

| SPECIAL INSPECTIONS: | | | | |
|---|-----------------------------------|--|--|---|
| Required Inspection Verification, or Test | Verification Monitoring Frequency | Type and/or Frequency of Testing | IBC Section & Reference Criteria | Inspector Qualifications |
| 1. SOILS (SLAB-ON-GRADE) | | Site Preparation | IBC 1705.6 | |
| A. Sub-Grade | Periodic | 1. At the contractors expense, instrument readings shall be taken by a licensed surveyor to verify final subgrade elevations and slopes. | Geotechnical Report; Building Pad General Notes | 1. Licensed Surveyor |
| 1. Visual Observation | | 2. Verify excavations have reached proper material (strata) and subgrade has been properly prepared. | | 2. * Qualifications based on ASTM D3740 |
| 2. Proofrolling Observations | Continuous | Proofrolling shall be monitored by a Geotechnical Engineer. The Geotechnical Engineer shall approve the type of proofrolling equipment and procedures. | Geotechnical Report; Building Pad General Notes | * Qualifications based on ASTM D3740 |
| 3. Moisture Conditioning & Recompaction | Continuous or Periodic | Provide (1) one density test for each 3000 sq. ft. (Min. of 3 tests) Refer to Notes on Building Pad for Testing Specifications. | Geotechnical Report; Building Pad General Notes | * Qualifications based on ASTM D3740 |
| B. Select and/or Structural Fill | Prior to Placement | * Perform classification and testing of proposed fill materials | Building Pad General Notes. | * Qualifications based on ASTM D3740 |
| C. During Fill Placement | Continuous or Periodic | Visual Observation: During placement and compaction of fill, special inspector shall determine that the material being used and the maximum lift thickness comply with the project requirements. Pit run materials shall be visually monitored by the testing lab with additional samples tested each day, or more often if material appears to vary. | IBC 1705.6 Geotechnical Report; Building Pad General Notes | * Qualifications based on ASTM D3740 |
| D. Evaluation of In-Place Density of Fill | Continuous or Periodic | For each lift, provide (1) one density test for each 3000 sq. ft. (use 1 test for each 5000 sf. for crushed limestone) (Min. of 3 tests) Refer to Notes on Building Pad for Testing Specifications. | IBC 1705.6 Geotechnical Report; Building Pad General Notes | * Qualifications based on ASTM D3740 |
| E. Trench Backfilling | Continuous or Periodic | Trench Backfilling: Trench backfilling with clay cap and placing of clay plug shall be monitored by Geotechnical Engineer with a written report sent to Structural Engineer. | | |
| 2a. PILE FOUNDATIONS | | Not Applicable | IBC 1705.7 | Licensed Geotechnical Engineer |
| 2b. PIER FOUNDATIONS | | Not Applicable | | |
| 3. CONCRETE CONSTRUCTION | | | | |
| A. Reinforcing Steel | Periodic | Provide periodic inspection of reinforcing sizes, spacing, grade of rebar; and placement at a frequency of 20%. | IBC 1705.3 ACI 318: Ch. 3.5, 7.1-7.7; Concrete and Reinforcing General Notes. ACI 318: 6.1.1 | * Qualifications based on ASTM E329 |
| B. Form Work | Periodic | Inspect formwork for shape location and dimensions of the concrete member being formed. See "A" above for frequency. | ACI 318 – Ch. 4, 5.2 – 5.4 | * Qualifications based on ASTM C1077 |
| C. Verify use of concrete mix design | Periodic | Each Concrete Pour | ACI 318 – Ch. 5.6, 5.8 | * Qualifications based on ASTM C1077 |
| D. Sampling of fresh concrete. | Continuous Each Concrete Pour; | 1. All concrete testing is to be made after water, if any, is added at site. 2. Provide a set of cylinders to be taken for every 150 cubic yards of concrete (100 cubic yards for slab-on-grade), or fraction thereof, by testing lab. Sampling & Quantity of cylinders to comply with ACI 318. 3. Monitor slump and air content of concrete and notify delivery driver if slump deviates more than plus or minus 1 inch from recommended value. Contact supplier for further directions. 4. Pull testing of epoxied anchors, unless specifically shown on drawings, shall be paid by contractor. | | |
| E. Placement of concrete. | Continuous | Monitor concrete slump, temp and correct mix design. | ACI 318 – Ch. 5.9, 5.10 | * Qualifications based on ASTM C1077 |
| F. Maintenance of specified curing temperature & techniques. | Periodic | Each Concrete Pour | ACI 318 – Ch. 5.11, 5.13. | * Qualifications based on ASTM C1077 |
| G. Removal of shores and forms from beams and structural slabs. | Periodic | Verify in-situ concrete strength prior to removal. | ACI 318: Ch. 6.2; Concrete Joint General Notes. | * Qualifications based on ASTM E329 |
| H. Drilled & Epoxied Anchors. (Adhesive anchors) | Each Application | 1. Provide inspections as required by the ICC Evaluation Service Report (ICC ES ESR) 2. Confirm proper installation as required by ICC ES ESR. 3. All drilled and epoxied anchors (rebar, bolts, threaded rods, etc.) shall be pull tested to 10 percent of the ULTIMATE BOND STRENGTH for no less than 3 min. 4. Pull testing of epoxied anchors, unless specifically shown on drawings, shall be paid by contractor. | ACI 318: Ch. 3.8.6.8.1.3, 21.2.8 ACI 355.4, ASTM E488 | * Qualifications based on ASTM ES ESR |
| I. Post-Installed Mechanical Anchors (Expansion bolts, screw anchors, etc.,) | See Notes | 1. Provide inspections as required by the ICC Evaluation Service Report (ICC ES ESR) 2. Confirm proper installation as required by ICC ES ESR. 3. If inspections are not performed, pull test anchors as outlined above (for drilled & epoxied anchors) | ACI 318, ACI 355.2 | * Qualifications based on ICC ES ESR |
| 4. STEEL CONSTRUCTION | | | IBC 1705.2 | |
| A. Material verification of high-strength bolts, nuts, and washers; and cold formed steel deck. | Periodic | 1. Identification markings to conform to ASTM standards specified in the approved construction documents. | Structural Steel General Notes | CWI/Associate/Technical Graduate, AWS or CRSI |
| | Periodic | 2. Manufacturer's certificate of compliance or certified test reports required. | Applicable ASTM material specifications; AISC 335, Section A3.4; AISC LRFD, Section A3.3 | |
| B. High-strength bolting: | Periodic | 1. Bearing-type connections, & snug tight joints. | AISC 360 Structural Steel General Notes | CWI/Associate/Technical Graduate, AWS or CRSI |
| | Periodic | 2. Slip-critical connections, using twist off bolt or direct tension indicator method of installation. | AISC LRFD Section M2.5 | |
| C. Material verification of structural steel: | Periodic | 1. Identification markings to conform to ASTM standards specified in the approved construction documents. | Structural Steel General Notes | CWI/Associate/Technical Graduate, AWS or CRSI |
| | Periodic | 2. Manufacturers' certified mill test reports. | ASTM A 6 or ASTM A 568 | |
| D. Material verification of weld filler materials: | Periodic | 1. Identification markings to conform to AWS specification in the approved construction documents. | Structural Steel General Notes | CWI/Associate/Technical Graduate, AWS or CRSI |
| | Periodic | 2. Manufacturer's certificate of compliance required. | AISC, ASD, Section A3.6; AISC LRFD, Section A3.5 | |
| E. Welding: of Structural Steel: | Continuous | 1. Complete & partial joint penetration groove welds. | AWS Structural Steel General Notes | CWI and ASNT |
| | Continuous | 2. Multipass fillet welds, plug & slot welds. | AWS D1.1 | CWI and ASNT or licensed Engineer |
| | Continuous | 3. Single-pass fillet welds > 5/16" | | |
| | Periodic | 4. Single pass fillet welds ≤ 5/16" | | |
| | Periodic | 5. Floor and roof deck welds. | AWS D1.3 | |
| F. Steel frame joint details: Compliance with approved construction documents: | Periodic | 1. Details such as bracing & stiffening. | Structural Drawings and Details | Project of complex joint details: - Associate CWI - Projects of relatively simple details: - Technician trained in field of work and has at least one year of experience. |
| | Periodic | 2. Member locations. | Structural Drawings | |
| | Periodic | 3. Application of joint details at each connection. | | |
| G. Pre-Engineered Metal Building: | As Indicated | 1. Check and record proper nut tightening and quantities at all bolted connections of main frame elements, or provide tension indicator connections. | Metal Building Shop Drawings | |
| | As Indicated | 2. Metal Building Design Engineer (or member of his staff) to inspect completed metal building frame and components for compliance with design and send Structural Engineer letter confirming erected building is in compliance with the design. | | |
| 5. INSPECTION OF FABRICATORS FOR STRUCTURAL STEEL, INCLUDING METAL BLDG | | | | |
| Fabrication & Implementation Procedures | Periodic | 1. Fabrication and implementation procedures. The special inspector shall verify that the fabricator maintains detailed fabrication and quality control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to approved construction documents and referenced standards. The special inspector shall review the procedures for completeness and adequacy relative to the code requirements for the fabricator's scope of work. Exception: Special Inspections shall NOT be required where the work is done on the premises of a fabricator: 1. That is enrolled in a nationally accepted inspections program acceptable to the registered design professional in responsible charge; or 2. Where a special inspection agency has reviewed and approved the fabricators written procedural and quality control manual, and periodic auditing of fabrication practices. 2. At completion of fabrication, all approved fabricators shall submit a certificate of compliance to building official upon request and to the registered design professional in responsible charge stating that the work was performed in accordance with the approved construction documents, & applicable specifications. | IBC 1705.2 | CWI, ASNT, Licensed Engineer |
| 6. MASONRY CONSTRUCTION | | | | |
| Not Applicable | | | | |
| 7. WOOD CONSTRUCTION | | | | |
| Not Applicable | | | | |

