

**COUNTY OF WESTCHESTER
NEW YORK**

DIVISION OF ENGINEERING

ADDENDUM NO. 2

CONTRACT NO. 23-528

**NEW SNOW EQUIPMENT STORAGE BUILDING
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON AND NORTH CASTLE AND
VILLAGE OF RYE BROOK, NEW YORK**

The attention of the bidder is directed to the following changes, additions, and/or substitutions affecting the above referenced contract.

I. RE: THE PLANS

REMOVE old sheet G-001 (page 1 of 72) and **REPLACE** with the attached Sheet G-001 (1 of 72) labelled Rev. No. 1.

REMOVE old sheet S-001 (page 16 of 72) and **REPLACE** with the attached Sheet S-001 (16 of 72) labelled Rev. No. 1.

REMOVE old sheet S-102 (page 19 of 72) and **REPLACE** with the attached Sheet S-102 (page 19 of 72) labelled Rev. No. 1.

REMOVE old sheet S-103 (page 20 of 72) and **REPLACE** with the attached Sheet S-103 (page 20 of 72) labelled Rev. No. 1.

REMOVE old sheet S-301 (page 22 of 72) and **REPLACE** with the attached Sheet S-301 (page 22 of 72) labelled Rev. No. 1.

REMOVE old sheet S-501 (page 24 of 72) and **REPLACE** with the attached Sheet S-501 (page 24 of 72) labelled Rev. No. 1.

REMOVE old sheet S-502 (page 25 of 72) and **REPLACE** with the attached Sheet S-502 (page 25 of 72) labelled Rev. No. 1.

REMOVE old sheet S-503 (page 26 of 72) and **REPLACE** with the attached Sheet S-503 (page 26 of 72) labelled Rev. No. 1.

ADD the attached Supplemental set of drawings (1-6) titled "Plans and Specifications for Vapor Intrusion Mitigation System" by Terracon.

II. RE: THE SPECIFICATIONS

REMOVE Proposal Page 6 (1 of 2) through Proposal Page 6 (2 of 2) and **REPLACE** with attached Proposal Page 6 (1 of 2) – Proposal Page 6 (2 of 2) labelled Addendum No. 2.

III. RE: REQUESTS FOR INFORMATION

Q1: Who is responsible for the AC condensate discharge piping and where does it terminate?

R1: Mechanical contractor is responsible for AC condensate drain piping. Terminate condensate drain piping in the vertical OW vent pipe with funnel ball/float trap.

Q2: Who is responsible for the condensate waste discharge piping for the Vacuum Pumps VP-1 & VP-2?

R2: Mechanical contractor is responsible for the condensate drain piping off VP-1 & VP-2.

Q3: Where exactly is the ACCU located. The equipment schedule calls for a CMU wall bracket. The drawings note “on deck above”. Is that the roof deck? Or, the deck directly above the room. Or, on the wall using the spec’d wall bracket?

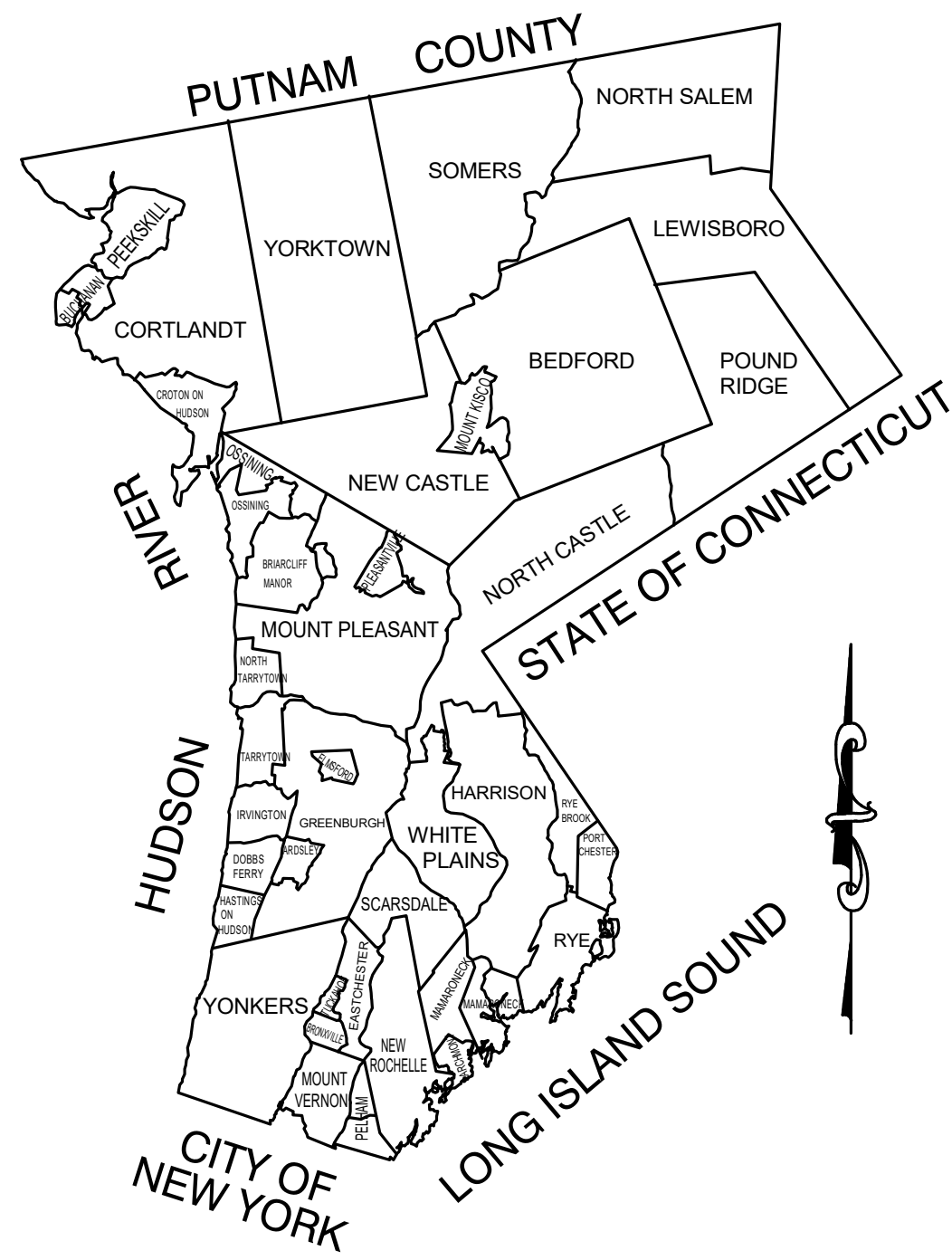
R3: ACCU-1 is located on deck directly above the room. No need for wall bracket for unit mounting.

ALL PROVISIONS OF THE CONTRACT NOT AFFECTED BY THE FOREGOING SHALL REMAIN IN FULL FORCE AND EFFECT.

COUNTY OF WESTCHESTER
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

By: Hugh J. Greechan Jr., P.E.
Commissioner

Dated: Tuesday, March 24, 2026
WHITE PLAINS, NEW YORK



WESTCHESTER COUNTY

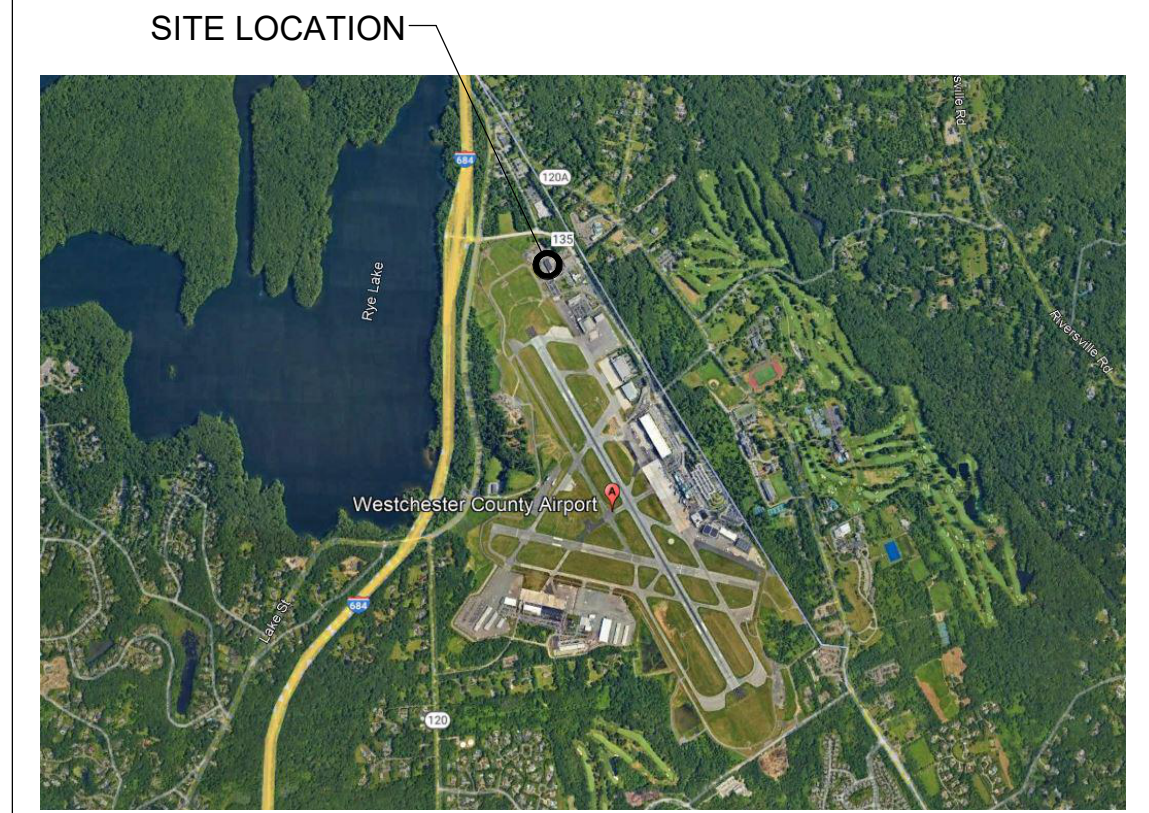
WESTCHESTER COUNTY

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT No. 23-528 SNOW EQUIPMENT STORAGE FACILITY



WESTCHESTER COUNTY AIRPORT TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK



LOCATION MAP
SCALE: N.T.S.

DRAWING LIST				DRAWING LIST			
SHEET NUMBER	SHEET NAME	DPW FILE NO.	REV	SHEET NUMBER	SHEET NAME	DPW FILE NO.	REV
G-001	1 COVER SHEET AND SHEET INDEX	48-16-T-67	1	A-102	37 ROOF PLAN	48-16-A-103	0
GC-101	2 CONTRACTOR HAIL, ROUTE AND STAGING AREA PLAN	48-16-G-68	0	A-111	38 REFLECTED CEILING PLAN	48-16-A-104	0
GC-102	3 CONSTRUCTION SAFETY & PHASING PLAN	48-16-G-69	0	A-201	39 EXTERIOR ELEVATIONS	48-16-A-105	0
GC-501	4 CONSTRUCTION SAFETY & PHASING NOTES AND DETAILS	48-16-G-70	0	A-301	40 BUILDING SECTIONS	48-16-A-106	0
C-001	5 GENERAL NOTES, ABBREVIATIONS AND LEGEND	48-16-C-71	0	A-302	41 WALL SECTIONS AND DETAILS	48-16-A-107	0
C-002	6 EXISTING CONDITIONS PLAN	48-16-C-72	0	A-401	42 ENLARGED PLANS, INTERIOR ELEVATIONS, AND DETAILS	48-16-A-108	0
CD-101	7 DEMOLITION PLAN	48-16-C-73	0	A-601	43 SCHEDULES AND DOOR DETAILS	48-16-A-109	0
C-101	8 SITE PLAN	48-16-C-74	0	F-001	44 DETAILS, NOTES, & SYMBOLS	48-16-F-110	0
C-102	9 UTILITY PLAN	48-16-C-75	0	F-101	45 FLOOR PLAN	48-16-F-111	0
C-103	10 GRADING PLAN	48-16-C-76	0	P-101	46 SANITARY/STORM PLUMBING PLAN, DETAILS & LEGEND	48-16-P-112	0
C-104	11 FIRE TRUCK TRAVEL PATH PLAN	48-16-C-77	0	P-102	47 WATER, PROPANE, COMPRESSOR PLUMBING PLAN & DETAILS	48-16-P-113	0
C-105	12 FIRE TRUCK TRAVEL PATH PLAN	48-16-C-78	0	P-401	48 SANITARY RISER	48-16-P-114	0
C-501	13 DETAILS	48-16-C-79	0	P-402	49 GAS RISER	48-16-P-115	0
C-502	14 DETAILS	48-16-C-80	0	M-001	50 ABBREVIATIONS, GENERAL NOTES, AND SYMBOLS	48-16-M-116	0
C-503	15 DETAILS	48-16-C-81	0	M-002	51 HVAC BUILDING AIR BALANCE DIAGRAM	48-16-M-117	0
S-001	16 GENERAL NOTES	48-16-S-82	1	M-101	52 HVAC FLOOR PLAN	48-16-M-118	0
S-002	17 GENERAL NOTES	48-16-S-83	0	M-102	53 HVAC ROOF PLAN	48-16-M-119	0
S-101	18 FOUNDATION PLAN	48-16-S-84	0	M-301	54 ELEVATIONS	48-16-M-120	0
S-102	19 FLOOR SLAB LAYOUT PLAN	48-16-S-85	1	M-501	55 DETAILS	48-16-M-121	0
S-103	20 FLOOR SLAB REINFORCEMENT PLAN	48-16-S-86	1	M-502	56 DETAILS	48-16-M-122	0
S-104	21 ROOF FRAMING PLAN	48-16-S-87	0	M-601	57 SCHEDULES	48-16-M-123	0
S-301	22 SECTIONS	48-16-S-88	1	E-001	58 ELECTRICAL NOTES, SYMBOLS, ABBREVIATIONS AND COMPLIANCE	48-16-E-124	0
S-302	23 SECTIONS	48-16-S-89	0	ED-100	59 ELECTRICAL SITE PLAN - REMOVALS	48-16-E-125	0
S-501	24 DETAILS	48-16-S-90	1	ED-101	60 ELECTRICAL FIRST FLOOR PLAN - REMOVALS	48-16-E-126	0
S-502	25 DETAILS	48-16-S-91	1	E-100	61 ELECTRICAL SITE PLAN	48-16-E-127	0
S-503	26 DETAILS	48-16-S-92	1	E-101	62 ELECTRICAL FLOOR PLAN	48-16-E-128	0
S-504	27 DETAILS	48-16-S-93	0	E-102	63 ELECTRICAL FLOOR PLAN	48-16-E-129	0
S-505	28 DETAILS	48-16-S-94	0	E-103	64 ELECTRICAL CEILING PLAN	48-16-E-130	0
S-506	29 DETAILS	48-16-S-95	0	E-104	65 ELECTRICAL ROOF PLAN	48-16-E-131	0
S-507	30 DETAILS	48-16-S-96	0	E-105	66 ELECTRICAL LIGHTING PLAN	48-16-E-132	0
S-601	31 SCHEDULES	48-16-S-97	0	E-501	67 ELECTRICAL DETAILS	48-16-E-133	0
A-001	32 SYMBOLS, ABBREVIATIONS, AND TYPICAL DETAILS	48-16-A-98	0	E-502	68 ELECTRICAL DETAILS	48-16-E-134	0
A-002	33 CODE COMPLIANCE AND LIFE SAFETY PLAN	48-16-A-99	0	E-503	69 ELECTRICAL DETAILS	48-16-E-135	0
AD-101	34 DEMOLITION FLOOR PLAN	48-16-A-100	0	E-601	70 ELECTRICAL SCHEDULES	48-16-E-136	0
A-100	35 OVERALL FLOOR PLAN	48-16-A-101	0	FA-001	71 DETAILS, NOTES, & SYMBOLS	48-16-FA-137	0
A-101	36 FLOOR PLAN	48-16-A-102	0	FA-101	72 FIRE ALARM FIRST FLOOR PLAN	48-16-FA-138	0

THE FOLLOWING PERMIT APPLICATIONS ARE TO BE FILED WITH THE WESTCHESTER COUNTY DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION BUILDING AND CODE ENFORCEMENT OFFICE FOR ALL WORK, INCLUDING ANY TEMPORARY FACILITIES AND SERVICES.

- APPLICATION FOR DEMOLITION PERMIT
- APPLICATION FOR BUILDING PERMIT
- APPLICATION FOR PROPOSED PLUMBING WORK
- APPLICATION FOR PROPOSED ELECTRICAL PERMIT
- APPLICATION FOR PROPOSED PLUMBING GAS WORK

CONTRACTOR SHALL BE RESPONSIBLE FOR DEFERRED PERMITS FOR WORK INCLUDING BUT NOT LIMITED TO SPRINKLER, VEHICLE LIFT, FIRE ALARM, SOLAR PHOTOVOLTAICS, PROPANE TANKS, BACKFLOW PREVENTER, OR AS DEEMED BY CODE ENFORCEMENT OFFICIAL.



IT IS A VIOLATION OF NYS LAW FOR ANY PERSON TO ALTER THIS DOCUMENT IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. IF A DOCUMENT BEARING THE SEAL OF AN ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE DOCUMENT THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

IN CHARGE OF _____
CHECKED BY _____
MADE BY _____

RECOMMENDED FOR DESIGN JEFFREY A. DEAN, P.E. ASSOCIATE ENGINEER DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	DATE _____	RECOMMENDED FOR CONSTRUCTION GAYLE M. KATZMAN, P.E. FIRST DEPUTY COMMISSIONER DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	DATE _____	APPROVED FOR CONSTRUCTION HUGH J. GREECHAN, JR., P.E. COMMISSIONER DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	DATE _____
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CONSULTANT INFORMATION			
1	3-13-2026		ADDENDUM #2
REVISION NUMBER	DATE	MADE BY	APP'D BY
RECORD DRAWING CERTIFICATION			
<input type="checkbox"/> AS BUILT - CHANGES AS NOTED <input type="checkbox"/> AS BUILT - NO CHANGES			
CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	DATE _____	SHEET NUMBER _____
SIGNATURE _____	SIGNATURE _____		
TITLE _____	TITLE _____		
WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION DIVISION OF ENGINEERING			
NEW SNOW EQUIPMENT STORAGE BUILDING WESTCHESTER COUNTY AIRPORT TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK COVER SHEET AND SHEET INDEX		CONTRACT NUMBER 23-528	SHEET NUMBER G-001
SHEET NO. 1 OF 72		SCALE: AS SHOWN	DATE: OCTOBER 10, 2025
DPW FILE NO. 48-16-T-67		REV. NO. 1	

GENERAL NOTES:

- 1. CODES AND REFERENCE STANDARDS: 2020 NYS BUILDING CODE AND ASCE 7-16
2. STRUCTURAL LOADING DESIGN DATA:
A. ROOF DEAD LOAD:
MAIN ROOF AND WASHBAY ROOF DL - COLATTERAL: 15 PSF
STEEL JOIST WEIGHT: 32 PLF
SOLAR SYSTEM ENTIRE ROOF SURFACE COLATTERAL: 8 PSF (+4PSF MAX AT EDGE LINE OF PANELS AT GRID 1, 5 & 7)
MECHANICAL ROOM CAP ROOF: 10 PSF
B. ROOF LIVE LOAD:
MAIN ROOF AND WASHBAY ROOF: 20 PSF
MECHANICAL ROOM: 100 PSF INCIDENTAL/MECH (NOT FOR STORAGE)
C. GROUND FLOOR LIVE LOAD:
FIRST FLOOR: 175 PSF
FIRST FLOOR (ANALYZED SEPARATELY FROM 175PSF): ASHTO HL-93 TRUCK & LANE LOADING
MECHANICAL ROOMS: 200 PSF, 2000 LBS'
LIVE LOAD REDUCTION: N/A
D. GROUND FLOOR DEAD LOADS:
SUPERIMPOSED DL: 5 PSF
E. WIND LOAD (3-SEC. GUST):
ULTIMATE WIND SPEED: 115 MPH
RISK CATEGORY: II
EXPOSURE CATEGORY: C
INTERNAL PRESSURE COEFFICIENT: 0.18
WIND-BORNE DEBRIS REGION: NA
F. RAIN INTENSITY: 2.81 IN/HR
G. SNOW LOAD:
GROUND SNOW LOAD (Pg): 30 PSF
FLAT-ROOF SNOW LOAD (Pf): 21 PSF
SNOW EXPOSURE FACTOR (Ce): 1.0
SNOW IMPORTANCE FACTOR (Is): 1.0
THERMAL FACTOR (Ct): 1.0
DRIFT LOADS (S-1 TRIANGLE DISTRIBUTION PER ASCE7) UPPER ROOF: NO DRIFT, WASHBAY +68 PSF MAX @2'-6" FROM GRID 5
H. SEISMIC LOAD:
RISK CATEGORY: II
SEISMIC IMPORTANCE FACTOR: 1.0
SS: 265
S1: .061
SITE CLASS: C - PER GEOTECH REPORT
Sds: .247
Saf: .061
SEISMIC DESIGN CATEGORY: B
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE
BASIC SEISMIC FORCE-RESISTING SYSTEM: DUAL SYSTEM WITH INTERMEDIATE MOMENT FRAMES & ORDINARY REINFORCED MASONRY SHEAR WALLS
RESPONSE MODIFICATION COEFFICIENT, R: 3.0
SEISMIC RESPONSE COEFFICIENT, Cs: .070
STEEL MSFRS ULTIMATE SEISMIC BASE SHEAR, V: 42.5 KIPS (>25% OF TOTAL BASE SHEAR PER ASCE 7-16)
TOTAL MSFRS ULTIMATE SEISMIC BASE SHEAR, V: 93 KIPS

3. HANDRAIL ASSEMBLIES AND GUARDS SHALL BE DESIGNED FOR 50 PLF OR A CONCENTRATED LOAD OF 200 LBS LOCATED AT ANY POINT APPLIED IN ANY DIRECTION AT THE TOP AND TRANSFER THE LOAD TO THE SUPPORT STRUCTURE. THE LOADS NEED NOT TO ACT CONCURRENTLY.

GENERAL: (THE FOLLOWING REQUIREMENTS TOGETHER WITH THE PROJECT PLANS AND SPECIFICATIONS SHALL APPLY TO THE STRUCTURES IN THIS CONTRACT.)

- 1. THE CONTRACTOR IS RESPONSIBLE FOR THE SURVEY AND FIELD VERIFYING ALL EXISTING CONDITIONS.
2. WORK ON STRUCTURAL DRAWINGS REPRESENTS FINAL CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRUCTURAL STABILITY OF ALL INTERMEDIATE CONDITIONS DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL COORDINATE THE ARCHITECTURAL, PLUMBING, HVAC, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION NOT INDICATED ON THE STRUCTURAL DRAWINGS. SUCH INFORMATION INCLUDES, AS A MINIMUM, EMBEDDED SLEEVES AND INSERTS, MISCELLANEOUS DETAILS, SPECIAL FLOOR FINISHES, DOOR THRESHOLDS, SLOPES TO DRAINS, NAILERS, OPENINGS IN STRUCTURAL ELEMENTS, ETC.
4. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS, TIE-DOWNS, AND/OR SHORING MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
5. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROCEDURES. THE STRUCTURAL ENGINEER OF RECORD IS NOT RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION OR FOR RELATED SAFETY PROCEDURES.
6. TYPICAL NOTES AND DETAILS SHOWN ON STRUCTURAL TYPICAL DETAILS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE ON THE CONTRACT DOCUMENTS. DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR THE MOST NEARLY SIMILAR CONDITION ON THE DRAWINGS AS DETERMINED BY THE ENGINEER.
7. DO NOT SCALE DRAWING DIMENSIONS. IN THE EVENT OF A GRID LINE DIMENSION CONFLICT, THE ARCHITECTURAL DRAWINGS SHALL GOVERN.
8. THE CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS FOR ALL PARTS OF THE WORK INCLUDING DESCRIPTION OF DEMOLITION, TEMPORARY BRACING, CONSTRUCTION METHODS AND SEQUENCING, WHERE APPLICABLE NO PERFORMANCE OF WORK SHALL COMMENCE WITHOUT REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER.
9. FABRICATION PRIOR TO THE RECEIPT OF AN APPROVED SHOP DRAWINGS SHALL BE AT THE CONTRACTORS OWN RISK AND THAT INSTALLATION OF ANY WORK PRIOR TO RECEIPT OF AN APPROVED SHOP DRAWING SHALL BE STRICTLY PROHIBITED.
10. FOR ELEVATIONS REFER TO THE PLAN SHEETS.
11. DRILLING, CORING, SAW CUTTING AND ETC. INTO CONCRETE SHALL MEET THE LATEST OSHA REGULATIONS FOR SILICA DUST EXPOSURE.

EXCAVATION:

- 1. DEWATER, EXCAVATE, FILL AND COMPACT SOIL IN PREPARATION FOR SLAB ON GRADE, WALLS, AND FOUNDATION IN ACCORDANCE WITH THE RECOMMENDATIONS PRESENTED IN THE GEOTECHNICAL REPORT PREPARED BY RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC. REPORT NUMBER 23.0018 DATED MAY 08, 2023, AND RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC. GEOTECHNICAL REPORT ADDENDUM 1 DATED AUGUST 27, 2023. PER GEOTECHNICAL REPORT THIS SITE HAS A HIGH WATER TABLE. GENERAL CONTRACTOR IS RESPONSIBLE FOR DESIGN INSTALLATION AND PROPER APPLICATION OF DEWATERING SYSTEM TO SERVE THE MEANS AND METHODS INTENT AND PHASES OF CONSTRUCTION OPERATIONS ON THE SITE. PROTECT GRADE MATERIALS FROM DEGRADATION DUE TO WATER AND WEATHER EXPOSURE.
2. ALL EXCAVATIONS SHALL BE DEWATERED TO MAINTAIN GROUNDWATER AT LEAST 24" BELOW FOOTING BEFORE PLACING OF CONCRETE.
3. SLOPE THE EXTERIOR GRADE AWAY FROM THE STRUCTURE. REFER TO CIVIL PLANS FOR DETAILS.
4. CONTRACTOR RESPONSIBLE TO PROVIDE TEMPORARY OR PERMANENT SUPPORTS, SHORING, SHEETING OR BRACING SO THAT NO HORIZONTAL MOVEMENT OR VERTICAL SETTLEMENT OCCURS TO ADJACENT STRUCTURES, STREETS, SOILS OR UTILITIES ADJACENT TO OR WITHIN THE PROJECT SITE.
5. BACKFILL SHALL BE PLACED IN COMPACTED LIFTS PER THE EARTHWORK SPECIFICATIONS.
6. NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER.
7. DO NOT BACKFILL BEHIND FOUNDATION WALLS UNTIL THE PERMANENT LATERAL SUPPORT SYSTEM IS IN PLACE AND OF FULL STRENGTH.
8. COMPONENTS OF ANY SUPPORT OF EXCAVATION SYSTEM SHALL REMAIN IN PLACE UNTIL ALL PERMANENT STRUCTURAL SYSTEMS AT AND BELOW GROUND ARE IN PLACE.
9. STRUCTURE WITH BACKFILL ON BOTH SIDES SHALL RECEIVE BACKFILL IN BALANCED 95% COMPACTED LIFTS OF CRUSHED STONE EACH SIDE.
10. FOUNDATIONS SHALL BE DRILLED DISPLACEMENT MICROPILES DESIGNED BY INSTALLER'S ENGINEER FOR THE SOIL CONDITIONS AND CONSTRAINTS OUTLINED IN THE MICROPIILING REQUIREMENTS OF GEOTECHNICAL REPORT ADDENDUM 1. REQUIRED CAPACITY NOTED ON S-101

SOILS:

- 1. THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT PREPARED BY RENAISSANCE GEOTECHNICAL ENGINEERING, PLLC. REPORT NUMBER 23.0018 DATED MAY 08, 2023.
2. THE GEOTECHNICAL REPORT NAMED ABOVE IS AVAILABLE TO THE CONTRACTOR UPON REQUEST TO THE OWNER. THE ARCHITECT AND ENGINEER WILL NOT BE RESPONSIBLE FOR THE ACCURACY OR APPLICABILITY OF SUCH DATA THEREIN.
3. NO RESPONSIBILITY IS ASSUMED BY THE ENGINEER FOR THE VALIDITY OF THE SUBSURFACE CONDITIONS DESCRIBED ON THE DRAWINGS, SPECIFICATIONS, TEST BORINGS, OR TEST PITS. THESE DATA ARE INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION. THEY REPRESENT CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AT THE TIME DATA WAS COLLECTED.
4. MAXIMUM ALLOWABLE SOIL BEARING PRESSURE = STRUCTURE SUPPORTED BY PILES
5. PILE CAPS TO BEAR ON NATURAL UNDISTURBED SOIL OR COMPACTED FILL PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS TO EXHIBIT A DENSITY OF AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 (MODIFIED PROCTOR).
6. GEOTECHNICAL ENGINEER MUST REVIEW THE FINAL SITE AND GRADING PLANS TO VALIDATE ALL RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AND CONFIRM THEIR FINDINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF INSPECTIONS OR EXAMINATIONS PRIOR TO CONSTRUCTION COMMENCEMENT.
7. PERFORM SOIL COMPACTION TESTING, AT LEAST ONE TEST EVERY 100 LINEAR FEET OF FOUNDATION. PROVIDE A MINIMUM OF 2 SOIL COMPACTION TESTS AT EVERY 1000 SF OF BUILDING SLAB.

