

PLUMBING FIXTURE CALCULATIONS

OCCUPANT LOAD FACTOR CPC 2016 TABLE 422.1 & TABLE A

COMMERCIAL AREAS
GROUP B 2768 S.F. / 200 = 14 OCCUP. / 2 = 7 PER GENDER
GROUP M 4880 S.F. / 200 = 24 OCCUP. / 2 = 12 PER GENDER

FIXTURE	MALE REQ.	MALE PROVIDED	FEMALE REQ.	FEMALE PROVIDED
W.C.	1	1	2	2
UR.	1	1	0	0
LAV.	1	1	1	1

	REQD.	PROVIDED
D.F.	1	1

TACTILE EXIT SIGNS PER SECT 1013.4

- SEE 24/A-501 FOR SIGNAGE DETAILS
- L "EXIT" AT GRADE LEVEL EXIT DOORS
 - K "EXIT ROUTE" AT INTERIOR EXIT ACCESS DOORS WHERE MORE THAN ONE EXIT IS REQUIRED
 - A INTERNATIONAL SYMBOL OF ACCESSIBILITY

CODE COMPLIANCE PLAN LEGEND

- ROOM NAME**
- ROOM AREA (SF)
 - OCCUPANT LOAD
 - FLOOR AREA PER OCCUPANT
 - OCCUPANCY CLASSIFICATION
 - ACCUMULATIVE OCCUPANT LOAD
- EXITS & EXIT ACCESS**
- COMMON PATH OF EGRESS TRAVEL
 - EXIT ACCESS TRAVEL DISTANCE
- DOOR SEPARATIONS**
- MAX DIAGONAL DIMENSION OF AREA
 - DOOR SEPARATION DISTANCE PROVIDED
- ASSEMBLY RATING LEGEND**
- (N) NON-RATED WALL
 - (E) NON-RATED WALL
 - (E) 2-HOUR RATED CONCRETE WALL AT BUILDING EXTERIOR WHERE <5' FROM PL
- EXIT WIDTHS**
- EGRESS WIDTH PER OCCUPANT
 - CALCULATED EXIT WIDTH: 20"
 - REQUIRED WIDTH: 0"
 - EXIT WIDTH PROVIDED: 0"
 - SUM OF OCCUPANTS AT THIS LOCATION ALONG MEANS OF EGRESS
 - PANIC EXIT DEVICE REQUIRED
- ABBREVIATIONS**
- AFSS AUTOMATIC FIRE SPRINKLER SYSTEM
 - ALLOW ALLOWABLE
 - CPET COMMON PATH OF EXIT TRAVEL
 - DSD DOOR SEPARATION DISTANCE
 - EATD EXIT ACCESS TRAVEL DISTANCE
 - EXCEP EXCEPTION
 - GPM GALLONS PER MINUTE
 - MDD MAXIMUM DIAGONAL DISTANCE
 - OCCUP OCCUPANTS / OCCUPANCY
 - OL OCCUPANT LOAD

GENERAL CODE COMPLIANCE NOTES

- A. CODE COMPLIANCE ANALYSIS IS BASED ON 2016 CBC.
- B. BUILDING AREAS INDICATED ARE FOR CODE COMPLIANCE COMPUTATIONS ONLY - REFER TO FLOOR PLANS FOR CONSTRUCTION DIMENSIONS.
- C. PLUMBING FIXTURE OCCUPANT LOAD CALCULATED PER 2016 CPC, CHAPTER 4, TABLE A (SHAFTS, CORRIDORS & STAIRS OMITTED) AND MAY DIFFER FROM EXIT CALCULATION LOADS.
- D. CODE COMPLIANCE DRAWINGS DOCUMENT THE BASIS OF DESIGN INTENT AS IT RELATES TO APPLICABLE BUILDING CODES AND REVIEW BY THE BUILDING AUTHORITIES HAVING JURISDICTION - THE CODE COMPLIANCE DRAWINGS ARE FOR REFERENCE ONLY AND SHALL NOT BE USED BY THE CONTRACTOR FOR CONSTRUCTION PURPOSES.
- E. ENTIRE BUILDING SHALL BE EQUIPPED WITH AUTOMATIC FIRE SPRINKLER SYSTEM (UNDER SEPARATE COVER).

CODE COMPLIANCE SUMMARY

GENERAL BUILDING HEIGHT AND AREA REQUIREMENTS

BASIS OF DESIGN = 2016 CBC

BUILDING DATA

NON-SEPARATED OCCUPANCY BUILDING SEC. 508.3

OCCUPANCY CLASSIFICATIONS
BUSINESS GROUP B
MERCANTILE GROUP M

TYPE OF CONSTRUCTION = V-B

AUTOMATIC FIRE SPRINKLER SYSTEM = YES - NFPA 13 THROUGHOUT

AUTOMATIC SMOKE DETECTION SYSTEM (FIRE ALARM) = YES

BUILDING AREA (GROSS) = 17,075 SF

NUMBER OF STORIES ABOVE GRADE PLANE = 1 STORY

BUILDING HEIGHT ABOVE GRADE PLANE = 29 FT

BUILDING HEIGHT & STORIES CALCULATIONS

ALLOWABLE HEIGHT TABLE 504.3
B OCCUPANCY, TYPE V-B, S = 60 FT ≥ 29 FT ACTUAL = **COMPLIES**
M OCCUPANCY, TYPE V-B, S = 60 FT ≥ 29 FT ACTUAL = **COMPLIES**

ALLOWABLE STORIES TABLE 504.4
B OCCUPANCY, TYPE V-B, S = 3 STORY ≥ 1 STORY ACTUAL = **COMPLIES**
M OCCUPANCY, TYPE V-B, S = 2 STORY ≥ 1 STORY ACTUAL = **COMPLIES**

BUILDING AREA DETERMINATION (Aa)

NON-SEPARATED MIXED OCCUPANCY, S1 SECT 506.2.1

Aa = A1 + (NS x If) SECT 506.2, EQUATION 5-1

B & M OCCUPANCIES

A1 = 36,000 SF

Aa = 36,000 SF + (9,000 x 0.0) = 36,000 SF ≥ 17,075 SF ACTUAL = **COMPLIES**

FRONTAGE INCREASE CALCULATION (If)

If = [F / P - 0.25] W / 30 SECT 506.3.3, EQUATION 5-5

P = 495'

F = 98'

W = 30'

If = [98 / 495 - 0.25] 30 / 30 = 0.0

TYPES OF CONSTRUCTION REQUIREMENTS

FIRE-RESISTANCE RATING FOR BUILDING ELEMENTS

CONSTRUCTION TYPE = V-B TABLE 601

BUILDING ELEMENT	RATING (HRS.)
STRUCTURAL FRAME	0
BEARING WALLS	0
EXTERIOR	0
INTERIOR	0
NON-BEARING WALLS & PARTITIONS	0
EXTERIOR	SEE BELOW
INTERIOR	0
FLOOR CONSTRUCTION	0
ROOF CONSTRUCTION	0

FIRE-RESISTANCE FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

TABLE 602

FIRE SEPARATION DISTANCE	B & M OCCUP. TYPE V-B CONST.
X < 5 FT	2 HR (FOR M-OCCUPANCY, MOST RESTRICTIVE)
5 FT ≤ X < 10 FT	1 HR
10 FT ≤ X < 30 FT	0
X ≥ 30 FT	0

MEANS OF EGRESS REQUIREMENTS

EXIT ACCESS & TRAVEL DISTANCE LIMITATIONS

W/ SPRINKLER SYSTEM

COMMON PATH OF EGRESS TRAVEL SECT 1006.2.1 & TABLE 1006.2.1
B OCCUP = 100 FT MAX
M OCCUP = 75 FT MAX

EXIT ACCESS TRAVEL DISTANCE TABLE 1017.2
B OCCUP = 300 FT MAX
M OCCUP = 250 FT MAX

EXIT & EXIT ACCESS DOORWAYS

SPACES WITH ONE MEANS OF EGRESS TABLE 1006.2.1
B OCCUP = 49 MAX
M OCCUP = 49 MAX

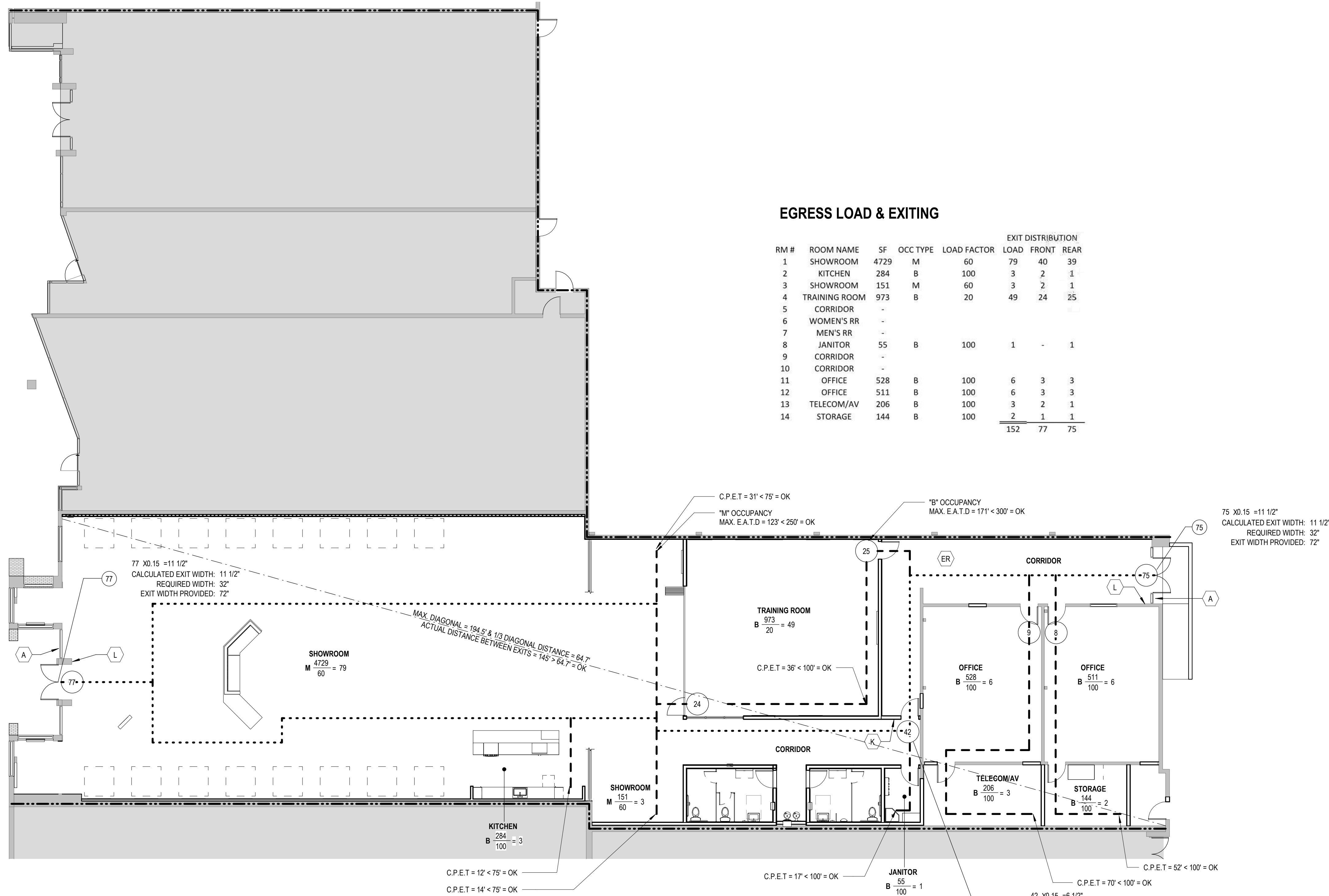
TWO EXIT SEPARATION DISTANCE SECT 1007.1.1 (W/ SPRINKLER SYSTEM)
MIN 1/3 THE MAX OVERALL DIAGONAL

CORRIDOR FIRE-RESISTANCE RATING

FIRE PARTITION PER SECT 708 SECT 1020 & TABLE 1020.1
B OCCUP > 49 OL = 0 HR
M OCCUP > 49 OL = 0 HR

EGRESS LOAD & EXITING

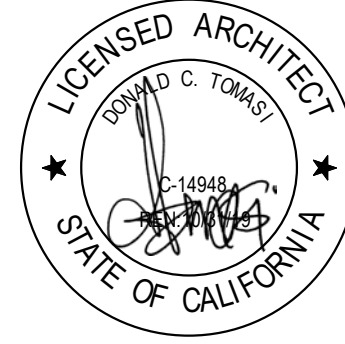
RM #	ROOM NAME	SF	OCC TYPE	LOAD FACTOR	EXIT DISTRIBUTION LOAD	FRONT	REAR
1	SHOWROOM	4729	M	60	79	40	39
2	KITCHEN	284	B	100	3	2	1
3	SHOWROOM	151	M	60	3	2	1
4	TRAINING ROOM	973	B	20	49	24	25
5	CORRIDOR	-	-	-	-	-	-
6	WOMEN'S RR	-	-	-	-	-	-
7	MEN'S RR	-	-	-	-	-	-
8	JANITOR	55	B	100	1	-	1
9	CORRIDOR	-	-	-	-	-	-
10	CORRIDOR	-	-	-	-	-	-
11	OFFICE	528	B	100	6	3	3
12	OFFICE	511	B	100	6	3	3
13	TELECOM/AV	206	B	100	3	2	1
14	STORAGE	144	B	100	2	1	1
					152	77	75



4 EGRESS & FIRE SEPARATION PLAN

1" = 10'-0"

520 Third St. #250
Santa Rosa, CA 95401
o: 707.525.5600
f: 707.525.5616
tlcd.com



ISSUE FOR CONSTRUCTION

ADVANCED ENERGY CENTER
741 4TH STREET, SANTA ROSA, CALIFORNIA 95404



PROJECT NUMBER:

18077.00

DATE:

7/22/2019

DRAWN BY:

LLL

CHECKED BY:

DB

REVISIONS:

NO.	DESCRIPTION	DATE
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BUILDING CODE ANALYSIS

G-002

Project Name:	SCP-Advanced Energy Center	NRCC-PRF-01-E	Page 1 of 25
Project Address:	741 4th Street Santa Rosa 95404	Calculation Date/Time:	13:11, Mon, Jun 24, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	EP726-SCPMarketplace-v6-190621.cibd16x

A. PROJECT GENERAL INFORMATION

1.	Project Location (city)	Santa Rosa	8.	Standards Version	Compliance2016
2.	CA Zip Code	95404	9.	Compliance Software (version)	EnergyPro 7.2
3.	Climate Zone	2	10.	Weather File	SANTA-ROSA_724957_CZ2010.epw
4.	Total Conditioned Floor Area in Scope	9,492 ft²	11.	Building Orientation (deg)	(S) 152 deg
5.	Total Unconditioned Floor Area	0 ft²	12.	Permitted Scope of Work	ExistingAdditionAndAlteration
6.	Total # of Stories (Habitable Above Grade)	1	13.	Building Type(s)	Nonresidential
7.	Total # of dwelling units	0	14.	Gas Type	NaturalGas

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft²-yr)

\$ 140.1

BUILDING COMPLIES				
1. Energy Component	2. Standard Design (TDV)	3. Proposed Design (TDV)	4. Compliance Margin (TDV)	5. Percent Better than Standard
Space Heating	-28.84	47.87	-19.03	-66.0%
Space Cooling	79.79	64.96	14.83	18.6%
Indoor Fans	115.27	75.29	39.98	34.7%
Heat Rejection	--	--	--	--
Pumps & Misc.	--	--	--	--
Domestic Hot Water	4.17	6.43	-2.26	-54.2%
Indoor Lighting	77.18	97.70	39.48	51.2%
COMPLIANCE TOTAL	305.25	232.25	73.00	23.9%
Receptacle	88.54		0.0	0.0%
Process	6.25	6.25	0.0	0.0%
Other Ltg	--	--	--	--
Process Motors	--	--	--	--
TOTAL	400.04	327.04	73.0	18.2%

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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

Identify which building components use the performance or prescriptive path for compliance. "NA"= not in project.
For components that utilize the performance path, indicate the sheet number that includes mandatory notes on plans.

Building Component	Compliance Path	Compliance Forms (required for submittal)	Location of Mandatory Notes on Plans
Envelope	☒ Performance	NRCC-PRF-ENV-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-ENV-01 / 02 / 03 / 04 / 05 / 06-E	
	☐ NA		
Mechanical	☒ Performance	NRCC-PRF-MCH-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-MCH-01 / 02 / 03 / 04 / 05 / 06 / 07-E	
	☐ NA		
Domestic Hot Water	☒ Performance	NRCC-PRF-PLB-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PLB-01-E	
	☐ NA		
Lighting (Indoor Conditioned)	☒ Performance	NRCC-PRF-LTI-DETAILS (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	
	☐ NA		
Covered Process: Commercial Kitchens	☐ Performance	S2 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 03-E	
	☒ NA		
Covered Process: Computer Rooms	☐ Performance	S3 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 04-E	
	☒ NA		
Covered Process: Laboratory Exhaust	☐ Performance	S4 (section of the NRCC-PRF-01-E)	
	☐ Prescriptive	NRCC-PRC-01/ 09-E	
	☒ NA		

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C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings)

1st	Indoor Fans: Check envelope and mechanical	Compliance Margin By Energy Component (from Table B column 4) Indoor Fans Indoor Lighting Space Cooling Heat Rejection Pumps & Misc. Domestic Hot Water Space Heating PenaltyEnergy Credit
2nd	Indoor Lighting: Check lighting	
3rd	Space Cooling: Check envelope and mechanical	
4th	Heat Rejection: Check envelope and mechanical	
5th	Pumps & Misc.: Check mechanical	
6th	Domestic Hot Water: Check mechanical	
7th	Space Heating: Check envelope and mechanical	

D. EXCEPTIONAL CONDITIONS

This project includes Domestic Hot Water in the analysis. Please verify that Domestic Hot Water is included in the design for the permitted scope of work.

E. HERS VERIFICATION

This Section Does Not Apply

F. ADDITIONAL REMARKS

None Provided

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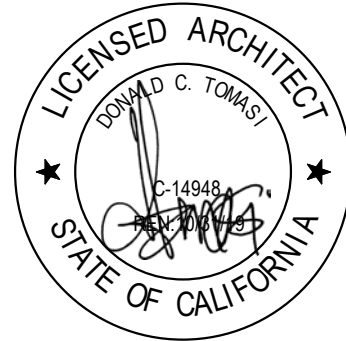
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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY

The following building components are only eligible for prescriptive compliance. Indicate which are relevant to the project.

Yes	NA	Prescriptive Requirement	Compliance Forms	Yes	NA	Mandatory Requirement	Compliance Forms
☐	☒	Lighting (Indoor Unconditioned) §140.6	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	☐	☒	Commissioning: §120.8 Simple Systems Complex Systems	NRCC-CXR-01 / 02 / 03 / 05-E NRCC-CXR-01 / 02 / 04 / 05-E
☒	☐	Lighting (Outdoor) §140.7	NRCC-LTO-01 / 02 / 03-E	☐	☒	Electrical: §130.5	NRCC-ELC-01-E
☒	☐	Lighting (Sign) §140.8	NRCC-LTS-01-E	☐	☒	Solar Ready: §110.10	NRCC-SRA-01 / 02-E
☐	☒	Solar Thermal Water Heating: §140.5	NRCC-STH-01-E	☐	☒	Covered Process: §120.6 Parking Garage Commercial Refrigeration Warehouse Refrigeration Compressed Air Process Boilers	NRCC-PRC-01-E NRCC-PRC-02-E NRCC-PRC-05-E NRCC-PRC-06/07/08-E NRCC-PRC-10-E NRCC-PRC-11-E

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ADVANCED ENERGY
CENTER
741 4TH STREET, SANTA
ROSA, CALIFORNIA 95404



PROJECT NUMBER:
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NO.	DESCRIPTION	DATE
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TITLE 24 FORMS

G-003

Project Name:	SCP:Advanced Energy Center	NRCC-PRF-01-E	Page 5 of 25
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H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) – Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify). See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.

Building Component	Compliance Forms (required for submittal)	Pass	Fail	
Envelope	☒ NRCI-ENV-01-E - For all buildings	☐	☐	
	☒ NRCA-ENV-02-F- NFRC label verification for fenestration	☐	☐	
	☒ NRCI-MCH-01-E - For all buildings with Mechanical Systems	☐	☐	
	☒ NRCA-MCH-02-A- Outdoor Air	☐	☐	
	☒ NRCA-MCH-03-A – Constant Volume Single Zone HVAC	☐	☐	
	☐ NRCA-MCH-04-H- Air Distribution Duct Leakage	☐	☐	
	☒ NRCA-MCH-05-A- Air Economizer Controls	☐	☐	
	☒ NRCA-MCH-06-A- Demand Control Ventilation	☐	☐	
	☐ NRCA-MCH-07-A – Supply Fan Variable Flow Controls	☐	☐	
	☐ NRCA-MCH-08-A- Valve Leakage Test	☐	☐	
Mechanical	☐ NRCA-MCH-09-A – Supply Water Temp Reset Controls	☐	☐	
	☐ NRCA-MCH-10-A- Hydronic System Variable Flow Controls	☐	☐	
	☐ NRCA-MCH-11-A – Auto Demand Shed Controls	☐	☐	
	☒ NRCA-MCH-12-A- Packaged Direct Expansion Units	☐	☐	
	☐ NRCA-MCH-13-A- Air Handling Units and Zone Terminal Units	☐	☐	
	☐ NRCA-MCH-14-A- Distributed Energy Storage	☐	☐	
	☐ NRCA-MCH-15-A – Thermal Energy Storage	☐	☐	
	☐ NRCA-MCH-16-A- Supply Air Temp Reset Controls	☐	☐	
	☐ NRCA-MCH-17-A – Condensate Water Temp Reset Controls	☐	☐	
	☐ NRCA-MCH-18-A- Energy Management Controls Systems	☐	☐	
	☐ NRCV-MCH-04-H- Duct Leakage Test	☐	☐	

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Building Component	Compliance Forms (required for submittal)	Pass	Fail
Covered Process	☐ NRCI-PRC-01-E Covered Processes	☐	☐
	☐ NRCA-PRC-01-F- Compressed Air Systems	☐	☐
	☐ NRCA-PRC-02-F- Kitchen Exhaust	☐	☐
	☐ NRCA-PRC-03-F- Garage Exhaust	☐	☐
	☐ NRCA-PRC-04-F- Refrigerated Warehouse- Evaporator Fan Motor Controls	☐	☐
	☐ NRCA-PRC-05-F- Refrigerated Warehouse- Evaporative Condenser Controls	☐	☐
	☐ NRCA-PRC-06-F- Refrigerated Warehouse- Air Cooled Condenser Controls	☐	☐
	☐ NRCA-PRC-07-F- Refrigerated Warehouse- Variable Speed Compressor	☐	☐
	☐ NRCA-PRC-08-F- Electrical Resistance Underslab Heating System	☐	☐

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information)					Confirmed		
1.	Total Conditioned Floor Area	9,492 ft²	5.	Number of Floors Above Grade	1	Pass	Fail
2.	Total Unconditioned Floor Area	0 ft²	6.	Number of Floors Below Grade	0		
3.	Addition Conditioned Floor Area	0 ft²					
4.	Addition Unconditioned Floor Area	0 ft²					
7. Opaque Surfaces & Orientation		8. Total Gross Surface Area	9. Total Fenestration Area	10. Window to Wall Ratio			
North Wall		2,081 ft²	84 ft²	04.0%		☐	☐
East Wall		3,533 ft²	30 ft²	00.8%		☐	☐
South Wall		972 ft²	210 ft²	21.6%		☐	☐
West Wall		2,451 ft²	30 ft²	01.2%		☐	☐
Total		9,037 ft²	354 ft²	03.9%		☐	☐
Roof		9,397 ft²	6 ft²	00.1%		☐	☐

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Building Component	Compliance Forms (required for submittal)	Pass	Fail
Plumbing	☒ NRCI-PLB-01-E - For all buildings with Plumbing Systems	☐	☐
	☐ NRCI-PLB-02-E - required on central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-03-E - Single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-21-E - HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-PLB-22-E - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-21-H- HERS verified central systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.	☐	☐
	☐ NRCI-STH-01-E - Any solar water heating	☐	☐
	☒ NRCI-LTI-01-E - For all buildings	☐	☐
	Indoor Lighting	☐ NRCI-LTI-02-E - Lighting control system, or for an Energy Management Control System (EMCS)	☐
☐ NRCI-LTI-03-E - Line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting		☐	☐
☐ NRCI-LTI-04-E - Two interlocked systems serving an auditorium, a convention center, a conference room, or a theater		☐	☐
☐ NRCI-LTI-05-E - Lighting Control Credit Power Adjustment Factor (PAF)		☐	☐
☐ NRCI-LTI-06-E - Additional wattage installed in a video conferencing studio		☐	☐
☒ NRCA-LTI-02-A - Occupancy sensors and automatic time switch controls		☐	☐
☒ NRCA-LTI-03-A - Automatic daylighting controls		☐	☐
☒ NRCA-LTI-04-A - Demand responsive lighting controls		☐	☐
☒ NRCI-LTO-01-E – Outdoor Lighting		☐	☐
Outdoor Lighting		☒ NRCI-LTO-02-F- EMCS Lighting Control System	☐
	☒ NRCA-LTO-02-A - Outdoor Lighting Control	☐	☐
Sign Lighting	☐ NRCI-LTS-01-E – Sign Lighting	☐	☐
Electrical	☐ NRCI-ELC-01-E - Electrical Power Distribution	☐	☐
Photovoltaic	☐ NRCI-SPV-01-E Photovoltaic Systems	☐	☐

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J. FENESTRATION ASSEMBLY SUMMARY

							§ 110.6	Confirmed		
1.	2.	3.	4.	5.	6.	7.	8.	9.	Pass	Fail
Fenestration Assembly Name / Tag or I.D.	Fenestration Type / Product Type / Frame Type	Certification Method¹	Assembly Method	Area ft²	Overall U-factor	Overall SHGC	Overall VT	Status		
Single Metal Clear	VerticalFenestration FixedWindow MetalFraming	Default Performance	SiteBuilt	354	1.19	0.83	0.77	E	☐	☐
Solartubes	Skylight FixedWindow N/A	NFRC Rated	Manufactured	6	0.53	0.35	0.50	N	☐	☐

¹ Newly installed fenestration shall have a certified NFRC Label Certificate or use the EEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.
² Status: N - New, A - Altered, E - Existing

Taking compliance credit for fenestration shading devices? (if "Yes", see NRCC-PRF-ENV-DETAILS for more information)	No
--	----

K. OPAQUE SURFACE ASSEMBLY SUMMARY							§ 120.7/ § 140.3	Confirmed	
1.	2.	3.	4.	5.	6.	7.	8.	Pass	Fail
Surface Name	Surface Type	Area (ft²)	Framing Type	Cavity R-Value	Continuous R-Value	U-Factor / F-Factor / C-Factor	Status		
Exist. Concrete Exterior13	ExteriorWall	5651	NA	0	NA	U-Factor: 0.694	E	☐	☐
Exist. Concrete Demising16	ExteriorWall	2853	NA	0	NA	U-Factor: 0.694	E	☐	☐
Slab On Grade27	UndergroundFloor	9492	NA	0	NA	F-Factor: 0.730	E	☐	☐
Altered Roof R-3829	Roof	9397	Wood	38	NA	U-Factor: 0.029	A	☐	☐
Existing Interior Space33	InteriorWall	1189	NA	0	NA	U-Factor: 0.439	E	☐	☐
New Interior Wall35	InteriorWall	2753	NA	0	NA	U-Factor: 0.337	A	☐	☐
Existing Interior Wall79	InteriorWall	1785	NA	0	NA	U-Factor: 0.309	E	☐	☐
R-O Roof No Attic85	Ceiling	2163	NA	0	NA	U-Factor: 0.248	A	☐	☐
Default Wall Prior to 197113	ExteriorWall	390	Wood	0	NA	U-Factor: 0.537	E	☐	☐
Exist. Metal Exterior Wall115	ExteriorWall	111	Metal	0	NA	U-Factor: 0.458	E	☐	☐
8 Concrete + 4 Fur131	ExteriorWall	32	NA	0	NA	U-Factor: 0.694	A	☐	☐
Default Floor No Crawlspace145	InteriorFloor	2068	Wood	0	NA	U-Factor: 0.205	E	☐	☐

¹ Status: N - New, A - Altered, E - Existing

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ISSUE FOR
CONSTRUCTION

ADVANCED ENERGY
CENTER
741 4TH STREET, SANTA
ROSA, CALIFORNIA 95404

PROJECT NUMBER:
18077.00

DATE:
7/22/2019

DRAWN BY:
Author

CHECKED BY:
Checker

REVISIONS:

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NO.	DESCRIPTION	DATE
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TITLE 24 FORMS
G-004

Project Name:	SCP-Advanced Energy Center	NRCC-PRF-01-E	Page 9 of 25
Project Address:	741 4th Street Santa Rosa 95404	Calculation Date/Time:	13:11, Mon, Jun 24, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	EP726-SCPMarketplace-v6-190621.cbd16x

L. ROOFING PRODUCT SUMMARY											§ 140.3		Confirmed	
1.	2.	3.	4.	5.	6.	7.					Pass	Fail		
Product Type	Product Density (lb/ft²)	Aged Solar Reflectance	Thermal Emittance	SRI	Cool Roof Credit	Roofing Product Description								
Altered Roof R-3829	3.698	0.08	0.75	NA	No	NA					☐	☐		

M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information)											§ 110.1 / § 110.2		Confirmed	
Dry System Equipment ¹ (Fan & Economizer info included below in Table N)														
1.	2.	3.	4.	5.	6.	7.	8.	9.		10.	11.	Pass	Fail	
Equip Name	Equip Type	System Type (Simple ² or Complex ³)	Qty	Total Heating Output (kBtu/h)	Supp Heat Source (V/N)	Supp Heat Output (kBtu/h)	Total Cooling Output (kBtu/h)	Efficiency		Acceptance Testing Required? (Y/N) ⁴	Status ⁵	Pass	Fail	
								Cooling	Heating					
Retail Sales + ERV 1and23	Exhaust (I)	Simple	1	0	No	0	0	NA	NA	No	N	☐	☐	
Restroom/Support + ERV 238	Exhaust (I)	Simple	1	0	No	0	0	NA	NA	No	N	☐	☐	
Kitchen 2 + ERV 167	Exhaust (I)	Simple	1	0	No	0	0	NA	NA	No	E	☐	☐	
Office 11 + ERV 276	Exhaust (I)	Simple	1	0	No	0	0	NA	NA	No	N	☐	☐	
Office 12 + ERV 286	Exhaust (I)	Simple	1	0	No	0	0	NA	NA	No	N	☐	☐	
HP-1	SZHP (Packaged3Phase)	Simple	1	61	No	0	73	EER-11.0	COP-3.69	Yes	N	☐	☐	
Corridors + ERV 2109	Exhaust (I)	Simple	1	0	No	0	0	NA	NA	No	N	☐	☐	
Storage + ERV 2124	Exhaust (I)	Simple	1	0	No	0	0	NA	NA	No	N	☐	☐	
Telecom/AV 13 + EF1146	Exhaust (I)	Simple	1	0	No	0	0	NA	NA	No	N	☐	☐	
FC-1/2/3/5/7/8	MiniSplitHP (Split3Phase)	Simple	6	27	No	0	23	SEER-14.00 / EER-11.70	HSPF-8.20	Yes	N	☐	☐	

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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	EP726-SCPMarketplace-v6-190621.cbd16x

N. ECONOMIZER & FAN SYSTEMS SUMMARY ¹											§ 140.4		Confirmed	
1.	2.	3.					4.					5.	Pass	Fail
Equip Name	Outside Air	Supply Fan					Return Fan					Economizer Type (if present)		
	CFM	CFM	HP	BHP	TSP (Inch WC)	Control	CFM	HP	BHP	TSP (Inch WC)	Control			
HP-1	532	2500	2.240	2.240	3.41	ConstantVolume	NA	NA	NA	NA	NA	DifferentialDryBulb	☐	☐
FC-1/2/3/5/7/8	0	537	0.116	0.116	0.69	ConstantVolume	NA	NA	NA	NA	NA	NA	☐	☐
FC-4	0	537	0.116	0.116	0.69	ConstantVolume	NA	NA	NA	NA	NA	NA	☐	☐
FC-6	0	537	0.116	0.116	0.69	ConstantVolume	NA	NA	NA	NA	NA	NA	☐	☐
FC-9	0	425	0.116	0.116	0.87	ConstantVolume	NA	NA	NA	NA	NA	NA	☐	☐
FC-10	0	425	0.116	0.116	0.87	ConstantVolume	NA	NA	NA	NA	NA	NA	☐	☐
FC-IT	0	470	0.116	0.116	0.79	ConstantVolume	NA	NA	NA	NA	NA	NA	☐	☐

¹ Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section.

O. EQUIPMENT CONTROLS			§ 120.2		Confirmed	
1.	2.	3.	Pass	Fail		
Equip Name	Equip Type	Controls				
Retail Sales + ERV 1and23	Exhaust	NA	☐	☐		
Restroom/Support + ERV 238	Exhaust	NA	☐	☐		
Kitchen 2 + ERV 167	Exhaust	NA	☐	☐		
Office 11 + ERV 276	Exhaust	NA	☐	☐		
Office 12 + ERV 286	Exhaust	NA	☐	☐		
HP-1	SZHP	1 Zones With CO2Sensor Vent. Control Differential Drybulb Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery	☐	☐		
Corridors + ERV 2109	Exhaust	NA	☐	☐		
Storage + ERV 2124	Exhaust	NA	☐	☐		

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance. Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2019-06-24 13:12:24

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M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information)											§ 110.1 / § 110.2		Confirmed	
Dry System Equipment ¹ (Fan & Economizer info included below in Table N)														
1.	2.	3.	4.	5.	6.	7.	8.	9.		10.	11.	Pass	Fail	
Equip Name	Equip Type	System Type (Simple ² or Complex ³)	Qty	Total Heating Output (kBtu/h)	Supp Heat Source (V/N)	Supp Heat Output (kBtu/h)	Total Cooling Output (kBtu/h)	Efficiency		Acceptance Testing Required? (Y/N) ⁴	Status ⁵	Pass	Fail	
								Cooling	Heating					
FC-4	MiniSplitHP (Split3Phase)	Simple	1	27	No	0	23	SEER-14.00 / EER-11.70	HSPF-8.20	Yes	N	☐	☐	
FC-6	MiniSplitHP (Split3Phase)	Simple	1	27	No	0	23	SEER-14.00 / EER-11.70	HSPF-8.20	Yes	N	☐	☐	
FC-9	MiniSplitHP (Split3Phase)	Simple	2	20	No	0	23	SEER-14.00 / EER-11.70	HSPF-8.20	Yes	N	☐	☐	
FC-10	MiniSplitHP (Split3Phase)	Simple	2	20	No	0	23	SEER-14.00 / EER-11.70	HSPF-8.20	Yes	N	☐	☐	
FC-IT	MiniSplitHP (Split3Phase)	Simple	1	19	No	0	23	SEER-14.00 / EER-11.70	HSPF-8.20	Yes	N	☐	☐	

¹ Dry System Equipment includes furnaces, air handling units, heat pumps, etc.
² Simple Systems must complete NRCC-CMB-04-E commissioning design review form.
³ Complex Systems must complete NRCC-CMB-04-E commissioning design review form.
⁴ A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS.
⁵ Status: N - New, A - Altered, E - Existing.

Wet System Equipment ¹											Pumps					Confirmed	
12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	Status ²	Pass	Fail		
Equip Name	Equip Type	Qty	Vol (gal)	Rated Capacity (kBtu/h)	Efficiency	Standby Loss	Tank Ext. R Value	Qty	GPM	HP	YSD (Y/N)						
Rheem PROPH50 T2 RH350 D2	Heat-Pump Packaged	1	50.00	5.0 (kW)	UEF: 3.50	NA	NA	NA	NA	NA	NA	NA	N	☐	☐		

¹ Wet System Equipment includes boilers, chillers, cooling towers, water heaters, etc.
² Status: N - New, A - Altered, E - Existing.

Discrepancy between modeled and designed equipment sizing? (If "Yes", see Table F: "Additional Remarks" for an explanation)											No				
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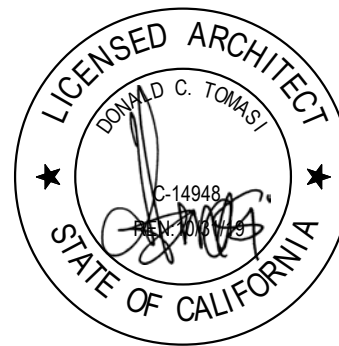
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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	EP726-SCPMarketplace-v6-190621.cbd16x

O. EQUIPMENT CONTROLS							§ 120.2		Confirmed	
1.	2.	3.	Pass	Fail						
Equip Name	Equip Type	Controls								
Telecom/AV 13 + EF1146	Exhaust	NA	☐	☐						
Heat Pump Water Heater1 - SHW	Service Hot Water, Primary Only	Fixed Temperature Control, No DDC No Heat Recovery	☐	☐						

P. SYSTEM DISTRIBUTION SUMMARY							§ 120.4/ § 140.4(I)		Confirmed	
1.	2.	3.	4.	5.		6.	Pass	Fail		
Equip Name	Equip Type	Duct Leakage and Sealing Required per 140.4(I)	Duct Leakage will be verified per NA1 and NA2	Ducts		Status ¹				
				Insulation R-Value	Location					
HP-1	SZHP	No	No	8.0	Unconditioned	N	☐	☐		
FC-1/2/3/5/7/8	MiniSplitHP	No	No	NA	Ductless	N	☐	☐		
FC-4	MiniSplitHP	No	No	NA	Ductless	N	☐	☐		
FC-6	MiniSplitHP	No	No	NA	Ductless	N	☐	☐		
FC-9	MiniSplitHP	No	No	NA	Ductless	N	☐	☐		
FC-10	MiniSplitHP	No	No	NA	Ductless	N	☐	☐		
FC-IT	MiniSplitHP	No	No	NA	Ductless	N	☐	☐		

¹ Status: N - New, E - Existing.

Does the Project Include Zonal Systems? (If "Yes", see NRCC-PRF-MCH-DETAILS for system information)									Yes	
Does the Project Include a Solar Hot Water System? (If "Yes", see NRCC-PRF-MCH-DETAILS for system information)									No	
Multifamily or Hotel/ Motel Occupancy? (If "Yes", see NRCC-PRF-MCH-DETAILS for DHW system information)									No	



ISSUE FOR
CONSTRUCTION

ADVANCED ENERGY
CENTER
741 4TH STREET, SANTA
ROSA, CALIFORNIA 95404



PROJECT NUMBER:
18077.00

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7/22/2019

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NO.	DESCRIPTION	DATE
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Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info) ³						§ 140.6	
						Confirmed	
1.	2.	3.	4.	5.		Pass	Fail
Occupancy Type ¹	Conditioned Floor Area ² (ft²)	Installed Lighting Power (Watts)	Lighting Control Credits (Watts)	Additional (Custom) Allowance			
				Area Category Footnotes (Watts)	Tailored Method (Watts)	☐	☐
Retail Merchandise Sales, Wholesale Showroom	4,998	2,658	0	0	0	☐	☐
Corridors, Restrooms, Stairs, and Support Areas	1,423	378	0	0	0	☐	☐
Office (Greater than 250 square feet in floor area)	1,197	480	0	0	0	☐	☐
Commercial and Industrial Storage Areas (conditioned or unconditioned)	284	57	0	0	0	☐	☐
Electrical, Mechanical, Telephone Rooms	224	80	0	0	0	☐	☐
Building Totals:		8,126	3,653	0	0		

¹ See Table 140.6-C
² See NRCC-LTI-01-E for unconditioned spaces
³ Lighting information for existing spaces modeled is not included in the table

R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E) ¹							§ 130.0	
Luminaire Schedule (includes all permanent installed lighting in conditioned space, and portable lighting over 0.3 w/ft² in offices)							Confirmed	
Name or Item Tag	Complete Luminaire Description (i.e., 3-lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per luminaire	How Wattage is Determined		Total Number Luminaires	Installed Watts	Pass	Fail
			CEC Default from NAB	According to §130.0(c)				
LB-1	1'x4" Recessed LED 17w LB-1	17	No	Yes	9	153	☐	☐
LB-1A	1'x4" Recessed LED w Drywall Mount Kit 40w LB-1A	40	No	Yes	15	600	☐	☐
LC-5	60" Diameter LED Round Pendant 186w LC-5	186	No	Yes	3	558	☐	☐

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S4. COVERED PROCESS SUMMARY – LABORATORY EXHAUSTS		§ 140.9
This Section Does Not Apply		

T. UNMET LOAD HOURS	
This Section Does Not Apply	

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	—	26.2	—	163.4	—	—
Space Cooling	15.0	10.5	4.5	—	—	—
Indoor Fans	47.3	30.7	16.6	—	—	—
Heat Rejection	—	—	—	—	—	—
Pumps & Misc.	—	—	—	—	—	—
Domestic Hot Water	—	2.9	—	27.6	—	—
Indoor Lighting	29.7	14.5	15.2	—	—	—
COMPLIANCE TOTAL	92.0	84.8	7.2	191.0	0.0	—
Receptacle	33.9	33.9	0.0	—	—	—
Process	2.9	2.9	0.0	—	—	—
Other Ltg	—	—	—	—	C-14948	—
Process Motors	—	—	—	—	—	—
TOTAL	128.8	121.6	7.2	191.0	0.0	—

CA Building Energy Efficiency Standards: 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2019-06-24 13:12:24

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R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E) ¹						§ 130.0		
Luminaire Schedule (includes all permanent installed lighting in conditioned space, and portable lighting over 0.3 w/ft² in offices)						Confirmed		
Name or Item Tag	Complete Luminaire Description (i.e., 3-lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per luminaire	How Wattage is Determined		Total Number Luminaires	Installed Watts	Pass	Fail
			CEC Default from NAB	According to §130.0(c)				
LCB-8	LED 7" Strips 30w LCB-8	30	No	Yes	16	480	☐	☐
LD-1	4" Round Downlight 21w LD-1	21	No	Yes	8	168	☐	☐
LK-6	6" LED Cove Light 29w LK-6	29	No	Yes	2	58	☐	☐
LL-4	4" x2" Wire Mount LED LL-4	29	No	Yes	2	58	☐	☐
LL-6	6"x2" Wire Mount LED 44w LL-6	44	No	Yes	24	1,056	☐	☐
LL-8	8"x2" Wire Mount LED 58w LL-8	58	No	Yes	11	638	☐	☐
LR-1	2'x4' LED Troffer 47w LR-1	47	No	Yes	9	423	☐	☐

¹ If lighting power densities were used in this compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.

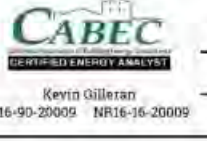
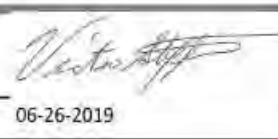
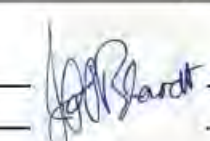
S1. COVERED PROCESS SUMMARY – ENCLOSED PARKING GARAGES		§ 140.9
This Section Does Not Apply		

S2. COVERED PROCESS SUMMARY – COMMERCIAL KITCHENS					§ 140.9	
Space Name	Exhaust Hood Style	Exhaust Hood Duty	Exhaust Length (ft)	Exhaust Flow Rate (cfm)	Confirmed	
					Pass	Fail
					☐	☐
					☐	☐
					☐	☐
					☐	☐
S-3-Kitchen 2 + ERV 1						
		Light			☐	☐
		Light			☐	☐
		Light			☐	☐
		Light			☐	☐
		Light			☐	☐

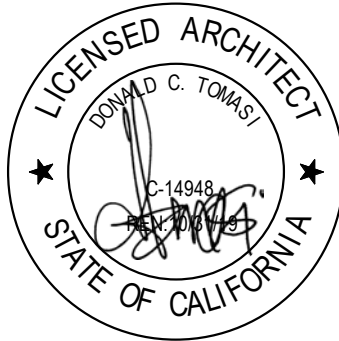
S3. COVERED PROCESS SUMMARY – COMPUTER ROOMS		§ 140.9
This Section Does Not Apply		

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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	EP726-SCPMarketplace-v6-190621.cbd16x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		§ 10-103
I certify that this Certificate of Compliance documentation is accurate and complete.		
Documentation Author Name: Kevin P. Gilleran	Signature:	
Company: Gilleran Energy Management		
Address: 750A Davis St	Signature Date: 06-24-2019	
City/State/Zip: Santa Rosa California 95401	CEA Identification (if applicable):	
Phone: 707-528-7318		
RESPONSIBLE PERSON'S DECLARATION STATEMENT		
I certify the following under penalty of perjury, under the laws of the State of California:		
1	I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer, or I am a licensed architect.	
2	I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.	
3	I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.	
Responsible Envelope Designer Name:		Signature: 
Company: TLCD Architecture		Date Signed: 06-24-2019
Address: 520 Third St #250		Declaration Statement Type:
City/State/Zip: Santa Rosa CA 95401		Title:
Phone: (707)525-5600		License #:
Responsible Lighting Designer Name: Victor Steffen		Signature: 
Company: Guttman & Blaevoet		Date Signed: 06-26-2019
Address: 2351 Powell Street		Declaration Statement Type:
City/State/Zip: San Francisco, CA 94133		Title: Principal Engineer
Phone: 415-655-4000		License #: E11872
Responsible Mechanical Designer Name: - specify - Jeffrey Blaevoet		Signature: 
Company: Guttman & Blaevoet		Date Signed: 6/26/2019
Address: 2351 Powell Street		Declaration Statement Type:
City/State/Zip: San Francisco, CA 94133		Title: Principal
Phone: (415) 655-4000		License #: M025313

CA Building Energy Efficiency Standards: 2016 Nonresidential Compliance Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2019-06-24 13:12:24



ISSUE FOR
CONSTRUCTION

ADVANCED ENERGY
CENTER
741 4TH STREET, SANTA
ROSA, CALIFORNIA 95404



PROJECT NUMBER:
18077.00

DATE:
7/22/2019

DRAWN BY:
Author

CHECKED BY:
Checker

REVISIONS:

NO.	DESCRIPTION	DATE
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TITLE 24 FORMS

G-006

Project Name:	SCP-Advanced Energy Center	NRCC-PRF-01-E	Page 17 of 25
Project Address:	741 4th Street Santa Rosa 95404	Calculation Date/Time:	13:11, Mon, Jun 24, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	EP726-SCPMarketplace-v6-190621.cbd16x

NRCC-PRF-ENV-DETAILS -SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS				Confirmed	
1.	2.	3.	4.	Pass	Fail
Surface Name	Surface Type	Description of Assembly Layers	Notes		
Exist. Concrete Exterior13	ExteriorWall	Concrete - 140 lb/ft3 - 8 in.		☐	☐
Exist. Concrete Demising16	ExteriorWall	Concrete - 140 lb/ft3 - 8 in.		☐	☐
Slab On Grade27	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		☐	☐
Altered Roof R-3829	Roof	Single Ply Roofing - 1/4 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Wood framed roof, 24in. OC, 11.25in., R-38 Gypsum Board - 1/2 in.		☐	☐
Existing Interior Space33	InteriorWall	Air - Cavity - Wall Roof Ceiling - 4 in. or more		☐	☐
New Interior Wall35	InteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Gypsum Board - 1/2 in.		☐	☐
Existing Interior Wall79	InteriorWall	Gypsum Board - 1/2 in. Vapor permeable felt - 1/8 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Gypsum Board - 1/2 in.		☐	☐
R-0 Roof No Attic85	Ceiling	Asphalt shingles - 1/4 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Gypsum Board - 1/2 in.		☐	☐
Default Wall Prior to 197113	ExteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Wood framed wall, 16in. OC, 3.5in., R-0 Gypsum Board - 1/2 in.		☐	☐

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance. Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2019-06-24 13:12:24

Project Name:	SCP-Advanced Energy Center	NRCC-PRF-01-E	Page 19 of 25
Project Address:	741 4th Street Santa Rosa 95404	Calculation Date/Time:	13:11, Mon, Jun 24, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	EP726-SCPMarketplace-v6-190621.cbd16x

NRCC-PRF-MCH-DETAILS -SECTION START-

A. MECHANICAL VENTILATION AND REHEAT (Adapted from 2016-NRCC-MCH-03-E)																			Confirmed	
1. DESIGN AIR FLOWS								2. VENTILATION (§ 120.1)											Pass	Fail
CONDITIONED ZONE NAME	HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN PRIMARY MINIMUM AIR FLOW (CFM)	MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	DDC CONTROL (Y/N)	VENT SYSTEM ID	CONDITIONED AREA (ft2)	MIN. VENT PER AREA (CFM/ft2)	DESIGN NUM. OF PEOPLE	MIN. VENT PER PERSON (CFM/person)	REQ'D VENT AIR FLOW (CFM)	DESIGN VENT AIR FLOW (CFM)	TRANSFER AIRFLOW (CFM)	DDC (Y/N)	Operable Window Interlock § 140.4(a) (Y/N)			
1-Retail Sales + ERV 1and2	FC-1/2/3/5/7/8	NA	NA	0.00	NA	NA	N	Retail Sales + ERV 1and23	4,998	NA	41.66	24.00	1,000	1,000	NA	N	NA	☐	☐	
2-Restroom/Support + ERV 2	FC-4	NA	NA	0.00	NA	NA	N	Restroom/Support + ERV 238	762	NA	3.81	30.00	114	114	NA	N	NA	☐	☐	
3-Kitchen 2 + ERV 1	FC-6	NA	NA	0.00	NA	NA	N	Kitchen 2 + ERV 167	326	NA	0.81	60.00	49	49	NA	N	NA	☐	☐	
4-Office 11 + ERV 2	FC-9	NA	NA	0.00	NA	NA	N	Office 11 + ERV 276	640	NA	3.20	30.00	96	96	NA	N	NA	☐	☐	
5-Office 12 + ERV 2	FC-10	NA	NA	0.00	NA	NA	N	Office 12 + ERV 286	557	NA	2.79	30.00	84	84	NA	N	NA	☐	☐	
6-Training Rm 4	HP-1	1,310	NA	0.00	NA	NA	N	HP-1	1,040	NA	26.00	15.00	390	390	NA	Y	NA	☐	☐	
7-Corridors + ERV 2	HP-1	832	NA	0.00	NA	NA	N	HP-1	661	NA	3.31	30.00	99	99	NA	N	NA	☐	☐	
8-Storage + ERV 2	HP-1	358	NA	0.00	NA	NA	N	HP-1	284	NA	0.28	150.00	43	43	NA	N	NA	☐	☐	
10-Telecom/AV 13 + EF1	FC-IT	NA	NA	0.00	NA	NA	N	Telecom/AV 13 + EF1146	224	NA	0.34	100.00	34	34	NA	N	NA	☐	☐	
TOTAL									9,492		82.20	1,909	1,909	NA				☐	☐	

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance. Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2019-06-24 13:12:24

Project Name:	SCP-Advanced Energy Center	NRCC-PRF-01-E	Page 18 of 25
Project Address:	741 4th Street Santa Rosa 95404	Calculation Date/Time:	13:11, Mon, Jun 24, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	EP726-SCPMarketplace-v6-190621.cbd16x

A. OPAQUE SURFACE ASSEMBLY DETAILS				Confirmed	
1.	2.	3.	4.	Pass	Fail
Surface Name	Surface Type	Description of Assembly Layers	Notes		
Exist. Metal Exterior Wall115	ExteriorWall	Stucco - 7/8 in. Vapor permeable felt - 1/8 in. Metal framed wall, 16in. OC, 3.5in., R-0 Gypsum Board - 1/2 in.		☐	☐
8 Concrete + 4 Fur131	ExteriorWall	Concrete - 140 lb/ft3 - 8 in.		☐	☐
Default Floor No Crawispa145	InteriorFloor	Wood framed floor, 16in. OC, 11.25in., R-0 Plywood - 1/2 in. Carpet - 3/4 in.		☐	☐

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E)					
This Section Does Not Apply					

C. OPAQUE DOOR SUMMARY							Confirmed	
1.	2.	3.	4.	5.	6.	7.	Pass	Fail
Opaque Door Assembly Name / Tag or I.D.	Door Type	Certification Method	Operation	Area	Overall U-factor	Status ¹		
Wood Door133	WoodGreaterThanOrEqualTo1.75inThickDoor	DefaultPerformance	Swinging	21	0.500	N	☐	☐

¹ 1-Untested; N - Noted; A - Altered; E - Existing

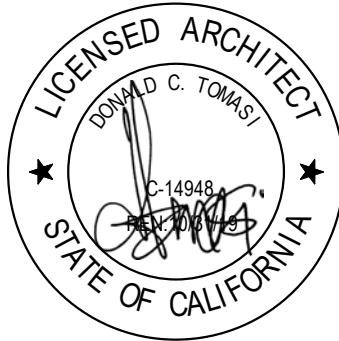
CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance. Report Version: NRCC-PRF-01-E-09132018-5583 Report Generated at: 2019-06-24 13:12:24

Project Name:	SCP-Advanced Energy Center	NRCC-PRF-01-E	Page 20 of 25
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B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY													§ 140.4	
1.	2.	3.	4.		5.	6.	7.			8.			Confirmed	
System ID	System Type	Qty	Rated Capacity (kBtu/h)		Economizer	Zone Name	Airflow (cfm)			Fan			Pass	Fail
			Heating	Cooling			Design	Min.	Min. Ratio	BHP	Cycles	ECM Motor		
FC-1/2/3/5/7/8	MiniSplitHP	6	27.00	23.00	No	1-Retail Sales + ERV 1and2	537	NA	NA	0.116	☐	☐	☐	☐
FC-4	MiniSplitHP	1	27.00	23.00	No	2-Restroom/Support + ERV 2	537	NA	NA	0.116	☐	☐	☐	☐
FC-6	MiniSplitHP	1	27.00	23.00	No	3-Kitchen 2 + ERV 1	537	NA	NA	0.116	☐	☐	☐	☐
FC-9	MiniSplitHP	2	20.00	23.00	No	4-Office 11 + ERV 2	425	NA	NA	0.116	☐	☐	☐	☐
FC-10	MiniSplitHP	2	20.00	23.00	No	5-Office 12 + ERV 2	425	NA	NA	0.116	☐	☐	☐	☐
FC-IT	MiniSplitHP	1	19.00	23.00	No	10-Telecom/AV 13 + EF1	470	NA	NA	0.116	☐	☐	☐	☐
8-Storage + ERV 2-Trm	Uncontrolled	1	NA	NA	NA	8-Storage + ERV 2	358	NA	0.00	NA	NA	☐	☐	☐
7-Corridors + ERV 2-Trm	Uncontrolled	1	NA	NA	NA	7-Corridors + ERV 2	832	NA	0.00	NA	NA	☐	☐	☐
6-Training Rm 4-Trm	Uncontrolled	1	NA	NA	NA	6-Training Rm 4	1310	NA	0.00	NA	NA	☐	☐	☐

C. EXHAUST FAN SUMMARY						Confirmed	
1.	2.	3.	4.	5.	6.	Pass	Fail
System ID	Zone Name	Qty	CFM	Motor BHP	Total Static Pressure (in H2O)		
Retail Sales + ERV 1and23	1-Retail Sales + ERV 1and2	1	1,004	1.127	4.27	☐	☐
Restroom/Support + ERV 238	2-Restroom/Support + ERV 2	1	115	1.206	39.93	☐	☐
Kitchen 2 + ERV 167	3-Kitchen 2 + ERV 1	1	49	0.050	3.92	☐	☐
Office 11 + ERV 276	4-Office 11 + ERV 2	1	180	0.184	3.89	☐	☐
Office 12 + ERV 286	5-Office 12 + ERV 2	1	180	0.184	3.89	☐	☐
Corridors + ERV 2109	7-Corridors + ERV 2	1	100	0.102	3.90	☐	☐
Storage + ERV 2124	8-Storage + ERV 2	1	43	0.044	3.90	☐	☐
Telecom/AV 13 + EF1146	10-Telecom/AV 13 + EF1	1	400	0.121	1.15	☐	☐

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Author

CHECKED BY:
Checker

REVISIONS:

NO.	DESCRIPTION	DATE
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TITLE 24 FORMS

G-007

Project Name:		SCP-Advanced Energy Center				NRCC-PRF-01-E		Page 21 of 25	
Project Address:		741 4th Street Santa Rosa 95404				Calculation Date/Time:		13:11, Mon, Jun 24, 2019	
Compliance Scope:		ExistingAdditionAndAlteration				Input File Name:		EP726-SCPMarketplace-v6-190621.cibd16x	

D. DHW EQUIPMENT SUMMARY – (Adapted from NRCC-PLB-01)										§ 110.3		Confirmed	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	Pass	Fail	
DHW Name	Heater Element Type	Tank Type	Qty	Tank Vol (gal)	Rated Input (kBtu/h)	Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss Fraction	Heat Pump Type	Tank Location or Ambient Condition			
Rheem PROPH50 T2 RH350 02	Electricity	NA	1	50.00	5.0 (kW)	UEF: 3.50	NA	NA	Heat-Pump Packaged	Outdoor	☐	☐	

E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS											
This Section Does Not Apply											

F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01)											
This Section Does Not Apply											

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS (Adapted from 2016-NRCC-MCH-01-E)												§ RA4									
Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).																					
Test Description		MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A	MCH-12A	MCH-13A	MCH-14A	MCH-15A	MCH-16A	MCH-17A	MCH-18A	Confirmed	Pass	Fail
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Duct Ducts	Economizer Controls	DCV	Supply Fan VAV	Valve Leakage	Supply Water Temp. Reset	Hyd. Variable Flow Control	Auto Demand Shield Control	FDD for DX Units	Auto FDD for Air & Zone	Dist. Energy Storage DX AC	TES Systems	Supply Air Temp. Reset	Condenser Water Reset Controls	ECMS			
Heat Pump Water Heater1 - SHW	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	

Project Name:		SCP-Advanced Energy Center				NRCC-PRF-01-E		Page 23 of 25	
Project Address:		741 4th Street Santa Rosa 95404				Calculation Date/Time:		13:11, Mon, Jun 24, 2019	
Compliance Scope:		ExistingAdditionAndAlteration				Input File Name:		EP726-SCPMarketplace-v6-190621.cibd16x	

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS (Adapted from 2016-NRCC-MCH-01-E)										§ RA4											
Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).																					
Test Description		MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A	MCH-12A	MCH-13A	MCH-14A	MCH-15A	MCH-16A	MCH-17A	MCH-18A	Confirmed	Pass	Fail
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Duct Ducts	Economizer Controls	DCV	Supply Fan VAV	Valve Leakage	Supply Water Temp. Reset	Hyd. Variable Flow Control	Auto Demand Shield Control	FDD for DX Units	Auto FDD for Air & Zone	Dist. Energy Storage DX AC	TES Systems	Supply Air Temp. Reset	Condenser Water Reset Controls	ECMS			
FC-4	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
FC-6	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
FC-9	2	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
FC-10	2	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
FC-IT	1	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	

H. EVAPORATIVE COOLER SUMMARY											
This Section Does Not Apply											

NRCC-PRF-LTI-DETAILS -SECTION START-											
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A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E)										§ 140.6			
This Section Does Not Apply													

B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E)										§ 130.1			
This Section Does Not Apply													

\$130.1(a) = Manual area controls; \$130.0(b) = Multi Level; \$130.1(c) = Auto Shut-Off; \$130.1(d) = Mandatory Daylight; \$130.1(e) = Demand Responsive

Project Name:		SCP-Advanced Energy Center				NRCC-PRF-01-E		Page 22 of 25	
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Compliance Scope:		ExistingAdditionAndAlteration				Input File Name:		EP726-SCPMarketplace-v6-190621.cibd16x	

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS (Adapted from 2016-NRCC-MCH-01-E)										§ RA4											
Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).																					
Test Description		MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A	MCH-12A	MCH-13A	MCH-14A	MCH-15A	MCH-16A	MCH-17A	MCH-18A	Confirmed	Pass	Fail
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Duct Ducts	Economizer Controls	DCV	Supply Fan VAV	Valve Leakage	Supply Water Temp. Reset	Hyd. Variable Flow Control	Auto Demand Shield Control	FDD for DX Units	Auto FDD for Air & Zone	Dist. Energy Storage DX AC	TES Systems	Supply Air Temp. Reset	Condenser Water Reset Controls	ECMS			
Retail Sales + ERV 1and23	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
Restroom/S upport + ERV 238	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
Kitchen 2 + ERV 167	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
Office 11 + ERV 276	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
Office 12 + ERV 286	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
HP-1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	☐	☐	
Corridors + ERV 2109	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
Storage + ERV 2124	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
Telecom/AV 13 + EF146	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	
FC 1/2/3/5/7/8	6	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	☐	☐	

Project Name:		SCP-Advanced Energy Center				NRCC-PRF-01-E		Page 24 of 25	
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Compliance Scope:		ExistingAdditionAndAlteration				Input File Name:		EP726-SCPMarketplace-v6-190621.cibd16x	

C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E)										§ 140.6	
General lighting power (see Table D)										0	
General lighting power from special function areas (see Table E)										NA	
Additional "use it or lose it" (See Table G)										0	
Total watts										0	

D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E)										§ 140.6-D	
This Section Does Not Apply											

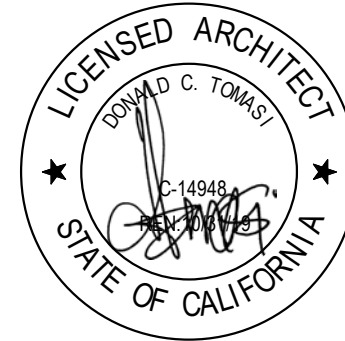
E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E)										§ 140.6(c) 3H	
Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed	Pass	Fail		
NA	NA	NA	NA	NA	NA	NA		☐	☐		

Note: Tailored Method for Special Function Areas is not currently implemented

F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E)									
Rectangular Spaces									
Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed	Pass	Fail	
NA	NA	NA	NA	NA	NA		☐	☐	
Non-Rectangular Spaces									
This Section Does Not Apply									

Note: All applicable spaces are listed under the Non-Rectangular Spaces table

G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E)									
1.	2.	3.	4.	Allowed Watts	Confirmed	Pass	Fail		
Wall Display	Combined Floor Display and Task Lighting	Combined Ornamental and Special Effects Lighting	Very Valuable Merchandise	0		☐	☐		
0	0	0	0	0		☐	☐		



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Author

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Checker

REVISIONS:

NO.	DESCRIPTION	DATE
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TITLE 24 FORMS
G-008

Project Name:SCP-Advanced Energy CenterProject Address:741 4th Street Santa Rosa 95404Compliance Scope:ExistingAdditionAndAlteration

NRCC-PRF-01-EPage 25 of 25Calculation Date/Time:13-11, Mon, Jun 24, 2019Input File Name:EP726-SCPMarketplace-v6-190621.cibd16x

5. Wall Display

This Section Does Not Apply

6. Floor Display and Task Lighting

This Section Does Not Apply

7. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

8. Very Valuable Merchandise

This Section Does Not Apply

H. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTO-01-E)

\$ 130.4

Declaration of Required Acceptance Certificates (NRCA)–Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).

Test Description		Indoor			Outdoor	Confirmed	
		NRCA-LTI-02-A	NRCA-LTI-03-A	NRCA-LTI-04-A	NRCA-LTO-02-A	Pass	Fail
Equipment Requiring Testing or Verification	# of units	Occ Sensors / Auto Time Switch	-Auto Daylight	Demand Responsive	Outdoor Controls		
Occupant Sensors	7	☒	☐	☐	☐	☐	☐
Automatic Time Switch	0	☒	☐	☐	☐	☐	☐
Automatic Daylighting	2	☐	☒	☐	☐	☐	☐
Demand Responsive	1	☐	☐	☒	☐	☐	☐
Outdoor Controls	1	☐	☐	☐	☒	☐	☐

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STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E (Created 7/18)

CALIFORNIA ENERGY COMMISSION

NRCC-LTI-E

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy CenterReport Page: Page 2 of 7

Project Address: 741 4th StreetDate Prepared: 6/24/2019

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Table H. Indoor Lighting Controls Permit Applicant Notes:
Offices > 250sf: <0.5w/sf
Commercial, Industrial Storage: <0.5w/sf
Electrical/Mechanical: <0.5w/sf
Classroom, Lecture, Training: <0.5w/sf

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.
Demand response has been determined to not be applicable. Building floor area is 9,492sf. The attic (2,068sf) is indirectly conditioned space within the building envelope not for occupancy use and the proposed lighting in the attic is for health and safety requirements by the Fire Department only.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

01	02	03		04	05	06	07	08	09	
Name or Item Tag	Complete Luminaire Description	Specialized Luminaire Types		Watts per luminaire ¹	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector	
		Track	Portable						Pass Fail	
LB-1	1'x4" Recessed LED 17w LB-1	☐	☐	17	Mfr. Spec ¹	12	☐	204	☐	☐
LB-1A	1'x4" Recessed LED w Drywall Mount	☐	☐	40	Mfr. Spec ¹	15	☐	600	☐	☐
LC-5	60" Diameter LED Round Pendant 18	☐	☐	186	Mfr. Spec ¹	3	☐	558	☐	☐
LCB-8	LED 7" Strips 30w LCB-8	☐	☐	30	Mfr. Spec ¹	16	☐	480	☐	☐
LD-1	4" Round Downlight 21w LD-1	☐	☐	21	Mfr. Spec ¹	8	☐	168	☐	☐
LK-6	6" LED Cove Light 29w LK-6	☐	☐	29	Mfr. Spec ¹	2	☐	58	☐	☐
LL-4	4" x2" Wire Mount LED LL-4	☐	☐	29	Mfr. Spec ¹	2	☐	58	☐	☐
LL-6	6"x2" Wire Mount LED 44w LL-6	☐	☐	44	Mfr. Spec ¹	24	☐	1,056	☐	☐
LL-8	8"x2" Wire Mount LED 58w LL-8	☐	☐	58	Mfr. Spec ¹	11	☐	638	☐	☐
LR-1	2'x4' LED Troffer 47w LR-1	☐	☐	47	Mfr. Spec ¹	9	☐	423	☐	☐
Total Designed Watts CONDITIONED SPACES:						4,243				

NOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c). Wattage used must be the maximum rated for the luminaire, not the lamp.

