1
1456A	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	1
1456B	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	1/48.20	-	1
1456C	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	-	-	19
1456D	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	-	H METAL	PAINT	-	-	19
1456E	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	-	H METAL	PAINT	-	-	19
1459	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	60 MIN
1459A	C	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F2	H METAL	PAINT	1/48.20	-	60 MIN
1461B	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	-
1461C	F	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	-
1461D	E	3'-1 1/2"	7'-1"	1 3/4"	ALUM	FACTORY	-	ALUM	FACTORY	-	-	2
1462	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F1	H METAL	PAINT	1/48.20	-	12, 14
1512	D	6'-0"	7'-0"	1 3/4"	H METAL	PAINT	F5A	H METAL	FACTORY	9/48.20	90 MIN	12, 14
1514	D	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	7/48.20	45 MIN	12, 14
1516A	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1516B	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	45 MIN
1517	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1523	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1524	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1525	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1526	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1535	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1536	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1537	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1538	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	FACTORY	-	-	12, 14
1539	F1	6'-2"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	14
1591	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	14
1592	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	14
1601A	B	6'-0"	7'-0"	1 3/4"	H METAL	PAINT	F7	H METAL	PAINT	-	-	90 MIN
1601B	B	6'-0"	7'-0"	1 3/4"	H METAL	PAINT	F7	H METAL	PAINT	-	-	90 MIN
1601C	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F7	H METAL	PAINT	-	-	90 MIN
1601D	A	3'-0"	7'-0"	1 3/4"	H METAL	PAINT	F7	H METAL	PAINT	-	-	90 MIN
1644	C	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	7/48.20	-	-
2353	F	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.20	-	90 MIN
2414A	D	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F1	H METAL	PAINT	1/48.20	-	90 MIN
2430A	A	3'-0"	7'-0"	1 3/4"	SC WOOD	STAIN	F2	H METAL	PAINT	1/48.		

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DOOR SCHEDULE GENERAL NOTES

- REFER TO PROJECT SPECIFICATION SECTION 081112 FOR DOOR HARDWARE SET ASSIGNMENTS FOR EACH OPENING AND SECTION 081111 FOR DOOR HARDWARE SETS.
- REFER TO SECURITY DRAWINGS FOR DOOR ACCESS CONTROL LOCATIONS. COORDINATE HARDWARE AND FRAME PREP WITH HARDWARE REQUIRED FOR ACCESS CONTROL.
- PROVIDE 1/4" TEMPERED GLASS FOR DOOR LITES AND SIDE LITES AT NON-FIRE RATED DOORS. PROVIDE FIRE RESISTANT GLAZING FOR DOOR LITES AND SIDE LITES AT ALL FIRE RATED DOORS. REFER TO SPECIFICATION 08800.

DOOR SCHEDULE REMARKS

- PROVIDE GALVANIZED DOOR AND FRAME FOR WET LOCATION
- DOORS ARE WITHIN A STOREFRONT OR CURTAINWALL SYSTEM. SEE ELEVATIONS, PLANS AND DETAILS FOR FURTHER INFORMATION.
- DOOR TO BE REMOTELY RELEASED WITH PUSH BUTTON.
- PROVIDE ELECTROMAGNETIC HOLD OPEN HARDWARE.
- OVERHEAD COILING DOOR SYSTEM PER SPECIFICATION 083323. DOOR TO HAVE PUSH BUTTON AND REMOTE CONTROL.
- PROVIDE POWER ASSIST AND ACTUATOR ON EXTERIOR AND INTERIOR SIDES OF DOOR.
- ACOUSTICALLY RATED DOOR ASSEMBLY PER SPECIFICATION 083474. DOOR THICKNESS AS REQUIRED BY MANUFACTURER TO ACHIEVE STC RATING INDICATED.
- FOLDING PANEL PARTITION WITH OVERHEAD TRACK PER SPECIFICATION 102239.
- FLEXIBLE TRAFFIC SERVICE DOOR PER SPECIFICATION 083800.
- UNDERCUT DOOR 3/4" (DIMENSION FROM FINISH FLOOR TO UNDERSIDE OF DOOR).
- OVERHEAD COILING GRILLE PER SPECIFICATION 083326.
- FIRE RATED STEEL FRAMED ENTRANCE PER SPECIFICATION 081113.23.
- INTERIOR ALUMINUM FRAMING SYSTEM PER SPECIFICATION 081116. SEE INTERIOR ELEVATIONS AND DETAILS FOR FURTHER INFORMATION.
- NEW DOOR AND FRAME IN EXISTING OPENING. FIELD VERIFY EXISTING OPENING SIZE.
- ACOUSTICAL GASKETING - SEE DOOR HARDWARE SPECIFICATIONS
- NEW DOOR OPENING IN EXISTING WALL. FIELD VERIFY HEIGHT TO ALIGN WITH MASONRY COURSING.
- LOCKABLE GATE IN WIRE MESH PARTITION SYSTEM PER SPECIFICATION 102113. PROVIDE LOCK COLUMNS FOR BUILDING KEY SYSTEM.
- DOORS PROVIDED BY PRESS BOX MANUFACTURER. HARDWARE SUB-CONTRACTOR TO FURNISH AND INSTALL LOCKSETS KEYS TO MASTER KEY SYSTEM.
- SLIDING DOOR WITH OVERHEAD TRACK HARDWARE AND PULL.
- DOORS WITH HOLLOW METAL WINDOW FRAME SYSTEM. SEE INTERIOR ELEVATIONS AND DETAILS.
- SECTIONAL OVERHEAD DOOR PER SPECIFICATION

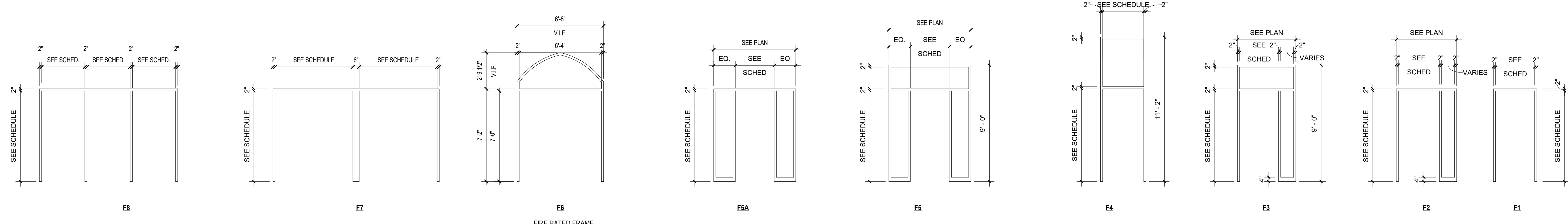
GLAZING TYPES

DESCRIPTIONS BELOW FOR GENERAL GLASS TYPES INDICATIONS - REFER TO SPECIFICATIONS 08800 FOR ADDITIONAL INFORMATION

G-01 = 1" IGU (TEMPERED / TEMPERED), LOW-E COATING, CLEAR
 G-02 = TBD
 G-03 = LAMINATED SECURITY GLASS
 G-04 = SECURITY FILM APPLIED TO EXISTING GLASS
 G-05 = 1/4" SPANDREL GLASS - CERAMIC FRIT

G-21 = 1/4" LAMINATED GLASS, CLEAR
 G-22 = 3/8" LAMINATED GLASS, ONE-WAY VISION GLASS
 G-23 = 1/4" TEMPERED GLASS, CLEAR
 G-24 = 3/8" LAMINATED GLASS, CLEAR
 G-25 = 3/8" LAMINATED GLASS, CLEAR WITH CERAMIC FRIT
 G-26 = SKYLIGHT GLASS, INSULATED

G-30 = FIRE RATED GLASS (45 MIN)
 G-31 = FIRE RATED GLASS (90 MIN)



DISTRICT 99

COMMUNITY HIGH SCHOOL DISTRICT 99

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ISSUED FOR 25% CD - PHASE C 08.30.2019
 ISSUED FOR BID - BID GROUP 5 07.01.2019
 REV. DATE

MFP IMPLEMENTATION - NORTH

4436 MAIN STREET
 DOWNERS GROVE, IL 60515

DOOR ELEVATION AND FRAME TYPES

Project Number:
 5274-42
 Drawn By:
 Author:
 Sheet:

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COMMUNITY HIGH SCHOOL
DISTRICT 99

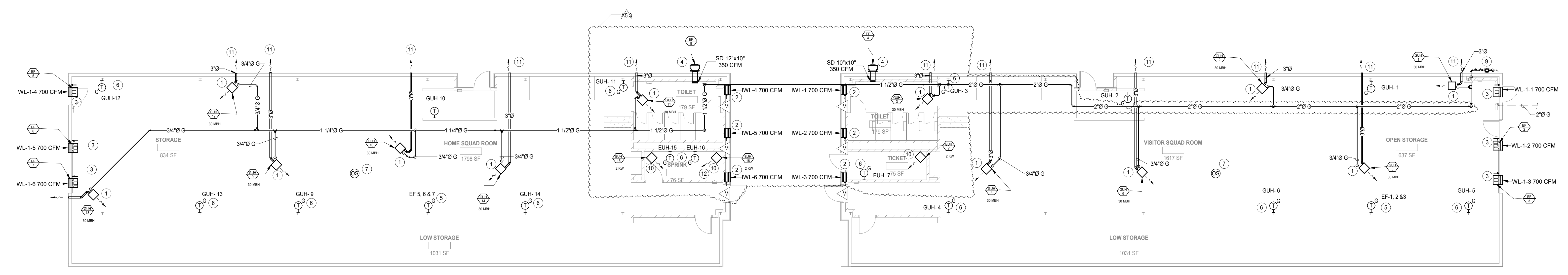


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- # KEYNOTES
- 1 PROVIDE GAS UNIT HEATERS AND INSTALL AT 8' AFF. PROVIDE NECESSARY MOUNTING HARDWARE TO INSTALL FROM ADJACENT WALLS OR CEILING.
 - 2 PROVIDE INTAKE WALL LOUVERS AND MOTORIZED DAMPERS. REFER TO INTAKE WALL LOUVER SCHEDULE FOR MORE DETAILS. PROVIDE TANDY 3000G DAMPER.
 - 3 PROVIDE EXHAUST WALL LOUVERS AND PROPELLER EXHAUST FANS. REFER TO DETAIL NO. 2 ON DRAWING M2.00.s FOR DETAILS ON INSTALLATION.
 - 4 PROVIDE GENERAL MOUNTED TOILET EXHAUST FAN.
 - 5 PROVIDE TEMPERATURE SENSOR WITH GAUARD FOR EXHAUST FANS.
 - 6 PROVIDE TEMPERATURE SENSOR WITH GAUARD FOR GAS AND ELECTRIC UNIT HEATERS AS SHOWN.
 - 7 PROVIDE CEILING MOUNTED OCCUPANCY SENSOR WITH WIRE GAUARD.
 - 8 GAS METER ASSEMBLY WITH ISOLATION VALVE AND PRESSURE REDUCING VALVE. SEE DETAIL NO. 3 ON DRAWING M2.00.s FOR ADDITIONAL INFORMATION. UTILITY COMPANY TO PROVIDE GAS FOR 300 CFH AT 2" PSI.
 - 9 PROVIDE ELECTRIC UNIT HEATERS AND INSTALL AT 8' AFF. PROVIDE NECESSARY MOUNTING HARDWARE TO INSTALL FROM ADJACENT WALLS OR CEILING.
 - 10 PROVIDE HORIZONTAL WALL EXHAUST TERMINATION KITS.
 - 11 ELECTRIC UNIT HEATER EUM-16 IS A STANDBY HEATER TO BE OPERATED IF AND ONLY IF EUM-15 FAILS. TEMPERATURE SETPOINT OF EUM-16 SHOULD BE LOWER THAN EUM-15.

IMPORTANT NOTE:
BUILDING IS CONSTRUCTED WITHIN A LOCALIZED POOR DRAINAGE AREA WITH AN ESTABLISHED BASE FLOOR ELEVATION OF 738.7. ALL CONSTRUCTION MATERIALS SHALL BE WATER RESISTANT TO A MINIMUM OF 3 FEET ABOVE THE BASE FLOOR ELEVATION (738.7) OR 4 FEET ABOVE FINISHED FLOOR.

ALL ELECTRICAL, HEATING, VENTILATION, AIR CONDITIONING, PLUMBING AND OTHER APPLIANCES OR FIXED MECHANICAL OR ELECTRICAL DEVICES SHALL BE LOCATED A MINIMUM OF 3 FEET ABOVE THE BASE FLOOR ELEVATION (738.7) OR 4 FEET ABOVE FINISH FLOOR.



1 MECHANICAL FLOOR PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"

**NOT FOR
CONSTRUCTION**

AS.3 ADDENDUM 5.3 08.18.2019
ISSUED FOR BID-BID GROUP 5 07.01.2019
REV. ISSUE DATE

**MFP
IMPLEMENTATION -
NORTH**

4436 MAIN STREET
DOWNERS GROVE, IL 60515

**MECHANICAL LEVEL 1
FLOOR PLAN FOR SQUAD
ROOMS**

Project Number:
5274-42
Drawn By:
Author
Sheet:

M2.00.s

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EXHAUST FAN SCHEDULE

TAG	LOCATION	SERVICE	CFM	SP	DRIVE TYPE	WHEEL TYPE	MOTOR						CONTROL BY	MAKE/MODEL	
							MAXIMUM RPM	BHP	HP	PH	VOLT	FLA			WEIGHT
EF-1	SIDEWALL OF SQUAD ROOMS	VISITOR SQUAD ROOM	700	0.00'	INLINE DIRECT	DIRECT DRIVE VARGREEN	886	0.02	1/4	1	115	3.3	27	TEMPERATURE SENSOR	GREENHECK SE1-12-436-VG
EF-2	SIDEWALL OF SQUAD ROOMS	VISITOR SQUAD ROOM	700	0.00'	INLINE DIRECT	DIRECT DRIVE VARGREEN	886	0.02	1/4	1	115	3.3	27	TEMPERATURE SENSOR	GREENHECK SE1-12-436-VG
EF-3	SIDEWALL OF SQUAD ROOMS	VISITOR SQUAD ROOM	700	0.00'	INLINE DIRECT	DIRECT DRIVE VARGREEN	886	0.02	1/4	1	115	3.3	27	TEMPERATURE SENSOR	GREENHECK SE1-12-436-VG
EF-4	SIDEWALL OF TOILET ROOM	TOILET ROOM	375	0.5'	INLINE DIRECT	DIRECT DRIVE VARGREEN	1435	0.07	1/10	1	115	2.6	31	TEMPERATURE SENSOR	GREENHECK CUE-90-VG
EF-5	SIDEWALL OF SQUAD ROOMS	HOME SQUAD ROOM	700	0.00'	INLINE DIRECT	DIRECT DRIVE VARGREEN	886	0.02	1/4	1	115	3.3	27	TEMPERATURE SENSOR	GREENHECK SE1-12-436-VG
EF-6	SIDEWALL OF SQUAD ROOMS	HOME SQUAD ROOM	700	0.00'	INLINE DIRECT	DIRECT DRIVE VARGREEN	886	0.02	1/4	1	115	3.3	27	TEMPERATURE SENSOR	GREENHECK SE1-12-436-VG
EF-7	SIDEWALL OF SQUAD ROOMS	HOME SQUAD ROOM	700	0.00'	INLINE DIRECT	DIRECT DRIVE VARGREEN	886	0.02	1/4	1	115	3.3	27	TEMPERATURE SENSOR	GREENHECK SE1-12-436-VG
EF-8	SIDEWALL OF TOILET ROOM	TOILET ROOM	375	0.5'	INLINE DIRECT	DIRECT DRIVE VARGREEN	1435	0.07	1/10	1	115	2.6	31	TEMPERATURE SENSOR	GREENHECK CUE-90-VG

- NOTES:
 1. PROVIDE EF-4 & 8 UNIT WITH GRAVITY BACKDRAFT DAMPER, INSULATED SIDEWALL MOUNT CURB, UNIT MOUNTED DISCONNECT SWITCH AND BIRDSCREEN.
 2. PROVIDE ALL EXHAUST FANS WITH BIRDSCREEN AND BACKDRAFT DAMPER.
 3. ALL FANS TO BE PROVIDED WITH DISCONNECT SWITCH.
 4. ALL EXHAUST FANS SHALL BE TIED TO THE TEMPERATURE OR OCCUPANCY SENSOR, HENCE A RELAY SHOULD BE PROVIDED. HOWEVER, A WALL MOUNTED SWITCH SHALL ALSO BE PROVIDED TO MANUALLY SWITCH THE FAN ON/OFF.
 5. FAN FANS SHALL BE SUPPORTED FROM THE CEILING. PROVIDE NECESSARY HARDWARE.

INTAKE WALL LOUVER SCHEDULE

EQUIPMENT TAG	LOCATION	INTAKE/EXHAUST	SERVICE	MANUFACTURER	MODEL	TYPE	SIZE (WxHxD) (IN)	MIN. FREE AREA (SQ. FT.)	CFM	FREE AREA VELOCITY (FFM)	P.D. (IN HOD)	WATER PENETRATION VELOCITY (FFM)	NOTES
IWL-1	VISITOR SQUAD ROOMS	INTAKE	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
IWL-2	VISITOR SQUAD ROOMS	INTAKE	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
IWL-3	VISITOR SQUAD ROOMS	INTAKE	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
IWL-4	HOME SQUAD ROOMS	INTAKE	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
IWL-5	HOME SQUAD ROOMS	INTAKE	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
IWL-6	HOME SQUAD ROOMS	INTAKE	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL

- NOTES:
 1. OTHER ACCEPTABLE MANUFACTURERS SEE SPECIFICATIONS.
 2. PROVIDE BIRDSCREEN FOR ALL LOUVERS.
 3. COLOR & FINISH TO BE SELECTED BY ARCHITECT.
 4. WATER PENETRATION VELOCITY IS BASED ON 0.01 OUNCES/SQ. FT. WITH A 48"x48" LOUVER AND A TEST PERIOD OF 15 MINUTES.

EXHAUST WALL LOUVER SCHEDULE

EQUIPMENT TAG	LOCATION	INTAKE/EXHAUST	SERVICE	MANUFACTURER	MODEL	TYPE	SIZE (WxHxD) (IN)	MIN. FREE AREA (SQ. FT.)	CFM	FREE AREA VELOCITY (FFM)	P.D. (IN HOD)	WATER PENETRATION VELOCITY (FFM)	NOTES
EWL-1	VISITOR SQUAD ROOMS	EXHAUST	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
EWL-2	VISITOR SQUAD ROOMS	EXHAUST	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
EWL-3	VISITOR SQUAD ROOMS	EXHAUST	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
EWL-4	HOME SQUAD ROOMS	EXHAUST	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
EWL-5	HOME SQUAD ROOMS	EXHAUST	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL
EWL-6	HOME SQUAD ROOMS	EXHAUST	SQUAD ROOMS	GREENHECK	EVH-501-20X20	EXTRUDED ALUMINUM	20X20X5	1.1	700	642	0.07	1007	ALL

- NOTES:
 1. OTHER ACCEPTABLE MANUFACTURERS SEE SPECIFICATIONS.
 2. PROVIDE BIRDSCREEN AND BACKDRAFT DAMPERS FOR ALL LOUVERS.
 3. COLOR & FINISH TO BE SELECTED BY ARCHITECT.
 4. WATER PENETRATION VELOCITY IS BASED ON 0.01 OUNCES/SQ. FT. WITH A 48"x48" LOUVER AND A TEST PERIOD OF 15 MINUTES.

GAS UNIT HEATER SCHEDULE

EQUIPMENT TAG	LOCATION	GENERAL				HEATER						FAN DATA		NOTES	
		TYPE	MANUFACTURER	TYPE	MODEL	INPUT MBH	OUTPUT MBH	FLA	MOCOP	VOLTS	PHASE	HZ	TYPE		CFM
GH-1	VISITOR SQUAD-OPEN STORAGE	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-2	VISITOR SQUAD ROOM	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-3	VISITOR SQUAD ROOM	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-4	VISITOR SQUAD ROOM	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-5	VISITOR SQUAD-OPEN STORAGE	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-6	VISITOR SQUAD-LOW STORAGE	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-9	HOME SQUAD ROOM-LOW STORAGE	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-10	HOME SQUAD ROOM	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-11	HOME SQUAD ROOM	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-12	HOME SQUAD ROOM	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-13	HOME SQUAD STORAGE-LOW STORAGE	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL
GH-14	HOME SQUAD STORAGE-LOW STORAGE	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	GAS	UDAP-30	30	24.6	1.9	15	115	1	60	BUILT IN	450	ALL

- NOTES:
 1. PROVIDED WITH INTEGRAL DISCONNECT SWITCH AND WALL MTD THERMOSTAT WITH FAN SWITCH.
 2. PROVIDE MOUNTING ACCESSORIES (EITHER WALL MOUNT BRACKETS OR CEILING SUSPENDED RODS) TO INSTALL HEATER AT AN ELEVATION OF 8'-00" AFF LEVEL.

ELECTRIC UNIT HEATER SCHEDULE

EQUIPMENT TAG	LOCATION	GENERAL				ELECTRIC DATA						FAN DATA		NOTES
		TYPE	MANUFACTURER	TYPE	MODEL	KW	VOLTS	PHASE	HZ	MCA	MOCOP	TYPE	CFM	
EUH-7	VISITOR SQUAD TICKET	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	ELECTRIC	EGHB-2	2	208	1	60	13.3	20	BUILT IN	510	ALL
EUH-15	HOME SQUAD SPRINKLER	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	ELECTRIC	EGHB-2	2	208	1	60	13.3	20	BUILT IN	510	ALL
EUH-16	HOME SQUAD SPRINKLER	CEILING SUSPENDED OR WALL MOUNTED	REZNOR	ELECTRIC	EGHB-2	2	208	1	60	13.3	20	BUILT IN	510	ALL

- NOTES:
 1. PROVIDED WITH INTEGRAL DISCONNECT SWITCH AND WALL MTD THERMOSTAT WITH FAN SWITCH.
 2. PROVIDE MOUNTING ACCESSORIES (EITHER WALL MOUNT BRACKETS OR CEILING SUSPENDED RODS) TO INSTALL HEATER AT AN ELEVATION OF 8'-00" AFF LEVEL.

DIFFUSER, GRILLE AND REGISTER SCHEDULE

EQUIPMENT TAG	MANUFACTURER	MODEL	TYPE	NOMINAL FACE SIZE	NECK SIZE	MATERIAL	MAX. N.C.	NOTES
E	TITUS	50F	EGG CRATE EXHAUST GRILLE	12"x10"	10"	ALUMINUM	25	1,2,3

- NOTES:
 1. OTHER ACCEPTABLE MANUFACTURERS SEE SPECIFICATIONS.
 2. FINISH AS SELECTED BY ARCHITECT.
 3. OPPOSED BLADE DAMPER.

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A5.3 ADDENDUM 5.3 09.18.2019
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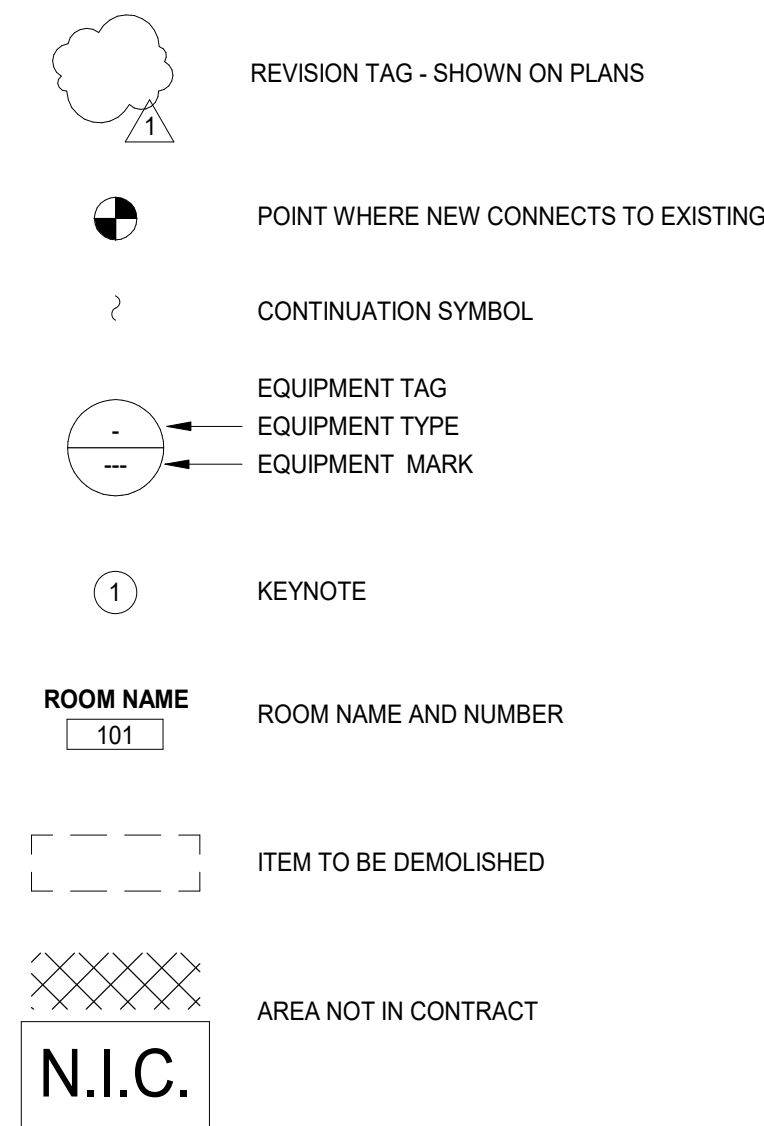
MECHANICAL SCHEDULES

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5274-42
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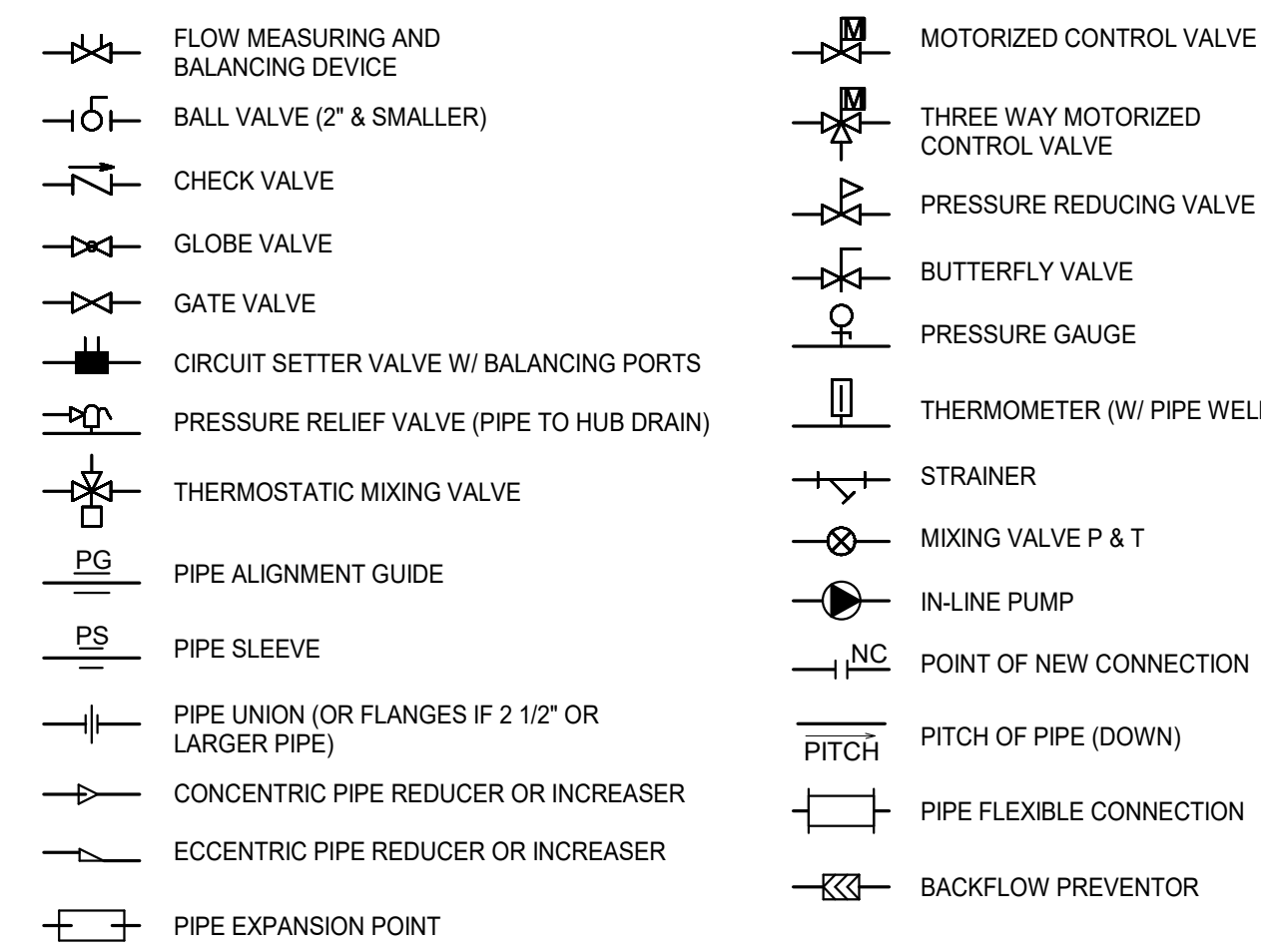
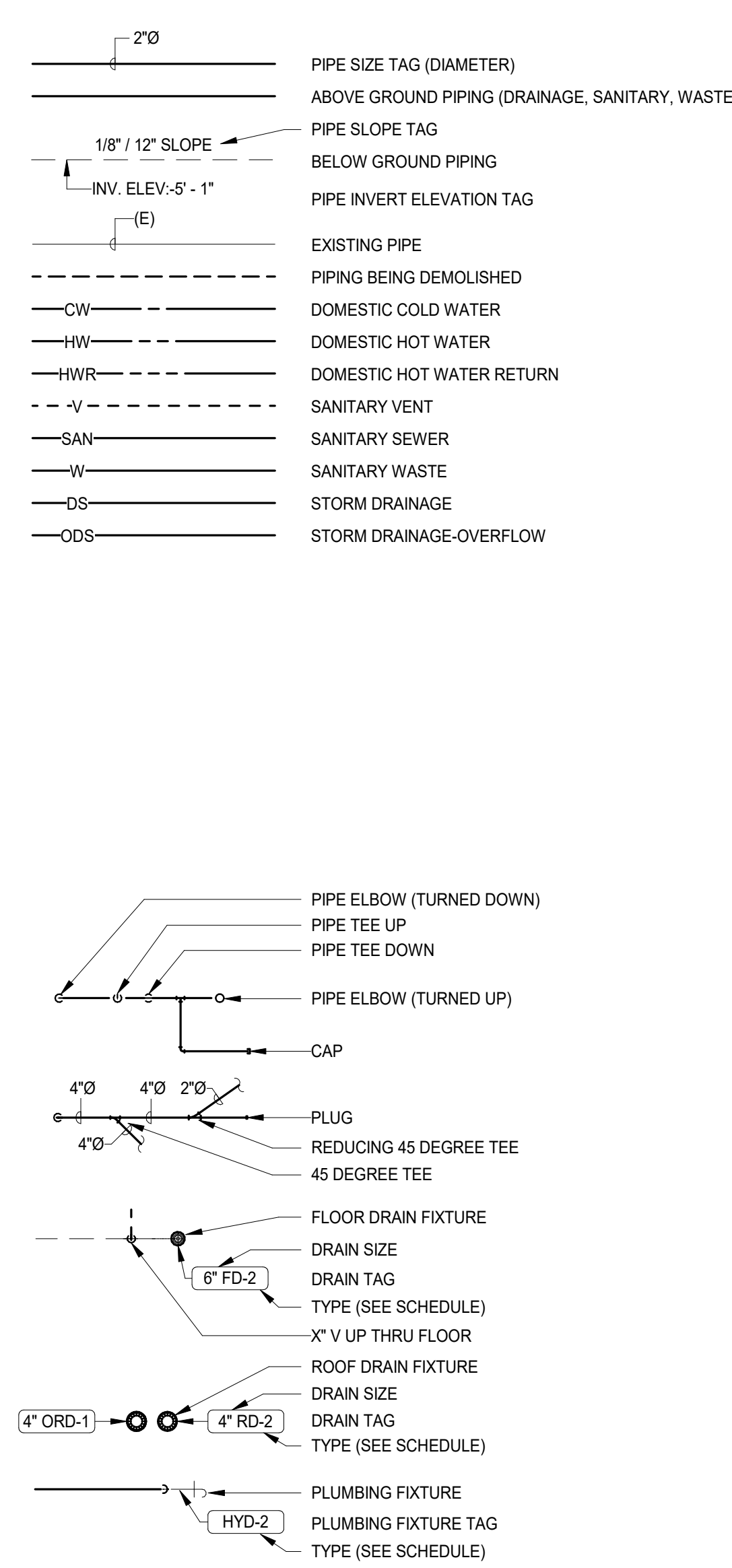
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GENERAL PLUMBING SYMBOLS



PLUMBING AND PIPING SYMBOLS



ABBREVIATIONS

AD	AREA DRAIN	INV	INVERT
AFP	ABOVE FINISHED FLOOR ACCESS PANEL	LAB	LABORATORY
ARCH	ARCHITECT/ARCHITECTURAL	MAX	MAXIMUM
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
CB	CATCH BASIN	MIN	MINIMUM
CF	CAST IRON	NC	NORMALLY CLOSED
CO	CLEAN OUT	NOT IN CONTRACT	NOT IN CONTRACT
COL	COLUMN	NO	NORMALLY OPEN
CUFT	CUBIC FEET	NTS	NOT TO SCALE
CW	COLD WATER	O	ORIGIN
DIA	DIAMETER	OC	ON CENTER
DN	DOWN	ORD	OVERFLOW ROOF DRAIN
DWG	DRAWING	PLBG	PLUMBING
EA	EACH	PRV	PRESSURE REDUCING VALVE
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
ELEV	ELEVATION	RD	ROOF DRAIN
EW	ELECTRIC WATER COOLER	RPM	REVOLUTIONS PER MINUTE
EWG	ELECTRIC WATER HEATER	SEF	SEWAGE EJECTOR PUMP
EXST	EXISTING	SF	SQUARE FOOT
ET	EXPANSION TANK	SN	SANITARY
F	DEGREES FAHRENHEIT	SP	SUMP PUMP
FCO	FLOOR CLEAN OUT	SQ	SQUARE
FD	FLOOR DRAIN	SS	STAINLESS STEEL
FL	FLOOR	STD	STANDARD
FT	FOOT/FEET	TEMP	TEMPERATURE
GA	GAGE/GAUGE	TRP	TYPICAL
GAL	GALLON	UG	UNDERGROUND
GC	GENERAL CONTRACTOR	VAC	VACUUM
GENL	GENERAL	V	VENT
GI	GREASE INTERCEPTOR	VTR	VENT THROUGH ROOF
GPM	GALLONS PER MINUTE	W	WASTE
GR	GREASE	WCD	WALL CLEAN OUT
GW	GREASE WASTE	WH	WATER HEATER
HB	HOSE BIB		
HD	HEAD		
HP	HORSE POWER		
HTR	HEATER		
HW	HOT WATER		

GENERAL NOTES

- ALL WORK SHALL BE INSTALLED AND ALL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH ILLINOIS PLUMBING CODE 2014 EDITION AND ALL LOCAL AMENDMENTS TO THE PLUMBING CODE.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH STATE PLUMBING INSPECTORS AND THE LOCAL PLUMBING INSPECTOR HAVING JURISDICTION.
- EXACT LOCATION OF PLUMBING FIXTURES AND DEVICES SHALL BE VERIFIED WITH BUILDING STRUCTURE, ARCHITECT, GENERAL AND CABINETS EQUIPMENT CONTRACTOR PRIOR TO STARTING ANY WORK.
- ALL EXISTING INFORMATION SHOWN ON DRAWINGS HAS BEEN OBTAINED FROM OWNERS EXISTING CONSTRUCTION DOCUMENTS. EXACT LOCATION OF EXISTING SANITARY/SYSTEM LINES, WATER LINES, VENT LINES, VALVES, INVERT ELEVATIONS, AND ALL SIZES SHALL BE VERIFIED IN THE FIELD BEFORE STARTING INSTALLATION.
- PITCH ALL SUPPLY AND RETURN WATER LINES TO DRAIN COMPLETELY THROUGH LOWER EQUIPMENT FIXTURES, UNIONS, OR DRAIN VALVES. INSTALL A 1/2" DRAIN VALVE WITH 3/4" HOSE THREAD OUTLET IN ALL MAIN PIPING RUNS WHICH WOULD NOT BE ABLE TO DRAIN THRU A LOWER PIECE OF EQUIPMENT.
- ALL VENT AND WASTE PIPING SIZES ARE MINIMUM. ADDITIONAL VENTS SHALL BE ADDED AND/OR PIPE SIZE INCREASED AS REQUIRED BY APPLICABLE CODES, STATUTES AND REGULATIONS, ETC. WITHOUT ADDITIONAL COST TO THE OWNER.
- STERILIZATION: UPON COMPLETION OF TESTING AND FLUSHING OF NEW DOMESTIC WATER PIPING, THE CONTRACTOR SHALL STERILIZE ALL WATER PIPING INCLUDING ALL DOMESTIC HOT WATER SUPPLY AND RETURN AND ALL DOMESTIC COLD WATER PIPING. CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY TAPINGS, VALVE OPENINGS, DRAIN FITTINGS, ETC. AS REQUIRED TO STERILIZE THE WATER PIPING, INCLUDING ALL REQUIRED EXCAVATION WORK, FITTING AND SQUARING. WATER PIPING SHALL BE FLUSHED AND CHLORINATED IN ACCORDANCE WITH AWWA-C601-54 STANDARD PROCEDURE FOR DISINFECTING WATER MAINS AND AS REQUIRED BY ILLINOIS DEPARTMENT OF PUBLIC HEALTH. DISINFECTING SHALL NOT BE DEEMED COMPLETE UNTIL SATISFACTORY BACTERIOLOGICAL ANALYSIS REPORTS ARE RECEIVED FOR SAMPLES OF WATER COLLECTED AND TESTED FROM THE NEW WATER PIPING SYSTEM ALL BY PLUMBING CONTRACTOR.
- PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PVC PIPING WITH THE MECHANICAL SYSTEMS. PVC PIPING SHALL NOT BE USED IN PLENUM CEILING UNLESS WRAPPED USING UL-910 & ASTM-E84 3M PLENUM WRAP SA OR APPROVED EQUAL.
- PVC PIPING SHALL NOT BE ALLOWED ABOVE WOOD FLOOR OR IN AREAS WHERE IMPACT DAMAGE CAN OCCUR SUCH AS GYMNASIUMS.
- PVC PIPING SHALL NOT BE ALLOWED FOR SANITARY PIPING SYSTEMS ABOVE OR BELOW GRADE IN APPLICATION WHERE FLOOR DRAINS IN BOLLER ROOMS AND MECHANICAL ROOMS CAN RECEIVE WASTE WITH WATER TEMPERATURE EXCEEDING 140 DEGREES. CAST IRON PIPING SHALL BE USED A MINIMUM 1 FEET OR TO A POINT IN THE SYSTEM WHERE THE WASTE CAN BE MIXED DOWN TO A TEMPERATURE LESS THEN 140 DEGREES.
- INSTALL POTABLE WATER PROTECTION DEVICES ON PLUMBING PIPING WHERE CONTAMINATION OF DOMESTIC WATER MAY OCCUR INCLUDING BUT NOT LIMITED TO BOILER FEED LINES, CLEANING CHEMICAL EQUIPMENT, FIRE SPRINKLER SYSTEMS, IRRIGATION SYSTEMS, FLUSH VALVES, INTERIOR OR EXTERIOR HOSE CONNECTIONS, FOOD SERVICE EQUIPMENT, ICE MAKERS.
- INSTALL AIR CHAMBERS ON ALL COLD AND HOT WATER SUPPLY PIPING TO EACH FIXTURE FABRICATED FROM SAME SIZE PIPE SERVING FIXTURE (MIN. 3/4" AND MINIMUM 18" LONG).
- ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNERS EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING SANITARY/SYSTEM LINES, WATER LINES, VENT LINES, VALVES AND ALL PIPE SIZES SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION. FOR UNDERGROUND PIPING, CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE LOCATIONS, CONNECTION LOCATION, SIZE, DIRECTION OF FLOW, AND DEPTH VIA PIPE LOCATING EQUIPMENT AS REQUIRED PRIOR TO SAW CUTTING OF FLOOR OR BEGINNING WORK. CONTRACTOR'S BID SHALL INCLUDE SAW CUTTING, PATCHING TO MATCH EXISTING PIPING, LABOR, ETC. TO LOCATE, MAKE CONNECTIONS TO EXISTING UNDERFLOOR PIPING, OR CAP EXISTING UNDERFLOOR PIPING WITHIN 10 FEET OF LOCATION SHOWN ON DRAWINGS. IF LOCATION SHOWN FOR ANY CONNECTION DOES NOT EXIST OR IS NOT ACCESSIBLE, CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IMMEDIATELY.

