



75 State St., Suite 701
Boston, Massachusetts 02109
tel: 617 452-6000
fax: 617 452-8000

October 28, 2016

Ms. Suzanne Warner
U.S. Environmental Protection Agency, Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3962

Subject: Notice of Intent
Dewatering General Permit
EQR – 249 Third Street, LLC
249 Third Street
Cambridge, Massachusetts

Dear Ms. Suzanne Warner,

On behalf of EQR – 249 Third Street, LLC, CDM Smith (CDM Smith) is submitting this Notice of Intent for the Dewatering General Permit for the property located at 249 Third Street in Cambridge, Massachusetts. Dewatering General Permit authorization is sought for discharge related to the operation of a temporary groundwater treatment system to treat water associated with excavation dewatering for remedial purposes under the Massachusetts Contingency Plan and for the future construction of an apartment building.

Should you have any questions or require additional information, please do not hesitate to contact me at (617) 452-6721.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Nick Casto".

Nicholas Castonguay
CDM Smith Inc.



II. Suggested Notice of Intent (NOI) Format

1. General facility information. Please provide the following information about the facility.

a) Name of facility: EQR - 249 Third Street, LLC, a Delaware Limited Liability Company		Mailing Address for the Facility: 2 N Riverside Plaza, Suite 400, Chicago, Illinois, 60606-2609	
b) Location Address of the Facility (if different from mailing address): 249 Third Street, Cambridge, MA	Facility Location	Type of Business: private development	
	longitude: <u>-71.0821772</u> latitude: <u>42.366835</u>	Facility SIC codes: None	
c) Name of facility owner: <u>EQR - 249 Third Street, LLC</u>		Owner's email: <u>rbecker@eqr.com</u>	
Owner's Tel #: <u>(312) 928-8471</u>		Owner's Fax #: <u>(312) 526-9261</u>	
Address of owner (if different from facility address)			
Owner is (check one): 1. Federal ☐ 2. State ☐ 3. Private ☒ 4. Other ☐ (Describe) <u>Private development - apartment building</u>			
Legal name of Operator, if not owner: _____			
Operator Contact Name: <u>Ms. Rebecca Becker</u>			
Operator Tel Number: <u>(312) 928-8471</u>		Fax Number: <u>(312) 526-9261</u>	
Operator's email: <u>rbecker@eqr.com</u>			
Operator Address (if different from owner)			
d) Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water. Map attached? ☒			
e) Check Yes or No for the following:			
1. Has a prior NPDES permit been granted for the discharge? Yes ☐ No ☒ If Yes, Permit Number: _____			
2. Is the discharge a "new discharger" as defined by 40 CFR Section 122.2? Yes ☒ No ☐			
3. Is the facility covered by an individual NPDES permit? Yes ☐ No ☒ If Yes, Permit Number _____			
4. Is there a pending application on file with EPA for this discharge? Yes ☐ No ☒ If Yes, date of submittal: _____			

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed)

- a) Name of receiving water into which discharge will occur: Charles River
State Water Quality Classification: Class B Freshwater: Freshwater Marine Water: _____
- b) Describe the discharge activities for which the owner/applicant is seeking coverage:
✓ 1. Construction dewatering of groundwater intrusion and/or storm water accumulation.
2. Short-term or long-term dewatering of foundation sumps.
3. Other.
- c) Number of outfalls 1
- For each outfall:
- d) Estimate the maximum daily and average monthly flow of the discharge (in gallons per day – GPD). Max Daily Flow 144,000 GPD
Average Monthly Flow 1,512,000 GPD
- e.) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 8.0 Min pH 6.5
- f.) Identify the source of the discharge (i.e. potable water, surface water, or groundwater). If groundwater, the facility shall submit effluent test results, as required in Section 4.4.5 of the General Permit. Groundwater
- g.) What treatment does the wastewater receive prior to discharge? Groundwater Treatment Prior to Discharge
- h.) Is the discharge continuous? Yes _____ No ✓ If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B) P
If (P), number of days or months per year of the discharge 30 and the specific months of discharge November 2016 to June 2017;
If (I), number of days/year there is a discharge 240
Is the discharge temporary? Yes ✓ No _____
If yes, approximate start date of dewatering November 1, 2016 approximate end date of dewatering June 30, 2017
- i.) Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long. -71.081858 lat. 42.386769; Outfall 2: long. _____ lat. _____; Outfall 3: long. _____ lat. _____.
- j.) If the source of the discharge is potable water, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water and attach any calculation sheets used to support stream flow and dilution calculations Not Applicable cfs
(See Appendix VII for equations and additional information)

MASSACHUSETTS FACILITIES: See Section 3.4 and Appendix 1 of the General Permit for more information on Areas of Critical Environmental Concern (ACEC):

- k.) Does the discharge occur in an ACEC? Yes _____ No ☒
If yes, provide the name of the ACEC: _____

3. Contaminant Information

- a) Are any pH neutralization and/or dechlorination chemicals used in the discharge? If so, include the chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC₅₀ in percent for aquatic organism(s)). No
b) Please report any known remediation activities or water-quality issues in the vicinity of the discharge. None

4. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendix IV. In addition, respond to the following questions.

- a) Which of the three eligibility criteria listed in Appendix IV, Criterion (A, B, or C) have you met? A
b) Please attach documentation with your NOI supporting your response. Please see Appendix IV for acceptable documentation

5. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

- a) See Screening Process in Appendix III and respond to questions regarding your site and any historic properties listed or eligible for listing on the National Register of Historic Places. Question 1: Yes _____ No ☒ ; Question 2: No ☒ Yes _____
b) Have any State or Tribal historic preservation officers been consulted in this determination? Yes _____ or No ☒ If yes, attach the results of the consultation(s).
c) Which of the three National Historic Preservation Act eligibility criterion listed in Appendix III, Criterion (A, B, or C) have you met? A
d) Is the project located on property of religious or cultural significance to an Indian Tribe? Yes _____ or No ☒ If yes, provide that name of the Indian Tribe associated with the property. _____

6. Supplemental Information: Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit See Attached

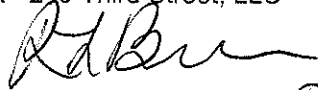
7. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product or finished product; (4) if the discharge of dewatering subsequently mixes with other permitted wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharge; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name: EQR - 249 Third Street, LLC

Operator signature:



Print Full Name and Title:

Rebecca Becker, Assistant Vice President

Date:

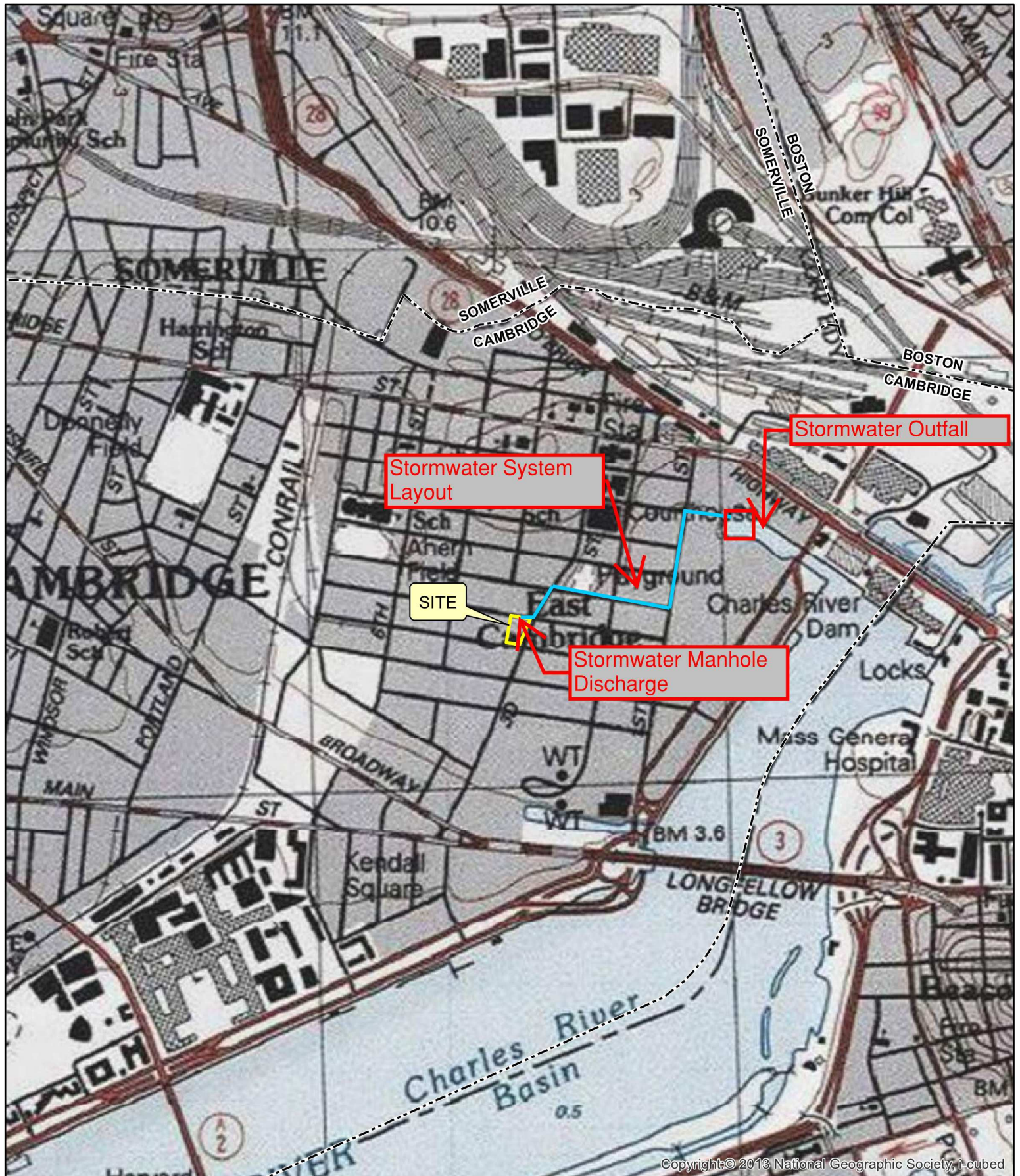
October 18, 2016

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

Attachment No.1

**Topographic Plan with Site Location, Discharge
Location, Stormwater Layout with Outfall
Location, and Groundwater Treatment System
Schematic**



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249 Third Street
Cambridge, Massachusetts

0 500 1,000
Feet

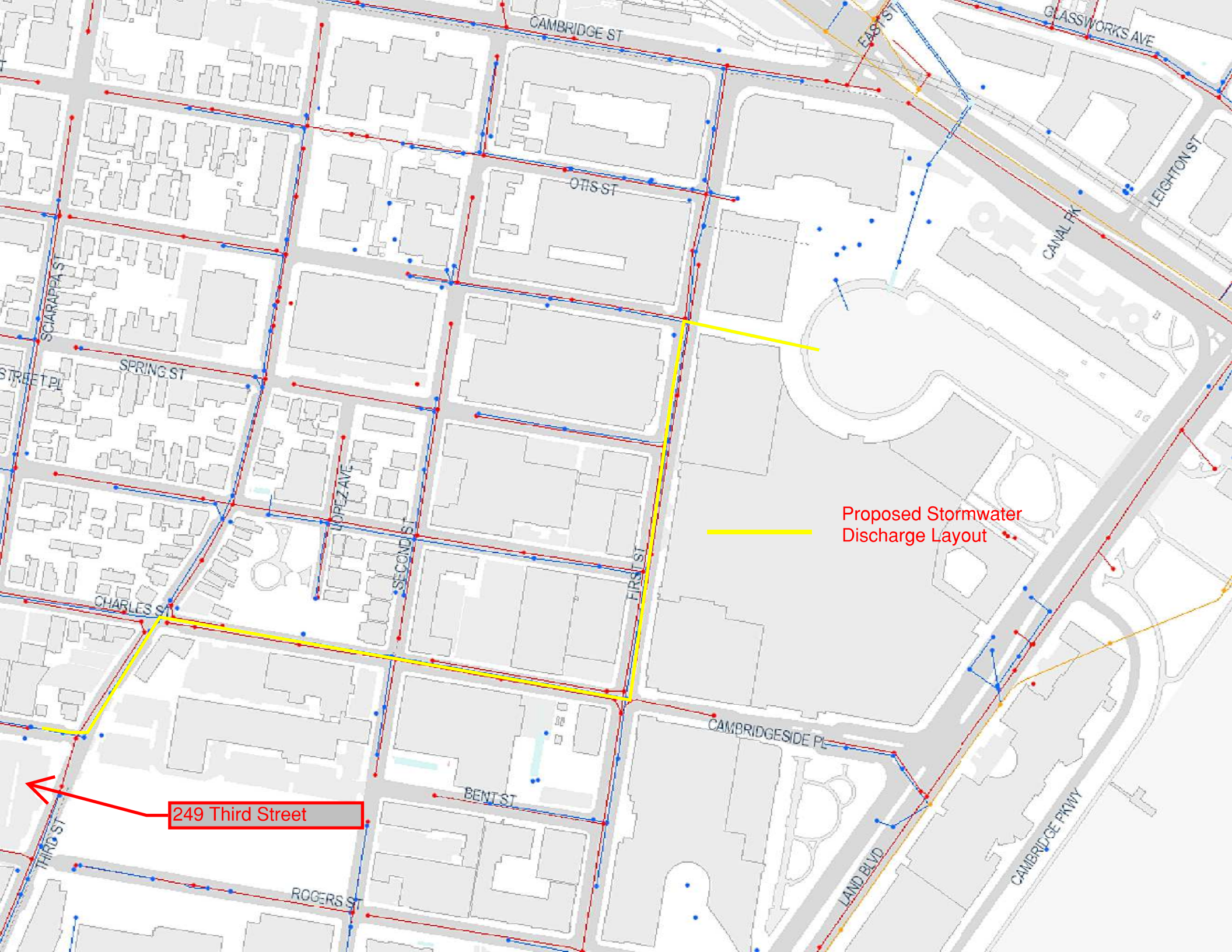
1" = 1,000'



Basemap: USGS 7.5-minute Topographic Quadsheet
Source: ESRI ArcGIS Online, NGS Topo US
Coord. System: NAD83 Mass, State Plane Mainland FIPS 2001 (feet)

Figure 1-1
Site Location Plan

**CDM
Smith**



CAMBRIDGE ST

OTIS ST

EAST ST

GLASSWORKS AVE

LEIGHTON ST

CANAL Fk

SCIARAPPA ST

SPRING ST

STREET PL

LOPEZ AVE

SECOND ST

FIRST ST

CHARLES ST

CAMBRIDGE SIDE PL

BENT ST

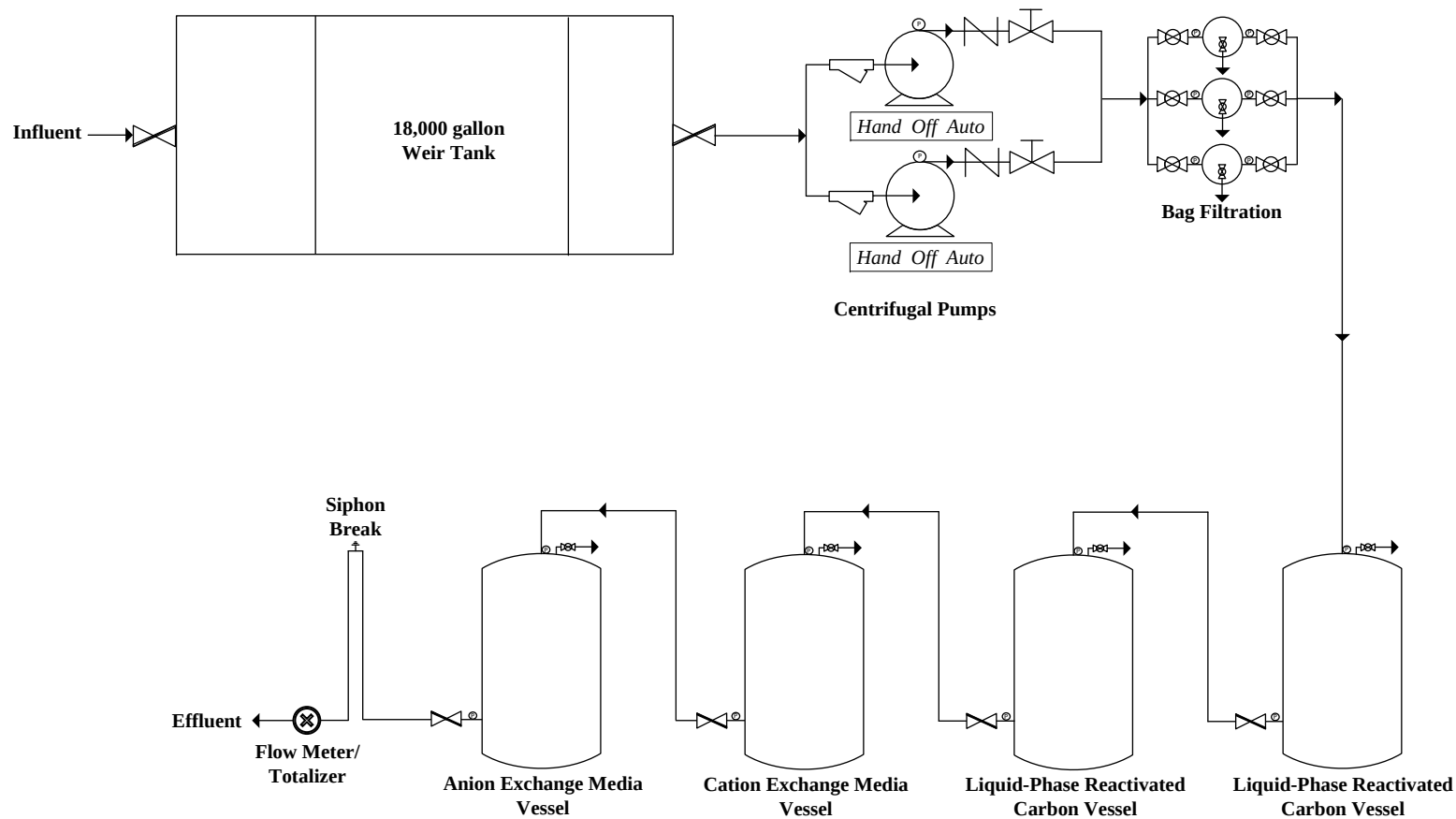
ROGERS ST

LAND BLVD

CAMBRIDGE PKWY

249 Third Street

Proposed Stormwater
Discharge Layout



Notes:

- 1.) Figure is not to scale
- 2.) System rated for 100 GPM
- 3.) Sampling ports located on all treatment system components

Key:
Piping/Hose →



Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
Office: 774-450-7177

DESIGNED BY: LRT

DRAWN BY: B. Watkins

CHECKED BY:

DATE: 9-20-16

Figure 4 - Water Treatment System Schematic

249 Third Street
Cambridge, Massachusetts

PROJECT No.
2-1433

FIGURE No.
4

Attachment No.2

Groundwater Results Compared to 2010 RGP Effluent Limits

RGP Groundwater Sampling Results and Criteria						
249 Third Street						
Cambridge, Massachusetts						
CLIENT SAMPLE ID				CDM-MW-5		
SAMPLING DATE				11-APR-16		
LAB SAMPLE ID				L1610606-01		
General Chemistry - Westborough Lab						
Solids, Total Suspended	---	30	mg/l	5.0	U	
Anions by Ion Chromatography - Westborough Lab						
Chloride	16887-00-6	Monitor Only	mg/l	3420		
General Chemistry - Westborough Lab						
Cyanide, Total	57-12-5	5.2	ug/l	12		
Chlorine, Total Residual	----	11	ug/l	20	U	
TPH, SGT-HEM	----	5	mg/l	4	U	
Phenolics, Total	----	-	mg/l	0.03	U	
Chromium, Hexavalent	18540-29-9	11.4	ug/l	14		
Total Metals - Westborough Lab						
Antimony, Total	7440-36-0	5.6	ug/l	8		
Arsenic, Total	7440-38-2	10	ug/l	1.5		
Cadmium, Total	7440-43-9	0.2	ug/l	1.3		
Chromium, Total	7440-47-3	60.2	ug/l	13.7		
Copper, Total	7440-50-8	5.2	ug/l	3.9		
Iron, Total	7439-89-6	1,000	ug/l	50	U	
Lead, Total	7439-92-1	1.3	ug/l	0.7		
Mercury, Total	7439-97-6	0.9	ug/l	0.2	U	
Nickel, Total	7440-02-0	29	ug/l	4.8		
Selenium, Total	7782-49-2	5	ug/l	13		
Silver, Total	7440-22-4	1.2	ug/l	0.4	U	
Zinc, Total	7440-66-6	66.6	ug/l	77.9		
Dissolved Metals - Westborough Lab						
Antimony, Dissolved	7440-36-0	-	ug/l	8		
Arsenic, Dissolved	7440-38-2	-	ug/l	2		
Cadmium, Dissolved	7440-43-9	-	ug/l	1.3		
Chromium, Dissolved	7440-47-3	-	ug/l	13.1		
Copper, Dissolved	7440-50-8	-	ug/l	3.6		
Iron, Dissolved	7439-89-6	-	ug/l	50		
Lead, Dissolved	7439-92-1	-	ug/l	0.8		
Mercury, Dissolved	7439-97-6	-	ug/l	0.2	U	
Nickel, Dissolved	7440-02-0	-	ug/l	4.4		
Selenium, Dissolved	7782-49-2	-	ug/l	11		
Silver, Dissolved	7440-22-4	-	ug/l	0.4	U	
Zinc, Dissolved	7440-66-6	-	ug/l	75.2		
Microextractables by GC - Westborough Lab						
1,2-Dibromoethane (EDB)	106-93-4	0.05	ug/l	0.022	U	

RGP Groundwater Sampling Results and Criteria					
249 Third Street					
Cambridge, Massachusetts					
CLIENT SAMPLE ID				CDM-MW-5	
SAMPLING DATE				11-APR-16	
LAB SAMPLE ID				L1610606-01	
	CAS Number	2010 RGP Criteria	Units	Qual	
Volatile Organics by GC/MS - Westborough Lab					
1,1,1,2-Tetrachloroethane	630-20-6	-	ug/l	0.5	U
1,1,1-Trichloroethane	71-55-6	200	ug/l	52	
1,1,2,2-Tetrachloroethane	79-34-5	-	ug/l	0.5	U
1,1,2-Trichloroethane	79-00-5	5.0	ug/l	0.75	U
1,1-Dichloroethane	75-34-3	70	ug/l	39	
1,1-Dichloroethene	75-35-4	3.2	ug/l	0.5	U
1,1-Dichloropropene	563-58-6	-	ug/l	2.5	U
1,2,3-Trichlorobenzene	87-61-6	-	ug/l	2.5	U
1,2,3-Trichloropropane	96-18-4	-	ug/l	5	U
1,2,4-Trichlorobenzene	120-82-1	-	ug/l	2.5	U
1,2,4-Trimethylbenzene	95-63-6	-	ug/l	2.5	U
1,2-Dibromo-3-chloropropane	96-12-8	-	ug/l	2.5	U
1,2-Dibromoethane	106-93-4	0.05	ug/l	2	U
1,2-Dichlorobenzene	95-50-1	600	ug/l	2.5	U
1,2-Dichloroethane	107-06-2	5.0	ug/l	0.5	U
1,2-Dichloroethene, Total	540-59-0	-	ug/l	4.2	
1,2-Dichloropropane	78-87-5	-	ug/l	1.8	U
1,3,5-Trimethylbenzene	108-67-8	-	ug/l	2.5	U
1,3-Dichlorobenzene	541-73-1	320	ug/l	2.5	U
1,3-Dichloropropane	142-28-9	-	ug/l	2.5	U
1,3-Dichloropropene, Total	542-75-6	-	ug/l	0.5	U
1,4-Dichlorobenzene	106-46-7	5.0	ug/l	2.5	U
1,4-Dichlorobutane	110-56-5	-	ug/l	5	U
2,2-Dichloropropane	594-20-7	-	ug/l	2.5	U
2-Butanone	78-93-3	-	ug/l	5	U
2-Hexanone	591-78-6	-	ug/l	5	U
4-Methyl-2-pentanone	108-10-1	-	ug/l	5	U
Acetone	67-64-1	Monitor Only	ug/l	5	U
Acrylonitrile	107-13-1	-	ug/l	5	U
Bromobenzene	108-86-1	-	ug/l	2.5	U
Bromochloromethane	74-97-5	-	ug/l	2.5	U
Bromodichloromethane	75-27-4	-	ug/l	0.5	U
Bromoform	75-25-2	-	ug/l	2	U
Bromomethane	74-83-9	-	ug/l	1	U
Carbon disulfide	75-15-0	-	ug/l	5	U
Carbon tetrachloride	56-23-5	4.4	ug/l	0.5	U
Chlorobenzene	108-90-7	-	ug/l	0.5	U
Chloroethane	75-00-3	-	ug/l	1	U
Chloroform	67-66-3	-	ug/l	0.75	U
Chloromethane	74-87-3	-	ug/l	2.5	U
cis-1,2-Dichloroethene	156-59-2	70	ug/l	4.2	
cis-1,3-Dichloropropene	10061-01-5	-	ug/l	0.5	U

RGP Groundwater Sampling Results and Criteria					
249 Third Street					
Cambridge, Massachusetts					
CLIENT SAMPLE ID				CDM-MW-5	
SAMPLING DATE				11-APR-16	
LAB SAMPLE ID				L1610606-01	
	CAS Number	2010 RGP Criteria	Units	Qual	
Dibromochloromethane	124-48-1	-	ug/l	0.5	U
Dibromomethane	74-95-3	-	ug/l	5	U
Dichlorodifluoromethane	75-71-8	-	ug/l	5	U
Ethyl ether	60-29-7	-	ug/l	2.5	U
Ethyl methacrylate	97-63-2	-	ug/l	5	U
Hexachlorobutadiene	87-68-3	-	ug/l	0.5	U
Isopropylbenzene	98-82-8	-	ug/l	0.5	U
Methyl tert butyl ether	1634-04-4	70	ug/l	1	U
Methylene chloride	75-09-2	4.6	ug/l	3	U
n-Butylbenzene	104-51-8	-	ug/l	0.5	U
n-Propylbenzene	103-65-1	-	ug/l	0.5	U
Naphthalene	91-20-3	20	ug/l	2.5	U
o-Chlorotoluene	95-49-8	-	ug/l	2.5	U
p-Chlorotoluene	106-43-4	-	ug/l	2.5	U
p-Isopropyltoluene	99-87-6	-	ug/l	0.5	U
sec-Butylbenzene	135-98-8	-	ug/l	0.5	U
Styrene	100-42-5	-	ug/l	1	U
Tert-Butyl Alcohol	75-65-0	Monitor Only	ug/l	10	U
tert-Butylbenzene	98-06-6	-	ug/l	2.5	U
Tertiary-Amyl Methyl Ether	994-05-8	Monitor Only	ug/l	2	U
Tetrachloroethene	127-18-4	5.0	ug/l	0.5	U
Tetrahydrofuran	109-99-9	-	ug/l	5	U
trans-1,2-Dichloroethene	156-60-5	-	ug/l	0.75	U
trans-1,3-Dichloropropene	10061-02-6	-	ug/l	0.5	U
trans-1,4-Dichloro-2-butene	110-57-6	-	ug/l	2.5	U
Trichloroethene	79-01-6	5.0	ug/l	7.9	
Trichlorofluoromethane	75-69-4	-	ug/l	2.5	U
Vinyl acetate	108-05-4	-	ug/l	5	U
Vinyl chloride	75-01-4	2.0	ug/l	1	U
Benzene	71-43-2	5.0 / *	ug/l	0.5	U
Toluene	108-88-3	*	ug/l	0.75	U
Ethylbenzene	100-41-4	*	ug/l	0.5	U
o-Xylene	95-47-6	*	ug/l	1	U
p/m-Xylene	179601-23-1	*	ug/l	1	U
Xylenes, Total	1330-20-7	*	ug/l	1	U
Total BTEX	*	100	ug/l	ND	
Volatile Organics by GC/MS-SIM - Westborough Lab					
1,4-Dioxane	123-91-1	Monitor Only	ug/l	4.6	

RGP Groundwater Sampling Results and Criteria					
249 Third Street					
Cambridge, Massachusetts					
CLIENT SAMPLE ID				CDM-MW-5	
SAMPLING DATE				11-APR-16	
LAB SAMPLE ID				L1610606-01	
	CAS Number	2010 RGP Criteria	Units	Qual	
Semivolatile Organics by GC/MS - Westborough Lab					
1,2,4-Trichlorobenzene	120-82-1	-	ug/l	5	U
1,2-Dichlorobenzene	95-50-1	600	ug/l	2	U
1,3-Dichlorobenzene	541-73-1	320	ug/l	2	U
1,4-Dichlorobenzene	106-46-7	5.0	ug/l	2	U
2,4,5-Trichlorophenol	95-95-4	-	ug/l	5	U
2,4,6-Trichlorophenol	88-06-2	-	ug/l	5	U
2,4-Dichlorophenol	120-83-2	-	ug/l	5	U
2,4-Dimethylphenol	105-67-9	-	ug/l	5	U
2,4-Dinitrophenol	51-28-5	-	ug/l	20	U
2,4-Dinitrotoluene	121-14-2	-	ug/l	5	U
2,6-Dinitrotoluene	606-20-2	-	ug/l	5	U
2-Chlorophenol	95-57-8	-	ug/l	2	U
2-Methylphenol	95-48-7	-	ug/l	5	U
2-Nitroaniline	88-74-4	-	ug/l	5	U
2-Nitrophenol	88-75-5	-	ug/l	10	U
3,3'-Dichlorobenzidine	91-94-1	-	ug/l	5	U
3-Methylphenol/4-Methylphenol	108-39-4	-	ug/l	5	U
3-Nitroaniline	99-09-2	-	ug/l	5	U
4,6-Dinitro-o-cresol	534-52-1	-	ug/l	10	U
4-Bromophenyl phenyl ether	101-55-3	-	ug/l	2	U
4-Chloroaniline	106-47-8	-	ug/l	5	U
4-Chlorophenyl phenyl ether	7005-72-3	-	ug/l	2	U
4-Nitroaniline	100-01-6	-	ug/l	5	U
4-Nitrophenol	100-02-7	-	ug/l	10	U
Aniline	62-53-3	-	ug/l	2	U
Azobenzene	103-33-3	-	ug/l	2	U
Benzidine	92-87-5	-	ug/l	20	U
Benzoic Acid	65-85-0	-	ug/l	50	U
Benzyl Alcohol	100-51-6	-	ug/l	2	U
Bis(2-chloroethoxy)methane	111-91-1	-	ug/l	5	U
Bis(2-chloroethyl)ether	111-44-4	-	ug/l	2	U
Bis(2-chloroisopropyl)ether	108-60-1	-	ug/l	2	U
Carbazole	86-74-8	-	ug/l	2	U
Bis(2-ethylhexyl)phthalate	117-81-7	6.0	ug/l	3	U
Butyl benzyl phthalate	85-68-7	**	ug/l	5	U
Di-n-butylphthalate	84-74-2	**	ug/l	5	U
Di-n-octylphthalate	117-84-0	**	ug/l	5	U
Diethyl phthalate	84-66-2	**	ug/l	5	U
Dimethyl phthalate	131-11-3	**	ug/l	5	U
Total Phthalates	**	3.0	ug/l	ND	
Dibenzofuran	132-64-9	-	ug/l	2	U
Hexachlorocyclopentadiene	77-47-4	-	ug/l	20	U

RGP Groundwater Sampling Results and Criteria					
249 Third Street					
Cambridge, Massachusetts					
CLIENT SAMPLE ID				CDM-MW-5	
SAMPLING DATE				11-APR-16	
LAB SAMPLE ID				L1610606-01	
	CAS Number	2010 RGP Criteria	Units	Qual	
Isophorone	78-59-1	-	ug/l	5	U
n-Nitrosodimethylamine	62-75-9	-	ug/l	2	U
NDPA/DPA	86-30-6	-	ug/l	2	U
Nitrobenzene	98-95-3	-	ug/l	2	U
p-Chloro-m-cresol	59-50-7	-	ug/l	2	U
Phenol	108-95-2	300	ug/l	5	U
Pyridine	110-86-1	-	ug/l	5	U
Semivolatile Organics by GC/MS-SIM - Westborough Lab					
1-Methylnaphthalene	90-12-0	-	ug/l	0.2	U
2-Chloronaphthalene	91-58-7	-	ug/l	0.2	U
2-Methylnaphthalene	91-57-6	-	ug/l	0.2	U
Benzo(a)anthracene	56-55-3	0.0038 / ***	ug/l	0.2	U
Benzo(a)pyrene	50-32-8	0.0038 / ***	ug/l	0.2	U
Benzo(b)fluoranthene	205-99-2	0.0038 / ***	ug/l	0.2	U
Benzo(k)fluoranthene	207-08-9	0.0038 / ***	ug/l	0.2	U
Chrysene	218-01-9	0.0038 / ***	ug/l	0.2	U
Dibenzo(a,h)anthracene	53-70-3	0.0038 / ***	ug/l	0.2	U
Indeno(1,2,3-cd)Pyrene	193-39-5	0.0038 / ***	ug/l	0.2	U
Total Group I PAHs	***	10.0	ug/l	ND	
Hexachlorobenzene	118-74-1	-	ug/l	0.8	U
Hexachlorobutadiene	87-68-3	-	ug/l	0.5	U
Hexachloroethane	67-72-1	-	ug/l	0.8	U
Pentachlorophenol	87-86-5	1.0	ug/l	0.8	U
Acenaphthene	83-32-9	****	ug/l	0.1	U
Acenaphthylene	208-96-8	****	ug/l	0.2	U
Anthracene	120-12-7	****	ug/l	0.2	U
Benzo(ghi)perylene	191-24-2	****	ug/l	0.2	U
Fluoranthene	206-44-0	****	ug/l	0.2	U
Fluorene	86-73-7	****	ug/l	0.2	U
Naphthalene	91-20-3	20 / ****	ug/l	0.2	U
Phenanthrene	85-01-8	****	ug/l	0.2	U
Pyrene	129-00-0	****	ug/l	0.2	U
Total Group II PAHs	****	100	ug/l	ND	
Polychlorinated Biphenyls by GC - Westborough Lab					
Aroclor 1016	12674-11-2	-	ug/l	0.25	U
Aroclor 1221	11104-28-2	-	ug/l	0.25	U
Aroclor 1232	11141-16-5	-	ug/l	0.25	U
Aroclor 1242	53469-21-9	-	ug/l	0.25	U
Aroclor 1248	12672-29-6	-	ug/l	0.25	U
Aroclor 1254	11097-69-1	-	ug/l	0.25	U
Aroclor 1260	11096-82-5	-	ug/l	0.2	U
PCBs, Total	---	0.000064	ug/l	ND	

RGP Groundwater Sampling Results and Criteria					
249 Third Street					
Cambridge, Massachusetts					
CLIENT SAMPLE ID				CDM-MW-5	
SAMPLING DATE				11-APR-16	
LAB SAMPLE ID				L1610606-01	
	CAS Number	2010 RGP Criteria	Units	Qual	
Notes:					
Highlighted Bold Values Exceeded RGP Criteria					
ND: Nondetect					
Reporting limits greater than their associated criteria are <i>italicized</i>					
TBEL: Technology based effluent Limit					
WQBEL: Water Quality based effluent limit					
- : No RGP Criteria					
* : Parameter summed and compared to the "Total BTEX" Criteria					
**: Parameter summed and compared to the "Total Phthalates" Criteria					
***: Parameter summed and compared to the "Total PAH Group I" Criteria					
****: Parameter summed and compared to the "Total PAH Group II" Criteria					
1. RGP Criteria presented in this table are from the 2010 NPDES Permit, Appendix III. https://www3.epa.gov/region1/npdes/remediation/RGP2010_PermitsAppendixIII.pdf					
2. Total Chromium standard is not provided in the NPDES RGP criteria. The sum of Cr III and Cr VI is used for comparison					
3. For all "Group" criteria, all detect results are summed for the applicable parameters and compared to the criteria value. Nondetects are not included in this comparison					

Attachment No 3

U.S. Fish and Wildlife Environmental Review

Documentation

249 Third Street Excavation and Dewatering

IPaC Trust Resources Report

Generated October 06, 2016 05:48 PM MDT, IPaC v3.0.9

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.

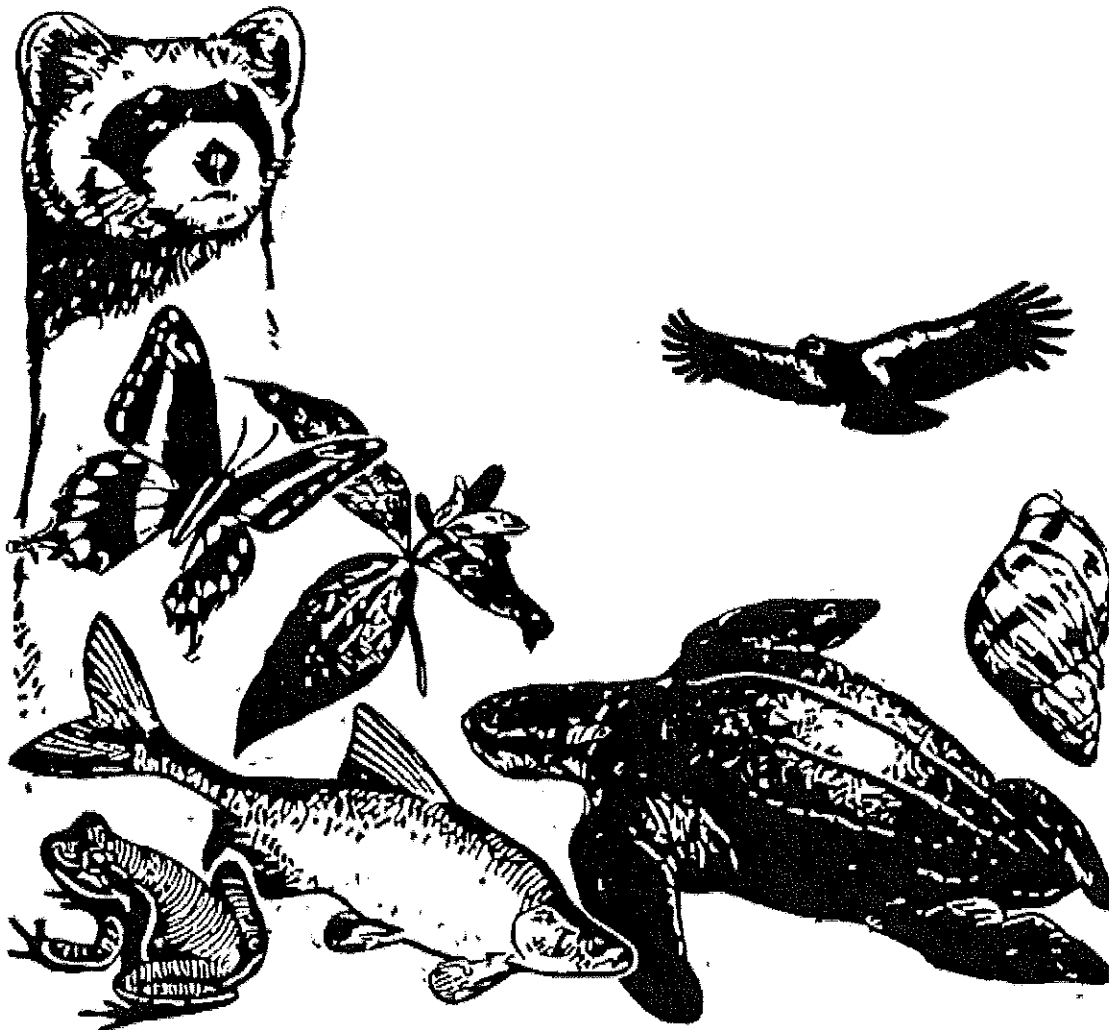


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IPaC Trust Resources Report	<u>1</u>
Project Description	<u>1</u>
Endangered Species	<u>2</u>
Migratory Birds	<u>3</u>
Refuges & Hatcheries	<u>5</u>
Wetlands	<u>6</u>

U.S. Fish & Wildlife Service

IPaC Trust Resources Report



NAME

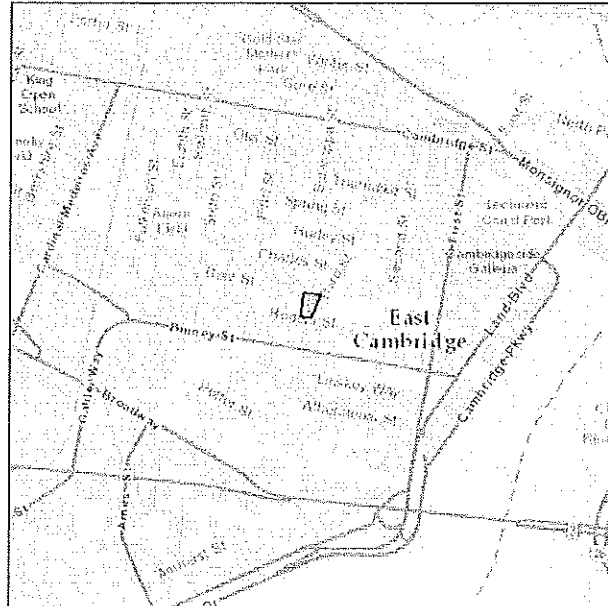
249 Third Street Excavation and
Dewatering

LOCATION

Middlesex County, Massachusetts

DESCRIPTION

Complete excavation down to 10-12 feet below ground surface to remove impacted soils; complete dewatering for excavation purposes. Groundwater collected during dewatering process will be treated, stored in a frac tank, and discharged to the local stormwater drainage. Stormwater discharge to the Charles River located to the East of 249 Third Street.



IPAC LINK

[https://ecos.fws.gov/ipac/project/
M4AU3-56TXN-ELZF2-KVGWB-C6POE4](https://ecos.fws.gov/ipac/project/M4AU3-56TXN-ELZF2-KVGWB-C6POE4)

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

There are no endangered species in this location

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.^[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The following species of migratory birds could potentially be affected by activities in this location:

American Oystercatcher <i>Haematopus palliatus</i>	Bird of conservation concern
On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G8	
American Bittern <i>Botaurus lentiginosus</i>	Bird of conservation concern
On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F3	
Bald Eagle <i>Haliaeetus leucocephalus</i>	Bird of conservation concern
On Land Season: Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008	
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i>	Bird of conservation concern
On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0H1	

Blue-winged Warbler <i>Vermivora pinus</i> On Land Season: Breeding	Bird of conservation concern
Canada Warbler <i>Wilsonia canadensis</i> On Land Season: Breeding	Bird of conservation concern
Hudsonian Godwit <i>Limosa haemastica</i> At Sea Season: Migrating	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B092	
Olive-sided Flycatcher <i>Contopus cooperi</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0AN	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FU	Bird of conservation concern
Pied-billed Grebe <i>Podilymbus podiceps</i> On Land Season: Breeding	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> On Land Season: Breeding	Bird of conservation concern
Purple Sandpiper <i>Calidris maritima</i> On Land Season: Wintering	Bird of conservation concern
Saltmarsh Sparrow <i>Ammodramus caudacutus</i> On Land Season: Breeding	Bird of conservation concern
Seaside Sparrow <i>Ammodramus maritimus</i> On Land Season: Breeding	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> On Land Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> On Land Season: Breeding	Bird of conservation concern
Upland Sandpiper <i>Bartramia longicauda</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HC	Bird of conservation concern
Willow Flycatcher <i>Empidonax traillii</i> On Land Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F6	Bird of conservation concern
Wood Thrush <i>Hylocichla mustelina</i> On Land Season: Breeding	Bird of conservation concern
Worm Eating Warbler <i>Helmitheros vermivorum</i> On Land Season: Breeding	Bird of conservation concern

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands in this location

Attachment No 4

Massachusetts Historical Society Project Notification Form and Approval

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: EQR - 249 Third Street, LLC

Location / Address: 249 Third Street

City / Town: Cambridge, MA

Project Proponent

Name: Ms. Rebecca Becker

Address: 2 N Riverside Plaza, Suite 400

City/Town/Zip/Telephone: Chicago, Illinois, 60606-2609, (312) 928-8471

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name

Type of License or funding (specify)

US EPA
US EPA
MassDEP

NPDES Dewatering General Permit
SIP - PCB Remediation
RAM Plan

Project Description (narrative):

Complete excavation and dewatering down to 10-12 feet below ground surface to remove impacted soils for development of future Apartment Building.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

No Demolition

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

No Rehabilitation of Existing Buildings

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

Yes, Construction of a New Apartment Building, see Attached Plans

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH
No known Historic and Archaeological properties are known to exist on the Property

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

What is the total acreage of the project area?

Woodland _____ acres
Wetland _____ acres
Floodplain _____ acres
Open space _____ acres
Developed 0.60 acres

Productive Resources:
Agriculture _____ acres
Forestry _____ acres
Mining/Extraction _____ acres
Total Project Acreage 0.60 acres

What is the acreage of the proposed new construction? 0.60 acres

What is the present land use of the project area?

The Project Area is currently used as a Parking Lot for Residents Residing at 195
Binney Street, Cambridge, MA

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: 

Date:

10/18/16

Name: Ms. Rebecca Becker

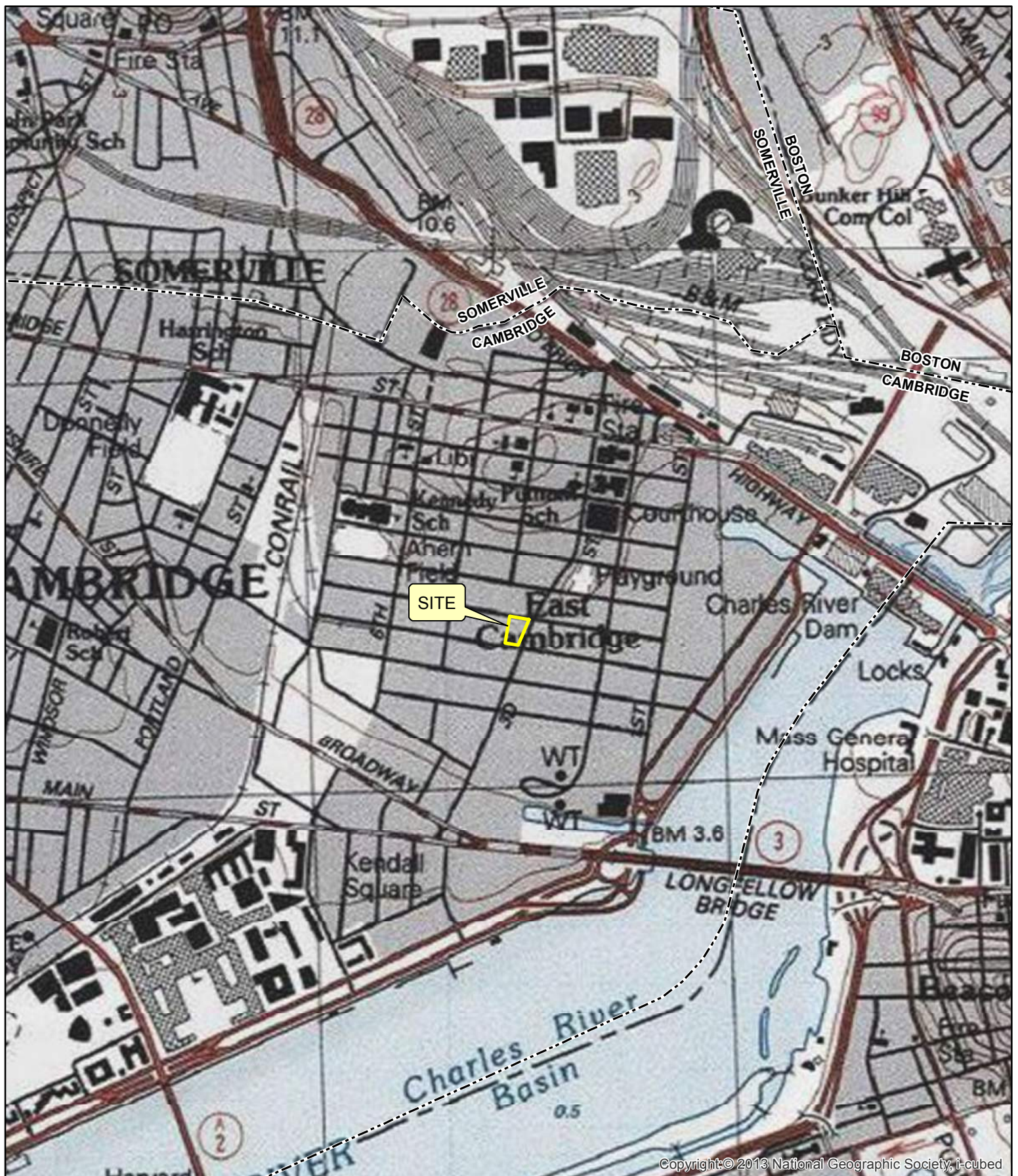
Address: 2 N Riverside Plaza, Suite 400

City/Town/Zip: Chicago, Illinois, 60606-2609

Telephone: (312) 928-8471

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.



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249 Third Street
Cambridge, Massachusetts

0 500 1,000
Feet

1" = 1,000'



Basemap: USGS 7.5-minute Topographic Quadsheet
Source: ESRI ArcGIS Online, NGS Topo US
Coord. System: NAD83 Mass. State Plane Mainland FIPS 2001 (feet)

Figure 1-1
Site Location Plan

**CDM
Smith**

EXISTING CONDITIONS LEGEND			
	SEWER MANHOLE	BIT.	BITUMINOUS
	DRAIN MANHOLE	CONC.	CONCRETE
	TELEPHONE MANHOLE	VGC	VERTICAL GRANITE CURB
	ELECTRIC MANHOLE	FGC	FLUSH GRANITE CURB
	MANHOLE	GEN.	GENERATOR
	GAS SHUT OFF	TBM	TEMPORARY BENCH MARK
	WATER SHUT OFF	BC	BOTTOM OF CURB
	CATCH BASIN	TC	TOP OF CURB
	CATCH BASIN ROUND		GUARD RAIL
	GUY WIRE	X	FENCE
	GUY POLE	S	SEWER
	UTILITY POLE	D	DRAIN
	UTILITY POLE W/ LIGHT	W	WATER
	HYDRANT	OHW	OVERHEAD WIRE
	SIGN	T	TELEPHONE
	PARKING METER	G	GAS
	BOLLARD	E	ELECTRIC
	OBSERVATION WELL	PTC	PIPE TYPE CABLE
	FIRE ALARM		DECIDUOUS TREE
	FLAG POLE		

EXISTING CONDITIONS NOTES

- BENCH MARK INFORMATION:
BENCH MARKS USED
B.M.#1 X-CUT BOLT BASE R.R. SIGNAL LIGHT WEST SIDE OF R.R. TRACKS SOUTH SIDE OF MAIN STREET ELEVATION = 20.783
B.M.#2 X-CUT IN BOLT OF HYDRANT ON SOUTH SIDE OF MAIN STREET OPPOSITE PARKING GARAGE AT VASSAR STREET ELEVATION=21.918
TEMPORARY BENCH MARKS USED
T.B.M.#1 X-CUT BOLT ON WESTERLY BOLT OF HYDRANT ON SOUTHERLY SIDE OF BUENEY STREET BETWEEN FIRST STREET AND SECOND STREET ELEVATION=22.22 (AS SHOWN ON PLAN BY HARRY R. FELDMAN NO. 10962)
T.B.M.#3 NORTHERN MOST CAP MUT OF HYDRANT ON EAST SIDE OF SECOND AND SOUTH SIDE OF ROGERS STREET ELEVATION=23.05 (AS SHOWN ON PLAN BY HARRY R. FELDMAN NO. 12115)
TEMPORARY BENCH MARKS SET (DECEMBER 10, 2009)
T.B.M.#4 SPIKE SET IN UTILITY POLE #622740 LOCATED AT THE INTERSECTION OF THE EASTERLY SIDEWALK OF THIRD STREET AND THE NORTHERLY SIDEWALK OF ROGERS STREET ELEVATION=22.58
T.B.M.#5 SPIKE SET IN UTILITY POLE #37 LOCATED AT THE INTERSECTION OF THE WESTERLY SIDE OF THIRD STREET AND THE NORTHERLY SIDE OF BENT STREET ELEVATION=23.35
- ELEVATIONS REFER TO CITY OF CAMBRIDGE DATUM.
- CONTOUR INTERVAL EQUALS ONE (1) FOOT.
- UTILITY INFORMATION SHOWN IS BASED ON A FIELD SURVEY, THE LATEST PLANS OF RECORD, AND WATER MAIN AS-BUILT INFORMATION IN THIRD AND ROGERS STREET DATED JANUARY 21, 2015 PROVIDED TO HIGHPOINT BY THE CAMBRIDGE WATER DEPARTMENT. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. FELDMAN AND HIGHPOINT CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLAN, SINCE SUB-SURFACE UTILITIES CANNOT BE VISIBLY VERIFIED. BEFORE PLACING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUB-SURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL, TOLL FREE, THE DIG SAFE CALL CENTER AT 1-888-344-7233 SEVENTY TWO HOURS PRIOR TO EXCAVATION.
- THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF HARRY R. FELDMAN, INC. ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO HARRY R. FELDMAN INC.'S SCOPE OF SERVICES UNDER CONTRACT TO OUR CLIENT FOR THIS PROJECT. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN CONSENT IS PROVIDED BY HARRY R. FELDMAN, INC.
- THERE IS UNDERGROUND CABLE TELEVISION CONDUIT WITHIN ROGERS STREET THAT IS NOT PLOTTABLE.
- UTILITY LINES SHOWN WITH AN ASTERISK (*) ARE APPROXIMATE ONLY AND ALL SUBCONTRACTORS WILL VERIFY IN THE FIELD (VIF).
- 6' DRAIN LINE SHOWN WITH A DOUBLE ASTERISK (**) IS APPROXIMATE ONLY AND ALL SUBCONTRACTORS WILL VERIFY IN THE FIELD (VIF).
- DRAIN LINE CONNECTIONS WITH A TRIPLE ASTERISK (***) ARE APPROXIMATE ONLY AND ALL SUBCONTRACTORS WILL VERIFY IN THE FIELD (VIF).

SITE PREPARATION, DEMOLITION, AND EROSION CONTROL LEGEND	
MP	MAINTAIN AND PROTECT EXISTING SITE FEATURE
AD	REMOVE AND DISPOSE OF EXISTING SITE FEATURE
DR	DEMOLISH AND REMOVE EXISTING SITE FEATURE
SDR	SAV-CUT, DEMOLISH & REMOVE EXISTING PAVEMENT OR SIDEWALK
RS	REMOVE AND STOCKPILE EXISTING FEATURE
	SAWCUT EXISTING PAVEMENT OR SIDEWALK
	DEMOLISH AND REMOVE EXISTING CURB OR FENCE
	DEMOLISH AND REMOVE EXISTING UTILITY
X	PROPOSED CONSTRUCTION FENCE
	INDICATES FEATURE TO BE REMOVED
	SILTSACK SEDIMENT CONTROL DEVICE
	REMOVE AND DISPOSE OF EXISTING LANDSCAPE AND LAWN AREAS TO SUBGRADE
	DEMOLISH AND REMOVE EXISTING BITUMINOUS CONCRETE PAVEMENT TO SUBGRADE
	PROPOSED CRUSHED STONE TRACKING PAD AT CONSTRUCTION ENTRANCE

SITE PREPARATION, DEMOLITION AND EROSION CONTROL NOTES

- CONTRACTOR SHALL NOTIFY DIG-SAFE AT 8-11 AT LEAST 72 HOURS PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITY. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER IN WRITING OF ANY AND ALL DISCREPANCIES BETWEEN THESE PLANS AND OBSERVED EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
- TOPSOIL AND OVEREXCAVATION SPOILS SHALL EITHER BE HAULED OFF SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL GUIDELINES OR STOCKPILED ON SITE. ANY STOCKPILED EXCAVATION MATERIALS LEFT ON SITE FOR MORE THAN 24 HOURS SHALL BE COVERED WITH WATERPROOF TARPIS AND PROTECTED FROM WASHOUT WITH A FILTER SOCK AND/OR SILT FENCE BARRIER.
- ASPHALT PAVEMENT AND CONCRETE SIDEWALKS TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH OF GRAVEL BASE UNLESS OTHERWISE INDICATED ON SHEET C300.
- ALL CURBS AND BERRIS TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH OF GRAVEL BASE.
- CONTRACTOR SHALL COORDINATE HAULING DEMOLISHED MATERIAL OFF SITE. REMOVAL OF EXCAVATED MATERIALS FROM SITE SHALL BE CONDUCTED IN ACCORDANCE WITH MASSDOT-HIGHWAY DIVISION "STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES" LATEST EDITION.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING TEMPORARY ADJUSTMENTS TO PEDESTRIAN AND VEHICULAR CIRCULATION IN ALL PUBLIC WAYS ADJACENT TO THE SITE DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO POLICE DETAILS, TEMPORARY PEDESTRIAN CORRIDORS, JERSEY BARRIERS, AND THE LIKE. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF CAMBRIDGE ASSOCIATED WITH ALL WORK IN THE PUBLIC WAYS.
- TRENCHING LIMITS FOR NEW UTILITY INSTALLATIONS NOT SHOWN HEREON. REFER TO GRADING, DRAINAGE AND UTILITY PLAN (SHEET C500) AND SITE CONSTRUCTION DETAILS (C600) FOR UTILITY LAYOUT AND TRENCHING DETAILS, RESPECTIVELY.
- SILTSACK INLET PROTECTION DEVICES SHALL BE INSTALLED AT ALL LOCATIONS INDICATED HEREON PRIOR TO CONSTRUCTION AND SHALL REMAIN IN PLACE FOR DURATION OF CONSTRUCTION ACTIVITIES.
- ALL DEMOLITION AND SITE PREPARATION ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH CAMBRIDGE DEPARTMENT OF PUBLIC WORKS STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL COORDINATE ALL NECESSARY INSPECTIONS WITH THE CAMBRIDGE INSPECTIONAL SERVICES DEPARTMENT.
- ALL ACTIVITIES ASSOCIATED WITH REMOVAL OF EXISTING WATER SERVICE LATERALS SHOWN ON SHEET C300 ARE SUBJECT TO REVIEW AND APPROVAL BY THE CAMBRIDGE WATER DEPARTMENT.
- MAINTAIN AND PROTECT ALL EXISTING OFF-SITE SURFACE AND SUBSURFACE DRAINAGE AND UTILITY SERVICES AND STRUCTURES EXCEPT AS INDICATED ON SHEET C300.
- REMOVE ALL EXISTING SITE LIGHTING, WROUGHT IRON FENCING, BRICKS FOR FENCE PYLONS, AND PARKING SIGNAGE WITHIN LIMIT OF WORK AS SHOWN ON SHEET C300. DISPOSE OF SAID APPURTENANCES OR STORE ON SITE FOR FUTURE REUSE/RELOCATION AT THE DIRECTION OF THE PROPERTY OWNER.
- REMOVE AND DISPOSE OF ALL EXISTING LANDSCAPE PLANTINGS WITHIN LIMIT OF WORK UNLESS INSTRUCTED BY THE OWNER TO TEMPORARILY STORE PLANTINGS ON SITE FOR FUTURE RELOCATION.
- THE EROSION CONTROL MEASURES SHOWN ON SHEET C300 AND DESCRIBED HEREIN SHALL BE CONSIDERED MINIMUM STANDARDS.
- CONTRACTOR SHALL KEEP ON SITE, AT ALL TIMES, ADDITIONAL FILTER SOCK MATERIALS AND SILT FENCE FOR EMERGENCY INSTALLATION OR FOR INSTALLATION AT THE DIRECTION OF THE OWNER, THE ENGINEER, OR THE CITY OF CAMBRIDGE REPRESENTATIVE.
- CONTRACTOR SHALL INSPECT AND REPAIR EROSION AND SEDIMENT CONTROL DEVICES AT THE END OF EACH WORKING DAY AND AFTER EACH RAINFALL EVENT.
- SIDEWALK AT SOUTHWEST CORNER OF THIRD STREET- ROGERS STREET INTERSECTION HAS BEEN RECONSTRUCTED SINCE EXISTING CONDITIONS SURVEY SHOWN ON THESE PLANS IN CONJUNCTION WITH A SEPARATE CONSTRUCTION PROJECT BY OTHERS. DEMOLITION AND REMOVAL OF SIDEWALK CURB AND PAVEMENT IN THIS AREA IS TO ACCOMMODATE CONSTRUCTION OF A RAISED PEDESTRIAN CROSSWALK PER A MANUATE BY THE CAMBRIDGE DEPARTMENT OF PUBLIC WORKS. AS SURVEY INFORMATION FOR THIS CONSTRUCTION HAS NOT BEEN OBTAINED THE EXTENT OF REQUIRED DEMOLITION IS APPROXIMATE AND IS TO BE CONFIRMED IN THE FIELD BY THE CONTRACTOR UNDER GUIDANCE FROM THE SITE ENGINEER.
- ALL EXISTING SIDEWALKS WITHIN BENT AND THIRD STREETS ADJACENT TO THE SITE SHALL BE DEMOLISHED AND REMOVED TO FULL DEPTH OF GRAVEL BASE. CONTRACTOR TO DETERMINE EXTENT OF OVEREXCAVATION TO ACCOMMODATE BASEMENT AND FOUNDATION CONSTRUCTION.
- EXISTING CURBS WITHIN BENT AND THIRD STREET RIGHTS-OF-WAY ARE TO REMAIN UNLESS OTHERWISE INDICATED ON SHEET C300. CONTRACTOR TO DETERMINE SCOPE OF ADDITIONAL CURB REMOVAL AND REPLACEMENT TO ACCOMMODATE BASEMENT AND FOUNDATION EXCAVATION.

DIMENSIONAL SUMMARY			
DISTRICTS: IA-1, PUD-4C, ECHO			
USE: RETAIL AND MULTI-FAMILY RESIDENTIAL (SPECIAL PERMIT REQUIRED)			
BUILDING DIMENSIONAL REQUIREMENTS			
CRITERIA	EXISTING	ALLOWED OR REQUIRED	PROPOSED
MIN. LOT AREA	26,918 SF	5,000 SF	26,918 SF (EX)
MIN. LOT WIDTH	217.65 FT	50 FT	217.65 (EX)
MIN. GROSS FLOOR AREA	N/A	87,424 (I)	86,381 SF
RESIDENTIAL BASE	N/A	87,295 SF (MAX)	66,189 SF
NON-RESIDENTIAL BASE	N/A	N/A	1,420 SF (RETAIL)
INCL. HOUSING BONUS	N/A	20,159 SF (MAX)	18,772 SF
MAX. FLOOR AREA RATIO	N/A	3.25 (MAX) (I)	3.21
RESIDENTIAL BASE	N/A	2.5 (MAX) (I)	2.45
NON-RESIDENTIAL BASE	N/A	1.25 (MAX)	0.95
INCL. HOUSING BONUS	N/A	0.75	0.70
MAX. DWELLING UNITS	N/A	90 (MAX)	84
BASE UNITS	N/A	69	84
INCL. BONUS UNITS	N/A	21	26
BASE LOT AREA / UNIT	N/A	300 (MAX) (I)	320 SF/UNIT
TOTAL LOT AREA / UNIT	N/A	300 (MAX) (I)	320 SF/UNIT
MAX. BUILDING HEIGHT	N/A	45 FT [4]	45 FT & 6.5 FT
MIN. FRONT YARD	N/A	0 FT / 4 FT [4]	0 FT / 7 FT [4]
MIN. SIDE YARD	N/A	10 FT [4]	10.1 FT [4]
MIN. REAR YARD	N/A	N/A [4]	N/A [4]
MIN. OPEN SPACE	20.1%	20%	20.4%
PRIVATE OPEN SPACE	0 SF	-	2,128 SF [4]
PERMEABLE OPEN SPACE	5,571 SF	-	4,737 SF
OTHER OPEN SPACE	0 SF	-	0 SF
OFF-STREET PARKING	78 SPACES	87 [4]	2 [4]
LONG-TERM BICYCLE PARKING	0 SPACES	89 [4]	69
SHORT-TERM BICYCLE PARKING	0 SPACES	10 [4]	12
LOADING BAYS	0 BAYS	N/A	N/A

SITE LAYOUT AND MATERIALS NOTES

- REFER TO LANDSCAPE PLANS (BY OTHERS) FOR SITE LANDSCAPE AND LANDSCAPE IMPROVEMENTS. NOT ALL PROPOSED IMPROVEMENT DETAILS AND SPECIFICATIONS ARE SHOWN ON SHEET C400.
- REFER TO LANDSCAPE PLANS (BY OTHERS) FOR MATERIALS AND SPECIFICATIONS REGARDING SHORT-TERM BICYCLE PARKING LOCATIONS.
- REFER TO ARCHITECTURAL PLANS (BY OTHERS) FOR MATERIALS AND SPECIFICATIONS REGARDING STOOPS AND STAIRS ADJACENT TO STREET-FACING FIRST-FLOOR RESIDENTIAL UNITS.
- PAVEMENT AREAS SHALL CONSIST OF TWO COURSES OF 2-INCH THICK TYPE 1-1 BITUMINOUS CONCRETE ATOP A 12-INCH THICK COMPACTED GRAVEL BASE.
- SIDEWALK AREAS SHALL CONSIST OF 4-INCH THICK CONCRETE SLAB, REINFORCED WITH W1.4 x W1.4 WELDED WIRE MESH REINFORCEMENT, ATOP 8-INCH THICK COMPACTED GRAVEL BASE. INSTALL CONTROL AND EXPANSION JOINTS AT 5 FEET AND 25 FEET ON CENTER RESPECTIVELY. PROVIDE BRUSHED-BROOM FINISH IN TRANSVERSE DIRECTION TO PATH OF TRAVEL.
- TACTILE WARNING SURFACES SHALL BE DURALAST CAST IRON DETECTABLE WARNING PLATES OR APPROVED EQUAL.
- PARKING STOPPING SHOWN ON SHEET C400 SHALL CONSIST OF 4-INCH WIDE LINES OF WHITE TRAFFIC PAINT. REFER TO SITE DETAIL SHEET FOR HANDICAP PARKING PAVEMENT MARKING DETAIL.
- EXISTING SIDEWALKS WITHIN BENT AND THIRD STREET RIGHTS-OF-WAY ARE TO REMAIN UNLESS OTHERWISE INDICATED ON SHEET C400. CONTRACTOR TO DETERMINE SCOPE OF ADDITIONAL SIDEWALK REMOVAL AND REPLACEMENT TO ACCOMMODATE FOUNDATION AND BUILDING CONSTRUCTION.

DIMENSIONAL FOOTNOTES

- Per Section 11.203.2.1 of City of Cambridge Zoning Ordinance
- Per Section 20.43 of City of Cambridge Zoning Ordinance
- Per Section 13.54(f) of City of Cambridge Zoning Ordinance
- Per Section 13.53.4(1) of City of Cambridge Zoning Ordinance
- Proposed 7-foot setback from northerly right-of-way line of Rogers Street
- Minimum side yard setback per Section 6.34, Table 6-4 of City of Cambridge Zoning Ordinance
- Lot has frontage on street of three of four sides with fourth side designated as side lot line per Section 6.24.3 of City of Cambridge Zoning Ordinance and there has no rear yard nor rear yard setback
- Denotes area of private patio at roof level
- 84 residential + 3 retail spaces required per Section 6.35 of City of Cambridge Zoning Ordinance
- 2 spaces proposed on site; remainder of parking to be provided in off-site parking facility
- Per Section 6.107.2 of City of Cambridge Zoning Ordinance:
Long-term bicycle parking (residential) = 1 per unit for first 20 units + 1.05 per unit thereafter = 20 + (1.05 x 64) = 87.2 = 88 spaces
Long-term bicycle parking (retail) = 0.1 per 1,000 sf = 0.1 x (1,420,1,000) = 0.1420 = 1 space
Total long-term bicycle parking required = 88 + 1 = 89 spaces
- Per Section 6.107.3 of City of Cambridge Zoning Ordinance:
Short-term bicycle parking (residential) = 0.1 per dwelling unit = 0.1 x 84 = 8.4 = 9 spaces
Short-term bicycle parking (retail) = 0.8 per 1,000 sf = 0.8 x (1,420,1,000) = 0.85 = 1 space
Total short-term parking required = 9 + 1 = 10 spaces

SITE LAYOUT AND MATERIALS LEGEND	
GTC	PROPOSED GRANITE TRANSITION CURB
VGC	PROPOSED VERTICAL GRANITE CURB
FGC	PROPOSED FLUSH GRANITE CURB
*	PROPOSED BOLLARD
	PROPOSED SIGN
	PROPOSED BICYCLE RACK
	PROPOSED DETECTABLE WARNING PANELS
	PROPOSED REUSED WROUGHT IRON FENCE
	PROPOSED HANDICAP PARKING PAVEMENT MARKING
	PROPOSED LANDSCAPE/ OPEN SPACE AREA
	PROPOSED BITUMINOUS CONCRETE PAVEMENT
	PROPOSED ON-SITE CAST-IN-PLACE CONCRETE SIDEWALK
	PROPOSED BUILDING FOOTPRINT

SITE GRADING, DRAINAGE AND UTILITY LEGEND	
	PROPOSED STORM DRAIN
	PROPOSED SANITARY SEWER
	PROPOSED WATER SERVICE
	PROPOSED ELECTRICAL SERVICE
	PROPOSED TELCOM SERVICE
	PROPOSED GAS SERVICE
	PROPOSED 10\"/>
	PROPOSED 12\"/>
	PROPOSED TRENCH DRAIN W/ ACCESSIBLE GRATE
	PROPOSED 24\"/>
	PROPOSED 4\"/>
	PROPOSED 4\"/>
	PROPOSED 4\"/>
	PROPOSED STORMCEPTOR 450 WATER QUALITY UNIT (4\"/>
	PROPOSED 4\"/>
	PROPOSED WATER GATE VALVE
	PROPOSED R-TANK 2.0 UNDERGROUND STONE-EMBEDDED DETENTION INFILTRATION SYSTEM WITH AT-GRADE INSPECTION PORT ACCESS
	PROPOSED GAS GATE VALVE
	PROPOSED SPOT ELEVATION
	PROPOSED TOP OF CURB
	PROPOSED BOTTOM OF CURB
	PROPOSED BOTTOM OF FRONT OF CURB
	PROPOSED BOTTOM OF BACK OF CURB
	PROPOSED FLUSH CURB ELEVATION
	PROPOSED ELEVATION CONTOUR
	PROPOSED FLOW DIRECTION AND SLOPE

SITE GRADING, DRAINAGE AND UTILITY NOTES

- ALL DRAINAGE PIPES SHALL BE ADS N12 CORRUGATED HIGH DENSITY POLYETHYLENE UNLESS OTHERWISE INDICATED ON SHEET C500.
- ALL SEWER PIPES SHALL BE 8-INCH DIAMETER SDR 35 POLYVINYL CHLORIDE UNLESS OTHERWISE INDICATED ON SHEET C500.
- ALL DRAINAGE AND SEWER MANHOLES SHALL BE 4-FOOT INTERIOR DIAMETER PRECAST REINFORCED CONCRETE UNLESS OTHERWISE INDICATED ON SHEET C500.
- STORMCEPTOR UNIT SHALL BE DROP INLET MODEL STC-450L.
- UNDERGROUND DETENTION SYSTEM SHALL CONSIST OF R-TANK 2.0 PREFABRICATED CHAMBERS EMBEDDED IN CRUSHED STONE.
- FINAL GAS, ELECTRIC, AND TELECOMMUNICATIONS SERVICES SHALL BE COORDINATED WITH THEIR RESPECTIVE LOCAL PROVIDERS. LOCATIONS SHOWN ON SHEET C500 ARE TENTATIVE ONLY.
- REFER TO LANDSCAPE GRADING PLAN (BY OTHERS) FOR SITE GRADING AND DRAINAGE NOT SHOWN ON SHEET C500.
- SEE SHEET C500 FOR DRAINAGE STRUCTURE RIM AND INVERT SCHEDULE INFORMATION.
- EXISTING GRADES ALONG WEST PROPERTY BOUNDARY ARE TO REMAIN.
- UNLESS OTHERWISE INDICATED ON SHEET C500, ALL EXISTING GRADES WITHIN PAVEMENT AND SIDEWALK RECONSTRUCTION AREAS IN BENT STREET, THIRD STREET, AND THE ROGERS-THIRD STREET INTERSECTION SHALL BE MATCHED AND ALL EXISTING AT-GRADE DRAINAGE AND UTILITY CASTING ELEVATIONS SHALL BE MAINTAINED. SEE SHEET C500 FOR NEW FINISH GRADE ELEVATIONS WITHIN ROGERS STREET.
- REFER TO SHEET C600 FOR ROGERS STREET DRAINAGE AND UTILITY PROFILE INFORMATION.
- UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL WORK IS TO CONFORM TO THE CITY OF CAMBRIDGE WATER DEPARTMENT CONSTRUCTION AND OPERATING PROCEDURES, HWMA DESIGN STANDARDS, AND MASSACHUSETTS PLUMBING CODE FIRST, AND IF WORK IS NOT COVERED IN THE SPECIFICATIONS, IT IS TO CONFORM TO THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATION FOR HIGHWAYS AND BRIDGES, CURRENT EDITION.
- THE SITE CONTRACTOR SHALL VERIFY THE LOCATION, SIZE, AND DEPTH OF EXISTING UTILITIES AND DRAINAGE INFRASTRUCTURE PRIOR TO TAPPING INTO, CROSSING, OR EXTENDING THEM. IF THE NEW WORK POSES A CONFLICT WITH EXISTING UTILITIES, THE ENGINEER SHALL BE NOTIFIED PRIOR TO THE CONTRACTOR CONTINUING.
- THE SITE CONTRACTOR SHALL KEEP ACCURATE AND NEAT TIES TO ALL SUBSURFACE UTILITIES. COPIES OF THESE TIES SHALL BE PROVIDED TO THE CITY OF CAMBRIDGE AND THE ENGINEER AT THE COMPLETION OF SITE WORK.
- REFER TO PLUMBING PLANS BY OTHERS FOR PLUMBING MODIFICATIONS WITHIN THE EXISTING BUILDING.
- CAMBRIDGE WATER DEPARTMENT, CAMBRIDGE PUBLIC WORKS DEPARTMENT AND CAMBRIDGE ENGINEERING DEPARTMENT SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO START OF CONSTRUCTION.
- THE SITE CONTRACTOR SHALL OBTAIN, AT A MINIMUM, A WATER WORKS DEMOLITION PERMIT, A WATER WORKS CONSTRUCTION PERMIT, STREET OBSTRUCTION PERMIT, TRAFFIC MANAGEMENT DETOUR PLAN, AND ANY OTHER NECESSARY PERMITS PRIOR TO DEMOLITION AND/OR INSTALLATION OF EXISTING AND PROPOSED WATER SERVICES SHOWN HEREON.
- CAMBRIDGE WATER DEPARTMENT SHALL BE NOTIFIED A MINIMUM OF 72 HOURS PRIOR TO CONDUCTING A FIRE PUMP TEST. CONTACT NUMBER TO SCHEDULE FIRE PUMP TEST IS (617) 349-7754.
- ALL WORK SHALL BE PERFORMED BY A CITY OF CAMBRIDGE LICENSED AND BONDED CONTRACTOR.
- ALL WATER SERVICE PIPE SHALL BE CEMENT-LINED, TAP-COATED CLASS 52 DUCTILE IRON, SUPPLIED BY U.S. PIPE AND FOUNDRY COMPANY, GRIFIN PIPE COMPANY, OR EQUAL AS APPROVED BY CAMBRIDGE WATER DEPARTMENT.
- WATER PIPE FITTINGS SHALL BE CEMENT-LINED DUCTILE IRON WITH INTERLOCKING OR MECHANICAL JOINT RESTRAINTS.
- WATER PIPE JOINTS SHALL HAVE INTERLOCKING OR MECHANICAL JOINT RESTRAINTS.
- WATER PIPE COUPLINGS SHALL BE SMITH BLAIR STYLE #41, DRESS STYLE 153, 360 OR ROMAN STYLE 901 WITH PLAIN GRATE 27 RUBBER GASKETS AND BLACK STEEL TRACK-HEAD BOLTS WITH NUTS.
- WATER GATE VALVES SHALL MEET AWWA C-509, 200 PSI MINIMUM WORKING PRESSURE, RESILIENT SEATED, AND OPEN CLOCKWISE.
- THRUST BLOCKS SHALL BE 3,000 PSI MINIMUM, 1-1/2, 470 CEMENT CONCRETE MASONRY.
- TRENCH DRAIN SHALL BE ACO "RushGuard" GALVANIZED STEEL EDGE RAIL CHANNEL SYSTEM WITH ADA-COMPLIANT TYPE 6530 PERFORATED STAINLESS STEEL GRATE. INSTALL PER MANUFACTURERS STANDARDS AND SPECIFICATIONS.

