



DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

County Executive
Joseph T. Parisi

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Commissioner / Director
Gerald J. Mandli

December 4, 2013

ATTENTION ALL REQUEST FOR BID (RFB) PROPOSAL HOLDERS

RFB NO. 313086 - ADDENDUM NO. 5

ARCTIC ANIMAL EXHIBIT AND CONCESSIONS

BIDS DUE: THURSDAY, DECEMBER 12, 2013, 2:00 PM.
DUE DATE AND TIME ARE NOT CHANGED BY THIS ADDENDUM.

This Addendum is issued to modify, explain or clarify the original Request for Bid (RFB) and is hereby made a part of the RFB. Please attach this Addendum to the RFB. **Bidders must acknowledge all Addenda on the Bid Form.**

PLEASE MAKE THE FOLLOWING CHANGES:

GENERAL

1. Utilities

- Regarding contactor use during construction:
Water connection is by contractor, no use charges will be assessed.
Power & gas connections, meters and use charges are the responsibility of the contractor.

2. Permits

- All construction permits and fees are the responsibility of the contractor.

3. Existing Tunnel (Existing Bear Holding)

- Drawings showing the existing tunnel referred to on SD1.0, SA1.1 & SG1.0 are included with this addendum for information only. They are not considered part of the construction documents.

4. Bidform

- Unit price #2- Removal of Bedrock is further defined as: "Rock excavation will not be paid unless the removal of the consolidated rock formation requires methods above and beyond the operational capacity of a 100,000-pound hydraulic excavator utilizing a rock bucket"

CIVIL

5. Specification

- Section 331000 and 333113- undercut and placement of ¾" washed stone shall be considered incidental and included in base bid for undercut up to 6" in a given area. Unit Price #1 will cover additional undercut if required by the engineering/testing team.

ARCHITECTURAL

6. Specification section 061053, Miscellaneous Rough Carpentry

- Add section 2.7 as follows:

2.7 DIMENSION LUMBER FRAMING

A. Framing for open air viewing structures: No. 2 grade.

1. Species:

- a. Hem-fir (north); NLGA.
- b. Southern pine; SPIB.
- c. Douglas fir-larch; WCLIB or WWPA.
- d. Mixed southern pine; SPIB.
- e. Spruce-pine-fir; NLGA.
- f. Douglas fir-south; WWPA.
- g. Hem-fir; WCLIB or WWPA.
- h. Douglas fir-larch (north); NLGA.
- i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

B. Exposed Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

C. Provide treated materials as shown on structural drawings.

D. Fastener systems as shown on structural drawings.

7. Specification section 086200, Unit Skylights

- Add specification section included with this addendum

8. Specification section 097720, Decorative Fiberglass Reinforced Wall Panels

- Add specification section 097720 included with this addendum.

9. Specification section 099600, Special Coatings

- Coating system SC-2 for structural steel and misc metal includes all structural beams, structural columns, structural angles, embed plates in bear and seal/life support buildings. Cagework NOT coated.

10. Specification section 102600, Wall and Door Protection

- Change plan sheet reference to A1.12

11. Specification section 122124, Manual Roller Shade System

- Add specification section included with this addendum.

12. Sheets A1.5 – A1.10

- Note 05.14 refers to the exposed fastener panel specified in part 2.2 of 074213
- Note 05.15 refers to the concealed fastener panel specified in part 2.3 of 074213

13. Sheet A1.11

- Toilet Accessories- note G- hand dryer to be:
Xlerator had dryer, Model XL-W, 110/120V 12.5 Amp 60Hz

14. Sheet A2.1

- (A & 5/A5.1) Changed 12" concrete wall to 10" where bubbled.
- (B/A5.1) Changed elevation of head of shift door to 5' AFF & raised height of concrete roof 1 ½" to BO Roof Elev. = 109'-9 ½".
- (C & 1/A5.1): Revised to show added 8" tall x 6' long concrete parapet for themework.
- (3 & 4/A5.1) Raised concrete lid to elev. 110'-5 ½" (typical).
- (6/A5.1) Minor revisions as bubbled
- (7/A5.1) Revised detail to add 8" tall sloped concrete parapet with themework terminating atop wall.
- (9/A5.1) Revised to remove 1 ½" poly-iso insulation and changed wall to 10" thick.
- Delete current sheet A2.1; replace with new Sheet A2.1, included with this addendum.

15. Sheets A4.1 –A6.1 (typical notes to apply to all shade/ viewing structures)

- All wood and steel to be painted.
- All roof sheathing to be plywood (not OSB)
- Changed all elevation tags from Architectural 100' to Site elevations – All viewing structures elevations will now match the site elevations. (does not apply to A5 sheets)
- At all viewing structures where a roof is weather tight to a site wall: If the site wall is to have a reveal pattern cast in, locate apx. height & width of roof and stop reveal pattern 4" min. short of bottom of joist and 8" min. short of the top of the roof.
- Omit 2x4 nailer between joists for all viewing structures (see details 5 & 6/A4.5 in this addendum)
- All shade structures with galvanized corrugated metal roofing to have 30# felt paper underlayment, a 3' wide layer of ice & water shield at all edges, ridges, and valleys, and galvanized metal flashing with drip edge (as shown in details 5 & 6/A4.5).

16. Sheet A4.1

- Delete door tag 404. This is a gate as shown on SA1.2, detail per H/SA3.1
- (G,H/A4.1) Added note to call out previously drawn condition – scab in 2x framing w/ additional 2x12 joist to fill gap above glass where roof / shade jogs north past site wall.
- (H/A4.1) Where shade & joists run atop and bear on concrete site wall – slope top of concrete wall to match slope of wood joists.
- (K/A4.1) Raised steel beam up apx. 6” to match new top of wall height of SITE 130.00’ (see site sheets).
- Delete current sheet A4.1; replace with new Sheet A4.1, included w/this addendum.

17. Sheets A4.3 & A4.4

- Four central columns shown as wood, changed keynote tag from 06.04 to 05.02 to be steel columns to match structural plan.
- Low slope roof over bear training area & off exhibit yard with TPO membrane to have 5/8” glass-mat roof deck sheathing instead of ¼”.

18. Sheet A4.5

- (5 & 6/A4.5) Revised details to omit 2x4 nailer between joists, and to add felt paper, ice & water shield, and galvanized metal flashing as shown.
- (9 & 10/A4.5) Revised details to show 5/8” glass-mat roof deck sheathing instead of ¼”.

19. Sheet A5.1

- (1/A5.1) Added new enlarged plan; Block out opening for recessed steel tubes in floor for squeeze panel.
- Add new detail 1/A5.1 to existing A5.1 sheet.
- Add 9’-4” FRP guardrail at main floor of room 506 from north east corner of mezzanine 508 north to the exterior wall.

20. Sheet A5.2

- (A/A5.2) Top of west parapet walls revised to match elevation 3/A5.3.

21. Sheet A5.3

- (3/A5.3) Changed top of precast wall & slope as bubbled.
- Delete current sheet A5.3; replace with new Sheet A5.3, included with this addendum.

22. Sheet A6.1

- Add galvanized metal drip edge trim to details 1 & 2, similar to detail 5&6/A4.5 included with this addendum.

SITE

23. Sheet SD1.0

- Modified note on detail A/SD1.0

24. Sheet SD1.1

- View 2-There is no alternate for tree relocation.
- View 3- Modified note to indicate moat slab to remain

25. Sheet SA1.1

- Modified note #15 to read “30” Concrete Pipe- Ends Themed- Partially Burried. See N/SA3.0.

26. Sheet SA1.3

- Updated pool dimensions.

27. Sheet SA1.7

- Clarified wall color at main viewing structure.

28. Sheet SA3.2

- Rainwater storage tank is shown in more detail on SA1.1 & E/SA3.2

29. Sheet SA3.3

- Added detail for horizontal reveals at pool walls.

30. Sheet SA7.1

- Detail F; 2”x2” mesh to be: “1/8” hand-woven stainless steel mesh w/ 2”x2” openings and black-oxide finish”
- Add the following information to detail I/SA7.1:

Wood fence constructed as follows:

A. Materials:

1. Slats: 8" wide min. redwood, cedar, combed spruce, or other wood covering acceptable to the Owner/ architect. Submit sample for approval.

2. Bottom, Middle, and Top Rail: Minimum 2-inch x 4-inch x 8-foot cedar stud.

3. Corner, Gate, End, or Line Posts: Minimum size 4-inch dia. steel post.

B. Concrete: All corner, gate, end, or line wood posts shall be set in concrete. All concrete for post bases shall conform to the provisions of Section 5.3 Class C.

C. Construction: The steel posts shall be set true to line and grade in concrete bases at least two (2) feet in depth. The maximum distance between posts in any section shall not exceed eight (8) feet. The top and bottom railings shall be securely fastened to the posts with clamps or other acceptable means. Changes in line of 30 degrees or more shall be considered as corners. A minimum of six (6) inches of concrete shall be provided below the bottom of each post. End posts, corner posts, and gate posts shall have a concrete base at least twelve (12) inches in diameter. Bases for line posts shall also be twelve (12) inches in diameter.

Fence slats shall be placed on the public side of posts unless otherwise specified. The slats shall be placed approximately one inch above the ground, and on a straight grade between posts by excavating high points of the ground. Filling depressions will be permitted only upon approval of the architect. The slats shall be sound and free from all major decay or defects which would weaken or otherwise cause them to be unsuitable for fence slats. Fastening to top and bottom railings shall be done with two galvanized screws at both the top and bottom rail.

31. Sheet SG1.1

- Modified top of concrete bench elevations at main viewing structure.
- Modified bottom of pool elevations at shallow portion of polar bear pool.
- Modified grades at seal zero entry.

32. Sheet SG1.2

- Modified top of wall elevations directly adjacent to both sides of east bear viewing structure.
- Modified top of wall elevations around seal viewing.

33. Sheet ST1.1

- Themework pavement removed from bear side of glass at west viewing structure- this was shown on addendum #3, but not noted.

34. Sheet ST2.1

- Detail B/ST2.1 modified to include references to structural details and show themework foundations by themework contractor.
- General note added to sheet clarifying all foundations for themework structures are designed and constructed by themework contractor per the specification.

35. Specification section 033600 Artificial Rockwork

- Revise 1.3 A to read: "Artificial rockwork shall be constructed in location and types as shown on the Drawings and specified herein." Artificial rockwork is to be included in the basebid.

36. Specification Section 323113- Chainlink Fences and Gates

- Revise paragraph 1.2b with the following:
A. Structural Performance: Chain-link fence and gate framework shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to ASCE/SEI 7:

1. Minimum Post Size: As shown on drawings.

a. Wind Loads: 90 mph

b. Exposure Category: C

c. Fence Height: 17 feet.

d. Material Group: IC, electric-resistance-welded round steel pipe

STRUCTURAL

37. Plans: 1/S4.1, 3/S4.1, 5/S4.1, 1/S4.2, 1/S6.1

- The top of pier (TP) at the viewing structures to be 5" below finish grade/ sidewalk elevation as shown on SG sheets.

38. Plan 1/ S6.1

- "Performance design criteria" for the bench to be: capable of supporting a 300lb point load .

39. Sheet S2.1

- Den Foundation Plan; Revised Wall 1 and Dimensions
- Den Roof Framing Plan; Revised Wall Dimensions

- 40. Sheet S4.1 - Bear Viewing Foundation Plans & Framing Plans**
 - Revised Simpson CPS6 Base to include a 5" Anchor Embedment (1,3/S4.1)
 - Added 'Taper Conc' Note at T.O Wall in 2/S4.1
 - Added Section 8/S9.2 and relocated 9/S9.2 in 2/S4.1
- 41. Sheet S5.1- Seal Holding/ Life Support Foundation Plan, Mezzanine Framing Plan**
 - Revised Footing Steps and elevations to account for future grade drop at SE corner
 - Added 2" Recess for Squeeze Panel
 - Revised T.O. Wall near SW corner
- 42. S7.3 – Foundation Details**
 - Detail 13 – Revised T.O Wall
- 43. S7.5 – Foundation Details**
 - Detail 20 – Revised to show step for site pavement and overall site wall width at base
- 44. S7.6- Foundation Details**
 - Added Detail 7 for Seal Wall @ Pool
- 45. S9.2 – Steel Framing Details**
 - Added Detail 8 and Revised Detail 9
- 46. SR1.1 – Retaining Wall Partial Site Plan**
 - Revised T.O Footing and added footing steps in multiple locations to meet Geotech Report requirements.
 - Added 'At footings that do not bear 5'-6", use...non-frost susceptible sub-base' note
- 47. SR1.2 – Retaining Wall Partial Site Plan**
 - Revised T.O Footing and added footing steps in multiple locations to meet Geotech Report requirements.
- 48. SR1.3 – Bear Pool Wall Plan**
 - Revised Zero-Depth Pool wall location
 - Revised footing to match detail 8/S7.4
 - Added 'At pool footings that do not bear 5'-6", use...non-frost susceptible sub-base' note
- 49. SR1.4 – Seal Pool Wall Plan**
 - Revised T.O Footing and added footing steps in multiple locations to meet Geotech Report requirements.
 - Added SIM to section cut at bridge
 - Added 'At pool footings that do not bear 5'-6", use...non-frost susceptible sub-base' note
 - Removed wall at zero-depth entry

PLUMBING

50. Sheets P0.0 & P2.2

- Revisions described in addendum #3, revised sheets attached

51. Sheet P5.2

- addendum #3 stated revised sheet P5.2 was to be included. The sheet is not included. The described revisions are valid.

ELECTRICAL

52. Sheet E0.1

- Luminaire Schedule: Add "Spectrum SGE6LEDOS" as an acceptable manufacturer for type F6 and F6E.
- Luminaire Schedule: Add "McGraw Edison TT-A1-LED-WQ" as an acceptable manufacturer for type F12.
- Luminaire Schedule: Add "McGraw Edison TT-A1-LED-WQ" as an acceptable manufacturer for type F12.

53. Sheet EL2.1

- Revise the lighting in the five den skylights to be four F14 fixtures, creating a square inside the skylight, instead of a single F14 fixture in each.

TELECOMMUNICATIONS

54. Specification section 27 05 00

- Page 22, submittal of the proof of certification is not to be included with the bid. It is required and shall be submitted with other shop drawings and product data submittal information.

55. Sheets T2.1 & T6.2

- Revisions described in addendum #3, revised sheets attached

Enclosures:

Drawings "Vilas Zoo Bear Exhibit", 5 sheets (dated Feb 16, 1981)

Specification section 086200 - Unit Skylights

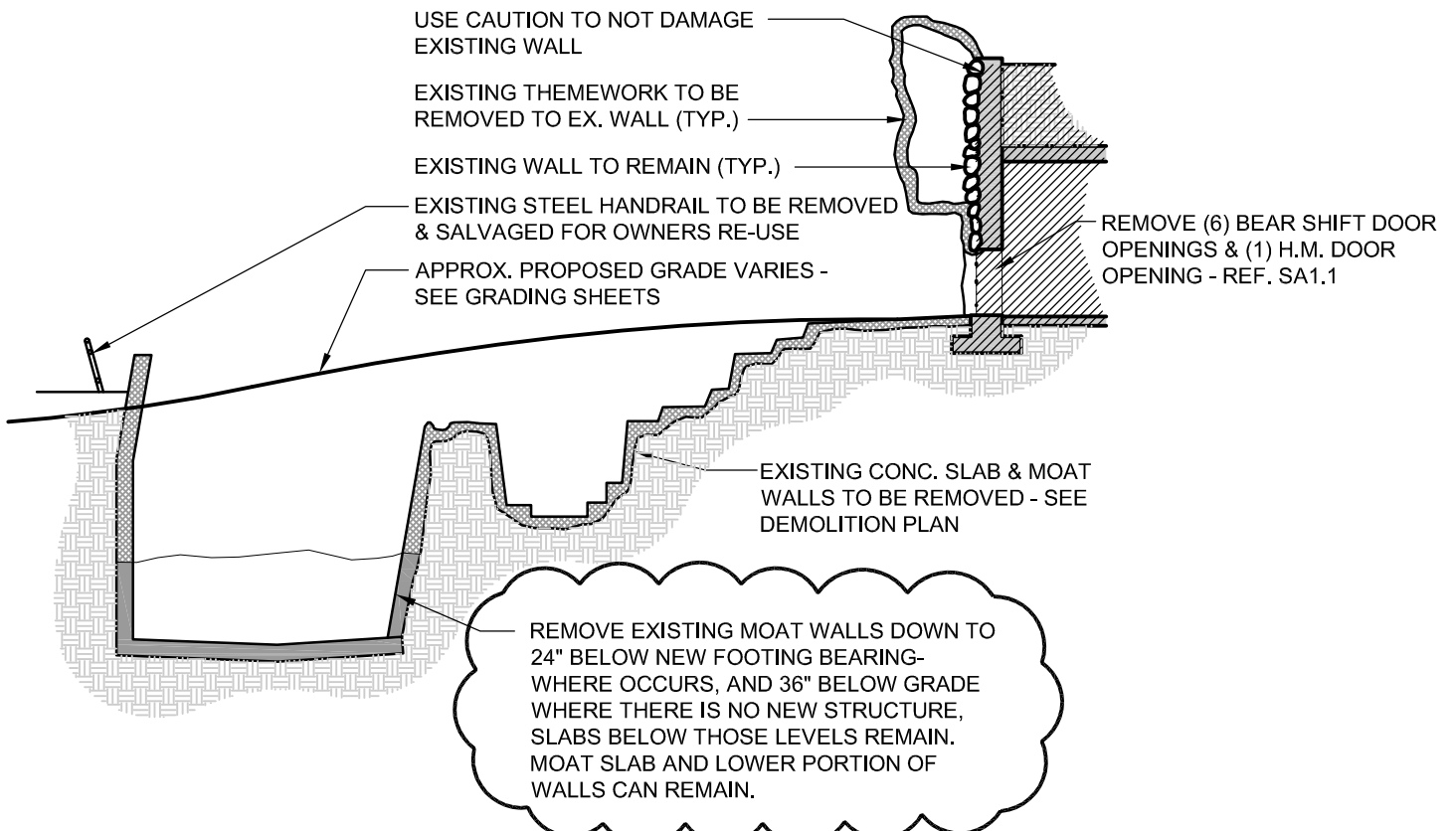
Specification section 097720 - Decorative Fiberglass Reinforce Wall Panels

Specification section 122124- Manual Roller Shade System

Sheets: SA1.3, SG1.1, ST2.1, A2.1, A4.1, A5.3, S2.1, S4.1, S5.1, S7.3, S7.5, S7.6, S9.2, SR1.1, SR1.2, SR1.3, SR1.4, (all 30"x42" sheets - dated 12.4.2013)

Sheets: SD1.0, SD1.1, SA1.7, SA3.3, SG1.2, SG1.2b, A4.5, A5.1 (all sheets 8.5"x11" sheets – dated 12.4.2013)

Sheets: P0.0, P2.2, T2.1, T6.2 (all 30"x42" sheets – dated 11.25.2013)

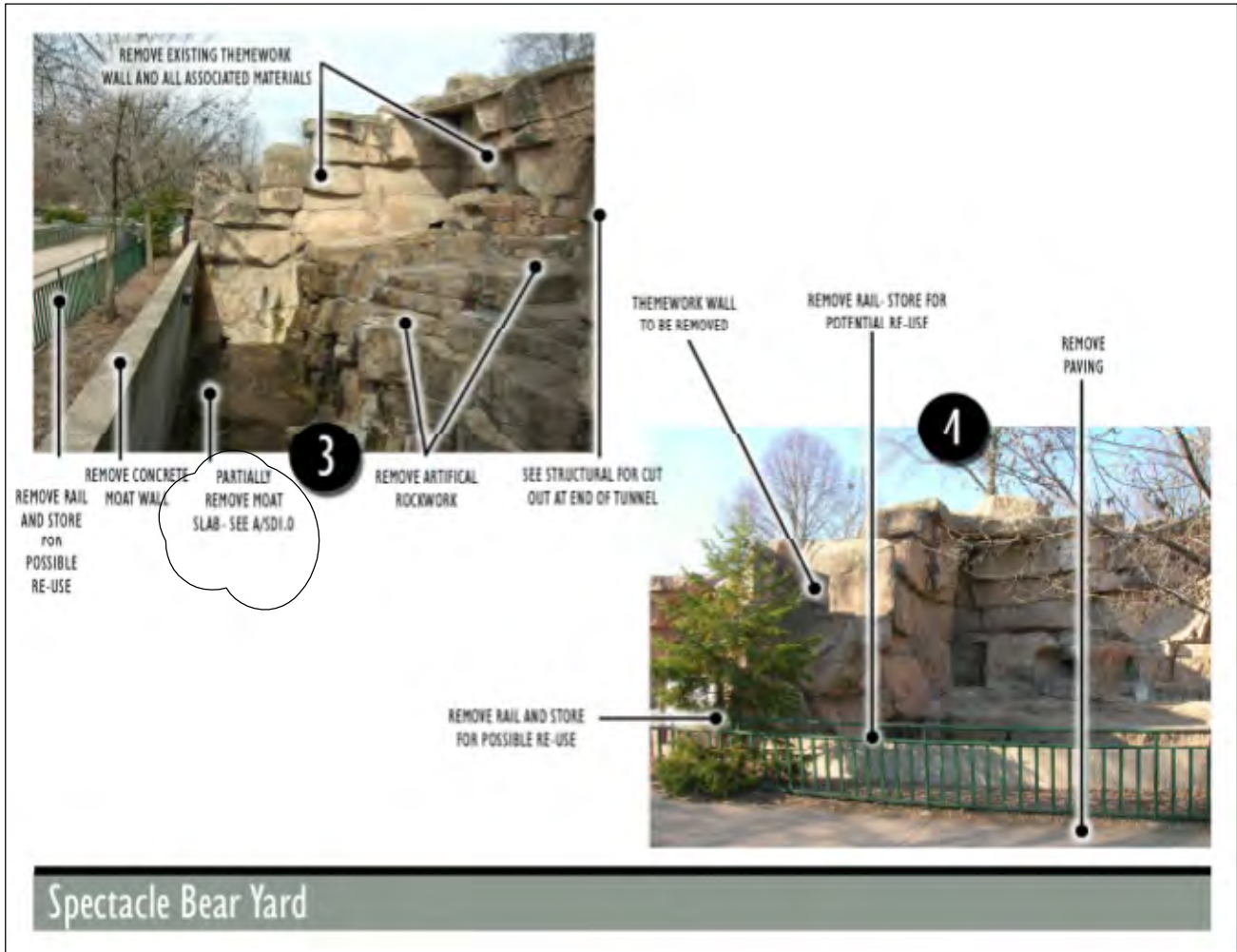


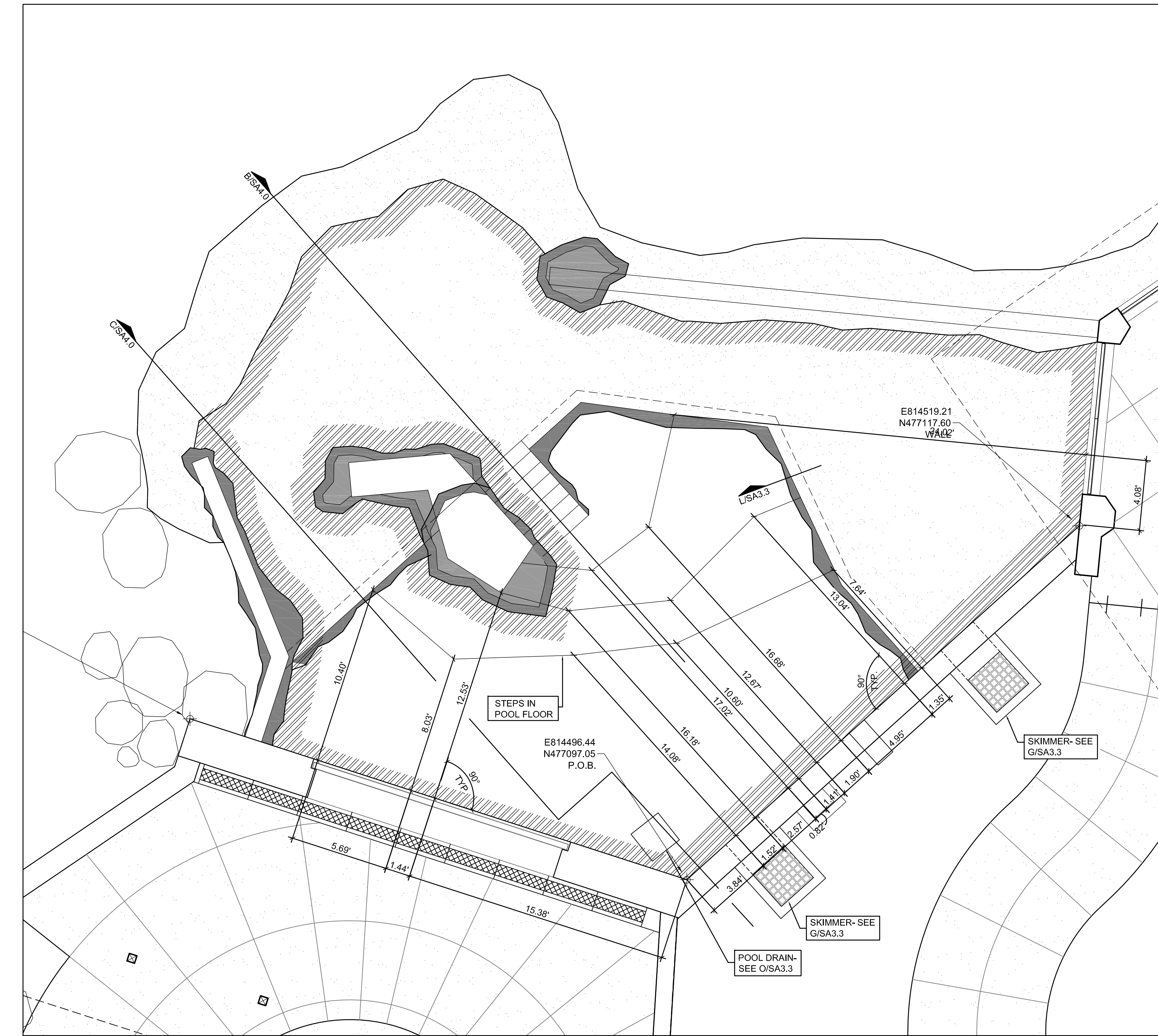
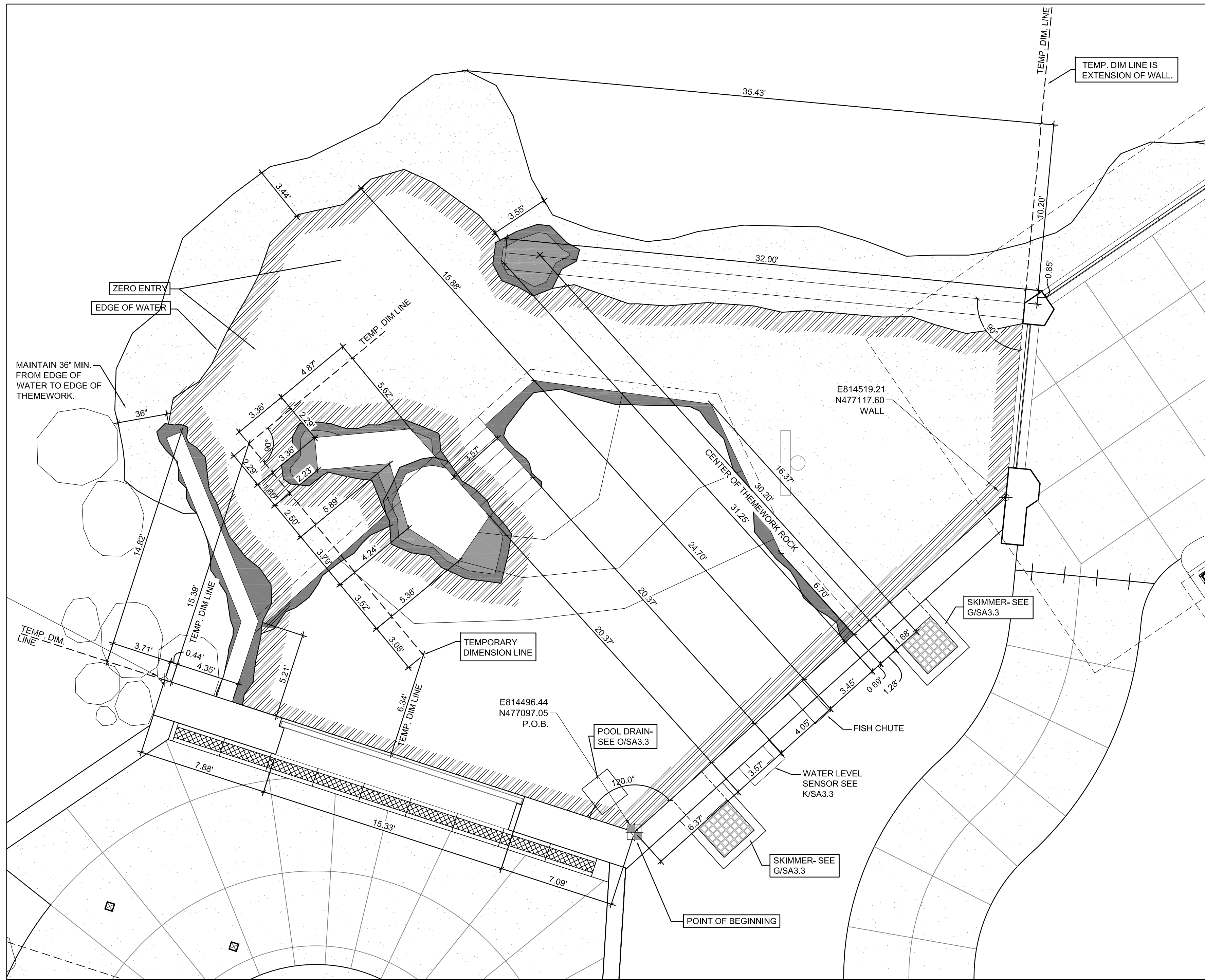
A SECTION THRU EXISTING POLAR BEAR EXHIBIT
NTS

L:\13046\13046-deno-jhr.dwg

Nhrab

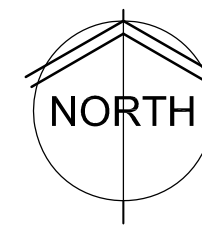
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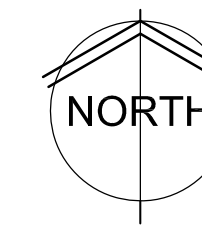
**POLAR BEAR POOL
ENLARGED LAYOUT PLAN**

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



**POLAR BEAR POOL
ENLARGED LAYOUT PLAN**

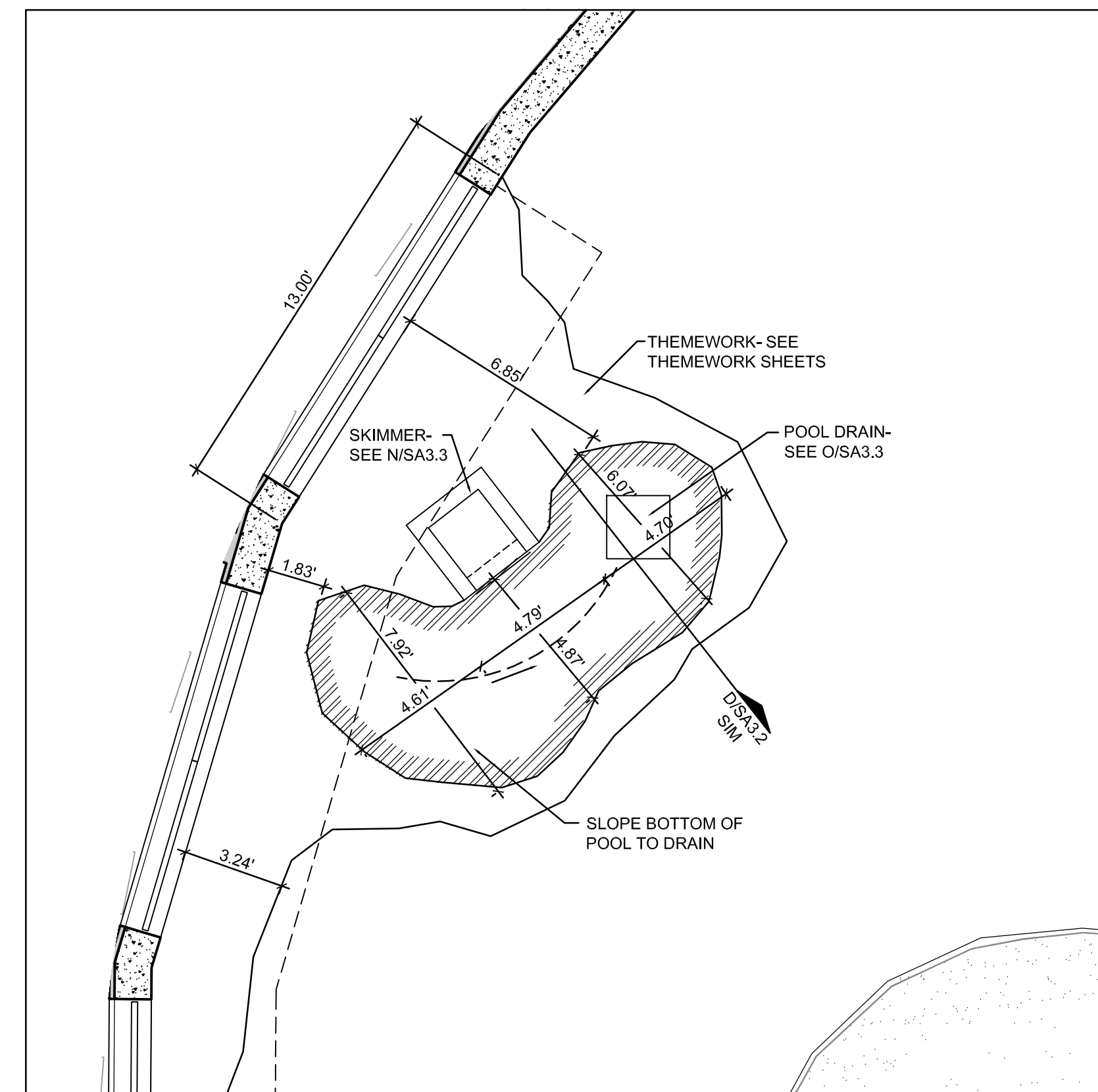
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LAYOUT LEGEND

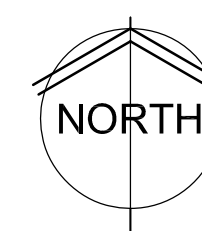
- PROPERTY LINE
- CONTROL JOINT (CJ)
- EXPANSION JOINT (EJ)
- NEW CONCRETE PAVING
- NEW LIGHT POLE
- ⊕ POINT OF BEGINNING
- ⊙ LANDSCAPE BOULDERS

NOTE:
ALL COORDINATES SHOWN ARE
BASED OFF SURVEY
COORDINATES.



**BEAR POOL @ GRILL
ENLARGED LAYOUT PLAN**

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



WDM Architects P.A.
105 North Washington
Wichita, KS 67202-2815
T 316.262.4700
F 316.262.0002
wdmarchitects.com



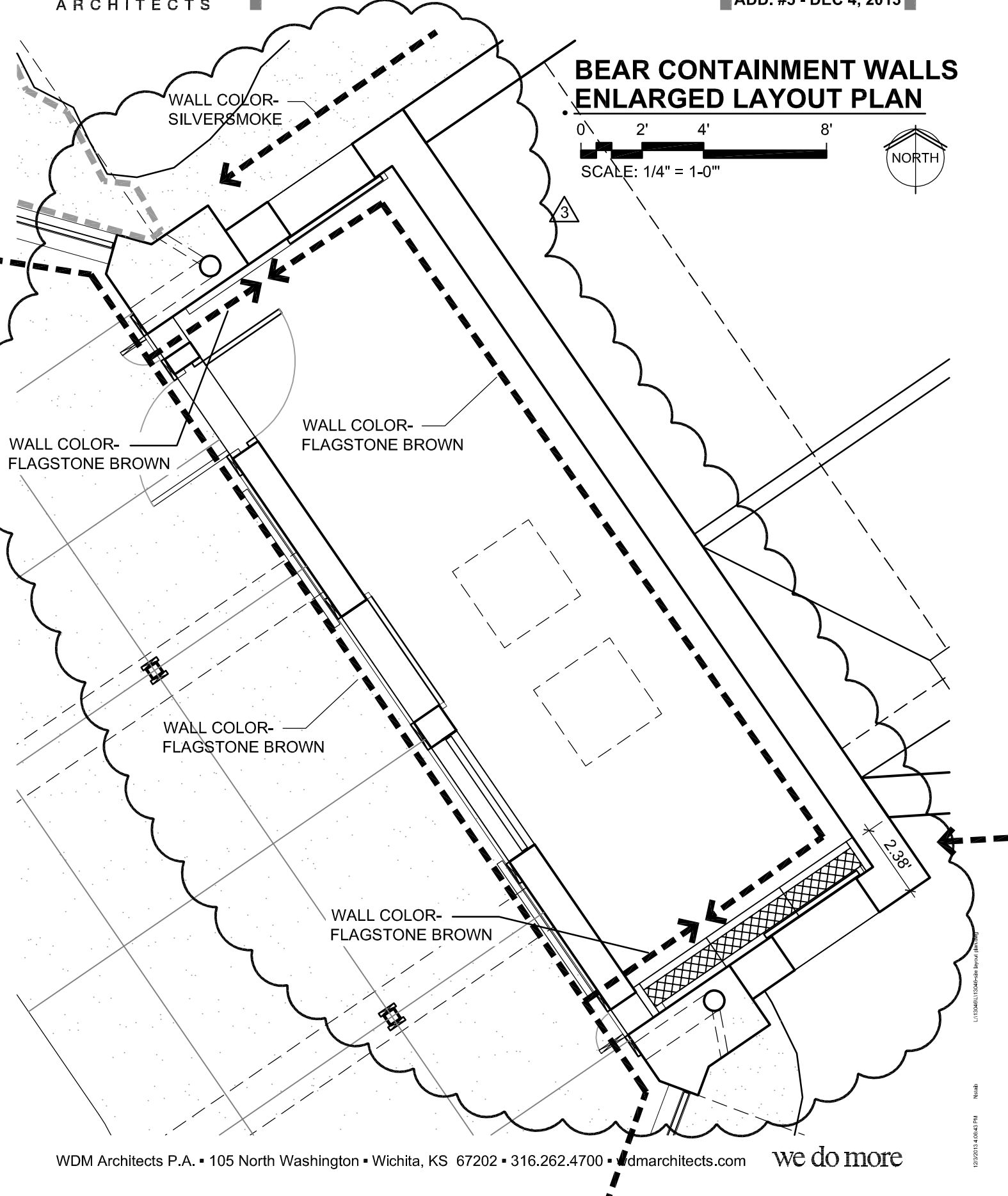
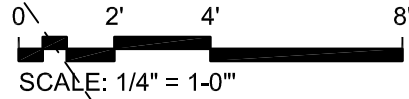
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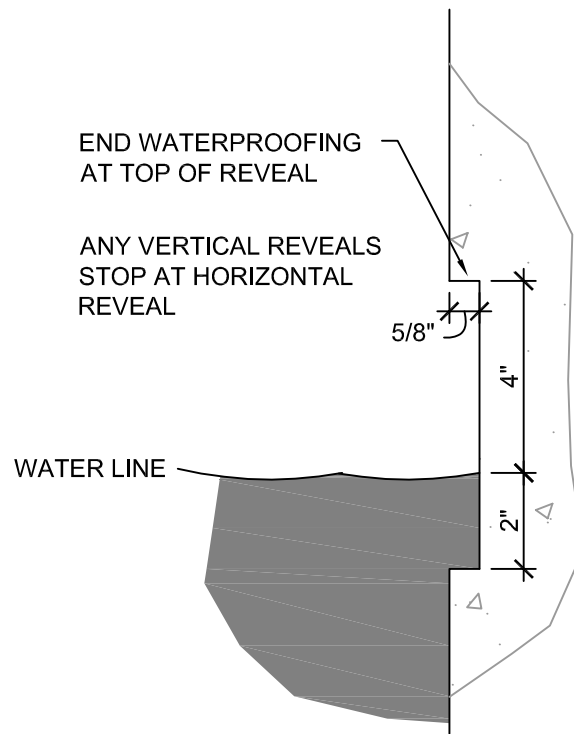
PRINTS ISSUED
07.26.2013 - Schematic Design
08.23.2013 - Design Development
09.23.2013 - 65% CD's
10.07.2013 - Pricing Set
10.21.2013 - 95% CD's
11.13.2013 - Bid Documents
11.25.2013 - Addendum #3
11.27.2013 - Addendum #4
12.04.2013 - Addendum #5

WDM No. 13046 drawn: NS
checked: SR
BEAR POOL LAYOUT PLAN

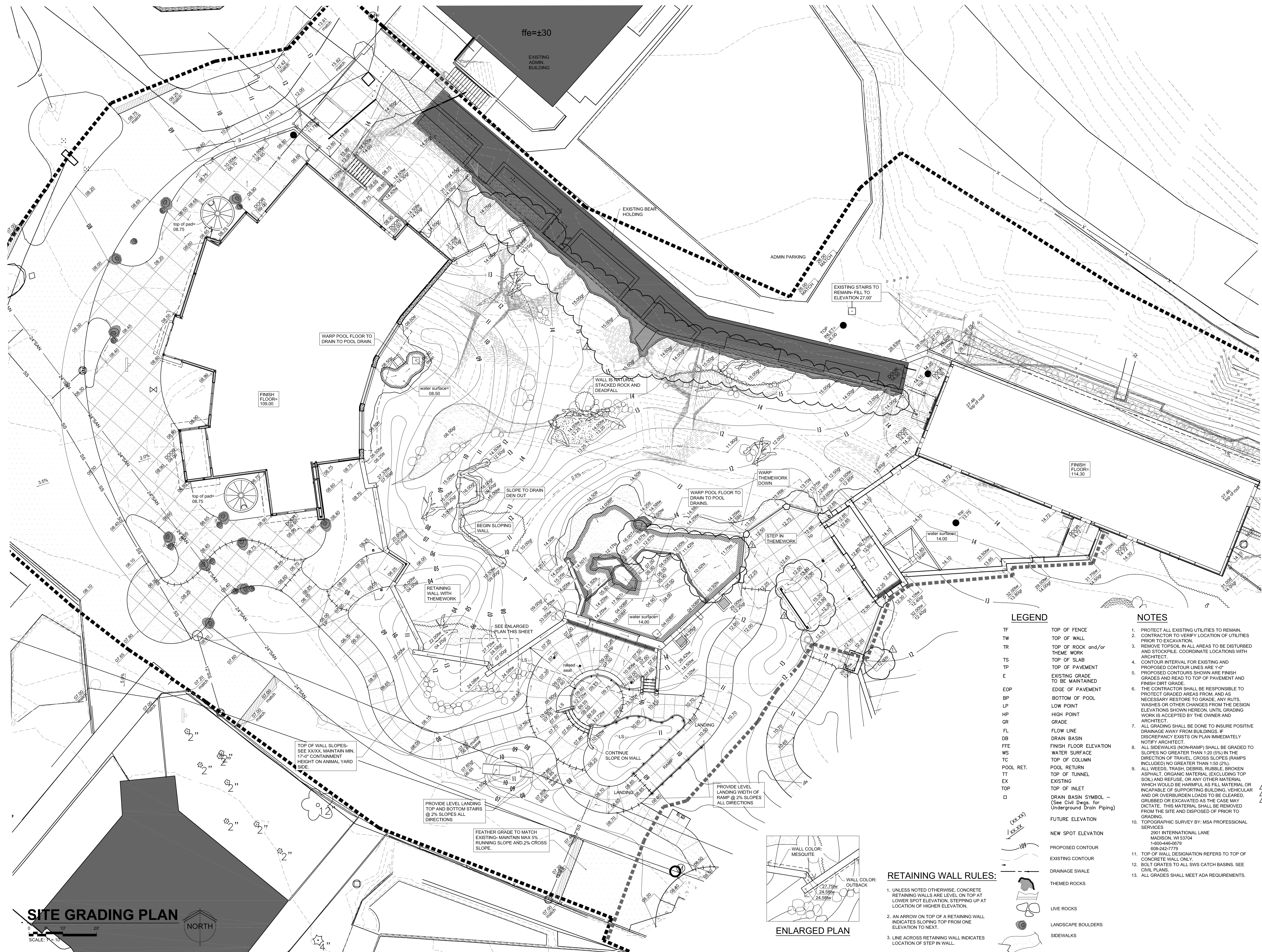
SA1.3

**BEAR CONTAINMENT WALLS
ENLARGED LAYOUT PLAN**





~~X~~ HORIZONTAL REVEAL AT POOL WALLS



wdm
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we do more
henry vilas zoo

ARCTIC ANIMAL EXHIBIT AND CONCESSIONS
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12.04.2013 - Addendum #5

WDM No. 13046
drawn: NS
checked: SR

SG1.1

LEGEND

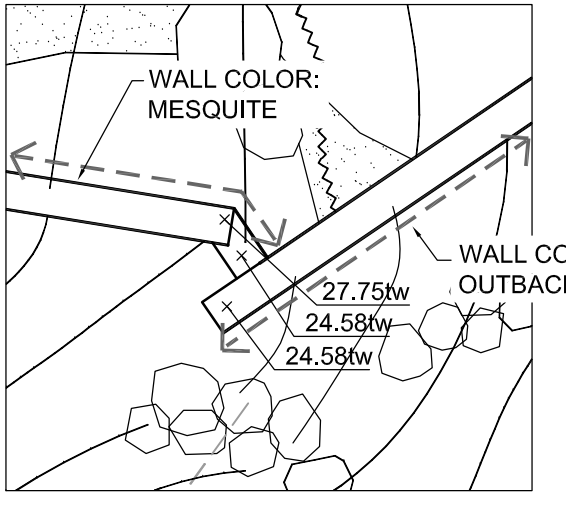
- TF TOP OF FENCE
- TW TOP OF WALL
- TR TOP OF ROCK and/or THEME WORK
- TS TOP OF SLAB
- TP TOP OF PAVEMENT
- E EXISTING GRADE TO BE MAINTAINED
- EOP EDGE OF PAVEMENT
- BP BOTTOM OF POOL
- LP LOW POINT
- HP HIGH POINT
- GR GRADE
- FL FLOW LINE
- DB DRAIN BASIN
- FFE FINISH FLOOR ELEVATION
- WS WATER SURFACE
- TC TOP OF COLUMN
- POOL RET. POOL RETURN
- TT TOP OF TUNNEL
- EX EXISTING
- TOP TOP OF INLET
- DRAIN BASIN SYMBOL - (See Civil Dwg. for Underground Drain Piping)
- FUTURE ELEVATION
- NEW SPOT ELEVATION
- PROPOSED CONTOUR
- EXISTING CONTOUR
- DRAINAGE SWALE
- THEMED ROCKS
- LIVE ROCKS
- LANDSCAPE BOULDERS
- SIDEWALKS

NOTES

1. PROTECT ALL EXISTING UTILITIES TO REMAIN.
2. CONTRACTOR TO VERIFY LOCATION OF UTILITIES PRIOR TO EXCAVATION.
3. REMOVE TOPSOIL IN ALL AREAS TO BE DISTURBED AND STOCKPILE. COORDINATE LOCATIONS WITH ARCHITECT.
4. CONTOUR INTERVAL FOR EXISTING AND PROPOSED CONTOUR LINES ARE 1'-0".
5. PROPOSED CONTOUR LINES ARE FINISH GRADES AND READ TO TOP OF PAVEMENT AND FINISH DIRT GRADE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT GRADED AREAS FROM, AND AS NECESSARY RESTORE TO GRADE, ANY RUTS, WASHES OR OTHER CHANGES FROM THE DESIGN ELEVATIONS SHOWN HEREON, UNTIL GRADING WORK IS ACCEPTED BY THE OWNER AND ARCHITECT.
7. ALL GRADING SHALL BE DONE TO INSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS. IF DISCREPANCY EXISTS ON PLAN IMMEDIATELY NOTIFY ARCHITECT.
8. ALL SIDEWALKS (NON-RAMP) SHALL BE GRADED TO SLOPES NO GREATER THAN 1:20 (5%) IN THE DIRECTION OF TRAVEL. CROSS SLOPES (RAMPS INCLUDED) NO GREATER THAN 1:50 (2%).
9. ALL WEEDS, TRASH, DEBRIS, RUBBLE, BROKEN ASPHALT, ORGANIC MATERIAL (EXCLUDING TOP SOIL) AND REFUSE, OR ANY OTHER MATERIAL WHICH WOULD BE HARMFUL AS FILL MATERIAL OR INCAPABLE OF SUPPORTING BUILDING, VEHICULAR AND/OR OVERBURDEN LOADS TO BE CLEARED, GRUBBED OR EXCAVATED AS THE CASE MAY DICTATE. THIS MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PRIOR TO GRADING.
10. TOPOGRAPHIC SURVEY BY: MSA PROFESSIONAL SERVICES
2901 INTERNATIONAL LANE
MADISON, WI 53704
1-800-446-0679
608-242-7778
11. TOP OF WALL DESIGNATION REFERS TO TOP OF CONCRETE WALL ONLY.
12. BOLT GRATES TO ALL SWS CATCH BASINS. SEE CIVIL PLANS.
13. ALL GRADES SHALL MEET ADA REQUIREMENTS.

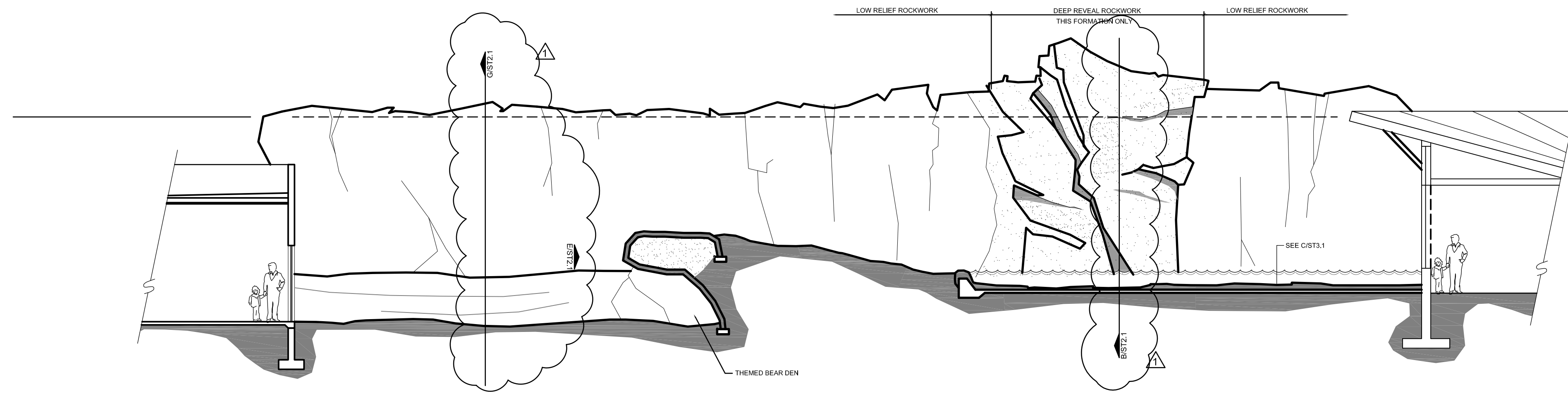
RETAINING WALL RULES:

1. UNLESS NOTED OTHERWISE, CONCRETE RETAINING WALLS ARE LEVEL ON TOP AT LOWER SPOT ELEVATION, STEPPING UP AT LOCATION OF HIGHER ELEVATION.
2. AN ARROW ON TOP OF A RETAINING WALL INDICATES SLOPING TOP FROM ONE ELEVATION TO NEXT.
3. LINE ACROSS RETAINING WALL INDICATES LOCATION OF STEP IN WALL.

