

PLAN NOT VALID WITHOUT ORIGINAL WET STAMP

PROJECT NAME:

PROJECT NAME

PROJECT DESCRIPTION  
 STREET ADDRESS  
 CITY, STATE

CLIENT:  
 YOUR COMPANY NAME  
 STREET ADDRESS  
 CITY, STATE  
 Contact: Your Name  
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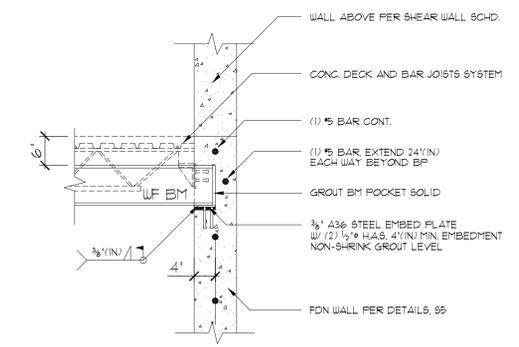
HELICAL PILE LAYOUT & FOUNDATION PLAN

NO.	DATE	REVISION/ISSUE

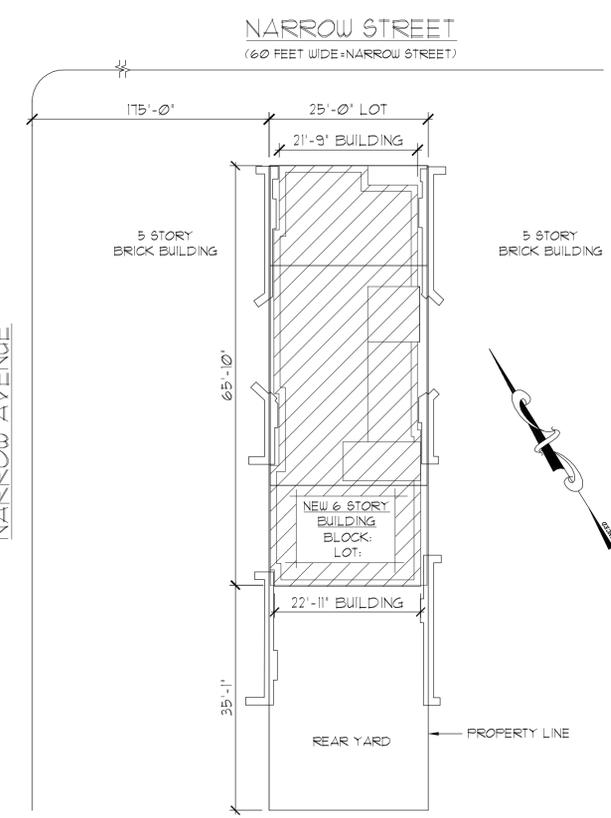
DESIGNED BY: MMB DATE: 5/26/09  
 DRAWN BY: MMB SCALE: AS SHOWN  
 CHECKED BY: HAP PROJECT NO: CNI10  
 SHEET: S1

HELIX FOUNDATION SCHEDULE					
SYMBOL	QUANTITY	DESIGN CAPACITY	MIN. LENGTH	PIER CAP CONNECTION	NOTES
⊙	68	50 KIPS	TO BEDROCK	MHC-1040 GRADE BEAM CAP	MIN. Ø250 WALL, 3" HELIX SHAFT (HEAVY DUTY)

NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION REGARDING HELICAL PIERS.

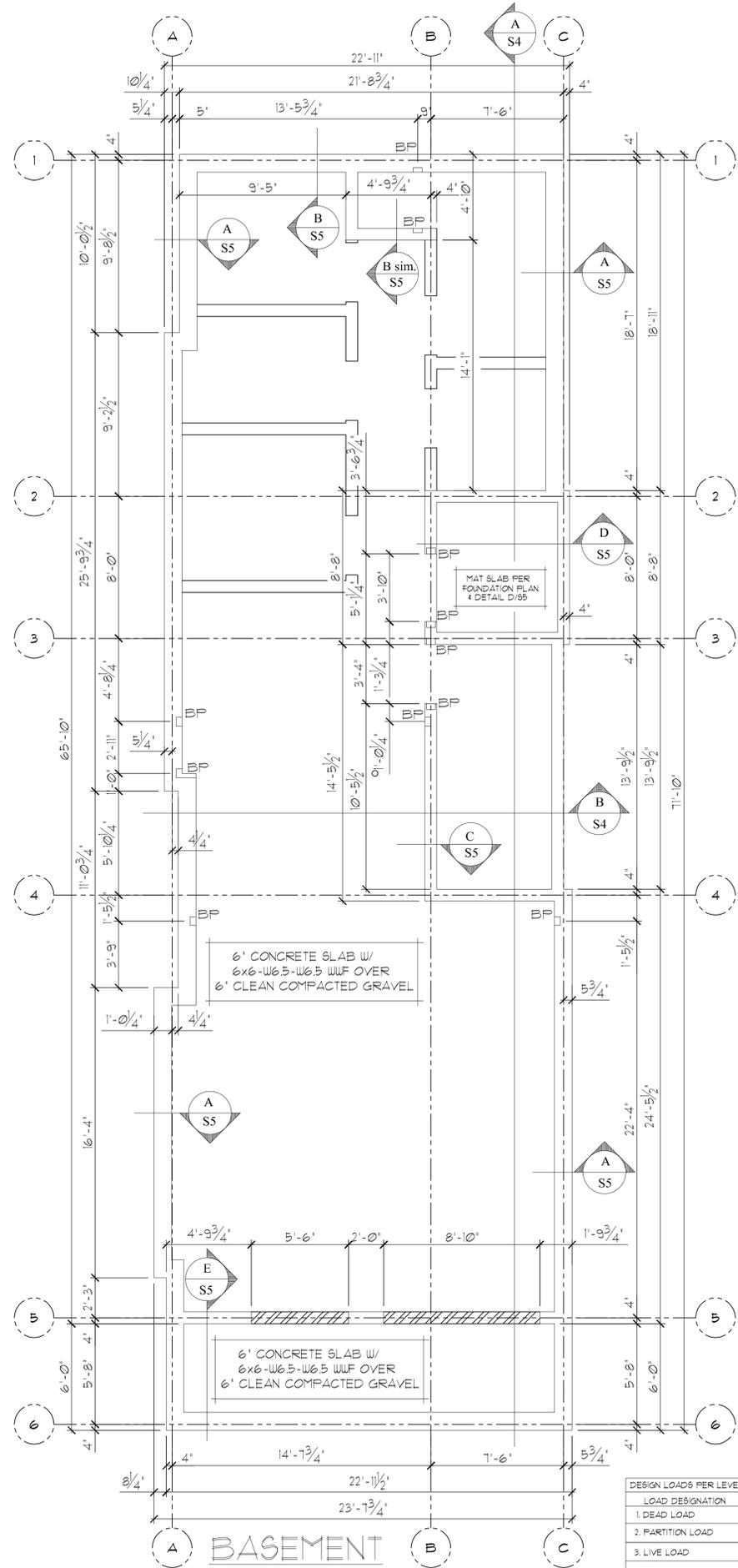
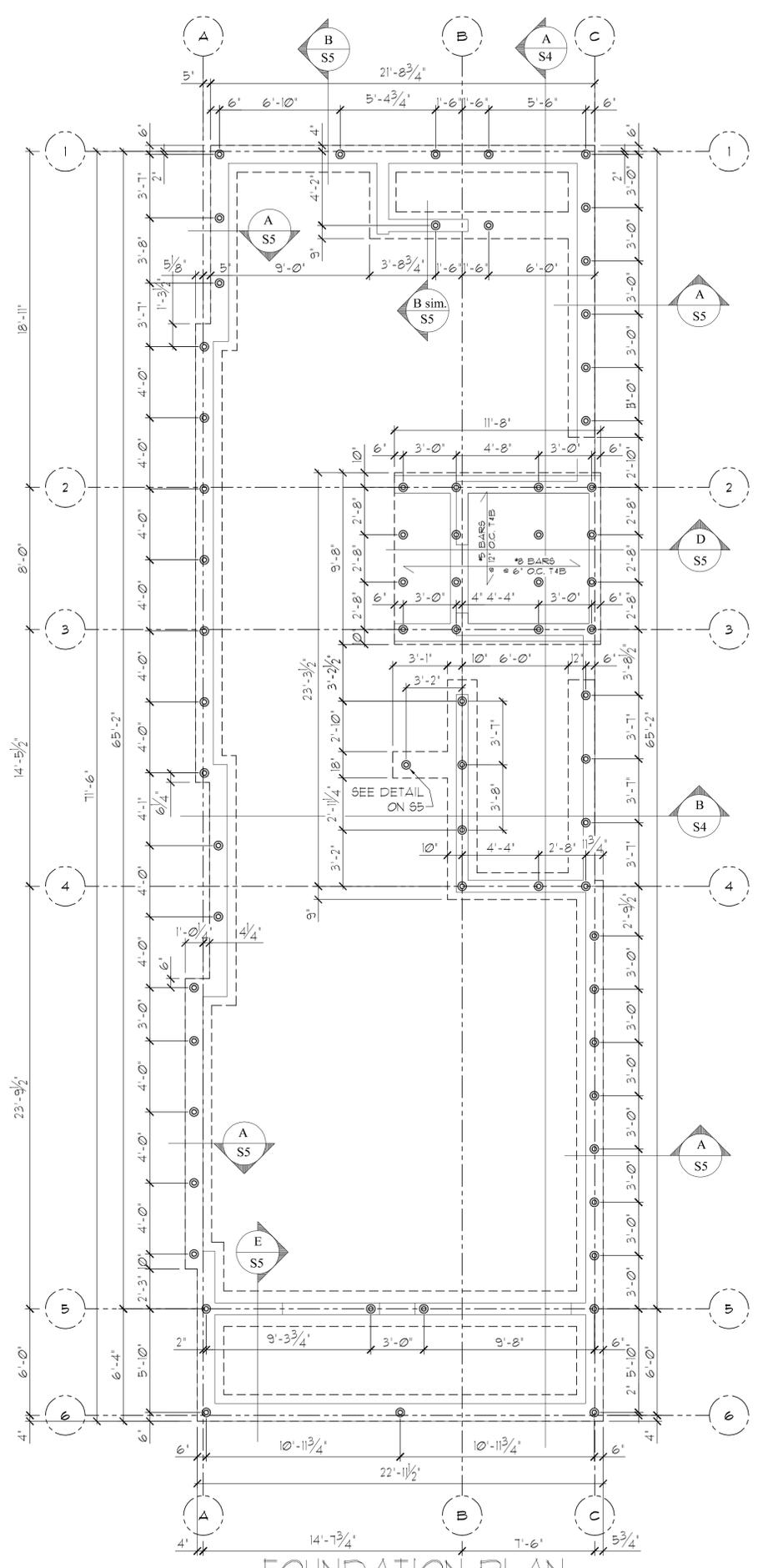