249 Third Street

249 Third St., Cambridge, MA

Equity Residential
249 Third St., Cambridge, MA

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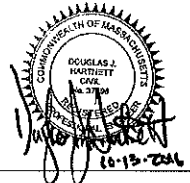
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KEY PLAN

MARK	DATE	DESCRIPTION
	10-13-2016	PERMIT SET
	07-29-2016	75% REVISED GMP SET
	05-13-2016	GMP SET
	04-01-2016	ISSUED FOR CONSTRUCTION

PROJECT NUMBER: 21412

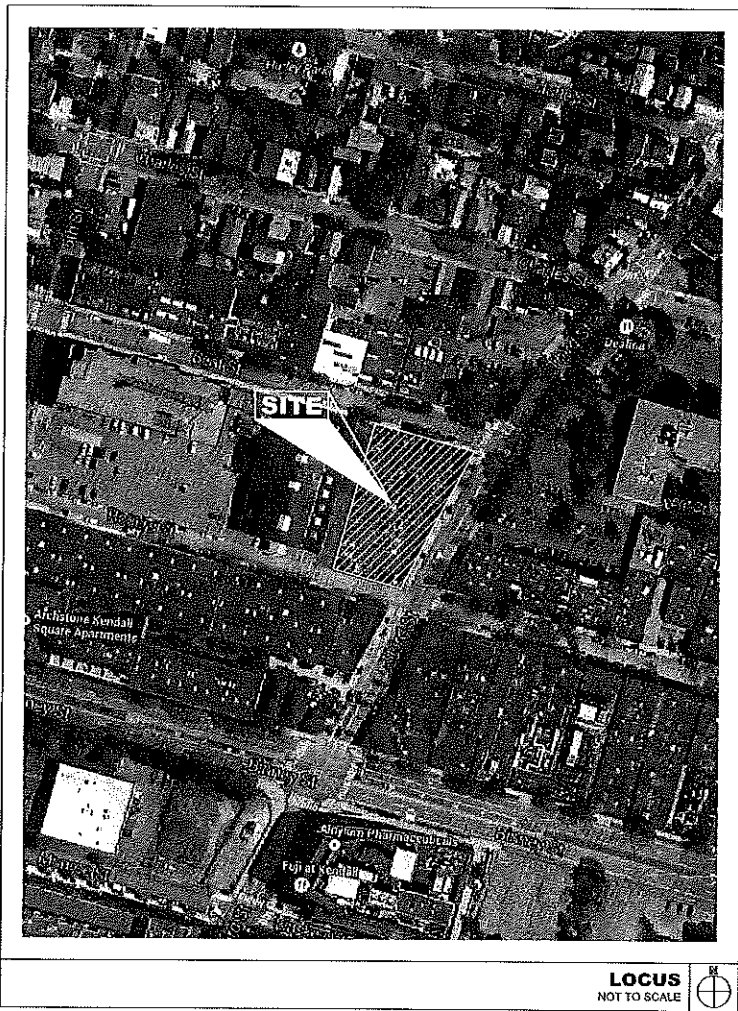
DRAWN BY: JJA

CHECKED BY: DJH

SHEET TITLE

SITE PLAN LEGENDS
AND NOTES

C100



EXISTING CONDITIONS NOTES

1. BENCH MARK INFORMATION:

BENCH MARKS USED

B.M.-41 X-CUT BOLT BASE R.R. SIGNAL LIGHT WEST SIDE OF R.R. TRACKS SOUTH SIDE OF MAIN STREET. ELEVATION = 22.785

B.M.-42 X-CUT IN BOLT OF HYDRANT ON SOUTH SIDE OF MAIN STREET OPPOSITE PARKING GARAGE AT VASSAR STREET. ELEVATION = 21.916

TEMPORARY BENCH MARKS USED

T.B.M.-41 X-CUT BOLT ON WESTERLY BOLT OF HYDRANT ON SOUTHERLY SIDE OF BUNNEY STREET BETWEEN FIRST STREET AND SECOND STREET ELEVATION = 22.22 (AS SHOWN ON PLAN BY HARRY R. FELDMAN NO. 10966)

T.B.M.-43 NORTHERN MOST CAP NUT OF HYDRANT ON EAST SIDE OF SECOND AND SOUTH SIDE OF ROGERS STREET. ELEVATION = 23.06 (AS SHOWN ON PLAN BY HARRY R. FELDMAN NO. 12119)

TEMPORARY BENCH MARKS SET (DECEMBER 10, 2006)

T.B.M.-A SPIKE SET IN UTILITY POLE #66740 LOCATED AT THE INTERSECTION OF THE EASTERLY SIDEWALK OF THIRD STREET AND THE NORTHERLY SIDEWALK OF ROGERS STREET. ELEVATION = 22.58

T.B.M.-B SPIKE SET IN UTILITY POLE #37 LOCATED AT THE INTERSECTION OF THE WESTERLY SIDE OF THIRD STREET AND THE NORTHERLY SIDE OF BENT STREET. ELEVATION = 23.35

2. ELEVATIONS REFER TO CITY OF CAMBRIDGE DATUM.

3. CONTOUR INTERVAL EQUALS ONE (1) FOOT.

4. UTILITY INFORMATION SHOWN IS BASED ON A FIELD SURVEY, THE LATEST PLANS OF RECORD, AND WATER MAIN AS-BUILT INFORMATION IN THIRD AND ROGERS STREET DATED JANUARY 21, 2015 PROVIDED TO HIGHPOINT BY THE CAMBRIDGE WATER DEPARTMENT. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. FELDMAN AND HIGHPOINT CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLAN, SINCE SUB-SURFACE UTILITIES CANNOT BE VISIBLY VERIFIED. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUB-SURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL, TOLL FREE, THE DIG SAFE CALL CENTER AT 1-888-344-7233 SEVENTY TWO HOURS PRIOR TO EXCAVATION.

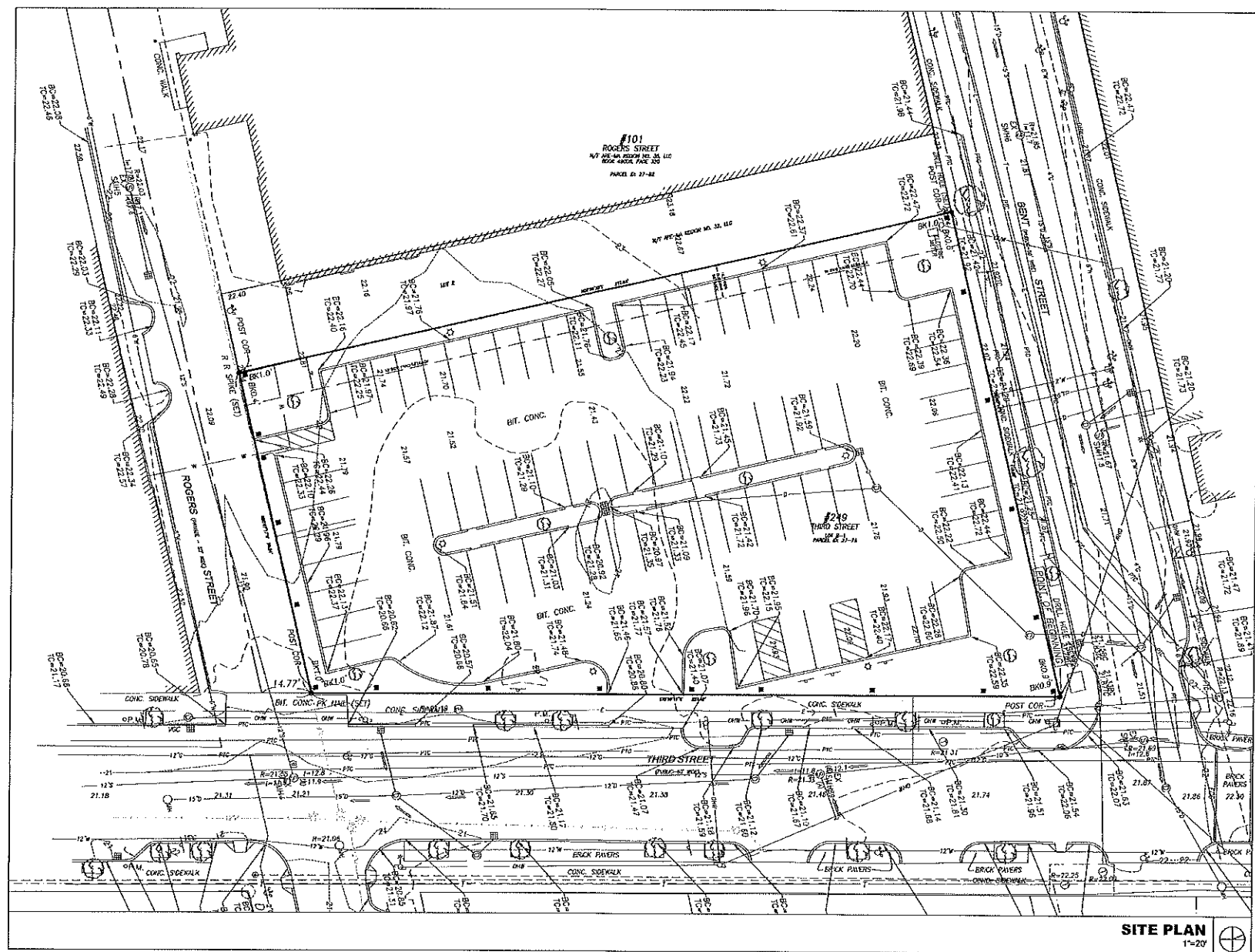
5. THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF HARRY R. FELDMAN, INC. ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO HARRY R. FELDMAN INC.'S SCOPE OF SERVICES UNDER CONTRACT TO OUR CLIENT FOR THIS PROJECT. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS. UNLESS WRITTEN CONSENT IS PROVIDED BY HARRY R. FELDMAN, INC.

6. THERE IS UNDERGROUND CABLE TELEVISION CONDUIT WITHIN ROGERS STREET THAT IS NOT PLOTTABLE.

7. UTILITY LINES SHOWN WITH AN ASTERISK (*) ARE APPROXIMATE ONLY AND ALL SUBCONTRACTORS WILL VERIFY IN THE FIELD (V/F).

8. 6" DRAIN LINE SHOWN WITH A DOUBLE ASTERISK (**) IS APPROXIMATE ONLY AND ALL SUBCONTRACTORS WILL VERIFY IN THE FIELD (V/F).

9. DRAIN LINE CONNECTIONS WITH A TRIPLE ASTERISK (***) ARE APPROXIMATE ONLY AND ALL SUBCONTRACTORS WILL VERIFY IN THE FIELD (V/F).



EXISTING CONDITIONS LEGEND			
(S)	SEWER MANHOLE	BIT.	BITUMINOUS
(D)	DRAIN MANHOLE	CONC.	CONCRETE
(T)	TELEPHONE MANHOLE	VGC	VERTICAL GRANITE CURB
(E)	ELECTRIC MANHOLE	FGC	FLUSH GRANITE CURB
(MH)	MANHOLE	GEN.	GENERATOR
(S/O)	GAS SHUT OFF	TBM	TEMPORARY BENCH MARK
(W/O)	WATER SHUT OFF	BC	BOTTOM OF CURB
(CB)	CATCH BASIN	TC	TOP OF CURB
(CB-R)	CATCH BASIN-ROUND	UR	GUARD RAIL
(G)	GUY WIRE	X	FENCE
(GP)	GUY POLE	S	SEWER
(UP)	UTILITY POLE	D	DRAIN
(UP-L)	UTILITY POLE W/ LIGHT	W	WATER
(H)	HYDRANT	OW	OVERHEAD WIRE
(S)	SIGN	T	TELEPHONE
(P.M.)	PARKING METER	C	GAS
(B)	BOLLARD	E	ELECTRIC
(OW)	OBSERVATION WELL	PTC	PIPE TYPE CABLE
(FA)	FIRE ALARM		
(F.P.)	FLAG POLE	(T)	DECIDUOUS TREE



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Equity Residential
249 Third St., Cambridge, MA

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Feldman Land Surveyors
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Boston, MA 02118
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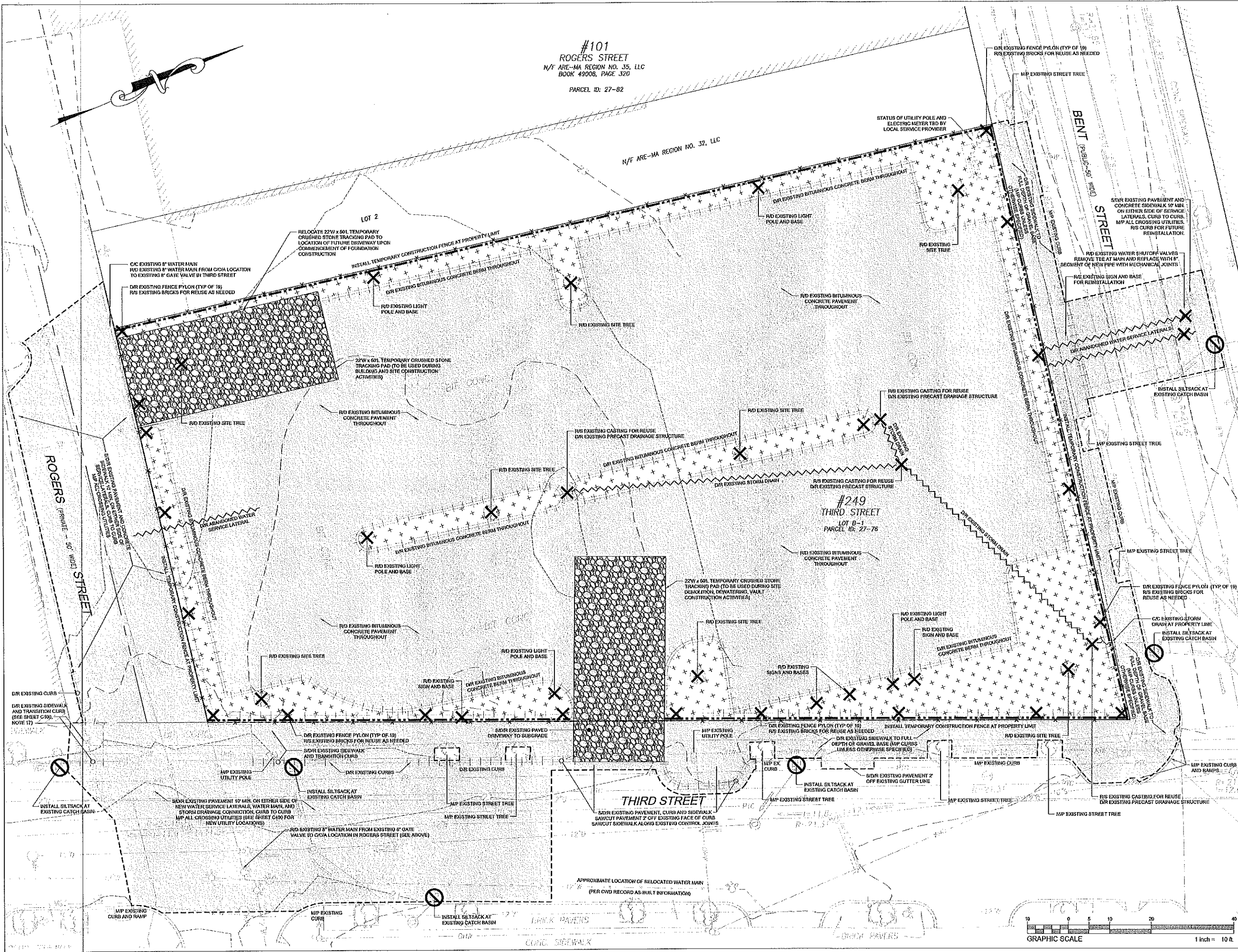
KEY PLAN

MARK	DATE	DESCRIPTION
	10-13-2016	PERMIT SET
	07-29-2016	75% REVISED GMP SET
	05-13-2016	GMP SET
	04-01-2016	ISSUED FOR CONSTRUCTION

PROJECT NUMBER: 21412
DRAWN BY: JJA
CHECKED BY: DJH

SHEET TITLE
**EXISTING
CONDITIONS PLAN**

C200



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249 Third St., Cambridge, MA

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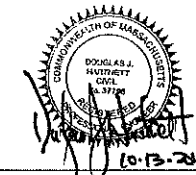
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KEY PLAN

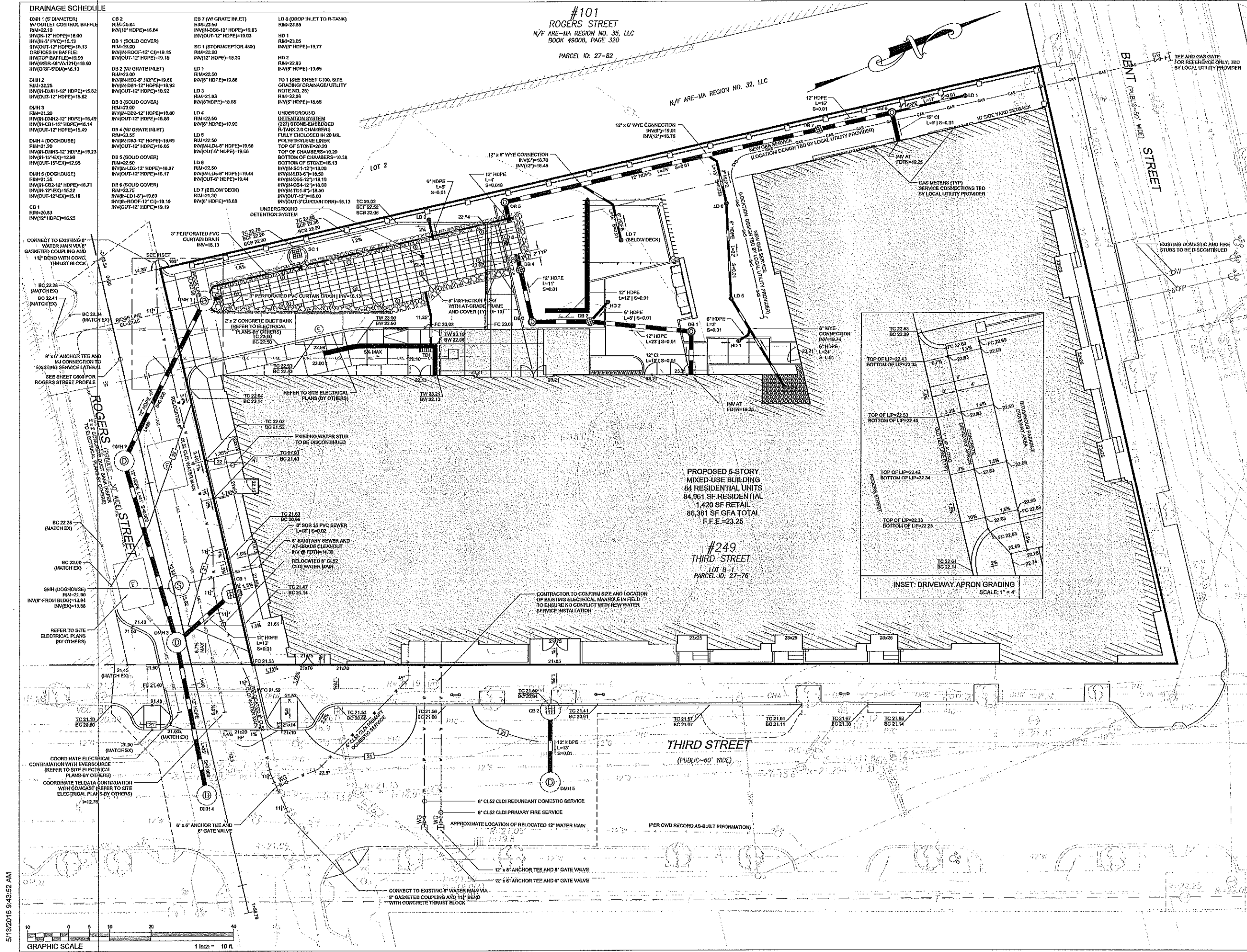
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PROJECT NUMBER: 21412
DRAWN BY: JJA
CHECKED BY: DJH

SHEET TITLE

**SITE PREPARATION,
DEMOLITION AND
EROSION CONTROL
PLAN**

C300



Drainage Schedule

DMH 1 (5' DIAMETER) W/ OUTLET CONTROL Baffle RM=22.10 INV(12' HOPE)=16.00 INV(12' HOPE)=16.13 INV(12' HOPE)=16.13 INV(12' HOPE)=16.13 INV(12' HOPE)=16.13 INV(12' HOPE)=16.13	DB 2 (W/ GRATE INLET) RM=23.00 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60	DB 7 (W/ GRATE INLET) RM=22.50 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03	LD 8 (DROP INLET TO R-TANK) RM=23.55 INV(12' HOPE)=19.77 INV(12' HOPE)=19.77 INV(12' HOPE)=19.77 INV(12' HOPE)=19.77 INV(12' HOPE)=19.77 INV(12' HOPE)=19.77
DMH 2 RM=22.25 INV(12' HOPE)=15.82 INV(12' HOPE)=15.82 INV(12' HOPE)=15.82 INV(12' HOPE)=15.82 INV(12' HOPE)=15.82 INV(12' HOPE)=15.82	DB 3 (SOLID COVER) RM=23.00 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60	LD 1 RM=22.50 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03	TO 1 SEE SHEET C100, SITE GRADING/ DRAINAGE/ UTILITY NOTE NO. 23
DMH 3 RM=21.20 INV(12' HOPE)=15.49 INV(12' HOPE)=15.49 INV(12' HOPE)=15.49 INV(12' HOPE)=15.49 INV(12' HOPE)=15.49 INV(12' HOPE)=15.49	DB 4 (W/ GRATE INLET) RM=23.00 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60	LD 2 RM=22.50 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03	UNDERGROUND DETENTION SYSTEM (22) STONE-EMBODDED R-TANK 2.0 CHAMBERS FULLY ENCLOSED IN 20 MIL POLYETHYLENE LINER TOP OF CHAMBERS=19.20 BOTTOM OF CHAMBERS=18.38 BOTTOM OF STONE=18.13 INVERT(S)=17.18, 18.10 INVERT(S)=17.18, 18.10 INVERT(S)=17.18, 18.10 INVERT(S)=17.18, 18.10
DMH 4 (DOGHOUSE) RM=21.20 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23	DB 5 (SOLID COVER) RM=23.00 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60	LD 3 RM=22.50 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03	TO 2 SEE SHEET C100, SITE GRADING/ DRAINAGE/ UTILITY NOTE NO. 23
DMH 5 (DOGHOUSE) RM=21.20 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23 INV(12' HOPE)=15.23	DB 6 (SOLID COVER) RM=23.00 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60 INV(12' HOPE)=19.60	LD 4 RM=22.50 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03 INV(12' HOPE)=19.03	TO 3 SEE SHEET C100, SITE GRADING/ DRAINAGE/ UTILITY NOTE NO. 23

PROPOSED 5-STORY
MIXED-USE BUILDING
84 RESIDENTIAL UNITS
84,961 SF RESIDENTIAL
1,420 SF RETAIL
86,381 SF GFA TOTAL
F.F.E.=23.25

#249
THIRD STREET
LOT B-1
PARCEL ID: 27-76

249 Third Street

249 Third St., Cambridge, MA

Equity Residential
249 Third St., Cambridge, MA

ARCHITECT

E-ICON
ARCHITECTURE

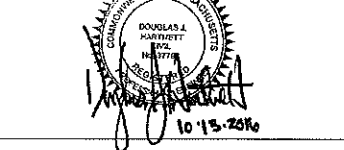
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HIGHPOINT

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CANTON CORPORATE PLACE
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STAMP



KEY PLAN



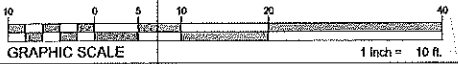
MARK	DATE	DESCRIPTION
	10-13-2016	PERMIT SET
	07-29-2016	75% REVISED GMP SET
	05-13-2016	GMP SET
	04-01-2016	ISSUED FOR CONSTRUCTION

PROJECT NUMBER: 21412
DRAWN BY: JJA
CHECKED BY: DJH

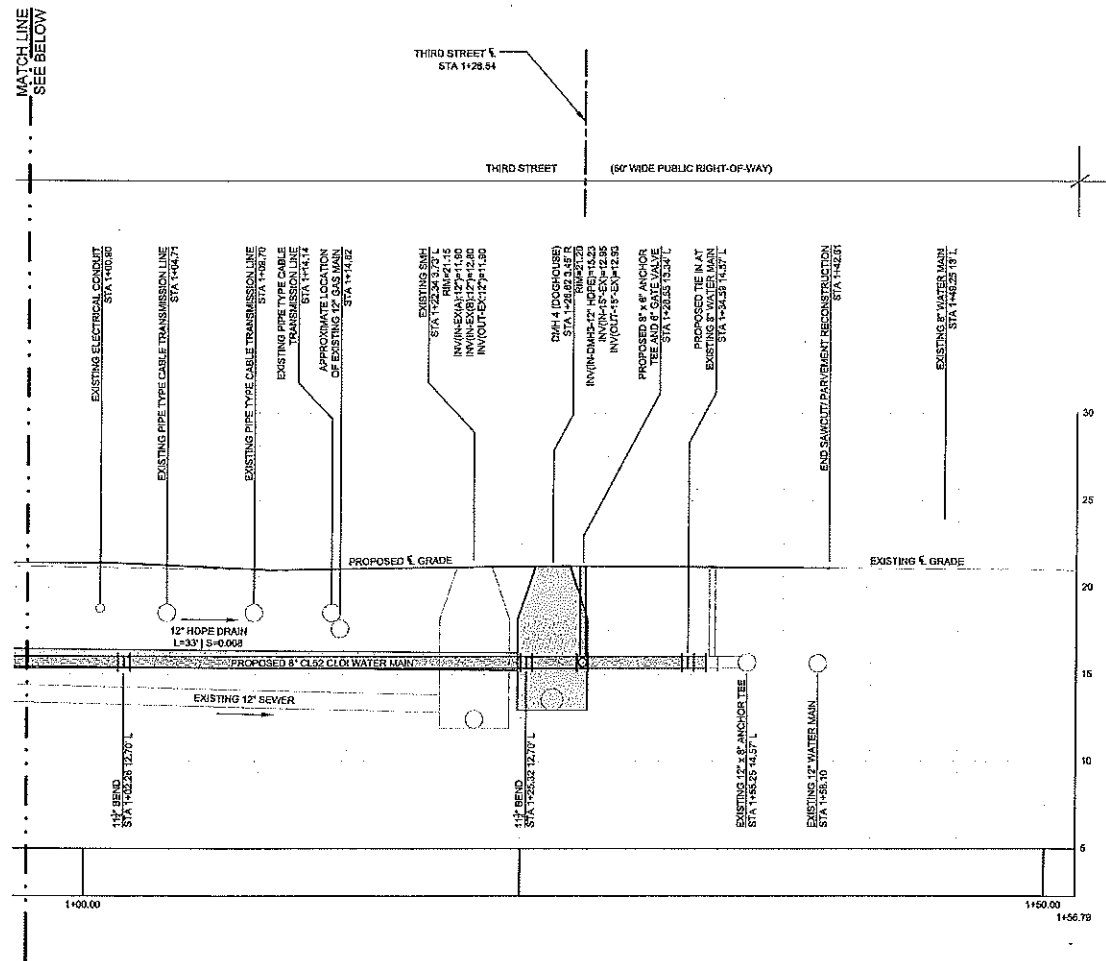
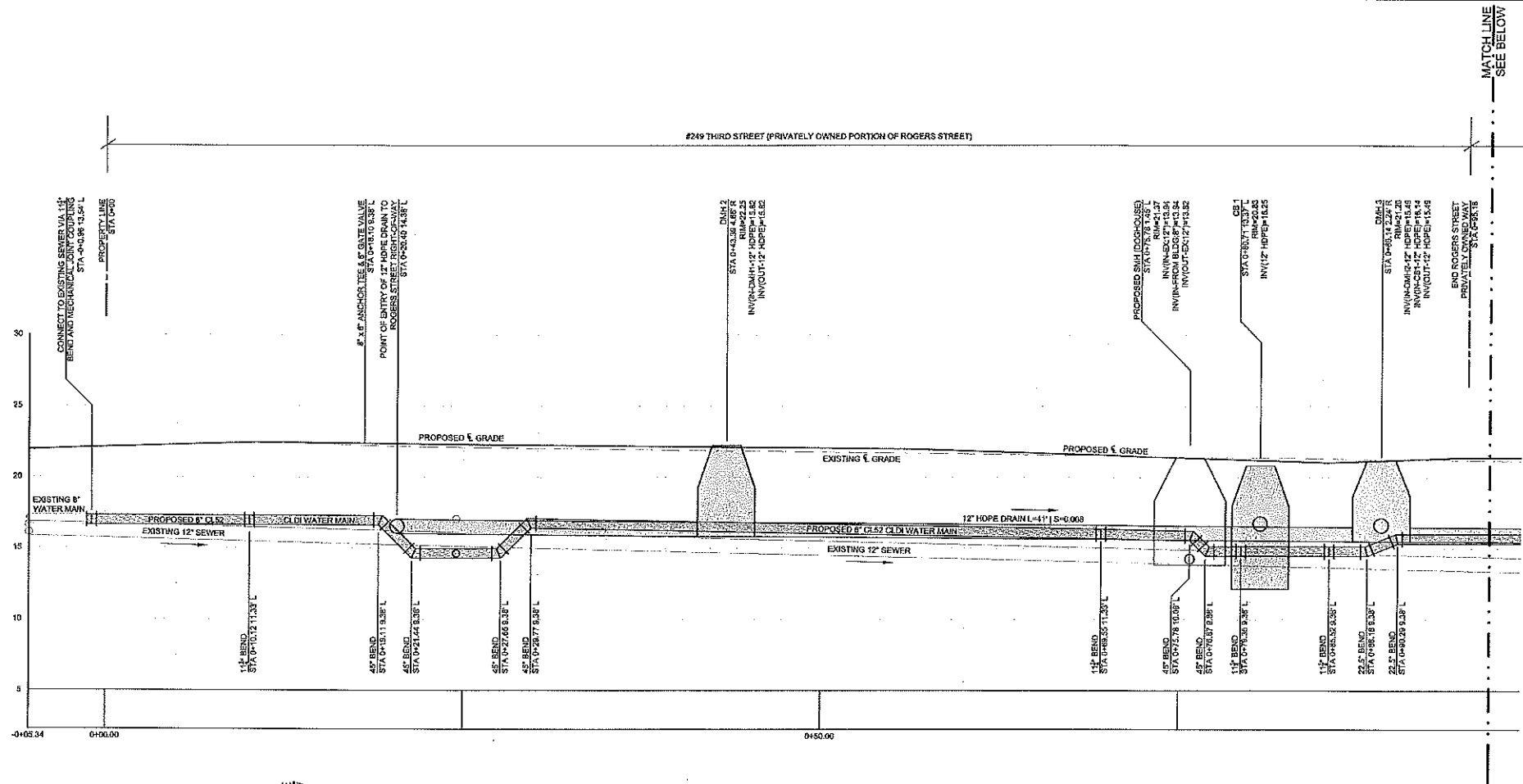
SHEET TITLE

SITE GRADING,
DRAINAGE AND
UTILITY PLAN

C500



5/13/2016 9:43:52 AM



- NOTES:
1. DEPTH OF PRIVATE UTILITIES IS ASSUMED BASED UPON MINIMUM INSTALLATION COVER REQUIREMENTS. CONTRACTOR TO FIELD VERIFY PRIOR TO MUNICIPAL UTILITY INSTALLATIONS.
 2. ELECTRIC AND TEL/DATA INFRASTRUCTURE NOT SHOWN HEREON. COORDINATE WITH SITE ELECTRICAL PLANS (BY OTHERS).

249 Third Street

249 Third St., Cambridge, MA

Equity Residential
249 Third St., Cambridge, MA

ARCHITECT

E-ICON
ARCHITECTURE

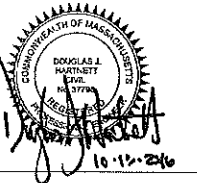
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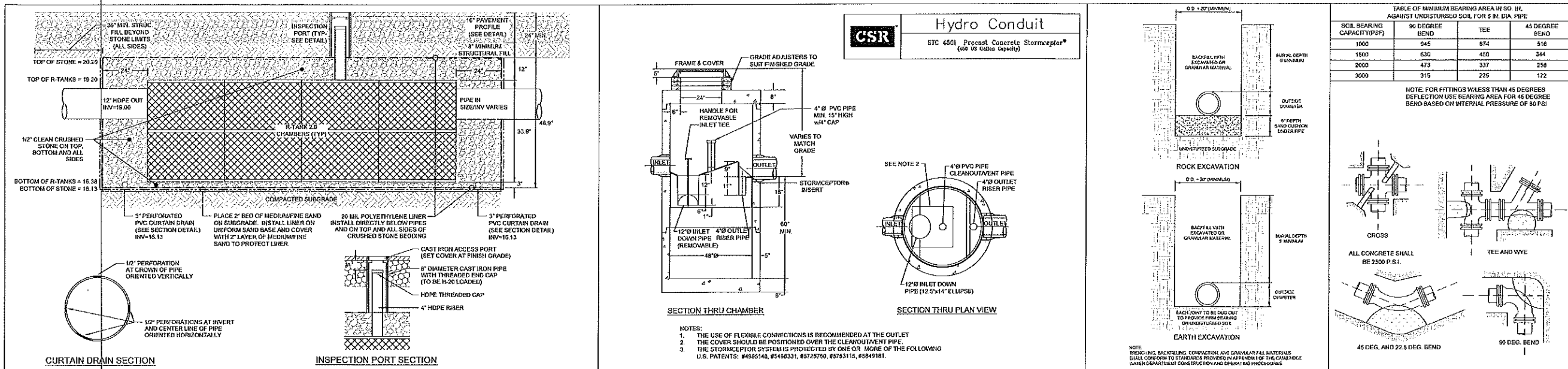
CHECKED BY: DJH

SHEET TITLE

ROGERS STREET
DRAINAGE AND
UTILITY PROFILE

C600

DRAINAGE AND UTILITY PROFILE
HORIZONTAL SCALE: 1" = 5' VERTICAL SCALE: 1" = 5'

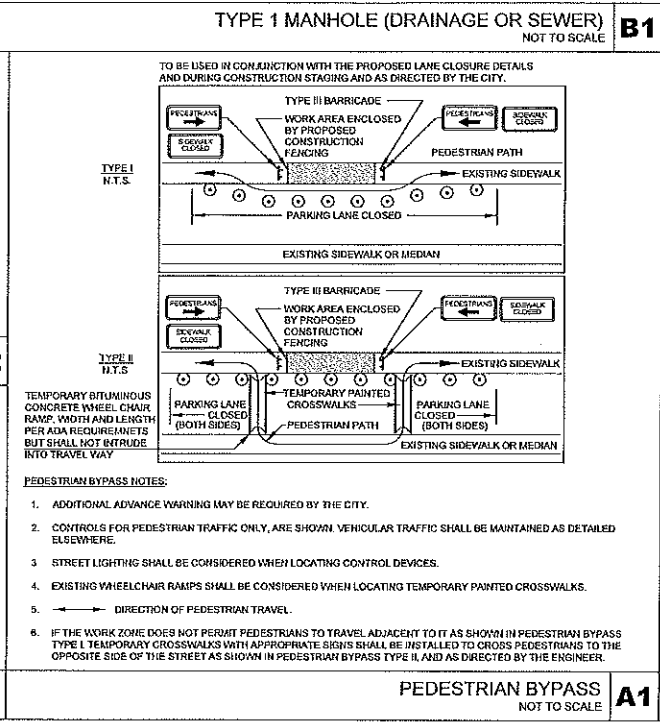
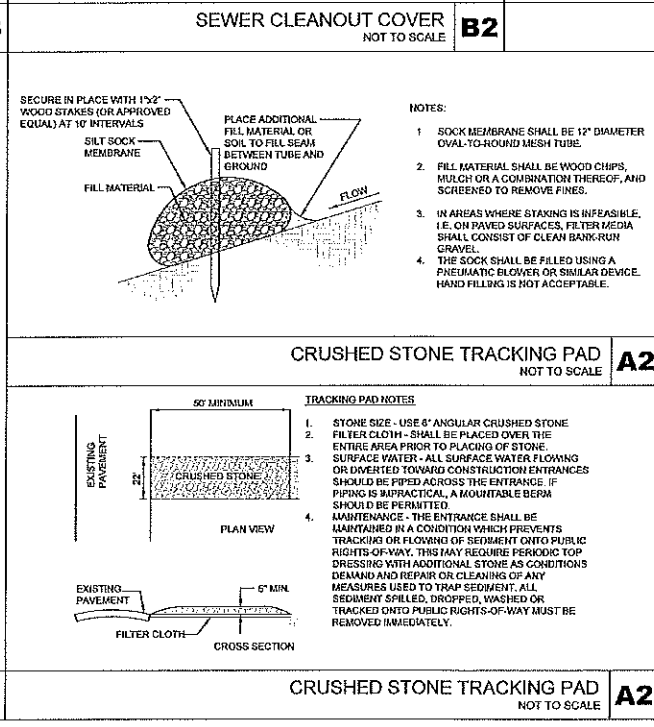
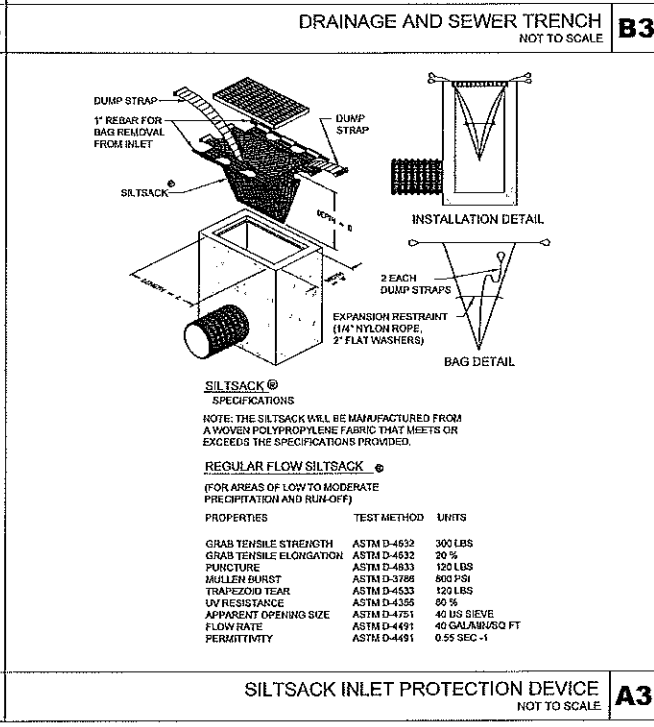
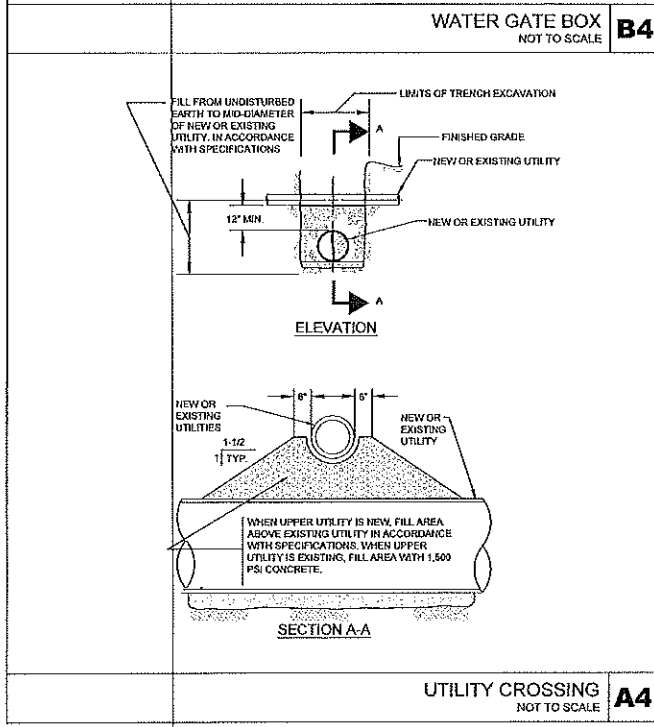
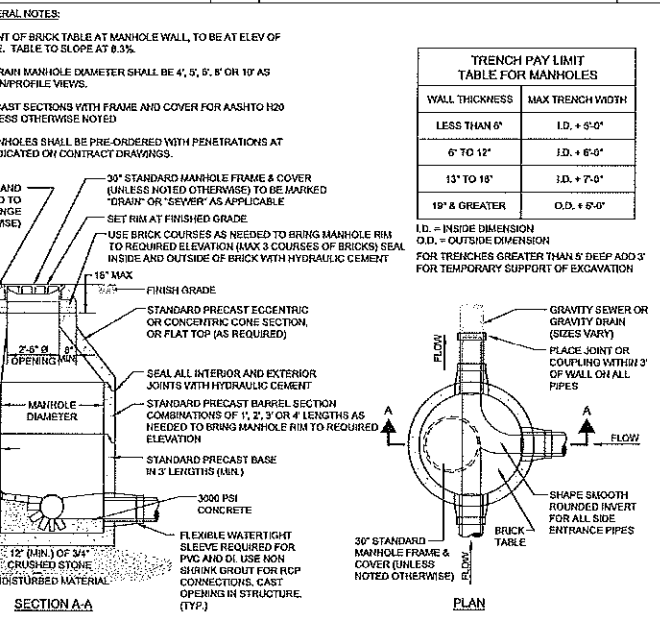
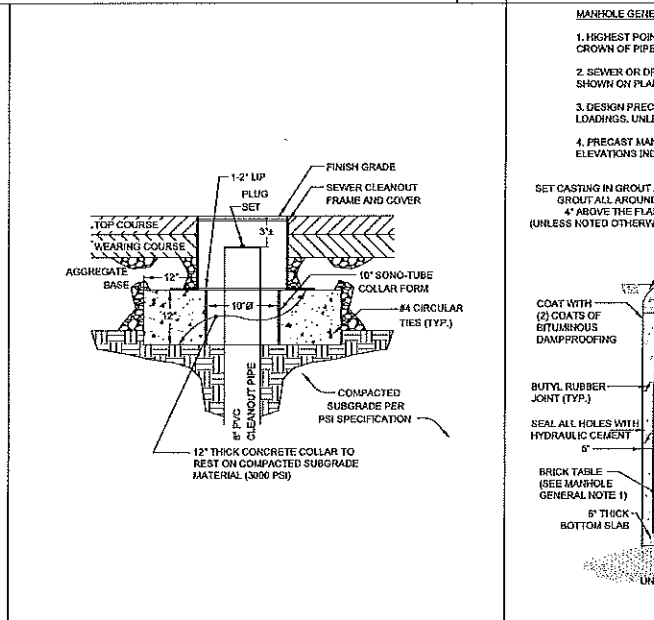
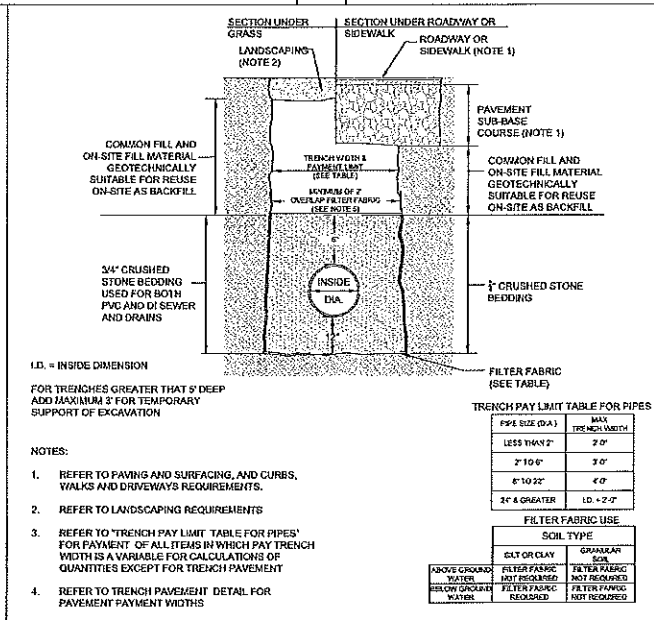
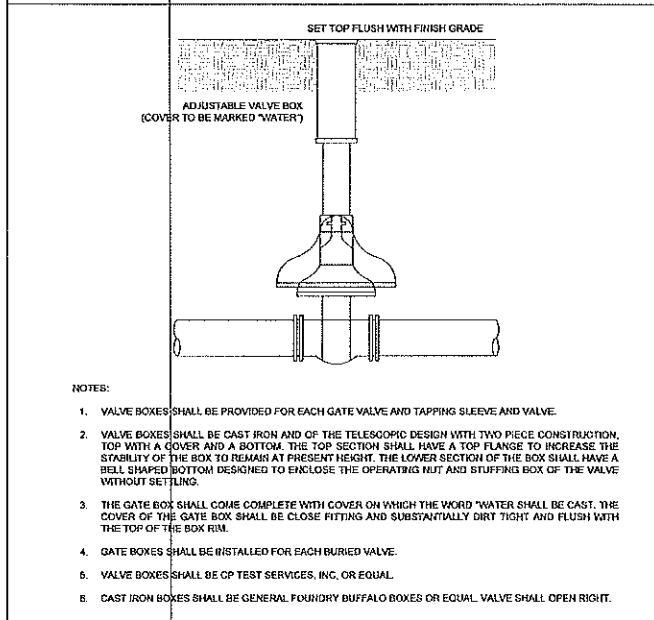


R-TANK 2.0 UNDERGROUND DETENTION SYSTEM NOT TO SCALE **C4**

STORMCEPTOR STC-450i WATER QUALITY UNIT NOT TO SCALE **C3**

WATER TRENCH NOT TO SCALE **C2**

THRUST BLOCKS NOT TO SCALE **C1**



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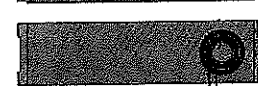
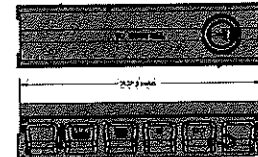
SITE CONSTRUCTION
DETAILS

C800

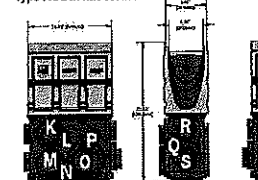
ACO DRAIN

KlassikDrain - K200 Galvanized steel edge rail channel system

Plan view of channel showing channel ID number and knockout if applicable (every 5th channel)



Type 902G in-line catch basin



Knockouts included on every 5th channel

Table capacity = 19 gallons

Outlet	Product	Outlet size (Sch. 40)	Height	GPM	CS
A	Bottom outlet - K200	4" round	7.87	153	0.34
A	Bottom outlet - K200	4" round	15.75	216	0.43
D	Bottom outlet - K200	4" round	7.87	344	0.71
B	Bottom outlet - K200	4" round	15.75	455	1.08
C	End outlet - K200	4" round	7.87	132	0.29
C	End outlet - K200	4" round	15.75	209	0.50
D	End outlet - K200	4" round	3.64	320	0.71
D	End outlet - K200	4" round	15.75	497	0.97
E	Type K200/20	4" round	25.37	263	0.59
F	Type K200/20	4" round	31.62	297	0.66
G	Type K200/20	4" round	23.76	254	0.57
H	Type K200/20	4" round	31.37	450	1.04
I	Type K200/20	4" round	23.19	255	0.57
J	Type K200/20	4" round	30.40	210	0.63
K	Type K200/20	4" round	24.65	570	1.27
L	Type K200/20	4" round	24.17	268	0.57
M	Type K200/20	4" round	31.52	559	1.47
N	Type K200/20	4" round	31.26	234	0.66
O	Type K200/20	4" round	31.26	621	1.45
P	Type K200/20	4" round	31.62	1149	2.86
Q	Type K200/20	4" round	30.32	640	1.43
R	Type K200/20	4" round	23.19	263	0.56
S	Type K200/20	4" round	29.89	268	0.61

September 2016

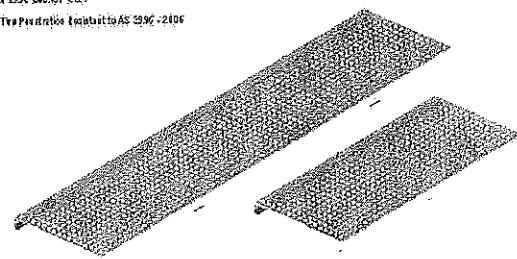
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ACO DRAIN

Type 665D/666D Perforated stainless steel grate (ADA)

Product Features

- Conforms to EN 12412 Class D - 66,000 psi
- Low Risk of Pedestrian Injuries
- Suitable for use with K200, K200S, H200S, Q, and H200S13 channels
- Manufactured from 16 gauge, Grade 304 stainless steel
- Complies with ADA - American Disabilities Act (of 1990 Section 4.06)
- Meets the Performance Requirements AS 1536-2106



Specifications

General
The surface drainage system shall be ACO Drain (K200, K200S, H200S13, and H200S13), complete with ACO Type 665D/666D Perforated stainless steel grate (ADA) with optional locking bar, removable lockbar, and/or ACO Polymer Products, Inc. or approved equivalent.

Installation
The grate shall be manufactured from stainless steel and have minimum properties as follows:

- Independently certified to meet Load Class C in EN 14188-1:2000 (66,000 psi - 987 psi)
- 16 gauge, Grade 304 stainless steel
- Initial area of 22.8 sq. ft. (143.67 sq. ft. per sq. meter of grate)

The overall width of 3.41' (1039mm) and overall height of 31.57' (1000mm), (Type 611D) and overall height of 31.62' (969mm) (Type 613D) Perforated grates to 6.25' (1905mm) in diameter.

Installation
The trench drain system and grate shall be installed in accordance with the manufacturer's installation instructions and recommendations.

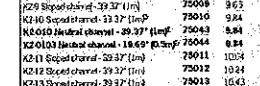
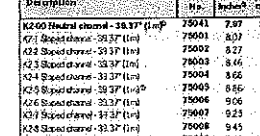
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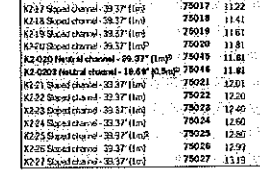
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KlassikDrain - K200 Galvanized steel edge rail channel system

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ACO DRAIN

Type 665D/666D Perforated stainless steel grate (ADA)

Plan view

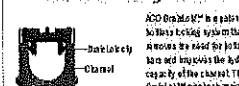


Side elevation



Description	Part No.	Length (inches)	Width (inches)	Weight (lb.)
Drainlok grate	130082	39.37 (1000)	9.41 (239)	21.0
Type 665D Perforated stainless steel grate	130083	39.37 (1000)	9.41 (239)	10.5

"Drainlok" locking mechanism



ACO Drainlok™ is a patented, heavy-duty locking system that allows the grate to be locked and unlocked by the user. The grate is held in place by the Drainlok™ mechanism, which is a heavy-duty, stainless steel, U-shaped bracket that is welded to the grate and the channel. The grate is held in place by the Drainlok™ mechanism, which is a heavy-duty, stainless steel, U-shaped bracket that is welded to the grate and the channel.

ACO Polymer Products, Inc.

Northwest Sales Office
5470 Pioneer Drive
Burien, OR 97006
Tel: (503) 639-7232
Fax: (503) 639-7233

West Sales Office
825 W. Beavercreek St.
Ore. Div. 421-0000
Tel: (503) 431-9988
Fax: (503) 431-9989

Southeast Sales Office
4211 Peachtree Road
Atlanta, GA 30340
Tel: (404) 543-4764
Fax: (404) 543-4765

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August 2016

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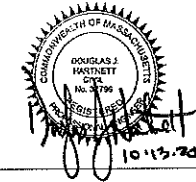
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SHEET TITLE

SITE CONSTRUCTION
DETAILS

C1000

STRUCTURAL NOTES AND SPECIFICATIONS

POST-TENSIONED CONCRETE (cont.)

5. ALL TENDONS SHALL BE ENCASED IN A SLIPPAGE SHEATHING WHICH SHALL BE MANUFACTURED BY A PROCESS THAT PROVIDES WATERIGHT ENCASEMENT OF THE CORROSION INHIBITING COATING MATERIAL (P/T COATING) SO AS TO PREVENT THE INTERNAL MIGRATION OF ANY WATER. SHEATHING SHALL BE OF SUFFICIENT STRENGTH AND DURABILITY TO RESIST DAMAGE DURING NORMAL FABRICATION, TRANSPORTATION, INSTALLATION AND CONCRETE PLACEMENT OPERATIONS. MINIMUM SHEATHING THICKNESS SHALL BE 0.05". TEARS IN THE SHEATHING SHALL BE REPAIRED BY REPLACING THE P/T COATING AND RESTORING THE WATERIGHTNESS. TENDONS SHALL BE PROTECTED DURING SHIPPING AND HANDLING TO AVOID DAMAGE TO THE TENDON SHEATHING DURING TRANSPORTATION AND OFFLOADING AT THE JOBSITE AND AVOID EXPOSURE TO DEICING SALTS OR ANY OTHER FORM OF CORROSIVE ELEMENTS.
6. ALL TENDONS SHALL BE SHOP-FABRICATED WITH PRE-ASSEMBLED FIXED OR DEAD END ANCHORAGES. PLASTIC POKKET FORMERS SHALL BE USED AT ALL STRESSING ENDS TO RECESS THE ANCHOR CASTINGS SO THAT THE REQUIRED COVER IS ACHIEVED.
7. ALL ANCHORAGES, COUPLERS AND MISCELLANEOUS HARDWARE SHALL BE APPROVED BY GOVERNING AGENCIES AND THE SER. ANCHORAGES FOR UNBONDED TENDONS SHALL BE RECESSED A MINIMUM OF 2" WITH TWO CONTINUOUS #4 BACKUP BARS PLACED BEHIND THE ANCHORAGES AND CAPABLE OF DEVELOPING AT LEAST 95% OF THE ACTUAL ULTIMATE STRENGTH OF THE TENDON, UNLESS NOTED OTHERWISE.
8. ALL TENDONS SHALL BE MARKED, SHIPPED TO THE JOB SITE AND INSTALLED IN A SEQUENCE CONSISTENT WITH THE DESIGN PLACEMENT SHOWN ON THE DRAWINGS. TENDONS AND SLAB REINFORCEMENT SHALL BE PLACED IN THE FOLLOWING SEQUENCE, UNLESS NOTED OTHERWISE:

- A. AT LEAST TWO DISTRIBUTED TENDONS PLACED OVER THE SUPPORTS.
B. BANDED TENDONS PLACED IN THE PERPENDICULAR DIRECTION.
C. REMAINING DISTRIBUTED TENDONS PLACED OVER THE BANDED TENDONS.

9. ALL DIMENSIONS SHOWING THE LOCATIONS OF PRESTRESSING TENDONS ARE TO THE CENTER OF GRAVITY OF THE TENDON, UNLESS NOTED OTHERWISE. CLEAR CONCRETE COVER FOR PRESTRESSED AND NON-PRESTRESSED REINFORCING SHALL BE AS FOLLOWS:

A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
B. CONCRETE EXPOSED TO EARTH OR WEATHER:	
a. WALL PANELS, SLABS AND JOISTS	1"
b. OTHER MEMBERS	1½"
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
a. SLABS, WALLS AND JOISTS	¾"
b. BEAMS AND COLUMNS:	
• PRIMARY REINFORCEMENT	1½"
• TIES, STIRRUPS AND SPIRALS	1"
D. BUNDLED BARS	ØBUNDLE ≤ 2"

10. TENDONS SHALL BE ADEQUATELY SUPPORTED IN THEIR DESIGN LOCATIONS AND ALIGNMENTS PRIOR TO PLACEMENT OF CONCRETE. TOLERANCES FOR THE VERTICAL LOCATION OF THE PRESTRESSING STEEL SHALL NOT BE MORE THAN ±¼" FOR SLAB THICKNESS LESS THAN 8", ±¾" FOR CONCRETE WITH DIMENSIONS MORE THAN 8" BUT NOT MORE THAN 2'-0" AND ±½" FOR CONCRETE DIMENSIONS MORE THAN 2'-0". AT A MINIMUM TENDONS SHALL BE SUPPORTED ON REINFORCING BARS SPACED AT 4'-0" O.C. AND SECURED TO THE SUPPORT BAR AT EACH TENDON/SUPPORT BAR INTERSECTION. SUPPORT BARS SHALL BE A #4 MINIMUM.

11. IF TENDONS MUST BE CURVED HORIZONTALLY TO AVOID OPENINGS OR OTHER OBSTRUCTIONS, TENDON GROUPS SHALL BE FLARED SUCH THAT A MINIMUM OF TWO INCHES OF SEPARATION IS MAINTAINED BETWEEN EACH INDIVIDUAL TENDON. TENDONS SHALL BE FLARED A MAXIMUM OF 1:6. IF TENDONS ARE FLARED AT MORE THAN 1:12, #5 HAIRPINS AT 12" O.C. SHALL BE USED TO TRANSFER THE HORIZONTAL RADIAL FORCE TO THE CONCRETE, UNLESS NOTED OTHERWISE. SMALL DEVIATIONS IN THE HORIZONTAL SPACING OF THE SLAB TENDONS WILL BE PERMITTED WHEN REQUIRED TO AVOID OPENINGS, INSERTS AND DOWELS WITH SPECIFIC LOCATION REQUIREMENTS.

12. PROFILES SHALL CONFORM TO CONTROL POINTS SHOWN ON THE CONTRACT DOCUMENTS AND SHALL HAVE AN APPROXIMATE PARABOLIC DRAPE BETWEEN SUPPORTS, UNLESS NOTED OTHERWISE. LOW POINTS SHALL BE AT MIDSPAN, UNLESS NOTED OTHERWISE. HARPED TENDONS SHALL BE STRAIGHT BETWEEN HIGH AND LOW POINTS.

13. A MAXIMUM OF 5 TENDONS IS ALLOWED PER BUNDLE UNLESS NOTED OTHERWISE ON THE APPROVED INSTALLATION DRAWINGS. TWISTING OR ENTWINING OF INDIVIDUAL TENDONS WITHIN A BUNDLE SHALL NOT BE PERMITTED.

14. IN TWO-WAY SLAB CONSTRUCTION, A MINIMUM OF TWO TENDONS SHALL BE PLACED DIRECTLY OVER THE SUPPORTING COLUMN (WITHIN THE COLUMN CAGE), IN EACH ORTHOGONAL DIRECTION.

15. POUR STRIPS SHALL BE UTILIZED BETWEEN SLAB PLACEMENTS. SIZE AND LOCATION SHALL BE COORDINATED BY THE CONTRACTOR WITH THE POUR SEQUENCE PLAN.

16. SHOP DRAWINGS SHALL INCLUDE REQUIRED SLAB OPENINGS OR EMBEDS SHOWN ON ALL PROJECT DOCUMENTS. THE STRUCTURAL DOCUMENTS GENERALLY INCLUDE OPENINGS LARGER THAN 12" IN ANY DIRECTION, BUT DO NOT IDENTIFY SMALLER MECHANICAL OR PLUMBING OPENINGS (SLEEVES). IT SHALL BE THE RESPONSIBILITY OF THE POST-TENSION CONTRACTOR TO COORDINATE THE LOCATION OF POST-TENSION MATERIALS WITH ANY AND ALL OPENINGS OR EMBEDMENTS REQUIRED WITHIN THE WORK.

17. SHOP DRAWINGS FOR ANCHORAGE OF ANY SUSPENDED WORK SHALL BE SUBMITTED TO BOTH THE SER AND ARCHITECT FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INDICATE THE LOCATION AND TYPE OF ALL PROPOSED ANCHORAGES. ALL ANCHORS ARE REQUIRED TO AVOID STRUCTURAL REINFORCEMENTS OF ANY KIND WITHIN THE SLAB. ANCHORAGE FOR SUSPENDED WORK SHALL GENERALLY CONFORM TO THE FOLLOWING:

- A. CAST-IN-PLACE, HOT-DIP GALVANIZED STEEL OR MALLEABLE IRON INSERTS AS APPROVED BY THE ARCHITECT.
B. FIELD DRILLING OF POST-TENSIONED MEMBERS IS NOT PERMITTED WITHOUT WRITTEN AUTHORIZATION OF THE SER AND ARCHITECT. FIELD DRILLING WILL ONLY BE PERMITTED AFTER THE LOCATION OF ALL TENDONS IN THE AREA OF PROPOSED DRILLING ARE ACCURATELY MARKED ON THE SURFACE OF THE SLAB THAT IS PROPOSED TO BE DRILLED.
C. MAXIMUM SUSPENDED LOAD BY ANY DRILLED IN ANCHOR IS LIMITED TO 300 lbs.

18. THE STRESSING OPERATION SHALL BE UNDER THE IMMEDIATE CONTROL OF A PERSON WHO IS A PTI CERTIFIED INSTALLER EXPERIENCED IN THIS TYPE OF WORK. CONTINUOUS INSPECTION AND RECORDING OF ELONGATIONS AND STRESSING EQUIPMENT GAUGE PRESSURES BY AN INDEPENDENT INSPECTOR, HIRED BY THE OWNER, IS REQUIRED DURING ALL STRESSING OPERATIONS. TENDON STRESSING SHALL BE CONDUCTED WITH APPROVED AND APPROPRIATELY CALIBRATED HYDRAULIC STRESSING RAMS HAVING GRIPPERS WHICH WILL NOT NOTCH TENDONS MORE SEVERELY THAN NORMAL ANCHORING WEDGES. PROVIDE CALIBRATION CERTIFICATES FOR ALL STRESSING RAMS TO BE USED ON THE PROJECT.

19. FIELD READINGS OF ELONGATIONS AND/OR STRESSING FORCES ACHIEVED DURING STRESSING OPERATIONS SHALL BE WITHIN ±7% OF CALCULATED VALUES SHOWN ON THE CONTRACT DOCUMENTS. IF THE MEASURED ELONGATIONS VARY FROM CALCULATED VALUES BY MORE THAN ±7% STRESSING OPERATIONS SHALL BE SUSPENDED UNTIL THE CAUSE OF THE VARIATION FROM THE SPECIFIED ELONGATION IS DETERMINED AND CORRECTED TO THE SATISFACTION OF THE SER.

20. FORCES SHOWN ON THE CONTRACT DOCUMENTS ARE EFFECTIVE FORCES AFTER ALL SHORT AND LONG TERM LOSSES. THE POST-TENSIONING SUPPLIER SHALL PROVIDE FRICTION AND LONG TERM LOSS CALCULATIONS FOR THE STRUCTURAL ENGINEER OF RECORDS REVIEW.

21. TENDON STRESSES SHALL CONFORM TO THE FOLLOWING:

A. MINIMUM ULTIMATE TENSILE STRENGTH (f_{pu})	270 KSI
B. MINIMUM YIELD STRENGTH (f_{py})	243 KSI
C. MAXIMUM TENDON JACKING STRESS ($0.94f_{py} < 0.80f_{pu}$)	216 KSI
D. MAXIMUM TENDON STRESS IMMEDIATELY AFTER PRESTRESS TRANSFER ($0.82f_{py} < 0.74f_{pu}$)	199 KSI
E. MAXIMUM TENDON STRESS AT ANCHORS AND COUPLERS AFTER ANCHORAGE-SET (0.7 f_{pu})	189 KSI
F. ESTIMATED PRESTRESS LOSSES	14 KSI
G. FINAL EFFECTIVE STRESS (f_{se})	175 KSI

22. STRESSING SEQUENCE REQUIREMENTS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

- A. STRESS CONTINUOUS DISTRIBUTED TENDONS
B. STRESS CONTINUOUS BANDED TENDONS
C. STRESS ADDED DISTRIBUTED TENDONS
D. STRESS ADDED BANDED TENDONS

POST-TENSIONED CONCRETE (cont.)

23. TENDON ENDS WITHIN A SECTION OF THE PROJECT SHALL NOT BE CUT UNTIL ALL POST-TENSIONING TENDONS IN THAT SECTION HAVE BEEN SATISFACTORILY STRESSED AND APPROVED BY THE SER. TENDONS SHALL BE CUT USING AN ABRASIVE SAW OR AN OXY-ACETYLENE TORCH TO A LENGTH OF BETWEEN ¾" AND 1½" BEYOND THE ANCHOR WEDGE AND WITHIN THE POKKET FORMER. THE TENDON ENDS SHALL BE PROTECTED WITH A GREASE-FILLED CAP WITHIN ONE DAY OF CUTTING OFF THE TENDON ENDS. CONNECTION OF THE CAP TO THE ANCHORAGE SHALL BE WATERTIGHT.
24. STRESSING POCKETS SHALL BE COMPLETELY FILLED WITH AN APPROVED NON-SHRINK GROUT WITHIN 10 DAYS OF COMPLETION OF STRESSING OPERATIONS. GROUT CONTAINING CHLORIDES SHALL NOT BE USED.
25. UNLESS FULL SHORING IS REQUIRED TO CARRY THE FLOORS ABOVE, THE SHORING SUPPORTING THE SLABS MAY BE STRIPPED WITHIN 10 DAYS OF COMPLETION OF STRESSING OPERATIONS. THE SHORING SHALL BE STRIPPED IN ACCORDANCE WITH THE APPROVED SHORING PLAN. IN AREAS SUPPORTING A PARTIAL SPAN SUCH AS NEAR A POUR STRIP OR CONSTRUCTION JOINT, THE SHORING IN THE PARTIAL SPAN SHALL STAY IN PLACE UNTIL THE REMAINING SECTION OF SPAN HAS BEEN POURED AND STRESSED. IN SOME CASES, THE IMMEDIATE BACK SPAN MAY ALSO NEED TO REMAIN SHORED UNTIL THE ADJACENT SPAN IS COMPLETED. IF THIS IS REQUIRED, IT SHALL BE SPECIFIED ON THE POST-TENSIONING INSTALLATION DRAWINGS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL BE NEW STEEL AND UN-SPLICED CONFORMING TO THE MOST CURRENT ASTM DESIGNATIONS INDICATED. ALL STRUCTURAL STEEL WORK SHALL BE IN ACCORDANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION.
- A. W-SHAPES AND WT-SHAPES: ASTM A992 ($F_y=50$ KSI)
B. SQUARE AND RECTANGULAR HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE B ($F_y=46$ KSI)
C. ROUND HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE B ($F_y=42$ KSI)
D. CHANNELS, ANGLES, PLATES, BARS AND RODS: ASTM A36 ($F_y=36$ KSI)
E. PIPES: ASTM A53, GRADE B ($F_y=35$ KSI)
F. ANCHOR RODS: ASTM F1554, GRADE 36 ($F_u=58$ KSI), U.N.O.
G. HIGH STRENGTH BOLTS: ASTM A325 OR ASTM A490 ($F_u=120$ AND 150 KSI, RESPECTIVELY)
H. COMMON BOLTS: ASTM A307, GRADE A ($F_u=60$ KSI)

2. STRUCTURAL CONNECTIONS SHOWN ON THESE DRAWINGS ARE GENERALLY SCHEMATIC. ALL STRUCTURAL STEEL CONNECTIONS SHALL BE DESIGNED BY A STRUCTURAL ENGINEER, RETAINED BY THE FABRICATOR, LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED AND DESIGNED IN ACCORDANCE WITH THE GOVERNING BUILDING CODE. CONNECTION DESIGN SHALL BE IN ACCORDANCE WITH THE EDITION OF AISC "STEEL CONSTRUCTION MANUAL" STATED IN THE GOVERNING BUILDING CODE. DESIGN FOR ALL CONNECTIONS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW PRIOR TO FABRICATION.

3. SHOP CONNECTIONS SHALL BE WELDED OR BOLTED. FIELD CONNECTIONS SHALL BE BOLTED WHERE EVER POSSIBLE EXCEPT AS SPECIFICALLY DEFINED OTHERWISE HEREIN. BOLTS SHALL CONFORM TO THE ASTM "STANDARD SPECIFICATION FOR STRUCTURAL BOLTS" SERIAL DESIGNATION F1552 (A325TC), SHALL BE ¾" DIAMETER, AND HAVE STANDARD HOLES OF 1/16" DIAMETER, UNLESS DESIGNATED DIFFERENTLY IN THE STRUCTURAL DETAILS OR SECTIONS. THE MINIMUM NUMBER OF ROWS OF BOLTS FOR BEAM, GIRDER AND GIRT CONNECTIONS SHALL BE AS FOLLOWS:

- A. W8, W10 AND W12: 2 ROWS
B. W14, W16 AND 18: 3 ROWS

4. ALL SHEAR CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR AT EACH LOCATION WHERE THEY ARE REQUIRED, INDICATED OR OTHERWISE, IN THE CONTRACT DRAWINGS. THE CONNECTION SHALL BE DESIGNED IN ACCORDANCE WITH THE GOVERNING AISC MANUAL TO DEVELOP END REACTIONS BASED ON ALLOWABLE, MAXIMUM TOTAL UNIFORM LOAD (MTUL).

5. WING-PLATE TYPE BEAM SHEAR CONNECTIONS FRAMED INTO THE FACE OF HOLLOW STRUCTURAL SECTIONS (HSS) SHALL BE THROUGH-PLATE WITH WELDS EACH SIDE, EACH FACE.