PLUMBING DEMOLITION NOTES

- DISCONNECT AND REMOVE INDICATED EXISTING PLUMBING FIXTURES, CAP DRAINAGE PIPING BELOW FLOOR AT POINT OF CONNECTION WITH EXISTING STACK, CAP VENT ABOVE CEILING AT POINT OF CONNECTION WITH EXISTING STACK, DISCONNECT AND REMOVE WATER PIPING, CAP BRANCHES AT POINT OF CONNECTION WITH WATER MAINS, (V.I.F.)
- VERIFY DEMOLITION SCOPE WITH ARCHITECTS.
- REMOVAL AND DEMOLITION ITEMS AND AREAS INDICATED ON THIS DRAWING ARE MINIMUM INDICATIONS TO SHOW "BASIS OF DESIGN" ADDITIONAL DEMOLITION THAT IS NOT SHOWN MAY BE REQUIRED FOR THE WORK INCLUDED IN THIS PROJECT. THE CONTRACTOR IS TO INCLUDE ALL DEMOLITION IN THE PROJECT AS REQUIRED TO FULLY EXECUTE THE WORK. NO EXTRA COMPENSATION WILL BE ALLOWED FOR DEMOLITION WORK THAT COULD HAVE BEEN ANTICIPATED AT THE TIME OF BID.

ADDITIONAL PLUMBING NOTES

- A TEST OF AT LEAST A (10) FOOT OF HEAD OF WATER SHALL BE PROVIDED FOR THE DRAINAGE AND VENT SYSTEMS. THE WATER SHALL BE KEPT IN THE SYSTEM OR IN THE PORTION BEING TESTED FOR AT LEAST 15 MINUTES BEFORE INSPECTION STARTS AND INSPECTION OR TESTING OF THE SYSTEM SHALL CONFIRM THAT THE SYSTEM IS TIGHT AT ALL POINTS.
- ALL THE (RPZS) REDUCED PRESSURE BACK FLOW PREVENTERS ASSEMBLIES SHALL BE TESTED AND APPROVED BY A CROSS CONNECTION CONTROL DEVICE INSPECTOR (CCCDI) BEFORE OPERATIONS, AND AT LEAST ONE TIME PER YEAR THEREAFTER.
- ONLY A LICENSED PLUMBER SHALL INSTALL THE REDUCED PRESSURE BACK FLOW PREVENTER DETECTOR ASSEMBLY. THE INSTALLATION SHALL COMPLY WITH THE ILLINOIS POLLUTION CONTROL BOARD ADMINISTRATION RULES FOR TITLE 35.
- NONE OF THE BACK FLOW PREVENTERS SHALL BE INSTALLED VERTICALLY. ONLY HORIZONTAL DEVICES ARE TO BE USED.
- ALL THERMOSTATIC MIXING VALVES SHALL BE SET TO A TEMPERATURE NO MORE THEN 110°F.
- LAVATORIES SHALL NOT HAVE EXPOSED WATER, WASTE, OR ABRASIVE SURFACES, BUT SHALL BE COVERED WITH PROTECTIVE GUARDS.
- REDUCED PRESSURE BACK FLOW PREVENTER (RPZ) SHALL BE INSTALLED IN A DEDICATED WATER SUPPLY LINE AND SHUT OFF VALVES TO EACH LOCATION WHERE SANITIZING CHEMICALS OR DETERGENTS WILL BE ASPRATED OR PUSHED BY WATER PRESSURE INTO CLEANSING/SANITIZING OPERATION UNITS.
- "SPILL-PROOF" OR PRESSURE VACUUM BREAKERS ARE PROHIBITED IN ILLINOIS.
- WASTE AND VENT PIPING SYSTEMS SHALL BE TESTED BY CLOSING OPENINGS IN PIPING SYSTEM AND FILLED WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 10-FOOT HEAD OF WATER.
- INSTALLER AGREES TO REPAIR OR REPLACE PRODUCTS THAT FAIL DUE TO POOR WORKMANSHIP OR FAULTY INSTALLATION WITHIN SPECIFIED WARRANTY PERIOD. WARRANTY PERIOD WILL BE ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
- ALL EXISTING SANITARY THAT ARE RECEIVING A NEW CONNECTION SHALL BE TELEVIEWED TO VERIFY LOCATION, INVERT, SIZE ARE CORRECT. IF LOCATION SHOWN DOES NOT EXIST OR INVERT CAN NOT BE MET, ENGINEER, ARCHITECT, AND CONSTRUCTION MANAGER SHALL BE NOTIFIED IMMEDIATELY. TELEVIEWED FOOTAGE SHALL BE GIVEN TO ALL PARTIES TO REVIEW.
- NO DEAD END SHALL EXCEED A DEVELOPED LENGTH OF TWO FEET LONG FOR ABANDONED SANITARY AND DOMESTIC WATER LINES.

NOTE

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.



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ISSUED FOR BID-BID GROUP 5 07.01.2019
ISSUED FOR BID GROUP 4 04.02.2019

REV ISSUE DATE

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NOTES & SYMBOLS

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E. Aguiar
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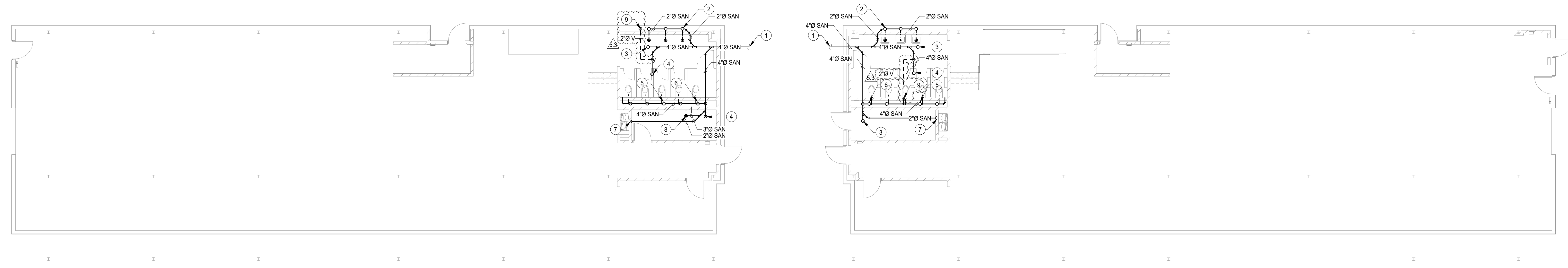
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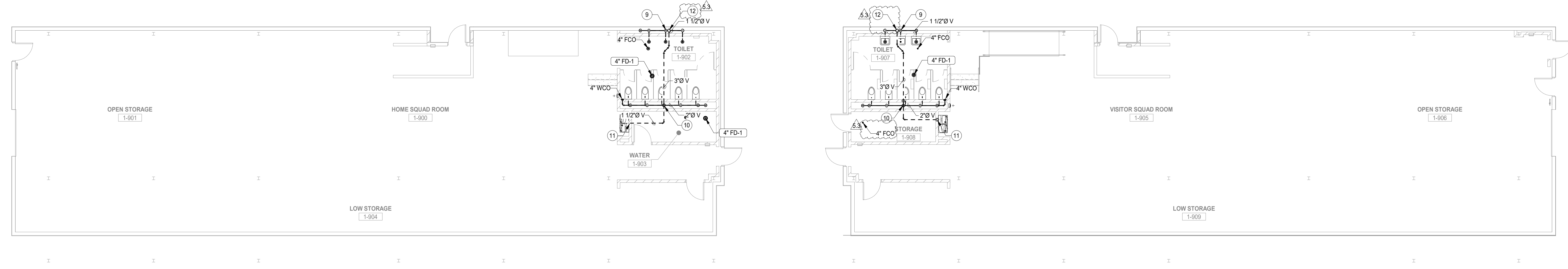
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GENERAL NOTES:
1. BUILDING IS CONSTRUCTED WITHIN A LOCALIZED POOR DRAINAGE AREA WITH AN ESTABLISHED BASE FLOOD ELEVATION OF 735.7. ALL CONSTRUCTION MATERIALS SHALL BE WATER RESISTANT TO A MINIMUM OF 3 FEET ABOVE THE BASE FLOOD ELEVATION (738.7) OR 4 FEET ABOVE FINISHED FLOOR.
2. ALL ELECTRICAL, HEATING, VENTILATION, AIR CONDITIONING, PLUMBING, AND OTHER APPLIANCES, OR FIRED MECHANICAL OR ELECTRICAL DEVICES SHALL BE LOCATED A MINIMUM OF 3 FEET ABOVE THE BASE FLOOD ELEVATION (738.7) OR 4 FEET ABOVE FINISH FLOOR.

#	KEY NOTES
1	FOR CONTINUATION, SEE CIVIL DRAWINGS.
2	2"Ø SAN UP TO LAV-1 (TYP 3).
3	4"Ø SAN UP TO FCO.
4	4"Ø SAN UP TO FFD-1.
5	4"Ø SAN UP TO WC-1 (TYP 4).
6	4"Ø SAN UP TO WC-1A.
7	2"Ø SAN UP TO WF-1A.
8	3"Ø SAN UP TO JS-1.
9	2"Ø V UP.
10	3"Ø V UP.
11	1 1/2"Ø V UP.
12	4"Ø V UP, COORDINATE ROUTING WITH PRESS BOX MANUFACTURER.



1 SANITARY & DRAINAGE UNDERGROUND PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"



2 SANITARY & DRAINAGE FLOOR PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"

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**SANITARY & DRAINAGE
FLOOR PLANS - SQUAD
ROOMS**

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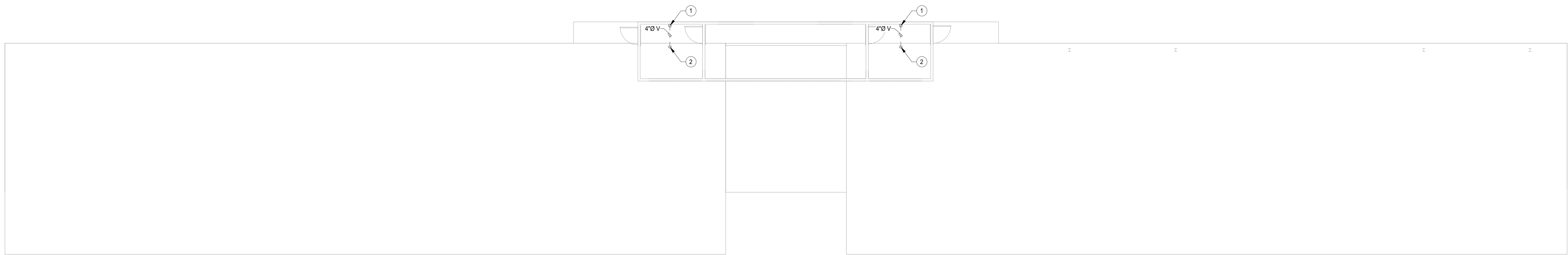


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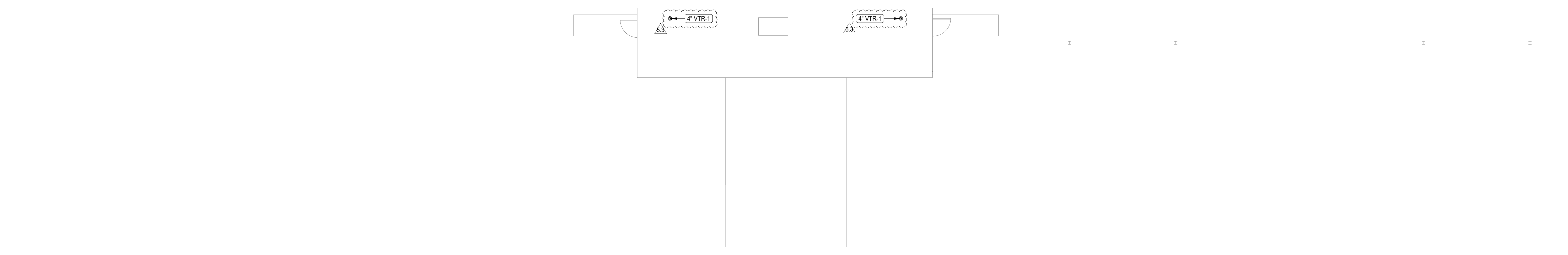
#	KEY NOTES
1	4" V TO BE ROUTED UP TO 4" VTR-1 ON PRESS BOX ROOF
2	4" V EN. COORDINATE ROUTING WITH PRESS BOX MANUFACTURER.

GENERAL NOTES:

- BUILDING IS CONSTRUCTED WITHIN A LOCALIZED POOR DRAINAGE AREA WITH AN ESTABLISHED BASE FLOOD ELEVATION OF 735.7. ALL CONSTRUCTION MATERIALS SHALL BE WATER RESISTANT TO A MINIMUM OF 3 FEET ABOVE THE BASE FLOOD ELEVATION (738.7) OR 4 FEET ABOVE FINISHED FLOOR.
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1 SANITARY & DRAINAGE FLOOR PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"



2 SANITARY & DRAINAGE ROOF PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"

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**SANITARY & DRAINAGE
ROOF PLAN - SQUAD
ROOMS**

Project Number:
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E. Aguilar
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#	KEY NOTES
1	FOR CONTINUATION, SEE CIVIL DRAWINGS.
2	WATER DISTRIBUTION/FIRE PROTECTION PIPING WILL BE ENCLOSED BETWEEN SQUAD ROOMS. PIPING TO BE SLOPED FOR WINTER DRAINAGE.



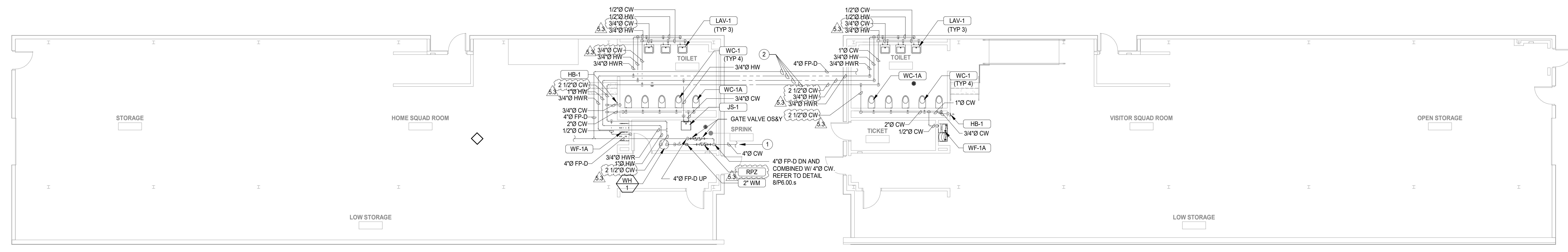
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**WATER DISTRIBUTION
FLOOR PLAN - SQUAD
ROOMS**

Project Number:
5274-42
Drawn By:
E. Aguilar
Sheet:

P3.01.s

1 WATER DISTRIBUTION FLOOR PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"

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DISTRICT 99



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IMPORTANT NOTE:

BUILDING IS CONSTRUCTED WITH A LOCALIZED POOR DRAINAGE AREA WITH AN ESTABLISHED BASE FLOOD ELEVATION OF 73.7. ALL CONSTRUCTION MATERIALS SHALL BE WATER RESISTANT TO MINIMUM OF 3 FEET ABOVE THE BASE FLOOD ELEVATION (73.7) OR 4 FEET ABOVE FINISHED FLOOR.
ALL ELECTRICAL, HEATING, VENTILATION, AIR CONDITIONING, PLUMBING AND OTHER APPLIANCES OR FIXED MECHANICAL OR ELECTRICAL DEVICES SHALL BE LOCATED A MINIMUM OF 3 FEET ABOVE THE BASE FLOOD ELEVATION (73.7) OR 4 FEET ABOVE FINISHED FLOOR.

DEMO NOTES

DISCONNECT EXISTING FEED TO THE PRESS BOX PULL BACK THE CIRCUITS TO SOURCE AND IDENTIFY AS SPARE. REMOVE ASSOCIATED CONDUITS FOR THE PRESS BOX AND PROVIDE NEW PER OTHER TRADE DRAWINGS.

SHEET NOTES

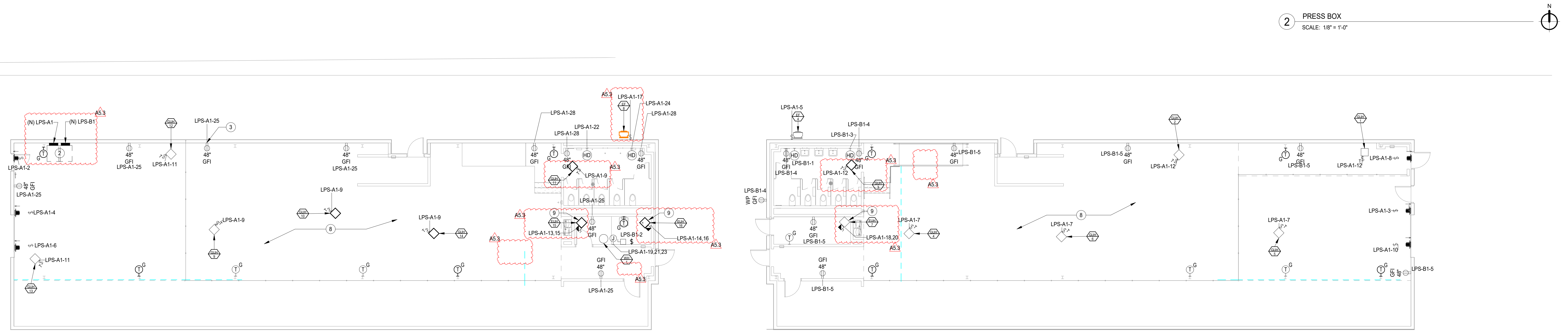
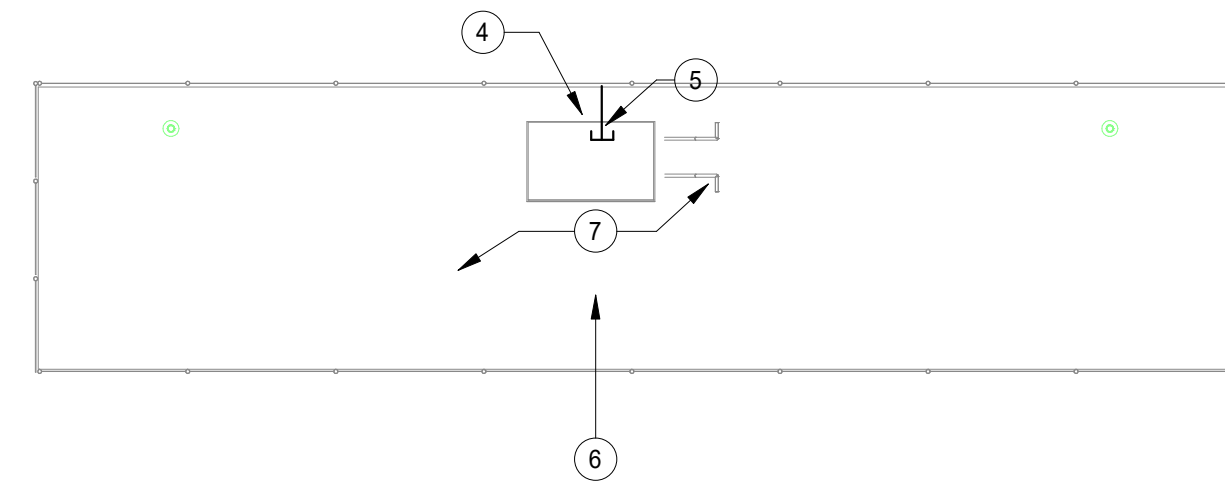
- COORDINATE WITH HVAC CONTRACTOR/HVAC DRAWINGS FOR EXACT REQUIREMENTS OF POWER TO THE HVAC EQUIPMENTS.
- COORDINATE WITH LOW VOLTAGE/SECURITY AV (DATA) DRAWINGS FOR ADDITIONAL SCOPE OF WORK FOR POWER AND ROUGH-IN REQUIREMENTS.
- ALL THE DEVICES IN THE SQUAD ROOM AREAS SHALL BE IMPACT RESISTANT.
- COORDINATE FOR CONDUIT TERMINATION AND CONNECTION TO THE SQUAD ROOMS AND PRESS BOX WITH THE FIRE ALARM CONTRACTOR PRIOR TO START.

GENERAL NOTES

- THESE NOTES ARE APPLICABLE TO ALL POWER PLANS.
- THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR SHARED NEUTRAL CONDUCTORS WHICH THE MINIMUM SIZE SHALL BE #10 AWG. THE MINIMUM CONDUIT SIZE FOR HOMERUNS AND BRANCH FEEDS TO POWER OUTLETS SHALL BE 3/4" 1/2" CONDUIT IS ACCEPTABLE FOR BRANCH WIRING TO END OF THE LINE RECEPTACLES ONLY.
- ALL POWER BRANCH CIRCUITS SHALL TERMINATE AT 20A 1-POLE CIRCUIT BREAKERS IN PANELS/BOARD UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL PROVIDE ALL PENETRATIONS, SLEEVES, AND SEALANT AS REQUIRED THROUGH PARTITIONS TO ACCOMMODATE THE FIRE ALARM, PAGING, SECURITY, AUDIO/VISUAL, VOICE, AND DATA CABLES. ANY PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE PROPERLY SEALED AND TREATED TO MAINTAIN THE FIRE STOPPING RATING OF THE WALLS, FLOORS, AND CEILINGS.
- RECEPTACLES SHALL BE MOUNTED OFFSET, NOT BACK TO BACK.
- CIRCUIT NUMBERS, WHERE SHOWN, ARE TO INDICATE QUANTITY OF CIRCUITS REQUIRED. VERIFY EXACT CIRCUIT NUMBER TO BE UTILIZED IN FIELD. CONTRACTOR SHALL PROVIDE ACTUAL CIRCUITING AS PART OF "AS BUILT" DRAWINGS.
- UNLESS INDICATED OTHERWISE, ALL MATERIALS REQUIRED TO PROVIDE BRANCH CIRCUITS AND FEEDERS ARE TO BE NEW.
- REFERS TO MECHANICAL AND PLUMBING SHEETS FOR ADDITIONAL EQUIPMENT INFORMATION.
- ANY ELECTRICAL DEVICES ON NEW WALLS SHALL BE FLUSH MOUNTED. NO WYREMOLES ARE ACCEPTABLE ON NEW WALLS UNLESS NOTED OTHERWISE.
- VERIFY RECEPTACLE LOCATIONS WITH ARCHITECTURAL FURNITURE LAYOUT TO ENSURE PROPER ACCESSIBILITY.
- LOW VOLTAGE WIRING SHALL NOT LIE ON TOP OF CEILING GRID SYSTEM. WIRING SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 3 FEET BY UTILIZING J-HOOKS SUPPORTED BY STRUCTURAL MEMBERS. WIRING SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS.
- PROVIDE PULL BOXES BETWEEN PULL POINTS AS REQUIRED TO COMPLY WITH NEC 34.2.8 SUCH THAT THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (90 DEGREE TOTAL) BETWEEN PULL POINTS.
- SPECIAL ATTENTION SHALL BE PAID TO ALL CONDUIT ROUTING IN OPEN CEILING SPACE FOR AESTHETIC PURPOSES. ALL EXPOSED CONDUITS SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO BUILDING LINES AND TIGHT TO CEILING/STRUCTURAL CORNERS WHERE THIS IS NOT FEASIBLE. SUBMIT CONDUIT ROUTING PLAN TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
- CONTRACTOR SHALL PROVIDE COMMON DISCONNECTING MEANS FOR BRANCH CIRCUITS UTILIZING SHARED NEUTRALS PER ARTICLE 210.4(B). HANDLE THESE ARE ACCEPTABLE WHEN BREAKERS ARE "SLASH RATED" FOR THE HIGHER SYSTEM VOLTAGE RATING OF THE SYSTEM. WHEN HANDLE TIES ARE NOT POSSIBLE DUE TO NON-ADJACENT BREAKERS, PROVIDE A DEDICATED NEUTRAL FOR EACH UNGROUNDED CONDUCTOR.
- PROVIDE MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH AND 120V 20A CONTROL RELAY CONTRACTOR TO CONTROL PUMP/FAN. VERIFY CONTROL VOLTAGE WITH BUILDING AUTOMATION SYSTEM CONTRACTOR.
- PROVIDE AUXILIARY RELAY WIRING FOR INTERFACING OF HVAC CONTROLS AS REQUIRED. SEE MECHANICAL PLANS FOR ALL REQUIREMENTS. SEE MECHANICAL PLANS FOR ROUGH-IN LOCATION OF CONTROLS.

KEYNOTES

- PROVIDE 3 FEET OF CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS PER NEC.
- ALL RECEPTACLES SHALL BE GFI, IMPACT-RESISTANT AND INSTALLED AT 48" AFF.
- EXISTING WIRINGS AND CONDUITS POWERING DEMOLISHED PRESS BOX SHALL BE REMOVED. PULL BACK WIRING TO NEAREST JUNCTION BOX. SEE PRESS BOX DRAWINGS FOR MORE INFORMATION AND ALL REQUIREMENTS.
- ALL EXISTING CONDUITS INCLUDING BUT NOT LIMITED TO THE DEVICE (TWO (2)) AT DEMOLISHED PRESS BOX SHALL BE RECONNECTED TO NEW PRESS BOX. FIELD VERIFY QUANTITY AND SIZES OF ALL CONNECTED CONDUITS FROM FIELD TO PRESS BOX. EXTEND WIRINGS AND CONDUIT AS NEEDED.
- SEE TAV AND SS DRAWINGS FOR QUANTITY AND LOCATION OF ROUGHINS AND ALL REQUIREMENT.
- ALL ELECTRICAL, HEATING, VENTILATION, AIR CONDITIONING, PLUMBING, AND OTHER APPLIANCES OR FIXED MECHANICAL OR ELECTRICAL DEVICES SHALL BE LOCATED A MINIMUM OF 3 FEET ABOVE THE BASE FLOOD ELEVATION (73.7) OR 4 FEET ABOVE FINISH FLOOR.
- POWER FOR ELECTRIC UNIT HEATER. COORDINATE LOCATION WITH HVAC CONTRACTOR PRIOR TO START.



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AS3 ADDENDUM 5.3 09.18.2019
REV ISSUED FOR BID-BID GROUP 5 07.01.2019
ISSUE DATE

**MFP
IMPLEMENTATION -
NORTH**

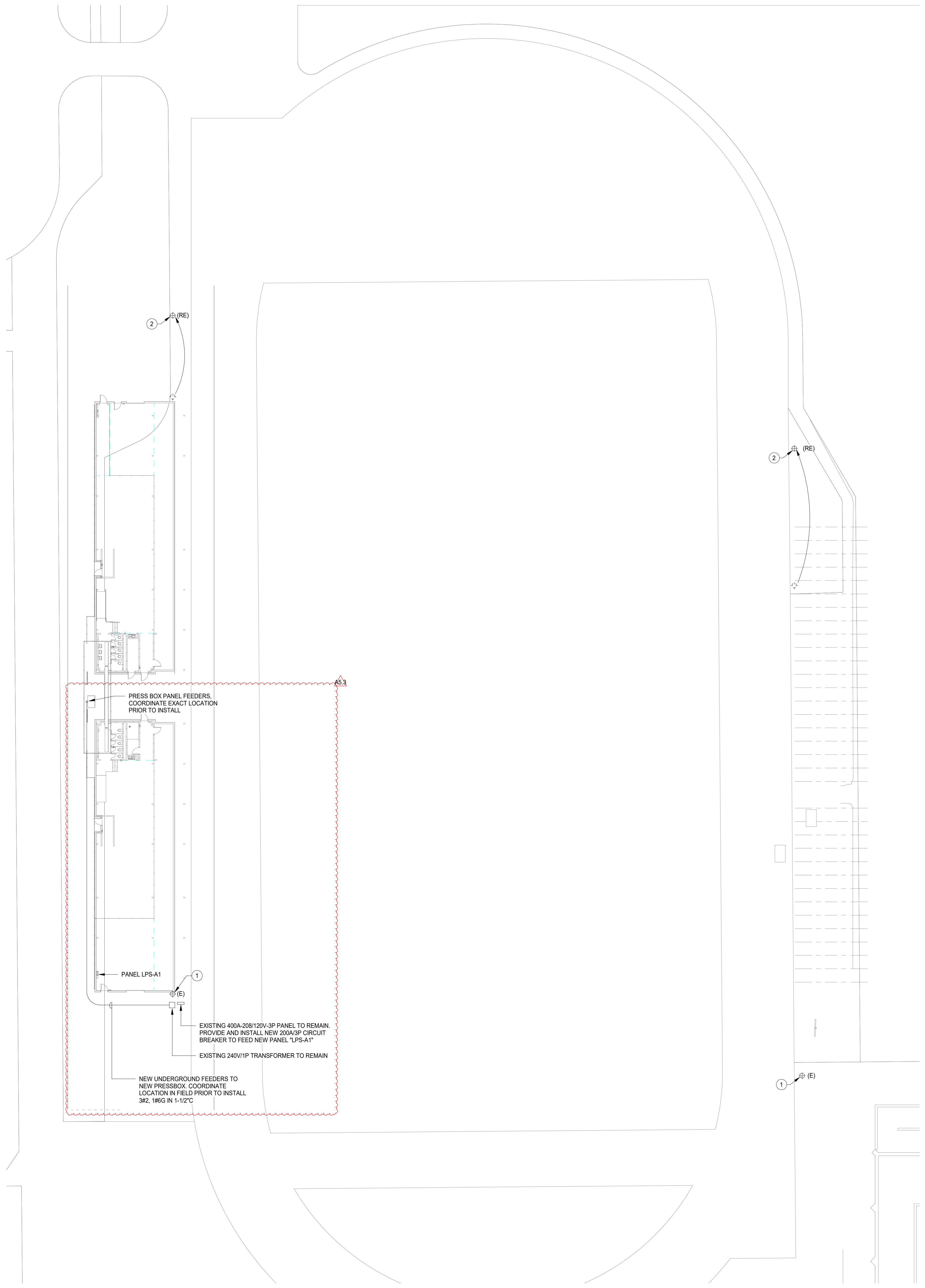
4436 MAIN STREET
DOWNERS GROVE, IL 60515

**SQUAD ROOMS POWER
PLAN**

Project Number:
5274-42
Drawn By:
Author
Sheet:

E2.01.s

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1 SITE LIGHTING PLAN
SCALE: 3/8" = 1'-0"

GENERAL NOTES

1. LOCATION OF EXISTING UTILITY TRANSFORMER, PRIMARY SERVICE ENTRANCE SWITCHING CENTER, EXISTING MANHOLES AND ALL OTHER ELECTRICAL EQUIPMENT ARE DIAGRAMMATIC. FIELD VERIFY EXACT LOCATIONS.
2. UNDERGROUND FEEDER ROUTING IS DIAGRAMMATIC. FIELD VERIFY EXACT ROUTING AS NEEDED THROUGHOUT THE PROJECT.
3. CONTRACTOR SHALL PROTECT AND MAINTAIN THE CONTINUITY OF EXISTING ELECTRICAL SERVICE THROUGHOUT THE CONSTRUCTION.
4. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS OF NEW EQUIPMENT AND INSTALLATION WITH MINIMUM DOWNTIME.
5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND SHALL CONFORM TO ALL LOCAL CODES.
6. ALL MATERIAL AND LABOR SHALL BE GUARANTEED FOR ONE YEAR AFTER FINAL ACCEPTANCE BY THE ENGINEER.
7. MINIMUM SIZE CONDUIT SHALL BE 3/4" E.M.T.
8. MINIMUM SIZE WIRE SHALL BE #12 THW/N2 WITH #14 USED FOR CONTROL WIRING.
9. WIRE #14 THROUGH #10 SHALL BE COPPER THW/N-2. ALUMINUM WIRE NOT ACCEPTABLE. ALL WIRE SHALL BE COLOR CODED.
10. CONDUIT UNDER DRIVES AND PARKING LOTS SHALL BE EITHER MC OR GRMC BURIED MINIMUM 24 INCHES.
11. ALL CONDUIT OUTDOORS OR BURIED SHALL BE EITHER MC, GRMC OR SCHEDULE 40 POLYETHYLENE.
12. THIS CONTRACTOR SHALL PROVIDE ALL NECESSARY CUTTING AND PATCHING INCLUDING SLEEVES AND INSERTS.
13. BEFORE SUBMITTING HIS BID, THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO ASCERTAIN ALL WORK INVOLVED IN THE PROJECT.
14. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH PROJECT MANAGER.
15. THIS CONTRACTOR SHALL MAKE NECESSARY MODIFICATIONS AND ADJUSTMENTS TO ALL ELECTRICAL ITEMS AND EQUIPMENT AS MAY BE REQUIRED BY THIS WORK.
16. J.U.L.I.E. MUST BE CONTACTED PRIOR TO ANY DIGGING OR EXCAVATION. ANY DAMAGE TO ANY EXISTING UNDERGROUND UTILITIES, MARKED BY J.U.L.I.E. OR NOT SHALL BE REPAIRED BY THIS CONTRACTOR AT THEIR EXPENSE.
17. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES NOT MARKED BY J.U.L.I.E. IF DAMAGED, THIS CONTRACTOR SHALL REPAIR AT THEIR OWN EXPENSE.
18. EACH HEAD TO OF THE FIXTURE MUST BE WIRED DOWN TO THE MANHOLE INDEPENDENTLY. ALL LIGHTING CIRCUITS MUST BE PRESENT AT THE BASE OF EACH POLE SO THAT WIRING CAN BE ACCESSED FOR FUTURE CIRCUIT MODIFICATION/REWIRING AS REQUIRED.
19. PROVIDE ALL TRENCHING AND BACKFILL AS REQUIRED. BACKFILL PER ARCHITECTS REQUIREMENTS. SURFACE SUITABLE FOR FINAL PAVEMENT LAYER. FINAL PAVEMENT BY OTHERS. THIS CONTRACTOR TO COORDINATE WORK WITH ALL OTHER TRADES PRIOR TO ANY EXCAVATION.
20. ALL PENETRATIONS THROUGH THE BUILDING SHALL BE SEALED WATER TIGHT PER ARCHITECTS REQUIREMENTS. SECURELY MOUNT CONDUIT TO WALL AS REQUIRED.
21. ALL 90 DEGREE BENDS TO RIGID PIPE.

KEYNOTES

- 1 EXISTING POLE MOUNTED LIGHT FIXTURE TO REMAIN AS IS
- 2 EXISTING POLE MOUNTED LIGHT FIXTURE AND POLE SHALL BE RELOCATED. PROVIDE NEW BASE AND FOUNDATION. REFER TO MUSEO LIGHTING DRAWINGS AND DOCUMENT FOR EXACT LOCATION AND ALL REQUIREMENT. EXTEND CONDUCTORS AND CONDUITS AS NEEDED TO POWER THE RELOCATED POLE MOUNTED LIGHT FIXTURES AT THE NEW LOCATION.



