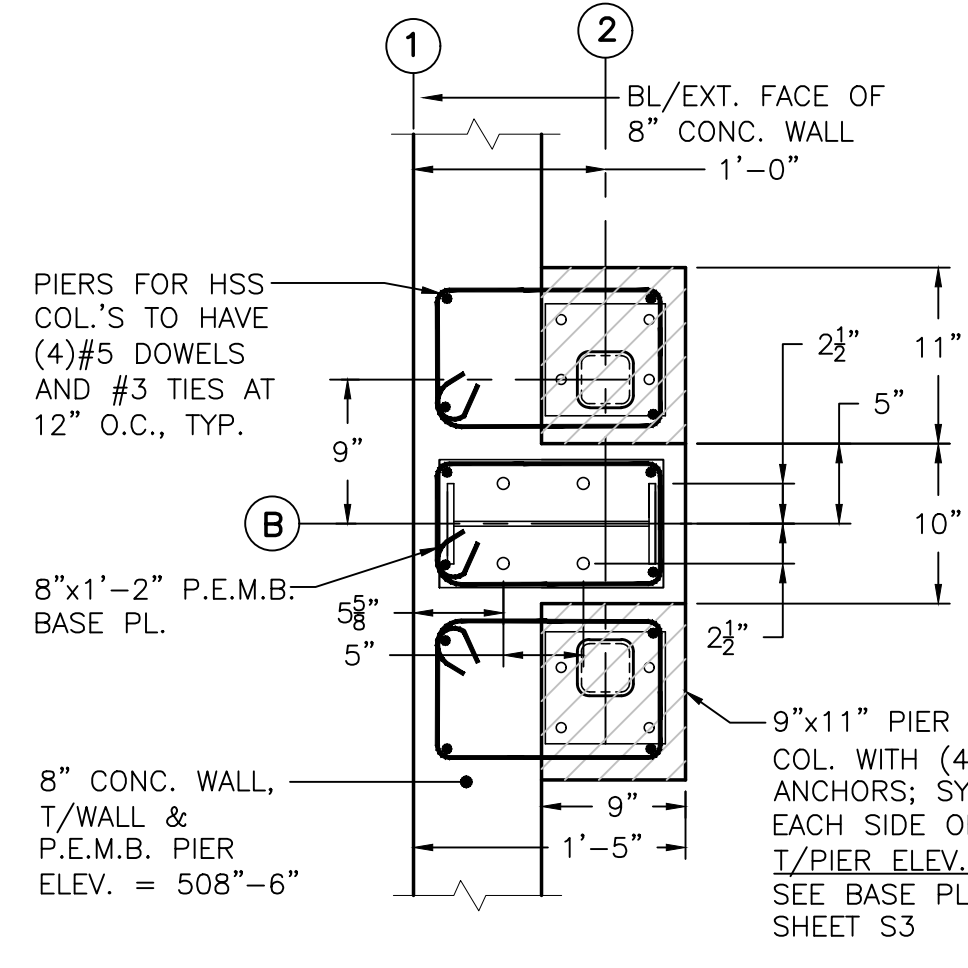
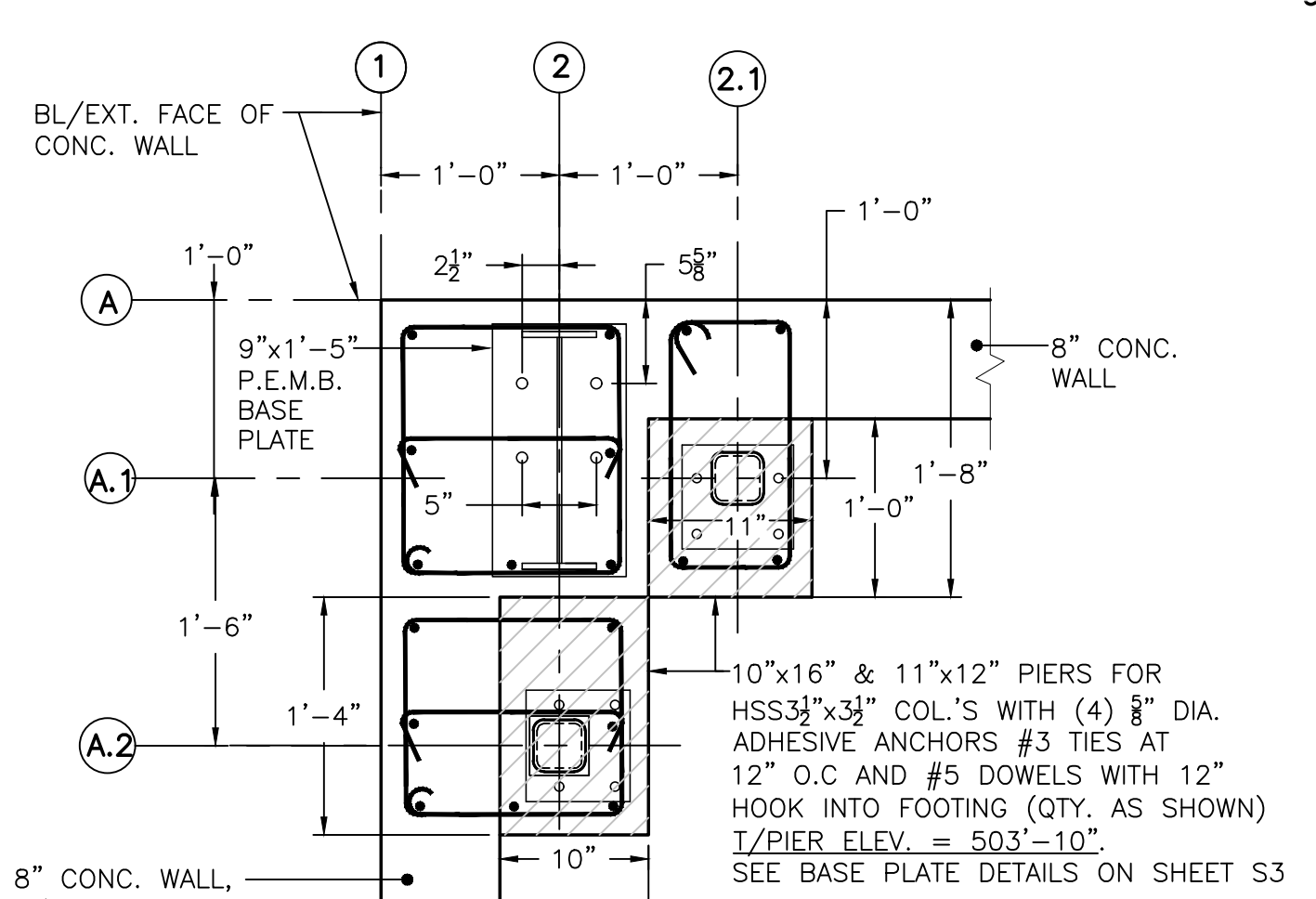


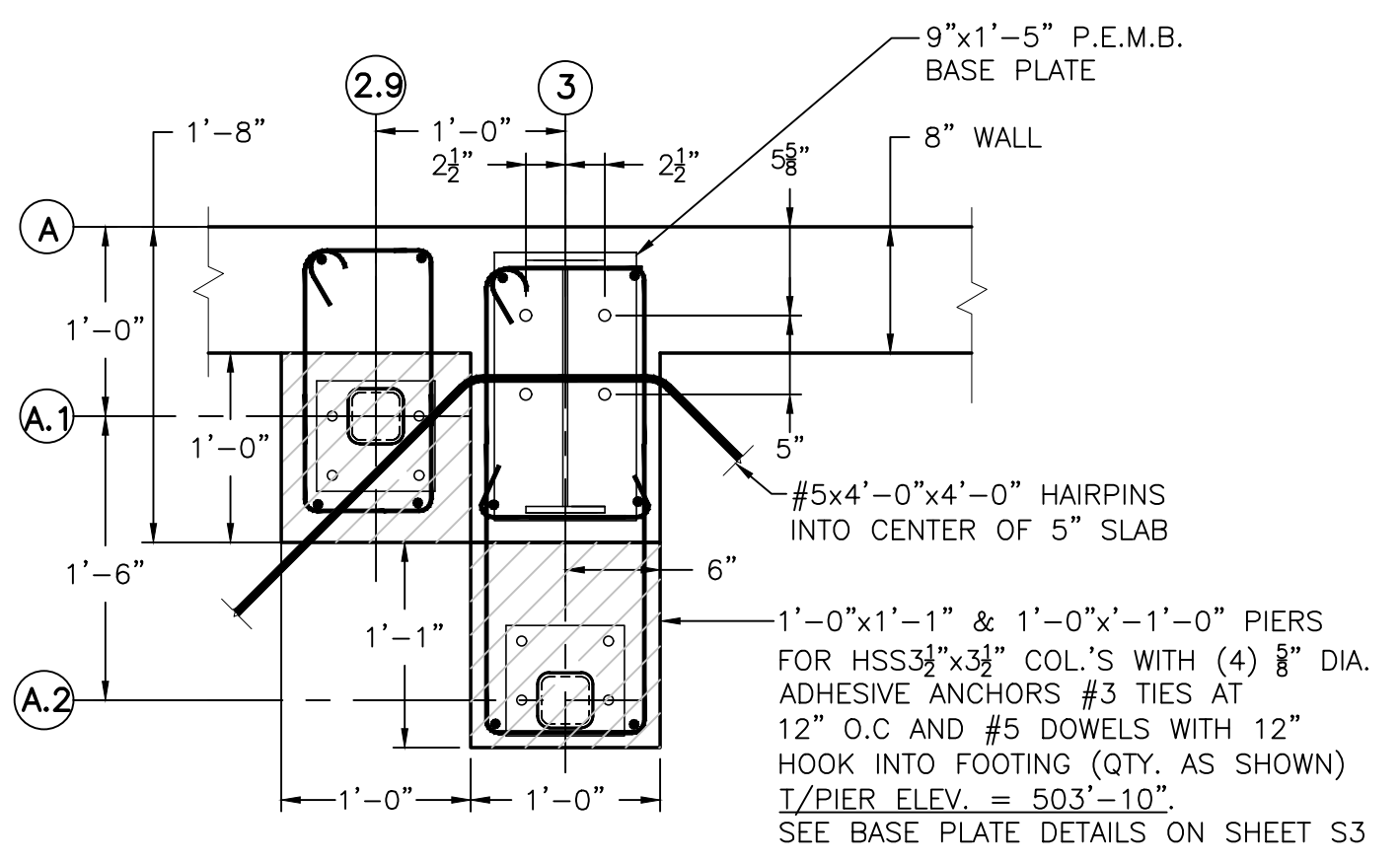
FOUNDATION PLAN
3/16" = 1'-0"



