

GENERAL NOTES:

- THE STRUCTURAL DRAWINGS MUST BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS, AND THE SPECIFICATIONS. THE CONTRACTOR MUST VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES, AND ADDITIONAL ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.
- ALL EXISTING INFORMATION SHOWN IS REFERENCED FROM EXISTING DRAWINGS PREPARED BY: SLOAN & WHEATLEY ARCHITECTS, DATED 1/8/62.
- THE ALTERATIONS THIS STRUCTURE HAVE BEEN DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF THE NORTH CAROLINA STATE EXISTING BUILDING CODE, 2018 EDITION.
- THE WORK OUTLINED IN THE BUILDING CODE IS SUBJECT TO SPECIAL INSPECTIONS AS DESCRIBED IN THE BUILDING CODE.
- THE CONTRACTOR MUST PROVIDE TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL PERMANENT SUPPORTS AND LATERAL BRACING ARE IN PLACE.
- PORTIONS OF THE EXISTING STRUCTURE NOT ALTERED AND NOT AFFECTED BY THE ALTERATION HAVE NOT BEEN REVIEWED FOR COMPLIANCE WITH THE CODE REQUIREMENTS FOR A NEW STRUCTURE.
- BEFORE PROCEEDING WITH WORK WITHIN THE EXISTING STRUCTURE, THE CONTRACTOR MUST BECOME FAMILIAR WITH THE EXISTING STRUCTURAL CONDITIONS. ANY SHORING OR BRACING SHOWN IS A PARTIAL AND SCHEMATIC REPRESENTATION OF THAT REQUIRED. THE CONTRACTOR MUST BE SOLELY RESPONSIBLE FOR THE DESIGN AND ERECTION OF ANY AND ALL SAFEGUARDS NECESSARY TO PROTECT THE EXISTING STRUCTURE. THE CONTRACTOR MUST PROVIDE SHORING, BRACING, AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE STRUCTURE IN A SAFE CONDITION AT ALL TIMES DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION.
- THE CONTRACTOR MUST FIELD VERIFY THE DIMENSIONS, ELEVATIONS, AND OTHER REQUIREMENTS NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF THE NEW PORTIONS OF THE STRUCTURE TO THE EXISTING. ANY DIMENSIONS SHOWN OF EXISTING STRUCTURES MUST BE CONSIDERED AS APPROXIMATE AND ADEQUATE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR MUST MAKE ALL MEASUREMENTS NECESSARY FOR THE FABRICATION AND ERECTION OF STRUCTURAL MEMBERS. DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- DISCREPANCIES BETWEEN DRAWINGS, BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, OR WITHIN THE SPECIFICATIONS, MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER DURING THE BIDDING PROCESS IN TIME TO PERMIT CLARIFICATION BY ADDENDUM. IF INCONSISTENCIES, DISCREPANCIES OR CONTRADICTIONS IN THE CONTRACT DOCUMENTS ARE DISCOVERED AFTER THE BIDDING QUESTIONS, THE CONTRACTOR MUST NOT BE DEEMED BY SUBMITTAL OF THEIR BID, TO HAVE BID THE MOST COSTLY AS TO LABOR, MATERIALS, DURATION, SEQUENCE AND METHOD OF CONSTRUCTION TO PROVIDE THE WORK.
- THESE STRUCTURAL DRAWINGS ARE ISSUED ON THE DATE INDICATED FOR THE PURPOSE DESIGNATED. THESE DRAWINGS MUST NOT BE ISSUED OR RELEASED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN AUTHORIZATION OF THE STRUCTURAL ENGINEER OF RECORD.
- DETAILS LABELED "TYPICAL DETAIL" WITHIN THE DOCUMENTS APPLY TO SITUATIONS ON THE PROJECT THAT MAY OCCUR THROUGHOUT THE PROJECT. SUCH DETAILS APPLY WHETHER OR NOT THE DETAIL IS SPECIFICALLY REFERENCED AT EACH INSTANCE. NOTIFY THE ENGINEER IF CLARIFICATIONS ARE REQUIRED REGARDING THE APPLICABILITY OF THE "TYPICAL DETAIL."
- DESIGN CRITERIA:

| | |
|----------------------------|-----|
| CLASSIFICATION OF BUILDING | III |
| RISK CATEGORY | III |

EXISTING BUILDING CODE APPROACH - ALTERATION LEVEL III

SUPERIMPOSED ROOF DEAD LOADS - UNIFORM:

| | |
|---------------------------------|-------|
| INSULATION AND ROOF MEMBRANE | 3 PSF |
| CEILING | 2 PSF |
| SPRINKLERS | 3 PSF |
| DUCTS, LIGHTS, MISC. MECHANICAL | 3 PSF |

SUPERIMPOSED FLOOR DEAD LOADS - UNIFORM:

| | |
|---------------------------------|-------|
| FLOOR FINISH | 3 PSF |
| CEILING | 2 PSF |
| SPRINKLERS | 3 PSF |
| DUCTS, LIGHTS, MISC. MECHANICAL | 3 PSF |

LIVE LOADS - UNIFORM:

| | |
|-----------------------------------|---------|
| SLAB ON GRADE | 100 PSF |
| FIRST FLOOR | 100 PSF |
| ROOF | 20 PSF |
| CLASSROOMS | 40 PSF |
| OFFICES W/ PARTITION ALLOWANCE | 65 PSF |
| MECHANICAL SPACE | 150 PSF |
| LOBBIES | 100 PSF |
| CORRIDORS (FIRST FLOOR) | 100 PSF |
| CORRIDORS (SERVING PUBLIC SPACES) | 100 PSF |
| CORRIDORS (ABOVE FIRST FLOOR) | 80 PSF |
| STAIRWAYS | 100 PSF |

LIVE LOAD REDUCTION OF THE UNIFORMLY DISTRIBUTED FLOOR LIVE LOADS HAS BEEN UTILIZED.

LIVE LOADS - CONCENTRATED:

| | |
|--------------|---------------------|
| STAIR TREADS | 300# OVER 4" SQUARE |
| FLOOR | 2,000# |
| ROOFS | 300# |

UNLESS OTHERWISE NOTED, CONCENTRATED LOADS ARE APPLIED UNIFORMLY OVER 2'-6" x 2'-6" AREA.

SPECIAL LOADS:

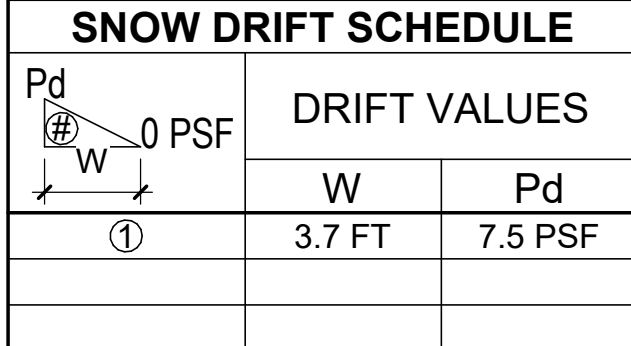
| | |
|---|------------------------|
| LIFELINE ANCHORAGE | 3100# (ASD) / LIFELINE |
| ALTERNATE #4 - FUTURE PHOTOVOLTAIC PANEL SYSTEM DEAD LOAD (PENTHOUSE ROOF ONLY) | 13 PSF |
| MAXIMUM CONSTRUCTION LOADS ON STEEL DECK | 20 PSF |
| ALTERNATE #4 - FUTURE ROOF BALLAST FOR SOLAR (EXISTING MAIN ROOF ONLY) | 30 PSF |

RAIN LOADS:

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|----------------------------|------------|
| RAIN INTENSITY (15 MINUTE) | 6.29 IN/HR |
|----------------------------|------------|

SNOW LOADS:

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|-------------------------------------|-----------|
| GROUND SNOW LOAD (Pg) | 15 PSF |
| FLAT ROOF LOAD (P _f) | 16.5 PSF |
| IMPORTANCE FACTOR (I _s) | 1.1 |
| THERMAL FACTOR (C _t) | 1.0 |
| EXPOSURE FACTOR (C _e) | 1.0 |
| DRIFT SURCHARGE (P _d) | REF TABLE |



NOTE: SNOW DRIFT LOADS ARE IN ADDITION TO FLAT ROOF LOADS.

WIND LOADS (PENTHOUSE ONLY):

| | |
|--|-----------|
| BASIC WIND SPEED (V _{ult}) | 120 MPH |
| ALLOWABLE STRESS DESIGN WIND SPEED (V _{asd}) | 93 MPH |
| EXPOSURE CATEGORY | B |
| INTERNAL PRESSURE COEFFICIENT | +0.18 |
| COMPONENT AND CLADDING PRESSURES: | |
| WALLS, ZONE 5 (10 SF) | 31.6 PSF |
| ROOF, ZONE 3 (10 SF) | 65.4 PSF |
| PARAPET, END/CORNER (10 SF) | 66.7 PSF |
| ULTIMATE WIND BASE SHEARS (FOR MWFRS): | |
| V _y | 7.3 KIPS |
| V _x | 20.6 KIPS |

ADDITIONAL PENTHOUSE WIND LOADING RESULTS IN AN INCREASE IN THE DEMAND-CAPACITY RATIO OF EXISTING MWFRS MEMBERS LESS THAN 10%.

SEISMIC LOADS:

| | | | |
|--|--|--------------------|-----------------------------------|
| SITE CLASSIFICATION | D (ASSUMED) | | |
| SEISMIC DESIGN CATEGORY | B | | |
| IMPORTANCE FACTOR (I _e) | 1.25 | | |
| SPECTRAL RESPONSE ACCELERATIONS: | | | |
| S _s | 0.155 | S ₁ | 0.077 |
| S _{ms} | 0.247 | S _{M1} | 0.184 |
| S _{ps} | 0.165 | S _{D1} | 0.123 |
| ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE (TWO-STAGE ANALYSIS) | | | |
| LATERAL FORCE RESISTING SYSTEM: | | | |
| PENTHOUSE | STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE | EXISTING STRUCTURE | REINFORCED CONCRETE MOMENT FRAMES |
| RESPONSE MODIFICATION COEFFICIENT (R): | | | |
| PENTHOUSE | 3.0 | EXISTING STRUCTURE | UNCHANGED |
| SEISMIC RESPONSE COEFFICIENT (C_s): | | | |
| PENTHOUSE | 0.0689 | EXISTING STRUCTURE | UNCHANGED |
| ULTIMATE SEISMIC BASE SHEAR (V): | | | |
| PENTHOUSE | 10.2 KIPS | EXISTING STRUCTURE | UNCHANGED |

ADDITIONAL PENTHOUSE SEISMIC LOADING RESULTS IN AN INCREASE IN THE DEMAND-CAPACITY RATIO OF EXISTING SEISMIC FORCES RESISTING SYSTEM MEMBERS LESS THAN 10%.

TEMPORARY SHORING/BRACING NOTES:

- THE CONTRACTOR MUST SUBMIT A DETAILED PLAN, INCLUDING WORK SEQUENCE, PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA FOR SHORING, BRACING, AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE STRUCTURE IN A SAFE CONDITION AT ALL TIMES DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION AND TO PROTECT FROM DAMAGE THOSE PORTIONS OF THE EXISTING STRUCTURE WHICH ARE TO REMAIN. SUBMIT PLAN PRIOR TO BEGINNING WORK.
- GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY SHORING AND BRACING OF THE EXISTING STRUCTURE DURING DEMOLITION AND CONSTRUCTION UNTIL ALL PERMANENT STRUCTURAL GRAVITY AND LATERAL SUPPORTS ARE IN-PLACE. THIS INCLUDES AT LOCATIONS WHERE EXTERIOR MASONRY WALLS ARE REMOVED.
- BRACING MUST BE PROVIDED FOR EXISTING EXTERIOR WALLS THAT ARE ADJACENT TO EXISTING FLOOR SLABS INDICATED TO BE REMOVED. SHORING AND BRACING MUST BE PROVIDED FOR EXISTING FLOOR SLABS THAT ARE ADJACENT TO EXISTING FLOOR SLABS INDICATED TO BE REMOVED.

FOUNDATION NOTES:

- FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE REPORT OF SUBSURFACE EXPLORATION PREPARED BY ESP ASSOCIATES, INC., DATED APRIL 6, 2024.
- FOUNDATIONS HAVE BEEN DESIGNED FOR A NET ALLOWABLE SOIL BEARING PRESSURE OF 2,000 PSF.
- TOP OF FOOTING ELEVATIONS MUST BE A MINIMUM DEPTH OF 0'-8" BELOW LOWEST ADJACENT SOIL GRADE.
- PRIOR TO PLACING FOUNDATION CONCRETE, ALL FOUNDATION EXCAVATIONS MUST BE INSPECTED BY THE SPECIAL INSPECTOR TO EXPLORE THE EXTENT OF LOOSE, SOFT, EXPANSIVE, OR OTHERWISE UNSATISFACTORY SOIL MATERIAL AND TO VERIFY DESIGN BEARING PRESSURE. DIRECTION FOR CORRECTIVE ACTION WILL BE PROVIDED BY THE OWNER'S GEOTECHNICAL TESTING AGENCY SPECIAL INSPECTOR WHERE UNSATISFACTORY SOILS ARE PRESENT.
- NO UNBALANCED BACKFILLING MUST BE DONE AGAINST MASONRY OR CONCRETE WALLS UNLESS WALLS ARE SECURELY BRACED AGAINST OVERTURNING, EITHER BY TEMPORARY CONSTRUCTION BRACING OR BY PERMANENT CONSTRUCTION.
- CONTROL GROUNDWATER AND SURFACE RUNOFF THROUGHOUT THE CONSTRUCTION PROCESS. INUNDATION AND LONG TERM EXPOSURE OF BEARING SURFACES WHICH RESULT IN DETERIORATION OF BEARING MUST BE PREVENTED.
- RETAINING WALLS HAVE BEEN DESIGNED FOR THE FOLLOWING LATERAL LOAD CRITERIA:

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| A. ACTIVE SOIL PRESSURE | 35 PCF |
| B. PASSIVE SOIL PRESSURE | 250 PCF |
| C. SOIL DENSITY | 120 PCF |
| D. SOIL COEFFICIENT OF FRICTION | 0.35 |
| E. ALLOWABLE BEARING PRESSURE | 2000 PSF |

DEMOLITION NOTES:

- SOME TERMS INDICATED ON PLAN ARE DEFINED AS FOLLOWS:

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| A. REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF-SITE. |
| B. REMOVE AND SALVAGE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND DELIVER THEM TO THE OWNER READY FOR REUSE. |
| C. REMOVE AND REINSTALL: DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE THEM FOR REUSE, AND REINSTALL THEM WHERE INDICATED. |
| D. EXISTING TO REMAIN: EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE REMOVED. |
- COMPLY WITH LOCAL NOISE, DUST AND EROSION CONTROL REGULATIONS. CONTROL DUST FROM DEMOLITION TO PREVENT IT FROM SPREADING TO OCCUPIED PORTIONS OF BUILDING AND TO AVOID CREATING A NUISANCE IN SURROUNDING AREA.
- OBTAIN REQUIRED PERMITS FROM GOVERNING AUTHORITIES.
- PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT PROPERTY.
- AT END OF EACH WORKDAY AND DURING INCLEMENT WEATHER, COVER AND PROTECT AREAS OF OPENED UP AND UNFINISHED WORK WITH WEATHER PROOF BARRIERS, AS REQUIRED.
- PROTECT FROM DAMAGE EXISTING ROADS, WALKS, CURBS, LANDSCAPE, AND OTHER SITE AND BUILDING STRUCTURES. REPAIR OR REPLACE DAMAGED ITEMS.
- REMOVE MATERIAL RESULTING FROM DEMOLITION OPERATIONS, EXCEPT AS OTHERWISE INDICATED, AND DISPOSE OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS AS PART OF THE WORK. CONTROL RUBBISH, DEBRIS, AND DUST BY APPROVED METHODS, AS REQUIRED BY LOCAL NOISE, DUST, AND EROSION CONTROL REGULATIONS. SOLID WASTE DISPOSAL IN ACCORDANCE WITH COV 10.1 - 1408.1, (1997) VIRGINIA WASTE MANAGEMENT ACT; ARTICLE 2, SOLID WASTE MANAGEMENT. DISPOSAL OF SOLID WASTE IN OPEN DUMPS IS PROHIBITED.

CAST-IN-PLACE CONCRETE NOTES:

- CONCRETE MUST BE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301 AND 318.
- CONCRETE MUST BE NORMAL WEIGHT AND MUST OBTAIN 28 DAY COMPRESSIVE STRENGTHS AS FOLLOWS:

| | |
|---------------------------------|-----------|
| A. SLAB-ON-GRADE | 3,500 PSI |
| B. SUPPORTED FLOOR SLABS | 4,000 PSI |
| C. COLUMNS AND WALLS | 4,500 PSI |
| D. FOUNDATIONS | 3,000 PSI |
| E. CONCRETE NOT OTHERWISE NOTED | 3,000 PSI |
- REINFORCING MATERIALS MUST BE AS FOLLOWS:

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| A. REINFORCING BARS - ASTM A615, GRADE 60, DEFORMED. |
| B. WELDED WIRE REINFORCEMENT - ASTM A1064, WELDED STEEL WIRE REINFORCEMENT; PROVIDE SHEET TYPE, ROLL TYPE IS NOT ACCEPTABLE. |
- ALL REINFORCING STEEL AND EMBEDDED ITEMS SUCH AS ANCHOR RODS AND WELD PLATES MUST BE ACCURATELY PLACED AND ADEQUATELY TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.
- CONCRETE COVER TO REINFORCING STEEL MUST CONFORM TO THE MINIMUM COVER RECOMMENDATIONS IN ACI 318, UNLESS THE DRAWINGS SHOW GREATER COVER REQUIREMENTS.
- LAP CONTINUOUS REINFORCING STEEL PER "TYPICAL REINFORCING SPLICE SCHEDULES."

CONCRETE MASONRY NOTES:

- CONCRETE MASONRY MATERIALS AND CONSTRUCTION MUST CONFORM TO THE AMERICAN CONCRETE INSTITUTE (ACI) 530.
- CONCRETE MASONRY UNITS MUST CONFORM TO ASTM C90 AND MUST BE MADE WITH LIGHTWEIGHT AGGREGATE. MINIMUM NET AREA COMPRESSIVE STRENGTH OF MASONRY UNITS MUST BE 2,000 PSI AT 28 DAYS.
- COMPRESSIVE STRENGTH OF MASONRY MUST BE DETERMINED BY THE UNIT STRENGTH METHOD AS SET FORTH IN ACI 530.1. THE NET AREA COMPRESSIVE STRENGTH OF MASONRY, f_m, MUST BE 2,000 PSI AT 28 DAYS.
- MORTAR MUST BE TYPE 'M' OR 'S' AND MUST COMPLY WITH ASTM C270, PROPORTIONS OR PROPERTIES SPECIFICATION.
- GROUT MUST COMPLY WITH EITHER THE PROPORTIONS OR PROPERTIES SPECIFICATION OF ASTM C476 AND AS FOLLOWS:

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| A. PROPORTIONS SPECIFICATION: THIS MIX CANNOT CONTAIN ADMIXTURES. WATER MUST BE ADDED IN THE FIELD IN ORDER TO ACHIEVE A SLUMP OF 8-11 INCHES WHEN PLACED IN THE CONCRETE MASONRY UNITS. MORTAR, PEA-GRAVEL CONCRETE, OR "CHAT" MIXES ARE NOT ACCEPTABLE SUBSTITUTES FOR THE SPECIFIED GROUT. |
| B. PROPERTIES SPECIFICATION: THIS MIX MUST BE PROPORTIONED TO OBTAIN A DOCUMENTED 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI, WITH AN 8-11 INCH SLUMP WHEN PLACED IN THE CONCRETE MASONRY UNITS. |
- REINFORCING STEEL MUST COMPLY WITH ASTM A615, GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE BENT OR HOOKED.
- ALL BOND BEAMS, REINFORCED CELLS AND CELLS WITH EXPANSION BOLTS, EMBED PLATES OR OTHER ANCHORS AND ALL CELLS BELOW GRADE MUST BE GROUTED SOLID. GROUT PROCEDURE MUST COMPLY WITH ACI 530.1.
- ALL CMU WALLS MUST BE REINFORCED CONTINUOUSLY FROM FOUNDATION TO TOP OF WALL. WHERE REINFORCING IS INTERRUPTED, OFFSET AND LAP ADDITIONAL BARS PER THE "TYPICAL OFFSET SPLICE AT MASONRY WALL DETAILS."
- LAP ALL REINFORCING PER SCHEDULE BELOW, TYPICAL UNLESS OTHERWISE NOTED:

MASONRY LAP SCHEDULE

| REINF SIZE | 72 x BAR DIAMETER |
|------------|-------------------|
| #4 | 36" |
| #5 | 45" |
| #6 | 54" |
| #7 | 63" |
| #8 | 72" |

CONCRETE MASONRY NOTES:

- PROVIDE MECHANICAL SPLICES FOR ALL #9 BARS AND LARGER AND FOR ALL BARS AT CONTRACTOR'S OPTION.
- ALL NON-BEARING MASONRY WALLS MUST BE REINFORCED WITH #4 VERTICAL BARS AT 40 INCHES ON CENTER, TYPICAL UNLESS OTHERWISE NOTED. ALL NON-BEARING MASONRY WALLS MUST BE BRACED PER "TYPICAL NON-BEARING MASONRY PARTITION DETAILS."
- PROVIDE REINFORCING STEEL DOWELS OF THE SAME SIZE AND SPACING AS VERTICAL REINFORCING FROM THE SUPPORTING STRUCTURE. DOWELS MUST HAVE STANDARD ACI HOOKS.
- PROVIDE STANDARD 9 GAGE LADDER TYPE HORIZONTAL JOINT REINFORCING IN CMU WALLS AT 16 INCHES ON CENTER AND IN TWO JOINTS IMMEDIATELY ABOVE AND BELOW ALL OPENINGS, EXTENDING A MINIMUM OF 2 FEET BEYOND THE JAMB ON EACH SIDE OF THE OPENING, EXCEPT AT CONTROL JOINTS.
- PROVIDE HORIZONTAL BOND BEAMS WITH CONTINUOUS REINFORCING AS SHOWN IN THE SECTIONS AND DETAILS. DISCONTINUE ALL HORIZONTAL REINFORCING AT CONTROL JOINTS.
- DO NOT LOCATE CONTROL JOINTS WITHIN TWO FEET OF STEEL BEAM BEARING LOCATIONS.

STRUCTURAL STEEL NOTES:

- STRUCTURAL STEEL MUST BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) 360.
- STRUCTURAL STEEL MUST COMPLY WITH THE FOLLOWING SPECIFICATIONS:

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|--|---|---------------------------------------|--|---|------------------------|---------------------|
| A. STRUCTURAL STEEL SHAPES, PLATES AND BARS UNLESS OTHERWISE NOTED - ASTM A36, F _y = 36 KSI | | | | | | |
| B. STRUCTURAL STEEL W-SHAPES - ASTM A992, F _y = 50 KSI | | | | | | |
| C. HOLLOW STRUCTURAL SECTIONS (HSS): <table border="1"> <tr> <td>a. SQUARE & RECTANGULAR - ASTM A500, GRADE C, F_y = 50 KSI</td> </tr> <tr> <td>d. ANCHOR RODS - ASTM F1554, GRADE 36</td> </tr> <tr> <td>E. HIGH STRENGTH BOLTS - ASTM A325 (TYPICAL UON)</td> </tr> <tr> <td>F. FULLY PRETENSIONED BOLTS - ASTM F1852 (TWIST-OFF TYPE)</td> </tr> <tr> <td>G. WASHERS - ASTM F436</td> </tr> <tr> <td>H. NUTS - ASTM A563</td> </tr> </table> | a. SQUARE & RECTANGULAR - ASTM A500, GRADE C, F _y = 50 KSI | d. ANCHOR RODS - ASTM F1554, GRADE 36 | E. HIGH STRENGTH BOLTS - ASTM A325 (TYPICAL UON) | F. FULLY PRETENSIONED BOLTS - ASTM F1852 (TWIST-OFF TYPE) | G. WASHERS - ASTM F436 | H. NUTS - ASTM A563 |
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| d. ANCHOR RODS - ASTM F1554, GRADE 36 | | | | | | |
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| F. FULLY PRETENSIONED BOLTS - ASTM F1852 (TWIST-OFF TYPE) | | | | | | |
| G. WASHERS - ASTM F436 | | | | | | |
| H. NUTS - ASTM A563 | | | | | | |
- UNLESS OTHERWISE NOTED, ALL REQUIRED DESIGN STRENGTHS AND REACTIONS INDICATED ARE BASED ON THE "LOADING COMBINATIONS USING STRENGTH DESIGN OR LOAD AND RESISTANCE FACTOR DESIGN" PER SECTION 1605.2 OF THE BUILDING CODE.
- UNLESS OTHERWISE NOTED, BEAM CONNECTIONS MUST BE AISC "SIMPLE SHEAR CONNECTIONS" WITH ASTM A325 BOLTS. DESIGN CONNECTIONS FOR THE REACTIONS (LRFD FACTORED LOADING) SHOWN ON THE DRAWINGS AND THE MINIMUM NUMBER OF BOLTS SHOWN BELOW. IF NO REACTION IS SHOWN, DESIGN CONNECTIONS FOR REACTIONS AND THE MINIMUM NUMBER OF BOLTS SHOWN BELOW.

MINIMUM BEAM REACTION SCHEDULE

| BEAM SIZE | DESIGN REACTION (LRFD) | MIN # OF BOLTS |
|-----------|------------------------|----------------|
| W8 | 15 KIPS | 2 |
| W10 | 25 KIPS | 2 |
| W12 | 35 KIPS | 3 |
| W21 | 40 KIPS | 5 |

- HIGH STRENGTH BOLTS MAY BE TIGHTENED TO THE "SNUG TIGHT" CONDITION IN LIEU OF FULL PRETENSIONING EXCEPT FOR THE FOLLOWING CONNECTIONS WHICH MUST BE FULLY PRETENSIONED:

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| A. DIRECT TENSION CONNECTIONS IDENTIFIED AS (DT) ON PLAN. |
| B. BOLTED CONNECTIONS USING NON-STANDARD HOLES. |
- REFER TO THE SPECIFICATIONS FOR REQUIREMENTS OF "DELEGATED DESIGN" CONNECTIONS.
- FOR STRUCTURAL STEEL CONNECTIONS INDICATED AS "DELEGATED DESIGN", INCLUDE STRUCTURAL CALCULATIONS SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA RESPONSIBLE FOR THEIR PREPARATION. IN ADDITION, THE PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN MUST REVIEW THE SHOP DRAWINGS PRIOR TO SUBMITTAL TO VERIFY THAT THE CONNECTIONS AS DETAILED ON THE SHOP DRAWINGS COMPLY WITH THE CONNECTION DESIGN REQUIREMENTS OF THE FINAL CALCULATIONS. A REVIEW LETTER, SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN MUST BE PROVIDED WITH THE SHOP DRAWINGS AND CALCULATION SUBMITTAL STATING THAT THIS REVIEW AND VERIFICATION HAS BEEN COMPLETED.
- DELEGATED DESIGN CONNECTIONS ARE AS FOLLOWS:

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| A. SHEAR CONNECTIONS |
| B. MOMENT CONNECTIONS |
| C. HSS BEAM CONNECTIONS |
- HIGH STRENGTH BOLTS MUST BE FULLY PRETENSIONED USING TENSION CONTROL "TWIST OFF" BOLTS.
- PROVIDE ANGLE FRAMING AROUND OPENINGS LARGER THAN 6 INCHES IN ANY DIMENSION (INCLUDING ROOF DRAINS) TO SUPPORT STEEL DECK, TYPICAL UNLESS OTHERWISE NOTED OR DETAILED AS FOLLOWS:

| JOIST/BEAM SPACING | ANGLE SIZE |
|--------------------|------------|
| TO 6'-0" | L3x3x1/4 |

STRUCTURAL STEEL NOTES:

- WELDING MUST BE IN ACCORDANCE WITH AWS D1.1. "STRUCTURAL WELDING CODE - STEEL." WELD ELECTRODES MUST BE E70XX LOW HYDROGEN, UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE REQUIRED BY TABLE J2.4 AISC 360.
- COORDINATE ALL MEMBER LOCATIONS, UNIT WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED.
- STRUCTURAL STEEL SCHEDULED TO RECEIVE SPRAYED-ON FIREPROOFING MUST NOT BE PRIME PAINTED.
- HOT-DIP GALVANIZE AFTER FABRICATION THE FOLLOWING:

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| A. ANGLES AND PLATES SUPPORTING MASONRY IN EXTERIOR WALLS. |
| B. LINTELS AND LINTEL ASSEMBLIES SUPPORTING MASONRY IN EXTERIOR WALLS. |
| C. ALL STEEL EXPOSED TO WEATHER IN THE FINAL CONSTRUCTION. |
| D. ITEMS IDENTIFIED AS GALVANIZED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. |
- ALL MEMBERS EXPOSED TO VIEW IN THE FINISHED CONSTRUCTION MUST BE CONSIDERED ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS).
- STEEL MEMBERS MUST BE SPLICED ONLY WHERE INDICATED. CONTINUOUS MEMBERS MUST BE SPLICED OVER SUPPORTS, UNLESS OTHERWISE NOTED. MEMBERS INDICATED AS DIAPHRAGM CHORDS (DC) MUST HAVE FULL PENETRATION BUTT WELD SPLICES, UNLESS OTHERWISE NOTED.

STEEL DECK NOTES:

- STEEL DECK MUST BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI), "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND THE STEEL DECK INSTITUTE (SDI), "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS."
- STEEL DECK INSTALLATION MUST COMPLY WITH THE FOLLOWING:

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|---|
| A. ROOF DECK (UNLESS OTHERWISE NOTED): 1 1/2" x 22 GAGE TYPE 'B' GALVANIZED, UNLESS OTHERWISE NOTED, ATTACH DECK TO SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS IN ALL RIBS WHERE END LAPS OCCUR AND AT 12 INCHES ON CENTER ALONG SUPPORTS WITH A 36/4 PATTERN. FASTEN SIDE LAPS WITH #10 SELF-TAPPING HEX HEAD SCREWS AT 1/5 POINTS BETWEEN SUPPORTS. FASTEN EDGESTMOST DECK PANEL TO STEEL FRAMING WITH 5/8 INCH DIAMETER PUDDLE WELDS AT SAME SPACING AS SIDELAP FASTENERS. |
| B. ROOF DECK (AS INDICATED): 3" x 20 GAGE TYPE 'N' GALVANIZED, UNLESS OTHERWISE NOTED, ATTACH DECK TO STEEL SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS IN ALL RIBS WHERE END LAPS OCCUR AND AT 8 INCHES ON CENTER ALONG SUPPORTS WITH A 24/4 PATTERN. FASTEN SIDE LAPS WITH #10 SELF-TAPPING HEX HEAD SCREWS AT 1/4 POINTS BETWEEN SUPPORTS. FASTEN EDGESTMOST DECK PANEL TO STEEL FRAMING WITH 5/8 INCH DIAMETER PUDDLE WELDS AT SAME SPACING AS SIDELAP FASTENERS. |
| C. FORM DECK: 1 1/2" x 20 GAGE TYPE 'C' GALVANIZED, UNLESS OTHERWISE NOTED, ATTACH DECK TO SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS AT 12 INCHES ON CENTER. FASTEN SIDELAPS WITH #10 SELF-TAPPING HEX HEAD SCREWS AT 1/4 POINTS BETWEEN SUPPORTS. FASTEN EDGESTMOST DECK PANEL TO STEEL FRAMING WITH 5/8 INCH DIAMETER PUDDLE WELDS AT SAME SPACING AS SIDELAP FASTENERS. |
- STEEL DECK MUST BE INSTALLED PERPENDICULAR TO SUPPORTS AND MUST HAVE A MINIMUM OF THREE CONTINUOUS SPANS. ENDLAPS MUST ONLY OCCUR AT SUPPORTS.
- WELDING MUST BE IN ACCORDANCE WITH AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL."
- PERMANENT SUSPENDED LOADS MUST NOT BE SUPPORTED BY STEEL ROOF DECK.
- STEEL DECK SCHEDULED TO RECEIVE SPRAYED-ON FIREPROOFING MUST BE GALVANIZED.
- CONDUIT AND PIPING MUST NOT BE PLACED IN ELEVATED SLABS.

COLD-FORMED METAL FRAMING NOTES:

- COLD-FORMED METAL FRAMING MUST BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS."
- SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A NORTH CAROLINA LICENSED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN OF INTERIOR AND EXTERIOR NON-LOAD BEARING COLD-FORMED METAL FRAMING. SHOP DRAWINGS MUST INCLUDE DESIGN LOADINGS AND REACTIONS APPLIED TO THE SUPPORTING STRUCTURE. INCLUDE PLACING DRAWINGS FOR FRAMING MEMBERS SHOWING SIZE AND GAGE DESIGNATIONS, NUMBER, TYPE, LOCATION AND SPACING. INDICATE CONNECTIONS, SUPPLEMENTAL STRAPPING, BRACING, SPLICES, BRIDGING, ACCESSORIES AND DETAILS AND CONSTRUCTION SEQUENCE REQUIRED FOR PROPER AND SAFE INSTALLATION.
- WELDING MUST BE IN ACCORDANCE WITH AWS D1.3, "STRUCTURAL WELDING CODE - SHEET STEEL." TOUCH UP ALL WELDS WITH SPECIFIED COATING SYSTEMS.
- COLD-FORMED METAL FRAMING MEMBERS MUST CONFORM TO ASTM C955, AND BE FORMED OF CORROSION-RESISTANT STEEL CONFORMING TO ASTM A653 AND ASTM C955 WITH A MINIMUM YIELD STRENGTH OF 33 KSI FOR 43 MIL AND THINNER MEMBERS AND 50 KSI FOR ALL OTHER MEMBERS.
- MEMBER SECTION PROPERTIES MUST CONFORM TO PART 'I' OF THE "COLD-FORMED STEEL DESIGN MANUAL."
- COLD-FORMED METAL FRAMING MEMBERS, HEADERS AND CONNECTIONS SHOWN ON STRUCTURAL AND ARCHITECTURAL DRAWINGS ARE SCHEMATIC ONLY AND MUST BE DESIGNED TO MEET PERFORMANCE SPECIFICATION REQUIREMENTS.
- PROVIDE BRIDGING LINES AT 4'-0" MAXIMUM ON CENTER IN ALL WALLS UNLESS OTHERWISE INDICATED. BRIDGING MUST BE FULLY INSTALLED AND ANCHORED AT ENDS BEFORE SUPERIMPOSING LOADS ONTO THE STUDS.
- SCREWS ARE SELF DRILLING SCREWS (SDS). MINIMUM SCREW SPACING AND EDGE DISTANCE MUST BE 3/4" IN ANY DIRECTION, TYPICAL.
- POWDER ACTUATED FASTENERS (PAF) MUST HAVE A MINIMUM ALLOWABLE CAPACITY INTO THE BASE MATERIAL AS FOLLOWS, UNLESS OTHERWISE NOTED:

| |
|---|
| A. STEEL: SHEAR = 600 LBS; TENSION = 250 LBS |
| B. CONCRETE: SHEAR = 260 LBS; TENSION = 255 LBS |
- LOW PROFILE SCREWS MUST BE USED AS REQUIRED FOR ARCHITECTURAL REQUIREMENTS.

UNAUTHORIZED USE OF THESE DRAWINGS IS AT THE RISK OF THE CONTRACTOR. UNAUTHORIZED USE, WHICH MAY BE NOT RESPONSIBLE FOR ADDITIONAL COSTS DUE TO CHANGES, CORRECTIONS OR ADDITIONAL SCOPE OF WORK REQUIRED TO BE CORRECTED.

| | |
|-------------------------------|--|
| UNAUTHORIZED USE | |
| NO FIELD MODIFICATION | |
| NO EARLY FOUNDATION PACKAGE | |
| NO EARLY UNDERPINNING PACKAGE | |
| NO EARLY STEEL PACKAGE | |
| NO SHIRT KIT | |
| NO CONSTRUCTION SET | |

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Mann Hall Renovation
 STATE ID #22-2450-02A
 NCSU PROJECT # 202220021



North Carolina State University
 Facilities Division Design & Construction
 Administrative Services Building III

SPECIALTY STRUCTURAL ELEMENTS:

- THE FOLLOWING BUILDING ELEMENTS REQUIRE DELEGATED DESIGN AND ENGINEERING BY A SPECIALTY STRUCTURAL ENGINEER:
 - METAL STAIRS
 - CURTAIN WALL AND GLAZING ASSEMBLIES INCLUDING CONNECTIONS TO THE STRUCTURE
 - INTERIOR AND EXTERIOR NON-LOAD BEARING COLD-FORMED METAL FRAMING (CFMF)
 - STRUCTURAL STEEL CONNECTIONS
 - PRE-FABRICATED CANOPIES AND AWNINGS
 - TEMPORARY SHORING AND/OR EXCAVATION SUPPORT
 - MECHANICAL, ELECTRICAL, AND PLUMBING SUPPORTS AND DISTRIBUTIONS SYSTEMS, INCLUDING BRACING AND ATTACHMENTS.

REFERENCE SPECIFICATIONS FOR COMPLETE REQUIREMENTS
- SUBMIT COMPLETE CALCULATIONS AND SHOP DRAWINGS, SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA RESPONSIBLE FOR THE DESIGN, INCLUDING DESIGN LOADINGS AND REACTIONS APPLIED TO THE SUPPORTING STRUCTURE. INCLUDE A SUMMARY OF THE CONTROLLING LOAD CASES FOR EACH LOCATION.
- IN ADDITION TO THEIR OWN DEAD WEIGHT AND THE DEAD LOADS SHOWN OR INDICATED IN THE DRAWINGS, MEMBERS MUST BE DESIGNED TO SUPPORT THE LOADS INDICATED IN THE GENERAL NOTES.
- CONNECTION DETAILS SHOWN ARE SCHEMATIC ONLY. ALL CONNECTIONS MUST BE DESIGNED AND DETAILED BY THE MANUFACTURER TO SUIT THE SPECIFIED LOADS. CONNECTIONS MUST ACCOUNT FOR THERMAL MOVEMENT, DEFLECTION AND CREEP. DETAIL ALL CONNECTIONS ON SHOP DRAWINGS.
- THE CONTRACTOR MUST BE RESPONSIBLE FOR THE COORDINATION OF ALL SPECIALTY STRUCTURAL ELEMENTS AND COST ASSOCIATED WITH A CONTRACTOR INITIATED CHANGE IN BUILDING STRUCTURE, INCLUDING CONSTRUCTION COSTS AND RE-ENGINEERING COSTS.

POST-INSTALLED ANCHOR NOTES:

- ALL POST INSTALLED ANCHORS INDICATED ON THE DRAWINGS ARE BY HILTI, INC. AND MUST BE CONSIDERED THE BASIS OF DESIGN PRODUCT. WHERE NOT EXPLICITLY INDICATED IN THE DRAWINGS, THE FOLLOWING ANCHORS/ADHESIVES MUST BE USED:
 - ANCHORAGE TO CONCRETE
 - ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC40U) WITH STEEL THREADED ROD PER ICC ESR-3187.
 - SCREW ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR-3027.
 - REBAR DOWELING INTO CONCRETE
 - ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
 - HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC 40-U) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187.
 - ANCHORAGE TO SOLID GROUTED MASONRY
 - ADHESIVE ANCHORS USE:
 - HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM (ICC PENDING).
 - STEEL ANCHOR ELEMENT MUST BE HILTI HAS-E CONTINUOUSLY THREADED ROD.
 - MECHANICAL ANCHORS USE:
 - HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR 3056.
 - ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY
 - ADHESIVE ANCHORS USE:
 - HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM PER ICC ESR-3342
 - STEEL ANCHOR ELEMENT MUST BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR.
 - THE APPROPRIATE SIZE SCREEN TUBE MUST BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION.
 - ALTERNATE POST INSTALLED ANCHOR PRODUCTS MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW AND POSSIBLE APPROVAL. ALL SUBSTITUTION REQUESTS MUST BE ACCOMPANIED BY AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE. ALTERNATE PRODUCTS MAY REQUIRE MODIFICATIONS TO ANCHOR DIAMETER, SPACING, AND EMBEDMENT.
 - INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
 - THE CONTRACTOR MUST ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ON-SITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.
 - ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
 - EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR MUST LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN OR GPR.
 - ALL POST INSTALLED ANCHORS REQUIRE CONTINUOUS SPECIAL INSPECTIONS TO VERIFY INSTALLATION HAS BEEN PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. REFERENCE THE STATEMENT AND SCHEDULE OF SPECIAL INSPECTIONS FOR ADDITIONAL INFORMATION.

DRAWINGS LEGEND

| GENERAL ANNOTATIONS | | ELEVATIONS | | CONCRETE | |
|---|--|--|--|--|--|
| SECTIONS SECTION/DETAIL NUMBER/LETTER = SECTION/DETAIL MARK SHEET NUMBER WHERE SECTION/DETAIL MARK IS DRAWN SECTION/DETAIL NUMBER/LETTER = SECTION/DETAIL MARK SHEET NUMBER WHERE SECTION/DETAIL MARK IS DRAWN SHEET NUMBER WHERE SECTION/DETAIL MARK IS CUT | | FOUNDATIONS = TOP OF FOOTING ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" = TOP OF PILE CAP / GRADE BEAM ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" = TOP OF EXISTING FOOTING ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" = TOP OF SLAB ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" | | WALLS = BEARING WALL EXTENDING ABOVE FLOOR / ROOF = BEARING WALL TERMINATING BELOW FLOOR / ROOF = EXTERIOR WALL TERMINATING BELOW FLOOR / ROOF = CONCRETE SHEARWALL = CONCRETE FIREWALL = WALL TYPE MARK | |
| COLUMNS = COLUMN GRID MARK = EXISTING COLUMN GRID MARK | | FLOORS AND ROOF = BOTTOM OF DECK ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" = TOP OF STEEL ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" = BOTTOM OF STEEL ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" = TOP OF MASONRY ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" = TRUSS BEARING ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0" | | MASONRY WALLS = BEARING WALL EXTENDING ABOVE FLOOR / ROOF = BEARING WALL TERMINATING BELOW FLOOR / ROOF = NON-BEARING WALL BEARING ON FLOOR BELOW = EXTERIOR WALL TERMINATING BELOW FLOOR / ROOF = CMU SHEARWALL = CMU FIREWALL = WALL TYPE MARK | |
| GENERAL PLANS = PLAN KEY NOTE MARK = FIELD VERIFY = DIRECTION OF SLOPE = CHANGE IN ELEVATION = CHANGE IN SLOPE | | STEEL CONNECTIONS = MOMENT CONNECTION = AXIAL CONNECTION = HORIZONTAL SLOTTED/BEARING ONLY CONNECTION = JOIST BOTTOM CHORD EXTENSION = BEAM BOTTOM FLANGE BRACE = BEAM SPLICE = KNUCKLED BEAM | | STEEL LINTELS = STEEL LINTEL MARK = STEEL LINTEL BEARING PLATE MARK | |
| SHALLOW FOUNDATIONS = PIPE CROSSING FOOTING = SLAB-ON-GRADE JOINT = WALL FOOTING MARK = COLUMN FOOTING MARK | | CONNECTIONS = JOIST SLIP CONNECTION = JOIST GIRDER SLIP CONNECTION = BEAM SLIP CONNECTION = JOIST GIRDER MOMENT MARK | | | |
| SHALLOW FOUNDATIONS = PILE CAP MARK = GRADE BEAM MARK = TEST PILE MARK | | MISC ANNOTATIONS = JOIST SLIP CONNECTION = JOIST GIRDER SLIP CONNECTION = BEAM SLIP CONNECTION = JOIST GIRDER MOMENT MARK | | | |
| FLOOR AND ROOF FRAMING = MECHANICAL UNIT SUPPORTED ABOVE FRAMING (WEIGHT IN POUNDS) - COORD W/ MECH DWGS = MECHANICAL UNIT SUPPORTED BELOW FRAMING (WEIGHT IN POUNDS) - COORD W/ MECH DWGS = FLOOR / ROOF OPENING = WARP LINE OF ROOF DECK = HORIZONTAL BRIDGING = CROSS BRIDGING = HIGH SIDE OF BRACE = BEAM BOTTOM FLANGE BRACE = LOW SIDE OF BRACE | | | | | |

ABBREVIATIONS

| | | | |
|-----------|----------------------------|--------|---|
| AFF | ABOVE FINISHED FLOOR | KCJ | KEYED CONSTRUCTION JOINT |
| ARCH | ARCHITECT | Ld | REBAR TENSION |
| BD | BAR DIAMETER | Ldc | DEVELOPMENT LENGTH |
| BF | BRACED FRAME | Ldh | REBAR COMPRESSION DEVELOPMENT LENGTH |
| BEJ | BUILDING EXPANSION JOINT | Ls | HOOKED REBAR TENSION DEVELOPMENT LENGTH |
| BLDG | BUILDING | Lsc | REBAR TENSION SPLICE LENGTH |
| BM | BEAM | L | REBAR COMPRESSION SPLICE LENGTH |
| BOD | BOTTOM OF DECK | LLH | LONG LEG HORIZONTAL |
| BOS | BOTTOM OF STEEL | LLV | LONG LEG VERTICAL |
| BOT, B | BOTTOM | LSH | LONG SIDE HORIZONTAL |
| BRG | BEARING | LSV | LONG SIDE VERTICAL |
| BTWN | BETWEEN | LWT | LIGHTWEIGHT |
| C TO C | CENTER TO CENTER | LWC | LIGHTWEIGHT CONCRETE |
| CFMF | COLD-FORMED METAL FRAMING | MAS | MASONRY |
| CJ | CONTROL JOINT | MATL | MATERIAL |
| CL | CENTERLINE | MAX | MAXIMUM |
| CLR | CLEAR | MECH | MECHANICAL |
| CMU | CONCRETE MASONRY UNIT | MF | MOMENT FRAME |
| COL | COLUMN | MFR | MANUFACTURER |
| CONC | CONCRETE | MID | MIDDLE |
| CONN | CONNECTION | MIN | MINIMUM |
| CONSTR | CONSTRUCTION | MOD | MODIFY |
| CONT | CONTINUOUS | MOS | MIDDEPTH OF SLAB |
| COORD | COORDINATE | NOM | NOMINAL |
| CTR | CENTER | NS | NEAR SIDE |
| CTRD | CENTERED | NTS | NOT TO SCALE |
| DBA | DEFORMED BAR ANCHOR | OC | ON CENTER |
| DBL | DOUBLE | OPH | OPPOSITE HAND |
| DC | DIAPHRAGM CHORD | OPNG | OPENING |
| DCJ | DOWELED CONSTRUCTION JOINT | PAP | POST-TENSIONED (CONC) FASTENER |
| DIA, Ø | DIAMETER | PAR | PARALLEL |
| DIST | DISTANCE | PC | PIECE |
| DJ | DOUBLE JOIST | PEMB | PRE-ENGINEERED METAL BUILDING |
| DWGS | DRAWINGS | PEN | PENETRATE, PENETRATION |
| EA | EACH | PERP | PERPENDICULAR |
| EF | EACH FACE | PL | PLATE |
| EJ | EXPANSION JOINT | PT | POST-TENSIONED (CONC) PRESSURE TREATED (WOOD) |
| EL | ELEVATION | R | RADIUS |
| ELEV | ELEVATOR | REF | REFERENCE, REFER TO |
| EMBED | EMBEDMENT | REIN | REINFORCE, REINFORCED, REINFORCING |
| EOD | EDGE OF DECK | REQD | REQUIRED |
| EOS | EDGE OF SLAB | REQMTS | REQUIREMENTS |
| EQ | EQUAL | SCHED | SCHEDULE |
| EW | EACH WAY | SF | STEPPED FOOTING |
| EX, EXIST | EXISTING | SGB | STEPPED GRADE BEAM |
| EXT | EXTERIOR | SIM | SIMILAR |
| FD | FLOOR DRAIN | SJ | SAWED JOINT |
| FDN | FOUNDATION | SL | SLOPE |
| FF EL | FINISHED FLOOR ELEVATION | SOG | SLAB-ON-GRADE |
| FIN | FINISH | SPF | SIDEPLATE FRAME |
| FIN FLR | FINISHED FLOOR | STD | STANDARD |
| FOB | FACE OF BUILDING | STIFF | STIFFENER |
| FOC | FACE OF CONCRETE | TBE | TRUSS BEARING ELEVATION |
| FOM | FACE OF MASONRY | T&B | TOP & BOTTOM |
| FOS | FACE OF SLAB/ STUD | T&G | TONGUE AND GROOVE |
| FRMG | FRAMING | THK | THICKNESS |
| FTG | FOOTING | TOC | TOP OF CONCRETE |
| FS | FAR SIDE | TOP | TOP OF FOOTING |
| FV, ± | FIELD VERIFY | TOM | TOP OF MASONRY |
| GALV | GALVANIZED | TOCP | TOP OF CONCRETE PEDESTAL |
| GC | GENERAL CONTRACTOR | TOS | TOP OF STEEL |
| GEN | GENERAL | TS | THICKENED SLAB |
| GR BM | GRADE BEAM | TS/STR | THICKENED SLAB AT STAIR |
| H | HIGH | TYP | TYPICAL |
| HK | HOOK | UON | UNLESS OTHERWISE NOTED |
| HORIZ | HORIZONTAL | VERT | VERTICAL |
| HSS | HOLLOW STRUCTURAL SECTION | W/ | WITH |
| HSA | HEADED STUD ANCHOR | WP | WORKING POINT |
| HST BM | HOIST BEAM | WSP | WOOD STRUCTURAL PANEL(S) |
| HT | HEIGHT | WWR | WELDED WIRE REINFORCING |
| INT | INTERIOR | | |
| JBE | JOIST BEARING ELEVATION | | |
| JT | JOINT | | |
| KCJ | KEYED CONSTRUCTION JOINT | | |

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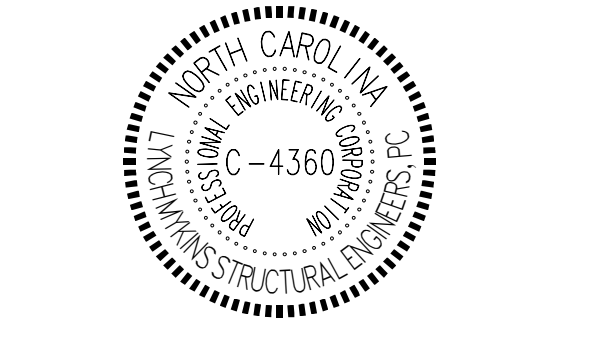
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LM Project Number: LM23.226



Mann Hall Renovation
STATE ID #22-2450-02A
NCSU PROJECT # 20220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2001 West Village Way, Suite 331
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NOT FOR CONSTRUCTION

ISSUE CHART

| | | |
|---|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 8/9/2024 |
| 1 | Schematic | 5/16/24 |

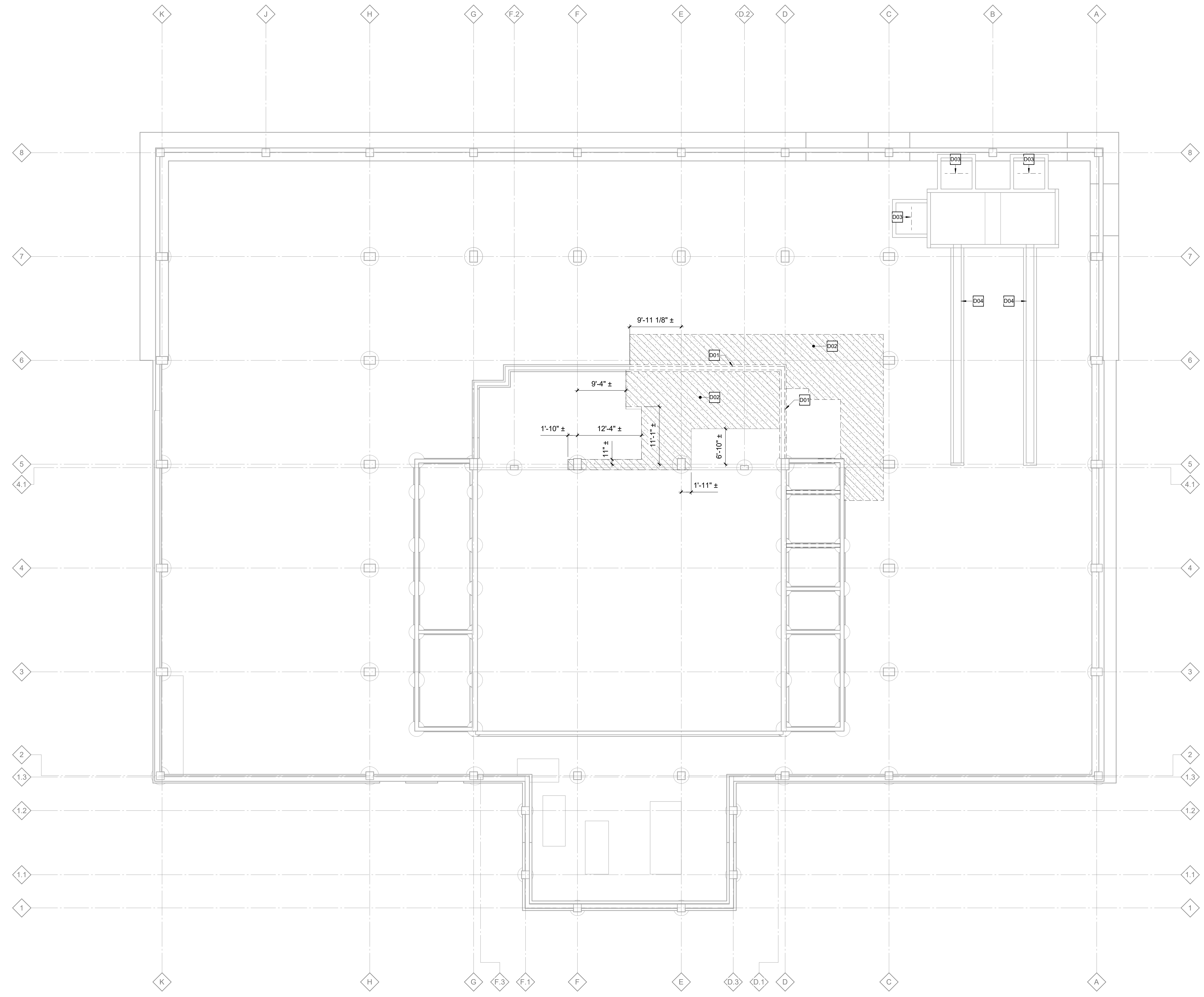
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 Drawn By: DO
 Designed By: JD
 Checked By: SF

GENERAL NOTES

SHEET NUMBER

S00-02

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FOUNDATION PLAN NOTES

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. TOP OF ALL FOOTINGS ARE INDICATED ON PLAN.
- D. NOT ALL UTILITY LOCATIONS ARE SHOWN ON PLAN. THE CONTRACTOR MUST COORDINATE THE LOCATIONS, SIZES, AND INVERTS OF UTILITIES. AT LOCATIONS WHERE UTILITIES PASS BELOW THE TOP OF FOOTING ELEVATION, STEP THE TOP OF FOOTING DOWN ON EACH SIDE PER THE "TYPICAL STEPPED FOOTING DETAIL" AND SLEEVE THE UTILITY THROUGH THE FOUNDATION WALL. THE CONTRACTOR MAY, AT HIS/HER OPTION, SLEEVE THE UTILITY THROUGH THE FOUNDATION PER THE "TYPICAL PIPE SLEEVE AT WALL FOOTING DETAILS."
- E. UNLESS OTHERWISE INDICATED, EXTEND WALL FOOTINGS A MINIMUM OF 6 INCHES BEYOND ENDS OF WALLS.
- F. SITE WALLS ARE NOT SHOWN ON PLAN. CONTRACTOR MUST COORDINATE CIVIL AND LANDSCAPE DRAWINGS FOR SITE WALL INFORMATION.
- G. DIMENSIONS SHOWN ON FOUNDATION PLAN ARE TO COLUMN GRIDLINES AND OUTSIDE FACE OF FOUNDATION WALLS, UNLESS OTHERWISE NOTED.

SLAB/DECK PLAN NOTES

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LIMITS OF SLAB DEPRESSIONS AND OMITTED SLABS.
- D. FLOOR SINKS AND DRAINS ARE NOT SHOWN ON PLAN. REFERENCE PME DRAWINGS FOR LOCATIONS.
- E. REFERENCE CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE SLABS AND PAVING.
- F. SLAB-ON-GRADE JOINTS MUST BE SAWED JOINTS OR KEYED CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED. CONTRACTOR MUST COORDINATE ALL SLAB JOINTS WITH JOINTS IN BONDED FLOOR FINISHES. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR FINISH JOINT LOCATIONS.
- G. PLACE (1) #4 x 3'-0" IN MIDDEPTH OF SLAB AT RE-ENTRANT CORNERS WHERE A SLAB JOINT DOES NOT OCCUR.
- H. EXISTING SLAB-ON-GRADE IS 4" CONCRETE, UNLESS OTHERWISE NOTED.

KEY NOTES

- D01 EXISTING WALL AND WALL FOOTING TO BE DEMOLISHED.
- D02 EXISTING SLAB TO BE DEMOLISHED.
- D03 EXISTING STEEL BEAM TO BE DEMOLISHED.
- D04 EXISTING COVER PLATE OVER TRENCH TO BE DEMOLISHED.

