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Metropolitan Water Reclamation District of Greater Chicago

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Darlene A. LoCascio
 Director of Procurement and Materials Management
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 darlene.locascio@mwrdd.org

April 3, 2026

Dear Bidder:

Enclosed herewith is "Notice of Revision and Addendum in Contract Documents," Addendum 10, consisting of five (5) pages and other attachments as referenced in the addendum. This addendum is dated April 3, 2026, and pertains to Contract 21-092-3P "Battery E Activated Sludge Facility, O'Brien Water Reclamation Plant."

Proposers must download Addendum 10 and the attachments in their entirety from the District's Portal at www.mwrdd.org. The path is as follows: **Doing Business**→**Procurement and Materials Management**→**Contract Announcements**. Scroll to Contract 21-092-3P and click "Addenda" to obtain this and all other addenda. If you are unable to download this addendum or any other contract documents, please email the Contract Desk at contractdesk@mwrdd.org or call (312) 751-6629 for assistance.

The Notice must also be signed, dated, inserted in the Contract Documents, and submitted with the Proposal, OR the Bidder may identify the addendum number in the space provided on the Proposal signature page.

Very truly yours,

Darlene A. LoCascio
 Director of Procurement and
 Materials Management

Attachment

Acknowledgment of receipt of the above-cited Notice:

DATE _____
 NAME _____
 FIRM _____
 SIGNED _____



NOTICE OF REVISION AND ADDENDUM IN CONTRACT DOCUMENTS

ADDENDUM 10

APRIL 3, 2026

**CONTRACT 21-092-3P
BATTERY E ACTIVATED SLUDGE FACILITY
O'BRIEN WATER RECLAMATION PLANT**

All bidders are hereby notified of the following revisions:

Volumes 2 and 3 of 4 – Specifications

1. SECTION 02300 – PAGE 3

Refer to Paragraph 1.03 A.3, as added in Addendum 8.

Add the following after the referenced paragraph:

- “4. Ground Control Point Survey:
- a. Proposed plan of ground control points in excavation areas. Submit prior to commencement of excavation. Refer to Paragraph 3.05 H for more details.
 - b. Weekly reports containing daily readings for ground control points in excavation areas. Submit every week while excavation work is ongoing. Reports shall be signed and sealed by a land surveyor licensed in the State of Illinois.”

2. SECTION 02300 – PAGE 11

Refer to Paragraph 3.05 F.

Add the following after the referenced paragraph:

- “G. In any given area, excavate to an interim elevation of 2'-0" (minimum) to 2'-6" (maximum) above the final subgrade elevation at least one week prior to excavation to final subgrade elevation. Immediately after reaching the interim elevation in a given

area the Contractor shall install ground control points along the bottom of excavation. The minimum frequency of ground control points shall be one point per 2,000 square feet of excavated area. The Contractor shall survey the ground control points every day after reaching the interim elevation. If a minimum of one week has passed after excavating to the interim elevation and there is no measured vertical differential (+/- 0.01 feet) between the most recent reading and the reading measured two days prior to the most recent reading at a ground control point, then the Contractor may proceed with final excavation in the area tributary to that ground control point. Surveys of ground control points shall be accurate to a hundredth of a foot (0.01 feet).”

3. SECTION 02300 – PAGE 12

Refer to Subsection 3.06., as revised in Addendum 8.

Add the following at the beginning of the referenced subsection and renumber subsequent paragraphs:

“A. Do not proceed with excavation to proposed final subgrade or bottom of mat elevation until the requirements of Paragraph 3.05 G. are met.”

Refer to Paragraph 3.06 A., as revised in Addendum 8.

Add the wording “and confirm required soil bearing capacity” at the end of the referenced paragraph.

Refer to Paragraph 3.06 C., as revised in Addendum 9.

Add the following sentence after the first sentence of the referenced paragraph:

“The minimum frequency of bearing capacity tests shall be one test per 2,000 square feet of subgrade area.”

Delete the last sentence of the referenced paragraph and replace it with the following:

“Undercut subgrade shall be replaced with compacted CA-1 Stone Fill or Class R concrete as directed by the Engineer.”

Refer to Paragraph 3.06 E., as revised in Addendum 8.

Delete the wording “minimum 4 feet” and replace with “minimum 2 feet” in the last sentence of the referenced paragraph.

Add the following sentence to the end of the referenced paragraph:

“Refer to Paragraph 3.05 G. for additional soil cover requirements.”

Refer to Paragraph 3.06 G., as revised in Addendum 8 and renumbered in this addendum.

Add the following after the referenced paragraph:

“I. Stabilization of subgrade for construction operations is the responsibility of the Contractor and shall be done at no additional cost to the District.”

4. SECTION 02300 – PAGE 15

Refer to Paragraph 3.12 A.1., as revised in Addendum 8.

Delete the wording “90 percent maximum dry density” and replace with “95 percent maximum dry density” in the referenced paragraph.

Refer to Paragraph 3.12 A.3., as revised in Addendum 8.

Delete the referenced paragraph and replace it with the following:

“3. Place all Engineered Fill under building slabs or mat foundations in maximum 8-inch lifts and compact each lift to 95% maximum dry density.”

Add the following after the referenced paragraph and renumber subsequent paragraphs.

“4. Place all Engineered Fill adjacent to (but not under) structures in maximum 8-inch lifts and compact each lift to 90% maximum dry density.”

5. SECTION 02300 – PAGE 19

Refer to Paragraph 3.21 K.

Delete the wording “Class F concrete” and replace with “Class F reinforced concrete” in the referenced paragraph.

6. SECTION 02465 – PAGE 4

Refer to Paragraph 1.05 E.

Delete the referenced paragraph and replace with the following:

“E. Submit record drawings showing the actual locations and lengths of all piles and their deviations from their design locations and lengths within one week of completion of pile installation.”

7. SECTION 02465 – PAGE 9

Refer to Paragraph 3.04 A.2.

Delete the wording “Section 3.10” and replace with “Section 3.07” in the referenced paragraph.

8. SECTION 02465 – PAGE 11

Refer to Paragraph 3.07 D.

Add the following after the referenced paragraph:

“E. If a pile is installed out of tolerance the Contractor shall take corrective action as directed by the Engineer, at no additional cost to the District.”

9. PLANS


The following revised plans are included in this Addendum. The revised plans replace previously issued plans having corresponding sheet numbers:

<u>PAGE</u> <u>NO.</u>	<u>SHEET</u> <u>NO.</u>	<u>REV#</u>	<u>TITLE OF SHEET</u>
74	S-001	2	STRUCTURAL NOTES AND ABBREVIATIONS
75	S-002	2	STRUCTURAL NOTES
77	S-004	2	STANDARD DETAILS - 2
219	S-706	2	AIR MAIN CONNECTIONS - SECTIONS AND DETAILS
258	P-019	3	PROCESS EQUIPMENT SCHEDULES
347	PB-001	3	PLUMBING NOTES, SYMBOLS, AND ABBREVIATIONS

This Notice must also be signed, dated, inserted in the Contract Documents, and submitted with the Proposal, OR the Bidder may identify the addendum number in the space provided on the Proposal signature page.



Catherine A. O'Connor
Director of Engineering



Darlene A. LoCascio
Director of Procurement and
Materials Management

The bidder acknowledges that he/she has read this Notice of Revision, dated April 3, 2026, to the Contract Documents and that he/she has taken the provisions thereof into consideration when preparing and submitting this Proposal.

GENERAL NOTES FOR STRUCTURES:

DESIGN CRITERIA

- 1. CODE: INTERNATIONAL BUILDING CODE, IBC - 2021...
2. DESIGN LOADS: A. LIVE LOADS: SUPERSTRUCTURE ROOF 20 PSF MINIMUM...
B. WATER SOIL 62.4 PCF...
C. ROOF SNOW LOAD: GROUND SNOW LOAD, Pg 25 PSF...
D. WIND LOAD: ULTIMATE DESIGN WIND SPEED, Vult (3 SECONDS GUST) 114 MPH...
E. SEISMIC DESIGN DATA: RISK CATEGORY III...
F. UNDERHUNG PIPING & EQUIPMENT 50 PSF...
G. CONSTRUCTION LIVE LOAD 20 PSF...
H. UNLESS NOTED OTHERWISE, SURCHARGE LOAD 300 PSF...
I. SURCHARGE LOAD FOR ROAD BETWEEN FINAL SETTLING TANK 600 PSF...
J. GROUNDWATER TABLE (PERMANENT STRUCTURES ONLY) EL.+18.00'...
K. LATERAL AT-REST EARTH PRESSURE (PERMANENT STRUCTURES ONLY): ELEVATION +23.00 CCD 300 PSF...
ELEVATION -2.00 CCD 1,925 PSF...
OTHER ELEVATIONS INTERPOLATE BETWEEN PRESSURES FOR +23.00 CCD AND -2.00 CCD

GENERAL

- 1. ALL DIMENSIONS AND ELEVATIONS SHOWN TO EXISTING CONSTRUCTION AND ALL EXISTING CONDITIONS SHALL BE ASSUMED TO BE (+) AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION OF MATERIAL...
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL TEMPORARY CONSTRUCTION REQUIRED FOR, BUT NOT LIMITED TO, SHEETING, SHORING, UNDERPINNING, NEEDLING AND BRACING...
3. REFER TO EQUIPMENT MFR'S APPROVED SHOP DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS AND MISCELLANEOUS EMBEDDED ITEMS...
4. BRACE ALL WALLS (CONCRETE AND MASONRY) UNTIL CONCRETE SLABS AND BEAMS AT TOP OF WALLS HAVE BEEN IN PLACE FOR MINIMUM 14 DAYS...
5. (*) - DIMENSIONS NOTED THUS INDICATE DIMENSIONS TO BE DETERMINED BY EQUIPMENT MANUFACTURER OR DIMENSIONS TO BE VERIFIED IN FIELD BASED ON EXISTING CONSTRUCTION...
6. CONTRACTOR SHALL NOT EXPOSE THE SIDEWALLS OR FOUNDATIONS OF EXISTING STRUCTURES WITHOUT PRIOR WRITTEN APPROVAL FROM THE DISTRICT...
7. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING STRUCTURES AND OTHER EXISTING ELEMENTS ARE BASED ON DISTRICT RECORD DRAWING AND CONTRACT DOCUMENTS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT...

CONCRETE

- 1. DESIGN AND CONSTRUCTION SHALL CONFORM TO THE LATEST BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE OF THE AMERICAN CONCRETE INSTITUTE (ACI 318) FOR BUILDINGS OR CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES (ACI 350) FOR ENVIRONMENTAL STRUCTURES.
2. ALL REINFORCING BARS SHALL CONFORM TO ASTM A-615, GRADE 60, ARRANGEMENT AND DETAILS OF REINFORCING STEEL, INCLUDING BAR SUPPORTS AND SPACERS, SHALL BE IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL (MNL- 66) UNLESS OTHERWISE NOTED.
3. ALL SLAB AND BEAM REINFORCEMENT SHALL HAVE A MINIMUM EXTENSION INTO THE SUPPORT IN ACCORDANCE WITH THE LATEST ACI CODE.
4. HORIZONTAL WALL REINFORCEMENT AND TEMPERATURE REINFORCEMENT SHALL LAP A MINIMUM OF 1.3 Ld AT SPLICES.
5. CEMENT MUST BE ASTM C150 TYPE I OR II PORTLAND CEMENT. ALL CAST IN PLACE CONCRETE SHALL BE DISTRICT STANDARD CLASS R WITH MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI...
7. HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS SHOWN OR NOTED ON THE PLANS ARE RECOMMENDED. ANY DEVIATION FROM THOSE SHOWN SHALL HAVE APPROVAL OF THE ENGINEER.

STRUCTURAL STEEL NOTES

- 1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM WITH AISC 360-16 AND AISC 303-16, CODE OF STANDARD PRACTICE, UNLESS NOTED OR SPECIFIED ELSEWHERE.
2. U.N.O., ALL STRUCTURAL STEEL WIDE FLANGE BEAMS SHALL BE ASTM A992, GRADE 50 AND ALL SQUARE AND RECTANGULAR AND HOLLOW STRUCTURAL SECTIONS SHALL BE ASTM A500 GRADE B.
3. U.N.O., ALL BOLTS SHALL BE 3/4" DIA ASTM F3125, GR F1852 (120 KSI), NUTS SHALL BE ASTM A563, AND WASHERS SHALL BE ASTM A436.
4. ALL CONNECTIONS, UNLESS INDICATED OTHERWISE, SHALL BE SIMPLE SHEAR CONNECTIONS UTILIZING 3/4" DIAMETER, A325-N HIGH STRENGTH BOLTS IN BEARING TYPE CONNECTIONS.
5. CONNECTIONS NOT DETAILED SHALL BE DESIGNED TO DEVELOP 50% OF UNIFORM LOAD BEAM CAPACITY FOR THE BEAM SIZE AND SPAN NOTED.
6. ALL WELDING ELECTRODES SHALL BE E70XX. ALL WELDING SHALL CONFORM TO THE AWS D1.1 STRUCTURAL WELDING CODE, LATEST EDITION.
7. THE CONTRACTOR SHALL SUBMIT DETAILED, COORDINATED, AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE ENGINEER FOR REVIEW.
8. ONLY APPROVED SHOP DRAWINGS SHALL BE USED FOR STEEL FABRICATION AND ERECTION.
9. ALL PARTIAL PENETRATION WELD SIZES INDICATED DESIGN EFFECTIVE THROAT SIZE UNLESS NOTED OTHERWISE.
10. MINIMUM FILLET WELD SIZE SHALL COMPLY WITH THE AISC REQUIREMENTS.
11. COLD GALVANIZING SHALL BE: 7000 SYSTEM COLD GALVANIZING COMPOUND BY RUSTOLEUM, ZRC COLD GALVANIZING REPAIR COMPOUND BY ZRC WORLDWIDE.
12. FIELD CUTTING OF STRUCTURAL STEEL MEMBERS IS NOT PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
13. PROVIDE CMU LINTELS WITH STEEL SHELF ANGLE FOR ALL OPENINGS WHETHER OR NOT INDICATED ON THE STRUCTURAL DRAWINGS.
14. ALL STRUCTURAL STEEL EXPOSED TO THE ELEMENTS SHALL BE HOT-DIP GALVANIZED.
15. ALL POST-INSTALLED ANCHORS SHALL BE STAINLESS STEEL (SS) WHILE ALL OTHER ANCHORS SHALL BE HOT-DIPPED GALVANIZED.
16. BEAMS AND GIRDERS SHALL BE FABRICATED WITH NATURAL CAMBER UP.
17. UNO, PROVIDE 1/4" MIN END PLATES SEAL WELDED TO ENDS OF HSS MEMBERS.
18. GROUT SHALL BE NON-SHRINK, NON-METALLIC STRUCTURAL GROUT.

FOUNDATIONS

- 1. ALL EXPOSED SUBGRADES SHALL HAVE AN ALLOWABLE SOIL BEARING CAPACITY OF 2,000 PSF.
2. U.N.O., ALL REINFORCED CONCRETE MAT SLAB USE 12" OF LEAN CONCRTE MUD MAT TO BE PLACED UNDERNEATH THE STRUCTURAL MAT FOUNDATION BEFORE CONSTRUCTION OF EACH FOUNDATION.
3. IMMEDIATELY FOLLOWING FIELD VERIFICATION OF THE SUBGRADE BY THE CONTRACTOR'S GEOTECHNICAL TESTING AGENCY AND APPROVAL BY THE ENGINEER, A MUD MAT SHALL BE PLACED OVER THE ENTIRE BOTTOM OF EXCAVATION SURFACE.
4. ALL EXCAVATION FOR STRUCTURES SHALL BE KEPT DEWATERED DURING CONSTRUCTION OPERATIONS UNTIL BACKFILL IS IN PLACE.
5. ALL CONCRETE SLABS SUPPORTED ON SOIL SHALL BE PROTECTED AGAINST FROST ACTION AND DANGER FROM HEAVING BY INSULATING THE SLAB WITH A LAYER OF INSULATING MATERIAL THICK ENOUGH TO PREVENT FROST PENETRATION.
6. FILL AND BACKFILL MATERIAL, PLACING AND COMPACTION OF FILL AND BACKFILL SHALL BE IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS.
7. U.N.O., EXTERIOR FOUNDATION TO BE FOUNDED AT MINIMUM 3'-6" BELOW FINISH GRADE FOR FROST PROTECTION.

ABBREVIATIONS

Table with 4 columns: Abbreviation, Description, and Notes. Includes entries like ADD'L (Additional), ALT (Alternate), ARCH (Architectural), BTM, BOT (Bottom), BRG (Bearing), C/C (Center to Center), etc.

Revision table with columns: Rev., Description, Appr., Date. Shows revision 1 and 2.