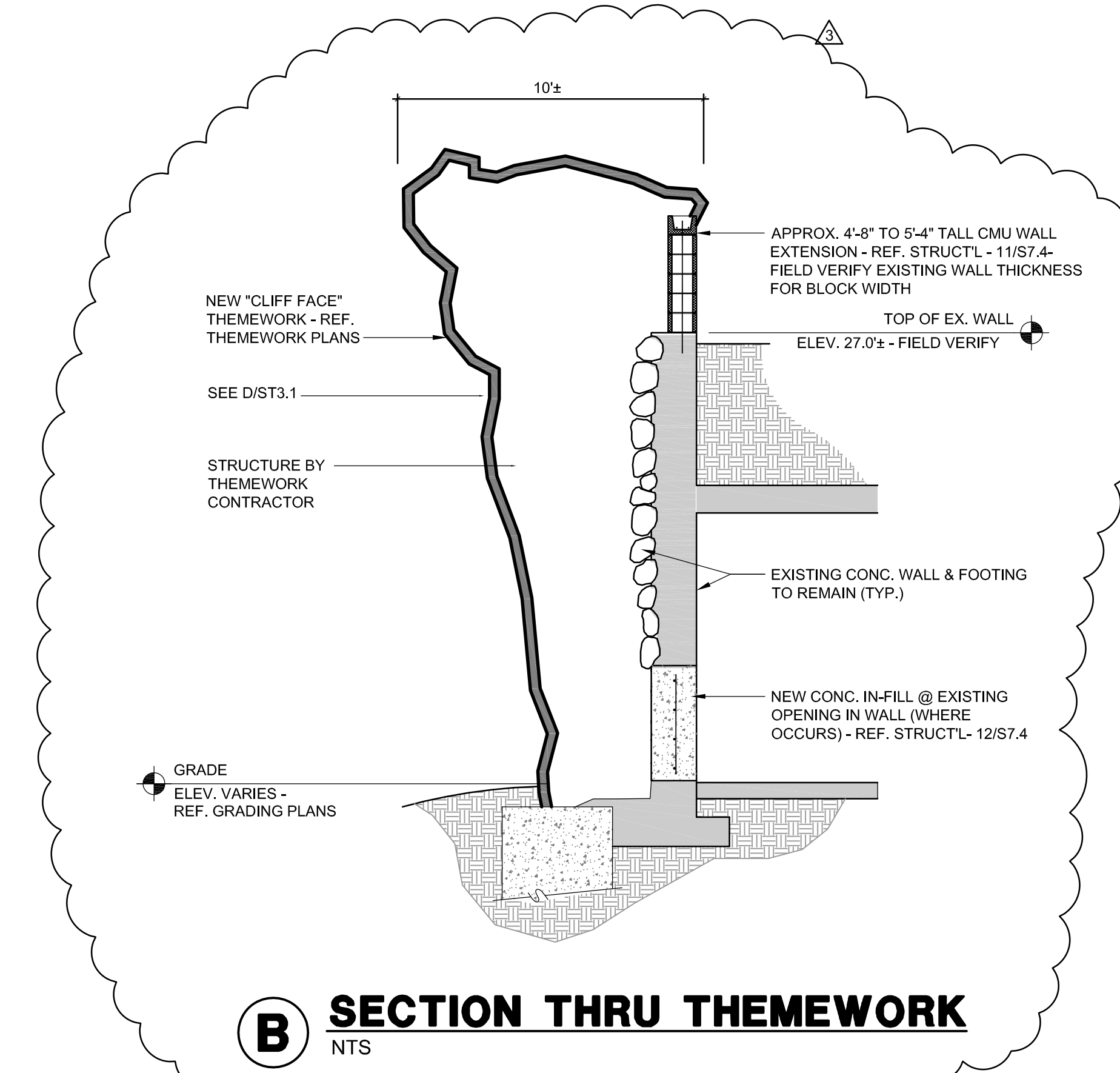


ENLARGED PLAN

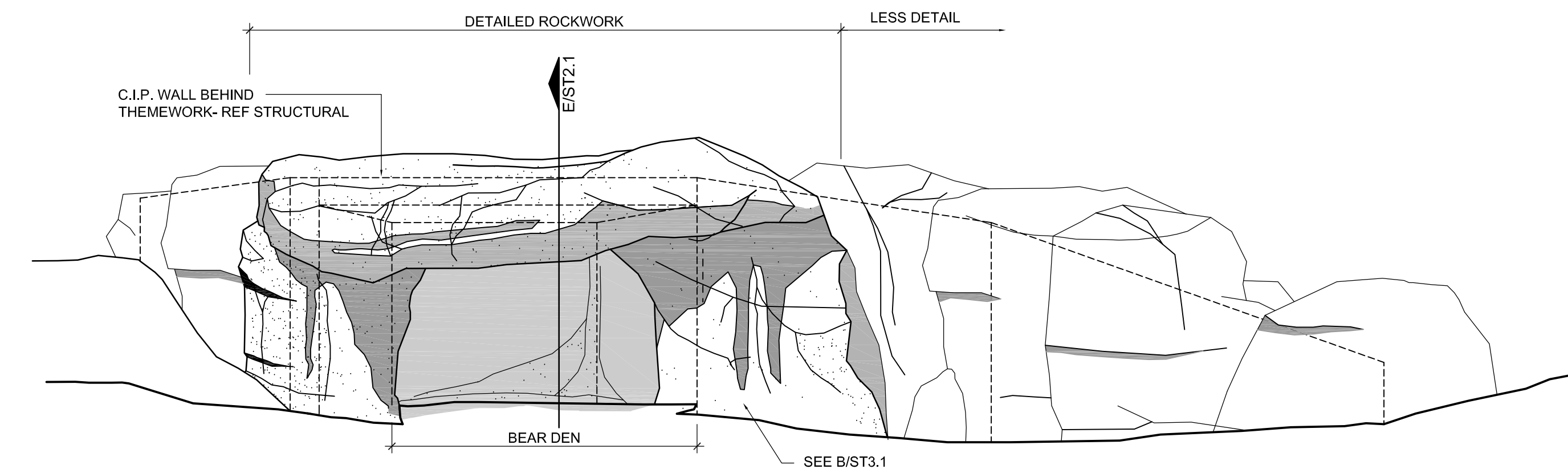
SITE GRADING PLAN
SCALE: 1" = 10'
NORTH



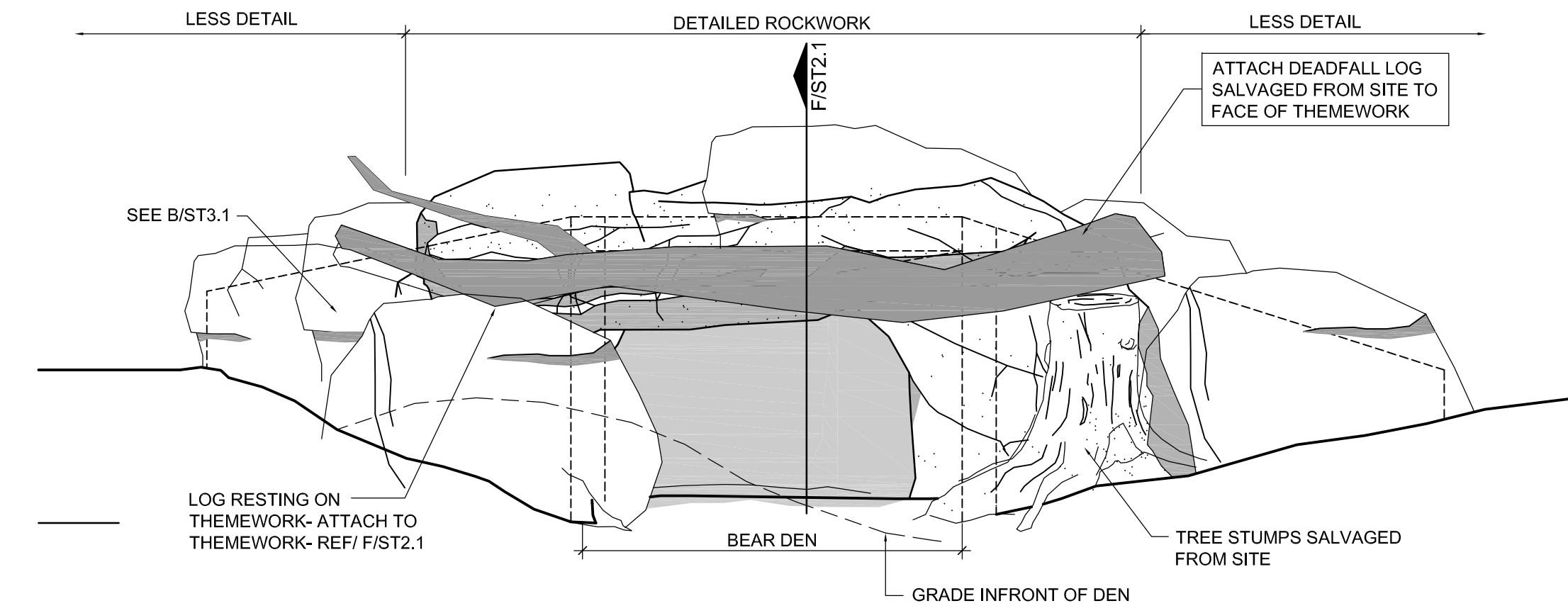
A BACK CONTAINMENT WALL THEMEWORK ELEVATION
SCALE: 1/8" = 1'-0"



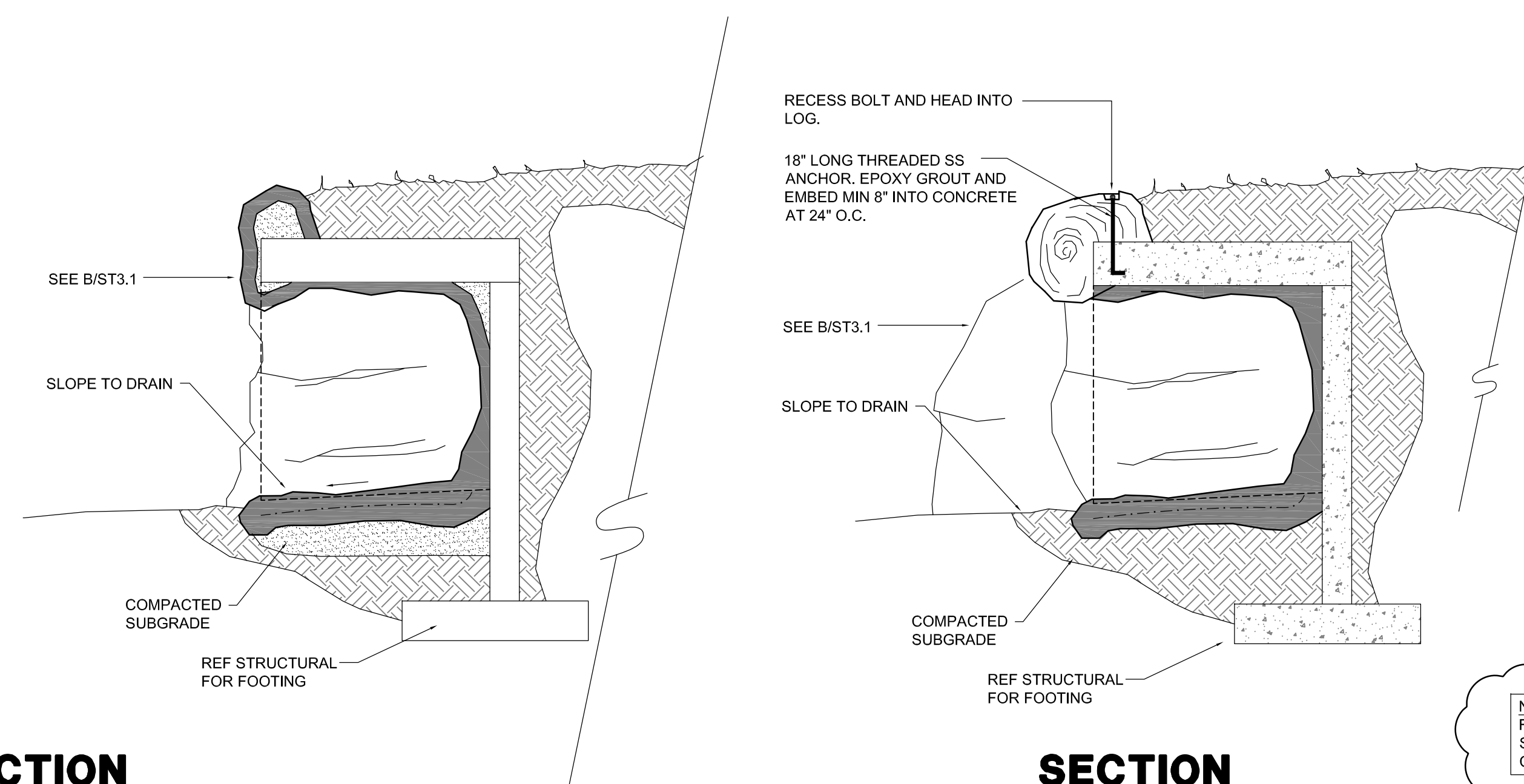
B SECTION THRU THEMEWORK
NTS



C BEAR DEN 1
SCALE: 3/8" = 1'-0"



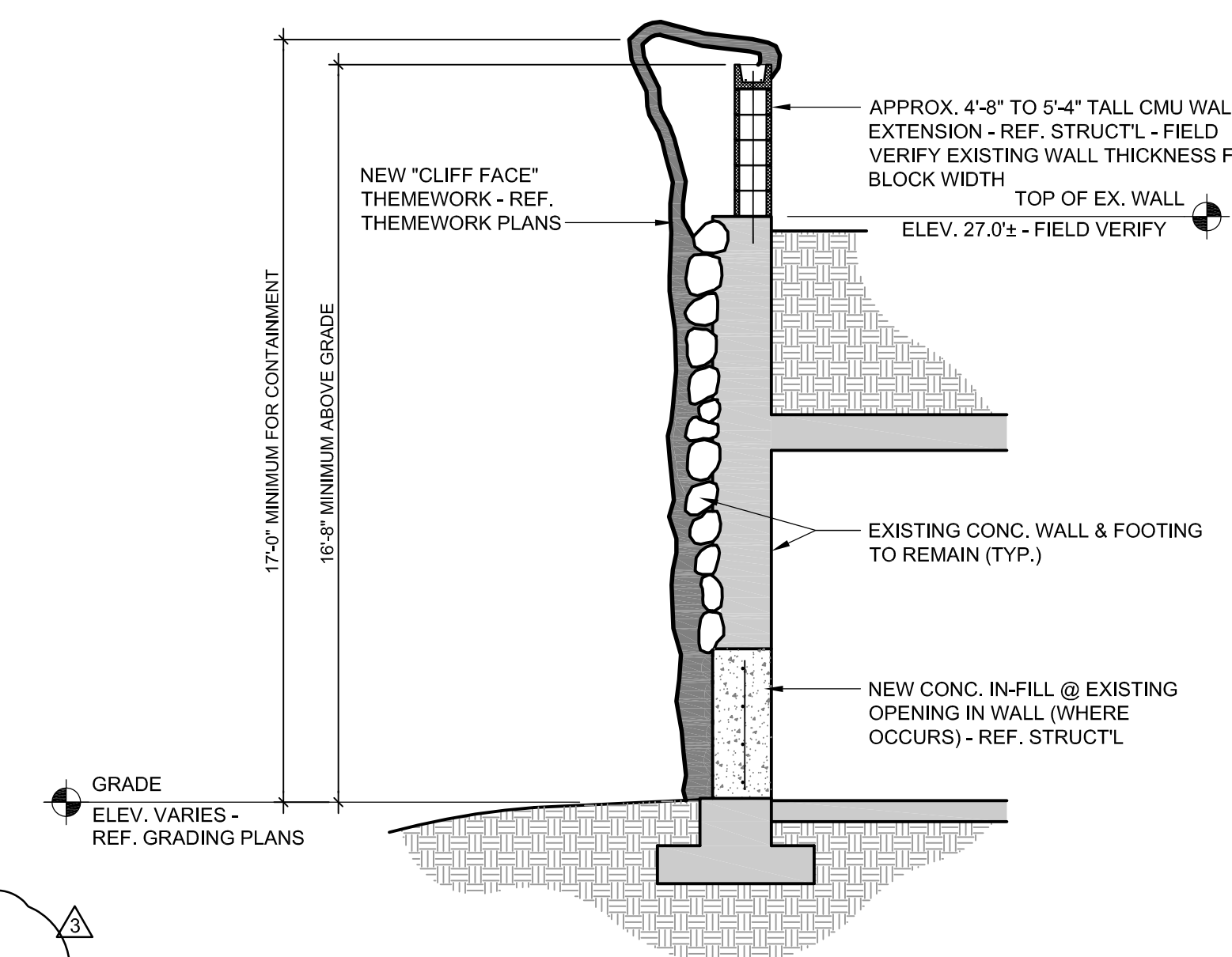
D BEAR DEN 2
SCALE: 3/8" = 1'-0"



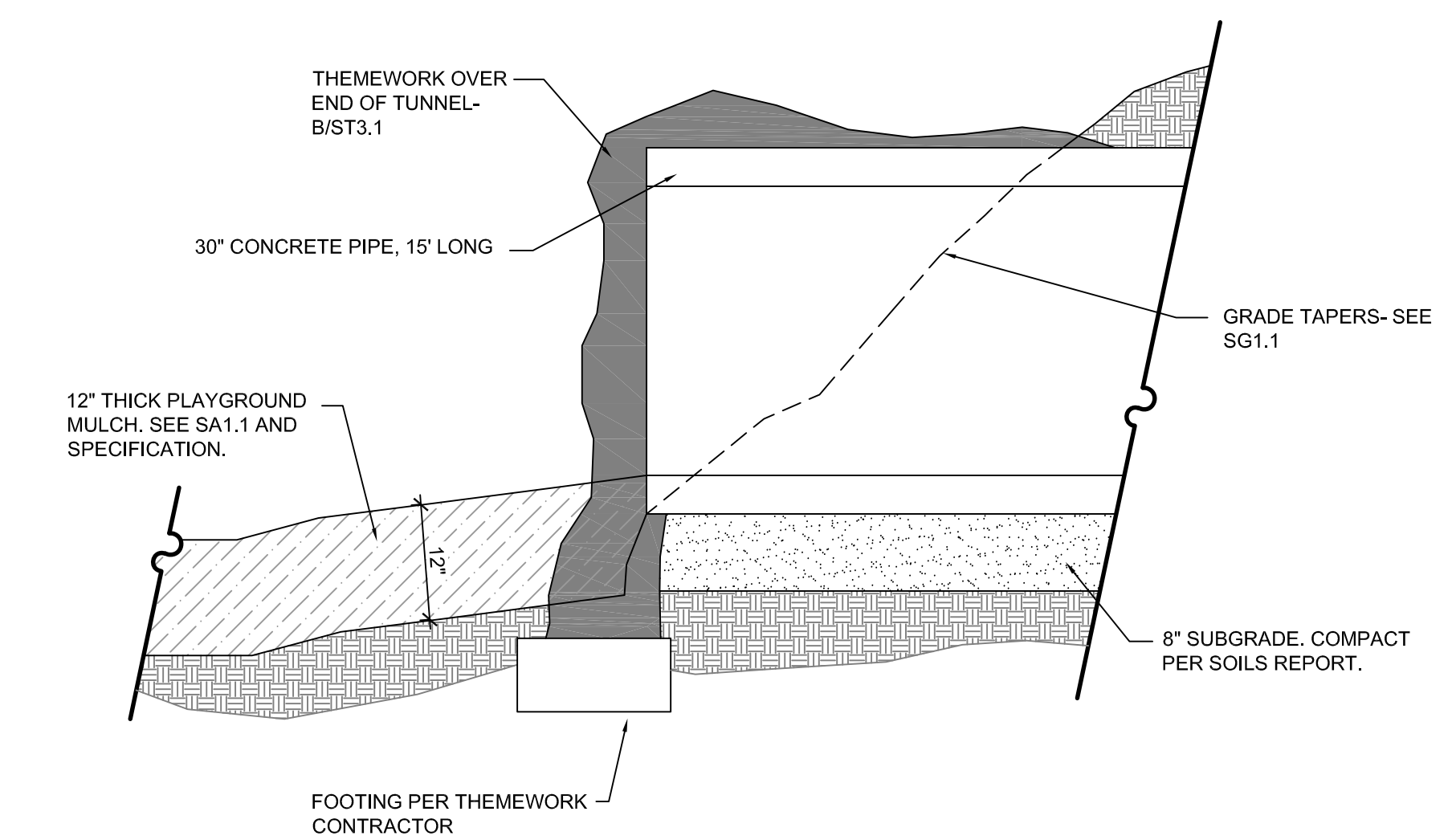
E SECTION BEAR DEN 1
SCALE: 3/8" = 1'-0"

F SECTION BEAR DEN 2
SCALE: 3/8" = 1'-0"

NOTE:
FOUNDATIONS FOR ALL THEMEWORK
STRUCTURES ARE BY THEMEWORK
CONTRACTOR.

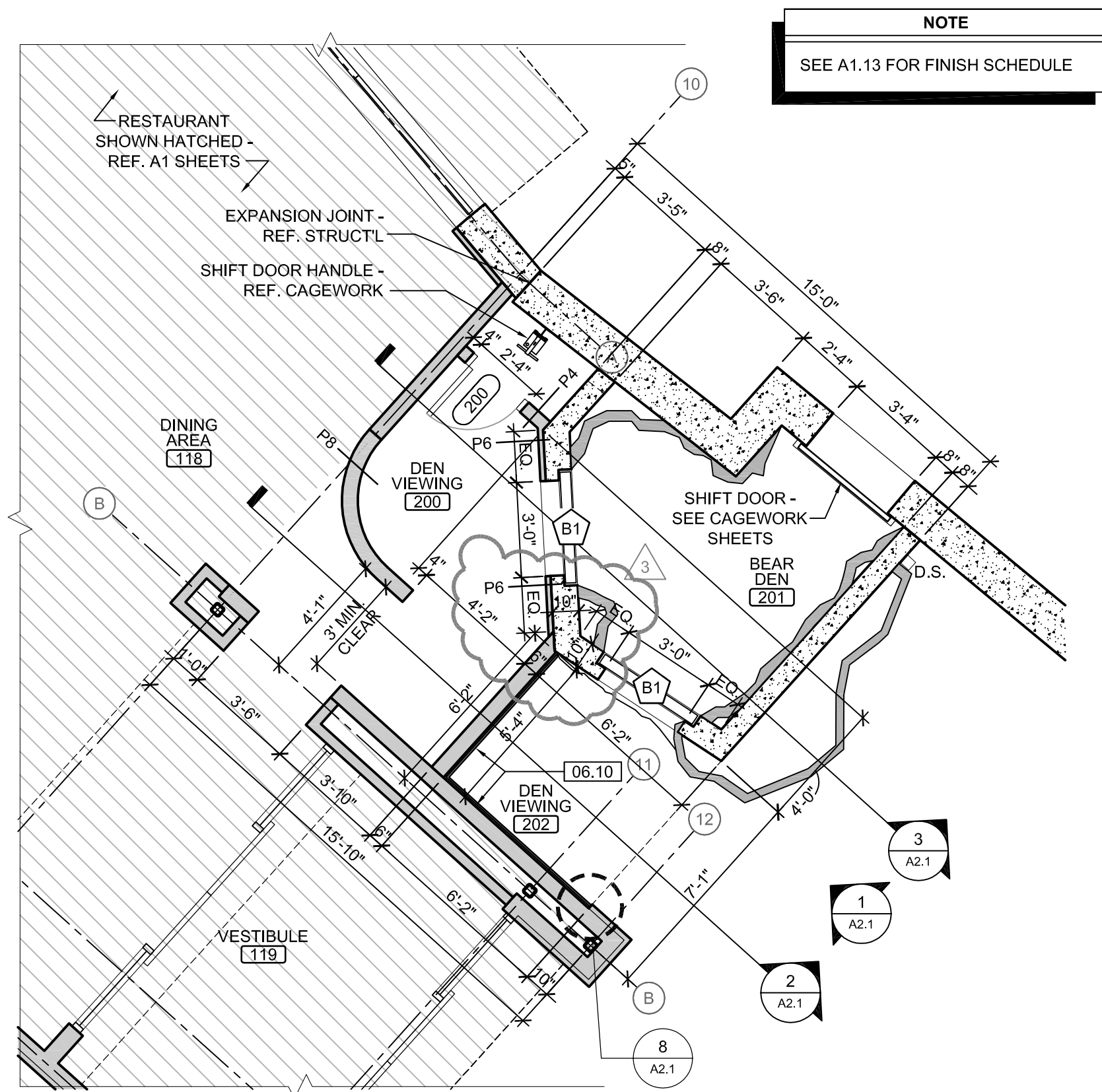


G SECTION THRU EXISTING WALL
NTS

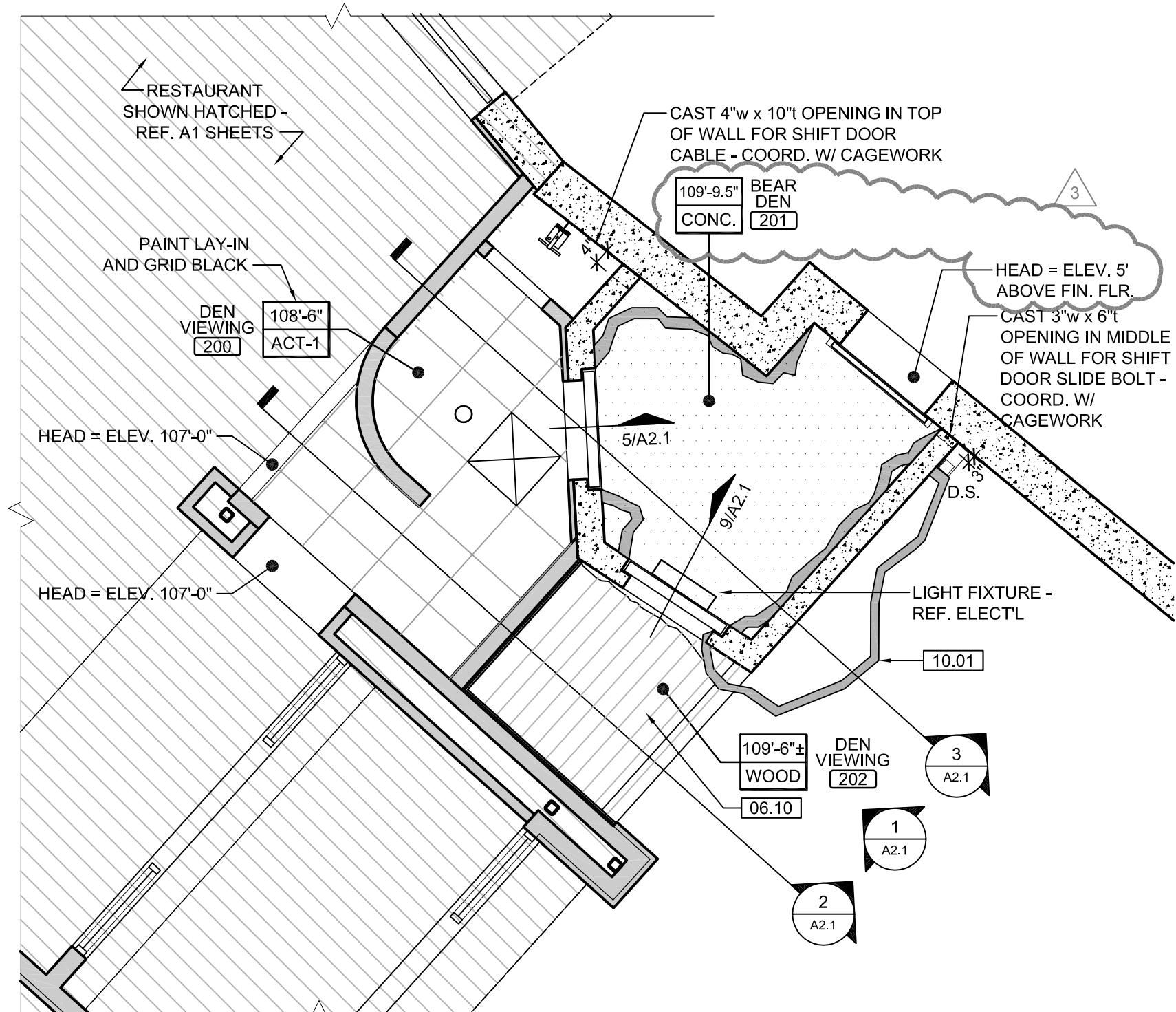


H CRAWL TUNNEL
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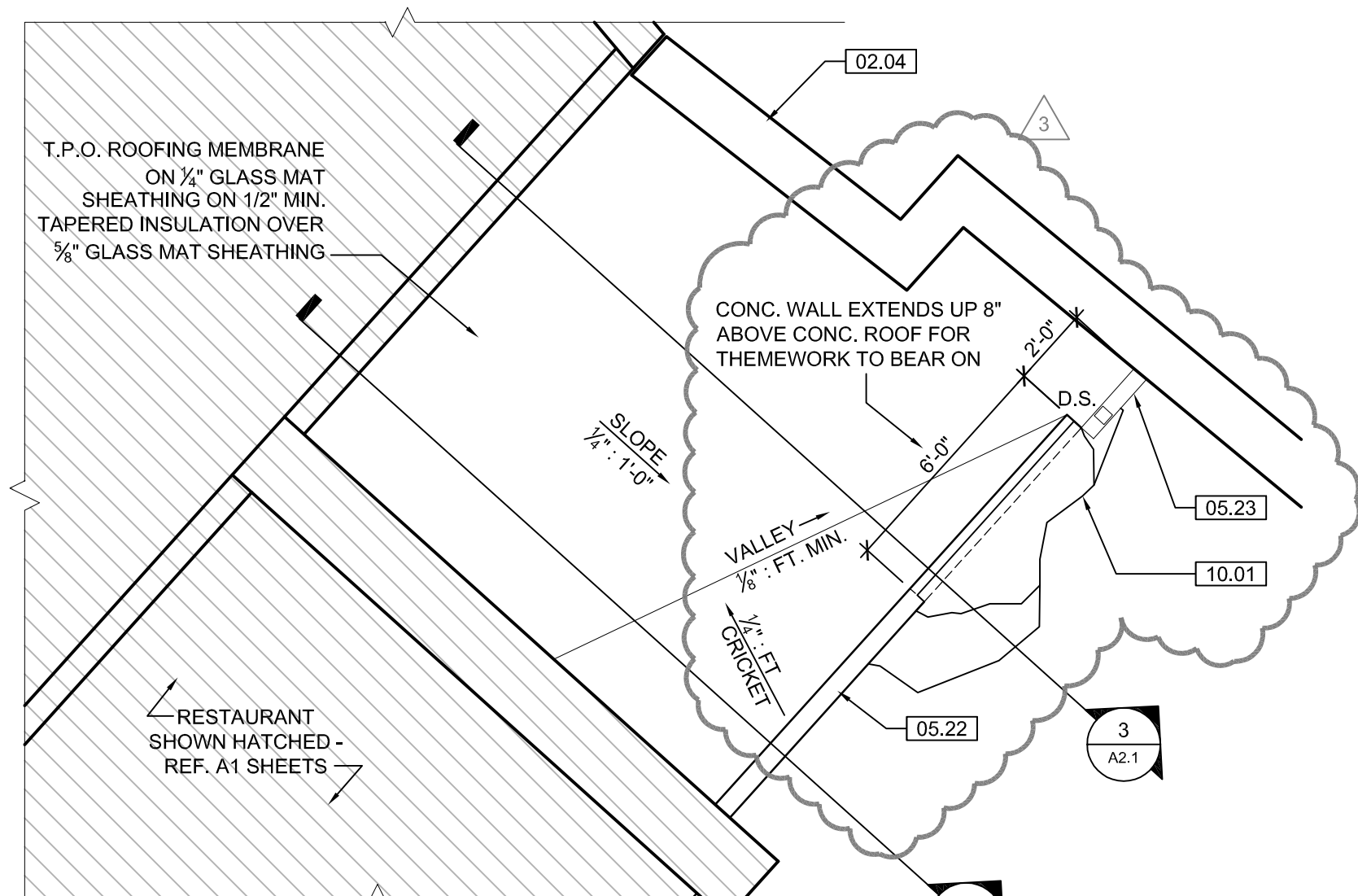
NOTE:
FOUNDATIONS FOR ALL THEMEWORK
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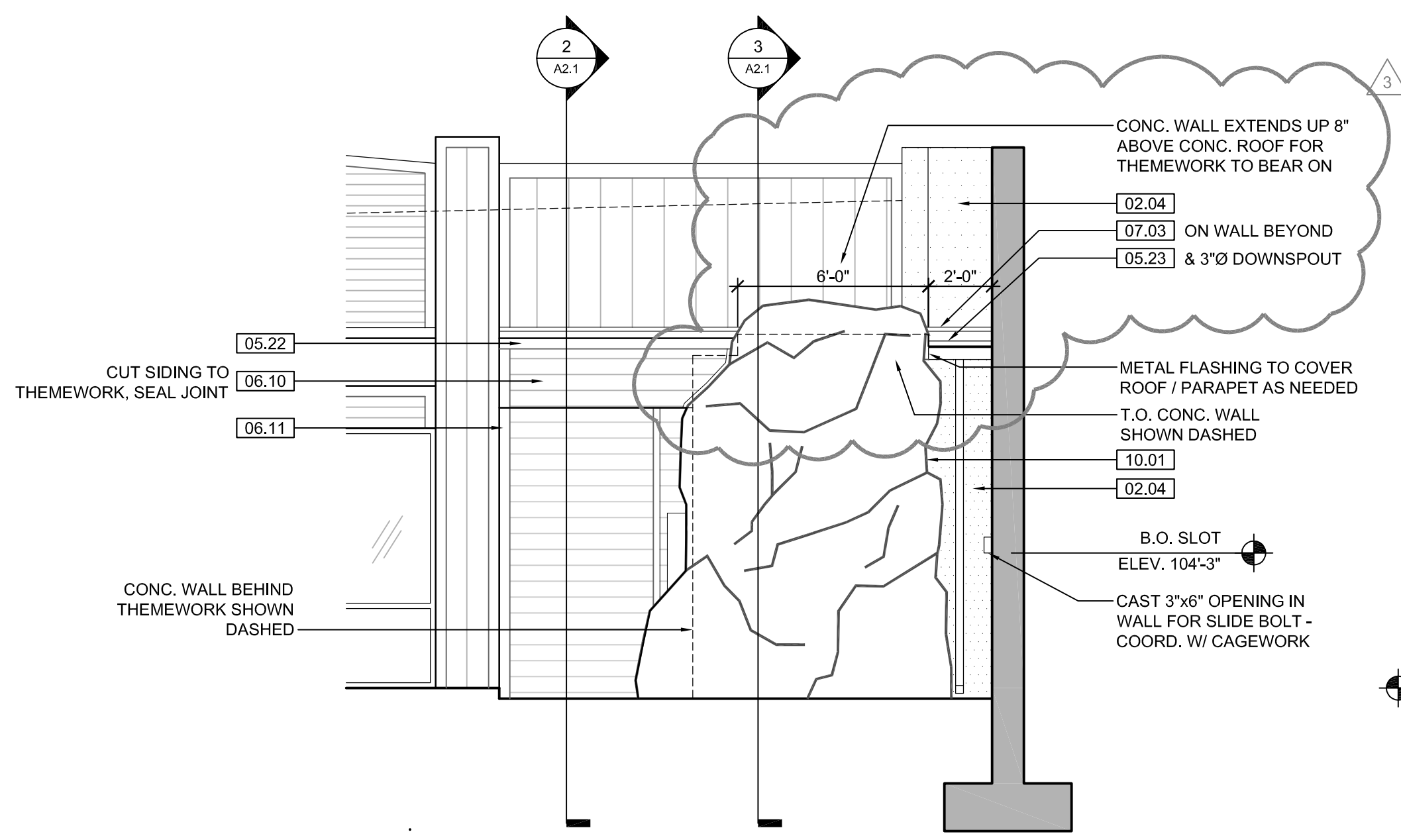
A DEN FLOOR PLAN
SCALE: 1/4" = 1'-0"



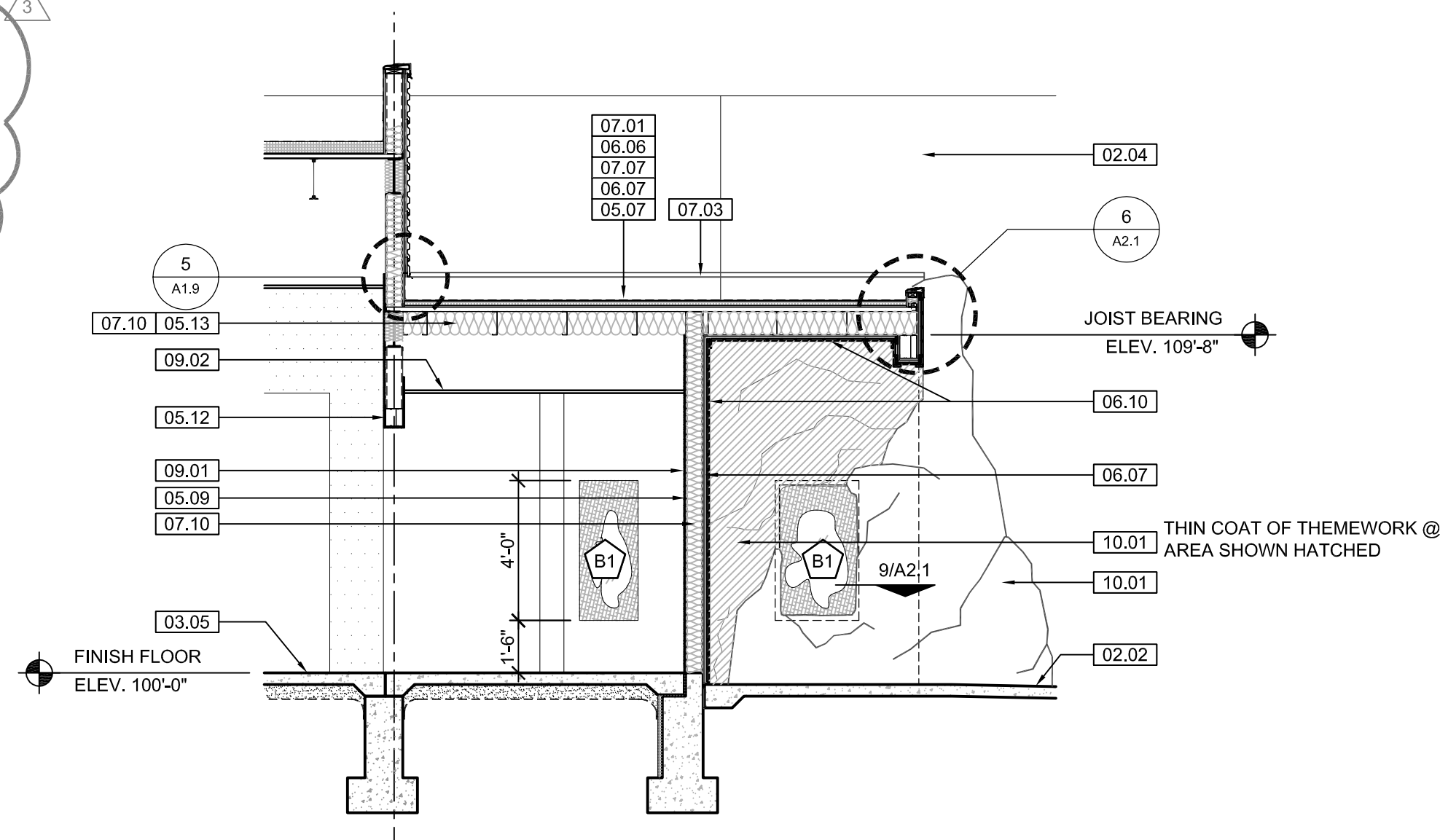
B DEN RCP
SCALE: 1/4" = 1'-0"



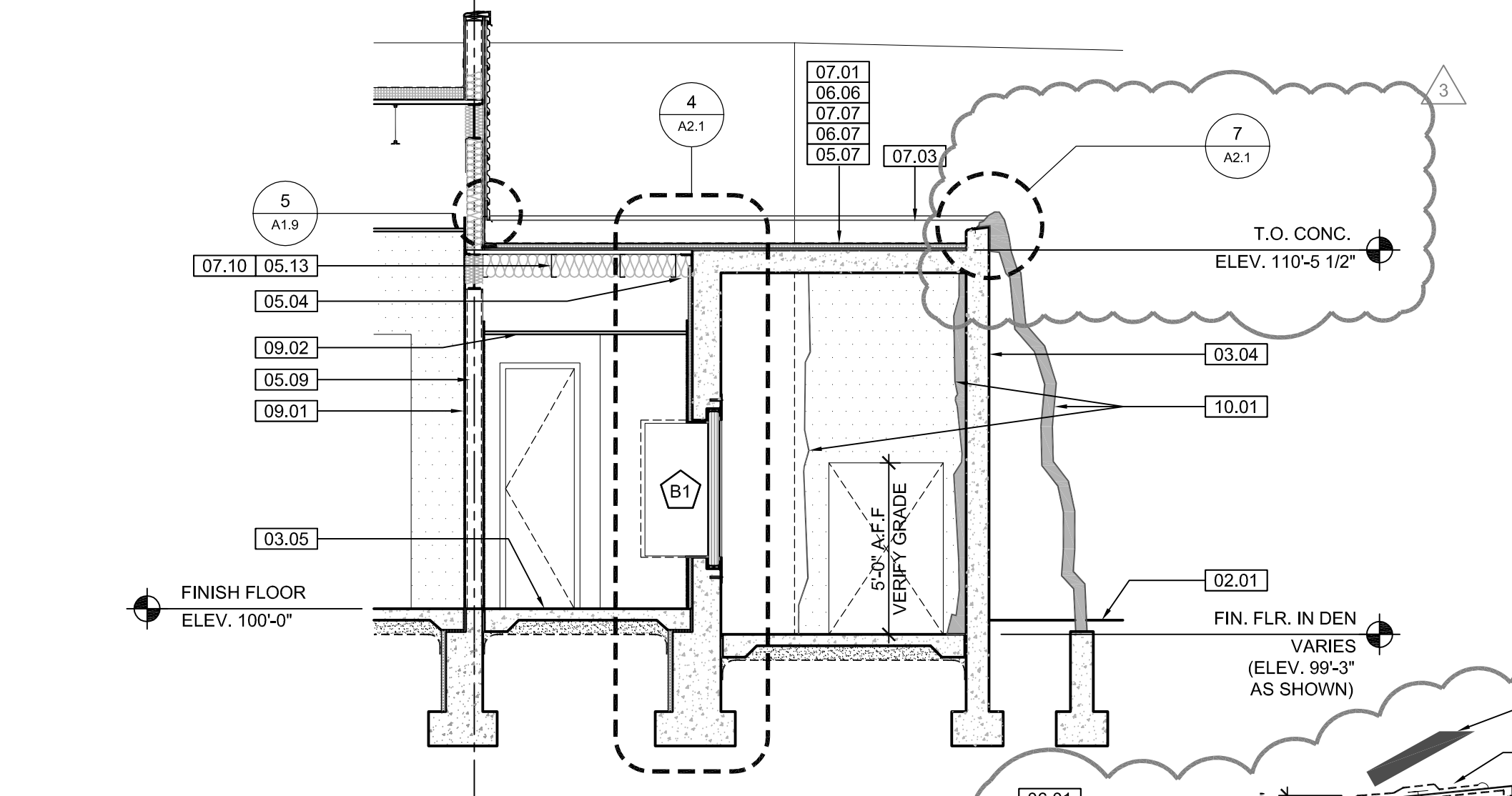
C DEN ROOF PLAN
SCALE: 1/4" = 1'-0"



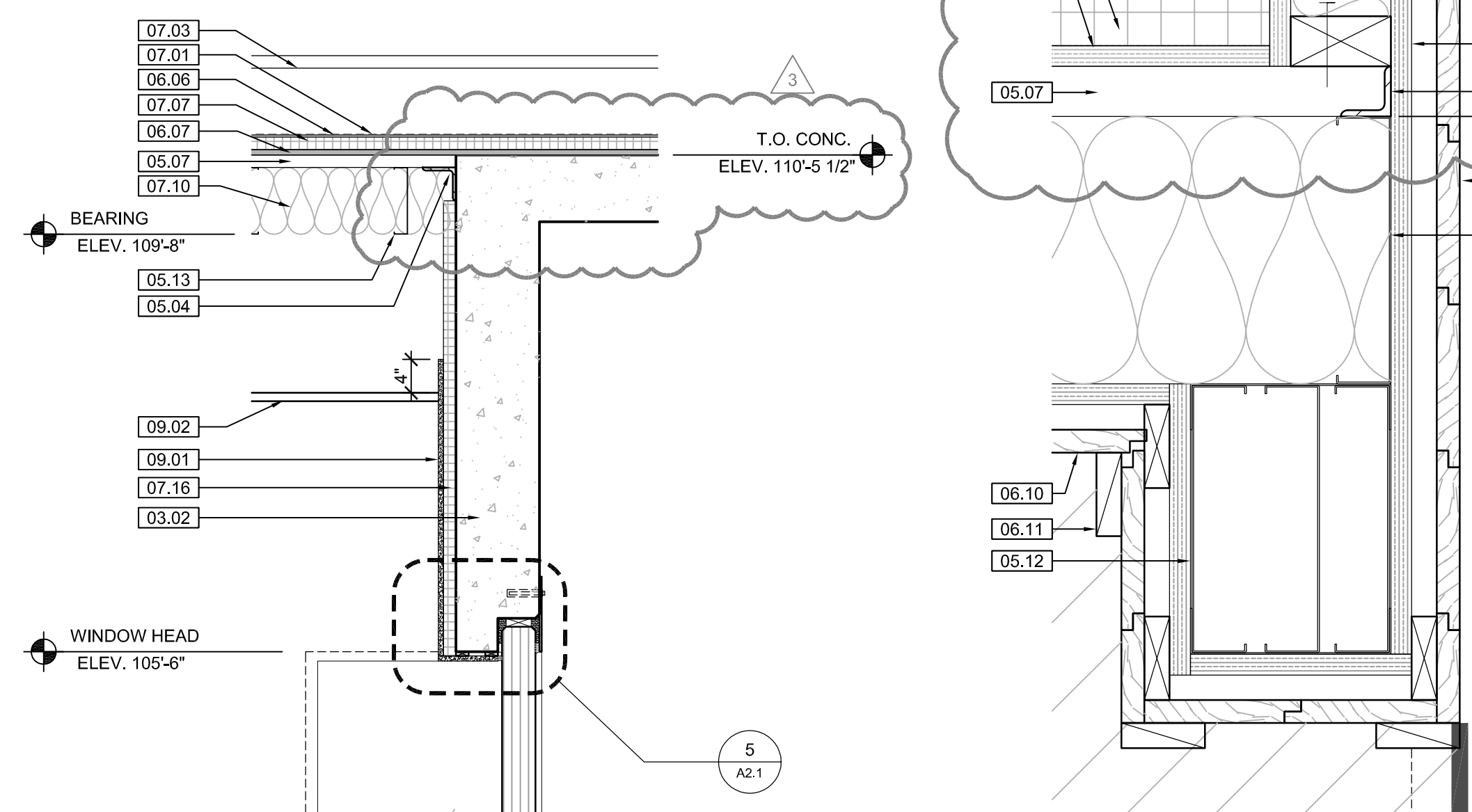
1 DEN ELEVATION
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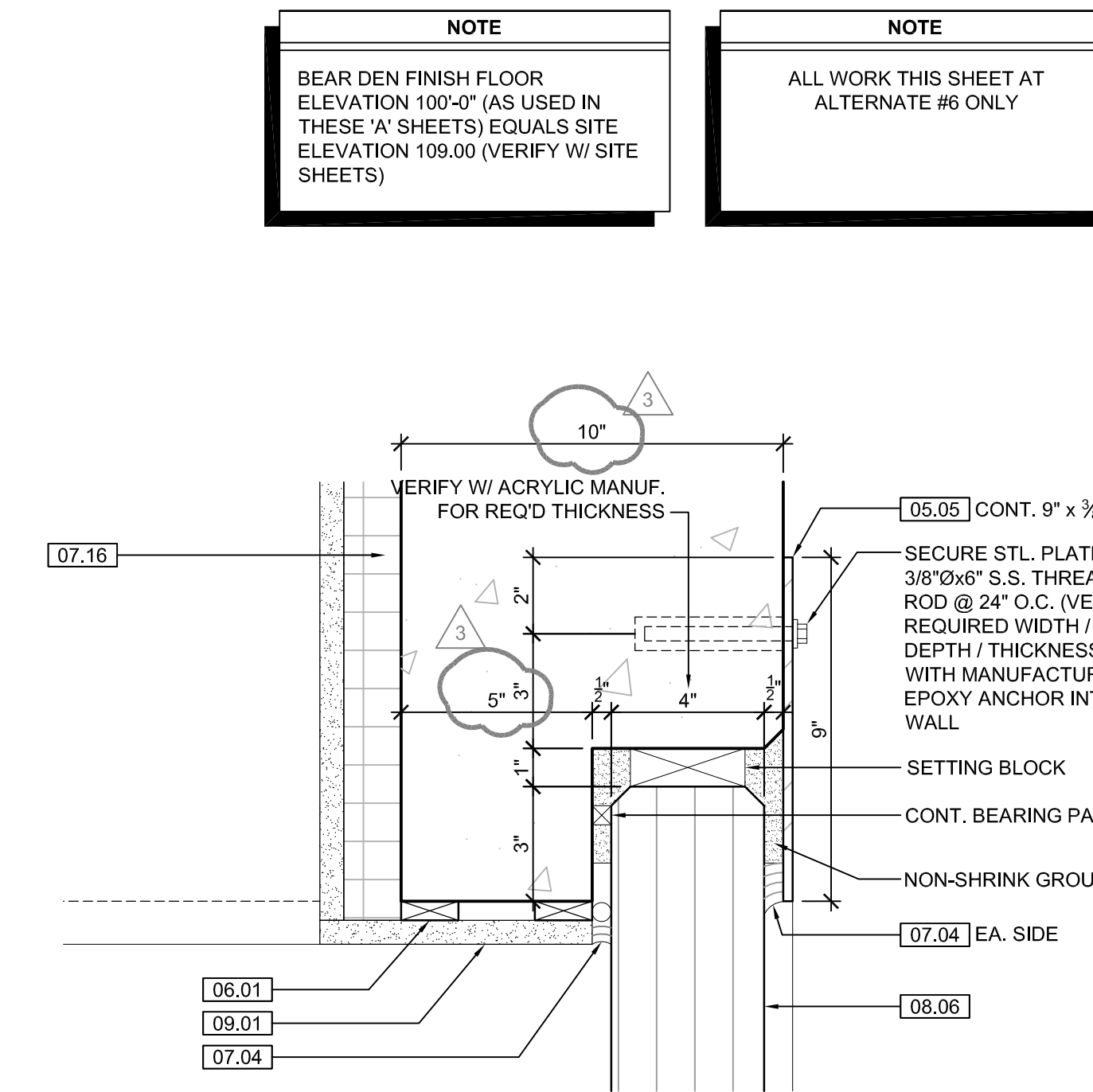
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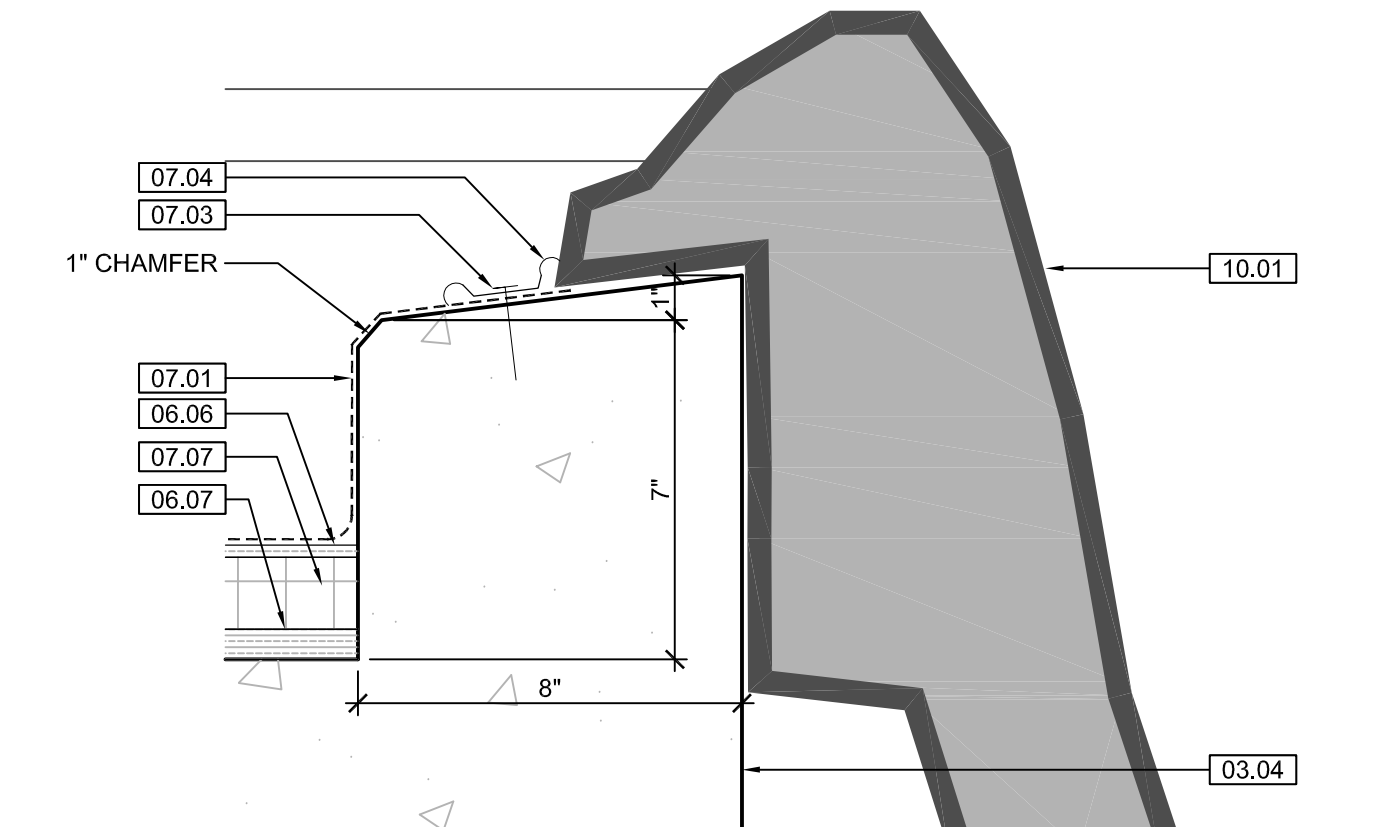
3 DEN SECTION
SCALE: 1/4" = 1'-0"