BEAM POCKET DETAIL



SITE PLAN  
 N.T.S.

DESIGN LOADS PER LEVEL (BASEMENT SLAB)	
LOAD DESIGNATION	LOAD MAGNITUDE
1. DEAD LOAD	15 psf
2. PARTITION LOAD	20 psf
3. LIVE LOAD	100 psf
TOTAL LOAD	135 psf



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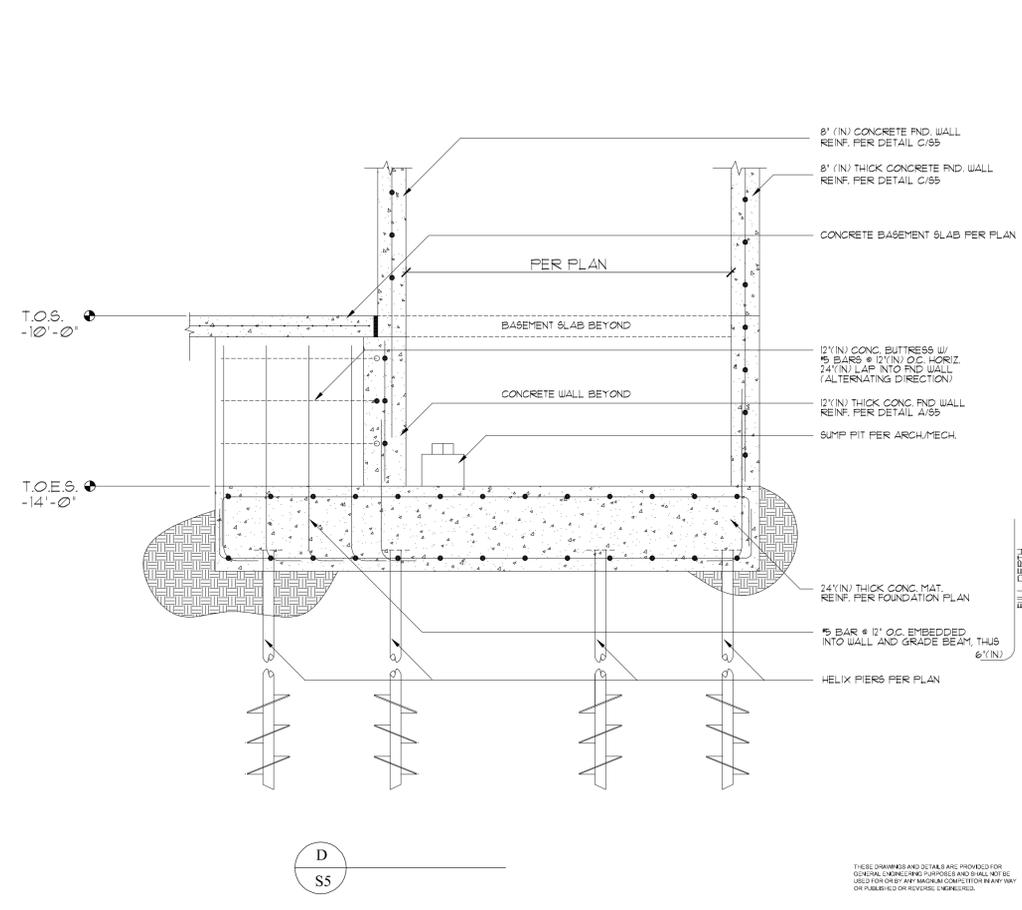