Professional seal and title block for Rubinos & Mesa Engineers, Inc. Includes project name: METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO, O'Brien Water Reclamation Plant, Battery E Activated Sludge Facility, and sheet number S-001.

Structural Notes and Abbreviations section, providing a key for symbols and terms used in the drawings.

MASONRY NOTES

- 1. ALL MASONRY CONSTRUCTION SHALL CONFORM TO "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES" TMS 402/602.
2. UNO, MASONRY MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING ASTM SPECIFICATIONS:
a. HOLLOW LOAD BEARING CONCRETE BLOCK: ASTM C90 MEDIUM WEIGHT, AND ASTM C-140, 1900 PSI UNITS MINIMUM (fm=2,500 PSI),
b. MORTAR: ASTM C270, TYPE S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 1800 PSI.
c. GROUT: ASTM C476, 3,000 PSI AT 28 DAYS MINIMUM.
d. MASONRY WIRE REINFORCEMENT: SEE SPEC. 04200.
3. CALCIUM CHLORIDE AND/OR ADMIXTURES CONTAINING SAME SHALL NOT BE INCLUDED IN MORTAR OR GROUT MIX.
4. NO EXTERIOR MASONRY SHALL BE LAID WHEN THE OUTSIDE AIR TEMPERATURE IS LESS THAN 40 DEGREES F. UNLESS THE RECOMMENDATIONS SPECIFIED BY THE INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL IN THEIR BOOK "RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR COLD WEATHER MASONRY CONSTRUCTION" ARE STRICTLY FOLLOWED.
5. MASONRY WALLS SHALL BE PROVIDED WITH ADEQUATE TEMPORARY BRACING DURING THEIR ERECTION. BRACING SHALL REMAIN IN PLACE UNTIL ALL PERMANENT CONNECTIONS TO THE STRUCTURE ARE COMPLETED.
6. MORTAR AND GROUT SHALL BE TESTED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH ASTM C1019 AND C780. TWO SETS OF THREE CUBES OR CYLINDERS SHALL BE TAKEN AT RANDOM FOR EACH DAY OF MASONRY WORK. TEST ONE OF EACH SET AT 7 DAYS AND 28 DAYS. THE THIRD TO BE TESTED AT 56 DAYS ONLY IF REQUIRED BY THE ENGINEER. COST OF MORTAR AND GROUT TESTS SHALL BE PAID BY CONTRACTOR. TESTS RESULTS SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW/APPROVAL.
7. WHEN GROUT IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE POUR OF GROUT 2" BELOW THE TOP OF UPPERMOST UNIT.
8. GROUT SHALL BE PROPORTIONED IN ACCORDANCE WITH ASTM C476. COARSE GROUT. WHERE THE LEAST CLEAR CELL DIMENSION IS 3", NOT MORE THAN 5% OF THE PEA GRAVEL SHALL PASS THE #8 SIEVE AND 100% SHALL PASS THE 3/8" SIEVE. ADMIXTURES, WHEN APPROVED BY THE ENGINEER, SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. REINFORCING BARS SHALL CONFORM TO ASTM A-615, GRADE 60.
10. BEFORE MASONRY IS PLACED ON CONCRETE, THOROUGHLY CLEAN THE CONCRETE OF ALL LAITANCE AND LOOSE MATERIAL. ROUGHEN AS IN CONCRETE CONSTRUCTION JOINTS.
11. MASONRY SHALL BE BUILT TO PRESERVE THE UNOBSTRUCTED CONTINUITY OF THE VERTICAL CELLS TO BE FILLED.
12. ALL MASONRY UNITS SHALL BE FULLY BEDDED IN MORTAR (FULL BED AND HEAD JOINTS).
13. CLEAN-OUT OPENINGS SHALL BE PROVIDED AT THE BOTTOM OF ALL REINFORCED CELLS AT EACH GROUT POUR WHERE SUCH GROUT POUR IS IN EXCESS OF 4'-0" IN HEIGHT BUT SHALL NOT EXCEED 32" ON CENTER. ANY OVERHANGING MORTAR OR OTHER OBSTRUCTION OR DEBRIS SHALL BE REMOVED FROM INSIDE SUCH CELLS. THE CLEAN-OUTS SHALL BE SEALED AFTER INSPECTION AND BEFORE GROUTING.
14. USE STRIPS OF METAL LATH TO CLOSE OFF CELLS THAT ARE NOT TO BE FILLED. DO NOT USE ANY PAPER PRODUCTS TO CLOSE CELLS.
15. NO PIPE OR ELECTRICAL CONDUITS SHALL BE PLACED IN CELLS OR COURSES CONTAINING REINFORCEMENT.
16. ANY PIPE MAY PASS HORIZONTALLY THROUGH MASONRY WALLS BY MEANS OF A SLEEVE AT LEAST LARGE ENOUGH TO PASS ANY HUB OR COUPLING ON THE PIPELINE. SUCH SLEEVES SHALL BE PLACED NOT CLOSER THAN 3 DIAMETERS CENTER-TO-CENTER, NOR SHALL THEY IMPAIR THE STRENGTH OF CONSTRUCTION.
17. UNO, ALL CELLS CONTAINING REINFORCING BARS SHALL BE FILLED SOLIDLY WITH GROUT. PROVIDE TWO CELL UNITS TO ALLOW REINFORCED CELLS TO LINE UP. ALLOW 24 HOURS TO ELAPSE AFTER MASONRY UNITS HAVE BEEN PLACED BEFORE GROUTING.
18. ALL HORIZONTAL AND VERTICAL SPLICES SHALL BE LAPPED 64 BAR DIAMETERS, AND ALL DEVELOPMENT LENGTHS SHALL BE 48 BAR DIAMETERS UNO.
19. ALIGN ALL VERTICAL BARS AND DOWELS AT THE CENTERLINE OF WALL WHEN SINGLE LAYER OF REINFORCEMENT IS USED, AND 1/2" FROM THE INSIDE FACE OF THE FACE SHELL WHEN TWO LAYERS ARE USED. USE REINF. BAR SPACERS AND SPREADERS TO MAINTAIN REQUIRED ALIGNMENT. VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT THE TOP, BOTTOM, AND AT INTERVALS NOT EXCEEDING 96 BAR DIAMETERS.
20. PROVIDE HORIZONTAL JOINT REINFORCING @16" ON CENTER (EVERY OTHER COURSE). SEE ARCHITECTURAL DRAWINGS AND SPEC 04200 FOR DETAILS.
21. UNO, BOND BEAM BLOCKS SHALL BE USED FOR COURSES CONTAINING HORIZONTAL REINFORCEMENT EXCEPT AT ENDS OF WALL AND AT CORNERS WHERE STANDARD BLOCKS SHALL BE USED WITH CUTS MADE IN THE BLOCK WEB AS NEEDED TO PASS REINFORCEMENT.
22. HORIZONTAL REINFORCING BARS SHALL BE CONTINUOUS THROUGH THE CONTROL JOINTS. LADDER TYPE JOINT REINFORCEMENT SHALL NOT RUN THROUGH CONTROL JOINTS.

METAL DECK NOTES

- 1. METAL DECK SHALL BE DESIGNED, DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH STEEL DECK INSTITUTE SPECIFICATIONS.
2. METAL DECK SECTION PROPERTIES SHALL BE COMPUTED IN ACCORDANCE WITH AISI "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS". METAL DECK SHALL BE FABRICATED FROM STEEL TYPE ASTM A611, GRADES C & D, OR FROM ASTM 653-94, STRUCTURAL QUALITY HAVING A MINIMUM YIELD STRENGTH OF 33 KSI.
3. ROOF DECK SHALL BE 1 1/2" DEEP, TYPE B, MINIMUM 18 GAGE, U.N.O.
4. METAL DECKING SHALL BE WELDED TO SUPPORTING STEEL WITH 3/4" PUDDLE WELD AT 12" ON CENTER AT INTERNAL SUPPORTS AND 6" ON THE PERIMETER. SIDE LAP CONNECTION SHALL BE PROVIDED AT 18" ON CENTER MAXIMUM AND 3 PER SPAN MINIMUM.
5. ALL DECKING SHALL BE GALVANIZED (G90), PER ASTM A924. UNLESS NOTED OTHERWISE.
6. PROVIDE ENGINEERED AND CHECKED SHOP DRAWINGS INDICATING LOCATION, GAGE AND SIZE OF EACH PIECE OF DECKING AND RELATED DECKING ACCESSORY. THE SHOP DRAWINGS SHALL CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING, SIDE LAP CONNECTION DETAILS, DECK OPENINGS, EDGE CLOSURES AND ANY REQUIRED SUPPLEMENTARY DECK REINFORCING.
7. THE METAL DECK SHALL BE INSTALLED TO BE CONTINUOUS OVER THREE (3) SPANS IN THE DIRECTION INDICATED.
8. PROVIDE AS REQUIRED, RIDGE AND VALLEY PLATES, CANT STRIPS, SUMP PLATES AT PIPING PENETRATIONS AND RECESSED SUMP PANS AT ROOF DRAINS.
9. ANY METAL DECK OPENING THAT IS 12" DIA OR LARGER OR ANY GROUP OF OPENINGS THAT PENETRATE MORE THAN ONE METAL DECK RIB SHALL BE FRAMED WITH SUPPLEMENTAL STEEL APPROVED BY THE DISTRICT. OPENINGS SHALL BE COORDINATED WITH ARCHITECTURAL & MECH DRAWINGS.
10. ALL HANGERS FOR DUCTWORK, CONDUITS, PIPES LARGER THAN 2" DIA, ETC. SHALL BE HUNG DIRECTLY FROM STRUCTURAL STEEL FRAMING OR SUPPLEMENTAL STEEL MEMBERS WHICH SHALL BE DESIGNED & DETAILED BY THE CONTRACTOR'S ILLINOIS LICENSED STRUCTURAL ENGINEER. THE SIGNED AND SEALED CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
11. CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO ENSURE TEMPORARY CONSTRUCTION LOADINGS DO NOT EXCEED ALLOWABLE CONSTRUCTION LIVE LOAD LISTED UNDER DESIGN LOADS.
12. DECK BEARING: 2" MINIMUM BEARING AT EXTERIOR SUPPORT AND 4" MINIMUM AT INTERIOR SUPPORT.

ADHESIVE ANCHORS

- 1. ALL ADHESIVE ANCHORS AND ADHESIVE DOWELS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S GUIDELINES. SEE SPECIFICATION 05500, "METAL FABRICATIONS".
2. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL ANCHORING PRODUCTS USED. THE CONTRACTOR SHALL SUBMIT WRITTEN CONFIRMATION THAT ALL WORKERS INSTALLING ANCHORS ARE TRAINED PRIOR TO INSTALLATION OF ANCHORS.
3. U.N.O., WHEN INSTALLING ADHESIVE ANCHORS OR DOWELS, THE CONTRACTOR SHALL USE TECHNOLOGY (SIMILAR TO HILTI SAFESIT TECHNOLOGY) WHICH INCLUDES THE DUST REMOVAL SYSTEM/VACUUMS WITH ATTACHMENT TO DRILLING EQUIPMENT TO CLEAN HOLES. UNLESS APPROVED OTHERWISE IN WRITING, THE ENTIRE SYSTEM INCLUDING, BUT NOT LIMITED TO ANCHORS, ADHESIVE, MIXING NOZZLE, EXTENSION TUBES, DISPENSING GUNS, VACUUMS, DRILLING EQUIPMENT AND ALL OTHER MANUFACTURER'S RECOMMENDED SUPPLIES FOR INSTALLING ADHESIVE ANCHORS, SHALL BE FROM THE SAME MANUFACTURER. IF THE CONTRACTOR ELECTS TO USE AN ALTERNATE ANCHORAGE SYSTEM, HE SHALL SUBMIT SIGNED AND SEALED CALCULATIONS BY A LICENSED STRUCTURAL ENGINEER IN THE STATE OF ILLINOIS DEMONSTRATING THAT THE ALTERNATE ANCHORAGE SYSTEM PROVIDES THE SAME OR GREATER ALLOWABLE SHEAR AND TENSILE CAPACITIES CONSIDERING ALL EDGE DISTANCE, SPACING, AND OTHER APPLICABLE REDUCTION FACTORS AND SATISFIES ALL OTHER MANUFACTURER'S REQUIREMENTS.
4. MECHANICAL POST INSTALLED ANCHORS IN CONCRETE EXPOSED TO ELEMENTS NOT PERMITTED.
5. REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH POST-INSTALLED ANCHOR LOCATIONS. THE CONTRACTOR SHALL SCAN CONCRETE WITH PACHOMETER, GPR, X-RAY OR OTHER SUITABLE MEANS TO PREVENT CUTTING OF REBAR.
A. ADJUST ANCHOR OR DOWEL LOCATIONS TO AVOID CUTTING REINFORCING STEEL, IF INTERFERENCES ARE IDENTIFIED, OBTAIN ENGINEER'S WRITTEN APPROVAL TO ADJUST ANCHOR/DOWEL LOCATIONS OR CUT REINFORCING STEEL.

Table with 5 columns: BAR SIZE, MINIMUM LAP SPLICE LENGTH (Lsp), MINIMUM DEVELOPMENT LENGTH (Ld), TOP BAR, OTHER BAR. It is divided into sections for REINFORCING STEEL LAP SPLICES, COLUMNS AND BEAMS, and WALLS AND SLABS.

LAP SPLICE NOTES

- 1. UNLESS NOTED OTHERWISE IN THE DRAWINGS OR IF LONGER LENGTHS ARE REQUIRED PER ACI 318, PROVIDE MINIMUM LAP SPLICE LENGTHS & DEVELOPMENT LENGTHS, INDICATED ABOVE.
2. TOP BARS ARE DEFINED AS ALL HORIZONTAL WALL BARS AND OTHER HORIZONTAL BARS WITH 12" OR MORE FRESH CONCRETE PLACED BENEATH.
3. WHERE LAP SPLICES ARE INDICATED BETWEEN BARS OF DIFFERENT SIZES, THE LAP SPLICE LENGTH SHALL BE THE GREATER OF THE LARGER BAR DEVELOPMENT LENGTH AND SMALLER BAR LAP SPLICE LENGTH.
4. DOWELS SHOW EXTENDING FROM PREVIOUSLY PLACED CONCRETE SHALL EXTEND MINIMUM OF ONE LAP SPLICE LENGTH PLUS TWO INCHES BEYOND THE JOINT, UNLESS DIMENSIONED OTHERWISE.

Table with 3 columns: BAR SIZE, H (INCH), Ldh (INCH). Titled 'STANDARD 90 DEGREE HOOK LENGTH'.

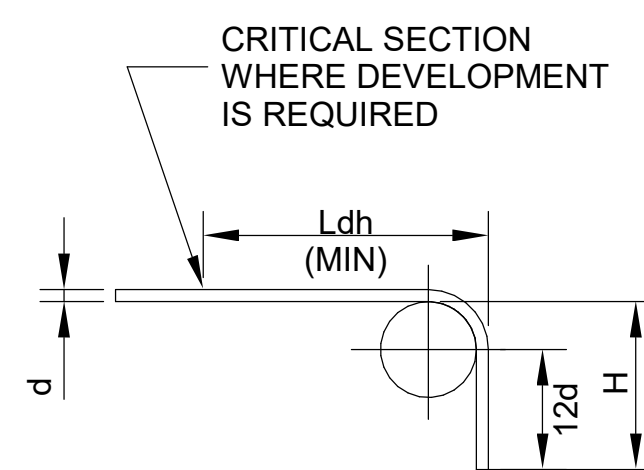


Table titled 'REQUIRED & FREQUENCY OF VERIFICATION AND INSPECTION PER IBC 2021 CHAPTER 17'. Columns include STRUCTURAL ELEMENT, CONTINUOUS, PERIODIC, and REMARKS. Rows list various construction elements like high-strength bolts, concrete reinforcing steel, and foundation verification.