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A5.3 ADDENDUM 5.3 09.18.2019
ISSUED FOR BID-BID GROUP 5 07.01.2019
REV ISSUE DATE

**MFP
IMPLEMENTATION -
NORTH**

4436 MAIN STREET
DOWNERS GROVE, IL 60515

**SITE POWER & LIGHTING
PLAN**

Project Number:
5274-42
Drawn By:
Author
Sheet:

E3.00.s

**NOT FOR
CONSTRUCTION**

A5.3 ADDENDUM 5.3 09.18.2019
ISSUED FOR BID-BID GROUP 5 07.01.2019
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**MFP
IMPLEMENTATION -
NORTH**

4436 MAIN STREET
DOWNERS GROVE, IL 60515

**PARTIAL RISER DIAGRAM
& PANEL SCHEDULE**

Project Number:
5274-42
Drawn By:
Author
Sheet:

E5.00.s

PANELBOARD: LPS-B1

LOCATION: STORAGE MOUNTING: SURFACE NEMA 1 MAIN DEVICE: 100 A MAIN CB BUS AMPS: 100 AMPS

VOLTAGE: 208Y/120 V, 3 ø 4 W. A.I.C. RATING: 10,000 AMPS SYMMETRICAL SPECIAL: NEW

LOAD DESCRIPTION	BKR	P	CKT	A	B	C	CKT	P	BKR	LOAD DESCRIPTION
HAND DRYER	20 A	1	LPS-B1-1	1.4	0.2		LPS-B1-2	1	20 A	RCP-1
HAND DRYER	20 A	1	LPS-B1-3		1.4	0.8		LPS-B1-4	1	EWIC/TOILET RCPT
VISITOR SQUADS RCPT	20 A	1	LPS-B1-5			1.1	1.5	LPS-B1-6	1	20 A VISITORS SQUAD LIGHTS
Spare	20 A	1	LPS-B1-7	0.0	0.0			LPS-B1-8	1	20 A Spare
Spare	20 A	1	LPS-B1-9	0.0	0.0			LPS-B1-10	1	20 A Spare
Spare	20 A	1	LPS-B1-11			0.0	0.0	LPS-B1-12	1	20 A Spare
Spare	20 A	1	LPS-B1-13	0.0	0.0			LPS-B1-14	1	20 A Spare
Spare	20 A	1	LPS-B1-15			0.0	0.0	LPS-B1-16	1	20 A Spare
Spare	20 A	1	LPS-B1-17			0.0	0.0	LPS-B1-18	1	20 A Spare
Spare	20 A	1	LPS-B1-19	0.0	0.0			LPS-B1-20	1	20 A Spare
Spare	20 A	1	LPS-B1-21			0.0	0.0	LPS-B1-22	1	20 A Spare
Spare	20 A	1	LPS-B1-23			0.0	0.0	LPS-B1-24	1	20 A Spare
Spare	20 A	1	LPS-B1-25	0.0	0.0			LPS-B1-26	1	20 A Spare
Spare	20 A	1	LPS-B1-27			0.0	0.0	LPS-B1-28	1	20 A Spare
Spare	20 A	1	LPS-B1-29			0.0	0.0	LPS-B1-30	1	20 A Spare
Spare	20 A	1	LPS-B1-31	0.0	0.0			LPS-B1-32	1	20 A Spare
Spare	20 A	1	LPS-B1-33			0.0	0.0	LPS-B1-34	1	20 A Spare
Spare	20 A	1	LPS-B1-35			0.0	0.0	LPS-B1-36	1	20 A Spare
Spare	20 A	1	LPS-B1-37	0.0	0.0			LPS-B1-38	1	20 A Spare
Spare	20 A	1	LPS-B1-39			0.0	0.0	LPS-B1-40	1	20 A Spare
Spare	20 A	1	LPS-B1-41			0.0	0.0	LPS-B1-42	1	20 A Spare
TOTAL LOAD:				2 kVA	2 kVA	3 kVA				
TOTAL AMPS:				14 A	22 A	22 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
HVAC	240 VA	100.00%	240 VA	
Lighting	479 VA	100.00%	479 VA	CONNECTED LOAD: 6491 VA
Other	2860 VA	100.00%	2860 VA	ESTIMATED DEMAND: 5623 VA
RCPT	1920 VA	65.00%	1248 VA	CONNECTED CURRENT: 18 A
LITES	10 VA	125.00%	13 VA	EST. DEMAND CURRENT: 16 A

NOTES:

PANELBOARD: LPS-A1

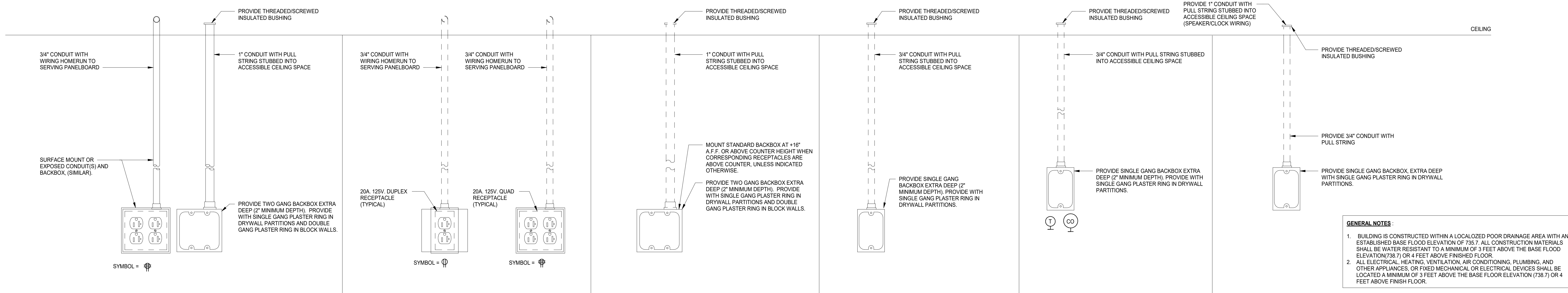
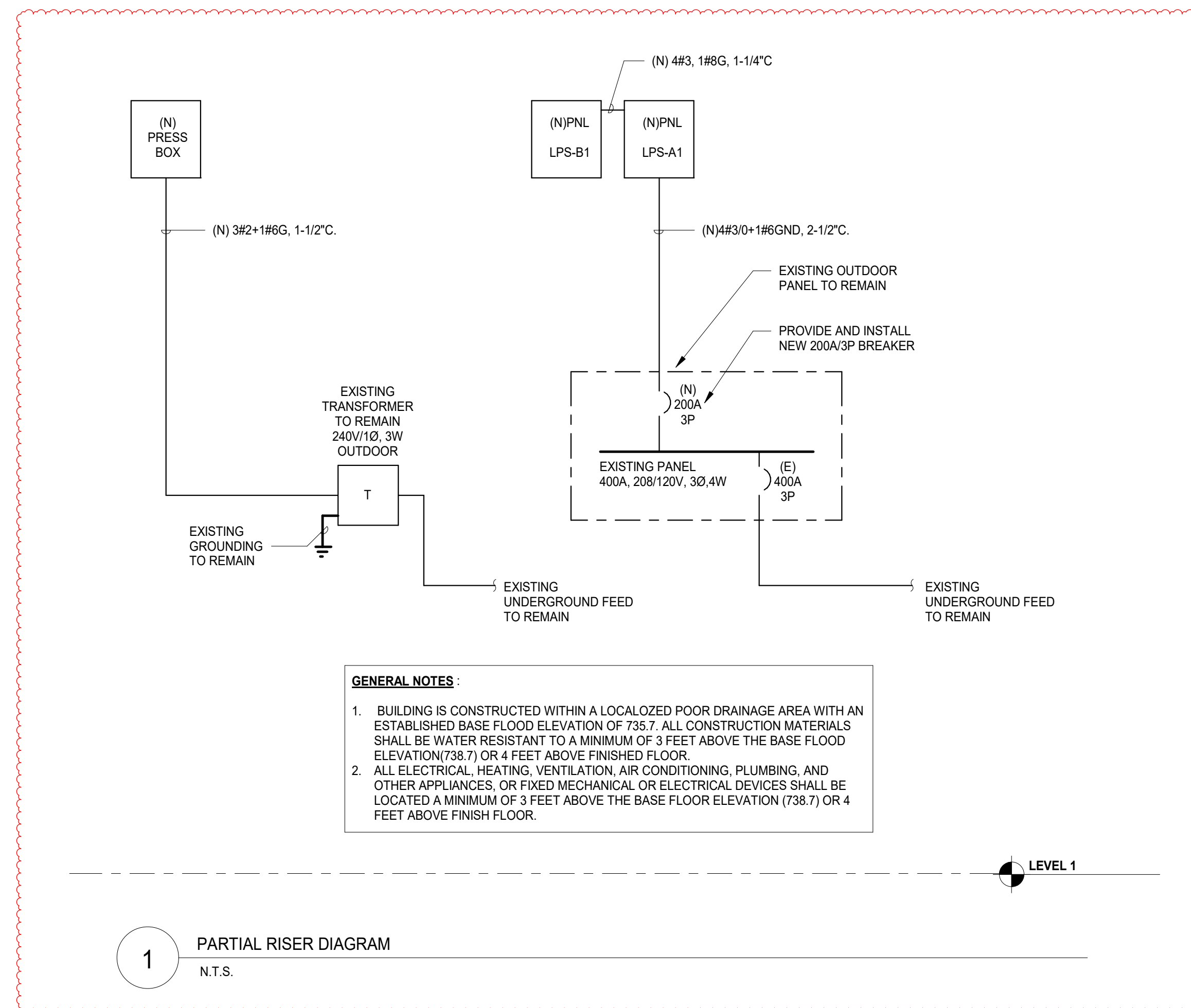
LOCATION: STORAGE MOUNTING: SURFACE NEMA 1 MAIN DEVICE: 200 A MAIN CB BUS AMPS: 225 AMPS

VOLTAGE: 208Y/120 V, 3 ø 4 W. A.I.C. RATING: 10,000 AMPS SYMMETRICAL SPECIAL: NEW

LOAD DESCRIPTION	BKR	P	CKT	PHASE A	PHASE B	PHASE C	CKT	P	BKR	LOAD DESCRIPTION
Spare	20 A	1	LPS-A1-1	0.0	0.4			LPS-A1-2	1	20 A EF-5
EF-2	20 A	1	LPS-A1-3		0.4	0.4		LPS-A1-4	1	20 A EF-6
EF-4	20 A	1	LPS-A1-5			0.3	0.4	LPS-A1-6	1	20 A EF-7
GUH-4, GUH-5, GUH-6	20 A	1	LPS-A1-7	0.7	0.4			LPS-A1-8	1	20 A EF-1
GUH-9, GUH-11, GUH-14	20 A	1	LPS-A1-9		0.8	0.4		LPS-A1-10	1	20 A EF-3
GUH-12, GUH-13	20 A	1	LPS-A1-11		0.5	0.7		LPS-A1-12	1	20 A GUH-1, GUH-2, GUH-3
EUH-15	20 A	2	LPS-A1-13	1.1	1.1			LPS-A1-14	2	20 A EUH-16
EF-8	20 A	1	LPS-A1-17		1.1	1.1		LPS-A1-18	1	20 A EF-18
	20 A	1	LPS-A1-19	0.8	1.1			LPS-A1-20	1	20 A EF-9
WATER HEATER	20 A	3	LPS-A1-21		0.6	1.4		LPS-A1-22	1	20 A HAND DRYER
	20 A	1	LPS-A1-23		0.6	1.4		LPS-A1-24	1	20 A HAND DRYER
HOME SQUADS RCPT	20 A	1	LPS-A1-25	1.1	1.5			LPS-A1-26	1	20 A HOME SQUAD LIGHTS
Spare	20 A	1	LPS-A1-27		0.0	0.5		LPS-A1-28	1	20 A EWIC/TOILET RCPT
Spare	20 A	1	LPS-A1-29			0.0	0.0	LPS-A1-30	1	20 A Spare
Spare	20 A	1	LPS-A1-31	0.0	0.0			LPS-A1-32	1	20 A Spare
Spare	20 A	1	LPS-A1-33			0.0	0.0	LPS-A1-34	1	20 A Spare
Spare	20 A	1	LPS-A1-35			0.0	0.0	LPS-A1-36	1	20 A Spare
Spare	20 A	1	LPS-A1-37	0.0	1.7			LPS-A1-38	1	20 A Spare
Spare	20 A	1	LPS-A1-39		0.0	2.3		LPS-A1-40	3	100 A LPS-B1
Spare	20 A	1	LPS-A1-41			0.0	2.5	LPS-A1-42	1	20 A Spare
TOTAL LOAD:				10 kVA	9 kVA	8 kVA				
TOTAL AMPS:				82 A	77 A	66 A				

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS
HVAC	240 VA	100.00%	240 VA	
Lighting	952 VA	100.00%	952 VA	CONNECTED LOAD: 26626 VA
Motor	5616 VA	101.76%	5715 VA	ESTIMATED DEMAND: 25489 VA
Other	7486 VA	100.00%	7486 VA	CONNECTED CURRENT: 74 A
Power	6864 VA	100.00%	6864 VA	EST. DEMAND CURRENT: 71 A
RCPT	3540 VA	65.00%	2301 VA	
LITES	10 VA	125.00%	13 VA	

NOTES:



JUNCTION BOX ROUGH-IN DETAIL

USE ONLY IN NON-PUBLIC AREAS
(E.G. MECHANICAL/ELECTRICAL ROOMS/SERVICE BAYS)
WHERE FLUSH/RECESS INSTALLATION IS NOT REQUIRED. SEE PLAN
DRAWINGS FOR LOCATIONS.

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SECTION 221316 – SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Pipe, tube, and fittings.
- 2. Specialty pipe fittings.
- 3. ~~Encasement for underground metal piping.~~

- B. Related Sections:

- 1. Section 221313 "Facility Sanitary Sewers" for sanitary sewerage piping and structures outside the building.
- 2. Section 221329 "Sanitary Sewerage Pumps" for effluent and sewage pumps.
- 3. Section 226600 "Chemical-Waste Systems for Laboratory and Healthcare Facilities" for chemical-waste and vent piping systems.

1.3 PERFORMANCE REQUIREMENTS

- A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated:

- 1. Soil, Waste, and Vent Piping: 10-foot head of water .
- 2. Waste, Force-Main Piping: 150 psig .

- ~~B. Seismic Performance: Soil, waste, and vent piping and support and installation shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.~~

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

- B. LEED Submittals:

- 1. Product Data for Credit IEQ 4.1: For solvent cements and adhesive primers, documentation including printed statement of VOC content.
- 2. Laboratory Test Reports for Credit IEQ 4: For solvent cements and adhesive primers, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

1.5 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Certificates: For waste and vent piping, accessories, and components, from manufacturer.
 - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - 2. Detailed description of piping anchorage devices on which the certification is based and their installation requirements.
- B. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.
- B. Comply with NSF/ANSI 14, "Plastics Piping Systems Components and Related Materials," for plastic piping components. Include marking with "NSF-dwv" for plastic drain, waste, and vent piping and "NSF-sewer" for plastic sewer piping.

1.7 PROJECT CONDITIONS

- A. Interruption of Existing Sanitary Waste Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
 - 1. Notify Architect no fewer than three days in advance of proposed interruption of sanitary waste service.
 - 2. Do not proceed with interruption of sanitary waste service without Architect's written permission.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

- A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.2 HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS

- A. Pipe and Fittings: ASTM A 74, Service class.
- B. Gaskets: ASTM C 564, rubber.
- C. Calking Materials: ASTM B 29, pure lead and oakum or hemp fiber.

2.3 HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS

- A. Pipe and Fittings: ASTM A 888 or CISPI 301.
- ~~B. Solvent Stack Fittings: ASME B16.45 or ASSE 1043, hubless, cast iron aerator and deaerator drainage fittings.~~
- C. CISPI, Hubless-Piping Couplings:
 - 1. Standards: ASTM C 1277 and CISPI 310.
 - 2. Description: Stainless-steel corrugated shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.
- D. Heavy-Duty, Hubless-Piping Couplings:
 - 1. Standards: ASTM C 1277 and ASTM C 1540.
 - 2. Description: Stainless-steel shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.

~~2.4 GALVANIZED STEEL PIPE AND FITTINGS~~

- ~~A. Galvanized Steel Pipe: ASTM A 53/A 53M, Type E, Standard Weight class. Include square cut-grooved or threaded ends matching joining method.~~
- ~~B. Cast Iron Drainage Fittings: ASME B16.12, threaded.~~
- ~~C. Steel Pipe Pressure Fittings:
 - 1. Galvanized Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106/A 106M, Schedule 40, seamless steel pipe. Include ends matching joining method.
 - 2. Malleable Iron Unions: ASME B16.39; Class 150; hexagonal stock body with ball and socket, metal to metal, bronze seating surface; and female threaded ends.
 - 3. Galvanized Gray Iron, Threaded Fittings: ASME B16.4, Class 125, standard pattern.~~
- ~~D. Cast Iron Flanges: ASME B16.1, Class 125.
 - 1. Flange Gasket Materials: ASME B16.21, full face, flat, nonmetallic, asbestos-free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
 - 2. Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.~~
- ~~E. Grooved Joint, Galvanized Steel Pipe Appurtenances:
 - 1. Galvanized, Grooved-End Fittings for Galvanized Steel Piping: ASTM A 536 ductile iron castings, ASTM A 47/A 47M malleable iron castings, ASTM A 234/A 234M forged steel fittings, or ASTM A 106/A 106M steel pipes with dimensions matching ASTM A 53/A 53M steel pipe, and complying with AWWA C606 for grooved ends.
 - 2. Grooved Mechanical Couplings for Galvanized Steel Piping: ASTM F 1476, Type I. Include ferrous housing sections with continuous curved keys; EPDM rubber gasket suitable for hot and cold water; and bolts and nuts.~~

~~2.5 STAINLESS STEEL PIPE AND FITTINGS~~

- ~~A. Pipe and Fittings: ASME A112.3.1, drainage pattern with socket and spigot ends.~~
- ~~B. Internal Sealing Rings: Elastomeric gaskets shaped to fit socket groove.~~

~~2.6 DUCTILE IRON PIPE AND FITTINGS~~

~~A. Ductile Iron, Mechanical Joint Piping:~~

- ~~1. Ductile Iron Pipe: AWWA C151/A21.51, with mechanical joint bell and plain spigot end unless grooved or flanged ends are indicated.~~
- ~~2. Ductile Iron Fittings: AWWA C110/A21.10, mechanical joint, ductile or gray iron standard pattern or AWWA C153/A21.53, ductile iron compact pattern.~~
- ~~3. Glands, Gaskets, and Bolts: AWWA C111/A21.11, ductile or gray iron glands, rubber gaskets, and steel bolts.~~

~~B. Ductile Iron, Push on Joint Piping:~~

- ~~1. Ductile Iron Pipe: AWWA C151/A21.51, with push on joint bell and plain spigot end unless grooved or flanged ends are indicated.~~
- ~~2. Ductile Iron Fittings: AWWA C110/A21.10, push on joint ductile or gray iron standard pattern or AWWA C153/A21.53, ductile iron compact pattern.~~
- ~~3. Gaskets: AWWA C111/A21.11, rubber.~~

~~C. Ductile Iron, Grooved Joint Piping:~~

- ~~1. Ductile Iron Pipe: AWWA C151/A21.51 with round cut grooved ends according to AWWA C606.~~
- ~~2. Ductile Iron Pipe Appurtenances:
 - ~~a. Grooved End, Ductile Iron Fittings: ASTM A 536 ductile iron castings with dimensions matching AWWA C110/A 21.10 ductile iron pipe or AWWA C153/A 21.53 ductile iron fittings and complying with AWWA C606 for grooved ends.~~
 - ~~b. Grooved Mechanical Couplings for Ductile Iron Pipe: ASTM F 1476, Type I. Include ferrous housing sections with continuous curved keys; EPDM rubber center leg gasket suitable for hot and cold water; and bolts and nuts.~~~~

~~2.7 COPPER TUBE AND FITTINGS~~

- ~~A. Copper DWV Tube: ASTM B 306, drainage tube, drawn temper.~~
- ~~B. Copper Drainage Fittings: ASME B16.23, cast copper or ASME B16.29, wrought copper, solder joint fittings.~~
- ~~C. Hard Copper Tube: ASTM B 88, Type L, water tube, drawn temper.~~
- ~~D. Soft Copper Tube: ASTM B 88, Type L, water tube, annealed temper.~~
- ~~E. Copper Pressure Fittings:~~

- ~~1. Copper Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper, solder joint fittings. Furnish wrought copper fittings if indicated.~~
- ~~2. Copper Unions: MSS SP 123, copper alloy, hexagonal stock body with ball and socket, metal-to-metal seating surfaces, and solder joint or threaded ends.~~

~~F. Copper Flanges: ASME B16.24, Class 150, cast copper with solder joint end.~~

- ~~1. Flange Gasket Materials: ASME B16.21, full face, flat, nonmetallic, asbestos-free, 1/8-inch maximum thickness unless thickness or specific material is indicated.~~
- ~~2. Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.~~

~~G. Solder: ASTM B 32, lead free with ASTM B 813, water flushable flux.~~

2.8 PVC SCHEDULE 40 PIPE AND FITTINGS (Not allowed on plenum return walls and/or ceilings)

- A. Pipe and fittings shall be manufactured from PVC compound with a cell class of 12454 per ASTM D 1784 and conform with NSF International standard 14. Pipe shall be iron pipe size (IPS) conforming to ASTM D 1785 and ASTM D 2665. Molded fittings shall conform to ASTM D 2665, Fabricated fittings shall conform to ASTM F 1866. All pipe and fittings to be produced by a single manufacturer and to be installed in accordance with manufacturer's recommendations and local code requirements. Buried Pipe to be installed in accordance with ASTM D 2321. Solvent cements shall conform to ASTM D 2564. Primer shall conform to ASTM F 656.
- B. Manufacturers: Charlotte Pipe and Foundry Co. or approved equal Adhesive Primer: ASTM F 656.
 1. Adhesive primer shall have a VOC content of 550 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 2. Adhesive primer shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Solvent Cement: ASTM D 2564.
 1. PVC solvent cement shall have a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 2. Solvent cement shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.9 SPECIALTY PIPE FITTINGS

- A. Transition Couplings:
 1. General Requirements: Fitting or device for joining piping with small differences in OD's or of different materials. Include end connections same size as and compatible with pipes to be joined.
 2. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.
 3. Unshielded, Nonpressure Transition Couplings:
 - a. Standard: ASTM C 1173.

- b. Description: Elastomeric, sleeve-type, reducing or transition pattern. Include shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end.
 - c. Sleeve Materials:
 - 1) For Cast-Iron Soil Pipes: ASTM C 564, rubber.
 - 2) For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
 - 3) For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.
4. Shielded, Nonpressure Transition Couplings:
- a. Standard: ASTM C 1460.
 - b. Description: Elastomeric or rubber sleeve with full-length, corrosion-resistant outer shield and corrosion-resistant-metal tension band and tightening mechanism on each end.
5. Pressure Transition Couplings:
- a. Standard: AWWA C219.
 - b. Description: Metal, sleeve-type same size as, with pressure rating at least equal to, and ends compatible with, pipes to be joined.
 - c. Center-Sleeve Material: Carbon steel or Stainless steel Ductile iron.
 - d. Gasket Material: Natural or synthetic rubber.
 - e. Metal Component Finish: Corrosion-resistant coating or material.
- B. Dielectric Fittings:
- 1. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.
 - 2. Dielectric Unions:
 - a. Description:
 - 1) Standard: ASSE 1079.
 - 2) Pressure Rating: 150 psig minimum at 180 deg F.
 - 3) End Connections: Solder-joint copper alloy and threaded ferrous.
 - 3. Dielectric Flanges:
 - a. Description:
 - 1) Standard: ASSE 1079.
 - 2) Factory-fabricated, bolted, companion-flange assembly.
 - 3) Pressure Rating: 150 psig minimum at 180 deg F
 - 4) End Connections: Solder-joint copper alloy and threaded ferrous; threaded solder-joint copper alloy and threaded ferrous.
 - 4. Dielectric-Flange Insulating Kits:
 - a. Description:
 - 1) Nonconducting materials for field assembly of companion flanges.

- 2) Pressure Rating: 150 psig .
- 3) Gasket: Neoprene or phenolic.
- 4) Bolt Sleeves: Phenolic or polyethylene.
- 5) Washers: Phenolic with steel backing washers.

5. Dielectric Nipples:

a. Description:

- 1) Standard: IAPMO PS 66
- 2) Electroplated steel nipple.
- 3) Pressure Rating: 300 psig at 225 deg F.
- 4) End Connections: Male threaded or grooved.
- 5) Lining: Inert and noncorrosive, propylene.

~~2.10 ENCASEMENT FOR UNDERGROUND METAL PIPING~~

~~A. Standard: ASTM A 674 or AWWA C105/A 21.5.~~

~~B. Material: Linear low density polyethylene film of 0.008 inch or high density, cross laminated polyethylene film of 0.004 inch minimum thickness.~~

~~C. Form: Sheet or tube.~~

~~D. Color: Black or natural.~~

PART 3 - EXECUTION

3.1 EARTH MOVING

- A. Comply with requirements for excavating, trenching, and backfilling specified in Section 312000 "Earth Moving."

3.2 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.
- B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- E. Install piping to permit valve servicing.

- F. Install piping at indicated slopes.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Install piping to allow application of insulation.
- J. Install seismic restraints on piping. Comply with requirements for seismic-restraint devices specified in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment."
- K. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.
- L. Lay buried building drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.
- M. Install soil and waste drainage and vent piping at the following minimum slopes unless otherwise indicated:
 - 1. Building Sanitary Drain: 2 percent downward in direction of flow for piping NPS 3 and smaller; 1/4" per 12" downward in direction of flow for piping NPS 4 and larger.
 - 2. Horizontal Sanitary Drainage Piping: 1/8" per 12" downward in direction of flow.
 - 3. Vent Piping: 1 percent down toward vertical fixture vent or toward vent stack.
- N. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
 - 1. Install encasement on underground piping according to ASTM A 674 or AWWA C105/A 21.5.
- O. Install steel piping according to applicable plumbing code.
- P. Install stainless-steel piping according to ASME A112.3.1 and applicable plumbing code.
- Q. Install aboveground copper tubing according to CDA's "Copper Tube Handbook."
- ~~R. Install engineered soil and waste drainage and vent piping systems as follows:
 - 1. ~~Combination Waste and Vent: Comply with standards of authorities having jurisdiction.~~
 - 2. ~~Sovent Drainage System: Comply with ASSE 1043 and sovent fitting manufacturer's written installation instructions.~~
 - 3. ~~Reduced-Size Venting: Comply with standards of authorities having jurisdiction.~~~~

~~S. Install underground, ductile iron, force main piping according to AWWA C600. Install buried piping inside building between wall and floor penetrations and connection to sanitary sewer piping outside building with restrained joints. Anchor pipe to wall or floor. Install thrust block supports at vertical and horizontal offsets.~~

~~1. Install encasement on piping according to ASTM A 674 or AWWA C105/A 21.5.~~

~~T. Install underground, copper, force main tubing according to CDA's "Copper Tube Handbook."~~

~~1. Install encasement on piping according to ASTM A 674 or AWWA C105/A 21.5.~~

~~U. Install force mains at elevations indicated.~~

V. Plumbing Specialties:

1. Install backwater valves in sanitary waster gravity-flow piping. Comply with requirements for backwater valves specified in Section 221319 "Sanitary Waste Piping Specialties."
2. Install cleanouts at grade and extend to where building sanitary drains connect to building sanitary sewers in sanitary drainage gravity-flow piping. Install cleanout fitting with closure plug inside the building in sanitary drainage force-main piping. Comply with requirements for cleanouts specified in Section 221319 "Sanitary Waste Piping Specialties."
3. Install drains in sanitary drainage gravity-flow piping. Comply with requirements for drains specified in Section 221319 "Sanitary Waste Piping Specialties."

W. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

X. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."

Y. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."

Z. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 220518 "Escutcheons for Plumbing Piping."

3.3 JOINT CONSTRUCTION

A. Join hub-and-spigot, cast-iron soil piping with gasket joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for compression joints.

B. Join hub-and-spigot, cast-iron soil piping with calked joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for lead-and-oakum calked joints.

C. Join hubless, cast-iron soil piping according to CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-piping coupling joints.

D. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- E. Join stainless-steel pipe and fittings with gaskets according to ASME A112.3.1.
- F. Join copper tube and fittings with soldered joints according to ASTM B 828. Use ASTM B 813, water-flushable, lead-free flux and ASTM B 32, lead-free-alloy solder.
- G. Grooved Joints: Cut groove ends of pipe according to AWWA C606. Lubricate and install gasket over ends of pipes or pipe and fitting. Install coupling housing sections, over gasket, with keys seated in piping grooves. Install and tighten housing bolts.
- H. Flanged Joints: Align bolt holes. Select appropriate gasket material, size, type, and thickness. Install gasket concentrically positioned. Use suitable lubricants on bolt threads. Torque bolts in cross pattern.

3.4 SPECIALTY PIPE FITTING INSTALLATION

A. Transition Couplings:

1. Install transition couplings at joints of piping with small differences in OD's.
2. In Drainage Piping: Shielded, nonpressure transition couplings.
3. In Aboveground Force Main Piping: Fitting-type transition couplings.
4. In Underground Force Main Piping:
 - a. NPS 1-1/2 and Smaller: Fitting-type transition couplings.
 - b. NPS 2 and Larger: Pressure transition couplings.

B. Dielectric Fittings:

1. Install dielectric fittings in piping at connections of dissimilar metal piping and tubing.
2. Dielectric Fittings for NPS 2 and Smaller: Use dielectric unions.
3. Dielectric Fittings for NPS 2-1/2 to NPS 4 Use dielectric flange kits.
4. Dielectric Fittings for NPS 5 and Larger: Use dielectric flange kits.

3.5 ~~VALVE INSTALLATION~~

~~A. General valve installation requirements are specified in Section 220523.12 "Ball Valves for Plumbing Piping," Section 220523.13 "Butterfly Valves for Plumbing Piping," Section 220523.14 "Check Valves for Plumbing Piping," and Section 220523.15 "Gate Valves for Plumbing Piping."~~

~~B. Shutoff Valves:~~

- ~~1. Install shutoff valve on each sewage pump discharge.~~
- ~~2. Install gate or full port ball valve for piping NPS 2 and smaller.~~
- ~~3. Install gate valve for piping NPS 2-1/2 and larger.~~

~~C. Check Valves: Install swing check valve, between pump and shutoff valve, on each sewage pump discharge.~~

~~D. Backwater Valves: Install backwater valves in piping subject to backflow.~~

- ~~1. Horizontal Piping: Horizontal backwater valves. Use normally closed type unless otherwise indicated.~~
- ~~2. Floor Drains: Drain outlet backwater valves unless drain has integral backwater valve.~~
- ~~3. Install backwater valves in accessible locations.~~
- ~~4. Comply with requirements for backwater valve specified in Section 221319 "Sanitary Waste Piping Specialties."~~

3.6 HANGER AND SUPPORT INSTALLATION

- A. Comply with requirements for seismic-restraint devices specified in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment."
- B. Comply with requirements for pipe hanger and support devices and installation specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."
 1. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.
 2. Install stainless-steel pipe hangers for horizontal piping in corrosive environments.
 3. Install carbon-steel pipe support clamps for vertical piping in noncorrosive environments.
 4. Install stainless-steel pipe support clamps for vertical piping in corrosive environments.
 5. Vertical Piping: MSS Type 8 or Type 42, clamps.
 6. Install individual, straight, horizontal piping runs:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - b. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
 - c. Longer Than 100 Feet if Indicated: MSS Type 49, spring cushion rolls.
 7. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 8. Base of Vertical Piping: MSS Type 52, spring hangers.
- C. Support horizontal piping and tubing within 12 inches of each fitting, valve, and coupling.
- D. Support vertical piping and tubing at base and at each floor.
- E. Rod diameter may be reduced one size for double-rod hangers, with 3/8-inch minimum rods.
- F. Install hangers for cast-iron soil piping with the following maximum horizontal spacing and minimum rod diameters:
 1. NPS 1-1/2 and NPS 2: 60 inches with 3/8-inch rod.
 2. NPS 3: 60 inches with 1/2-inch rod.
 3. NPS 4 and NPS 5: 60 inches with 5/8-inch rod.
 4. NPS 6 and NPS 8: 60 inches with 3/4-inch rod.
 5. NPS 10 and NPS 12: 60 inches with 7/8-inch rod.
 6. Spacing for 10-foot lengths may be increased to 10 feet. Spacing for fittings is limited to 60 inches.
- G. Install supports for vertical cast-iron soil piping every 15 feet.
- H. Install hangers for steel piping with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 1-1/4: 84 inches with 3/8-inch rod.
2. NPS 1-1/2: 108 inches with 3/8-inch rod.
3. NPS 2: 10 feet with 3/8-inch rod.
4. NPS 2-1/2: 11 feet with 1/2-inch rod.
5. NPS 3: 12 feet with 1/2-inch rod.
6. NPS 4 and NPS 5: 12 feet with 5/8-inch rod.
7. NPS 6 and NPS 8: 12 feet with 3/4-inch rod.
8. NPS 10 and NPS 12: 12 feet with 7/8-inch rod.

I. Install supports for vertical steel piping every 15 feet.

J. Install hangers for stainless-steel piping with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 2: 84 inches with 3/8-inch rod.
2. NPS 3: 96 inches with 1/2-inch rod.
3. NPS 4: 108 inches with 1/2-inch rod.
4. NPS 6: 10 feet with 5/8-inch rod.

K. Install supports for vertical stainless-steel piping every 10 feet.

L. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 1-1/4: 72 inches with 3/8-inch rod.
2. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
3. NPS 2-1/2: 108 inches with 1/2-inch rod.
4. NPS 3 and NPS 5: 10 feet with 1/2-inch rod.
5. NPS 6: 10 feet with 5/8-inch rod.
6. NPS 8: 10 feet with 3/4-inch rod.

M. Install supports for vertical copper tubing every 10 feet.

N. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.7 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect soil and waste piping to exterior sanitary sewerage piping. Use transition fitting to join dissimilar piping materials.

C. Connect drainage and vent piping to the following:

1. Plumbing Fixtures: Connect drainage piping in sizes indicated, but not smaller than required by plumbing code.
2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.
3. Plumbing Specialties: Connect drainage and vent piping in sizes indicated, but not smaller than required by plumbing code.
4. Install test tees (wall cleanouts) in conductors near floor and floor cleanouts with cover flush with floor.

5. Install horizontal backwater valves in pit with pit cover flush with floor with co.
 6. Comply with requirements for backwater valves cleanouts and drains specified in Section 221319 "Sanitary Waste Piping Specialties."
 7. Equipment: Connect drainage piping as indicated. Provide shutoff valve if indicated and union for each connection. Use flanges instead of unions for connections NPS 2-1/2 and larger.
- D. Connect force-main piping to the following:
1. Sanitary Sewer: To exterior force main.
 2. Sewage Pump: To sewage pump discharge.
- E. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.
- F. Make connections according to the following unless otherwise indicated:
1. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment.
 2. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment.

3.8 IDENTIFICATION

- A. Identify exposed sanitary waste and vent piping. Comply with requirements for identification specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.9 FIELD QUALITY CONTROL

- A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.
1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
 2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
- B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.
- C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
- D. Test sanitary drainage and vent piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:
1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
 2. Leave uncovered and unconcealed new, altered, extended, or replaced drainage and vent piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.

3. Roughing-in Plumbing Test Procedure: Test drainage and vent piping except outside leaders on completion of roughing-in. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water. From 15 minutes before inspection starts to completion of inspection, water level must not drop. Inspect joints for leaks.
 4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight. Plug vent-stack openings on roof and building drains where they leave building. Introduce air into piping system equal to pressure of 1-inch wg. Use U-tube or manometer inserted in trap of water closet to measure this pressure. Air pressure must remain constant without introducing additional air throughout period of inspection. Inspect plumbing fixture connections for gas and water leaks.
 5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
 6. Prepare reports for tests and required corrective action.
- E. Test force-main piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:
1. Leave uncovered and unconcealed new, altered, extended, or replaced force-main piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.
 2. Cap and subject piping to static-water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
 3. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
 4. Prepare reports for tests and required corrective action.

3.10 CLEANING AND PROTECTION

- A. Clean interior of piping. Remove dirt and debris as work progresses.
- B. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
- C. Place plugs in ends of uncompleted piping at end of day and when work stops.

3.11 PIPING SCHEDULE

- A. Flanges and unions may be used on aboveground pressure piping unless otherwise indicated.
- B. Aboveground, soil and waste piping NPS 4 and smaller shall be any of the following:
 1. ~~Service class, cast iron soil pipe and fittings; gaskets; and gasketed joints.~~
 2. CISPI Hubless, cast-iron soil pipe and fittings.
 3. ~~Galvanized steel pipe, drainage fittings, and threaded joints.~~
 4. ~~Stainless steel pipe and fittings, sealing rings, and gasketed joints.~~
 5. ~~Copper DWV tube, copper drainage fittings, and soldered joints.~~
 6. Dissimilar Pipe-Material Couplings: Shielded, nonpressure transition couplings.