STRUCTURAL STEEL:

- 1. STANDARDS:
DESIGN - AISC 360 - 2016
CONSTRUCTION - AISC 303, LATEST EDITION
BOLTED CONNECTIONS - LATEST EDITION OF AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325
WELDED CONNECTIONS - AMERICAN WELDING SOCIETY (AWS) D1.1, LATEST EDITION
2. WIDE FLANGE SECTIONS AND TEES - ASTM A992 (Fy = 50 KSI)
3. SQUARE, RECTANGULAR & ROUND HOLLOW STRUCTURAL SECTIONS (HSS) - ASTM A500 GRADE C.
4. ANGLES, PLATES AND BARS - ASTM A572-50, (EXCEPT WHERE NOTED TO BE ASTM A36)
5. BEAM/COLUMN CONTINUITY PLATES AND DOUBLER PLATES - ASTM A572-50
6. PIPE SECTIONS - ASTM A53 GRADE B.
7. ALL STRUCTURAL BOLTS SHALL BE ASTM A-325 TYPE N UNLESS OTHERWISE NOTED.
8. ALL EMBEDDED STEEL ANCHOR BOLTS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST A.I.S.C. STANDARD SPECIFICATIONS AND SHALL BE ASTM F1554, GRADE 55, U.N.O.
9. USE WELDED OR BOLTED SHOP CONNECTIONS AND BOLTED FIELD CONNECTIONS WHERE POSSIBLE.
10. ALL EMBEDDED STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
11. ALL WELDING SHALL CONFORM WITH THE LATEST EDITION OF AWS CODE. ALL WELDERS (SHOP & FIELD) SHALL BE AWS D1.1 CERTIFIED FOR THE TYPE OF WELDING BEING PERFORMED.
12. TO OBTAIN SPECIFIED ALIGNMENT AND FIT-UP U.N.O. FIELD WELDING MUST BE PERFORMED WHERE SPECIFICALLY NOTED. EDGE OF SLAB AND ROOF BENT PLATES, ANGLES AND OTHER MISK EXTERIOR, OR INTERIOR WALL ALIGNMENT ITEMS SHALL BE FIELD WELDED TO BEAMS. PROVIDE FABRICATION AND ERECTION TOLERANCES MORE STRINGENT THAN SPECIFIED BY AISC WHERE REQUIRED TO ACHIEVE THE DETAILS INDICATED.
13. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
14. WHERE A GROOVE WELD IS SHOWN WITHOUT AN INDICATED DEPTH OF PENETRATION THE JOINT SHALL BE A COMPLETE JOINT PENETRATION WELD (CJP).
15. CONNECTIONS ARE DESIGNED AND DIMENSIONED ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR RETAINING AN AISC CERTIFIED FABRICATOR AND THE SERVICES OF A QUALIFIED STEEL DETAILER TO FINALIZE DETAILING FOR FABRICATION IN ACCORDANCE WITH THE PLAN REQUIREMENTS HEREIN AND AISC CODE OF STANDARD PRACTICE. CONNECTION DIMENSIONS DETAIL ARE TYPICAL TO THAT CONNECTION. FOR ANY DIMENSIONS NOT PROVIDED SEE NOTES 31 & 32 BELOW. DESIGN AND DETAILING OF MISCELLANEOUS METALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
16. ANCHOR BOLTS OR RODS SHALL BE BUILT INTO CONNECTING WORK PRESET BY TEMPLATES OR SIMILAR METHODS.
17. MINIMUM CONNECTION BOLT DIAMETER IS 3/4 INCH. BEAM CONNECTIONS MUST HAVE AT LEAST TWO BOLTS.
18. PROVIDE FRICTION TYPE BOLT CONNECTIONS IN ALL MOMENT CONNECTIONS.
19. SIMPLE SHEAR CONNECTIONS SHALL BE CAPABLE OF END ROTATION PER AISC REQUIREMENTS FOR UNRESTRAINED MEMBERS.
20. MINIMUM SIZE OF FILLET WELDS SHALL BE 1/4 INCH UNO.
21. PROVIDE FRAMED OR TOP OF COLUMN BEARING BEAM CONNECTIONS IN ACCORDANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION. UNLESS OTHERWISE NOTED, BEAM CONNECTIONS SHALL BE DETAILED TO HAVE A CAPACITY OF NOT LESS THAN ONE-HALF THE TOTAL ALLOWABLE UNIFORM LOAD DETERMINED IN ACCORDANCE WITH AISC MANUAL OF STEEL CONSTRUCTION TABLE (ASD) FOR "UNIFORM LOAD CONSTRAINTS FOR BEAMS LATERALLY SUPPORTED", FOR BEAMS AND SPANS IN QUESTION, UNLESS A MEMBER LOAD IS SPECIFIED ON WITHIN THESE DOCUMENTS. SEE S-104 & S-504.
22. MINIMUM BEAM END REACTION SHALL BE 10 KIPS (ASD).
23. ENDS OF COLUMNS AT SPLICES OR LOOSE BASE PLATES SHALL BE "FINISHED TO FULL CONTACT".
24. PROVIDE STIFFENERS "FINISHED TO CONTACT" UNDER ALL LOAD CONCENTRATIONS ON SUPPORTING MEMBERS, OVER COLUMNS, AND WHERE SHOWN ON THE DRAWINGS.
25. PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD THE STRUCTURAL STEEL FRAME SECURELY IN POSITION. BRACING SHALL NOT BE REMOVED UNTIL THE PERMANENT LATERAL LOAD RESISTING SYSTEM IS IN PLACE AND CONCRETE FOR FLOORS AND ROOFS HAVE ACHIEVED AT LEAST 75% OF THEIR DESIGN STRENGTH. THE STEEL FRAME SHALL BE CONSIDERED A NON SELF-SUPPORTING FRAME UNTIL ALL SLAB DIAPHRAGMS, DECK DIAPHRAGMS AND DECK ANGLES ARE IN PLACE.
26. FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER FOR EACH INDIVIDUAL CASE.
27. STRUCTURAL STEEL EXPOSED TO THE WEATHER OR LOCATED IN A NONCONCIDENT SPACE, SHALL BE HOT DIPPED GALVANIZED. ALL STRUCTURAL STEEL IN WASHBAY AND ON GRIDLINE 5 SUPPORTING WASHBAY SHALL BE HOT DIPPED GALVANIZED.
28. BEAM AND JOISTS SHALL BE SPACED EQUALLY BETWEEN COLUMNS UNO.
29. TYPICAL STEEL FRAME CONNECTION REQUIREMENTS UNO:
ALL MOMENT AND END PLATE CONNECTIONS SHALL BE SYMMETRICAL TO BEAM CENTERLINE UNO
ALL MOMENT AND END PLATE CONNECTIONS SHALL UTILIZE WORKABLE GAUGE OF CONNECTED MEMBER FOR BOLT PLACEMENT. ALL BEAMS AND COLUMNS ON THIS PROJECT WITH THESE CONNECTION TYPES HAVE A WORKABLE GAUGE OF 5 1/2".
ALL STIFFENERS SHALL BE FULL DEPTH, HAVE 1" CORNER CLIPS AND BE WELDED EACH SIDE TO THE WEB AND BOTH FLANGES UNO
ALL STIFFENERS SHALL HAVE WIDTH THAT EXTENDS EQUAL TO THE BEAM FLANGE WIDTH IN THE CONNECTION
BEAM ENDS SHALL HAVE 1/2" ERECTION GAP FROM SUPPORT, AND BEAM ENDS CUT PARALLEL TO SUPPORT FACE. FULLY TIGHTEN TO PRETENSION ALL BOLTS IN STEEL TO STEEL CONNECTIONS UTILIZE 10 BOLTS IN ALL AREAS TOOL ACCESSIBLE
30. TYPICAL STEEL FRAME CONNECTION DIMENSIONS UNO: (NOT APPLICABLE TO LINTELS)
SHEAR CONN PLATE THICKNESS: tsp= 3/8"
MOMENT CONN FLANGE PLATE THICKNESS: tmp= 3/4"
MOMENT CONN CAP PLATE THICKNESS: tpc= 1 1/4"
WEB STIFFENER THICKNESS: tws= 5/8"
BOLT CL TO BEAM SIDE EDGE OF PLATES: Lsb= 1 1/2" (LARGER AT END & CAP PL., WIDTH EQUAL OR WIDER THAN LARGER FLANGE)
T&B BOLT CL TO T&B EDGE OF SHEAR PL: Lvs= 1 1/2"
LAST BOLT CL TO END OF MOM & END PL: Lvm= 1 3/4"
FIRST SPS BOLT CL TO FACE OF SUPPORT: as= 2 1/2" (2" BOLT CL TO END OF BEAM PER REQUIRED ERECTION GAP ABOVE)
FIRST MOM BOLT CL TO FACE OF SUPPORT: am= 3" (2 1/2" BOLT CL TO END OF BEAM PER REQUIRED ERECTION GAP ABOVE)
BOLT SPACING WITHIN LINE: sp= 5 1/2"
FLANGE BOLT GAUGE SPACING: sg= 5 1/2"

JOISTS:

- 1. ALL JOIST AND JOIST GIRDER MEMBERS SHALL BE IN ACCORDANCE WITH STEEL JOIST INSTITUTE SPECIFICATIONS FOR STEEL JOISTS (SJI K10), JOIST GIRDERS (SJI JG-10) AND LONG SPAN JOISTS (SJI LH10H-10).
2. DO NOT INSTALL JOISTS UNTIL SUPPORTING CONSTRUCTION IS IN PLACE AND SECURED. CAMBER SHALL BE CALIBRATED IN JOISTS TO ALLOW FOR INSTALLATION OF DECKING TO ADJACENT JOISTS AND TO PERIMETER FRAMING.
3. FIELD WELD JOISTS TO SUPPORTING STEEL. COMPLY WITH AWS REQUIREMENTS AND PROCEDURES.
4. JOIST MANUFACTURER SHALL DESIGN AND PROVIDE ALL JOIST BRIDGING PER STEEL JOIST INSTITUTE REQUIREMENTS. THE MANUFACTURER IS RESPONSIBLE FOR INCLUDING ALL REQUIRED BRIDGING AND AT A MINIMUM UPLIFT BRIDGING LOCATED NEAR THE FIRST PANEL JOINT AT THE BOTTOM CHORD OF EACH END OF THE BAR JOISTS, CONSIDERED WHEN UPLIFT WIND PRESSURE IS PART OF A DESIGN COMBINATION. REFER TO THE COMPONENT AND CLADDING DRAWINGS ON S-402 FOR GROSS UPLIFT PRESSURES. IGNORE SOLAR PV WEIGHT IN UPLIFT DESIGN SEE NOTE 5.
5. DESIGN AND FABRICATE JOISTS AND GIRDERS, BRIDGING, CONNECTIONS, AND ANCHORAGES AS REQ'D TO MEET ALL LOAD CONDITIONS INCLUDING UPLIFT. JOIST SHALL NOT BE REDUCED FOR FABRICATION FROM THE DETAILING THAT PROVIDES THE FULL SJI CAPACITY FOR THE SPECIFIED JOIST. UPLIFT DESIGN SHALL NOT UTILIZE SOLAR PV PANEL DEAD WEIGHT TO OFFSET UPLIFT FOR ASSURANCE AGAINST FUTURE REMOVAL OF THIS SYSTEM AND LIGHTER BALLASTING THAN SPECIFIED ASSUMPTION.
6. JOISTS SHALL BE DESIGNED TO RESIST AN ADDITIONAL ASD INCIDENTAL AXIAL LOAD OF 1 KIP T&C FROM FORCES ON AND MOVEMENT OF OTHER CONNECTED BUILDING FRAMING ELEMENTS NOT RELATED TO JOIST SLOPE.

METAL DECK:

- 1. METAL DECK REFERENCE STANDARDS:
ALL METAL DECK: SDI PUBLICATION NO. 31
2. MATERIAL SPECIFICATION: REFER TO SPECIFICATION FOR DECK MATERIAL PHYSICAL PROPERTIES AND ATTACHMENT REQUIREMENTS.
3. INSTALL DECK IN TRIPLE SPAN CONDITION IN ALL LOCATIONS WHERE POSSIBLE PROVIDE 1 DOUBLE SPAN AS NECESSARY IN SHORTEST SPAN CONDITIONS TO ALLOW TRIPLE SPAN ELSEWHERE. SINGLE SPANS, IF THEY OCCUR, MAY REQUIRE SHORING DURING PLACEMENT, AND MUST BE HIGHLIGHTED FOR ADDITIONAL REVIEW ON APPROVED SHOP DRAWINGS.
4. INSTALL DECK WITH ALL REQUIRED ACCESSORIES, INCLUDING BUT NOT LIMITED TO POUR STOPS, CLOSURE STRIPS, GIRDER FILLERS, AND ALL OTHER MISCELLANEOUS DECK ACCESSORIES.
5. SEE PLAN FOR METAL DECK SHEAR CONNECTORS. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
6. METAL DECK WITH SIDE LAP FASTENERS SHALL BE AT 12" MAX AND NO WIDER THAN 1/2 x CL TO CL SPAN.

CONCRETE:

- 1. CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ACI 301 - SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
2. STANDARDS:
DESIGN: ACI 318 - 2014
DETAILS: ACI 315 - 1999
MATERIALS: ACI 301 - 2010
3. DESIGN STRENGTH:
SLAB ON GRADE: 5000 PSI COMPRESSIVE STRENGTH @ 28 DAYS, NORMAL WEIGHT CONCRETE
WALLS: 5000 PSI COMPRESSIVE STRENGTH @ 28 DAYS, NORMAL WEIGHT CONCRETE
FOUNDATIONS: 5000 PSI COMPRESSIVE STRENGTH @ 28 DAYS, NORMAL WEIGHT CONCRETE
CAPS: 5000 PSI COMPRESSIVE STRENGTH @ 28 DAYS, NORMAL WEIGHT CONCRETE
BEAMS: 5000 PSI COMPRESSIVE STRENGTH @ 28 DAYS, NORMAL WEIGHT CONCRETE
4. SUBMIT PROPOSED CONCRETE MIX DESIGN TO THE OWNERS REPRESENTATIVE AND TESTING LABORATORY CONCURRENTLY FOR REVIEW AND APPROVAL.
5. CONCRETE COVER TO REINFORCEMENT SHALL EQUAL:
CONCRETE DEPOSITED ON GROUND 3".
FORMED CONCRETE EXPOSED TO GROUND, WEATHER, WATER OR CAST ON VAPOR RETARDER: #6 & LARGER: 2"
FORMED CONCRETE EXPOSED TO GROUND, WEATHER, WATER OR CAST ON VAPOR RETARDER: #5 & SMALLER: 1 1/2"
WALLS & SLABS NOT EXPOSED TO GROUND, WEATHER OR WATER: 1-1/2".
6. CLEAN AND APPLY BONDING AGENT TO ALL EXISTING CONCRETE SURFACES TO RECEIVE NEW CONCRETE. INTENTIONALLY ROUGHEN SURFACES TO RECEIVE CMU DURING FINISHING. ALL REINFORCED CONCRETE TO CONFORM WITH THE ACI - 301.
7. SECTIONS AND DETAILS MAY NOT SHOW ALL REQUIRED CONCRETE REINFORCEMENT. ADDITIONAL REINFORCEMENT MAY BE DESCRIBED IN SCHEDULES (IF APPLICABLE) AND NOTES.
8. PROVIDE BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH REQUIREMENTS OF ACI 315 UNLESS NOTED OTHERWISE.
9. NOT ALL ITEMS EMBEDDED IN THE CONCRETE ARE SHOWN ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ALL OPENINGS AND EMBEDDED ITEMS IN THE CONCRETE PERTAINING TO THE DIFFERENT TRADES AS SHOWN ON THEIR RESPECTIVE DRAWINGS. SLEEVES, MECHANICAL OPENINGS, CONDUITS, PIPES, RECESSES, DEPRESSIONS, CURBS, AND ALL EMBEDDED ITEMS SHALL BE PROVIDED AS SHOWN ON THE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS AND AS REQUIRED BY THE EQUIPMENT MANUFACTURERS.
10. EMBEDDED CONDUITS, PIPES, OR OTHER UTILITIES NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER. WHERE EMBEDDED ITEMS ARE ALLOWED, THEY SHALL BE SPACED NOT LESS THAN THREE DIAMETERS ON CENTER EACH WAY BUT WITH NOT LESS THAN TWO INCHES CLEAR SPACE BETWEEN EMBEDDED ITEMS. THE TOTAL DEPTH OF ALL EMBEDDED ITEMS AND THE CLEAR SPACE BETWEEN THEM SHALL NOT EXCEED 1/3 OF THE TOTAL CONCRETE DEPTH AND SHALL BE CONFINED TO THE MIDDLE THIRD OF THE CONCRETE DEPTH.
11. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS (EXCEPT SHEAR WALLS) ARE PROHIBITED. ALL CONSTRUCTION JOINTS TO BE AUTHORIZED BY ENGINEER.
12. UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE SIZE OF CONCRETE PLACEMENTS SHALL BE LIMITED AS FOLLOWS:
A. STRIP FOOTINGS AND WALLS: 60 FT (UNLESS INTERMEDIATE CONTROL JOINTS ARE PROVIDED)
13. PROVIDE 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES U.N.O.
14. THROUGH PENETRATIONS FOR CONCRETE WALLS OR SLABS SHALL CONFORM TO STANDARD DETAIL DRAWINGS.
15. MULTIPLE PENETRATIONS SHALL NOT BE SPACED CLOSER THAN THREE TIMES THE DIAMETER OR THREE TIMES THE WIDTH OF THE LARGER OPENING WITHOUT APPROVAL OF THE ENGINEER.
16. SEE S-402 FOR CONCRETE MASONRY GENERAL NOTES.
17. MODELING LINES SHOWN IN CONCRETE POURS OR DETAILS SHALL NOT BE ASSUMED TO PERMIT CONSTRUCTION JOINTS. ALL CONSTRUCTION JOINT LOCATIONS NOT SPECIFICALLY CALLED OUT SHALL BE SUBMITTED AS DETAILED SHOP DRAWINGS
18. CONTRACTOR REQUIRED TO SUBMIT DETAILED CONCRETE OPENING AND SLEEVE SHOP DRAWINGS FOR REVIEW BY STRUC & MEP

POST INSTALLED ANCHORS AND DOWELS:

- 1. ALL POST INSTALLED ANCHORS INTO MASONRY USE HILTI-HY 70 SYSTEM OR APPROVED EQUAL.
2. ALL POST INSTALLED ANCHORS INTO EXISTING CONCRETE USE HILTI HIT-HY 200 INJECTION ADHESIVE ANCHOR OR APPROVED EQUAL.
3. ALL POST INSTALLED ANCHOR PRODUCTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION PROCEDURES.
4. DRILLING, CORING, SAW CUTTING AND ETC. INTO CONCRETE SHALL MEET THE LATEST OSHA REGULATIONS FOR SILICA DUST EXPOSURE.
5. WEDGE EXPANSION ANCHORS SHALL UTILIZE HILTI KWIKBOLT TZ OR A DEWALT POWER-STUD SD1 OR APPROVED EQUAL OR GREATER CAPACITY RATED FOR SEISMIC LOADING AND CRACKED CONCRETE. INSTALLED FULLY INTO CONCRETE OR FULLY GROUTED CONCRETE MASONRY CELLS.
6. ALL DOWELS SHALL BE SET IN ADVANCE AND TIED NOT WET SET. DOWELS SHALL INCLUDE FULL CLASS B DEVELOPMENT LENGTH OR STANDARD 90 DEGREE HOOKS. SET HOOK DEPTH FOR VERTICAL BARS DOWN TO THE BOTTOM REINFORCEMENT OF THE SUPPORTING ELEMENT.
7. ACCIDENTALLY MISSED DOWELS REPLACED WITH DRILL AND EPOXY DOWELS AT REQUEST SHALL INCLUDE REVIEW BY CONTRACTOR THAT REQUESTED DRILLED EMBEDMENT EXTENDS PAST SUPPORTING REINFORCING ELEMENT SURFACE NOT ONLY CONCRETE SURFACE. PROVIDE DETAILED SUBMITTAL OF REQUESTED LOCATIONS AND DIMENSIONS

LEGEND / ABBREVIATIONS table with columns for symbol, description, and additional notes. Includes entries for architectural steel, floor drain, horizontal, vertical, and various materials.

A4 ABBREVIATIONS

SCALE: NOT TO SCALE

SLAB ON GRADE:

- 1. ALL SLABS SHALL BE PLACED ON VAPOR RETARDER, 20 MIL ASSUMED, OVER COMPACTED CRUSHED CLEAN STONE, 4" #57 ASSUMED, (FINAL VAPOR RETARDER AND CLEAN STONE LAYER DESIGN THICKNESSES BY TERRACOR FOR SLAB DEPRESSURIZATION SYSTEM). CLEAN STONE TO BE PLACED OVER 12" OF 95% MODIFIED PROCTOR COMPACTED SELECT STRUCTURAL GRANULAR MATERIAL.
2. THE DESIGN OF CONCRETE MIXES, LOCATION OF CONSTRUCTION JOINTS IN SLABS, STAGGERING OF POUR PLACEMENTS, LOCATION OF POUR STRIPS, AND PLACING, CURING, AND SURFACE HARDENING PROCEDURES ARE TO BE PERFORMED BY THE CONTRACTOR IN A MANNER THAT WILL MINIMIZE SHRINKAGE CRACKING OF THE SLABS. ALL MUST BE SUBMITTED FOR APPROVAL AND PROJECT RECORDS.
3. SUBSEQUENT PLACEMENT OF ANY APPROVED ALTERNATE SLAB STRIPS SHOULD NOT BE MADE SOONER THAN 24 HOURS AFTER THE COMPLETION OF SLAB FINISHING OPERATIONS AND THE INITIATION OF CURING PROCEDURES.
4. THE CONTRACTOR SHALL REPAIR ALL SHRINKAGE CRACKS DESIGNATED AS UNACCEPTABLE BY THE ENGINEER BY EPOXY INJECTION AT NO ADDITIONAL COST TO THE CONTRACT.
5. REPAIR MATERIAL SHALL BE APPROPRIATE FOR THE APPLICATION AS RECOMMENDED BY THE MANUFACTURER. PRODUCTS SHALL BE BY SIKA CORPORATION, OR APPROVED EQUAL.
6. THE CONTRACTOR SHALL SUBMIT TO THE EOR FOR REVIEW PRIOR TO THE DEVELOPMENT OF SLAB REINFORCING SHOP DRAWINGS, A PROPOSED SLAB CONSTRUCTION JOINT LAYOUT PLAN, ALONG WITH PROPOSED ADMIXTURE, CURING, AND PROTECTION METHODS FOR CONTROLLING SHRINKAGE CRACKING IN THE SLABS. SAWN CONTROL JOINTS ARE NOT SPECIFIED IN THIS REINFORCED SLAB WITH A PASSIVE SLAB DEPRESSURIZATION SYSTEM. SEE NOTES 1 & 2. PROVIDE ASTM C645 COMPENSATING TYPE K COMPONENTS TO REDUCE LABOR AND SCHEDULE OF SHRINKAGE CONTROL PROCESS, AND FURTHER MINIMIZE CRACKING AND PERMIABILITY OF SLAB.
7. THIS BUILDING CONTAINS A STRUCTURAL SLAB AT GRADE SPANNING POOR SOIL CONDITIONS. REBAR COVER SHALL BE MET EXACTLY BY CONTRACTORS AND MEASURED BY INSPECTORS. ALL WORK SHALL MATCH PLANNING AND WORKMANSHIP REQUIRED OF AN ELEVATED CONCRETE FLOOR SLAB WITHOUT EXCEPTION.
8. CONTRACTOR REQUIRED TO SUBMIT DETAILED CONCRETE SLAB OPENING AND SLEEVE SHOP DRAWINGS FOR REVIEW BY STRUC & MEP

CONCRETE REINFORCEMENT:

- 1. REINFORCING:
MESH: ASTM A-185 (FLAT SHEETS)
BARS: ASTM A-615 GRADE 60 - DEFORMED.
BARS: WELDED REINFORCING BARS TO CONFORM TO ASTM A-706 GRADE 80.
2. SPLICES IN REINFORCEMENT: UNLESS OTHERWISE NOTED, ALL SPLICES SHALL BE 1.3Ld (CLASS B) AND ANCHORAGES OF INDIVIDUAL BARS INTO CONCRETE Ld (CLASS A) PER ACI. STAGGER SPLICES WHEREVER POSSIBLE AND LOCATE SO AS NOT TO IMPAIR STRENGTH OF MEMBERS. SEE SCHEDULE AND DETAILS FOR LENGTH AND ALIGNMENT.
3. REINFORCEMENT WORK OF DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318), (ACI DETAILING MANUAL 2004 (SP 66) CRSI MANUAL OF STANDARD PRACTICE (MSP 2009), AND THE STRUCTURAL WELDING CODE- REINFORCING STEEL (AWS D1.1).
4. PROVIDE AND SCHEDULE ON SHOP DRAWINGS THE NECESSARY ACCESSORIES TO HOLD ALL REINFORCEMENT SECURELY IN POSITION.
5. WHERE CONTINUOUS REINFORCEMENT IS CALLED FOR, IT SHALL BE EXTENDED CONTINUOUSLY AROUND CORNERS AND LAPPED AT SPLICES OR AT DISCONTINUOUS ENDS. LAPS SHALL BE CLASS B TENSION LAP SPLICES UNLESS OTHERWISE NOTED.
6. WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE DETAILS AS DETERMINED BY THE ENGINEER. IN NO CASE SHALL THE REINFORCEMENT BE LESS THAN THE MINIMUM PERMITTED BY THE APPLICABLE CODES.
7. WHERE REINFORCEMENT IS REQUIRED IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTION APPLIES AND SHALL BE ASSUMED TO BE CONTINUOUS IN EACH DIRECTION OF THAT ELEMENT GEOMETRY UNTIL MODIFIED BY ANOTHER DETAIL.
8. WHERE THERE IS A CONFLICT BETWEEN COLUMN VERTICAL BARS AND SLAB OR BEAM HORIZONTAL BARS THE COLUMN BARS SHALL REMAIN IN THEIR DESIGNATED POSITIONS AND THE HORIZONTAL BARS SHALL BE ADJUSTED TO SPLICE AROUND.
9. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS WITH FULL CLASS B LAP SPLICES AT LOCATIONS SPECIFIED ON S-502.
10. COLUMN DOWELS SHALL BE SET WITH A TEMPLATE SO AS TO BE ENCLOSED BY THE COLUMN TIES.
11. DOWELS SHALL MATCH BAR SIZES UNLESS OTHERWISE NOTED.
12. WELDED WIRE FABRIC SHALL BE LAPPED 8 INCHES OR 1 1/2 SQUARES WHICHEVER IS LARGER AND SHALL BE WIRED TOGETHER.
13. REINFORCEMENT SHALL NOT BE TACK WELDED. REINFORCING BARS TO BE WELDED SHALL CONFORM TO ASTM A706 FY-60KSI.
14. REINFORCEMENT INSTALLATION SHALL BE COMPLETED AT LEAST 24 HOURS BEFORE A CONCRETE PLACEMENT OR SHALL BE COORDINATED WITH THE OAR TO ENSURE PROPER TIME IS ALLOWED FOR THE INSPECTION OF THE REINFORCING. NOTIFY THE ENGINEER OF COMPLETION.
15. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE AT THE POSITIONS SHOWN ON THE DRAWINGS BEFORE PLACING CONCRETE.
16. UNLESS NOTED OTHERWISE, ALL BARS SHALL BE EMBEDDED TO A MINIMUM DEPTH (1.0 Ld OR Ldh IF HOOKED)

SHEET NOTE: GENERAL NOTES AND REQUIREMENTS CONTINUE ON S-002

A1 GENERAL NOTES

SCALE: NOT TO SCALE

CERTIFICATE OF AUTHORIZATION: 00211960
REGISTRATION EXPIRATION: 12/31/2026



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Table with columns: REVISION NUMBER, DATE, MADE BY, APP'D BY, REVISION. Row 1: 1, 3-13-2026, [blank], [blank], ADDENDUM #2.