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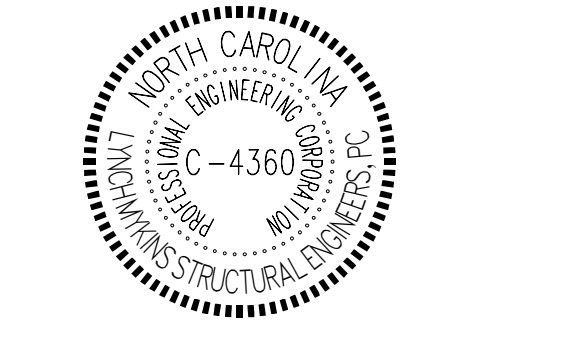
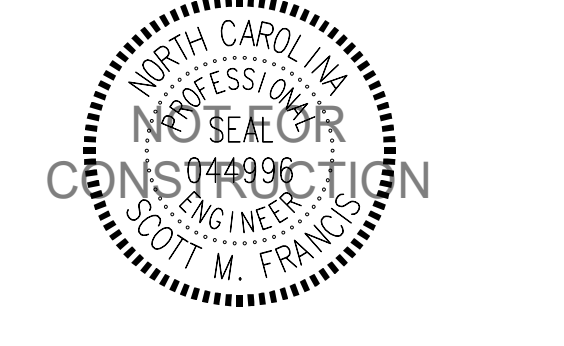
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- CONTRACTOR**
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LM Project Number: LM23.226



Mann Hall Renovation

STATE ID #22-2450-02A
NCSU PROJECT # 202220021



North Carolina State University

Facilities Division Design & Construction
Administrative Services Building III
2901 West Village Way, Suite 311
Raleigh, NC 27695

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ISSUE CHART

| Issue No. | Issue Description | Date |
|-----------|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 09/20/24 |
| 0 | Issue | 04/24/24 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

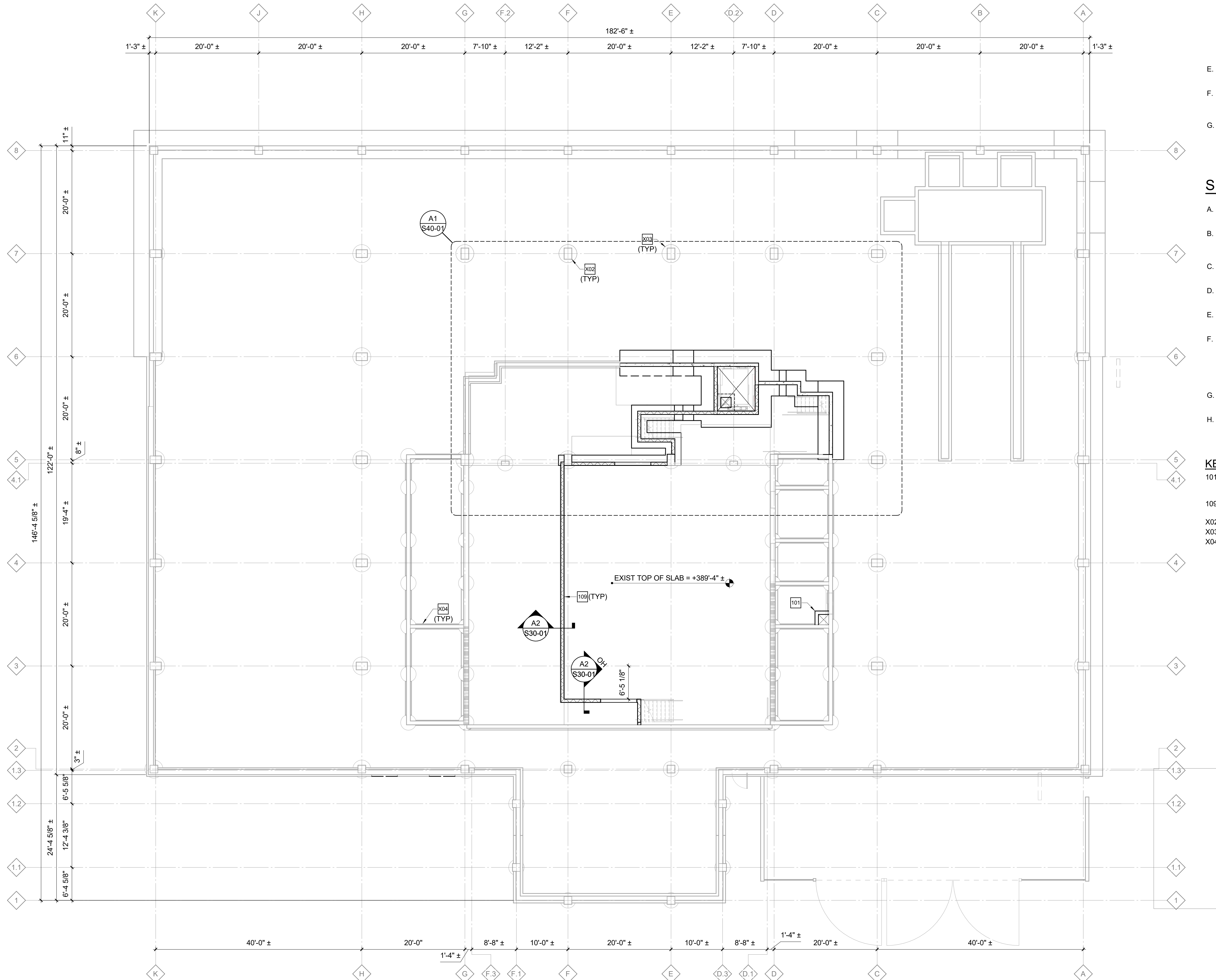
TITLE
FOUNDATION AND
SLAB-ON-GRADE
DEMOLITION PLAN -
FLOOR 00
SHEET NUMBER

S11-01

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A1 FOUNDATION AND SLAB-ON-GRADE DEMOLITION PLAN - FLOOR 00
1/8" = 1'-0"

| WALL FOOTING SCHEDULE | | | | | |
|-----------------------|-------|-------|------------------|-----------------------|---------|
| MARK | SIZE | | REINFORCING | | REMARKS |
| | WIDTH | DEPTH | CONTINUOUS | TRANSVERSE | |
| WF3 | 3'-0" | 1'-0" | (3) #4 BOT | #4 AT 48" OC BOT | - |
| WF5 | 5'-0" | 2'-0" | (6) #6 TOP & BOT | #6 AT 8" OC TOP & BOT | - |



FOUNDATION PLAN NOTES

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. TOP OF ALL FOOTINGS ARE INDICATED ON PLAN.
- D. NOT ALL UTILITY LOCATIONS ARE SHOWN ON PLAN. THE CONTRACTOR MUST COORDINATE THE LOCATIONS, SIZES, AND INVERTS OF UTILITIES. AT LOCATIONS WHERE UTILITIES PASS BELOW THE TOP OF FOOTING ELEVATION, STEP THE TOP OF FOOTING DOWN ON EACH SIDE PER THE "TYPICAL STEPPED FOOTING DETAIL" AND SLEEVE THE UTILITY THROUGH THE FOUNDATION WALL. THE CONTRACTOR MAY, AT HIS/HER OPTION, SLEEVE THE UTILITY THROUGH THE FOUNDATION PER THE "TYPICAL PIPE SLEEVE AT WALL FOOTING DETAILS."
- E. UNLESS OTHERWISE INDICATED, EXTEND WALL FOOTINGS A MINIMUM OF 6 INCHES BEYOND ENDS OF WALLS.
- F. SITE WALLS ARE NOT SHOWN ON PLAN. CONTRACTOR MUST COORDINATE CIVIL AND LANDSCAPE DRAWINGS FOR SITE WALL INFORMATION.
- G. DIMENSIONS SHOWN ON FOUNDATION PLAN ARE TO COLUMN GRIDLINES AND OUTSIDE FACE OF FOUNDATION WALLS, UNLESS OTHERWISE NOTED.

SLAB/DECK PLAN NOTES

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LIMITS OF SLAB DEPRESSIONS AND OMITTED SLABS.
- D. FLOOR SINKS AND DRAINS ARE NOT SHOWN ON PLAN. REFERENCE PME DRAWINGS FOR LOCATIONS.
- E. REFERENCE CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE SLABS AND PAVING.
- F. SLAB-ON-GRADE JOINTS MUST BE SAWED JOINTS OR KEYED CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED. CONTRACTOR MUST COORDINATE ALL SLAB JOINTS WITH JOINTS IN BONDED FLOOR FINISHES. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR FINISH JOINT LOCATIONS.
- G. PLACE (1) #4 x 3'-0" IN MIDDLE OF SLAB AT RE-ENTRANT CORNERS WHERE A SLAB JOINT DOES NOT OCCUR.
- H. EXISTING SLAB-ON-GRADE IS 4" CONCRETE, UNLESS OTHERWISE NOTED.

KEY NOTES

- 101 2'-0" SQUARE SUMP PIT FOR ELEVATOR. REFERENCE TYPICAL DETAIL. COORDINATE LOCATION WITH PLUMBING DRAWINGS AND ELEVATOR MANUFACTURER.
- 109 8" CMU WALL REINFORCED WITH #5 VERTICAL AT 40" OC, CENTERED IN WALL.
- X02 EXISTING CONCRETE COLUMN.
- X03 EXISTING CONCRETE CAISSON.
- X04 EXISTING CONCRETE GRADE BEAM.

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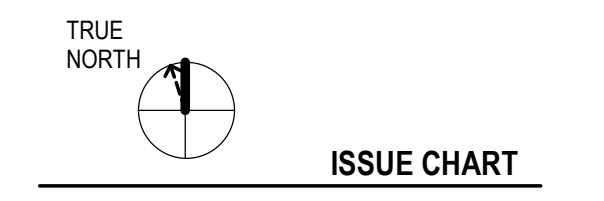


Mann Hall Renovation
STATE ID #22-2450-02A
NCSU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2901 Wool Village Way, Suite 311
Raleigh, NC 27695

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ISSUE CHART

| NO. | DESCRIPTION | DATE |
|-----|-----------------------------------|------------|
| 1 | Issue for Bid - Early Procurement | 01/17/2025 |
| 2 | Design Development | 09/20/24 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

TITLE
FOUNDATION AND
SLAB-ON-GRADE
PLAN - FLOOR 00

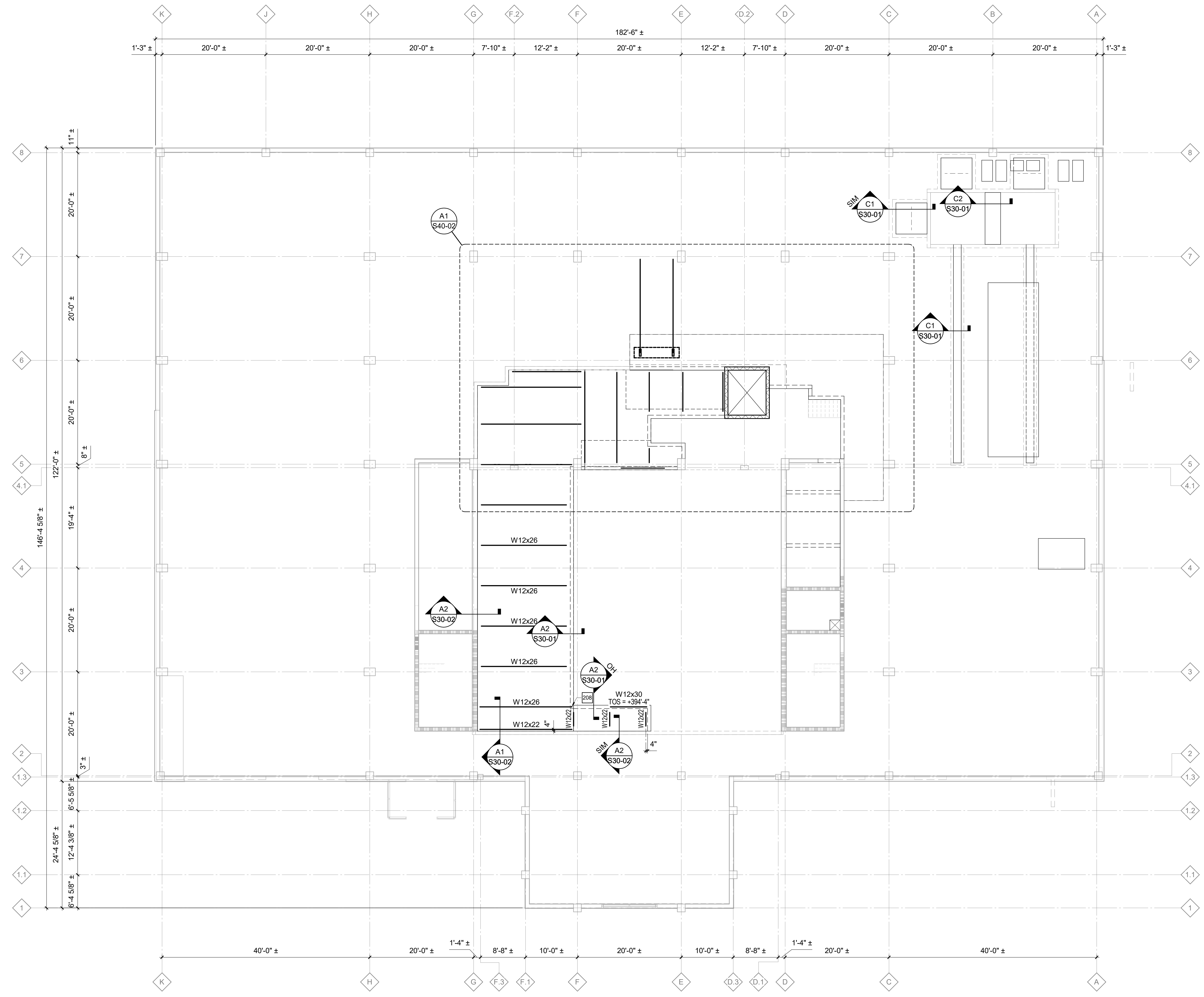
SHEET NUMBER

S11-02

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A1 FOUNDATION AND SLAB-ON-GRADE PLAN - FLOOR 00
1/8" = 1'-0"

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A1 FRAMING PLAN - FLOOR 01
1/8" = 1'-0"

FRAMING PLAN NOTES

- A. REFERENCE FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- B. TOP OF FINISHED FLOOR ELEVATION MUST BE AS NOTED ON SLAB PLANS.
- C. STEEL FLOOR FRAMING MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 8'-0" ON-CENTER).
- D. STEEL ROOF FRAMING SUPPORTING 1 1/2" STEEL ROOF DECK MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 5'-0" ON-CENTER).
- E. CONCRETE ON ELEVATED METAL DECKS MUST BE POURED TO THE THICKNESS INDICATED.
- F. AT STEEL ROOF FRAMING, BOTTOM OF DECK ELEVATIONS ARE SHOWN ON PLAN. INTERMEDIATE ELEVATIONS MUST BE STRAIGHT LINES BETWEEN GIVEN ELEVATIONS. INTERPOLATE AS REQUIRED FOR INTERMEDIATE BEARING ELEVATIONS, UNLESS OTHERWISE NOTED.
- G. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.
- H. EXTENTS OF SLAB/JOIST DEMO AND NEW MEMBER FRAMING LENGTHS ARE APPROXIMATE. EXISTING FRAMING CONDITIONS AND REQUIRED MEASUREMENTS MUST BE FIELD VERIFIED PRIOR TO DEMOLITION AND FABRICATION. DESIGN INTENT IS FOR NEW OPENING AND SLAB CONSTRUCTION TO BE LOCATED BETWEEN EXISTING CONCRETE JOISTS, ADJUST DIMENSIONS AND LOCATION OF SLAB DEMO AS NEEDED. NOTIFY ENGINEER IF AS-BUILT CONDITIONS ARE INCONSISTENT WITH INFORMATION INDICATED ON PLAN.
- I. DIMENSIONS TO CHANNELS ARE FROM FLAT FACE OF CHANNEL.

KEY NOTES

- 208 EXTEND LONG W12 BEAM TO BEAR ON CMU WALL. FRAME SHORT W12 BEAM INTO LONG W12 BEAM.

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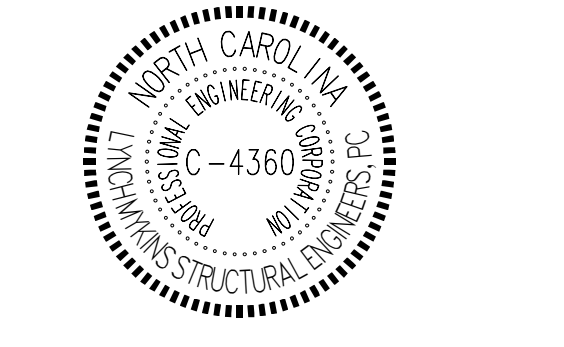
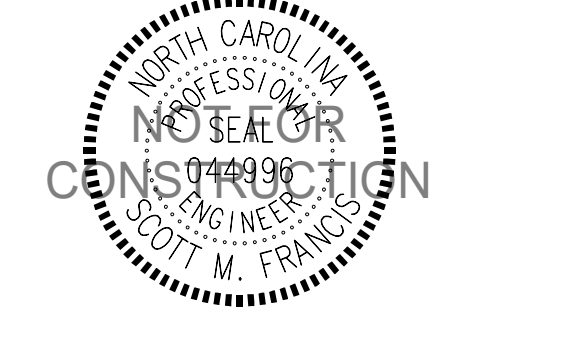
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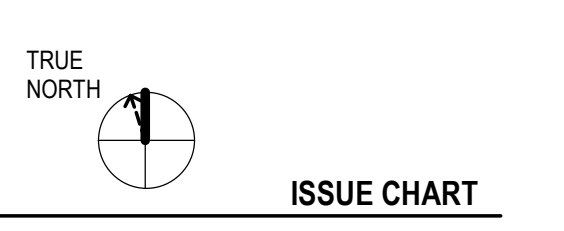


Mann Hall Renovation
STATE ID #22-2450-02A
NCSU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2901 Wool Village Way, Suite 331
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ISSUE CHART

| Issue No. | Issue Description | Date |
|-----------|-----------------------------------|------------|
| 1 | Issue for Bid - Early Procurement | 01/17/2025 |
| 2 | Design Development | 09/20/24 |
| 3 | Issue | DATE |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

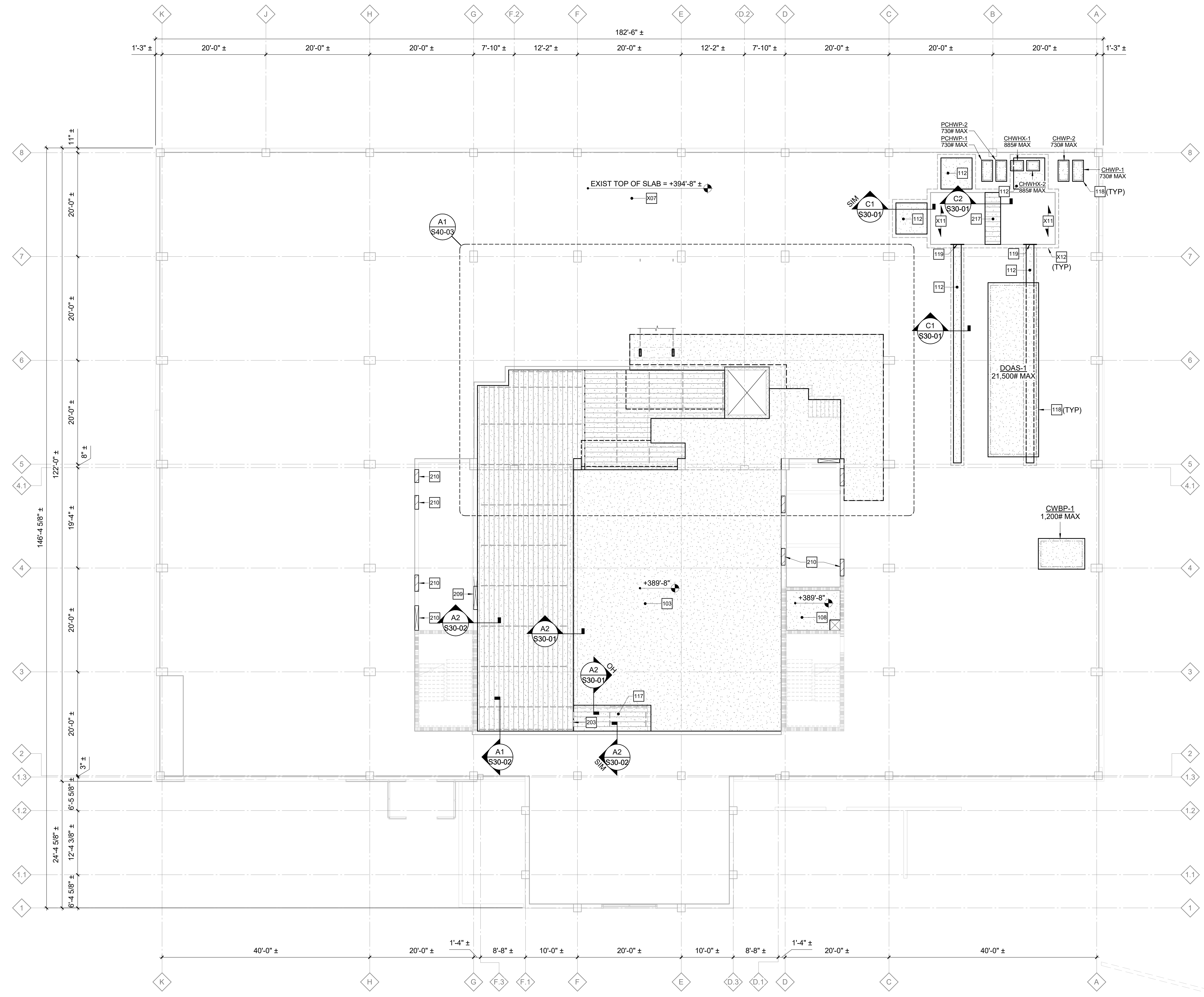
FRAMING PLAN - FLOOR 01

SHEET NUMBER

S11-03

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A1 SLAB PLAN - FLOOR 01
1/8" = 1'-0"

SLAB/DECK PLAN NOTES

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LIMITS OF SLAB DEPRESSIONS AND OMITTED SLABS.
- D. FLOOR SINKS AND DRAINS ARE NOT SHOWN ON PLAN. REFERENCE PME DRAWINGS FOR LOCATIONS.
- E. REFERENCE CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE SLABS AND PAVING.
- F. SLAB-ON-GRADE JOINTS MUST BE SAWS JOINTS OR KEYED CONSTRUCTION JOINTS. UNLESS OTHERWISE NOTED, CONTRACTOR MUST COORDINATE ALL SLAB JOINTS WITH JOINTS IN BONDED FLOOR FINISHES. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR FINISH JOINT LOCATIONS.
- G. PLACE (1) #4 x 3'-0" IN MIDDEPTH OF SLAB AT RE-ENTRANT CORNERS WHERE A SLAB JOINT DOES NOT OCCUR.
- H. EXISTING SLAB-ON-GRADE IS 4" CONCRETE, UNLESS OTHERWISE NOTED.

KEY NOTES

- 103 4" TOPPING SLAB OVER EXISTING SLAB. REINFORCE SLAB WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCING PLACED 1 1/2" CLEAR BELOW TOP OF SLAB. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT. APPLY SIKKA BONDBREAKER ID OR APPROVED EQUIVALENT BETWEEN EXISTING SLAB AND TOPPING SLAB.
- 108 REMOVE EXISTING CONCRETE SLAB AND REPLACE WITH 12" CONCRETE SLAB-ON-GRADE. REINFORCE SLAB WITH #4 AT 12" ON-CENTER EACH WAY, TOP AND BOTTOM. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT.
- 112 INFILL EXISTING PIT WITH COMPACTED #57 STONE. PLACE NEW 4" CONCRETE SLAB-ON-GRADE OVER VAPOR RETARDER AND COMPACTED #57 STONE. REINFORCE SLAB WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCING PLACED 1 1/2" CLEAR BELOW TOP OF SLAB. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT. DOWEL TO ADJACENT EXISTING CONCRETE SLAB. REFER TO TYPICAL SLAB DOWEL DETAIL.
- 117 4" TOPPING SLAB EXTENDS INTO STORAGE AREA BELOW ELEVATED SLAB. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT EXTENTS.
- 118 CONCRETE HOUSEKEEPING PAD AT MECHANICAL EQUIPMENT. REFER TO HOUSEKEEPING PAD AT EXISTING SLAB ON GRADE DETAILS. COORDINATE EXACT SIZE AND LOCATION WITH MECHANICAL DRAWINGS.
- 119 GALVANIZED CLOSURE PL 1/2x24 FOR FULL DEPTH OF OPENING BETWEEN EXISTING PIT AND TRENCH. FASTEN TO EXISTING CONCRETE WALLS WITH 5/8"ACEE SCREW ANCHORS WITH 5" EMBEDMENT AT 12" ON-CENTER EACH SIDE OF OPENING (21" GAGE).
- 203 CHANGE DECK DIRECTION AT BEAM CENTER LINE.
- 209 NEW OPENING IN EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE. REFER TO TYPICAL STEEL LINTEL BEARING ON EXISTING MASONRY DETAILS.
- 210 INFILL EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE WITH BRICK TO MATCH EXISTING.
- 217 2 1/2" NORMAL WEIGHT CONCRETE SLAB ON 1 1/2" FORM DECK. (4" TOTAL) REINFORCED WITH 6x6-W2.9xW2.9 WELDED WIRE REINFORCING LOCATED 1" CLEAR BELOW TOP OF SLAB.
- X07 EXISTING 4" CONCRETE SLAB-ON-GRADE.
- X11 EXISTING 6" CONCRETE SLAB. SPAN DIRECTION OF PRIMARY REINFORCEMENT INDICATED ON PLAN.
- X12 EXISTING 8" CONCRETE WALL.

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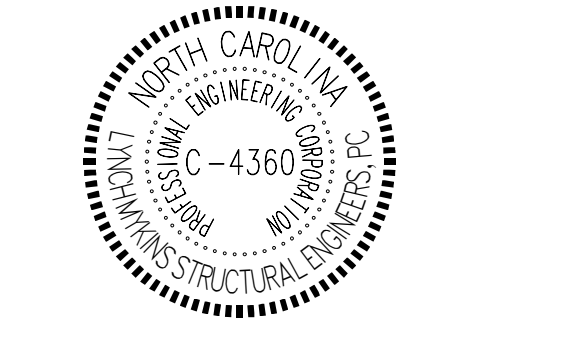
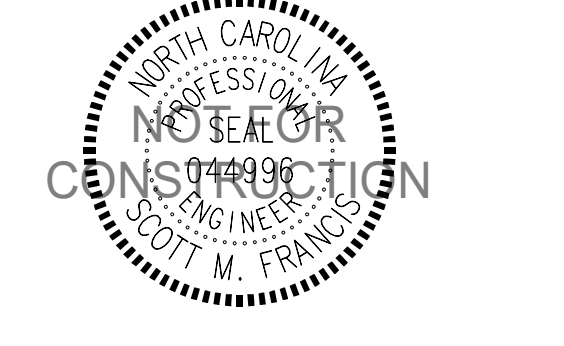
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LM Project Number: LM23.226



Mann Hall Renovation

STATE ID #22-2450-02A
NCSU PROJECT # 20220021



North Carolina State University

Facilities Division Design & Construction
Administrative Services Building III
2901 West Village Way, Suite 311
Raleigh, NC 27695

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ISSUE CHART

| Issue No. | Issue Description | Issue Date | Issue Status |
|-----------|-----------------------------------|------------|--------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 | ISSUE |
| 1 | Design Development | 09/20/24 | ISSUE |

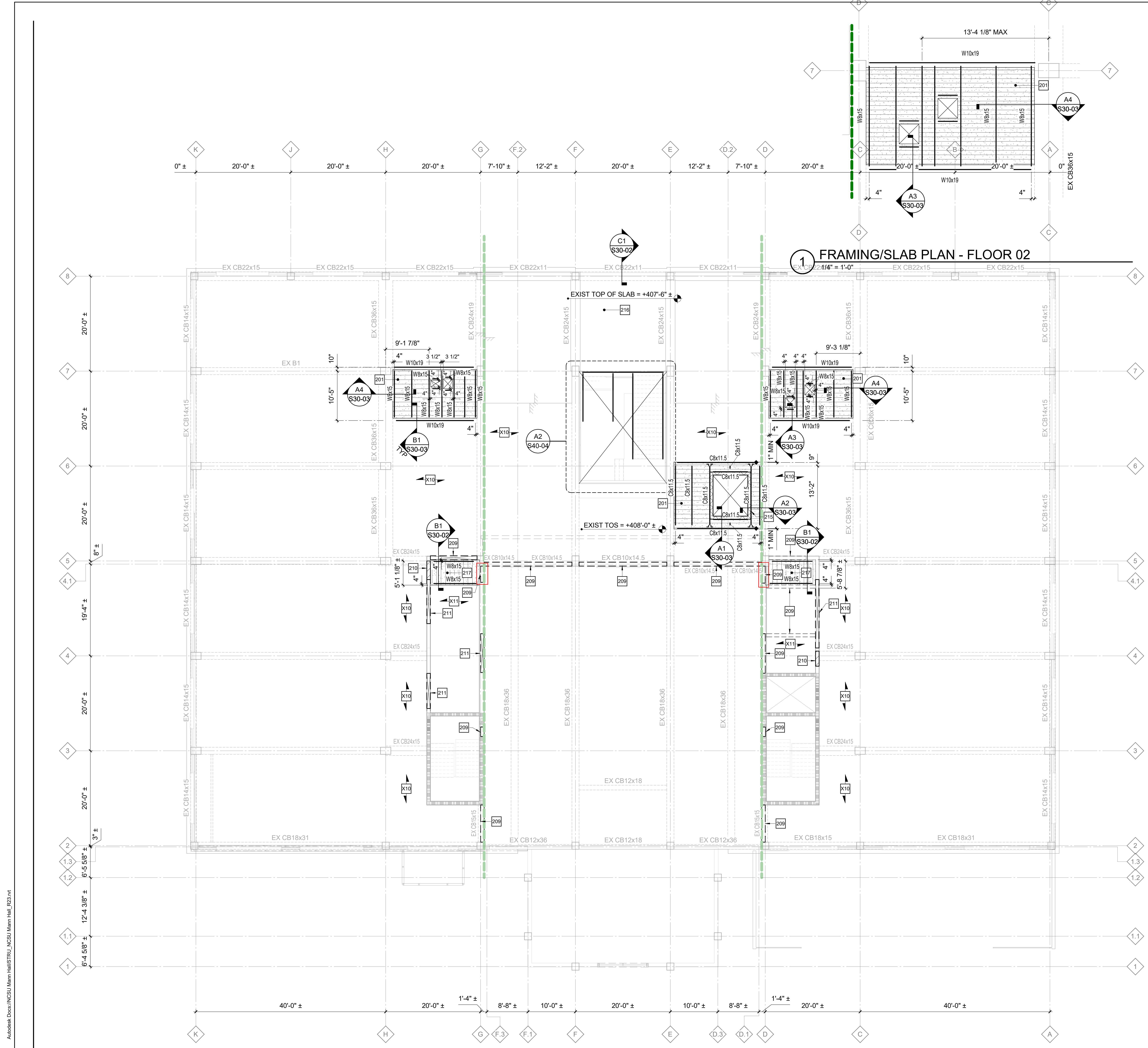
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SLAB PLAN - FLOOR 01

SHEET NUMBER

S11-04

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FRAMING PLAN NOTES

- A. REFERENCE FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- B. TOP OF FINISHED FLOOR ELEVATION MUST BE AS NOTED ON SLAB PLANS.
- C. STEEL FLOOR FRAMING MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 8'-0" ON-CENTER).
- D. STEEL ROOF FRAMING SUPPORTING 1 1/2" STEEL ROOF DECK MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 5'-0" ON-CENTER).
- E. CONCRETE ON ELEVATED METAL DECKS MUST BE POURED TO THE THICKNESS INDICATED.
- F. AT STEEL ROOF FRAMING, BOTTOM OF DECK ELEVATIONS ARE SHOWN ON PLAN. INTERMEDIATE ELEVATIONS MUST BE STRAIGHT LINES BETWEEN GIVEN ELEVATIONS. INTERPOLATE AS REQUIRED FOR INTERMEDIATE BEARING ELEVATIONS, UNLESS OTHERWISE NOTED.
- G. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.
- H. EXTENTS OF SLAB/JOIST DEMO AND NEW MEMBER FRAMING LENGTHS ARE APPROXIMATE. EXISTING FRAMING CONDITIONS AND REQUIRED MEASUREMENTS MUST BE FIELD VERIFIED PRIOR TO DEMOLITION AND FABRICATION. DESIGN INTENT IS FOR NEW OPENING AND SLAB CONSTRUCTION TO BE LOCATED BETWEEN EXISTING CONCRETE JOISTS, ADJUST DIMENSIONS AND LOCATION OF SLAB DEMO AS NEEDED. NOTIFY ENGINEER IF AS-BUILT CONDITIONS ARE INCONSISTENT WITH INFORMATION INDICATED ON PLAN.
- I. DIMENSIONS TO CHANNELS ARE FROM FLAT FACE OF CHANNEL.

KEY NOTES

- 201. REMOVE EXISTING CONCRETE SLAB/JOISTS AND REPLACE WITH 2 1/2" NORMAL WEIGHT CONCRETE SLAB ON 1 1/2" FORM FLOOR DECK, (4" TOTAL) REINFORCED WITH 6x6-W2.9 WELDED WIRE REINFORCING LOCATED 1" CLEAR BELOW TOP OF SLAB.
- 209. NEW OPENING IN EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE. REFER TO TYPICAL STEEL LINTEL BEARING ON EXISTING MASONRY DETAILS.
- 210. INFILL EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE WITH BRICK TO MATCH EXISTING.
- 211. WIDEN OPENING IN EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE AND REMOVE EXISTING STEEL LINTEL. REFER TO TYPICAL STEEL LINTEL ON EXISTING MASONRY DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATION OF LINTELS.
- 215. LOCATE BEAM DIRECTLY BELOW NEW STAIR STRINGERS/POSTS. REFER TO THE ARCHITECTURAL DRAWINGS FOR STRINGER/POST BEARING LOCATION. PROVIDE BEARING CONNECTION ONLY.
- 216. EXISTING NON-STRUCTURAL SLAB AND RIGID INSULATION TO BE REMOVED AND REPLACED IN KIND.
- 217. 2 1/2" NORMAL WEIGHT CONCRETE SLAB ON 1 1/2" FORM DECK, (4" TOTAL) REINFORCED WITH 6x6-W2.9 WELDED WIRE REINFORCING LOCATED 1" CLEAR BELOW TOP OF SLAB.
- X10. EXISTING 3" CONCRETE SLAB AND 15" CONCRETE PAN JOISTS. SPAN DIRECTION OF PAN JOISTS INDICATED ON PLAN. FIELD VERIFY JOIST SPACING AND DEPTH PRIOR TO DEMO.
- X11. EXISTING 6" CONCRETE SLAB. SPAN DIRECTION OF PRIMARY REINFORCEMENT INDICATED ON PLAN.

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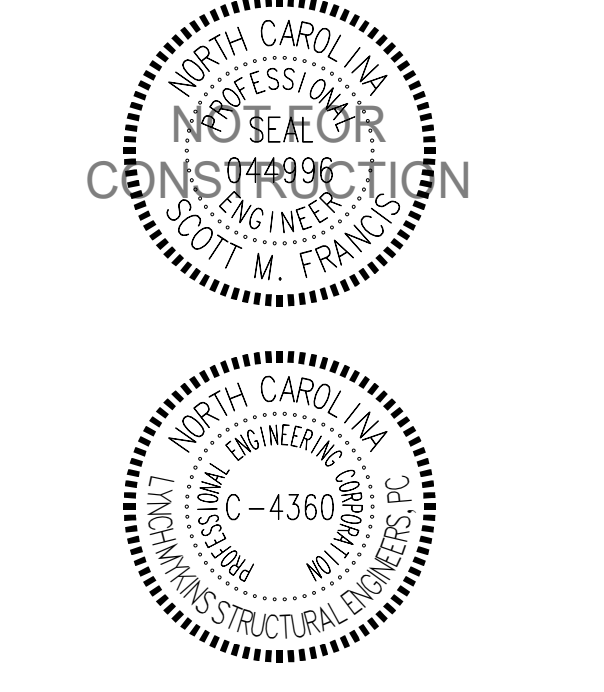
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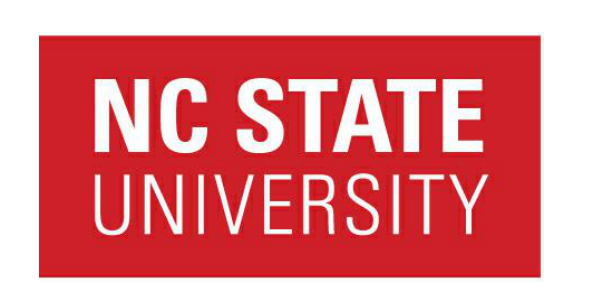
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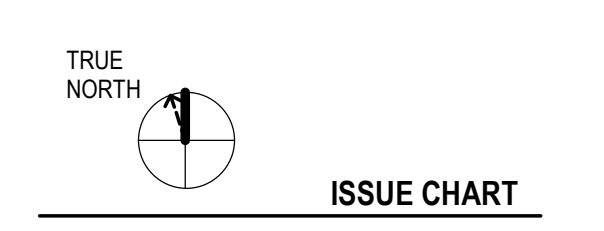


Mann Hall Renovation
STATE ID #22-2450-02A
NCSU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2021 West Village Way, Suite 331
Raleigh, NC 27695

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ISSUE CHART

| | | |
|---|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 8/9/2024 |
| 0 | Schematic | 8/1/2024 |

Job Number: 820937.001
 Drawn By: DO
 Designed By: JD
 Checked By: SF

FRAMING/SLAB PLAN - FLOOR 02

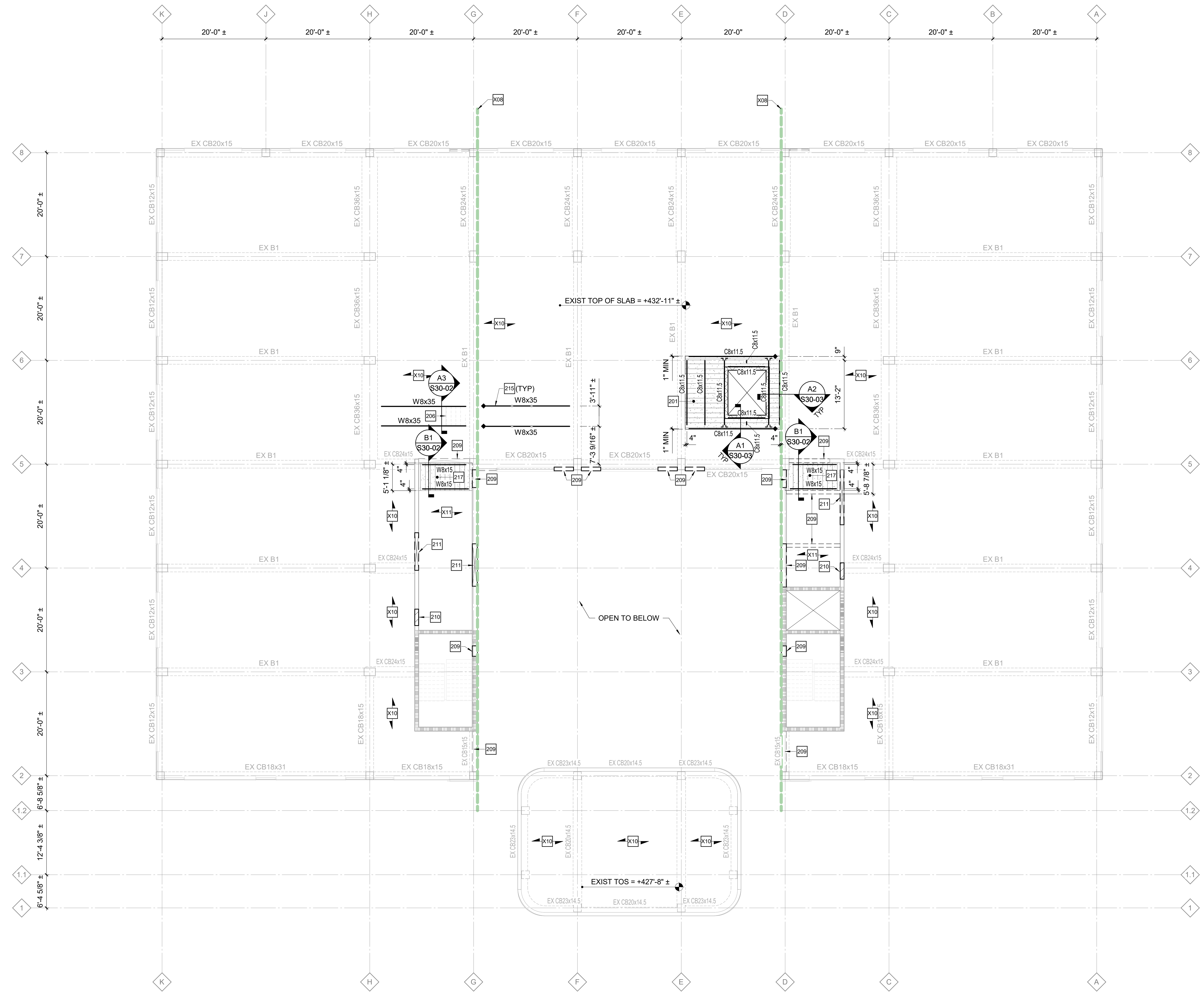
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A1 FRAMING/SLAB PLAN - FLOOR 02
1/8" = 1'-0"

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A1 FRAMING/SLAB PLAN - FLOOR 04
1/8" = 1'-0"

FRAMING PLAN NOTES

- A. REFERENCE FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- B. TOP OF FINISHED FLOOR ELEVATION MUST BE AS NOTED ON SLAB PLANS.
- C. STEEL FLOOR FRAMING MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 8'-0" ON-CENTER).
- D. STEEL ROOF FRAMING SUPPORTING 1 1/2" STEEL ROOF DECK MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 5'-0" ON-CENTER).
- E. CONCRETE ON ELEVATED METAL DECKS MUST BE POURED TO THE THICKNESS INDICATED.
- F. AT STEEL ROOF FRAMING, BOTTOM OF DECK ELEVATIONS ARE SHOWN ON PLAN. INTERMEDIATE ELEVATIONS MUST BE STRAIGHT LINES BETWEEN GIVEN ELEVATIONS. INTERPOLATE AS REQUIRED FOR INTERMEDIATE BEARING ELEVATIONS, UNLESS OTHERWISE NOTED.
- G. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.
- H. EXTENTS OF SLAB/JOIST DEMO AND NEW MEMBER FRAMING LENGTHS ARE APPROXIMATE. EXISTING FRAMING CONDITIONS AND REQUIRED MEASUREMENTS MUST BE FIELD VERIFIED PRIOR TO DEMOLITION AND FABRICATION. DESIGN INTENT IS FOR NEW OPENING AND SLAB CONSTRUCTION TO BE LOCATED BETWEEN EXISTING CONCRETE JOISTS, ADJUST DIMENSIONS AND LOCATION OF SLAB DEMO AS NEEDED. NOTIFY ENGINEER IF AS-BUILT CONDITIONS ARE INCONSISTENT WITH INFORMATION INDICATED ON PLAN.
- I. DIMENSIONS TO CHANNELS ARE FROM FLAT FACE OF CHANNEL.

KEY NOTES

- 201 REMOVE EXISTING CONCRETE SLAB/JOISTS AND REPLACE WITH 2 1/2" NORMAL WEIGHT CONCRETE SLAB ON 1 1/2" FORM FLOOR DECK, (4" TOTAL) REINFORCED WITH 6x6-W2.9xW2.9 WELDED WIRE REINFORCING LOCATED 1" CLEAR BELOW TOP OF SLAB.
- 206 PREFABRICATED METAL STAIR BY SUPPLIER.
- 209 NEW OPENING IN EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE. REFER TO TYPICAL STEEL LINTEL BEARING ON EXISTING MASONRY DETAILS.
- 210 INFILL EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE WITH BRICK TO MATCH EXISTING.
- 211 WIDEN OPENING IN EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE AND REMOVE EXISTING STEEL LINTEL. REFER TO TYPICAL STEEL LINTEL ON EXISTING MASONRY DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATION OF LINTELS.
- 215 LOCATE BEAM DIRECTLY BELOW NEW STAIR STRINGERS/POSTS. REFER TO THE ARCHITECTURAL DRAWINGS FOR STRINGER/POST BEARING LOCATION. PROVIDE BEARING CONNECTION ONLY.
- 217 2 1/2" NORMAL WEIGHT CONCRETE SLAB ON 1 1/2" FORM DECK, (4" TOTAL) REINFORCED WITH 6x6-W2.9xW2.9 WELDED WIRE REINFORCING LOCATED 1" CLEAR BELOW TOP OF SLAB.
- X08 EXISTING 1" +- BUILDING EXPANSION JOINT.
- X10 EXISTING 3" CONCRETE SLAB AND 15' CONCRETE PAN JOISTS. SPAN DIRECTION OF PAN JOISTS INDICATED ON PLAN. FIELD VERIFY JOIST SPACING AND DEPTH PRIOR TO DEMO.
- X11 EXISTING 6" CONCRETE SLAB. SPAN DIRECTION OF PRIMARY REINFORCEMENT INDICATED ON PLAN.

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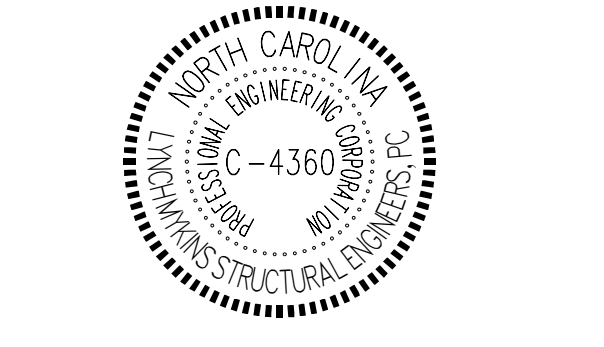
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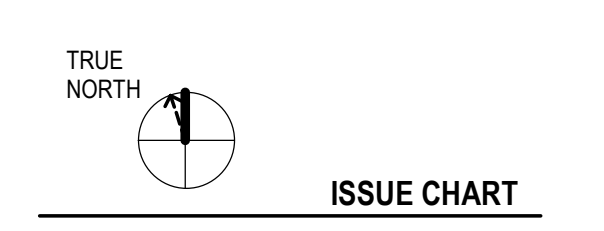


Mann Hall Renovation
STATE ID #22-2450-02A
NCSU PROJECT # 20220021



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| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 09/20/24 |
| 1 | Issue | 04/15/24 |

Job Number: 820937.001
 Drawn By: DO
 Designed By: JD
 Checked By: SF

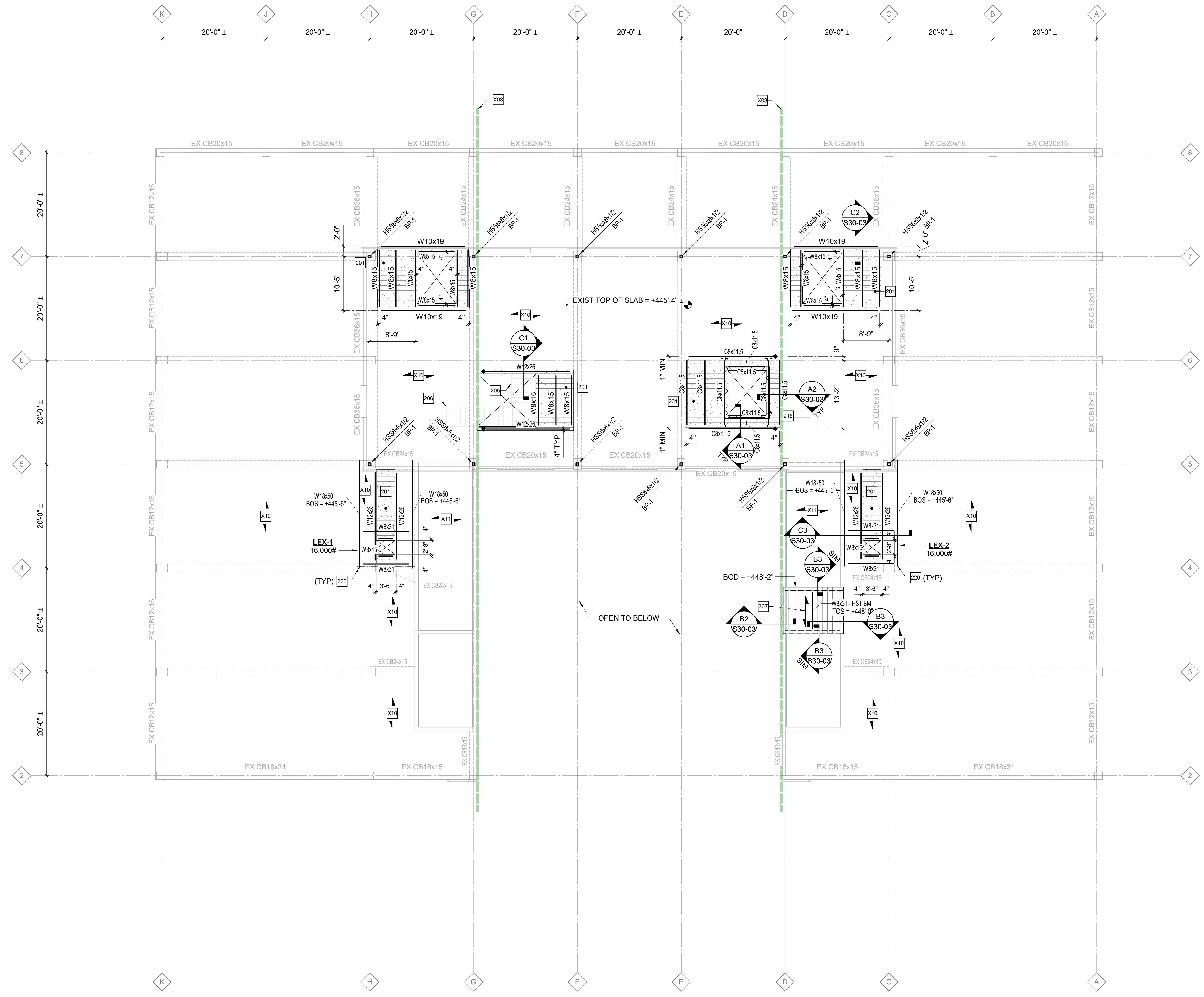
FRAMING/SLAB PLAN - FLOOR 04

SHEET NUMBER

S14-01

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A1 FRAMING/SLAB PLAN - MAIN ROOF
1/8" = 1'-0"

FRAMING PLAN NOTES

- A. REFERENCE FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- B. TOP OF FINISHED FLOOR ELEVATION MUST BE AS NOTED ON SLAB PLANS.
- C. STEEL FLOOR FRAMING MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 8'-0" ON-CENTER).
- D. STEEL ROOF FRAMING SUPPORTING 1 1/2" STEEL ROOF DECK MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 5'-0" ON-CENTER).
- E. CONCRETE ON ELEVATED METAL DECKS MUST BE POURED TO THE THICKNESS INDICATED.
- F. AT STEEL ROOF FRAMING, BOTTOM OF DECK ELEVATIONS ARE SHOWN ON PLAN. INTERMEDIATE ELEVATIONS MUST BE STRAIGHT LINES BETWEEN GIVEN ELEVATIONS. INTERPOLATE AS REQUIRED FOR INTERMEDIATE BEARING ELEVATIONS, UNLESS OTHERWISE NOTED.
- G. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.
- H. EXTENTS OF SLAB/JOIST DEMO AND NEW MEMBER FRAMING LENGTHS ARE APPROXIMATE. EXISTING FRAMING CONDITIONS AND REQUIRED MEASUREMENTS MUST BE FIELD VERIFIED PRIOR TO DEMOLITION AND FABRICATION. DESIGN INTENT IS FOR NEW OPENING AND SLAB CONSTRUCTION TO BE LOCATED BETWEEN EXISTING CONCRETE JOISTS, ADJUST DIMENSIONS AND LOCATION OF SLAB DEMO AS NEEDED. NOTIFY ENGINEER IF AS-BUILT CONDITIONS ARE INCONSISTENT WITH INFORMATION INDICATED ON PLAN.
- I. DIMENSIONS TO CHANNELS ARE FROM FLAT FACE OF CHANNEL.

KEY NOTES

- 201 REMOVE EXISTING CONCRETE SLAB/JOISTS AND REPLACE WITH 2 1/2" NORMAL WEIGHT CONCRETE SLAB ON 1 1/2" FORM FLOOR DECK, (4" TOTAL) REINFORCED WITH 6x6-W2.9xW2.9 WELDED WIRE REINFORCING LOCATED 1" CLEAR BELOW TOP OF SLAB.
- 206 PREFABRICATED METAL STAIR BY SUPPLIER. LOCATE BEAM DIRECTLY BELOW NEW STAIR STRINGERS/POSTS. REFER TO THE ARCHITECTURAL DRAWINGS FOR STRINGER/POST BEARING LOCATION. PROVIDE BEARING CONNECTION ONLY.
- 215 BEARING PL2x12x12 AT EACH END OF EXHAUST FAN SUPPORT BEAM.
- 220 3" x 20 GAGE ROOF DECK. REFERENCE STEEL DECK NOTES. EXISTING 1" +/- BUILDING EXPANSION JOINT.
- 307 EXISTING 3" CONCRETE SLAB AND 15" CONCRETE PAN JOISTS. SPAN DIRECTION OF PAN JOISTS INDICATED ON PLAN. FIELD VERIFY JOIST SPACING AND DEPTH PRIOR TO DEMO.
- X08 EXISTING 6" CONCRETE SLAB. SPAN DIRECTION OF PRIMARY REINFORCEMENT INDICATED ON PLAN.
- X10
- X11

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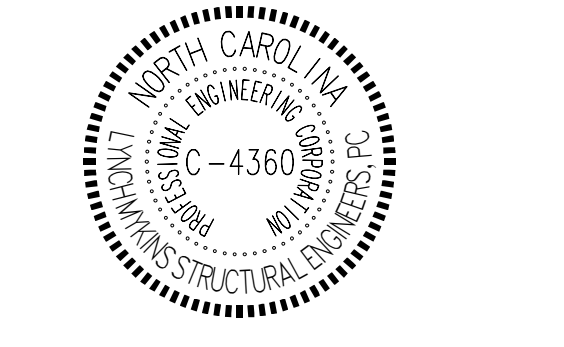
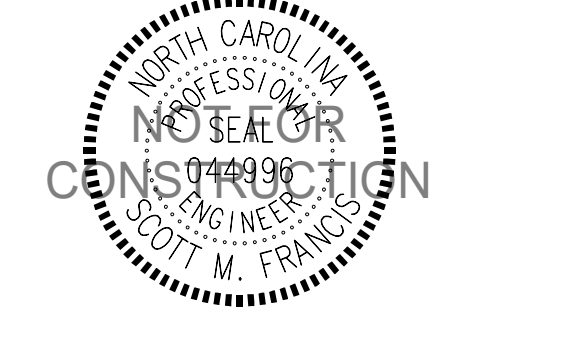
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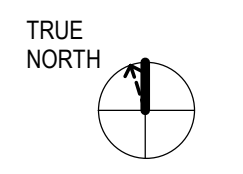
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NCSU PROJECT # 202220021



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| Issue Number | Issue Description | Date |
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| 1 | Issue for Bid - Early Procurement | 01/17/2025 |
| 2 | Design Development | 09/20/24 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

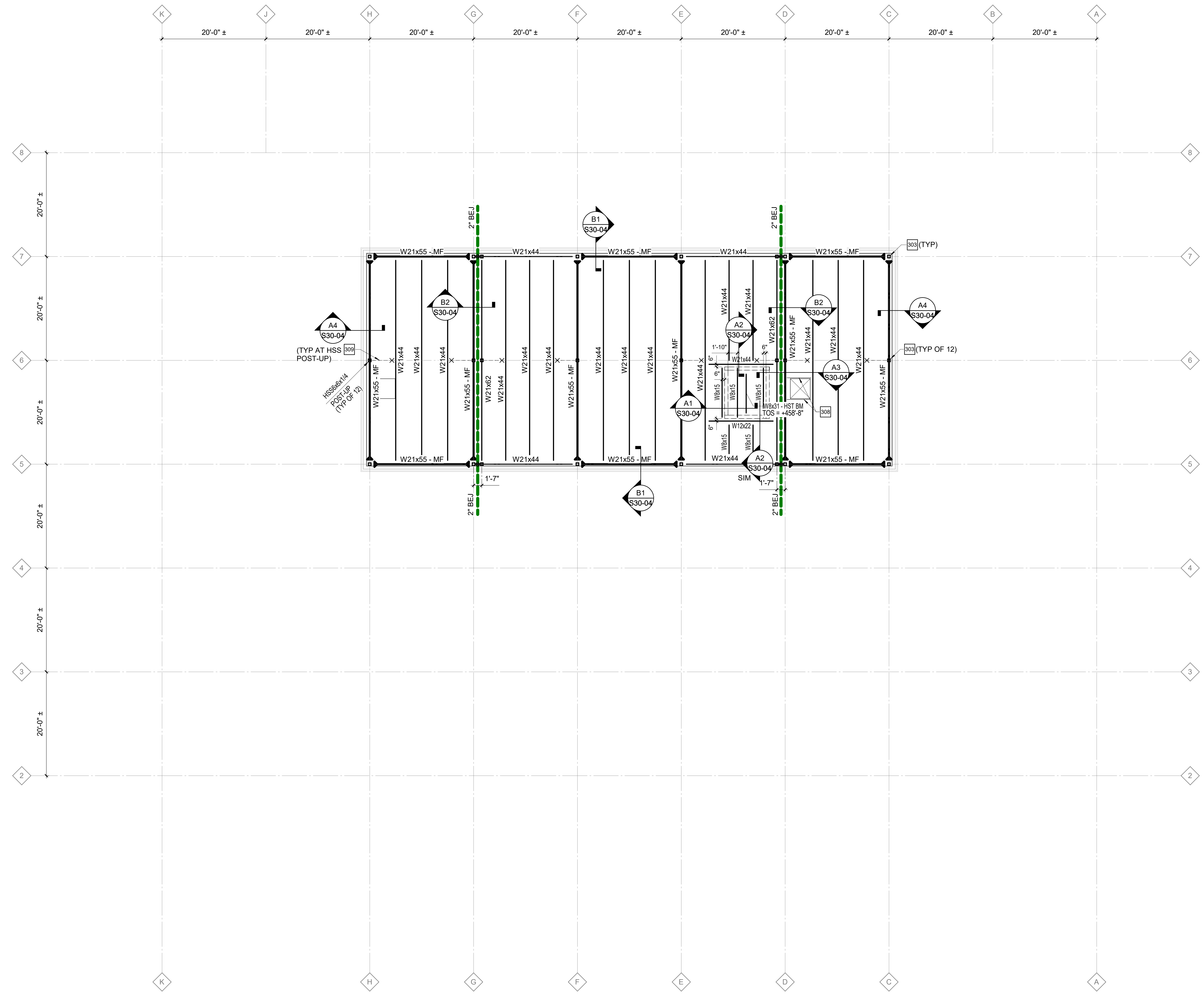
FRAMING/SLAB PLAN - ROOF

SHEET NUMBER

S15-01

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FRAMING PLAN NOTES

- A. REFERENCE FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- B. TOP OF FINISHED FLOOR ELEVATION MUST BE AS NOTED ON SLAB PLANS.
- C. STEEL FLOOR FRAMING MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 8'-0" ON-CENTER).
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- H. EXTENTS OF SLAB/JOIST DEMO AND NEW MEMBER FRAMING LENGTHS ARE APPROXIMATE. EXISTING FRAMING CONDITIONS AND REQUIRED MEASUREMENTS MUST BE FIELD VERIFIED PRIOR TO DEMOLITION AND FABRICATION. DESIGN INTENT IS FOR NEW OPENING AND SLAB CONSTRUCTION TO BE LOCATED BETWEEN EXISTING CONCRETE JOISTS, ADJUST DIMENSIONS AND LOCATION OF SLAB DEMO AS NEEDED. NOTIFY ENGINEER IF AS-BUILT CONDITIONS ARE INCONSISTENT WITH INFORMATION INDICATED ON PLAN.
- I. DIMENSIONS TO CHANNELS ARE FROM FLAT FACE OF CHANNEL.

KEY NOTES

- 303 ALTERNATE #4 - EXTEND TOP OF COLUMN 28" ABOVE BOTTOM OF DECK FOR FUTURE PHOTOVOLTAIC PANEL SYSTEM SUPPORT. COLUMN MUST BE HOT-DIP GALVANIZED.
- 308 L5x5x5/16 AT ROOF HATCH.
- 309 REFER TO TYPICAL BEAM BOTTOM FLANGE BRACE DETAILS.

