

GENERAL STRUCTURAL NOTES

DESCRIPTION OF THE WORK
 Work is to include the furnishing and installation of all material, labor and equipment necessary to accomplish the work shown on the plans and specifications. Foundation work is to include, but is not limited to, excavation, subgrade preparation, installation of footings, installation of embedments, backfilling and compaction. Super-structure is to include, but is not limited to, fabrication, delivery, storage and erection of all framing members and their connections.

CODES AND STANDARDS
 Codes - The Contractor shall comply with the requirements of the International Building Code 2003 (IBC 2003) and all local building codes. Where requirements differ, the more stringent shall apply.
 Permits and Licenses - The Contractor is to comply with all applicable regulations for the work shown on the drawings, and must obtain all necessary permits and licenses necessary to conduct the work. Associated permit and licensing fees shall be paid by the Contractor.
 Safety Inspections - The Contractor is to comply with the requirements to provide all necessary inspections of the work as required by the local building department.

JOB CONDITIONS
 Survey / Existing Conditions Information - Information on existing conditions is based upon documentation provided by the Architect for prior construction. Existing conditions are to be verified by the Contractor where required for support of or where modified by new construction. Notify the Engineer of any variation of existing conditions from that shown on the plans or where indicated to be verified.
 Dimensions - The Contractor is responsible to verify all dimensions and information shown on the drawings and in the field and advise the Engineer of any discrepancies or conflicts immediately. Written dimensions take precedence over scaled dimensions.
 Regulatory Compliance - The Contractor is responsible to conduct his work in strict accordance with OSHA requirements and other regulatory requirements.
 Construction Methods - The design plans show the requirements for the completed work. The Contractor is solely responsible for the means and methods of construction.
 Sub-Surface Information - No information is available on sub-surface conditions. It is the obligation of the contractor to familiarize himself with the existing conditions and to make any tests necessary to determine sub-surface conditions.
 Utility Notification - The Contractor must comply with all provisions of the N.J. Underground Facility Protection Act and New Jersey Administrative Code regarding notification of utility facility owners at least three (3) full business days prior to any excavation work on the project by calling the New Jersey One-Call (Telephone 1 (800) 272-1000) to verify the locations of all underground utilities prior to excavation.

QUALITY ASSURANCE
 Inspection Firms - The contractor is to obtain proposals from qualified testing and inspection firms for services on this project. The testing and inspection firms are to be engaged by the Owner. The proposals are to be submitted with the Contractor's bid for the construction work, and included in the bid as a separate item in the final contract amount. The names and qualifications of firm(s) for inspection services are to be submitted to the Architect and Engineer for review prior to the start of work. The names of selected inspection firms are to be submitted to the local building official prior to the start of work. The Contractor is to coordinate their work with the services required of the testing and inspection agencies on behalf of the Owner.
 Geotechnical Engineering - The Owner is to engage a geotechnical engineer registered in the state in which the project is located during construction, satisfactory to the Engineer, to monitor the preparation of compacted subgrade, construction of structural fills, determine adequacy of foundation bearing capacity, monitor backfilling and compaction, and installation of foundations. Work is to be performed in compliance with the requirements of the geotechnical engineer.
 Testing and Inspection - The Owner is to engage a qualified material testing laboratory registered in the state in which the project is located and satisfactory to the Engineer to conduct all inspections and testing of materials as required for the Project. The Contractor will coordinate their work with representatives of the testing company, providing access to work areas and submitting samples necessary for testing and quality assurance. Work not complying with the requirements of the contract documents is to be removed and replaced to the satisfaction of the Engineer at no additional cost to the contractor.
 Inspection Reports - Inspection firms are to prepare records for all inspections which are to be submitted to the Owner, Architect, Knudsen Engineering, Inc., building official and contractor. Deviations from design requirements are to be reported to the attention of the contractor and Knudsen Engineering, Inc. immediately. Deviations from design requirements are to be corrected or addressed to the satisfaction of Knudsen Engineering, Inc. and the work inspected to determine compliance.
 A final report of inspections documenting the inspections and satisfactory compliance with the design requirements, including correction of any deficiencies is to be submitted to the Owner, Architect, Knudsen Engineering, Inc. and building official.

Fabrication - Fabricators are to maintain an agreement with an approved independent inspection or quality control agency to inspect all steel fabrications in accordance with the fabricator's plan, at a frequency that will assure the fabricator's conformance to the requirements of the inspection agency's approved quality control program.

SUBMITTALS
 Engineering Review - The Contractor shall provide the Engineer with six (6) copies of shop drawings, manufacturer's technical product data and installation instructions, and material certificates, or samples for review prior to fabrication, delivery and installation. A review period of two (2) weeks is to be allowed for the initial review and each subsequent review, if required. Submittals will be reviewed for general conformance with design intent only. The Contractor is responsible for confirming and correcting all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades; performing his work in a safe and satisfactory manner; and complying with all applicable regulations.
 Shop Drawings - Submit the shop drawings for fabrication and installation of building components as described in the following sections, including plans, elevations, details of components and attachments to other work.
 Record Drawings - The Contractor is to maintain a set on which the actual location of existing and installed items are to be recorded. They shall identify and describe unexpected variation in soils and other sub-surface conditions as well as exact location of utilities encountered. These drawings shall be the basis for claim for additional cost arising from the need for additional excavation, backfill or additional structural members or materials. These are to be submitted to the Engineer prior to release of final payment. The plans shall be submitted to the Engineer upon completion of the project to permit the preparation of record plans.

EARTHWORK
 Geotechnical Engineer - Earthwork is to be performed in strict accordance with the recommendations of the geotechnical engineer. Where there is a discrepancy between the recommendations and the requirements on these drawings the Geotechnical Engineer shall govern.
 Regulatory Requirements - All excavations, trenching and shoring operations shall comply with the requirements of the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA).
 Material Classifications - Excavation is unclassified and includes excavation to subgrade elevation indicated, regardless of character of materials or obstructions encountered.
 Inspections and Testing - Inspections for earthwork shall comply with the recommendations of the geotechnical engineer.
 Prepared Fills - The Inspector shall determine that the site has been prepared in accordance with the requirements of the geotechnical engineer. During placement and compaction of fill material, the Inspector shall determine that the material being used and maximum fill thickness comply with the report. The Inspector shall determine, at the required frequency, that the in-place density of the compacted fill complies with the report.
 Foundation Bearing - The Inspector shall determine the presence of the design bearing capacity for foundation as indicated by the geotechnical engineer or on the plans.
 Prepared Subgrade - The Inspector shall determine the compaction of natural, in-situ and constructed subgrades to meet design requirements as indicated by the geotechnical engineer or on the plans.
 Soil Bearing Capacity - All column and wall footings, foundations, pads and pavements shall be founded on soil having a minimum allowable soil bearing pressure of 3,000 psf. The bottom of all footing excavations are to be inspected by the Geotechnical Engineer to verify adequate bearing capacity prior to placement of concrete for foundations.
 Prepared Subgrade - Prepared subgrade is to include the soil supporting structural fills, foundations, slabs-on-grade, pits, structures, etc. The suitability of subgrades is to be determined by the geotechnical engineer prior to further construction.
 Compaction - The suitability and acceptability of prepared subgrades, backfill and structural fill is to be determined by regular periodic compaction and tests by the Geotechnical Engineer submitted to the Engineer for approval and to the Contractor. Compaction and testing are to be in accordance with the requirements of the geotechnical engineering report. Tests for compaction are to be conducted in accordance with ASTM D-1557 (Modified Proctor). Compaction of structural fills and prepared subgrades for support of foundations, slabs-on-grade and structures shall not be less than 98% relative dry density. Compaction of backfills shall not be less than 95% relative dry density.
 Excavations for Foundations - Excavate to the lines and grades shown. Notify the Geotechnical Engineer who will verify adequate bearing capacity. The bottom of foundation excavations and subgrades shall be compacted to the satisfaction of the Geotechnical Engineer. If unsuitable material or insufficient bearing capacity is encountered in in-situ materials, carry excavations deeper as directed by Geotechnical Engineer and replace with compacted structural fill material or concrete. The removal and disposal of unsuitable material and replacement with backfill material will be compensated according to the Schedule of Unit Prices. The bottom of footings shall be free of loose soil, water, debris prior to placement of concrete for foundations.
 Unauthorized Excavation and Fill/Backfill - Excavation beyond the lines and grades shown or to replace unsuitable material not at the direction of the Geotechnical Engineer will not be compensated.

CAST-IN-PLACE CONCRETE
 Codes and Standards - All concrete work is to conform to the requirements of ACI "Building Code Requirements for Structural Concrete (ACI-318)" latest edition, ACI 301 "Specifications for Structural Concrete for Buildings", CRS "Manual of Standard Practice" and ACI Detailing Manual (ACI-308E).
 Testing and Inspection - The Owner is to engage a testing and inspection agency satisfactory to the Engineer to perform inspections and testing of concrete conforming with the requirements of ACI-318.
 Submittals - Submittals are to include concrete mix designs for each type of concrete specified, admixtures, curing compounds, expansion joint materials and sealants, joint forming strips and shop drawings for reinforcement. Shop drawings for reinforcement are to include layout, bar sizes and geometry, spacing and placement.