RECORD DRAWING CERTIFICATION

- AS BUILT - CHANGES AS NOTED
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Table for CONTRACTOR and PROJECT COORDINATOR with fields for NAME, SIGNATURE, TITLE, and DATE.

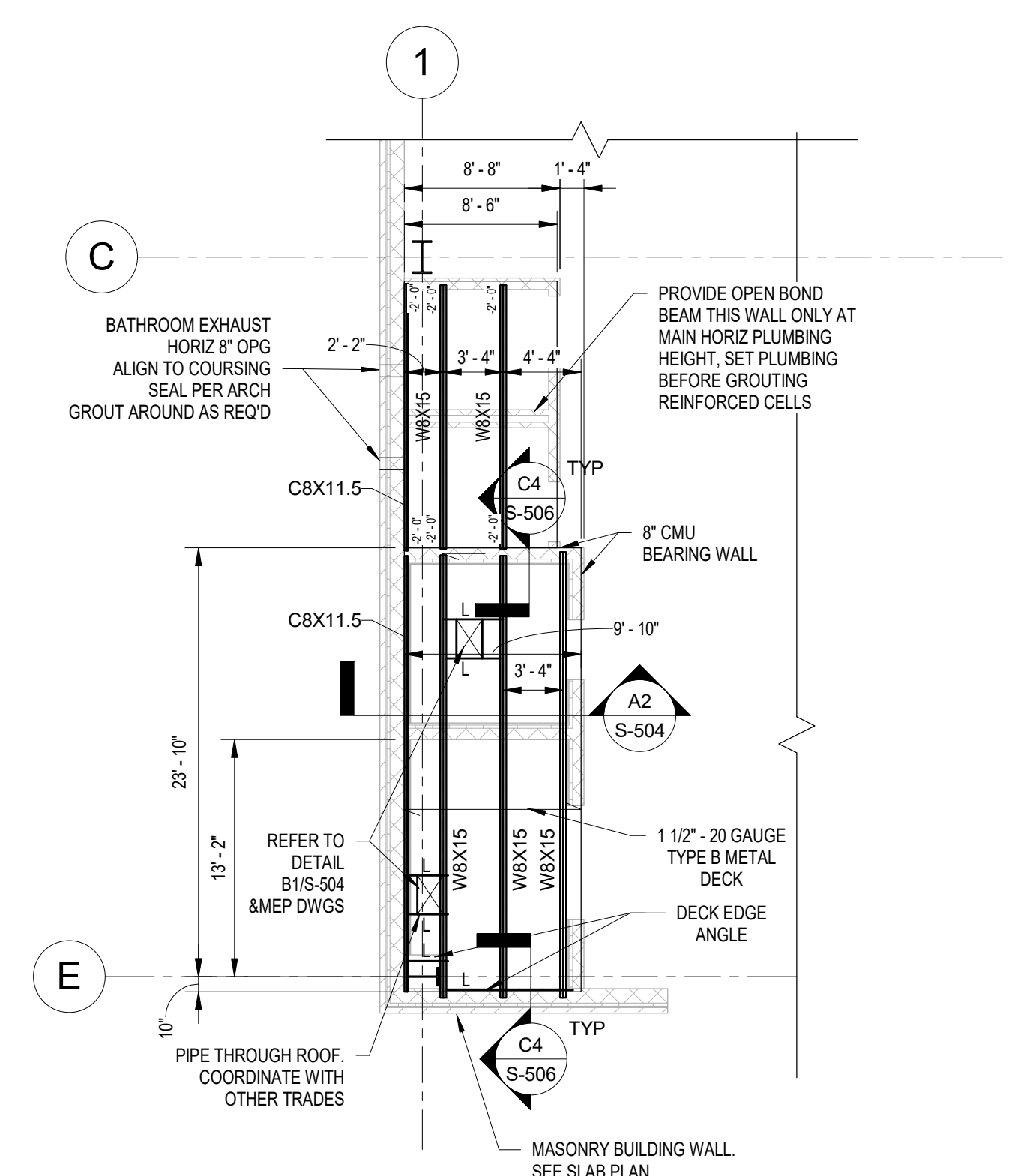
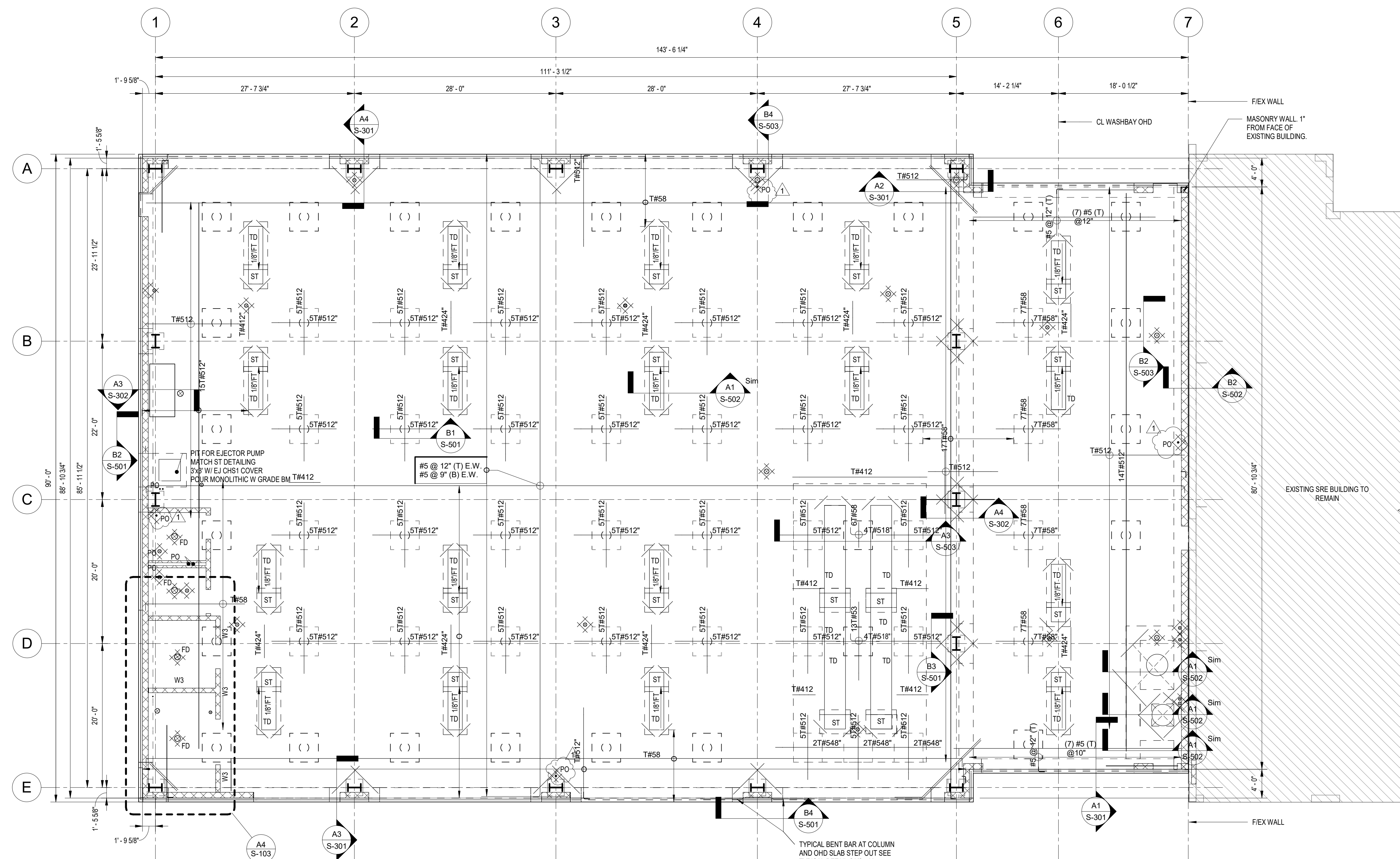
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

CONTRACT NUMBER: 23-528
SHEET NUMBER: S-001

SHEET NO. 16 OF 72

NEW SNOW EQUIPMENT STORAGE BUILDING
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK
GENERAL NOTES

SCALE: AS SHOWN
DATE: OCTOBER 10, 2025
DPW FILE NO.
REV. NO. 1



- NOTES:**
- SEE S-102 FOR SLAB GEOMETRIC LAYOUT NOTES
 - B/CONC SLAB -1'-0" SLAB REBAR SHALL BE LEVEL BASED ON THE 11" SLAB THICKNESS THEREFROM 1.5" CLEAR COVER EF SLAB SLOPES SHALL BE MONOLITHIC ADDITIONAL COVER WHERE THICKNESS EXCEEDS 11" DUE TO HIGH POINTS OF SLOPES
 - ALL SLAB TOP REINFORCEMENT HOOKS AT SLAB EDGES
 - ALL SLAB TOP AND BOTTOM REINFORCEMENT HOOKS WHERE INTERRUPTED BY OPENINGS, STEPS, AND DRAINS
 - COLUMN SCHEDULE AND CMU WALL REINFORCEMENT SCHEDULE SEE S-801
 - LINTEL SCHEDULES SEE S-504 & S-505
 - TYPICAL TOP AND BOTTOM CONTINUOUS MAT BARS NOTED ON PLAN WITHIN BOX APPLIES TO ALL AREAS OF PLAN
 - ALL OTHER BARS NOTED ARE IN ADDITION TO THE TYPICAL MAT REINFORCEMENT
 - DIAGONAL CRACK CONTROL BARS NOTED WITHOUT BAR MARKS ON PLAN SEE TYPICAL DETAILS FOR THESE BARS
 - ALL BARS OF THIS TYPE SHALL NOT BE ASSUMED TO BE SHOWN IN FULL ON PLAN
 - SEE A3&B3-S-502 & P-101 FOR PIPE SUPPORT HANGERS FOR UNDERGROUND PIPING PROVIDE (2) ADDL #4 x48" (1) ES @ ROD MIDDLE BENT DOWN BAR UNDER HANGER PLATE AND OVER LOWER MAT OF TOP BARS 12'-6 1/2" @ 12" + (1) ADDL #4x24" @ PL THICKNESS
 - PITS, THICKENED AREAS AND PILE CAPS CONTAIN ADDITIONAL REBAR CONSULT DETAILS FOR BARS NOT PART OF MAIN SLAB THICKNESS
 - REINFORCE SAND TRAP +1'-0" PIT WALLS #5@8" VERT Z BARS TYP# #4@12" HORIZ PERIMETER COLUMN STIRRUPS EF TRAP PIT SLAB #5@6" T&B CONT W/ WALL Z BARS SEE B1/S-502
 - ALL BELOW SLAB PIPING WILL REQUIRE PIPE HANGERS SUPPORTED BY GROUND FLOOR SLAB FOR SOIL CONDITIONS SEE MECHANICAL DRAWINGS FOR PIPE HANGER REQUIREMENTS AND SPACING
 - ANCHOR HOOK ABOVE 3RD WAY BARS IN TOP MAT
 - OUTERMOST REINFORCEMENT IN SLAB RUNS NORTH TO SOUTH 1ST WAY BOTTOM MAT, 2ND WAY TOP MAT

- NOTES:**
- TIS = 12'-0" UNO
 - ALL PLAN NOTED ELEVATIONS REFERENCED (+) OR (-) THEREFROM
 - PIDDLE WELD AND SIDE LAP IN ACCORDANCE WITH ROOF PLAN S-104
 - PROVIDE BENTONITE WATERSTOP UNDER WALLS AND 1'-0" UP CONTROL JOINTS BETWEEN ELECTRICAL ROOM AND ADJACENT ROOMS WITH PLUMBING

A1 FLOOR REINFORCEMENT PLAN

A4 MECHANICAL ROOM INTERIOR ROOF FRAMING

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

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

IN CHARGE OF **B. BYRNES, P.E.**
 CHECKED BY **J. OBLEMAN, P.E.**
 MADE BY **B. ZUHRIC**



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1	3-13-2026			ADDENDUM #2

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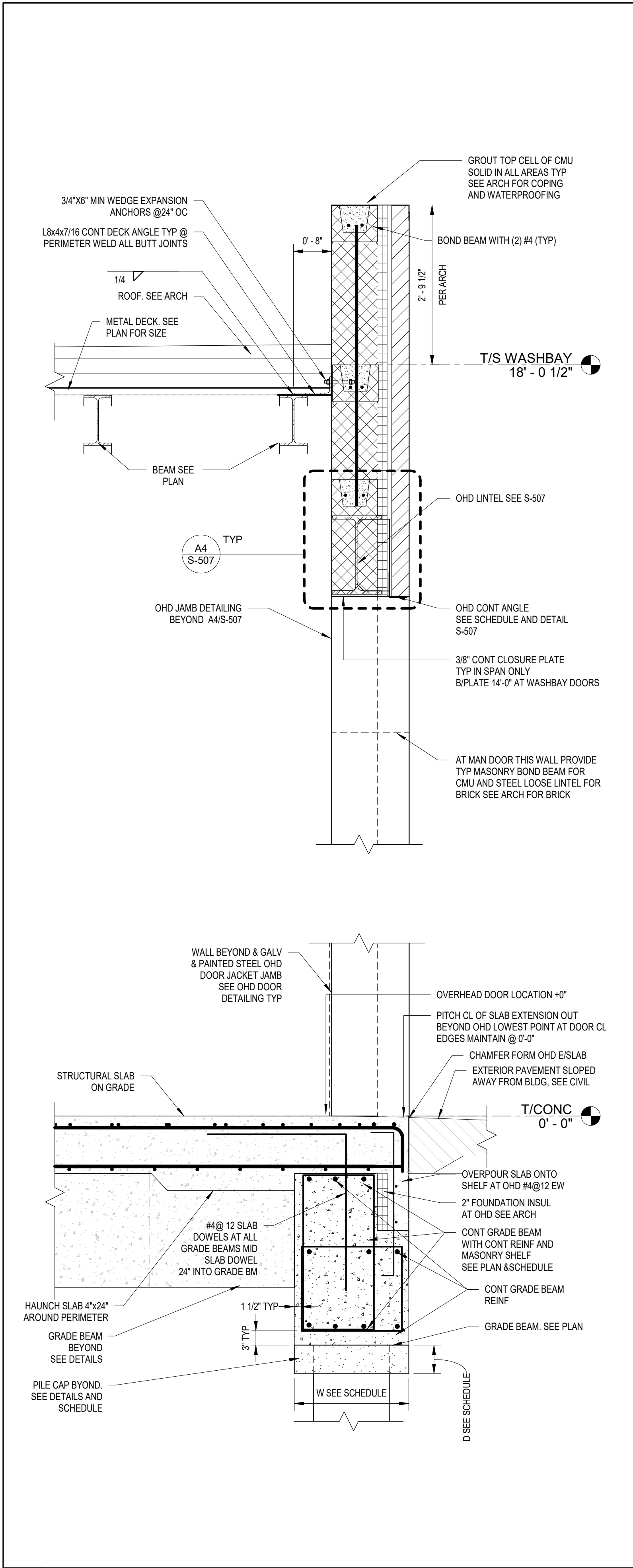
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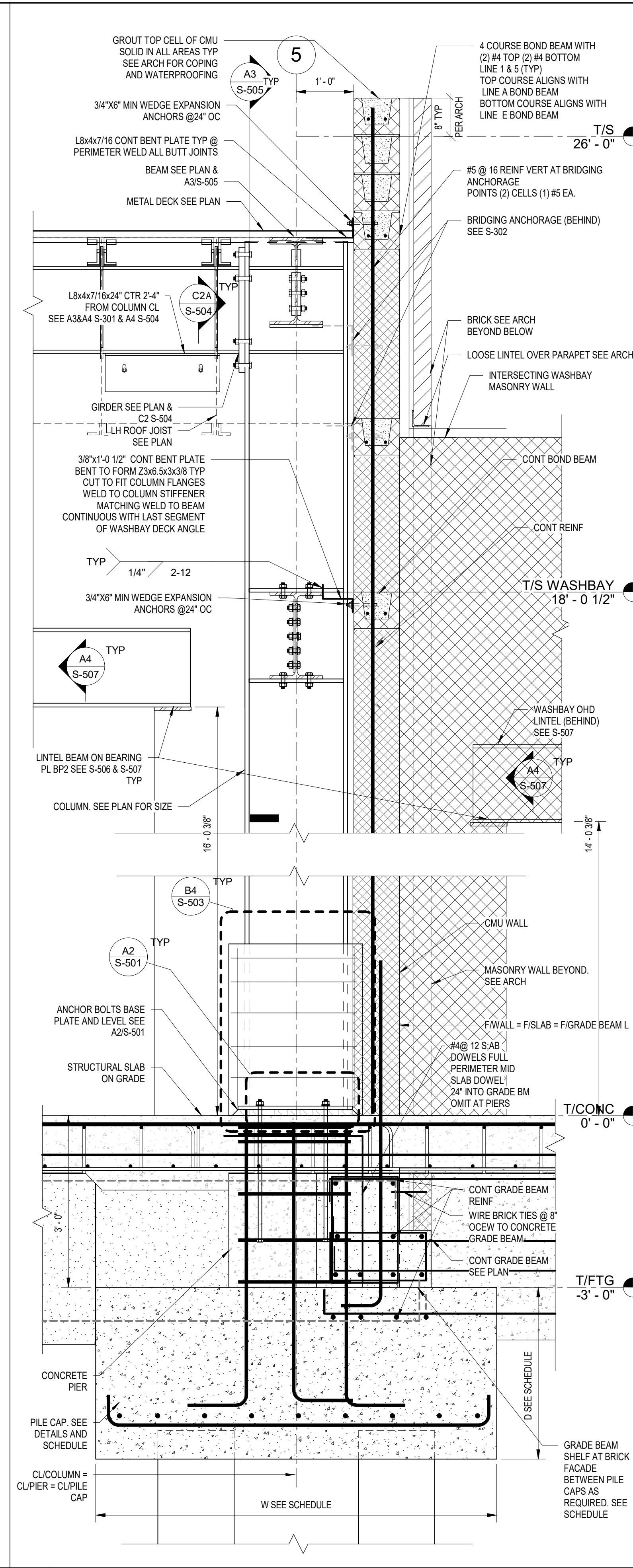
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NEW SNOW EQUIPMENT STORAGE BUILDING
 WESTCHESTER COUNTY AIRPORT
 TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK
 FLOOR SLAB REINFORCEMENT PLAN

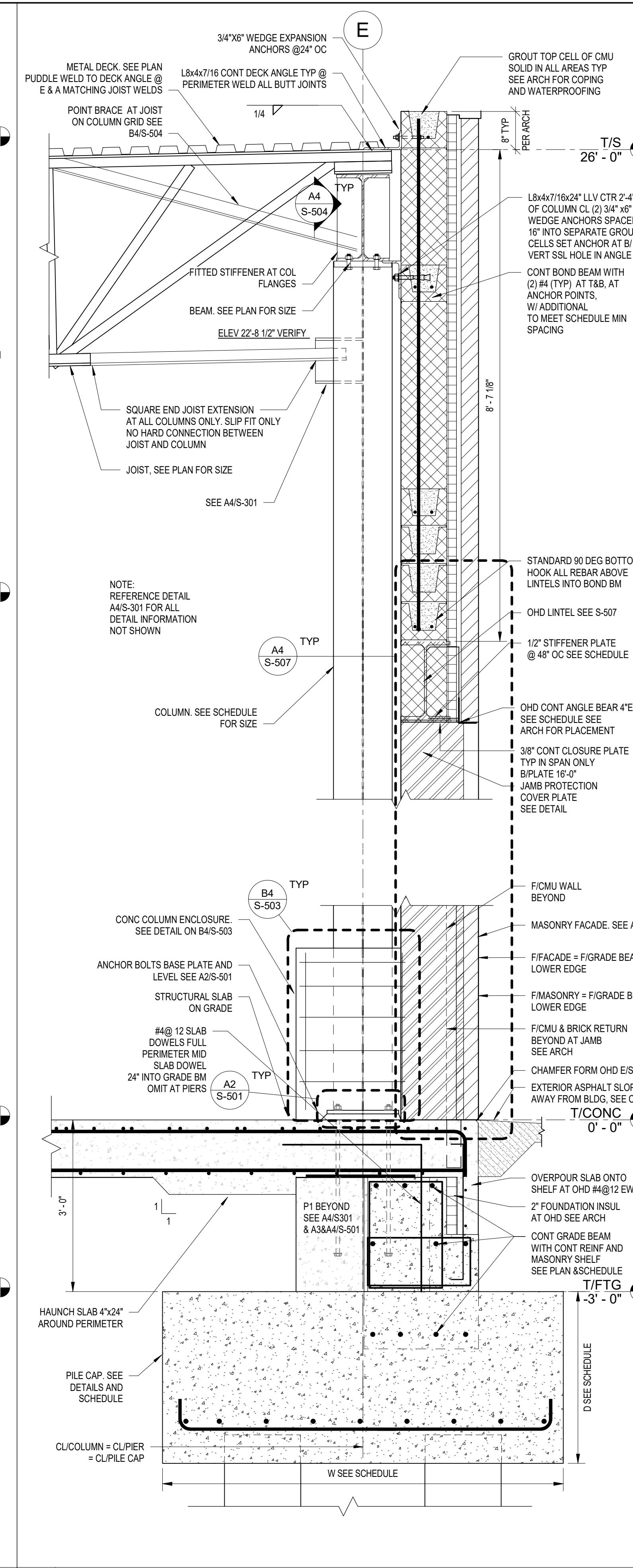
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SHEET NO. 20 OF 72	
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DATE: OCTOBER 10, 2025	
DPW FILE NO.	REV. NO.
48-16-S-86	1



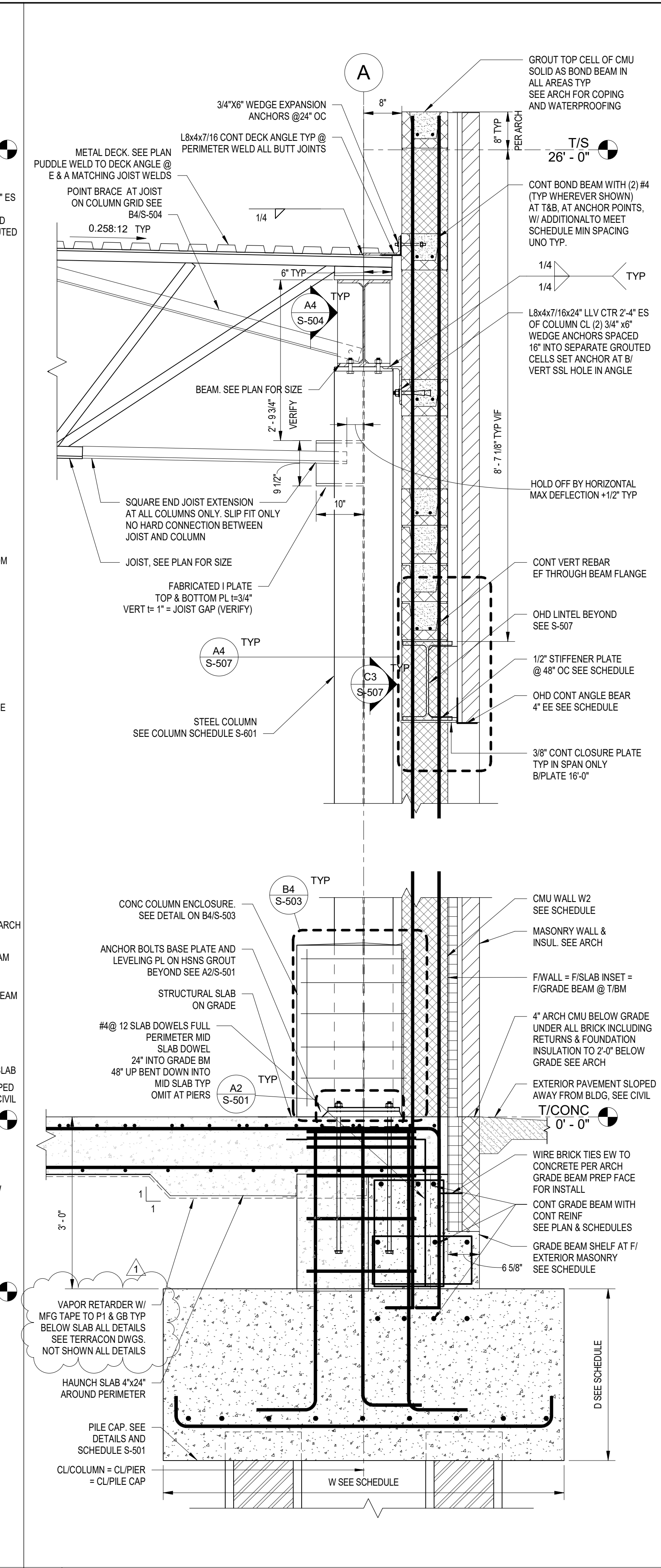
A1 WASHBAY TYPICAL FOUNDATION AND FRAMING WALL SECTION AT OHD
SCALE: 3/4" = 1'-0"



A2 GRIDLINE 5 CORNER WALL SECTION FACING GRID A, MIRROR AT GRID E
SCALE: 3/4" = 1'-0"



A3 TYPICAL WALL SECTION
SCALE: 3/4" = 1'-0"



A4 TYPICAL WALL SECTION
SCALE: 3/4" = 1'-0"

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IN CHARGE OF: B. BYRNES, P.E.
CHECKED BY: J. OBLEMAN, P.E.
MADE BY: B. ZUHRIC

