

**DESIGN REQUIREMENTS:**

THE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- DERRY, NH, BUILDING CODE
2009 INTERNATIONAL BUILDING CODE
ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
ACI 318-08 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
NFPA 101 LIFE SAFETY CODE, 2009
AISC STEEL CONSTRUCTION MANUAL, 14TH ED.
AISC CODE OF STANDARD PRACTICE FOR BUILDINGS AND BRIDGES, LATEST EDITION
AWS D 1.1 STRUCTURAL WELDING CODE, LATEST EDITION

**PRE-ENGINEERED METAL BUILDING (PEMB):**

1. SEE PEMB DRAWINGS, NOTES AND SPECIFICATIONS FOR REQUIREMENTS OF THE PEMB.

**DESIGN LOADS:**

UNIFORMLY DISTRIBUTED LIVE LOADS

- STAIRS = 100 PSF
SLABS = 250 PSF

**SNOW**

- GROUND SNOW LOAD (PG) = 60 PSF
FLAT ROOF SNOW LOAD (PF) = 50.4 PSF
EXPOSURE FACTOR (CE) = 1.0
IMPORTANCE FACTOR (I) = 1.0
THERMAL ROOF FACTOR (CT) = 1.2 (UNHEATED)
SLOPED ROOF SNOW LOAD (PS) = 50.4 PSF

**WIND**

- BASIC WIND SPEED (V) = 110 MPH
IMPORTANCE FACTOR (I) = 1.0 (CATEGORY II BUILDING)
EXPOSURE CATEGORY = "C"
Kh = 0.98
Kzt = 1.0
Kd = 0.85
WIND PRESSURE qz = 25.8 PSF

**DEAD LOADS**

BASED ON NORMAL WEIGHT CONCRETE AND SPECIFIED BUILDING MATERIALS.

**SEISMIC**

- SEISMIC OCCUPANCY CATEGORY: II
SPECTRAL RESPONSE COEFFICIENT SDS = 0.37
SPECTRAL RESPONSE COEFFICIENT SD1 = 0.13
SEISMIC DESIGN CATEGORY = "B"
SITE CLASS = "D"
BASIC SEISMIC FORCE RESISTING SYSTEM = STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE.

**VEHICULAR LIVE LOAD**

- AASHTO LRFD HL-93
AASHTO SPECIFIED 10 KIP HORIZONTAL LOAD FOR GUARDRAIL

**GENERAL NOTES:**

- 1. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE 2009 IBC INTERNATIONAL BUILDING CODE.
2. IF ANY OF THE WORK TO BE DONE AS SHOWN ON THE DRAWINGS DOES NOT CORRESPOND WITH THE EXISTING FIELD CONDITIONS, CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
3. DRAWINGS ARE NOT INTENDED TO BE SCALED. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS, INCLUDING UTILITIES, PRIOR TO THE START OF CONSTRUCTION. IF THERE ARE ANY DISCREPANCIES, CONSULT THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
4. PLACEMENT OF SLEEVES, OUTLET BOXES, BOX-OUTS, ANCHORS, ETC., AS NEEDED FOR ELECTRICAL, MECHANICAL OR PLUMBING TRADES IS THE RESPONSIBILITY OF THE TRADE INVOLVED. NO CONDUIT PLACED IN A STRUCTURAL ELEMENT SHALL HAVE AN OUTSIDE DIAMETER GREATER THAN 1/3 THE THICKNESS OF THE ELEMENT. EXCEPT FOR CONDUIT INTERSECTIONS, THE MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 6". ANY BOX-OUT, PENETRATION, OR MODIFICATION OF A STRUCTURAL MEMBER NOT DEPICTED IN THE PLANS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL.
5. THE DRAWINGS REPRESENT THE FINISHED STRUCTURE AND DO NOT SPECIFY THE MEANS AND METHODS OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY WORKS INCLUDING DESIGNING, INSTALLING, AND MAINTAINING ALL TEMPORARY SUPPORT STRUTS, SHORING, GUYING, AND BRACING AS NEEDED FOR TRANSPORT, HANDLING, AND ERECTION. THE CONTRACTOR SHALL DETERMINING AND ENFORCE ALL CONSTRUCTION LOAD LIMITS ON THE STRUCTURE IN ACCORDANCE WITH THE SELECTED MEANS AND METHODS.

**SUBMITTALS AND ALTERNATES**

- 1. SUBMIT TO THE ENGINEER: SHOP DRAWINGS, OPERATION AND MAINTENANCE MANUALS, MANUFACTURERS' CERTIFICATES, PROJECT DATA, AND SAMPLES REQUIRED BY THE SPECIFICATIONS.
2. IF THE CONTRACTOR ELECTS TO SUBMIT AN ALTERNATE THAT IS EQUIVALENT OR SUPERIOR, THE CONTRACTOR WILL BE RESPONSIBLE TO MAKE ALL MODIFICATIONS TO THE WORK RESULTING FROM THE USE OF THE ALTERNATE.
3. SHOP DRAWINGS ARE REQUIRED FOR EACH AND EVERY ELEMENT OF THE WORK. EACH SHOP DRAWING SHALL BE ASSIGNED A SEQUENTIAL NUMBER FOR PURPOSES OF EASY IDENTIFICATION, AND SHALL RETAIN ITS ASSIGNED NUMBER, WITH APPROPRIATE SUBSCRIPT, ON REQUIRED RESUBMISSION.
4. SHOP DRAWINGS ARE GENERALLY DEFINED AS ALL FABRICATION AND ERECTION DRAWINGS, DIAGRAMS, BROCHURES, SCHEDULES, BILLS OF MATERIAL, MANUFACTURERS DATA, SPARE PARTS LISTS, AND OTHER DATA PREPARED BY THE CONTRACTOR, HIS SUBCONTRACTORS, SUPPLIERS, OR MANUFACTURERS WHICH ILLUSTRATE THE MANUFACTURER, FABRICATION, CONSTRUCTION, AND INSTALLATION OF THE WORK, OR A PORTION THEREOF. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER ELECTRONIC (PDF) COPIES OF SHOP DRAWINGS AND APPROVED DATA.
5. THE CONTRACTOR SHALL PROVIDE A COPY OF A COMPLETED SUBMITTAL CERTIFICATION FORM WHICH SHALL BE ATTACHED TO EVERY COPY OF EACH SHOP DRAWING. SHOP DRAWINGS SHALL SHOW THE PRINCIPAL DIMENSIONS, WEIGHT, STRUCTURAL AND OPERATING FEATURES, SPACE REQUIRED, CLEARANCES, TYPE AND/OR BRAND OF FINISH OR SHOP COAT, GREASE FITTINGS, ETC., DEPENDING ON THE SUBJECT OF THE DRAWING. WHEN IT IS CUSTOMARY TO DO SO, WHEN THE DIMENSIONS ARE OF PARTICULAR IMPORTANCE, OR WHEN SO SPECIFIED, THE DRAWINGS SHALL BE CERTIFIED BY THE MANUFACTURER OR FABRICATOR AS CORRECT FOR THE WORK.
6. NO MATERIAL OR EQUIPMENT SHALL BE PURCHASED OR FABRICATED ESPECIALLY FOR THE CONTRACT UNTIL THE REQUIRED SHOP AND WORKING DRAWINGS HAVE BEEN SUBMITTED AS HEREINABOVE PROVIDED AND REVIEWED FOR CONFORMANCE TO THE CONTRACT REQUIREMENTS. ALL SUCH MATERIALS AND EQUIPMENT AND THE WORK INVOLVED IN THEIR INSTALLATION OR INCORPORATION INTO THE WORK SHALL THEN BE AS SHOWN IN AND REPRESENTED BY SAID DRAWINGS.
7. IF A SHOP DRAWING SHOWS ANY DEVIATION FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL MAKE SPECIFIC MENTION OF THE DEVIATIONS IN HIS LETTER OF TRANSMITTAL.

8. THE CONTRACTOR SHALL SUBMIT SAMPLES WHEN REQUESTED BY THE ENGINEER TO ESTABLISH CONFORMANCE WITH THE SPECIFICATIONS, AND AS NECESSARY TO DEFINE COLOR SELECTIONS AND TEXTURES AVAILABLE.

9. PRIOR TO ACCEPTING THE INSTALLATION, THE CONTRACTOR SHALL SUBMIT MANUFACTURER'S CERTIFICATES AND WARRANTIES FOR EACH ITEM SPECIFIED.

10. SUCH MANUFACTURER'S CERTIFICATES SHALL STATE THAT THE EQUIPMENT HAS BEEN INSTALLED UNDER EITHER THE CONTINUOUS OR PERIODIC SUPERVISION OF THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE, THAT IT HAS BEEN ADJUSTED AND INITIALLY OPERATED IN THE PRESENCE OF THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE, THAT IT IS OPERATING IN ACCORDANCE WITH THE SPECIFIED REQUIREMENTS, TO THE MANUFACTURER'S SATISFACTION AND THAT THE INSTALLATION MEETS ALL CONDITIONS OF THE GUARANTEE/WARRANTEE PERIOD. ALL COSTS FOR MEETING THIS REQUIREMENT SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.

11. CERTIFIED PERFORMANCE TEST DATA WILL ALSO BE SUBMITTED TO THE ENGINEER AS REQUIRED BY THE SPECIFICATIONS.

**FOUNDATION NOTES:**

- 1. CARE SHALL BE TAKEN IN PREPARATION OF FOUNDATIONS ON ROCK TO AVOID UNDUE OVER BREAKAGE IN THE DRILLING AND BLASTING OF ROCK.
2. ROCK SURFACES TO RECEIVE THE FOOTINGS SHALL BE LEVEL, STEPPED, ROUGHENED, DOWELED, OR ANY COMBINATION THEREOF AS DIRECTED. WHEN THE USE OF DOWELS IS ORDERED, HOLES SHALL BE DRILLED TO THE DEPTH REQUIRED AND THE DOWELS GROUTED WITH CEMENT MORTAR.
3. SURFACES SHALL BE CLEANED AND MAINTAINED CLEAN UNTIL THE MASONRY IS PLACED. ALL LOOSE ROCK AND FRAGMENTS SHALL BE REMOVED AS DIRECTED.
4. SEAMS SHALL BE CLEANED AND GROUTED WHEN ORDERED.
5. AFTER EACH EXCAVATION IS COMPLETED, AND PRIOR TO PLACING FORMS FOR CONCRETE, THE ENGINEER SHALL APPROVE THE DEPTH OF EXCAVATION AND THE CHARACTER OF THE FOUNDATION MATERIAL.
6. WHERE MASONRY IS TO REST ON A ROCK SURFACE, ALL SPACE RESULTING FROM EXCAVATING ROCK WITHIN VERTICAL PLANES THROUGH THE NEAT LINES OF THE FOOTINGS SHALL BE BACKFILLED WITH CONCRETE OF THE SAME CLASS AS THAT IN THE FOOTINGS, UNLESS OTHERWISE SHOWN OR ORDERED.

**CAST-IN-PLACE CONCRETE NOTES:**

- 1. ALL CAST-IN-PLACE CONCRETE SHALL BE CONTROLLED, MIXED AND PLACED UNDER SUPERVISION OF AN APPROVED CONCRETE TESTING AGENCY.
2. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE WITH SAND AND GRAVEL AGGREGATE. TYPE II PORTLAND CEMENT SHALL BE USED FOR ALL CONCRETE.
3. GROUT FOR SHEAR KEYS, UNDER COLUMN BASE PLATES, AND FOR SEALING UTILITY PENETRATIONS SHALL BE NON-SHRINK, NON-METALLIC GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 6000 PSI AT 3 DAYS.
4. THE CONTRACTOR SHALL SUBMIT CONCRETE AND GROUT MIX DESIGNS FOR REVIEW AND APPROVAL AT LEAST 15 DAYS PRIOR TO BATCHING, TRANSPORTING AND PLACING CONCRETE.
5. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:
WALLS AND PIERS: 4000 PSI
FOOTINGS: 3000 PSI
SLABS-ON-GRADE: 4000 PSI
OVERLAYS AND INFILLS: 4000 PSI
6. MATERIALS AND INSTALLED WORK MAY REQUIRE TESTING AND RETESTING AS DIRECTED BY ENGINEER AT ANY TIME DURING PROGRESS OF WORK. TESTS, INCLUDING RETESTING OF REJECTED MATERIALS AND INSTALLED WORK, SHALL BE DONE AT CONTRACTOR'S EXPENSE.

7. PRODUCT DATA: SUBMIT DATA FOR PROPRIETARY MATERIALS AND ITEMS, INCLUDING REINFORCEMENT AND FORMING ACCESSORIES, ADMIXTURES, PATCHING, COMPOUNDS, JOINT SYSTEMS, CURING COMPOUNDS, AND OTHERS AS REQUESTED BY ENGINEER.

8. SHOP DRAWINGS: SUBMIT DRAWINGS WHICH INDICATE REINFORCEMENT LAYOUT AND POSITION. SHOW METHOD OF SECURING REINFORCEMENT AGAINST LATERAL AND VERTICAL MOVEMENT.

- 9. CONCRETE MATERIALS:
A. ALL CEMENT SHALL BE PROCURED FROM ONE MANUFACTURER AND SHALL HAVE AN ALKALI CONTENT LESS THAN 0.6%. THE CONTRACTOR SHALL PROVIDE A FURNISH MILL AFFIDAVIT THAT ALL MATERIAL USED ON THIS WORK CONFORMS TO THE REQUIREMENTS STATED. AGGREGATES SHALL BE OF NORMAL WEIGHT, FINE OR COARSE AGGREGATES CONTAINING SPALLING-CAUSING DELETERIOUS SUBSTANCES ARE NOT PERMITTED. WATER SHALL BE POTABLE.
B. THE LIQUID TYPE MEMBER-FORMING CURING COMPOUND SHALL COMPLY WITH ASTM C 309 TYPE I, CLASS A UNLESS OTHER TYPE IS DEEMED ACCEPTABLE BY THE ENGINEER. MOISTURE LOSS SHALL BE MORE THAN 0.05% GR/SQ CM WHEN APPLIED AT 200 SQ FT/GAL.
C. WATER-REDUCING ADMIXTURE MAY BE USED IN CONCRETE AS REQUIRED FOR PLACEMENT AND WORKABILITY. WATER REDUCING ADMIXTURE SHALL CONFORM TO ASTM C 494, TYPE A, AND CONTAIN NOT MORE THAN 0.01% CHLORIDE IONS. THE CONTRACTOR SHALL PROVIDE ADMIXTURE'S MANUFACTURER'S WRITTEN CERTIFICATION THAT CHLORIDE ION CONTENT COMPLIES WITH SPECIFIED REQUIREMENTS. CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 0.1% CHLORIDE IONS ARE NOT PERMITTED.
D. ADD AIR-ENTRAINING ADMIXTURE AT MANUFACTURER'S PRESCRIBED RATE TO RESULT IN CONCRETE AT A POINT OF PLACEMENT HAVING TOTAL AIR CONTENT WITH A TOLERANCE OF PLUS OR MINUS 1.5% AIR ENTRAINMENT SHALL CONFORM TO ASTM C260-77, WITH NOT LESS THAN 4% NOR GREATER THAN 6% AIR ENTRAINMENT.

10. CONTRACTOR SHALL PLACE ALL CONCRETE IN THE DRY.

11. ALL CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS, EXCEPT WHERE SPECIFICALLY NOTED. HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS THROUGH VERTICAL CONSTRUCTION JOINTS. SHOW ALL CONSTRUCTION JOINTS ON THE SHOP DRAWINGS.

12. CONCRETE SHALL BE PLACED IN ITS FINAL LOCATION AS SOON AS POSSIBLE AFTER MIXING. SEGREGATION OF THE MIX OR DISPLACEMENT OF MATERIALS INSIDE THE FORMS WILL NOT BE PERMITTED.

13. CONCRETE SHALL BE PLACED IN LAYERS NOT TO EXCEED 12 INCHES AND PLACING INTERVALS SHALL NOT EXCEED 30 MINUTES UNLESS OTHERWISE PERMITTED. CONCRETE WHICH HAS ATTAINED A PARTIAL SET SHALL NOT BE USED.

14. WHEN PLACING SLAB OR DECK CONCRETE, CONCRETE SHALL NOT BE PLACED MORE THAN 10 FEET AHEAD OF THE FINISHING MACHINE.

15. IN THE EVENT OF UNSCHEDULED STOPPAGE OF THE WORK, VERTICAL BULKHEADS SHALL BE INSTALLED TO ENSURE A MINIMUM DEPTH OF 6 INCHES OF CONCRETE IN THE NEXT LIFT OF CONCRETE WHEN PLACEMENT IS RESUMED.

16. CARE SHALL BE TAKEN TO KEEP THE CONCRETE PRESSURE ON TIES AND FORMS WITHIN THE DESIGN LIMITS. CONCRETE SHALL NOT BE DROPPED A DISTANCE OF MORE THAN 5 FEET UNLESS CONTAINED WITHIN A TREMIE, ELEPHANT TRUNK, OR OTHER APPROVED SYSTEM.

17. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4".

18. ALL REINFORCING BARS SHALL BE GRADE 60, BLACK STEEL. WELDED WIRE FABRIC (WWF) SHALL BE BLACK STEEL WITH AN ULTIMATE TENSILE STRENGTH OF 70 KSI.

19. ALL REINFORCING SHALL BE PLACED WITH A MINIMUM CLEARANCES AS FOLLOWS:
2" FOR WALLS, PIERS, AND COLUMNS
3" FOR BOTTOM REINFORCEMENT IN FOOTINGS
2" FOR SLAB TOP REINFORCEMENT
1" FOR BOTTOM REINFORCEMENT IN SUPPORTED SLABS AND BEAMS

20. ALL SPLICES SHALL BE TENSION SPLICES, CLASS B, AS PER THE ACI CODE UNLESS OTHERWISE NOTED (UON).

21. EMBEDMENTS FOR DOWELS, ETC, SHALL BE THE DEVELOPMENT LENGTH IN TENSION , AS PER THE ACI CODE UON.

22. WHERE MECHANICAL OR WELDED SPLICES ARE USED, SPLICES SHALL BE STAGGERED AND SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH.

23. CONCRETE CAST ON SLOPED SURFACES SHALL BEGIN AT THE LOWEST ELEVATION AND CONTINUE MONOLITHICALLY TOWARD THE HIGHEST ELEVATION.

24. CONCRETE SHALL CURE IN THE FORMWORK FOR AT LEAST SEVEN DAYS OR ATTAIN AT LEAST 80% OF ITS 28-DAY COMPRESSIVE STRENGTH PRIOR TO THE REMOVAL OF FORMS.