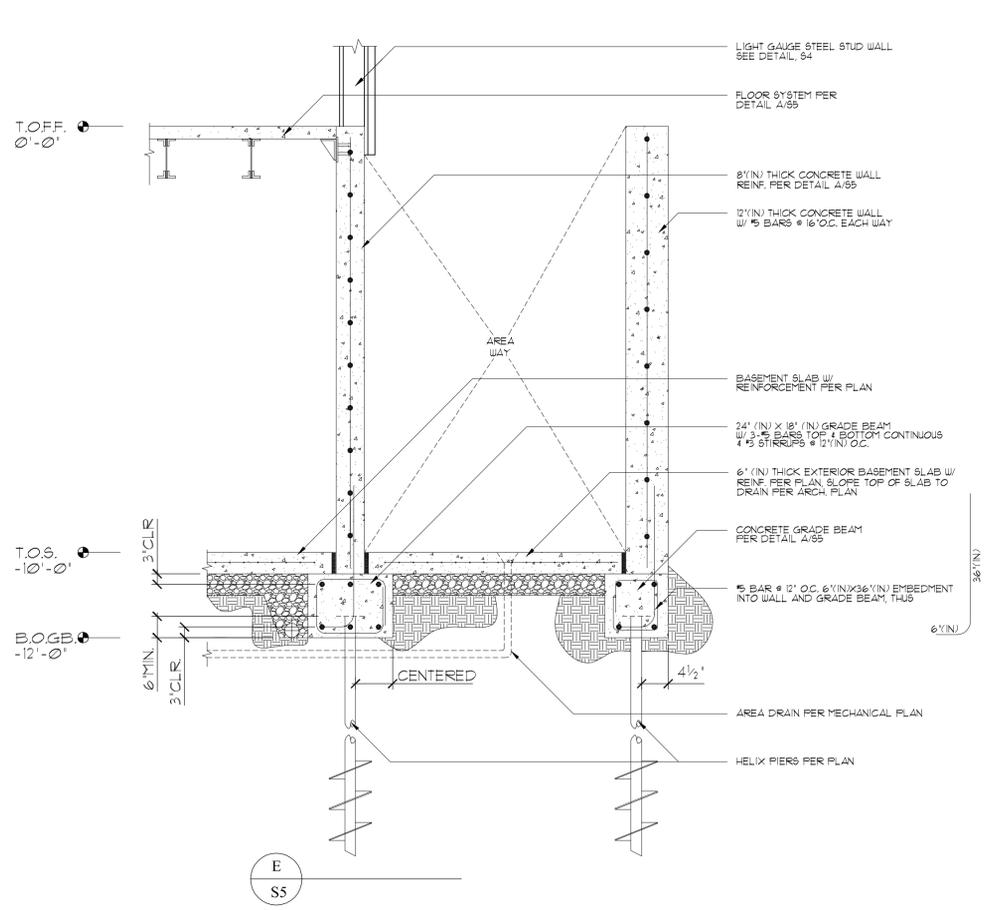
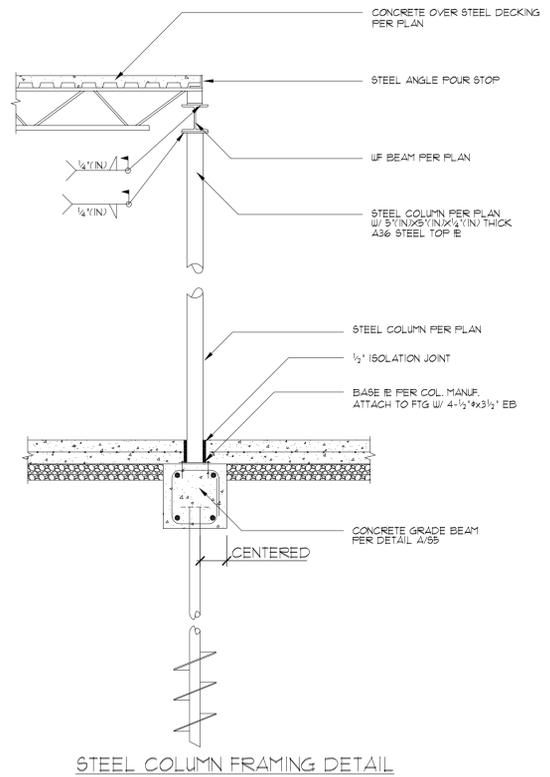
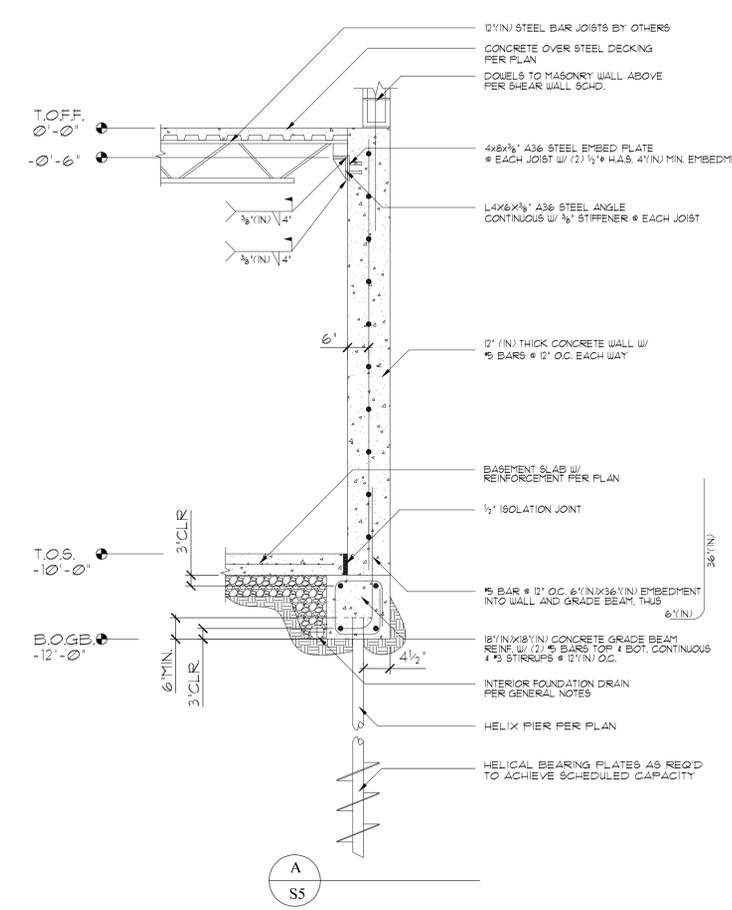
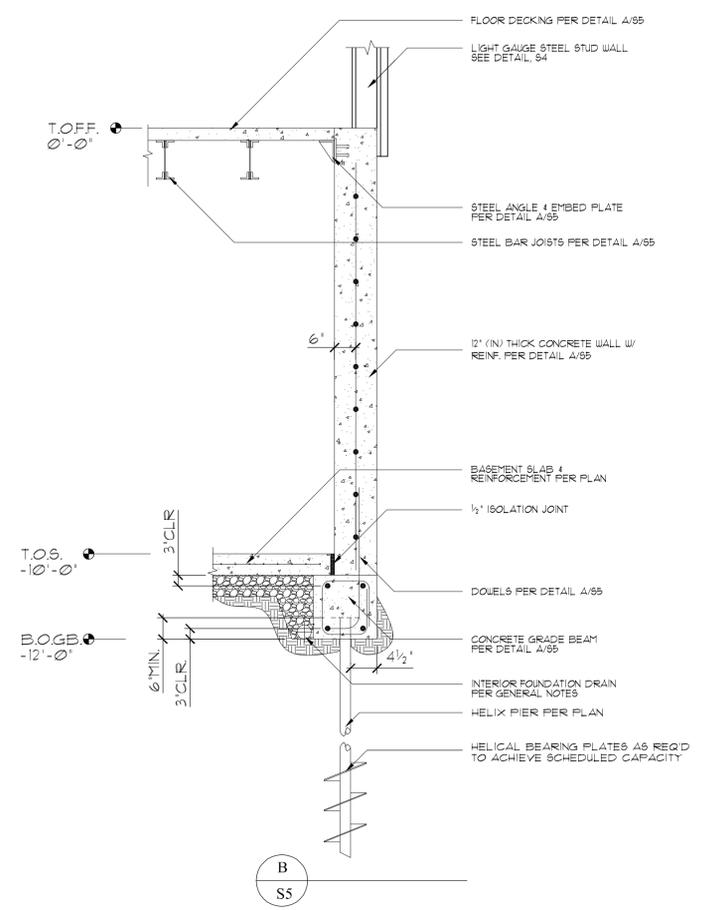
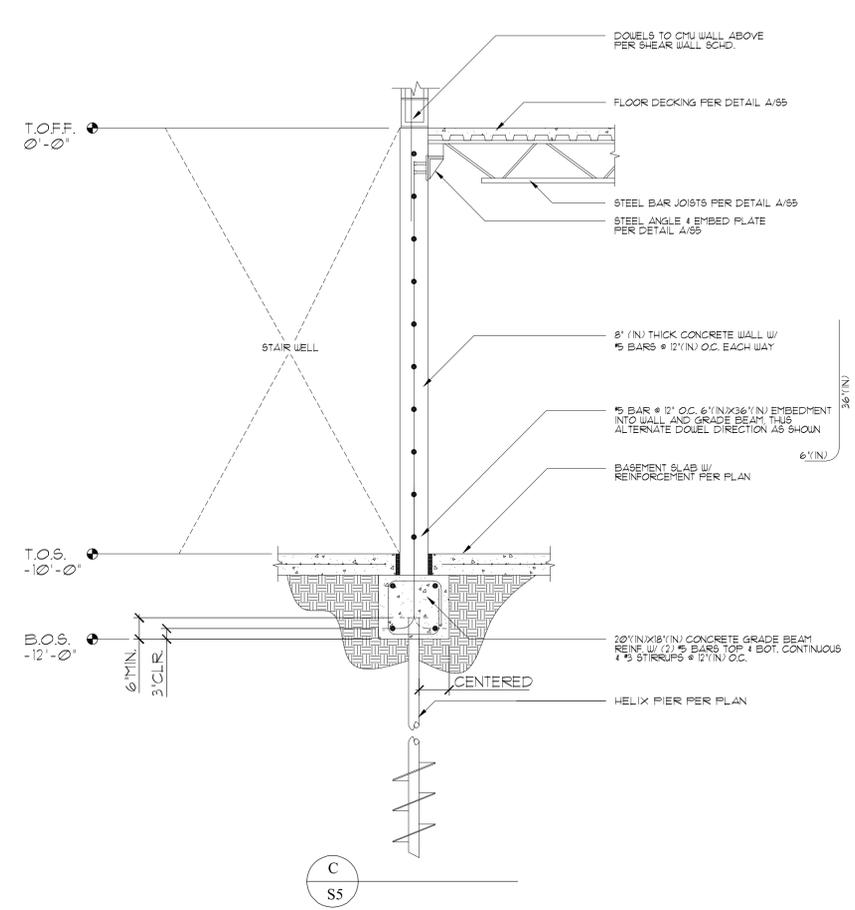
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FOUNDATION AND PILE DETAILS