GENERAL

- GC-1 The contract structural documents represent the finished structure, and, except where specifically shown, do not indicate the method or means of construction. The Contractor shall supervise and direct the work and shall be solely responsible for all construction means, methods, procedures, techniques, and sequence.
- GC-2 The structure has been designed to resist design loads only as a completed structure. Applications of construction loads to the partially completed structure shall be considered by the Contractor and so included in the design of shoring, bracing, formwork, and any other supporting elements provided for construction of the structure. During erection and until all permanent connections are made, the Contractor must provide temporary bracing to brace the structure in all directions.
- GC-3 The Engineer shall not have control or charge of, and shall not be responsible for, construction means, methods techniques, sequences, or procedures for safety precautions and programs in connection with the work, for the acts or omission of the Contractor, Subcontractor, or any other persons performing any of the work, or for the failure of any of them to carry out the work in accordance with the contract documents.
- GC-4 General Contractor shall check and verify all dimensions, grade conditions, (both new and existing) reporting any discrepancies to the Engineer before proceeding with any phase of the work as he will be responsible for all work fitting as intended by the drawings and specifications.
- GC-5 Design and construction of the metal buildings is the responsibility of the General Contractor.

SUBGRADE AND UNDERFLOOR FILL PREPARATION

- UF-1 The subgrade and underfloor fill shall be prepared to a point that extends 5'-0" minimum beyond the limits of the building foundation footprint.
- UF-2 Subgrade preparation and select fill requirements:

- The existing vegetation, topsoil, and any existing loose materials shall be stripped and removed from the proposed building footprint areas. Any existing trees and stumps shall be grubbed and removed in it's entirety from the site.
- Following stripping and grubbing operations, the floor slab area shall be over-excavated down to 18-inches below the existing grade and replaced with select fill material. There shall be a minimum of 12-inches of select fill material placed below the floor slab in the area of the building that will be require to be cut down/excavated for grading purposes. The over-excavated area should extend a minimum of five (5) feet beyond the horizontal limits of the proposed building footprint areas.
- Following excavation, the exposed subgrade soil shall be scarified to a depth of six (6) inches, moisture-conditioned between 0 and + 4 percentage points above optimum moisture content and compacted to at least 95% of the maximum dry density as determined in accordance with ASTM D 698.
- Following approval of the subgrade, the select fill should be placed up to the desired final building pad elevation. The select fill should be placed in eight (8) inch maximum thick loose lifts. The select fill shall be moisture-conditioned between -3 and + 3 percentage points of optimum moisture content and compacted to a minimum of 98 % of the maximum dry density as determined in accordance with ASTM D 698, standard proctor method. A minimum of one nuclear density test per 5,000 square feet should be performed per lift.
- The on-site clay materials are not considered suitable for re-use as select fill material. The select fill material should have a plasticity index (pi) ranging between 5 and 17 and have a maximum particle size of three (3) inches.
- Plastic vapor barrier shall be 10 mil thick and is to be in contact with the soil or fill under the concrete slab. Install the vapor barrier below slab surface with joints lapped at least 8 inches and taped continuously with pressure sensitive adhesive tape. Extend vapor barrier down the sides of the beam trenches and terminate at the bottom of the trench.

- UF-3 Perform all earthwork before trenching for grade beams or mechanical lines.
- UF-4 Maintain subgrade and the fill at optimum insitu moisture content after completion of structural fill placement. Contractor shall make all corrective work required to improve the subgrade and structural fill areas which are not acceptable to the Engineer prior to placement of concrete.
- UF-5 The finish grading around the building shall be graded to ensure adequate drainage of surface water away from the building. All air conditioning condensate lines and roof gutter downspouts shall be directed to discharge a minimum of three (3) feet away from the foundation for further removal from the site.
- UF-6 Trenching of grade beams shall be excavated in order to provide the beam cross sections indicated. Beam and slab depths and widths as indicated are minimum acceptable sizes. Larger size beams and slabs formed by less accurate trenching may require additional reinforcing (not shown) which shall be determined by the Engineer during construction review. All loose soil from sides and bottoms of trenches shall be removed.
- UF-7 Drain exposed grade beams during construction in the event of inclement weather.

STRUCTURAL DESIGN CRITERIA

- SD-1 A. Live loads:
- Roof - 20 PSF
 - Typical Floor - 50 PSF
 - Floor Dead Load - 75 PSF (Slab On Grade)
 - Partitions - 20 PSF
 - Public Areas - 100 PSF (Non-reduceable)
 - Storage Rooms - 125 PSF (Non-reduceable)
 - Combinations in accordance with IBC 1605.3.1
- B. Wind loads - ASCE 7-05 (IBC 1609.1)
- Basic wind speed (MPH) 115mph (3-Second Gust)
- Exposure classification C
- Importance Factor 1.0, Category II
- C. Ground Snow Load 5 PSF
- D. Seismic Design Category A

SD-2 Future Loads: Unless specifically noted, there are no provisions made for future floors, roofs, or other loads.