A1 FRAMING PLAN - PENTHOUSE ROOF
1/8" = 1'-0"

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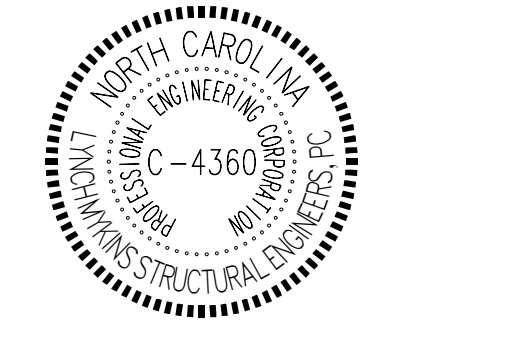
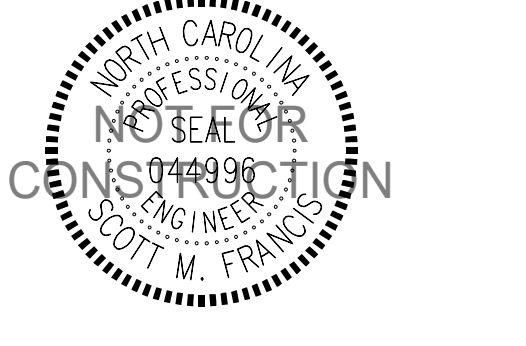
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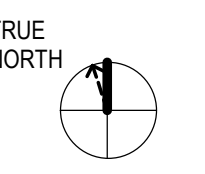


Mann Hall Renovation
STATE ID #22-2450-02A
NCSU PROJECT # 202220021



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ISSUE CHART

| Issue No. | Description | Date |
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| 1 | Issue for Bid - Early Procurement | 01/17/2025 |
| 2 | Design Development | 8/9/2024 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

TITLE
FRAMING PLAN - PENTHOUSE

SHEET NUMBER

S16-01

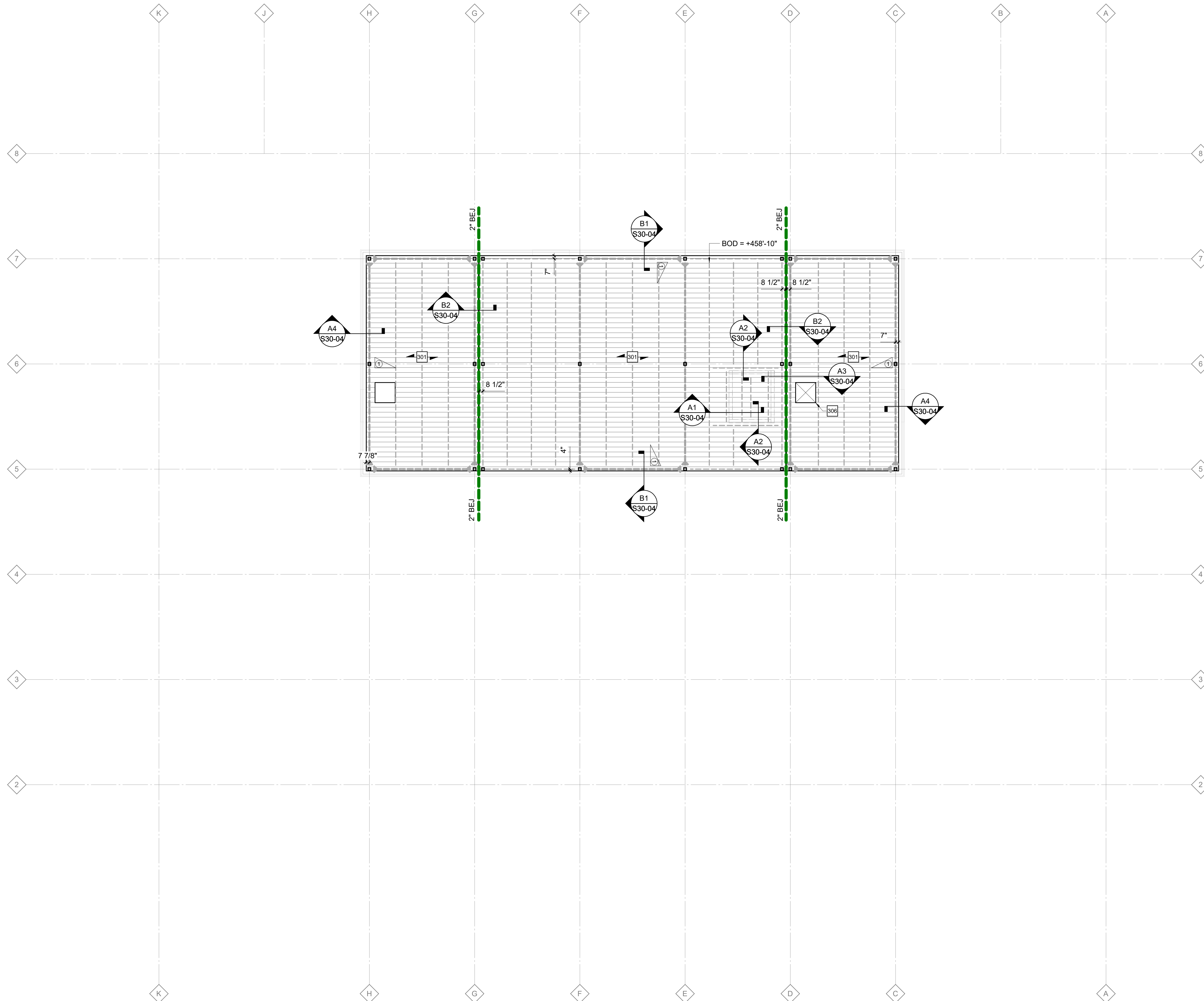
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SLAB/DECK PLAN NOTES

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LIMITS OF SLAB DEPRESSIONS AND OMITTED SLABS.
- D. FLOOR SINKS AND DRAINS ARE NOT SHOWN ON PLAN. REFERENCE PME DRAWINGS FOR LOCATIONS.
- E. REFERENCE CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE SLABS AND PAVING.
- F. SLAB-ON-GRADE JOINTS MUST BE SAWED JOINTS OR KEYED CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED. CONTRACTOR MUST COORDINATE ALL SLAB JOINTS WITH JOINTS IN BONDED FLOOR FINISHES. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR FINISH JOINT LOCATIONS.
- G. PLACE (1) #4 x 3'-0" IN MIDDEPTH OF SLAB AT RE-ENTRANT CORNERS WHERE A SLAB JOINT DOES NOT OCCUR.
- H. EXISTING SLAB-ON-GRADE IS 4" CONCRETE, UNLESS OTHERWISE NOTED.

KEY NOTES

- 301 1 1/2" x 22 GAGE ROOF DECK. REFERENCE STEEL DECK NOTES.
- 306 ROOF HATCH. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SIZE AND LOCATION.



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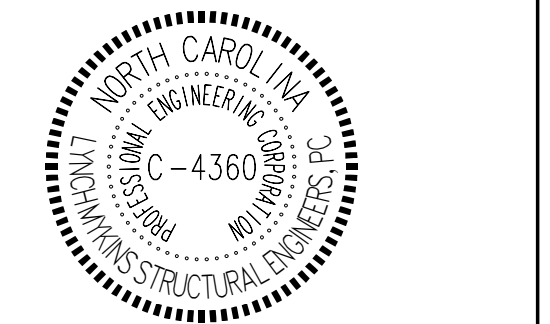
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| NO. | DESCRIPTION | DATE |
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| 1 | Design Development | 8/9/2024 |
| 2 | Issue for Bid - Early Procurement | 10/17/2025 |

Job Number: 820937.001
 Drawn By: DO
 Designed By: JD
 Checked By: SF

TITLE

**DECK PLAN -
PENTHOUSE**

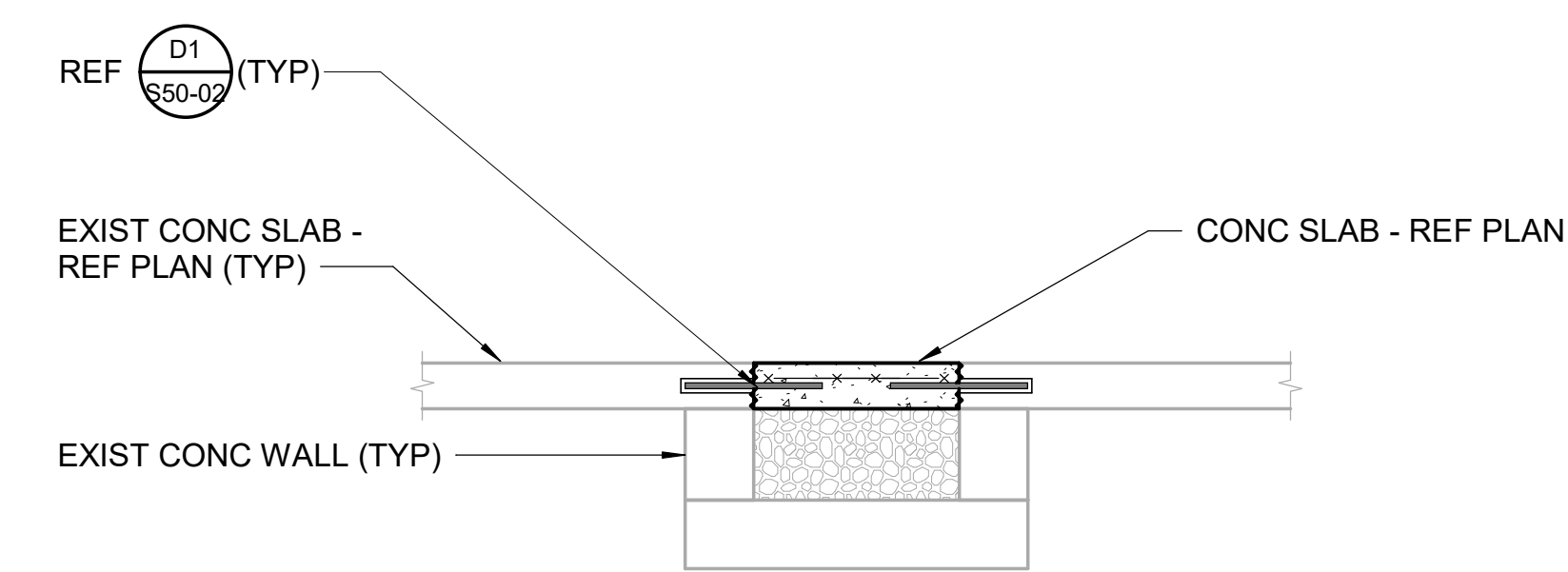
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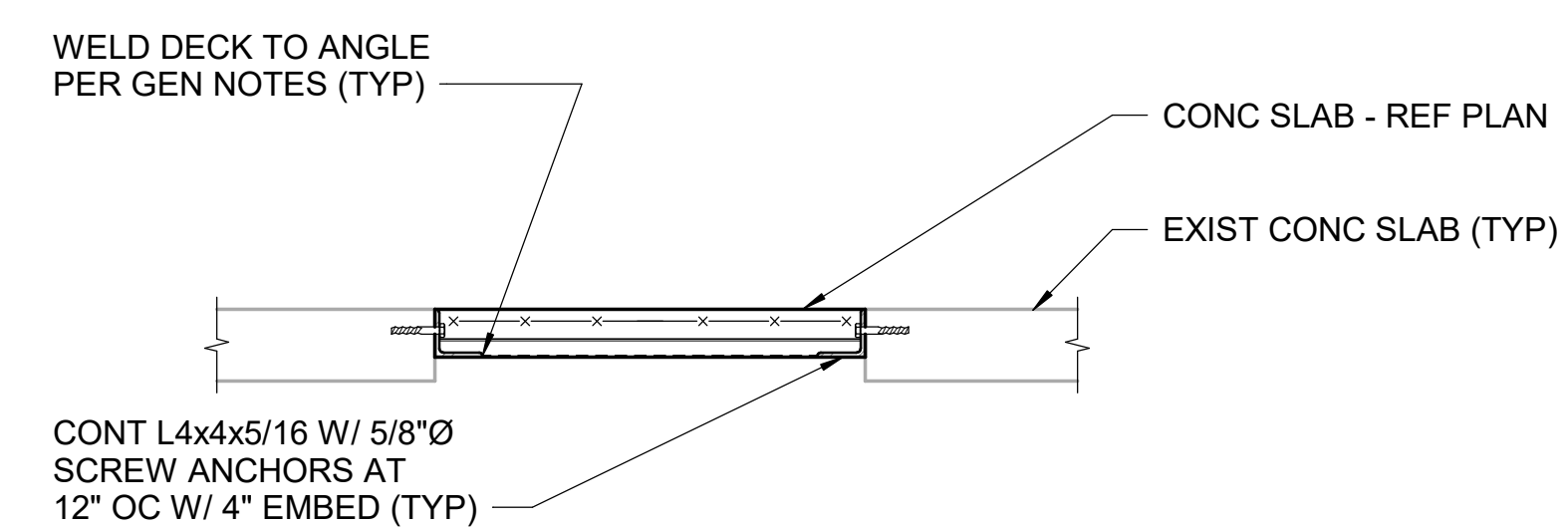
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A1 DECK PLAN - PENTHOUSE ROOF

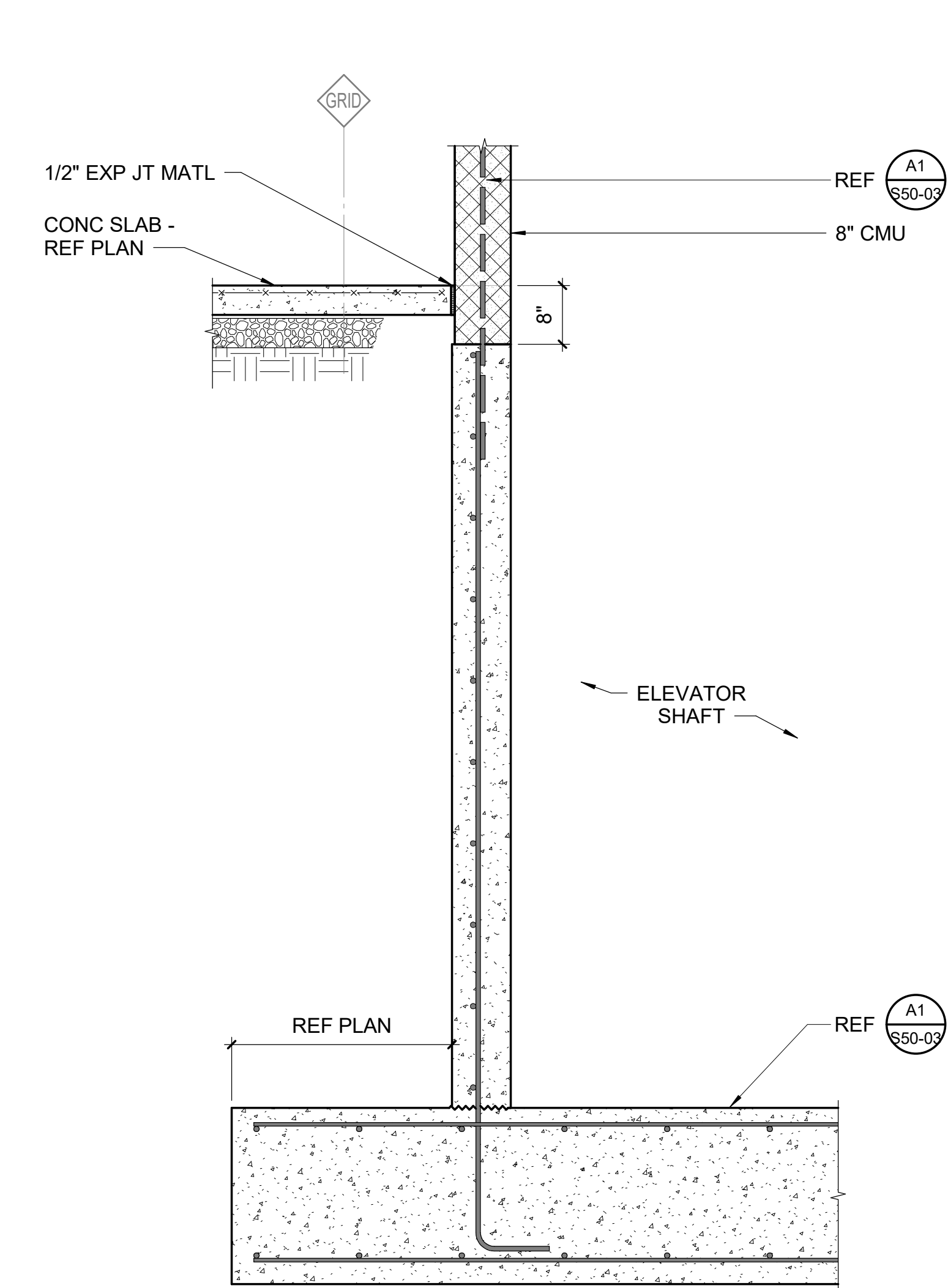
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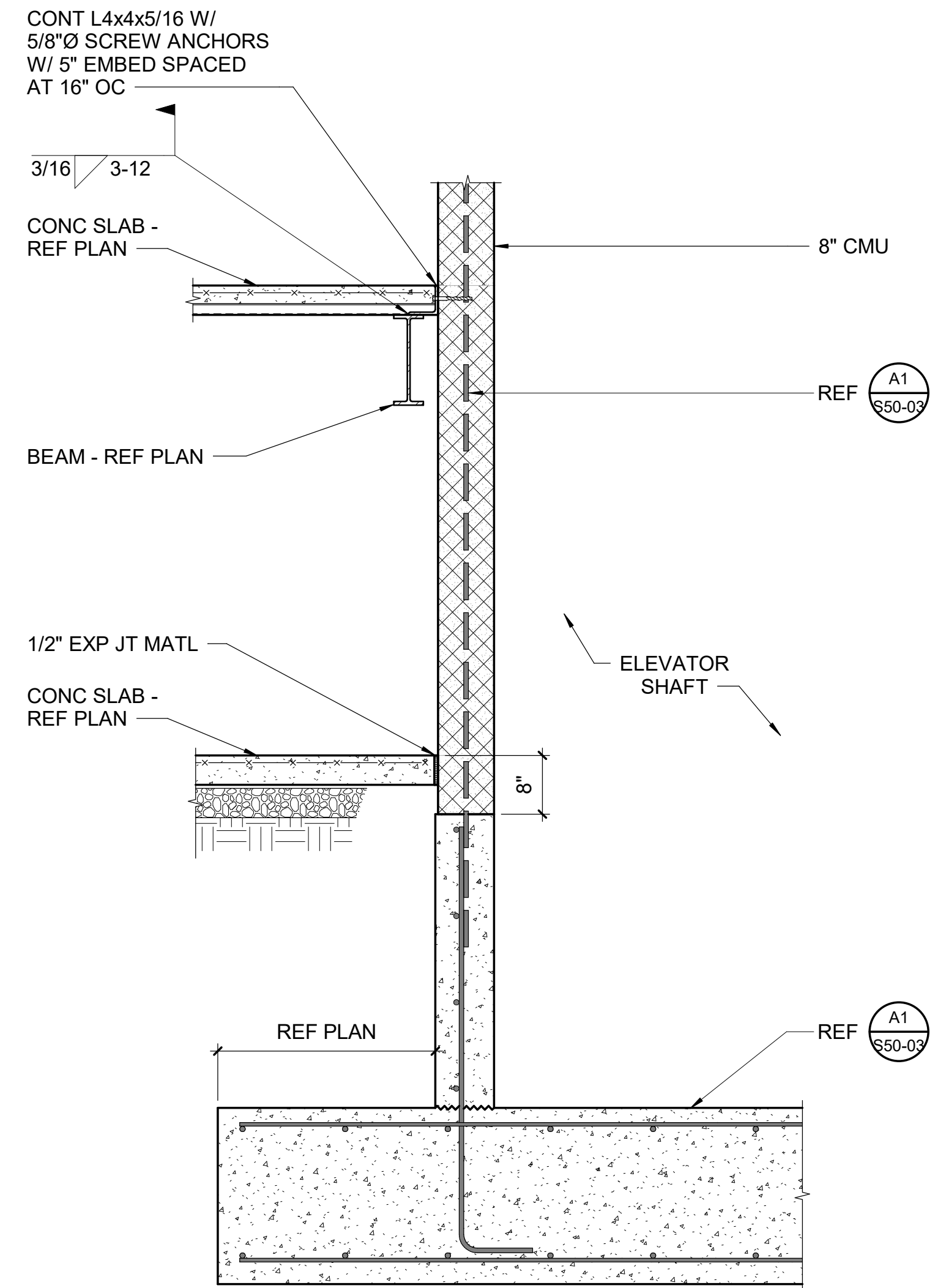
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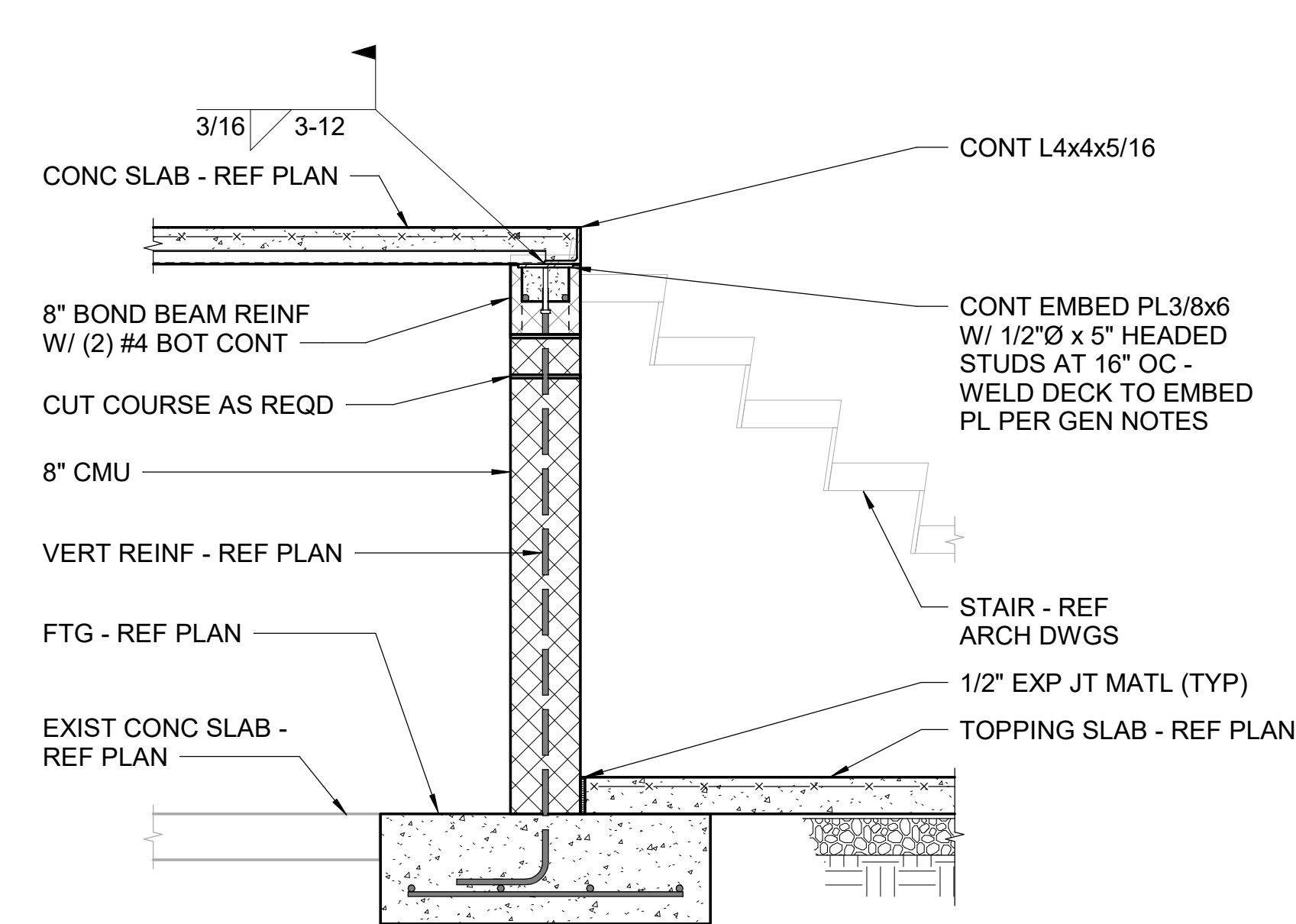
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3/4" = 1'-0"



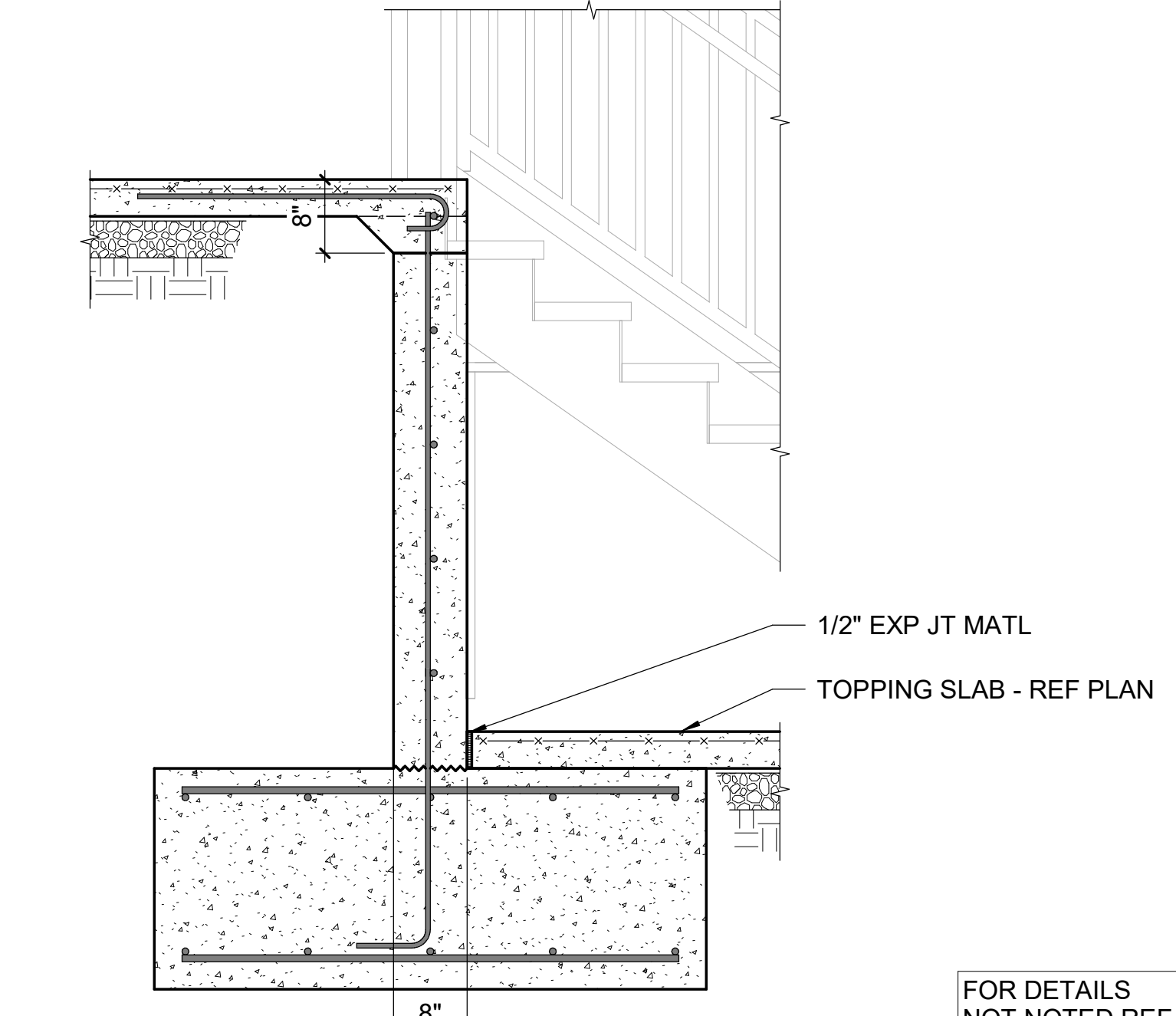
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3/4" = 1'-0"



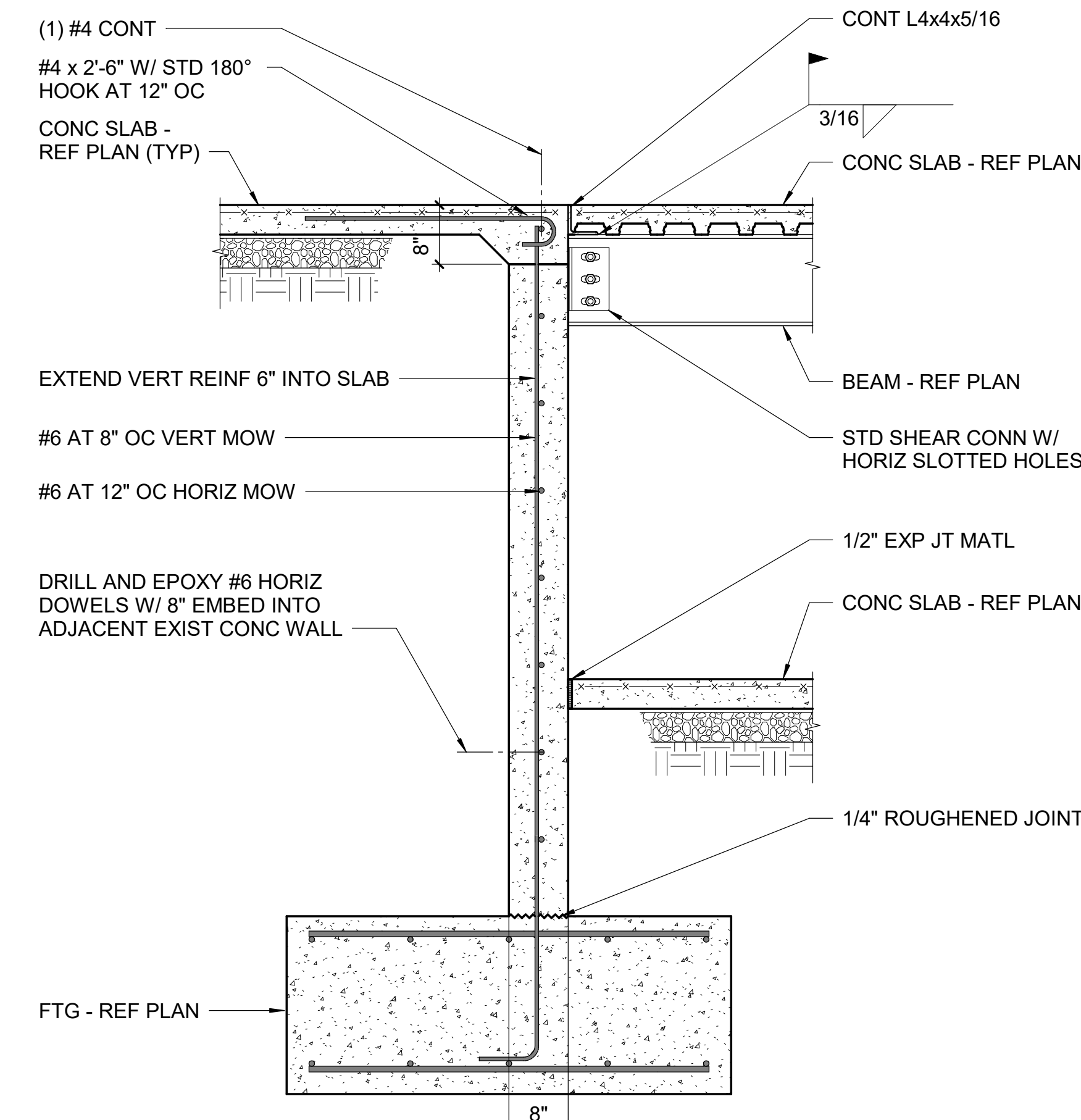
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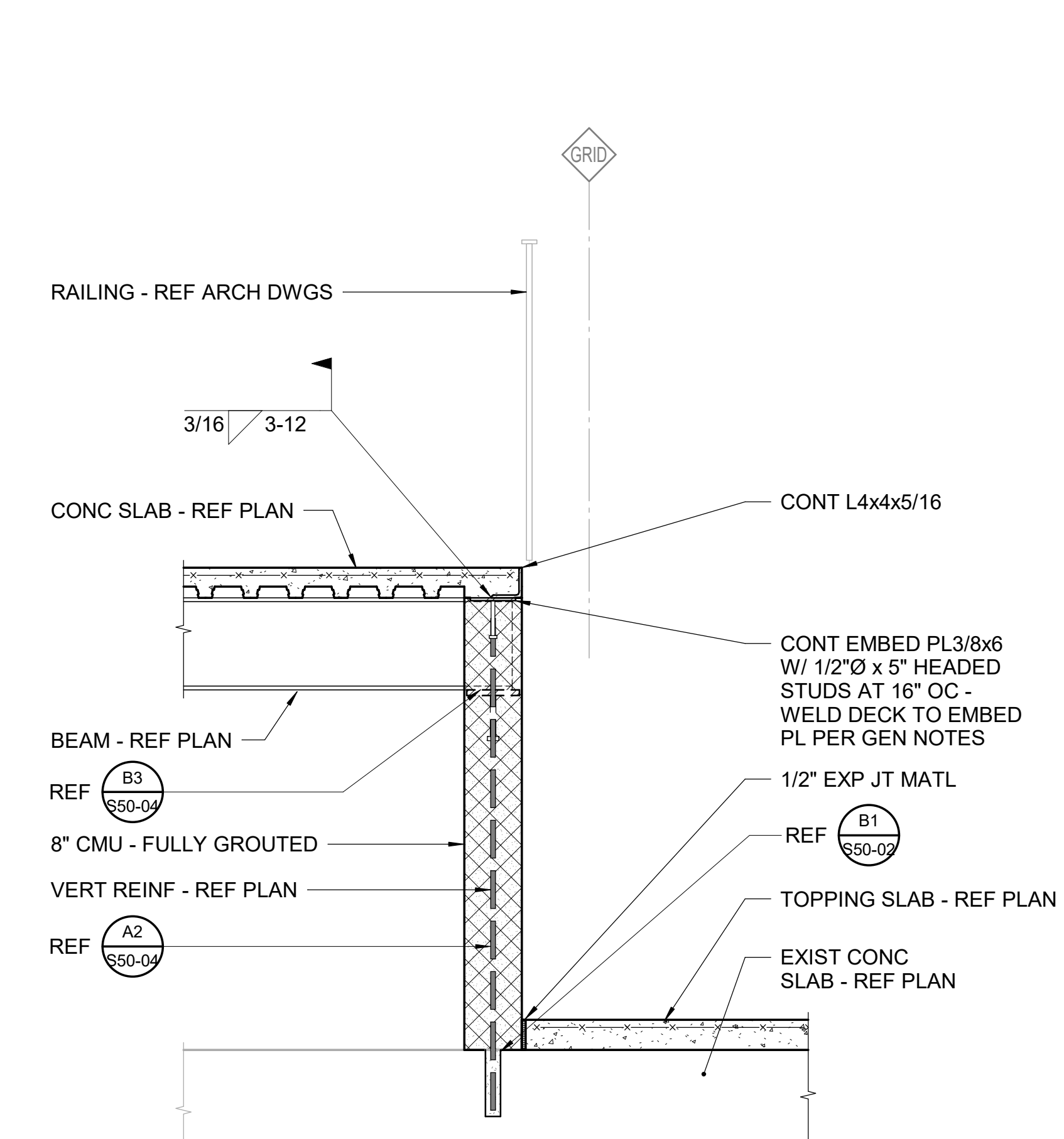
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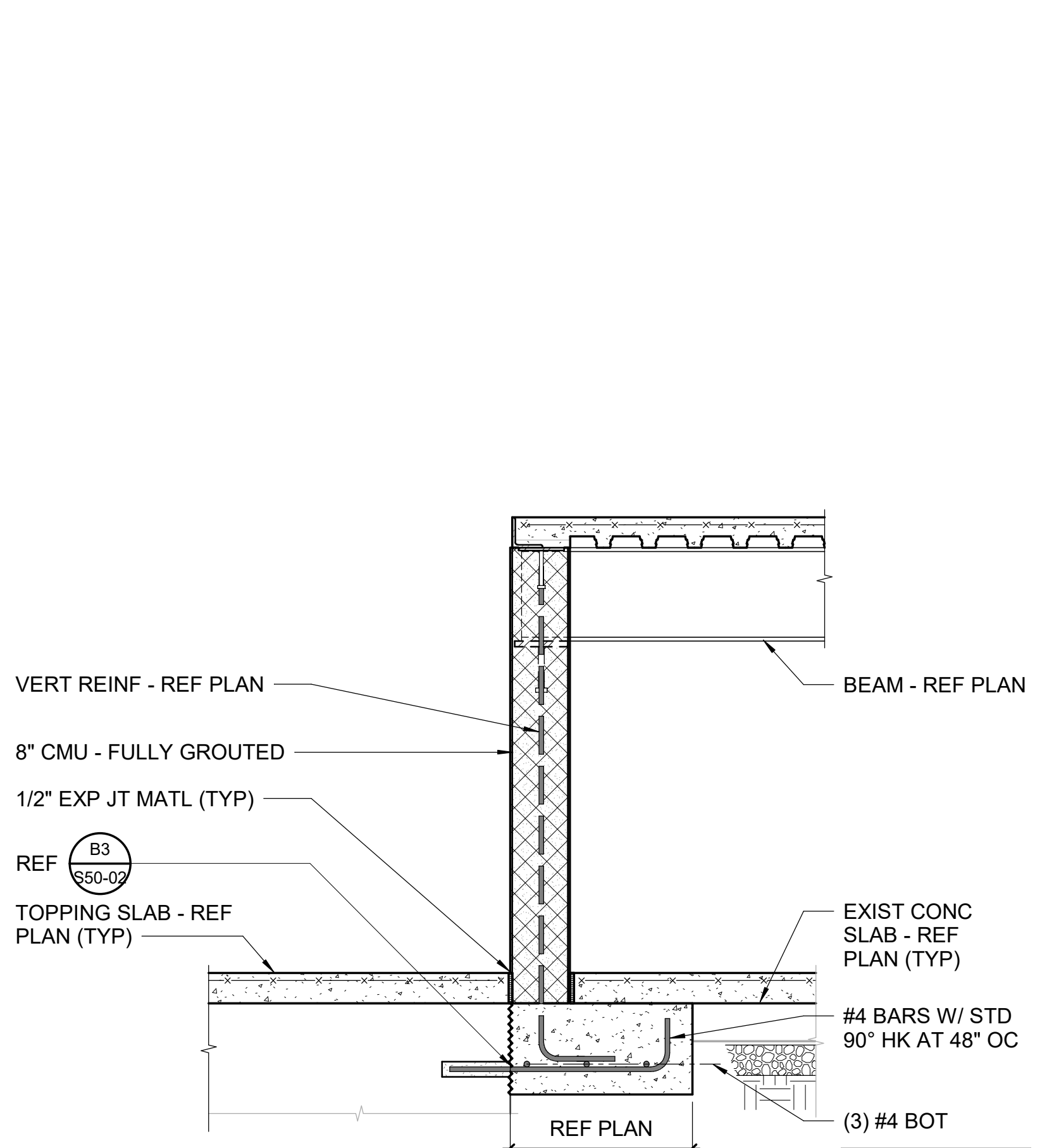
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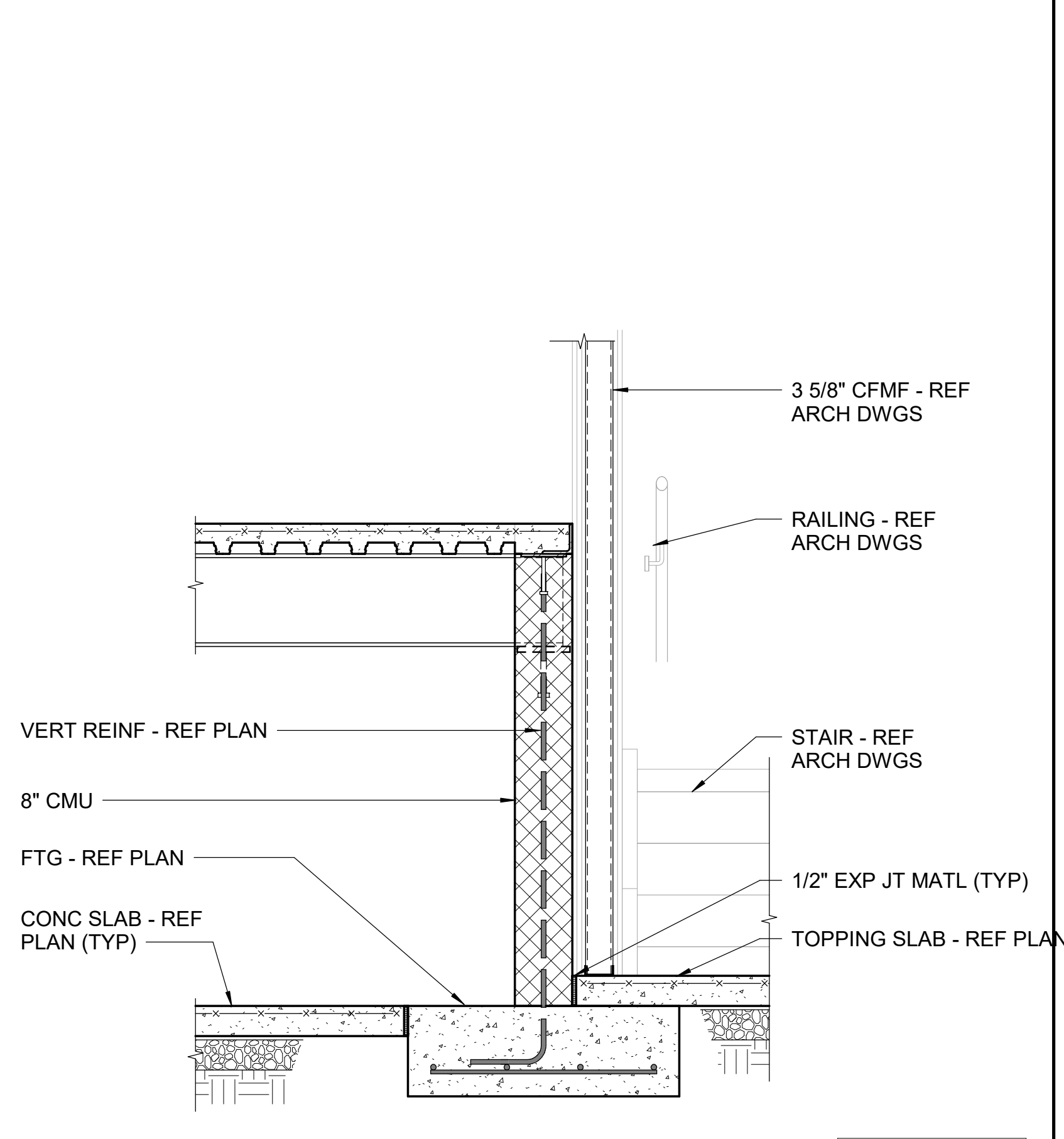
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A2 SECTION
3/4" = 1'-0"



A3 SECTION
3/4" = 1'-0"



A4 SECTION
3/4" = 1'-0"

FOR DETAILS NOT NOTED REF A1 / S30-01

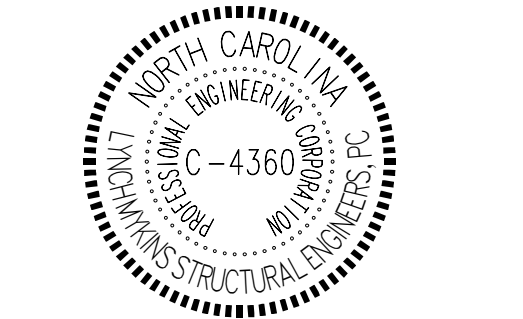
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FOR DETAILS NOT NOTED REF A2 / S30-01



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| Issue No. | Issue Description | Issue Date | Prepared By | Checked By |
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| 2 | Issue for Bid - Early Procurement | 01/17/2025 | | |
| 1 | Design Development | 09/20/24 | | |
| 1 | Issue | 04/16/24 | | |

Job Number: 820937.001
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Designed By: JD
Checked By: SF

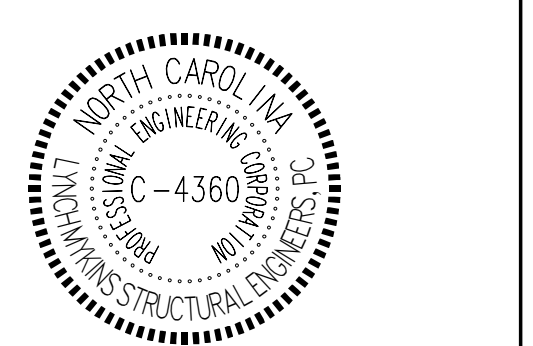
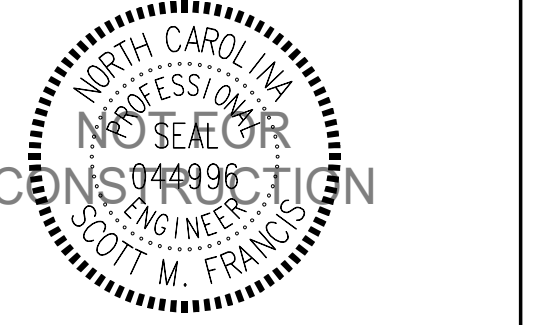
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Mann Hall Renovation
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ISSUE CHART

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| 2 | Issue for Bid - Early Procurement | 01/17/2025 | ISSUED |
| 1 | Design Development | 8/9/2024 | ISSUED |
| 1 | Issue | 8/9/2024 | ISSUED |

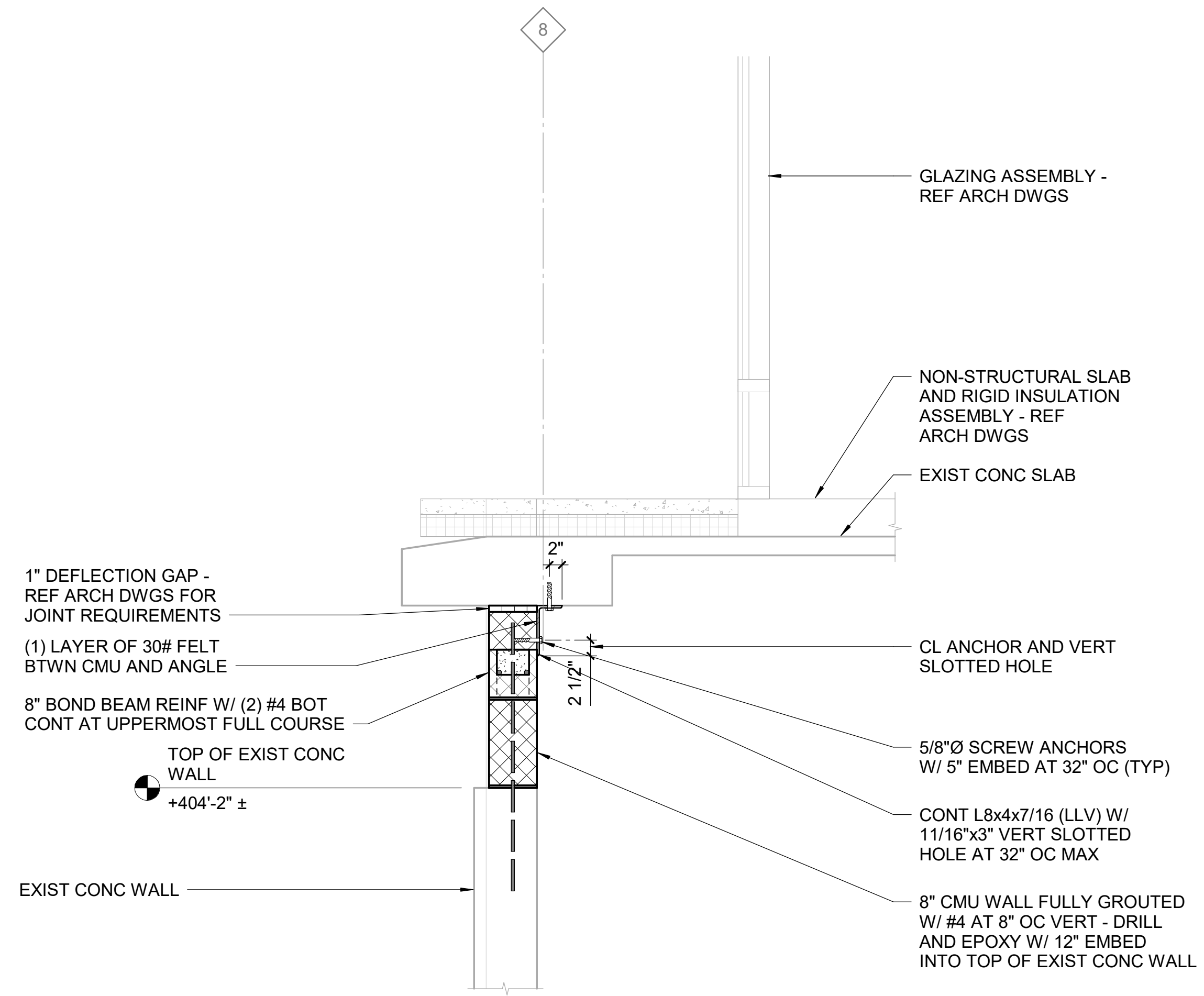
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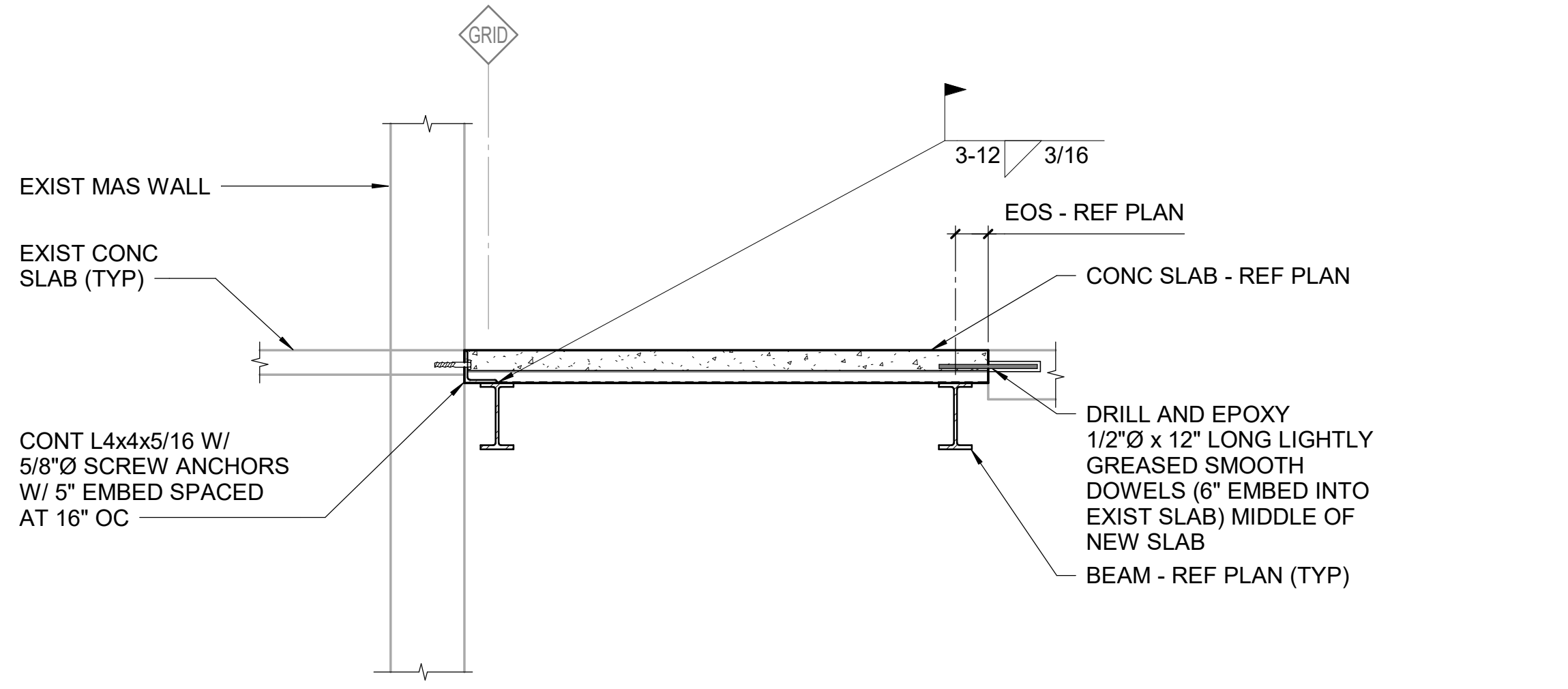
SECTIONS

SHEET NUMBER

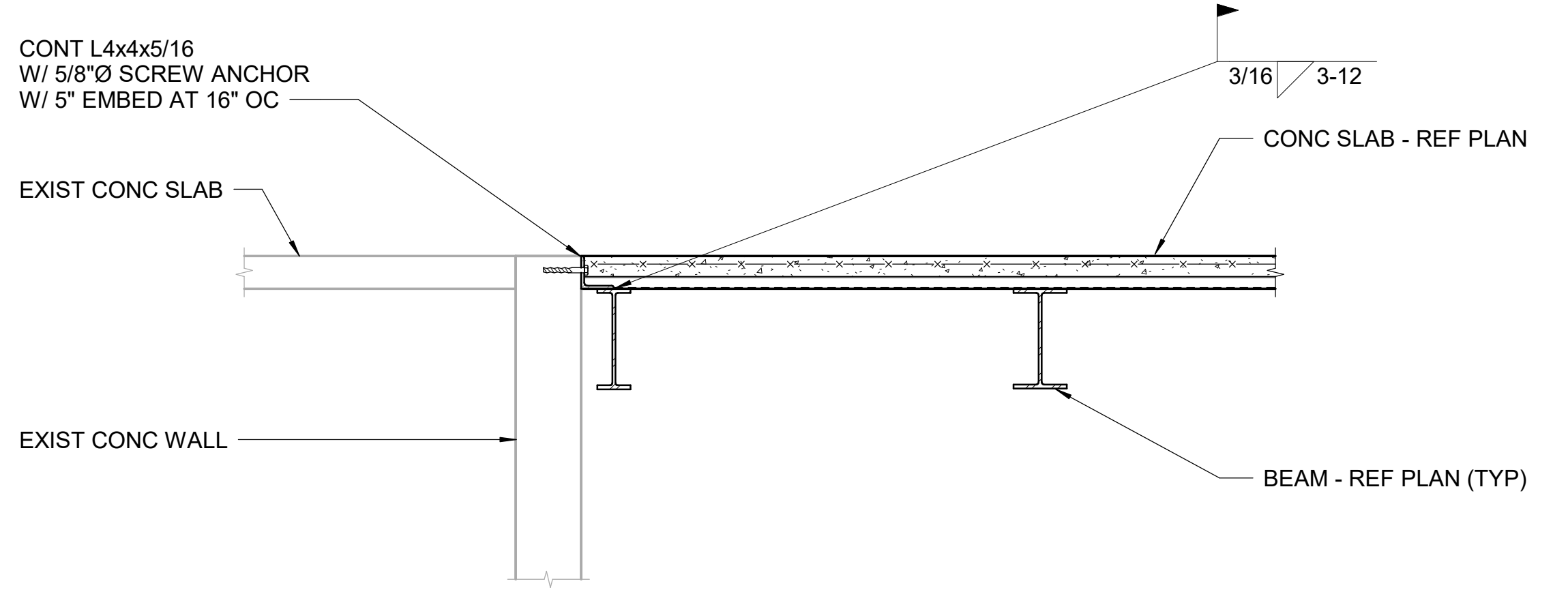
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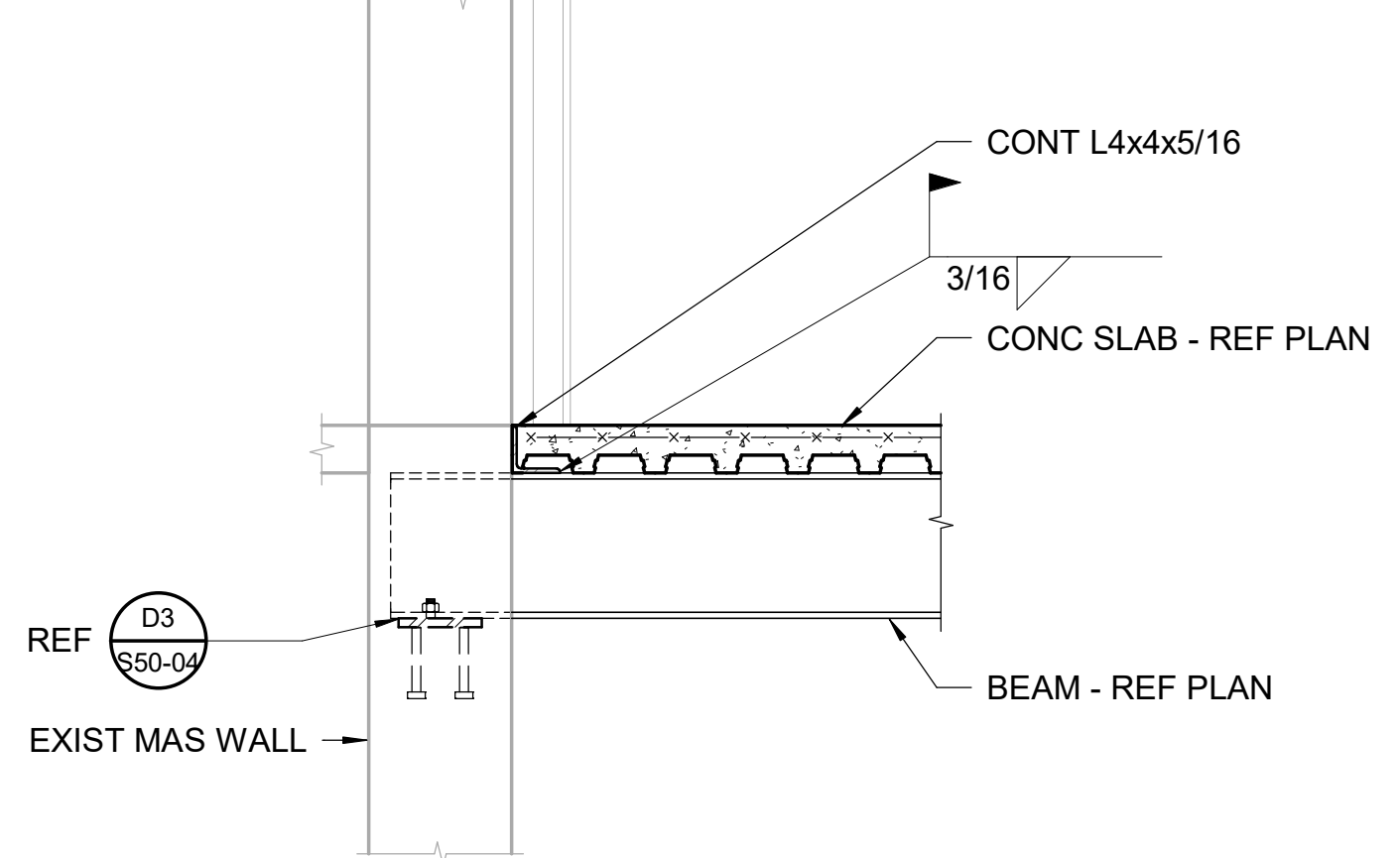
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3/4" = 1'-0"



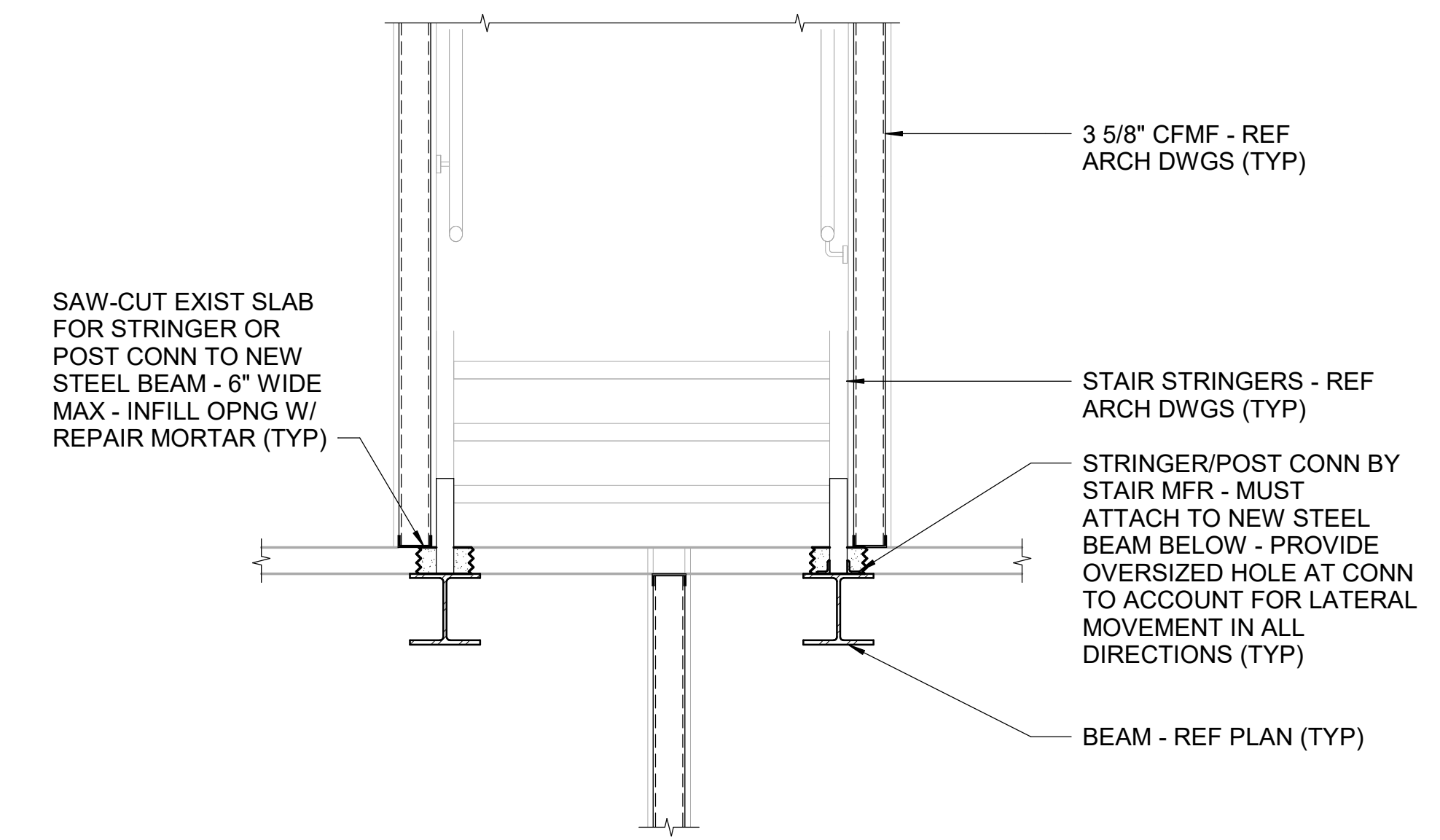
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3/4" = 1'-0"



A1 SECTION
3/4" = 1'-0"