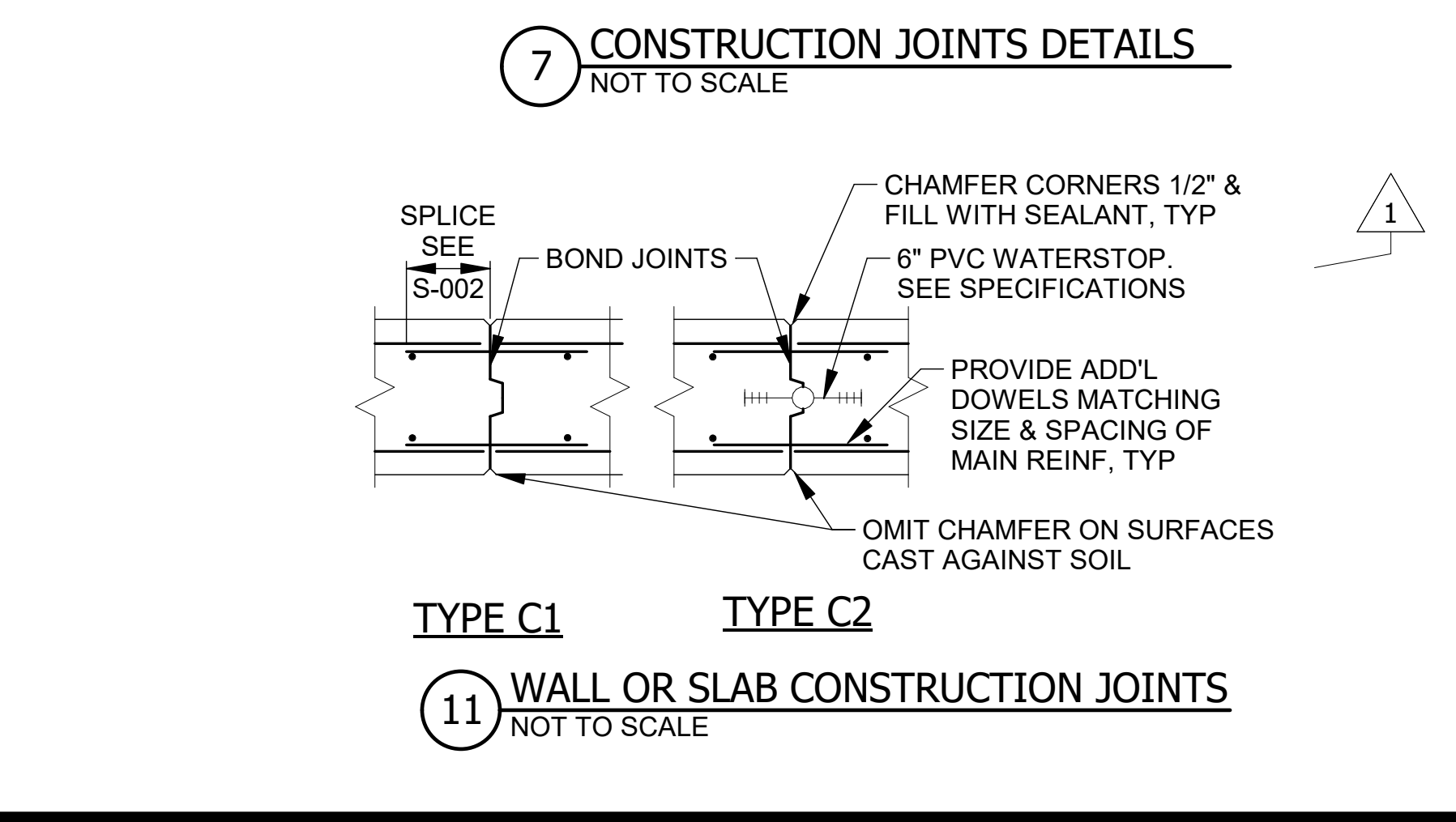
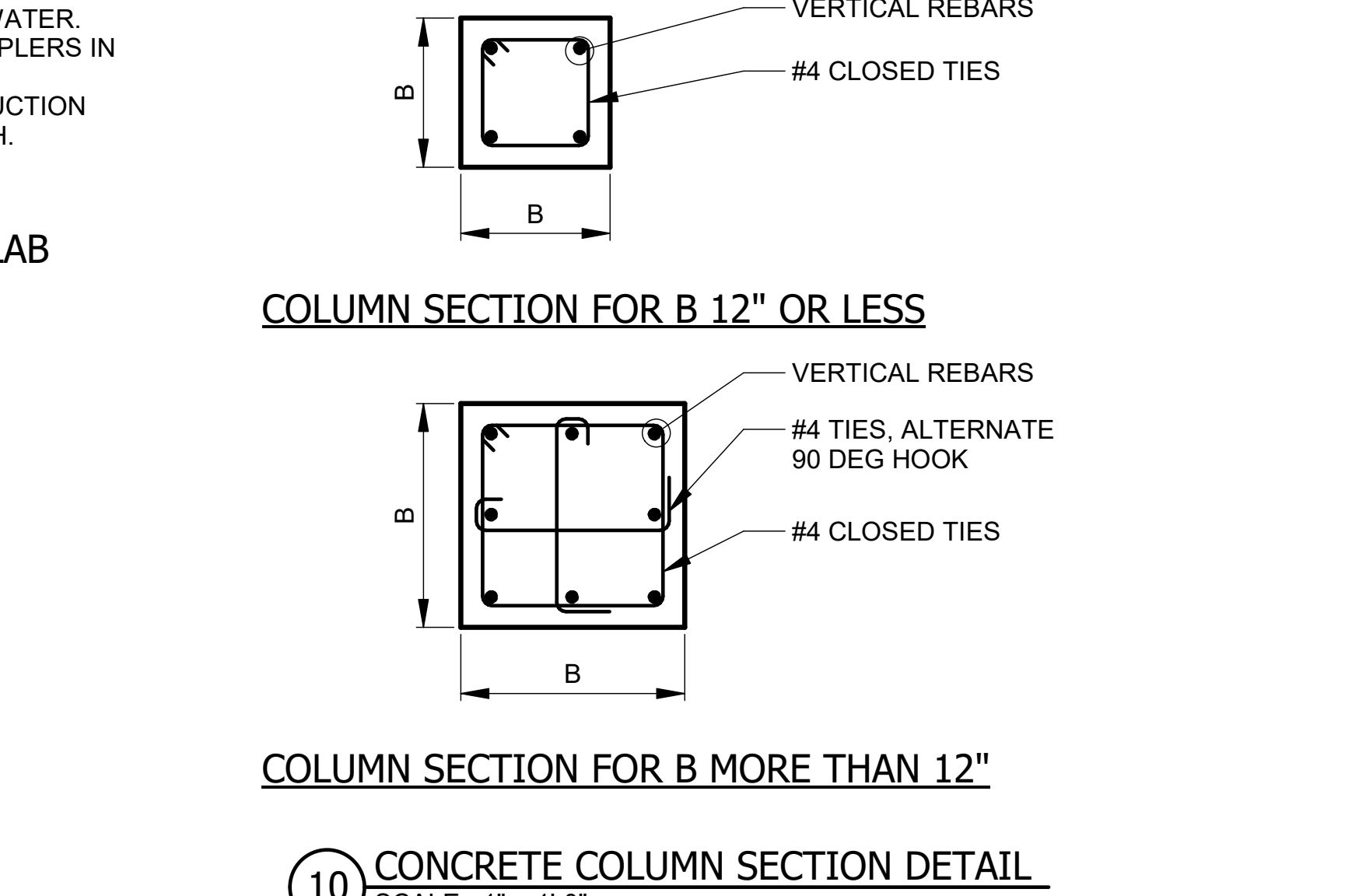
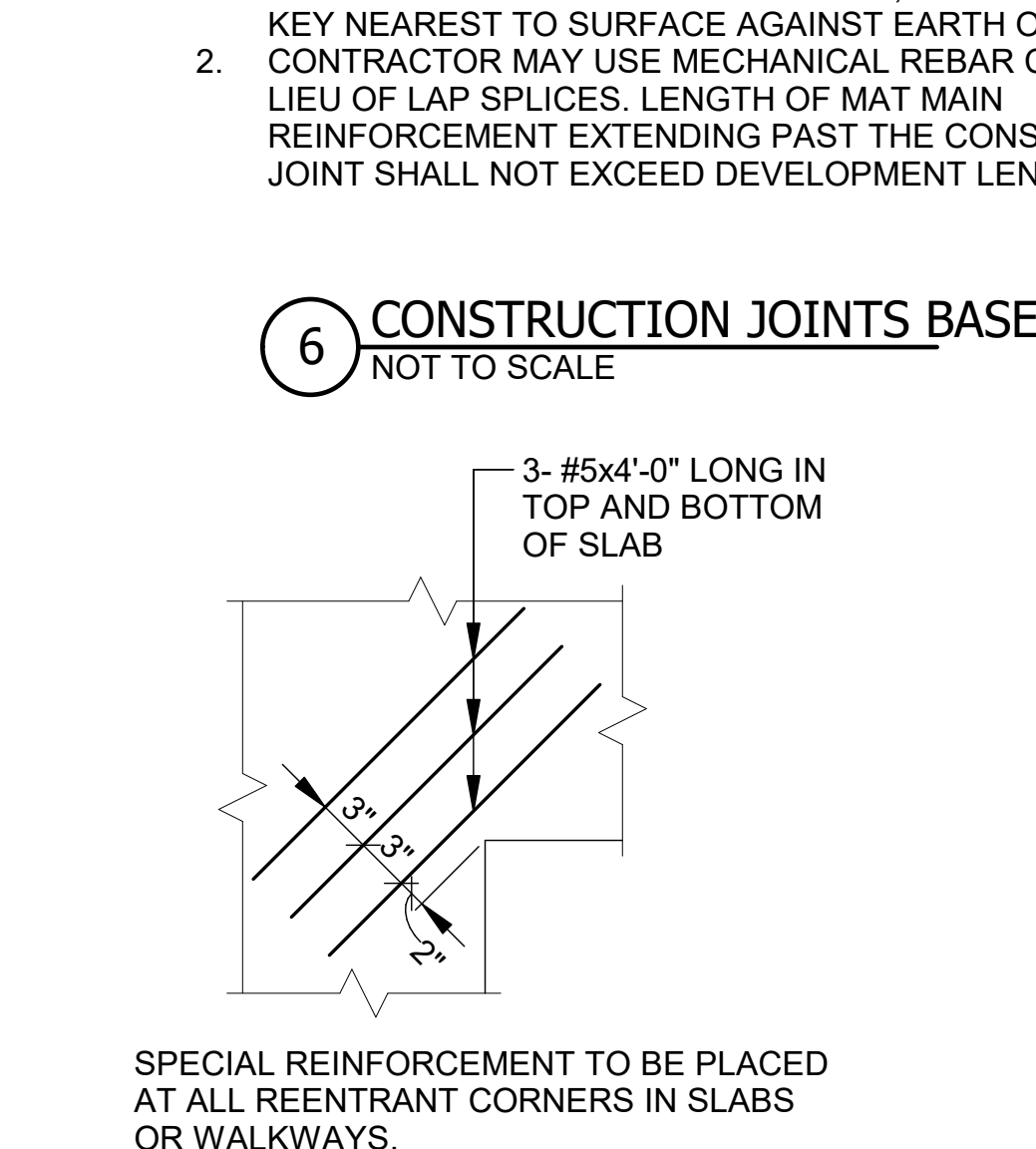
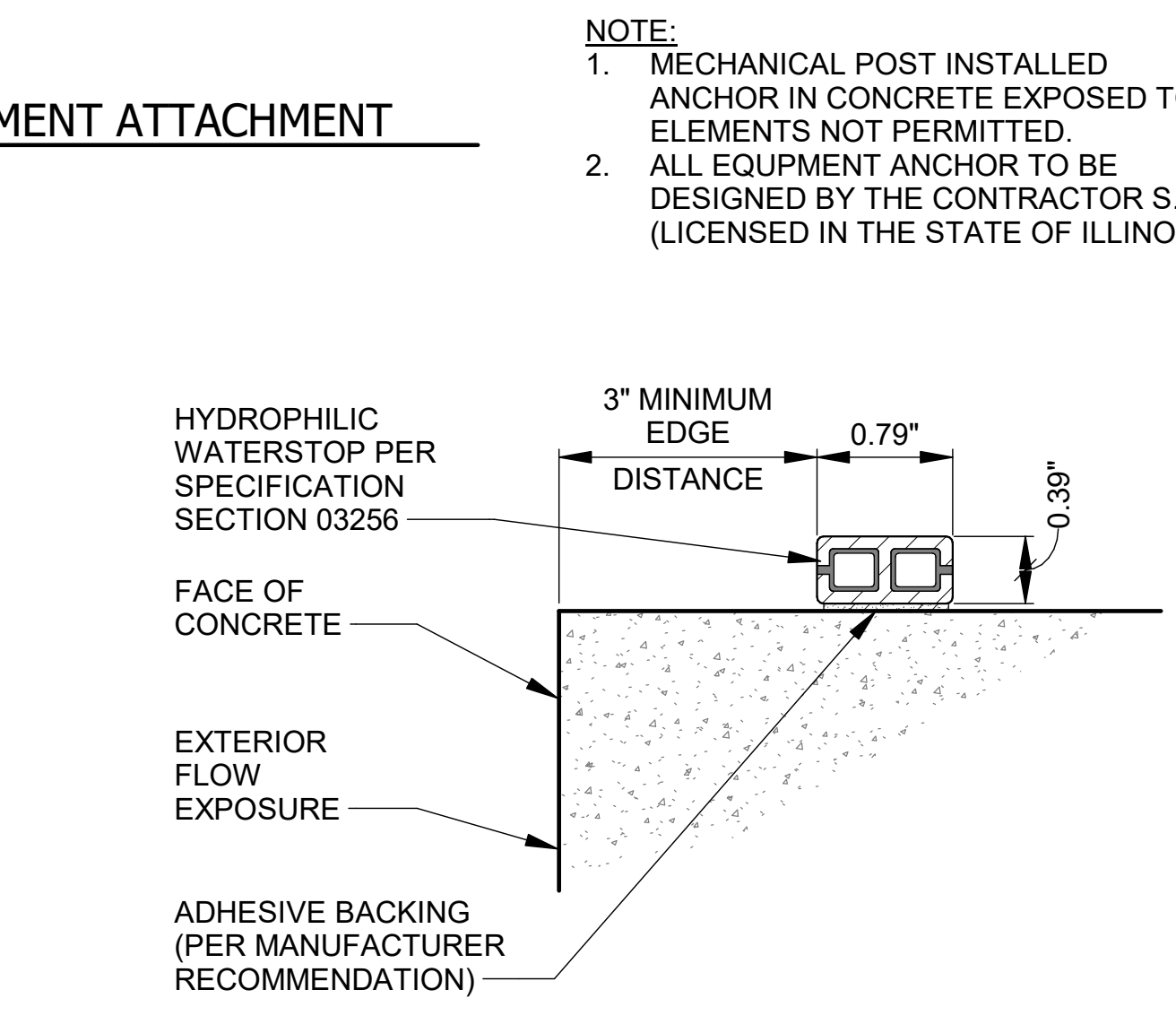
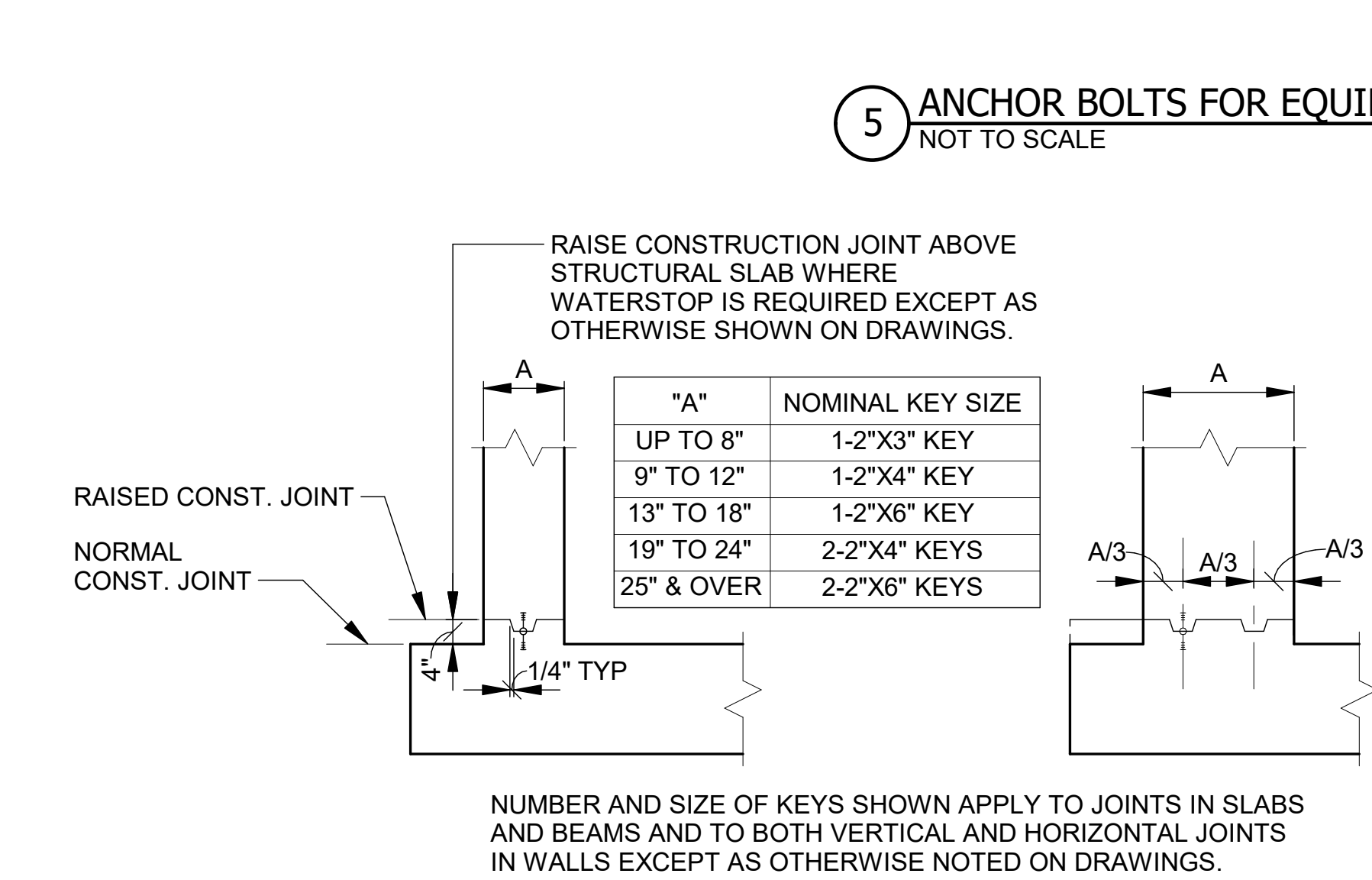
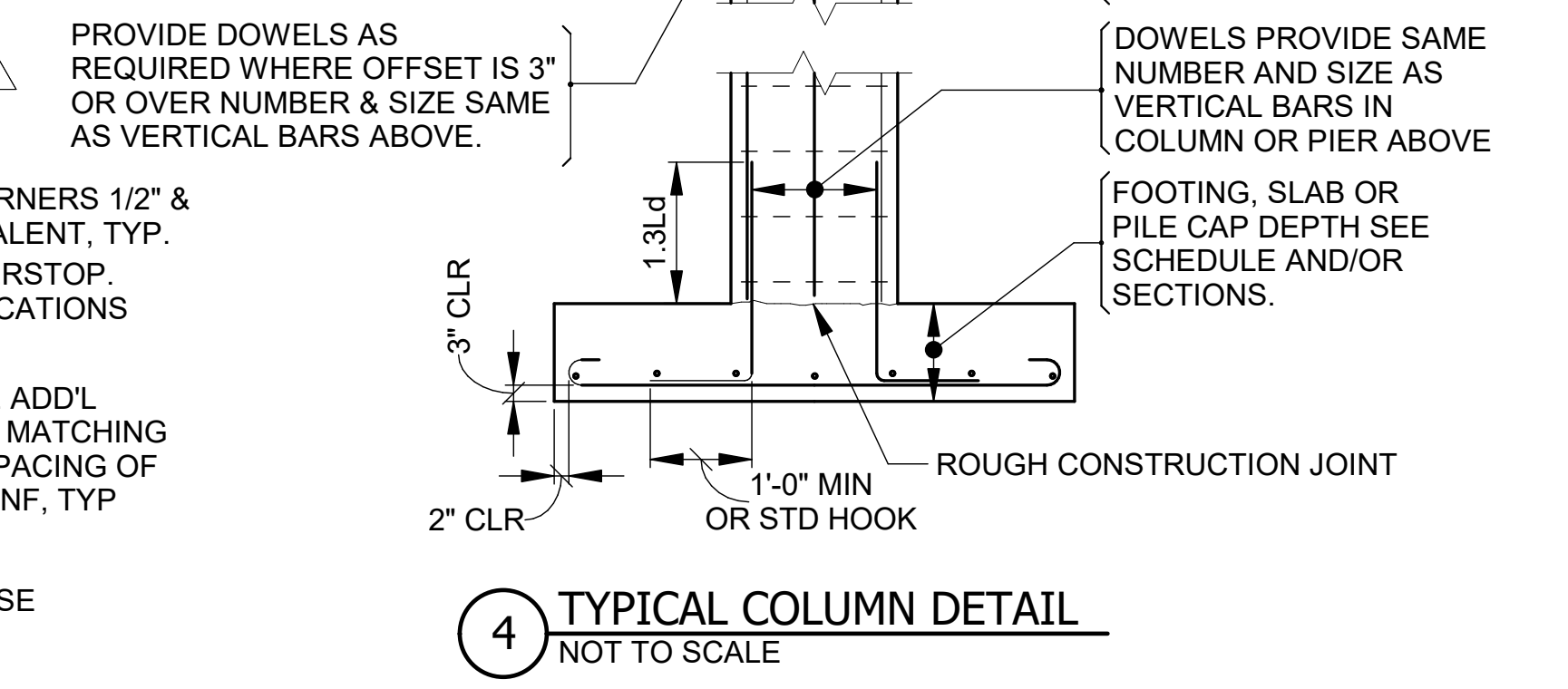
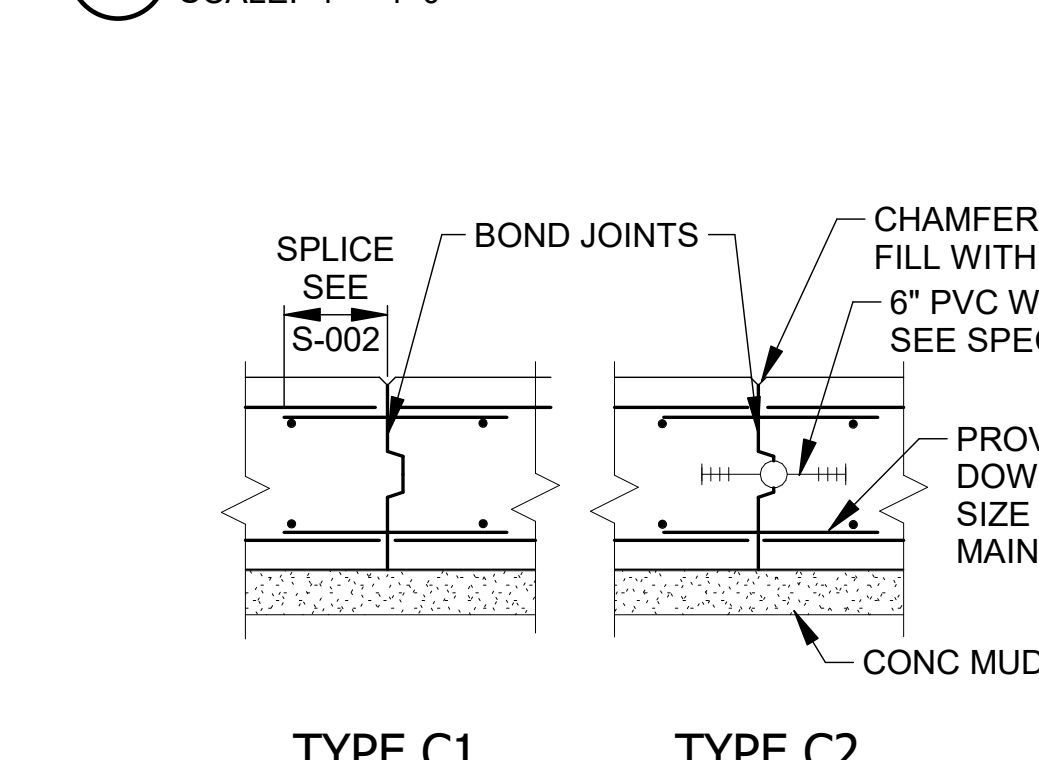
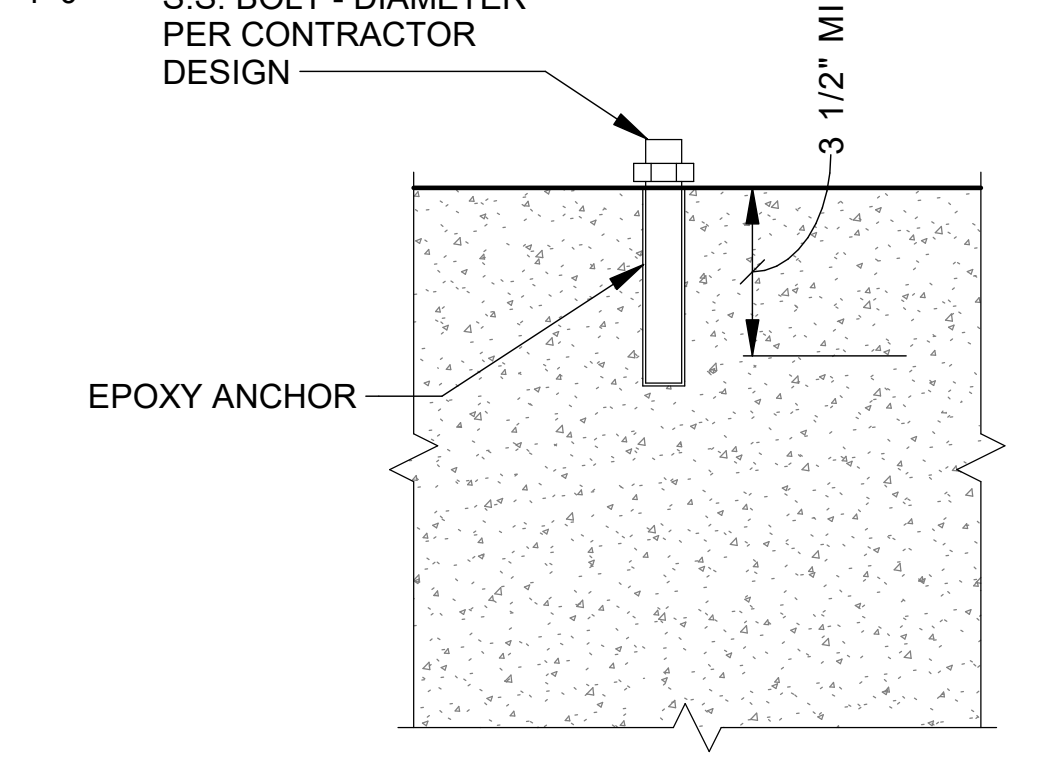