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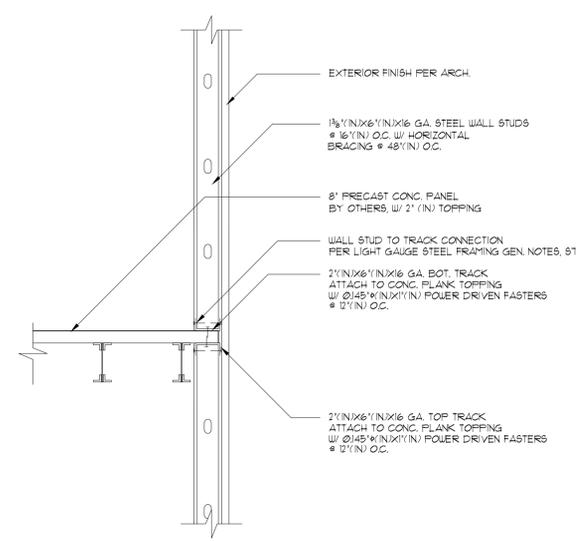
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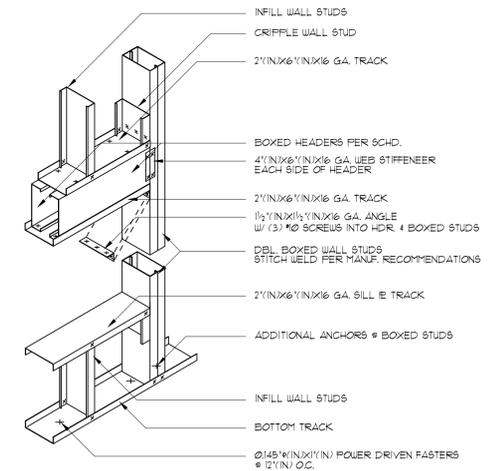
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TYPICAL STEEL STUD WALL FRAMING DETAIL

LIGHT GAUGE STEEL HEADER SCHEDULE			
OPENING SPAN	SIZE	TYPE	MINIMUM SUPPORTING COLUMN
4'(FT) - 8'(FT)	(2) 1 1/2" X 6" X 1/2" GA.	BOXED W/ END WEB STIFFENERS	(2) WALL STUDS (BOXED)
8'(FT) - 12'(FT)	(2) 1 1/2" X 8" X 1/2" GA.	BOXED W/ END WEB STIFFENERS	(2) WALL STUDS (BOXED)

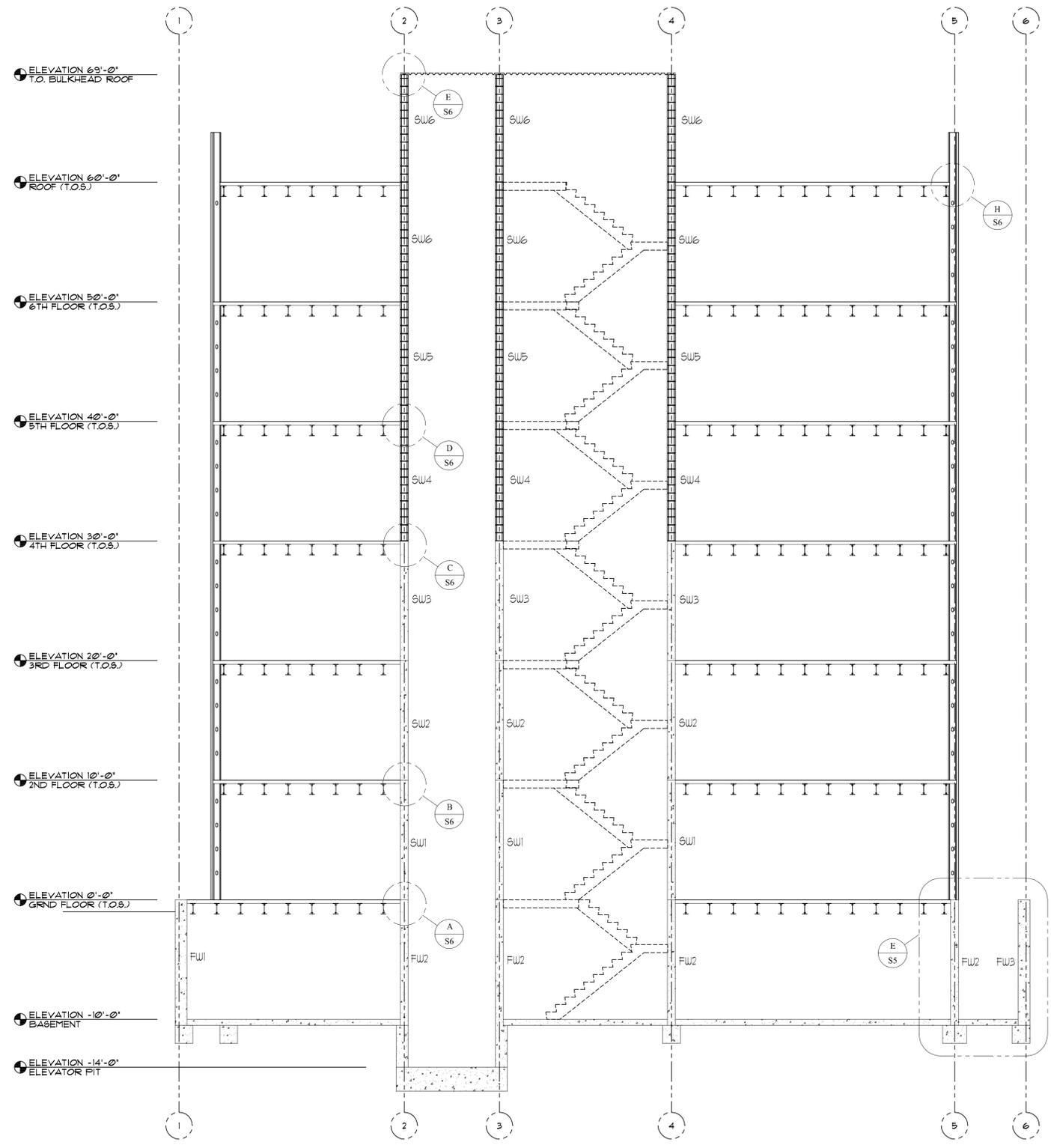


\* DENOTES STANDARD FASTENER LOCATION PER LIGHT STEEL FRAMING GEN. NOTES (UNO).

