

**STRUCTURAL NOTES**

- A. PROJECT REFERENCES:**
- 1. **CODE:** WORK SHALL BE EXECUTED IN FULL COMPLIANCE WITH THE APPLICABLE PROVISIONS OF ALL LAWS, BY-LAWS, STATUTES, ORDINANCES, CODES, RULES, REGULATIONS, AND LAWFUL ORDERS OF PUBLIC AUTHORITIES BEARING ON THE PERFORMANCE AND EXECUTION OF THE WORK.

**CODES AND STANDARDS**

BUILDING CODE	IBC 2021 (ASCE 7-16)
RISK CATEGORY	II
FM APPROVED PARAMETERS	NO

- 2. **PROJECT SPECIFICATIONS:** NOTES AND SPECIFICATIONS GIVEN ON THE STRUCTURAL DRAWINGS ARE EXCERPTS FROM THE RELATING PROJECT SPECIFICATIONS. THEY ARE NEITHER COMPLETE NOR DO THEY REPLACE THE CONTRACT SPECIFICATIONS.
- 3. **MATERIAL STANDARDS:** REFERENCED STANDARDS OR PUBLICATIONS SHALL PERTAIN TO MOST CURRENT DATA, STANDARD OR PUBLICATION.

- B. TEMPORARY BRACING, SHORING AND METHODS:** CONTRACTOR RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF SHORING, BRACING, OTHER TEMPORARY SUPPORTS, AND METHODS OF CONSTRUCTION.

- 1. **STABILITY:** THE CONTRACTOR SHALL INSURE THE STABILITY OF ALL ELEMENTS INCLUDING, BUT NOT LIMITED TO EXCAVATION, FLOORS, ROOFS, WALLS, FOUNDATIONS, AND ADJACENT PROPERTY AS PROJECT CONDITIONS REQUIRE. THE STRUCTURAL ENGINEER ASSUMES NO RESPONSIBILITY FOR THE STRUCTURE DURING THE ENTIRE CONSTRUCTION PERIOD. BRACE BASEMENT PIT WALLS UNTIL SUPPORTING FLOORS ARE PLACED AND WALL/FLOOR HAS REACHED DESIGN STRENGTH. BACKFILL BOTH SIDES OF WALLS SIMULTANEOUSLY.
- 2. **LOADING:** THE BUILDING IS DESIGNED ONLY FOR PERMANENT LOADS APPLIED TO THE STRUCTURE IN ITS FINAL CONFIGURATION. DO NOT PLACE MATERIAL OR EQUIPMENT ON FLOORS OR FLOORS IN EXCESS OF THE INDICATED DESIGN LIVE LOADS. AVOID IMPACT LOADS.

- 3. **SURCHARGE:** IN NO CASE SHALL HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION/BASEMENT WALL. IF THE CONTRACTOR DEEMS IT NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8'-0", THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND, AT HIS OWN EXPENSE, PROVIDE ADEQUATE SUPPORTS OR WALL BRACES TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT.

- 4. **SITE SAFETY:** THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING CONDITIONS OF PUBLIC AND WORKER SAFETY DURING EXECUTION OF THE WORK. THIS SHALL INCLUDE COMPLIANCE WITH ALL OSHA, STATE AND LOCAL REGULATIONS/LAWS AS WELL AS PREPARING AND FILING A SITE SAFETY PLAN OR PROVIDING OTHER WRITTEN SAFETY ASSURANCES AS REQUIRED. ALL CONSTRUCTION METHODS SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 33 OF THE IBC, "SAFEGUARDS DURING CONSTRUCTION".

- 5. **DAMAGE:** CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY MEASURES TO PROTECT THE PREMISES INCLUDING EXISTING FACILITIES, STRUCTURES, AND UTILITY LINES FROM ANY DAMAGE AND REPAIR ALL DAMAGE CAUSED BY THE CONTRACTOR WITH NEW MATERIALS TO MATCH EXISTING TO THE SATISFACTION OF THE OWNER, ARCHITECT AND/OR ENGINEER.

**C. REVIEW AND COORDINATION:**

- 1. **EXISTING CONDITIONS, DIMENSIONS, AND ACCESSIBILITY** SHALL BE VERIFIED BY ALL CONSTRUCTION TRADES IN FIELD, PRIOR TO SHOP DRAWING PREPARATIONS AND PROCEEDING WITH THE WORK. IF EXISTING CONDITIONS DO NOT PERMIT EXECUTION OF THE WORK IN ACCORDANCE WITH THE SHOWN DETAILS, THE CONTRACTOR MUST SUBMIT A SKETCH WITH PROPOSED MODIFICATION. APPROVAL MUST BE GRANTED BY THE ENGINEER PRIOR TO START OF WORK.

- 2. **CONSTRUCTION DOCUMENTS:** THE CONTRACTOR SHALL COORDINATE STRUCTURAL PLANS, DETAILS AND DIMENSIONS WITH ALL OTHER CONSTRUCTION DOCUMENTS BEFORE PROCEEDING WITH THE WORK. DISCREPANCIES WITHIN OR BETWEEN OTHER CONSTRUCTION DOCUMENTS SHALL BE NOTIFIED TO THE ENGINEER AND ARCHITECT PRIOR TO BID AND EXECUTION OF THE WORK.

- **MATERIAL STRENGTHS OR QUANTITIES:** IF DISCREPANCIES OCCUR REGARDING MATERIAL STRENGTHS OR QUANTITIES, HIGHER STRENGTH, AND GREATER QUANTITY SHALL BE USED.

- **DIMENSIONS AND ELEVATIONS** SHOWN ON STRUCTURAL DRAWINGS ARE GENERATED BY OTHER DISCIPLINES. WITH THE EXCEPTION OF DIMENSIONS OF STRUCTURAL MEMBERS, ANY DIMENSIONS OR ELEVATIONS OMITTED OR NOT SHOWN ON THE STRUCTURAL DRAWINGS SHOULD BE OBTAINED FROM THE OTHER TRADE CONSTRUCTION DOCUMENTS.

- 3. **INTENT:** ALL DETAILS, SECTIONS, AND NOTES ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO SIMILAR CONDITIONS ELSEWHERE.

- 4. **BID:** UNLESS DRAWING IS PART OF THE FULL SET OF DOCUMENTS LABELED "ISSUED FOR BID," DO NOT CONSIDER IT AS THE BASIS FOR A BID. ALL ESTIMATES BASED ON OTHER DRAWINGS ARE USED AT THE ESTIMATOR'S SOLE RISK.

- 5. **CHANGES** REQUESTED BY THE CONTRACTOR WILL BE DONE AT NO COST TO THE OWNER. APPROVAL OF CONTRACTOR REQUESTED CHANGES IN NO WAY STATES OR IMPLIES APPROVAL OF A CHANGE IN SCOPE OR CHANGE IN CONTRACT COST. THE CONTRACTOR SHALL MAKE NO DEVIATION FROM THE CONTRACT DOCUMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER OF RECORD.

- 6. **ERRORS:** COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTORS EXPENSE.

- D. **SUBMITTALS:**
- 1. **REVIEW SCHEDULE:** SUBMIT SHOP DRAWINGS FOR REVIEW AT LEAST 14 DAYS (10 WORKING DAYS) BEFORE RETURNED SUBMITTALS WILL BE NEEDED. ANY REVIEW THAT IS REQUIRED MORE QUICKLY WILL BE AT THE CONTRACTORS EXPENSE.

- 2. **COMPLETENESS:** A CONTRACTOR'S STAMP CERTIFYING THAT THEY HAVE VERIFIED ALL FIELD MEASUREMENTS, CONSTRUCTION CRITERIA, MATERIALS AND SIMILAR DATA AND HAVE CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS MUST BE PRESENT ON ALL SUBMITTALS FOR REVIEW BY THE ENGINEER OF RECORD. IF REVIEWS OF INCOMPLETE SHOP DRAWINGS/SUBMITTALS ARE REQUIRED, THOSE SUBMITTALS SHALL BE MARKED AS INCOMPLETE UNTIL THEY BEAR SUCH STAMP FROM THE G.C.

- 3. **ORIGINAL DOCUMENTS:** IN NO CASE SHALL THE CONTRACT DOCUMENTS BE USED/REPRODUCED AS A BASIS FOR SHOP DRAWINGS. SHOP DRAWINGS SHALL BE ORIGINAL DRAWINGS NOT COPIES OF THE CONTRACT DOCUMENTS.

- 4. **REJECTION:** SUBMITTALS NOT MEETING THE CRITERIA LISTED IN THIS SECTION WILL NOT BE REVIEWED.

- 5. **DELEGATED DESIGN:** DELEGATED DESIGNS SHALL CLEARLY INDICATE THE APPLICABLE CODES, DESIGN CRITERIA, CONNECTION DETAILS, AND LOAD CAPACITY OF COMPONENTS/SYSTEMS BEING PROVIDED.

- a. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CONSTRUCTION FOR THE FOLLOWING:
  - SHORING SYSTEMS FOR EXCAVATIONS AND SOIL RETENTION
  - TEMPORARY BRACING, ERECTION BRACING
  - CONCRETE MIX DESIGNS
  - CONCRETE FORMWORK
  - PRECAST COMPONENTS
  - STEEL GRAVITY SHEAR CONNECTIONS

- b. DELEGATED ELEMENTS AND CONNECTIONS SHALL BE ARRANGED SUCH THAT NO ECCENTRICITIES OR TORSION IS CREATED ON THE PRIMARY STRUCTURE. ADDITIONAL BRACING TO RESOLVE SUCH FORCE SHALL BE DETAILED BY THE DELEGATED DESIGNER AND FURNISHED BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING EMBED ITEMS AND HARDWARE AS REQUIRED.

**FOUNDATION UNDERPINNING**

- A. UNDERPINNING NOTES:**
- 1. **WORK REQUIREMENTS:** ALL FOUNDATIONS & EARTHWORK OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING BUILDING CODE AND ALL LOCAL, BUILDINGS, AND SERVICE FACILITIES ADJOINING THE FOUNDATION AND EARTHWORK AREAS SHALL BE PROTECTED AND SUPPORTED.
  - 2. **INSPECTION:** ALL TEST PITS, BORINGS, AND UNDERPINNING OPERATIONS ARE SUBJECT TO CONTROLLED INSPECTION.
  - 3. **SURVEY:** THE OWNER SHALL RETAIN A LICENSED SURVEYOR TO SURVEY ALL LOAD BEARING WALLS, PIERS, AND COLLUMNS TO BE UNDERPINNED. THE SURVEYOR SHALL CHECK THE DATUM OF SUCH STRUCTURAL ELEMENTS PRIOR TO EXCAVATION AND EVERY TWO WEEKS FOR DURATION OF THE WORK.
  - 4. **WATER TABLE:** EXCAVATION BELOW THE WATER TABLE SHOULD BE AVOIDED. DEWATER THE SITE PRIOR TO THE EXCAVATION MAY ONLY PROCEED AFTER REVIEW BY THE EOR.
  - 5. **OBSERVATION REPORTING:** DURING THE COURSE OF THE UNDERPINNING, THE CONTRACTOR SHALL MAINTAIN CONTINUAL OBSERVATIONS OF OPERATIONS AND SHALL BE COMPLETELY RESPONSIBLE FOR THE SAFETY OF THE EXISTING STRUCTURES. SHOULD THE CONTRACTOR BECOME AWARE OF ANY SITUATION THAT REQUIRES FURTHER INVESTIGATION OR STUDY, SUCH AS CRACKS IN MASONRY, ADDITIONAL DEFLECTIONS, ANY DISCREPANCY TO DRAWINGS, ETC. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
  - 6. **BEARING:** THE UNDERPINNING FOUNDATIONS SHALL BEAR ON SUBGRADE HAVING BEARING CAPACITY EQUAL TO OR GREATER THAN THE SUBGRADE OF THE EXISTING FOUNDATION. THE SUBGRADE AT THE LEVEL OF THE EXISTING FOUNDATION SHALL BE INSPECTED BY A LICENSED PROFESSIONAL ENGINEER RETAINED BY THE OWNER TO VERIFY THE BEARING CAPACITY, AND DEFICIENCIES BROUGHT TO THE ATTENTION OF THE EOR.

- 7. **CONCRETE STRENGTH:** ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE WITH A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4,000 PSI @ 28 DAYS.
- 8. **GROUT/DRY PACK:** ALL DRYPACK SHALL BE NON-SHRINK GROUT (ASTM C1107) WITH A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI. ALL DRYPACK SHALL BE MIXTURE OF 1 PART CEMENT AND 2 PARTS DAMP SAND, WITH 0" SLUMP.
- 9. **PROTECTION:** THE CONTRACTOR SHALL SAFEGUARD AND PROTECT ALL EXCAVATIONS. ALL EXCAVATION PITS SHALL BE BRACED TO PREVENT ANY LOSS OF SOIL BENEATH ADJOINING PROPERTY.

- 10. **LIFT BRACING:** MAXIMUM UNBRACED LIFT HEIGHT IS 4'-0" FOR DEEP LIFTS. PROVIDE BRACING FOR EXISTING WALL AND NEW UNDERPINNINGS. BRACING AND SHORING TO BE DESIGNED BY THE CONTRACTORS MEANS & METHODS ENGINEER. THE DEPTH OF UNDERPINNING PITS SHALL BE A MAXIMUM OF ONE LIFT.
- 11. **JOINTS:** THE LIFT SHALL BE WITHOUT INTERMEDIATE HORIZONTAL CONSTRUCTION JOINTS (COLD JOINTS). MULTIPLE (VERTICAL) LEVELS OF UNDERPINNING SHALL NOT BE PERMITTED.
- 12. **WIDTH LIMIT:** MAXIMUM UNDERPINNING SECTION WIDTH IS 3'-0".
- 13. **LAYOUT:** PRIOR TO COMMENCING UNDERPINNING, ALL PANELS TO BE LAID OUT AND MARKED IN SEQUENTIAL NUMBERS ORDER.
- 14. **ORDER:** EXCAVATE AND PLACE PANELS "1" FIRST, "2" SECOND, "3" THIRD, AND "4".

- 15. **SPACING:** SPACING BETWEEN OPEN UNDERPINNING SECTIONS IS 12 FEET MINIMUM.
- 16. **KEY:** PROVIDE 2" DEEP BY 4" WIDE VERTICAL KEY ON BOTH SIDES OF UNDERPINNING SECTIONS W/ #4 DOWELS @ 18" O.C.

- 17. **SHIMMING/GROUTING:** CONSTRUCT UNDERPINNING SECTION WITHIN 2" OF THE UNDERSIDE OF THE EXISTING FOUNDATION WALL TO ALLOW FOR INSTALLATION OF DRY PACK MORTAR. TAPERED STEEL SHIMS @ 2'-0" O.C. MAX. WITH 2" OF DRY PACK ALL AROUND SHIMS.

- 18. **PLUMBNESS:** THE UNDERPINNING SHALL BE INSTALLED IN A MANNER SUCH THAT THE EXPOSED FACE OF THE CONCRETE IS VERTICAL, U.N.O.
- 19. **LOAD TRANSFER:** DO NOT TRANSFER LOAD ONTO UNDERPINNING PIERS UNTIL CONCRETE POUR HAS REACHED A MINIMUM OF 75% OF ITS 28-DAY COMPRESSIVE STRENGTH AS CONFIRMED BY CYLINDER TEST.

- B. **EXISTING WALL UNDERPINNING SEQUENCE:**
- 1. STARTING WITH SEGMENTS "A," ONLY DIG PITS 3'-0" WIDE, MAXIMUM SIMULTANEOUSLY PLACING REQUIRED SHEETING AND BRACING. LEAVE MIN. 12" OF EXISTING SOIL BETWEEN PITS).
- 2. CLEAN BOTTOM OF EXISTING FOOTING AND COMPACT SOIL TO 95% OF MAXIMUM DENSITY IN LIFTS NO GREATER THAN 8". LOSS OF GROUND SHOULD BE KEPT TO A MINIMUM BY BACKFILLING BEHIND THE BOARDS WHERE AND WHEN POSSIBLE WITH GROUP PUMPED INTO VOIDS

- 3. CONTRACTOR SHALL INSTALL ADOQUATE LATERAL BRACNG SYSTEMS TO PREVENT MOVEMENT IN THE EXISTING STRUCTURES AND IN THE NEW UNDERPINNING
- 4. POUR NEW CONCRETE UNDERPINNING FOR SEGMENT "1" AFTER CONCRETE COMPLETES 24 HOURS OF CURING. PLACE STEEL SHIMS AT 2'-0" O.C. MIN. THEN PLACE SOIL W/ DRYPACK INTO SPACE BETWEEN TOP OF UNDERPINNING AND BOTTOM OF EXISTING FOOTING. TO TRANSFER LOAD, ENSURE THE BACK OF VOID IS FORMED SO THAT DRYPACK IS NOT LOST WHEN RAMMED INTO THE GAPS.

- 5. FOR SEGMENT "2" DIG PITS 3'-0" O.C. MAX. WIDE. THEN FOR SEGMENT "3" REPEAT CONCRETING, CLEANING, STEEL SHIMS, AND DRY PACKING PER NOTE 2, 3, 4.
- 6. FOR SEGMENT "4" DIG PITS 3'-0" O.C. MAX. WIDE. THEN FOR SEGMENT "3" REPEAT CONCRETING, CLEANING, STEEL SHIMS, AND DRY PACKING PER NOTE 2, 3, 4.