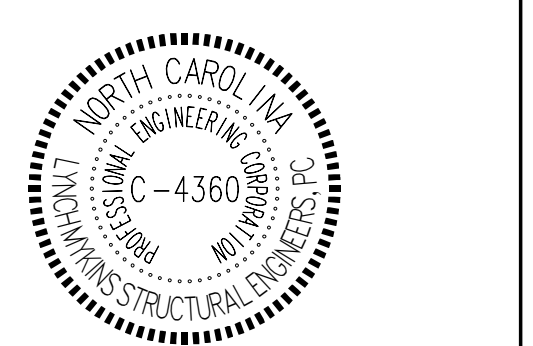
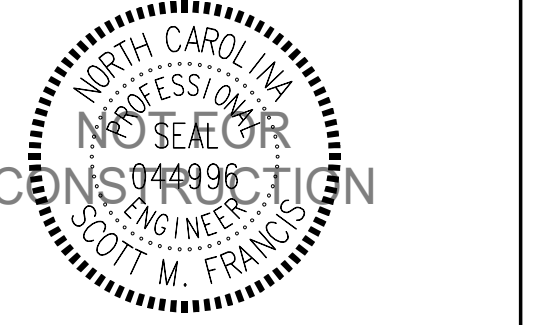
A2 SECTION
3/4" = 1'-0"



A3 SECTION
3/4" = 1'-0"



Structural Engineers
301 N. West Street, Suite 105
Raleigh, NC 27603
919.782.1833 - lynchmykyn.com
LM Project Number: LM23.226



Mann Hall Renovation
STATE ID #22-2450-02A
NCSU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2901 Wolf Village Way, Suite 331
Raleigh, NC 27695

NOT FOR CONSTRUCTION

ISSUE CHART

| | | |
|---|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 8/9/2024 |
| 1 | Schematic | 5/15/24 |

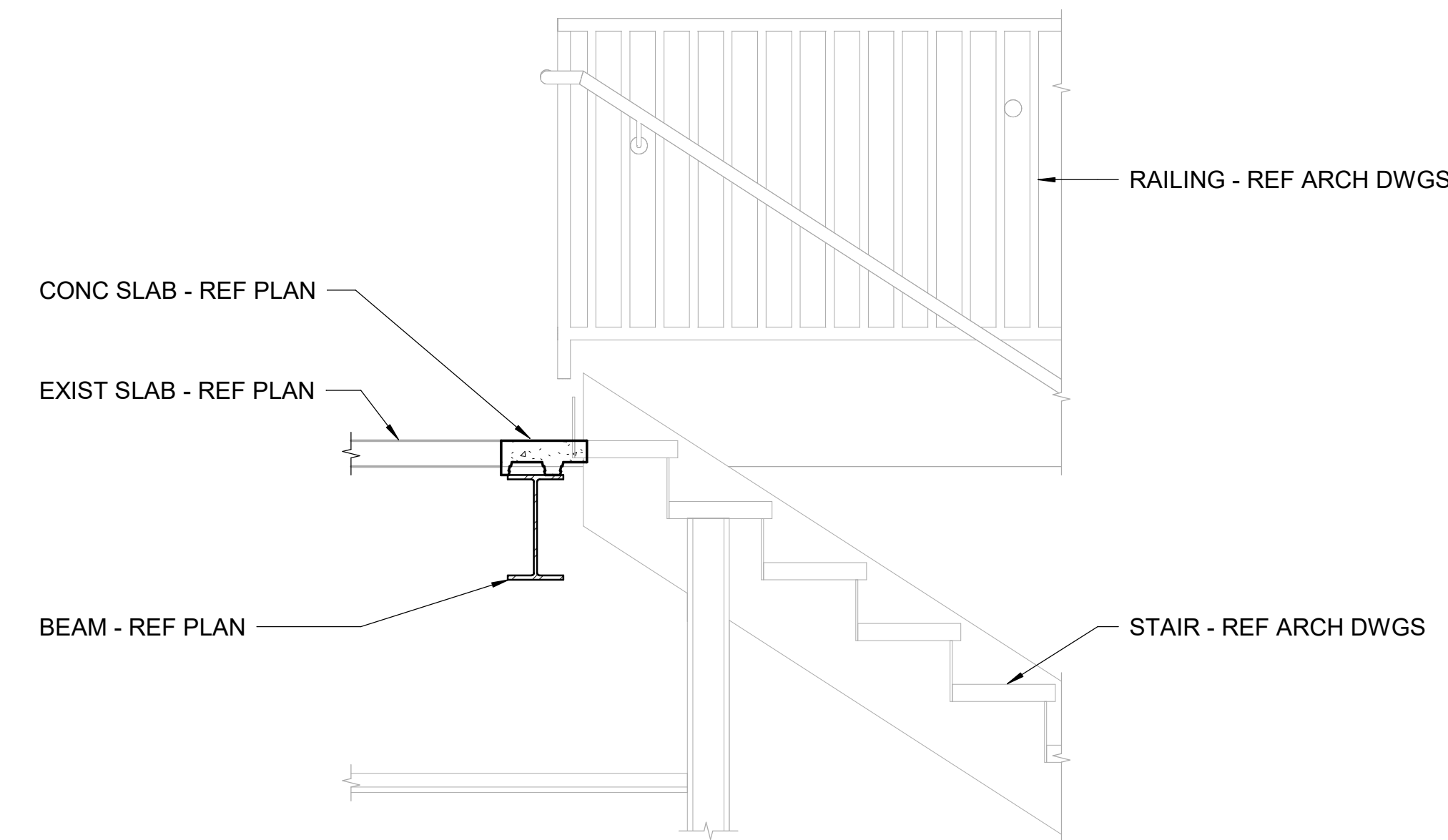
Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

TITLE

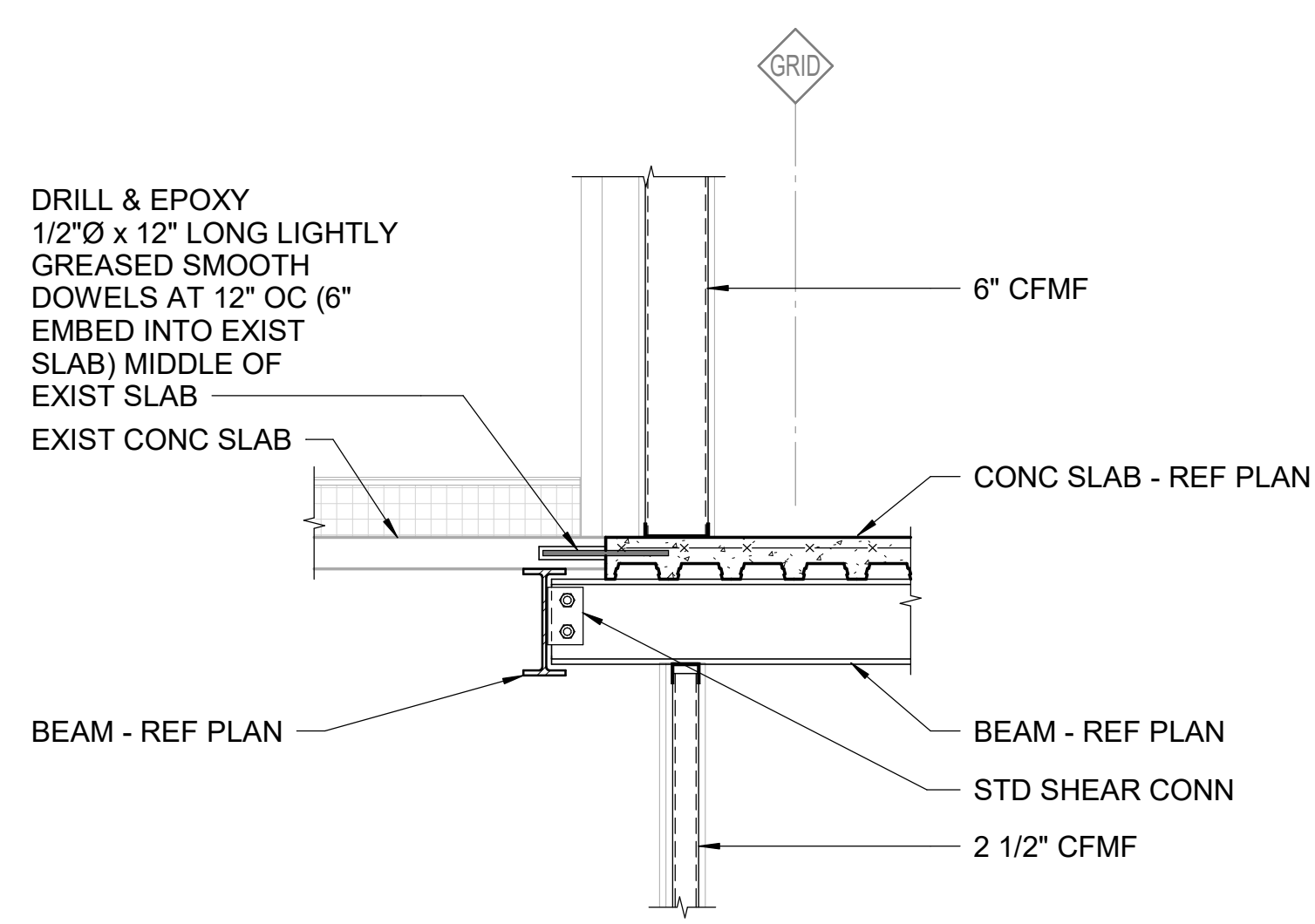
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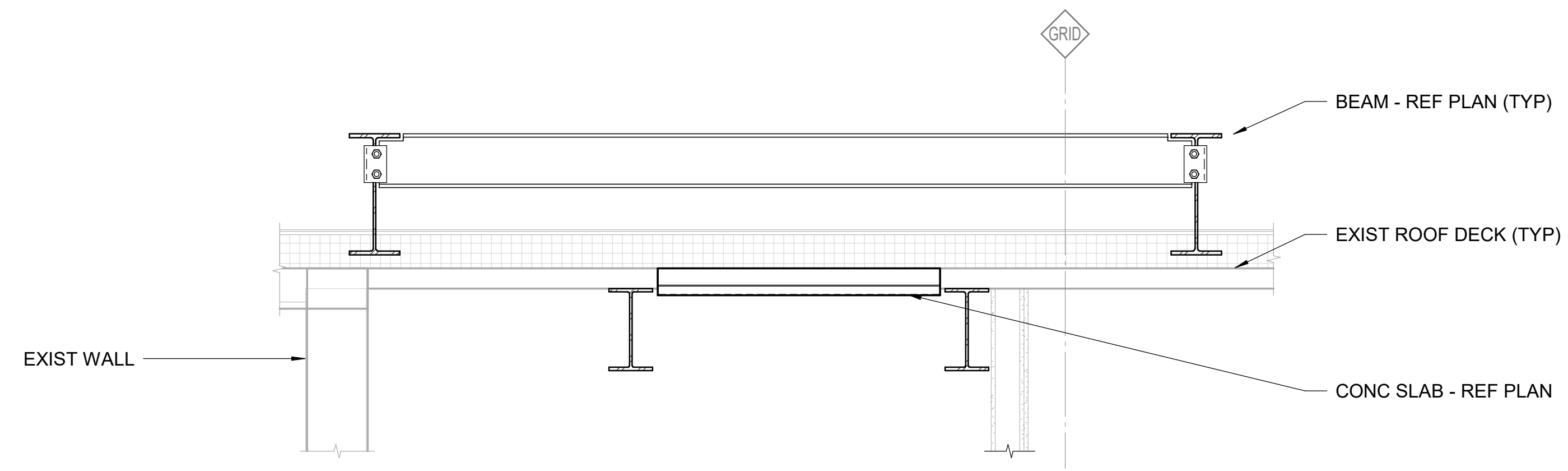
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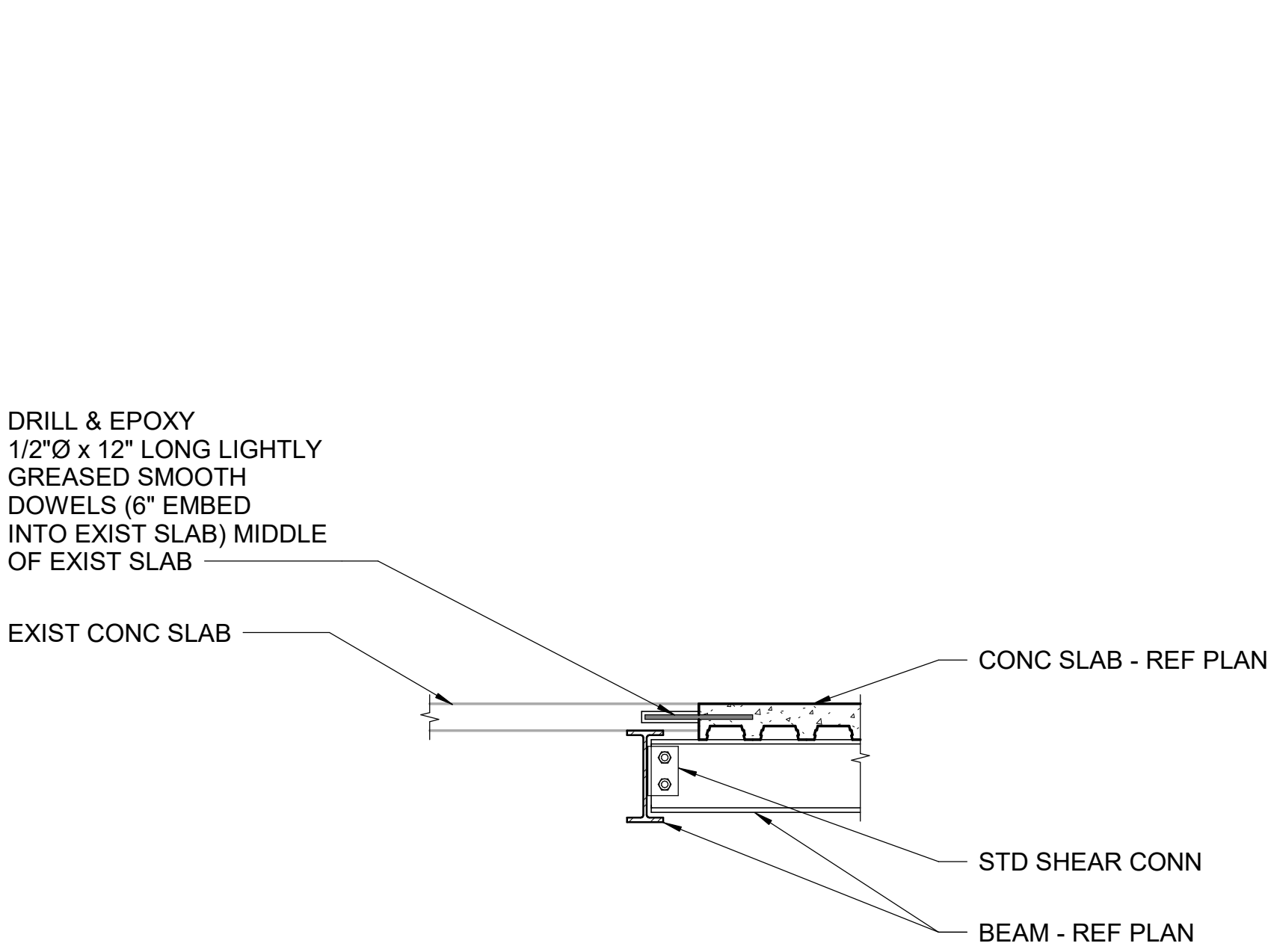
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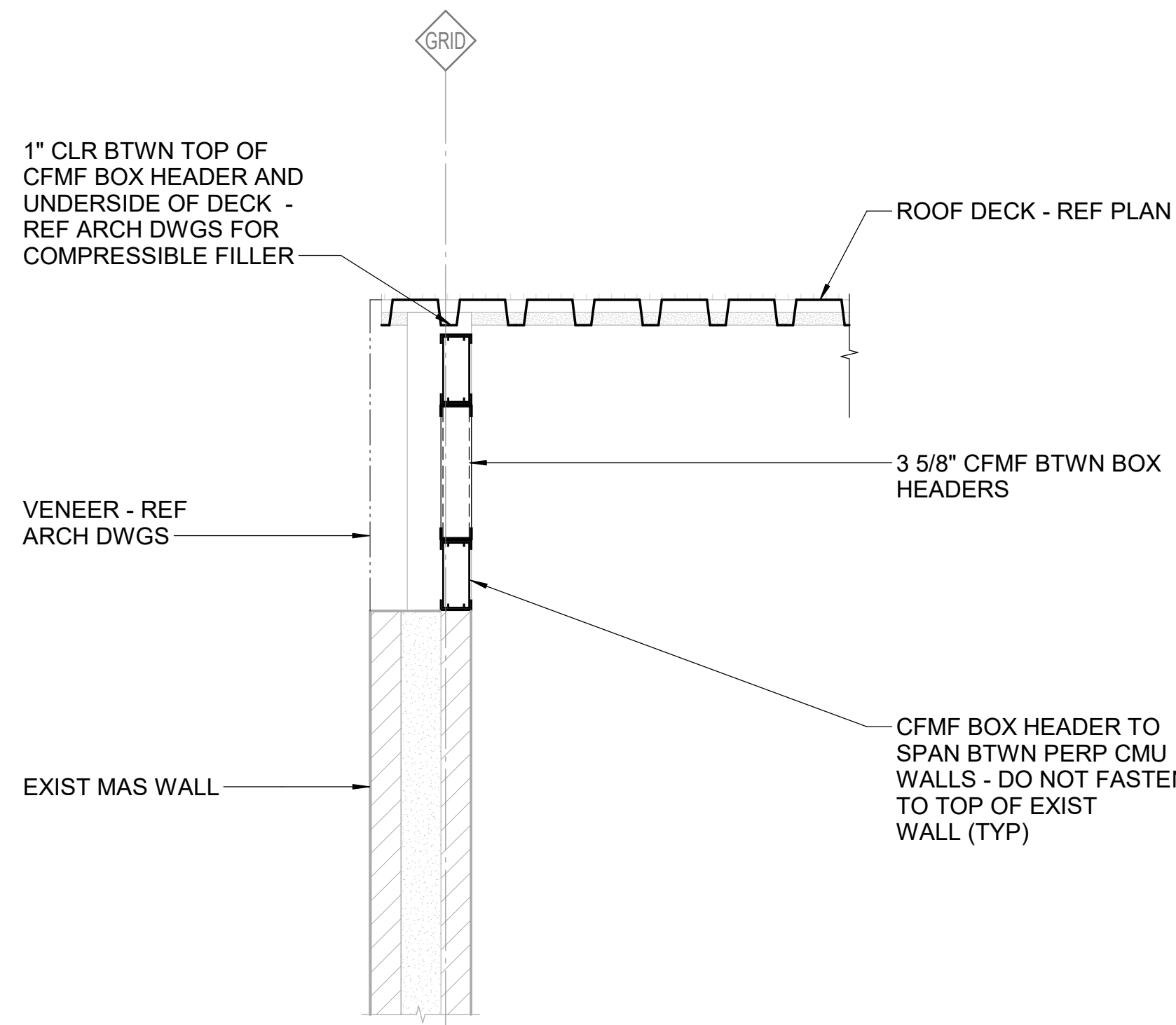
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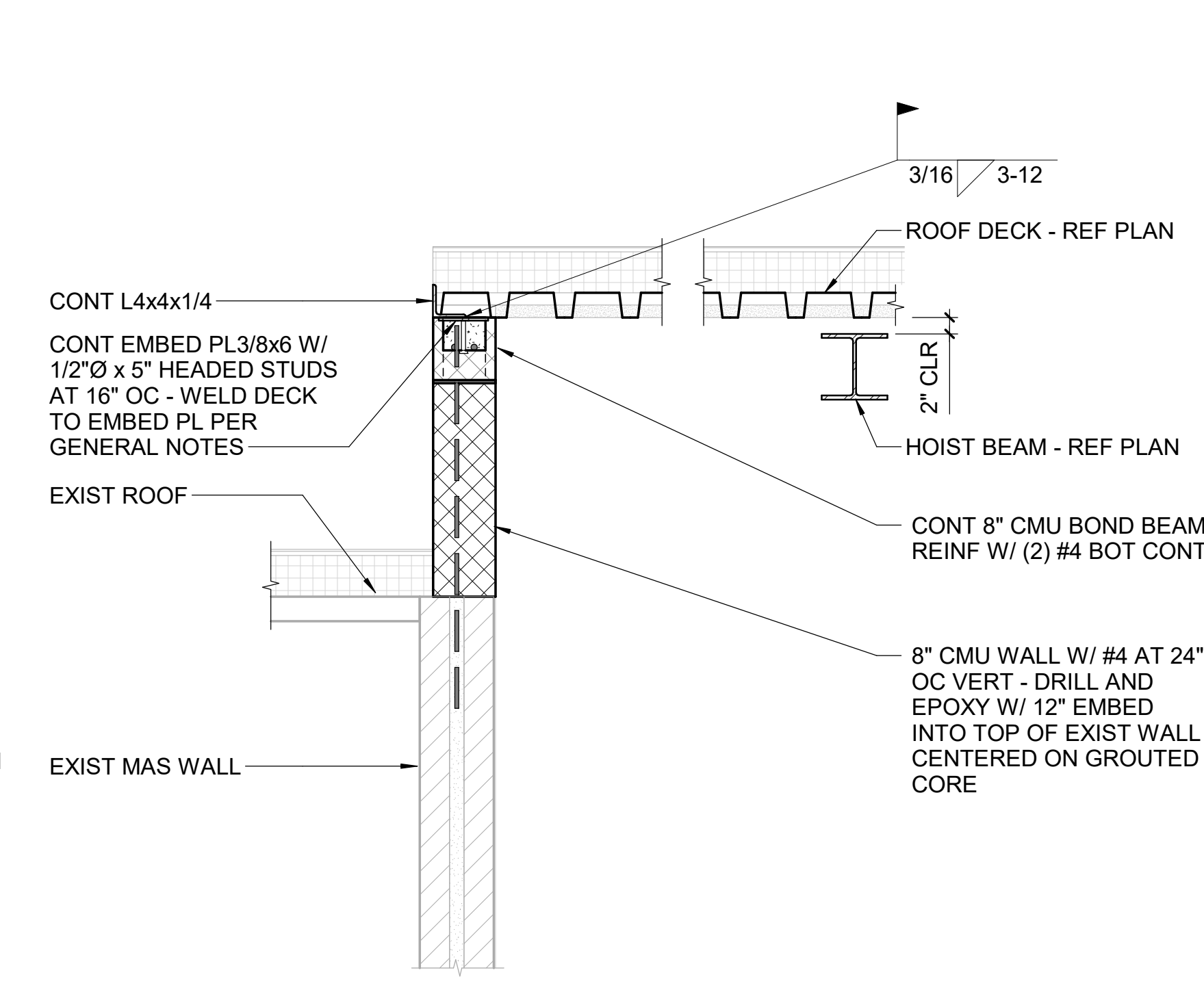
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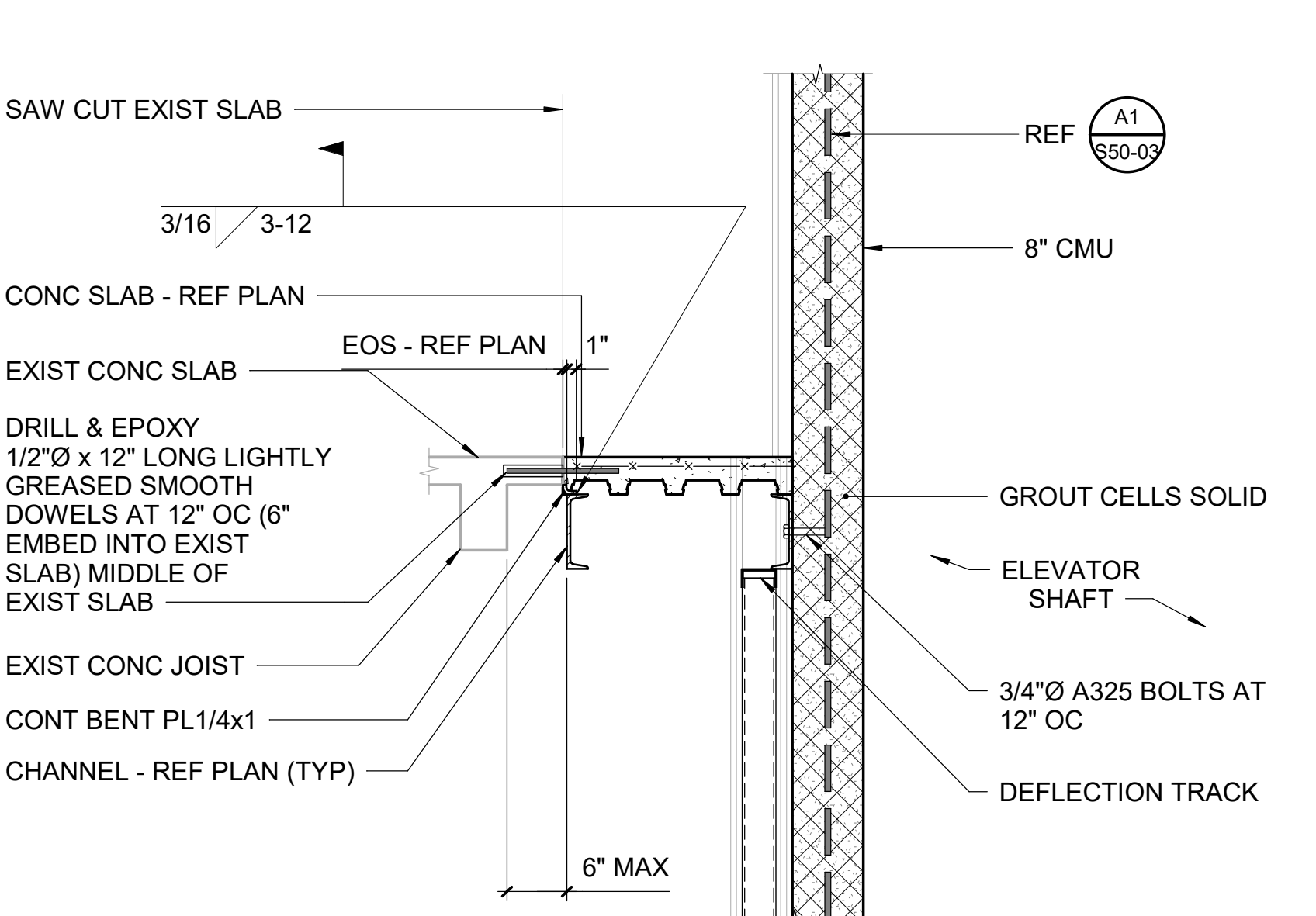
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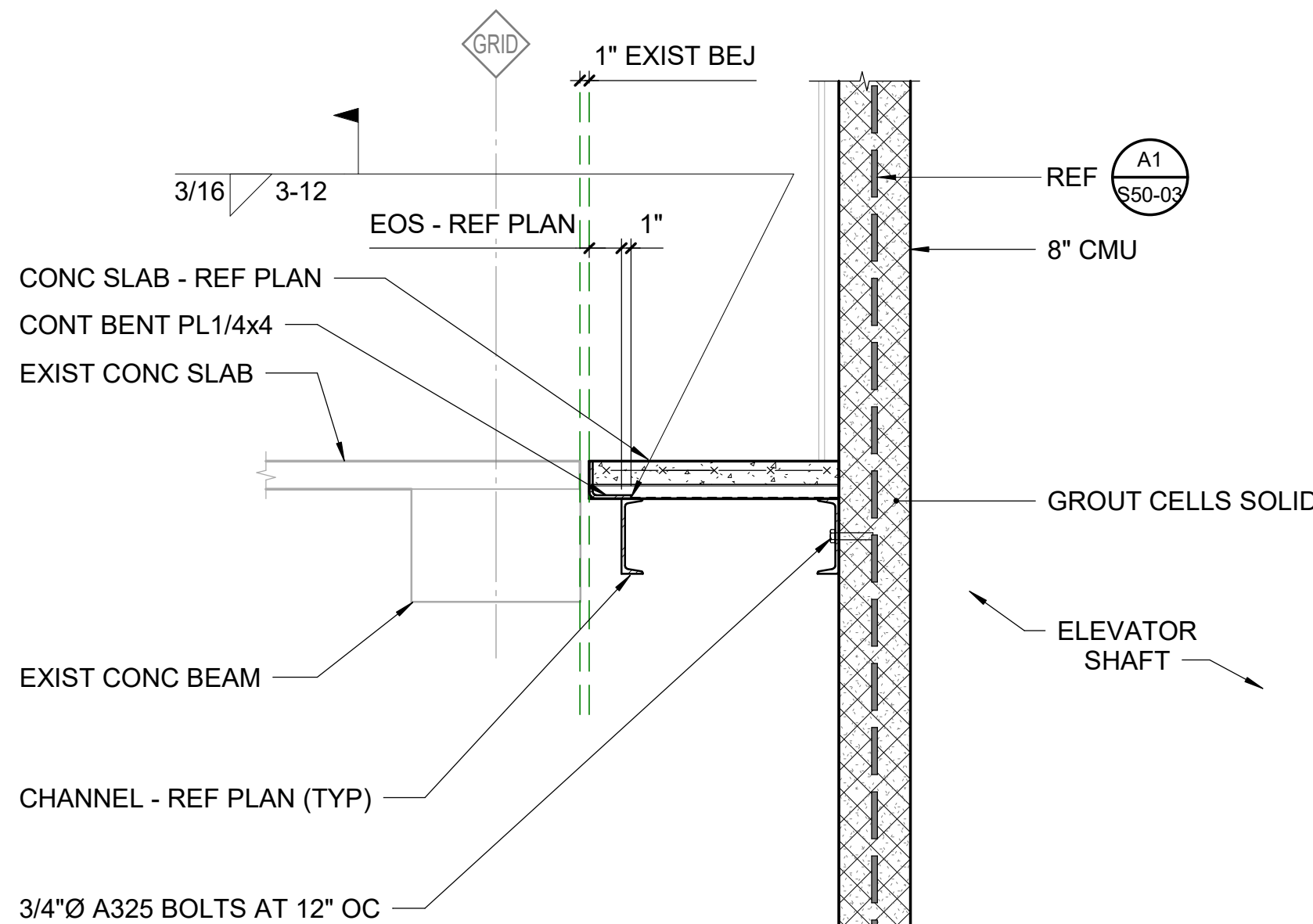
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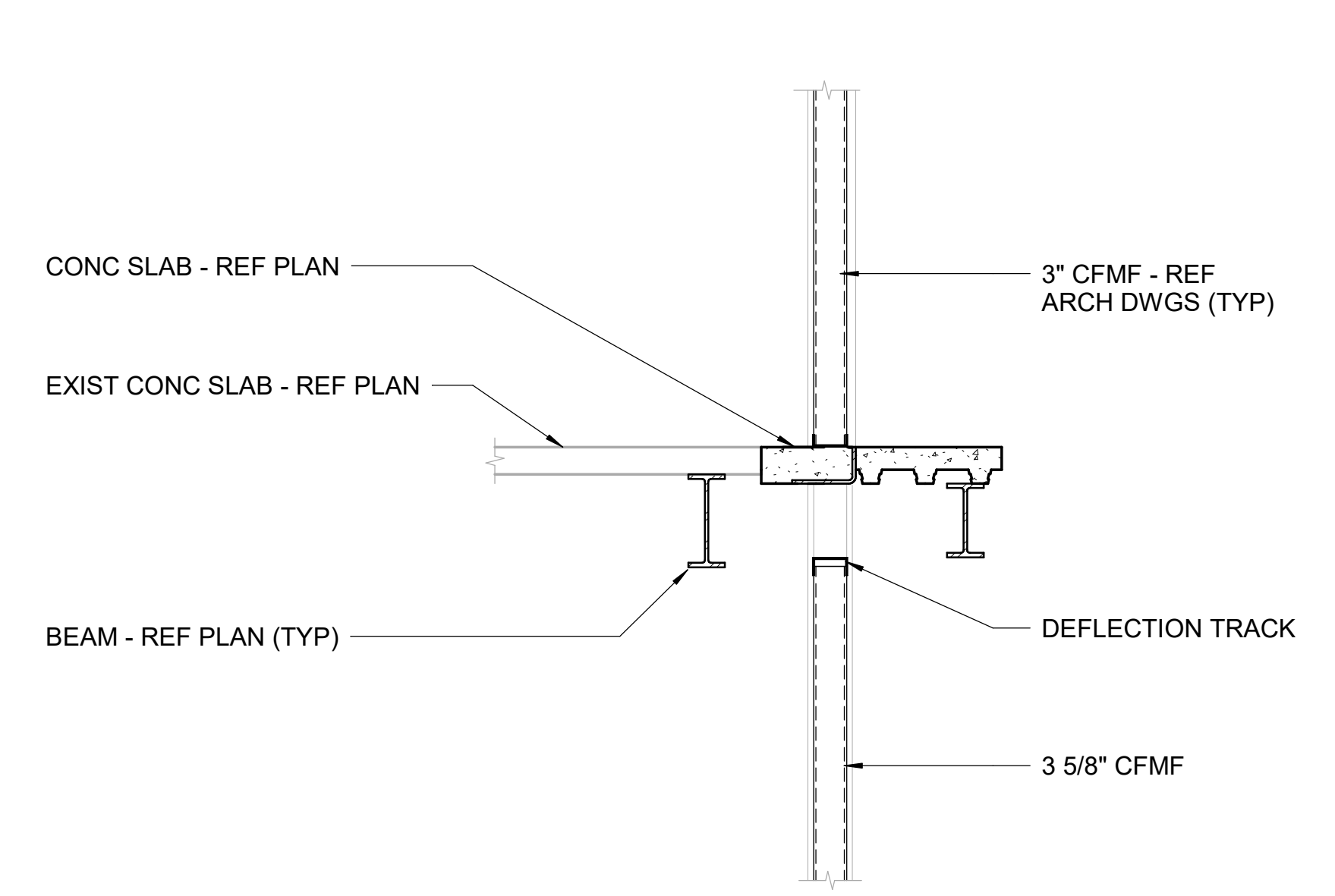
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3/4" = 1'-0"



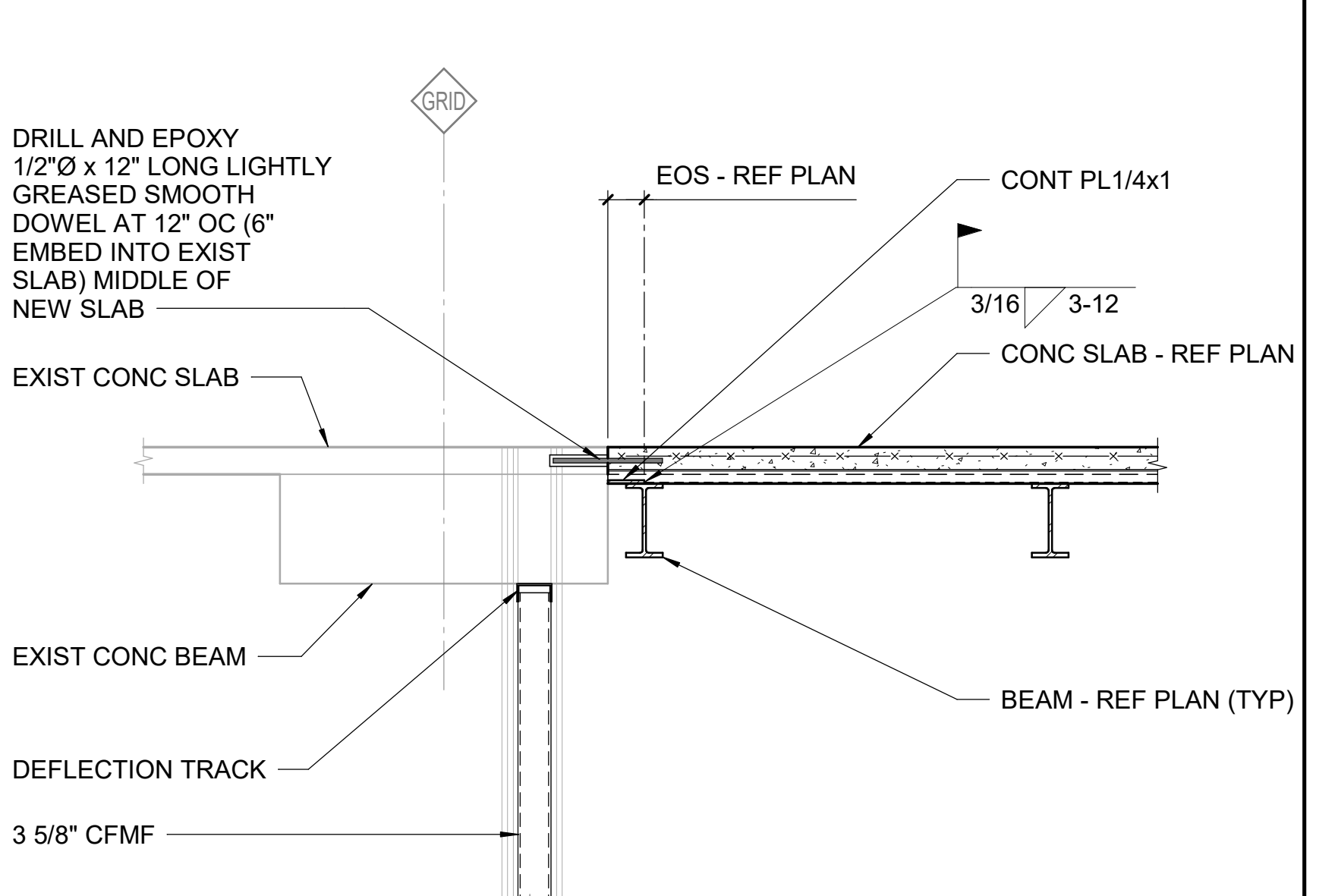
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A2 SECTION
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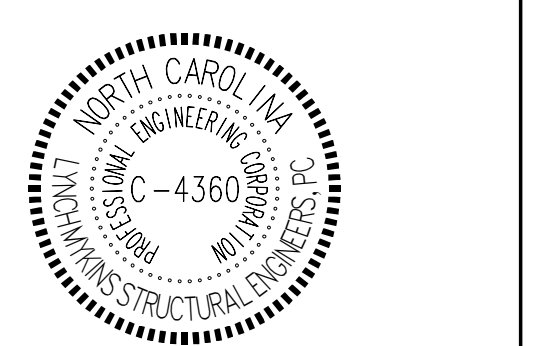
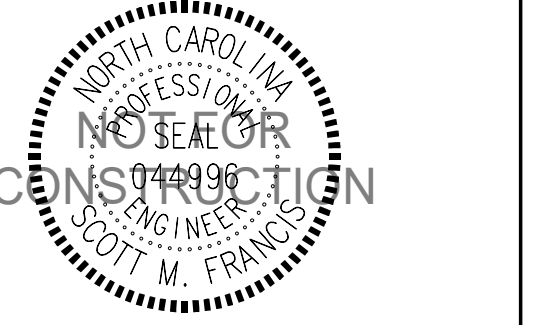
A3 SECTION
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A4 SECTION
3/4" = 1'-0"



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Raleigh, NC 27603
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LM Project Number: LM23.226

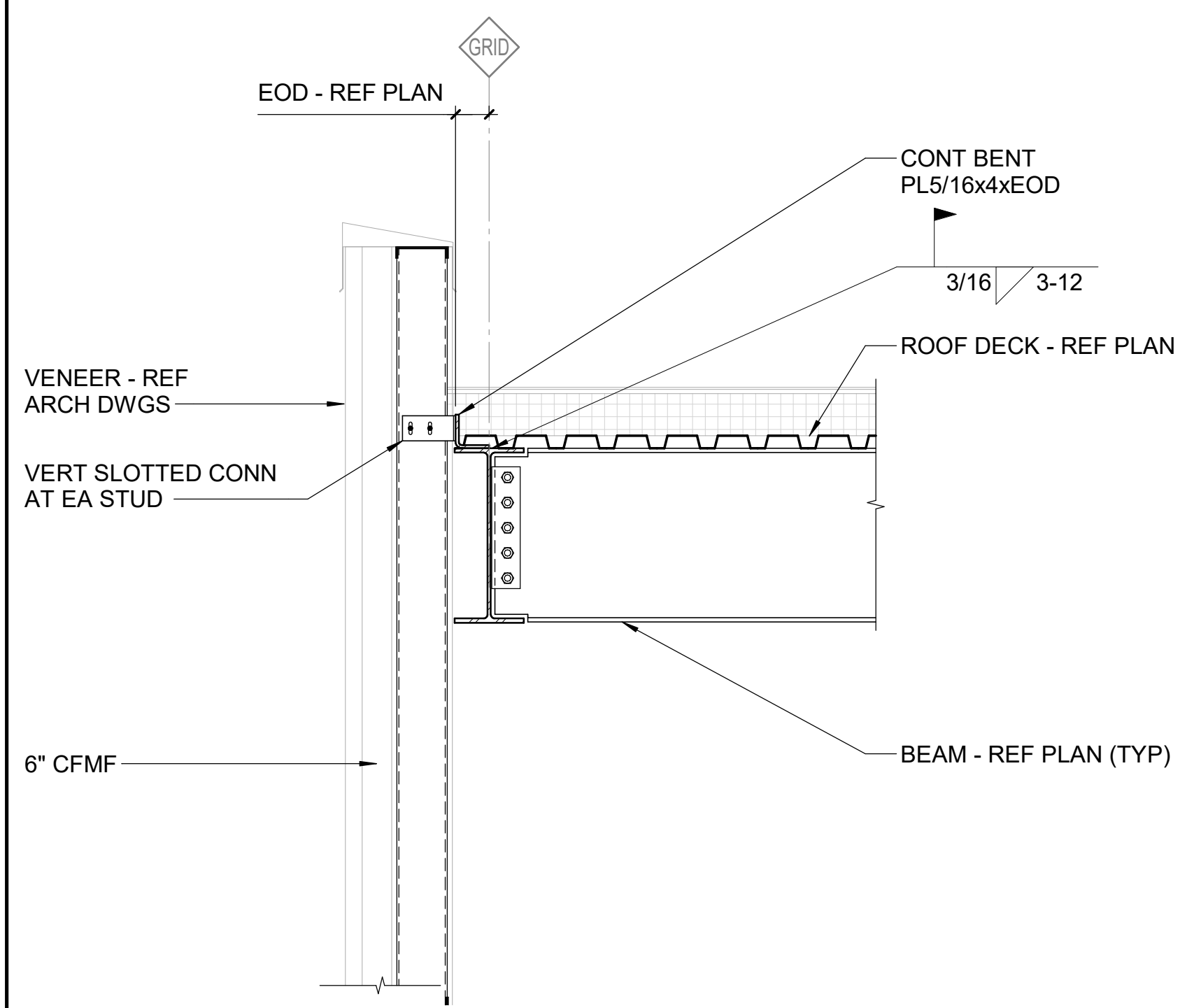


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STATE ID #22-2450-02A
NCSU PROJECT # 202220021

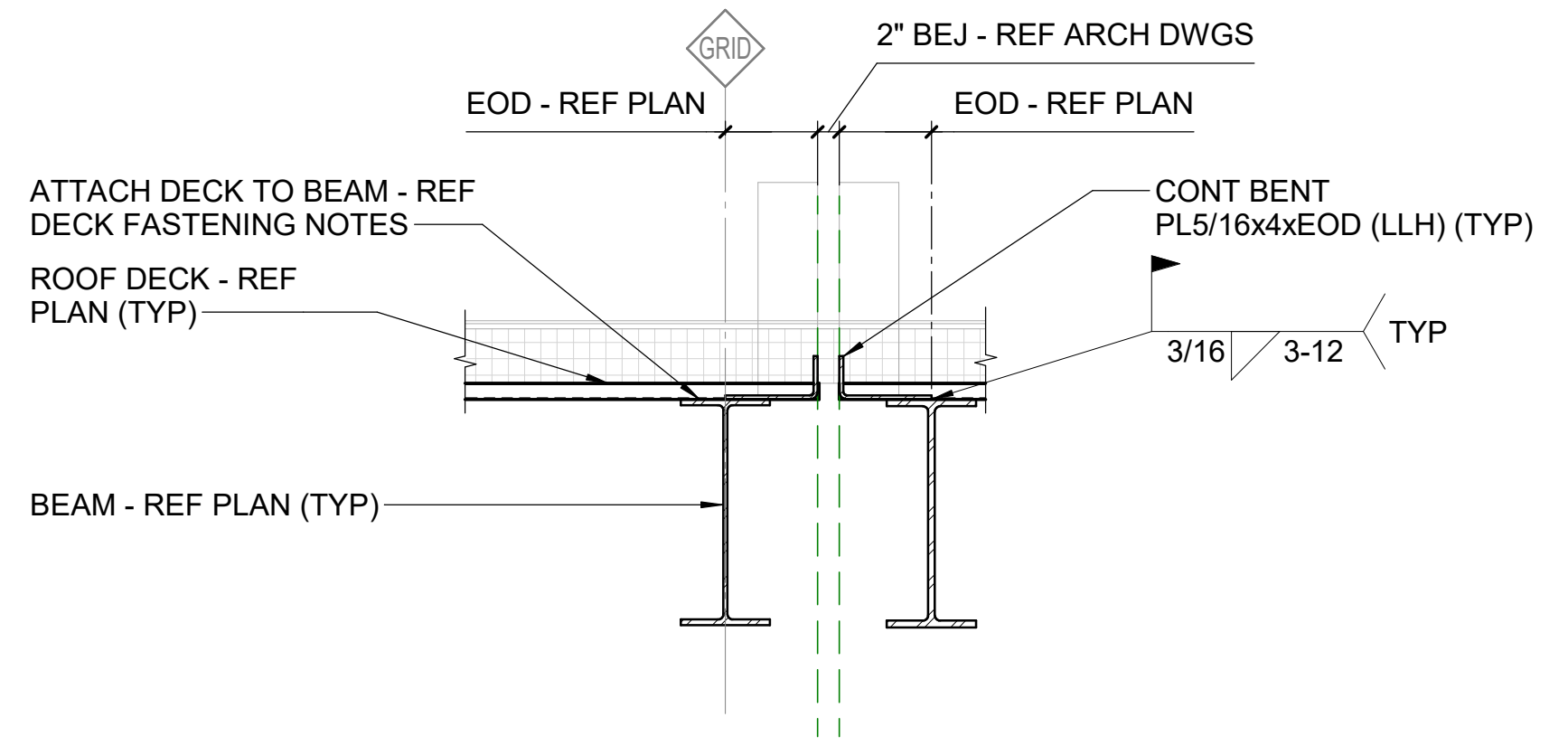


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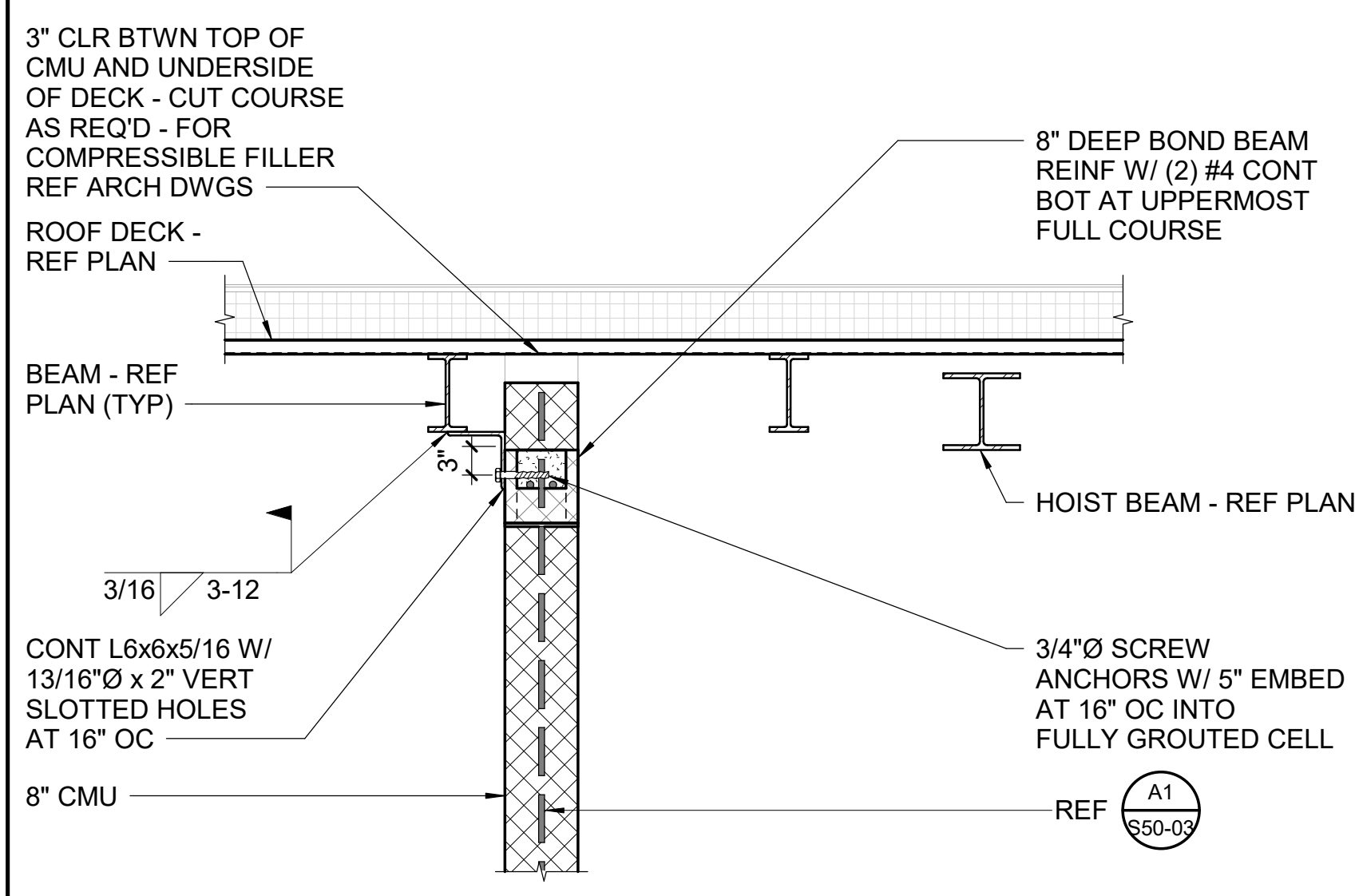
NOT FOR CONSTRUCTION



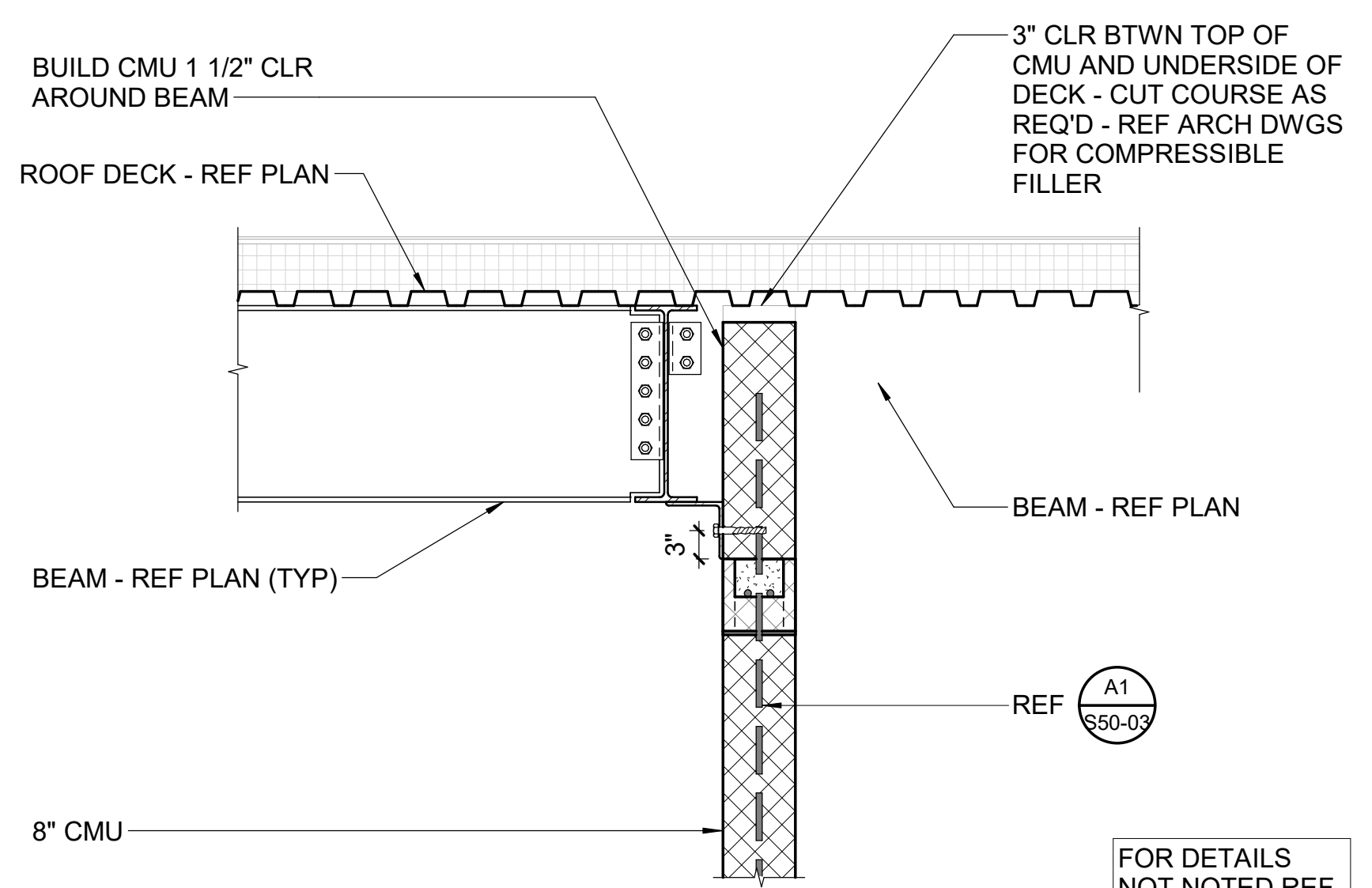
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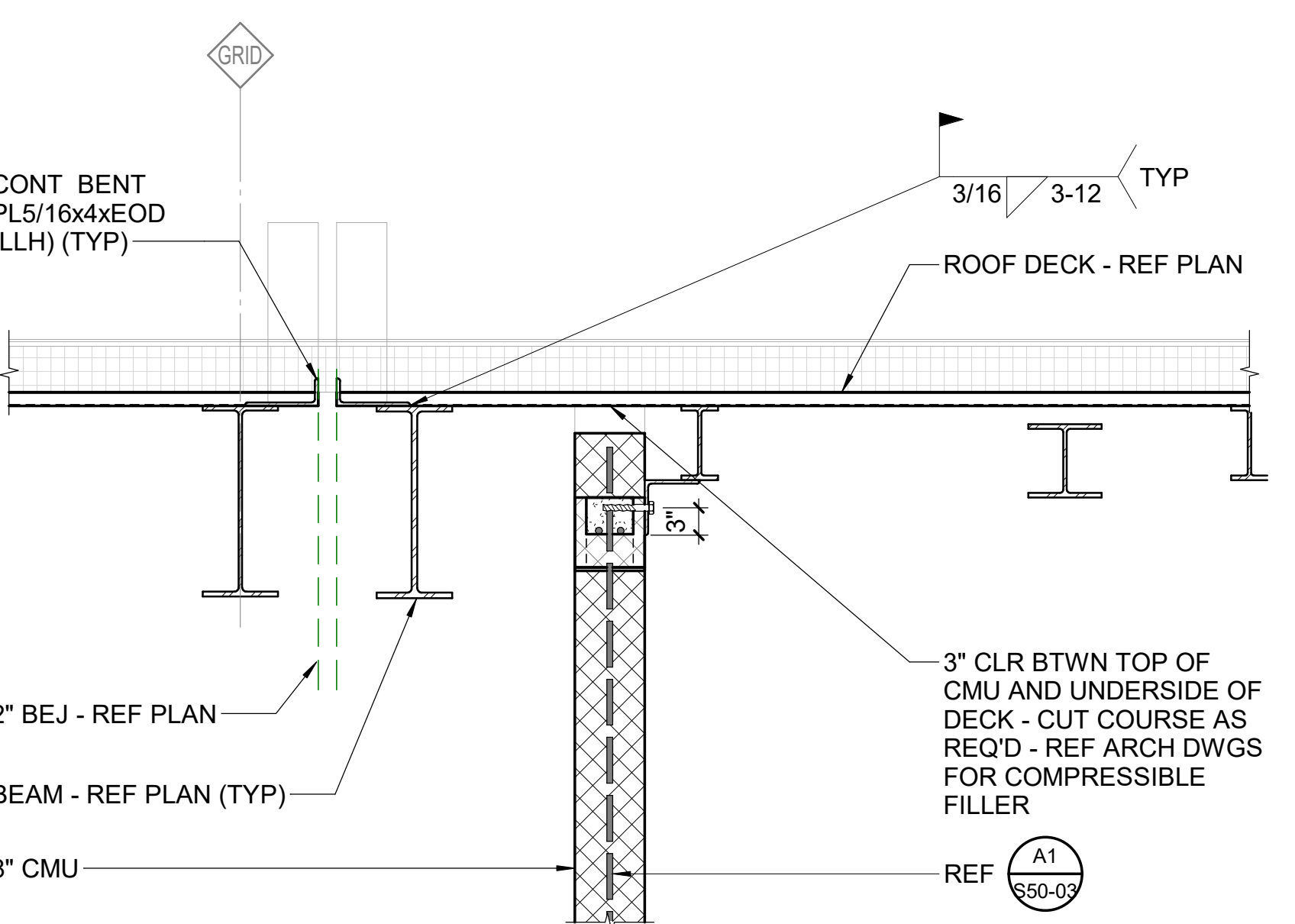
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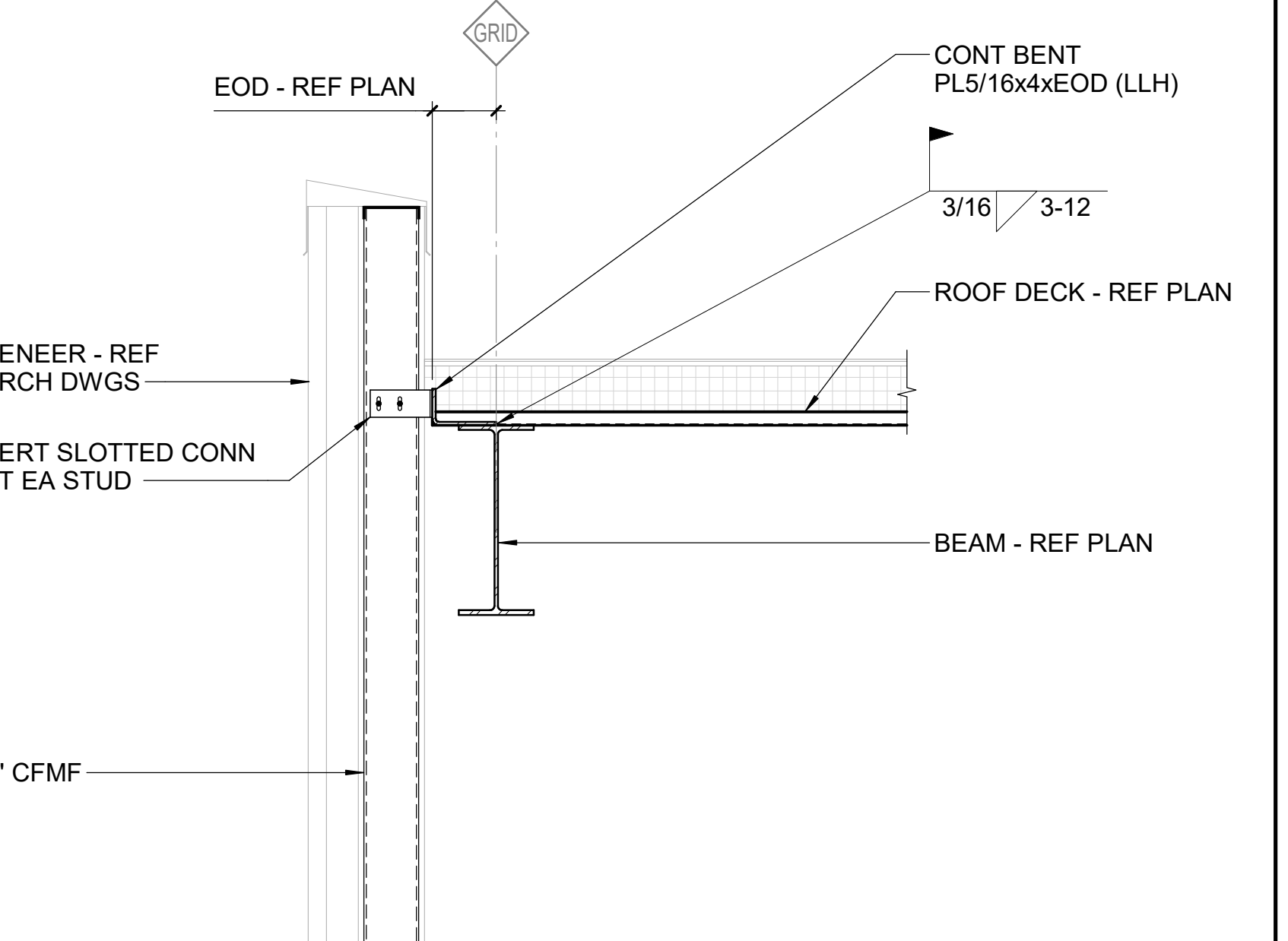
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3/4" = 1'-0"



A2 SECTION
3/4" = 1'-0"



A3 SECTION
3/4" = 1'-0"



A4 SECTION
3/4" = 1'-0"

ISSUE CHART

| | | |
|--------------|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 09/20/24 |
| 1 | Schematic | 04/15/24 |
| Job Number | | 820937.001 |
| Drawn By: | | DO |
| Designed By: | | JD |
| Checked By: | | SF |

TITLE

SECTIONS

SHEET NUMBER

S30-04

| MARK | SIZE | | REINFORCING | | REMARKS |
|------|---------|-------|------------------|-----------------------|---------|
| | WIDTH | DEPTH | CONTINUOUS | TRANSVERSE | |
| WF3 | 3' - 0" | 1'-0" | (3) #4 BOT | #4 AT 48" OC BOT | - |
| WF5 | 5' - 0" | 2'-0" | (6) #6 TOP & BOT | #6 AT 8" OC TOP & BOT | - |

FOUNDATION PLAN NOTES

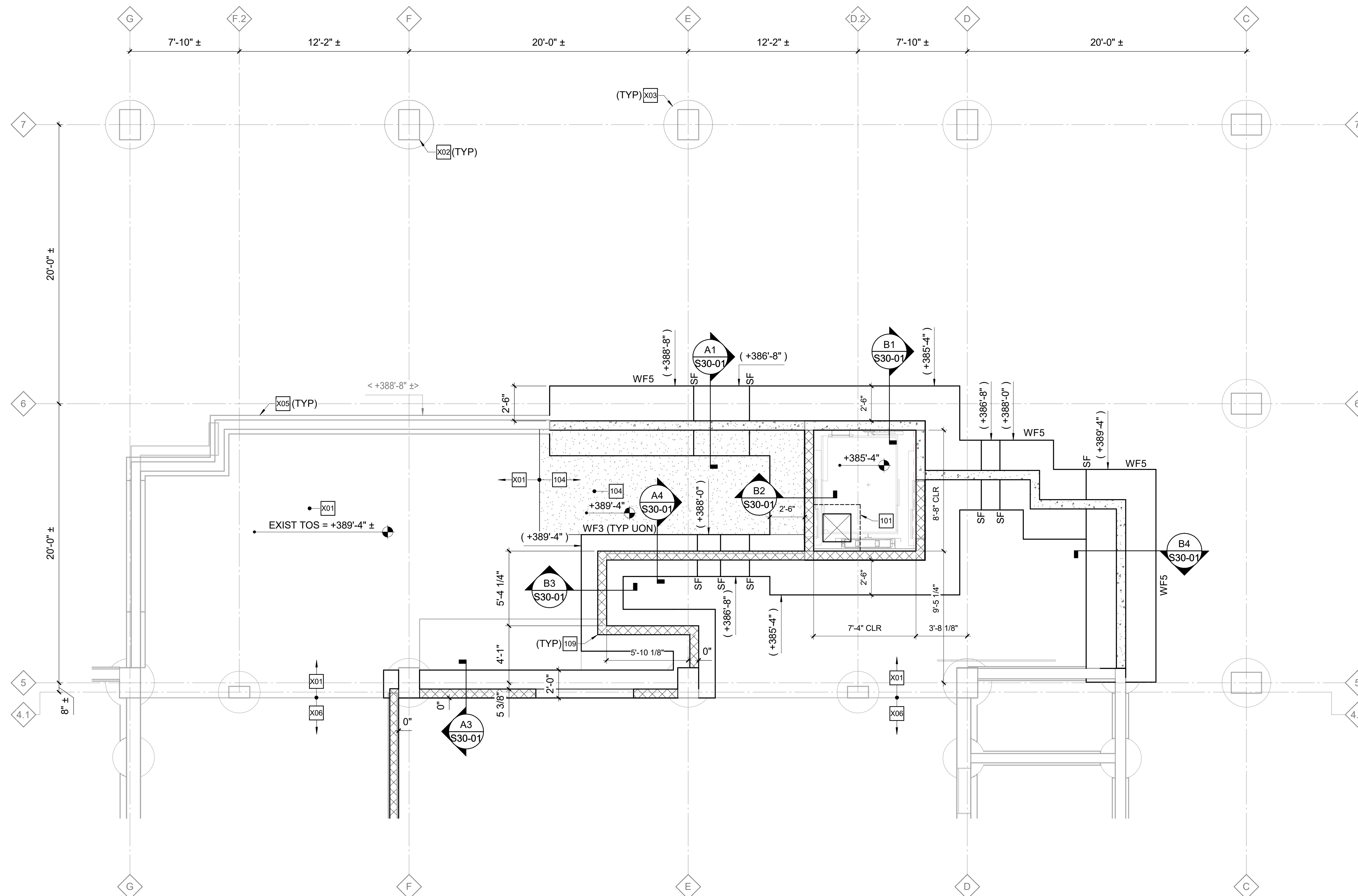
- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. TOP OF ALL FOOTINGS ARE INDICATED ON PLAN.
- D. NOT ALL UTILITY LOCATIONS ARE SHOWN ON PLAN. THE CONTRACTOR MUST COORDINATE THE LOCATIONS, SIZES, AND INVERTS OF UTILITIES. AT LOCATIONS WHERE UTILITIES PASS BELOW THE TOP OF FOOTING ELEVATION, STEP THE TOP OF FOOTING DOWN ON EACH SIDE PER THE "TYPICAL STEPPED FOOTING DETAIL" AND SLEEVE THE UTILITY THROUGH THE FOUNDATION WALL. THE CONTRACTOR MAY, AT HIS/HER OPTION, SLEEVE THE UTILITY THROUGH THE FOUNDATION PER THE "TYPICAL PIPE SLEEVE AT WALL FOOTING DETAILS."
- E. UNLESS OTHERWISE INDICATED, EXTEND WALL FOOTINGS A MINIMUM OF 6 INCHES BEYOND ENDS OF WALLS.
- F. SITE WALLS ARE NOT SHOWN ON PLAN. CONTRACTOR MUST COORDINATE CIVIL AND LANDSCAPE DRAWINGS FOR SITE WALL INFORMATION.
- G. DIMENSIONS SHOWN ON FOUNDATION PLAN ARE TO COLUMN GRIDLINES AND OUTSIDE FACE OF FOUNDATION WALLS, UNLESS OTHERWISE NOTED.