Addendum 4

7. **Schedule 40 PVC piping with solvent welded joints. Install only where piping is concealed in ceilings or walls. PVC piping will not be allowed exposed in the squad rooms.**

C. ~~Aboveground, soil and waste piping NPS 5 and larger shall be any of the following:~~

- ~~1. Service class, cast iron soil pipe and fittings; gaskets; and gasketed joints.~~
- ~~2. CISPI Hubless, cast iron soil pipe and fittings, and coupled joints.~~
- ~~3. Galvanized steel pipe, drainage fittings, and threaded joints.~~
- ~~4. Stainless steel pipe and fittings, sealing rings, and gasketed joints.~~
- ~~5. Dissimilar Pipe-Material Couplings: Shielded, nonpressure transition couplings.~~

D. Aboveground, vent piping NPS 4 and smaller shall be any of the following:

- ~~1. Service class, cast iron soil pipe and fittings; gaskets; and gasketed joints.~~
- ~~2. CISPI Hubless, cast iron soil pipe and fittings Galvanized steel pipe, drainage fittings, and threaded joints.~~
- ~~3. Stainless steel pipe and fittings gaskets, and gasketed joints.~~
- ~~4. Copper DWV tube, copper drainage fittings, and soldered joints.~~
- ~~5. Option for Vent Piping, NPS 2-1/2 and NPS 3-1/2: Hard copper tube, Type M; copper pressure fittings; and soldered joints.~~
6. Dissimilar Pipe-Material Couplings: Shielded, nonpressure transition couplings.
7. **Schedule 40 PVC piping with solvent welded joints. Install only where piping is concealed in ceilings or walls. PVC piping will not be allowed exposed in the squad rooms.**

E. ~~Aboveground, vent piping NPS 5 and larger shall be any of the following:~~

- ~~1. Service class, cast iron soil pipe and fittings; gaskets; and gasketed joints.~~
- ~~2. CISPI Hubless, cast iron soil pipe and fittings, and coupled joints.~~
- ~~3. Dissimilar Pipe-Material Couplings: Shielded, nonpressure transition couplings.~~

F. Underground, soil, waste, and vent piping NPS 4 and smaller shall be any of the following:

1. Service class, cast-iron soil piping; ~~calking materials; and calked joints~~ with rubber gasketed joints.
2. Dissimilar Pipe-Material Couplings: Shielded, nonpressure transition couplings.
3. **Schedule 40 PVC piping with solvent welded joints.**

G. ~~Underground, soil and waste piping NPS 5 and larger shall be any of the following:~~

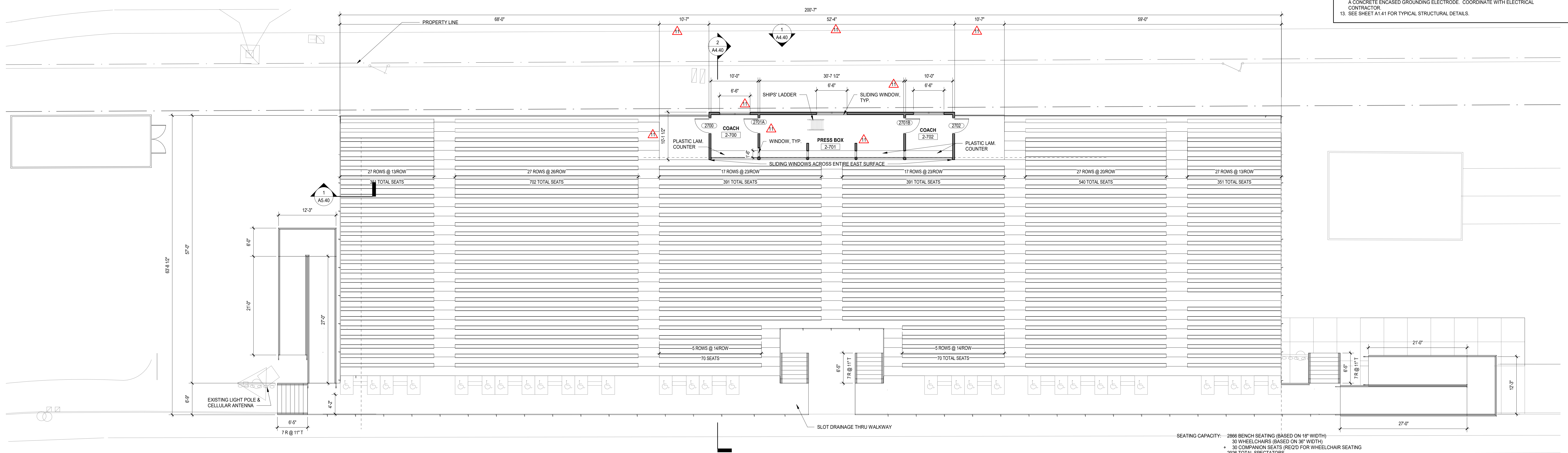
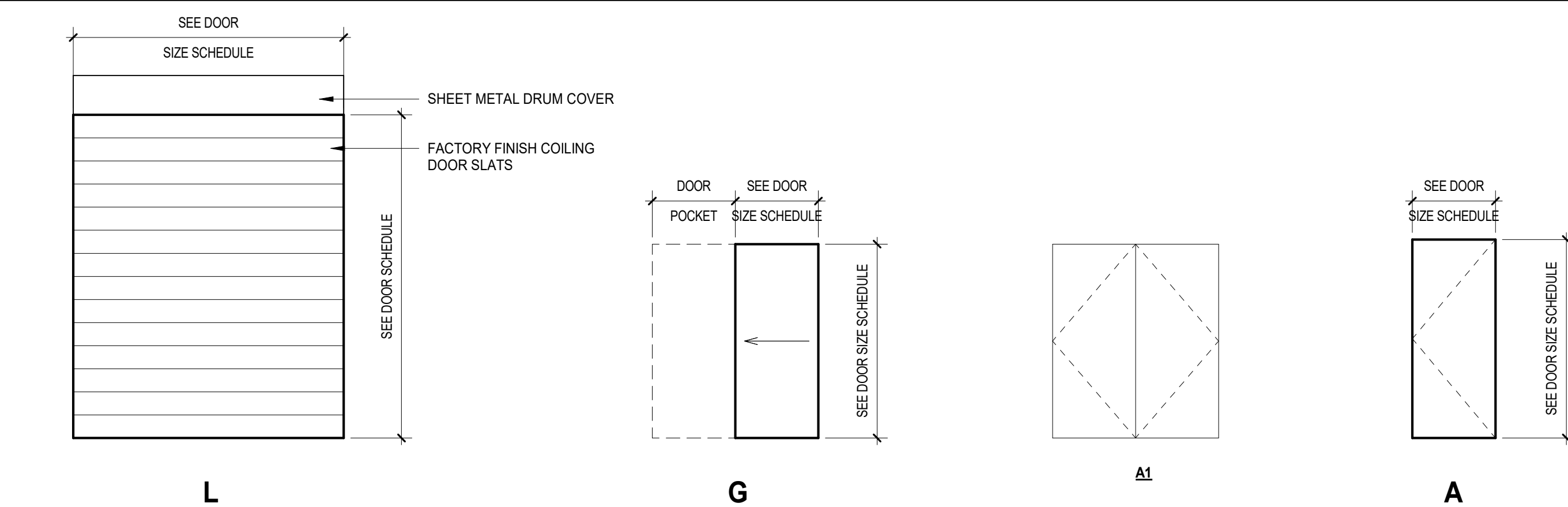
- ~~1. Service class, cast iron soil piping; calking materials; and calked joints.~~
- ~~2. Dissimilar Pipe-Material Couplings: Shielded, nonpressure transition couplings.~~

END OF SECTION 221316

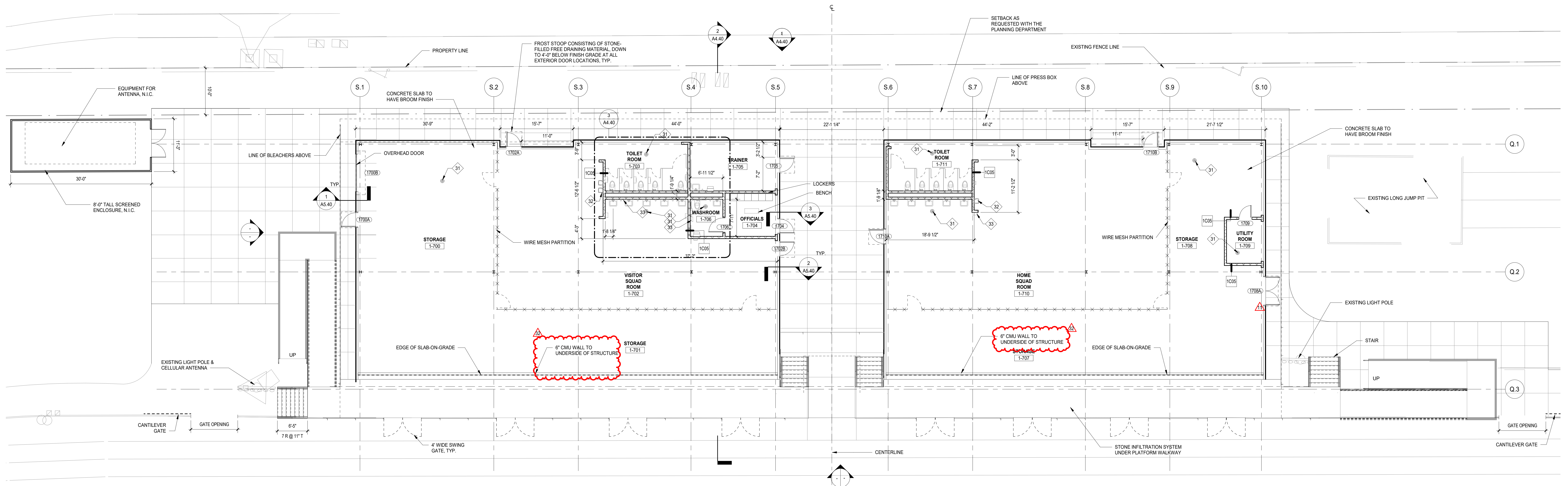
NUMBER	ELEVATION TYPE	DOOR			DETAIL		FRAME		DETAIL		FIRE RATING	HARDWARE SET	REMARKS
		WIDTH	HEIGHT	THICKNESS	MATERIAL	FINISH	MATERIAL	FINISH	HEAD	JAMB			
1710A	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			45	
1710B	L	8'-0"	8'-0"	2"	STEEL	FACTORY	-	-	-				
1710A	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			46	
1710B	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			46	
1710A	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			47	
1710B	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			47	
1710A	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			48	
1710B	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			48	
1710A	A1	6'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			49	
1710B	A	2'-6"	7'-0"	1.34"	HM	WS	1	HM	PT			11	
1710A	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			46	
1710B	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			46	
2700	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			50	
2701A	A	3'-0"	7'-0"	1.34"	WD	FACTORY	1	WD	FACTORY			50	
2701B	A	3'-0"	7'-0"	1.34"	WD	FACTORY	1	WD	FACTORY			50	
2702	A	3'-0"	7'-0"	1.34"	HM	WS	1	HM	PT			50	

#	KEYNOTES LEGEND
31	FLOOR DRAIN - SEE PLUMBING DRAWINGS.
32	DRINKING FOUNTAIN - SEE PLUMBING DRAWINGS.
33	HAND DRYER - SEE ELECTRICAL DRAWINGS.

#	GENERAL NOTES
1.	ALL DISTURBED AREAS ON-SITE AND IN THE RIGHT-OF-WAY SHALL BE RESTORED TO EXISTING CONDITION. ALL ITEMS DISTURBED SHALL BE REPLACED INCLUDING ALL LANDSCAPING, CURB, SIDEWALK, PAVEMENT, ETC.
2.	CONTRACTOR TO PROTECT ALL EXISTING UTILITIES DURING DEMOLITION & CONSTRUCTION ACTIVITIES UNLESS OTHERWISE SPECIFIED.
3.	ANY UTILITY ADJUSTMENTS, CONFLICTS, RELOCATIONS, ETC. REQUIRED SHALL BE COORDINATED WITH ENGINEER AND UTILITY OWNER/PROVIDER.
4.	BOUNDARIES OF THE BLEACHERS STRUCTURE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL COORDINATE WITH BLEACHER CONTRACTOR FOR LOCATION OF STRUCTURE.
5.	SLAB-ON-GRADE SHALL BE 6" THICK CONCRETE OVER PREPARED SUBGRADE. REINFORCE WITH 4 LBS./CU. YD. OF STRUK 9040 MACROSYNTHETIC FIBERS OR EQUIVALENT.
6.	PROVIDE THICKENED SLAB-ON-GRADE UNDER THE DOUBLE CMU WALL CONSTRUCTION.
7.	SLAB-ON-GRADE SHALL BE UNDERLAIN BY A MINIMUM OF 6 INCHES OF GRANULAR BASE COURSE LAYER OVER PROPERLY PREPARED SUBGRADE AND A 1.5 MIL CONTINUOUS VAPOR RETARDER U.N.D. ON PLANS. SEE GEOTECHNICAL REPORT FOR SPECIFIC DRAINAGE LAYER MATERIAL REQUIREMENTS. COMPACT THE SUBGRADE TO AT LEAST THE 95 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D1557.
8.	THE INITIAL SUBGRADE PREPARATION SHALL CONSIST OF REMOVING THE EXISTING TOPSOIL AND PAVEMENTS ALONG ANY OTHER SOFT OR UNSUITABLE MATERIALS FROM THE 10-FOOT EXPANDED BUILDING AREAS AND 5 FEET BEYOND THE TOE OF ENGINEERED FILLS.
9.	THE GEOTECHNICAL REPORT RECOMMENDS AGAINST THE FINAL SLAB SOILS REMAINING EXPOSED TO THE ELEMENTS FOR A PROLONGED PERIOD OF TIME AS THE SUBGRADE MAY BE DISTURBED AND COMPACTED. IF THE SLAB SECTION IS NOT CONSTRUCTED WITHIN A FEW DAYS AFTER EXPOSING THE FINAL DESIGN SUBGRADE, CONSIDERATION SHALL BE GIVEN TO LEAVING THE SUBGRADE APPROXIMATELY 1 FOOT ABOVE THE FINAL DESIGN SUBGRADE TO HELP REDUCE DISTURBANCE OF THE SUBGRADE SOILS.
10.	PER THE GEOTECHNICAL REPORT, IF THE EXISTING FILL SOILS ARE TO REMAIN IN PLACE, THEY SHALL BE COMPACTED PER THE PROOFROLLING REQUIREMENTS IN THE GEOTECHNICAL REPORT.
11.	PROVIDE CONTROL JOINTS ON SLAB-ON-GRADE AT COLUMN CENTERLINES AND AT 12 FEET MAXIMUM SPACING ON CENTER.
12.	SEE ELECTRICAL DRAWINGS FOR ELECTRICAL GROUNDING DETAIL AND REQUIREMENTS FOR A CONCRETE ENCASED GROUNDING ELECTRODE. COORDINATE WITH ELECTRICAL CONTRACTOR.
13.	SEE SHEET A141 FOR TYPICAL STRUCTURAL DETAILS.



1 HOME GRANDSTAND BLEACHER AND PRESS BOX PLAN
SCALE: 1/8" = 1'-0"



2 HOME GRANDSTAND - SQUAD ROOM PLAN
SCALE: 1/8" = 1'-0"

REV	ISSUE	DATE
32	ISSUED FOR ADDENDUM 3 - BGS	09.18.2019
	ISSUED FOR BID GROUP 5	07.01.2019
	ISSUED FOR BID GROUP 5	05.10.2019
11	ISSUED FOR ADDENDUM 2 - B64	04.19.2019
	ISSUED FOR BID GROUP 4	04.02.2019
	ISSUED FOR DESIGN DEVELOPMENT - PHASE B	03.11.2019
	ISSUED FOR 50% CONSTRUCTION DOCUMENTS - PHASE A	11.28.2018
	ISSUED FOR SCHEMATIC DESIGN - PHASE A	11.05.2018
	ISSUED FOR SCHEMATIC DESIGN - PHASE A	09.19.2018

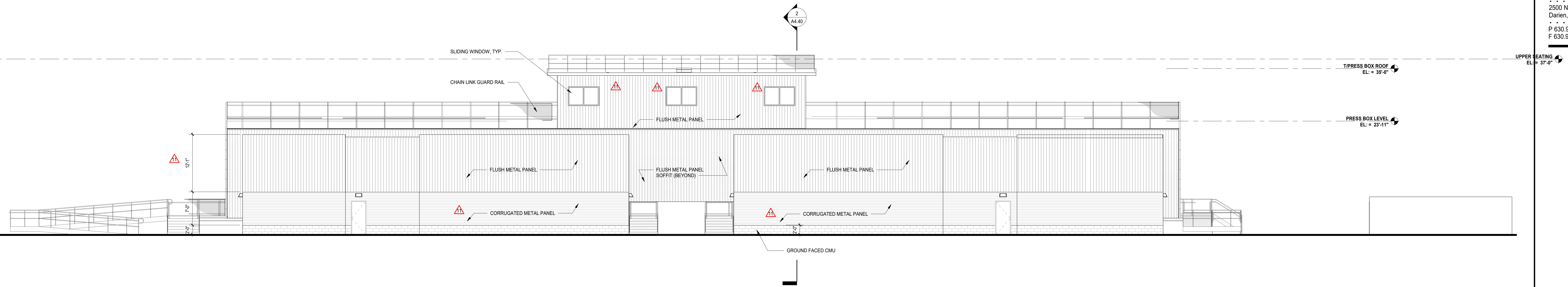
MFP IMPLEMENTATION - SOUTH

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

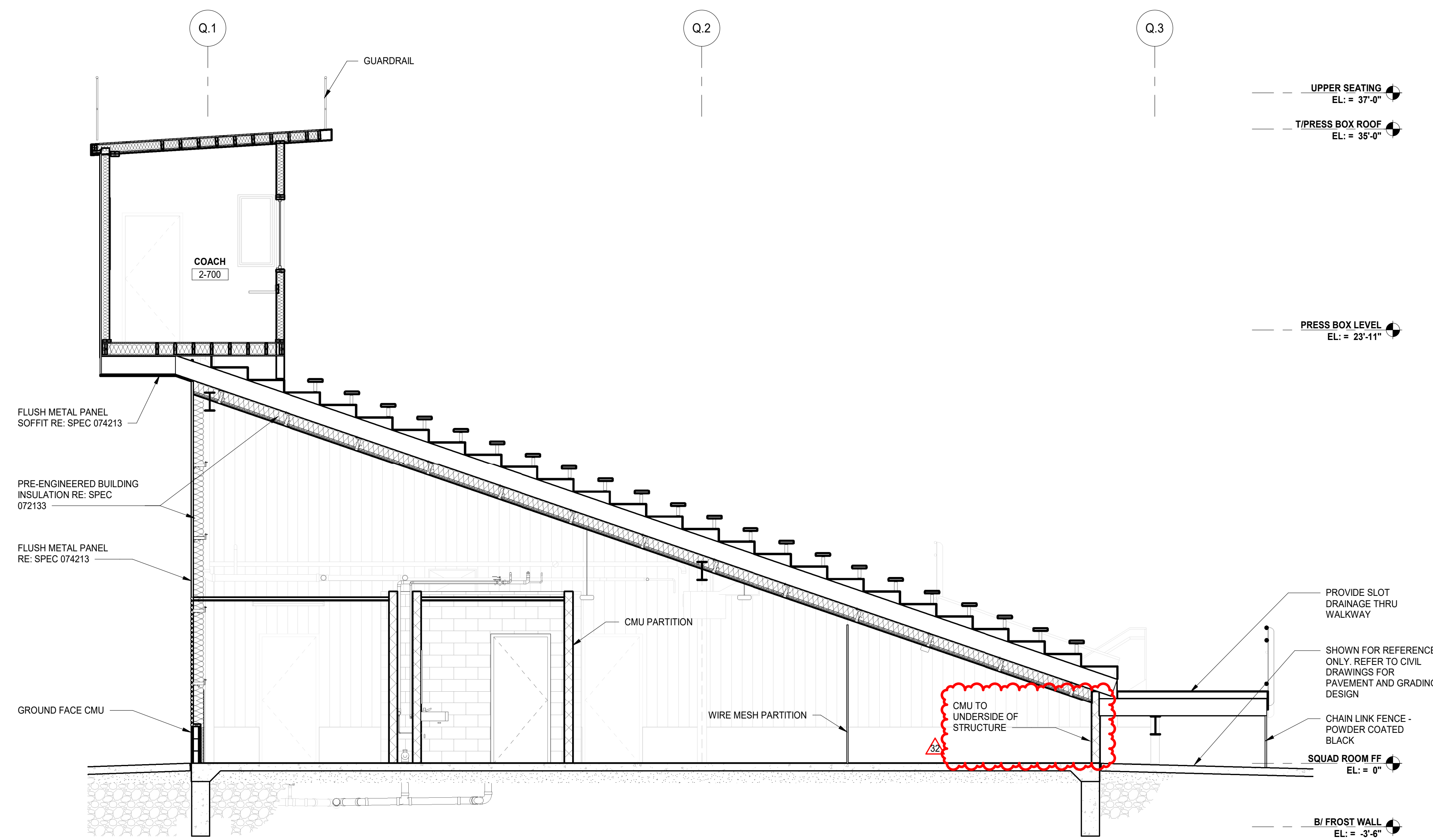
SITE PLAN - HOME BLEACHERS & SQUAD ROOMS

Project Number:
5274-42
Drawn By:
B.SPOEHR
Sheet:

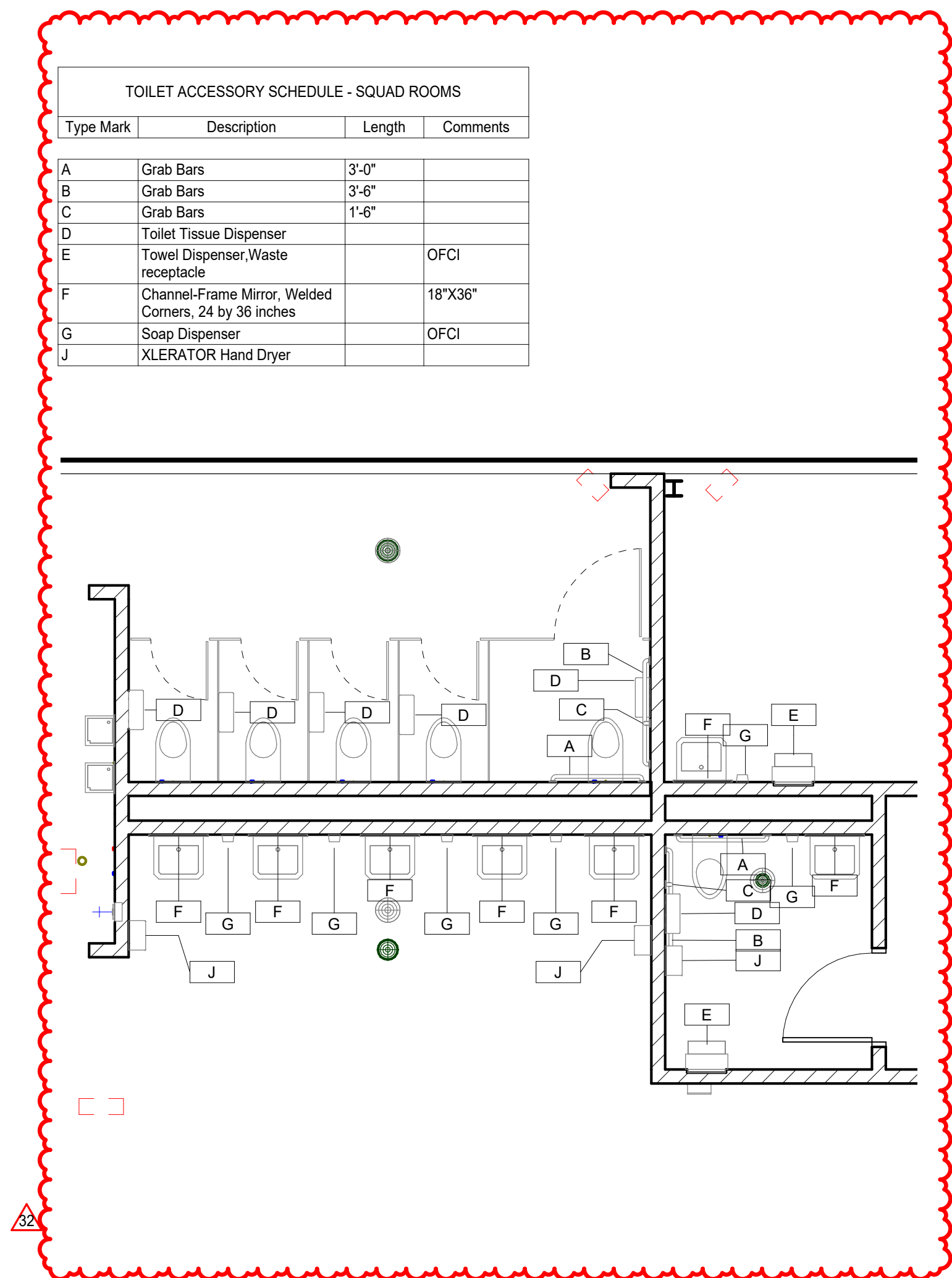
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1 SQUAD ROOMS & BLEACHERS - WEST
SCALE: 1/8" = 1'-0"



2 SECTION - PRESS BOX & SQUAD ROOM
SCALE: 1/4" = 1'-0"



Type Mark	Description	Length	Comments
A	Grab Bars	3'-0"	
B	Grab Bars	3'-0"	
C	Grab Bars	1'-0"	
D	Toilet Tissue Dispenser		
E	Towel Dispenser/Waste receptacle		DFCI
F	Channel-Frame Mirror, Welded Corners, 24 by 36 inches	18'x36"	
G	Soap Dispenser		DFCI
J	XLERATOR Hand Dryer		

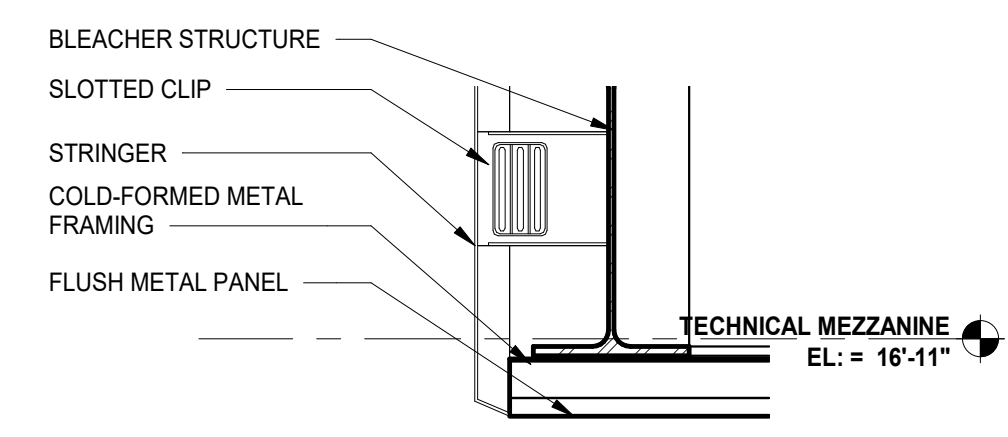
REV	ISSUE	DATE
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	ISSUED FOR BID GROUP 5	07.01.2019
	ISSUED FOR ADDENDUM 2 - B64	05.10.2019
11	ISSUED FOR ADDENDUM 2 - B64	04.19.2019
	ISSUED FOR BID GROUP 4	04.02.2019
	ISSUED FOR DESIGN DEVELOPMENT - PHASE B	03.11.2019
	ISSUED FOR 50% CONSTRUCTION DOCUMENTS - PHASE A	11.28.2018
	ISSUED FOR SCHEMATIC DESIGN - PHASE A	11.05.2018
	ISSUED FOR SCHEMATIC DESIGN - PHASE A	09.19.2018

MFP
IMPLEMENTATION -
SOUTH

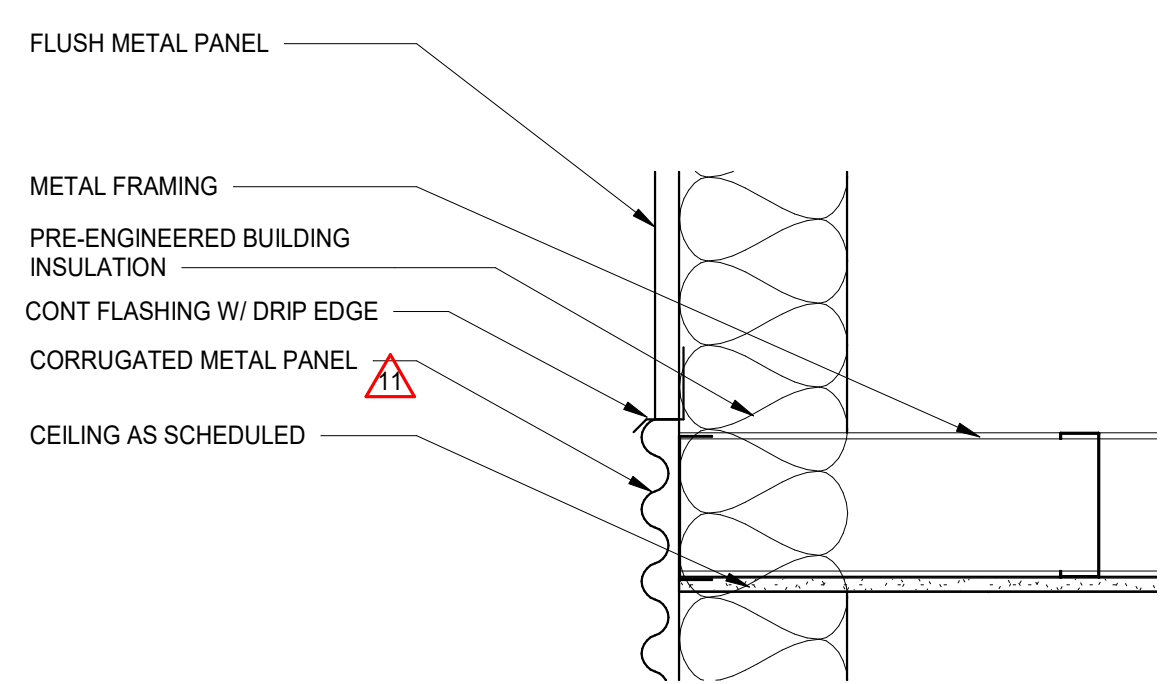
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

EXTERIOR ELEVATIONS
AND BUILDING SECTIONS
- HOME BLEACHERS

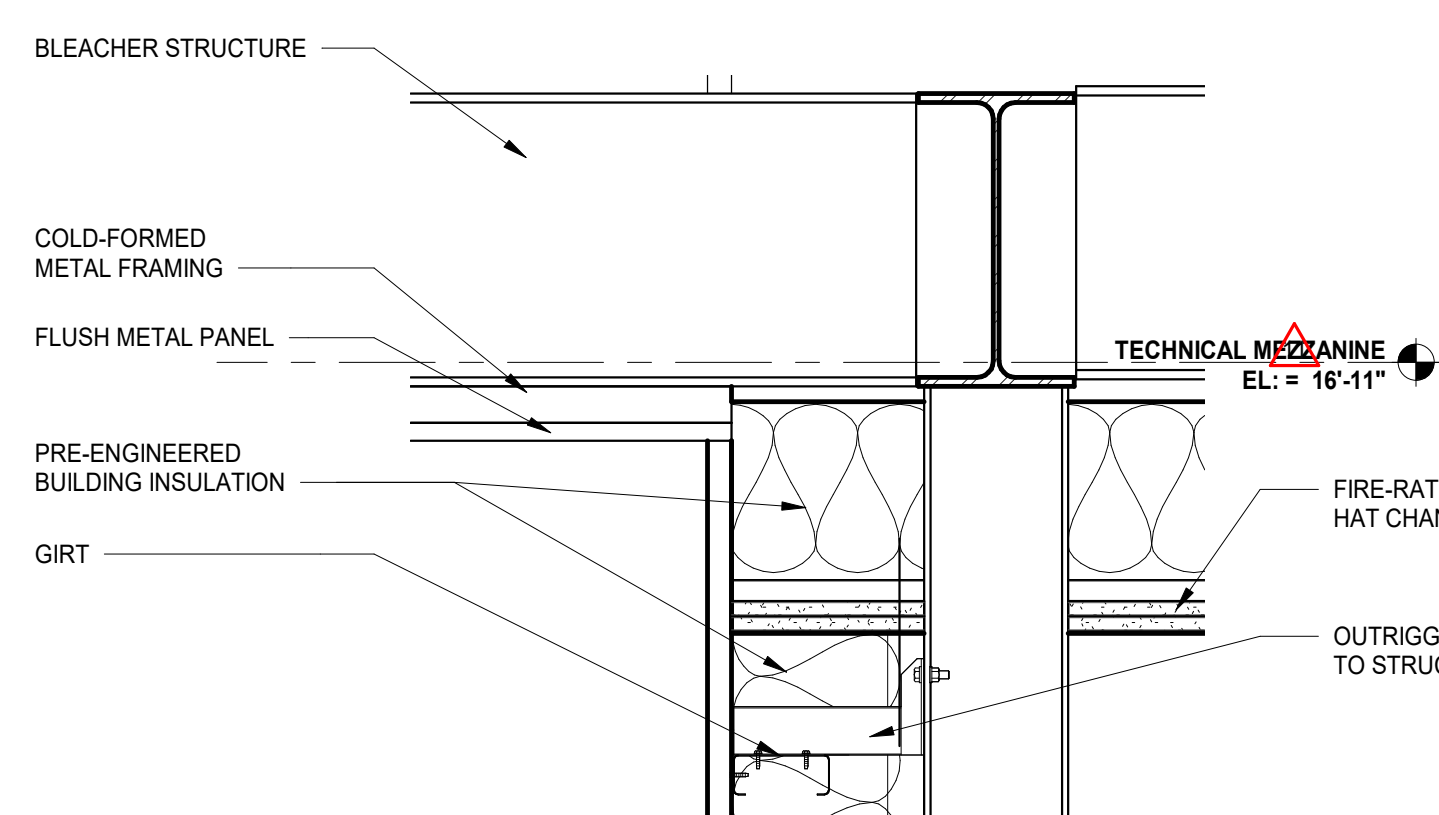
Project Number:
5274-42
Drawn By:
B.SPOEHR
Sheet:



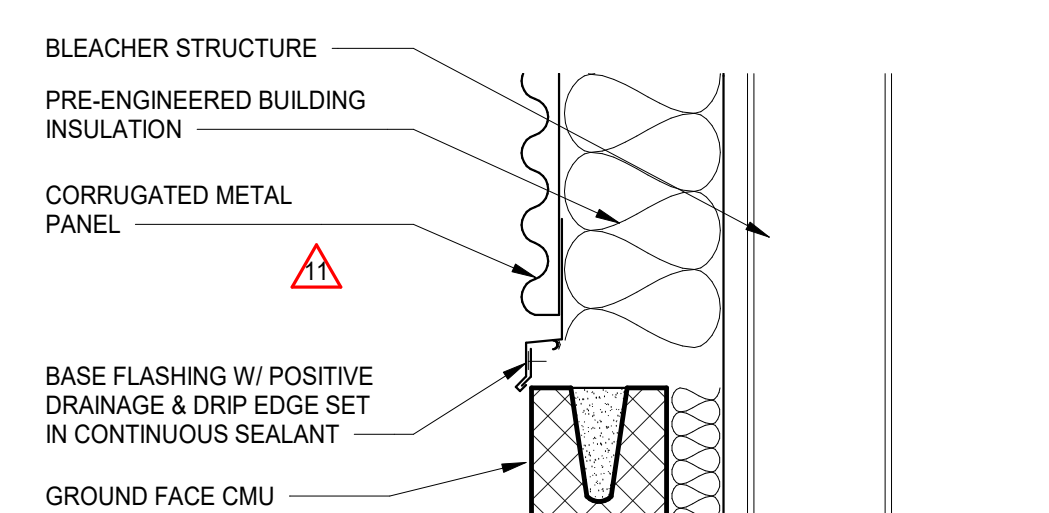
8 SECTION DETAIL - TYPICAL BLEACHER SOFFIT EDGE CONDITION
SCALE: 1 1/2" = 1'-0"



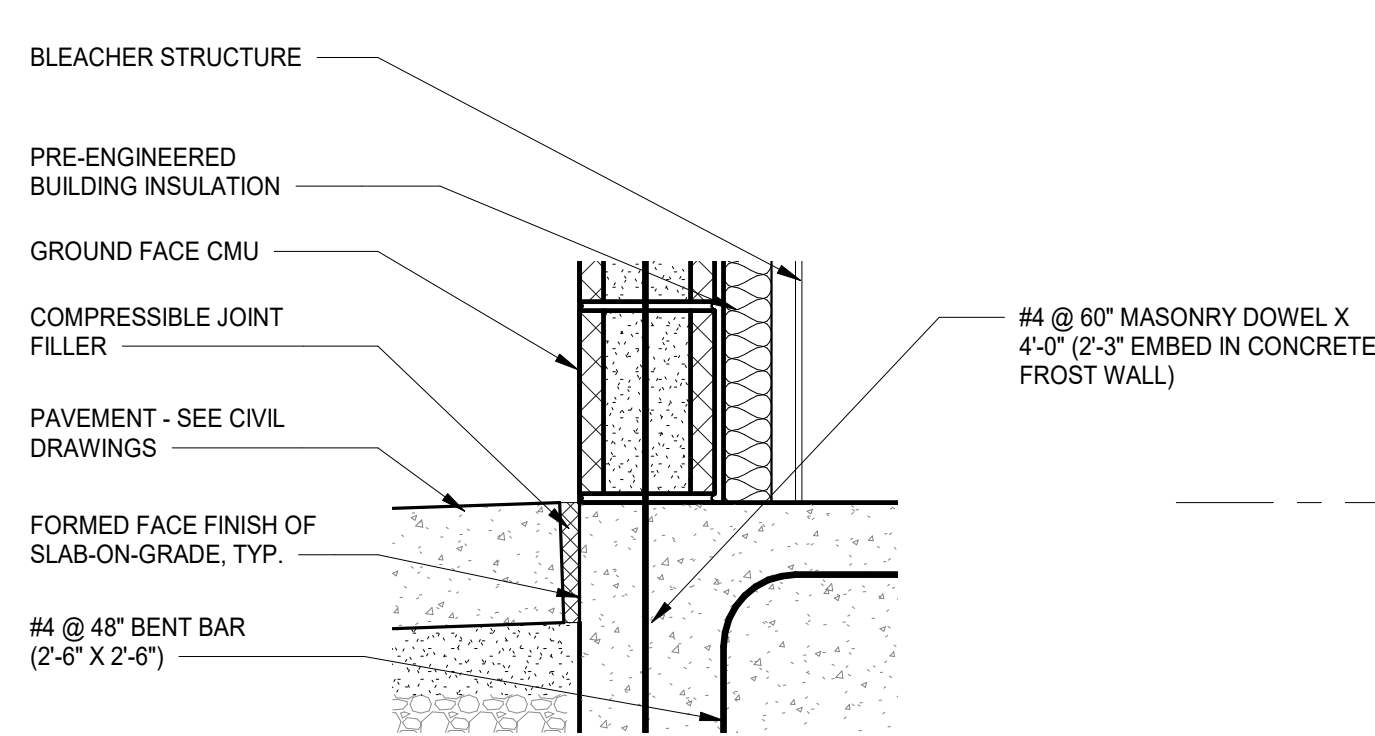
7 SECTION DETAIL - SQUAD ROOM THRU OFFICIALS ROOM CEILING
SCALE: 1 1/2" = 1'-0"



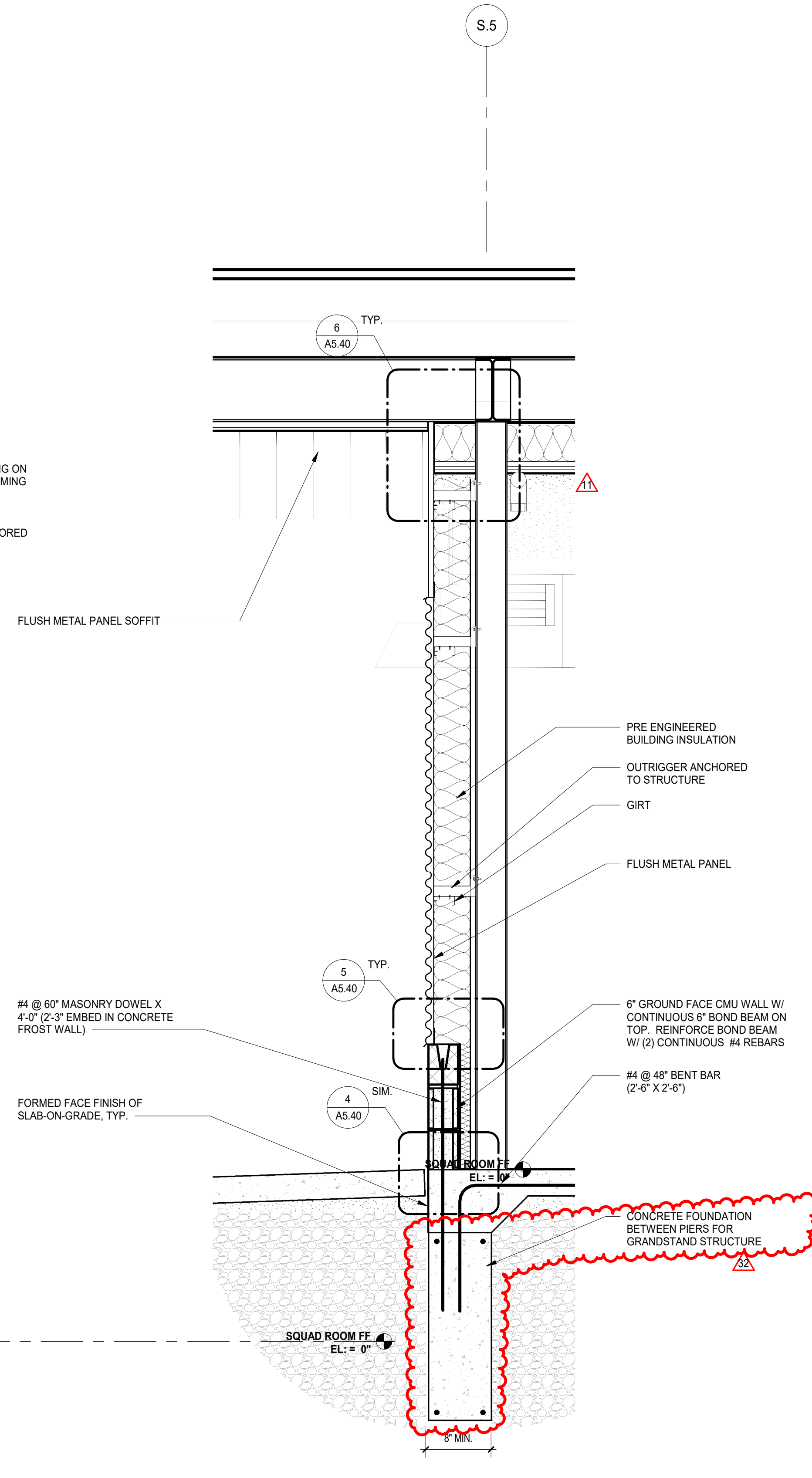
6 SECTION DETAIL - TYPICAL SOFFIT TO WALL PANEL
SCALE: 1 1/2" = 1'-0"