SD-3 Applicable codes:

- 2018 International Building Code
- ASCE 7-05
- ACI 318-08
- AISC Ninth Edition 1989
- AWS D1. 01-90

CONCRETE / REINFORCING:

- CR-1 All concrete shall test 3000 PSI at 28 days and shall be in accordance with ACI 301. Testing shall be the sole responsibility of the builder and any substandard strengths shall be reported to the Architect and Engineer.
- CR-2 Flyash shall not exceed 20 percent.
- CR-3 There shall be no horizontal construction joints in concrete pours. All construction joints shall be made in the center of spans with vertical bulkheads.
- CR-4 Bar support accessories shall be provided in accordance with the latest ACI manual of standard practice for detailing reinforced concrete structures, except that beam reinforcing shall be supported on beam bolsters spaced not more than 4 feet on center. Bar supports for concrete exposed to view shall have plastic coated legs or be hot dip galvanized after fabrication. Bar supports for concrete with a sandblast finish shall have stainless steel bar supports. Tie-Wire Bricks Will be allowed.
- CR-5 Mechanical, Plumbing and Electrical conduit in slabs shall run under top layer of slab reinforcing. Provide a minimum of 1-1/2" clear between conduits and between reinforcing and adjacent conduits parallel to reinforcing. If maximum size of conduit exceeds one third of the slab depth, additional framing or reinforcing may be necessary.
- CR-6 All reinforcing steel shall be grade 60 and shall conform to the ASTM Specification A615. Detailing of reinforcing steel shall conform to the American Concrete Institute Detailing Manual. Lap continuous unscheduled reinforcing bars 40 bar diameters at splices. Tie wire shall be 18 gage annealed type.
- CR-7 Provide 1-#6 x 4'-0" L-shaped bar top and bottom of exterior face of grade beams and spandrel beams at corners.
- CR-8 Reinforcing steel coverage shall be as follows:
A. Grade Beams - 1-1/2" Top, 3" Bottom, 3" Sides
- CR-9 Provide "Z" transition bars (same size as beam reinforcement) where beam soffit step downs are greater than 6 inches.
- CR-10 Concrete shall be placed and cured in accordance with ACI 302.1R. Finish tolerance shall be in accordance with ACI 117.
- CR-11 Construct formwork to maintain tolerances outlined in ACI 347.
- CR-12 Formwork shall extend a minimum of 6 inches below finished grade at perimeter beams.
- CR-13 Vapor barrier shall be 10 mil polyethylene film for below grade application. Vapor barrier shall be continuous with joints lapped 8 inches.

INSPECTION BY THE TESTING LAB

- TLI-1 The testing lab shall provide special inspection of the following items in accordance with the code. Re-inspect as required until all items pass inspection. Written reports shall be submitted to the Engineer.
- Concrete: During the taking of test specimens and placing of reinforced concrete.
 - Bolts and Embed Plates Installed in Concrete: Prior to and during the placement of concrete around bolts and embed plates.
 - Reinforcing Steel: Inspect all rebar prior to pouring concrete.

PREFABRICATED METAL BUILDING

- MB-1 Design Criteria
- See "Structural Design Criteria" in these General Notes for additional design requirements.
 - Maximum Allowable Horizontal Drift of Structure = H/240 (where H = mean height of structure.
 - Minimum Collateral Load = 5 PSF plus roof top units.
- MB-2 A Professional Structural Engineer registered in the State of Texas shall be responsible for the design of the prefabricated metal building members and their connections.
- MB-3 All drawings shall be sealed by a Professional Engineer and shall be submitted for record purposes upon request.
- MB-4 The supplier shall submit a sealed letter stating design criteria for all work and certifying that all designs are in compliance with applicable codes.
- MB-5 All anchor bolts shall be designed by the metal building supplier and supplied by the Contractor. All anchor bolts shall conform to ASTM A36. Submit shop drawings for all anchor bolts.
- MB-6 All bolts for structural connections of beams, girders, purlins, columns, braces, etc. shall be of American origin. NO EXCEPTIONS. Submit mill certificates for all bolts.
- MB-7 All A325 bolts shall be fully tensioned using the turn of the "nut" method.
- MB-8 Provide pinned base connection from column to foundation.
- MB-9 All bolts in the metal building shall be inspected by the testing lab to confirm proper tension. The testing lab shall inspect each and every bolt on the project using a torque wrench. Submit written reports to the Architect.

MISCELLANEOUS

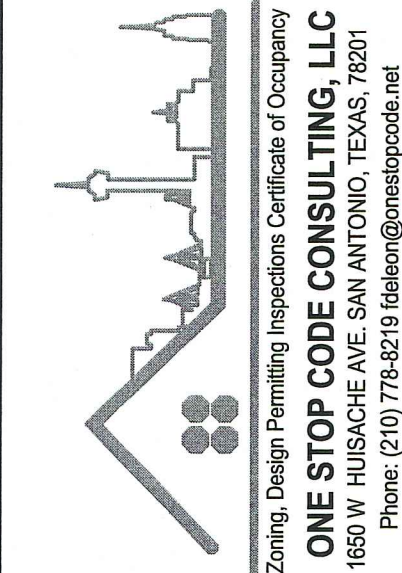
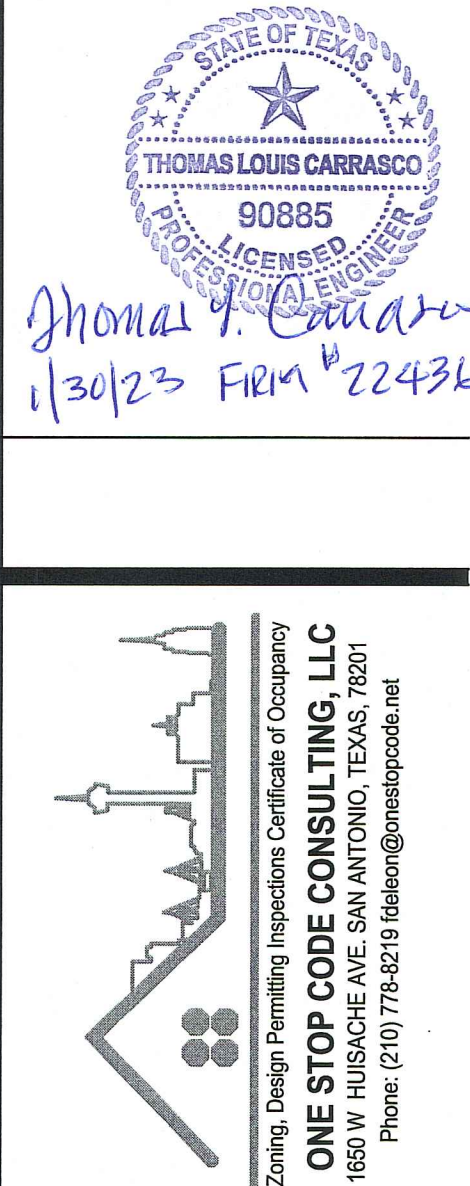
- M-1 See architectural drawings and civil engineer drawings for floor elevations, slopes, and the location of depressed floor areas.
- M-2 The Contractor shall compare structural sections with architectural sections and report any discrepancy to the architect prior to fabrication or installing structural members.
- M-3 Verify all dimensions and conditions of existing conditions at the job site prior to beginning work.
- M-4 See prefabricated building manufacturer's drawings for steel framing. The General Contractor shall provide and set anchor bolts as per prefabricated building manufacturer's drawings.
- M-5 Changes shall not be made to the drawings without written approval of the Structural Engineer.
- M-6 Shop drawings shall be submitted for all structural items including rebar, light-gage metal studs and the pre-engineered metal building structures.
- M-7 Rebar shall not be heated with a torch in the field.

SITE OBSERVATION BY THE STRUCTURAL ENGINEER

- SV-1 Periodic site observations by field representatives of the Structural Engineer and One Stop Code Consulting Engineer Professional are solely for the purpose of determining if the work of the Contractor is proceeding in general accordance with the structural contract documents. These limited site observations should not be construed as exhaustive or continuous to check the quality or quantity of the work, but rather periodic in an effort to guard the Owner against defects or deficiencies in the work of the Contractor.
- SV-2 The Contractor shall notify the Engineer 48 hours in advance of any concrete pour.
- SV-3 The Contractor shall not pour any concrete until all reinforcing steel placement has been reviewed by the Structural Engineer and One Stop Code Consulting and all corrections made by the Contractor. It is the Contractor's responsibility to ensure that all corrections have been made.