6. WELDED CONSTRUCTION SHALL BE IN ACCORDANCE WITH AWS D1.1 FOR PROCEDURE, APPEARANCE, AND QUALITY OF WELDS AND METHODS USED IN CORRECTING NONCONFORMING WELDED WORK. ALL WELDING SHALL BE MADE BY WELDERS CURRENTLY CERTIFIED IN ACCORDANCE WITH THE APPLICABLE AWS D1.1 REQUIREMENTS FOR THE TYPE, POSITION AND PROCESS REQUIRED. ELECTRODES FOR WELDS SHALL COMPLY WITH THE APPLICABLE AWS CODE REQUIREMENTS AND AS FOLLOWS:

- A. MINIMUM YIELD STRENGTH OF ELECTRODES, 70 KSI. USE HIGHER YIELD STRENGTHS WHERE REQUIRED BY DESIGN OR BY AWS CODES

7. THE MINIMUM SIZE OF FILLET WELDS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

MATERIAL THICKNESS OF THICHER PART JOINED	MINIMUM SIZE OF FILLET WELD*
TO ¼" INCLUSIVE	⅛"
OVER ¼" TO ½"	⅜"
OVER ½" TO ¾"	½"
OVER ¾"	⅝"

- A. LEG DIMENSION OF FILLET WELDS. SINGLE PASS WELDS MUST BE USED.

8. FITTED, FULL-DEPTH WEB STIFFENERS SHALL BE PROVIDED AT ALL BEAMS AND GIRDERS SUPPORTING CONCENTRATED LOADS OR CANTILEVERING OVER SUPPORTS. WEB STIFFENERS SHALL BE INSTALLED ON EACH SIDE OF BEAMS AND GIRDERS AND SHALL BE EQUAL TO THEIR WEB THICKNESS, UNLESS NOTED OTHERWISE.

9. OPENINGS REQUIRED IN STEEL ELEMENTS AND NOT SHOWN ON THE CONTRACT DOCUMENTS SHALL BE INSTALLED ONLY WITH THE SPECIFIC APPROVAL OF THE ENGINEER AND WITH RETROFITTING AS REQUIRED.

10. A ¾" NON-SHRINK GROUT LEVELING BED AND A 1½" THICK LEVELING PLATE, SIZED TO MATCH BASE PLATE, SHALL BE PROVIDED BENEATH ALL COLUMN SETTINGS. THE NON-SHRINK GROUT SHALL ATTAIN A COMPRESSIVE STRENGTH OF 5,000 PSI AT THE END OF 28 DAYS.

STEEL PROTECTIVE COATINGS

1. ALL STEEL, UNLESS NOTED OTHERWISE, SHALL BE CLEANED IN ACCORDANCE WITH SSPC-SP3 "POWER TOOL CLEANING" AND SHALL RECEIVE ONE COAT SHOP PRIMER APPLIED TO PRODUCE A DRY FILM THICKNESS OF 2 MILS. ALL STEEL SHALL BE PRIMED IN THE SHOP AND TOUCHED-UP IN THE FIELD FOLLOWING ERECTION, UNLESS NOTED OTHERWISE. PRIMER SHALL BE OMITTED AT THE FOLLOWING LOCATIONS:
- A. THOSE PORTIONS TO BE EMBEDDED IN CONCRETE.
B. WITHIN 3 IN. OF FIELD WELDS.
C. FAYING SURFACES OF SLP-CRITICAL CONNECTIONS.
D. GALVANIZED MEMBERS NOT SCHEDULED TO RECEIVE FINISH PAINTING.
E. MEMBERS TO RECEIVE SPRAY-ON-FIREPROOFING; DELETE ALL NON-COMPATIBLE PRIMERS. ANY REMAINING PRIMERS AND SPRAY-ON-FIREPROOFING SHALL BE COMPATIBLE FOR BOND STRENGTH.
2. ALL PRIMER/PAINT PRODUCTS AND COLORS SHALL BE SELECTED IN ACCORDANCE WITH THE ARCHITECTURAL PAINT SPECIFICATION AND SUBJECT TO THE OWNER'S APPROVAL.
3. ALL EXPOSED STEEL TO WEATHER OR MOISTURE, WHETHER NOTED AS SUCH IN THE CONTRACT DOCUMENTS OR NOT, SHALL BE GALVANIZED CONFORMING TO ASTM A123, CLASS G60 SPECIFICATIONS FOR STEEL SECTIONS AND ASTM A153, CLASS C FOR BOLTS AND THREADED ROD.
4. ALL TUBE AND PIPE COLUMNS SCHEDULED TO BE HOT-DIPPED GALVANIZED SHALL BE FABRICATED WITH ADEQUATE VENTILATION.

STRUCTURAL MASONRY

1. CONCRETE MASONRY UNITS (CMU) FOR MASONRY WALL CONSTRUCTION SHALL BE APPROVED LOAD-BEARING UNITS CONFORMING TO ASTM C90, TYPE N-1, WITH A MINIMUM COMPRESSIVE STRENGTH EQUAL TO 2,800 PSI, BASED ON NET CROSS SECTIONAL AREA.
2. GROUT FOR CMU SHALL COMPLY WITH ASTM C476 AND SHALL HAVE A COMPRESSIVE STRENGTH AT 28 DAYS NOT LESS THAN 3,000 PSI. MORTAR SHALL CONFORM TO ASTM C270, TYPE M OR S PORTLAND CEMENT/LIME OR MORTAR CEMENT. THE NET COMPRESSIVE STRENGTH OF MASONRY (f_m) SHALL MEET OR EXCEED 2,000 PSI.

STRUCTURAL MASONRY (cont.)

3. GROUTING OF MASONRY WALLS SHALL BE LOW LIFT GROUTING CONFORMING TO ACI 530. LIMIT GROUT PLACEMENT HEIGHTS (MAXIMUM WALL CONSTRUCTION HEIGHT PRIOR TO GROUTING) AS SPECIFIED IN ACI 530.1, TABLE 7. GROUT LIFTS SHALL BE LIMITED TO 5' MAXIMUM. PLACE FIRST GROUT LIFT AND ALLOW THIRTY MINUTE TIME LAPSE BETWEEN EACH ADDITIONAL LIFT. THE TOP OF GROUT PLACEMENT LIFTS SHALL BE HELD DOWN MINIMUM 1½" BELOW TOP OF COURSE. CONSOLIDATE GROUT AT TIME OF PLACEMENT USING MECHANICAL VIBRATION. RECONSOLIDATE GROUT POUR BY MECHANICAL VIBRATION AFTER INITIAL SETTLEMENT AND WATER LOSS HAS OCCURRED.
4. ALL CELLS OF MASONRY BLOCKS CONTAINING REINFORCING BARS OR ANCHOR BOLTS SHALL BE COMPLETELY FILLED WITH GROUT.
5. REINFORCING STEEL SHALL BE NEW BILLET STEEL IN ACCORDANCE WITH ASTM A615, GRADE 60. TOLERANCE FOR REINFORCEMENT SHALL BE ±½" OF THE DETAILED POSITION WITHIN A LOCAL CMU CELL OR SECTION AND ±2" IN LAYOUT LOCATION ALONG THE LENGTH OF A WALL.
6. UNLESS A HEAVIER GRADE JOINT REINFORCEMENT IS SPECIFIED ON THE DRAWINGS, THE MINIMUM HORIZONTAL JOINT REINFORCEMENT SHALL BE , LADDER TYPE, STANDARD WEIGHT (SERIES 200, BY WIREBOND, OR AN APPROVED SUBSTITUTE), HAVING 9 GA. SIDE RODS AND 9 GA. CROSS RODS, IN ALTERNATING COURSES (16" O.C. VERTICAL) OF ALL MASONRY WALLS.
7. HORIZONTAL REINFORCEMENT SHALL BE DISCONTINUED AT ALL MASONRY CONTROL JOINTS.
8. CONCRETE MASONRY UNITS SHALL BE LAID IN RUNNING BOND AND BE PLACED AS FOLLOWS:
- A. FACE SHELLS OF BED JOINTS ARE FULLY MORTARED.
B. WEBS ARE FULLY MORTARED IN ALL COURSES OF PIERS, COLUMNS AND PILASTERS, IN THE STARTING COURSE ON FOUNDATIONS AND CELLS CONTAINING VERTICAL REINFORCEMENT.
C. HEAD JOINTS ARE MORTARED, A MINIMUM DISTANCE FROM EACH FACE EQUAL TO THE FACE SHELL THICKNESS OF THE UNIT.
D. VERTICAL CELLS TO BE GROUTED SHALL BE ALIGNED AND UNOBSTRUCTED OPENINGS.
9. ALL EXPOSED JOINTS SHALL BE TOOLED CONCAVE AND CONCEALED JOINTS STRUCK FLUSH.
10. EXTREME (HOT OR COLD) WEATHER MASONRY INSTALLATION AS DEFINED BY ACI 530.1 SHALL BE PERFORMED IN ACCORDANCE WITH ACI 530.1, IMPLEMENTING THE APPROVED PROCEDURES FOR PREPARATION, CONSTRUCTION AND PROTECTION.
11. MASONRY WALLS SHALL BE 8" C.M.U. AND REINFORCED AS FOLLOWS, UNLESS NOTED OTHERWISE:

- A. EXTERIOR WALLS AND WALLS ENCLOSING EXITS, EXIT DISCHARGES AND ELEVATOR SHAFTS

- a. ALL REINFORCEMENT SHALL BE REINFORCING STEEL BARS IN GROUTED CELLS, IN GROUTED BOND COURSES OR IN GROUTED COLLAR JOINTS.

- b. VERTICAL REINFORCEMENT:

- THE MINIMUM VERTICAL REINFORCEMENT SHALL BE A #4 BAR @ 32" O.C..
- VERTICAL REINFORCEMENT SHALL BE LOCATED WITHIN 16" OF THE ENDS OF MASONRY WALLS.

- c. HORIZONTAL REINFORCEMENT:

- THE MINIMUM HORIZONTAL REINFORCEMENT SHALL BE 2-#4 BARS @ 48" O.C.
- HORIZONTAL REINFORCEMENT SHALL BE PROVIDED WITHIN 16" OF THE TOP AND BOTTOM OF THE WALLS.

- B. NON-STRUCTURAL WALLS

- a. VERTICAL REINFORCEMENT:

- VERTICAL REINFORCEMENT SHALL CONSIST OF AT LEAST ONE #4 BAR SPACED NOT MORE THAN 72".
- VERTICAL REINFORCEMENT SHALL BE LOCATED WITHIN 16" OF THE ENDS OF MASONRY WALLS.

- b. HORIZONTAL REINFORCEMENT:

- THE MINIMUM HORIZONTAL REINFORCEMENT SHALL CONSIST OF A LADDER TYPE, 9 GA., BED JOINT REINFORCEMENT SPACED NOT MORE THAN 16" O.C. OR A SINGLE #4 BAR SPACED AT NOT MORE THAN 48" O.C.
- HORIZONTAL REINFORCEMENT SHALL BE PROVIDED WITHIN 16" OF THE TOP AND BOTTOM OF THE WALLS.

12. MISCELLANEOUS STEEL LINTEL SCHEDULE FOR MASONRY WALLS 8" THICK OR GREATER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

OPENING	LINTEL
UP TO 4'-0"	3½x3½x¾
4'-0" TO 5'-0"	4x3½x¾ LLV
5'-0" TO 6'-0"	5x3½x¾ LLV
6'-0" TO 7'-0"	6x3½x¾ LLV
OVER 7'-0"	PER PLAN

- A. USE ONE ANGLE FOR EACH 4" WYTHE OF MASONRY.
B. ALL LINTELS SHALL HAVE A BEARING LENGTH AT EACH END OF 1 INCH PER FOOT OF OPENING WITH A MINIMUM OF 6".
C. ALL LINTELS SHALL BEAR ON 16" SOLID MASONRY PIERS ON EACH SIDE OF THE OPENING.
D. ALL LINTELS ON THE BUILDING EXTERIOR SHALL BE GALVANIZED.
E. REFER TO "TYPICAL MASONRY OPENING REINFORCING DETAIL" FOR MASONRY LINTELS IN LIEU OF STEEL LINTELS.

BRICK VENEER

1. BRICK VENEER SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GOVERNING BUILDING CODE, THE ARCHITECTURAL DRAWINGS AND ACI 530. WHERE THE PROVISIONS OF THE GOVERNING BUILDING CODE OR THE ARCHITECTURAL DRAWINGS OR SPECIFICATIONS IS MORE STRINGENT, THE MORE STRINGENT SHALL APPLY.
- A. VENEER BRICK: ASTM C216, GRADE SW
B. MORTAR (BELOW GRADE): ASTM C270, TYPE S
C. MORTAR (ABOVE GRADE): ASTM C270, TYPE N OR S
2. THE HEIGHT OF THE ANCHORED BRICK VENEER SHALL NOT EXCEED 30 FEET BETWEEN HORIZONTAL SUPPORTS FOR THE LOWEST LIFT AND SHALL NOT EXCEED THE STORY HEIGHT FOR EACH LIFT ABOVE THE LOWEST LIFT.
3. BRICK VENEER WITH A MAXIMUM WEIGHT OF 40 PSF SHALL BE ANCHORED IN ACCORDANCE WITH ACI 530.
- A. ALL TIES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION CONFORMING TO ASTM A-153 CLASS B2. EMBED ALL ANCHORS IN THE MORTAR JOINT 1½" MIN W/ AT LEAST ¾" COVER TO THE OUTSIDE FACE. SPACE ANCHORS TO PROVIDE AT LEAST ONE ANCHOR FOR EACH 2.67 SQ. FT. OF WALL AREA W/ MAXIMUM SPACING OF ANCHORS AND TIES OF 16" O.C. VERTICAL AND 24" O.C. HORIZONTAL. PROVIDE ADDITIONAL ANCHORS AROUND ALL OPENINGS GREATER THAN 16" IN EITHER DIMENSION. SPACE ANCHORS AROUND PERIMETER OF OPENINGS AT A MAXIMUM OF 3'-0" ON CENTER. PLACE ANCHORS WITHIN 12" OF OPENING. PROVIDE WEEP HOLES SPACED HORIZONTALLY NOT LESS THAN 33" O.C.
4. BRICK VENEER SHALL BE DESIGNED & DETAILED BY THE ARCHITECT/CONTRACTOR TO ALLOW FOR DIFFERENTIAL MOVEMENT AT ALL FIXED OBJECTS WITHIN THE VENEER INCLUDING DOORS, WINDOWS, BEAMS, TRIM, ETC.
5. MISCELLANEOUS STEEL LINTEL SCHEDULE:

OPENING	LINTEL
UP TO 4'-0"	3½x3½x¾
4'-0" TO 5'-0"	4x3½x¾ LLV
5'-0" TO 6'-0"	5x3½x¾ LLV
6'-0" TO 8'-0"	6x3½x¾ LLV
OVER 8'-0"	PER PLAN

- A. USE ONE ANGLE FOR EACH 4" WYTHE OF MASONRY.
B. ALL LINTELS SHALL HAVE A BEARING LENGTH AT EACH END OF 1 INCH PER FOOT OF OPENING WITH A MINIMUM OF 6".
C. ALL LINTELS ON THE BUILDING EXTERIOR SHALL BE GALVANIZED.

WOOD FRAMING SPECIFICATIONS

1. ALL WOOD MEMBER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDED PRACTICE OF THE NATIONAL FOREST PRODUCTS ASSOCIATION (NFPA) AND NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS).
2. ALL WOOD MEMBERS, ENGINEERED LUMBER, AND PLYWOOD USED IN CONSTRUCTION OF THIS STRUCTURE SHALL BE NEW MATERIAL. ALL WOOD AND ENGINEERED LUMBER MEMBERS SHALL BE FREE FROM CRACKS, KNOT HOLES, NOTCHES AND OTHER STRUCTURAL DEFICIENCIES.
3. WOOD FRAMING SIZES, VERTICAL FRAMING, HORIZONTAL FRAMING, FIRESTOPS, ANCHORAGE, FURRING AND CONNECTORS NOT SHOWN ON THE CONTRACT DOCUMENTS SHALL BE PER THE GOVERNING BUILDING CODES MINIMUM REQUIREMENTS.
4. MOISTURE CONTENT OF LUMBER SHALL BE NO LESS THAN 7% AND NO GREATER THAN 19% AT TIME OF FABRICATION.
5. ALL WOOD MEMBERS USED FOR EXTERIOR CONSTRUCTION OR IN CONTACT WITH CONCRETE (SILL PLATES) SHALL BE PRESERVATIVE TREATED (PT) LUMBER AND SHALL BE MINIMUM #1 SOUTHERN PINE OR BETTER. WATER-BORNE PRESERVATIVES SHALL BE USED AND LUMBER SHALL BE TREATED IN ACCORDANCE WITH AWPA U1 (COMMODITY SPECIFICATIONS A OR F) FOR ABOVE GROUND USE. ALL FASTENERS AND CONNECTORS IN CONTACT WITH PT LUMBER SHALL BE HOT-DIP, ZINC COATED GALVANIZED STEEL OR STAINLESS STEEL AND BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. ALL LUMBER AND PLYWOOD NOTED ON THE CONTRACT DOCUMENTS AS FIRE RETARDANT TREATED (F.R.T.) SHALL BE TREATED IN ACCORDANCE WITH THE "AMERICAN WOOD PRESERVES ASSOCIATION, STANDARDS C20 AND C27" AND EACH PIECE SHALL BEAR A U.L. LABEL INDICATING SUCH TREATMENT. FIRE RETARDANT TREATED LUMBER SHALL BE DESIGNED WITH THE FOLLOWING REDUCTION FACTORS:

	LVL	PSL	LSL	PSL(COL)
A. MODULOUS OF ELASTICITY (E), PSI	1.9X10 ⁶	2.0X10 ⁶	1.55X10 ⁶	1.8X10 ⁶
B. FLEXURAL STRESS (F _b), PSI	2,600	2,900	2,325	2,400
C. COMPRESSION PERPENDICULAR (F _c), PSI	750	750	800	425
D. COMPRESSION PARALLEL (F _c), PSI	2,510	2,900	2,050	2,500
E. SHEAR PARALLEL (F _v), PSI	285	290	310	190

9. ALL WOOD STRUCTURAL PANEL (WSP) SHALL CONFORM TO THE REQUIREMENTS OF DOC PS-2 WITH A BOND CLASSIFICATION OF EXPOSURE 1. WOOD STRUCTURAL PANEL SHALL BE STAMPED WITH AN APA TRADEMARK INDICATING THE THICKNESS, GRADE AND SPAN RATING INDICATED ON THE DRAWINGS AND WITHIN THE "GENERAL NOTES AND SPECIFICATIONS".

10. ALL JOIST HANGERS, COLUMN CAPS, COLUMN BASES, HOLDDOWNS, METAL CONNECTOR PLATES AND OTHER ENGINEERED WOOD CONNECTION PRODUCTS SHALL BE AS MANUFACTURED BY SIMPSON STRONG-TIE CO., INC. OR AN APPROVED SUBSTITUTE. ALL PRODUCTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ANY OF THE MANUFACTURER'S RECOMMENDATIONS.

11. WIRE NAILS SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC), AMERICAN WOOD COUNCIL NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS) AND ASTM F1667. ALL NAILS SPECIFIED ON THESE DRAWINGS SHALL BE COMMON NAILS, UNLESS NOTED OTHERWISE.

12. GUN NAILS MAY BE USED AND THE FOLLOWING MINIMUM LENGTH AND DIAMETER SHALL BE USED FOR THE COMMON DESIGNATIONS ON THESE PLANS:

	PENNY WT.	LENGTH	DIAMETER
A. FLOOR SHEATHING (DEFORMED SHANK)	8d	2½"	0.131"
	10d	3"	0.148"
B. ROOF SHEATHING (SMOOTH SHANK)	8d	2½"	0.131"
	10d	3"	0.148"
C. GENERAL FRAMING (SMOOTH SHANK)	8d	2½"	0.131"
	10d	3"	0.148"
	12d	3½"	0.148"
	16d	3½"	0.162"

WOOD CONSTRUCTION NOTES

1. ROOF AND FLOOR FRAMING LAYOUTS ARE PROVIDED TO ILLUSTRATE CONDITIONS OF CONSTRUCTION AND DO NOT NECESSARILY INDICATE SPECIFIC QUANTITIES OF MATERIALS OR COMPONENTS REQUIRED FOR CONSTRUCTION.
2. BLOCKING FOR INTERIOR FINISHES SHALL BE PROVIDED IN ADDITION TO MINIMUM STRUCTURAL CONFIGURATION SHOWN ON THESE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFIC CONFIGURATIONS THAT WILL REQUIRE ADDITIONAL BLOCKING. TO THE GREATEST EXTENT POSSIBLE, THE WALL PANELS SHALL BE FABRICATED WITH ADDITIONAL BLOCKING FOR THIS PURPOSE PROVIDED THAT IT DOES NOT INTERFERE WITH THE INSTALLATION OF STRUCTURAL ASSEMBLIES SHOWN ON THESE DRAWINGS.
3. ALL WOOD FRAMING SHALL BE FASTENED IN ACCORDANCE WITH THE FASTENING SCHEDULE IN TABLE 2304.9.1 OF THE IBC OR AS INDICATED IN THESE DRAWINGS, THE MORE STRINGENT SHALL APPLY. SHEAR WALL AND DIAPHRAGM ASSEMBLIES SHALL BE FASTENED IN ACCORDANCE WITH THE "STRUCTURAL SHEAR PANEL" AND "STRUCTURAL DIAPHRAGM" NOTES ON THESE DRAWINGS. NAILS FASTENING SHEATHING TO SUPPORTING MEMBERS SHALL BE DRIVEN SO THAT THE NAIL HEAD IS FLUSH WITH THE SHEATHING SURFACE.

4. CUTTING, NOTCHING AND BORING SHALL BE AVOIDED WHEREVER POSSIBLE. WHEN ABSOLUTELY NECESSARY, CUTTING, NOTCHING AND BORING OF STRUCTURAL FRAMING AND LOAD BEARING ASSEMBLIES SHALL BE LIMITED BY THE PROVISIONS OF SECTION 2308 OF THE IBC:

A. FLOOR FRAMING	2308.8.2
B. WALL FRAMING	2308.9.10 AND 2308.9.11
C. ROOF/CEILING FRAMING	2308.10.4.2

5. CONSTRUCTION BRACING SHALL BE PROVIDED BY THE CONTRACTOR TO MAINTAIN THE BUILDING PLUMB AND TRUE. THE BRACING SHALL REMAIN IN PLACE UNTIL ALL THE LOAD BEARING AND SHEAR WALLS ARE COMPLETELY SHEATHED, CONNECTED AND ANCHORED.

6. ALL JOISTS, RAFTERS AND TRUSSES SHALL ALIGN WITH THE SUPPORTING STUDS UNLESS THE LAYOUT SPACINGS DO NOT MATCH.

7. MULTIPLE MEMBER, MULTIPLE PLY OR BUILT-UP BEAMS THAT ARE USED IN PLACE OF SOLID SECTION MEMBERS SHALL HAVE PILES CONNECTED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

8. PROVIDE STANDARD FLUSH BEAM AND JOIST HANGERS BY SIMPSON STRONG-TIE OR AN APPROVED SUBSTITUTE ON ALL BEAM AND JOIST ENDS THAT DO NOT BEAR ON WALLS OR BEAMS.

9. ALL WOOD MEMBERS SHALL BE PRE-DRILLED PRIOR TO INSTALLATION OF BOLTS OR LAGS.

10. ALL JOISTS SHALL BE PROVIDED WITH ONE LINE OF BRIDGING FOR EACH 8 FEET OF SPAN. BRIDGING SHALL CONSIST OF METAL CROSS, WOOD CROSS (1X3 MIN) OR 2X SOLID BLOCKING OF EQUAL DEPTH TO THE JOIST.

11. ALL TRUSSES SHALL BE PROVIDED WITH STRONGBACKS AT 10'-0" O.C. MAXIMUM. FLOOR AND ROOF TRUSS COMPONENTS SHALL HAVE BRIDGING OR BRACING LINES AS SHOWN ON TRUSS MANUFACTURER DRAWINGS.

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ARCHITECT

STRUCTURAL NOTES AND SPECIFICATIONS

WOOD CONSTRUCTION NOTES (cont.)

12. ALL POSTS SHALL BE CARRIED DOWN TO FOUNDATIONS OR PODIUMS. JOIST CAVITIES WITHIN THE FLOOR THAT FALL IN LINE WITH POSTS SHALL BE BLOCKED SOLID BETWEEN THE TOP PLATE OF THE WALL BELOW TO THE UNDERSIDE OF THE SOLE PLATE ABOVE.
13. ALL BUILT-UP BEAMS, ENGINEERED WOOD BEAMS, AND GIRDER TRUSSES MUST BE SUPPORTED BY POSTS WITHIN THE WALL FRAMING THAT ARE DIRECTLY ALIGNED WITH THE BEAM OR GIRDER TRUSS ABOVE. ALL BUILT-UP BEAMS OF 2X CONVENTIONAL FRAMING MEMBERS SHALL BE SUPPORTED BY AT LEAST THE SAME NUMBER OF BUILT-UP STUDS. ALL ENGINEERED WOOD BEAMS AND GIRDER TRUSSES MUST BE SUPPORTED BY A MINIMUM OF A 3-PLY BUILT-UP STUD OR THE NUMBER OF STUDS REQUIRED TO MEET OR EXCEED THE WIDTH OF THE FRAMING MEMBER ABOVE, WHICHEVER IS LARGER. WHERE SOLID OR ENGINEERED POSTS ARE SHOWN ON THE DRAWINGS, THOSE SHALL BE CONSIDERED TO SATISFY THE MINIMUM POST REQUIREMENTS.
14. STUD BEARING WALLS, SHEAR WALLS AND EXTERIOR WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH EITHER A PREFABRICATED WALL PANEL SYSTEM OR FIELD BUILT WALLS. REFER TO THE TYPICAL DETAILS FOR ADDITIONAL INFORMATION. PROVIDE MID-HEIGHT BLOCKING, TO MATCH WALL WIDTH, FOR ALL BEARING WALLS UNSHEATHED DURING CONSTRUCTION (I.E. INTERIOR BEARING PARTITIONS TO RECEIVE GYPSUM SHEATHING).
15. FRAMED OPENINGS SHALL HAVE AT LEAST 1 JACK STUD AND 1 KING STUD ON EACH SIDE OF THE OPENING IN NON-LOAD BEARING WALLS AND UP TO 4'-0" OPENINGS IN LOAD BEARING WALLS. FOR OPENINGS IN LOAD BEARING WALLS 4'-0" AND WIDER, AT LEAST 2 JACK STUDS AND 2 KING STUDS ON EACH END SHALL BE PROVIDED UNLESS NOTED OTHERWISE IN THE DRAWINGS.
16. ALL EXTERIOR WALL SHEATHING NOT SPECIFICALLY IDENTIFIED OTHERWISE AS SHEAR WALL SHEATHING SHALL BE MINIMUM 7/8" THICK APA RATED WOOD STRUCTURAL PANEL SHEATHING WITH A SPAN RATING OF 32/16 OR WALL-24, EXPOSURE 1, AT LEAST ONE SIDE OF ALL EXTERIOR WALLS SHALL BE SHEATHED. SHEATHING SHALL BE ORIENTED WITH EITHER THE LONG SPAN OF THE SHEET VERTICAL OR PARALLEL TO THE SUPPORTING STUDS AND VERTICAL SEAMS STAGGERED BY 2'-0" O.C. OR LONG SPAN OF THE SHEET HORIZONTAL OR PERPENDICULAR TO THE SUPPORTING STUDS AND VERTICAL SEAMS STAGGERED BY 4'-0". WALL SHEATHING SHALL BE FASTENED WITH 8d COMMON NAILS AT A MAXIMUM 6" O.C. AROUND ALL DIRECT EDGES AND 12" O.C. ON ALL INTERIOR SUPPORTS. SEE "STRUCTURAL SHEAR PANEL" NOTES FOR ADDITIONAL EXTERIOR WALL SHEATHING REQUIREMENTS.

PREFABRICATED WOOD TRUSSES

1. MANUFACTURER SHALL FURNISH TRUSS DESIGN DRAWINGS BEARING THE SEAL OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY BOTH THE STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO FABRICATION. TRUSS DESIGN DRAWINGS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
- A. BUILDING CODE USED FOR DESIGN
 - B. SPAN, DEPTH, SLOPE AND SPACING OF TRUSSES
 - C. REQUIRED BEARING WIDTH
 - D. DESIGN LOADS AS SPECIFIED ON THESE DRAWINGS
 - E. PLATE SIZE, TYPE, GAGE, AND LOCATION OF EACH PLATE
 - F. LUMBER SIZE, SPECIES, AND GRADE
 - G. LOCATION OF ANY REQUIRED CONTINUOUS BRACING OR BRACING FOR OUT-OF-PLANE WIND LOADING
 - H. CALCULATED MAXIMUM DEFLECTION UNDER LIVE AND TOTAL LOADS
 - I. MAXIMUM AXIAL AND/OR BENDING STRESSES IN EACH TRUSS MEMBER
 - J. TRUSS-TO-TRUSS CONNECTION AND TRUSS FIELD ASSEMBLY REQUIREMENTS INDICATING LOCATIONS AND DETAILS OF JOINTS AND/OR FIELD SPRICES
 - K. MAXIMUM REACTION FORCE AND DIRECTION, INCLUDING MAXIMUM UPLIFT REACTION FORCES WHERE APPLICABLE
 - L. MINIMUM TRUSS-TO-SUPPORT CONNECTION REQUIREMENTS TO RESOLVE LISTED REACTIONS AT TRUSS BEARING POINTS
 - M. FABRICATION TOLERANCE PER THE STANDARD
 - N. REQUIRED PERMANENT INDIVIDUAL TRUSS MEMBER SLENDERNESS BRACING LOCATION AND THE METHOD OF BRACING TO BE USED PER THE STANDARD
2. DESIGN, MANUFACTURE, AND SUPPLY WOOD TRUSSES AS SHOWN ON THE CONSTRUCTION DOCUMENTS AND AS SPECIFIED HEREIN.
3. TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION (ANSI/TPI 1) AND WHERE ANY APPLICABLE DESIGN FEATURE IS NOT SPECIFICALLY COVERED HEREIN, DESIGN SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE AMERICAN FOREST & PAPER ASSOCIATION'S (AF&PA'S) NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION AND ALL APPLICABLE REQUIREMENTS OF THE GOVERNING BUILDING CODE.
4. MANUFACTURER SHALL FURNISH INDIVIDUAL TRUSS DESIGN DRAWINGS AND A TRUSS PLACEMENT DIAGRAM BEARING THE SEAL OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY BOTH THE STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO FABRICATION. TRUSS DESIGN DRAWINGS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE REQUIREMENTS OF 2303.4.1.1 OF THE IBC.
5. TRUSS PROFILES ILLUSTRATED WITHIN THE CONTRACT DOCUMENTS ARE PROVIDED TO INDICATE GENERAL TRUSS PROFILE AND BEARING POINTS. IT SHALL BE THE RESPONSIBILITY OF THE TRUSS MANUFACTURER TO SUBSTITUTE OR ADD TRUSS PROFILES AS REQUIRED TO ADEQUATELY FRAME THE FLOOR AND ROOF TO THE LIMITS SHOWN ON THE DRAWINGS. THE TRUSS MANUFACTURER SHALL DESIGN AND LAYOUT TRUSS DIAGONAL MEMBERS IN THE MOST STRUCTURALLY EFFICIENT CONFIGURATION TO SUITE THE FLOOR AND ROOF PROFILES AND TRUSS TYPES. THE TRUSS MANUFACTURER SHALL COORDINATE TRUSS CONFIGURATION WITH MEP DRAWINGS, SPECIFICALLY TRUNK LINES AND MECHANICAL CHASES. THE DIAGONALS SHOWN WITHIN THE CONTRACT DOCUMENTS SHALL BE CONSIDERED APPROXIMATE UNLESS SPECIFICALLY NOTED OTHERWISE IN EITHER THE ARCHITECTURAL OR STRUCTURAL DRAWINGS.
6. LUMBER USED SHALL BE IDENTIFIED BY GRADE MARK OF A LUMBER INSPECTION BUREAU OR AGENCY APPROVED BY THE AMERICAN LUMBER STANDARDS COMMITTEE, AND SHALL BE THE SIZE, SPECIES, AND GRADE AS SHOWN ON THE TRUSS DESIGN DRAWINGS, OR EQUIVALENT AS APPROVED BY THE TRUSS DESIGN ENGINEER.
7. MOISTURE CONTENT OF LUMBER SHALL BE NO LESS THAN 7% AND NO GREATER THAN 19% AT TIME OF FABRICATION.
8. ADJUSTMENT OF VALUE FOR DURATION OF LOAD OR CONDITIONS OF USE SHALL BE IN ACCORDANCE WITH NDS.
9. METAL CONNECTOR PLATES:
- A. METAL CONNECTOR PLATES SHALL BE MANUFACTURED BY A TRUSS PLATE INSTITUTE (TPI) MEMBER PLATE MANUFACTURER AND SHALL NOT BE LESS THAN 0.036 IN. THICK (20 GAUGE) AND SHALL MEET OR EXCEED ASTM A653/A653M GRADE 33, AND GALVANIZED COATING SHALL MEET OR EXCEED ASTM A924/924M, COATING DESIGNATION G60. WORKING STRESSES IN STEEL ARE TO BE APPLIED TO EFFECTIVENESS RATIOS FOR PLATES AS DETERMINED BY TEST AND IN ACCORDANCE WITH THE STANDARD.
 - B. TPI MEMBER PLATE MANUFACTURER SHALL FURNISH A CERTIFIED RECORD THAT MATERIALS COMPLY WITH STEEL SPECIFICATIONS.
10. TRUSSES SHALL BE FABRICATED IN A PROPERLY EQUIPPED MANUFACTURING FACILITY BY EXPERIENCED PERSONNEL USING PRECISION CUTTING, JOGGING AND PRESSING EQUIPMENT AS SPECIFIED BY THE REQUIREMENTS OF ANSI/TPI-1. ALL TRUSS MEMBERS SHALL BE CUT TO ACCURATE LENGTHS AND ANGLES TO ASSURE PROPER FITTING JOINTS WITHIN TOLERANCES SET FORTH IN ANSI/TPI-1.
11. TRUSSES SHALL BE HANDLED DURING MANUFACTURING, DELIVERY AND BY THE CONTRACTOR AT THE JOB SITE SO AS NOT TO BE SUBJECTED TO EXCESSIVE BENDING. TRUSSES SHALL BE UNLOADED IN A MANNER SO AS TO MINIMIZE LATERAL STRAIN. TRUSSES SHALL BE PROTECTED FROM DAMAGE THAT MIGHT RESULT FROM ON-SITE ACTIVITIES AND ENVIRONMENTAL CONDITIONS. TRUSSES SHALL BE HANDLED IN SUCH A WAY SO AS TO PREVENT TOPPLING WHEN BANDING IS REMOVED. APPARENT DAMAGE TO TRUSSES SHALL BE REPORTED TO TRUSS MANUFACTURER PRIOR TO ERECTION.
12. TRUSSES SHALL BE SET AND SECURED LEVEL AND PLUMB, AND IN CORRECT LOCATION. EACH TRUSS SHALL BE HELD IN CORRECT ALIGNMENT UNTIL SPECIFIED PERMANENT RESTRAINT AND BRACING IS INSTALLED.
13. CUTTING AND ALTERING OF TRUSSES IS NOT PERMITTED. IF ANY TRUSS SHOULD BECOME BROKEN, DAMAGED, OR ALTERED, WRITTEN APPROVAL OF ALTERATION OR REPAIR DOCUMENTATION BY THE TRUSS DESIGNER IS REQUIRED.
14. CONCENTRATED LOADS SHALL NOT BE PLACED ON TOP OF TRUSSES UNTIL ALL SPECIFIED RESTRAINT AND BRACING HAS BEEN INSTALLED AND DECKING IS PERMANENTLY NAILED IN PLACE. SPECIFICALLY AVOID STACKING FULL BUNDLES OF PLYWOOD OR OTHER CONCENTRATED LOADS ON TOP OF TRUSSES.
15. TRUSS SUBMITTALS AND ANY SUPPLEMENTARY INFORMATION PROVIDED BY THE TRUSS MANUFACTURER SHALL BE PROVIDED BY THE CONTRACTOR TO THE INDIVIDUAL OR ORGANIZATION RESPONSIBLE FOR THE INSTALLATION OF THE TRUSSES.

PREFABRICATED WOOD TRUSSES (cont.)

16. TRUSSES SHALL BE RESTRAINED AND BRACED BOTH PERMANENTLY AND DURING ERECTION IN A MANNER CONSISTENT WITH GOOD BUILDING PRACTICES AS OUTLINED IN THE BUILDING COMPONENT SAFETY INFORMATION (BCSI) MANUAL AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. ALL TEMPORARY AND PERMANENT BRACING SHALL BE INSTALLED AND ALL TRUSSES PERMANENTLY FASTENED BEFORE APPLICATION OF ANY LOADS. MATERIALS USED IN BRACING ARE OTHERWISE NOTED IN THESE SPECIFICATIONS.
17. TRUSS SERVICEABILITY LIMITS SHALL BE AS FOLLOWS:
- | | | |
|----------|----------|----------|
| | LL | TL |
| A. FLOOR | SPAN/480 | SPAN/240 |
| B. ROOF | SPAN/360 | SPAN/240 |

STRUCTURAL SHEAR PANEL

1. SHEAR PANEL TYPES A, B, C, AND D:
- WALL SHEATHING SHALL BE MINIMUM 7/16" THICK APA RATED WOOD STRUCTURAL PANEL (WSP) WITH A MINIMUM SPAN RATING OF 32/16 OR WALL-24, EXPOSURE 1. THE SIDE OF WALLS INDICATED ON THE PLAN SHALL BE SHEATHED ACCORDING TO THE "SHEAR WALL SCHEDULE". SHEATHING SHALL BE ORIENTED WITH EITHER THE LONG SPAN OF THE SHEET VERTICAL OR PARALLEL TO THE SUPPORTING STUDS AND VERTICAL SEAMS STAGGERED BY 2'-0" O.C. OR LONG SPAN OF THE SHEET HORIZONTAL OR PERPENDICULAR TO THE SUPPORTING STUDS AND VERTICAL SEAMS STAGGERED BY 4'-0". WHERE HORIZONTAL PANEL SEAMS DO NOT FALL ON SUPPORTING MEMBERS, MIN 2X BLOCKING SHALL BE PROVIDED. WALL HEIGHTS OVER 96" WILL REQUIRE HORIZONTAL BLOCKING OR SPECIAL ORDER OF LONGER PANELS IF THE PANELS ARE HUNG VERTICALLY. SHEATHING SHALL BE FASTENED ACCORDING TO THE "SHEAR WALL SCHEDULE" SHOWN ON THE CONTRACT DOCUMENTS.
2. SHEAR PANEL TYPE E:
- WALL SHEATHING SHALL BE MINIMUM 19/32" THICK APA RATED WOOD STRUCTURAL PANEL (WSP) WITH A MINIMUM SPAN RATING OF 32/16 OR WALL-24, EXPOSURE 1. THE SIDE OF WALLS INDICATED ON THE PLAN SHALL BE SHEATHED ACCORDING TO THE "SHEAR WALL SCHEDULE". SHEATHING SHALL BE ORIENTED WITH EITHER THE LONG SPAN OF THE SHEET VERTICAL OR PARALLEL TO THE SUPPORTING STUDS AND VERTICAL SEAMS STAGGERED BY 2'-0" O.C. OR LONG SPAN OF THE SHEET HORIZONTAL OR PERPENDICULAR TO THE SUPPORTING STUDS AND VERTICAL SEAMS STAGGERED BY 4'-0". WHERE HORIZONTAL PANEL SEAMS DO NOT FALL ON SUPPORTING MEMBERS, MIN 2X BLOCKING SHALL BE PROVIDED. WALL HEIGHTS OVER 96" WILL REQUIRE HORIZONTAL BLOCKING OR SPECIAL ORDER OF LONGER PANELS IF THE PANELS ARE HUNG VERTICALLY. SHEATHING SHALL BE FASTENED ACCORDING TO THE "SHEAR WALL SCHEDULE" SHOWN ON THE CONTRACT DOCUMENTS.
3. ALL SHEAR PANELS SHALL BE APPLIED DIRECTLY TO THE FACE OF FRAMING MEMBERS IN ACCORDANCE WITH THE "SHEAR WALL SCHEDULE" REQUIREMENTS. FURRING, STRAPPING, AND ADDITIONAL LAYERS OF SHEATHING MAY NOT BE PLACED BETWEEN THE LISTED SHEAR PANEL SHEATHING AND THE FACE OF THE FRAMING MEMBER. IF A FIRE RATING REQUIRES ADDITIONAL LAYERS OF SHEATHING, THEY SHALL BE APPLIED ON TOP OF THE SHEAR PANEL SHEATHING AFTER AN INSPECTION IS MADE OF THE BASE SHEAR PANEL.
4. UNLESS NOTED OTHERWISE ON THE DRAWINGS, PROVIDE AT LEAST 2-2X BUILT-UP STUDS AT THE ENDS OF EACH SHEAR WALL SHOWN ON THE PLAN AND AN ADDITIONAL 2X FOR EACH ADDITIONAL FLOOR. ALL HOLDOWNS AND METAL STRAPS MUST BE ALIGNED AND CONNECTED TO THE SAME END POSTS WITHIN THE WALL.
5. ALL SHEAR PANELS SHALL EXTEND FROM SILL OR SOLE PLATE OF WALL TO ROOF DIAPHRAGM SHEATHING.
6. THE ALLOWABLE SHEAR CAPACITIES LISTED ON THESE DRAWINGS HAVE BEEN REDUCED TO PERMIT THE USE OF STUD WALL FRAMING MATERIAL OF #2 S-P-F OR BETTER. IN GENERAL ALL WOOD STRUCTURAL PANEL (WSP) SHEAR WALLS SHALL HAVE STUDS SPACED AT 24" O.C. MAXIMUM. REFER TO "BEARING WALL SCHEDULE" FOR EXACT SIZE AND SPACING OF WALL FRAMING MEMBERS, THE SPACING LISTED IN THIS NOTE ARE MAXIMUMS ONLY.

STRUCTURAL DIAPHRAGM

1. ROOF DIAPHRAGM SHEATHING:
- ROOF SHEATHING SHALL BE 3/4" THICK WOOD STRUCTURAL PANEL. PANELS SHALL BE TONGUE AND GROOVE TYPE, HAVING A SPAN RATING OF 48/24. SHEATHING SHALL BE ORIENTED WITH LONG SPAN OF THE SHEET PERPENDICULAR TO THE SUPPORTING MEMBERS AND VERTICAL SEAMS STAGGERED BY 4'-0" O.C. ROOF SHEATHING SHALL BE SET IN A CONSTRUCTION ADHESIVE ON SUPPORTING MEMBERS. SHEATHING MUST BE CONTINUOUS BENEATH ALL OVERFRAMED ROOF AREAS OR DORMERS.
- A. FASTENING WITHIN GENERAL ROOF AREA: 8d COMMON AT 6" O.C. ON SUPPORTED PANEL EDGES AND 12" O.C. AT ALL INTERMEDIATE SUPPORTS.
2. FLOOR DIAPHRAGM SHEATHING:
- FLOOR SHEATHING SHALL BE 3/4" THICK WOOD STRUCTURAL PANEL. PANELS SHALL BE TONGUE AND GROOVE TYPE, HAVING A SPAN RATING OF 48/24. SHEATHING SHALL BE ORIENTED WITH LONG SPAN OF THE SHEET PERPENDICULAR TO THE SUPPORTING MEMBERS AND VERTICAL SEAMS STAGGERED BY 4'-0" O.C. FLOOR SHEATHING SHALL BE SET IN A CONSTRUCTION ADHESIVE ON SUPPORTING MEMBERS.
- A. FASTENING WITHIN GENERAL FLOOR AREA: 8d COMMON AT 6" O.C. ON SUPPORTED PANEL EDGES AND 12" O.C. AT ALL INTERMEDIATE SUPPORTS.
3. ALL DIAPHRAGM SHEATHING SHALL BE APPLIED DIRECTLY TO THE FACE OF FRAMING MEMBERS IN ACCORDANCE WITH THE DIAPHRAGM REQUIREMENTS. FURRING, STRAPPING, AND ADDITIONAL LAYERS OF SHEATHING MAY NOT BE PLACED BETWEEN THE LISTED DIAPHRAGM SHEATHING AND THE FACE OF THE FRAMING MEMBER.

LEVELING TOPPING

1. SELF-LEVELING TOPPING SHALL BE A NON-STRUCTURAL, CEMENTITIOUS OR GYPSUM BASE, FLOOR UNDERLAYMENT PLACED ON THE SUB-FLOOR OR FLOOR DIAPHRAGM SHEATHING AS DIRECTED ON THE ARCHITECTURAL DRAWINGS OR RATED FLOOR ASSEMBLY DETAILS.
2. TOPPING PRODUCTS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28-DAYS AND NOT EXCEED A DRY DENSITY OF 115 PCF.
3. TOPPING SHALL BE 3/4" THICK AT ALL INTERIOR FLOORS.

ADHESIVE AND MECHANICAL ANCHOR SYSTEMS

1. ALL ADHESIVE AND MECHANICAL ANCHORS SHALL BE AS MANUFACTURED BY HILTI USA (www.hilti.com) OR SIMPSON STRONG-TIE (www.simpsonanchors.com) OR AN APPROVED SUBSTITUTE. ALL SPECIFICATIONS AND RECOMMENDATIONS ARE AS OUTLINED IN THE HILTI "NORTH AMERICAN PRODUCT TECHNICAL GUIDE - ANCHORING SYSTEMS" OR SIMPSON "ANCHORING AND FASTENING SYSTEMS" TECHNICAL MANUAL LATEST EDITION.
2. ALL ADHESIVE AND MECHANICAL ANCHORS SHALL BE LOCATED TO MEET MINIMUM EDGE AND END DISTANCES SPECIFIED FOR THE INSTALLATION LOCATION ENCOUNTERED IN THE FIELD. ALL ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
3. WHERE ADHESIVE AND MECHANICAL ANCHORS ARE SPECIFIED TO BE ANCHORED INTO SOLID CONCRETE WALLS, SLABS, BEAMS AND/OR ANY OTHER STRUCTURAL CONCRETE, EXISTING OR PROPOSED, THE CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3,000 PSI.
4. ALL BORE HOLES INTO THE ANCHORAGE BASE SHALL BE DRILLED WITH A CARBIDE BIT, CLEANED WITH PRESSURIZED AIR AND A WIRE BRUSH. THE DIAMETER AND TYPE OF DRILL BIT SHALL BE AS SPECIFIED IN THE HILTI "NORTH AMERICAN PRODUCT TECHNICAL GUIDE - ANCHORING SYSTEMS" OR SIMPSON "ANCHORING AND FASTENING SYSTEMS" TECHNICAL MANUAL LATEST EDITION.
5. A TESTING AND INSPECTION AGENCY SHALL BE REQUIRED TO IDENTIFY THE LOCATION OF REINFORCEMENT WHERE MECHANICAL FASTENERS ARE SPECIFIED TO BE ANCHORED INTO EXISTING CONCRETE. THE CONTRACTOR SHALL COORDINATE THE TESTING WITH THE PROPOSED MECHANICAL ANCHOR LOCATIONS. EXISTING REINFORCEMENT SHALL NOT BE CUT, DRILLED OR ALTERED IN ANY WAY.

ADHESIVE AND MECHANICAL ANCHOR SYSTEMS (cont.)

6. ANCHOR SELECTION SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
- A. ADHESIVE ANCHOR
- a. NON-CRACKED CONCRETE HIT ICE/HIT HY 200 (HAS ROD) OR AT HIT-RE 500-SD OR SET-XP
 - b. CRACKED CONCRETE HIT ICE/HIT HY 200 (HAS ROD) OR AT HIT HY 70 OR AT HIT ICE/HIT HY 200 (HAS ROD) OR AT HIT HY 70 OR AT
 - c. LIGHTWEIGHT CONCRETE
 - d. POST-TENSIONED CONCRETE
 - e. GROUT FILLED CMU
 - f. HOLLOW CMU
 - g. SOLID BRICK
- B. MECHANICAL ANCHOR
- a. NON-CRACKED CONCRETE KWIK BOLT 3 OR WEDGE-ALL
 - b. CRACKED CONCRETE KWIK BOLT TZ OR STRONG-BOLT
 - c. LIGHTWEIGHT CONCRETE KWIK BOLT 3 OR WEDGE-ALL
 - d. POST-TENSIONED CONCRETE HDI-P OR DROP-IN
 - e. GROUT FILLED CMU KWIK BOLT 3 OR WEDGE-ALL
 - f. HOLLOW CMU HLC OR TITEN HD
 - g. SOLID BRICK HLC OR TITEN HD

PREFABRICATED STAIRS AND HANDRAILS

1. MANUFACTURER SHALL FURNISH STAIR AND HANDRAIL DESIGN DRAWINGS BEARING THE SEAL OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED, DESIGNED IN ACCORDANCE WITH THE GOVERNING BUILDING CODE. DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY BOTH THE STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO FABRICATION. DESIGN DRAWINGS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
- A. BUILDING CODE USED FOR DESIGN
 - B. SPAN, DEPTH, SLOPE AND SPACING OF STRINGERS
 - C. TREAD AND RISER SIZE, THICKNESS, AND CONFIGURATION
 - D. REQUIRED BEARING OR CONNECTION REQUIREMENTS AT SUPPORTS
 - E. CALCULATED MAXIMUM DEFLECTIONS FOR BOTH LIVE AND TOTAL LOAD CONDITIONS.
 - F. STRUCTURAL MEMBER SIZES AND ORIENTATION
 - G. ALL DIMENSIONS AND ELEVATIONS
 - H. LOADS IMPOSED ON THE STRUCTURAL FRAME BY THE STAIRS
2. THE FOLLOWING DESIGN CRITERIA SHALL BE CONSIDERED:
- A. DESIGN LIVE LOAD SHALL BE 100 PSF FOR ALL STRUCTURAL ELEMENTS WITHIN THE STAIR COMPONENT.
 - B. STAIR TREADS SHALL BE DESIGNED TO SUPPORT A 300# CONCENTRATED LOAD OVER 4 IN² AT THE CENTER OF THE TREAD.
 - C. GUARDRAILS AND HANDRAILS SHALL BE DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF THE GOVERNING BUILDING CODE.
 - D. STAIR CONNECTIONS TO THE PRIMARY STRUCTURE MADE BY HANGERS SHOULD BE DESIGNED FOR AN IMPACT LOAD OF 1.33 x LIVE LOAD REACTION AT THE CONNECTION.
 - E. STAIRS SHALL BE DESIGNED FOR SERVICEABILITY LIMITS OF SPAN/480 FOR LIVE LOADS AND SPAN/240 FOR TOTAL LOADS

STRUCTURAL TESTING AND INSPECTION

1. THE STRUCTURAL TESTS AND INSPECTIONS IDENTIFIED ON THESE DRAWINGS SHALL BE PERFORMED BY APPROVED INDEPENDENT TESTING AND INSPECTION AGENCIES (AGENCY) UNDER THE SUPERVISION OF PROFESSIONAL ENGINEERS LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. ALL QUALITY ASSURANCE DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE GOVERNING BUILDING CODE. THE AGENCY MUST PROVIDE A COPY OF RESULTS FROM ANY AND ALL TESTING AND INSPECTION OF THE STRUCTURAL SYSTEM DIRECTLY TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW. ALLEN & MAJOR ASSOCIATES, INC. IS THE STRUCTURAL ENGINEER OF RECORD (SER) FOR THIS PROJECT.
2. THE OWNER SHALL ENSURE THAT THE AGENCY HAS BEEN PROVIDED WITH CURRENT STRUCTURAL CONSTRUCTION DOCUMENTS, APPLICABLE SHOP DRAWINGS AND THE PROJECT GEOTECHNICAL REPORT. THE OWNER SHALL OBTAIN AND PAY FOR TESTS AND INSPECTIONS AS CALLED FOR HERE UNDER:

A. STEEL CONSTRUCTION

- a. THE AGENCY SHALL VERIFY COMPLIANCE OF THE STEEL FRAME WITH THE CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO: BRACING, STIFFENING, BASE PLATE ANCHORAGE, MEMBER LOCATIONS AND JOINT DETAILS.
- b. ALL STRUCTURAL STEEL AND REINFORCING STEEL WELDS MUST BE INSPECTED AND/OR TESTED BY THE AGENCY IN ACCORDANCE WITH AWS D1.1 AND D1.3, RESPECTIVELY. AT LEAST 25% OF ALL WELDS MUST BE VERIFIED BY NONDESTRUCTIVE TESTING.
- c. INSTALLATION OF HIGH STRENGTH BOLTS SHALL BE INSPECTED IN ACCORDANCE WITH AISC 360, FOR BOLTS REQUIRING PRETENSIONING, THE AGENCY SHALL OBSERVE THE TESTING AND CALIBRATION PROCEDURES AND DETERMINE THAT ALL PILES OF CONNECTED MATERIALS HAVE BEEN DRAWN TOGETHER AND PROPERLY SNUGGED. MONITORING OF PRETENSIONED BOLTS NEED ONLY BE PERIODICALLY IF USING THE TURN-OF-NUT METHOD WITH MATCHMARKING TECHNIQUES, THE DIRECT TENSIONING INDICATOR METHOD OR THE ALTERNATE DESIGN FASTENER (TWIST-OF-BOLT) METHOD. FOR SNUG-TIGHT CONNECTIONS, THE AGENCY NEED ONLY TO VERIFY THE CONNECTED MATERIALS HAVE BEEN DRAWN TOGETHER AND PROPERLY SNUGGED.

B. CONCRETE CONSTRUCTION

- a. PRIOR TO PLACEMENT OF CONCRETE THE AGENCY SHALL VERIFY THE GENERAL ARRANGEMENT OF CONCRETE FORMS AND REINFORCING AS FOLLOWS:
 - FORMWORK - SHAPE, LOCATION, DIMENSIONS, FORM SAVER COUPLERS AND EMBEDDED PLATES
 - REINFORCEMENT (INCLUDING PRESTRESSING TENDONS) - SIZE, QUANTITY, CONDITION AND PLACEMENT.
- b. CONCRETE SHALL BE SAMPLED AT THE POINT OF PLACEMENT FOR EACH 50 YARDS (OR PORTION THEREOF) OF CONCRETE PLACED. THE FOLLOWING TESTS SHALL BE MADE:
 - VERIFY PLANT BATCH TICKET IS IN CONFORMANCE WITH APPROVED MIX DESIGN.
 - SLUMP TESTS SHALL BE IN ACCORDANCE WITH ASTM C143.
 - AIR CONTENT TESTS SHALL BE IN ACCORDANCE WITH ASTM C231.
 - CYLINDER TESTS SHALL BE IN ACCORDANCE WITH ASTM C39. A MINIMUM OF 4 CYLINDERS SHALL BE CAST. BREAKS SHOULD BE MADE 7 DAYS (1), 28 DAYS (2), THE FOURTH CYLINDER SHALL BE HELD FOR 56 DAYS IF INSUFFICIENT RESULTS ARE OBTAINED FROM THE 28 DAY BREAKS, OTHERWISE AN ADDITIONAL 28 DAY BREAK SHALL BE MADE.
- c. THE AGENCY SHALL OBSERVE PLACEMENT OPERATIONS. VERIFY PROPER CONSOLIDATION PROCEDURES AND EQUIPMENT. VERIFY CONFORMANCE TO SPECIFICATIONS INCLUDING COLD AND HOT WEATHER PLACEMENT PROCEDURES.
- d. THE AGENCY SHALL OBSERVE CURING PROCEDURES AND VERIFY CONFORMANCE WITH THE CONTRACT DOCUMENTS.
- f. POST-TENSIONED CONCRETE INSPECTIONS SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
 - VERIFY TENDON MARK, LOCATIONS AND PROFILES WITH APPROVED SHOP DRAWINGS
 - VERIFICATION OF IN-SITU CONCRETE STRENGTH PRIOR TO STRESSING OF TENDONS
 - IDENTIFICATION OF STRESSING EQUIPMENT AND REVIEW CALIBRATION RECORDS
 - APPLICATION AND MONITORING OF PRESTRESSING FORCES (REQUIRED ELONGATION AND GAGE PRESSURE)
 - REMOVAL OF TENDON TAILS, END CAP INSTALLATION AND GROUTING OF ANCHORAGE POCKETS

STRUCTURAL TESTING AND INSPECTION (cont.)

- C. MASONRY CONSTRUCTION
- a. THE AGENCY SHALL BE RESPONSIBLE TO CONDUCT QUALITY ASSURANCE FOR MASONRY CONSTRUCTION IN ACCORDANCE WITH ACI 530.1/ASCE 6/TMS 602. THE INSPECTION SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
 - MASONRY STRENGTH
 - CONSTRUCTION OF MORTAR JOINTS
 - STEEL REINFORCEMENT SIZE, QUANTITY, PLACEMENT AND CONDITION
 - LOCATION OF REQUIRED BOND BEAMS AND SPECIAL SHAPES
 - GROUTING STRENGTH AND PLACEMENT PROCEDURE
 - HOT AND COLD WEATHER PROTECTION
 - ANCHORAGE OF MASONRY TO OTHER CONSTRUCTION MATERIAL
- D. WOOD CONSTRUCTION
- a. OBSERVE THE WOOD FRAMING COMPONENTS AND CONNECTIONS AND VERIFY CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE INSPECTION SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:
 - JOISTS, RAFTERS, HEADERS AND BEAMS
 - WALL ASSEMBLY (STUDS, PLATES, JACK STUDS, KING STUDS, POSTS)
 - FLOOR AND ROOF TRUSSES
 - FLOOR, ROOF AND WALL SHEATHING
 - SHEAR WALL ASSEMBLIES (INCLUDING SHEAR BLOCKING AND DRAG TRUSSES)
 - CONNECTIONS (NAIL/SCREW SIZE AND SPACING, TIEDOWNS, HOLDOWNS, CAPS AND BASES)
- E. SOILS
- a. A GEOTECHNICAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED SHALL BE RETAINED TO PREPARE AND EXECUTE A TESTING AND INSPECTION PROGRAM RELATED TO THE SITE EXCAVATION AND BACKFILLING ACTIVITIES. THE GEOTECHNICAL ENGINEER SHALL CONDUCT AN EVALUATION OF UNDISTURBED SOIL SUBGRADES TO VERIFY ADEQUATE DESIGN BEARING CAPACITY AND MONITOR THE PLACEMENT AND COMPACTION OF STRUCTURAL FILL CONTRIBUTING TO THE SUPPORT OF THE MAT FOUNDATION.
 - b. ALL BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY, AS DETERMINED BY ASTM D1557, METHOD C OR AS REQUIRED BY THE PROJECT GEOTECHNICAL REPORT.
- F. ADHESIVE AND MECHANICAL ANCHORING SYSTEMS
- a. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED UNLESS THE CONTRACTORS PERSONNEL HAS DOCUMENTATION OF TRAINING FROM PREVIOUS PROJECTS. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
 - b. THE INITIAL INSTALLATION FOR ALL INJECTION ADHESIVE ANCHORING PRODUCTS SPECIFIED MUST BE WITNESSED BY THE AGENCY. DOCUMENTATION OF THE ANCHOR DIAMETER, HOLE DIAMETER, EMBEDMENT DEPTH, TYPE OF EPOXY USED, TYPE OF DRILL BIT USED AND CONFIRMATION OF PROPER HOLE CLEANING SHALL BE MADE WITH INSPECTIONS PERFORMED PERIODICALLY.
3. CONTRACTOR SHALL COORDINATE TEST SCHEDULING WITH OWNER AND SER PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.
4. CONTRACTOR SHALL PROVIDE THE SER WITH MINIMUM TWO (2) WORKING DAYS NOTICE PRIOR TO COVERING ANY STRUCTURAL COMPONENTS, SYSTEMS OR FASTENINGS. STRUCTURAL COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO: STRUCTURAL STEEL FRAMING, METAL DECK AND FASTENINGS, CONCRETE REINFORCEMENT, SHEAR WALL ASSEMBLIES AND ASSOCIATED HARDWARE.

SHORING

1. ALL SHORING WORK SHALL BE CARRIED OUT BY A QUALIFIED SHORING CONTRACTOR WITH EXTENSIVE EXPERIENCE IN SIMILAR TYPE SHORING PROJECTS. THE SHORING CONTRACTOR SHALL PROVIDE REFERENCE PROJECTS WITH CONTACT PERSONS UPON REQUEST OF THE OWNER. THE SHORING CONTRACTOR SHALL PROVIDE A CERTIFICATE OF INSURANCE FOR OWNER APPROVAL, AT THE REQUEST OF THE OWNER.
2. THE SHORING CONTRACTOR SHALL SUBMIT A DESIGN DRAWING FOR PROPOSED SHORING, IN ACCORDANCE WITH OSHA AND OTHER APPLICABLE REGULATIONS, THAT IS STAMPED AND SIGNED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. SHORING INSTALLATION SHALL NOT COMMENCE UNTIL THE SHORING DESIGN DRAWING IS REVIEWED BY THE PROJECT STRUCTURAL ENGINEER OF RECORD AND RETURNED WITH A REVIEW INDICATION OF "NO EXCEPTIONS TAKEN".

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STAMP

KEY PLAN

	10/13/16	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION

PROJECT NUMBER: 1108-05

DRAWN BY: BEM

CHECKED BY: BMS

SHEET TITLE

STRUCTURAL NOTES
AND SPECIFICATIONS

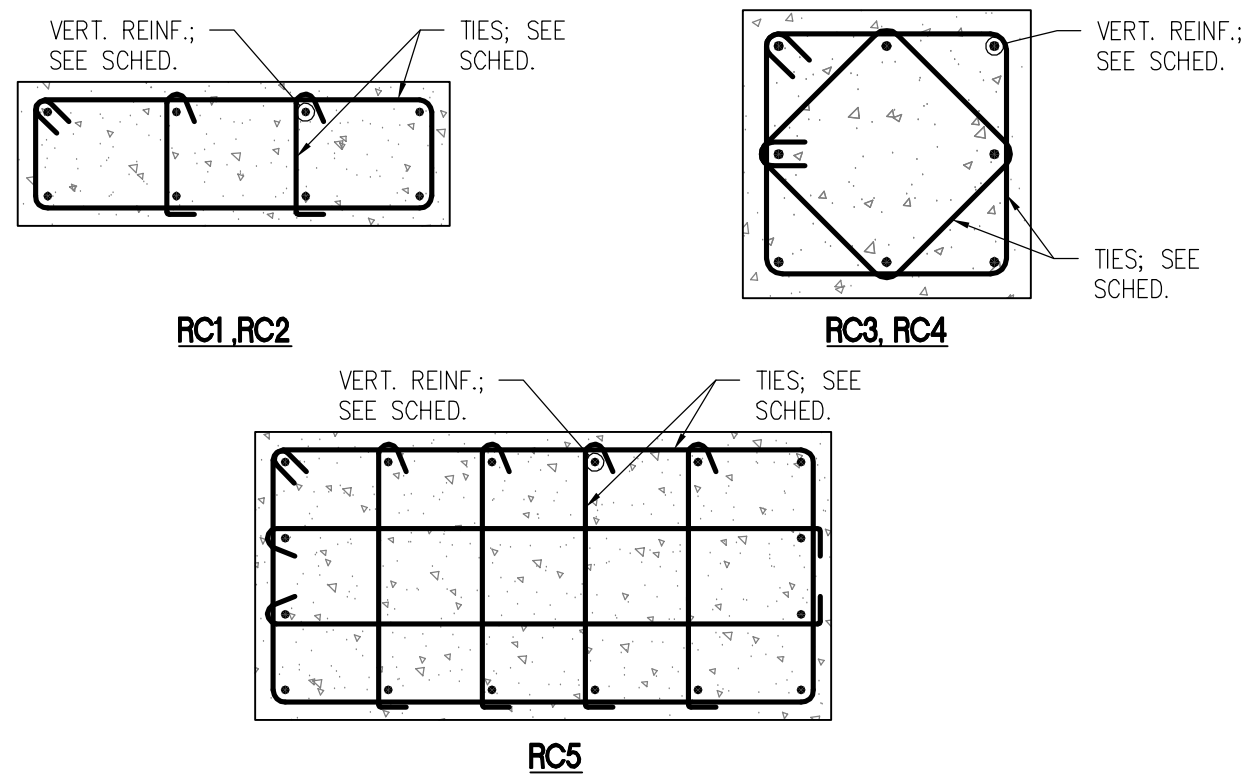
S-002

REINFORCED CONCRETE COLUMN SCHEDULE																											
COLUMN MARK	B 7.8	B 9.3	C 9.3	C.2 1.1	C.2 1.5	C.2 2	D 9.3	D.1.6 9.1	D.2 6	D.2 6.5	D.2 7.5	E 9.3	F.2 7.5	F.2 9.2	F.2 9.6	F.3 4	F.3 4.4	F.3 6	F.3 6.5	F.4 1.8	F.6 0.9	F.7 6.2	F.8 5	F.9 2.6	F.9 4.1	F.9 5	H 1.9
SECOND FLOOR T/SLAB EL. +12'-8"				RC2	RC2	RC2										RC2	RC2	RC2	RC2	RC4	RC4	RC2	RC2	RC2	RC2	RC2	RC4
FIRST FLOOR HIGH SLAB T/SLAB EL. 1'-9"	RC4	RC4	RC4	RC1	RC1	RC1	RC4	RC5	RC1	RC2	RC4	RC4	RC4	RC4	RC4	RC1	RC1	RC2	RC2	RC3	RC3	RC1	RC1	RC1	RC1	RC1	RC3
FIRST FLOOR LOW SLAB T/SLAB EL. 0'-0"				RC1	RC1	RC1	RC4	RC5	RC1	RC2	RC4	RC4	RC4	RC4	RC4	RC1	RC1	RC2	RC2	RC3	RC3	RC1	RC1	RC1	RC1	RC1	RC3
BASEMENT T/SLAB EL. -9'-0"				RC1	RC1	RC1	RC4	RC5	RC1	RC2	RC4	RC4	RC4	RC4	RC4	RC1	RC1	RC2	RC2	RC3	RC3	RC1	RC1	RC1	RC1	RC1	RC3

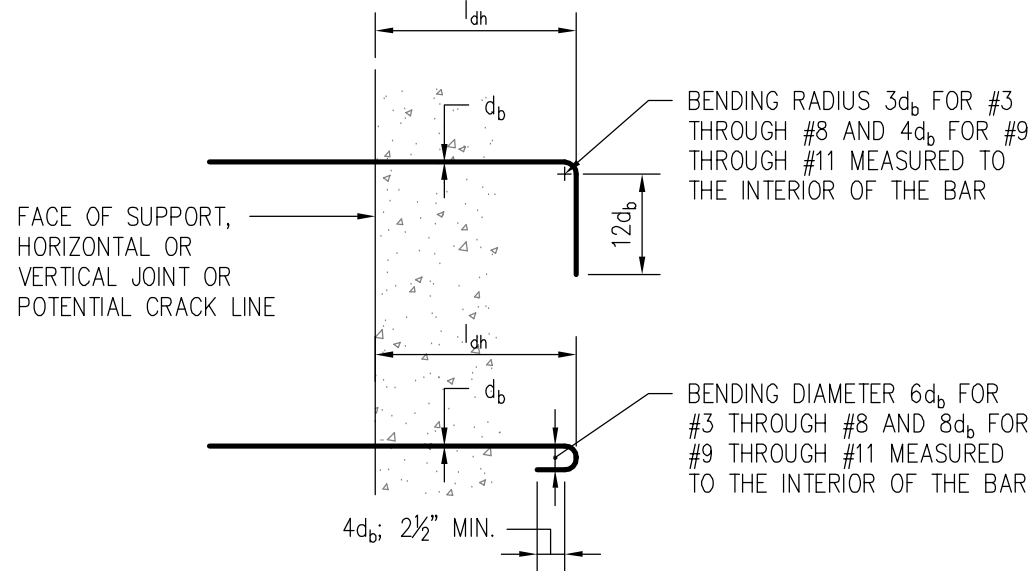
- NOTES:
- RC# INDICATES REINFORCED CONCRETE COLUMN TYPE. REFER TO THE "REINFORCED CONCRETE COLUMN DETAILS SCHEDULE" AND "STUD RAIL SCHEDULE" ON THIS DRAWING FOR ADDITIONAL INFORMATION. REFER TO THE "TYPICAL REINFORCED CONCRETE COLUMN DETAIL" FOR ADDITIONAL DETAILING INFORMATION.