SLAB/DECK PLAN NOTES

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LIMITS OF SLAB DEPRESSIONS AND OMITTED SLABS.
- D. FLOOR SINKS AND DRAINS ARE NOT SHOWN ON PLAN. REFERENCE PME DRAWINGS FOR LOCATIONS.
- E. REFERENCE CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE SLABS AND PAVING.
- F. SLAB-ON-GRADE JOINTS MUST BE SAWED JOINTS OR KEYED CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED. CONTRACTOR MUST COORDINATE ALL SLAB JOINTS WITH JOINTS IN BONDED FLOOR FINISHES. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR FINISH JOINT LOCATIONS.
- G. PLACE (1) #4 x 3'-0" IN MIDDEPTH OF SLAB AT RE-ENTRANT CORNERS WHERE A SLAB JOINT DOES NOT OCCUR.
- H. EXISTING SLAB-ON-GRADE IS 4" CONCRETE, UNLESS OTHERWISE NOTED.

KEY NOTES

- 101 2'-0" SQUARE SUMP PIT FOR ELEVATOR. REFERENCE TYPICAL DETAIL. COORDINATE LOCATION WITH PLUMBING DRAWINGS AND ELEVATOR MANUFACTURER.
- 104 SAW-CUT AND REPLACE EXISTING CONCRETE SLAB-ON-GRADE WITH 4" CONCRETE SLAB-ON-GRADE OVER VAPOR RETARDER AND 4" DEPTH OF POROUS FILL UNLESS OTHERWISE INDICATED. REINFORCE SLAB WITH 6x6-W2.1 W2.1 WELDED WIRE REINFORCING PLACED 1 1/2" CLEAR BELOW TOP OF SLAB. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT. REFER TO TYPICAL SLAB DOWEL DETAIL. EXTENTS OF WORK AS REQUIRED FOR NEW CONCRETE WALL AND FOOTING WORK. COORDINATE TOP OF NEW SLAB ELEVATION WITH ADJACENT EXISTING SLAB. CONTRACTOR MUST VERIFY EXISTING SLAB THICKNESS.
- 109 8" CMU WALL REINFORCED WITH #5 VERTICAL AT 40" OC, CENTERED IN WALL.
- X01 EXISTING 5" CONCRETE SLAB-ON-GRADE.
- X02 EXISTING CONCRETE COLUMN.
- X03 EXISTING CONCRETE CAISSON.
- X05 EXISTING CONCRETE WALL FOOTING.
- X06 EXISTING 54" CONCRETE SLAB-ON-GRADE.



A1 ENLARGED FOUNDATION AND SLAB-ON-GRADE PLAN - FLOOR 00
1/4" = 1'-0"

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1 704.972.5600
1 704.972.5601
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Salas O'Brien
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License (NC): F-1434
CIVIL

NVS Engineers and Consultants
3300 Regency Parkway Suite 100, Cary, NC 27518

CONTRACTOR
Holder Construction Group
6210 Audrey Kell Road Suite 400, Charlotte, NC 28277

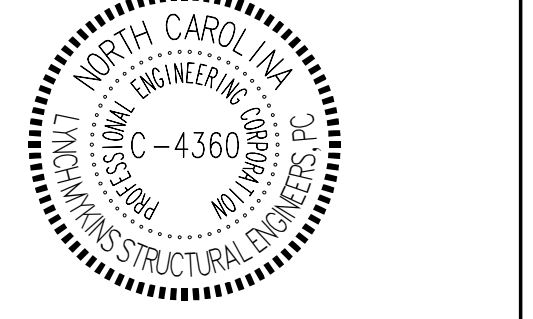
AUDIOVISUAL
NVS Engineers and Consultants
4905 Professional Court, Raleigh, NC 27609

LIGHTING
Available Light
5700 Six Forks Road, Suite 203, Raleigh, NC 27609

SUSTAINABILITY
Ecoimpact Consulting
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LM Project Number: LM23.226



Mann Hall Renovation
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NCSU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
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NOT FOR CONSTRUCTION

ISSUE CHART

| NO. | DESCRIPTION | DATE |
|-------|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 09/20/24 |
| 0000K | Issue | 04/16/24 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

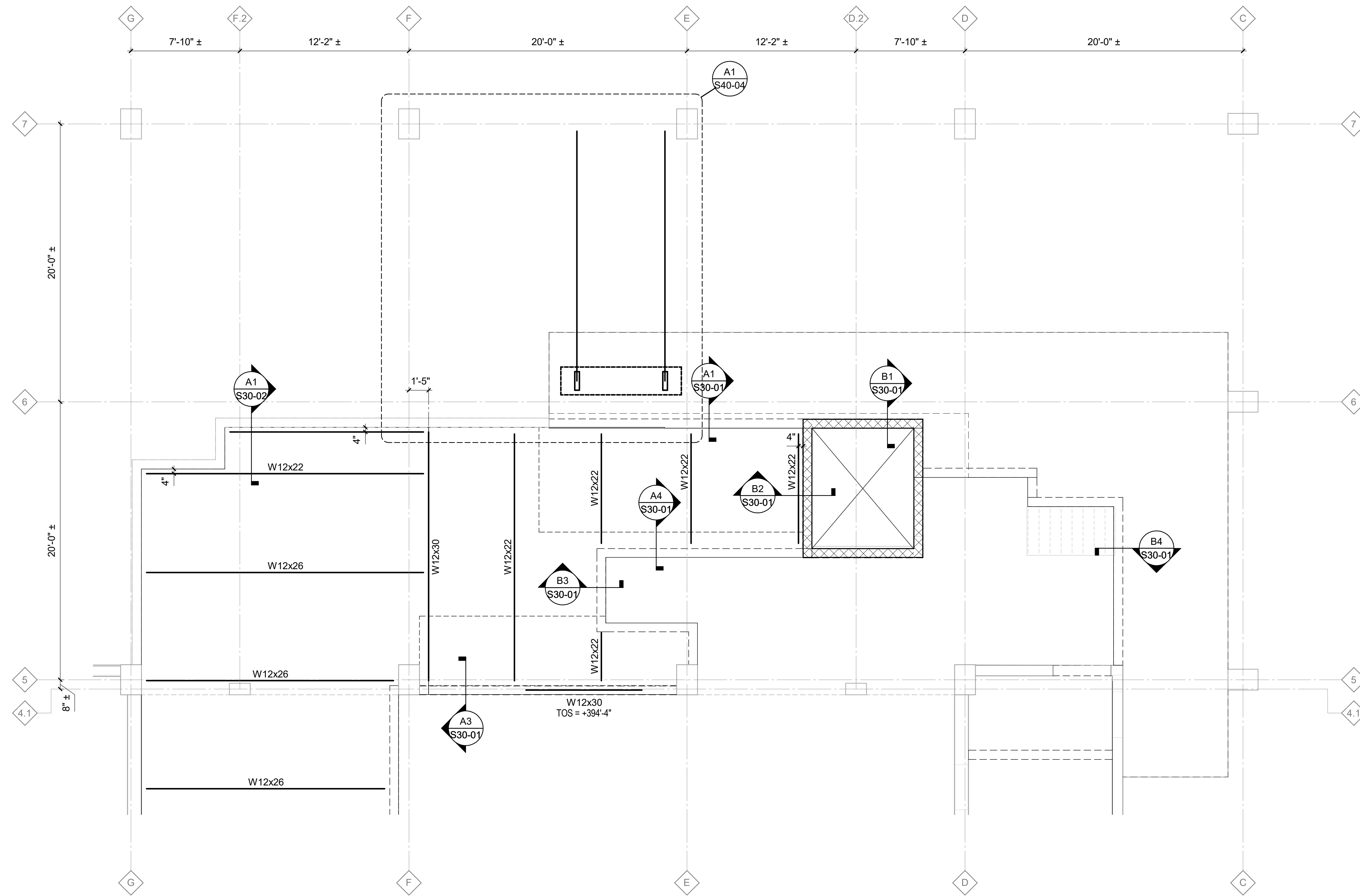
TITLE
ENLARGED
FOUNDATION AND
SLAB-ON-GRADE
PLAN - FLOOR 00
SHEET NUMBER

S40-01

FRAMING PLAN NOTES

- A. REFERENCE FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- B. TOP OF FINISHED FLOOR ELEVATION MUST BE AS NOTED ON SLAB PLANS.
- C. STEEL FLOOR FRAMING MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 8'-0" ON-CENTER).
- D. STEEL ROOF FRAMING SUPPORTING 1 1/2" STEEL ROOF DECK MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 5'-0" ON-CENTER).
- E. CONCRETE ON ELEVATED METAL DECKS MUST BE POURED TO THE THICKNESS INDICATED.
- F. AT STEEL ROOF FRAMING, BOTTOM OF DECK ELEVATIONS ARE SHOWN ON PLAN. INTERMEDIATE ELEVATIONS MUST BE STRAIGHT LINES BETWEEN GIVEN ELEVATIONS. INTERPOLATE AS REQUIRED FOR INTERMEDIATE BEARING ELEVATIONS, UNLESS OTHERWISE NOTED.
- G. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.
- H. EXTENTS OF SLAB/JOIST DEMO AND NEW MEMBER FRAMING LENGTHS ARE APPROXIMATE. EXISTING FRAMING CONDITIONS AND REQUIRED MEASUREMENTS MUST BE FIELD VERIFIED PRIOR TO DEMOLITION AND FABRICATION. DESIGN INTENT IS FOR NEW OPENING AND SLAB CONSTRUCTION TO BE LOCATED BETWEEN EXISTING CONCRETE JOISTS, ADJUST DIMENSIONS AND LOCATION OF SLAB DEMO AS NEEDED. NOTIFY ENGINEER IF AS-BUILT CONDITIONS ARE INCONSISTENT WITH INFORMATION INDICATED ON PLAN.
- I. DIMENSIONS TO CHANNELS ARE FROM FLAT FACE OF CHANNEL.

KEY NOTES



A1 ENLARGED FRAMING PLAN - FLOOR 01
1/4" = 1'-0"

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MEP
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702 Oberlin Road, Raleigh, NC 27605
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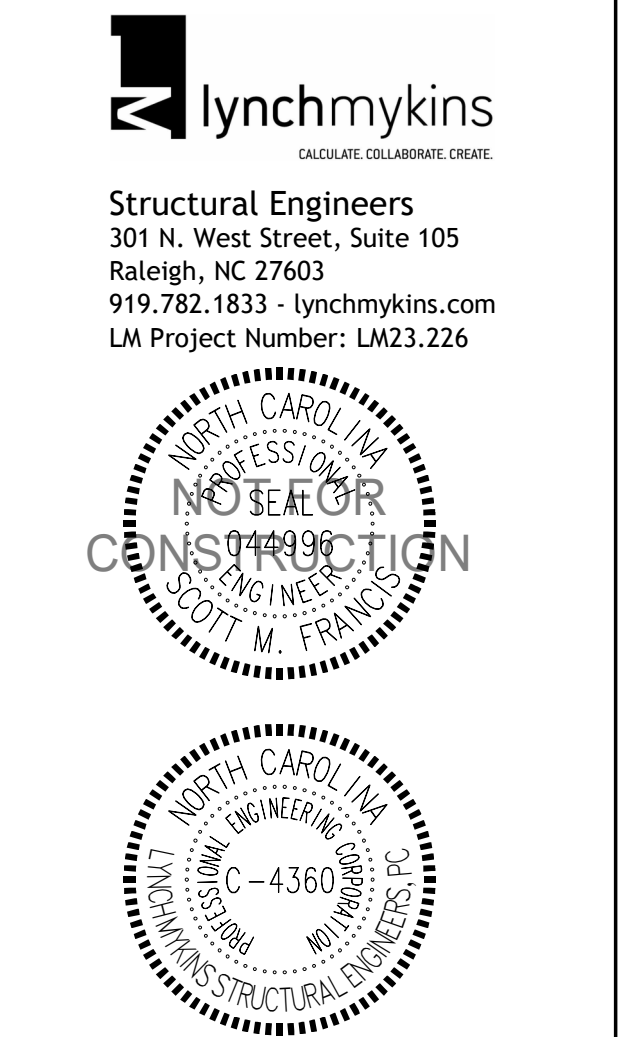
CIVIL
NVS Engineers and Consultants
3300 Regency Parkway Suite 100, Cary, NC 27518

CONTRACTOR
Holder Construction Group
6210 Audrey Kell Road Suite 400, Charlotte, NC 28277

AUDIOVISUAL
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Available Light
5700 Six Forks Road, Suite 203, Raleigh, NC 27609

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Mann Hall Renovation
STATE ID #22-2450-02A
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North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
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ISSUE CHART

| NO. | DESCRIPTION | DATE |
|-----|-----------------------------------|------------|
| 1 | Issue for Bid - Early Procurement | 01/17/2025 |
| 2 | Design Development | 09/20/24 |
| 3 | Final | 04/18/24 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

ENLARGED FRAMING PLAN - FLOOR 01

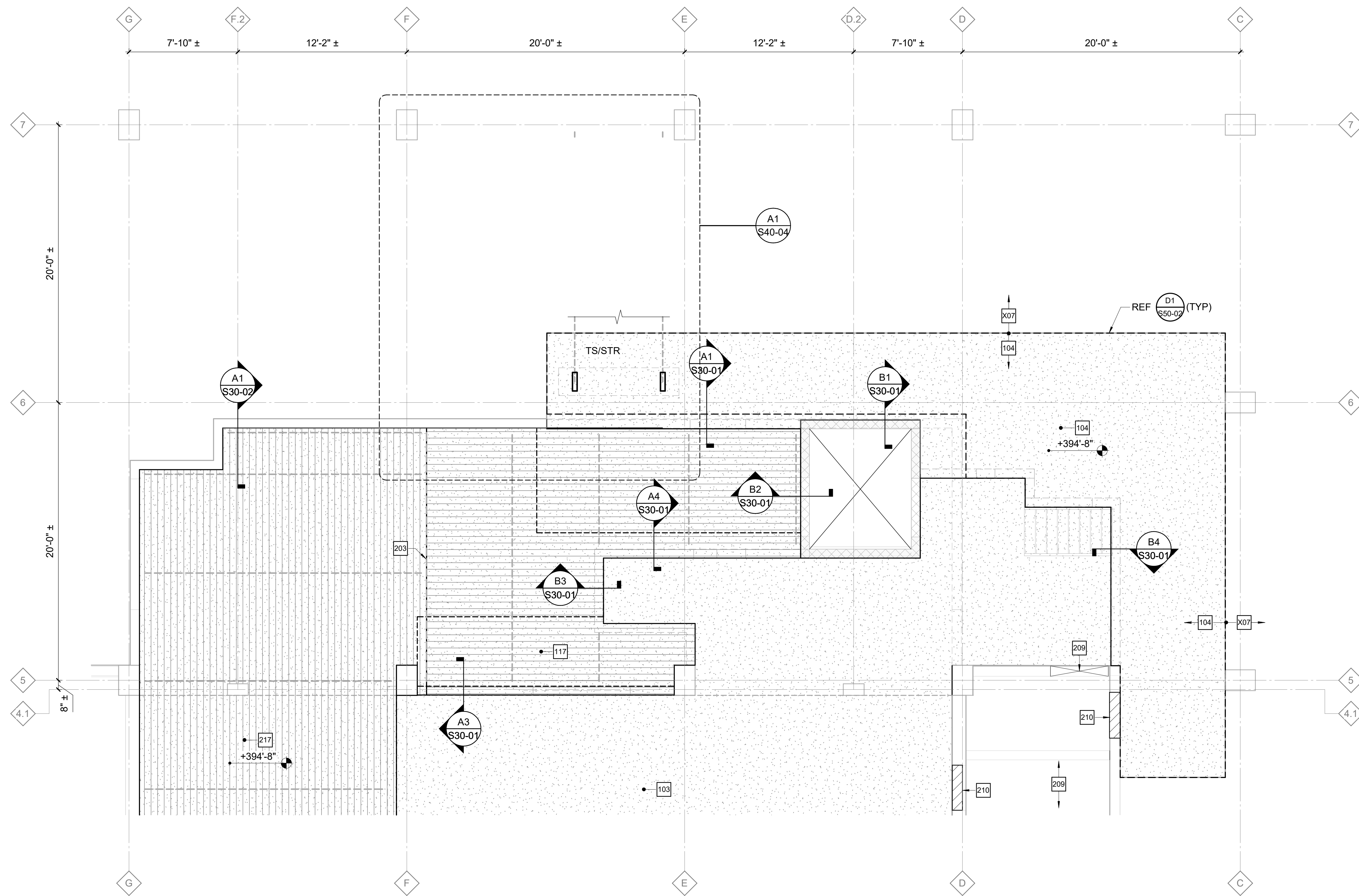
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S40-02

SLAB/DECK PLAN NOTES

- A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.
- B. ACTUAL FINISHED FLOOR ELEVATIONS ARE SPECIFIED ON PLAN. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIAL.
- C. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LIMITS OF SLAB DEPRESSIONS AND OMITTED SLABS.
- D. FLOOR SINKS AND DRAINS ARE NOT SHOWN ON PLAN. REFERENCE PME DRAWINGS FOR LOCATIONS.
- E. REFERENCE CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE SLABS AND PAVING.
- F. SLAB-ON-GRADE JOINTS MUST BE SAWS JOINTS OR KEYED CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED. CONTRACTOR MUST COORDINATE ALL SLAB JOINTS WITH JOINTS IN BONDED FLOOR FINISHES. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR FINISH JOINT LOCATIONS.
- G. PLACE (1) #4 x 3'-0" IN MIDDEPTH OF SLAB AT RE-ENTRANT CORNERS WHERE A SLAB JOINT DOES NOT OCCUR.
- H. EXISTING SLAB-ON-GRADE IS 4" CONCRETE, UNLESS OTHERWISE NOTED.

KEY NOTES

- 103 4" TOPPING SLAB OVER EXISTING SLAB. REINFORCE SLAB WITH 6x6-W2, 1xW2, 1 WELDED WIRE REINFORCING PLACED 1 1/2" CLEAR BELOW TOP OF SLAB. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT. APPLY SIKA BONDBREAKER ID OR APPROVED EQUIVALENT BETWEEN EXISTING SLAB AND TOPPING SLAB.
- 104 SAW-CUT AND REPLACE EXISTING CONCRETE SLAB-ON-GRADE WITH 4" CONCRETE SLAB-ON-GRADE OVER VAPOR RETARDER AND 4" DEPTH OF POROUS FILL UNLESS OTHERWISE INDICATED. REINFORCE SLAB WITH 6x6-W2, 1xW2, 1 WELDED WIRE REINFORCING PLACED 1 1/2" CLEAR BELOW TOP OF SLAB. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT. REFER TO TYPICAL SLAB DOWEL DETAIL. EXTENTS OF WORK AS REQUIRED FOR NEW CONCRETE WALL AND FOOTING WORK. COORDINATE TOP OF NEW SLAB ELEVATION WITH ADJACENT EXISTING SLAB. CONTRACTOR MUST VERIFY EXISTING SLAB THICKNESS.
- 117 4" TOPPING SLAB EXTENDS INTO STORAGE AREA BELOW ELEVATED SLAB. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT EXTENTS.
- 203 CHANGE DECK DIRECTION AT BEAM CENTER LINE.
- 209 NEW OPENING IN EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE. REFER TO TYPICAL STEEL LINTEL BEARING ON EXISTING MASONRY DETAILS.
- 210 INFILL EXISTING MULTI-WYTHE BRICK MASONRY WALL ABOVE WITH BRICK TO MATCH EXISTING.
- 217 2 1/2" NORMAL WEIGHT CONCRETE SLAB ON 1 1/2" FORM DECK, (4" TOTAL) REINFORCED WITH 6x6-W2, 9xW2, 9 WELDED WIRE REINFORCING LOCATED 1" CLEAR BELOW TOP OF SLAB.
- X07 EXISTING 4" CONCRETE SLAB-ON-GRADE.



A1 ENLARGED SLAB PLAN - FLOOR 01
1/4" = 1'-0"

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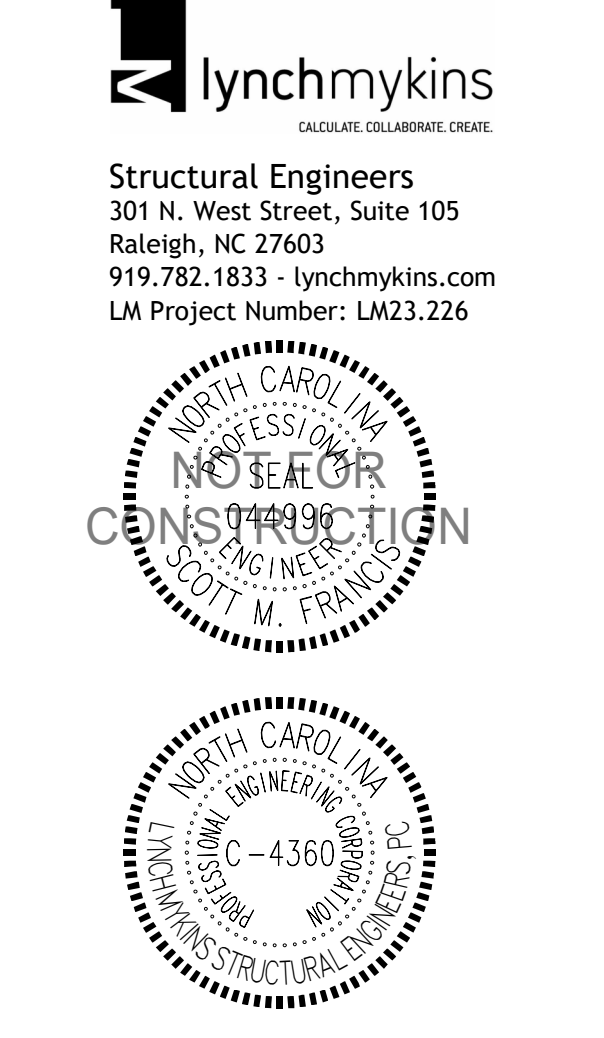
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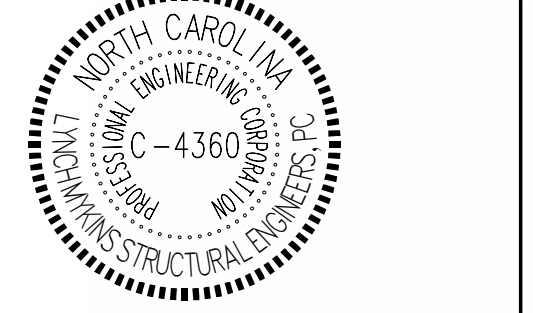
Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

ENLARGED SLAB PLAN - FLOOR 01

SHEET NUMBER
S40-03



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LM Project Number: LM23.226



Mann Hall Renovation
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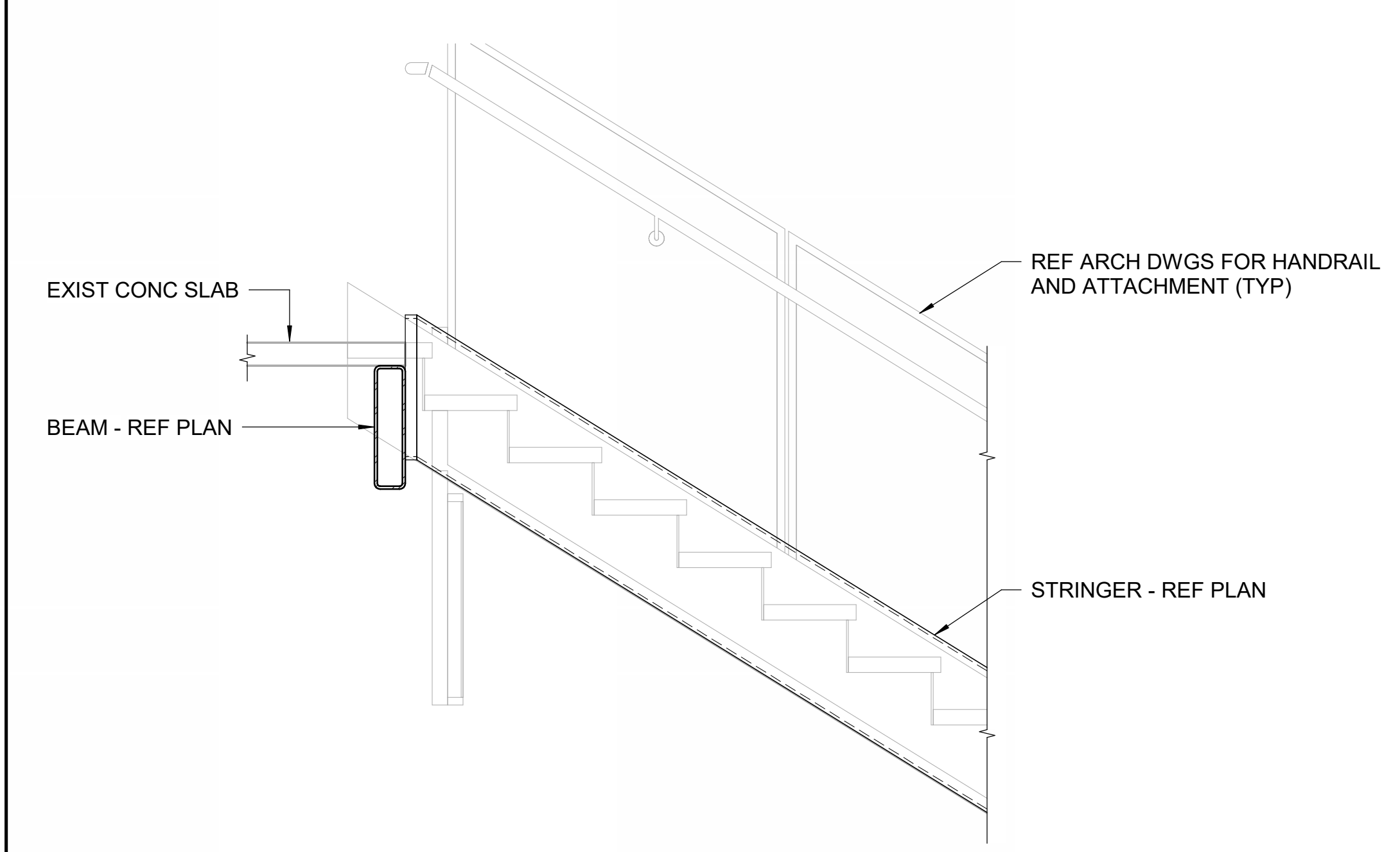
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Facilities Division Design & Construction
Administrative Services Building III
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MONUMENTAL STAIR NOTES

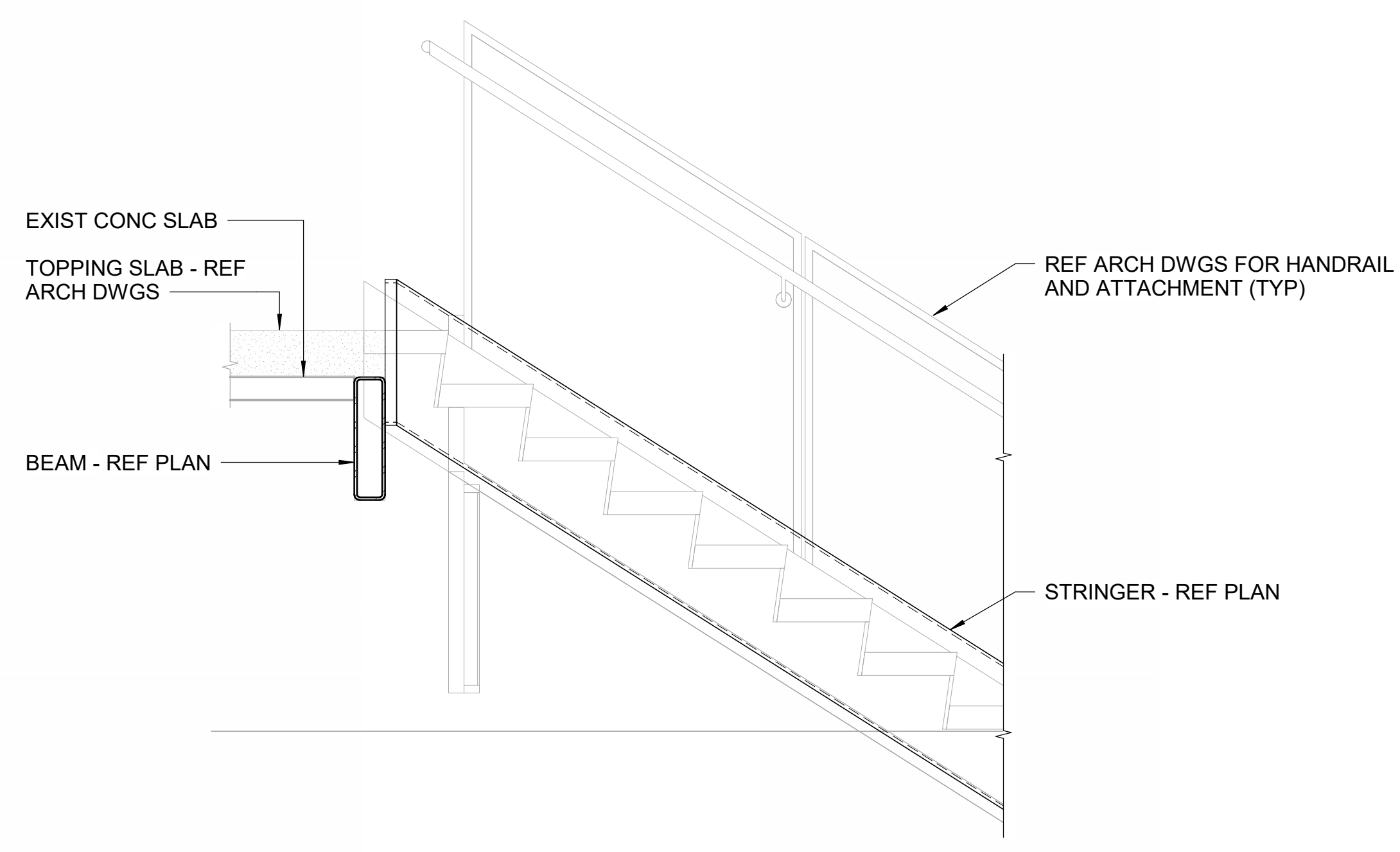
- A. ALL MONUMENTAL STAIR FRAMING MUST BE ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS 3).
- B. SUPPLIER/CONTRACTOR MUST COORDINATE FIELD MEASUREMENTS PRIOR TO FABRICATION.
- C. ALL RAILINGS (STEEL OR OTHERWISE) AND THEIR CONNECTIONS MUST BE DESIGNED FOR A LATERAL LOAD OF 50 PLF APPLIED TO THE TOP OF THE RAIL OR A 200 POUND POINT LOAD IN ANY DIRECTION, WHICHEVER GOVERNS THE DESIGN. ALL RAILING SHOP DRAWINGS AND DESIGN CALCULATIONS MUST BEAR THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA. CALCULATIONS MUST BE SUBMITTED FOR REVIEW WITH THE RAILING SHOP DRAWINGS.

KEY NOTES

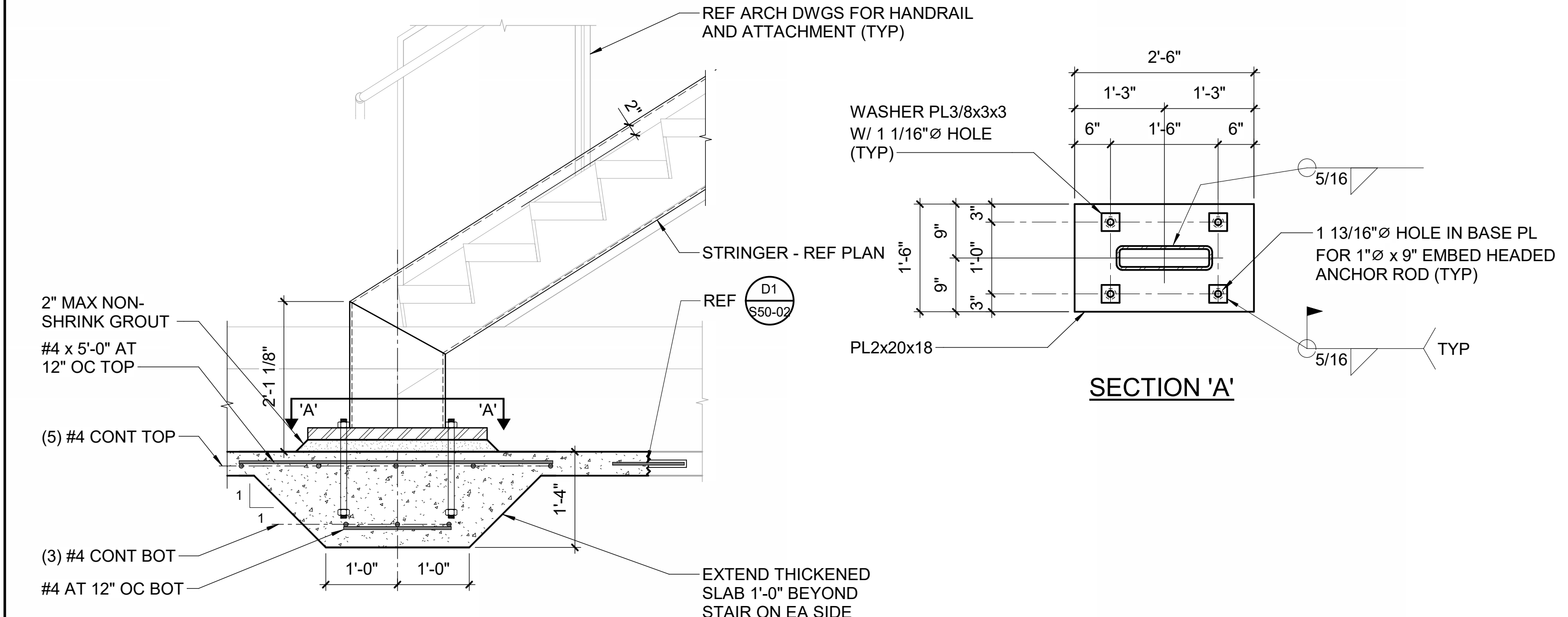
- 205 HSS16x4x3/8 STAIR STRINGER.
- 219 HSS16x4x3/8 AT STAIR LANDING.
- X07 EXISTING 4" CONCRETE SLAB-ON-GRADE.
- X10 EXISTING 3" CONCRETE SLAB AND 15" CONCRETE PAN JOISTS. SPAN DIRECTION OF PAN JOISTS INDICATED ON PLAN. FIELD VERIFY JOIST SPACING AND DEPTH PRIOR TO DEMO.



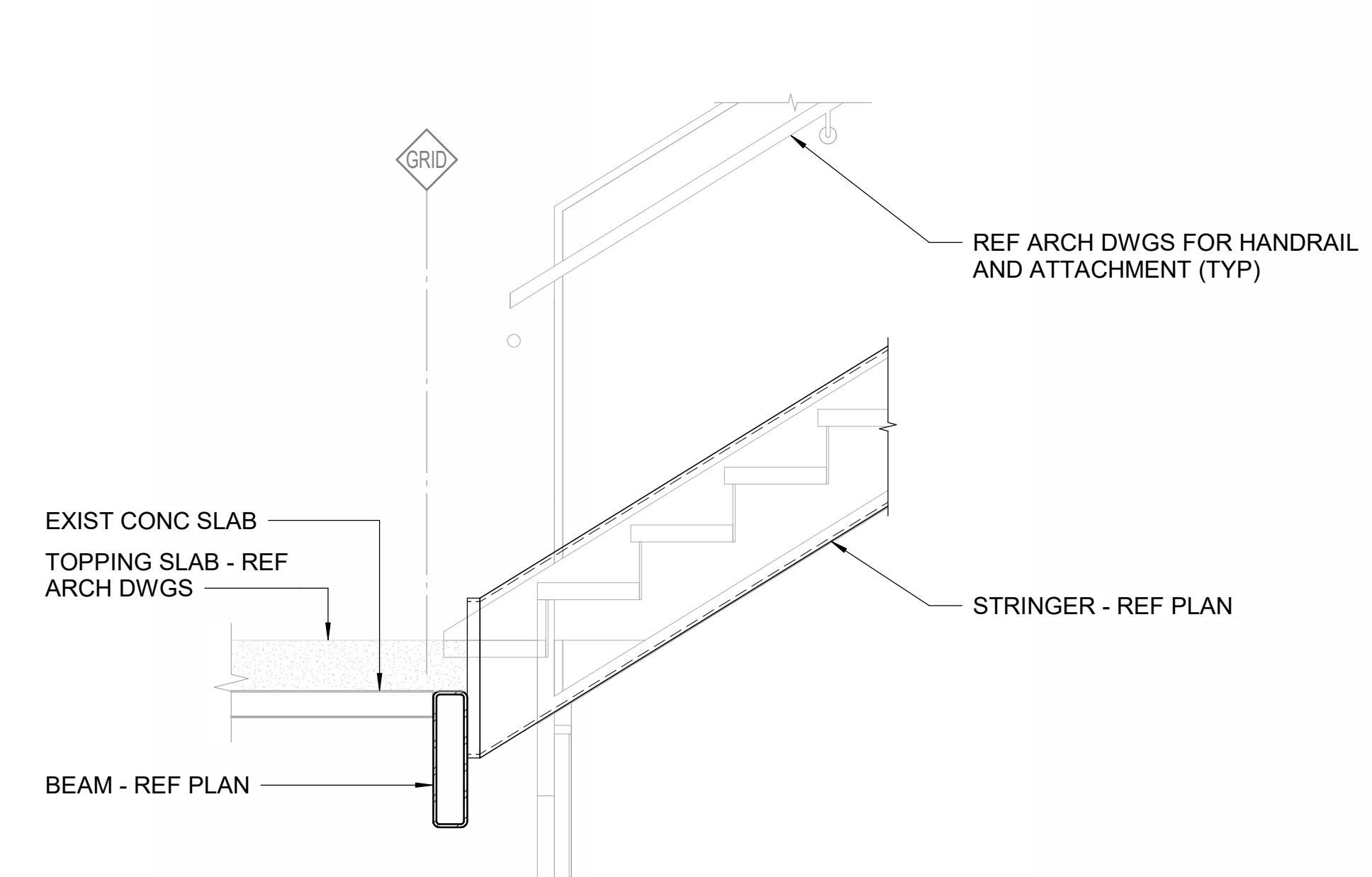
C1 SECTION
3/4" = 1'-0"



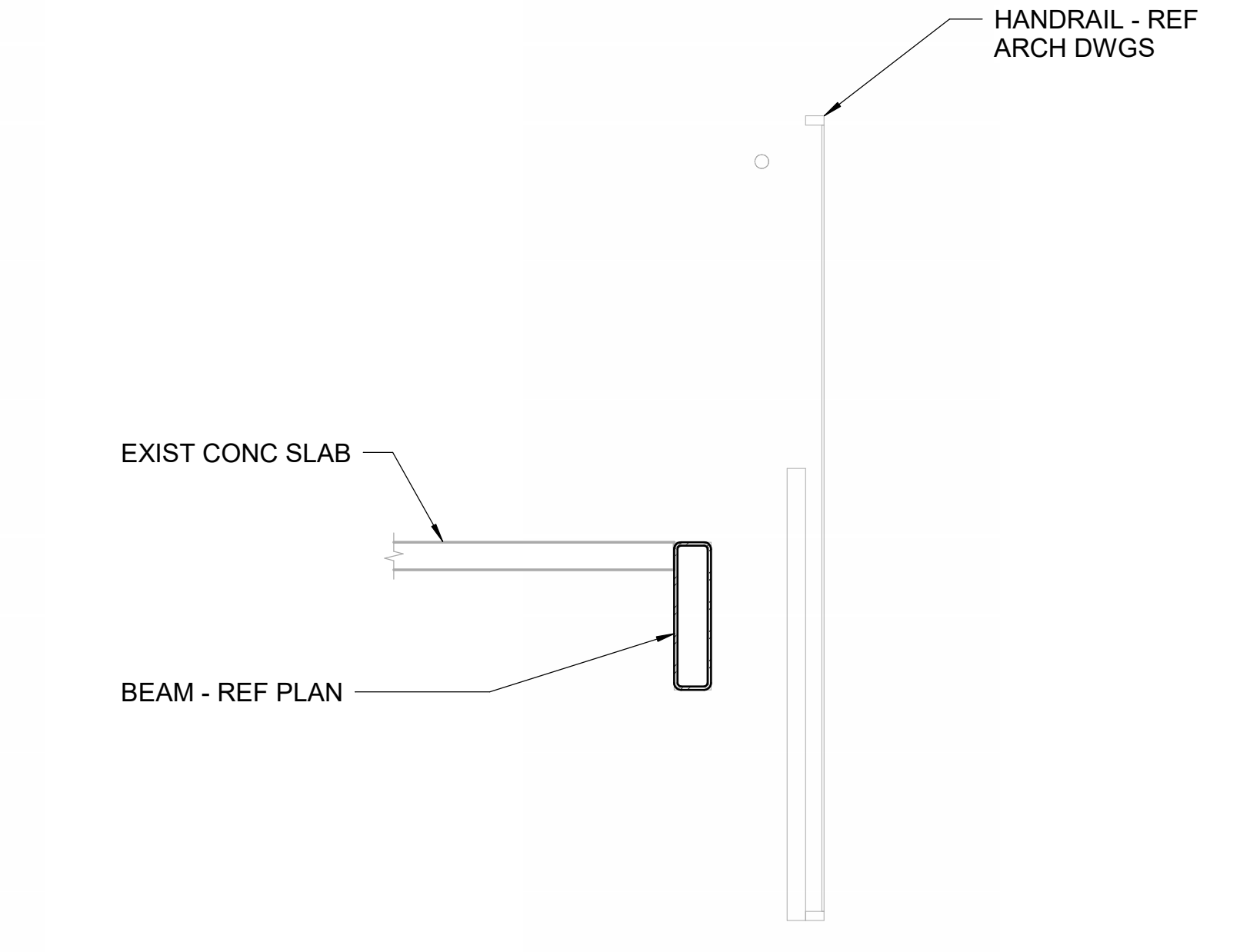
C2 SECTION
3/4" = 1'-0"



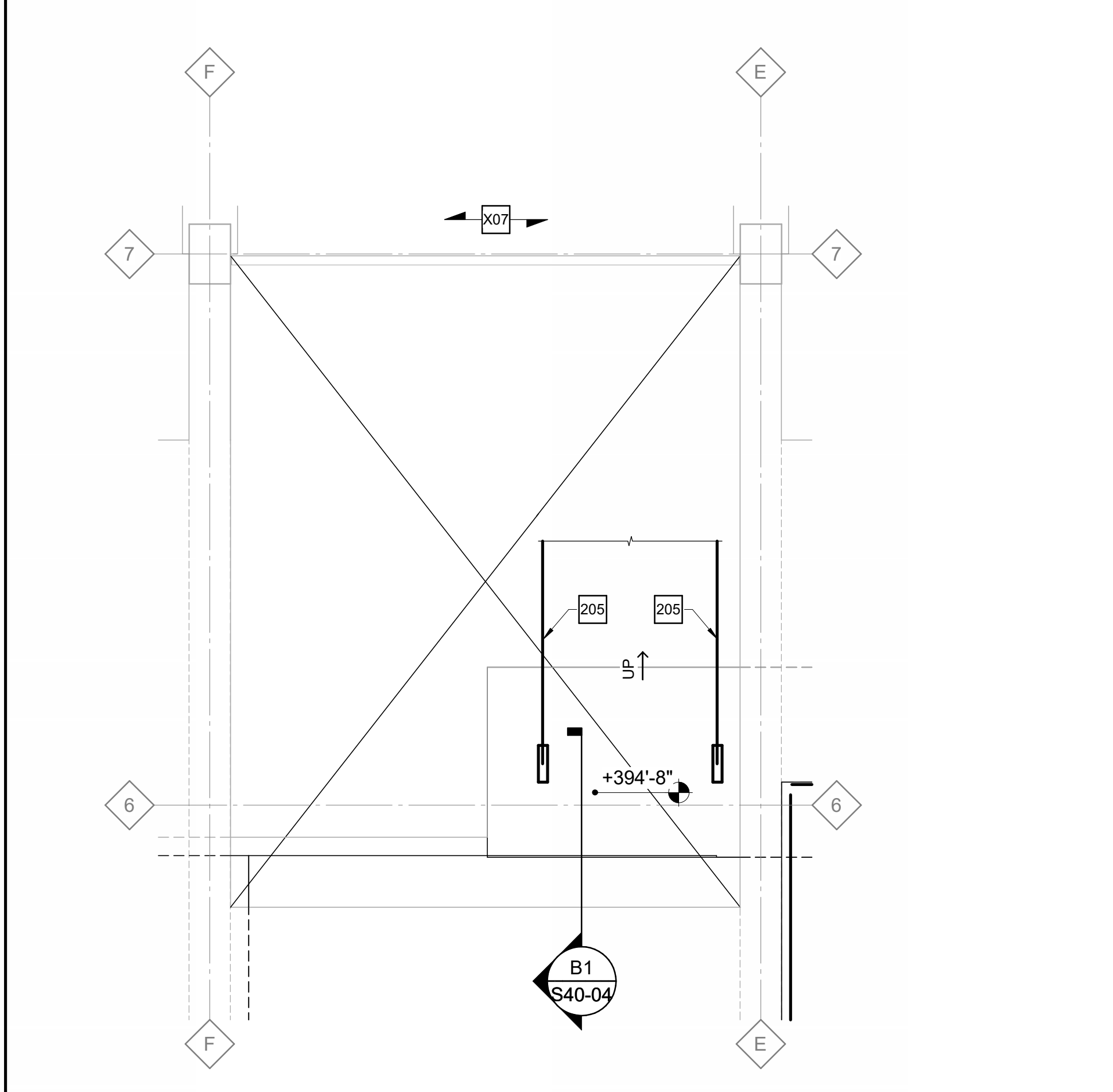
B1 SECTION
3/4" = 1'-0"



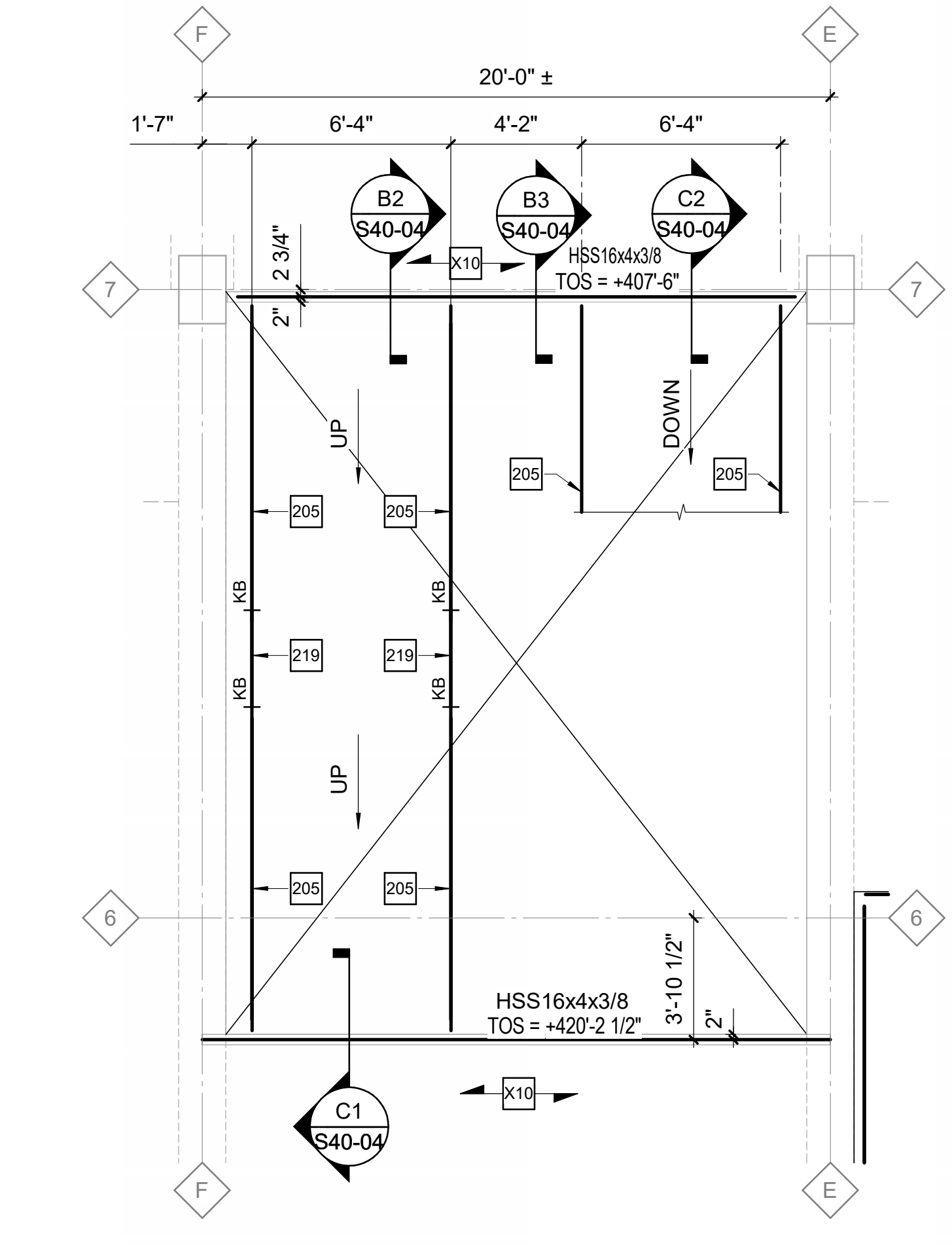
B2 SECTION
3/4" = 1'-0"



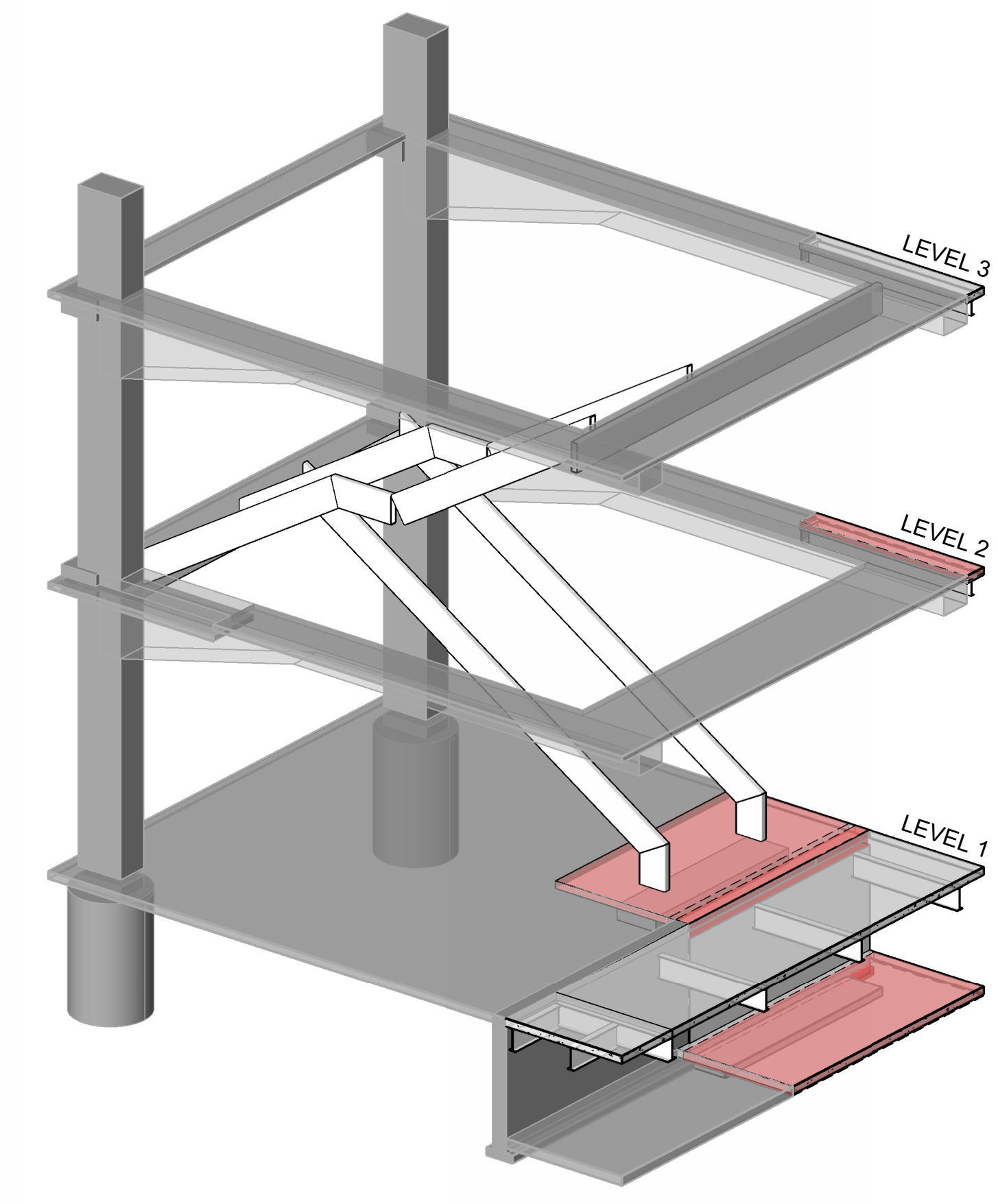
B3 SECTION
3/4" = 1'-0"



A1 MONUMENTAL STAIR FRAMING - LEVEL 1 TO LEVEL 2
1/4" = 1'-0"



A2 MONUMENTAL STAIR FRAMING - LEVEL 2 TO LEVEL 3
1/4" = 1'-0"



A3 3D VIEW - MONUMENTAL STAIR
3/4" = 1'-0"

NOT FOR CONSTRUCTION

ISSUE CHART

| NO. | DESCRIPTION | DATE |
|-----|-----------------------------------|------------|
| 1 | Design Development | 8/9/2024 |
| 2 | Issue for Bid - Early Procurement | 10/17/2025 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