STATE OF NEW YORK
Professional Engineer
089005
EXPIRES: 4/30/2028

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	3-13-2026			ADDENDUM #2

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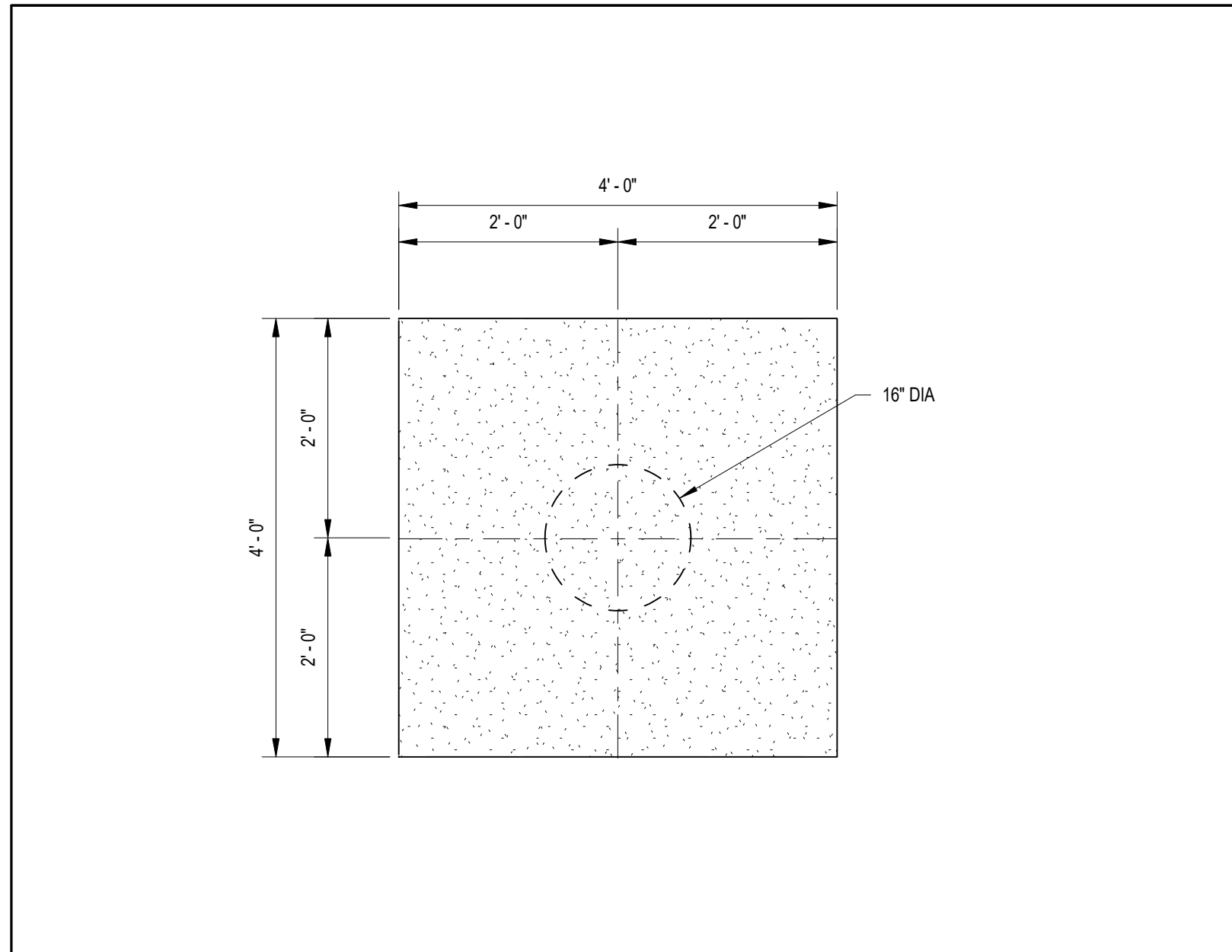
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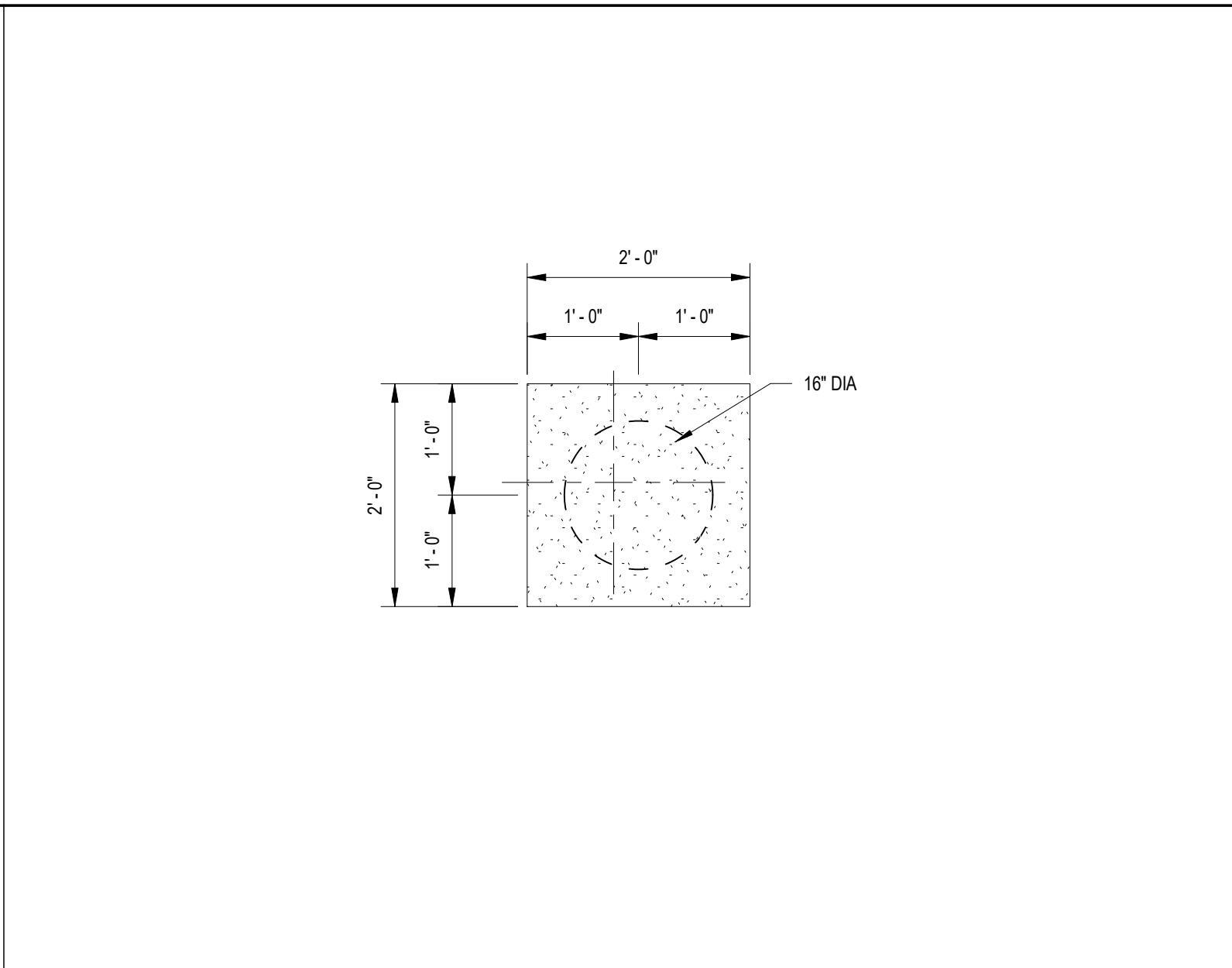
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DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

NEW SNOW EQUIPMENT STORAGE BUILDING
WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK
SECTIONS

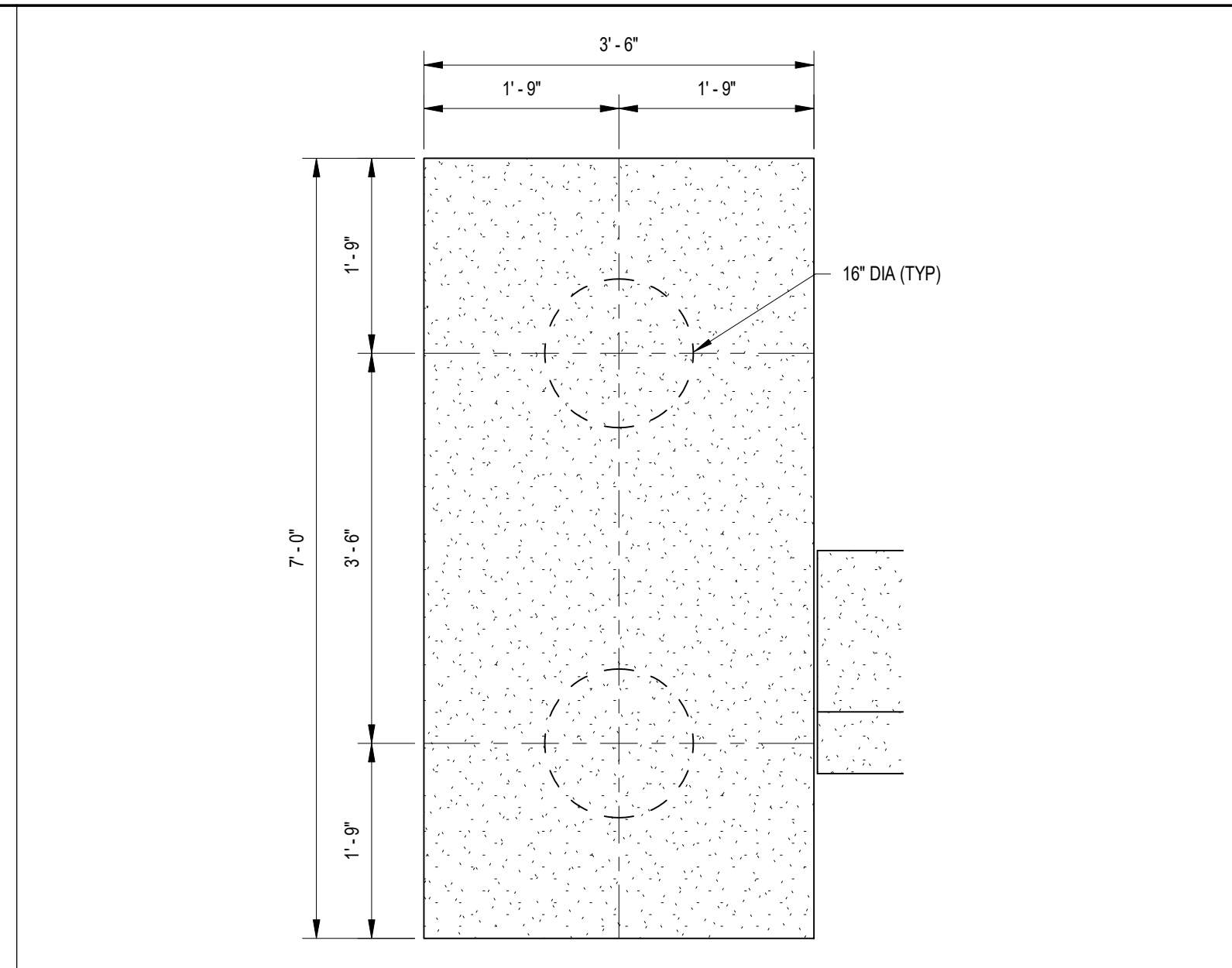
CONTRACT NUMBER: 23-528
SHEET NUMBER: S-301
SHEET NO. 22 OF 72
SCALE: AS SHOWN
DATE: OCTOBER 10, 2025
DPW FILE NO.: 48-16-S-88
REV. NO.: 1



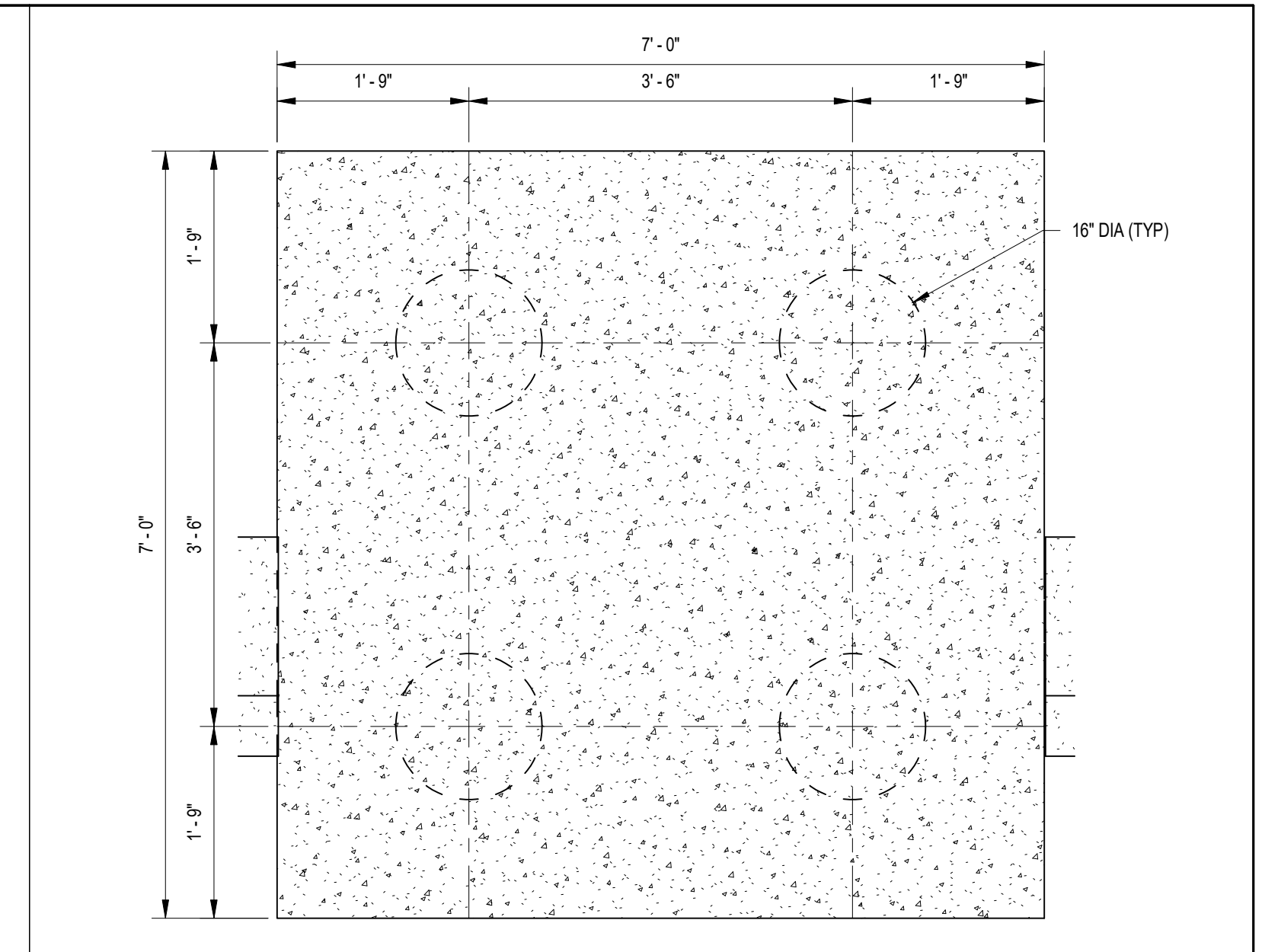
C1 TYPICAL PILE PC1 PLAN
SCALE: 3/4" = 1'-0"



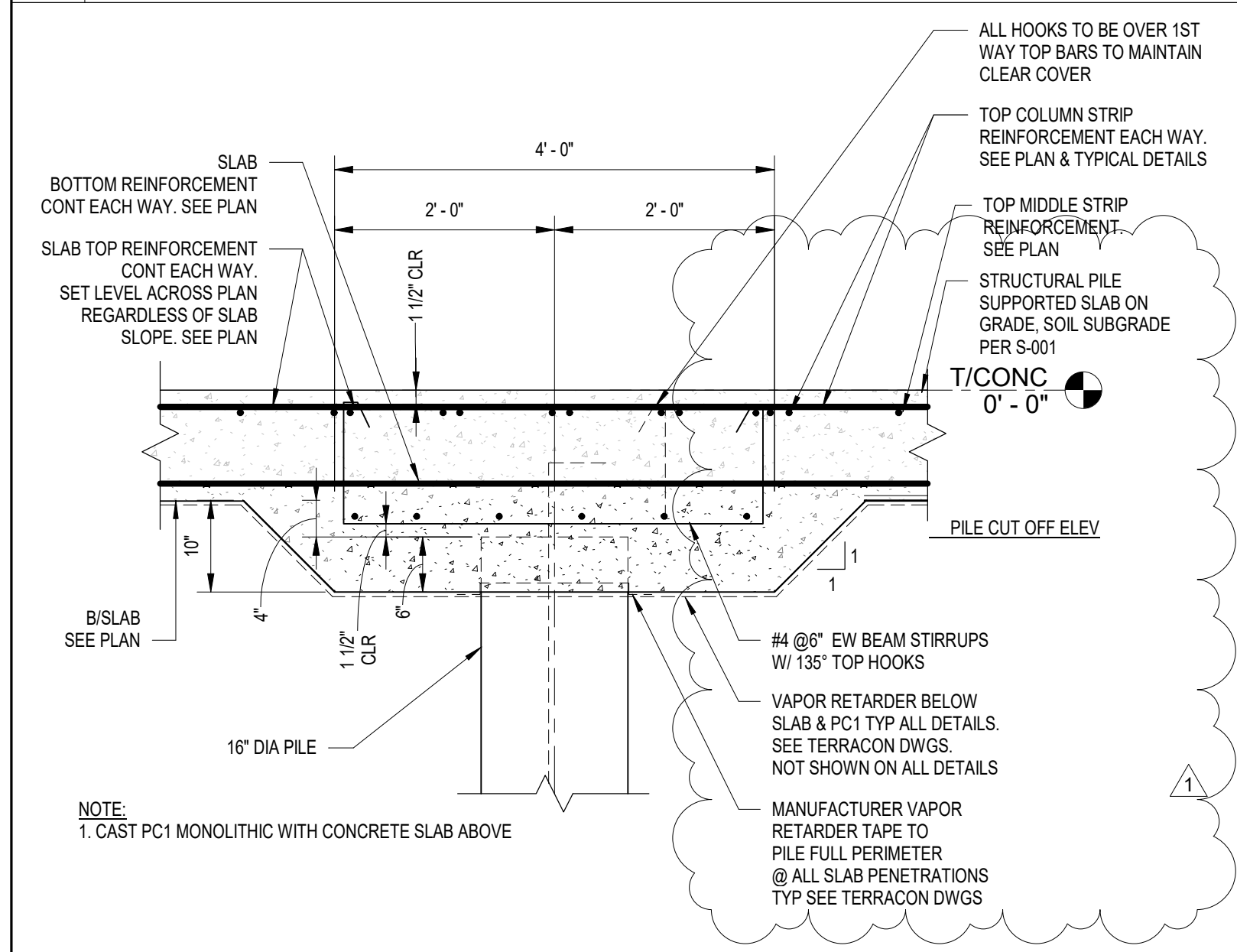
C2 TYPICAL PILE PC1A PLAN
SCALE: 3/4" = 1'-0"



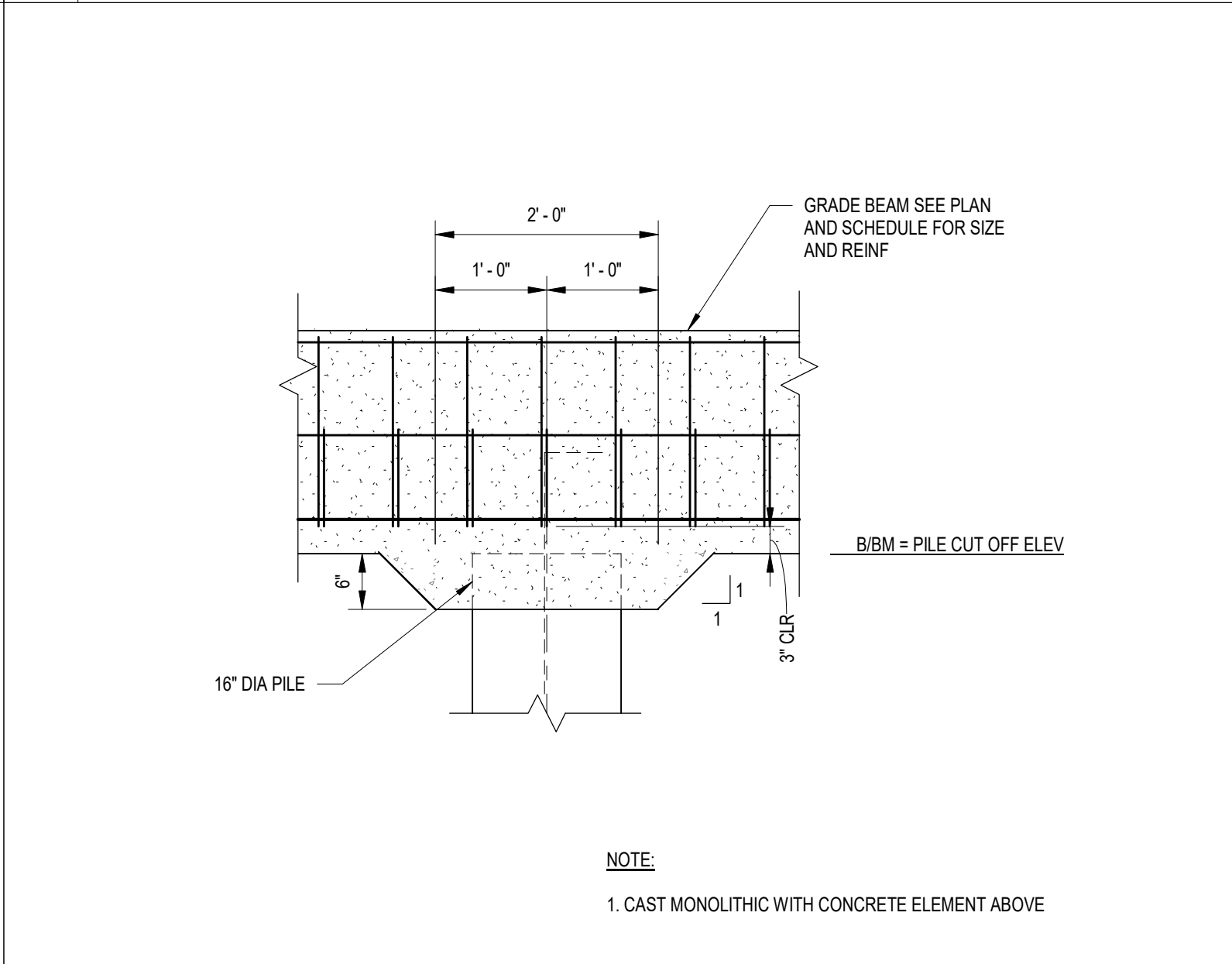
C3 TYPICAL PILE PC2 PLAN
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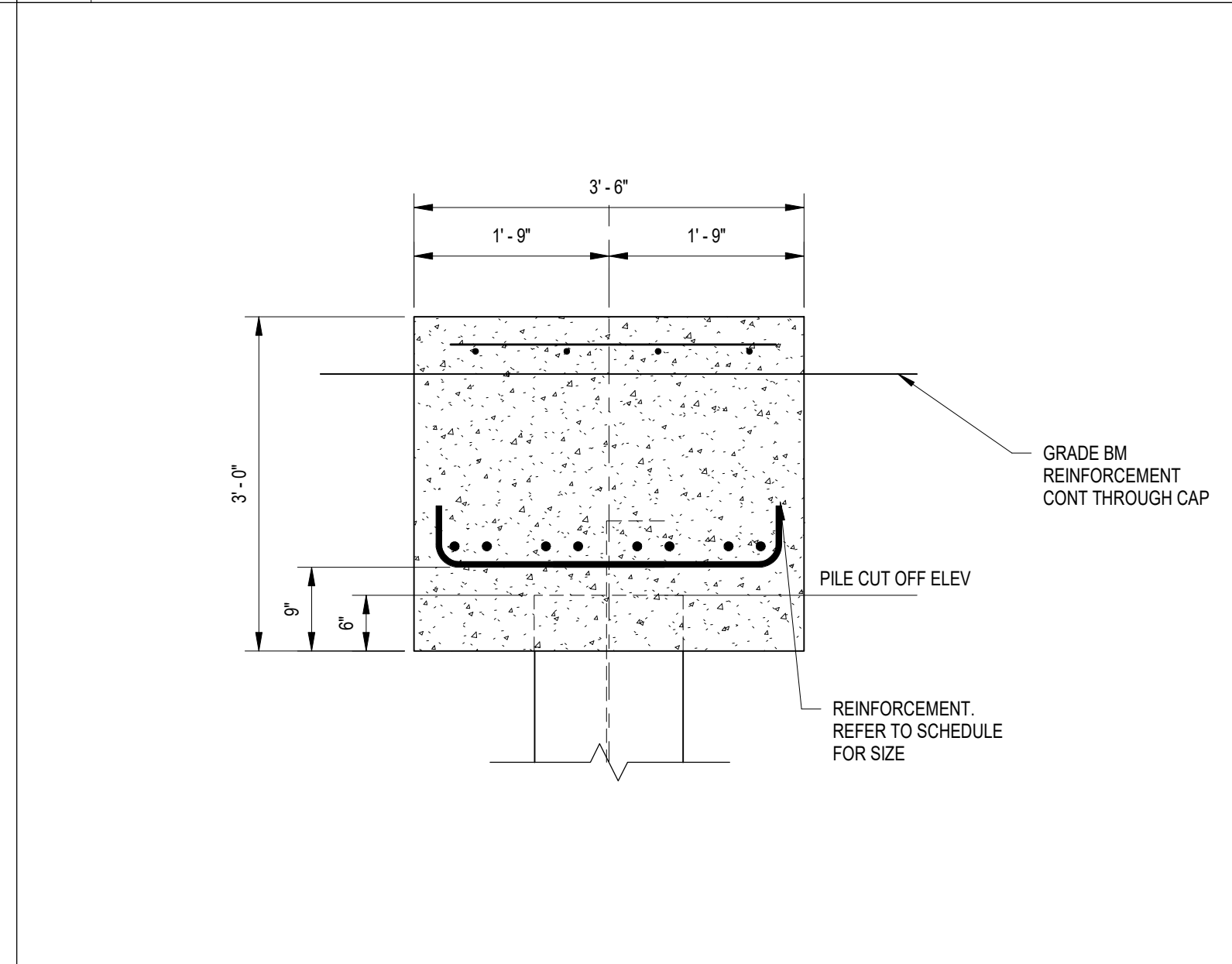
C4 TYPICAL PILE PC4 PLAN
SCALE: 3/4" = 1'-0"



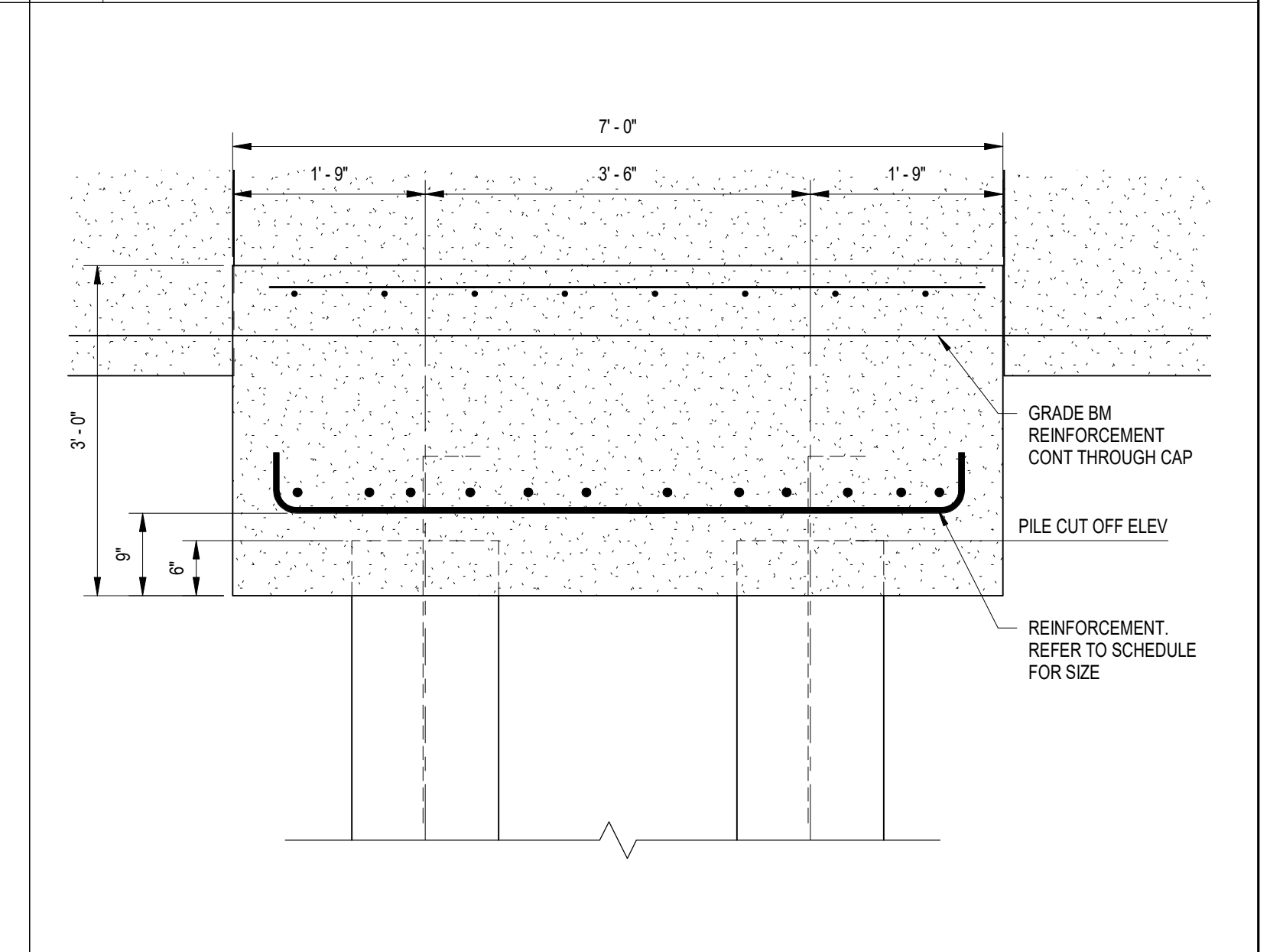
B1 TYPICAL PC1 & SLAB REINFORCEMENT SECTION
SCALE: 3/4" = 1'-0"