4 WALL SECTIONS
SCALE: 3/4" = 1'-0"

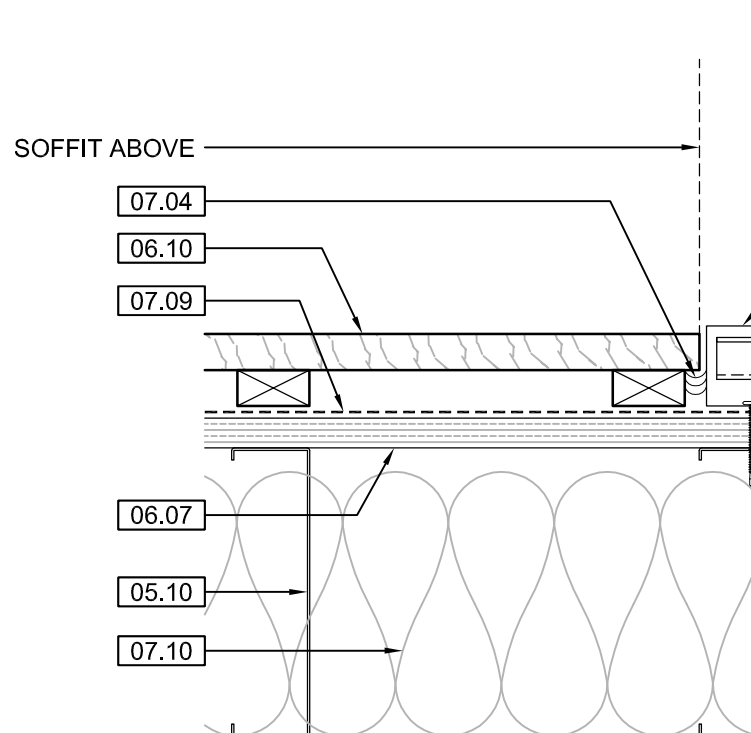


5 WINDW. DETAIL
SCALE: 3" = 1'-0"



9 WINDW. DETAIL
SCALE: 3" = 1'-0"

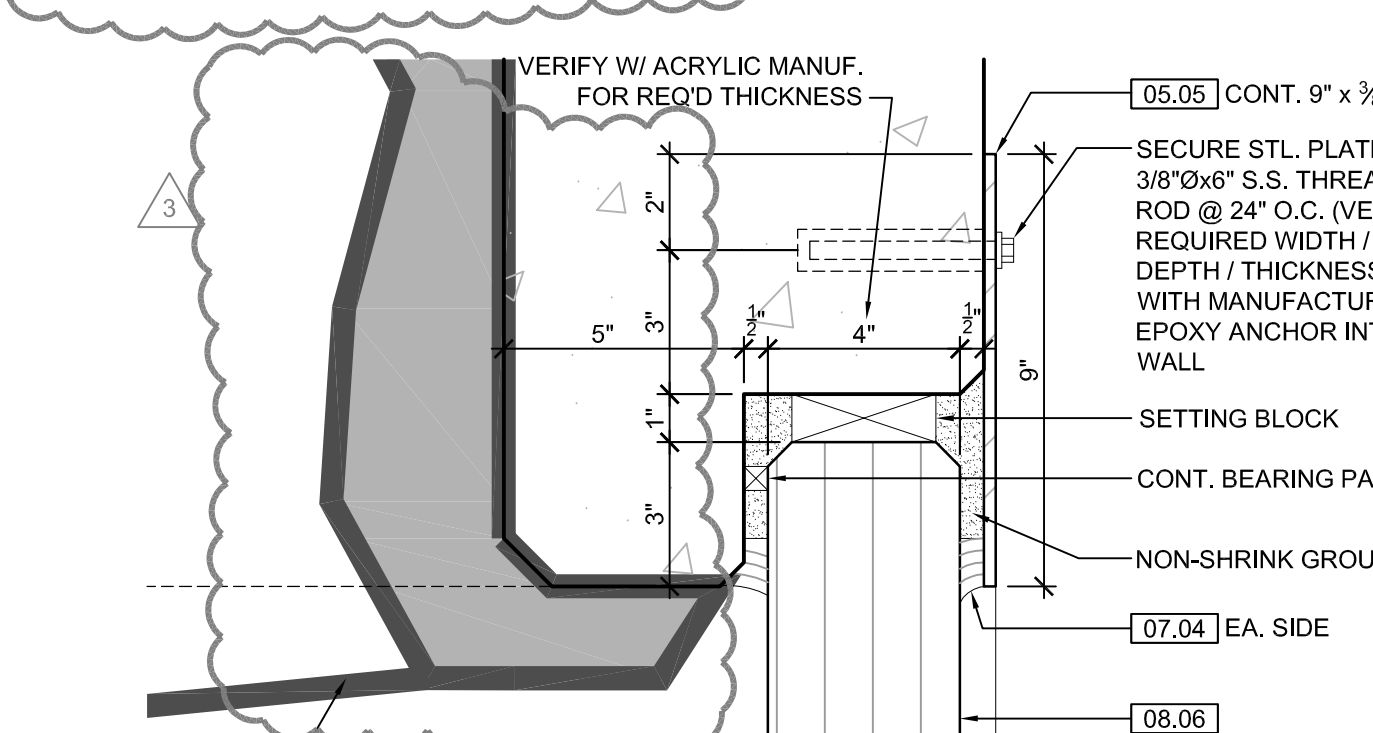
6 PARAPET DETAIL
SCALE: 3" = 1'-0"



8 SIDING DETAIL
SCALE: 3" = 1'-0"



7 PARAPET DETAIL
SCALE: 3" = 1'-0"



KEYNOTE LEGEND: BUILDING ELEVATIONS, SECTIONS, WALL SECTIONS, & DETAILS	
Division 01 - Existing Construction	07.10 BATT INSULATION: R-19 MIN. TYPICAL, OR AS NOTED
01.01 XXX	07.11 FOUNDATION INSULATION 48" BELOW GRADE
Division 02 - Site Construction	07.12 EXPANSION JOINT
02.02 SIDEWALK OR SITE PAVING - SEE SITE SHEETS	07.13 E.J. MATERIAL
02.03 1/2" E.J. W/ 1/2" FIBER BD. & SELF LEVELING SEALANT	07.14 COLD APPLIED WATER PROOFING
02.04 SITE WALL - SEE SITE SHEETS	07.15 6" EXPANDIBLE WATER STOP
02.05 SITE STAIR / RAMP / DOCK - SEE SITE SHEETS	07.16 1 1/2" RIGID EPS INSULATION WITH FURRING AS REQUIRED
02.06 CONTAINMENT FENCE - SEE SITE SHEETS	07.17 SPRAY FOAM INSULATION R-30
02.07 TRENCH DRAIN - SEE SITE SHEETS	07.18 30# ROOFING FELT
02.08 HANDRAIL - SEE SITE SHEETS	Division 08 - Doors & Windows
Division 03 - Concrete	08.01 HOLLOW METAL DOOR / FRAME - SEE DOOR SCHEDULE
03.01 CONC. FOUNDATION / FOOTING - REF. STRUCT.	08.02 F.R.P. DOOR / FRAME - SEE DOOR SCHEDULE
03.02 PRE-CAST CONCRETE WALL - REF. STRUCT.	08.03 HOLLOW METAL WINDOW - SEE WINDOW TYPES
03.03 PRE-CAST HOLLOW CORE CONC. ROOF SLAB - REF. STRUCT.	08.04 STOREFRONT WINDOW / DOOR - SEE WINDOW TYPES
03.04 CAST-IN-PLACE CONCRETE WALL - REF. STRUCT.	08.05 PRE-FINISHED BREAK METAL - MATCH STOREFRONT FINISH
03.05 REINF. CONC. SLAB ON GRANULAR FILL OVER VAPOR BARRIER - REF. STRUCT. & GEOTECH REPORT	08.06 GLASS / ACRYLIC - SEE WINDOW TYPES
03.06 GROUT FILL - REF. STRUCT.	08.07 SKYLIGHT - SEE SPEC.
Division 04 - Masonry	Division 09 - Finishes
04.01 CMU - 8"x8"x16" NORMAL WEIGHT (OR AS NOTED) - REF. STRUCT.	09.01 1/2" GYP. BD. (OR AS INDICATED)
Division 05 - Metals	09.02 LAY-IN CEILING - SEE R.C.P.
05.01 STEEL BEAM / JOIST / TRUSS - REF. STRUCT.	09.03 MILLWORK / CASEWORK - SEE MILLWORK SHEETS
05.02 STEEL COLUMN - REF. STRUCT.	09.04 SOLID SURFACE - SEE FIN. SCHED.
05.03 STEEL TUBE (SIZE AS NOTED) - REF. STRUCT.	09.05 PAINT
05.04 STEEL ANGLE (SIZE AS NOTED) - REF. STRUCT.	Division 10 - Specialties
05.05 STEEL PLATE (SIZE AS NOTED) - REF. STRUCT.	10.01 THEMWORK - SEE THEMWORK SHEETS
05.06 STEEL LINTEL - REF. STRUCT.	10.02 SNOW GUARDS - PER MANUF. RECOMMENDED LAYOUT - COLOR TO MATCH ROOF
05.07 METAL ROOF DECK - REF. STRUCT.	Division 11 - Equipment
05.08 3/4" METAL STUD FRAMING @ 16" O.C. - REF. STRUCT.	11.01 KITCHEN EQUIPMENT - SEE KITCHEN EQUIPMENT SHEETS
05.09 6" METAL STUD FRAMING @ 16" O.C. - REF. STRUCT.	11.02 EQUIPMENT BY OWNER - N.I.C.
05.10 PRE-FINISHED METAL SOFFIT PANEL	11.03 WATER STORAGE SILO - SEE SITE SHEETS (ANY PAINTED SIGNAGE BY OWNER)
05.11 METAL FRAMING AS REOD	Division 12 - Furnishings
05.12 HEADER - REF. STRUCT.	12.01 XXX
05.13 COLD ROLLED METAL JOISTS @ 16" O.C. (SIZE AS INDIC'D) - REF. STRUCT.	Division 13 - Special Construction
05.14 PRE-FINISHED HORIZONTAL METAL PANEL SIDING	13.01 CAGEWORK: 3/16" LACING BAR - SEE DETAILS FOR STANDOFF LOCNS.
05.15 PRE-FINISHED VERTICAL METAL PANEL SIDING	13.03 CAGEWORK: SEE CAGEWORK SHEETS
05.16 PRE-FINISHED STANDING SNAP ON SEAM CURVED METAL ROOF	13.04 SIGNAGE (BY OWNER) - COORDINATE MOUNTING & ELECTRICAL REQUIREMENTS
05.17 GALV. CORRUGATED METAL ROOFING	Division 14 - Conveying Systems
05.18 FURRING PER METAL SIDING MANUF. RECOMENDATION	14.01 XXX
05.19 PRE-FINISHED MTL. FLASHING	Division 15 - Mechanical
05.20 PRE-FINISHED MTL. SILL FLASHING	15.01 HVAC UNIT / EQUIPMENT / DUCT - REF. MECHL
05.21 PRE-FINISHED MTL. FASCIA	15.02 PLUMBING EQUIPMENT / LINE / FLOOR DRAIN - REF. PLUMB'G
05.22 PRE-FINISHED MTL. PARAPET FLASHING	15.03 HOSEBIB - REF. PLUMB'G
05.23 PRE-FIN. METAL GUTTER OR CONDUCTOR HEAD & DOWNSPOUT	15.04 BEAR YARD FAN & DUCTWORK: MAIN DUCT IS 8" PVC PIPE W/ 3" PVC PIPE VENTS @ 12" O.C. - DUCTWORK CAST INTO CONC. WALL. REFERENCE MECHANICAL SHEETS FOR FAN EQUIPMENT.
05.24 GALV. 6" HALF ROUND GUTTER & 3" DIAM. DOWNSPOUT	15.05 12" LAYER CRUSHED CLEAR STONE, SURROUNDED BY NON-WOVEN GEO-TEXTILE FABRIC W/ SLOTTED DRAIN TILE
05.25 PRE-FIN. METAL TRIM - PER SIDING MANUFACTURER'S INSTALLATION INSTRUCTIONS	Division 16 - Electrical
Division 06 - Wood & Plastics	16.01 LIGHT FIXTURE - REF. ELECTL
06.01 BLOCKING, 2X OR SIZE AS INDIC'D	16.02 ELECTRICAL OUTLET - REF. ELECTL
06.02 WOOD TRIM, 1X OR SIZE AS INDIC'D - SEE SPEC	16.03 LIGHT SWITCH - REF. ELECTL
06.03 WOOD BEAM / JOISTS - REF. STRUCT.	
06.04 WOOD COLUMN - REF. STRUCT.	
06.05 PLYWOOD SHEATHING - 3/4" OR SIZE AS INDIC'D	
06.06 1/2" GLASS-MAT ROOF COVER BD.	
06.07 1/2" GLASS-MAT SHEATHING SHEATHING	
06.08 ROOF SHEATHING - REF. STRUCT.	
06.09 2x FASCIA OR SIZE AS INDIC'D	
06.10 1" CEDAR SHIPLAP SIDING ON 1X SLEEPERS	
06.11 CEDAR TRIM	
Division 07 - Thermal & Moisture	
07.01 FULLY ADHERED T.P.O. MEMBRANE ROOFING	
07.02 FULLY ADHERED T.P.O. FLASHING STRIP	
07.03 TERMINATION BAR	
07.04 SEALANT	
07.05 CONTINUOUS BACKER ROD (DOUBLE WHERE NOTED)	
07.06 RIGID BASE INSULATION, 3" MIN. AT BEAR & SEAL HOLDING, 4" MIN. AT RESTAURANT (OR THICKNESS & R-VALUE AS INDICATED)	
07.07 TAPERED INSULATION, 1/2" MIN.	
07.08 ICE & WATER SHIELD	
07.09 WEATHER BARRIER	



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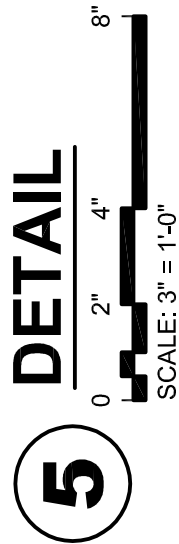
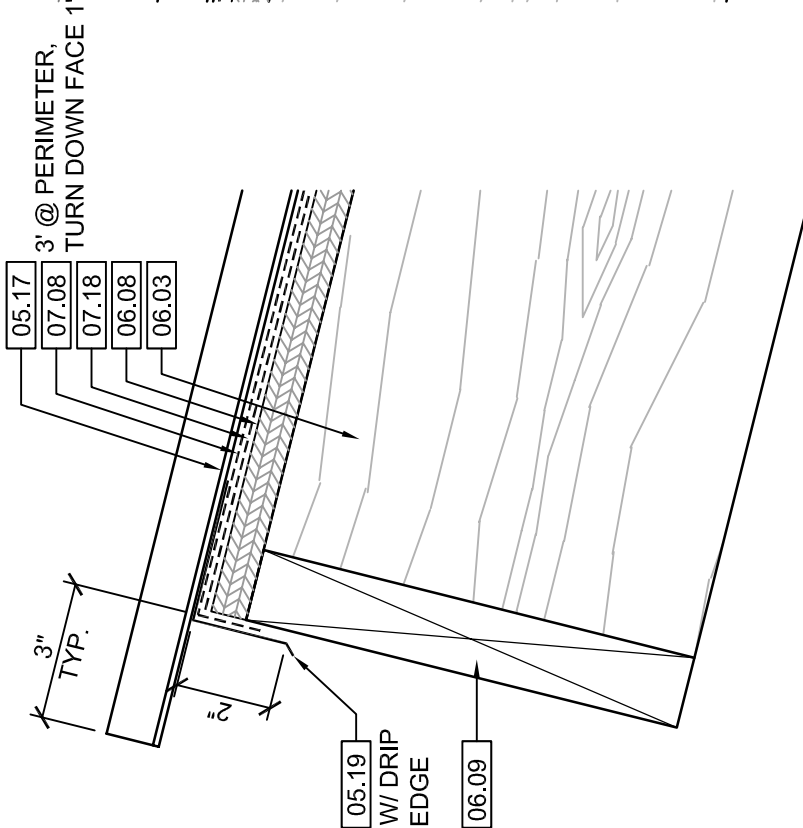
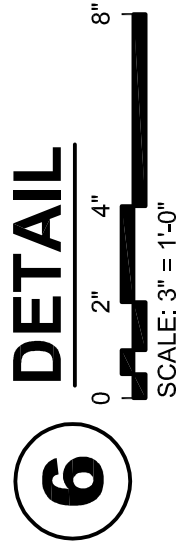
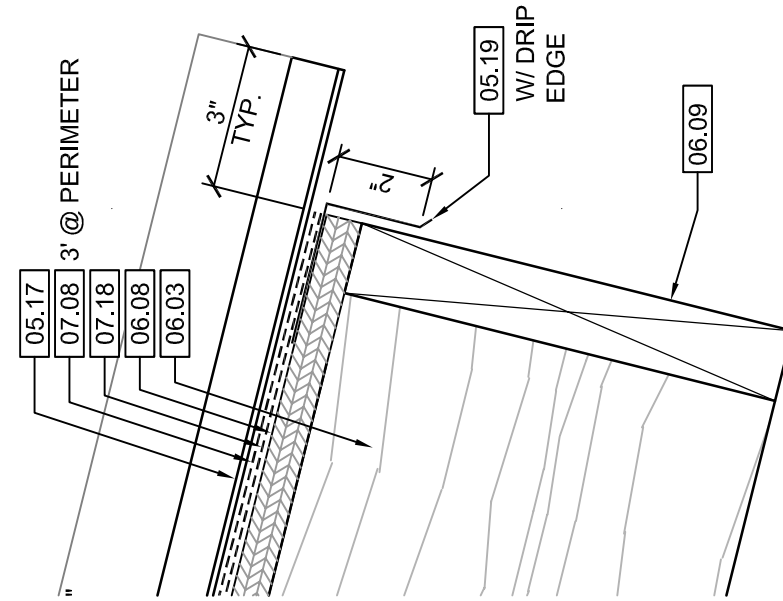


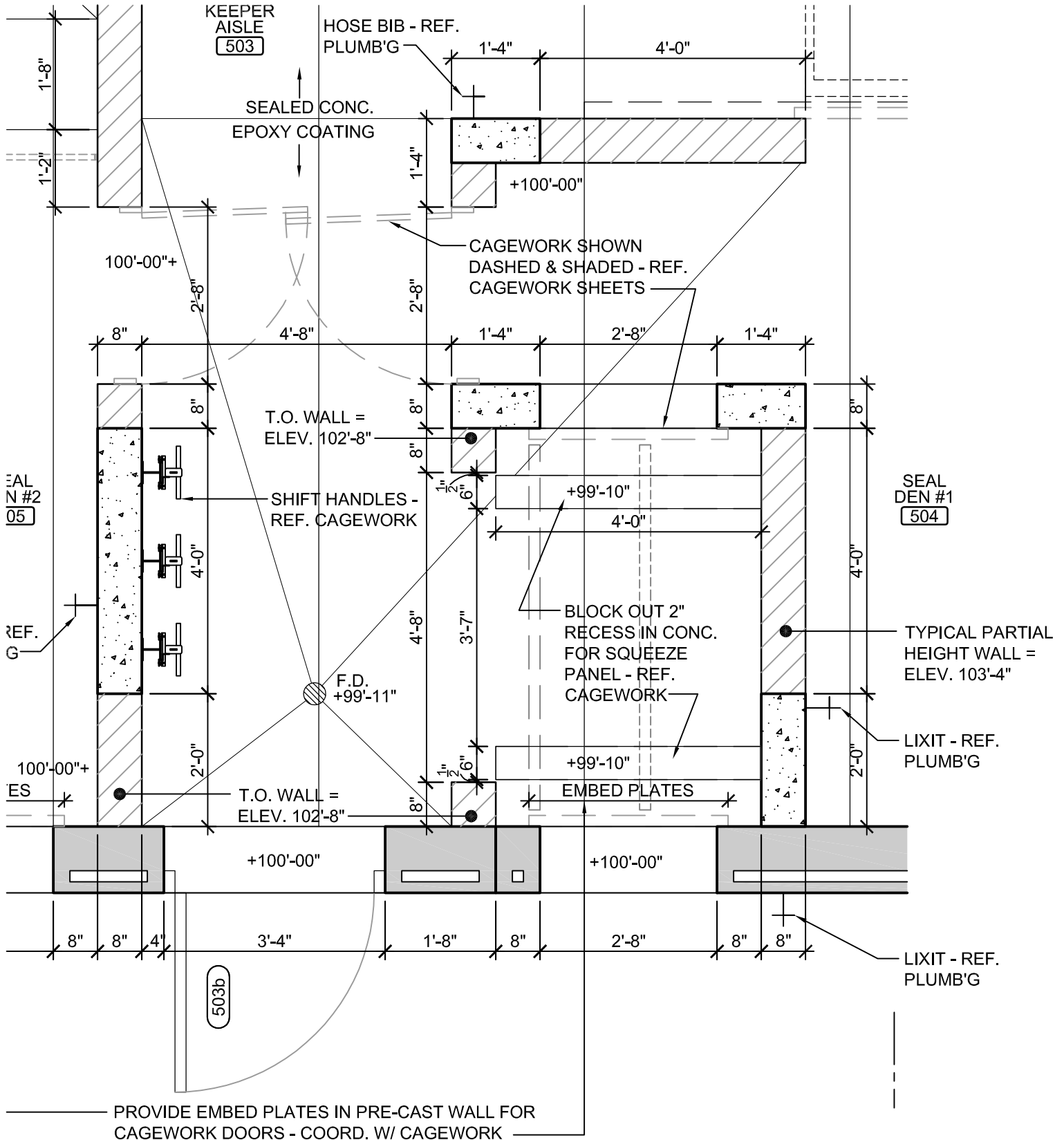
we do more
henry vilas zoo
ARCTIC ANIMAL EXHIBIT AND CONCESSIONS
RFB No. 313086
Henry Vilas Zoo - County of Dane
Department of Public Works
1919 Alliant Energy Center Way
Madison, Wisconsin

PRINTS ISSUED
07.26.2013 - Schematic Design
08.23.2013 - Design Development
09.23.2013 - 65% CD's
10.07.2013 - Pricing Set
10.21.2013 - 95% CD's
11.13.2013 - Bid Documents
11.25.2013 - Addendum #3
11.27.2013 - Addendum #4
12.04.2013 - Addendum #5

WDM No. drawn: DS
13046 checked: SR
BEAR DEN

A2.1





EAL
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05

REF.
G

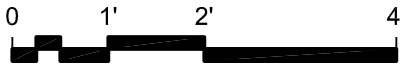
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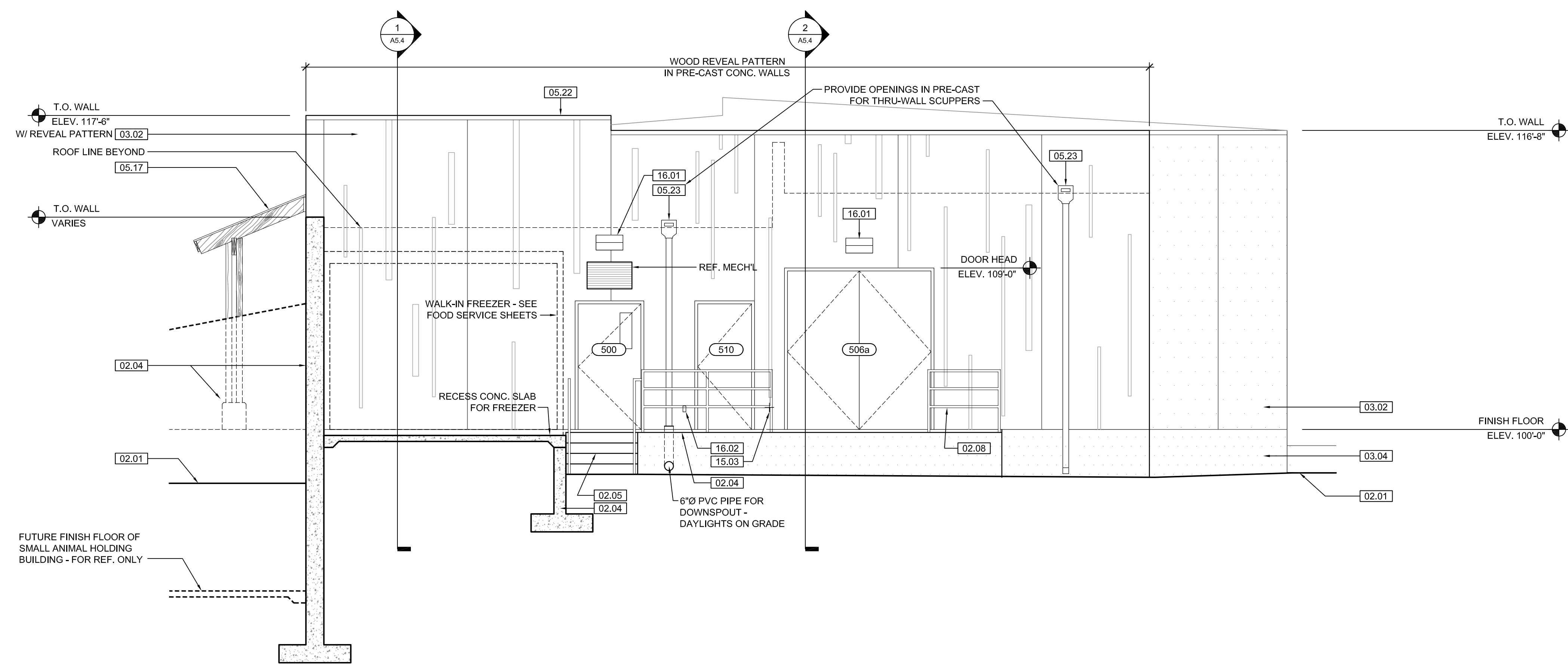
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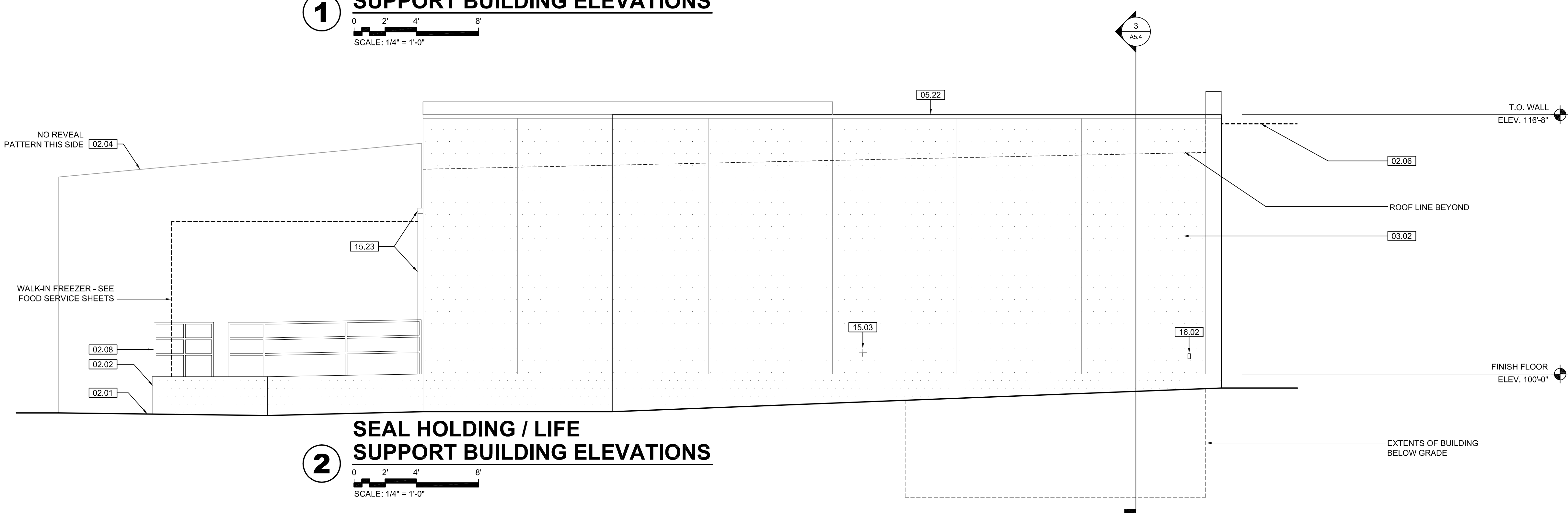
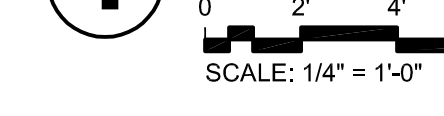
1 ENLARGED PLAN



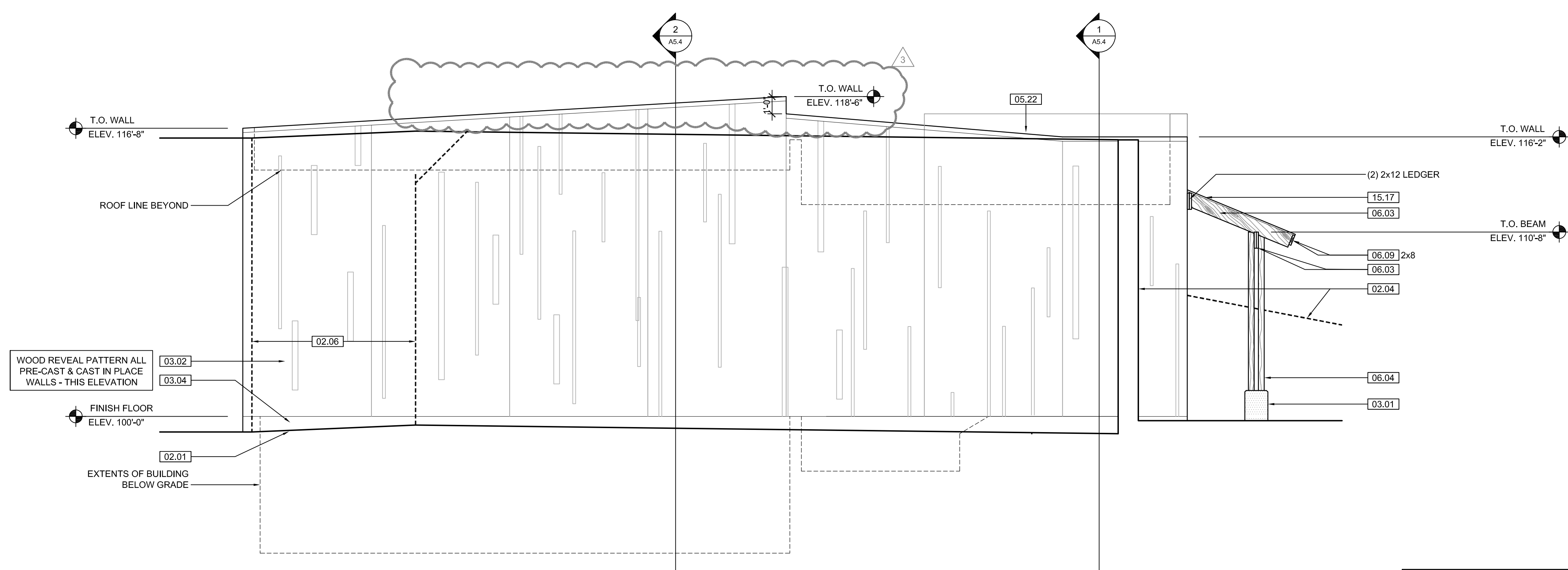
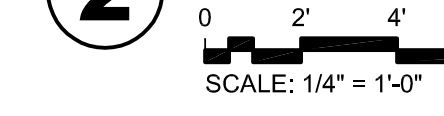
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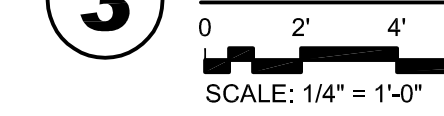
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2 SEAL HOLDING / LIFE SUPPORT BUILDING ELEVATIONS



3 SEAL HOLDING / LIFE SUPPORT BUILDING ELEVATIONS

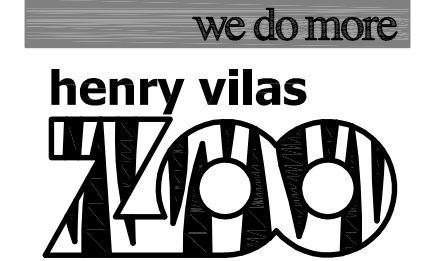


KEYNOTE LEGEND: BUILDING ELEVATIONS, SECTIONS, WALL SECTIONS, & DETAILS	
Division 01 - Existing Construction	07.10 BATT INSULATION: R-19 MIN. TYPICAL, OR AS NOTED
01.01 XXX	07.11 FOUNDATION INSULATION 48\"/>
Division 02 - Site Construction	07.12 EXPANSION JOINT
02.01 GRADE - SEE SITE SHEETS	07.13 E.J. MATERIAL
02.02 SIDEWALK OR SITE PAVING - SEE SITE SHEETS	07.14 COLD APPLIED WATER PROOFING
02.03 1/2\"/>	
02.04 SITE WALL - SEE SITE SHEETS	07.15 6\"/>
02.05 SITE STAIR / RAMP / DOCK - SEE SITE SHEETS	07.16 1 1/2\"/>
02.06 CONTAINMENT FENCE - SEE SITE SHEETS	07.17 SPRAY FOAM INSULATION R-30
02.07 TRENCH DRAIN - SEE SITE SHEETS	07.18 30# ROOFING FELT
02.08 HANDRAIL - SEE SITE SHEETS	Division 08 - Doors & Windows
Division 03 - Concrete	08.01 HOLLOW METAL DOOR / FRAME - SEE DOOR SCHEDULE
03.01 CONC. FOUNDATION / FOOTING - REF. STRUCT.	08.02 F.R.P. DOOR / FRAME - SEE DOOR SCHEDULE
03.02 PRE-CAST CONCRETE WALL - REF. STRUCT.	08.03 HOLLOW METAL WINDOW - SEE WINDOW TYPES
03.03 PRE-CAST HOLLOW CORE CONC. ROOF SLAB - REF. STRUCT.	08.04 STOREFRONT WINDOW / DOOR - SEE WINDOW TYPES
03.04 CAST-IN-PLACE CONCRETE WALL - REF. STRUCT.	08.05 PRE-FINISHED BREAK METAL - MATCH STOREFRONT FINISH
03.05 REINF. CONC. SLAB ON GRANULAR FILL OVER VAPOR BARRIER - REF. STRUCT. & GEOTECH REPORT	08.06 GLASS / ACRYLIC - SEE WINDOW TYPES
03.06 GROUT FILL - REF. STRUCT.	08.07 SKYLIGHT - SEE SPEC.
Division 04 - Masonry	Division 09 - Finishes
04.01 CMU - 8\"/>	
04.02 LAY-IN CEILING - SEE R.C.P.	09.01 1/2\"/>
Division 05 - Metals	09.02 MILLWORK / CASEWORK - SEE MILLWORK SHEETS
05.01 STEEL BEAM / JOIST / TRUSS - REF. STRUCT.	09.03 SOLID SURFACE - SEE FIN. SCHED.
05.02 STEEL COLUMN - REF. STRUCT.	09.05 PAINT
05.03 STEEL TUBE (SIZE AS NOTED) - REF. STRUCT.	Division 10 - Specialties
05.04 STEEL ANGLE (SIZE AS NOTED) - REF. STRUCT.	10.01 THEMWORK - SEE THEMWORK SHEETS
05.05 STEEL PLATE (SIZE AS NOTED) - REF. STRUCT.	10.02 SNOW GUARDS - PER MANUF. RECOMMENDED LAYOUT - COLOR TO MATCH ROOF
05.06 STEEL LINTEL - REF. STRUCT.	Division 11 - Equipment
05.07 METAL ROOF DECK - REF. STRUCT.	11.01 KITCHEN EQUIPMENT - SEE KITCHEN EQUIPMENT SHEETS
05.08 3 1/2\"/>	
05.09 6\"/>	
05.10 PRE-FINISHED METAL SOFFIT PANEL	11.02 EQUIPMENT BY OWNER - N.I.C.
05.11 METAL FRAMING AS REQ'D	11.03 WATER STORAGE SILO - SEE SITE SHEETS (ANY PAINTED SIGNAGE BY OWNER)
05.12 HEADER - REF. STRUCT.	Division 12 - Furnishings
05.13 COLD ROLLED METAL JOISTS @ 16\"/>	
05.14 PRE-FINISHED HORIZONTAL METAL PANEL SIDING	12.01 XXX
05.15 PRE-FINISHED VERTICAL METAL PANEL SIDING	Division 13 - Special Construction
05.16 PRE-FINISHED STANDING SNAP ON SEAM CURVED METAL ROOF	13.01 2\"/>
05.17 GALV. CORRUGATED METAL ROOFING	13.02 CAGEWORK: 3/8\"/>
05.18 FURRING PER METAL SIDING MANUF. RECOMMENDATION	13.03 CAGEWORK: SEE CAGEWORK SHEETS
05.19 PRE-FINISHED MTL. FLASHING	13.04 SIGNAGE (BY OWNER) - COORDINATE MOUNTING & ELECTRICAL REQUIREMENTS
05.20 PRE-FINISHED MTL. SILL FLASHING	Division 14 - Conveying Systems
05.21 PRE-FINISHED MTL. FASCIA	14.01 XXX
05.22 PRE-FINISHED MTL. PARAPET FLASHING	Division 15 - Mechanical
05.23 PRE-FIN. METAL GUTTER OR CONDUCTOR HEAD & DOWNSPOUT	15.01 HVAC UNIT / EQUIPMENT / DUCT - REF. MECHL.
05.24 GALV. 6\"/>	
05.25 PRE-FIN. METAL TRIM - PER SIDING MANUFACTURER'S INSTALLATION INSTRUCTIONS	15.02 PLUMBING EQUIPMENT / LINE / FLOOR DRAIN - REF. PLUMB'G
Division 06 - Wood & Plastics	15.03 HOSEBIB - REF. PLUMB'G
06.01 BLOCKING, 2X OR SIZE AS INDIC'D	15.04 BEAR YARD FAN & DUCTWORK: MAIN DUCT IS 8\"/>
06.02 WOOD TRIM, 1X OR SIZE AS INDIC'D - SEE SPEC	15.05 12\"/>
06.03 WOOD BEAM / JOISTS - REF. STRUCT.	Division 16 - Electrical
06.04 WOOD COLUMN - REF. STRUCT.	16.01 LIGHT FIXTURE - REF. ELECTL.
06.05 PLYWOOD SHEATHING - 5/8\"/>	
06.06 1/2\"/>	
06.07 3/8\"/>	
06.08 ROOF SHEATHING - REF. STRUCT.	16.02 ELECTRICAL OUTLET - REF. ELECTL.
06.09 2x FASCIA OR SIZE AS INDIC'D	16.03 LIGHT SWITCH - REF. ELECTL.
06.10 6\"/>	
06.11 CEDAR TRIM	Division 07 - Thermal & Moisture
06.12 (2) 2x12 LEDGER	07.01 FULLY ADHERED T.P.O. MEMBRANE ROOFING
06.13 2x8	07.02 FULLY ADHERED T.P.O. FLASHING STRIP
06.14 2x FASCIA OR SIZE AS INDIC'D	07.03 TERMINATION BAR
06.15 2x8	07.04 SEALANT
06.16 2x8	07.05 CONTINUOUS BACKER ROD (DOUBLE WHERE NOTED)
06.17 2x8	07.06 RIGID BASE INSULATION, 3\"/>
06.18 2x8	07.07 TAPERED INSULATION, 1/2\"/>
06.19 2x8	07.08 ICE & WATER SHIELD
06.20 2x8	07.09 WEATHER BARRIER

NOTE
SEAL HOLDING FINISH FLOOR ELEVATION 100'-0" (AS USED IN THESE 'A' SHEETS) EQUALS SITE ELEVATION 114.0 (VERIFY W/ SITE SHEETS)



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ARCCTIC ANIMAL EXHIBIT AND CONCESSIONS
RFB No. 313086
Henry Vilas Zoo - County of Dane
Department of Public Works
702 S Randall Ave
Madison, Wisconsin

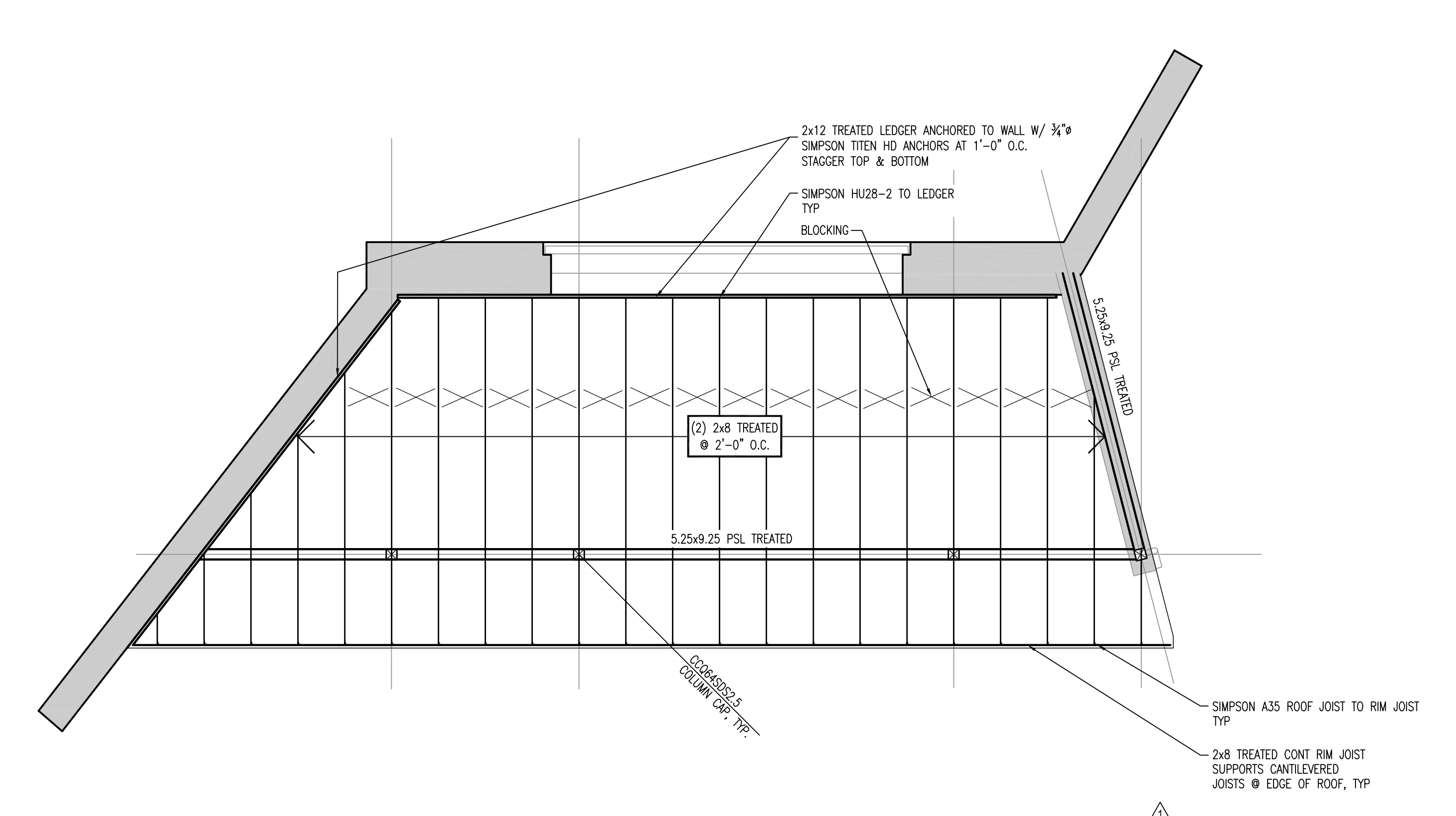
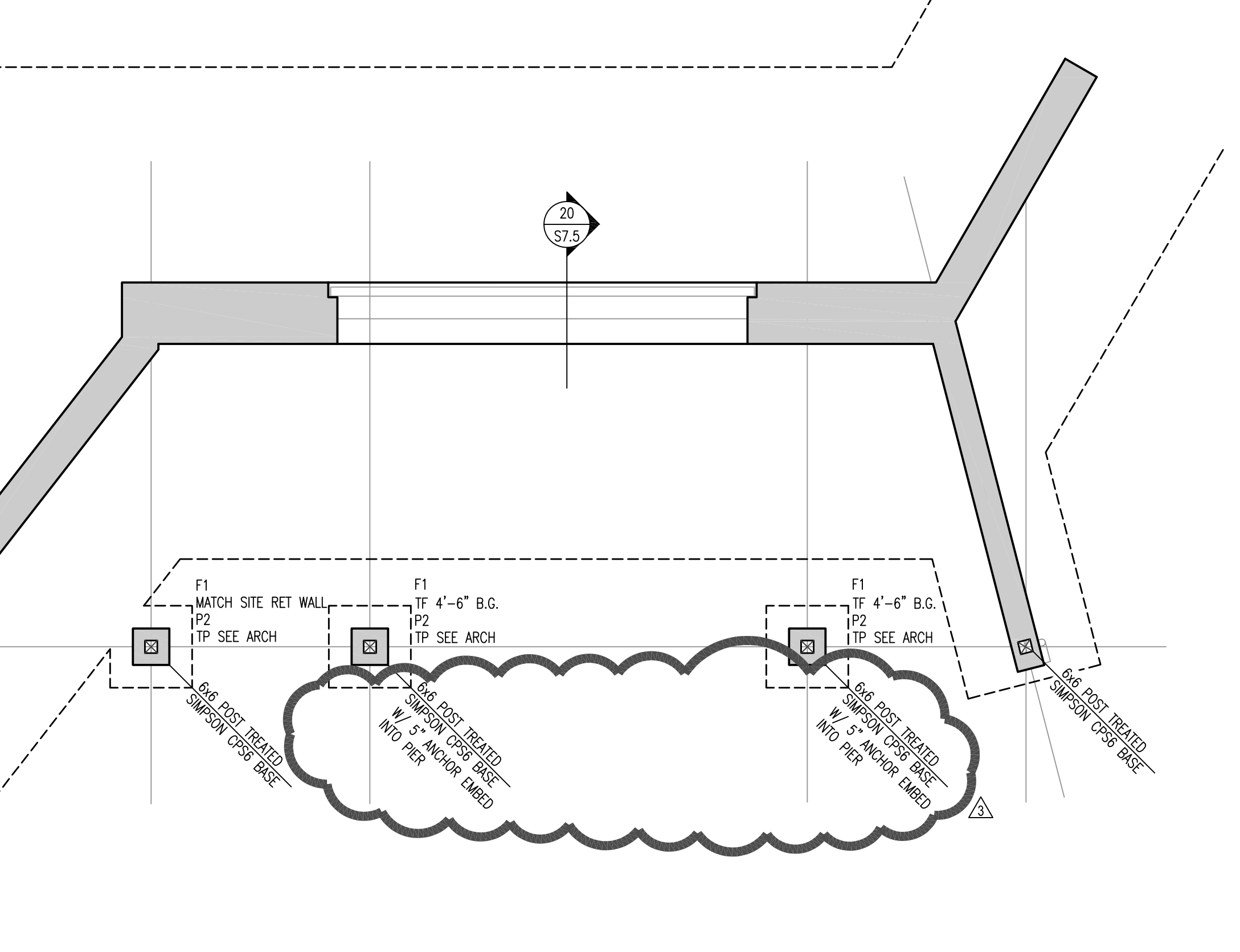
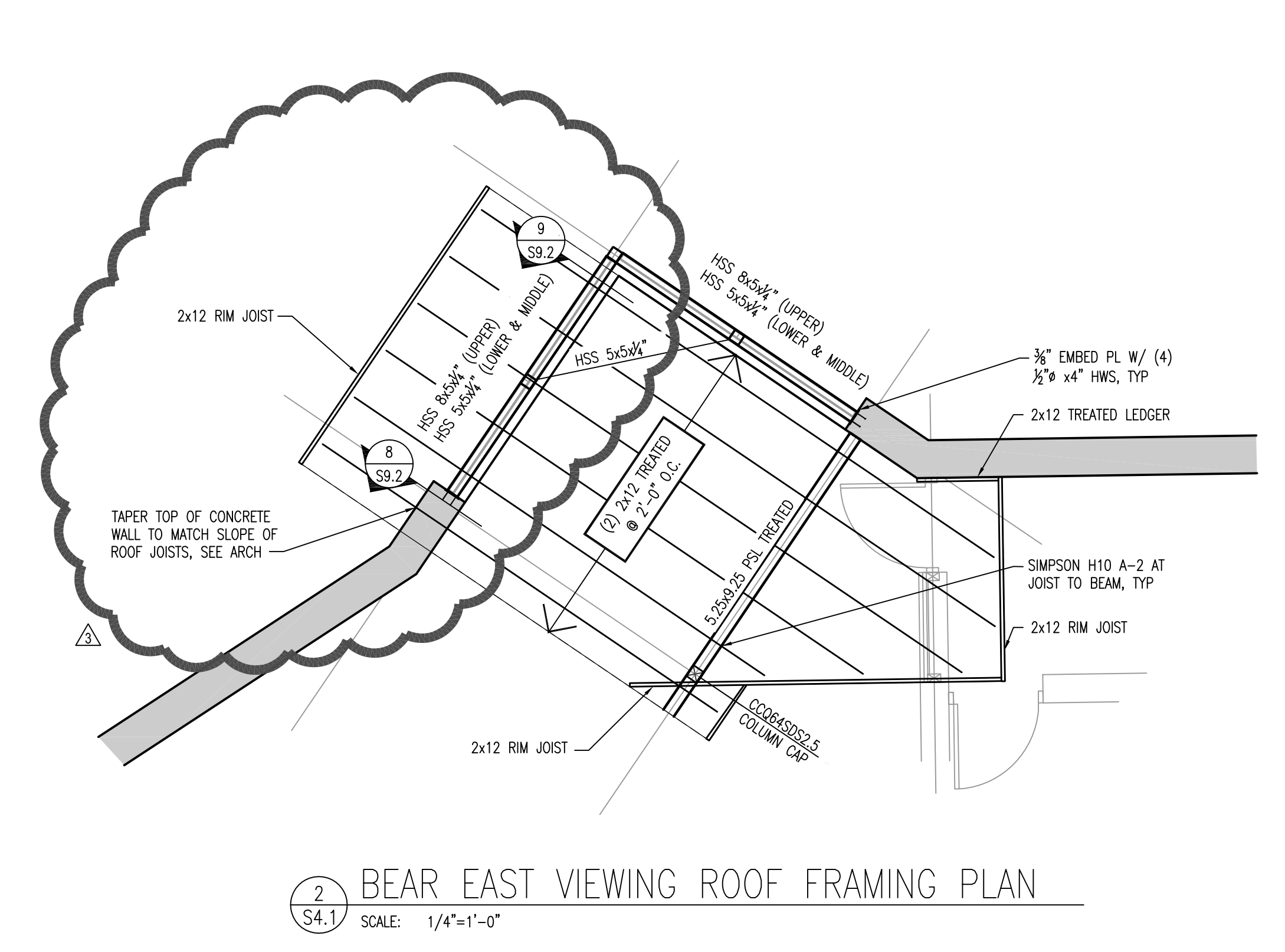
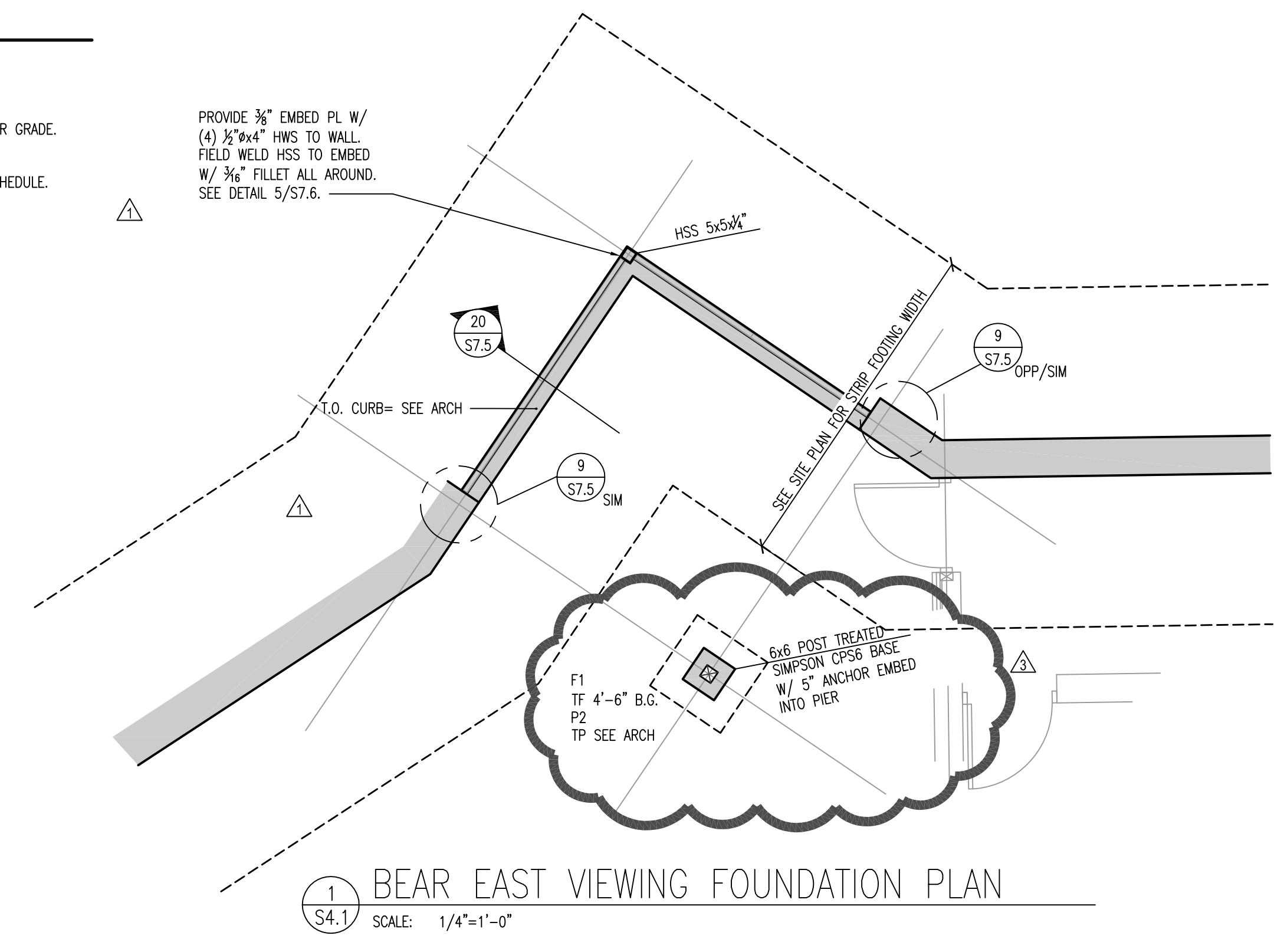
PRINTS ISSUED
07.26.2013 - Schematic Design
08.23.2013 - Design Development
09.23.2013 - 65% CD's
10.07.2013 - Pricing Set
10.21.2013 - 95% CD's
11.13.2013 - Bid Documents
11.25.2013 - Addendum #3
11.27.2013 - Addendum #4
12.04.2013 - Addendum #5

WDM No. 13046
drawn: DS
checked: SR

SEAL BUILDING ELEVATIONS

A5.3

- PLAN NOTES**
- SEE SHEET S.01 FOR ADDITIONAL NOTES.
 - SEE ARCH FOR JOIST BEARING ELEVATION.
 - ROOF SHEATHING SHALL BE 1/2" APA RATED EXTERIOR GRADE. FASTEN TO FRAMING PER DETAIL 4 ON SHEET S10.1.
 - SEE DETAIL 4 SHEET S10.1 FOR WOOD FASTENER SCHEDULE.