- 7. FOR SEGMENT "4" DIG PITS 3'-0" O.C. MAX. WIDE. THEN FOR SEGMENT "4" REPEAT CONCRETING, CLEANING, STEEL SHIMS, AND DRY PACKING PER NOTE 2, 3, 4.
- 8. UNDERPINNING PITS CLOSER THAN 12' APART SHALL NOT BE EXCAVATED AT THE SAME TIME.
- 9. WHERE BOTTOM OF ADJACENT UNDERPINNING PITS ARE AT DIFFERENT ELEVATIONS, THE DEEPER PIT SHALL BE INSTALLED FIRST.

- 10. SEQUENCE ORDER IS RESPONSIBILITY OF THE CONTRACTOR, AS IS LAYOUT AND FIELD VERIFICATION OF ALL DIMENSIONS/CONDITIONS/CONSTRAINTS PRIOR TO MOBILIZATION.

**FOUNDATION NOTES**

- A. STANDARDS**
- 1. ALL FOUNDATION WORK SHALL CONFORM TO THE APPLICABLE CONCRETE WORK NOTES.
- B. GEOTECHNICAL DATA**
- 1. **REFERENCE:** FOUNDATIONS HAVE BEEN DESIGNED WITH CONFORMANCE TO THE GEOTECHNICAL ENGINEERING REPORT INDICATED IN FOUNDATION CRITERIA TABLE.
  - 2. **SITE PREPARATION AND EXCAVATION WORK:** SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT.

FOUNDATION CRITERIA	
GEOTECHNICAL ENGINEER	N/A
GEOTECH REPORT DATE	N/A
BEARING CAPACITY	2,000 PSF (ASSUMED)
FROST DEPTH	3'-0"

- C. SHALLOW FOUNDATION**
- 1. **VERIFICATION OF BEARING CAPACITY:** THE ADEQUACY OF THE BEARING STRATUM AND ELEVATION AT THE ELEVATOR MAT SLAB SHALL BE INSPECTED AND APPROVED, IN WRITING, BY A REGISTERED GEOTECHNICAL ENGINEER HIRED BY THE OWNER PRIOR TO PLACING CONCRETE. WRITTEN APPROVAL SHALL SPECIFY THAT THE SOIL HAS THE CAPACITY TO SUPPORT THE DESIGNED BEARING PRESSURE. FOUNDATION SHALL NOT BEAR ON (OR ABOVE) EXISTING FILL MATERIALS.

- D. FOUNDATION PLACEMENT**
- 1. **FROST DEPTH:** ALL EXTERIOR FOOTINGS SHALL BE PROTECTED FROM FROST BY EXTENDING BELOW THE FROST DEPTH PER FOUNDATION CRITERIA TABLE.
  - 2. **SUBGRADE:** ALL FOUNDATION SUBGRADE PREPARATION AND CRUSHED STONE FILL BLANKETS BENEATH SLAB ON GRADE SHALL COMPLY WITH THE PROJECT'S GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

- 3. **DEWATERING:** DEWATERING OF THE SITE, INCLUDING METHODS OF DewaterING AND CALCULATIONS, DURING CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL CONTROL SURFACE AND SUBSURFACE WATER DURING CONSTRUCTION SO THAT THE FOUNDATION WILL BE CONSTRUCTED ON DRY SOIL/ROCK.
- 4. **FREEZING:** NO FOUNDATION SHALL BE PLACED IN WATER OR FROZEN GROUND.

- 5. **BACKFILL:**
- A. AROUND THE EXTERIOR OF WALLS (UNBALANCED) SHALL NOT BE PLACED UNTIL AFTER THE WALLS ARE SUPPORTED (BRACED) BY THE COMPLETION OF THE INTERIOR FLOOR SYSTEMS AT BOTH THE BOTTOM AND TOP OF WALL.
- B. DO NOT PROCEED WITH BACKFILL UNTIL SEVEN (7) DAYS AT A MINIMUM AFTER THE COMPLETION OF INTERIOR FLOOR SYSTEM INSTALLATION (CONCRETE) UNLESS WALLS ARE OTHERWISE TEMPORARILY SHORED/BRACED.

- 6. BACKFILL SHALL NOT BE PLACED UNTIL AFTER COMPLETION AND INSPECTION OF WATERPROOFING WHERE APPLICABLE.
- 7. **MATERIAL ACCEPTANCE:** ALL UNSUITABLE MATERIALS SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND BACKFILLED WITH ACCEPTABLE FILL ACCORDING TO THE SPECIFICATIONS AND COMPACTED TO THE SPECIFIED BEARING CAPACITY.

- 8. **REINFORCEMENT CONTINUITY:** FOUNDATION WALLS AND FOOTINGS (OR CAPS) SHALL HAVE REINFORCEMENT PERMITTED THROUGHOUT THROUGH ELEMENTS SO ELEMENTS BEHAVE MONOLITHICALLY.
- 9. **CENTERING:** ALL FOOTINGS SHALL BE CENTERED DIRECTLY BELOW COLUMNS/WALLS WHICH THEY SUPPORT UNLESS OTHERWISE NOTED.

- 10. **REINFORCEMENT CONTINUITY:** FOUNDATION WALLS AND FOOTINGS (OR CAPS) SHALL HAVE REINFORCEMENT PERMITTED THROUGHOUT THROUGH ELEMENTS SO ELEMENTS BEHAVE MONOLITHICALLY.
- 11. **CENTERING:** ALL FOOTINGS SHALL BE CENTERED DIRECTLY BELOW COLUMNS/WALLS WHICH THEY SUPPORT UNLESS OTHERWISE NOTED.

- 12. **WALLS:** PROVIDE ADEQUATE BRACING AND SHORING FOR BASEMENT, RETAINING AND PIT WALLS. BRACE BASEMENT AND PIT WALLS UNTIL SUPPORTING FLOORS ABOVE ARE IN PLACE AND HAVE ATTAINED DESIGN STRENGTH. DO NOT BACKFILL WALLS UNTIL AFTER FLOORS AT THE TOP AND BASE OF THE WALLS ARE IN PLACE. WHERE BACKFILL IS REQUIRED ON BOTH SIDES OF A WALL, BACKFILL BOTH SIDES SIMULTANEOUSLY WITH THE GRADE DIFFERENCE NOT TO EXCEED 2'-0" AT ANY TIME.

- 13. **UNDERCUTTING:** IF EXCAVATION DEPTH AT FOOTING PROPOSED IS DEEPER THAN 24-HY PROJECTED FROM EDGE OF ADJACENT EXISTING OR NEIGHBORING FOOTING, UNDERPINNING MAY BE REQUIRED. G.C. TO DETERMINE IF UNDERPINNING IS REQUIRED BEFORE CONSTRUCTION.

- 14. **SURCHARGE:** CANTILEVERED AND BASEMENT RETAINING WALLS ARE NOT DESIGNED FOR SURCHARGE LOADING ASSOCIATED WITH CONSTRUCTION TRAFFIC BEHIND THE WALL. PROVIDE ADEQUATE TEMPORARY BRACING TO RESIST LATERAL LOADS ASSOCIATED WITH MEANS AND METHODS OF CONSTRUCTION.

- F. **EXCAVATION SUPPORT - INSTALLATION**
- 1. THE CONTRACTOR SHALL INSURE THAT EFFICIENT MEANS ARE PROVIDED TO PROPERLY TRANSFER EXTERNAL FORCES FROM THE SHEETING AND SHORING TO THE INTERNAL BRACING.
- 2. CONDITIONS OF NEARBY STRUCTURES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE DOCUMENTED PRIOR TO SHEETING AND/OR SHORING, AND SHALL BE MONITORED DURING THE CONSTRUCTION.
- 3. ALL ABUTTING ENDS OF BRACING SHALL BE IN FULL BEARING ACROSS THE ENTIRE SECTION OF THE MEMBER.
- 4. BRACING SHALL BE INSTALLED (POSTED AND TIED) SO AS TO PREVENT SPREADING OR DISTORTION OF THE BRACED FRAMES.
- 5. BRACING SHALL CLEAR COLUMN, FLOOR FRAMING ELEMENTS, AND OTHER PERMANENT WORK.
- 6. PROPERLY SUPPORT HORIZONTAL WALES TO PREVENT UNACCEPTABLE MOVEMENT OR OVERTURNING DUE TO THRUSTS FROM THE BRACING.
- 7. FILLERS AND WEDGES SHALL BE PROVIDED AS REQUIRED, BETWEEN THE SHEETING AND THE WALES AT THE TIME OF INSTALLATION OF EACH LEVEL OF BRACING, AND THE BRACING SYSTEM TO BE PROPERLY STRESSED AT ALL TIMES.
- 8. BRACING SHALL NOT BE CAST INTO PERMANENT CONCRETE, EXCEPT AS SPECIFICALLY APPROVED BY THE EOR. IN WHICH CASE, THE PROPER KEYS, CUTOFFS, WATERSTOPS AND WATERPROOFING MUST BE PROVIDED.
- 9. SHOULD IT BECOME NECESSARY TO MOVE A BRACE, A NEW BRACE SHALL BE INSTALLED PROPERLY PRIOR TO REMOVAL OF THE ORIGINAL BRACE.

- G. **EXCAVATION SUPPORT - COMPLETION**
- 1. ALL BRACING SHALL BE MAINTAINED UNTIL STRUCTURAL ELEMENTS ARE RE-BRACED BY OTHER BRACING OR UNTIL THE PERMANENT FLOOR CONSTRUCTION IS ABLE TO WITHSTAND THE LATERAL EARTH AND GROUND WATER PRESSURES.
- 2. SHEETING AND SHORING RETAINING EARTH ON WHICH THE SUPPORT AND/OR STABILITY OF EXISTING STRUCTURES IS DEPENDENT, MUST BE LEFT IN PLACE AT THE COMPLETION OF THE WORK, AND SHALL BE STEEL OR CONCRETE.
- 3. IF WOOD IS USED AS PART OF THE SHEETING, SHORING AND BRACING SYSTEM NEAR EXISTING STRUCTURES, IT MUST BE REMOVED PRIOR TO THE PLACEMENT OF BACKFILL OR SHALL BE TREATED WOOD TO PREVENT ROT.
- 4. IF REQUIRED, REMOVE SHEETING, SHORING AND BRACING IN A MANNER TO AVOID HARMFUL DISTURBANCE TO UNDERLYING SOILS AND DAMAGE TO BUILDINGS, STRUCTURES, PAVEMENTS, FACILITIES AND UTILITIES.
- 5. WHERE SHEETING IS ANCHORED TO THE SOILS IT RETAINS, ALL PRESTRESSED TIEBACK RODS SHALL BE RELIEVED OF STRESS AT THEIR ANCHORAGES ONCE NEW WALLS ARE POURED AND ARE SUPPORTED LATERALLY IN A PERMANENT MANNER BY THE NEW CONSTRUCTION.

**ELEVATOR NOTES**

- A. STANDARDS**
- 1. ALL ELEVATOR PIT/CORE WORK SHALL CONFORM TO THE APPLICABLE CONCRETE/MASONRY/STEEL WORK NOTES.
- B. PRODUCT DATA**
- 1. **SUBMITTALS:** CONTRACTOR SHALL SUPPLY ENGINEER OF RECORD SHOP DRAWINGS INDICATING ELEVATOR ARRANGEMENT, PIT REQUIREMENTS, SUMP REQUIREMENTS, MAINTENANCE ACCESS, RAIL/CAB/HOIST REACTION LOCATIONS/MAGNITUDES, WALL OPENING EXTENTS, HOIST BEAM, AND OVER RUN INFORMATION.
  - 2. **BACKUP:** GENERAL CONTRACTOR SHALL ACCOUNT FOR COST OF RAIL BACKUP SUPPORT FOR SHAFT WALL TYPE ELEVATOR CORE CONSTRUCTION.
  - 3. **MASONRY WALL LEAVE-OUTS:** ELEVATOR CORES HAVE BEEN DESIGNED FOR THE DOOR OPENINGS INDICATED PER PLAN ONLY. LINTELS AND WALL SEGMENTS ARE NOT RATED FOR INCREASED OPENINGS UNLESS COORDINATED WITH THE GENERAL CONTRACTOR PRIOR TO PIT AND WALL FABRICATION. IF ADDITIONAL CLEAR OPENINGS ARE NEEDED AT ANY LEVEL DUE TO ELEVATOR INSTALLATION THE ENGINEER OF RECORD MUST BE NOTIFIED OF THE REQUEST AND WALL/LINTEL/FOOTING MODIFICATIONS WILL BE PROVIDED.

**STRUCTURAL DRAWINGS LIST**

SHEET NUMBER	SHEET NAME	Q	Q
S001	GENERAL NOTES	X	X
S002	GENERAL NOTES CONTD	X	X
S100	STRUCTURAL PLANS	X	X
S200	TYPICAL DETAILS	X	X
S301	FOUNDATION SECTIONS	X	X
S302	FRAMING SECTIONS	X	X

DATE	ISSUED FOR	REV
2025.03.04	BIDDING	A
2025.04.28	PLAN REVIEW	B
2025.06.18	REISSUED FOR BID	C

4

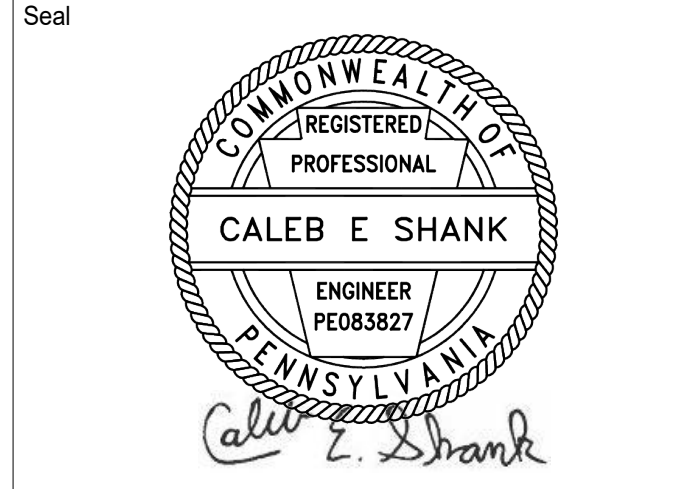
This drawing has been prepared solely for the use of COUNTY OF DELAWARE DEPARTMENT OF PUBLIC WORKS and there are no representations of any kind made by

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer

3

Design Team	
Architecture:	NORR
Structural:	NORR
Mechanical:	NORR
Electrical:	NORR

2



**NORR**

NORR  
One Penn Center  
1917 JFK Blvd, Suite 1600  
Philadelphia, PA 19103  
norr.com

Project Manager	Drawn
	CES
Project Architect	Checked
	SCD

Client  
**COUNTY OF DELAWARE  
DEPARTMENT OF PUBLIC  
WORKS**

Project  
**VOTING MACHINE  
WAREHOUSE ELEVATOR  
ADDITION**  
403 EAST 24TH STREET, CHESTER, PA 19013

Drawing Title  
**GENERAL NOTES**

Project No.  
IN2325-0323-00

Drawing No.  
**S001**

CONCRETE NOTES

- A. CODES / STANDARDS
1. STANDARDS: CONCRETE WORK SHALL COMPLY WITH THE LATEST EDITIONS OF: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE BUILDINGS"
2. STEEL: ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 AND DETAILED ACCORDING TO THE ACI MANUAL OF STANDARD PRACTICE
3. GROUT: NON-SHRINK GROUT (NON-METALLIC) CRD-C-621, FACTORY PRE-MIXED GROUT SHALL BE "MASTERFLOW 713" BY MASTER BUILDERS OR APPROVED EQUAL.

- C. CONCRETE MIX INFORMATION
1. FREEZE-THAW: ALL CONCRETE EXPOSED TO FREEZING AND THAWING SHALL BE NORMAL WEIGHT (ASTM C33) READY MIX CONCRETE (ASTM C94).
2. CONCRETE STRENGTH & MIX DESIGN: ALL CAST-IN-PLACE CONCRETE SHALL CONFORM TO THE FOLLOWING: 1" MIN. SLUMP, 4% AIR CONTENT BASED ON 3/4" AGGREGATE, NORMAL WEIGHT UNLESS NOTED OTHERWISE.

- A. REINFORCEMENT
1. REINFORCEMENT SHALL NOT BE FIELD CUT, UNLESS OTHERWISE INDICATED. REINFORCEMENT SHALL BE COLD BENT. HEATING REINFORCEMENT IS PROHIBITED. RE-BENDING REINFORCING IS PROHIBITED.
2. BAR SUPPORT: PROVIDE BAR SUPPORTS AND SPACERS PER ACI 315 AND CRSI MANUAL OF STANDARD PRACTICE
3. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

- 4. WELDED WIRE FABRIC (WWF) SHALL BE PROVIDED IN FLAT SHEETS SUPPORTED ON CONTINUOUS SLAB BOLSTERS AND LAPPED 1.5 X MESH SPACES OR MINIMUM OF 6".
5. DEVELOPMENT & LAP SPICE TABLE: ALL LAP SPLICES SHALL BE CLASS "B", UNLESS NOTED OTHERWISE.

Table with 5 columns: BAR #, TENSION LAP SPICE (CLASS 'A' 12d, CLASS 'B' 12d), COMPRESSION LAP SPICE (DOWEL EMBED, 22d, 30d), and CLASSIFICATION (1, 2, 3, 4).

TABULATED VALUES ARE BASED ON THE FOLLOWING ASSUMPTIONS
• NORMAL WEIGHT & 4,000 PSI CONCRETE STRENGTH
• A MINIMUM CLEAR COVER AS SHOWN IN GENERAL NOTES.
• A MINIMUM CLEAR SPACING OF 3" BETWEEN ANY BARS.