25. WATER REPELLENT (SILANE-SILOXANE), SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES AT A RATE OF 125 SF/GALLON.

26. PLACE 1/2" THICK CORK FILLER BETWEEN CAST IN PLACE JOINTS. CORK FILLER SHALL BE PLACED 1/2" BELOW EXPOSED SURFACE. APPLY 1/2" X 1/2" JOINT SEALANT, COLOR MATCHED TO CONCRETE, OVER CORK FILLER AT ALL JOINTS. SEALANT SHALL BE ONE COMPONENT LOW-MODULUS SILICONE SEALANT SUCH AS OMNISEAL BY CHEMREX OR APPROVED EQUAL. CONTRACTOR SHALL MAINTAIN QUALIFIED PERSONNEL WHO HAVE RECEIVED PRODUCT TRAINING FROM THE MANUFACTURER'S REPRESENTATIVE.

**STRUCTURAL STEEL NOTES (EXCLUDING PEMB):**

- 1. STEEL FABRICATOR SHALL BE CERTIFIED BY THE AISC QUALITY CERTIFICATION PROGRAM. MINIMUM CERTIFICATION SHALL BE (STD).
2. ELEMENTS TO BE WELDED SHALL USE WELDING ELECTRODES THAT CONFORM TO E70 ELECTRODES. MINIMUM FILLET WELD SIZE SHALL BE 1/4" UON.
3. MINIMUM BOLT SIZE SHALL BE 5/8" DIAMETER UON. BOLT HOLES SHALL HAVE A DIAMETER 1/16" LARGER THAN BOLT DIAMETER UON.
4. ANY SUGGESTED MODIFICATION OR ALTERATION MADE BY THE DETAILER ON THE STEEL SHOP DRAWINGS TO ITEMS DEPICTED ON THE DRAWINGS SHALL BE CLEARLY IDENTIFIED BY THE DETAILER WITH NOTES ON THE SHOP DRAWINGS FOR REVIEW AND APPROVAL BY THE ENGINEER.

**STEEL FINISHES:**

1. SEE ARCHITECTURAL PLANS FOR COATING SCHEDULE FOR STEEL FABRICATIONS.

**HOT-DIP GALVANIZING NOTES:**

- 1. STEEL FABRICATIONS, AS CALLED FOR, SHALL BE COATED WITH HOT-DIP GALVANIZING IN ACCORDANCE WITH ASTM A 153 FOR HARDWARE. GALVANIZING BATH SHALL CONTAIN HIGH GRADE ZINC AND OTHER EARTHLY MATERIALS. IMMEDIATELY BEFORE GALVANIZING, THE STEEL SHALL BE IMMERSED IN A BATH OF ZINC AMMONIUM CHLORIDE. THE USE OF THE WET KETTLE PROCESS FOR GALVANIZING IS PROHIBITED.
2. PORTIONS OF STEEL MEMBERS THAT NEED TO BE MASKED FROM GALVANIZING TO FACILITATE WELDING, OR WHERE DAMAGE TO THE COATING HAS OCCURRED DURING CONSTRUCTION SHALL BE COATED WITH A 95% ZINC RICH ORGANIC COATING AFTER ALL WELDING AND OR REPAIRS HAVE BEEN COMPLETED. THE COATING SHALL BE "ZIRP" AS DISTRIBUTED BY DUNCAN GALVANIZING OR APPROVED EQUAL.

**FOUNDATION BACKFILL**

- 1. THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO ALLOW COMPACTION TESTING TO BE PERFORMED AT A TIME, PLACE AND ELEVATION DETERMINED BY THE ENGINEER.
2. POST PLACEMENT TESTING
A. THE TRENCH AND/OR EXCAVATION SHALL BE PREPARED USING THE NORMAL BACKFILL TECHNIQUE EMPLOYED BY THE CONTRACTOR. NO SPECIAL OR ADDITIONAL PREPARATION WILL BE ALLOWED.
B. DETERMINE IN-PLACE DENSITY IN ACCORDANCE WITH ASTM D2922-05 OR BY OTHER METHODS AS APPROVED BY THE ENGINEER.
C. COMPACTION TESTS SHALL BE MADE IN ACCORDANCE WITH THE SCHEDULE OF SECTION INSPECTIONS.
D. SHOULD COMPACTION TESTS FAIL TO MEET THE SPECIFIED DENSITIES, THE CONTRACTOR SHALL MODIFY BACKFILL METHODS AS NECESSARY TO OBTAIN PASSING RESULTS. THE MODIFIED METHOD SHALL BE USED FROM THAT POINT ON.
3. MATERIALS
A. EXCAVATED MATERIAL SUITABLE FOR REUSE:
1. MATERIAL SHALL BE FRIABLE NATURAL MATERIAL COMPRISED OF GRAVELS, SAND, SILTS, OR CLAYEY GRAVEL AND SANDS.
2. MATERIAL SHALL BE FREE FROM PEAT, MUCK, OTHER ORGANIC MATTER, FROZEN MATERIAL, ICE, AND/OR SNOW.
3. MATERIAL SHALL BE FREE FROM STONES, LEDGE/ROCK FRAGMENTS, AND ASPHALT OVER 8" IN THE LARGEST DIMENSION.
4. THE MATERIAL SHALL NOT HAVE A MOISTURE CONTENT OVER 2% OF ITS OPTIMUM MOISTURE CONTENT.
B. SELECT AND BORROW MATERIALS: NHDOT 209.201
C. SAND (SAND BLANKET OR BEDDING): NHDOT 304.1
D. BANK RUN GRAVEL, COMMON BORROW OR GRANULAR GRAVEL BORROW: NHDOT 304.2
E. CLEAN STONE FOR STRUCTURAL FILL: NHDOT 508, 2.1.3

Design-Build General Contractor HUTTER Hutler Construction Corporation New Ipswich, New Hampshire
CMA ENGINEERS CIVIL/ENVIRONMENTAL ENGINEERS Portsmouth, Nrh Manchester, NH Portland, ME Robert E. Doyle PE RA 603.738.2872 22 West Concord Street Dover, NH 03820 roylepen@gmail.com
Town of Derry, NH Department of Public Works Transfer Station & Recycling Facility Construction Drawings Structural Notes I
drawing no. S1
sheet: 1 of 8
date: April 2015
project no: 938
file name: 938 - Foundations.dwg
designed by: LBK/JLG
drawn by: LBK
approved by: JLG
scale: No Scale
RELEASED FOR BIDDING 4/24/15
no. 0
revision

SCHEDULE OF SPECIAL INSPECTIONS, C.A.S.E FORM-101

PROJECT: TOWN OF DERRY, NEW HAMPSHIRE, TRANSFER STATION/RECYCLING FACILITY  
 LOCATION: 43 TRANSFER LANE, DERRY, NEW HAMPSHIRE 03038  
 OWNER: TOWN OF DERRY  
 OWNER'S ADDRESS: 14 MANNING STREET, DERRY, NEW HAMPSHIRE 03038

ARCHITECT OF RECORD (AOR): ROBERT E. DOYLE, PE RA  
 STRUCTURAL ENGINEER OF RECORD (EOR): CMA ENGINEERS, INC./ JASON GALLANT, P.E.

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED AS A CONDITION OF PERMIT ISSUANCE IN ACCORDANCE WITH THE SPECIAL INSPECTION REQUIREMENTS OF THE 2009 INTERNATIONAL BUILDING CODE. IT INCLUDES A SCHEDULE OF SPECIAL INSPECTION SERVICES APPLICABLE TO THIS PROJECT AS WELL AS THE NAME OF THE SPECIAL INSPECTORS AND THE IDENTITY OF OTHER APPROVED AGENCIES INTENDED TO BE RETAINED FOR CONDUCTING THESE SERVICES.


THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, STRUCTURAL ENGINEER AND ARCHITECT OF RECORD. DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR.

A FINAL REPORT OF SPECIAL INSPECTIONS BY THE SPECIAL INSPECTOR(S) DOCUMENTING COMPLETION OF ALL REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY.

THE SPECIAL INSPECTOR, WHO IS GENERALLY EMPLOYED BY THE PRIMARY TESTING AGENCY, MAY USE VARIOUS INSPECTORS WHO ARE FAMILIAR WITH EACH CATEGORY OF WORK. IF SPECIAL INSPECTIONS ARE ALSO PERFORMED BY AGENTS WHO ARE NOT EMPLOYED BY THE PRIMARY TESTING AGENCY, EACH OF THESE ADDITIONAL SPECIAL INSPECTORS SHALL ISSUE A FINAL REPORT FOR THEIR CATEGORY OF INSPECTION. ONLY AFTER THE FINAL REPORT(S) HAS(HAVE) BEEN ISSUED BY THE SPECIAL INSPECTOR(S) CAN THE AOR AND EOR ISSUE FINAL AFFIDAVITS FOR THE PROJECT COMPLETION.

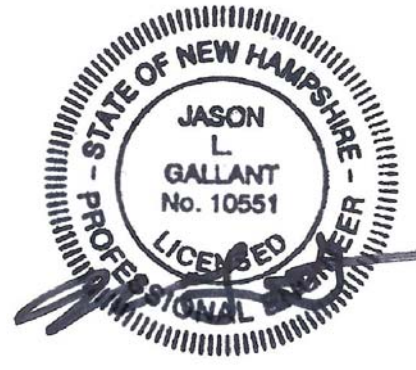
JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

PREPARED BY:



4/22/14

JASON L. GALLANT, P.E. DATE



SEAL

OWNER'S AUTHORIZATION: BUILDING OFFICIAL'S AUTHORIZATION:

SIGNATURE DATE SIGNATURE DATE

SCHEDULE OF SPECIAL INSPECTION SERVICES

THE FOLLOWING TABLES COMPRISE THE REQUIRED SCHEDULE OF SPECIAL INSPECTIONS FOR THIS PROJECT. THE CONSTRUCTION DIVISIONS WHICH REQUIRE SPECIAL INSPECTIONS FOR THIS PROJECT ARE AS FOLLOWS:

- SOILS AND FOUNDATIONS
- CAST-IN-PLACE CONCRETE
- STRUCTURAL STEEL
- STRUCTURAL TIMBER

| INSPECTION AGENT                     | FIRM                | ADDRESS  |
|--------------------------------------|---------------------|--|
| 1. SPECIAL INSPECTOR                 | TBD                 | TBD  |
| 2. TESTING LABORATORY                | TBD                 | TBD  |
| 3. STRUCTURAL ENGINEER               | CMA ENGINEERS, INC. | 55 SOUTH COMMERCIAL ST.<br>MANCHESTER, NH<br>03101<br>(603) 627-0708 |
| 4. COLD-FORMED METAL DESIGN ENGINEER | TBD                 | TBD  |

NOTE: THE INSPECTION AND TESTING AGENT SHALL BE ENGAGED BY THE OWNER OR THE OWNER'S AGENT, AND NOT BY THE CONTRACTOR OR SUBCONTRACTOR WHOSE WORK IS TO BE INSPECTED OR TESTED. ANY CONFLICT OF INTEREST MUST BE DISCLOSED TO THE BUILDING OFFICIAL PRIOR TO COMMENCING WORK.

QUALIFICATIONS OF INSPECTORS / TESTING TECHNICIANS

THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTIONS ACTIVITIES ARE SUBJECT TO THE APPROVAL OF THE BUILDING OFFICIAL. THE CREDENTIALS OF ALL INSPECTORS AND TESTING TECHNICIANS SHALL BE PROVIDED IF REQUESTED.

KEY FOR MINIMUM QUALIFICATIONS OF INSPECTION AGENTS:

WHEN THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE DEEMS IT APPROPRIATE THAT THE INDIVIDUAL PERFORMING TEST OR INSPECTION HAVE A SPECIFIC CERTIFICATION OR LICENSE AS INDICATED BELOW, SUCH DESIGNATION SHALL APPEAR BELOW THE AGENCY NUMBER ON THE SCHEDULE.

PE/SE STRUCTURAL ENGINEER - A LICENSED SE OR PE SPECIALIZING IN THE DESIGN OF BUILDING STRUCTURES.  
 PE/GE GEOTECHNICAL ENGINEER - A LICENSED PE SPECIALIZING IN SOIL MECHANICS AND FOUNDATIONS.  
 EIT ENGINEER-IN-TRAINING - A GRADUATE ENGINEER WHO HAS PASSED THE FUNDAMENTALS OF ENGINEERING EXAMINATION.

AMERICAN CONCRETE INSTITUTE (ACI) CERTIFICATION  
 ACI-CFTT CONCRETE FIELD TESTING TECHNICIAN - GRADE 1  
 ACI-COI CONCRETE CONSTRUCTION INSPECTOR  
 ACI-LTT LABORATORY TESTING TECHNICIAN - GRADE 1 & 2  
 ACI-STT STRENGTH TESTING TECHNICIAN

AMERICAN WELDING SOCIETY (AWS) CERTIFICATION  
 AWS-CWI CERTIFIED WELDING INSPECTOR  
 AWS/AISC-SSI CERTIFIED STRUCTURAL STEEL INSPECTOR

AMERICAN SOCIETY OF NON-DESTRUCTIVE TESTING (ASNT) CERTIFICATION  
 ASNT NON-DESTRUCTIVE TESTING TECHNICIAN - LEVEL II OR III

INTERNATIONAL CODE COUNCIL (ICC) CERTIFICATION  
 ICC-SMS STRUCTURAL MASONRY SPECIAL INSPECTOR  
 ICC-SWSI STRUCTURAL STEEL AND WELDING SPECIAL INSPECTOR  
 ICC-SFSI SPRAY-APPLIED FIREPROOFING SPECIAL INSPECTOR  
 ICC-PCSI PRESTRESSED CONCRETE SPECIAL INSPECTOR  
 ICC-RCSI REINFORCED CONCRETE SPECIAL INSPECTOR

NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET)  
 NICET-CT CONCRETE TECHNICIAN - LEVELS I, II, III & IV  
 NICET-ST SOIL TECHNICIAN - LEVELS I, II, III & IV  
 NICET-GET GEOTECHNICAL ENGINEERING TECHNICIAN - LEVELS I, II, III & IV

EXTERIOR DESIGN INSTITUTE (EDI) CERTIFICATION  
 EDI-EIFS EIFS THIRD PARTY INSPECTOR

SOILS AND FOUNDATIONS

| ITEM                          | AGENT NO. & QUALIFICATIONS | SCOPE & FREQUENCY  |
|-------------------------------|----------------------------|--|
| 1. SHALLOW FOUNDATIONS        | 1 PE/GE                    | VERIFY THAT UNSTABLE BEARING MATERIALS ARE REMOVED VERIFY THE SOIL LOAD-BEARING CAPACITY COINCIDES WITH THAT IDENTIFIED IN THE CONSTRUCTION DOCUMENTS<br>FREQUENCY - AT EACH AFFECTED FOOTING  |
| 2. CONTROLLED STRUCTURAL FILL | 1                          | PERFORM SIEVE TESTS (ASTM D422 & D1140) AND MODIFIED PROCTOR TESTS (ASTM D1557) OF EACH SOURCE OF FILL MATERIAL.<br><br>INSPECT PLACEMENT, LIFT THICKNESS AND COMPACTION OF CONTROLLED FILL.<br><br>TEST DENSITY OF EACH LIFT OF FILL BY NUCLEAR METHOD (ASTM D 2922).<br><br>VERIFY EXTENT AND SLOPE OF FILL PLACEMENT.   |
| 3. TESTING FREQUENCY          | 2                          | MATERIAL UNDER SLABS OR STRUCTURES:<br>NATIVE MATERIAL OR BARROW MATERIAL<br>ONE FOR EVERY 500 S.F. OF SURFACE AREA OF THE SLAB FOR EVERY 2 LIFTS OF PLACED MATERIAL. LIFTS SHALL BE 12" AND REACH 95% COMPACTION.<br><br>STRUCTURAL FILL OR CRUSHED GRAVEL:<br>ONE FOR EVERY 500 S.F. OF SURFACE AREA OF THE SLAB FOR EVERY LIFT OF PLACED MATERIAL. LIFTS SHALL BE 12" AND REACH 95% COMPACTION.<br><br>MATERIAL AROUND STRUCTURES<br>BORROW MATERIAL OR OTHER MATERIAL NOTED ON DRAWINGS:<br>ONE FOR EVERY 500 L.F. OF ALL FOR EVERY 2 LIFTS OF MATERIAL PLACED. APPLIES TO MATERIAL PLACED AROUND STRUCTURES. LIFTS SHALL BE 12" AND REACH 95% COMPACTION. |
| 4. DEEP FOUNDATIONS           | 1                          | N/A  |
| 5. OTHER                      | 1                          | N/A  |