REINFORCED CONCRETE COLUMN DETAILS SCHEDULE					
MARK	SIZE (WIDTH x LENGTH)	REINFORCEMENT		STUD RAIL TYPE	REMARKS
		VERTICAL	TIES		
RC1	1'-0" x 3'-0"	8-#7	#3@12" O.C.	SR1	
RC2	1'-0" x 3'-0"	8-#7	#3@12" O.C.	SR2	
RC3	2'-0" x 2'-0"	8-#8	#3@12" O.C.	SR3	
RC4	2'-0" x 2'-0"	8-#8	#3@12" O.C.	SR4	
RC5	2'-0" x 4'-0"	16-#8	#3@12" O.C.	SR5	

- NOTES:
- REFER TO "STUD RAIL SCHEDULE" FOR STUD RAIL TYPE ADDITIONAL INFO.
 - THE REINFORCED CONCRETE COLUMN CONFIGURATION IS AS FOLLOWS:



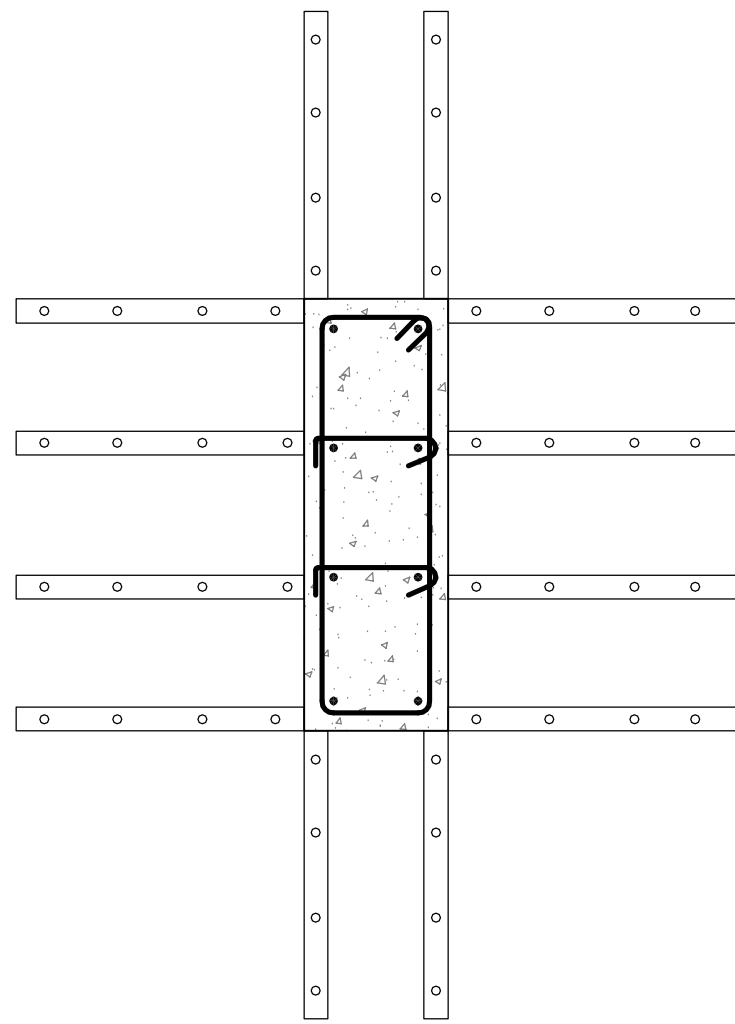
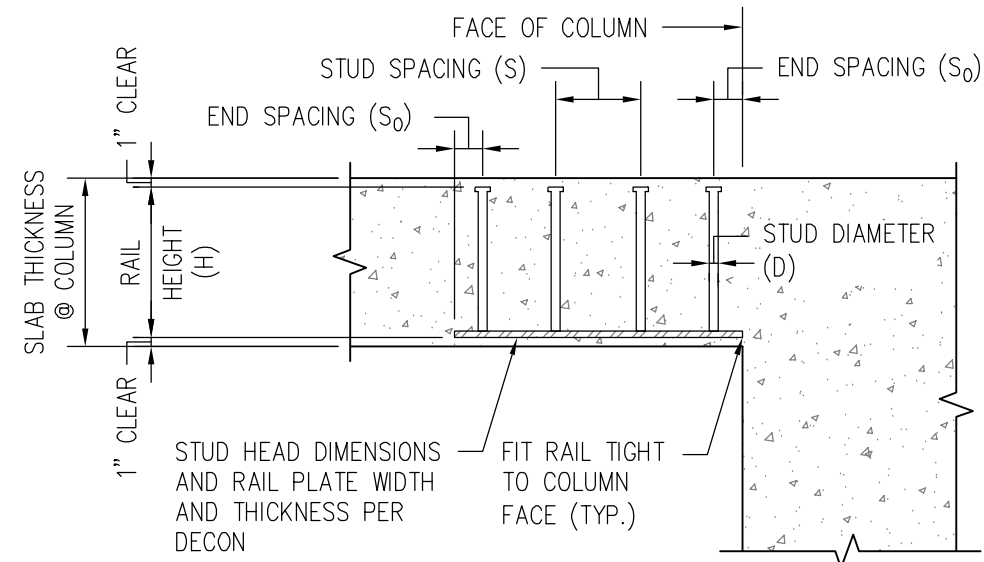
CONCRETE HOOKED REINFORCEMENT TENSION DEVELOPMENT LENGTH SCHEDULE			
BAR SIZE	TENSION DEVELOPMENT LENGTH, (l _d), (in.)		
	f' _c =3ksi	f' _c =4ksi	f' _c =5ksi
#3	9"	8"	7"
#4	11"	10"	9"
#5	14"	12"	11"
#6	17"	15"	13"
#7	20"	17"	15"
#8	22"	19"	17"
#9	25"	22"	20"
#10	28"	24"	22"
#11	31"	27"	24"



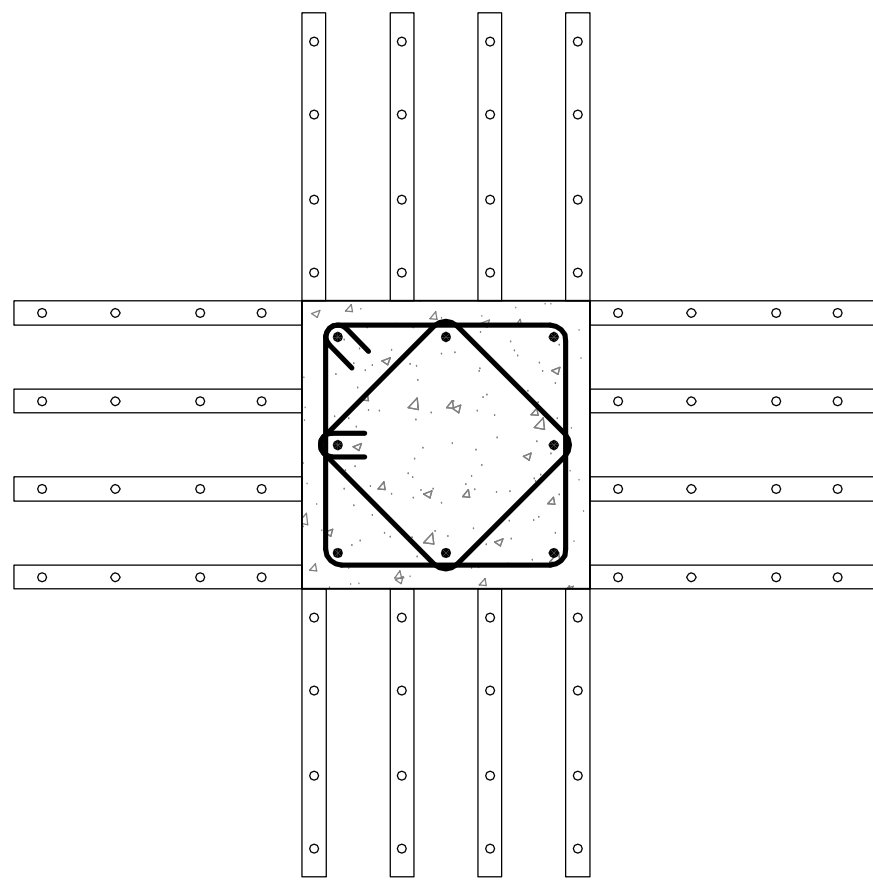
- NOTES:
- TABULATED DEVELOPMENT LENGTHS ARE BASED ON REINFORCING YIELD STRENGTH $F_y = 60\text{ksi}$ AND NORMAL WEIGHT CONCRETE.
 - ALL TABULATED VALUES ARE MINIMUM LENGTHS. IN CASE OF CONFLICT WITH THE PLANS, SECTIONS OR DETAILS, USE THE LONGER LENGTH.
 - ADJUST TABULATED LENGTHS BY THE FOLLOWING FACTORS WHERE APPLICABLE. NOTE THAT THE FACTORS ARE CUMULATIVE:
 - REINFORCING BAR YIELD STRENGTH OTHER THAN 60ksi: $(f_y/60,000)$.
 - LIGHTWEIGHT CONCRETE: 1.3
 - EPOXY-COATED REINFORCEMENT: 1.2

STUD RAIL SCHEDULE							
MARK	CONFIGURATION	NUMBER OF STUDS PER RAIL	STUD DIAMETER (D)	STUD SPACING (S)	END SPACING (S ₀)	RAIL HEIGHT (H)	REMARKS
SR1	A	20	1/2"	3"	3"	8	10" P.T. SLAB
SR2	A	20	1/2"	3"	3"	12	14" P.T. SLAB
SR3	B	20	1/2"	3"	3"	8	10" P.T. SLAB
SR4	B	20	1/2"	3"	3"	12	14" P.T. SLAB
SR5	C	30	1/2"	3"	3"	12	14" P.T. SLAB

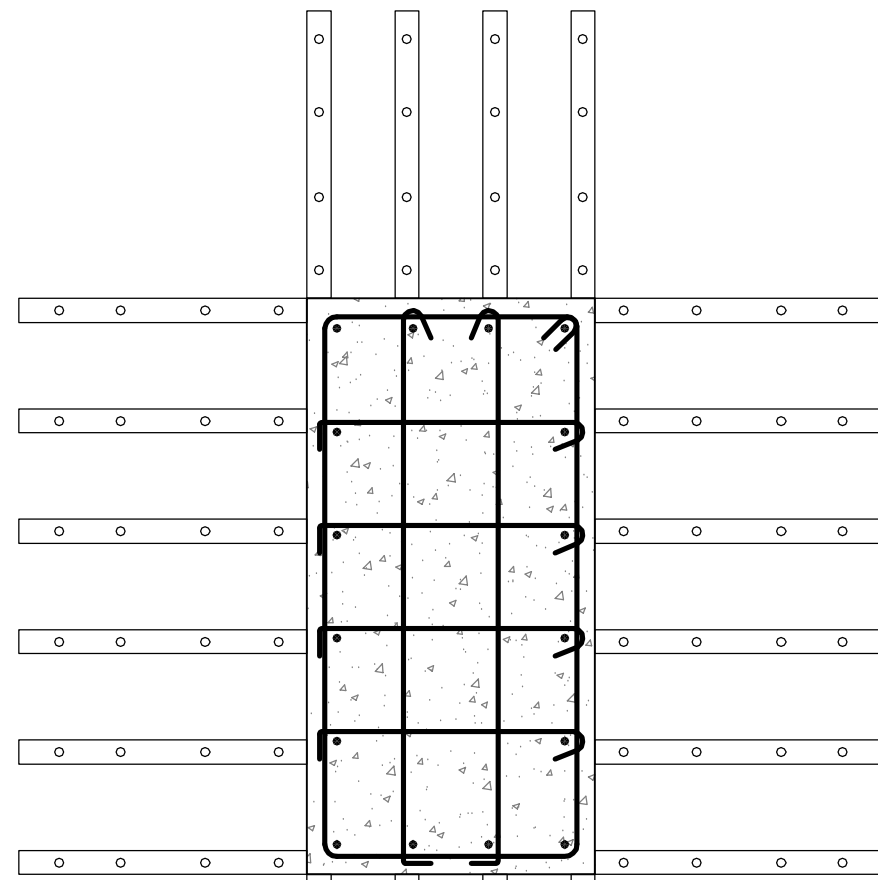
- NOTES:
- REFER TO "REINFORCED CONCRETE COLUMN DETAILS SCHEDULE" FOR LOCATIONS.
 - THE STUD RAIL CONFIGURATION IS AS FOLLOWS:



CONFIGURATION 'A'

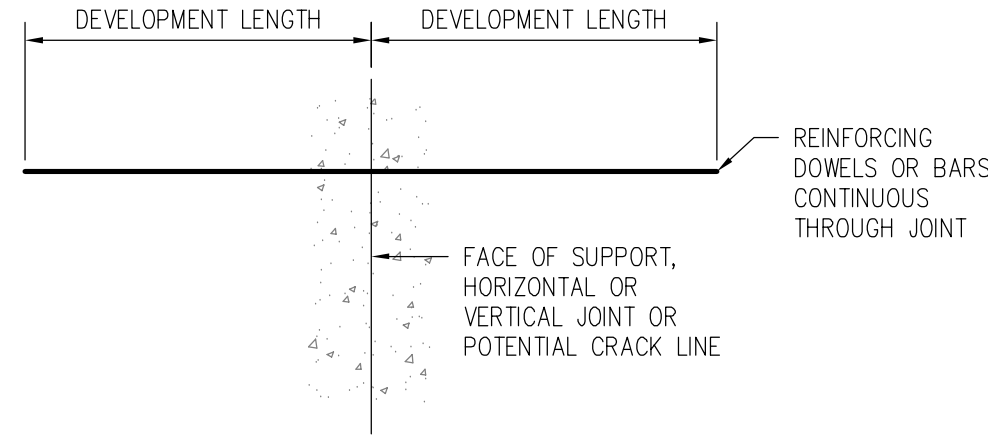


CONFIGURATION 'B'



CONFIGURATION 'C'

CONCRETE STRAIGHT REINFORCEMENT DEVELOPMENT AND SPLICE LENGTH SCHEDULE												
BAR SIZE	DEVELOPMENT LENGTH, (l _d), (in.)						LAP SPLICE LENGTH, (in.)					
	TENSION DEVELOPMENT LENGTH						TENSION LAP LENGTH					
	TOP BARS			OTHER BARS			TOP BARS			OTHER BARS		
	f _c =3ksi	f _c =4ksi	f _c =5ksi	f _c =3ksi	f _c =4ksi	f _c =5ksi	f _c =3ksi	f _c =4ksi	f _c =5ksi	f _c =3ksi	f _c =4ksi	f _c =5ksi
#3	21"	18"	16"	16"	14"	13"	28"	24"	22"	21"	18"	16"
#4	28"	25"	22"	22"	19"	17"	37"	32"	29"	28"	25"	22"
#5	36"	31"	28"	27"	24"	21"	46"	40"	36"	36"	31"	28"
#6	43"	37"	33"	33"	28"	25"	56"	48"	43"	43"	37"	33"
#7	62"	54"	48"	48"	42"	37"	81"	70"	63"	62"	54"	48"
#8	71"	62"	55"	55"	47"	42"	93"	80"	72"	71"	62"	55"
#9	80"	69"	62"	62"	53"	48"	104"	90"	81"	80"	69"	62"
#10	88"	77"	69"	68"	59"	53"	116"	100"	90"	89"	77"	69"
#11	98"	85"	76"	75"	65"	58"	127"	110"	99"	98"	85"	76"

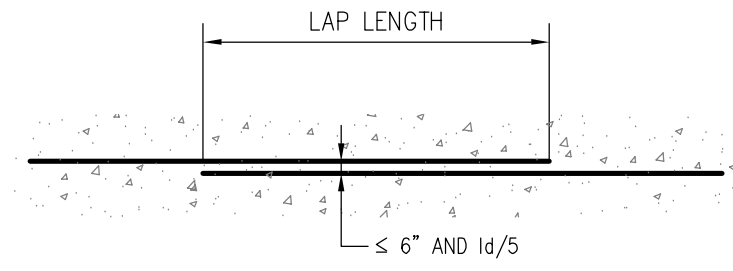


DEVELOPMENT

REFER TO "HOOKED REINFORCEMENT DEVELOPMENT LENGTH SCHEDULE" WHEN STRAIGHT DEVELOPMENT LENGTH TENSION CANNOT BE ACCOMMODATED IN THE CONCRETE SECTION.

NOTES:

- TABULATED DEVELOPMENT AND LAP SPLICE LENGTH ARE BASED ON REINFORCING YIELD STRENGTH $F_y=60\text{ksi}$, NORMAL WEIGHT CONCRETE AND CLASS B LAPS.
- TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12 INCHES OF FRESH CONCRETE CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE.
- WHEN DIFFERENT BAR DIAMETERS ARE SPLICED, USE LARGER BAR LAP SPLICE LENGTH.
- ALL TABULATED VALUES ARE MINIMUM LENGTHS. IN CASE OF CONFLICT WITH THE PLANS, SECTIONS OR DETAILS, USE THE LONGER LENGTH.
- FOR TENSION DEVELOPMENT AND TENSION LAP SPLICE LENGTHS, THE LIGHTWEIGHT CONCRETE FACTOR IS 1.30. THE EPOXY-COATED BAR FACTOR FOR TENSION DEVELOPMENT AND TENSION LAP SPLICE LENGTHS IS 1.2. THIS FACTOR INCREASES TO 1.5 WHEN THE COVER OF THE BARS IS LESS THAN $3d_b$ OR THE CLEAR SPACING IS LESS THAN $6d_b$. TABULATED VALUES FOR DEVELOPMENT AND LAP LENGTHS IN TENSION SHALL BE FACTORED BY 1.5 WHEN THE CLEAR COVER IS LESS THAN d_b AND THE CLEAR SPACING IS LESS THAN d_b (AND THERE ARE STIRRUPS OR TIES ALONG l_d). TABULATED DEVELOPMENT AND LAP LENGTHS IN TENSION FOR BUNDLED BARS SHALL BE FACTORED BY 1.2 FOR 3 BAR BUNDLES AND 1.33 FOR 4 BAR BUNDLES.



LAP SPLICE

LAP SPLICES IN ADJACENT BARS SHALL BE STAGGERED A MINIMUM OF 24" INCHES. WELDED OR MECHANICAL SPLICES IN ADJACENT BARS SHALL BE STAGGERED A MINIMUM OF 30 INCHES.

- WELDED AND/OR MECHANICAL SPLICES MAY BE USED AT THE GENERAL CONTRACTORS OPTION PROVIDED THAT THE SPLICE IS CAPABLE OF DEVELOPING AT LEAST 125 PERCENT OF THE YIELD STRENGTH OF THE LARGER BAR IN TENSION. THE GENERAL CONTRACTOR SHALL USE WELDED AND/OR MECHANICAL SPLICES WHERE LAP SPLICES WOULD CREATE BAR CONGESTION THAT WOULD INTERFERE WITH THE PLACING AND FINISHING OF THE CONCRETE. SPLICES IN "TENSION-TIE" MEMBERS SHALL BE FULL WELDED OR FULL MECHANICAL SPLICES. WHERE WELDED AND/OR MECHANICAL SPLICES ARE TO BE USED, THE GENERAL CONTRACTORSHALL SUBMIT FULL DATA ON THE PROPOSED MATERIALS, PROCEDURES AND INSTALLATION INSTRUCTIONS TO THE ENGINEER FOR REVIEW AS A SHOP DRAWING SUBMISSION.
- ALL STRAIGHT BAR DEVELOPMENTS AND SPLICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318. ALL WELDED SPLICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AWS D1.4.
- d_b = BAR DIAMETER.

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KEY PLAN

MARK	DATE	DESCRIPTION
	10/13/16	ISSUED FOR CONSTRUCTION

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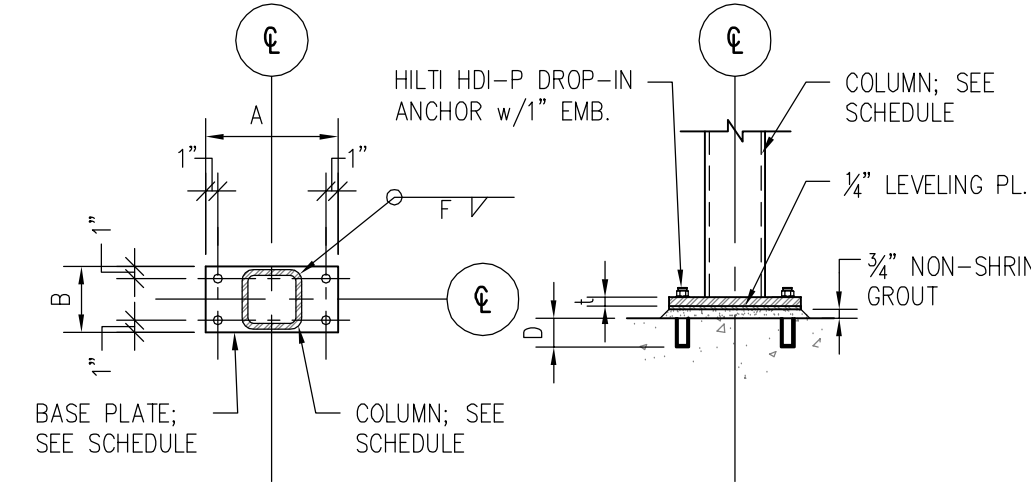
FOUNDATION AND
CONCRETE PODIUM
SCHEDULES

S-003

STEEL COLUMN SCHEDULE									
MARK	COLUMN	BASE PLATE PLATE SIZE			ANCHOR RODS			WELD SIZE	UPLIFT PLATES
		A(in.)	B(in.)	t(in.)	Ø(in.)	D(in.)	Qty.	F(in.)	t(in.) x Ø(in.)
C1	HSS5x5x $\frac{3}{8}$	11	5 $\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	1	4	$\frac{1}{4}$	–
C2	HSS5x5x $\frac{1}{2}$	11	5 $\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	1	4	$\frac{1}{4}$	–

NOTES:

- ANCHOR RODS SHALL BE ASTM F1554 GR. 36, U.N.O.
- BASE PLATE CONFIGURATIONS SHALL BE AS FOLLOWS:



C1 AND C2

HEADER SUPPORT SCHEDULE									
MARK	INTERIOR WALL HEADER								REMARK
	2 ND /3 RD FLOOR		3 RD /4 TH FLOOR		4 TH /5 TH FLOOR		ROOF		
	KING STUD	JACK STUD	KING STUD	JACK STUD	KING STUD	JACK STUD	KING STUD	JACK STUD	
H26	(2)–2x4	2x4	2x4	2x4	2x4	2x4	2x4	2x4	U.N.O. ON PLAN
H28	(2)–2x4	2x4	(2)–2x4	2x4	2x4	2x4	2x4	2x4	U.N.O. ON PLAN
H210	(2)–2x4	(2)–2x4	(2)–2x4	(2)–2x4	2x4	(2)–2x4	2x4	(2)–2x4	U.N.O. ON PLAN
H212	(2)–2x4	(2)–2x4	(2)–2x4	(2)–2x4	2x4	(2)–2x4	2x4	(2)–2x4	U.N.O. ON PLAN
H28L	(3)–2x4	(2)–2x4	(2)–2x4	(2)–2x4	2x4	(2)–2x4	2x4	(2)–2x4	U.N.O. ON PLAN
H29L	(3)–2x4	(3)–2x4	(2)–2x4	(3)–2x4	2x4	(3)–2x4	2x4	(3)–2x4	U.N.O. ON PLAN
H36	2x6	2x6	2x6	2x6	2x6	2x6	2x6	2x6	U.N.O. ON PLAN
H38	(2)–2x6	2x6	(2)–2x6	2x6	2x6	2x6	2x6	2x6	U.N.O. ON PLAN
H310	(2)–2x6	(2)–2x6	2x6	(2)–2x6	2x6	(2)–2x6	2x6	(2)–2x6	U.N.O. ON PLAN
H312	(2)–2x6	(2)–2x6	2x6	(2)–2x6	2x6	(2)–2x6	2x6	(2)–2x6	U.N.O. ON PLAN
H38L	(2)–2x6	(2)–2x6	(2)–2x6	(2)–2x6	2x6	(2)–2x6	2x6	(2)–2x6	U.N.O. ON PLAN
H39L	(3)–2x6	(2)–2x6	(2)–2x6	(2)–2x6	2x6	(2)–2x6	2x6	(2)–2x6	U.N.O. ON PLAN
MARK	EXTERIOR WALL HEADER								REMARK
	2 ND /3 RD FLOOR		3 RD /4 TH FLOOR		4 TH /5 TH FLOOR		ROOF		
	KING STUD	JACK STUD	KING STUD	JACK STUD	KING STUD	JACK STUD	KING STUD	JACK STUD	
H36	(2)–2x6	2x6	(2)–2x6	2x6	2x6	2x6	2x6	2x6	U.N.O. ON PLAN
H38	(3)–2x6	2x6	(3)–2x6	2x6	(2)–2x6	2x6	(2)–2x6	2x6	U.N.O. ON PLAN
H310	(3)–2x6	(2)–2x6	(2)–2x6	(2)–2x6	(2)–2x6	(2)–2x6	(2)–2x6	(2)–2x6	U.N.O. ON PLAN
H312	(3)–2x6	(2)–2x6	(3)–2x6	(2)–2x6	(3)–2x6	(2)–2x6	(3)–2x6	(2)–2x6	U.N.O. ON PLAN
H39L	(3)–2x6	(2)–2x6	(3)–2x6	(2)–2x6	(3)–2x6	(2)–2x6	(3)–2x6	(2)–2x6	U.N.O. ON PLAN

NOTES:

- REFER TO ARCHITECTURAL DRAWINGS FOR ALL NON–STRUCTURAL WALLS.
- ALL KING AND JACK STUDS SHALL BE ALIGNED AND CARRIED THROUGH THE STRUCTURE TO THE PODIUM.

BEAM SUPPORT SCHEDULE					
MARK	2x4 WALL CONSTRUCTION				REMARK
	2 ND /3 RD FLOOR	3 RD /4 TH FLOOR	4 TH /5 TH FLOOR	ROOF	
	POST	POST	POST	POST	
FB28	(4)–2x4	(3)–2x4	(3)–2x4	(2)–2x4	U.N.O. ON PLAN
FB210	(4)–2x4	(4)–2x4	(3)–2x4	(2)–2x4	U.N.O. ON PLAN
FB212	(5)–2x4	(4)–2x4	(3)–2x4	(3)–2x4	U.N.O. ON PLAN
FB28L	(5)–2x4	(4)–2x4	(4)–2x4	(3)–2x4	U.N.O. ON PLAN
FB29L	(6)–2x4	(5)–2x4	(4)–2x4	(3)–2x4	U.N.O. ON PLAN
FB212L	(8)–2x4	(6)–2x4	(4)–2x4	(3)–2x4	U.N.O. ON PLAN
FB518L	(10)–2x4	–	–	–	U.N.O. ON PLAN
MARK	2x6 WALL CONSTRUCTION				REMARK
	2 ND /3 RD FLOOR	3 RD /4 TH FLOOR	4 TH /5 TH FLOOR	ROOF	
	POST	POST	POST	POST	
FB38	(4)–2x6	(3)–2x6	(3)–2x6	(2)–2x6	U.N.O. ON PLAN
FB310	(4)–2x6	(3)–2x6	(3)–2x6	(3)–2x6	U.N.O. ON PLAN
FB312	(4)–2x6	(4)–2x6	(3)–2x6	(3)–2x6	U.N.O. ON PLAN
FB38L	(5)–2x6	(4)–2x6	(3)–2x6	(3)–2x6	U.N.O. ON PLAN
FB39L	(5)–2x6	(4)–2x6	(3)–2x6	(3)–2x6	U.N.O. ON PLAN
FB312L	(6)–2x6	(5)–2x6	(4)–2x6	(3)–2x6	U.N.O. ON PLAN
FB518L	(7)–2x6	–	–	–	U.N.O. ON PLAN

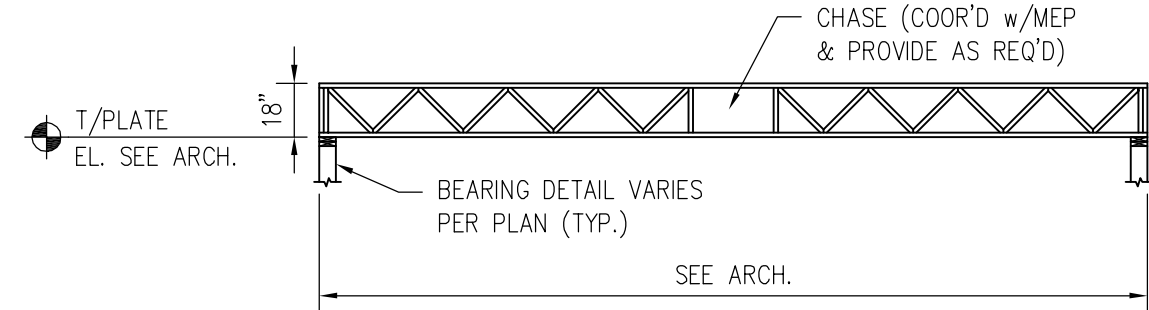
NOTES:

- REFER TO ARCHITECTURAL DRAWINGS FOR ALL NON–STRUCTURAL WALLS.
- ALL POSTS SHALL BE ALIGNED AND CARRIED THROUGH THE STRUCTURE TO THE PODIUM.
- AN EQUIVALENT SOLID POST OR PSL OF THE SAME WIDTH AND DEPTH MAY BE SUBSTITUTED IN LIEU OF THE BUILT UP POST.

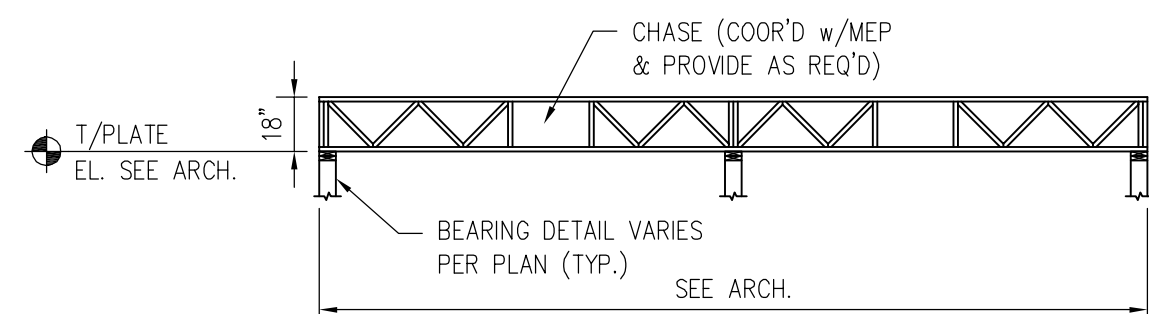
FLOOR TRUSS/GIRDER TRUSS LOADING SCHEDULE		
LOCATION	FLOOR LIVE LOADS	FLOOR DEAD LOADS
TOP CHORD	(SEE NOTE #1)	25 PSF
BOTTOM CHORD	–	5 PSF

NOTES:

- LIVE LOADS GIVEN IN THE "STRUCTURAL NOTES AND SPECIFICATIONS" ARE APPLIED TO THE TOP CHORD OF TRUSSES SHOWN ON THE DRAWINGS.
- FLOOR TRUSS TYPES ARE AS FOLLOWS (WEB CONFIGURATION IS SHOWN FOR GRAPHICAL PURPOSES ONLY):



SINGLE SPAN FLOOR TRUSS/GIRDER TRUSS

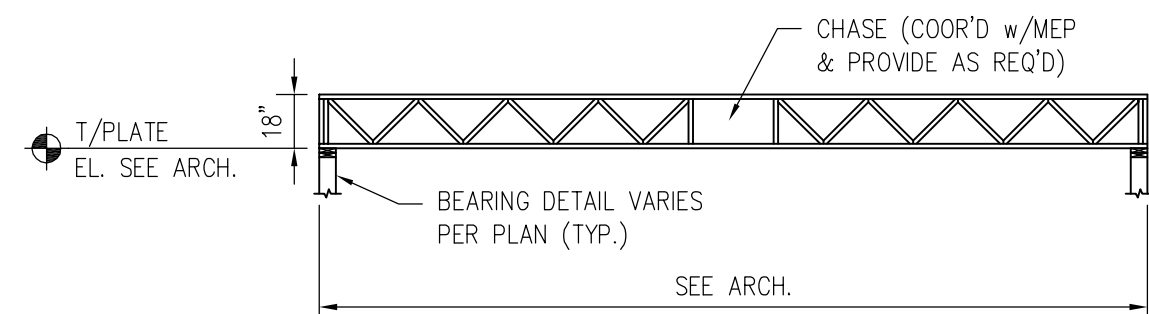


MULTIPLE SPAN FLOOR TRUSS/GIRDER TRUSS

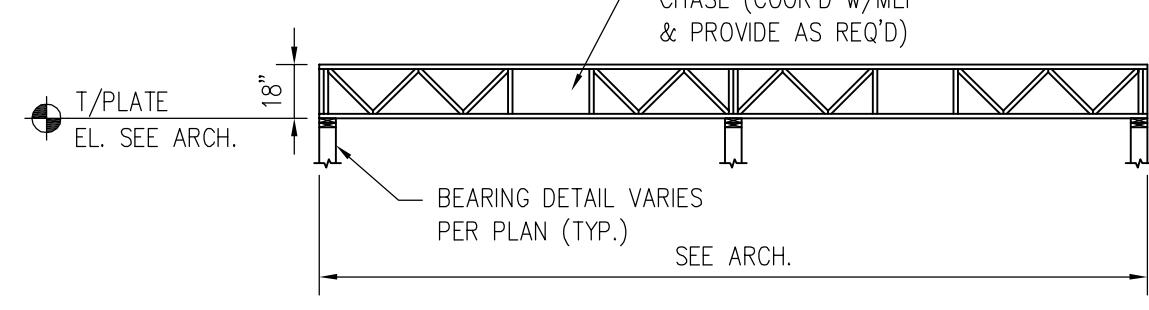
ROOF TRUSS/GIRDER TRUSS LOADING SCHEDULE		
LOCATION	ROOF LIVE LOADS	ROOF DEAD LOADS
TOP CHORD	(SEE NOTE #1)	10 PSF (SEE NOTE #2)
BOTTOM CHORD	–	10 PSF

NOTES:

- SNOW LOADS GIVEN IN THE "STRUCTURAL NOTES AND SPECIFICATIONS" ARE APPLIED TO THE TOP CHORD OF TRUSSES SHOWN ON THE DRAWINGS. REFER TO THE "ROOF WIND AND SNOW LOADING PLAN" FOR LOADS IN ADDITION TO THE WIND AND SNOW LOADS GIVEN IN THE "STRUCTURAL NOTES AND SPECIFICATIONS".
- REFER TO MEP DRAWINGS FOR ADDITIONAL RTU AND ACCU WEIGHTS.
- TRUSSES SHALL BE DESIGNED FOR A WIND UPLIFT AS SHOWN ON THE "WIND UPLIFT SCHEDULE" AND CONNECTION HARDWARE AT THE TRUSS SUPPORTS SHALL BE, AS A MINIMUM, AS INDICATED ON THE "UPLIFT TIEDOWN SCHEDULE". WHERE THE TRUSS DESIGNER REQUIRES AN ALTERNATE CONNECTION TO THOSE SHOWN ON THESE DRAWINGS, IT SHALL BE SO NOTED ON THE TRUSS COMPONENT LAYOUT PLAN OR SHOP DRAWING.
- ROOF DRAG TRUSSES (RDT) SHALL BE CAPABLE OF RESISTING THE ALLOWABLE CAPACITY OF THE SHEAR WALL BELOW PER THE "SHEAR WALL SCHEDULE" MULTIPLIED BY THE WALL LENGTH IN FEET.
- ROOF TRUSS TYPES ARE AS FOLLOWS (WEB CONFIGURATION IS SHOWN FOR GRAPHICAL PURPOSES ONLY):



SINGLE SPAN ROOF TRUSS/GIRDER TRUSS



MULTIPLE SPAN ROOF TRUSS/GIRDER TRUSS

BEAM SCHEDULE			
BEAM IDENTIFICATION			
QUANTITY LOCATION DEPTH TYPE TREATMENT EXAMPLE: DB210P–W INDICATES A DROP BEAM 3$\frac{1}{2}$"x9$\frac{1}{2}$"PSL–WOLMANIZED			
MARK	QUANTITY–SIZE [HANGER]		
26	(2)–2x6[LUS26–2] or (2)–1 $\frac{1}{2}$ "x5 $\frac{1}{2}$ "[HU48]		
36	(3)–2x6[LUS26–3] or (3)–1 $\frac{1}{2}$ "x5 $\frac{1}{2}$ "[HU68]		
28	(2)–2x8[LUS28–2] or (2)–1 $\frac{1}{2}$ "x7 $\frac{1}{4}$ "[HU48]		
38	(3)–2x8[LUS28–3] or (3)–1 $\frac{1}{2}$ "x7 $\frac{1}{4}$ "[HU68]		
29	(2)–1 $\frac{1}{2}$ "x9 $\frac{1}{2}$ "[HU410] or 3 $\frac{1}{2}$ "x9 $\frac{1}{2}$ "[HU410]		
39	(3)–1 $\frac{1}{2}$ "x9 $\frac{1}{2}$ "[HU610] or 5 $\frac{1}{4}$ "x9 $\frac{1}{2}$ "[HU610]		
210	(2)–2x10[LUS210–2] or (2)–1 $\frac{1}{2}$ "x9 $\frac{1}{2}$ "[HU410] or 3 $\frac{1}{2}$ "x9 $\frac{1}{2}$ "[HU410]		
310	(3)–2x10[LUS210–3] or (3)–1 $\frac{1}{2}$ "x9 $\frac{1}{2}$ "[HU610] or 5 $\frac{1}{4}$ "x9 $\frac{1}{2}$ "[HU610]		
211	(2)–1 $\frac{1}{2}$ "x11 $\frac{1}{2}$ "[HU412] or 3 $\frac{1}{2}$ "x11 $\frac{1}{2}$ "[HU412]		
311	(3)–1 $\frac{1}{2}$ "x11 $\frac{1}{2}$ "[HU612] or 5 $\frac{1}{4}$ "x11 $\frac{1}{2}$ "[HU612]		
212	(2)–2x12[LUS210–2] or (2)–1 $\frac{1}{2}$ "x11 $\frac{1}{2}$ "[HU412] or 3 $\frac{1}{2}$ "x11 $\frac{1}{2}$ "[HU412]		
312	(3)–2x12[LUS210–3] or (3)–1 $\frac{1}{2}$ "x11 $\frac{1}{2}$ "[HU612] or 5 $\frac{1}{4}$ "x11 $\frac{1}{2}$ "[HU612]		
214	(2)–2x14[LUS214–2] or (2)–1 $\frac{1}{2}$ "x14"[HU416] or 3 $\frac{1}{2}$ "x14"[HU416]		
314	(3)–2x14[U210–3] or (3)–1 $\frac{1}{2}$ "x14"[HU616] or 5 $\frac{1}{4}$ "x14"[HU616]		
216	(2)–1 $\frac{1}{2}$ "x16"[HU416] or 3 $\frac{1}{2}$ "x16"[HU416]		
316	(3)–1 $\frac{1}{2}$ "x16"[HU616] or 5 $\frac{1}{4}$ "x16"[HU616]		
218	(2)–1 $\frac{1}{2}$ "x18"[HU416] or 3 $\frac{1}{2}$ "x18"[HU416]		
318	(3)–1 $\frac{1}{2}$ "x18"[HU616] or 5 $\frac{1}{4}$ "x18"[HU616]		
MARK	LOCATION	MARK	TYPE
H	HEADER	L	LAMINATED VENEER LUMBER (LVL)
DB	DROP BEAM	LS	LAMINATED STRAND LUMBER (LSL)
FB	FLUSH BEAM	P	PARALLEL STRAND LUMBER (PSL)
HB	HIP BEAM	MARK	TREATMENT
RB	RIDGE BEAM	PT	PRESSURE TREATED
VB	VALLEY BEAM	W	WOLMANIZED

NOTES:

- ALL BEAM ARE SAWN LUMBER, S–P–F #2 OR BETTER, U.N.O.
- ALL BEAMS NOT BEARING DIRECTLY ON A SUPPORT SHALL REQUIRE A HANGER AS INDICATED IN THE SCHEDULE, U.N.O.
- HANGERS ARE MANUFACTURED FROM SIMPSON STRONG–TIE CO.

POST SCHEDULE			
MARK	SIZE	POST CAP	POST BASE
P224	(2)–2x4	–	–
P324	(3)–2x4	–	–
P424	(4)–2x4	–	–
P524	(5)–2x4	–	–
P624	(6)–2x4	–	–
P724	(7)–2x4	–	–
P824	(8)–2x4	–	–
P924	(9)–2x4	–	–
P1024	(10)–2x4	–	–
P226	(2)–2x6	–	–
P326	(3)–2x6	–	–
P426	(4)–2x6	–	–
P526	(5)–2x6	–	–
P626	(6)–2x6	–	–
P726	(7)–2x6	–	–
P826	(8)–2x6	–	–
P926	(9)–2x6	–	–
P1026	(10)–2x6	–	–
P44	4x4	CCQ	CBSQ44–SDS2
P46	4x6	CCQ	CBSQ46–SDS2
P66	6x6	CCQ	CBSQ66–SDS2
P68	6x8	CCQ	CBSQ68–SDS2
P88	8x8	CCQ	CBSQ88–SDS2
P33P	3 $\frac{1}{2}$ "x3 $\frac{1}{2}$ " PSL	CCQ	CB44
P35P	3 $\frac{1}{2}$ "x5 $\frac{1}{4}$ " PSL	CCQ	CB46
P37P	3 $\frac{1}{2}$ "x7" PSL	CCQ	CB7 $\frac{1}{2}$ –4
P55P	5 $\frac{1}{4}$ "x5 $\frac{1}{4}$ " PSL	CCQ	CB66
P57P	5 $\frac{1}{4}$ "x7" PSL	CCQ	CB7 $\frac{1}{2}$ –6
P77P	7x7 PSL	CCQ	CB7 $\frac{1}{2}$ –7

NOTES:

- "–PT" ADDED TO THE POST MARK INDICATES A PRESSURE TREATED POST.
- "–W" ADDED TO THE POST MARK INDICATES A WOLMANIZED POST.
- [C/B] ADDED TO THE POST MARK INDICATES A POST CAP/BASE IS REQUIRED.
- CAPS/BASES ARE MANUFACTURED FROM SIMPSON STRONG–TIE CO.
- CCQ CAPS SHALL BE SIZED APPROPRIATELY FOR THE BEAM(S) SIZE AND ORIENTATION THAT THE POST IS SUPPORTING. PROVIDE AN ECCQ POST CAP AT END CONDITIONS AND ROTATE STRAPS AS REQUIRED.

WIND UPLIFT SCHEDULE				
A=7'-0"		TRIBUTARY AREA	BASIC WIND SPEED, V = 105 MPH	
ZONE			GROSS PRESSURE (PSF)	
			POSITIVE	NEGATIVE
ROOF 0' TO 7'	1	10 ft ²	13.0	-31.9
	1	50 ft ²	11.1	-30.1
	1	100 ft ²	10.3	-29.2
	2	10 ft ²	13.0	-53.6
	2	50 ft ²	11.1	-40.4
	2	100 ft ²	10.3	-34.7
	3	10 ft ²	13.0	-80.7
	3	50 ft ²	11.1	-48.5
	3	100 ft ²	10.3	-34.7
ROOF OVERHANG	1	10 ft ²	-	-46.0
	1	50 ft ²	-	-44.1
	1	100 ft ²	-	-43.3
	3	10 ft ²	-	-75.8
	3	50 ft ²	-	-38.0
	3	100 ft ²	-	-21.7

NOTES:

- NET UPLIFT LOADS MAY BE REDUCED BY 0.6 x DEAD LOAD OF THE ROOF.

UPLIFT TIEDOWN SCHEDULE		
TRUSS TYPE	LOCATION	TIEDOWN
RT (SINGLE SPAN)	END SUPPORT	H2.5A
RT (MULTIPLE SPAN)	END SUPPORT	H2.5A
	INTERIOR SUPPORT	(2)–H2.5A

NOTES:

- TIEDOWNS ARE MANUFACTURED FROM SIMPSON STRONG–TIE CO.
- UPLIFT TIEDOWNS IN THIS SCHEDULE ARE A MINIMUM. TRUSS MANUFACTURER SHALL PROVIDE TIEDOWNS WITH TRUSS DRAWINGS.

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249 Third St., Cambridge, MA

ARCHITECT

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ARCHITECTURE
101 SUMMER ST. BOSTON MA 02110

SHEAR WALL SCHEDULE																		
MARK	SHEATHING TYPE	FACES SHEATHED	FASTENER TYPE	FASTENER EDGE NAILING (E.N.)	FASTENER FIELD NAILING (F.N.)	BLOCK MEMBERS AT PANEL EDGES	RIM JOIST/BLOCKING/DRAГ TRUSS TO TOP PLATE				TOP PLATE SPUICE TYPE	SILL PLATE ATTACHMENT			SOLE PLATE ATTACHMENT		ALLOWABLE CAPACITY	
							NAILS	A35 CLIP	LTP4 CLIP	HGA10 CLIP		EXTERIOR SHEAR WALL A.B.	INTERIOR SHEAR WALL A.B.	PLATE WASHERS	NAILS TO RIM JST OR BLK	SEISMIC LOADING	WIND LOADING	
A	7/16" WSP	ONE	8d COMMON	6" O.C.	6" O.C.	2x	16d @ 6" O.C.	20" O.C.	23" O.C.	32" O.C.	A	AB-1 @ 48" O.C.	AB-2 @ 36" O.C.	0.229"x3"x3"	16d @ 6" O.C.	220 PLF	308 PLF	
B	7/16" WSP	ONE	8d COMMON	4" O.C.	6" O.C.	2x	16d @ 4" O.C.	12" O.C.	16" O.C.	22" O.C.	A	AB-1 @ 36" O.C.	AB-2 @ 24" O.C.	0.229"x3"x3"	16d @ 4" O.C.	320 PLF	448 PLF	
C	7/16" WSP	ONE	8d COMMON	3" O.C.	6" O.C.	2x	16d @ 3" O.C.	10" O.C.	12" O.C.	17" O.C.	A	AB-1 @ 28" O.C.	AB-2 @ 18" O.C.	0.229"x3"x3"	16d @ 4" O.C.	410 PLF	579 PLF	
D	7/16" WSP	ONE	8d COMMON	2" O.C.	6" O.C.	3x OR 4x (SEE NOTE #1)	16d @ 2" O.C.	8" O.C.	9" O.C.	13" O.C.	A	AB-1 @ 21" O.C.	AB-2 @ 15" O.C.	0.229"x3"x3"	16d @ 3" O.C.	535 PLF	754 PLF	
E	19/32" WSP	ONE	8d COMMON	2" O.C.	6" O.C.	3x OR 4x (SEE NOTE #1)	—	7" O.C.	8" O.C.	12" O.C.	A	AB-1 @ 19" O.C.	AB-2 @ 13" O.C.	0.229"x3"x3"	(2)-16d @ 4" O.C.	588 PLF	823 PLF	
F	19/32" WSP	ONE	10d COMMON	2" O.C.	6" O.C.	3x OR 4x (SEE NOTE #1)	—	6" O.C.	7" O.C.	10" O.C.	A	AB-1 @ 16" O.C.	AB-2 @ 11" O.C.	0.229"x3"x3"	(2)-16d @ 4" O.C.	708 PLF	991 PLF	
G	19/32" WSP	ONE	10d COMMON	2" O.C.	6" O.C.	3x OR 4x (SEE NOTE #1)	—	5" O.C.	6" O.C.	9" O.C.	A	AB-1 @ 14" O.C.	AB-2 @ 10" O.C.	0.229"x3"x3"	(2)-16d @ 4" O.C.	800 PLF	1120 PLF	

NOTES:

- BUILT-UP 2x MEMBERS MAY BE USED IN PLACE OF SOLID 3x OR 4x MEMBERS AT ALL PANEL EDGES PROVIDED THAT THE BUILT-UP MEMBER IS FASTENED TOGETHER WITH 10d NAILS IN ACCORDANCE WITH THE SOLE PLATE NAILING REQUIREMENT FOR THE LISTED SHEARWALL MARK. THIS APPLIES TO ALL HORIZONTAL BLOCKS AND VERTICAL STUDS AT PANEL EDGES.
- REFER TO "TYPICAL DETAILS" FOR THE "TYPICAL SHEAR WALL LAYOUT DETAIL" AND "TYPICAL DOUBLE TOP PLATE SPUCE DETAIL".
- SHEAR WALL POSTS AT EACH END OF THE SHEAR WALL, AT A MINIMUM, SHALL BE A (2)-2x POST AND AN ADDITIONAL 2x FOR EACH SUPPORTING FLOOR, U.N.O.
- REFER TO "ANCHOR BOLT SCHEDULE" FOR ADDITIONAL INFORMATION.

BEARING WALL SCHEDULE						
MARK	1 ST /2 ND FLOOR	2 ND /3 RD FLOOR	3 RD /4 TH FLOOR	4 TH /5 TH FLOOR	LOCATION	REMARK
BW-1	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	EXTERIOR WALL	TYPICAL @ EXTERIOR WALLS U.N.O.
BW-2	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	EXTERIOR WALL	TYPICAL @ EXTERIOR WALL WITH BRICK U.N.O.
BW-3	(2)-2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	EXTERIOR WALL	TYPICAL @ EXTERIOR WALLS WITH FLOOR FRAMING PERPENDICULAR U.N.O.
BW-4	(2)-2x6 @ 16" O.C.	(2)-2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	EXTERIOR WALL	TYPICAL @ EXTERIOR WALLS WITH FLOOR FRAMING PERPENDICULAR AND BRICK U.N.O.
BW-5	(2)-2x6 @ 24" O.C.	(2)-2x6 @ 24" O.C.	2x6 @ 24" O.C.	2x6 @ 24" O.C.	CORRIDOR WALL	TYPICAL @ CORRIDOR WALLS U.N.O.
BW-6	(3)-2x6 @ 24" O.C.	(2)-2x6 @ 24" O.C.	(2)-2x6 @ 24" O.C.	2x6 @ 24" O.C.	CORRIDOR WALL	TYPICAL @ CORRIDOR WALLS WITH FLOOR FRAMING PERPENDICULAR U.N.O.
BW-7	(2)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	2x4 @ 24" O.C.	2x4 @ 24" O.C.	TENANT WALL	TYPICAL @ TENANT DEMISING WALLS U.N.O.
BW-8	(3)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	TENANT WALL	TYPICAL @ TENANT DEMISING WALLS WITH ROOF FRAMING PERPENDICULAR U.N.O.
BW-9	(4)-2x4 @ 24" O.C.	(3)-2x4 @ 24" O.C.	(3)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	TENANT WALL	TYPICAL @ TENANT DEMISING WALLS WITH ROOF AND FLOOR FRAMING PERPENDICULAR U.N.O.
BW-10	(3)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	2x4 @ 24" O.C.	INTERIOR WALL	TYPICAL @ INTERIOR BEARING WALLS U.N.O.
BW-11	(2)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	2x4 @ 24" O.C.	2x4 @ 24" O.C.	STAIR WALL	TYPICAL @ UNIT SIDE OF STAIR SEPARATION WALLS U.N.O.
BW-12	(3)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	2x4 @ 24" O.C.	STAIR WALL	TYPICAL @ CORRIDOR SIDE OF STAIR SEPARATION WALLS U.N.O.
BW-13	(2)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	2x4 @ 24" O.C.	2x4 @ 24" O.C.	ELEVATOR WALL	TYPICAL @ UNIT SIDE OF ELEVATOR SEPARATION WALLS U.N.O.
BW-14	(3)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	(2)-2x4 @ 24" O.C.	2x4 @ 24" O.C.	ELEVATOR WALL	TYPICAL @ CORRIDOR SIDE OF ELEVATOR SEPARATION WALLS U.N.O.
BW-15	1 1/2"x7 1/4" LSL @ 12" O.C.	1 1/2"x7 1/4" LSL @ 12" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	EXTERIOR TALL WALL	TYPICAL @ 2-STORY TALL WALLS U.N.O.

NOTES:

- REFER TO ARCHITECTURAL DRAWINGS FOR ALL NON-STRUCTURAL WALLS.
- FLOOR FRAMING SHALL ALIGN WITH THE STUD LAYOUT. WHERE THE STUD LAYOUT DOES NOT MATCH THE FLOOR FRAMING LAYOUT, CRIPPLE STUDS ARE REQUIRED WITHIN THE FLOOR CAVITY.
- PROVIDE MID-HEIGHT BLOCKING IN ALL STRUCTURAL WALLS THAT ARE NOT SHEATHED WITH WOOD STRUCTURAL PANELS. PROVIDE BLOCKING @ 8'-0" O.C. MAXIMUM WITHIN TIMBERSTRAND LSL WALLS
- FOR SILL PLATE ANCHORAGE REFER TO THE "ANCHOR BOLT SCHEDULE".
- REFER TO "TYPICAL STAIR FRAMING DETAIL" FOR STAIR FRAMING INFORMATION.

HOLDOWN SCHEDULE																
MARK	1 ST /2 ND FLOOR							2 ND /3 RD FLOOR			3 RD /4 TH FLOOR			4 TH /5 TH FLOOR		
	HOLDOWN TYPE	TENSION CAPACITY (SPF)	TENSION CAPACITY (PSL)	ELEVATED SLAB ANCHORAGE		POST		HOLDOWN TYPE	POST		HOLDOWN TYPE	POST		HOLDOWN TYPE	POST	
				ANCHOR Ø	ANCHOR TYPE	2x4 WALL	2x6 WALL		2x4 WALL	2x6 WALL		2x4 WALL	2x6 WALL		2x4 WALL	2x6 WALL
HD-1	—	—	—	—	—	(8)-2x4	(5)-2x6	—	(6)-2x4	(4)-2x6	—	(4)-2x4	(3)-2x6	—	(3)-2x4	(2)-2x6
HD-2	HDU2	2.2k	3.0k	5/8"Ø A.R.	AB-3	(8)-2x4	(5)-2x6	CS16	(6)-2x4	(4)-2x6	CS16	(4)-2x4	(3)-2x6	CS16	(3)-2x4	(2)-2x6
HD-3	HDU4	3.2K	4.5k	5/8"Ø A.R.	AB-3	(8)-2x4	(5)-2x6	CS16	(6)-2x4	(4)-2x6	CS16	(4)-2x4	(3)-2x6	CS16	(3)-2x4	(2)-2x6
HD-4	HDU5	4.0k	5.6k	5/8"Ø A.R.	AB-3	(8)-2x4	(5)-2x6	(2) CS16	(6)-2x4	(4)-2x6	CS16	(4)-2x4	(3)-2x6	CS16	(3)-2x4	(2)-2x6
HD-5	HDU8	5.6k	7.8k	7/8"Ø A.R.	AB-4	(8)-2x4	(5)-2x6	(2) CS16	(6)-2x4	(4)-2x6	CS16	(4)-2x4	(3)-2x6	CS16	(3)-2x4	(2)-2x6
HD-6	HDU11	8.0k	11.1k	1"Ø A.R.	AB-4	3½"x7" PSL + (2)-2x4	5¼"x7" PSL	(2) CS16	(6)-2x4	(4)-2x6	(2) CS16	(4)-2x4	(3)-2x6	CS16	(3)-2x4	(2)-2x6
HD-7	HDU14	10.4k	14.4k	1"Ø A.R.	AB-4	3½"x7" PSL + (2)-2x4	5¼"x7" PSL	HDU8	3½"x7" PSL	5/8"x5¼" PSL	(2) CS16	(4)-2x4	(3)-2x6	(2) CS16	(3)-2x4	(2)-2x6
HD-8	HD19	15.2k	19.0k	1¼"Ø A.R.	AB-4	3½"x7" PSL + (2)-2x4	5¼"x7" PSL	HDU11	3½"x7" PSL	5/8"x5¼" PSL	HDU8	(4)-2x4	(3)-2x6	(2) CS16	(3)-2x4	(2)-2x6

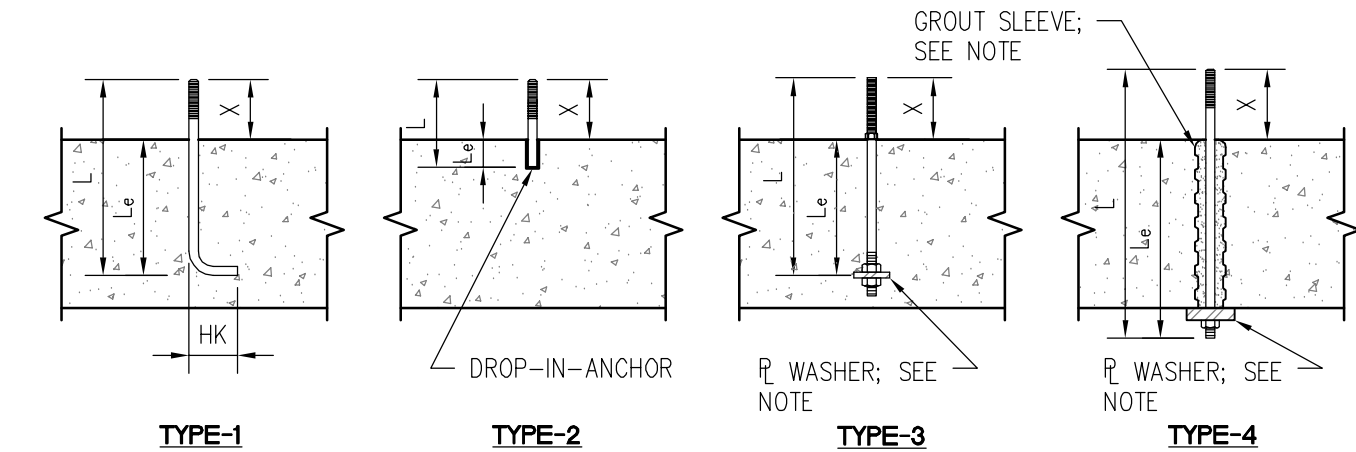
NOTES:

- HOLDOWNS ARE MANUFACTURED FROM SIMPSON STRONG-TIE CO.
- "A.R." IN SCHEDULE INDICATES ASTM F1554 GR.36 THREADED ANCHOR RODS.
- HOLDOWN ANCHOR RODS DIAMETER AND TYPE SHALL BE AS PERMITTED IN THE "HOLDOWN SCHEDULE". REFER TO "ANCHOR BOLT SCHEDULE" FOR ADDITIONAL INFORMATION.
- TENSION CAPACITY LOADS ARE ALLOWABLE LOADS INCREASED FOR EARTHQUAKE AND WIND LOAD DURATIONS.

ANCHOR BOLT SCHEDULE								
MARK	DIAMETER	ASTM GRADE	TYPE	EMBEDMENT LENGTH (L)	THREADED PROJECTION (X)	EFFECTIVE LENGTH (L)	HOOK LENGTH (HK)	FINISH
AB-1	5/8"	F1554 GR.36	1	8"	3"	11"	2"	GALV.
AB-2	1/2"	SEE MFR	2	1"	3"	4"	—	GALV.
AB-3	NOTE #3	F1554 GR.36	3	11"	SEE MFR	NOTE #3	—	GALV.
AB-4	NOTE #4	F1554 GR.36	4	NOTE #4	SEE MFR	NOTE #4	—	GALV.

NOTES:

- AB-1 SHALL BE SUPPLIED WITH NUTS AND STANDARD WASHERS AND ARE INTENDED FOR EXTERIOR WALLS SUPPORTED ON THE SLAB PERIMETER. ANCHOR BOLTS WITHIN SHEAR WALLS SHALL HAVE 0.229"x3"x3" STEEL PLATE WASHERS AS PER SHEAR WALL SCHEDULE. ALL MATERIALS SHALL BE GALVANIZED. AB-2 ANCHORS MAY BE SUBSTITUTED FOR AB-1 ANCHORS, WHERE NECESSARY, USING A 3/8" MINIMUM EDGE DISTANCE AND HALF THE SPACING AS SHOWN IN THE "SHEAR WALL SCHEDULE". 8" CONCRETE SLABS SHALL HAVE AN L_e = 6".
- AB-2 SHALL BE A HILTI HDI-P (DROP-IN-ANCHOR) AND IS INTENDED FOR INTERIOR WALLS SUPPORTED ON ELEVATED POST TENSIONED SLABS. ANCHOR BOLTS WITHIN SHEAR WALLS SHALL HAVE 0.229"x3"x3" STEEL PLATE WASHERS AS PER SHEAR WALL SCHEDULE. ALL MATERIALS SHALL BE GALVANIZED.
- AB-3 SHALL BE INSTALLED INTO THE POST TENSIONED SLAB WITH 1/2"x3"Ø UPLIFT PLATES LOCATED AT THE EMBEDMENT LENGTH AS SHOWN IN THE SCHEDULE AND A DIAMETER AS PERMITTED IN THE "HOLDOWN SCHEDULE". ALL TYPE-3 ANCHOR BOLTS ARE TO BE TIED INTO PLACE WITH A RIGID TEMPLATE PRIOR TO POURING CONCRETE.
- AB-4 SHALL HAVE A DIAMETER AS PERMITTED IN THE "HOLDOWN SCHEDULE". ANCHOR BOLTS SHALL BE THRU BOLTED TO THE POST TENSIONED SLAB WITH 3/4"x4"x4" STEEL PLATE WASHERS. PROVIDE A 2"Ø CORRUGATED GROUT SLEEVE WHERE REQUIRED.
- REFER TO "TYPICAL SILL PLATE ANCHORAGE DETAIL" FOR ADDITIONAL INFORMATION.
- ANCHOR BOLT TYPES ARE AS FOLLOWS:



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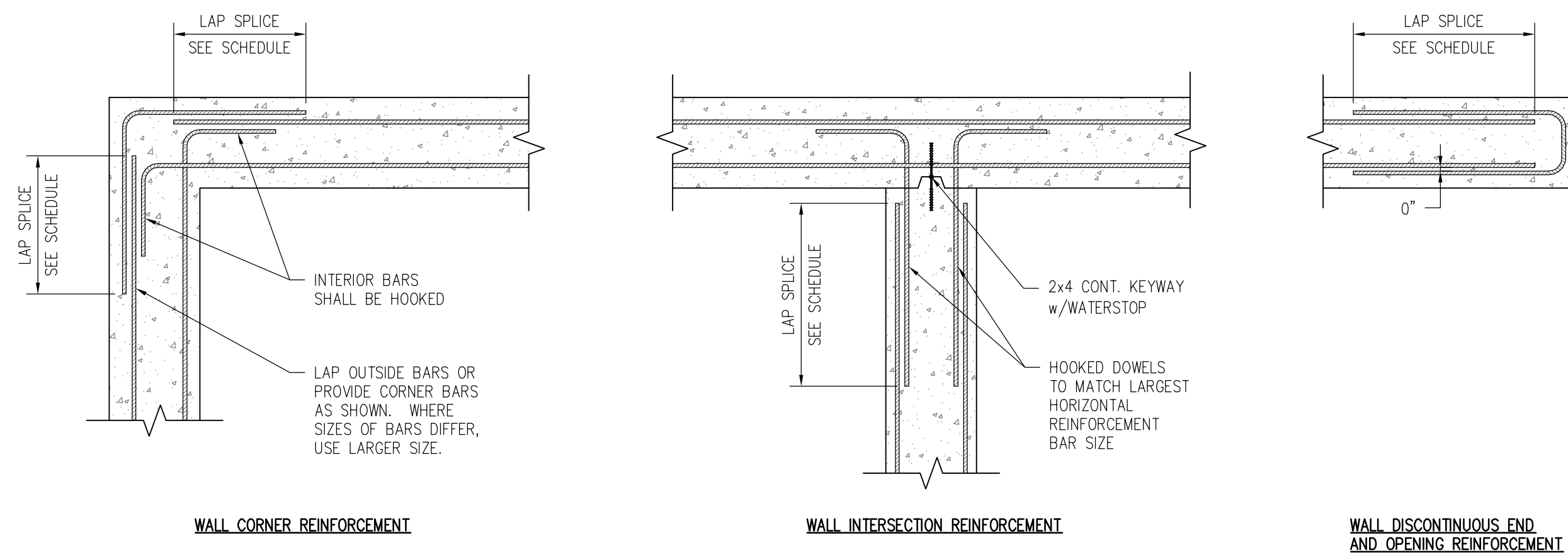
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DRAWN BY: BEM		
CHECKED BY: BMS		

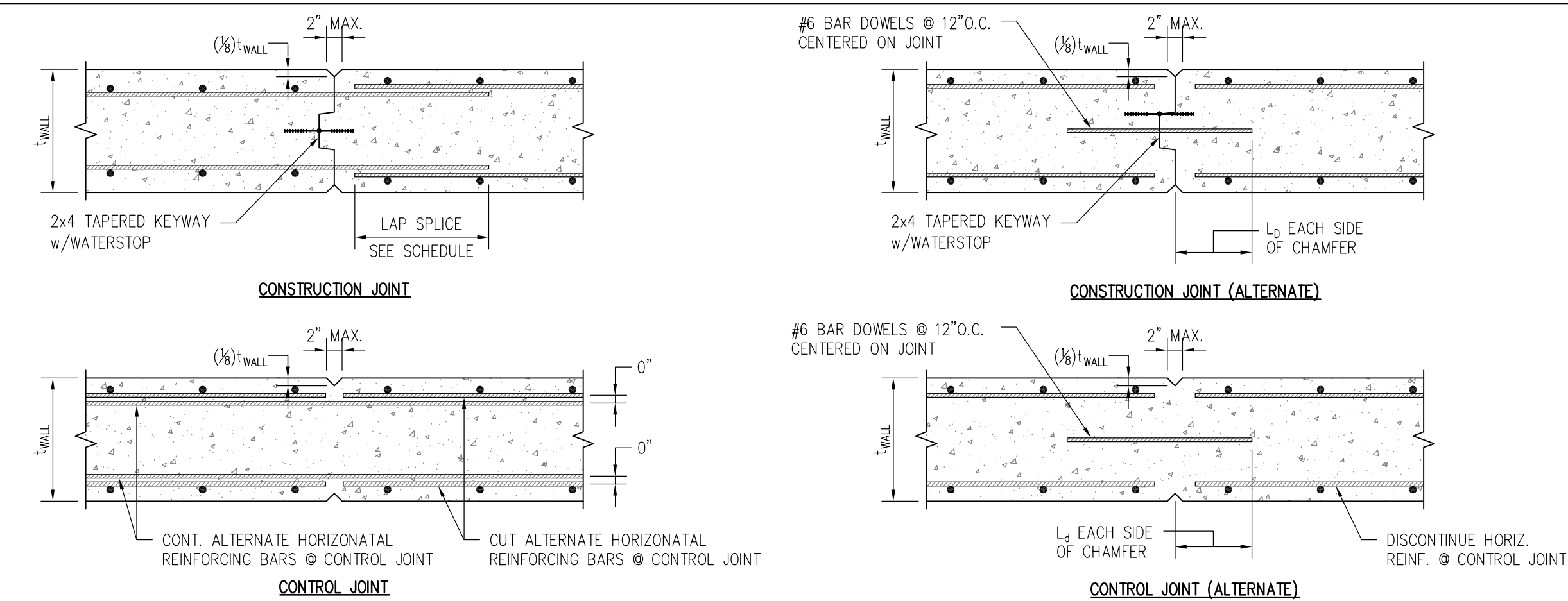
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STUD LAYOUT AND
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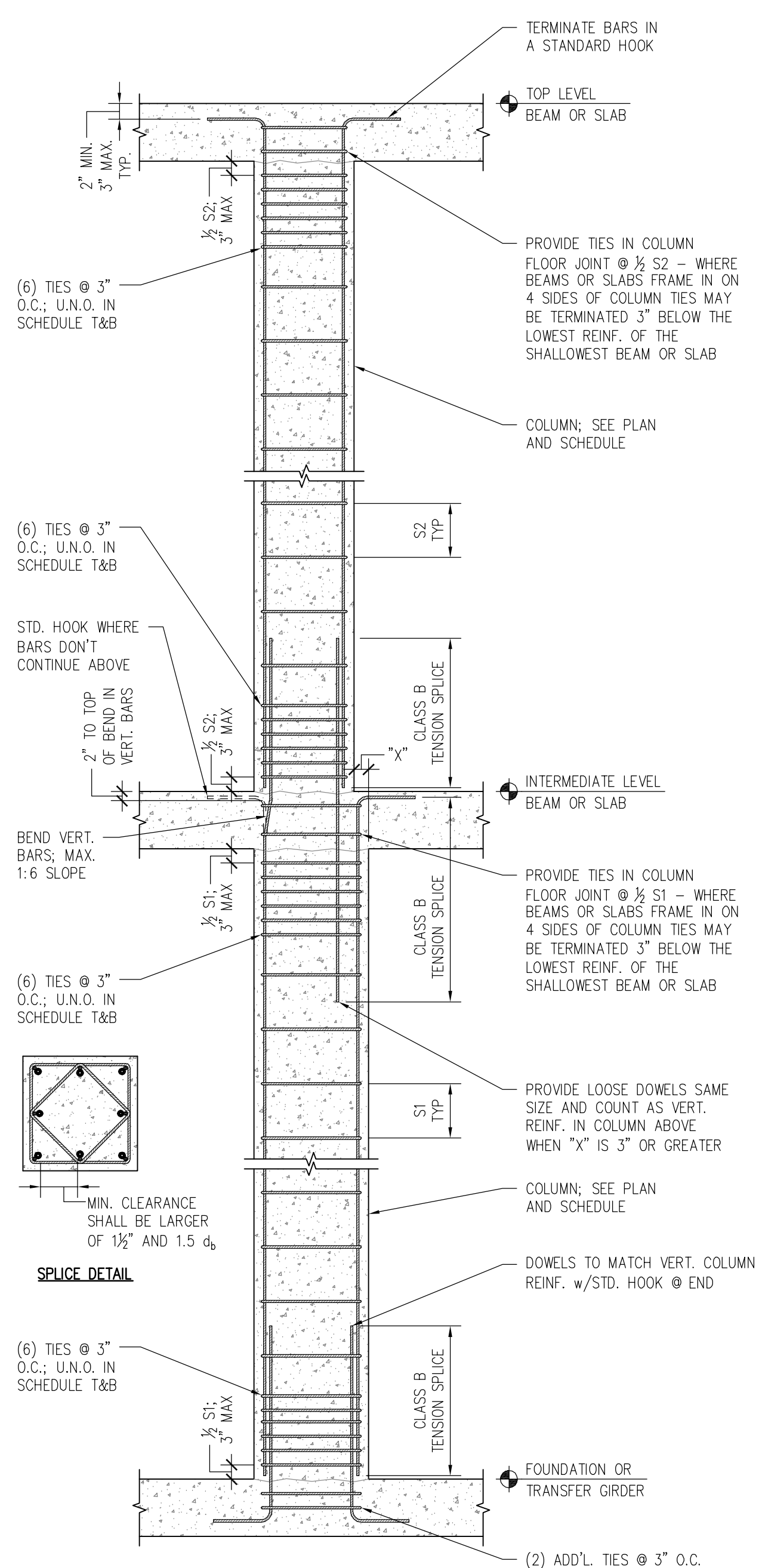
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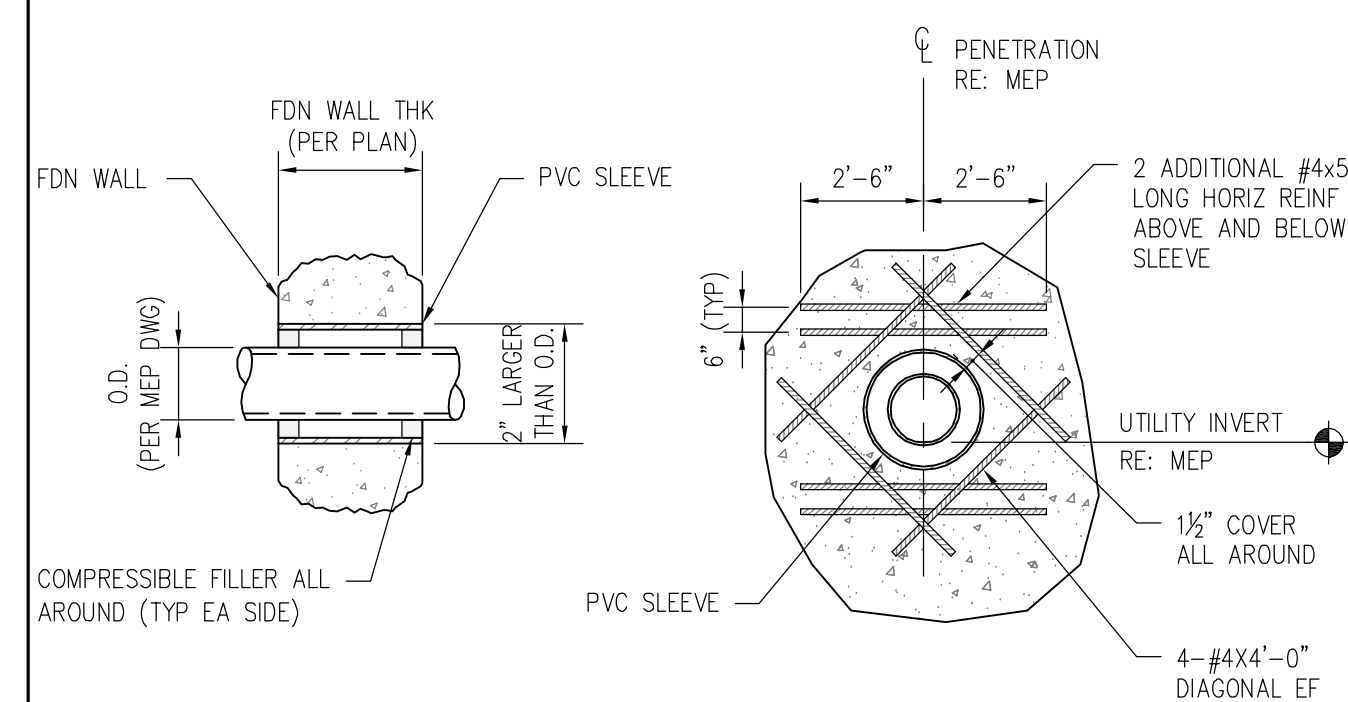
- NOTES:**
1. COORDINATE WITH SECTIONS AND DETAILS
 2. SIZE AND SPACING OF BARS TO MATCH HORIZONTAL WALL REINFORCING



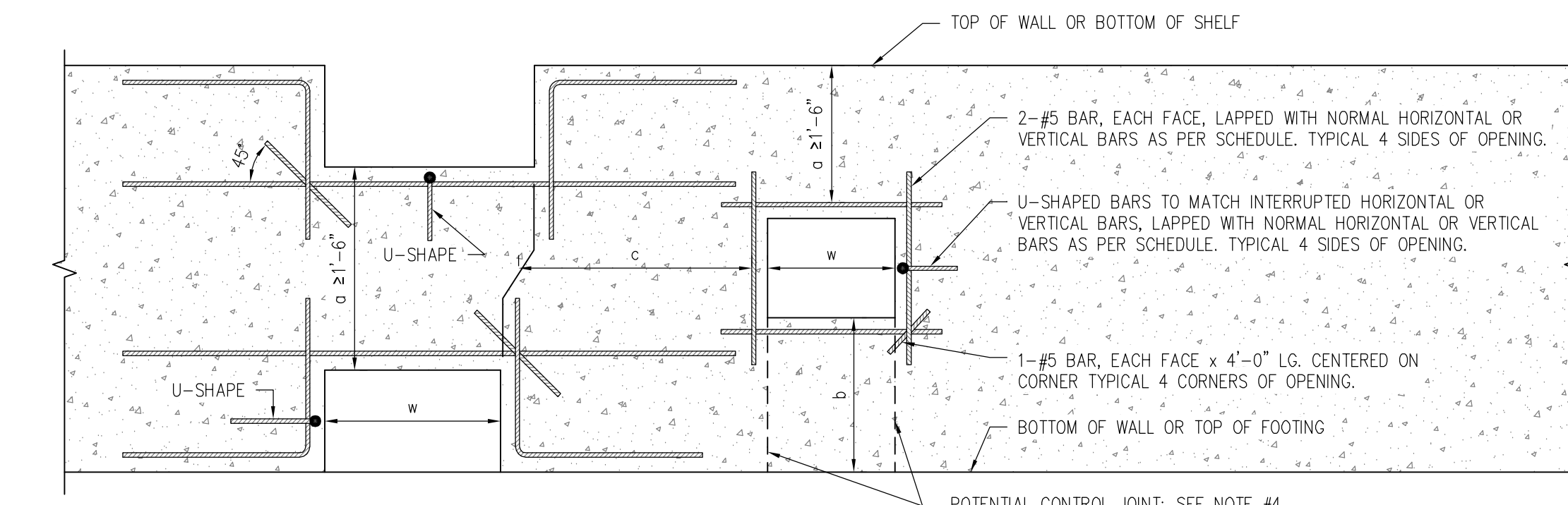
- | NOTES: | NOTES: |
|--|--|
| 1. LAP SPLICE WALL REINFORCING AT CONSTRUCTION JOINT. | 1. STOP HORIZONTAL WALL REINFORCING AT JOINT. |
| 2. STOP ALTERNATE HORIZONTAL WALL REINFORCING AT CONTROL JOINT. | 2. PROVIDE CONTROL JOINTS AT 15' x t_{WALL} MAXIMUM OFF ALL CORNERS AND AT 30' x t_{WALL} MAXIMUM INTERMITTENT. REDUCE THE CONTRACTION JOINT SPACING IN WALLS WITH FREQUENT OPENINGS TO 12' x t_{WALL} MAXIMUM OFF ALL CORNERS AND AT 24' x t_{WALL} MAXIMUM INTERMITTENT. ALIGN JOINTS WITH BRICK MASONRY WALL CONTROL JOINTS WHERE APPLICABLE. |
| 3. PROVIDE CONTROL JOINTS AT 15' x t_{WALL} MAXIMUM OFF ALL CORNERS AND AT 30' x t_{WALL} MAXIMUM INTERMITTENT. REDUCE THE CONTRACTION JOINT SPACING IN WALLS WITH FREQUENT OPENINGS TO 12' x t_{WALL} MAXIMUM OFF ALL CORNERS AND AT 24' x t_{WALL} MAXIMUM INTERMITTENT. ALIGN JOINTS WITH BRICK MASONRY WALL CONTROL JOINTS WHERE APPLICABLE. | 3. PROVIDE CONSTRUCTION JOINTS AT 60' x t_{WALL} MAXIMUM AND REDUCE TO 48' x t_{WALL} MAXIMUM WHERE THE WALLS HAVE FREQUENT OPENINGS. |
| 4. PROVIDE CONSTRUCTION JOINTS AT 60' x t_{WALL} MAXIMUM AND REDUCE TO 48' x t_{WALL} MAXIMUM WHERE THE WALLS HAVE FREQUENT OPENINGS. | |



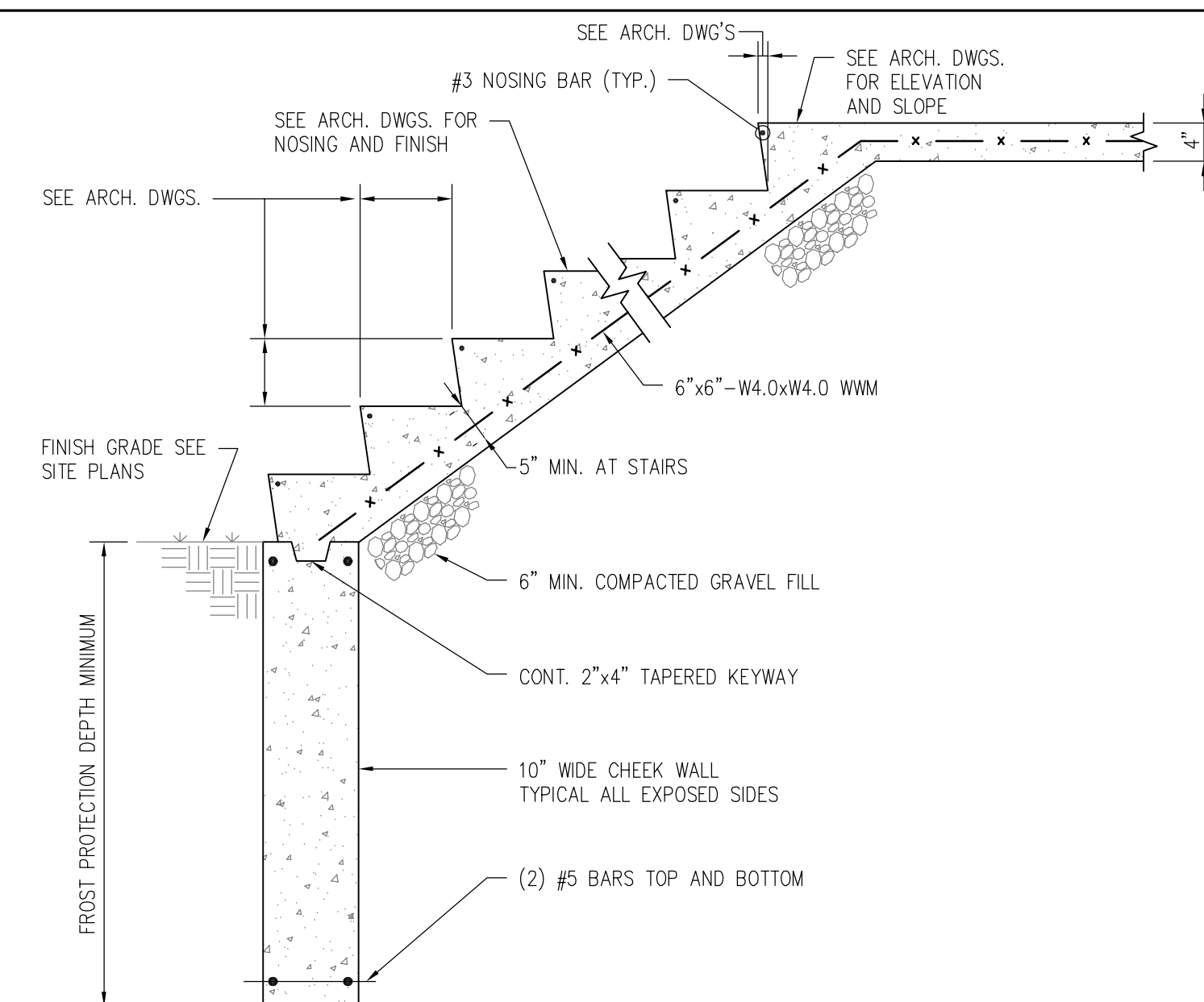
- NOTES:**
1. LOCATION SHALL OCCUR AT MID-SPAN OF THE SLAB. ANY OTHER LOCATIONS ARE SUBJECT TO PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
 2. CONTRACTOR TO SUBMIT LOCATIONS OF ALL CONSTRUCTION JOINTS PRIOR TO ISSUE OF REBAR SHOP DRAWINGS.