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018

STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E (Created 7/18)

CALIFORNIA ENERGY COMMISSION

NRCC-LTI-E

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy CenterReport Page: Page 1 of 7

Project Address: 741 4th StreetDate Prepared: 6/24/2019

A. GENERAL INFORMATION

01 Project Location (city)	Santa Rosa	04 Total Conditioned Floor Area (ft²)	11,555
02 Climate Zone	2	05 Total Unconditioned Floor Area (ft²)	0
03 Occupancy Types Within Project (select all that apply):		06 # of Stories (Habitable Above Grade)	1
☐ Office	☐ Retail	☐ Warehouse	☐ Hotel/Motel
☐ Parking Garage	☐ High-Rise Residential	☐ Relocatable	☒ Other (write in): Auditorium

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces	Unconditioned Spaces			
01	02	03	05		
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)	
☐ New Lighting System					
☒ Altered Lighting System	Entire Luminaire Alteration	Complete Building	11,555	Complete Building	0
Total Area of Work (ft²)		11,555	0		

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Allowed Lighting Power per §140.6(b) (Watts)					Actual Lighting Power per §140.6(a) (Watts)				Compliance Results
01	02	03	04	05	06	07	08	09	10
Complete Building	Area Category	Area Category Footnotes	Tailored Footnotes	Total Allowed (Watts)	Total Designed (Watts)	Portable Lighting	PAF Control Credits	Total Actual (Watts)	05 Must be ≥ 09
§140.6(c)1	§140.6(c)2	§140.6(c)2S (+)	§140.6(c)13 (+)	=	(See Table F)	§140.6(a)2 (-)	(See Table R)	=	§140.6
(See Table I)	(See Table I)	(See Table K)	(See Table L)						
Conditioned:	16,177			≥ 16,177	≥ 4,243			≥ 4,243	COMPLIES
Unconditioned:				≥				≥	
Controls Compliance (See Table H for Details)					COMPLIES with Exceptional Conditions				
Rated Power Reduction Compliance (See Table S for Details)					Not Applicable				

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018

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Indoor Lighting

NRCC-LTI-E (Created 7/18)

CALIFORNIA ENERGY COMMISSION

NRCC-LTI-E

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy CenterReport Page: Page 3 of 7

Project Address: 741 4th StreetDate Prepared: 6/24/2019

G. TRACK LIGHTING

This Section Does Not Apply.

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

Table Instructions: Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.

Building Level Controls		Area Level Controls	
01	02	03	04
Mandatory Demand Response §130.1(e)	Shut-off Controls §130.1(c)	Field Inspector	
Not Required < 10,000 SF	Whole Building: Automatic Time Switch	Pass Fail	

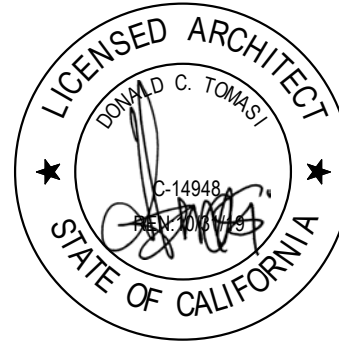
04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector	
								Pass Fail	
Retail Sales, Wholesale	Retail Sales, Wholesale	Manual ON/OFF	Dimmer	Occ Sensor	Included	Included	☐	☐	☐
Kitchen, Food Prep	Kitchen, Food Preparation	Manual ON/OFF	Dimmer	Occ Sensor	N/A	N/A	☐	☐	☐
Offices > 250sf	Office > 250 sqft	Manual ON/OFF	Exempt *	Occ Sensor	N/A	N/A	☐	☐	☐
Corridor/Restroom/Support	Corridor/Restroom/Support	Manual ON/OFF	Dimmer	Occ Sensor	N/A	N/A	☐	☐	☐
Commercial, Industrial Storage	Commercial, Industrial Storage	Manual ON/OFF	Exempt *	Occ Sensor	N/A	N/A	☐	☐	☐
Electrical/Mechanical	Electrical, Mechanical Room	Manual ON/OFF	Exempt *	Occ Sensor	N/A	N/A	☐	☐	☐
Classroom, Lecture, Training	Classroom, Lecture, Training	Manual ON/OFF	Exempt *	Occ Sensor	Included	N/A	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting;
EXCEPTION 1 to §130.1(d)2
Offices > 250sf <0.5w/sf
Commercial, Industrial Storage <0.5w/sf
Electrical/Mechanical <0.5w/sf
Classroom, Lecture, Training <0.5w/sf
Table Continued

13

Plan Sheet Showing Daylit Zones:

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018



ISSUE FOR
CONSTRUCTION

ADVANCED ENERGY
CENTER
741 4TH STREET, SANTA
ROSA, CALIFORNIA 95404



PROJECT NUMBER:
18077.00

DATE:
7/22/2019

DRAWN BY:
Author

CHECKED BY:
Checker

REVISIONS:

NO.	DESCRIPTION	DATE
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TITLE 24 FORMS

G-009

STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E (Created 7/18)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy Center

Report Page: Page 4 of 7

Project Address: 741 4th Street

Date Prepared: 6/24/2019

04	05	06	07	08	09	10	11	12
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)(1)	Field Inspector Pass Fail

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustments Footnotes PAF Portable Ltg
Whole Building	Auditorium Building	1.4	11,555	16,177	☐ ☐ ☐
TOTAL:			11,555	16,177	See Tables J, K, R for detail

J. POWER ADJUSTMENT: PORTABLE LIGHTING IN OFFICES

This Section Does Not Apply

K. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD FOOTNOTES

This Section Does Not Apply

L. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED SPECIAL FUNCTION AREAS

This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards>

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STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E (Created 7/18)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy Center

Report Page: Page 5 of 7

Project Address: 741 4th Street

Date Prepared: 6/24/2019

P. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This Section Does Not Apply

Q. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This Section Does Not Apply

R. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (PAF)

This Section Does Not Apply

S. RATED POWER REDUCTION COMPLIANCE BY SPACE

This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at <http://www.energy.ca.gov/2015publications/CEC-400-2015-033/appendices/forms/NRCI>

YES	NO	Form/Title	Field Inspector Pass Fail
☒	☐	NRCI-LTI-01-E - Must be submitted for all buildings	☐ ☐
☒	☐	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ ☐
☐	☒	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐ ☐
☐	☒	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐ ☐
☐	☒	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ ☐
☐	☒	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ ☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards>

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STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E (Created 7/18)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy Center

Report Page: Page 6 of 7

Project Address: 741 4th Street

Date Prepared: 6/24/2019

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: <http://www.energy.ca.gov/title24/attcp/providers.html>

YES	NO	Form/Title	Field Inspector Pass Fail
☒	☐	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐ ☐
☒	☐	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐ ☐
☐	☒	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐ ☐
☐	☒	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐ ☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards>

July 2018

STATE OF CALIFORNIA

Indoor Lighting

NRCC-LTI-E (Created 7/18)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy Center

Report Page: Page 7 of 7

Project Address: 741 4th Street

Date Prepared: 6/24/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Documentation Author Name: Kevin P. Gilleran

Documentation Author Signature:

Company: Gilleran Energy Management

Signature Date: 06-24-2019

Address: 750A Davis St

CEA/ HERS Certification Identification (if applicable):

City/State/Zip: Santa Rosa, California 95401

Phone: 707-528-7318

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.

2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).

3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.

4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Victor Steffen

Responsible Designer Signature:

Company: Guttman & Blaevoet

Date Signed: 6/25/2019

Address: 2351 Powell Street

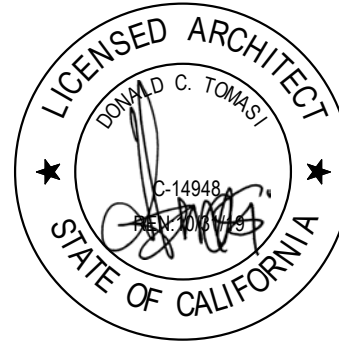
License: E11872

City/State/Zip: San Francisco, CA 94133

Phone: 415-655-4000

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards>

July 2018



ISSUE FOR
CONSTRUCTION

ADVANCED ENERGY
CENTER
741 4TH STREET, SANTA
ROSA, CALIFORNIA 95404



PROJECT NUMBER:
18077.00

DATE:
7/22/2019

DRAWN BY:
Author

CHECKED BY:
Checker

REVISIONS:

NO.	DESCRIPTION	DATE
-----	-------------	------

TITLE 24 FORMS

G-010

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17)
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
NRCC-LTO-E
This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.2, §140.7, and §141.0(b)(2) for outdoor lighting scopes using the prescriptive path.
Project Name: SCP: Advanced Energy Center
Report Page: Page 1 of 6
Project Address: 741 4th Street
Date Prepared: 6/24/2019

A. GENERAL INFORMATION

D1 Project Location (city)

Santa Rosa

D4 Total Illuminated Hardscape Area (ft²)

0

D2 Climate Zone

2

D3 Outdoor Lighting Zone per Title 24, Part 1 §10-114 or as designated by Authority Having Jurisdiction (AHJ):

☐ LZ-0: Very Low - Undeveloped Parkland

☐ LZ-2: Moderate - Rural Areas

☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval

☐ LZ-1: Low - Developed Parkland

☒ LZ-3: Moderately High - Urban Areas

B. PROJECT SCOPE

Table Instructions: Include any outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)(2) for alterations.
My project consists of:

☒ New Lighting System

Must Comply with Allowances from §140.7.

☐ Altered Lighting System

Is your alteration increasing the connected lighting load (Watts)?

☐ Yes

☐ No

¹ FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, for guidance.
Calculation of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)(2)
Compliance Results

01	02	03	04	05	06	07	08	09						
General Hardscape Allowance §140.7(d)(1)	+	Per Application §140.7(d)(2)	+	Sales Frontage §140.7(d)(2)	+	Ornamental §140.7(d)(2)	+	Per Specific Area §140.7(d)(2) OR Existing Power §141.0(b)(2)	=	Total Allowed (Watts)	≥	Total Actual (Watts)	(See Table F)	07 Must be ≥ 08
(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		(See Table N)				
520	+	35	+		+		OR		=	555	≥	131		COMPLIES
Cutoff Compliance (See Table G for Details)											Not Applicable			
Controls Compliance (See Table H for Details)											COMPLIES			

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17)
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
NRCC-LTO-E
Project Name: SCP: Advanced Energy Center
Report Page: Page 3 of 6
Project Address: 741 4th Street
Date Prepared: 6/24/2019

Table Instructions: Complete this table demonstrating compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank. For each requirement in columns 02 through 07, do not leave the field blank, instead select NA or Exempt* from the dropdown list to indicate not applicable or an exemption.

Mandatory Controls

01	02	03	04	05	06	07	08
Area Description	Motion Sensor: Incandescent>100W §130.2(a)	Shut-Off §130.2(c)(1)	Auto-Schedule §130.2(c)(2)	Motion Sensor §130.2(c)(3)	Sales Frontage §130.2(c)(4)	Façade, Ornament, Outdoor Dining §130.2(c)(5)	Field Inspector
Entry	NA: No Incand>100W	Photocontrol	Yes	Yes	NA: No Sales Front Ltg	No Applicable Lt	☐ Pass ☐ Fail

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c).

I. LIGHTING POWER ALLOWANCE (per §140.7)

Table Instructions: Please complete this table for areas using the allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lose it" Allowances are per Table 140.7-B. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

General Hardscape Allowance

☐

"Use it or lose it" Allowance (Watts)

☒ Per Application

☐ Sales Frontage

☐ Ornamental

☐ Per Specific Area

Table I (below)Table JTable KTable LTable M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A

02	03	04	05	06	07	08	09
Area Description	Area Wattage Allowance (AWA)	Linear Wattage Allowance (LWA)	Total General AWA + LWA (Watts)				
	Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (ft)	Allowed Density (W/ft)	Linear Allowance (Watts)	
		0.04	0		0.35	0	0

Initial Wattage Allowance for Entire Site (Watts):

520

Total General Hardscape Allowance (Watts):

520

J. LIGHTING ALLOWANCE: PER APPLICATION

Table Instructions: Please complete this table for areas using the wattage allowance per application from Table 140.7-B.
Table Continued

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards> September 2017

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17)
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
NRCC-LTO-E
Project Name: SCP: Advanced Energy Center
Report Page: Page 2 of 6
Project Address: 741 4th Street
Date Prepared: 6/24/2019

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.
No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: For new or altered lighting systems demonstrating compliance with §140.7 (ie Table I has expanded for input), include all luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)(2) (ie Table N has expanded for input), include only new luminaires being installed and replacement luminaires being installed as part of the project scope (ie, do not include existing luminaires remaining or existing luminaires being moved).

Designed Wattage:

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Complete Luminaire Description	Watts per luminaire¹	How Wattage is determined	Total number luminaires	Luminaire Status²	Excluded per §140.7(a)	Design Watts	Cutoff Req. > 150W §130.2(b)³	Field Inspector
LW-1	47w LED Wall Sconce	LW-1	47	Mfr. Spec¹	2	New	☐	94	☐ Pass ☐ Fail
LW-2	37w Above Door Ext. Door PAK 37w		37	Mfr. Spec¹	1	New	☐	37	☐ Pass ☐ Fail
Total Designed Watts:								131	

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b).

G. CUTOFF REQUIREMENTS (BUG)

This Section Does Not Apply.

H. OUTDOOR LIGHTING CONTROLS

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards> September 2017

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17)
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
NRCC-LTO-E
Project Name: SCP: Advanced Energy Center
Report Page: Page 4 of 6
Project Address: 741 4th Street
Date Prepared: 6/24/2019

01	02	03	04	05	06	07	08	09	10
Area Description	Application per Table 140.7-B¹	CALCULATED ALLOWANCE (Watts)	DESIGN WATTS						
		# of Locations	Allowance per Location² (Watts)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
Entry	Bldg Entrance/ Exit	1	35	35	LW-1	47	2	94	
Entry	Bldg Entrance/ Exit	1	35	35	LW-2	37	1	37	
Total Design Watts for this Area:								131	35
Total Allowance (Watts) All Areas:									35

¹ FOOTNOTES: Primary entrance applications are only available for senior care facilities, police stations, hospitals, fire stations, and emergency vehicle facilities.
² The Allowance per Location for ATMs is 250W for the first ATM and 70W for each additional per Table 140.7-B.

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This Section Does Not Apply

L. LIGHTING ALLOWANCE: ORNAMENTAL

This Section Does Not Apply

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This Section Does Not Apply

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards> September 2017

TLCDARCHITECTURE

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ISSUE FOR
CONSTRUCTION

ADVANCED ENERGY
CENTER

741 4TH STREET, SANTA
ROSA, CALIFORNIA 95404

PROJECT NUMBER:
18077.00

DATE:
7/22/2019

DRAWN BY:
Author

CHECKED BY:
Checker

REVISIONS:

NO.	DESCRIPTION	DATE
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TITLE 24 FORMS

G-011

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STATE OF CALIFORNIA

Outdoor Lighting

NRCC-LTO-E (Created 9/17)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy Center

Report Page: Page 5 of 6

Project Address: 741 4th Street

Date Prepared: 6/24/2019

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: <http://www.energy.ca.gov/title24/attcp/providers.html>

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
☒	☐	NRCC-LTO-01-E - Must be submitted for all buildings.	☐	☐
☒	☐	NRCC-LTO-02-E - Must be submitted for a lighting control system; or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

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YES	NO	Form/Title	Field Inspector	
			Pass	Fail
☒	☐	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls area added to ≤ 20 luminaires.	☐	☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards> September 2017

STATE OF CALIFORNIA

Sign Lighting

NRCC-LTS-E (Created 9/17)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.3, §140.8, and §141.0(b)(2)M for sign lighting scopes using the prescriptive path. Exit signs and traffic signs are not required to comply with prescriptive requirements per exceptions to §140.8 and do not need to complete this compliance document.

Project Name: SCP: Advanced Energy Center

Report Page: Page 1 of 4

Project Address: 741 4th Street

Date Prepared: 6/24/2019

A. GENERAL INFORMATION

01 Project Location (city)	Santa Rosa
02 Climate Zone	2

B. PROJECT SCOPE

Table Instructions: Include any illuminated signs that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.8 or §141.0(b)(2)M for alterations. Exit signs and traffic signs are not required to comply with prescriptive requirements per exceptions to §140.8 and do not need to complete this compliance document. WARNING: Changing the Compliance Method in this table will result in the deletion of data previously input. If you need to change the compliance method, please open a new form or use "Save As".

01	02	03	04	05
Name or Item Tag	Complete Sign Description	Sign Status ¹	Location	Compliance Method ²
XL-1	Storefront Sign	New	Outdoor	Max Allowed Lighting Power

¹FOOTNOTE: Sign alterations that increase the connected lighting load, replace and rewire more than 50% of the ballasts, or relocate the sign to a different location must comply with §140.8. See §141.0(b)(2)M for more details.
²The ENERGY VERIFIED Label compliance method is only applicable if the sign has a permanent, factory-installed, ENERGY VERIFIED label certified by UL or comparable, confirming the sign complies with §140.8. Note that using an ENERGY VERIFIED label is an optional compliance path, not a mandatory requirement. See the tool tips for this table for more details.

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01	02	03	04	05	06	07
Name or Item Tag	Complete Sign Description	Total Allowed (Watts)	Total Designed (Watts)	Compliant Light Sources (See Table F)	ENERGY VERIFIED Label (See Table B)	Compliance Results
(See Table B)	(See Table B)	(See Table B)	(See Table F)	(See Table G)	(See Table B)	
XL-1	Storefront Sign	257.6	96			COMPLIES
Controls Compliance (See Table F/G/H for Details)						COMPLIES

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards> September 2017

STATE OF CALIFORNIA

Outdoor Lighting

NRCC-LTO-E (Created 9/17)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy Center

Report Page: Page 6 of 6

Project Address: 741 4th Street

Date Prepared: 6/24/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Documentation Author Name: Kevin P. Gilleran

Documentation Author Signature:

Company: Gilleran Energy Management

Signature Date: 06-24-2019

Address: 750A Davis St

CEA/ HERS Certification Identification (if applicable):

City/State/Zip: Santa Rosa, California 95401

Phone: 707-528-7318

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.

2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)

3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.

4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Victor Steffen

Responsible Designer Signature:

Company : Guttman & Blaevoet

Date Signed: 6/25/2019

Address: 2351 Powell Street

License: E11872

City/State/Zip: San Francisco, CA 94133

Phone: 415-655-4000

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards> September 2017

STATE OF CALIFORNIA

Sign Lighting

NRCC-LTS-E (Created 9/17)

CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE

Project Name: SCP: Advanced Energy Center

Report Page: Page 2 of 4

Project Address: 741 4th Street

Date Prepared: 6/24/2019

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. MAXIMUM ALLOWED LIGHTING POWER AND CONTROLS

Table Instructions: Complete this table for illuminated signs using the Maximum Allowed Lighting Power compliance method per §140.8(a) as indicated on Table B of this compliance document. Also demonstrate compliance with mandatory controls requirements from §130.3 by indicating control types for each sign.

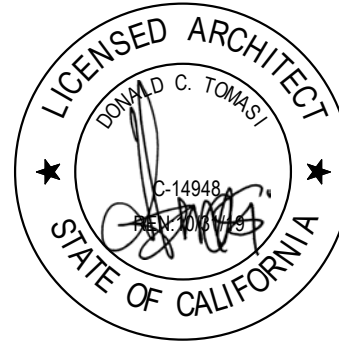
01	02	03	04	05	06	07	08		09
Name or Item Tag	Complete Sign Description	Illumination Method	Sign Area (ft²)	Allowed Density (W/ft²)	Allowance (Watts)	Design Watts	Shut-Off	Dimming	Demand Response ¹
XL-1	Storefront Sign	Externally	112	2.3	257.6	96	Auto Timer	NA	NA
		10	11			12	13	14	
		Luminaire Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	How Wattage is Determined	Total number luminaires			
		XL-1	XL1	96	Mfr. Spec	1			

¹NOTE: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Sign within tunnel illuminated day & night; EXCEPTION to §130.3(a)2A.
²FOOTNOTE: Demand response controls are only required for an Electronic Message Center having a new connected lighting power load greater than 15 kW per §130.3(a)3.

G. LIGHT SOURCES AND CONTROLS

This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: <http://www.energy.ca.gov/title24/2016standards> September 2017



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TITLE 24 FORMS

G-012

STATE OF CALIFORNIA

Sign Lighting

NRCC-LTS-E (Created 9/17)

CALIFORNIA ENERGY COMMISSION

NRCC-LTS-E

CERTIFICATE OF COMPLIANCE		Report Page:	Page 3 of 4
Project Name: SCP: Advanced Energy Center		Date Prepared:	6/24/2019
Project Address: 741 4th Street			

H. ENERGY VERIFIED LABELED SIGNS AND CONTROLS

This Section Does Not Apply

I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

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YES	NO	Form/Title	Field Inspector	
☒	☐	NRCI-LTS-01-E - Must be submitted for all buildings.	Pass	Fail
			☐	☐

J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no Certificates of Acceptance applicable to sign lighting requirements.

STATE OF CALIFORNIA

Sign Lighting

NRCC-LTS-E (Created 9/17)

CALIFORNIA ENERGY COMMISSION

NRCC-LTS-E

CERTIFICATE OF COMPLIANCE		Report Page:	Page 4 of 4
Project Name: SCP: Advanced Energy Center		Date Prepared:	6/24/2019
Project Address: 741 4th Street			

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Documentation Author Signature: Kevin P. Gilleran

Company: Gilleran Energy Management

Signature Date: 06-24-2019

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3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.

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Responsible Designer Name: Victor Steffen

Responsible Designer Signature: Victor Steffen

Company : Guttman & Blaevoet

Date Signed: 6/25/2019

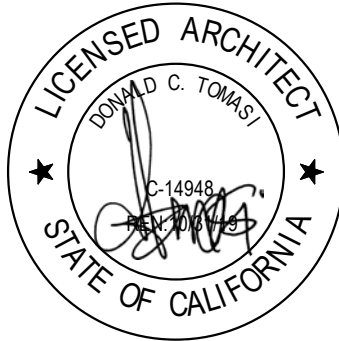
Address: 2351 Powell Street

License: E11872

City/State/Zip: San Francisco, CA 94133

Phone: 415-655-4000

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL		ENV-MM
Project Name SCP: Advanced Energy Center		Date 6/24/2019
DESCRIPTION		
Building Envelope Measures:		
§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.	
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.	
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.	
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.	
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft. ² of window area, 0.3 cfm/ft. ² of door area for residential doors, 0.3 cfm/ft. ² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft. ² for nonresidential double doors (swinging).	
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.	
§110.6(a):	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.	
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).	
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: Metal Building- The weighted average U-factor of the roof assembly shall not exceed 0.098. Wood Framed and Others- The weighted average U-factor of the roof assembly shall not exceed 0.075. The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows: Metal Building- The weighted average U-factor of the wall assembly shall not exceed 0.113. Metal Framed- The weighted average U-factor of the wall assembly shall not exceed 0.151. Light Mass Walls- A 6 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. Heavy Mass Walls- An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. Wood Framed and Others- The weighted average U-factor of the wall assembly shall not exceed 0.110. Spandrel Panels and Opaque Curtain Wall- The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. Demising Walls- The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.	
§120.7(c):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: Raised Mass Floors- Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. Other Floors- The weighted average U-factor of the floor assembly shall not exceed 0.071.	



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TITLE 24 FORMS

G-013

Effective 7/1/2018

Column 1 Feature or Measure	Column 2 Mandatory Project Requirements	Column 3 Verification Complete after implementation and prior to final inspection approval Verification by a 3rd party CALGreen Inspector or by City staff as noted
NOTE <i>Measures are only required for those portions of the building being added to or altered within the scope of the permitted work.</i>	Select all applicable measures below	
5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings with new systems serving additions or alterations subject to section 303.1	☒ G-016	☐ CALGreen Inspector (48)
5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include, as applicable to the project: 1. Renewable energy systems. 2. Landscape irrigation systems. 3. Water reuse systems.	☐ N/a: None of these systems within permit scope	☐
5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system	☒ G-016	☐
5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the system in accordance with the procedures defined by national standards listed in Section 5.410.4.3.1 or as approved by the enforcing agency.	☒ G-016	☐
5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.	☒ G-016	☐
5.410.4.5 Operation and maintenance (O&M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guarantees/warranties for each added or altered system prior to final inspection.	☒ G-016	☐
5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.	☒ G-016	☐
ENVIRONMENTAL QUALITY		☐ CALGreen Inspector to Verify all Environmental Quality Measures
5.503 Fireplaces. 5.503.1 General (Fireplaces). Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove meeting the requirements of Santa Rosa City Code Chapter 17-35.	☐ N/a: no fireplace within permit scope	☐
5.504 Pollutant Control. 5.504.1 Temporary ventilation. <u>If the HVAC system serving the added or altered area(s) is used during construction</u> , use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters of the HVAC system serving the added or altered area(s) immediately prior to occupancy.	☒ G-016	☐

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CALGreen Checklist
Jan 2019

Effective 7/1/2018

Column 1 Feature or Measure	Column 2 Mandatory Project Requirements	Column 3 Verification Complete after implementation and prior to final inspection approval Verification by a 3rd party CALGreen Inspector or by City staff as noted
NOTE <i>Measures are only required for those portions of the building being added to or altered within the scope of the permitted work.</i>	Select all applicable measures below	
5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.	☒ G-016	☐
5.504.4 Finish material pollutant control. Newly installed finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.	☒ G-015 VOC Tables ☒ G-016	☐
5.504.4.1 Adhesives, sealants, caulks. <u>Newly installed adhesives, sealants and caulks</u> used on the project shall meet the requirements of the following standards: 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. in Division 5 2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.	☒	☐
5.504.4.3 Paints and coatings. <u>Newly installed architectural paints and coatings</u> shall comply with Table 5.504.4.3 in Division 5.5.	☒	☐
5.504.4.3.1 Aerosol Paints and Coatings. <u>Newly installed aerosol paints and coatings</u> shall meet the Product-Weighted MIR Limits for ROC in section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances (CCR, Title 17, Section 94520 et seq).	☒	☐
5.504.4.3.2 Verification. Verification of compliance with this section shall be provided when requested by the enforcing agency. Documentation may include, but is not limited to, the following: 1.Manufacture's product specification 2.Field verification of on-site product containers	☒	☐
5.504.4.4 Carpet systems. All <u>newly installed carpet</u> in the building interior shall meet the testing and product requirements of one of the standards listed in Section 5.504.4.4.	☒	☐
5.504.4.4.1 Carpet cushion. All <u>newly installed carpet cushion</u> in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.	☒	☐
5.504.4.4.2 Carpet adhesive. All <u>newly installed carpet adhesive</u> shall meet the requirements of Table 5.504.4.1.	☒	☐

8 of 12City of Santa Rosa - Nonresidential Additions & Alterations
CALGreen Checklist
Jan 2019

Effective 7/1/2018

Column 1 Feature or Measure	Column 2 Mandatory Project Requirements	Column 3 Verification Complete after implementation and prior to final inspection approval Verification by a 3rd party CALGreen Inspector or by City staff as noted
NOTE <i>Measures are only required for those portions of the building being added to or altered within the scope of the permitted work.</i>	Select all applicable measures below	
5.504.4.5 Composite wood products. <u>Newly installed hardwood plywood, particleboard, and medium-density fiberboard composite wood products</u> used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4 in Division 5.5.	☒ G-016	☐
5.504.4.5.2 Documentation. Verification of compliance with this section shall be provided when requested by the enforcing agency. Documentation shall include at least one of the following as applicable. 1. Product certifications and specifications. 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.) 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards. 5. Other methods acceptable to the enforcing agency.	☒	☐
5.504.4.6 Resilient flooring systems. For 80% of floor area receiving <u>newly installed resilient flooring</u> , installed resilient flooring complying with the VOC-emission limits defined in the 2012 CHPS criteria and listed on its High Performance Products Database; products compliant with CHPS criteria certified under the Greenguard Children & Schools program; certified under the FloorScore program of the Resilient Floor Covering Institute; or meet California Department of Public Health 2010 Specification 01350.	☒ G-016 G-015 VOC Tables	☐
5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits. <u>(Support documentation required prior to final inspection approval)</u>	☒	☐
5.504.5.3 Filters. In <u>mechanically ventilated spaces serving additions or altered areas</u> of buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a MERV of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. Exceptions: 1. An ASHRAE 10% to 15% efficiency filter shall be permitted for an HVAC unit meeting the 2013 California Energy Code having 60,000 Btu-hr or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/ftm or less at design air flow. 2. Existing mechanical equipment. 5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.	☒ G-016	☐
5.504.7 Environmental tobacco smoke (ETS) control. ³ <u>Where outdoor areas are provided for smoking</u> , prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows <u>and within the building as already prohibited by other laws or regulations</u> ; or as enforced by ordinances, regulations, or policies of any city or county, whichever are more stringent. See Santa Rosa City Code Chapter 9-20.	☐ N/a: No outdoor smoking areas provided.	☐

9 of 12City of Santa Rosa - Nonresidential Additions & Alterations
CALGreen Checklist
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³ Modified to conform with Chapter 9-20 of the Santa Rosa City Code

Effective 7/1/2018

Column 1 Feature or Measure	Column 2 Mandatory Project Requirements	Column 3 Verification Complete after implementation and prior to final inspection approval Verification by a 3rd party CALGreen Special Inspector or by City staff as noted
NOTE <i>Measures are only required for those portions of the building being added to or altered within the scope of the permitted work.</i>	Select all applicable measures below	
5.505 Indoor moisture control.	☒ G-016	☐
5.506 Indoor air quality. 5.506.1 Outside air delivery. <u>Where newly installed, mechanically or naturally ventilated spaces in additions or altered spaces</u> within buildings, shall meet the minimum requirements of Section 120.1 of the California Energy Code and Chapter 4 of CCR, Title 8, or the applicable local code, whichever is more stringent. 5.506.2 Carbon dioxide (CO₂) monitoring. For <u>additions equipped with demand control ventilation</u> , CO ₂ sensors and ventilation controls shall be specified and installed in accordance with the requirements of the 2016 California Energy Code, Section 120.1(c)(4).	☒ G-016 ☐ N/a: alteration only	☐
5.507 Environmental comfort. 5.507.4 Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E 90 and ASTM E 413 or OITC determined in accordance with ASTM E 1532, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2. <u>(Support documentation required prior to permit issuance)</u> 5.507.4.1 Exterior noise transmission, Prescriptive Method. Wall and floor-ceiling assemblies exposed to the noise source making up the building envelope shall have exterior wall and roof-ceiling assemblies meeting a composite STC rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dBL _{eq} 1-hr during any hour of operation shall have exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30). or 5.507.4.2 Exterior noise transmission, Performance Method. For buildings located as defined in Sections 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (L _{eq} 1-hr) of 50 dBA in occupied areas during any hour of operation. 5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition, or alteration project to mitigate sound migration to the interior. 5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.	☐ Choose either Prescriptive or Performance method ☐ N/a: Per Santa Rosa General Plan EIR and noise contour map, the proposed project location is exposed to less than 65dB. or Nearly all existing wall and ceiling assemblies will remain with the exception of a single wall infill from a door being removed. ☐	☐ Verify either Prescriptive or Performance method ☐

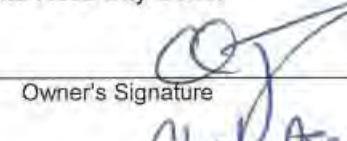
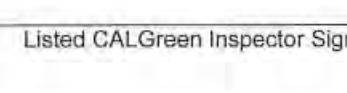
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CALGreen Checklist
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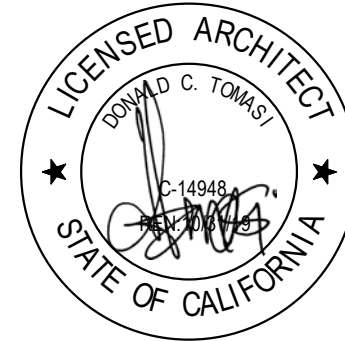
Column 1 Feature or Measure	Column 2 Mandatory Project Requirements	Column 3 Verification Complete after implementation and prior to final inspection approval Verification by a 3rd party CALGreen Inspector or by City staff as noted
NOTE <i>Measures are only required for those portions of the building being added to or altered within the scope of the permitted work.</i>	Select all applicable measures below	
5.507.4.3 Interior sound transmission. <u>Newly installed wall and floor-ceiling assemblies separating tenant spaces and public places</u> shall have an STC of at least 40.	☐ N/a: no separation of tenant/public spaces within the building	☐
5.508 Outdoor air quality. 5.508.1 Ozone depletion and greenhouse gas reductions. <u>New installations of HVAC, refrigeration, and fire suppression equipment</u> shall comply with Sections 5.508.1.1 and 5.508.1.2. 5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that does not contain CFCs. 5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons. 5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 sq. ft. or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities. Exception: Refrigeration systems containing low-global warming potential (low GWP) refrigerant with a GWP value of less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO ₂), and potentially other refrigerants.	☒ G-016 ☒ ☐ N/a: Commercial refrigeration systems not in permit scope.	☐
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS		
QUALIFICATIONS		
702.1 HVAC system installers (if any) are trained and certified in the proper installation of HVAC systems.	☒	☐ CALGreen Inspector
702.2 The CALGreen Inspector for this project is <u>listed by the City of Santa Rosa, as an approved CALGreen Inspector</u> , and is qualified and able to demonstrate competence in the discipline they inspect and verify.	☒	☐ City Plan Check Staff
VERIFICATIONS		
703.1 Verification of compliance with CALGreen for Nonresidential Additions and Alterations may include construction documents, plans, specifications builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which show substantial conformance. Implementation verification shall be submitted to the Building Department after implementation of all required measures and prior to final inspection approval.	☒	☐ CALGreen Inspector

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CALGreen Building Acknowledgments	
Project Address:	741 4th Street, Santa Rosa, CA 95401
Project Description:	Tenant Interior Alteration to Existing Nonresidential Building
Section 1 - Design Verification <i>Complete all lines of Section 1- "Design Verification" and submit the completed checklist (Columns 1 and 2) with the plans and building permit application to the Building Department.</i>	
The owner, design professional and CALGreen Inspector have reviewed the plans and certify that the items checked above are hereby incorporated into the project plans and will be implemented into the project in accordance with the requirements set forth in the 2016 California Green Building Standards Code as amended by Chapter 18-42 of the Santa Rosa City Code.	
Owner's Signature 	Date 4/15/19
Owner Name (Please Print) Don Tomasi	
Design Professional's Signature 	Date 4/15/2019
Design Professional's Name (Please Print) Samantha Cobb	
Signature of Listed CALGreen Inspector Samantha Cobb	Date 04-16-2019
Listed CALGreen Inspector's Name (Please Print) scobb@gillenerenergy.com	Phone 707-528-7318 x 205
CALGreen Inspector's E-mail Address	
Section 2 - Implementation Verification <i>Complete, sign and submit the completed checklist, including Column 3, together with all original signatures on Section 2 - "Implementation Verification" to the Building Division prior to Building Division final inspection.</i>	
I have inspected the work have received sufficient documentation to verify and certify that the project identified above was constructed in accordance with this CALGreen Building Checklist and in accordance with the requirements set forth in the 2016 California Green Building Standards Code as amended by Chapter 18-42 of the Santa Rosa City Code	
Listed CALGreen Inspector Signature 	Date
CALGreen Inspector's Name (Please Print) Samantha Cobb	Phone (if different than above)
CALGreen Inspector's E-mail Address (if different than above)	

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CALGreen Checklist
Jan 2019



ISSUE FOR CONSTRUCTION

ADVANCED ENERGY CENTER

741 4TH STREET, SANTA ROSA, CALIFORNIA 95404



PROJECT NUMBER:
18077.00

DATE:
7/22/2019

DRAWN BY:
Author

CHECKED BY:
Checker

REVISIONS:

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G-015

TABLE 4.504.5 FORMALDEHYDE LIMITS ¹ Maximum Formaldehyde Emissions in Parts per Million	
PRODUCT	CURRENT LIMIT
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard ²	0.13

1. Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333. For additional information, see *California Code of Regulations*, Title 17, Sections 93120 through 93120.12.
2. Thin medium density fiberboard has a maximum thickness of ³/₁₆ inch (8 mm).

TABLE 4.504.1 ADHESIVE VOC LIMIT ^{1,2} Less Water and Less Exempt Compounds in Grams per Liter	
ARCHITECTURAL APPLICATIONS	VOC LIMIT
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply roof membrane adhesives	250
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

1. If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.
2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168.

TABLE 4.504.2 SEALANT VOC LIMIT Less Water and Less Exempt Compounds in Grams per Liter	
SEALANTS	VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	
Nonporous	250
Porous	775
Modified bituminous	500
Marine deck	760
Other	750

TABLE 4.504.3 VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS ^{1,3} Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds	
COATING CATEGORY	VOC LIMIT
Flat coatings	50
Nonflat coatings	100
Nonflat-high gloss coatings	150
SPECIALTY COATINGS	
Aluminum roof coatings	400
Basement specialty coatings	400
Bituminous roof coatings	50
Bituminous roof primers	350
Bond breakers	350
Concrete curing compounds	350
Concrete/masonry sealers	100
Driveway sealers	50
Dry fog coatings	150
Faux finishing coatings	350
Faux resistive coatings	350
Floor coatings	100
Form-release compounds	250
Graphic arts coatings (sign paints)	500
High temperature coatings	420
Industrial maintenance coatings	250
Low solids coatings ²	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers, and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Rust preventative coatings	250
Shellacs	
Clear	730
Opaque	550
Specialty primers, sealers and undercoaters	100
Stains	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tub and tile refinish coatings	420
Waterproofing membranes	250
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	340

1. Grams of VOC per liter of coating, including water and including exempt compounds.
2. The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.
3. Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.

Construction Waste Management Plan (CWMP) – CW 1

Project Name: Sonoma Clean Power Advanced Energy Center
Project Location: 741 4th Street, Santa Rosa, CA 95404
Building Permit #: _____ **Project Sq. Ft.:** 9,435 SF
Contractors Name: _____ **Telephone:** _____
Owners Name: Chad Asay **Telephone:** 707.791.1346

This construction waste management plan is hereby submitted to comply with Section 4.408.2 of the 2016 California Green Building Standards Code.

The purpose of this plan is to identify and outline the methods to be used as the minimum requirements for a construction waste management plan when the local jurisdiction does not have a construction and demolition waste management ordinance per Section 4.408.2.

- The project's overall rate of waste diversion will be 65%.
- The method of waste tracking to be used on this project will be: (Check one box)
☐ Volume ☐ Weight ☐ 4 Lbs. per Sq. Ft. ☐ Recycling Facility
- Construction waste generated on this project for transport to a recycling facility will be: (Check appropriate box)
☐ Sorted on-site (Source-separated) ☐ Bulk mixed (Single stream)
- The facility (or facilities) where the construction waste material will be taken is:
Name of Facility: _____
Address: _____
Telephone: _____
(Attach separate sheet for additional facilities)
- The following construction methods will be used to reduce the amount of waste generated: (Check all that apply)
☐ Efficient design (dimensions of building components are designed to available material sizes or standard sizes).
☐ Careful and accurate material ordering.
☐ Careful material handling and storage.
☐ Panelized or prefabricated construction.
☐ Other _____
☐ Other _____
- Waste reduction and recycling strategies shall be discussed at periodic project meetings. Each new [Contractor]* that comes onto the site shall be provided with a copy of the CWMP, which shall also be posted in the project office. The [Project Manager]* shall also instruct all [Subcontractors]* as to the location and proper use of debris boxes for disposal of construction waste materials.

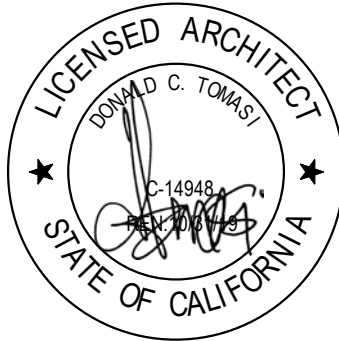
- Every effort shall be made to use recycling and/or reuse (diversion) measures to reduce the amount of construction waste and other materials sent to landfills. Whenever possible, site-sorted debris boxes shall be used to segregate construction waste materials to maximize the diversion rate.
- The [Contractor]* shall provide debris boxes for materials sorted on-site (source-separated) and/or bulk mixed (single stream) waste for all construction related waste generated on this project. Mixed construction waste shall be taken to a recycling facility that has a diversion rate of at least 65 percent. In the event that a [Subcontractor]* provides their own debris box, they shall be responsible for providing the [Contractor]* with a monthly report of the total Recycled and Reused (Diverted) and the total Non-Recycled (Disposed) materials to be included in the project's overall waste management/waste reduction program.
- Any [Supplier]* hauling away packaging or waste materials shall notify the [Contractor]* of the amount of these materials and how they will be disposed of (reused, recycled, salvaged, or taken to landfill).
- Identified below are the construction waste materials that will be reused and/or recycled during the course of this project and how they will be diverted:

Material	Diversion Method: (Recycle/Reuse)

(See Construction Waste Management Worksheets for examples of common materials.)

- The [Waste Hauler]* shall track the total amount of construction waste leaving the project by weight or by volume and supply the [Contractor]* with copies of tickets or detailed receipts from all loads of construction waste removed from the jobsite.
- The [Contractor]* shall monitor the process of waste management, recycling, and reuse of construction waste materials to ensure compliance with the CWMP during the course of the project.
- The [Contractor]* shall ensure that all supporting documentation which demonstrates compliance with the waste management plan is provided to the local enforcement agency upon completion of the project.

* Insert title of appropriate party or responsible person, which may include, but not be limited to: Contractor(s), Subcontractor(s), Project Manager(s), Superintendent(s), Supplier(s), or Waste Hauler(s).



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Author

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REVISIONS:

NO.	DESCRIPTION	DATE
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CALGreen

G-016

2016 CALGreen Mandatory Measures – NonResidential Alterations

5.303.6 Plumbing fixtures and fittings. Newly installed plumbing fixtures and fittings shall be installed in accordance with the CA Plumbing Code and shall meet the applicable standards referenced in Table 1701.1 of the CA Plumbing Code and Chapter 6 of this code.

5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by *California Building Code* Section 1403.2 and *California Energy Code* Section 150, manufacturer's installation instructions or local ordinance, whichever is more stringent.1

5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction or demolition waste management ordinance that is more stringent, submit a construction waste management plan that:

1. Identifies that construction and demolition waste materials to be diverted from disposal by efficient usage, recycling, reuse on the project or salvage for future use or sale.
 2. Determines if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream).
 3. Identifies diversion facilities where construction and demolition waste material collected will be taken.
 4. Specifies that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.
- 5.408.1.2 Waste Management Company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction waste material diverted from the landfill complies with this section.

Exceptions to Sections 5.408.1.1 and 5.408.1.2:

1. Excavated soil and land-clearing debris
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.
3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets, where demolition of an existing structure(s) is necessary for the new construction.

5.408.1.3 Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 5.408.1.1, Items 1 through 4. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency. (Support documentation required prior to permit issuance)

5.504.4 Finish material pollutant control. Newly installed finish materials shall comply with Sections 5.504.4.1 through5.504.4.6.

5.504.4.1 Adhesives, sealants, caulks. Newly installed adhesives, sealants and caulks used on the project shall meet the requirements of the following standards.

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. in Division 5
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section94507.

5.504.4.3 Paints and coatings. Newly installed architectural paints and coatings shall comply with Table 5.504.4.3 in Division 5.5.

5.504.4.3.1 Aerosol Paints and Coatings. Newly installed aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances (CCR, Title 17, Section 94520 et seq).

5.504.4.3.2 Verification. Verification of compliance with this section shall be provided when requested by the enforcing agency. Documentation may include, but is not limited to, the following:

1. Manufacture's product specification
2. Field verification of on-site product containers

5.504.4.4 Carpet systems. All newly installed carpet in the building interior shall meet the testing and product requirements of one of the standards listed in Section 5.504.4.4.

5.504.4.4.1 Carpet cushion. All newly installed carpet cushion in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.

5.504.4.4.2 Carpet adhesive. All newly installed carpet adhesive shall meet the requirements of Table 5.504.4.1.

5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4.5.

5.408.2 Universal waste. Addition and alteration to a building or tenant space that meet the scoping provision in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste material shall be included in the construction documents.

Universal wastes are:

1. Electronic devices: Includes any electronic device that is a hazardous waste (with or without a Cathode Ray Tube (CRT)), including televisions, computer monitors, cell phones, VCRs, computer CPUs and portable DVD players.
2. Batteries: Most household-type batteries, including rechargeable nickel-cadmium batteries, silver button batteries, mercury batteries, alkaline batteries and other batteries that exhibit a characteristic of a hazardous waste
3. Electric lamps: Fluorescent tubes and bulbs, high intensity discharge lamps, sodium vapor lamps and electric lamps that contain added mercury, as well as any other lamp that exhibits a characteristic of a hazardous waste. (e.g., lead).
4. Mercury-containing equipment: Thermostats, mercury switches, mercury thermometers, pressure or vacuum gauges, dilators and weighted tubing, mercury rubber flooring, mercury gas flow regulators, dental amalgams, counterweights, dampers and mercury added novelties such as jewelry, ornaments and footwear.
5. CRTs: The glass picture tubes removed from devices such as televisions and computer monitors.
6. CRT glass: A cathode ray tube that has been accidentally broken or processed for recycling.
7. Non-empty aerosol cans

5.410.1 Recycling by occupants. Provide readily acceptable areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.

Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code 42649.82 (a)(2)(A) et seq. shall also be exempt from the organic waste portion of this section.

5.410.1.2 Sample Ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act).

5.504.4.5.2 Documentation. Verification of compliance with this section shall be provided when requested by the enforcing agency. Documentation shall include at least one of the following as applicable.

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, etseq)
4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards.
5. Other methods acceptable to the enforcing agency.

5.504.4.6 Resilient flooring systems. For 80 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following standards listed in Section 5.504.4.6.

5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits. (Support documentation required prior to final inspection approval)

5.504.5.3 Filters. In mechanically ventilated spaces serving additions or altered areas of buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a MERV of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

- Exceptions:
1. An ASHRAE 10% to 15% efficiency filter shall be permitted for an HVAC unit meeting the 2013 California Energy Code having 60,000 Btu-hr or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/ cfm or less at design air flow.
 2. Existing mechanical equipment.
- 5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.

5.505.1 Indoor moisture control. Buildings shall meet or exceed the provisions of *California Building Code*, CCR, Title 24, Part 2, Sections 1203 and Chapter 14.1.

5.506.1 Outside air delivery. Where newly installed, mechanically or naturally ventilated spaces in additions or altered spaces within buildings, shall meet the minimum requirements of Section 120.1 of the California Energy Code and Chapter 4 of CCR, Title 8, or the applicable local code, whichever is more stringent.

5.508.1 Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.

5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC and refrigeration equipment that does not contain CFCs.

5.508.1.2 Halons. Install fire suppression equipment that does not contain Halons.

5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings with new systems serving additions or alterations subject to section 303.1

5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include, as applicable to the project:

1. Renewable energy systems.
2. Landscape irrigation systems.
3. Water reuse systems.

5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system.

5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the system in accordance with the procedures defined by national standards listed in Section 5.410.4.3.1 or as approved by the enforcing agency.

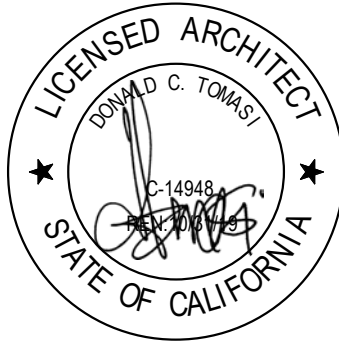
5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

5.410.4.5 Operation and maintenance (O&M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each added or altered system prior to final inspection.

5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.

5.504.1 Temporary ventilation. If the HVAC system serving the added or altered area(s) is used during construction, use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters of the HVAC system serving the added or altered area(s) immediately prior to occupancy.

5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.



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Author

CHECKED BY:

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REVISIONS:

NO.	DESCRIPTION	DATE
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ABBREVIATIONS

AB	AGGREGATE BASE	MIN	MINIMUM
AC	ASPHALT CONCRETE	MISC	MISCELLANEOUS
ACP	ASBESTOS CEMENT PIPE	MJ	MECHANICAL JOINT
AD	ALGEBRAIC DIFFERENCE	MSL	MEAN SEA LEVEL
ADA	AMERICANS WITH DISABILITIES ACT	NO	NORTH
ADPT	ADAPTER	NB	NUMBER
AGG	AGGREGATE	NA	NOT APPLICABLE
ALUM	ALUMINUM	NIC	NOT IN CONTRACT
AP	ANGLE POINT	NPT	NATIONAL PIPE THREAD
APN	ASSESSORS PARCEL NUMBER	OC	ON CENTER
APPROX	APPROXIMATE	OD	OUTSIDE DIAMETER
ARV	AIR RELEASE VALVE	OH	OVERHEAD
AVE	AVENUE	OZ	OUNCE
BC	BEGIN HORIZONTAL CURVE	PA	PLANTER AREA
BLDG	BUILDING	PC	POINT OF CURVATURE
BLVD	BOULEVARD	PCC	POINT OF COMPOUND CURVATURE
BM	BENCHMARK	PCCB	PORLAND CEMENT CONCRETE
BO	BLOWOFF	PD	PLANTER DRAIN
BV	BUTTERFLY VALVE	PE	PLAIN END
BVC	BEGIN VERTICAL CURVE	PG	PAV GRADE
BSW	BACK OF SIDEWALK	PV	POST INDICATOR VALVE
BT	BOTTOM OF TAPER	P	PROPERTY LINE
B&R	BRELJE & RACE	PN	PAVING NOTCH
CAV	COMBINATION AIR AND VACUUM RELEASE VALVE	POC	POINT OF CONNECTION
CB	CATCH BASIN	POS	POINT ON CURVE
CBC	CALIFORNIA BUILDING CODE	POT	POINT ON TANGENT
CD	CONTROLLED DENSITY FILL	PP	POWER POLE
CHK	CHECK	PRC	POINT OF REVERSE CURVATURE
CIPP	CUT-IN-PLACE PIPE	PRV	PRESSURE REDUCING VALVE
C	CENTERLINE	PSI	POUND PER SQUARE INCH
CL	CENTERLINE	PSV	PRESSURE SUSTAINING VALVE
CLR	CLASS	PT	POINT OF TANGENCY
CMP	CLEAR	PUB	PUBLIC UTILITY EASEMENT
CMPA	CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE
CO	CORRUGATED METAL PIPE ARCH	PVI	POINT OF VERTICAL INTERSECTION
CLEANOUT	CLEANOUT	PVMT	PAVEMENT
COAXIAL CABLE	COAXIAL CABLE	R	RADIUS
CONC	CONCRETE	RAW	RAW WATER
COND	CONDUIT	RC	RELATIVE COMPACTION
COTG	CLEANOUT TO GRADE	RCC	REINFORCED CONCRETE BOX
CP	CONTROL POINT	RCP	REINFORCED CONCRETE PIPE
CPLG	COUPLING	RD	ROAD
CR	CURB RETURN	RD	ROAD
CSP	CORRUGATED STEEL PIPE	RED	REDUCER
CTR	CENTER	REF	REFERENCE
CY	CUBIC YARDS	RFBP	REDUCED PRESSURE
C/C	CENTER TO CENTER	RSC	REMOTE SUPERVISORY CONTROL
C&G	CURB AND GUTTER	RT	RIGHT
DBL	DOUBLE	RT	RING TIGHT
DDCC	DOUBLE CHECK DETECTOR CHECK	RW	RECYCLED WATER
DDC	DOUBLE DETECTOR CHECK	RWL	RAIN WATER LEADER
DET	DETECTOR	R/W	RIGHT OF WAY
DI	DROP INLET	S	SOUTH
DIA	DIAMETER	S	SLOPE
DIP	DUCTILE IRON PIPE	S.A.D.	SEE ARCHITECTURAL DRAWINGS
DR	DRIVE	S.S.D.	SUPERVISORY CONTROL AND DATA ACQUISITION
DS	DOWNSPOUT	SCH	SCHEDULE
DS	DOWNSIDE	SD	STORM DRAIN
DWG	DRAWING	SDCB	STORM DRAIN CATCH BASIN
D/W	DRIVEWAY	SDCO	STORM DRAIN CLEANOUT
E	END HORIZONTAL CURVE	SDDI	STORM DRAIN DROP INLET
ECC	ECCENTRIC	SDI	STORM DRAIN EASEMENT
EFFL	EFFLUENT (SEWER)	SDMH	STORM DRAIN MANHOLE
EXIST	EXISTING	SE	SEWER EASEMENT
EL	ELEVATION	SEE	SEE ELECTRICAL DRAWINGS
ELEC	ELECTRICAL	S.F.	SQUARE FEET
ELL	ELBOW	SG	SUBGRADE
EP	EDGE OF PAVEMENT	S.L.D.	SEE LANDSCAPE DRAWINGS
ESMT	EASEMENT	SLIP ON FLANGE	SLIP ON FLANGE
EVC	END VERTICAL CURVE	SO	SIDE OPENING (SD)
EW	EACH WAY	S.P.D.	SEE PLUMBING DRAWINGS
EX	EXISTING	SPEC	SPECIFICATION
EXIST	EXISTING	SS	STAINLESS STEEL
FACE OF CURB	FACE OF CURB	SSCO	SANITARY SEWER CLEANOUT
FCA	FLANGED COUPLING ADAPTER	S.S.D.	SEE STRUCTURAL DRAWINGS
FDC	FIRE DEPARTMENT CONNECTION	SSMH	SANITARY SEWER MANHOLE
FES	FLARED END SECTION	STA	STATION
FINISHED FLOOR	FINISHED FLOOR	STD	STANDARD
FG	FINISHED GRADE	STL	STEEL
FH	FIRE HYDRANT	SV	SERVICE
FL	FLOWLINE	SWC	SIDEWALK EASEMENT
FLG	FLOWLINE	SY	SQUARE YARDS
FLM	FLOWLINE OF SIDE OPENING	S/W	SIDEWALK
FLEX	FLEXIBLE	T	TANGENT
FRP	FIBERGLASS REINFORCED PLASTIC	T	TANGENT
FTG	FOOTING	TB	TOP OF BOX
GALV	GALVANIZED	TC	TOP OF CURB
GB	GRADE BREAK	TC	TEMPORARY CONSTRUCTION
GPM	GALLONS PER MINUTE	TCE	EASEMENT
GRD	GROUND	TO	TOP OF DIKE
GSP	GALVANIZED STEEL PIPE	TEL	TELEPHONE
GV	GAS VALVE	TEMP	TEMPORARY
GV	GATE VALVE	TF	TOP OF FOUNDATION
HB	HOSE BIBB	TG	TOP OF GRATE
HB	HEADER BOARD	THD	THREADED
HDO	HOT DIPPED GALVANIZED	TS	TOP OF SLAB
HDPE	HIGH DENSITY POLYETHYLENE	TT	TOP OF TAPER
HP	HIGH POINT	TW	TOP OF WALL
HWP	HIGH PRESSURE GAS	TYP	TYPICAL
HWY	HIGHWAY	UFFG	UNDER FLOOR FINISHED GRADE
ICV	IRRIGATION CONTROL VALVE	UNO	UNLESS NOTED OTHERWISE
ID	INSIDE DIAMETER	VC	VERTICAL CURVE
INV	INVERT	W	WEST
IPS	IRON PIPE	W	WATER
IPS	IRON PIPE SIZE	WM	WATER METER
IRR	IRRIGATION	WNF	WELD NECK FLANGE
ISR	INTERNATIONAL SYMBOL	WS	WATER SERVICE
OF ACCESSIBILITY	OF ACCESSIBILITY	WT	WATER VALVE
JP	JOINT POLE	WV	WATER VALVE
JT	JOINT TRENCH	°	DEGREES
L	ARC LENGTH	'	MINUTES
L	LENGTH	"	SECONDS
LF	LINEAL FEET	Δ	DELTA
LG	LIP OF GARAGE	Δ	DELTA
LG	LIP OF GUTTER	AT	AT
LP	LOW POINT	#	NUMBER
LT	LEFT	POUNDS	POUNDS
MAX	MAXIMUM	%	PERCENT
MBGR	METAL BEAM GUARD RAIL		
MFR	MANUFACTURE		
MG	MILLION GALLONS		
MH	MANHOLE		

LEGEND

LINES

BOUNDARY	-----
PARCEL	-----
CENTER	-----
EASEMENT	-----

UTILITY LINES

	EXISTING	PROPOSED
STORM DRAIN	24" SD	24" SD
WATER	8" W	8" W
SEWER	12" SS	12" SS
GAS	3" G	12KV E
ELECTRICAL	E	12KV E
TELEPHONE	T	
TELEVISION	TV	
JOINT TRENCH	JT	

TOPOGRAPHY

DROP INLET		
DROP INLET WITH SIDE OPENINGS		
WATER METER		
WATER VALVE		
BLOWOFF		
FIRE HYDRANT		
THRUST BLOCK		
GAS METER		
STORM DRAIN MANHOLE		
STORM DRAIN CATCH BASIN		
SEWER MANHOLE		
SEWER CLEANOUT		
JOINT POLE		
LIGHT STANDARD		
GUY/ANCHOR		
CURB & GUTTER		
AC DIKE		
FENCE		
CHAIN LINK FENCE		
DITCH/SWALE		
MONUMENT		
TREE PROTECTION		
TREE TO BE SAVED		
TREE TO BE REMOVED		

UTILITY GENERAL NOTES

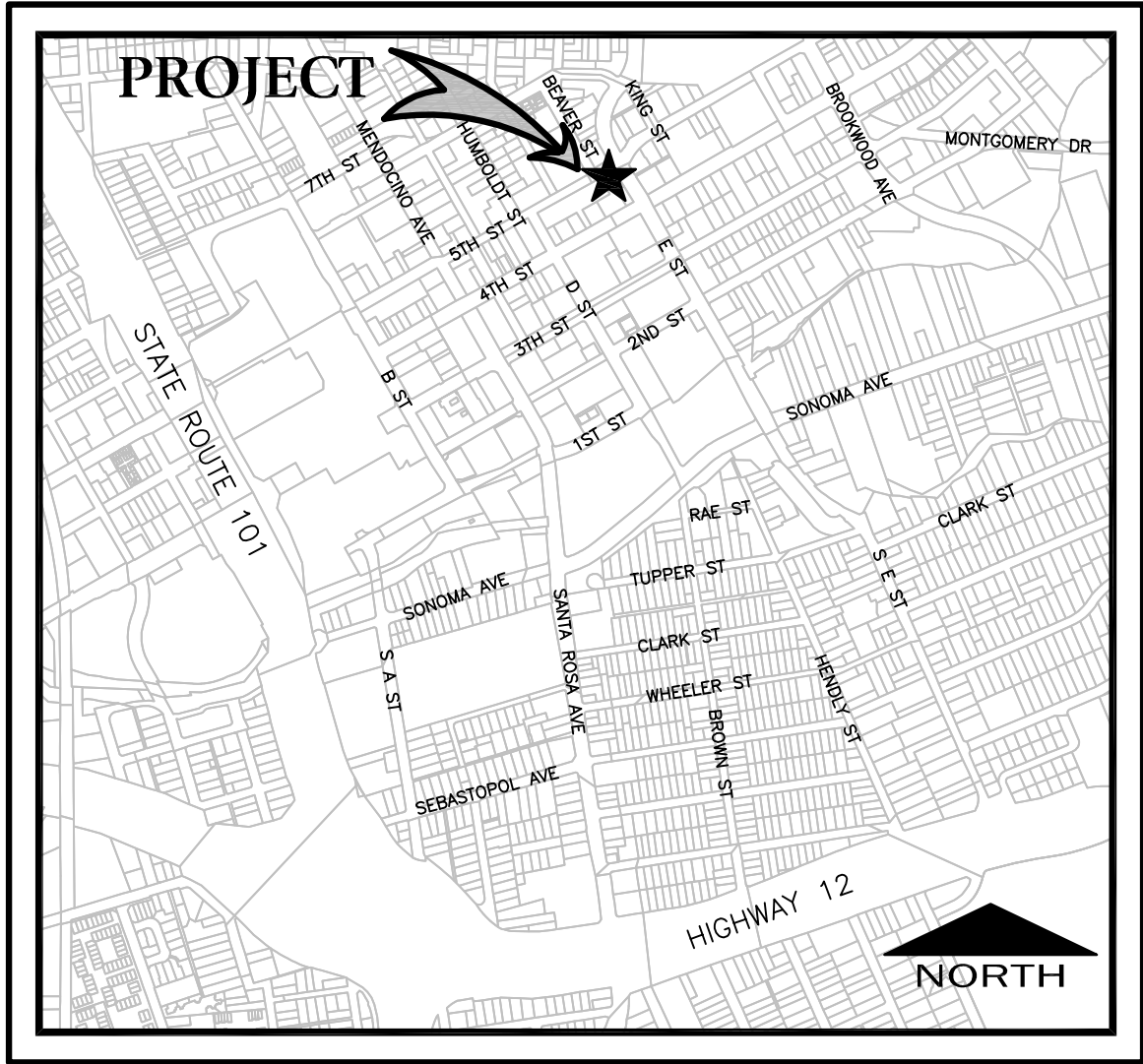
- THE USE OF CONTROLLED DENSITY BACKFILL (CDF) WITHIN ANY PUBLIC SEWER OR WATER TRENCH IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR OF WATER.
- THERE SHALL BE NO UNMETERED CONNECTIONS TO THE CITY OF SANTA ROSA WATER SYSTEM INCLUDING CONNECTIONS BYPASSING THE METER FOR TESTING ONCE PLUMBING OR FOR OBTAINING CONSTRUCTION WATER. SUCH CONNECTIONS SHALL BE SEVERED BY THE WATER DEPARTMENT AND WILL RESULT IN PENALTIES, INCLUDING PAYMENT OF FINES AND ESTIMATED WATER USAGE FEES.
- CONTRACTOR SHALL NOTIFY INSPECTOR A MINIMUM OF 48 HOURS IN ADVANCE TO ALLOW FOR VISUAL ONSITE INSPECTION OF WATER PIPE JOINTS, VALVES, CONNECTIONS, SERVICE SADDLES, HARNESSSES, ANCHORS AND THRUST BLOCKS, PRIOR TO BACKFILLING.
- CONTRACTOR SHALL NOTIFY INSPECTOR A MINIMUM OF 48 HOURS IN ADVANCE TO ALLOW FOR VISUAL INSPECTION OF CUT/TIE INS TO THE SEWER SYSTEM AND ALL ABANDONMENTS.
- ONLY AUTHORIZED CITY PERSONNEL SHALL OPERATE VALVES ON THE EXISTING WATER SYSTEM.
- RESTRAINED MECHANICAL JOINTS SHALL BE USED ON ALL TEES, FITTINGS, AND ASSOCIATED GATE VALVES UNLESS OTHER APPROVED OR DIRECTED BY THE INSPECTOR.
- SUBMITTALS FOR ALL ITEMS USED FOR WATER AND SEWER CONSTRUCTION IN THE CITY RIGHT OF WAY ARE REQUIRED FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK.
- CUT-IN TEES AND FINAL WATER MAIN TIE-INS SHALL BE DONE UNDER THE INSPECTION OF AUTHORIZED CITY PERSONNEL. CUT-IN TEES OR TIE-INS SHALL NOT BE DONE WITHIN FOUR FEET OF A JOINT UNLESS DIRECTED BY THE INSPECTOR. IF THIS SPACING REQUIREMENT CANNOT BE MET THE INSPECTOR MAY DIRECT THAT THE JOINT BE REMOVED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE INSPECTOR FOR ALL REQUIRED INSPECTIONS.
- ALL WATER METER BOX COVERS SHALL BE CONSTRUCTED FROM A TRAFFIC RATED COMPOSITE MATERIAL WITH A 2' DIAMETER BORE ALL THE WAY THROUGH THE LID, AND A 4-1/8" DIAMETER BY 5/16" DEEP COUNTER-BORE CENTERED OVER THE 2" BORE TO ACCOMMODATE AUTOMATED METER READING (AMR) EQUIPMENT. THE BORE HOLES SHALL BE SET TOWARD A CORNER OF THE BOX IN A MANNER THAT DOES NOT WEAKEN THE TRAFFIC RATING. CONTACT THE SANTA ROSA WATER DEPARTMENT IF ADDITIONAL INFORMATION IS NEEDED TO COMPLY WITH THESE REQUIREMENTS. LID SHALL BE CONSTRUCTED SPECIFICALLY FOR BOX USED ON. COVER MAY REQUIRE FIELD MODIFICATION TO ACCOMMODATE AMR EQUIPMENT. CONTACT WATER DEPARTMENT FOR DIRECTION.
- ALL VERTICAL AND HORIZONTAL SEPARATIONS REQUIREMENTS BETWEEN UTILITIES TO MEET MOST RECENT STATE WATER RESOURCES CONTROL BOARD STANDARDS. THESE STATE REQUIREMENTS SUPERCEDE CITY STANDARDS AND APPROVAL FROM STATE WATER RESOURCES BOARD MAY BE REQUIRED.
- ALL WATER AND SEWER IMPROVEMENTS TO BE INSTALLED PER CITY WATER AND SEWER DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS.
- A SEPARATE PERMIT AND PLAN APPROVAL FROM THE FIRE DEPARTMENT IS REQUIRED PRIOR TO INSTALLATION OF PRIVATE FIRE PROTECTION SYSTEM.
- DISINFECTION OF NEW WATER LATERAL/MAIN CAN TAKE A MINIMUM OF A WEEK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO READ DISINFECTION PROCEDURES AND UNDERSTAND THE PROCESS AND TIMING INVOLVED WITH TESTING OUT THE NEW MAIN/LATERAL. DISINFECTION PROCEDURES LIKE ALL OTHER STANDARDS ARE AVAILABLE ONLINE AT THE CITY OF SANTA ROSA WEBSITE. <https://arcity.org/2321/Design-Construction-Standards>

UTILITY GENERAL NOTES

- CONTRACTOR SHALL CONTACT CITY OF SANTA ROSA WATER DEPARTMENT FOR FINAL INSPECTION OF ALL SEWER MAINS AND LATERALS, ALL SEWER MAINS AND LATERALS MUST BE CLEANED & MANDRELED PRIOR TO CITY ACCEPTANCE.
- THE CONTRACTOR SHALL HIRE AN INDEPENDENT TELEVISION INSPECTION SERVICE TO PERFORM A CLOSED -CIRCUIT TELEVISION INSPECTION OF ALL NEWLY CONSTRUCTED SEWERS INCLUDING LATERALS FROM THE MAIN TO THE CLEAN-OUT AND IF LATERAL LINE IS A REPLACEMENT, FROM CLEANOUT TO CONNECTION POINT OF THE EXISTING LATERAL. THE TELEVISION SHALL BE PERFORMED PER SECTION 130-1.09 OF THE CITY OF SANTA ROSA SEWER SYSTEM CONSTRUCTION STANDARD SPECIFICATIONS
- ALL SEWER PIPE LENGTHS SHOWN ARE MEASURED HORIZONTALLY TO CENTER OF MANHOLES AND CLEANOUTS.
- THE CONTRACTOR SHALL ACTIVATE THE PROJECTS WATERLINES THROUGH THE INSTALLATION OF A SIX INCH WATER METER PRIOR TO CONSTRUCTION OR STORAGE OF COMBUSTIBLE MATERIALS. THE SIX INCH METER, APPURTENANCES AND SUITABLE PIPING SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR AS SHOWN ON STD. 860. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE 6" METER CERTIFIED. THE CITY WATER DEPARTMENT WILL PLACE A PLAQUE ON THE METER AFTER CERTIFICATION OF METER HAS BEEN OBTAINED. THE ABOVE INSTALLATION SHALL REMAIN IN PLACE UNTIL THE WATER SYSTEM IS ACCEPTED BY THE CITY. THE COST OF WATER WILL BE BORNE BY THE OWNER/DEVELOPER/SUB-DIVIDER. THE LOCATION OF THE BRIDGE METER AND CHECK VALVES WILL BE DETERMINED BY THE CITY WATER DEPARTMENT.
- FOR HOT TAP CONNECTIONS, THE CONTRACTOR SHALL PROVIDE EXCAVATION, SHORING, BACKFILL, AND TRENCH SURFACING. THE CONTRACTOR SHALL ALSO PROVIDE AND INSTALL THE TAPPING SADDLE, TAPPING VALVE, AND RELATED HARDWARE. CITY PERSONNEL WILL MAKE THE HOT TAP. NO HOT TAP WILL BE MADE WITHIN FOUR FEET OF A JOINT AS MEASURED FROM JOINT TO CENTERLINE OF INTERSECTING PIPE UNLESS OTHERWISE DIRECTED BY THE INSPECTOR. IF THIS SPACING REQUIREMENT CANNOT BE MET, THE INSPECTOR MAY DIRECT THAT THE JOINT BE REMOVED AND THE PROPOSED HOT TAP BE REPLACED WITH A CUT-IN TEE. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE THE HOT TAP WITH THE INSPECTOR.
- METER BOXES SHALL BE INSTALLED OUT OF TRAFFIC LOADING AREAS WHEREVER POSSIBLE.
- WATER SERVICE TAPS UP TO 1 INCH REQUIRE A MINIMUM OF 18 INCHES OF SPACING BETWEEN TAPS, FOR LARGER SERVICE TAPS, THE CONTRACTOR SHALL CONSULT INSPECTOR FOR SPACING REQUIREMENTS.
- IF DAMAGE OCCURS TO ANY WATER SERVICE DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THE SERVICE FROM THE CORPORATION STOP AT THE MAIN TO THE WATER METER WITHOUT SPLING.
- CONTRACTOR TO PROVIDE A RECEIPT OF DISPOSAL FOR ALL ASBESTOS PIPE.