FOOTING SCHEDULE

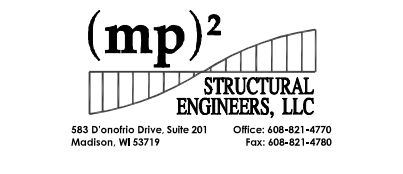
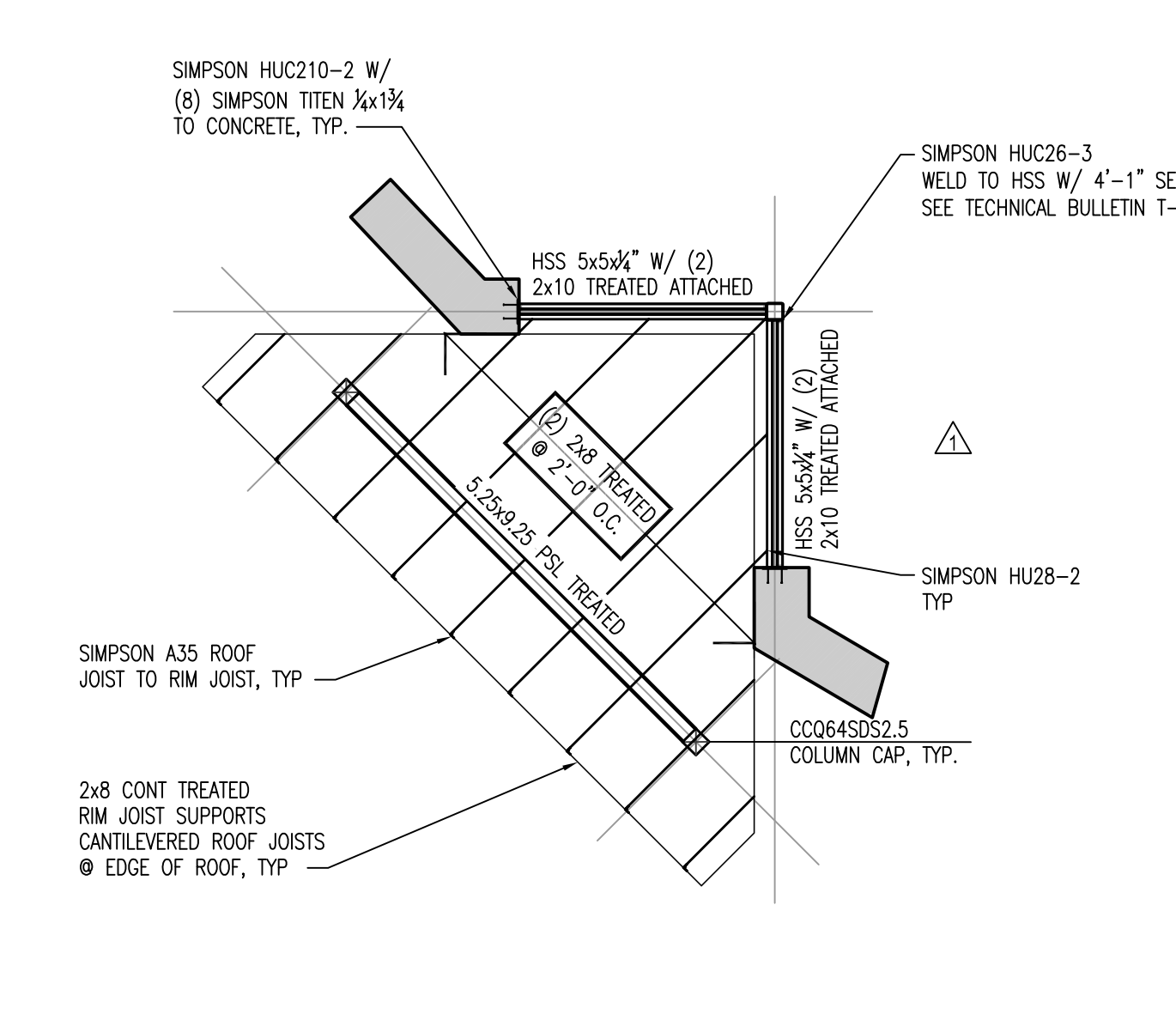
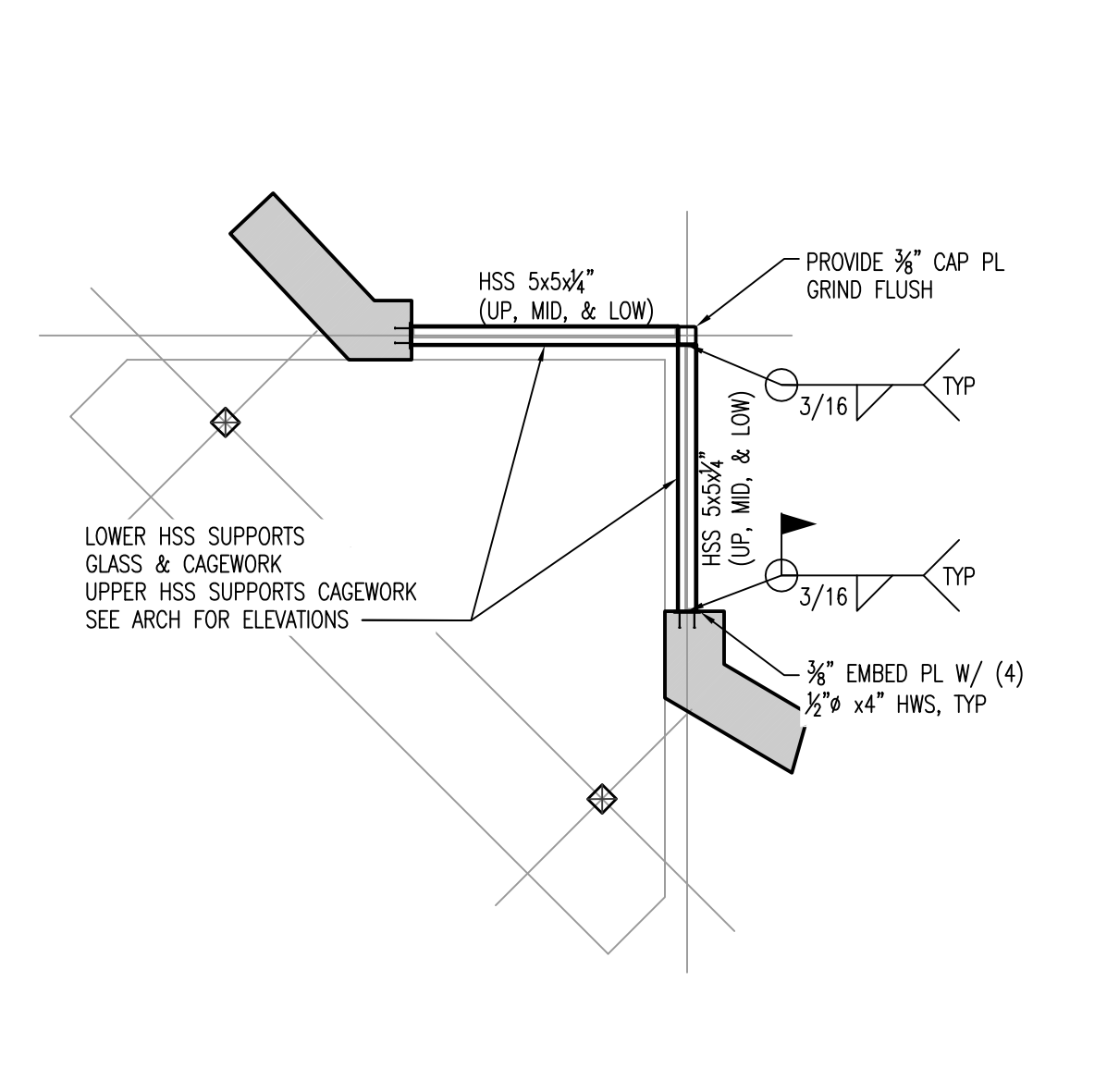
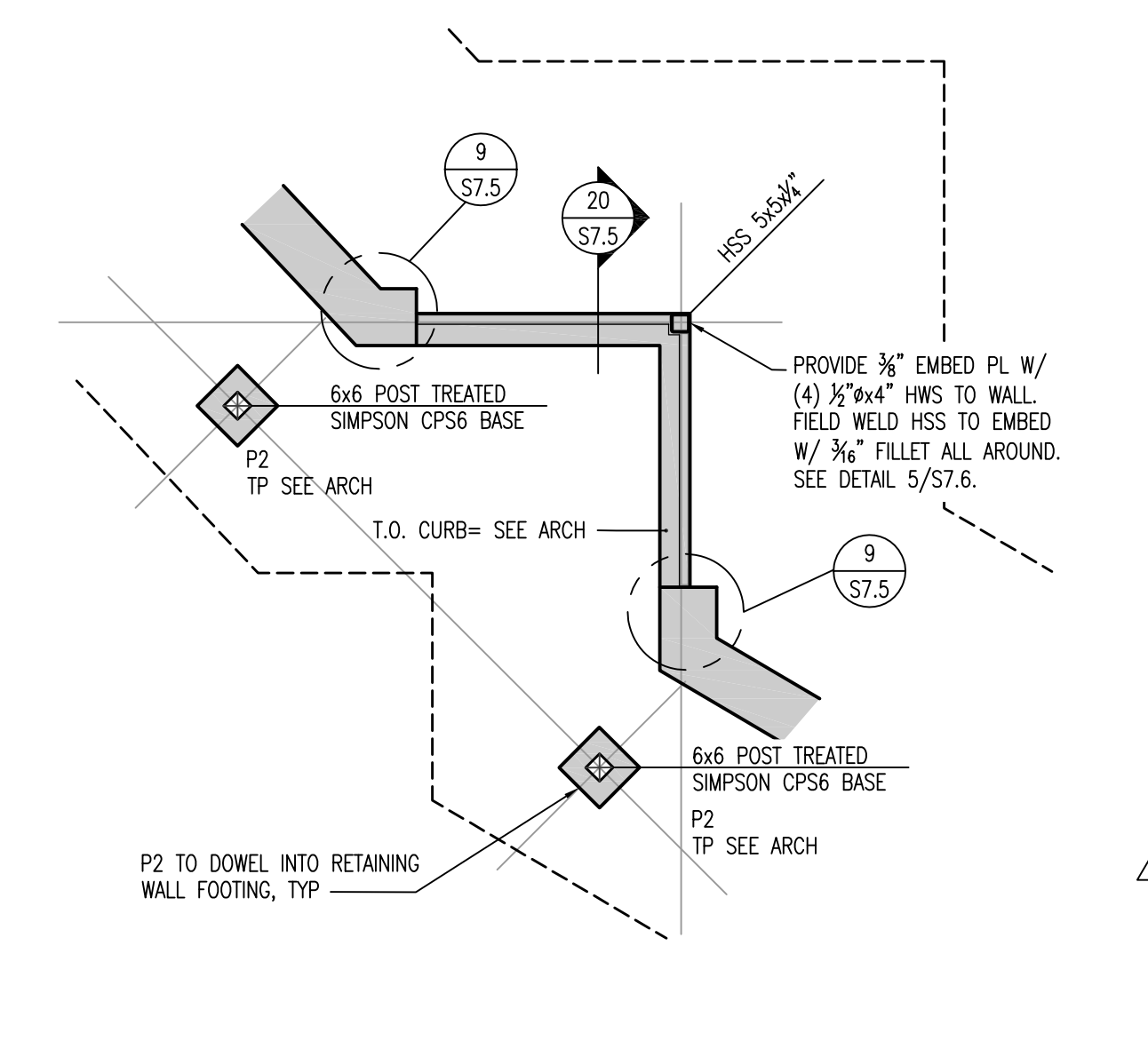
FOOTING MARK	FOOTING DIMENSION (W x L x D)	FOOTING REINFORCING, BOTTOM
F1	3'-0" x 3'-0" x 1'-0"	3-#5 EA WAY

1. CENTER FOOTING UNDER COLUMN AND/OR PIER.

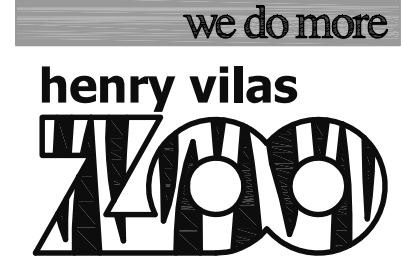
PIER SCHEDULE

PIER MARK	PIER DIMENSION (W x L)	PIER REINFORCING	TYPE
P2	16"x16"	4-#6 VERT W/ #3 TIES @ 10"OC W/ (3) #3 TIES IN TOP 8"	A

1. CENTER PIER UNDER COLUMN UNLESS NOTED OTHERWISE.



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WDM No. 13046
drawn: MP2
checked: MP2

BEAR VIEWING
FOUNDATION PLANS &
FRAMING PLANS

S4.1

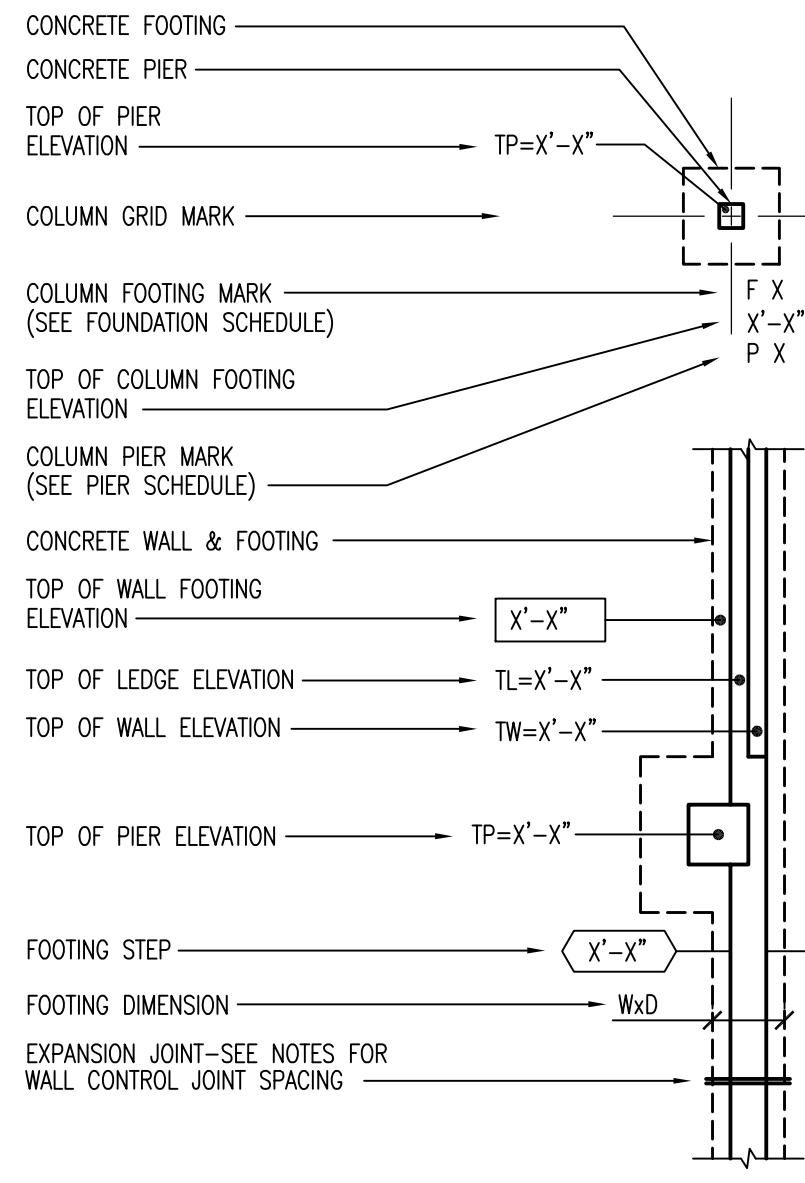
PLAN NOTES

- SEE SHEET S.01 FOR ADDITIONAL NOTES.
- SEE SHEET S7.1 DETAIL 1 FOR ANCHOR BOLT REQUIREMENTS.
- SEE SHEET S7.1 DETAILS 2 & 3 FOR FOOTING & FOUNDATION WALL CORNER REINFORCING.
- SEE SHEET S7.1 DETAILS 4 & 5 FOR ADDED REINFORCING AT ROUND & RECTANGULAR OPENINGS.
- PROVIDE 2-#4 BARS AT ALL DEAD ENDS & REINTRANT CORNERS. SEE DETAIL 6/S7.1.
- SLAB CONTROL JOINTS SHALL BE AS SHOWN ON PLAN OR SIMILAR. JOINT SPACING SHALL NOT EXCEED 10'-0" O.C. SLAB JOINT ASPECT RATIO SHALL NOT EXCEED 1.5:1. SEE DETAIL 7/S7.1.
- SEE SHEET S7.1 DETAIL 8 FOR WALL JOINT REQUIREMENTS.
- SITE PLAN DATUM ELEVATION: 114.00' = 100'-0"
- SLOPE SLAB TO DRAINS. MAINTAIN SLAB THICKNESS.
- ALL FLOOR BARS AND WWF IN SEAL HOLDING AREA AND ALL WALL REINFORCEMENT SURROUNDING POOLS SHALL BE EPOXY COATED (WHETHER SHOWN OR NOT SHOWN IN DETAILS).
- SEE A-DRAWINGS FOR ALL DOOR AND INTERIOR WALL DIMENSIONS.
- G.C. TO COORDINATE REQ. EMBED SIZE & LOC FOR CAGE WORK WITH PRECAST SUPPLIER AT ALL NOTED DOORS, TYP.

FOOTING SCHEDULE		
FOOTING MARK	FOOTING DIMENSION (W x L x D)	FOOTING REINFORCING, BOTTOM
F1	3'-0" x 3'-0" x 1'-0"	4-#5 EA WAY

1. CENTER FOOTING UNDER COLUMN AND/OR PIER.

FOUNDATION LEGEND

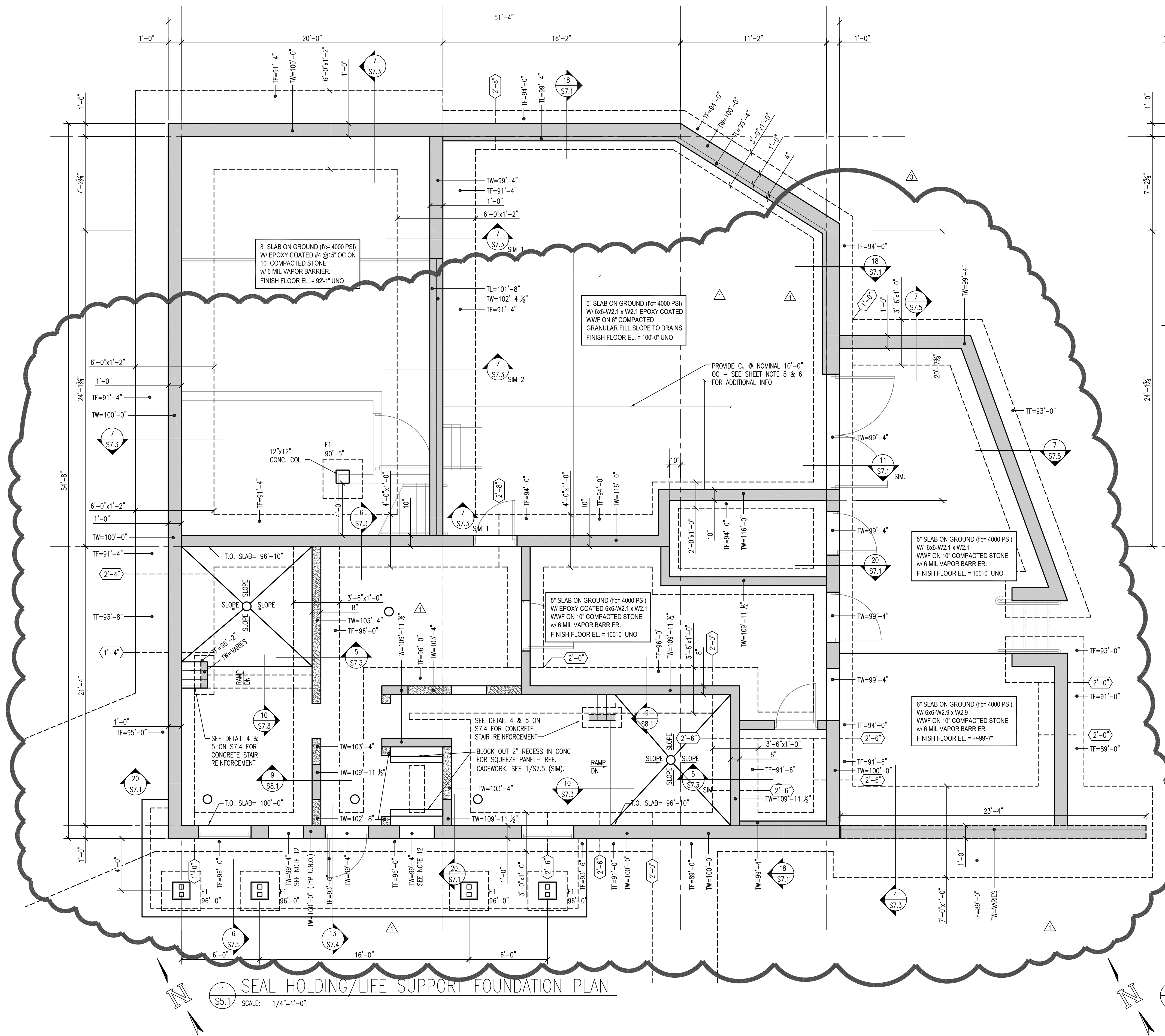


PRECAST SCHEDULE						
MARK	PLANK DEPTH	TOPPING	LOAD INFORMATION			P/C BEARING ELEVATION
			DL (psf)	LL (psf)	SL (psf)	
PC-1	8"	NONE	SELF WT. + 10	125	NONE	101'-8 1/2"

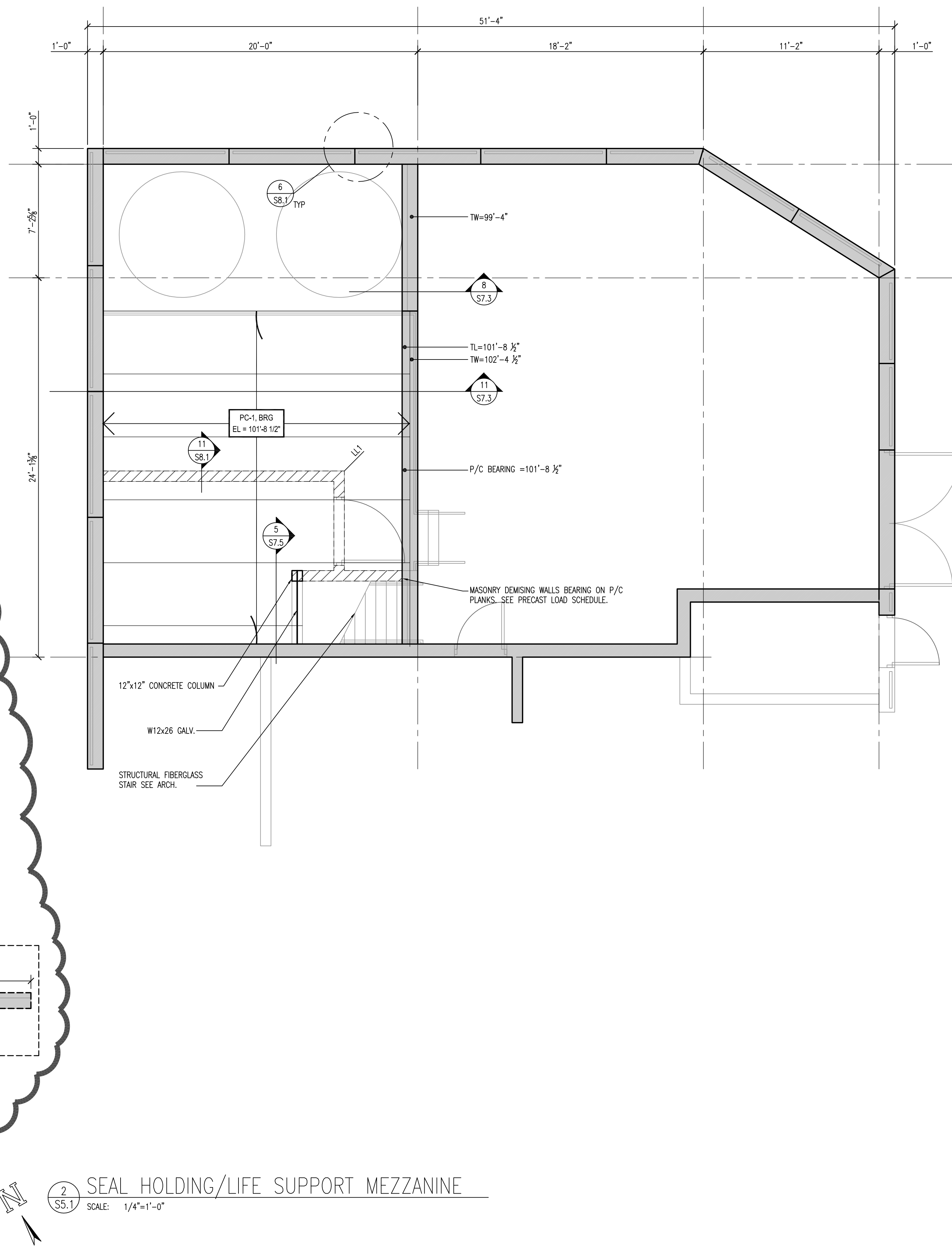
- NOTES:
 1. SELF WT. NOTED IN SCHEDULE TO INCLUDE WT. OF TOPPING SLAB NOTED.
 2. GROUT ALL SHEAR KEYS AND TOOL SMOOTH

PRECAST PLANK LOAD SCHEDULE			
MARK	DEAD LOAD (psf)	LIVE LOAD (psf)	SNOW LOAD (psf)
LL1	600	NONE	NONE

- NOTES:
 1. ALL LOADS ARE SERVICE LOADS.



1 SEAL HOLDING/LIFE SUPPORT FOUNDATION PLAN SCALE: 1/4"=1'-0"



2 SEAL HOLDING/LIFE SUPPORT MEZZANINE SCALE: 1/4"=1'-0"

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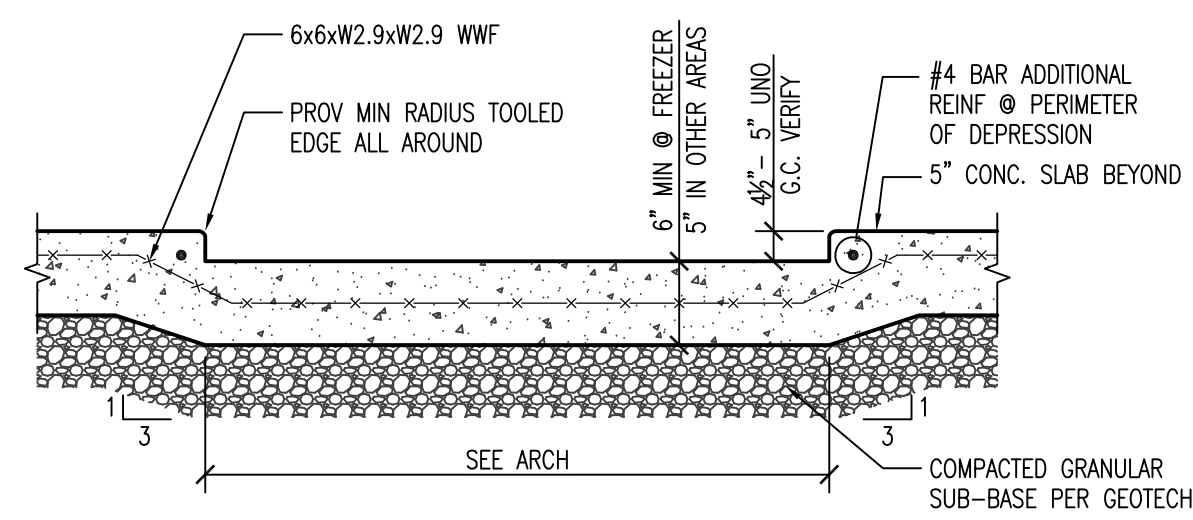
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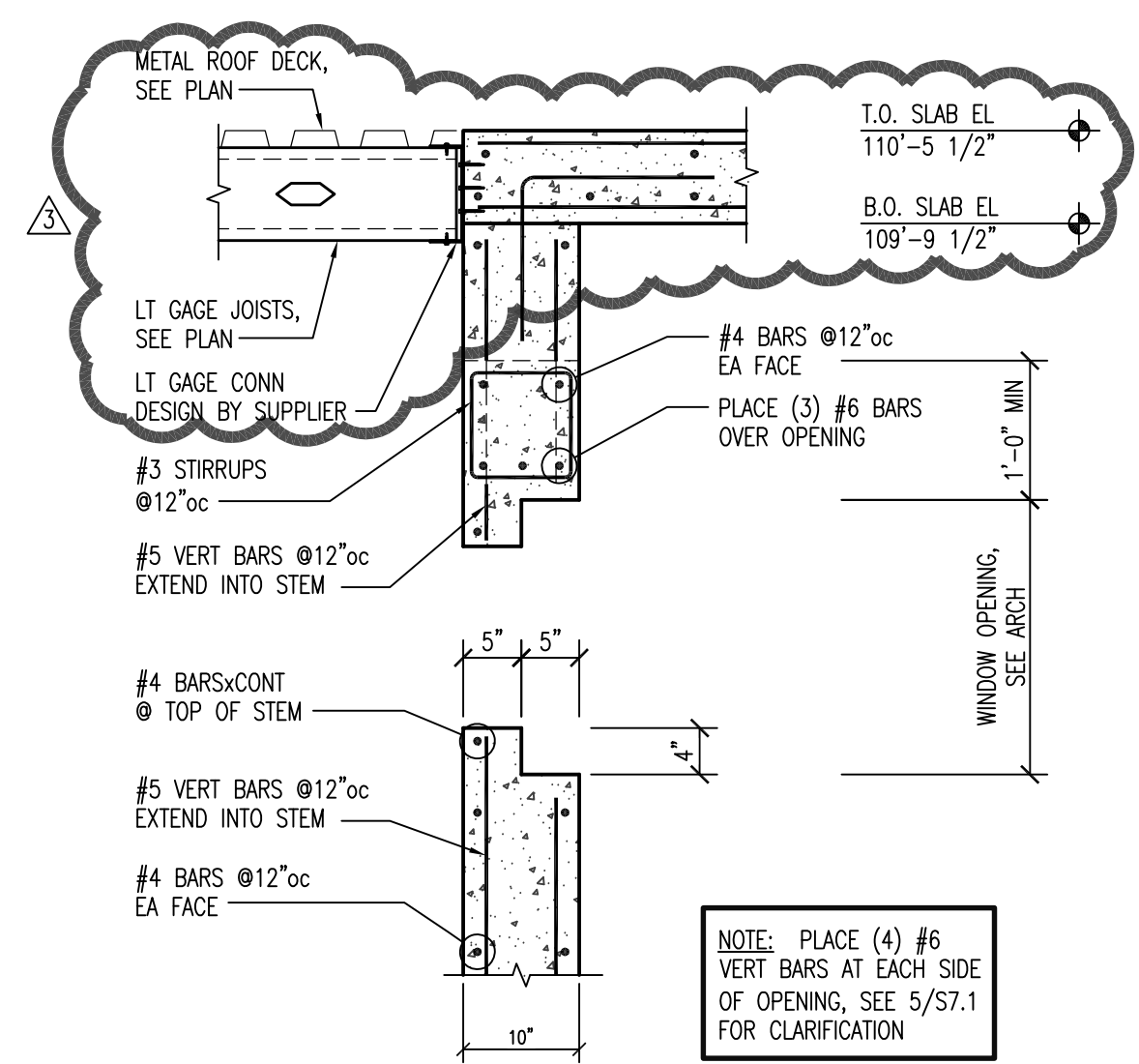
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WDM No. 13046
 draw: MP2
 checked: MP2
 SEAL HOLDING / LIFE SUPPORT
 FOUNDATION PLAN
 MEZZANINE FRAMING PLAN

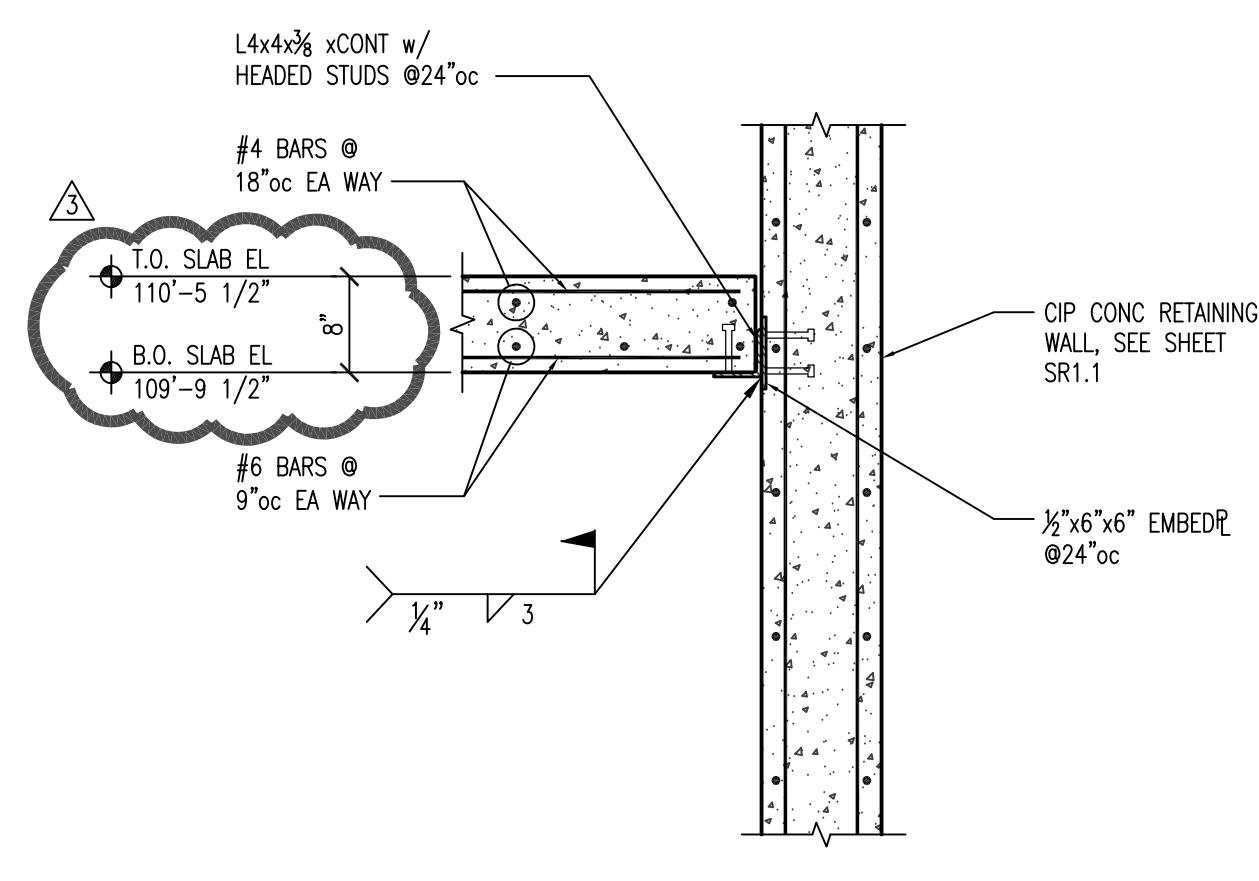
S5.1



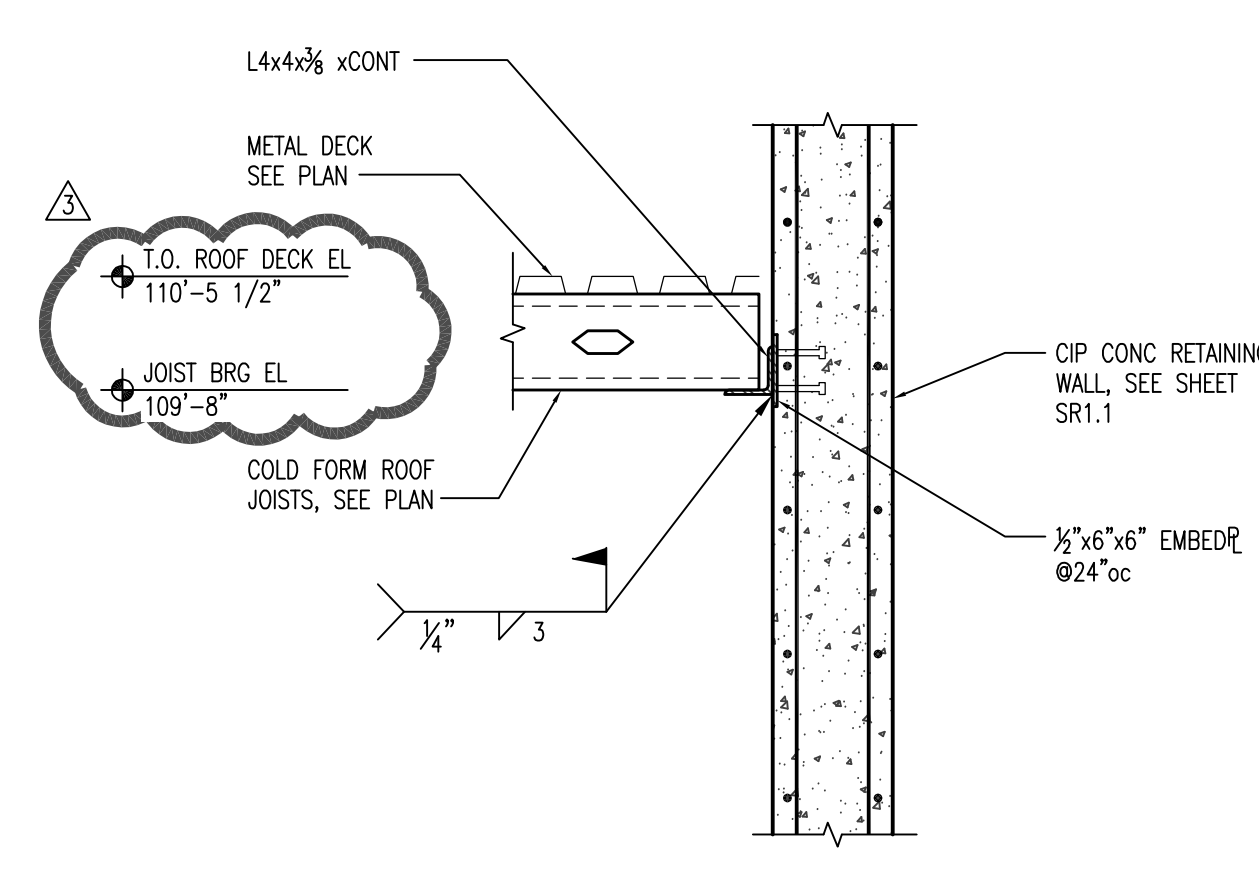
1 SECTION @ SLAB DEPRESSION
S7.5 SCALE: 3/4" = 1'-0"



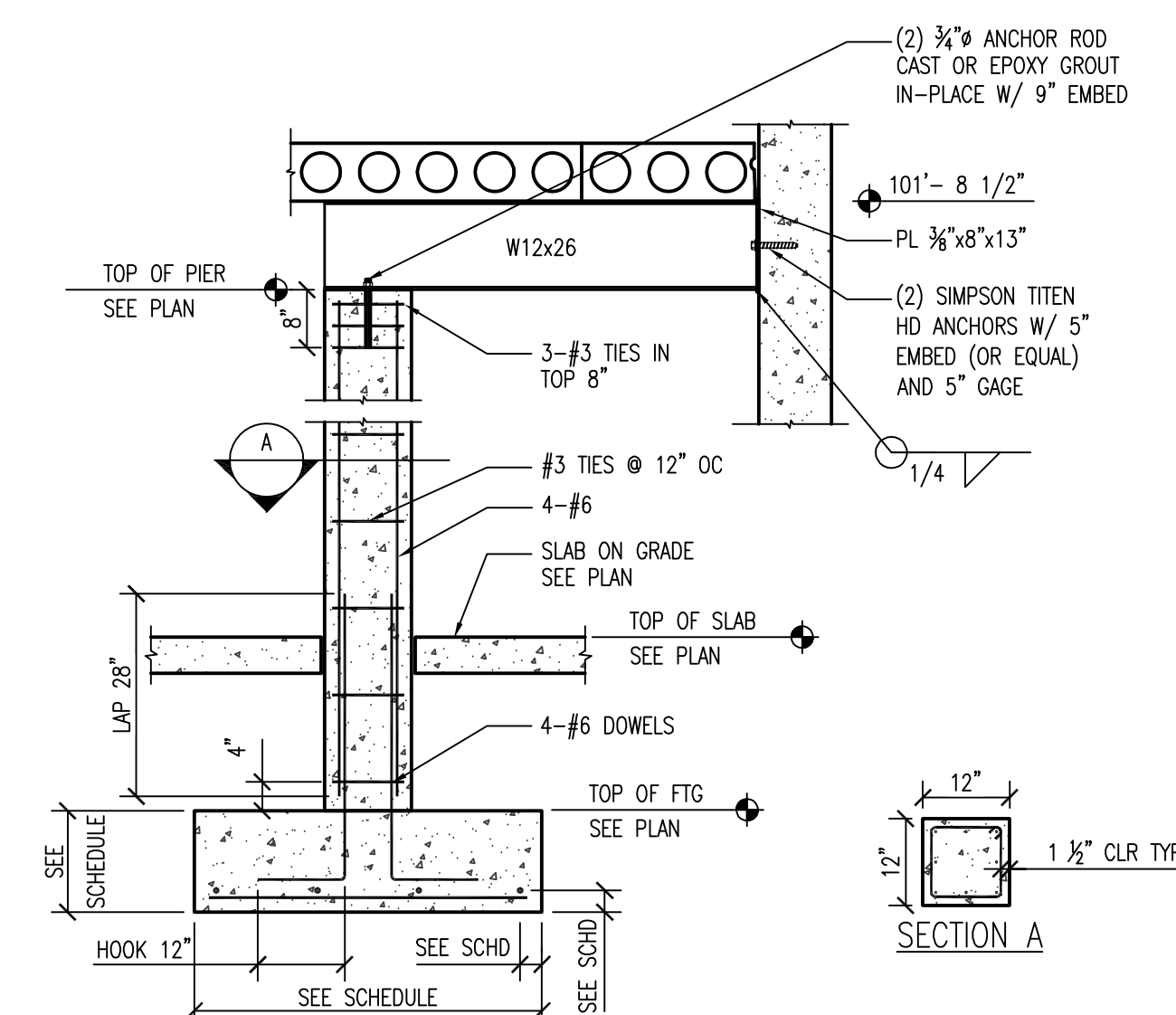
2 BEAR DEN WINDOW (ALT BID)
S7.5 SCALE: 3/4" = 1'-0"



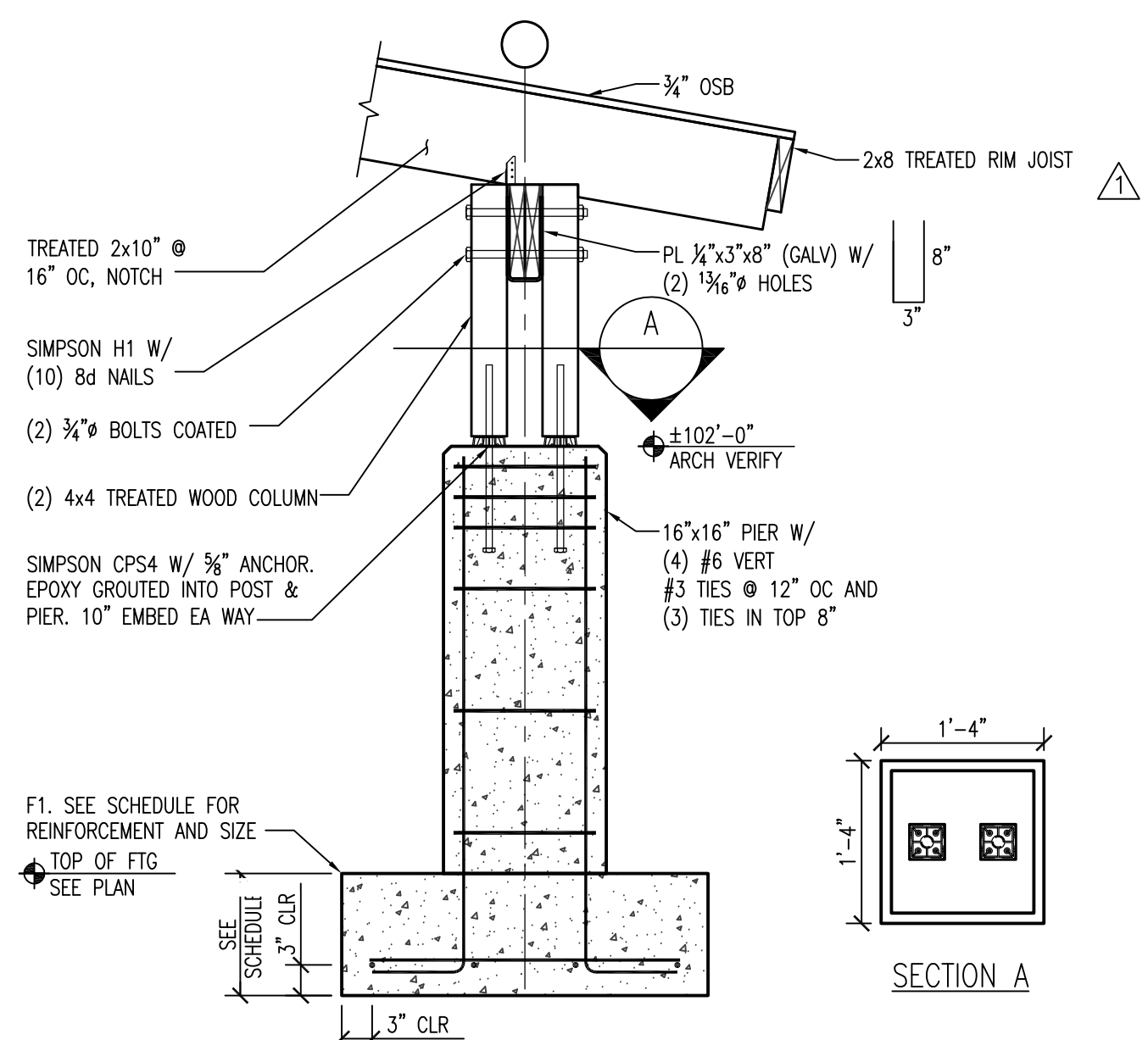
3 BEAR DEN ROOF (ALT BID)
S7.5 SCALE: 3/4" = 1'-0"



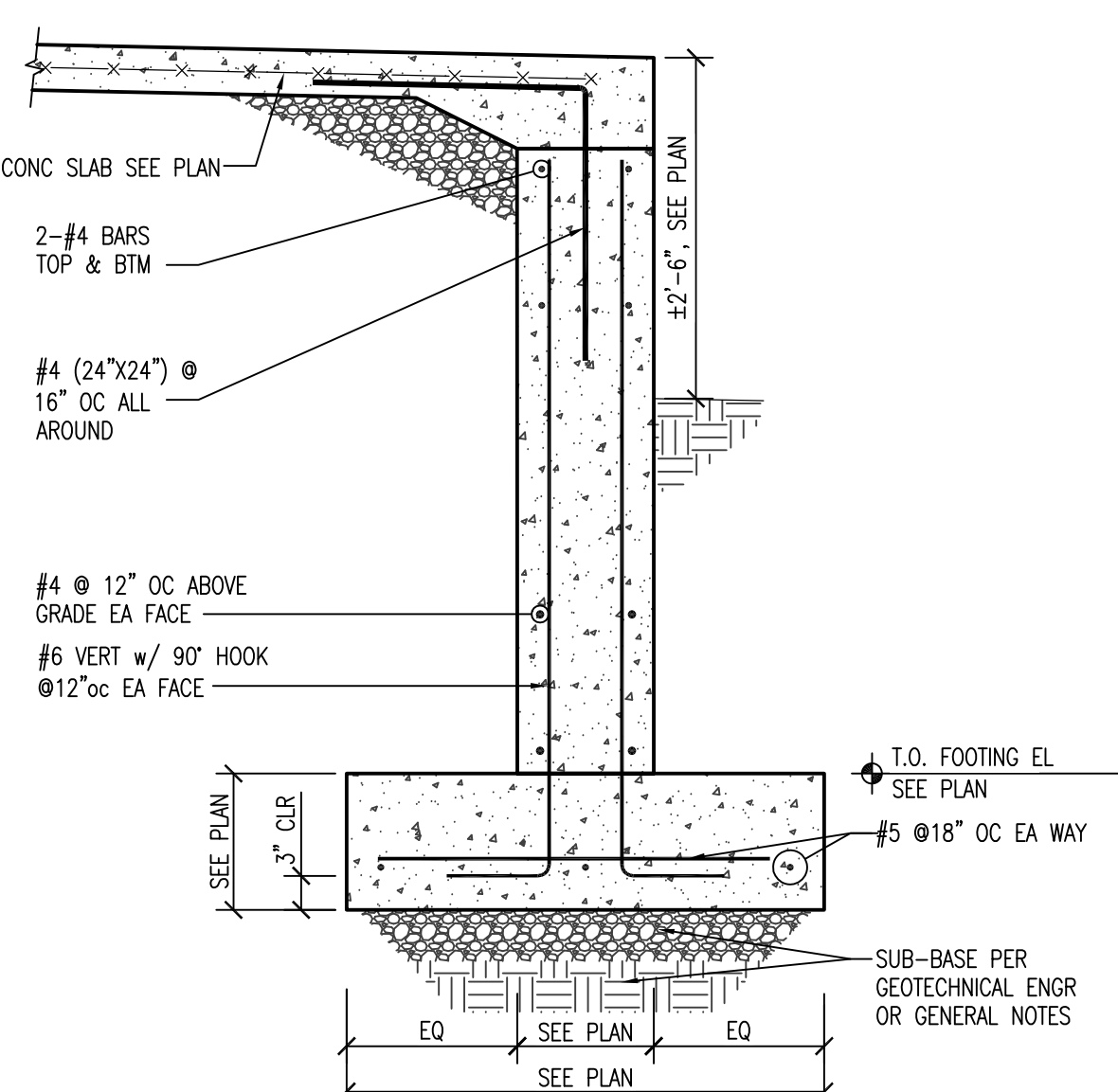
4 BEAR DEN ROOF (ALT BID)
S7.5 SCALE: 3/4" = 1'-0"