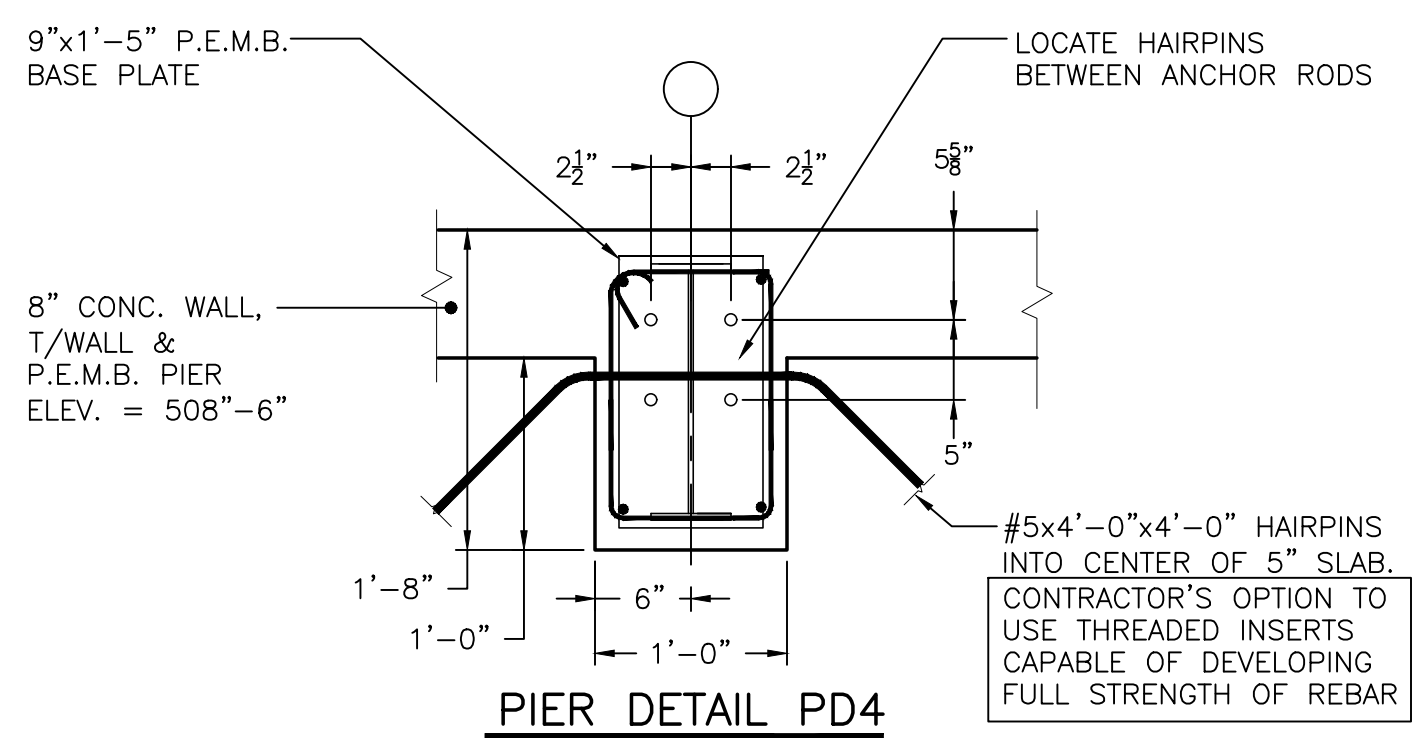
PIER DETAIL PD1
1" = 1'-0"



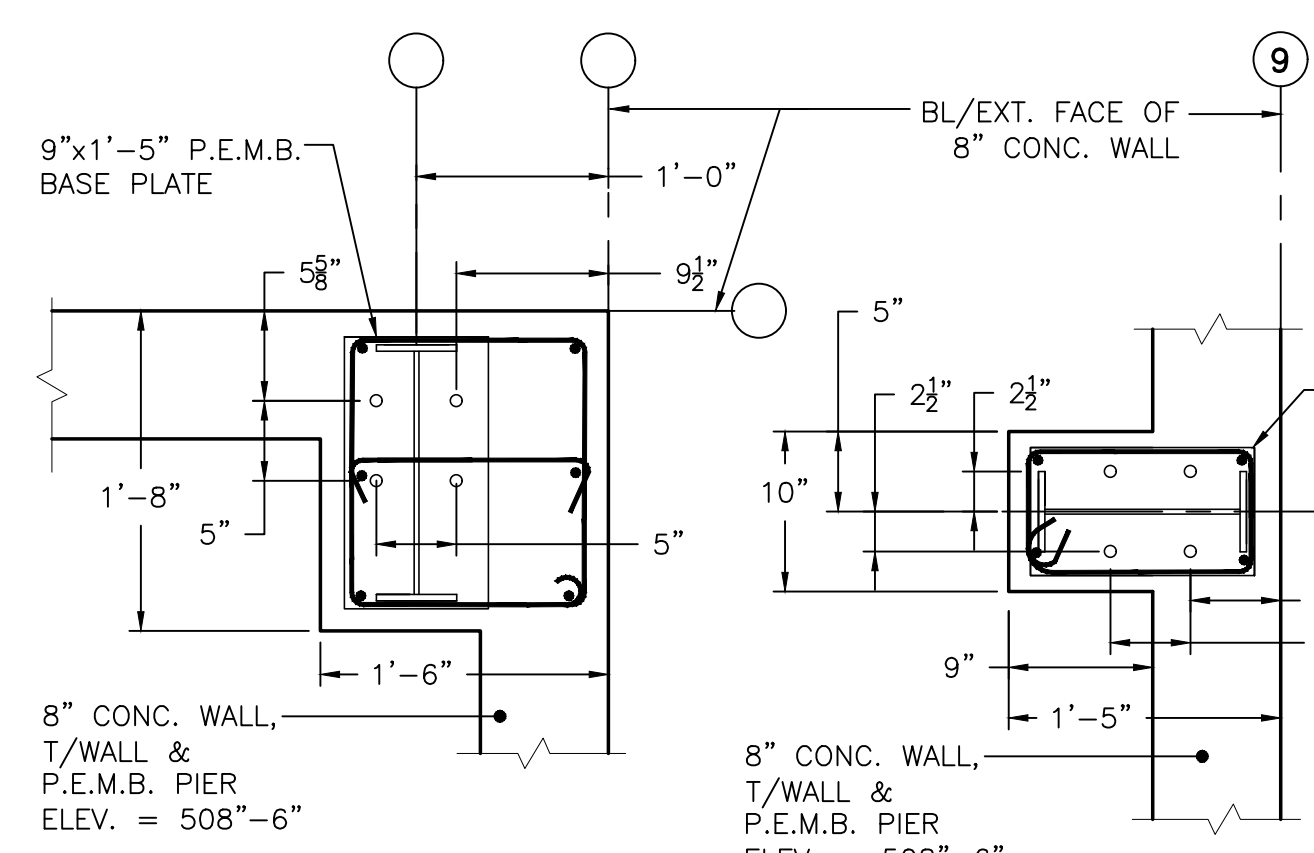
PIER DETAIL PD2
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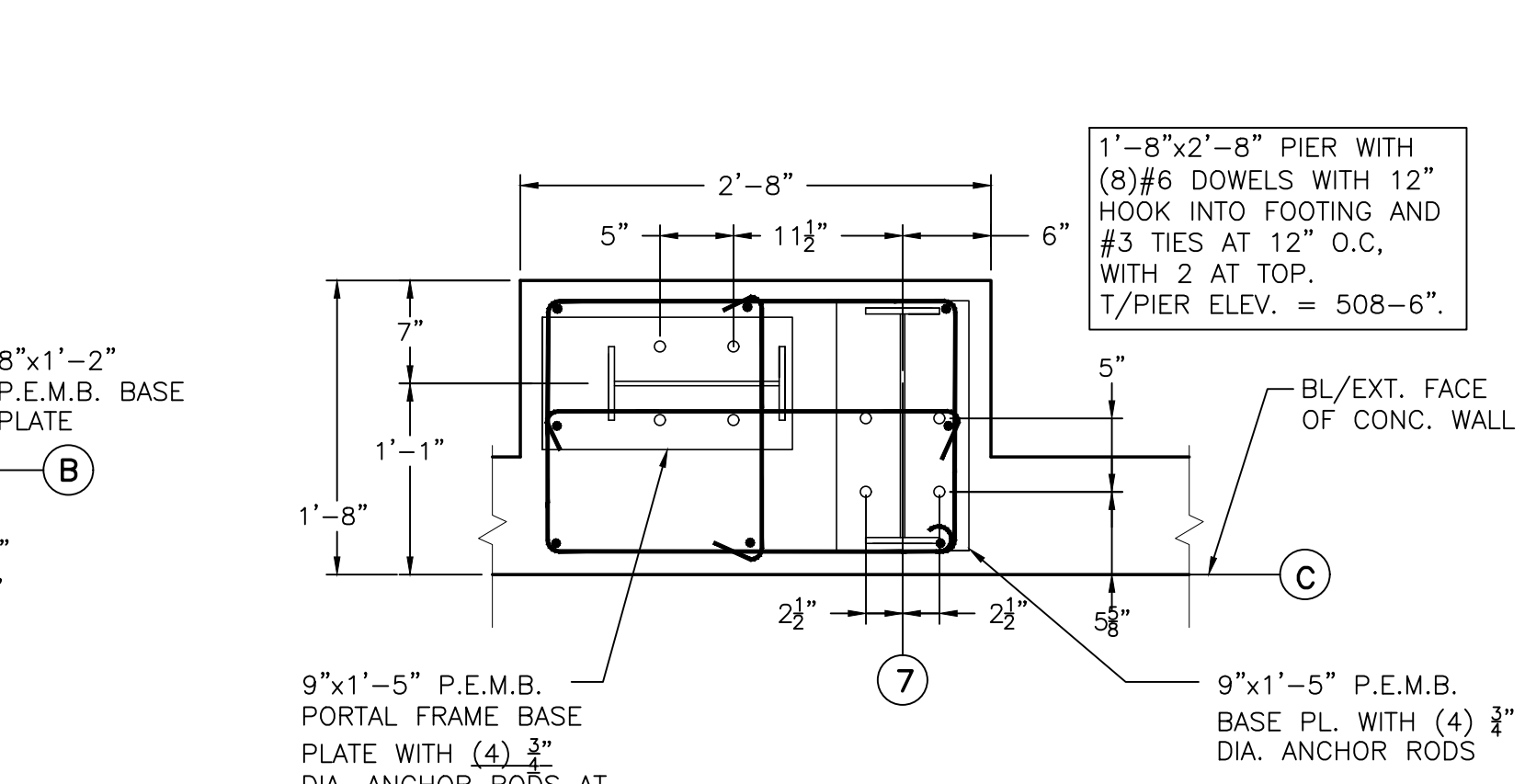
PIER DETAIL PD3A
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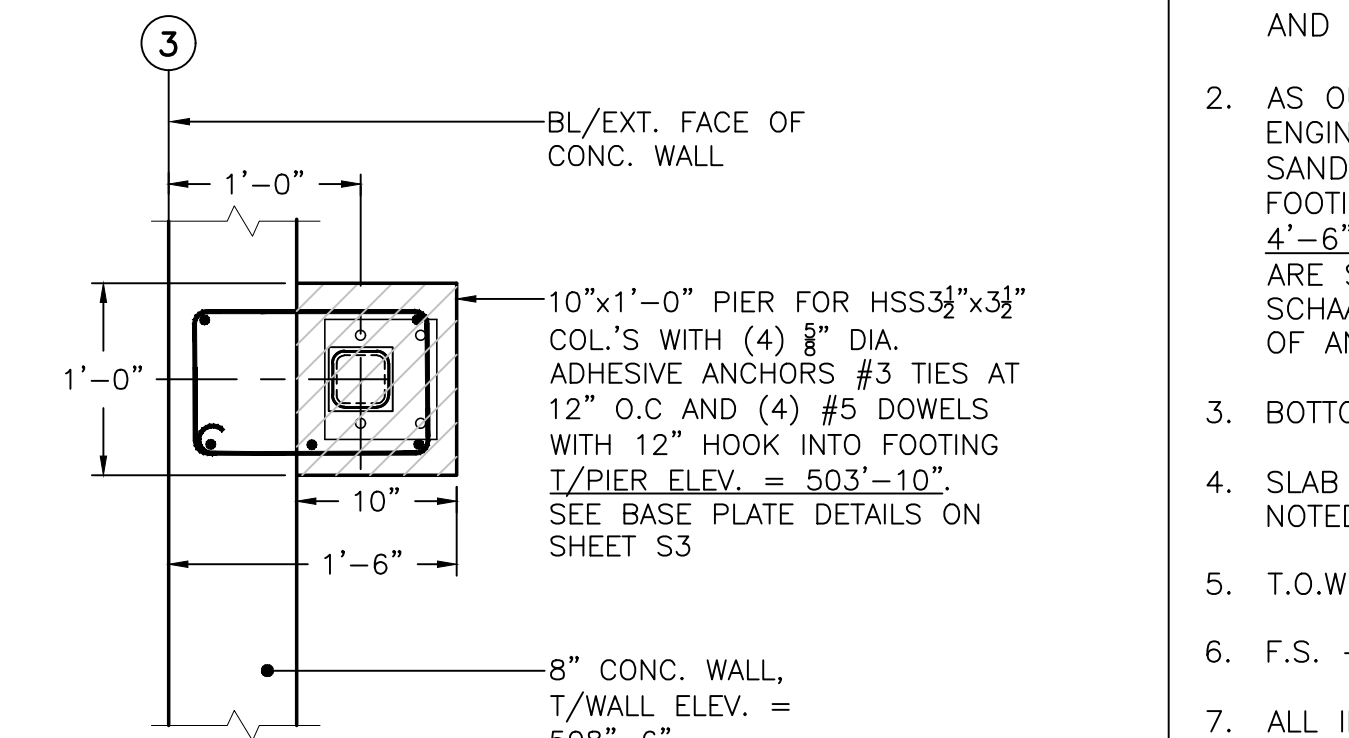
PIER DETAIL PD4
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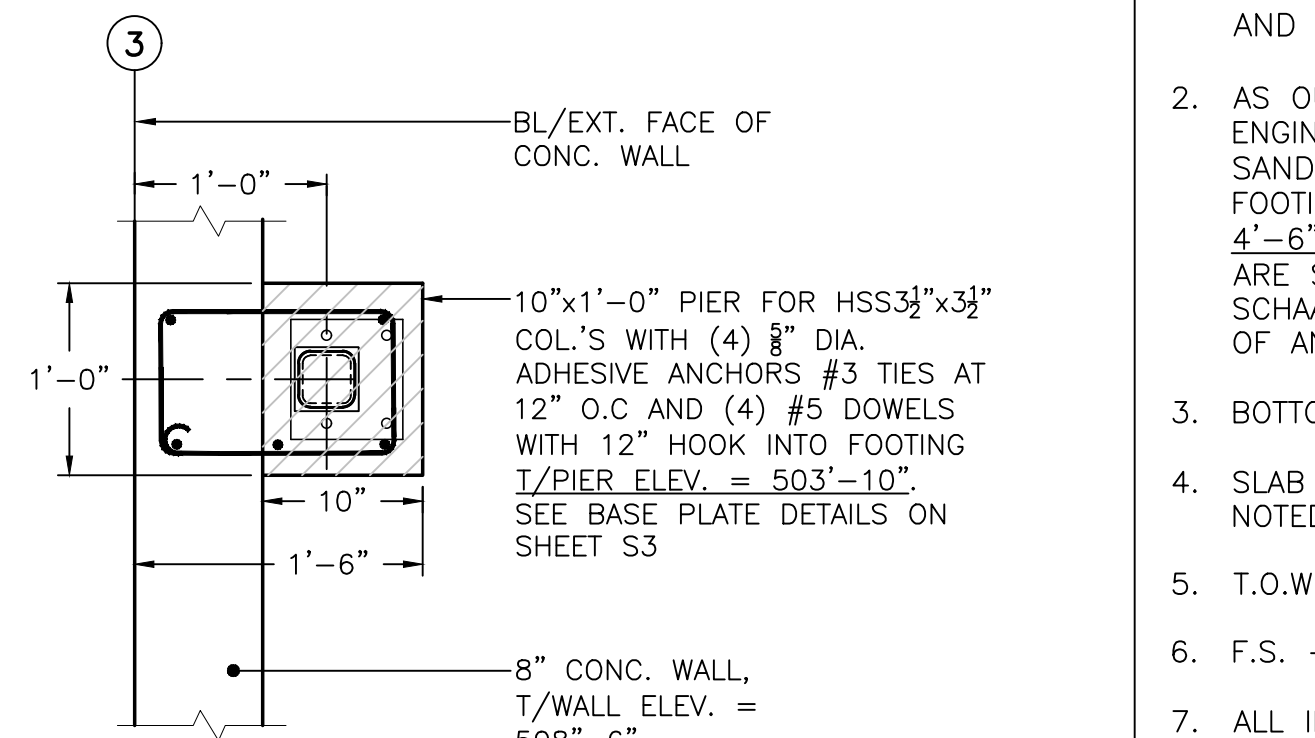
PIER DETAIL PD5
1" = 1'-0"