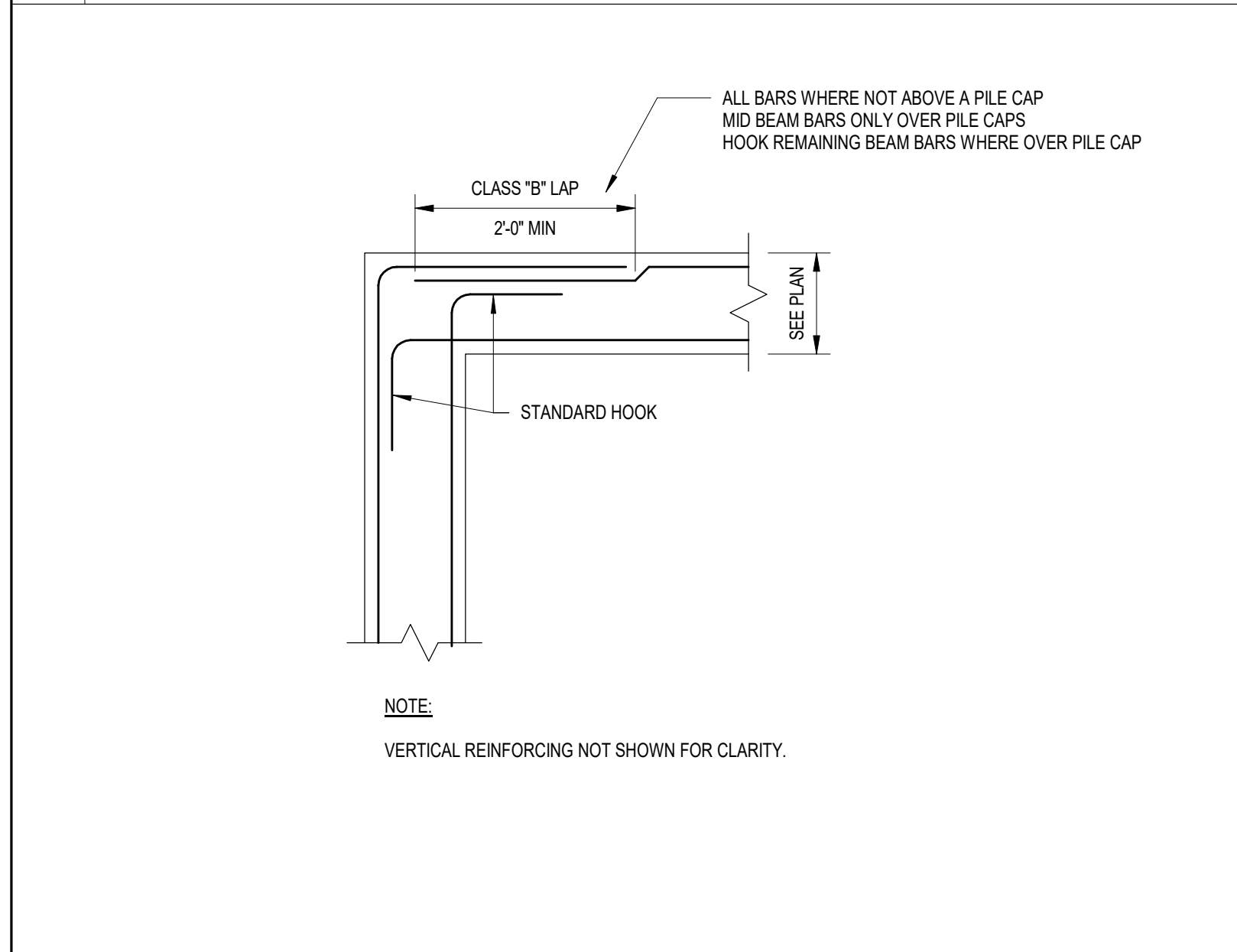
B2 TYPICAL PILE PC1A SECTION
SCALE: 3/4" = 1'-0"



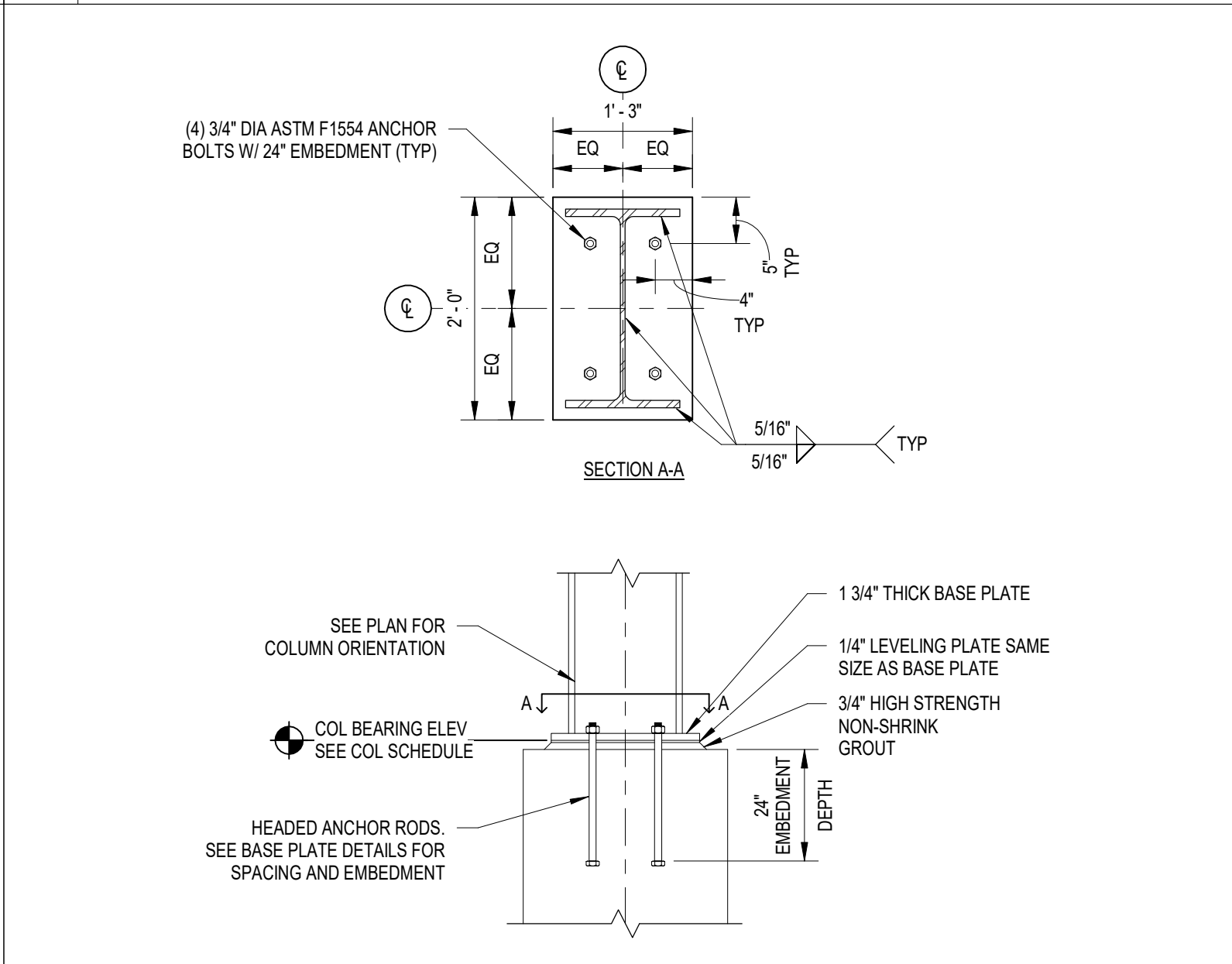
B3 TYPICAL PILE PC2 SECTION
SCALE: 3/4" = 1'-0"



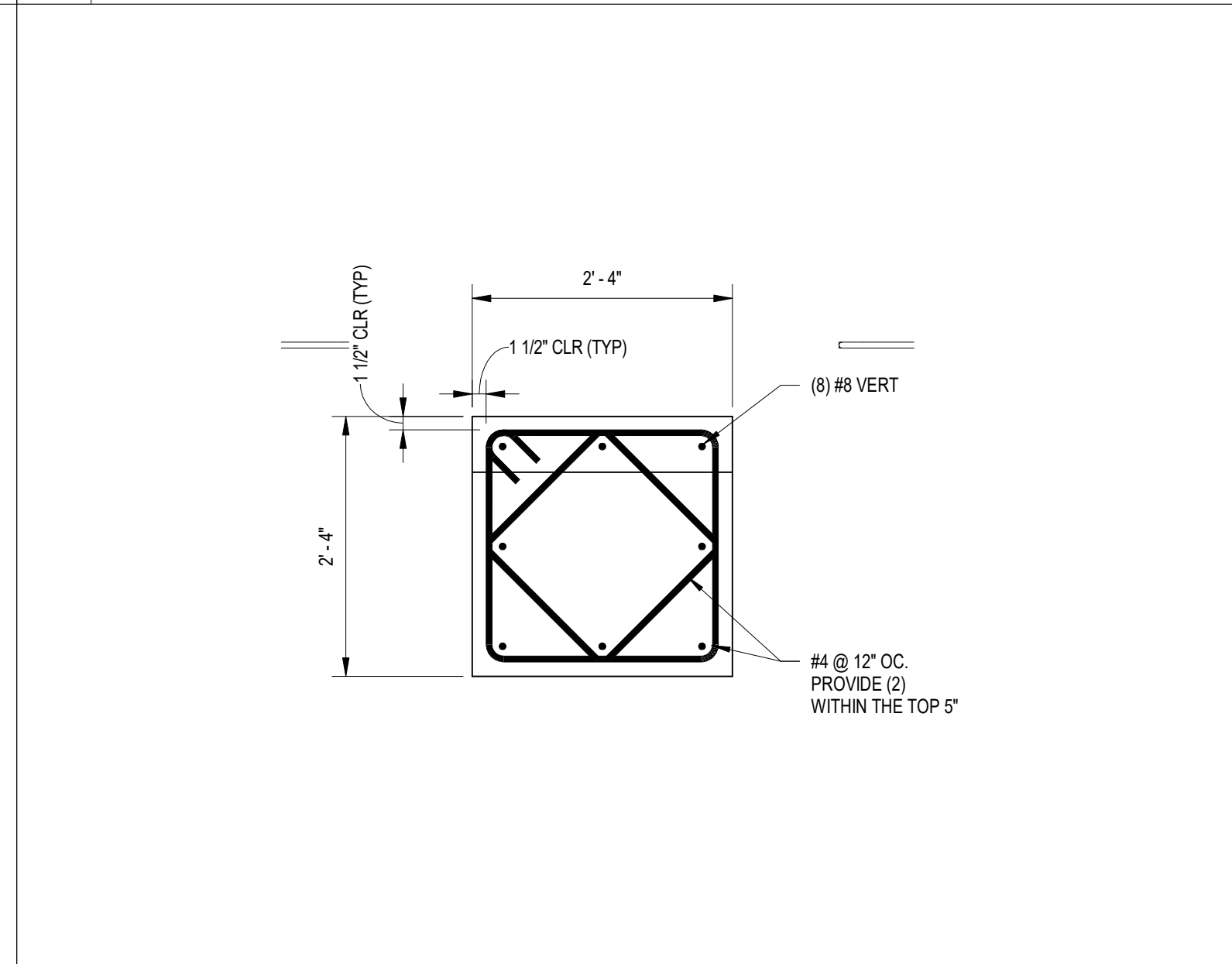
B4 TYPICAL PILE PC4 SECTION
SCALE: 3/4" = 1'-0"



A1 TYPICAL CONCRETE GRADE BEAM CORNER DETAIL
SCALE: 3/4" = 1'-0"



A2 TYPICAL COLUMN BASE PLATE SECTION
SCALE: 3/4" = 1'-0"



A3 PIER P1 DETAIL
SCALE: 3/4" = 1'-0"

PILE CAP SCHEDULE				PILE SCHEDULE		
MARK	DIMENSIONS			REINFORCING	TOP CUT OFF ELEVATION	TOTAL # PILES
	"W"	"L"	"H"			
PC1	4'-0"	4'-0"	0'-10"	SEE B2/S-501, MONOLITHIC WITH SLAB	(-1'-4")	52
PC1 @ LIFT	4'-0"	4'-0"	0'-10"	SEE B2/S-501, A3/S-503 MONOLITHIC WITH SLAB	(-2'-9 3/4")	9
PC1A	2'-0"	2'-0"	0'-6"	BEAM REINF. ONLY, MONOLITHIC WITH BEAM	(-4'-0")	15
PC1A @ GB3	2'-0"	2'-0"	0'-6"	BEAM REINF. ONLY, MONOLITHIC WITH BEAM	(-3'-0")	5
PC2	7'-0"	3'-6"	3'-0"	(8) #8 LONG, (12) #8 SHORT #5 @ 10" TOP EW	(-5'-6")	14
PC4	7'-0"	7'-0"	3'-0"	(12) #8 EW, #5 @ 10" TOP EW	(-5'-6")	32

CL/COLUMN = CL/PIER = CL/PILE CAP AT COLUMN GRIDS
ALL CUT OFF ELEVATIONS ARE REFERENCED FROM T/CONC SLAB ELEVATION +0'-0"
16" TYP 100 KIP DRILLED DISPLACEMENT MICRO PILES.
STEELCOR OR ENGINEER APPROVED EQUAL DESIGNED SIGNED AND SEALED BY NYSPE
BASED ON EXISTING SURVEY & BORING LOCATIONS
ASSUMED AVERAGE BOTTOM OF PILE DEPTH = (-23'-2")
WEIGHTED AVERAGE PILE LENGTH: 20'-0"
PROVIDE #4 L40"x6" SET 24" INTO CL GROUT OF EACH PILE MIN
SEE S-101 FOR ADDITIONAL NOTATIONS

PIER SCHEDULE				
MARK	SIZE (WIDTHxLENGTH)	VERT. REINF.	TIE REINF.	REF. DETAIL
P1	28 x 28	(8) #8	#4 @ 12" OC	A3/S-501

A4 PILE CAP AND PIER SCHEDULE
SCALE: NTS

IN CHARGE OF **B. BYRNES, P.E.**
CHECKED BY **J. OBLEMAN, P.E.**
MADE BY **B. ZUHRIC**

CERTIFICATE OF AUTHORIZATION: 0021365
REGISTRATION EXPIRATION: 12/31/2026

C&S COMPANIES

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EXPIRES: 4/30/2028

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	3-13-2026			ADDENDUM #2

RECORD DRAWING CERTIFICATION

AS BUILT - CHANGES AS NOTED
 AS BUILT - NO CHANGES

CONTRACTOR: _____ PROJECT COORDINATOR: _____

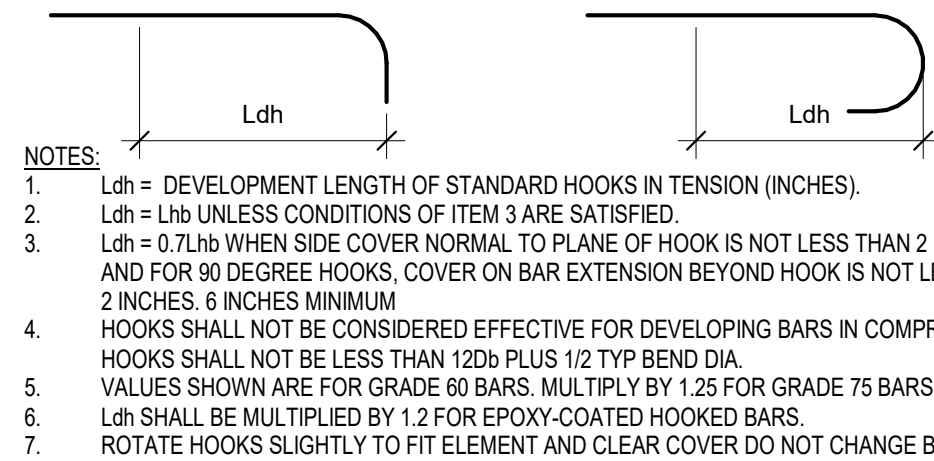
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WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

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TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK
DETAILS

CONTRACT NUMBER: 23-528
SHEET NUMBER: S-501
SHEET NO. 24 OF 72
SCALE: AS SHOWN
DATE: OCTOBER 10, 2025
DPW FILE NO.: 48-16-S-90
REV. NO.: 1

BAR SIZE	F'c = 5000 psi	
	Lhb	0.7Lhb
#3	7	6
#4	9	7
#5	11	8
#6	13	10
#7	15	11
#8	17	12
#9	19	14
#10	22	16
#11	24	18

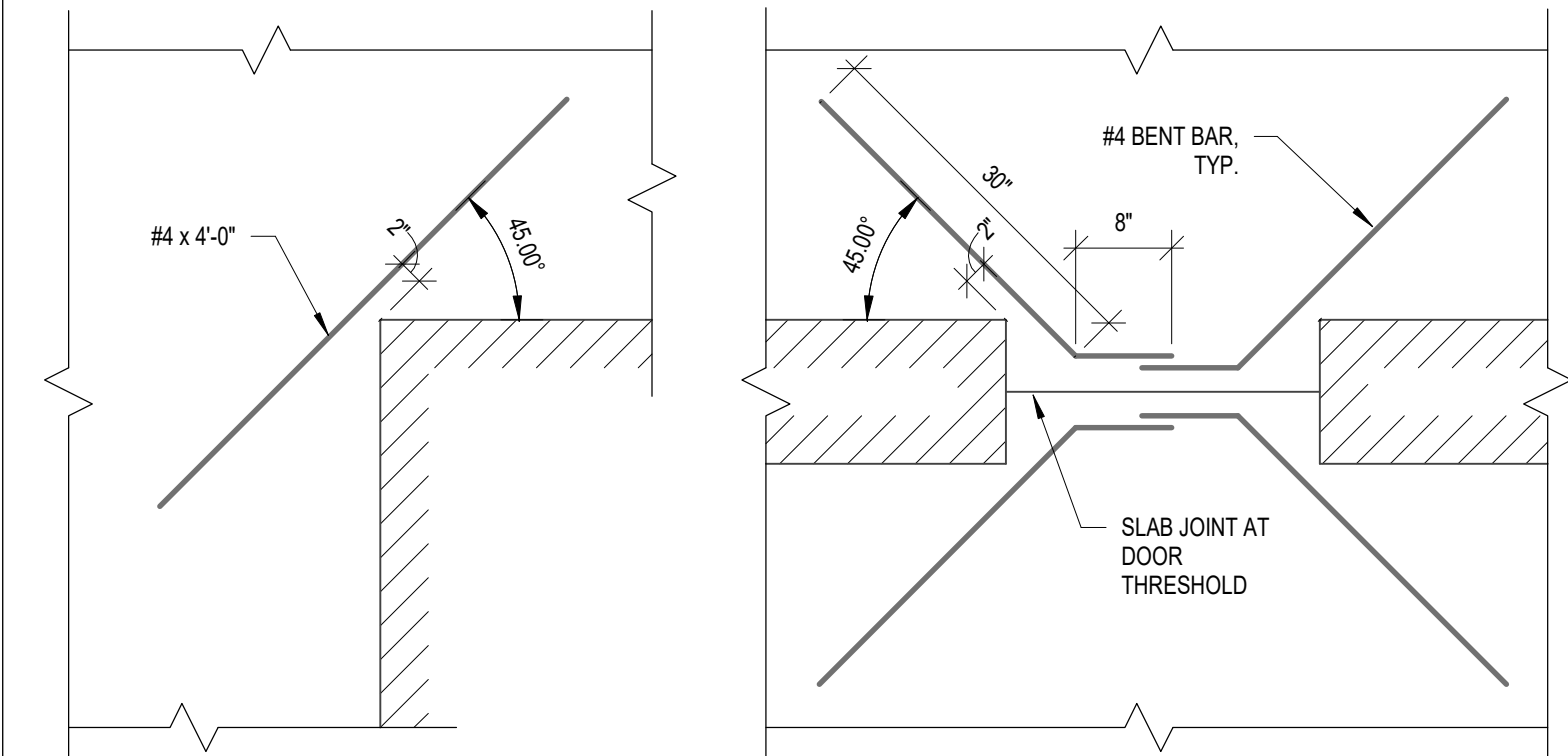


TENSION DEVELOPMENT LENGTHS OF STANDARD HOOKS- NORMAL WEIGHT CONCRETE (GRADE 60 REINFORCING BARS)

BAR SIZE	F'c = 5000 psi	
	CLASS A (1.0 Ld)	CLASS B (1.3 Ld)
#3	13	17
#4	17	22
#5	22	28
#6	26	33
#7	37	49
#8	43	55
#9	48	63
#10	54	70
#11	60	78

- NOTES:**
- Ld = TENSION DEVELOPMENT LENGTH OF BAR WITHOUT HOOKS INTO CONCRETE.
 - 1.3 Ld = TENSION LAP SPICE LENGTH FOR REBAR TO REBAR SPLICES
 - ALL SPLICE LENGTHS ARE IN INCHES.
 - FOR TOP BARS, MULTIPLY SPLICE LENGTHS BY 1.30. TOP BARS REQUIRE A MINIMUM OF 12" FRESH CONCRETE BELOW BAR.
 - FOR EPOXY-COATED BARS, MULTIPLY SPLICE LENGTHS BY 1.5. THE PRODUCT OF THE TOP BAR MULTIPLIER AND THE EPOXY-COATED BAR MULTIPLIER NEED NOT BE MORE THAN 1.7.
 - WHEN LAP SPLICING BARS OF DIFFERENT SIZES, THE LAP LENGTH IS DETERMINED BY THE SMALLER BAR, BUT MAY NOT BE LESS THAN THE CLASS A SPLICE LENGTH OF THE LARGER BAR.
 - SPLICE LENGTHS ARE BASED OFF A MINIMUM OF 1 1/2' OF COVER.

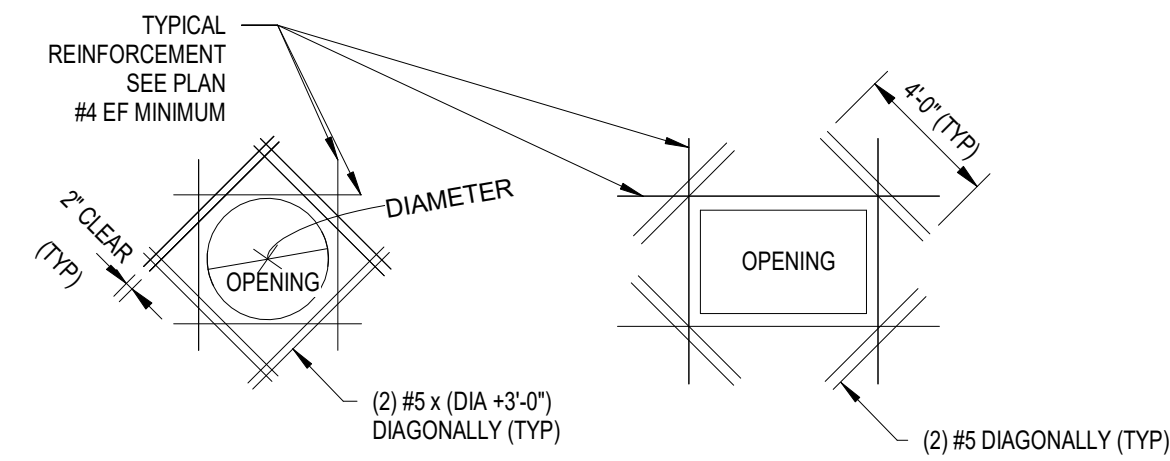
TENSION DEVELOPMENT AND SPLICE LENGTHS- NORMAL WEIGHT CONCRETE (GRADE 60 REINFORCING BARS)