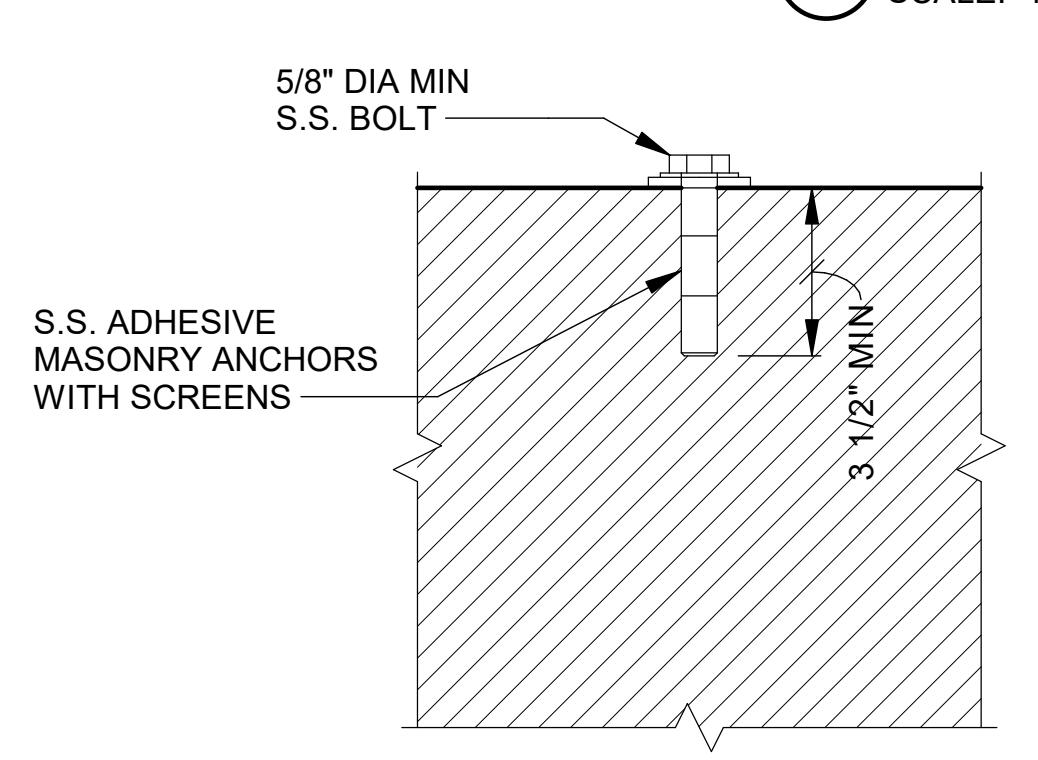
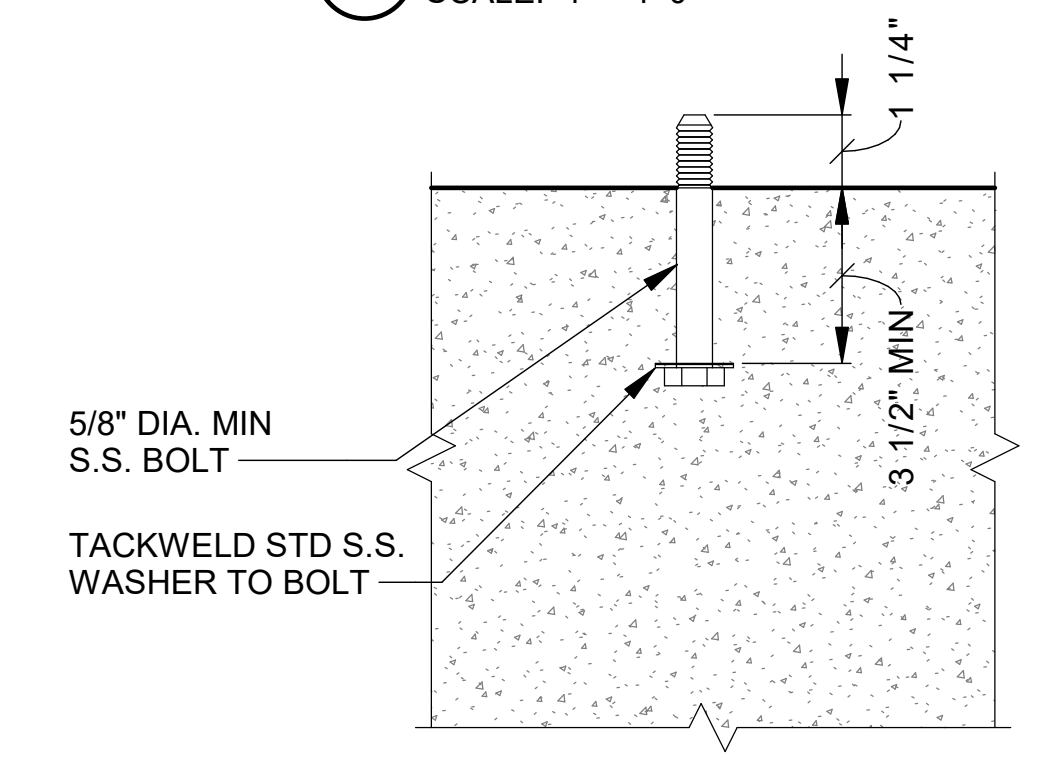
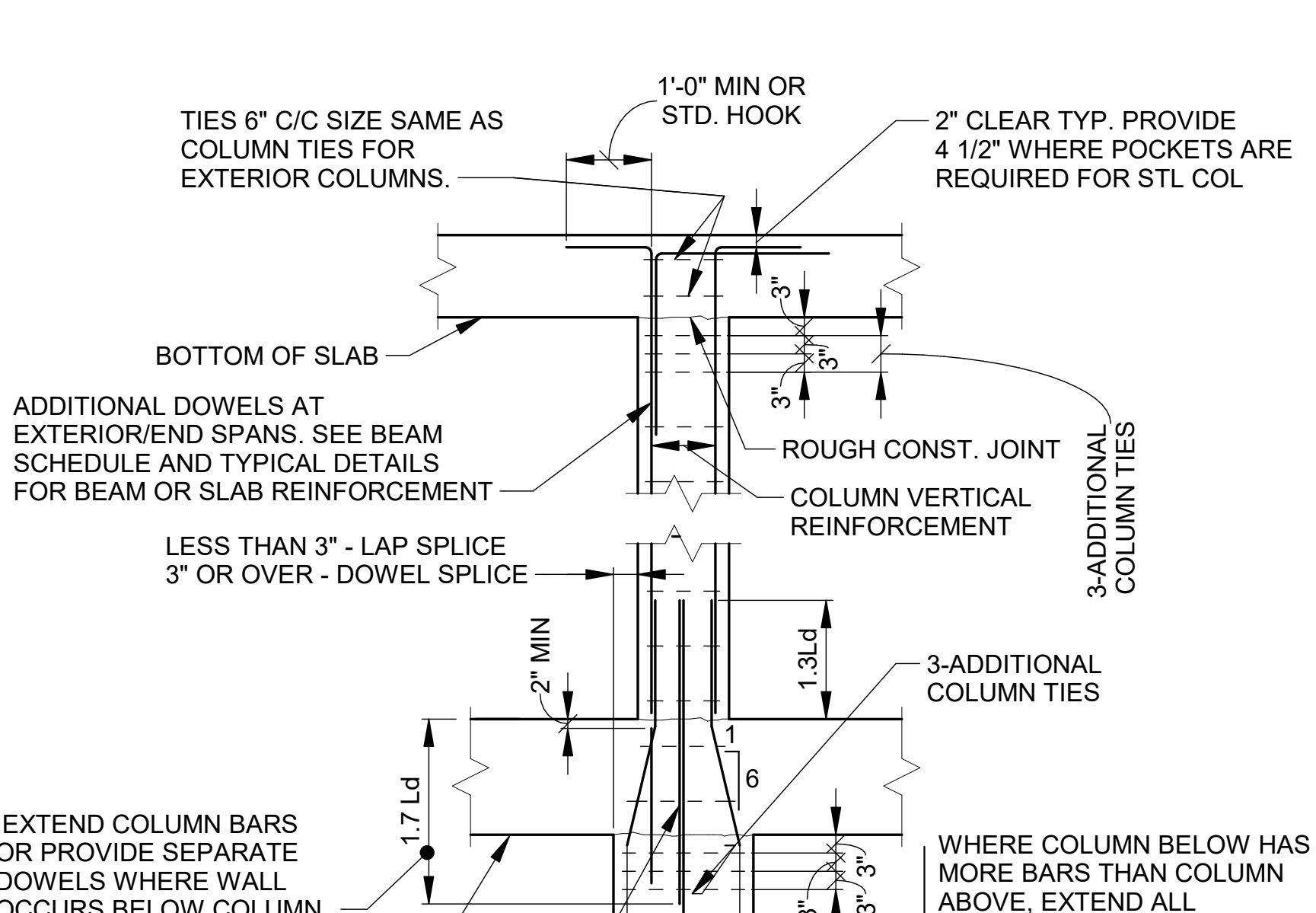
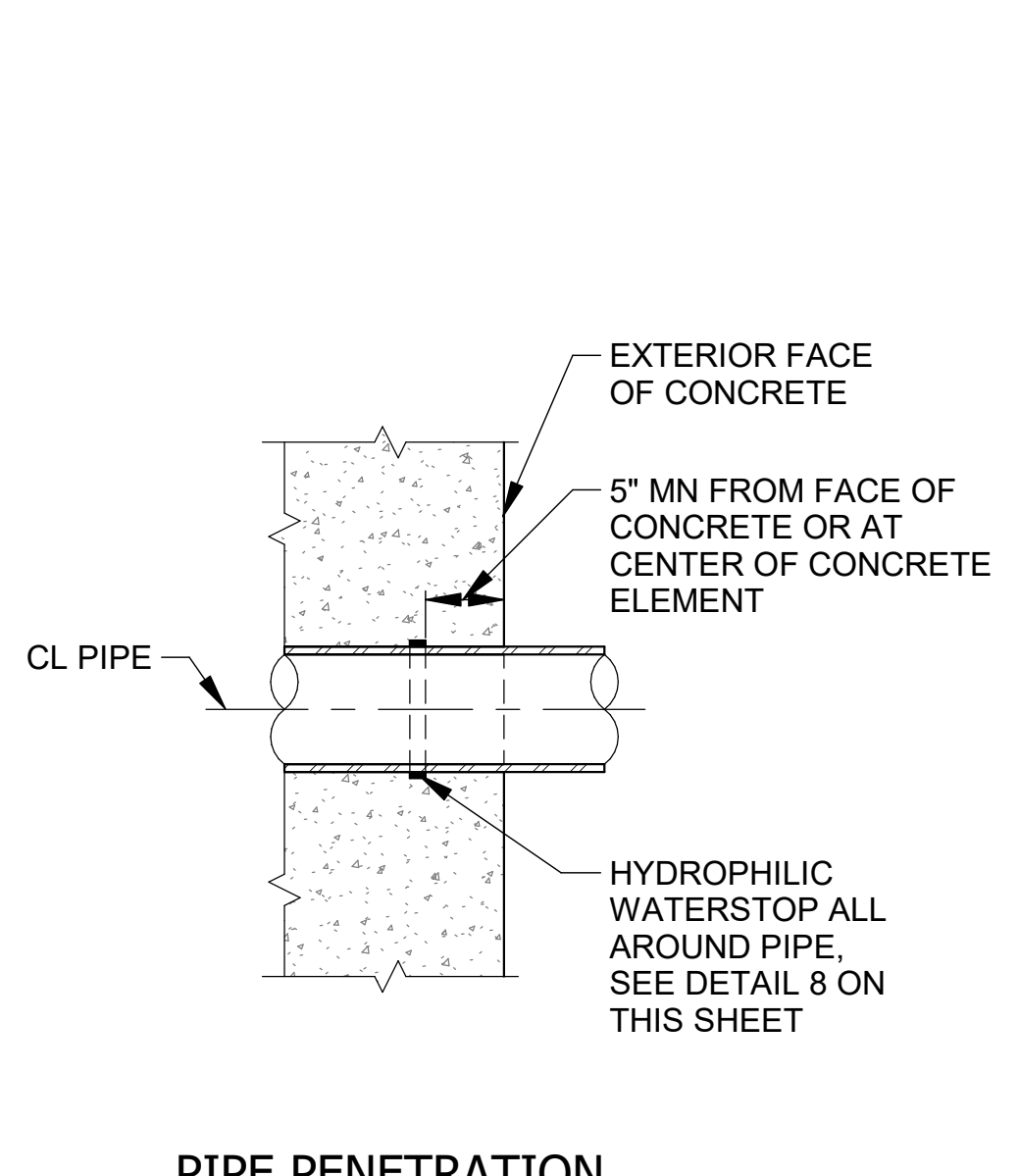
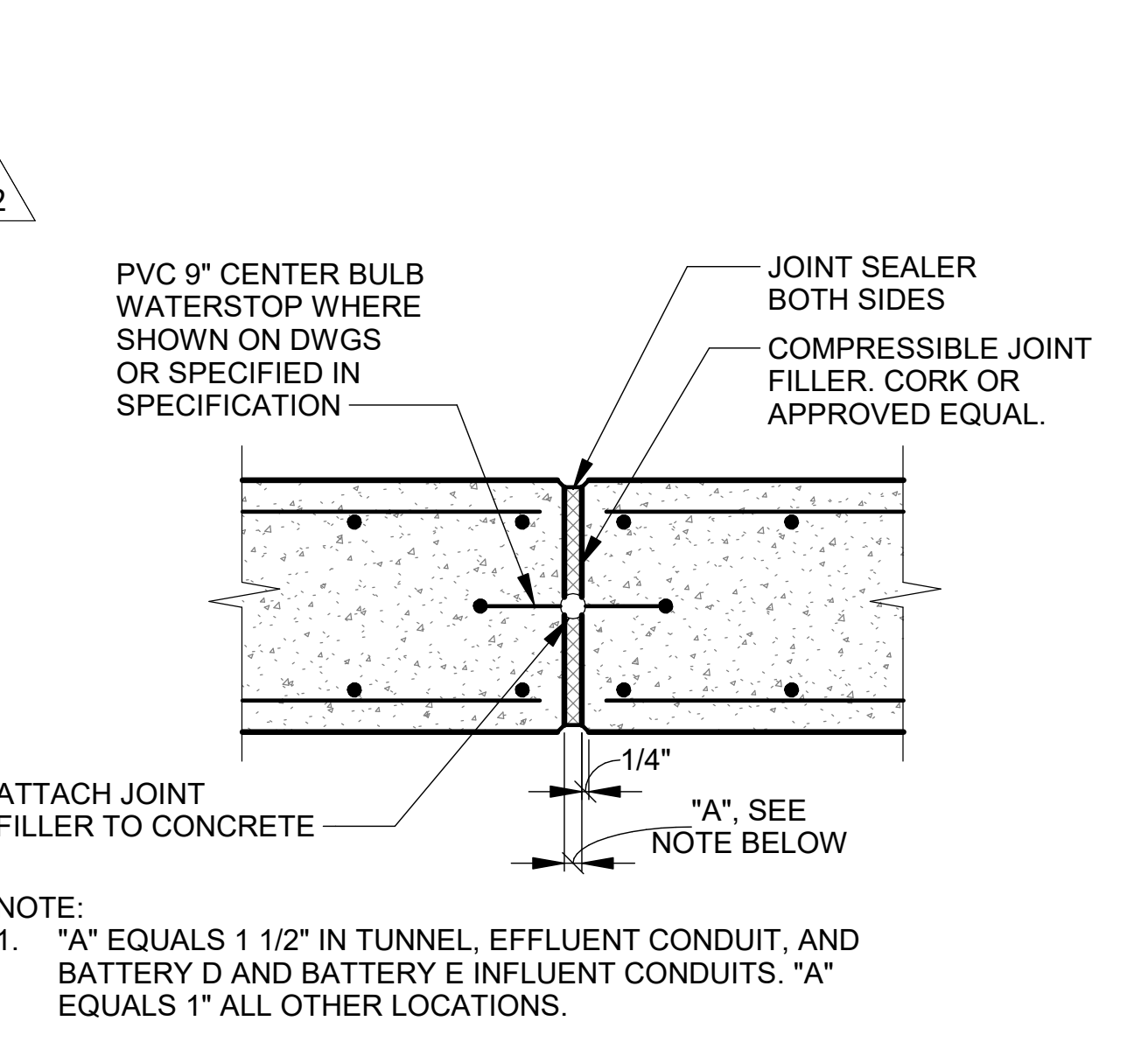
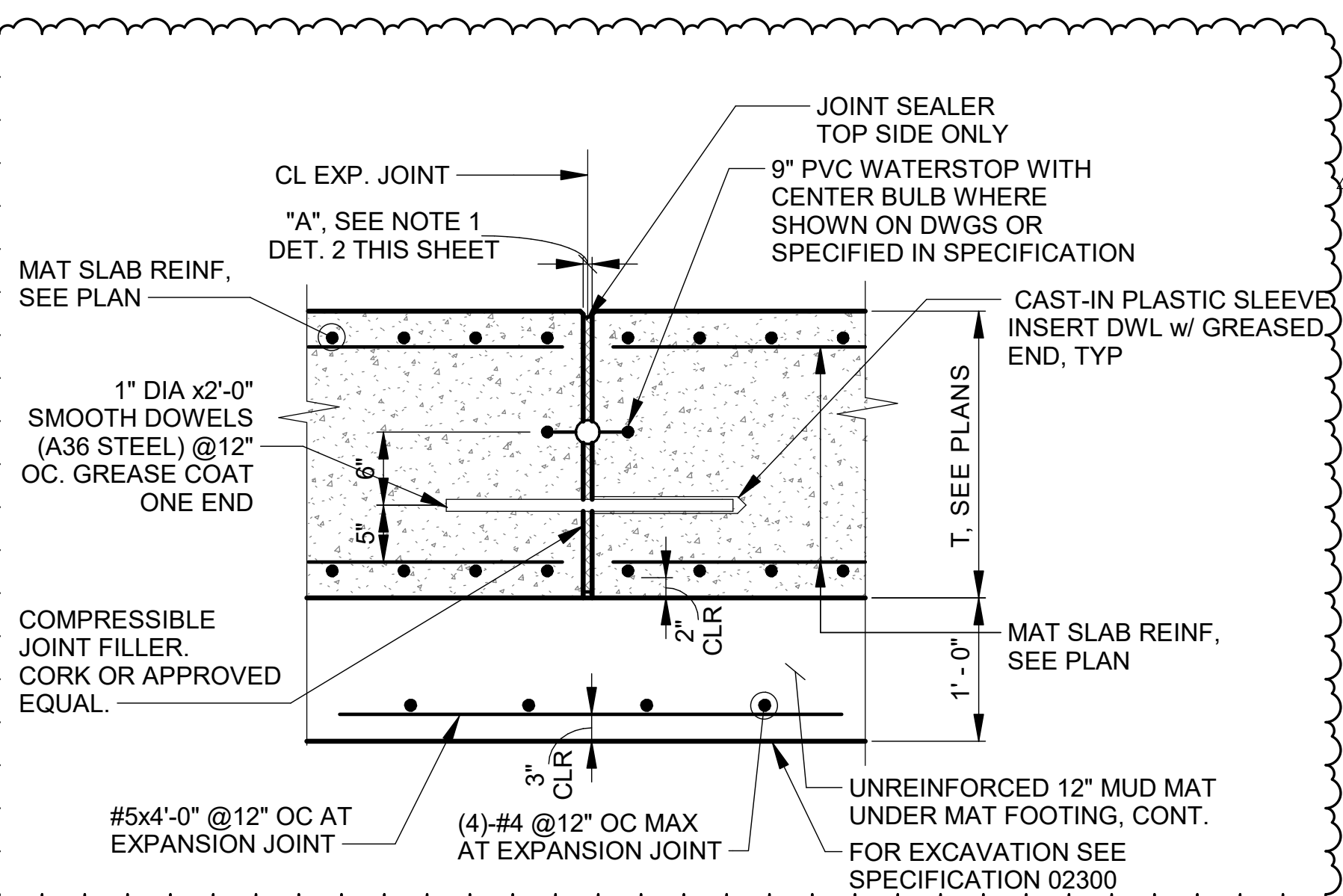
EARTH RETENTION SYSTEM (ERS) AND EXCAVATION NOTES:

- 1. CONTRACTOR SHALL PROVIDE ALL EXCAVATION AND APPROVED BACKFILL NECESSARY FOR THE CONSTRUCTION OF PERMANENT STRUCTURES, TUNNELS, CONDUITS, ETC.
2. CONTRACTOR SHALL RETAIN A PROFESSIONAL (GEOTECHNICAL) ENGINEER LICENSED IN THE STATE OF ILLINOIS TO PREPARE AN EXCAVATION PLAN FOR THE SITE. THE EXCAVATION PLAN SHALL INCLUDE, AT A MINIMUM, PLANS, SECTIONS, AND DETAILS IDENTIFYING THE LIMITS AND LOCATIONS OF TEMPORARY ERS, OPEN CUT EXCAVATIONS, EXCAVATION PROCEDURES, CONSTRUCTION SEQUENCING, AND BACKFILL PROCEDURES. THE EXCAVATION PLAN SHALL BE STAMPED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER. THE EXCAVATION PLAN SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW PRIOR TO WORK.
3. EXCAVATIONS SHALL COMPLY WITH OSHA CFR 1926 SUBPART P. AT A MINIMUM, ALL SLOPED EXCAVATIONS SHALL COMPLY WITH OSHA GUIDELINES FOR TYPE C SOILS AND THE WRITTEN RECOMMENDATIONS OF THE CONTRACTOR'S GEOTECHNICAL ENGINEER. BACKFILLING SHALL BE PER OSHA AS WELL AS SPECIFICATION SECTIONS 02300 AND 02317.
4. THE CONTRACTOR SHALL DESIGN, FURNISH, INSTALL, MONITOR, AND MAINTAIN ERS CAPABLE OF SUPPORTING EXCAVATION SIDEWALLS AND RESISTING SOIL AND HYDROSTATIC PRESSURES AND ALL SUPERIMPOSED CONSTRUCTION AND SURCHARGE LOADS. THE ERS SHALL ALSO BE DESIGNED FOR SURCHARGES FROM EQUIPMENT AND TRUCK LOADING.
5. CONTRACTOR SHALL ENGAGE A LICENSED STRUCTURAL ENGINEER IN THE STATE OF ILLINOIS TO DESIGN THE TEMPORARY EARTH RETENTION SYSTEM (ERS) TO PREVENT ROTATION, DISPLACEMENT, AND UNDERMINING OF EXISTING STRUCTURES, UTILITIES, NEW STRUCTURES, ETC. ERS PROVIDED SHALL USE SOLDIER PILES, SHEET PILING, SLIDE RAIL SYSTEMS, OR OTHER ACCEPTABLE NON-DRIVEN/NON-VIBRATORY METHODS. UNLESS OTHERWISE NOTED, SELECTION OF THE ERS SHALL BE THE CONTRACTOR'S MEANS AND METHODS.
6. ERS SHALL BE BRACED. TYPE, SIZE, SPACING, AND NUMBER OF BRACING LEVELS TO BE DETERMINED BY CONTRACTOR'S STRUCTURAL ENGINEER.
7. THE CONTRACTOR SHALL DESIGN AND INSTALL TEMPORARY SUPPORTS AND PROTECTION FOR ALL UTILITIES ADJACENT TO OR LOCATED WITHIN EXCAVATED AREAS.
8. THE CONTRACTOR SHALL DESIGN AND INSTALL A DEWATERING SYSTEM FOR THE EXCAVATION. GROUNDWATER ELEVATIONS MAY VARY. PROVIDE FOR SEASONAL VARIATIONS. STANDING WATER SHALL NOT BE PERMITTED TO COLLECT IN EXCAVATION. CONTRACTOR SHALL ALSO INSTALL DEWATERING AS NEEDED TO ENSURE THERE IS NO PERCHED GROUNDWATER NEAR EXCAVATION LIMITS.
9. WITHIN EXCAVATION LIMITS 2'-0" TO 2'-6" OF SOIL COVER SHALL BE LEFT ABOVE PROPOSED BOTTOM OF EXCAVATION TO PROTECT THE SUBGRADE. THE SOIL COVER SHALL BE EXCAVATED IMMEDIATELY PRIOR TO INSTALLATION OF MUD MATS. SEE SPECIFICATION SECTION 02300 PARAGRAPH 3.05.G FOR ADDITIONAL REQUIREMENTS.
10. CONTRACTOR SHALL PLACE 12" MUD MAT UNDERNEATH ALL NEW STRUCTURE FOUNDATIONS AS SHOWN ON THE STRUCTURAL DRAWINGS. CONTRACTOR SHALL ALSO PLACE MUD MAT OVER THE ENTIRE BOTTOM OF EXCAVATION AREA BEYOND THE NEW STRUCTURE FOOTPRINTS, FOR BOTH ERS EXCAVATIONS AND OPEN CUT EXCAVATIONS. MUD MAT OUTSIDE OF THE STRUCTURE FOOTPRINTS SHALL BE A MINIMUM 4" THICK, OR LARGER IF DEEMED NECESSARY BY CONTRACTOR'S LICENSED GEOTECHNICAL ENGINEER AND/OR STRUCTURAL ENGINEER TO SUPPORT CONSTRUCTION EQUIPMENT AND PROTECT SUBGRADE. AFTER THE NEW STRUCTURE IS CONSTRUCTED AND PRIOR TO BACKFILLING, CONTRACTOR SHALL CORE 6" DIAMETER HOLES AT 10'-0" ON CENTER EACH WAY (N-S AND E-W DIRECTIONS) THROUGH THE MUD MAT BETWEEN THE NEW STRUCTURE FOOTPRINT AND EDGE OF EXCAVATION. A 12" THICK LAYER OF CA-7 TOPPED WITH GEOTEXTILE FABRIC SHALL BE INSTALLED OVER THE ENTIRE MUD MAT BETWEEN THE NEW STRUCTURE FOOTPRINT AND EDGE OF EXCAVATION TO PROMOTE FREE DRAINAGE AND RELIEVE TRAPPED GROUND WATER.
11. SEE SPECIFICATION SECTION 02068 FOR ADDITIONAL INFORMATION.