- NOTES:**
1. SLEEVE SHOWN SHALL BE USED FOR UTILITY PENETRATIONS ENTIRELY BELOW GRADE ON THE INTERIOR AND EXTERIOR OF FOUNDATION. A LINK-SEAL OR MECHANICAL GASKET SET TYPE SLEEVE AND ANCHOR RING ON PIPE SLEEVE SHALL BE USED FOR ALL PENETRATIONS ABOVE ANY SLAB.
 2. NO SLEEVES LARGER THAN 12" DIAMETER SHALL BE USED WITHOUT APPROVAL OF STRUCTURAL ENGINEER PRIOR TO PLACEMENT.
 3. SLEEVES LESS THAN 4" DIAMETER DO NOT REQUIRE ADDITIONAL REINFORCEMENT SHOWN.



- NOTES:**
1. NORMAL HORIZONTAL AND VERTICAL REINFORCING NOT SHOWN FOR CLARITY.
 2. OPENINGS ARE SHOWN SQUARE AND RECTANGULAR. CIRCULAR OPENINGS REQUIRE THE SAME DETAILS AND REINFORCING.
 3. WHEN DIMENSION "a" $\leq 0.5w$, REPLACE U-SHAPED BARS WITH CLOSED STIRRUPS. SPACE CLOSED TIRRRUPS TO MATCH VERTICAL WALL REINFORCING BUT NOT GREATER THAN $a/2$.
 4. WHERE DIMENSION "b" IS SMALL AND PLACING/FINISHING OF CONCRETE BELOW OPENING IS DIFFICULT, THE GENERAL CONTRACTOR MAY ELEG TO ADD VERTICAL CONSTRUCTION JOINTS ALIGNING WITH THE EDGES OF THE OPENINGS PROVIDED THAT ALL REINFORCING IS CONTINUOUS THROUGH THE JOINTS AND A 1-1/2 INCH BY 3-1/2 INCH TAPERED KEYWAY IS FORMED IN THE JOINTS.
 5. WHEN DIMENSION "c" IS LESS THAN 6'-0", THE ENGINEER MAY REQUIRE SPECIAL REINFORCING AROUND THE OPENINGS. SUBMIT THESE OPENINGS TO THE ENGINEER FOR REVIEW.
 6. REFER TO ALL THE CONTRACT DRAWINGS TO DETERMINE THE SIZES AND LOCATIONS OF ALL OPENINGS REQUIRED THROUGH CONCRETE WALLS.



- G** *TYPICAL EXTERIOR STAIR DETAIL*
SCALE: 3/4" = 1'-0"

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KEY PLAN

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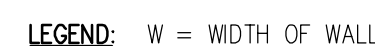
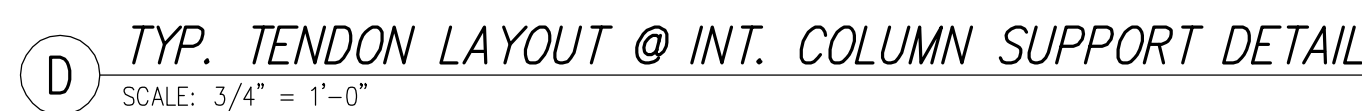
TYPICAL DETAILS

S-006



1. CONDUITS SHALL NOT BE LARGER IN OUTSIDE DIAMETER THAN $\frac{1}{3}$ THE OVERALL THICKNESS OF THE SLAB IN WHICH THEY ARE EMBEDDED.
2. CONDUITS SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS OR WIDTHS ON CENTER.
3. CONDUITS SHALL BE PLACED BETWEEN TOP AND BOTTOM SLAB REINFORCEMENT AND SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE MID-DEPTH OF THE SLAB.
4. MINIMUM CONCRETE COVER FOR CONDUITS SHALL BE THE SAME AS THAT OF THE SLAB MAIN REINFORCEMENT.
5. REINFORCEMENT WITH AN AREA NOT LESS THAN 0.002 TIMES THE AREA OF THE CONCRETE SECTION SHALL BE PROVIDED NORMAL TO CONDUITS.
6. CONDUITS SHALL BE SO FABRICATED AND INSTALLED SUCH THAT CUTTING, BENDING, OR DISPLACEMENT OF REINFORCEMENT FROM ITS PROPER LOCATION WILL NOT BE REQUIRED.
7. CONDUITS AND PIPES OF ALUMINUM SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE.
8. ALL CONDUITS, PIPES, SLEEVES, EMBEDS, ETC. SHALL BE SHOWN ON A SHOP DRAWING AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL.

(B) *TYPICAL CONDUITS EMBEDDED IN SLAB DETAIL*
SCALE: 1" = 1'-0"



(F) TYP. ADDITIONAL REINF. @ INTERIOR WALL DETAIL
SCALE: N.T.S.



1. PENETRATIONS WITH DIMENSIONS GREATER THAN 12" REQUIRE TRIM BARS.

(G) *TYP. REINF. @ ANCHORAGE ZONE PENETRATIONS DETAIL*
SCALE: 3/4" = 1'-0"



SECTION AT BOND BEAM

- NOTES:

1. SIZE OF CORNER BARS TO MATCH BOND BEAM REINFORCING.
2. NORMAL JOINT AND BOND BEAM REINFORCING NOT SHOWN FOR CLARITY.
3. VERTICAL REINFORCING TO EXTEND CONTINUOUSLY THROUGH BOND BEAMS. LAP VERTICALS 48 DIAMETERS ABOVE BOND BEAMS.

(H) *TYPICAL MASONRY INTERSECTION REINFORCING DETAIL*
SCALE: 3/4" = 1'-0"

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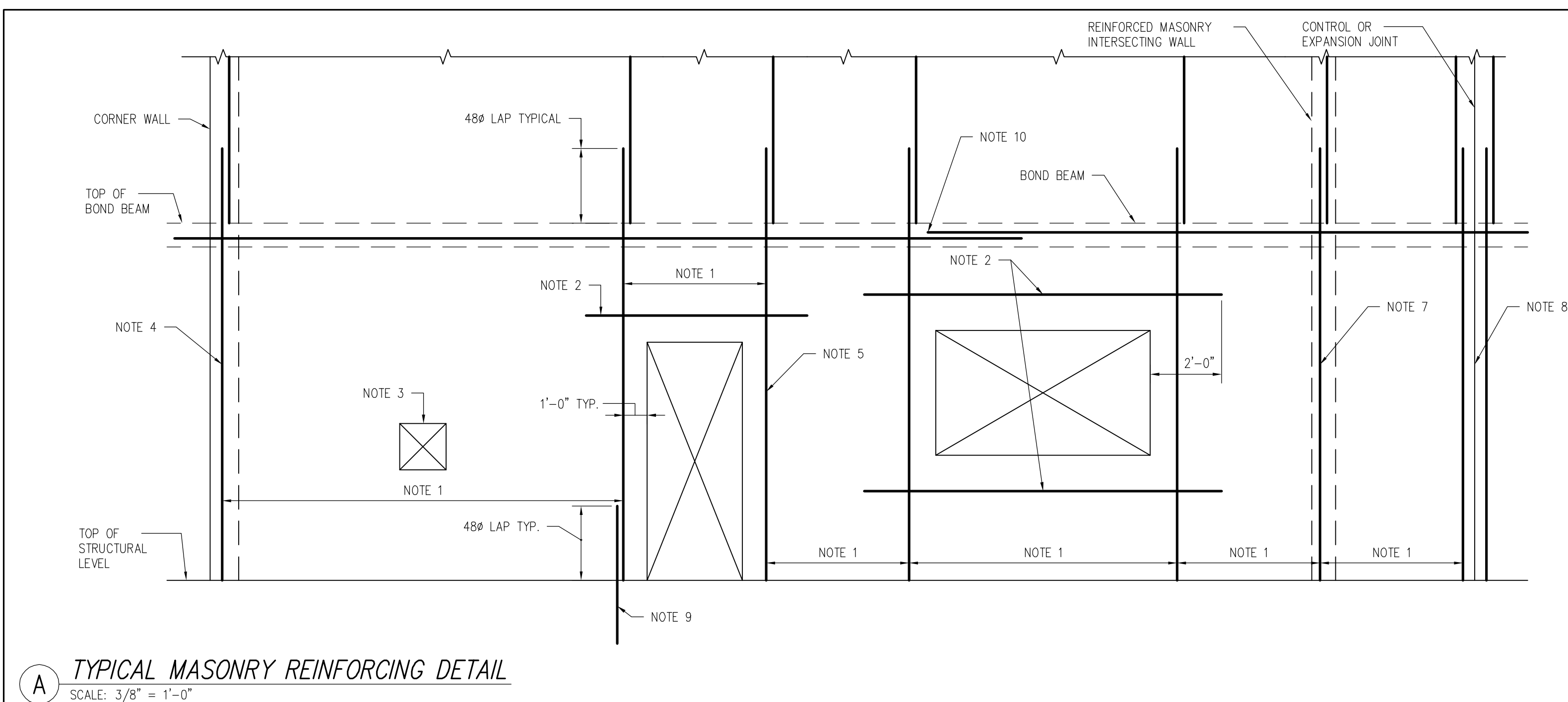
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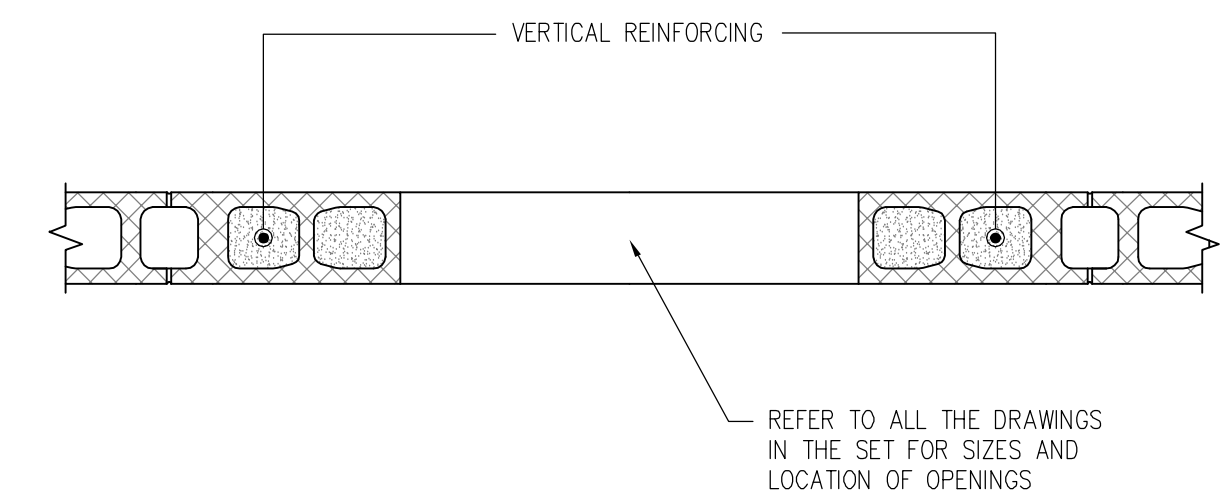
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TYPICAL DETAILS

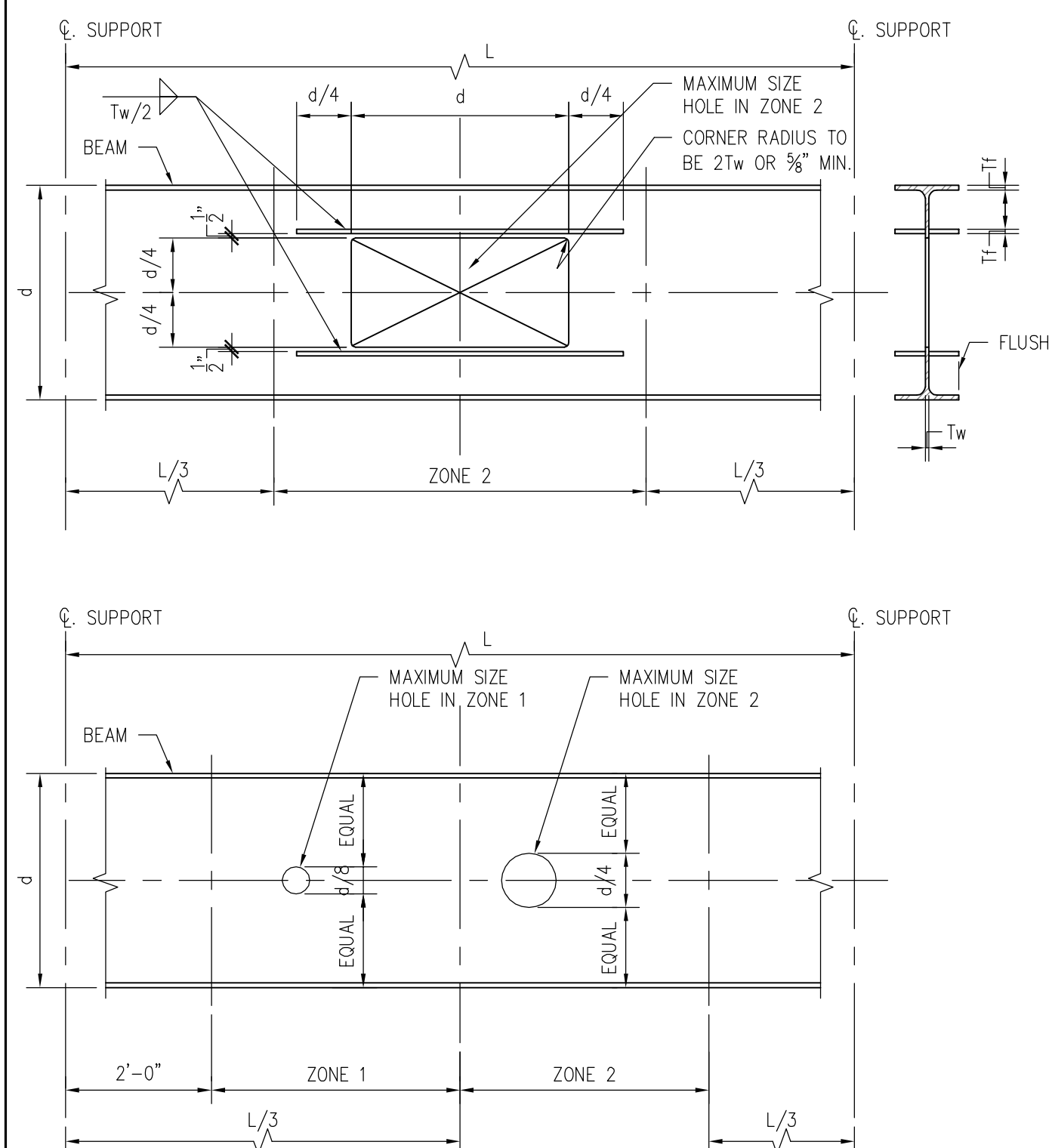
S-008



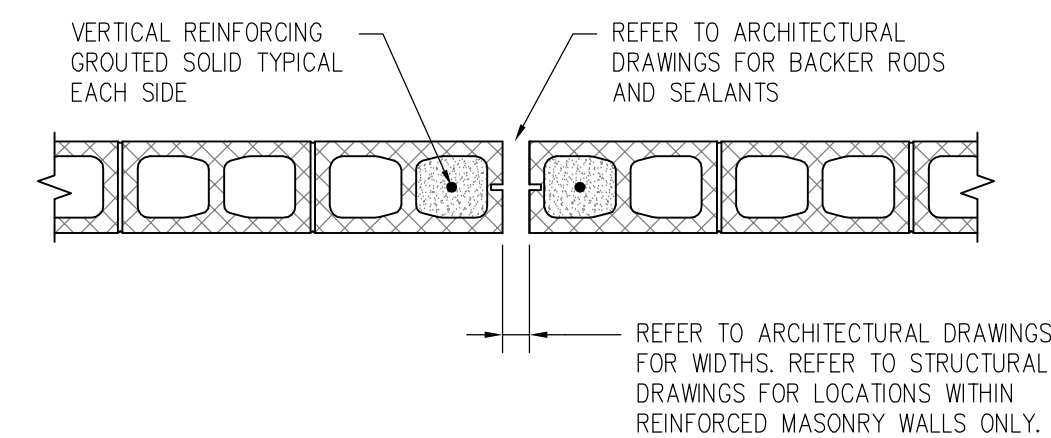
- ## NOTES:
1. POSITION VERTICAL REINFORCING AT END LOCATIONS FIRST (I.E., CORNERS, INTERSECTIONS OF REINFORCED MASONRY WALLS, SIDES OF CONTROL AND EXPANSION JOINTS, AND JAMBS OF OPENINGS LARGER THAN 2 FEET IN EITHER DIRECTION). SPACE INTERMEDIATE VERTICAL REINFORCING BETWEEN THESE PRIMARY BARS AT A SPACING NOT TO EXCEED THE MAXIMUM SPECIFIED FOR THE WALL.
 2. JAMB, HEAD AND SILL REINFORCING BARS ARE REQUIRED FOR OPENING WHICH EXCEED 2 FEET IN EITHER DIRECTION. SMALLER OPENINGS (<2 FEET) IN BOTH DIRECTIONS DO NOT REQUIRE ADDITIONAL REINFORCING AROUND THEM.
 3. COORDINATE WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, KITCHEN, AND EQUIPMENT CONTRACT DRAWINGS FOR OPENINGS AND OTHER INFORMATION NOT SHOWN IN THE STRUCTURAL CONTRACT DRAWINGS.
 4. SEE "TYPICAL MASONRY CORNER REINFORCING DETAIL".
 5. SEE "TYPICAL MASONRY OPENING JAMB REINFORCING DETAIL".
 6. SEE "TYPICAL MASONRY OPENING REINFORCING DETAIL".
 7. SEE "TYPICAL MASONRY INTERSECTION REINFORCING DETAIL".
 8. SEE "TYPICAL MASONRY CONTROL/EXPANSION JOINT REINFORCING DETAIL".
 9. 48 DIAMETERS INTO MASONRY, DEVELOPMENT LENGTH OR STD. HOOK (IF REQUIRED) INTO CONCRETE.
 10. LAP BOND BEAM REINFORCING 48 DIAMETERS.



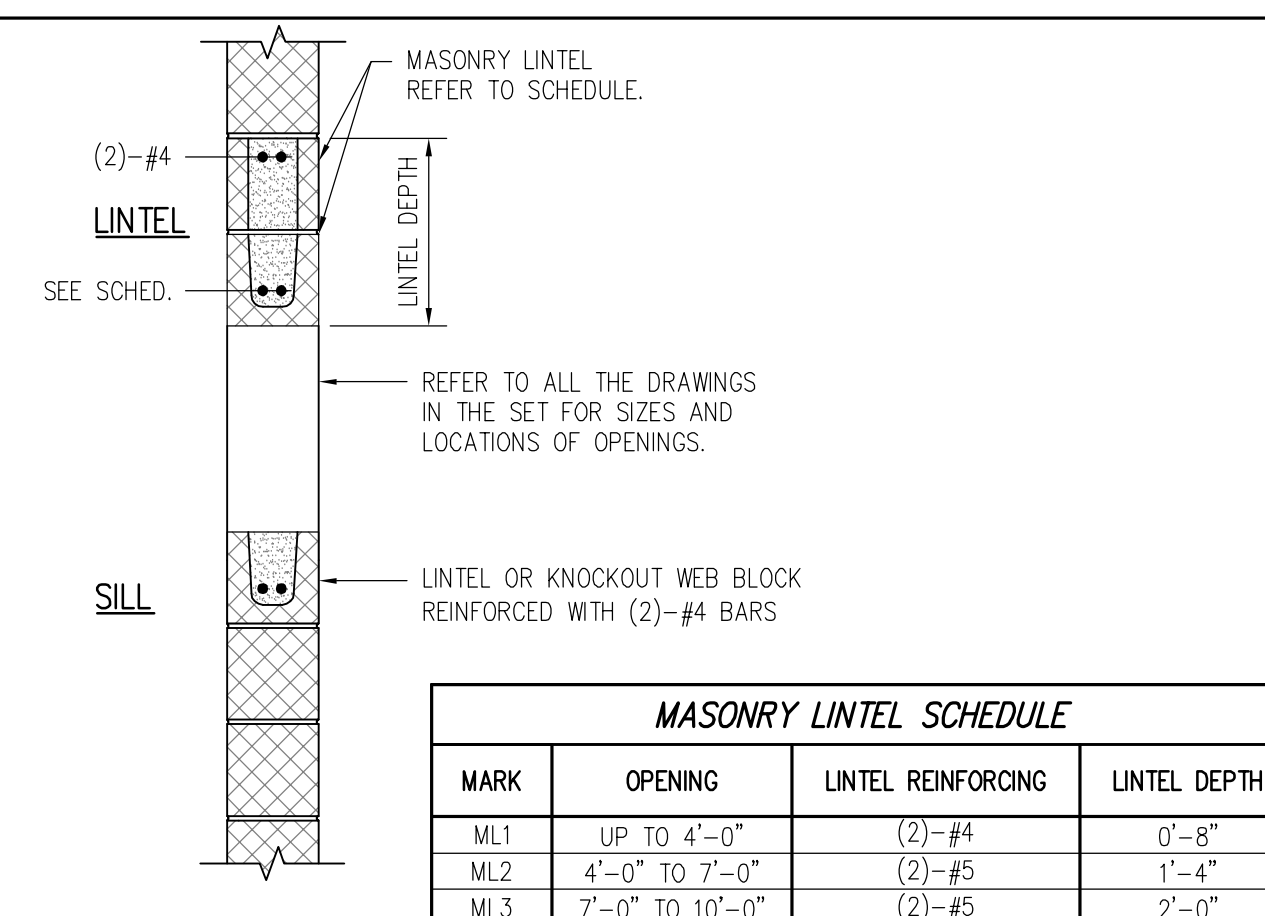
- NOTES:**
1. GROUT THE TWO CELLS ADJACENT TO OPENING SOLID TO UNDERSIDE OF LINTEL ABOVE.
 2. INSTALL VERTICAL REINFORCING IN THE CELL AWAY FROM OPENING TO AVOID INTERRUPTION WHEN STEEL LINTELS ARE SPECIFIED.
 3. VERTICAL REINFORCING TO EXTEND CONTINUOUSLY THROUGH BOND BEAMS. LAP VERTICALS 48 DIAMETERS ABOVE BOND BEAMS.



- NOTES:**
1. NUMBER, SIZES AND LOCATIONS OF OPENINGS REQUIRED THROUGH STEEL BEAMS AND GIRDERS SHALL BE DETERMINED BY THE GENERAL CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR ENGINEER'S REVIEW. REFER TO ALL THE DRAWINGS IN THE SET. FIELD CUTTING OPENINGS IS NOT PERMITTED. FIELD DRILLING OPENING MAY BE PERMITTED WITH THE SPECIFIC APPROVAL OF THE STRUCTURAL ENGINEER.
 2. SPECIAL OPENING CASES MAY BE SHOWN ON THE STRUCTURAL CONTRACT PLANS.
 3. MINIMUM SPACING BETWEEN OPENINGS SHALL BE 1.5d. NO OPENING SHALL BE PLACED AT A CONCENTRATED LOAD. MINIMUM SPACING BETWEEN A CONCENTRATED LOAD AND AN OPENING SHALL BE 2d.

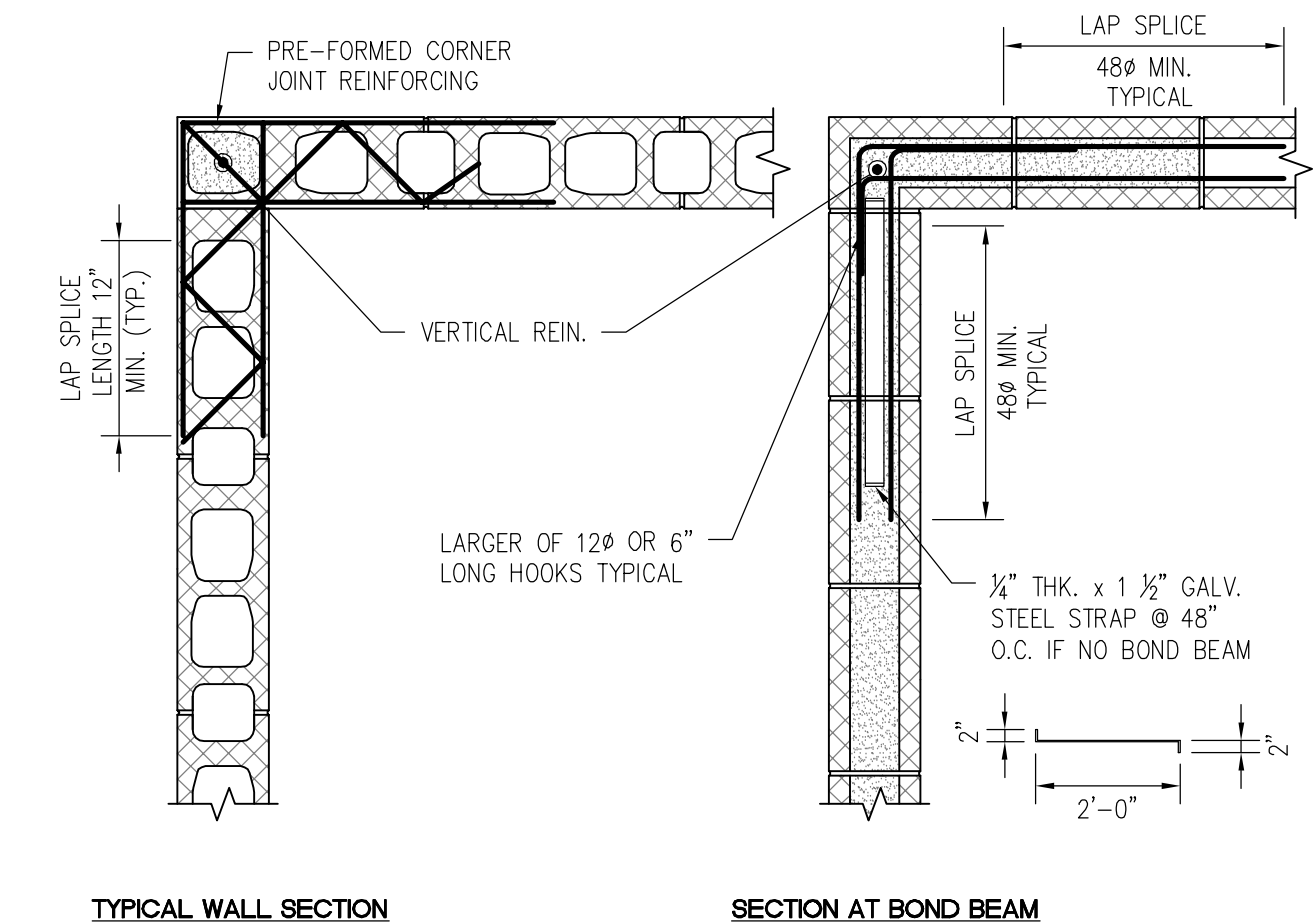


- NOTES:**
1. HORIZONTAL JOINT REINFORCING AND BOND BEAM REINFORCING SHALL STOP AT CONTROL JOINTS.
 2. STRUCTURAL CONTRACT DRAWINGS SHALL BE REFERRED TO FOR LOCATIONS OF CONTROL JOINTS IN BEARING AND SHEAR WALLS. CONTROL JOINTS SHOWN IN THE STRUCTURAL CONTRACT DRAWINGS ARE MANDATORY WHERE SHOWN. DO NOT ADD JOINTS IN BEARING AND SHEAR WALLS THAT ARE NOT SHOWN IN THE STRUCTURAL CONTRACT DRAWINGS.
 3. VERTICAL REINFORCING TO EXTEND CONTINUOUSLY THROUGH BOND BEAMS, LAP VERTICALS 48 DIAMETERS ABOVE BOND BEAMS.

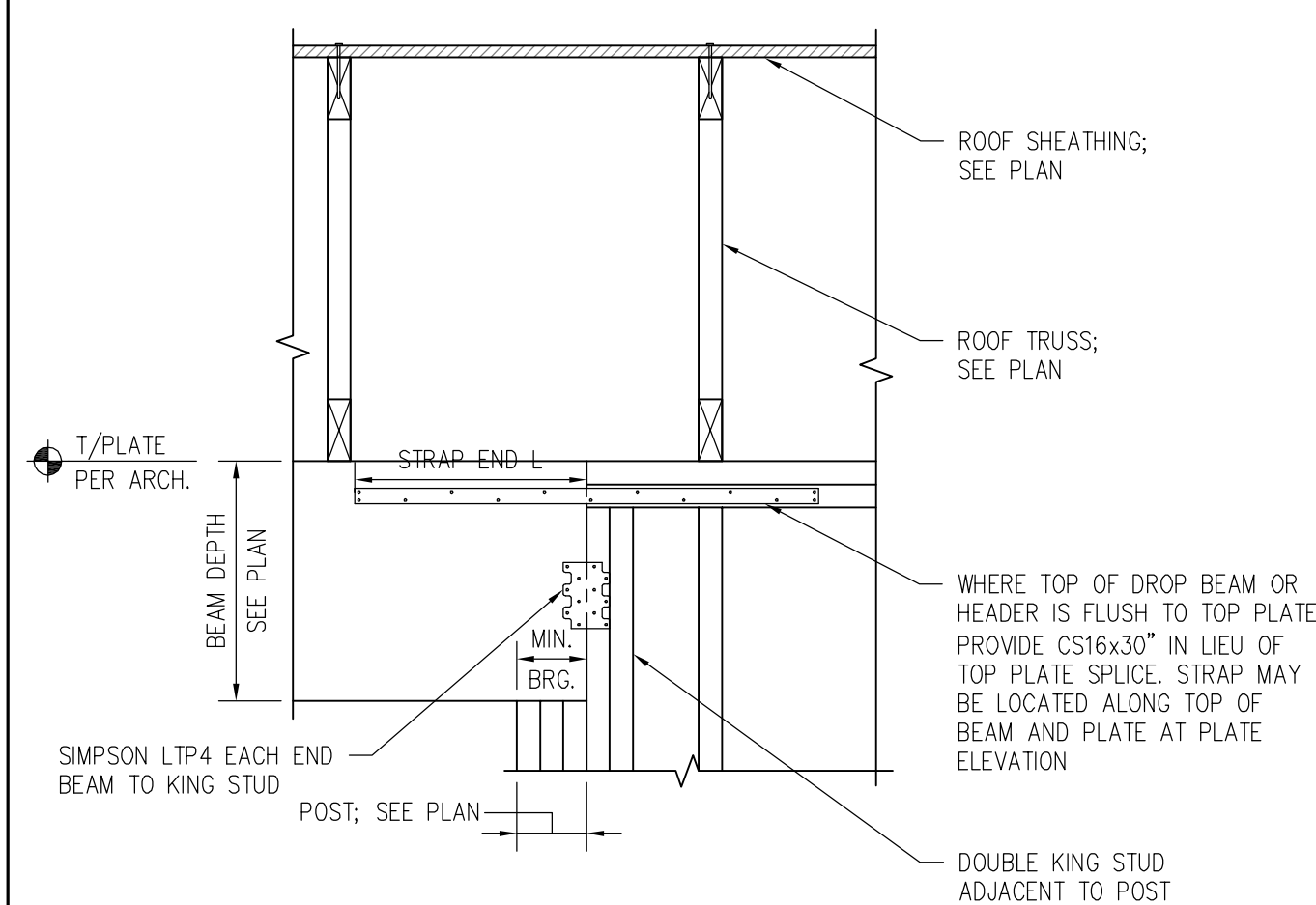


MASONRY LINTEL SCHEDULE			
MARK	OPENING	LINTEL REINFORCING	LINTEL DEPTH
ML1	UP TO 4'-0"	(2)-#4	0'-8"
ML2	4'-0" TO 7'-0"	(2)-#5	1'-4"
ML3	7'-0" TO 10'-0"	(2)-#5	2'-0"

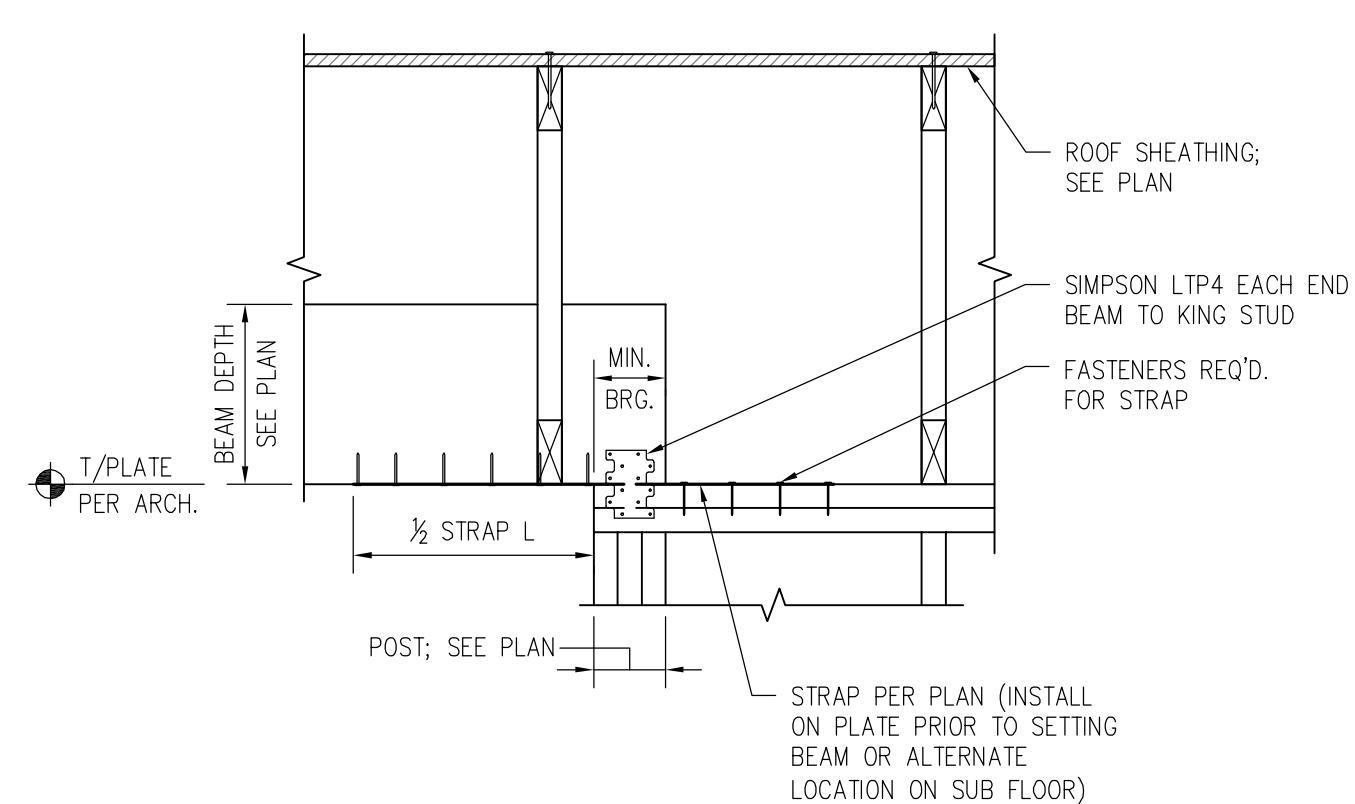
- NOTES:**
1. LIMITS/SILL SHALL BE SHORED AND GROUTED SOLID FULL LENGTH. SHORING SHALL REMAIN IN PLACE FOR 14 DAYS OR UNTIL GROUT HAS ATTAINED A COMPRESSIVE STRENGTH OF 3,000 PSI MINIMUM VERIFIED THROUGH TESTING, WHICHEVER IS LONGER.
 2. NO LAP SPLICES ALLOWED WITHIN CLEAR SPAN OR END BEARING LENGTH.
 3. PROVIDE 8" MINIMUM BEARING AT EACH END BUT NOT LESS THAN 1" PER FOOT OF SPAN.
 4. STEEL TENDONS MAY BE USED IN LIEU OF MASONRY LINTELS. REFER TO THE "STRUCTURAL NOTES AND SPECIFICATIONS" FOR ADDITIONAL INFORMATION.



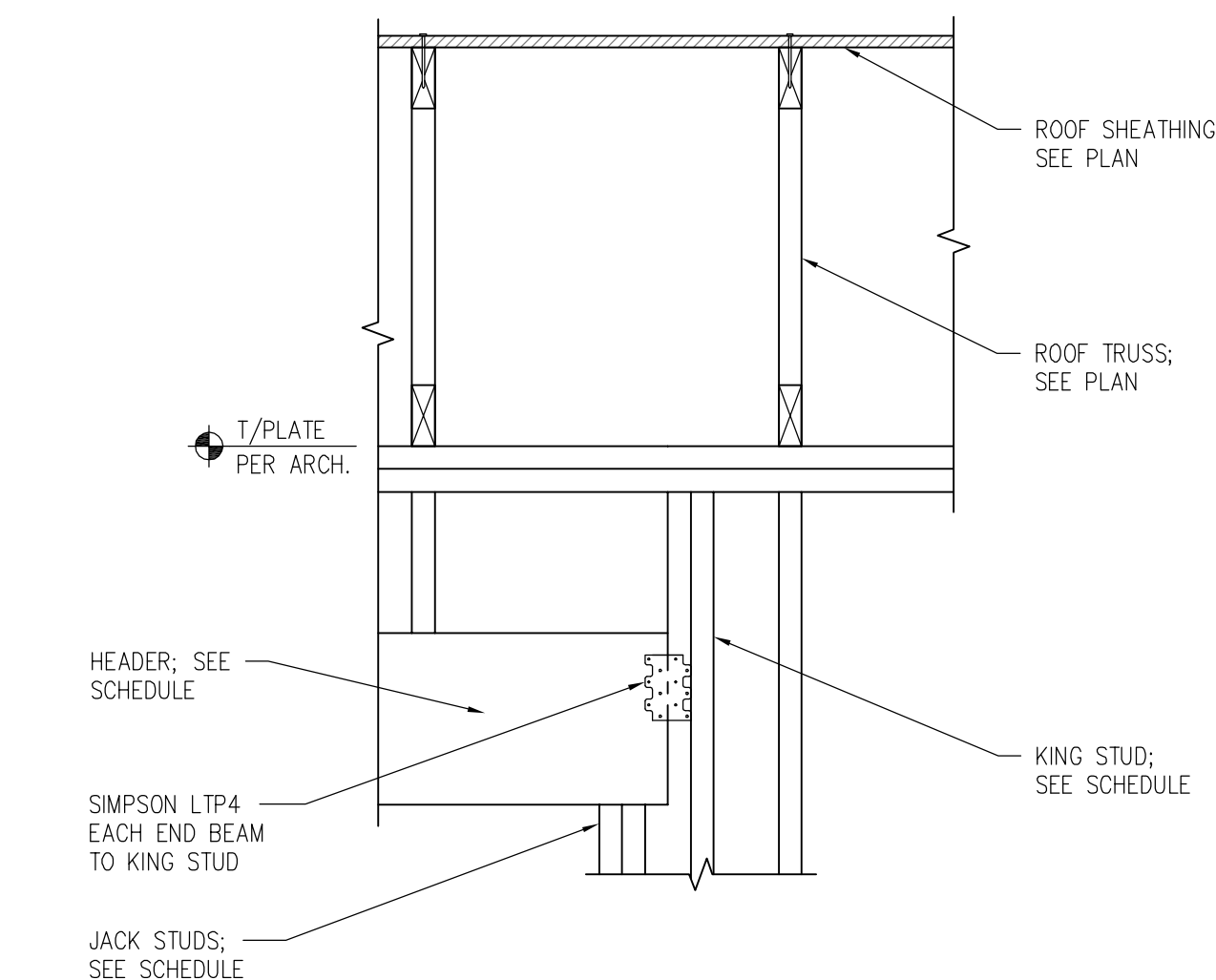
- NOTES:**
1. SIZE OF CORNER BARS TO MATCH BOND BEAM REINFORCING.
 2. NORMAL JOINT AND BOND BEAM REINFORCING NOT SHOWN FOR CLARITY.
 3. VERTICAL REINFORCING TO EXTEND CONTINUOUSLY THROUGH BOND BEAMS.
LAP VERTICALS 48 DIAMETERS ABOVE BOND BEAMS.



- NOTES:**
1. MINIMUM BEARING SHALL BE THE LARGER OF THE POST WIDTH OR THAT REQUIRED BY THE SUPPORTED BEAM.
 2. STRAP MAY BE OMITTED AT DROP BEAM WHERE TOP OF BEAM IS HELD DOWN 1½" AND TOP PLATE IS SPLICED OVER TOP OF BEAM IN ACCORDANCE WITH "TYPICAL DOUBLE TOP PLATE SPLICE DETAIL".



- NOTES:
1. MINIMUM BEARING SHALL BE THE LARGER OF THE POST WIDTH OR THAT REQUIRED BY THE SUPPORTED BEAM.



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KEY PLAN

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S-009

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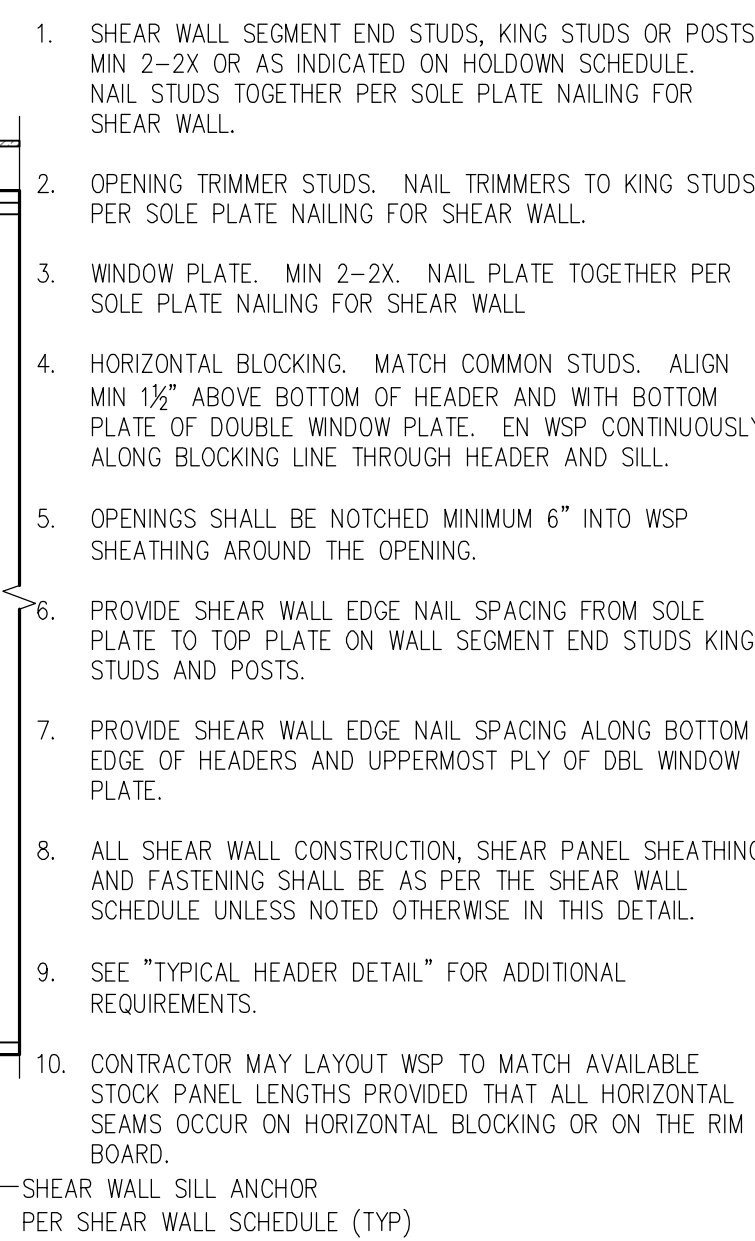
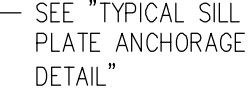
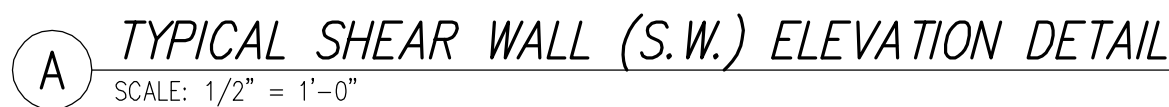
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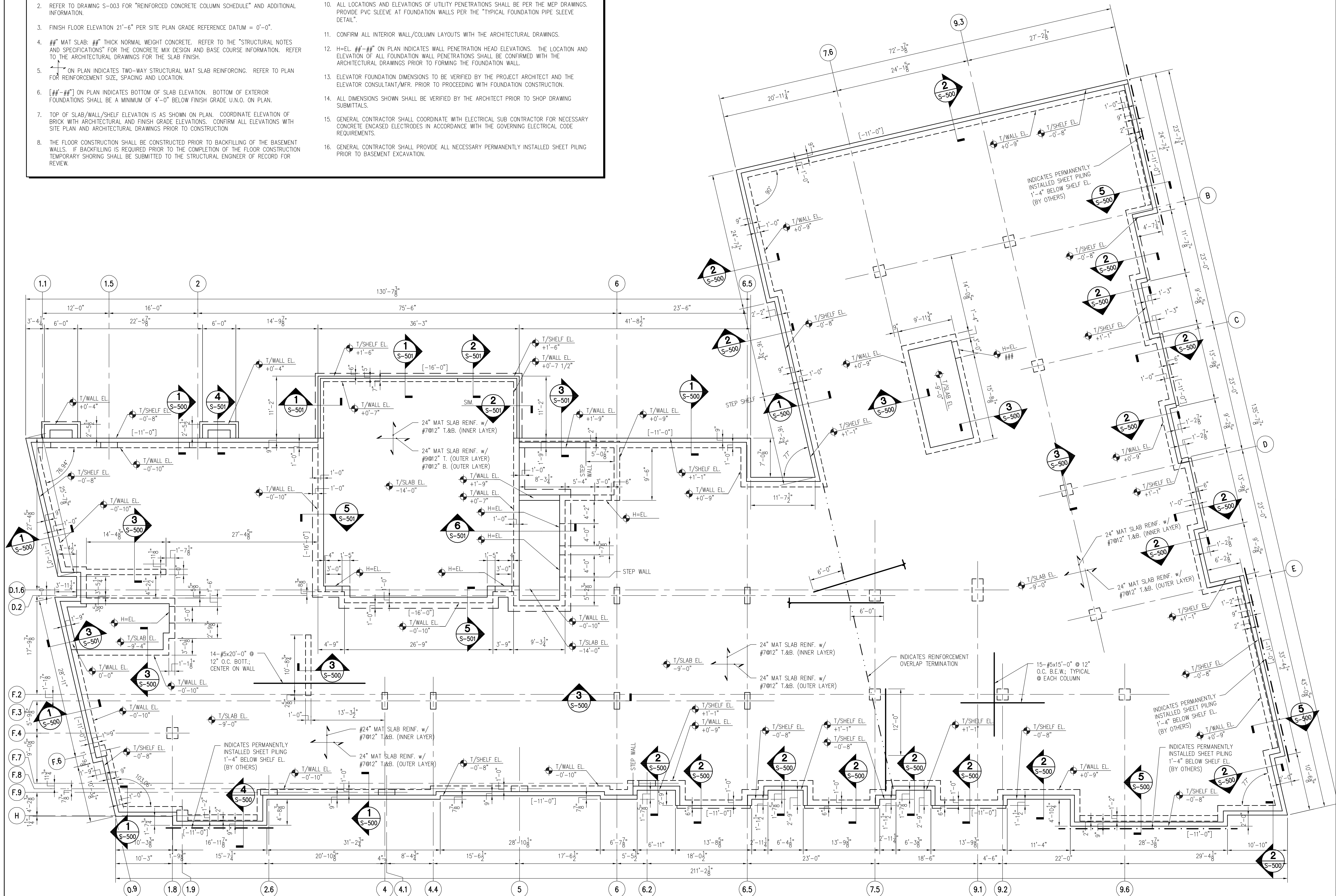
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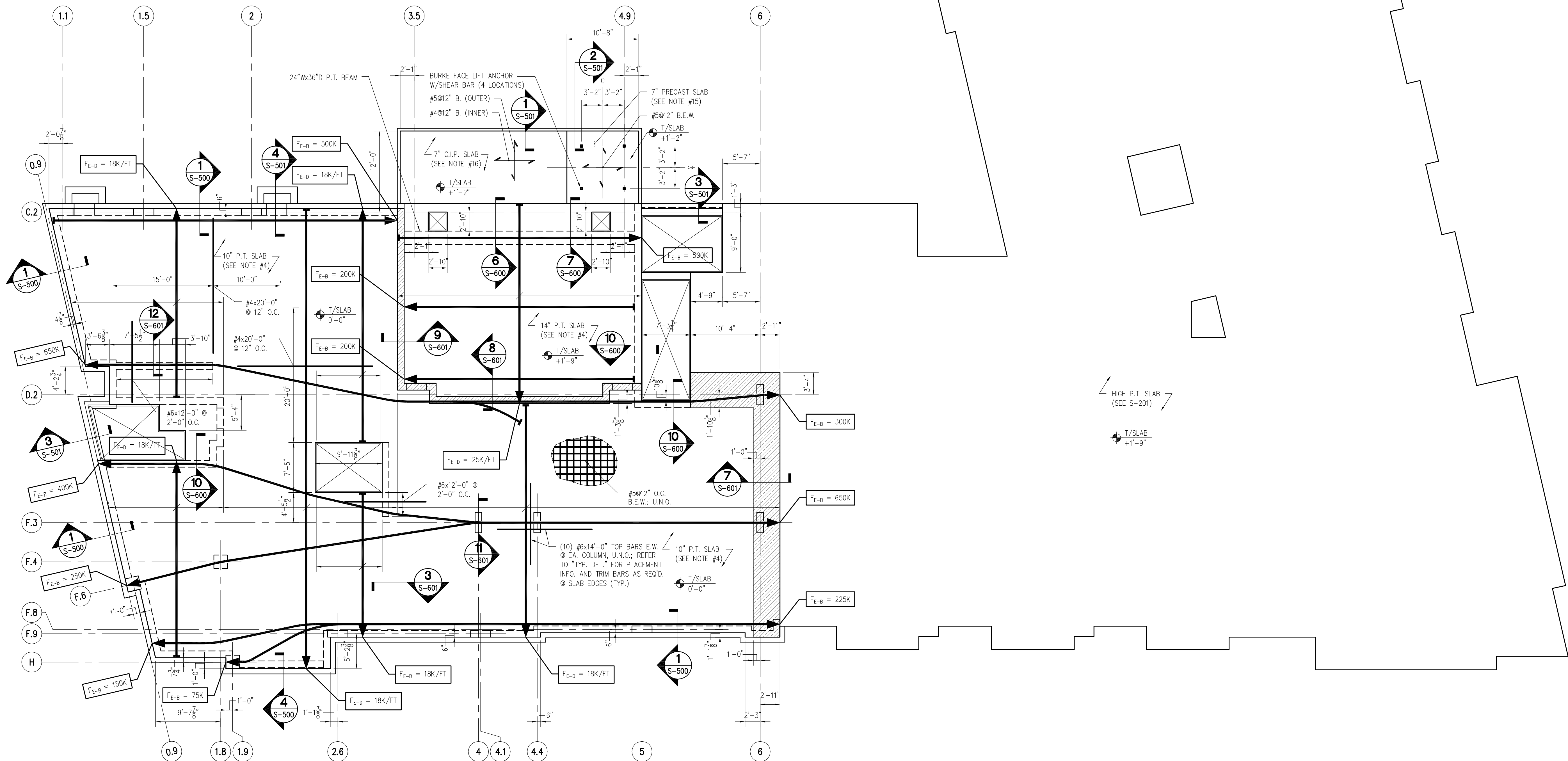
S-100

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".	9. REFER TO DRAWING S-001 "STRUCTURAL MASONRY" NOTE #11 AND #12, FOR MASONRY WALL REINFORCEMENT AND LIFT INFORMATION, RESPECTIVELY.
2. REFER TO DRAWING S-003 FOR "REINFORCED CONCRETE COLUMN SCHEDULE" AND ADDITIONAL INFORMATION.	10. ALL LOCATIONS AND ELEVATIONS OF UTILITY PENETRATIONS SHALL BE PER THE MEP DRAWINGS. PROVIDE PVC SLEEVE AT FOUNDATION WALLS PER THE "TYPICAL FOUNDATION PIPE SLEEVE DETAIL".
3. FINISH FLOOR ELEVATION 21'-6" PER SITE PLAN GRADE REFERENCE DATUM = 0'-0".	11. CONFIRM ALL INTERIOR WALL/COLUMN LAYOUTS WITH THE ARCHITECTURAL DRAWINGS.
4. ## MAT SLAB: ## THICK NORMAL WEIGHT CONCRETE. REFER TO THE "STRUCTURAL NOTES AND SPECIFICATIONS" FOR THE CONCRETE MIX DESIGN AND BASE COURSE INFORMATION. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE SLAB FINISH.	12. H=EEL ## - ## ON PLAN INDICATES WALL PENETRATION HEAD ELEVATIONS. THE LOCATION AND ELEVATION OF ALL FOUNDATION WALL PENETRATIONS SHALL BE CONFIRMED WITH THE ARCHITECTURAL DRAWINGS PRIOR TO FORMING THE FOUNDATION WALL.
5. ON PLAN INDICATES TWO-WAY STRUCTURAL MAT SLAB REINFORCING. REFER TO PLAN FOR REINFORCEMENT SIZE, SPACING AND LOCATION.	13. ELEVATOR FOUNDATION DIMENSIONS TO BE VERIFIED BY THE PROJECT ARCHITECT AND THE ELEVATOR CONSULTANT/MFR. PRIOR TO PROCEEDING WITH FOUNDATION CONSTRUCTION.
6. [## - ##] ON PLAN INDICATES BOTTOM OF SLAB ELEVATION. BOTTOM OF EXTERIOR FOUNDATIONS SHALL BE A MINIMUM OF 4'-0" BELOW FINISH GRADE U.N.O. ON PLAN.	14. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE ARCHITECT PRIOR TO SHOP DRAWING SUBMITTALS.
7. TOP OF SLAB/WALL/SHELF ELEVATION IS AS SHOWN ON PLAN. COORDINATE ELEVATION OF BRICK WITH ARCHITECTURAL AND FINISH GRADE ELEVATIONS. CONFIRM ALL ELEVATIONS WITH SITE PLAN AND ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION	15. GENERAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL SUB CONTRACTOR FOR NECESSARY CONCRETE ENCASED ELECTRODES IN ACCORDANCE WITH THE GOVERNING ELECTRICAL CODE REQUIREMENTS.
8. THE FLOOR CONSTRUCTION SHALL BE CONSTRUCTED PRIOR TO BACKFILLING OF THE BASEMENT WALLS. IF BACKFILLING IS REQUIRED PRIOR TO THE COMPLETION OF THE FLOOR CONSTRUCTION TEMPORARY SHORING SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW.	16. GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PERMANENTLY INSTALLED SHEET PILING PRIOR TO BASEMENT EXCAVATION.



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

- FLOOR SLAB NOTES:**
1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "FOUNDATION AND FRAMING SCHEDULES" AND "TYPICAL DETAILS".
 2. REFER TO DRAWING S-003 FOR "REINFORCED CONCRETE COLUMN SCHEDULE" AND ADDITIONAL INFORMATION.
 3. TOP OF SLAB ELEVATION IS AS SHOWN ON PLAN. CONFIRM ALL ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
 4. **##" P.T. SLAB: ##" THICK NORMAL WEIGHT CONCRETE POST-TENSIONED SLAB REINFORCED WITH UNBONDED TENDONS AND CONVENTIONAL REINFORCEMENT.** REFER TO THE "STRUCTURAL NOTES AND SPECIFICATIONS" FOR THE CONCRETE MIX DESIGN AND POST-TENSION CONCRETE WORK INFORMATION. REFER TO THIS DRAWING FOR THE SLAB UNBONDED TENDON REINFORCEMENT AND CONVENTIONAL REINFORCEMENT INFORMATION.
 5. ON PLAN INDICATES POST-TENSIONED TENDON STRESSING-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
 6. ON PLAN INDICATES POST-TENSIONED TENDON FIXED-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
 7. ON PLAN INDICATES POST-TENSIONED INTERMEDIATE TENDON STRESSING-END ANCHORAGE AT THE CONSTRUCTION JOINT. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
 8. ON PLAN INDICATES POST-TENSIONED ADDED TENDON FIXED-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
 9. ON PLAN INDICATES DISTANCE FROM BOTTOM OF SLAB TO CENTER OF GRAVITY OF POST-TENSIONED TENDON.
 10. ON PLAN INDICATES OVERLAP SLAB TRANSITION. SLAB ELEVATIONS ARE AS SHOWN ON PLAN. THE LOWER SLAB SHALL BE POST-TENSIONED PRIOR TO PLACEMENT OF UPPER SLAB. A CONTINUOUS BOND BREAKER SHALL BE USED BETWEEN THE INTERFACE OF THE LOWER AND UPPER SLABS. REFER TO SECTIONS FOR ADDITIONAL INFORMATION.
 11. $F_{E-D} = ###$ K/FT ON PLAN INDICATES EFFECTIVE TENDON POST-TENSIONING FORCE FOR DISTRIBUTED TENDONS. (K/FT = KIPS PER FOOT)
 12. $F_{E-B} = ###$ K ON PLAN INDICATES EFFECTIVE TENDON POST-TENSIONING FORCE FOR BANDED TENDONS. (K = KIPS)
 13. ON PLAN INDICATES A CONVENTIONAL REINFORCEMENT MAT LAYOUT FOR THE LIMITS SHOWN ON PLAN.
 14. C.J. ON PLAN INDICATES CONTROL JOINT. REFER TO "TYPICAL DETAILS" FOR STRESSING AND NON-STRESSING CONTROL JOINT INFORMATION.
 15. **##" PRECAST SLAB: ##" THICK NORMAL WEIGHT CONCRETE PRECAST SLAB REINFORCED WITH CONVENTIONAL REINFORCEMENT.** REFER TO THE "STRUCTURAL NOTES AND SPECIFICATIONS" FOR THE CONCRETE MIX DESIGN. REFER TO THE PLAN FOR LIFT LOCATIONS.
 16. **##" C.I.P. SLAB: ##" THICK NORMAL WEIGHT CONCRETE CAST-IN-PLACE SLAB REINFORCED WITH CONVENTIONAL REINFORCEMENT.** REFER TO THE "STRUCTURAL NOTES AND SPECIFICATIONS" FOR THE CONCRETE MIX DESIGN.
 17. ON PLAN INDICATES C.I.P. AND PRECAST SLAB REINFORCING. REFER TO PLAN FOR REINFORCEMENT SIZE, SPACING AND LOCATION.
 18. GENERAL CONTRACTOR SHALL COORDINATE ALL PENETRATION LOCATIONS AND CLEAR OPENING DIMENSIONS WITH THE DISCIPLINE DRAWINGS REQUIRING THE PENETRATION. NO PENETRATION SHALL BE FRAMED, FABRICATED OR OTHERWISE FORMED WITHOUT WRITTEN APPROVAL OF THE FABRICATOR RESPONSIBLE TO UTILIZE THE PENETRATION, UNLESS OTHERWISE NOTED ON THIS PLAN.
 19. REFER TO THE "BRACING PLAN" AND "TYPICAL SHEAR WALL LAYOUT DETAIL" FOR ALL HOLDOWN LOCATIONS AND ADDITIONAL INFORMATION.



FIRST FLOOR VAULT AND LOW SLAB PLAN
1/8" = 1'-0"

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PROJECT NUMBER: 1108-05

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SHEET TITLE

FIRST FLOOR VAULT
AND LOW SLAB PLAN

S-200

249 Third St., Cambridge, MA

Equity Residential

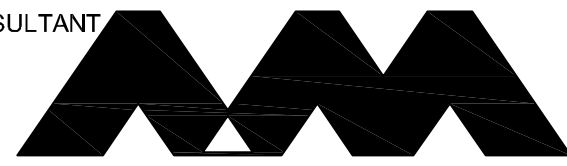
249 Third St., Cambridge, MA

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FAX: (781) 935-2896

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STAMP

KEY PLAN

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	10/13/16	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION
PROJECT NUMBER: 1108-05		
DRAWN BY:	BEM	
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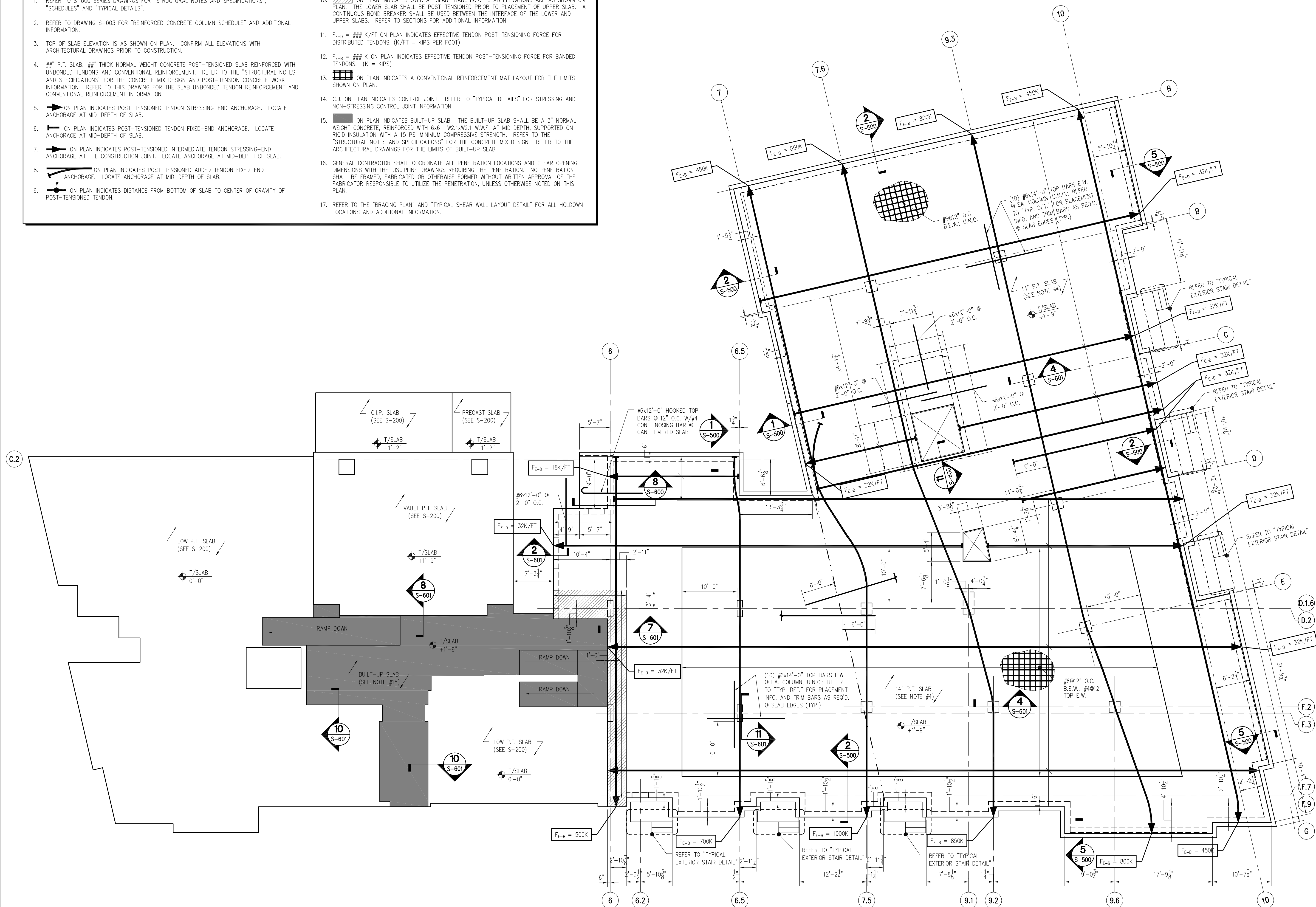
SHEET TITLE

FIRST FLOOR HIGH SLAB PLAN

S-201

FLOOR SLAB NOTES

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
2. REFER TO DRAWING S-003 FOR "REINFORCED CONCRETE COLUMN SCHEDULE" AND ADDITIONAL INFORMATION.
3. TOP OF SLAB ELEVATION IS AS SHOWN ON PLAN. CONFIRM ALL ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
4.  P.T. SLAB:  THICK NORMAL WEIGHT CONCRETE POST-TENSIONED SLAB REINFORCED WITH UNBONDED TENDONS AND CONVENTIONAL REINFORCEMENT. REFER TO THE "STRUCTURAL NOTES AND SPECIFICATIONS" FOR THE CONCRETE MIX DESIGN AND POST-TENSION CONCRETE WORK INFORMATION. REFER TO THIS DRAWING FOR THE SLAB UNBONDED TENDON REINFORCEMENT AND CONVENTIONAL REINFORCEMENT INFORMATION.
5.  ON PLAN INDICATES POST-TENSIONED TENDON STRESSING-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
6.  ON PLAN INDICATES POST-TENSIONED TENDON FIXED-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
7.  ON PLAN INDICATES POST-TENSIONED INTERMEDIATE TENDON STRESSING-END ANCHORAGE AT THE CONSTRUCTION JOINT. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
8.  ON PLAN INDICATES POST-TENSIONED ADDED TENDON FIXED-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
9.  ON PLAN INDICATES DISTANCE FROM BOTTOM OF SLAB TO CENTER OF GRAVITY OF POST-TENSIONED TENDON.
10.  ON PLAN INDICATES OVERLAP SLAB TRANSITION. SLAB ELEVATIONS ARE AS SHOWN ON PLAN. THE LOWER SLAB SHALL BE POST-TENSIONED PRIOR TO PLACEMENT OF UPPER SLAB. A CONTINUOUS BOND BREAKER SHALL BE USED BETWEEN THE INTERFACE OF THE LOWER AND UPPER SLABS. REFER TO SECTIONS FOR ADDITIONAL INFORMATION.
11. $F_{E-B} = \text{### K/FT}$ ON PLAN INDICATES EFFECTIVE TENDON POST-TENSIONING FORCE FOR DISTRIBUTED TENDONS. (K/FT = KIPS PER FOOT)
12. $F_{E-B} = \text{### K}$ ON PLAN INDICATES EFFECTIVE TENDON POST-TENSIONING FORCE FOR BANDED TENDONS. (K = KIPS)
13.  ON PLAN INDICATES A CONVENTIONAL REINFORCEMENT MAT LAYOUT FOR THE LIMITS SHOWN ON PLAN.
14. C.J. ON PLAN INDICATES CONTROL JOINT. REFER TO "TYPICAL DETAILS" FOR STRESSING AND NON-STRESSING CONTROL JOINT INFORMATION.
15.  ON PLAN INDICATES BUILT-UP SLAB. THE BUILT-UP SLAB SHALL BE A 3" NORMAL WEIGHT CONCRETE, REINFORCED WITH 6x6 -W2.1xW2.1 W.W.F. AT MID DEPTH, SUPPORTED ON RIGID INSULATION WITH A 15 PSI MINIMUM COMPRESSIVE STRENGTH. REFER TO THE "STRUCTURAL NOTES AND SPECIFICATIONS" FOR THE CONCRETE MIX DESIGN. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE LIMITS OF BUILT-UP SLAB.
16. GENERAL CONTRACTOR SHALL COORDINATE ALL PENETRATION LOCATIONS AND CLEAR OPENING DIMENSIONS WITH THE DISCIPLINE DRAWINGS REQUIRING THE PENETRATION. NO PENETRATION SHALL BE FRAMED, FABRICATED OR OTHERWISE FORMED WITHOUT WRITTEN APPROVAL OF THE FABRICATOR RESPONSIBLE TO UTILIZE THE PENETRATION, UNLESS OTHERWISE NOTED ON THIS PLAN.
17. REFER TO THE "BRACING PLAN" AND "TYPICAL SHEAR WALL LAYOUT DETAIL" FOR ALL HOLDOWN LOCATIONS AND ADDITIONAL INFORMATION.