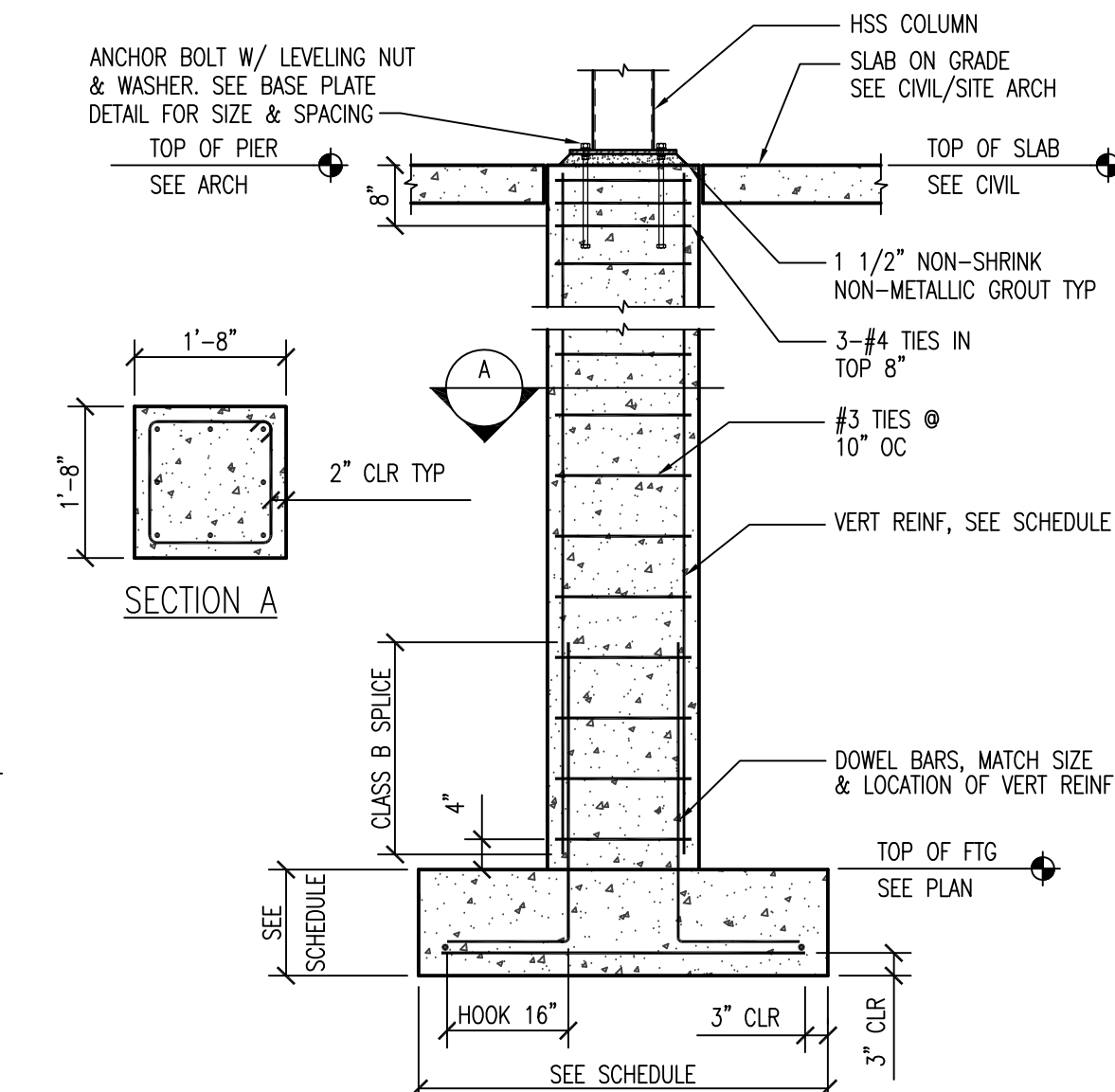
5 INTERIOR COLUMN PIER
S7.5 SCALE:



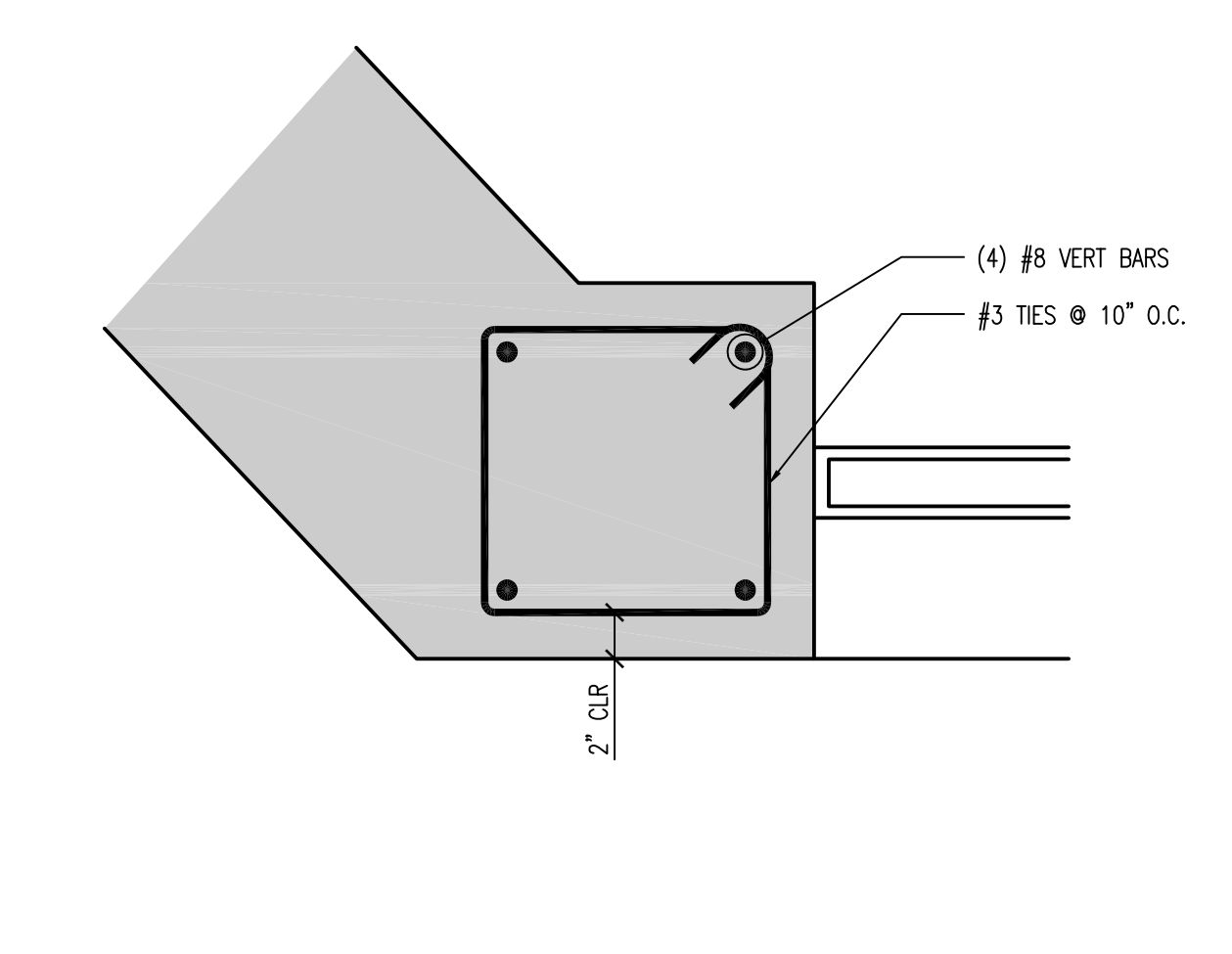
6 SEAL POST DETAIL
S7.5 SCALE: 3/4" = 1'-0"



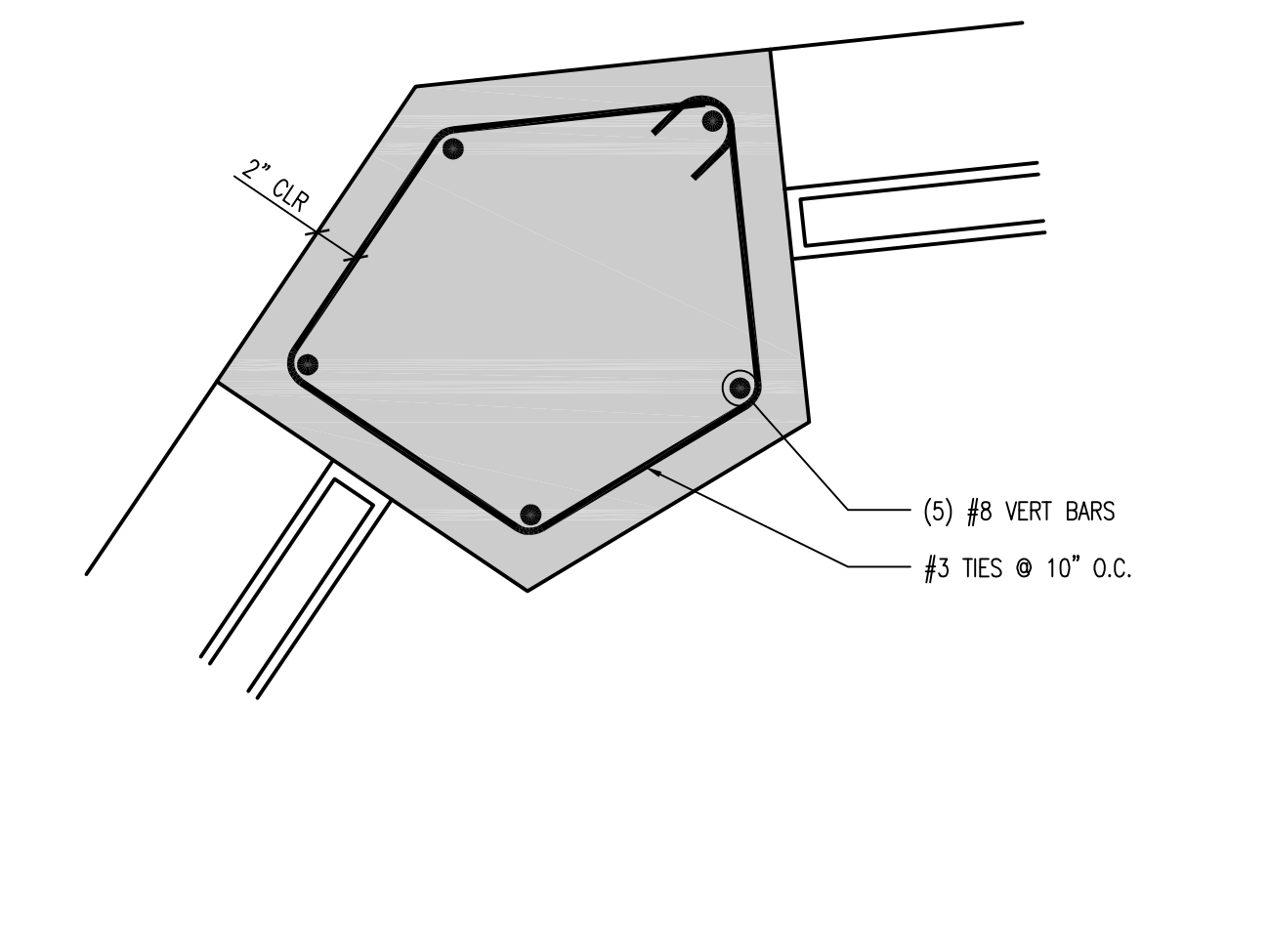
7 SEAL LOADING DOCK
S7.5 SCALE: 3/4" = 1'-0"



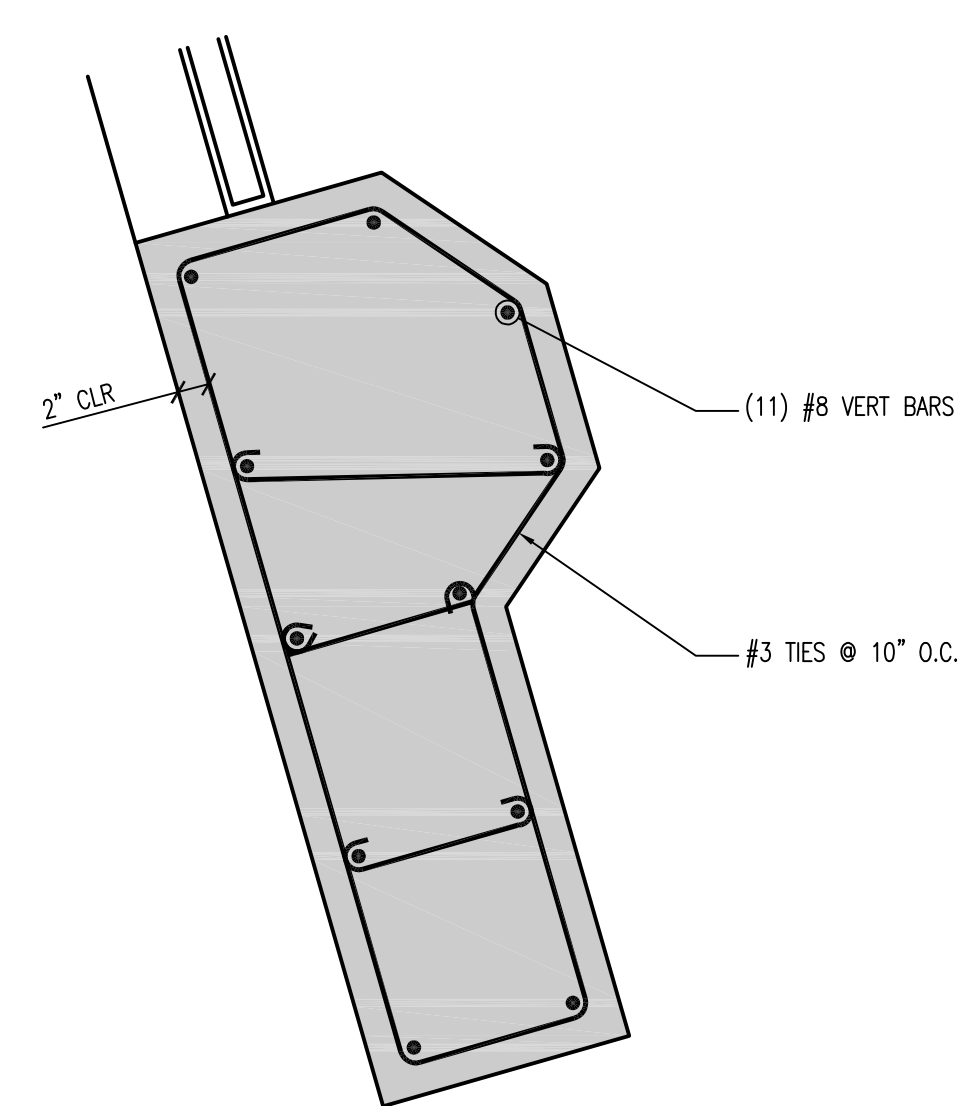
8 COLUMN PIER/ FOOTING
S7.5 SCALE:



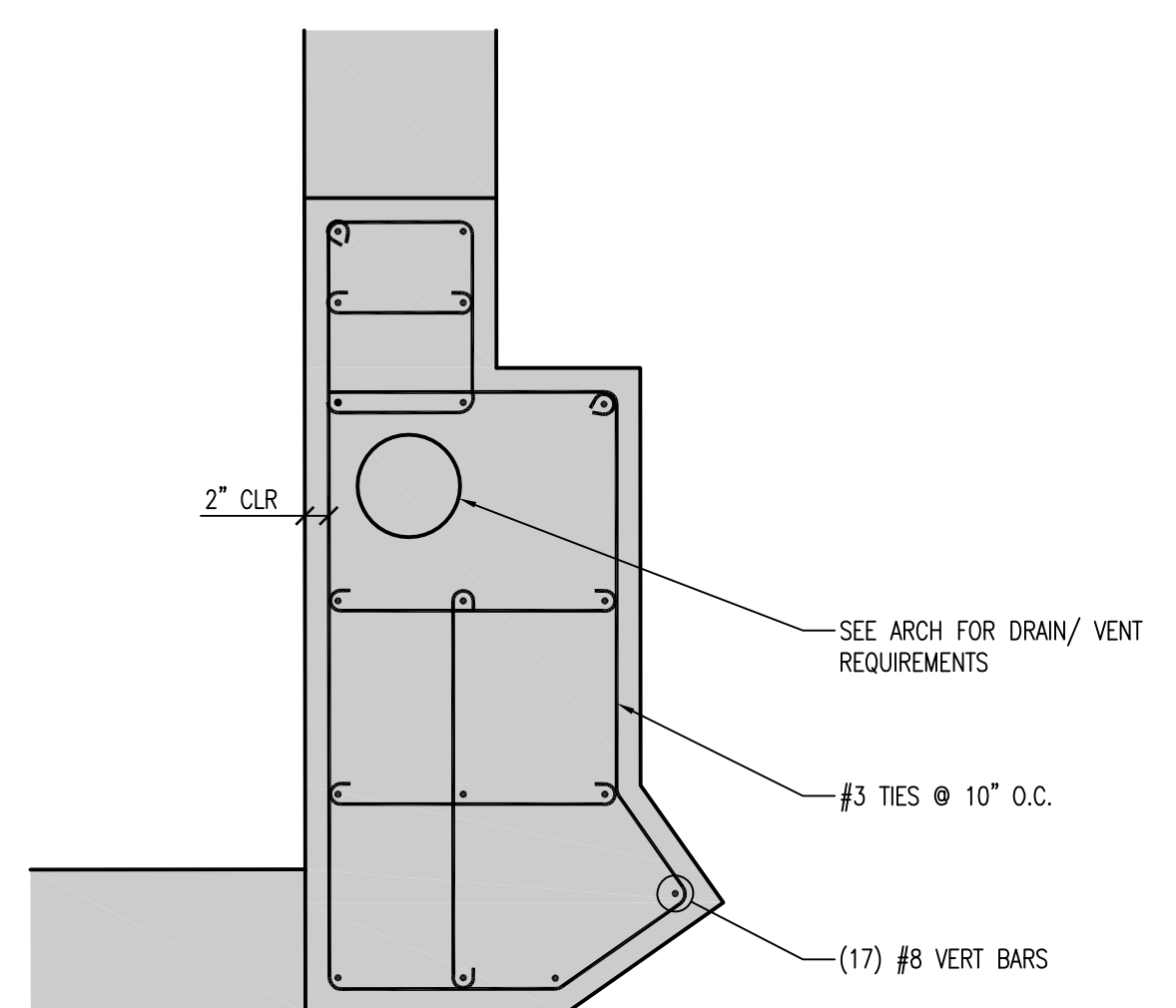
9 PIER REINFORCING
S7.5 SCALE: 1 1/2" = 1'-0"



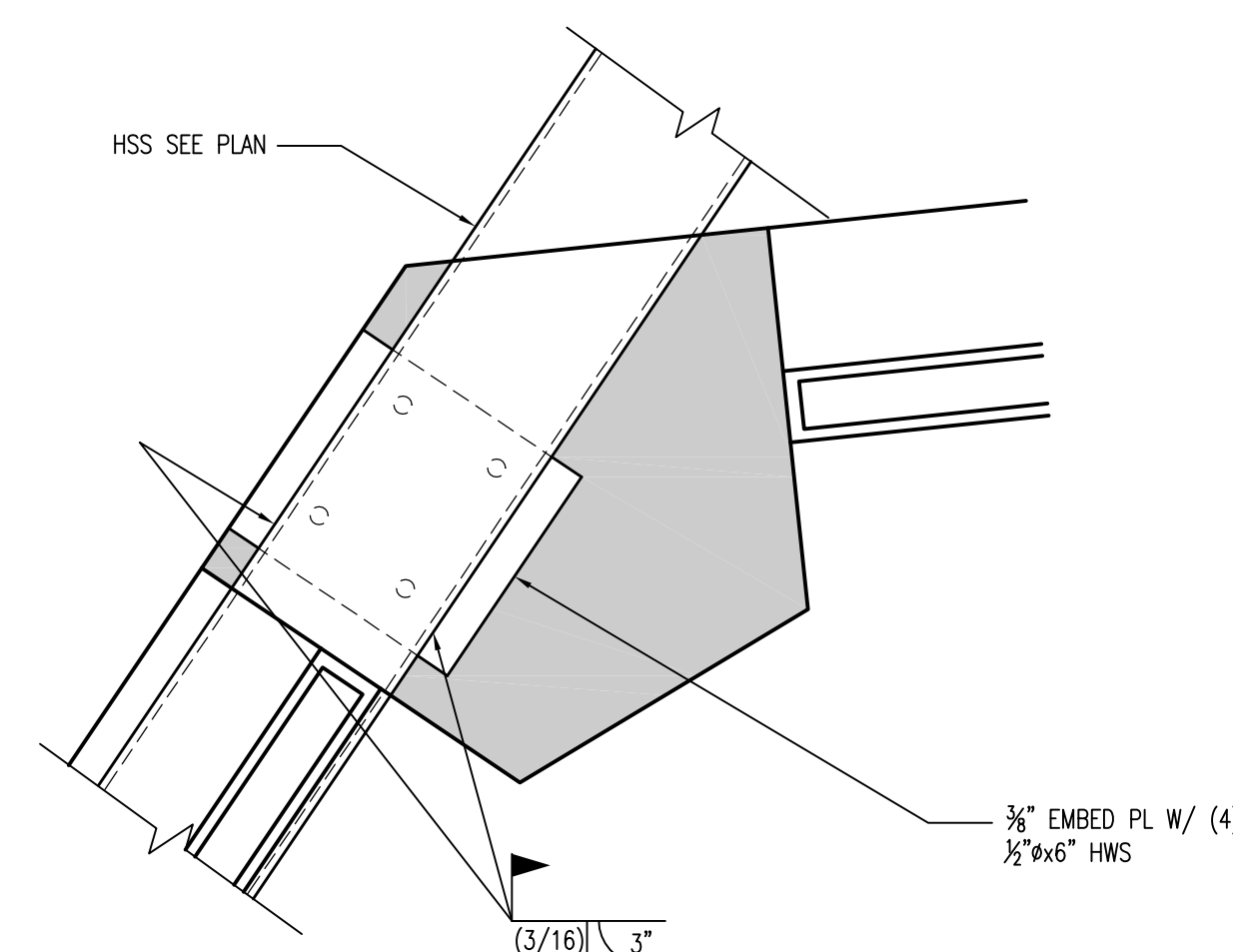
10 PIER REINFORCING
S7.5 SCALE: 1 1/2" = 1'-0"



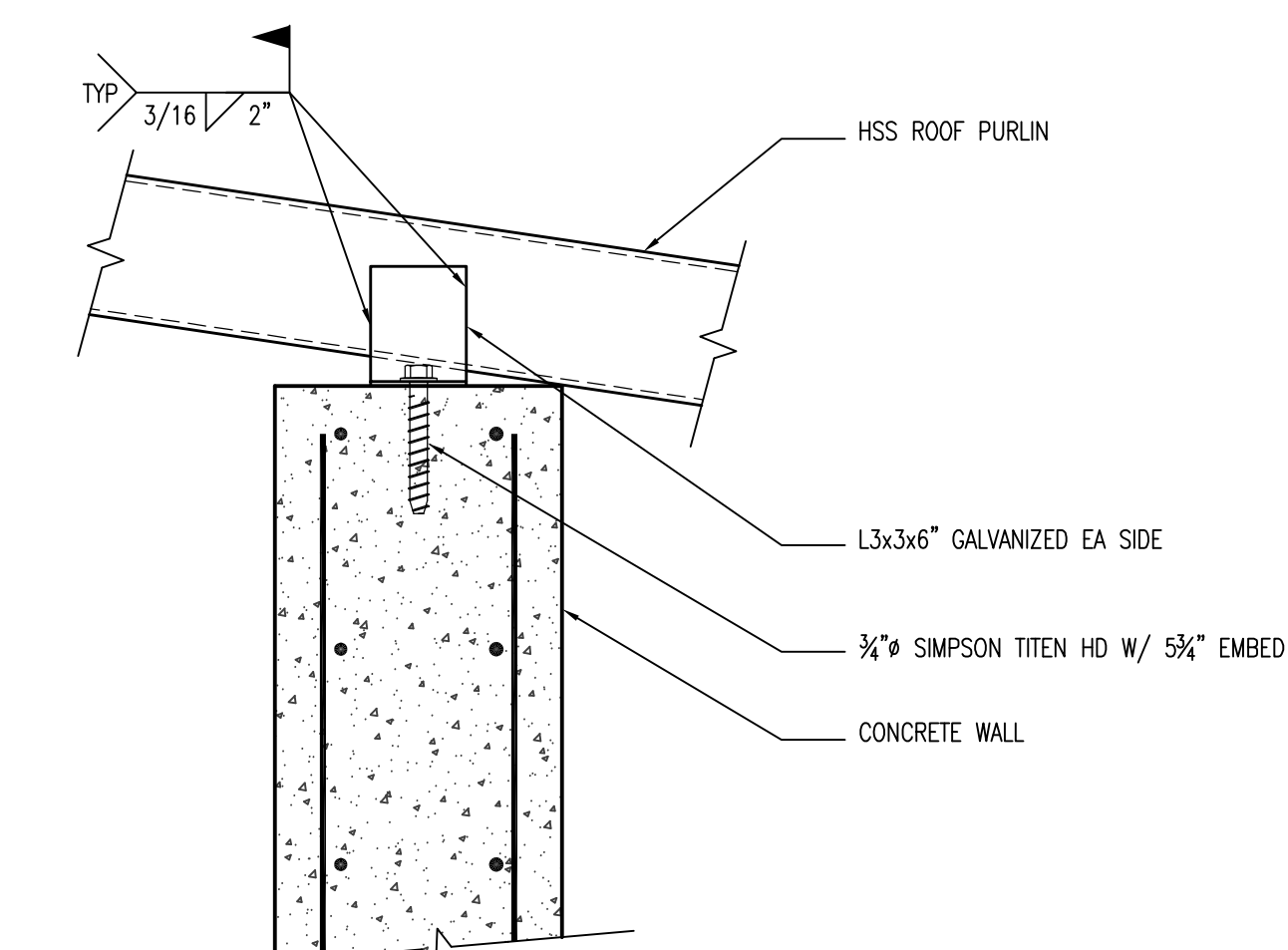
11 PIER REINFORCING
S7.5 SCALE: 1" = 1'-0"



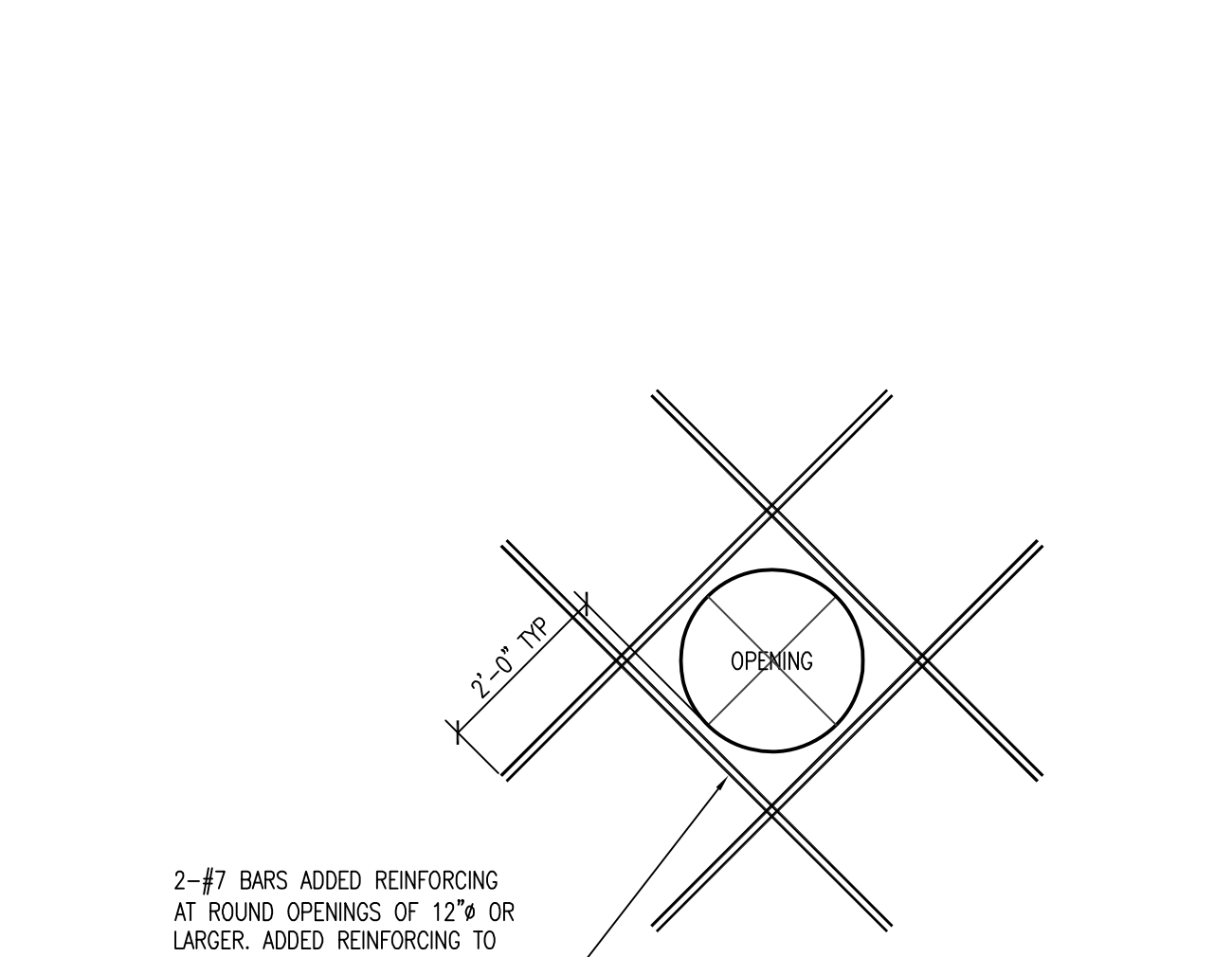
12 PIER REINFORCING
S7.5 SCALE: 3/4" = 1'-0"



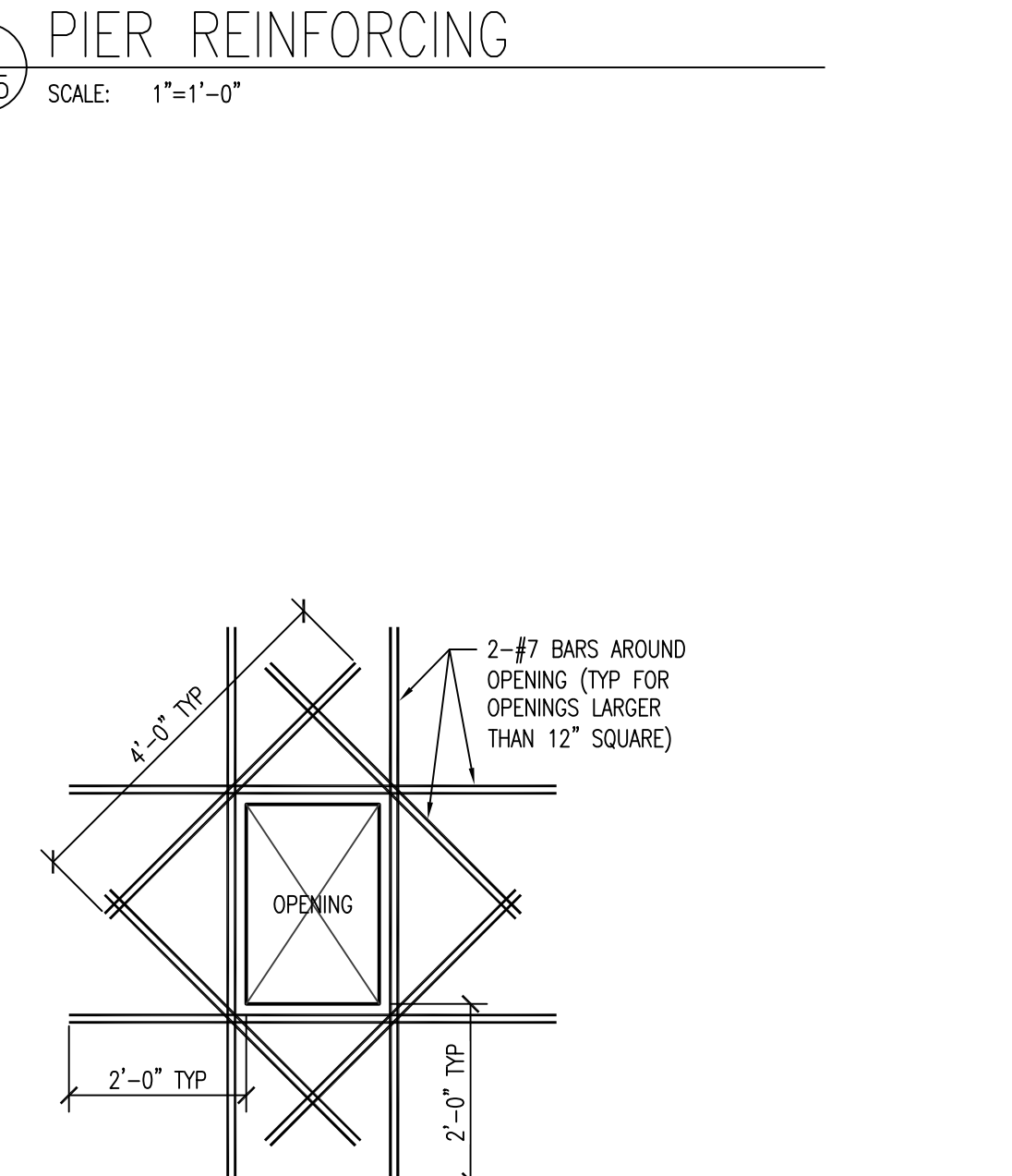
13 HSS TO CONCRETE PIER
S7.5 SCALE: 1 1/2" = 1'-0"



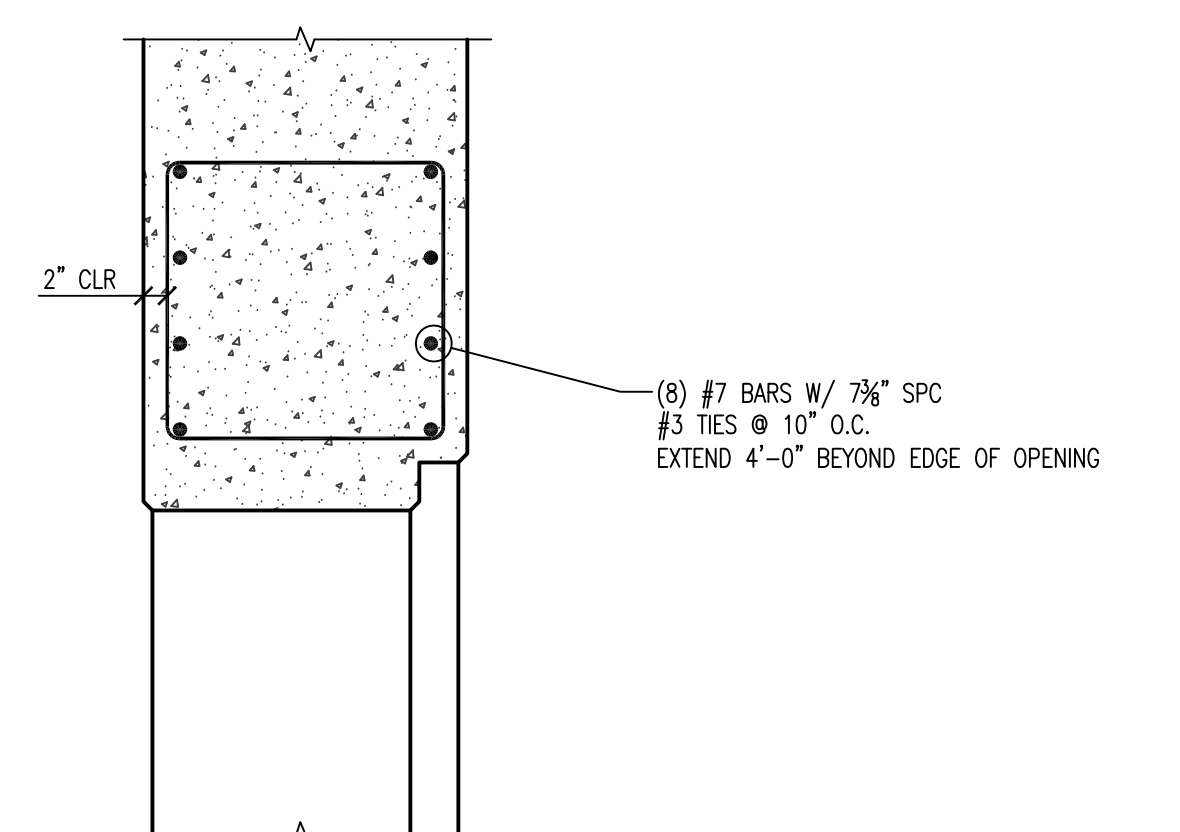
14 LIGHT GAGE PURLIN TO CONC WALL
S7.5 SCALE: 1 1/2" = 1'-0"



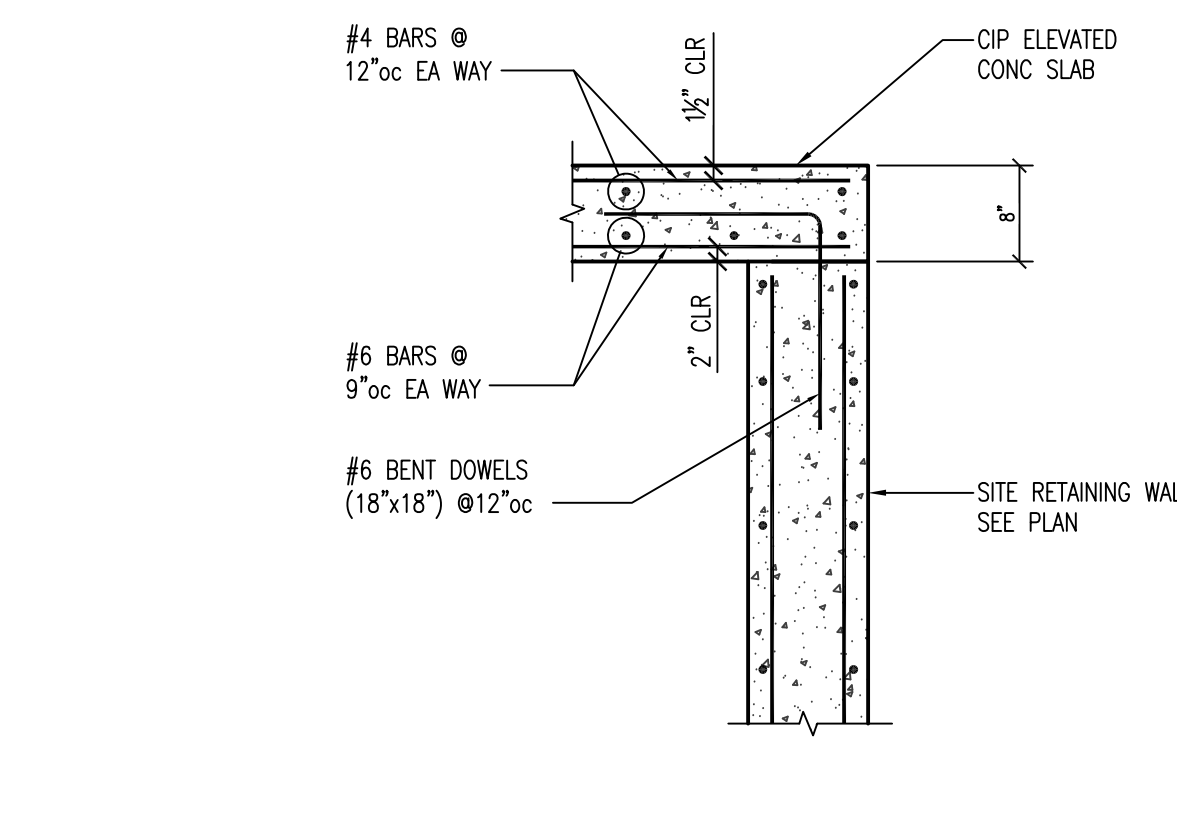
15 ADDED REINFORCING AT ROUND OPENINGS @ SITE RET. WALLS
S7.5 SCALE: 1 1/2" = 1'-0"



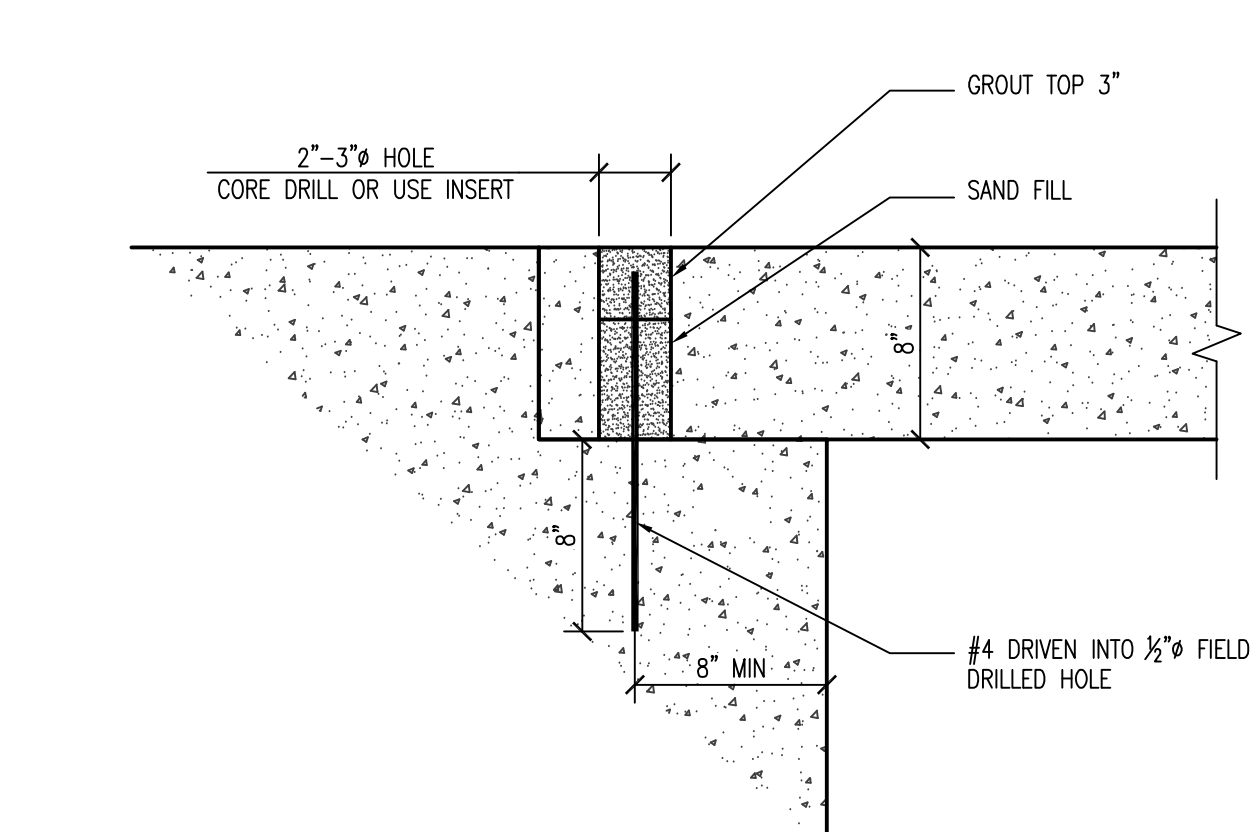
16 ADDED REINFORCING AT RECTANGULAR OPENINGS @ SITE RET. WALLS
S7.5 SCALE: 1/2" = 1'-0"



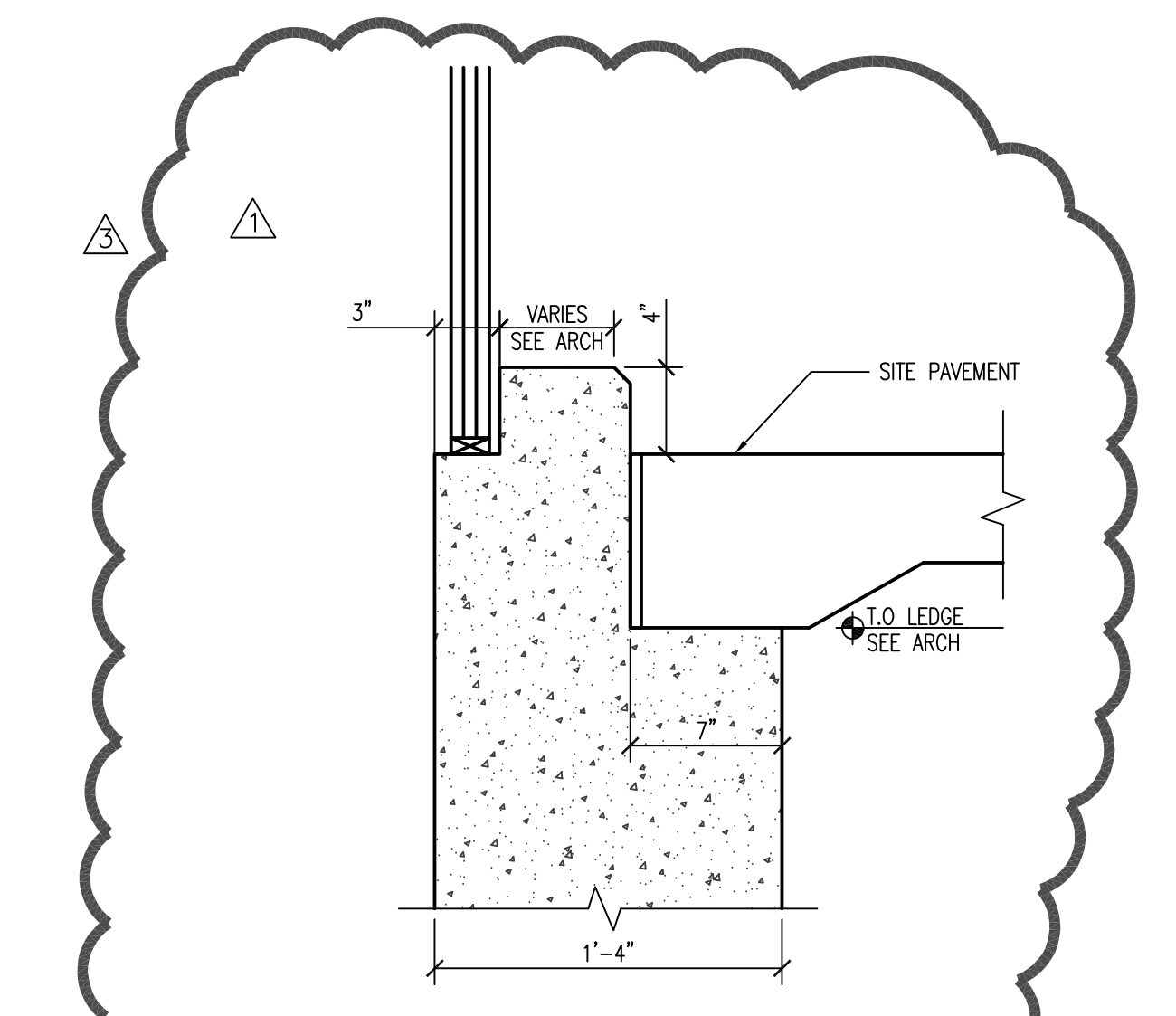
17 HEADER @ UNDERWATER VIEWING
S7.5 SCALE: 3/4" = 1'-0"



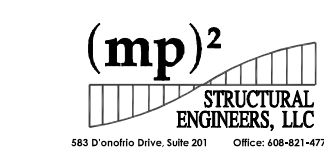
18 SITE BEAR DEN LID
S7.5 SCALE: 3/4" = 1'-0"



19 BRIDGE AT \"ROCK\"
S7.5 SCALE: 1 1/2" = 1'-0"

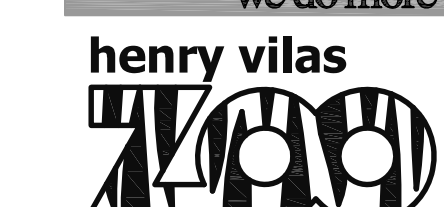


20 DETAIL BELOW VIEWING
S7.5 SCALE: 1 1/2" = 1'-0"



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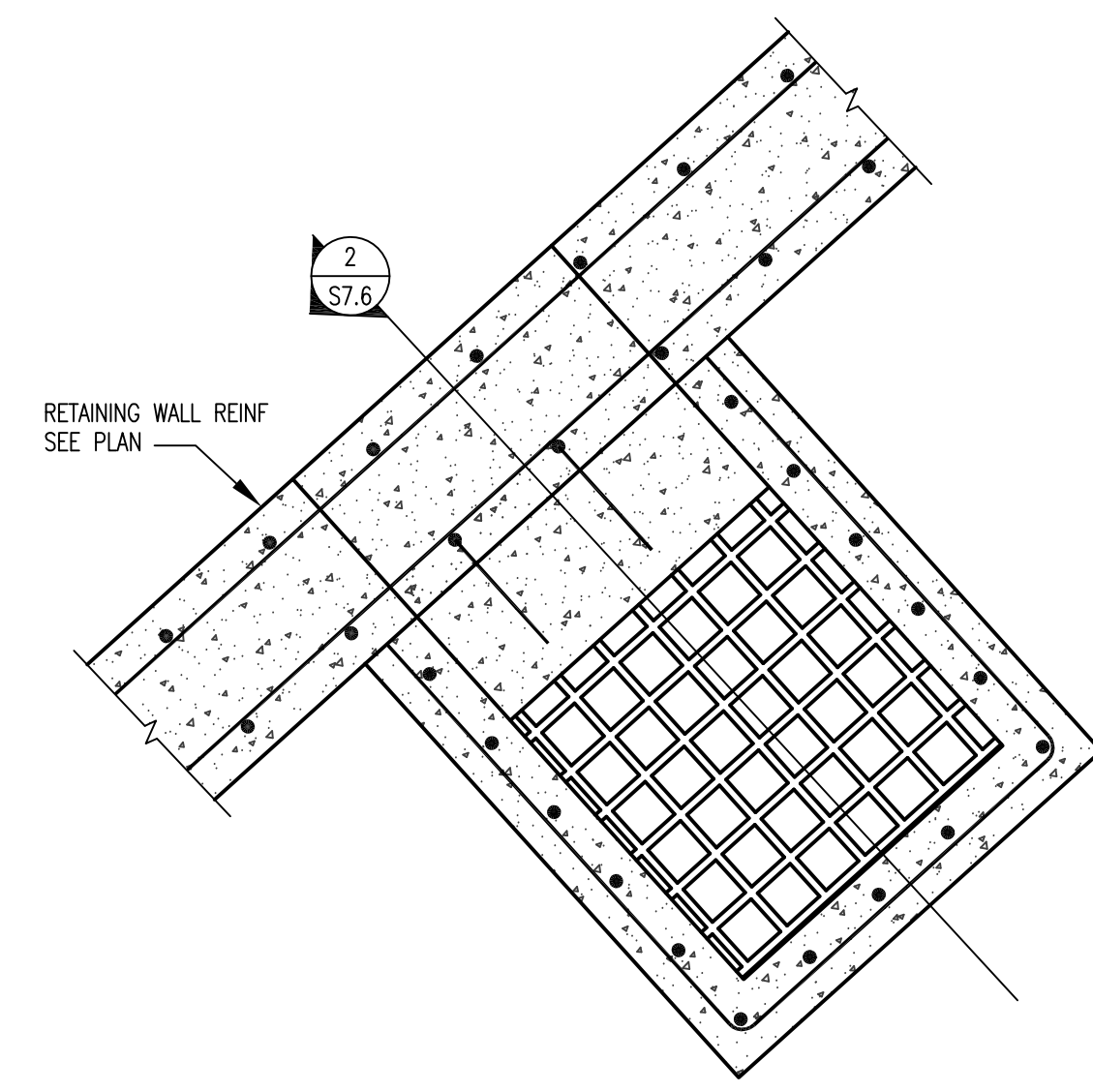
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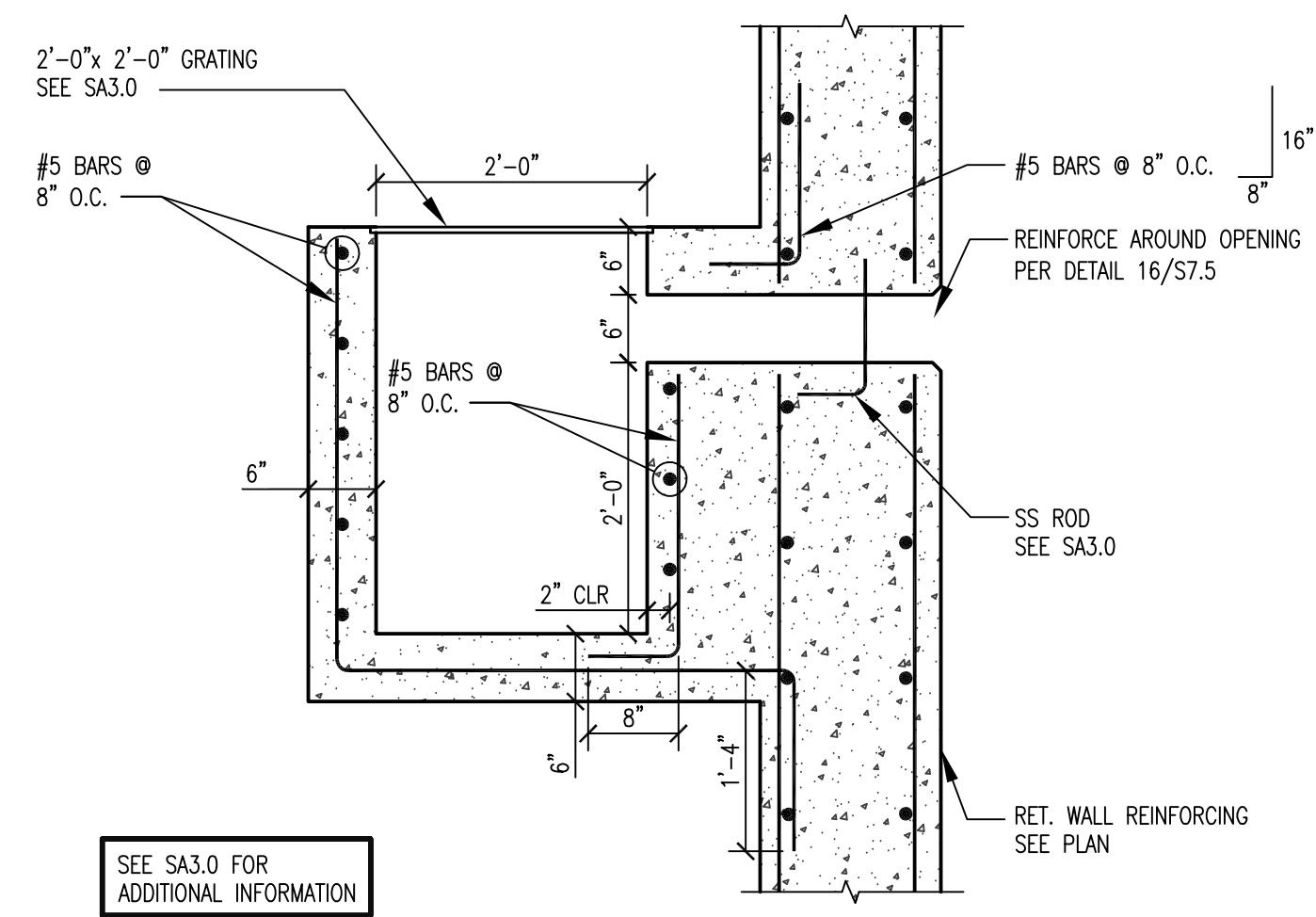
WDM No. 13046
drawn: MP2
checked: MP2