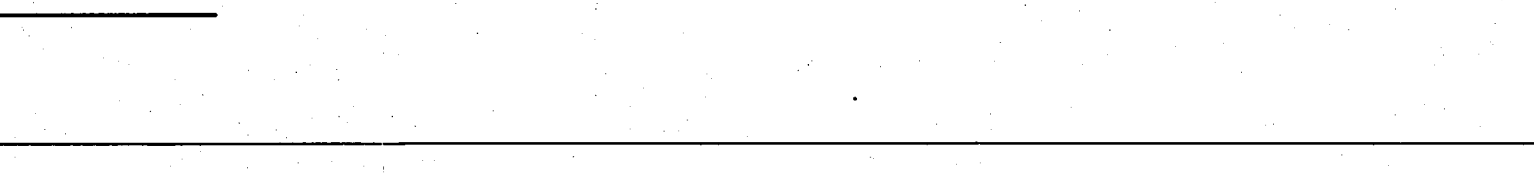
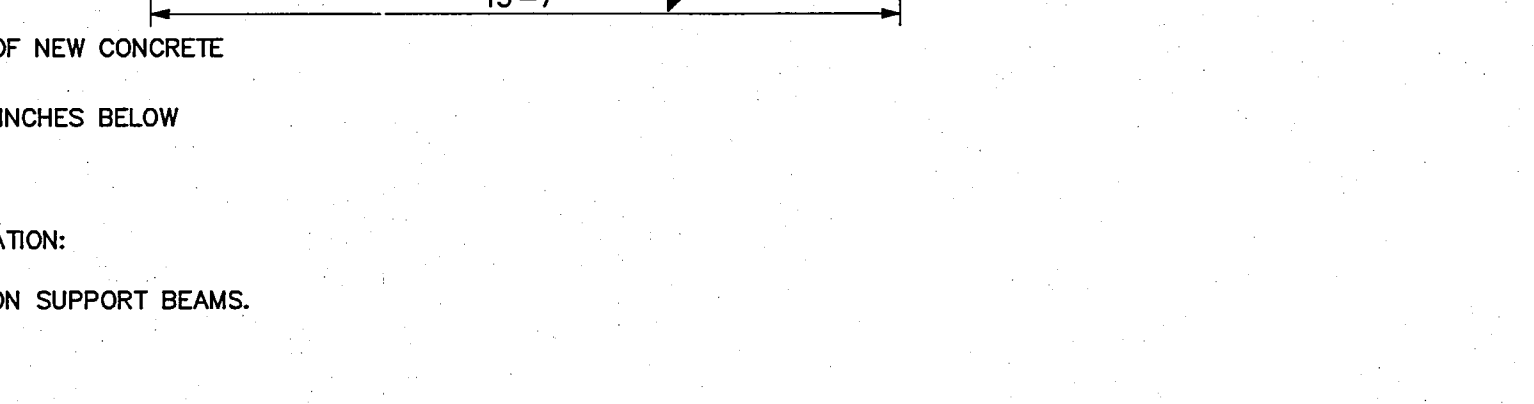
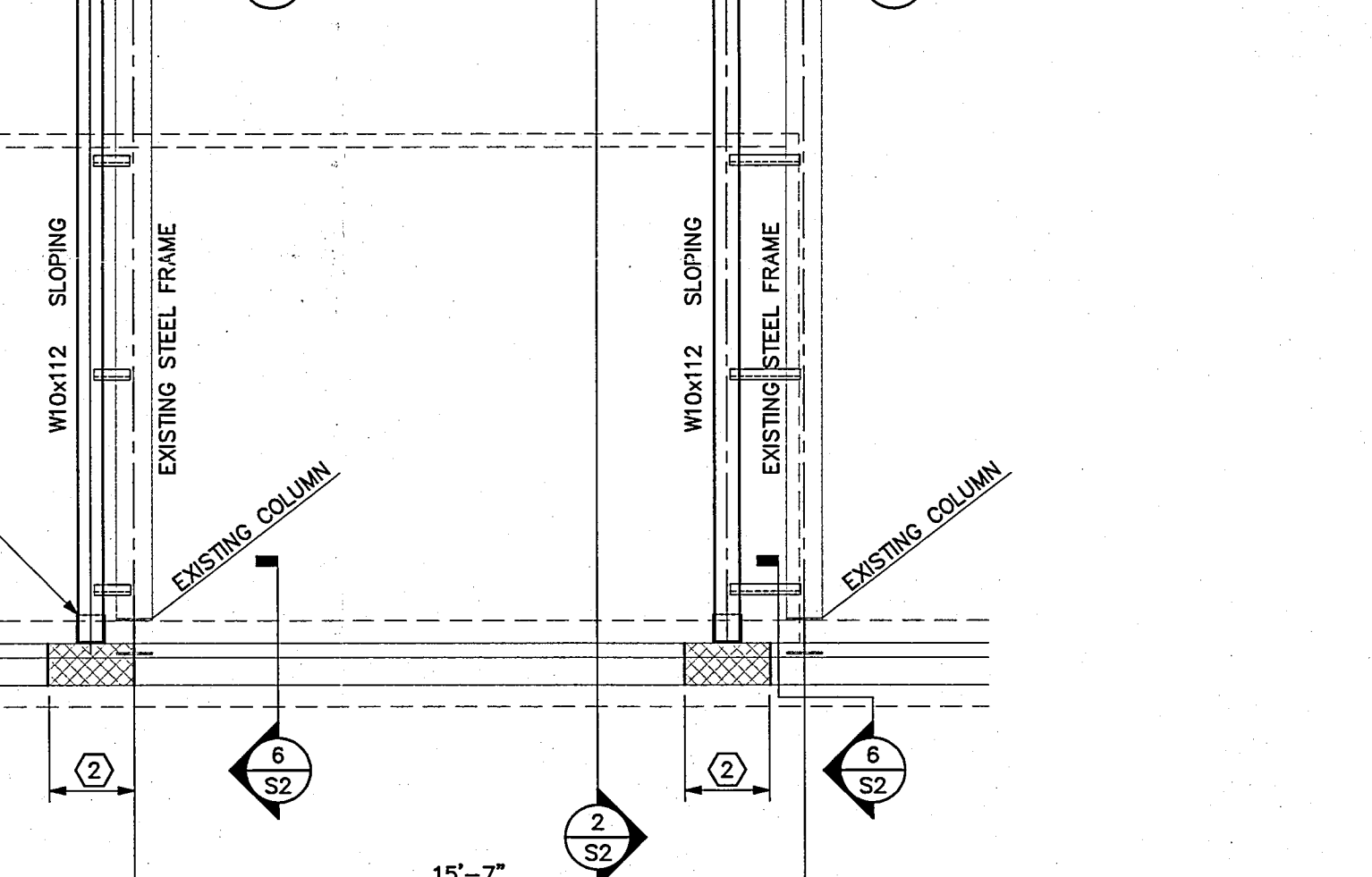
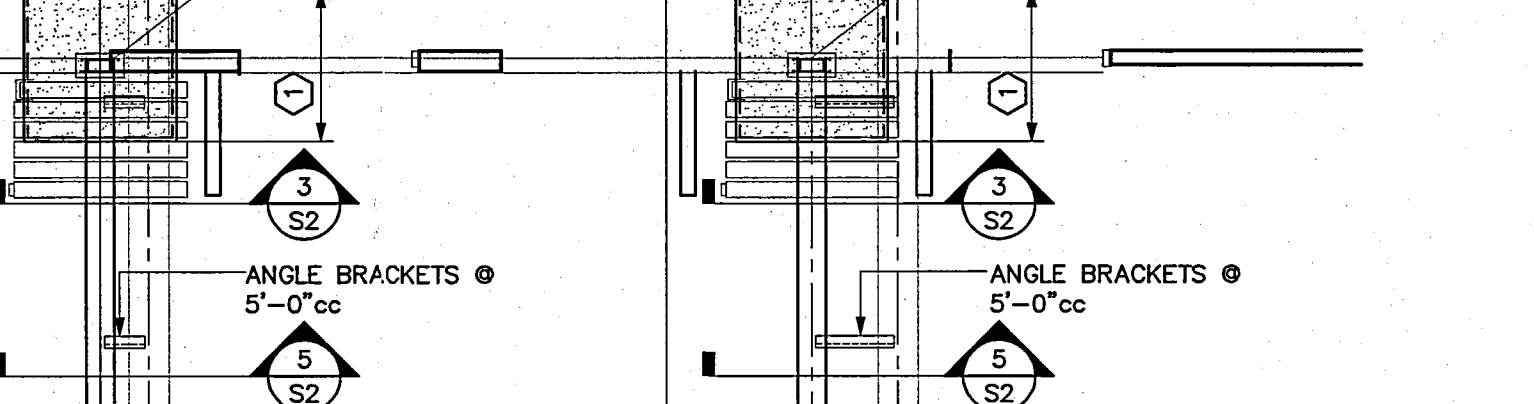
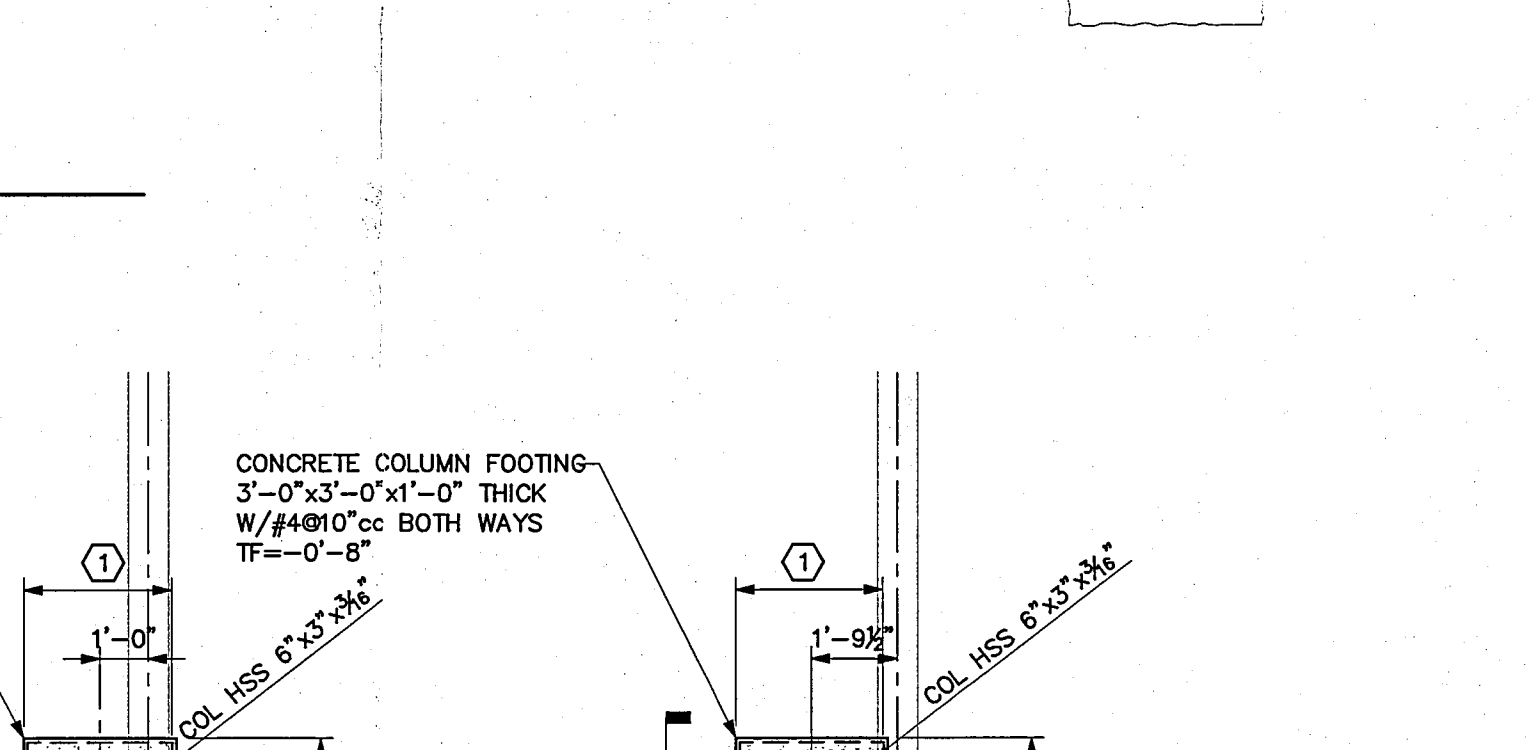
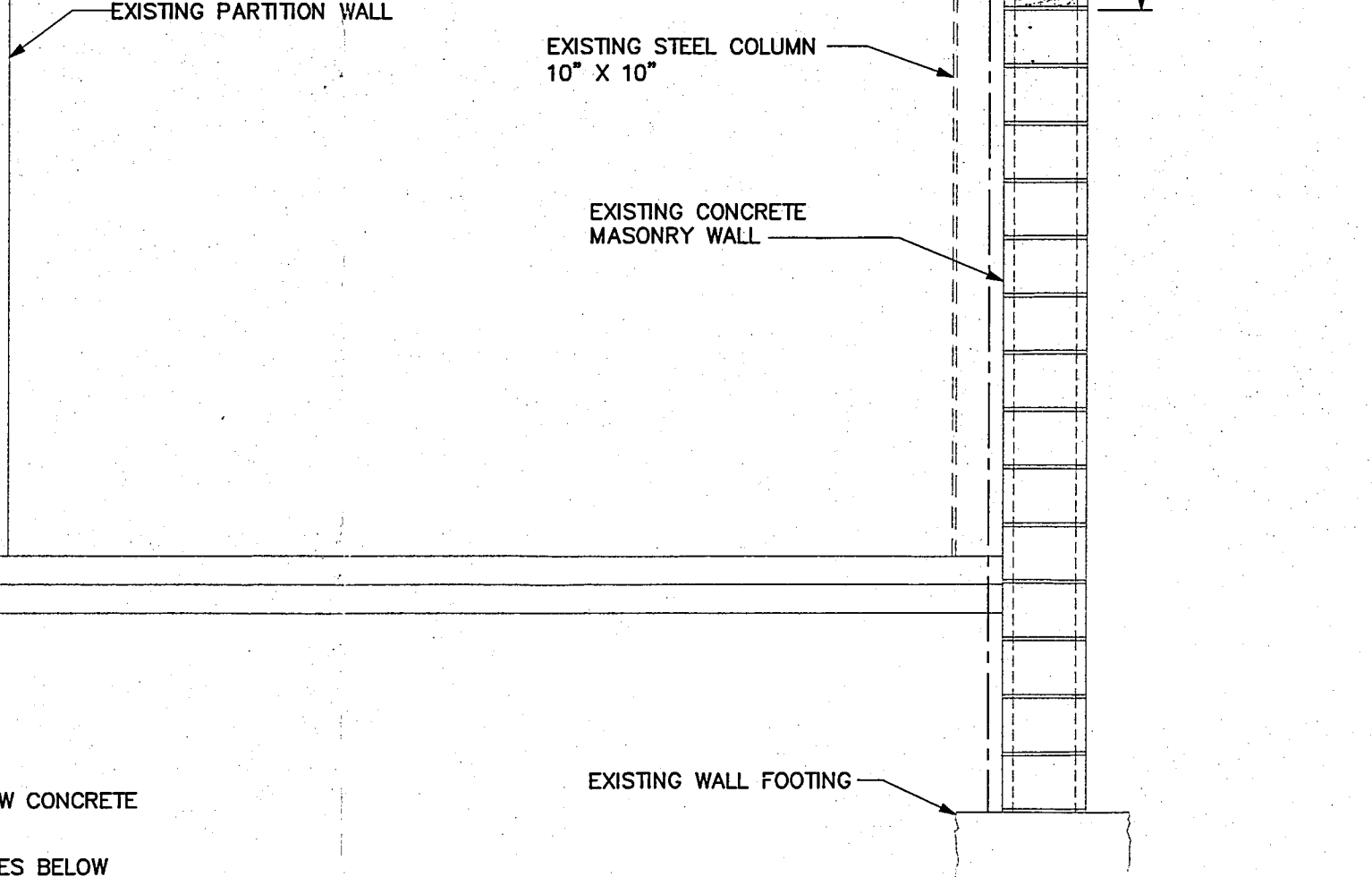
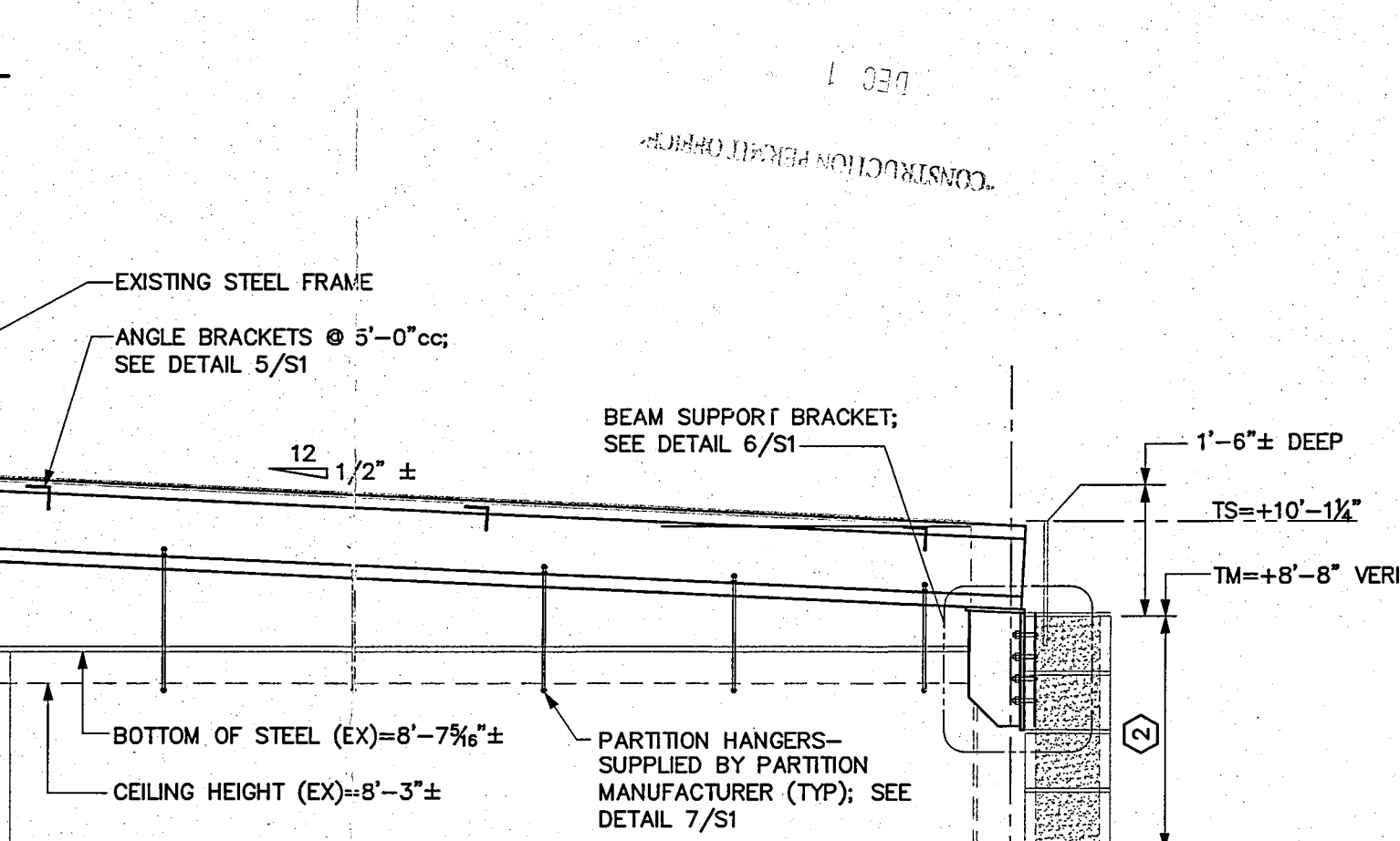