GENERAL NOTES

- ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR WORK IN THE PUBLIC RIGHT OF WAY SHALL CONFORM TO THE CITY OF SANTA ROSA MOST RECENTLY ADOPTED EDITION OF THE STANDARD PLANS AND SPECIFICATIONS FOR PUBLIC IMPROVEMENTS.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL CONSTRUCTION PERMITS REQUIRED BY THE CITY OF SANTA ROSA (SUCH AS ENCROACHMENT, GRADING, BUILDING, DEMOLITION ETC.) PRIOR TO COMMENCEMENT OF WORK.
- AN ENCROACHMENT PERMIT MUST BE OBTAINED FROM THE PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT PRIOR TO BEGINNING ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- CONTRACTOR SHALL OBTAIN A DE-WATERING PERMIT FROM THE NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD FOR ANY DE-WATERING OPERATIONS THAT ARE USED TO MANAGE THE REMOVAL OF GROUND WATER FROM EXCAVATIONS WITH THE INTENT OF DOWNSIDE DISCHARGE TO THE WATERS OF THE STATE OR THE STORM DRAIN SYSTEM. WHEN GROUNDWATER IS TO BE DISCHARGED TO THE SEWER APPROVAL MUST BE OBTAINED FROM THE CITY OF SANTA ROSA INDUSTRIAL WASTE DIVISION.
- A NOTICE OF INTENT TO COMPLY WITH THE TERMS OF THE GENERAL PERMIT TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY MUST BE FILED WITH THE NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD PRIOR TO THE ISSUANCE OF ANY GRADING PERMIT (CALL 707-576-2220 FOR INFORMATION).
- IF ANY CONTAMINATED MATERIAL IS ENCOUNTERED DURING CONSTRUCTION, WORK MUST STOP UNTIL A WORK PLAN HAS BEEN APPROVED IN WRITING BY THE CITY FIRE DEPARTMENT AND THE STATE REGIONAL WATER QUALITY CONTROL BOARD.
- CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO ANY WORKING HOURS; AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO HOLD HARMLESS, INDEMNIFY AND DEFEND THE OWNER, THE DESIGN PROFESSIONAL AND THEIR CONSULTANTS, AND THE CITY OF SANTA ROSA, AND EACH OF THEIR OFFICERS, EMPLOYEES, AND AGENTS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.
- THE LOCATIONS OF UNDERGROUND OBSTRUCTIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY AND SHOULD NOT BE TAKEN AS FINAL OR ALL INCLUSIVE. THE CONTRACTOR IS CAUTIONED THAT THE PLANS MAY NOT INCLUDE ALL EXISTING UTILITIES AND THAT THE OWNER, THE CITY OF SANTA ROSA AND DESIGN PROFESSIONAL ASSUME NO RESPONSIBILITY OF OBSTRUCTIONS WHICH MAY BE ENCOUNTERED.
- THE CONTRACTOR SHALL RECOGNIZE THAT UNDERGROUND FACILITIES NOT SHOWN AS CIVIL IMPROVEMENTS (P&E, TELEPHONE, TV, IRRIGATION, ETC.) SHALL BE COORDINATED AND CONSTRUCTED PRIOR TO PLACEMENT OF BASE ROCK AND PAVING.
- CONTRACTOR IS RESPONSIBLE FOR PRESERVATION AND/OR PERPETUATION OF ALL EXISTING SURVEY MONUMENTS (IRON PIPES ON LOT LINES AND CORNER, CENTERLINE WELL DISKS, ETC.), WHICH CONTROL SUBDIVISIONS, TRACTS, BOUNDARIES, STREETS, HIGHWAYS, OR OTHER RIGHT-OF-WAY, EASEMENTS, OR PROVIDE SURVEY CONTROL WHICH WILL BE DISTURBED OR REMOVED DUE TO CONTRACTOR'S WORK. CONTRACTOR SHALL PROVIDE A MINIMUM OF 10 (TEN) WORKING DAYS NOTICE TO THE ENGINEER/SURVEYOR PRIOR TO DISTURBANCE OR REMOVAL OF EXISTING MONUMENTS.
- CONSTRUCTION HOURS SHALL BE LIMITED TO 7 AM TO 7 PM MONDAY THRU SATURDAY, EXCLUDING HOLIDAYS. THIS RESTRICTION INCLUDES THE START UP OF ANY MOTOR VEHICLES OR OTHER HEAVY EQUIPMENT. ALL CONTRACTORS' EQUIPMENT SHALL BE PROPERLY MUFFLED AND SHALL BE SHUT DOWN WHEN NOT IN USE. (HOURS ARE SUBJECT TO THE CONDITIONS OF APPROVAL)
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE OR DETERIORATION OCCURRING TO EXISTING PUBLIC IMPROVEMENTS AS A DIRECT RESULT OF CONSTRUCTION ACTIVITY RELATED TO CONSTRUCTION OF THE COMMON IMPROVEMENTS (GRADING, ROAD CONSTRUCTION, UTILITY INSTALLATION, ETC.). REQUIRED REPAIR MAY REQUIRE PATCHING, SEALING OR OVERLAYING AFFECTED AREAS AS APPROPRIATE TO RETURN THE ROADS TO AS GOOD A CONDITION AS THEY WERE PRIOR TO CONSTRUCTION. IF THE CONTRACTOR DOES NOT ACT PRUDENTLY IN A TIMELY MANNER, THE CITY MAY, AT ITS DISCRETION PERFORM THE CORRECTION AND CHARGE THE CONTRACTOR FOR ALL COSTS AND OVERHEAD INCURRED.
- RECORD PLAN DRAWINGS SHALL BE PROVIDED UPON COMPLETION OF PROJECT PRIOR TO FINAL ACCEPTANCE.
- A TRAFFIC CONTROL PLAN MUST BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS FOR APPROVAL PRIOR TO BEGINNING ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- CONSTRUCTION SITE WASTE MANAGEMENT IS THE RESPONSIBILITY OF THE OWNER/CONTRACTOR. THE CONSTRUCTION SITE MUST BE KEPT CLEAN AND FREE FROM NON-STORM WATER MATERIAL DISCHARGES, INCLUDING BUT NOT LIMITED TO SOLID WASTE SUCH AS PACKAGING MATERIALS, WOOD, PAPER, AND PLASTIC; BUILDING MATERIALS SUCH AS METALS, RUBBER, PLASTIC, GLASS AND MASONRY PRODUCTS; DOMESTIC WASTES SUCH AS FOOD CONTAINERS, COFFEE CUPS, PAPER BAGS, AND CIGARETTES; CONSTRUCTION AND LANDSCAPING MATERIALS; AND HAZARDOUS WASTE SUCH AS PETROLEUM PRODUCTS, WOOD PRESERVATIVES, PAINTS, MORTARS, AND SOLVENTS. ANY ACTIVITY DURING CONSTRUCTION WHICH ACTUALLY AND/OR MAY POTENTIALLY RESULT IN THE DISCHARGE OF SUCH POLLUTANTS INTO THE CITY'S STORM WATER SYSTEM IS IN VIOLATION OF CITY OF SANTA ROSA STORM WATER ORDINANCE AND STATE OF CALIFORNIA NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD REGULATIONS. THE SITE SHALL REMAIN NEAT AND FREE FROM ANY SUCH POLLUTANTS. THE SITE MUST HAVE AN ADEQUATE NUMBER OF WATERTIGHT CONTAINERS WITH LIDS OR COVERS THAT CAN BE PLACED OVER THE CONTAINER TO KEEP OUT RAIN OR TO PREVENT LOSS OF WASTE DUE TO WIND. THE CONTRACTOR MUST COLLECT SITE TRASH DAILY AND ARRANGE FOR REGULAR WASTE COLLECTION BEFORE CONTAINER OVERFLOWS.
- ADA COMPLIANCE: CONSTRUCTION CONTRACTOR MUST COMPLY WITH THE REQUIREMENTS OF THE AMERICAN WITH DISABILITIES ACT (ADA) AND WHILE WORKING IN THE PUBLIC RIGHT-OF-WAY, IF CONSTRUCTION CONTRACTOR'S WORK IN THE PUBLIC RIGHT-OF-WAY WILL AFFECT PEDESTRIAN ACCESS, THE CONSTRUCTION CONTRACTOR IS REQUIRED TO PROVIDE A PROPERLY SIGNED ACCESSIBLE ROUTE OF TRAVEL. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. FAILURE TO COMPLY WITH THE ADA AND CAN HAVE SERIOUS CONSEQUENCES FOR THE CONSTRUCTION CONTRACTOR. SUCH FAILURE MAY RESULT IN LAWSUITS FOR REGULATORY ACTIONS BY THE DEPARTMENT OF JUSTICE OR THE STATE ATTORNEY GENERAL.



VICINITY MAP
NOT TO SCALE

GRADING NOTES

- NO GRADING, CLEARING OR GRUBBING SHALL BE PERFORMED PRIOR TO ISSUANCE OF A BUILDING PERMIT FROM THE CITY OF SANTA ROSA.
- DUST CONTROL SHALL BE PROVIDED BY CONTRACTOR DURING ALL PHASES OF CONSTRUCTION.
- SITE GRADING SHALL BE DONE UNDER DIRECTION OF THE SOILS ENGINEER AND SHALL BE IN COMPLIANCE WITH CHAPTER 1, 18, AND APPENDIX 33, 2016 EDITION OF THE CALIFORNIA BUILDING CODE.
- EXISTING NON-COMPLYING FILLS SHALL BE REMOVED OR BROUGHT INTO COMPLIANCE WITH CHAPTER 33 AND 18, AND APPENDIX 33, 2016 EDITION OF THE CALIFORNIA BUILDING CODE, AND THE SATISFACTION OF THE SOILS ENGINEER.
- ANY EXCESS AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE TO AN AREA APPROVED BY THE CITY BUILDING DIVISION AND CITY FIRE DEPARTMENT. APPROVALS MUST BE IN WRITING PRIOR TO REMOVAL OF MATERIAL.
- DRAINAGE FROM UPSTREAM PROPERTIES SHALL NOT BE BLOCKED BY GRADING OR CONSTRUCTION OF IMPROVEMENTS.
- CONTRACTOR SHALL PROTECT EXISTING DRAINAGE FACILITIES FROM SEDIMENTATION DURING ALL PHASES OF CONSTRUCTION.
- ALL HAZARDOUS MATERIAL SHALL BE REMOVED AND DISPOSED OF ACCORDING TO THE REQUIREMENTS OF THE CITY'S FIRE DEPARTMENT. THE APPLICANT IS REQUIRED TO DEMONSTRATE COMPLIANCE WITH STATE AND LOCAL CODES FOR REMOVAL OF ASBESTOS CONTAINING MATERIALS DURING DEMOLITION OF THE STRUCTURES ON THE PROJECT SITE. SEE ALSO THE PROJECT MANUAL SECTIONS 00 32 00 AND 00 80 50.
- PRIOR TO ANY GRADING OPERATION, THE CONTRACTOR SHALL INSTALL PROTECTIVE FENCING AROUND THE DRIP LINE OF TREES TO BE SAVED IN COMPLIANCE WITH THE CITY TREE ORDINANCE. CUTTING, FILLING, PAVING OR TRENCING WITHIN ROOT ZONES OF TREES TO BE SAVED MUST BE REVIEWED AND APPROVED BY A CITY APPROVED ARBORIST AND DONE UNDER THEIR ON SITE SUPERVISION.
- DRIP-LINES OF TREES OVERHANGING THE PROPERTY LINE SHALL BE AFFORDED THE SAME LEVEL OF PROTECTION AS TREES ON SITE THAT ARE TO REMAIN.
- PROPOSED DEVELOPMENT MUST CONFORM TO 40 CFR (CODE OF FEDERAL REGULATIONS) PARTS 122, 123 AND 124 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT APPLICATIONS FOR STORM WATER DISCHARGE. PROJECT MUST ALSO CONFORM WITH ANY DESIGN AND CONSTRUCTION POLICIES ADOPTED BY THE CITY TO CONFORM WITH THESE REGULATIONS.
- UNDER 40 CFR, CONSTRUCTION ACTIVITY INCLUDES CLEARING, GRADING AND EXCAVATION ACTIVITIES. THESE ACTIVITIES REQUIRE OBTAINING AN NPDES PERMIT FROM THE STATE WATER RESOURCES CONTROL BOARD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITY.

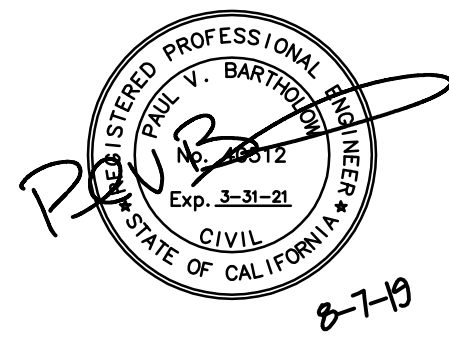
STRIPING AND SIGNING NOTES

- STRIPING AND SIGNING SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE CITY OF SANTA ROSA STREET TRAFFIC STANDARDS. MATERIALS SHALL BE FURNISHED BY THE CONTRACTOR.
- PROPOSED STRIPING AND MARKING SHALL BE INSTALLED THE SAME DAY AS THE REMOVAL OF THE EXISTING STRIPING AND MARKINGS. IF NOT, CONTRACTOR SHALL PROVIDE TEMPORARY PAVEMENT MARKERS UNTIL PROPOSED STRIPING AND MARKING ARE INSTALLED.
- ALL STRIPING, PAVEMENT MARKING AND SIGNING SHALL CONFORM TO THE LATEST EDITION OF THE CALTRANS TRAFFIC MANUAL, THE M.U.T.C.D. AND CITY OF SANTA ROSA STREET TRAFFIC STANDARDS.
- THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER A MINIMUM OF 48 HOURS PRIOR TO THE DAY OF LAYOUT OF THE PROPOSED SIGNING AND STRIPING. CONTACT TRAFFIC ENGINEERING AT 543-3814.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT AND CAT TRACKING OF ALL PROPOSED STRIPING AND MARKING. CAT TRACKING SHALL BE DONE A MINIMUM OF 48 HOURS PRIOR TO PROPOSED STRIPING AND MARKING TO ALLOW THE CITY TIME FOR REVIEW AND APPROVAL.
- EXISTING STRIPING AND MARKING TO BE REMOVED SHALL BE REMOVED BY GRINDING BY THE CONTRACTOR.
- PAVEMENT LEGENDS, CROSSWALKS AND STOP BARS SHALL BE INSTALLED BY USING THERMOPLASTIC PER M.U.T.C.D. AND CALTRANS STANDARD SUPPLEMENTAL SPECIFICATIONS. BIKE LANE LINES TO BE INSTALLED IN 6" TAPE OR PAINT.
- STOP SIGNS AND STREET NAME SIGNS SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR PER CITY STD. DWG. 705, 705A, 705B, 705D, & 240, AND COMPLY WITH M.U.T.C.D. AND STATE SUPPLEMENTAL GUIDELINES FOR OTHER SIGNAGE.
- ALL SIGNING SHALL BE REFLECTORIZED HIGH INTENSITY SHEETING AND SHALL BE OF ALUMINUM ALLOY MATERIAL PER CITY STANDARD SERIES 700.
- SIGNING AND STRIPING ARE TO BE WORKED ON CONCURRENTLY.

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ISSUE FOR
CONSTRUCTION

ADVANCED ENERGY
CENTER

741 4TH STREET,
SANTA ROSA, CALIFORNIA
95404



PROJECT NUMBER: 18077.00/4570.00		
DATE: 8/6/2019		
DRAWN BY: PIT		
CHECKED BY: PVB		
REVISION:		
NO.	DESCRIPTION	DATE

COVER,
ABBREVIATIONS,
LEGEND & NOTES

C-001

WOOD FRAMING NOTES

[illegible]

- HEADERS, BEAMS, POSTS, TOP PLATE SPLICES, AND ETC., ARE PER 1/8"-012 AND 3/8"-012. WHERE NOT NOTED ON PLAN AND DETAILS. WALLS AT SEISMIC SEPARATIONS SHALL BE CONSIDERED EXTERIOR WALLS.
2. ALL BEAMS AND JOISTS SHALL BE SEAT CUT FOR FULL UNIFORM BEARING AT SUPPORTS, INCLUDING BEAM SEATS AND COLUMN CAPS.
3. THE GENERAL CONTRACTOR SHALL MEASURE GLULAM BEAM SIZES AND CAMBERS AS DELIVERED TO THE JOB SITE AND SHALL REPORT FINDINGS TO THE ENGINEER PRIOR TO ERECTION. PROVIDE 5,000 FT. RADIUS CAMBER ON ALL SIMPLE SPAN GLULAM BEAMS UNO. WHERE INDICATED ON PLAN, C = ¼" INDICATES MIDSPAN CAMBER IN INCHES.
4. ALL NAILING NOT NOTED OR DETAILED OTHERWISE SHALL BE PER 12/5"-012 NAIL LENGTH TO BE SUFFICIENT TO MEET CBC PENETRATION REQUIREMENTS.
5. WALLS SHALL BE 2x6 @ 16"oc UNLESS NOTED OTHERWISE. SEE ARCHITECTURAL DRAWINGS FOR OTHER INTERIOR WALL FRAMING SIZES
6. WOOD POST SIZES ARE TO MATCH BEAM AND STUD WIDTH, UNO. WHERE POST OCCURS ABOVE RAISED FLOOR, PROVIDE SOLID BLOCKING AT FLOOR FRAMING TO MATCH WIDTH OF POST.
7. ALL MECHANICAL SUPPLY AND RETURN OPENINGS TO BE BETWEEN FRAMING UNO.
8. JOISTS AND RAFTERS ARE PER PLAN. UNLESS NOTED OTHERWISE, PROVIDE "L" HANGER AT FLUSH FRAMING AND "H" HANGER WHERE HANGER IS SHOWN SKEWED PER PLAN AND/OR HANGER SEAT IS INDICATED TO BE SLOPED. HANGER SIZE TO BE CORRECT FULL SIZE FOR JOIST SIZE (I.E. LU210 FOR 2x10). HANGERS FOR PANELIZED ROOF CONSTRUCTION ARE PER PLAN.
9. ROUND HOLES IN STEEL PLATES TO BE ¼" OVERSIZE. SLOTTED HOLES IN STEEL PLATES SHALL BE ¼" WIDER THAN THE BOLT DIAMETER AND HAVE A LENGTH OF 2 TIMES THE BOLT DIAMETER. THE DIRECTION OF THE SLOTTED LENGTH IS INDICATED ON THE DETAILS (VSH OR HSH). INSTALL BOLT AT THE CENTER LINE OF THE HOLE. BOLT HOLES IN WOOD SHALL BE ROUND AND ½" OVERSIZE. CUT OFF BOLT THREADED END FLUSH WITH NUT WHEN REQUIRED BY FINISHES AND 1" MAXIMUM FROM NUT OTHERWISE. PROVIDE STANDARD CUT WASHERS UNDER HEAD AND NUT WHERE BOLT BEARS ON WOOD. USE PLATE OR MALLEABLE IRON WASHERS AT EXPOSED CONDITIONS OR AS INDICATED.
10. ALL BOLTED OR NAILED STRAP CONNECTIONS SHALL HAVE AN EQUAL NUMBER OF BOLTS OR NAILS EACH SIDE OF THE SPLICE JOINT. THE FIRST BOLT OR NAIL FROM EACH SIDE OF THE SPLICED OR STRAPPED MEMBER SHALL BE EQUIDISTANT FROM THE SPLICE. STRAPS USING 16d NAILS ON 2x MATERIAL TO BE INSTALLED ON THE 1½" EDGE OF THE MEMBER.
11. THE CONTRACTOR SHALL VERIFY THAT THE MOISTURE CONTENT OF ALL FRAMING LUMBER AND SHEATHING MEET THE REQUIREMENTS OF THE SPECIFICATIONS AT THE TIME OF INSTALLATION AND AT CLOSE-IN. THE CONTRACTOR SHALL PROVIDE ALLOWANCE FOR DIFFERENTIAL SHRINKAGE BETWEEN FLOORS, ETC.
12. VENTING IS REQUIRED IN ENCLOSED FRAMING AREAS, SAD, DRILL BLOCKING AND LEDGERS AND PROVIDE SPC BLOCKING AS DETAILED.
13. SAD FOR CEILING INFO. WHERE REQUIRED PROVIDE CEILING JOISTS PER PLAN.

F MATERIAL DATA

(INFORMATION SHOWN IS FOR STRUCTURAL DESIGN REFERENCE ONLY. SEE THE PROJECT SPECIFICATIONS FOR ALL MATERIAL SPECIFICATIONS.)

CONCRETE 28-DAY ULTIMATE COMPRESSIVE STRENGTH:
 $F'_c = 3,000$ PSI FOUNDATIONS (DESIGNED FOR 2,500 PSI)
 $F'_c = 3,000$ PSI INTERIOR SLAB ON GRADE

REINFORCING STEEL YIELD STRENGTH:
 $F_y = 40,000$ PSI AT #3 AND SMALLER
 $F_y = 60,000$ PSI AT #4 AND LARGER

STEEL YIELD STRENGTH (UNO):
 $F_y = 50,000$ PSI W SHAPES
 $F_y = 36,000$ PSI ANGLES, CHANNELS, AND PLATES
 $F_y = 46,000$ PSI RECTANGULAR HSS

FASTENERS:
MACHINE BOLTS SHALL BE ASTM A307
ANCHOR RODS SHALL BE ASTM F1554 GR 36 UNC
ARC-WELDING ELECTRODES SHALL BE E70

WOOD BASE DESIGN STRESSES (UNO):

SAWN LUMBER MEMBER	SPECIES AND MINIMUM GRADE, UNO	F _x (PSI)	F _y (PSI)	E (PSI)
6x POSTS	DOUGLAS FIR - #1	1200	170	1.6x10 ⁶
6x BEAMS	DOUGLAS FIR - #1	1350	170	1.6x10 ⁶
4x POSTS & BEAMS	DOUGLAS FIR - #1	1000	180	1.7x10 ⁶
2x JOISTS, RAFTERS	DOUGLAS FIR - #2	900	180	1.7x10 ⁶
℔ MATERIAL	DOUGLAS FIR - #2	900	180	1.6x10 ⁶
2x STUDS	DOUGLAS FIR - #2	900	180	1.6x10 ⁶

MANUFACTURED WOOD PRODUCTS:

LVL (JOISTS)	$F_b = 2,600 \text{ PSI}$	$E = 1.9 \times 10^6 \text{ PSI}$
LSL (STUDS, BLOCKING)	$F_b = 1,700 \text{ PSI}$	$E = 1.3 \times 10^6 \text{ PSI}$

FOR METAL CONNECTOR DESIGNATION REFER TO SIMPSON STRONG-TIE PER SPECIFICATIONS.

EXISTING CONSTRUCTION NOTES

1. IN PREPARING THE PROJECT PLANS, THE SOURCE OF INFORMATION WAS BASED ON THE EXISTING BUILDING PLANS PREPARED BY, HERTZKA & KNOWLES, DATED JANUARY 21, 1947. THE CONTRACTOR SHALL VERIFY ALL EXISTING JOB CONDITIONS, REVIEW THE PLANS AND VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ALL DISCREPANCIES AND EXCEPTIONS BEFORE PROCEEDING WITH ANY WORK.
2. ALL WORK NOT INDICATED AS EXISTING (E) SHALL BE ASSUMED TO BE NEW (N).
3. ANY REMOVAL, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE. SMALL TOOLS SHALL BE USED IN ORDER NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE STRUCTURE. IF STRUCTURAL MEMBERS OR MECHANICAL, ELECTRICAL, OR ARCHITECTURAL ELEMENTS NOT INDICATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT/ENGINEER SHALL BE IMMEDIATELY NOTIFIED AND PRIOR APPROVAL SHALL BE OBTAINED BEFORE REMOVAL OF THE MEMBERS.
4. DO NOT OVER CUT EXISTING WOOD, CONCRETE OR OTHER WORK TO REMAIN. CUTS SHALL BE MADE NEATLY TO A CORNER, THEN ALTERNATE MEANS SHALL BE USED TO REMOVE REMAINING MATERIAL. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF OVER CUT MATERIAL AS DIRECTED BY THE ARCHITECT AND/OR ENGINEER.
5. EXISTING DAMAGED STRUCTURAL MEMBERS WHICH ARE UNCOVERED SHALL BE REPORTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND REPAIR.
6. EXISTING CONCRETE SURFACE ABUTTING NEW CONCRETE SHALL BE ROUGHENED TO 3/4" AMPLITUDE AND THOROUGHLY CLEANED OF DUST, LOOSE AGGREGATE, LAITANCE, ETC.
7. REMODELING REQUIRES ASSUMPTIONS BE MADE REGARDING EXISTING CONDITIONS WHICH MAY NOT BE VERIFIABLE WITHOUT DESTROYING OTHERWISE ADEQUATE OR SERVICEABLE PORTIONS OF THE STRUCTURE. THIS ANALYSIS DOES NOT MAKE ANY GUARANTEE TO THE ADEQUACY OF THE STRUCTURAL DESIGN OF THE EXISTING BUILDING NOT SPECIFICALLY ADDRESSED IN THE STRUCTURAL CALCULATIONS. ZFA SHALL NOT BE RESPONSIBLE FOR UNSATISFACTORY PERFORMANCE OF EXISTING PORTIONS OF THE STRUCTURE NOT SPECIFICALLY ADDRESSED IN THE CONSTRUCTION DOCUMENTS.
8. DIFFERENTIAL SETTLEMENT BETWEEN NEW AND EXISTING CONSTRUCTION AT REMODEL OR ADDITION FOUNDATION INTERFACES CAN BE EXPECTED. ZFA SHALL NOT BE RESPONSIBLE FOR UNSATISFACTORY PERFORMANCE RESULTING FROM THESE CONDITIONS.

FOUNDATION NOTES

- ZFA RECOMMENDS GEOTECHNICAL REPORTS FOR ALL CONSTRUCTION PROJECTS. NO GEOTECHNICAL REPORT HAS BEEN PROVIDED FOR THIS PROJECT AND UNDER DIRECTION OF THE CLIENT, ZFA IS PROCEEDING WITH FOUNDATION DESIGN BASED ON THE CONVENTIONAL PROVISIONS AND THE MINIMUM ALLOWABLE SOIL BEARING CAPACITY FOR THE CALIFORNIA BUILDING CODE, CHAPTER 18. HOWEVER, GEOTECHNICAL AND GEOLOGICAL CONDITIONS SUCH AS EXPANSIVE AND COMPRESSIBLE SOILS, LIQUEFACTION, SLOPE INSTABILITY, ETC MAY EXIST WHICH WARRANT SPECIAL DESIGN CONSIDERATIONS. ZFA SHALL NOT BE RESPONSIBLE FOR UNSATISFACTORY PERFORMANCE RESULTING FROM THESE CONDITIONS. FOUNDATION DESIGN PRESSURES ARE PER CBC SECTION 1806.2: SHALLOW FOOTINGS:
- DEAD LOAD + LIVE LOAD = 1,500 PSF
DEAD LOAD + LIVE LOAD + LATERAL = 2,000 PSF
- ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF CHAPTER 18 OF THE CBC. ALL FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED, NATIVE SOILS AT OR EXCEEDING DEPTHS SHOWN ON THE DRAWINGS. INCREASED FILL AND OR FOOTING DEPTHS AS REQUIRED. ALL FOOTING EXCAVATIONS SHALL BE AS NEAT AS PRACTICABLE. MAXIMUM OVER EXCAVATION IN WIDTH SHALL BE LESS THAN 12 INCHES OR 25% OF FOOTING WIDTH, WHICH EVER IS LESS. 6 INCHES MAXIMUM PER SIDE. LARGER OVER-EXCAVATIONS IN WIDTH SHALL BE FILLED WITH ADDITIONAL REINFORCED CONCRETE AS DIRECTED BY THE ENGINEER, OR FORMWORK SHALL BE PROVIDED. OVER-EXCAVATIONS IN DEPTH MAY BE FILLED WITH LEAN CONCRETE OR COMPACTED APPROVED BACKFILL. ALL LOOSE SOILS SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING OR CONCRETE.
 - WHERE BOTTOM OF ADJACENT FOOTINGS ARE DIFFERENT PROVIDE STEPPED FOOTING PER §5-011
 - TYPICAL SLAB: 4" CONCRETE REINFORCED WITH #3 @ 16" EACH WAY AT MID-DEPTH OVER VAPOR RETARDER (PER SPECIFICATIONS) AND 6" MINIMUM FREE DRAINING COARSELY CRUSHED ¾" CRUSHED ROCK ON SUBGRADE. DO NOT RIDE CONCRETE TRUCKS OR LARGE SCREED MACHINES ON VAPOR RETARDER WITHOUT ADDITIONAL BUFFER MATERIAL AND APPROVAL FROM THE STRUCTURAL ENGINEER.
 - REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR DERESSED SLABS FOR ARCHITECTURAL FLOORING OR INSERTS, SLOPED SLABS TO DRAIN AND PIPES OR CONDUITS AT SLAB. PER §5-011 AT DEPRESSED SLAB & §5-011 FOR PIPES AND CONDUITS.
 - PROVIDE CONTROL JOINTS PER 7-5-011 (OR CONSTRUCTION/DOWEL JOINTS AT CONTRACTOR'S OPTION) AS SHOWN ON PLAN AND AS REQUIRED TO MEET A MAXIMUM SPACING IN FEET OF 3 TIMES THE SLAB DEPTH IN INCHES (FOR EXAMPLE 3x5' = 15'-0"OR MAX) AND 15'-0" MAX. INSTALL JOINTS TO DIVIDE SLAB INTO RECTANGULAR AREAS WITH LONG DIMENSION LESS THAN 1.5x SHORT DIMENSION. INSTALL JOINTS AT FACE OF STUDS OF WALL WHERE POSSIBLE. SUBMIT JOINT LAYOUT PLAN FOR REVIEW PRIOR TO PLACEMENT.
 - DO NOT UNDERCUT EXISTING FOUNDATIONS. NOTIFY ENGINEER FOR REVIEW AND POSSIBLE REVISIONS, IF EXISTING FOUNDATION CONDITIONS ARE NOT AS SHOWN.
 - TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, LANDSCAPE, ETC.

A DESIGN CRITERIA

<u>DESIGN CRITERIA:</u>	2016 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
<u>ROOF LIVE LOAD:</u>	20 PSF (REDUCIBLE)
<u>RISK CATEGORY:</u>	II
<u>WIND DATA:</u>	ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 110

EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I_e : 1.0
 MAPPED SPECTRAL RESPONSE ACCELERATIONS: $S_S = 2.34$; $S_1 = 0.9$
 SITE CLASS: D
 SPECTRAL RESPONSE COEFFICIENTS: $S_{DS} = 1.56$; $S_{D1} = 0.97$
 SEISMIC DESIGN CATEGORY: E

SCOPE: INTERIOR TENANT IMPROVEMENTS INCLUDING ROOF TOP MECHANICAL UNITS AND NON-BEARING WALLS. THE EXISTING LATERAL FORCE RESISTING SYSTEM IS TO REMAIN UNALTERED.

B GENERAL NOTES

3. REFER TO SHEETS **S-011** AND **S-012** FOR STANDARD DETAILS OF CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS FOR MATERIALS AND METHODS.
 2. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.
 3. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK.
 4. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.
 5. REFER TO ARCHITECTURAL DRAWINGS FOR SIDEWALK SLABS AND DIMENSIONS.
 6. COORDINATION OF MECHANICAL, ELECTRICAL, PLUMBING, AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. USE DETAILS **2/S-011** AND **2/S-012**. AT CONDITIONS WHERE THE DETAILS DO NOT APPEAR TO APPLY, NOTIFY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. AT CONDITIONS WHERE FIELD MODIFICATIONS OF MECHANICAL, ELECTRICAL, PLUMBING, OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
 7. VERIFY WEIGHTS AND LOCATIONS OF MECHANICAL UNITS WITH MECHANICAL ENGINEER PRIOR TO PLACEMENT. UNITS VARYING OVER 10% IN WEIGHT SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION (MECHANICAL WEIGHTS SHOWN ARE MAXIMUM). CONTRACTOR TO VERIFY MECHANICAL UNIT SIZES AND WEIGHTS AS INSTALLED PRIOR TO INSTALLATION OF SPECIAL FRAMING TO ENSURE CORRECT PLACEMENT UNDER CURBS, ETC. SEE **11/S-012**.
 8. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS. LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED.
 9. SPECIAL INSPECTIONS ARE REQUIRED PER **D/S-001** AND THE TESTING AND INSPECTION FORM.
 10. COORDINATE TOP OF FOOTING ELEVATIONS AS DETERMINED BY THE CONTRACTOR PER **C/S-001**.
 11. TOP OF STEEL ELEVATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS.
 12. STRUCTURAL OBSERVATION PER CBC SECTION 1704.6 IS NOT REQUIRED. NOTIFY ZFA FOR GENERAL REVIEW OF:
 - MINIMUM FOOTING SIZE AND REINFORCING STEEL.
 - STRUCTURAL WOOD FRAMING.
- NOTIFY ZFA FOR REVIEW PRIOR TO COVERING ABOVE LISTED WORK. PROVIDE 2 WORKING DAYS MINIMUM SCHEDULING NOTICE PRIOR TO REVIEW DATE.

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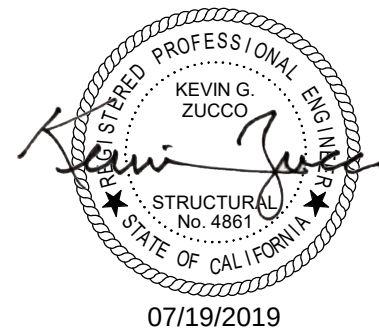
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PROJECT NUMBER
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18620

DATE:
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7/22/20

ENGINEER

ECM

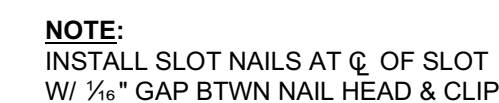
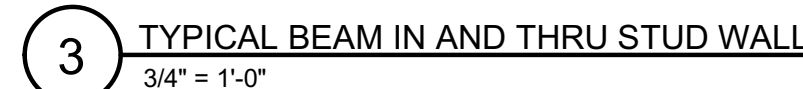
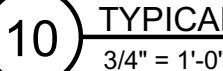
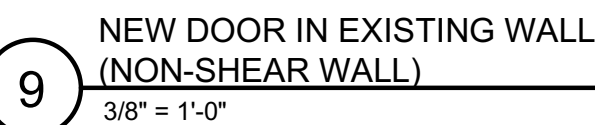
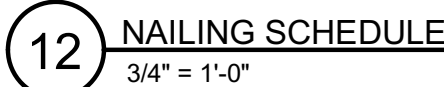
PROJECT MANAGER

KZ

NO.	DESCRIPTION	DATE
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GENERAL NOTES AND SPECIFICATIONS

S-001



1. HEADERS TO MATCH WIDTH OF WALL STUDS.
2. HEADERS TO BE DF #1, MIN UNO.
3. FOR LARGER OPENINGS, SEE PLANS.
4. HEADER MAY BE USED AS LOWER TOP R AS REQD BY OPENING HEIGHT
5. AT 2x8 WALLS, USE 6x HEADER + 2x + SHIM OR 6"x GLB + SHIM.

S-012



FOUNDATION PLAN

1/8" = 1'-0"

PAD FOOTING SCHEDULE		
MARK	SIZE	REINFORCING
F2.0	2'-0" SQ x 18" DEEP	(3) #5 T&B EW

FOUNDATION PLAN NOTES:

- REFER TO SHEETS **S-001**, **S-011** AND **S-013** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
- DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- SEE DETAILS FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES. PROVIDE LONGER ANCHOR BOLTS AT CURBS PER **C/S0.1**.
- PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO PIPES OR CONDUITS THRU SILL PLATES SHALL BE WITHIN 12" OF HOLDOWN BOLTS. NO MECHANICAL, ELECTRICAL, OR PLUMBING OPENINGS SHALL BE LOCATED IN SHEAR WALLS UNLESS SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY STRUCTURAL ENGINEER/ARCHITECT PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

PIPES THROUGH FOOTINGS SHALL BE PER **2/S-011** AND **3/S-011**.

PIPES PARALLEL TO FOOTINGS SHALL BE PER **4/S-011**.

PIPES AT SLAB ON GRADE SHALL BE PER **8/S-011**.

PIPES THROUGH WOOD FRAMING SHALL BE PER **2/S-012**.
- CONTRACTOR SHALL DETERMINE FOUNDATION STEP LOCATIONS BASED ON GEOTECHNICAL REPORT, CIVIL, ARCHITECTURAL AND LANDSCAPE DRAWINGS. STEP FOOTING PER **5/S-011**.

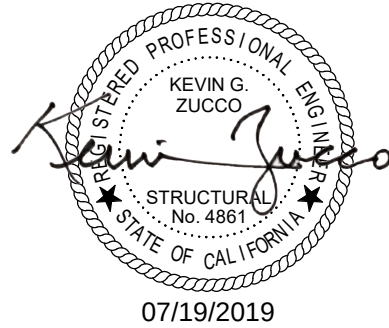
PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
	1/S-012	INDICATES NON-BEARING WALL.
		INDICATES EXISTING FRAMING.
	E/S-001	INDICATES WOOD POST.
		INDICATES STEEL COLUMN.
		INDICATES FOUNDATION.
CF24		INDICATES CONTINUOUS FOOTING SIZE AND REINFORCING PER SCHEDULE.
F2.0		INDICATES PAD FOOTING SIZE AND REINFORCING PER SCHEDULE.
	9/S-011	INDICATES DEPRESSED SLAB. SEE ARCHITECTURAL AND PLUMBING DRAWINGS FOR COMPLETE LOCATIONS, DEPTH AND SLOPE INFORMATION.
		INDICATES STEP IN ELEVATION. SEE ARCHITECTURAL DRAWINGS.
		INDICATES GRIDLINE AT FACE OF STUD.
		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
		INDICATES ELEVATION.
		INDICATES EXISTING FOUNDATION.

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Sonoma Clean Power

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DATE:
7/22/2019

ENGINEER:
ECM

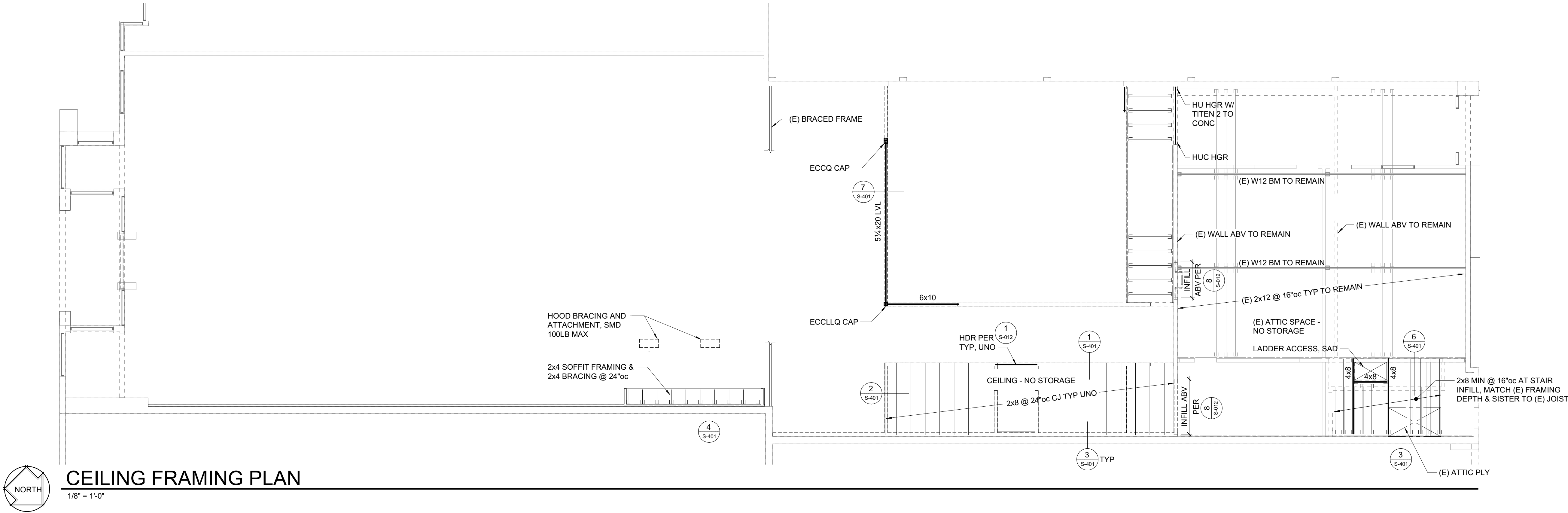
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FOUNDATION PLAN

S-121



CEILING FRAMING PLAN

1/8" = 1'-0"

FRAMING PLAN NOTES:

- REFER TO SHEETS **S-001** AND **S-012** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
- DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- MECHANICAL, ELECTRICAL AND PLUMBING PENETRATIONS THROUGH WALLS, ROOFS OR FLOORS SHALL BE PER REFERENCES BELOW UNLESS SHOWN AND DETAILED OTHERWISE ON THE STRUCTURAL PLANS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

PENETRATIONS THROUGH FLOORS/ROOFS SHALL BE PER **6/S-012**.
- COORDINATE TOP OF FRAMING AND LEDGER HEIGHTS AS REQUIRED TO PROVIDE ROOF SLOPES AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
	1/S-012	INDICATES NON-BEARING WALL.
	1/S-012	INDICATES NON-BEARING WALL ABOVE.
	E/S-001	INDICATES WOOD POST.
		INDICATES STEEL COLUMN.
	E/S-001	INDICATES GLULAM BEAM SIZE AND CAMBER. WHERE NO CAMBER IS SPECIFIED SEE WOOD FRAMING NOTES FOR TYPICAL GLULAM BEAM CAMBER.
	E/S-001	INDICATES HANGER.
		INDICATES LEDGER. SEE PLAN FOR SIZE AND ANCHORAGE.

PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
		INDICATES GRIDLINE AT FACE OF STUD.
		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
		INDICATES ELEVATION.
	11/S-012	INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
		INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.
		INDICATES EXISTING FRAMING.

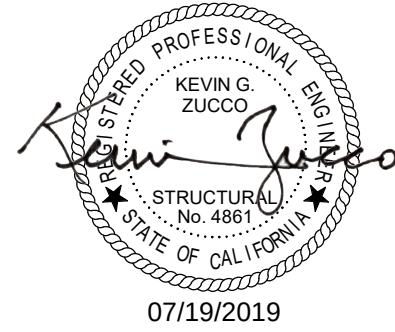
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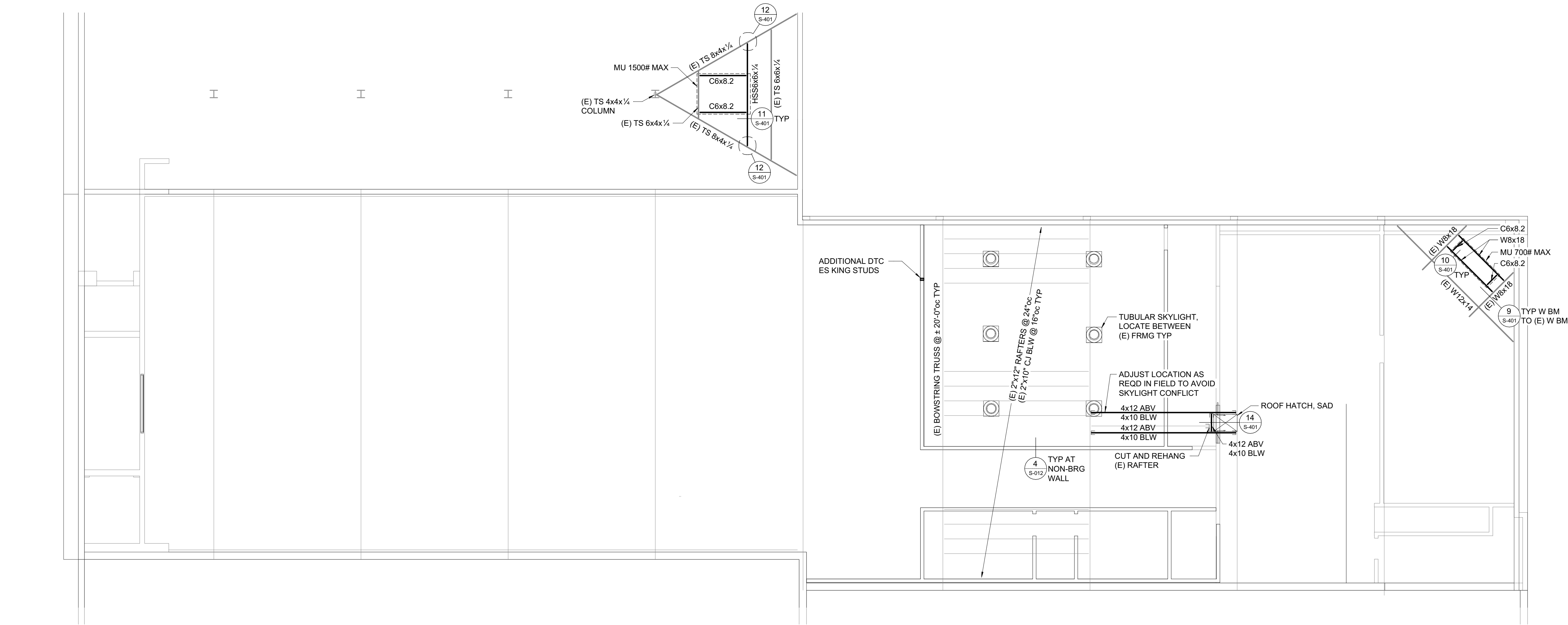
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ENGINEER:
ECM
PROJECT MANAGER:
KZ

REVISIONS:
NO. DESCRIPTION DATE

CEILING FRAMING
PLAN
S-122



 **ROOF FRAMING PLAN**
1/8" = 1'-0"

FRAMING PLAN NOTES:

- REFER TO SHEETS **S-001** AND **S-012** FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAIL SHEETS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
- DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- MECHANICAL, ELECTRICAL AND PLUMBING PENETRATIONS THROUGH WALLS, ROOFS OR FLOORS SHALL BE PER REFERENCES BELOW UNLESS SHOWN AND DETAILED OTHERWISE ON THE STRUCTURAL PLANS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

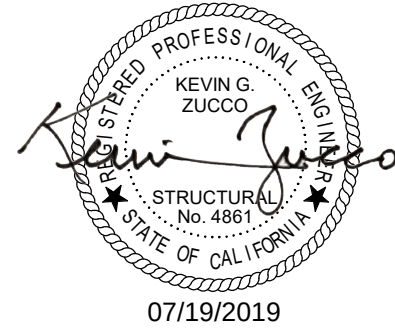
PENETRATIONS THROUGH FLOORS/ROOFS SHALL BE PER **S/S-012**.
- COORDINATE TOP OF FRAMING AND LEDGER HEIGHTS AS REQUIRED TO PROVIDE ROOF SLOPES AS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
	1/S-012	INDICATES NON-BEARING WALL.
	1/S-012	INDICATES NON-BEARING WALL ABOVE.
	E/S-001	INDICATES WOOD POST.
		INDICATES STEEL COLUMN.
	E/S-001	INDICATES GLULAM BEAM SIZE AND CAMBER. WHERE NO CAMBER IS SPECIFIED SEE WOOD FRAMING NOTES FOR TYPICAL GLULAM BEAM CAMBER.
	E/S-001	INDICATES HANGER.
		INDICATES LEDGER. SEE PLAN FOR SIZE AND ANCHORAGE.

PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
		INDICATES GRIDLINE AT FACE OF STUD.
		INDICATES GRIDLINE AT CENTERLINE OF COLUMN.
		INDICATES ELEVATION.
	11/S-012	INDICATES APPROXIMATE LOCATION, SIZE AND MAXIMUM WEIGHT OF MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR ANCHORAGE AND ADDITIONAL INFORMATION.
		INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.
		INDICATES EXISTING FRAMING.

TLCDARCHITECTURE
520 Third St. #250
Santa Rosa, CA 95401
o: 707.525.5600
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tlcd.com

ZFA STRUCTURAL ENGINEERS
1212 fourth street | suite 2
santa rosa ca 95404
zfa job no. 18620
zfa.com
707.528.0992
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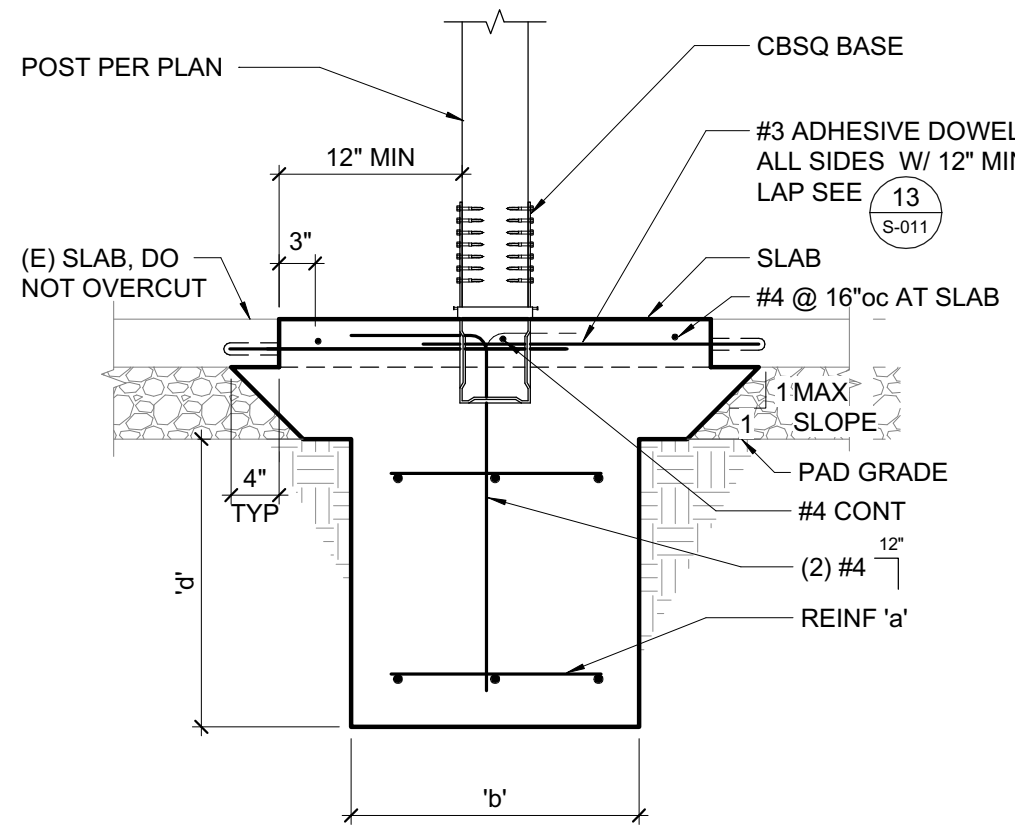
ADVANCED ENERGY CENTER
741 4TH STREET, SANTA ROSA CALIFORNIA 95404



PROJECT NUMBER:
18620
DATE:
7/22/2019
ENGINEER:
ECM
PROJECT MANAGER:
KZ
REVISIONS:

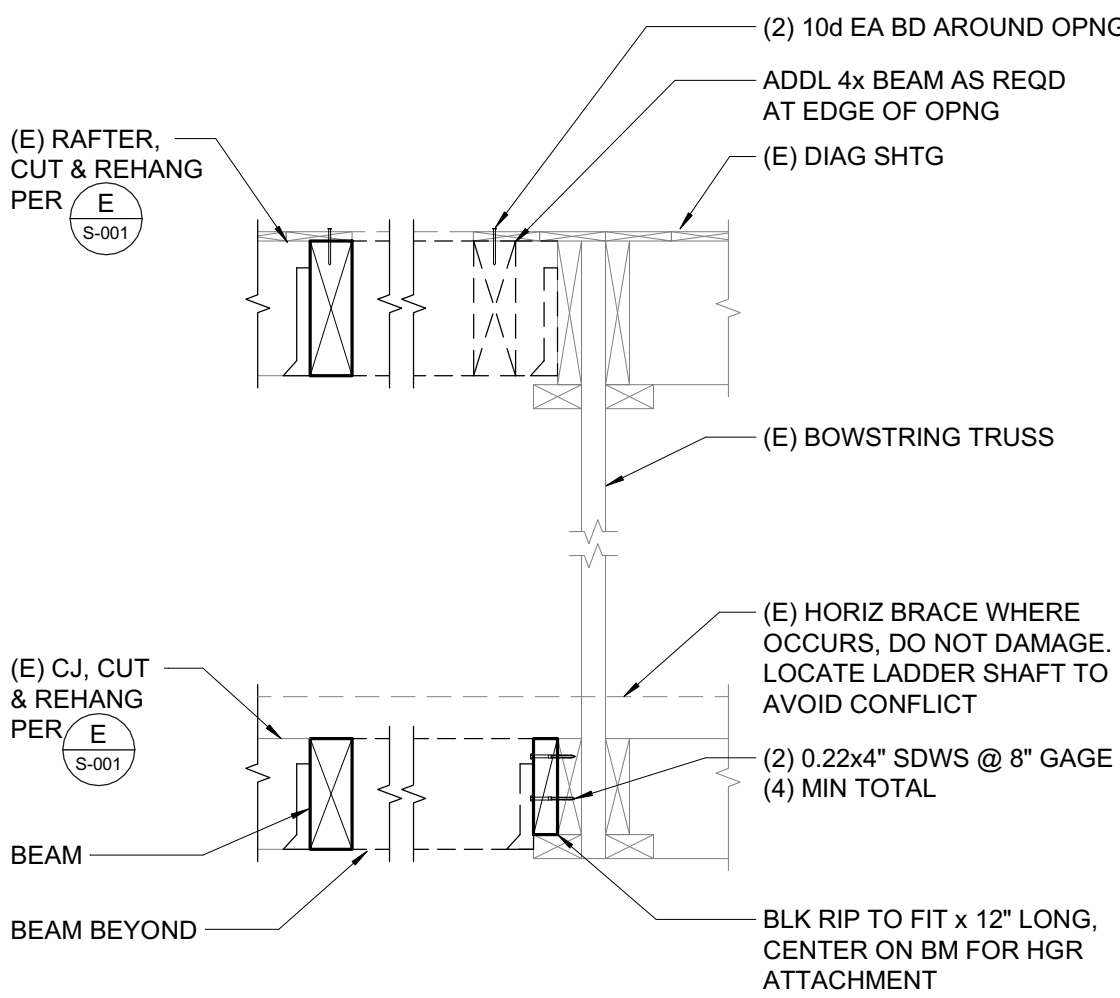
NO.	DESCRIPTION	DATE
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ROOF FRAMING PLAN
S-123

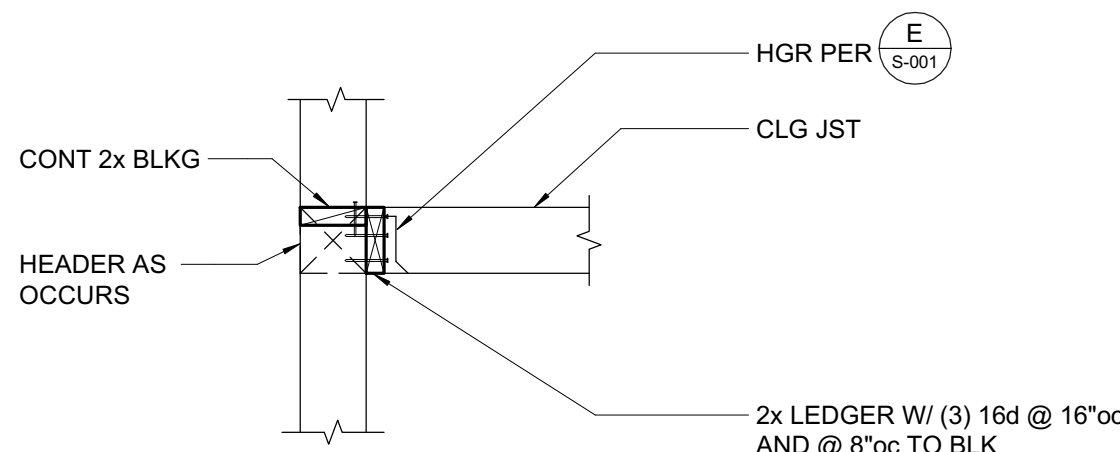


PAD FOOTING SCHEDULE		
MARK	SIZE	REINFORCING
F2.0	2'-0" SQ x 18" DEEP	(3) #5 T&B EW

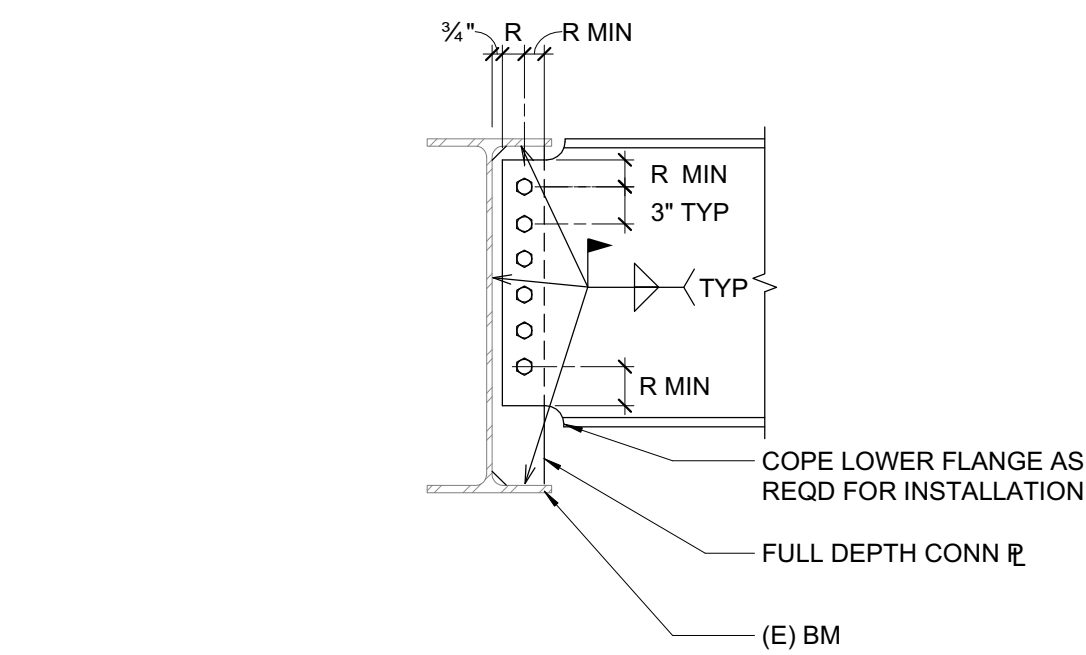
13 NEW FOOTING AT EXISTING SLAB
3/4" = 1'-0"



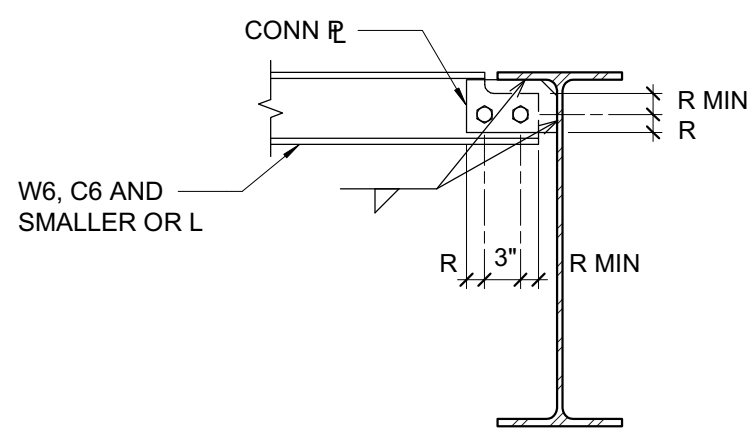
14 FRAMING AT LADDER SHAFT
3/4" = 1'-0"



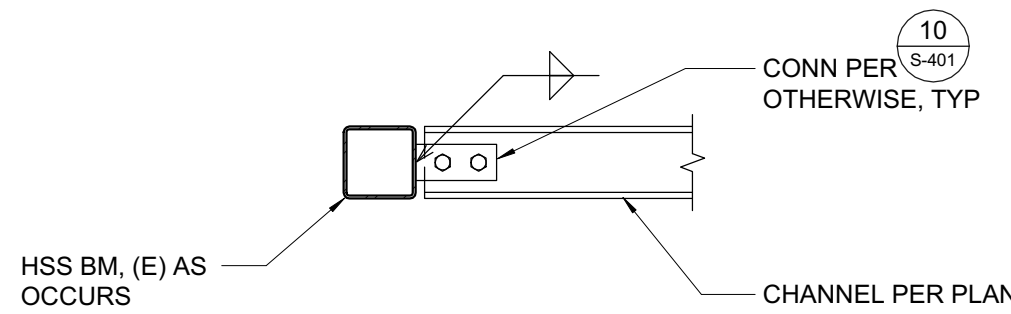
15 CEILING JOISTS (SPAN TO WALLS)
3/4" = 1'-0"



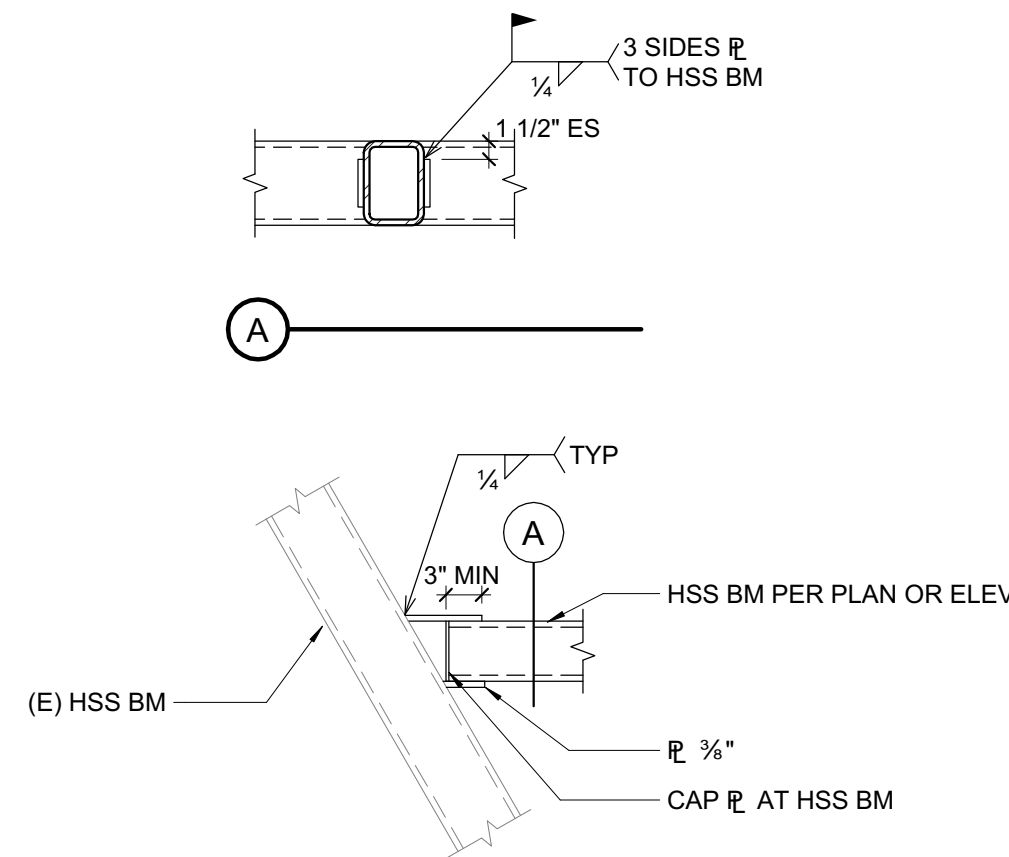
9 TYPICAL FULL DEPTH BEAM TO BEAM CONNECTION
3/4" = 1'-0"



10 TYPICAL SHALLOW BEAM DETAIL
3/4" = 1'-0"

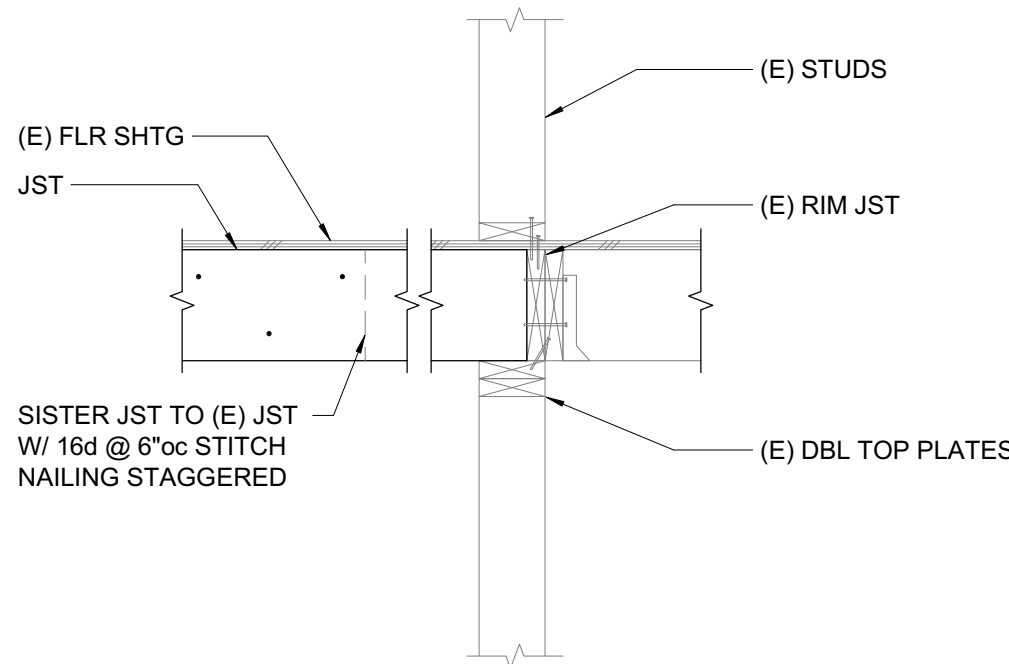


11 BEAM TO HSS OR C CHANNEL
3/4" = 1'-0"

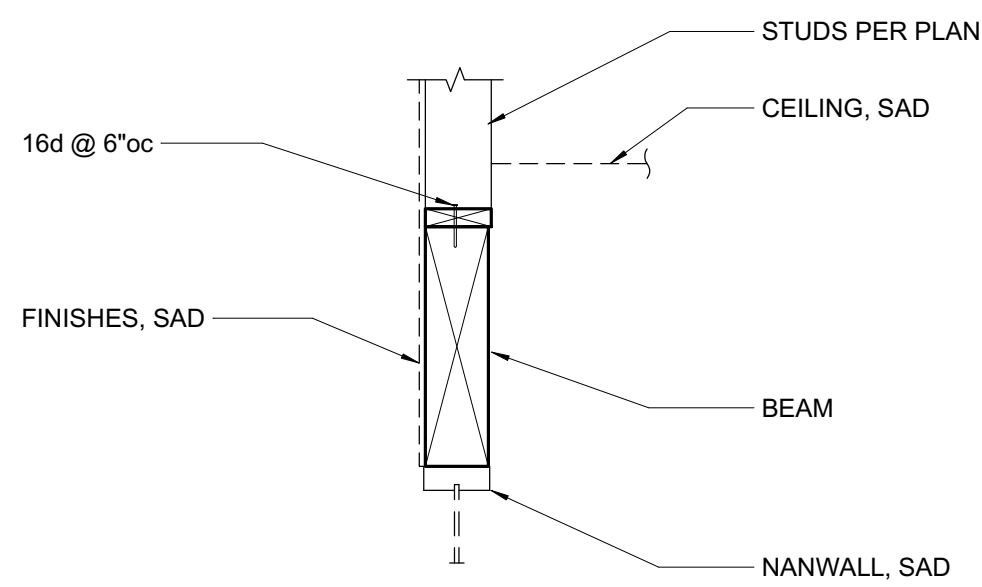


12 HSS BEAM TO HSS COLUMN
3/4" = 1'-0"

5 NOT USED
1 1/2" = 1'-0"



6 FLOOR FRAMING AT EXISTING WALL
3/4" = 1'-0"

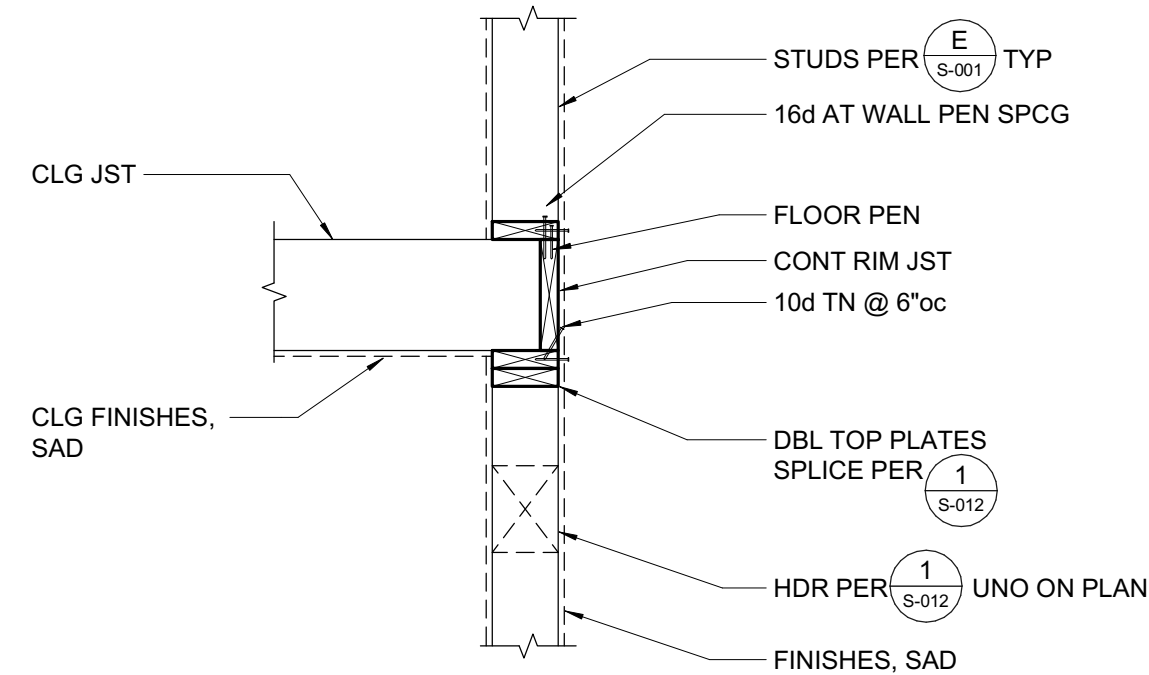


7 BEAM OVER NANOWALL
3/4" = 1'-0"

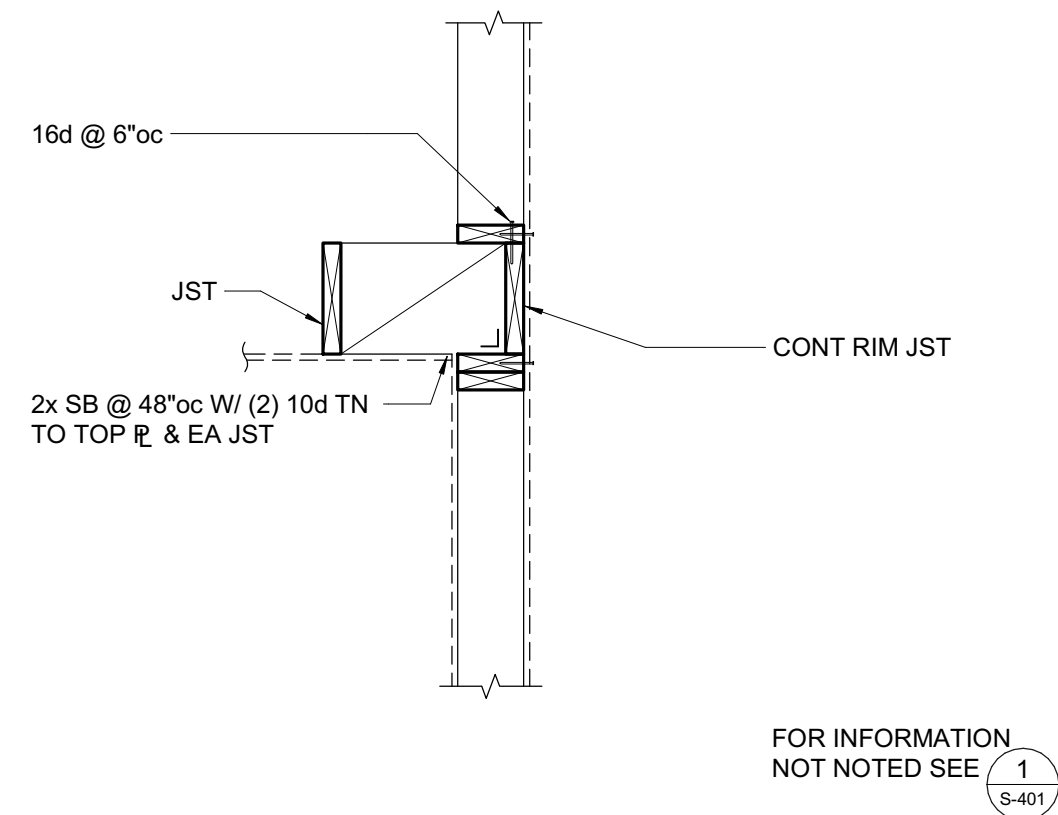
BEAM DEPTH	NO. BOLTS PER ROW	CONN. PLATE	WELD SIZE
W8, W10	2	R 3/4"	3/8"
W12, W14	3	R 3/4"	3/8"

- NOTES:**
- R = 1 1/2" SEE TYP CONNECTION DETAILS. BOLT SPACING AND EDGE DISTANCE SHALL CONFORM TO AISC SPECIFICATIONS.
 - A COMPLETE PENETRATION BEVEL WELD MAY BE SUBSTITUTED FOR THE FILLET WELDS SPECIFIED.
 - USE ASTM A36 CONNECTION PLATES, UNO.
 - HOLE SIZE = BOLT SIZE + 1/8". SHORT SLOTTED HOLES (+ 1/8" VERT, + 1/4" HORIZ) MAY BE SUBSTITUTED (EXCEPT AS NOTED).
 - USE SAME CONNECTIONS AT CHANNELS. FOR W6, C6 & ANGLES USE PLATE, WELD & BOLT SIZE PER W6 & SEE 10/S-401.