TYP. RE-ENTRANT CORNER and **RE-ENTRANT CORNERS AT DOORS**

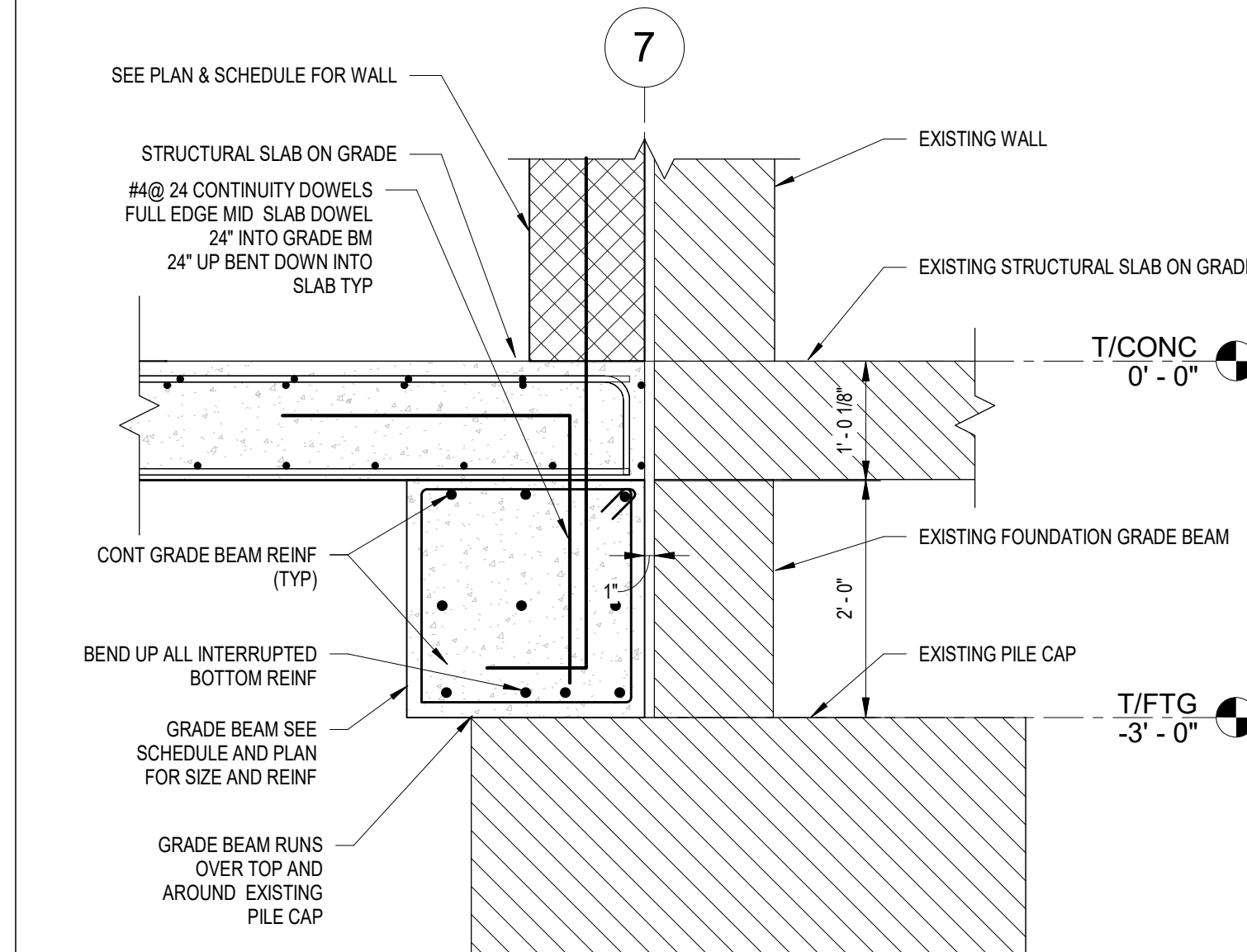
C4 SLAB RE-ENTRANT CORNER REINF

C2 CONCRETE REINFORCEMENT TENSION DEVELOPMENT AND SPLICE LENGTHS

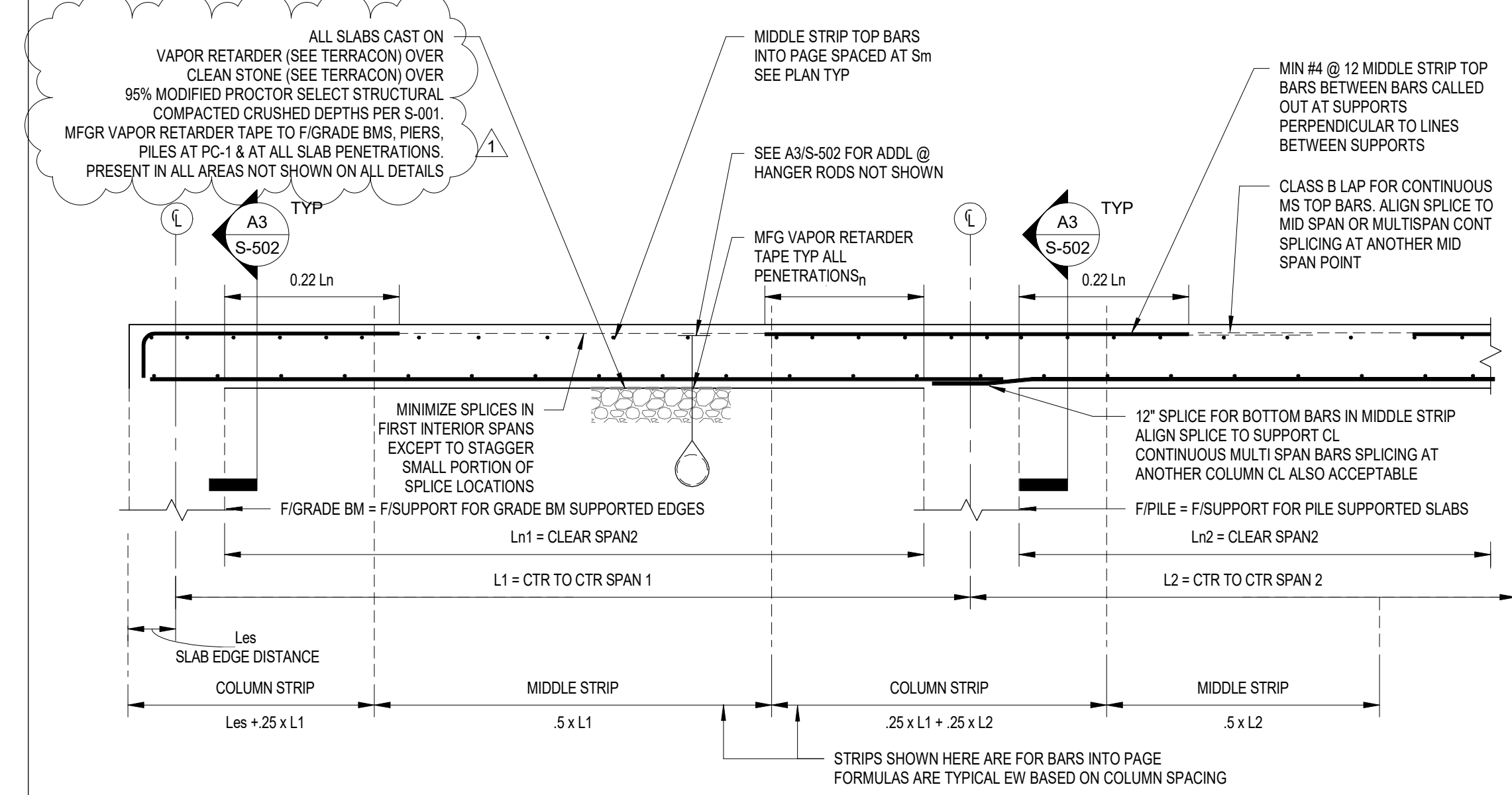


- NOTES:**
- FOR WALLS WITH OPENINGS GREATER THAN 6" IN ANY DIRECTION, PLACE BARS AT EACH FACE FOR WALLS WITH (2) LAYERS OF REINFORCEMENT.
 - FOR WALLS WITH REINFORCEMENT LARGER THAN #5 BARS, MATCH WALL REINFORCEMENT BAR SIZE.
 - ALL PIPE PENETRATIONS THROUGH GRADE BEAM SHALL REQUIRE GRADE BEAM TO EXTEND NO LESS THAN 12" BELOW BOTTOM EDGE OF OPENING IN THAT ENTIRE SPAN BETWEEN SUPPORTS. SPLAY BOTTOM BARS BELOW TO SAME CLEAR COVER DO NOT CUT REINFORCEMENT.
 - FOR SLABS ALL DIAGONAL BARS SHALL FALL DIRECTLY BELOW LOWER MAT OF TOP BARS FOR WALLS AND GRADE BEAMS DIAGONAL BARS SHALL BE DIRECTLY INBOARD EACH FACE FROM OUTERMOST MAIN REINFORCEMENT.

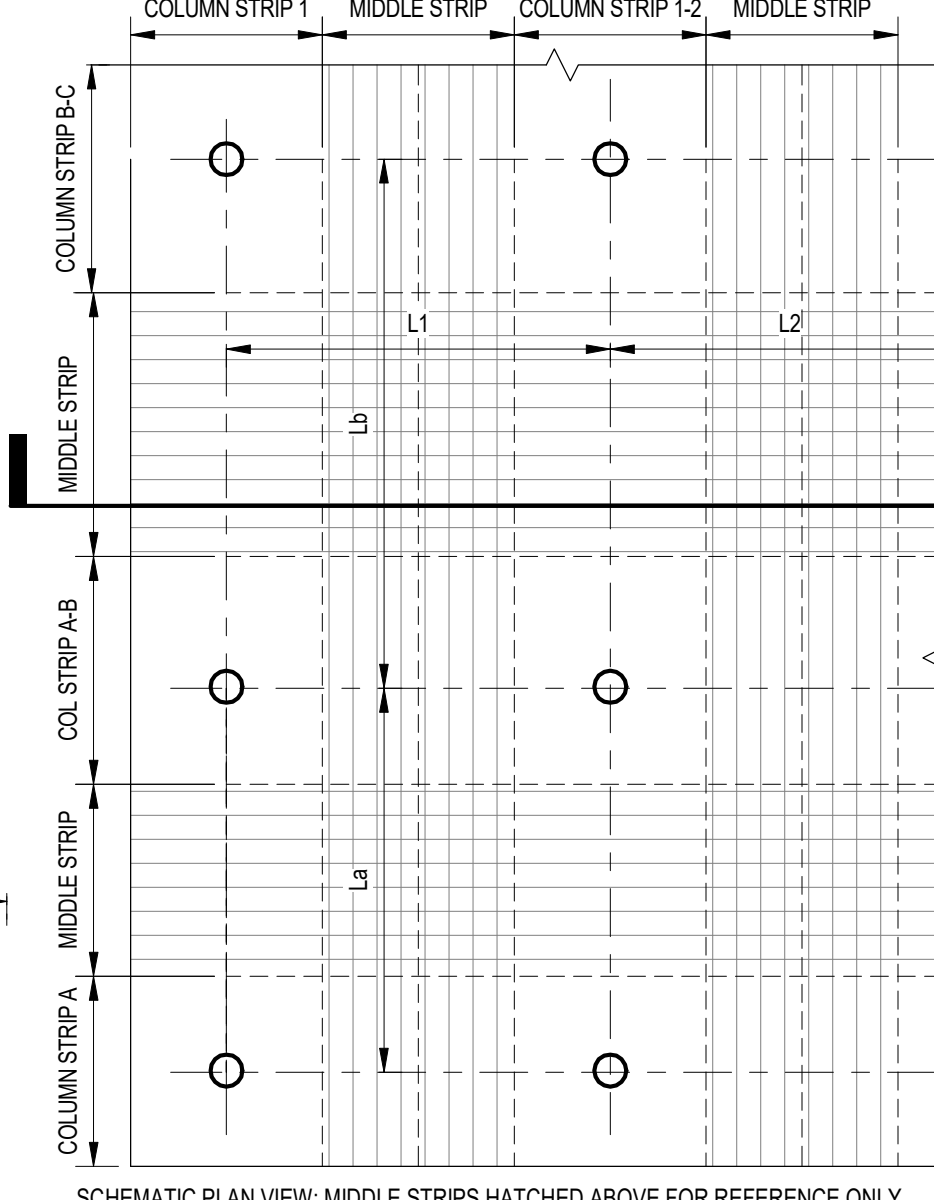
B1 CONCRETE OPENING REINFORCING DETAIL



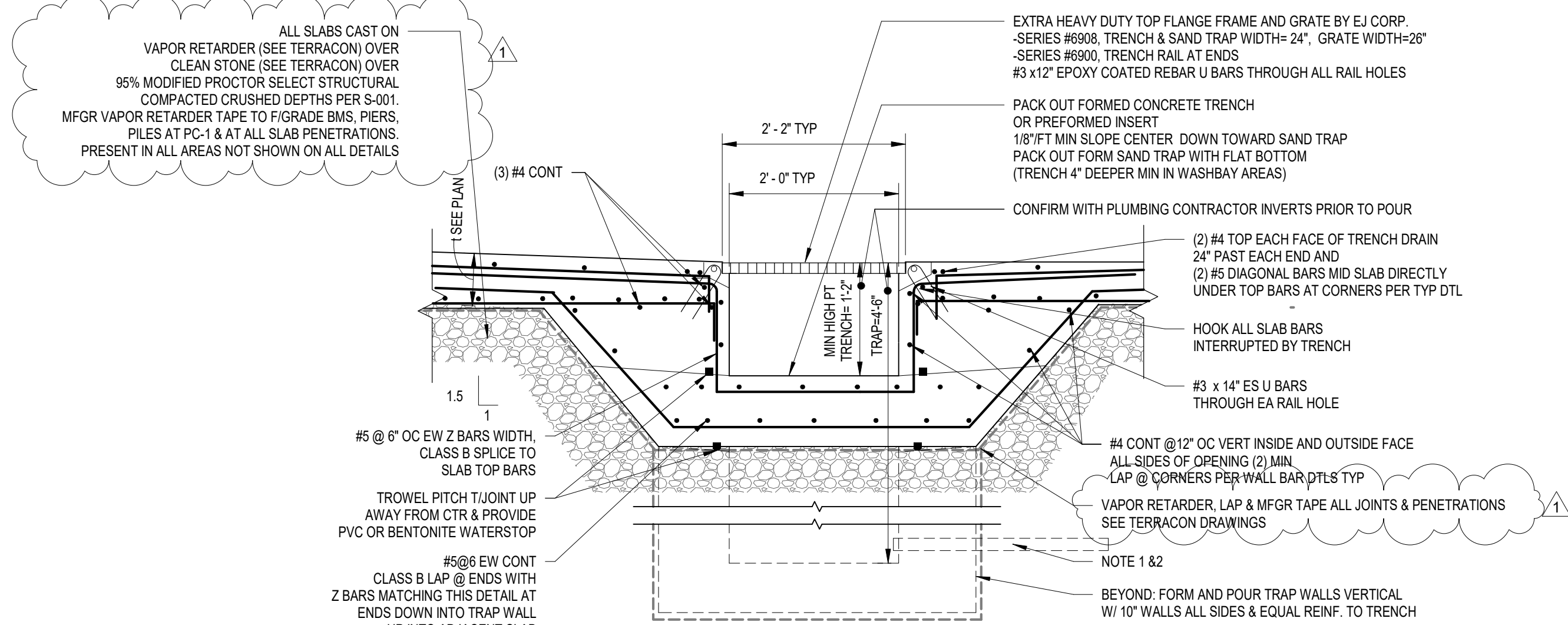
B2 TYPICAL NEW TO EXISTING FOUNDATION DETAIL



B3 TYPICAL 2-WAY SLAB MIDDLE STRIP REINFORCEMENT

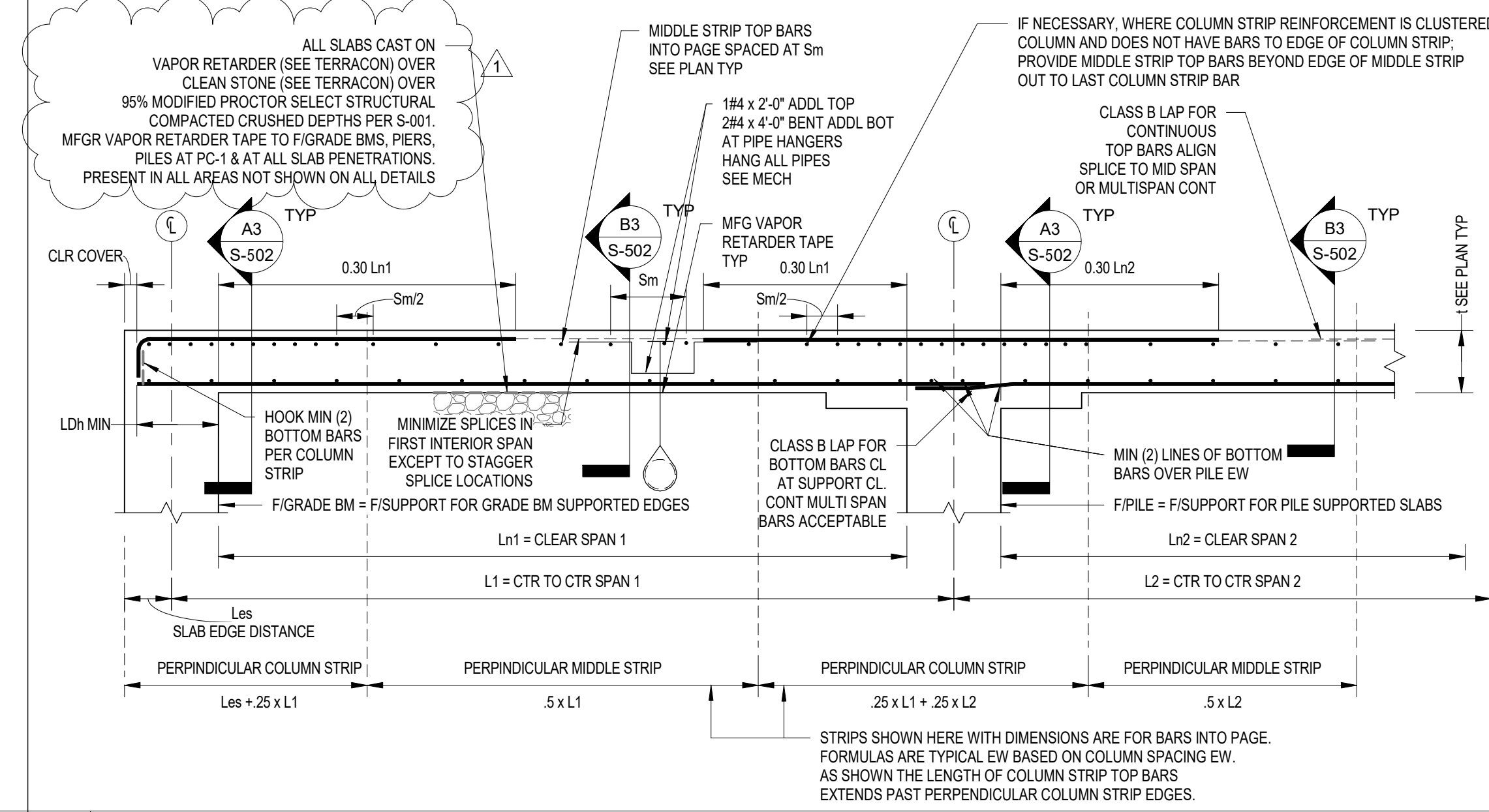


SCHEMATIC PLAN VIEW: MIDDLE STRIPS HATCHED ABOVE FOR REFERENCE ONLY

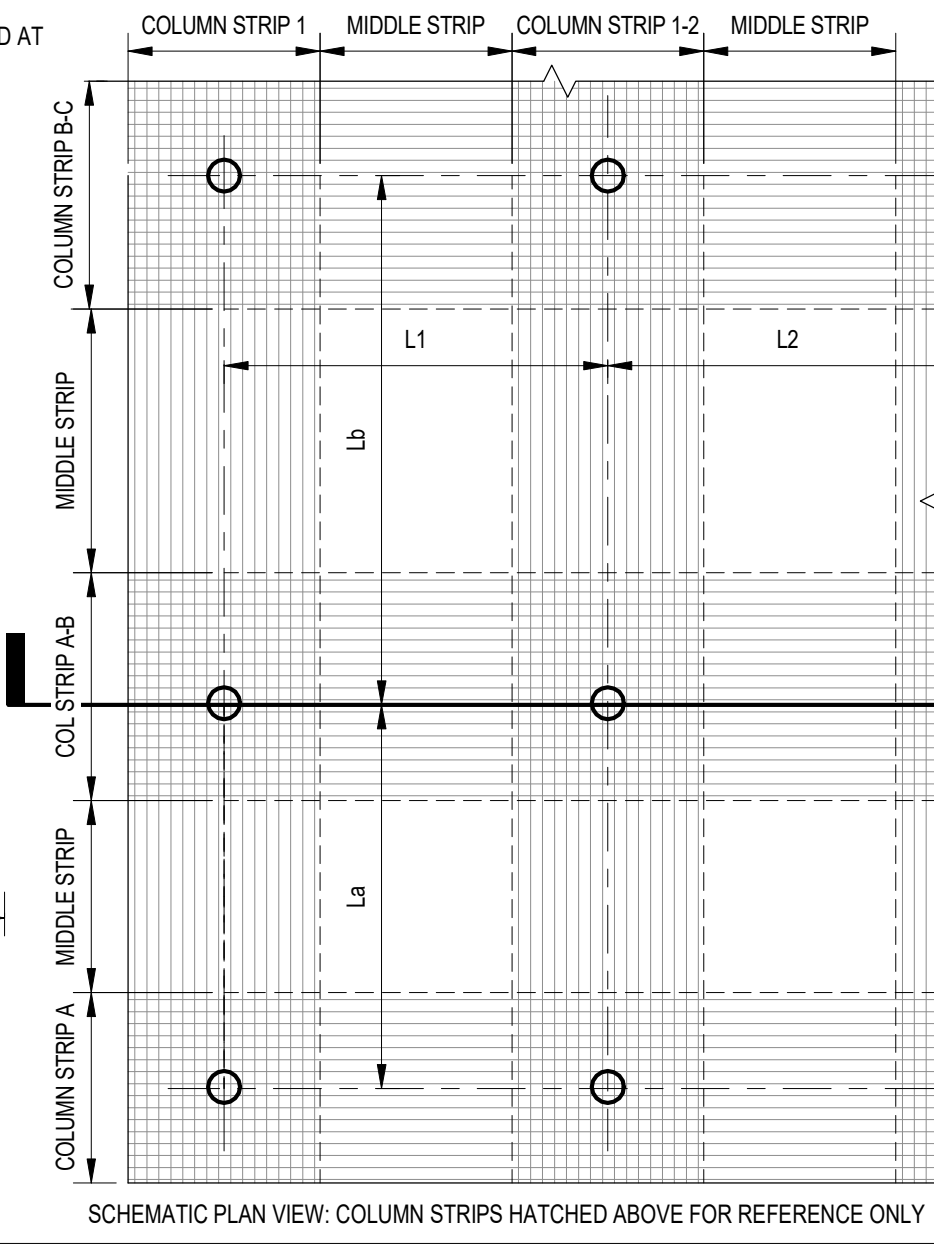


- NOTES:**
- REFER TO PLUMBING DRAWINGS FOR INVERT ELEVATIONS & SEAL REQUIREMENTS. INSTALL TO MATCH
 - ALL BELOW SLAB PIPING WILL REQUIRE PIPE HANGERS SUPPORTED BY GROUND FLOOR SLAB FOR SOIL CONDITIONS
 - SEE P-101 FOR PIPE HANGER REQUIREMENTS AND SPACING & A3/S-502 FOR SLAB REQUIREMENTS

A1 TYPICAL TRENCH DRAIN DETAIL



A3 TYPICAL 2-WAY SLAB COLUMN STRIP REINFORCEMENT



SCHEMATIC PLAN VIEW: COLUMN STRIPS HATCHED ABOVE FOR REFERENCE ONLY

A1 TYPICAL TRENCH DRAIN DETAIL
SCALE: 3/4" = 1'-0"

CERTIFICATE OF AUTHORIZATION: 0021365
REGISTRATION EXPIRATION: 12/31/2026

STATE OF NEW YORK
Professional Engineer
B. BYRNES, P.E.
4/30/2028

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A3 TYPICAL 2-WAY SLAB COLUMN STRIP REINFORCEMENT
SCALE: 1/2" = 1'-0"

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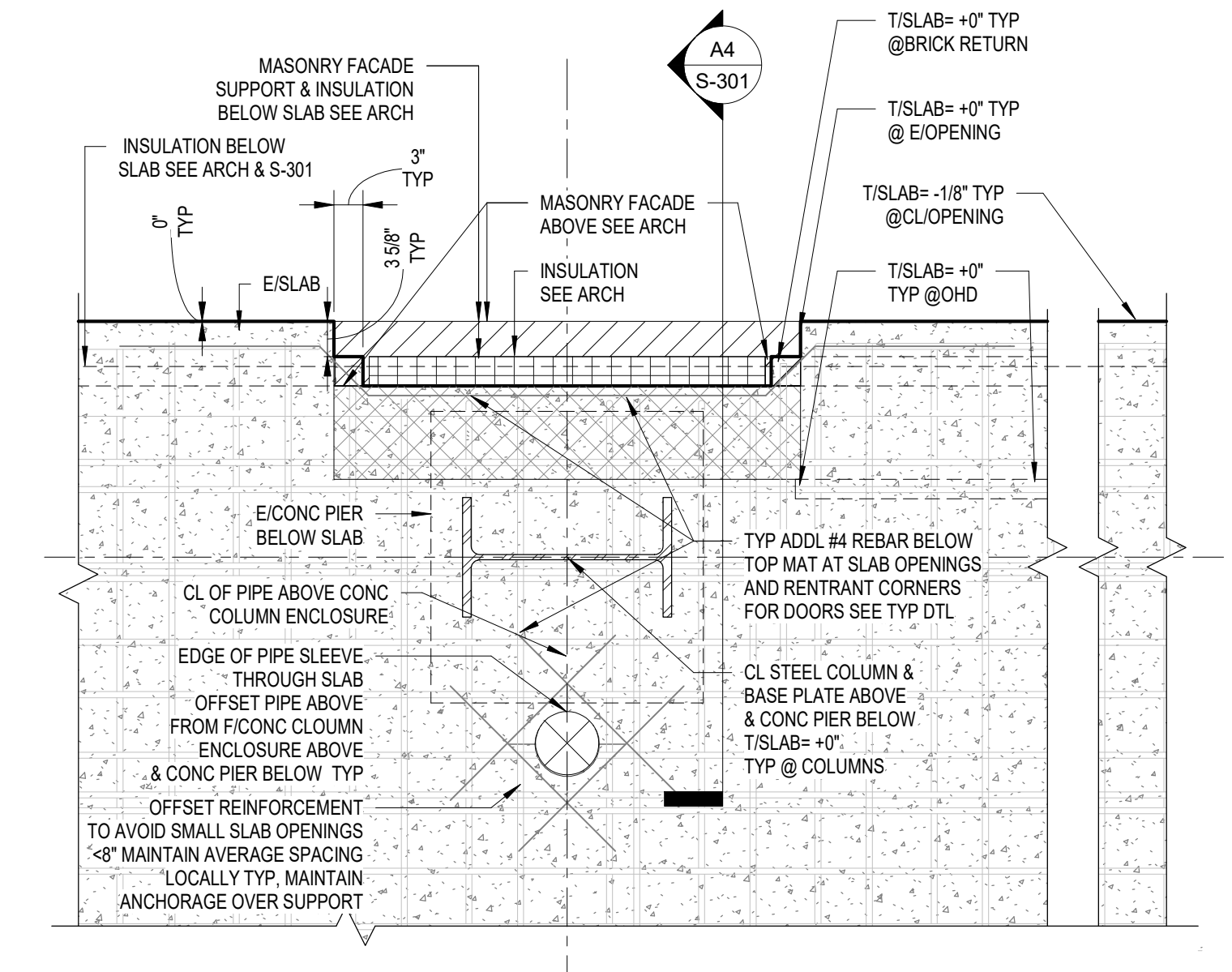
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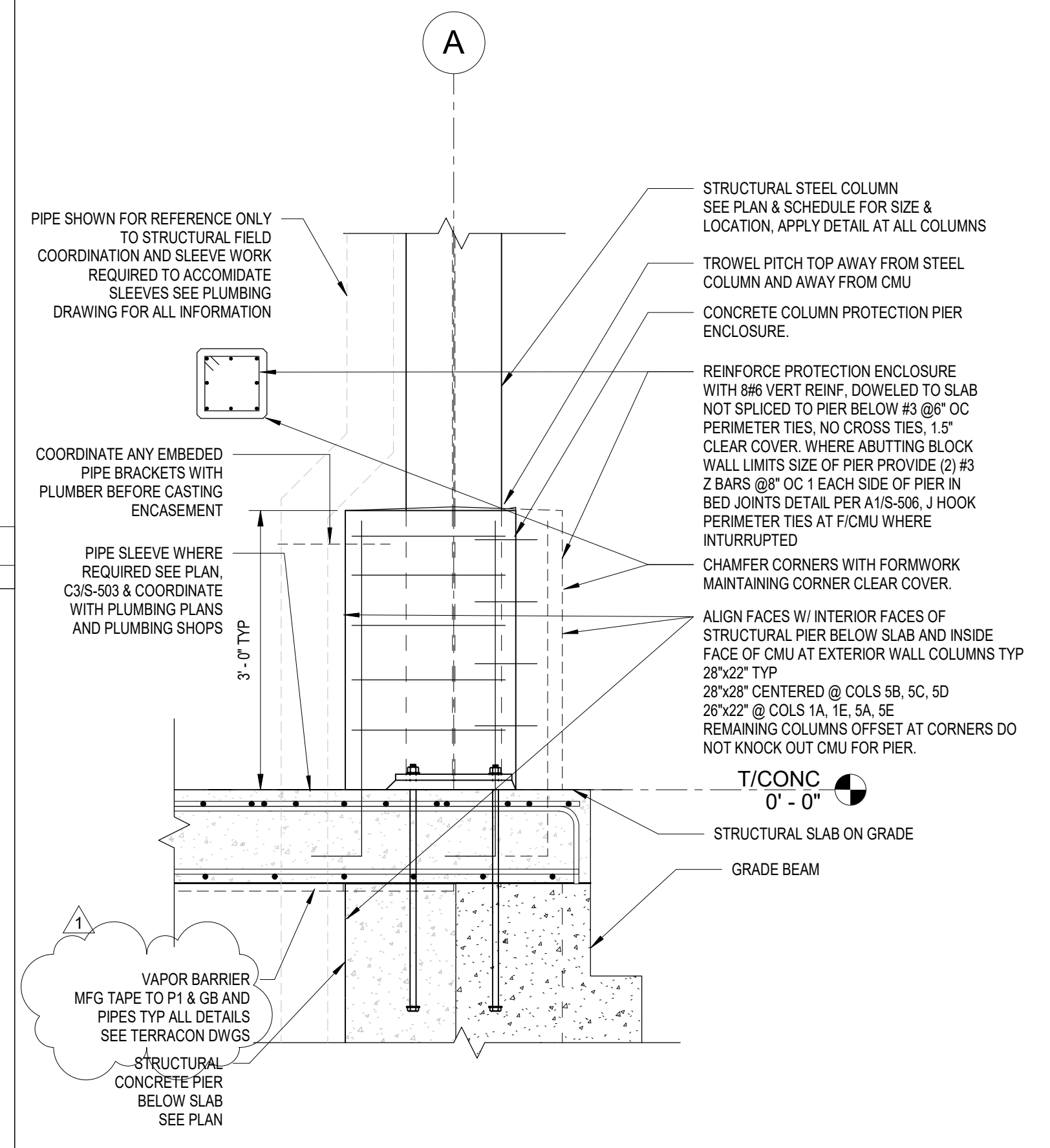
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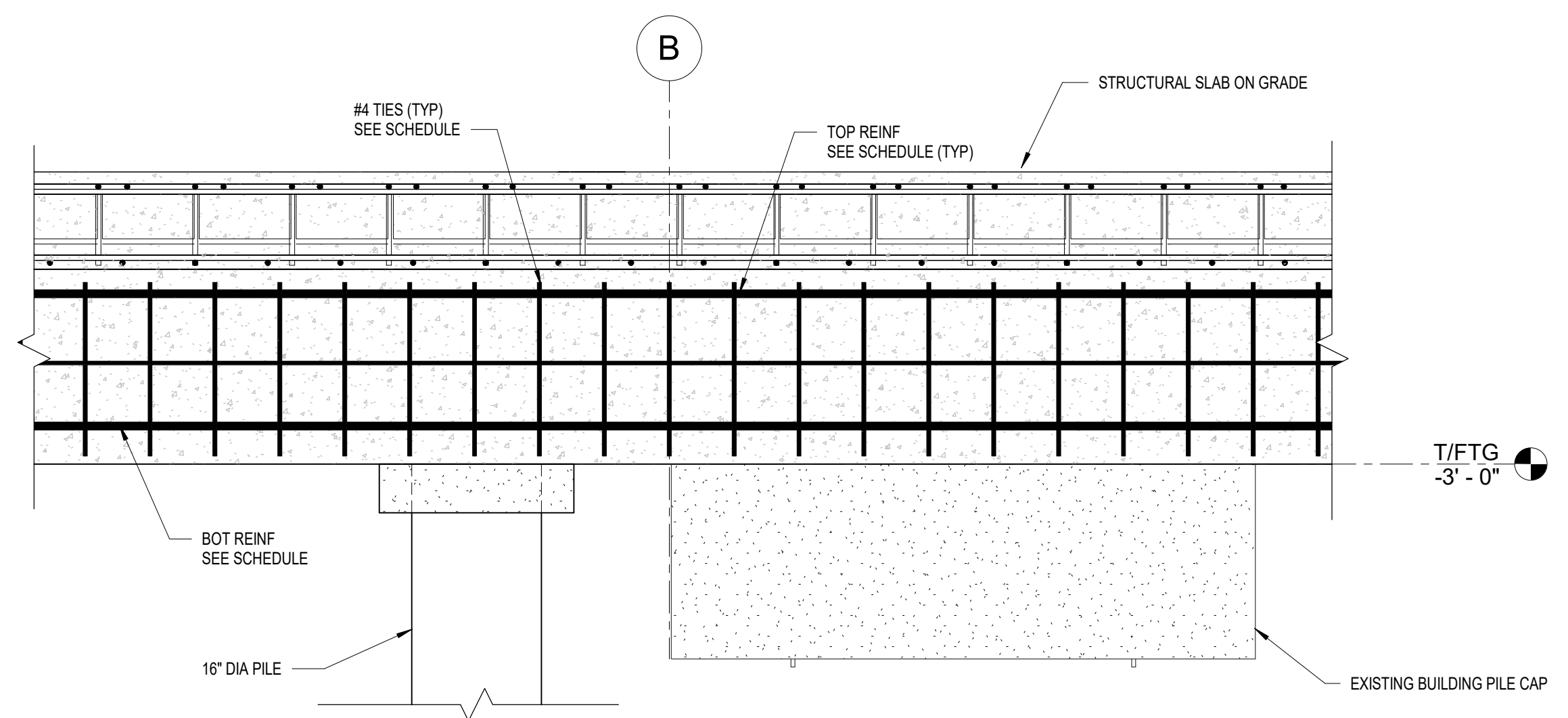
CONTRACT NUMBER: 23-528
SHEET NUMBER: S-502
SHEET NO. 25 OF 72
SCALE: AS SHOWN
DATE: OCTOBER 10, 2025
DPW FILE NO.: 48-16-S-91
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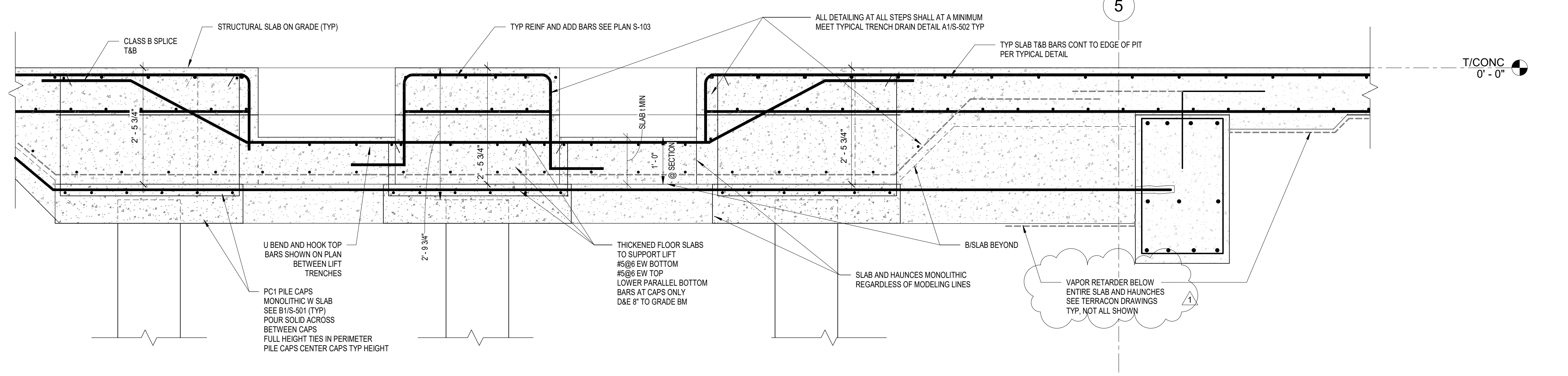
C3 TYPICAL SLAB AT PIER, PLUMBING OPENING & OHD
SCALE: 3/4" = 1'-0"