PIER DETAIL PD6
1" = 1'-0"



PIER DETAIL PD7
1" = 1'-0"

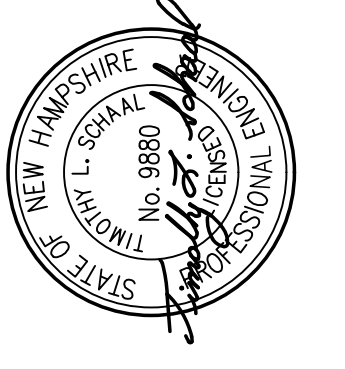


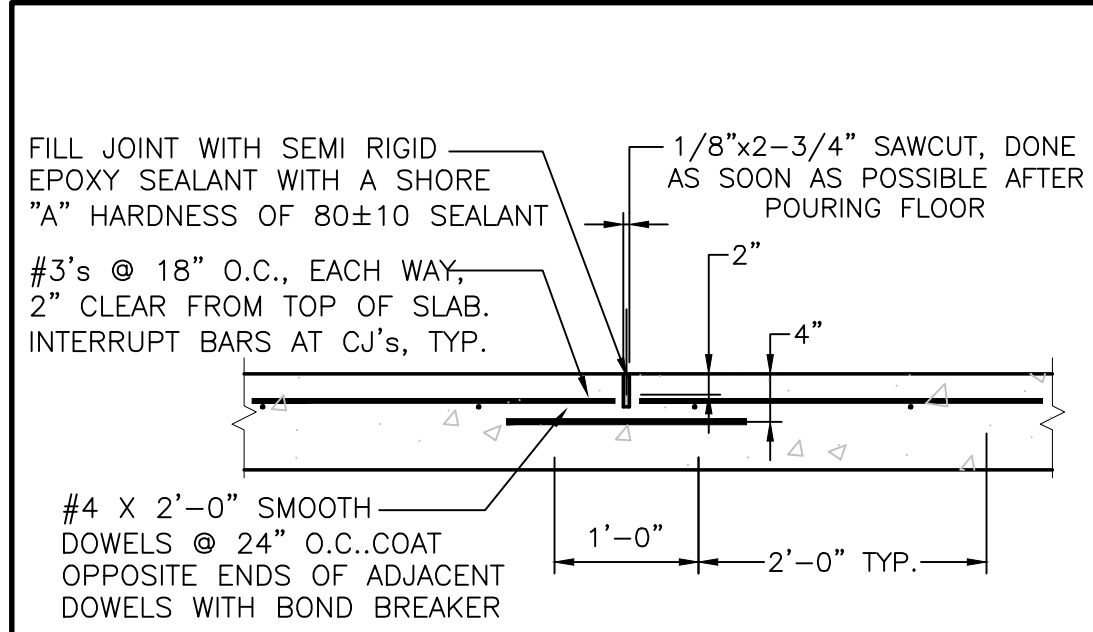
PIER DETAIL PD8
1" = 1'-0"

UNLESS NOTED OTHERWISE, ALL P.E.M.B. PIERS SHALL HAVE:
 - #3 TIES AT 12" O.C., WITH (2) TIES AT 4" O.C. AT TOP
 - #5 DOWELS WITH 12" HOOK INTO FOOTING (QTY. AS SHOWN)
 - 3/8" DIAMETER ASTM 1554, GRADE 36, HEADED OR 3" HOOKED RODS, WITH 2'-0" TOTAL LENGTH AND 4" PROJECTION ABOVE PIER.

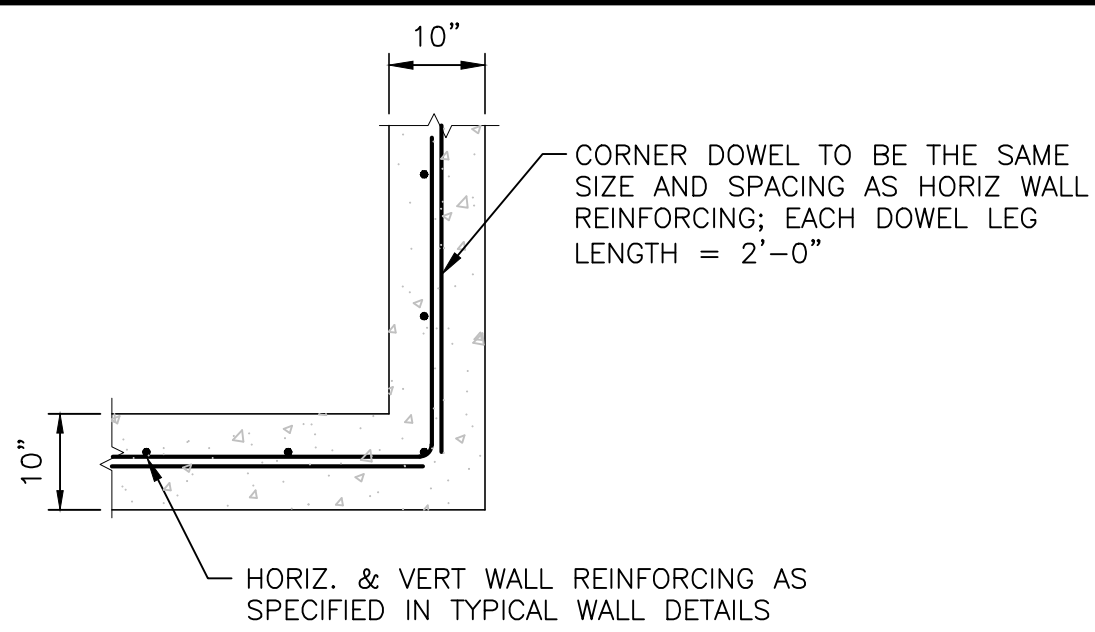
NOTE:
 PIER DETAIL "3B" IS SIMILAR, BUT WITHOUT THE HSS COL'S

- NOTES:**
- THIS FOUNDATION DESIGN AND THESE PLANS ARE FOR THE 40'x140' PRE-ENGINEERED STEEL BUILDING BY BUTLER MANUFACTURING WITH ANCHOR ROD PLANS DATED 2/15/21 AND BUTLER MANUFACTURING'S "REACTION REPORT" DATED 2/20/21.
 - AS OUTLINED IN THE DECEMBER 4, 2020 GEOTECHNICAL REPORT BY M&W SOILS ENGINEERING, INC., FOOTINGS SHALL BE CONSTRUCTED ON NATIVE UNDISTURBED SILTY SAND SAND SOIL. THE DESIGN BEARING CAPACITY IS 3,000 PSF. ELEVATIONS OF BOTTOM OF FOOTINGS ARE SHOWN ON PLAN, BUT ALL FOOTINGS AT THE BUILDING PERIMETER SHALL BE 4'-6" MINIMUM FROM FINISHED GRADE TO BOTTOM OF FOOTING. THE FOOTING ELEVATIONS ARE SUBJECT TO REVISION WHEN TRUE SOIL CONDITIONS ARE EXPOSED BY EXCAVATION. SCHAAL ENGINEERING, P.C AND M&W SOILS ENGINEERING, INC. SHALL BE NOTIFIED PROMPTLY OF ANY WEAK STRATA, WATER CONDITIONS, OR OTHER POOR BEARING CONDITIONS.
 - BOTTOM OF FOOTING ELEVATION INDICATED THUS: (000'-0").
 - SLAB CONTROL JOINTS SHALL BE LOCATED ON ALL COLUMN GRID LINES, UNLESS OTHERWISE NOTED ON THE PLANS. SEE DETAIL ON SHEET S2.
 - T.O.W. - INDICATES TOP OF WALL ELEVATION.
 - F.S. - INDICATES FOOTING STEP.
 - ALL INTERIOR SLABS ON GRADE SHALL BE 5" CONCRETE OVER 10 MIL REINFORCED POLY VAPOR BARRIER AND 2" OF RIGID INSULATION AND 12" MIN. OF COMPACTED 3/4" CRUSHED STONE. SLABS SHALL BE REINFORCED WITH #3'S @ 18" O.C. EACH WAY, 12" CLEAR FROM TOP OF SLAB.