REPRODUCTION NOTE:

- R-1 The use of reproductions of these contract drawings by any contractor, subcontractor, erector, fabricator, or material supplier in lieu of preparation of shop drawings signifies his acceptance of all information shown hereon as correct, and obligates himself to any job expense, real or implied, arising due to any errors that may occur hereon.



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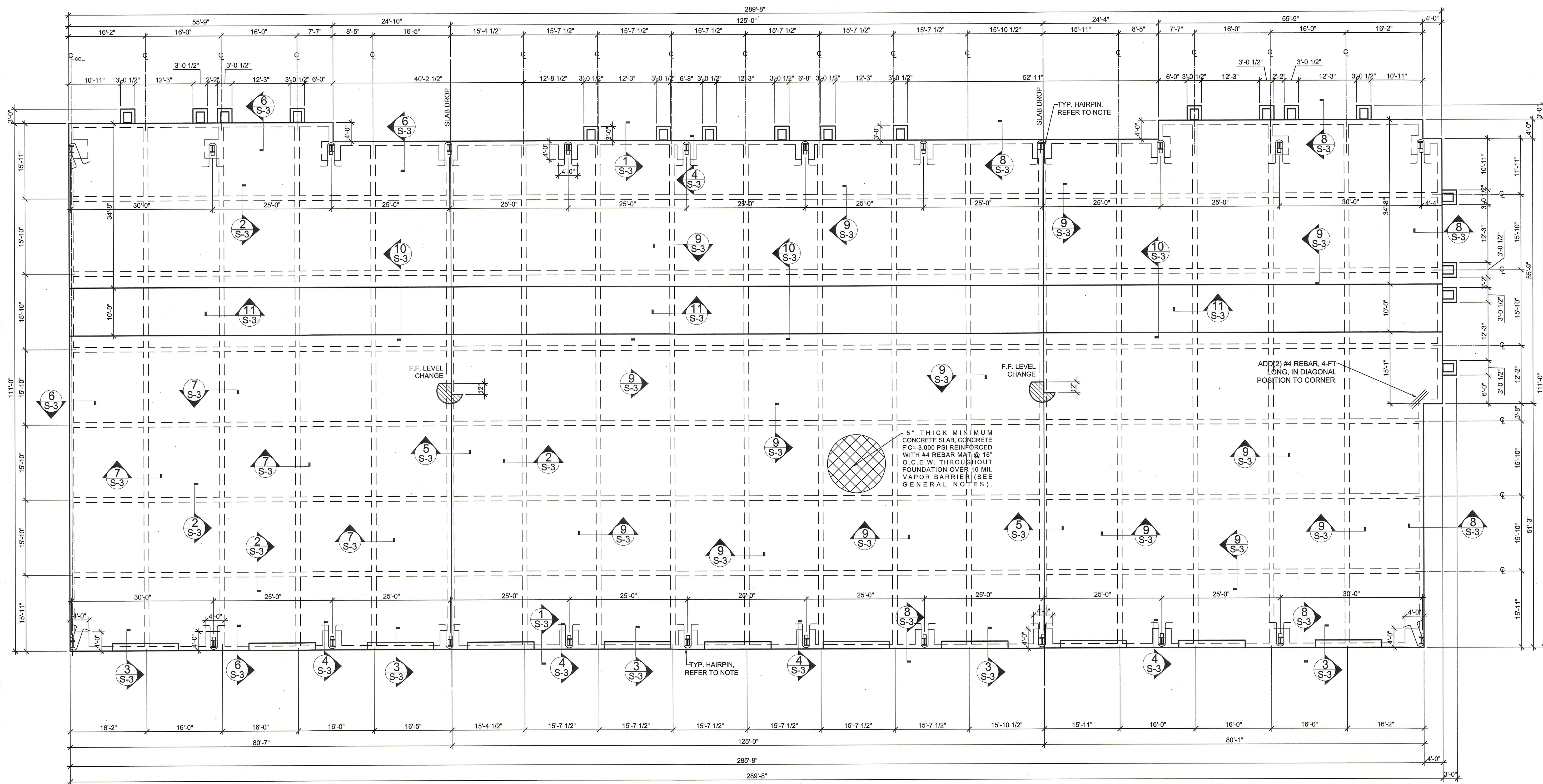
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drawn by: ossc

drawing title: FOUNDATION NOTES

drawn number:

S-1



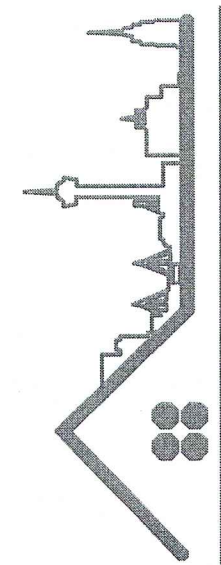
FOUNDATION PLAN
SCALE: 3/32" = 1'-0"

TYPICAL CONCRETE SLAB:

5" Thick concrete slab w/ # 4 @ 16" O.C. each way over 12" min. compacted select fill as required, over compacted subgrade. See General Notes.