TYPICAL HEADER DETAIL

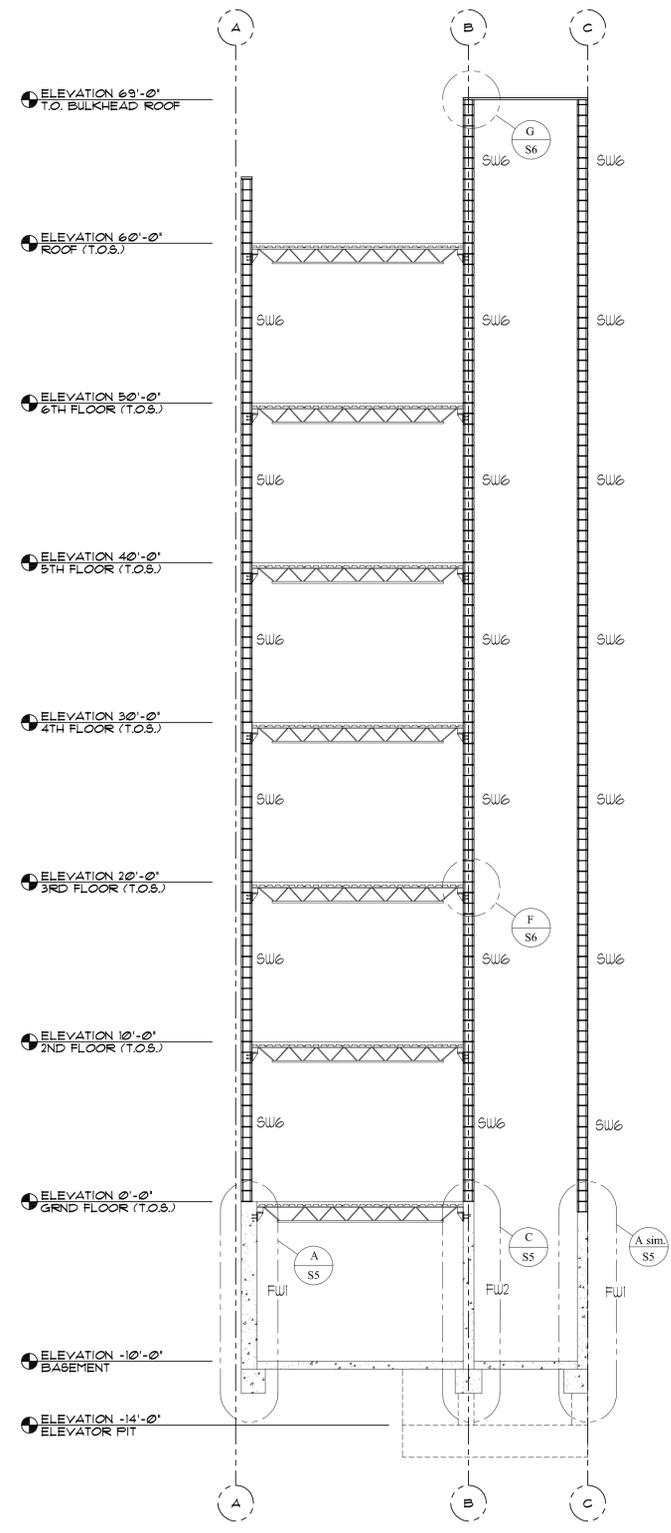
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No.	MATERIAL	REINFORCEMENT	
		VERTICAL	HORIZONTAL
FW1	12" CONCRETE	SEE DETAILS, S5	
FW2	8" CONCRETE	SEE DETAILS, S5	
FW3	12" CONCRETE	SEE DETAILS, S5	
SW1	8" CONCRETE	(2) #5 BARS @ EACH END 4 #5 BARS @ 12" O.C.	#5 BAR @ TOP, MID, 4 BOT.
SW2	8" CONCRETE	(4) #5 BARS @ EACH END 4 #5 BARS @ 16" O.C.	#5 BAR @ TOP, MID, 4 BOT.
SW3	8" CONCRETE	(2) #5 BARS @ EACH END 4 #5 BARS @ 16" O.C.	#5 BAR @ TOP, MID, 4 BOT.
SW4	8" CMU (SPECIAL INSPECTION REQ'D)	(2) #5 BARS @ EACH END 4 #5 BARS @ 24" O.C.	#3 GA. DUR.-A-WALL @ 16" O.C.
SW5	8" CMU	#5 BARS @ 24" O.C.	#3 GA. DUR.-A-WALL @ 16" O.C.
SW6	8" CMU	#5 BARS @ 48" O.C.	#3 GA. DUR.-A-WALL @ 16" O.C.



LONG SIDE SHEAR WALL ELEVATION

SCALE 3/16" = 1'-0"  
 S4



SHORT SIDE SHEAR WALL ELEVATION

SCALE 3/16" = 1'-0"  
 S4

STAIRWELL FRAMING & DETAILS

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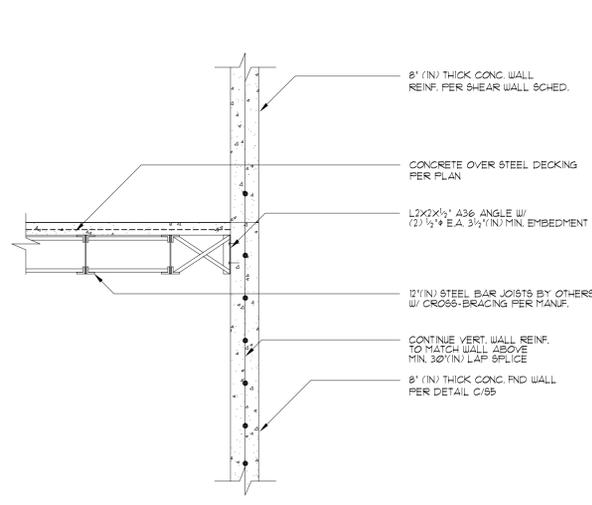
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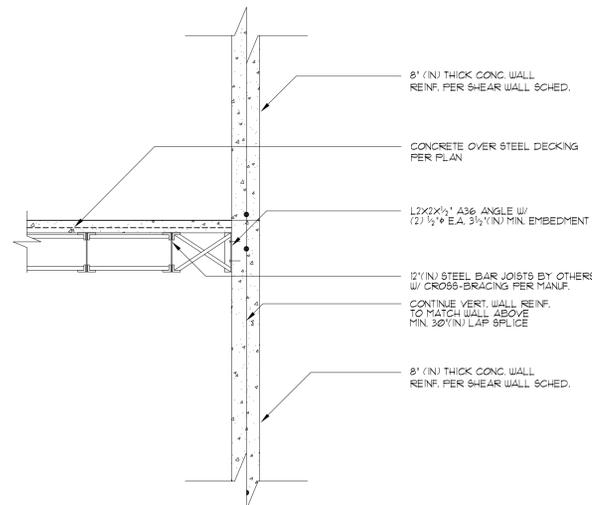
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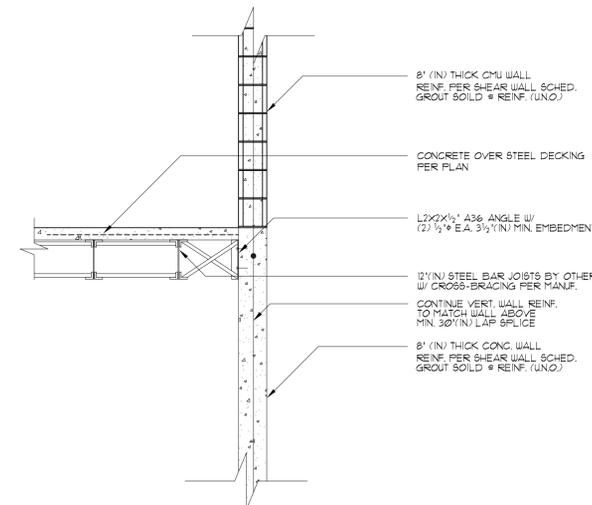
- 8" (N) THICK CONC. WALL REINF. PER SHEAR WALL SCHED.
- CONCRETE OVER STEEL DECKING PER PLAN
- L2X2X1/4" A36 ANGLE W/ (2) 1/2" E.A. 3/4" (N) MIN. EMBEDMENT
- 12" (N) STEEL BAR JOISTS BY OTHERS W/ CROSS-BRACING PER MANUF.
- CONTINUE VERT. WALL REINF. TO MATCH WALL ABOVE MIN. 30" (N) LAP SPLICE
- 8" (N) THICK CONC. FND WALL PER DETAIL C/S5