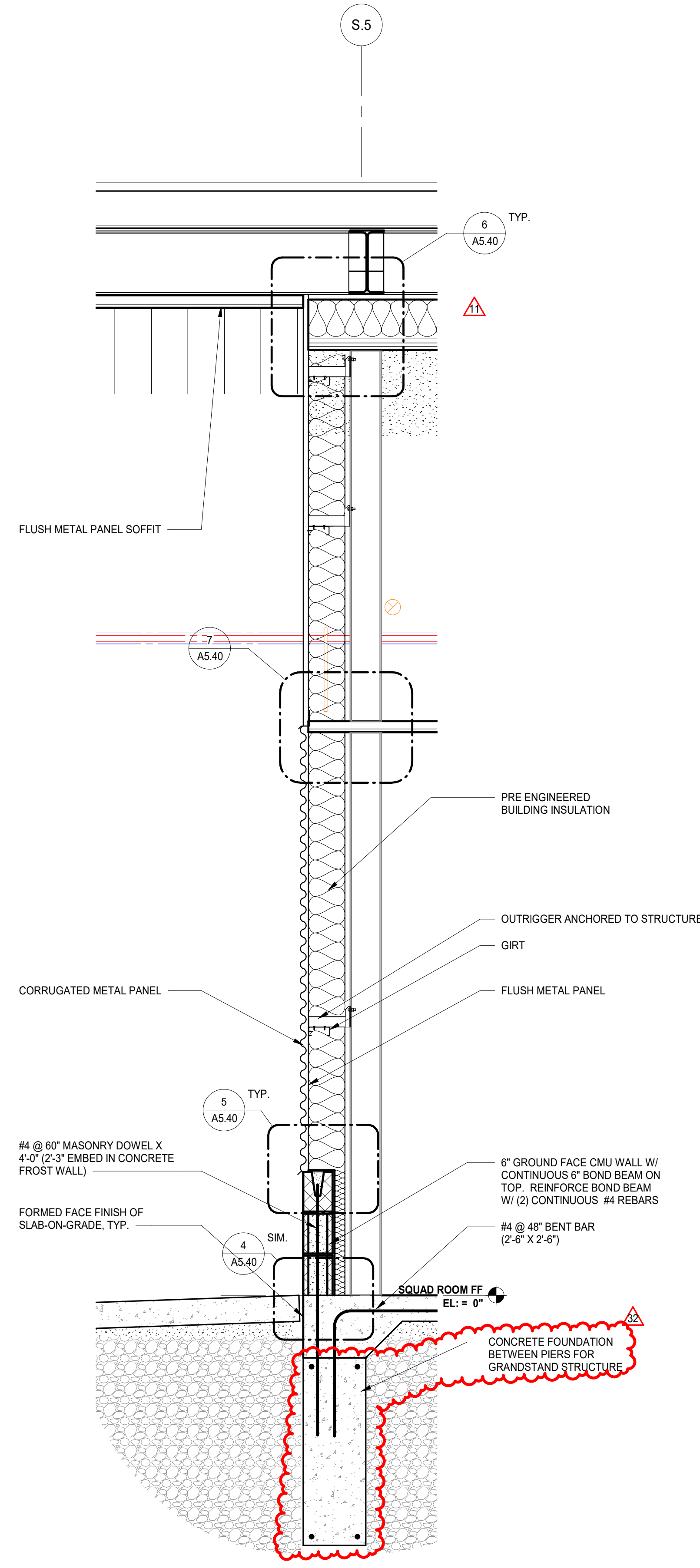
5 SECTION DETAIL - TYPICAL PANEL TO CMU TRANSITION
SCALE: 1 1/2" = 1'-0"



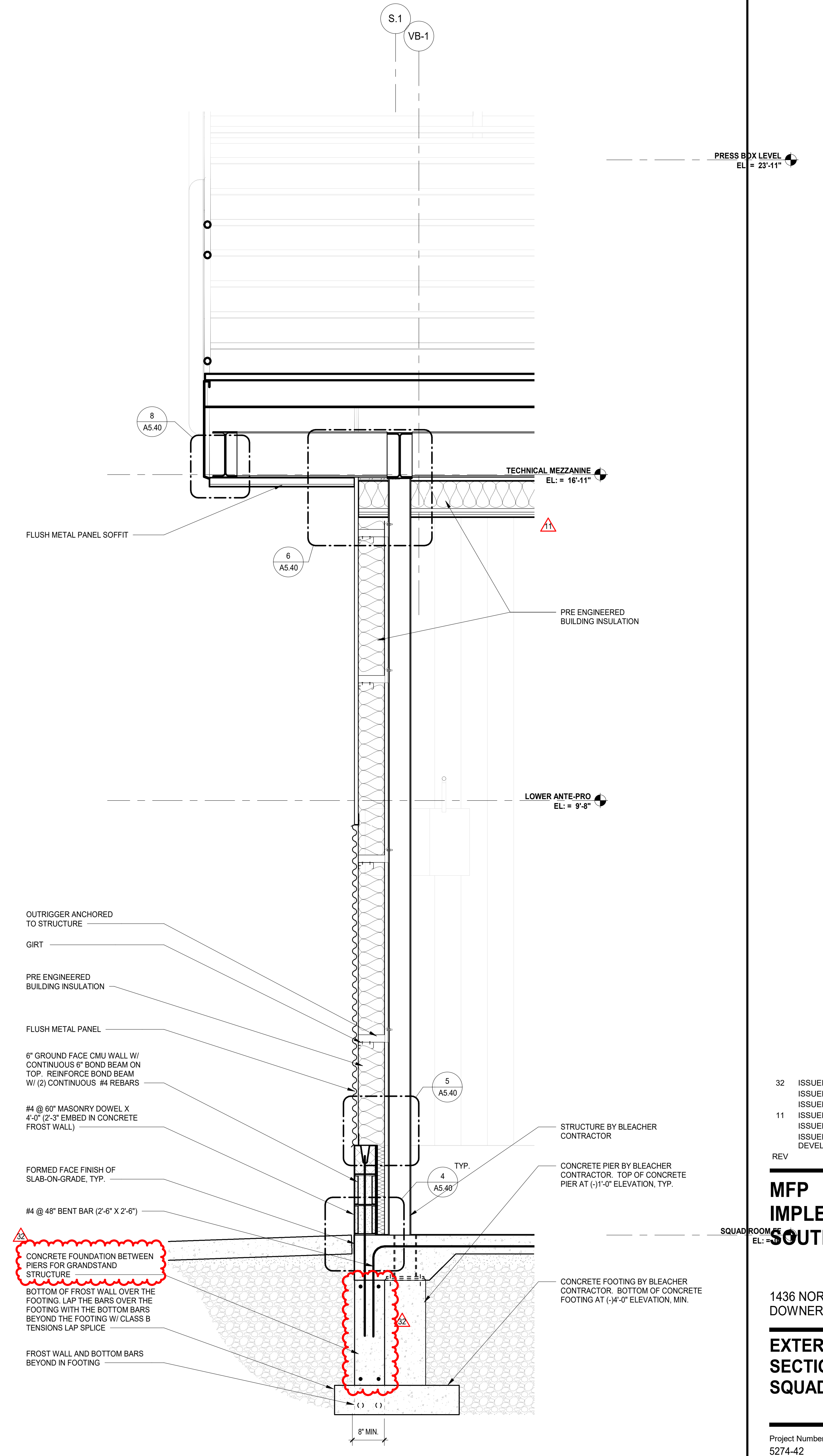
4 SECTION DETAIL - TYPICAL SQUAD ROOM WALL SILL
SCALE: 1 1/2" = 1'-0"



2 WALL SECTION - TYPICAL SQUAD ROOM BELOW BLEACHERS
SCALE: 3/4" = 1'-0"



3 WALL SECTION - SQUAD ROOM THRU CAPPED ROOM
SCALE: 3/4" = 1'-0"



1 WALL SECTION - TYPICAL SQUAD ROOM WALL ALONG PERIMETER
SCALE: 3/4" = 1'-0"

REV	ISSUE	DATE
32	ISSUED FOR ADDENDUM 3 - BGS	09.18.2019
	ISSUED FOR BID GROUP 5	07.01.2019
	ISSUED FOR BID GROUP 5	05.10.2019
11	ISSUED FOR ADDENDUM 2 - BGA	04.19.2019
	ISSUED FOR BID GROUP 4	04.02.2019
	ISSUED FOR DESIGN DEVELOPMENT - PHASE B	03.11.2019

**MFP
IMPLEMENTATION -
SOUTH**

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

**EXTERIOR WALL
SECTIONS & DETAILS -
SQUAD ROOMS**

Project Number:
5274-42
Drawn By:
A.SASSILA
Sheet:

TYPE 3A: METAL FRAME INTERIOR PARTITION- 1 +2 LAYER

STUDS TO STRUCTURE ABOVE (SEE DETAILS)	2HR RATED W/ GYP BD TO STRUCTURE ABOVE	3A20	3A21	3A22	3A23	3A24	3A25	3A26	3A27	3A28	3A29	3A30
	3HR RATED W/ GYP BD TO STRUCTURE ABOVE	3A01	3A11	3A31	3A41	3A51		3A71	3A81			
	NON-RATED W/ GYP BD TO STRUCTURE ABOVE	3A02	3A12	3A32	3A42	3A52		3A72	3A82			
	NON-RATED W/ GYP BD TO ABOVE CEILING	3A03	3A13	3A33	3A43	3A53		3A73	3A83			
NON-RATED W/ GYP BOARD TO FINISH CEILING (SEE DETAILS)		3A04	3A14	3A34	3A44	3A54		3A74	3A84			
NON-RATED PARTIAL HEIGHT PARTITION (SEE DETAILS)		3A05	3A15	3A35	3A45	3A55		3A75	3A85			
STUD SIZE		3.5" x 5"	3.5" x 5"	3.5" x 5"	4" x 4"	4" x 4"	4" x 4"	6" x 6"	6" x 6"	6" x 6"	8" x 4"	
GYP BD THICKNESS		5/8"	5/8"	3/4"	5/8"	5/8"	3/4"	5/8"	5/8"	3/4"	5/8"	3/4"
RESILIENT 25 GA FURRING CHANNELS		NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
PARTITION THICKNESS		5.1/2"	5.1/2"	5.3/4"	5.7/8"	5.7/8"	6"	7.7/8"	7.7/8"	14"		
ACOUSTICAL BATT INSULATION		NO	YES	YES	NO	YES	YES	NO	YES	YES		
STC ACOUSTICAL RATING (FOR WALLS TO STRUCTURE)		40	42	43	40	42	48	43	42	44	50	
THERMAL BATT INSULATION		NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
UL DESIGNATION (WHERE APPLICABLE)		U485	U465	U419	U465	U451	U419	U465	U465	U419	U419	

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

INTERIOR NON-STRUCTURAL HEIGHT LIMITATIONS

STUD SIZE	STUD SPACING	COMPOSITE TABLE MAX HEIGHT (S PSF)		NON-COMPOSITE TABLE MAX HEIGHT (S PSF)	
		L240	L360	L240	L360
2 1/2"	43 (18)	12'-0"	15'-0"	15'-0"	13'-6"
3 5/8"	33 (20)	18'-0"	16'-0"	15'-0"	13'-6"
3 5/8"	43 (18)	18'-0"	16'-0"	15'-0"	14'-0"
4"	18 (25)	18'-0"	15'-4"	--	--
4"	33 (20)	18'-0"	16'-4"	15'-11"	15'-0"
6"	18 (25)	18'-0"	19'-0"	17'-11"	--
6"	33 (20)	18'-0"	24'-0"	21'-4"	20'-10"
6"	43 (18)	18'-0"	28'-3"	24'-6"	22'-0"

REMARKS:

- METAL STUDS TO EXTEND TO UNDERSIDE OF DECK, WHERE GYPSUM BOARD IS CALLED TO BE EXTENDED 6" PAST CEILING.
- PROVIDE ABUSE RESISTANT GYPSUM BOARD AT EXPOSED WALL AREAS (WITHOUT FINISH TREATMENT) TO A MINIMUM OF 6" PAST THE FINISH CEILING.
- HEIGHT LIMITATION TABLE PROVIDED FOR REFERENCE ONLY. CONTRACTOR TO CONFIRM STUD GAUGE REQUIREMENTS WITH SELECTED MANUFACTURER.
- PROVIDE MINIMUM 20 GAUGE STUDS BEHIND STONE PANEL SYSTEM WALL TREATMENT. SEE INTERIOR ELEVATIONS AND DETAILS FOR LOCATIONS.
- PROVIDE BACKER BOARD WHERE WALL TIES ARE SCHEDULED. SEE FINISH PLANS.

TYPE 2A: METAL FRAME INTERIOR PARTITION- 1 +1 LAYER

STUDS TO STRUCTURE ABOVE (SEE DETAILS)	2HR RATED W/ GYP BD TO STRUCTURE ABOVE	2A20	2A21	2A31	2A41	2A51	2A71	2A81	
	3HR RATED W/ GYP BD TO STRUCTURE ABOVE	2A01	2A11	2A31	2A41	2A51	2A71	2A81	
	NON-RATED W/ GYP BD TO STRUCTURE ABOVE	2A02	2A12	2A32	2A42	2A52	2A72	2A82	2A92
	NON-RATED W/ GYP BD TO ABOVE CEILING	2A03	2A13	2A33	2A43	2A53	2A73	2A83	
NON-RATED W/ GYP BOARD TO FINISH CEILING (SEE DETAILS)		2A04	2A14	2A34	2A44	2A54	2A74	2A84	
NON-RATED PARTIAL HEIGHT PARTITION (SEE DETAILS)		2A05	2A15	2A35	2A45	2A55	2A75	2A85	
STUD SIZE		3.5" x 5"	3.5" x 5"	3.5" x 5"	4" x 4"	4" x 4"	4" x 4"	6" x 6"	6" x 6"
GYP BD THICKNESS		5/8"	5/8"	3/4"	5/8"	5/8"	3/4"	5/8"	3/4"
RESILIENT 25 GA FURRING CHANNELS		NO	NO	NO	NO	NO	NO	NO	NO
PARTITION THICKNESS		4.7/8"	4.7/8"	5.1/8"	5.1/4"	5.1/4"	6.1/8"	5.1/2"	7.1/4"
ACOUSTICAL BATT INSULATION		NO	YES	YES	NO	YES	YES	NO	YES
STC ACOUSTICAL RATING (FOR WALLS TO STRUCTURE)		35	39	40	35	39	43	40	37
THERMAL BATT INSULATION		NO	NO	NO	NO	NO	NO	NO	NO
UL DESIGNATION (WHERE APPLICABLE)		U485	U485	U419	U485	U465	U419	U465	U419

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

INTERIOR NON-STRUCTURAL HEIGHT LIMITATIONS

STUD SIZE	STUD SPACING	COMPOSITE TABLE MAX HEIGHT (S PSF)		NON-COMPOSITE TABLE MAX HEIGHT (S PSF)	
		L240	L360	L240	L360
2 1/2"	43 (18)	12'-0"	15'-0"	15'-0"	13'-6"
3 5/8"	33 (20)	18'-0"	16'-0"	15'-0"	13'-6"
3 5/8"	43 (18)	18'-0"	16'-0"	15'-0"	14'-0"
4"	18 (25)	18'-0"	15'-4"	--	--
4"	33 (20)	18'-0"	16'-4"	15'-11"	15'-0"
6"	18 (25)	18'-0"	19'-0"	17'-11"	--
6"	33 (20)	18'-0"	24'-0"	21'-4"	20'-10"
6"	43 (18)	18'-0"	28'-3"	24'-6"	22'-0"

REMARKS:

- METAL STUDS TO EXTEND TO UNDERSIDE OF DECK, WHERE GYPSUM BOARD IS CALLED TO BE EXTENDED 6" PAST CEILING.
- PROVIDE ABUSE RESISTANT GYPSUM BOARD AT EXPOSED WALL AREAS (WITHOUT FINISH TREATMENT) TO A MINIMUM OF 6" PAST THE FINISH CEILING.
- HEIGHT LIMITATION TABLE PROVIDED FOR REFERENCE ONLY. CONTRACTOR TO CONFIRM STUD GAUGE REQUIREMENTS WITH SELECTED MANUFACTURER.
- PROVIDE BACKER BOARD WHERE WALL TIES ARE SCHEDULED. SEE FINISH PLANS.

TYPE 1A: METAL FRAME FURRING WALL-SINGLE LAYER

STUDS TO STRUCTURE ABOVE (SEE DETAILS)	NON-RATED W/ GYP BD TO STRUCTURE ABOVE	1A00	1A10	1A20	1A30	1A40	1A50	1A60	1A70	1A80	1A90
	NON-RATED W/ GYP BD TO ABOVE CEILING	1A01	1A11	1A21	1A31	1A41	1A51	1A61	1A71	1A81	1A91
NON-RATED W/ GYP BOARD TO FINISH CEILING (SEE DETAILS)		1A02	1A12	1A22	1A32	1A42	1A52	1A62	1A72	1A82	1A92
NON-RATED PARTIAL HEIGHT PARTITION (SEE DETAILS)		1A03	1A13	1A23	1A33	1A43	1A53	1A63	1A73	1A83	1A93
STUD SIZE		2.1/2"	3.5/8"	3.5/8"	4"	4"	6"	6"	6"	6"	8" x 4"
GYP BD THICKNESS		5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	3/4"
RESILIENT 25 GA FURRING CHANNELS		NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
PARTITION THICKNESS		3.1/8"	4.1/4"	4.1/4"	4.1/4"	4.5/8"	4.5/8"	6.5/8"	6.5/8"	2.1/4"	1.1/2"
ACOUSTICAL BATT INSULATION		NO	NO	YES	NO	YES	NO	YES	NO	NO	NO
STC ACOUSTICAL RATING (FOR WALLS TO STRUCTURE)		--	--	--	--	--	--	--	--	--	--
UL DESIGNATION (WHERE APPLICABLE)		--	--	--	--	--	--	--	--	--	--

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

INTERIOR NON-STRUCTURAL HEIGHT LIMITATIONS

STUD SIZE	STUD SPACING	COMPOSITE TABLE MAX HEIGHT (S PSF)		NON-COMPOSITE TABLE MAX HEIGHT (S PSF)	
		L240	L360	L240	L360
2 1/2"	33 (20)	12'-0"	15'-0"	15'-0"	13'-6"
3 5/8"	33 (20)	18'-0"	16'-0"	15'-0"	13'-6"
3 5/8"	43 (18)	18'-0"	16'-0"	15'-11"	14'-0"
4"	33 (20)	18'-0"	16'-0"	17'-3"	15'-0"
6"	33 (20)	18'-0"	23'-11"	20'-10"	--
6"	43 (18)	18'-0"	28'-0"	22'-0"	--

REMARKS:

- METAL STUDS TO EXTEND TO UNDERSIDE OF DECK, WHERE GYPSUM BOARD IS CALLED TO BE EXTENDED 6" PAST CEILING.
- PROVIDE ABUSE RESISTANT GYPSUM BOARD AT EXPOSED WALL AREAS (WITHOUT FINISH TREATMENT) TO A MINIMUM OF 6" PAST THE FINISH CEILING.
- HEIGHT LIMITATION TABLE PROVIDED FOR REFERENCE ONLY. CONTRACTOR TO CONFIRM STUD GAUGE REQUIREMENTS WITH SELECTED MANUFACTURER.
- PROVIDE BACKER BOARD WHERE WALL TIES ARE SCHEDULED. SEE FINISH PLANS.

GENERAL NOTES

- SEAL ALL OPENINGS, GAPS, PENETRATIONS, AND JOINTS IN PARTITION TYPES AS FOLLOWS.
- FIRE RATED PARTITIONS AND SMOKE BARRIERS: SEAL IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE DIVISION OF SPECIFICATION SECTIONS FOR PENETRATION FIRESTOP SYSTEMS AND FIRE RESISTIVE JOINT SYSTEMS. REFER TO CODE COMPLIANCE DRAWINGS FOR LOCATIONS OF SMOKE BARRIERS.
- PARTITIONS DESIGNED TO RESIST THE PASSAGE OF SMOKE: SEAL COMPLETELY WITH ELASTOMERIC SEALANT. FOR THE LOCATION AND EXTENT REFER TO CODE COMPLIANCE DRAWINGS.
- OTHER LOCATIONS: SEAL AS INDICATED AND REQUIRED ELSEWHERE BY THE CONTRACT DOCUMENTS.
- OUTER LAYER OF ALL GWP PARTITIONS TO BE 5/8" ABUSE RESISTANT GWP, BOTH SIDES.
- PROVIDE TILE BACKER BOARD (L.U.) OF GWP AT PARTITIONS RECEIVING WALL TIE.
- PROVIDE MOISTURE RESISTANT GWS AT PARTITIONS ADJACENT TO PLUMBING AND/OR PLUMBING FIXTURES.

PARTITION NOTES

- PROVIDE FULL HEIGHT CORNER GUARD (GORDON FINAL FORMS (SERIES 901-SC-150)) AT ALL VERTICAL OUTSIDE CORNERS OF GYPSUM BOARD PARTITIONS. TAPE, SPACKLE, AND PAINT TO MATCH WALL.

TYPE 4A: METAL FRAME INTERIOR PARTITION 2+ 2 LAYERS

STUDS TO STRUCTURE ABOVE (SEE DETAILS)	4HR RATED W/ GYP BD TO STRUCTURE ABOVE					4A50				4A80
	3HR RATED W/ GYP BD TO STRUCTURE ABOVE					4A51				4A81
	2HR RATED W/ GYP BD TO STRUCTURE ABOVE	4A02	4A12	4A22	4A32	4A42	4A62	4A72		4A92
	NON-RATED W/ GYP BD TO STRUCTURE ABOVE	4A03	4A13	4A23	4A33	4A43		4A73		
	NON-RATED W/ GYP BD TO ABOVE CEILING	4A04	4A14	4A24	4A34	4A44		4A74		
NON-RATED W/ GYP BOARD TO FINISH CEILING (SEE DETAILS)		4A05	4A15	4A25	4A35	4A45		4A75		
NON-RATED PARTIAL HEIGHT PARTITION (SEE DETAILS)		4A06	4A16	4A26	4A36	4A46		4A76		
STUD SIZE		2.1/2"	3.5/8"	3.5/8"	4"	4"	4"	6"	6"	6"
GYP BD THICKNESS		5/8"	5/8"	5/8"	5/8"	5/8"	3/4"	5/8"	5/8"	3/4"
RESILIENT 25 GA FURRING CHANNELS		NO	NO	NO	NO	NO	NO	NO	NO	NO
PARTITION THICKNESS		5"	6.1/8"	6.1/8"	6.1/2"	7"	8.1/8"	8.1/2"	9"	10.1/8"
ACOUSTICAL BATT INSULATION		YES	NO	YES	NO	YES	YES	YES	YES	YES
STC ACOUSTICAL RATING (FOR WALLS TO STRUCTURE)		44	44	45	44	45	45	52	47	47
THERMAL BATT INSULATION		NO	NO	NO	NO	NO	NO	NO	NO	NO
UL DESIGNATION (WHERE APPLICABLE)		U411	U411	U411	U411	U411	U419	U454	U411	U419

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

INTERIOR NON-STRUCTURAL HEIGHT LIMITATIONS

STUD SIZE	STUD SPACING	COMPOSITE TABLE MAX HEIGHT (S PSF)		NON-COMPOSITE TABLE MAX HEIGHT (S PSF)	
		L240	L360	L240	L360
2 1/2"	43 (18)	12'-0"	15'-0"	15'-0"	13'-6"
3 5/8"	33 (20)	18'-0"	16'-0"	15'-0"	13'-6"
3 5/8"	43 (18)	18'-0"	16'-0"	15'-0"	14'-0"
4"	18 (25)	18'-0"	15'-4"	--	--
4"	33 (20)	18'-0"	16'-4"	15'-11"	15'-0"
6"	18 (25)	18'-0"	19'-0"	17'-11"	--
6"	33 (20)	18'-0"	24'-0"	21'-4"	20'-10"
6"	43 (18)	18'-0"	28'-3"	24'-6"	22'-0"

REMARKS:

- WALL TYPES 4A02-4A48 (4HR RATED) MUST HAVE MINIMUM 2" MINERAL WOOL FIBRE FIBER FIBER FITTED BETWEEN STUDS & RUNNERS. REF: UL 419 SPECIFICATIONS.
- METAL STUDS TO EXTEND TO UNDERSIDE OF DECK, WHERE GYPSUM BOARD IS CALLED TO BE EXTENDED 6" PAST CEILING.
- PROVIDE ABUSE RESISTANT GYPSUM BOARD AT EXPOSED WALL AREAS (WITHOUT FINISH TREATMENT) TO A MINIMUM OF 6" PAST THE FINISH CEILING.
- HEIGHT LIMITATION TABLE PROVIDED FOR REFERENCE ONLY. CONTRACTOR TO CONFIRM STUD GAUGE REQUIREMENTS WITH SELECTED MANUFACTURER.
- PROVIDE BACKER BOARD WHERE WALL TIES ARE SCHEDULED. SEE FINISH PLANS.

TYPE 5A: 1 HR METAL FRAME SHAFT WALL

STUDS TO STRUCTURE ABOVE (SEE DETAIL)	5A00	5A10	5A11	5A20	5A30
STUD SIZE	2.1/2"	4"	4"	6" (C-H)	6" (2X)
GYP BD THICKNESS	5/8"	5/8"	5/8"	5/8"	5/8"
PARTITION THICKNESS	3.1/8"	4.5/8"	4.5/8"	6.5/8"	6.5/8"
ACOUSTICAL BATT INSULATION	NO	NO	YES	NO	NO
STC ACOUSTICAL RATING	39	39	43	39	39
UL DESIGNATION (WHERE APPLICABLE)	U415(A)	U415(A)	U415(A)	U415(A)	U415(A)

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

INTERIOR NON-STRUCTURAL HEIGHT LIMITATIONS

STUD SIZE	STUD SPACING	COMPOSITE TABLE MAX HEIGHT (S PSF)	
		L240	L360
2 1/2"	33 (20)	24'-0"	10'-4"
4"	33 (20)	18'-0"	14'-5"
6"	33 (20)	18'-0"	17'-5"
6" (2X)	33 (20)	18'-0"	24'-0"

REMARKS:

- PROVIDE CONTINUOUS BRACING TO FRAMING AT HEIGHTS EXCEEDING MAX HEIGHTS GIVEN IN THIS TABLE.
- PROVIDE ABUSE RESISTANT GYPSUM BOARD AT EXPOSED WALL AREAS (WITHOUT FINISH TREATMENT) TO A MINIMUM OF 6" PAST THE FINISH CEILING.
- HEIGHT LIMITATION TABLE PROVIDED FOR REFERENCE ONLY. CONTRACTOR TO CONFIRM STUD GAUGE REQUIREMENTS WITH SELECTED MANUFACTURER.

TYPE 6A: 2 HR METAL FRAME SHAFT WALL

STUDS TO STRUCTURE ABOVE (SEE DETAILS)		6A10	6A20	6A30
STUD SIZE		2.1/2"	4"	6" (C-H)
GYP BD THICKNESS		5/8"	5/8"	5/8"
NUMBER OF GYP BD LAYERS ON FACE		2	2	2
NUMBER OF GYP BD LAYERS ON FACE		0	0	0
RESILIENT 25 GA FURRING CHANNELS		NO	NO	NO
PARTITION THICKNESS		3.3/4"	5.1/4"	7.1/4"
ACOUSTICAL BATT INSULATION		YES	YES	YES
STC ACOUSTICAL RATING		48	50	50
UL DESIGNATION (WHERE APPLICABLE)		U415(B)	U415(B)	U415(B)

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

INTERIOR NON-STRUCTURAL HEIGHT LIMITATIONS

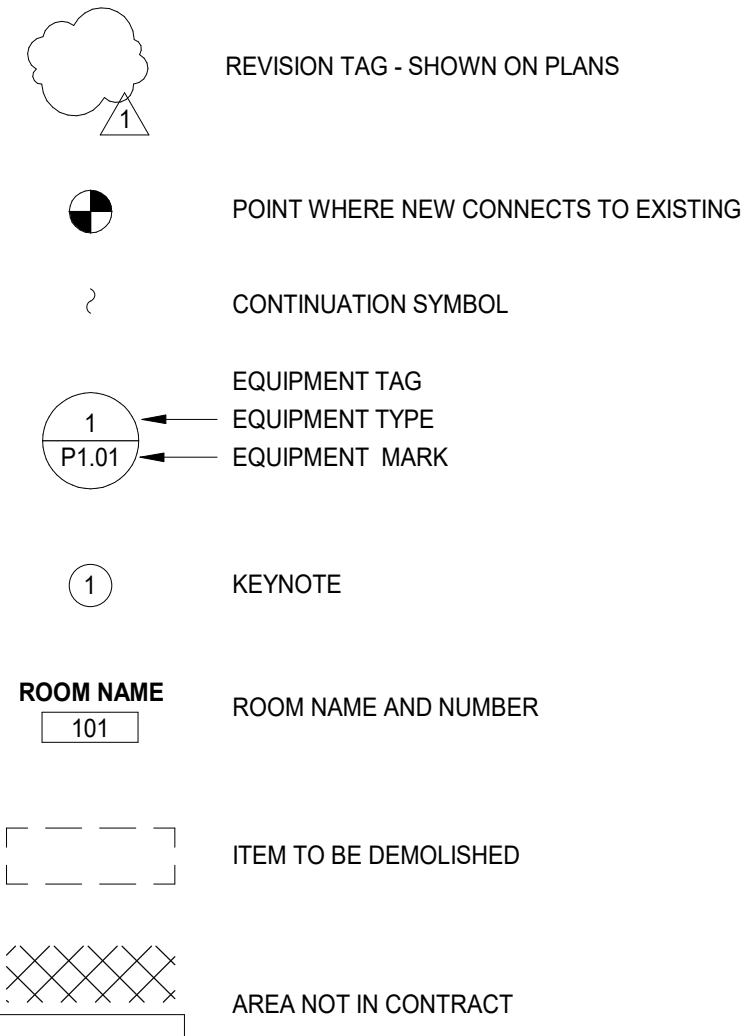
STUD SIZE	STUD SPACING	COMPOSITE TABLE MAX HEIGHT (S PSF)	
		L240	L360
2 1/2"	33 (20)	24'-0"	9'-3"
4"	33 (20)	18'-0"	14'-5"
6"	33 (20)	18'-0"	17'-5"
6" (2X)	33 (20)	24'-0"	21'-0"

REMARKS:

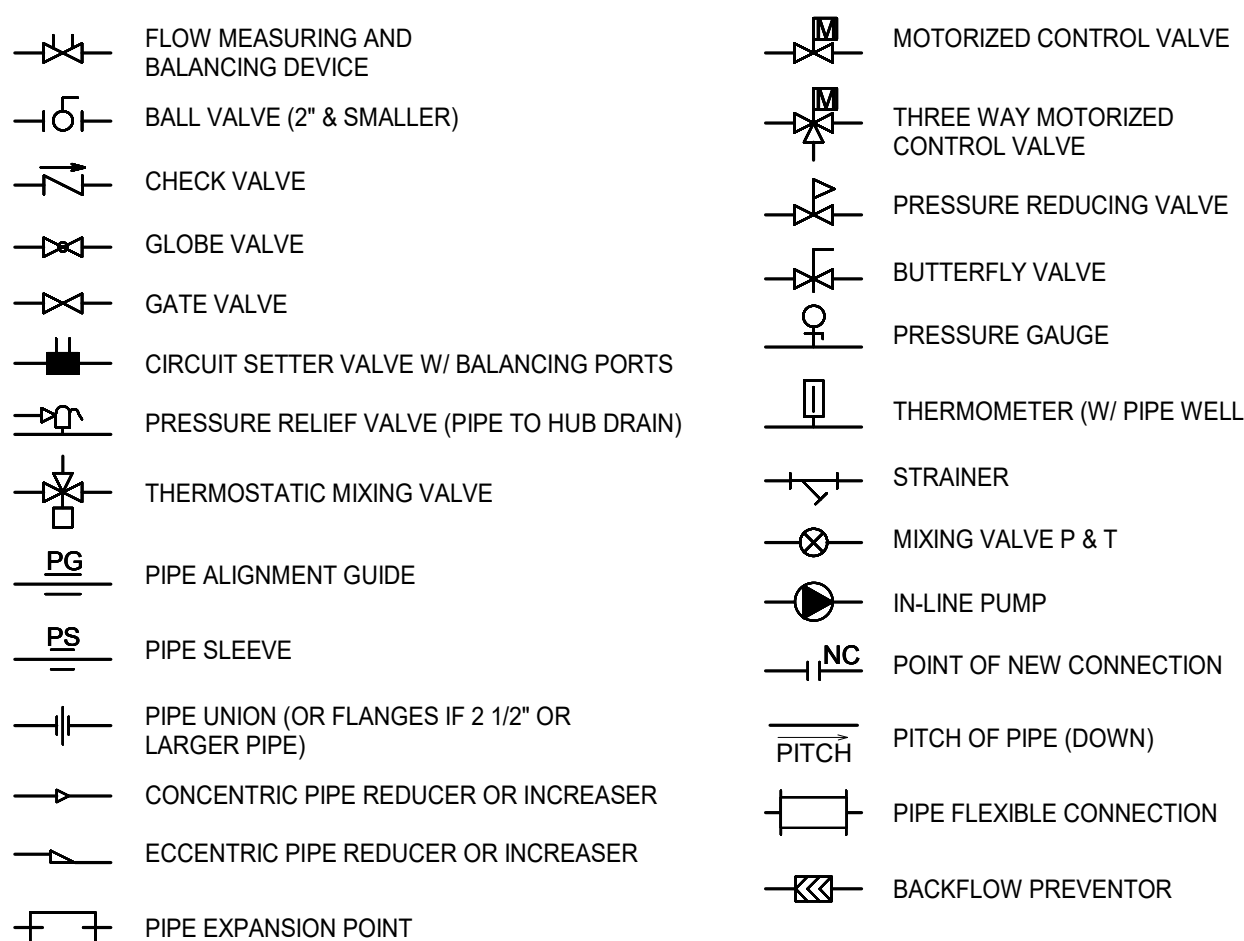
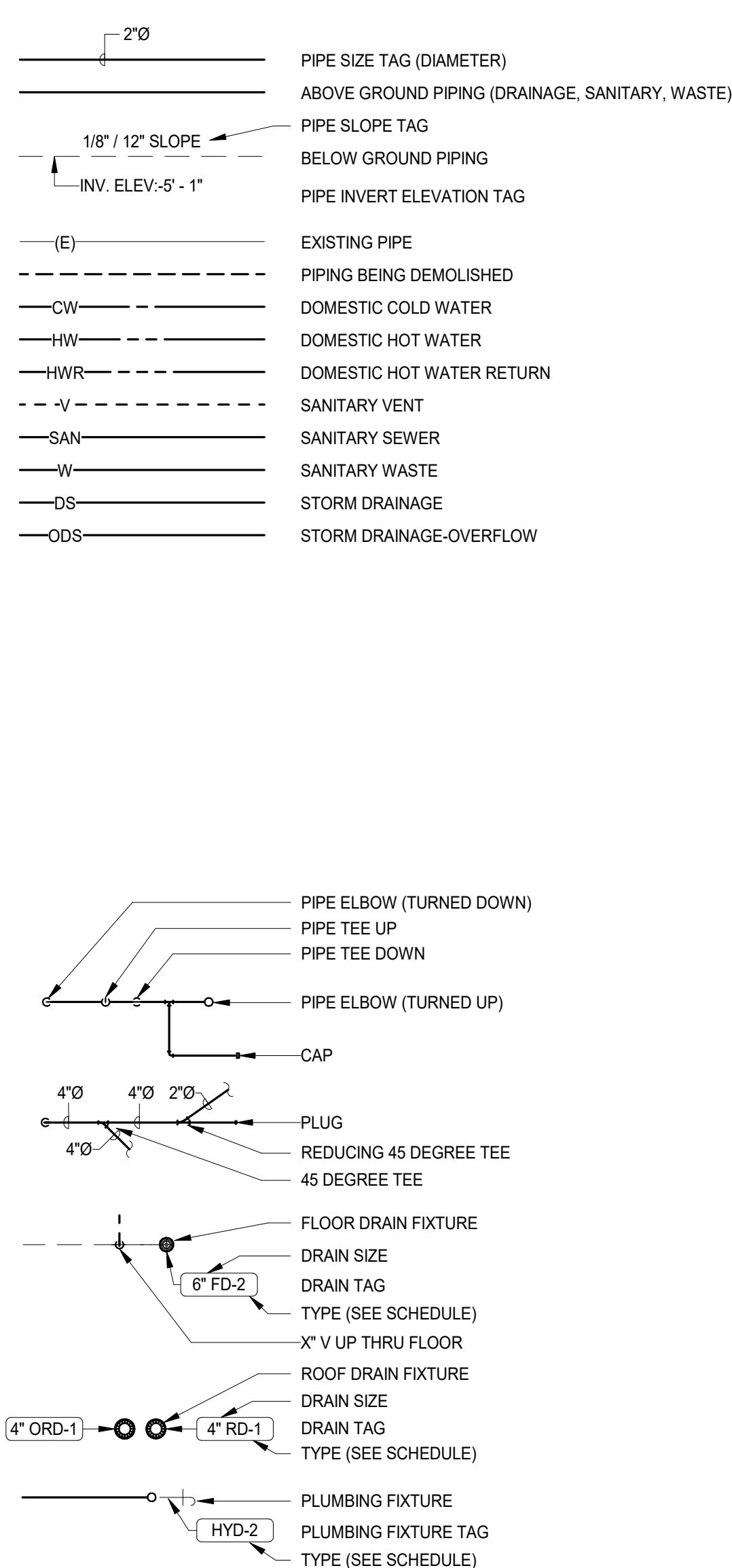
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GENERAL PLUMBING SYMBOLS