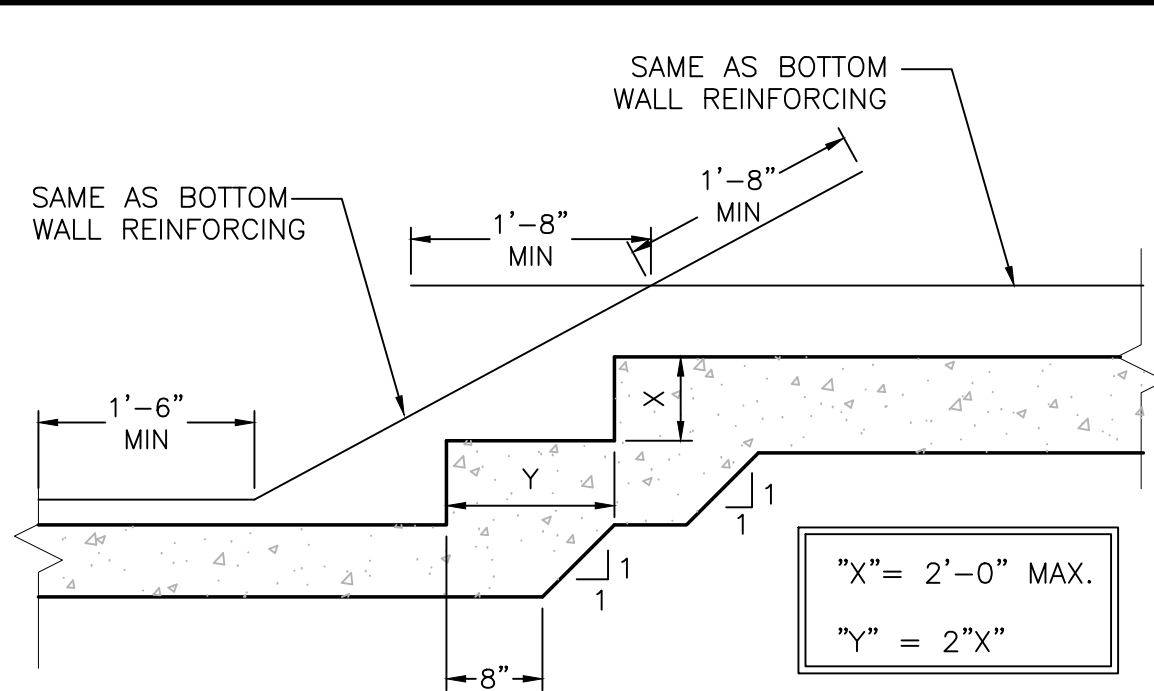
	DATE
REVISION	
NO.	
	
SCHAAL ENGINEERING, P.C. P.O. Box 152 61 Depot Street Wilder, VT 05088-0152 (802) 295-2002 Timothy@schaalengineering.com	
TOWNLINE EQUIPMENT - NEW 40'x140' P.E.M.B. FOUNDATIONS & MEZZANINE Plainfield, NH	
PROJECT	
DRAWING NUMBER	
S1	
SHEET 1 OF 2	
SCALE: SEE PLANS	CHECKED BY: T.L.S.
DATE: 3/22/23	DRAWN BY: BTH



SLAB CONTROL JOINT DETAIL
NOT TO SCALE

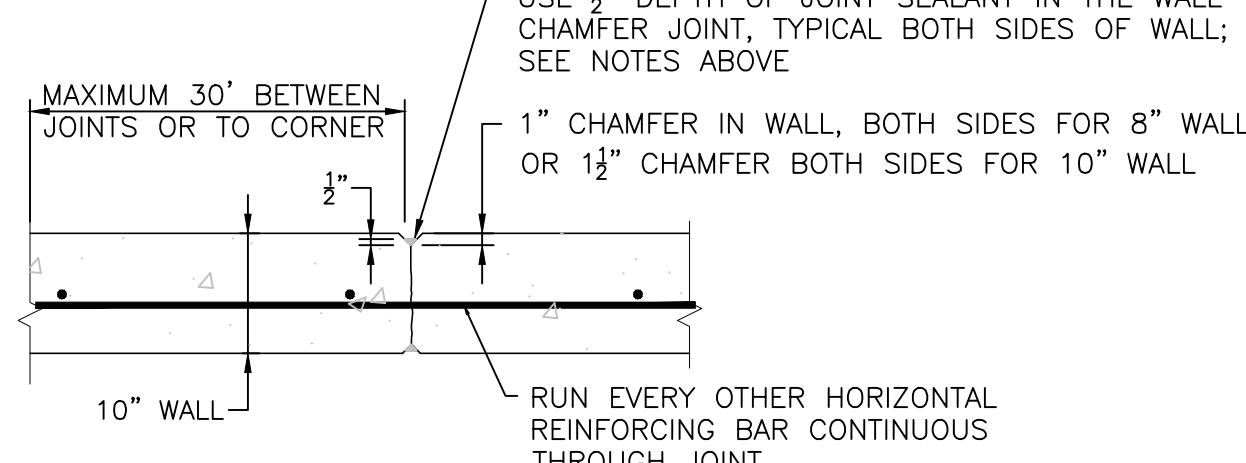


TYPICAL CORNER REINFORCING DETAIL
NOT TO SCALE

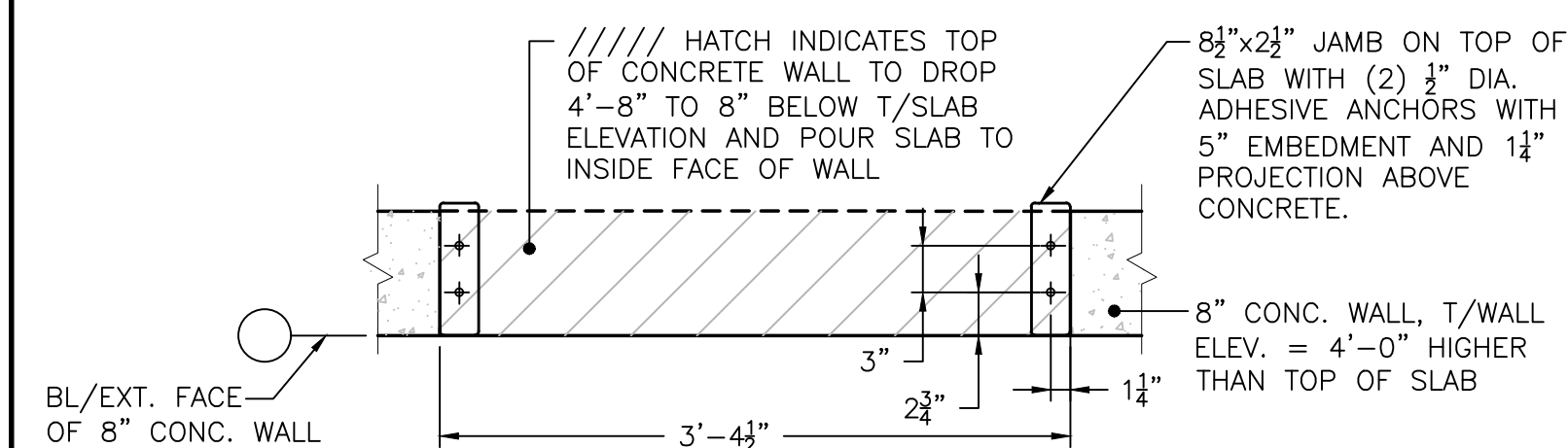


TYPICAL FOOTING STEP
NOT TO SCALE

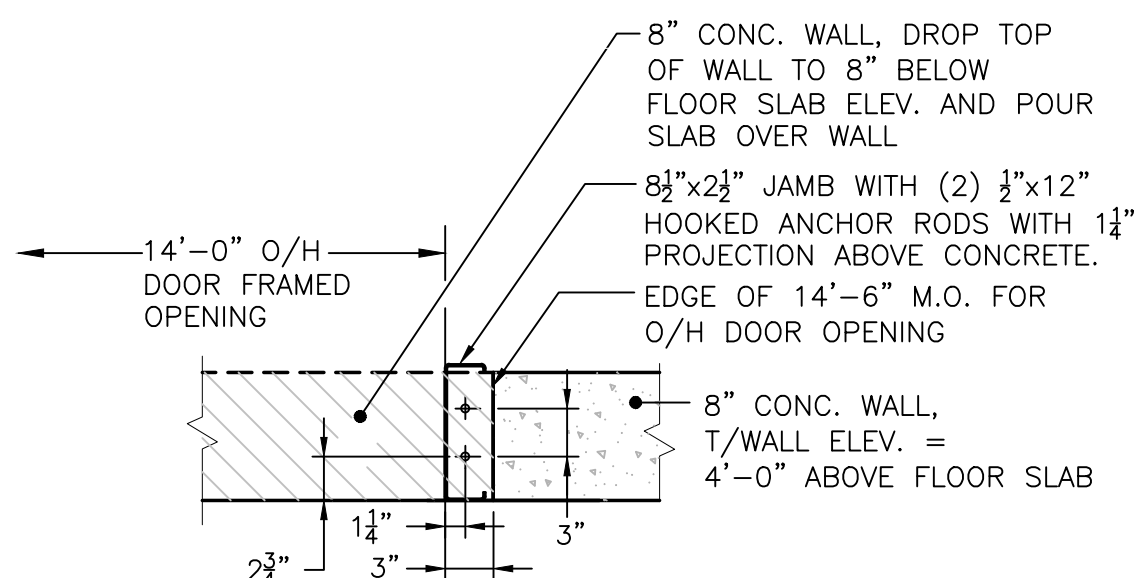
- WALL CONTROL JOINT NOTES:**
1. JOINT SEALANT MUST BE A SUITABLE ELASTOMERIC POLYURETHANE SEALANT WHICH ALLOWS 25% MOVEMENT CAPABILITY, HAS 350 psi TENSILE STRENGTH, AND IS SUITABLE FOR BELOW GROUND APPLICATIONS IN ALL CLIMATES.
 2. PRIOR TO INSTALLING THE JOINT SEALANT, REMOVE ALL LOOSE CONCRETE, DIRT, ETC. FROM THE CHAMFER JOINT, AND THEN THOROUGHLY CLEAN AND DRY THE JOINT.
 3. INSTALLATION OF THE JOINT SEALANT MUST BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 4. CONTRACTOR SHALL SUBMIT PLAN FOR WALL CONTROL LOCATIONS FOR APPROVAL.



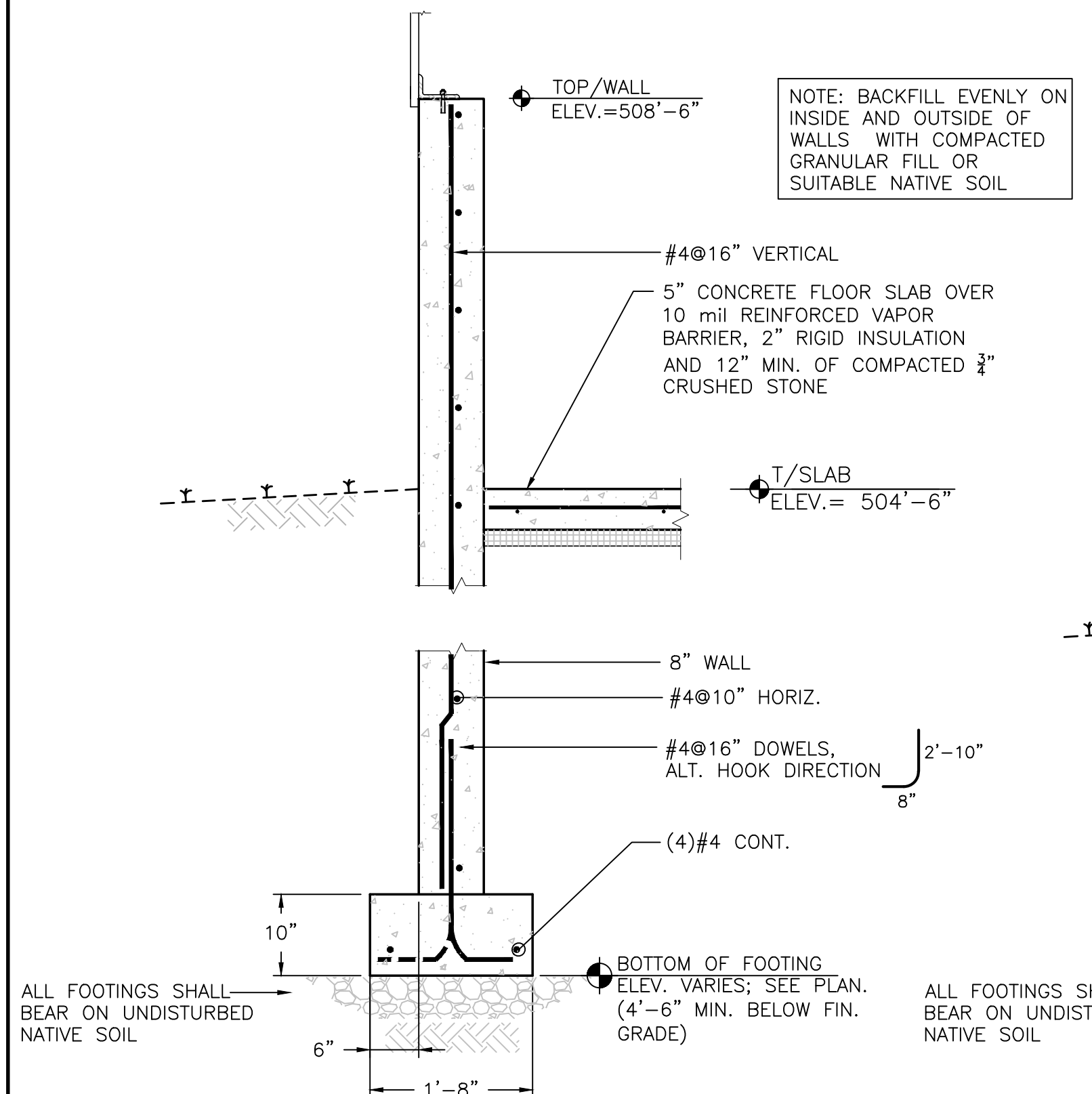
WALL CONTROL JOINT DETAIL
N.T.S.