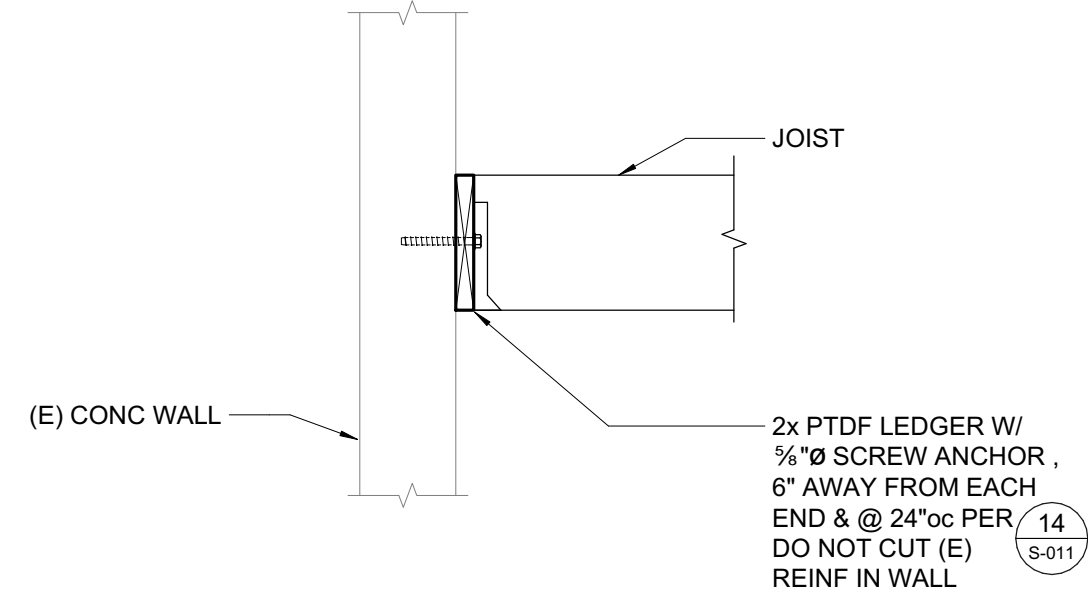
8 3/4"Ø MACHINE BOLT (MB) CONNECTION SCHEDULE
3/4" = 1'-0"



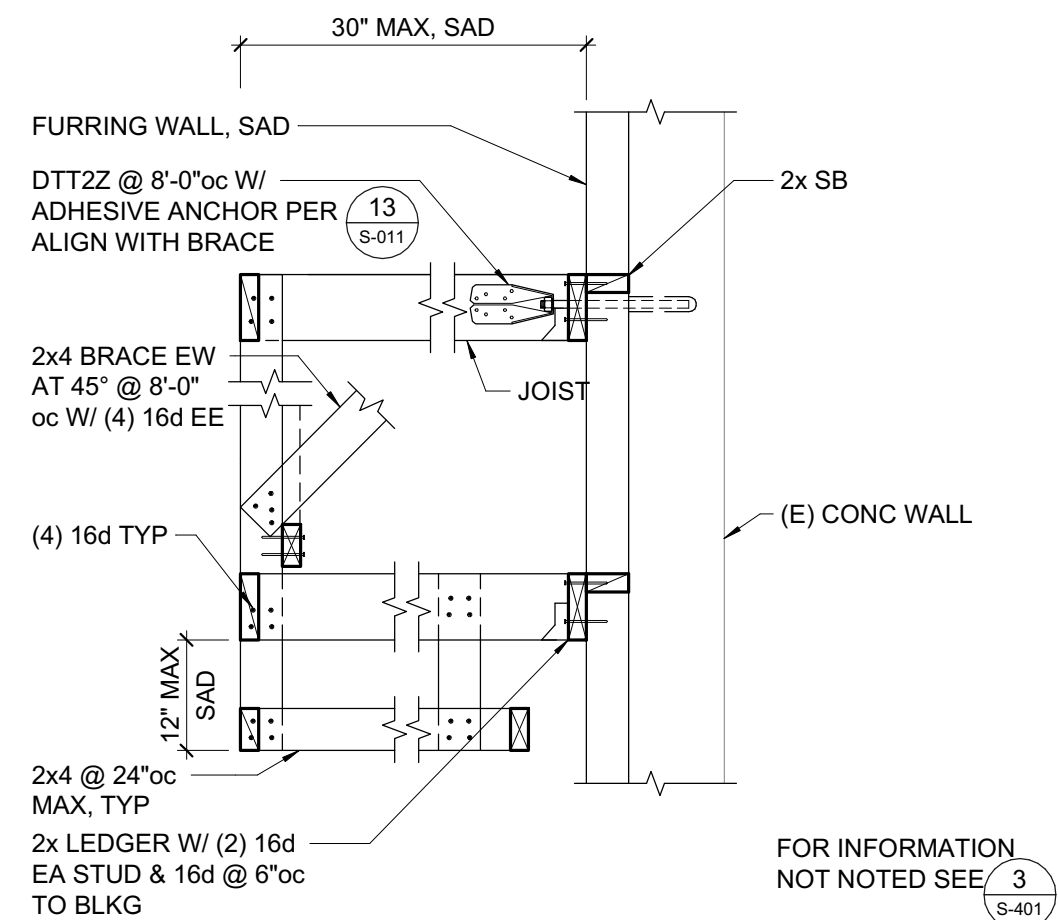
1 CEILING FRAMING AT PERPENDICULAR WALL
3/4" = 1'-0"



2 CEILING FRAMING AT PARALLEL WALL
3/4" = 1'-0"



3 TYPICAL WOOD LEDGER TO CONCRETE WALL
3/4" = 1'-0"

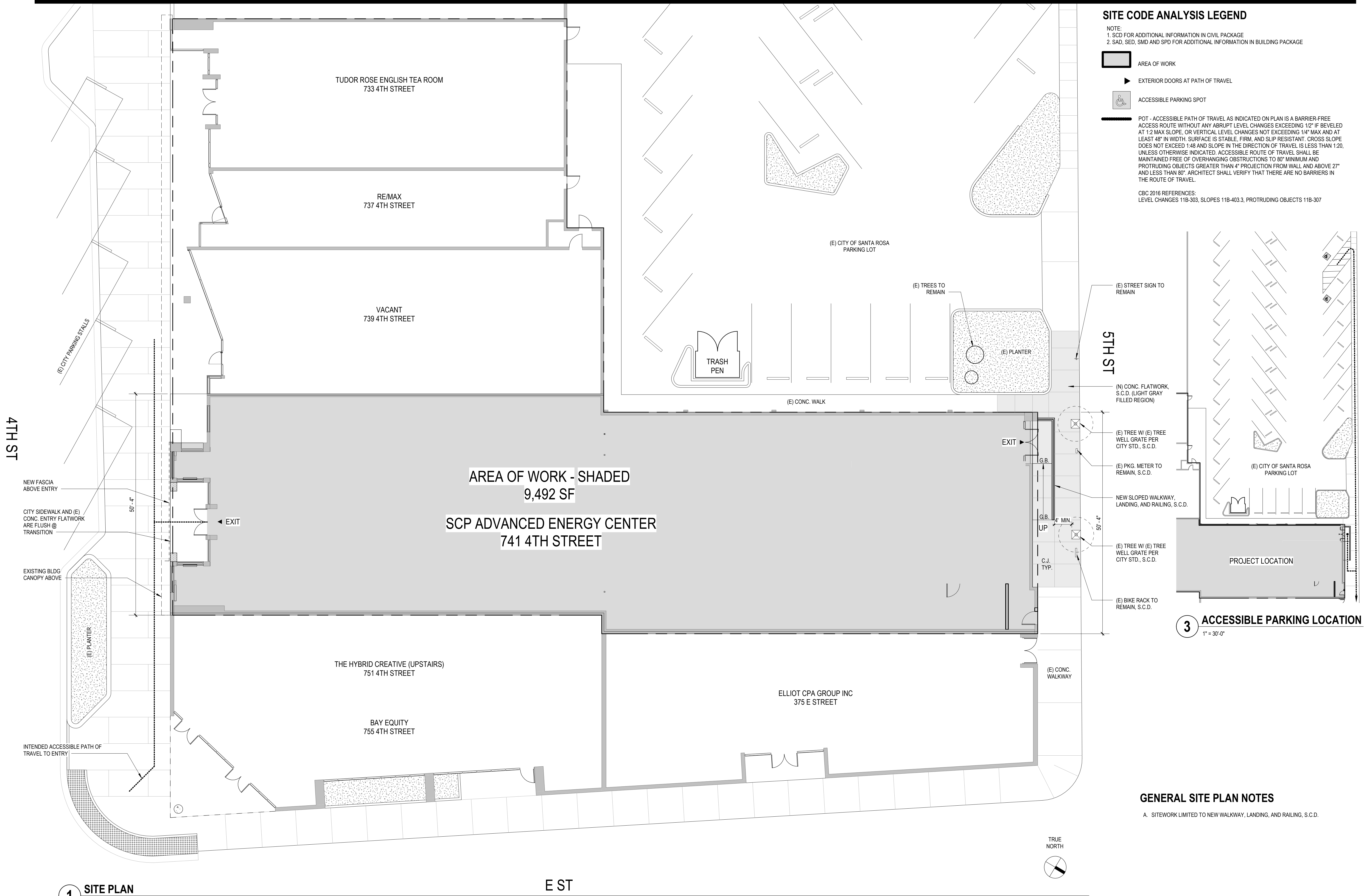


4 TYPICAL SOFFIT FRAMING
3/4" = 1'-0"

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741 4TH STREET, SANTA
ROSA CALIFORNIA 95404

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SITE CODE ANALYSIS LEGEND

- NOTE:
1. SCD FOR ADDITIONAL INFORMATION IN CIVIL PACKAGE
2. SAD, SED, SMD AND SPD FOR ADDITIONAL INFORMATION IN BUILDING PACKAGE

AREA OF WORK

EXTERIOR DOORS AT PATH OF TRAVEL

ACCESSIBLE PARKING SPOT

POT - ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A BARRIER-FREE ACCESS ROUTE WITHOUT ANY ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAX SLOPE, OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" MAX AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP-RESISTANT. CROSS SLOPE DOES NOT EXCEED 1:48 AND SLOPE IN THE DIRECTION OF TRAVEL IS LESS THAN 1:20, UNLESS OTHERWISE INDICATED. ACCESSIBLE ROUTE OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL AND ABOVE 27" AND LESS THAN 80". ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE ROUTE OF TRAVEL.

CBC 2016 REFERENCES:
LEVEL CHANGES 11B-303, SLOPES 11B-403.3, PROTRUDING OBJECTS 11B-307

5TH ST

5TH ST

3 ACCESSIBLE PARKING LOCATION
1" = 30'-0"

GENERAL SITE PLAN NOTES

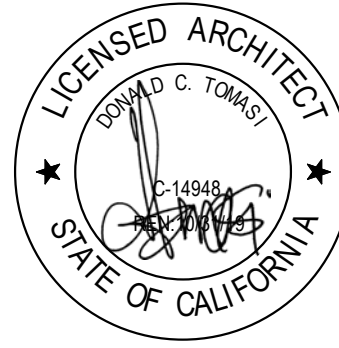
- A. SITEWORK LIMITED TO NEW WALKWAY, LANDING, AND RAILING, S.C.D.

SITE LEGEND

PROPERTY LINE
AREA OF WORK - SHADED

TLCDARCHITECTURE

520 Third St. #250
Santa Rosa, CA 95401
o: 707.525.5600
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ADVANCED ENERGY
CENTER

741 4TH STREET, SANTA
ROSA, CALIFORNIA 95404

Sonoma
Clean Power

PROJECT NUMBER:
18077.00

DATE:
7/22/2019

DRAWN BY:
LLL

CHECKED BY:
DB

REVISIONS:

NO.	DESCRIPTION	DATE
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SITE PLAN

A-102

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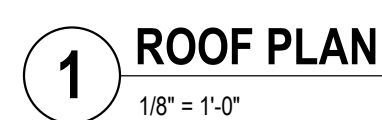


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NO.	DESCRIPTION	DATE
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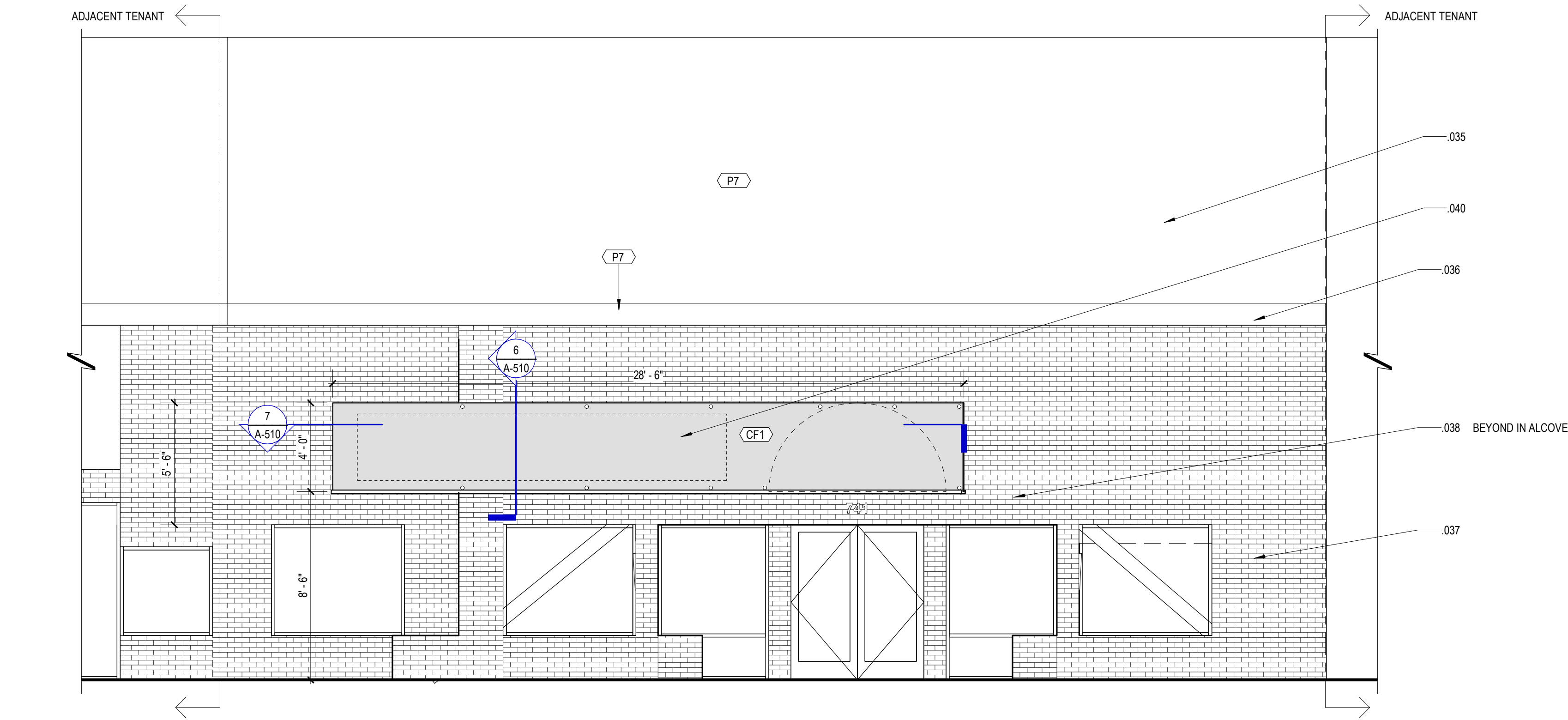
A-161



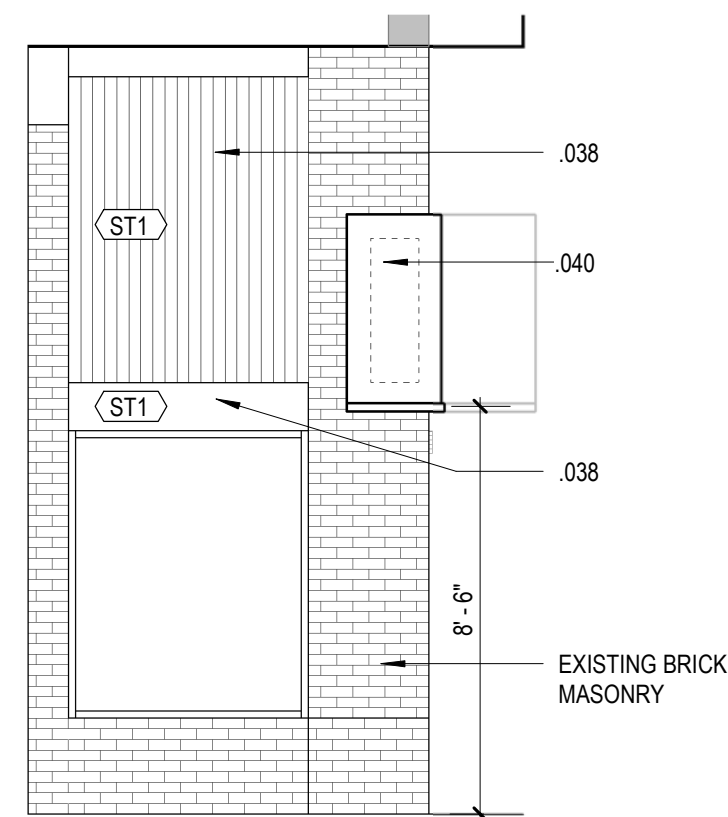
A. PATCH AND REPAIR ALL EXISTING PENETRATIONS THROUGH ROOF



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1 SOUTH ELEVATION
1/4" = 1'-0"



8 ARCHITECTURAL ELEMENT VIEW FROM SIDE
1/4" = 1'-0"

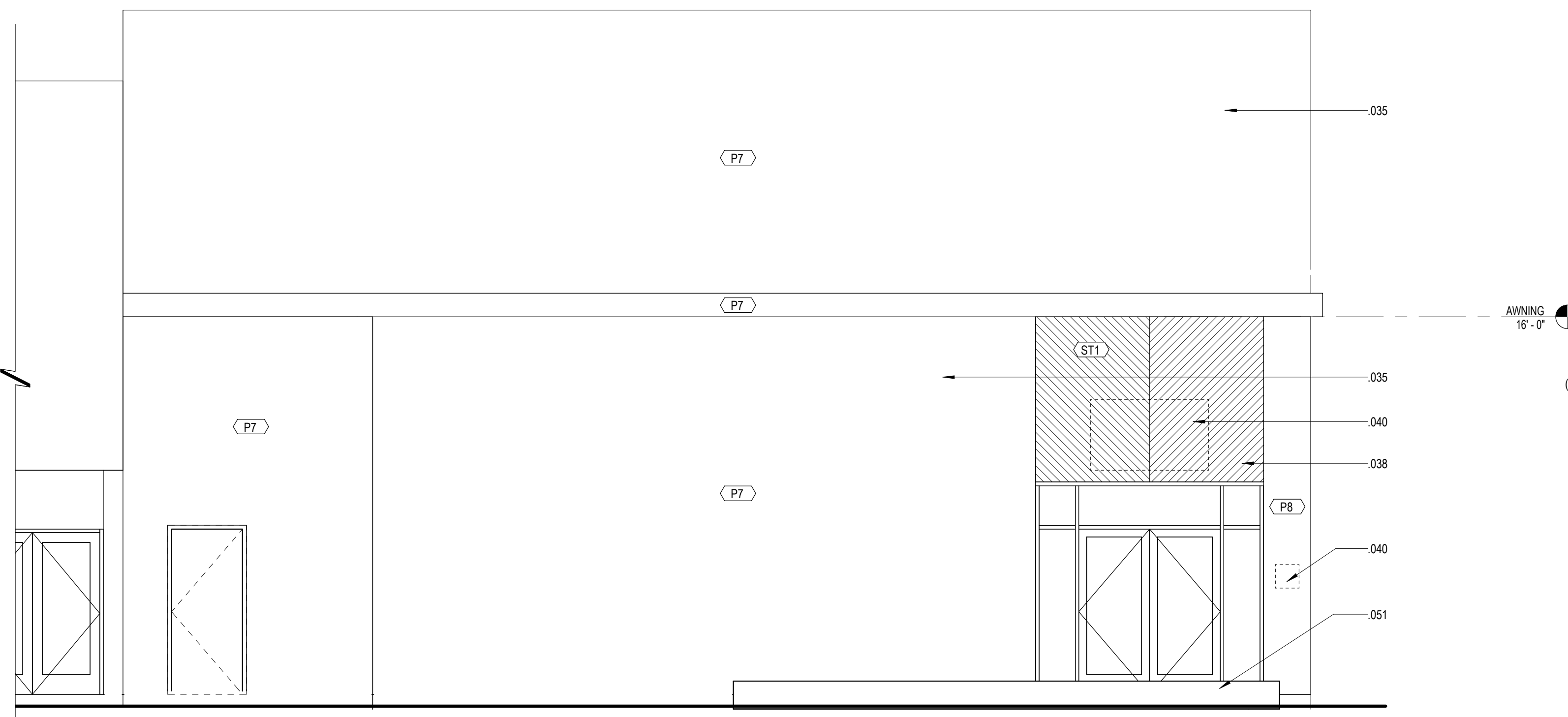
GENERAL EXTERIOR ELEVATION NOTES

- PREPARE, PRIME AND PAINT ALL NON-BRICK EXTERIOR WALLS
- POWERWASH (E) BRICK WALLS
- CLEAN ALL (E) EXTERIOR WINDOWS AND STOREFRONTS
- ARCHITECTURAL SIGNAGE INCLUDED FOR REFERENCE ONLY

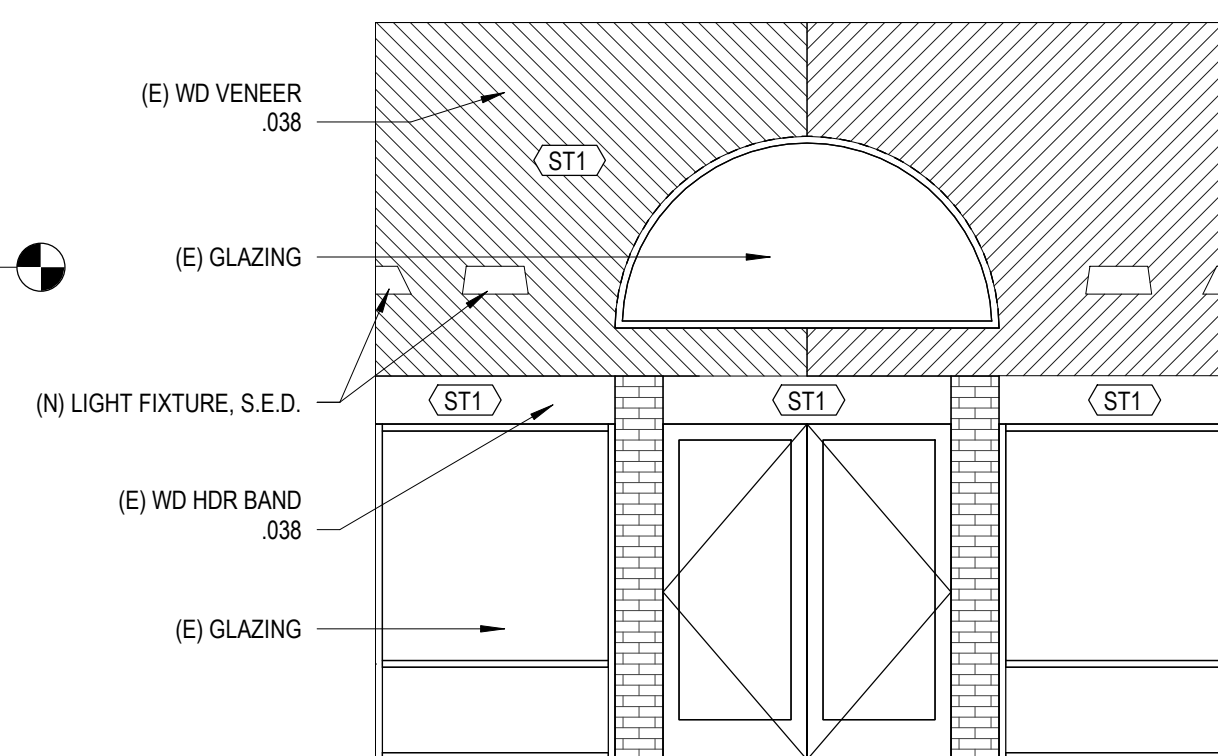
DRAWING NOTES

- .035 PAINT (E) WALL, EXTENT OF TENANT FRONTAGE ONLY
.036 PAINT (E) CANOPY FACE AND UNDERSIDE, EXTENT OF TENANT FRONTAGE ONLY
.037 POWERWASH (E) BRICK
.038 PREPARE (E) WOOD TRIM FOR NEW SOLID PIGMENT STAIN
.040 SIGNAGE AREA APPLIED TO (N) ARCHITECTURAL FASCIA, SEE SIGNAGE DRAWINGS. MAX AREA OF ONE SQ. FT. FOR 50'-4" FRONTAGE IS NOT EXCEEDED.
.045 PAINT ACCENT COLOR ON SIDES OF PILASTER, TYP.
.051 CONCRETE CURB, SCD

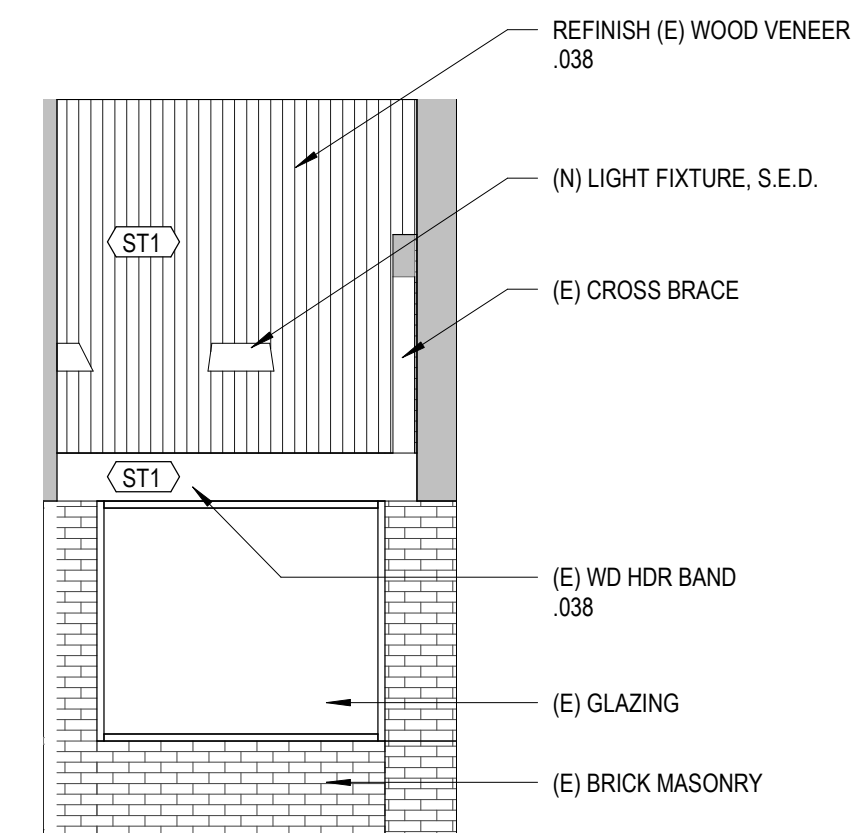
REFERENCE KEYNOTE



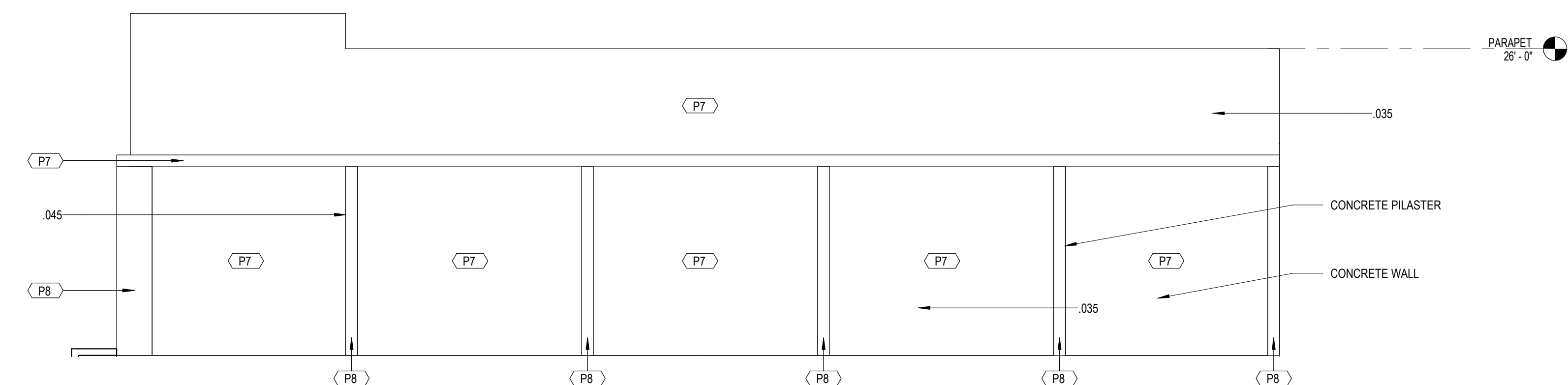
2 NORTH ELEVATION
1/4" = 1'-0"



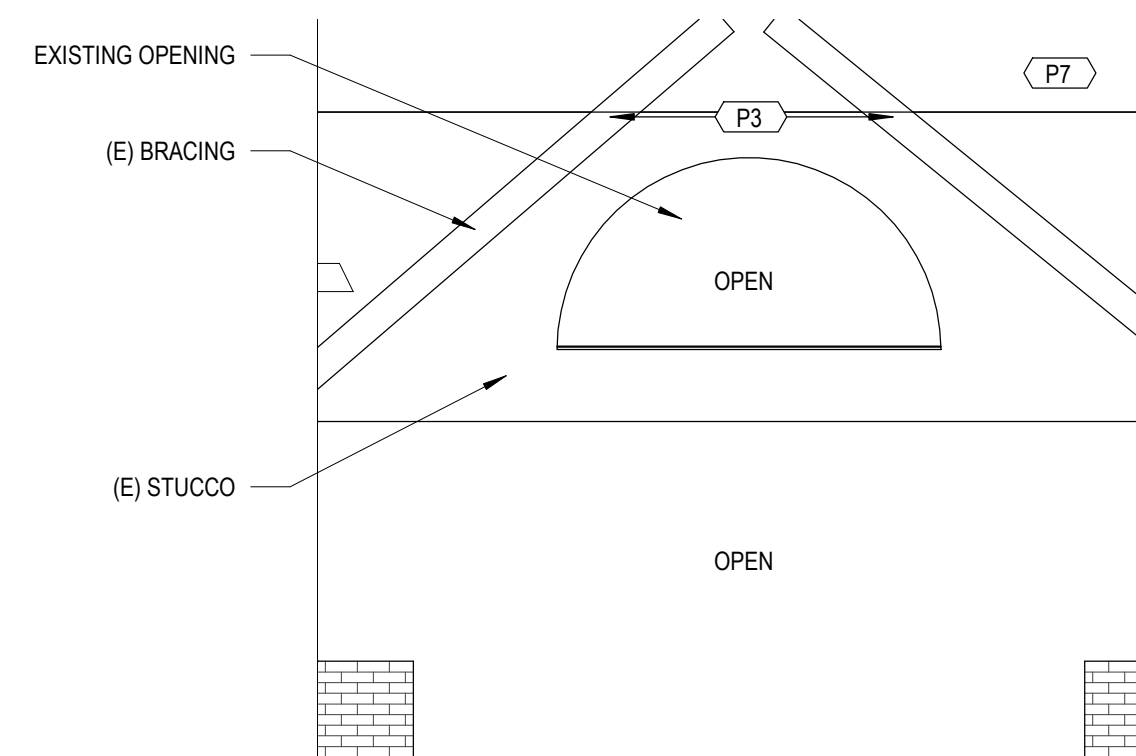
4 ENTRY ALCOVE - NORTH
1/4" = 1'-0"



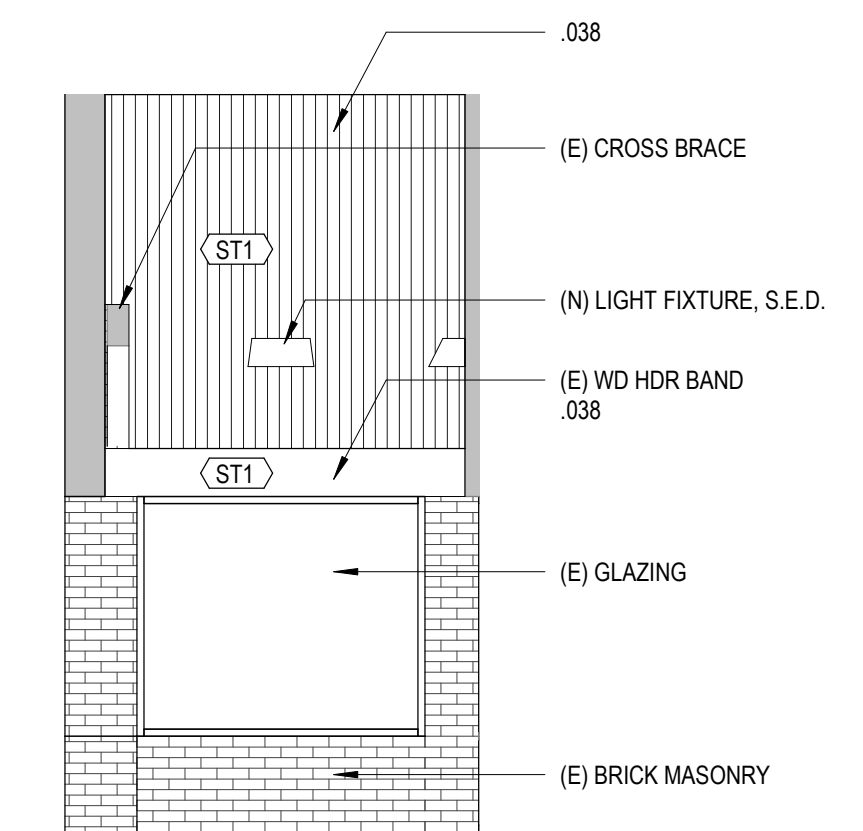
5 ENTRY ALCOVE - EAST
1/4" = 1'-0"



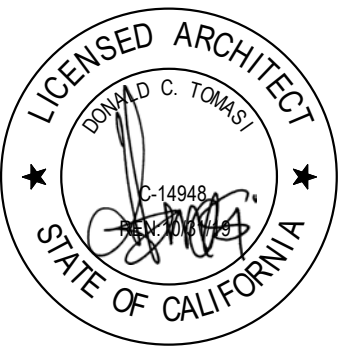
3 WEST ELEVATION
1/8" = 1'-0"



6 ENTRY ALCOVE - SOUTH
1/4" = 1'-0"



7 ENTRY ALCOVE - WEST
1/4" = 1'-0"



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7/22/2019

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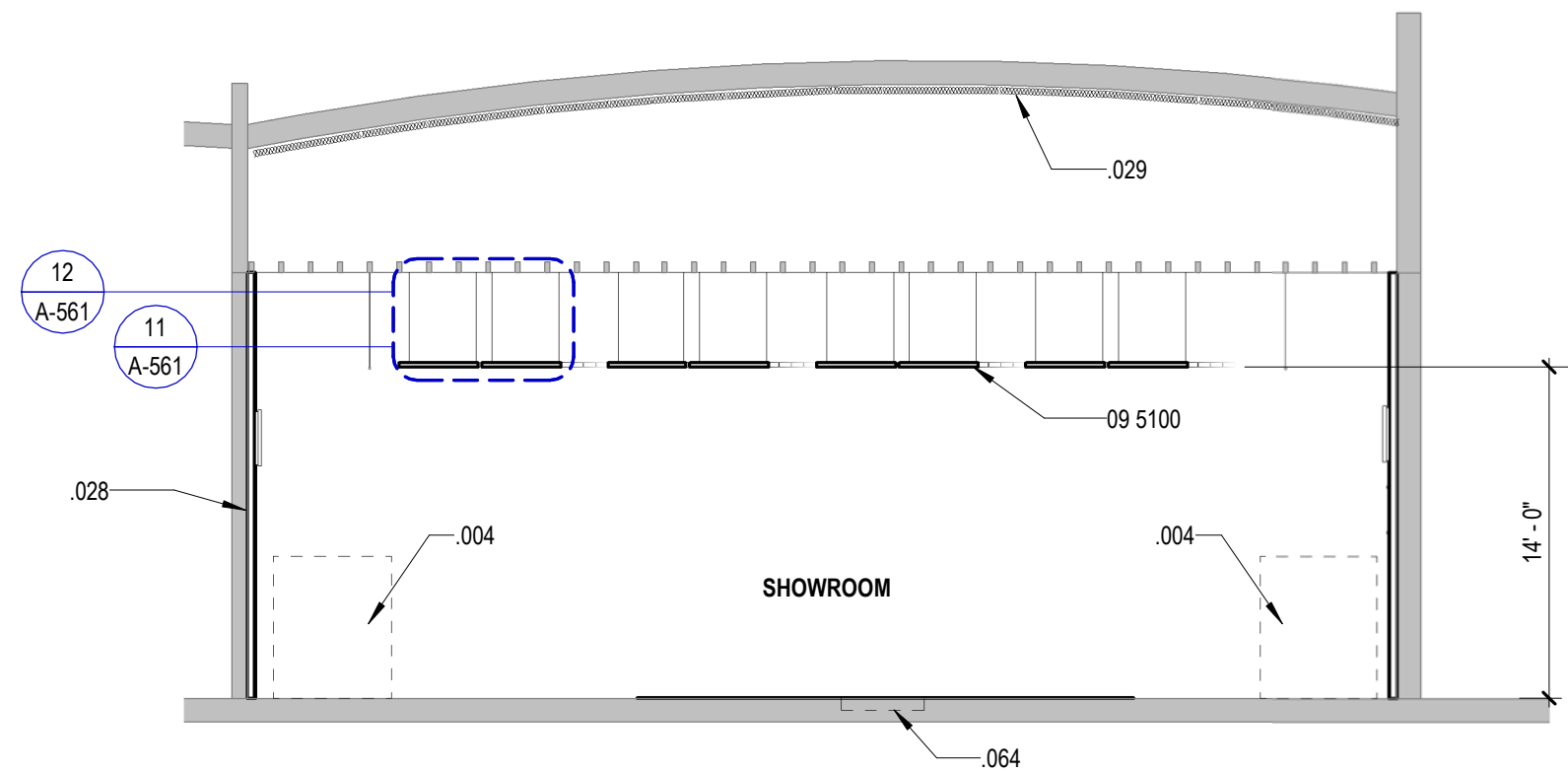
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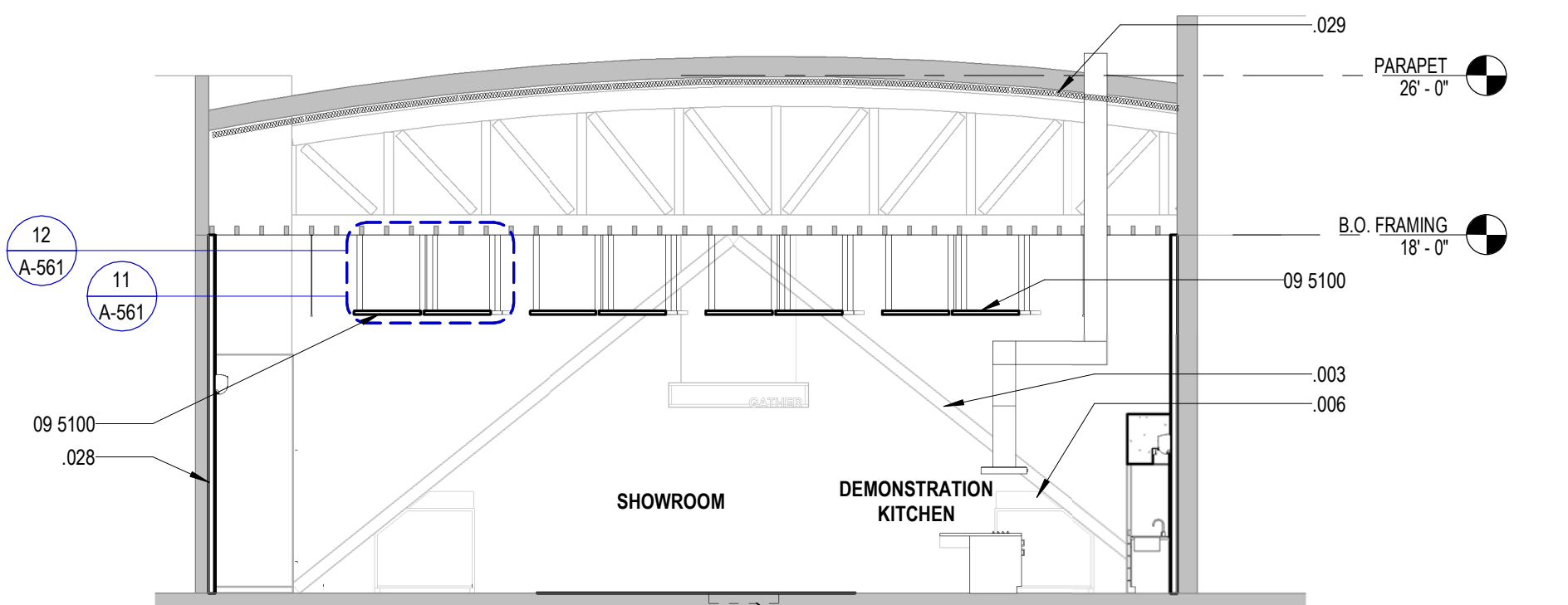
EXTERIOR ELEVATIONS

A-201



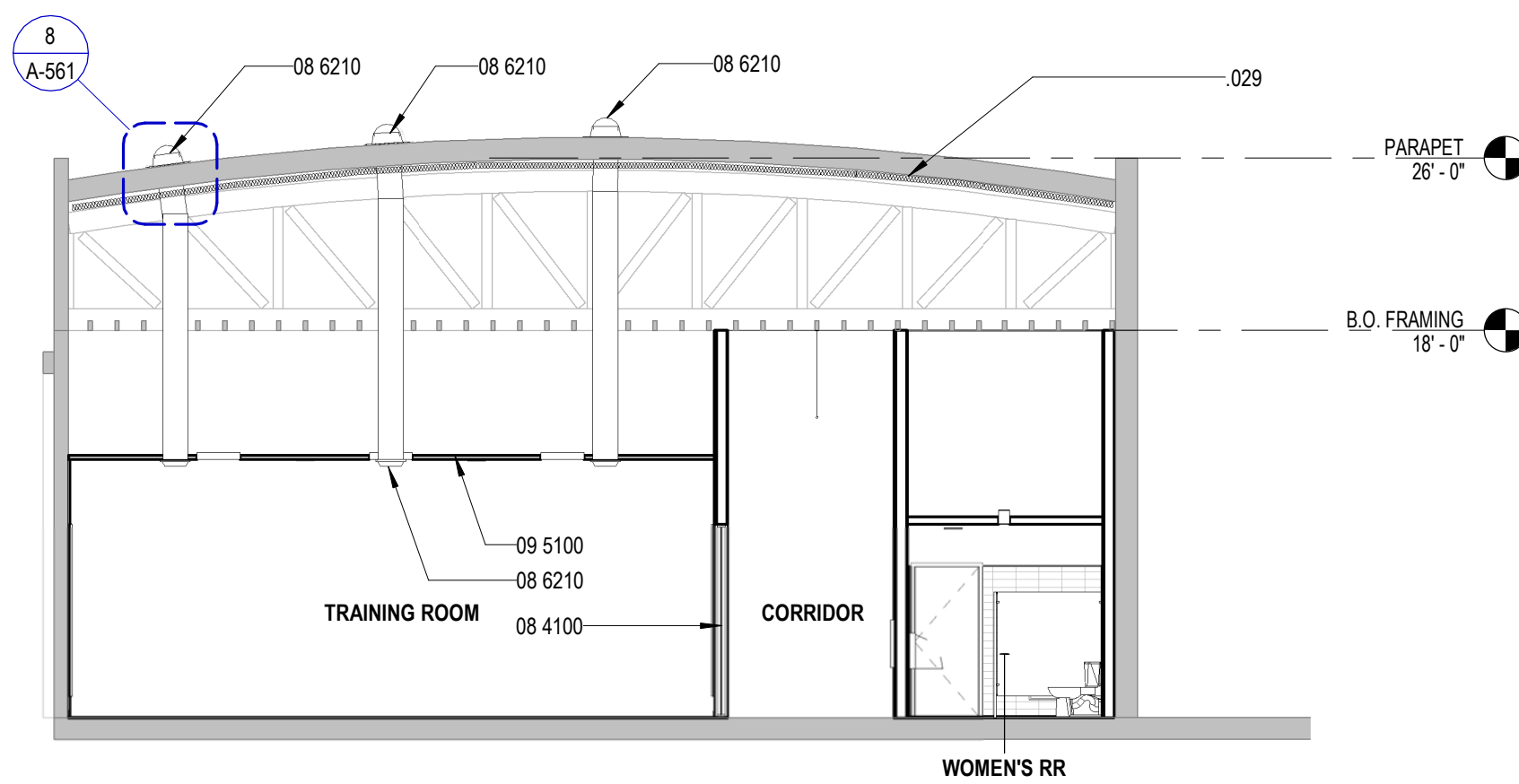
1 CROSS SECTION AT SHOWROOM

1/8" = 1'-0"



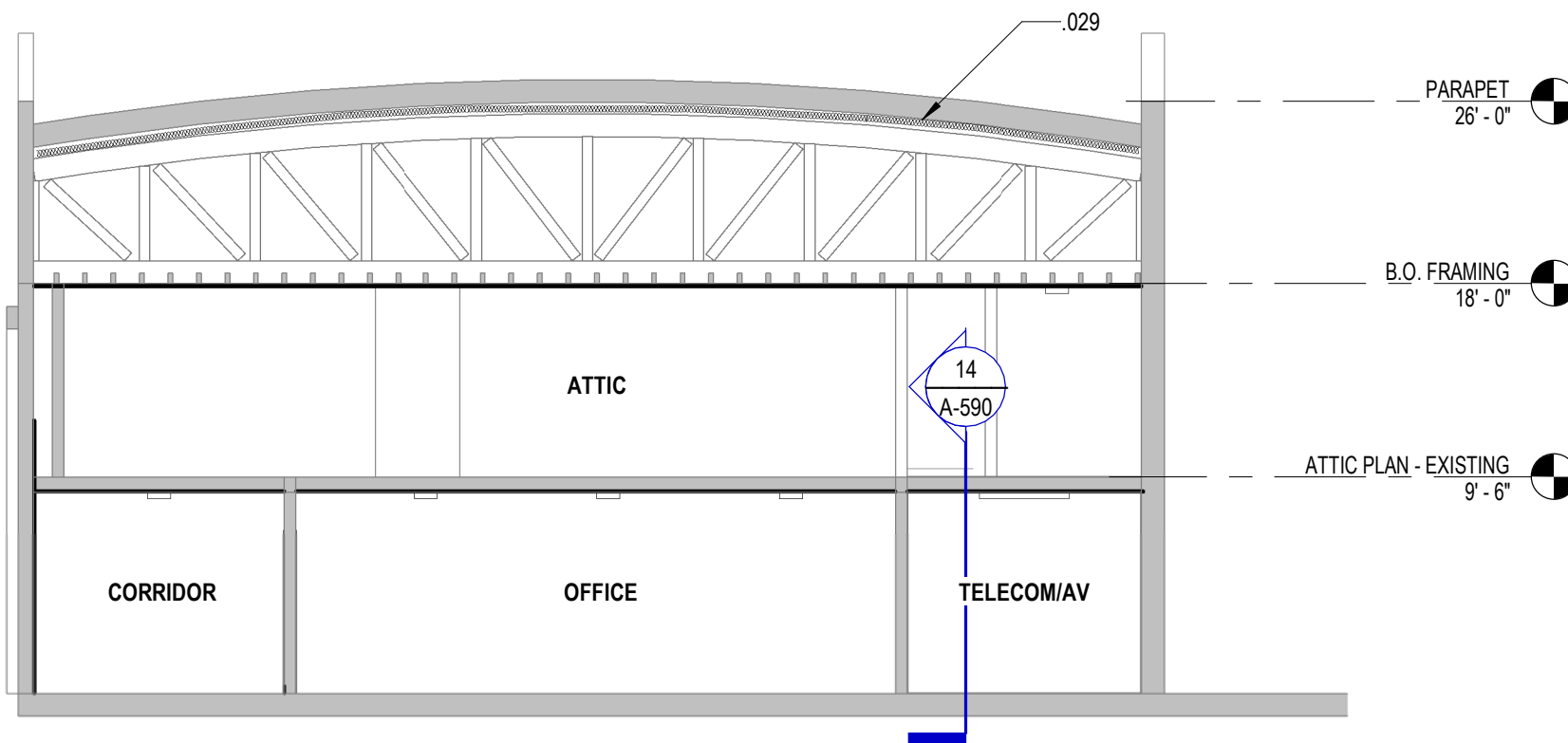
2 CROSS SECTION AT KITCHEN

1/8" = 1'-0"



3 CROSS SECTION AT TRAINING ROOM

1/8" = 1'-0"



4 CROSS SECTION AT ATTIC

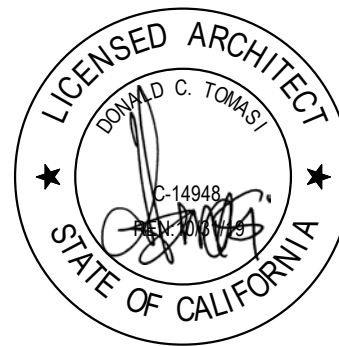
1/8" = 1'-0"

DRAWING NOTES

- .003 PAINT (E) STEEL BRACE P3
.004 VENDOR DISPLAY, BY OTHERS, 5' W X 5' L X 6' H TYPICAL
.006 (N) STEEL RAILING, SEE ELEVATION
.028 (N) GYP OVER FURRING WALLS, S.S.D.
.029 BLACK-FACED BATT INSULATION AT UNDERSIDE OF ROOF
.064 SLAB MODIFICATION FOR UTILITIES, S.S.D.