PLUMBING AND PIPING SYMBOLS



ABBREVIATIONS

AD	AREA DRAIN	INV	INVERT
AFP	ABOVE FINISHED FLOOR ACCESS PANEL	LAB	LABORATORY
ARCH	ARCHITECT/ARCHITECTURAL	MAX	MAXIMUM
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
CB	CATCH BASIN	MIN	MINIMUM
CF	CAST IRON	NC	NORMALLY CLOSED
CO	CLEAN OUT	NI	NOT IN CONTRACT
COL	COLUMN	NO	NORMALLY OPEN
CUFT	CUBIC FEET	NTS	NOT TO SCALE
CW	COLD WATER	O	OXYGEN
DN	DOWN	OC	ON CENTER
DWG	DRAWING	ORD	OVERFLOW ROOF DRAIN
DW	DISTILLED WATER	PLBG	PLUMBING
EA	EACH	PRV	PRESSURE REDUCING VALVE
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
ELEV	ELEVATION	RD	ROOF DRAIN
EWG	ELECTRIC WATER COOLER	RPM	REVOLUTIONS PER MINUTE
EWV	ELECTRIC WATER HEATER	SEP	SEWAGE EJECTOR PUMP
EXIST	EXISTING	SF	SQUARE FOOT
ET	EXPANSION TANK	SAN	SANITARY
F	DEGREES FAHRENHEIT	SF	SQUARE FOOT
FCO	FLOOR CLEAN OUT	SP	SUMP PUMP
FD	FLOOR DRAIN	SQ	SQUARE
FL	FLOOR	SS	STAINLESS STEEL
FT	FOOT/FEET	STD	STANDARD
GA	GAGE/GAUGE	TEMP	TEMPERATURE
GAL	GALLON	THP	TYPICAL
GC	GENERAL CONTRACTOR	UG	UNDERGROUND
GENL	GENERAL	VAC	VACUUM
GI	GREASE INTERCEPTOR	V	VENT
GPM	GALLONS PER MINUTE	VTR	VENT THROUGH ROOF
GR	GRADE	W	WASTE
HB	HOSE BIB	WCD	WALL CLEAN OUT
HD	HEAD	WH	WATER HEATER
HP	HORSE POWER		
HTR	HEATER		
HW	HOT WATER		

GENERAL NOTES

- ALL WORK SHALL BE INSTALLED AND ALL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH AND PLUMBING CODE 2014 EDITION.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL INSPECTIONS WITH THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH STATE PLUMBING INSPECTORS AND THE LOCAL PLUMBING INSPECTOR HAVING JURISDICTION.
- EXACT LOCATION OF PLUMBING FIXTURES AND DEVICES SHALL BE VERIFIED WITH BUILDING STRUCTURE, ARCHITECT, GENERAL AND CABINETRY EQUIPMENT CONTRACTOR PRIOR TO STARTING ANY WORK.
- ALL EXISTING INFORMATION SHOWN ON DRAWINGS HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS. EXACT LOCATION OF EXISTING SANITARY/STORM LINES, WATER LINES, VENT LINES, VALVES, INVERT ELEVATIONS, AND ALL SIZES SHALL BE VERIFIED IN THE FIELD BEFORE STARTING INSTALLATION.
- PITCH ALL SUPPLY AND RETURN WATER LINES TO DRAIN COMPLETELY THROUGH LOWER EQUIPMENT FIXTURES, UNIONS, OR DRAIN VALVES. INSTALL A 1/2" DRAIN VALVE WITH 3/4" HOSE THREAD OUTLET IN ALL MAIN PIPING RUNS WHICH WOULD NOT BE ABLE TO DRAIN THRU A LOWER PIECE OF EQUIPMENT.
- ALL VENT AND WASTE PIPING SIZES ARE MINIMUM. ADDITIONAL VENTS SHALL BE ADDED AND/OR PIPE SIZE INCREASED AS REQUIRED BY APPLICABLE CODES, STATUTES AND REGULATIONS, ETC. WITHOUT ADDITIONAL COST TO THE OWNER.
- STERILIZATION: UPON COMPLETION OF TESTING AND FLUSHING OF NEW DOMESTIC WATER PIPING, THE CONTRACTOR SHALL STERILIZE ALL WATER PIPING INCLUDING ALL DOMESTIC HOT WATER SUPPLY AND RETURN AND ALL DOMESTIC COLD WATER PIPING. CONTRACTOR SHALL FLUSH AND INSTALL ALL TEMPORARY TAPPINGS, VALVE OPENINGS, DRAIN FITTINGS, ETC. AS REQUIRED TO STERILIZE THE WATER PIPING INCLUDING ALL REQUIRED EXCAVATION WORK, FITTING AND LABOR. WATER PIPING SHALL BE FLUSHED AND CHLORINATED AS SPECIFIED IN AWWAC-601-54 STANDARD PROCEDURE FOR DISINFECTING WATER MAINS AND AS REQUIRED BY ILLINOIS DEPARTMENT OF PUBLIC HEALTH. DISINFECTING SHALL NOT BE DEEMED COMPLETED UNTIL SATISFACTORY BACTERIOLOGICAL ANALYSIS REPORTS ARE RECEIVED FOR SAMPLES OF WATER COLLECTED AND TESTED FROM THE NEW WATER PIPING SYSTEM ALL BY PLUMBING CONTRACTOR.
- PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PVC PIPING WITH THE MECHANICAL SYSTEMS. PVC PIPING SHALL NOT BE USED IN PLENUM CELINGS UNLESS WRAPPED USING UL-910 & ASTM-E84 3M PLENUM WRAP SA OR APPROVED EQUAL.
- PVC PIPING SHALL NOT BE ALLOWED ABOVE WOOD FLOOR OR IN AREAS WHERE IMPACT DAMAGE CAN OCCUR SUCH AS GYMNASIUMS.
- PVC PIPING SHALL NOT BE ALLOWED FOR SANITARY PIPING SYSTEMS ABOVE OR BELOW GRADE IN APPLICATION WHERE FLOOR DRAINS IN BOILER ROOMS AND MECHANICAL ROOMS CAN RECEIVE WASTE WITH WATER TEMPERATURE EXCEEDING 140 DEGREES. CAST IRON PIPING SHALL BE USED A MINIMUM () FEET OR TO A POINT IN THE SYSTEM WHERE THE WASTE CAN BE MIXED DOWN TO A TEMPERATURE LESS THEN 140 DEGREES.
- INSTALL POTABLE WATER PROTECTION DEVICES ON PLUMBING PIPING WHERE CONTAMINATION OF DOMESTIC WATER MAY OCCUR INCLUDING BUT NOT LIMITED TO BOILER FEED LINES, CLEANING CHEMICAL EQUIPMENT, FIRE SPRINKLER SYSTEMS, RIGGATION SYSTEMS, FLUSH VALVES, INTERIOR OR EXTERIOR HOSE CONNECTIONS, FOOD SERVICE EQUIPMENT, ETC. MARKS.
- INSTALL AIR CHAMBERS ON ALL COLD AND HOT WATER SUPPLY PIPING TO EACH FIXTURE FABRICATED FROM SAME SIZE PIPE SERVING FIXTURE (MIN. 3/4") AND MINIMUM 18" LONG.
- ALL EXISTING PIPING INFORMATION SHOWN ON THIS DRAWING HAS BEEN OBTAINED FROM OWNER'S EXISTING CONSTRUCTION DOCUMENTS AND LIMITED FIELD SURVEY. EXACT LOCATION OF EXISTING SANITARY/STORM LINES, WATER LINES, VENT LINES, VALVES AND ALL PIPE SIZES SHALL BE FIELD VERIFIED BEFORE STARTING INSTALLATION. FOR UNDERGROUND PIPING, CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE LOCATIONS, CONNECTION LOCATION, SIZE, ORIENTATION OF FLOW, AND DEPTH VIA PIPE LOCATING/TELEVISIONS EQUIPMENT AS REQUIRED PRIOR TO SAW CUTTING OF FLOOR OR BEGINNING WORK. CONTRACTOR'S BID SHALL INCLUDE SAW CUTTING, PATCHING TO MATCH EXISTING PIPING, LABOR, ETC. TO LOCATE, MAKE CONNECTIONS TO EXISTING UNDERFLOOR PIPING, OR CAP EXISTING UNDERFLOOR PIPING WITHIN 10 FEET OF LOCATION SHOWN ON DRAWINGS. IF LOCATION SHOWN FOR ANY CONNECTION DOES NOT EXIST OR IS NOT ACCESSIBLE, CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IMMEDIATELY.

PLUMBING DEMOLITION NOTES

- DISCONNECT AND REMOVE INDICATED EXISTING PLUMBING FIXTURES, CAP DRAINAGE PIPING, BELOW FLOOR AT POINT OF CONNECTION WITH EXISTING STACK, CAP VENT ABOVE CEILING AT POINT OF CONNECTION WITH EXISTING STACK, DISCONNECT AND REMOVE WATER PIPING, CAP BRANCHES AT POINT OF CONNECTION WITH WATER MAINS (V.I.F.).
- REFER TO ARCHITECTURAL DEMOLITIONS DRAWINGS FOR MORE INFORMATION.
- REMOVAL AND DEMOLITION ITEMS AND AREAS INDICATED ON THIS DRAWING ARE MINIMUM INDICATIONS TO SHOW "BASIS OF DESIGN" ADDITIONAL DEMOLITION THAT IS NOT SHOWN MAY BE REQUIRED FOR THE WORK INCLUDED IN THIS PROJECT. THE CONTRACTOR IS TO INCLUDE ALL DEMOLITION IN THE PROJECT AS REQUIRED TO FULLY EXECUTE THE WORK. NO EXTRA COMPENSATION WILL BE ALLOWED FOR DEMOLITION WORK THAT COULD HAVE BEEN ANTICIPATED AT THE TIME OF BID.

ADDITIONAL PLUMBING NOTES

- A TEST OF AT LEAST A (10) FOOT OF HEAD OF WATER SHALL BE PROVIDED FOR THE DRAINAGE AND VENT SYSTEMS. THE WATER SHALL BE KEPT IN THE SYSTEM OR IN THE PORTION BEING TESTED FOR AT LEAST 15 MINUTES BEFORE INSPECTION STARTS, AND INSPECTION OR TESTING OF THE SYSTEM SHALL CONFIRM THAT THE SYSTEM IS TIGHT AT ALL POINTS.
- ALL THE (RPZ'S) REDUCED PRESSURE BACK FLOW PREVENTERS ASSEMBLIES SHALL BE TESTED AN APPROVED BY A CROSS CONNECTION CONTROL DEVICE INSPECTOR (CCDCI) BEFORE OPERATIONS, AND AT LEAST ONE TIME PER YEAR THEREAFTER.
- ONLY A LICENSED PLUMBER SHALL INSTALL THE REDUCED PRESSURE BACK FLOW PREVENTER DETECTOR ASSEMBLY. THE INSTALLATION SHALL COMPLY WITH THE ILLINOIS POLLUTION CONTROL BOARD ADMINISTRATION RULES FOR TITLE 35.
- NONE OF THE BACK FLOW PREVENTERS SHALL BE INSTALLED VERTICALLY. ONLY HORIZONTAL DEVICES ARE TO BE USED.
- ALL THERMOSTATIC MIXING VALVES SHALL BE SET TO A TEMPERATURE NO MORE THEN 110°F.
- LAVATORIES SHALL NOT HAVE EXPOSED WATER, WASTE, OR ABRASIVE SURFACES, BUT SHALL BE COVERED WITH PROTECTIVE GUARDS.
- REDUCED PRESSURE BACK FLOW PREVENTER (RPZ) SHALL BE INSTALLED IN A DEDICATED WATER SUPPLY LINE AND SHUT OFF VALVES TO EACH LOCATION WHERE SANITIZING CHEMICALS OR DETERGENTS WILL BE ASPRATED OR PUSHED BY WATER PRESSURE INTO CLEANING/SANITIZING OPERATION UNITS.
- "SPILL-PROOF" OR PRESSURE VACUUM BREAKERS ARE PROHIBITED IN ILLINOIS.
- WASTE AND VENT PIPING SYSTEMS SHALL BE TESTED BY CLOSING OPENINGS IN PIPING SYSTEM AND FILLED WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 10-FOOT HEAD OF WATER.
- INSTALLER AGREES TO REPAIR OR REPLACE PRODUCTS THAT FAIL DUE TO POOR WORKMANSHIP OR FAIL BY INSTALLATION WITHIN SPECIFIED WARRANTY PERIOD. WARRANTY PERIOD WILL BECOME 3 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
- ALL EXISTING SANITARY THAT ARE RECEIVING A NEW CONNECTION SHALL BE TELEVIEWED TO VERIFY LOCATION, INVERT, SEE ARE CORRECT. IF LOCATION SHOWN DOES NOT EXIST OR INVERT CAN NOT BE MET, ENGINEER, ARCHITECT, AND CONSTRUCTION MANAGER SHALL BE NOTIFIED IMMEDIATELY. TELEVIEWED FOOTAGE SHALL BE GIVEN TO ALL PARTIES TO REVIEW.
- 3M FIRE WRAPPING WILL BE INCORPORATED FOR NEW AND EXISTING PIPING WITHIN A PLENUM.
- NO DEAD END SHALL EXCEED A DEVELOPED LENGTH OF TWO FEET LONG FOR ABANDONED SANITARY AND DOMESTIC WATER LINES.

NOTE

ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.



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	ISSUED FOR BID GROUP 5	07.01.2019
	ISSUED FOR BID GROUP 4	04.02.2019
REV	ISSUE	DATE

**MFP
IMPLEMENTATION -
SOUTH**

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

NOTES & SYMBOLS

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

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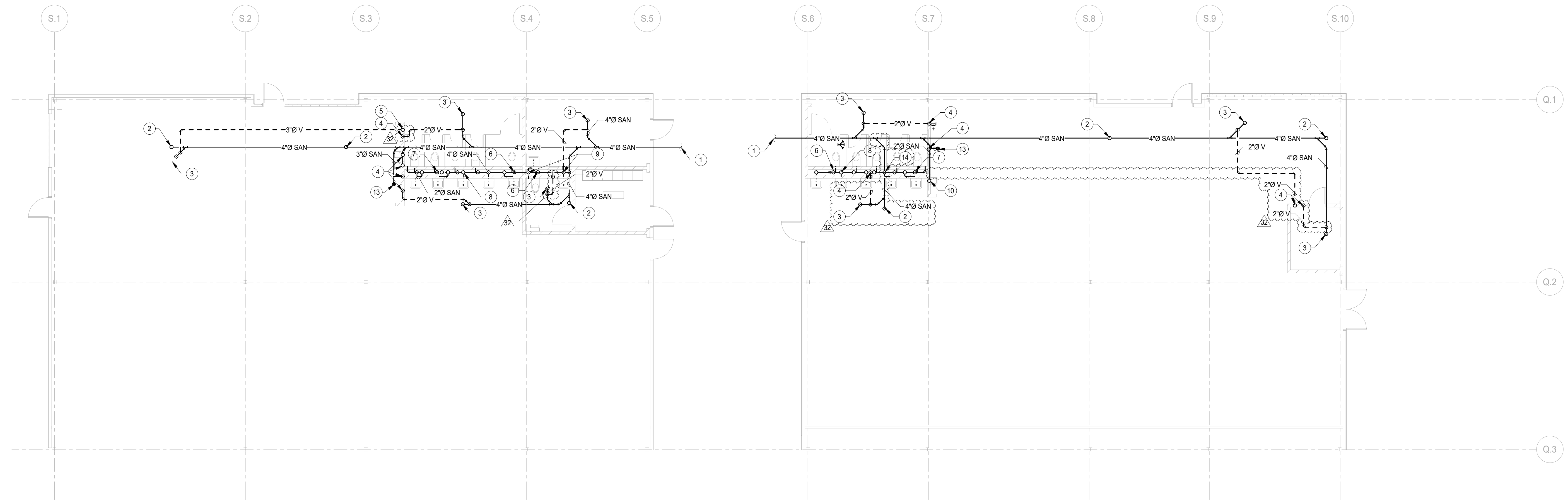


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DISTRICT 99

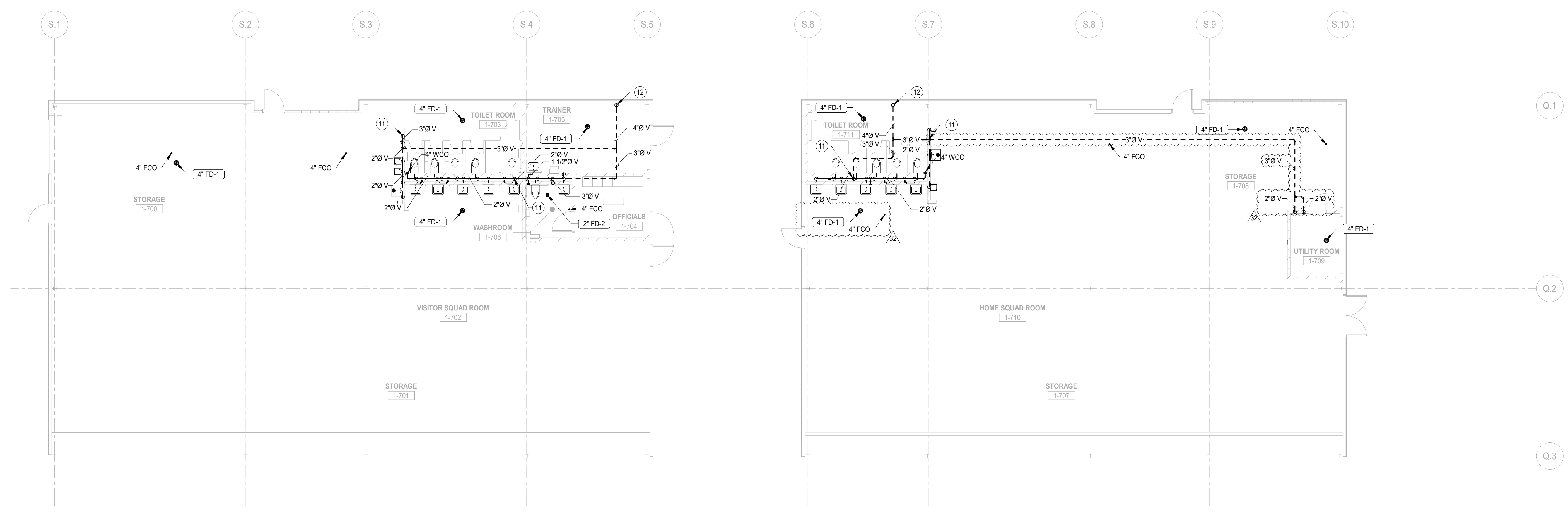


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#	KEY NOTES
1	FOR COORDINATION, SEE CIVIL DRAWINGS.
2	4" SAN UP TO FCO.
3	4" SAN UP TO FD-1.
4	2" V UP.
5	3" V UP.
6	4" SAN UP TO WC-1A.
7	4" SAN UP TO WC-1 (TYP 4).
8	2" SAN UP TO LAV-1 (TYP 5).
9	2" SAN UP TO LAV-1.
10	2" SAN UP TO EWG-1.
11	3" V UP.
12	4" V UP.
13	3" SAN UP TO JS-1.
14	4" SAN UP.



1 SANITARY & DRAINAGE UNDERGROUND PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"



2 SANITARY & DRAINAGE FLOOR PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"

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**SANITARY & DRAINAGE
FLOOR PLANS - SQUAD
ROOMS**

Project Number:
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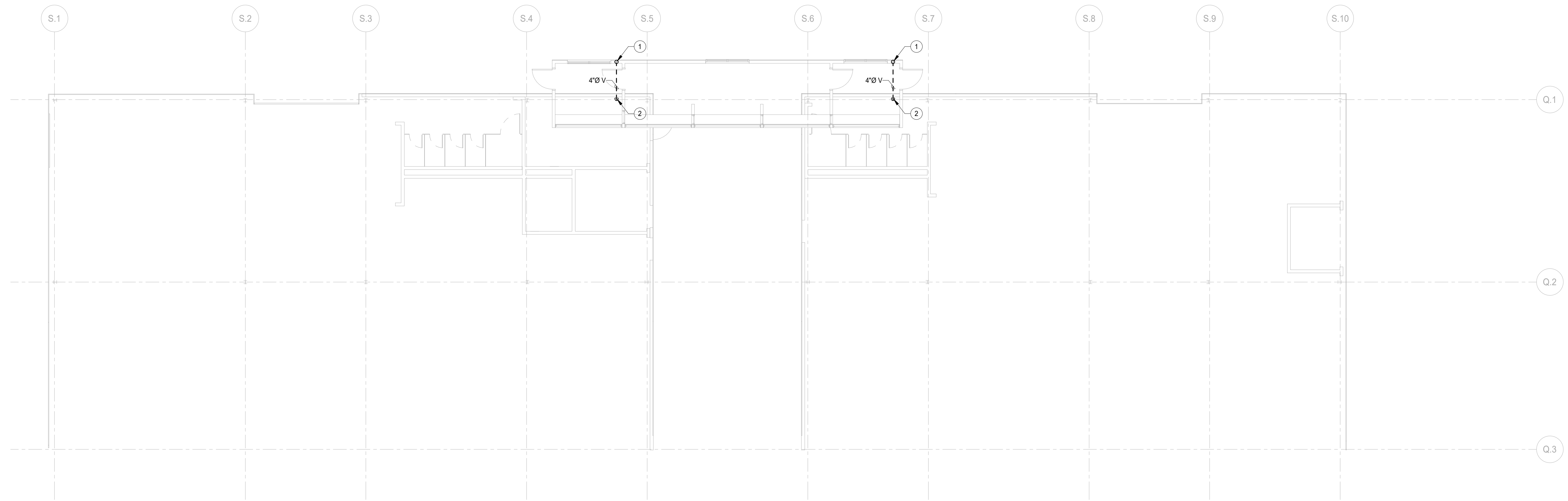
#	KEY NOTES
1	4" V TO BE ROUTED UP TO 4" VTR-1 ON PRESS BOX ROOF.
2	4" Ø V EN. COORDINATE ROUTING WITH PRESS BOX MANUFACTURER.



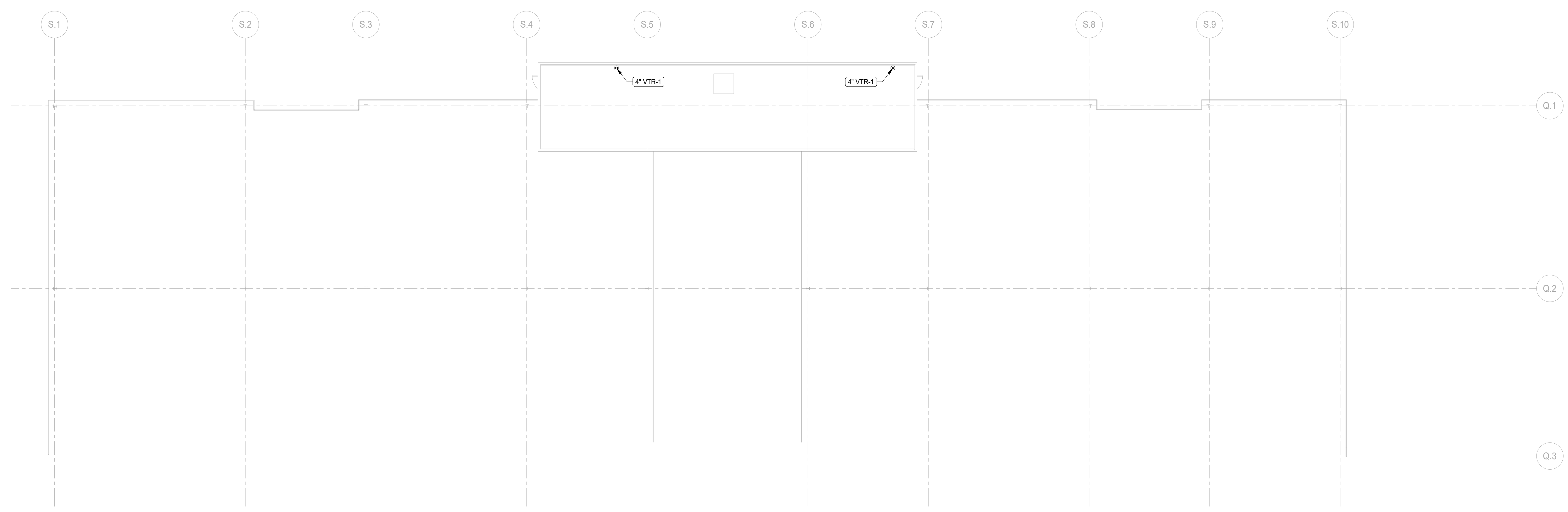
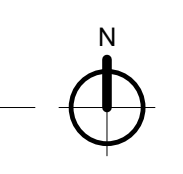
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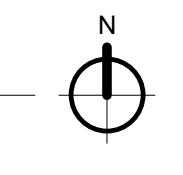
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1 SANITARY & DRAINAGE FLOOR PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"



2 SANITARY & DRAINAGE ROOF PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"



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	ISSUED FOR BID GROUP 4	04.02.2019

**MFP
IMPLEMENTATION -
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1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

**SANITARY & DRAINAGE
ROOF PLAN - SQUAD
ROOMS**

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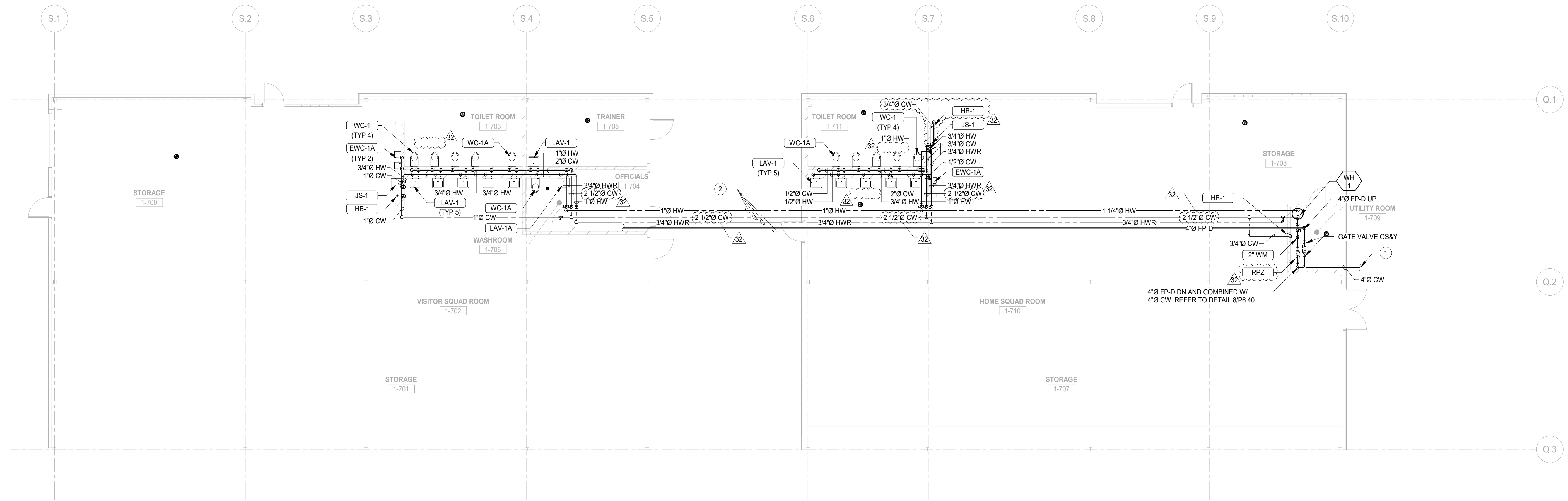
#	KEY NOTES
1	FOR CONTINUATION, SEE CIVIL DRAWINGS.
2	WATER DISTRIBUTION/FIRE PROTECTION PIPING WILL BE ENCLOSED BETWEEN SQUAD ROOMS. PIPING TO BE SLOPED FOR WINTER DRAINAGE.



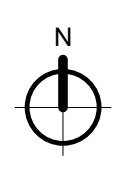
COMMUNITY HIGH SCHOOL
DISTRICT 99



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2500 North Frontage Road
Darien, IL 60561
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F 630.969.7979



1 WATER DISTRIBUTION FLOOR PLAN - SQUAD ROOMS
SCALE: 1/8" = 1'-0"



**NOT FOR
CONSTRUCTION**

32	ISSUED FOR ADDENDUM #3 - BG5	09.18.2019
	ISSUED FOR BID GROUP 5	07.01.2019
	ISSUED FOR BID GROUP 4	04.02.2019
REV	ISSUE	DATE

**MFP
IMPLEMENTATION -
SOUTH**

1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

**WATER DISTRIBUTION
FLOOR PLAN - SQUAD
ROOMS**

Project Number:
5274-42
Drawn By:
E. AGUILAR
Sheet:

P2.41

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CLEANOUT (CO) SCHEDULE

TERRAZZO AND CERAMIC FLOORS	EXPOSED DRAINS WITH CAST IRON FERRULES AND RAISED BRASS FLUGS.
MIFAB C1100-UR	FINISHED AREAS/OFFICES, TOILET ROOMS, LOCKER ROOMS, CORRIDORS, LOBBIES & KITCHENS: ROUND CORIATED NICKEL BRONZE ACCESS COVER AND FRAME, ADJUSTABLE TO FINISH FLOOR LEVEL AFTER LLOORING BEEN SET. MATCH FLOOR FINISH. SCORATED NICKEL BRONZE ACCESS COVER AND FRAME, ADJUSTABLE TO FINISH FLOOR LEVEL AFTER
MIFAB C1100-US	UNFINISHED AREAS WITH CONCRETE FLOOR (STORE ROOMS, MECHANICAL ROOMS, ETC.): ROUND SCORATED HEAVY DUTY NICKEL BRONZE ACCESS COVERS AND FRAME, ADJUSTABLE TO FINISH FLOOR LEVEL AFTER FLOORING HAS BEEN SET
MIFAB UA-A-WR	LOCKABLE & PAINTABLE, 16 GAUGE UNIVERSAL ACCESS DOORS FOR INTERIOR CLEANOUTS & VALVE ACCESSIBILITY, COORDINATE FINISHES WITH ARCHITECT.

FLOOR DRAIN (FD) SCHEDULE

TAG	FIXTURE	MANUFACTURER	APPLICATION	DESCRIPTION	MODEL	(MEMBRANE FLOORS)	NOTES
FD-1	FLOOR DRAIN	MIFAB	FINISHED FLOORS	EPOXY COATED CAST IRON & SS COVER 6X6 SQUARE TOP	F1102-S-3	F1102-C-3	1, 2, 3, 4
FD-2	FLOOR DRAIN	MIFAB	FINISHED FLOORS	EPOXY COATED CAST IRON & SS COVER 6X6 SQUARE TOP	F1102-S-3	F1102-C-3	1, 2, 3, 4

- NOTES:
 1. PROVIDE WITH VANDAL RESISTANT SCREWS.
 2. STANDARD P-TRAPS ARE ACCEPTABLE FOR FLOOR DRAINS. PROVIDE "SURE SEAL" FLOOR DRAIN TRAP SEAL (OR EQUIVALENT) FOR ALL FLOOR DRAINS.
 3. "FLOOR DRAINING" TOILET ROOMS AND CLASSROOMS SHALL BE PROVIDED WITH "TRAP-PRIMERS".
 4. SEE MANUFACTURERS RECOMMENDATIONS PRIOR TO INSTALLATION.

LAVATORY (LAV) SCHEDULE

TAG	TYPE	MANUFACTURER & MODEL INFO.	Faucet	FEATURES / DESCRIPTION
LAV-1	WHITE CERAMIC LAVATORY	AMERICAN STANDARD MODEL # 862-000	CHROME PLATED, BATTERY SENSOR ACTIVATED MIXING FAUCET, 0.5 GPM SLOAN OPTIMA MODEL 864-200 CP WITH VANDAL RESISTANT AERATOR AND TRIM PLATE AND COPPER CHROME PLATED TUBING.	PROVIDE WITH DURABLE ROUND BRASS SINK P-TRAP WITH ROUND HEAVY FLANGE AND GRID STRAINER, WASTE WITH OVERFLOW, FULL PORT 1/4 TURN KEY-LESS ANGLE VALVES WITH BENDABLE COPPER PIPE.
LAV-1A	SAME AS LAV-1 W/ ACCESSIBILITY MOUNTING HEIGHT			

- NOTES:
 1. MOUNTING HEIGHT BY ARCHITECTURAL DRAWINGS. (SEE TOILET INTERIOR ELEVATIONS SHEETS).
 2. INSTALL TMV AS HIGH AS POSSIBLE UNDER LAV, HIDDEN FROM EYE SIGHT.
 3. PROVIDE WITH FLOOR MOUNTED CONCEALED ARM CARRIER.

WATER CLOSET (WC) SCHEDULE

TAG	TYPE	GPF	MANUFACTURER	MODEL	VALVE TYPE	VALVE MODEL	NOTES
WC-1	WALL MOUNTED	1.1	AMERICAN STANDARD	AFWALL #2257-101	BATTERY POWERED SENSOR-OPERATED TOP SPUD 1.6GPF	SLOAN OPTIMA PLUS 811YG	1, 2, 3
WC-1A	SAME AS WC-1 WITH MOUNTING ADJUSTMENT FOR ACCESSIBILITY COMPLIANCE. COORDINATE WITH GRAB BAR INSTALLATION						

- NOTES:
 1. FLUSHMETER TOILET, WHITE COLOR, PROVIDE LOW CONSUMPTION SIPHON JET FLUSHING SYSTEM TOILET.
 2. PROVIDE WITH FLOOR MOUNTED WALL CARRIER.
 3. SEAT BENCH - 1955CT11955SCT & 2155CT2155SCT EXTRA HEAVY DUTY, OPEN FRONT, LESS COVER WITH ANTI-MICROBIAL SURFACE.

ELECTRIC WATER COOLER (EWC) SCHEDULE

TAG	TYPE	MFR.	TYPE & MATERIAL	MODEL	ELECTRIC LOADS	OPTIONS
EWC-1A	ELECTRIC WATER COOLER	ELKAY	ADA HEIGHT WALL MOUNTED STAINLESS STEEL	VRCS	PLUG IN INSTALLATION, 120V, 4.0 AMPS, 60 HZ.	N/A

MISCELLANEOUS EQUIPMENT SCHEDULE

TAG	TYPE	MFR.	LOCATION	FIXTURE	OUTLET	NOTES/OPTIONS
TMV	THERMOSTATIC MIXING VALVE	LEONARD	170 LF	VARES	SINKS/LAVS	110°F REFER TO MANUFACTURERS INSTALLATION REQUIREMENTS MIN. FLOW 25 GPM

JANITOR SINK (JS) SCHEDULE

TAG	FLOW (GPM)	MANUFACTURER & MODEL NO.	DESCRIPTION	PLUMBING			REMARKS
				CW	HW	DRAIN	
JS-1	3	MUSTIE 63M CHICAGO FAUCET 897-AGE	24"x24"x18" DURASTONE WITH WALL MOUNTED FAUCET WITH INTEGRAL VACUUM BREAKER, PROVIDE WITH STAINLESS STEEL BUMPERS, (2) SS 1/2" HIGH BACK SPASH PLATES, WALL BRACE, PAL HOOK, WOP HANGER, AND CHROME PLATED STRAINER	3/4"	3/4"	3"	SEE MFR. SPECIFICATION SHEET PRIOR TO INSTALL.

DOMESTIC WATER HEATER (WH) SCHEDULE

TAG	ITEM	LOCATION	SYSTEM CAPACITY	MANUFACTURER	NOTES
WH-1	ELECTRIC DOMESTIC WATER HEATER	UTILITY ROOM 1709	ELEC. V/FPHZ WATTS RECOVERY GPH GALLON CAPACITY	480/3160 4000/4000 16 GAL/HR 30	A.O. SMITH DEL-30 1, 2, 3, 4

- NOTES:
 1. SEE MANUFACTURERS RECOMMENDATIONS PRIOR TO INSTALLATION.
 2. PROVIDE DRAIN LINE FROM MOUNT TO FLOOR DRAIN.
 3. PROVIDE THERMAL EXPANSION TANK WATTS - DELTA-1A.
 4. PROVIDE INSULATOR 35-SWHP-30M WALL HUNG PLATFORM.

DOMESTIC HOT WATER RETURN PUMP SCHEDULE

TAG	TYPE	LOCATION	MODEL NO.	HP	VOLTAGE	PHASE	CAPACITY (GPM)	TDH (FEET)	DISCHARGE	NOTES
RCP-1	HOT WATER RECIRC (120°F)	UTILITY ROOM 1709	BELL & GOSSETT PL-30B	0.125 RPM	120V	1	5	18	3/4"	

REDUCED PRESSURE BACKFLOW PREVENTER

TAG	TYPE	MANUFACTURER AND MODEL	GPF
RPZ	2 1/2" REDUCED PRESSURE BACKFLOW PREVENTER	WATTS LP99	

FDA APPROVED EPOXY COATED CAST IRON BODY CONSTRUCTION WITH STAINLESS STEEL TRIM. LEAD FREE. CAST COPPER SILICON ALLOY BALL VALVE SHIPPERS, AND LEAD FREE COPPER SILICON ALLOY TEST COCKS. SERIES LP99 FEATURES A "AIR-IN-WATER-OUT" PRINCIPLE FOR PROTECTION DURING EMERGENCY COMBINED BACKSIPHONING AND BACKPRESSURE CONDITIONS. CHECK WITH LOCAL WATER AUTHORITIES FOR INSTALLATION REQUIREMENTS. LEAD FREE CONSTRUCTION TO COMPLY WITH LEAD FREE INSTALLATION REQUIREMENTS. MAXIMUM WORKING PRESSURE: 175PSI (12.6 BAR).