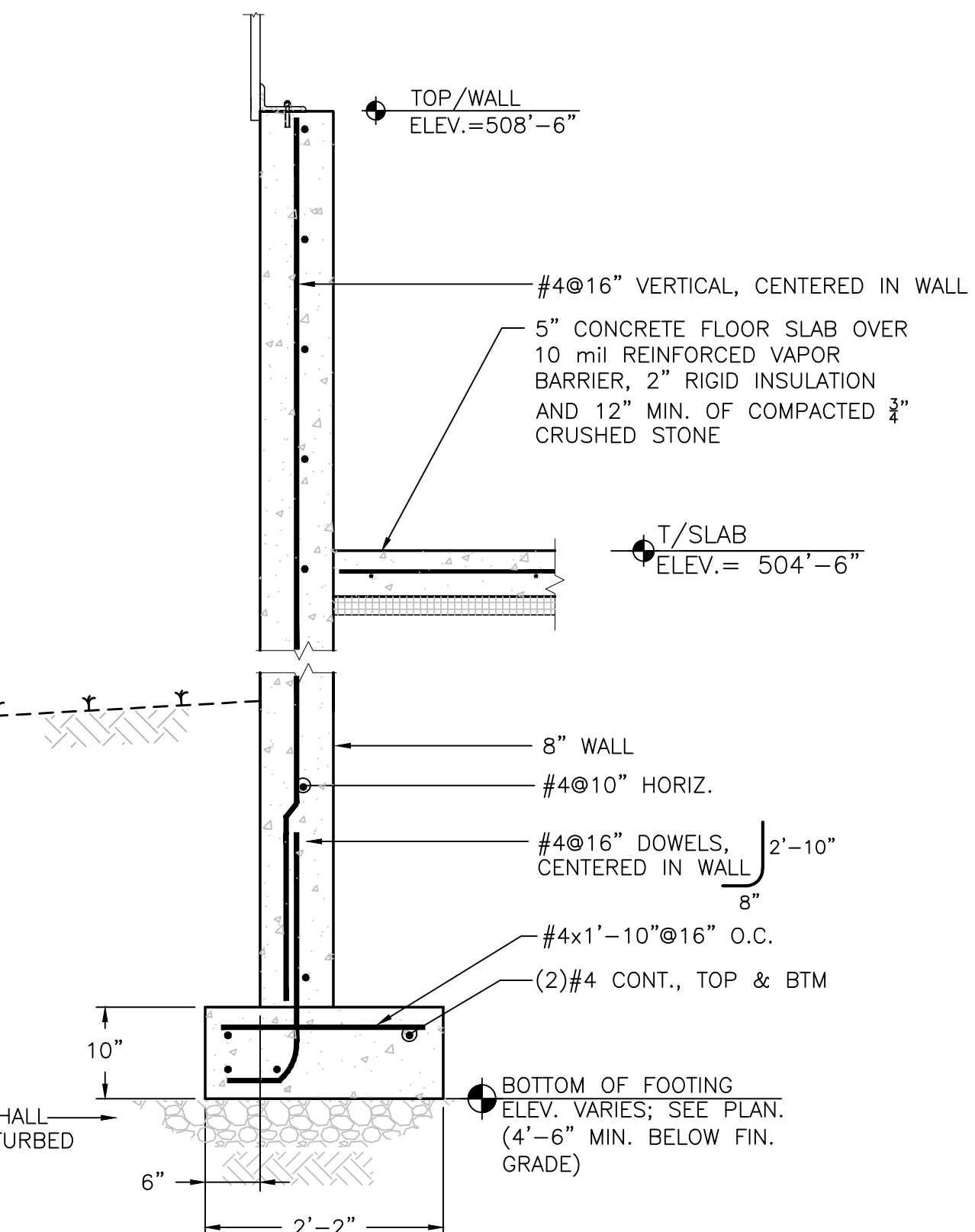
DETAIL AT EGRESS DOORS
N.T.S.



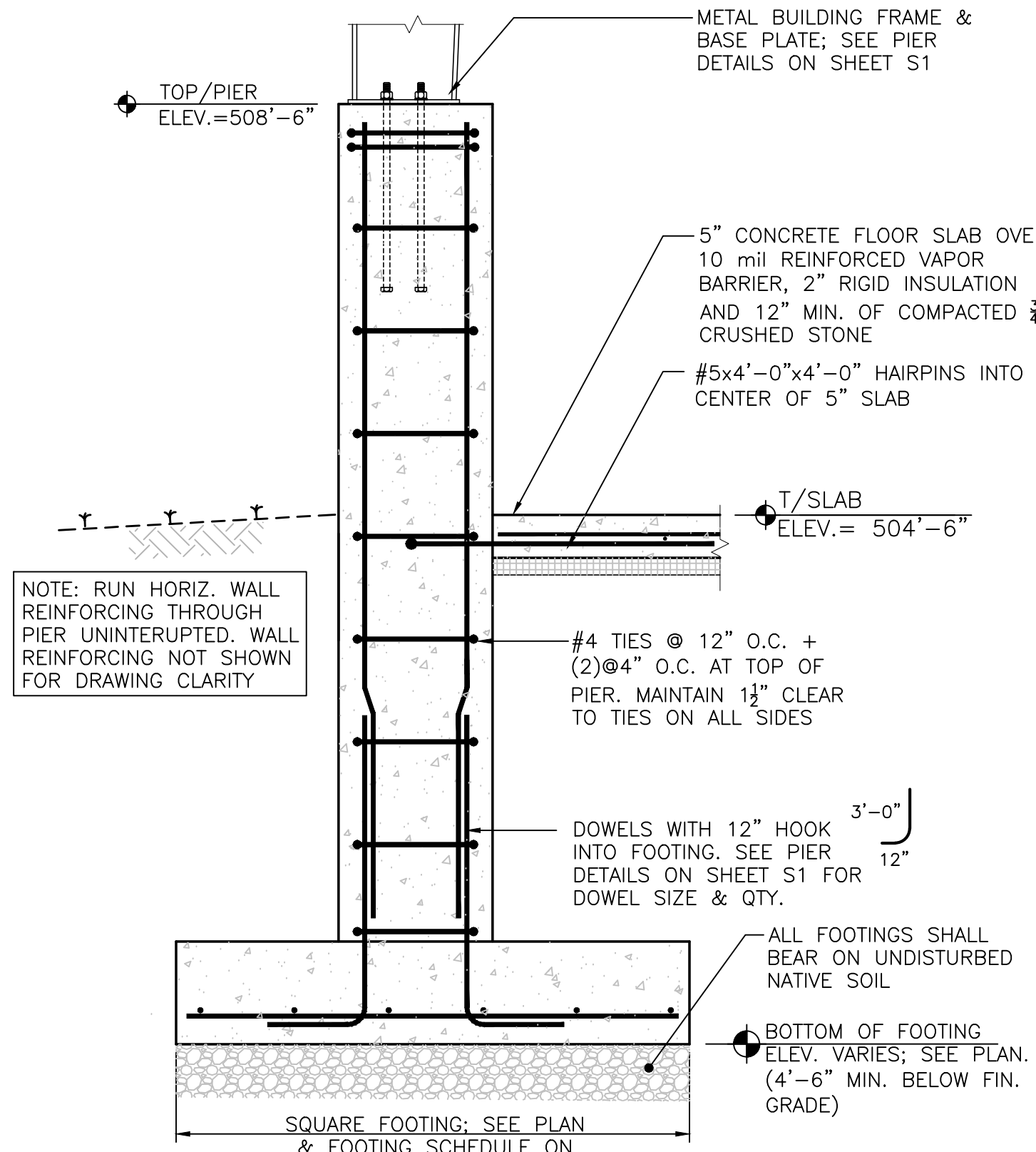
DETAIL AT O/H DOORS
N.T.S.



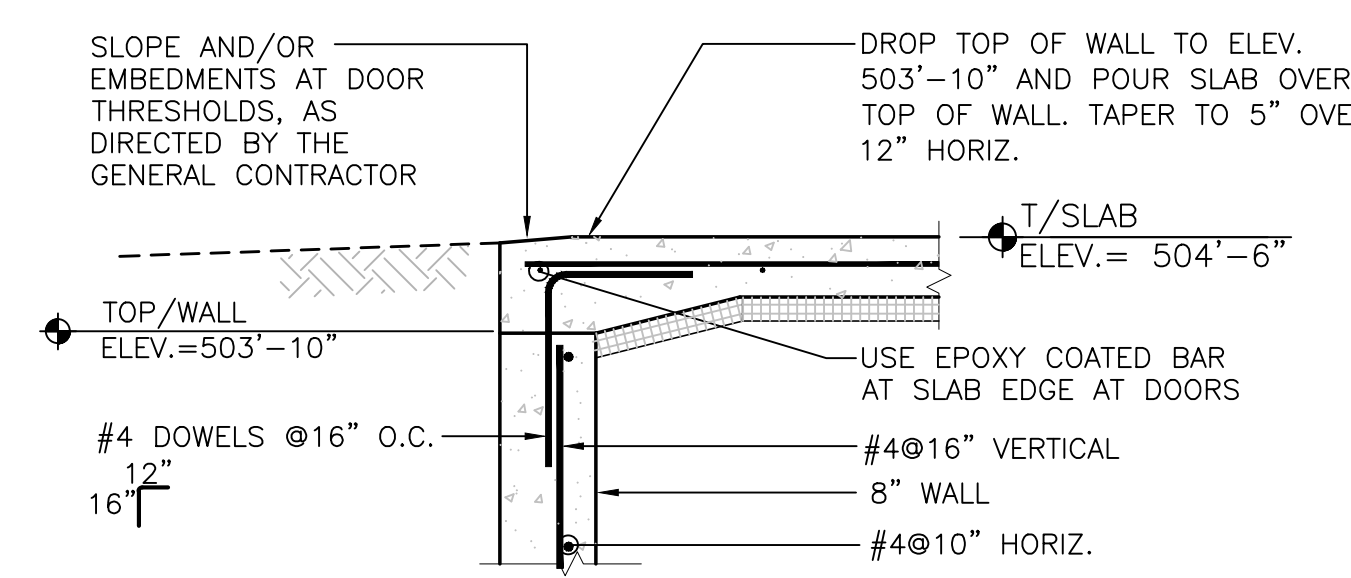
SECTION A/S1
3/4" = 1'-0"



SECTION B/S1
3/4" = 1'-0"



SECTION C/S1
N.T.S.



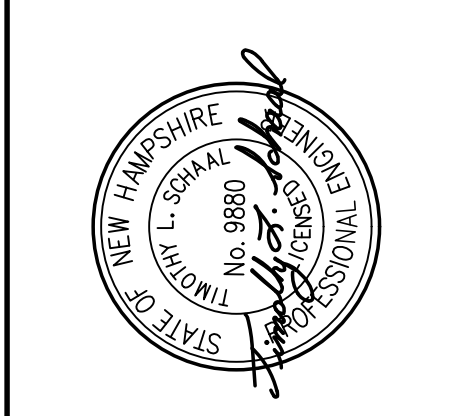
SECTION D/S1
N.T.S.