A  
S6



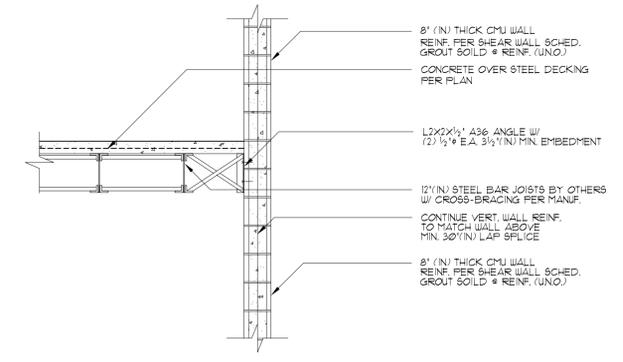
- 8" (N) THICK CONC. WALL REINF. PER SHEAR WALL SCHED.
- CONCRETE OVER STEEL DECKING PER PLAN
- L2X2X1/4" A36 ANGLE W/ (2) 1/2" E.A. 3/4" (N) MIN. EMBEDMENT
- 12" (N) STEEL BAR JOISTS BY OTHERS W/ CROSS-BRACING PER MANUF.
- CONTINUE VERT. WALL REINF. TO MATCH WALL ABOVE MIN. 30" (N) LAP SPLICE
- 8" (N) THICK CONC. WALL REINF. PER SHEAR WALL SCHED.

B  
S6



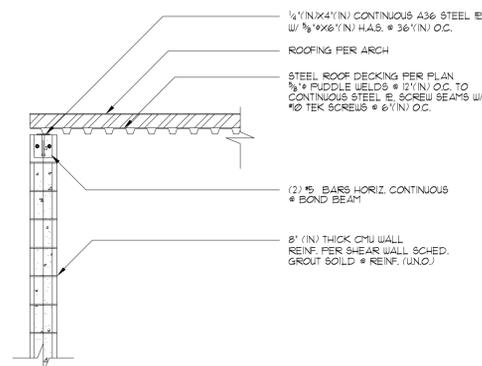
- 8" (N) THICK CMU WALL REINF. PER SHEAR WALL SCHED. GROUT SOLID & REINF. (UNO.)
- CONCRETE OVER STEEL DECKING PER PLAN
- L2X2X1/4" A36 ANGLE W/ (2) 1/2" E.A. 3/4" (N) MIN. EMBEDMENT
- 12" (N) STEEL BAR JOISTS BY OTHERS W/ CROSS-BRACING PER MANUF.
- CONTINUE VERT. WALL REINF. TO MATCH WALL ABOVE MIN. 30" (N) LAP SPLICE
- 8" (N) THICK CONC. WALL REINF. PER SHEAR WALL SCHED. GROUT SOLID & REINF. (UNO.)

C  
S6



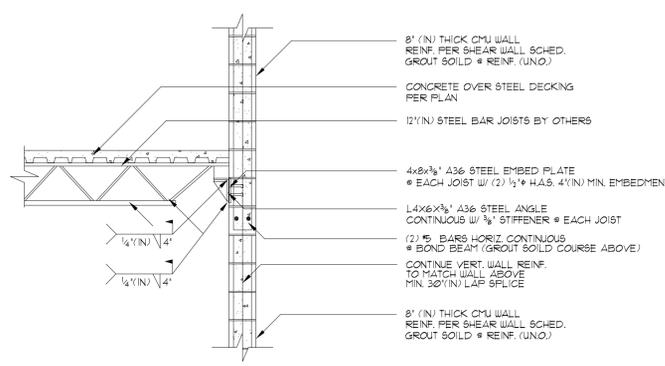
- 8" (N) THICK CMU WALL REINF. PER SHEAR WALL SCHED. GROUT SOLID & REINF. (UNO.)
- CONCRETE OVER STEEL DECKING PER PLAN
- L2X2X1/4" A36 ANGLE W/ (2) 1/2" E.A. 3/4" (N) MIN. EMBEDMENT
- 12" (N) STEEL BAR JOISTS BY OTHERS W/ CROSS-BRACING PER MANUF.
- CONTINUE VERT. WALL REINF. TO MATCH WALL ABOVE MIN. 30" (N) LAP SPLICE
- 8" (N) THICK CMU WALL REINF. PER SHEAR WALL SCHED. GROUT SOLID & REINF. (UNO.)

D  
S6



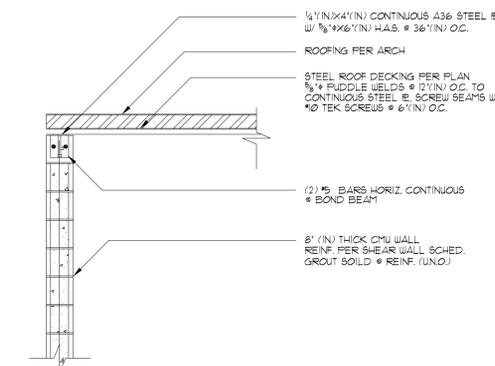
- 1/4" (N) X 4" (N) CONTINUOUS A36 STEEL B W/ 3/8" X 3/8" (N) HAS. @ 36" (N) O.C.
- ROOFING PER ARCH
- STEEL ROOF DECKING PER PLAN 3/4" RIBBLE WELODS @ 12" (N) O.C. TO CONTINUOUS STEEL B. SCREW BEAMS W/ #10 TEK SCREWS @ 6" (N) O.C.
- (2) #5 BARS HORIZ. CONTINUOUS @ BOND BEAM
- 8" (N) THICK CMU WALL REINF. PER SHEAR WALL SCHED. GROUT SOLID & REINF. (UNO.)

E  
S6



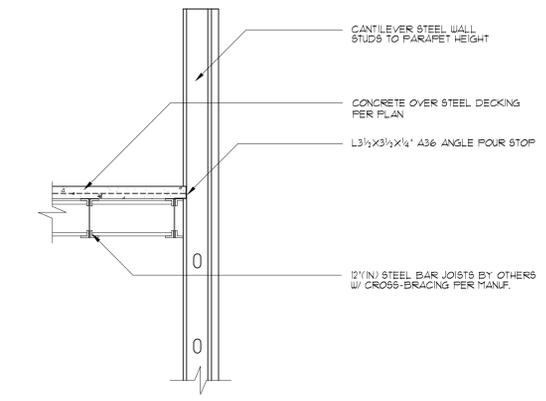
- 8" (N) THICK CMU WALL REINF. PER SHEAR WALL SCHED. GROUT SOLID & REINF. (UNO.)
- CONCRETE OVER STEEL DECKING PER PLAN
- 12" (N) STEEL BAR JOISTS BY OTHERS
- 4x8x3/8" A36 STEEL EMBED PLATE @ EACH JOIST W/ (2) 1/2" X 4" HAS. 4" (N) MIN. EMBEDMENT
- L4x6x3/8" A36 STEEL ANGLE CONTINUOUS W/ 3/8" STIFFENER @ EACH JOIST
- (2) #5 BARS HORIZ. CONTINUOUS @ BOND BEAM (GROUT SOLID COURSE ABOVE)
- CONTINUE VERT. WALL REINF. TO MATCH WALL ABOVE MIN. 30" (N) LAP SPLICE
- 8" (N) THICK CMU WALL REINF. PER SHEAR WALL SCHED. GROUT SOLID & REINF. (UNO.)