FOUNDATION DETAILS

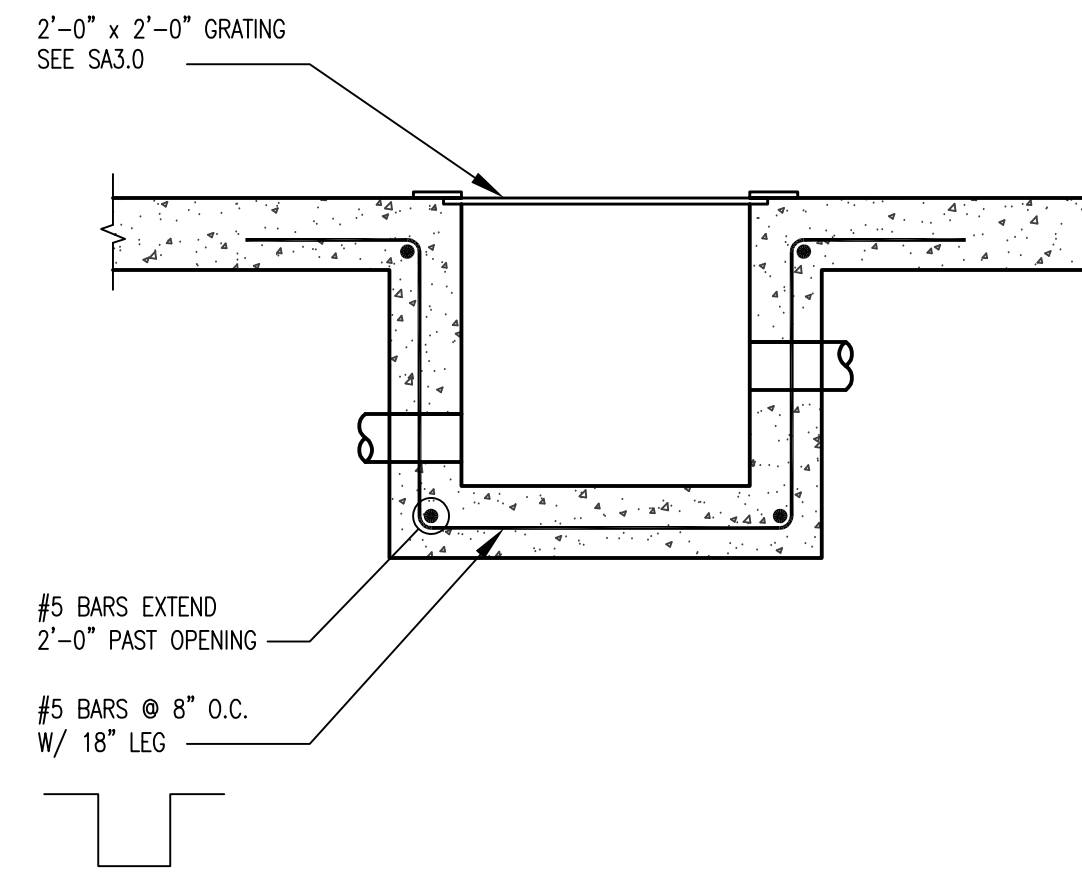
S7.5



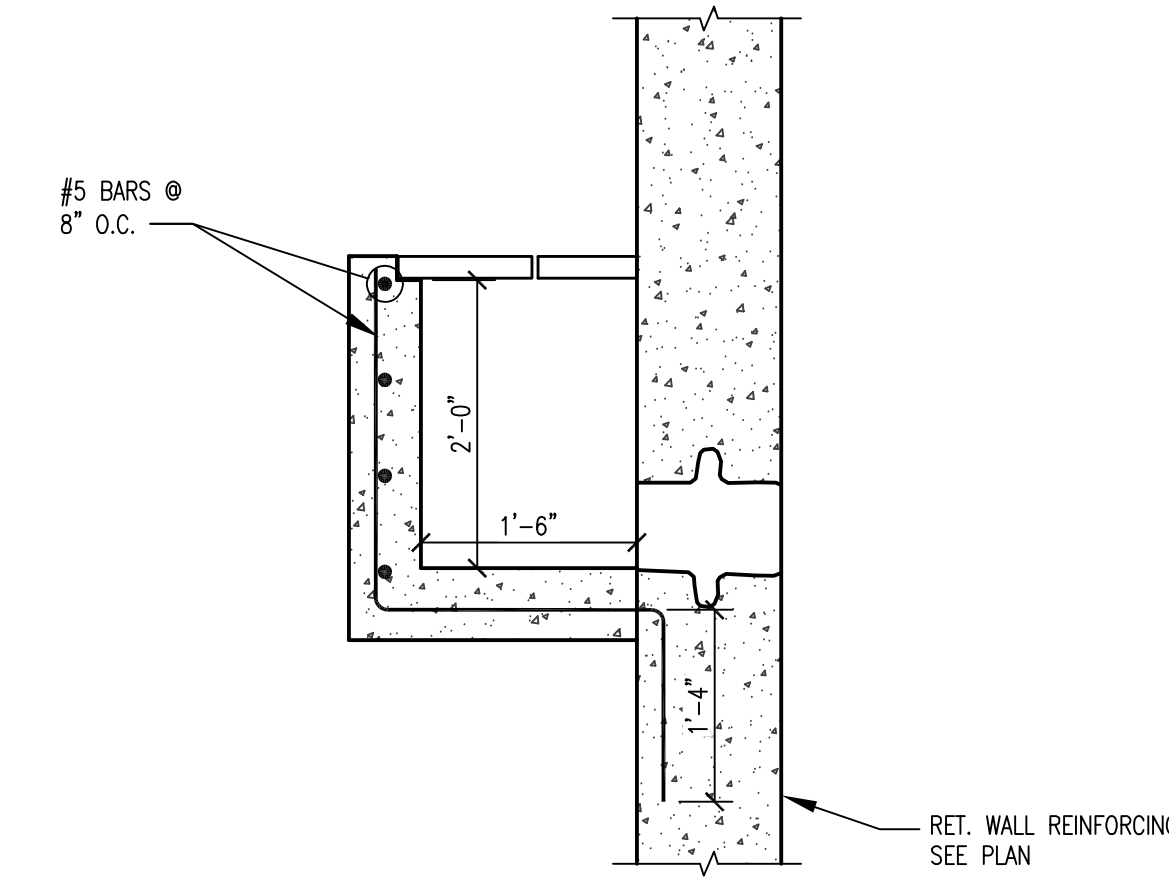
1 PLAN VIEW AT SKIMMER
SCALE: 3/4"=1'-0"



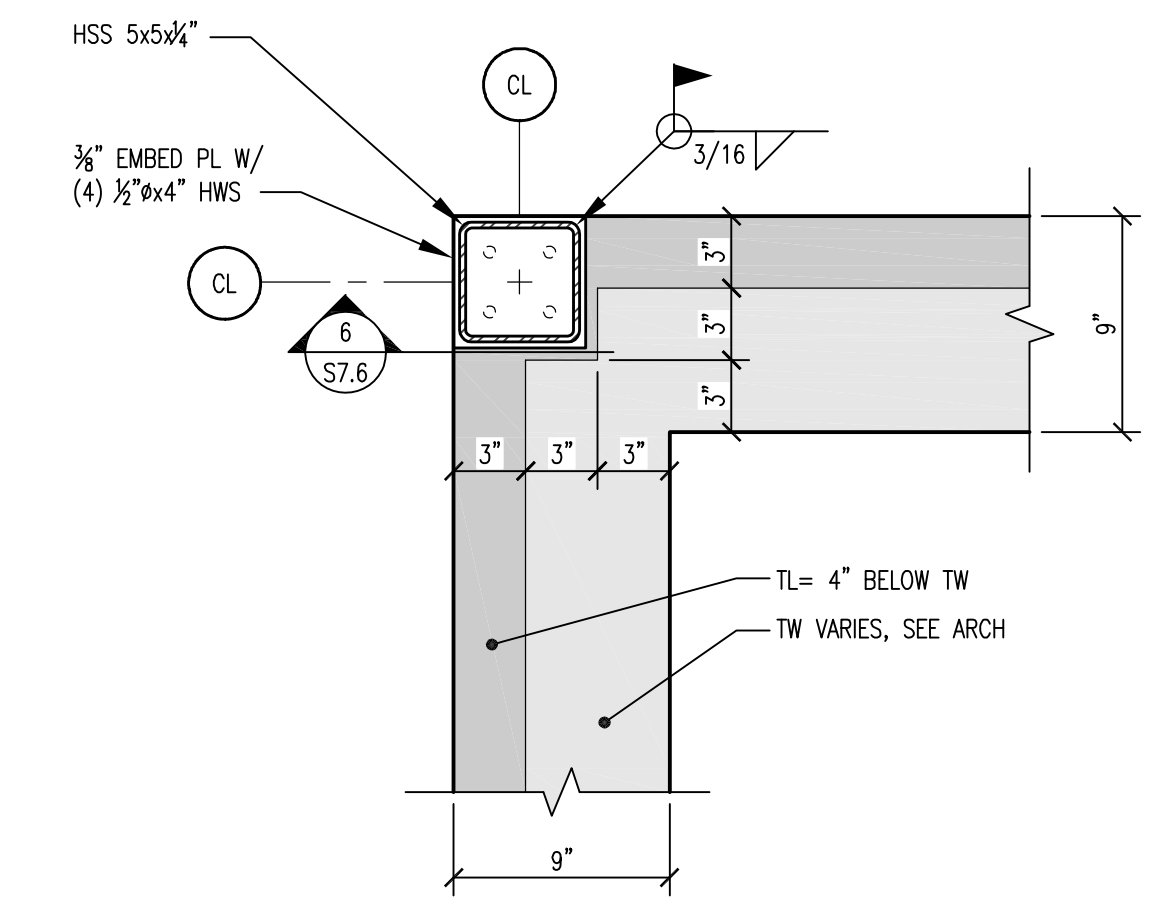
2 TYPICAL SKIMMER SECTION
SCALE: 3/4"=1'-0"



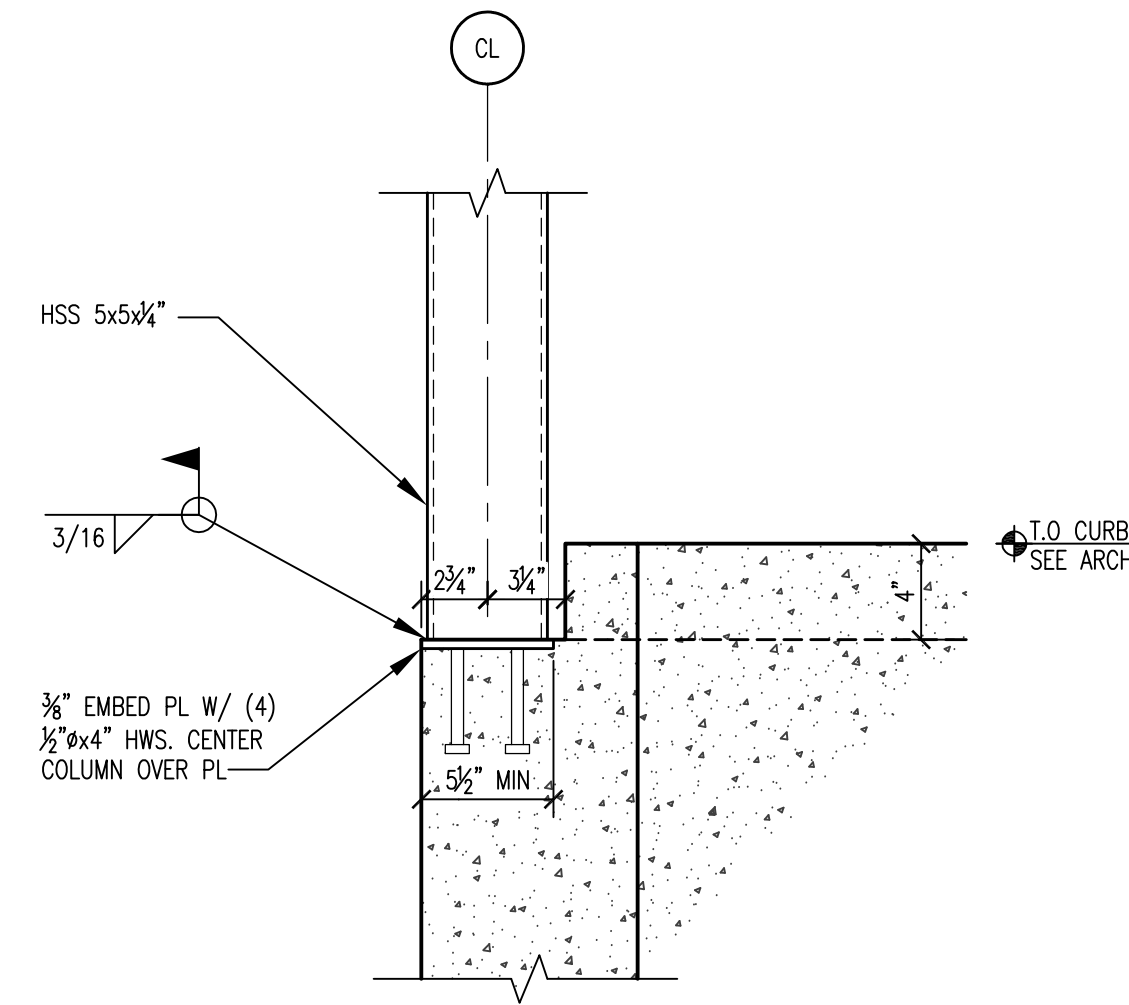
3 POOL DRAIN
SCALE: 3/4"=1'-0"



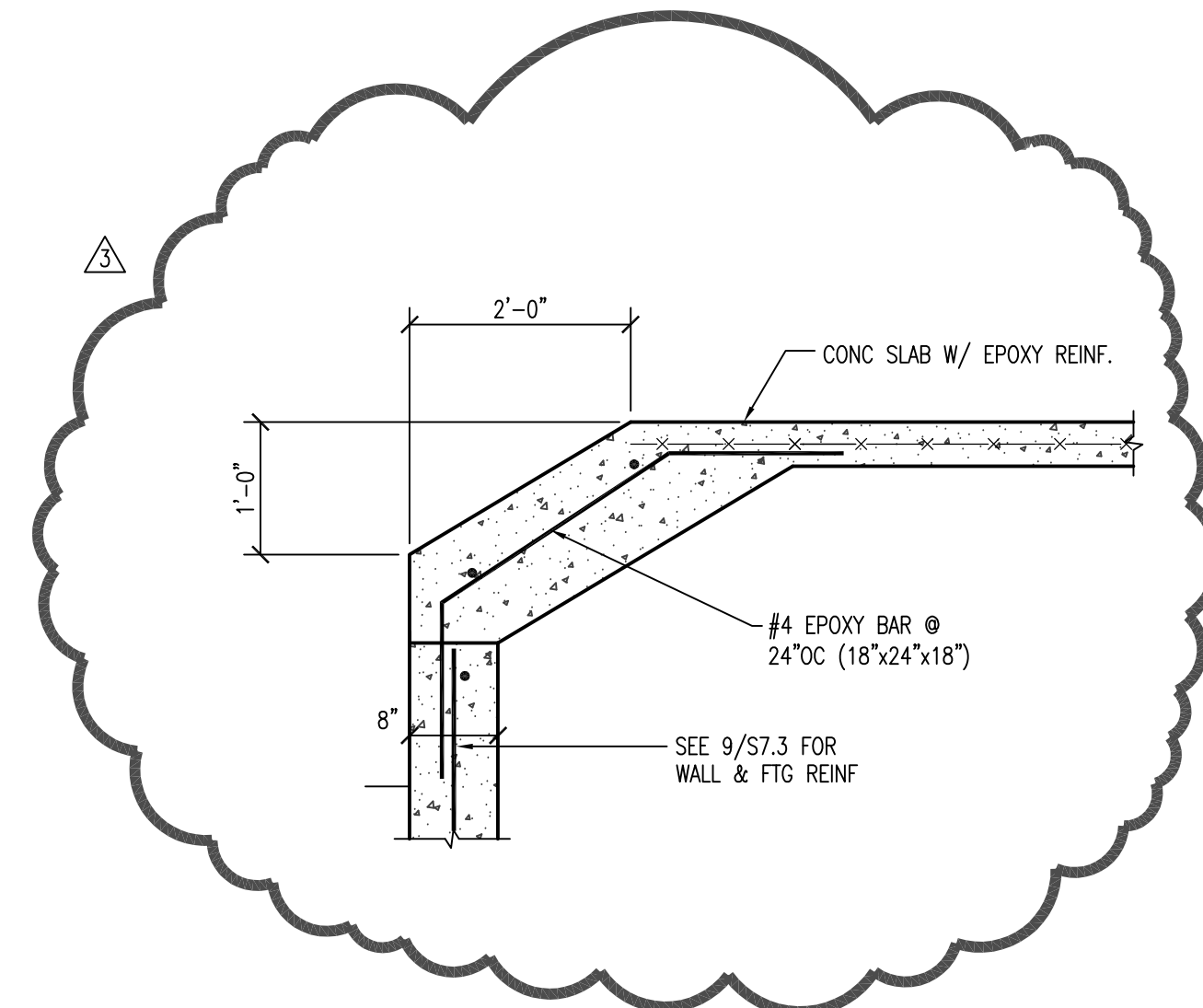
4 POOL LEVEL SENSOR
SCALE: 3/4"=1'-0"



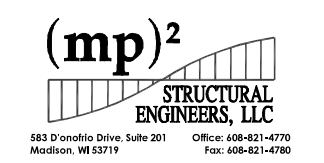
5 COLUMNS AT VIEWING AREA
SCALE: 1 1/2"=1'-0"



6 COLUMNS AT VIEWING AREA
SCALE: 1 1/2"=1'-0"



7 SEAL WALL @ POOL
SCALE: 3/4"=1'-0"



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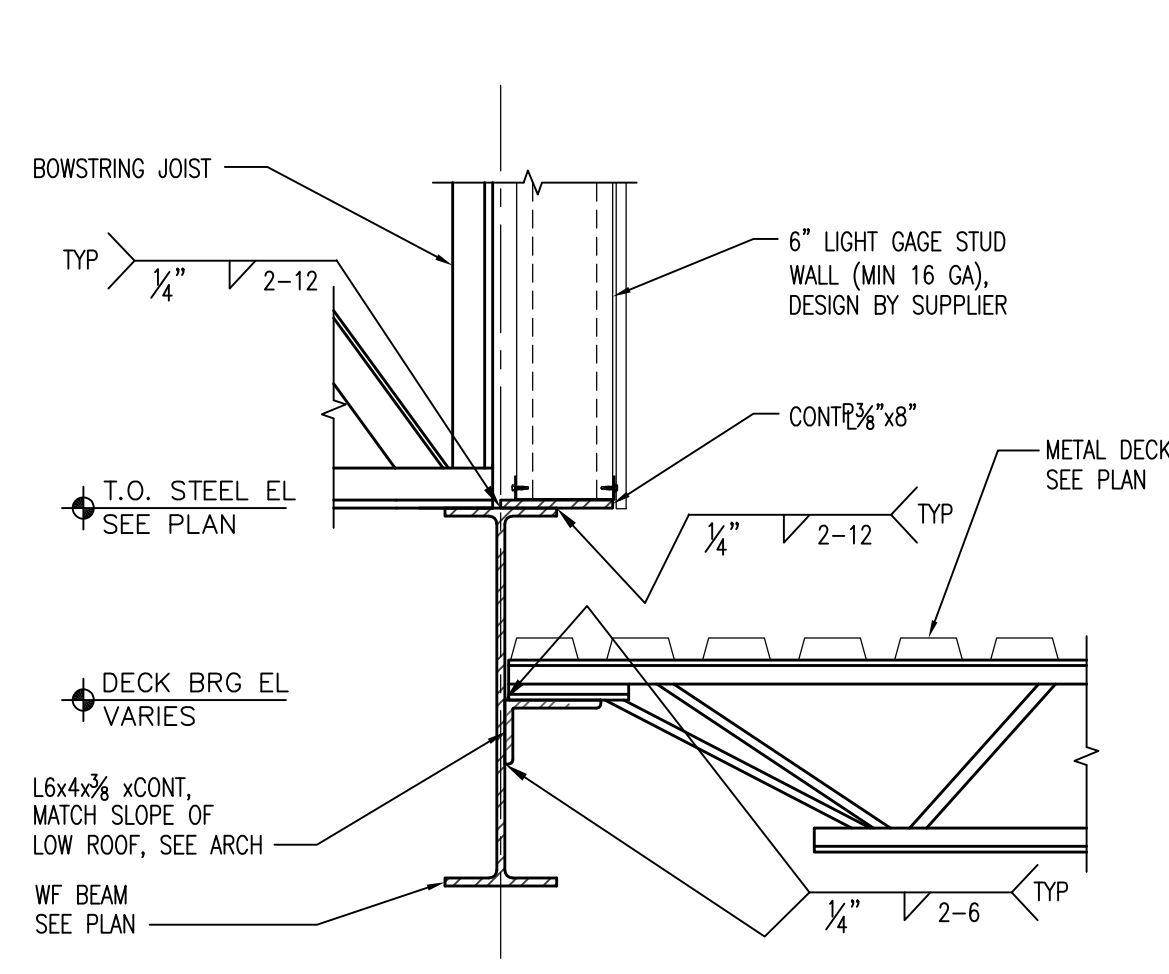
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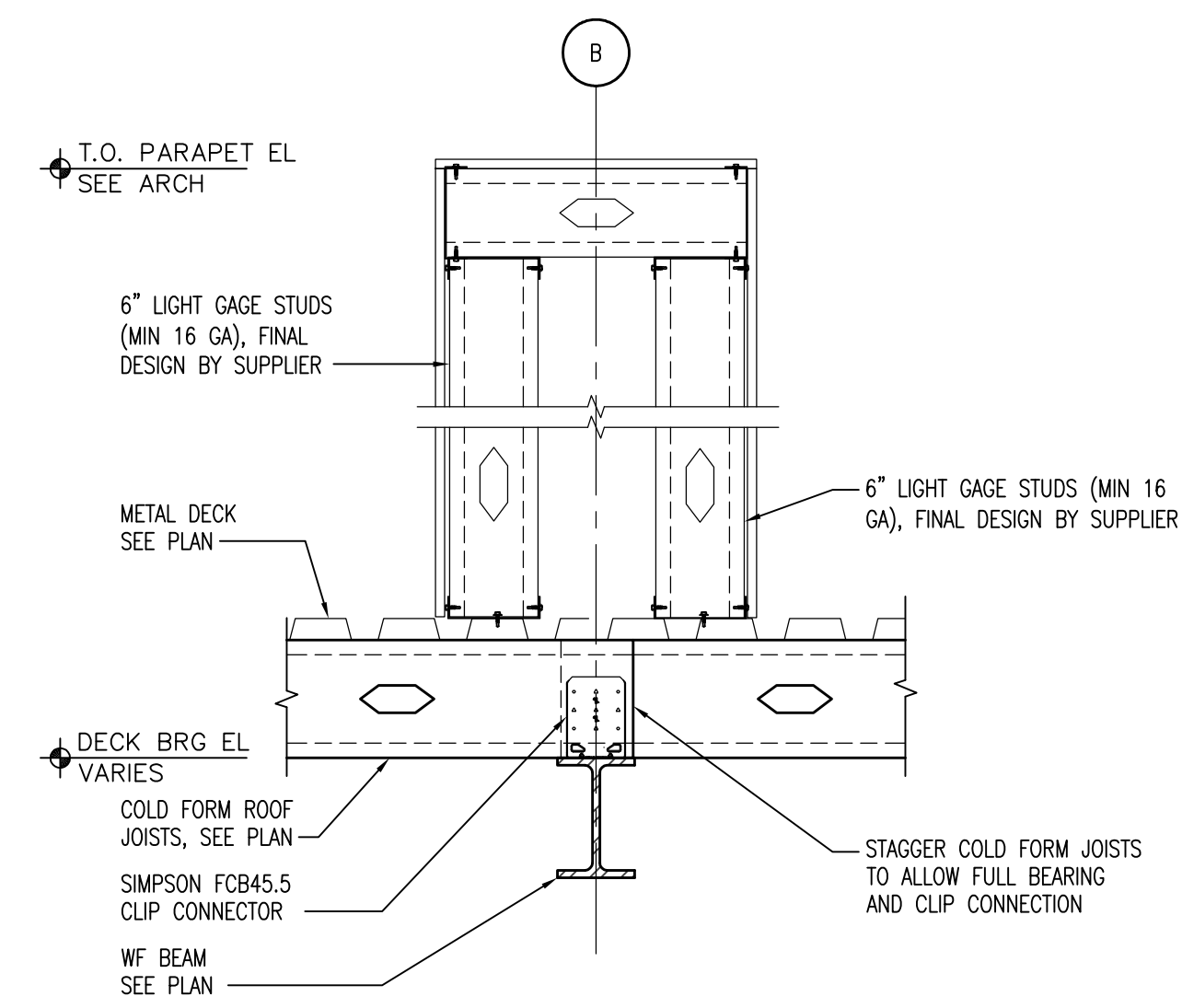
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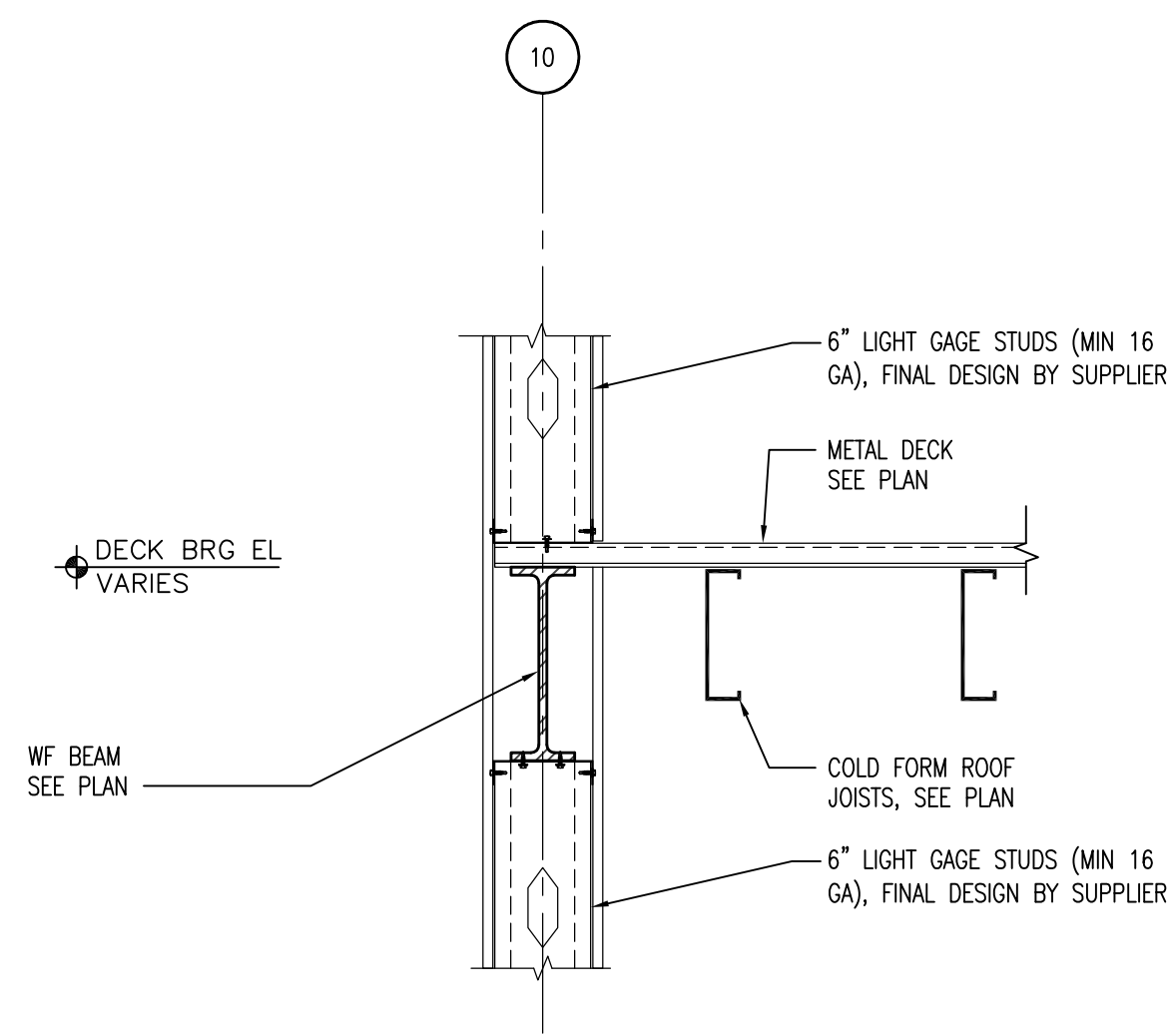
S7.6



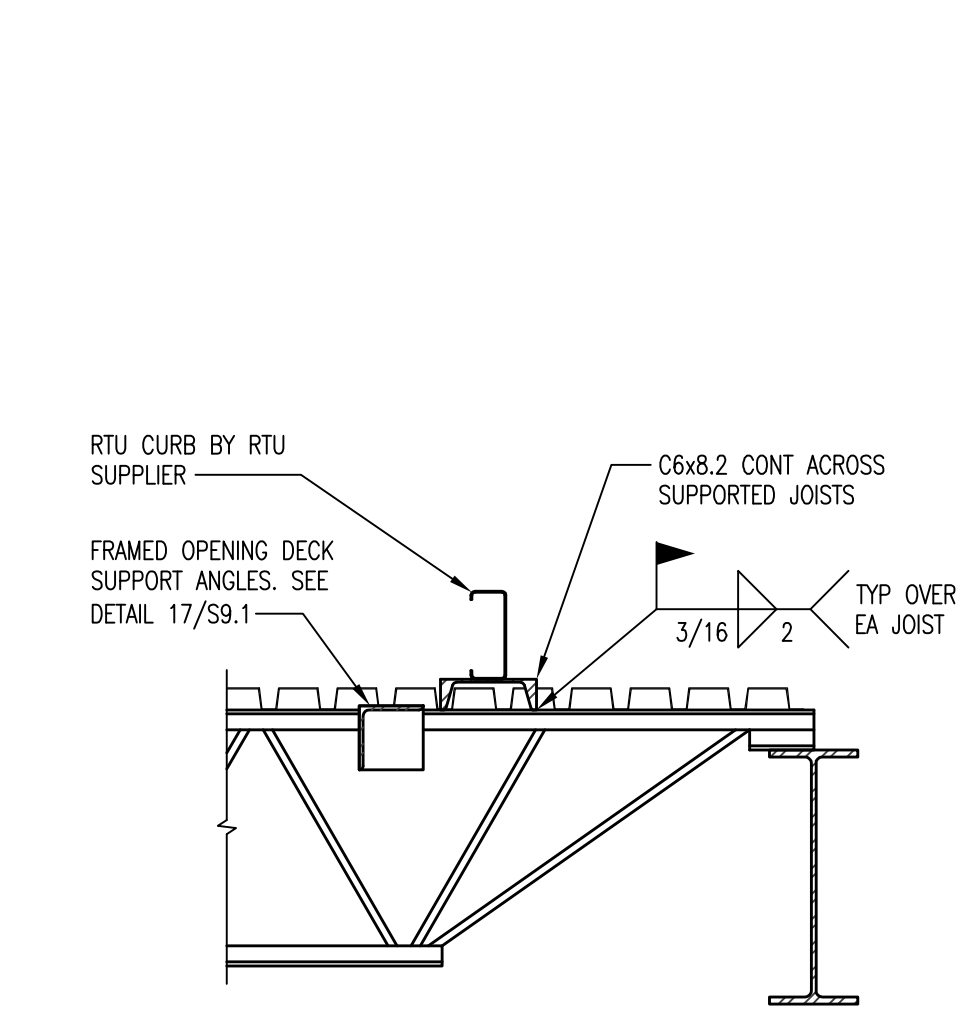
1 SECTION @ HI/LO ROOF
SCALE: 1"=1'-0"



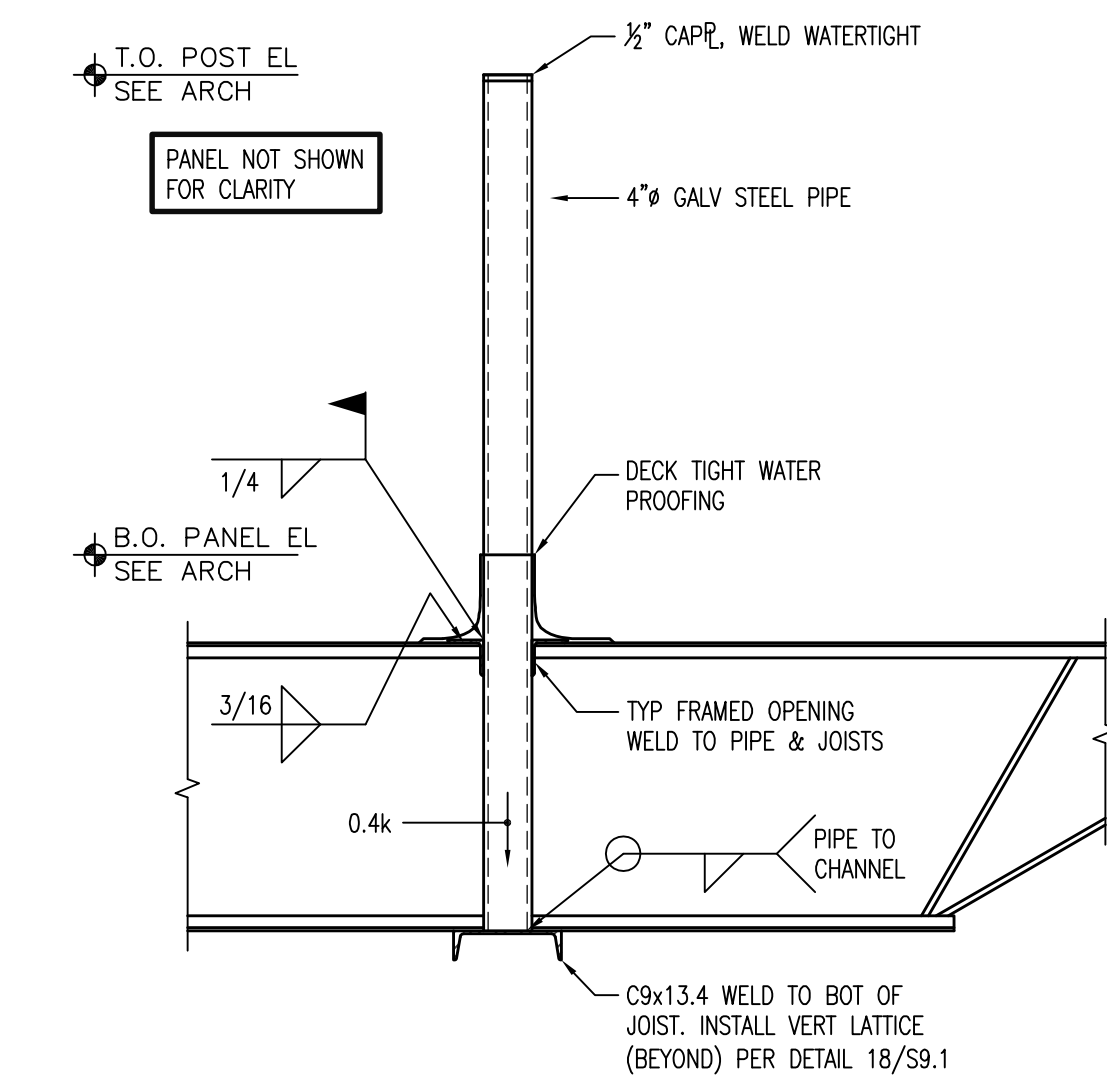
2 ROOF FRAMING DETAIL (ALT BID)
SCALE: 1"=1'-0"



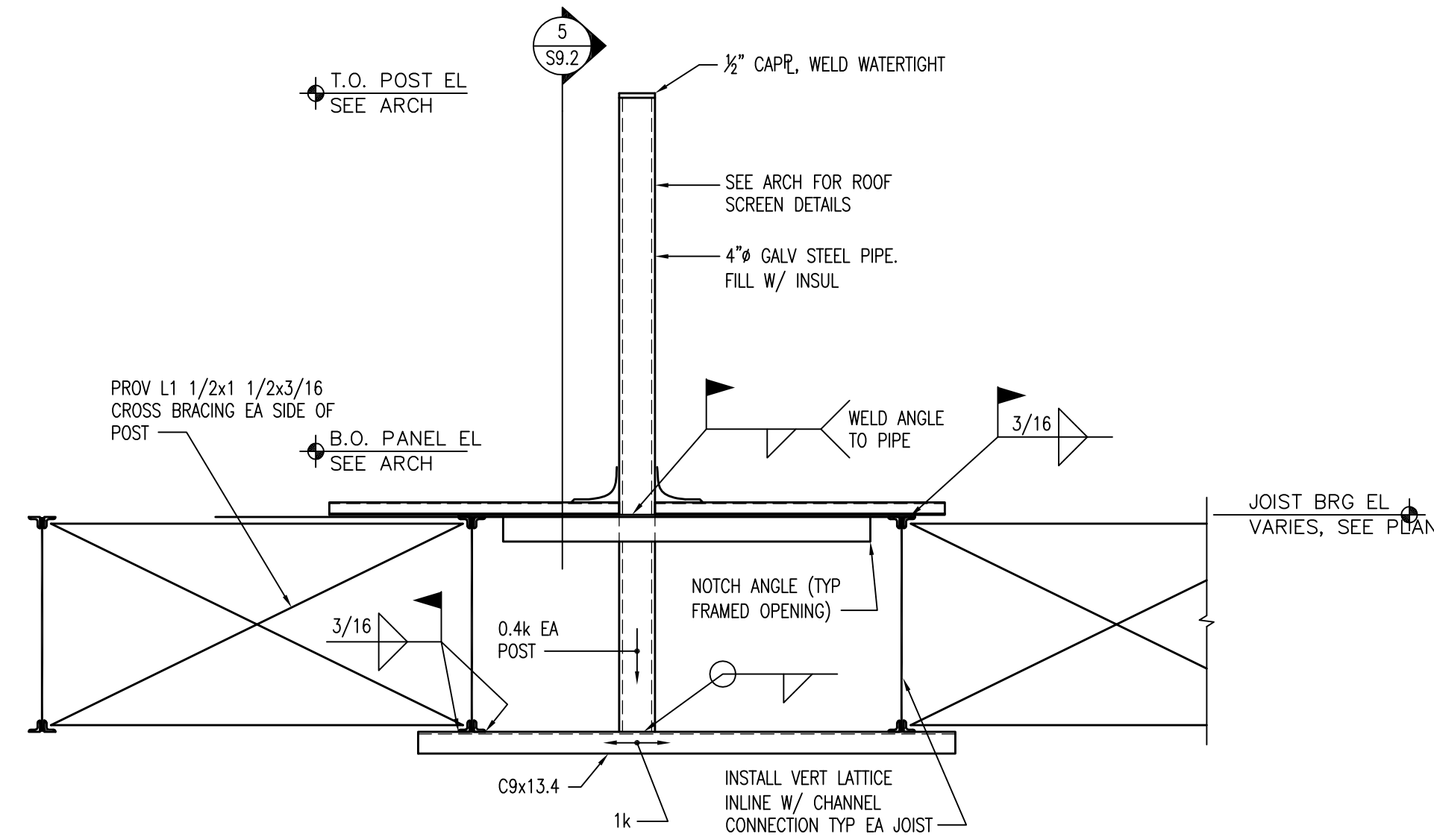
3 ROOF FRAMING DETAIL (ALT BID)
SCALE: 1"=1'-0"



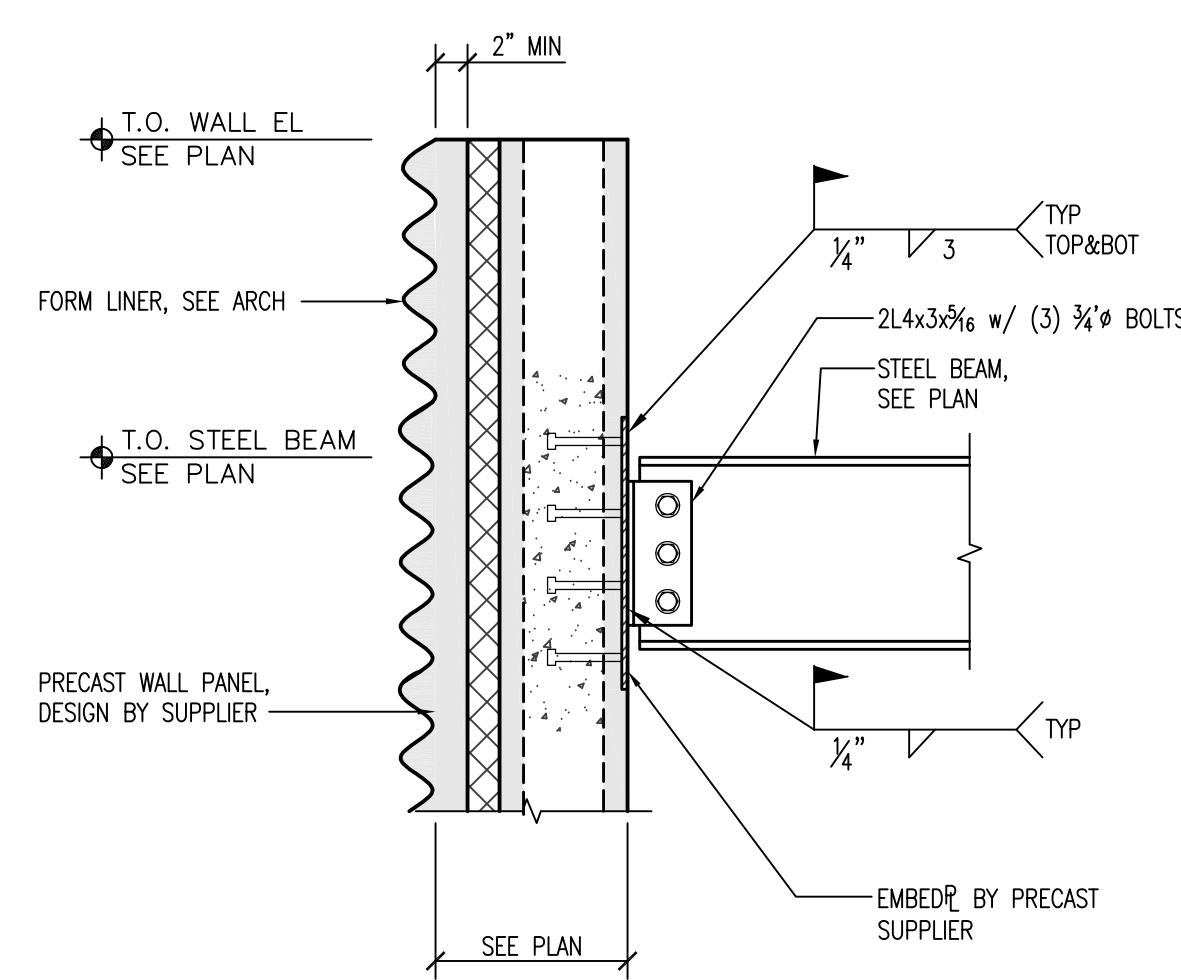
4 RTU SUPPORT
SCALE: 1"=1'-0"



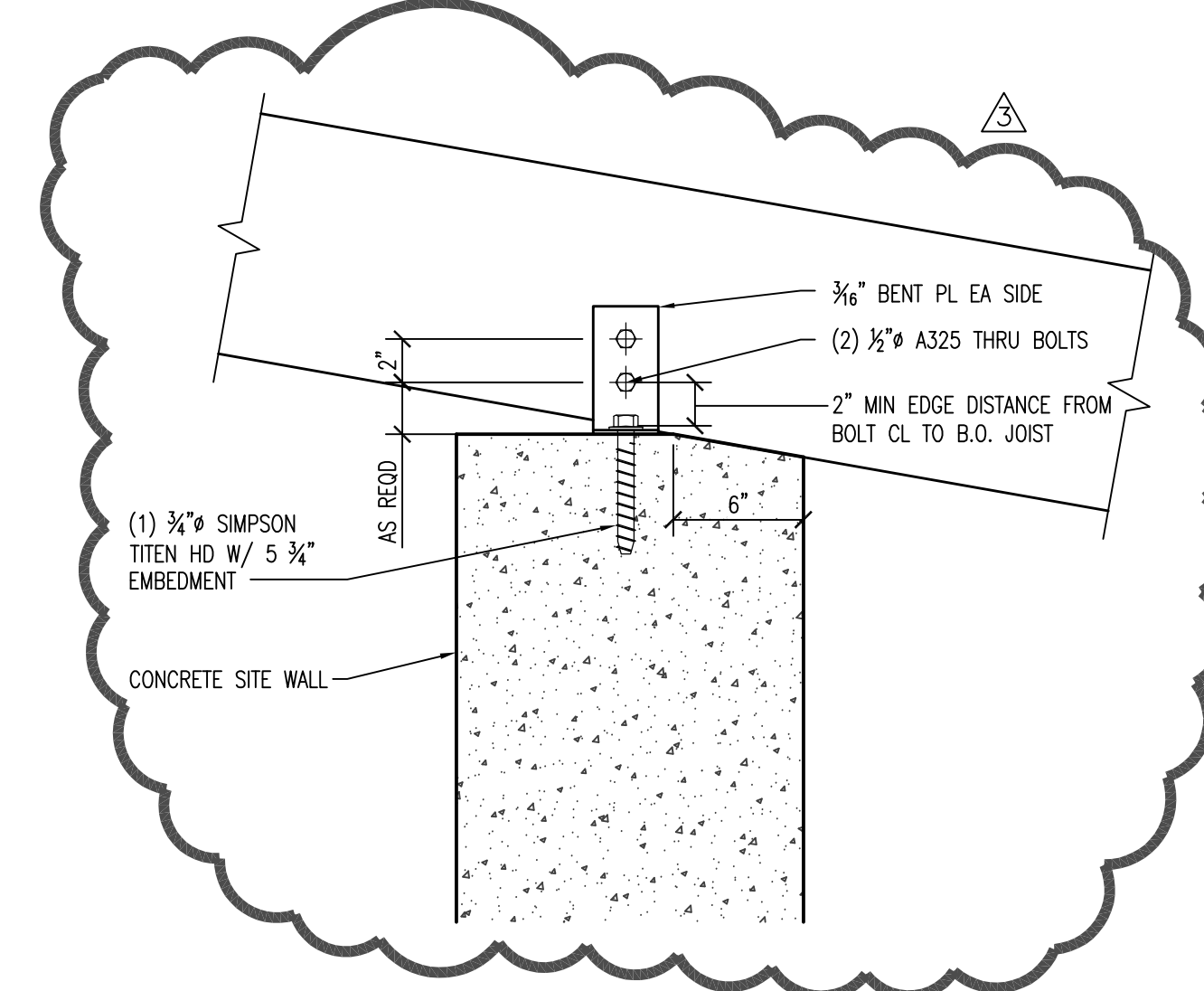
5 ROOF SCREEN SUPPORT
SCALE: 3/4"=1'-0"



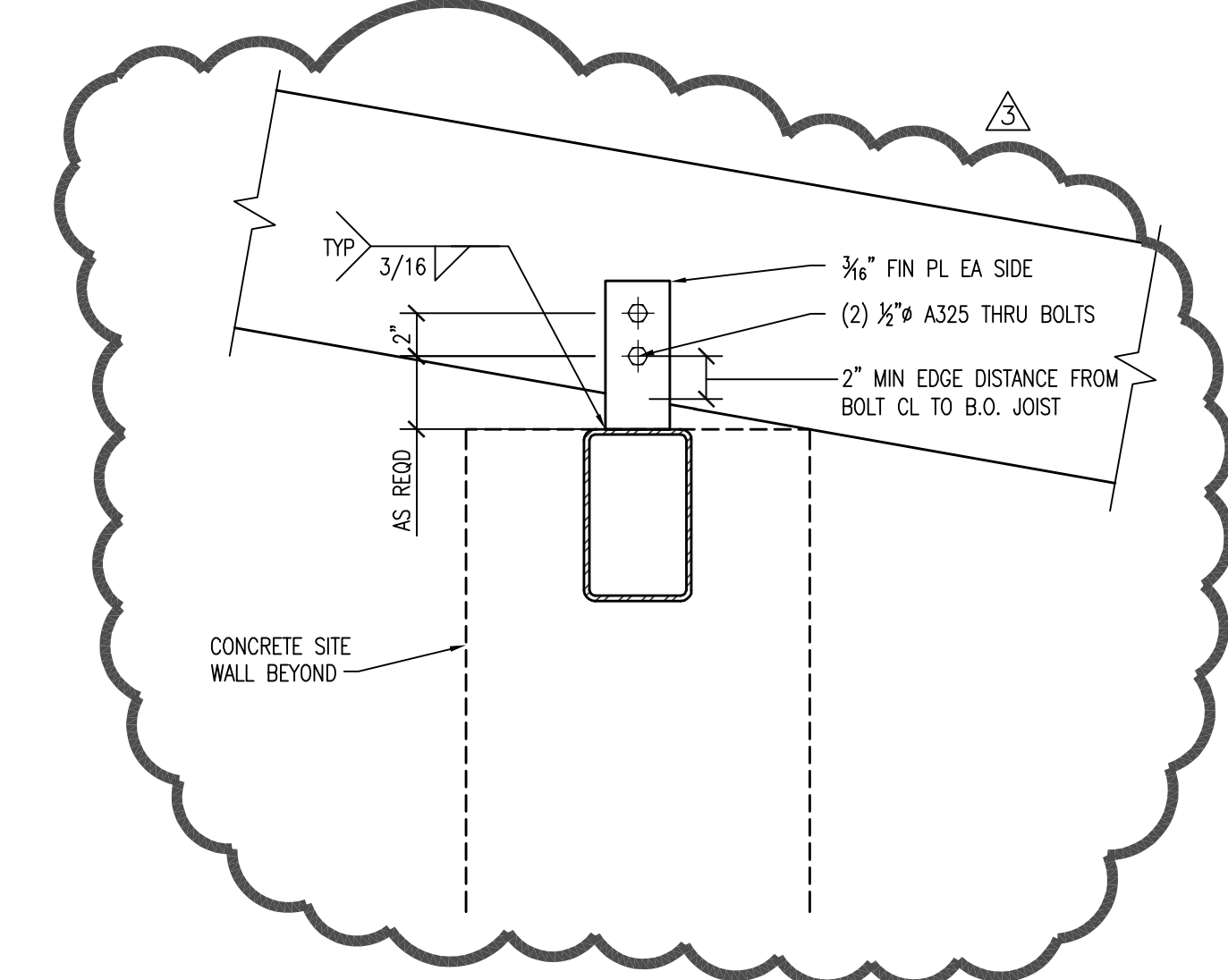
6 ROOF SCREEN SUPPORT
SCALE: 3/4"=1'-0"



7 STEEL BEAM @ PC WALL
SCALE: 1"=1'-0"



8 ROOF JOIST TO CONCRETE WALL
SCALE: 1 1/2"=1'-0"



9 ROOF JOIST TO HSS BEAM
SCALE: 1 1/2"=1'-0"

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drawn: MP2
checked: MP2

STEEL FRAMING DETAILS

S9.2

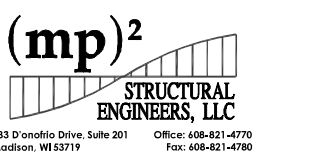
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PLAN NOTES

1. RETAINING WALLS SIZED USING THE FOLLOWING PRESUMPTIVE PARAMETERS:
ALLOWABLE BEARING PRESSURE = 2,000 PSF
ETP (ACTIVE) = 30 PSF
2. WALL THICKNESS SHOWN ON THE PLANS IS THE MINIMUM THICKNESS REQUIRED & DOES NOT INCLUDE FORM LINER PROFILE. INCREASE WALL THICKNESS AS REQUIRED TO ACCOMMODATE FORM LINER. SEE ARCH FOR FORM LINER SPECIFICATION.
3. GEOTECHNICAL INFORMATION TAKEN FROM CGC EXPLORATION REPORT. SEE SO.1.
4. SEE SHEET S7.4 DETAIL 11 FOR EXTENSION AT EXISTING SITE RETAINING WALLS.
5. SEE SHEET S7.4 DETAIL 12 FOR TYPICAL EXISTING CAST-IN-PLACE WALL OPENING INFILL REQUIREMENTS.
6. THICKEN FOOTING IN LOCATIONS INDICATED TO ACHIEVE 6" CONCRETE BELOW FLOW LINE ELEVATIONS PER S46.0 UNDERSLAB DRAINAGE PLAN.
7. SEE SHEET S7.5 DETAILS 15 & 16 FOR ADDED REINFORCING AT ROUND & RECTANGULAR OPENINGS, UNLESS NOTED OTHERWISE.
8. REFERENCE SITE ARCH FOR ALL WALL OPENING LOCATIONS & SIZES.
9. SEE SHEET S7.4 DETAIL 1 FOR CONTROL JOINT & EXPANSION JOINT REQUIREMENTS.
10. SEE SHEET S7.1 DETAILS 2 & 3 FOR FOOTING & WALL CORNER REINFORCING.
11. SEE SHEET S7.6 DETAIL 4 FOR REINFORCEMENT AT POOL LEVEL SENSOR.