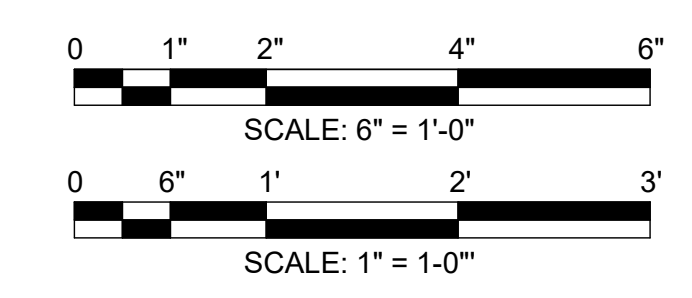
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Professional seal and contact information for Rubinos & Mesa Engineers, Inc. Includes the RME logo and address: 130 E RANDOLPH STREET SUITE 2400 CHICAGO, IL 60601, USA.

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL
STRUCTURAL NOTES



DETAILS SHOWN ON THIS DRAWING ARE TYPICAL DETAILS AND SHALL BE USED, WHOLLY OR IN PART, WHERE THEY APPLY EXCEPT WHERE MODIFIED BY DETAILED DRAWINGS & SPECIFICATIONS.



Rev.	Description	Appr.	Date
1	ADDENDUM NO. 4	GD	10/27/25
2	ADDENDUM NO. 10	GD	04/03/26

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

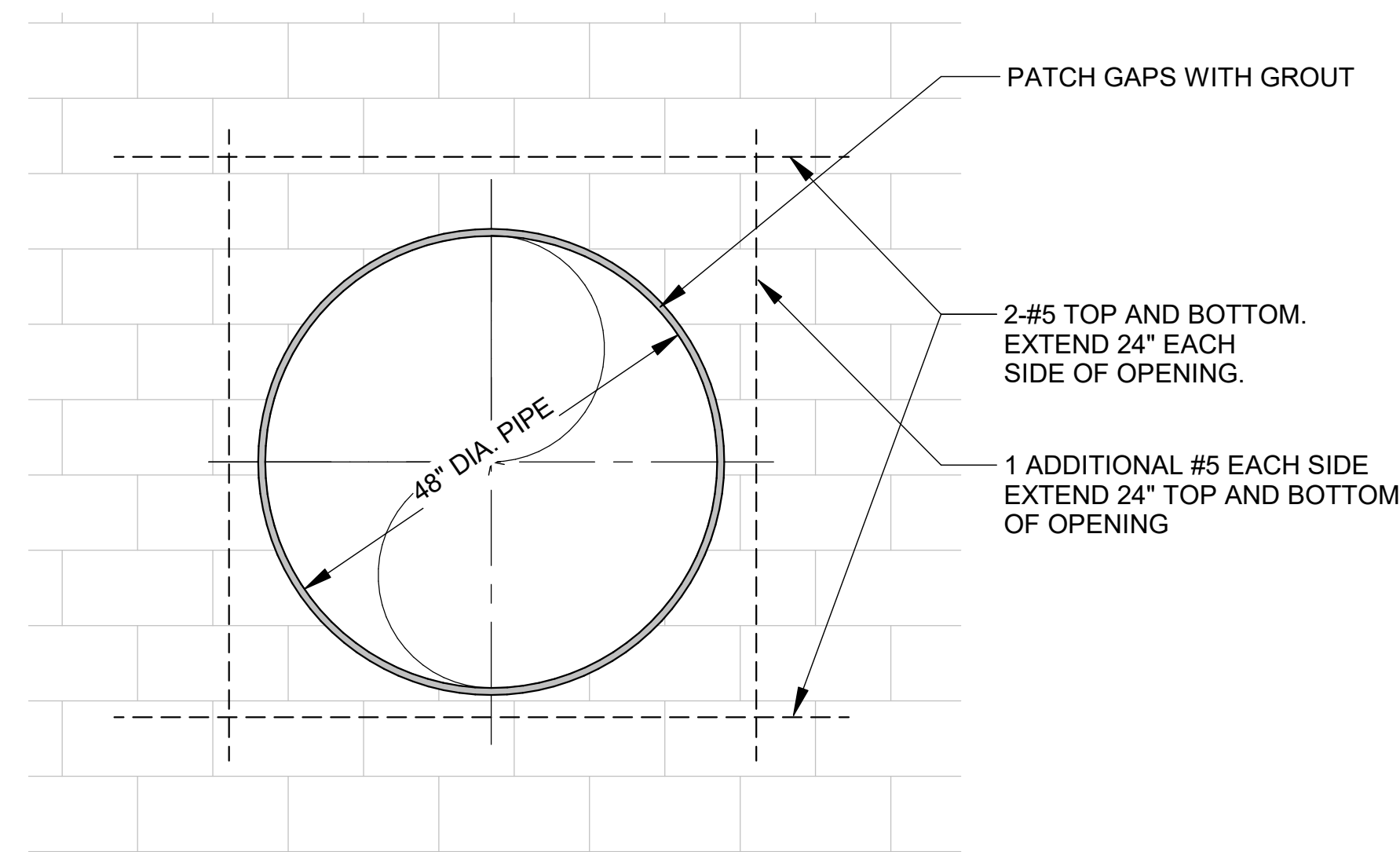
Contract 21-092-3P
O'Brien Water Reclamation Plant
Battery E Activated Sludge Facility
GENERAL
STANDARD DETAILS - 2

Checked by: AS
Designed by: JB
Drawn by: DA
Date: 7/1/2025

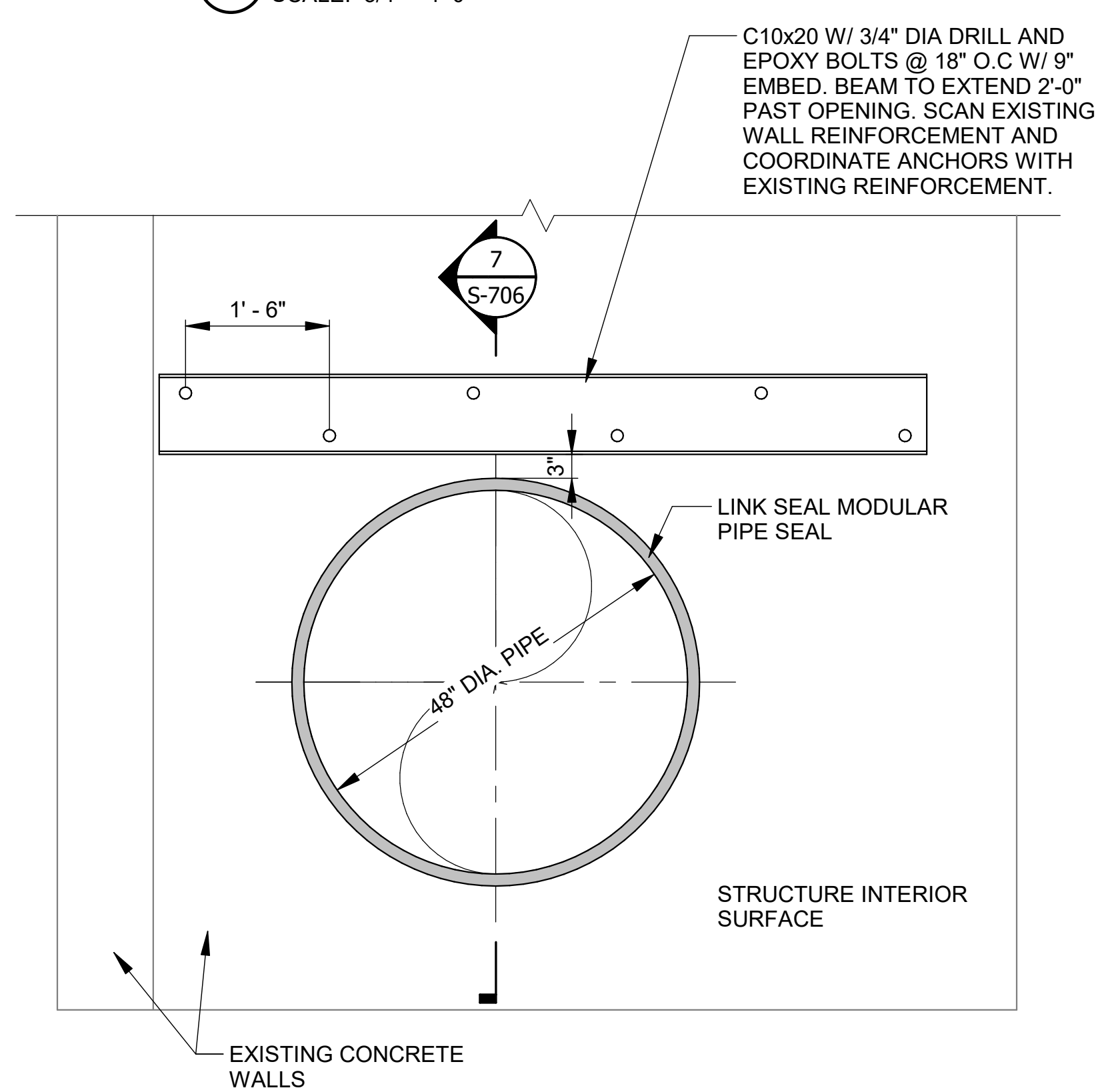
Reviewed by: MF
Scale: AS SHOWN

AECOM
Rubinos & Mesa Engineers, Inc.
200 S. Michigan Avenue, Suite 1500, Chicago, IL 60604-2482
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