REFERENCE KEYNOTE

- 08 4100 ENTRANCES AND STOREFRONTS
08 6210 TUBULAR DAYLIGHTING DEVICES
09 5100 ACOUSTICAL PANEL CEILINGS



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ROSA, CALIFORNIA 95404



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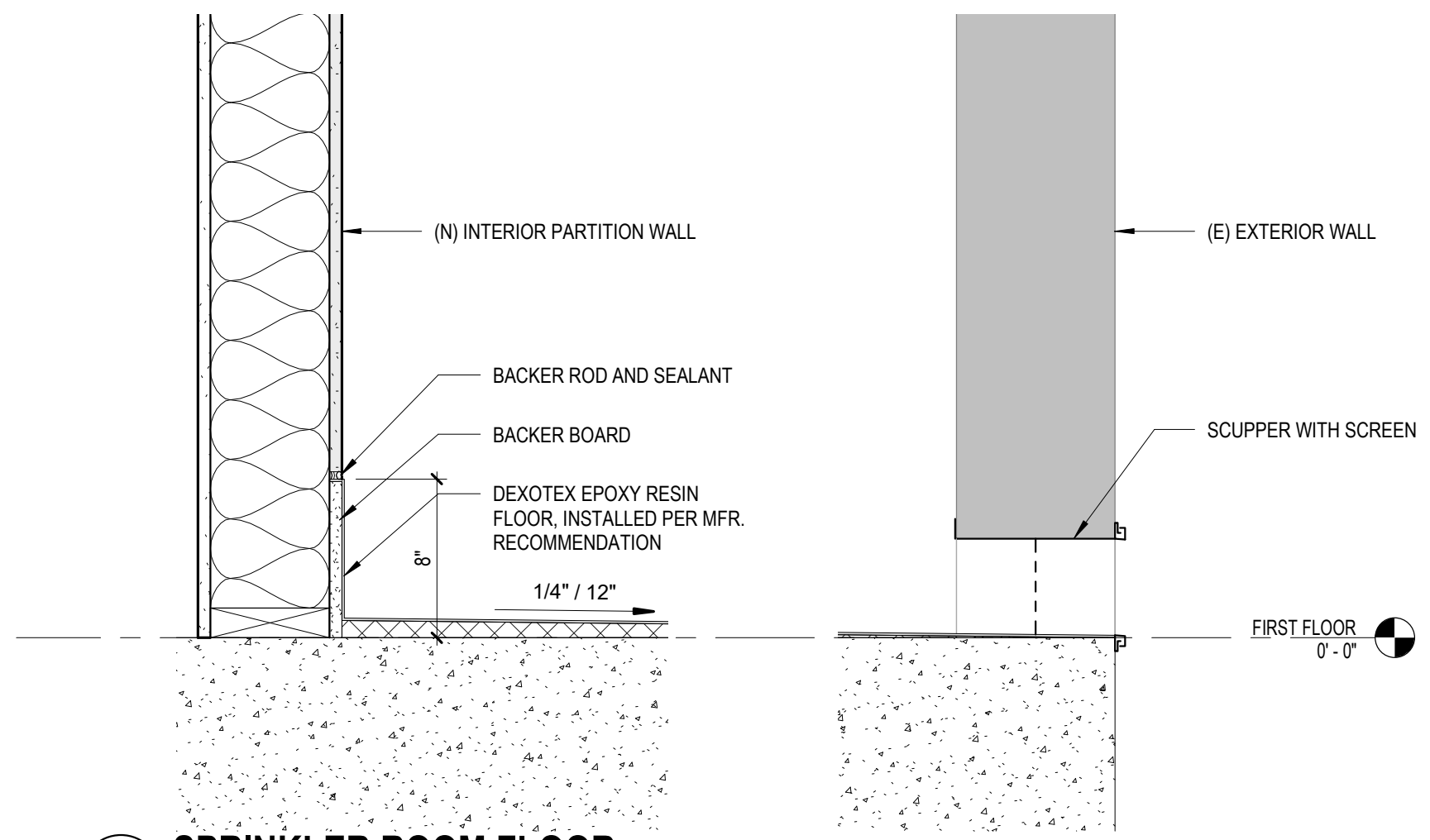
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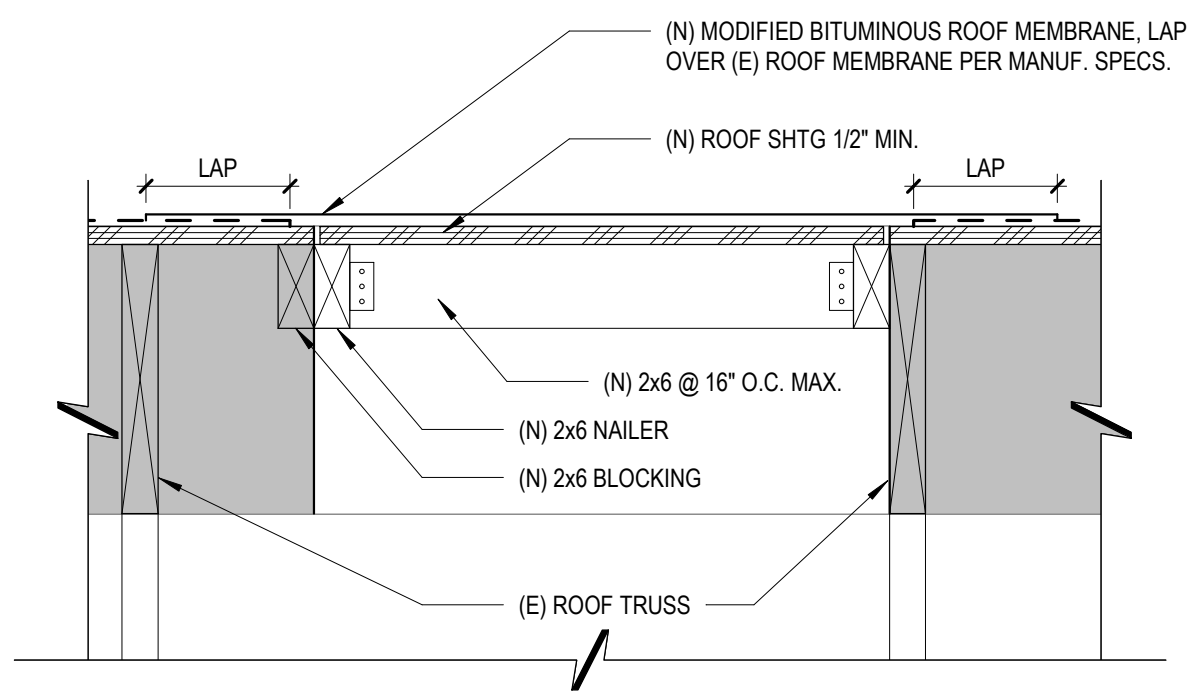
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BUILDING SECTIONS

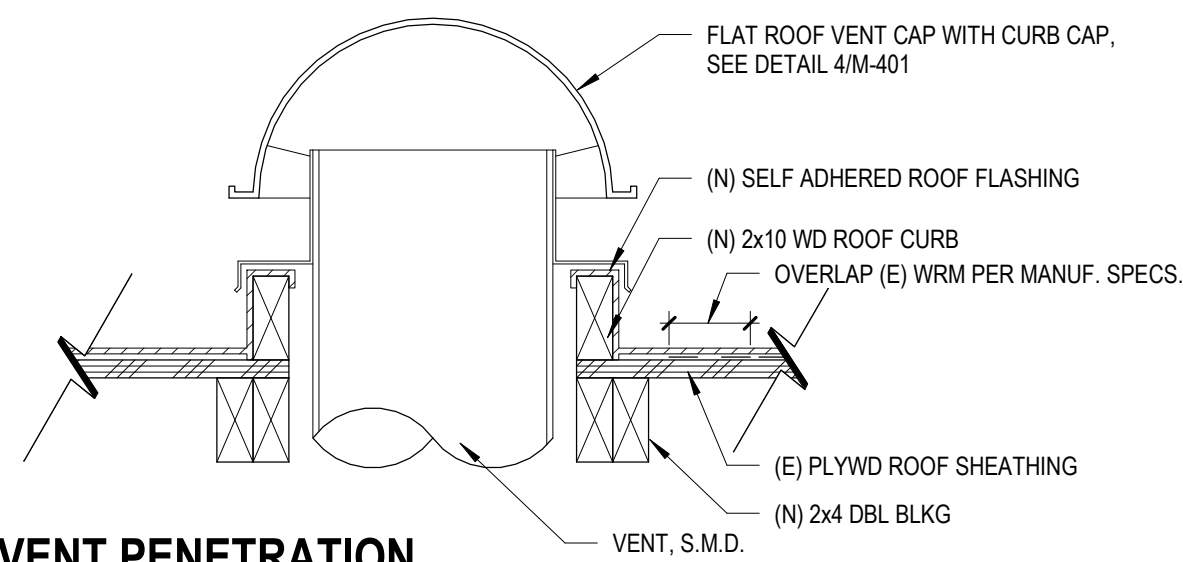
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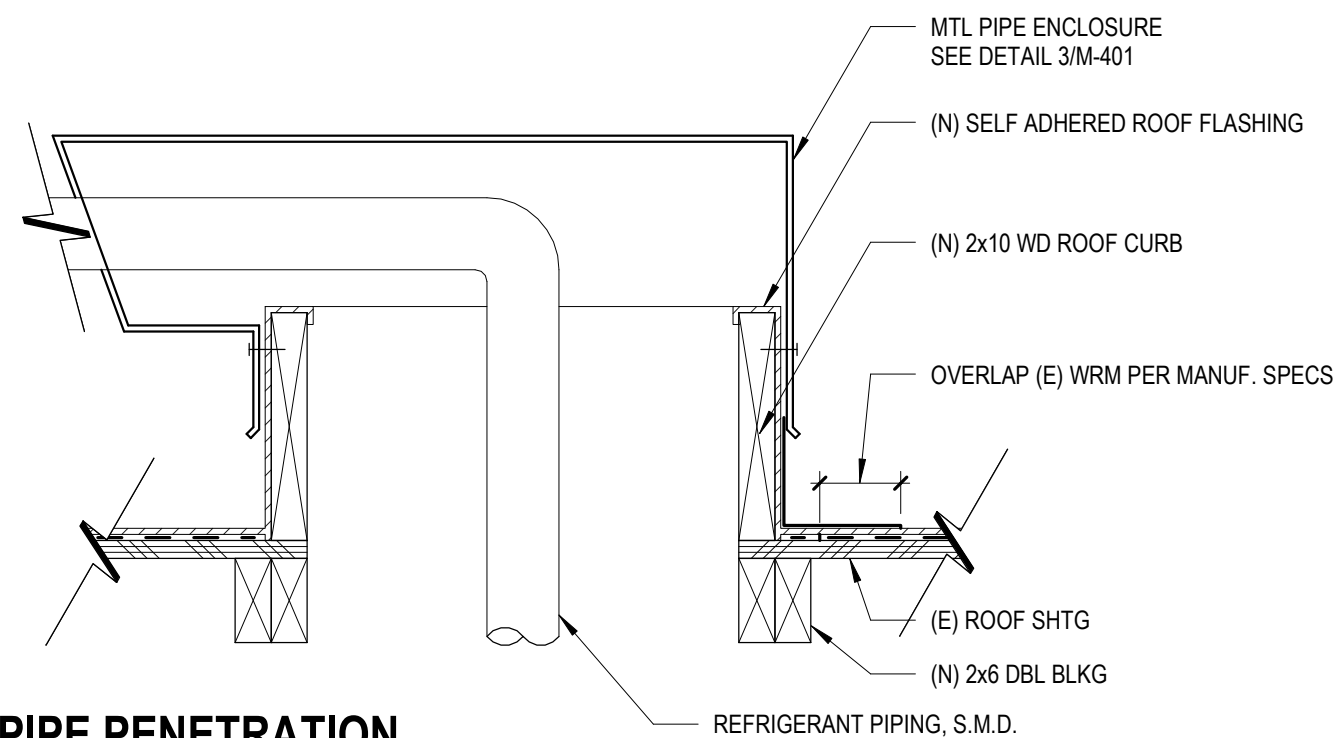
12 SPRINKLER ROOM FLOOR
1 1/2" = 1'-0"



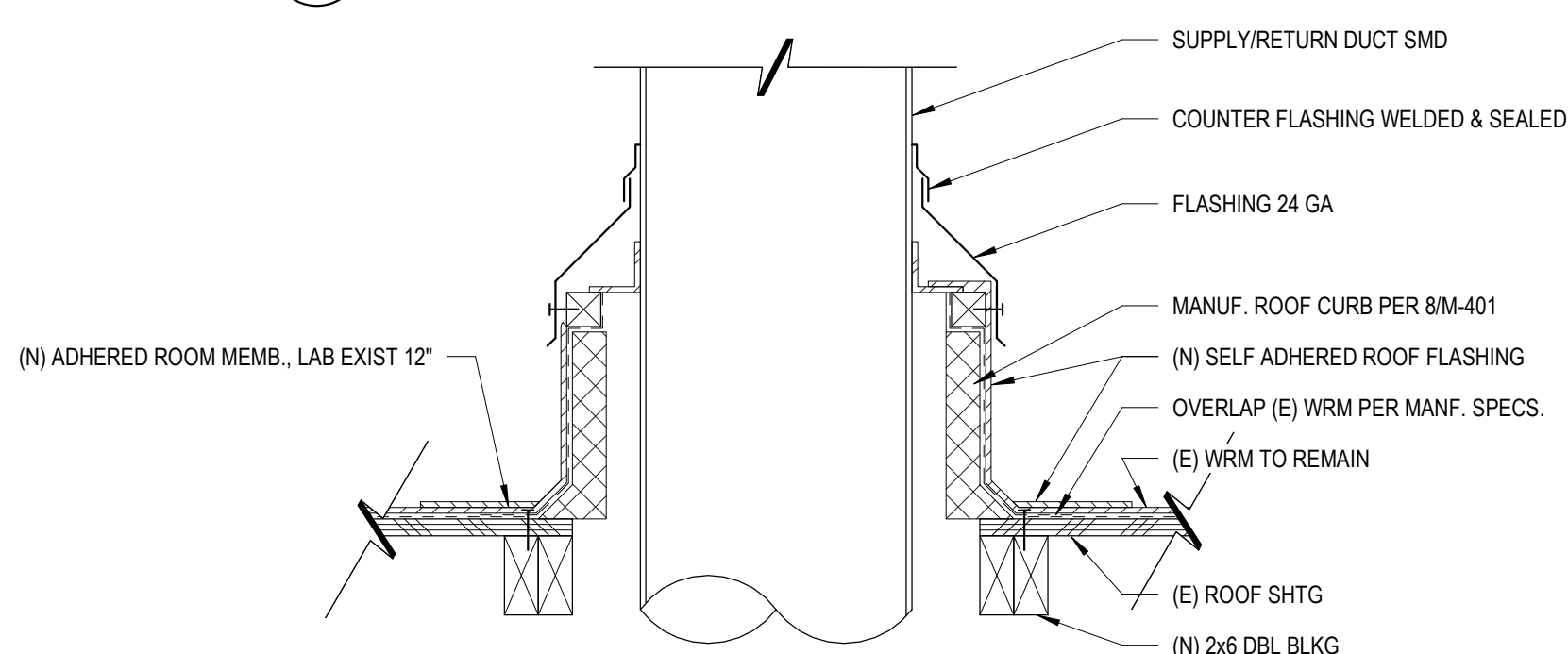
13 ROOF PATCH
1 1/2" = 1'-0"



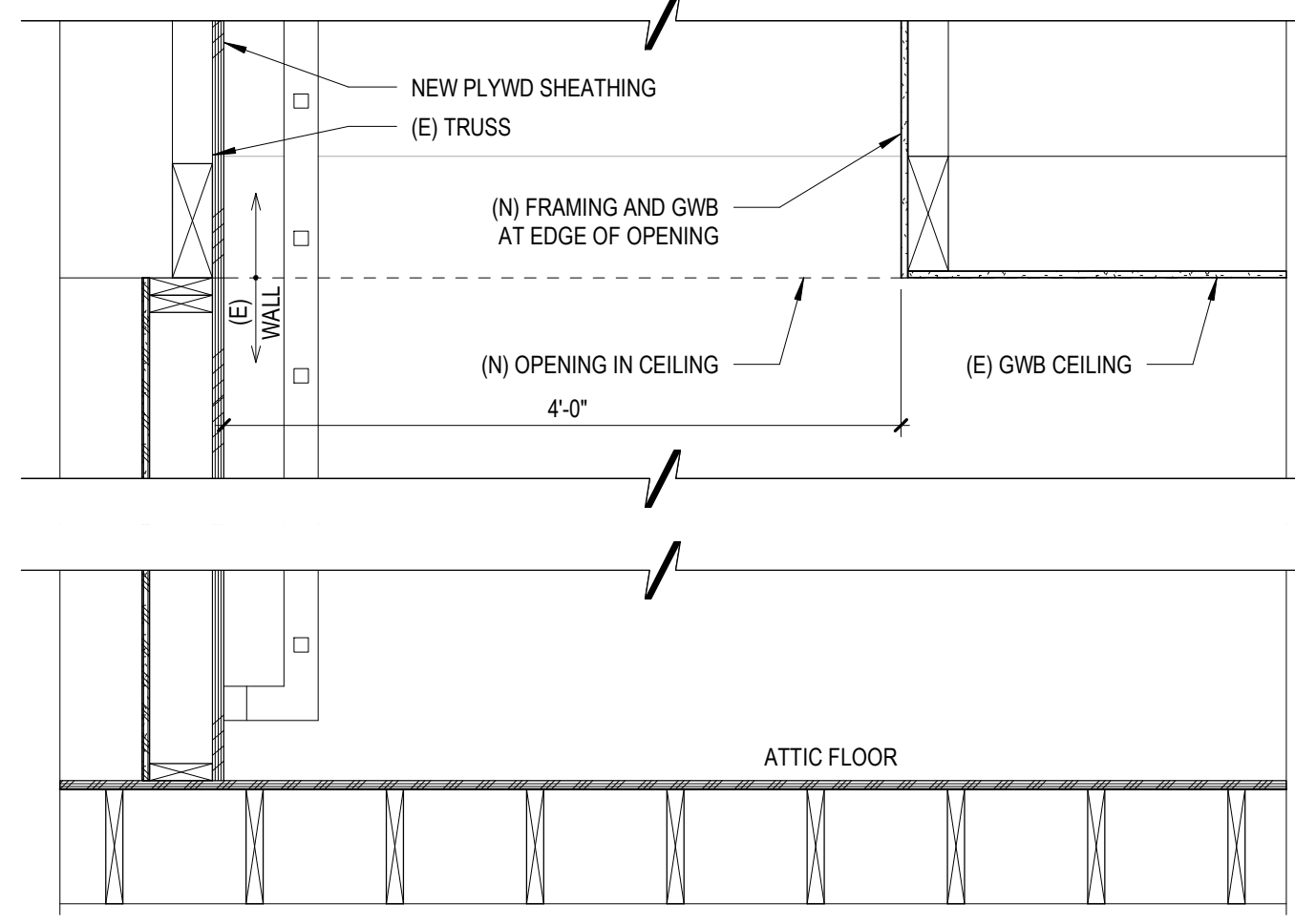
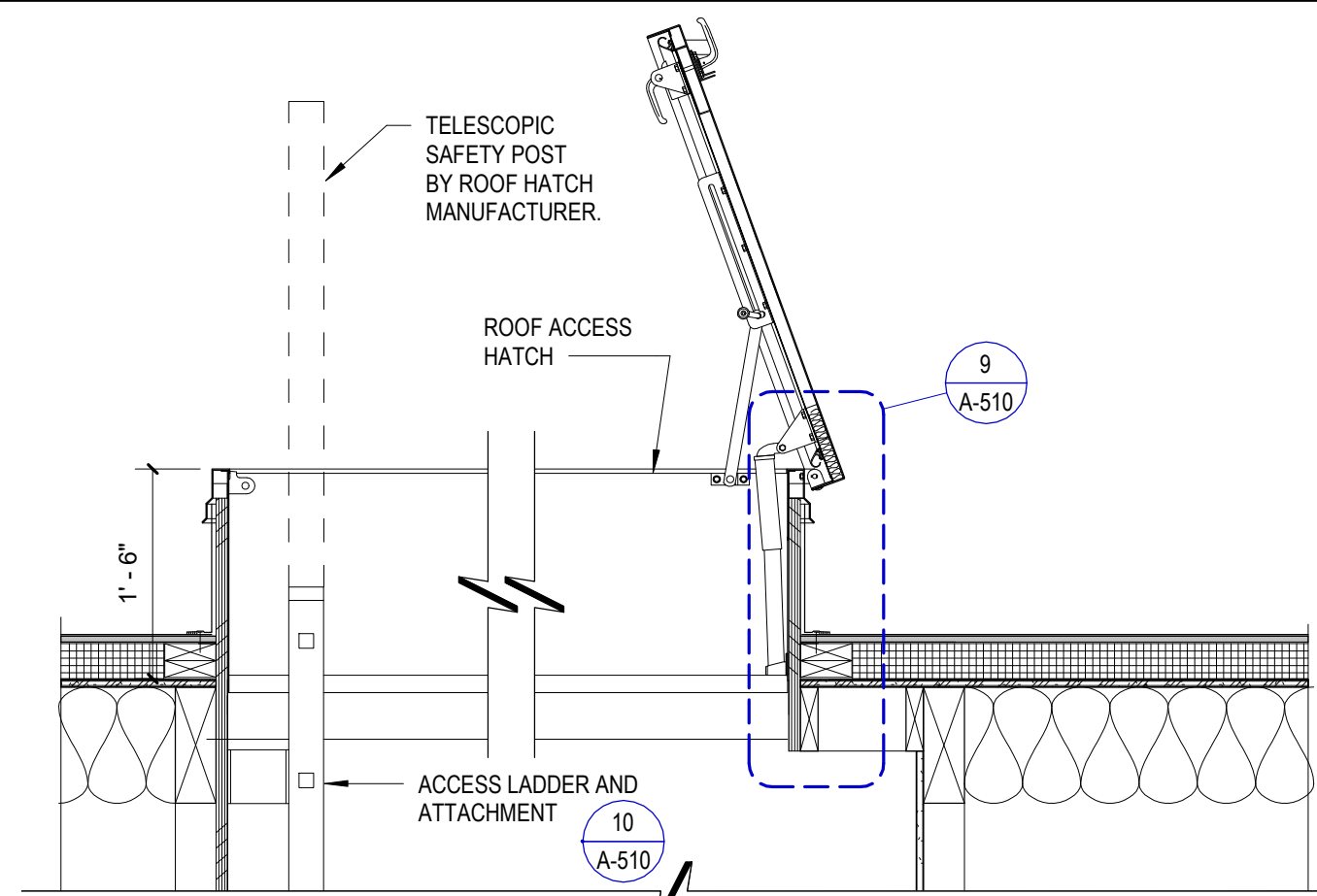
14 VENT PENETRATION
1 1/2" = 1'-0"



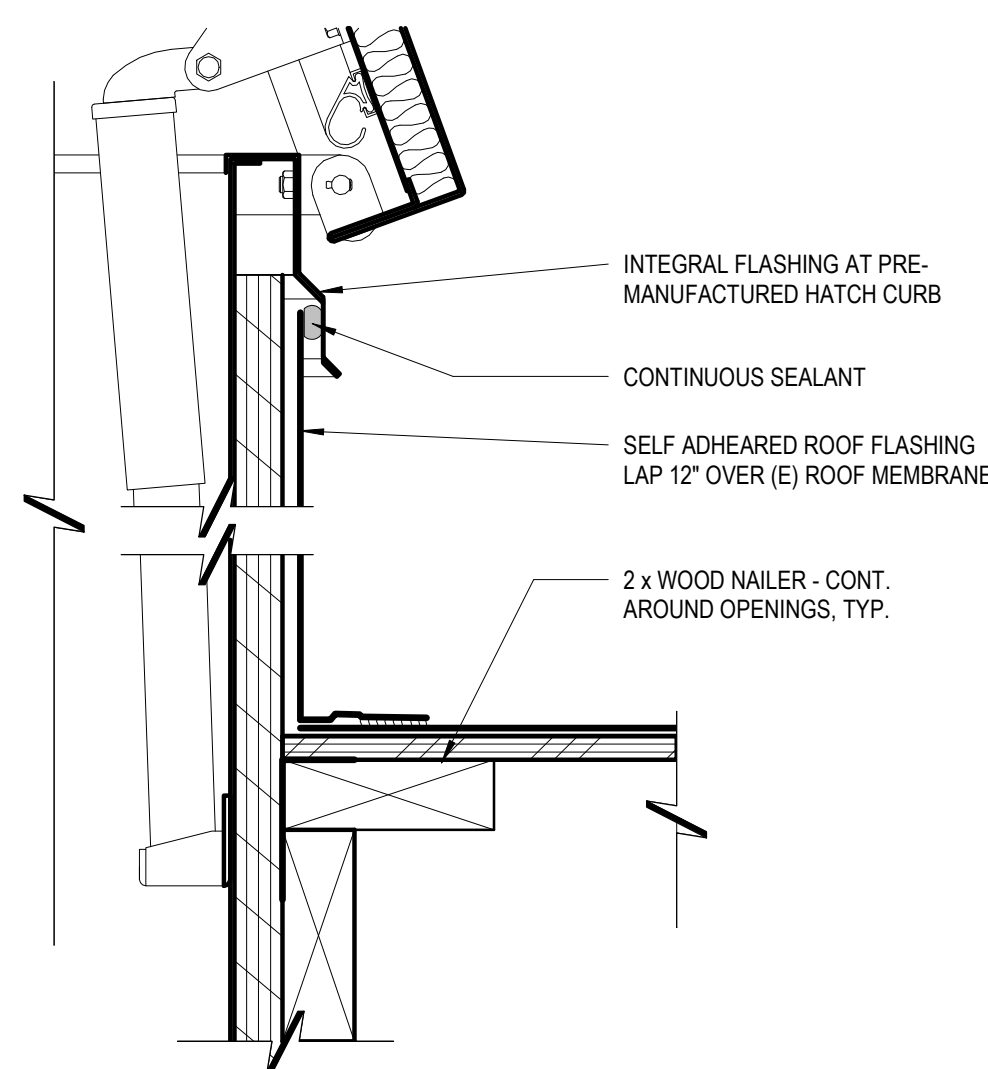
15 PIPE PENETRATION
1 1/2" = 1'-0"



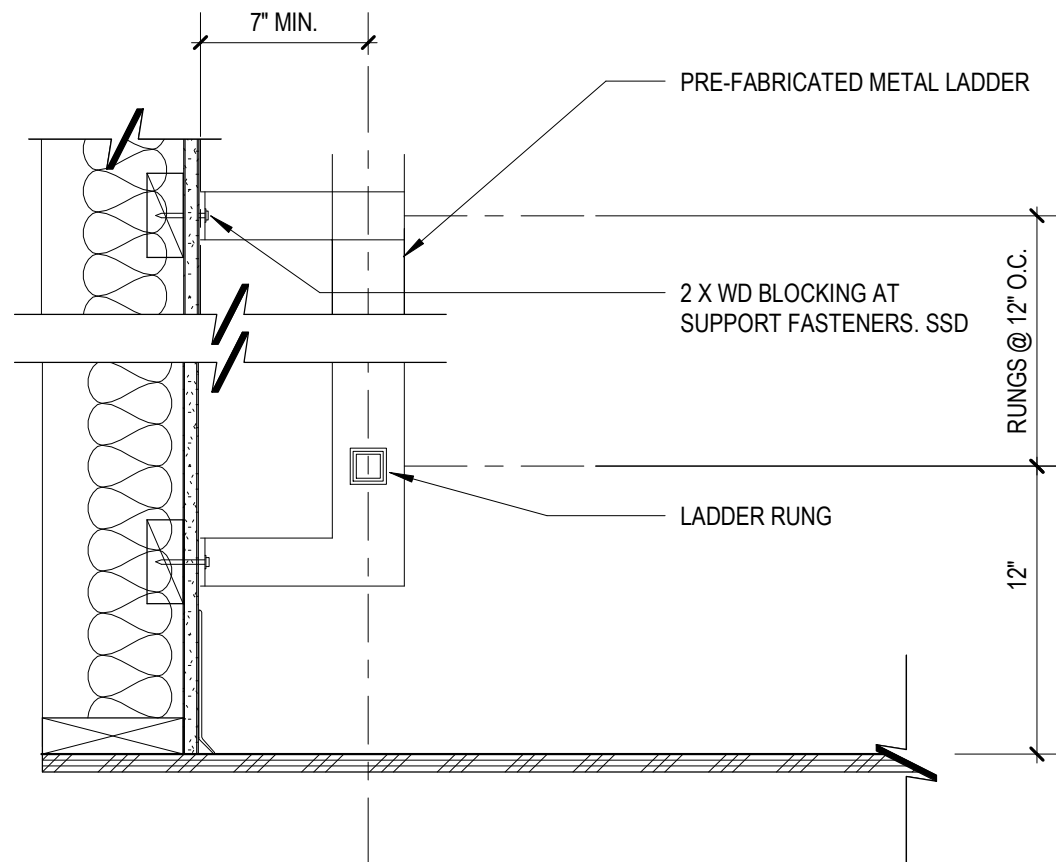
16 DUCT PENETRATION
1 1/2" = 1'-0"



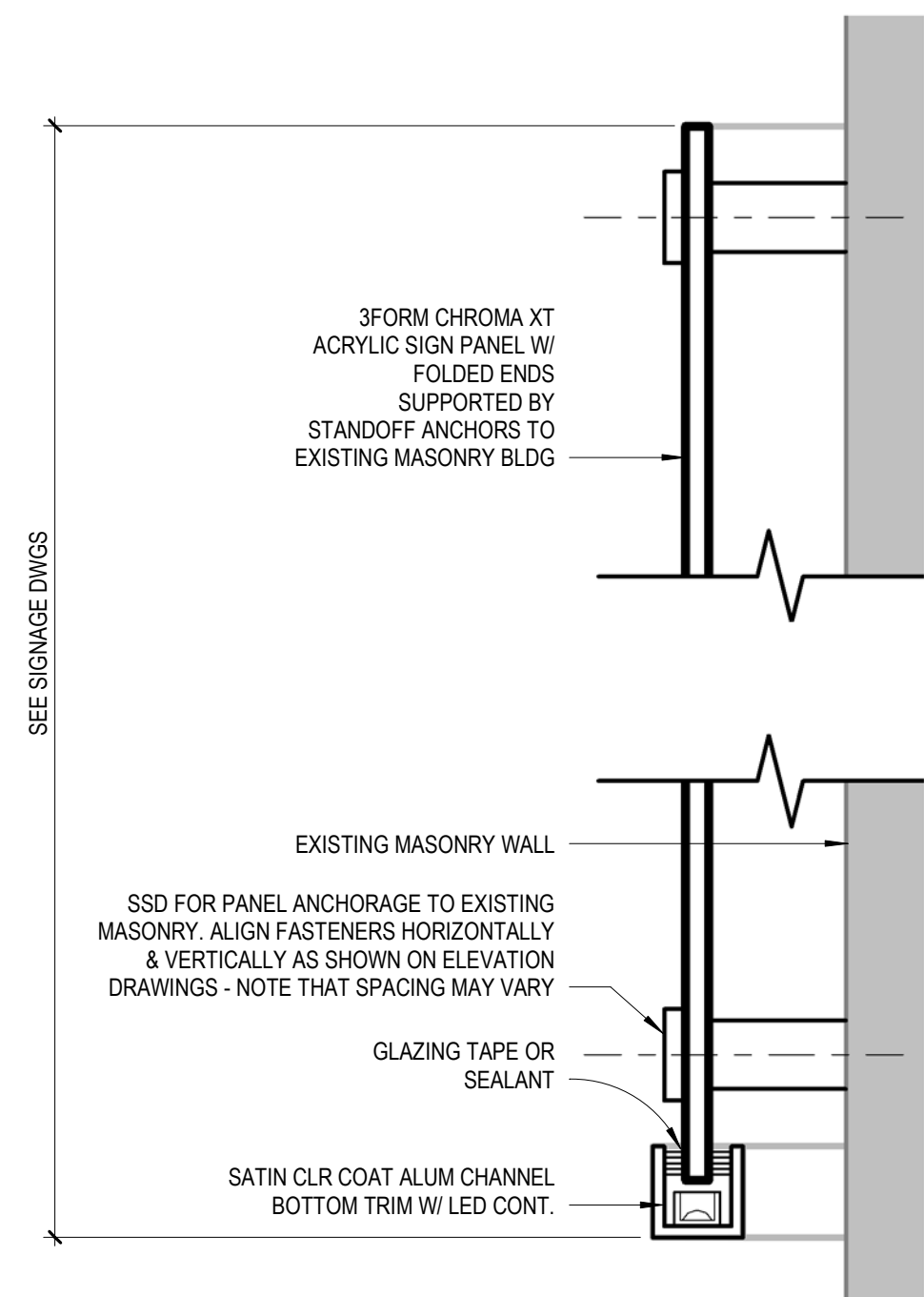
8 ROOF HATCH
3/4" = 1'-0"



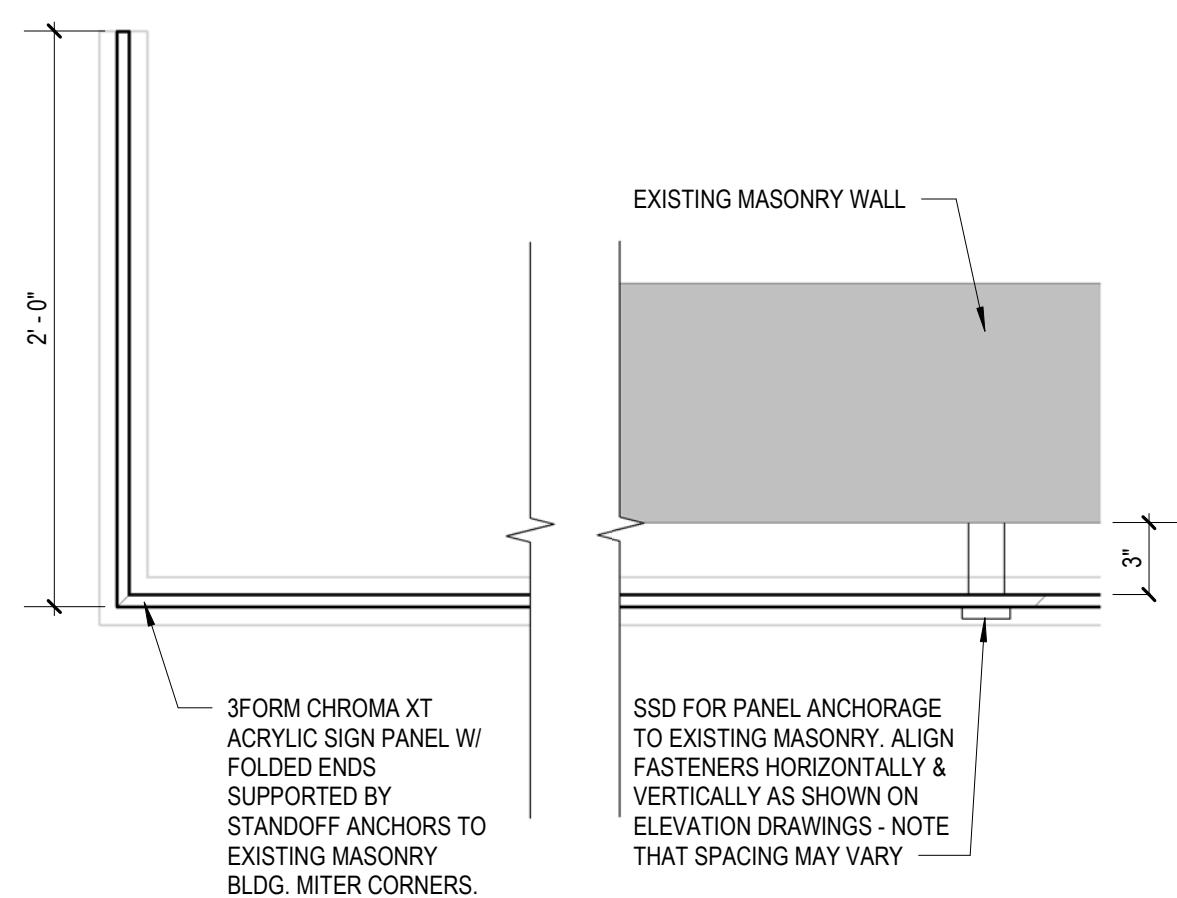
9 CURB @ ROOF HATCH
3" = 1'-0"



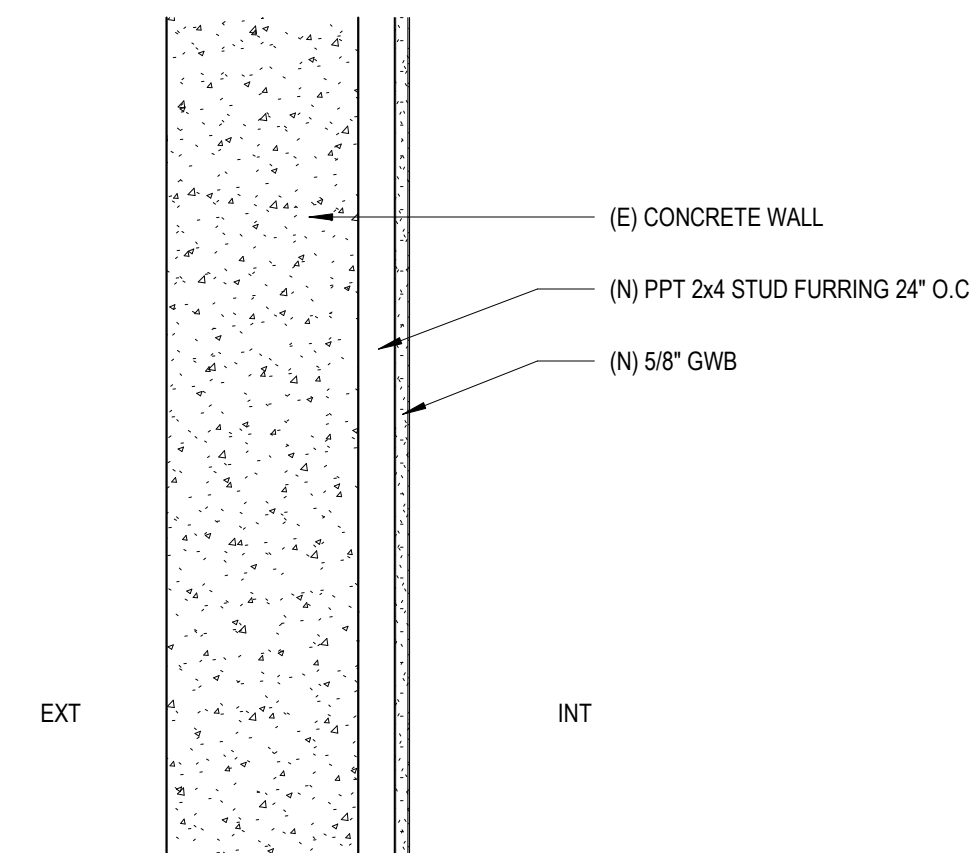
10 METAL ROOF LADDER
1 1/2" = 1'-0"



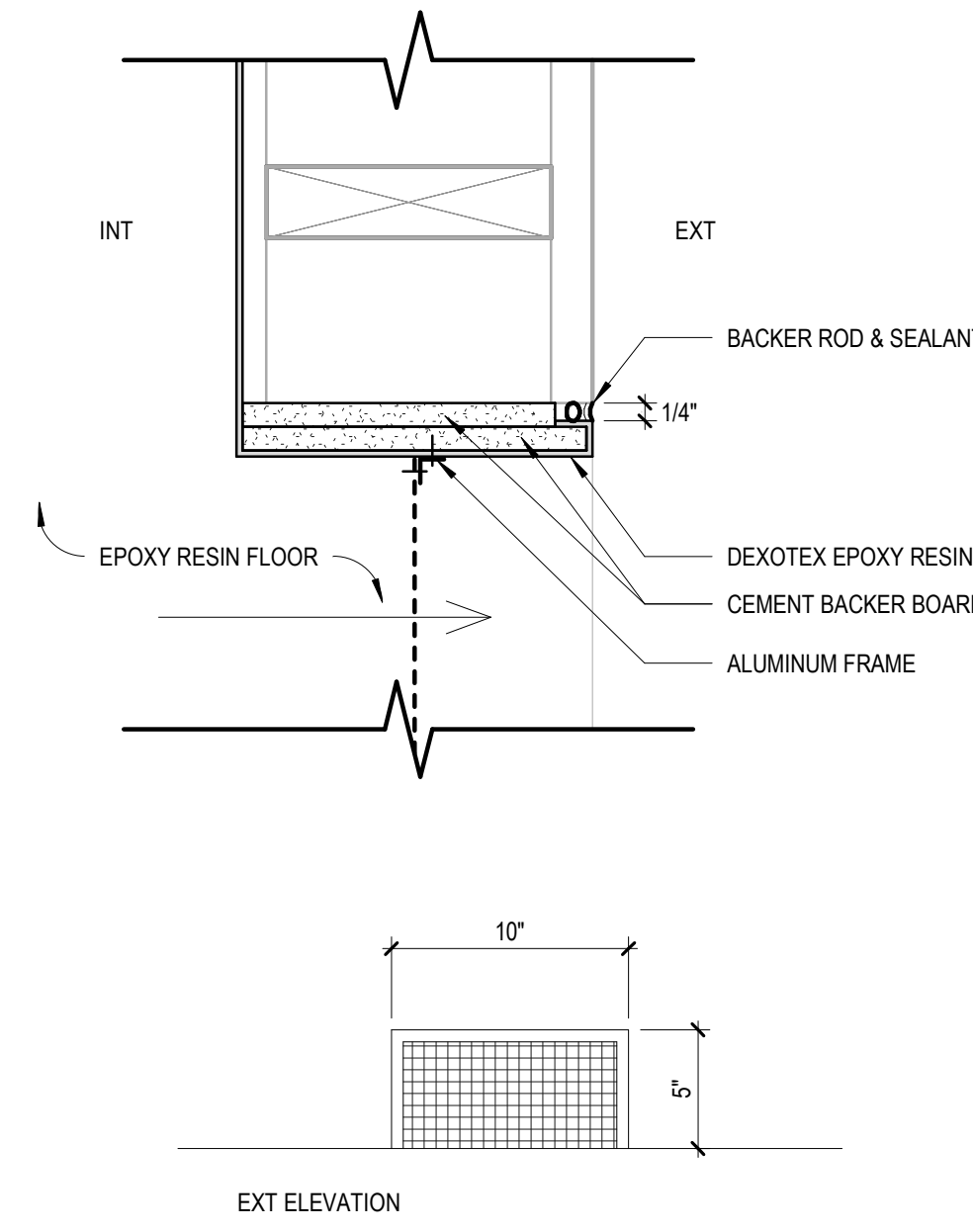
6 SIGNAGE SECTION (INCLUDED FOR REFERENCE ONLY)
3" = 1'-0"



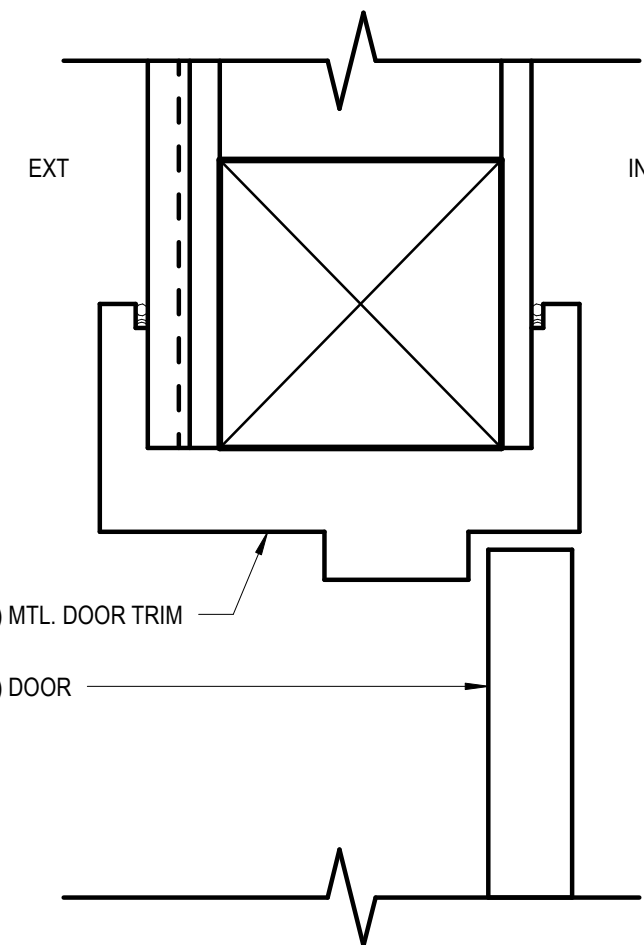
7 SIGNAGE PLAN SECTION (INCLUDED FOR REFERENCE ONLY)
1 1/2" = 1'-0"



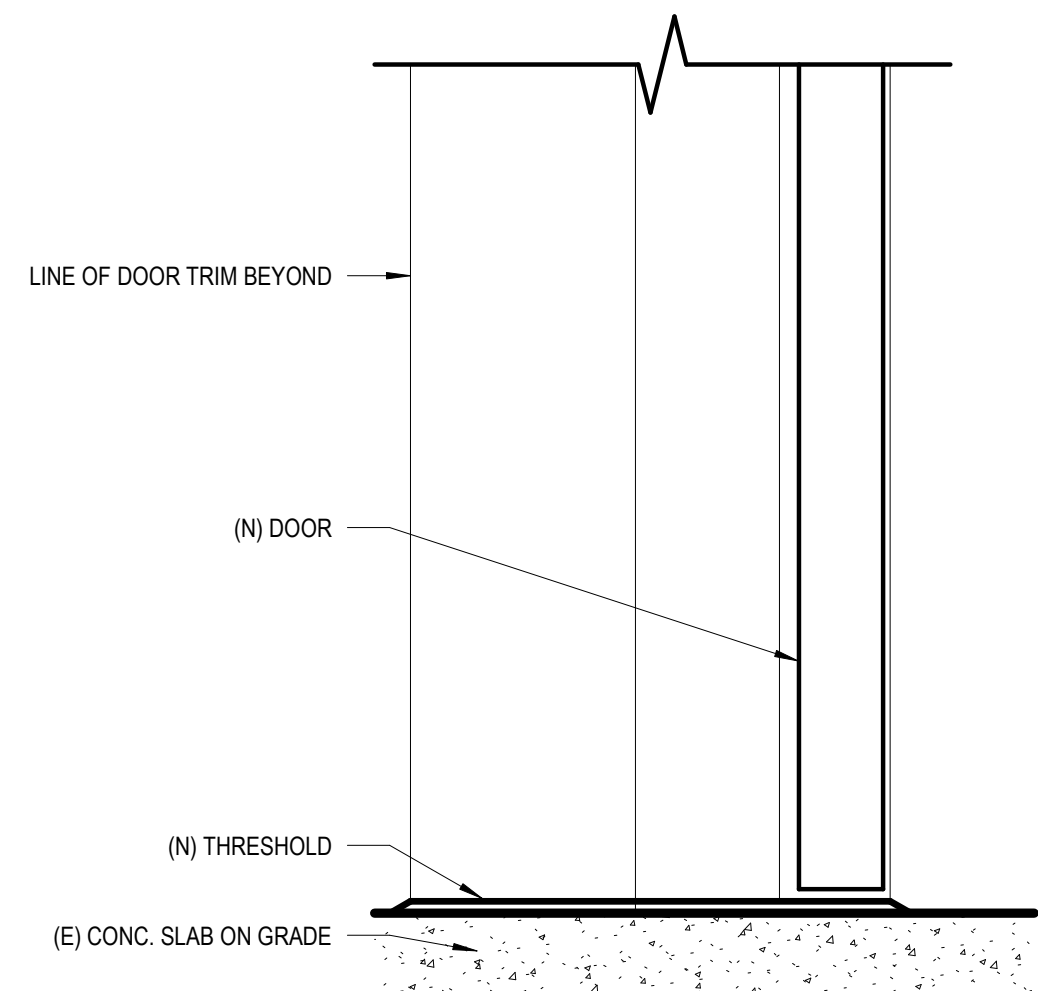
11 FURRING AT EXTERIOR WALL
1 1/2" = 1'-0"



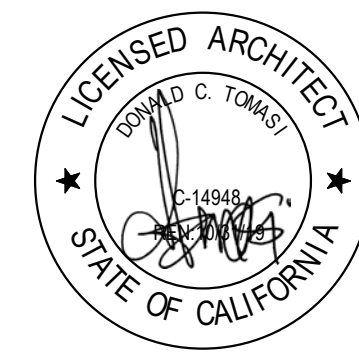
1 SCUPPER DETAIL
3" = 1'-0"