F  
S6



- 1/4" (N) X 4" (N) CONTINUOUS A36 STEEL B W/ 3/8" X 3/8" (N) HAS. @ 36" (N) O.C.
- ROOFING PER ARCH
- STEEL ROOF DECKING PER PLAN 3/4" RIBBLE WELODS @ 12" (N) O.C. TO CONTINUOUS STEEL B. SCREW BEAMS W/ #10 TEK SCREWS @ 6" (N) O.C.
- (2) #5 BARS HORIZ. CONTINUOUS @ BOND BEAM
- 8" (N) THICK CMU WALL REINF. PER SHEAR WALL SCHED. GROUT SOLID & REINF. (UNO.)

G  
S6



- CANTILEVER STEEL WALL STUDS TO PARAPET HEIGHT
- CONCRETE OVER STEEL DECKING PER PLAN
- L3 1/2 X 3 1/2 X 1/4" A36 ANGLE FOUR STOP
- 12" (N) STEEL BAR JOISTS BY OTHERS W/ CROSS-BRACING PER MANUF.

H  
S6

FRAMING DETAILS

NO.	DATE	REVISION/ISSUE

**GENERAL NOTES:**

- This plan was prepared based on the 2002 City Building Code, ACI 318-02, and ACI 530-02.
- Soils Report: American Standard Testing and Consulting Laboratories, Inc Report: #BEC-0001 Date: February 14, 2005
- All work pertaining to sheeting, bracing, support of adjoining lots and sidewalks, placement of foundation concrete on soil subgrade is subject to controlled inspection. Design for sheeting and bracing shall be performed by engineer in charge of controlled inspection.
- Proper notices shall be given for performance of the controlled inspection in accordance with the requirements set by the building code. Before any work is commenced on an item of construction requiring controlled inspection, all persons responsible for such controlled inspection shall be notified in writing at least 12 hours prior to such commencement.
- Notice shall be provided by the projects owner to adjoining property owners in accordance with requirements set by the building code. No foundation of earth work permit shall be issued unless and until at least five days prior written notice of the permit application shall have been given by the applicant to the owners of all adjoining lots, buildings, and service facilities which may be affected by the proposed foundation work or earthwork operations.
- All work performed in connection with sheeting/bracing, underpinning, excavation shall adhere to the applicable provisions of the building code, the state code, regulations of the state department of labor and OSHA.
- Prior to commencement of mass excavation, the adjoining properties, and streets shall be visually surveyed by the contractor, suitably marked with permanent monitoring points to be measured during construction for the purpose of determining construction-related effects. Report with photographs shall be provided to the architect in triplicate copies. A preconstruction damage condition survey of all adjoining properties shall be submitted in written and pictorial form, and two copies shall be furnished to the owner's representative.
- Any water inflow into the excavation shall be controlled by sumping or other suitable methods. Disposal of water shall be made out of the excavation area in accordance with local regulation. The elevation of the water levels beyond the limits of the project site shall not be lowered so as to prevent distress to adjoining structures.
- A competent representative of the contractor shall inspect the subgrade of the excavation, any and all bracing, at the commencement of each shift, to assure integrity prior to permitting work to commence within any excavated area.
- The contractor shall provide any temporary excavation restraints required for the construction of the project. If a sheeting or bracing system is to be utilized, the details of the shop drawings shall be submitted for review and approval by the architect before commencement of work.
- It is the contractor's responsibility to verify and coordinate all elevations and dimensions prior to construction. Brick ledges, foundation steps, insets, beam pockets, mechanical blockouts, and basement windows, etc. may or may not be shown. This plan is based on the contractor furnished plans and the above referenced specifications. Any discrepancies or changes should be brought to the attention of Magnum.

**CONCRETE NOTES:**

- All concrete work shall conform with the requirements set forth by the concrete institute (ACI) 318-02
- All concrete except as specifically noted herein, shall contain Type II cement and obtain a minimum ultimate compressive strength of 3000 psi after 28 days. Concrete for slab-on-grade shall be 4000 psi. Formed slabs shall be 5000 psi concrete.
- Reinforcement for reinforced concrete elements, unless noted otherwise, shall be deformed in accordance with ASTM-A615, Grade 60 and shall have a minimum yield strength of 60,000 psi. Welded wire fabric shall have a minimum ultimate strength of 10,000 psi.
- Minimum reinforcement protection, unless noted otherwise, shall be 3/4"(in) for slab and interior faces of walls, 2"(in) for exterior faces of walls, 3"(in) for footings and other structural concrete placed against soil. No concrete shall be poured until the required controlled inspections have been made and approved. See controlled inspection section.
- All structural members shall be poured for their full depth in one operation. Construction joints shall be located in the middle third of the span. Main reinforcing steel shall run continuous, no lap splices for 40 bar diameters each way, through the joint. Roughen and scarify joints to expose aggregate for chemical bond. Wet thoroughly and slush joint with 1:2 mortar, 1/2"(in) thick, not more than 5 minutes before fresh concrete is placed against surface.
- All openings in foundation walls, unless noted otherwise, shall have (2) #6 bars additional on all sides and shall extend 2'-6" beyond edges of openings.
- The contractor shall cooperate with other trades and where required, install all built-in-work, sleeves, openings, inserts, etc. as required. Location of sleeves and openings not shown on plans are subject to approval by structural engineer.
- All reinforcing steel in slabs to be supported by plastic coated chairs per ACI requirements.
- All reinforcing steel shall be detailed, fabricated, and placed in accordance with ACI detailing manual (latest edition).
- All reinforcing steel shall be supported in forms, spaced with necessary accessories, and shall be securely wired together in accordance with CRSI "Manual of Standard Practice" (latest edition).
- Slump of concrete shall not exceed 4" (in) unless a high range water-reducing admixture is used. The slump of water-reducing admixture shall not exceed 4" (in). The slump of concrete containing a high range water-reducing admixture shall not exceed 8" (in).
- Concrete exposed to weather shall be air-entrained. Air content shall be 6% ± 1%.
- All reinforcing steel overlaps shall be 40 bar diameters but not less than 30" (in).

**MASONRY NOTES:**

- Masonry units shall be clearly identified to show the grade of the unit and the compressive strength where called for on plans. Reinforcing bars shall be rolled to identify grade of steel, and sized, and tagged.
- Materials shall conform to the following standards:  