MULTIPLY THE TABULATED TENSION SPICE VALUES BY MODIFICATION FACTORS BELOW AS APPLICABLE FOR OTHER CONCRETE TYPES, STRENGTHS AND CONDITIONS. MODIFICATION FACTORS ARE CUMULATIVE. TENSION SPICE LENGTH SHALL NOT BE LESS THAN 12".
• F'c = 3 ksi, x 1.16
• CLEAR SPACING < 2" db & CLEAR OVER < db, x1.5

- E. POST-INSTALLED ANCHORS
1. REBAR: WHEN INSTALLING ANCHORS CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING/CUTTING ANY EXISTING REINFORCEMENT AND DESTRUCTION OF CONCRETE. HOLES SHALL BE CLEANED PER SUPPLIER REQUIREMENTS PRIOR TO SETTING/PLACEMENT.
• EXPANSION BOLTS SHALL CONFORM TO HILTI KWIK BOLT TZ OR APPROVED EQUAL UNLESS NOTED OTHERWISE.
• ADHESIVE ANCHORS SHALL CONFORM TO HILTI HY-200 ADHESIVE ANCHORING SYSTEM OR APPROVED EQUAL WITH THREADED ROD A193 GRADE B7.

- F. PLACEMENT
1. OPENINGS AND PENETRATION LOCATION AND DIMENSIONS SHALL BE VERIFIED AND COORDINATED BEFORE THE CONCRETE IS POURED. MINIMUM DISTANCE BETWEEN SLEEVES IS THE GREATER OF SLEEVE DIAMETER OR 6 INCH. OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS REQUIRE APPROVAL FROM STRUCTURAL ENGINEER IN WRITING PRIOR TO FIELD CUTTING/CORING SINCE ADDITIONAL REINFORCEMENT MAY BE REQUIRED.
2. CHAMFER: EXPOSED EDGES SHALL BE CHAMFERED 1/2". UNLESS NOTED
3. EMBEDDED ITEMS SHALL BE COORDINATED WITH OTHER TRADE DOCUMENTATION BY THE CONTRACTOR. NO CONDITIONS MAY BE EMBEDDED IN CONCRETE. SET AND BUILD ANCHOR DEVICES AND EMBEDDED ITEMS REQUIRED FOR OTHER WORK THAT IS ATTACHED TO OR SUPPORTED BY CAST-IN-PLACE CONCRETE. USE SETTING DIAGRAMS, TEMPLATES, AND INSTRUCTIONS PROVIDED BY OTHERS FOR LOCATION AND SETTING.
4. FLOOR SLABS:
a. COORDINATION: CONTRACTOR SHALL COORDINATE DEPRESSIONS FOR FLOOR FINISHES, FLOOR DRAINS, CURBS, CONCRETE PADS, INSERTS, AND WELDED PLATES WITH ALL OTHER TRADE DOCUMENTATION.
b. 28-DAY STRENGTH SHALL BE ATTAINED BEFORE POURING ANY TOPPING SLAB, OR BEFORE ANY MASONRY OR CONCRETE WALL IS ERRECTED ON TOP.
c. FLATNESS & LEVELNESS OF CONCRETE FLOOR SHALL BE AS FOLLOWS U.N.O.
• SLAB ON GRADE: F(1) 25, F(L) 25, MINIMUM LOCAL F(F)=24, F(L) 19
• ELEVATED FLOOR: F(F) 30
d. THE CONTRACTOR SHALL PROVIDE CORRECTIVE MEASURES TO MEET REQUIREMENTS FOR ASTM E1155 AND PROJECT SPECIFIC PARTITIONS.

STEEL FRAMING NOTES

- A. STANDARDS
1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH "THE STEEL CONSTRUCTION MANUAL", 15TH EDITION, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
B. SHOP DRAWINGS / SUBMITTALS
1. DRAWINGS INCLUDING THE FOLLOWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO ANY FABRICATION
• COMPLETE DETAILS FOR FABRICATION, ASSEMBLY AND ERECTION.
• RESUPT CHANGES IN WALL HEIGHT OR THICKNESS, BUT NOT EXCEEDING 30" - 0" O.C.
• WALL HEIGHT RECOMMENDED SPACING
• BETWEEN 8 FT AND 12 FT 2X WALL HEIGHT
• 12 FT OR GREATER 1X WALL HEIGHT
• CONSTRUCTION JOINTS SHALL BE LOCATED AT:
• 60' - 0" O.C. MAXIMUM FOR NON-EXPOSED WALLS
• 30' - 0" O.C. MAXIMUM FOR EXPOSED WALLS
• NOT LESS THAN 4' - 0" AWAY FROM FACE OF SUPPORTIVE PIER, BUTTRESS OR WALL OPENINGS.
• CORNERS: JOINTS SHALL BE LOCATED NO FURTHER THAN 15'-0" FROM CORNERS.

- C. MATERIAL INFORMATION
1. MATERIAL SCHEDULE
ELEMENT ASTM YIELD STRENGTH
W-SHAPES, TEES, CHANNELS, ANGLES, PLATES AND BARS A992 50 KSI
A36 36 KSI
HSS (RECT. & SQUARE) A500 Gr. C 50 KSI
F3125 Gr. A, A325 92 KSI
WASHERS F436
NUTS A563 Gr. B
2. SHOP PAINT SHALL CONFORM TO SSPC-P1, 10, PAINT 25, RED IRON OXIDE, SURFACE PREPARATIONS SHALL CONFORM TO SSPC-SP-3, SURFACES TO RECEIVE SPRAY ON FIRE PROOFING SHALL BE ENCASED IN CONCRETE AND SURFACES OF CONNECTING ELEMENTS IN SLIP-CRITICAL CONNECTIONS SHALL NOT BE PAINTED. PAINT SHOULD BE MODIFIED AS REQUIRED WITH NO ADDITIONAL COST TO THE OWNER. FIELD PAINT PER ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.

- 3. GALVANIZED STEEL: GALVANIZED STEEL AND ITS CONNECTORS SHALL CONFORM TO ASTM A123, ASTM A153, ASTM A384 AND THE RECOMMENDATIONS OF THE "AMERICAN HOT DIP GALVANIZERS ASSOCIATION STANDARD SPECIFICATIONS". FINISH PIECES SHALL CONFORM TO ALSO "MANUAL OF STEEL CONSTRUCTION", ABRASED, SCRAPED AND FIELD WELDED AREAS SHALL BE TOUCHED UP WITH A SUITABLE ZINC RICH PAINT.
4. FABRICATION/ERECTION
1. FILLER BEAM SPACING: SHALL BE EQUAL BETWEEN SPACERS U.N.O.
2. DECK SUPPORT ANGLES SHALL BE PROVIDED BY THE STRUCTURAL STEEL CONTRACTOR AS REQUIRED.
3. ANCHOR ROD LAYOUT: RIGID STEEL TEMPLATES FOR ANCHOR ROD INSTALLATION SHALL BE SUPPLIED BY THE STRUCTURAL STEEL CONTRACTOR
4. GALVANIZED ELEMENTS: HOT-DIP GALVANIZE ALL STEEL LINTELS AND SHELF ANGLES, DUNNAGE STEEL OR OTHER STEEL EXPOSED TO THE EXTERIOR. STEEL SURFACES THAT ARE EXPECTED TO CONTACT ALIGNMENT SHALL BE PROPERLY SEPARATED OR TREATED. BOLTS, NUTS, AND WASHERS FOR STEEL PERMANENTLY EXPOSED TO WEATHER SHALL BE GALVANIZED.

- 5. TEMPORARY BRACING: CONTRACTOR SHALL PROVIDE ADDITIONAL STEEL, GUYING, CONNECTIONS, BRACING REQUIRED FOR ERECTION AT NO ADDITIONAL COST.
6. DRAINAGE: PROVIDE HOLES IN ALL STEEL AS REQUIRED TO PREVENT ANY ACCUMULATION OF WATER DURING ERECTION. ALL PENETRATIONS THROUGH MAIN MEMBERS SHALL NOT EXCEED 1" AND SHALL BE GROUND SMOOTH. THESE DRAININGS MUST BE KEPT CLEAN AND OPEN.
7. THERMAL CUTTING: ALL HOLES AND CUTS SHALL BE SHOWN IN THE SHOP DRAWINGS AND MADE IN THE SHOP. BURNING OR CUTTING OF HOLES IN STRUCTURAL STEEL IN THE FIELD IS NOT PERMITTED WITHOUT APPROVAL OF EOR.
8. FIELD ADJUSTABILITY: SPANDREL ANGLE AT PERIMETER EDGE OF FLOOR SLAB/ROOF SHALL BE ADJUSTABLE. SHIP ANGLE LOOSE AND SET WITH STRING LINE IN FIELD FOR VERTICAL AND HORIZONTAL ALIGNMENT AFTER STEEL IS FULLY ERRECTED TO A MAXIMUM TOLERANCE OF 1/4" HORIZONTAL PER FLOOR AND MUST BE SET PLUMB BY STEEL ERECTOR PRIOR TO STUD/CLADDING ERECTION. ANGLE MUST BE INSTALLED IN ONE LENGTH PER BAY.
9. CANTILEVER BEAMS: ALL STEEL CANTILEVER BEAMS MUST BE PLUM PRIOR TO COMPLETING MOMENT CONNECTIONS.

- 10. STIFFENING: PROVIDE WEB STIFFENER PLATES ON BOTH SIDES OF THE WEB FOR BEAMS AT POINTS OF CONCENTRATED LOADS INCLUDING BEAMS SUPPORTING COLUMNS OR RUNNING OVER THE TOPS OF COLUMNS. MINIMUM STIFFENER PLATE THICKNESS SHALL BE 3/8 INCH OR FLANGE THICKNESS OF COLUMN ABOVE OR BELOW OR BEAM WEB THICKNESS ABOVE OR BELOW, WHICHEVER IS GREATER.
11. CAMBER: BEAMS AND TRUSSES WITHOUT SPECIFIED CAMBER SHALL BE FABRICATED SO THAT AFTER ERECTION ANY CAMBER DUE TO ROLLING OR SHOP ASSEMBLY SHALL BE UPWARD. ELEMENTS WITH NATURAL CAMBER SHALL BE ASSEMBLED UPWARD. PROVIDED ADDITIONAL CAMBERS AS INDICATED PER PLANS.
12. SPLICING: MEMBERS MAY BE SPLICED ONLY WHERE SPECIFICALLY DETAILED ON APPROVED SHOP DRAWINGS, SUBMIT PROFESSIONAL ENGINEER'S SIGNED AND SEALED CALCULATIONS WITH THE SPLICE DETAILS. WHERE STEEL MEMBERS ARE REQUIRED TO BE SPLICED, THE SPLICE SHALL DEVELOP THE FULL STRENGTH OF THE SECTION. SUCH SPLICES SHOULD NOT INTERFERE WITH ANY ARCHITECTURAL OR MECHANICAL DESIGN OR CLEARANCES.
13. CONCRETE ENCASED STEEL SHALL BE UNPAINTED ON THE CONTACT SURFACES AND WRAPPED WITH A MINIMUM W/F#8X-W2.9XW2.9 REINFORCING U.N.O.

- E. STEEL CONNECTIONS
1. DETAILS: ALL DETAILS ARE CONCEPTUAL ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES. U.N.O. REFERENCE DELEGATED DESIGN SUBMITTALS SECTION UNDER GENERAL NOTES.
2. SHEAR CAPACITY SHALL BE THE LARGEST REACTION VALUE OF THE FOLLOWING:
• HALF OF TOTAL UNIFORM LOAD CAPACITY OF THE BEAM SHAPE FOR THE SPAN, WITH THE EFFECT OF CONCENTRATED LOADS.
• THE ULTIMATE REACTIONS INDICATED ON PLAN
• 15 KIPS.
3. BOLTED CONNECTIONS:
a. MINIMUM OF TWO (2) 3/4"Ø BOLTS TO BE PROVIDED PER CONNECTION.
b. FLOOR BEAM CONNECTIONS SHALL BE FULL DEPTH DOUBLE ANGLES WITH 3/8"Ø BOLTS SPACED AT 3" O.C. AT ALL CONNECTIONS U.N.O.
c. BOLT HOLES: OVERSIZED OR VERTICAL SLOT HOLES SHALL NOT BE USED FOR ANY CONNECTIONS U.N.O. OR APPROVED IN WRITING BY THE E.O.R.
d. JOINT TYPES
a. PRETENTIONED BOLTS SHALL BE PROVIDED PER FIELD TESTING NOTES SECTION AT FOLLOWING LOCATIONS:
• BEAM-TO-COLUMN MOMENT CONNECTIONS
• BEAM-TO-GIRDER MOMENT CONNECTIONS
• WEB SHEAR CONNECTIONS FOR MOMENT CONNECTIONS
• LATERAL BRACE CONNECTIONS
• COLUMN SPLICES
b. SLIP-CRITICAL BOLTS SHALL BE PROVIDED AT:
• ALL MOMENT CONNECTION PLATES
• OVERSIZED HOLES
E. ALL OTHER BOLTS SHALL BE TIGHTENED TO "SNUG TIGHT" CONDITION U.N.O.

- 4. WELDED CONNECTION: WELDS SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1.
• ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
• ALL WELDED CONNECTIONS SHALL BE E70XX ELECTRODES.
• NO WELD TO BE LESS THAN 1/4" UNLESS NOTED OTHERWISE.
• ALL BUTT AND FULL PENETRATION WELDS SHALL HAVE RUN OFF TABS THAT SHALL BE REMOVED & GROUND SMOOTH ONLY WHERE NOTED.
• ALL WELD BACK UP BARS SHALL BE REMOVED & GROUND SMOOTH ONLY WHERE NOTED.
• ALL STEEL MARKED AS AESS (ARCHITECTURALLY EXPOSED STRUCTURAL) SHALL BE FINISHED TO THE FINISH SURFACE.
5. PIPE TIRES BEING USED TO PROVIDE COLUMN CONNECTIONS SHALL EMPLOY A MINIMUM 3/8" THICK, FULL DEPTH, THROUGH-PLATE (KNIFE PLATE).
6. ALTERNATE CONNECTIONS WILL BE ACCEPTED ONLY WITH THE PRIOR APPROVAL BY THE E.O.R. CONTRACTOR'S BID SHALL ANTICIPATE THE USE OF SPECIFIC DETAILS SHOWN ON THE DRAWINGS. IN ANY EVENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF SUCH ALTERNATE DETAILS THEY PROPOSE.
F. FIELD TESTING
1. INSPECTIONS: THE STRUCTURAL STEEL FABRICATOR AND ERECTOR SHALL SCHEDULE ALL WORK TO ALLOW COMPLETION OF INSPECTION AND TESTING REQUIREMENTS, AND APPLICABLE THIRD PARTY INSPECTION ITEMS.
2. BOLTED CONNECTIONS: COMPONENTS AND FASTENERS IN SLIP CRITICAL CONNECTIONS, SHALL BE VISUALLY INSPECTED FOR TIGHTNESS PER AISC SPECIFICATIONS FOR STRUCTURAL JOINTS.
A. ALL SLIP CRITICAL (S.C.) BOLTED CONNECTIONS SHALL BE CHECKED AND INSPECTED USING ONE OF THE FOLLOWING:
• TURN OF THE NUT
• CALIBRATED WRENCH
• ALTERNATE DESIGN FASTENER
• DIRECT TENSION INDICATOR
B. CHECK 25% OF BOLTS IN EACH NON-SLIP CRITICAL CONNECTIONS - MINIMUM OF (2) - BY CALIBRATED TORQUE WRENCH
3. FIELD WELDED CONNECTIONS SHALL BE TESTED PER ANSI / AWS D1.1, CHAPTER 6.

MASONRY NOTES

- A. CODES / STANDARDS ALL CONCRETE MASONRY CONSTRUCTION SHALL COMPLY WITH:
• THE "SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF LOAD-BEARING CONCRETE MASONRY" PUBLISHED BY THE NATIONAL CONCRETE MASONRY ASSOCIATION.
• BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES: ACI 530/ASCE 5-09/TMS 402 AND ACI 530.1/ASCE 6-05/TMS 602.
B. SHOP DRAWINGS / SUBMITTALS
1. REFERENCE TO THE STANDARD REQUIREMENTS.
C. MATERIAL INFORMATION
1. FORM STRENGTH: CONCRETE MASONRY ASSEMBLY SHALL HAVE A NET AREA COMPRESSIVE STRENGTH (f'm) OF 2,500 PSI MINIMUM.
2. BLOCK MATERIAL: ALL CONCRETE MASONRY UNITS SHALL BE NORMAL WEIGHT, GRADE N, COMPLYING WITH ASTM C90. NET AREA COMPRESSIVE STRENGTH OF INDIVIDUAL CONCRETE MASONRY UNIT SHALL BE 3,200 PSI MINIMUM.
3. MORTAR: MORTAR FOR ALL CONCRETE MASONRY MUST BE TYPE S CEMENT-LIME MORTAR PER ASTM C270.
4. GROUT: GROUT FOR GROUT FILLED MASONRY SHALL BE A HIGH SLUMP MIX CONFORMING TO ASTM C476 AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS FROM FIELD OBTAINED TEST CYLINDERS.
5. JOINT REINFORCEMENT: CONCRETE MASONRY UNITS SHALL BE CONSTRUCTED WITH HORIZONTAL JOINTS REINFORCED WITH HOT-DIPPED GALVANIZED LADDER TYPE REINFORCEMENT (ASTM A153 CLASS B-2).
6. REINFORCEMENT: SEE CONCRETE NOTES FOR REINFORCING STEEL REQUIREMENTS, STANDARDS AND SPECIFICATIONS FOR ADDITIONAL NOTES. PROVIDE LAP SPLICES IN ACCORDANCE WITH THE TYPICAL MASONRY LAP SPLICE DETAIL FOR ALL REINFORCEMENT.
7. BRICK MASONRY: ALL BRICK MASONRY UNITS SHALL BE GRADE SW PER ASTM C216 WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AND BONDED TOGETHER WITH TYPE S MORTAR.