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1/30/23 REG # 22436



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date: 12/20/22

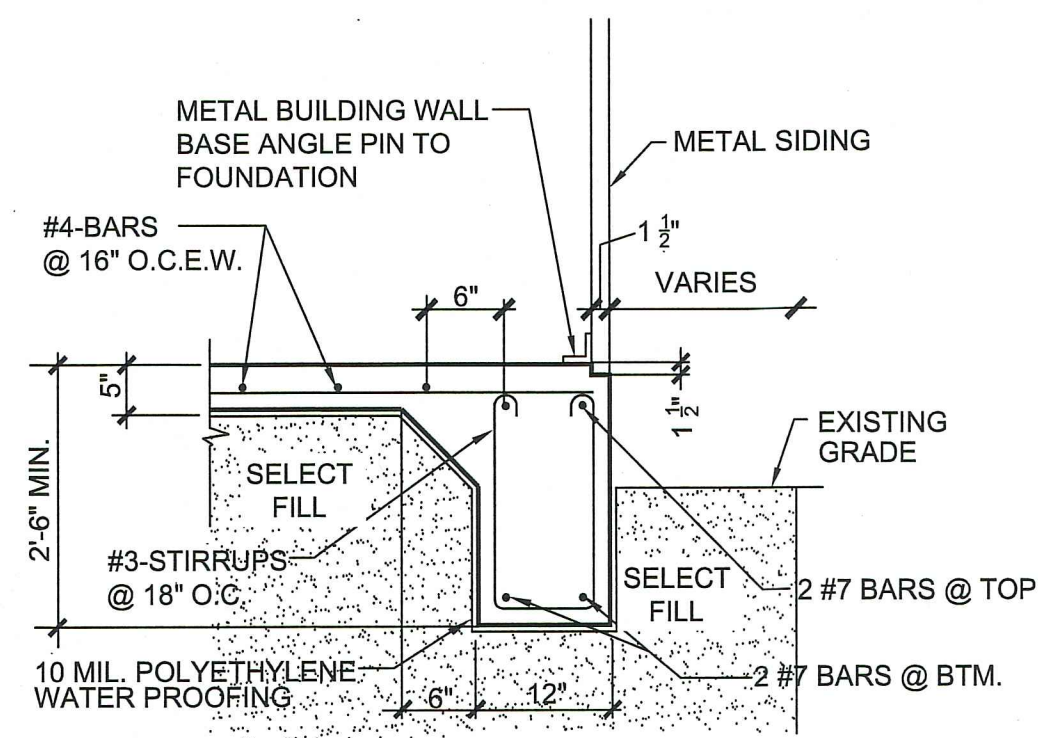
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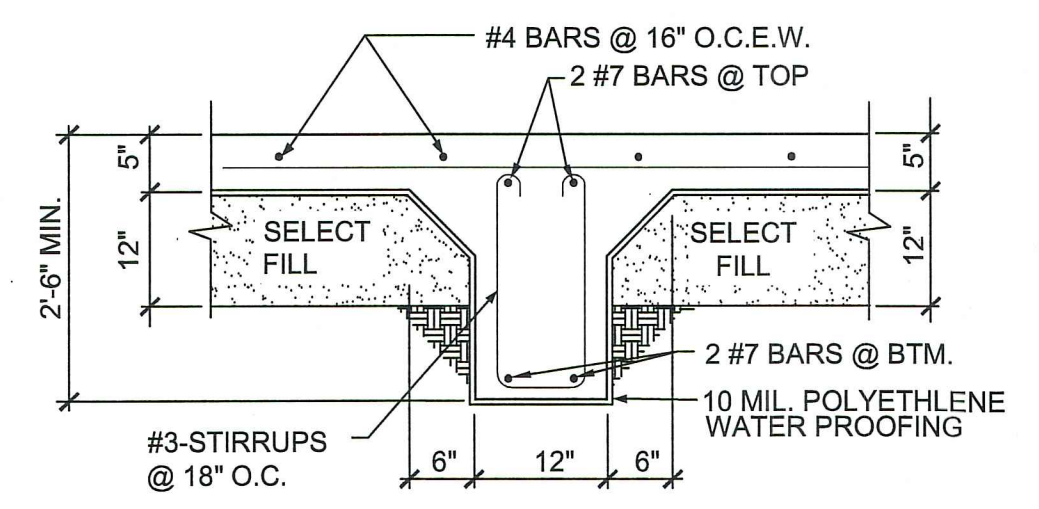
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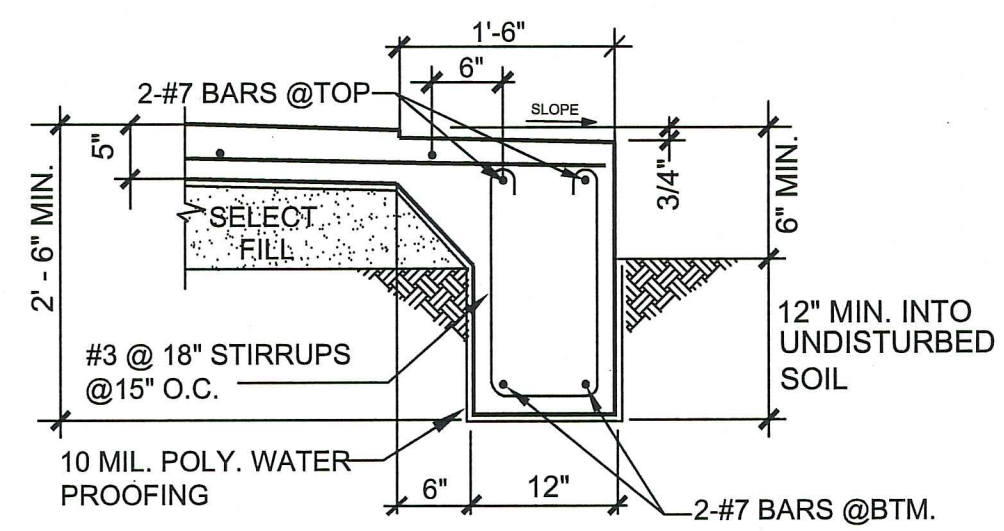
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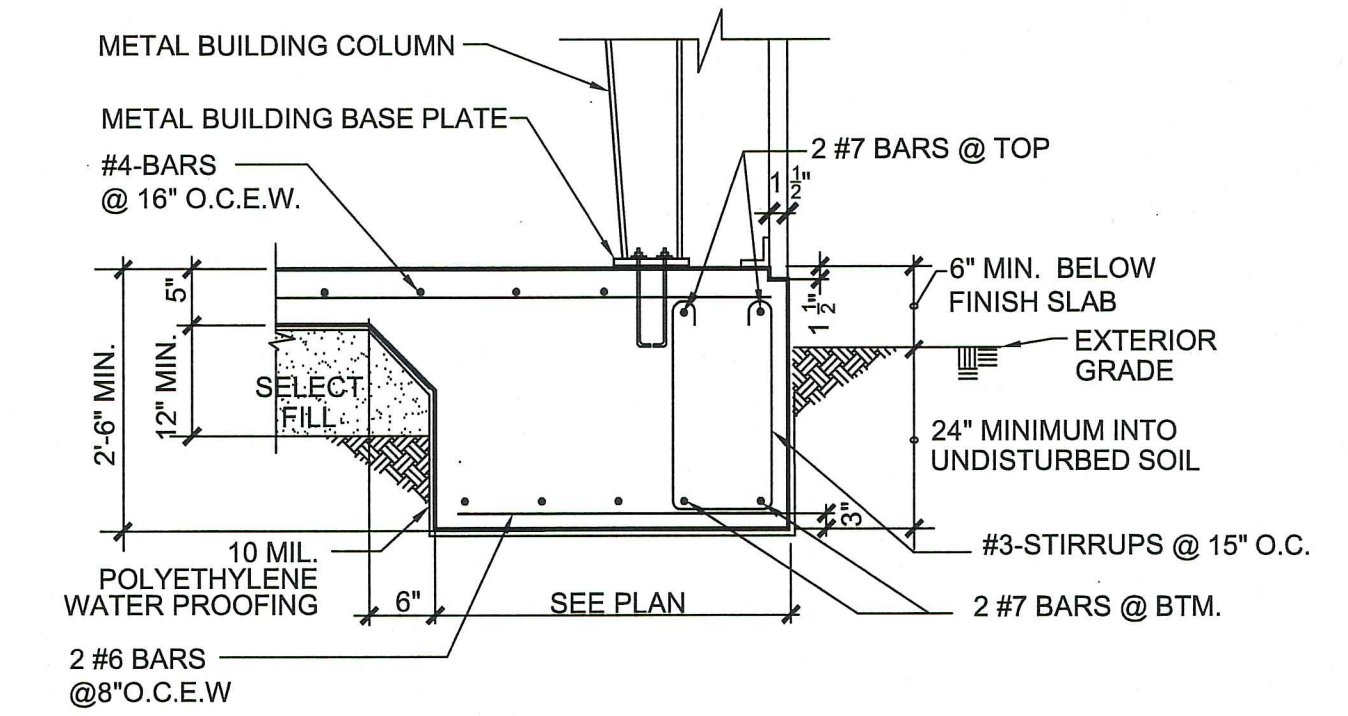
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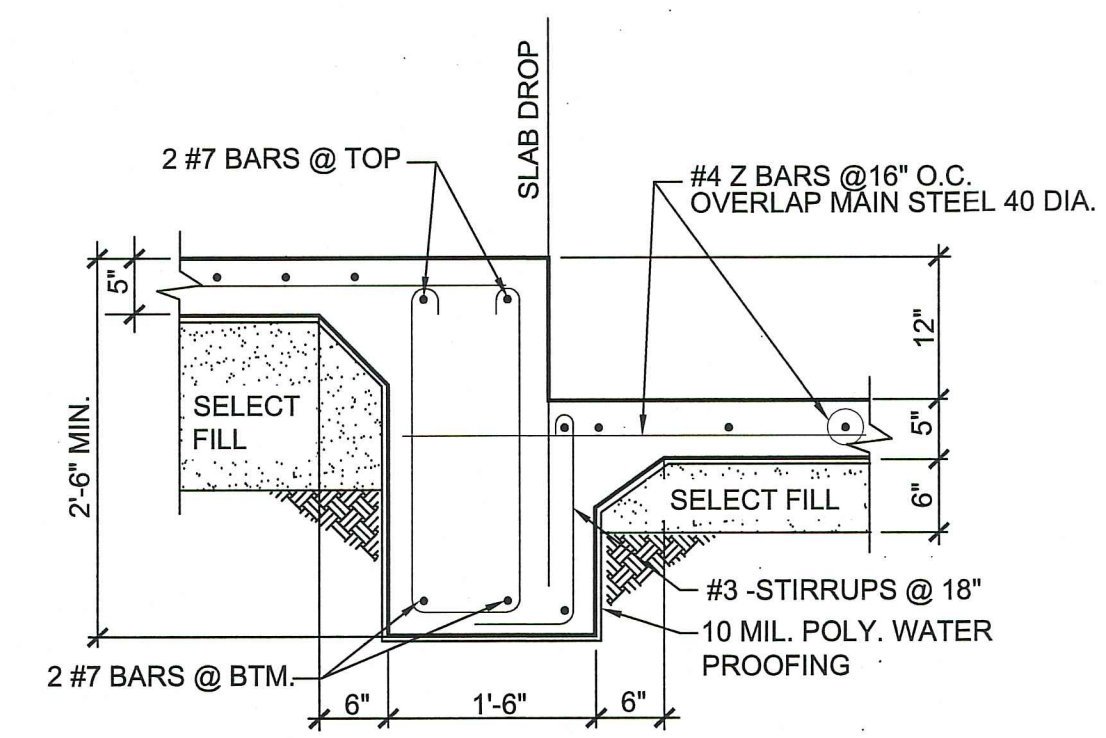