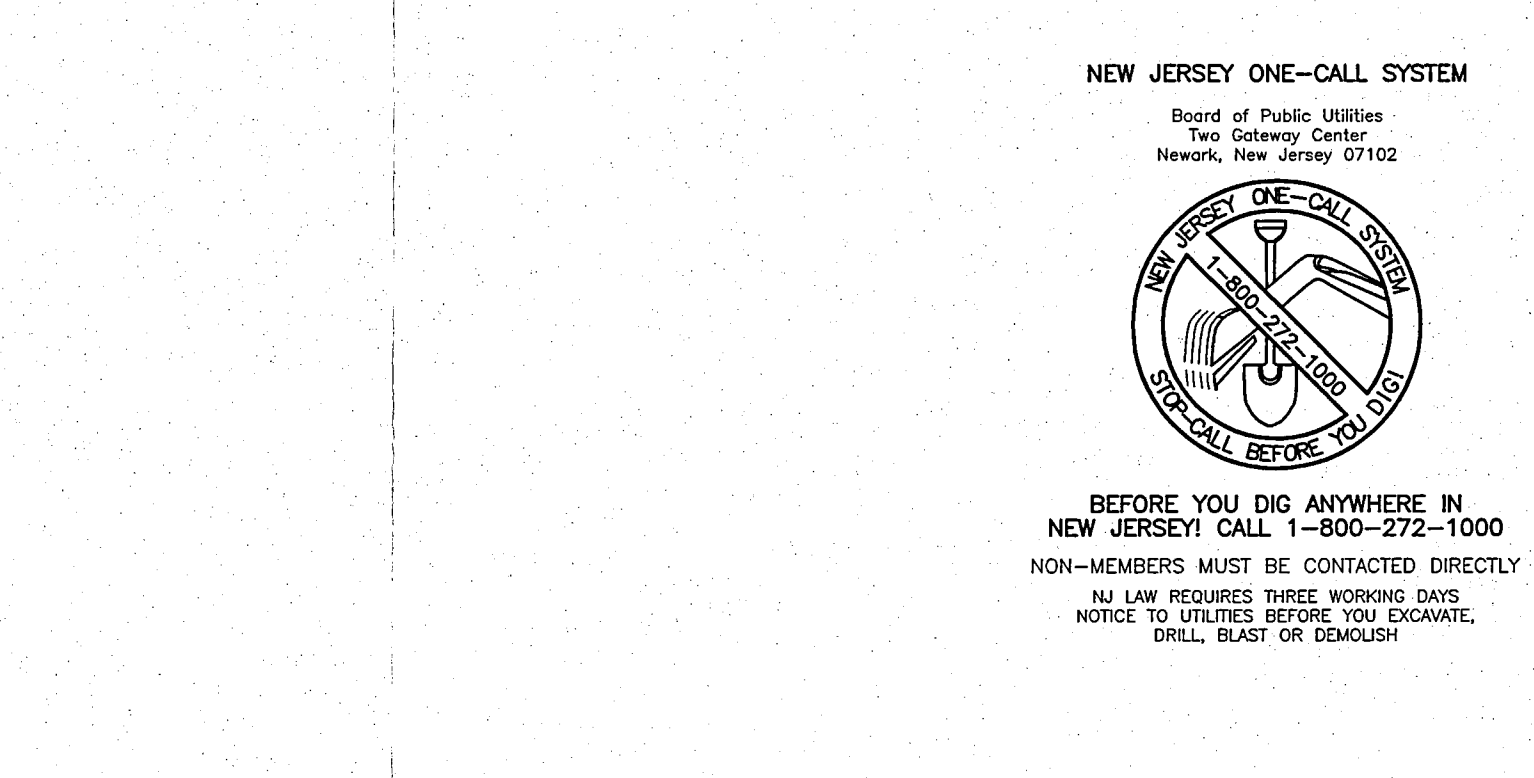
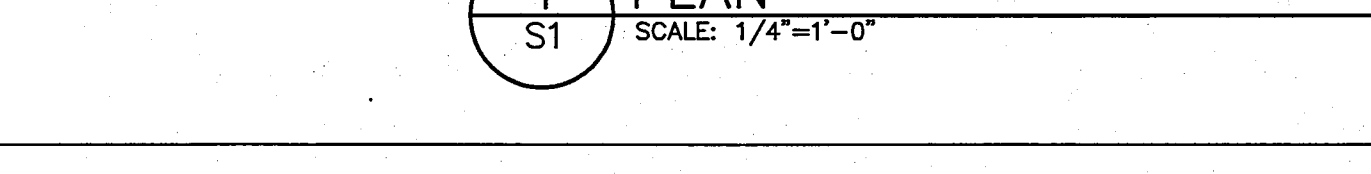
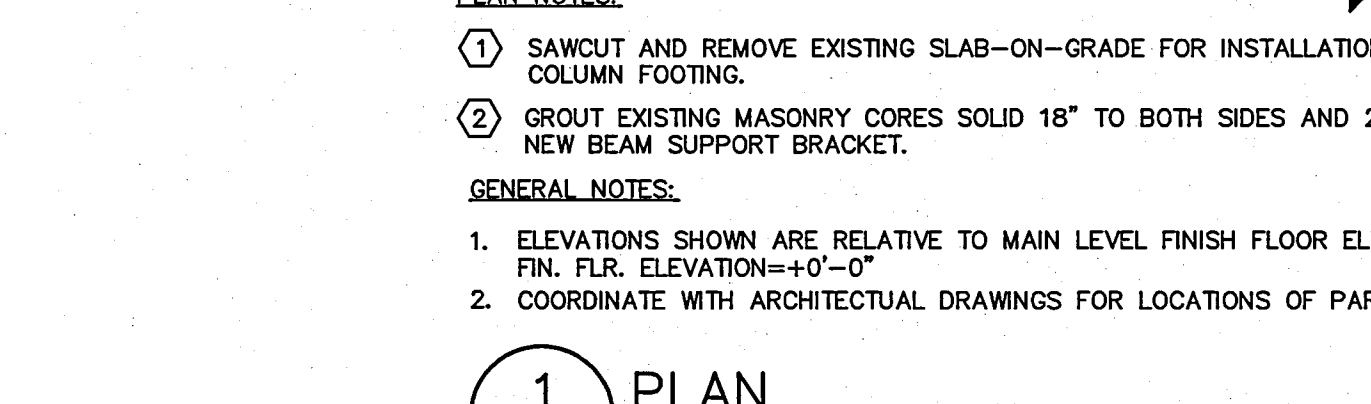
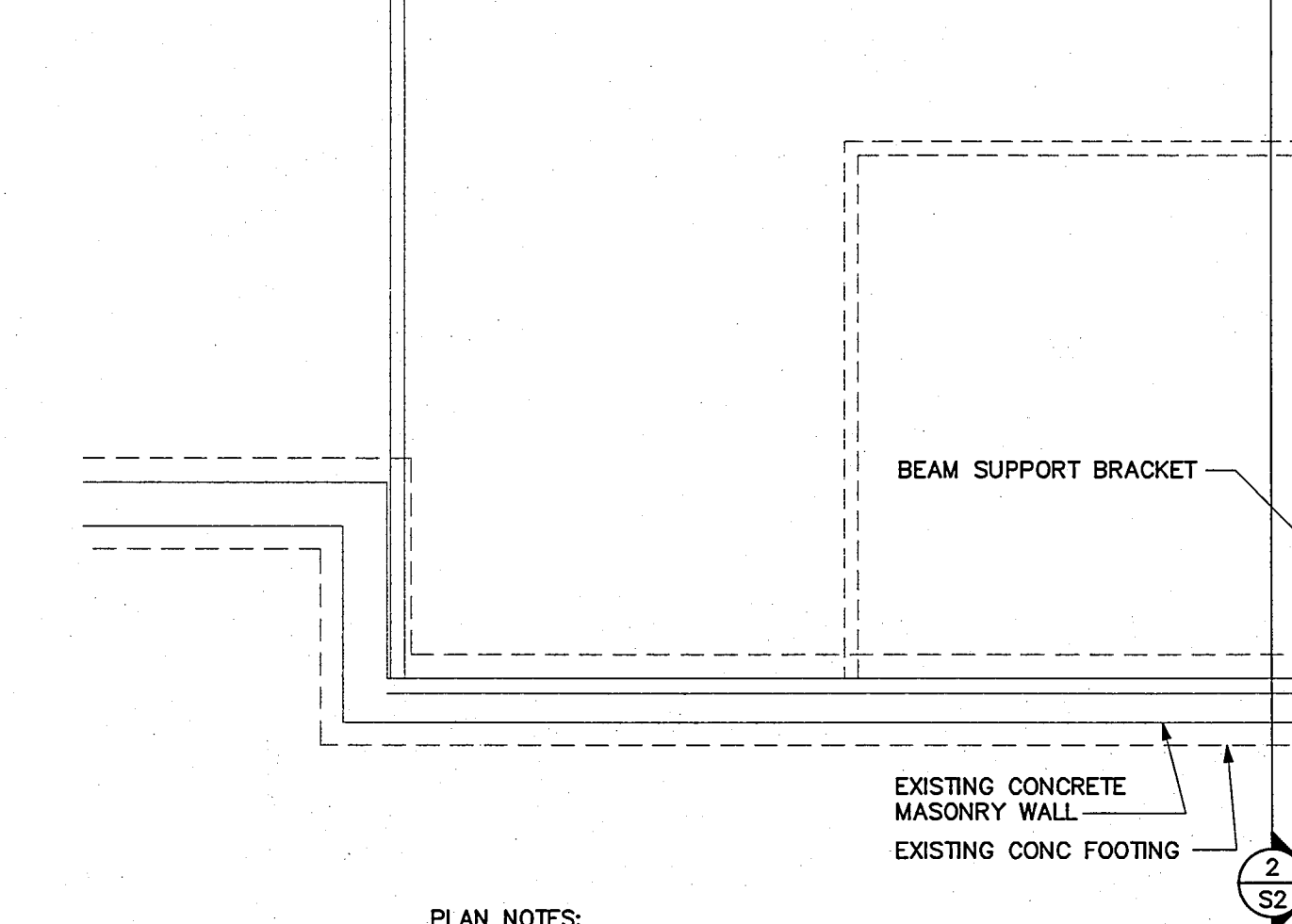
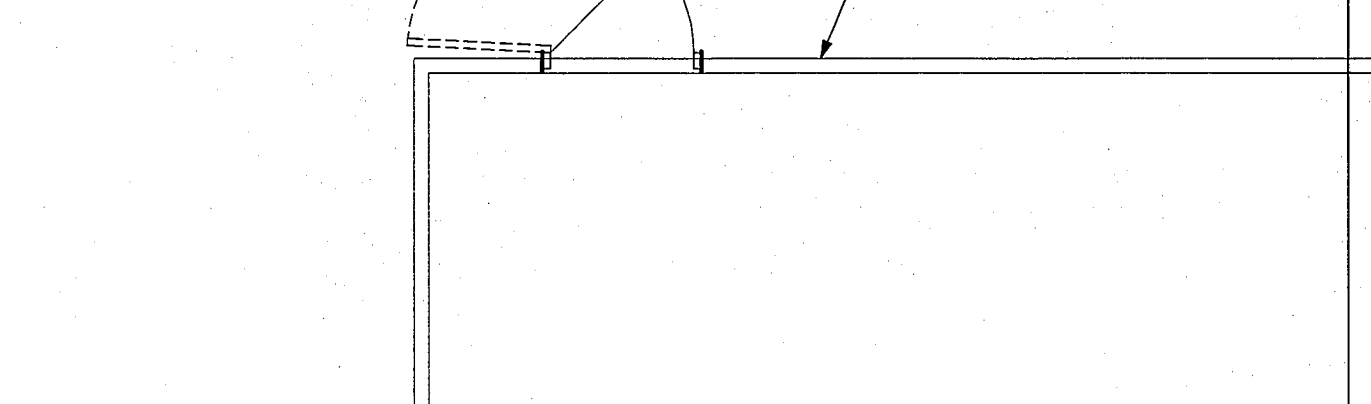
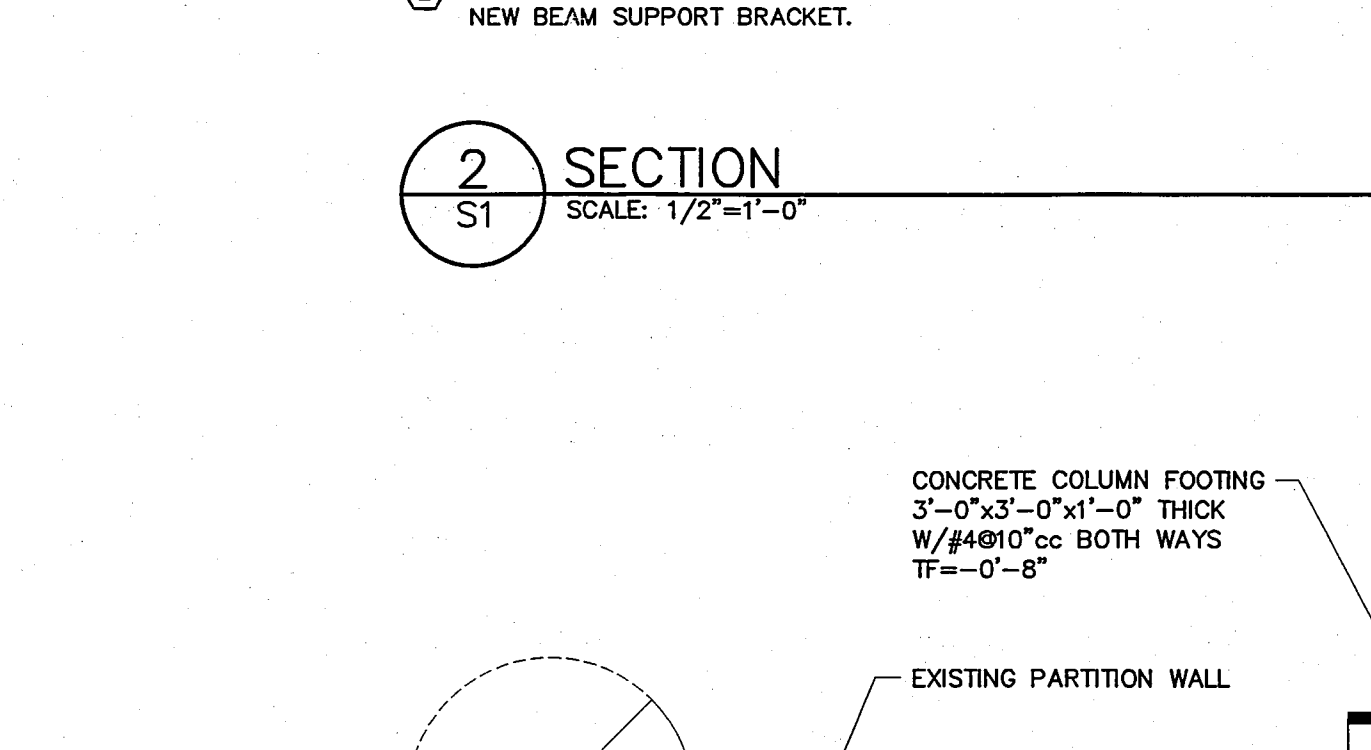
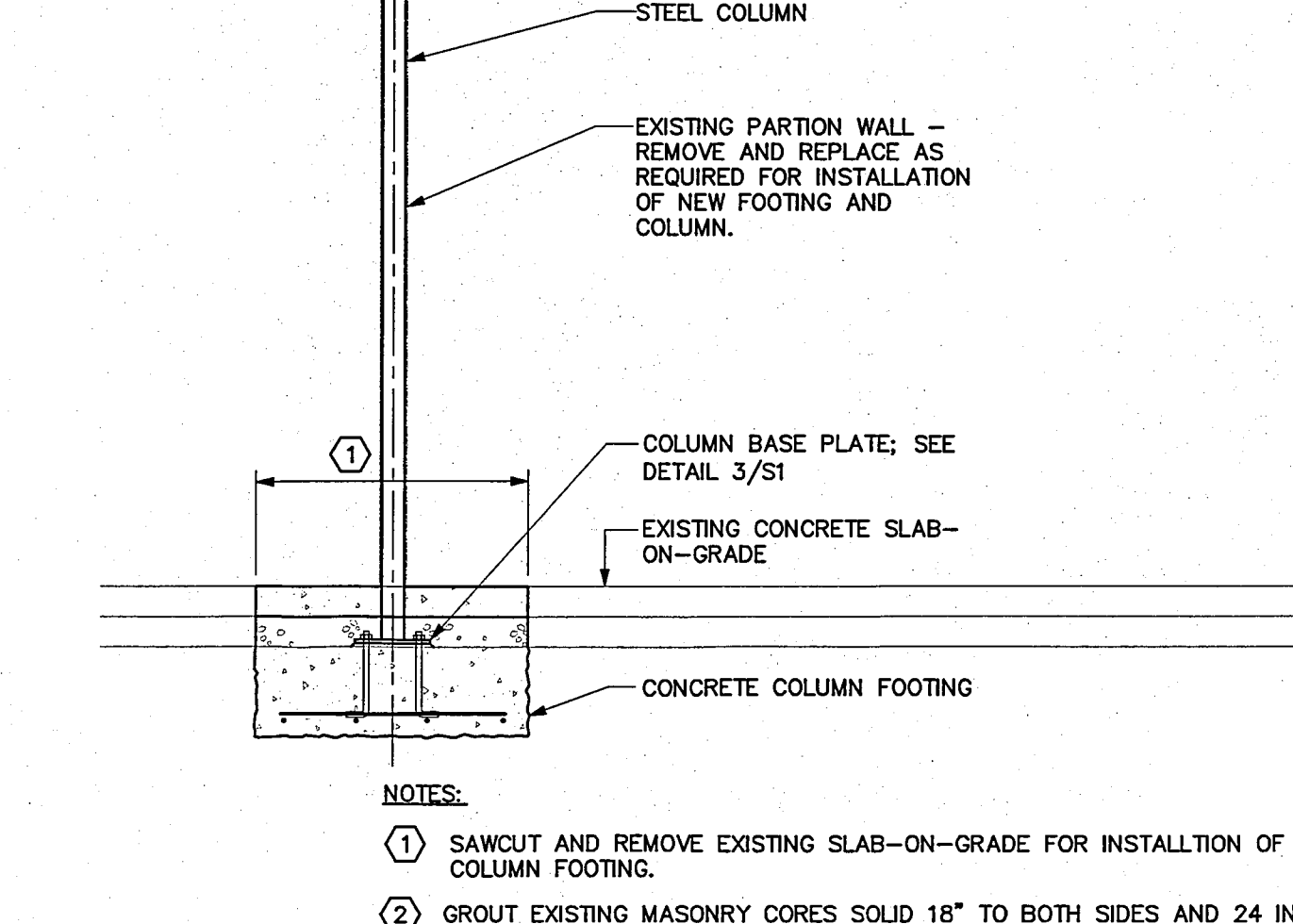