CAST-IN-PLACE CONCRETE

| ITEM                                | AGENT NO. & QUALIFICATIONS | SCOPE & FREQUENCY  |
|-------------------------------------|----------------------------|--|
| 1. MIX DESIGN                       | 2<br>ACI-CCI<br>ICC-RCSI   | REVIEW CONCRETE BATCH TICKETS AND VERIFY COMPLIANCE WITH APPROVED MIX DESIGN. VERIFY THAT WATER ADDED AT THE SITE DOES NOT EXCEED THAT ALLOWED BY THE MIX DESIGN.<br>FREQUENCY - EACH MIX DESIGN   |
| 2. MATERIAL CERTIFICATION           | 3<br>PE                    | REVIEW FOR COMPLIANCE WITH CONSTRUCTION DOCUMENTS  |
| 3. REINFORCEMENT INSTALLATION       | 2<br>ACI-CCI<br>ICC-RCSI   | INSPECT SIZE, SPACING, COVER, POSITIONING AND GRADE OF REINFORCING STEEL. REINFORCING BARS ARE FREE OF FORM OIL OR OTHER DELETERIOUS MATERIALS. INSPECT BAR LAPS AND MECHANICAL SPLICES. VERIFY THAT BARS ARE ADEQUATELY TIED AND SUPPORTED ON CHAIRS OR BOLSTERS.<br>INSPECTION FREQUENCY:<br>-25% OF STRIP FOOTINGS, FROST WALLS AND SLABS ON GRADE<br>-100% OF ISOLATED FOOTINGS, RETAINING WALLS, REINFORCED CONCRETE PIERS AND PUSH WALLS<br>-50% OF ALL OTHERS   |
| 4. ANCHOR RODS & FORMWORK GEOMETRY  | 2<br>ACI-CCI<br>ICC-RCSI   | INSPECT SIZE, POSITIONING AND EMBEDMENT OF ANCHOR RODS. INSPECT CONCRETE PLACEMENT AND CONSOLIDATION AROUND ANCHORS. REVIEW FORMWORK GEOMETRY FOR COMPLIANCE WITH THE STRUCTURAL CONSTRUCTION DOCUMENTS.<br>FREQUENCY - 100% OF ALL ANCHOR RODS, 25% OF FORMWORK   |
| 5. CONCRETE PLACEMENT               | 2<br>ACI-CCI<br>ICC-RCSI   | INSPECT PLACEMENT OF CONCRETE. VERIFY THAT CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION. VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED.<br>FREQUENCY - 100% OF ALL FOOTING PLACEMENTS AND THOSE EXCEEDING 5 CUBIC YARDS PLACED ELSEWHERE. TEST SLUMP AND TEMPERATURE OF EACH BATCH. TEST AIR CONTENT WHEN COMPRESSIVE STRENGTH TEST SPECIMENS ARE MOLDED.<br><br>OBTAIN ONE SET OF (4) STANDARD CYLINDERS FOR EACH COMPRESSIVE STRENGTH TEST. TEST ONE (1) CYLINDER AT 7-DAYS AND TWO (2) AT 28-DAYS. THE FINAL CYLINDER IS TO BE RETAINED IN RESERVE FOR LATER TESTING, IF REQUIRED.<br><br>TESTING FREQUENCY: (1) COMPRESSIVE STRENGTH TEST SHOULD BE PERFORMED FOR EACH DAY'S POUR EXCEEDING 5 CUBIC YARDS AND (1) ADDITIONAL SER FOR EACH 50 CUBIC YARDS MORE THAN THE FIRST 25 CUBIC YARDS. AT A MINIMUM, COMPRESSIVE STRENGTH TESTS SHOULD BE PERFORMED ON CONCRETE USED IN 30% OF ALL NEW INTERIOR FOOTINGS.<br><br>FIELD-CURED CYLINDERS - DURING COLD WEATHER CONCRETE OPERATIONS, PREPARE TWO (2) ADDITIONAL SETS OF TWO (2) STANDARD CYLINDERS TO BE CURED AT THE SITE, MAINTAINING CYLINDERS IN CONDITIONS AND AT TEMPERATURES OF THE IN-PLACE CONCRETE. PROTECT CYLINDERS FROM BEING HIT, DAMAGED AND FROM VIBRATION DURING INITIAL SET. PERFORM COMPRESSIVE STRENGTH TEST ON TWO (2) OF THE CYLINDERS AT 7-DAYS AND ON THE REMAINING TWO (2) CYLINDERS AT 28-DAYS. |
| 6. SAMPLING AND TESTING OF CONCRETE | 2<br>ACI-CFTT<br>ACI-STT   | TEST CONCRETE COMPRESSIVE STRENGTH (ASTM C31 & C39), SLUMP (ASTM C143), AIR CONTENT (ASTM C231 OR C 173) AND TEMPERATURE (ASTM C1064).<br><br>OBTAIN ONE SET OF (4) STANDARD CYLINDERS FOR EACH COMPRESSIVE STRENGTH TEST. TEST ONE (1) CYLINDER AT 7-DAYS AND TWO (2) AT 28-DAYS. THE FINAL CYLINDER IS TO BE RETAINED IN RESERVE FOR LATER TESTING, IF REQUIRED.<br><br>TESTING FREQUENCY: (1) COMPRESSIVE STRENGTH TEST SHOULD BE PERFORMED FOR EACH DAY'S POUR EXCEEDING 5 CUBIC YARDS AND (1) ADDITIONAL SER FOR EACH 50 CUBIC YARDS MORE THAN THE FIRST 25 CUBIC YARDS. AT A MINIMUM, COMPRESSIVE STRENGTH TESTS SHOULD BE PERFORMED ON CONCRETE USED IN 30% OF ALL NEW INTERIOR FOOTINGS.<br><br>FIELD-CURED CYLINDERS - DURING COLD WEATHER CONCRETE OPERATIONS, PREPARE TWO (2) ADDITIONAL SETS OF TWO (2) STANDARD CYLINDERS TO BE CURED AT THE SITE, MAINTAINING CYLINDERS IN CONDITIONS AND AT TEMPERATURES OF THE IN-PLACE CONCRETE. PROTECT CYLINDERS FROM BEING HIT, DAMAGED AND FROM VIBRATION DURING INITIAL SET. PERFORM COMPRESSIVE STRENGTH TEST ON TWO (2) OF THE CYLINDERS AT 7-DAYS AND ON THE REMAINING TWO (2) CYLINDERS AT 28-DAYS.  |
| 7. CURING AND PROTECTION            | 2<br>ACI-CCI<br>ICC-RCSI   | INSPECT CURING, COLD WEATHER PROTECTION AND HOT WEATHER PROTECTION PROCEDURES.   |

STRUCTURAL STEEL


| ITEM   | AGENT NO. & QUALIFICATIONS        | SCOPE & FREQUENCY  |
|--|-----------------------------------|--|
| 1. FABRICATOR CERTIFICATION AND QUALITY CONTROL PROCEDURES | PE/SE<br>AWS/AISC-SSI<br>ICC-SWSI | REVIEW SHOP FABRICATION AND QUALITY CONTROL PROCEDURE  |
| 2. MATERIAL CERTIFICATION                                  | PE/SE<br>AWS/AISC-SSI<br>ICC-SWSI | REVIEW CERTIFIED MILL TEST REPORTS AND IDENTIFICATION MARKINGS ON WIDE-FLANGE SHAPES, HIGH STRENGTH BOLTS, NUTS AND WELDING ELECTRODES.  |
| 3. OPEN WEB STEEL JOISTS                                   | 1<br>AWS/AISC-SSI<br>ICC-SWSI     | N/A  |
| 4. BOLTING   | 1<br>AWS/AISC-SSI<br>ICC-SWSI     | INSPECT INSTALLATION AND TIGHTENING OF HIGH-STRENGTH BOLTS. VERIFY THAT SPLINES HAVE SEPARATED FROM TENSION CONTROL BOLTS. VERIFY PROPER TIGHTENING SEQUENCES.<br>FREQUENCY - 25% OF BEARING-TYPE BOLTS. CONTINUOUS INSPECTION OF BOLTS IN SLIP-CRITICAL CONDITIONS.   |
| 5. WELDING   | 1<br>AWS-CWI<br>ASNT              | VISUALLY INSPECT ALL WELDS, INSPECT PRE-HEAT, POST-HEAT AND SURFACE PREPARATION BETWEEN PASSES.<br>VERIFY SIZE AND LENGTH OF FILLET WELDS.<br>REVIEW WELDER QUALIFICATION STATEMENTS BY FABRICATOR AND ERECTOR.<br>FREQUENCY -<br>100% SHOP & FIELD FILLET (>5/16", MULTI-PASS) AND PARTIAL PENETRATION GROOVE WELDS MUST BE SPOT TESTED AT A RATE OF ONE (1) TEST PER MEMBER USING THE MAGNETIC PARTICLE TEST METHOD.<br>100% OF ALL SHOP & FIELD COMPLETE PENETRATION GROOVE WELDS MUST BE TESTED USING THE ULTRASONIC METHOD. |
| 6. STRUCTURAL DETAILS                                      | 3<br>PE/SE                        | VERIFY THAT THE GENERAL GEOMETRY OF THE ERECTED STEEL FRAME CONFORMS TOP THE CONSTRUCTION DOCUMENTS AND APPROVED SHOP DRAWINGS.<br>FREQUENCY - TBD   |
| 7. METAL DECK  | 2<br>AWS-CWI                      | N/A  |

COLD-FORMED METAL (LIGHT GAGE STEEL) FRAMING

| ITEM                      | AGENT NO. & QUALIFICATIONS | SCOPE & FREQUENCY  |
|---------------------------|----------------------------|--|
| 1. MEMBER SIZES           | 4<br>TO BE APPROVED BY EOR | VERIFY CONFORMANCE OF MEMBER SHAPES INCLUDING THEIR DEPTHS AND FLANGE WIDTHS TO CONSTRUCTION DOCUMENTS.<br>FREQUENCY - AS NECESSARY  |
| 2. MATERIAL THICKNESS     | 4<br>TO BE APPROVED BY EOR | VERIFY MATERIAL THICKNESS FOR CONFORMANCE WITH CONSTRUCTION DOCUMENTS.<br>FREQUENCY - AS NECESSARY   |
| 3. MATERIAL PROPERTIES    | 4<br>TO BE APPROVED BY EOR | VERIFY MATERIAL PROPERTIES FOR CONFORMANCE WITH CONSTRUCTION DOCUMENTS.<br>FREQUENCY - AS NECESSARY  |
| 4. MECHANICAL CONNECTIONS | 4<br>TO BE APPROVED BY EOR | VERIFY THAT CONNECTIONS COMPLY WITH CONSTRUCTION DOCUMENTS. VERIFY THAT SIZE AND QUANTITY OF LIGHT GRADE FASTENERS COMPLY WITH CONSTRUCTION DOCUMENTS.<br>FREQUENCY - SPOT CHECK 10% |
| 5. FRAMING DETAILS        | 4<br>TO BE APPROVED BY EOR | VERIFY CONFORMANCE OF FRAMING CONFIGURATIONS AND ALIGNMENT TO CONSTRUCTION DOCUMENTS.<br>FREQUENCY - AS NECESSARY  |

|   |                    |                                     |                    |
|---|--------------------|-------------------------------------|--------------------|
| designed by:<br>LBK/JLG   | drawn by:<br>LBK   | approved by:<br>JLG                 | scale:<br>No Scale |
| date:<br>April 2015   | project no:<br>938 | file name:<br>938 - Foundations.dwg |                    |
| Town of Derry, NH<br>Department of Public Works<br>Transfer Station & Recycling Facility<br>Construction Drawings |                    | Structural Notes II                 |                    |
| drawing no. S2  |                    |                                     |                    |
| sheet: 2 of 8   |                    |                                     |                    |

JLG  
 4/24/15  
 date  
 0  
 no.  
 RELEASED FOR BIDDING  
 revision

Design-Build General Contractor  
  
 Hutler Construction Corporation  
 New Ipswich, New Hampshire

CMA ENGINEERS  
 CIVIL/ENVIRONMENTAL ENGINEERS  
 Portsmouth, NH Manchester, NH Portland, ME  
**Robert E. Doyle PE RA**  
 603.738.2872  
 22 West Concord Street  
 Dover, NH 03820  
 rodoyle@cmahen.com

**METAL BUILDING NOTES**

1. THE FOUNDATION IS DESIGNED TO CARRY LOADS AND REACTIONS AS PROVIDED FOR A PRELIMINARY DESIGN BY NUCOR BUILDINGS. THE METAL BUILDING MANUFACTURER, WHETHER IT IS NUCOR OR OTHER, SHALL DESIGN BUILDING TO STAY WITHIN REACTION LIMITS SHOWN ON THE DRAWINGS.

GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING SUPPLIED BUILDING HAS BEEN DESIGNED BY MANUFACTURER IN ACCORDANCE WITH IBC 2009 TO CARRY ALL THE DEAD LOADS OF THE VARIOUS STRUCTURAL, ARCHITECTURAL, MECHANICAL, AND OTHER SYSTEMS AND THE LIVE LOADS INDICATED ON THE STRUCTURAL NOTES SHEET.

2. CMA ENGINEERS, INC. HAS PROVIDED FOUNDATION DESIGN ONLY AND IS NOT RESPONSIBLE FOR THE METAL BUILDING DESIGN ITSELF. BUILDING DRAWINGS, STAMPED BY A NEW HAMPSHIRE REGISTERED ENGINEER, SHALL BE PROVIDED TO THE LOCAL BUILDING DEPARTMENT BY THE METAL BUILDING MANUFACTURER.

3. METAL BUILDING MANUFACTURER SHALL BE A MEMBER OF MBMA AND AN AISC-CERTIFIED MANUFACTURER OF METAL BUILDING SYSTEMS AND COMPONENTS. METAL BUILDING MANUFACTURER SHALL HAVE A MINIMUM OF FIVE (5) CONSECUTIVE YEARS IN BUSINESS OF MANUFACTURING METAL BUILDINGS AND COMPONENTS WITHIN THE UNITED STATES.

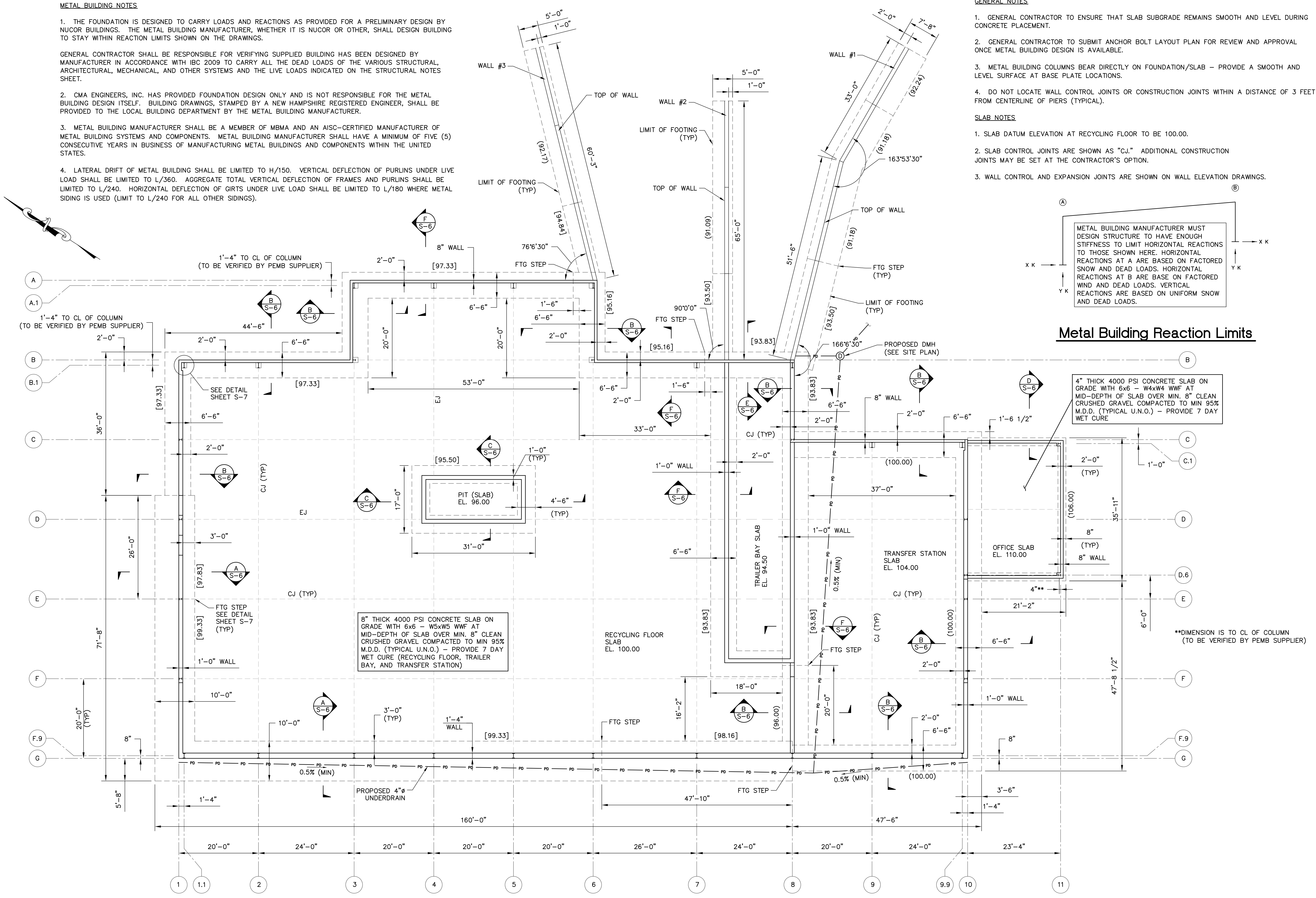
4. LATERAL DRIFT OF METAL BUILDING SHALL BE LIMITED TO H/150. VERTICAL DEFLECTION OF PURLINS UNDER LIVE LOAD SHALL BE LIMITED TO L/360. AGGREGATE TOTAL VERTICAL DEFLECTION OF FRAMES AND PURLINS SHALL BE LIMITED TO L/240. HORIZONTAL DEFLECTION OF GIRTS UNDER LIVE LOAD SHALL BE LIMITED TO L/180 WHERE METAL SIDING IS USED (LIMIT TO L/240 FOR ALL OTHER SIDINGS).

**GENERAL NOTES**

1. GENERAL CONTRACTOR TO ENSURE THAT SLAB SUBGRADE REMAINS SMOOTH AND LEVEL DURING CONCRETE PLACEMENT.
2. GENERAL CONTRACTOR TO SUBMIT ANCHOR BOLT LAYOUT PLAN FOR REVIEW AND APPROVAL ONCE METAL BUILDING DESIGN IS AVAILABLE.
3. METAL BUILDING COLUMNS BEAR DIRECTLY ON FOUNDATION/SLAB - PROVIDE A SMOOTH AND LEVEL SURFACE AT BASE PLATE LOCATIONS.
4. DO NOT LOCATE WALL CONTROL JOINTS OR CONSTRUCTION JOINTS WITHIN A DISTANCE OF 3 FEET FROM CENTERLINE OF PIERS (TYPICAL).

**SLAB NOTES**

1. SLAB DATUM ELEVATION AT RECYCLING FLOOR TO BE 100.00.
2. SLAB CONTROL JOINTS ARE SHOWN AS "CJ." ADDITIONAL CONSTRUCTION JOINTS MAY BE SET AT THE CONTRACTOR'S OPTION.
3. WALL CONTROL AND EXPANSION JOINTS ARE SHOWN ON WALL ELEVATION DRAWINGS.



METAL BUILDING MANUFACTURER MUST DESIGN STRUCTURE TO HAVE ENOUGH STIFFNESS TO LIMIT HORIZONTAL REACTIONS TO THOSE SHOWN HERE. HORIZONTAL REACTIONS AT A ARE BASED ON FACTORED SNOW AND DEAD LOADS. HORIZONTAL REACTIONS AT B ARE BASED ON FACTORED WIND AND DEAD LOADS. VERTICAL REACTIONS ARE BASED ON UNIFORM SNOW AND DEAD LOADS.