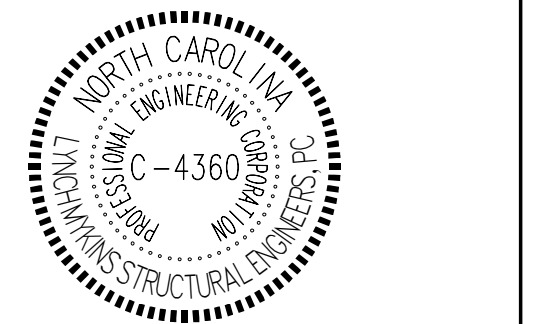
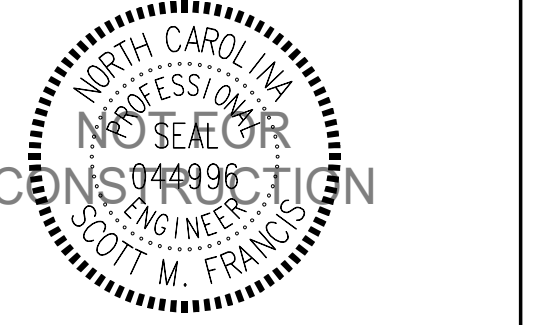
EXIT ACCESS STAIR PLANS AND SECTIONS

SHEET NUMBER

S40-04



Structural Engineers
301 N. West Street, Suite 105
Raleigh, NC 27603
919.782.1833 - lynchmykns.com
LM Project Number: LM23.226



Mann Hall Renovation
STATE ID #22-2450-02A
NCSTU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2901 West Village Way, Suite 311
Raleigh, NC 27695

NOT FOR CONSTRUCTION



| | | |
|---|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 09/20/24 |
| 1 | DATE | DATE |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF
TITLE

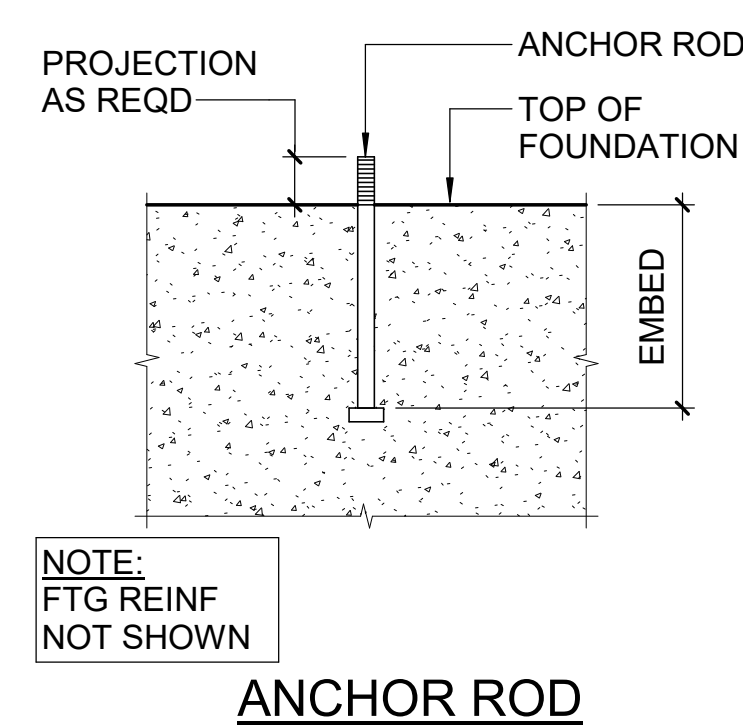
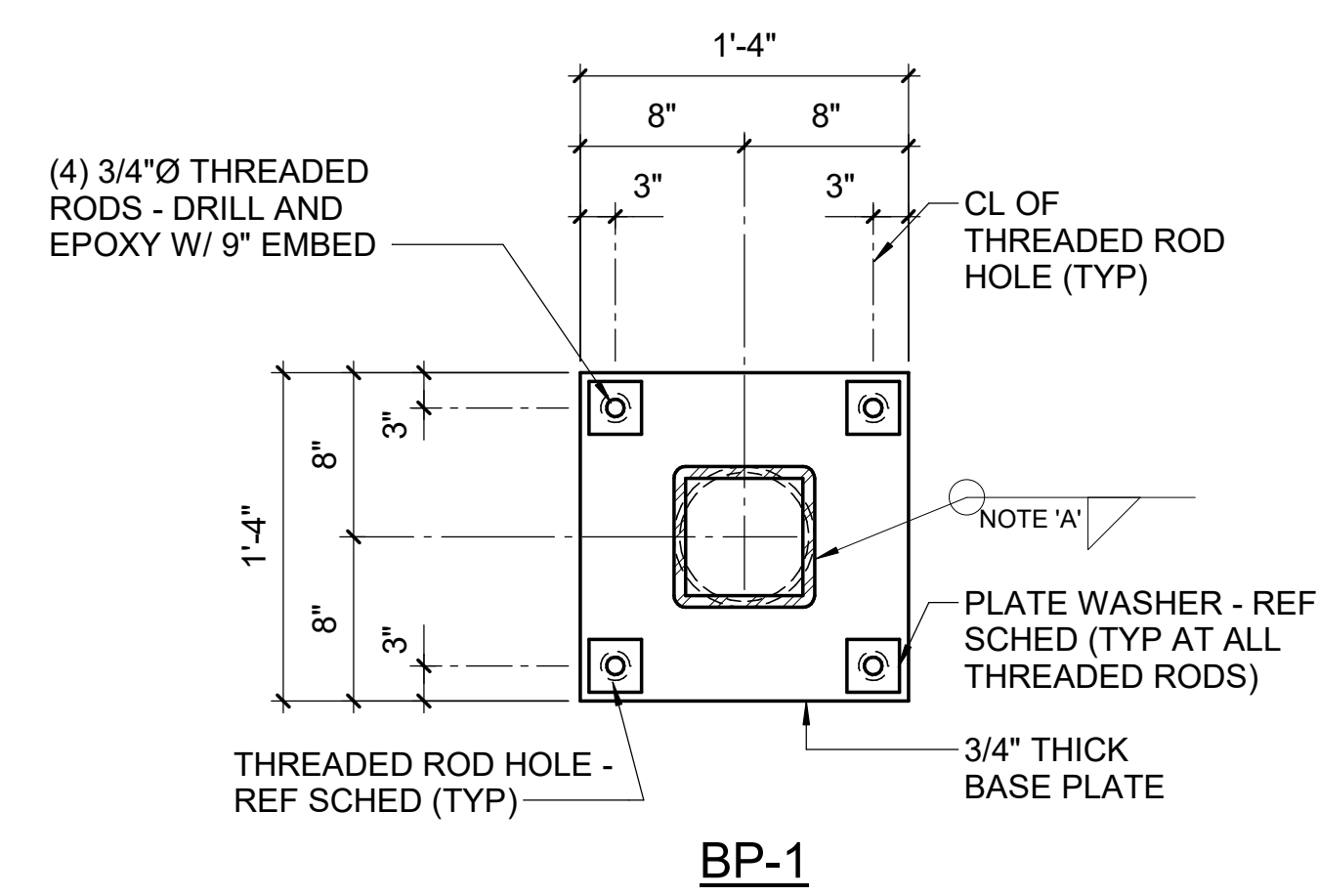
TYPICAL DETAILS

SHEET NUMBER

S50-01

| ANCHOR ROD | OVERSIZED HOLE WITH PLATE WASHER | | | | STANDARD HOLE | |
|------------|----------------------------------|-------------|-------------|------------------|-----------------|-----------|
| | BASE PLATE HOLE | WASHER SIZE | WASHER HOLE | WASHER THICKNESS | BASE PLATE HOLE | WASHER |
| 3/4"Ø | 1 5/16"Ø | 2" SQ | 1 3/16"Ø | 1/4" | 1 1/16"Ø | ASTM F844 |
| 7/8"Ø | 1 9/16"Ø | 2 1/2" SQ | 1 15/16"Ø | 5/16" | 1 3/16"Ø | ASTM F844 |
| 1"Ø | 1 13/16"Ø | 3" SQ | 1 1/16"Ø | 3/8" | 1 1/2"Ø | ASTM F844 |
| 1 1/4"Ø | 2 1/16"Ø | 3 1/2" SQ | 1 5/16"Ø | 1/2" | 1 3/4"Ø | ASTM F844 |
| 1 1/2"Ø | 2 5/16"Ø | 4" SQ | 1 9/16"Ø | 1/2" | 2"Ø | ASTM F844 |

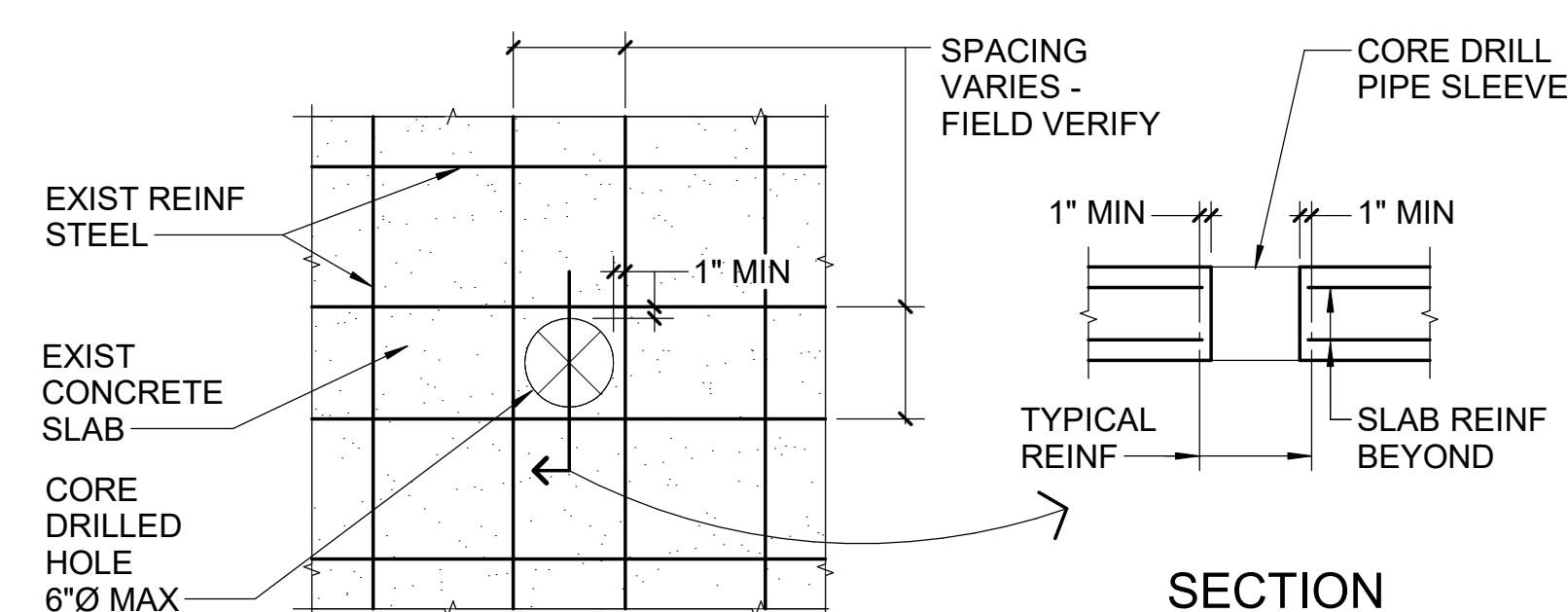
NOTE:
A. PROVIDE MINIMUM SIZE WELD PER AISC TABLE J2.4.
B. GENERAL CONTRACTOR'S OPTION TO USE STANDARD OR OVERSIZED HOLES IN GRAVITY COLUMN BASE PLATES. NO WELDING REQUIRED AT PLATE WASHERS USED WITH OVERSIZED HOLES.



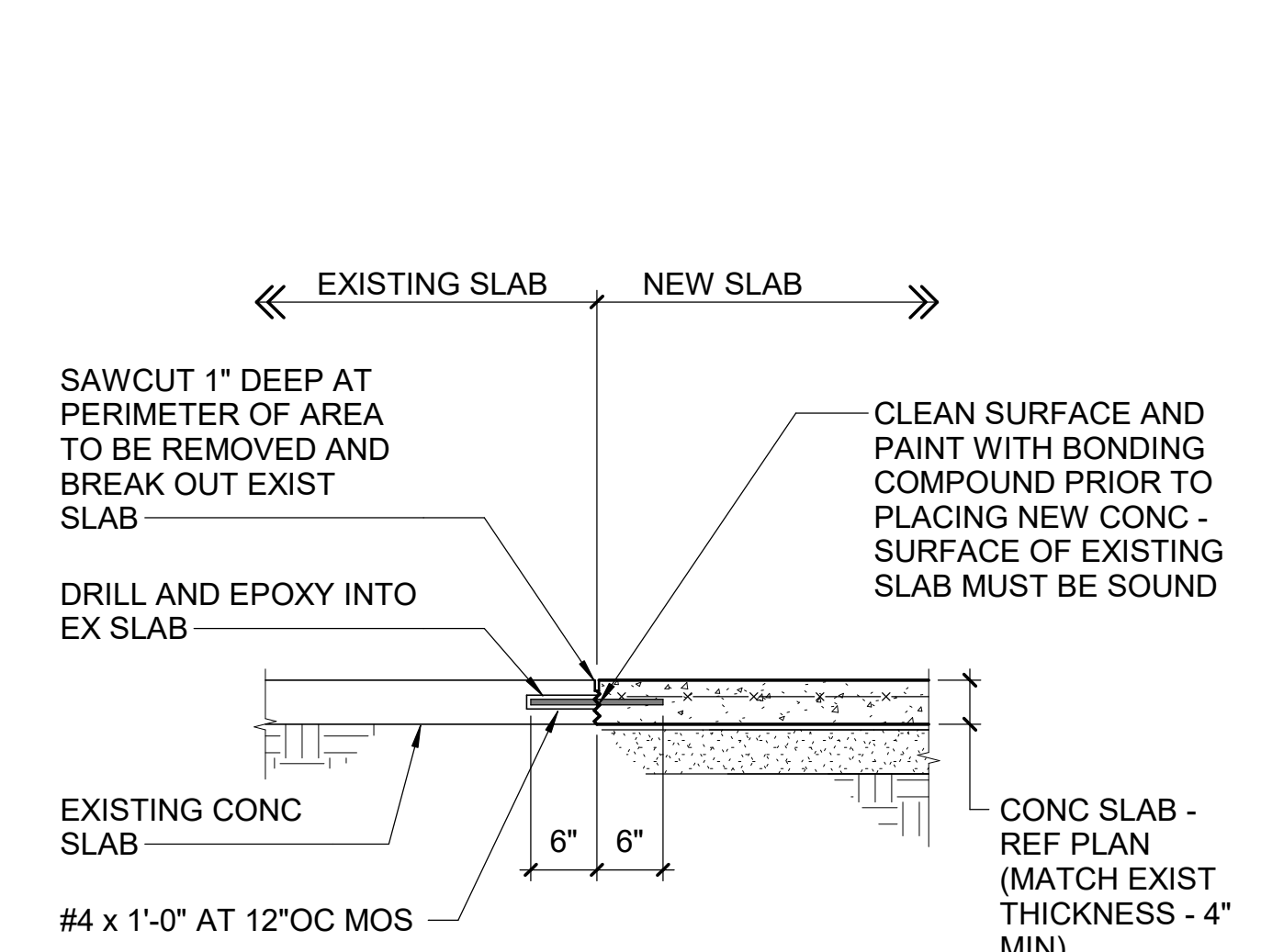
A1 COLUMN BASE PLATE AND ANCHOR ROD DETAILS
NTS

NOTES:

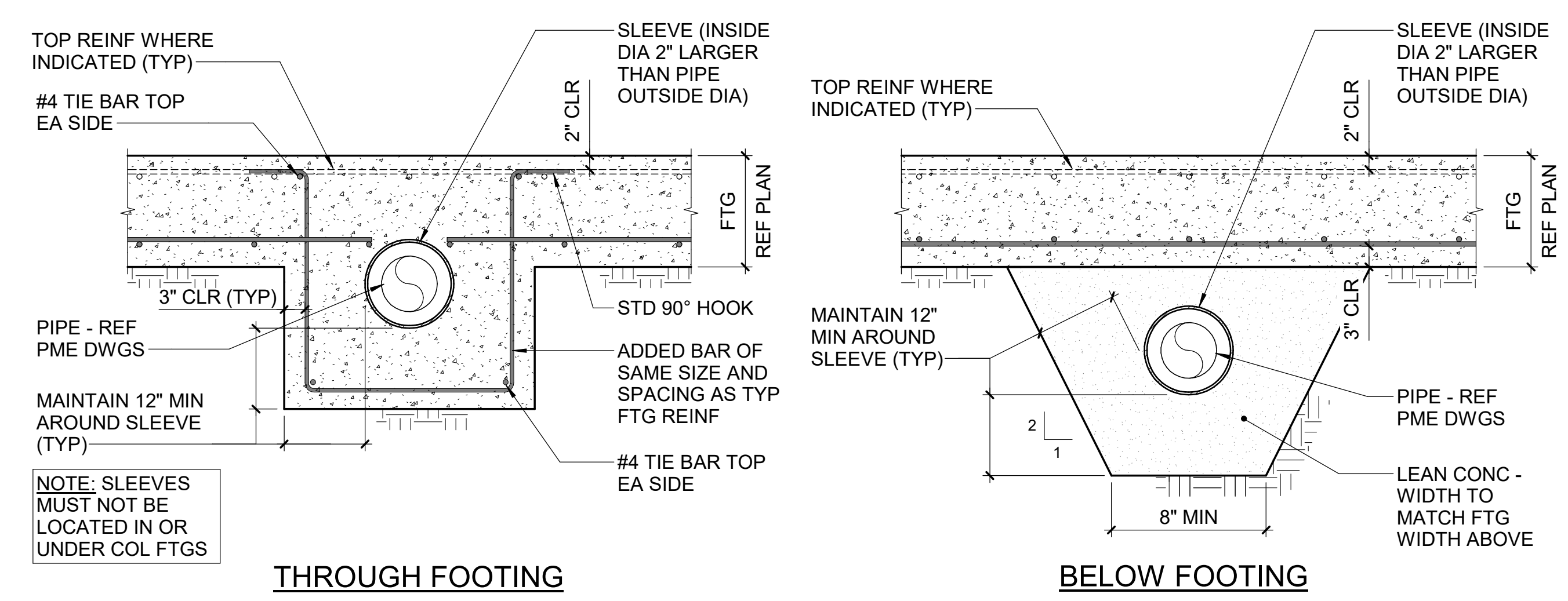
- FIELD LOCATE WITH GPR SCANNING AND MARK ALL REINFORCING (TOP AND BOTTOM) PRIOR TO CORE DRILLING.
- LOCATE CORE HOLE BETWEEN REINFORCING.
- SHIFT CORE HOLE AS REQUIRED TO PROVIDE MINIMUM 1" CLEAR TO ALL REINFORCING.
- REINFORCING MUST NOT BE CUT WITHOUT SPECIFIC APPROVAL OF THE ENGINEER.
- CORE DRILLING MUST NOT BE LOCATED IN BEAMS, JOISTS, OR COLUMNS.
- CORE LOCATIONS ARE NOT LOCATED ON PLAN, CONTRACTOR MUST COORDINATE WITH MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS.



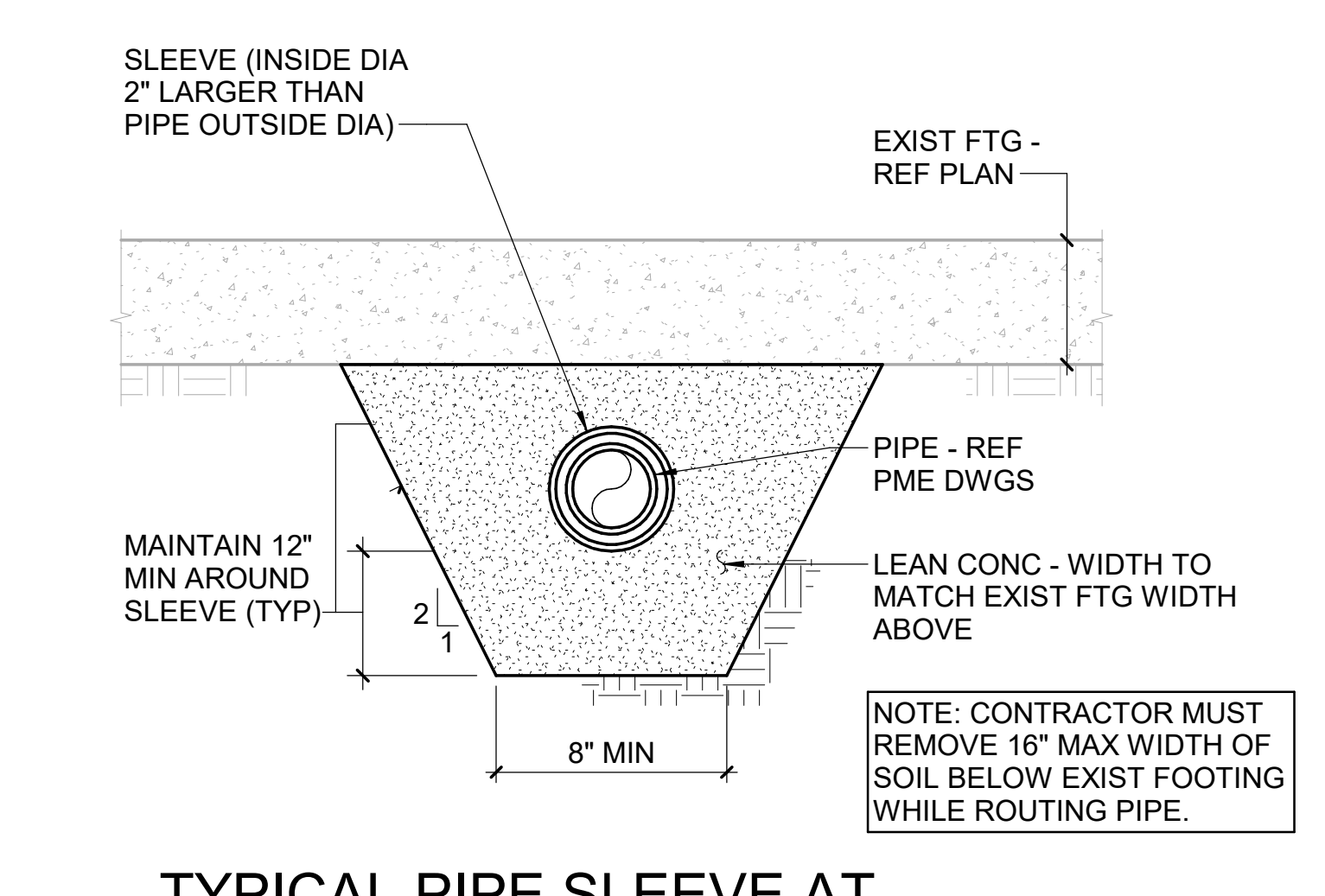
A2 TYP SLAB CORE IN EXISTING CONCRETE SLAB DRILL
NTS



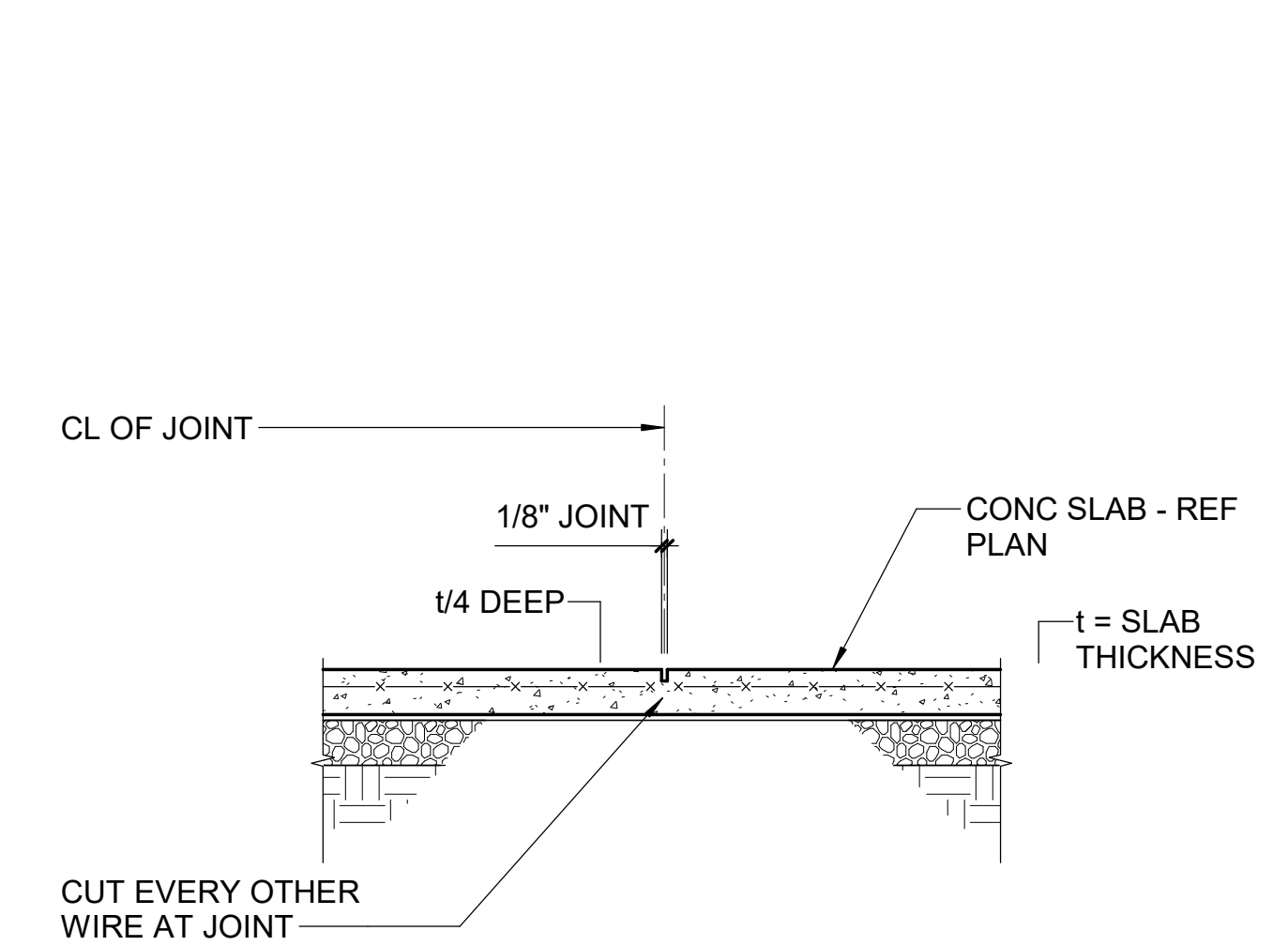
D1 TYPICAL SLAB DOWEL DETAIL
NTS



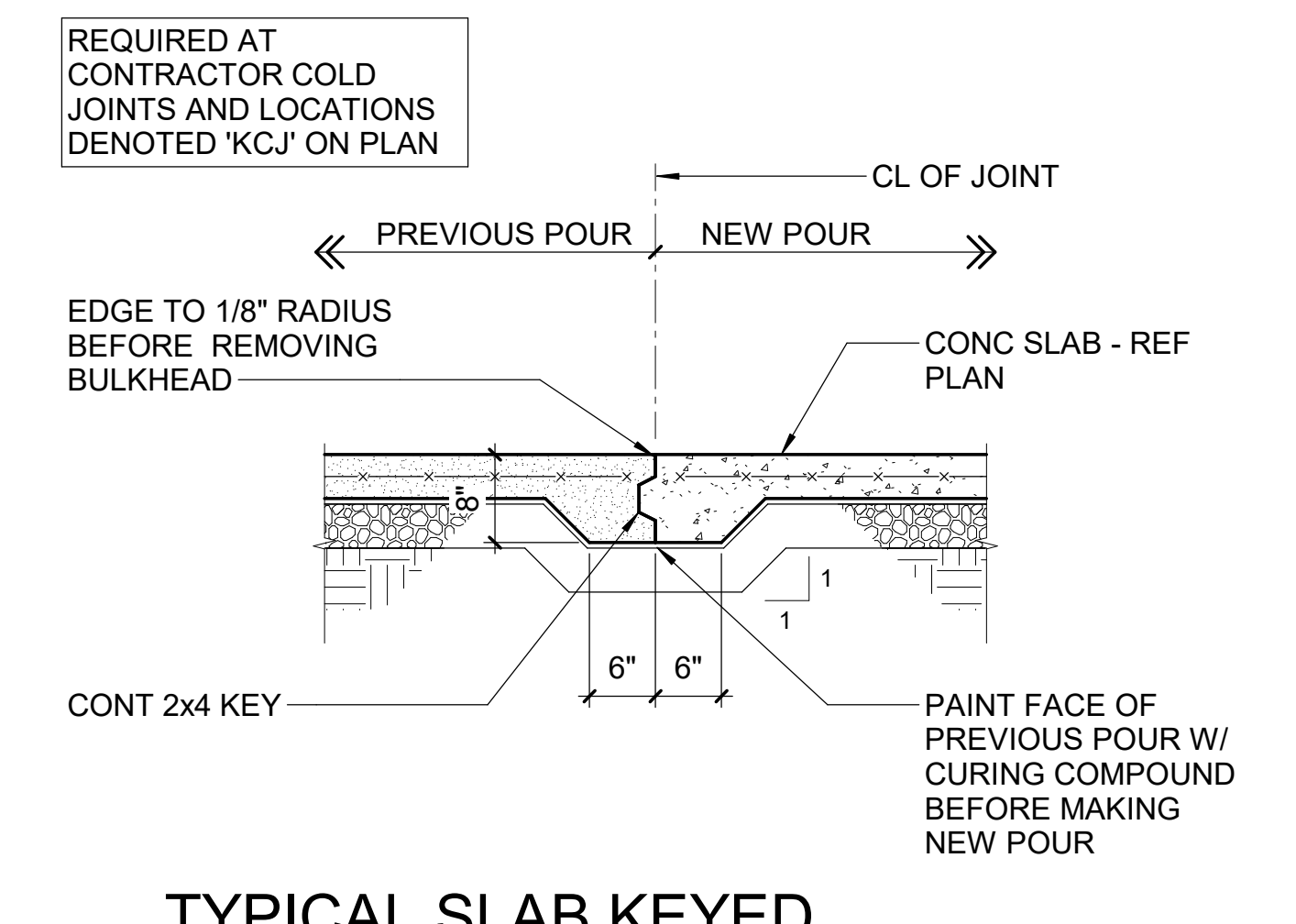
D2 TYPICAL PIPE SLEEVE AT WALL FOOTING DETAILS
NTS



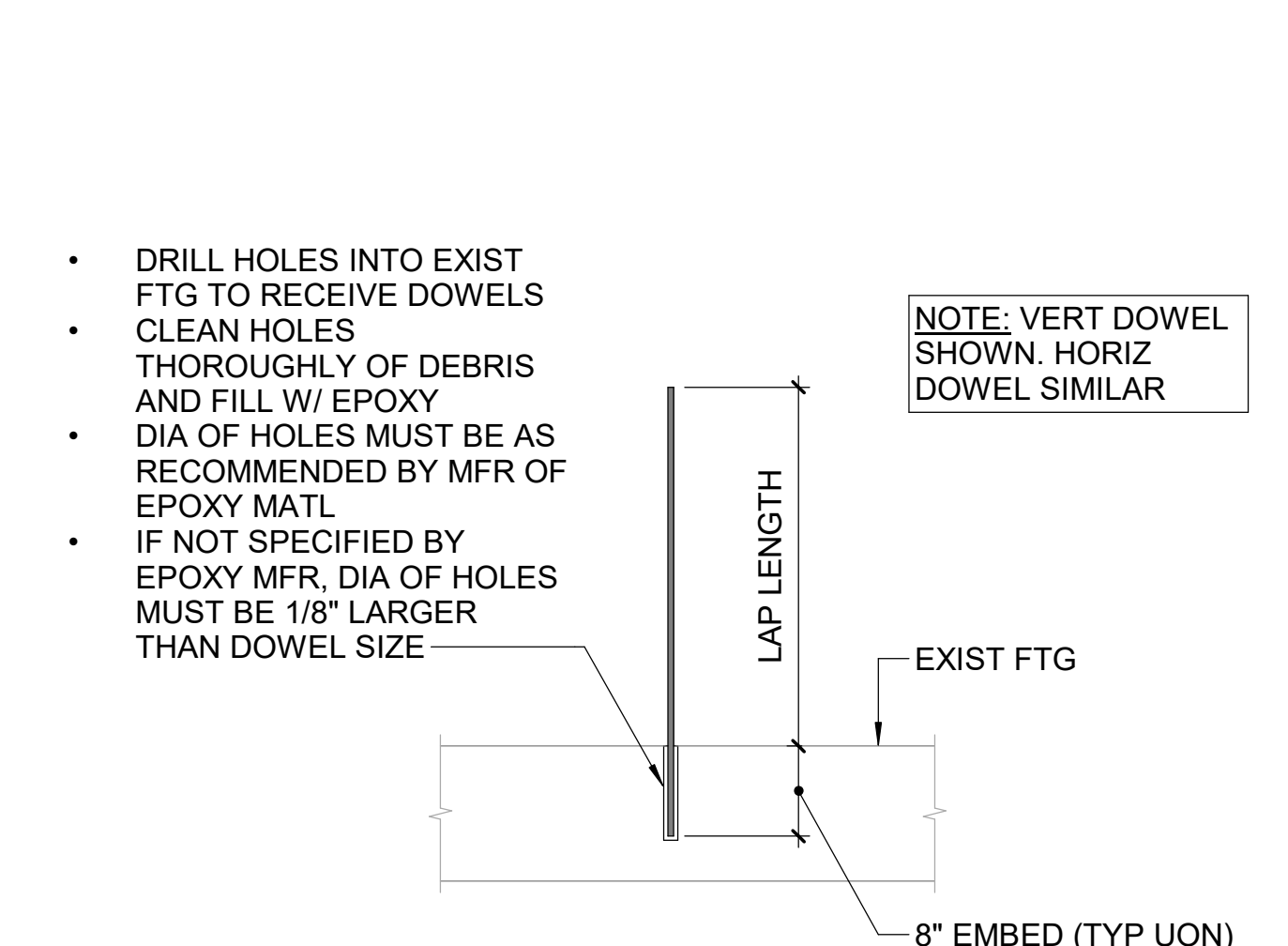
D3 TYPICAL PIPE SLEEVE AT EXISTING WALL FOOTING DETAIL
3/4" = 1'-0"



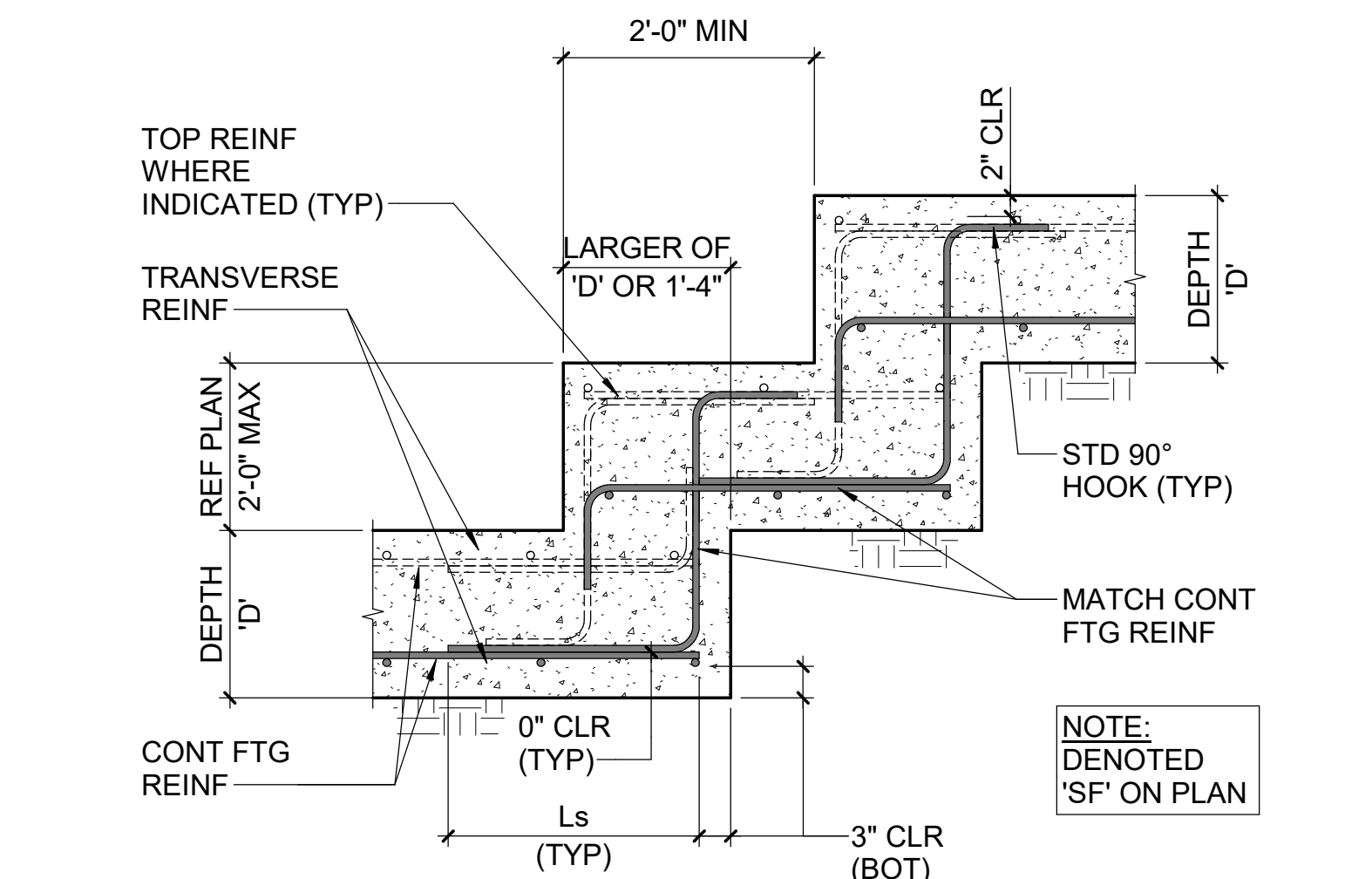
C1 TYPICAL SLAB SAWED JOINT DETAIL
NTS



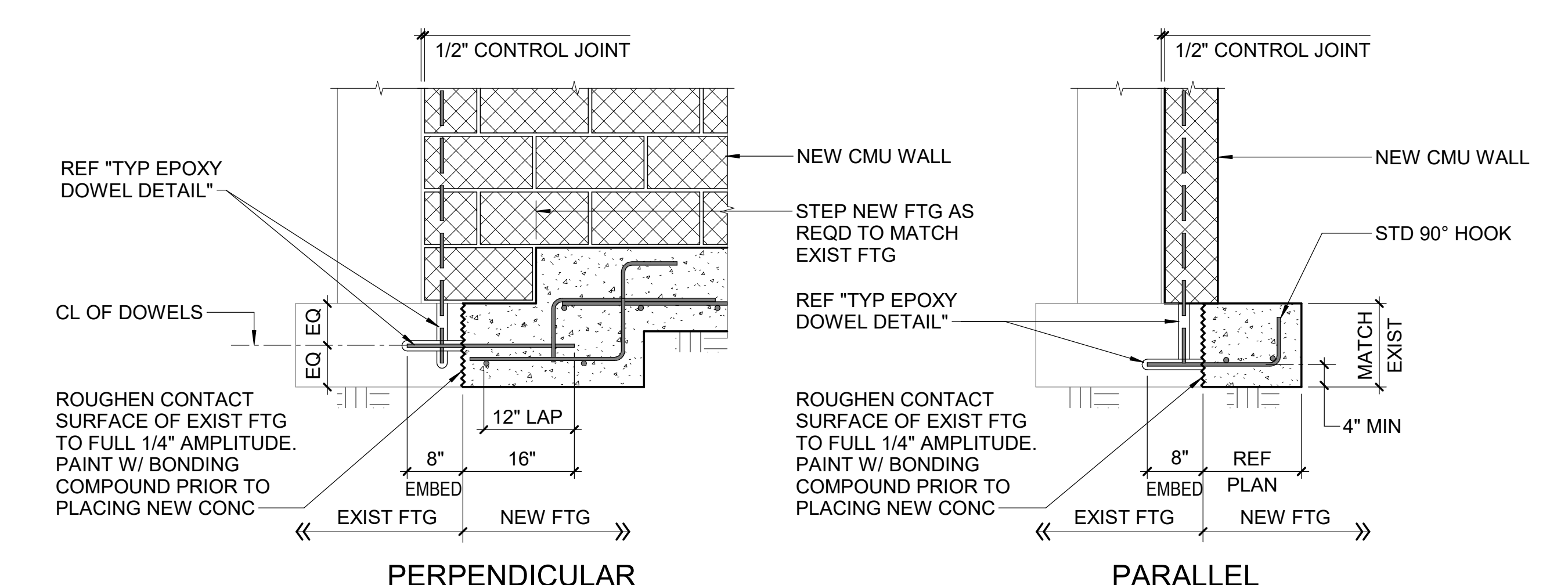
C2 TYPICAL SLAB KEYED CONSTRUCTION JOINT DETAIL
NTS



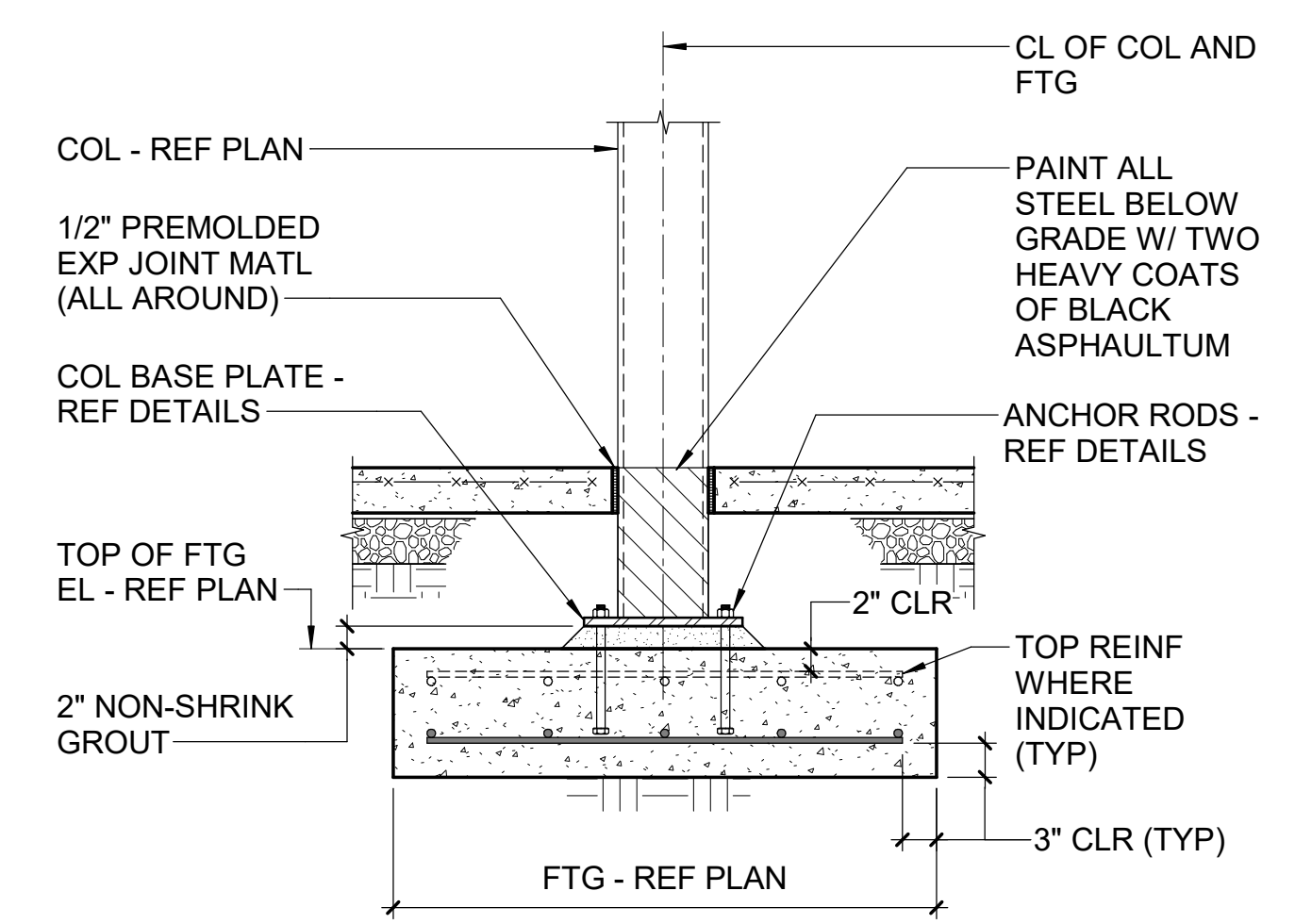
B1 TYPICAL EPOXY DOWEL DETAIL
NTS



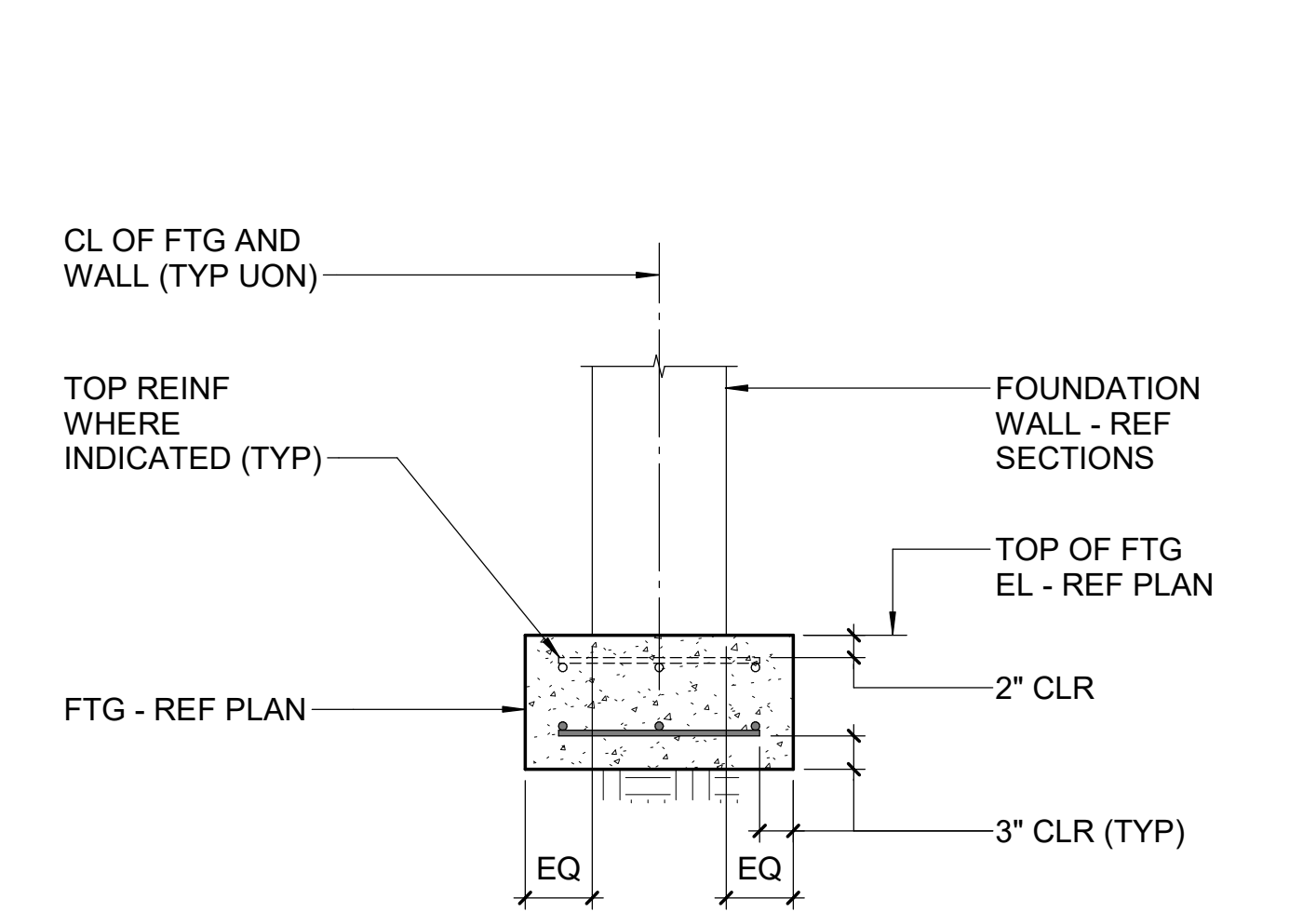
B2 TYPICAL STEPPED WALL FOOTING DETAIL
NTS



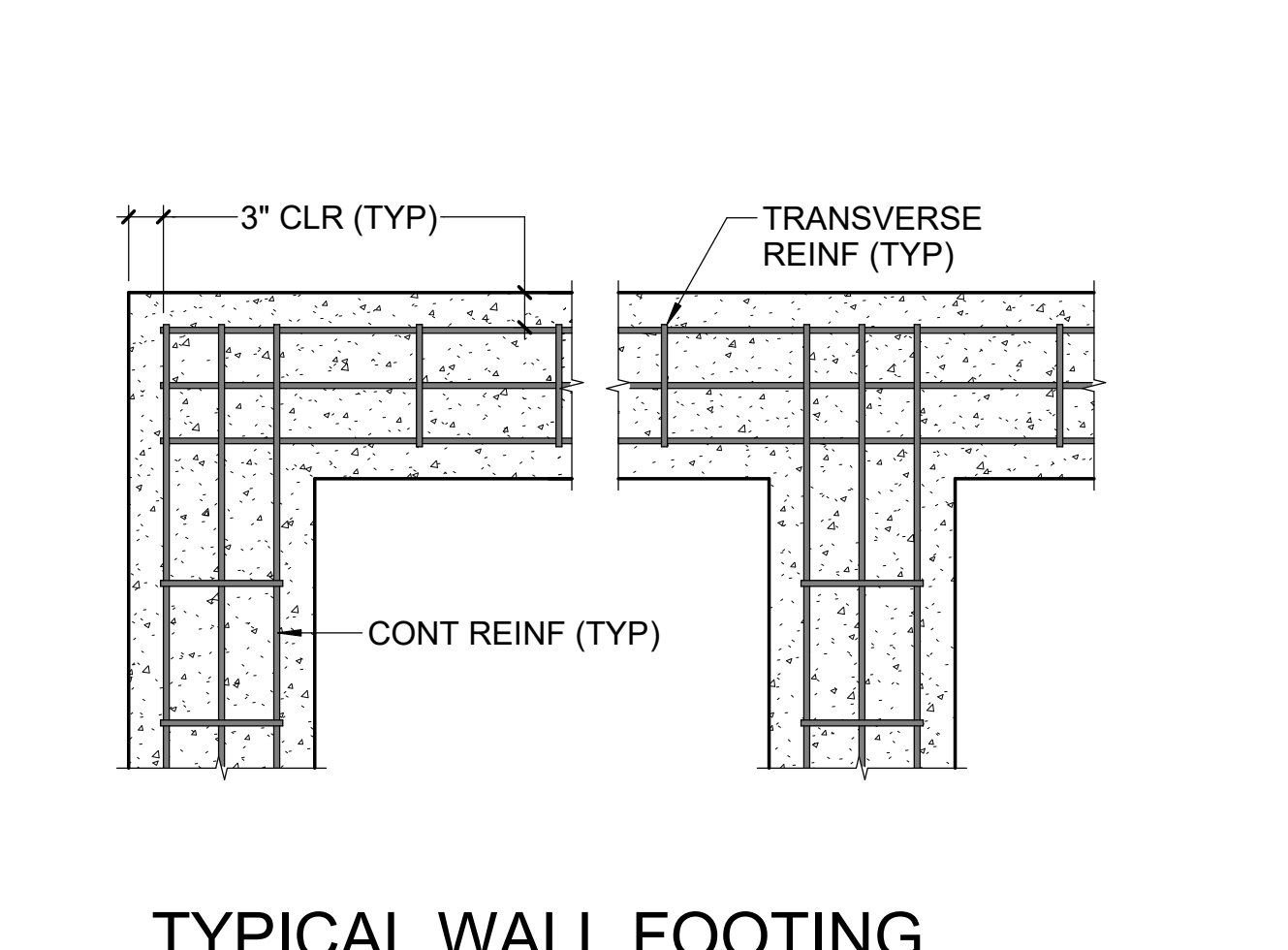
B3 TYPICAL DETAIL AT INTERSECTION OF NEW AND EXISTING WALL FOOTINGS
NTS



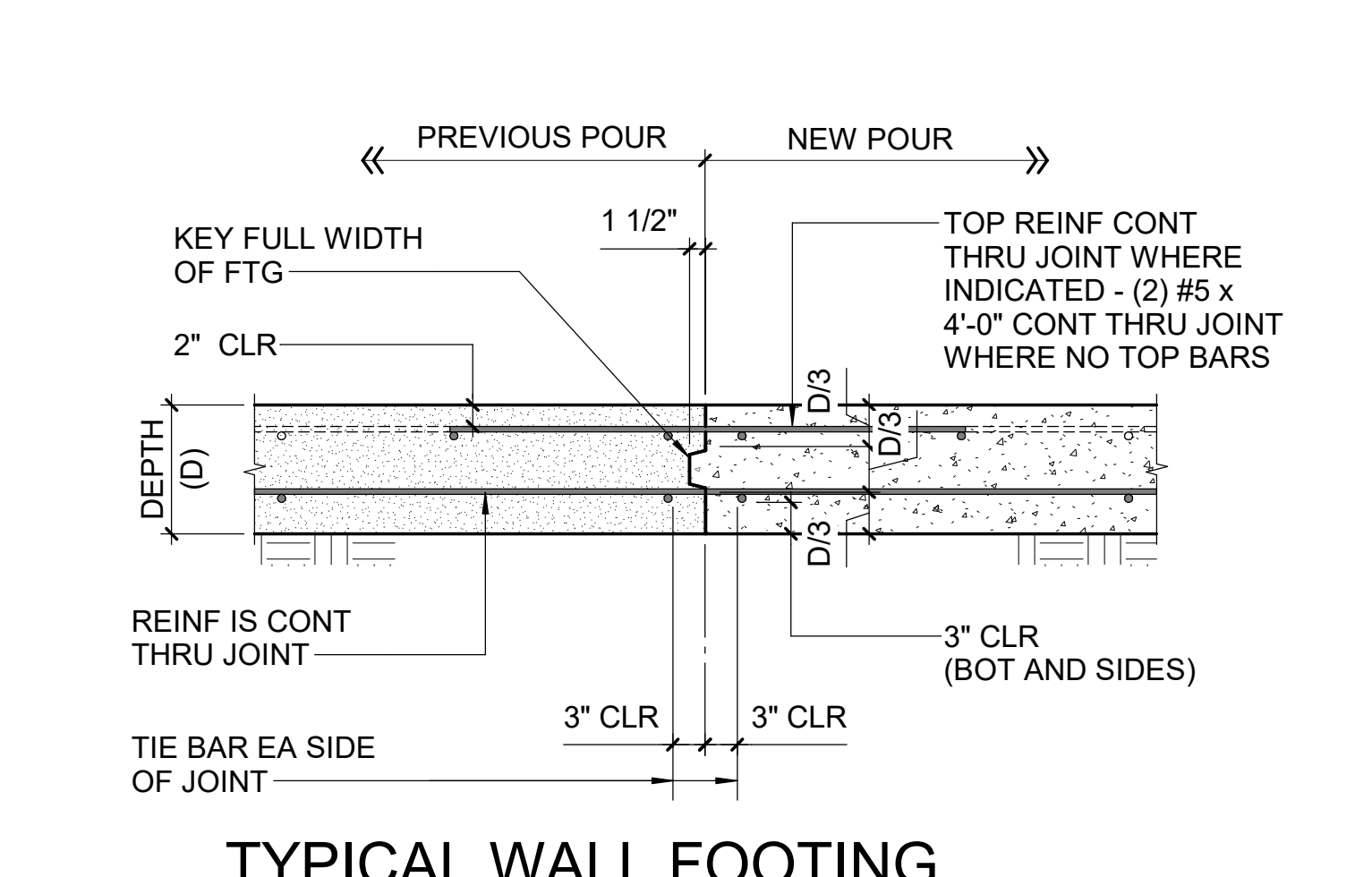
A1 TYPICAL COLUMN & FOOTING DETAIL
NTS



A2 TYPICAL WALL FOOTING DETAIL
NTS



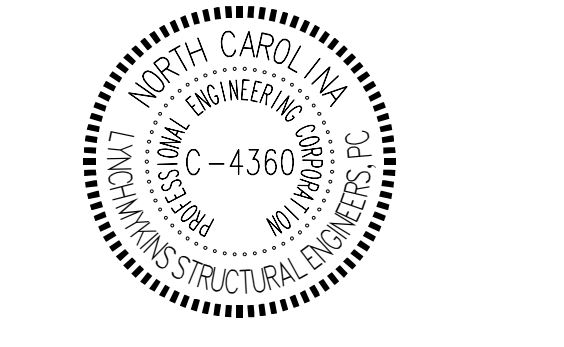
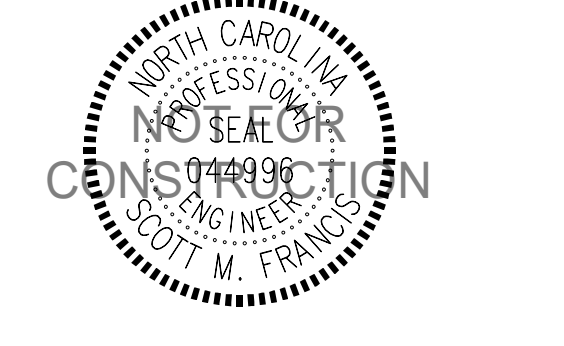
A3 TYPICAL WALL FOOTING CORNER & INTERSECTION DETAILS
NTS



A4 TYPICAL WALL FOOTING CONSTRUCTION JOINT DETAIL
NTS



Structural Engineers
301 N. West Street, Suite 105
Raleigh, NC 27603
919.782.1833 - lynchmykyn.com
LM Project Number: LM23.226



Mann Hall Renovation
STATE ID #22-2450-02A
NC SU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2601 West Village Way, Suite 331
Raleigh, NC 27695

NOT FOR CONSTRUCTION

ISSUE CHART

| | | |
|---|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 09/20/24 |
| 1 | Schematic | 04/15/24 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

TYPICAL DETAILS

SHEET NUMBER

S50-02

CONSULTANTS

STRUCTURAL
Lynch Mykims Structural Engineers
301 N. West Street Suite 105, Raleigh, NC 27603

MEP
Sales O'Brien
702 Oberlin Road, Raleigh, NC 27605
License (NC): F-1434
CIVIL

NVS Engineers and Consultants
3300 Regency Parkway Suite 100, Cary, NC 27518

CONTRACTOR
Holder Construction Group
6210 Audrey Kell Road Suite 400, Charlotte, NC 28277

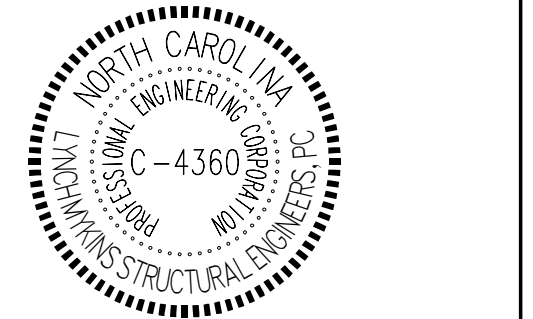
AUDIOVISUAL
NVS Engineers and Consultants
4905 Professional Court, Raleigh, NC 27609

LIGHTING
Available Light
5700 Six Forks Road, Suite 203, Raleigh, NC 27609

SUSTAINABILITY
Ecoimpact Consulting
8022 Providence Road Suite 500, Charlotte, NC 28277



Structural Engineers
301 N. West Street, Suite 105
Raleigh, NC 27603
919.782.1833 - lynchmykims.com
LM Project Number: LM23.226



Mann Hall Renovation
STATE ID #22-2450-02A
NC SU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2901 West Village Way, Suite 331
Raleigh, NC 27695

NOT FOR CONSTRUCTION

ISSUE CHART

| | | |
|---|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 09/20/24 |
| 1 | Schematic | 04/15/24 |

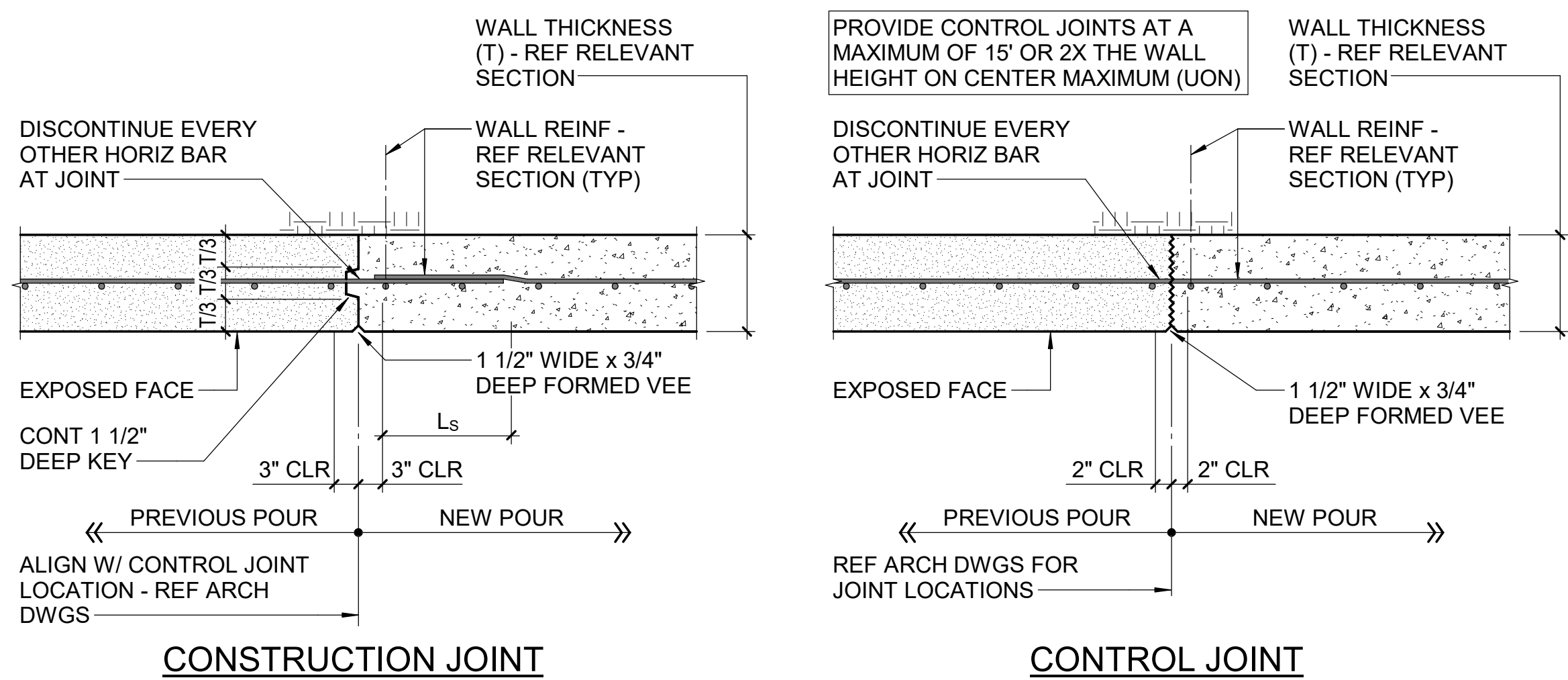
Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

TITLE

TYPICAL DETAILS

SHEET NUMBER

S50-03



CONSTRUCTION JOINT

CONTROL JOINT

C1 TYPICAL CONCRETE WALL VERTICAL JOINT DETAILS
NTS

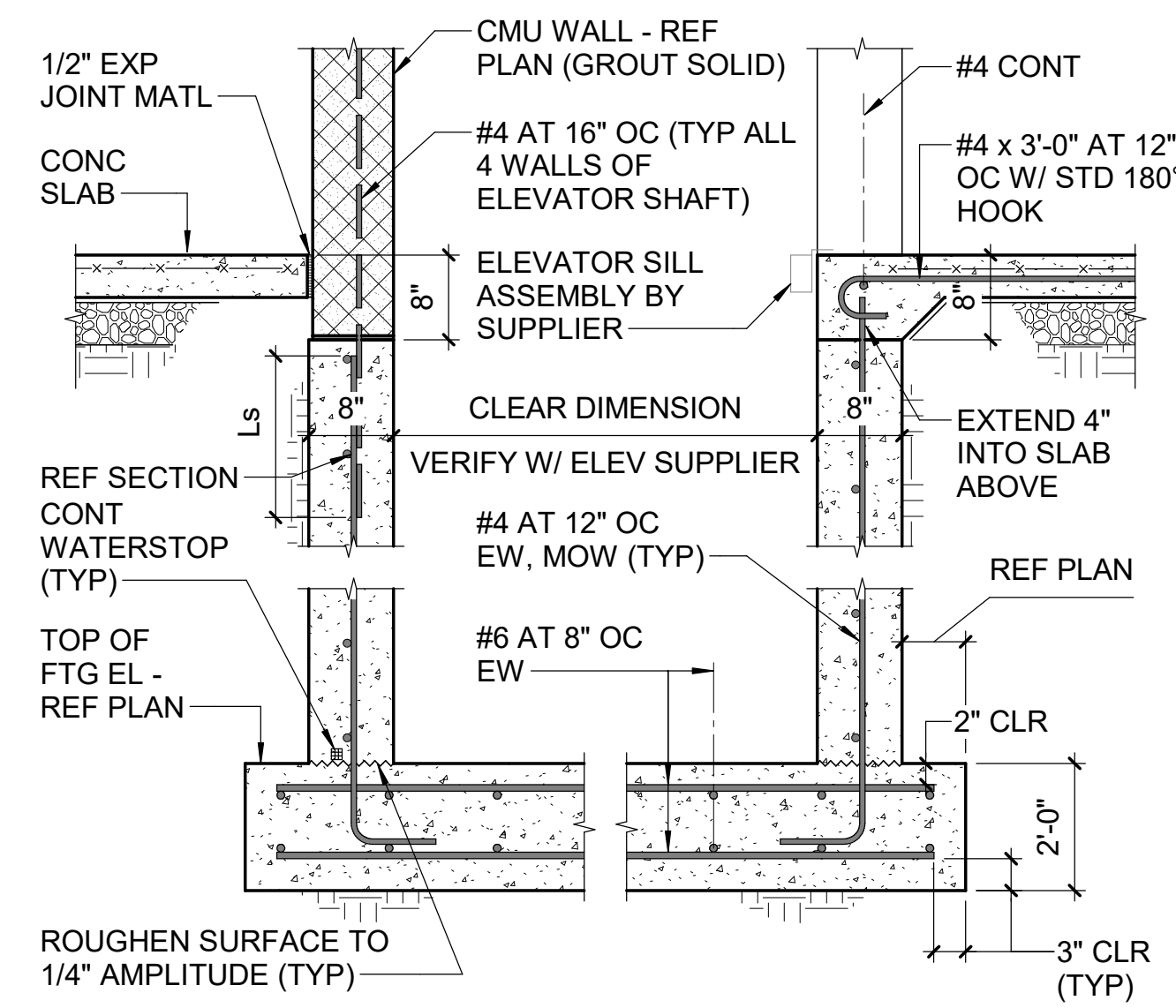
| BAR SIZE | TYPE | CONCRETE COMPRESSIVE STRENGTH (PSI) | | | | | |
|----------|------|-------------------------------------|-------|---------|-------|---------|-------|
| | | 3000 | | 4000 | | 5000 | |
| | | TOP BAR | OTHER | TOP BAR | OTHER | TOP BAR | OTHER |
| #3 | Ld | 22 | 17 | 19 | 15 | 17 | 13 |
| | Ls | 28 | 22 | 24 | 19 | 22 | 17 |
| #4 | Ld | 29 | 22 | 25 | 19 | 22 | 17 |
| | Ls | 37 | 29 | 32 | 25 | 29 | 22 |
| #5 | Ld | 36 | 28 | 31 | 24 | 28 | 22 |
| | Ls | 47 | 36 | 40 | 31 | 36 | 28 |
| #6 | Ld | 43 | 33 | 37 | 29 | 33 | 26 |
| | Ls | 56 | 43 | 48 | 37 | 43 | 33 |

NOTES:
1. ALL VALUES LISTED ARE INCHES.
2. TABLE IS BASE ON VALUES FOR ACI 318-14.
3. VALUES LISTED ARE FOR NORMAL WEIGHT CONCRETE. FOR LIGHTWEIGHT CONCRETE, MULTIPLY LENGTHS BY 1.33.
4. TOP BARS ARE DEFINED AS BARS WITH MORE THAN 12" OF CONCRETE COVER BELOW BAR.
5. WHERE DIFFERENT SIZE BARS ARE SPLICED, PROVIDE THE SPLICE LENGTH ASSOCIATED WITH THE LARGER BARS.