- D. PLACEMENT: LAY CONCRETE MASONRY UNITS AS FOLLOWS:
A. GROUT SOLID ALL MASONRY BELOW GRADE.
B. GROUT SOLID MINIMUM OF (2) COURSES BELOW ALL BEARING POINTS ON CMU WALL INCLUDING STAIR STRINGERS, LANDING BEAMS, AND ELEVATOR HOIST AND DIVIDER BEAMS.
C. WITH FULL BED OF MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS FOR HOLLOW MASONRY UNITS/CAVITIES.
D. BED WEBS IN MORTAR IN STARTING COURSE ON FOOTING AND IN ALL COURSES OF PIERS, COLUMNS AND PLASTERS, AND WHERE ADJACENT TO CELLS OR CAVITIES TO BE FILLED WITH GROUT.
E. FOR STARTING COURSE ON FOOTING WHERE CELLS ARE NOT GROUTED, SPREAD OUT FULL MORTAR BED INCLUDING AREAS UNDER CELLS.
F. MAINTAIN JOINT WIDTHS INDICATED, EXCEPT FOR MINOR VARIATIONS REQUIRED TO MAINTAIN BOND ALIGNMENT, IF NOT INDICATED, LAY WALLS WITH 3/8" JOINTS.
G. USE THE "HIGH LIFT" GROUTING METHOD WITH MAXIMUM LIFT HEIGHTS OF 48".
H. GROUT SHALL BE USED AS FILLING FOR VERTICAL CAVITIES, BOND BEAMS, LINTELS AND HOLLOW MASONRY UNITS DESIGNATED AS SOLID GROUTED IN THE DRAWINGS. MORTAR SHALL NOT BE USED TO FILL CELLS.

- I. ALL CUTTING OF MASONRY SHALL BE DONE WITH MASONRY SAWS.
J. WALLS SHALL BE PROPERLY BRACED AGAINST LATERAL LOADS UNTIL THE PERMANENT LATERAL BRACE OR OTHER LATERAL SUPPORT SYSTEMS HAVE BEEN INSTALLED.
K. CONCRETE MASONRY SHALL BE PROTECTED FROM ABSORBING MOISTURE AND WATER WHILE AT THE PLANT, DURING SHIPMENT, AND AT THE SITE DURING CONSTRUCTION.
L. MASONRY FACADE SUSPENDED FROM OR SUPPORTED ON CONCRETE SLABS AND BEAMS SHALL NOT BE ERRECTED UNTIL PERMANENT ALIGNMENT AND ANCHORAGE OF SHELF ANGLES AND SUSPENDED HARDWARE IS COMPLETED. ALL TEMPORARY AND PERMANENT BRACING (WHERE REQUIRED) IS INSTALLED AND ALL SHORES AND RE-SHORES ARE REMOVED. MASONRY SUPPORTED BY STEEL MEMBERS SHALL NOT BE ERRECTED UNTIL PERMANENT ANCHORAGE AND BRACING SYSTEMS HAVE BEEN INSTALLED.

- E. WALL JOINTS
1. PROVIDE VERT. CONTROL JOINTS IN BEARING & NON-LOAD BEARING CONCRETE MASONRY WALLS AT FOLLOWING:
• SPACED 25' - 0" O.C. MAXIMUM THROUGHOUT LENGTH OF WALL
• AT CHANGES IN WALL HEIGHT OR THICKNESS
• AT PILASTERS, PIERS OR COLUMNS
• ADJACENT TO CORNERS AND INTERSECTIONS (WITHIN 12' - 6")
• AT OPENINGS WITH MASONRY LINTELS AT LEAST 2' - 0" AWAY EA. SIDE
• AT EACH END OF STEEL LINTELS (ABOVE ONLY).
2. CONTROL JOINTS SHALL EXTEND THROUGH ENTIRE WALL THICKNESS FOR FULL WALL HEIGHT.
3. BOND BEAM REINFORCEMENT TO BE CONTINUOUS, WRAP BARS IN GREASE COATED WRAP OR PROVIDE JOINT STABILIZER ANCHORS.
4. HORIZONTAL JOINT REINFORCEMENT SHALL BE INTERRUPTED.

- F. VERTICAL REINFORCEMENT
1. PROVIDE VERTICAL REINFORCEMENT IN GROUTED CELLS AS FOLLOWS:
• MINIMUM WALL REINFORCEMENT OF #4@48" O.C SHALL BE PROVIDED. SEE DETAILS AND SHEET NOTES FOR INCREASED REINFORCEMENT BASED ON SPAN/LOADING.
• VERTICAL REINFORCING SHALL BE ANCHORED INTO SUPPORTING SLAB OR BEAMS BELOW WITH TENSION EMBEDMENT LENGTH.
2. ALL OTHER INTERIOR NON-LOAD BEARING WALLS SHALL BE DETAILED AND REINFORCED PER THE TYPICAL DETAILS SHEET.
G. HORIZONTAL REINFORCEMENT
1. PROVIDE JOINT REINFORCEMENT AS FOLLOWS:
• 12" CMU LADDER REINFORCEMENT WITH 3/16"Ø SIDE RODS AND 9 GAUGE CROSS RODS.
2. LOCATIONS: JOINT REINFORCEMENT SHALL BE PROVIDED AT FOLLOWING: COORDINATE WITH CONTROL JOINT LOCATIONS ON ARCHITECTURAL AND STRUCTURAL DRAWINGS.
• TYPICAL 16" O.C. CONTINUOUS AT ALL CMU WALLS (U.N.O. AT SHEAR WALLS)
• AT FLOOR OR ROOF: @ 8" O.C. FOR 3 COURSES
• AT PARAPETS: @ 8" O.C.
• AT CORNERS & INTERSECTIONS: 2' - 8" LONG E.W. @ 8" O.C. REINFORCEMENT SHALL BE SHOP FABRICATED AND CONTINUOUS AROUND ALL CORNERS AND AT INTERSECTIONS.
• AT HORIZONTAL JOINTS
3. PLACEMENT:
• REINFORCEMENT SHALL BE COMPLETELY EMBEDDED IN MORTAR WITH A MINIMUM COVER OF 3/8" WHEN EXPOSED TO EARTH OR WEATHER AND 1/2" WHEN NOT EXPOSED TO EARTH OR WEATHER.
• REINFORCEMENT TO BE FURNISHED IN 10 TO 20 FEET LENGTH FLAT SECTIONS.
• THE DISTANCE BETWEEN WELDED CONTACTS OF CROSS RODS (DIAGONALS) WITH EACH LONGITUDINAL WIRE SHALL NOT EXCEED 6" AND 16" FOR SMOOTH AND DEFORMED LONGITUDINAL WIRES RESPECTIVELY.

- H. TIES: ADJUSTABLE ANCHORS FOR ATTACHING MASONRY VENEER TO THE STRUCTURAL FRAME OR WALL SHALL CONFORM TO:
1. TWO-PIECE ASSEMBLIES ALLOWING VERTICAL AND HORIZONTAL DIFFERENTIAL MOVEMENT BETWEEN WALL AND FRAME WORK PARALLEL TO PLANE OF WALL, BUT RESISTING TENSION OR COMPRESSION FORCES PERPENDICULAR TO IT
2. IT MUST BE CAPABLE OF WITHSTANDING A 100 LB LOAD IN EITHER TENSION OR COMPRESSION WITHOUT DEFORMING, OR DEVELOPING PLAY IN EXCESS OF 0.05 OF AN INCH.
3. SPACE ADJUSTABLE TIES AT 16" ON CENTER VERTICALLY AND HORIZONTALLY.
I. PROVIDE FLEXIBLE MASONRY TIES ON ALL STEEL BEAMS AND COLUMNS THAT INTERFACE OR ABUT ANY MASONRY. USE 3/16"Ø TRIANGULAR TYPE TIES. SPACE AT 16" VERTICALLY AND HORIZONTALLY.
J. LINTELS
1. MOVEMENT: TO FACILITATE LINTEL MOVEMENT, THE BEARING OF AT LEAST ONE END OF EACH LINTEL SHOULD BE SUBSTITUTED BY PLASTIC BUTYRUMUM SHEET, NEOPRENE OR OTHER SUITABLE MATERIAL SHOULD BE USED FOR A SLIP PLATE.
2. STEEL LINTELS: DOUBLE LINTELS & SPACERS SHALL BE WELDED TO EACH OTHER AT 12" O.C. MAX.
J. EXPANSION & ADHESIVE ANCHORS
1. ANCHORING MATERIALS, INCLUDING NUTS & WASHERS, SHALL CONFORM TO THE SUPPLIER SPECIFICATIONS PER DRAWINGS. SUBSTITUTIONS MAY BE MADE PROVIDED THAT ALL MATERIAL PROPERTIES AND ALLOWABLE CAPACITIES ARE SHOWN TO BE EQUAL TO, OR IN EXCESS OF, THE SUPPLIER INDICATED ON DRAWINGS. SUBSTITUTIONS SHALL BE SUBMITTED TO STRUCTURAL ENGINEER FOR APPROVAL.
2. INSTALLATIONS PROCEDURES SHALL BE IN ACCORDANCE WITH SUPPLIER SPECIFICATIONS AND ALLOWABLE TOLERANCES. ALL EMBEDMENT DEPTHS SHALL BE "STANDARD" DEPTH PER SUPPLIER, U.N.O.
3. CONTRACTOR IS TO LOCATE EXISTING REBAR PRIOR TO ANCHOR INSTALLATION AND/OR FABRICATION OF ASSOCIATED PLATE. ANY CHANGE TO ANCHOR LAYOUT SHALL BE SUBMITTED TO STRUCTURAL ENGINEER FOR APPROVAL. CUTTING OF REBAR IS NOT PERMITTED.

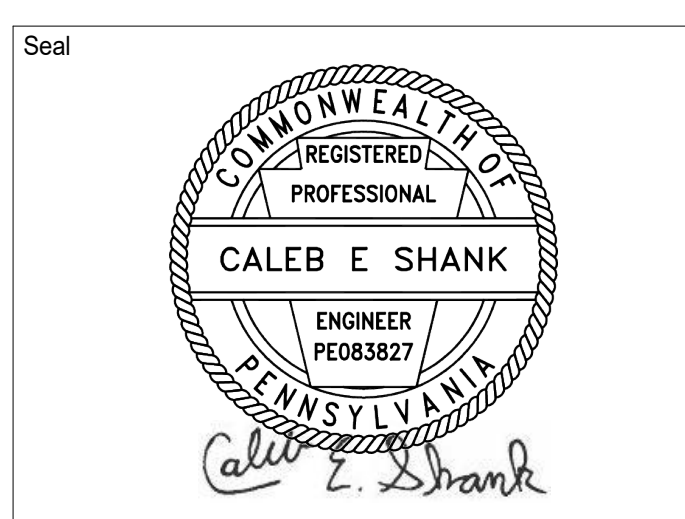
Table with 3 columns: DATE, ISSUED FOR, REV. Row 1: 2026.03.04, BIDDING, A. Row 2: 2026.04.28, PLAN REVIEW, B. Row 3: 2026.06.18, REISSUED FOR BID, C.

4

This drawing has been prepared solely for the use of COUNTY OF DELAWARE DEPARTMENT OF PUBLIC WORKS and there are no representations of any kind made by

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer

Design Team
Architecture: NORR
Structural: NORR
Mechanical: NORR
Electrical: NORR



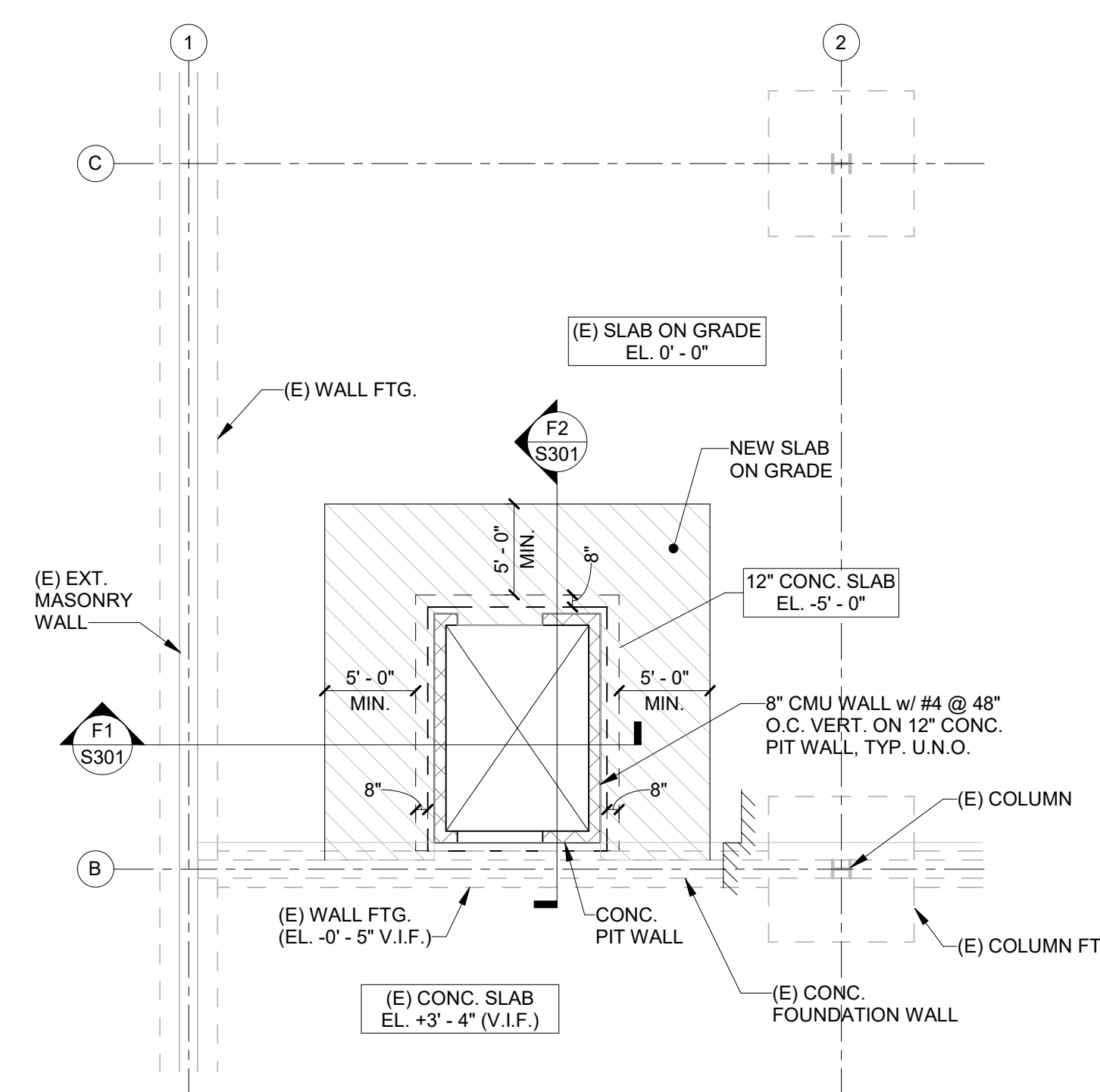
NORR logo and address: One Penn Center, 1917 JFK Blvd, Suite 1600, Philadelphia, PA 19103, norr.com

Project Manager: Drawn CES
Project Architect: Checked SCJ
Client: COUNTY OF DELAWARE DEPARTMENT OF PUBLIC WORKS
Project: VOTING MACHINE WAREHOUSE ELEVATOR ADDITION
403 EAST 24TH STREET, CHESTER, PA 19013

GENERAL NOTES CONT'D

Project No. IN2325-0323-00
Drawing No. S002
ARCH E File Block - 2023 - Rev (06/23) - Copyright © 2023