- CONCRETE NOTES**
1. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SITE, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND THE SPECIFICATIONS.
 2. ALL CONCRETE WORK SHALL COMPLY WITH THE LATEST RECOMMENDATIONS AND SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE LOCAL BUILDING CODES.
 3. CONCRETE SHALL BE NORMAL WEIGHT HAVING A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS WITH THE FOLLOWING REQUIREMENTS:
PORTLAND CEMENT - ASTM C150, TYPE II. SUPPLEMENTAL CEMENTITIOUS MATERIALS (SLAG AND FLY ASH) ARE PERMITTED WITH APPROVED CONCRETE MIX DESIGN.
AGGREGATE - ASTM C33, 1" MAXIMUM SIZE FOR SLABS AND WALLS AND 1 1/2" MAXIMUM SIZE FOR FOOTINGS.
WATER - POTABLE
SLUMP - 2" TO 4"
ADMIXTURES - USE AIR ENTRAINING AGENT CONFORMING TO ASTM C260 WITH 4-6% TOTAL AIR FOR EXTERIOR CONCRETE.
USE WATER REDUCING AGENT CONFORMING TO ASTM C494 IN ALL CONCRETE. CALCIUM CHLORIDE MAY NOT BE USED TO ACCELERATE THE SETTING TIME.
DESIGN MIX - SUBMIT A CURRENT DESIGN MIX, WITH 28 DAY COMPRESSIVE STRENGTH TEST, TO THE GENERAL CONTRACTOR FOR APPROVAL PRIOR TO STARTING CONSTRUCTION.
 4. ALL REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 60 EXCEPT STIRRUPS AND TIES TO BE GRADE 40. WELDED WIRE FABRIC TO CONFORM TO ASTM A185.
 5. LAP ALL BARS 30 DIAMETERS MINIMUM AT SPLICES UNLESS INDICATED OTHERWISE ON THE DRAWINGS. WELDED WIRE FABRIC TO BE LAPPED ONE FULL MESH AT SIDES AND ENDS.
 6. REINFORCEMENT SHALL BE SECURELY TIED IN ITS PROPER PLACE BEFORE AND DURING POURING OPERATIONS USING APPROVED CHAIRS AND SPACERS AS REQUIRED. NO BARS SHALL BE CUT OR OMITTED IN THE FIELD WITHOUT THE APPROVAL OF THE ENGINEER.
 7. WHERE CONTINUOUS BARS ARE CALLED FOR, INDICATED OR REQUIRED THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS, DOWELED INTO INTERSECTING WALLS AND LAPPED AT NECESSARY SPLICES WITH SPLICES STAGGERED WHEREVER POSSIBLE.
 8. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:
CONCRETE CAST AGAINST EARTH 3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER #5 AND SMALLER 1 1/2"
#6 AND LARGER 2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER SLABS, WALLS & JOISTS 1"
BEAMS & COLUMNS 1 1/2"
*** CLEAR DIM. FOR ALL PIER TIES 1 1/2" ***
 9. THE CONCRETE CONTRACTOR SHALL INSTALL (OR GIVE OTHER TRADES AMPLE OPPORTUNITY TO INSTALL) ALL ANCHORS, BOLTS, PLATES, NAILERS, SLOTS, CHASES, PIPE SLEEVES, ETC., AS REQUIRED BY OTHER TRADES.
 10. FOOTINGS SHALL BE CONSTRUCTED ON A PREPARED FOUNDATION BASE CONSISTING OF PLACING AND COMPACTING 3" MIN. OF 3" CRUSHED STONE OVER UNDISTURBED NATIVE SOIL. THE DESIGN BEARING PRESSURE IS 3,000 PSF. ELEVATIONS OF BOTTOM OF FOOTINGS ARE SHOWN ON PLANS, BUT ARE SUBJECT TO REVISION WHEN TRUE SOIL CONDITIONS ARE EXPOSED BY EXCAVATION. THE ENGINEER SHALL BE NOTIFIED PROMPTLY OF ANY WEAK STRATA, WATER CONDITIONS OR OTHER POOR BEARING CONDITIONS.
 11. UNLESS OTHERWISE NOTED, ALL FOOTINGS AND PIERS SHALL BE CENTERED UNDER SUPPORTED MEMBERS.

- CONCRETE NOTES (CONT.)**
12. PROPER VIBRATION OF THE CONCRETE IS IMPORTANT IN THE PLACEMENT OF ALL CONCRETE. THE CONCRETE CONTRACTOR SHALL MAKE PROVISIONS FOR BACK-UP VIBRATION EQUIPMENT.
 13. CONCRETE TEMPERATURE DURING THE FIRST SEVEN DAYS SHALL BE MAINTAINED BETWEEN 50 DEGREES FAHRENHEIT AND 90 DEGREES FAHRENHEIT. RAPID DRYING MUST BE PREVENTED. ALL COLD WEATHER CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 306.
 14. CURING
A) SLABS SHALL BE KEPT CONTINUOUSLY MOIST FOR A MINIMUM OF SEVEN DAYS, WITH WATER AND AN APPROVED SOAKING AGENT (BURLAP, PVC, ETC.), DESIGN.
B) WALLS SHALL RECEIVE 2 COATS (ONE AT A TIME OF STRIPPING AND ANOTHER 3 DAYS LATER) OF AN APPROVED NON-TOXIC CURING COMPOUND.
PRIOR TO USE OF ANY CURING COMPOUND, VERIFY COMPATIBILITY OF COMPOUND WITH ADHESIVES THAT WILL BE USED FOR WATERPROOFING SYSTEM. INSULATION, FLOOR TILES, WALL FINISHES AND OTHER ITEMS TO BE APPLIED LATER.
 15. ALL FOUNDATION WALLS SHALL BE ADEQUATELY BRACED TO WITHSTAND EARTH AND CONSTRUCTION LOAD PRESSURES. WALLS MUST BE AT LEAST SEVEN DAYS OLD BEFORE BACKFILLING.
 16. BACKFILLING AGAINST FOUNDATION WALLS SHALL BE DONE BY PLACING SIMULTANEOUS LEVEL LAYERS ON BOTH SIDES OF THE WALL SUCH THAT THE DIFFERENCE BETWEEN ONE SIDE AND THE OTHER DOES NOT EXCEED 12".
 17. THE OWNER IS REQUIRED BY CODE TO EMPLOY A QUALIFIED ENGINEERING TESTING FIRM TO PERFORM STANDARD FIELD TESTING OF THE CONCRETE AS PART OF THE "SPECIAL INSPECTIONS."

- GRANULAR FILL**
1. PRIOR TO PLACING GRANULAR FILL ALL ORGANIC MATERIAL, TOPSOIL, DEBRIS AND ANY OTHER DELETERIOUS MATERIAL SHALL BE REMOVED.
 2. STRUCTURAL FILL SHALL BE AN APPROVED, WELL GRADED BANK RUN, SCREENED OR CRUSHED GRAVEL MEETING THE FOLLOWING REQUIREMENTS:
SIEVE DESIGNATION % PASSING
2" 100
No. 4 40-70
No. 100 5-20
No. 200 2-5
 3. THE MATERIAL SHALL BE PLACED IN MAXIMUM 8" LIFTS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D1557, MODIFIED PROCTOR.
- MASONRY & CONCRETE ANCHOR NOTES**
1. ALL ADHESIVE ANCHORS INTO SOLID CONCRETE SHALL BE HILTI'S HY-200 SYSTEM, USING HILTI'S HAS THREADED ROD AND WITH 6" EMBEDMENT.
 3. ALL ADHESIVE ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, INCLUDING HOLE CLEANING AND TORQUE.
 4. THE INSTALLATION OF EPOXY/ADHESIVE ANCHORS SHALL BE TESTED AS FOLLOWS:
- TEST 100% OF ALL OF THE 1/2" DIAMETER ANCHORS TO 11 FT-LB TORQUE FOR HY-70 AND 30 FT-LBS FOR HY-200.
- THE TEST TORQUE MUST BE ACHIEVED WITHIN ONE HALF (1/2) TURN OF THE NUT.
- TESTING TO OCCUR 48 HOURS MINIMUM AFTER THE INSTALLATION OF THE ANCHORS. IF ANY ANCHOR FAILS TESTING, THE FAILED ANCHOR SHALL BE REPLACED AND RETESTED
 5. TESTING EQUIPMENT TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY, IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES..

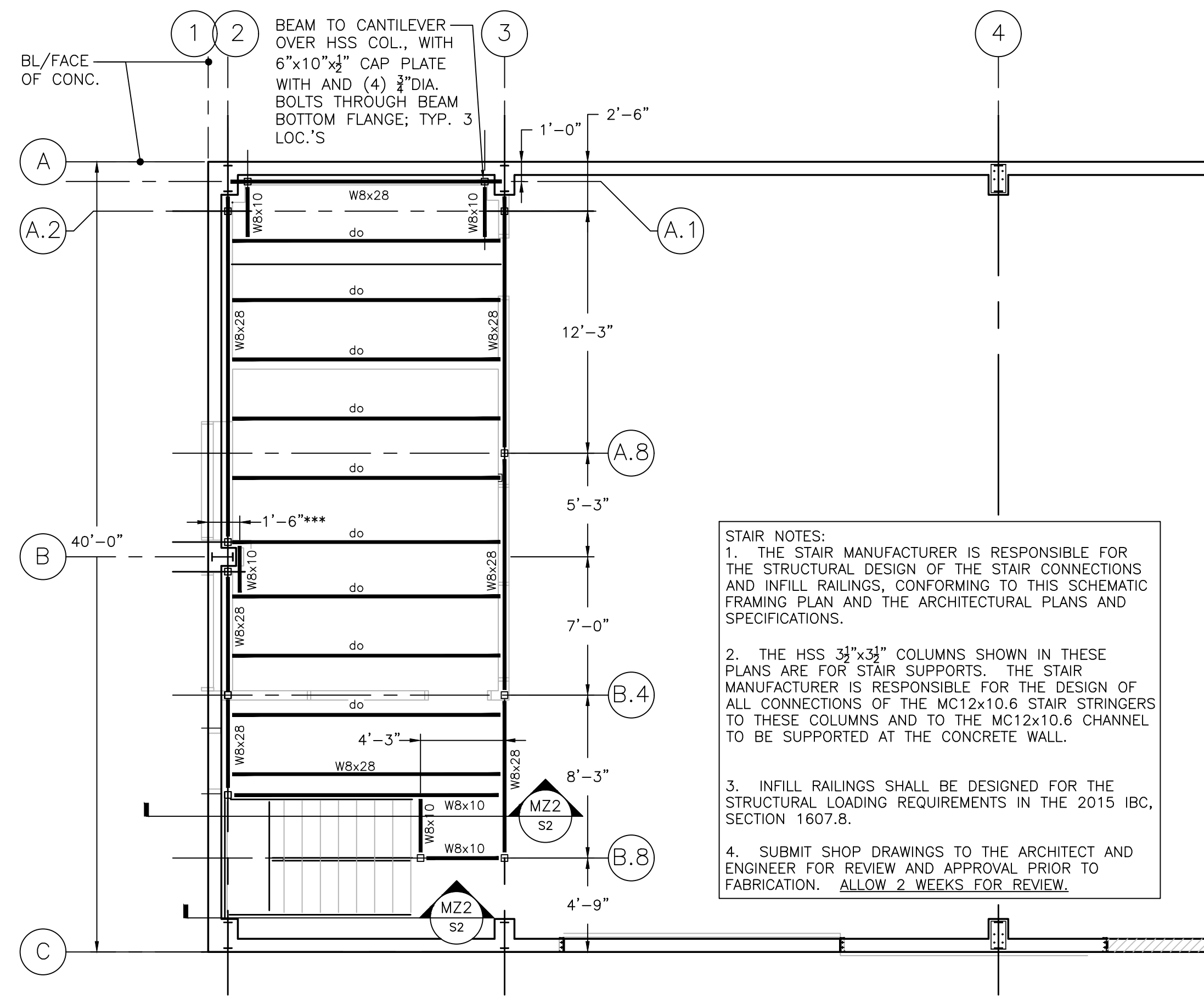
NO.	REVISION	DATE



SCHAAL ENGINEERING, P.C.
P.O. Box 152 | 61 Depot Street
Wilder, VT 05088-0152
(802) 295-2002
Timothy@schaalengineering.com