**Metal Building Reaction Limits**

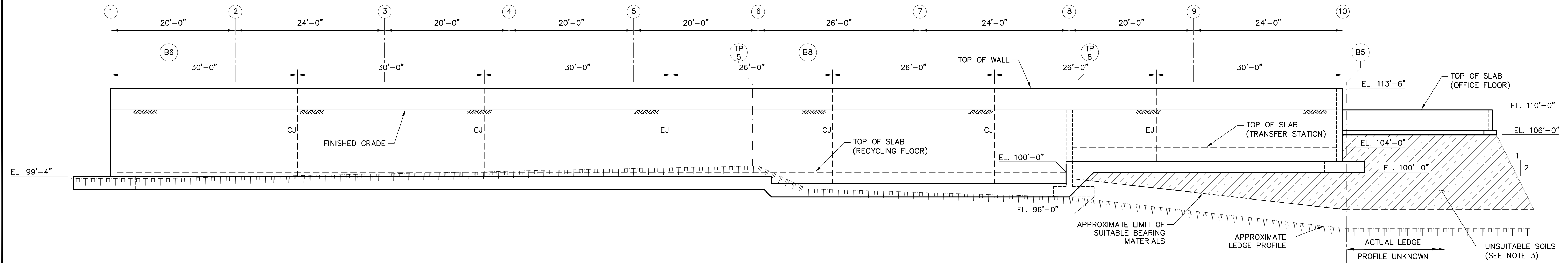
4" THICK 4000 PSI CONCRETE SLAB ON GRADE WITH 6x6 - W4x4 WWF AT MID-DEPTH OF SLAB OVER MIN. 8" CLEAN CRUSHED GRAVEL COMPACTED TO MIN 95% M.D.D. (TYPICAL U.N.O.) - PROVIDE 7 DAY WET CURE

8" THICK 4000 PSI CONCRETE SLAB ON GRADE WITH 6x6 - W5x5 WWF AT MID-DEPTH OF SLAB OVER MIN. 8" CLEAN CRUSHED GRAVEL COMPACTED TO MIN 95% M.D.D. (TYPICAL U.N.O.) - PROVIDE 7 DAY WET CURE (RECYCLING FLOOR, TRAILER BAY, AND TRANSFER STATION)

**Plan**  
Scale: 3/32" = 1'-0"

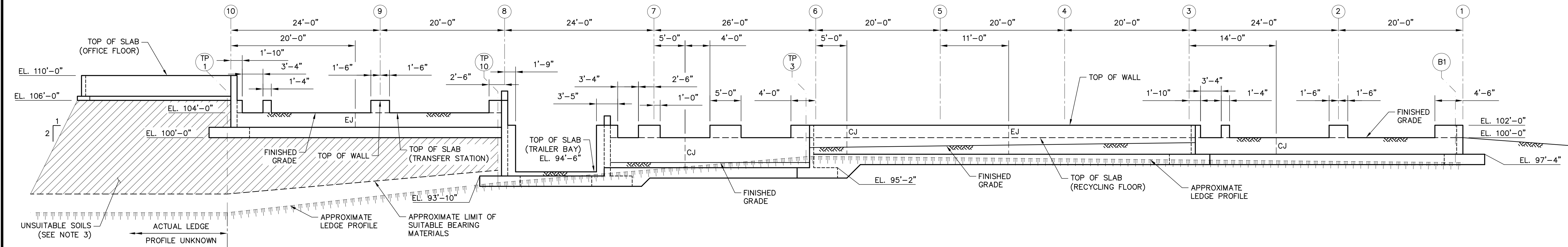
**LEGEND**  
[XX.XX] BOTTOM OF FOOTING ELEVATION (ON SOIL)  
[XX.XX] TOP OF FOOTING ELEVATION (ON BEDROCK)

|  |  |   |                           |           |
|--|--|---|---------------------------|-----------|
| <p>Design-Build General Contractor</p> <p><b>HUTTER</b></p> <p>Hutter Construction Corporation<br/>New Ipswich, New Hampshire</p>  |  | <p>0</p> <p>RELEASED FOR BIDDING</p>              | <p>4/24/15</p> <p>JLG</p> | <p>by</p> |
| <p>CMA ENGINEERS</p> <p>CIVIL/ENVIRONMENTAL ENGINEERS</p> <p>Portsmouth, N.H. Manchester, N.H. Portland, ME</p> <p><b>Robert E. Doyle PE RA</b></p> <p>603.738.2872<br/>rodoyle@cmains.com</p> |  | <p>22 West Concord Street<br/>Dover, NH 03820</p> |                           |           |
| <p>designed by: LBK/JLG<br/>drawn by: LBK<br/>approved by: JLG<br/>date: April 2015<br/>project no: 938<br/>file name: 938 - Foundations.dwg<br/>scale: As Noted</p>                           |  |   |                           |           |
| <p>Town of Derry, NH<br/>Department of Public Works<br/>Transfer Station &amp; Recycling Facility<br/>Construction Drawings<br/>Foundation Plan</p>  |  |   |                           |           |
| <p>sheet: 3 of 8</p>   |  |   |                           |           |



**Elevation - West Foundation Wall**

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



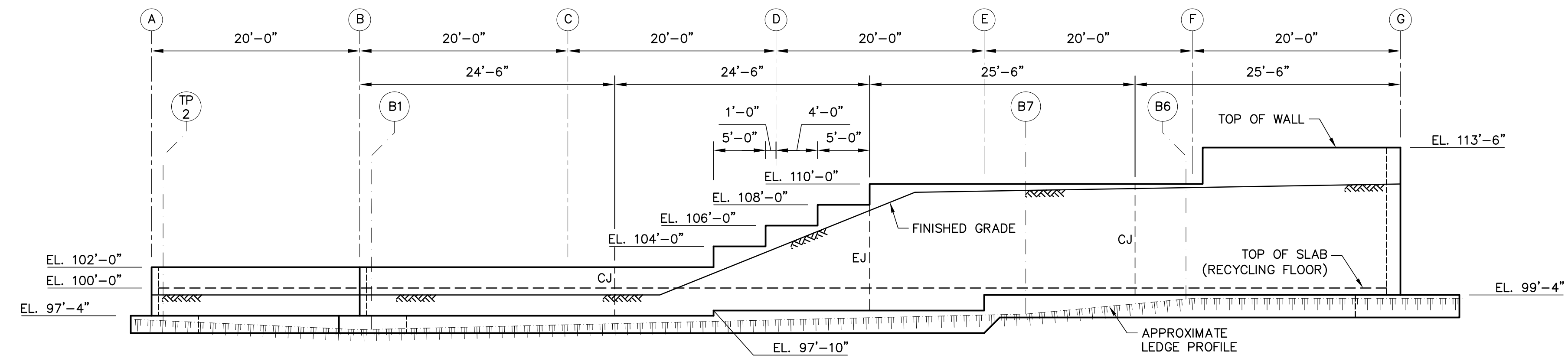
**Elevation - East Foundation Wall**

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

- NOTES:**
1. THE NOTATION "EJ" AND "CJ" INDICATE LOCATIONS OF EXPANSION AND CONSTRUCTION / CONTRACTION JOINTS. SEE DRAWING S-6 AND S-7 FOR ADDITIONAL FOUNDATION WALL DETAILS.
  2. SEE DRAWINGS S-1 AND S-2 FOR GENERAL NOTES.
  3. UNSUITABLE SOILS TO BE EXCAVATED AND BACKFILLED WITH GRAVEL (NHDOT ITEM 304.2). BACKFILL SHALL BE COMPACTED TO MIN 95% M.D.D. (UON). EXCAVATIONS SHALL INCLUDE AREAS UNDER SLABS AND FOOTINGS AND SHALL EXTEND OUTWARD FROM FOOTING LIMITS AT 1H:2V.
  4. WHEN PLACED ON NATIVE SOIL, FOOTINGS AND SLABS SHALL BEAR ON UNDISTURBED OR PROOF ROLLED ORIGINAL GROUND SURFACE.

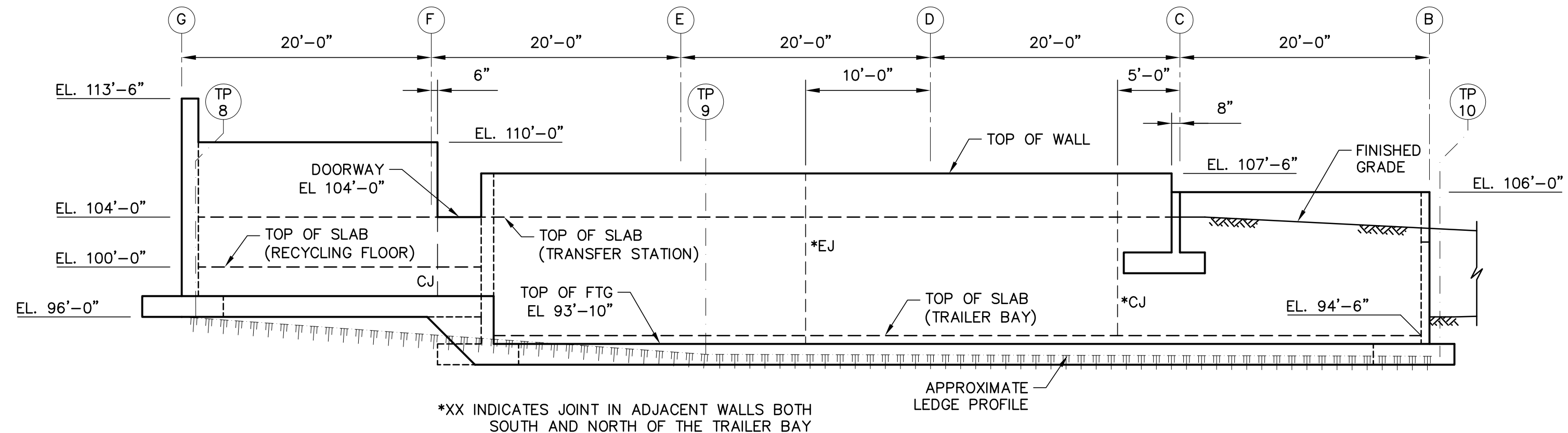
TP X BX NOTE LOCATIONS OF TEST PITS AND BORINGS

|   |                    |                                     |                                  |
|---|--------------------|-------------------------------------|----------------------------------|
| designed by:<br>LBK/JLG   | drawn by:<br>LBK   | approved by:<br>JLG                 | scale:<br>As Noted               |
| date:<br>April 2015   | project no:<br>938 | file name:<br>938 - Foundations.dwg |                                  |
| <b>Town of Derry, NH</b><br>Department of Public Works<br>Transfer Station & Recycling Facility<br>Construction Drawings  |                    | <b>Foundation Elevations I</b>      |                                  |
| drawing no. <b>S4</b>   |                    |                                     |                                  |
| sheet: 4 of 8   |                    |                                     |                                  |
| Design-Build General Contractor<br><b>HUTTER</b><br>Hutler Construction Corporation<br>New Ipswich, New Hampshire   |                    |                                     | RELEASED FOR BIDDING<br>0<br>no. |
| <b>CMA ENGINEERS</b><br>CIVIL/ENVIRONMENTAL ENGINEERS<br>Portsmouth, NH Manchester, NH Portland, ME<br><b>Robert E. Doyle PE RA</b><br>603.738.2872<br>22 West Concord Street<br>Dover, NH 03820<br>rodoylepe@gmail.com |                    |                                     | 4/24/15<br>date<br>JLG<br>by     |



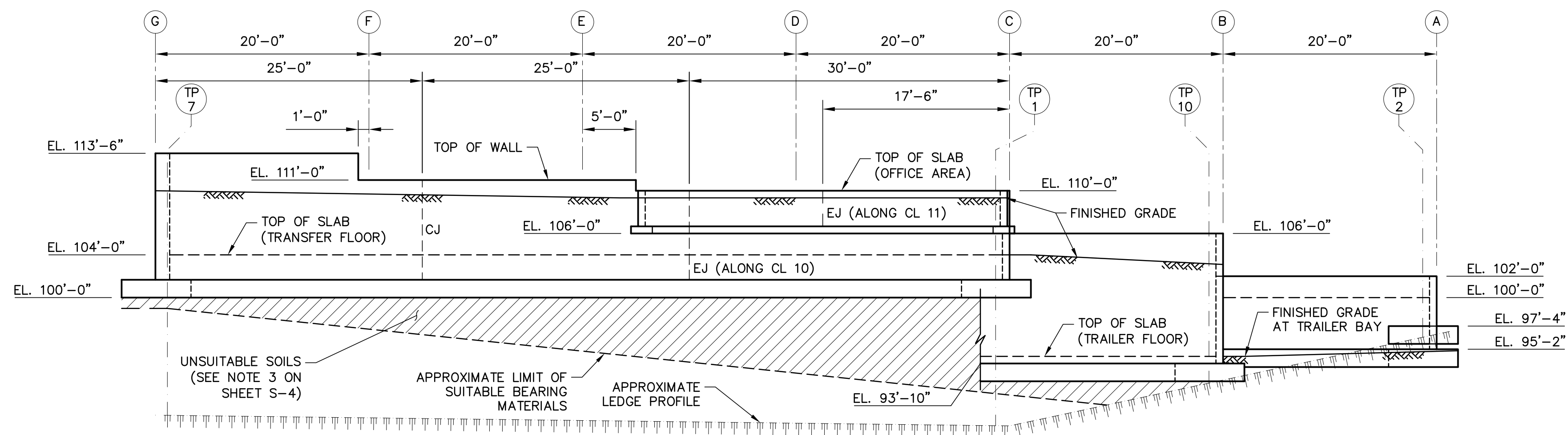
**Elevation - North Foundation Wall**

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



**Elevation - Interior Foundation Wall - Column Line 8**

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



**Elevation - South Foundation Wall**

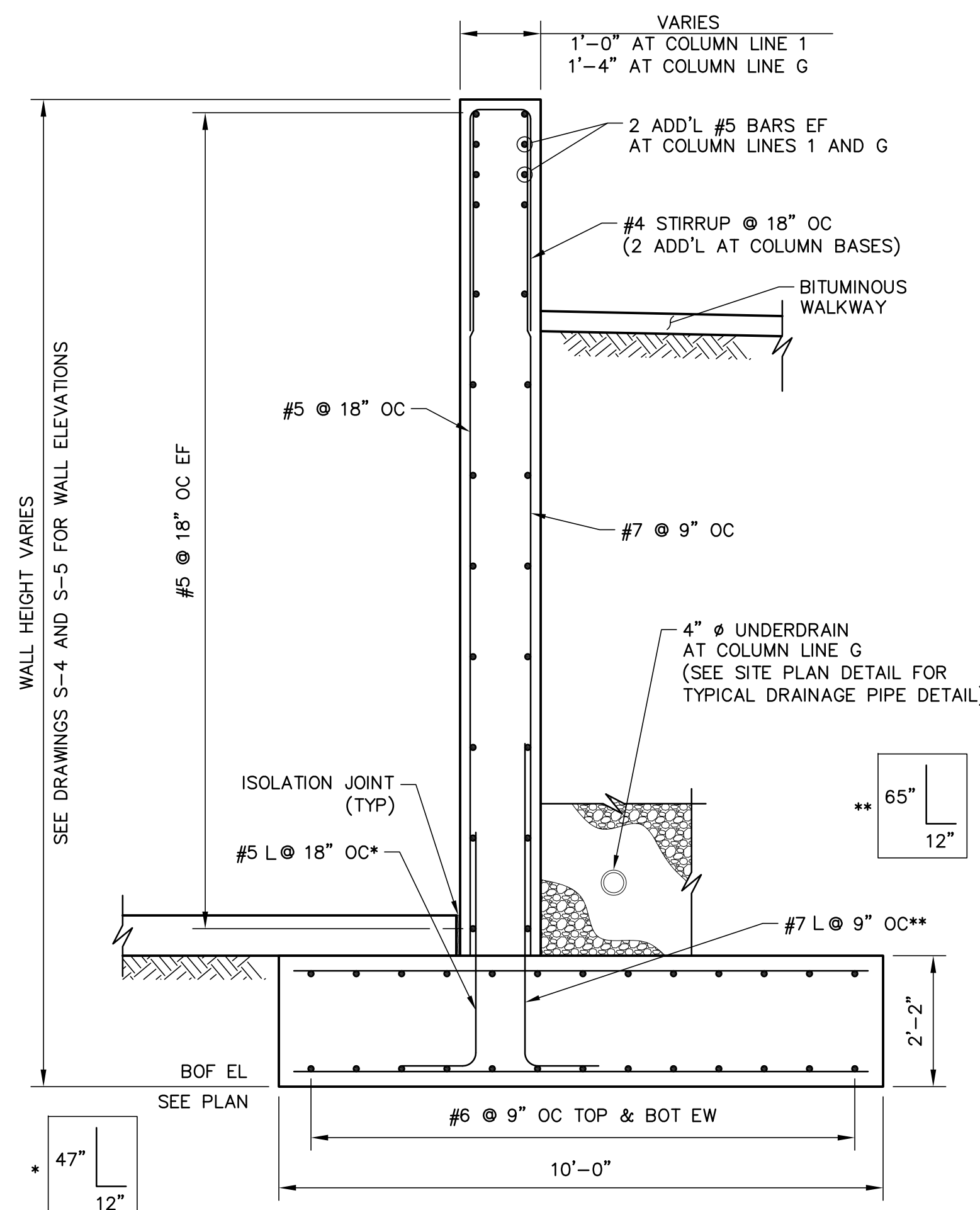
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**NOTES:**