DATE	ISSUED FOR	REV
2026.03.04	BIDDING	A
2026.04.28	PLAN REVIEW	B
2026.06.18	REISSUED FOR BID	C



1 FOUNDATION PARTIAL PLAN - ELEVATOR  
1/8" = 1'-0"

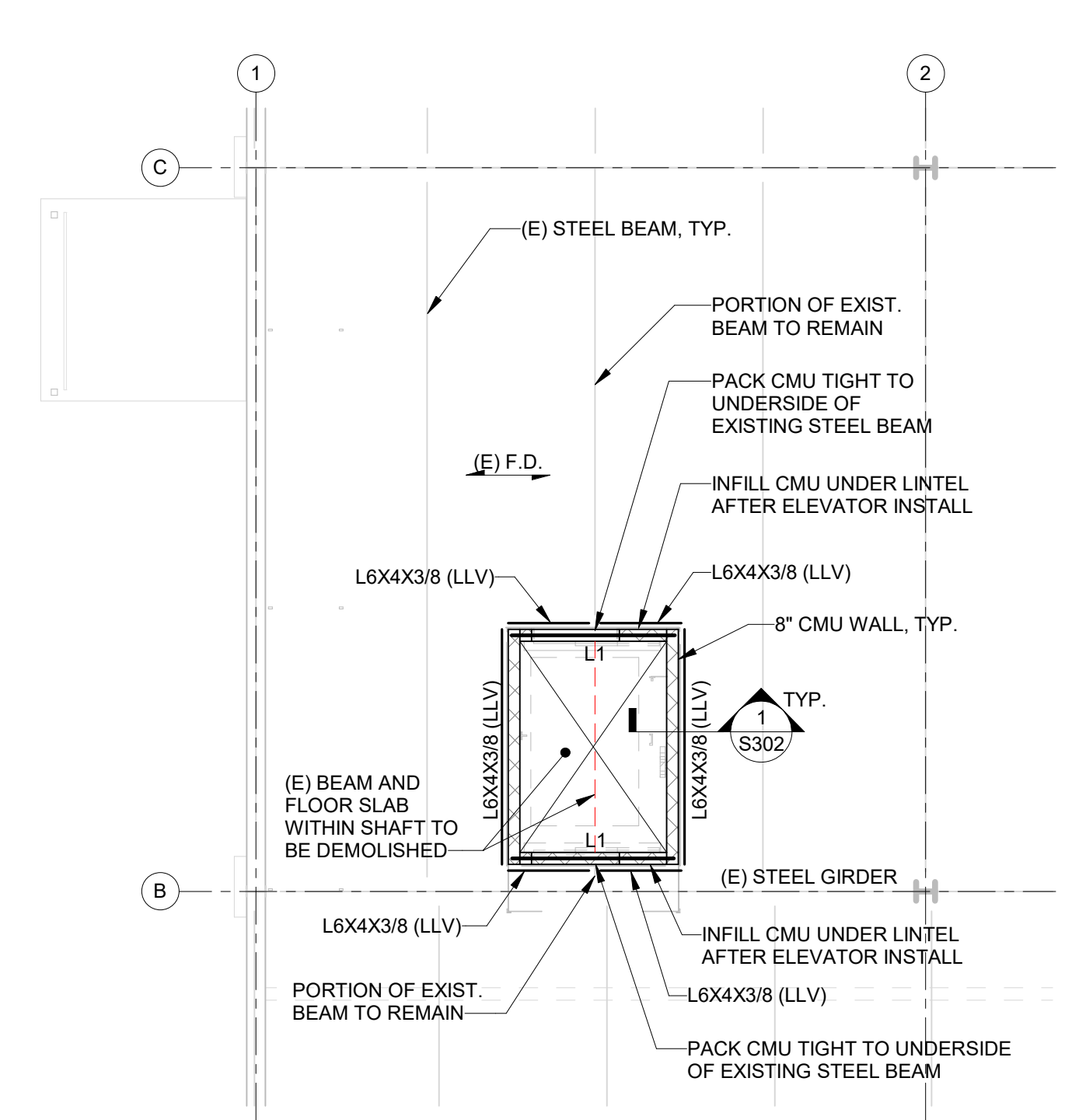
**FOUNDATION SHEET NOTES**

- ELEVATION: TOP OF SLAB SHALL BE +0'-0" AS REFERENCED FROM DATUM OF 98.27' (V.I.F.). FOLLOWING ELEVATIONS ARE RELATIVE TO TOP OF SLAB ELEVATION = 0'-0".
  - T.O. SLAB +1'-x'-x" INDICATES TOP OF SLAB
  - +1'-x'-x" INDICATES TOP OF FOOTING/MAT.
- SLAB ON GRADE SHALL BE 8" THICK REINFORCED WITH WELDED WIRE FABRIC **WWF 6x6-W2.9xW2.9** POURED OVER VAPOR BARRIER AND CLEAN COMPACTED STONE FILL.

**FOUNDATION CRITERIA**

GEOTECHNICAL ENGINEER	N/A
GEOTECH REPORT DATE	N/A
BEARING CAPACITY	2,000 PSF (ASSUMED)
FROST DEPTH	3'-0"

- BEARING CAPACITY: ALL BOTTOM OF FOOTING/MAT SLAB ELEVATION AND STRATUM SHALL BE INSPECTED AND APPROVED BY A REGISTERED GEOTECHNICAL ENGINEER HIRED BY THE OWNER IMMEDIATELY PRIOR TO PLACING CONCRETE.
- COORDINATE ALL DIMENSIONS AND SECTIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. DO NOT SCALE DRAWINGS.



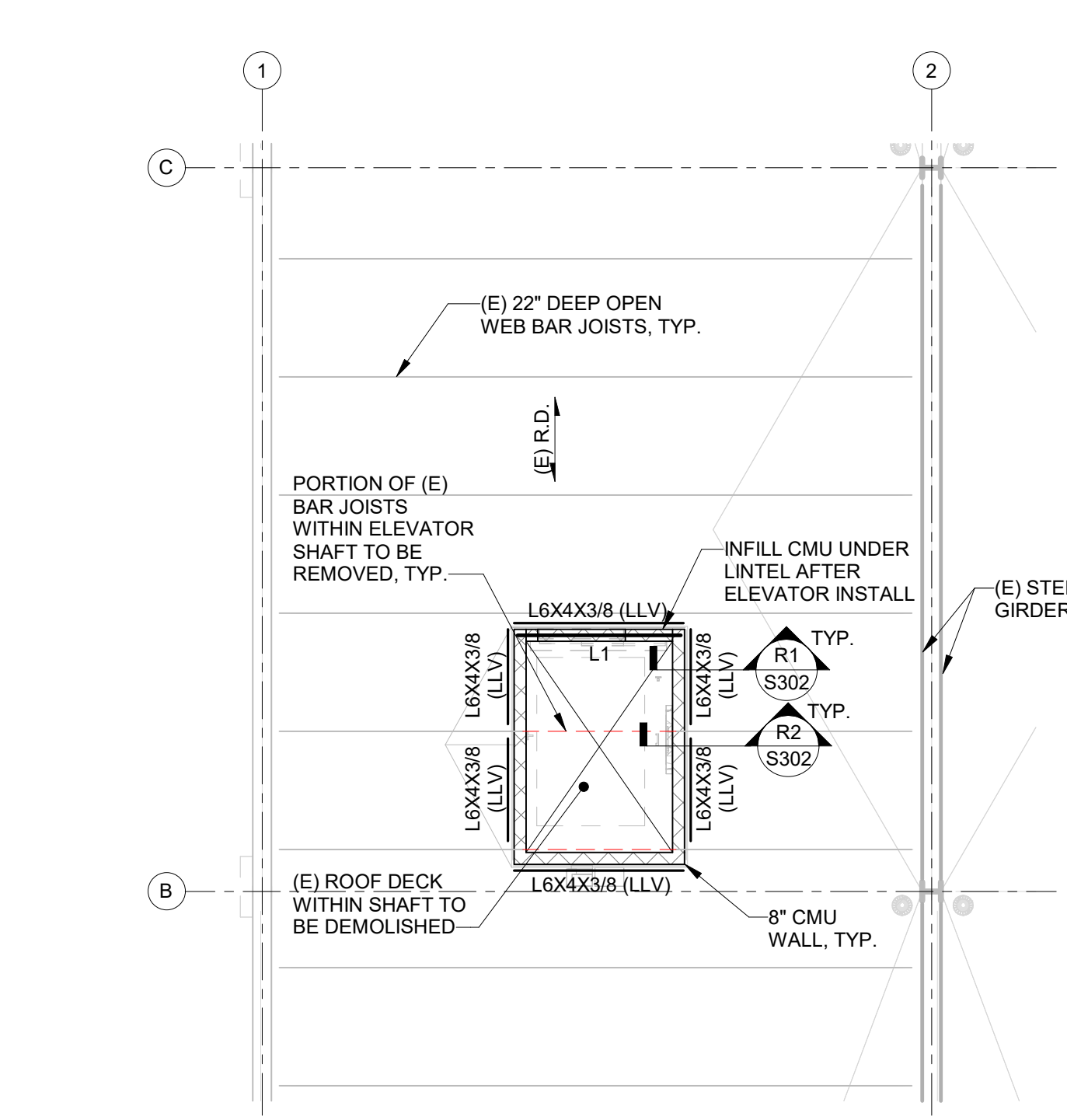
2 SECOND FLOOR FRAMING PARTIAL PLAN - ELEVATOR  
1/8" = 1'-0"

**2ND FLOOR SHEET NOTES**

- G.C. TO VERIFY IN FIELD EXISTING ELEVATIONS.
- (E) F.D. DENOTES SPAN DIRECTION OF EXIST. WOOD T&G FLOOR DECK w/ 2" CONC. TOPPING.
- "L1" INDICATES STANDARD PRECAST LINTEL TO MATCH WIDTH OF MASONRY WALL. PROVIDE 8" MIN BEARING EACH END. GROUT SOLID FOR MIN. OF (2) COURSES AT EACH BEARING POINT.
- SHORE BEAMS PRIOR TO DEMOLITION (SHORING DESIGN BY CONTRACTOR).

**ELEVATOR CONSTRUCTION SEQUENCE**

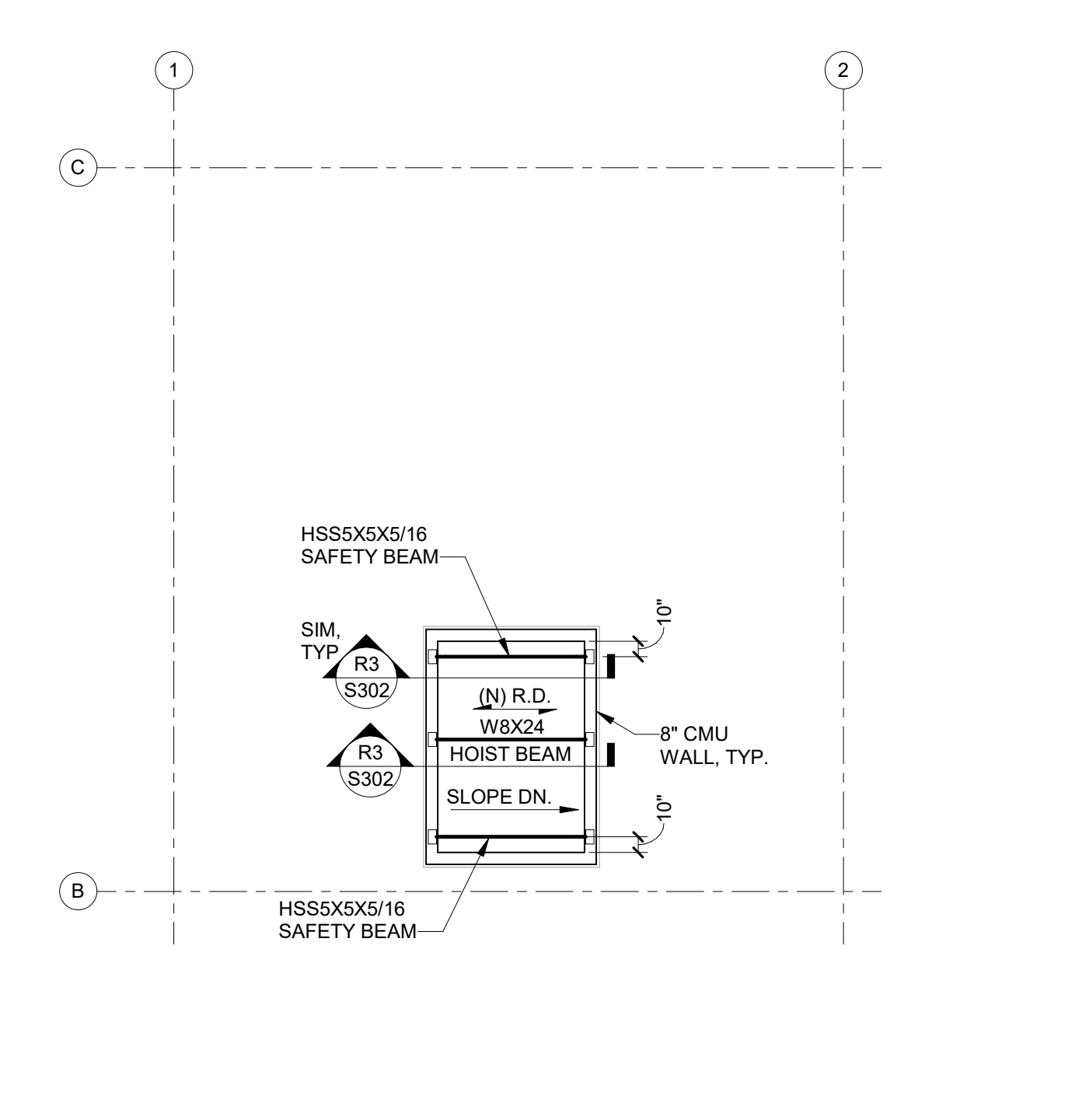
- SAWCUT AND DEMOLISH SLAB ON GRADE IN AREA OF NEW ELEVATOR, AS SHOWN ON PLAN.
- EXCAVATE FOR ELEVATOR PIT. DURING EXCAVATION ADJACENT TO THE EXISTING WALL FOOTING, FOLLOW UNDERPINNING DETAIL ON S200.
- CONSTRUCT NEW CONCRETE ELEVATOR MAT SLAB AND PIT WALLS.
- PUT SOIL BACK AROUND PIT WALLS AND COMPACT TO 95% COMPACTION IS 12" MAX. LIFTS.
- INSTALL NEW VAPOR BARRIER, CRUSHED STONE, AND SLAB ON GRADE AS SHOWN IN SECTIONS ON S301.
- CONSTRUCT 8" CMU WALLS TO THE UNDERSIDE OF THE EXISTING STEEL BEAM (PACK TIGHT WITH NON-SHRINK GROUT TO ENSURE FULL BEARING OF BEAM). TEMPORARILY SHORE FLOOR SLAB AROUND NEW ELEVATOR LOCATION.
- SAWCUT EXISTING FLOOR SLAB AND EXISTING BEAM.
- CONTINUE BUILDING CMU WALL THROUGH THE NEW FLOOR OPENING, AND INSTALL STEEL ANGLES ON CMU WALL AT UNDERSIDE OF SECOND FLOOR SLAB, AS SHOWN IN SECTION ON S302.
- TEMPORARILY SHORE THE ROOF DECK AND BAR JOISTS IN THE AREA OF THE NEW ELEVATOR.
- DEMOLISH THE PORTION OF THE BAR JOISTS IN THE AREA OF THE NEW ELEVATOR, AND CUT NEW OPENING IN ROOF DECK.
- CONTINUE BUILDING THE 8" CMU WALLS THROUGH THE OPENING IN THE ROOF DECK. INSTALL STEEL ANGLES TO CMU WALLS AND BAR JOIST SUPPORT, AS SHOWN IN SECTIONS ON S302.
- CONTINUE BUILDING THE 8" CMU WALLS TO THE TOP OF THE ELEVATOR POP-UP.
- INSTALL THE ELEVATOR POP-UP ROOF.



3 ROOF FRAMING PARTIAL PLAN - ELEVATOR  
1/8" = 1'-0"

**ROOF SHEET NOTES**

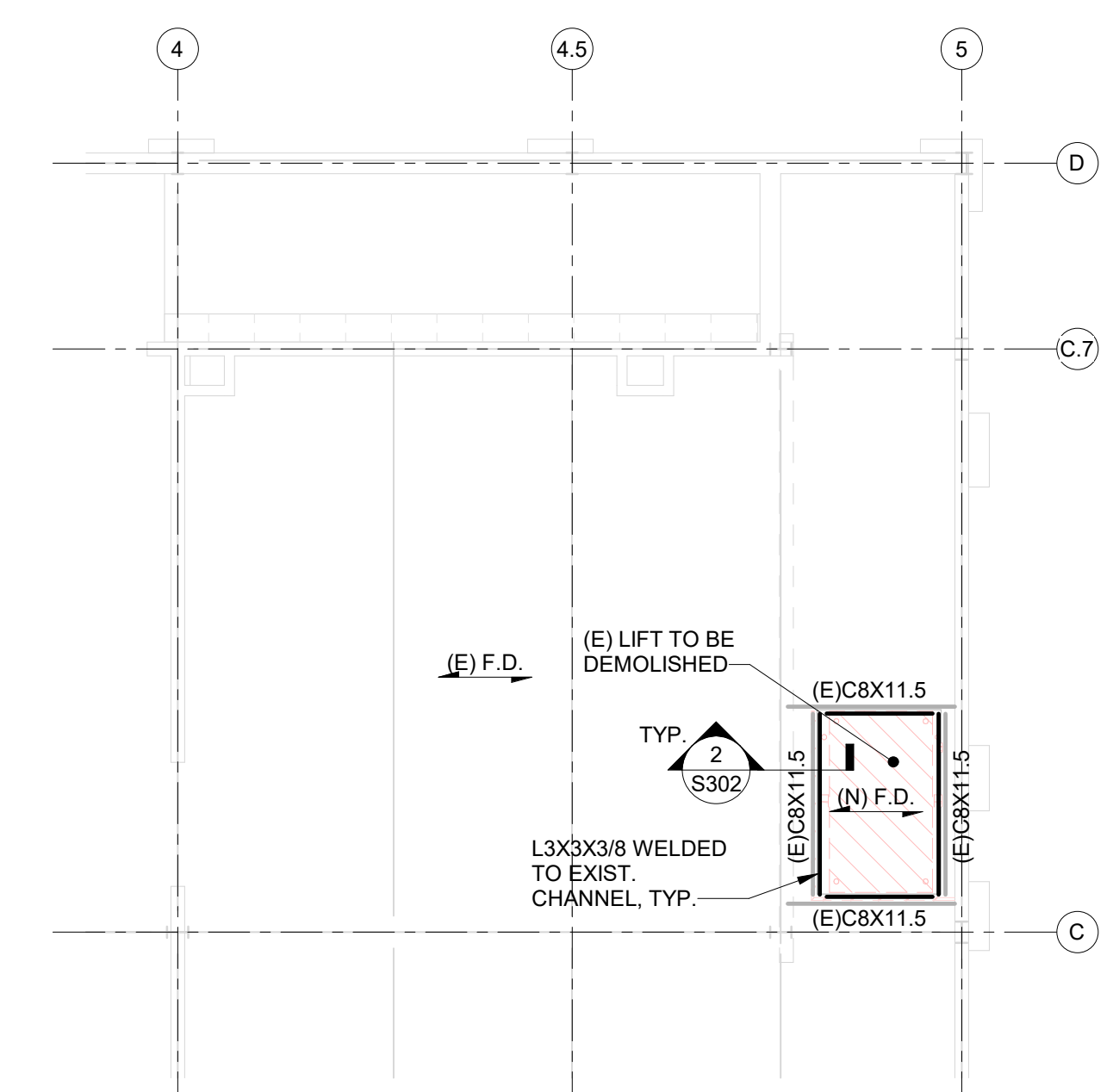
- G.C. TO VERIFY IN FIELD EXISTING ELEVATIONS.
- (E) F.D. DENOTES SPAN DIRECTION OF EXIST. METAL ROOF DECK.
- "L1" INDICATES STANDARD PRECAST LINTEL TO MATCH WIDTH OF MASONRY WALL. PROVIDE 8" MIN BEARING EACH END. GROUT SOLID FOR MIN. OF (2) COURSES AT EACH BEARING POINT.
- SHORE BEAMS PRIOR TO DEMOLITION (SHORING DESIGN BY CONTRACTOR).