TOWNLINER EQUIPMENT -
NEW 40'x140' P.E.M.B.
FOUNDATIONS & MEZZANINE
Plamfield, NH

PROJECT	DRAWING NUMBER
S2	S2
SHEET 2 OF 3	SCALE: SEE PLANS
CHECKED BY: T.L.S.	DATE: 3/23/21
DRAWN BY: BTH	

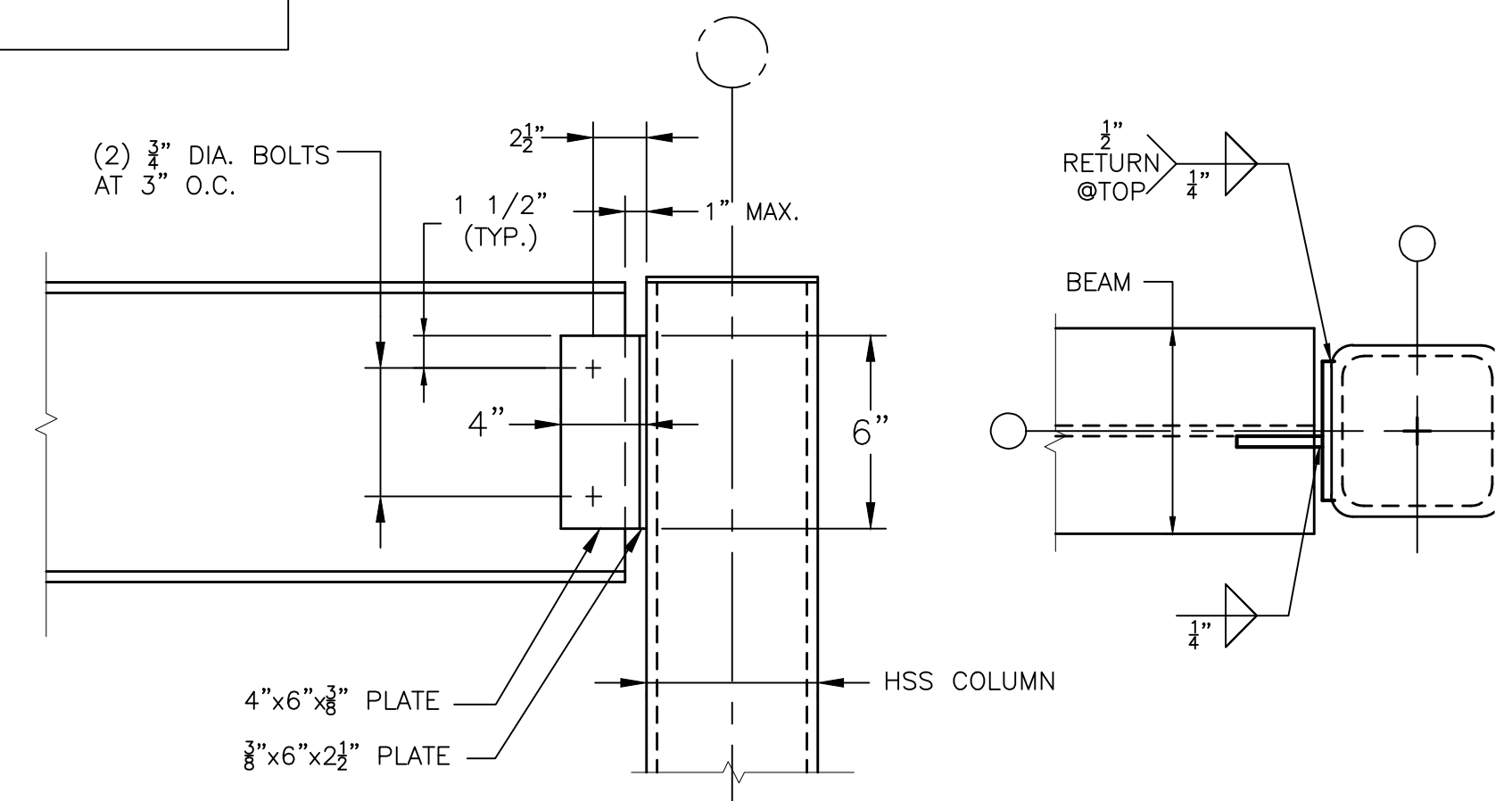


MEZZANINE JOIST PLAN
3/16" = 1'-0"

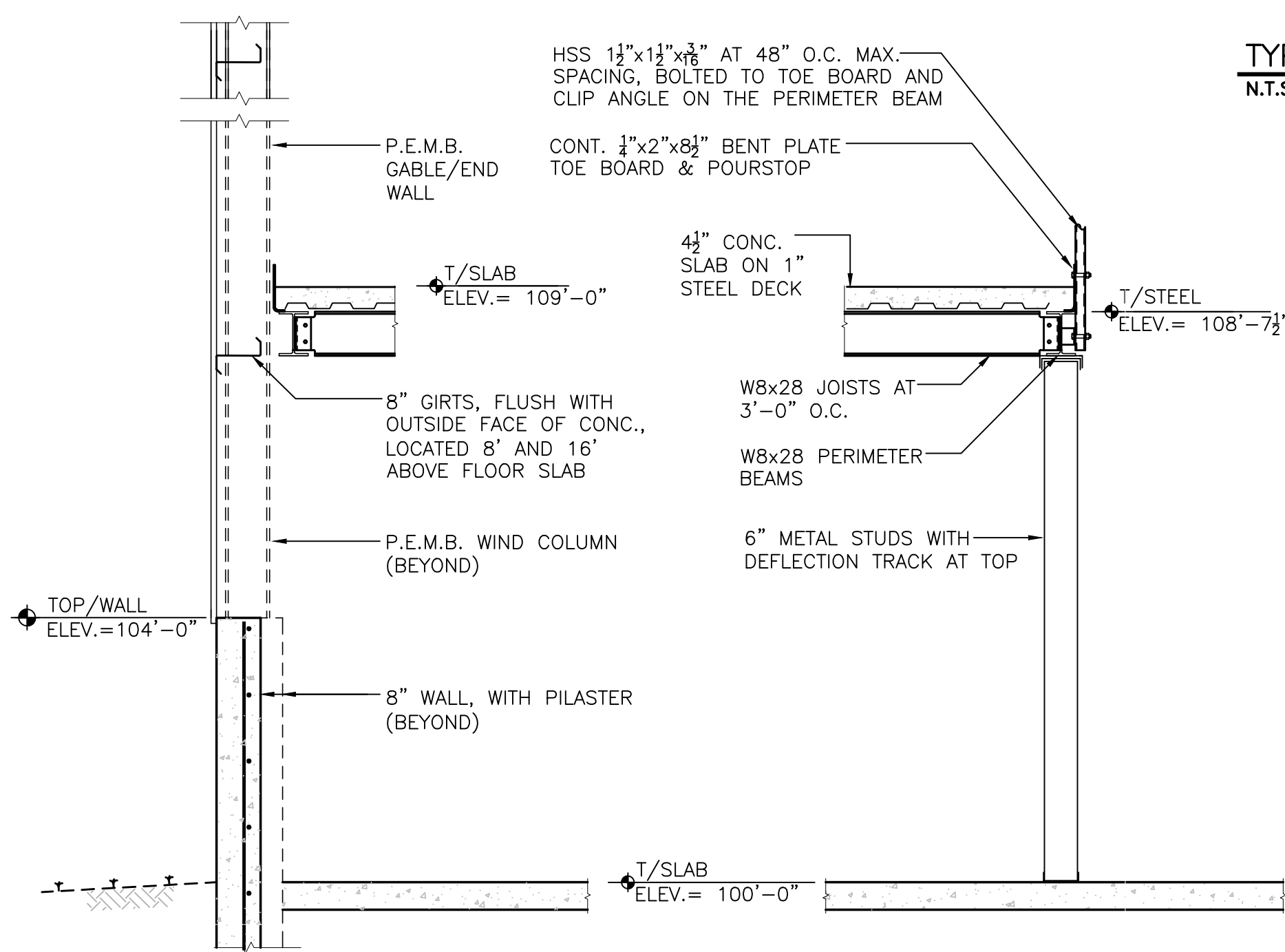
STAIR NOTES:
 1. THE STAIR MANUFACTURER IS RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE STAIR CONNECTIONS AND INFILL RAILINGS, CONFORMING TO THIS SCHEMATIC FRAMING PLAN AND THE ARCHITECTURAL PLANS AND SPECIFICATIONS.
 2. THE HSS 3 1/2"x3 1/2" COLUMNS SHOWN IN THESE PLANS ARE FOR STAIR SUPPORTS. THE STAIR MANUFACTURER IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS OF THE MC12x10.6 STAIR STRINGERS TO THESE COLUMNS AND TO THE MC12x10.6 CHANNEL TO BE SUPPORTED AT THE CONCRETE WALL.
 3. INFILL RAILINGS SHALL BE DESIGNED FOR THE STRUCTURAL LOADING REQUIREMENTS IN THE 2015 IBC, SECTION 1607.8.
 4. SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. ALLOW 2 WEEKS FOR REVIEW.

STRUCTURAL STEEL NOTES
 1. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SITE, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND THE SPECIFICATIONS.
 2. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS OF THE A.I.S.C. AND TO THE REQUIREMENTS OF THE LOCAL BUILDING CODES.
 3. ALL WELDING SHALL CONFORM TO THE CODE FOR WELDING IN BUILDING CONSTRUCTION OF THE AMERICAN WELDING SOCIETY.
 4. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING:
 W SHAPES - A992, GRADE 50
 PIPE COLUMN-ASTM A500, GRADE B
 OTHER SHAPES, BARS & PLATES - ASTM A36
 BOLTS - ASTM A307 FOR ANCHOR BOLTS
 ASTM A325 FOR ERECTION BOLTS
 WELDING ELECTRODE SHALL BE E70XX
 5. BOLTS SHALL BE 3/4" DIAMETER (UNLESS NOTED OTHERWISE) WITH OPEN HOLES 1/16" LARGER EXCEPT FOR COLUMN BASE AND GROUT PLATES WHICH ARE 3/16" LARGER.
 6. ALL STRUCTURAL STEEL SHALL BE SHOP PAINTED (MINIMUM 2 MILS DRY FILM THICKNESS) WITH AN APPROVED RUST INHIBITIVE PRIME PAINT. STEEL SHALL BE THOROUGHLY CLEANED (SSPC-3, POWER TOOL CLEANING) PRIOR TO PAINTING. FIELD TOUCH UP WITH THE SAME PAINT WILL BE REQUIRED FOR ALL FIELD CUTS AND WELDS.
 7. THE STRUCTURAL STEEL CONTRACTOR SHALL PROVIDE ALL NECESSARY GUYING AND BRACING REQUIRED TO ERECT AND HOLD THE STEEL FRAME PLUMB AND SQUARE.