PLUMBING FIXTURE ROUGH-IN SCHEDULE

TAG	TYPE	SANITARY	VENT	COLD	HOT	NOTES
WC	WATER CLOSET	4"	2"	1"	-	3
LAV	LAVATORY	1 1/4"	1 1/4"	3/8"	3/8"	1, 2, 3
JS	JANITOR SINK	3"	1 1/2"	3/4"	3/4"	3
EWC	ELECTRIC WATER COOLER	1 1/2"	1 1/4"	1/2"	-	1, 2, 3
FD	FLOOR DRAIN	4"	2"	-	-	3
HB	HOSE BIB	-	-	3/4"	-	3

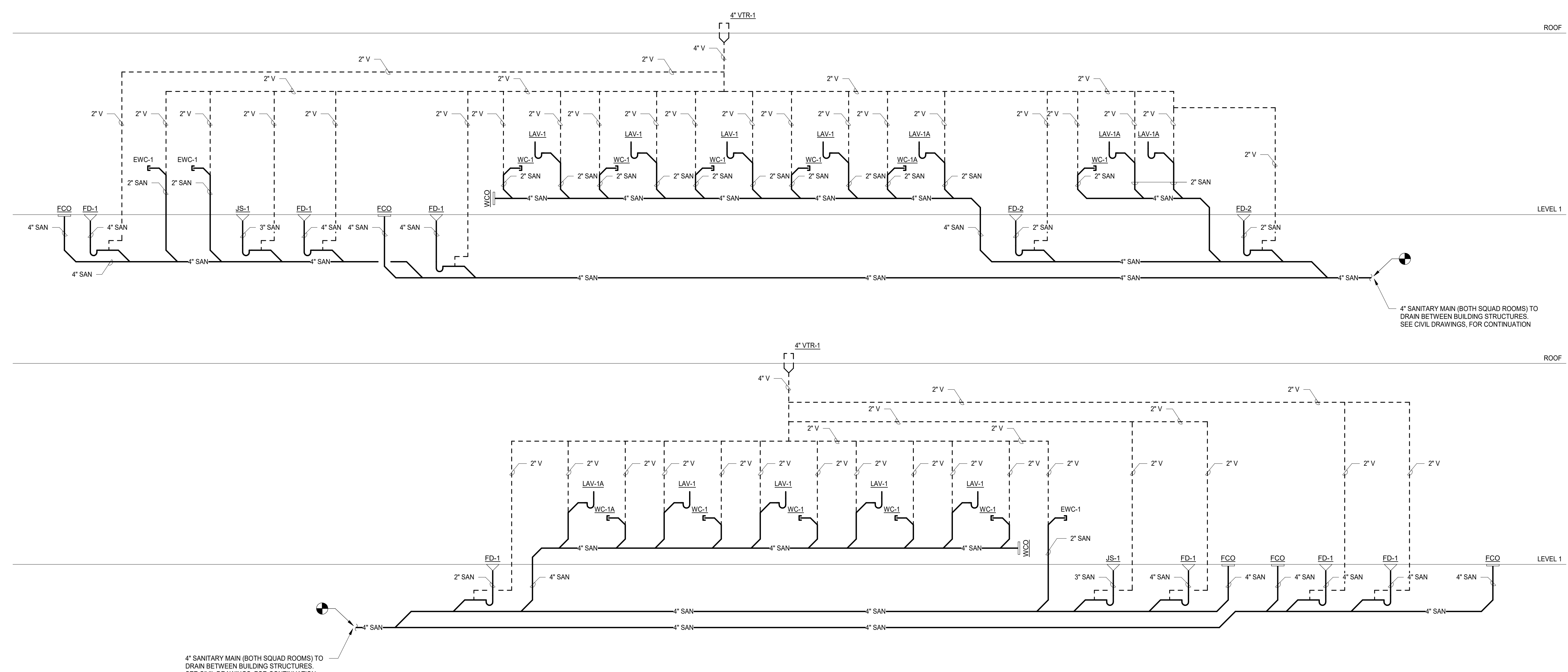
- NOTES:
 1. SANITARY RISER IN WALL UP TO FIXTURE SHALL BE 2" MINIMUM.
 2. 1/2" RESEAL ONLY APPLIES TO FINAL CONNECTION TO FIXTURE. BRANCH PIPE SIZE SHALL BE MIN. 3/4".
 3. SIZES SHOWN ARE MINIMUMS. DRAWING SIZES SHOWN AS LARGER SHALL DICTATE ROUGH-IN SIZE.

REDUCED PRESSURE DETECTOR ASSEMBLY

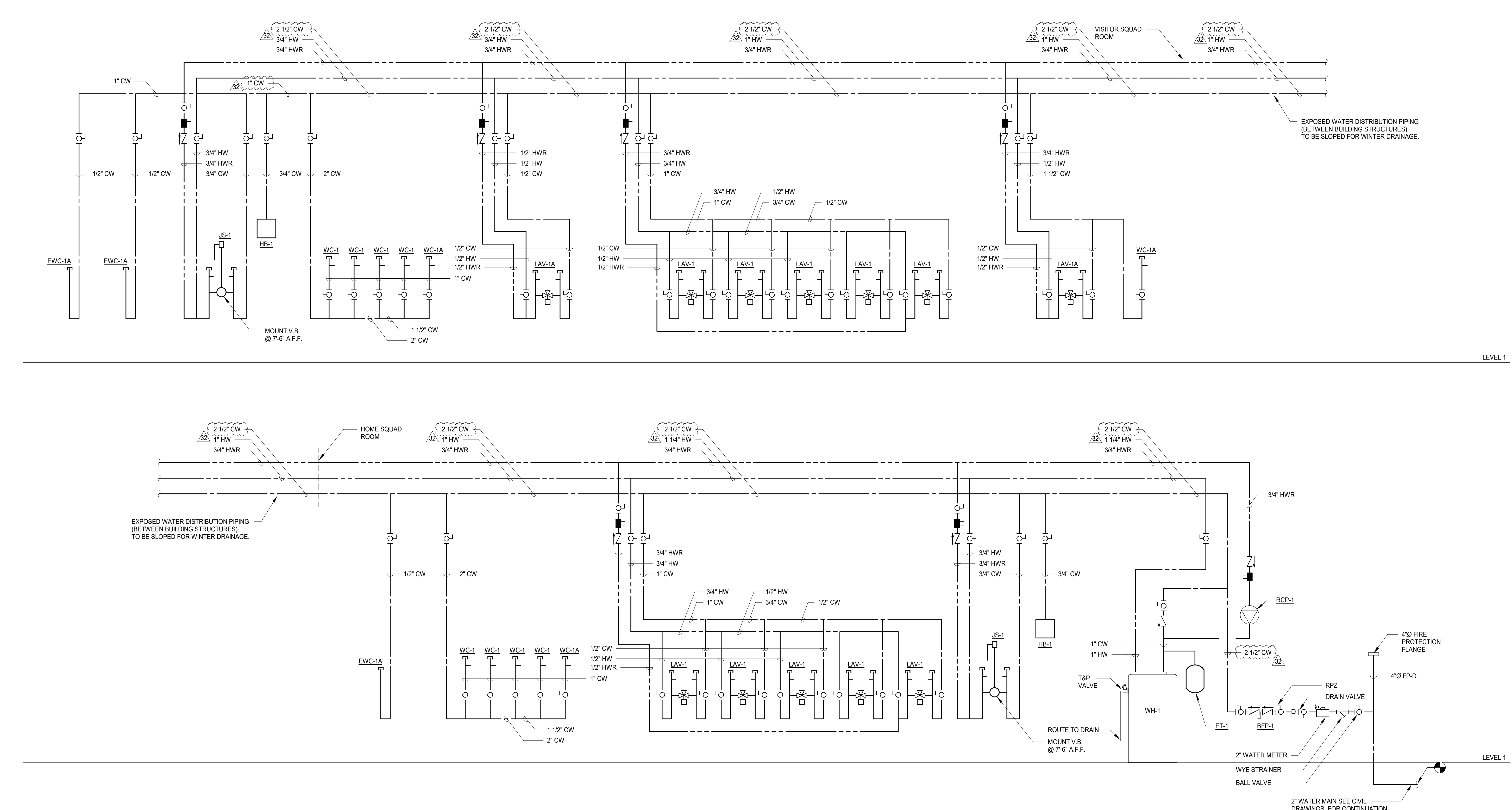
TAG	TYPE	MANUFACTURER AND MODEL	DESCRIPTION
RPOA	4" REDUCED PRESSURE DETECTOR ASSEMBLY	WATTS RPOA	REDUCED PRESSURE DETECTOR ASSEMBLIES PREVENT THE REVERSE FLOW OF FIRE PROTECTION SYSTEM SUBSTANCES FROM BEING PUMPED OR SIPHONED INTO THE POTABLE WATER SUPPLY. EPOXY COATED CAST IRON BODY WITH STAINLESS STEEL TRIM. BRONZE GATE VALVES, A PRESSURE DIFFERENTIAL RELIEF VALVE, SHUTOFF VALVES, WATER METER, AND BRONZE BALL TYPE TEST COCKS. MAXIMUM FLOW AT LOW PRESSURE DROP DESIGN PRINCIPLE FOR PROTECTION DURING EMERGENCY COMBINED BACKSIPHONAGE AND BACKPRESSURE CONDITIONS. MAXIMUM WORKING PRESSURE: 175PSI (12.6 BAR).

HYDRANT (HB) SCHEDULE

TAG	TYPE	MANUFACTURER MODEL NO.	HOSE CONN. (IN)	INLET CONN. (IN)	NOTES / OPTIONS	GPM
HB-1	FROST PROOF WALL HYDRANT W/ BOX MOUNT @ 18" A.F.F.	WOODFORD B-24	3/4"	3/4" MALE SWT + 3/4" FEMALE SWT	FREEZELESS / ANTI-SIPHON INTEGRAL VACUUM BREAKER / BACKFLOW PREVENTER SELF DRAINING QUICK OPEN / CLOSE ROUGH BRONZE KEY OPERATED RECESSED BOX.	5



1 WASTE/VENT RISER DIAGRAM - SQUAD ROOMS
N.T.S.



2 HOT/COLD WATER DISTRIBUTION RISER DIAGRAM - SQUAD ROOMS
N.T.S.

NOT FOR CONSTRUCTION

32 ISSUED FOR ADDENDUM #3 - BG5 09.18.2019
 ISSUED FOR BID GROUP 5 07.01.2019
 ISSUED FOR BID GROUP 4 04.02.2019
 REV ISSUE DATE

MFP IMPLEMENTATION - SOUTH

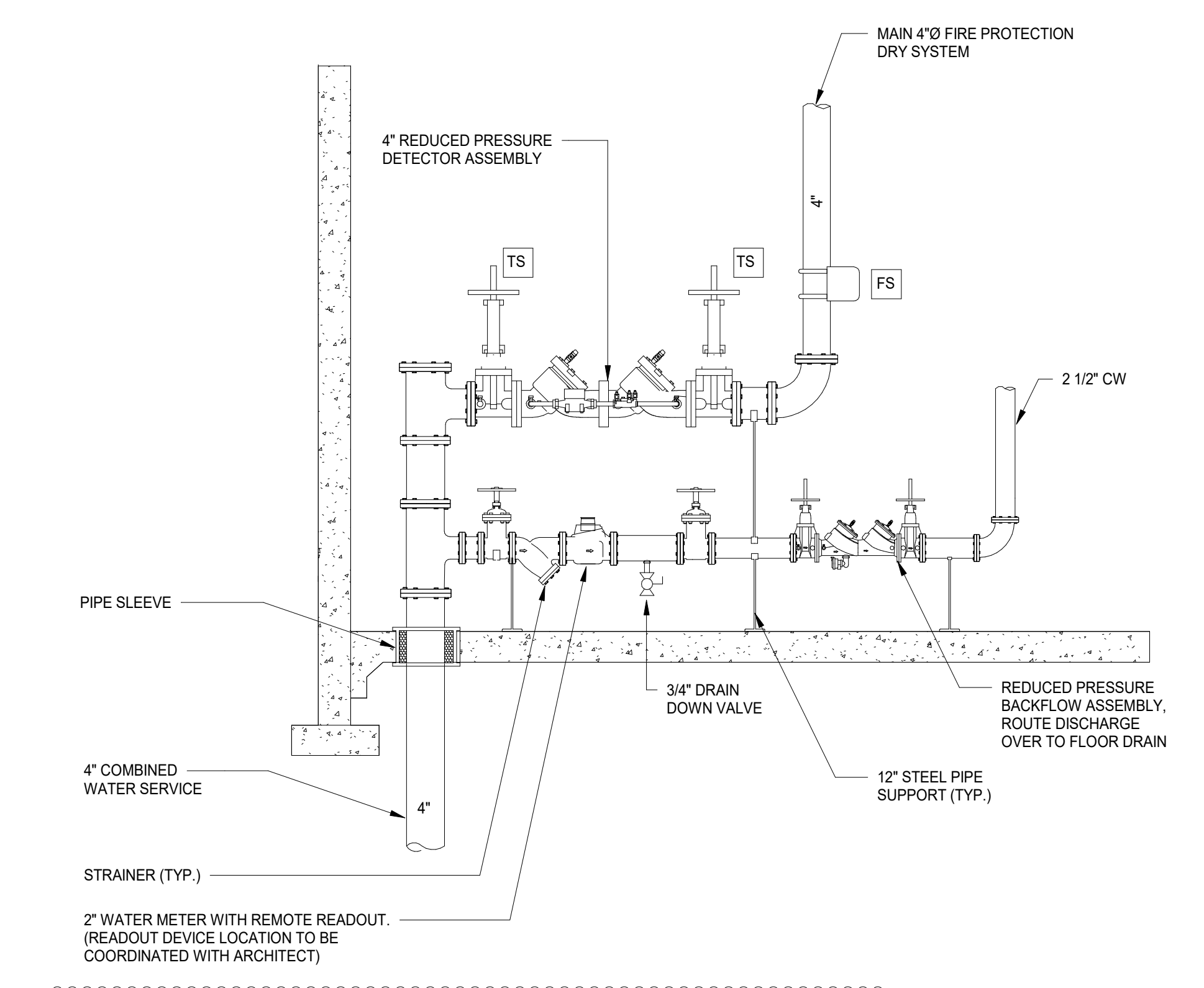
1436 NORFOLK STREET
DOWNERS GROVE, IL 60516

RISER DIAGRAMS & SCHEDULES

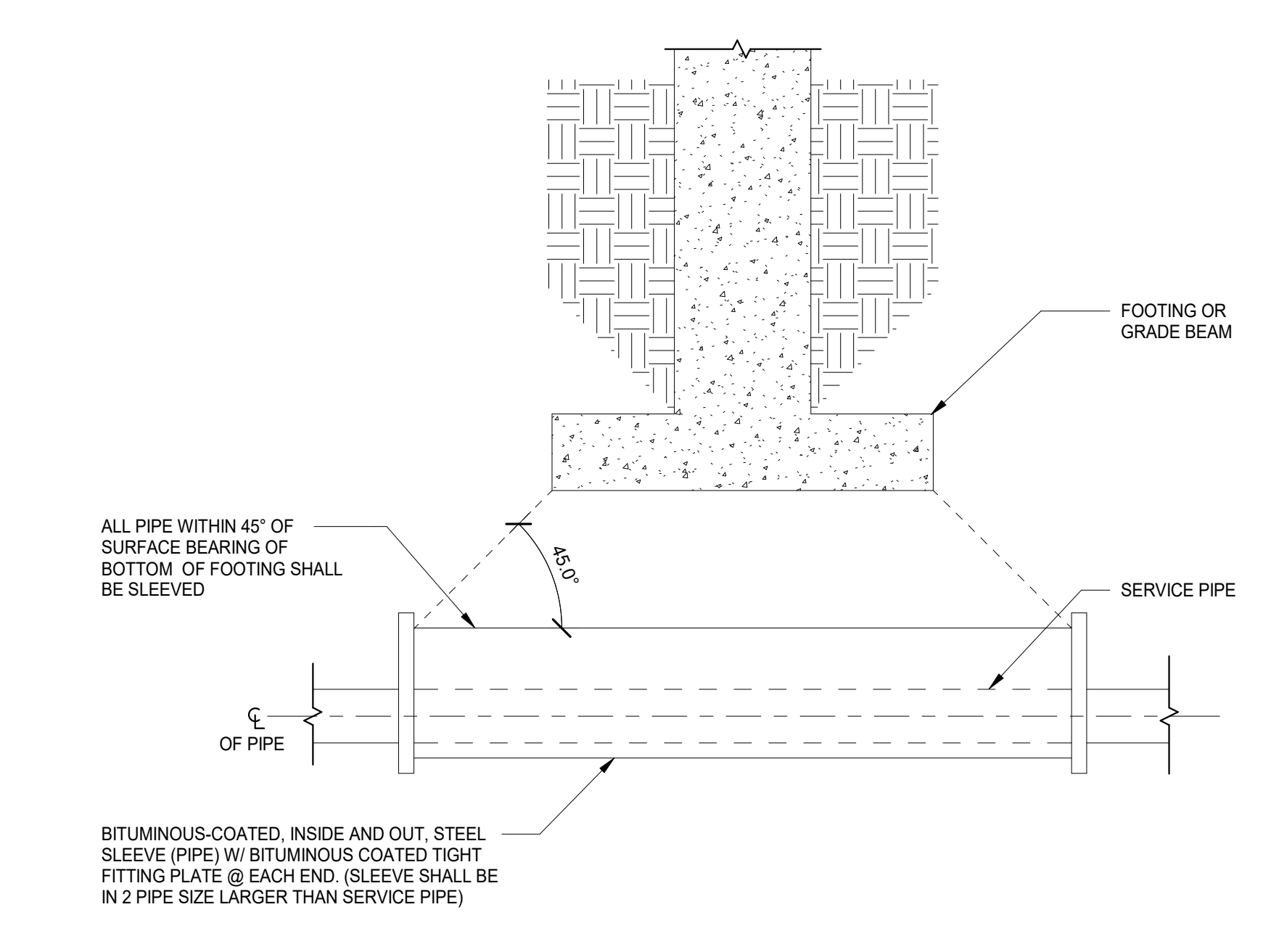
Project Number: 5274-42
 Drawn By: E. AGUILAR
 Sheet:

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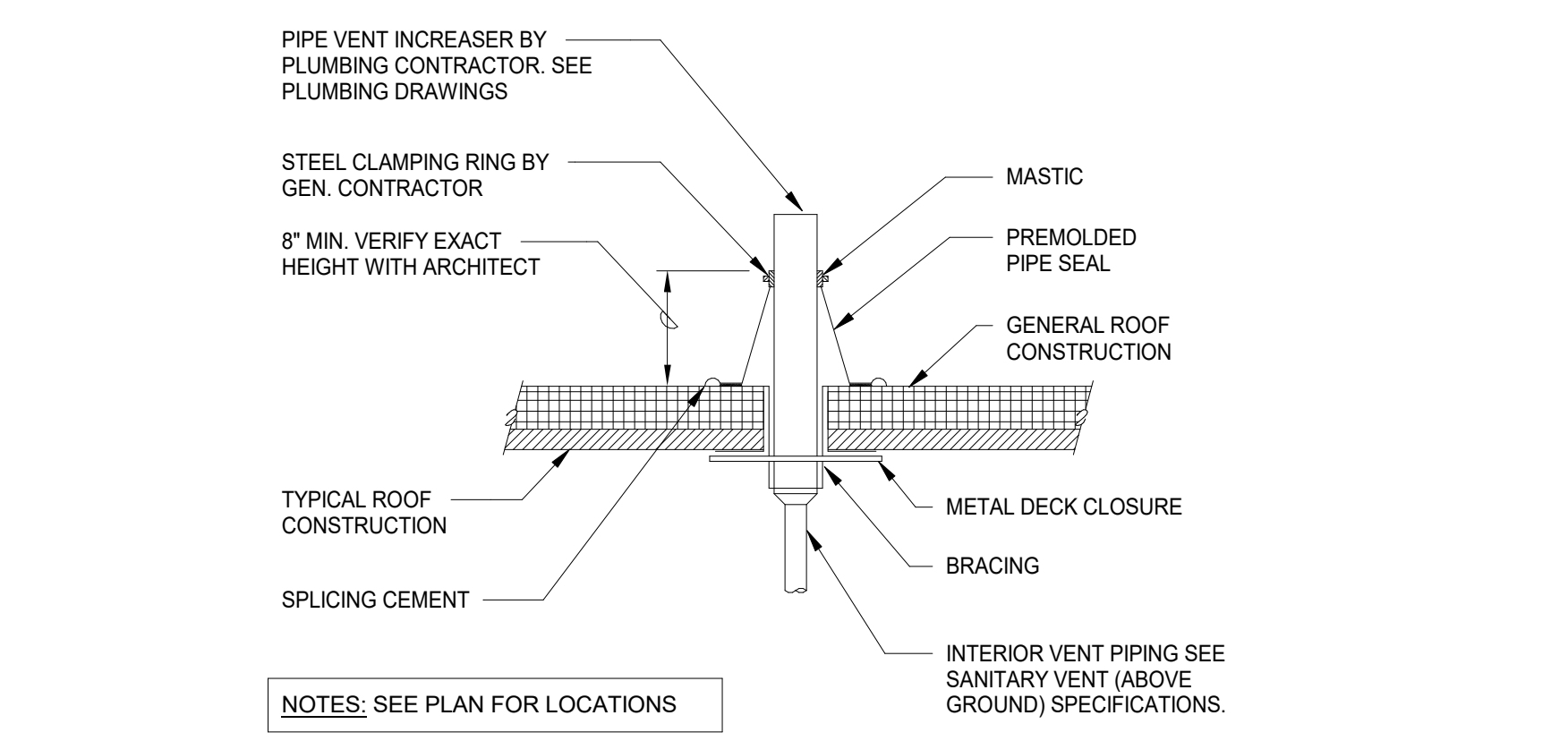
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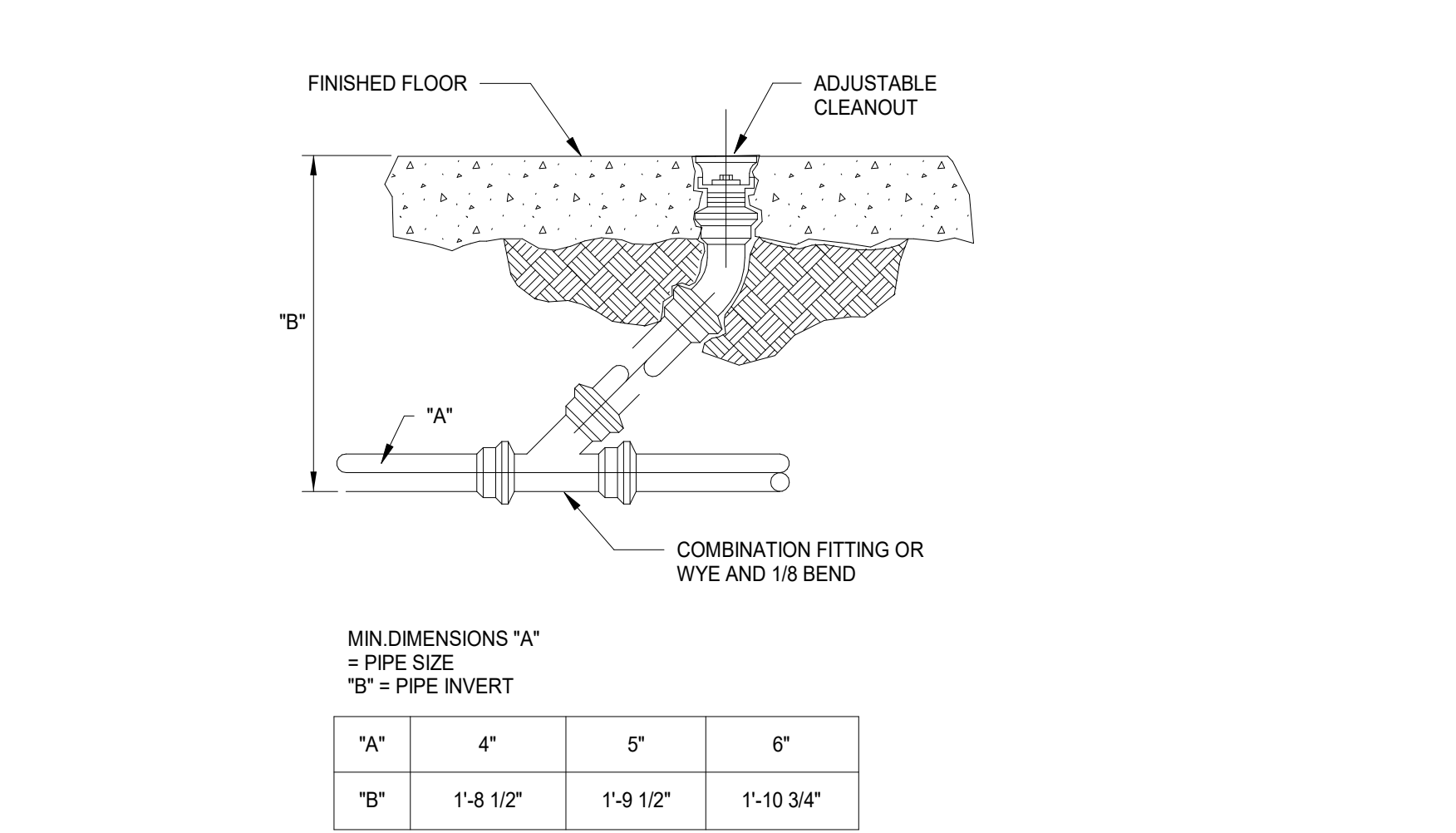
8 BUILDING WATER SERVICE DETAIL
N.T.S.



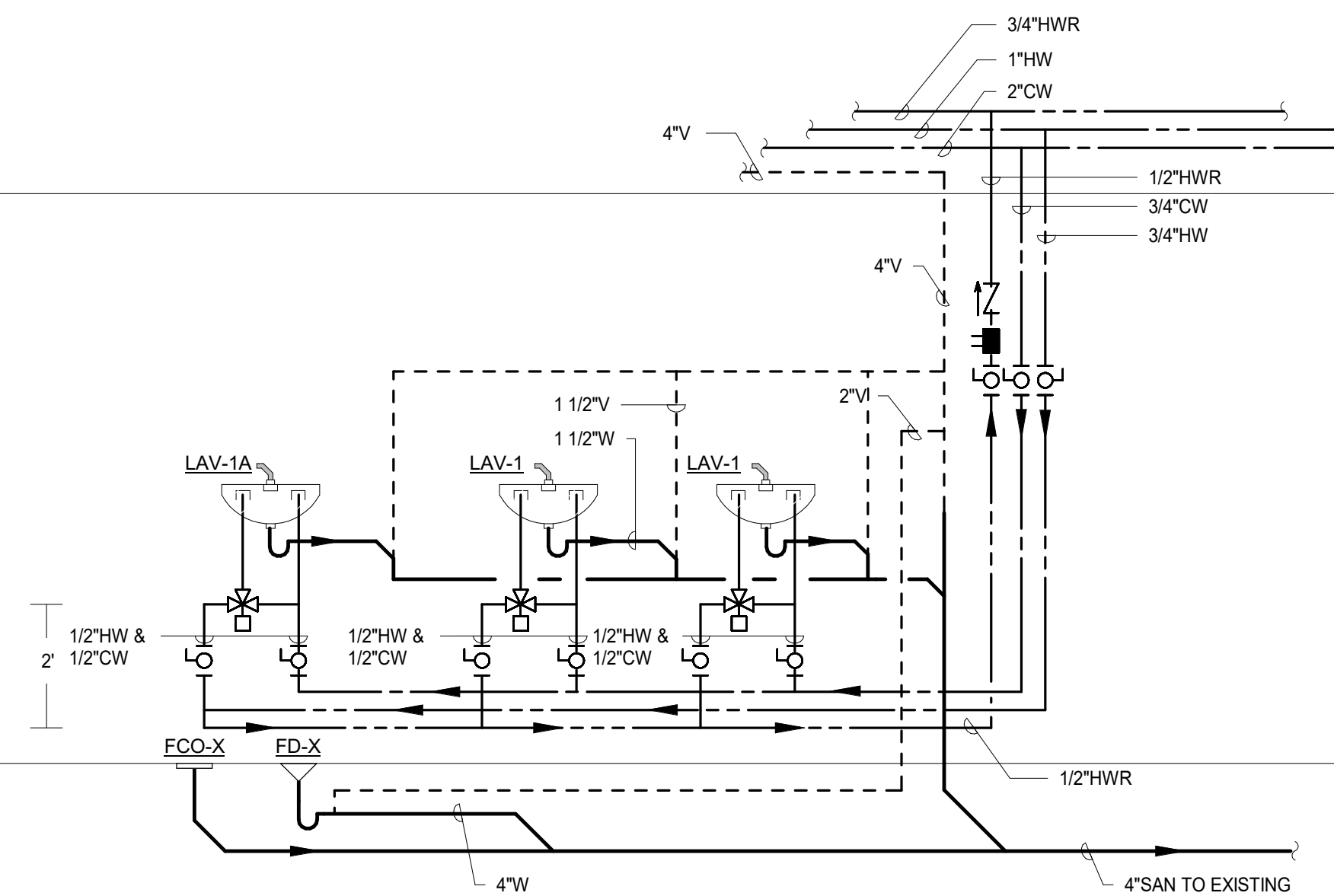
4 BELOW FOOTING/GRADE PIPE SLEEVE DETAIL
N.T.S.



5 PLUMBING VENT THROUGH ROOF (VTR) DETAIL
N.T.S.

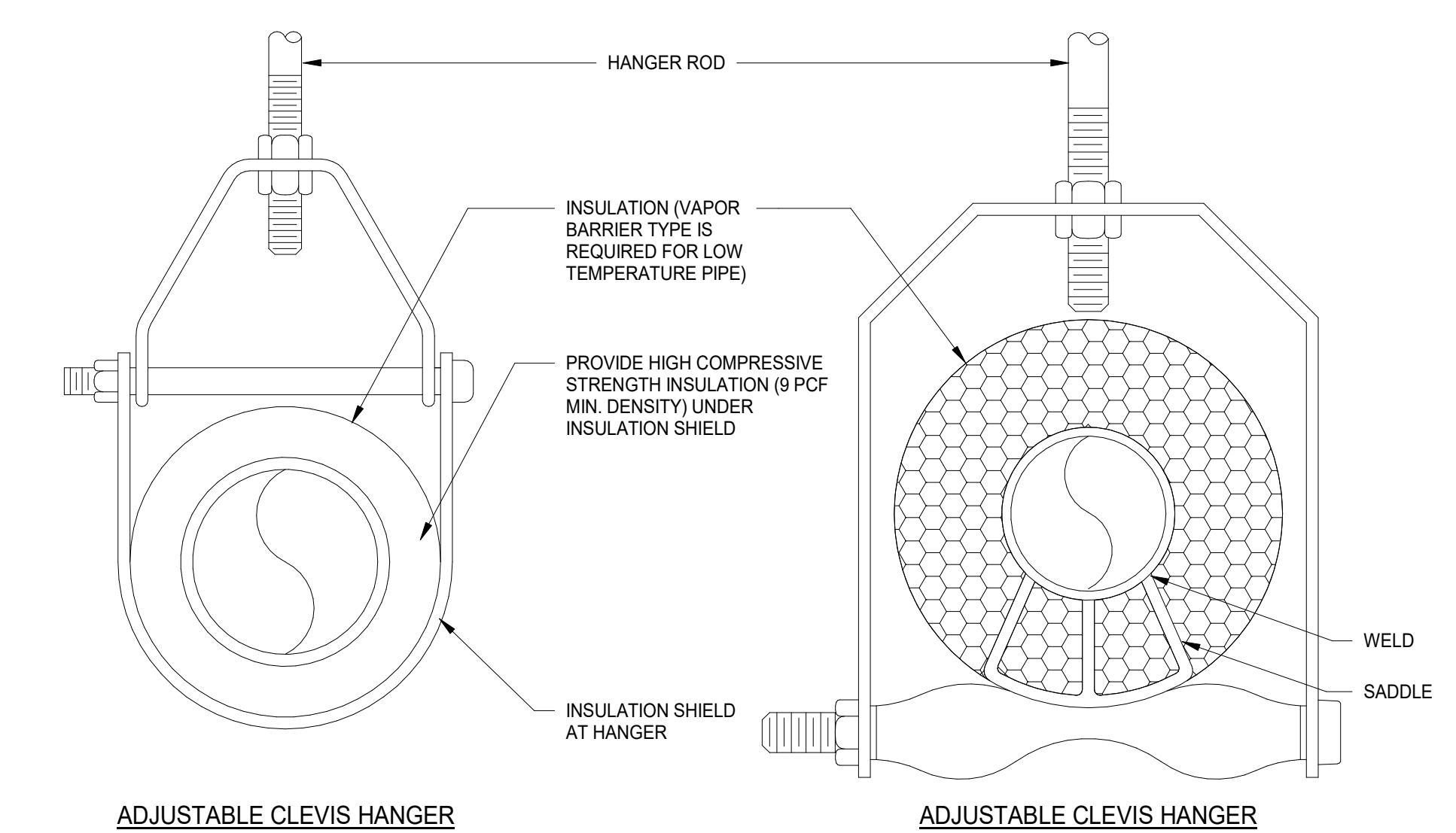


6 HUB DRAIN DETAIL
N.T.S.

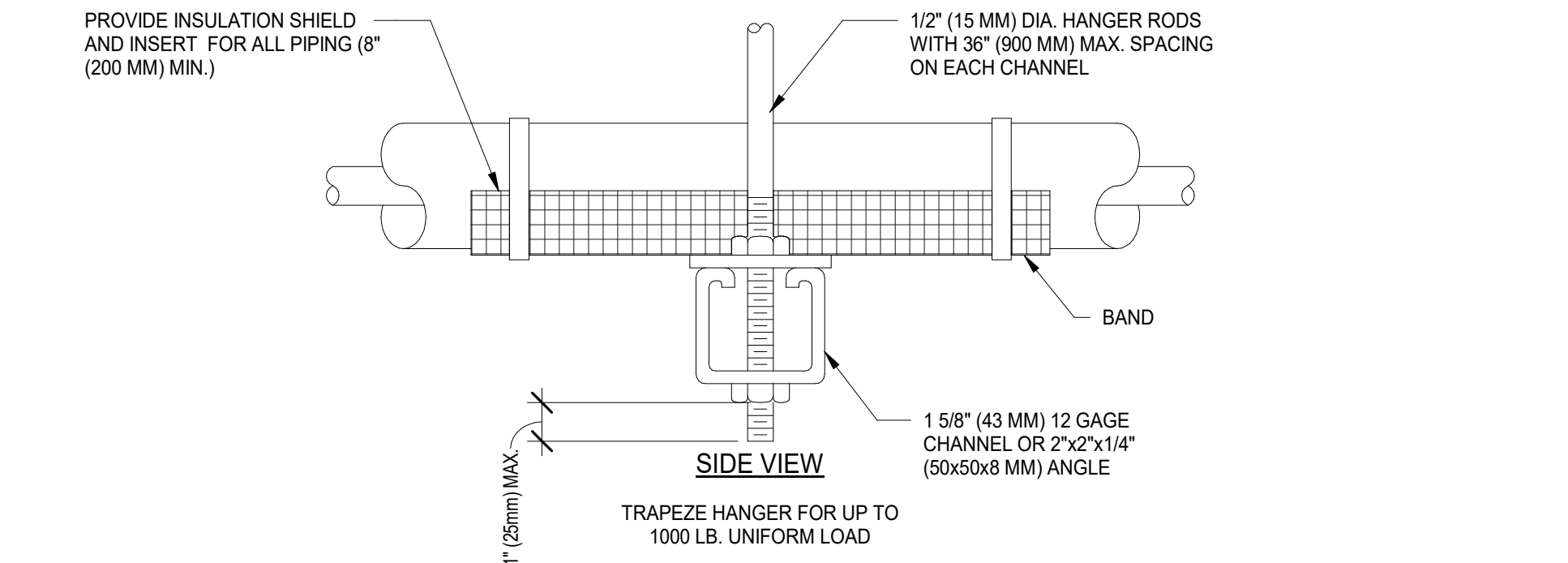


NOMINAL PIPE SIZE (IN)	VOLUME (LIQUID OUNCES PER FOOT LENGTH)	MAX PIPING LENGTH (FEET)	
		PUBLIC LAVATORY FAUCETS	OTHER FIXTURES AND APPLIANCES
1/4"	0.33	6	50
5/16"	5	4	50
3/8"	75	3	50
1/2"	1.5	2	43
5/8"	2	1	32
3/4"	3	0.5	21
7/8"	4	0.5	16
1"	5	0.5	13
1 1/4"	8	0.5	8
1 1/2"	11	0.5	6
2" OR LARGER	18	0.5	4

7 TYPICAL HWR PIPING DETAIL
N.T.S.



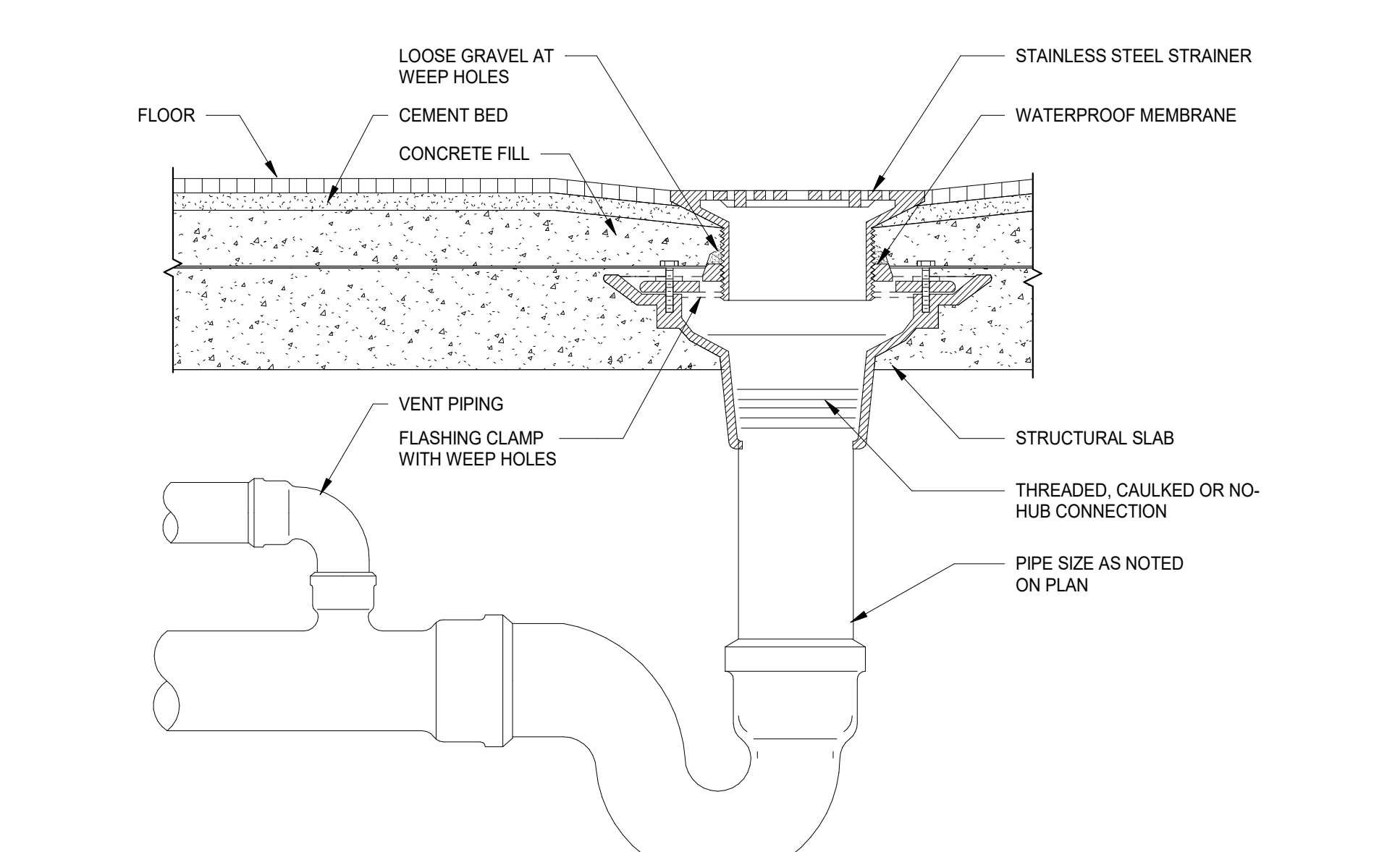
ADJUSTABLE CLEVIS HANGER



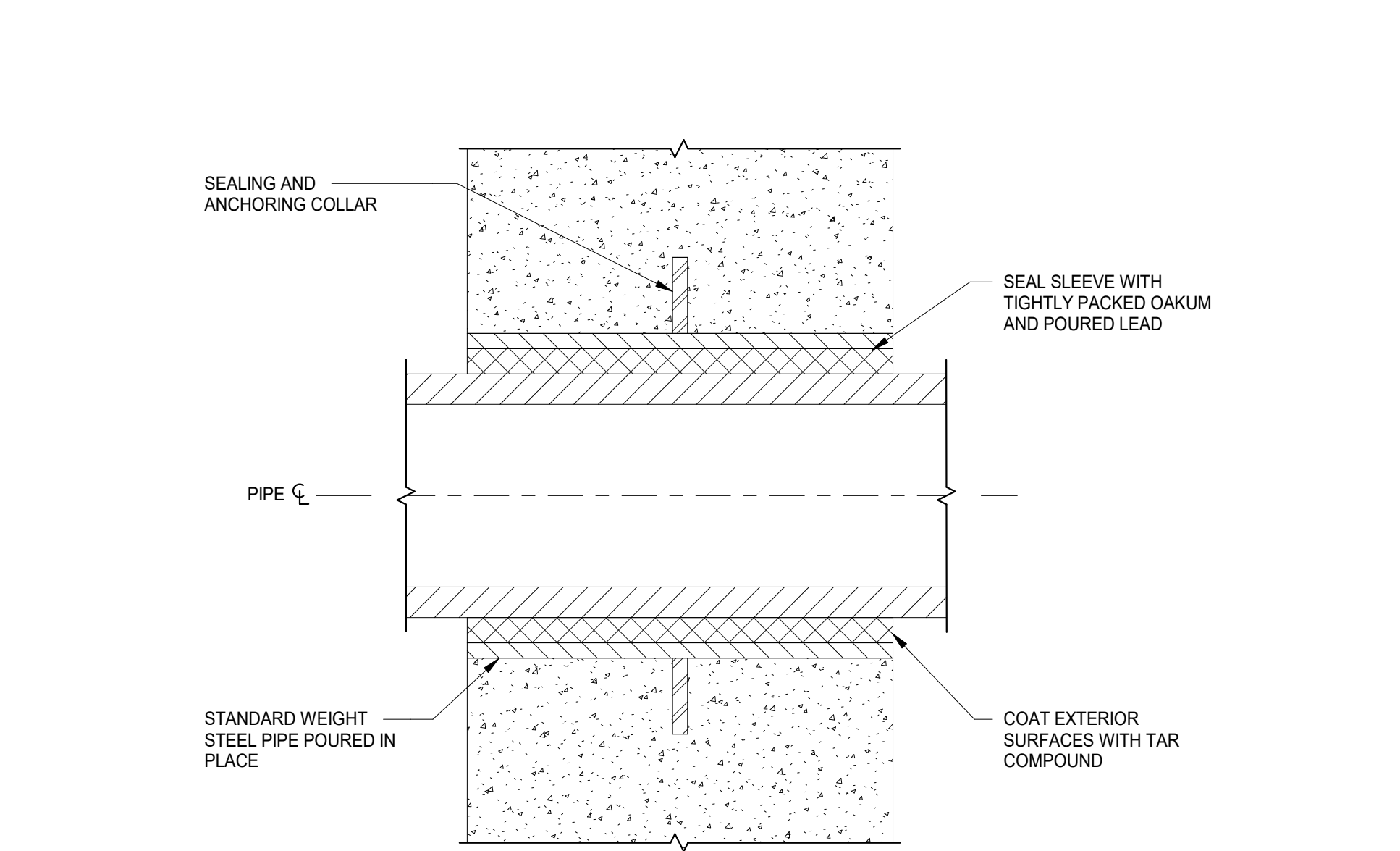
NOMINAL SIZE (IN)	THRU 3/4"	MAXIMUM PIPE/TUBING SUPPORT SPACING																
		1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
PIPE (FT.)	7	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
TUBING (FT.)	5	6	7	8	8	9	10	12	13	14	16							

NOTE:
1. FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

1 TYPICAL PIPE HANGER DETAIL
N.T.S.



2 TYPICAL FLOOR DRAIN DETAIL
N.T.S.



NOTE: FOR UNDERGROUND APPLICATION ONLY. NOT ACCEPTABLE ABOVE GRADE.