2 EXTERIOR DOOR @ HEAD
3" = 1'-0"



3 EXTERIOR DOOR @ SILL
3" = 1'-0"



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CONSTRUCTION

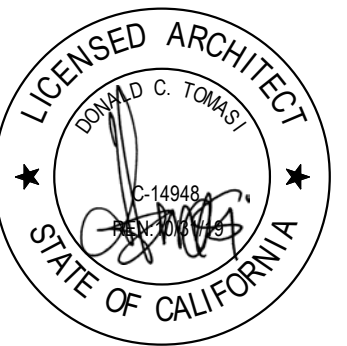
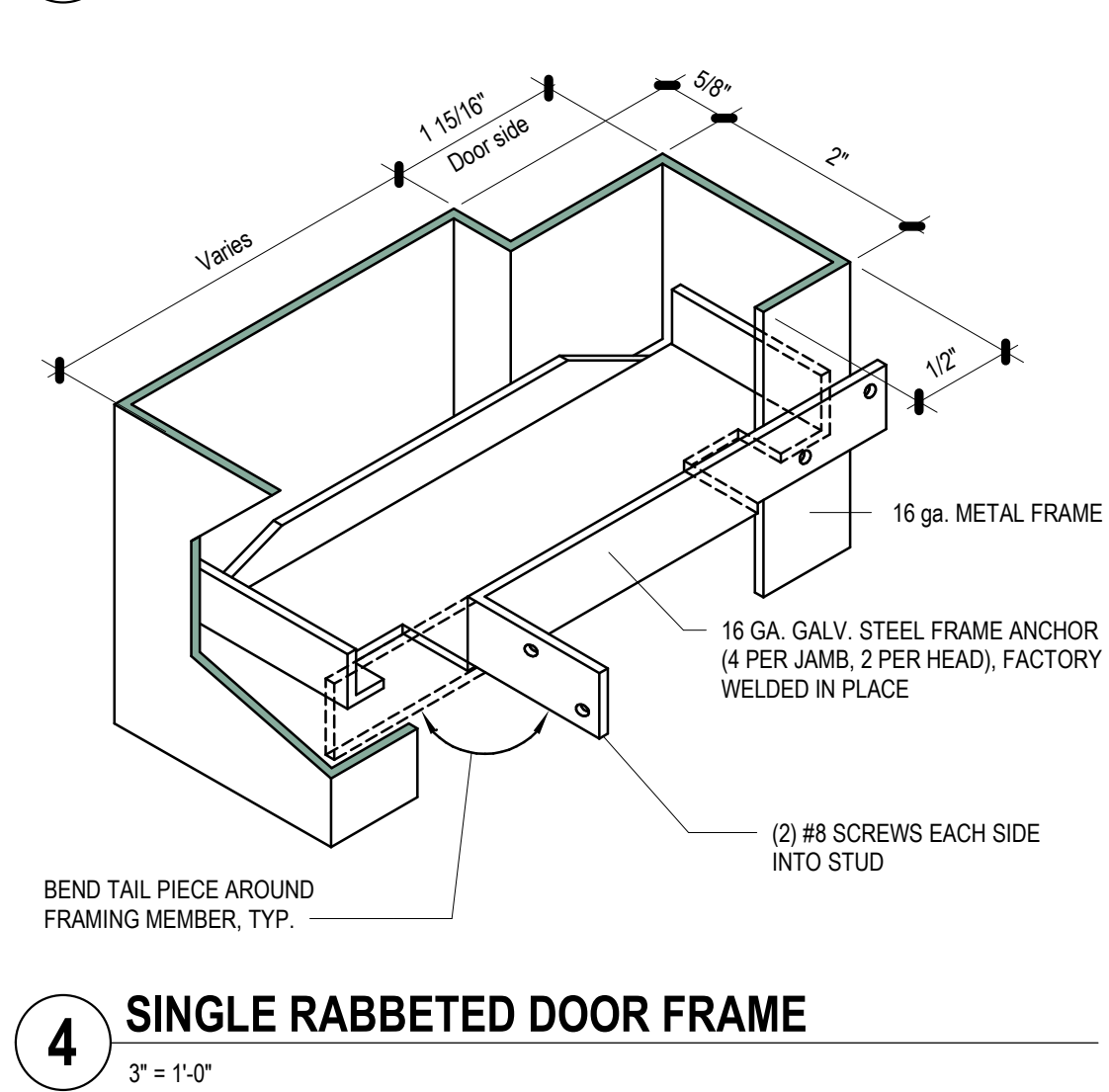
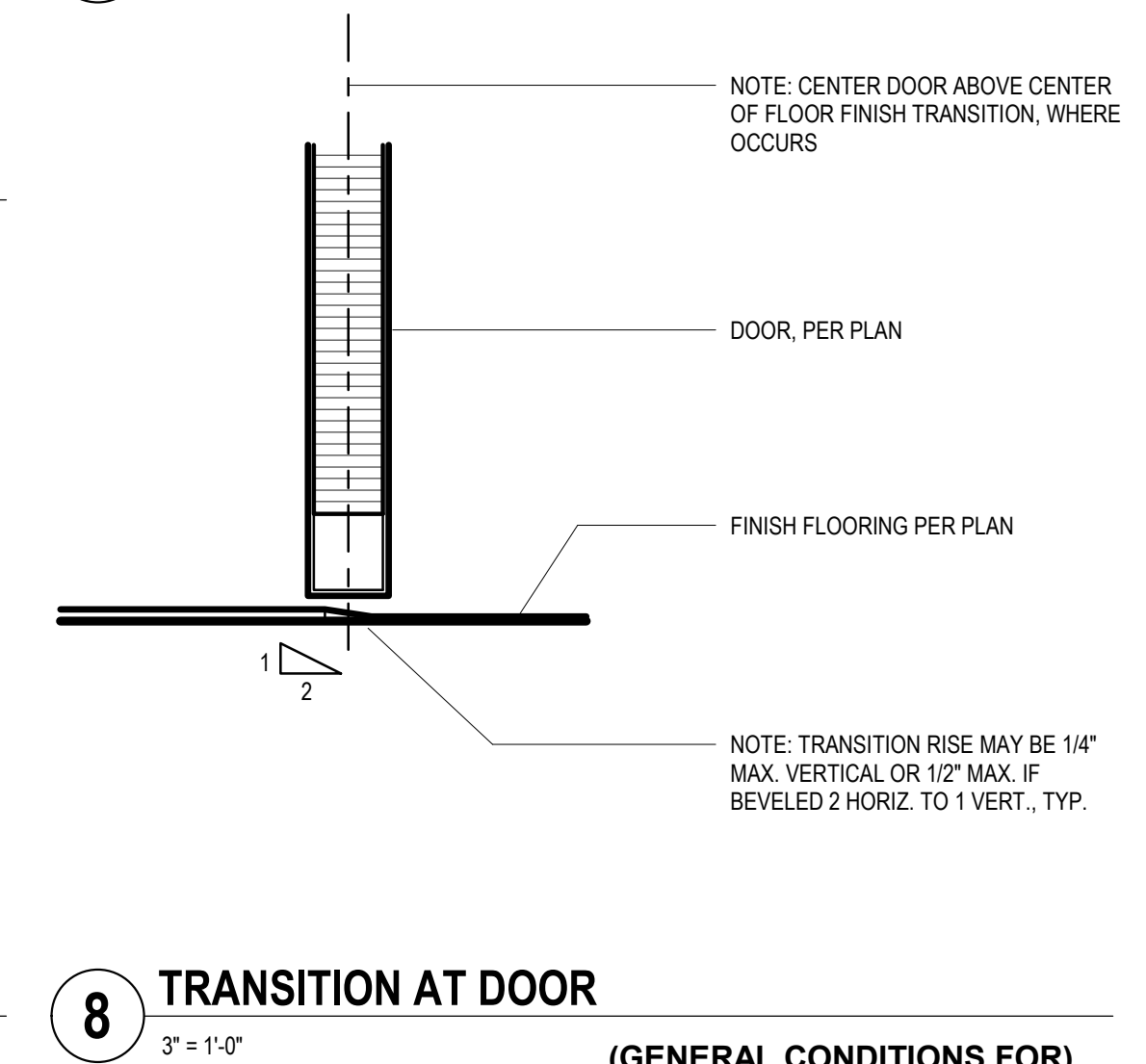
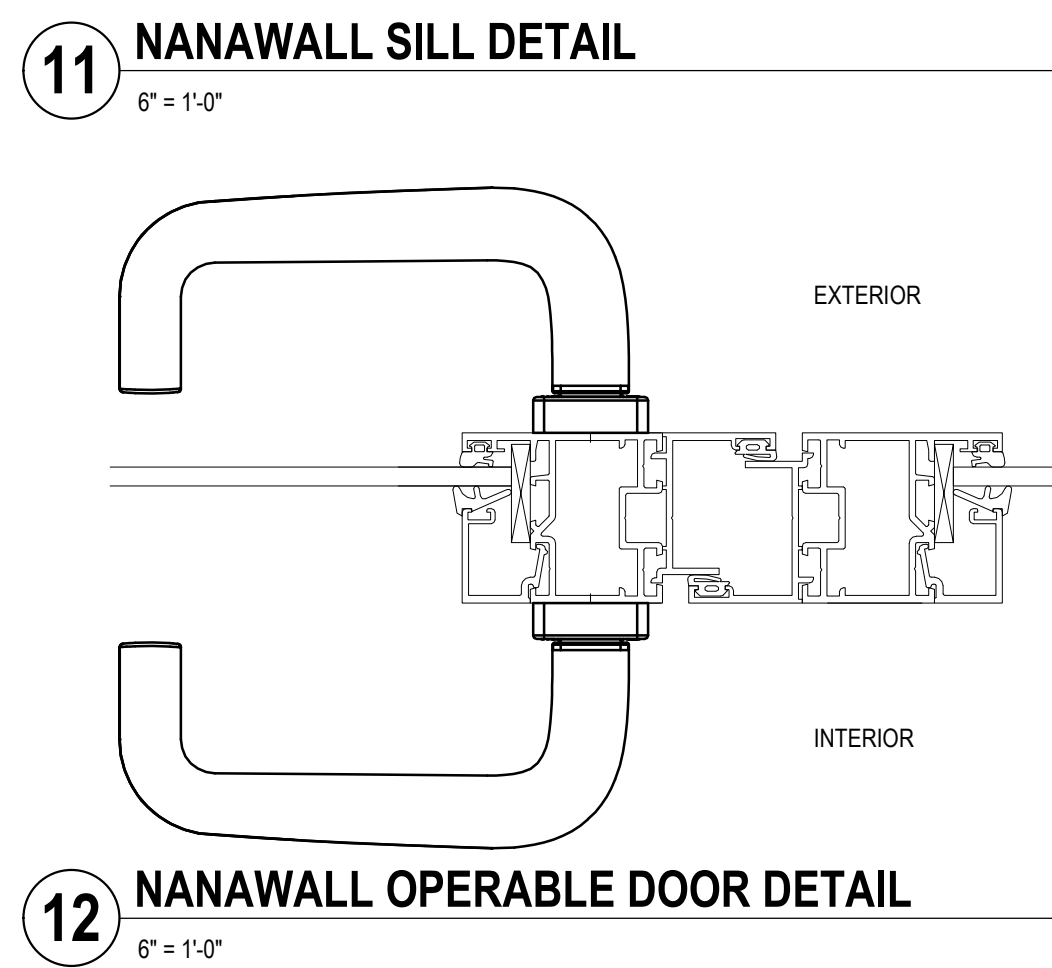
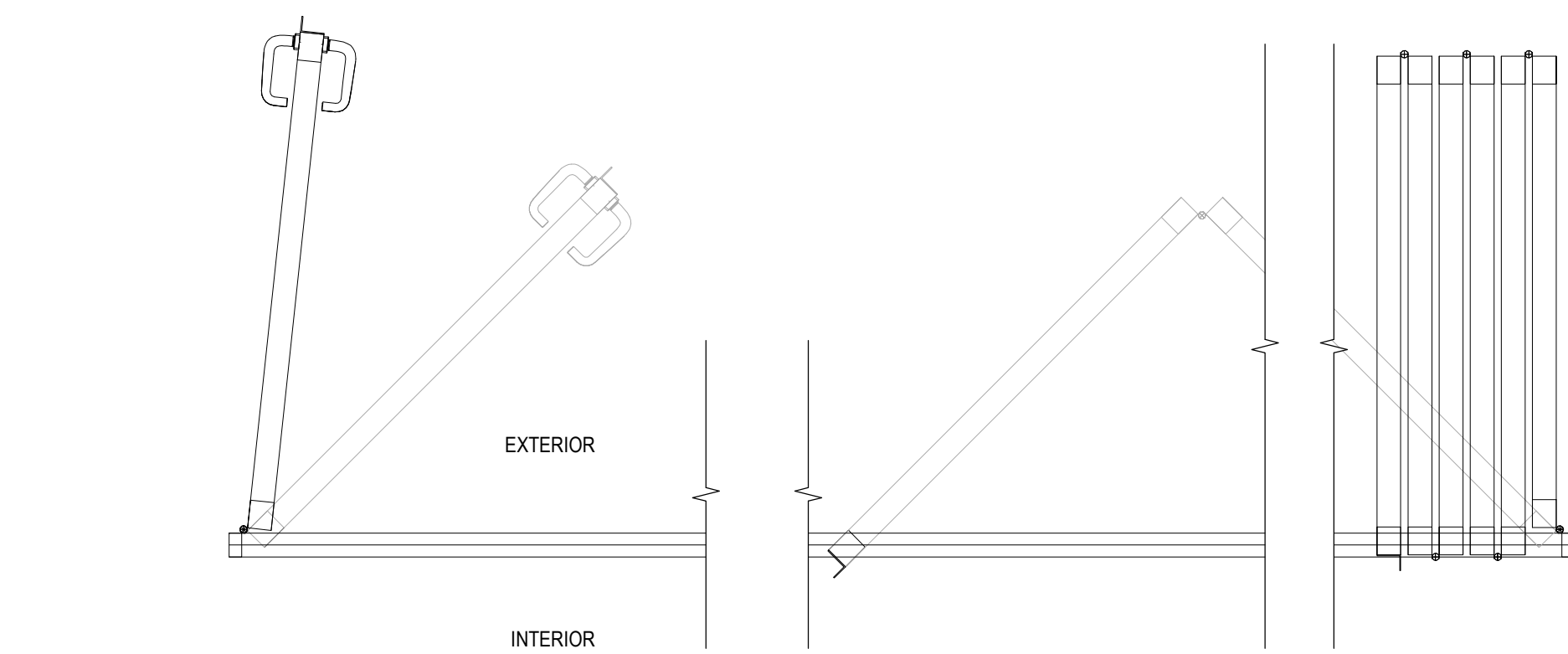
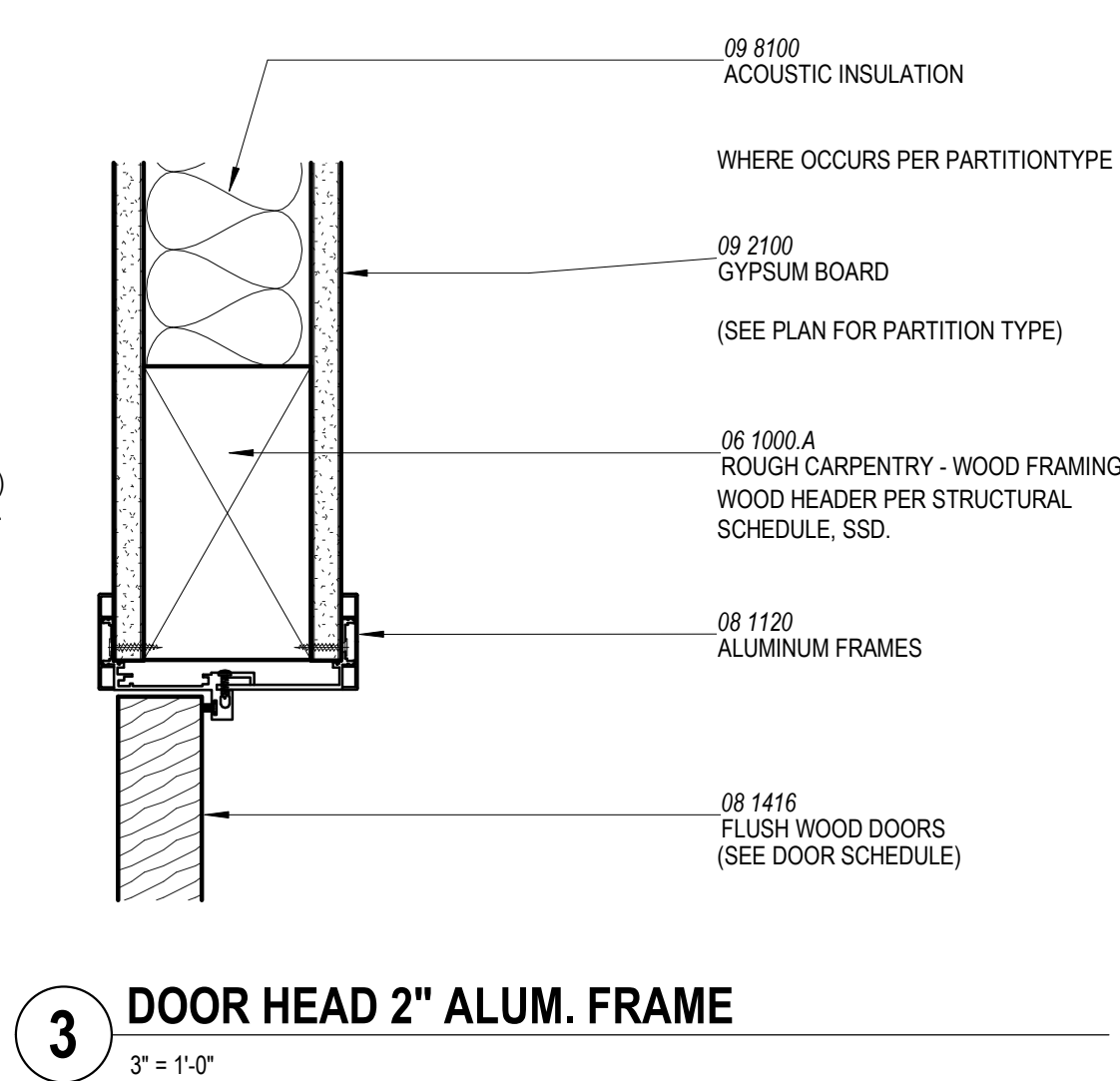
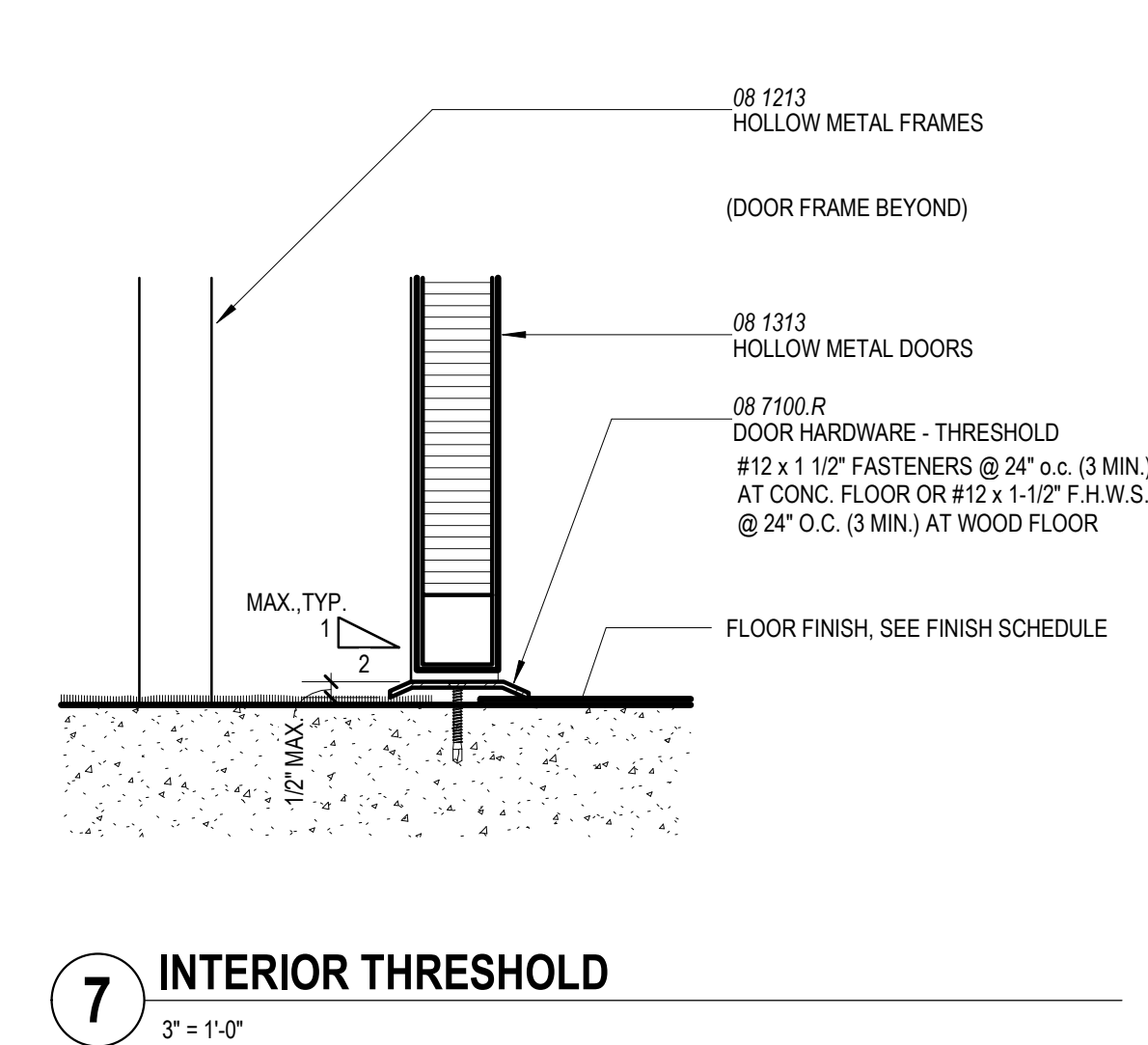
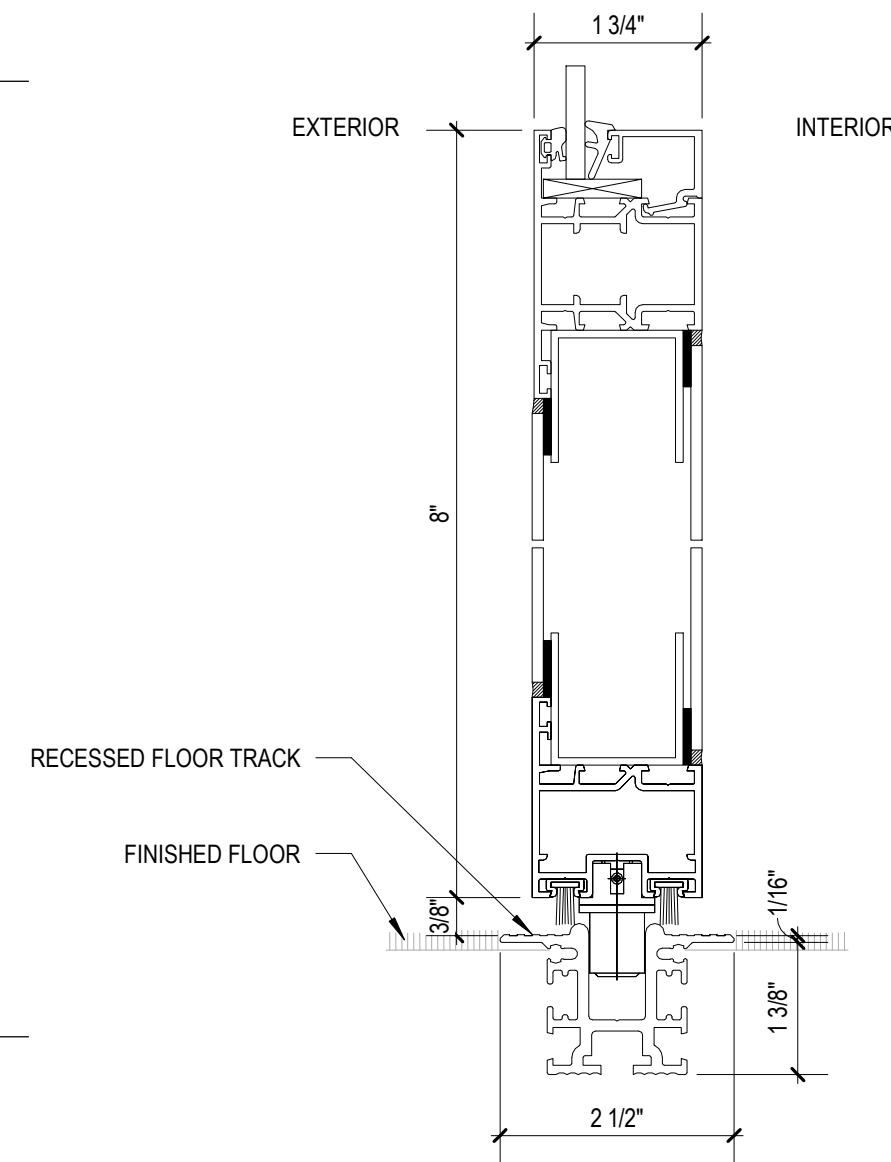
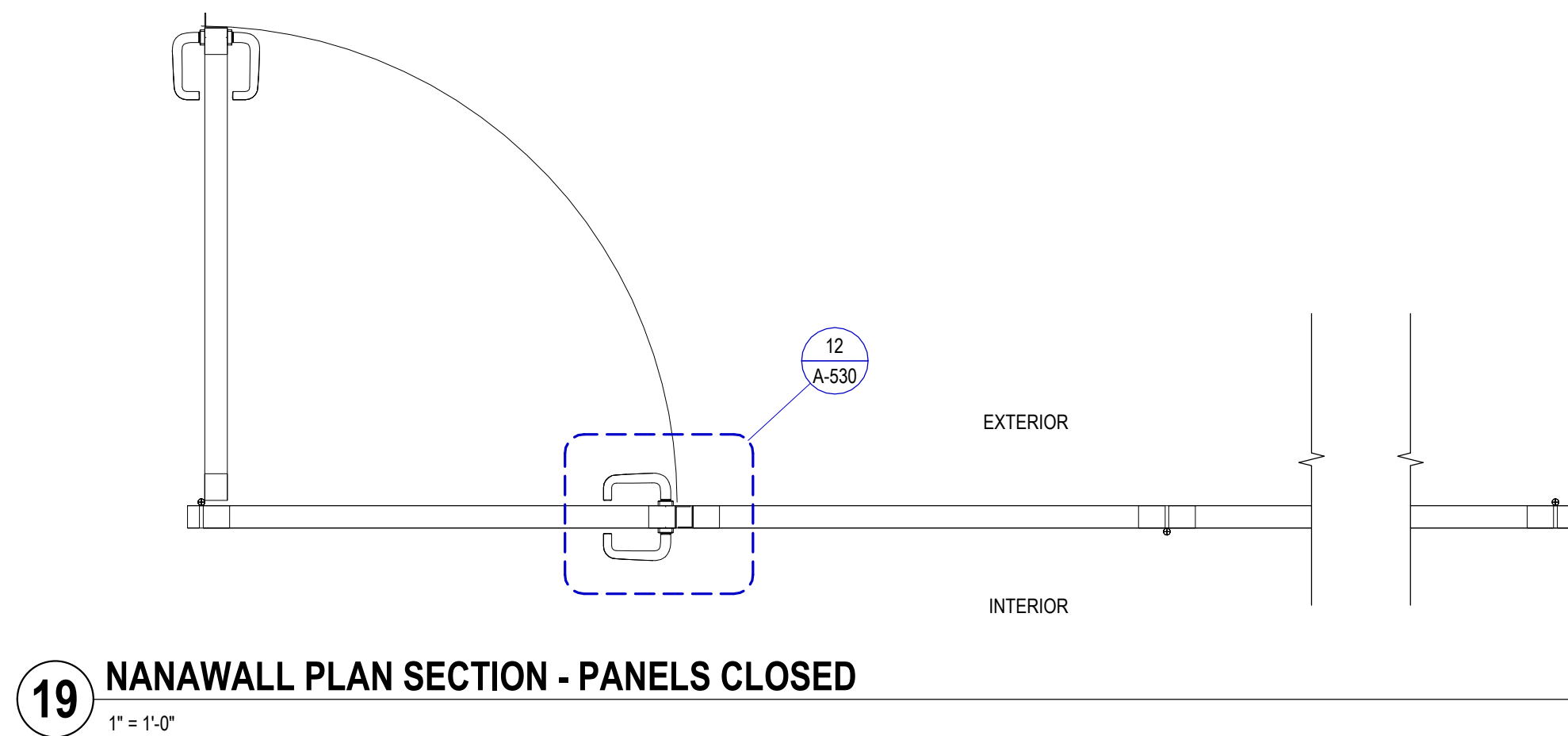
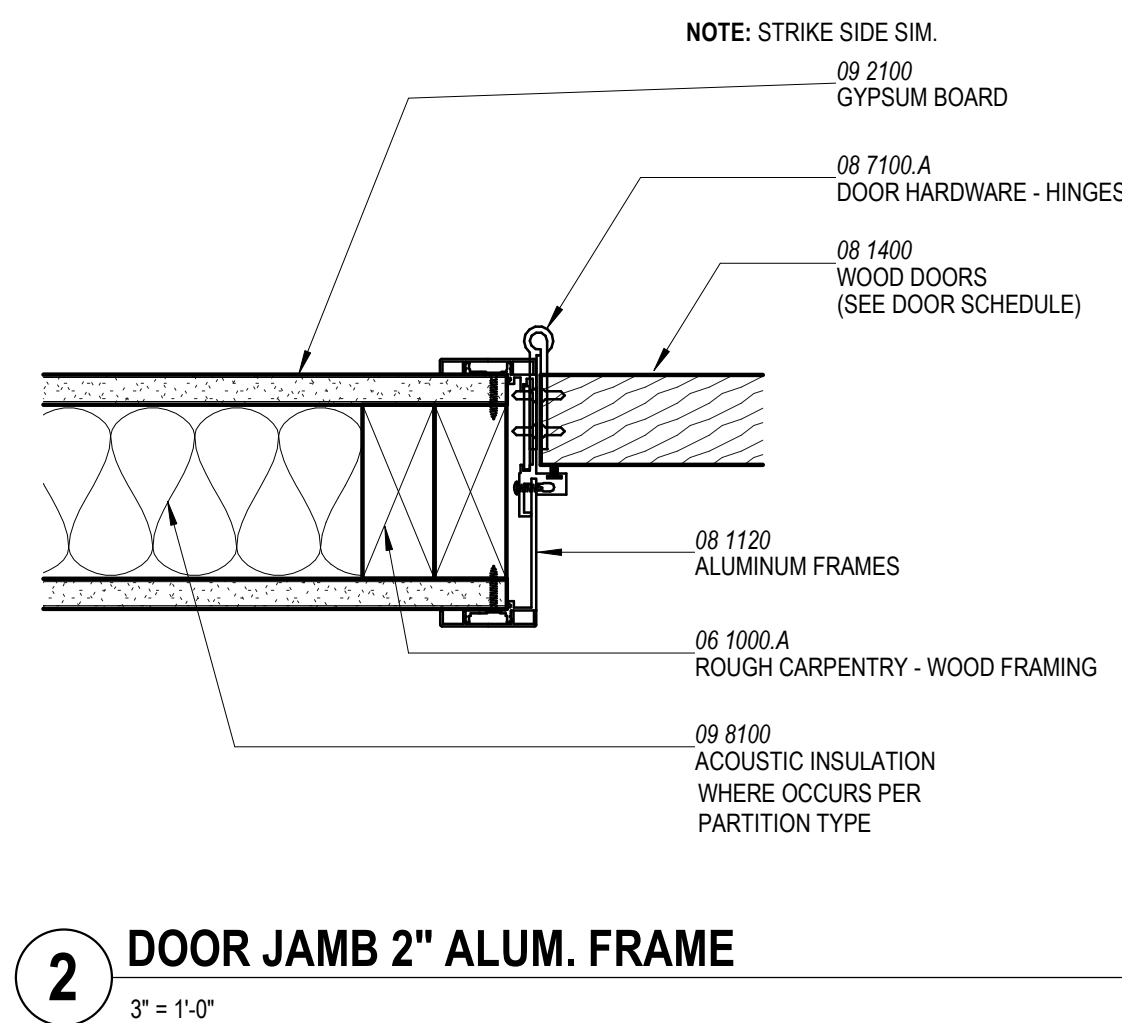
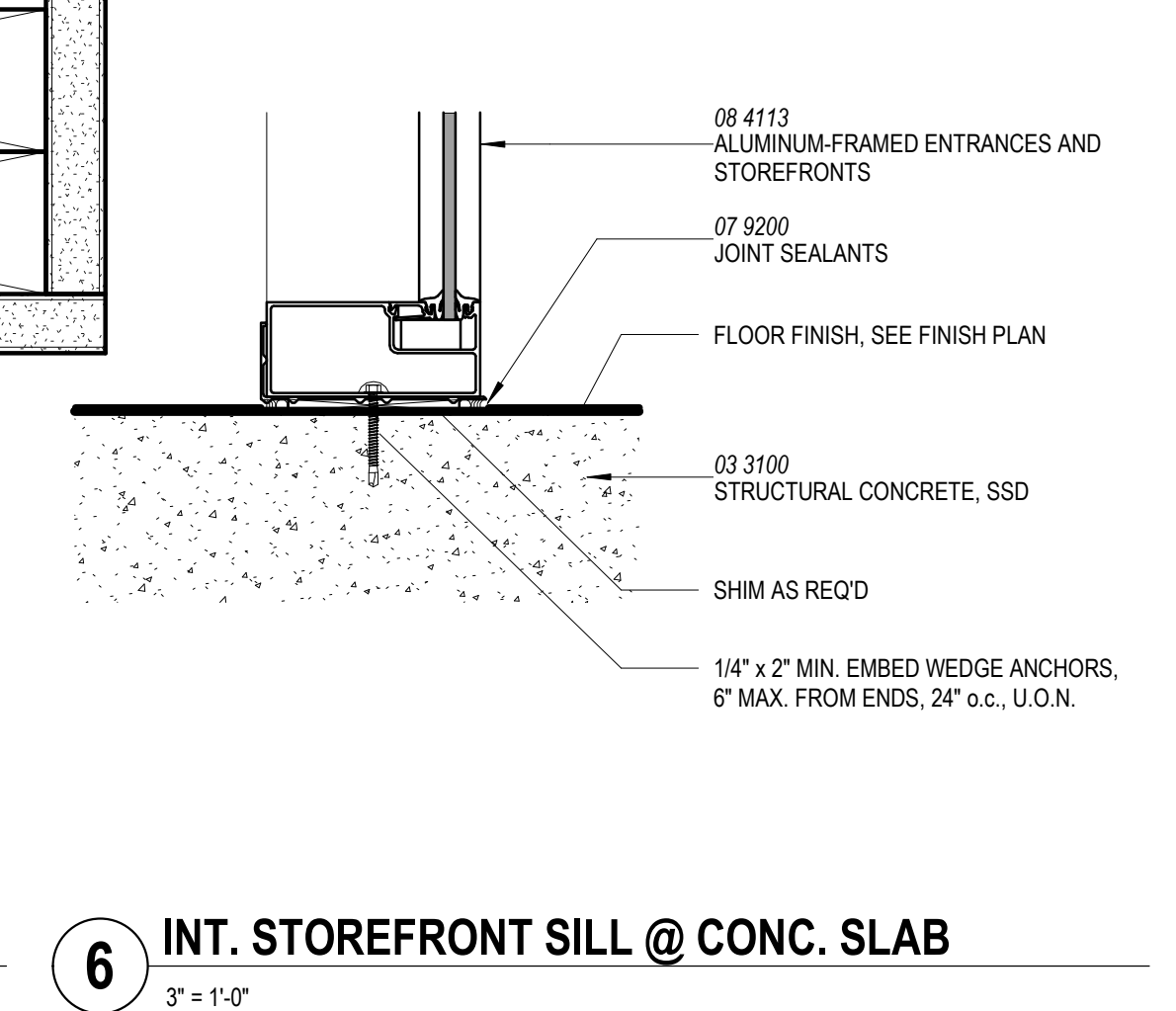
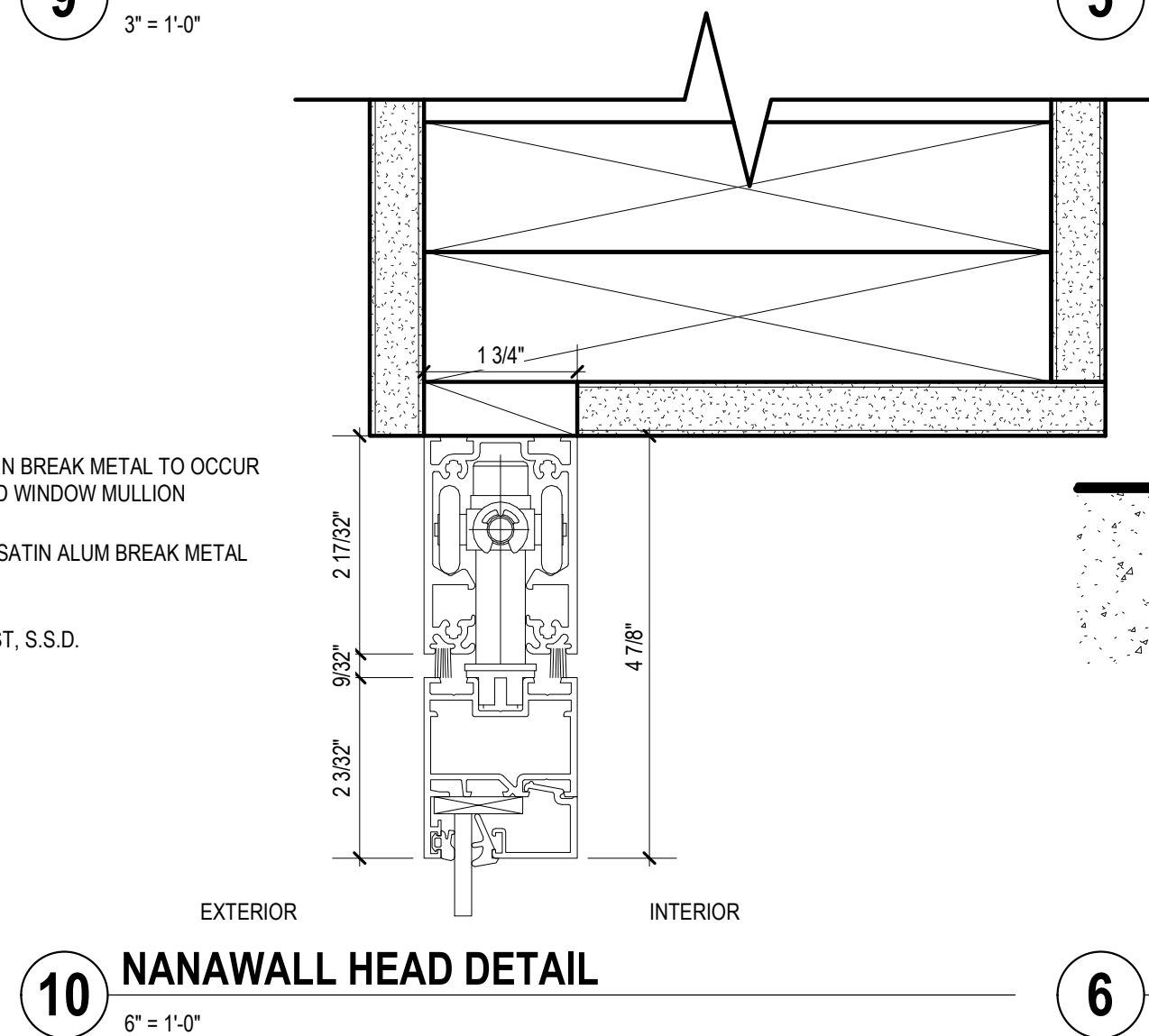
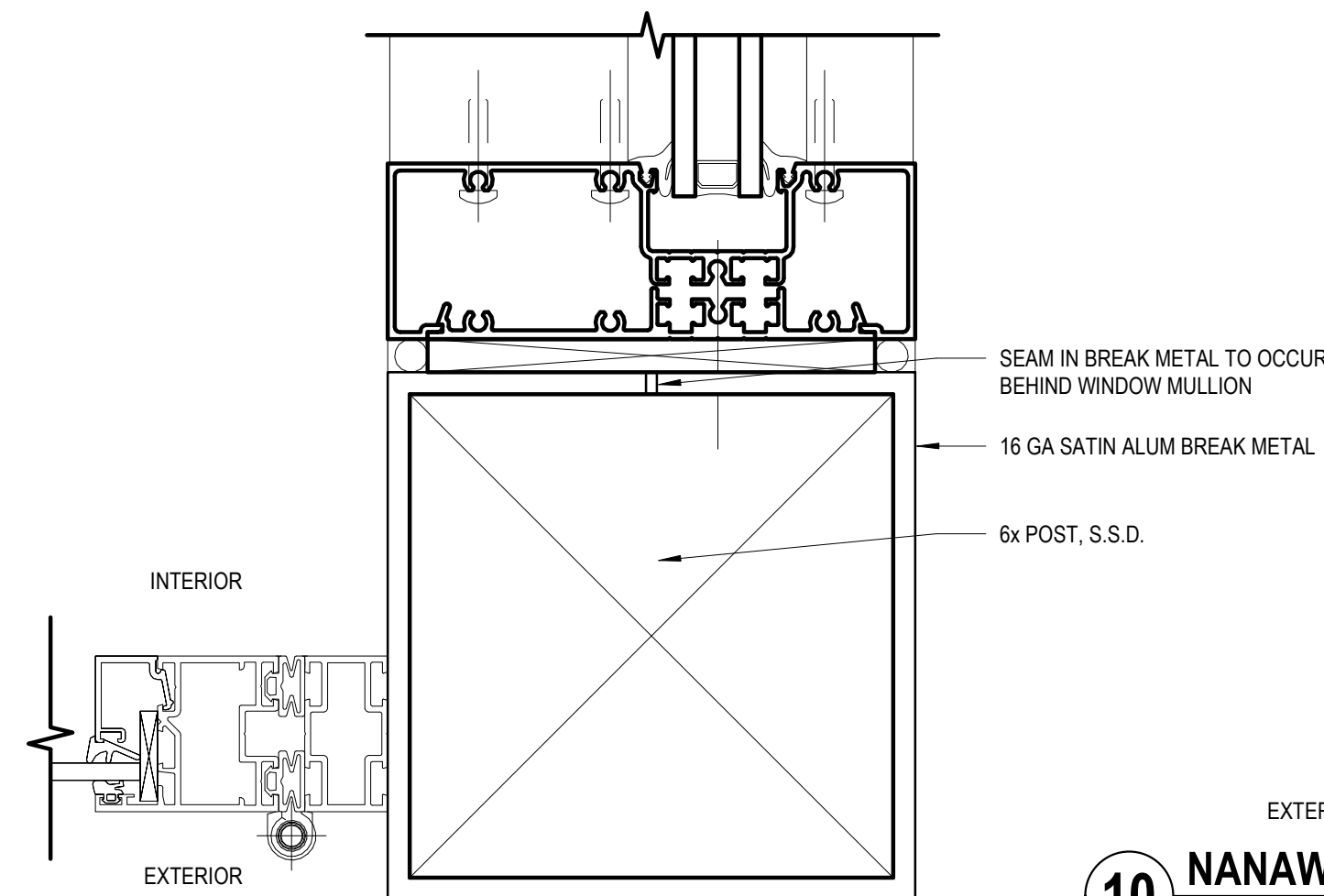
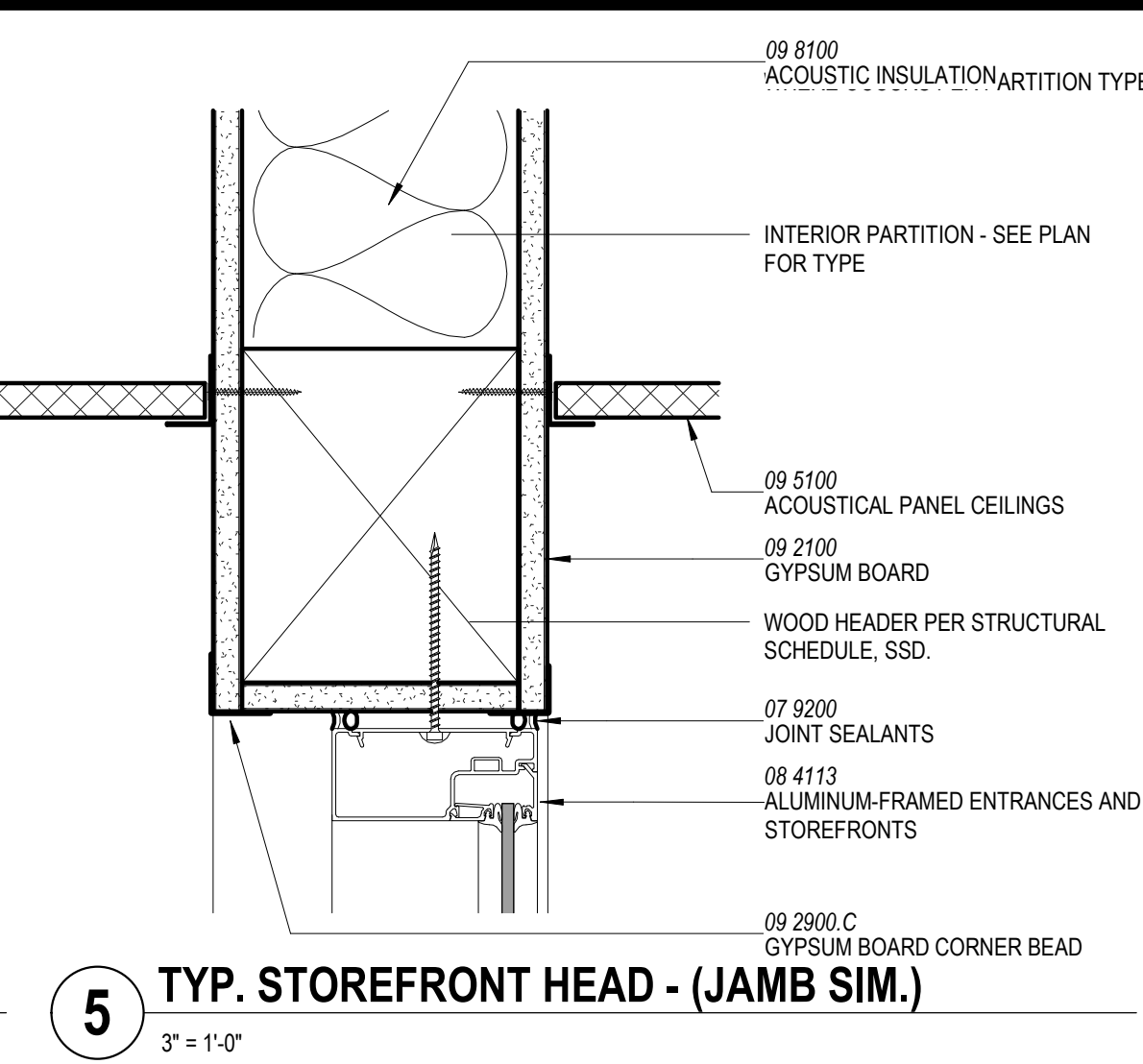
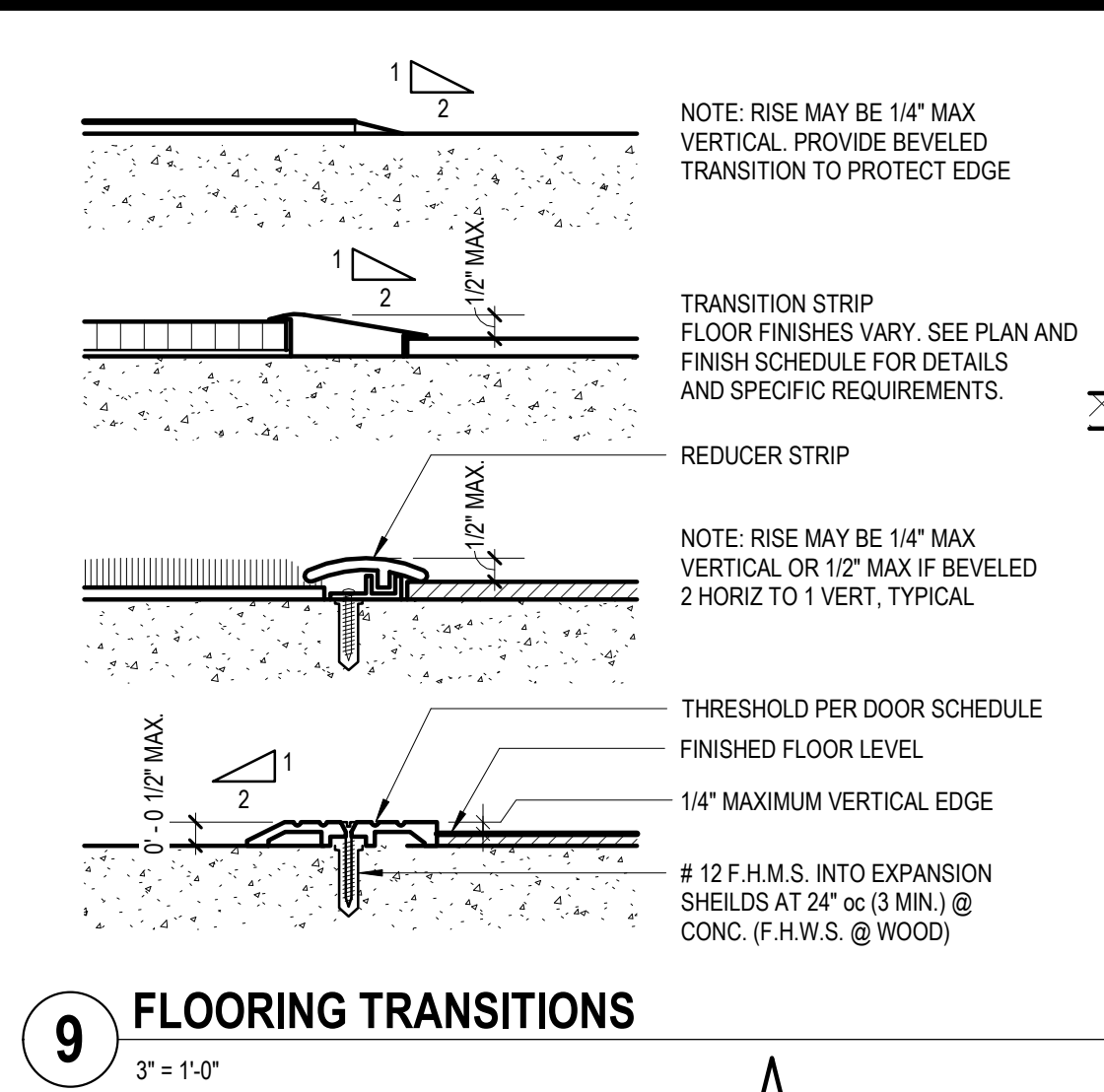
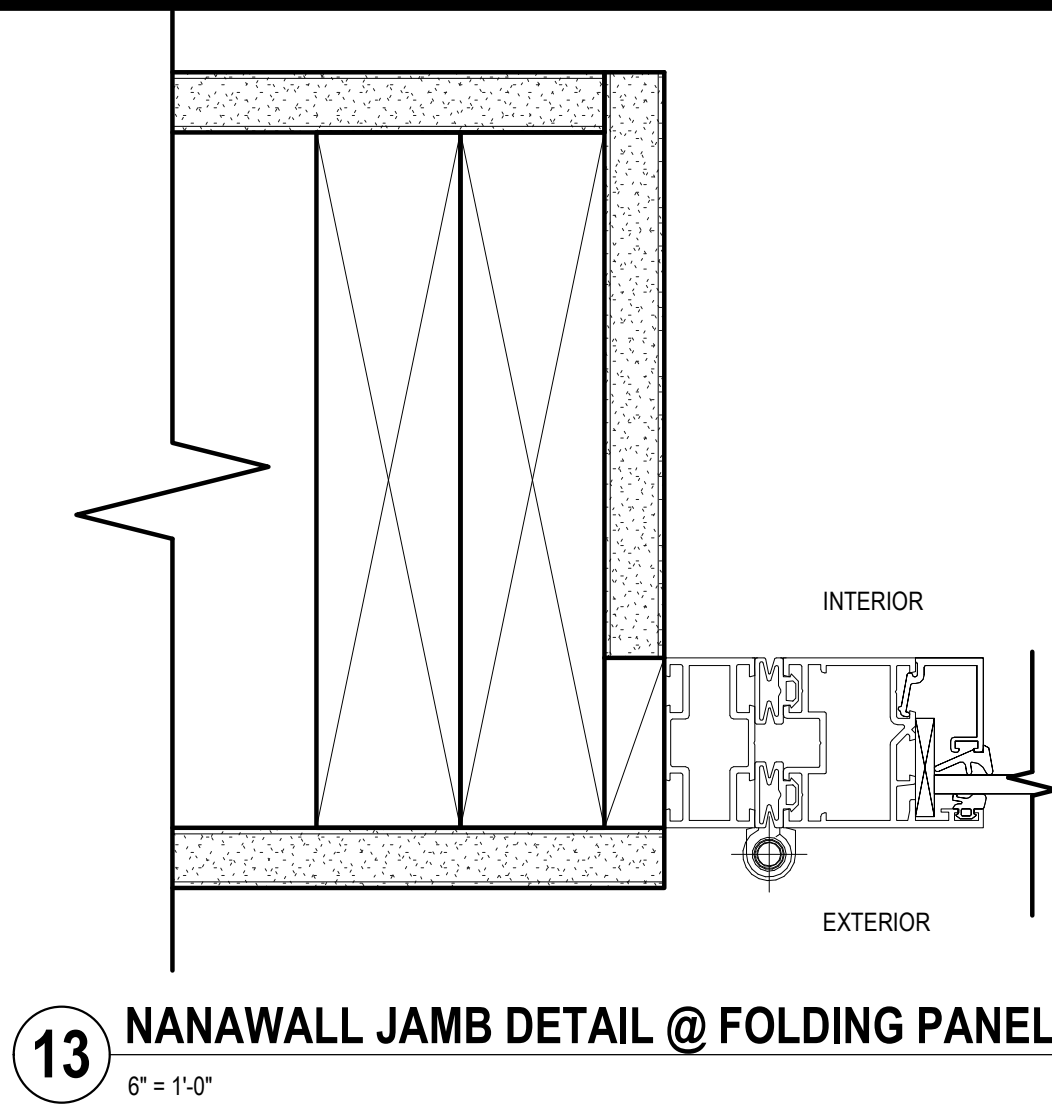
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EXTERIOR DETAILS
A-510



ISSUE FOR
CONSTRUCTION

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741 4TH STREET, SANTA
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OPENING DETAILS

A-530

ABBREVIATIONS

AC	ALTERNATING CURRENT	KV	KILOVOLT
ANN	ANNUNCIATOR	KVA	KILOVOLT - AMPERE
AM	AMMETER	KW	KILOWATT
A OR AMP	AMPERE	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	MAX	MAXIMUM
APPROX	APPROXIMATELY	MCC	MOTOR CONTROL CENTER
ARCH	ARCHITECTURAL	MCP	MOTOR CIRCUIT PROTECTOR
ATS	AUTOMATIC TRANSFER SWITCH	MECH	MECHANICAL
AUTO	AUTOMATIC	MTD	MOUNTED
AUX	AUXILIARY	MTG	MOUNTING
AV	AUDIO VISUAL	NEUT	NEUTRAL
BLDG	BUILDING	(N)	NEW
C	CLOCK OR CONDUIT	NC	NORMALLY CLOSED
CAB	CABINET	NIC	NOT IN CONTRACT
CAP	CAPACITOR	No	NUMBER
CAT	CATALOG	NO	NORMALLY OPEN
CB	CIRCUIT BREAKER	NOM	NOMINAL
CCTV	CLOSED CIRCUIT TELEVISION	NP	NAMEPLATE
CLF	CURRENT LIMITING FUSE	NTS	NOT TO SCALE
CLG	CEILING	OC	+6" OVERCOUNTER OR BACKSPLASH
CKT	CIRCUIT	OD	OUTSIDE DIAMETER
COMB	COMBINATION	OH	OVERHEAD
CONC	CONCRETE	OL	OVERLOAD
CONN	CONNECTION	P	POLE
CONT	CONTRACTOR	PA	PUBLIC ADDRESS
CONTR	CONTRACTOR	PB	PULL BOX or PUSHBUTTON
CT	CURRENT TRANSFORMER	PF	POWER FACTOR
DB	DECIBEL	PFB	PROVISION FOR FUTURE BREAKER
DC	DIRECT CURRENT	PH	PHASE
DET	DETAIL	PL	PILOT LIGHT
DIA	DIAMETER	PNL	PANELBOARD
DIAG	DIAGRAM	PR	PAIR
DIM	DIMENSION	PRI	PRIMARY
DISC	DISCONNECT	PVC	POLYVINYL CHLORIDE
DIST	DISTRIBUTION	REC	RECESSED or RECEPTACLE
DIV	DIVISION	REF	REFERENCE
DM	DAMPER MOTOR	REG	REGULATOR
DN	DOWN	REQD	REQUIRED
DPDT	DOUBLE POLE DOUBLE THROW	REV	REVISION
DPST	DOUBLE POLE SINGLE THROW	RM	ROOM
DWG	DRAWING	R	REMOVE AND REINSTALL
EA	EACH	SCHED	SCHEDULE
EC	ELECTRICAL CONTRACTOR	SD	SMOKE DETECTOR
ELECT	ELECTRICAL	SEC	SECONDARY or SECURITY
EL	ELEVATION	SN	SOLID NEUTRAL
EM	EMERGENCY	SOL	SOLENOID
ENCL	ENCLOSURE	SP	SPARE
EQUIP	EQUIPMENT	SPC	SPACE
EW	ELECTRIC WATER COOLER	SPDT	SINGLE POLE DOUBLE THROW
EW	ELECTRIC WATER HEATER	SPST	SINGLE POLE SINGLE THROW
(E)	EXISTING TO REMAIN	SPEC	SPECIFICATION
EXP	EXPOSED	SUPV	SUPERVISORY
FA	FIRE ALARM	SQ.FT.	SQUARE FOOT
FC	FOOTCANDLE	STA	STATION
FIXT	FIXTURE	STD	STANDARD
FIG	FIGURE	SUSP	SUSPENDED
FL	FLOOR	SW	SWITCH
FLA	FULL LOAD AMPERE	SWBD	SWITCHBOARD
FLEX	FLEXIBLE	SWGR	SWITCHGEAR
FLUOR	FLUORESCENT	SYNC	SYNCHRONIZATION
FT	FOOT OR FEET	SYST	SYSTEM
FUT	FUTURE	T or TEL	TELEPHONE
GEN	GENERATOR	TEMP	TEMPERATURE
GFI	GROUND FAULT	TOL	THERMAL OVERLOAD
	CIRCUIT INTERRUPTER	TPS	TWISTED PAIR SHIELDED
HGT	HEIGHT	TRANS	TRANSFORMER
HID	HIGH INTENSITY DISCHARGE	TTC	TELEPHONE TERMINAL CABINET
HORIZ	HORIZONTAL	TV	TELEVISION
HP	HORSEPOWER	TYP	TYPICAL
HTR	HEATER	UG	UNDERGROUND
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	UH	UNIT HEATER
	HIGH VOLTAGE	UON	UNLESS OTHERWISE NOTED
HV	HERTZ	UV	UNIT VENTILATOR
HZ	HERTZ	V	VOLT
IMP	IMPEDANCE	VA	VOLT AMPERE
IN	INCH OR INCHES	VERT	VERTICAL
INCAND	INCANDESCENT	VEST	VESTIBULE
JB	JUNCTION BOX	VM	VOLTMETER
		VR	VERMIN RESISTANT
		VOL	VOLUME
		W	WATT
		WP	WEATHER PROOF

GENERAL NOTES

- A VISIT TO THE SITE IS REQUIRED OF ALL BIDDERS PRIOR TO SUBMISSION OF BID. ALL BIDDERS WILL BE HELD TO HAVE FAMILIARIZED THEMSELVES WITH ALL DISCERNIBLE CONDITIONS AND NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK REQUIRED BECAUSE OF THESE CONDITIONS WHETHER SPECIFICALLY MENTIONED OR NOT.
- WHERE NOTED AS OWNER-SUPPLIED ON DRAWINGS, THE CONTRACTOR SHALL RECEIVE, INSTALL AND CONNECT EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. PRIOR TO INSTALLATION OF OWNER-SUPPLIED EQUIPMENT, CONTRACTOR SHALL INSPECT/TEST EQUIPMENT AND INFORM THE PROJECT MANAGER OF ANY DEFECTS. FAILURE TO DO SO SHALL MEAN THAT THE EQUIPMENT IS IN GOOD WORKING CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION, STARTUP AND TESTING OF SUCH EQUIPMENT.
- GROUND ALL PIPES, CONDUITS, DUCTS AND ALL OTHER METAL OBJECTS THAT PENETRATE THROUGH ANY OF THE PERIMETER WALLS OF THE PROJECT AREA.
- THE DRAWINGS AND SPECIFICATIONS OF OTHER DISCIPLINE SHALL BE USED FOR CONSTRUCTION OF THE DESCRIBED FACILITIES.
- PROVIDE 12" MINIMUM SEPARATION BETWEEN POWER AND DATA WIRING.
- PROVIDE A GREEN INSULATED GROUNDING CONDUCTOR IN ALL POWER CIRCUITS. SIZE SHALL BE IN ACCORDANCE WITH CEC TABLE 250-122 UNLESS OTHERWISE NOTED.
- VERIFY THE LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. PRIOR TO ROUGH-IN AND FINAL PLACEMENT OF ALL OUTLETS AND SWITCHES. COORDINATE FINAL OUTLET LOCATIONS WITH THE ARCHITECT. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILING AND THE LIKE, AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO THE OWNER.
- THIS SHEET INDICATES A STANDARD LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PROJECT DRAWINGS.
- LINES OR OTHER SERVICES THAT ARE DAMAGED AS A RESULT OF THIS WORK SHALL PROMPTLY BE REPAIRED AT NO EXPENSE TO THE OWNER AND TO THE COMPLETE SATISFACTION OF THE OWNER.
- REFER TO THE SPECIFICATION SECTION 260100 FOR SEISMIC BRACING REQUIREMENTS.
- REFER TO THE SPECIFICATION SECTION FOR PREPARATION AND SUBMITTAL REQUIREMENTS OF COORDINATION DRAWINGS.
- CONDUCTORS FOR 600V SYSTEMS AND BELOW SHALL BE COPPER, #12 AWG MINIMUM. #12 AND BELOW SHALL BE SOLID, LARGER THAN #12 SHALL BE STRANDED. INSULATION SHALL BE THWN FOR WET LOCATIONS AND THHN FOR DRY LOCATIONS.
- PENETRATING FIRE RATED WALLS: INSTALL CONDUIT IN CONDUIT SLEEVE OR FRAMED OPENING. SEAL ALL ELECTRICAL PENETRATIONS WITH UL LISTED FIRE STOP ASSEMBLY TO MAINTAIN RATING OF THE WALLS. ALL PENETRATION SEALS SHALL COMPLY WITH THE LATEST EDITION OF THE UL FIRE RESISTANCE DIRECTORY. FIRE RATING INTEGRITY MUST BE PRESERVED.
- UTILITY OUTAGE: NOT LESS THAN TEN WORKING DAYS PRIOR TO A REQUIRED UTILITY (POWER, TEL, NET) OUTAGE, NOTIFY AND OBTAIN APPROVAL IN WRITING OF SAID OUTAGE FROM THE OWNER. NO OUTAGE SHALL BE ACCOMPLISHED PRIOR TO THE RECEIPT OF APPROVAL. LOCK OUT AND RED TAG THE APPROPRIATE CIRCUIT BREAKER, SWITCH, ETC. THE RED TAG SHALL INDICATE WHEN THE OUTAGE WILL BE TERMINATED, AND A TELEPHONE NUMBER TO CONTACT REGARDING THE OUTAGE. THE TAG SHALL ALSO WARN PEOPLE NOT TO RE-ENERGIZE THE CIRCUIT/SYSTEM BECAUSE OF POTENTIAL DANGER TO PERSONNEL AND EQUIPMENT. ALL WORK ASSOCIATED WITH ANY POWER OUTAGES SHALL BE COMPLETED AFTER NORMAL WORKING HOURS.
- EXISTING WIRING WHERE SHOWN ON THE DRAWINGS IS BASED ON AVAILABLE AS-BUILT DRAWINGS AND FIELD INFORMATION. CONTRACTOR SHALL VERIFY EXISTING INSTALLATIONS AND THE TIME FOR DOING SO SHALL BE INCLUDED IN THE BID.
- ALL NEW RACEWAYS AND CONDUCTORS SHALL BE INSTALLED CONCEALED WHERE POSSIBLE. RACEWAY THROUGH THE EXISTING BUILDING SHALL FOLLOW ESTABLISHED ROUTES AND HEIGHTS.
- ALL EQUIPMENT TO BE INSTALLED OR PERMANENTLY CONNECTED MUST BE LISTED, LABELED OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
- EQUIPMENT AND DEVICE COLOR CODING:
NAMEPLATES AND LABELS-
NORMAL DEVICES: WHITE LABEL WITH BLACK TEXT
NORMAL EQUIPMENT: WHITE LABEL WITH BLACK TEXT
EMERGENCY DEVICE: RED DEVICE OR COVERPLATE, RED LABEL WITH BLACK TEXT
EMERGENCY EQUIPMENT: RED LABEL WITH BLACK TEXT
- ALL UNDERGROUND CONDUIT ENTERING BUILDING WALLS, VAULTS OR BOXES SHALL BE SLOPED AWAY FROM THE BOX OR WALL TO MINIMIZE WATER DRAINING INTO BUILDING OR BOX.
- ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH LOCAL DISCONNECTS. ALL LOCAL MOTOR STARTERS SHALL BE PROVIDED WITH A LOCK-OUT STOP PUSHBUTTON.
- PROVIDE LIGHTING CONTROL SHOP DRAWINGS SUITABLE FOR REVIEW BY ARCHITECT. PROVIDE SUBMITTAL DRAWINGS FOR REVIEW BEFORE ORDERING ANY COMPONENTS. PROVIDE UNIT PRICES FOR ADDITIONAL DEVICES: LIGHTING CONTROL DEVICES: LIGHTING CONTROL PANEL (IF ANY), OCCUPANCY SENSORS, PHOTOCELLS, PHOTOSENSORS, TIMER SWITCHES, LIGHTING RELAY PANELS (IF ANY), ETC. SHALL BE PROVIDED IN ONE SUBMITTAL PACKAGE FOR A COMPLETE LIGHTING CONTROL SYSTEM.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES, SPEAKERS, SMOKE DETECTORS AND OTHER CEILING MOUNTED DEVICES. LIGHTING FIXTURE ORIENTATION SHALL BE AS PER REFLECTED CEILING PLAN.
- MINIMUM CONDUIT SIZE SHALL BE 3/4".

FIRE ALARM SYMBOLS LIST

	FIRE ALARM ADDRESSABLE MANUAL STATION
	FIRE ALARM POST INDICATOR SWITCH CONNECTION
	FIRE ALARM CONTROL PANEL (ADDRESSABLE)
	FIRE ALARM ALARM ANNUNCIATOR
	FIRE ALARM HORN/STROBE XX DENOTES CANDELA, +90° AFF, UON
	FIRE ALARM ADDRESSABLE SMOKE DETECTOR
	FIRE ALARM ADDRESSABLE DUCT SMOKE DETECTOR
	FIRE ALARM FIRE SMOKE DAMPER UNIT (MECHANICAL SYSTEMS)
	FIRE ALARM ADDRESSABLE TAMPER SWITCH CONNECTION
	FIRE ALARM WATER FLOW SWITCH CONNECTION
	FIRE ALARM STROBE, CEILING MOUNTED, 15cd, 30cd, 75cd, 110cd, +90° AFF, UON
	FIRE ALARM STROBE, WALL MOUNTED, 15cd, 30cd, 75cd, 110cd, +90° AFF, UON

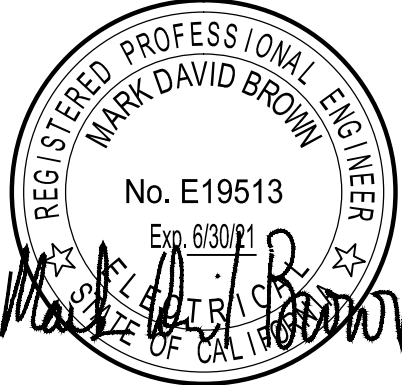
Sheet Number	Sheet Title
FA-001	SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND DRAWING LIST
FA-121	FIRST FLOOR PLAN - FIRE ALARM
FA-122	SECOND FLOOR PLAN - FIRE ALARM
FA-161	ROOF PLAN - FIRE ALARM

DRAWING LIST



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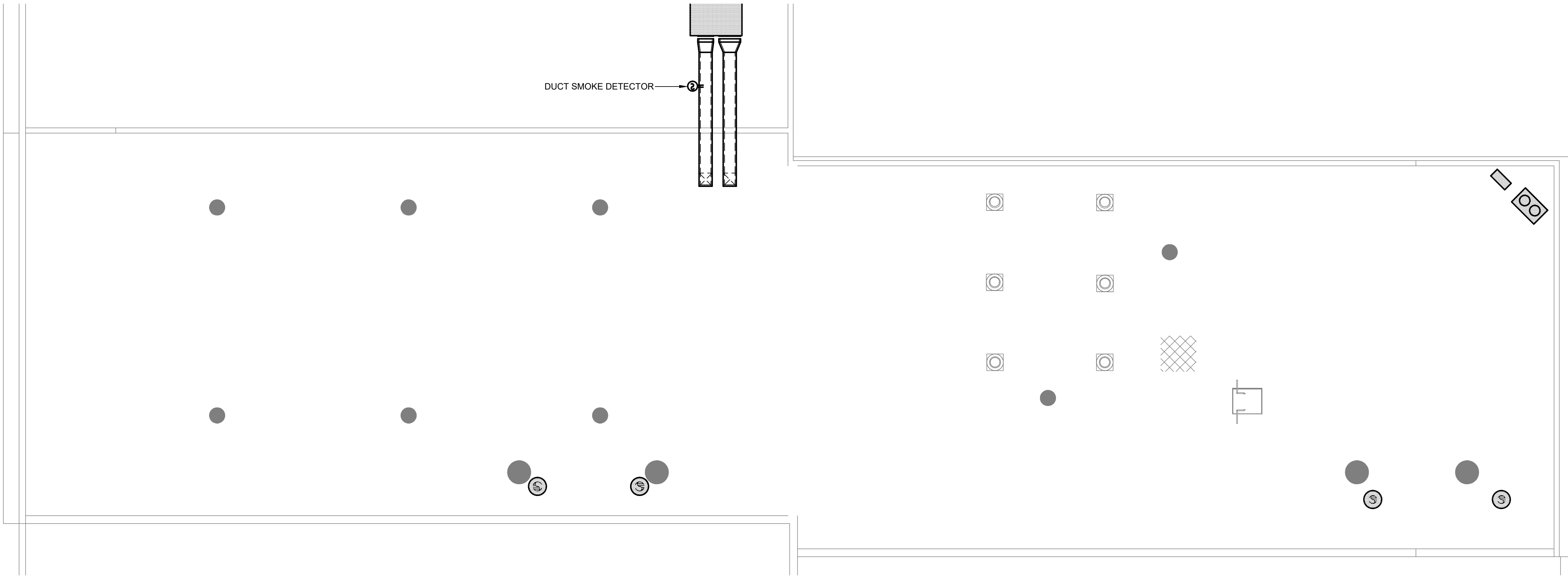
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SYMBOLS, ABBREVIATIONS,
GENERAL NOTES AND DRAWING
LIST

FA-001



1 ROOF PLAN - FIRE ALARM
1/8" = 1'-0"

Logix: DAN EILER
Drawing File: TLC0082FA161.dwg
Plotting Date: 7/23/2019 11:13 AM
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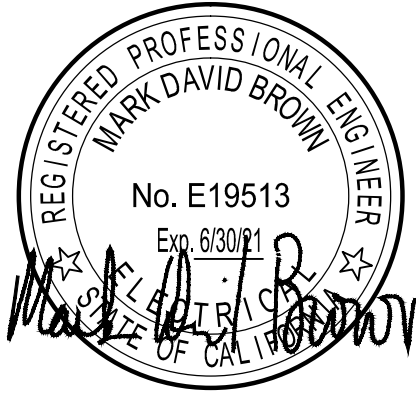
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ROOF PLAN - FIRE ALARM

FA-161

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GENERAL NOTES

A. GENERAL

- EXISTING DUCTWORK AND PIPING ARE SHOWN ONLY WHERE NECESSARY TO ESTABLISH RELATIONSHIP OR CONNECTION POINTS WITH NEW WORK. NOT ALL EXISTING DUCTS, PIPES AND EQUIPMENT ARE SHOWN.
- FOR EXISTING SERVICES AT PROJECT SITE, VERIFY EXACT SIZE AND LOCATION. VERIFY REQUIRED CLEARANCES OF EQUIPMENT TO NEW AND EXISTING MATERIAL AND ELECTRICAL EQUIPMENT.
- RAISE, LOWER, REMOVE, RELOCATE OR REPLACE WITH NEW AND RECONNECT TO EXISTING ALL PIPING AND DUCTWORK AS REQUIRED TO MAINTAIN EXISTING AREAS IN OPERATION DURING CONSTRUCTION.
- VERTICAL AND HORIZONTAL OFFSETS SHOWN IN DUCTS AND PIPES INDICATE THE GENERAL RELATIONSHIP OF THE SYSTEMS. PROVIDE ADDITIONAL OFFSETS SIMILAR TO THOSE SHOWN AS REQUIRED TO SUIT CONSTRUCTION AND WORK DONE BY OTHER TRADES.
- INSTALL ALL VALVES, CONTROLS, DAMPERS, ETC., IN ACCESSIBLE LOCATIONS. PROVIDE ADEQUATELY SIZED ACCESS DOORS WHERE REQUIRED.
- INSTALL ALL PIPING AND DUCTWORK TO AVOID ARCHITECTURAL FRAMING, STRUCTURAL MEMBERS AND OTHER CONSTRUCTION. COORDINATE DUCT AND PIPING LAYOUT WITH ALL OTHER CONTRACT DIVISIONS OF WORK BEFORE FABRICATION AND INSTALLATION.
- ALL EXISTING SERVICES TO EXISTING BUILDINGS MUST BE KEPT OPERATING DURING CONSTRUCTION. SHUTDOWN OF ANY BUILDING SYSTEM SHALL ONLY BE DONE AT TIMES ACCEPTABLE TO THE OWNER AND CONFIRMED IN WRITING. GIVE THE OWNER 48 HOURS ADVANCE NOTICE FOR THE SCHEDULING OF SHUTDOWNS. PROVIDE SUPPORT AND PROTECTION FOR ALL EXISTING PIPING AND/OR EQUIPMENT TO MAINTAIN THEM IN SERVICE THROUGHOUT CONSTRUCTION OR UNTIL THEIR SCHEDULED SHUTDOWN TIME.
- REPAIR OR REPLACE EXISTING EQUIPMENT AND SERVICES WHERE THESE ARE DAMAGED DUE TO THE CONTRACTOR'S ACTIVITIES, TO THE SATISFACTION OF THE OWNER.

B. HVAC

- EXAMINE ARCHITECTURAL DRAWINGS TO ENSURE THAT ALL DUCTS CROSSING FIRE AND/OR SMOKE SEPARATIONS ARE EQUIPPED WITH FIRE AND/OR SMOKE DAMPERS. NOTIFY THE ARCHITECT WHERE ADDITIONAL DAMPERS ARE REQUIRED.
- PROVIDE REHEAT COIL TRANSITIONS AND TRANSITIONS TO SMOKE AND/OR FIRE DAMPERS AS REQUIRED.
- LOCATE CEILING AIR OUTLETS ACCORDING TO THE ARCHITECTURAL REFLECTED CEILING PLANS. CONFIRM CEILING TYPES SHOWN ON ARCHITECTURAL DRAWINGS AND INSTALL CEILING TYPE SUPPLY AND RETURN OR EXHAUST OUTLETS TO SUIT.
- ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
- WHERE FLEXIBLE DUCT CONNECTORS ARE USED, THEY SHALL BE EQUAL TO OR GREATER THAN CROSS-SECTIONAL AREA OF DUCTS SHOWN. FOR MAXIMUM ALLOWABLE LENGTH SEE SPECIFICATION SECTION 15880, "DUCTWORK."
- PROVIDE TURNING VANES IN ALL SQUARE ELBOWS. RADIUS ELBOWS WITHOUT TURNING VANES SHALL BE USED IN ALL EXHAUST AND RETURN DUCTS EXCEPT WHERE SHOWN OR NOTED ON DRAWINGS. WHERE SQUARE ELBOWS ARE SHOWN IN EXHAUST AND RETURN DUCTS, ACCESS DOORS SHALL BE PROVIDED IMMEDIATELY UPSTREAM OF VANES.
- VOLUME DAMPERS SHALL BE INSTALLED IN ALL BRANCH SUPPLY AND EXHAUST OR RETURN DUCTS. LOCATE DAMPERS AS FAR AS POSSIBLE FROM OUTLETS.

C. PLUMBING AND PIPING

- VERIFY EXACT INVERT ELEVATION OF POINTS OF CONNECTION TO EXISTING SERVICE PRIOR TO INSTALLATION OF NEW BRANCH, MAINS OR SERVICE RELOCATION.
- PROVIDE A VALVED DRAIN AT THE LOW POINT IN EACH PIPING SYSTEM.
- VENT ALL HIGH POINTS IN HEATING WATER AND CHILLED WATER PIPING AS SPECIFIED.
- PROVIDE CONDENSATE DRIP TRAP ASSEMBLIES AT THE ENDS OF STEAM MAINS, BRANCHES, AND AT ALL LOW POINTS IN THE STEAM LINES.

DRAWING LIST

Sheet Number	Sheet Title
M-001	LEGEND, SYMBOLS, GENERAL NOTES & DRAWING LIST
M-111	FIRST FLOOR DEMOLITION PLAN
M-112	SECOND FLOOR DEMOLITION PLAN
M-113	ROOF DEMOLITION PLAN
M-121	FIRST FLOOR PLAN - HVAC
M-122	SECOND FLOOR PLAN - HVAC
M-161	ROOF PLAN - HVAC
M-301	SECTIONS
M-401	DETAILS
M-402	DETAILS
M-403	DETAILS
M-404	DETAILS
M-501	SCHEDULES
M-502	SCHEDULES
M-503	SCHEDULES
M-601	PIPING DIAGRAMS
M-701	CONTROL DIAGRAMS

SINGLE LINE DUCT LEGEND			
NAME OF FITTING	SINGLE LINE PRESENTATION	DOUBLE LINE PRESENTATION	
		SUPPLY	RETURN/EXHAUST
ROUND ELBOW			
MITERED ELBOW			
VELOCITY SPLIT			
VELOCITY SPLIT			
VERTICAL SPLIT			
VERTICAL SPLIT			
TAP-IN			NOT USED
TAP-IN			
TRANSITION (USUALLY - NOT SHOWN ON SINGLE LINE			

SYMBOLS

Some of the symbols shown may not be used on this project.

GENERAL

- EXISTING TO REMAIN
- TO BE REMOVED
- NEW WORK
- HUMIDISTAT
- HYGROMETER
- CARBON MONOXIDE SENSOR
- CARBON DIOXIDE SENSOR
- THERMOSTAT
- POINT OF CONNECTION

TAGS

- EQ-# EQUIPMENT TAG - TEXT ONLY
- EQ # EQUIPMENT TAG
- EQ-# EQ-# KITCHEN EQUIPMENT TAGS
- ABC # PLUMBING RISER TAG
- # SHEET NOTE TAG
- # ALTERNATE SHEET NOTE TAG
- Room # ROOM AIR BALANCE TAG
- CFM SUPPLY CFM
- CFM EXHAUST CFM
- E, P, N PRESSURE (EQUAL, POSITIVE, NEGATIVE)
- CFM TAG NECK (TYP.) DIFFUSER / GRILLE TAG

HVAC DUCTWORK

- REHEAT COIL
- FLEXIBLE CONNECTION - DUCT
- LINED DUCTWORK (DOUBLE LINE)
- LINED & LAGGED (DOUBLE LINE)
- LINED DUCTWORK (SINGLE LINE)
- LINED & LAGGED (SINGLE LINE)
- SUPPLY AIR DUCT RISER
- SUPPLY AIR DUCT DROP
- RETURN AIR DUCT RISER
- RETURN AIR DUCT DROP
- EXHAUST AIR DUCT RISER
- EXHAUST AIR DUCT DROP
- ROUND DUCT RISER
- ROUND DUCT DROP
- ACCESS DOOR
- ROUND DUCT
- SQUARE TO ROUND DUCT TRANSITION
- MOTORIZED DAMPER
- VOLUME DAMPER
- FIRE DAMPER
- COMBINATION FIRE AND SMOKE DAMPER
- ROUND TO RECTANGULAR TAP
- FLEXIBLE DUCT - SINGLE LINE

HVAC PIPING

- CHR CHILLED WATER RETURN
- CHS CHILLED WATER SUPPLY
- CD CONDENSATE DRAIN
- CWR CONDENSER WATER RETURN
- CWS CONDENSER WATER SUPPLY
- HR HEATING HOT WATER RETURN
- HS HEATING HOT WATER SUPPLY
- RHG REFRIGERANT HOT GAS
- RL REFRIGERANT LIQUID
- RS REFRIGERANT SUCTION

PUMPS

- PUMP - 01 FAN
- PUMP - 01 FAN

FIRE PROTECTION

- F FIRE MAIN
- SP FIRE SPRINKLER
- DSP DRY STANDPIPE
- WSP WET STANDPIPE

PIPING & FITTINGS

- DIRECTION AND FLOW
- PIPE UP - TEE & ELBOW
- PIPE DOWN TEE & ELBOW
- BJ BALL JOINT
- CAP OR PLUGGED FITTING
- CO CLEANOUT
- EJ EXPANSION JOINT
- FLANGE
- FLEXIBLE CONNECTION
- PETE'S PLUG
- PIPE ANCHOR
- PIPE GUIDE
- POINT OF CONNECTION
- P-TRAP
- REDUCER
- STRAINER
- UNION
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC HOT WATER RETURN
- NATURAL GAS
- VENT
- WASTE
- STORM DRAIN LEADER (ARCHITECTURAL DOWNSPOUT, SEE ARCH. DWGS.)
- L

VALVES

- ANGLE OR STOP CHECK VALVE
- BFP BACKFLOW PREVENTER
- RBPB REDUCE PRESSURE BACKFLOW PREVENTER
- BV BALANCING VALVE
- BLV BALL VALVE
- BFV BUTTERFLY VALVE
- CV CHECK VALVE
- CV CONTROL VALVE TWO WAY
- CV CONTROL VALVE THREE WAY
- GV GAS COCK
- GLV GATE VALVE
- GLV GLOBE VALVE
- HB HOSE BIBB
- NEEDLE VALVE
- PRV PRESSURE REDUCING VALVE ASSEMBLY
- RELIEF VALVE
- SOLENOID VALVE

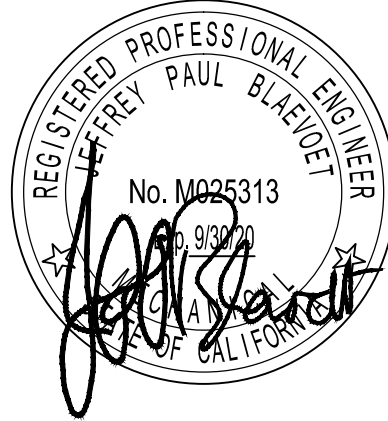
DRAINS & CLEANOUTS

- AD AREA DRAIN
- FCO FLOOR CLEANOUT
- FD FLOOR DRAIN
- FS FLOOR SINK

MECHANICAL LEGEND

(SOME OF THE ABBREVIATIONS AND SYMBOLS SHOWN MAY NOT BE USED ON THIS PROJECT.)