FIRST FLOOR HIGH SLAB PLAN

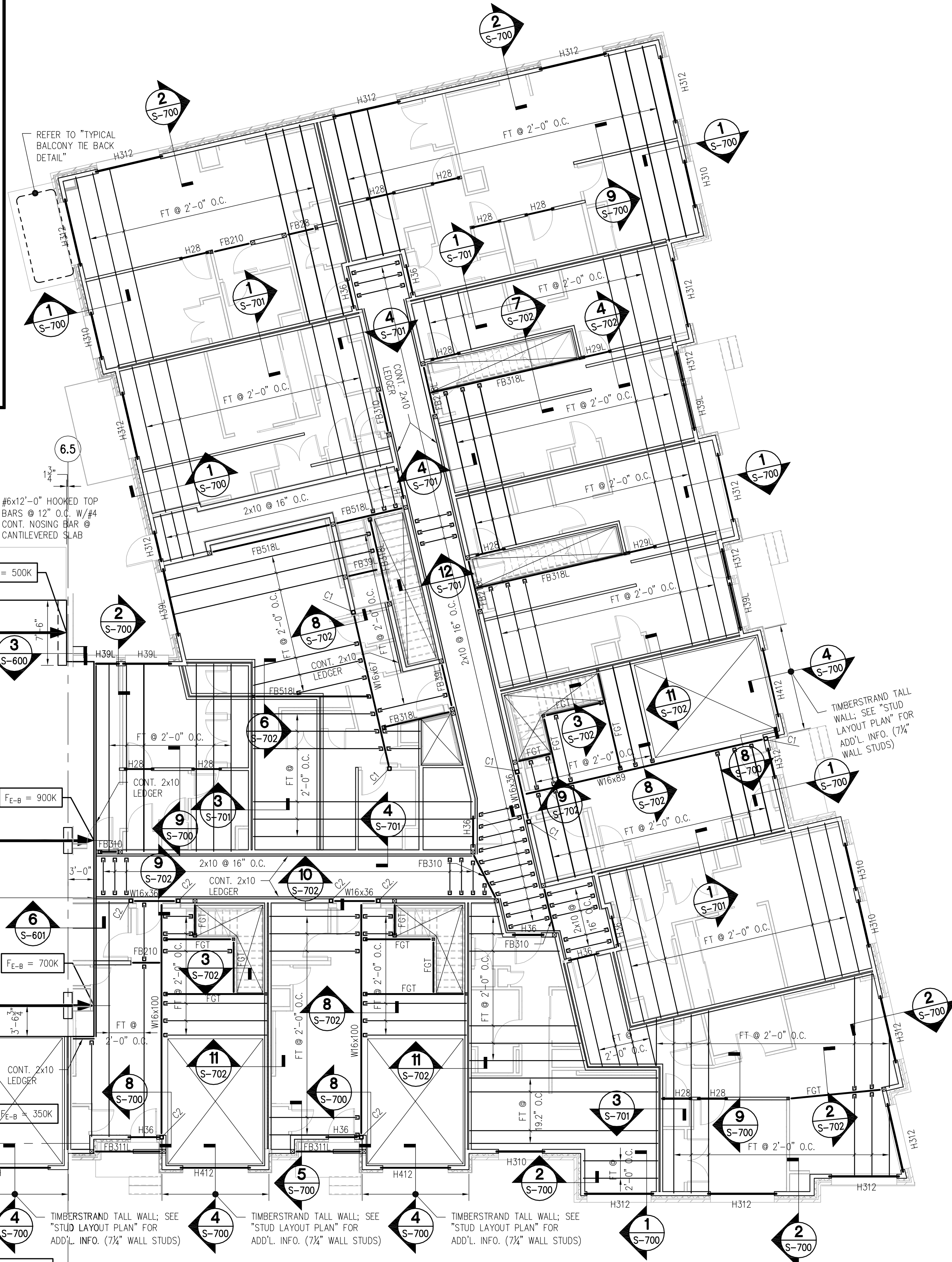
$$\overline{y_8} = 1' - 0'$$

FLOOR FRAMING NOTES:

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
2. TOP OF STEEL ELEVATION IS 12'-5 3/4" U.N.O. (+#) ON PLAN. CONFIRM ALL ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
3. C# ON PLAN INDICATES STEEL COLUMN. REFER TO DRAWING S-004 FOR "STEEL COLUMN SCHEDULE" AND ADDITIONAL INFORMATION.
4. THE FLOOR CONSTRUCTION SHALL BE FLOOR DIAPHRAGM SHEATHING PER "STRUCTURAL DIAPHRAGM" NOTE #2 ON DRAWING S-002. SHEATHING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE.
5. ALL BEAMS SUPPORTING WOOD FRAMING/TRUSSES SHALL REQUIRE A TOP PLATE NAILER. REFER TO "TYPICAL STEEL BEAM NAILER DETAIL" FOR ADDITIONAL INFORMATION.
6. FT-#, FGT-# AND FDT-# ON PLAN INDICATES AN 18" DEEP FLOOR TRUSS TYPE, FLOOR GIRDER TRUSS TYPE AND FLOOR DRAG TRUSS TYPE, RESPECTIVELY. REFER TO "FLOOR TRUSS LOADING SCHEDULE" ON DRAWING S-004 FOR DESIGN LOADS. TRUSS DESIGNER SHALL PROVIDE ALL TEMPORARY AND PERMANENT STABILITY BRACING AND BRIDGING DURING ERECTION AND AFTER PERMANENT INSTALLATION. TRUSS DESIGNER SHALL SPECIFY ALL TRUSS BRIDGING OR BRACING LINES ON THE TRUSS DESIGN DRAWINGS.
7. PROVIDE SUFFICIENT BLOCKING ON FLOOR GIRDER TRUSSES AT TRANSFER BEAM INTERSECTION.
8. REFER TO THE "TYPICAL FLOOR/ROOF TRUSS STABILITY BRACING DETAIL" AT ALL BEARING WALLS WHERE NO SHEAR BLOCKS, RIM BOARDS OR CONTINUOUS RIBBONS ARE PRESENT.
9. REFER TO "BEAM SCHEDULE" ON DRAWING S-004 FOR BEAM SIZE, LOCATION, TYPE AND TREATMENT INFORMATION.
10. REFER TO "HEADER SUPPORT SCHEDULE" ON DRAWING S-004 FOR KING STUD AND JACK STUD SIZES. ALL HEADERS SHALL BE LOCATED TO ACCOMMODATE ROUGH OPENINGS AS INDICATED ON THE ARCHITECTURAL DRAWINGS. VERIFY ALL HEADER ELEVATIONS AND ROUGH OPENING DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
11. ☒ ON PLAN INDICATES BEAM SUPPORT OR POST. REFER TO "POST SCHEDULE" ON DRAWING S-004 FOR POST SIZE, CAP AND BASE INFORMATION. REFER TO "BEAM SUPPORT SCHEDULE" AND "POST SCHEDULE" ON DRAWING S-004 FOR BEAM SUPPORT AND POST SIZES, RESPECTIVELY.
12. ☐ ON PLAN INDICATES HANGER. REFER TO "BEAM SCHEDULE" AND SECTIONS FOR SIZE.
13. REFER TO ARCHITECTURAL DRAWINGS FOR WALL TOP PLATE ELEVATION. SEE "TYPICAL DETAILS" FOR TOP PLATE FASTENING AND SPLICE SCHEDULE.
14. FLOOR FRAMING SHALL ALIGN WITH POSTS AND STUDS BELOW, UNLESS THE LAYOUT SPACING DO NOT MATCH. REFER TO THE "BEARING WALL SCHEDULE" ON DRAWING S-005 FOR ADDITIONAL INFORMATION.
15. REFER TO DRAWING S-001 "STRUCTURAL MASONRY" NOTE #11 AND #12, FOR MASONRY WALL REINFORCEMENT AND UNTEL INFORMATION, RESPECTIVELY.
16. ELEVATOR OPENING FRAMING DIMENSIONS TO BE VERIFIED BY THE PROJECT ARCHITECT AND THE ELEVATOR CONSULTANT/MFR. PRIOR TO PROCEEDING WITH CONSTRUCTION.

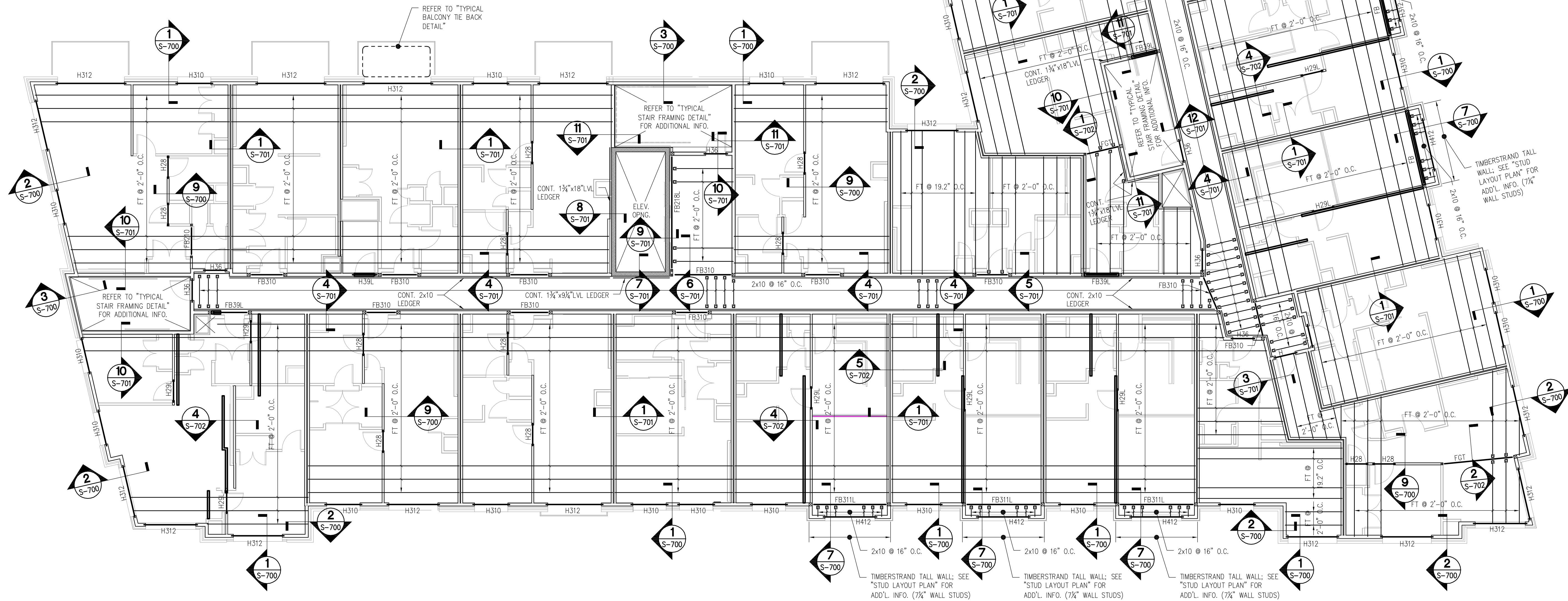
FLOOR SLAB NOTES:

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
2. REFER TO DRAWING S-003 FOR "REINFORCED CONCRETE COLUMN SCHEDULE" AND ADDITIONAL INFORMATION.
3. TOP OF SLAB ELEVATION IS AS SHOWN ON PLAN. CONFIRM ALL ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
4. 14" P.T. SLAB: 14" THICK NORMAL WEIGHT CONCRETE POST-TENSIONED SLAB REINFORCED WITH UNBONDED TENDONS AND CONVENTIONAL REINFORCEMENT. REFER TO THE "STRUCTURAL NOTES AND SPECIFICATIONS" FOR THE CONCRETE MIX DESIGN AND POST-TENSION CONCRETE WORK INFORMATION. REFER TO THIS DRAWING FOR THE SLAB UNBONDED TENDON REINFORCEMENT AND CONVENTIONAL REINFORCEMENT INFORMATION.
5.  ON PLAN INDICATES POST-TENSIONED TENDON STRESSING-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
6.  ON PLAN INDICATES POST-TENSIONED TENDON FIXED-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
7.  ON PLAN INDICATES POST-TENSIONED INTERMEDIATE TENDON STRESSING-END ANCHORAGE AT THE CONSTRUCTION JOINT. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
8.  ON PLAN INDICATES POST-TENSIONED ADDED TENDON FIXED-END ANCHORAGE. LOCATE ANCHORAGE AT MID-DEPTH OF SLAB.
9.  ON PLAN INDICATES DISTANCE FROM BOTTOM OF SLAB TO CENTER OF GRAVITY OF POST-TENSIONED TENDON.
10. $F_{E-D} = ###$ K/FT ON PLAN INDICATES EFFECTIVE TENDON POST-TENSIONING FORCE FOR DISTRIBUTED TENDONS. (K/FT = KIPS PER FOOT)
11. $F_{E-B} = ###$ K ON PLAN INDICATES EFFECTIVE TENDON POST-TENSIONING FORCE FOR BANDED TENDONS. (K = KIPS)
12.  ON PLAN INDICATES A CONVENTIONAL REINFORCEMENT MAT LAYOUT FOR THE LIMITS SHOWN ON PLAN.
13. C.J. ON PLAN INDICATES CONTROL JOINT. REFER TO "TYPICAL DETAILS" FOR STRESSING AND NON-STRESSING CONTROL JOINT INFORMATION.
14. CONFIRM ALL INTERIOR WALL/COLUMN LAYOUTS WITH THE ARCHITECTURAL DRAWINGS.
15. H=EL. ##'-##" ON PLAN INDICATES WALL PENETRATION HEAD ELEVATIONS. THE LOCATION AND ELEVATION OF ALL FOUNDATION WALL PENETRATIONS SHALL BE CONFIRMED WITH THE ARCHITECTURAL DRAWINGS PRIOR TO FORMING THE FOUNDATION WALL.
16. GENERAL CONTRACTOR SHALL COORDINATE ALL PENETRATION LOCATIONS AND CLEAR OPENING DIMENSIONS WITH THE DISCIPLINE DRAWINGS REQUIRING THE PENETRATION. NO PENETRATION SHALL BE FRAMED, FABRICATED OR OTHERWISE FORMED WITHOUT WRITTEN APPROVAL OF THE FABRICATOR RESPONSIBLE TO UTILIZE THE PENETRATION, UNLESS OTHERWISE NOTED ON THIS PLAN.
17. REFER TO THE "BRACING PLAN" AND "TYPICAL SHEAR WALL LAYOUT DETAIL" FOR ALL HOLDOWN LOCATIONS AND ADDITIONAL INFORMATION.



1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS," "SCHEDULES" AND "TYPICAL DETAILS".
2. THE FLOOR CONSTRUCTION SHALL BE FLOOR DIAPHRAGM SHEATHING PER "STRUCTURAL DIAPHRAGM" NOTE #2 ON DRAWING S-002. SHEATHING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE.
3. FT-F, FGT-B AND FDT-B ON PLAN INDICATES AN 18" DEEP FLOOR TRUSS TYPE, FLOOR GRID TRUSS TYPE AND FLOOR DRAG TRUSS TYPE, RESPECTIVELY. REFER TO "FLOOR TRUSS LOADING SCHEDULE" ON DRAWING S-004 FOR DESIGN LOADS. TRUSS DESIGNER SHALL PROVIDE ALL TEMPORARY AND PERMANENT STABILITY BRACING AND BRIDGING DURING ERECTION AND AFTER PERMANENT INSTALLATION. TRUSS DESIGNER SHALL SPECIFY ALL TRUSS BRIDGING OR BRACING LINES ON THE TRUSS DESIGN DRAWINGS.
4. PROVIDE SUFFICIENT BLOCKING ON FLOOR GRID TRUSSES AT TRANSFER BEAM INTERSECTION.
5. REFER TO THE "TYPICAL FLOOR/ROOF TRUSS STABILITY BRACING DETAIL" AT ALL BEARING WALLS WHERE NO SHEAR BLOCKS, RIM BOARDS OR CONTINUOUS RIBBONS ARE PRESENT.
6. REFER TO "BEAM SCHEDULE" ON DRAWING S-004 FOR BEAM SIZE, LOCATION, TYPE AND TREATMENT INFORMATION.
7. REFER TO "HEADER SUPPORT SCHEDULE" ON DRAWING S-004 FOR KING STUD AND JACK STUD SIZES. ALL HEADERS SHALL BE LOCATED TO ACCOMMODATE ROUGH OPENINGS AS INDICATED ON THE ARCHITECTURAL DRAWINGS. VERIFY ALL HEADER ELEVATIONS AND ROUGH OPENING DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.

8. ☒ ON PLAN INDICATES BEAM SUPPORT OR POST. REFER TO "POST SCHEDULE" ON DRAWING S-004 FOR POST SIZE, CAP AND BASE INFORMATION. REFER TO "BEAM SUPPORT SCHEDULE" AND "POST SCHEDULE" ON DRAWING S-004 FOR BEAM SUPPORT AND POST SIZES, RESPECTIVELY.
9. ☐ ON PLAN INDICATES HANGER. REFER TO "BEAM SCHEDULE" AND SECTIONS FOR SIZE.
10. REFER TO ARCHITECTURAL DRAWINGS FOR WALL TOP PLATE ELEVATION. SEE "TYPICAL DETAILS" FOR TOP PLATE FASTENING AND SPLICE SCHEDULE.
11. FLOOR FRAMING SHALL ALIGN WITH POSTS AND STUDS BELOW, UNLESS THE LAYOUT SPACING DOES NOT MATCH. REFER TO THE "BEARING WALL SCHEDULE" ON DRAWING S-005 FOR ADDITIONAL INFORMATION.
12. REFER TO DRAWING S-001 "STRUCTURAL MASONRY" NOTE #11 AND #12, FOR MASONRY WALL REINFORCEMENT AND LINTEL INFORMATION, RESPECTIVELY.
13. ELEVATOR OPENING FRAMING DIMENSIONS TO BE VERIFIED BY THE PROJECT ARCHITECT AND THE ELEVATOR CONSULTANT/MFR. PRIOR TO PROCEEDING WITH CONSTRUCTION.

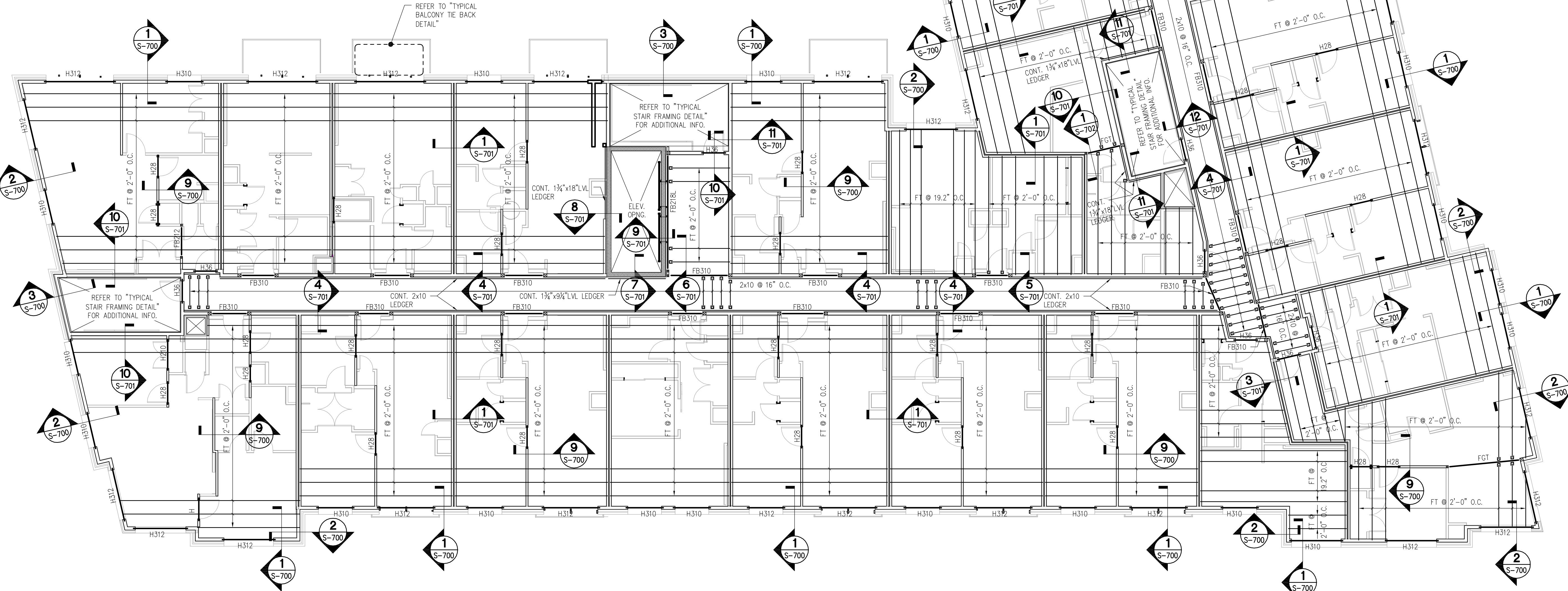


THIRD FLOOR FRAMING PLAN
1/8" = 1'-0"

S-203

FLOOR FRAMING NOTES:

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
2. THE FLOOR CONSTRUCTION SHALL BE FLOOR DIAPHRAGM SHEATHING PER "STRUCTURAL DIAPHRAGM" NOTE #2 ON DRAWING S-002. SHEATHING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE.
3. FT-#, FGT-# AND FDT-# ON PLAN INDICATES AN 18" DEEP FLOOR TRUSS TYPE, FLOOR GIRDER TRUSS TYPE AND FLOOR DRAG TRUSS TYPE, RESPECTIVELY. REFER TO "FLOOR TRUSS LOADING SCHEDULE" ON DRAWING S-004 FOR DESIGN LOADS. TRUSS DESIGNER SHALL PROVIDE ALL TEMPORARY AND PERMANENT STABILITY BRACING AND BRIDGING DURING ERECTION AND AFTER PERMANENT INSTALLATION. TRUSS DESIGNER SHALL SPECIFY ALL TRUSS BRIDGING OR BRACING LINES ON THE TRUSS DESIGN DRAWINGS.
4. PROVIDE SUFFICIENT BLOCKING ON FLOOR GIRDER TRUSSES AT TRANSFER BEAM INTERSECTION.
5. REFER TO THE "TYPICAL FLOOR/ROOF TRUSS STABILITY BRACING DETAIL" AT ALL BEARING WALLS WHERE NO SHEAR BLOCKS, RIM BOARDS OR CONTINUOUS RIBBONS ARE PRESENT.
6. REFER TO "BEAM SCHEDULE" ON DRAWING S-004 FOR BEAM SIZE, LOCATION, TYPE AND TREATMENT INFORMATION.
7. REFER TO "HEADER SUPPORT SCHEDULE" ON DRAWING S-004 FOR KING STUD AND JACK STUD SIZES. ALL HEADERS SHALL BE LOCATED TO ACCOMMODATE ROUGH OPENINGS AS INDICATED ON THE ARCHITECTURAL DRAWINGS. VERIFY ALL HEADER ELEVATIONS AND ROUGH OPENING DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
8. ☒ ON PLAN INDICATES BEAM SUPPORT OR POST. REFER TO "POST SCHEDULE" ON DRAWING S-004 FOR POST SIZE, CAP AND BASE INFORMATION. REFER TO "BEAM SUPPORT SCHEDULE" AND "POST SCHEDULE" ON DRAWING S-004 FOR BEAM SUPPORT AND POST SIZES, RESPECTIVELY.
9. ☐ ON PLAN INDICATES HANGER. REFER TO "BEAM SCHEDULE" AND SECTIONS FOR SIZE.
10. REFER TO ARCHITECTURAL DRAWINGS FOR WALL TOP PLATE ELEVATION. SEE "TYPICAL DETAILS" FOR TOP PLATE FASTENING AND SPLICE SCHEDULE.
11. A GALVANIZED SHELF ANGLE TO SUPPORT THE BRICK VENEER SHALL BE REQUIRED @ THE 4TH FLOOR WHERE THE BRICK EXCEEDS 30'-0" ABOVE THE FOUNDATION OR PODIUM. REFER TO "TYPICAL SHELF ANGLE DETAIL" FOR ADDITIONAL INFORMATION.
12. FLOOR FRAMING SHALL ALIGN WITH POSTS AND STUDS BELOW, UNLESS THE LAYOUT SPACING DO NOT MATCH. REFER TO THE "BEARING WALL SCHEDULE" ON DRAWING S-005 FOR ADDITIONAL INFORMATION.
13. REFER TO DRAWING S-001 "STRUCTURAL MASONRY" NOTE #1 AND #12, FOR MASONRY WALL REINFORCEMENT AND LINTEL INFORMATION, RESPECTIVELY.
14. ELEVATOR OPENING FRAMING DIMENSIONS TO BE VERIFIED BY THE PROJECT ARCHITECT AND THE ELEVATOR CONSULTANT/MFR. PRIOR TO PROCEEDING WITH CONSTRUCTION.



FOURTH FLOOR FRAMING PLAN

1/8" = 1'-0"

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STAMP

KEY PLAN

MARK	DATE	ISSUED FOR CONSTRUCTION	DESCRIPTION
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PROJECT NUMBER: 1108-05
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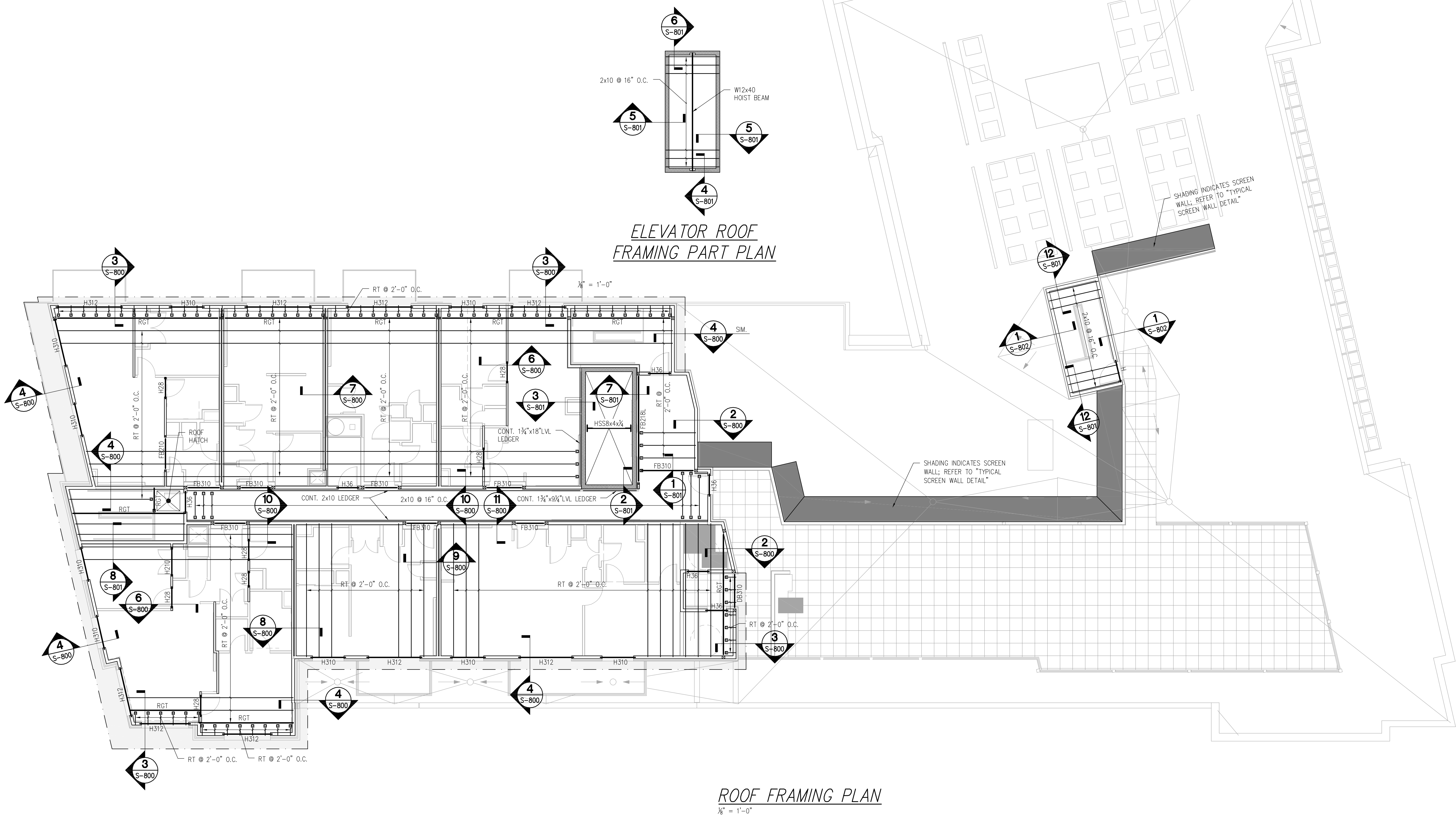
SHEET TITLE

FOURTH FLOOR
FRAMING PLAN

S-204

ROOF FRAMING NOTES:

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
2. THE ROOF CONSTRUCTION SHALL BE ROOF DIAPHRAGM SHEATHING PER "STRUCTURAL DIAPHRAGM" NOTE #1 ON DRAWING S-002. SHEATHING SHALL BE CONTINUOUS BENEATH ALL OVERFRAMED ROOF AREAS AND DORMERS.
3. TRUSS MANUFACTURER TO DESIGN TRUSSES FOR ADDITIONAL CONCENTRATED LOADS FROM RTU. CONFIRM UNIT SIZE, WEIGHT & LOCATION WITH MEP DRAWINGS.
4. REFER TO ARCHITECTURAL ROOF PLAN AND ELEVATIONS TO CONFIRM ALL PITCH LINES AND ROOF DIMENSIONS.
5. RT-#, RGT-# AND RDT-# ON PLAN INDICATES 18" ROOF TRUSS TYPE, ROOF GIRDER TRUSS TYPE AND ROOF DRAG TRUSS TYPE, RESPECTIVELY. REFER TO "ROOF TRUSS LOADING SCHEDULE" ON THIS DRAWING FOR DESIGN LOADS. TRUSS DESIGNER SHALL PROVIDE ALL TEMPORARY AND PERMANENT STABILITY BRACING AND BRIDGING DURING ERECTION AND AFTER PERMANENT INSTALLATION. TRUSS DESIGNER SHALL SPECIFY ALL TRUSS BRIDGING OR BRACING LINES ON THE TRUSS DESIGN DRAWINGS.
6. REFER TO THE "TYPICAL FLOOR/ROOF TRUSS STABILITY BRACING DETAIL" AT ALL BEARING WALLS WHERE NO SHEAR BLOCKS, RIM BOARDS OR CONTINUOUS RIBBONS ARE PRESENT.
7. REFER TO "UPLIFT TIEDOWN SCHEDULE" AND "WIND UPLIFT SCHEDULE" ON DRAWING S-004 FOR MINIMUM TRUSS UPLIFT ANCHORAGE AND WIND UPLIFT LOADS, RESPECTIVELY. NOTE: TRUSS MANUFACTURER SHALL PROVIDE ALL REQUIRED ANCHORAGE TO THE STRUCTURE PER THE TRUSS MANUFACTURER'S DESIGN.
8. REFER TO "BEAM SCHEDULE" ON DRAWING S-004 FOR BEAM SIZE, LOCATION, TYPE AND TREATMENT INFORMATION.
9. REFER TO "HEADER SUPPORT SCHEDULE" ON DRAWING S-004 FOR KING STUD AND JACK STUD SIZES. ALL HEADERS SHALL BE LOCATED TO ACCOMMODATE ROUGH OPENINGS AS INDICATED ON THE ARCHITECTURAL DRAWINGS. VERIFY ALL HEADER ELEVATIONS AND ROUGH OPENING DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
10. ALL HEADERS AND BEAMS SUPPORTING ROOF FRAMING MEMBERS SHALL HAVE AN UPLIFT TIEDOWN AS SHOWN IN THE TYPICAL DETAILS "TYPICAL HEADER UPLIFT TIEDOWN DETAIL" AND "TYPICAL DROP/FLUSH BEAM UPLIFT TIEDOWN DETAIL", RESPECTIVELY.
11. ☒ ON PLAN INDICATES BEAM SUPPORT OR POST. REFER TO "POST SCHEDULE" ON DRAWING S-004 FOR POST SIZE, CAP AND BASE INFORMATION. REFER TO "BEAM SUPPORT SCHEDULE" AND "POST SCHEDULE" ON DRAWING S-004 FOR BEAM SUPPORT AND POST SIZES, RESPECTIVELY.
12. ☐ ON PLAN INDICATES HANGER. REFER TO "BEAM SCHEDULE" AND SECTIONS FOR SIZE.
13. REFER TO ARCHITECTURAL DRAWINGS FOR WALL TOP PLATE ELEVATION. SEE "TYPICAL DETAILS" FOR TOP PLATE FASTENING AND SPLICE SCHEDULE.
14. ROOF FRAMING SHALL ALIGN WITH POSTS AND STUDS BELOW, UNLESS THE LAYOUT SPACING DO NOT MATCH. REFER TO THE "BEARING WALL SCHEDULE" ON DRAWING S-004 FOR ADDITIONAL INFORMATION.
15. REFER TO DRAWING S-001 "STRUCTURAL MASONRY" NOTE #11 AND #12, FOR MASONRY WALL REINFORCEMENT AND LINTEL INFORMATION, RESPECTIVELY.
16. ELEVATOR HOIST BEAM LOCATION SHALL BE VERIFIED WITH ELEVATOR SHOP DRAWINGS PRIOR TO FABRICATION.
17. ELEVATOR OPENING FRAMING DIMENSIONS TO BE VERIFIED BY THE PROJECT ARCHITECT AND THE ELEVATOR CONSULTANT/MFR. PRIOR TO PROCEEDING WITH CONSTRUCTION.



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STAMP

KEY PLAN

	10/13/16	ISSUED FOR CONSTRUCTION
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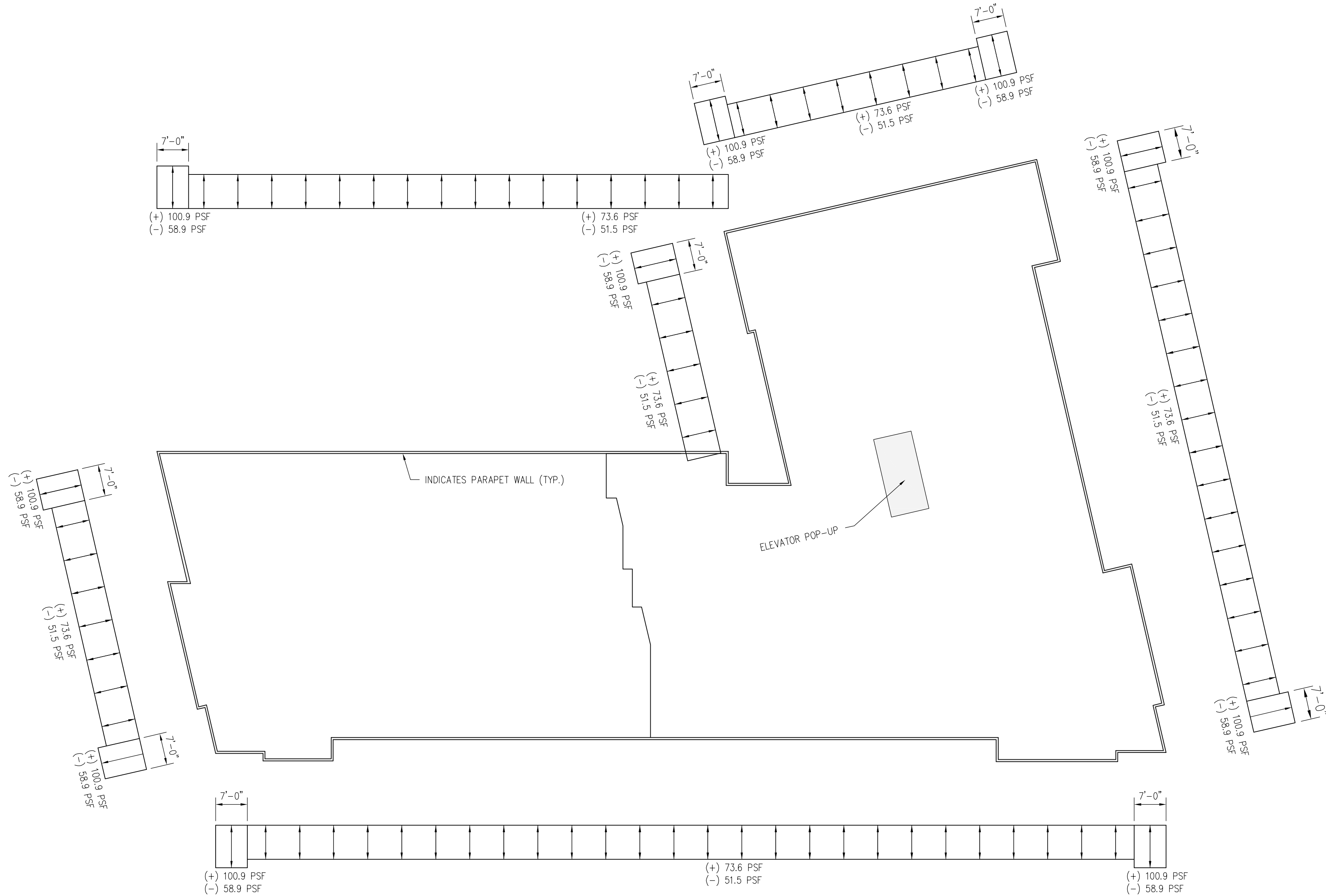
SHEET TITLE

ROOF
FRAMING PLAN

S-300

WIND LOADING NOTES:

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
2. TRUSS MANUFACTURER SHALL DESIGN THE PARAPET TRUSSES FOR ALL GRAVITY LOADS AS INDICATED ON THE "STRUCTURAL NOTES AND SPECIFICATIONS" AND THE LATERAL WIND PRESSURES AS INDICATED ON PLAN.
3. (+) ## PSF ON PLAN INDICATES PARAPET WIND PRESSURES ACTING TOWARDS THE BUILDING.
4. (-) ## PSF ON PLAN INDICATES PARAPET WIND PRESSURE ACTING AWAY FROM THE BUILDING.
5. REFER TO FRAMING SECTIONS FOR PARAPET TRUSS CONNECTIONS TO ROOF FRAMING. THE SUPPORT CONNECTIONS SHALL BE USED IN THE PARAPET TRUSS DESIGN.

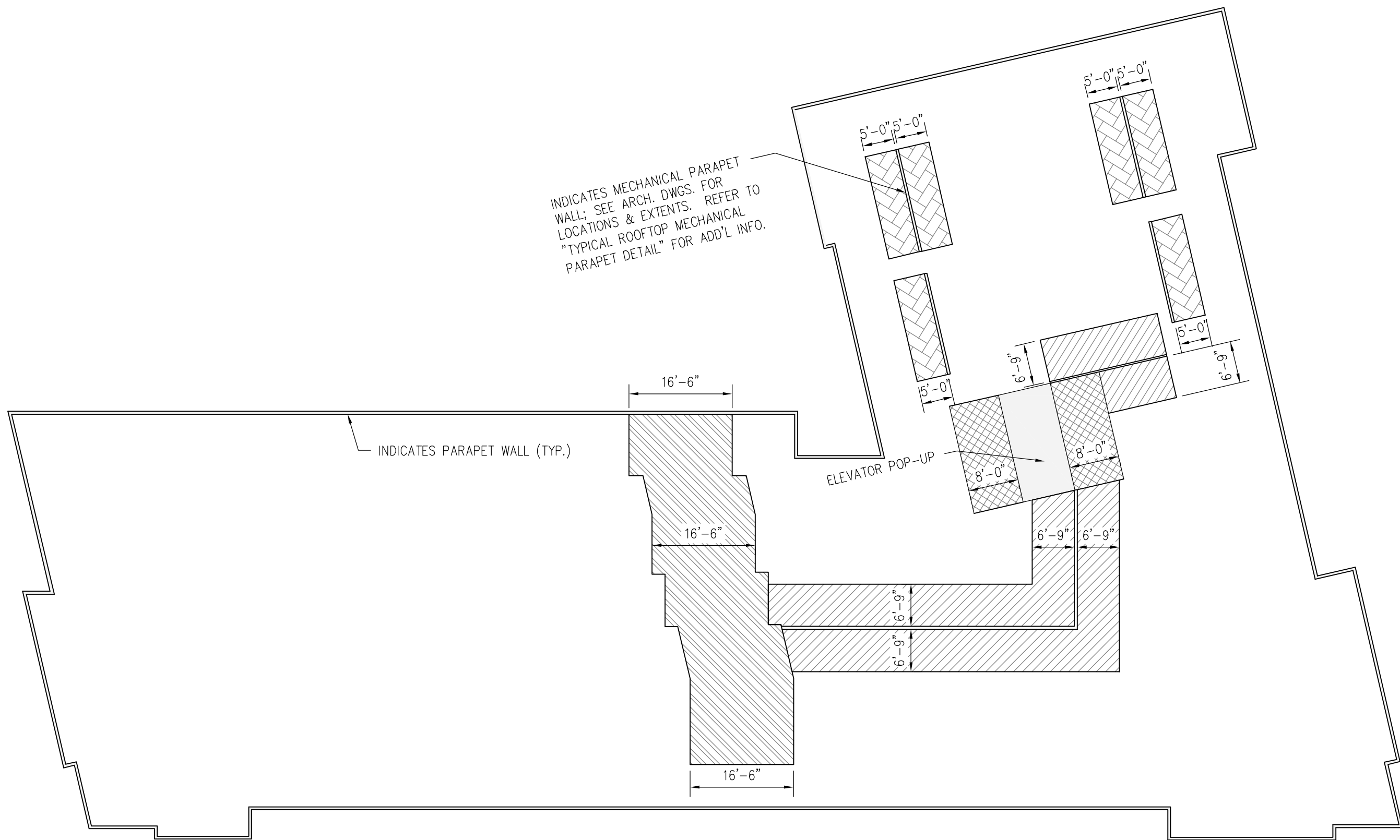


ROOF WIND LOADING PLAN

1/8" = 1'-0"

SNOW LOADING NOTES:

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
2. TRUSS MANUFACTURER SHALL DESIGN THE ROOF TRUSSES FOR ALL GRAVITY LOADS AS INDICATED ON THE "STRUCTURAL NOTES AND SPECIFICATIONS" AND THE SNOW LOADS AS INDICATED ON PLAN.
3. [Blank box] ON PLAN INDICATES FLAT ROOF SNOW LOAD = 30 PSF.
4. [Diagonal lines box] ON PLAN INDICATES FLAT ROOF SNOW LOAD PLUS SNOW DRIFT. THE FLAT ROOF SNOW LOAD PLUS DRIFT = 110 PSF AGAINST THE WALL AND TAPERS FOR A DISTANCE OF 16'-6" TO THE FLAT ROOF SNOW LOAD = 30 PSF.
5. [Cross-hatch box] ON PLAN INDICATES FLAT ROOF SNOW LOAD PLUS SNOW DRIFT. THE FLAT ROOF SNOW LOAD PLUS DRIFT = 70 PSF AGAINST THE WALL AND TAPERS FOR A DISTANCE OF 8'-0" TO THE FLAT ROOF SNOW LOAD = 30 PSF.
6. [Diagonal lines box] ON PLAN INDICATES FLAT ROOF SNOW LOAD PLUS SNOW DRIFT. THE FLAT ROOF SNOW LOAD PLUS DRIFT = 60 PSF AGAINST THE WALL AND TAPERS FOR A DISTANCE OF 6'-9" TO THE FLAT ROOF SNOW LOAD = 30 PSF.
7. [Cross-hatch box] ON PLAN INDICATES FLAT ROOF SNOW LOAD PLUS SNOW DRIFT. THE FLAT ROOF SNOW LOAD PLUS DRIFT = 30 PSF AGAINST THE WALL AND TAPERS FOR A DISTANCE OF 5'-0" TO THE FLAT ROOF SNOW LOAD = 30 PSF.



ROOF SNOW LOADING PLAN

1/8" = 1'-0"

249 Third Street

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KEY PLAN

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SHEET TITLE

ROOF WIND AND
SNOW LOADING PLAN

S-301

- STUD LAYOUT NOTES:**
1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
 2. REFER TO "BEARING WALL SCHEDULE" ON DRAWING S-005 FOR STUD SIZE, STUD LAYOUT AND LOCATION INFORMATION.
 3. REFER TO "ANCHOR BOLT SCHEDULE" ON DRAWING S-005 FOR SILL PLATE ANCHORAGE INFORMATION.
 4. VERIFY ALL WALL WIDTHS WITH ARCHITECTURAL DRAWINGS. NON-STRUCTURAL WALLS SHALL HAVE STUD SIZE AND SPACING PER ARCHITECTURAL DRAWINGS.
 5. ALL WALL LAYOUTS AND ROUGH OPENING LIMITS SHALL BE AS INDICATED ON THE ARCHITECTURAL PLAN. ANY CONFLICTS BETWEEN THE STRUCTURAL DRAWINGS AND ARCHITECTURAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO PROCEEDING WITH THE AFFECTED PORTION OF THE WORK.



STUD LAYOUT PLAN
1/8" = 1'-0"

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STUD LAYOUT PLAN

S-400

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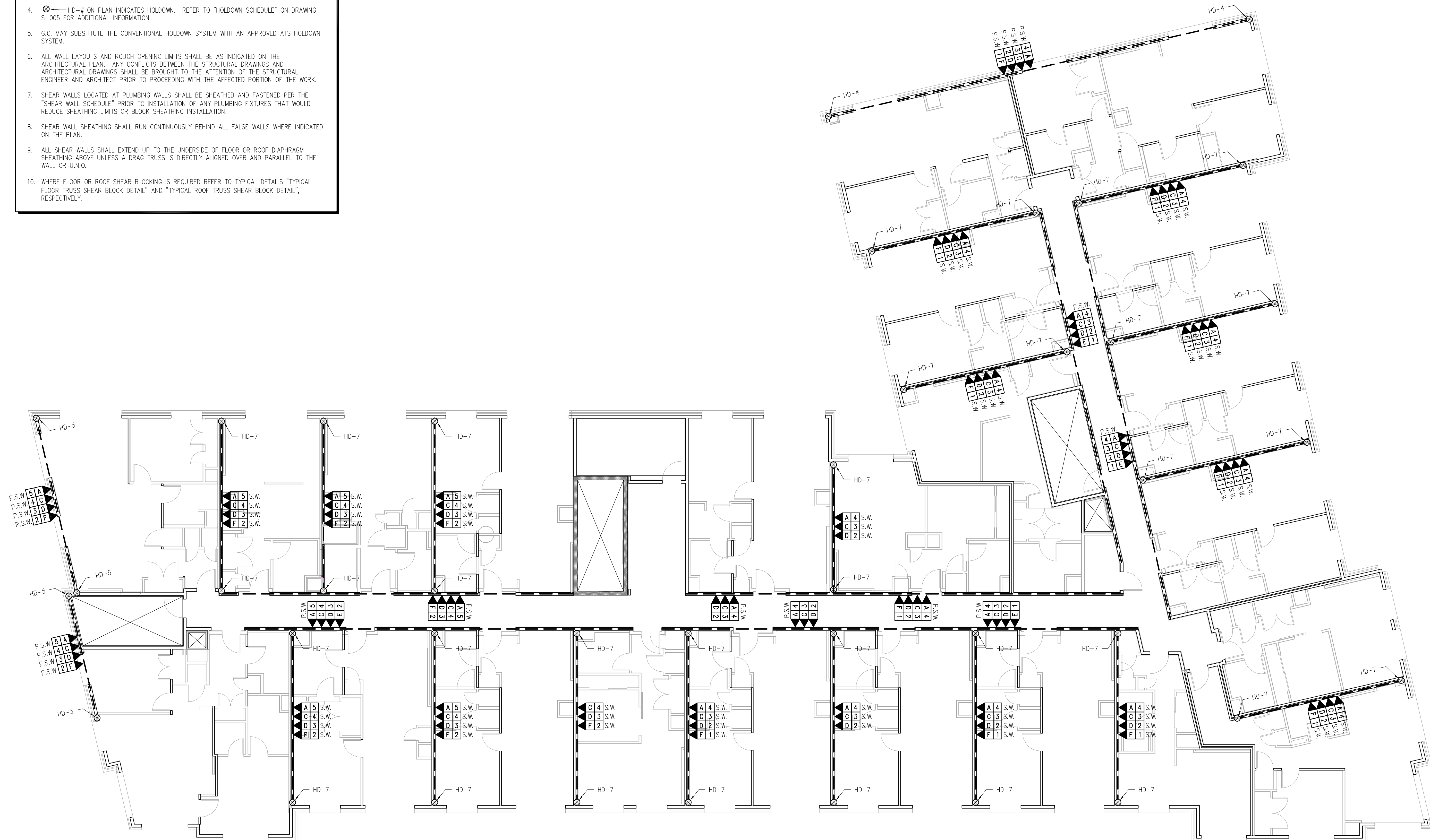
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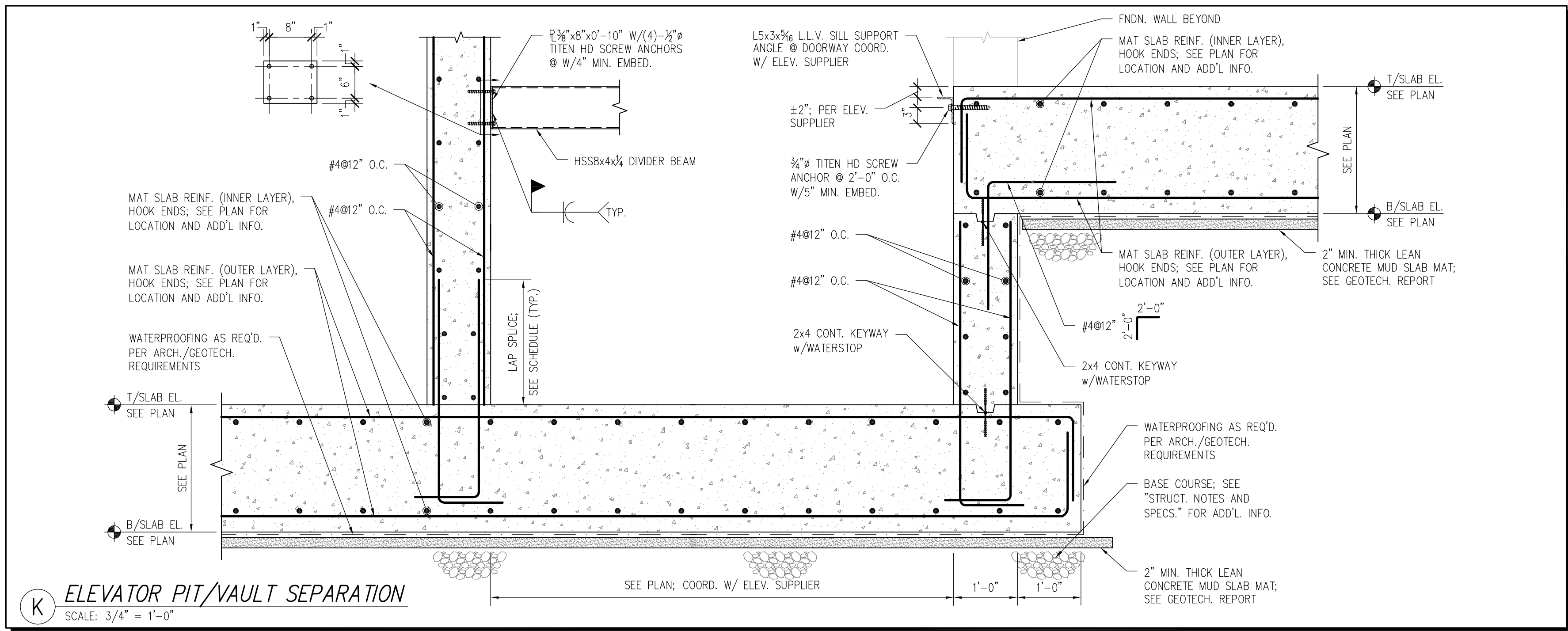
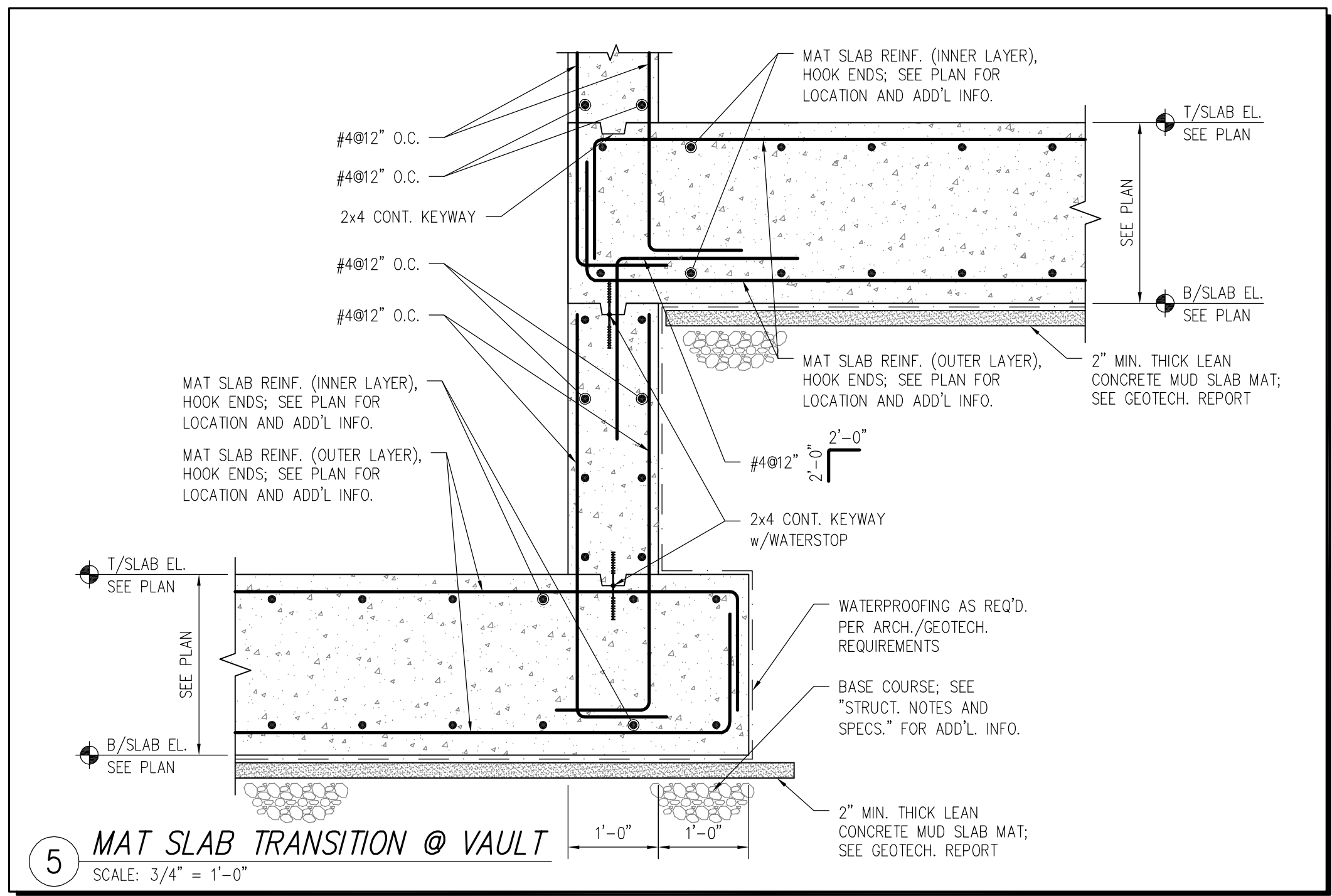
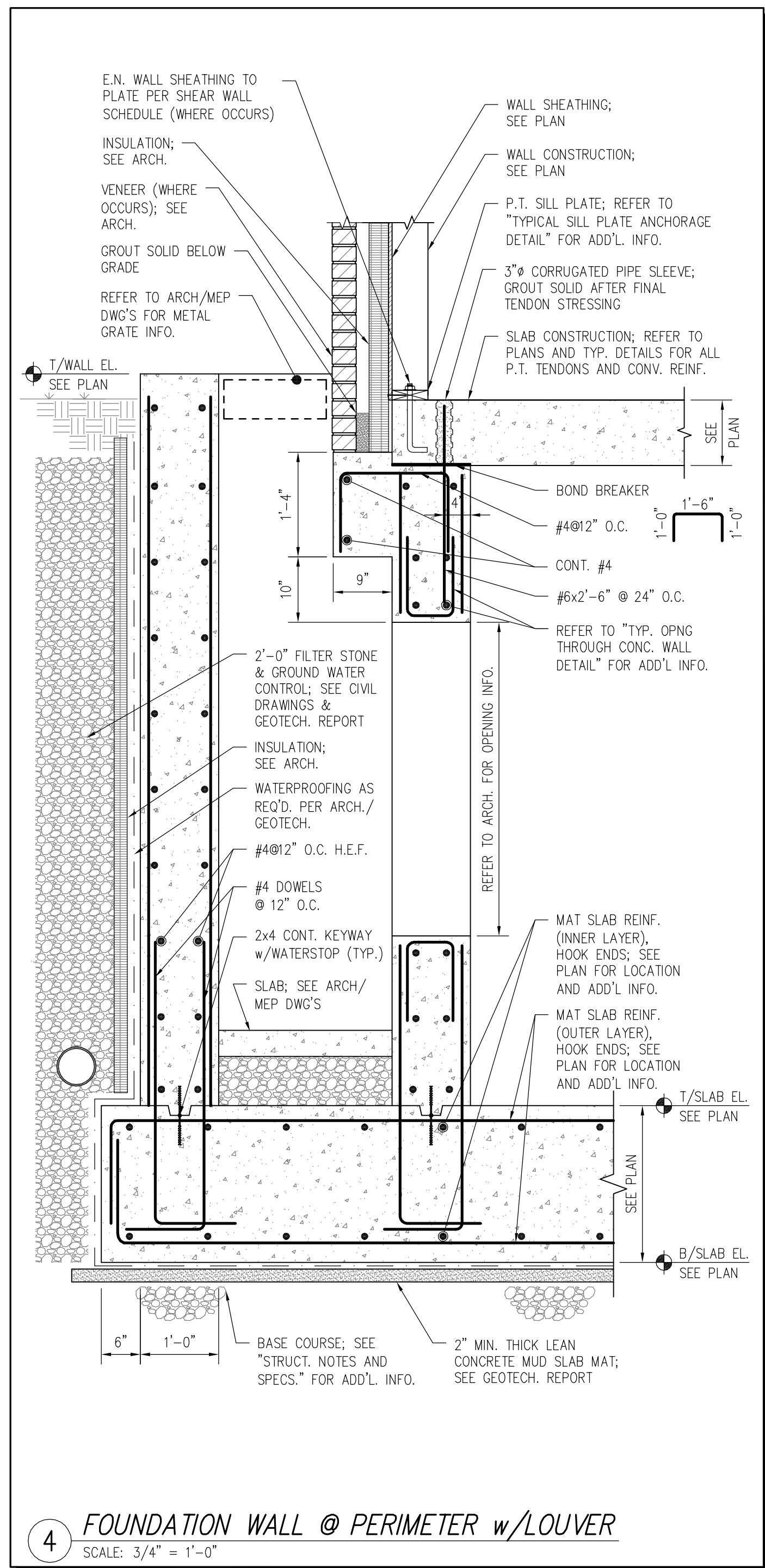
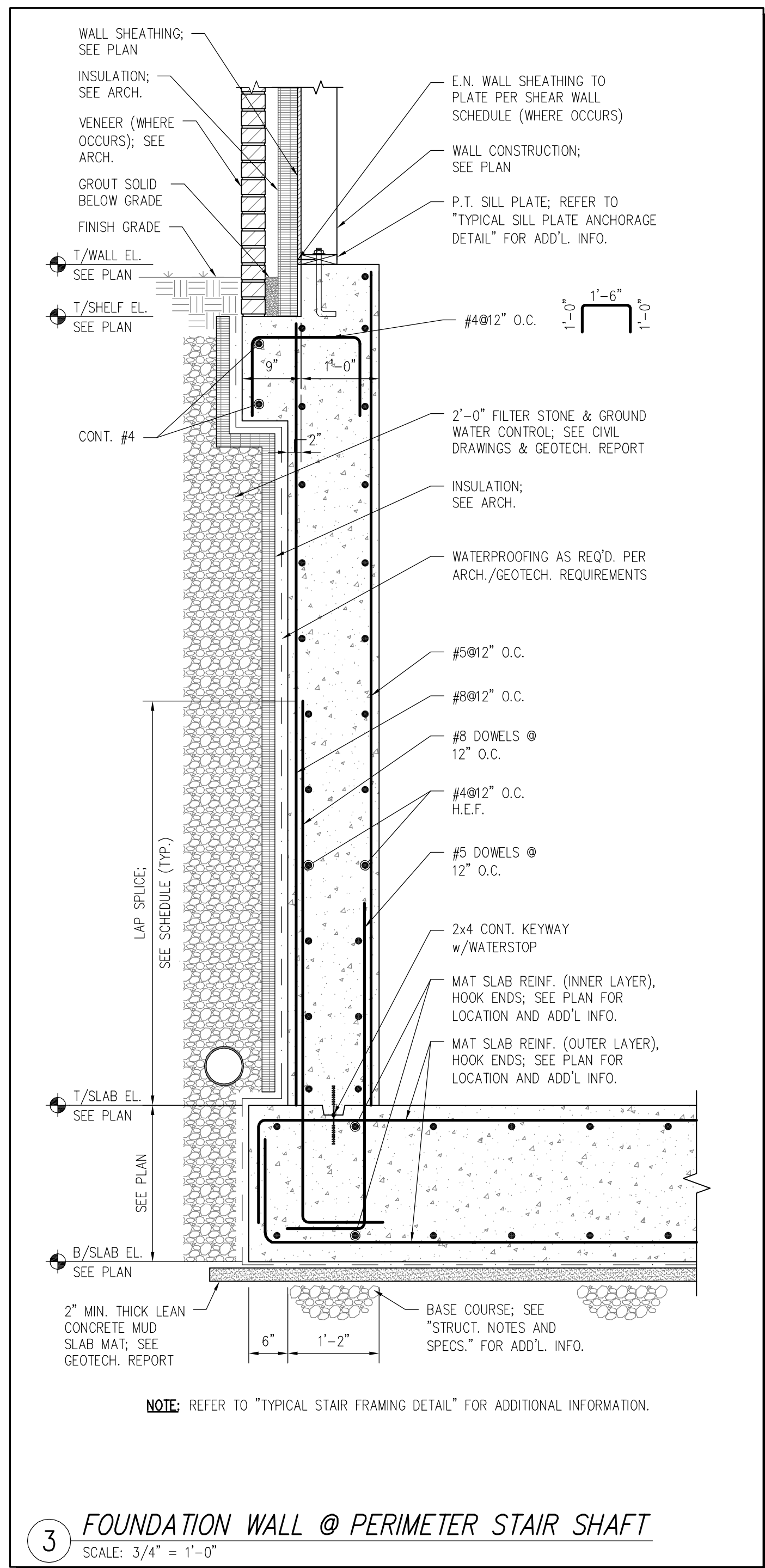
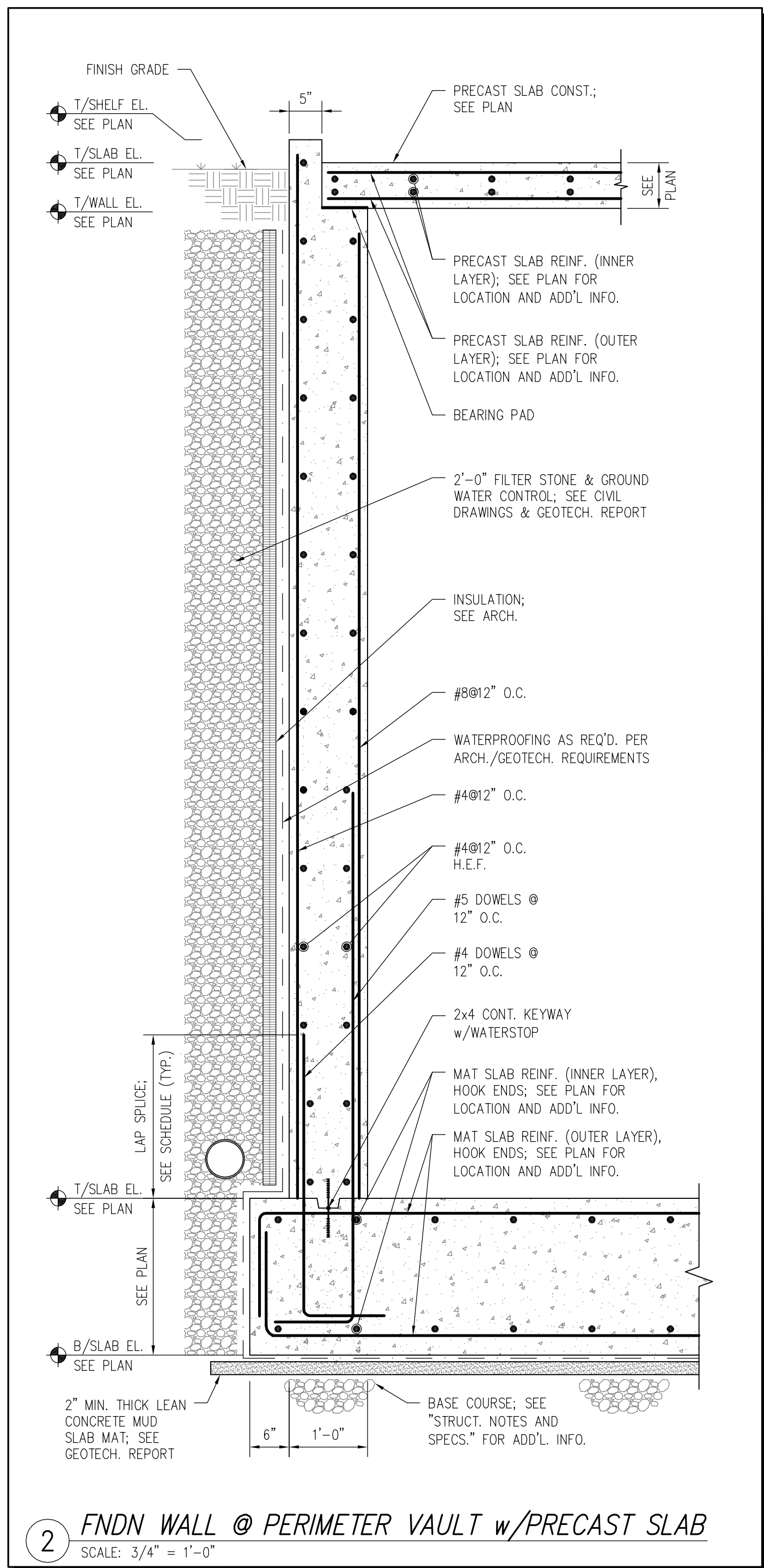
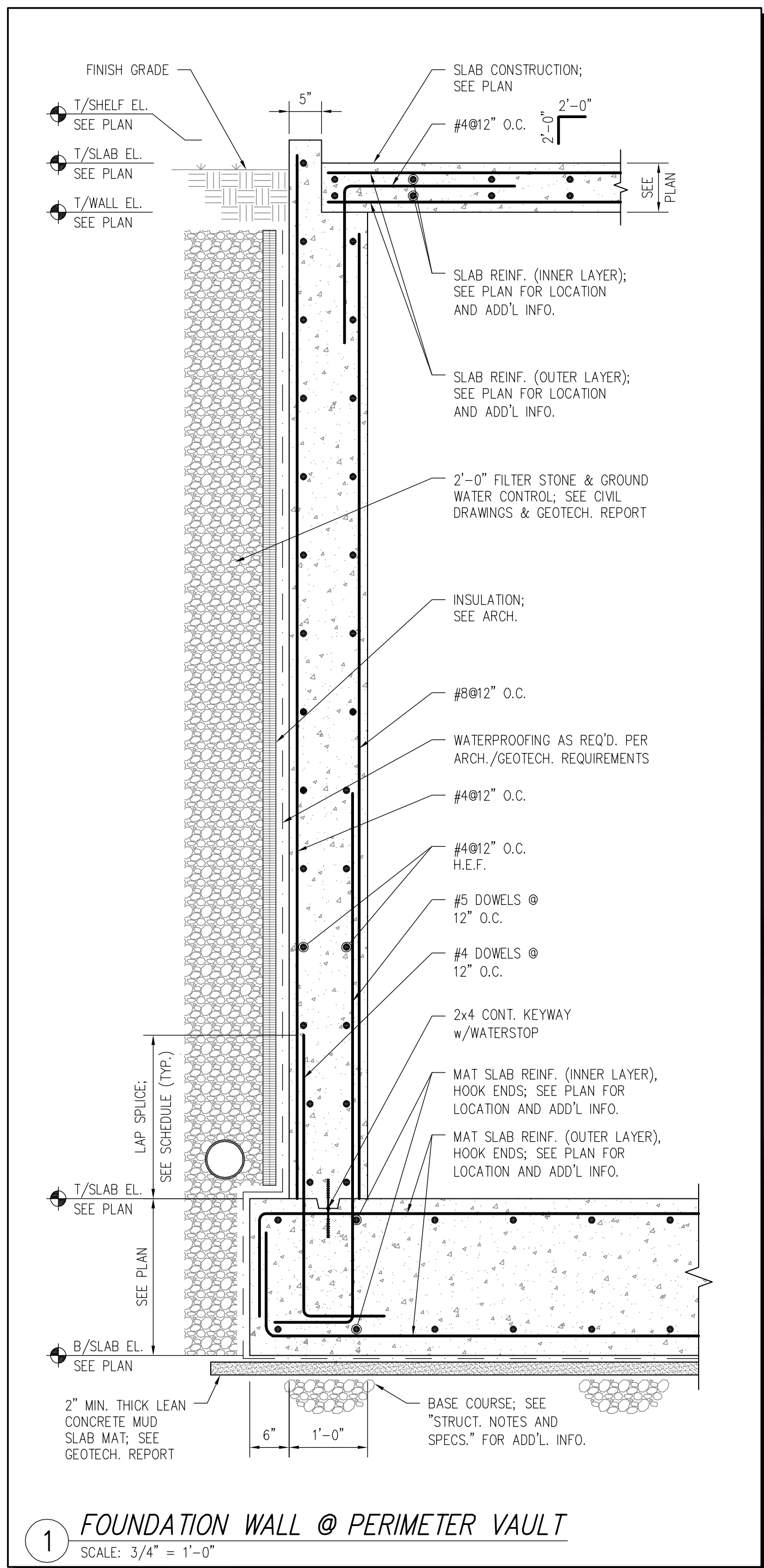
SHEET TITLE

S-401

1. REFER TO S-000 SERIES DRAWINGS FOR "STRUCTURAL NOTES AND SPECIFICATIONS", "SCHEDULES" AND "TYPICAL DETAILS".
2. ON PLAN INDICATES SHEAR WALL. S.W. AND P.S.W. ON PLAN INDICATE SHEAR WALL AND PERFORATED SHEAR WALL, RESPECTIVELY. REFER TO "TYPICAL DETAILS" FOR ADDITIONAL INFORMATION.
3. ON PLAN INDICATES THE SHEAR WALL INFORMATION WHERE "#" INDICATES THE FLOOR, "X" INDICATES THE SHEAR WALL TYPE AND THE ARROW INDICATES THE FACE OF WALL TO BE SHEATHED. NOTE: TENANT AND STAIR SHEAR WALLS SHALL BE SHEATHED ON THE INTERIOR FACE OF THE WALL INDICATED ON PLAN. REFER TO "SHEAR WALL SCHEDULE" ON DRAWING S-005 FOR ADDITIONAL INFORMATION.
4. HD-# ON PLAN INDICATES HOLDOWN. REFER TO "HOLDOWN SCHEDULE" ON DRAWING S-005 FOR ADDITIONAL INFORMATION.
5. G.C. MAY SUBSTITUTE THE CONVENTIONAL HOLDOWN SYSTEM WITH AN APPROVED ATS HOLDOWN SYSTEM.
6. ALL WALL LAYOUTS AND ROUGH OPENING LIMITS SHALL BE AS INDICATED ON THE ARCHITECTURAL PLAN. ANY CONFLICTS BETWEEN THE STRUCTURAL DRAWINGS AND ARCHITECTURAL DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO PROCEEDING WITH THE AFFECTED PORTION OF THE WORK.
7. SHEAR WALLS LOCATED AT PLUMBING WALLS SHALL BE SHEATHED AND FASTENED PER THE "SHEAR WALL SCHEDULE" PRIOR TO INSTALLATION OF ANY PLUMBING FIXTURES THAT WOULD REDUCE SHEATHING LISTS OR BLOCK SHEATHING INSTALLATION.
8. SHEAR WALL SHEATHING SHALL RUN CONTINUOUSLY BEHIND ALL FALSE WALLS WHERE INDICATED ON THE PLAN.
9. ALL SHEAR WALLS SHALL EXTEND UP TO THE UNDERSIDE OF FLOOR OR ROOF DIAPHRAGM SHEATHING ABOVE UNLESS A DRAG TRUSS IS DIRECTLY ALIGNED OVER AND PARALLEL TO THE WALL OR U.N.O.
10. WHERE FLOOR OR ROOF SHEAR BLOCKING IS REQUIRED REFER TO TYPICAL DETAILS "TYPICAL FLOOR TRUSS SHEAR BLOCK DETAIL" AND "TYPICAL ROOF TRUSS SHEAR BLOCK DETAIL", RESPECTIVELY.