3 PIPE SLEEVE THROUGH EXTERIOR WALLS DETAIL
N.T.S.

NOT FOR CONSTRUCTION

SECTION 087111 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Commercial door hardware for the following:
 - a. Swinging doors.
 - b. Other doors to the extent indicated.
2. Cylinders for door hardware specified in other Sections.

B. Related Requirements:

1. Division 06 Section "Architectural Woodwork" for cabinet door hardware provided as part of architectural woodwork.
2. Division 08 Section "Hollow Metal Doors and Frames" for door silencers provided as part of the frame.
3. Division 08 Section "Aluminum-Framed Entrances and Storefronts" for installation of entrance door hardware, except cylinders.
4. Division 08 Section "Flush Wood Doors" for integral intumescent seals provided as part of labeled fire-rated assemblies.
5. Division 26 Sections for connections to electrical power system and for low-voltage wiring work.

- C. Products furnished, but not installed, under this Section include the following. Coordinating, purchasing, delivering, and scheduling remain requirements of this Section.

1. Hardware for aluminum entrance doors and frames specified in other Sections.

1.3 ACTION SUBMITTALS

- A. Product Data: Include installation details, material descriptions, dimensions of individual components and profiles, and finishes.

- B. Shop Drawings: Details of electrified door hardware, indicating the following:
1. Wiring Diagrams: For power, signal, and control wiring and including the following:
 - a. Details of interface of electrified door hardware and building safety and security systems.
 2. Operation Narrative: Describe the operation of doors controlled by electrified door hardware.
- C. Samples for Verification: For exposed door hardware of each type, in specified finish, full size. Tag with full description for coordination with the door hardware sets. Submit Samples before, or concurrent with, submission of the final door hardware sets.
1. Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.
- D. Other Action Submittals:
1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate the final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - a. Submittal Sequence: Submit door hardware schedule after or concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
 - b. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents. Double space entries, and number and date each page.
 - c. Content: Include the following information:
 - 1) Identification number, location, hand, fire rating, size, and material of each door and frame.
 - 2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - 3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - 4) Description of electrified door hardware sequences of operation and interfaces with other building control systems.
 - 5) Fastenings and other pertinent information.
 - 6) Explanation of abbreviations, symbols, and codes contained in schedule.
 - 7) Mounting locations for door hardware.

- 8) List of related door devices specified in other Sections for each door and frame.
2. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and Architectural Hardware Consultant.
- B. Product Certificates: For electrified door hardware, from the manufacturer.
 1. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
- C. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.
- D. Warranty: Special warranty specified in this Section.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by product manufacturers with experience in installing specified items.
- B. Hardware Supplier Qualifications:
 1. Supplier must be a corporate member in good standing of The Door and Hardware Institute (DHI).
 2. Supplier shall employ an active Architectural Hardware Consultant (AHC), who is currently participating in DHI's continuing education program (CEP).
 3. Warehousing Facilities: In Project's vicinity.
 4. Scheduling Responsibility: Preparation of door hardware schedule.
 5. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

- C. Source Limitations: Obtain each type of door hardware from a Source Limitations: Obtain each type of door hardware from a single manufacturer.
1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.
- D. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.
- E. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. at the tested pressure differential of 0.3-inch wg of water.
- F. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- G. Means of Egress Doors: Latches do not require more force than 8-1/2 lbf to release the latch for exterior doors and 5 lbf for interior doors. Locks do not require use of a key, tool, or special knowledge for operation.
- H. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and the Illinois Accessibility Act.
1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.
 2. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
 - b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 3. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

- I. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Owner, Construction Manager, Contractor, and Architect, conference participants shall also include Installer's Architectural Hardware Consultant. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
 1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 2. Preliminary key system schematic diagram.
 3. Requirements for key control system.
 4. Requirements for access control.
 5. Address for delivery of keys.
- J. Preinstallation Conference: Conduct conference at Project site.
 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 2. Inspect and discuss preparatory work performed by other trades.
 3. Inspect and discuss electrical roughing-in for electrified door hardware.
 4. Review sequence of operation for each type of electrified door hardware.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.8 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- C. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of operators and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
- B. Warranty Period: One year from date of Substantial Completion, except as follows:
 - 1. Exit Devices: Two years from date of Substantial Completion.
 - 2. Locks: 3 years from date of Substantial Completion.
 - 3. Manual Closers: 10 years from date of Substantial Completion.

1.10 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article to comply with requirements in this Section.
 - 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated.
 - 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by descriptive titles corresponding to requirements specified in Part 2.
- C. Hardware shall be BHMA Grade 1.

2.2 HINGES

- A. Hinges: BHMA A156.1, Grade 1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. Hager.
 - b. Ives.
 - c. Stanley.
 - d. No alternate manufacturers will be accepted without architect's approval prior to bidding.
- B. Quantity: Provide the following, unless otherwise indicated:
1. Two Hinges: For doors with heights up to 60 inches.
 2. Three Hinges: For doors with heights 61 to 90 inches.
 3. Four Hinges: For doors with heights 91 to 120 inches.
 4. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
- C. Hinge Weight: Unless otherwise indicated, provide the following:
1. Entrance Doors and other high frequency doors: Heavy duty continuous hinges.
 2. Interior Doors: Standard weight ball bearing hinges.
 3. Interior Doors 3'4" wide or greater: Heavy weight ball bearing hinges.
- D. Hinge Base Metal:
1. Exterior Butt Hinges: Stainless steel, with stainless-steel pin.
 2. Continuous gear hinges: Anodized aluminum anodized
 3. Interior Hinges: Steel with steel pin.
- E. Hinge Options:
1. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for outswinging exterior doors.
 2. Corners: Square.
 3. All hinges to be ball bearing hinges.
- F. Fasteners: Comply with the following:
1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
 2. Wood Screws: For wood doors and frames.
 3. Threaded-to-the-Head Wood Screws: For fire-rated wood doors.
 4. Screws: Phillips flat-head; machine screws (drilled and tapped holes) for metal doors. Wood screws for wood doors and frames]. Finish screw heads to match surface of hinges.

2.3 CONTINUOUS HINGES

- A. Continuous Hinges: BHMA 156.26, minimum 0.120-inch-thick, hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.
- B. Continuous, Gear-Type Hinges: Extruded-aluminum, pinless, geared hinge leaves joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:
 - a. Hager.
 - b. Ives.
 - c. Select.
 - d. No alternate manufacturers will be accepted without architect's approval prior to bidding.
 - 2. Grade: Grade 1-300.
 - 3. Hinges for Fire-Rated Assemblies: With steel fire pins to hold fire-rated doors in place if required by tested listing.
 - 4. Mounting: Concealed leaf.

2.4 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule. Provide mortise and cylindrical locksets as indicated in hardware sets.
- B. Lock Throw: Comply with testing requirements for length of bolts to comply with labeled fire door requirements, and as follows:
 - 1. Mortise Locks: Minimum 3/4-inch latchbolt throw.
 - 2. Deadbolts: Minimum 1-inch bolt throw.
- C. Lock Backset: 2-3/4 inches, unless otherwise indicated.
- D. Lock Trim:
 - 1. Description: As indicated in door hardware schedule.
 - 2. Dummy Trim: Match lever lock trim and escutcheons.
 - 3. Operating Device: Lever with escutcheons (roses).
- E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
 - 1. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.

- F. Mortise Locks: BHMA A156.13; Grade 1.
 - 1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. Schlage.
 - b. No alternate manufacturers will be accepted without architect's approval prior to bidding.

2.5 DOOR BOLTS

- A. Automatic Flush Bolts: BHMA A156.3, Grade 1; designed for mortising into door edge.
- B. Dustproof Strikes: Grade 1, polished wrought brass, with 3/4-inch-diameter, spring-tension plunger.
- C. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - 1. Flush Bolts:
 - a. Hager.
 - b. Ives.
 - c. Rockwood.
 - d. No alternate manufacturers will be accepted without architect's approval prior to bidding.
- D. Bolt Throw: Comply with testing requirements for length of bolts to comply with labeled fire door requirements, and as follows:
 - 1. Mortise Flush Bolts: Minimum 3/4-inch throw.

2.6 EXIT DEVICES AND AUXILIARY ITEMS

- A. Exit Devices and Auxiliary Items: BHMA A156.3, Grade 1.
 - 1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. Von Duprin
 - b. No alternate manufacturers will be accepted without architect's approval prior to bidding.
- B. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
- C. Fire Exit Devices: Devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252.

- D. Fire-Exit Removable Mullions: Provide removable mullions for use with fire exit devices complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252. Mullions shall be used only with exit devices for which they have been tested.
- E. Through-Bolt Fasteners: For exit devices and trim on metal doors and fire-rated wood doors.

2.7 LOCK CYLINDERS

- A. Lock Cylinders: Manufacturers interchangeable core, constructed from brass or bronze, stainless steel, or nickel silver.
 - 1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. Schlage.
 - b. No alternate manufacturers will be accepted without architect's approval prior to bidding.

2.8 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference.
 - 1. Key all new cylinders into the existing masterkey system.
- B. Keys: Nickel-silver.
 - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: "DO NOT DUPLICATE."
 - 2. Quantity: In addition to one extra blank key for each lock, provide the following:
 - a. Cylinder Change Keys: Three.
 - b. Master Keys: Five.
 - c. Grand Master Keys: Five.
 - d. Control Keys: Two.

2.9 OPERATING TRIM

- A. Operating Trim: BHMA A156.6, Grade 1; stainless steel, unless otherwise indicated.
 - 1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. Hager.
 - b. Ives.
 - c. Rockwood.
 - d. No alternate manufacturers will be accepted without architect's approval prior to bidding.
- B. Flat Push Plates: 0.050 inch thick, 4 inches wide by 16 inches high with square corners and beveled edges; secured with exposed screws.
- C. Straight Door Pulls: With minimum clearance of 1-1/2 inches from face of door.
 - 1. Type: 1-inch constant diameter pull.
 - 2. Mounting: Through bolted with oval-head machine screws and countersunk washers.
 - 3. Center to Center Length: 10 inches.

2.10 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4, Grade 1; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force. Provide extra duty arm at parallel arm locations.
 - 1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. LCN
 - b. No alternate manufacturers will be accepted without architect's approval prior to bidding.
- B. Surface Closer with Cover: Grade 1; Modern Type with mechanism enclosed in cover. Mounting and type as indicated, with adjustable backcheck effective between 60 and 85 degrees of door opening, and molded plastic cover.
- C. Size of Units: Unless otherwise indicated, comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

2.11 AUTOMATIC DOOR OPERATORS

- A. General: Provide operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL325. Coordinate operator mechanisms with door operation, hinges, and activation devices.

Fire Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA80 for fire-rated door components and are listed and labeled by a qualified testing agency.

- B. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.
- C. Standard: Certified ANSI/BHMA A156.19.

Performance Requirements:

- a. Opening force if power fails: Not more than 15lbf to release a latch if provided, not more than 30lbf required to manually set door in motion, and not more than 15lbf required to fully open door.
 - b. Entrapment Protection: Not more than 15lbf required to prevent stopped door from closing or opening.
- D. Configuration: Surface mounted. Door operators to control single swinging and pair of swinging doors.
- E. Operation: Power opening and spring closing capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.
- F. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.
- G. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.
- H. Activation Devices: Provide activation devices in accordance with ANSI/BHMA A156.19 standard, for condition of exposure indicated and for long term, maintenance free operation under normal traffic load operation. Coordinate activation control with electrified hardware and access control interfaces. Activation switches are standard SPST, with option DPDT availability.

1. Manufacturers:

- a. LCN

- b. Horton
- c. Motion Access
- d.. No alternate manufacturers will be accepted without architect's approval prior to bidding.

2.12 MECHANICAL STOPS AND HOLDERS

- A. Wall- and Floor-Mounted Stops: BHMA A156.16, Grade 1; polished cast brass, bronze, or aluminum base metal; with rubber bumper.
 - 1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. Hager.
 - b. Ives.
 - c. Rockwood.
 - d. No alternate manufacturers will be accepted without architect's approval prior to bidding.

2.13 OVERHEAD STOPS AND HOLDERS

- A. Overhead Stops and Holders: BHMA A156.8, Grade 1.
 - 1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. ABH.
 - b. Glynn-Johnson.
 - c. Rixson.
 - d. No alternate manufacturers will be accepted without architect's approval prior to bidding.

2.14 METAL PROTECTIVE TRIM UNITS

- A. Metal Protective Trim Units: BHMA A156.6, Grade 1; fabricated from 0.050-inch-thick sheet; with manufacturer's standard machine or self-tapping screw fasteners.
 - 1. Approved Manufacturers: Subject to compliance with requirements, provide product indicated on schedule or equal product by one of the following:
 - a. Hager.
 - b. Ives.
 - c. Rockwood.
 - d. No alternate manufacturers will be accepted without architect's approval prior to bidding.

2.15 ELECTRIC STRIKES

- A. Electric Strikes: Heavy duty, confirming to ANSI/BHMA A156.31, UL listed for both Burglary Resistance and for use on fire rated door assemblies. Stainless Steel construction tested to 2000lbs of static strength and 120ft-lbs dynamic strength. Strikes tested for a minimum 1 million operating cycles. Provide strikes with 12 or 24VDC capability and supplied as fail secure unless otherwise specified.
1. Acceptable Manufacturers:
 - a. HES.
 - b. Von Duprin.
 - c. No alternate manufacturers will be accepted without architect's approval prior to bidding.

2.16 DOOR GASKETING

- A. Standard: BHMA A156.22.
- B. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 2. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
 3. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- C. Air Leakage: Not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to ASTM E 283.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated, based on testing according to ASTM E 1408.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Gasketing Materials: ASTM D 2000 and AAMA 701/702.
- G. Manufacturers:
 1. National Guard Products (NGP).
 2. Pemko.
 3. Reese.
 4. Smoke Seals. Provide smoke seal gasketing at all fire doors regardless if shown in sets.

2.17 THRESHOLDS

- A. Standard: BHMA A156.21.
- B. Accessibility Requirements: Where thresholds are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."
 - 1. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high.
- C. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch high.
- D. Manufacturers:
 - 1. National Guard Products (NGP).
 - 2. Pemko.
 - 3. Reese.

2.18 FABRICATION

- A. Base Metals: Produce door hardware units of base metal, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18 for finishes. Do not furnish manufacturer's standard materials or forming methods if different from specified standard.
- B. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
 - 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 - 2. Fire-Rated Applications:
 - a. Wood or Machine Screws: For the following:
 - 1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
 - 2) Strike plates to frames.
 - 3) Closers to doors and frames.

- b. Steel Through Bolts: For the following unless door blocking is provided:
 - 1) Surface hinges to doors.
 - 2) Closers to doors and frames.
 - 3) Surface-mounted exit devices.
- 3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
- 4. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."
- 5. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.19 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
- B. Wood Doors: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. Stops: Provide wall stops for doors unless floor or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.

- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.6 MISCELLANEOUS

- A. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL10C, unless otherwise indicated. Provide positive latching and self closing, regardless if specified in sets.
- B. Items of hardware not definitely specified herein but necessary for completion of the Work shall be provided. Such items shall be of type and quality suitable to the service required and comparable to the adjacent hardware. Where size and shape of members is such as to prevent the use of types specified, hardware shall be furnished of suitable types having as nearly as practicable the same operation and quality as the type specified. Sizes shall be adequate for the service required. Include such nuances as strike type, strike lip, raised barrel hinges, mounting brackets, fasteners, shims, and coordination between conflicting products. All doors shall be provided with a stop.

3.7 DOOR HARDWARE SCHEDULE

SET 01

2 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
2 EA	EXIT DEVICE	3347EO	626	VON DUPRIN
2 EA	PULLS	BF158	630	ROCKWOOD
2 EA	CLOSER	4040XP	689	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
2 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

**SEALS BY DOOR SUPPLIER.

SET 02

1 EA	CONTINUOUS HINGE	780-112HD X EPT PREP	CLR	HAGER
1 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
1 EA	POWER TRANSFER	EPT-10	SP28	VON DUPRIN
1 EA	EXIT DEVICE	QEL3347A-NL-OP	626	VON DUPRIN
1 EA	EXIT DEVICE	3347EO	626	VON DUPRIN
1 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
2 EA	PULLS	BF158	630	ROCKWOOD
1 EA	CLOSER	4040XP	689	LCN
1 EA	AUTO OPERATOR	4640	689	LCN
2 EA	ACTUATOR	8310-856T	630	LCN
2 EA	FLUSH MOUNT BOX	8310-868F	---	LCN

1 EA	WEATHER RING	8310-800	---	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	POWER SUPPLY	PS902 X 900-2RS	GRY	VON DUPRIN
2 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP
1 EA	POSITION SWITCH	1078	GRY	GE

**CARD READER BY OTHERS.

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

**SEALS BY DOOR SUPPLIER.

OPERATION: DOORS NORMALLY LOCKED AND CLOSED. VALID CARD READ ACTIVATES OUTSIDE AUTOMATIC OPERATOR ACTUATOR AND ACTIVATES ELECTRIC LATCH RETRACTION EXIT DEVICE TO ALLOW ENTRY. AT DISCRETION OF FACILITY, ELECTRIC LATCH RETRACTION EXIT DEVICE CAN BE PROGRAMMED TO BE RETRACTED TO ALLOW ENTRY (WHEN RETRACTED, OUTSIDE AUTOMATIC OPERATOR ACUATOR TO BE ACTIVE). FREE EGRESS IS ALWAYS ALLOWED.

SET 03

2 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
2 EA	EXIT DEVICE	3347EO	626	VON DUPRIN
2 EA	PULLS	BF158	630	ROCKWOOD
2 EA	CLOSER	4040XP	689	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

SET 04

1 EA	CONTINUOUS HINGE	780-112HD X EPT PREP	CLR	HAGER
1 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
1 EA	POWER TRANSFER	EPT-10	SP28	VON DUPRIN
1 EA	EXIT DEVICE	QEL3347A-NL-OP	626	VON DUPRIN
1 EA	EXIT DEVICE	3347EO	626	VON DUPRIN
1 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
2 EA	PULLS	BF158	630	ROCKWOOD
1 EA	CLOSER	4040XP	689	LCN
1 EA	AUTO OPERATOR	4640	689	LCN
2 EA	ACTUATOR	8310-856T	630	LCN
2 EA	FLUSH MOUNT BOX	8310-868F	---	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	POWER SUPPLY	PS902 X 900-2RS	GRY	VON DUPRIN
1 EA	POSITION SWITCH	1078	GRY	GE

**CARD READER AND REMOTE RELEASE BY OTHERS.

OPERATION: DOORS NORMALLY LOCKED AND CLOSED. VALID CARD READ OR REMOTE RELEASE ACTIVATES OUTSIDE AUTOMATIC OPERATOR ACTUATOR AND

ACTIVATES ELECTRIC LATCH RETRACTION EXIT DEVICE TO ALLOW ENTRY. AT DISCRETION OF FACILITY, ELECTRIC LATCH RETRACTION EXIT DEVICE CAN BE PROGRAMMED TO BE RETRACTED TO ALLOW ENTRY (WHEN RETRACTED, OUTSIDE AUTOMATIC OPERATOR ACUATOR TO BE ACTIVE). FREE EGRESS IS ALWAYS ALLOWED.

SET 05

1 EA	CONTINUOUS HINGE	780-112HD X EPT PREP	CLR	HAGER
1 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
1 EA	POWER TRANSFER	EPT-10	SP28	VON DUPRIN
1 EA	EXIT DEVICE	QEL3347A-NL-OP	626	VON DUPRIN
1 EA	EXIT DEVICE	3347EO	626	VON DUPRIN
1 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
2 EA	PULLS	BF158	630	ROCKWOOD
1 EA	CLOSER	4040XP	689	LCN
1 EA	AUTO OPERATOR	4640	689	LCN
1 EA	ACTUATOR	8310-856T	630	LCN
1 EA	FLUSH MOUNT BOX	8310-868F	---	LCN
1 EA	WEATHER RING	8310-800	---	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	POWER SUPPLY	PS902 X 900-2RS	GRY	VON DUPRIN
2 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP
1 EA	POSITION SWITCH	1078	GRY	GE

**CARD READER BY OTHERS.

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

**SEALS BY DOOR SUPPLIER.

OPERATION: DOORS NORMALLY LOCKED AND CLOSED. VALID CARD READ ACTIVATES OUTSIDE AUTOMATIC OPERATOR ACTUATOR AND ACTIVATES ELECTRIC LATCH RETRACTION EXIT DEVICE TO ALLOW ENTRY. AT DISCRETION OF FACILITY, ELECTRIC LATCH RETRACTION EXIT DEVICE CAN BE PROGRAMMED TO BE RETRACTED TO ALLOW ENTRY (WHEN RETRACTED, OUTSIDE AUTOMATIC OPERATOR ACUATOR TO BE ACTIVE). FREE EGRESS IS ALWAYS ALLOWED.

SET 06

2 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
2 EA	PUSH/PULL	BF15847	630	HAGER
2 EA	CLOSER	4040XP	689	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

SET 07

1 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
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1 EA	EXIT DEVICE	33A-EO	626	VON DUPRIN
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

**SEALS BY DOOR SUPPLIER.

SET 08

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	CLASSROOM SEC	L9071R X 05A	626	SCHLAGE
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON

SET 09

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	OFFICE LOCK	L9050R X 05A	626	SCHLAGE
1 EA	WALL STOP	409	630	ROCKWOOD

SET 10

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 805A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 11

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP X CUSH	689	LCN
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 12

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	ELECTRIC HINGE	AS SPECIFIED X ETW-6	652	HAGER
1 EA	ELECTRIC LOCK	RX-L9092REU X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD
1 EA	POSITION SWITCH	1078	GRY	GE

**CARD READER BY OTHERS.

SET 13

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 14

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	CORRIDOR LOCK	L9456R X 05A X L283-722	626	SCHLAGE
1 EA	WALL STOP	409	630	ROCKWOOD

SET 15

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	PRIVACY	L9040 X 05A X L283-722	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 16

1 EA	CONTINUOUS HINGE	780-224HD	CLR	HAGER
1 EA	CLASSROOM SEC	L9071R X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 17

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	CLASSROOM LOCK	L9070 X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 18

2 EA	CONTINUOUS HINGE	780-224HD	CLR	HAGER
2 EA	EXIT DEVICE	9927L-BE-F X LBR	626	VON DUPRIN
2 EA	CLOSER	4040XP	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
2 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD
1 EA	ASTRAGAL	5070CL	AL	NGP
1 SET	SEALS	5050C	BLK	NGP

SET 19

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	PASSAGE	L9010 X 05A	626	SCHLAGE

1 EA	WALL STOP	409	630	ROCKWOOD
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SET 20

1 EA	CONTINUOUS HINGE	780-224HD	CLR	HAGER
1 EA	CLASSROOM SEC	L9071R X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 21

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	ELECTRIC HINGE	AS SPECIFIED X ETW-6	652	HAGER
1 EA	ELECTRIC LOCK	RX-L9092REU X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD
1 EA	POSITION SWITCH	1078	GRY	GE

**CARD READER BY OTHERS.

OPERATION: DOOR NORMALLY LOCKED AND CLOSED. VALID CARD READ UNLOCKS ELECTRIC LOCK TO ALLOW ENTRY. FREE EGRESS IS ALWAYS ALLOWED.

SET 22

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	CLASSROOM LOCK	L9070R X 05A	626	SCHLAGE
1 EA	WALL STOP	409	630	ROCKWOOD

SET 23

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	OFFICE LOCK	L9050R X 05A	626	SCHLAGE
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON

SET 24

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD
1 SET	SEALS	5050C	BLK	NGP

SET 25

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	CLASSROOM LOCK	L9070R X 05A	626	SCHLAGE
1 EA	CLOSER W/HOLD	4040XP-H	689	LCN

1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 26

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STORE LOCK	L9466R X 05A	626	SCHLAGE
1 EA	WALL STOP	409	630	ROCKWOOD

SET 27

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	EXIT DEVICE	99L-NL	626	VON DUPRIN
1 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
1 EA	CLOSER	4040XP X CUSH	689	LCN
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

**PROVIDE KNURLED LEVER.

SET 28

2 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
2 EA	PUSH/PULL	BF15847	630	HAGER
2 EA	CLOSER	4040XP	689	LCN
1 EA	AUTO OPERATOR	4640	689	LCN
1 EA	ACTUATOR	8310-856T	630	LCN
1 EA	FLUSH MOUNT BOX	8310-868F	---	LCN
1 EA	DUAL ACTUATOR	8310-855	---	LCN
1 EA	FLUSH MOUNT BOX	8310-867F	---	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

SET 29

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STORE LOCK	L9466R X 05A	626	SCHLAGE
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON

SET 30

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 05A	626	SCHLAGE
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON

SET 31

2 EA	CONTINUOUS HINGE	780-224HD	CLR	HAGER
2 EA	EXIT DEVICE	9927L-BE-F X LBR	626	VON DUPRIN
2 EA	CLOSER	4040XP	689	LCN

2 EA	MAG HOLD OPEN	SEM7850	689	LCN
2 EA	KICKPLATE	10" X 1" LDW	630	ROCKWOOD
1 EA	ASTRAGAL	5070CL	AL	NGP
1 SET	SEALS	5050C	BLK	NGP

SET 32

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 805A	626	SCHLAGE
1 EA	CLOSER	4040XP X CUSH	689	LCN
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 33

2 EA	CONTINUOUS HINGE	780-224HD	CLR	HAGER
2 EA	EXIT DEVICE	99L-F	626	VON DUPRIN
3 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
2 EA	CLOSER	4040XP	689	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	KEYED MULLION	KR9954	SP28	VON DUPRIN
2 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD
1 SET	ASTRAGAL	115N	AL	NGP
1 SET	SEALS	5050C	BLK	NGP

SET 34

2 EA	CONTINUOUS HINGE	780-224HD	CLR	HAGER
1 EA	EXIT DEVICE	9975L-BE-F	626	VON DUPRIN
1 EA	EXIT DEVICE	9947L-BE-F	626	VON DUPRIN
2 EA	CLOSER	4040XP	689	LCN
2 EA	MAG HOLD OPEN	SEM7850	689	LCN
1 EA	CARRY BAR	CB1	626	IVES
1 EA	COORDINATOR	COR X FL	628	IVES
2 EA	MNTG BRACKET	AS REQUIRED	628	IVES
2 EA	KICKPLATE	10" X 1" LDW	630	ROCKWOOD
1 EA	ASTRAGAL	BY DOOR SUPPLIER		
1 SET	SEALS	5050C	BLK	NGP

SET 35

2 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
2 EA	EXIT DEVICE	3347EO	626	VON DUPRIN
2 EA	PULLS	BF158	630	ROCKWOOD
2 EA	CLOSER	4040XP	689	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
2 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP
2 EA	POSITION SWITCH	1078	GRY	GE

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

**SEALS BY DOOR SUPPLIER.

SET 36

1 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
1 EA	EXIT DEVICE	33A-EO	626	VON DUPRIN
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP
1 EA	POSITION SWITCH	1078	GRY	GE

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

**SEALS BY DOOR SUPPLIER.

SET 37

1 EA	CONTINUOUS HINGE	780-224HD	CLR	HAGER
1 EA	EXIT DEVICE	99NL-OP	626	VON DUPRIN
1 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
1 EA	PULL	BF158	630	ROCKWOOD
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 SET	WEATHERSTRIP	160S	AL	NGP
1 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP
1 EA	POSITION SWITCH	1078	GRY	GE

SET 38

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	CLASSROOM LOCK	L9070R X 05A	626	SCHLAGE
1 EA	OVERHEAD STOP	GJ90 SERIES	630	GLYNN-JOHNSON

SET 39

1 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
1 EA	EXIT DEVICE	33A-NL-OP	626	VON DUPRIN
1 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
1 EA	PULL	BF158	630	ROCKWOOD
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	ELECTRIC STRIKE	6300	630	VON DUPRIN
1 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP
1 EA	POSITION SWITCH	1078	GRY	GE

**CARD READERS BY OTHERS.

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

**SEALS BY DOOR SUPPLIER.

OPERATION: DOOR NORMALLY LOCKED AND CLOSED. VALID CARD READ ACTIVATES ELECTRIC STRIKE TO ALLOW ENTRY. AT DISCRETION OF FACILITY, ELECTRIC STRIKE CAN BE PROGRAMMED TO BE RELEASED TO ALLOW ENTRY. FREE EGRESS IS ALWAYS ALLOWED.

SET 40

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 805A	626	SCHLAGE
2 EA	CLOSER	4040XP X CUSH	689	LCN
1 SET	AUTO FLUSHBOLTS	FB31P/FB41P	630	IVES
1 EA	DUSTPROOF STRIKE	DP2	626	IVES
1 EA	COORDINATOR	COR X FL	628	IVES
2 EA	MNTG BRACKETS	AS REQUIRED	628	IVES
2 EA	KICKPLATE	10" X 1" LDW	630	ROCKWOOD
1 EA	ASTRAGAL	5070CL	AL	NGP
1 SET	SEALS	5050C	BLK	NGP

SET 41

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 805A	626	SCHLAGE
2 EA	CLOSER	4040XP	689	LCN
2 EA	WALL STOP	409	630	ROCKWOOD
1 SET	AUTO FLUSHBOLTS	FB31P/FB41P	630	IVES
1 EA	DUSTPROOF STRIKE	DP2	626	IVES
1 EA	COORDINATOR	COR X FL	628	IVES
2 EA	MNTG BRACKETS	AS REQUIRED	628	IVES
2 EA	KICKPLATE	10" X 1" LDW	630	ROCKWOOD

**ALLOW 180 DEGREE SWING.

SET 42

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	EXIT DEVICE	99L-2SI	626	VON DUPRIN
2 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
1 EA	CLOSER W/HOLD	4040XP-H	689	LCN
1 EA	WALL STOP	409	630	ROCKWOOD
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD

SET 43

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	CLASSROOM LOCK	L9070R X 05A	626	SCHLAGE
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON

SET 44

1 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
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**BALANCE OF HARDWARE BY DOOR SUPPLIER.

SET 45

EA	HINGES	AS SPECIFIED	630	HAGER
1 EA	STOREROOM LOCK	L9080R X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 SET	WEATHERSTRIP	160S	AL	NGP
1 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP

SET 46

1 EA	CONTINUOUS HINGE	780-224HD	CLR	HAGER
1 EA	EXIT DEVICE	99NL-OP	626	VON DUPRIN
1 EA	CYLINDER	AS REQUIRED	626	VON DUPRIN
1 EA	PULL	BF158	630	ROCKWOOD
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	KICKPLATE	10" X 2" LDW	630	ROCKWOOD
1 SET	WEATHERSTRIP	160S	AL	NGP
1 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP

SET 47

EA	HINGES	AS SPECIFIED	630	HAGER
1 EA	ENTRANCE LOCK	L9453R X 05A	626	SCHLAGE
1 EA	CLOSER	4040XP	689	LCN
1 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 SET	WEATHERSTRIP	160S	AL	NGP
1 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP

SET 48

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	PRIVACY	L9040 X 05A X L283-722	626	SCHLAGE
1 EA	WALL STOP	409	630	ROCKWOOD

SET 49

EA	HINGES	AS SPECIFIED	652	HAGER
1 EA	STOREROOM LOCK	L9080R X 05A	626	SCHLAGE
2 EA	CLOSER	4040XP	689	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 SET	AUTO FLUSHBOLTS	FB31P	630	IVES
1 EA	DUSTPROOF STRIKE	DP1	626	IVES

1 EA	COORDINATOR	COR X FL	628	IVES
2 EA	MNTG BRACKETS	AS REQUIRED	628	IVES
2 EA	KICKPLATE	10" X 1" LDW	630	ROCKWOOD
1 SET	ASTRAGAL	115NA	AL	NGP
1 SET	SEALS	5050C	BLK	NGP
1 EA	THRESHOLD	8425	AL	NGP

SET 50

1 EA	CLASSROOM LOCK	ND70RD X ATH	626	SCHLAGE
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**BALANCE OF HARDWARE TO BE PROVIDED BY DOOR SUPPLIER.

SET 51

1 EA	CONTINUOUS HINGE	780-112HD X EPT PREP	CLR	HAGER
1 EA	CONTINUOUS HINGE	780-112HD	CLR	HAGER
1 EA	POWER TRANSFER	EPT-10	SP28	VON DUPRIN
1 EA	EXIT DEVICE	QEL3347A-NL-OP	626	VON DUPRIN
1 EA	EXIT DEVICE	3347EO	626	VON DUPRIN
1 EA	I/C CYLINDER	AS REQUIRED	626	SCHLAGE
2 EA	PULLS	BF158	630	ROCKWOOD
2 EA	CLOSER	4040XP	689	LCN
2 EA	OVERHEAD STOP	GJ100 SERIES	630	GLYNN-JOHNSON
1 EA	POWER SUPPLY	PS902 X 900-2RS	GRY	VON DUPRIN
2 EA	SWEEP	200N	AL	NGP
1 EA	THRESHOLD	8425	AL	NGP
2 EA	POSITION SWITCH	1078	GRY	GE

**CARD READER BY OTHERS.

**PROVIDE DROP PLATE AND BLADE STOP SPACERS AS REQUIRED FOR CLOSER INSTALLATION.

**SEALS BY DOOR SUPPLIER.

OPERATION: DOORS NORMALLY LOCKED AND CLOSED. VALID CARD READ ACTIVATES ELECTRIC LATCH RETRACTION EXIT DEVICE TO ALLOW ENTRY. AT DISCRETION OF FACILITY, ELECTRIC LATCH RETRACTION EXIT DEVICE CAN BE PROGRAMMED TO BE RETRACTED TO ALLOW ENTRY. FREE EGRESS IS ALWAYS ALLOWED.