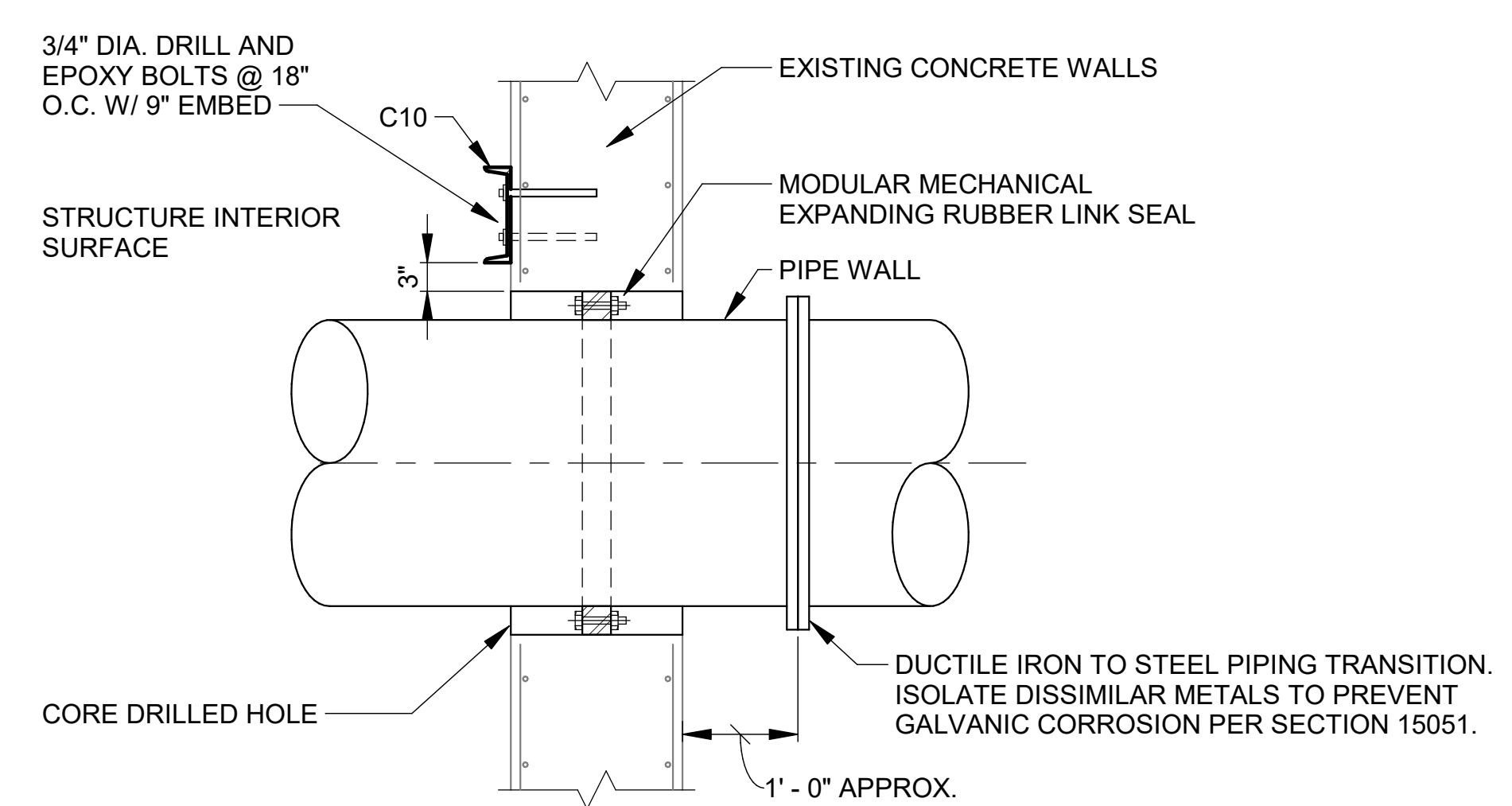
Sheet Number: **S-004**
Page Number: 77



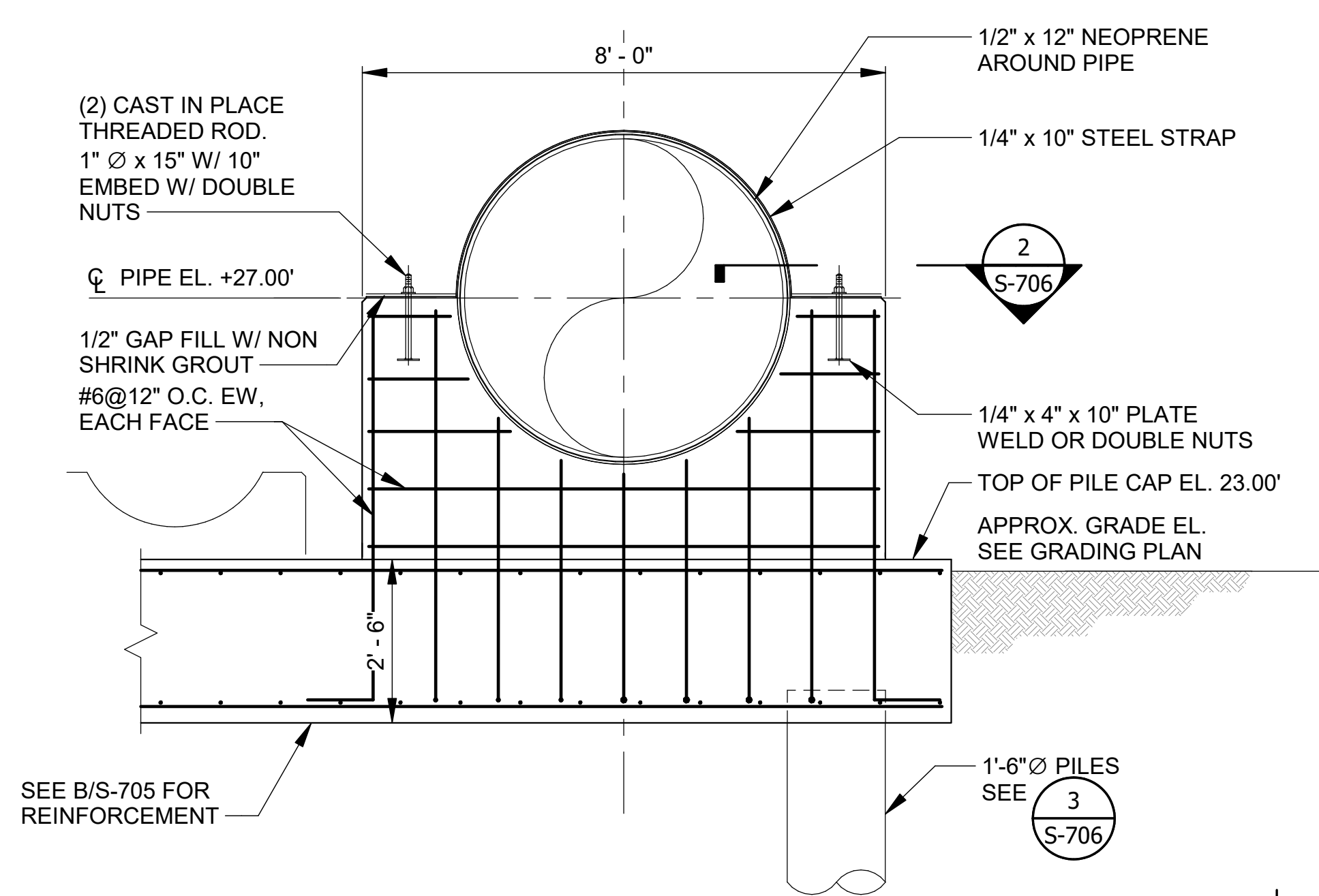
5 CMU WALL PENETRATION DETAIL
SCALE: 3/4" = 1'-0"



6 CONCRETE WALL PENETRATION DETAIL
SCALE: 3/4" = 1'-0"



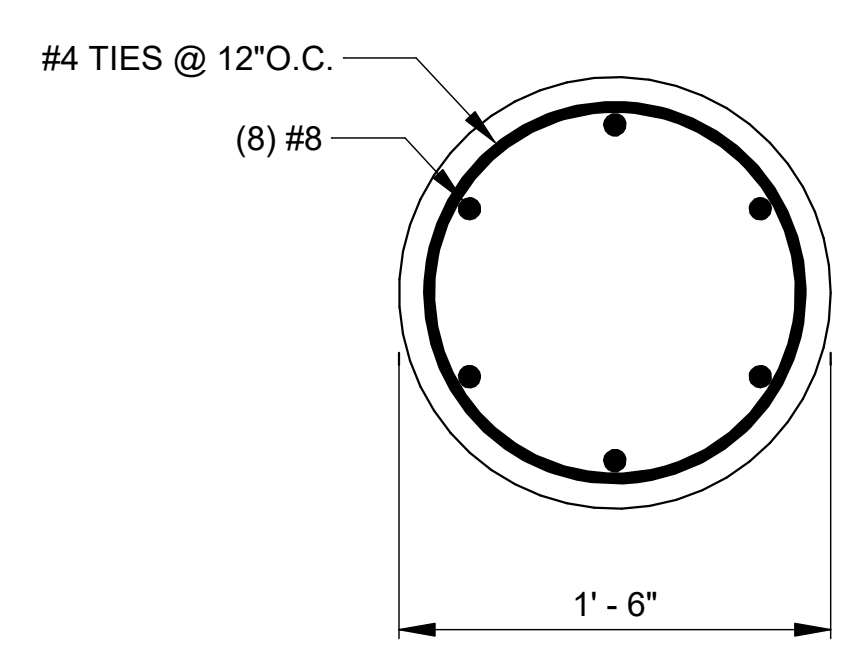
7 DETAIL
NOT TO SCALE



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

	MAX DEAD LOAD (Kip)	MAX LIVE LOAD (Kip)	TRANSVERSE LATERAL LOAD (Kip)	LONGITUDINAL LATERAL LOAD (Kip)
AIR MAIN FIXED SUPPORT	11.6	4.8	1.2	60
AIR MAIN SLIDE SUPPORT	8.3	3.4	1	0

*PIPE SUPPORT SHALL BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS
*PIPE SUPPORT SHOP DRAWINGS SHALL BE SEALED BY A LICENSED STRUCTURAL ENGINEER IN ILLINOIS AND SUBMIT FOR EOR REVIEW.
*LOADS SHOWN ARE SERVICE LEVEL LOADS.

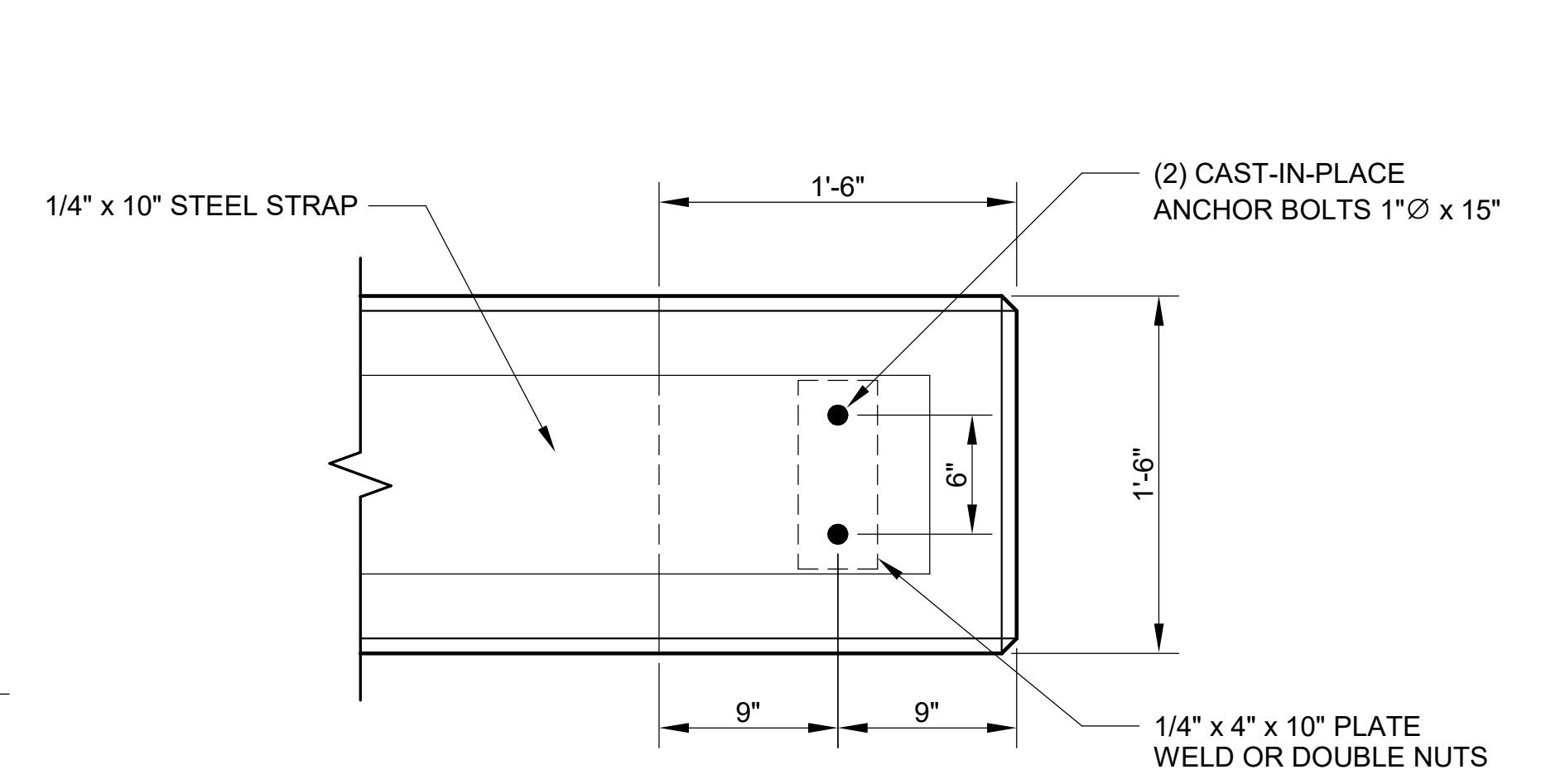


4 DETAIL
SCALE: 1 1/2" = 1'-0"

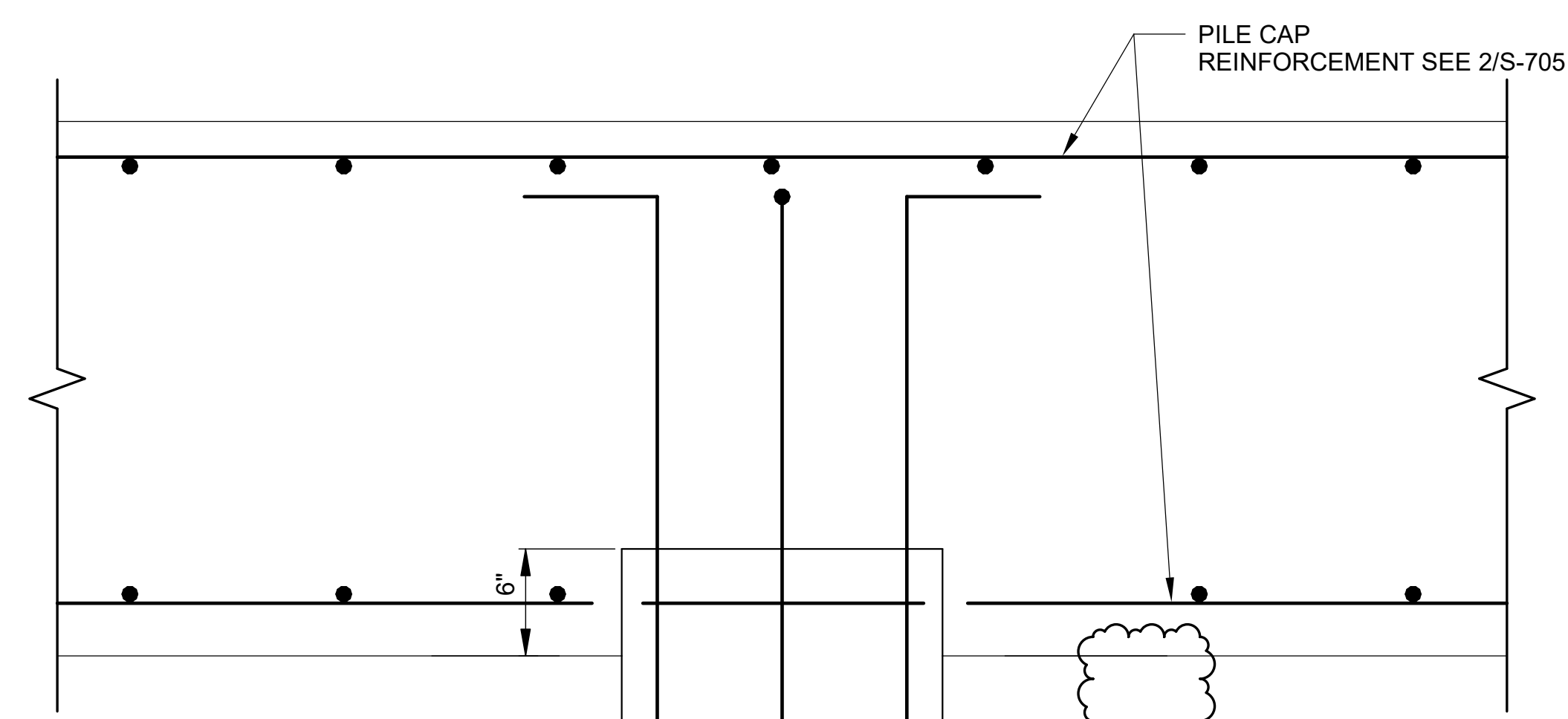
	PILE TIP ELEVATION (CCD)
SUPPORT 1	-32.0'
SUPPORT 2	-32.0'
SUPPORT 3	-32.0'
SUPPORT 4	-32.0'
SUPPORT 5	-32.0'
SUPPORT 6	-32.0'

NOTES:

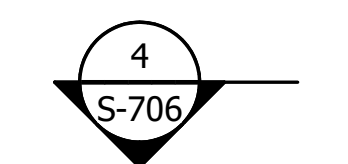
- CONTRACTOR SHALL USE A POCKET PENETROMETER OR OTHER APPROVED METHODS TO TEST SOIL (TAKEN FROM THE AUGER) FOR THE BOTTOM FIVE FEET OF EACH PILE, I.E. FROM ELEVATION -27.0' TO -32.0' CCD, TO CONFIRM THAT THE MINIMUM UNCONFINED COMPRESSIVE STRENGTH (Qu) IS 4,000 PSF. IF THE TESTED UNCONFINED COMPRESSIVE STRENGTH BETWEEN ELEVATION -27.0' AND -32.0' IS LESS THAN 4,000 PSF, THE PILE SHALL BE MADE DEEPER SO THAT THE TESTED UNCONFINED COMPRESSIVE STRENGTH IS AT LEAST 4,000 PSF ALONG THE BOTTOM FIVE FEET OF THE PILE.
- CONTRACTOR SHALL RECORD AS-INSTALLED PILE LOCATIONS AND LENGTHS AND SUBMIT A RECORD OF AS-INSTALLED PILE LOCATIONS AND LENGTHS TO THE DISTRICT WITHIN ONE WEEK OF COMPLETION OF PILE INSTALLATION.



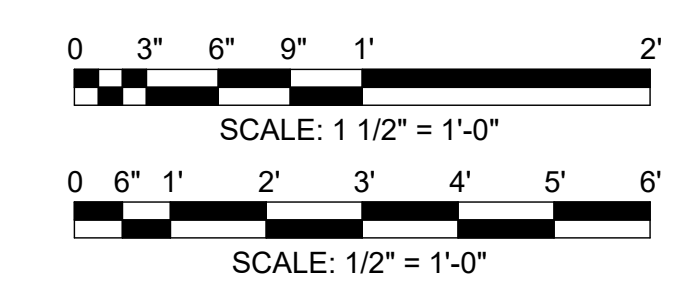
2 DETAIL
SCALE: 1 1/2" = 1'-0"



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



#4 TIES @ 12" O.C.