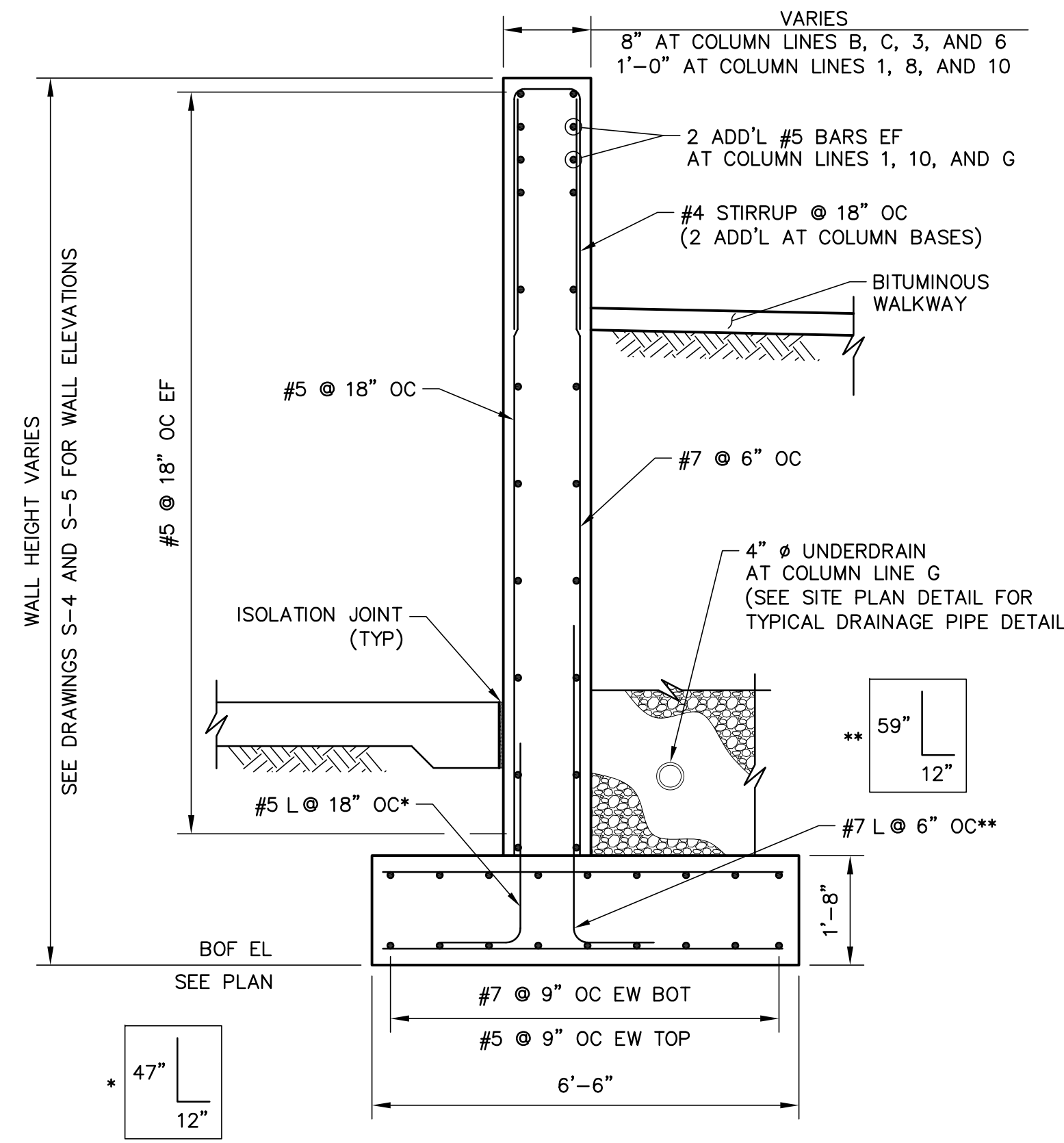
1. THE NOTATION "EJ" AND "CJ" INDICATE LOCATIONS OF EXPANSION AND CONSTRUCTION / CONTRACTION JOINTS. SEE DRAWING S-6 AND S-7 FOR ADDITIONAL FOUNDATION WALL DETAILS.
2. SEE DRAWINGS S-1 AND S-2 FOR GENERAL NOTES.
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4. WHEN PLACED ON NATIVE SOIL, FOOTINGS AND SLABS SHALL BEAR ON UNDISTURBED OR PROOF ROLLED ORIGINAL GROUND SURFACE.

TP X BX NOTE LOCATIONS OF TEST PITS AND BORINGS

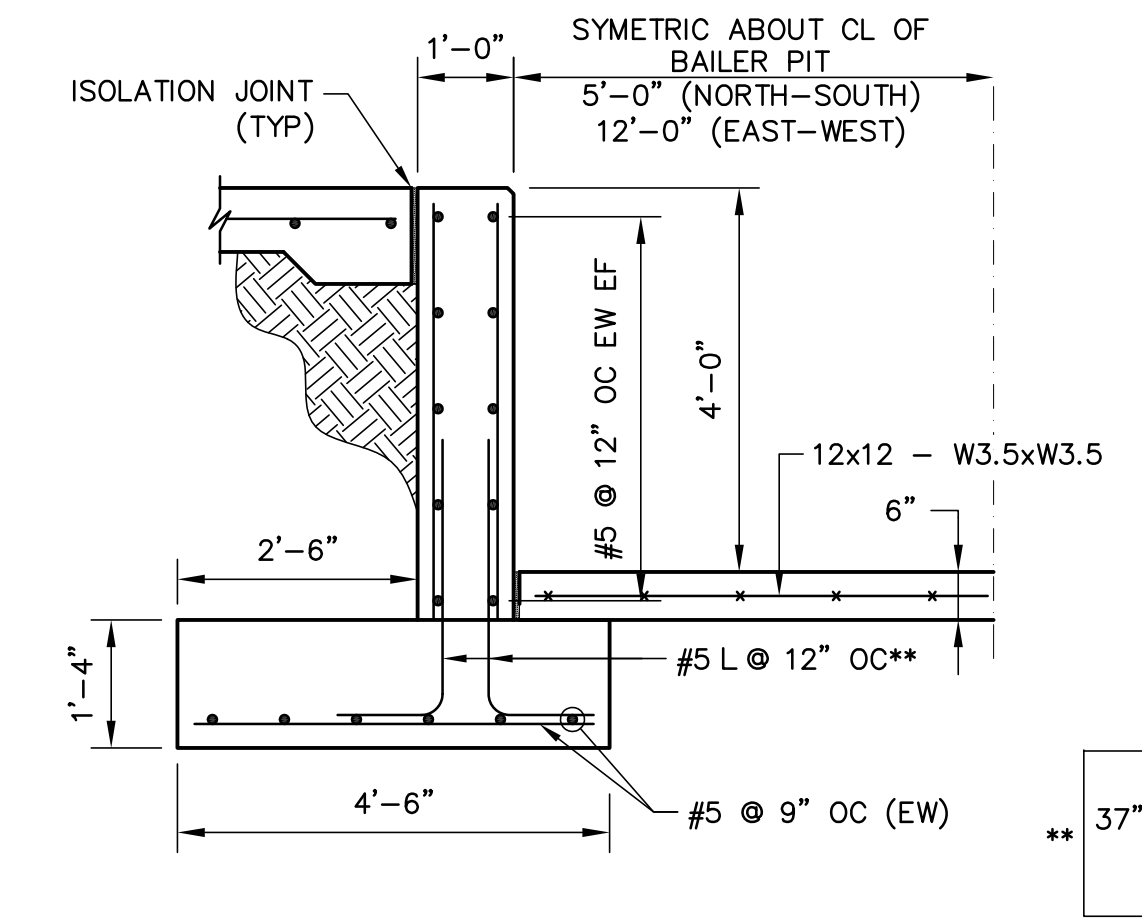
|   |  |  |
|---|--|--|
| Design-Build General Contractor<br><b>HUTTER</b><br>Hutten Construction Corporation<br>New Ipswich, New Hampshire   |  | RELEASED FOR BIDDING<br>4/24/15<br>JLG<br>date                                   |
| <b>CMA</b><br>ENGINEERS<br>CIVIL/ENVIRONMENTAL ENGINEERS<br>Portsmouth, N.H. Manchester, NH Portland, ME<br><b>Robert E. Doyle PE RA</b><br>603.738.2872<br>22 West Concord Street<br>Dover, NH 03820<br>roylepen@gmail.com |  | 0<br>no.   |
| designed by:<br>LBK/JLG<br>drawn by:<br>LBK<br>approved by:<br>JLG<br>scale:<br>As Noted  |  | date:<br>April 2015<br>project no:<br>938<br>file name:<br>938 - Foundations.dwg |
| Town of Derry, NH<br>Department of Public Works<br>Transfer Station & Recycling Facility<br>Construction Drawings<br>Foundation Elevations II   |  | drawing no.<br><b>S5</b><br>sheet: 5 of 8  |



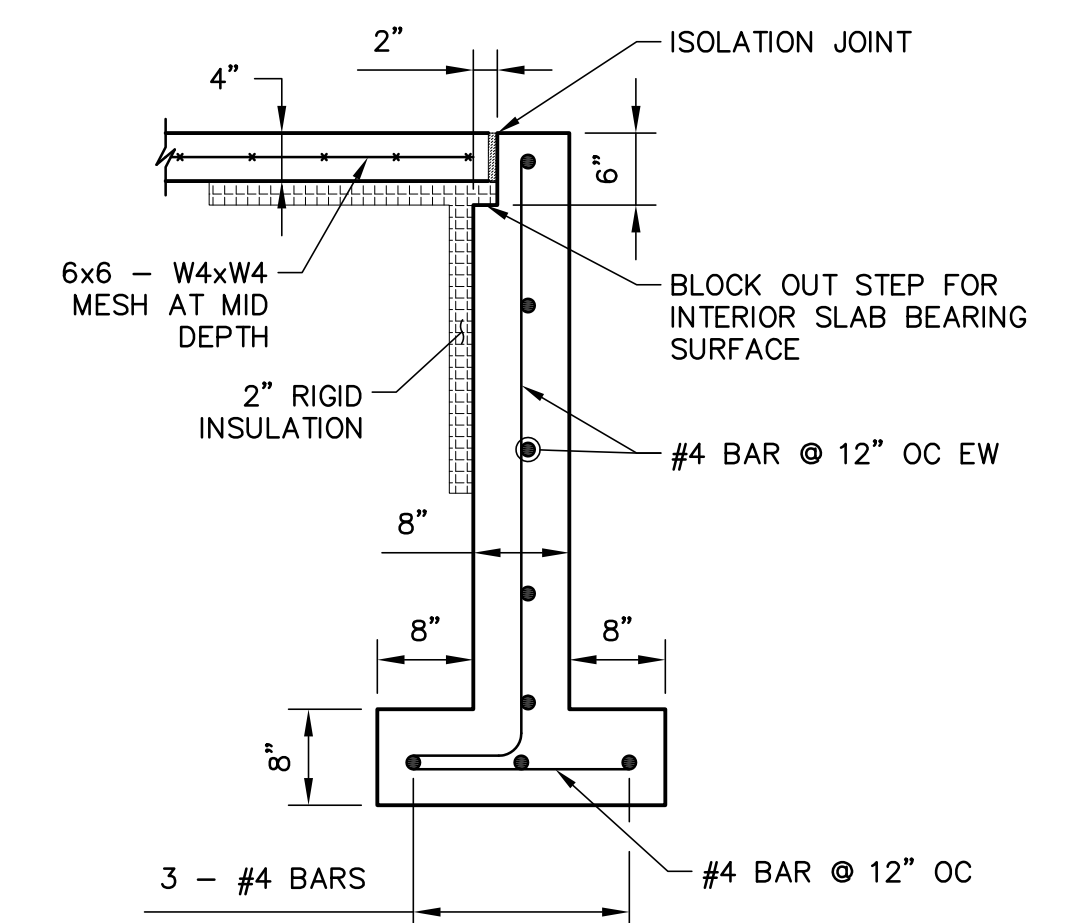
**Section A**  
Scale: 1/2"=1'-0"  
S-3



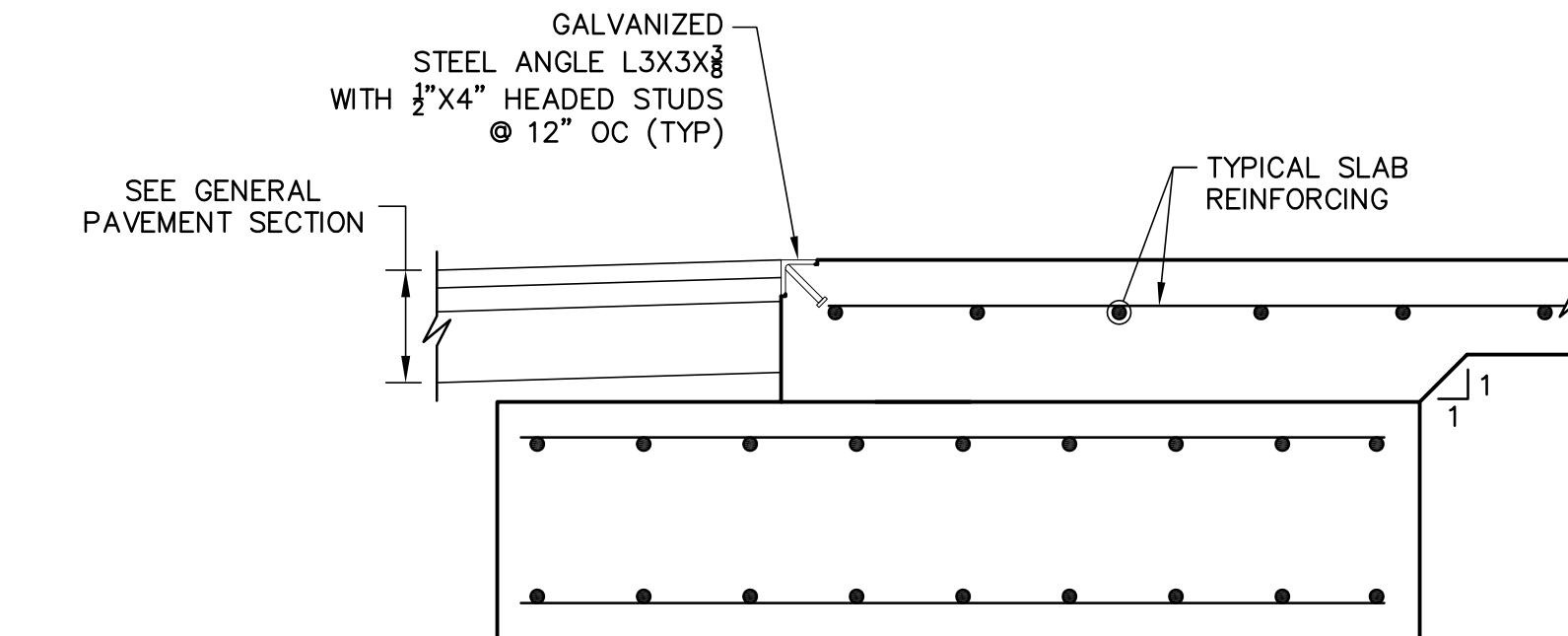
**Section B**  
Scale: 1/2"=1'-0"  
S-3



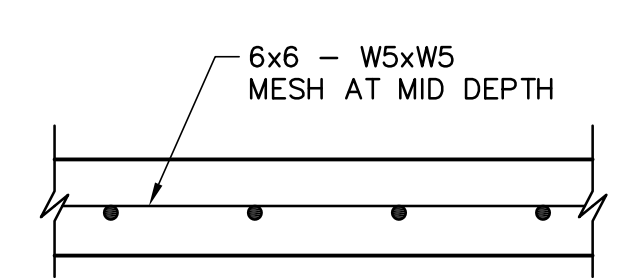
**Section C**  
Scale: 1/2"=1'-0"  
S-3



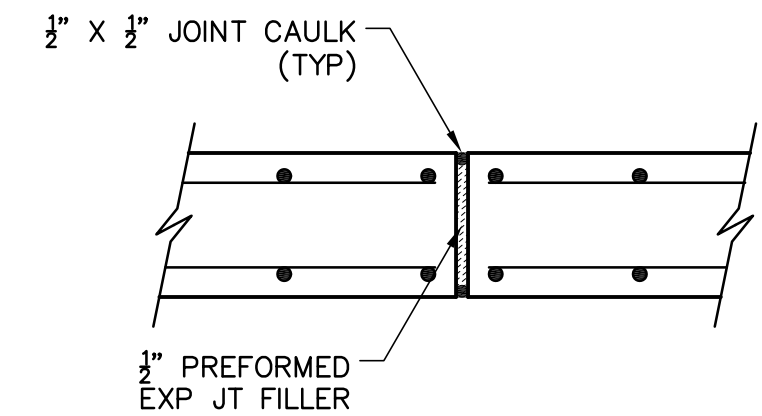
**Section D**  
Scale: 3/4"=1'-0"  
S-3



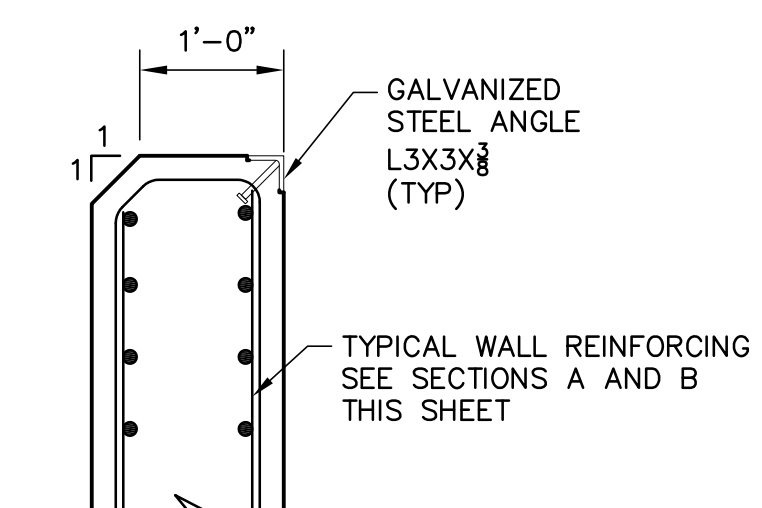
**Section E**  
Scale: 3/4"=1'-0"  
S-3



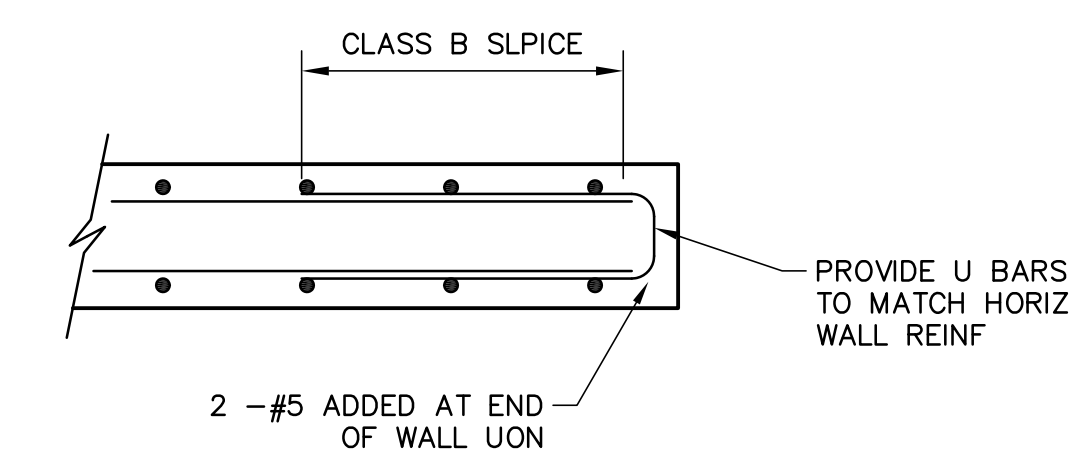
**Typical Slab Reinforcement**  
NOT TO SCALE