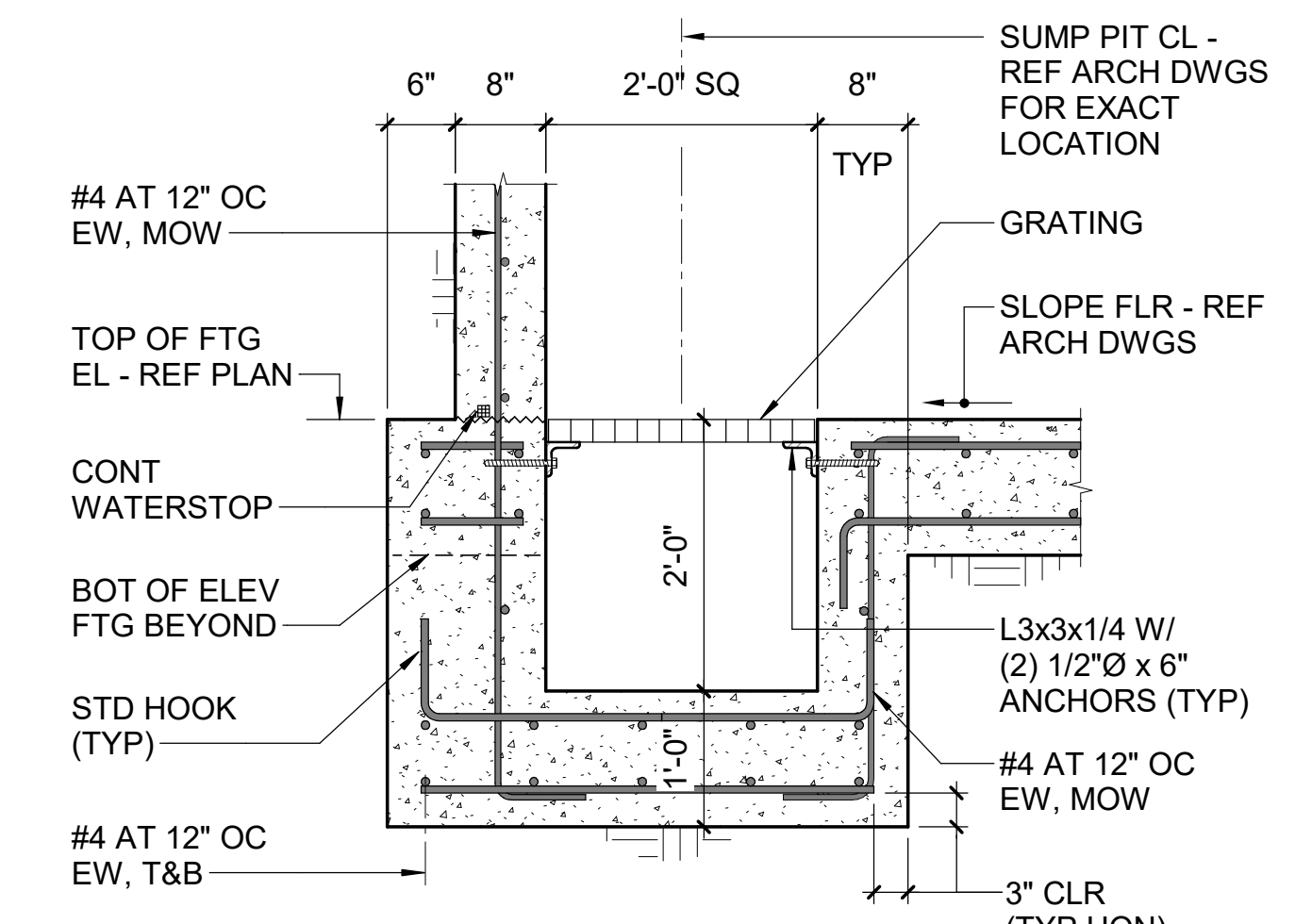
| BAR SIZE | TYPE | CONCRETE COMPRESSIVE STRENGTH (PSI) | | |
|----------|------|-------------------------------------|------|------|
| | | 3000 | 4000 | 5000 |
| | | #3 | Ldc | 9 |
| | Lds | 12 | 12 | 12 |
| #4 | Ldc | 11 | 10 | 9 |
| | Lds | 15 | 15 | 15 |
| #5 | Ldc | 14 | 12 | 12 |
| | Lds | 19 | 19 | 19 |
| #6 | Ldc | 17 | 15 | 14 |
| | Lds | 23 | 23 | 23 |

NOTES:
1. ALL VALUES LISTED ARE INCHES.

B1 TYPICAL REINFORCING SPLICE SCHEDULES
NTS

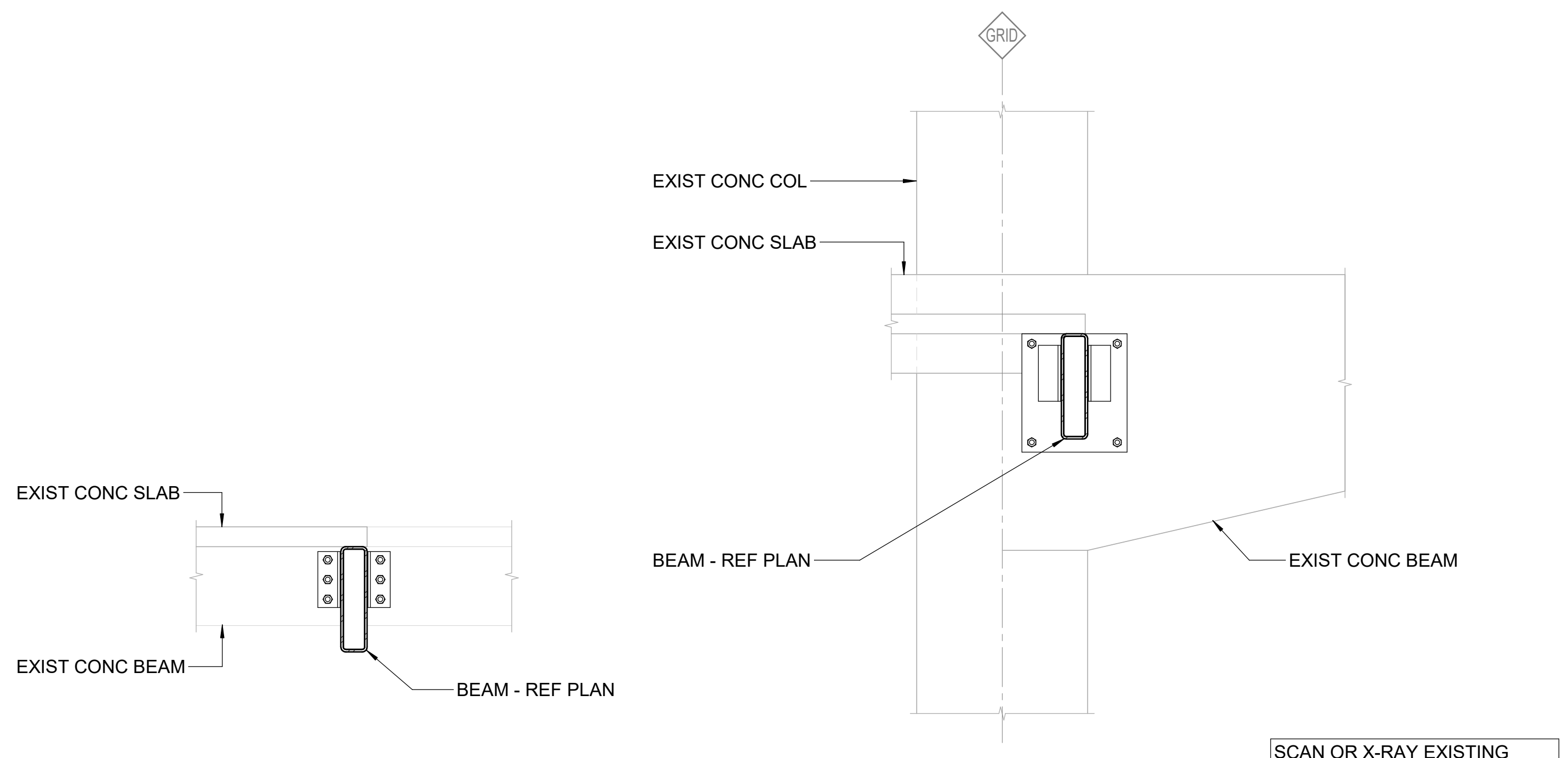


A1 TYPICAL ELEVATOR PIT DETAIL
NTS

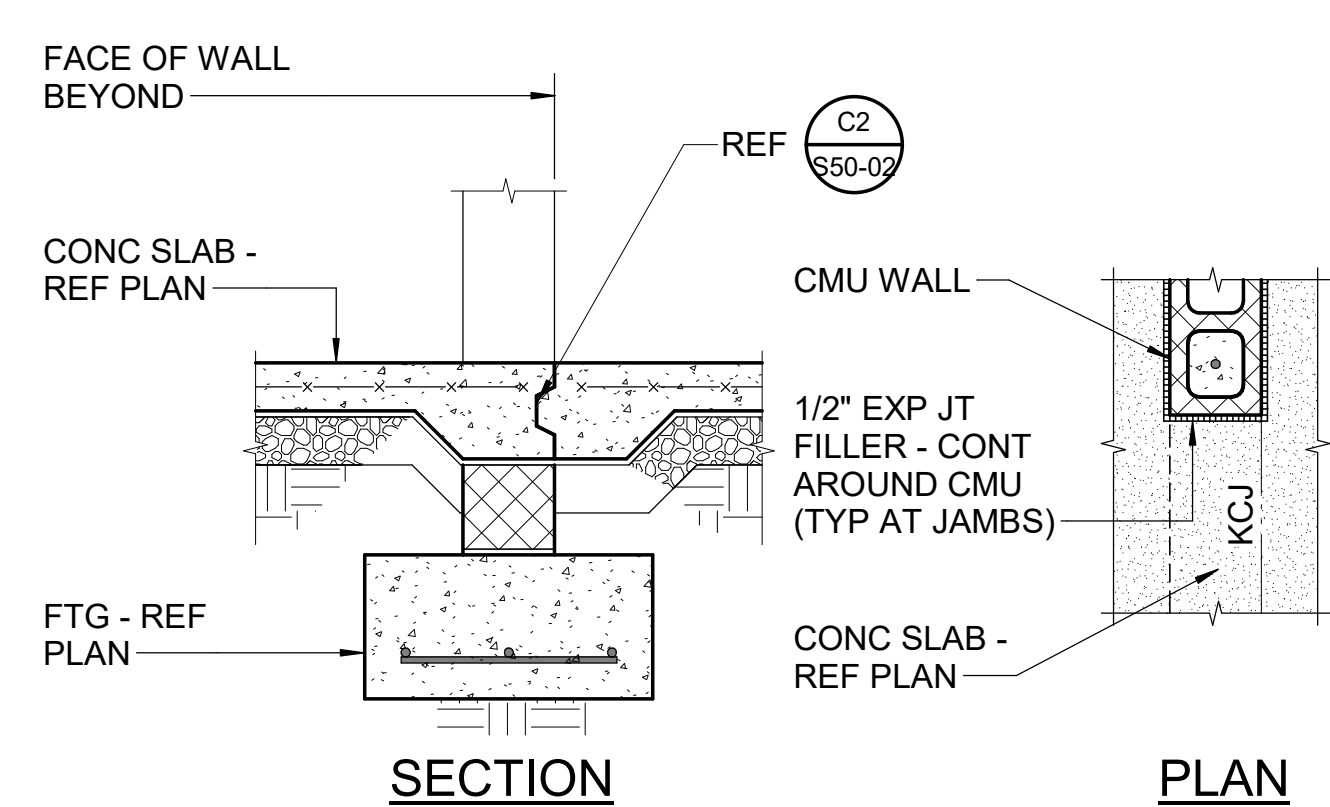


A2 ELEVATOR SUMP PIT DETAIL
NTS

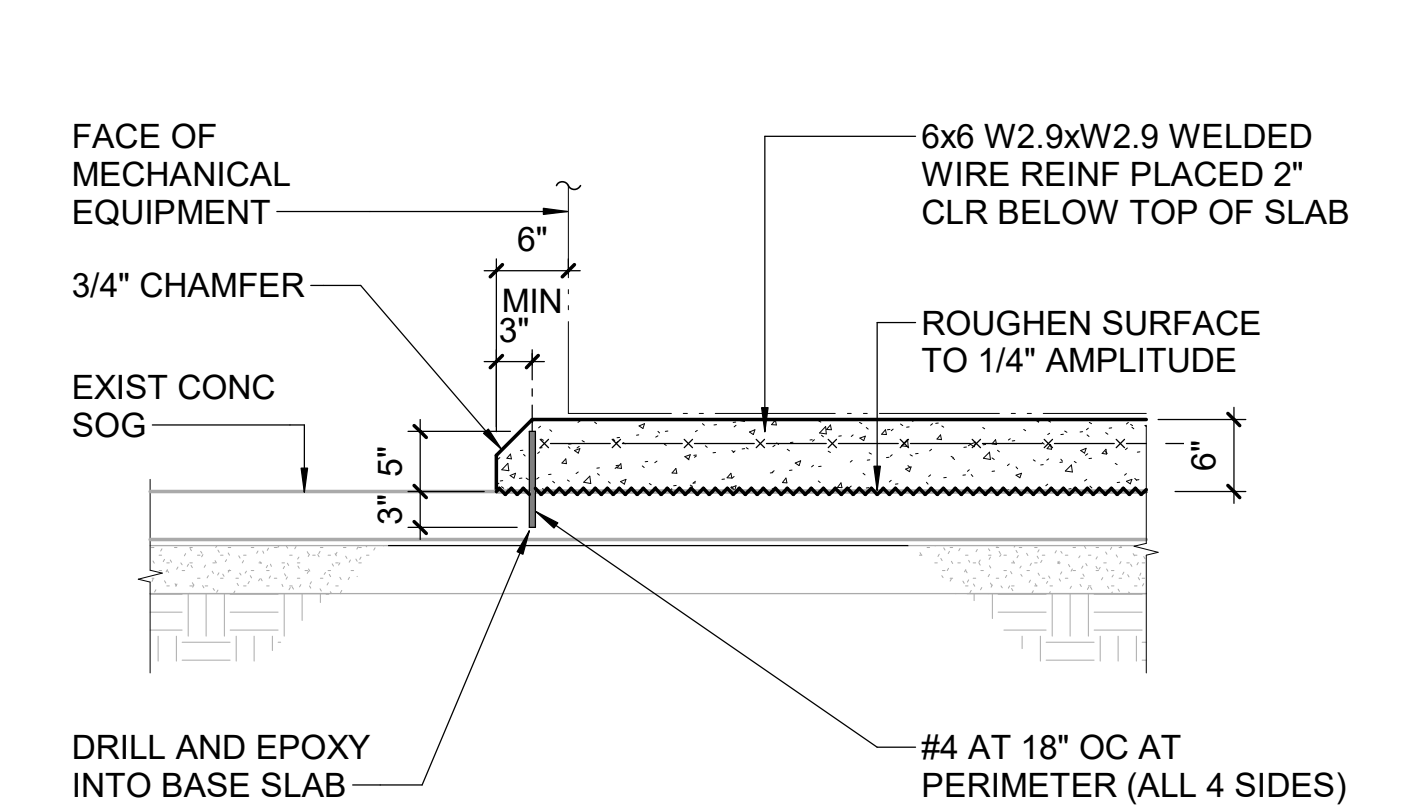
B2 TYPICAL STAIR SUPPORT BEAM CONNECTION DETAIL
NTS



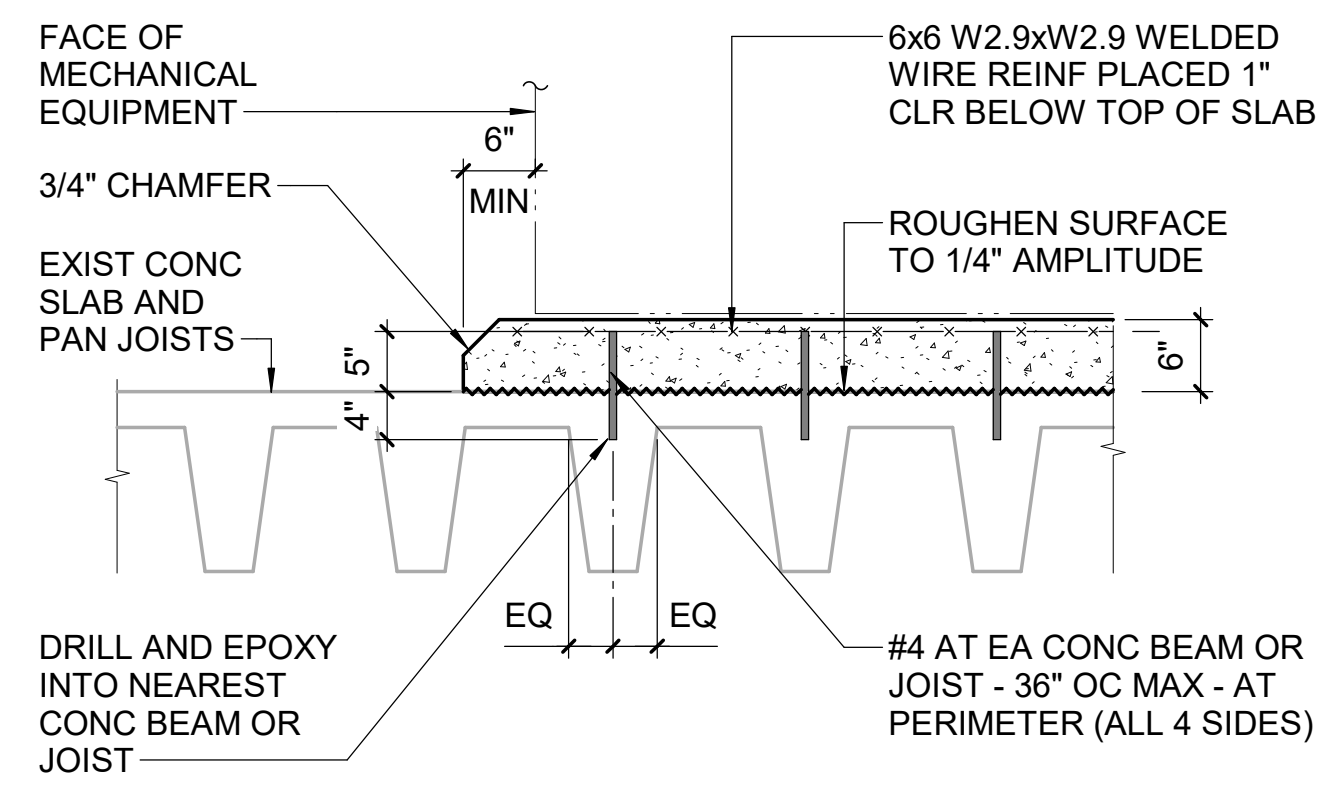
B2 TYPICAL STAIR SUPPORT BEAM CONNECTION DETAIL
NTS



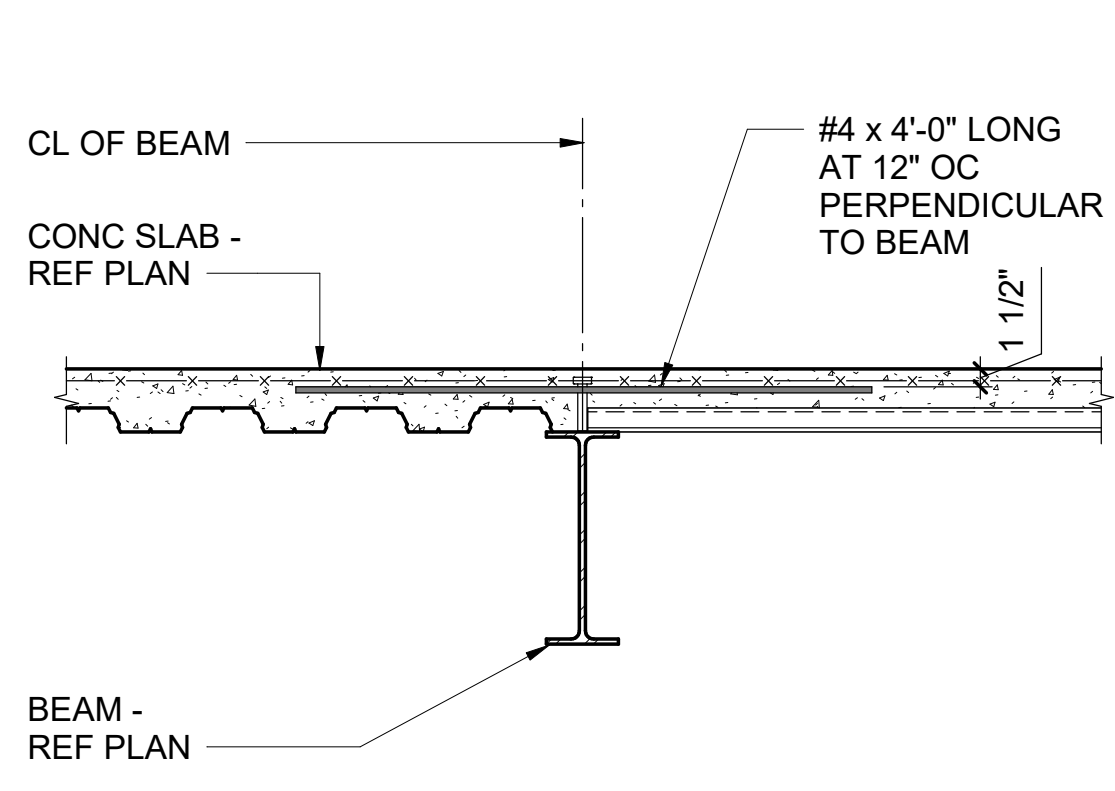
A3 TYPICAL DETAIL AT INTERIOR DOOR OPENINGS
NTS



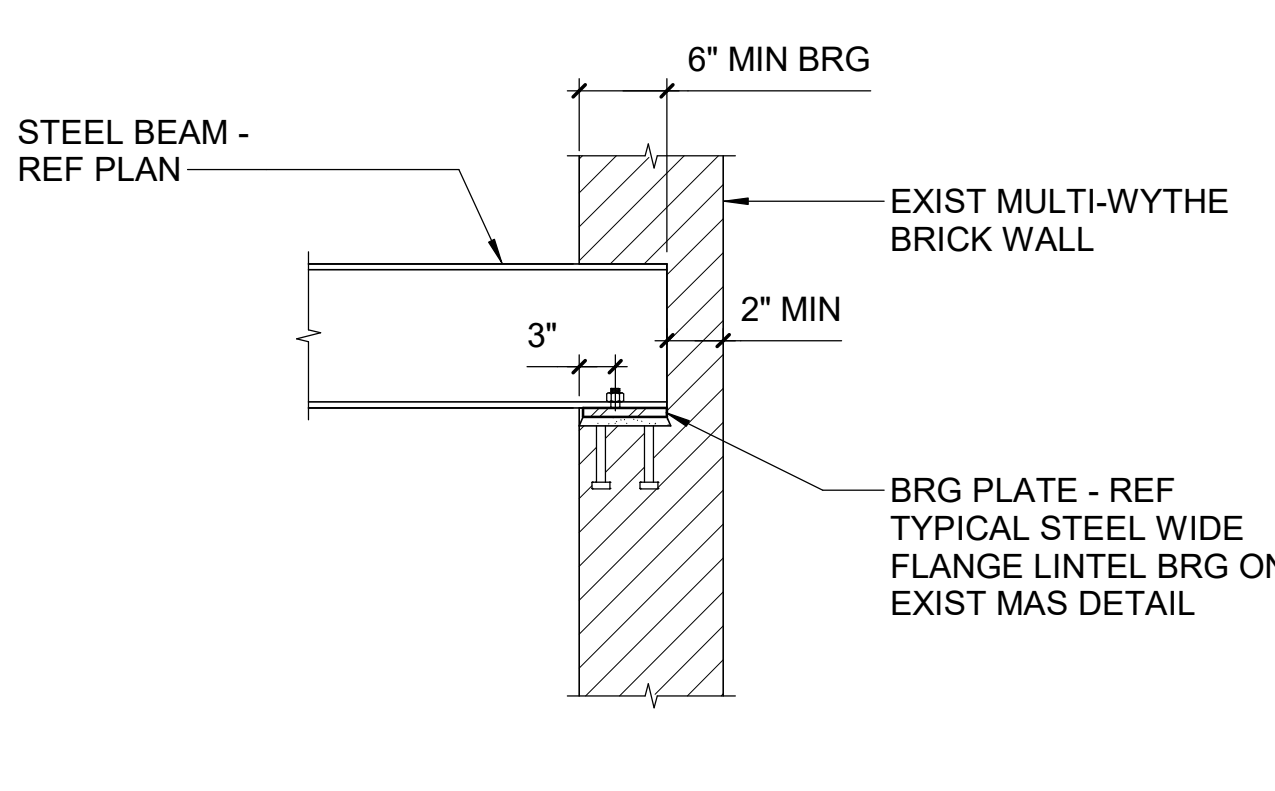
A4 TYPICAL HOUSEKEEPING PAD AT EXISTING SLAB ON GRADE DETAILS
NTS



D1 TYPICAL HOUSEKEEPING PAD AT ELEVATED CONCRETE SLAB DETAIL
3/4" = 1'-0"



D2 TYPICAL CHANGE IN DIRECTION OF STEEL DECK DETAIL
NTS

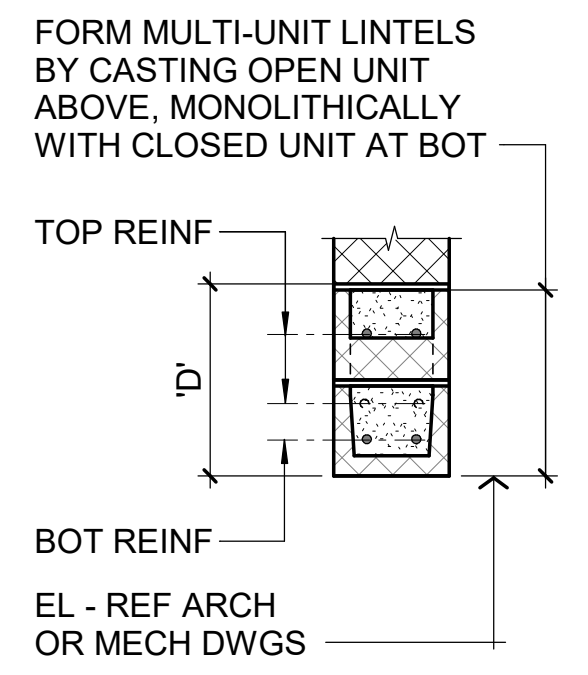


D3 TYPICAL STEEL BEAM TO EXISTING WALL DETAIL
NTS

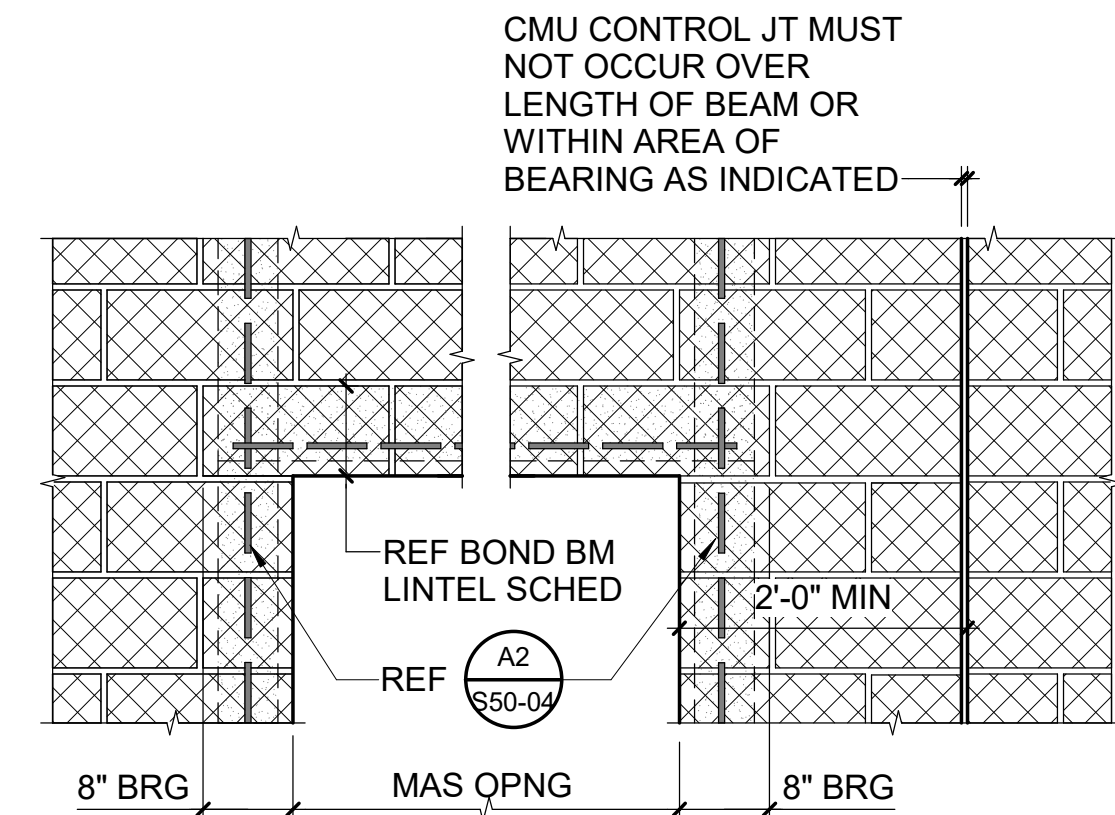
BOND BEAM LINTEL SCHEDULE

| CLEAR SPAN | DEPTH 'D' | REINFORCING | | |
|----------------|-----------|-------------|------------|------------|
| | | 6" CMU | 8"x10" CMU | 12" CMU |
| 0" TO 3'-4" | 8" | (1) #4 BOT | (2) #4 BOT | (2) #5 BOT |
| 3'-5" TO 5'-4" | 8" | (1) #5 BOT | (2) #5 BOT | (2) #5 BOT |
| 5'-5" TO 6'-8" | 16" | (1) #5 BOT | (2) #5 BOT | (2) #5 BOT |
| 6'-9" TO 8'-0" | 16" | (1) #5 T&B | (2) #5 T&B | (2) #5 T&B |

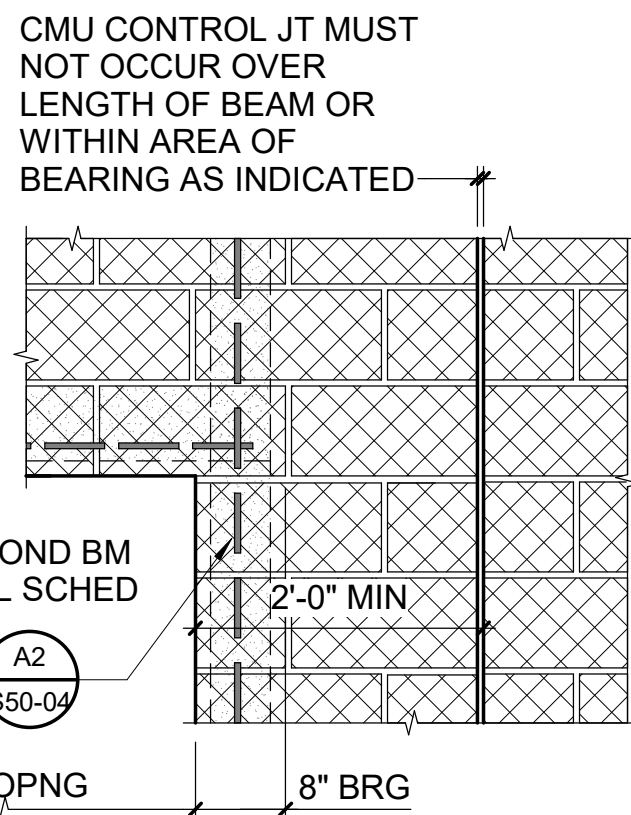
NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS; FOR DUCT OPENINGS REFER TO MECHANICAL DRAWINGS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR WIDTH OF LINTEL.
3. SCHEDULE APPLIES ONLY TO LINTELS NOT OTHERWISE SHOWN ON THE DRAWINGS.



TYPICAL SECTION



TYPICAL JAMB

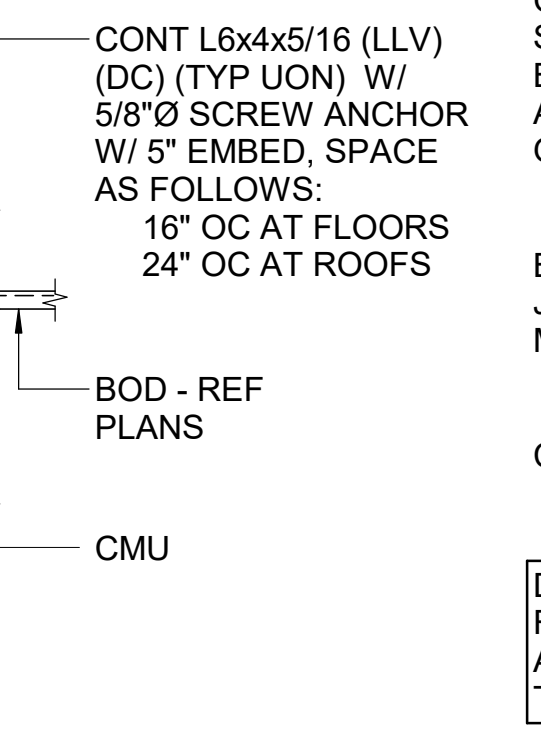


JAMB AT CONTROL JOINT

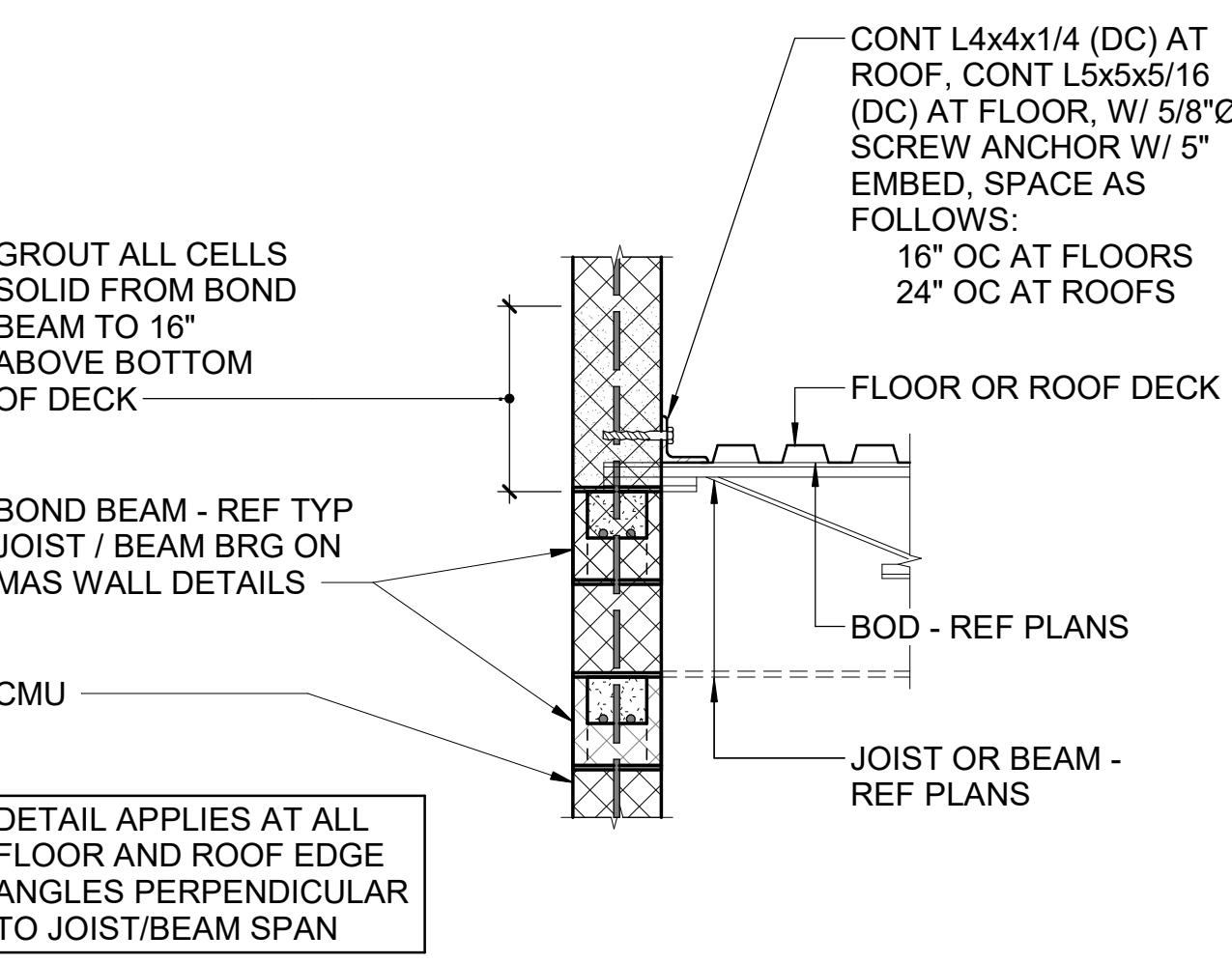
GROUT DIMENSION SCHEDULE

| DIM | FLOOR | ROOF |
|-----|---------|---------|
| 'A' | 14" MIN | 8" MIN |
| 'B' | 18" MIN | 12" MIN |

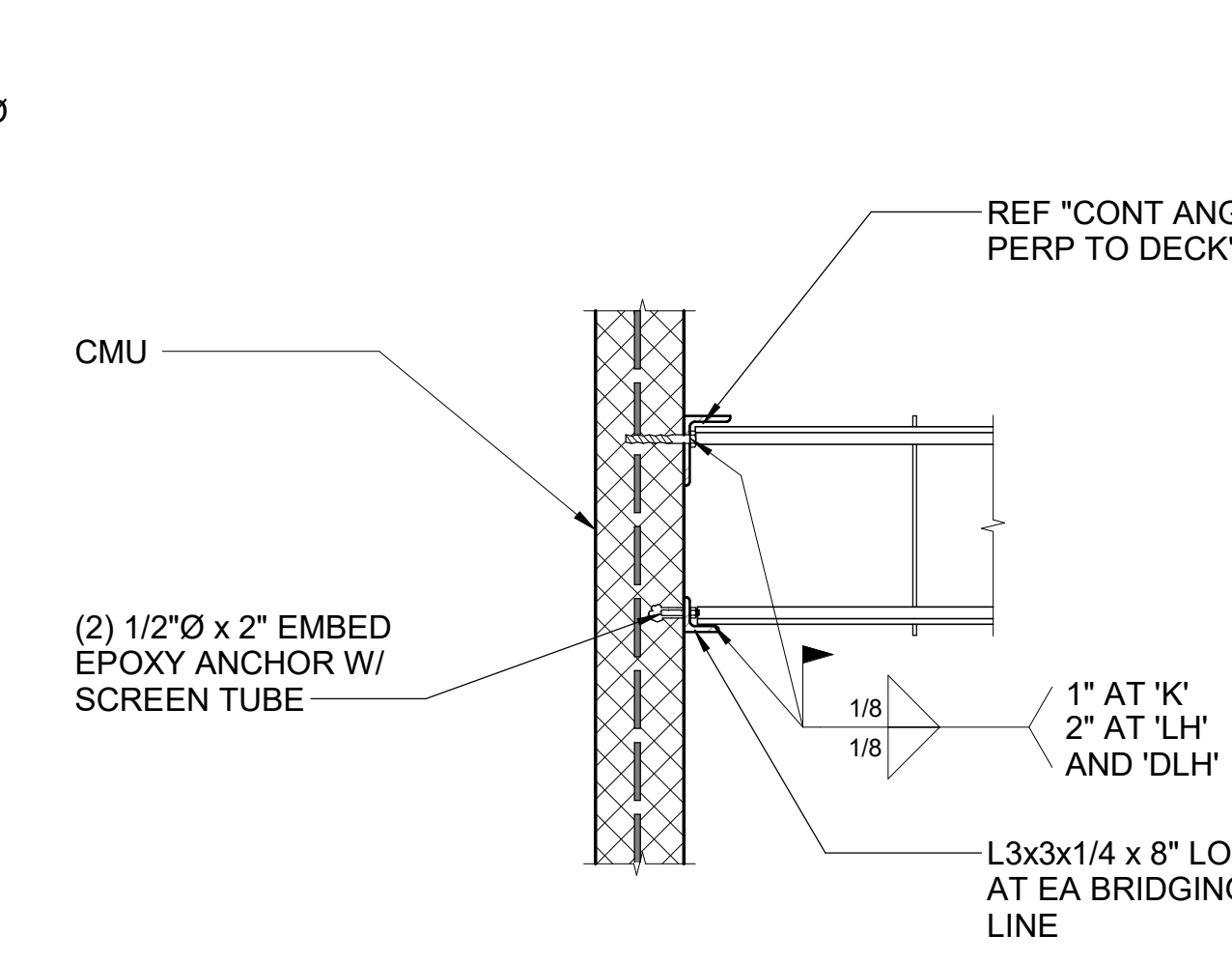
GROUT ALL CELLS SOLID FROM BB TO DIMENSION 'A' ABOVE BOD
(2) #4 AT 8" CMU
(2) #5 AT 12" CMU
CONTRACTOR MUST BE PERMITTED TO STEP BB WITH ROOF SLOPE - MAINTAIN MIN DIMENSIONS SHOWN



CONT ANGLE (PERP TO DECK)



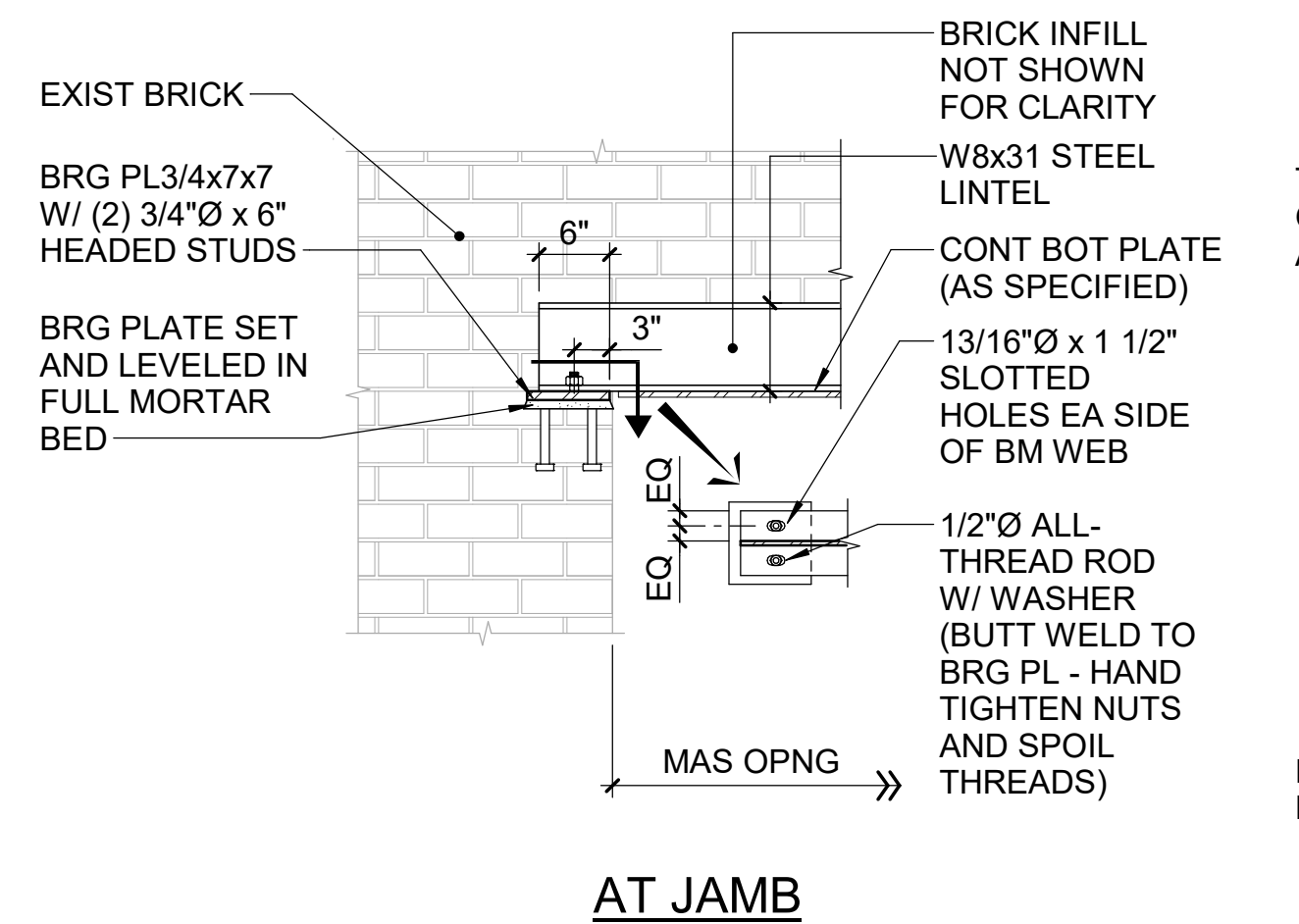
CONT ANGLE (PARALLEL TO DECK)



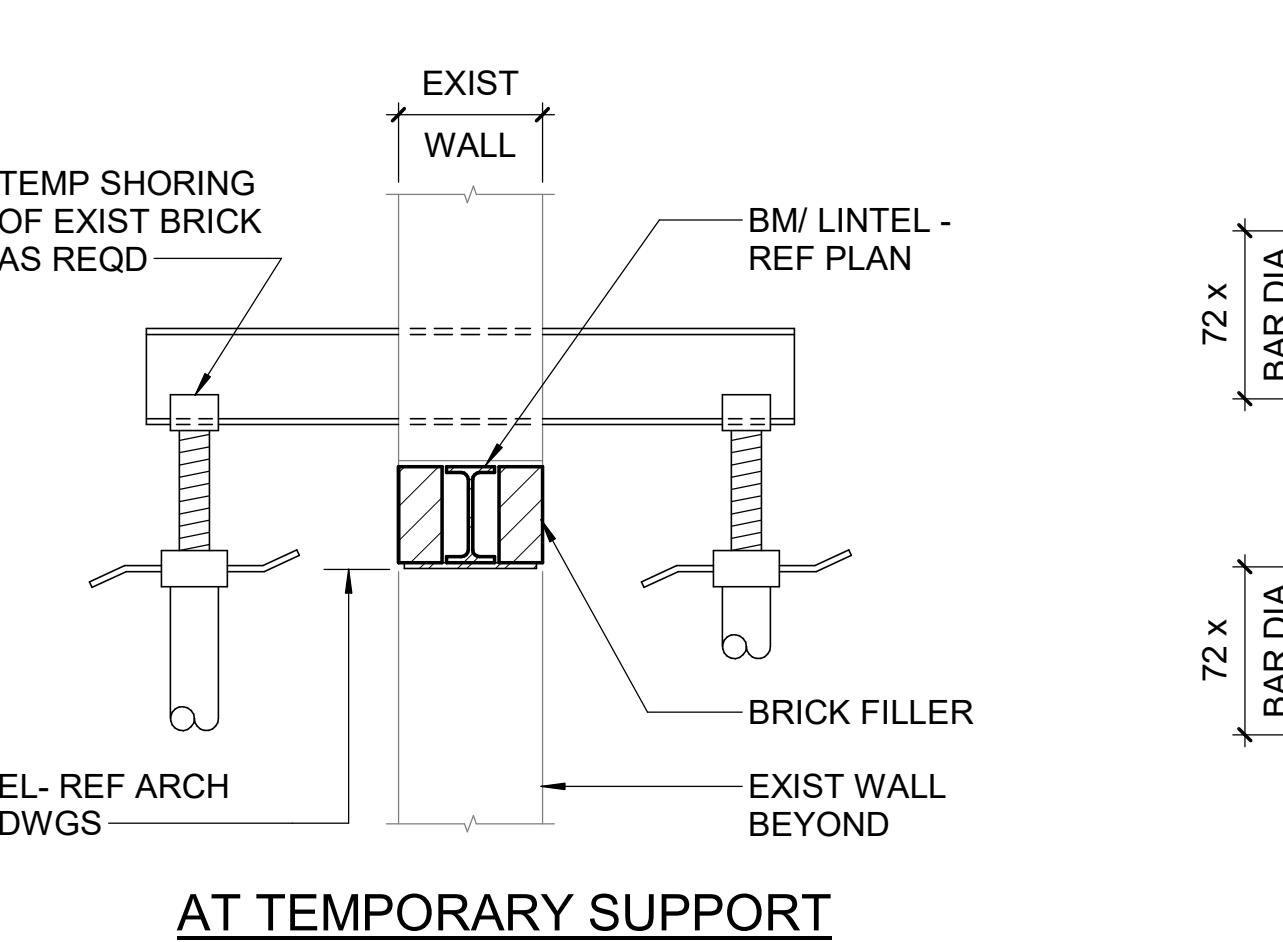
BRIDGING ANCHORAGE

C1 BOND BEAM LINTEL DETAILS
NTS

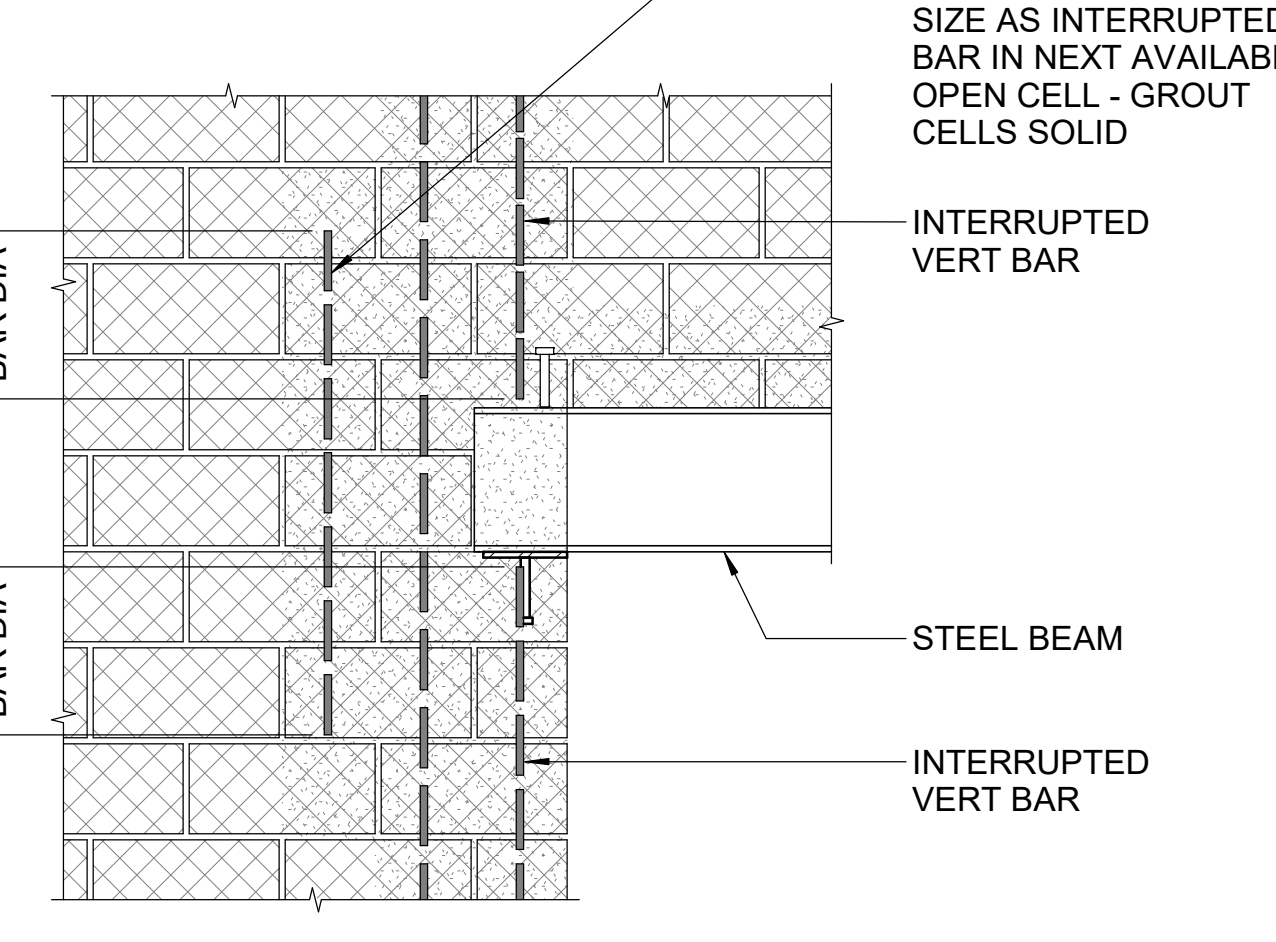
C2 TYPICAL MASONRY ANCHORAGE DETAILS
NTS