1 PARTIAL RETAINING WALL SITE PLAN
SCALE: 1/8" = 1'-0"



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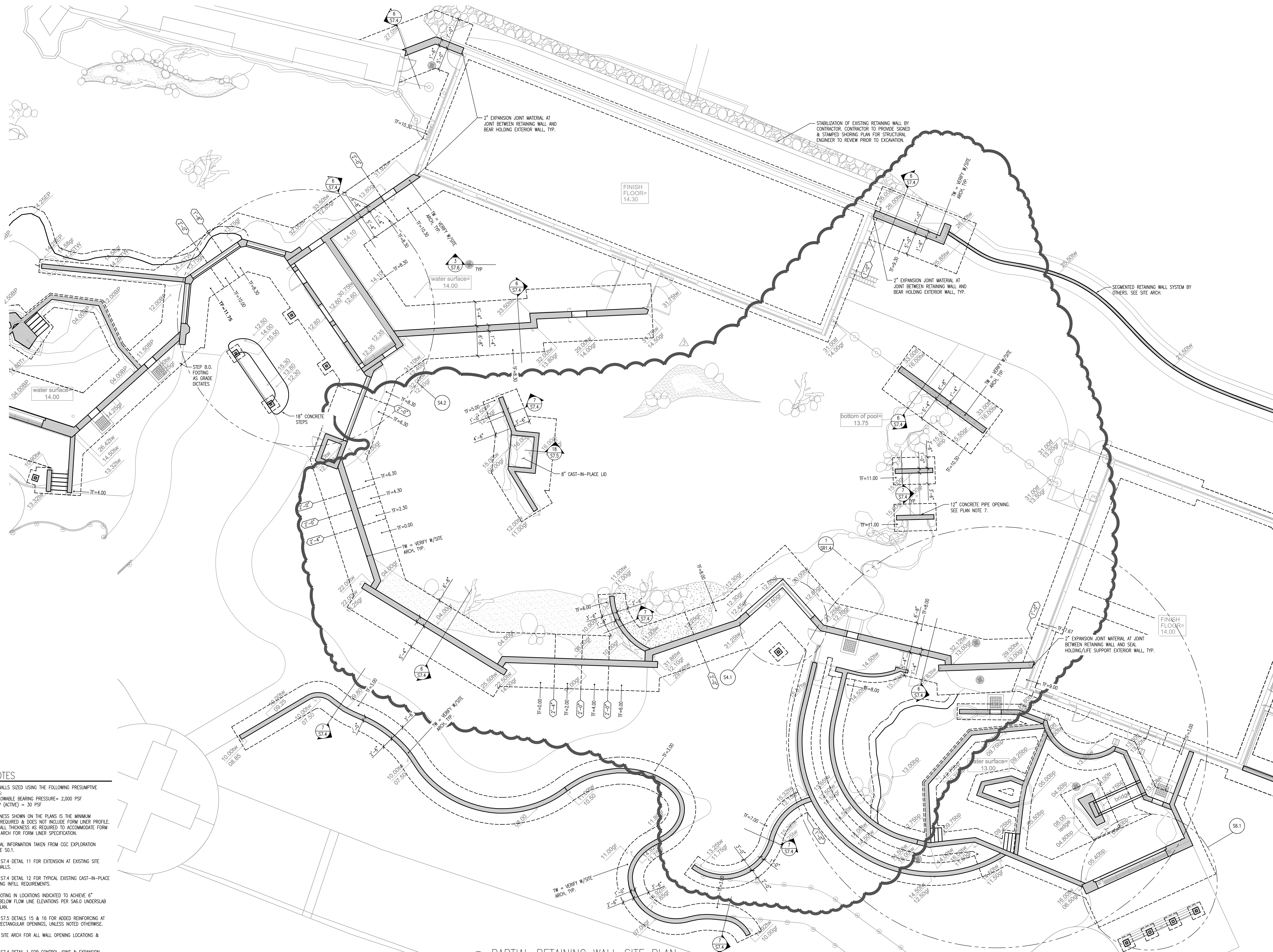


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drawn: MP2
checked: MP2
RETAINING WALL
PARTIAL SITE PLAN

SR1.1



- PLAN NOTES**
- RETAINING WALLS SIZED USING THE FOLLOWING PRESUMPTIVE PARAMETERS:
ALLOWABLE BEARING PRESSURE = 2,000 PSF
EFT (ACTIVE) = 30 PSF
 - WALL THICKNESS SHOWN ON THE PLANS IS THE MINIMUM THICKNESS REQUIRED & DOES NOT INCLUDE FORM LINER PROFILE. INCREASE WALL THICKNESS AS REQUIRED TO ACCOMMODATE FORM LINER. SEE ARCH FOR FORM LINER SPECIFICATION.
 - GEOTECHNICAL INFORMATION TAKEN FROM CGC EXPLORATION REPORT. SEE SD.1.
 - SEE SHEET S7.4 DETAIL 11 FOR EXTENSION AT EXISTING SITE RETAINING WALLS.
 - SEE SHEET S7.4 DETAIL 12 FOR TYPICAL EXISTING CAST-IN-PLACE WALL OPENING INFILL REQUIREMENTS.
 - THICKEN FOOTING IN LOCATIONS INDICATED TO ACHIEVE 6" CONCRETE BELOW FLOW LINE ELEVATIONS PER S46.0 UNDERSLAB DRAINAGE PLAN.
 - SEE SHEET S7.5 DETAILS 15 & 16 FOR ADDED REINFORCING AT ROUND & RECTANGULAR OPENINGS, UNLESS NOTED OTHERWISE.
 - REFERENCE SITE ARCH FOR ALL WALL OPENING LOCATIONS & SIZES.
 - SEE SHEET S7.4 DETAIL 1 FOR CONTROL JOINT & EXPANSION JOINT REQUIREMENTS.
 - SEE SHEET S7.1 DETAILS 2 & 3 FOR FOOTING & WALL CORNER REINFORCING.
 - SEE SHEET S7.6 DETAIL 4 FOR REINFORCEMENT AT POOL LEVEL SENSOR.

1 PARTIAL RETAINING WALL SITE PLAN
SCALE: 1/8" = 1'-0"

(mp)²
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ARCTIC ANIMAL EXHIBIT AND CONCESSIONS
RFB No. 313086

Henry Vilas Zoo - County of Dane
Department of Public Works
Henry Vilas Zoo
702 S Randall Ave
Madison, Wisconsin

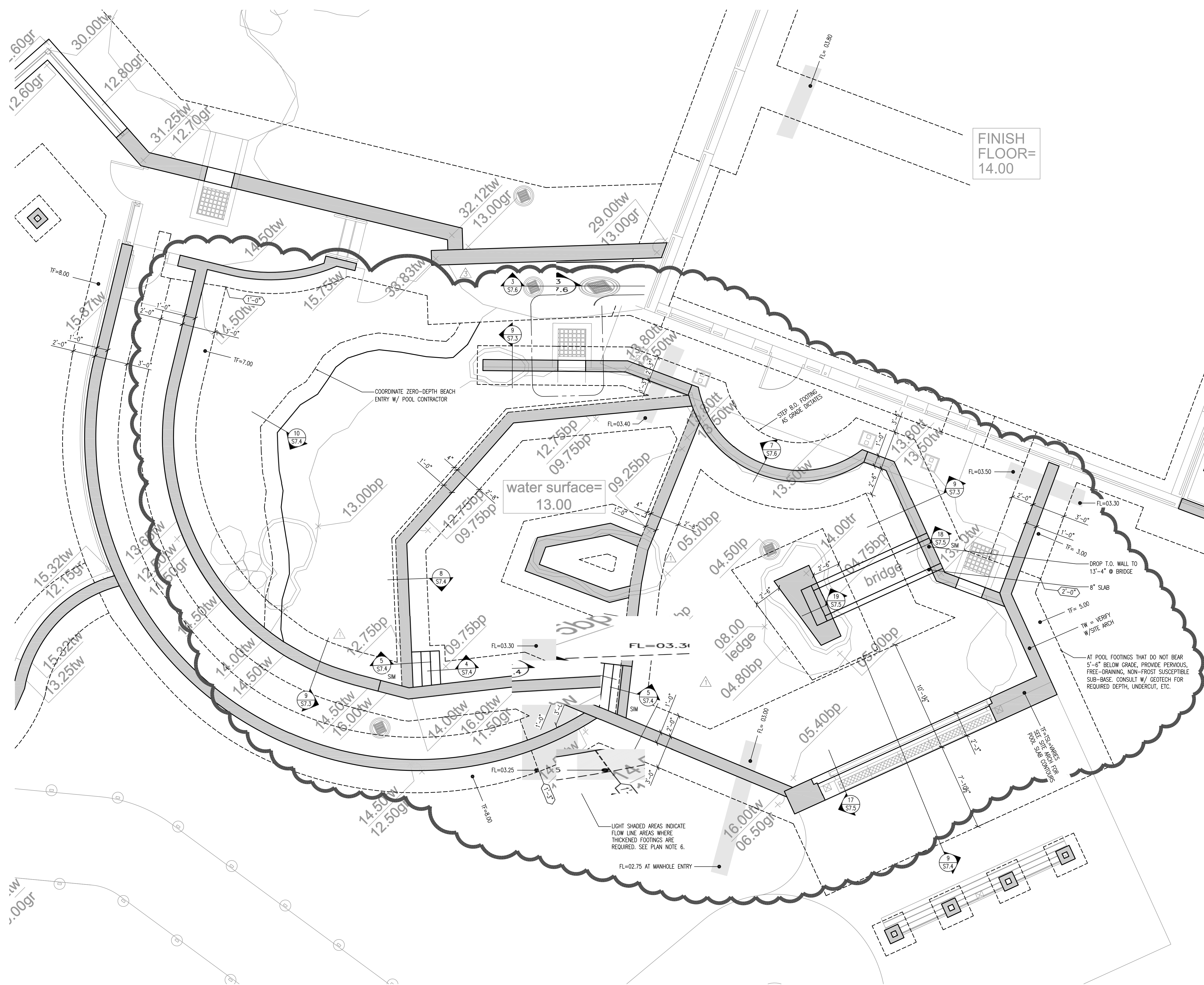
PRINTS ISSUED

- 07.26.2013 - Schematic Design
- 08.23.2013 - Design Development
- 09.23.2013 - 65% CD's
- 10.07.2013 - Pricing Set
- 10.21.2013 - 95% CD's
- 11.13.2013 - Bid Documents
- 11.25.2013 - Addendum #4
- 12.04.2013 - Addendum #5

WDM No. 13046
drawn: MP2
checked: MP2

RETAINING WALL
PARTIAL SITE PLAN

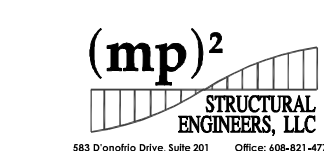
SR1.2



PLAN NOTES

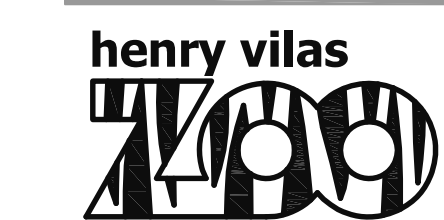
1. RETAINING WALLS SIZED USING THE FOLLOWING PRESUMPTIVE PARAMETERS:
ALLOWABLE BEARING PRESSURE = 2,000 PSF
EFP (ACTIVE) = 30 PSF
2. WALL THICKNESS SHOWN ON THE PLANS IS THE MINIMUM THICKNESS REQUIRED & DOES NOT INCLUDE FORM LINER PROFILE. INCREASE WALL THICKNESS AS REQUIRED TO ACCOMMODATE FORM LINER. SEE ARCH FOR FORM LINER SPECIFICATION.
3. GEOTECHNICAL INFORMATION TAKEN FROM CGC EXPLORATION REPORT. SEE SO.1.
4. SEE SHEET S7.4 DETAIL 11 FOR EXTENSION AT EXISTING SITE RETAINING WALLS.
5. SEE SHEET S7.4 DETAIL 12 FOR TYPICAL EXISTING CAST-IN-PLACE WALL OPENING INFILL REQUIREMENTS.
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7. SEE SHEET S7.5 DETAILS 15 & 16 FOR ADDED REINFORCING AT ROUND & RECTANGULAR OPENINGS, UNLESS NOTED OTHERWISE.
8. REFERENCE SITE ARCH FOR ALL WALL OPENING LOCATIONS & SIZES.
9. SEE SHEET S7.4 DETAIL 1 FOR CONTROL JOINT & EXPANSION JOINT REQUIREMENTS.
10. SEE SHEET S7.1 DETAILS 2 & 3 FOR FOOTING & WALL CORNER REINFORCING.
11. SEE SHEET S7.6 DETAIL 4 FOR REINFORCEMENT AT POOL LEVEL SENSOR.

1 SEAL POOL WALL PLAN
SCALE: 1/4" = 1'-0"



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12.04.2013 - Addendum #5

WDM No. 13046
drawn: MP2
checked: MP2

SEAL POOL WALL PLAN

SR1.4

PLUMBING FIXTURE SCHEDULE		
TAG NAME	DESCRIPTION	MANF. & MODEL
BFP-1	BACK FLOW PREVENTER - REDUCED PRESSURE ZONE, BRONZE OR FDA APPROVED EPOXY COATED CAST IRON CONSTRUCTION, SIZE SAME AS PIPE, NON-CORROSIVE INTERNAL PARTS. STAINLESS STEEL SPRINGS, DIFFERENTIAL PRESSURE RELIEF VALVE BETWEEN SPRING-LOADED CHECK VALVES, SHUT OFF VALVE WITH STRAP-ON REMOTE SENSOR BULB, TEST PORTS WITH SHUT-OFF VALVES, RATED FOR 175 PSI AT 33°F TO 140°F, 15 PSI (MAXIMUM) PRESSURE DROP AT 10 FPS, FACTORY TESTED, ALL PARTS TO BE SERVICEABLE WITHOUT REMOVING UNIT FROM LINE, APPROVED BY USC FCCC & HR, AWWA C511-92, ASSE 1013, IAPMO AND LISTED. MOUNT WITHIN 60" OF FINISHED FLOOR. PROVIDE AND INSTALL BRONZE OR EPOXY COATED STRAINER UPSTREAM OF EACH UNIT AND ADDITIONAL VALVE UPSTREAM OF EACH STRAINER. FLOW PRESSURE DROP CURVES SHALL BE SUBMITTED.	WATTS (009/909), CONBRACO (40-200), FEBCO (860), WILKINS (975X/375)
BFP-2	BACK FLOW PREVENTER - DUAL CHECK, STAINLESS STEEL BODY, HEAVY DUTY FDA APPROVED RUBBER DIAPHRAGMS, 3/8" SIZE, RATED FOR 150 PSI AT 33°F TO 110°F, APPROVED BY ASSE 1032	WATTS (SD-2)
BFP-3	BACK FLOW PREVENTER - DUAL CHECK VALVE WITH ATMOSPHERIC VENT, BRASS BODY, STAINLESS STEEL PARTS, INTEGRAL STRAINER AND DURABLE RUBBER DISC, ASSE 1015	WATTS (90) OR APPROVED EQUAL
CP-1	CIRCULATING PUMP - BRONZE CONSTRUCTION, NON-METALIC OR BRONZE BEARINGS, COUSE COUPLED, CERAMIC SHAFT WITH CARBON BEARINGS, OPEN DRIP-PROOF NON-OVERLOADING MOTOR WITH THERMAL OVERLOAD PROTECTION, FLANGED CONNECTIONS, RATED FOR 125 PSIG AT 225°F, UL LISTED. 1.5 GPM @ 10 FEET OF HEAD. MOTOR SHALL BE .08 HP OPERATING AT 2650 RPM. AGUASTAT - LINE VOLTAGE, ADJUSTABLE SETTING OF 90-180°F WITH STRAP-ON REMOTE SENSOR BULB, UL LISTED. PROVIDE WITH TRANSFORMER IF REQUIRED. INSTALL PER MANUFACTURERS INSTRUCTIONS. ELECTRICAL REQUIREMENTS - 115V-1 PHASE (HARD-WIRE)	WATTS (90) OR APPROVED EQUAL PUMP - B&G (NFB SERIES), TACO (00 SERIES), ARMSTRONG (ASTRO SERIES), GRUNDFOS (UP SERIES) AGUASTAT - HONEYWELL, WHITE-RODGERS, JOHNSON CONTROLS, SAME AS PUMP MANUFACTURER
ET-1	EXPANSION TANK - WELDED BLACK STEEL CONSTRUCTION, GUARANTEED AIRTIGHT AND LEAKPROOF, STAINLESS STEEL SYSTEM CONNECTION, HEAVY DUTY BUTYL DIAPHRAGM AND RIGID POLYPROPYLENE LINER MECHANICALLY BONDED TO TANK TO PROVIDE A 100% NON-CORROSIVE WATER RESERVOIR, DIAPHRAGM AND LINER SHALL BE APPROVED FOR USE IN POTABLE WATER SYSTEMS, ALL WETTED COMPONENTS OF FDA APPROVED MATERIALS. PROVIDE STANDARD SCHRADER AIR VALVE FOR FIELD CHARGING. TANK SHALL HAVE A WORKING TEMPERATURE OF 20°F AND A WORKING PRESSURE OF 125 PSIG. MINIMUM TANK VOLUME TO BE 4.4 GALLONS. MINIMUM ACCEPTABLE TANK VOLUME TO BE 3.2 GALLONS. FACTORY PRE-CHARGED TO 40 PSIG.	AMTROL (THERM-X-TROL), TACO (PAX SERIES), WESSELS (TW), ELBI (DT)
FCO-1	FLOOR CLEANOUT - ADJUSTABLE, CAST IRON HOUSING, ANCHOR FLANGE, TAPERED THREAD PLUG, SECURED NICKEL BRONZE TOP. TOP STYLE SHALL MATCH FLOOR FINISH AS FOLLOWS: UNFINISHED FLOOR - SQUARE SOLID SCORATED TOP TILE OR TERRAZZO - SQUARE RECESSED TOP	ZURN (Z1400), JOSAM (5000), MIFAB (C1100), SMITH (4000), WADE (6000), WATTS (CO-200)
FD-1	FLOOR DRAIN - CAST IRON BODY, NICKEL BRONZE ADJUSTABLE TOP, 6" ROUND, 2" BOTTOM OUTLET, FLASHING COLLAR, DEEP SEAL TRAP	ZURN (Z-415), SMITH (2005), WADE (1100), JOSAM (3000), WATTS (FD-100), MIFAB (F1100)
FD-2	FLOOR DRAIN - CAST IRON BODY, NICKEL BRONZE ADJUSTABLE TOP, 6" ROUND, 4" BOTTOM OUTLET, FLASHING COLLAR, DEEP SEAL TRAP	ZURN (Z-415), SMITH (2005), WADE (1100), JOSAM (3000), WATTS (FD-100), MIFAB (F1100)
FD-3	FLOOR DRAIN - ACID RESISTANT, POLYPROPYLENE BODY, STAINLESS STEEL GRATE, 6" ROUND, 2" BOTTOM OUTLET, FLASHING CLAMP, DEEP SEAL TRAP	ORION (AWF05TD), ZURN (ZNA-FD), WATTS (FD1-BAS), IPEX (ENFIELD SERIES F1000)
FS-1	FLOOR SINK - CAST IRON BODY, NICKEL BRONZE RIM AND GRATE, 12" SQUARE, 3" BOTTOM OUTLET, DEEP SEAL TRAP WITH ALUMINUM ACID RESISTANT COATED INTERIOR, SEEPAGE FLANGE WITH CLAMP, DEEP SEAL TRAP	ZURN (Z100), SMITH (151), WADE (6140), JOSAM (4930A), WATTS (FS-740)
FS-2	FLOOR SINK - CAST IRON BODY, NICKEL BRONZE RIM AND GRATE, 12" SQUARE, 4" BOTTOM OUTLET, DEEP SEAL TRAP WITH ALUMINUM ACID RESISTANT COATED INTERIOR, SEEPAGE FLANGE WITH CLAMP, DEEP SEAL TRAP	ZURN (Z100), SMITH (151), WADE (6140), JOSAM (4930A), WATTS (FS-740)
GI-1	GREASE INTERCEPTOR - RECESSED, STEEL CONSTRUCTION, INTERNAL ACID RESISTANT COATING, REMOVABLE BAFFLES, INTEGRAL AIR RELIEF, FLOW CONTROL, FITTING, INTEGRAL CLEANOUT, GASKETED ALUMINUM COVER WITH LOCK AND LIFT RING, PDI G101 COMPLIANT, PDI APPROVED. PROVIDE STEEL EXTENSION TO MATCH FINISHED FLOOR HEIGHT. 73 GPM FLOW, 194 LB. GREASE CAPACITY, 73 GALLONS HOLDING CAPACITY	SMITH (8000 SERIES), WADE (W-5100), JOSAM (80100), ZURN (Z1170), ROCKFORD (GF SERIES), WATTS (WD SERIES), MIFAB (MI-G), SCHIER (AT SERIES)
HB-1	HOSE BIBB - FREEZELESS WALL HYDRANT, BRASS VALVE BODY AND SEAT, BRASS FINISH, NON-FERROUS METAL, STEM AUTOMATIC DRAINING, VACUUM BREAKER, 3/4" MALE HOSE THREAD, WALL CLAMP, EXPOSED METAL WHEEL HANDLE, ASSE 1019 APPROVED AND LISTED. MOUNT AT 18" ABOVE GRADE UNLESS NOTED OTHERWISE ON DRAWINGS.	WOODFORD (B25), ZURN, JOSAM, WATTS, PRIER, MIFAB, SMITH
HB-2	HOSE BIBB - INDOOR WALL HYDRANT, BRASS CONSTRUCTION, STANDARD FINISH, VACUUM BREAKER, 3/4" MALE HOSE THREAD, METAL WHEEL HANDLE. MOUNT AT 12" ABOVE FINISHED FLOOR.	WOODFORD (24), CHICAGO FAUCET (293), ACCORN (8121), PRIER (C-135AS), T&S BRASS (84763), MIFAB (MHY-50)
HB-3	HOSE BIBB - FREEZELESS YARD HYDRANT, 3/4" MALE HOSE THREAD, 3/4" I.P.S. INLET, ONE PIECE PLUNGER, LOCKABLE HANDLE. VACUUM BREAKER - FREEZE PROOF, SELF DRAINING, BREAKAWAY SET SCREW, 3/4" HOSE THREAD INLET AND OUTLET. BURY AT A DEPTH OF 54" TO ASSURE PLUNGER AND DRAIN HOLE ARE BELOW FROST LINE. INSTALL WITH 1/2" GRAVEL, 12" AROUND DRAIN HOLE. INSTALL VACUUM BREAKER ON OUTLET OF YARD HYDRANT.	HOSE BIBB - WOODFORD (W34), ZURN (Z1350), PRIER (C-250), SMITH (5099) VACUUM BREAKER - WATTS (IS SERIES), SAME AS HYDRANT MANUFACTURER
HB-4	HOSE BIBB - FREEZELESS ROOF HYDRANT, ONE PIECE VARIABLE FLOW PLUNGER WITH ROOF GUIDE, BUILT-IN VENT FOR AUTOMATIC DRAINING, CAST IRON FLANGED HYDRANT SUPPORT WITH UNDER-DECK FLANGE, WELL SEAL BETWEEN SUPPORT AND HYDRANT PIPE WITH EDM BOOT COVER. PROVIDE WITH ASSE 1052 APPROVED, FIELD TESTABLE, DOUBLE CHECK VALVE BACK FLOW PREVENTER WITH 3/4" TREADED HOSE CONNECTION AT HYDRANT OUTLET.	HOSE BIBB - WOODFORD (RH2) OR APPROVED EQUAL
L-1	LAVATORY - ACCESSIBLE, WALL MOUNTED, WHITE VITREOUS CHINA, 20"x18", 4" HIGH CONTOURED BACKSPLASH, SINGLE FAUCET HOLE, DRILLED FOR CONCEALED ARM CARRIER. LAVATORY TRIM - SENSOR ACTIVATED MIXING FAUCET, HARD-WIRED, BRASS CONSTRUCTION, CHROME-PLATED FINISH, CONVENTIONAL SPOUT WITH VANDAL RESISTANT AERATOR, SINGLE HOLE, PERFORATED DRAIN GRATE WITH 1-1/4" GAUGE TAILPIECE, SOLID BRASS SOLENOID WITH BUILT-IN FILTER, SOLID BRASS MANUAL MIXING VALVE WITH ADJUSTABLE TEMPERATURE LIMIT STOP AND INTEGRAL CHECK VALVES, WATERPROOF CONNECTORS AND 10' LONG CABLE, UL APPROVED TRANSFORMER. ELECTRICAL REQUIREMENTS - 120 VAC INPUT MOUNT TRANSFORMER ABOVE CEILING OR IN ACCESSIBLE PIPE CHASE. MAXIMUM FLOW TO BE 0.5 GPM IN COMPLIANCE WITH ENERGY POLICY ACT OF 1992 AND ASME/ANSI STANDARD A112.18.1M. PROVIDE RESTRICTIVE DEVICE AS REQUIRED. MOUNT MIXING VALVE UNDER COUNTER/LAVATORY. MIXING VALVE SHALL NOT BE WYE PATTERN STYLE. INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES. ACCESSORIES - QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY LOOSE KEY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, DRAIN & OFFSET TAIL PIECE, 1-1/4" 20 GAUGE CAST BRASS P-TRAP. ARMAFLEX WITH TAPE IS NOT ACCEPTABLE IN LIEU OF INSULATION KIT. MOUNT LAVATORY WITH SUPPORT CARRIER BOLTED SECURELY TO FLOOR. TOP OF RIM SHALL BE AT 34" ABOVE FLOOR IN COMPLIANCE WITH LATEST ADA STANDARD. PROVIDE 29" MINIMUM CLEARANCE FROM FLOOR TO BOTTOM OF APRON IN COMPLIANCE WITH LATEST ANSI A117.1 AND ADA STANDARDS. PROVIDE MIXING VALVE (MV-1) AT EACH PUBLIC LAVATORY.	LAVATORY - AMERICAN STANDARD (0356 421), CRANE (1412), KOHLER (K-2008), SLOAN (SS-3103), TOTO (L1307), ZURN (Z5361) LAVATORY TRIM - SLOAN (ETP-610), CHICAGO FAUCET (116 SERIES), HYDROTEK (H-2603C), MOEN (8362), SPEAKMAN (S-8900), ZURN (Z6913) INSULATION KIT - TRUEBRO (LAV-GUARD), BROCAF PRODUCTS (TRAP WRAP), MCGUIRE (PROWRAP), PLUMBEREX (PRO-EXTREME)
L-2	LAVATORY - ACCESSIBLE, WALL MOUNTED, WHITE VITREOUS CHINA, 20"x18", 4" HIGH CONTOURED BACKSPLASH, FAUCET HOLES ON 8" CENTERS, DRILLED FOR CONCEALED ARM CARRIER. TWO HANDLE MIXING FAUCET - BRASS CONSTRUCTION, CHROME-PLATED FINISH, CONVENTIONAL SPOUT WITH AERATOR, VANDAL RESISTANT LEVER HANDLES AT 8" CENTERS, PERFORATED DRAIN GRATE WITH 1-1/4" GAUGE TAILPIECE. MAXIMUM FLOW TO BE 0.5 GPM IN COMPLIANCE WITH ENERGY POLICY ACT OF 1992 AND ASME/ANSI STANDARD A112.18.1M. PROVIDE RESTRICTIVE DEVICE AS REQUIRED. INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES. ACCESSORIES - QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY LOOSE KEY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, DRAIN & OFFSET TAIL PIECE, 1-1/4" 20 GAUGE CAST BRASS P-TRAP, SUPPORT CARRIER. ARMAFLEX WITH TAPE IS NOT ACCEPTABLE IN LIEU OF INSULATION KIT. MOUNT LAVATORY WITH SUPPORT CARRIER BOLTED SECURELY TO FLOOR. PROVIDE 29" MINIMUM CLEARANCE FROM FLOOR TO BOTTOM OF APRON IN COMPLIANCE WITH LATEST ANSI A117.1 AND ADA STANDARDS. TOP OF RIM SHALL BE AT 34" (MAXIMUM) ABOVE FLOOR IN COMPLIANCE WITH LATEST ADA STANDARDS. PROVIDE MIXING VALVE (MV-1) AT EACH PUBLIC LAVATORY.	LAVATORY - AMERICAN STANDARD (0356 015), CRANE (1412), KOHLER (K-2008), SLOAN (SS-3003), TOTO (L1307), ZURN (Z5368) LAVATORY TRIM - ZURN (Z811R1), AMERICAN STANDARD, CHG, CHICAGO FAUCET, DELTA, GERBER, KOHLER, MOEN, SPEAKMAN, T&S BRASS INSULATION KIT - TRUEBRO (LAV-GUARD), BROCAF PRODUCTS (TRAP WRAP), MCGUIRE (PROWRAP), PLUMBEREX (PRO-EXTREME)
MB-1	MOP BASIN - MOLDED STONE, WHITE WITH BLACK ACCENTS, 24"x24"x10", STAINLESS STEEL DRAIN WITH COMBINATION DOME STRAINER AND LINT BASKET, 3" OUTLET, VINYL BUMPER GUARD ON EXPOSED SIDES. TRIM - EXPOSED TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, SINGLE WING HANDLES, 3/4" HOSE THREAD SPOUT WITH INTEGRAL VACUUM BREAKER, WALL BRACE, PAL HOOK, CHECK STOPS. PROVIDE WITH SCREW-ON VACUUM BREAKER EQUIVALENT TO THE WATTS 8A. ACCESSORIES - MOP HANGER, HOSE AND HOSE BRACKET, HOSE AND HOSE BRACKET	MOP BASIN - FIAT (MSB), WILLIAMS (MTB), SWAN (MS), ZURN (Z-1996) TRIM - CHICAGO FAUCET (897), CHG (K71-8100), DELTA (2879), MOEN (8124), SPEAKMAN (SC-5812), T&S BRASS (B-0667), ZURN (Z841M1)
TD-1	TRENCH DRAIN - MODULAR, PRE-SLOPED, POLYESTER FIBERGLASS CHANNEL, 6" WIDE, HEAVY DUTY CAST IRON GRATE, INTERLOCKING ENDS, HEAVY DUTY STEEL FRAME AND ANCHORING DEVICE, CATCH BASIN WITH 4" BOTTOM OUTLET AND SEDIMENT BUCKET, LENGTH AS SHOWN ON DRAWINGS. GRATES SHALL BE PROVIDED IN 24" LENGTHS NOT WEIGHING MORE THAN 25 LBS.	ZURN (Z806812), SMITH (8812), ACO (FG200)
UR-1	URINAL - ACCESSIBLE, WALL MOUNTED, WHITE VITREOUS CHINA, FLUSH VALVE TYPE, WASHOUT ACTION, LOW CONSUMPTION, ELONGATED RIM, EXTENDED SIDE SHIELDS, 3/4" TOP SPUD, 2" OUTLET. FLUSH VALVE - EXPOSED, SENSOR OPERATED, HARD WIRED, 1.0 GALLON PER FLUSH, 11-1/2" ROUGH-IN, CHROME PLATED, 3/4" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, (MANUAL OVER-RIDE) RANGE ADJUSTMENT SCREW, (BEAM DEFLECTOR) CHROME-PLATED COVER PLATE WITH TAMPER-PROOF SCREWS, TRANSFORMER CAPABLE OF OPERATING UP TO 10 UNITS, CHLORAMINE RESISTANT MATERIALS, 3-YEAR WARRANTY. CONTRACTOR OPTION: COMBINATION URINAL/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, SLOAN, OR ZURN ACCESSORIES - SUPPORT CARRIER WITH TOP AND BOTTOM BEARING PLATES. ELECTRICAL REQUIREMENTS - 120VAC INPUT	URINAL - AMERICAN STANDARD (8590 001), GERBER (Z7-780), KOHLER (K-4960-ET), SLOAN (SU-1006), TOTO (UT447), ZURN (Z5750) FLUSH VALVE - ZURN (ZEM6003AV), SLOAN (ROYAL 166 ES-S), AMERICAN STANDARD (8062 101), DELANY (1351) HYDROTEK (H8-128), MOEN (8311AC12), TOTO SEAT - BEMIS (3155C), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME AS WATER CLOSET MANUFACTURER
WC-1	WATER CLOSET - ACCESSIBLE, FLOOR MOUNTED, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD, BOLT CAPS. FLUSH VALVE - FLUSH VALVE - EXPOSED, SENSOR OPERATED, HARDWIRED, 1.28 GALLONS PER FLUSH, CHROME PLATED 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE, CHEMICAL RESISTANT MATERIAL, VACUUM BREAKER, WALL AND SPUD FLANGES, OVER-RIDE BUTTON, RANGE ADJUSTMENT SCREW, CHROME PLATED COVER PLATE WITH TAMPER-PROOF SCREWS, TRANSFORMER CAPABLE OF OPERATING UP TO 10 UNITS, 3 YEAR WARRANTY. SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS. CONTRACTOR OPTION - COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, SLOAN, OR ZURN ELECTRICAL REQUIREMENTS - 120VAC INPUT TOP OF SEAT SHALL BE AT 17"-19" ABOVE FINISHED FLOOR. VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS	WATER CLOSET - AMERICAN STANDARD (3043 001), SLOAN (ST-2020), ZURN (Z5665), KOHLER (K-4405), TOTO (C1705ELN) FLUSH VALVE - ZURN (ZEM6000AV-HET), SLOAN (ROYAL 111-1 28 ESS), AMERICAN STANDARD (8067 121), HYDROTEK (H8-128), MOEN (8311AC12), TOTO SEAT - BEMIS (3155C), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME AS WATER CLOSET MANUFACTURER
WC-2	WATER CLOSET - FLOOR MOUNTED, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD, BOLT CAPS. FLUSH VALVE - FLUSH VALVE - EXPOSED, SENSOR OPERATED, HARDWIRED, 1.28 GALLONS PER FLUSH, CHROME PLATED 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE, CHEMICAL RESISTANT MATERIAL, VACUUM BREAKER, WALL AND SPUD FLANGES, OVER-RIDE BUTTON, RANGE ADJUSTMENT SCREW, CHROME PLATED COVER PLATE WITH TAMPER-PROOF SCREWS, TRANSFORMER CAPABLE OF OPERATING UP TO 10 UNITS, 3 YEAR WARRANTY. SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS. CONTRACTOR OPTION - COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, SLOAN, OR ZURN ELECTRICAL REQUIREMENTS - 120VAC INPUT TOP OF SEAT SHALL BE AT 16"-17" ABOVE FINISHED FLOOR. VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS	WATER CLOSET - AMERICAN STANDARD (2234 001), SLOAN (ST-2000), ZURN (Z5655), KOHLER (K-4406), TOTO (C1705ELN) FLUSH VALVE - ZURN (ZEM6003AV-HET), SLOAN (ROYAL 111-1 28 ESS), AMERICAN STANDARD (8067 121), HYDROTEK (H8-128), MOEN (8311AC12), TOTO SEAT - BEMIS (3155C), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME AS WATER CLOSET MANUFACTURER

PLUMBING FIXTURE SCHEDULE		
TAG NAME	DESCRIPTION	MANF. & MODEL
WC-3	WATER CLOSET - ACCESSIBLE, FLOOR MOUNTED, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, WATER SAVING, ELONGATED BOWL, 1-1/2" TOP SPUD, BOLT CAPS. FLUSH VALVE - FLUSH VALVE - EXPOSED, MANUAL OPERATION, 1.6 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME PLATED, 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, CHLORAMINE RESISTANT MATERIALS, ADA COMPLIANT, 3 YEAR WARRANTY. SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS. CONTRACTOR OPTION - COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, SLOAN, OR ZURN TOP OF SEAT SHALL BE AT 17"-19" ABOVE FINISHED FLOOR. FLUSH HANDLE SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET STANDARD. VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS	AMERICAN STANDARD (3043 001), CRANE (3HT01), GERBER (25-730), KOHLER (K-4368), SLOAN (ST-2023), ZURN (Z5660) FLUSH VALVE - ZURN (Z6000AV), SLOAN (ROYAL 111) AMERICAN STANDARD (8047 101), DELANY (462) SEAT - BEMIS (3155C), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME AS WATER CLOSET MANUFACTURER
WD-1	WATER DISPENSER - STAINLESS STEEL PIG VALVE WITH BITE GUARD, 1/2" MALE THREAD, COORDINATE FINAL HEIGHT WITH OWNER	WATER DISPENSERS - LIXIT (L 80), EODSTROM (1000), TROJAN SPECIALTY PRODUCTS (95)
WH-1	WATER HEATER - GAS FIRED, VERTICAL, MINIMUM 94% EFFICIENT, SEALED COMBUSTION, METAL CABINET, BAKED ENAMEL FINISH, GLASS-LINED ASME STAMPED WELDED STEEL TANK, 180 PSI WORKING PRESSURE, FIBERGLASS OR FOAM INSULATION, BRASS WATER CONNECTIONS AND DRAIN VALVE, ASME APPROVED T&P RELIEF VALVE, MULTIPLE ANODE RODS, VENT PIPING KIT, HIGH TEMPERATURE GAS SHUT OFF, AUTOMATIC WATER THERMOSTAT, BUILT-IN GAS REGULATING VALVE, ADJUSTABLE TEMPERATURE RANGE, 3-YEAR WARRANTY, UL LISTED, COMPLIANT TO MAECA, ASHRAE 90.1 AND ASHRAE 90A 100 GALLON CAPACITY, 150,000 BTUH INPUT NATURAL GAS, 190 GPH RECOVERY AT 90°F RISE. ELECTRICAL REQUIREMENTS - 120V CIRCUIT FOR BLOWER AND CONTROLS, HARD-WIRED SET WATER TEMPERATURE AT 120°F. SET SUPPLY GAS PRESSURE AT 10" W.C.	A.O. SMITH (BTH), BOEK (HEC), BRADFORD WHITE (EF SERIES), RHEEM (GHE), STATE (SURF)
WH-2	WATER HEATER - ELECTRIC, VERTICAL, METAL CABINET, BAKED ENAMEL FINISH, GLASS-LINED WELDED STEEL TANK, 150 PSI WORKING PRESSURE, FIBERGLASS OR FOAM INSULATION, BRASS WATER CONNECTIONS AND DRAIN VALVE, ASME APPROVED T&P RELIEF VALVE, ANODE ROD, LOW WATT DENSITY IMMERSSION ELEMENTS, AUTOMATIC THERMOSTAT WITH EXTERNAL ADJUSTMENT, HIGH TEMPERATURE CUTOFF SWITCH, ENCLOSED CONTROLS AND ELECTRICAL JUNCTION BOX, 1-YEAR WARRANTY, UL LISTED, COMPLIANT TO MAECA, ASHRAE 90.1 AND ASHRAE 90A 30 GALLON CAPACITY, 2-4500 WATT, NON-SIMULTANEOUS ELEMENT, 20 GPH RECOVERY AT 90°F RISE. ELECTRICAL REQUIREMENTS - 120V, HARD-WIRED CONNECTION SET WATER TEMPERATURE AT 115°F.	A.O. SMITH (ECJ-30), AMERICAN (E62-30), BRADFORD WHITE (M-2-30), RHEEM (82V930), RUUD (PEP), STATE (E66-30)
WHA-1	WATER HAMMER ARRESTER - BELLOWS TYPE, PRE-CHARGED, ALL STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI CERTIFIED, RATED FOR 1-11 FIXTURE UNITS.	ZURN (Z1700), SMITH (5005-5050), WADE (W5-100), JOSAM (75000 SERIES), WATTS (SS), MIFAB (WHB)
WHA-2	WATER HAMMER ARRESTER - BELLOWS TYPE, PRE-CHARGED, ALL STAINLESS STEEL CONSTRUCTION, ASSE 1010 APPROVED, PDI CERTIFIED, RATED FOR 12-32 FIXTURE UNITS.	ZURN (Z1700), SMITH (5005-5050), WADE (W5-100), JOSAM (75000 SERIES), WATTS (SS), MIFAB (WHB)
WS-1	WATER SOFTENER - AUTOMATIC REGENERATION TYPE, SIMPLEX SOFTENER TANKS, POWER SUPPLY WITH CORD AND PLUG. CONTINUOUS FLOW RATE OF 19 GPM AT 15 PSI PRESSURE DROP, MAXIMUM FLOW RATE OF 28 GPM AT 25 PSI PRESSURE DROP, MINIMUM CAPACITY OF 42,000 GRAINS PER TANK. ELECTRICAL REQUIREMENTS - 120V-1 PHASE RECEPTACLE REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.	HELLENBRAND H-125, CULLIGAN, OR APPROVED EQUAL

PLUMBING FIXTURE ROUGH-IN SCHEDULE					
NOTES: 1. SANITARY RISER UP IN WALL TO FIXTURE SHALL BE A MINIMUM OF 2".					
2. 1/2" CW AND HW APPLIES ONLY TO THE FINAL VERTICAL RISE-DROP TO EACH FIXTURE, BRANCH PIPING TO VERTICAL RISE-DROP SHALL BE A MINIMUM OF 3/4" UNLESS NOTED OTHERWISE. 3. SIZES SHOWN ARE MINIMUMS. SIZES SHOWN ON THE DRAWING THAT ARE LARGER THAN THE SIZES LISTED IN THE SCHEDULE SHALL DICTATE THE ROUGH-IN SIZE.					
FIXTURE DESCRIPTION	DOMESTIC CW (NOTE 3)	DOMESTIC HW (NOTE 3)	SANITARY (NOTE 3)	VENT (NOTE 3)	REMARKS
FLOOR DRAIN	-	-	2"	1 1/2"	-
FLOOR SINK	-	-	4"	2"	-
FLOOR SINK	-	-	3"	1 1/2"	-
FLOOR SINK	-	-	4"	2"	-
HOSE BIBB	3/4"	-	-	-	-
LAVATORY	1 1/2"	1 1/2"	1 1/4"	1 1/4"	NOTE 1 & 2
MOP BASIN	3/4"	3/4"	3"	1 1/2"	-
TRENCH DRAIN	-	-	4"	2"	-
URINAL	3/4"	-	2"	1 1/2"	-
WATER CLOSET	1"	-	4"	2"	-

WATER CALCULATION WORKSHEET FOR RESTAURANT	
60	MINIMUM PRESSURE AT CONNECTION TO CITY MAIN OR WELL TANK (PSIG)
1.2	PRESSURE DROP IN 100 FEET OF 4" PIPE FROM SERVICE CONNECTION TO METER AT 32 GPM CALCULATED BUILDING DEMAND PER STATE CODE
25	RESIDUAL PRESSURE NEEDED AT CRITICAL FIXTURE AT MAXIMUM ELEVATION
2	PRESSURE DROP OF ELEVATION DIFFERENCE FROM SERVICE CONNECTION TO LIMITING FIXTURE. ELEVATION DIFFERENCE IN FEET X 0.434 = PSI
15	PRESSURE DROP OF WATER SOFTENER (PSI). (TYPICALLY 15 PSIG)
5	PRESSURE DROP THROUGH WATER METER
11.8	PRESSURE DROP AVAILABLE FOR PIPING SYSTEM LOSSES (PSI)
X 100	MULTIPLY TO CONVERT FROM PSIFOOT TO PSIH/100 FEET.
150	DIVIDE BY EQUIVALENT LENGTH OF PIPING FROM METER TO CRITICAL FIXTURE (FEET) X 1.5 (FITTINGS LOSS)
7	MAXIMUM ALLOWABLE PIPING PRESSURE DROP (PSI/100 FEET).
NOTES:	
1. PIPE SIZING IS PER SP832 TABLE 382.40-7 FOR LARGER PIPING, BUT NOT OVER 6 PSIH/100 FEET OR 8 FPS FOR ANY SIZE.	
2. WATER CALCULATION WORKSHEET BASED OFF OF BUILDING WITH LOWEST MAXIMUM ALLOWABLE PIPING PRESSURE DROP. ALL OTHER BUILDINGS ARE SIZED FOR 4 PSIH/100 FEET PER WISCONSIN PLUMBING CODE.	

GREASE INTERCEPTOR (GI-1) CALCULATION	
97	CAPACITY IN GALLONS FOR 4 COMPARTMENT SINK
97	TOTAL CAPACITY OF FIXTURE DRAINING TO GREASE INTERCEPTOR (GALLONS)
73	GREASE INTERCEPTOR FLOW RATE (GPM) BASED ON 3/4 TOTAL HOLDING CAPACITY OF FIXTURE DRAINING TO GREASE INTERCEPTOR
194	GREASE HOLDING CAPACITY (LB.) BASED ON DOUBLE THE TOTAL HOLDING CAPACITY OF FIXTURES DRAINING TO GREASE INTERCEPTOR

ALL SYMBOLS AND ABBREVIATIONS LISTED MAY NOT BE APPLICABLE TO THIS PROJECT.

PLUMBING SYMBOLS LIST

SYMBOL: DESCRIPTION:

- CW - COLD WATER - POTABLE
- DL - DRAIN LINE
- DT - DRAIN TILE
- G - NATURAL GAS
- HW - HOT WATER - POTABLE
- HW-C - HOT WATER CIRCULATING - POTABLE
- HW-140 - HOT WATER - POTABLE NO. INDICATED TEMP.
- HW-C140 - HOT WATER CIRC. - POTABLE NO. INDICATES TEMP.
- PD - PUMPED DISCHARGE
- SAN - SANITARY DRAINAGE
- SCW - SOFT COLD WATER
- SHW - SOFT HOT WATER
- ST(1,000) - STORM DRAINAGE (ROOF SQUARE FOOTAGE)
- STS - STORM DRAINAGE (SECONDARY)
- V - VENT
- V(IST) - VENT (STORM)
- W - SERVICE WATER - POTABLE

PIPE CAP

PIPE DOWN

PIPE UP OR UP/DOWN

PIPE SERVING FIXTURE ON FLOOR ABOVE (EXAMPLE: FLOOR DRAIN)

UNDERFLOOR PIPING (LONG DASHES)

PITCH DOWN IN DIRECTION

DIRECTION OF FLOW IN PIPE

ROOF DRAIN PROPERTIES SYMBOL SIZE (ROOF SQ. FT.)

DI-ELECTRIC CONNECTION

UNION/FLANGE

SHUTOFF VALVE NORMALLY OPEN

SHUTOFF VALVE NORMALLY CLOSED

BALANCING VALVE (NO. INDICATES GPM)

MIXING VALVE

CHECK VALVE

SAFETY/RELIEF VALVE

PRESSURE REDUCING VALVE (LIQUID/GAS)

VACUUM BREAKER

SINK

REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB

METER

TEMPERATURE SENSOR WITH WELL

THERMOMETER WITH WELL (FILLED TYPE)

NO PIPING, PLUMBING, FIXTURES, ETC. ALLOWED IN THIS AREA UNLESS OTHERWISE INDICATED.

GENERAL PLUMBING NOTES:

- DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT ACTUAL INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF THE PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
- DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. READ ALL SPECIFICATIONS. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
- LAYOUT AND COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH ANY FABRICATION OR EQUIPMENT ORDERS.
- CONTRACTOR IS RESPONSIBLE FOR REVIEW OF SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKING REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
- ANY CHANGES THAT ARE REQUIRED TO ELIMINATE CONFLICTS AND RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO THE OWNER.
- CALLK ALL PIPE PENETRATIONS OF FULL HEIGHT NON FIRE RATED WALLS, PARTITIONS, FLOORS AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN THE ROOMS.
- CONTRACTOR IS RESPONSIBLE FOR ALL COST ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT DIFFERENT THAN THE BASIS OF DESIGN.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES.
- REFER TO CIVIL PLAN C1.4 FOR LOCATION OF YARD HYDRANTS. P.C. SHALL PROVIDE H-3 AT ALL LOCATIONS SHOWN ON SHEET C1.4. CIVIL CONTRACTOR WILL ROUTE PIPING TO LOCATION. P.C. IS RESPONSIBLE FOR FINAL WATER CONNECTION AND HOSE BIBB INSTALLATION. ALL YARD HYDRANTS MENTIONED IN THIS NOTE (4) ARE SHOWN ON PLUMBING PLANS. YARD HYDRANTS SHOWN ON PLUMBING PLANS ARE IN ADDITION TO THE (4) ON SHEET C1.4.

ALL SYMBOLS AND ABBREVIATIONS LISTED MAY NOT BE APPLICABLE TO THIS PROJECT.

PLUMBING SYMBOLS LIST

SYMBOL: DESCRIPTION:

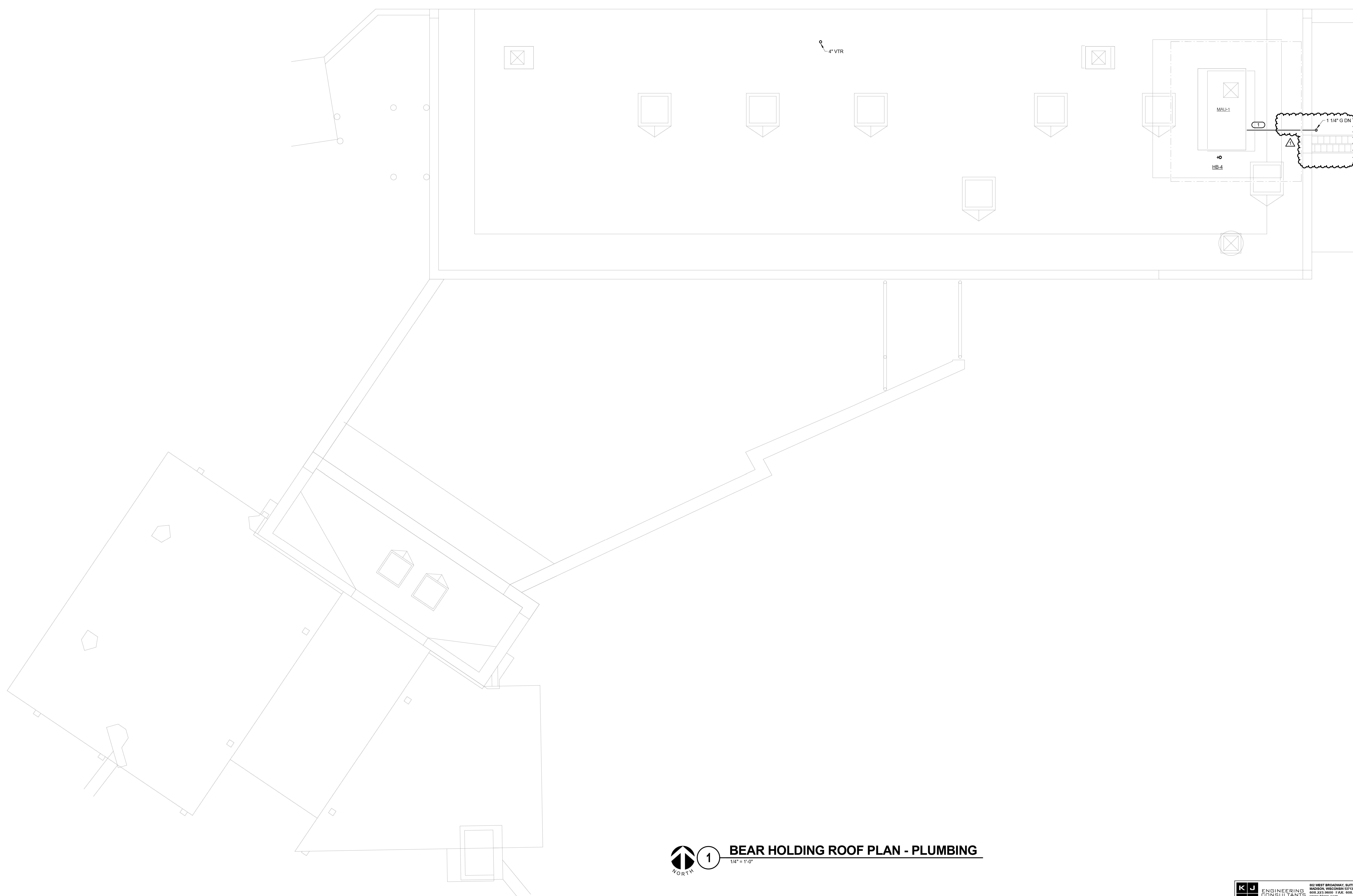
- AV - ACID VENT
- AW - ACID WASTE
- CA - COMPRESSED AIR
- GSAN - SANITARY DRAINAGE (GREASE LADEN)
- OR - OIL RETURN
- OS - OIL SUPPLY
- P - PROPANE GAS
- PW - PURE WATER
- CB - CATCH BASIN
- GI - GREASE INTERCEPTOR
- NT - NEUTRALIZATION TANK
- OS - OIL SEPARATOR

- AD - ACCESS DOOR
- AFP - ABOVE FINISHED FLOOR
- BFP - BACKFLOW PREVENTER
- BT - BATHUB
- CO - CLEANOUT
- DF - DRINKING FOUNTAIN
- EW - ELECTRIC WATER COOLER
- EE - EMERGENCY EYEWASH
- ES - EMERGENCY SHOWER
- ESE - EMERGENCY SHOWER/EYEWASH
- FCO - FLOOR CLEANOUT
- FD - FLOOR DRAIN
- FS - FLOOR SINK
- GD - GARBAGE DISPOSER
- HB - HOSE BIBB
- IE - INVERT ELEVATION (FOR REFERENCE ONLY)
- LAV - LAVATORY
- MB - MOP BASIN
- MV - MIXING VALVE
- NC - NEW CONNECTION
- N.C. - NORMALLY CLOSED
- N.I.C. - NOT IN CONTRACT
- N.O. - NORMALLY OPEN
- RD - ROOF DRAIN
- SH - SHOWER
- SK - SINK
- SS - SERVICE SINK
- TD - TRENCH DRAIN
- TP - TRAP PRIMER
- UR - URINAL
- VTR - VENT THROUGH ROOF
- WC - WATER CLOSET
- WCO - WALL CLEANOUT
- WF - WASH FOUNTAIN
- WH - WATER HEATER
- WMF - WASHING MACHINE FITTING
- YCO - YARD CLEANOUT

- A.C. - ASBESTOS ABATEMENT CONTRACTOR
- C.C. - CIVIL CONTRACTOR
- E.C. - ELECTRICAL CONTRACTOR
- F.S.E.C. - FOOD SERVICE EQUIPMENT CONTRACTOR
- G.C. - GENERAL CONTRACTOR
- M.C. - MECHANICAL CONTRACTOR
- P.C. - PLUMBING CONTRACTOR
- T.C. - TELECOMMUNICATIONS CONTRACTOR



KEYNOTES: C #
 1. COORDINATE FINAL CONNECTION SIZE AND LOCATION WITH M.C.