A(*) COMPRESSED AIR (*PSI WHERE REQUIRED)	DT DRIP TRAP	HB HOSE BIBB	MPS MEDIUM PRESSURE STEAM	SSK SERVICE SINK
AD AREA DRAIN	(E) EXISTING	HC HEATING COIL	(N) NEW	ST STEAM TRAP
AP ACCESS PANEL	EA EXHAUST AIR	HPDT HIGH PRESSURE DRIP TRAP	NC NORMALLY CLOSED	STD STANDARD
BD BOILER BLOW DOWN	EAT ENTERING AIR TEMPERATURE	HPR HIGH PRESSURE CONDENSATE RETURN	NFPA NATIONAL FIRE PROTECTION ASSOCIATION	STL STEEL
BF BOILER FEED	EF EXHAUST FAN	HPS HIGH PRESSURE STEAM	NO NORMALLY OPEN	STR SOUND TRAP
BFP BACKFLOW PREVENTER	EJ EXPANSION JOINT	HR HEATING HOT WATER RETURN	NTS NOT TO SCALE	SV STEAM VENT
BFV BUTTERFLY VALVE	EL ELEVATION	HS HEATING HOT WATER SUPPLY	OA OUTSIDE AIR	SW SPECIAL WASTE
BHP BRAKE/BOILER HORSEPOWER	ENT ENTERING	HTG HEATING	OD OUTSIDE DIMENSION	TCA TEMPERATURE CONTROL AIR
BLV BALL VALVE	ESP ETERNAL STATIC PRESSURE	HV HEATING AND VENTILATING	OSY OUTSIDE STEM AND YOKE	TCV TEMPERATURE CONTROL VALVE
BOD BOTTOM OF DUCT	EWT ENTERING WATER PRESSURE	HVAC HEATING VENTILATING AND AIR CONDITIONING	OV OUTLET VELOCITY	TD TRENCH DRAIN
BT BATH TUB	EXH EXHAUST	HWR DOMESTIC HOT WATER RETURN	PD PUMP DISCHARGE/PRESSURE DROP	TH THERMOMETER
BV BALANCING VALVE	FA FACE AREA	HZ HERTZ	PFF PLUG FOR FUTURE	TR TONS OF REFRIGERATION
BVV BACKWATER VALVE	FC FLEXIBLE CONNECTION	ID INSIDE DIAMETER	PG PRESSURE GAUGE	TS TIP SPEED
C DOMESTIC COLD WATER	FCO FLOOR CLEANOUT	IE INVERT ELEVATION	PLBG PLUMBING	TSP TOTAL STATIC PRESSURE
CB CATCH BASIN	FD FLOOR DRAIN	IFS IN FURRED SPACE	PR PUMP RETURN	TV TURNING VANES
CBI CATCH BASIN INVERT	FDC FIRE DEPARTMENT CONNECTION	IPS IRON PIPE SIZE	PRV PRESSURE REDUCING VALVE	UR URINAL
CBR CATCH BASIN RIM	FDR FIRE DAMPER	IW INDIRECT WASTE	PSI POUNDS PER SQUARE INCH	V SANITARY VENT
CFE CAP FOR FUTURE	FE FIRE EXTINGUISHER	L RAINWATER	PSIG POUNDS PER SQUARE INCH GAUGE	VB VACUUM BREAKER
CFH CUBIC FEET PER HOUR	FEC FIRE EXTINGUISHER CABINET	LAT LEAVING AIR TEMPERATURE/LATENT	RA RETURN AIR	VD VOLUME DAMPER
CFM CUBIC FEET PER MINUTE	FH FIRE HYDRANT	LP LOW PRESSURE	PW PUMP WASTE	VEL VELOCITY
COL COLUMN	FHC FIRE HOSE CABINET	LPDT LOW PRESSURE DRIP TRAP	RD ROOF DRAIN	VTR VENT THRU ROOF
CI CAST IRON	FIN FINISHED	LPG LIQUID PETROLEUM GAS	RF RETURN FAN	VV VAPOR VENT
CLG CEILING	FLR FLOOR	LPR LOW PRESSURE CONDENSATE RETURN	RPM REVOLUTIONS PER MINUTE	W WASTE
CO CLEANOUT	FM FLOW METER	LPS LOW PRESSURE STEAM	RVV RELIEF VENT/ROOF VENTILATOR	WB WET BULB TEMPERATURE
COND CONDENSER/CONDENSING/CONDENSATE	FPM FEET PER MINUTE	LV LAVATORY	RVV RELIEF VALVE VENT	WC WATER CLOSET
CRP CONDENSATE RETURN PUMP	FS FLOW SWITCH	LVG LEAVING	SA SUPPLY AIR/SHOCK ARRESTOR	WCO WALL CLEANOUT
CS DOMESTIC COLD WATER (SOFT)	FSK FLOOR SINK	LWT LEAVING WATER TEMPERATURE	SD SIGHT DRAIN	WP WEATHER OR WATER PROOF
CSK CLINICAL SINK	G NATURAL GAS	MBH THOUSAND BRITISH THERMAL UNITS PER HOUR	SDR SMOKE DAMPER	WSP WET STAND PIPE
CTE CONNECT TO EXISTING	GA GAUGE	MCC MOTOR CONTROL CENTER	SF SUPPLY FAN	WT WEIGHT
CV CONTROL VALVE	GCO GRADE CLEANOUT	MD MOTORIZED DAMPER	SK SINK	ADDITIONAL ABBREVIATIONS
DB DRY BULB TEMPERATURE	GI GALVANIZED IRON	MFR MANUFACTURER	SM SHEET METAL	AFF ABOVE FINISH FLOOR
DF DRINKING FOUNTAIN	GLV GLOBE VALVE	MPDT MEDIUM PRESSURE DRIP TRAP	SP FIRE SPRINKLER	BLDG BUILDING
DL DOOR LOUVER	GPH GALLONS PER HOUR	MPR MEDIUM PRESSURE CONDENSATE RETURN	SPD SPRINKLER DRAIN	BMS BUILDING MANAGEMENT SYSTEM
DN DOWN	GV GATE VALVE		SS STAINLESS STEEL	CD CONDENSATE DRAIN
DR DRAIN	H(*) DOMESTIC HOT WATER (*TEMP. WHERE REQUIRED)		SSD SUB-SURFACE DRAIN	DWG DRAWING
DSP DRY STANDPIPE				FSDR COMBINATION FIRE AND SMOKE DAMPER



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JB, VS

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LEGEND, SYMBOLS, GENERAL
NOTES & DRAWING LIST

M-001



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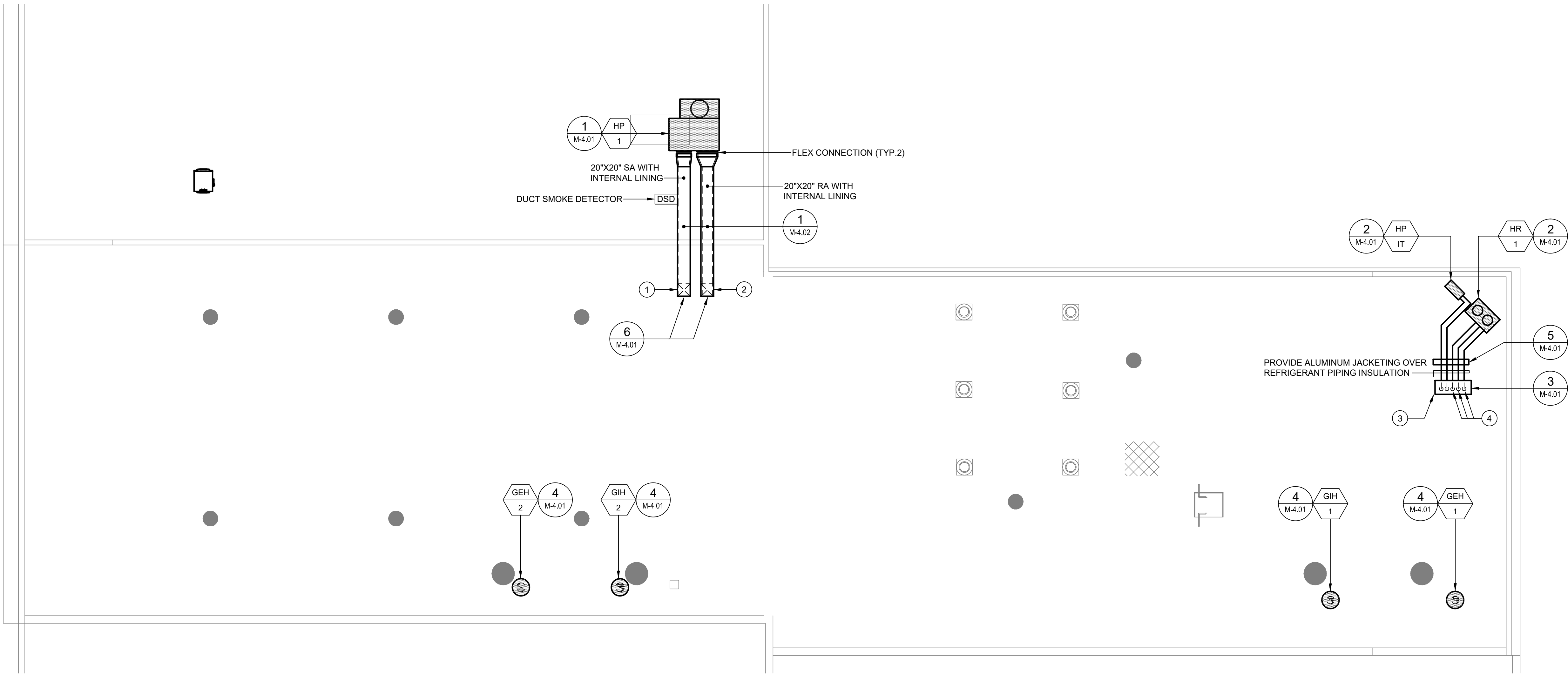
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ROOF PLAN - HVAC

M-161



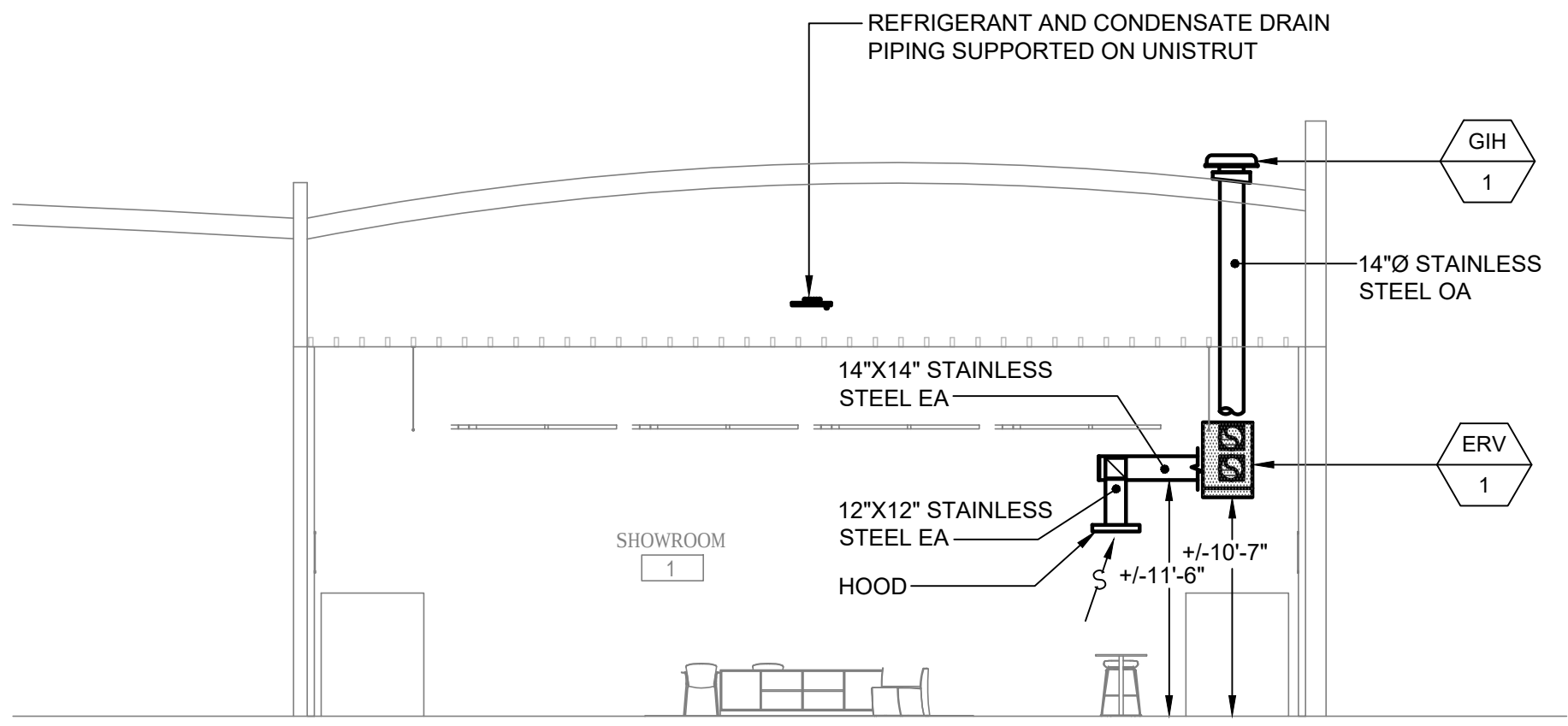
1 ROOF PLAN - HVAC
1/8" = 1'-0"

SHEET NOTES:

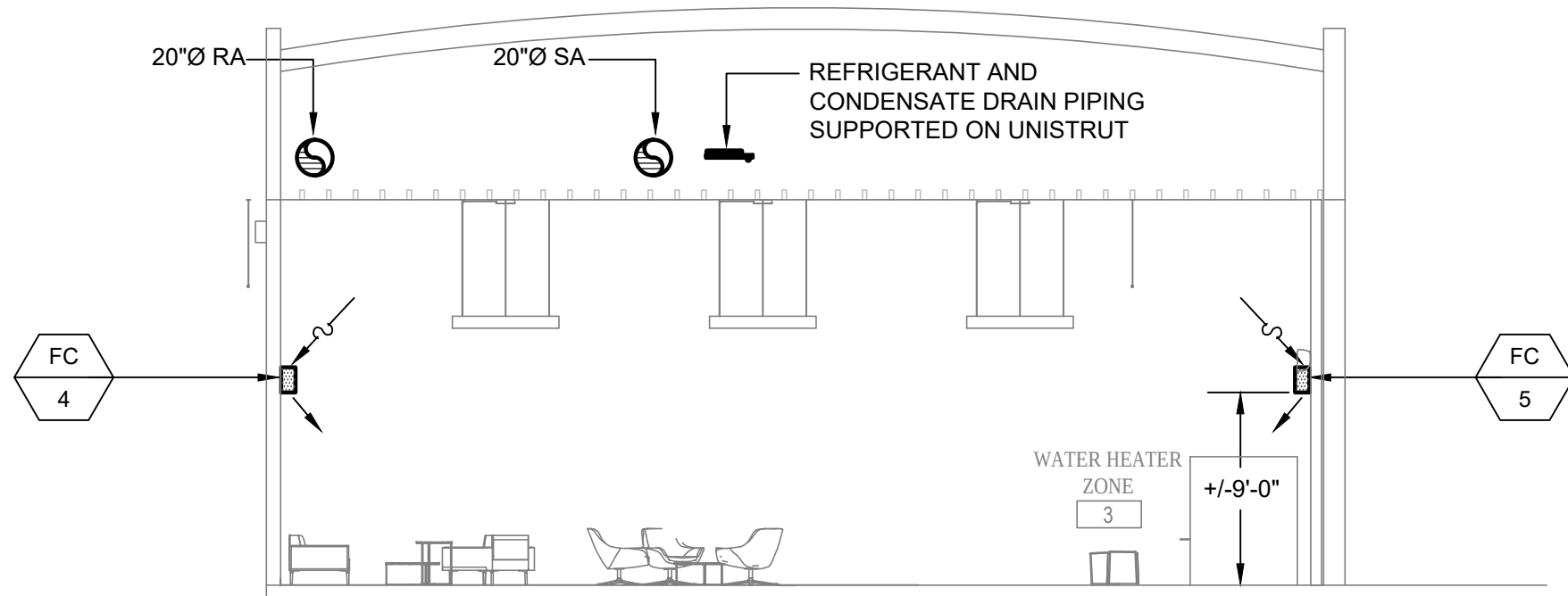
- 20"X20" SA DOWN THROUGH ROOF. SEE M-122 FOR CONTINUATION.
- 20"X20" RA DOWN THROUGH ROOF. SEE M-122 FOR CONTINUATION.
- REFRIGERANT PIPING ENCLOSURE/PIPE PENETRATION THROUGH ROOF. SEE M-122 FOR REFRIGERANT PIPE ROUTING CONTINUATION.
- REFRIGERANT PIPING DOWN TO BELOW. SEE M-122 FOR CONTINUATION.



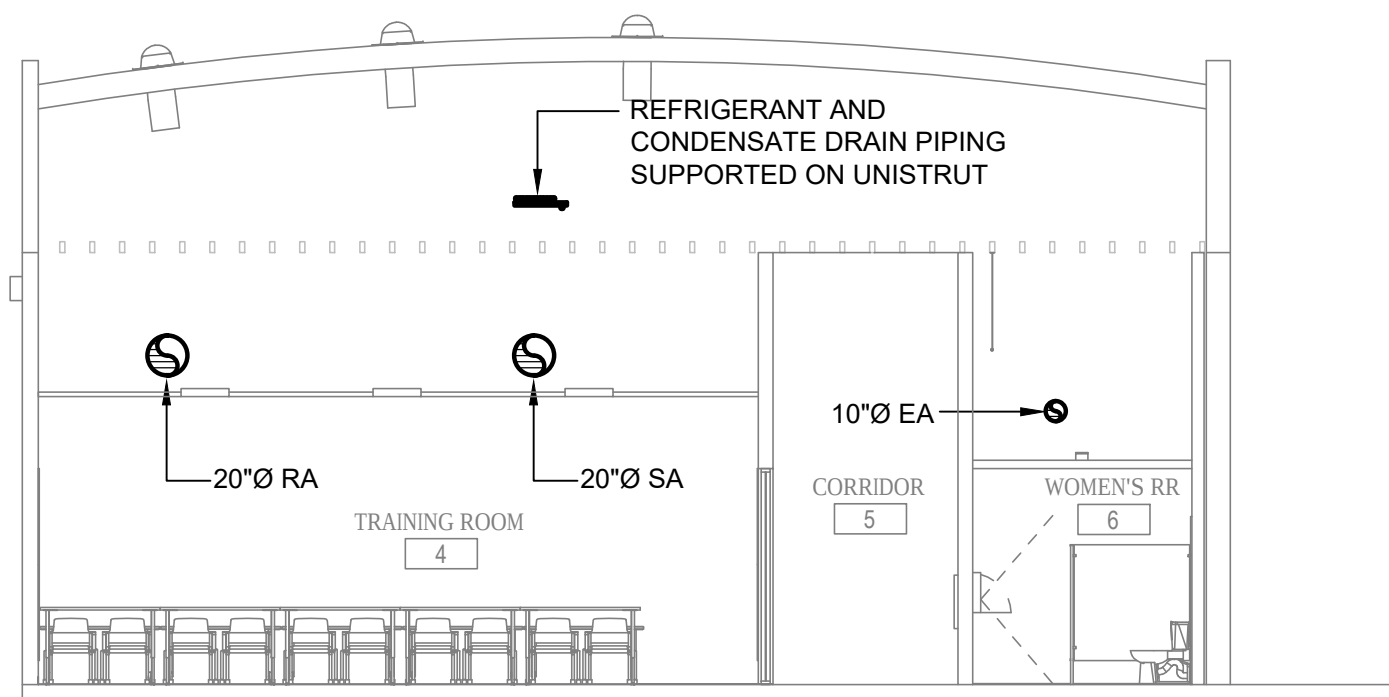
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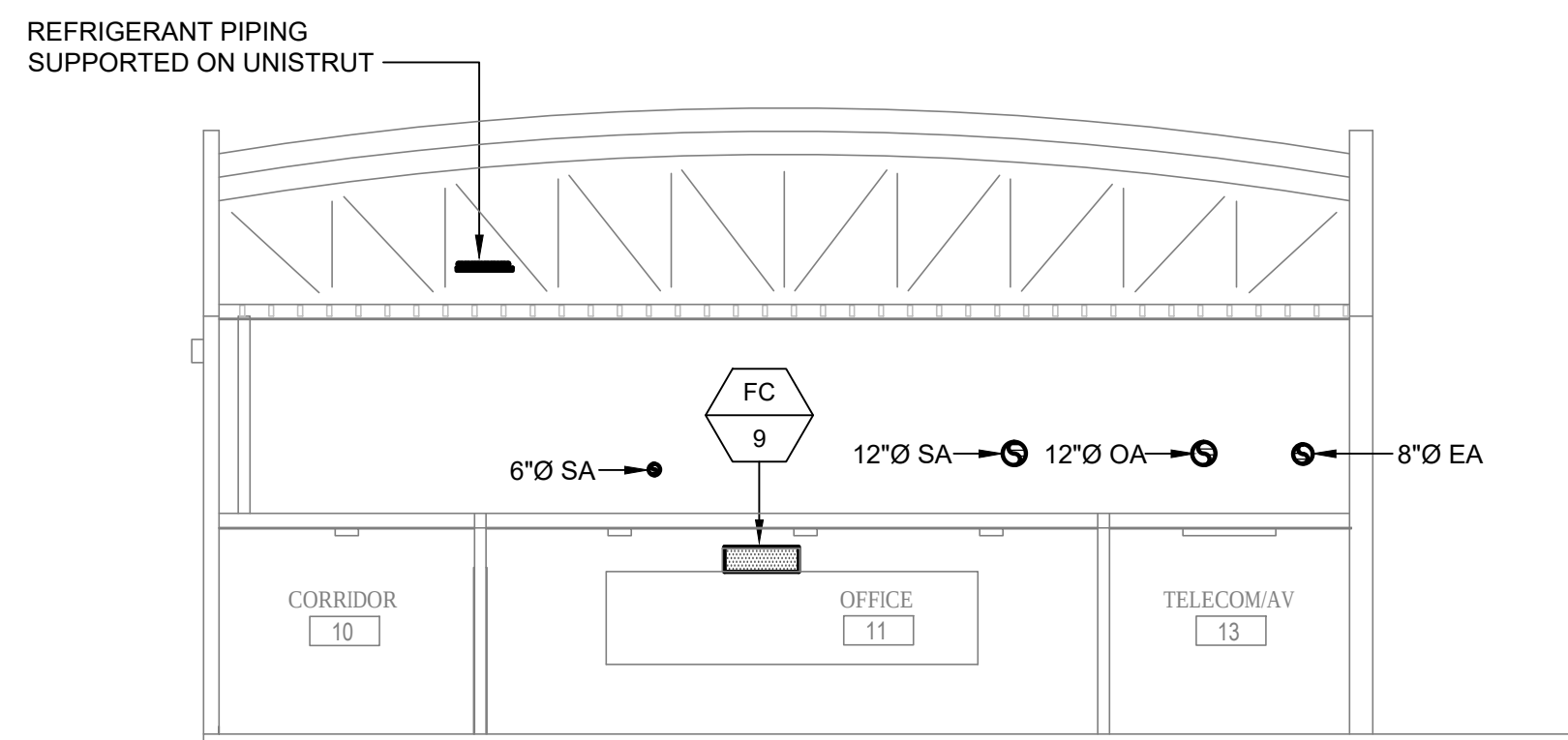
1 CROSS SECTION AT KITCHEN - HVAC
1/8" = 1'-0"



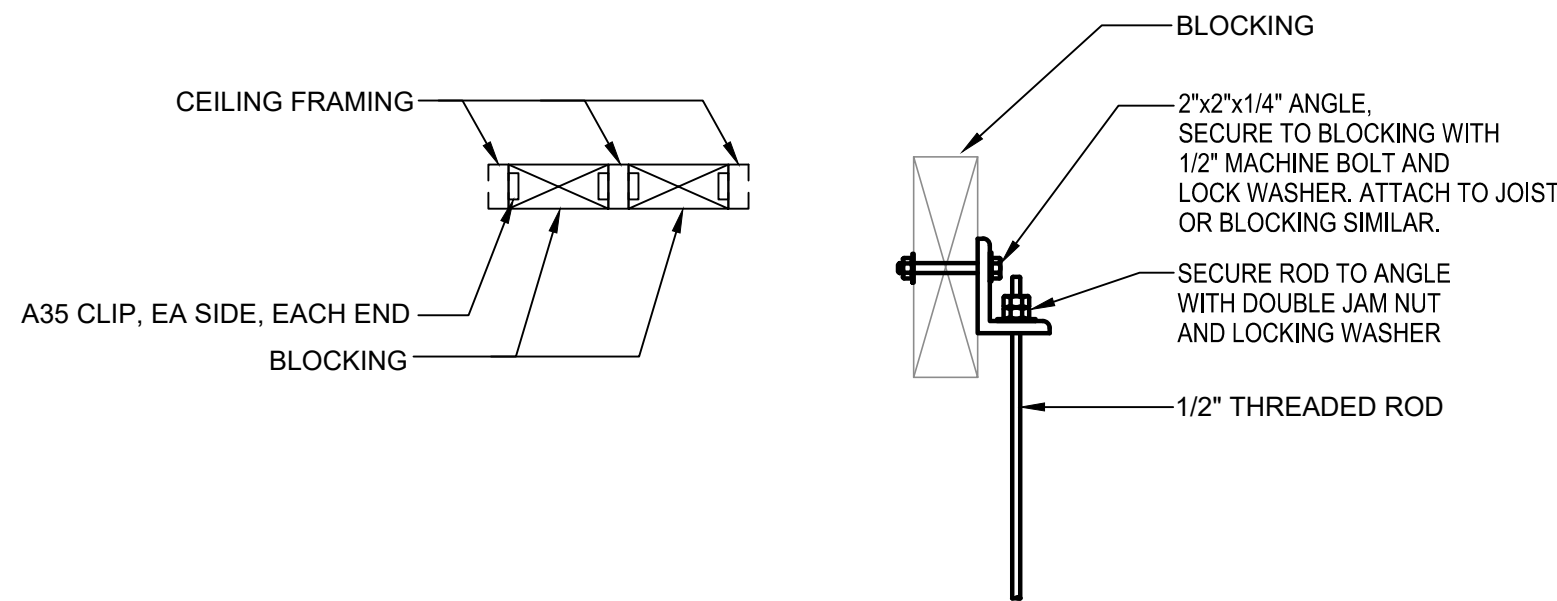
2 CROSS SECTION AT SHOWROOM - HVAC
1/8" = 1'-0"



3 CROSS SECTION AT TRAINING ROOM - HVAC
1/8" = 1'-0"

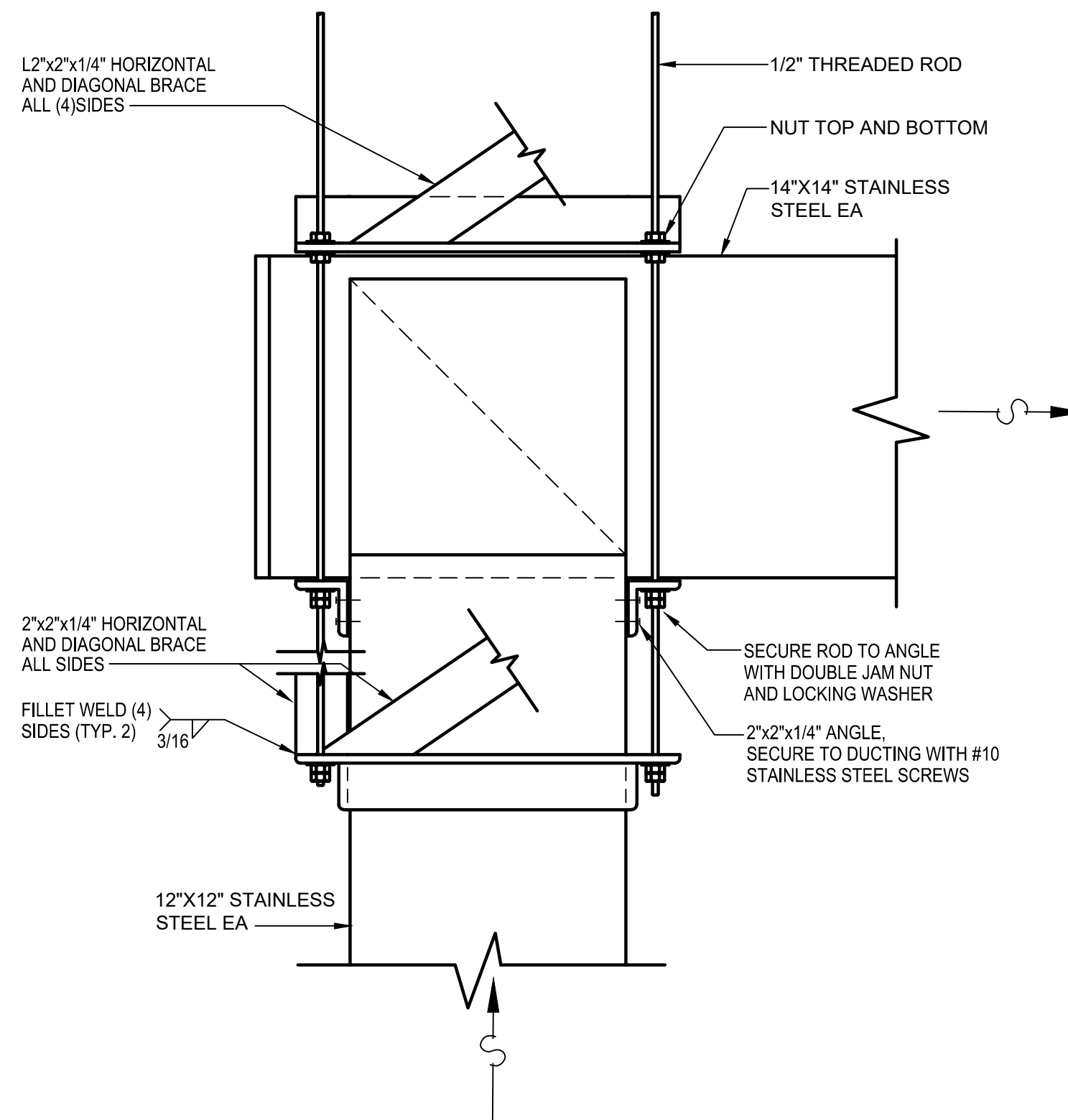


4 CROSS SECTION AT ATTIC - HVAC
1/8" = 1'-0"



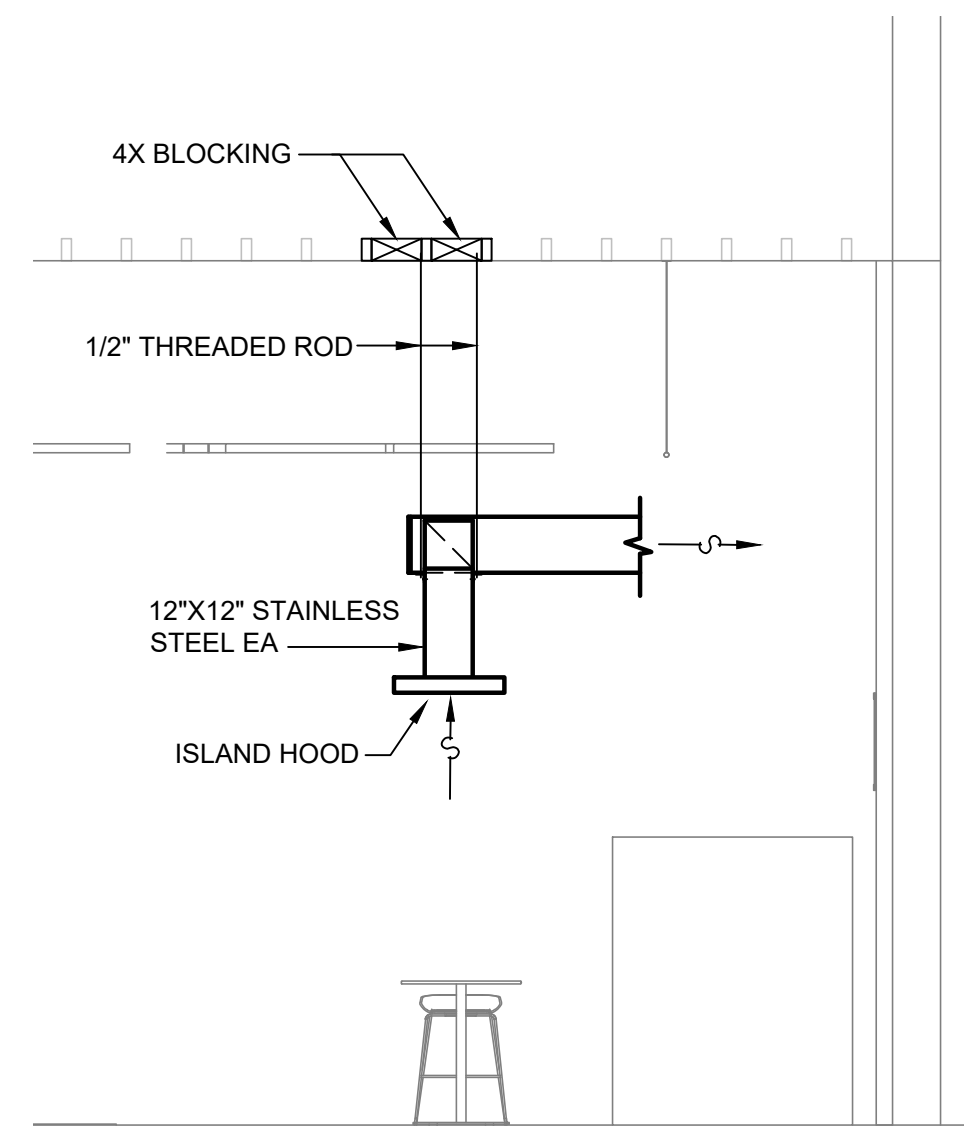
CONNECTION TO STRUCTURE

NOT TO SCALE



DUCT SUPPORT

NOT TO SCALE



5 ISLAND HOOD SUPPORT

1/4" = 1'-0"



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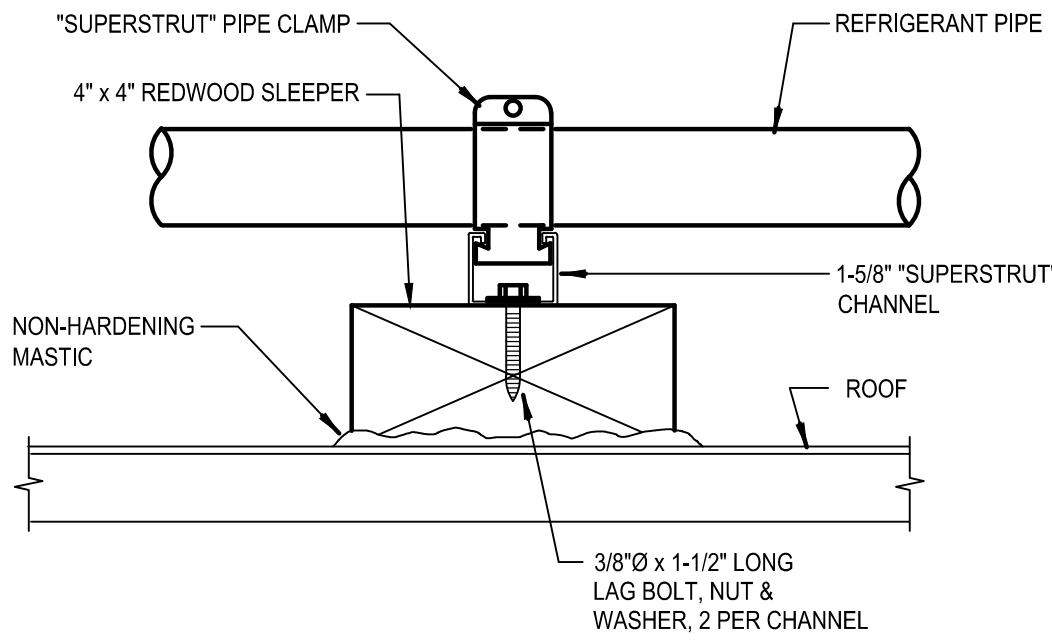
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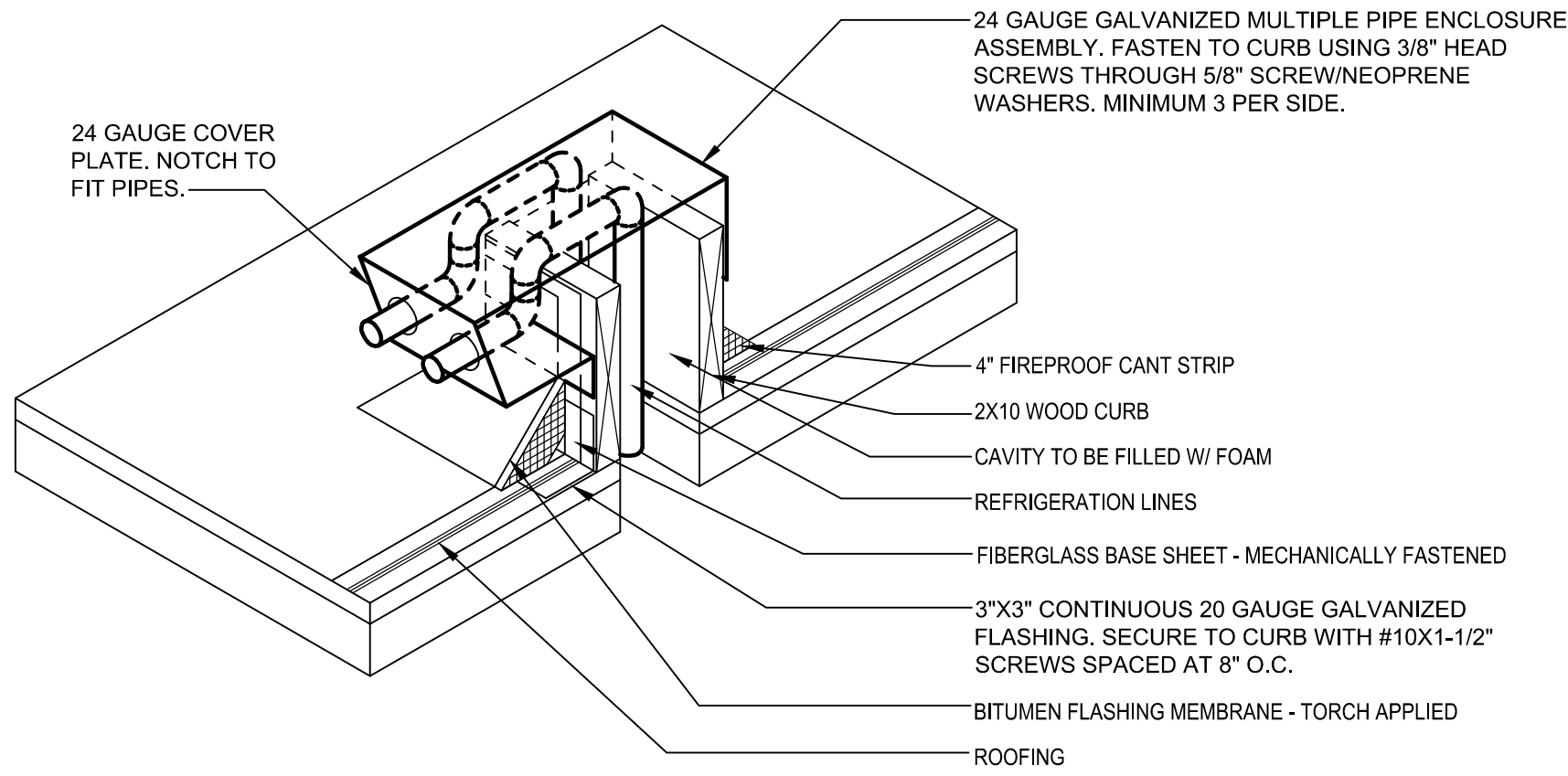
SECTIONS

M-301

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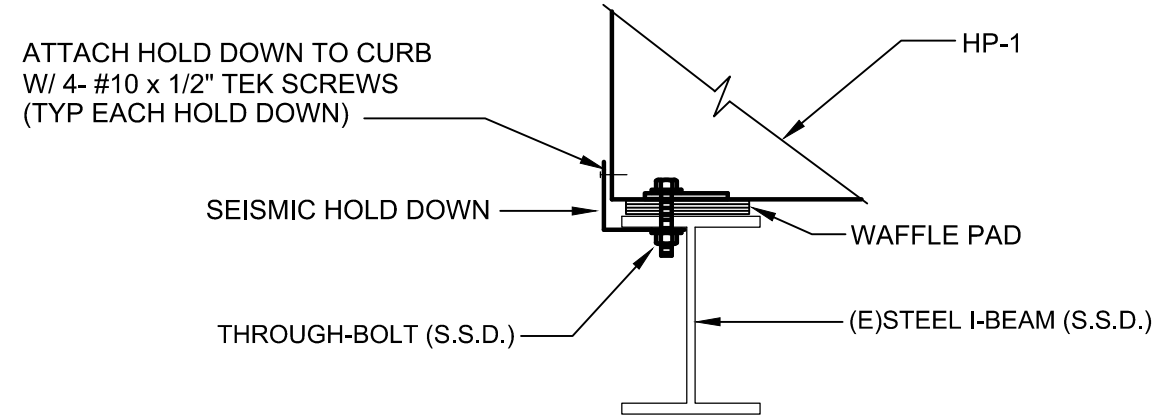
5 REFRIGERANT PIPING ON ROOF
SUPPORT DETAIL
NOT TO SCALE



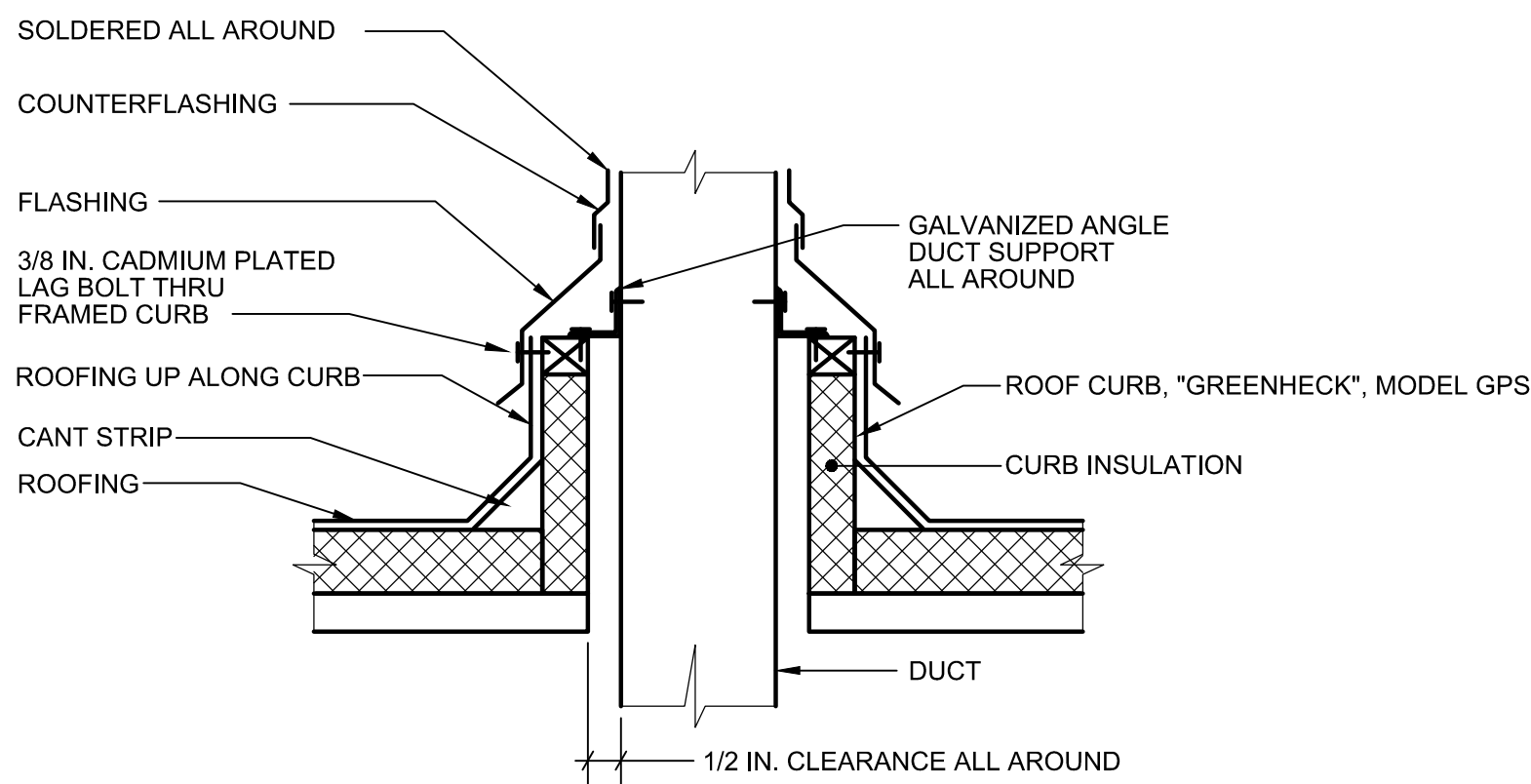
NOTES:

1. ALL PIPES ENTERING THE PIPE ENCLOSURE ASSEMBLY SHALL BE SLOPED UPWARD AS THEY ENTER THE FLASHING SO THAT WATER WILL NOT BE ABLE TO RUN INTO THE BUILDING.
2. CLEAN AND PRIME THE ENTIRE TIE-IN AREA.

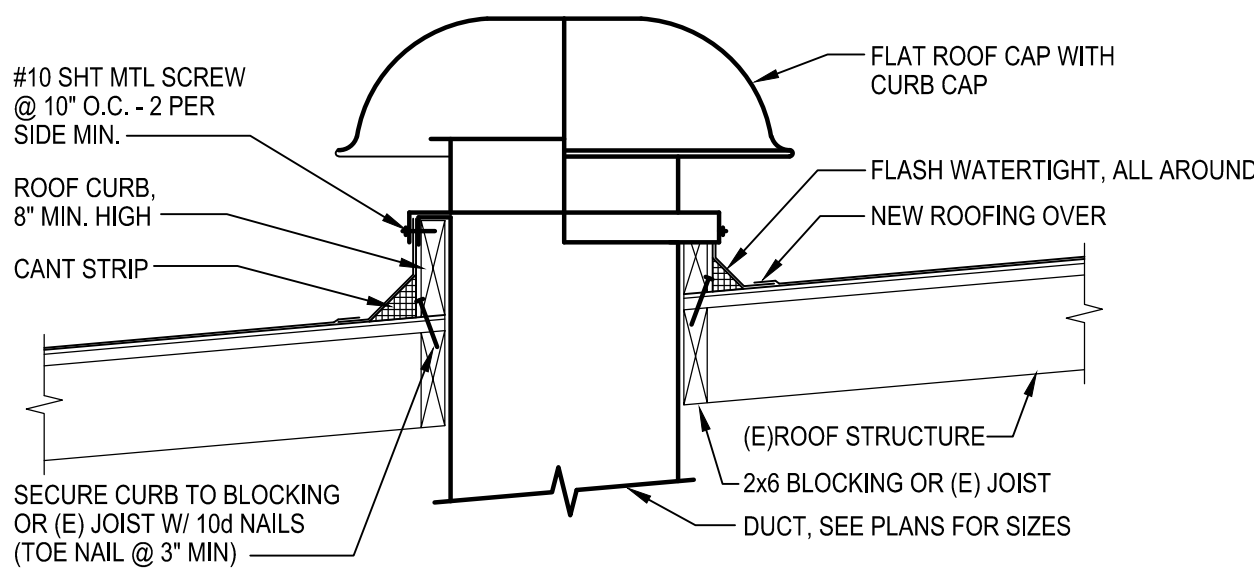
3 REFRIGERANT PIPING ENCLOSURE
THROUGH ROOF DETAIL
NOT TO SCALE



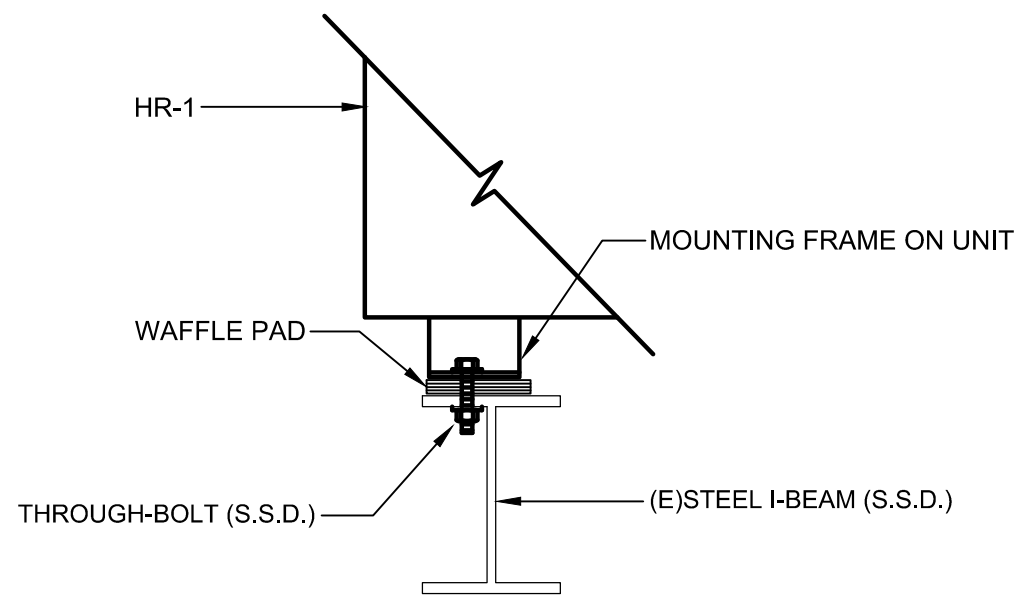
1 HP-1 MOUNTING ON ROOF DETAIL
NOT TO SCALE



6 DUCT THROUGH ROOF DETAIL
NOT TO SCALE



4 GRAVITY INTAKE OR EXHAUST CAP
MOUNTING DETAIL
NOT TO SCALE



2 HR-1 & HP-IT MOUNTING ON ROOF DETAIL
NOT TO SCALE



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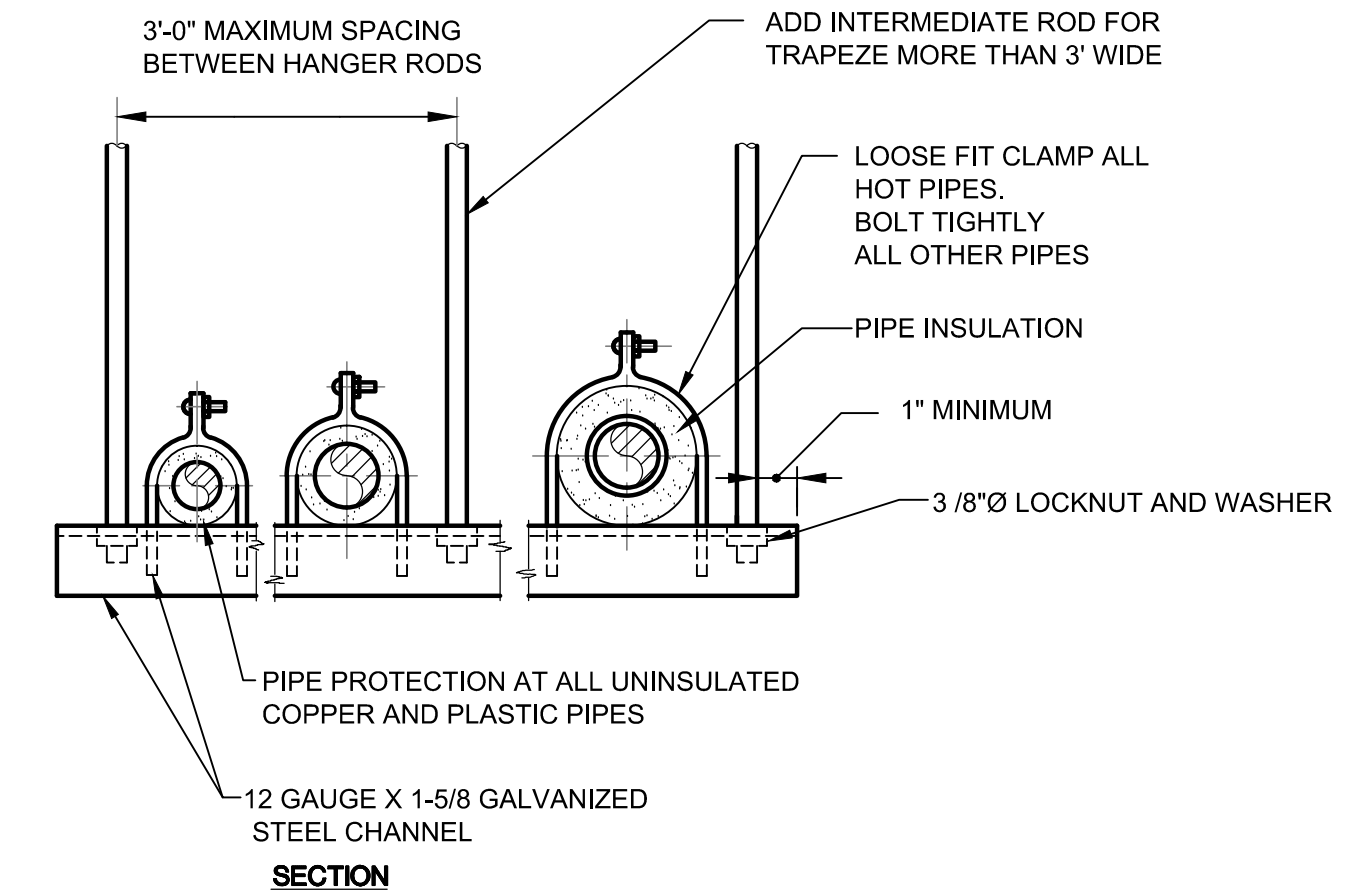
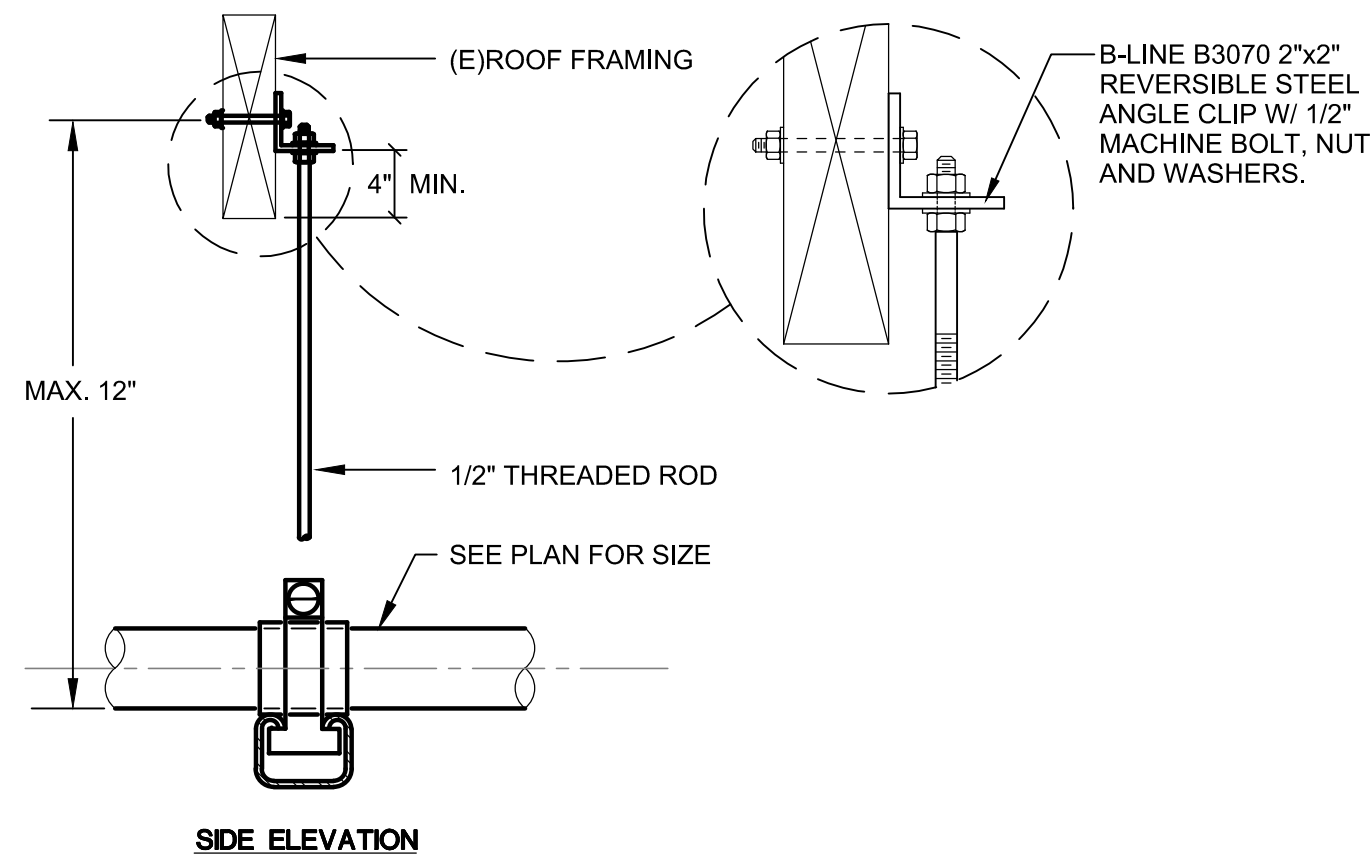
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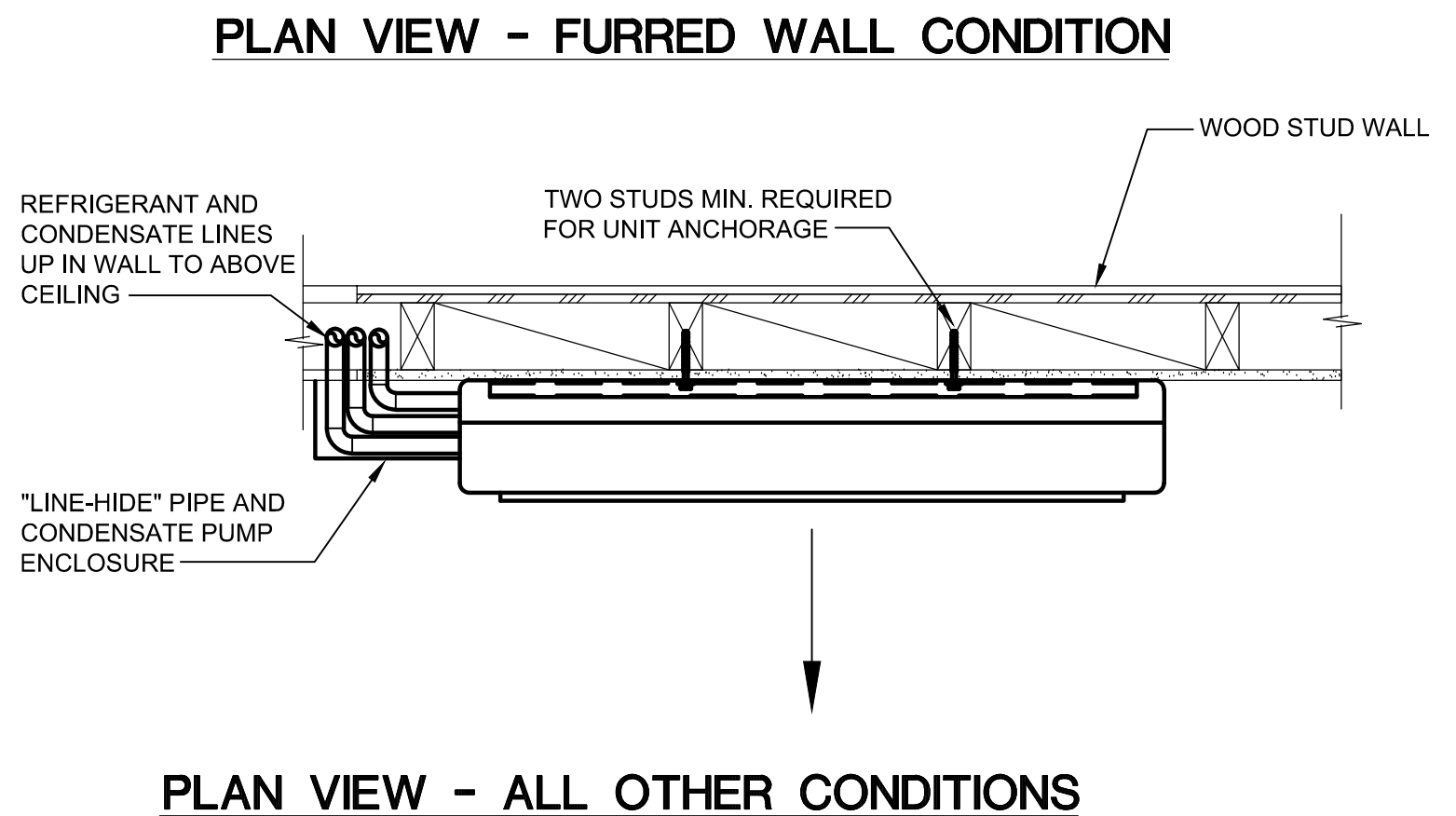
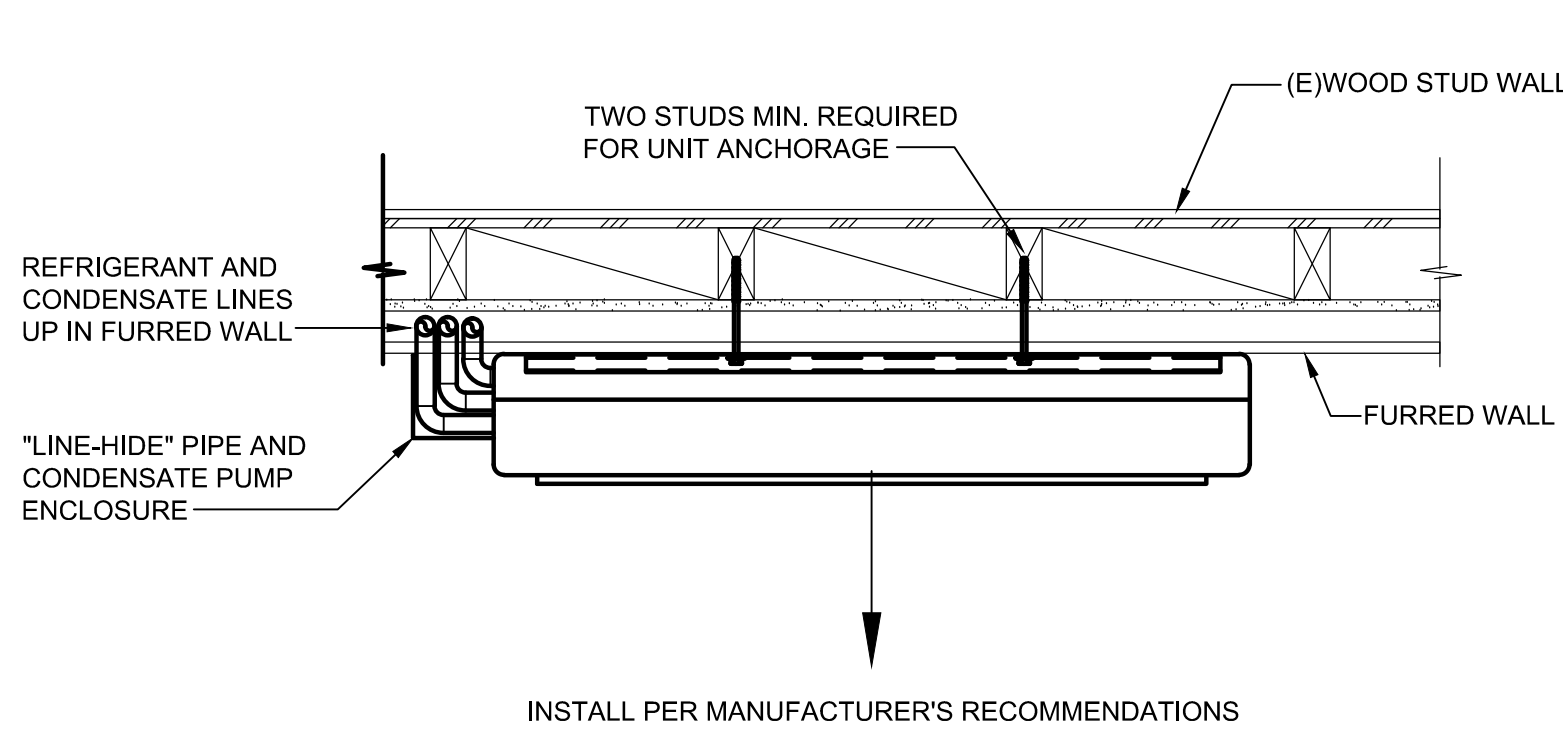
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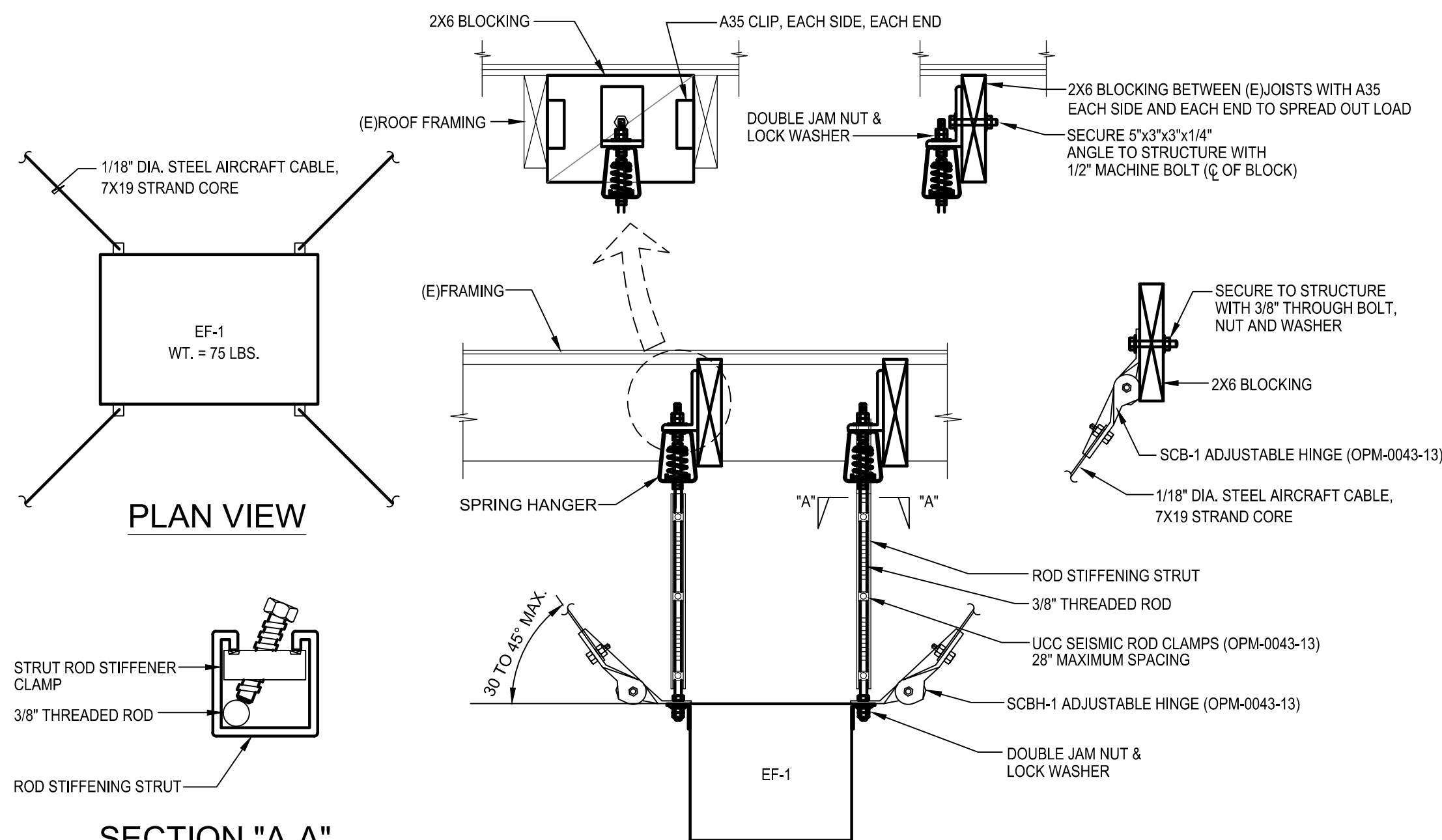
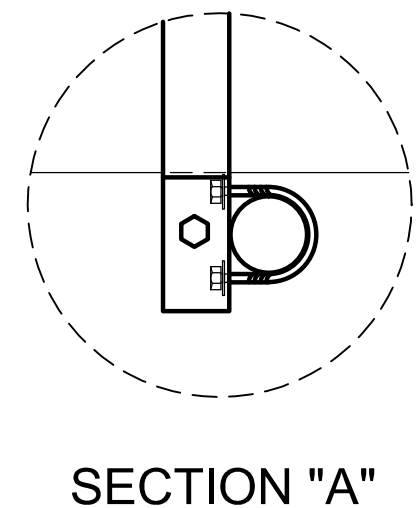
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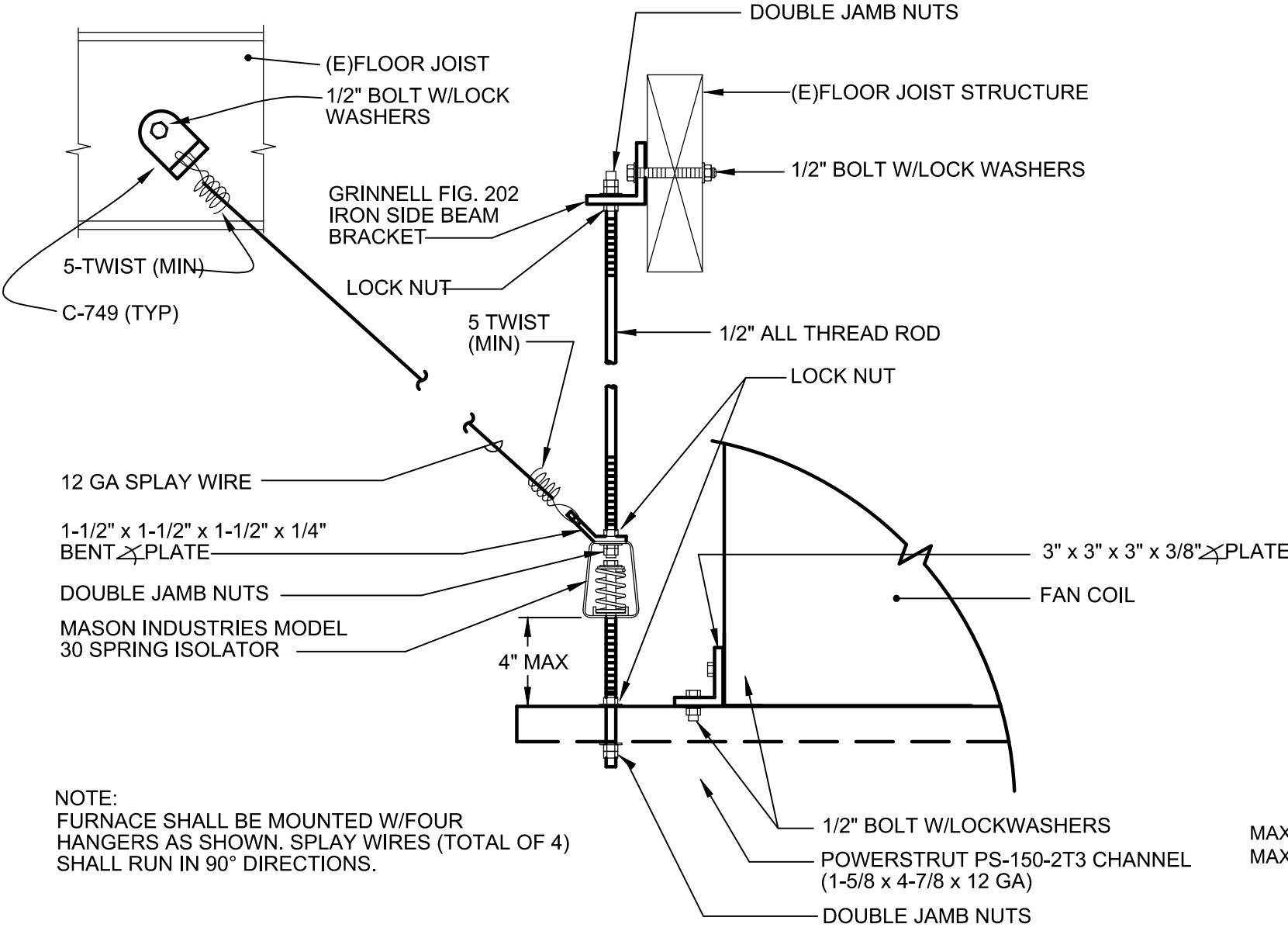
4 PIPING SUPPORT DETAIL
NOT TO SCALE