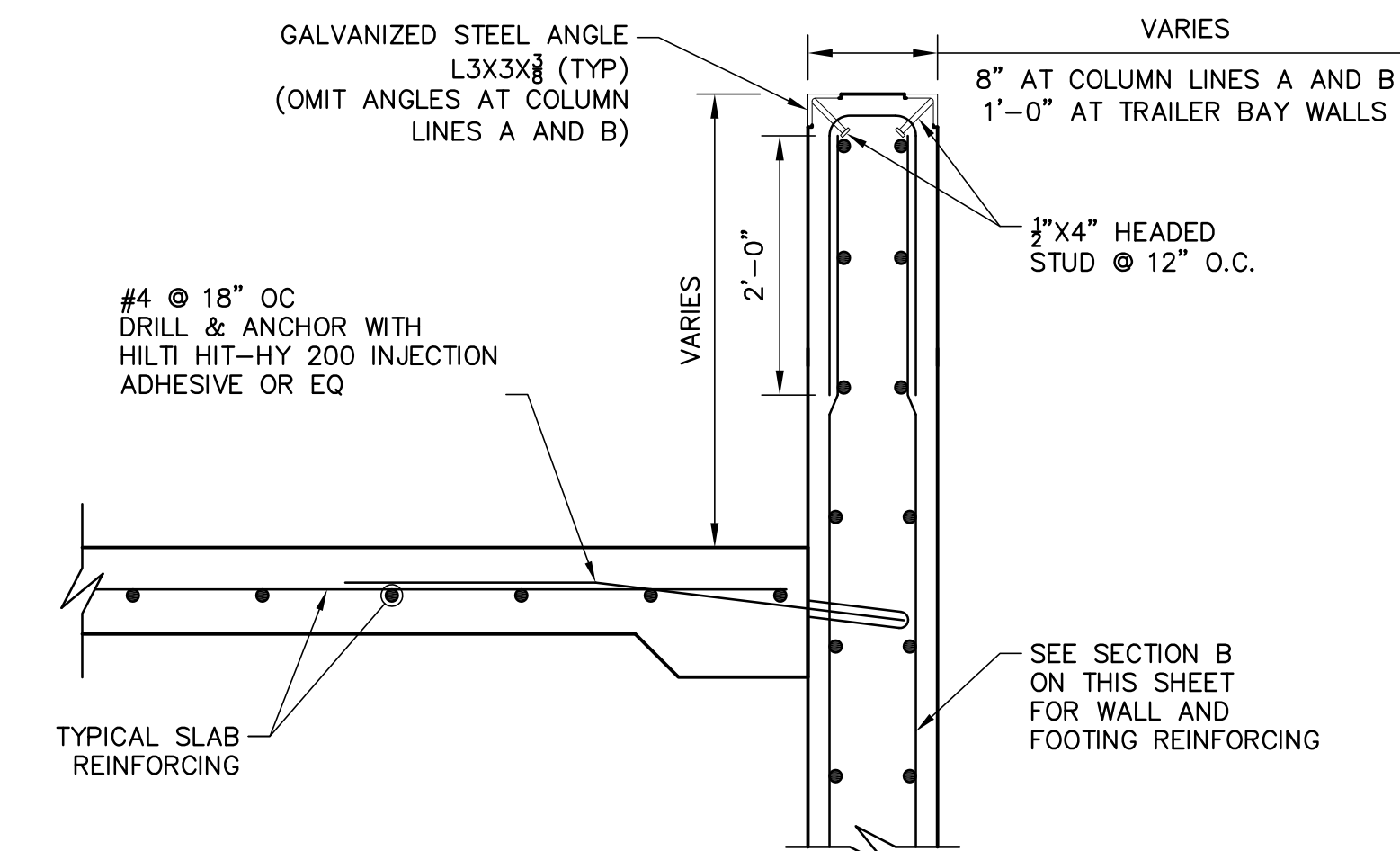
**Typical Vertical Wall Expansion Joint Detail**  
NOT TO SCALE



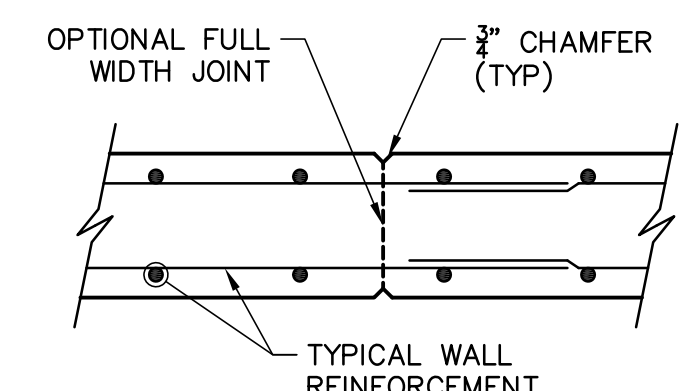
**Top of Wall Detail at Overhead Doors Along Column Line G**  
NOT TO SCALE



**End Reinforcing**  
NOT TO SCALE

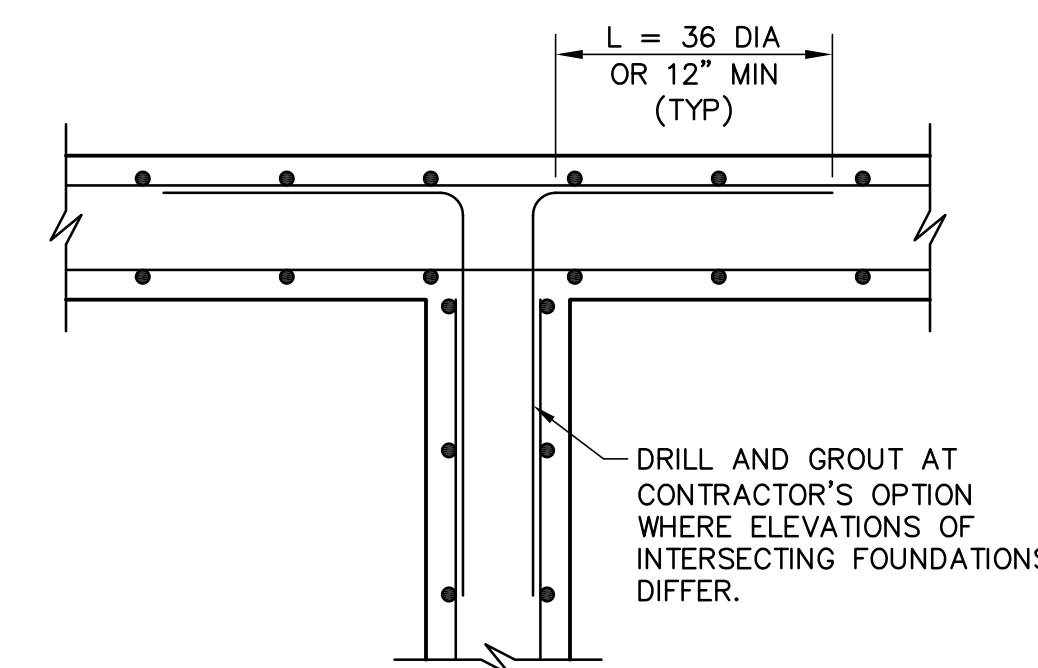


**Section F**  
Scale: 3/4"=1'-0"  
S-3

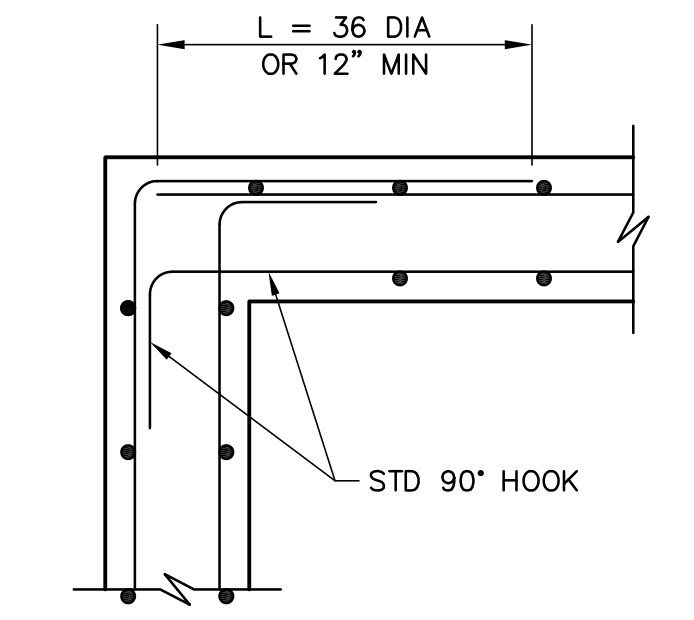


**Typical Vertical Wall Construction/Contraction Joint**  
NOT TO SCALE

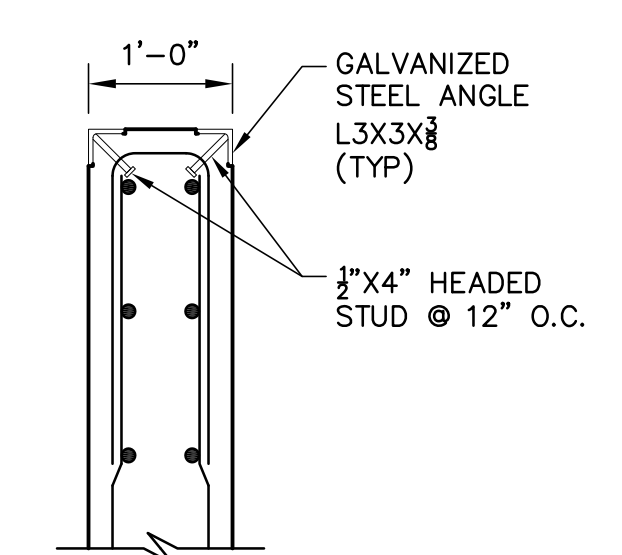
- NOTE:**
1. JOINT CAULK TO EXTEND FROM TOP OF FOOTING TO TOP OF WALL AND HORIZONTALLY ALONG TOP OF WALL.
  2. NO REINFORCEMENT SHALL PASS THROUGH EXPANSION JOINTS. REINFORCING SHALL PASS THROUGH CONSTRUCTION AND CONTRACTION JOINTS.



**Horizontal Wall Reinforcing at Tee**  
NOT TO SCALE

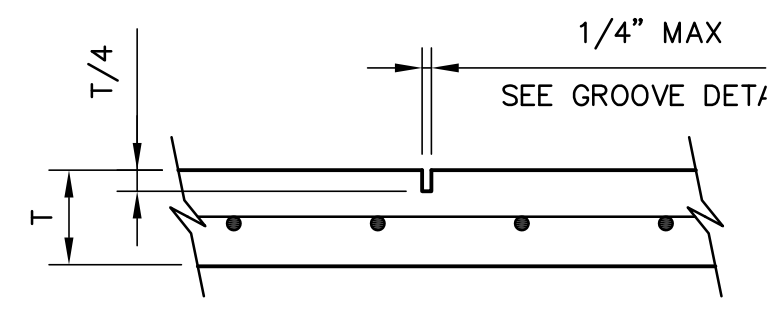


**Horizontal Wall Reinforcing at Corner**  
NOT TO SCALE

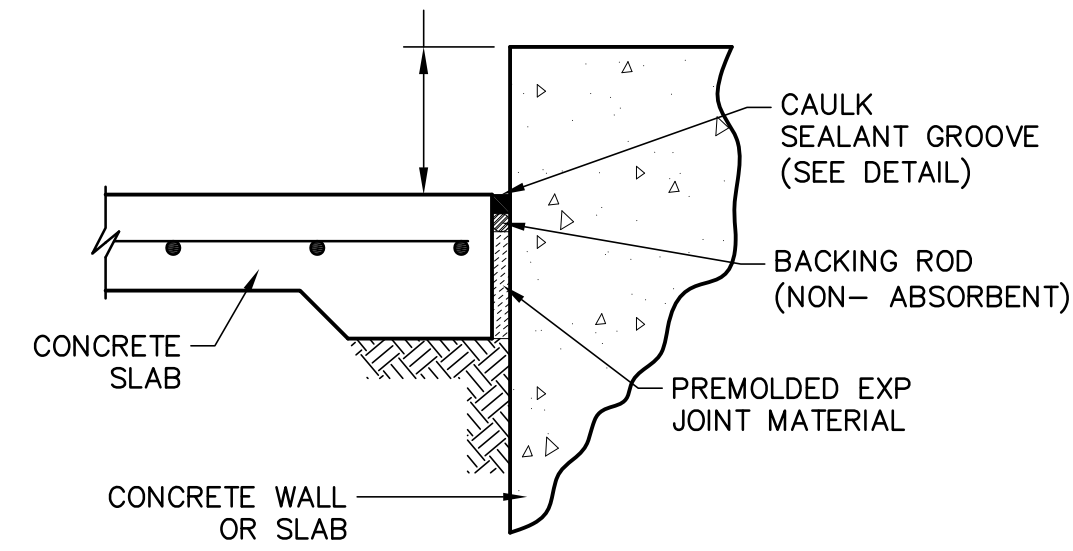


**Section G**  
Scale: 3/4"=1'-0"  
S-8

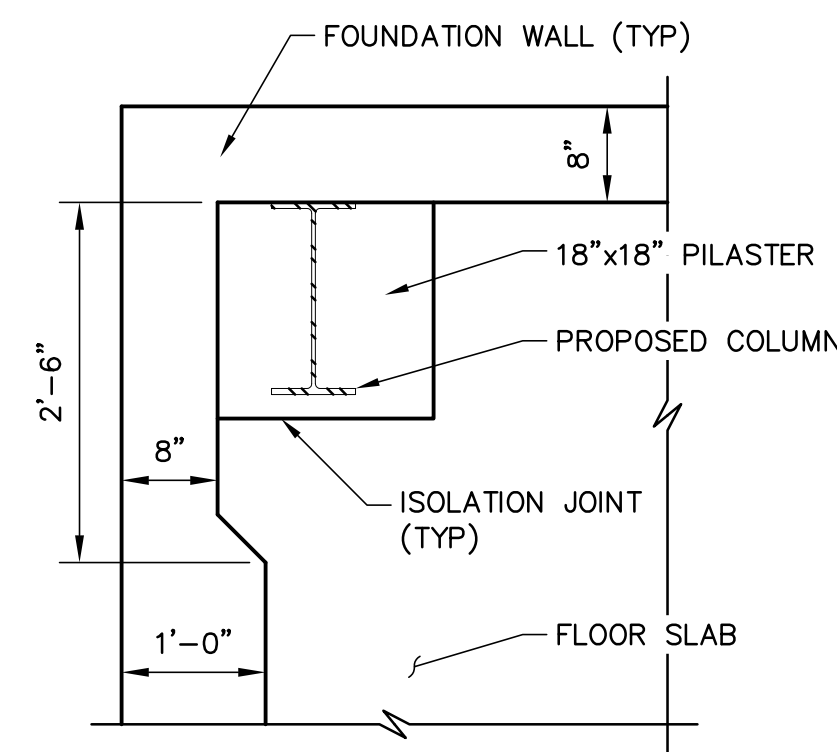
|  |                     |                     |                                     |                                     |
|--|---------------------|---------------------|-------------------------------------|-------------------------------------|
| designed by:<br>LBK/JLG  | date:<br>April 2015 | project no:<br>938  | file name:<br>938 - Foundations.dwg | scale:<br>As Noted                  |
| drawn by:<br>LBK   | approved by:<br>JLG | date:<br>April 2015 | project no:<br>938                  | file name:<br>938 - Foundations.dwg |
|  |                     |                     |                                     |                                     |
| <b>Robert E. Doyle PE RA</b><br>CIVIL/ENVIRONMENTAL ENGINEERS<br>Portsmouth, N.H. Manchester, N.H. Portland, ME<br>603.739.2872<br>rodoylepe@gmail.com |                     |                     |                                     |                                     |
| <b>HUTTER</b><br>Design-Build General Contractor<br>Hutler Construction Corporation<br>New Ipswich, New Hampshire                                      |                     |                     |                                     |                                     |
| <b>Town of Derry, NH</b><br>Department of Public Works<br>Transfer Station & Recycling Facility<br>Construction Drawings<br>Foundation Details I       |                     |                     |                                     |                                     |
| drawing no. <b>S6</b><br>sheet: 6 of 8   |                     |                     |                                     |                                     |
| 0 RELEASED FOR BIDDING<br>no. revision<br>4/24/15<br>JLG<br>by date  |                     |                     |                                     |                                     |