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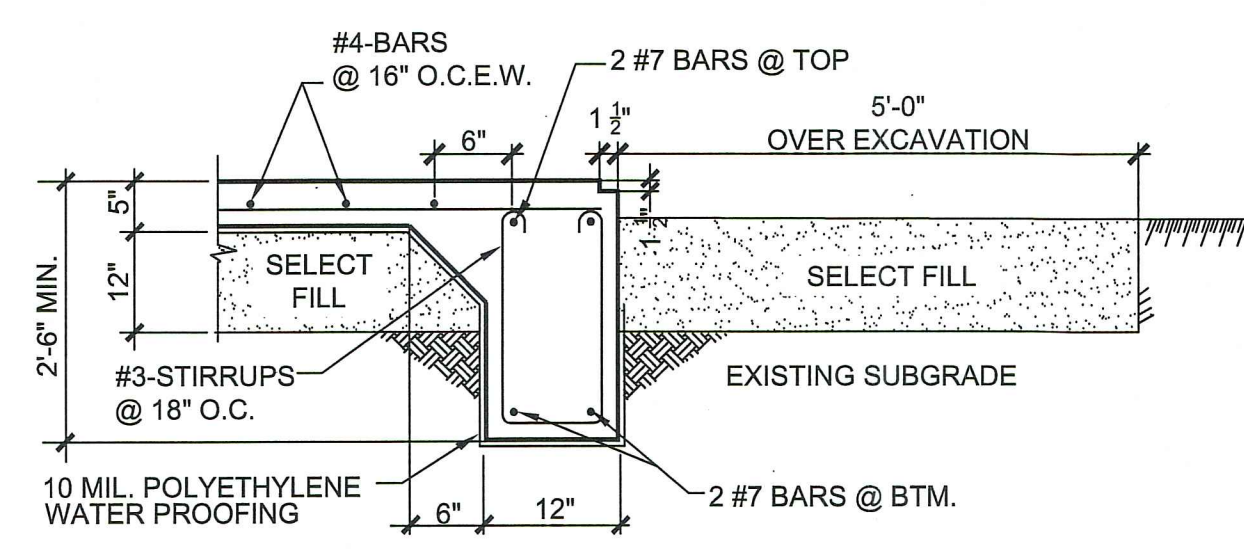
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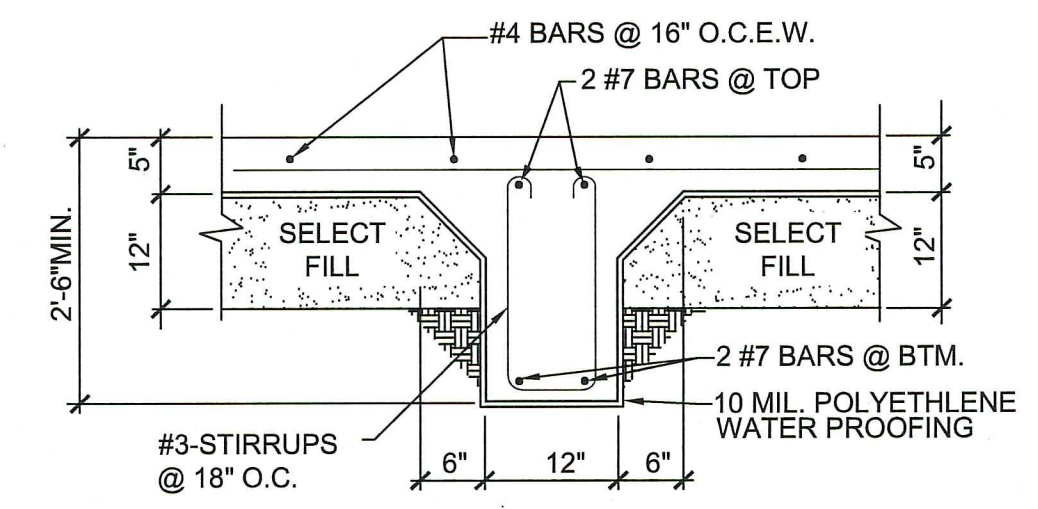
4 PERIMETER BEAM AT FOOTING / COLUMN DETAIL
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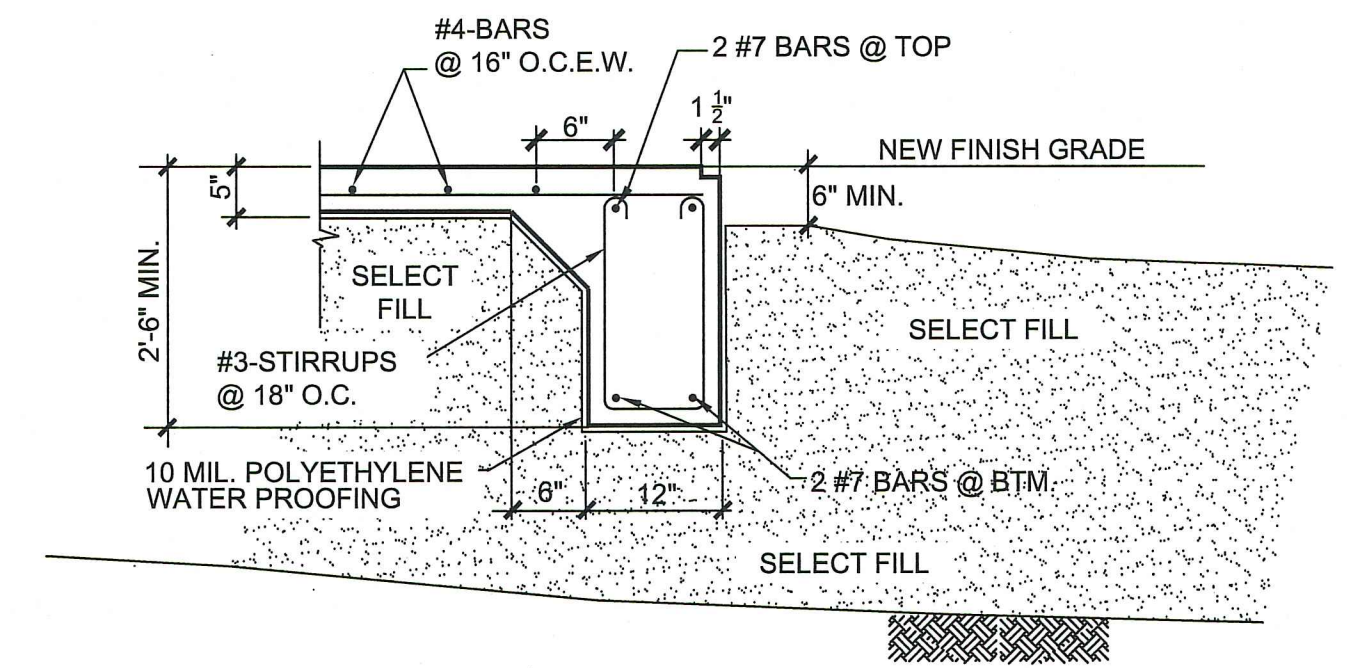
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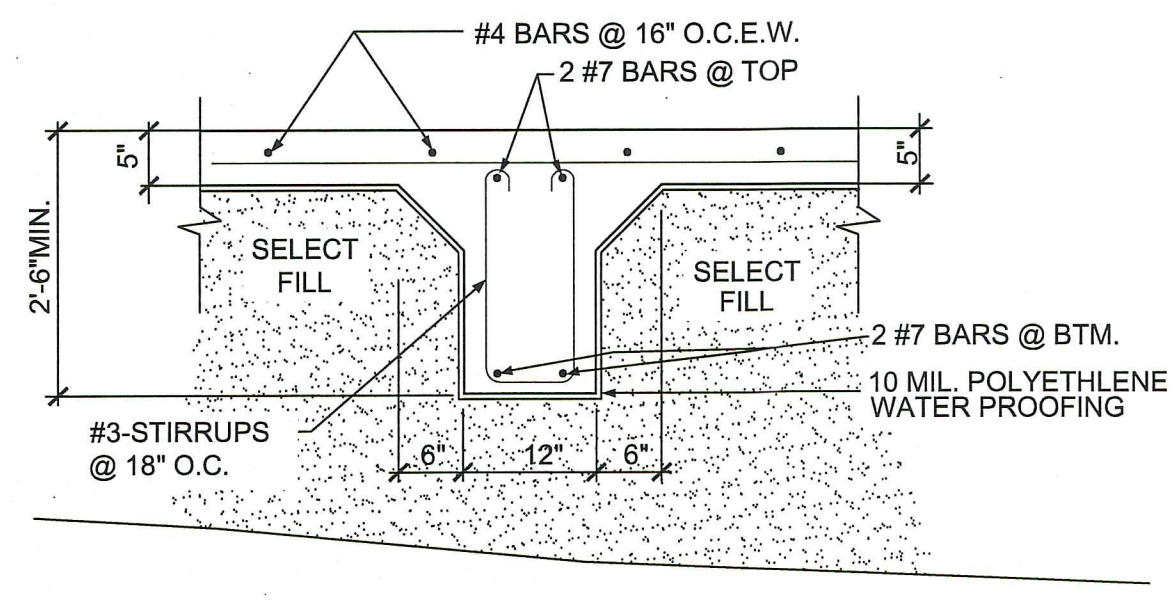
6 EXTERIOR BEAM AT CUT-SECTIONS
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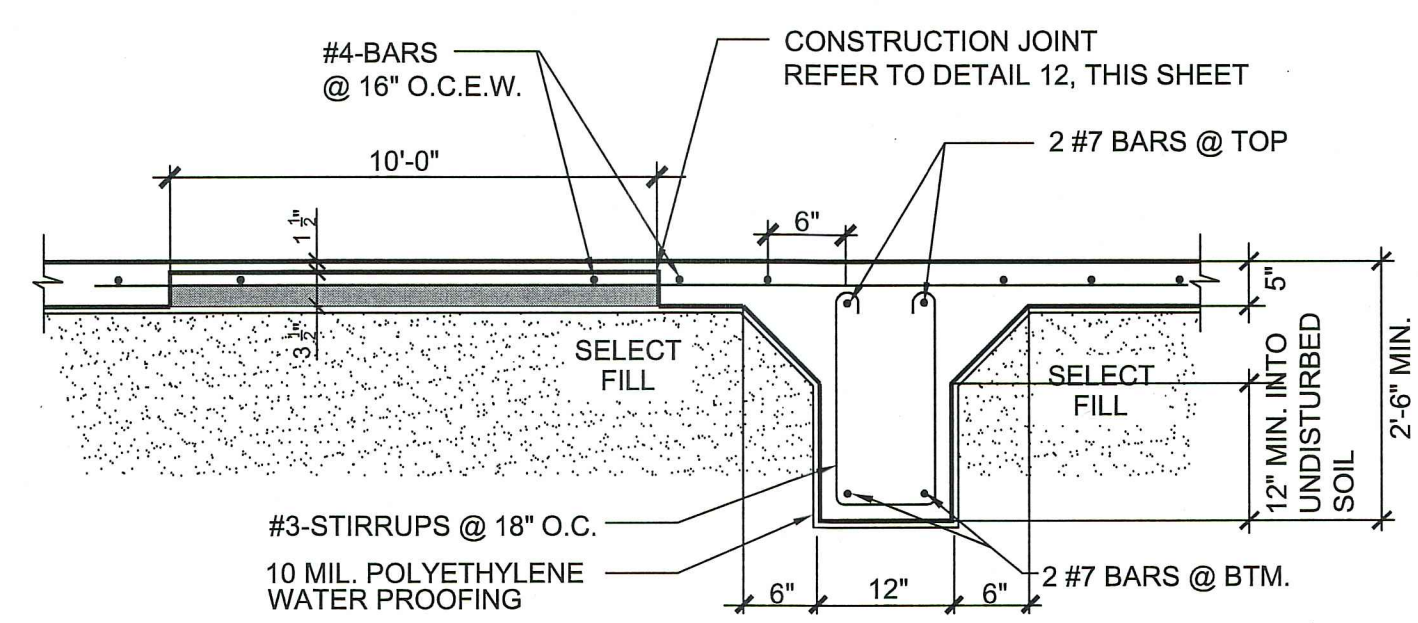