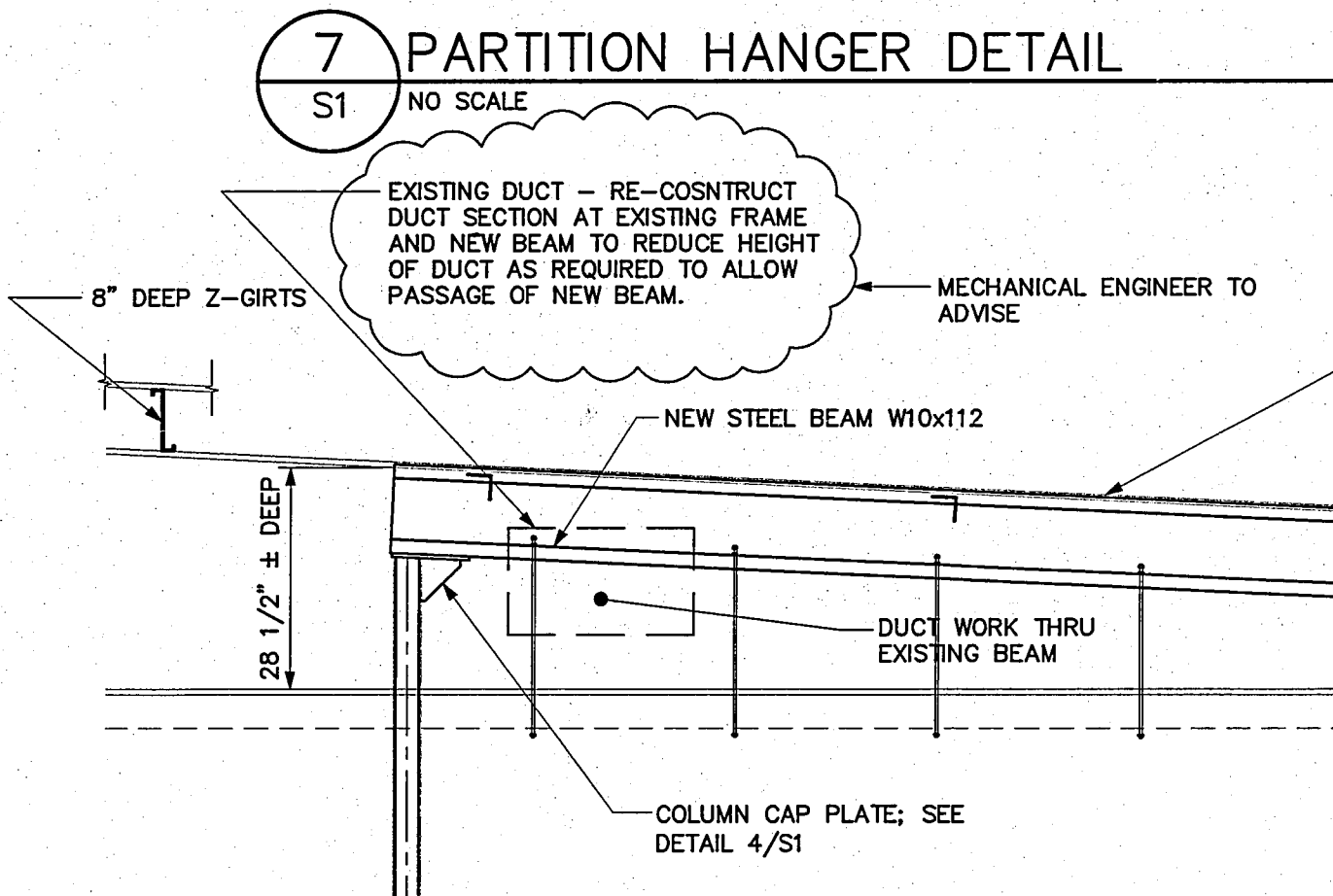
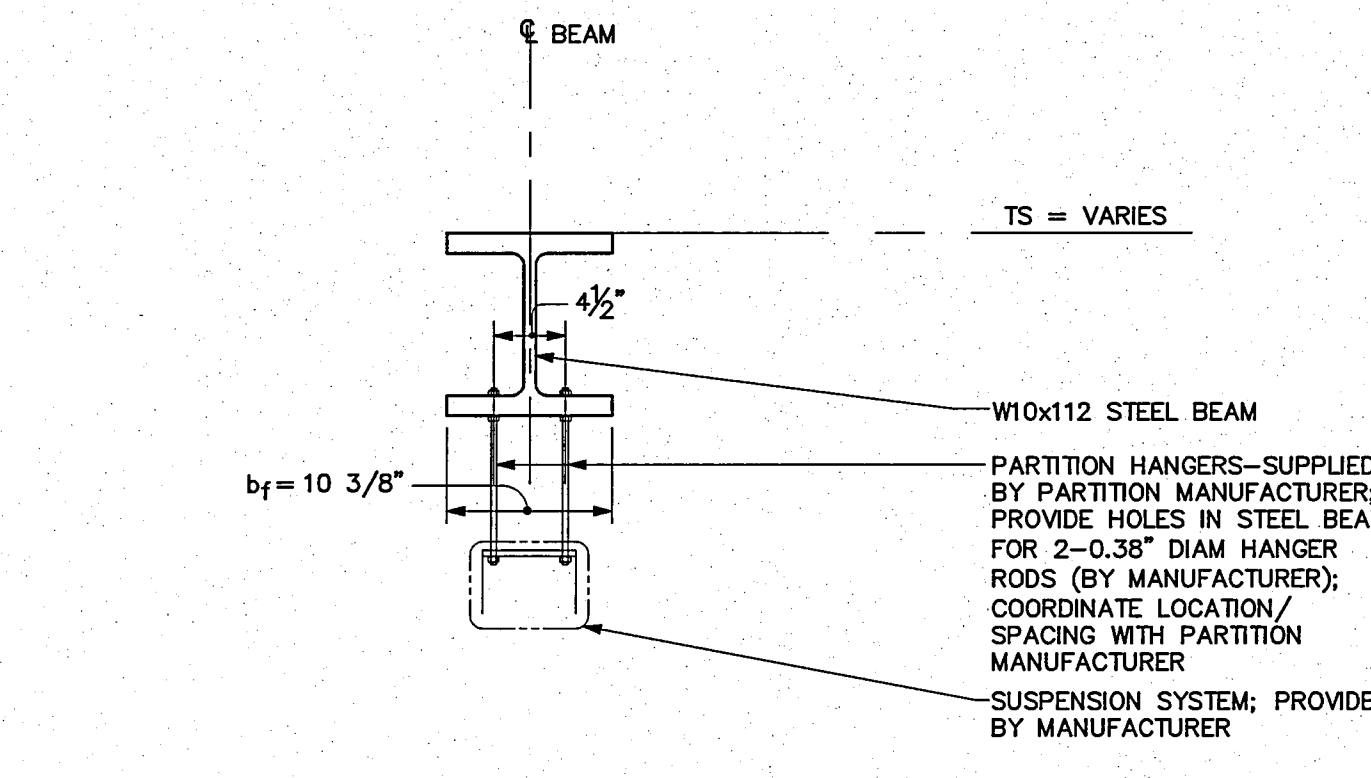
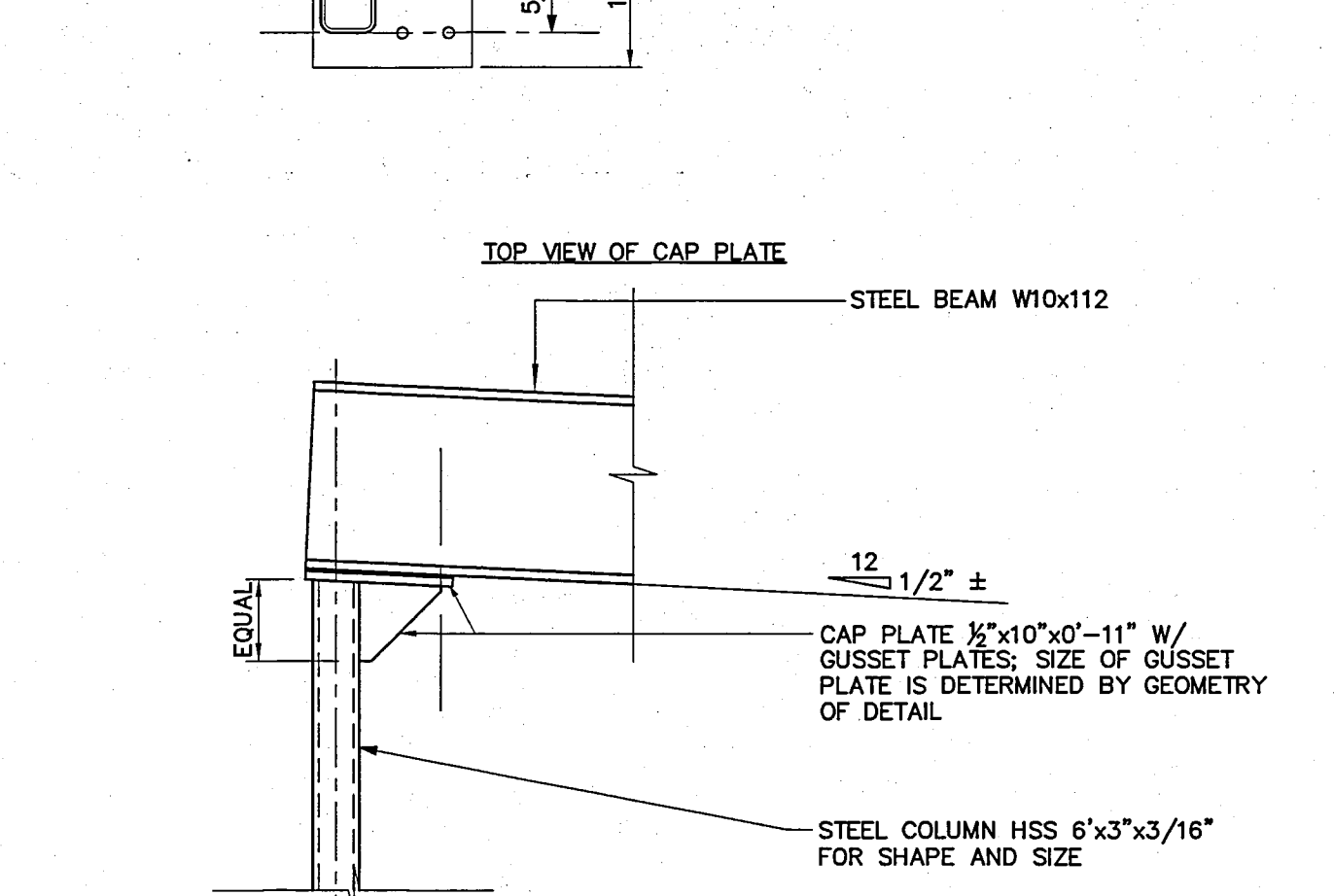
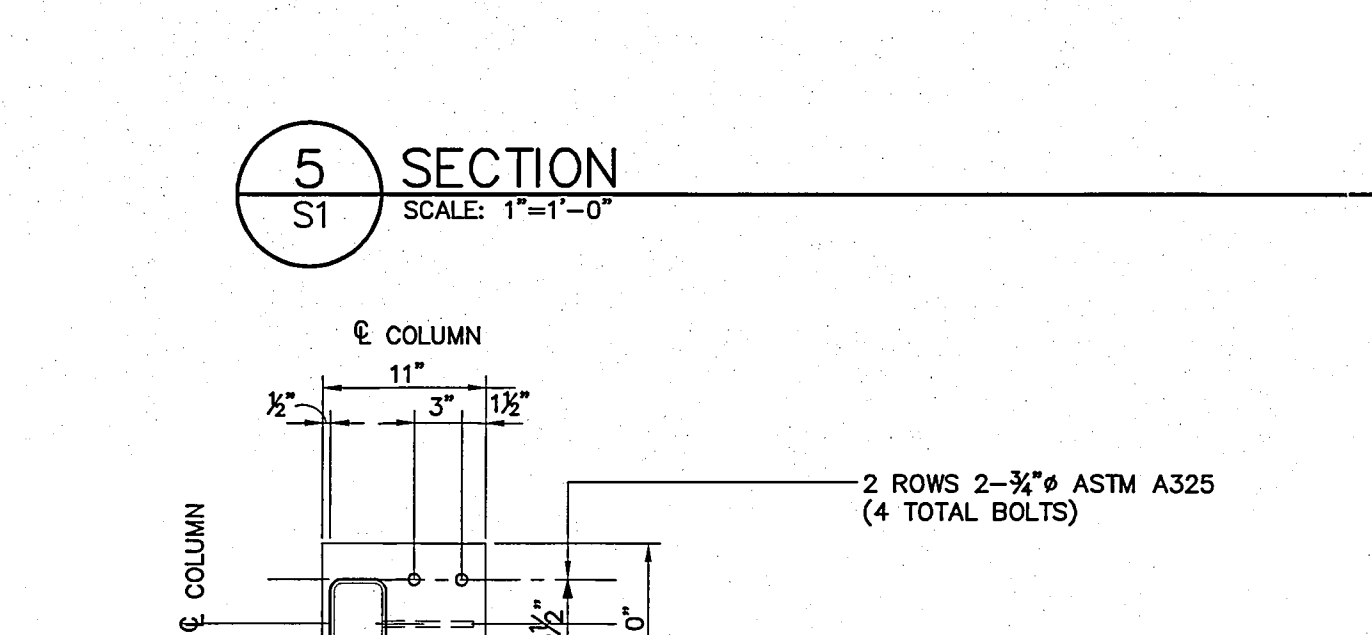
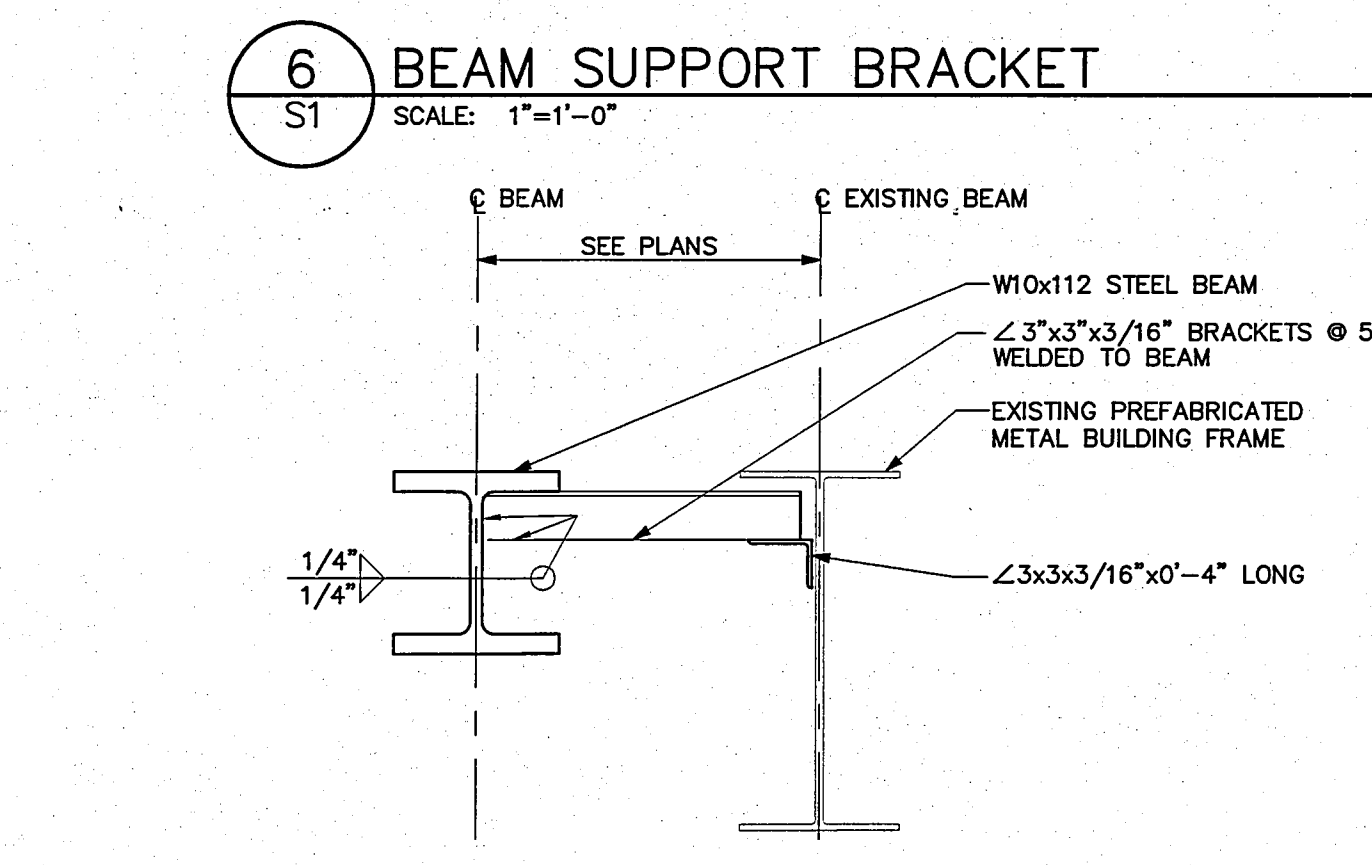
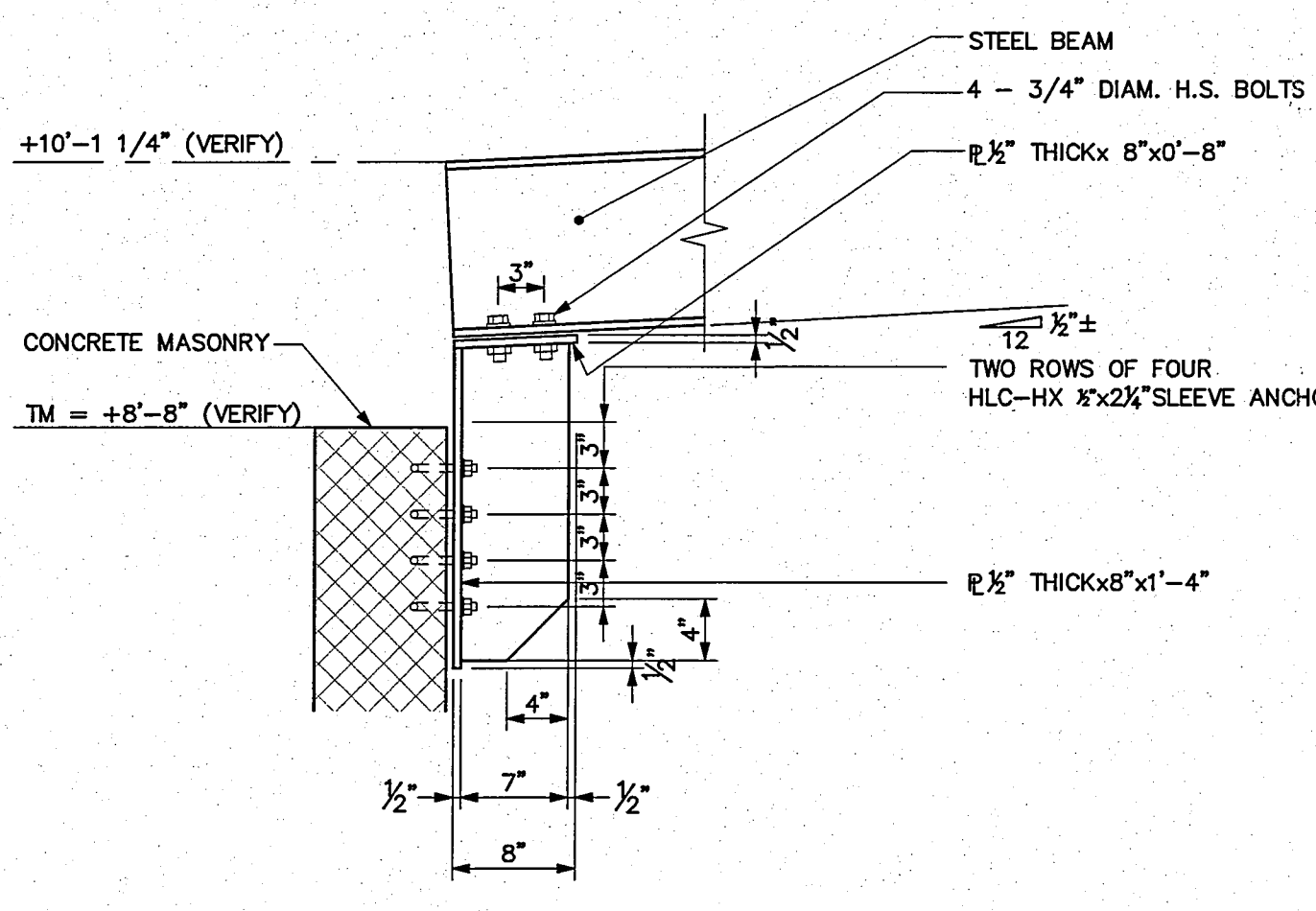
Inspections and Testing