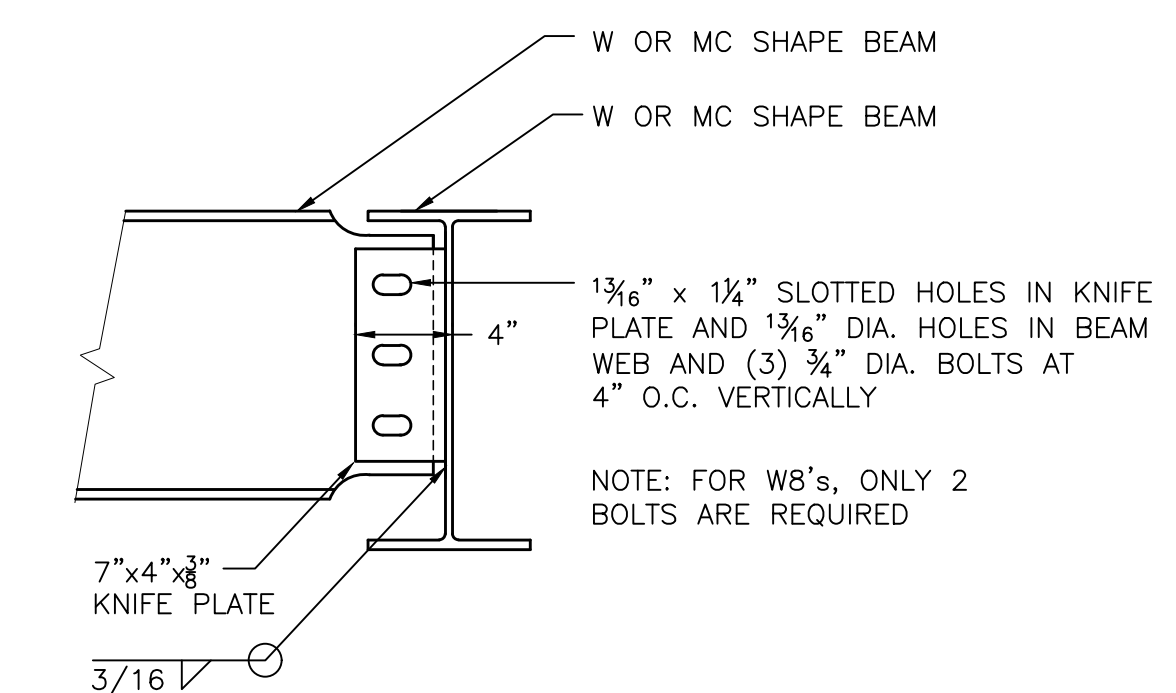
STRUCTURAL DESIGN DATA IN ACCORDANCE WITH 2015 INTERNATIONAL BUILDING CODE
 MEZZ. FLOOR LIVE LOAD = 125 PSF
 OR 28,000# LOAD OVER 7.5' DIAMETER
 DEAD LOAD = 60 PSF



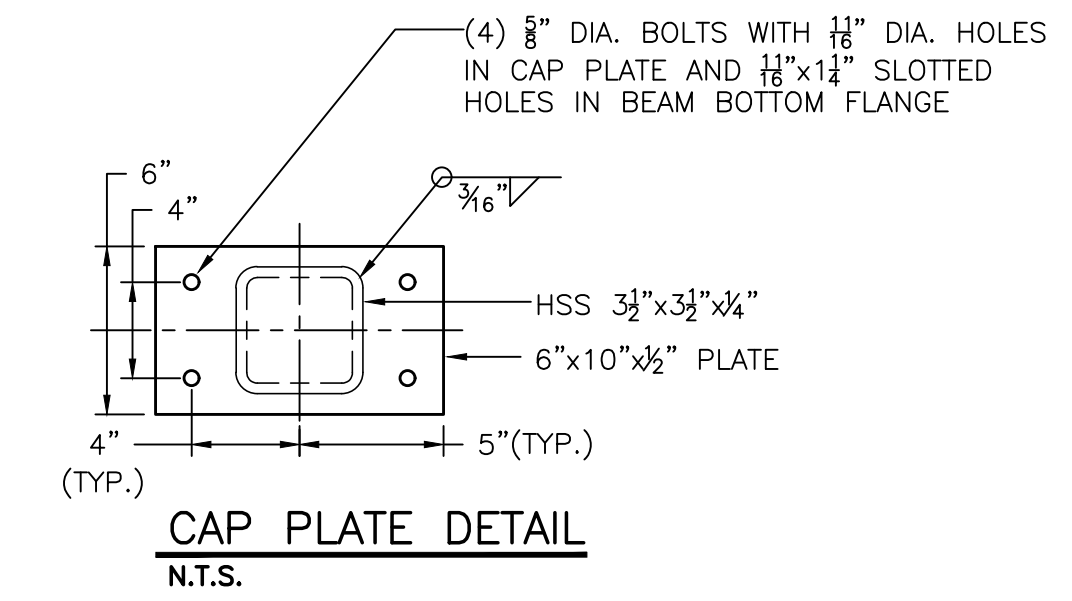
TYPICAL BEAM TO HSS (TUBE) COLUMN CONNECTION DETAILS
N.T.S.



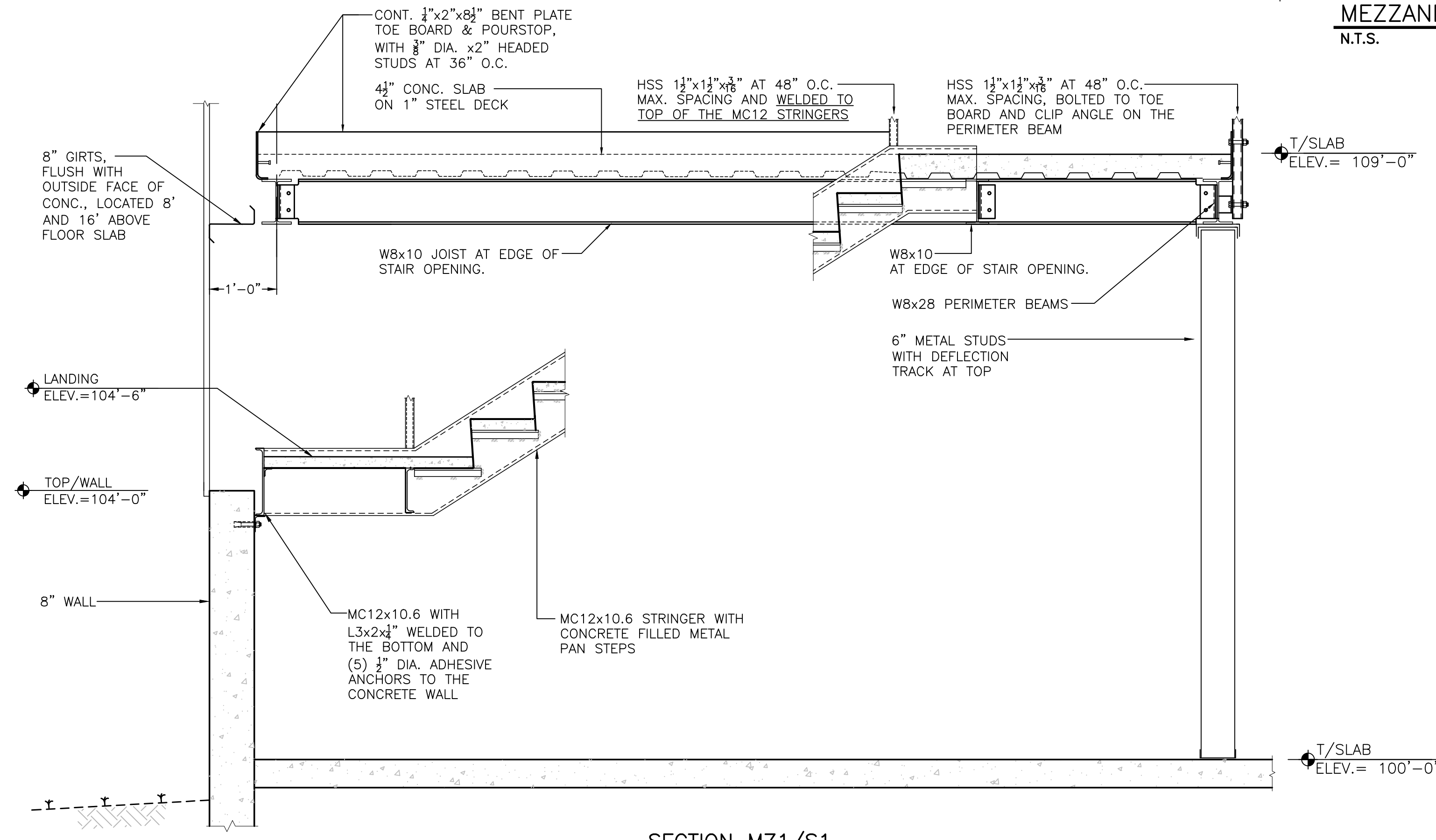
MEZZANINE-TYPICAL STRUCTURAL DETAIL
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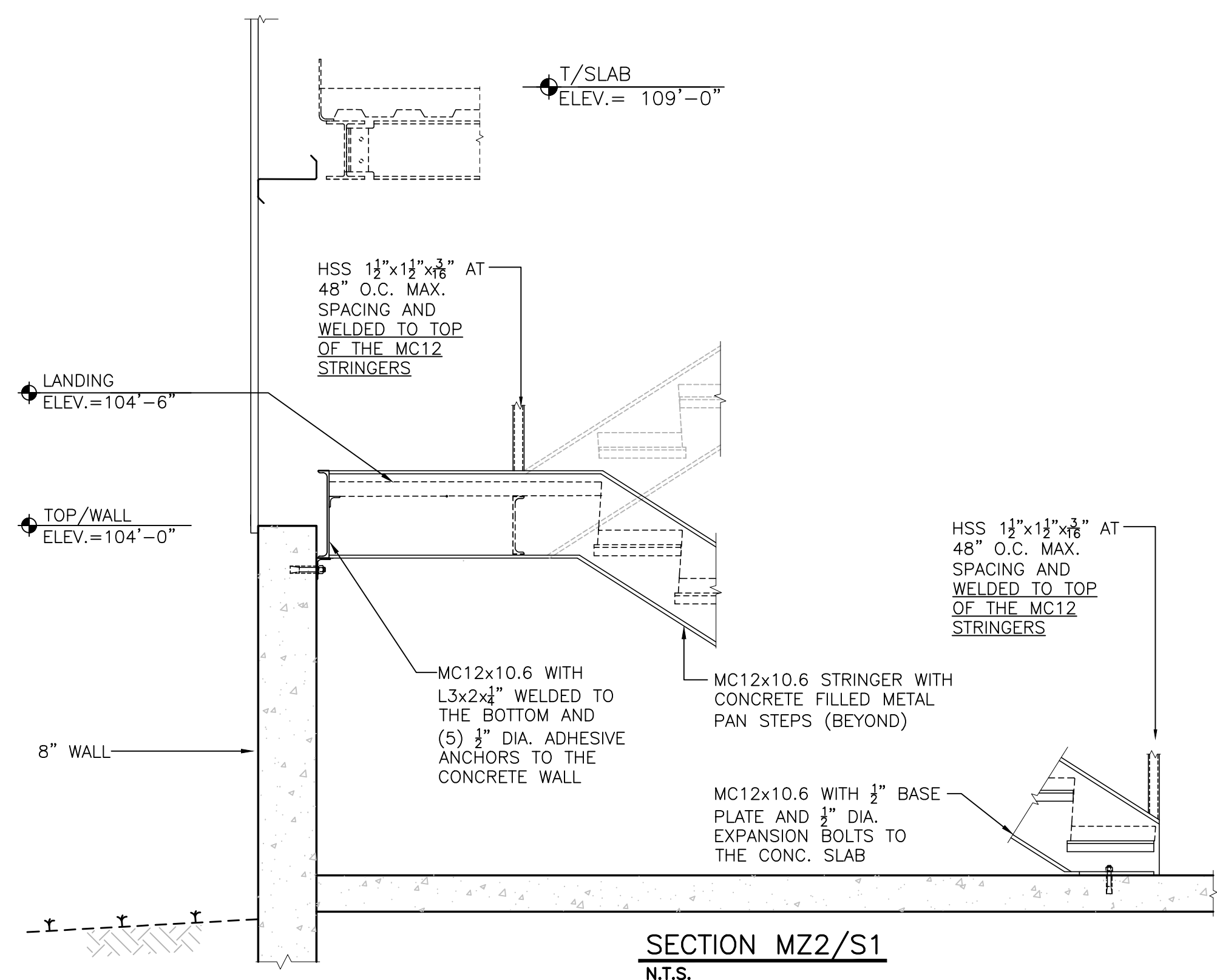
TYPICAL BEAM - BEAM CONNECTION DETAIL
N.T.S.



CAP PLATE DETAIL
N.T.S.



SECTION MZ1/S1
N.T.S.



SECTION MZ2/S1
N.T.S.

DATE	
REVISION	
NO.	
RELEASED FOR PERMITTING AND COORDINATION NOT FOR CONSTR. 3/23/21	
SCHAAL ENGINEERING, P.C. P.O. Box 152 61 Depot Street Wilder, VT 05088-0152 (802) 295-2002 Timothy@schaalengineering.com	
TOWNLINE EQUIPMENT - NEW 40'x140' P.E.M.B. FOUNDATIONS & MEZZANINE Plainfield, NH	
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SHEET 3 OF 3	
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