B4 TYPICAL CONCRETE BOTTOM OF COLUMN ENCASEMENT DETAIL
SCALE: 3/4" = 1'-0"



B2 TYPICAL GRADE BEAM AROUND EXISTING BUILDING PILE CAP DETAIL
SCALE: 3/4" = 1'-0"



A3 TYPICAL LIFT FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

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STATE OF NEW YORK
SEAL OF PROFESSIONAL ENGINEER
B. BYRNES, P.E.
089005
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CONTRACT NUMBER: 23-528
SHEET NUMBER: S-503
SHEET NO. 26 OF 72
SCALE: AS SHOWN
DATE: OCTOBER 10, 2025
DPW FILE NO.: 48-16-S-92
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**PLANS & SPECIFICATIONS FOR
VAPOR INTRUSION MITIGATION SYSTEM
NEW SNOW EQUIPMENT STORAGE BUILDING**

WESTCHESTER COUNTY AIRPORT
TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK

PROJECT SITE LOCATION



INDEX OF SHEETS

VI-001	TITLE SHEET AND GENERAL NOTES
VI-101	VAPOR INTRUSION MITIGATION SYSTEM PLAN - FOUNDATION
VI-102	VAPOR INTRUSION MITIGATION SYSTEM PLAN - ROOF
VI-301	VAPOR INTRUSION MITIGATION SYSTEM DETAILS - MEMBRANE
VI-302	VAPOR INTRUSION MITIGATION SYSTEM DETAILS - MEMBRANE
VI-311	VAPOR INTRUSION MITIGATION SYSTEM DETAILS - PIPING

NOTICE FOR CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH REGULATIONS OF THE U.S. DEPARTMENT OF LABOR AND ALL LOCAL AND STATE REGULATIONS.

THE OWNER AND THE VIMS DESIGNER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR CONTRACTORS AND SUBCONTRACTORS COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH REGULATIONS OF THE U.S. DEPARTMENT OF LABOR AND ALL LOCAL AND STATE REGULATIONS.

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND THE VIMS DESIGNER HARMLESS FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE VIMS DESIGNER.

IN CASE OF CONFLICT BETWEEN THESE PLANS AND OTHER SITE DESIGN DOCUMENTS AND/OR MANUFACTURER SPECIFICATIONS / REQUIREMENTS THE APPROPRIATE PARTIES / COMPANIES WITH CONFLICTING DOCUMENTATION SHALL CONFER TO DETERMINE A MUTUALLY AGREED UPON SOLUTION.

A MANDATORY PRE-INSTALLATION CONFERENCE SHALL BE HELD PRIOR TO THE INSTALLATION OF THE VIMS COMPONENTS TO COORDINATE SUBSTRATE AND INSTALLATION CONDITIONS AND PROCEDURES. THE VIMS INSTALLER, SUB-SLAB VAPOR COLLECTION CONTRACTORS, AND THE VIMS DESIGNER SHALL BE PRESENT AT THIS MEETING.

THE VIMS WAS DESIGNED IN GENERAL ACCORDANCE WITH INTERSTATE TECHNOLOGY AND REGULATORY COUNCIL (ITRC) STANDARD PRACTICES AND ANSI/AIAA87 CC-1000 (REVISIONS MAY 2023) SOIL GAS CONTROL SYSTEMS IN NEW CONSTRUCTION OF MULTIFAMILY, SCHOOL, COMMERCIAL, AND MIXED-USE BUILDINGS OR APPLICABLE ANSIAA87 STANDARD.

NOTES
L. APPLICABILITY

A. GENERAL

1. A PASSIVE VAPOR INTRUSION MITIGATION SYSTEM (VIMS) SHALL BE INSTALLED AND WILL INCLUDE A 20-MIL SHEET MEMBRANE WITH SPRAY-APPLIED ASPHALTIC EMULSION FOR SEAMS, PENETRATIONS, AND TERMINATIONS, COLLECTIVELY REFERRED TO AS "VIMS MEMBRANE" AND UNDERLAIN BY A VAPOR VENT SYSTEM VENTED ABOVE THE ROOF. THE VIMS IS DESIGNED TO BE CONVERTED TO AN ACTIVE SYSTEM, IF NEEDED.

2. VIMS DETAILS PRESENTED IN THESE PLANS AND SPECIFICATIONS SHALL BE UTILIZED IN THE CONSTRUCTION OF THE BUILDING DESIGNATED ON SHEETS VI-001 THROUGH VI-311. THE BASIS OF DESIGN IS A VOLATILE ORGANIC COMPOUND (VOC) RESISTANT SHEET MEMBRANE AND ANY ASSOCIATED MATERIALS AS DESCRIBED IN THESE PLANS. MANUFACTURER REFERENCE TO THESE PRODUCTS ARE PROVIDED BELOW AS APPROVED PROVIDERS. PRODUCT DEVIATION AND MEMBRANE THICKNESS MAY ONLY BE SUBSTITUTED FOR ALTERNATIVE PRODUCTS OR DESIGNS IF APPROVED BY THE VIMS DESIGNER.

- * GEO-SEAL® EVIDA, GEO-SEAL® CORE, VAPOR VENT™; EPPO SERVICES, INC. (EPPO); TEL: (800) 882-1896; WWW.EPPOINC.COM
- * SHIELD 20, NITRA-CORE®, TERRAVENT®; LAND SCIENCE TECHNOLOGIES; (949) 366-8000; WWW.LANDSCIENCETECH.COM
- * VI-20™ GEOMEMBRANE, LIQUID BOOT®, GEOVENT™; CETCO; WWW.MINERALSTECH.COM/CETCO

3. THE VIMS MEMBRANE WILL ALSO SERVE AS A MOISTURE MEMBRANE AND WILL REPLACE ANY VAPOR OR MOISTURE BARRIER SPECIFIED IN THE STRUCTURAL DETAILS. INSTALLATION OF AN ADDITIONAL MOISTURE OR VAPOR BARRIER BETWEEN THE VIMS MEMBRANE AND SLAB FLOOR MAY VOID THE WARRANTY PROVIDED BY THE VIMS MEMBRANE MANUFACTURER.

B. SYSTEM COMPONENTS

1. THE VIMS CONSTRUCTION SHALL CONSIST OF, BUT NOT BE LIMITED TO, THE FOLLOWING:

- a. SUPPLY AND INSTALL 4-INCH AGGREGATE LAYER BENEATH FOUNDATION SLAB
- b. SUPPLY AND INSTALL LOW PROFILE VAPOR COLLECTION PIPING AND ASSOCIATED FITTINGS
- c. SUPPLY AND INSTALL 3-INCH PVC CONVEYANCE PIPING
- d. SUPPLY AND INSTALL VOC-RESISTANT 20-MIL SHEET MEMBRANE LAYER
- e. SEAL 20-MIL MEMBRANE TO SEAMS, FOOTINGS, AND PENETRATIONS USING ASPHALTIC EMULSION
- f. PERFORM SMOKE TESTING OF THE VIMS MEMBRANE
- g. SUPPLY AND INSTALL SCH. 40 PVC VERTICAL VENT RISER PIPING, SAMPLE PORTS, AND GAS FITTINGS
- h. COMPLETE CONNECTION OF VERTICAL VENT RISER PIPING TO ROOF AS APPROPRIATE
- i. INSTALL ROOF-MOUNTED VENTILATORS
- j. INSTALL EMPTY ELECTRICAL CONDUIT OR SERVICE NEXT TO THE RISERS ON THE ROOF

2. ALL MATERIALS SHALL BE DELIVERED TO THE PROJECT SITE IN THEIR ORIGINAL UNBROKEN PACKAGES BEARING THE MANUFACTURER'S LABEL SHOWING BRAND, WEIGHT, VOLUME, BATCH NUMBER AND DATE. MATERIALS SHALL BE STORED AT THE PROJECT SITE IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

II. VAPOR INTRUSION MITIGATION SYSTEM

A. VAPOR COLLECTION AND VENT SYSTEM

A.1. AGGREGATE LAYER

1. A MINIMUM 4-INCH LAYER OF GRAVEL AGGREGATE SHALL BE PROVIDED BENEATH THE FOUNDATION SLAB. THE AGGREGATE LAYER SHALL BE A MEDIUM TO COARSE AGGREGATE AND CONTAIN NO MORE THAN 5% FINES (E.G. #57 STONE). THE GRADATION OF THE AGGREGATE PLACED BELOW THE MEMBRANE SHALL MEET THE FOLLOWING SPECIFICATIONS OR AS SPECIFIED IN THE GEOTECHNICAL REPORT IF APPROVED BY THE VIMS DESIGNER:

Sieve	GRAVEL	
	3/4" GRAVEL	3/8" GRAVEL
1-1/2"	100	-
1"	95-100	-
3/4"	90-100	100
3/8"	20-55	70-95
No. 4	0-10	0-25
No. 8	0-5	0-10

2. THE AGGREGATE WILL BE PLACED A MINIMUM OF 2-INCHES ABOVE AND A MINIMUM OF 1-INCH BELOW THE VAPOR COLLECTION PIPING AS SHOWN IN DETAIL 01, SHEET VI-301.

3. ANY AGGREGATE REMOVED DURING PLACEMENT OF UTILITIES MUST BE PLACED BACK TO LEVEL GRADE AND COMPACTED AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. UTILITIES PLACED IN THE AGGREGATE LAYER MAY NOT BE LARGER THAN 1-INCH IN DIAMETER. UTILITIES LARGER THAN 1-INCH IN DIAMETER MUST BE BURIED INTO THE SUBGRADE SUCH THAT NO MORE THAN 1 INCH OF THE AGGREGATE LAYER IS AFFECTED.

4. THE SUBGRADE UNDER THE AGGREGATE SHALL BE ROLLED SMOOTH AND MOISTURE CONDITIONED AS NECESSARY TO ACHIEVE THE COMPACTION SPECIFIED IN THE GEOTECHNICAL ENGINEER'S SPECIFICATION.

A.2. SUB-SLAB VAPOR COLLECTION PIPING

1. SUB-SLAB LOW PROFILE VAPOR COLLECTION PIPING SHALL BE COMPRISED OF ONE-FOOT WIDE BY ONE-INCH THICK CORRUGATED HOPE PIPING WRAPPED IN GEOTEXTILE OR EQUIVALENT AS APPROVED BY THE VIMS DESIGNER.

2. VAPOR COLLECTION PIPING SHALL BE INSTALLED AT LOCATIONS SHOWN ON SHEET VI-101 AND PLACED WITHIN THE 4-INCH AGGREGATE LAYER. LOW PROFILE VAPOR COLLECTION PIPING SHALL BE PLACED SUCH THAT NO AREA BENEATH THE SLAB FOUNDATION IS MORE THAN 25 FEET FROM THE VAPOR COLLECTION PIPING. IF CHANGES TO THE VAPOR COLLECTION PIPING ARE REQUIRED DURING CONSTRUCTION, THE VIMS DESIGNER SHALL BE NOTIFIED. ALL CHANGES MUST BE APPROVED BY THE VIMS DESIGNER.

3. SUB-SLAB PVC CONVEYANCE PIPING SHALL BE INSTALLED BY THE GENERAL CONTRACTOR OR VIMS INSTALLER AS SHOWN IN THESE DRAWINGS AND SHALL BE SUSPENDED FROM THE UNDERSIDE OF THE STRUCTURAL SLAB OR FRAMING WITH APPROVED HANGERS IN ACCORDANCE WITH THE PROJECT PLUMBING SPECIFICATIONS AND APPLICABLE PLUMBING CODES TO PREVENT DAMAGE DUE TO SUBGRADE SETTLEMENT.

4. VAPOR COLLECTION PIPING SHALL BE CONNECTED TO 3-INCH SOLID SCHEDULE 40 PVC CONVEYANCE PIPING TO THE VENT RISERS, CONNECTING TO SCH. 40 PVC ELBOWS TURNING UP THROUGH THE FLOOR SLAB ADJACENT TO FOUNDATION FOOTINGS AND STRUCTURAL COLUMNS.

5. ALL TRANSITION PIPING SHALL BE IN PLACE PRIOR TO POURING THE FOUNDATION GRADE BEAMS OR FOOTINGS WHEN POURED SEPARATELY FROM THE FLOOR SLAB. THE PIPING TRANSITIONS SHALL BE ACCOMPLISHED IN COMPLIANCE WITH THE ALL APPLICABLE BUILDING CODES AND WITH THE APPROVAL OF THE PROJECT STRUCTURAL ENGINEER AND/OR BUILDING OFFICIAL.

A.3. ABOVE SLAB VAPOR COLLECTION RISER

1. VENT RISER TO THE ROOF SHALL BE COMPRISED OF 3-INCH DIAMETER SCH. 40 PVC RISER PIPING IF ALLOWED BY APPLICABLE BUILDING CODES AND APPROVED BY THE PROJECT MECHANICAL ENGINEER OR BUILDING OFFICIALS. IF ALTERNATE PIPING MATERIALS ARE REQUIRED, CONSTRUCT AS REQUIRED BY BUILDING CODES. THE RISER PIPING SHALL BE LOCATED WITHIN THE WALLS/CHASES OR INSTALLED ADJACENT TO INTERIOR SUPPORT COLUMNS.

2. THE VENT RISER PIPE TO THE ROOF SHALL BE FULLY SUPPORTED THROUGH THE ENTIRE HEIGHT OF THE BUILDING WITH PIPE CLAMPS OR SIMILAR, SUCH THAT NO DOWNWARD FORCE (DUE TO THE WEIGHT OF THE RISER PIPE) IS EXERTED ON THE SUBSLAB VENTING SYSTEM.

3. A 304 STAINLESS STEEL HEX REDUCING BUSHING (MNP7, 1/2" X 1/4") SHALL BE TAPPED INTO THE VENT RISER PIPING BETWEEN 2 AND 5 FEET ABOVE THE GROUND AND SEALED PERMANENTLY FOR GAS-TIGHT APPLICATIONS. A QUICK-CONNECT COUPLER SHALL BE INSTALLED IN THE BUSHING AND SEALED WITH GAS-RATED TEFLOX TAPE TO ALLOW FOR REMOVAL DURING MONITORING (SEE DETAIL 06, SHEET VI-311).

4. THE RISER PIPE SHALL BE EQUIPPED WITH A 3-INCH SHUT-OFF VALVE TO ALLOW FOR SHUT-OFF OF AIR FLOW ABOVE THE VALVE DURING SAMPLING OR OPERATION OF AN ACTIVE SYSTEM. THIS VALVE SHALL BE INSTALLED INLINE ABOVE THE SAMPLE PORT AND APPROXIMATELY 8 FT ABOVE THE GROUND (SEE DETAIL 06, SHEET VI-311).

5. PLACARDS SHALL BE INSTALLED ON EACH VENT RISER APPROXIMATELY EVERY 5 FEET AND AT ANY EXPOSED RISER PIPING (SEE DETAIL 10, SHEET VI-311).

6. A VIMS MEMBRANE IDENTIFICATION SIGN SHALL BE INSTALLED IN UTILITY AND MECHANICAL ROOMS (SEE DETAIL 09, SHEET VI-311). THIS SIGN IS TO BE PLACED ON THE WALLS AT EYE LEVEL AND SHALL NOT BE COVERED OVER. THE LOCATION OF THIS NOTIFICATION WILL BE DETERMINED BY THE CONTRACTOR, OWNER, OR BUILDING OFFICIAL.

A.4. PASSIVE VENTILATOR

1. A PASSIVE VENTILATOR CAPABLE OF 26 CFM WITH A 4 MPH WIND SHALL BE INSTALLED ON THE TOP OF EACH VENT RISER PIPE ABOVE THE ROOF LINE. THE VENTILATORS SHALL INCLUDE BASES, REDUCING COUPLINGS, AND ALL OTHER REQUIRED ACCESSORIES FOR A SECURE CONNECTION TO THE VENT RISER PIPING.

2. THE AJRA AV-3 ROOF VENT IS AN ACCEPTABLE PASSIVE VENTILATOR (SEE DETAILS 07 AND 08, SHEET VI-311). THESE PRODUCTS ARE MANUFACTURED BY ACTIVE VENTILATION PRODUCTS, INC.; 1-800-247-3463; WWW.ROOFVENTS.COM.

3. THE PASSIVE VENTILATORS SHALL BE INSTALLED IN ACCORDANCE WITH INDUSTRY STANDARDS AS RECOMMENDED BY THE MANUFACTURER.

4. RISER PIPES SHALL TERMINATE A MINIMUM OF 24 INCHES ABOVE THE ROOF-LINE, EQUIPPED AND BRACED APPROPRIATELY IN ACCORDANCE WITH APPLICABLE BUILDING CODES (SEE DETAIL 07, SHEET VI-311).

5. ROOF-MOUNTED VENTILATORS SHALL BE LOCATED AT A DISTANCE OF NOT LESS THAN 15 FEET FROM ANY BUILDING AIR INTAKE AND AT A DISTANCE OF AT LEAST THE HEIGHT OF THE ROOF PARAPET AWAY FROM THE ROOF EDGE (IF APPLICABLE).

6. PROVIDE ELECTRICAL SERVICE OR EMPTY CONDUIT WITH A DEDICATED BREAKER WITHIN 6 FEET OF THE RISER PIPE ON THE ROOF IN CASE THE SYSTEM NEEDS TO CONVERT TO AN ACTIVE SYSTEM. THE BREAKER SHALL PROVIDE A MINIMUM OF 120 VAC/1P CONTINUOUS SERVICE INSTALLED IN ACCORDANCE WITH APPLICABLE BUILDING CODES.

B. VIMS MEMBRANE

B.1. MATERIALS

1. THE VIMS MEMBRANE SHALL CONSIST OF A 20-MIL VOC-RESISTANT SHEET MEMBRANE WITH SPRAY-APPLIED ASPHALTIC EMULSION FOR SEAMS, PENETRATIONS, AND TERMINATIONS SUPPLIED BY THE MANUFACTURERS SPECIFIED IN SECTION I.A.2, OR APPROVED EQUAL.

2. THE VIMS MEMBRANE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE VIMS DESIGNER.

B.2. PENETRATION SEALS

1. WHERE UTILITIES, VENT LINES, PIPING, ELECTRICAL CONDUITS, ETC. PENETRATE THE VIMS MEMBRANE, A GAS-TIGHT SEAL SHALL BE CREATED AROUND THE PENETRATION IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS SHOWN ON DETAIL 03, SHEET VI-301.

2. WHERE PENETRATIONS SUCH AS ELECTRICAL UTILITY CONDUITS, PLUMBING PIPING, ETC. ARE CONCENTRATED, A CONCRETE PENETRATION BANK WILL BE CONSTRUCTED TO SECURE THE PENETRATIONS IN-PLACE (SEE DETAIL 04, SHEET VI-301). THE PENETRATION BANK SHALL BE CONSTRUCTED USING A MINIMUM THICKNESS OF 12 INCHES OF NON-SHRINK GROUT EXTENDING A MINIMUM OF 8 INCHES FROM ANY PENETRATION, ALLOWING FOR A MINIMUM 6-INCH ATTACHMENT OF THE VIMS MEMBRANE, SIMILAR TO AN ATTACHMENT TO AN INTERIOR FOOTING. THE TOP OF THE PENETRATION BANK SHALL BE BELOW THE BOTTOM OF THE SLAB. PENETRATIONS SHALL NOT BE IN CONTACT WITH ADJACENT PENETRATIONS OR OTHER OBJECTS TO ALLOW PROPER SEALING AROUND THE ENTIRE PENETRATION CIRCUMFERENCE.

C. QUALITY ASSURANCE

1. THE VIMS INSTALLER SHALL BE TRAINED AND APPROVED BY THE VIMS MATERIAL MANUFACTURER. THE VIMS INSTALLER SHALL PROVIDE THE VIMS DESIGNER WITH A LETTER FROM THE MANUFACTURER (A) CONFIRMING THAT THE VIMS INSTALLER RETAINED BY THE OWNER FOR THE PERFORMANCE OF THIS SCOPE OF WORK IS CERTIFIED BY THE MANUFACTURER FOR INSTALLATION OF THE MATERIAL; AND (B) WARRANTING ITS MATERIAL TO BE FREE OF DEFECTS WHEN THAT MATERIAL IS INSTALLED BY THE VIMS INSTALLER.

2. A PRE-INSTALLATION CONFERENCE SHALL BE HELD PRIOR TO THE APPLICATION OF THE VIMS COMPONENTS TO COORDINATE PROPER SUBSTRATE AND INSTALLATION CONDITIONS AND PROCEDURES. THE VIMS INSTALLER, SITE SUPERINTENDENT, THE FOUNDATION SUBCONTRACTOR, SUBSLAB UTILITY CONTRACTORS, AND THE VIMS DESIGNER SHALL BE PRESENT AT THIS MEETING.

3. THE INSTALLATION OF THE VIMS MEMBRANE SHALL BE CLOSELY MONITORED BY THE VIMS INSPECTOR. INSPECTIONS SHALL TYPICALLY BE PERFORMED PRIOR TO, DURING, AND SUBSEQUENT TO THE INSTALLATION OF THE VAPOR COLLECTION PIPING AND APPLICATION OF THE VIMS MEMBRANE. IT IS THE RESPONSIBILITY OF THE VIMS INSTALLER TO NOTIFY THE OWNER AND VIMS DESIGNER WITHIN 72 HOURS OF BEGINNING ANY PORTION OF THIS WORK.

4. ALL SURFACES TO RECEIVE THE VIMS MEMBRANE TERMINATIONS SHALL BE INSPECTED AND APPROVED BY THE VIMS INSTALLER FOR THE PERFORMANCE OF THIS SCOPE OF WORK AND BY THE VIMS INSPECTOR PRIOR TO COMMENCING WORK.

5. PRIOR TO PLACING THE FLOOR SLAB OVER THE MEMBRANE, THE VIMS INSPECTOR SHALL INSPECT AND APPROVE THE MEMBRANE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. CONSTRUCTION OF THE FLOOR SLAB SHALL NOT PROCEED WITHOUT WRITTEN CERTIFICATION OF THE SUCCESSFUL INSTALLATION BY THE VIMS INSTALLER.

D. SUBMITTALS

1. THE VIMS INSTALLER SHALL SUBMIT ANY UPDATES OR REVISIONS TO THE MANUFACTURER'S MATERIAL DATA AND RECOMMENDED INSTALLATION PROCEDURES TO THE VIMS DESIGNER FOR REVIEW AND APPROVAL AT LEAST ONE WEEK PRIOR TO THE CONSTRUCTION OF THE VIMS MEMBRANE.

2. THE VIMS SUBCONTRACTOR SHALL SUBMIT REPRESENTATIVE SAMPLES OR MANUFACTURER'S PRODUCT SPECIFICATIONS OF THE FOLLOWING TO THE VIMS DESIGNER FOR APPROVAL:

- GRAIN-SIZE DISTRIBUTION OF AGGREGATE LAYER
- 20-MIL SHEET MEMBRANE
- ASPHALTIC EMULSION
- LOW-PROFILE VAPOR COLLECTION PIPING
- SAFETY DATA SHEET FOR LOW-VOC GLUE USED FOR CONSTRUCTION

3. TERRACON RECOMMENDS THAT AT THE COMPLETION OF INSTALLATION, THE VIMS INSTALLER SHALL SUBMIT A LETTER TO THE OWNER CERTIFYING THAT VIMS INSTALLATION WAS COMPLETED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS AS WELL AS MANUFACTURER SPECIFICATIONS.