Materials - The Inspector is to obtain material certificates for all concrete materials to document their conformance with design requirements or the Inspector shall conduct tests of materials in accordance with the appropriate standards and criteria for materials in ACI 318, Chapter 3.
Installation of Reinforcing - The location and installation details of reinforcing shall be inspected for compliance with the approved construction documents and ACI 318.
Concrete - During placement and curing of concrete, inspections are required per ACI 318 for 1) evolution of concrete strength; 2) mix proportions and mix technique; 3) proper technique of concrete placement; and 4) maintenance of specified curing temperatures and techniques.
Concrete Materials - All concrete shall be normal weight, with a minimum compressive strength at 28 days as shown below. Cement shall conform with ASTM C150 (Type I Portland Cement) and aggregate shall be normal weight aggregate conforming to ASTM C33. Concrete exposed to freezing weather is to be air-entrained as indicated below, with an admixture conforming with ASTM C260. Concrete use for slabs placed on metal deck shall not contain chloride salts. (No calcium chloride or any admixture containing chlorides shall be used in any concrete).
Application

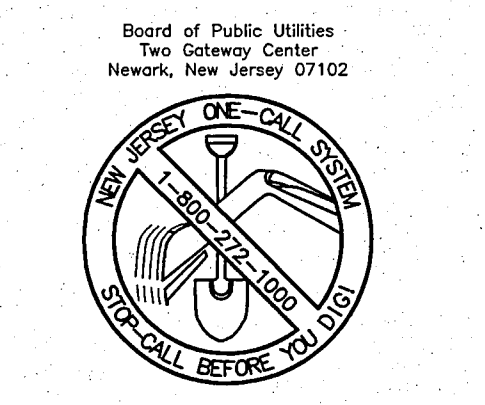
Application	Compressive Strength (psi)	Slump (inches)	Unit Weight (lbs/c.f.)	Air Entrainment (percent)
Foundations	3000	4	145	-
Slabs on Grade	3500	4	145	-