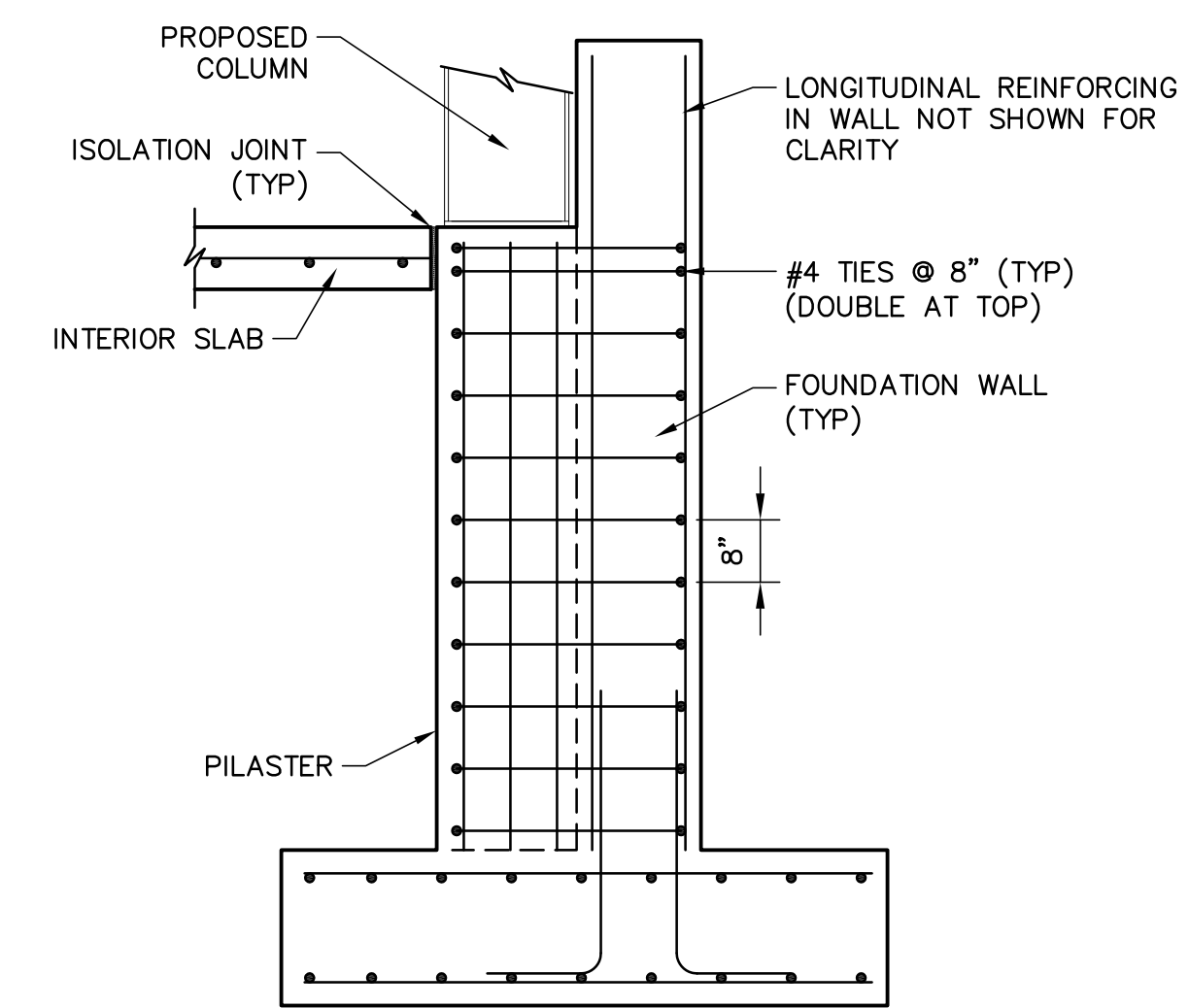
**Typical Slab On Grade  
Control Joint**  
NOT TO SCALE



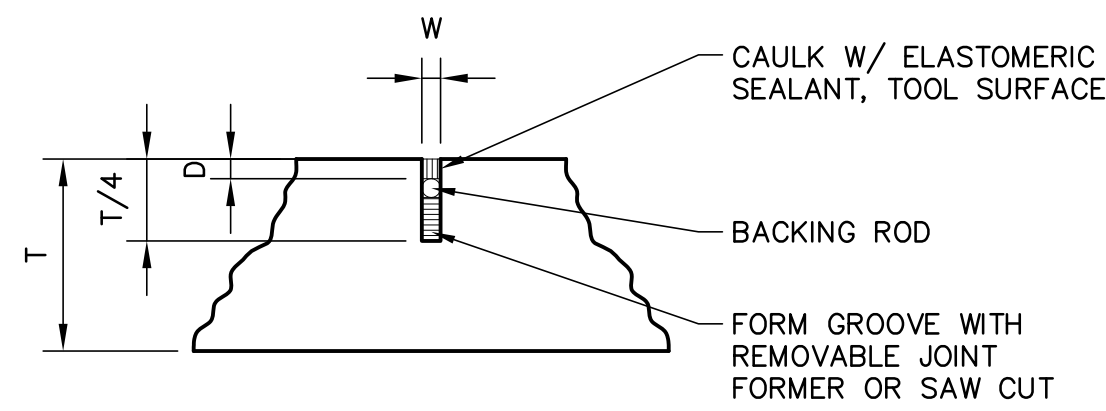
**Typical Slab On Grade  
Isolation Joint Details**  
NOT TO SCALE



**Detail 1**  
Scale: 3/4" = 1'-0"

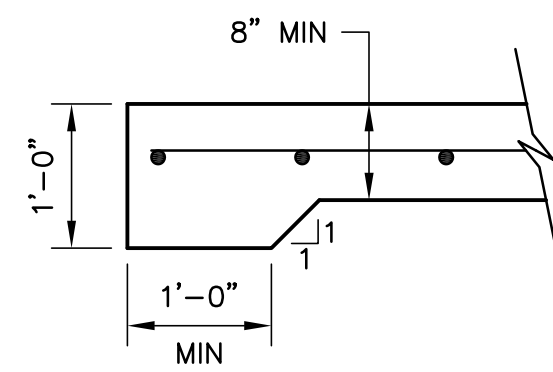


**Typical Section at PEMB  
Foundation Pilaster**  
NOT TO SCALE

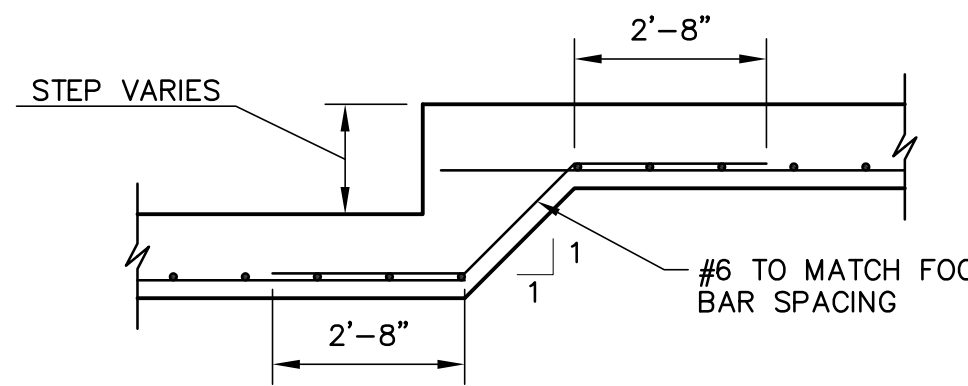


| JOINT SEALANT LOCATION   | W    | D    |
|--------------------------|------|------|
| CONTRACTION/CONTROL JT   | 1/4" | 1/4" |
| INTERIOR ISOLATION JOINT | 3/4" | 1/2" |
| EXTERIOR ISOLATION JOINT | 3/4" | 1/2" |

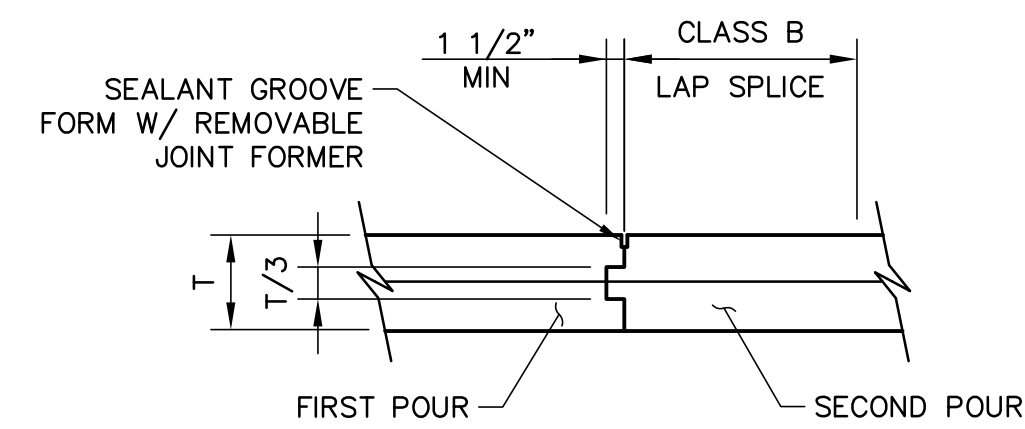
**Sealant Groove Detail**  
NOT TO SCALE



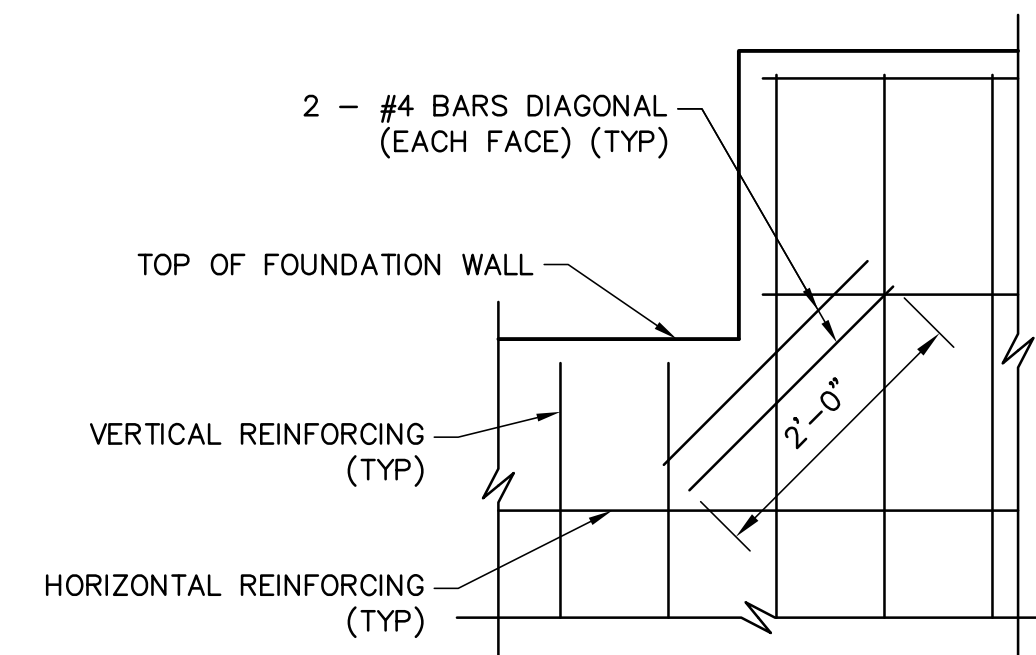
**Typical Slab Edge  
Treatment**  
NOT TO SCALE



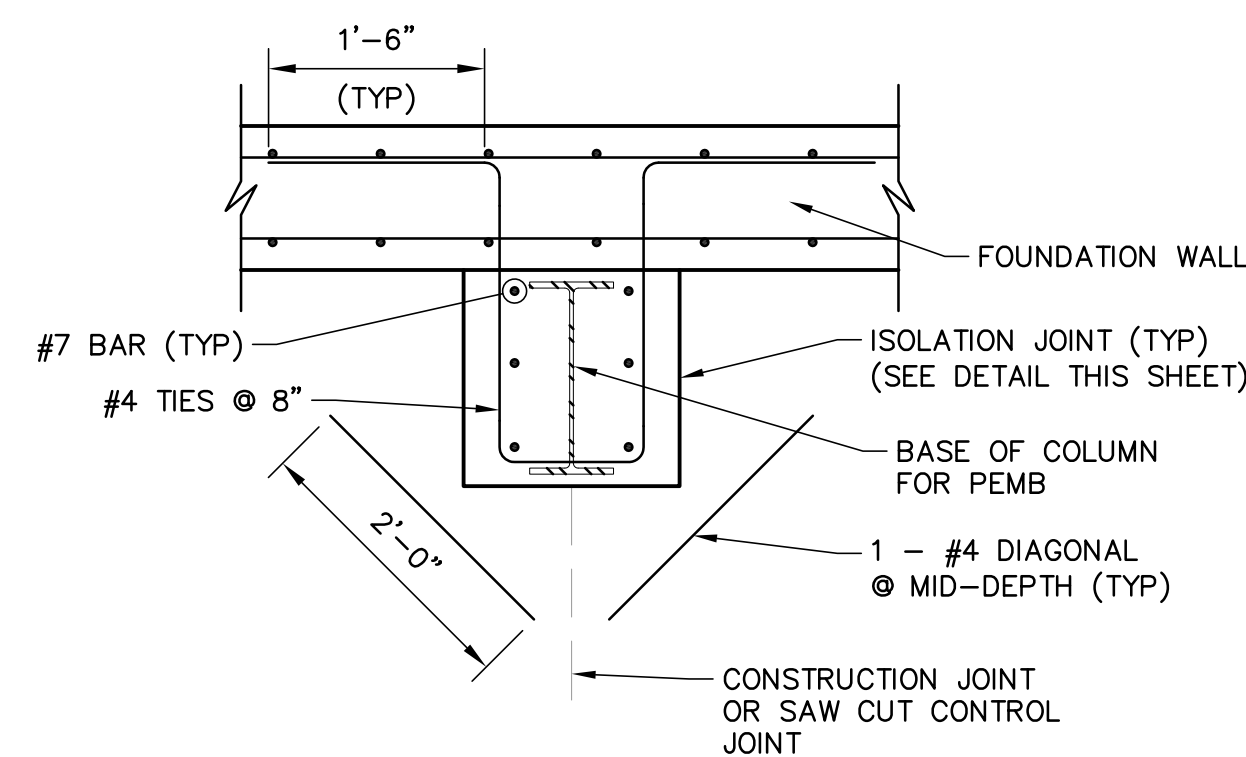
**Footing Step Detail**  
Scale: 3/8" = 1'-0"



**Typical Slab On Grade  
Construction Joint**  
NOT TO SCALE



**Typical Wall Reinforcing  
at Vertical Corners  
(Elevation View)**  
NOT TO SCALE

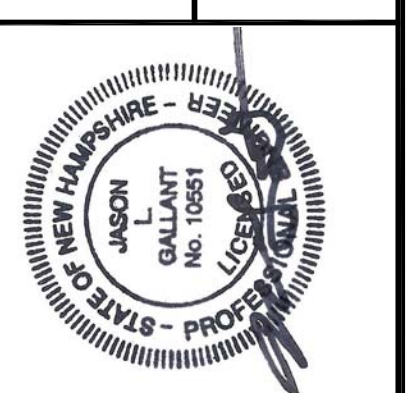


**Typical Exterior Isolation  
Joint at Column**  
NOT TO SCALE

| no. | revision             | date    | by  |
|-----|----------------------|---------|-----|
| 0   | RELEASED FOR BIDDING | 4/24/15 | JLG |

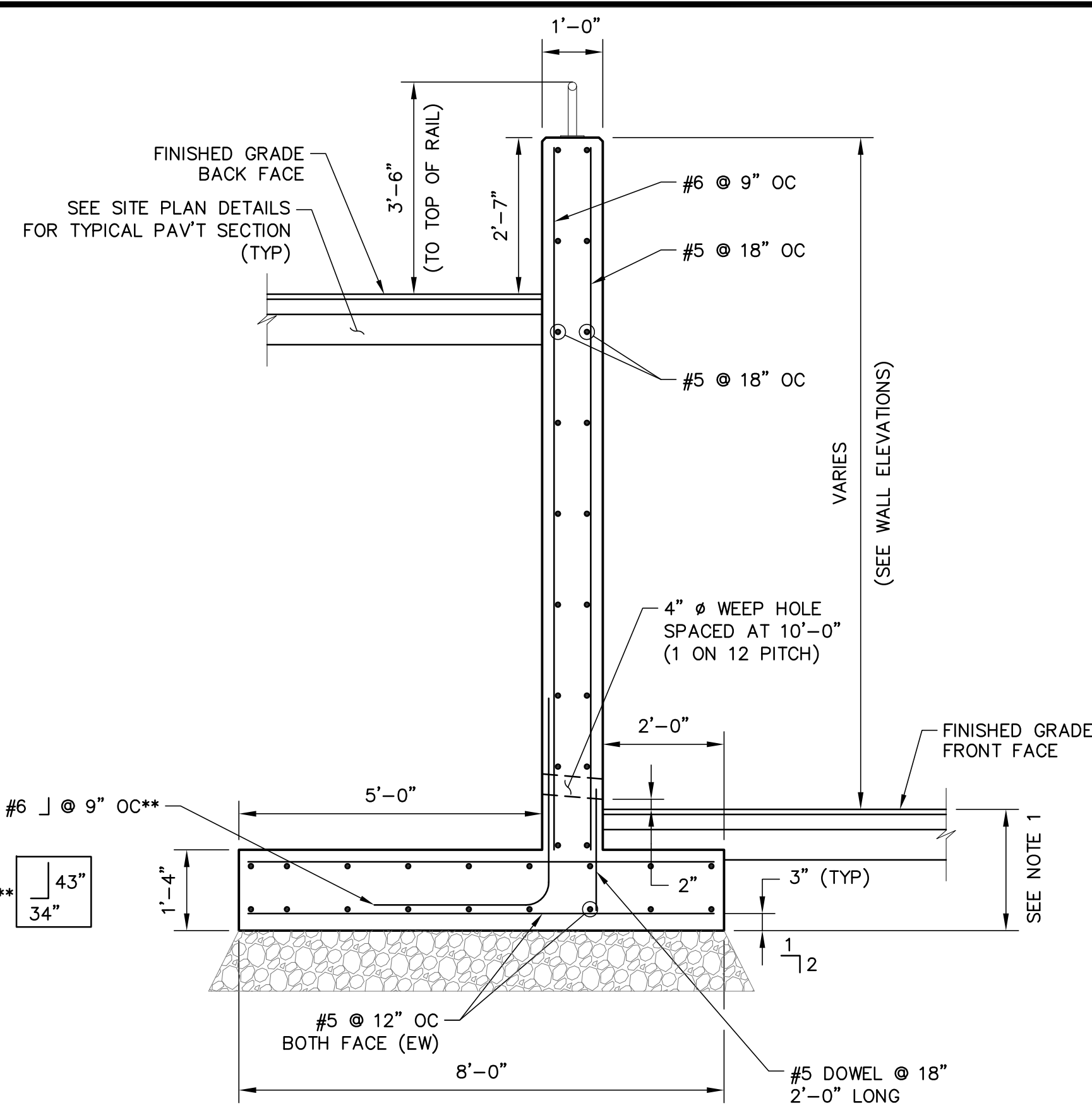
Design-Build General Contractor  
**HUTTER**  
Hutter Construction Corporation  
New Ipswich, New Hampshire

**CMA ENGINEERS**  
CIVIL/ENVIRONMENTAL ENGINEERS  
Portsmouth, NH Manchester, NH Portland, ME  
**Robert E. Doyle PE RA**  
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|                         |                    |                                     |                    |
|-------------------------|--------------------|-------------------------------------|--------------------|
| designed by:<br>LBK/JLG | drawn by:<br>LBK   | approved by:<br>JLG                 | scale:<br>As Noted |
| date:<br>April 2015     | project no:<br>938 | file name:<br>938 - Foundations.dwg |                    |