BRACING PLAN
 $\frac{1}{8}'' = 1'-0''$



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KEY PLAN

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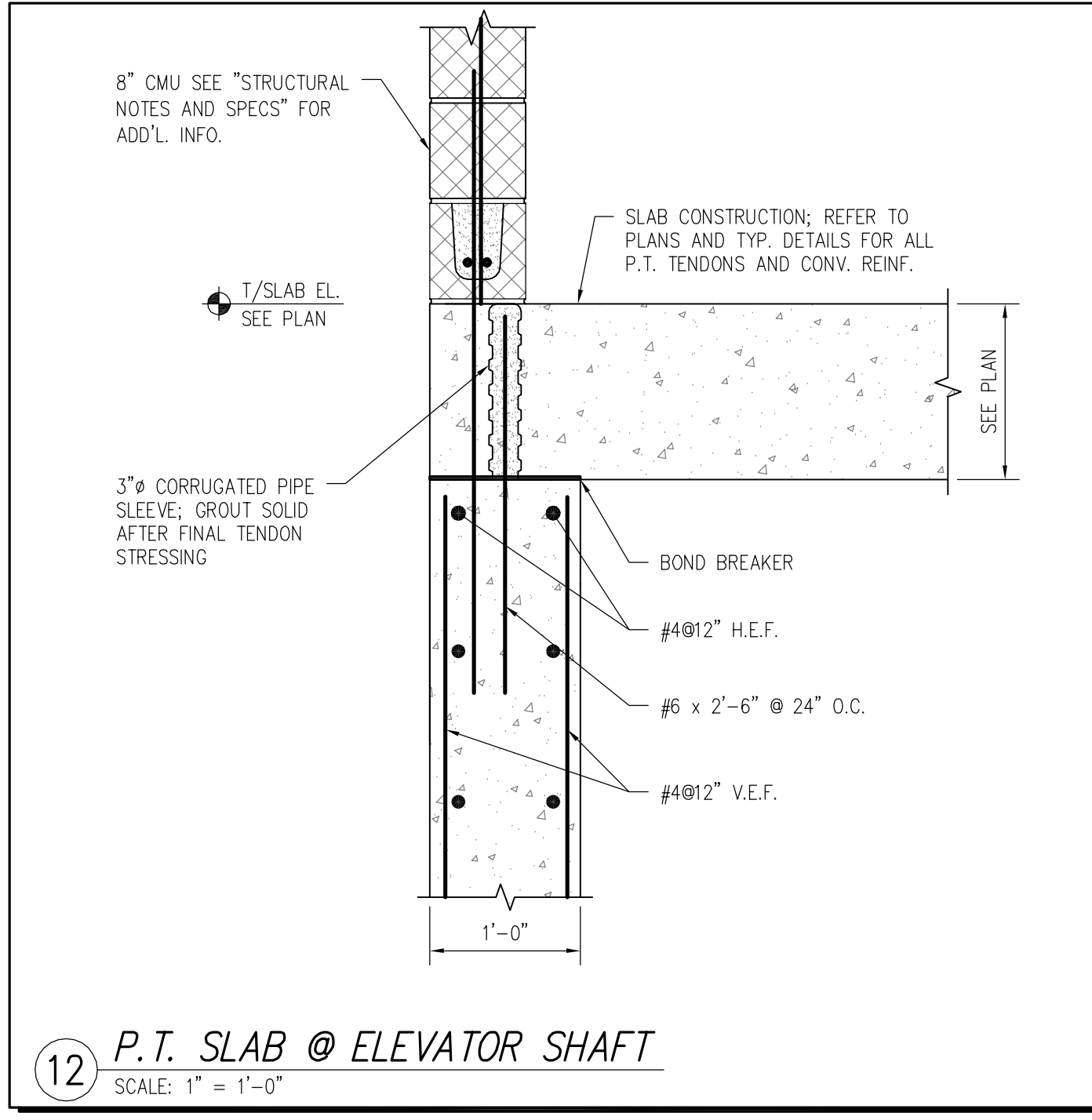
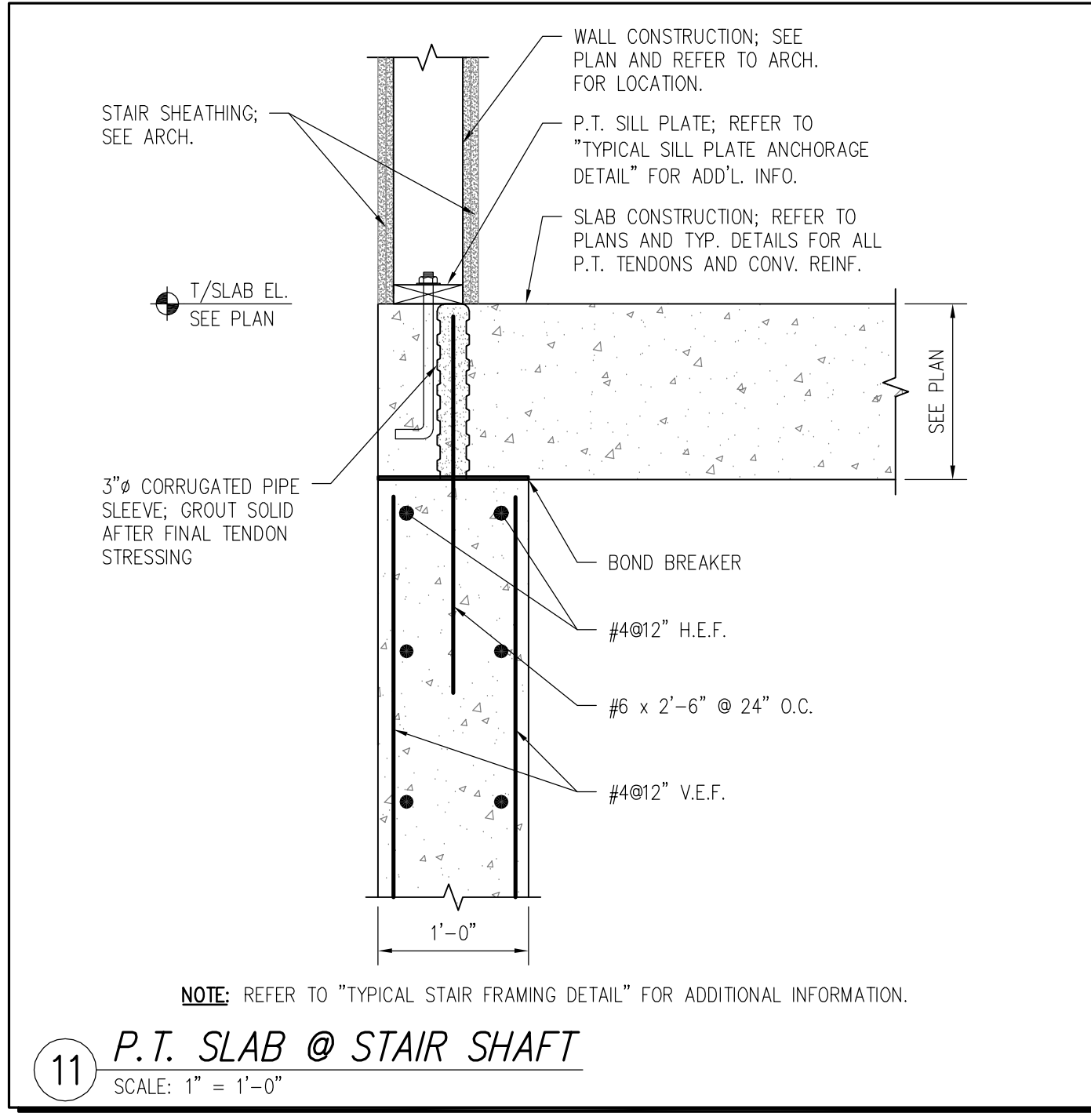
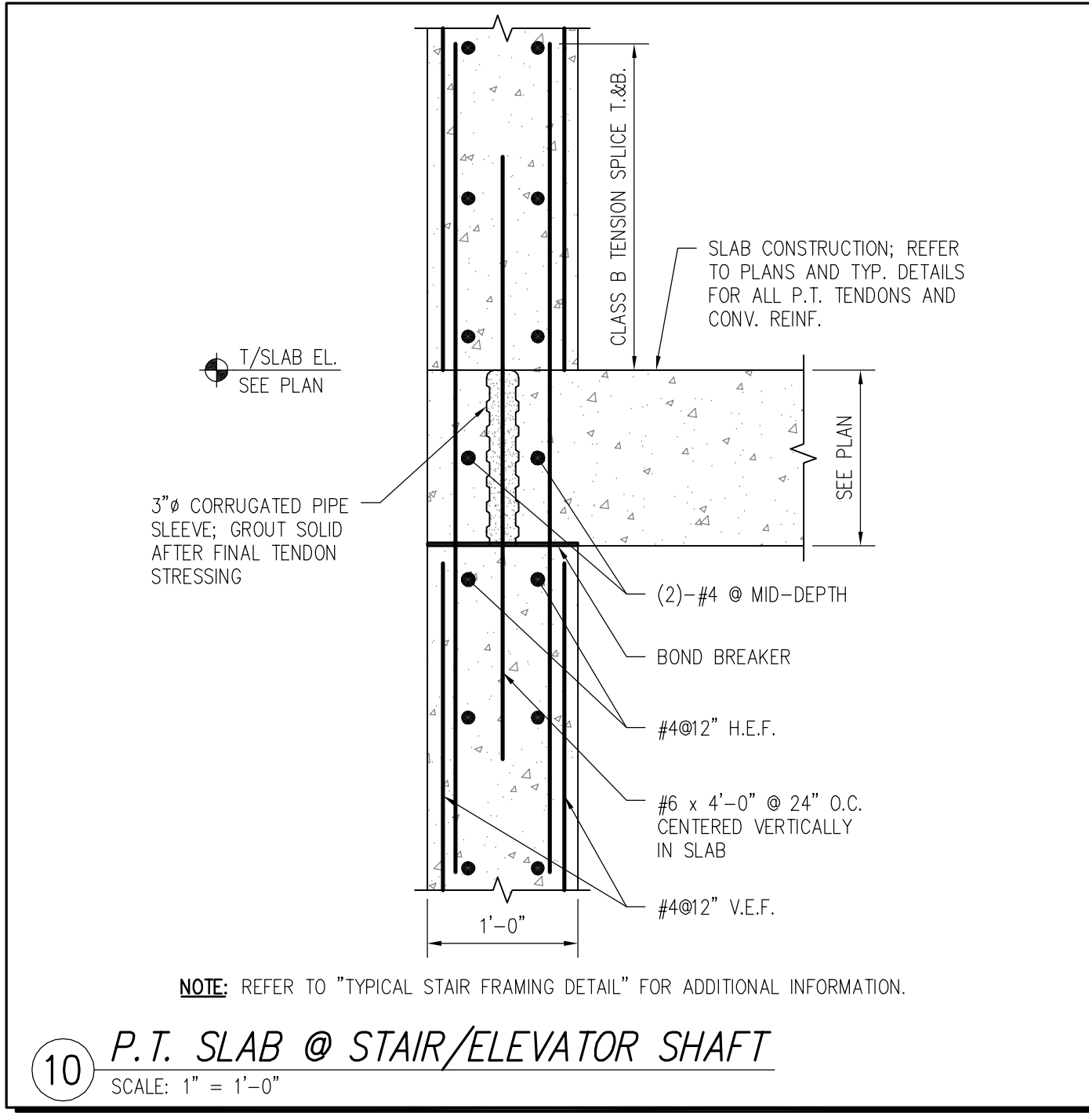
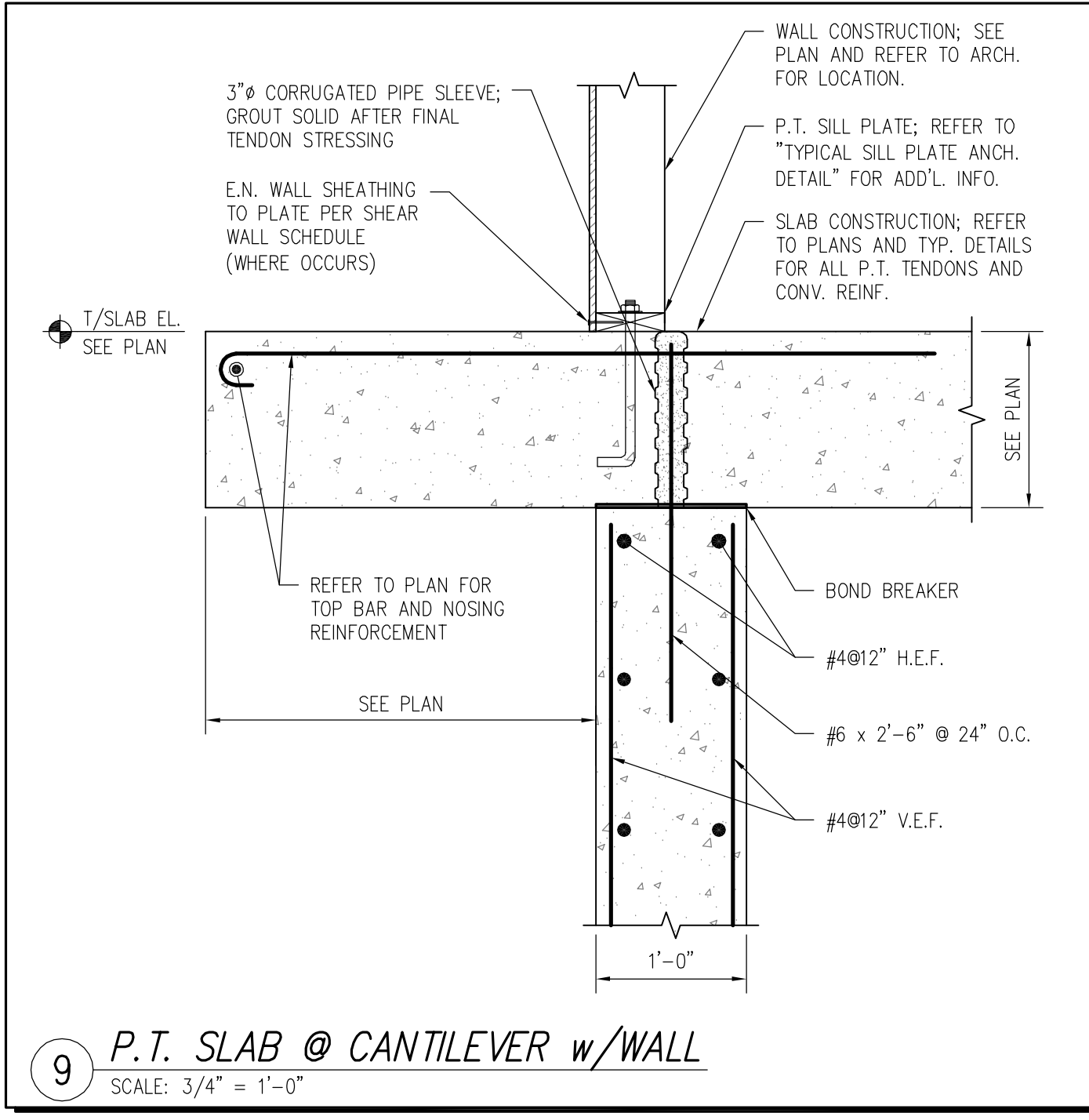
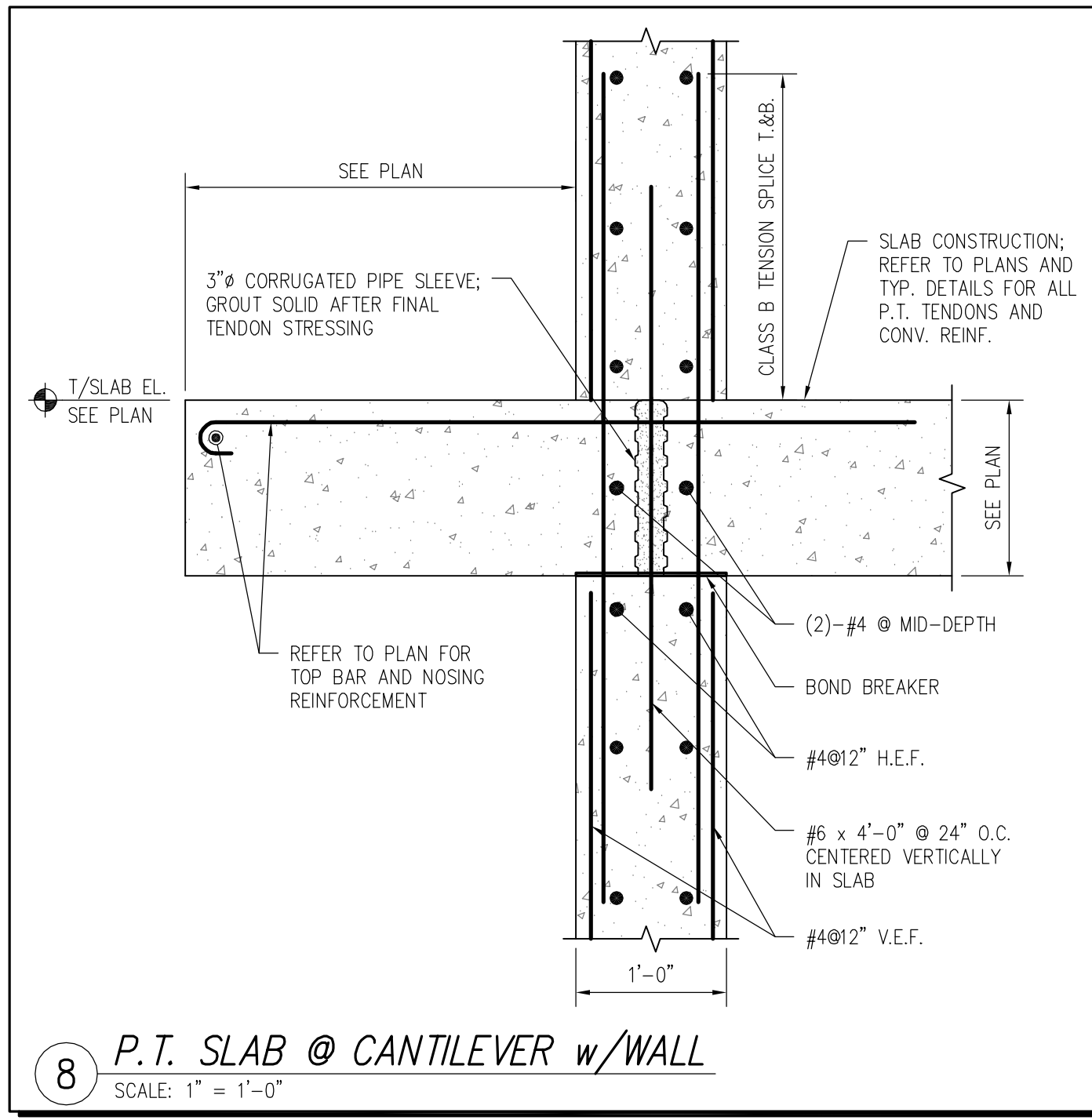
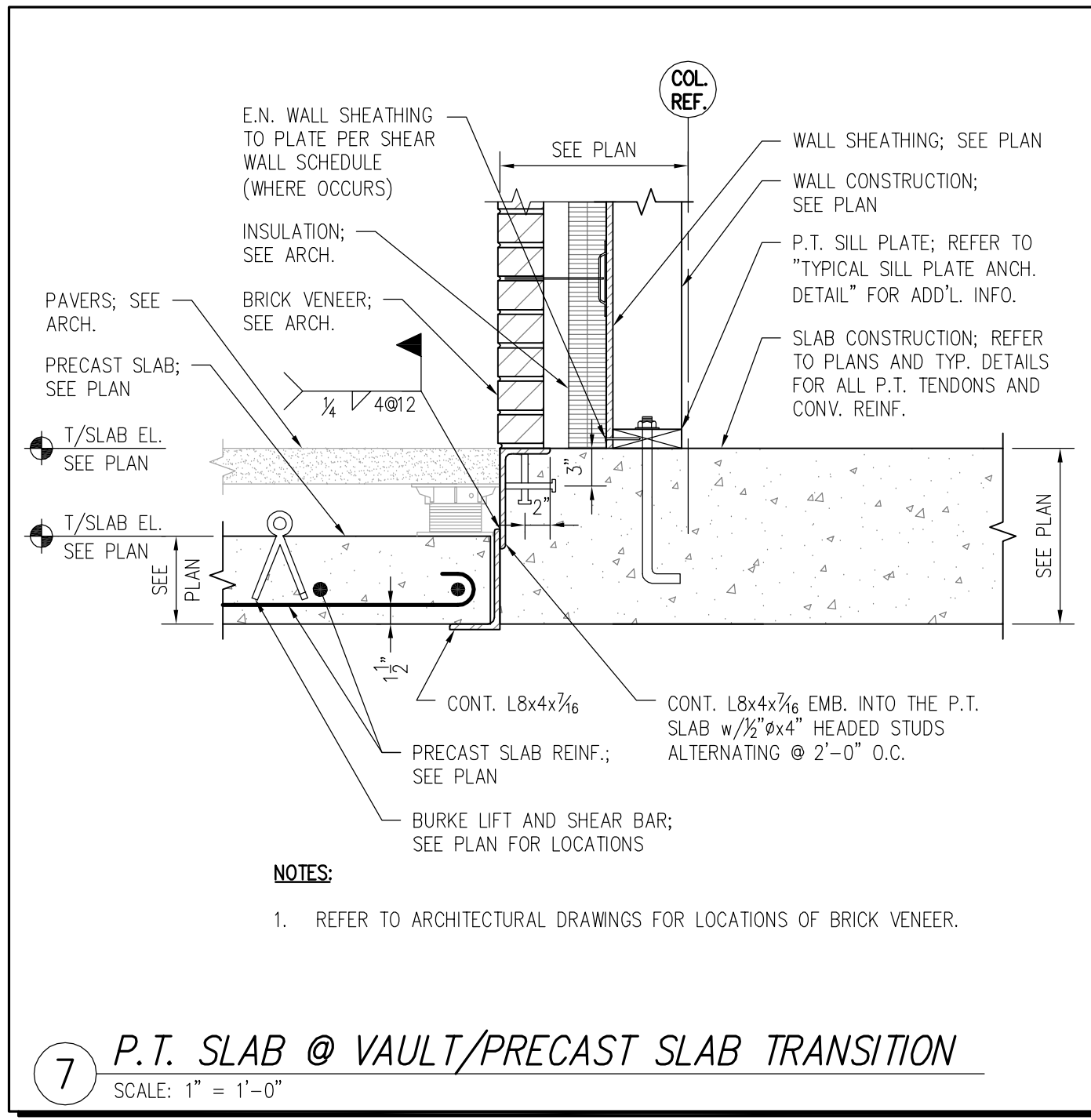
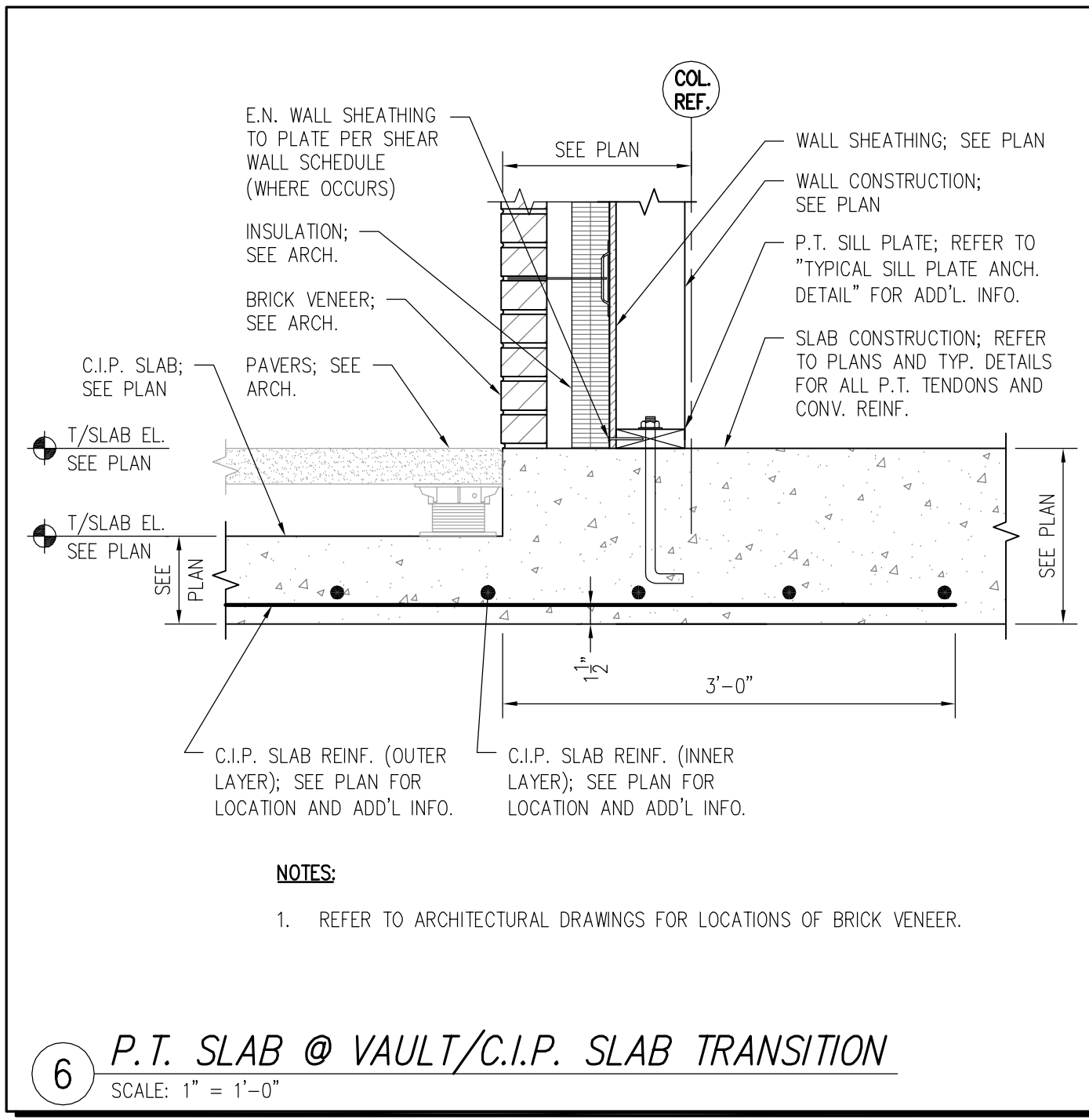
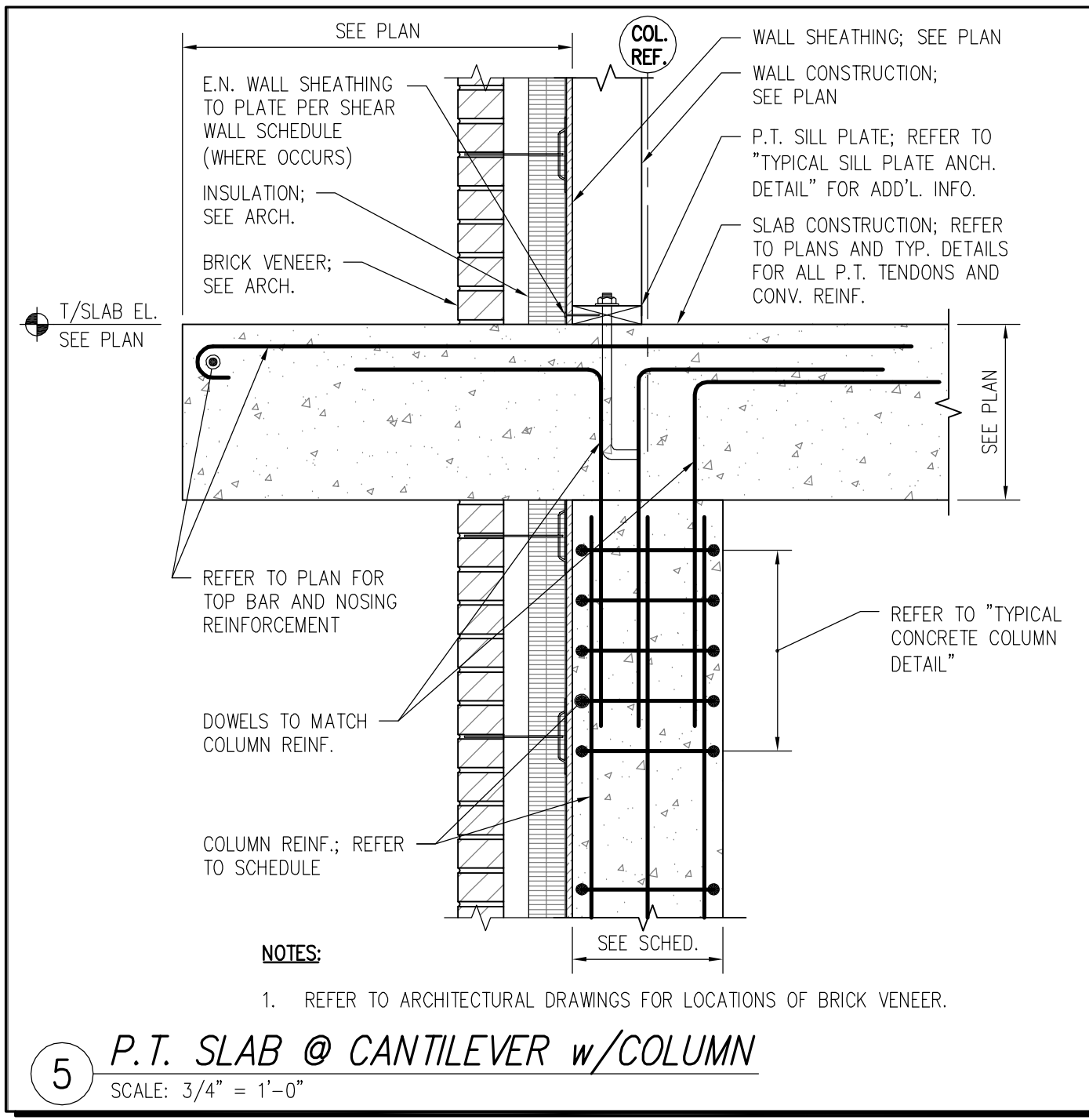
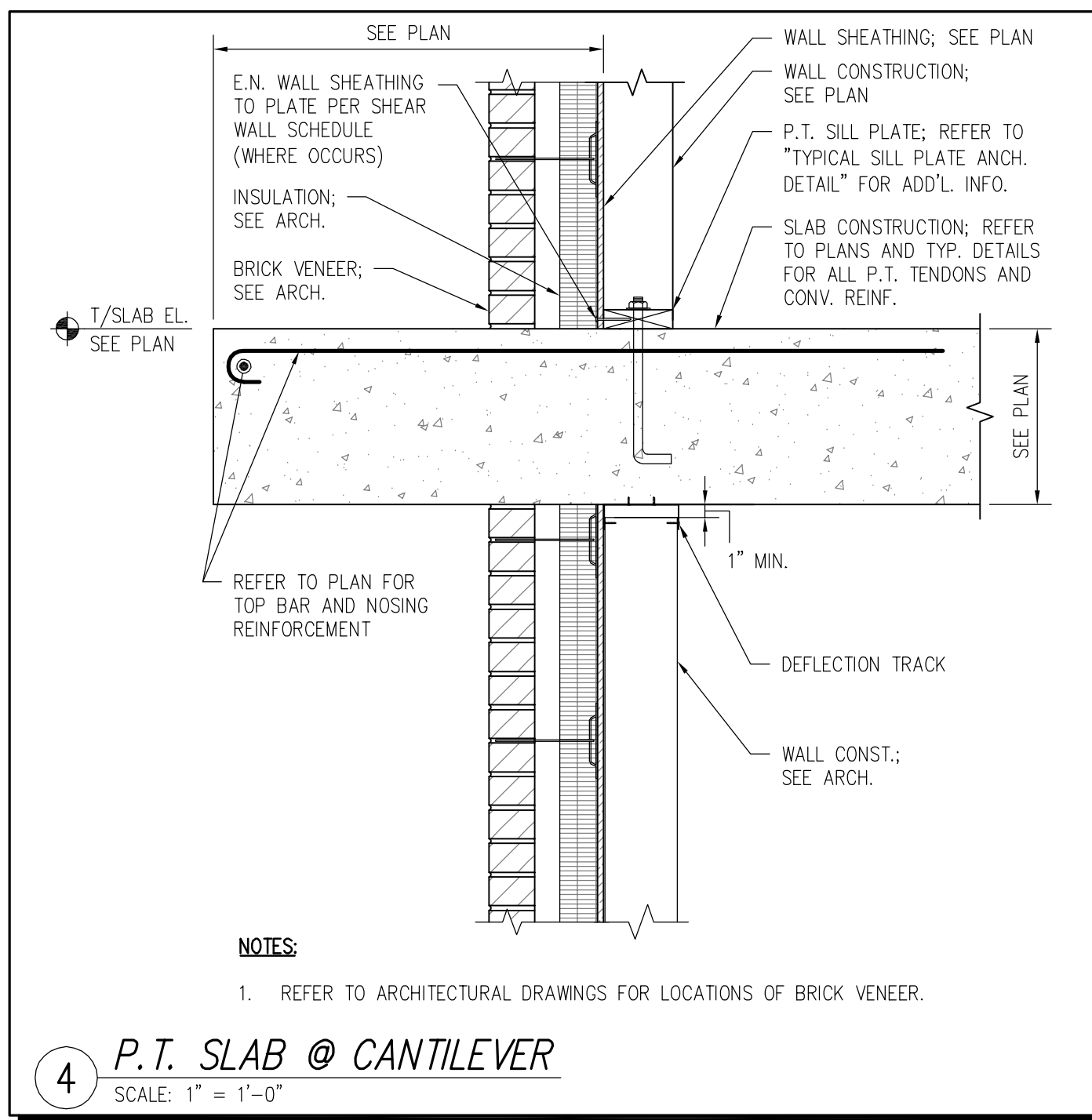
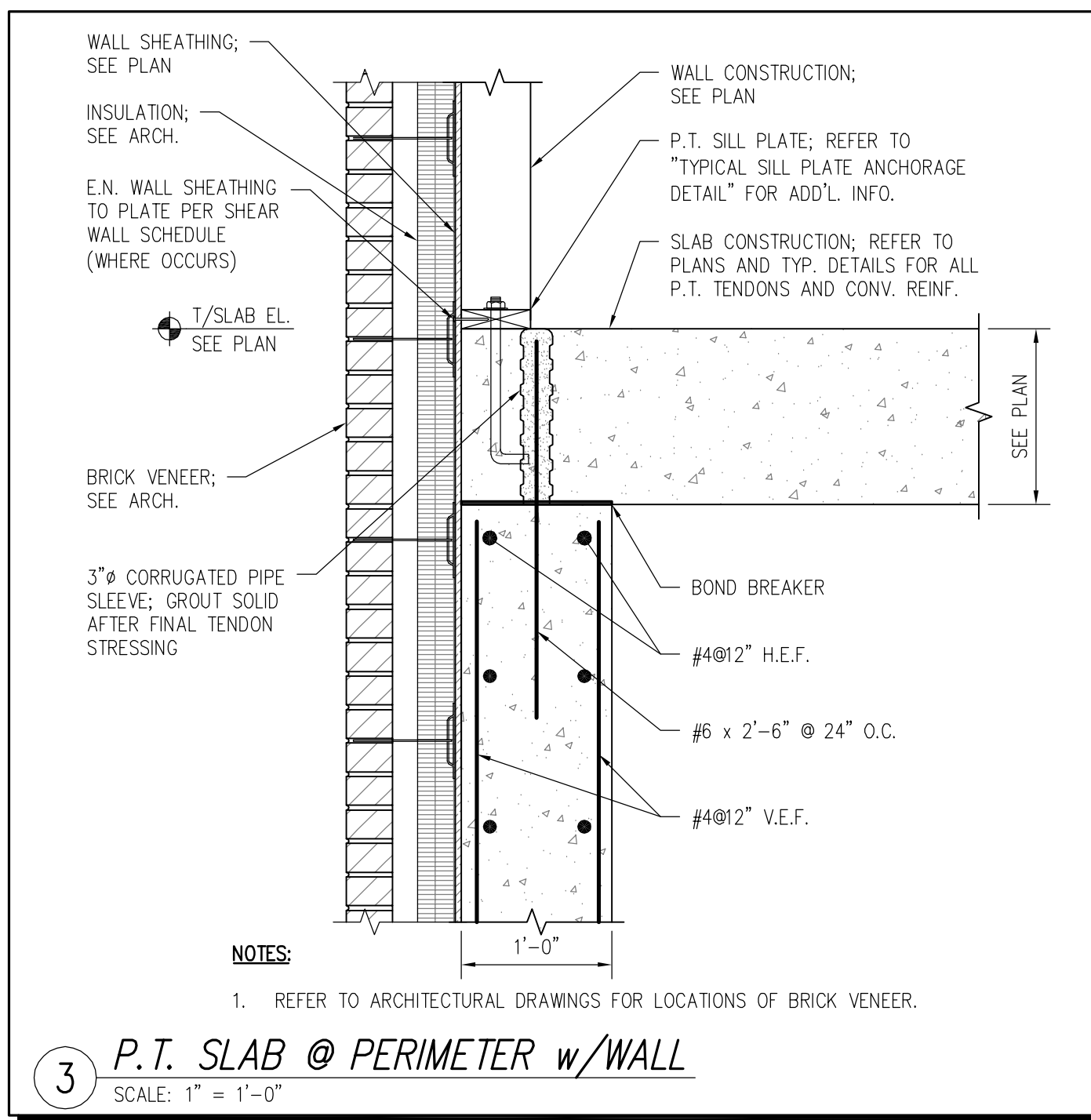
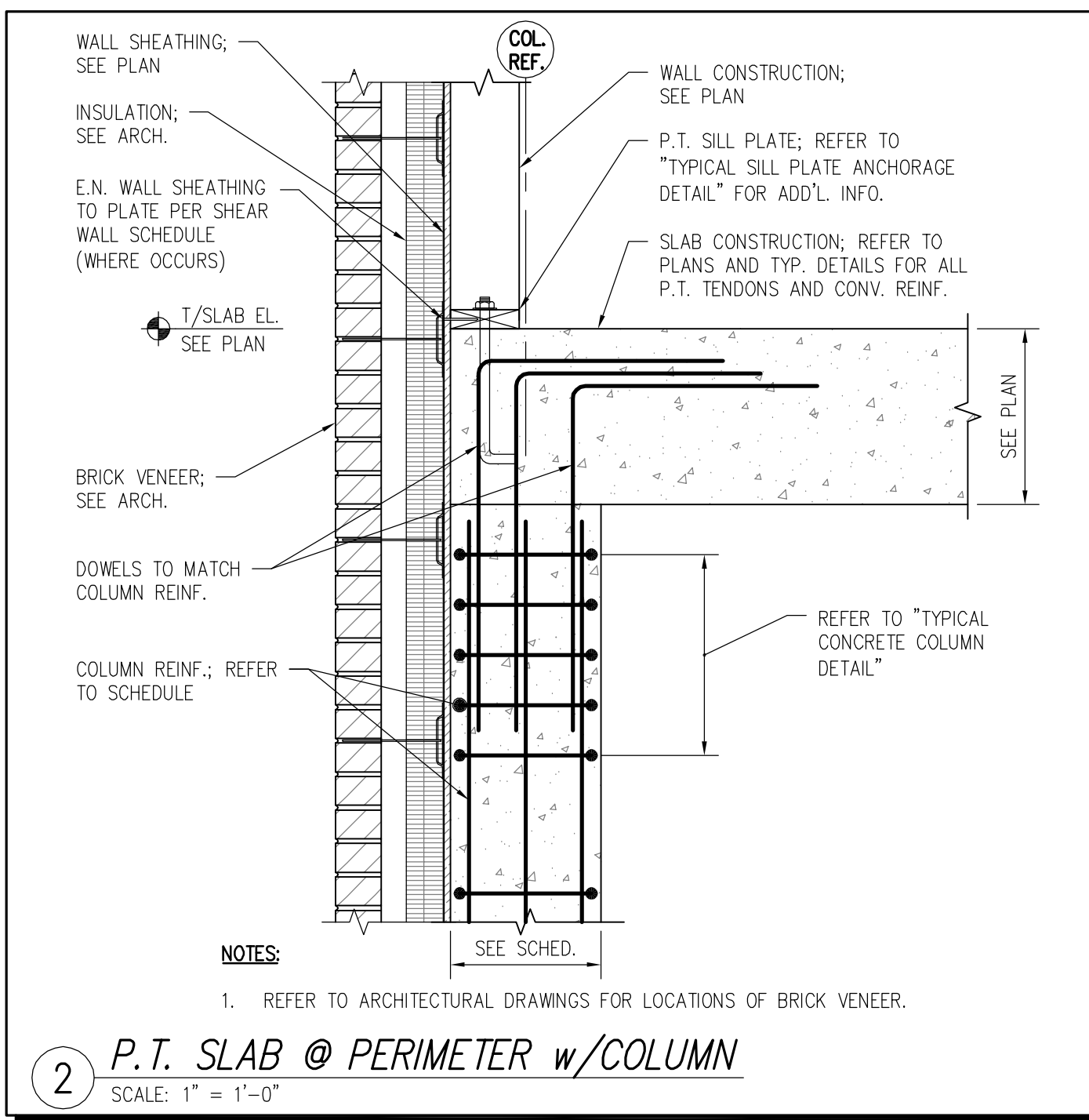
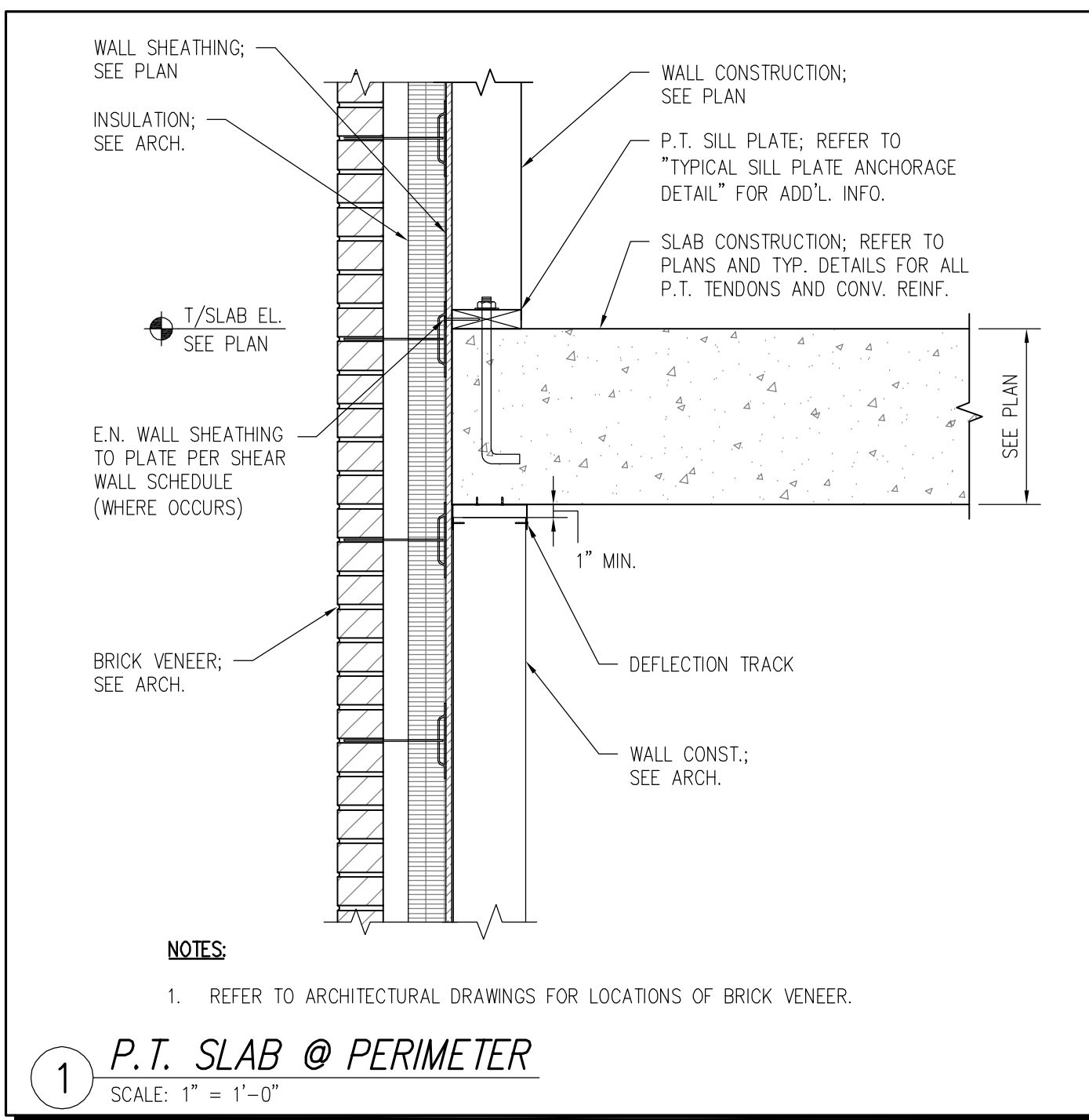
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SHEET TITLE

FOUNDATION
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S-501



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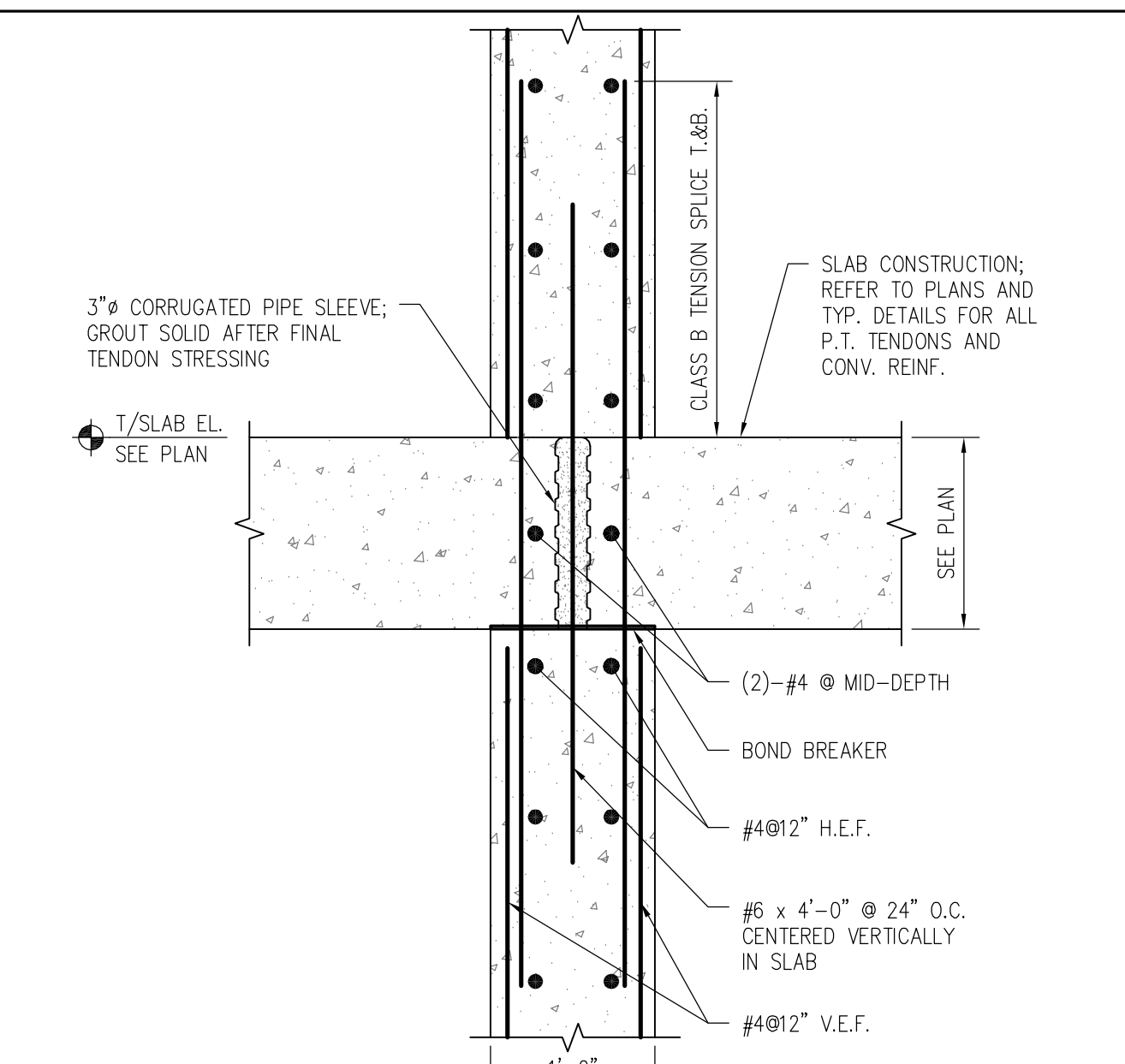
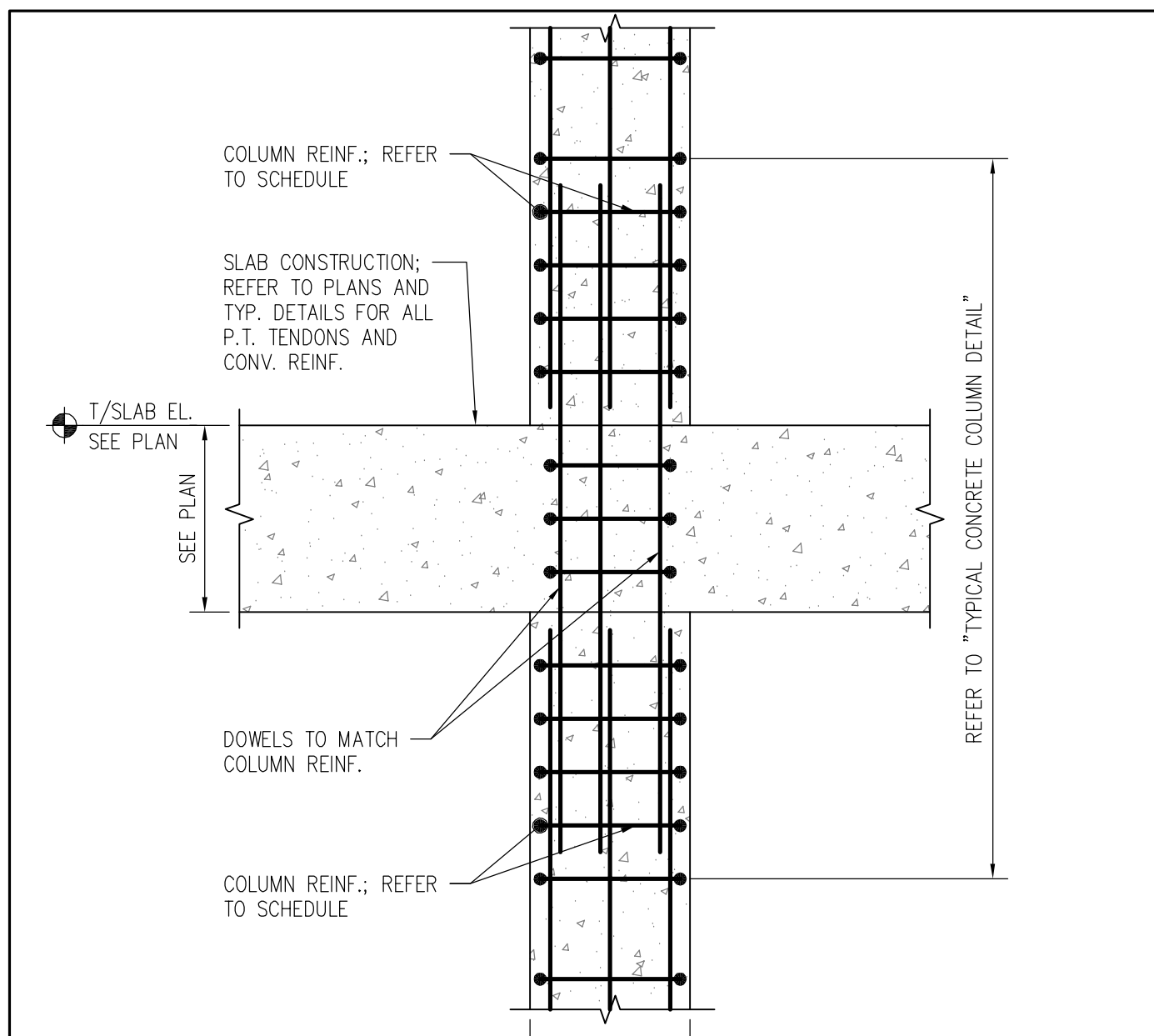
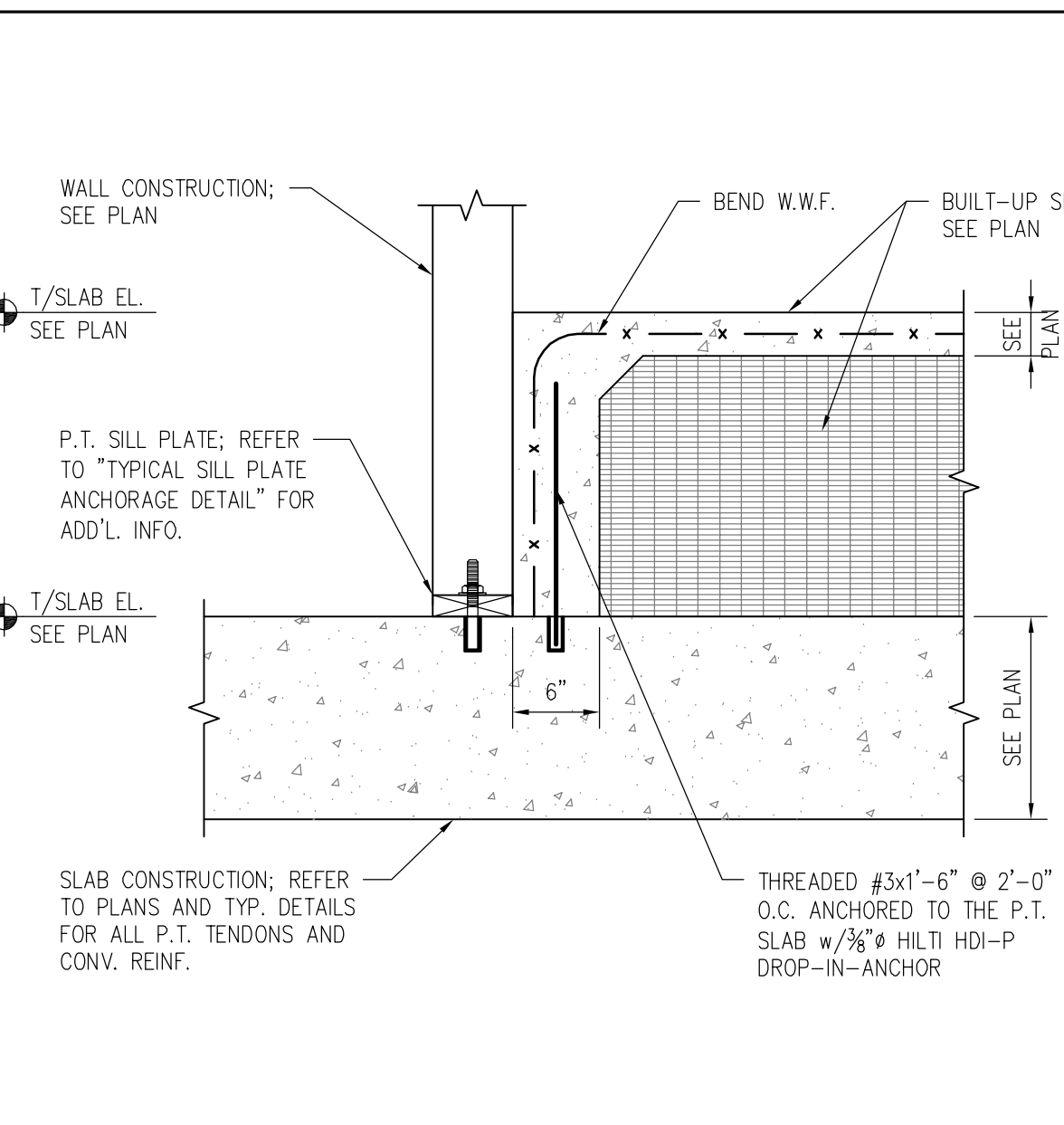
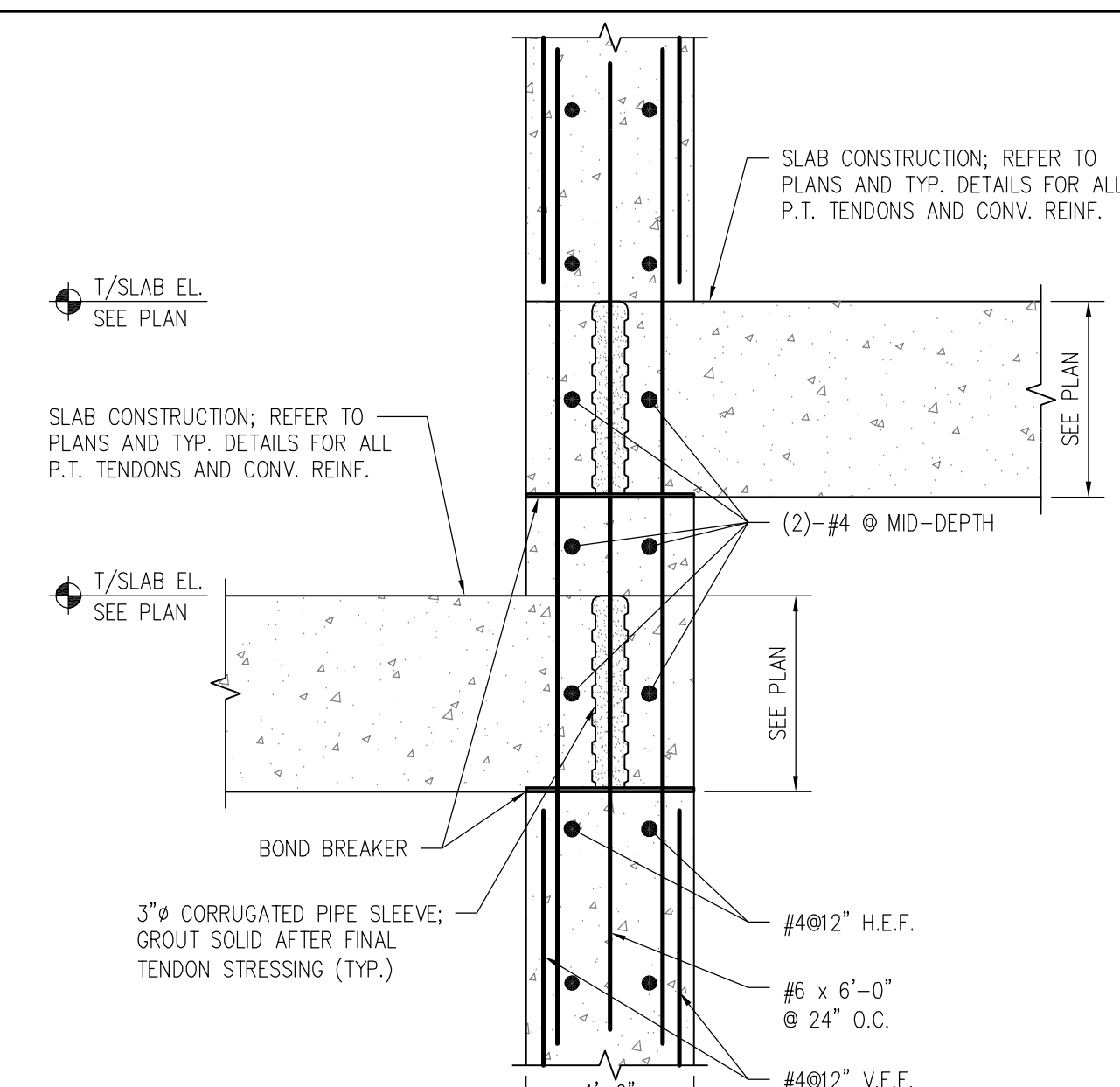
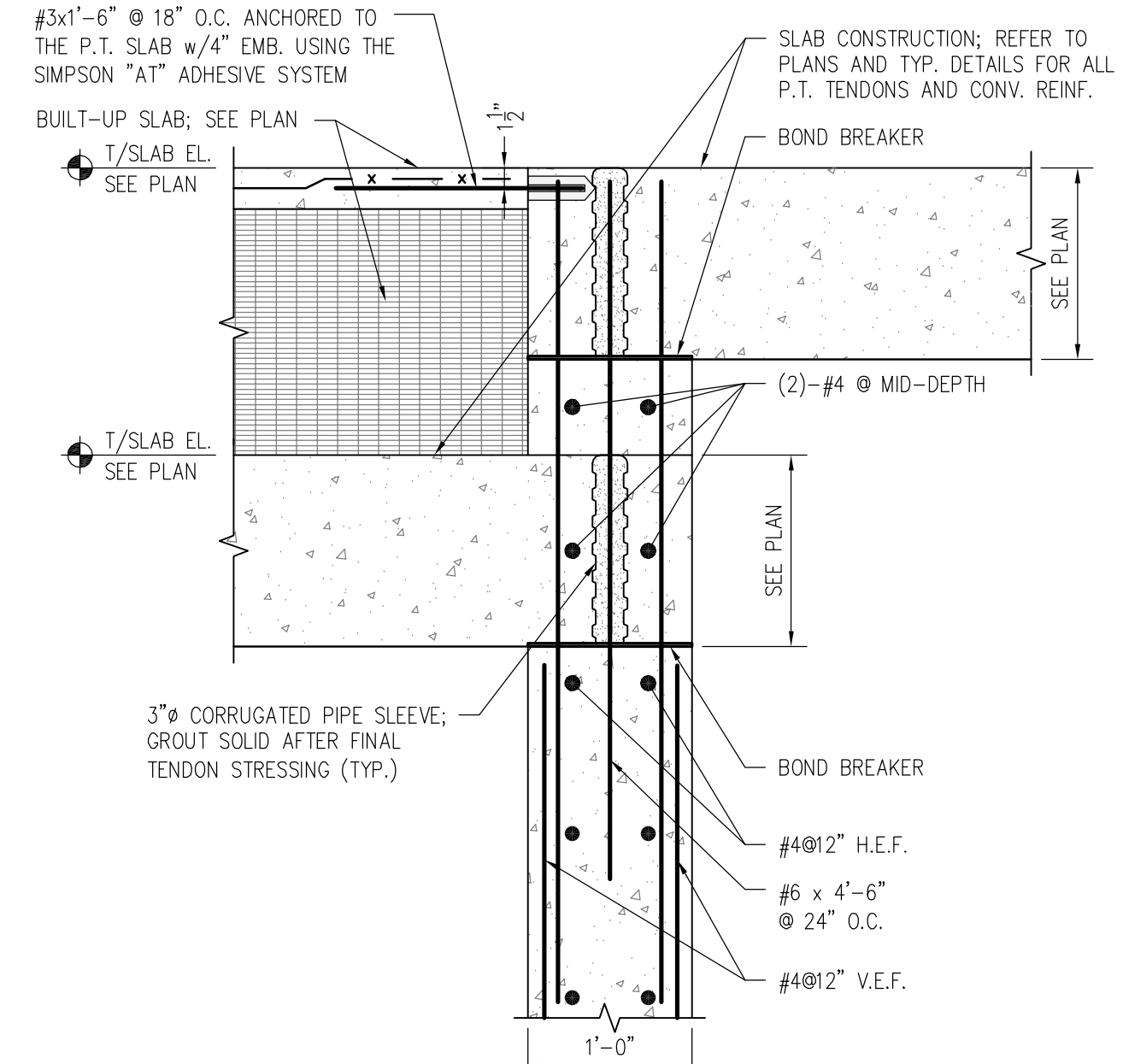
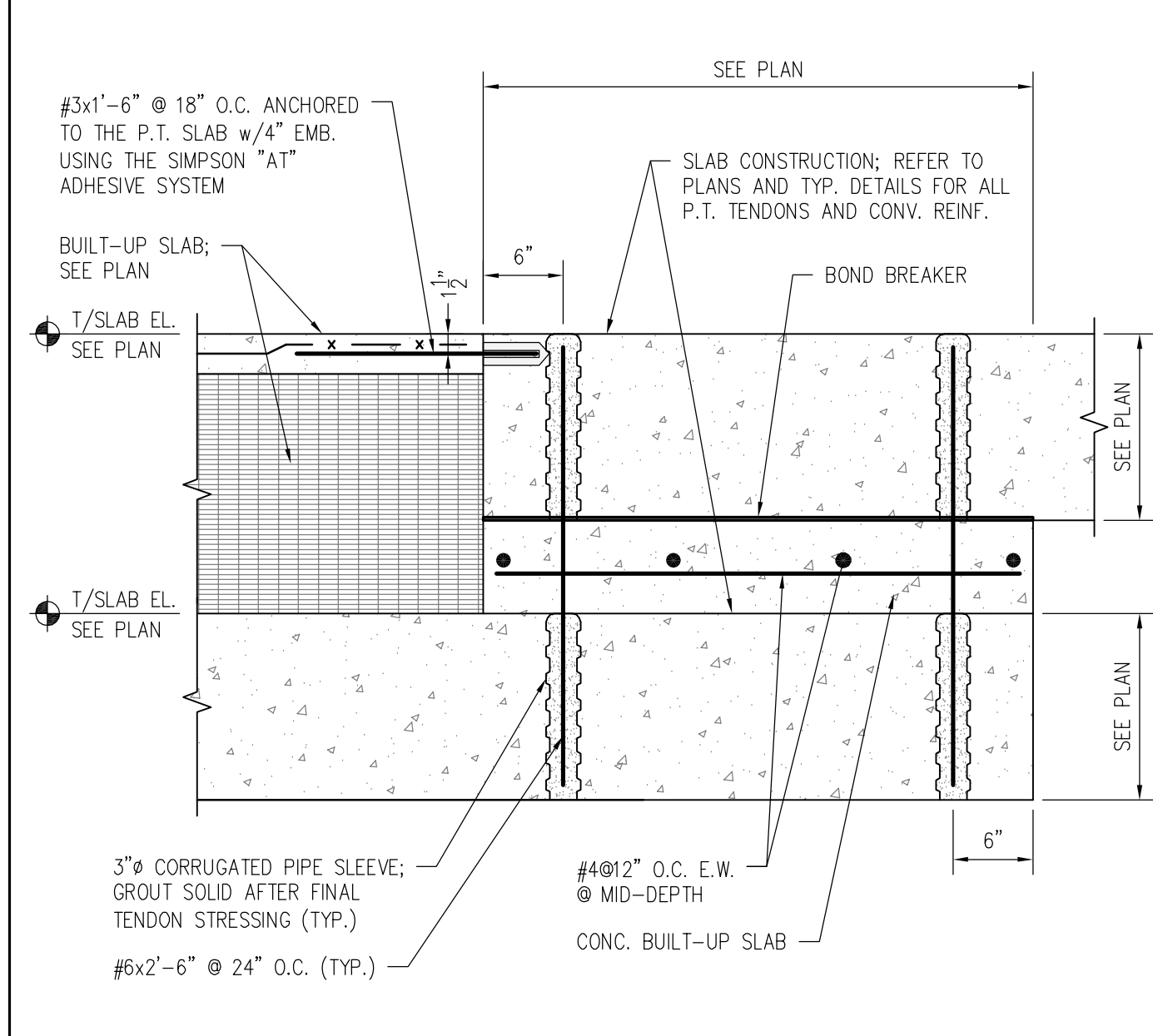
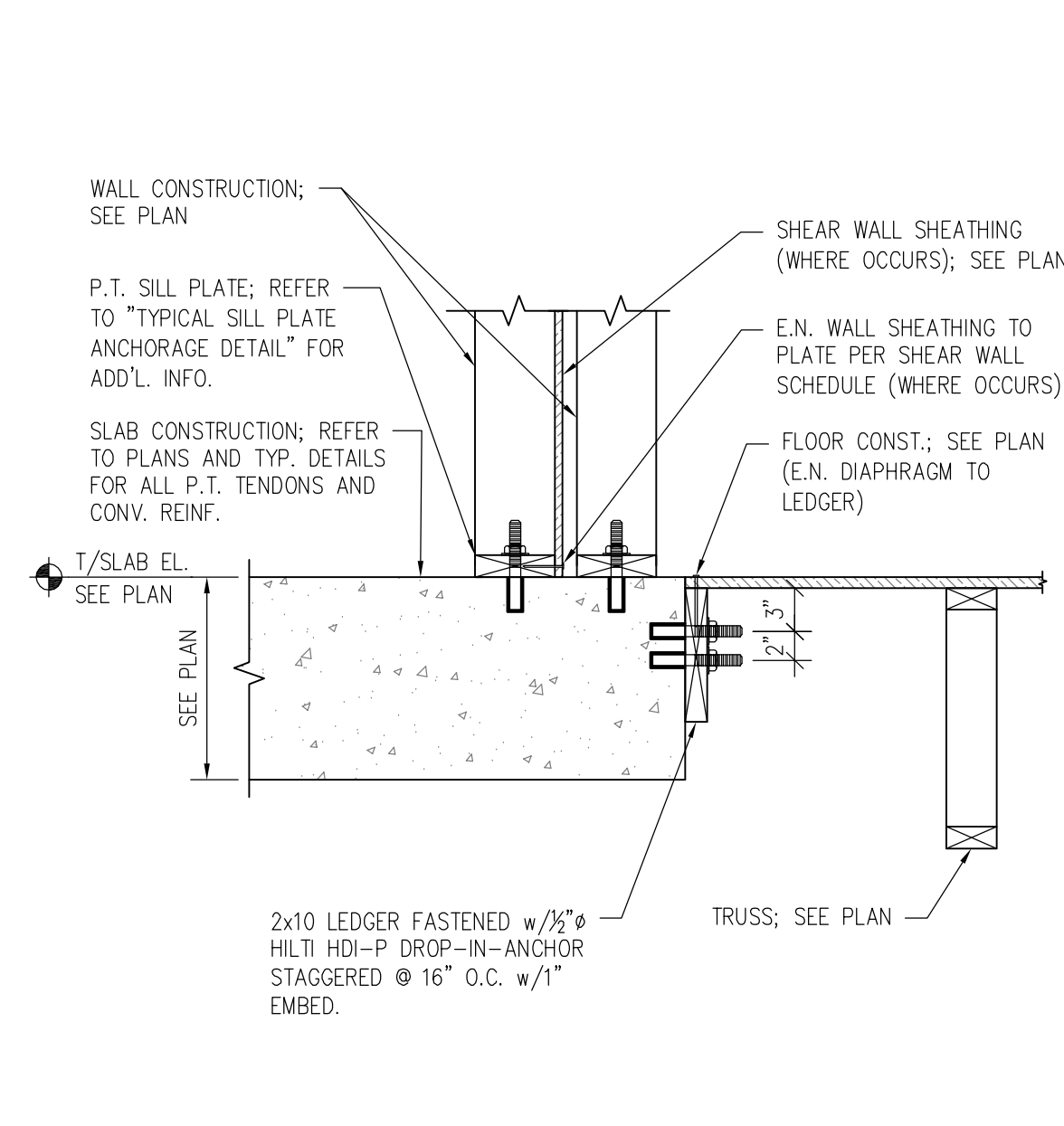
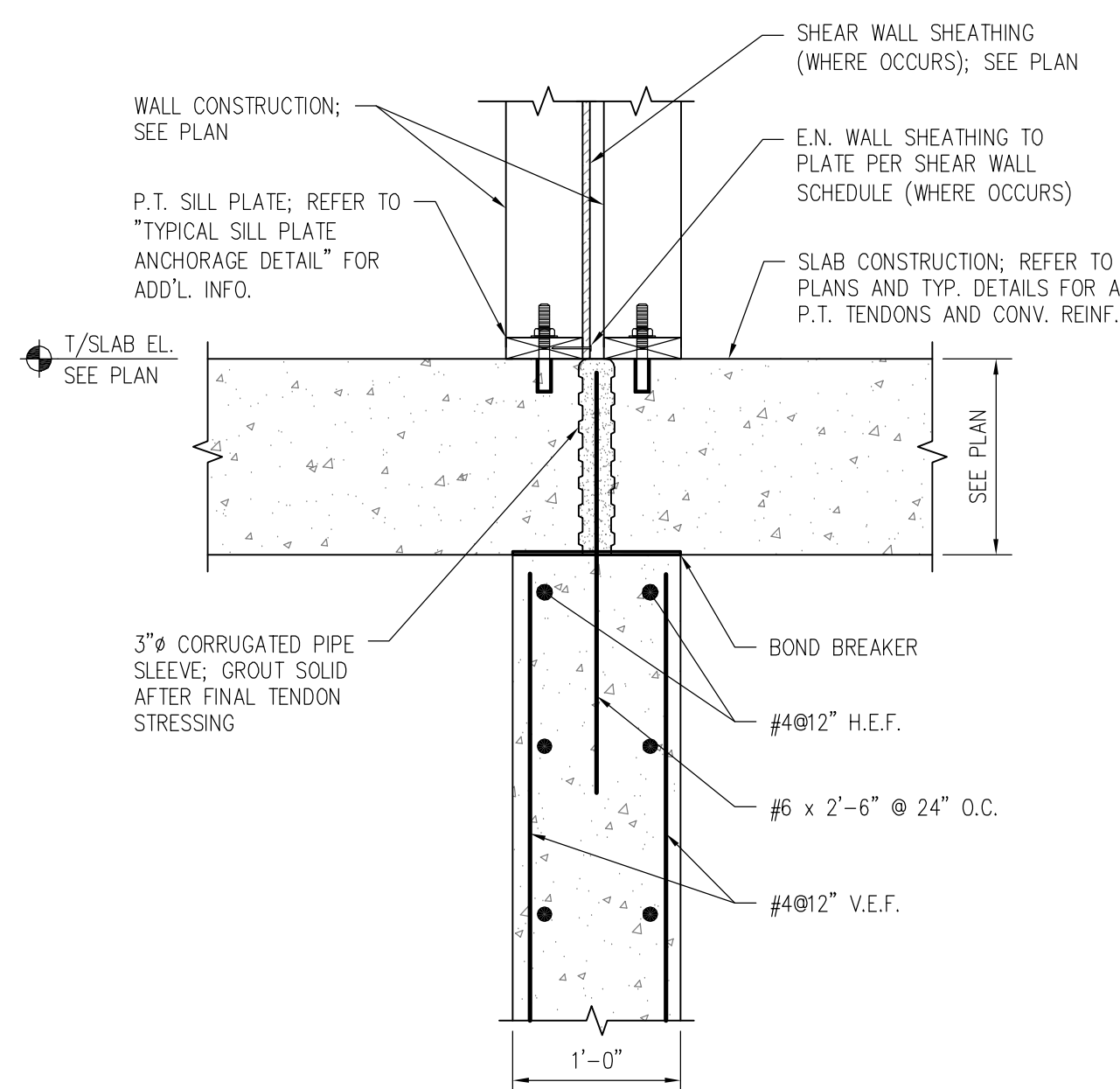
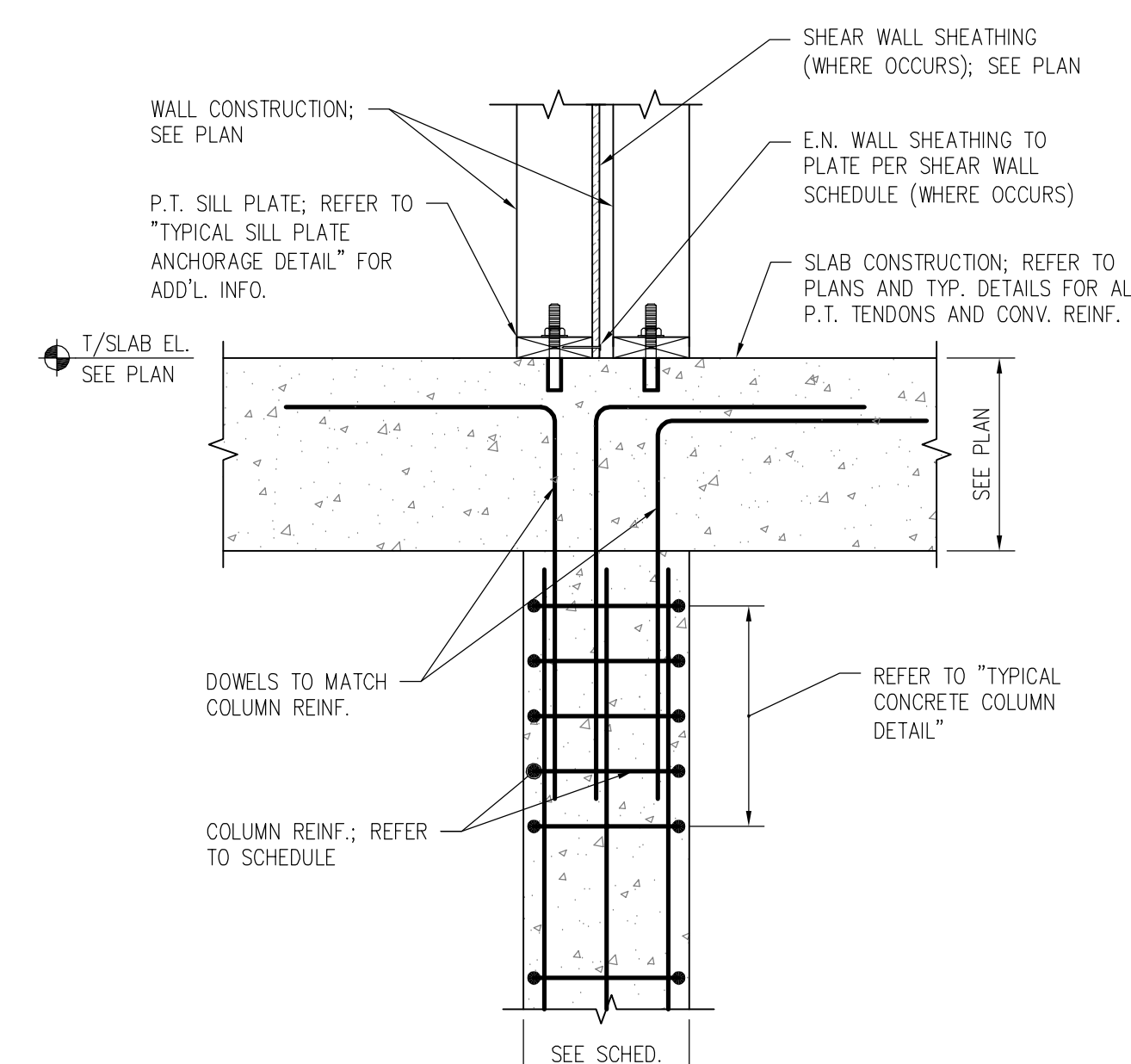
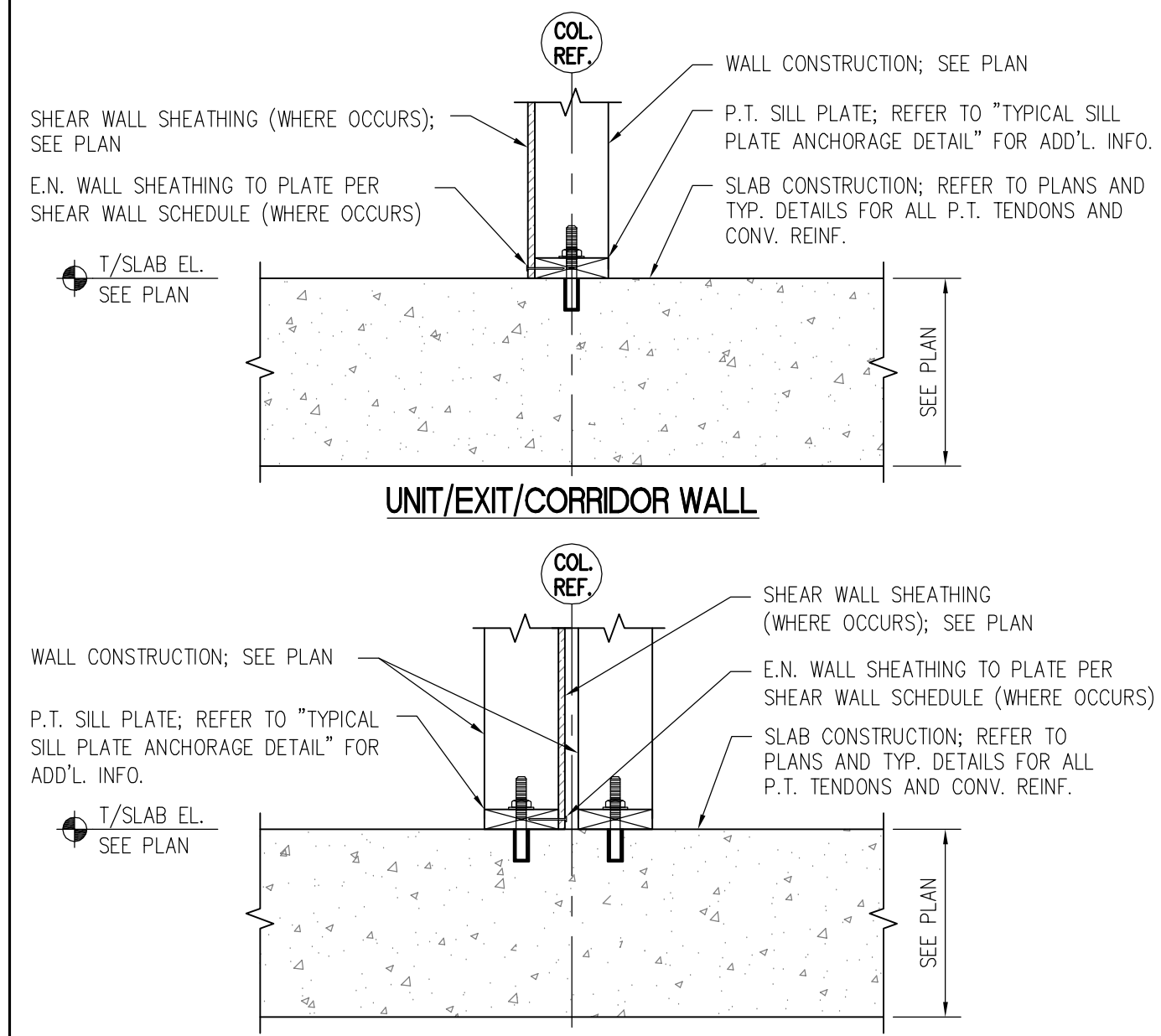
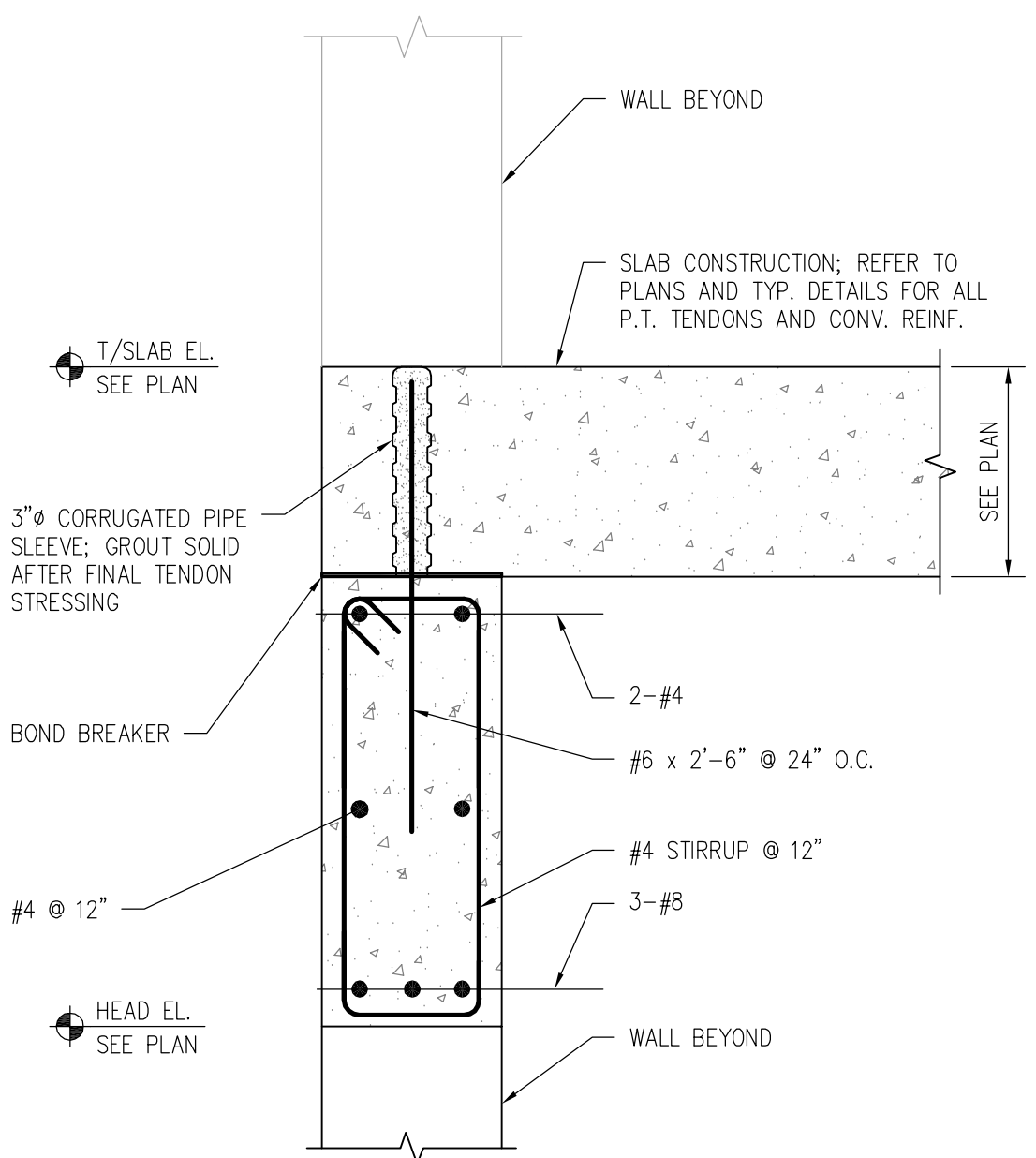
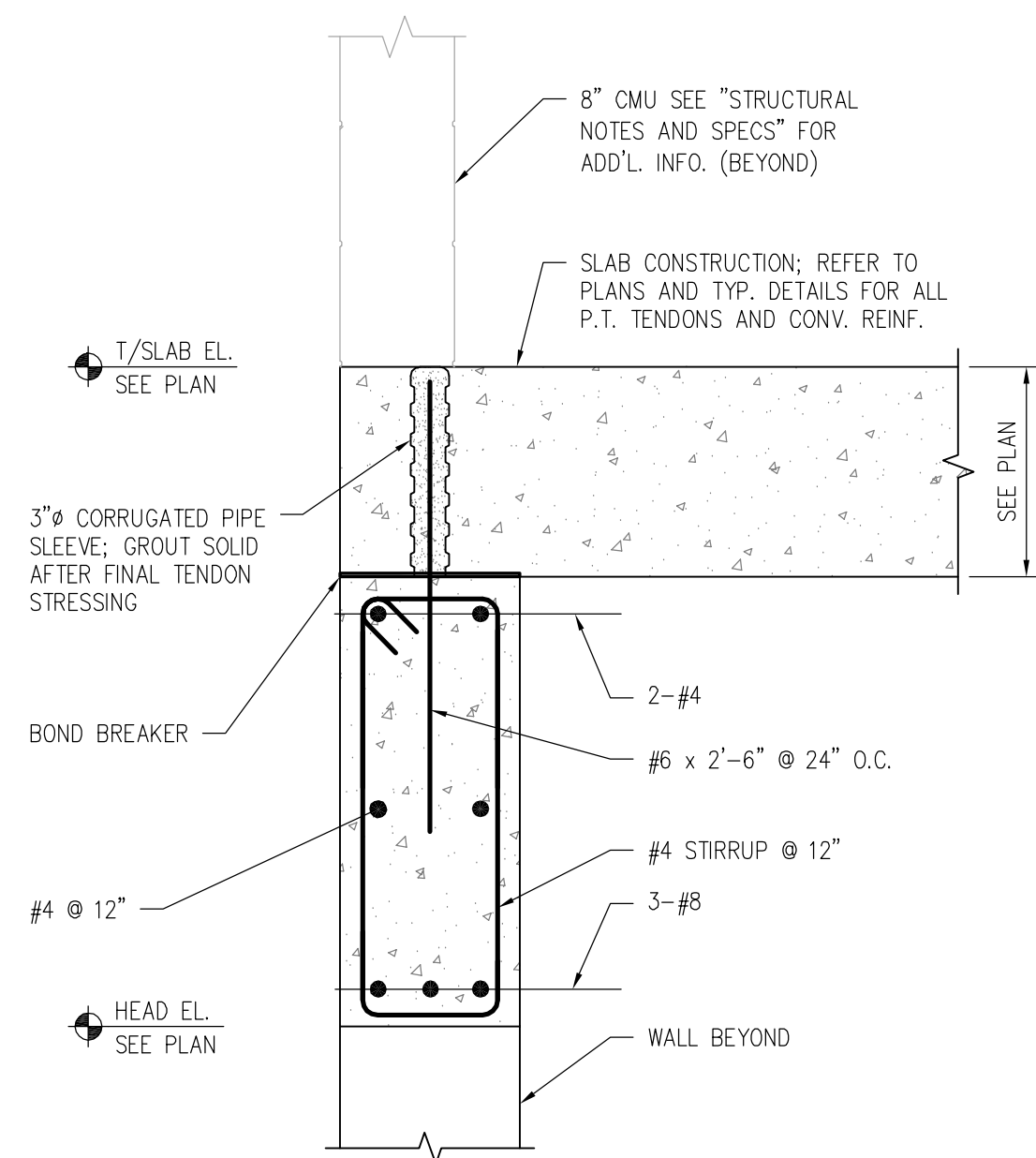
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SHEET TITLE