Concrete Reinforcing - Reinforcing bars are to conform with ASTM A615, Grade 60 high strength billet steel, deformed (Fy=60ksi). The minimum lap for reinforcing bars is to be 48 bar diameters unless noted otherwise on the plans. Provide corner bars or lap bands in exterior corners of footings, walls and grade beams of the same size and spacing as horizontal reinforcing. Reinforcing bars not to be welded in the field. Splices and anchorage of reinforcing shall be in accordance with the details. Where mechanical splices are used, they are to develop a minimum of 125 percent of the bar strength.
Vapor Retarder - Vapor Retarder shall be polyethylene sheets having a thickness of 8 mil. Edges of vapor retarder sheets are to be lapped 6 inches minimum and sealed.
Concrete Cover over Reinforcing - Minimum cover over concrete is to conform with the following:
 Concrete cast directly against earth 3 inches
Concrete Finishing - Interior concrete slabs are to be troweled smooth.
Concrete Curing - Slabs are to be moist-cured for seven (7) days following placement, or cured using a curing compound with the prior approval of the Engineer, except where metallic aggregate surface hardeners are to be used. Apply membrane curing compound such as Moisture 200W in areas where metallic aggregate surface hardener is used. Apply per manufacturer's directions.
 Curing compound is to be a high solids, acrylic curing compound conforming to ASTM C309 and C-1315, Type 1, Grade B applied at a rate of 1 gallon per 200 square feet to restrict the loss of water to less than 550 grams per square meter in 72 hours such as Master Builders Mastercure 100W or approved equivalent. Apply curing compound to concrete slab upon completion of finishing by continuous application by power spray or roller in accordance with manufacturer's instructions. Remove curing compound after curing as directed by manufacturer.
Non-Shrink Grout - Non-ferrous non-shrink grout complying with Corps of Engineers Specification CRD-621 for packing under beam and column base plates.
Job Conditions - No concrete shall be placed unless the ambient temperature is and is expected to remain above 40 degrees Fahrenheit for a period of at least six hours after placement of concrete.