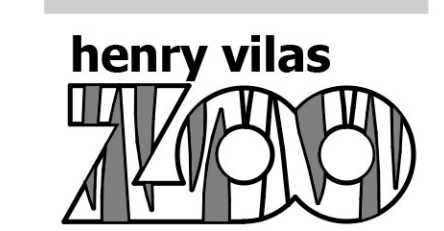
1

BEAR HOLDING ROOF PLAN - PLUMBING

1/4" = 1'-0"



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ARCTIC ANIMAL EXHIBIT AND CONCESSIONS
 RFB No. 313086
Henry Vilas Zoo - County of Dane
Henry Vilas Zoo - Department of Public Works
 702 S Randall Ave
 Madison, Wisconsin
 1919 Alliant Energy Center Way
 Madison, Wisconsin

PRINTS ISSUED
 07.26.2013 - Schematic Design
 08.23.2013 - Design Development
 09.23.2013 - 65% CD's
 10.07.2013 - Pricing Set
 10.21.2013 - 95% CD's
 11.13.2013 - Bid Documents
 11.25.2013 - Addendum #3
 11.27.2013 - Addendum #4
 12.04.2013 - Addendum #5

WDM No. drawn: MRE
13046 checked: RKJ
 BEAR HOLDING ROOF PLAN - PLUMBING

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REFERENCE SCALE IN INCHES
 0 1 2 3

P2.2

- | | | |
|--|--|---|
| ALTERNATES:
1. ALTERNATE BID 3 - LUMP SUM. EXHIBIT AREA PROVIDING VIDEO SURVEILLANCE SYSTEM. ADD PRICE FOR EQUIPMENT FOR SEAL BUILDING AND BEAR BUILDING AND YARDS.
2. ALTERNATE BID 4 - LUMP SUM. CONCESSION VIDEO SURVEILLANCE SYSTEM. ADD PRICE FOR VIDEO SURVEILLANCE SYSTEM FOR CONCESSION BUILDING. | GENERAL NOTES:
1. ALL INFORMATION OUTLET LOCATIONS AND VIDEO SURVEILLANCE CAMERAS ON THIS DRAWING FED FROM HC-2.
2. ALL CEILINGS IN THE BUILDING AREA SHOWN ON THIS DRAWING ARE BEING USED AS RETURN AIR PLENUMS. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
3. ALL INFORMATION OUTLET AND VIDEO SURVEILLANCE CABLING IN THIS AREA TO BE INSTALLED ENTIRELY IN CONDUIT FROM DEVICE TO HC-2 EQUIPMENT RACK ENCLOSURE. | KEYNOTES: (#)
1. ONE (1) 4" CONDUIT FROM HC-2 EQUIPMENT RACK ENCLOSURE TO SC-HH2 OUTSIDE. REFER TO V170 5 FOR CONTINUATION AND LOCATION OF SC-HH2.
2. INFORMATION OUTLET TO PROVIDE TELEPHONE AND ETHERNET CONNECTIVITY FOR MECHANICAL SYSTEMS CONTROL PANEL BY OTHERS. COORDINATE EXACT LOCATION AND TERMINATION WITH ON-SITE MECHANICAL CONTROLS CONTRACTOR PRIOR TO ROUGH-IN. |
|--|--|---|



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 - 11.27.2013 - Addendum #4
 - 12.04.2013 - Addendum #5

WDM No. drawn: CMF
13046 checked: MAW

BEAR HOLDING FLOOR PLAN - TECHNOLOGY

1 BEAR HOLDING FLOOR PLAN - TECHNOLOGY
 1/4" = 1'-0"

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T2.1

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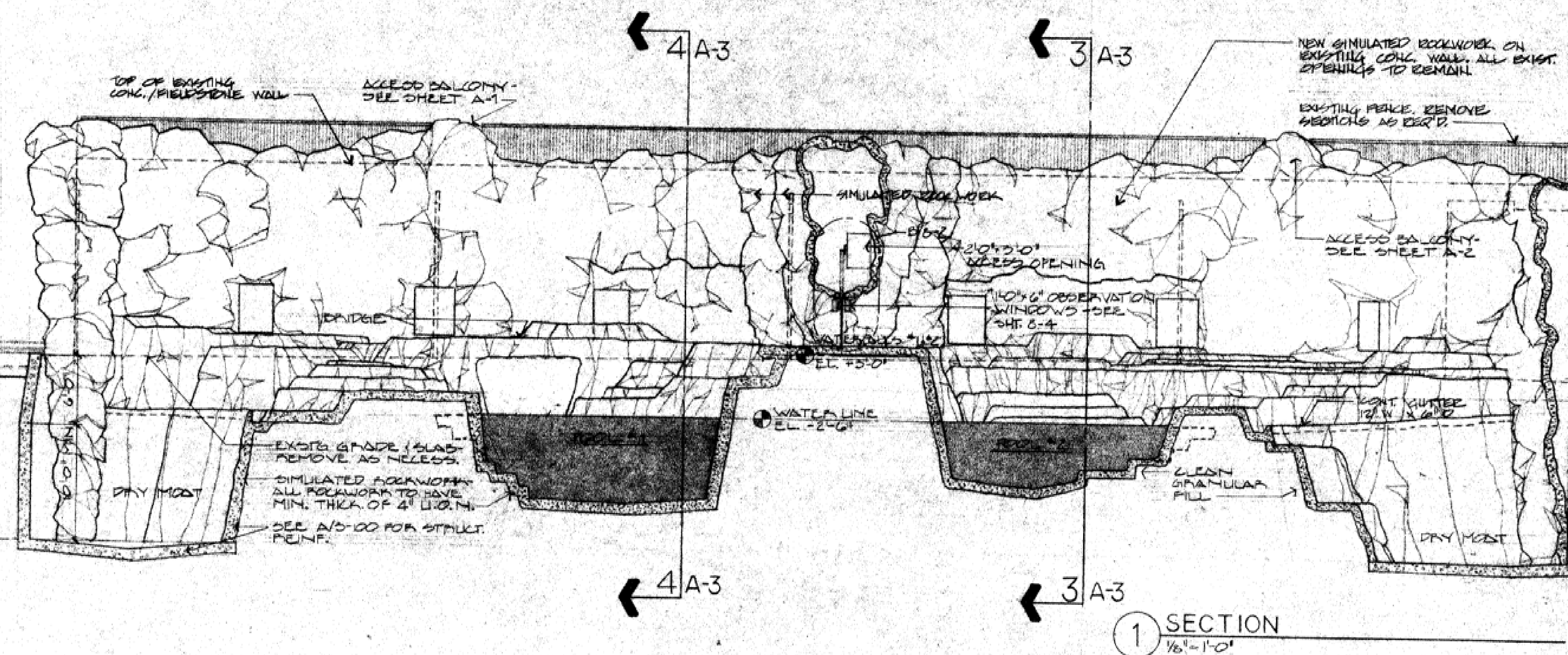
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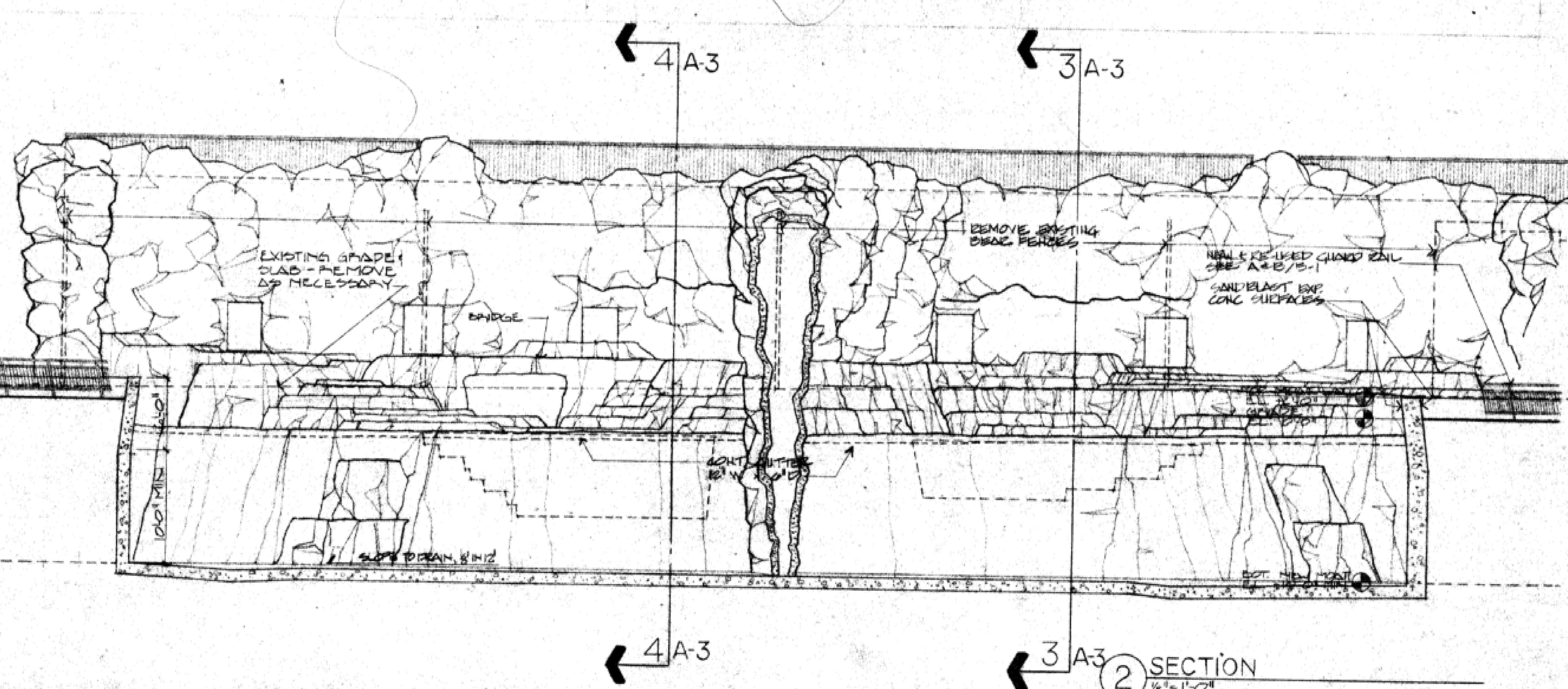
General Notes

- TOP EXIST. WALL
EL. +10.00 VARY
- TOP MOAT WALL
EL. -2.00
- SLOPE
3:1
- EXISTING
- 12" x 16" HOLE THRU
WALL FOR GUTTER
- EXT. EXIST. MOAT
EL. -10.00
- EXT. NEW MOAT
EL. -14.00

Revisions



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



2 SECTION
1/8" = 1'-0"

Project
**VILAS ZOO
BEAR EXHIBIT**

Sheet Title
SECTION/ELEVATIONS

Date
FEB 16 1981

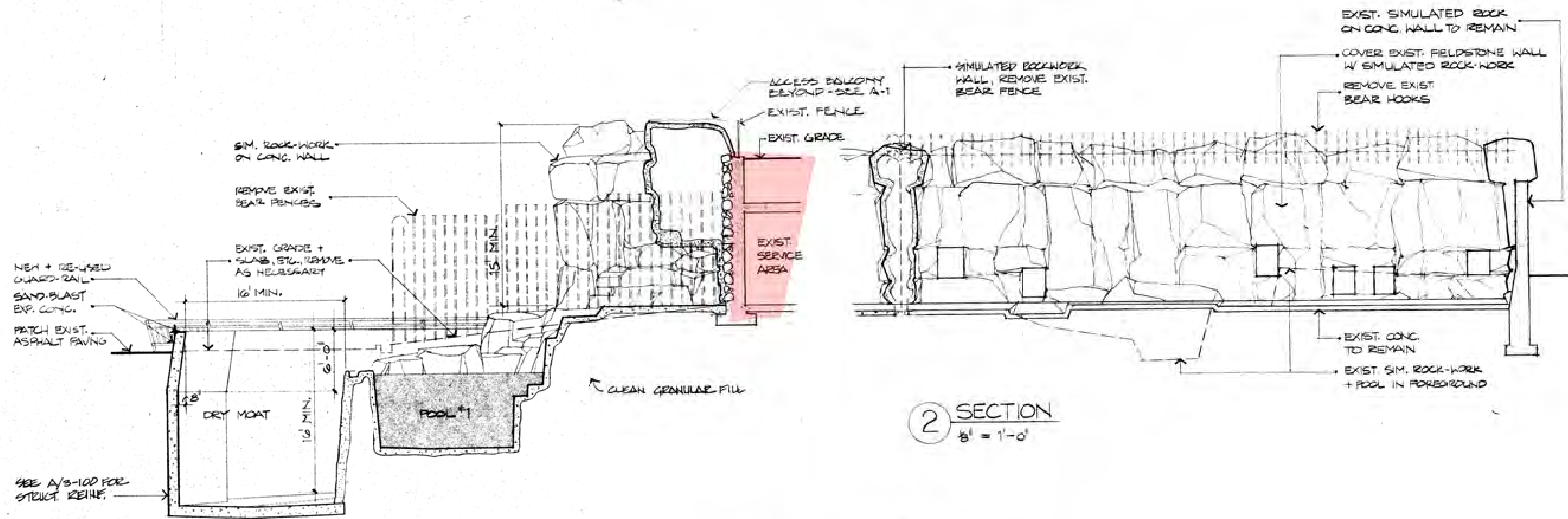
Project No
80004

Sheet No
A-2

Final	Overlay				
AZ	AS	AS	AS	AS	AS
Screen					

General Notes

Revisions

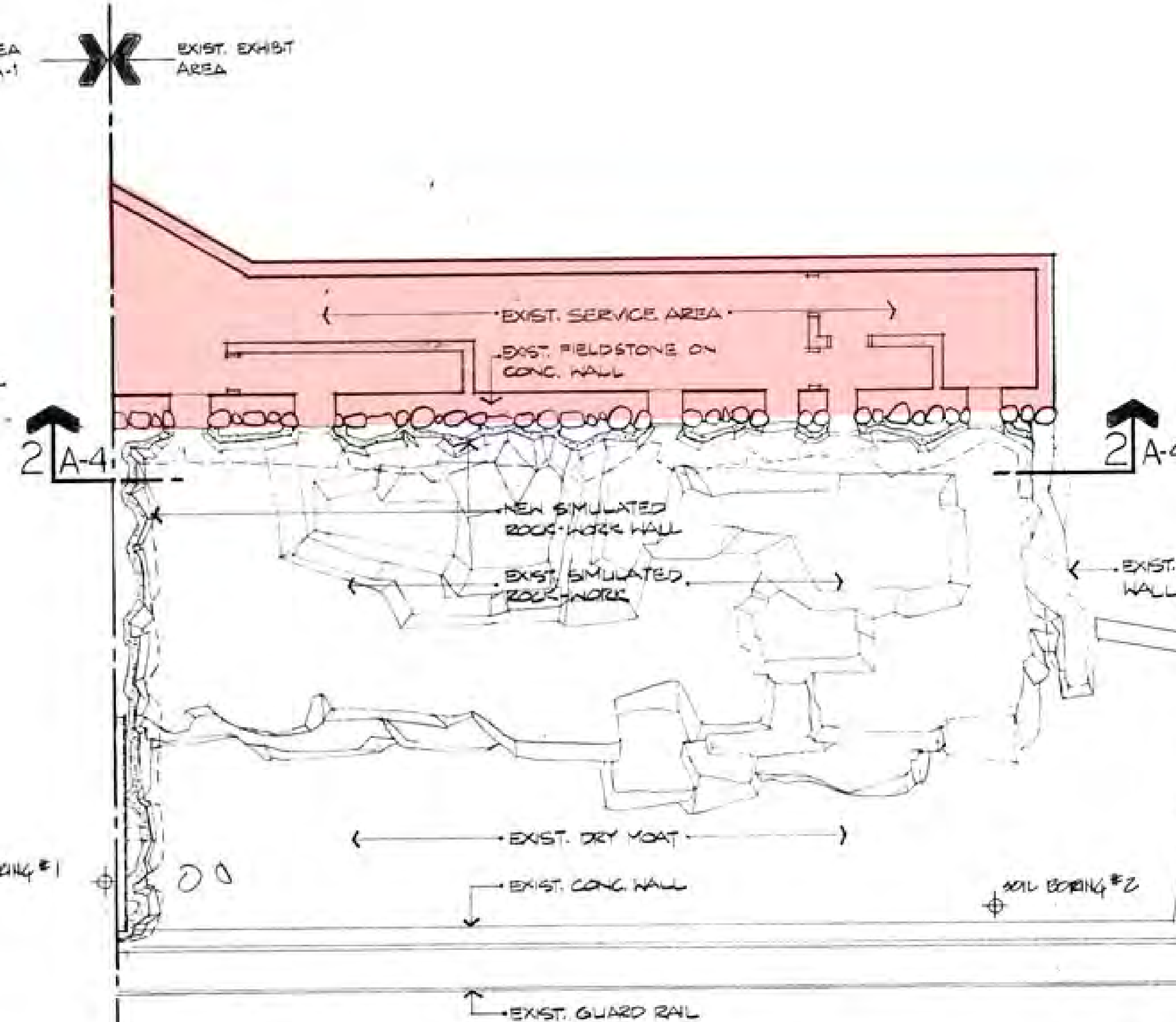


2 SECTION
1/8" = 1'-0"

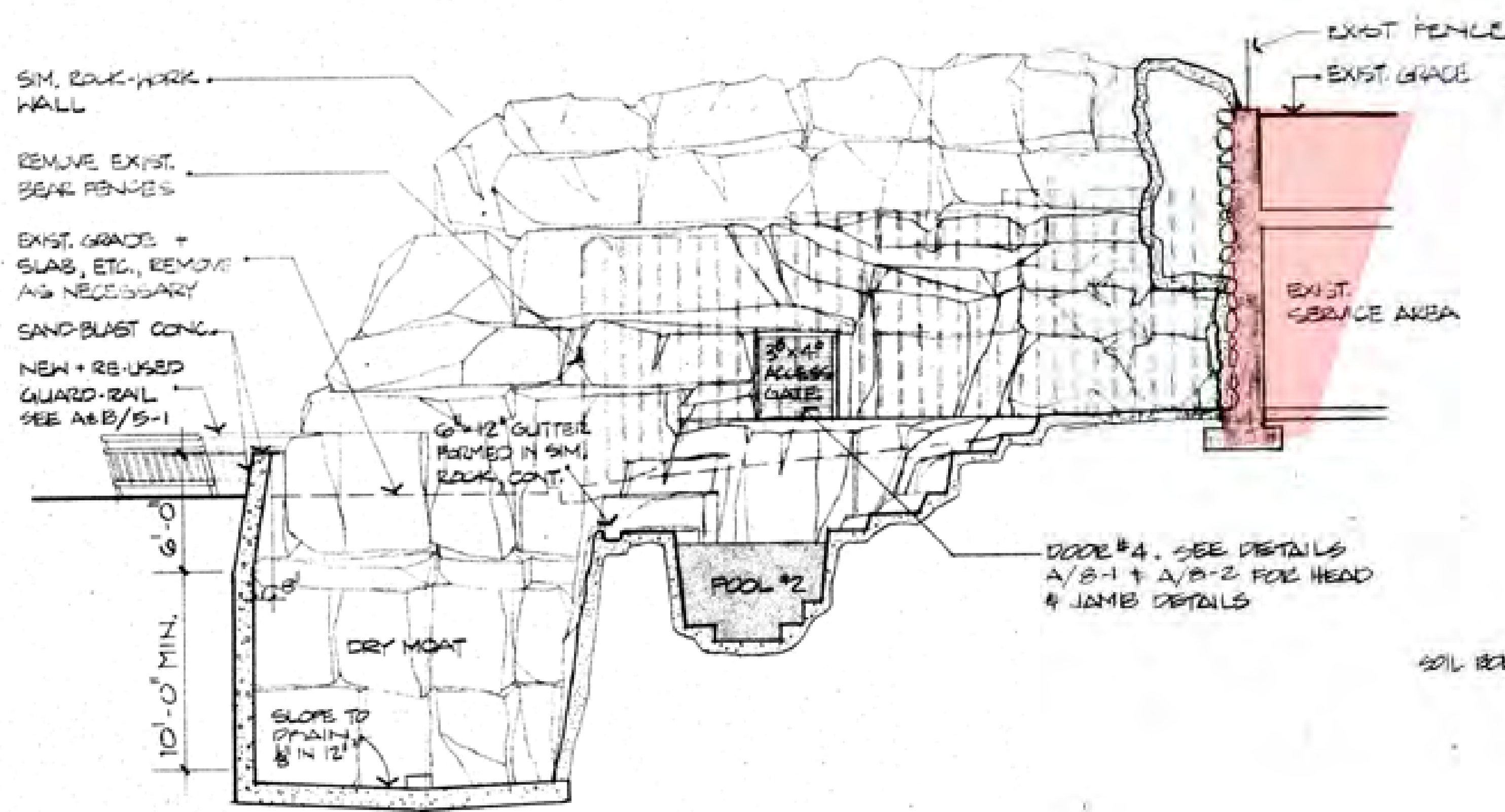
4 SECTION
1/8" = 1'-0"

NEW EXHIBIT AREA
SEE PLAN, SHT. A-1

EXIST. EXHIBIT AREA



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



3 SECTION
1/8" = 1'-0"

Project
**VILAS ZOO
BEAR EXHIBIT**

Sheet Title
**SECTIONS + DETAIL
PLAN AND ELEV.**

Date
FEB. 16, 1981

Project No.
80004

Sheet No.
A-3



Final	Overlay
A-3	Screen

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General Notes

Revisions

Project

VILAS ZOO
BEAR EXHIBIT

Sheet Title

PLUMBING PLAN

Date

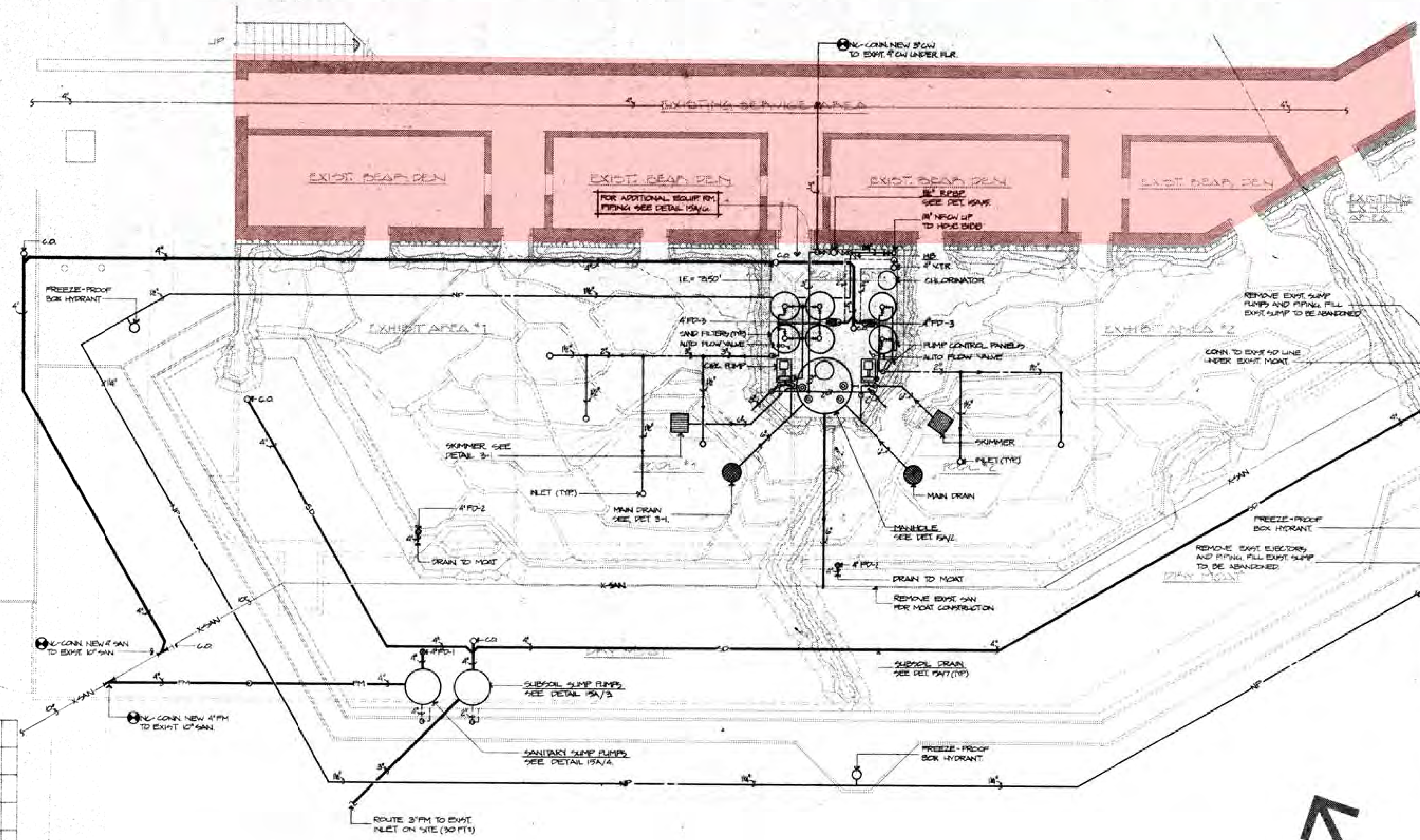
FEB 16 1981

Project No.

80004

Sheet No.

P-1



ALTERNATE 150\"/>

Final	Overlay				
P	P	a	1		
					Screen

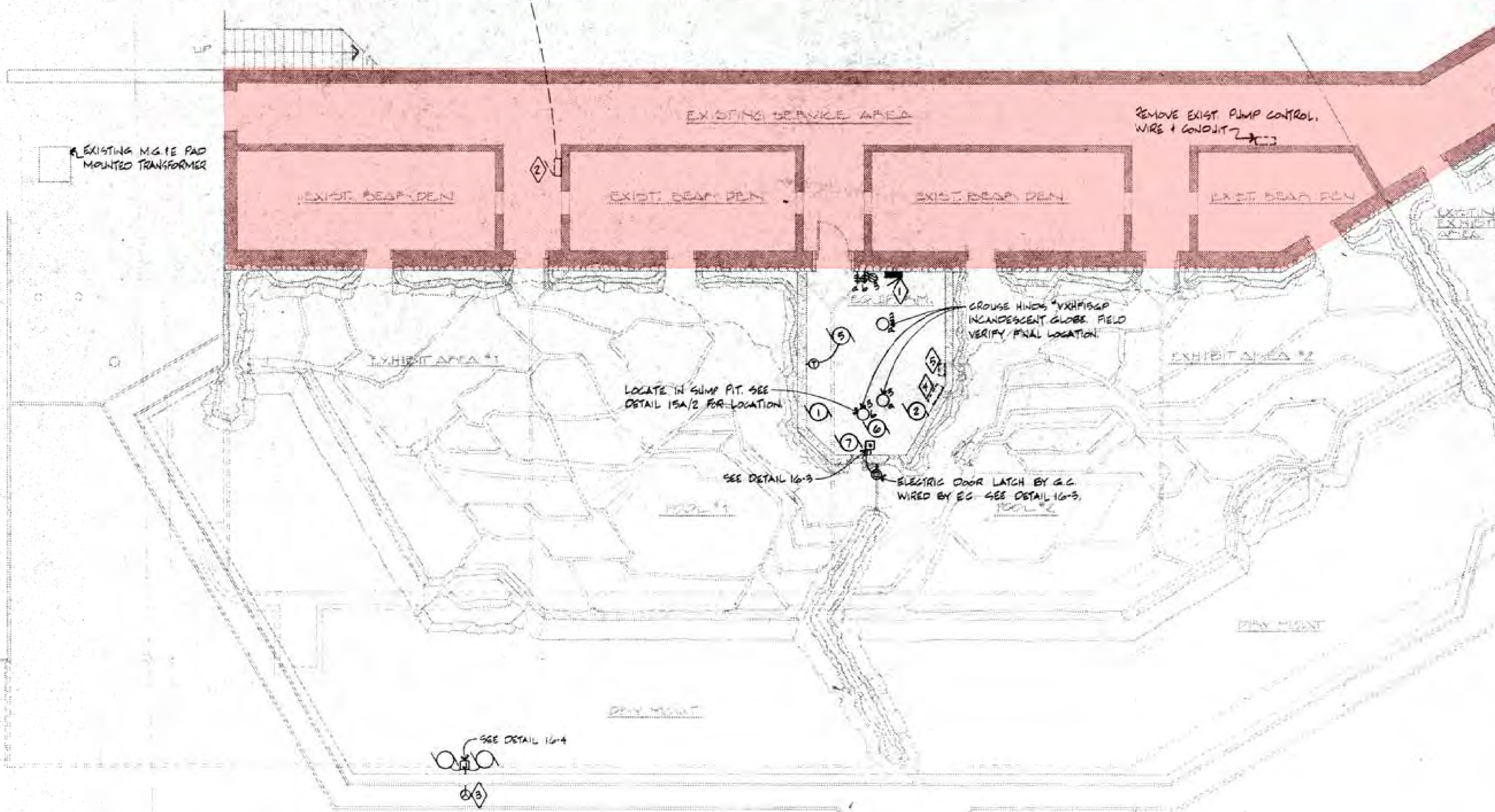


PLAN

P1

EXISTING 100A FUSED DISCONNECT SWITCH TO REMAIN. LOCATED IN BASEMENT OF EXISTING ADMINISTRATION BUILDING.

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- General Notes**
- 1 NEW PNL 'A', 120/240V, 1Ø, 42POLE, 325A M.L.O. W/ 1Ø-2Ø/1, 7-2Ø/2, 1-3Ø/2, 1-3Ø/2 + 1-ØØ/2 BREAKERS, NEMA 3R ENCLOSURE SURFACE MOUNTED
 - 2 REMOVE EXIST. 100A FALBO, EXTEND EXIST. 100A FEEDER (3"Ø) + BRANCH CIRCUITS TO NEW PNL 'A' IN NEW EQUIP ROOM, RE-CONNECT EXIST. CIRCUITS TO SAME BREAKER RATING AS EXISTING.
 - 3 HUBBELL *5492 RECEPTACLE MOUNTED IN SIERRA *WPB WEATHERPROOF PLATE. PNL 'A' COTS 12, 14Ø 2Ø/2, COT 16Ø 2Ø/1.
 - 4 PLUMBING CONTRACTOR FURNISHED CONTROL PANEL W/ STARTERS + LOCKABLE FUSED DISCONNECT SWITCHES FOR MOTORS *3 + *4.
 - 5 FAIL SAFE PANEL (PNL 'A' COT. 1Ø) BY EC WIRED BY E.C.

REMOVE EXISTING WIRE + CONDUIT FEEDING EXIST. SUMP PUMP + SEWAGE EJECTOR.

Project
**VILAS ZOO
 BEAR EXHIBIT**

Sheet Title
ELECTRICAL PLAN

Date
FEB 16 1981

Project No.
80004-00

Sheet No.
E-1

Final	Overlay	
E-1	01	0-1
Screen		

PLAN
 North

SECTION 086200 - UNIT SKYLIGHTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Domed plastic unit skylights.

1.2 REFERENCES

- A. Aluminum Association (AA):
 - 1. AA M12C22A41 – Anodized Plus Finish.
 - 2. AA M12C22A32/A34 – Color anodized: Class II, Color Anodic Finish.
- B. American Architectural Manufacturer's Association (AAMA):
 - 1. AAMA 501.2 – Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems.
 - 2. AAMA 605.2 – Voluntary Specification for High Performance Organic Coatings.
 - 3. AAMA 607.1 – Voluntary Guide Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum.
 - 4. AAMA 612 – Voluntary Specifications and Performance Requirements and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Coatings on Architectural Aluminum, for Finishes such as Anodized Plus.
- C. ASTM International (ASTM):
 - 1. ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - 2. ASTM C1048 – Standard Specification for Heat-Treated Flat Glass Kind HS, Kind FT Coated and Uncoated Glass.
 - 3. ASTM E331 – Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - 4. ASTM E773 – Standard Test Method for Accelerated Weathering of Sealed Insulating Glass Units.
 - 5. ASTM E774 – Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units.
- D. American Welding Society (AWS): AWS Structural Welding Code.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Indicate materials, finishes and installation procedures recommended by manufacturer.
 - 4. Indicate compliance with specified design criteria.
 - 5. Indicate compliance with performance requirements.

6. Include product specific glazing details.
- B. Shop Drawings:
 1. Indicate material types, gauges and finishes, fabrication details and installation details.
 2. Show glazing types, methods of attachments and thermal movement provisions.
 - C. Indicate compliance with specified structural design criteria:
 1. Submitted design calculations shall bear seal of a professional engineer licensed in the State in which the skylight is to be installed.
 2. Certify that engineer has reviewed shop drawings.
 - D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
 - E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- 1.4 QUALITY ASSURANCE
- A. Manufacturer Qualifications:
 1. Skylight manufacturer shall have a minimum of ten years experience in design, fabrication and installation of custom aluminum skylight systems.
 - B. Installer Qualifications:
 1. Installer shall be trained and approved by manufacturer.
 2. Installer shall have five years experience with skylight type, size and complexity.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Store products in manufacturer's unopened packaging until ready for installation.
 - B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- 1.6 PRODUCT CONDITIONS
- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- 1.7 WARRANTY
- A. Performance Warranty: Provide manufacturer's written warranty covering skylight work. Warranty shall cover defective materials, workmanship and performance. Warranty shall be limited to repair or replacement of work described in this section and shall not provide for repair or replacement of work by others.
 1. 5 years.

PART 2 - PRODUCTS

2.1 SKYLIGHT PERFORMANCE

- A. Load:
 - 1. Deflection of framing members shall not exceed $L/180$ or 1 inch (25 mm) whichever is less.
 - 2. Acrylic unit skylights shall meet the requirements of uniform load test ASTM E330 that requires glazing to withstand a positive and negative test pressure of 60 psf.
- B. Air Infiltration:
 - 1. Acrylic and/or polycarbonate unit skylights shall meet the requirements of ASTM E283 that allows a maximum air infiltration of 0.06 cfm (.0017 cu. m/m) of the total glazed surface area.
- C. Water Infiltration:
 - 1. Acrylic and/or polycarbonate unit skylights shall meet the requirements of ASTM E547/E331 that allows for no water infiltration at a test pressure of 12 psf (571 Pa).

2.2 PLASTIC SKYLIGHT

- A. Thermally Broken Curb Mount: Double domed acrylic or polycarbonate thermally broken curb mount skylight unit. Sizes as shown on drawings.
 - 1. Double domed acrylic / acrylic, gray or bronze tinted.

2.3 FABRICATION

- A. Glazing Gaskets and Sealants: Glazing to be separated from frame by a continuous extruded black Santoprene gasket.
- B. Fasteners: Screws and fasteners used in the factory assembly process shall be stainless steel. Fasteners and screws used for securing skylight to structure shall be suitable for substrate.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.

- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.4 CLEANING

- A. General Cleaning: Installer shall remove all protective coverings from frames and domes and shall leave installation free from debris and sealant markings.
- B. Final Cleaning: Final cleaning in accordance with manufacturer's recommendations. Cleaning instructions shall be located on manufacturer's label.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 086200

SECTION 097720 – DECORATIVE FIBERGLASS REINFORCED WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Prefinished polyester glass reinforced plastic sheets and adhered to unfinished gypsum wallboard.
 - 1. PVC trim.

1.2 REFERENCES

- A. American Society for Testing and Materials: Standard Specifications (ASTM)
 - 1. ASTM D 256 - Izod Impact Strengths (ft #/in)
 - 2. ASTM D 570 - Water Absorption (%)
 - 3. ASTM D 638 - Tensile Strengths (psi) & Tensile Modulus (psi)
 - 4. ASTM D 790 - Flexural Strengths (psi) & Flexural Modulus (psi)
 - 5. ASTM D 2583- Barcol Hardness
 - 6. ASTM D 5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels.
 - 7. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A. Product Data: Submit sufficient manufacturer's data to indicate compliance with these specifications, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Shop Drawings: Submit elevations of each wall showing location of paneling and trim members with respect to all discontinuities in the wall elevation.
- C. Selection Samples: Submit manufacturer's standard color pattern selection samples representing manufacturer's full range of available colors and patterns.
- D. Samples for Verification: Submit appropriate section of panel for each finish selected indicating the color, texture, and pattern required.
 - 1. Submit complete with specified applied finish.
 - 2. For selected patterns show complete pattern repeat.
 - 3. Exposed Molding and Trim: Provide samples of each type, finish, and color.
- E. Manufacturers Material Safety Data Sheets (MSDS) for adhesives and sealants prior to their delivery to the site.

1.4 QUALITY ASSURANCE

- A. Conform to building code requirements for interior finish for smoke and flame spread requirements as tested in accordance with:
 - 1. ASTM E 84 (Method of test for surface burning characteristics of building Materials)
 - a. Wall Required Rating – Class A.
- B. Sanitary Standards: System components and finishes to comply with:
 - 1. United States Department of Agriculture (USDA) requirements for food preparation facilities, incidental contact.
 - 2. Food and Drug Administration (FDA) 1999 Food Code 6-101.11.
 - 3. Canadian Food Inspection Agency (CFIA) requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials factory packaged on strong pallets.
- B. Store panels and trim lying flat, under cover and protected from the elements. Allow panels to acclimate to room temperature (70°) for 48 hours prior to installation.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Building are to be fully enclosed prior to installation with sufficient heat (70°) and ventilation consistent with good working conditions for finish work
- B. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer.
 - 1. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

1.7 WARRANTY

- A. Furnish one year guarantee against defects in material and workmanship.

PART 2 - PRODUCTS

2.1 PANELS

- A. Fiberglass reinforced thermosetting polyester resin panel sheets complying with ASTM D 5319.
 - 1. Coating: Multi-layer print, primer and finish coats or applied over-layer.
 - 2. Dimensions:
 - a. Thickness – 0.090 inch (2.29mm) nominal
 - b. Width - 4'-0" (1.22m) nominal
 - c. Length – Floor to ceiling – See plans.
 - 3. Tolerance:

- a. Length and Width: +/-1/8 inch (3.175mm)
 - b. Square - Not to exceed 1/8 inch for 8 foot (2.4m) panels or 5/32 inch (3.96mm) for 10 foot (2.4m) panels
- B. Properties: Resistant to rot, corrosion, staining, denting, peeling, and splintering.
1. Flexural Strength - 1.0×10^4 psi per ASTM D 790. (7.0 kilogram-force/square millimeter)
 2. Flexural Modulus - 3.1×10^5 psi per ASTM D 790. (217.9 kilogram-force/square millimeter)
 3. Tensile Strength - 7.0×10^3 psi per ASTM D 638. (4.9 kilogram-force/square millimeter)
 4. Tensile Modulus - 1.6×10^5 psi per ASTM D 638. (112.5 kilogram-force/square millimeter)
 5. Water Absorption - 0.72% per ASTM D 570.
 6. Barcol Hardness (scratch resistance) of 35 55 as per ASTM D 2583.
 7. Izod Impact Strength of 72 ft. lbs./in ASTM D 256
- C. Back Surface: Smooth. Imperfections which do not affect functional properties are not cause for rejection.
- D. Front Finish: Smooth.
- a. Color: White.

2.2 MOLDINGS

- A. PVC: Extruded PVC Trim Profiles for .090 inch thick panels.
1. Inside Corner
 2. Outside Corner
 3. Division
 4. Edge
 5. Color: White to match panels.

2.3 ACCESSORIES

- A. Fasteners: Non-staining nylon drive rivets.
1. Match panel colors.
 2. Length to suit project conditions.
- B. Adhesive: Either of the following construction adhesives complying with ASTM C 557.
1. FRP Adhesive - Water-resistant, non-flammable adhesive
 2. Construction adhesive flexible, water-resistant, solvent based adhesive formulated for fast, easy application.
- C. Sealant:
1. White Silicone Sealant

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.
 - 1. Verify that stud spacing does not exceed 24 inch (61cm) on-center.
- B. Repair defects prior to installation.
 - 1. Level wall surfaces to panel manufacturer's requirements. Remove protrusions and fill indentations.

3.2 INSTALLATION

- A. Comply with manufacturer's recommended procedures and installation sequence.
- B. Cut sheets to meet supports allowing 1/8" inch (3 mm) clearance for every 8 foot (2.43m) of panel.
 - 1. Cut and drill with carbide tipped saw blades or drill bits, or cut with shears.
 - 2. Pre-drill fastener holes 1/8 inch (3.175mm) oversize with high speed drill bit.
 - a. Space at 8 inches (20.32cm) maximum on center at perimeter, approximately 1 inch from panel edge.
 - b. Space at in field in rows 16 inches (40.64cm) on center, with fasteners spaced at 12 inches (30.48 cm) maximum on center.
- C. Apply panels to board substrate, above base, vertically oriented with seams plumb and pattern aligned with adjoining panels.
 - 1. Install panels with manufacturer's recommended gap for panel field and corner joints.
 - a. Adhesive trowel and application method to conform to adhesive manufacturer's recommendations.
 - b. Drive fasteners for snug fit. Do not over-tighten.
- D. Apply panel moldings to all panel edges using silicone sealant providing for required clearances.
 - 1. All moldings must provide for a minimum 1/8 inch (3.18mm) of panel expansion at joints and edges, to insure proper installation.
 - 2. Apply sealant to all moldings, channels and joints between the system and different materials to assure watertight installation.

3.3 CLEANING

- A. Remove excess sealant from panels and moldings. Wipe panel down using a damp cloth and mild soap solution or cleaner per manufacturer recommendations (no abrasive cleaners)

END OF SECTION 097720

SECTION 122124 - MANUAL ROLLER SHADE SYSTEM

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Provide manually operated, sunscreen and blackout roller shades as applicable.

1.2 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
 - 3. Storage and handling requirements and recommendations.
 - 4. Mounting details and installation methods.
- B. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, power and control wiring diagrams, and relationship to adjacent work.
 - 1. Prepare shop drawings on AutoCAD or Microstation format using base sheets provided electronically by the Architect.
 - 2. Prepare control, wiring diagrams based on, switching and operational requirements provided by the Architect in electronic format.
 - 3. Include one-line diagrams, wire counts, coverage patterns, and physical dimensions of each item.
- C. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.
- D. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shade cloth samples and aluminum finish sample as selected. Mark face of material to indicate interior faces.
- E. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.
- F. Warranty: Provide manufacturer's warranty documents as specified in this Section.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain roller shades system through one source from a single manufacturer with a minimum of ten years experience and minimum of five projects of similar scope and size in manufacturing products comparable to those specified in this section. This includes but is not limited to all required extrusions, accessories, controls and fabricated roller shades or else all stated and published warranties may be void.

CONSTRUCTION OF ARCTIC ANIMAL EXHIBIT AND CONCESSIONS

- B. Installer Qualifications: Engage an installer, which shall assume responsibility for installation of all system components, with the following qualifications.
 - 1. Installer for roller shade system shall be trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.
 - C. Fire-Test-Response Characteristics: Passes NFPA 701-99 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.
 - D. Shadecloth Anti-Microbial Characteristics: ‘No Growth’ per ASTM G 21 results for fungi ATCC9642, ATCC 9644, and ATCC9645.
- 1.4 DELIVERY, STORAGE, AND HANDLING
- A. Deliver components in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in the Window Treatment Schedule.
- 1.5 PROJECT CONDITIONS
- A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- 1.6 WARRANTY
- A. Warranty: Provide manufacturer’s standard warranties, including the following:
 - 1. Roller Shade Hardware, and Shadecloth: Manufacturer’s standard non-depreciating twenty-five year limited warranty.
 - 2. Roller Shade Installation: One year from date of Substantial Completion–
PRODUCTS
- 1.7 MANUFACTURER
- Basis of Design Manufacturer for Window Shade System: Products by MechoSystems or equal.
- 1.8 SHADE BANDS
- A. Shade Bands: Construction of shade band includes the fabric, the enclosed hem weight, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets are not acceptable.
 - 1. Concealed Hembar: Shall be continuous extruded aluminum for entire width of shade band and with the following characteristics:
 - a. Hembar shall be heat sealed on all sides.
 - b. Open ends shall not be accepted.
 - 2. Shade Band and Shade Roller Attachment:
 - a. Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection.
 - b. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a “snap-on” snap-off” spline mounting, without having to remove shade roller from shade brackets.

CONSTRUCTION OF ARCTIC ANIMAL EXHIBIT AND CONCESSIONS

- c. Mounting Spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.
- d. Any method of attaching shade band to roller tube that requires the use of: adhesive, adhesive tapes, staples, and/or rivets, does not meet the performance requirements of this specification and shall not be accepted.

1.9 ROLLER SHADE FABRICATION

- A. Fabricate shade cloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided shade cloth to roll true and straight without shifting sideways more than 1/8 inch (3.18 mm) in either direction per 8 feet (2438 mm) of shade height due to warp distortion or weave design.
- B. Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shade bands. Contractor shall be responsible for assuring the width-to-height (W:H) ratios shall not exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the shade cloth within specified standards. Battens shall be roll-formed stainless steel or tempered steel, as required.
- C. For railroaded shade bands, provide seams in railroaded multi-width shade bands as required to meet size requirements and in accordance with seam alignment as acceptable to Architect. Seams shall be properly located. Furnish battens in place of plain seams when the width, height, or weight of the shade exceeds manufacturer's standards. In absence of such standards, assure proper use of seams or battens as required to, and assure the proper tracking of the railroaded multi-width shade bands
- D. Provide battens for railroaded shades when width-to-height (W:H) ratios meet or exceed manufacturer's standards. In absence of manufacturer's standards, be responsible for proper use and placement of battens to assure proper tracking and roll of shade bands.

1.10 ROLLER SHADE COMPONENTS

- A. Access and Material Requirements:
 - 1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing hardware from opening and without requiring end or center supports to be removed.
 - 2. Provide shade hardware that allows for removal and re-mounting of the shade bands without having to remove the shade tube, drive or operating support brackets.
 - 3. Use only Delran engineered plastics by DuPont for all plastic components of shade hardware. Styrene based plastics, and /or polyester, or reinforced polyester shall not be accepted.
 - 4.
- B. Manual Operated Chain Drive Hardware and Brackets:
 - 1. Provide for universal, regular and offset drive capacity, allowing drive chain to fall at front, rear or non-offset for all shade drive end brackets. Universal offset shall be adjustable for future change.

CONSTRUCTION OF ARCTIC ANIMAL EXHIBIT AND CONCESSIONS

2. Provide hardware capable for installation of a removable fascia, for both regular and/or reverse roll, which shall be installed without exposed fastening devices of any kind.
3. Provide shade hardware system that allows for removable regular and/or reverse roll fascias to be mounted continuously across two or more shade bands without requiring exposed fasteners of any kind.
4. Provide shade hardware system that allows for operation of multiple shade bands (multi-banded shades) by a single chain operator, subject to manufacturer's design criteria. Connectors shall be offset to assure alignment from the first to the last shade band.
5. Provide shade hardware system that allows multi-banded manually operated shades to be capable of smooth operation when the axis is offset a maximum of 6 degrees on each side of the plane perpendicular to the radial line of the curve, for a 12 degrees total offset.
6. Provide positive mechanical engagement of drive mechanism to shade roller tube. Friction fit connectors for drive mechanism connection to shade roller tube are not acceptable.
7. Provide shade hardware constructed of minimum 1/8-inch (3.18 mm) thick plated steel or heavier as required to support 150 percent of the full weight of each shade.
8. Drive Bracket / Brake Assembly:
 - a. Drive Bracket shall be fully integrated with all accessories, including, but not limited to: SnapLoc fasciaM5 drive sprocket and brake assembly shall rotate and be supported on a welded 3/8 inch (9.525 mm) steel pin.
 - b. The brake shall be an over running clutch design which disengages to 90 percent during the raising and lowering of a shade. The brake shall withstand a pull force of 50 lbs. (22 kg) in the stopped position.
 - c. The braking mechanism shall be applied to an oil-impregnated hub on to which the brake system is mounted. The oil impregnated hub design includes an articulated brake assembly, which assures a smooth, non-jerky operation in raising and lowering the shades. The assembly shall be permanently lubricated. Products that require externally applied lubrication and or not permanently lubricated are not acceptable.
 - d. The entire assembly shall be fully mounted on the steel support bracket, and fully independent of the shade tube assembly, which may be removed and reinstalled without effecting the roller shade limit adjustments.
9. Drive Chain: #10 qualified stainless steel chain rated to 90 lb. (41 kg) minimum breaking strength. Nickel plate chain shall not be accepted.

1.11 ROLLER SHADE SCHEDULE

- A. Roller Shade Schedule: Refer to the Drawings for locations.
 1. Shade Type WT-1: Manual operating, chain drive, sunscreen roller shades in exterior windows of rooms and spaces shown on the Drawings.
- B. Fascia:
 1. Continuous removable extruded aluminum fascia that attaches to shade mounting brackets without the use of adhesives, magnetic strips, or exposed fasteners.
 2. Fascia shall be able to be installed across two or more shade bands in one piece.
 3. Fascia shall fully conceal brackets, shade roller and fabric on the tube.

CONSTRUCTION OF ARCTIC ANIMAL EXHIBIT AND CONCESSIONS

4. Provide bracket / fascia end caps where mounting conditions expose outside of roller shade brackets.

PART 2 – EXECUTION

2.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

2.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

2.3

- A. General:
 1. Provide power panels and circuits of sufficient size to accommodate roller shade manufacturer's requirements, as indicated on the mechanical and electrical drawings and manufacturer's shop drawings.
 2. Coordinate with requirements of subcontractor for this section before inaccessible areas are constructed.
 3. Comply with manufacturer's product data, including shop drawings, technical bulletins, product catalog installation instructions, and product carton instructions for installation.
 4. Protect installed product and finished surfaces from damage during all phases of installation including preparation, testing, and cleanup.

2.4 INSTALLATION OF ROLLER SHADES

- A. Contractor Furnish and Install Responsibilities:
 1. WC shall supervise the roller shade installation, and setting of intermediate stops of all shades to assure the alignment of the shade bands within a single EDU group, which shall not exceed +/- 0.125 inches (3.175mm), and to assure the alignment between EDU groups, which shall not exceed +/- 0.25 inches (6.35mm).
 2. Verification of Conditions: examine the areas to receive the work and the conditions under which the work would be performed and notify General Contractor and Owner of conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected. Commencement of installation shall constitute acceptance of substrate conditions by the installer.
 3. WC shall provide accurate to 0.0625 inch (1.5875mm); field measurements for custom shade fabrication on the Roller Shades manufacturers input forms.
 4. WC Installer shall install roller shades level, plumb, square, and true according to manufacturer's written instructions, and as specified here in. Blocking for roller shades installed under the contract of the interior General Contractor shall be installed plumb, level, and fitted to window mullion as per interior architect's design documents and in accordance with industry standard tolerances. The horizontal

CONSTRUCTION OF ARCTIC ANIMAL EXHIBIT AND CONCESSIONS

surface of the shade pocket shall not be out-of-level more than 0.625 inch (15.875mm) over 20 linear feet (6.096 meters)

5. Shades shall be located so the shade band is not closer than 2 inches (50 mm) to the interior face of the glass. Allow proper clearances for window operation hardware.
6. Adjust, align and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
7. WC shall certify the operation of all motorized shades and turn over each floor for preliminary acceptance.
8. The WC shall participate and cooperate with the electrical contractor, the window shade manufacturer and the Commissioning agent to verify and certify the installation is in full conformance with the specifications and is fully operational. This work to occur during the commissioning stage and is in addition to preliminary acceptance required for each floor.
9. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
10. WC shall train Owner's maintenance personnel to adjust, operate and maintain roller shade systems.
11. Protect installed products until completion of project.
12. Touch-up, repair or replace damaged products before Substantial Completion.

2.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 122124