7 INTERIOR BEAM AT CUT-SECTIONS
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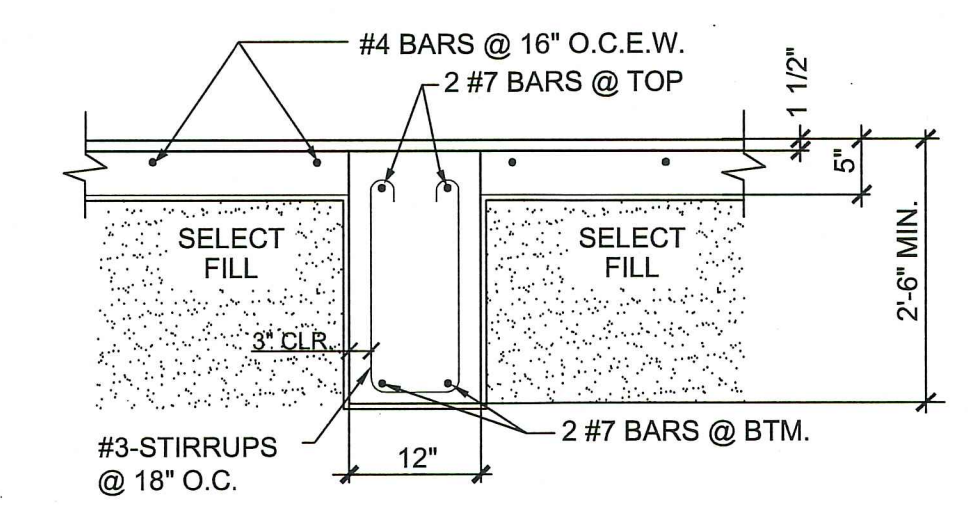
8 EXTERIOR BEAM AT FILL-SECTIONS
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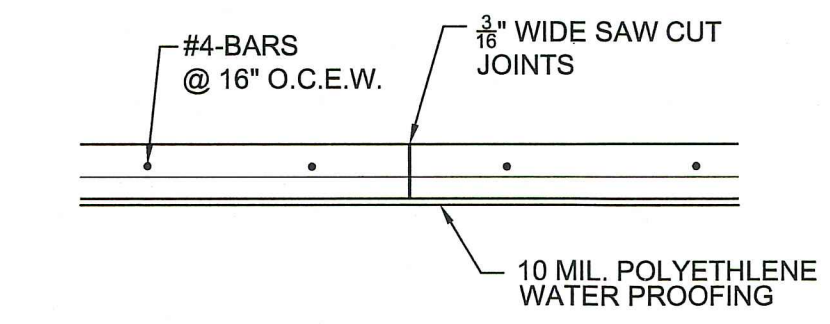
9 INTERIOR BEAM AT FILL SECTION
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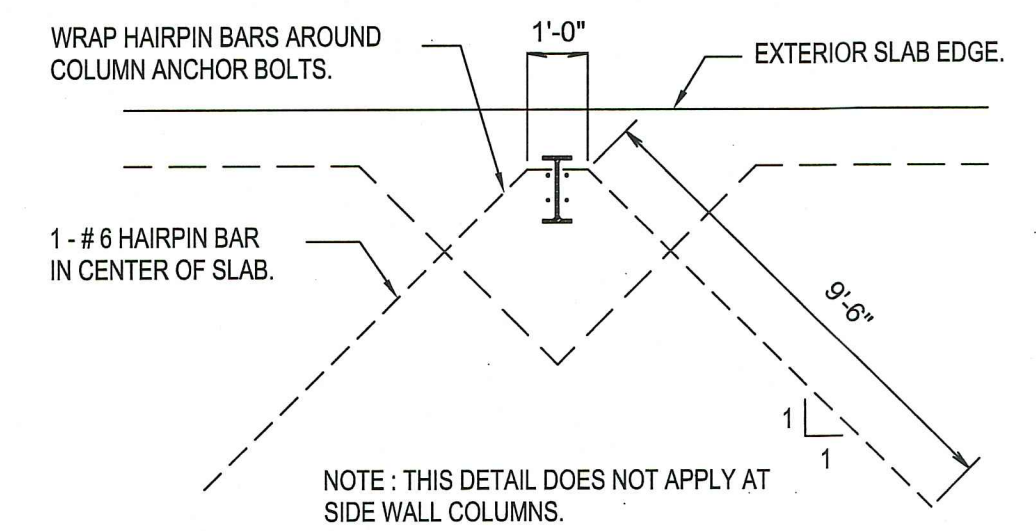
10 BEAM AT PLUMBING LEAVE-OUT
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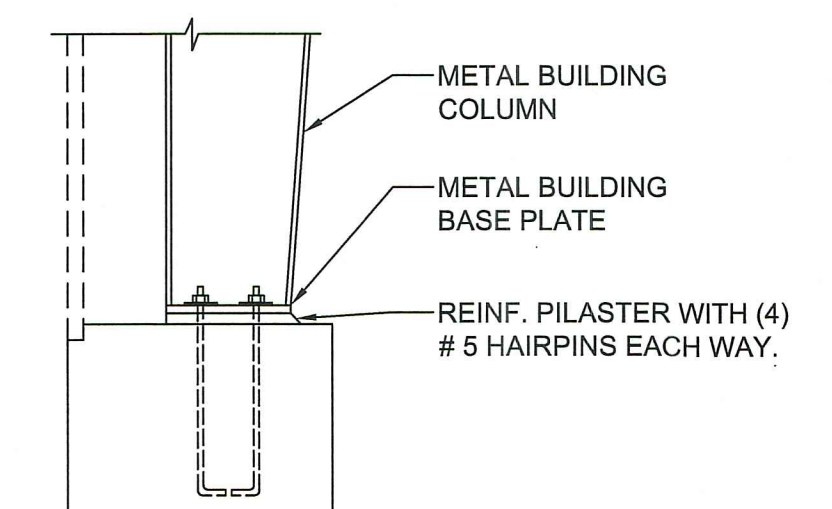
11 BEAM AT PLUMBING LEAVE - OUT
SCALE: NONE