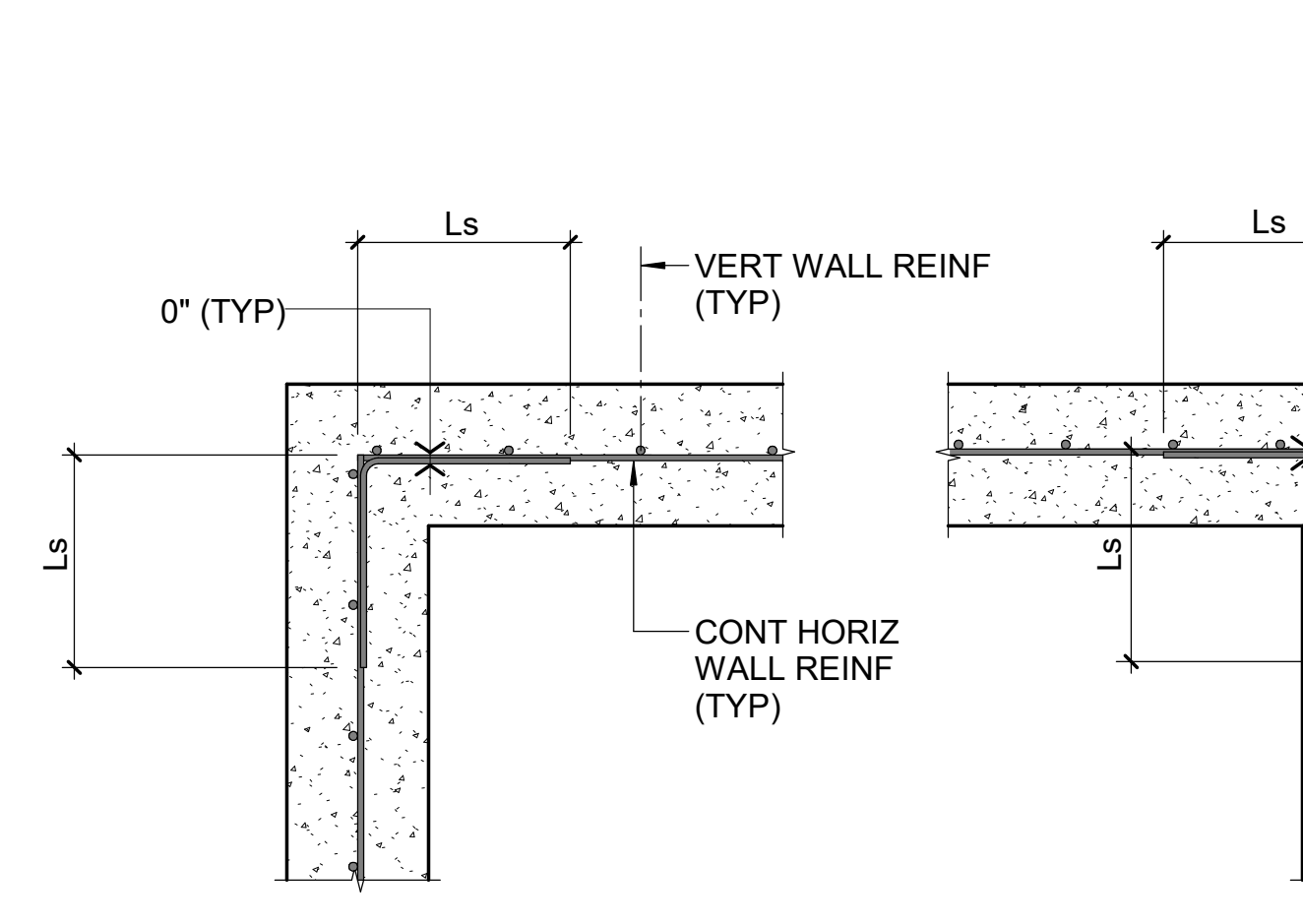
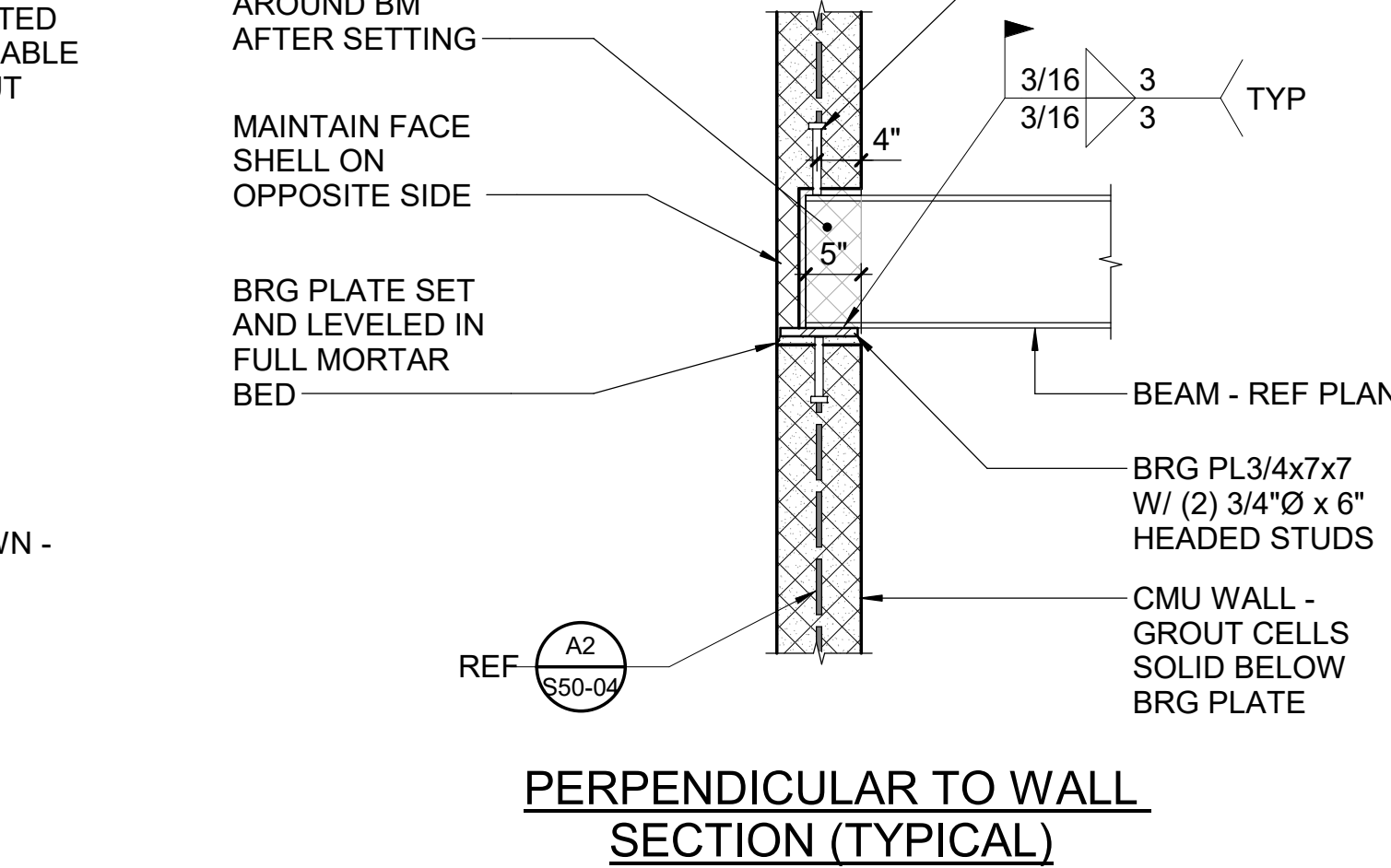
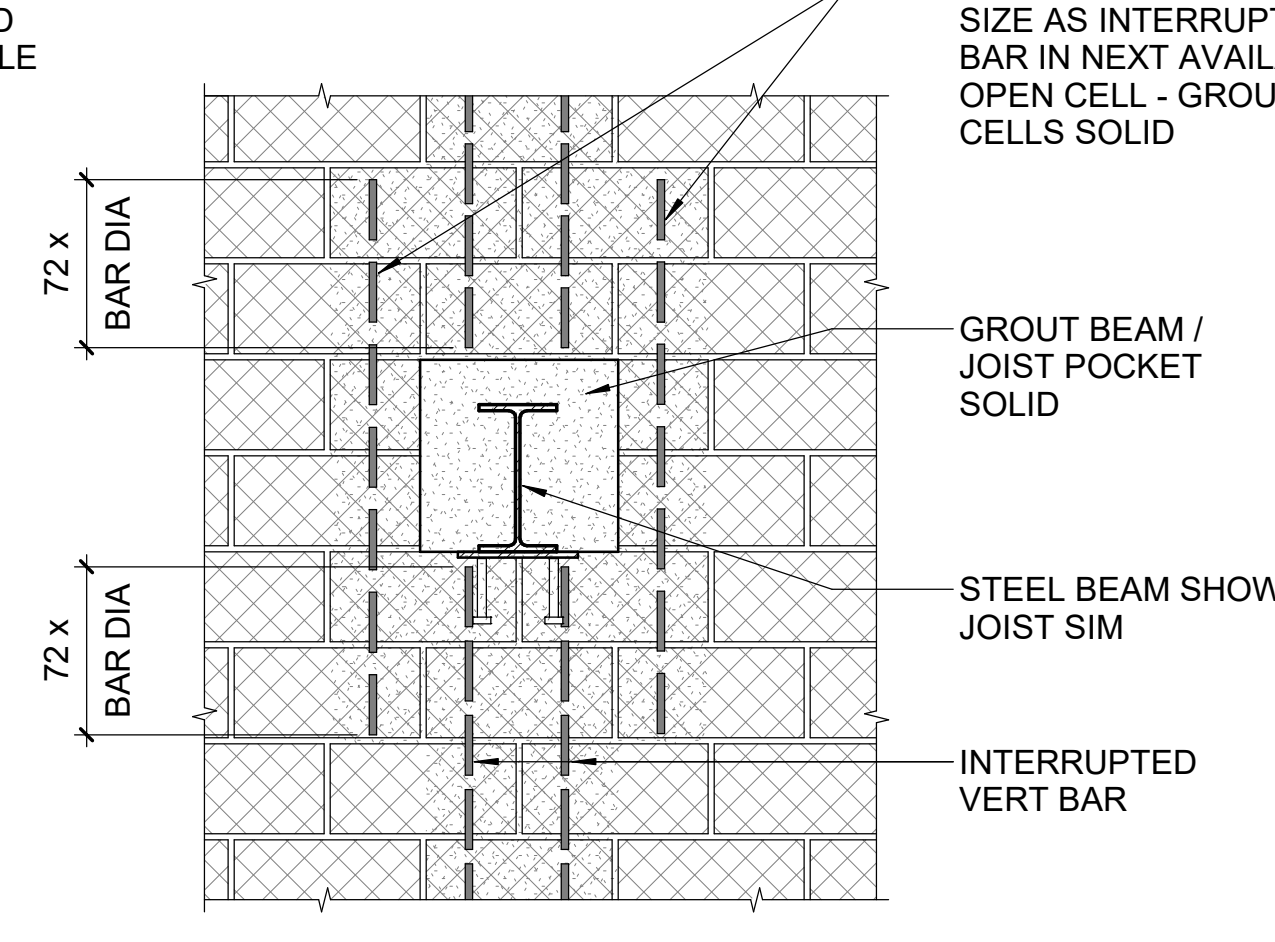
B1 TYPICAL STEEL WIDE FLANGE LINTEL BEARING ON EXISTING MASONRY
NTS



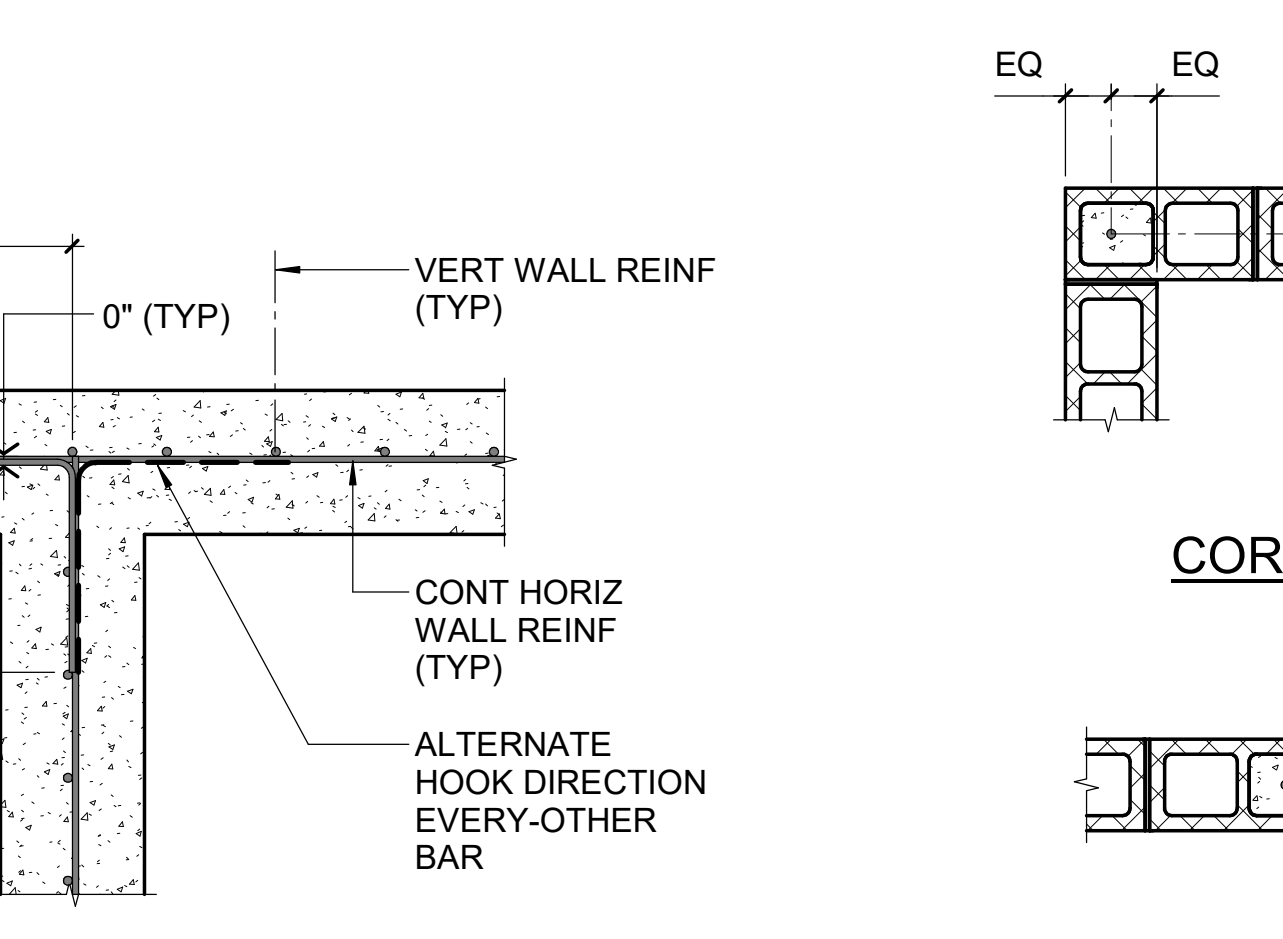
B2 TYPICAL OFFSET SPLICE AT MASONRY WALL DETAIL
NTS



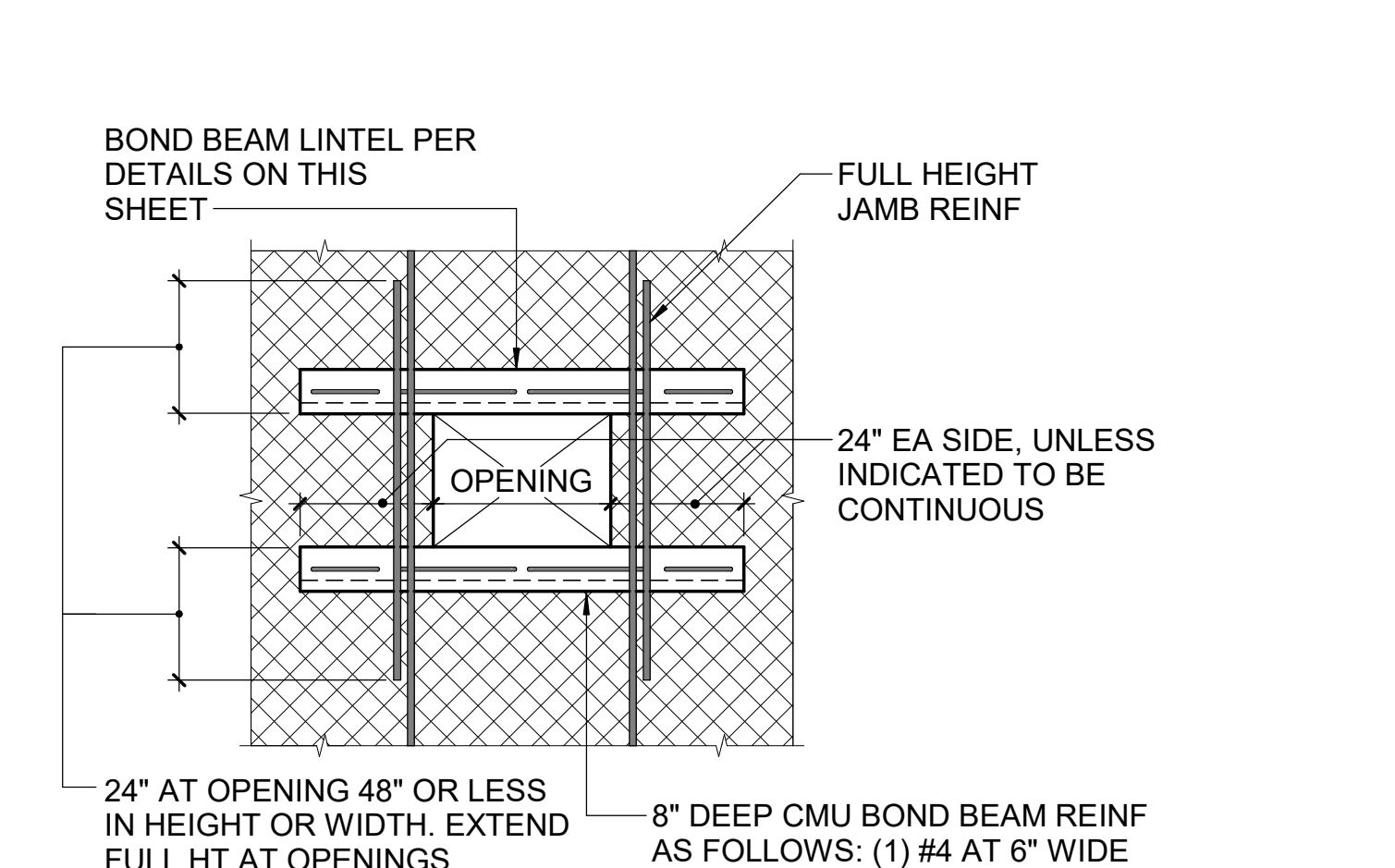
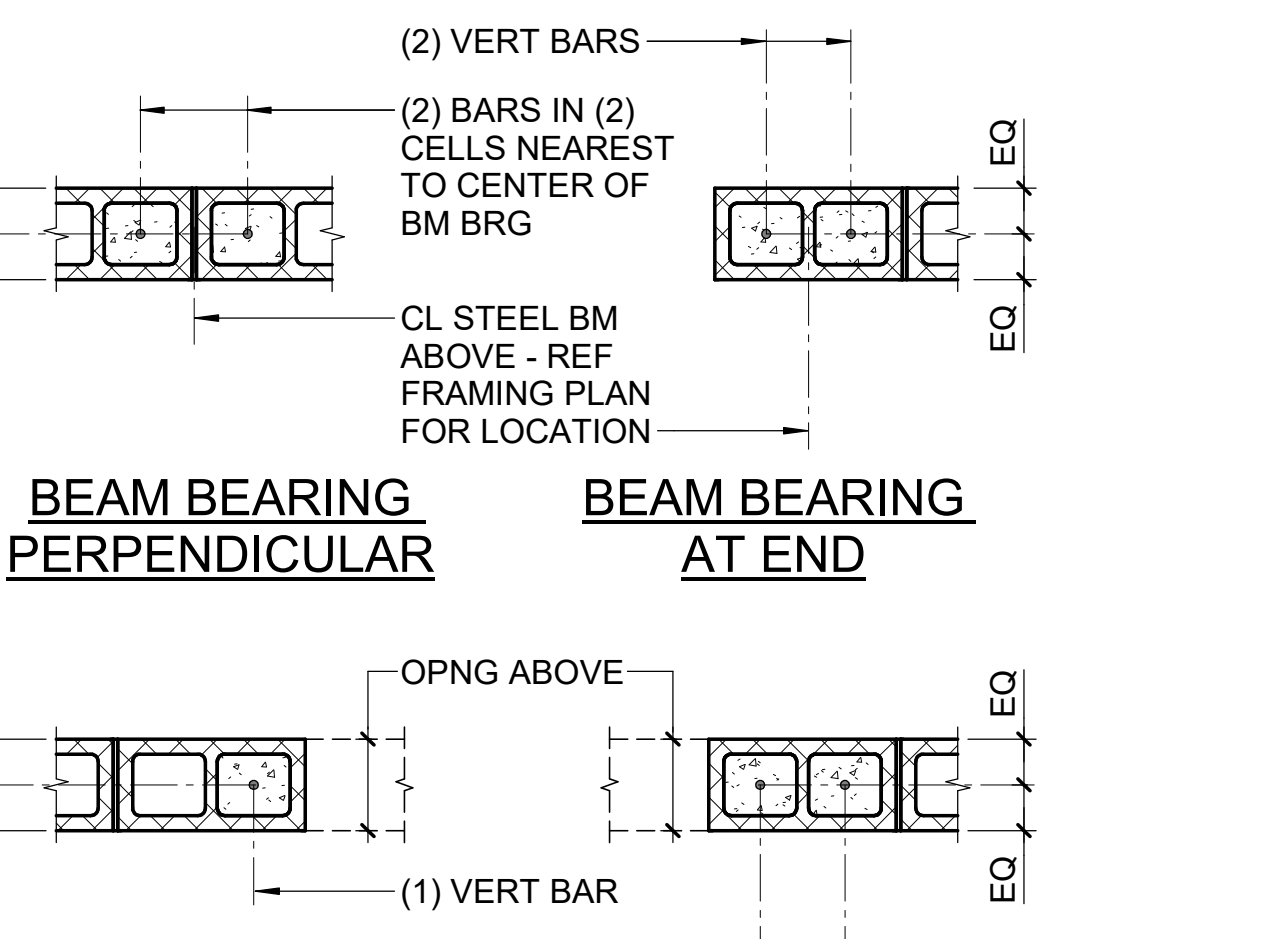
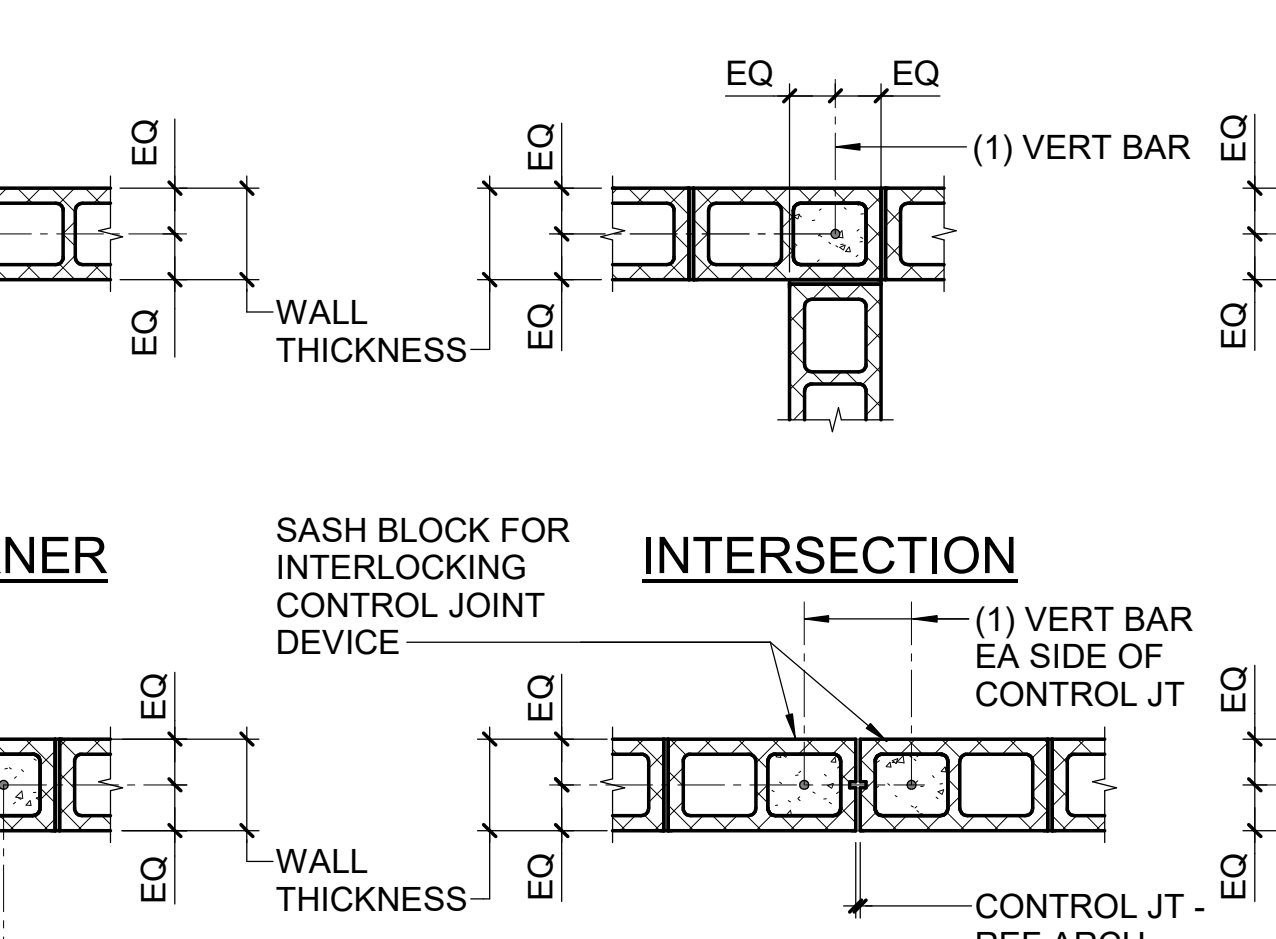
B3 TYPICAL STEEL BEAM BEARING ON MASONRY DETAILS
NTS



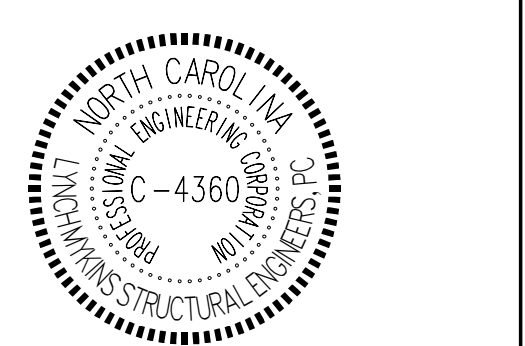
A1 TYPICAL DETAIL AT CORNERS AND INTERSECTIONS OF CONCRETE WALLS
NTS



A2 TYPICAL CONCRETE MASONRY REINFORCING DETAILS
NTS



A3 TYPICAL MASONRY REINFORCING AT WALL OPENING DETAIL
NTS



NOT FOR CONSTRUCTION

| Issue No. | Issue Description | Date |
|-----------|-----------------------------------|------------|
| 1 | Issue for Bid - Early Procurement | 01/17/2025 |
| 2 | Design Development | 09/20/24 |

Job Number: 820937.001

Drawn By: DO

Designed By: JD

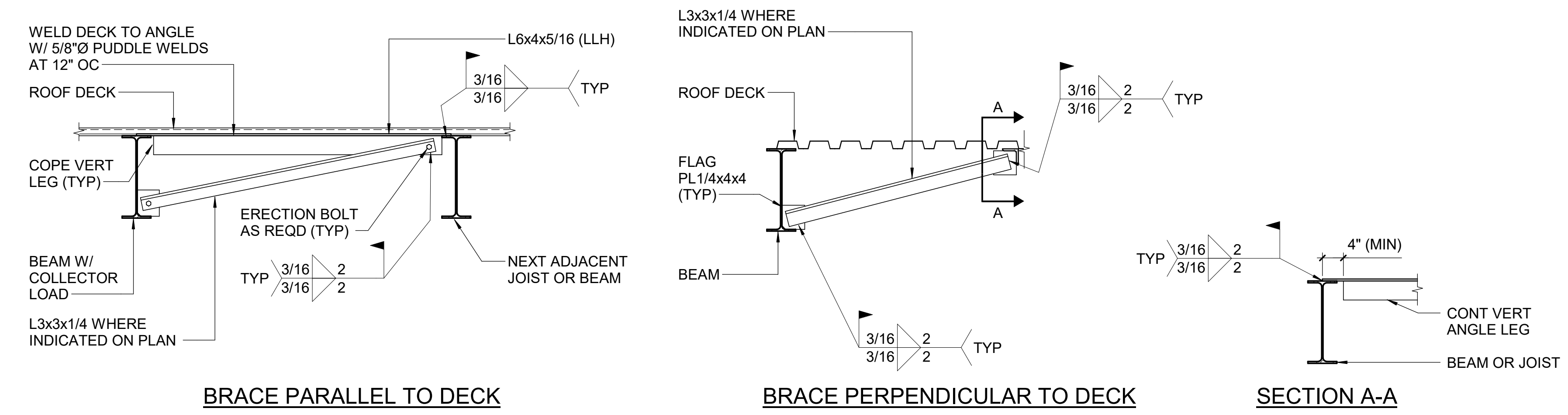
Checked By: SF

TITLE

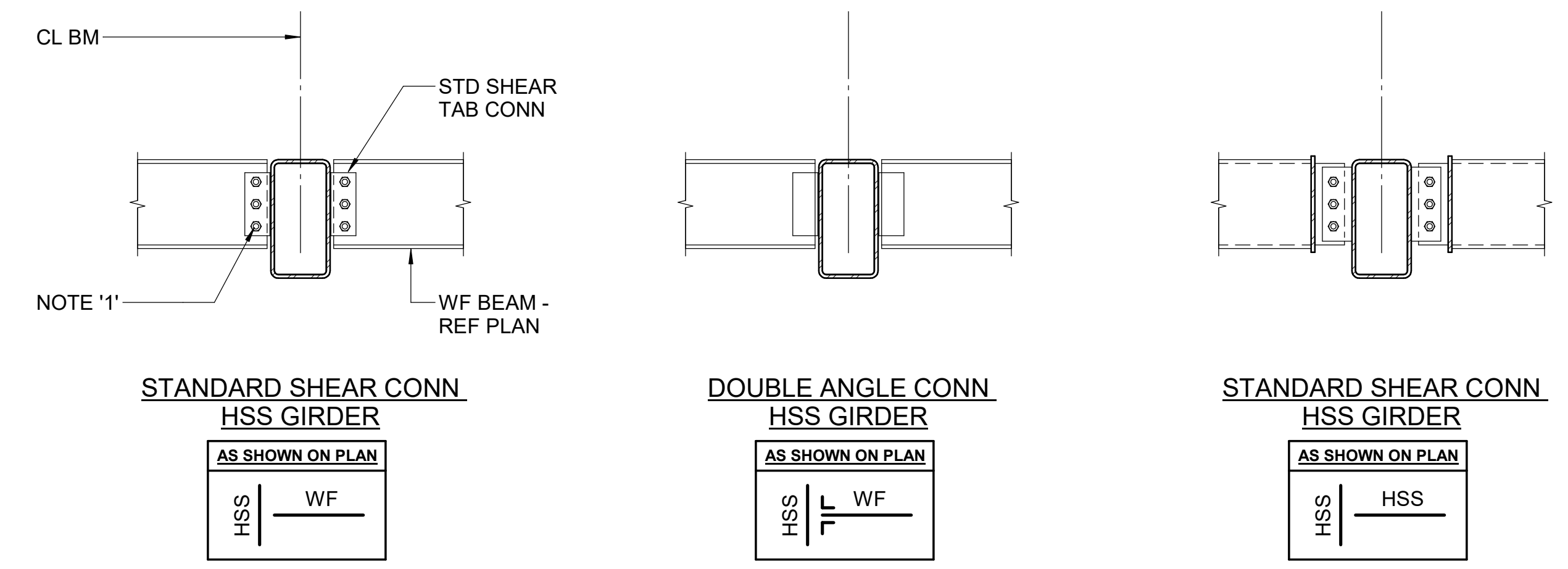
TYPICAL DETAILS

SHEET NUMBER

S50-04



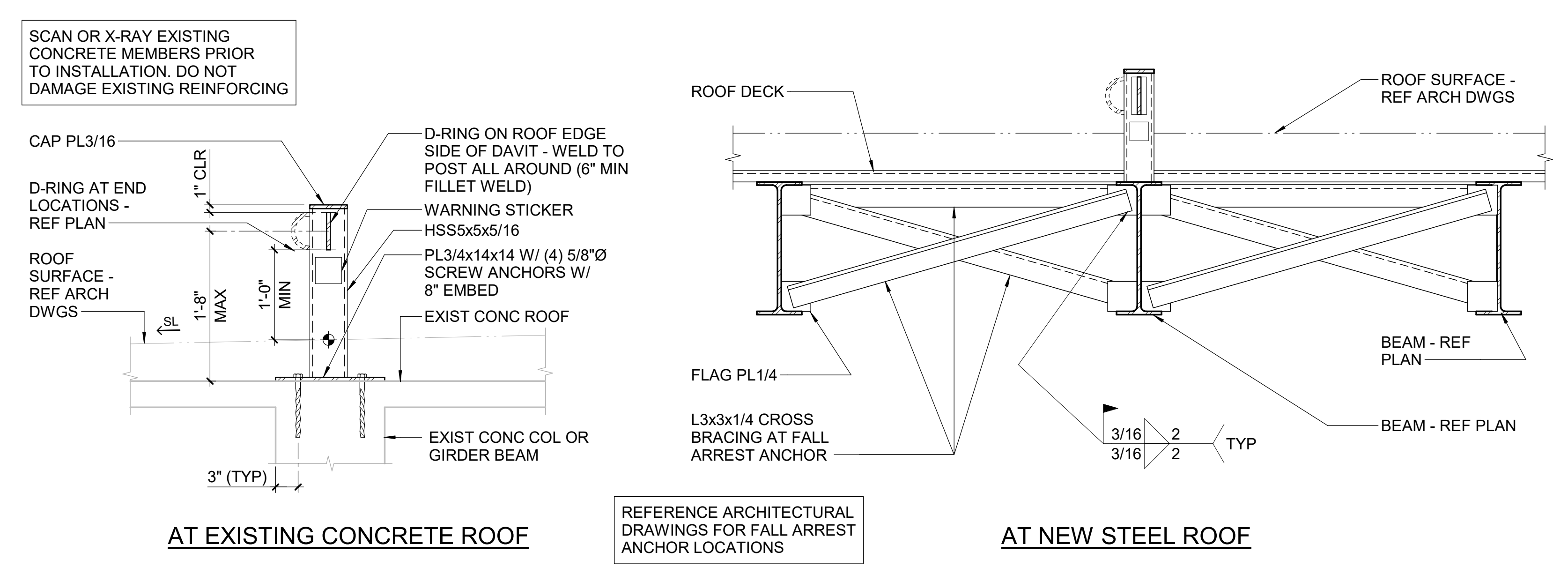
D1 TYPICAL BEAM BOTTOM FLANGE BRACE DETAILS
NTS



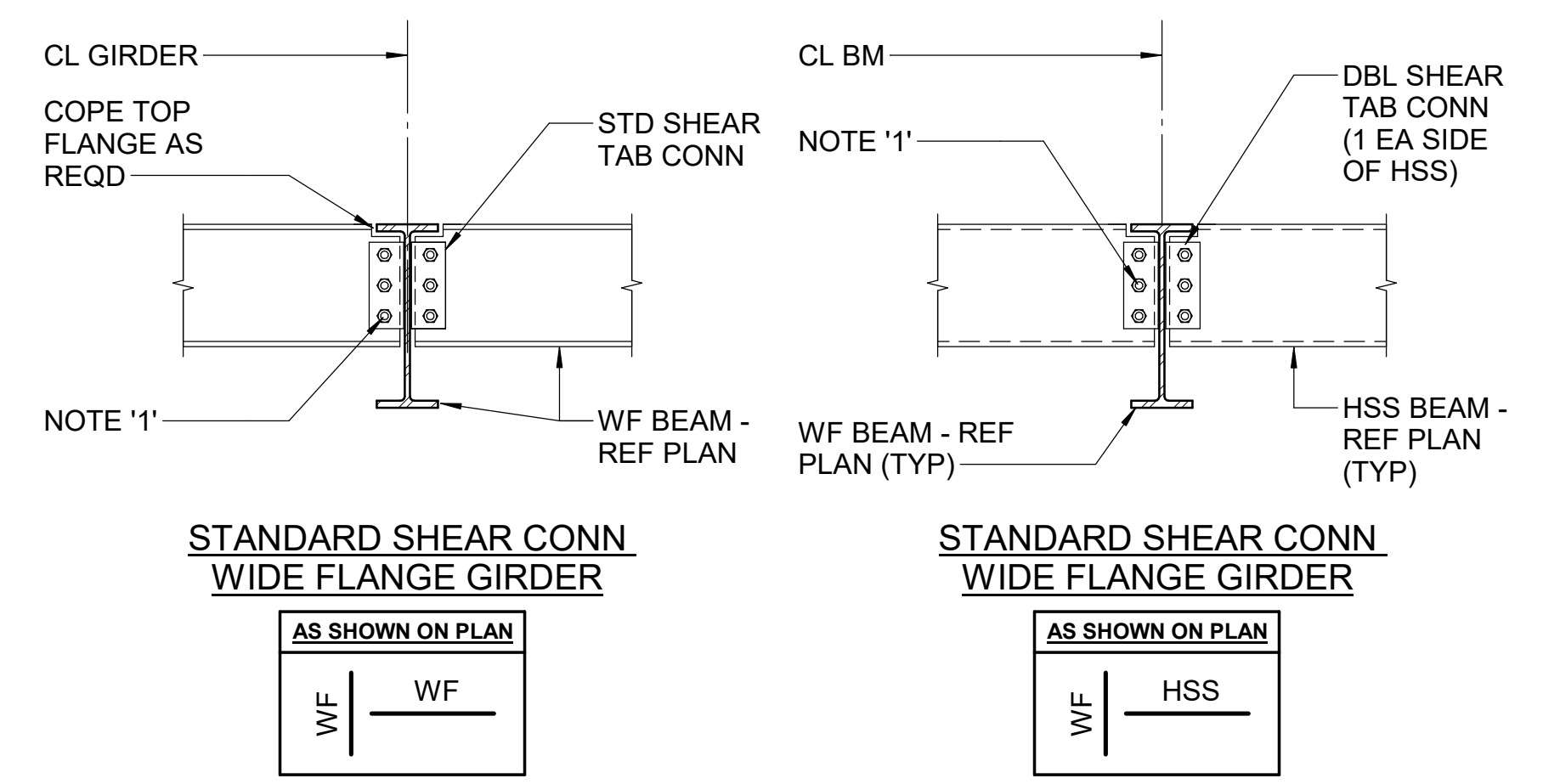
NOTE 1: UNLESS REACTION IS NOTED ON PLAN, DESIGN CONN FOR REACTION AND MIN NUMBER OF BOLTS PER SCHEDULE IN "STRUCTURAL STEEL" GENERAL NOTES.

NOTE 2: CONNECTION MUST USE THE MAXIMUM NUMBER OF BOLT ROWS ALLOWED FOR THE BEAM SIZE PER THE STEEL CONSTRUCTION MANUAL TABLE 10-1.

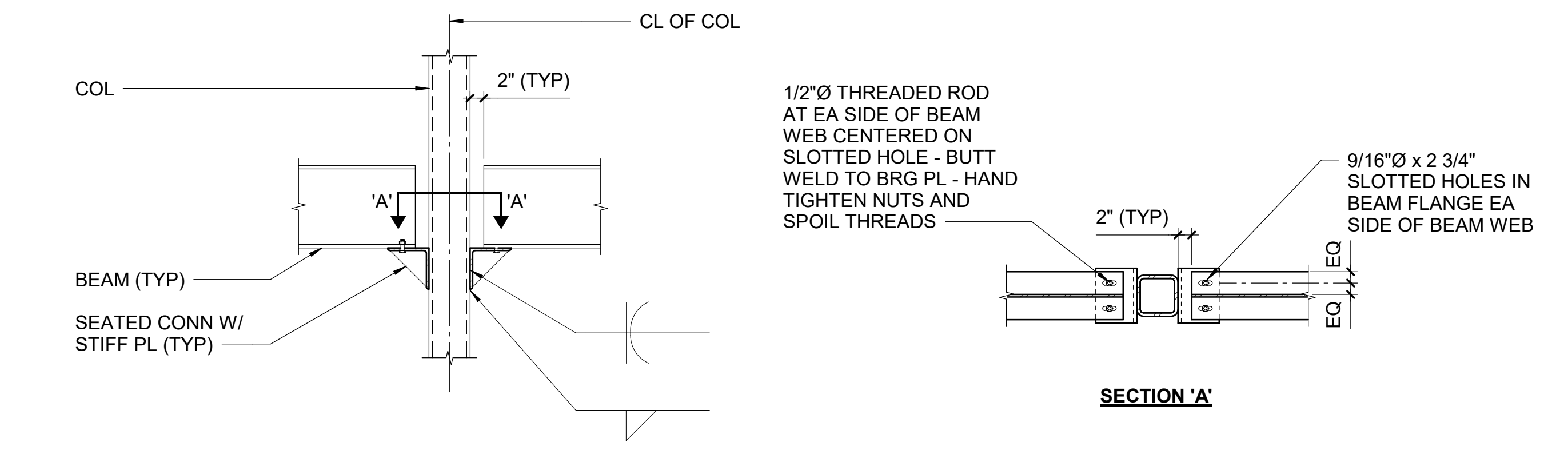
C1 TYPICAL WIDE FLANGE BEAM AND HSS BEAM TO HSS GIRDER CONNECTION DETAILS
NTS



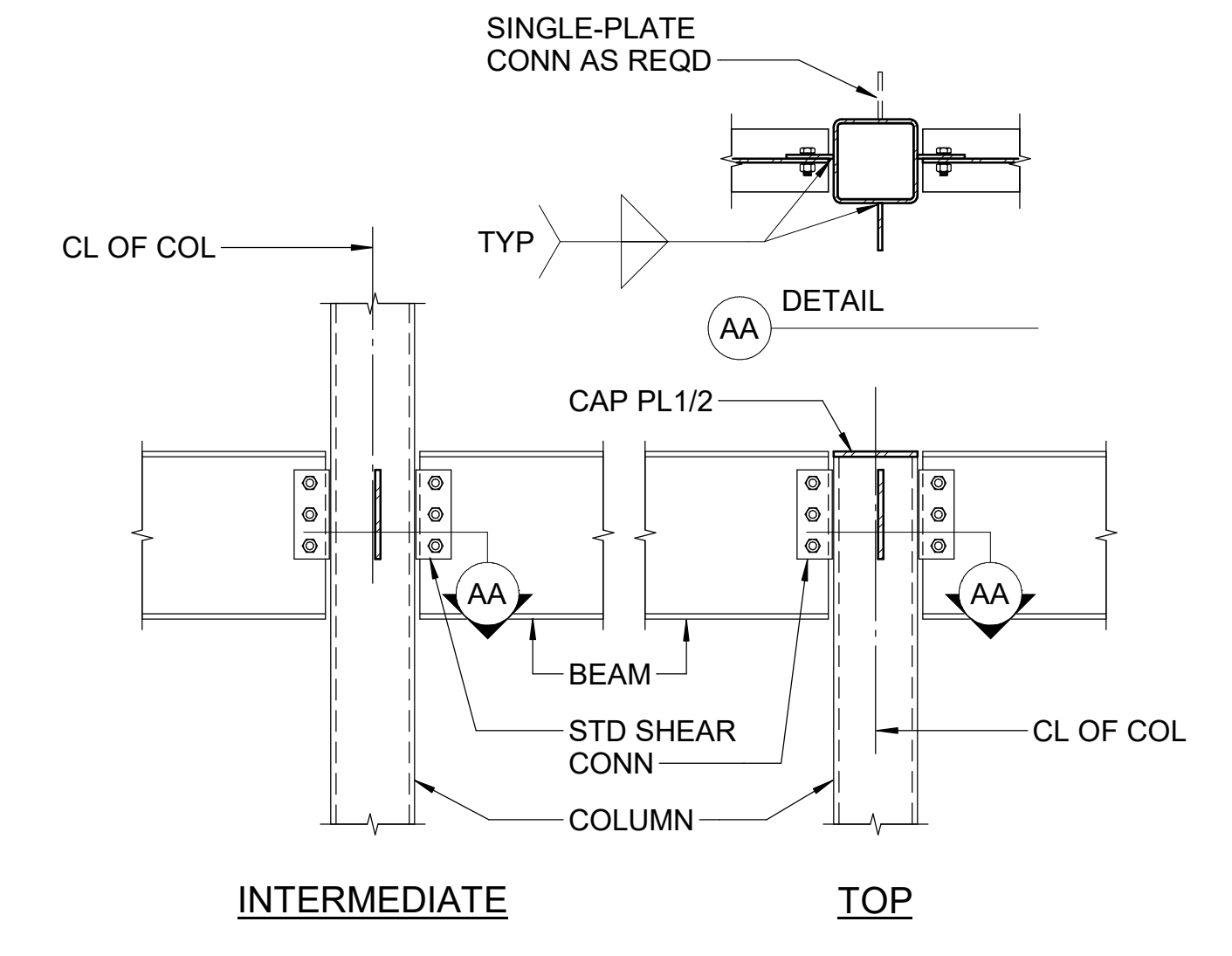
C2 TYPICAL FALL ARREST ANCHOR DETAILS
NTS



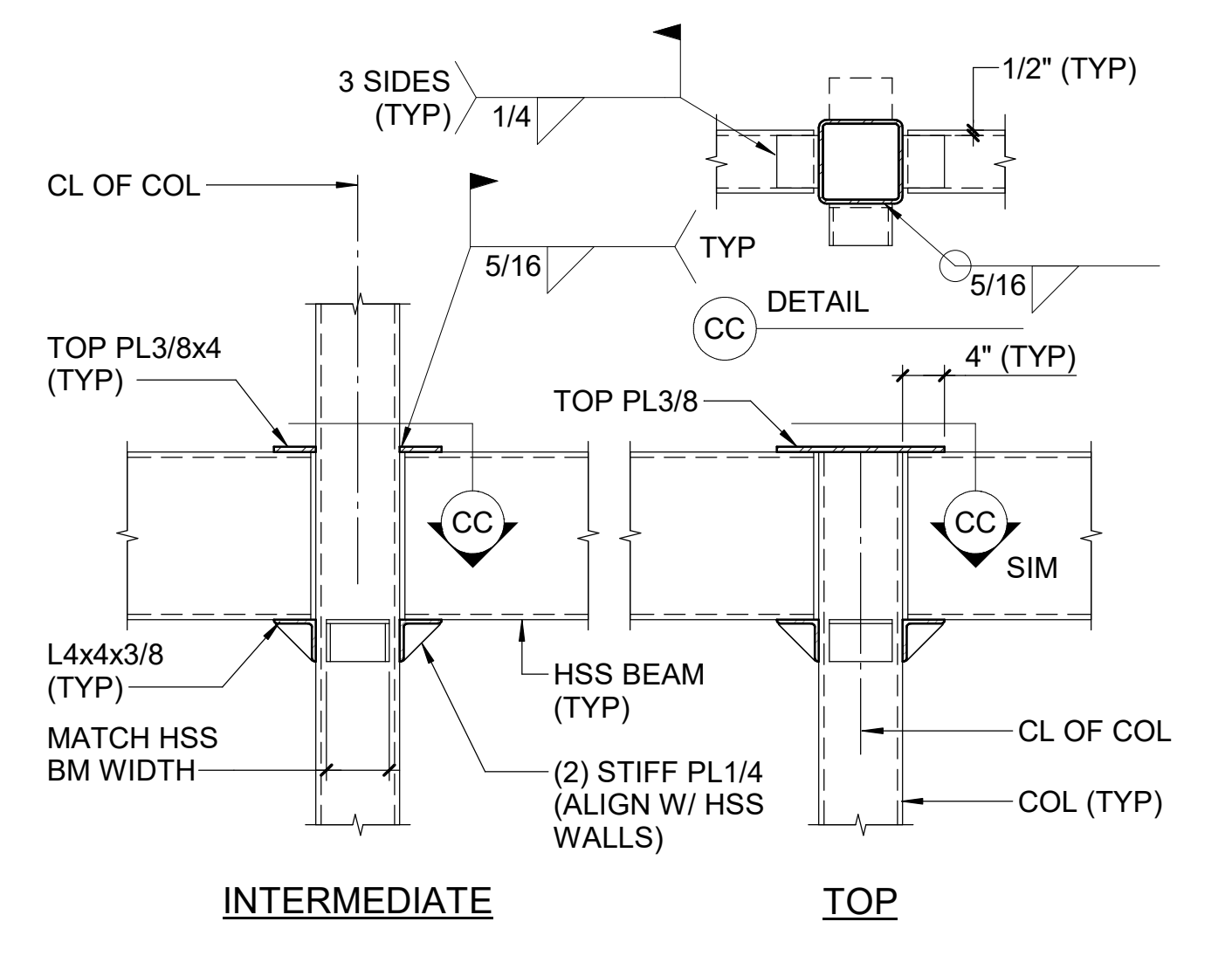
B1 TYPICAL WIDE FLANGE BEAM AND HSS BEAM TO WIDE FLANGE GIRDER CONNECTION DETAILS
NTS



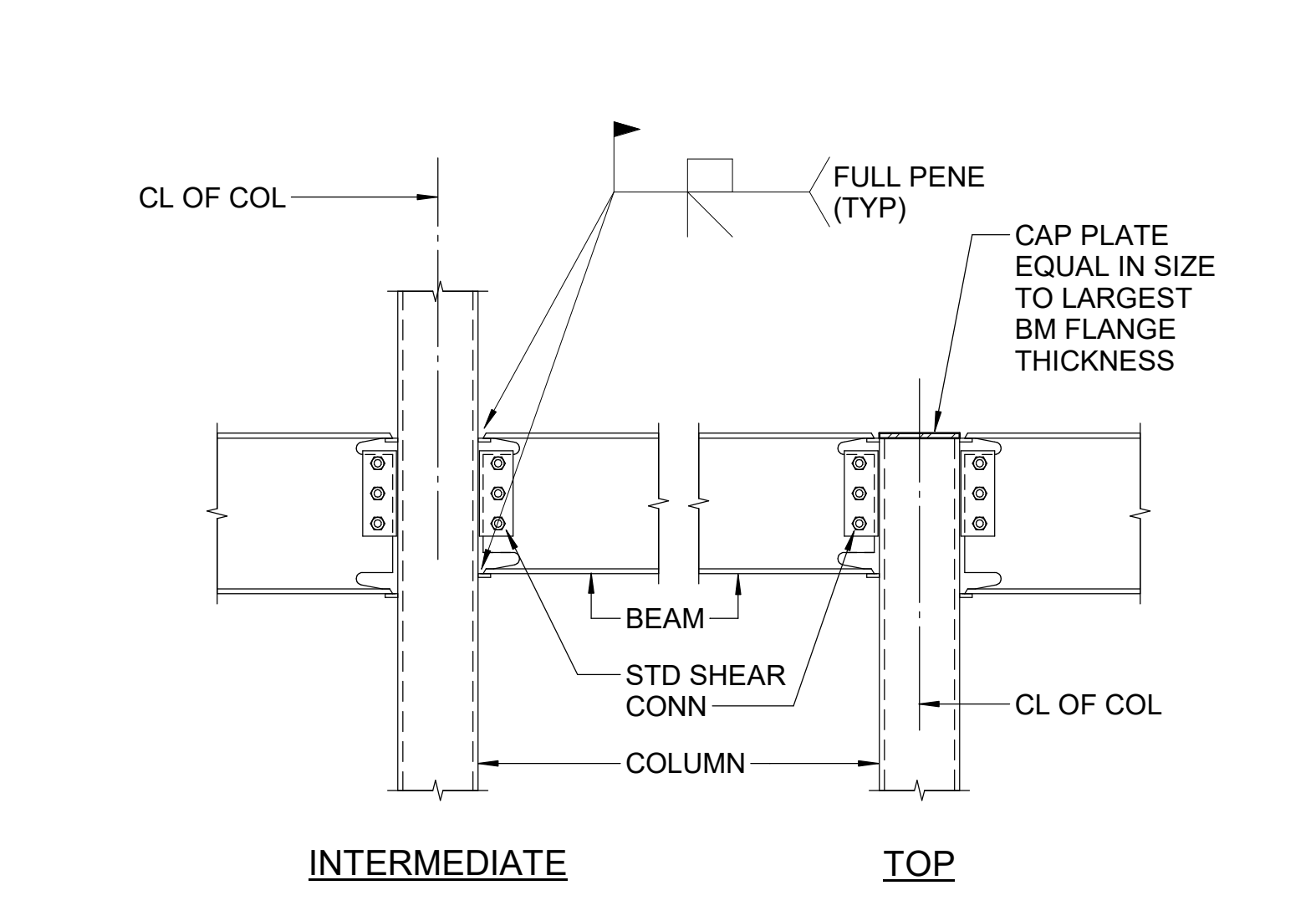
B2 TYPICAL WIDE FLANGE BEAM TO HSS COLUMN HORIZONTAL SLOTTED/BEARING ONLY CONNECTION DETAIL
NTS



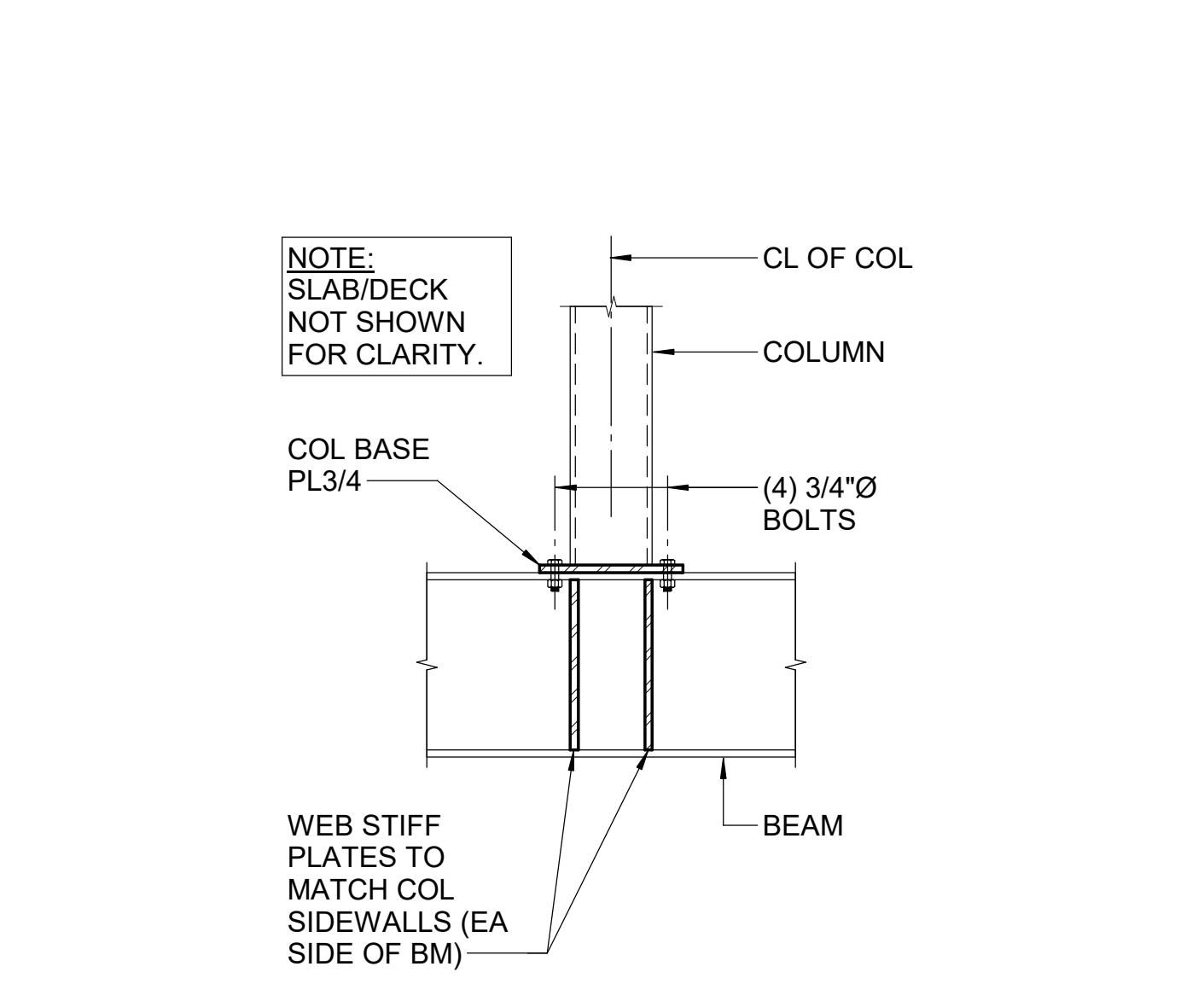
A1 TYPICAL WIDE FLANGE BEAM TO HSS COLUMN CONNECTION DETAILS
NTS



A2 TYPICAL HSS BEAM TO HSS COLUMN CONNECTION DETAILS
NTS



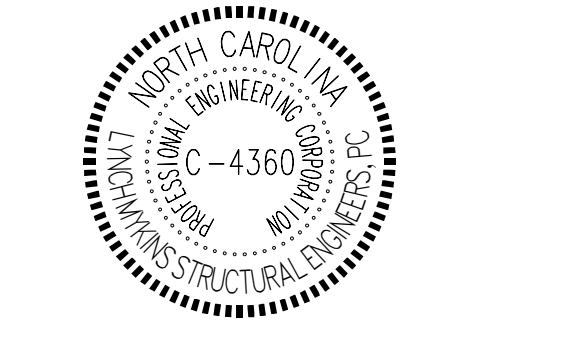
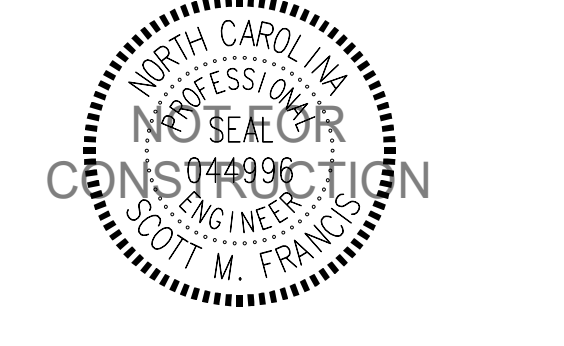
A3 TYPICAL WIDE FLANGE BEAM TO HSS COLUMN MOMENT CONNECTION DETAILS
NTS



A4 TYPICAL TRANSFER BEAM DETAILS
NTS



Structural Engineers
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LM Project Number: LM23.226



Mann Hall Renovation
STATE ID #2-2450-02A
NC SU PROJECT # 202220021



North Carolina State University
Facilities Division Design & Construction
Administrative Services Building III
2901 West Village Way, Suite 331
Raleigh, NC 27695

NOT FOR CONSTRUCTION

ISSUE CHART

| | | |
|---|-----------------------------------|------------|
| 2 | Issue for Bid - Early Procurement | 01/17/2025 |
| 1 | Design Development | 8/9/2024 |
| 1 | Schematic | 5/15/24 |

Job Number: 820937.001
Drawn By: DO
Designed By: JD
Checked By: SF

TYPICAL DETAILS

SHEET NUMBER

S50-05