MASONRY
Codes and Standards - Masonry construction shall conform with the requirements of the Building Code Requirements for Masonry Structures (ACI 530-95/ASCE 5-95/TMS 402-95) and "Specifications for Masonry Structures (ACI 530.1-95/ASCE 6-95/TMS 602-95)".
Grout - Grout is to be coarse Portland Cement Concrete grout (3/8 inch maximum aggregate) complying with ASTM C476. Grout shall attain a minimum compressive strength of 3000 psi at 28 days.
STRUCTURAL STEEL
Codes and Standards - Structural Steel shall be designed and constructed in accordance with the American Institute of Steel Construction (AISC) Specification for Structural Steel Building - Allowable Stress Design and Plastic Design.
Shop Drawings - Shop drawings showing complete information necessary for the fabrication and erection of the structural steel, including the location, type and size of all connectors and welds shall be submitted to the Engineer for review prior to fabrication.
Testing and Inspection - Shop and field-welded connections are to be inspected to ensure compliance with the requirements of AISC specifications for "Structural Joints using ASTM A325 or A490 bolts", latest Edition. Welded joints are to be visually inspected for compliance with the size and type of weld. Additional testing may be required.
Inspections
Materials - Steel materials are to be inspected as follows:
Bolts, Nuts, and Washers - The Inspector is to check for 1) Material identification markings, and 2) Conformance to specified ASTM standards with a manufacturer's certificate of compliance.
Structural Steel - The Inspector is to check for 1) Material identification markings, and 2) Conformance to ASTM Standards specified in the plans and specifications. Provide certified test reports in accordance with ASTM A6 or ASTM A588.
Weld Filler Materials - The Inspector is to check for conformance to AWS specification as specified in the plans and specifications and obtain the manufacturer's certificate of compliance.
Bolts - Inspections shall be as specified in Section 9 of the RCSC "Specification for Structural Joints Using A325 or A490 Bolts".
Welding - Weld inspection shall be in compliance with Section 6 of AWS D1.1. Weld inspectors shall be certified in accordance with AWS D1.1.
Details - The Inspector shall inspect the steel frame to verify compliance with the details shown on the construction documents, such as brooms, stiffeners, member locations, and proper application of joint details at each connection.
Structural Steel - Unless otherwise designated on plans, the structural steel type shall be as follows:
 All Wide Flange shapes: ASTM Type A992, Fy = 50ksi - (50)
 All other rolled shapes: ASTM Type A36, Fy = 36ksi - (36)
 HSS: ASTM Type A500 Grade B, Fy = 48ksi (Cold-formed)
 Column Base Plates: ASTM A572, Fy = 50 ksi
 Bearing Plates: ASTM A36, Fy = 36ksi
Steel Elevation - Top of steel elevations (TS) indicated are relative to ground floor finish floor elevation and indicate the top of steel assembly which is equal to the bottom of deck elevation (BD).
Columns - All columns set on foundations to have 1/4" thick leveling plate, same size as base plate, set on 3/4" inch non-ferrous non-shrink grout (See Cast-in-Place Concrete).
Fabrications - Fabrications used for connections are to be made of steel plate conforming to ASTM A36. Welded connections are to be made using E70XX electrodes. All structural steel fabrications used in connections are to be provided with one shop-applied coat of rust-inhibiting paint.
Connection Design - For purposes of detailing connections, unless specific reaction loads and moments are indicated on the plans for connections, the design reactions shall be the maximum web shear (0.4Cydw) and the design moment for moment connections shall be the maximum allowable bending moment for a beam assuming full lateral support. Beam connections to columns shall have the maximum number of bolts permitted by connection geometry. One-sided connections are not permitted unless specifically detailed on the plans or with approval of the design engineer. Connections to tube steel or pipes shall use thru-plates unless shown otherwise.
Bolted Connections - All bolted connections shall be made with 3/4 inch diameter ASTM A325 high strength bolts, unless noted otherwise on the plans. Beam to beam connections may be tightened to the snug tight condition, unless noted otherwise on the plans. All bolted connections to have a hardened washer under the element turned in tightening. All beams to have the maximum number of bolts practical at all column framing connections.
Welded Connections - All welded connections are to be made with E70XX electrodes. Welding to comply with AWS D1.1. Use low hydrogen welding on ASTM A992-Grade 50 Steel.
Steel Finishing - All structural steel shall be given one shop coat of primer with a dry film thickness of 1.5 mil. Primer is to be lead and chromate free, non-soluble, rust-inhibiting primer. Portion of columns below grade shall be painted with a bituminous coating prior to backfilling. Steel is to be standard hand-tooled cleaned per SSPC-SP2, prior to painting.
 Point is not to be provided on surfaces to be welded, receive spray-on fireproofing, to be in contact for slip-critical connections or for surfaces intended for composite action with concrete or embedded in concrete.