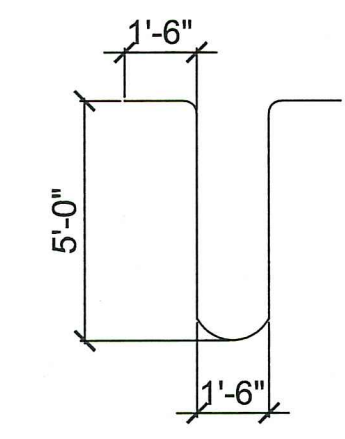
12 CONSTRUCTION JOINT DETAIL
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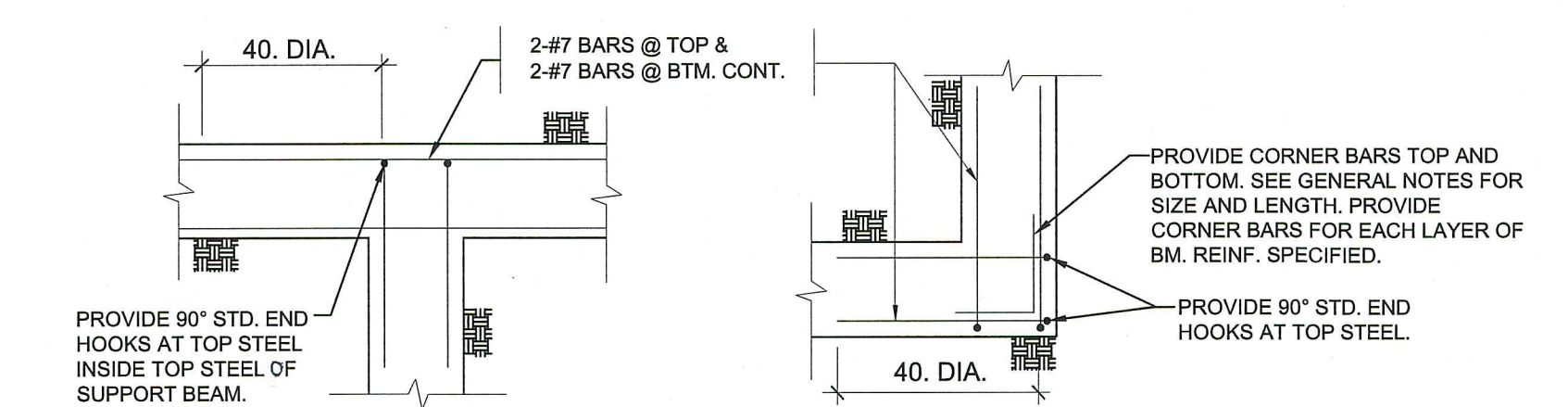
13 TYP. DETAIL AT MAIN BLDG. FRAME COLUMNS WITH NO TIE BEAMS
SCALE: NONE



14 METAL BUILDING COLUMN DETAIL
SCALE: NONE



15 TYPICAL HAIRPIN NOTE
SCALE: NONE



CORNER BARS REINFORCING DETAIL
SCALE: NONE

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drawn number: S-3