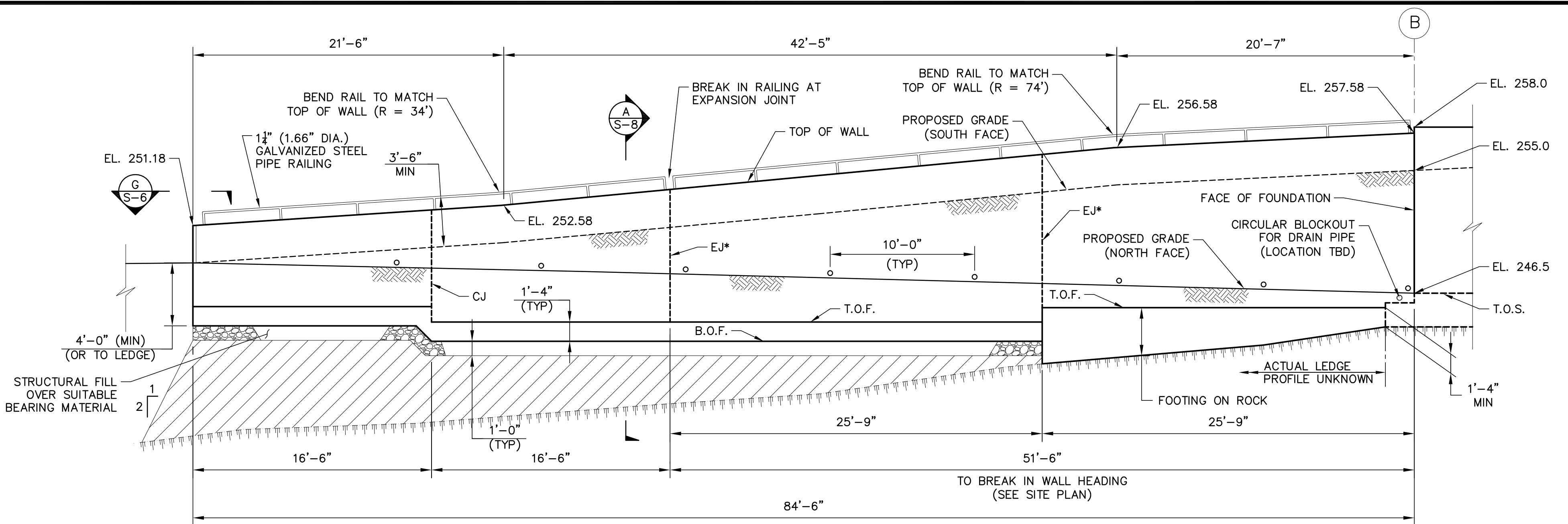
Town of Derry, NH  
Department of Public Works  
Transfer Station & Recycling Facility  
Construction Drawings  
Structural Details II



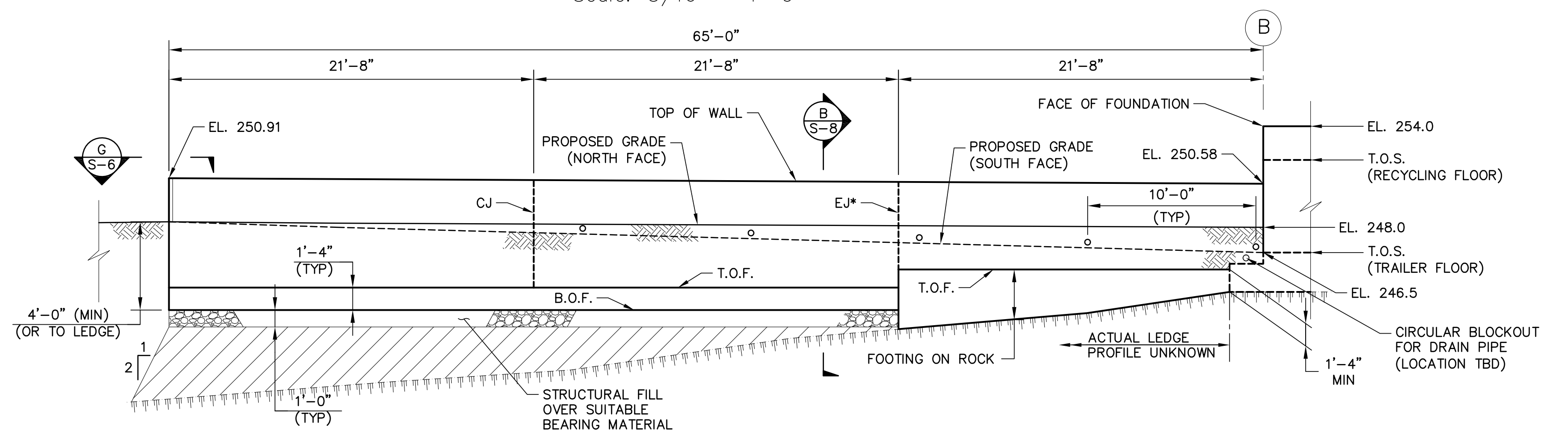
**Section A**  
Scale: 1/2" = 1'-0"

| WALL JOINT LAYOUT DIMENSIONS |             |   |
|------------------------------|-------------|---|
| WALL                         | JOINT TYPE  | DISTANCE FROM FACE OF BUILDING FOUNDATION |
| 1                            | EXPANSION   | 51'-6"                                    |
| 1                            | CONTRACTION | 25'-9"                                    |
| 1                            | CONTRACTION | 68'-0"                                    |
| 2                            | CONTRACTION | 21'-8"                                    |
| 2                            | CONTRACTION | 43'-4"                                    |
| 3                            | CONTRACTION | 20'-1"                                    |
| 3                            | CONTRACTION | 40'-2"                                    |

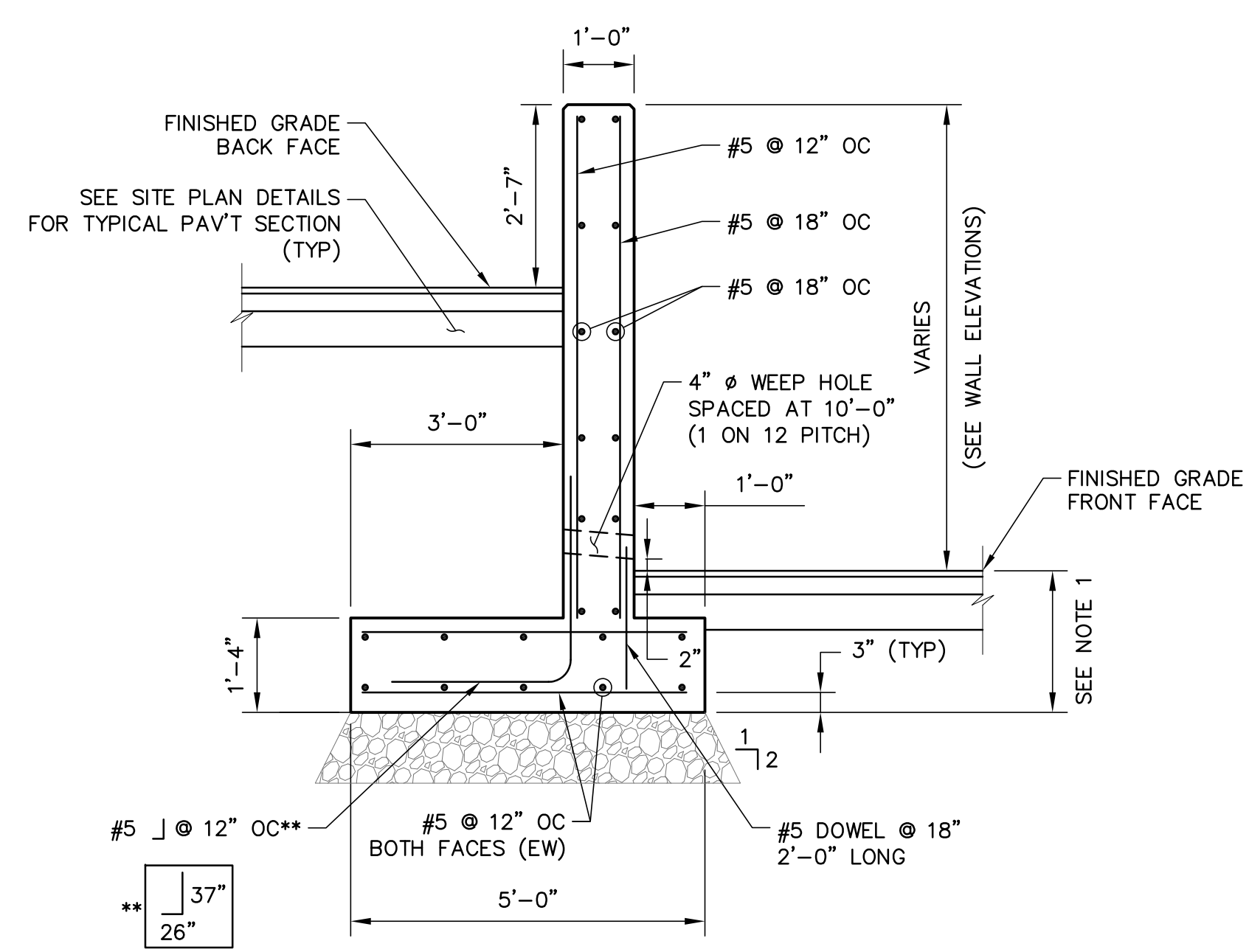
**LEGEND**  
 UNSUITABLE FILL TO BE REMOVED



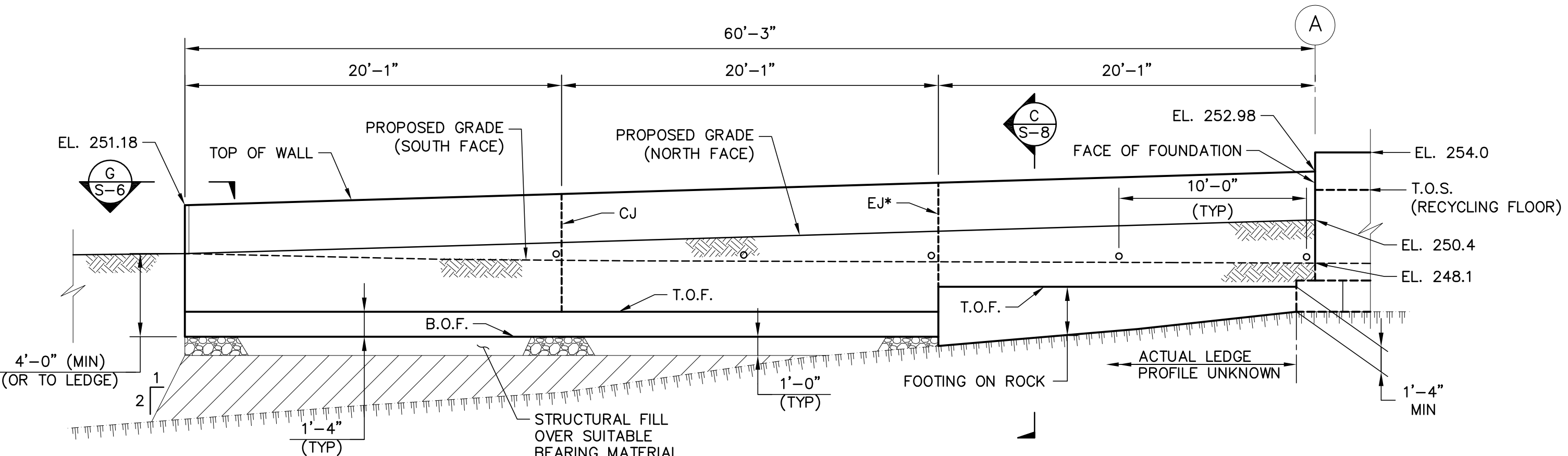
**Elevation - Wall 1 (Column Line 8)**  
Scale: 3/16" = 1'-0"



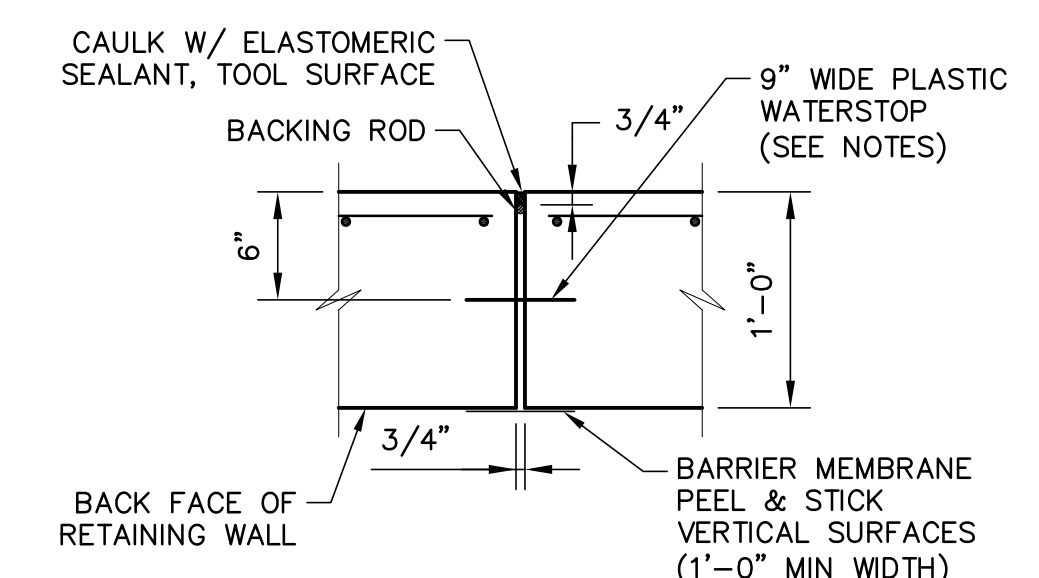
**Elevation - Wall 2 (Column Line 7 / 8)**  
Scale: 3/16" = 1'-0"



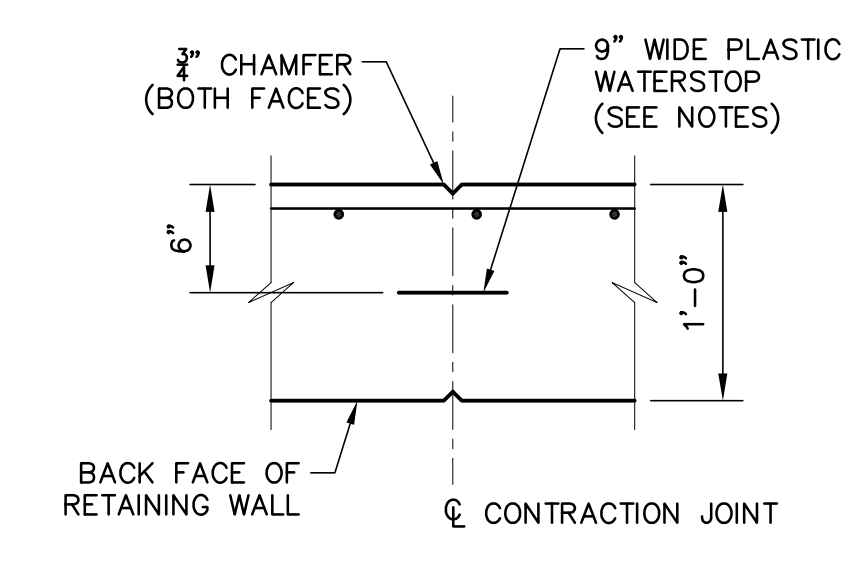
**Section B**  
Scale: 1/2" = 1'-0"



**Elevation - Wall 3 (Column Line 6)**  
Scale: 3/16" = 1'-0"



**Wall Expansion Joint Detail**  
Scale: 3/4" = 1'-0"



**Wall Contraction Joint Detail**  
Scale: 3/4" = 1'-0"

- RETAINING WALL NOTES:**
- BOTTOM OF FOOTING SHALL BE CONSTRUCTED ON CLEAN, SOUND LEDGE OR BURIED A MINIMUM OF 4'-0" BELOW GRADE AND PLACED ON A MINIMUM 12" OF STRUCTURAL FILL (NHDOT ITEM 508, 2.1.3).
  - UNSUITABLE MATERIALS (WASTE RUBBLE FILL) SHALL BE REMOVED AND REPLACED WITH GRAVEL BORROW (NHDOT ITEM 304.2) AS DIRECTED BY THE ENGINEER, PRIOR TO THE INSTALLATION OF COMPACTED STRUCTURAL FILL.
  - ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/8" UNLESS NOTED OTHERWISE.
  - THE HAND RAILING SHALL ONLY BE INSTALLED ON WALL 1 (COLUMN LINE 8).
  - CONTRACTOR SHALL SUBMIT PRODUCT QUALIFICATIONS OF SELECTED WATERSTOP FOR APPROVAL (NHDOT TYPE 4 OR APPROVED EQUAL).
  - SITE DATUM ELEVATION 252.00 CORRESPONDS TO BUILDING DATUM ELEVATION 100.00
  - SEE FOUNDATION PLAN FOR TOP/BOTTOM OF FOOTING ELEVATIONS.
  - WALL CONSTRUCTION JOINTS AND EXPANSION JOINTS ARE SHOWN AS "CJ" AND "EJ", RESPECTIVELY.

\* EJ MAY BE REVISED TO CJ IF FOUNDATION BASE MATERIALS ARE CONSISTENT OVER THE ENTIRE LENGTH OF THE WALL

|   |                 |   |                                 |
|---|-----------------|---|---------------------------------|
| DESIGNED BY: LBK/JLG  | DRAWN BY: LBK   | APPROVED BY: JLG  | SCALE: As Noted                 |
| DATE: April 2015  | PROJECT NO: 938 | FILE NAME: 938 - Retaining Walls.dwg  |                                 |
| <b>CMA ENGINEERS</b><br>CIVIL/ENVIRONMENTAL ENGINEERS<br>Portsmouth, NH Manchester, NH<br><b>Robert E. Doyle PE RA</b><br>603.738.2872<br>rodoyle@gmail.com |                 | <b>HUTTER</b><br>Design-Build General Contractor<br>Hutler Construction Corporation<br>New Ipswich, New Hampshire |                                 |
| Town of Derry, NH<br>Department of Public Works<br>Transfer Station & Recycling Facility<br>Construction Drawings   |                 |   | drawing no. S8<br>sheet: 8 of 8 |
| RELEASED FOR BIDDING<br>0 no. 4/24/15 date by JLG   |                 |   |                                 |