Concrete Masonry Units	ASTM C145
Solid Load Bearing	ASTM C90
Hollow Load Bearing	
Metal Anchors and Ties	
Zinc coating on iron or steel	ASTM A173 1965
Zinc coating on wire	ASTM A116 1965
Copper coated wire Grade 30 H5	ASTM E221 1965
Mortar	
Type 'M' or 'S'	ASTM C270
- Provide standard galvanized DUR-O-WALL reinforcing every other course, #3 GA. wire each way. Minimum wall vertical reinforcement #4 bar at 48"(in) O.C. and (2) #4 bars around openings. All reinforcement splices shall be a minimum 40 bar diameters.
- Control joints to be DUR-O-WALL rapid control joint, or equivalent. Control joints to be spaced no more than 40'(ft) O.C.
- At all wall openings 4'-0" or greater, fill jams solid. Fill masonry solid. All openings with no lintel or bond beam shown shall have continuous bond beams above with 2-#5 bars extending 24" (inches) beyond the opening and grouted two courses above solid.
- All masonry to be properly bonded and braced. The masonry walls are to be considered unstable until all floor and roof systems are installed and their connections completed. The contractor is responsible to provide adequate masonry temporary bracing during construction. The engineer can assist in the bracing design upon request.
- Intersecting walls and partitions shall be bonded by either a true masonry bond by laying at least 50% of the units 3" (in) on the unit below or by 1/4"(in) by 1/2"(in) metal anchors, ends bent up 2"(in) or cross pin anchors 2"(ft) long. Maximum vertical spacing 4'(ft).
- Parapet walls to have all hollow masonry units filled solid. Provide joint reinforcement at all corners extending at least 4'(ft) in both directions. Provide coping and weatherproof flashing. Height of parapet not to exceed three times the thickness, unless reinforced.
- Lay masonry in running bond except as designated otherwise on the drawings. Provide masonry bonds at all corners, edges of openings, and at intersections. Proper units shall be used to provide for all windows, doors, bond beams, lintels, pilasters, etc. with a minimum of cutting. Masonry shall be laid up and grouted in lifts not exceeding 4ft. Vertical grout pours shall be stopped 1/2" below the top of the top most unit. If top of lift is a bond beam then stop grout 1/2" below top of top most unit. Each bond beam shall be grouted with lift below. All openings with no lintel or bond beam shown shall have continuous bond beams above with 2-#5 bars extending 24" (inches) beyond the opening and grouted two courses above solid.
- Mix mortar for a minimum of 5 min. Mortar may be retempered by adding water and remixing. Mortar shall be used within 1 hour of initial mixing and shall not be left sitting for more than 1/2 hour without mixing.
- Thickness of mortar between masonry units and reinforcing bars or wire 1/4"(in) or less in diameter embedded in horizontal mortar joints shall have at least 3/8"(in) horizontal cover.
- Protect masonry during freezing or near freezing weather. No frozen materials shall be used. Heat sand or water to remove frost. Do not use chemicals to lower freezing temperature.
- Store materials in a manner that they are kept free of excessive dirt and wetness.

**LIGHT GAGE STEEL FRAMING NOTES:**

- All work shall conform with AISI, AWS, ASTM, and AISI/C.
- Framing material is galvanized lightweight steel framing manufactured in accordance with ASTM C955.  

Materials:	ASTM Designation	Yield Strength (Fy):
18, 20 GA.	A446 Grade A	33 ksi
12, 14 16 GA.	A446 Grade D	50 ksi
- All light gauge steel framing fasteners shall be #10 x 1 1/2" screws. All fasteners shall be installed and tightened per the fastener manufactures recommendations.
- Welded electrodes shall be E 6012 or AWS E 7014. Touch up welded areas with Zinc rich paint. All mechanical fasteners shall be specified by manufacture.
- The contractor shall provide all temporary bracing, shoring, and shimming, and be responsible for safety during construction.

**STRUCTURAL STEEL FRAMING NOTES:**

- All work shall conform with AISI, and ASTM.
- All structural steel, unless noted otherwise, shall be ASTM A992 (fy=50 ksi).
- All bolted or welded connections shall be designed per reactions shown on plan. All bolts to be A325 or better. All welds are to be Fexx=70 ksi.
- All shop drawings shall be submitted to engineer for approval prior to starting construction.
- The contractor shall provide all temporary bracing, shoring, and shimming, and be responsible for safety during construction.

**CONTROLLED INSPECTIONS NOTES:**

- The contractor engineer shall provide controlled inspection services per schedule 1.
- The inspection engineer shall prepare plans, and notes in the form of shop drawings, for all items of work which differ from what is shown on the foundation and structural drawings due to field conditions. Shop drawings shall be prepared for all temporary shores and braces and shall clearly indicate method of installation, sequence of operations, and quality control.
- These shop drawings shall be reviewed by the engineer of record and architect prior to construction. Work shall only be executed from reviewed shop drawings.
- Copies of such shop drawings which include the engineers comments shall be filled with the department of buildings (on amendment forms). Additionally, a completion of work forms, including all inspection reports prepared by the contractor's engineer shall be filed with the department of buildings.
- The controlled inspection engineer shall maintain a log of all inspections performed which includes the following information:
  - Address of the premises, job number, contractor name and address.
  - Date and time of each inspection including:
    - Names of personal who inspected the site.
    - Any significant observations or instructions given related to the following:
      - Deviation from the contract documents
      - Anticipated field conditions
      - Proper execution of the field work
      - Good engineering practice
      - Safe job-site conditions
  - The date of any participants in any conversations with the controlled inspection engineer occurring off-site and relating to any significant observations or instructions.
- The controlled inspection engineer shall retain a copy of the documents described above and shall provide a copy to the contractor and/or owner to be kept at the construction site.
- The engineer responsible for controlled inspections shall report unsafe conditions to the department of buildings and/or any other affected parties or agencies.
- Upon request of the department of buildings, the controlled inspection engineer shall make available for review all documents and logs described above

SCHEDULE 1 - CONTROLLED INSPECTIONS	
1.	SUBGRADE OPEN-HOLE
2.	HELIX PIERS
3.	GRADE BEAM REINFORCING STEEL AND CONC. MIX DESIGN
4.	FOUNDATION WALL REINFORCING STEEL AND CONC. MIX DESIGN
5.	ALL TEMPORARY SHORING AND BRACING
6.	BLOCK UNITS AND MORTAR MIX DESIGNS
7.	MASONRY THICKNESS, REIN. PLACEMENT, HEADERS, & BONDING
8.	STABILITY AND INTEGRITY OF STRUCTURES DURING CONSTRUCTION
9.	FINAL SITE GRADING

SEISMIC LOAD PROVISIONS PER BUILDING CODE		
ITEM	DESCRIPTION/MAGNITUDE	CODE REFERENCE
1. SEISMIC ZONE (ZA)	Z=0.15	BC TABLE NO. 23-I
2. SITE (SOIL) COEFFICIENT	S=1.0	BC TABLE NO. 23-J
3. IMPORTANCE FACTOR (STANDARD OCCUPANCY)	I=1.0	BC TABLE NO. 23-L
4. BASIC STRUCTURAL SYSTEM	REINFORCED MASONRY SHEAR WALLS	BC TABLE NO. 23-O
5. COEFFICIENT R <sub>u</sub>	R <sub>u</sub> =6.0	BC TABLE NO. 23-O
6. ANALYSIS PROCEDURE	EQUIVALENT STATIC LATERAL FORCE	UBC 1994

**FOUNDATION DRAINAGE NOTES:**

- Adequate drainage shall be provided around the structure. This drainage should be monitored and maintained throughout the life of the structure. At a minimum Magnum recommends a minimum slope of 1" (ft) in the first ten feet and a minimum 2% slope from that point to the property line for landscaped areas. For all below grade habitable areas Magnum recommends an interior perimeter drain. At a minimum, it should consist of 6"(in) of clean compacted sand and gravel base course over a 4"(in) perforated pipe sloped at 1/8"(in)/ft minimum to a sump pit with pump. Invert and high point shall be 12"(in) below the top of slab.

**HELICAL PIER NOTES:**

- Locate all utilities prior to excavation and installation of helix piers. All helix piers and pier caps shall be as manufactured by Magnum Piering, Inc. or equivalent. Helix pier installation should be observed by a representative from Magnum to verify installation torque and minimum depths. Provide a minimum of 24 hours notice prior to installation work. The loads shown on the plan are design allowable loads. All helix pier connector and top plate bolts shall be snug tight. The manufacturer's recommendations should be followed regarding the torque and bearing capacity relationship for the particular helix pier selected. The ratio of required ultimate helix pier capacity to the total area of the helix blades shall not exceed the ultimate subsurface material bearing capacity provided by the geotechnical engineer.



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PLAN NOT VALID WITHOUT ORIGINAL WET STAMP

**PROJECT NAME:**

**PROJECT NAME**

PROJECT DESCRIPTION  
 STREET ADDRESS  
 CITY, STATE

**CLIENT:**  
 YOUR COMPANY  
 NAME  
 STREET ADDRESS  
 CITY, STATE  
 Contact: Your Name  
 Your Number

**GENERAL NOTES**

NO.	DATE	REVISION/ISSUE

DESIGNED BY: NMB DATE: 5/26/09  
 DRAWN BY: NMB SCALE: AS SHOWN  
 CHECKED BY: HAP  
 PROJECT NO: CNI10

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