E. WARRANTY

1. TERRACON RECOMMENDS THE OWNER OBTAIN A WARRANTY FOR THE VIMS MEMBRANE. THE MANUFACTURER PROVIDES PRODUCT AND/OR SYSTEM WARRANTIES FOR THE VIMS MEMBRANE RANGING FROM ONE YEAR TO 20 YEARS IN DURATION.

2. THE VIMS MANUFACTURER MAY REQUIRE SUBMITTAL OF DESIGN DOCUMENTS, ENVIRONMENTAL REPORTS, GEOTECHNICAL REPORTS, OR OTHER DOCUMENTATION FOR REVIEW PRIOR TO ISSUING A WARRANTY, AND ADDITIONAL COSTS MAY APPLY. PLEASE CONTACT THE SELECTED MANUFACTURER FOR WARRANTY TERMS AND CONDITIONS AND ADDITIONAL INFORMATION.

3. MANUFACTURERS EXTENDED WARRANTIES MUST BE REQUESTED BY THE OWNER PRIOR TO VIMS INSTALLATION BID REQUESTS.

F. JOB CONDITIONS

1. PROPER CLEARANCE IS REQUIRED FOR A TYPICAL APPLICATION OF THE VIMS MEMBRANE COMPONENTS.

2. ALL PLUMBING, ELECTRICAL, MECHANICAL AND STRUCTURAL ITEMS THAT ARE LOCATED BENEATH OR THAT PASS THROUGH THE VIMS MEMBRANE SHALL BE PROTECTED PRIOR TO THEIR PROPER POSITIONS AND APPROPRIATELY PROTECTED PRIOR TO INSTALLATION OF THE VIMS MEMBRANE.

3. THE VIMS MEMBRANE SHALL BE INSTALLED BEFORE PLACEMENT OF REINFORCING STEEL. IF REINFORCING STEEL IS PRESENT AT THE TIME OF APPLICATION, ALL EXPOSED REINFORCEMENT SHALL BE MASKED BY THE FOUNDATION SUBCONTRACTOR PRIOR TO INSTALLATION OF THE VIMS MEMBRANE.

4. REINFORCING STEEL, PIPING, FORMS, ETC. SHALL NOT BEAR DIRECTLY ON THE MEMBRANE OR PROTECTIVE LAYER AND EQUIPMENT SHALL NOT BE DRIVEN OVER THE MEMBRANE OR ITS PROTECTIVE LAYER WITHOUT PRIOR APPROVAL FROM THE VIMS DESIGNER AND MANUFACTURER. HOLLOW STAKES, FORMS, OR BRACING SHALL NOT BE USED.

5. STAKES USED TO SECURE THE CONCRETE FORMS SHALL NOT PENETRATE THE VIMS MEMBRANE AFTER IT HAS BEEN INSTALLED. IF STAKES NEED TO PUNCTURE THE MEMBRANE AFTER IT HAS BEEN INSTALLED, THE VIMS DESIGNER AND INSTALLER SHOULD BE NOTIFIED. ALL NECESSARY REPAIRS SHALL BE MADE BY THE VIMS INSTALLER.

6. FIELD SITUATIONS NOT SPECIALLY DETAILED SHALL BE HANDLED PER THE INTENT OF THESE PLANS AND SPECIFICATIONS WITH THE APPROVAL OF THE VIMS DESIGNER. THE VIMS INSTALLER MAY SUBMIT SHOP DRAWINGS FOR ALTERNATIVE METHODS. SEE STRUCTURAL FOUNDATION PLANS FOR COMPLETE DEPTHS AND DETAILS OF FOOTING. DEPTHS OF FOOTINGS SHOWN IN THESE PLANS ARE GENERALIZED. ACTUAL FOOTING DEPTHS MAY VARY.

7. APPROPRIATE CARE SHALL BE EXERCISED TO PROTECT THE VIMS MEMBRANE AND PREVENT PENETRATIONS SUBSEQUENT TO ITS APPLICATION. THE VIMS MEMBRANE SHALL BE PROTECTED FROM PEDESTRIAN TRAFFIC AS PRACTICAL, AND SHALL BE KEPT FREE OF DIRT AND DEBRIS, TO THE EXTENT POSSIBLE, UNTIL THE FLOOR SLAB IS POURED. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THAT THE VIMS MEMBRANE AND THE PROTECTION SYSTEM ARE NOT PENETRATED AFTER THE COMPLETION OF THE INSTALLATION.

G. INSTALLATION

G.1. VAPOR COLLECTION PIPING INSTALLATION

1. VAPOR COLLECTION PIPING SHALL BE CONNECTED TO PROVIDE A GAS-TIGHT SEAL AT ALL JOINTS AND FITTINGS AND SHALL BE CONSTRUCTED OF MATERIALS THAT COMPLY WITH THE UNIFORM PLUMBING AND MECHANICAL CODES. ALL JOINTS SHALL BE TIGHTLY SEALED WITH APPROVED MATERIALS ANY GLUE OR SOLVENT USED TO SEAL THE PIPING MUST BE LOW-VOC.

2. PLACEMENT OF AGGREGATE ABOVE THE PIPING SHALL NOT BEGIN BEFORE THE VIMS INSTALLER HAS INSPECTED THE GRADE AND ALIGNMENT OF THE PIPING, THE BEDDING OF THE PIPING AND THE JOINTS BETWEEN THE PIPING. ALL PIPING LOCATED WITHIN THE AGGREGATE LAYER SHALL BE PROTECTED FROM PHYSICAL DAMAGE.

3. CONVEYANCE PIPING GREATER THAN 10 FEET IN LENGTH SHALL HAVE 1/4-INCH DIAMETER WEEP HOLES DRILLED ON THE BOTTOM OF THE PIPE APPROXIMATELY EVERY 5 FEET.

4. SOLID RISER PIPE SHALL BE LOCATED WITHIN THE WALLS/CHASES OR SHALL BE SIMILARLY PROTECTED FROM PHYSICAL DAMAGE. DAMAGE INCURRED DURING CONSTRUCTION OR OCCUPANCY COULD AFFECT SYSTEM PERFORMANCE.

G.2. VIMS MEMBRANE INSTALLATION

1. THE SUBGRADE SHALL BE MOISTURE CONDITIONED AND COMPACTED BY THE GRADING CONTRACTOR AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. THE FINISHED SURFACE SHALL BE SMOOTH, UNIFORM, AND FREE OF DEBRIS AND STANDING WATER. FINAL SUBGRADE INSPECTION/PREPARATION SHALL NOT PRECEDE THE VIMS INSTALLATION BY MORE THAN 72 HOURS.

2. IF THE VIMS MEMBRANE IS TO BE PLACED ON A CONCRETE SURFACE, CONCRETE SURFACES SHALL BE LIGHT BROOM FINISHED OR SMOOTHED, FREE OF ANY DIRT, DEBRIS, LOOSE MATERIAL, RELEASE AGENTS OR CURING COMPOUNDS. ALL VOIDS MORE THAN 1/4-INCH IN WIDTH SHALL BE PROPERLY FILLED WITH NON-SHRINK GROUT OR AS SPECIFIED IN THE PROJECT PLANS AND SPECIFICATIONS. MASONRY JOINTS SHALL BE STRUCK SMOOTH WITH A METAL TROWEL. ALL PENETRATIONS SHALL BE PREPARED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

3. ALL VIMS MEMBRANE PENETRATIONS SHALL BE PREPARED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. WHERE POSSIBLE, ANY FORM STAKES THAT PENETRATE THE VIMS MEMBRANE SHALL BE REBAR WHICH SHALL BE BENT OVER AND LEFT IN THE SLAB. HOLLOW CONDUIT STAKES SHALL NOT BE USED.

4. TRENCHES SHALL BE CUT OVERSIZED AS NECESSARY TO ACCOMMODATE INSTALLATION OF THE VIMS MEMBRANE.

5. THE WALLS FOR FOOTINGS OR UTILITY TRENCHES SHALL BE SMOOTH AND FREE OF ROOTS OR PROTRUDING ROCKS.

6. ORGANIC MATERIALS WITH POTENTIAL FOR GROWTH (E.G. SEEDS OR GRASSES) ARE PRESENT WITHIN THE SUBGRADE, THE GENERAL CONTRACTOR SHALL APPLY A SOIL STERILANT AT THE MANUFACTURER'S RECOMMENDED RATE PRIOR TO THE INSTALLATION OF THE VIMS MEMBRANE.

7. THE VIMS MEMBRANE LAYER SHALL BE LAID ON THE AGGREGATE LAYER IN ACCORDANCE WITH THE MATERIAL MANUFACTURER'S SPECIFICATIONS. ALL SEAMS SHALL BE OVERLAPPED A MINIMUM OF SIX INCHES. ANY OPEN UTILITY OR OTHER TRENCH PRESENT AT THE TIME OF APPLICATION SHALL BE LINED WITH THE MEMBRANE EXTENDING AT LEAST SIX INCHES ONTO THE ADJOINING SUBGRADE. THE MEMBRANE SHALL BE IN INTEGRAL CONTACT WITH ALL INTERIOR FOUNDATION CORNERS. ASPHALTIC EMULSION SHALL BE SPRAY APPLIED AT ALL OVERLAPPED SEAMS TO A THICKNESS OF 60-MILS MINIMUM.

G.3. SEALING PENETRATIONS

1. ALL PENETRATIONS SHALL BE CLEANED AND PREPARED TO PROVIDE PROPER ADHESION OF THE ASPHALTIC EMULSION. METAL PENETRATIONS SHALL BE SANDED CLEAN AND PREPARED USING EMERY CLOTH FOR PROPER ADHESION OF THE ASPHALTIC EMULSION.

2. ALL PENETRATIONS SHOULD BE SECURED PRIOR TO INSTALLATION OF THE VIMS MEMBRANE SYSTEM. PENETRATIONS SHALL NOT BE IN CONTACT WITH ADJACENT PENETRATIONS OR OTHER OBJECTS TO ALLOW PROPER SEALING AROUND THE ENTIRE PENETRATION CIRCUMFERENCE. WHERE PENETRATIONS SUCH AS ELECTRICAL CONDUITS, PLUMBING PIPING, ETC. ARE CONCENTRATED, A CONCRETE PENETRATION BANK WILL BE CONSTRUCTED PRIOR TO VIMS MEMBRANE PLACEMENT. THE CONCRETE PENETRATION BANK WILL CONSIST OF A MINIMUM THICKNESS OF 12 INCHES OF NON-SHRINK GROUT, EXTENDING A MINIMUM OF 8 INCHES BEYOND THE EDGE OF EACH PENETRATION TO ALLOW FOR ATTACHMENT OF THE VIMS MEMBRANE (SEE DETAIL 04, SHEET VI-301).

3. THE MEMBRANE SHALL BE CUT AROUND PENETRATIONS SO THAT IT LAYS FLAT ON THE SUBGRADE. THERE SHOULD NOT BE A GAP LARGER THAN 1/8-INCH BETWEEN THE VIMS MEMBRANE AND THE PENETRATION (SEE DETAIL 03, SHEET VI-301).

4. APPLY ONE COAT OF MANUFACTURER APPROVED SPRAY-APPLIED ASPHALTIC EMULSION SPRAY TO THE VIMS MEMBRANE AND AROUND THE PENETRATIONS AT A THICKNESS OF 30-MILS. PENETRATIONS SHOULD BE TREATED IN A 6-INCH RADIUS AROUND THE PENETRATION AND 3 INCHES ONTO THE PENETRATION OBJECT.

5. REINFORCEMENT FABRIC SHALL BE USED AS AN EMBEDDED LAYER COLLAR PLACED AFTER THE FIRST APPLICATION OF THE ASPHALTIC EMULSION SPRAY. THEN SPRAY A SECOND 30-MIL COAT OVER THE EMBEDDED REINFORCING LAYER ENSURING THE COMPLETE SATURATION OF THE EMBEDDED LAYER AND TIGHT SEAL AROUND THE PENETRATION.

6. THE PENETRATION SHALL BE WRAPPED WITH A POLYPROPYLENE CABLE TIE TIGHTENED FIRMLY SO AS TO SQUEEZE THE CURED MEMBRANE COLLAR, BUT NOT TO TIGHT TO SLICE INTO THE FINISHED SEAL (SEE DETAIL 03, SHEET VI-301). THE CABLE TIE MAY BE INSTALLED IMMEDIATELY AFTER THE EMBEDDED LAYER COLLAR HAS BEEN INSTALLED.

H. INSPECTIONS

1. THE INSPECTION OF ALL VAPOR CONTROL MEASURES SHALL BE PERFORMED BY THE VIMS DESIGNER AT A MINIMUM. INSPECTION SHALL TAKE PLACE AT THE FOLLOWING STAGES OF THE INSTALLATION, AS DEEMED NECESSARY BY THE VIMS DESIGNER:

- AFTER PLACEMENT AND COMPLETION OF SUBGRADE BACKFILL;
- AFTER THE INSTALLATION OF THE LOW PROFILE VENT PIPING AND PRIOR TO INSTALLATION OF THE AGGREGATE LAYER ABOVE THE VENT PIPING;
- DURING THE INSTALLATION OF THE VIMS MEMBRANE;
- DURING SMOKE TESTING;
- AFTER THE COMPLETION OF THE VIMS MEMBRANE BUT PRIOR TO AND THROUGHOUT PLACEMENT OF THE CONCRETE SLAB;
- DURING AND AT THE COMPLETION OF THE VERTICAL VENT RISER PIPING AND ROOF VENT INSTALLATION.

2. FINAL SUBGRADE INSPECTION / PREPARATION SHALL NOT PRECEDE THE VIMS INSTALLATION BY MORE THAN 72 HOURS.

3. FIELD QUALITY CONTROL IS A VERY IMPORTANT PART OF ALL APPLICATIONS. THE VIMS SUBCONTRACTOR SHALL CHECK HIS OWN WORK FOR COVERAGE, THICKNESS, AND ALL-AROUND GOOD WORKMANSHIP.

4. EACH COMPLETED AREA OF VIMS MEMBRANE SHALL BE SMOKE TESTED AT THE COMPLETION OF THE INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S PROTOCOL TO CONFIRM THE INTEGRITY OF THE VIMS MEMBRANE. ONE SMOKE TEST SHALL BE CONDUCTED FOR A MAXIMUM OF EVERY 2,500 SQUARE FOOT AREA. ANY LEAKS WHICH ARE IDENTIFIED SHALL BE REPAIRED AND RE-TESTED UNTIL ALL LEAKS/PERFORATIONS ARE ELIMINATED.

5. VOIDS LEFT BY SMOKE TESTING SHALL BE PATCHED BY THE VIMS INSTALLER BY OVERLAPPING THE VOID BY A MINIMUM OF 6 INCHES. A THIN TACK COAT OF ASPHALTIC EMULSION SHALL BE APPLIED TO ADHERE TO THE VIMS MEMBRANE. SPRAY-APPLIED ASPHALTIC EMULSION SHALL THEN BE APPLIED TO A 60-MIL PER MANUFACTURER MINIMUM DRY THICKNESS, EXTENDING AT LEAST 3 INCHES BEYOND THE PATCH.

6. THE VIMS INSTALLER SHALL PATCH CONCRETE TEST AREAS WITH ASPHALTIC EMULSION TO A 60-MIL PER MANUFACTURER MINIMUM DRY THICKNESS, EXTENDING A MINIMUM OF 1 INCH BEYOND THE TEST PERIMETER.

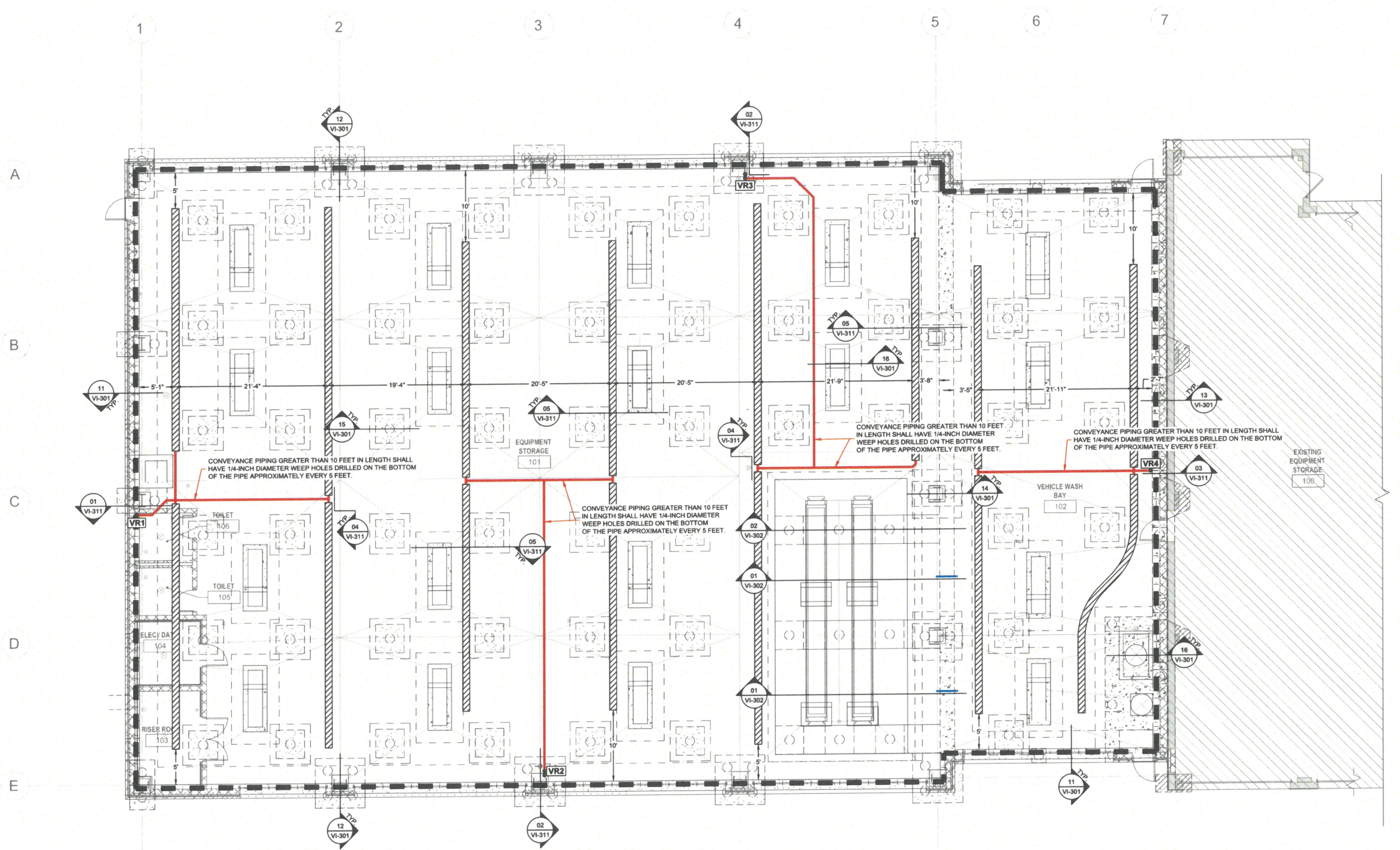
7. SERVICE LISTED IN THIS SPECIFICATION AS BEING REQUIRED BY THE VIMS DESIGNER ARE DEPENDENT UPON OWNER AUTHORIZATION OF SAID SERVICES TO VIMS DESIGNER, AND NOTIFICATIONS TO THE VIMS DESIGNER OF THE PROJECT STATUS BY THE VIMS SUBCONTRACTOR. IF THESE SERVICES ARE NOT PERFORMED BY THE VIMS DESIGNER, TERRACON SHALL NOT BE RESPONSIBLE FOR SYSTEM PERFORMANCE.

RECOMMENDED VAPOR INTRUSION MITIGATION SYSTEM TASKS SUMMARY

TASKS TO BE COMPLETED	RECOMMENDED CONTRACTOR / TRADE RESPONSIBLE FOR TASK	
	GC	VIMS INSTALLER

SUBGRADE PREPARATION

PLACEMENT OF 4-INCH MIN. COMPACTED AGGREGATE LAYER ABOVE SUBGRADE.	x	
CONSTRUCTION OF 12-INCH THICK		



LEGEND

- 12" LOW PROFILE VAPOR COLLECTION PIPE
- 3-INCH SOLID SCH 40 PVC CONVEYANCE PIPE
- 2-INCH SOLID SCH 40 PVC TRANSITION PIPE
- EXTENT OF VAPOR INTRUSION MITIGATION SYSTEM MEMBRANE
- APPROXIMATE TOP OF SLOPE OF STRUCTURAL FEATURE
- VENT RISER FROM SUB-SLAB TO ROOF LOCATION
- VENT RISER SLAB PENETRATION LOCATION
- VENT RISER TO ROOF LOCATION



VIMS MEMBRANE AND VAPOR COLLECTION VENT PIPE LAYOUT
SCALE: 1/8" = 1'-0"

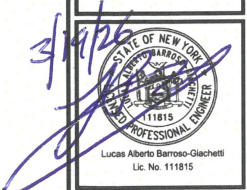
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REV.	DATE	BY	DESCRIPTION
01	03/12/2026	GKR	PRELIMINARY DRAFT FOR CONSTRUCTION

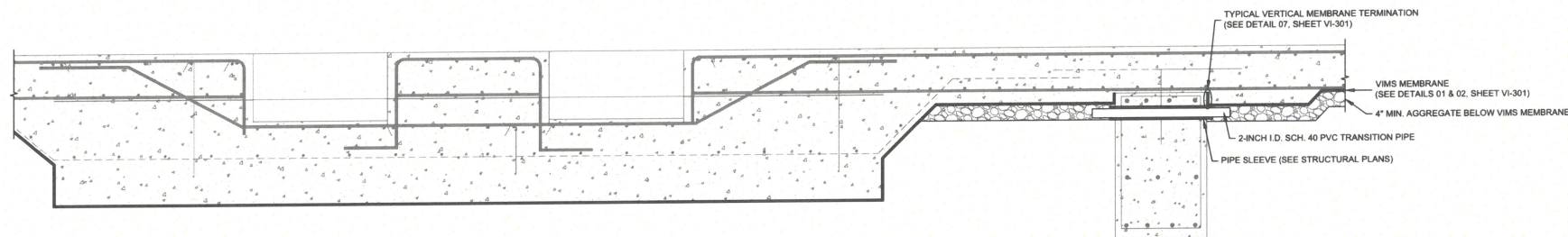
VAPOR INTRUSION MITIGATION SYSTEM PLAN - FOUNDATION
NEW SNOW EQUIPMENT STORAGE BUILDING
 WESTCHESTER COUNTY AIRPORT
 TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK



521 CLEMSON ROAD
COLUMBIA, SC 29229



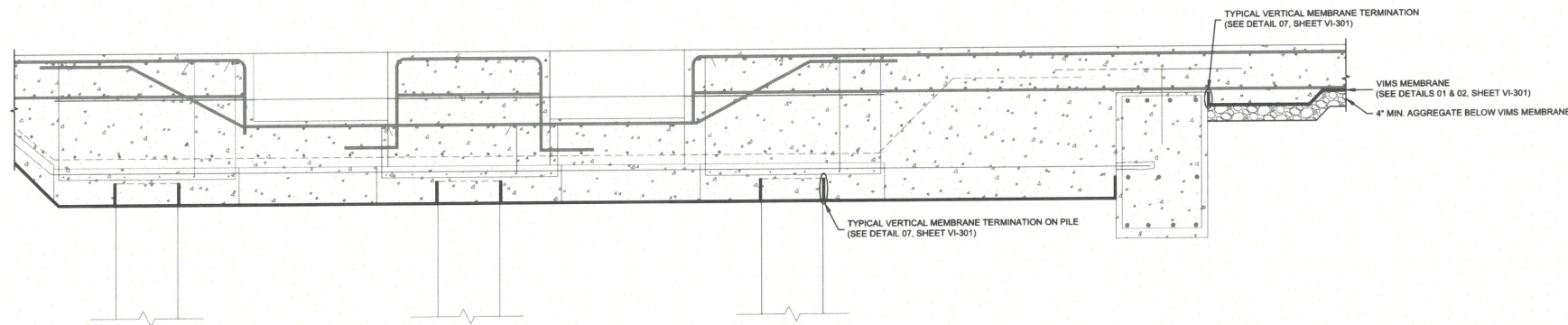
VI-101	
DESIGNED BY:	GKR
DRAWN BY:	PTK
APPVD. BY:	PMH
SCALE:	1/8" = 1'-0"
DATE:	03/12/2026
JOB NO.:	73267063
ACAD NO.:	73267063 VIMS
SHEET NO.:	2 OF 6



09

VIMS MEMBRANE AT LIFT FOUNDATION WITH TRANSITION PIPE THROUGH GRADE BEAM TO VEHICLE WASH BAY
NOT TO SCALE; REF: STRUCTURAL DETAIL A3, SHEET S-503

01



10

VIMS MEMBRANE AT LIFT FOUNDATION WITH GRADE BEAM
NOT TO SCALE; REF: STRUCTURAL DETAIL A3, SHEET S-503

02

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07

05

03

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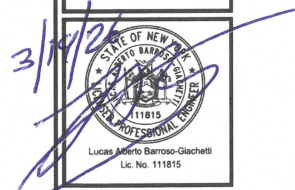
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06

04

REV	DATE	BY	DESCRIPTION
	03/12/26		PRELIMINARY DRAFT FOR CONSTRUCTION
	03/13/26		

VAPOR INTRUSION MITIGATION SYSTEM DETAILS - MEMBRANE
NEW SNOW EQUIPMENT STORAGE BUILDING
 WESTCHESTER COUNTY AIRPORT
 TOWNS OF HARRISON AND NORTH CASTLE AND VILLAGE OF RYE BROOK



VI-302	
DESIGNED BY:	GKR
DRAWN BY:	PTK
APPVD. BY:	PMH
SCALE:	NOT TO SCALE
DATE:	03/12/2026
JOB NO.:	73287063
ACAD NO.:	73287063 VIMS
SHEET NO.:	5 OF 6

ITEMIZED PROPOSAL

ITEM NO.	APPROXIMATE QUANTITIES	PAY UNIT	ITEM DESCRIPTION	UNIT BID PRICE		AMOUNT BID	
				DOLLARS	CENTS	DOLLARS	CENTS
A	1	Lump Sum	For providing all labor, material, and equipment necessary to complete the main snow equipment storage space, housing AIP (Airport Improvement Program)-eligible vehicles, and ancillary support spaces as shown on Sheet No. 35 of 72. This item also includes all contract paving, site lighting, utilities, geotechnical, site investigation, and monitoring as shown on the contract Drawings and in accordance with the specifications for the New Snow Equipment Storage Building at the Westchester County Airport.	\$ _____	_____	\$ _____	_____
B	1	Lump Sum	For providing all labor, material, and equipment to complete the equipment storage space housing AIP (Airport Improvement Program)-ineligible vehicles, the spare ARFF (Aircraft Rescue and Fire Fighting) truck bay and vehicle wash bay as shown on Sheet No. 35 of 72. This item also includes rooftop Solar Photovoltaics as shown on the Contract Drawings and in accordance with the specifications for the New Snow Equipment Storage Building at the Westchester County Airport.	\$ _____	_____	\$ _____	_____
C	200	Cubic Yards	Contaminated Soil Handling and Disposal	\$ _____	_____	\$ _____	_____

COMPLETE THIS FORM USING BLACK INK ONLY

ITEMIZED PROPOSAL

D	1	DC	Contaminated Groundwater Handling and Disposal Allowance	\$500,000	00
SUBTOTAL OF ALL ITEMS ABOVE:				\$ _____	_____
E	1	Lump Sum	MOBILIZATION (Must not exceed 2.00% of the Subtotal Shown Above)		
F	1	Lump Sum	CONTRACT BONDS AND INSURANCE (Must not exceed 3.00% of Subtotal Shown Above)	\$ _____	_____
GROSS SUM FOR TOTAL BID:					

CONTRACTOR: _____

ADDRESS: _____

BY: _____