4 ROOF POP-UP PARTIAL PLAN - ELEVATOR  
1/8" = 1'-0"

**ROOF SHEET NOTES**

- (N) R.D. DENOTES SPAN DIRECTION OF NEW 3", 20 GA. GALV. TYPE 'N' METAL ROOF DECK.



5 SECOND FLOOR FRAMING PARTIAL PLAN - LIFT INFILL  
1/8" = 1'-0"

**2ND FLOOR SHEET NOTES**

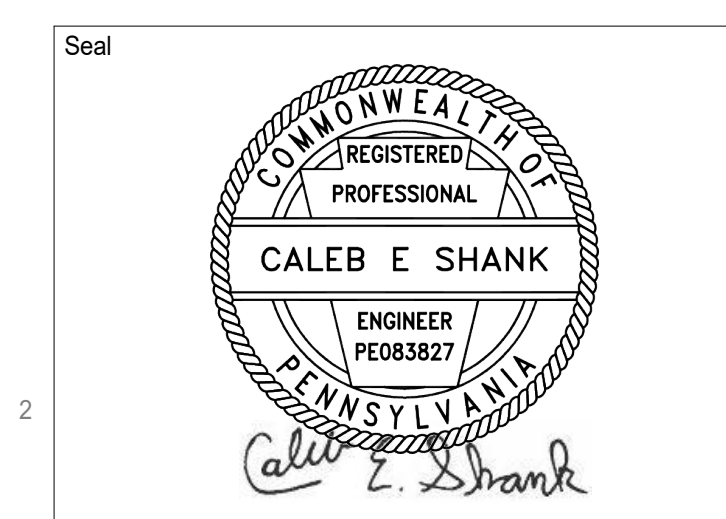
- G.C. TO VERIFY IN FIELD EXISTING ELEVATIONS.
- (E) F.D. DENOTES SPAN DIRECTION OF EXIST. WOOD T&G FLOOR DECK w/ 2" CONC. TOPPING.
- (N) F.D. DENOTES SPAN DIRECTION OF NEW 3", 20 GA. GALV. COMPOSITE FLOOR DECK TOPPED WITH 2 1/2" LIGHTWEIGHT CONCRETE w/ 6x6 - W2.0XW2.0 W.W.F. (5 1/2" TOTAL THICKNESS)

This drawing has been prepared solely for the use of COUNTY OF DELAWARE DEPARTMENT OF PUBLIC WORKS and there are no representations of any kind made by

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer

Design Team

Architecture:	NORR
Structural:	NORR
Mechanical:	NORR
Electrical:	NORR



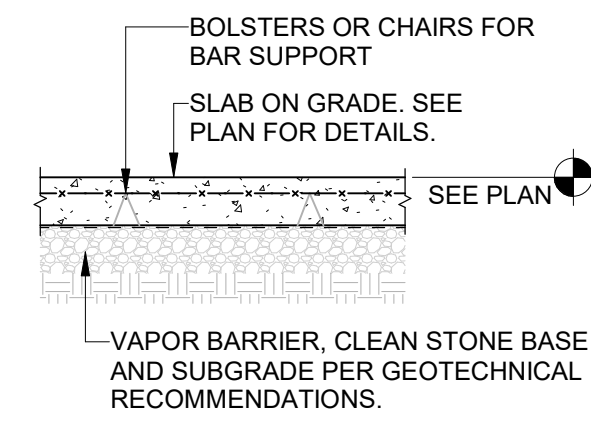
**NORR**

NORR  
One Penn Center  
1617 JFK Blvd, Suite 1600  
Philadelphia, PA 19103  
norr.com

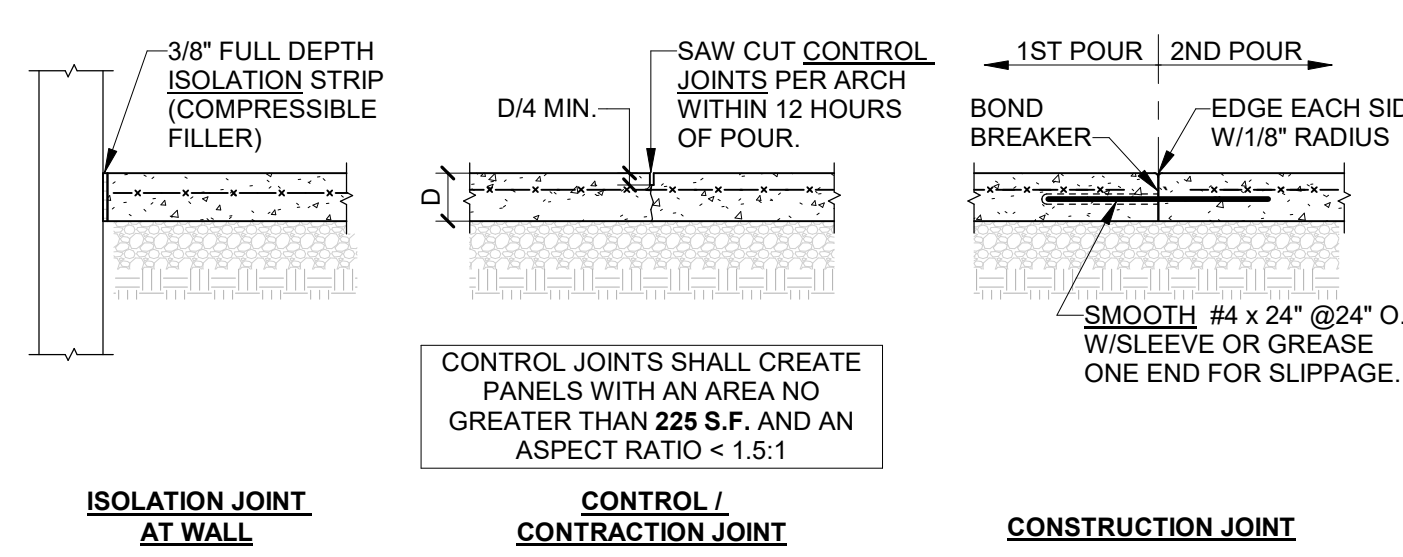
Project Manager	Drawn
Project Architect	Checked
Client	SCD

Project  
**VOTING MACHINE WAREHOUSE ELEVATOR ADDITION**  
403 EAST 24TH STREET, CHESTER, PA 19013  
Drawing Title  
**STRUCTURAL PLANS**

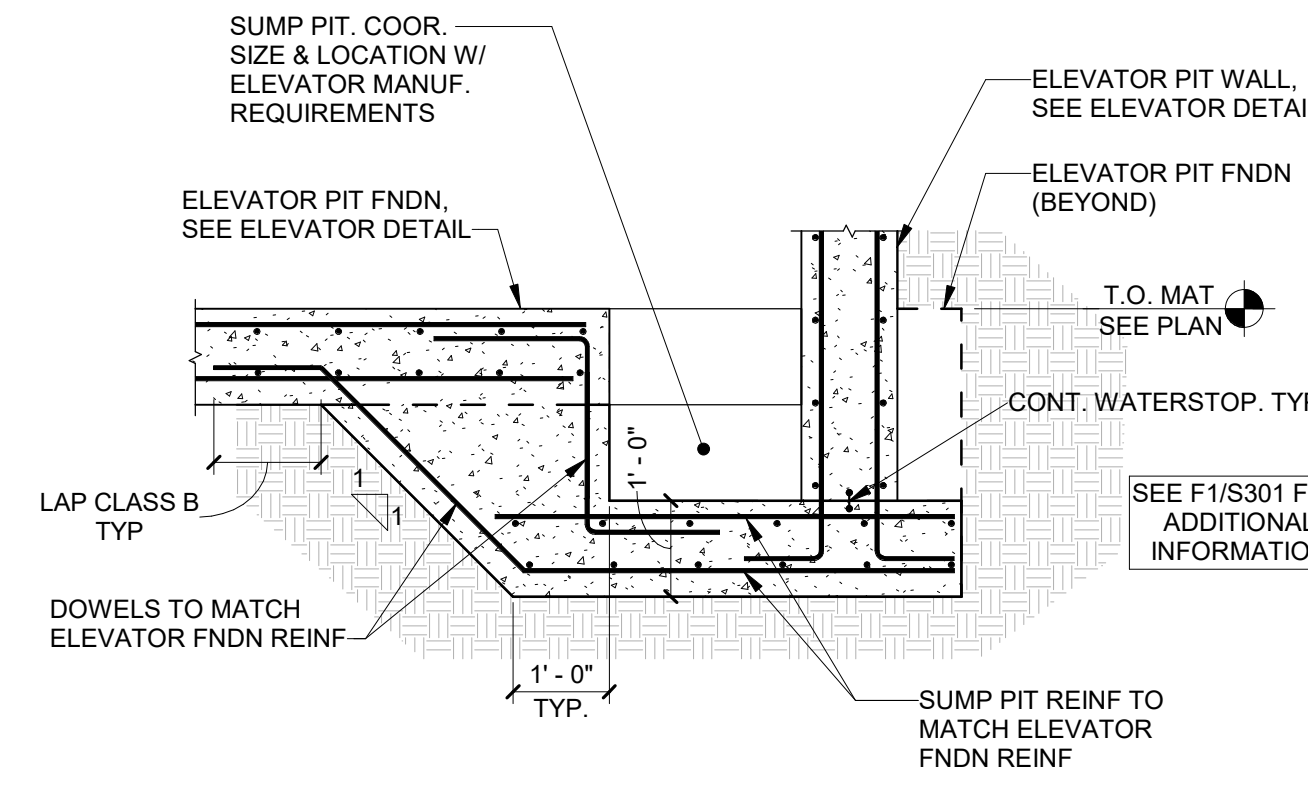
Project No.	IN2325-0323-00
Drawing No.	<b>S100</b>



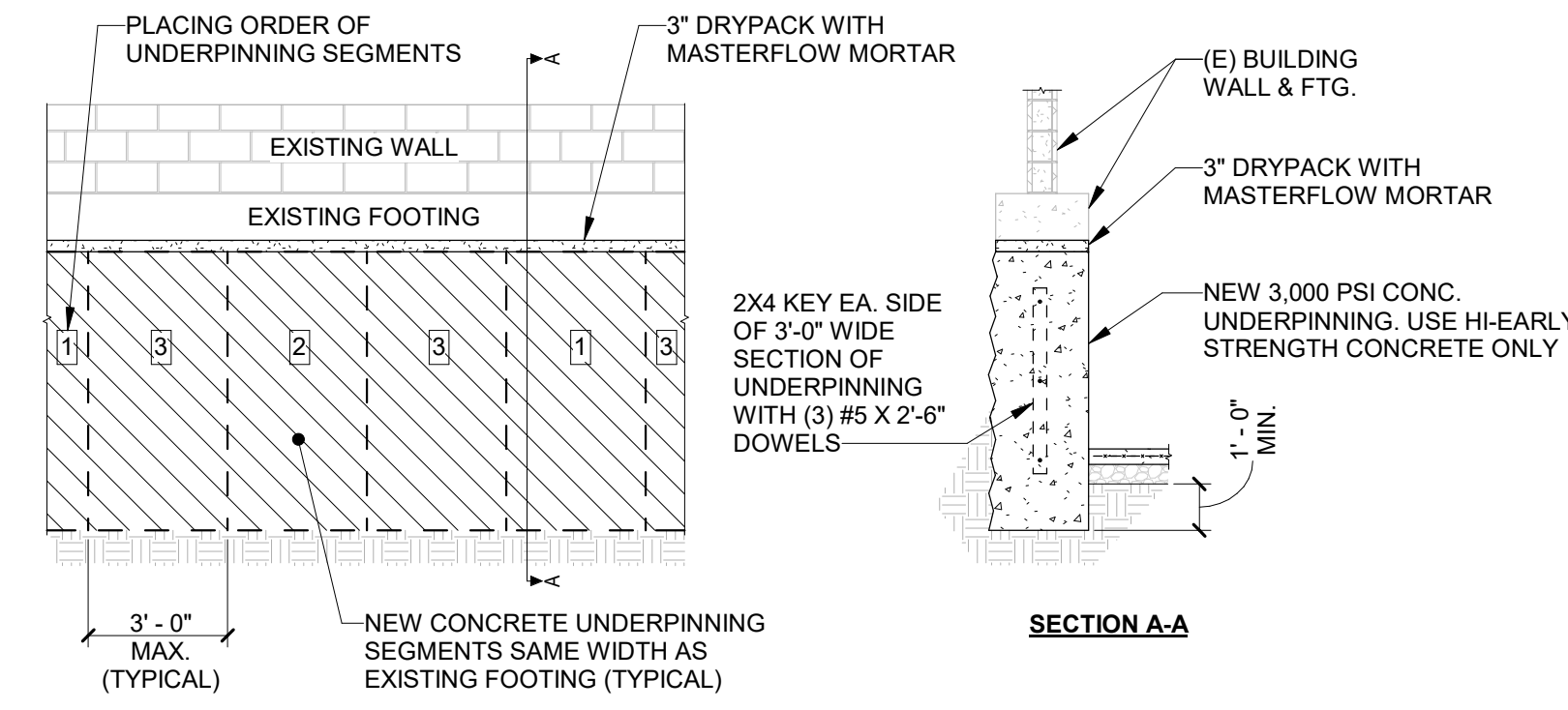
A SLAB ON GRADE CONSTRUCTION  
N.T.S.



B TYPICAL SLAB ON GRADE JOINTS  
N.T.S.

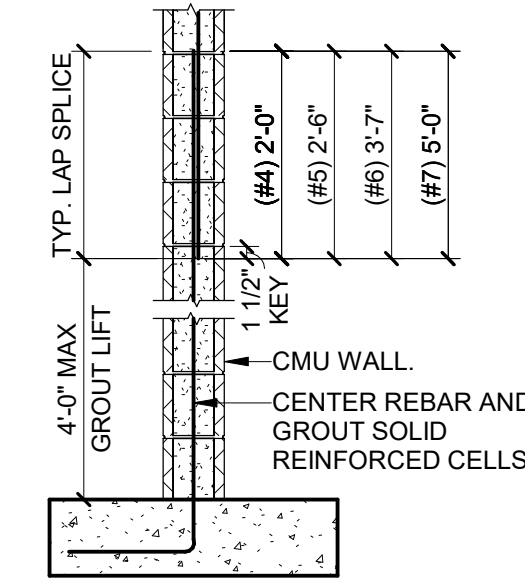


C TYPICAL ELEVATOR SUMP PIT CONSTRUCTION  
N.T.S.