NEW JERSEY ONE-CALL SYSTEM



BEFORE YOU DIG ANYWHERE IN NEW JERSEY CALL 1-800-272-1000
 NON-MEMBERS MUST BE CONTACTED DIRECTLY
 USE ONLY THE THREE WORKING DIAL NOTCH UTILITIES BEFORE YOU EXCAVATE, DRILL, BURN OR DEMOLISH

Knudsen Engineering, Inc.
 Civil and Structural Engineers
 1000 Park Avenue
 Suite 110
 Parkersville, PA 16801
 Telephone: 717-854-6332
 Fax: 717-854-6332
 www.knudsenengineering.com

Althouse, Jaffe & Associates, LLC
 Architecture - Planning - Interiors
 758 Parkersville Road
 Parkersville, PA 16804
 Tel: 610.754.6390 Fax: 610.754.6392

KNF NEUBERGER, INC.
 2 BLACK FOREST ROAD
 TRENTON, NJ 08691
 Partition Support

Structural Documents
 Progress
 REVISION: 1
 REVISION: 2
 REVISION: 3
 REVISION: 4

Foundation Plan
 Scale: 1/8"=1'-0"
 File No: xxxxxxx
 Drawn By: slg
 Checked: msk

S1
 November 19, 2010 KEI 984

These documents are instruments of the Architect's service for one solely with respect to this project. The Architect shall retain all common law, statutory and other reserved rights, including the copyright. They are not to be used for any purpose by any other party without the express written consent of the Architect.