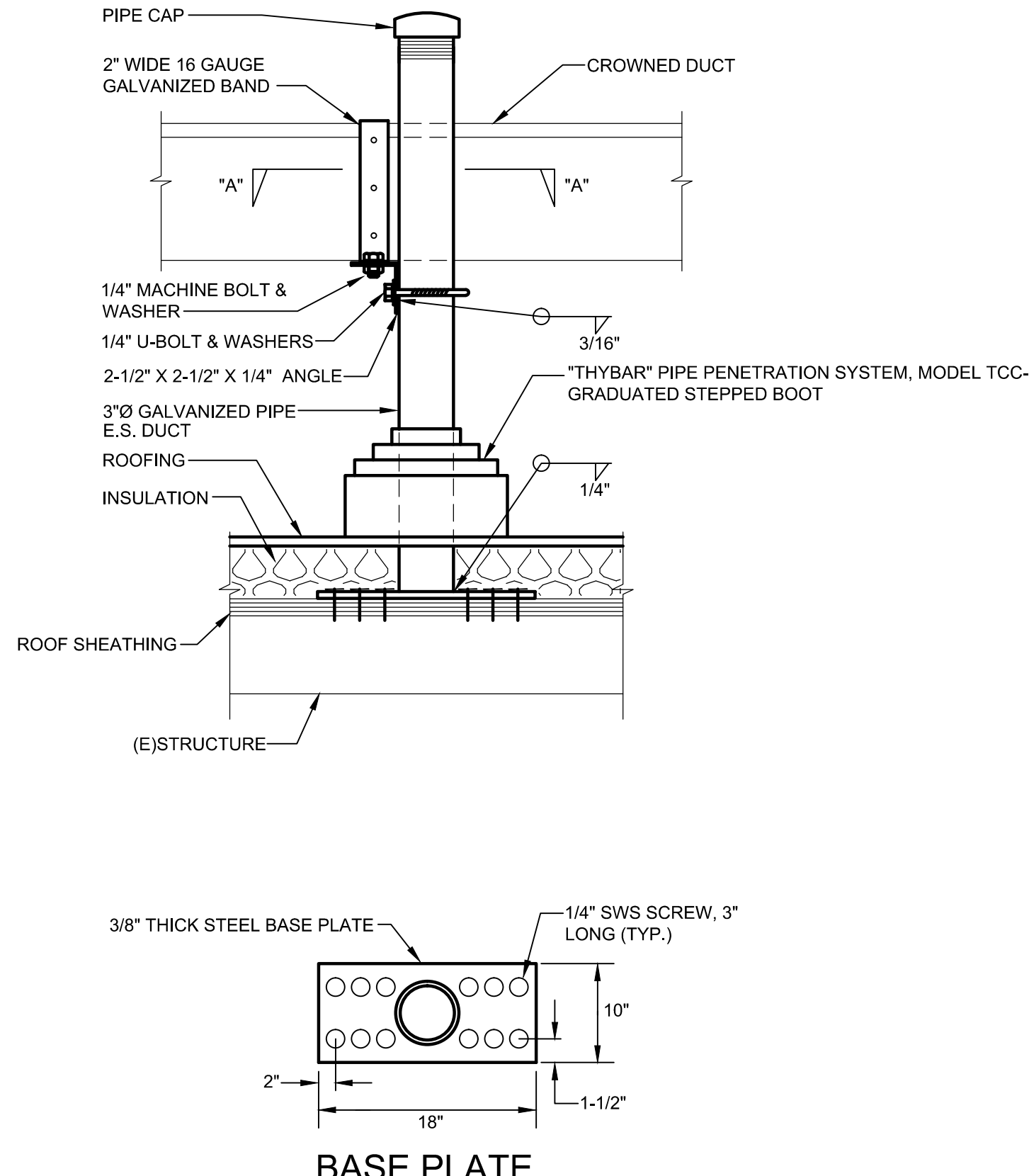
2 WALL-MOUNTED FAN COIL SUPPORT DETAIL
NOT TO SCALE



5 EXHAUST FAN SUPPORT DETAIL
NOT TO SCALE



3 ERV-1 AND ERV-2 SUPPORT DETAIL
NOT TO SCALE



1 ROOFTOP DUCTWORK SUPPORT DETAIL
NOT TO SCALE

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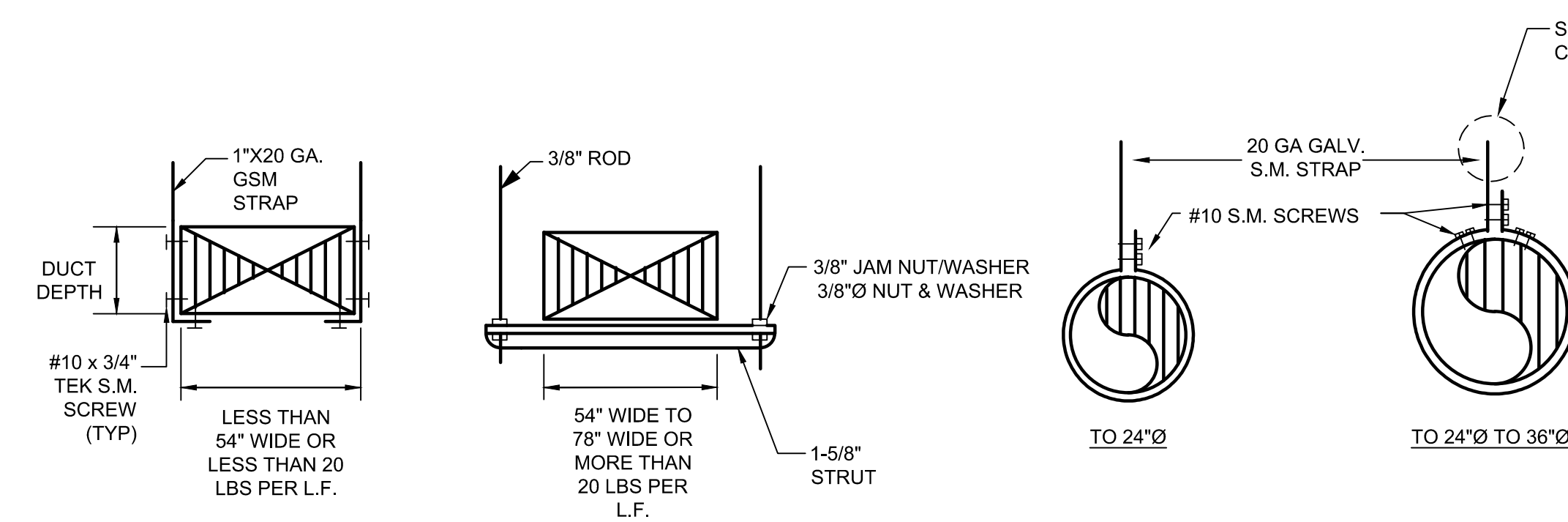
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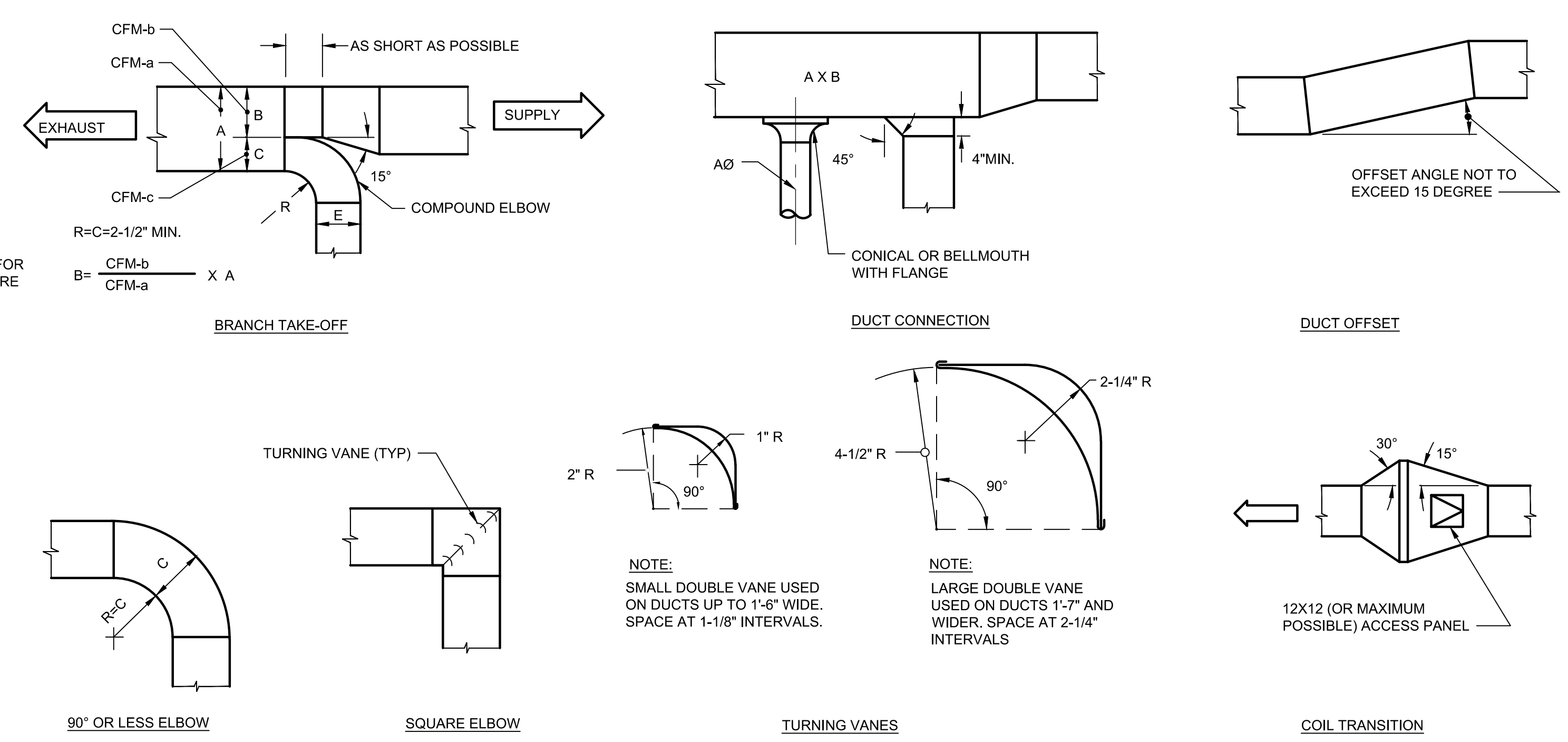
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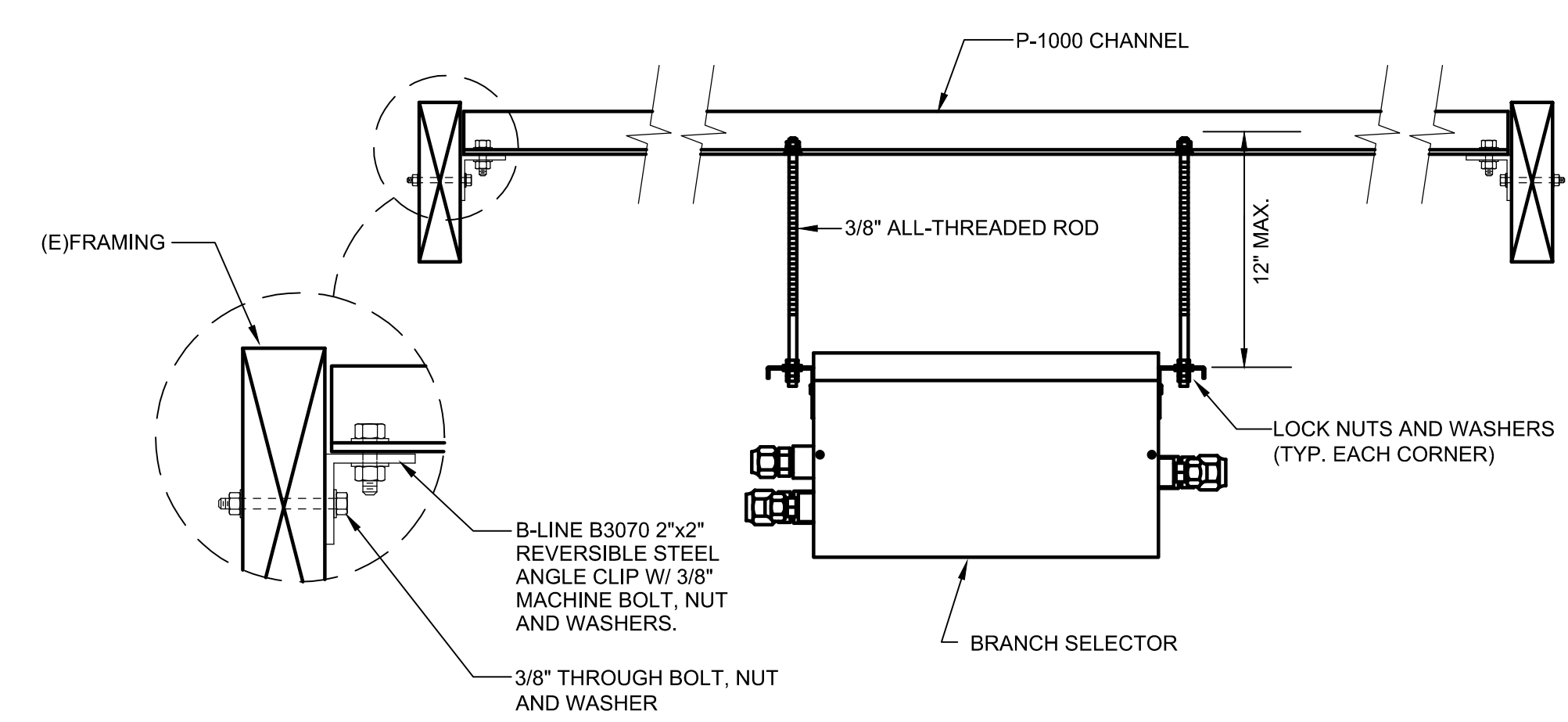
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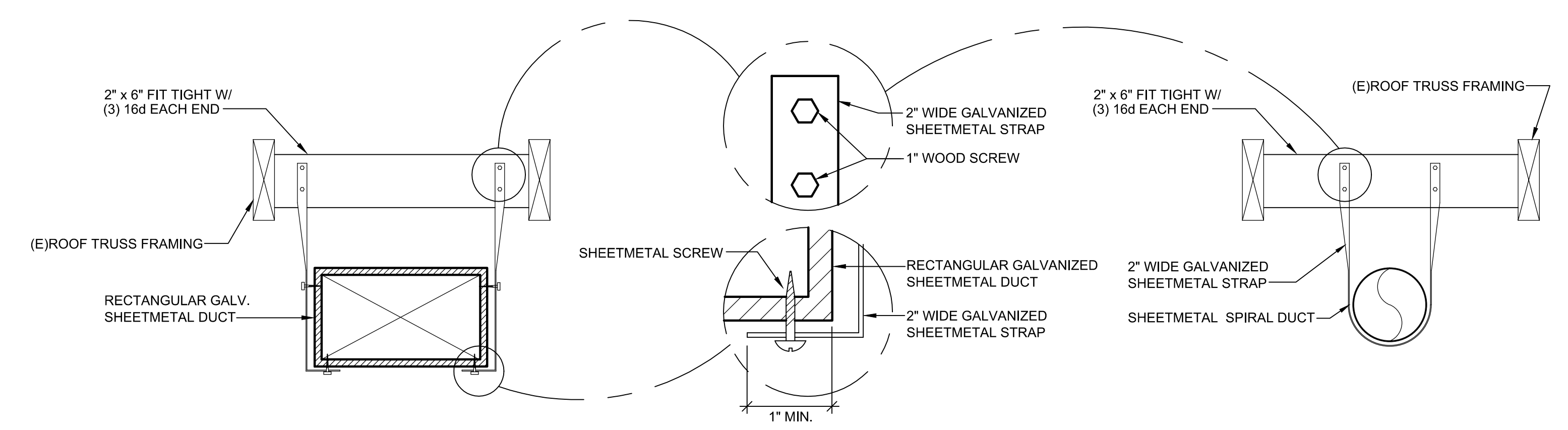
3 DUCT HANGING DETAIL
NOT TO SCALE



1 LOW VELOCITY DUCT CONSTRUCTION DETAILS
NOT TO SCALE



4 BRANCH SELECTOR SUPPORT DETAIL
NO SCALE



- DUCT SUPPORT NOTES:**
- A. ALL STRAPS, RODS, TRAPEZE ANGLES AND TRAPEZE CHANNELS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE LATEST SMACNA REQUIREMENTS.
 - B. ALL BOLTS, NUTS, SCREWS AND OTHER FASTENING DEVICES SHALL BE LOAD-RATED AND SHALL MEET ALL CODE REQUIREMENTS AND SAFETY FACTORS WHICH APPLY.
 - C. WIRE, USED IN LIEU OF STRAPS AND RODS, IS NOT ALLOWED.
 - D. WHERE APPLICABLE, INSTALL INSULATION AFTER INSTALLING DUCT HANGERS.

2 DUCT SUPPORT DETAIL
NOT TO SCALE

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VRV SYSTEM COMPONENTS

FAN COIL SCHEDULE																					
TAG	MANUFACTURER	MODEL	NOMINAL SIZE (TR)	TYPE	SERVICES	BRANCH SELECTOR		CFM	COOLING ENTERING AIR		COOLING CAPACITY		HEATING ENTERING AIR		HEATING CAPACITY		ELECTRICAL			WEIGHT (LBS.)	NOTES
						BS-1	BS-2		DB (°F.)	WB (°F.)	TOTAL (MBH)	SENS. (MBH)	DB (°F.)	TOTAL (MBH)	VOLTS - PHASE - HZ	MCA	MOCP				
FC-1	LG	ARNU243KSA4	2	WALL-MOUNTED	SHOWROOM 1	X		450	80	63	24.2	17.0	62	25.6	208 - 1 - 60	1	15	30	1, 2, 3		
FC-2	LG	ARNU243KSA4	2	WALL-MOUNTED	SHOWROOM 1	X		450	80	63	24.2	17.0	62	25.6	208 - 1 - 60	1	15	30	1, 2, 3		
FC-3	LG	ARNU243KSA4	2	WALL-MOUNTED	SHOWROOM 1	X		450	80	63	24.2	17.0	62	25.6	208 - 1 - 60	1	15	30	1, 2, 3		
FC-4	LG	ARNU243KSA4	2	WALL-MOUNTED	SHOWROOM 1	X		450	80	63	24.2	17.0	62	25.6	208 - 1 - 60	1	15	30	1, 2, 3		
FC-5	LG	ARNU243KSA4	2	WALL-MOUNTED	SHOWROOM 1	X		450	80	63	24.2	17.0	62	25.6	208 - 1 - 60	1	15	30	1, 2, 3		
FC-6	LG	ARNU243KSA4	2	WALL-MOUNTED	SHOWROOM 1	X		450	80	63	24.2	17.0	62	25.6	208 - 1 - 60	1	15	30	1, 2, 3		
FC-7	LG	ARNU243KSA4	2	WALL-MOUNTED	SHOWROOM 1	X		450	80	63	24.2	17.0	62	25.6	208 - 1 - 60	1	15	30	1, 2, 3		
FC-8	LG	ARNU243KSA4	2	WALL-MOUNTED	SHOWROOM 1	X		450	80	63	24.2	17.0	62	25.6	208 - 1 - 60	1	15	30	1, 2, 3		
FC-9	LG	ARNU183SKA4	1-1/2	WALL-MOUNTED	OFFICE 11		X	425	80	63	19.1	13.4	62	21.5	208 - 1 - 60	1	15	30	1, 2, 3		
FC-10	LG	ARNU183SKA4	1-1/2	WALL-MOUNTED	OFFICE 12		X	425	80	63	19.1	13.4	62	21.5	208 - 1 - 60	1	15	30	1, 2, 3		
NOTES: 1. 2. 3. COOLING/HEATING CAPACITY INDICATES THE MINIMUM REQUIRED OUTPUT. PROVIDE WITH THERMOSTAT. PROVIDE WITH CONDENSATE PUMP (ASPEN, MODEL 83939, 1.3 GPH @ 33' HEAD).																					

HEAT RECOVERY AIR-COOLED UNIT SCHEDULE (R-410A REFRIGERANT)																	
TAG	MANUFACTURER	MODEL	SUMMER DESIGN CONDITIONS		WINTER DESIGN CONDITION	RATED COOLING CAPACITY				RATED HEATING CAPACITY		NUMBER OF MODULES	ELECTRICAL - MODULE 1			OPERATING WEIGHT MODULE 1 LBS.	NOTES
			DB (°F.)	WB (°F.)	DB (°F.)	NOMINAL TONS	TOTAL (MBH)	EER	IEER	TOTAL (MBH)	COP		VOLTS - PHASE - HZ	MCA	MOCP		
HR-1	LG	ARUM241DTE5	100	66	26	20	233	9.5	16.7	243	3.2	1	208 - 3 - 60	63.2	80	670	1
NOTES: 1. CONTRACTOR SHALL SIZE THE REFRIGERANT PIPING.																	

BRANCH SELECTOR SCHEDULE									
TAG	MANUFACTURER	MODEL	NUMBER OF PORTS	MAX. CAPACITY PER PORT (MBH)	ELECTRICAL			WEIGHT LBS.	NOTES
					VOLTS - PHASE - HZ	MCA	MOCP		
BS-1	LG	PRHR083A	8	60.0	208 - 1 - 60	1	15	75	1
BS-2	LG	PRHR023A	2	60.0	208 - 1 - 60	1	15	50	1
NOTES: 1. PROVIDE WITH DIAMONDBACK BALL VALVES VB-SERIES, 700 PSIG WORKING PRESSURE, FULL PORT, 410A RATED.									

AIR TERMINAL SCHEDULE					
TAG	TYPE	MANUFACTURER	MODEL	DESCRIPTION	NOTES
CD-1	CEILING SUPPLY DIFFUSER	TITUS	TDCA	STEEL, 24"X24" MODULE, ROUND NECK	1
CD-2	CEILING SUPPLY DIFFUSER	TITUS	TDCA	STEEL, 12"X12" MODULE, ROUND NECK	1
CR-1	CEILING RETURN GRILLE	TITUS	50F	ALUMINUM, 24"X24" EGGCRATE FACE, 1/2"X1/2"X1/2" CORE	1
TG-1	CEILING TRANSFER GRILLE	TITUS	50F	ALUMINUM, 24"X24" EGGCRATE FACE, 1/2"X1/2"X1/2" CORE	1
TG-2	CEILING EXHAUST GRILLE	TITUS	50F	ALUMINUM, 12"X12" EGGCRATE FACE, 1/2"X1/2"X1/2" CORE	1
CE-1	CEILING EXHAUST GRILLE	TITUS	50F	ALUMINUM, 12"X12" EGGCRATE FACE, 1/2"X1/2"X1/2" CORE	1
SWS-1	SIDEWALL SUPPLY GRILLE	TITUS	300FL	ALUMINUM, DOUBLE DEFLECTION, 3/4" BLADE SPACING	1
NOTES: 1. SEE PLANS FOR NECK SIZES.					



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SCHEDULES

M-501

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PACKAGED HEAT PUMP COMPONENTS

PACKAGED HEAT PUMP UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	SUPPLY & RETURN DUCT CONNECTION CONFIGURATION	NOMINAL CAPACITY (TONS)	SERVICE	DIRECT EXPANSION COOLING & HEATING COIL	EER	IEER / SEER	COP	AIR FILTERS			POWER EXHAUST & ECONOMIZER	ACOUSTICAL PERFORMANCE	DESIGN OUTSIDE AIR (CFM)	SUPPLY FAN				STRIP HEATER (KW)	ELECTRICAL				UNIT WEIGHT LBS.	NOTES
										SIZE (L" X H" X D")	QTY.	MERV RATING				CFM	ESP "W.C.	BHP	HP		VOLTS - PHASE - HZ	FLA	MCA	MOCP		
HP-1	DAIKIN	REBEL DPS-006A	HORIZONTAL	6	TRAINING ROOM 4	DX-HP-1	11	18.8	3.69	16X16X2	4	13	PE-HP-1	AP-HP-1	600	2,500	1.5	2.24	4	NONE	208 - 3 - 60	32.2	36.0	50	1,450	1, 2, 3, 4, 5, 6, 7, 8, 9

NOTES:

1. PROVIDE WITH ECONOMIZING AIR OPTION.
2. PROVIDE WITH BACNET INTERFACE.
3. PROVIDE WITH POWER EXHAUST.
4. PROVIDE WITH SEISMIC HOLD-DOWNS. CONTRACTOR TO SUBMIT STRUCTURAL CALCULATIONS FOR UNIT ATTACHMENT TO CURB.
5. PROVIDE WITH 14" TALL ROOF CURB.
6. PROVIDE WITH PREMIUM EFFICIENCY FAN MOTOR.
7. PROVIDE WITH DUCT SMOKE DETECTOR, INSTALLED IN FIELD BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.
8. PROVIDE WITH CO2 SENSOR FOR DEMAND CONTROL VENTILATION. SEE PLAN FOR CO2 SENSOR LOCATION.
9. PROVIDE WITH CONVENIENCE OUTLET POWERED SEPARATELY FROM UNIT.

PACKAGED HEAT PUMP UNIT COOLING AND HEATING PERFORMANCE SCHEDULE

TAG	OUTSIDE DESIGN DATA			MINIMUM OUTSIDE AIR (CFM)	DX COIL COOLING PERFORMANCE						DX COIL HEATING PERFORMANCE			NOTES
	SUMMER DB (°F.)	SUMMER WB (°F.)	WINTER DB (°F.)		NET TOTAL CAPACITY (MBH)	NET SENSIBLE CAPACITY (MBH)	ENTERING AIR TEMP. DB (°F.)	ENTERING AIR TEMP. WB (°F.)	UNIT LEAVING AIR TEMP. DB (°F.)	UNIT LEAVING AIR TEMP. WB (°F.)	NET TOTAL CAPACITY (MBH)	ENTERING AIR TEMP. DB (°F.)	UNIT LEAVING AIR TEMP. DB (°F.)	
DX-HP-1	100.0	66.0	26.0	600	76.3	71.3	81.0	64.7	54.5	54.3	51.8	57.0	76.0	1

NOTES:

1. ELECTRIC STRIP HEATER TO OPERATE ONLY DURING DEFROST MODE.

GRAVITY INTAKE CAP SCHEDULE

TAG	MANUFACTURER	MODEL	THROAT	SP (IN. W.C.)	AIR FLOW (CFM)	NOTES
GIH-1	GREENHECK	GRSR-15	14"Ø	0.05	800	1, 2
GIH-2	GREENHECK	GRSR-15	14"Ø	0.05	800	1, 2

NOTES:

1. PROVIDE WITH ROOF CURB.
2. PROVIDE WITH INSECT SCREEN.

GRAVITY EXHAUST CAP SCHEDULE

TAG	MANUFACTURER	MODEL	THROAT (SQ. FT.)	SP (IN. W.C.)	AIR FLOW (CFM)	NOTES
GEH-1	GREENHECK	GRSR-15	14"Ø	0.05	800	1, 2
GEH-2	GREENHECK	GRSR-15	14"Ø	0.05	800	1, 2

NOTES:

1. PROVIDE WITH ROOF CURB.
2. PROVIDE WITH INSECT SCREEN.

POWER EXHAUSTER AND ECONOMIZER SCHEDULE

TAG	DRIVE TYPE	FAN				NOTES
		CFM	ESP * W.C.	BHP	HP	
PE-HP-1	DIRECT	2,500	1.5	1.19	2.3	1, 2, 3, 4, 5

NOTES:

1. ASHRAE 90.1 AND CALIFORNIA TITLE-24 COMPLIANT.
2. MODULATING WITH DRY BULB CONTROL.
3. PROVIDE WITH ECM MOTOR.
4. SEPARATELY POWERED FROM HEAT PUMP.
5. WEIGHT INCLUDED AS PART OF THE OVERALL UNIT WEIGHT.

PACKAGED HEAT PUMP ACOUSTICAL PERFORMANCE SCHEDULE

TAG	TYPE	OCTAVE BANDS (HZ)							
		63	125	250	500	1000	2000	4000	8000
AP-HP-1	INLET	80	78	86	81	83	77	72	66
	DISCHARGE	80	81	89	86	89	83	80	74
	RADIATED	82	82	78	75	73	68	61	54

EXHAUST FAN SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	SERVICES	Q	ESP	FAN RPM	ELECTRICAL			WEIGHT (LBS.)	NOTES
					(CFM)	(IN. W.C.)		FLA	WATTS	VOLTS - PHASE - HZ		
EF-1	GREENHECK	CSP-A510-VG	INLINE CABINET	TELECOM/AV 13	400	0.25	969	3.11	151	115 - 1 - 60	50	1, 2, 3, 4

NOTES:

1. PROVIDE WITH ECM MOTOR.
2. PROVIDE WITH DISCONNECT SWITCH.
3. PROVIDE WITH BACKDRAFT DAMPER.
4. PROVIDE WITH LINE VOLTAGE THERMOSTAT.



ISSUE FOR
CONSTRUCTION

ADVANCED ENERGY
CENTER

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ROSA, CALIFORNIA 95404



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ENERGY RECOVERY UNIT COMPONENTS

ENERGY RECOVERY VENTILATOR SCHEDULE

TAG	MANUFACTURER	MODEL	SUPPLY FAN			EXHAUST FAN			UNIT ELECTRICAL			OPERATING WEIGHT (LBS.)	NOTES
			CFM	RPM	HP	CFM	RPM	HP	MCA	MOCP	VOLTS - PHASE - HZ		
ERV-1	GREENHECK	ECV-10-VG	800	1,385	1/2	800	1,425	1/2	14.4	20	115 - 1 - 60	420	1, 2, 3, 4, 5
ERV-2	GREENHECK	ECV-10-VG	800	1,060	1/2	800	1,100	1/2	14.4	20	115 - 1 - 60	420	1, 2, 3, 4, 5
NOTES: 1. PROVIDE WITH FAN SPEED CONTROLLER. 2. PROVIDE WITH FAN MOTOR STARTERS. 3. PROVIDE WITH 24 VOLT ELECTRICAL CONTROL PANEL. 4. END CONNECTIONS. 5. PROVIDE REMOTE CONTROL PANEL.													

ENERGY RECOVERY VENTILATOR PERFORMANCE SCHEDULE

TAG	TYPE	SUMMER											WINTER											NOTES		
		OUTSIDE AIR (ENTERING)		SUPPLY AIR (LEAVING)		CFM	RETURN AIR (ENTERING)		EXHAUST AIR (LEAVING)		CFM	TOTAL EFFECTIVENESS (%)	TOTAL ENERGY RECOVERED (MBH)	OUTSIDE AIR (ENTERING)		SUPPLY AIR (LEAVING)		CFM	RETURN AIR (ENTERING)		EXHAUST AIR (LEAVING)		CFM		TOTAL EFFECTIVENESS (%)	TOTAL ENERGY RECOVERED (MBH)
		OAT DB (°F.)	OAT WB (°F.)	LAT DB (°F.)	LAT WB (°F.)		RAT DB (°F.)	RAT WB (°F.)	LAT DB (°F.)	LAT WB (°F.)				OAT DB (°F.)	OAT WB (°F.)	LAT DB (°F.)	LAT WB (°F.)		RAT DB (°F.)	RAT WB (°F.)	LAT DB (°F.)	LAT WB (°F.)				
ERV-1	PLATE FRAME	100.0	66.0	84.3	62.6	800	75.0	62.5	90.7	66.0	800	46.6	4.32	26.0	21.8	55.9	44.3	800	70.0	54.4	40.1	35.5	800	62.6	26.0	1
ERV-2	PLATE FRAME	100.0	66.0	81.1	61.9	500	75.0	62.5	93.9	66.6	500	54.7	2.5	26.0	21.8	58.7	46.4	500	70.0	54.4	37.3	33.1	500	70.7	17.8	1
NOTES:																										
1. PROVIDE MERV8 FILTERS.																										

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

OUTDOOR UNIT												INDOOR UNIT													NOTES			
TAG	MANUFACTURER	MODEL	SUMMER AMBIENT	WINTER AMBIENT	COOLING CAPACITY		HEATING CAPACITY		ELECTRICAL (HP)			WEIGHT LBS.	TAG	MANUFACTURER	HEAT PUMP MODEL	COOLING			HEATING			ELECTRICAL (HP)				WEIGHT LBS.		
			°F. DB	°F. DB	TOTAL (MBH)	IEER	TOTAL (MBH)	COP/HSPF	VOLTS - PHASE - HZ	MCA	MOCP					EAT (°F. DB)	EAT (°F. WB)	TOTAL (MBH)	SENSIBLE (MBH)	SEER	EAT (°F. DB)	EAT (°F. WB)	TOTAL (MBH)	VOLTS - PHASE - HZ			MCA	MOCP
HP-IT	DAIKIN	RZQ24PVJU8	96	66	23.8	18.0	27.6	2.2 / 9.4	208 - 1 - 60	16.5	20	150	FC-IT	DAIKIN	FAQ24PVJU	78	67	23.9	18.0	17.3	65	62	18.0	208 - 1 - 60	1	15	31	1, 2, 3, 4
NOTES: 1. R-410A REFRIGERANT. 2. CONTRACTOR SHALL SIZE THE REFRIGERANT PIPING. 3. PROVIDE WITH THERMOSTAT. 4. PROVIDE WITH CONDENSATE PUMP.																												

KITCHEN DEMONSTRATION HOOD SCHEDULE

TAG	MANUFACTURER	MODEL	SIZE (L" X W")	CFM	ELECTRICAL			WEIGHT LBS.	NOTES
					VOLTS - PHASE - HZ	MCA	MOCP		
KDH-1	ZLINE	KL3i	36 X 36	400	115 - 1 - 60	10	15	100	1, 2, 3
KDH-2	ZLINE	KL3i	36 X 36	400	115 - 1 - 60	10	15	100	1, 2, 3
NOTES: 1. 19G #430 STAINLESS STEEL. 2. DIRECTIONAL LED LIGHTS. 3. PUSH BUTTON CONTROL PANEL.									



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ABBREVIATIONS

AC	ALTERNATING CURRENT	JB	JUNCTION BOX
ANN	ANNUNCIATOR	KV	KILOVOLT
AM	AMMETER	KVA	KILOVOLT - AMPERE
A OR AMP	AMPERE	KW	KILOWATT
AFF	ABOVE FINISHED FLOOR	LTG	LIGHTING
APPROX	APPROXIMATELY	MAX	MAXIMUM
ARCH	ARCHITECTURAL	MCC	MOTOR CONTROL CENTER
ATS	AUTOMATIC TRANSFER SWITCH	MCP	MOTOR CIRCUIT PROTECTOR
AUTO	AUTOMATIC	MECH	MECHANICAL
AUX	AUXILIARY	MTD	MOUNTED
AV	AUDIO VISUAL	MTG	MOUNTING
BLDG	BUILDING	NEUT	NEUTRAL
C	CLOCK OR CONDUIT	NC	NORMALLY CLOSED
CAB	CABINET	NIC	NOT IN CONTRACT
CAP	CAPACITOR	No	NUMBER
CAT	CATALOG	NO	NORMALLY OPEN
CB	CIRCUIT BREAKER	NOM	NOMINAL
CCTV	CLOSED CIRCUIT TELEVISION	NP	NAMEPLATE
CLF	CURRENT LIMITING FUSE	NTS	NOT TO SCALE
CLG	CEILING	OC	+6" OVERCOUNTER OR BACKSPLASH
CKT	CIRCUIT	OD	OUTSIDE DIAMETER
COMB	COMBINATION	OL	OVERLOAD
CONC	CONCRETE	P	POLE
CONN	CONNECTION	PA	PUBLIC ADDRESS
CONT	CONTRACTOR	PB	PULL BOX or PUSHBUTTON
CONTR	CONTRACTOR	PF	POWER FACTOR
CT	CURRENT TRANSFORMER	PH	PHASE
DB	DECIBEL	PL	PILOT LIGHT
DC	DIRECT CURRENT	PNL	PANEL
DET	DETAIL	PR	PAIR
DIA	DIAMETER	PRI	PRIMARY
DIAG	DIAGRAM	PVC	POLYVINYL CHLORIDE
DIM	DIMENSION	REC	RECESSED or RECEPTACLE
DISC	DISCONNECT	REF	REFERENCE
DIST	DISTRIBUTION	REG	REGULATOR
DIV	DIVISION	REOD	REQUIRED
DM	DAMPER MOTOR	REV	REVISION
DN	DOWN	RM	ROOM
DPDT	DOUBLE POLE DOUBLE THROW	RR	REMOVE AND REINSTALL
DPST	DOUBLE POLE SINGLE THROW	SCHED	SCHEDULE
DWG	DRAWING	SD	SMOKE DETECTOR
EA	EACH	SEC	SECONDARY or SECURITY
EC	ELECTRICAL CONTRACTOR	SN	SOLID NEUTRAL
ELECT	ELECTRICAL	SOL	SOLENOID
EL	ELEVATION	SP	SPARE
EMERG	EMERGENCY	SPC	SPACE
ENCL	ENCLOSURE	SPDT	SINGLE POLE DOUBLE THROW
EQUIP	EQUIPMENT	SPST	SINGLE POLE SINGLE THROW
EWC	ELECTRIC WATER COOLER	SPEC	SPECIFICATION
EWH	ELECTRIC WATER HEATER	SUPV	SUPERVISORY
EXIST	EXISTING	SQ.FT.	SQUARE FOOT
EXP	EXPOSED	STA	STATION
FA	FIRE ALARM	STD	STANDARD
FC	FOOTCANDLE	SUSP	SUSPENDED
FIXT	FIXTURE	SW	SWITCH
FIG	FIGURE	SWBD	SWITCHBOARD
FL	FLOOR	SWGR	SWITCHGEAR
FLA	FULL LOAD AMPERE	SYNC	SYNCHRONIZATION
FLEX	FLEXIBLE	SYST	SYSTEM
FLUOR	FLUORESCENT	T or TEL	TELEPHONE
FT	FOOT OR FEET	TEMP	TEMPERATURE
FUT	FUTURE	TOL	THERMAL OVERLOAD
GEN	GENERATOR	TPS	TWISTED PAIR SHIELDED
GFI	GROUND FAULT	TRANS	TRANSFORMER
	CIRCUIT INTERRUPTER	TTC	TELEPHONE TERMINAL CABINET
HGT	HEIGHT	TV	TELEVISION
HID	HIGH INTENSITY DISCHARGE	TYP	TYPICAL
HORIZ	HORIZONTAL	UH	UNIT HEATER
HP	HORSEPOWER	UV	UNIT VENTILATOR
HTR	HEATER	V	VOLT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	VA	VOLT AMPERE
		VERT	VERTICAL
HV	HIGH VOLTAGE	VEST	VESTIBULE
HZ	HERTZ	VM	VOLTMETER
IMP	IMPEDANCE	VR	VERMIN RESISTANT
IN	INCH OR INCHES	VOL	VOLUME
INCAND	INCANDESCENT	W	WATT
		WP	WEATHER PROOF

STATUS OF WORK		
DESIGN ELEMENT EXISTING TO BE REMAIN	DESIGN ELEMENT EXISTING TO BE REMOVED	DESIGN ELEMENT EXISTING TO BE REPLACED
DESIGN ELEMENT FUTURE WORK	DESIGN ELEMENT NEW WORK	

GENERAL NOTES

- A VISIT TO THE SITE IS REQUIRED OF ALL BIDDERS PRIOR TO SUBMISSION OF BID. ALL BIDDERS WILL BE HELD TO HAVE FAMILIARIZED THEMSELVES WITH ALL DISCERNIBLE CONDITIONS AND NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK REQUIRED BECAUSE OF THESE CONDITIONS WHETHER SPECIFICALLY MENTIONED OR NOT.
- WHERE NOTED AS OWNER-SUPPLIED ON DRAWINGS, THE CONTRACTOR SHALL RECEIVE, INSTALL AND CONNECT EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. PRIOR TO INSTALLATION OF OWNER-SUPPLIED EQUIPMENT, CONTRACTOR SHALL INSPECT/TEST EQUIPMENT AND INFORM THE PROJECT MANAGER OF ANY DEFECTS. FAILURE TO DO SO SHALL MEAN THAT THE EQUIPMENT IS IN GOOD WORKING CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND TESTING OF SUCH EQUIPMENT.
- THE ELECTRICAL CONTRACTOR SHALL GROUND ALL PIPES, CONDUITS, DUCTS AND ALL OTHER METAL OBJECTS THAT PENETRATE THROUGH ANY OF THE PERIMETER WALLS OF THE PROJECT AREA.
- THE DRAWINGS AND SPECIFICATIONS OF OTHER DISCIPLINE SHALL BE USED FOR CONSTRUCTION OF THE DESCRIBED FACILITIES.
- PROVIDE 12" MINIMUM SEPARATION BETWEEN POWER AND DATA WIRING.
- PROVIDE A GREEN INSULATED GROUNDING CONDUCTOR IN ALL POWER CIRCUITS. SIZE SHALL BE IN ACCORDANCE WITH CEC TABLE 250-122 UNLESS OTHERWISE NOTED.
- VERIFY THE LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILING AND THE LIKE, AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO THE OWNER.
- THIS SHEET INDICATES A STANDARD LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PROJECT DRAWINGS.
- LINES OR OTHER SERVICES THAT ARE DAMAGED AS A RESULT OF THIS WORK SHALL PROMPTLY BE REPAIRED AT NO EXPENSE TO THE OWNER AND TO THE COMPLETE SATISFACTION OF THE OWNER.
- REFER TO THE SPECIFICATION SECTION (260100) FOR SEISMIC BRACING REQUIREMENTS.
- REFER TO THE SPECIFICATION SECTION FOR PREPARATION AND SUBMITTAL REQUIREMENTS OF COORDINATION DRAWINGS.
- CONDUCTORS FOR 600V SYSTEMS AND BELOW SHALL BE STRANDED COPPER, #12 AWG MINIMUM. INSULATION SHALL BE THWN FOR WET LOCATIONS AND THHN FOR DRY LOCATIONS.
- PENETRATING FIRE RATED WALLS: INSTALL CONDUIT IN CONDUIT SLEEVE OR FRAMED OPENING. SEAL ALL ELECTRICAL PENETRATIONS WITH UL LABELED OR LISTED FIRE RATED MATERIALS TO MAINTAIN RATING OF THE WALLS. ALL PENETRATION SEALS SHALL COMPLY WITH THE LATEST EDITION OF THE UL FIRE RESISTANCE DIRECTORY. FIRE RATING INTEGRITY MUST BE PRESERVED.
- REFER TO THE ARCHITECTURAL FLOOR PLANS, INTERIOR ELEVATIONS AND CASE WORK DRAWINGS PRIOR TO ROUGH-IN AND FINAL PLACEMENT OF ALL OUTLETS AND SWITCHES. COORDINATE FINAL OUTLET LOCATIONS WITH THE ARCHITECT.
- UTILITY OUTAGE: NOT LESS THAN TEN WORKING DAYS PRIOR TO A REQUIRED UTILITY (POWER, TELE, NET) OUTAGE, THE CONTRACTOR SHALL NOTIFY AND OBTAIN APPROVAL IN WRITING OF SAID OUTAGE FROM THE FACILITY. NO OUTAGE SHALL BE ACCOMPLISHED PRIOR TO THE RECEIPT OF APPROVAL. THE CONTRACTOR SHALL LOOK OUT AND RED TAG THE APPROPRIATE CIRCUIT BREAKER, SWITCH, ETC. THE RED TAG SHALL INDICATE WHEN THE OUTAGE WILL BE TERMINATED, AND A TELEPHONE NUMBER TO CONTACT REGARDING THE OUTAGE. THE TAG SHALL ALSO WARN PEOPLE NOT TO RE-ENERGIZE THE CIRCUIT SYSTEM BECAUSE OF POTENTIAL DANGER TO PERSONNEL AND EQUIPMENT. ALL WORK ASSOCIATED WITH ANY POWER OUTAGES SHALL BE COMPLETED AFTER NORMAL WORKING HOURS.
- EXISTING WIRING WHERE SHOWN ON THE DRAWINGS IS BASED ON AVAILABLE AS-BUILT DRAWINGS AND FIELD INFORMATION. CONTRACTOR SHALL VERIFY EXISTING INSTALLATIONS AND THE TIME FOR DOING SO SHALL BE INCLUDED IN THE BID.
- ALL NEW RACEWAYS AND CONDUCTORS SHALL BE INSTALLED CONCEALED WHERE POSSIBLE. RACEWAY THROUGH THE EXISTING BUILDING SHALL FOLLOW ESTABLISHED ROUTES AND HEIGHTS.
- ALL EQUIPMENT TO BE INSTALLED OR PERMANENTLY CONNECTED MUST BE LISTED, LABELED OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
- EQUIPMENT AND DEVICE COLOR CODING:
NAMEPLATES AND LABELS:
NORMAL DEVICES: WHITE LABEL WITH BLACK TEXT
NORMAL EQUIPMENT: WHITE LABEL WITH BLACK TEXT
EMERGENCY DEVICE: RED DEVICE OR COVERPLATE, RED LABEL WITH BLACK TEXT
EMERGENCY EQUIPMENT: RED LABEL WITH BLACK TEXT
- PROVIDE 4" HIGH CONCRETE EQUIPMENT PAD BENEATH SWITCHBOARDS, TRANSFORMERS, FLOOR MOUNTED DISTRIBUTION PANELS U.O.N. OTHER EQUIPMENT REQUIRING A CONCRETE PAD WILL BE NOTED ON THE PLANS.
- ALL UNDERGROUND CONDUIT ENTERING BUILDING WALLS, VAULTS OR BOXES SHALL BE SLOPED AWAY FROM THE BOX OR WALL TO MINIMIZE WATER DRAINING INTO BUILDING OR BOX.
- ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH LOCAL DISCONNECTS. ALL LOCAL MOTOR STARTERS SHALL BE PROVIDED WITH A LOCK-OUT STOP PUSHBUTTON.
- LIGHTING CONTROL SYSTEM IS UNDER ELECTRICAL DIVISION OF WORK. ELECTRICAL CONTRACTOR OR LIGHTING CONTROL SYSTEM VENDOR SHALL PROVIDE DRAWINGS SUITABLE FOR REVIEW AND APPROVAL BY ARCHITECT. PROVIDE SUBMITTAL DRAWINGS FOR REVIEW BEFORE ORDERING ANY COMPONENTS. PROVIDE UNIT PRICES FOR ADDITIONAL DEVICES. LIGHTING CONTROL DEVICES: LIGHTING CONTROL PANEL, OCCUPANCY SENSORS, PHOTOCELLS, PHOTO SENSORS, TIMER SWITCHES, LIGHTING RELAY PANELS, ETC. SHALL BE PROVIDED IN ONE SUBMITTAL PACKAGE FOR A COMPLETE AND INTEGRATED SYSTEM AND SINGLE POINT OF CONTACT FOR LIGHTING CONTROL COMPONENTS. LIGHTING CONTROL SYSTEMS SHALL BE COMPATIBLE WITH INTERFACE TO BE MONITORED BY THE BUILDING BMS SYSTEM. PROVIDE FULL COMMISSIONING SERVICES.
- VOICE/DATA SYSTEM: PROVIDE 120V POWER TO EQUIPMENT AS NOTED. PROVIDE BACK BOXES AND CONDUIT RACEWAY PER VOICE/DATA OR T SERIES DRAWINGS.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES, SPEAKERS, SMOKE DETECTORS AND OTHER CEILING MOUNTED DEVICES. LIGHTING FIXTURE ORIENTATION SHALL BE AS PER REFLECTED CEILING PLAN.
- MINIMUM CONDUIT SIZE SHALL BE .75".
- FIRE ALARM SYSTEM: ELECTRICAL CONTRACTOR OR FIRE ALARM SYSTEM VENDOR SHALL PROVIDE DRAWINGS SUITABLE FOR PERMIT AND APPROVAL BY LOCAL FIRE MARSHAL. PROVIDE SUBMITTAL DRAWINGS FOR REVIEW BEFORE ORDERING ANY COMPONENTS. PROVIDE ADDITIONAL DEVICES TO MEET CODE OR PER FIRE MARSHAL'S COMMENTS. PROVIDE FULL COMMISSIONING SERVICES.
- NOISE CRITERIA: ELECTRICAL DEVICES MOUNTED IN SOUND WALLS SHALL MAINTAIN NOISE CRITERIA RATING SEE ARCH. DETAILS.
- BRANCH CIRCUIT WIRE SIZE : IN ORDER TO COMPLY WITH ENERGY CODE VOLTAGE DROP REQUIREMENTS USE VOLT DROP TABLE ON DRAWINGS E5.3. USE THE TABLE TO MAXIMUM 3% VOLTAGE DROP FOR LENGTH OF BRANCH CIRCUIT INSTALLED. USE AMPACITY AND LENGTH OF CIRCUIT BASED ON SYSTEM VOLTAGE TO DETERMINE CONDUCTOR SIZE.

ELECTRICAL SYMBOLS LIST

ALL SYMBOLS MAY NOT BE USED
ALL WORK IS NEW, UNLESS OTHERWISE NOTED

CEILING	WALL
LIGHTING OUTLET AND FIXTURE	
EMERGENCY LIGHTING OUTLET AND FIXTURE SHADING IN ANY FIXTURE INDICATES FIXTURE IS SERVED BY THE EMERGENCY PANEL. ENTIRE FIXTURE SHALL BE OPERATED TO FULL LIGHT OUTPUT UNLESS OTHERWISE INDICATED ON THE PLANS.	
EXIT SIGN OUTLET AND FIXTURE; ARROWS AS INDICATED; DARKENED SEGMENT INDICATES FACE OF SIGN	
LIGHTING OUTLET AND FIXTURE	
LIGHTING OUTLET AND FIXTURE; NUMBERS AND LETTERS INDICATE ASSOCIATED BRANCH PANEL CIRCUIT AND SWITCH. CIRCUITS AND SWITCHING ARE ALSO INDICATED BY NOTES ON THE SHEETS.	
ANY LIGHTING OUTLET AND FIXTURE WITH 'EM' INDICATES FIXTURE IS SERVED BY THE EMERGENCY BATTERY BACKUP. ENTIRE FIXTURE SHALL BE OPERATED TO FULL LIGHT OUTPUT UNLESS OTHERWISE INDICATED ON THE PLANS. FIXTURE CONTROLS ARE AS SHOWN ON PLANS. ALL CONTROLS SHALL BE BYPASSED UPON LOSS OF NORMAL POWER OR AN ALARM FROM THE FIRE ALARM SYSTEM.	
SURFACE MOUNTED PLUG MOLD WITH DUPLEX RECEPTACLE MOUNTED EVERY 4' CENTER	
BRANCH CIRCUIT PANEL-BOARD, 480/277V SURFACE OR FLUSH MOUNTED	
DISTRIBUTION PANEL-BAORD, FREESTANDING WITH EQUIPMENT PAD	
BRANCH CIRCUIT PANEL-BOARD, 208/120V SURFACE OR FLUSH MOUNTED	
TERMINAL OR CONTROL CABINET, SURFACE OR FLUSH MOUNTED	
SINGLE POLE SINGLE THROW SWITCH, LOWER CASE LETTER INDICATES ASSOCIATED LIGHT FIXTURE, 42" AFF.	
THREE WAY SWITCH, 42" AFF UNLESS OTHERWISE NOTED	
SWITCH WITH PILOT LIGHT, 42" AFF UNLESS OTHERWISE NOTED	
DIMMING SWITCH, 42" AFF UNLESS OTHERWISE NOTED, ZONES a AND b	
WALL MOUNTED OCCUPANCY SENSOR, 42" AFF UNLESS OTHERWISE NOTED. LOWER CASE LETTER INDICATES ASSOCIATED LIGHT FIXTURE. SEE SHEET E2.15 FOR SPECIFICATION.	
CEILING MOUNTED OCCUPANCY SENSOR. "H" INDICATES HALLWAY SENSOR. LOWER CASE LETTER INDICATES ASSOCIATED LIGHT FIXTURE. WATTSTOPPER DT-355 WITH POWER PACK.	
SINGLE POLE DISCONNECT SWITCH - MOTOR - RATED. MOTOR BY OTHERS.	
DUPLEX RECEPTACLE: +18" AFF UON. R1-3 = CIRCUIT NUMBER CT = OUTLET INSTALLED 6" ABOVE COUNTER TOP OR BACKSPLASH D = DEDICATED WP = WEATHERPROOF G = GROUND FAULT CIRCUIT INTERRUPTER S = SPLIT-WIRED RECEPTACLE WITH ONE CONTROLLED OUTLET (TOP) AND ONE UNCONTROLLED OUTLET (BOTTOM) C = CONTROLLED RECEPTACLE b = LIGHTING CONTROL PANEL RELAY (FOR CONTROLLED RECEPTACLE)	
TWO DUPLEX RECEPTACLES MOUNTED IN ONE 2-GANG BOX: +18" AFF UON. R1-3 = CIRCUIT NUMBER CT = OUTLET INSTALLED 6" ABOVE COUNTER TOP OR BACKSPLASH D = DEDICATED WP = WEATHERPROOF G = GROUND FAULT CIRCUIT INTERRUPTER S = TWO SPLIT-WIRED RECEPTACLES WITH ONE CONTROLLED OUTLET (TOP) AND ONE UNCONTROLLED OUTLET (BOTTOM) ON EACH RECEPTACLE C = ONE CONTROLLED RECEPTACLE AND ONE UNCONTROLLED RECEPTACLE b = LIGHTING CONTROL PANEL RELAY (FOR CONTROLLED RECEPTACLE)	
DUPLEX RECEPTACLE CEILING MOUNTED	
FOURPLEX RECEPTACLE CEILING MOUNTED	
DUPLEX RECEPTACLE IN FLOOR BOX WITH HINGED COVER ALL IN-FLOOR BOXES ARE POWER/DATA COMBINATION BOXES.	
TWO DUPLEX RECEPTACLES IN FLOOR BOX WITH HINGED COVER ALL IN-FLOOR BOXES ARE POWER/DATA COMBINATION BOXES.	
SPECIAL PURPOSE RECEPTACLE, TYPE AS SHOWN	
MOTORIZED DAMPER #1/FIRE SMOKE DAMPER #1	
P.A. SPEAKER AND BACKBOX FOR FUTURE PUBLIC ADDRESS SYSTEM	
JUNCTION BOX	
JUNCTION BOX, FLOOR MOUNTED	
POWER CONNECTION TO ELECTRIFIED FURNITURE	
TELECOM CONNECTION TO ELECTRIFIED FURNITURE, PROVIDE A 1-1/4" C TO ACCESSIBLE CEILING ABOVE	
GROUND ROD	
3/4" CONDUIT, U.O.N., WITH 2#12 +1#12G U.O.	

EQUIPMENT

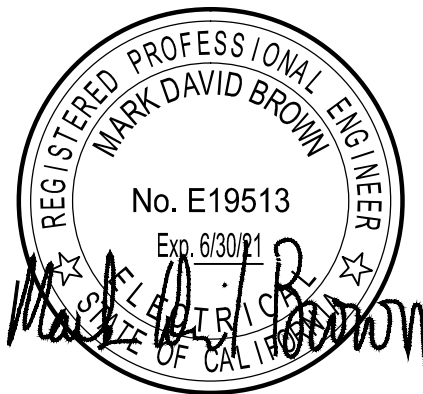
EQPT - #	
	PULLBOX , SIZE AS NOTED ON PLANS
	TRANSFORMER, RATING AS INDICATED OR SCHEDULED
	MOTOR OUTLET
	FUSED DISCONNECT SWITCH, RATING AS INDICATED OR SCHEDULED
	VOLTAGE FREQUENCY DRIVE (SEE DIVISION 23 SPECIFICATION)
	NON-FUSED DISCONNECT SWITCH, RATING AS NOTED OR SCHEDULED
	CIRCUIT BREAKER WITH ENCLOSURE, RATING AS NOTED OR SCHEDULED
	CIRCUIT BREAKER , RATING AS NOTED OR SCHEDULED.
	COMBINATION CIRCUIT BREAKER/FVNR MAGNETIC STARTER RATING AS NOTED OR SCHEDULED
	SURFACE RACEWAY WITH BUILT-IN RECEPTACLES (TYPE AND SPACING AS INDICATED OR SPECIFIED) DOTS = NEMA 5-20R SPECIAL OUTLET=NEMA 5-30R U.O.N.
	ELECTRIC HAND DRYER
	DRY TYPE TRANSFORMER VOLTAGE AS SHOWN SECONDARY GROUNDED
EQUIPMENT NAMEPLATE LAYOUT	
	TERMINAL BOX
EQUIPMENT NAME AMP RATING, VOLTAGE, PHASE, WIRES POWER SOURCE (FEEDER PANEL)	
SCREWED ON NAMEPLATE, NO ADHESIVES. EACH TEXT LINE CENTERED IN NAMEPLATE MIN. 1/4" HIGH WHITE TEXT ON BACKGROUND AS FOLLOWS: NORMAL-BLACK EMERGENCY-RED STANDBY-YELLOW UPS OR REGULATED-ORANGE	
NOMENCLATURE	
	FIXTURE TYPE
	FIXTURE SYMBOL
	CIRCUIT NO. AND SWITCHING DESIGNATION
	SHEET NOTE REFERENCE MARKER, NOTE #1 SHOWN
	REVISION REFERENCE MARKER
	DETAIL REFERENCE MARKER. (DETAIL 1 ON SHEET E6.1 SHOWN)
	MECHANICAL EQUIPMENT DESIGNATION
	ELECTRICAL EQUIPMENT DESIGNATION

ABBREVIATIONS

- (E) DENOTES EXISTING TO REMAIN
(R) DENOTES EXISTING TOP BE REMOVED
(RR) DENOTED EXISTING EQUIPMENT IN EXISTING LOCATION TO BE RELOCATED
(N) DENOTES NEW (ALL COMPONENTS ARE NEW UNLESS NOTED OTHERWISE)
(RL) DENOTES EXISTING EQUIPMENT IN RELOCATED POSITION

DRAWING LIST

Sheet Number	Sheet Title
E-001	SYMBOLS, ABBREVIATIONS, GENERAL NOTES AND DRAWING LIST
E-101	SITE PLAN-ELECTRICAL
E-111	FIRST FLOOR PLAN-POWER DEMO
E-112	SECOND FLOOR PLAN-POWER DEMO
E-121	FIRST FLOOR PLAN - POWER
E-122	SECOND FLOOR PLAN - POWER
E-161	ROOF PLAN-ELECTRICAL
E-171	FIRST FLOOR PLAN - LIGHTING
E-172	SECOND FLOOR PLAN - LIGHTING
E-173	FIRST FLOOR PLAN - PHOTOMETRICS
E-500	DETAILS AND RISER
E-501	SCHEDULES - MECHANICAL
E-600	SINGLE LINE DIAGRAM-NORMAL POWER
E-601	SCHEDULES - PANEL
E-602	LIGHTING CONTROL DIAGRAM
E-603	LIGHTING FIXTURE SCHEDULE



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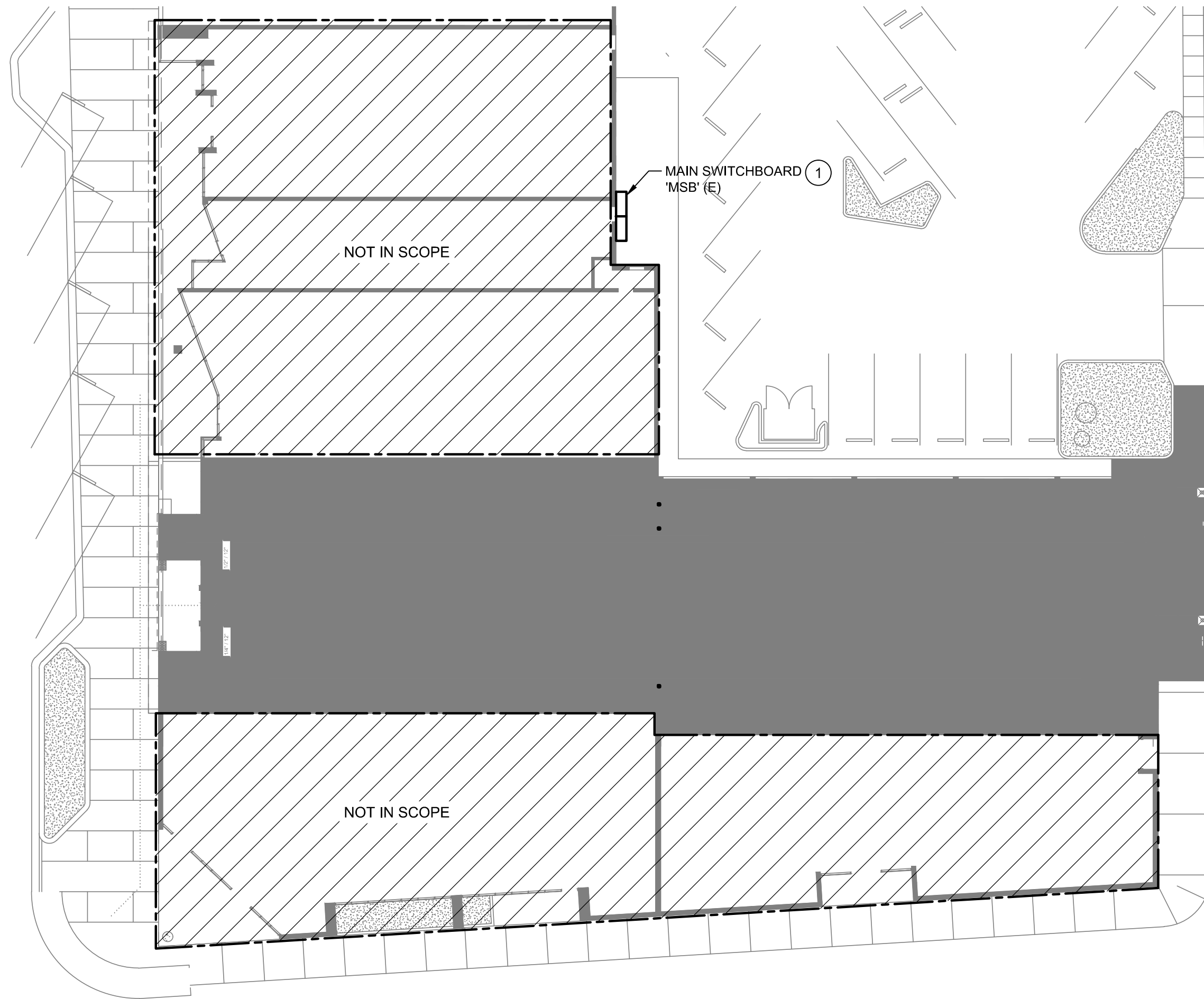


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SYMBOLS, ABBREVIATIONS,
GENERAL NOTES AND DRAWING
LIST

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Drawing File: TLCD0082E101.dwg
Plotting Date: 7/23/2019 10:53 AM
Last saved by: ECANCIO Tuesday, July 23, 2019 10:43:50 AM

1 SITE PLAN-ELECTRICAL
1" = 20'-0"



SHEET NOTES:

- 1 SEE ONE-LINE DIAGRAM FOR WORK REQUIRED AT (E) MAIN SWITCHBOARD.

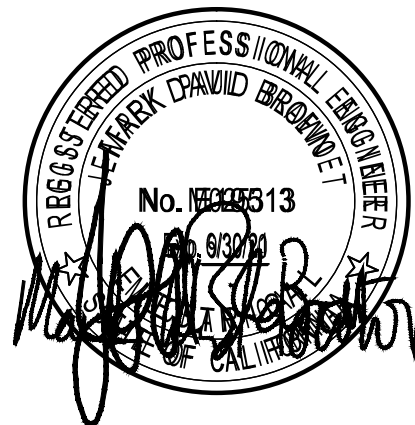
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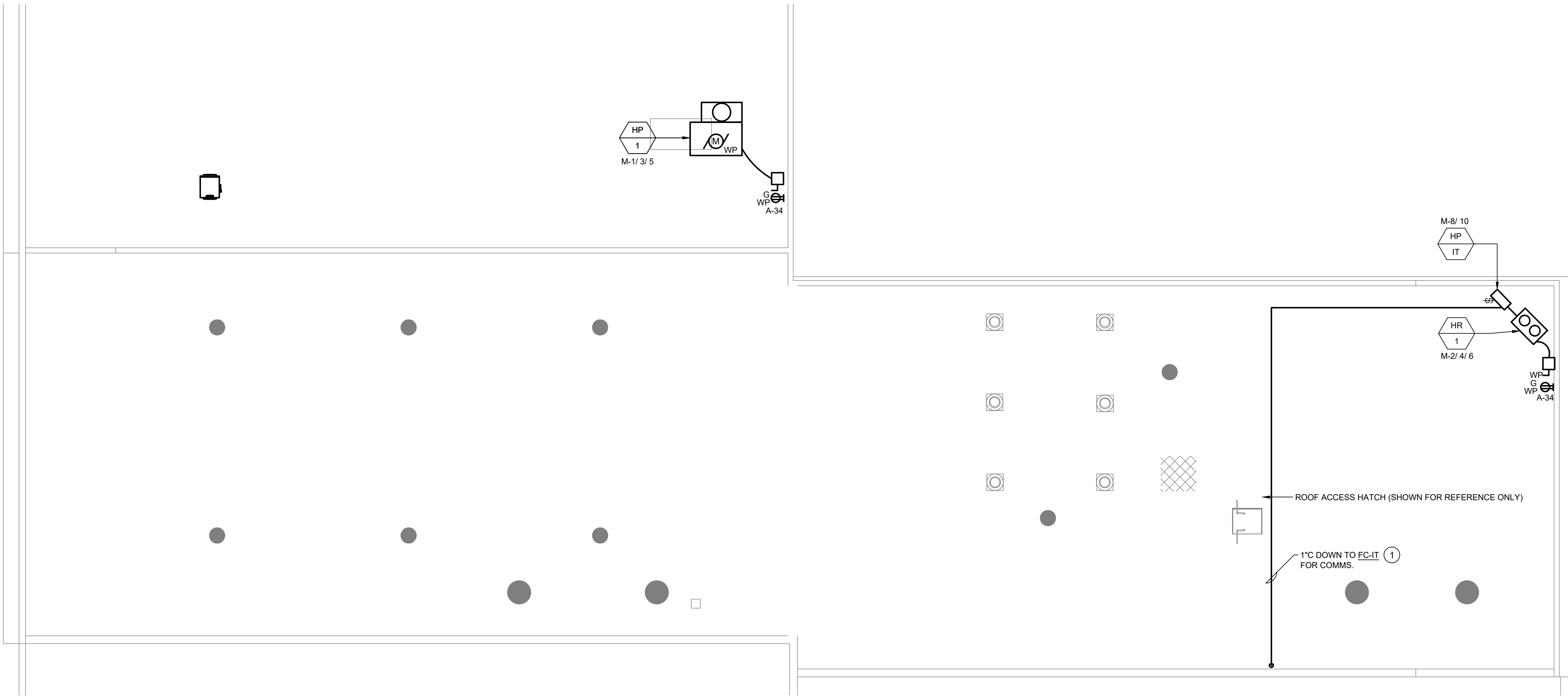
SITE PLAN-ELECTRICAL

E-101

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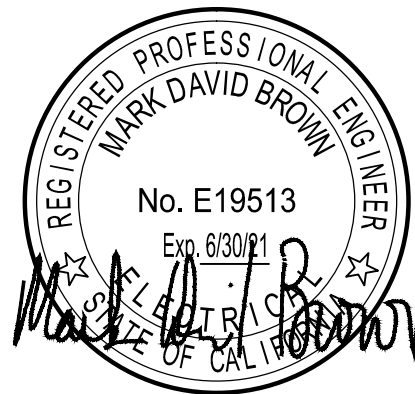


1 ROOF PLAN-ELECTRICAL
1/8" = 1'-0"



SHEET NOTES:

- 1 PROVIDE DURABLOCK SUPPORT, SPACING AS REQUIRED. SEE DETAIL 6/ E-500.
- 2 PROVIDE CONDUIT AND COMMUNICATIONS WIRING BETWEEN HP-IT AND FC-IT ON FIRST FLOOR PER WIRING DIAGRAM. SEE DETAIL SHEET 5/ E500.



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ROOF PLAN-ELECTRICAL

E-161