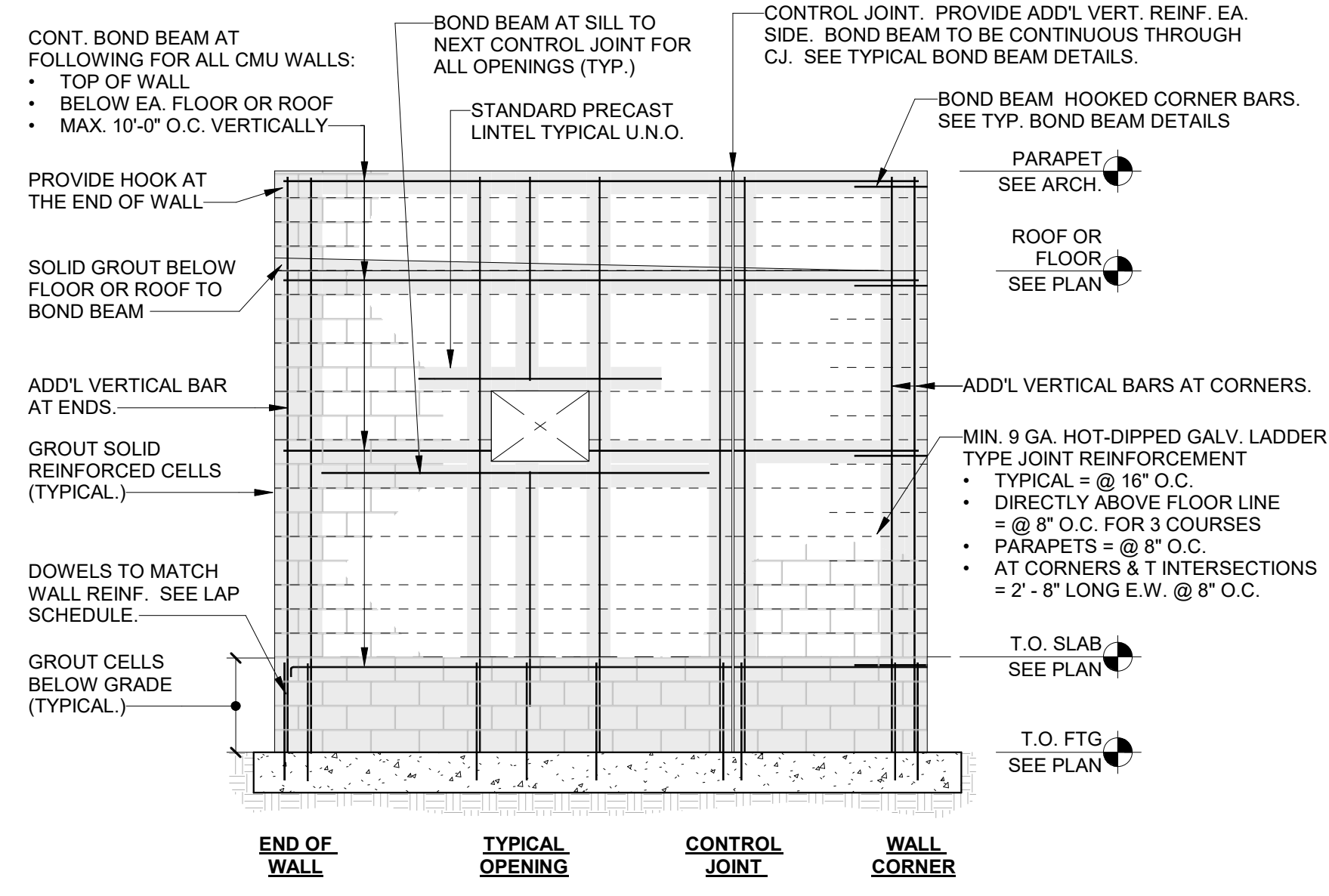


NOTES:  
1.) UNDERPIN IN SECTIONS 3'-0" WIDE @ 12'-0" O.C. SEE ELEVATION ABOVE FOR PLACING ORDER  
2.) ALLOW 72 HOURS CURING TIME BETWEEN DRYPACK OF ONE SECTION AND EXCAVATION OF ADJACENT SECTION.  
3.) DRYPACK 24 HOURS AFTER POURING UNDERPINNING.

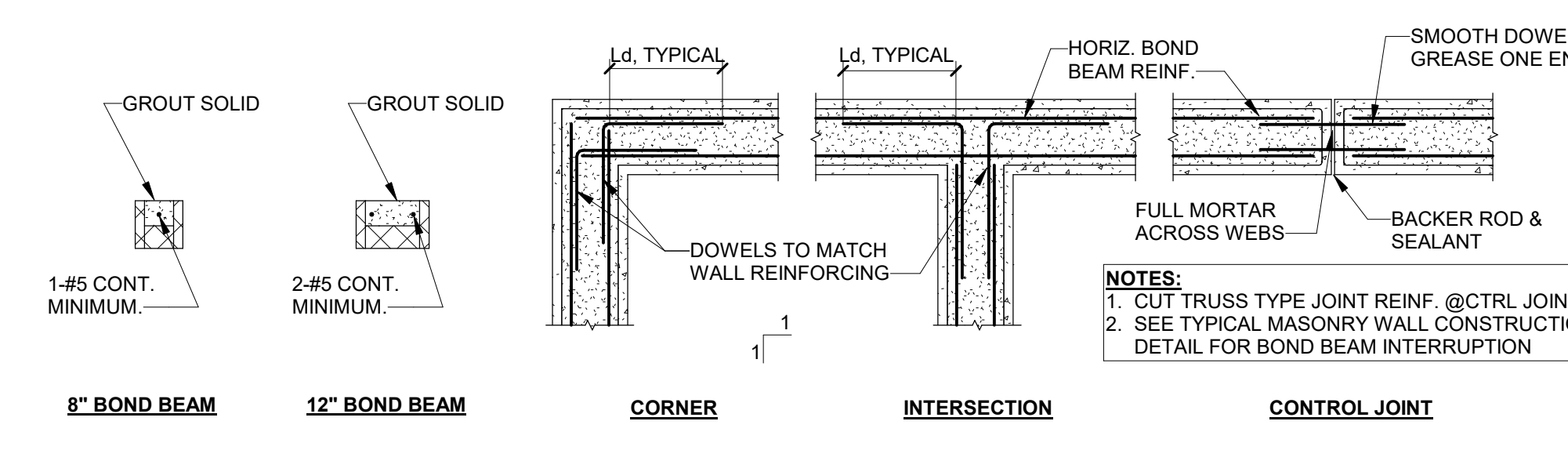
D TYPICAL UNDERPINNING DETAIL  
N.T.S.



E MASONRY LAP SPLICE  
N.T.S.



F PRESCRIPTIVE INTERMEDIATE REINFORCED MASONRY WALL  
N.T.S.



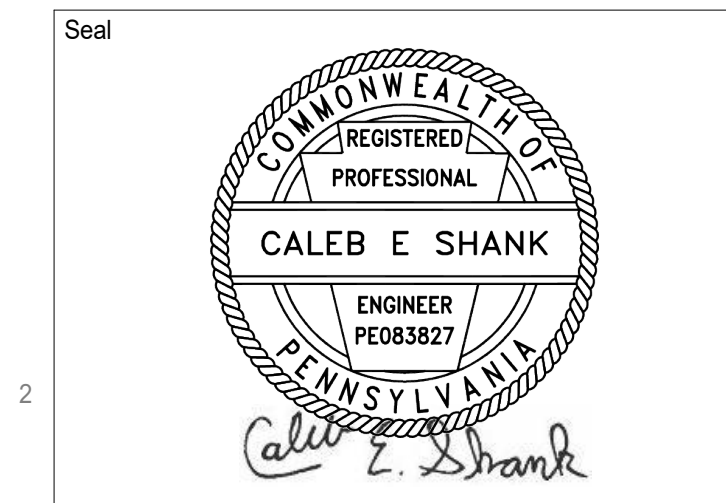
G TYPICAL BOND BEAM DETAIL  
N.T.S.

DATE	ISSUED FOR	REV
2026.03.04	BIDDING	A
2026.04.28	PLAN REVIEW	B
2026.06.18	REISSUED FOR BID	C

This drawing has been prepared solely for the use of COUNTY OF DELAWARE DEPARTMENT OF PUBLIC WORKS and there are no representations of any kind made by

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer

Design Team  
Architecture: NORR  
Structural: NORR  
Mechanical: NORR  
Electrical: NORR



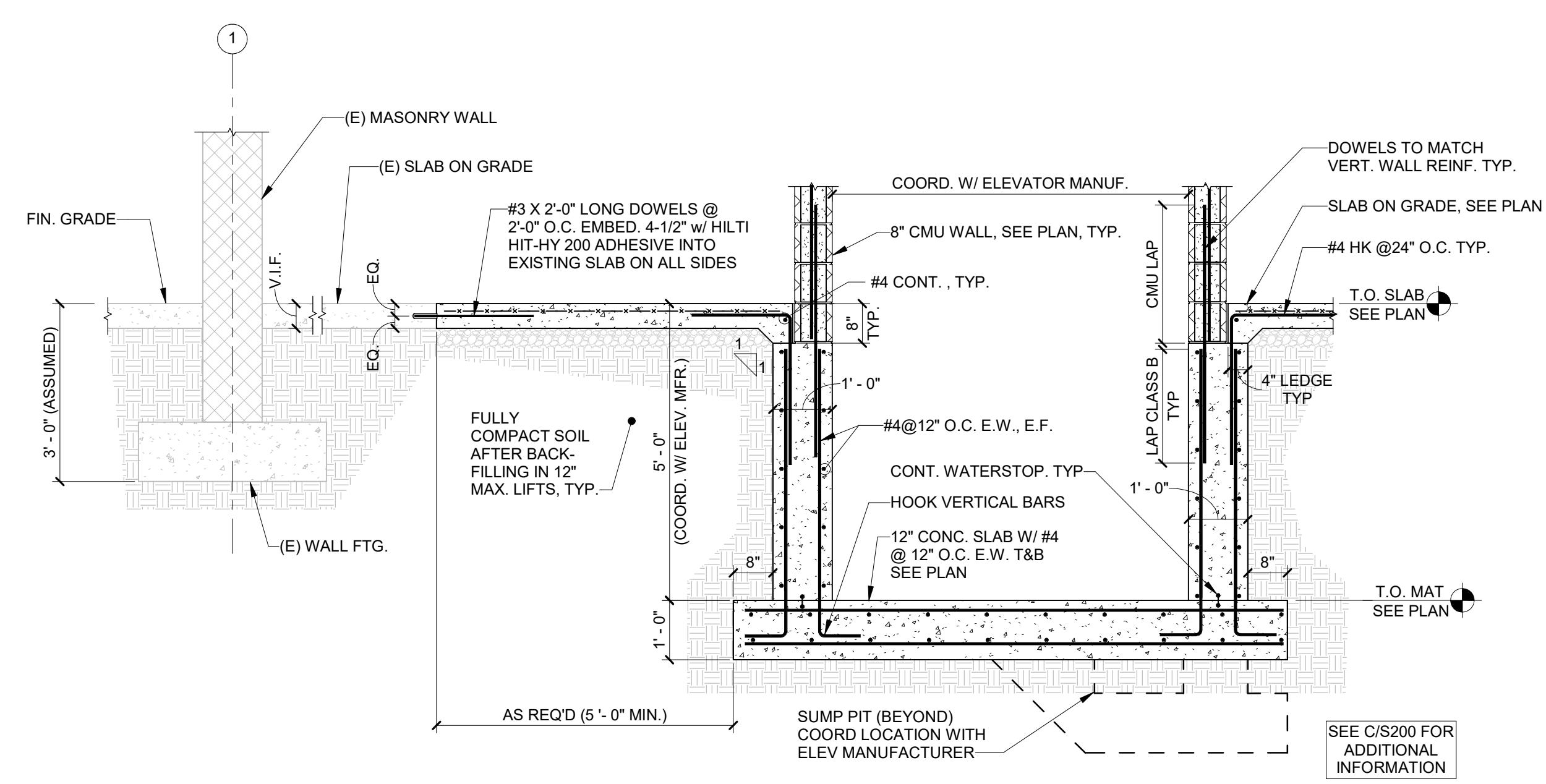
**NORR**  
NORR  
One Penn Center  
1917 JFK Blvd, Suite 1600  
Philadelphia, PA 19103  
norr.com

Project Manager: Drawn: CES  
Project Architect: Checked: SCG  
Client: COUNTY OF DELAWARE DEPARTMENT OF PUBLIC WORKS  
Project: VOTING MACHINE WAREHOUSE ELEVATOR ADDITION  
403 EAST 24TH STREET, CHESTER, PA 19013  
Drawing Title: TYPICAL DETAILS

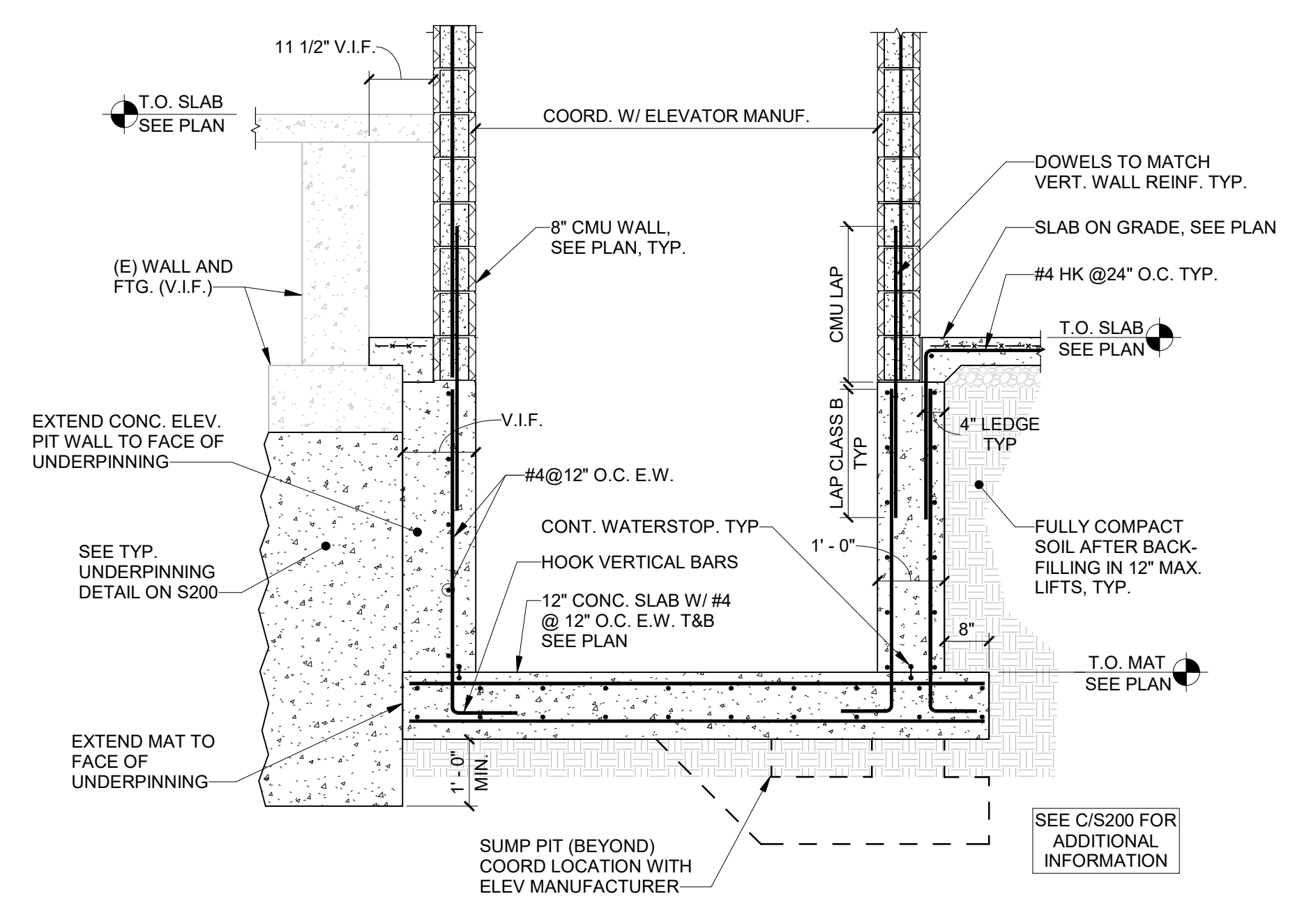
Project No.: IN2325-0323-00  
Drawing No.: S200  
ARCH E Title Block - 2023 - Rev (Sep23) - Copyright © 2023

4/26/2026 11:52:42 AM

Autodesk Docs (DWG) - Voting Machine Warehouse Elevator Addition\IN2325-0323-ST\_01.dwg - WarehouseElevatorAddition\_021.rvt



F1 SECTION THROUGH ELEVATOR PIT & EXT. WALL  
1/2" = 1'-0"

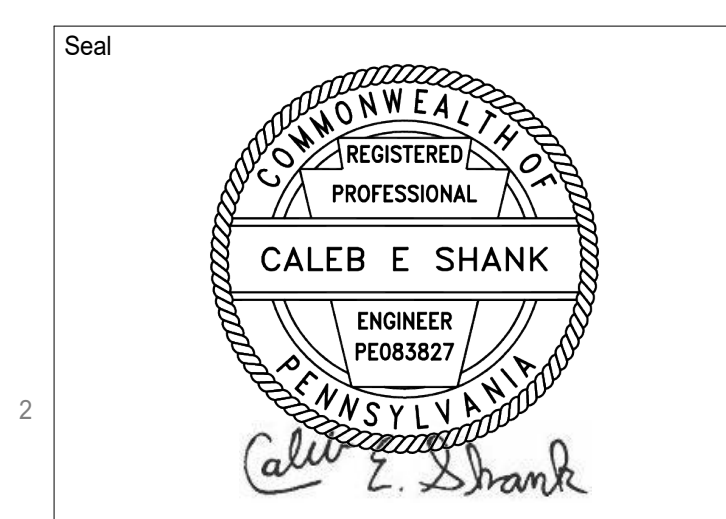


F2 SECTION THROUGH ELEVATOR PIT & ELEVATED WALKWAY  
1/2" = 1'-0"

DATE	ISSUED FOR	REV
2026.03.04	BIDDING	A
2026.04.28	PLAN REVIEW	B
2026.06.18	REISSUED FOR BID	C

This drawing has been prepared solely for the use of COUNTY OF DELAWARE DEPARTMENT OF PUBLIC WORKS and there are no representations of any kind made by  
 This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer

Design Team  
 Architecture: NORR  
 Structural: NORR  
 Mechanical: NORR  
 Electrical: NORR



**NORR**  
 NORR  
 One Penn Center  
 1917 JFK Blvd, Suite 1600  
 Philadelphia, PA 19103  
 norr.com

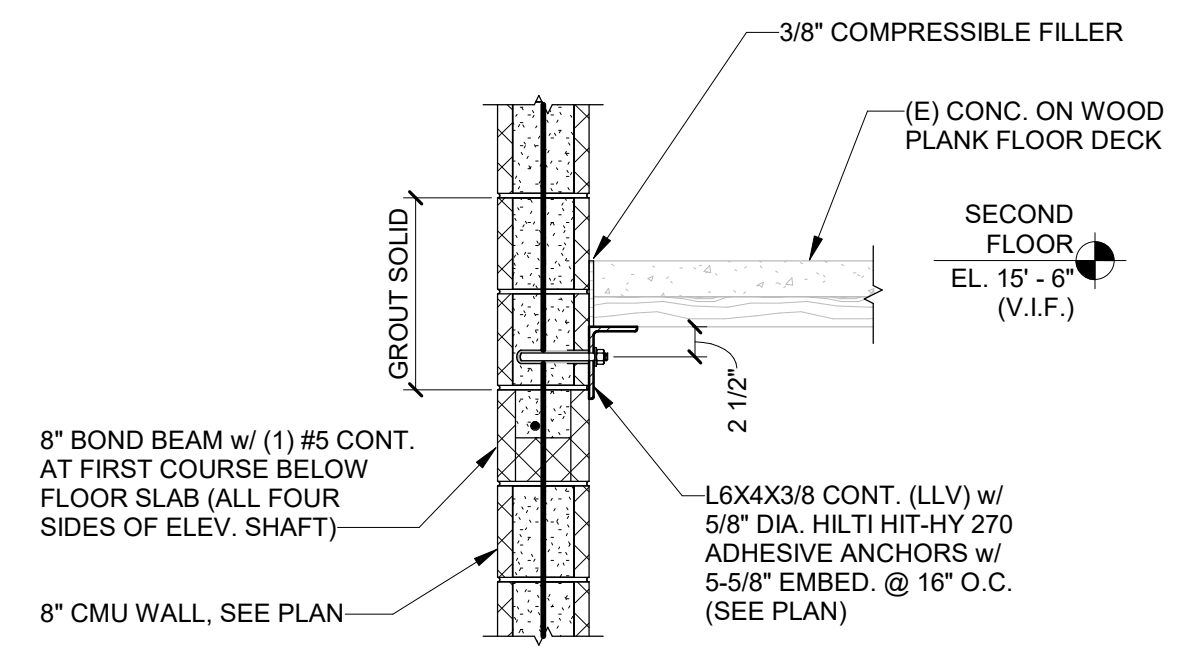
Project Manager: Drawn by CES  
 Project Architect: Checked by SCG

Client  
**COUNTY OF DELAWARE  
 DEPARTMENT OF PUBLIC  
 WORKS**

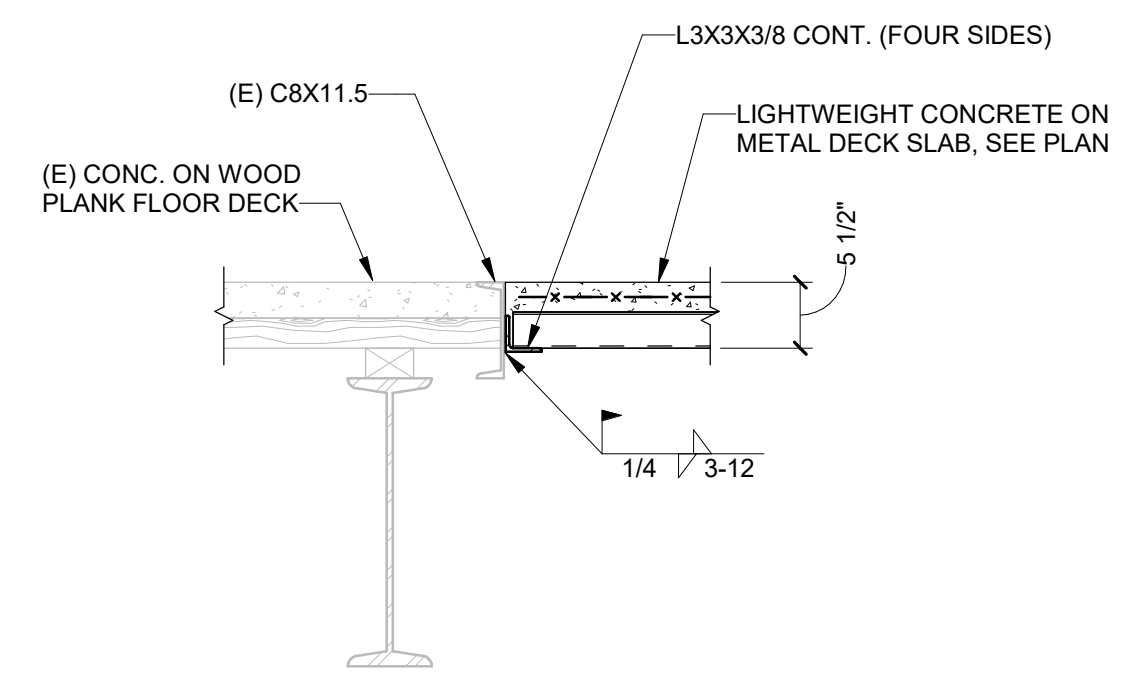
Project  
**VOTING MACHINE  
 WAREHOUSE ELEVATOR  
 ADDITION**  
 403 EAST 24TH STREET, CHESTER, PA 19013  
 Drawing Title  
**FOUNDATION SECTIONS**

Project No. IN2325-0323-00  
 Drawing No. **S301**  
 ARCH E Title Block - v 2023 - Rev (Sep23) - Copyright © 2023

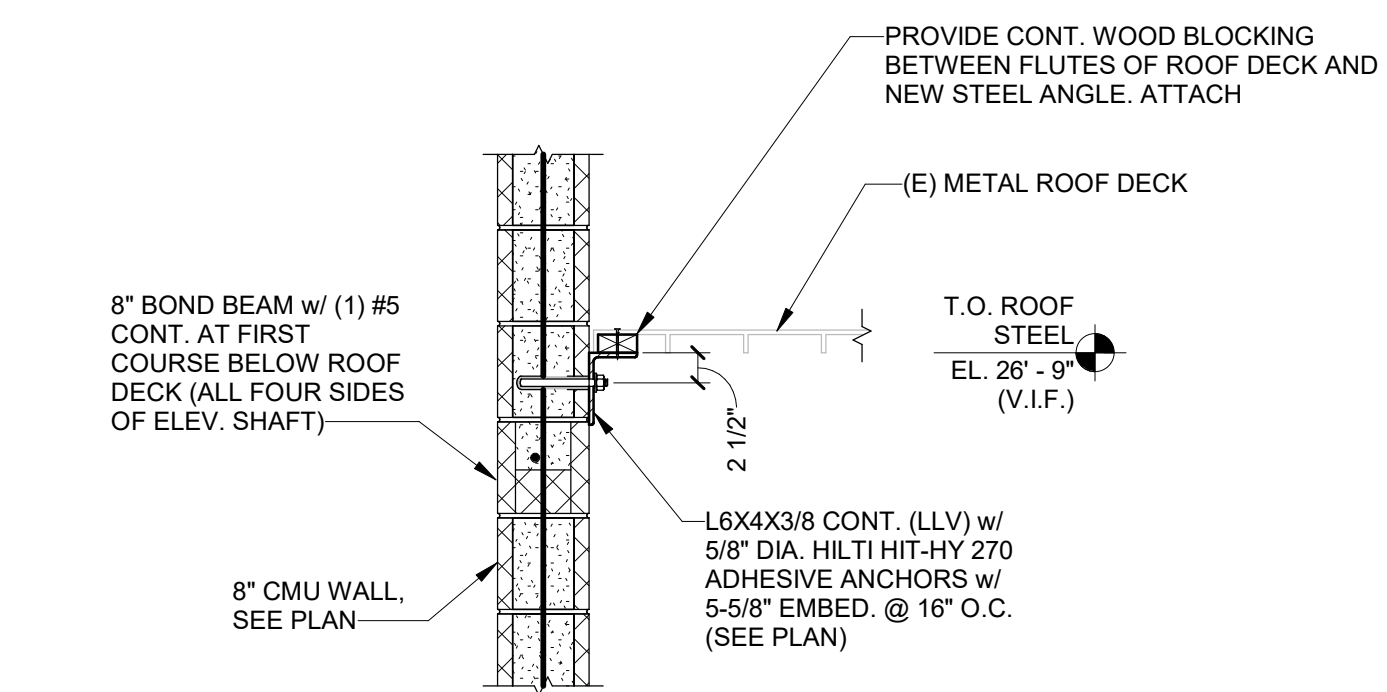
DATE	ISSUED FOR	REV
2026.03.04	BIDDING	A
2026.04.28	PLAN REVIEW	B
2026.06.18	REISSUED FOR BID	C



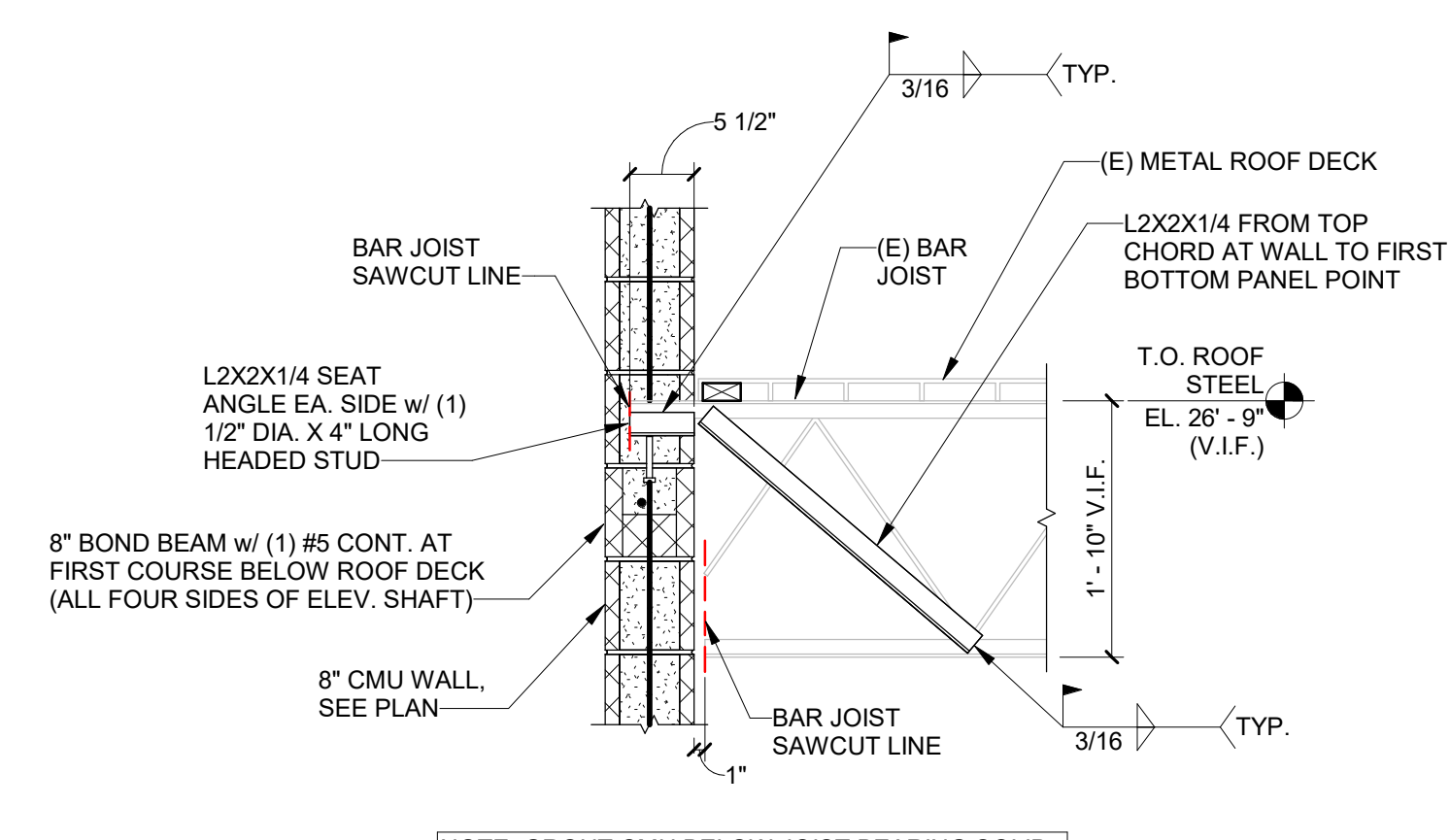
1 FLOOR SUPPORT AT CMU  
3/4" = 1'-0"



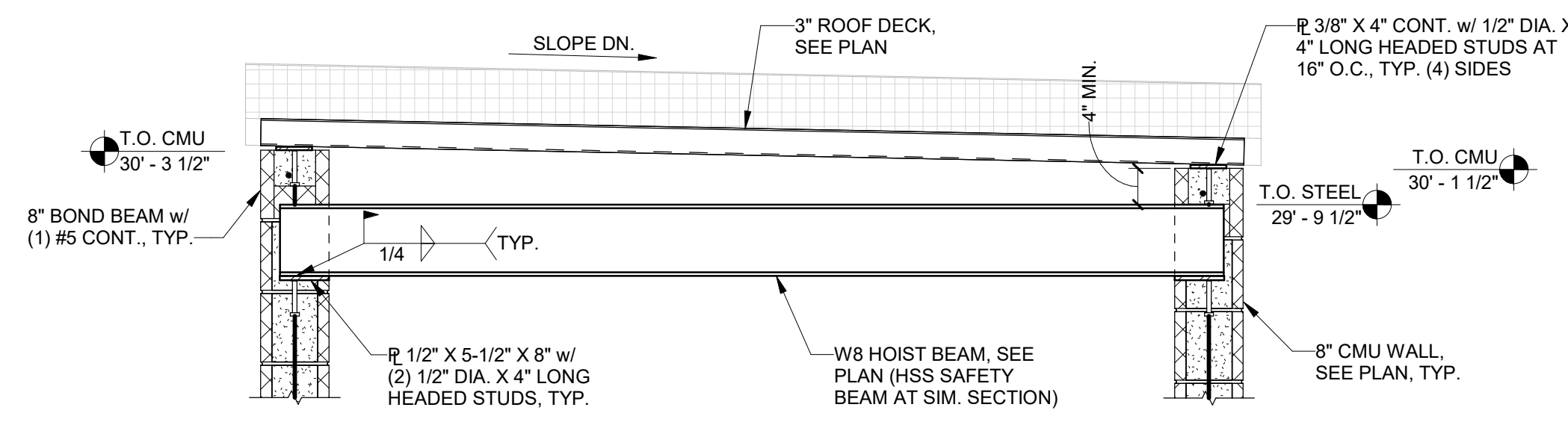
2 SECTION AT FLOOR INFILL  
3/4" = 1'-0"



R1 ROOF SUPPORT AT CMU  
3/4" = 1'-0"



R2 SUPPORT OF EXIST. BAR JOIST AT NEW CMU WALL  
3/4" = 1'-0"



R3 SECTION AT ELEVATOR POP-UP  
3/4" = 1'-0"

NOTES:  
1) GROUT SOLID A MIN. OF TWO COURSES BELOW ALL BEAM BEARING LOCATIONS.  
2) GROUT BEAM POCKET SOLID.

4

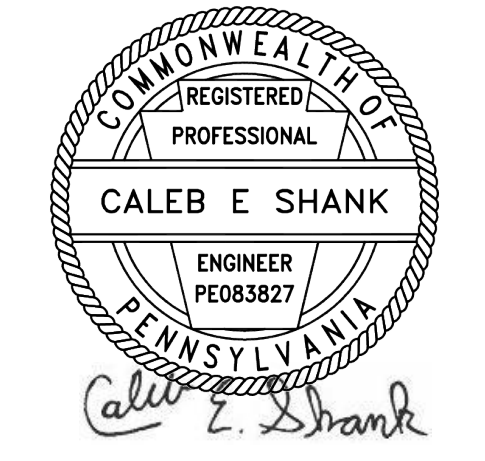
This drawing has been prepared solely for the use of COUNTY OF DELAWARE DEPARTMENT OF PUBLIC WORKS and there are no representations of any kind made by

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and dated by the Architect or Engineer

Design Team

Architecture: NORR  
Structural: NORR  
Mechanical: NORR  
Electrical: NORR

Seal



2

**NORR**  
NORR  
One Penn Center  
1917 JFK Blvd, Suite 1600  
Philadelphia, PA 19103  
norr.com

Project Manager: Drawn: CES  
Project Architect: Checked: SCDC

Client:  
**COUNTY OF DELAWARE  
DEPARTMENT OF PUBLIC  
WORKS**

Project:  
**VOTING MACHINE  
WAREHOUSE ELEVATOR  
ADDITION**  
403 EAST 24TH STREET, CHESTER, PA 19013

Drawing Title:  
**FRAMING SECTIONS**

Project No.: IN2325-0323-00  
Drawing No.: **S302**