Rev.	Description	Appr.	Date
1	ADDENDUM NO. 5	GD	11/19/25
2	ADDENDUM NO. 10	GD	04/03/26

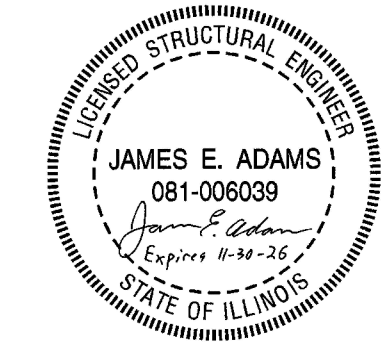
METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AECOM
PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

Designed by: JA
Checked by: JA
Drawn by: AC
Reviewed by: JA
Date: 7/1/2025
Scale: AS SHOWN

CONTRACT 21-092-3P
O'BRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
AIR MAIN SUPPORTS
AIR MAIN CONNECTIONS - SECTIONS AND DETAILS

Sheet Number:
S-706
Page Number: 219



PROCESS PIPING SCHEDULE - SPEC SECTION 15370

LEGEND	SERVICE	DIAMETER RANGE (INCH)	MATERIAL	LOCATION	COATING		JOINT TYPE	SYSTEM DESIGN CONDITIONS			REMARKS
					INTERIOR	EXTERIOR		MIN/MAX TEMP (F)	MAX WORKING PRESSURE (PSI)	PIPE TESTING	
WAS	WAS	6, 8	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
WAS	WAS	8, 10	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	15	HYDROSTATIC	TEST AT 50 PSI.
RAS	RAS	60	FRP SN72 PN100	BURIED / INTERIOR EXPOSED	-	-	FRP COUPLING / RESTRAINED COUPLING	40/75	15	HYDROSTATIC	NOMINAL INSIDE DIAMETER 60-INCH / TEST AT 50 PSI.
RAS	RAS	60	STEEL	INTERIOR EXPOSED	EPOXY	PAINTED	FLANGED	40/75	15	HYDROSTATIC	TEST AT 50 PSI.
FM RAS	FERMENTER RAS	18	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	15	HYDROSTATIC	TEST AT 50 PSI.
FM RAS	FERMENTER RAS	12, 18, 24	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
FM RAS	FERMENTER RAS	24	DUCTILE IRON	IMMERSED / SEWAGE CONTACT	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
SLS	SECONDARY SLUDGE	24	DUCTILE IRON	BURIED (CONCRETE ENCASED / POLYETHYLENE WRAP)	CEMENT MORTAR LINED	- / ASPHALTIC COATING	MECHANICAL	40/75	20	HYDROSTATIC	TEST AT 50 PSI.
ML	MIXED LIQUOR	42	DUCTILE IRON	IMMERSED / SEWAGE CONTACT	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	10	HYDROSTATIC	TEST AT 50 PSI.
ML	MIXED LIQUOR	42	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	10	HYDROSTATIC	TEST AT 50 PSI.
ML	MIXED LIQUOR	42	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	10	HYDROSTATIC	TEST AT 50 PSI.
PD	PLANT DRAIN	8, 12, 16	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	25	LOW PRESSURE AIR	TEST AT 50 PSI.
PD	PLANT DRAIN	36	DUCTILE IRON/HDPE	BURIED / BURIED	CEMENT MORTAR LINED/-	ASPHALTIC COATING / -	MECHANICAL/HEAT FUSION	40/75	25	LOW PRESSURE AIR	TEST AT 50 PSI.
PD	PLANT DRAIN	6, 8, 12	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	25	LOW PRESSURE AIR	TEST AT 50 PSI.
WNP	WATER NON-POTABLE	4* AND SMALLER	GALVANIZED	INTERIOR EXPOSED	-	PAINTED	FLANGED / SCREWED	40/75	90	HYDROSTATIC	TEST AT 150 PSI.
SC	SCUM	6, 8	HDPE	BURIED	-	-	HEAT FUSION	40/75	10	LOW PRESSURE AIR	TEST AT 50 PSI.
SAN	SANITARY	4, 6	DUCTILE IRON	BURIED (POLYETHYLENE WRAP)	CEMENT MORTAR LINED	ASPHALTIC COATING	MECHANICAL	40/75	10	LOW PRESSURE AIR	TEST AT 50 PSI.
WP	WATER POTABLE	3	GALVANIZED/HDPE	BURIED	-	PAINTED/-	WELDED/HEAT FUSION	40/75	100	HYDROSTATIC	TEST AT 150 PSI.
WP	WATER POTABLE	8	HDPE	BURIED	-	-	HEAT FUSION	40/75	100	HYDROSTATIC	TEST AT 150 PSI.
WNP	WATER NON-POTABLE	6, 8	HDPE	BURIED	-	-	HEAT FUSION	40/75	100	HYDROSTATIC	TEST AT 150 PSI.
LPA	AIR HEADER	48	CORTEN STEEL	OUTDOOR	-	-	WELDED / FLANGED	0/220	10	HIGH PRESSURE AIR	ASTM A588 NO EXTERIOR COATING TEST AT 15 PSI.
LPA	AIR HEADER	4, 8, 12, 18, 48	STEEL	INTERIOR EXPOSED	EPOXY	HIGH TEMP	WELDED / FLANGED	75/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR HEADER	48	DUCTILE IRON	BURIED (POLYETHYLENE WRAP)	-	ASPHALTIC COATING	MECHANICAL	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR SUPPLY TO POST AERATION TANK	10	DUCTILE IRON	BURIED (POLYETHYLENE WRAP)	-	ASPHALTIC COATING	MECHANICAL	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR SUPPLY TO AERATION TANK	18	STAINLESS STEEL	OUTDOOR/INTERIOR EXPOSED	-	-	WELDED / FLANGED	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR SUPPLY TO DIFFUSERS (AERATION TANKS AND POST-AERATION TANK)	3, 4, 5, 6, 8, 10	STAINLESS STEEL	OUTDOOR EXPOSED	-	-	WELDED / FLANGED	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
LPA	AIR SUPPLY TO SLUDGE LEVEL INDICATORS	1, 1-1/2, 2, 4	STAINLESS STEEL	BURIED	-	-	WELDED / THREADED / PRESS FIT	0/220	10	HIGH PRESSURE AIR	TEST AT 15 PSI.
SAM	BATTERY E EFFLUENT WATER SAMPLE	3	DUCTILE IRON	BURIED (POLYETHYLENE WRAP)	CEMENT MORTAR LINED	ASPHALTIC COATING	MECHANICAL	40/75	25	HYDROSTATIC	TEST AT 50 PSI.
SAM	BATTERY E EFFLUENT WATER SAMPLE	1	GALVANIZED	INTERIOR EXPOSED	-	PAINTED	THREADED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
EFF	FST 17/18 EFFLUENT	24	DUCTILE IRON/HDPE	BURIED (CONCRETE ENCASED)/BURIED	CEMENT MORTAR LINED/-	-	MECHANICAL/HEAT FUSION	40/75	25	LOW PRESSURE AIR	TEST AT 50 PSI.
SP	BATTERY E INFLUENT CONDUIT	72	STEEL	INTERIOR EXPOSED	EPOXY	PAINTED	WELDED	40/75	15	HYDROSTATIC	TEST AT 50 PSI.
ML SAM	MIXED LIQUOR SAMPLE	3	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
ML SAM	MIXED LIQUOR SAMPLE	3	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
RAS SAM	RAS SAMPLE	3	DUCTILE IRON	BURIED (CONCRETE ENCASED)	CEMENT MORTAR LINED	-	MECHANICAL	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
RAS SAM	RAS SAMPLE	3	DUCTILE IRON	INTERIOR EXPOSED	CEMENT MORTAR LINED	PAINTED	FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
IMLR	INTERNAL MIXED LIQUOR RECYCLE DISCHARGE	30	STAINLESS STEEL	IMMERSED / SEWAGE CONTACT	-	-	WELDED/FLANGED	40/75	30	HYDROSTATIC	TEST AT 50 PSI.
ML	MIXED LIQUOR	48	STEEL	BURIED (CONCRETE ENCASED)	EPOXY	-	WELDED	40/75	10	HYDROSTATIC	TEST AT 50 PSI.

NOTES:

- SEE TABLE 1 IN GSPC FOR PIPING COLOR CODING SCHEDULE.
- FIELD WELDED JOINTS ON EPOXY COATED STEEL PIPING SHALL BE PROPERLY REPAIRED. SEE SPECIFICATION 15061 FOR REQUIREMENTS.

Rev.	Description	Appr.	Date
1	ADDENDUM NO. 2	GD	10/06/25
2	ADDENDUM NO. 5	GD	11/19/25
3	ADDENDUM NO. 10	GD	04/03/26

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

AECOM

PRUDENTIAL PLAZA ONE
130 E RANDOLPH STREET
SUITE 2400
CHICAGO, IL 60601, USA

Designed by: WW/FRK	Checked by: RK
Drawn by: AT	Reviewed by: BK
Date: 7/1/2025	Scale: NONE

CONTRACT 21-092-3P

OBRIEN WATER RECLAMATION PLANT
BATTERY E ACTIVATED SLUDGE FACILITY
GENERAL

PROCESS EQUIPMENT SCHEDULES



GENERAL PLUMBING NOTES:

ALL THE FOLLOWING NOTES APPLIES TO ALL PLUMBING DRAWINGS.

- 1. EACH TRADE CONTRACTOR SHALL VISIT CONSTRUCTION SITE PRIOR TO BIDDING, EXAMINE SCOPE AND CONDITIONS OF OTHER CONTRACT WORK...
2. THIS CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL EQUIPMENT IN ACCORDANCE WITH THE CHICAGO BUILDING CODE AND INTERNATIONAL PLUMBING CODE...
3. THIS CONTRACTOR SHALL PAY ALL PERMIT FEES, PLAN REVIEW FEES, LICENSE FEES, INSPECTIONS FEES AND TAXES APPLICABLE TO THEIR DIVISION AND SHALL BE INCLUDED IN THE BASE BID AS PART OF THEIR CONTRACT...
4. CONTRACTOR SHALL SUBMIT SCALED, LAYOUT DRAWINGS (SHOP DRAWINGS) OF PIPE AND FITTINGS INCLUDING (BUT NOT LIMITED TO) PIPE SIZES, LOCATIONS, ELEVATIONS AND SLOPES OF HORIZONTAL RUNS, WALL AND FLOOR PENETRATIONS AND CONNECTIONS...
5. THIS CONTRACTOR SHALL FURNISH AS-BUILT CONTRACT DOCUMENTS TO THE DISTRICT/ ENGINEER BEFORE FINAL PAYMENT WILL BE ISSUED...
6. THIS CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIAL FOR ONE YEAR AFTER COMPLETION AGAINST ALL DEFECTS OF MATERIAL, EQUIPMENT AND WORKMANSHIP...
7. THIS CONTRACTOR SHALL PROVIDE ALL MINOR ITEMS WHICH ARE OBVIOUSLY AND REASONABLY NECESSARY TO COMPLETE THE INSTALLATION AND USUALLY INCLUDED IN SIMILAR WORK EVEN THOUGH NOT NECESSARILY MENTIONED IN THE CONTRACT DOCUMENTS...
8. CONTRACTOR SHALL PROVIDE A WRITTEN "REQUEST FOR INFORMATION" TO THE ARCHITECT AND/OR ENGINEER TO ALLOW FOR CLARIFICATION OF ANY INCONSISTENCIES THAT MAY APPEAR ON THE CONTRACT DOCUMENTS AND SPECIFICATIONS...
9. PLANS AND SPECIFICATIONS GOVERN WHERE THEY EXCEED CHICAGO CODE REQUIREMENTS 9. AND INTERNATIONAL PLUMBING CODE...
10. PLUMBING CONTRACTOR SHALL CONFER AND COORDINATE CLEARANCES, CHASES, RECESSES AND OPENINGS WITH OTHER TRADES FOR THIS WORK...
11. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS UNLESS SPECIFICALLY DIMENSIONED...
12. PROVIDE BACK FLOW PREVENTERS AND TEST IN ALL LOCATIONS REQUIRED BY CODE...
13. PROVIDE MAXIMUM HEADROOM IN ALL PIPED LOCATIONS...
14. PROVIDE ISOLATION VALVES FOR COLD, HOT, AND HOT WATER RETURN SYSTEMS AT EACH FIXTURE, FIXTURE GROUP AND SYSTEM COMPONENTS TO ALLOW FOR PROPER MAINTENANCE...
15. INSTALL EQUIPMENT PER MANUFACTURERS INSTRUCTIONS AND ALL APPLICABLE CODES...
16. INSULATE ALL PIPES RACKED TO OUTSIDE WALLS SUBJECT TO FREEZING...
17. PROVIDE ALL PROPER BUILDING PENETRATIONS TO MEET ALL MANUFACTURERS INSTRUCTIONS AND ALL APPLICABLE CODES...
18. INSULATE ALL HOT, COLD AND RETURN WATER LINES...
19. PROVIDE AT EACH FIXTURE SUPPLY CONNECTION, BOTH HOT AND COLD WATER, AN AIR CHAMBER NOT LESS THAN 12" LONG...
20. PROVIDE LOCAL STOPS OR VALVES AT ALL WATER CONNECTIONS TO PLUMBING FIXTURES...
21. DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC ACTION...
22. INSTALL ALL PIPING TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT...
23. THE CONTRACTOR SHALL PROVIDE AND INSTALL FAUCETS, TRAPS, STOPS, GATE VALVES, WATER HAMMER ARRESTERS AND CLEAN OUT COVERS...
24. PROVIDE CLEANOUTS AT BASE OF RISERS AND ON RISER STACKS...
25. ALL PENETRATIONS THROUGH FIRE-RATED WALLS AND FLOORS SHALL BE MADE FIRE SAFE IN COMPLIANCE WITH THE CITY OF CHICAGO BUILDING CODE...
26. ALL SANITARY, STORM AND VENT LINES SHALL BE PITCHED AS FOLLOWS:
3" AND SMALLER - 1/4" PER 1'-0"
4" AND LARGER - 1/8" PER 1'-0"
27. PROVIDE ACCESS PANELS IN CEILINGS AND AT WALLS FOR EQUIPMENT OR DEVICE REQUIRING REGULAR ACCESS, MAINTENANCE OR TESTING INSTALLED AT INACCESSIBLE LOCATIONS...

PLUMBING SYMBOLS table with columns for UNDERGROUND and SUSPENDED, listing pipe types (DOMESTIC COLD WATER, DOMESTIC HOT WATER, etc.) and abbreviations (AFF, AP, BOP, etc.) with corresponding symbols.

- 28. EACH GROUP OF FIXTURES SUPPLIED WITH A BRANCH FROM THE MAIN SHALL HAVE AN ACCESSIBLE ISOLATION VALVE NEAR THE POINT OF CONNECTION TO THE MAIN.
29. CATCHBASINS AND MANHOLES ARE THE RESPONSIBILITY OF THE SITE CONTRACTOR.
30. OFFSET VENTS WHERE REQUIRED SO THAT NO VTR IS CLOSER THAN 15'0" FROM ANY OUTSIDE AIR INTAKE...
31. FINISHED PIPING SHALL BE TESTED PER SKOKIE PLUMBING CODE SECTION 890.1920 AND INTERNATIONAL PLUMBING CODE...
32. PRIOR TO FINAL ACCEPTANCE BY DISTRICT, CONTRACTOR SHALL CLEAN ALL FIXTURES AND REMOVE ALL LABELS...

FIXTURE CONNECTION MATRIX

Table with columns: TAG, FIXTURE / EQUIPMENT, FIXTURE ROUGH-IN & FINAL CONNECTION (MIN.), SPECIAL REQUIREMENTS. Lists connections for Drinking Fountain, Hose Bib, Lavatory, Mop Basin, Sink, Urinal, Water Closet, and Floor Drain.

NOTE: PROVIDE WATER HAMMER ARRESTORS ON ALL PLUMBING SUPPLY PIPING.

PIPING & INSULATION APPLICATIONS table with columns: PIPE IDENTIFICATION, PIPE, FITTINGS, JOINTS, INSULATION. Includes a diagram showing pipe types and insulation applications for various services like Domestic Water, Sanitary, and Storm.

- GENERAL NOTES:
1. A CLEANOUT SHALL BE INSTALLED AT OR NEAR THE BASE OF EACH WASTE STACK.
2. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF PLUMBING FIXTURES, WALL LOCATIONS, FIXTURE ELEVATIONS ETC.
3. COORDINATE PIPING MATERIAL WITH PROJECT SPECIFICATIONS...
4. PIPE MATERIALS, FITTINGS AND JOINTS MUST MEET APPLICABLE BUILDING CODE REQUIREMENTS.
5. GENERAL CONTRACTOR TO COORDINATE ALL WORK BETWEEN SITE AND BUILDING PLUMBING CONTRACTORS.
6. ALL SUSPENDED PIPING IS INDOOR.

PLUMBING PIPING SCHEDULE

Table with columns: LEGEND, SERVICE, DIAMETER RANGE (INCH), MATERIAL, LOCATION, COATING (INTERIOR, EXTERIOR), JOINT TYPE, MIN/MAX TEMP (F), MAX WORKING PRESSURE (PSI), PIPE TESTING, REMARKS. Lists piping for Water Non-Potable, Water Potable, Sanitary, Vent, Compressed Air Piping.

- NOTES:
1. SEE TABLE 1 IN GSPC FOR PIPING COLOR CODING SCHEDULE.
2. SEE PIPING AND INSULATION APPLICATIONS TABLE ON SHEET PB-001

Revision table with columns: Rev., Description, Appr., Date. Shows revisions 1, 2, and 3.

Professional Engineer seal for Paul Ghassan, License No. 082-055864, State of Illinois. Includes project name and location.

Project title block: METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO, CONTRACT 21-092-3P, O'Brien Water Reclamation Plant, Battery E Activated Sludge Facility. Includes sheet number PB-001 and page number 347.