P.T. SLAB
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KEY PLAN

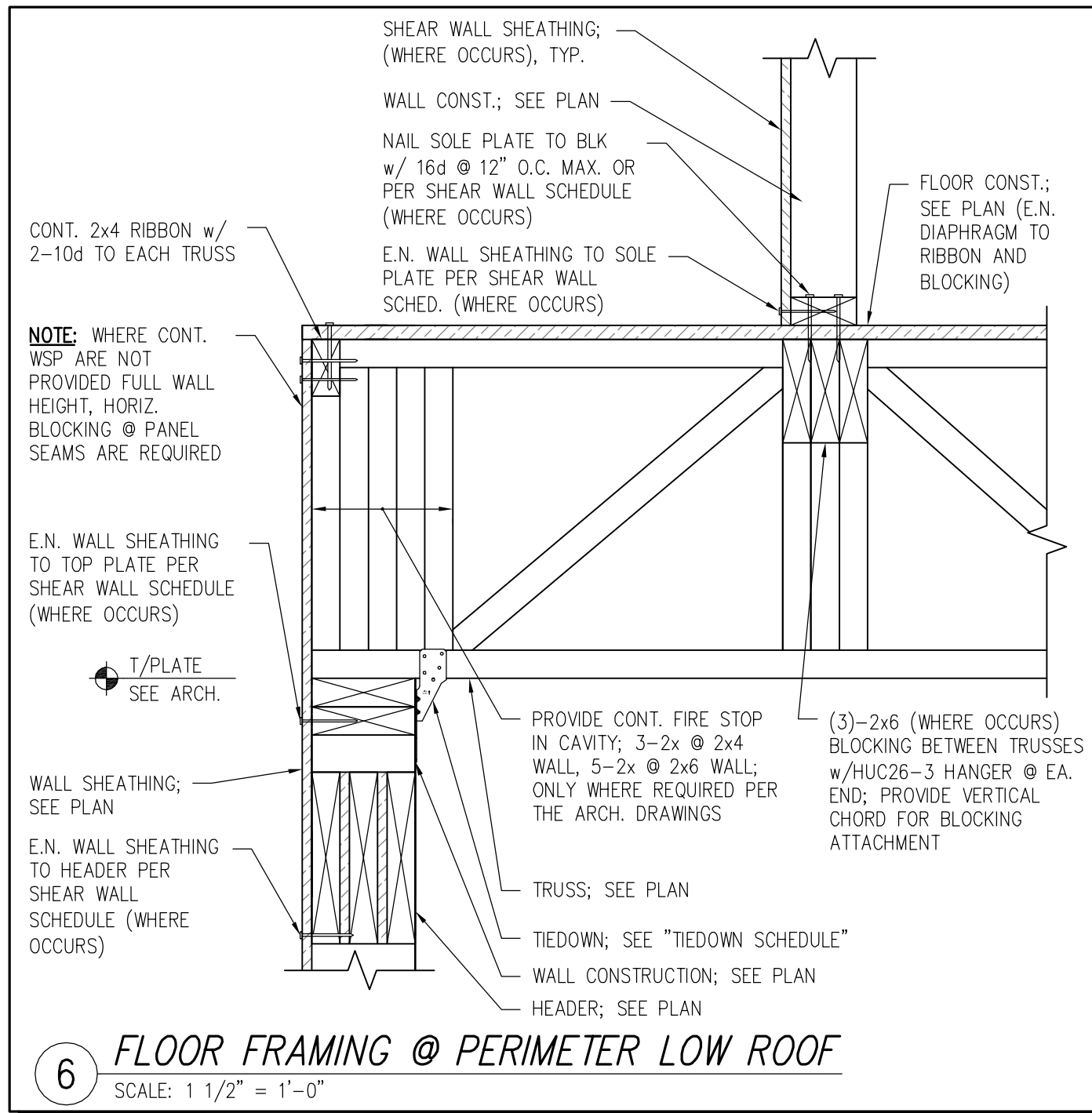
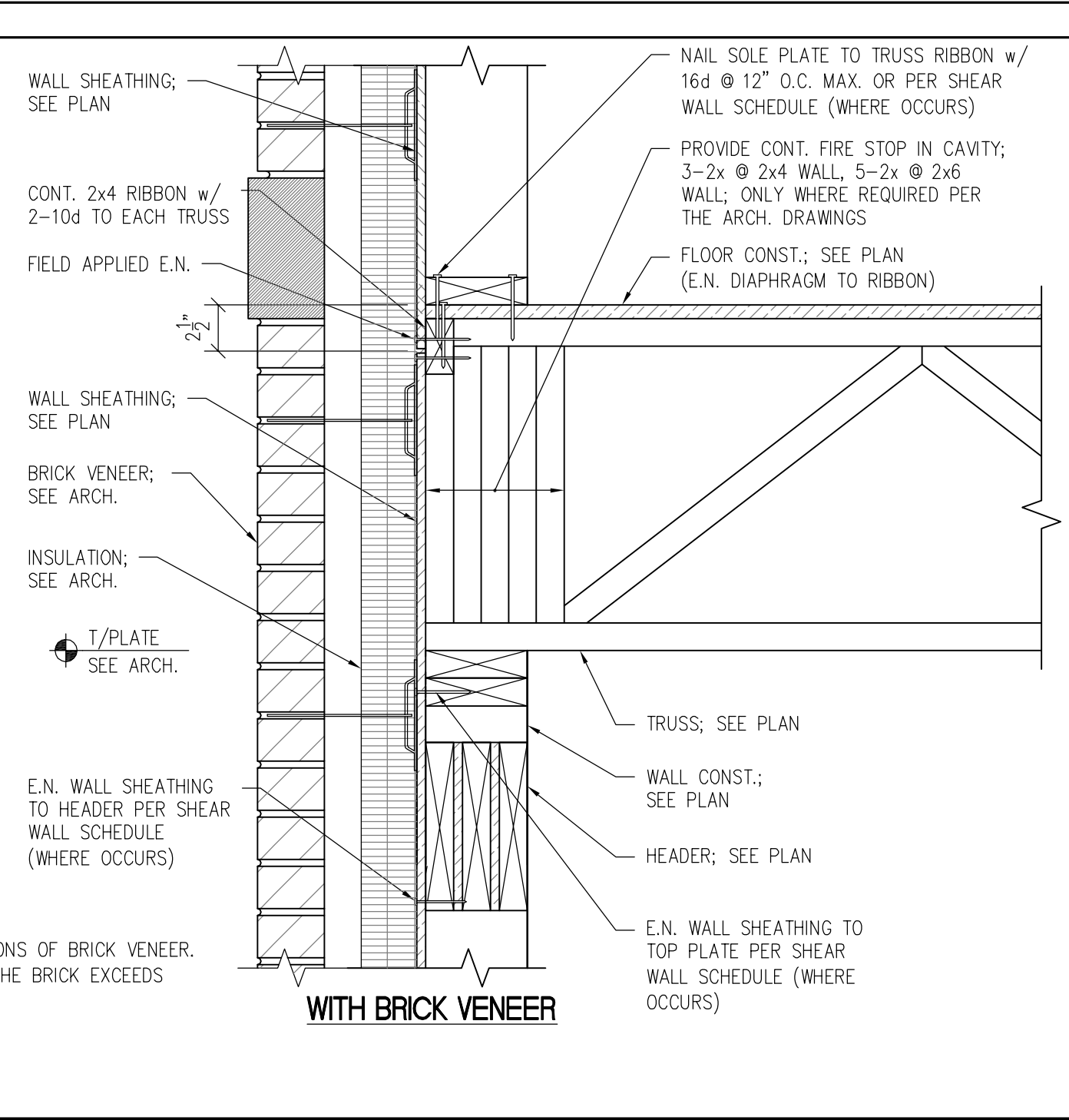
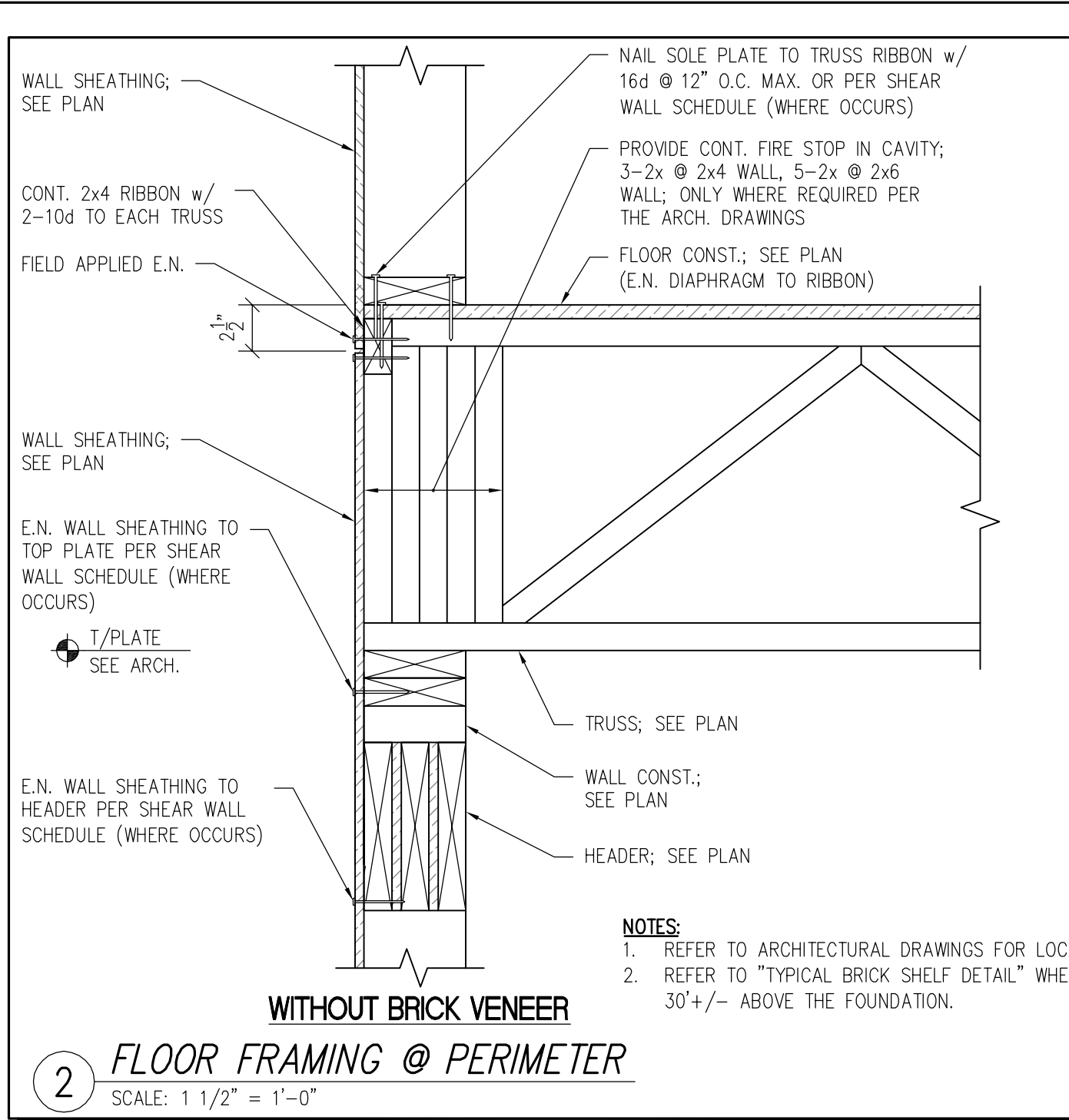
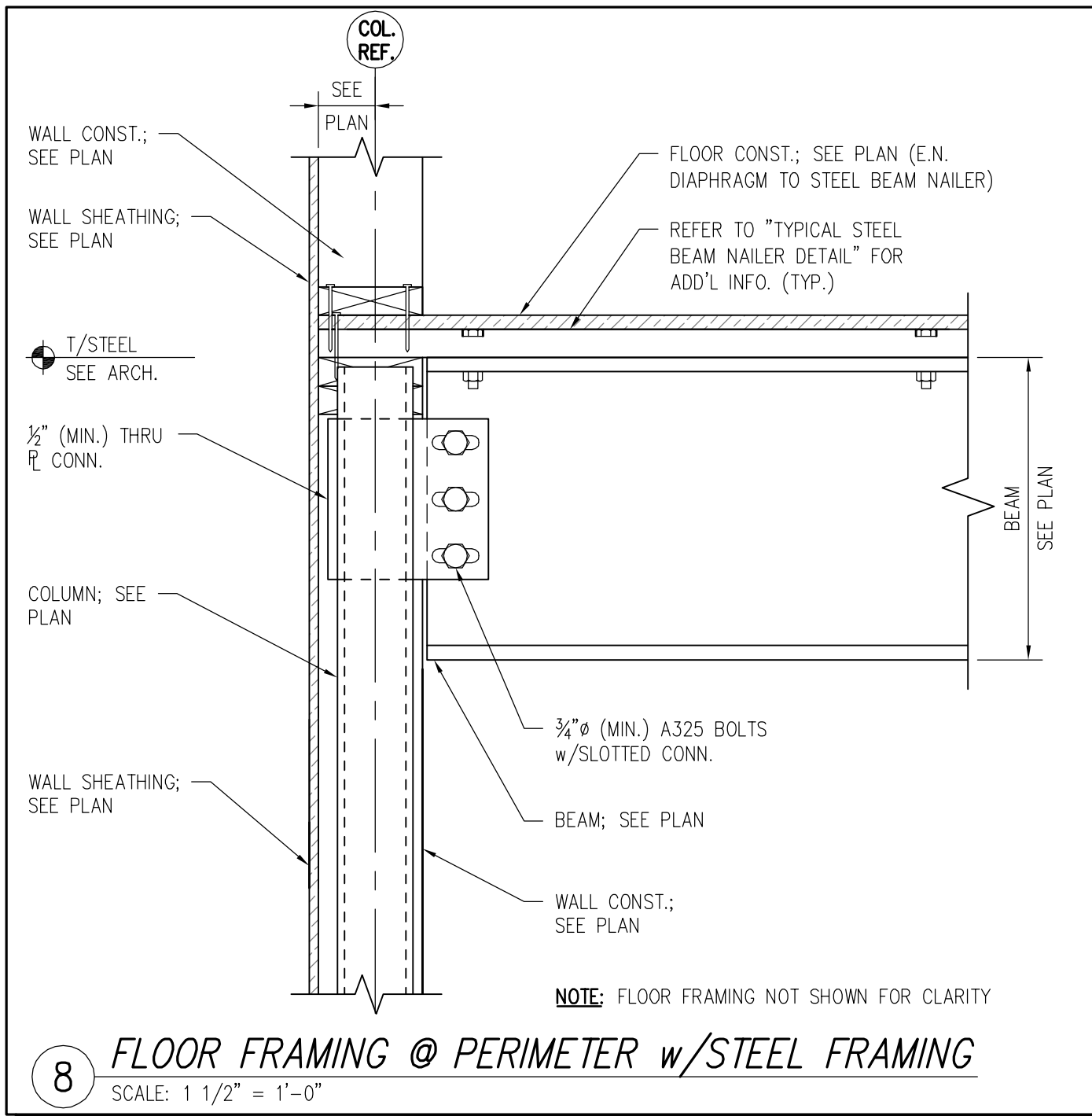
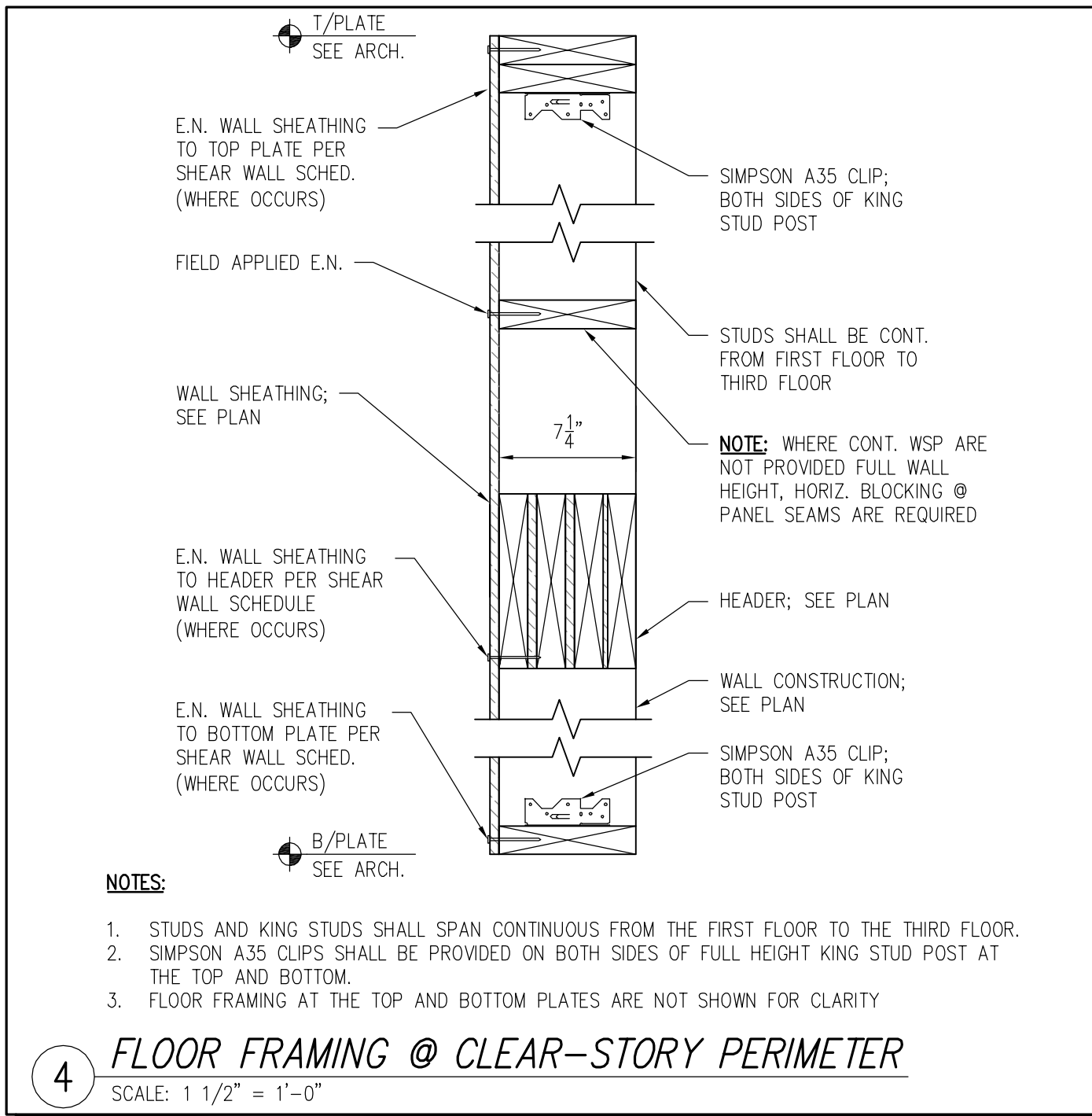
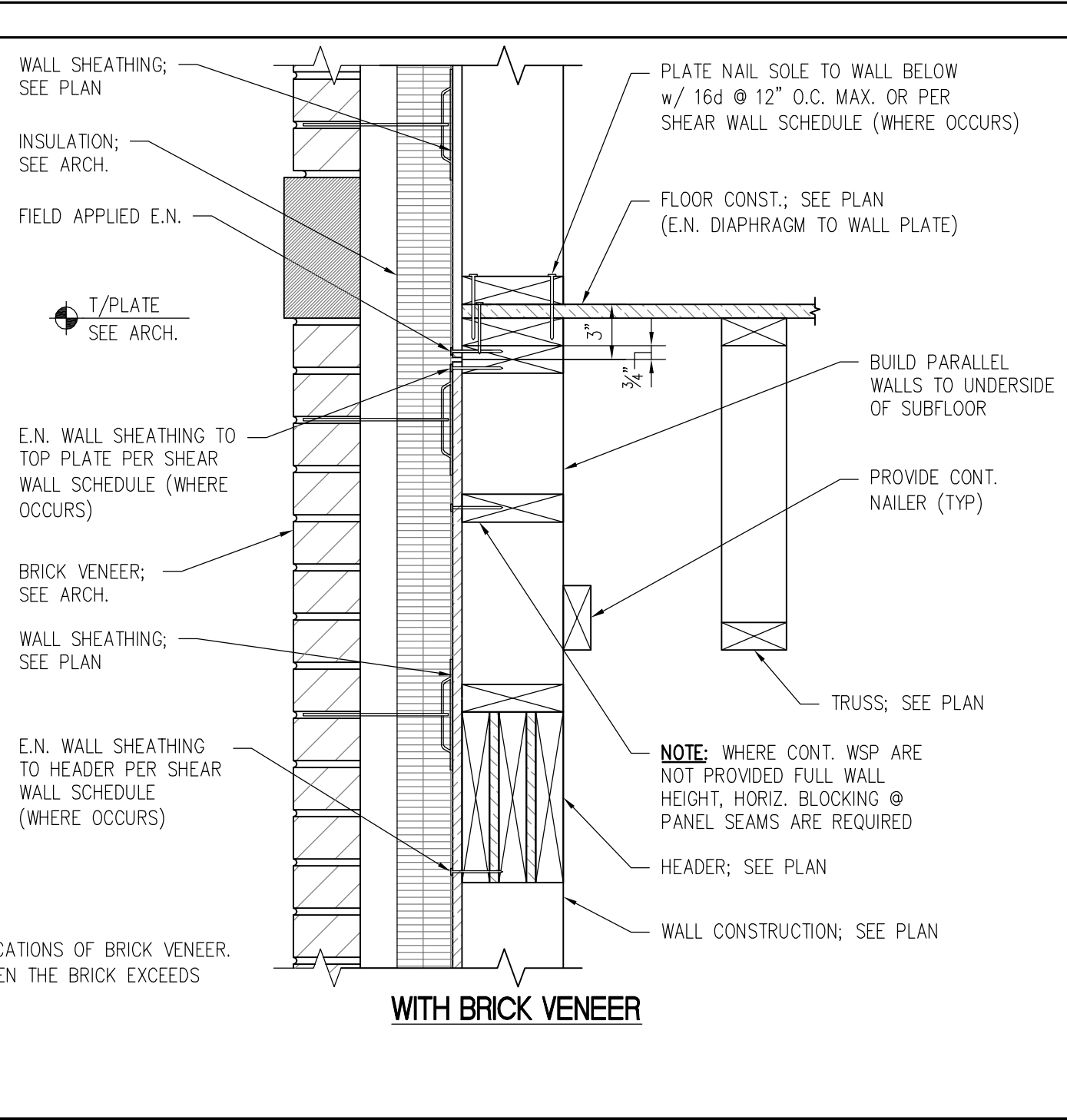
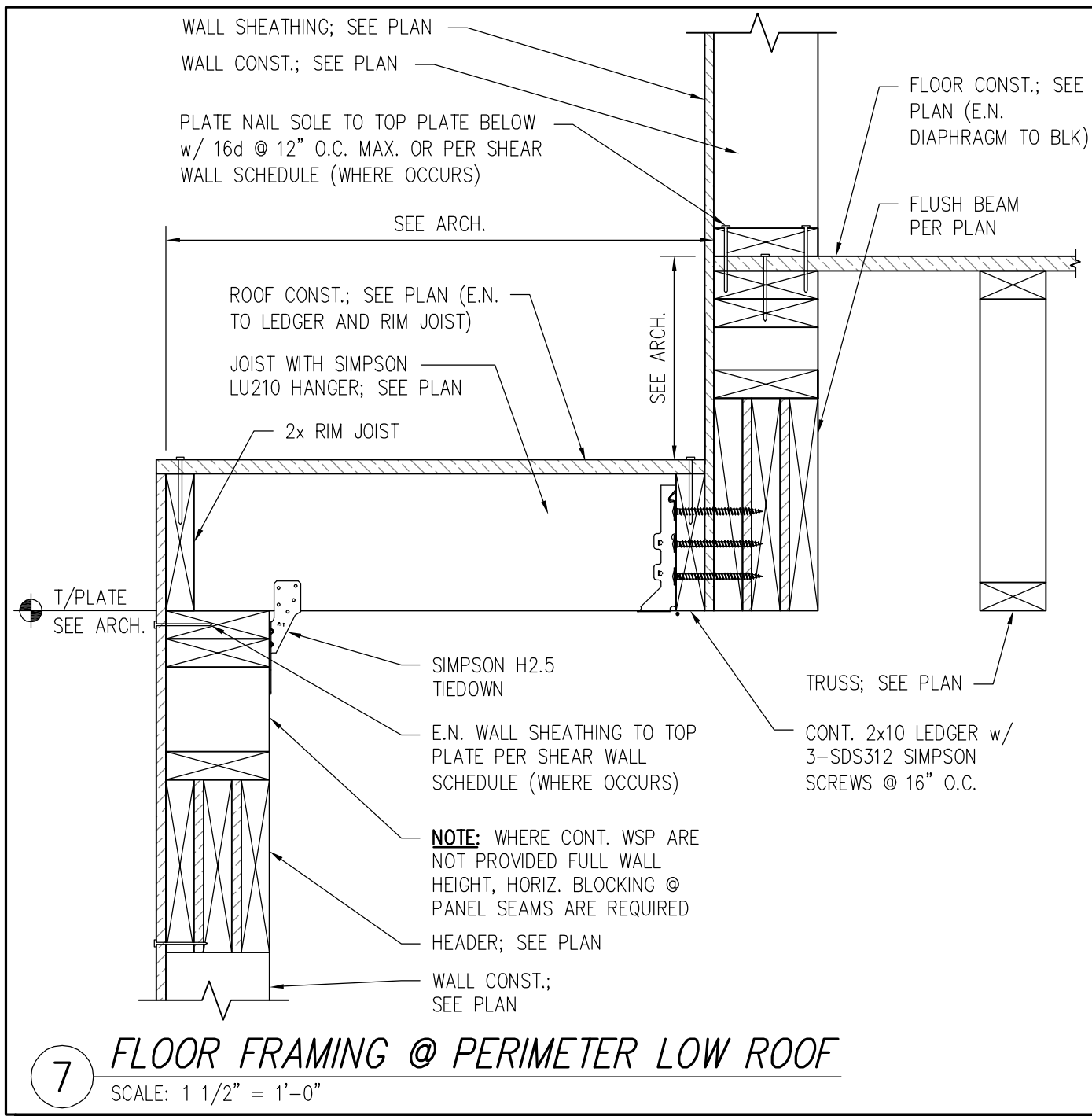
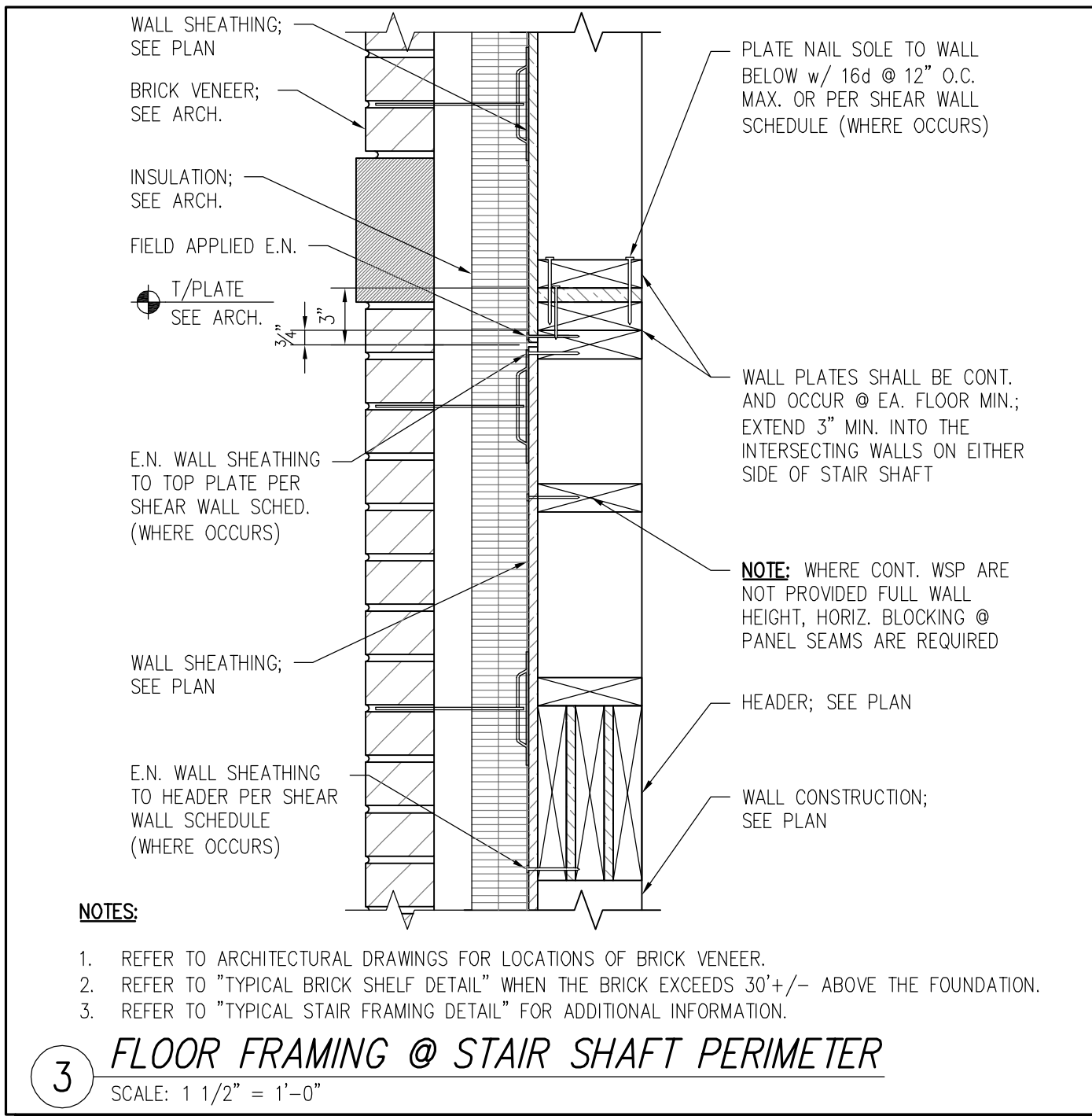
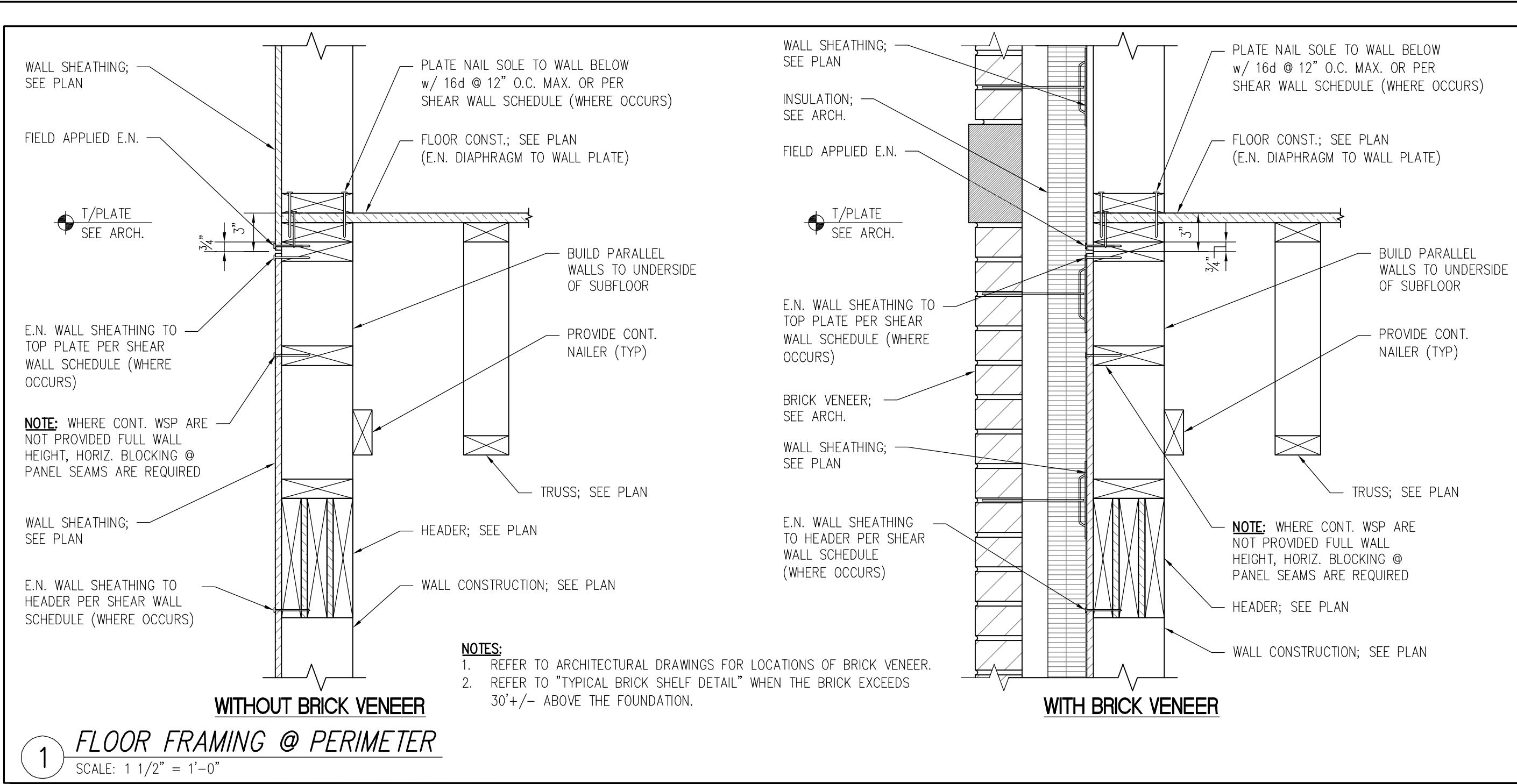
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SHEET TITLE

P.T. SLAB SECTIONS AND DETAILS

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FLOOR FRAMING
SECTIONS AND
DETAILS

S-700

1 FLOOR FRAMING @ FLUSH BEAM
SCALE: 1 1/2" = 1'-0"

2 FLOOR FRAMING @ GIRDER TRUSS
SCALE: 1 1/2" = 1'-0"

3 FLOOR FRAMING @ GIRDER TRUSS
SCALE: 1 1/2" = 1'-0"

4 FLOOR FRAMING @ TRANSFER FLOOR TRUSS
SCALE: 1 1/2" = 1'-0"

5 FLOOR FRAMING @ TRANSFER FLOOR TRUSS
SCALE: 1 1/2" = 1'-0"

6 FLOOR FRAMING @ TRANSFER BEAM
SCALE: 1 1/2" = 1'-0"

7 FLOOR FRAMING @ BEAM w/ TRANSFER GIRDER
SCALE: 1 1/2" = 1'-0"

8 FLOOR FRAMING @ STEEL FRAMING
SCALE: 1 1/2" = 1'-0"

9 FLOOR FRAMING @ STEEL FRAMING
SCALE: 1 1/2" = 1'-0"

10 FLOOR FRAMING @ STEEL FRAMING
SCALE: 1 1/2" = 1'-0"

11 FLOOR FRAMING @ CLEAR-STORY
SCALE: 1 1/2" = 1'-0"

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KEY PLAN

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SHEET TITLE

FLOOR FRAMING SECTIONS AND DETAILS

S-702



KEY PLAN

S-800

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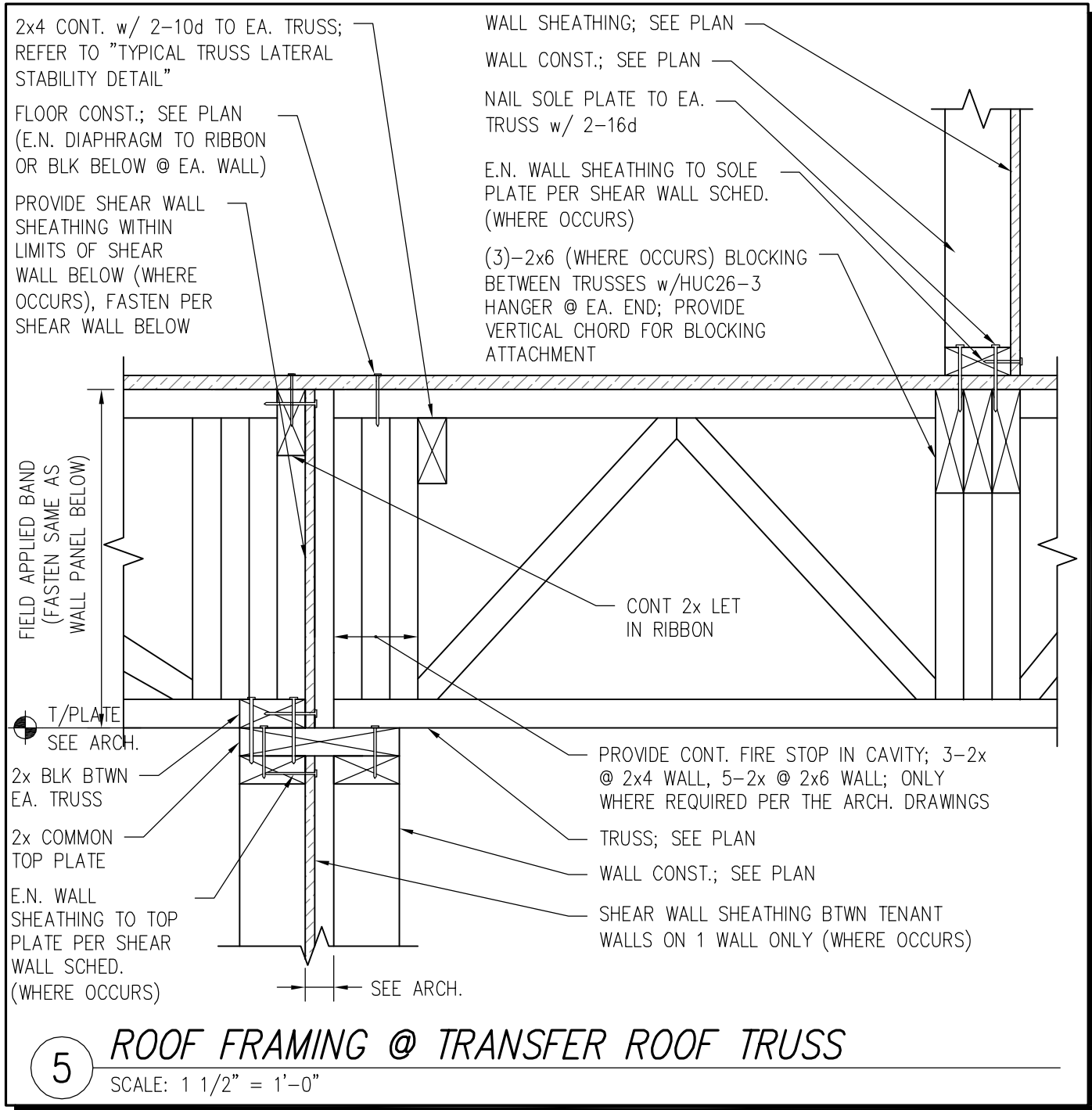
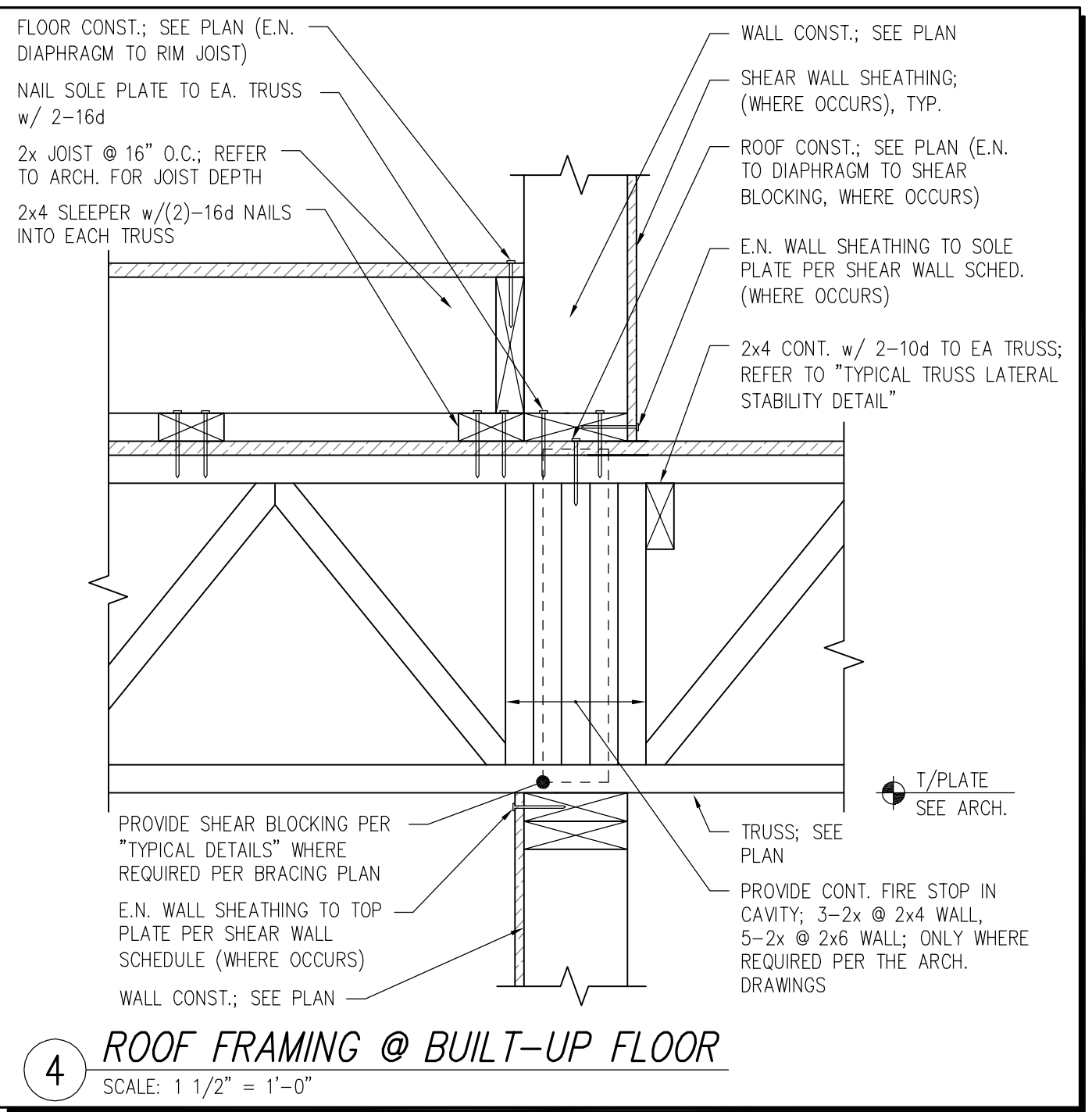
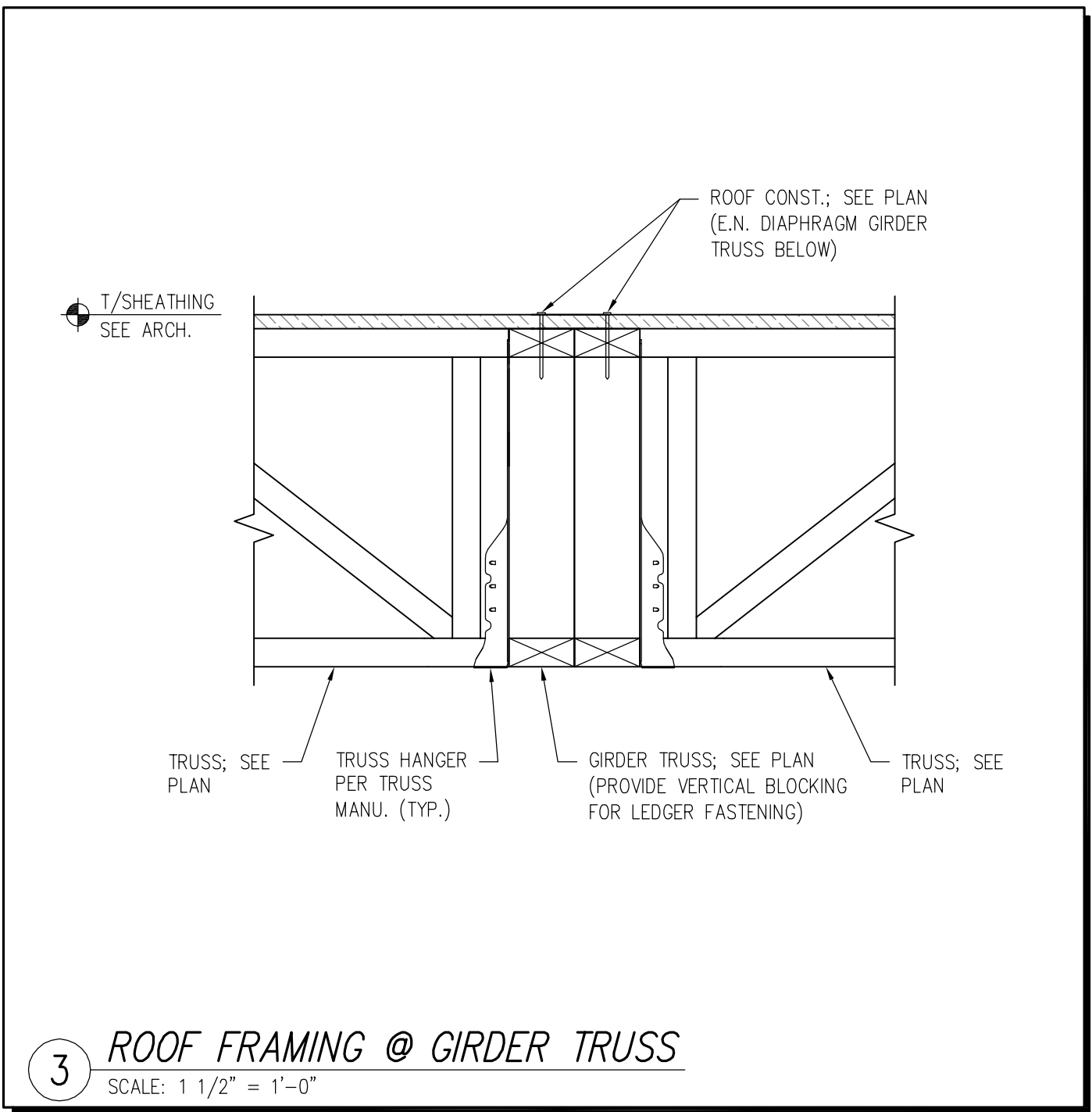
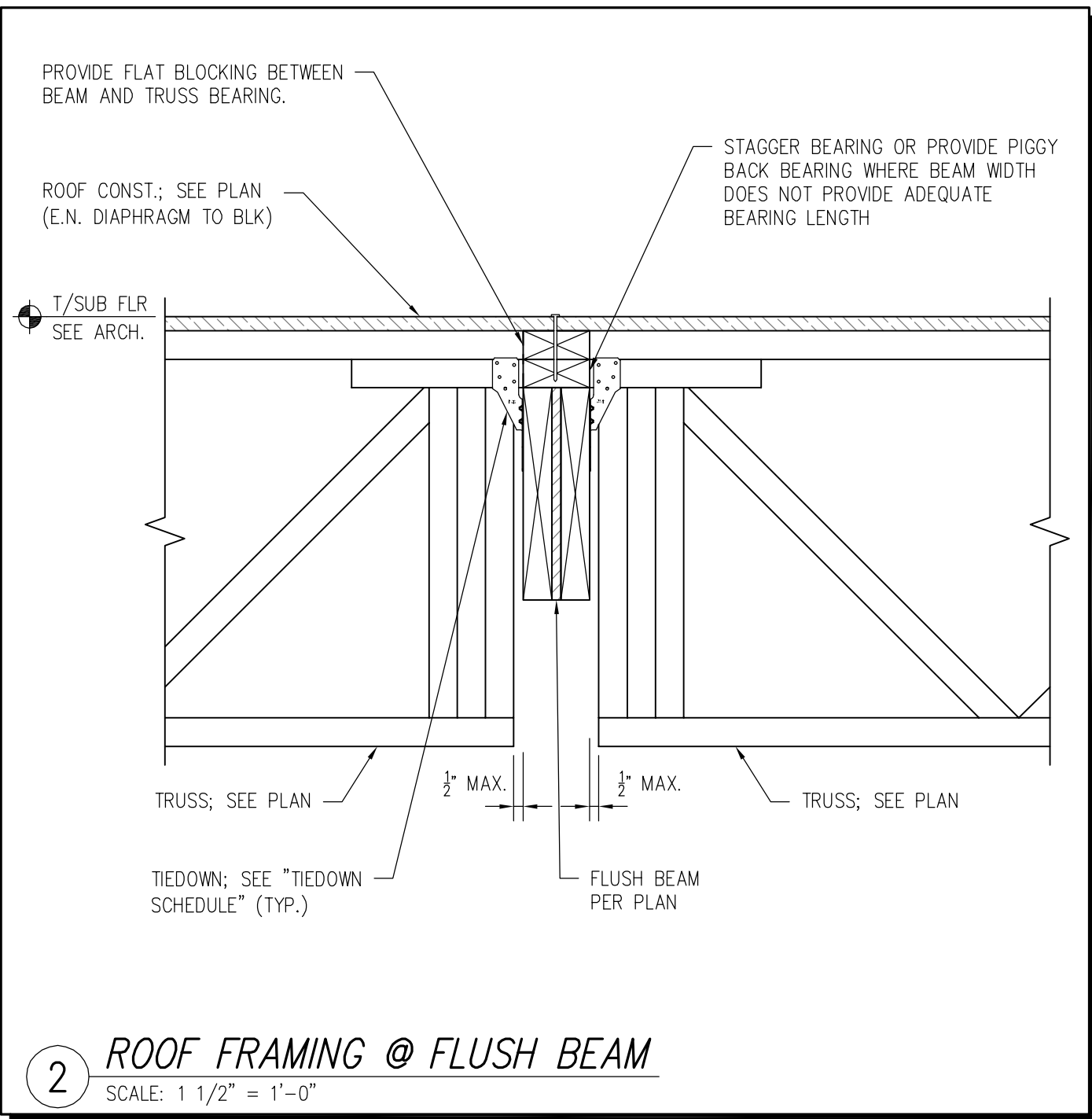
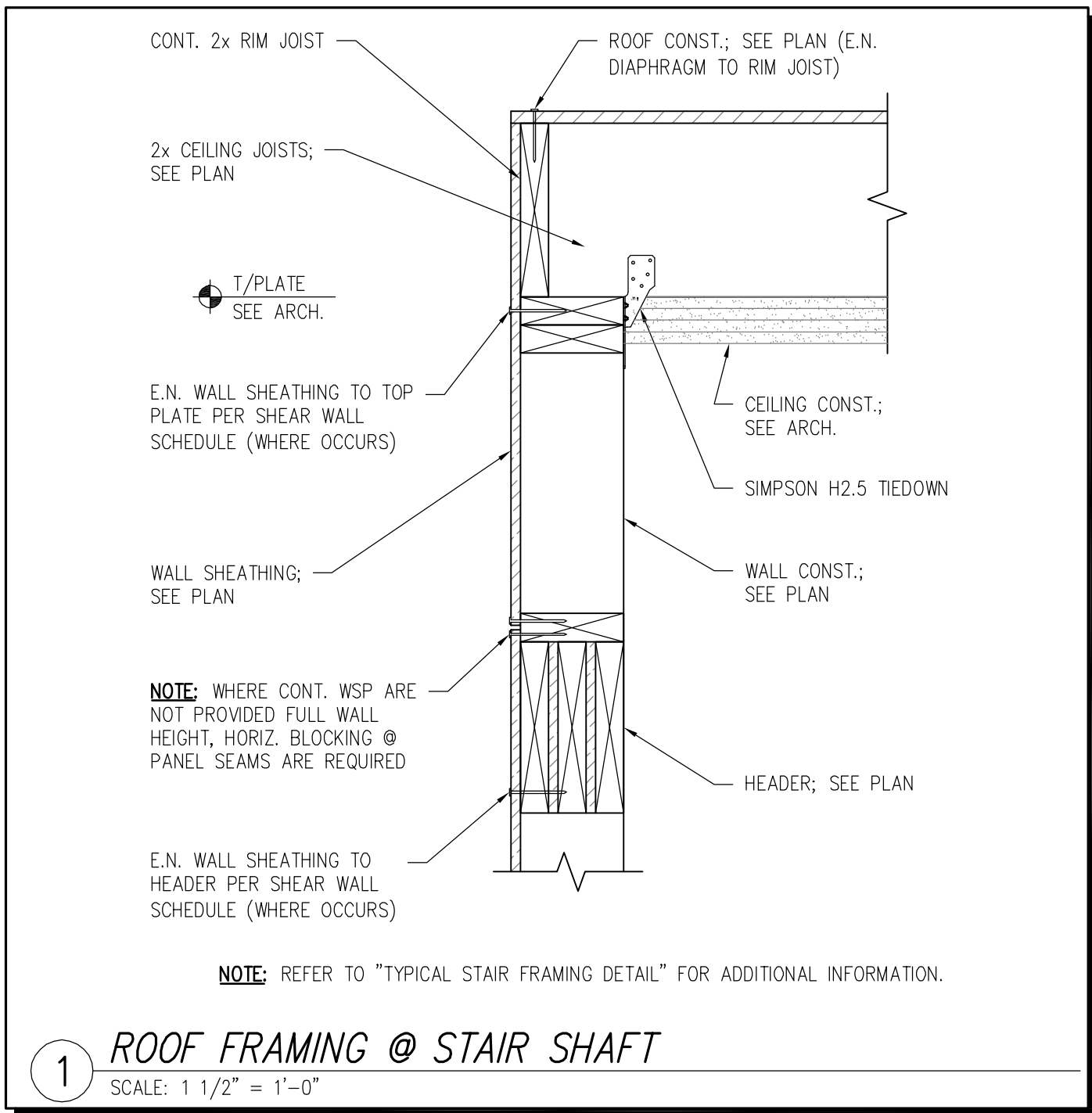
KEY PLAN

	.	.
	10/13/16	ISSUED FOR CONSTRUCTION
MARK	DATE	DESCRIPTION

SHEET TITLE

S-801

12 ROOF FRAMING @ STAIR SHAFT
SCALE: 1 1/2" = 1'-0"



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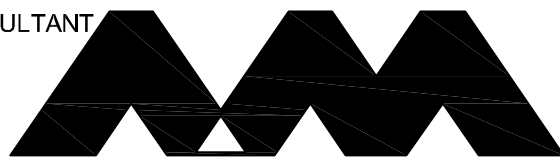
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SHEET TITLE

ROOF FRAMING
SECTIONS AND
DETAILS

S-802