### CAL GREEN BUILDING STANDARDS **DIVISION 5.2 – ENERGY EFFICIENCY** SECTION 5.201 – GENERAL 5.201.1 California Energy Code. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards. DIVISION 5.3 – WATER EFFICIENCY AND CONSERVATION SECTION 5.303 – INDOOR WATER USE 5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fitting (faucets and showerheads) shall comply with the following: 5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specifications for Tank- Type Toilets. Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush. 5.303.3.2 Urinals. 5.303.3.2.1 Wall mounted urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. 5.303.3.2.2 Floor mounted urinals. The effective flush volume of floor mounted or other urinals shall not exceed 0.5 gallons per flush. 5.303.3.3 Showerheads 5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specifications for showerheads. **5.303.3.3.2 Multiple showerheads serving one shower.** When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the showerhead shall be designed to allow only one shower outlet to be in operation at one time. **Note:** A hand-held shower shall be considered a showerhead. 5.303.3.4 Faucets and fountains. 5.303.3.4.1 Non-residential lavatory faucets. Non-residential lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi. 5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi. **5.303.3.4.3 Wash fountains.** Wash fountains shall have a maximum flow rate of not more than 1.8

gallons per minute/20 [rim space (inches) at 60 psi]. 5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle. 5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per cycle/20 [rim space (inches) at 60 psi]. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction

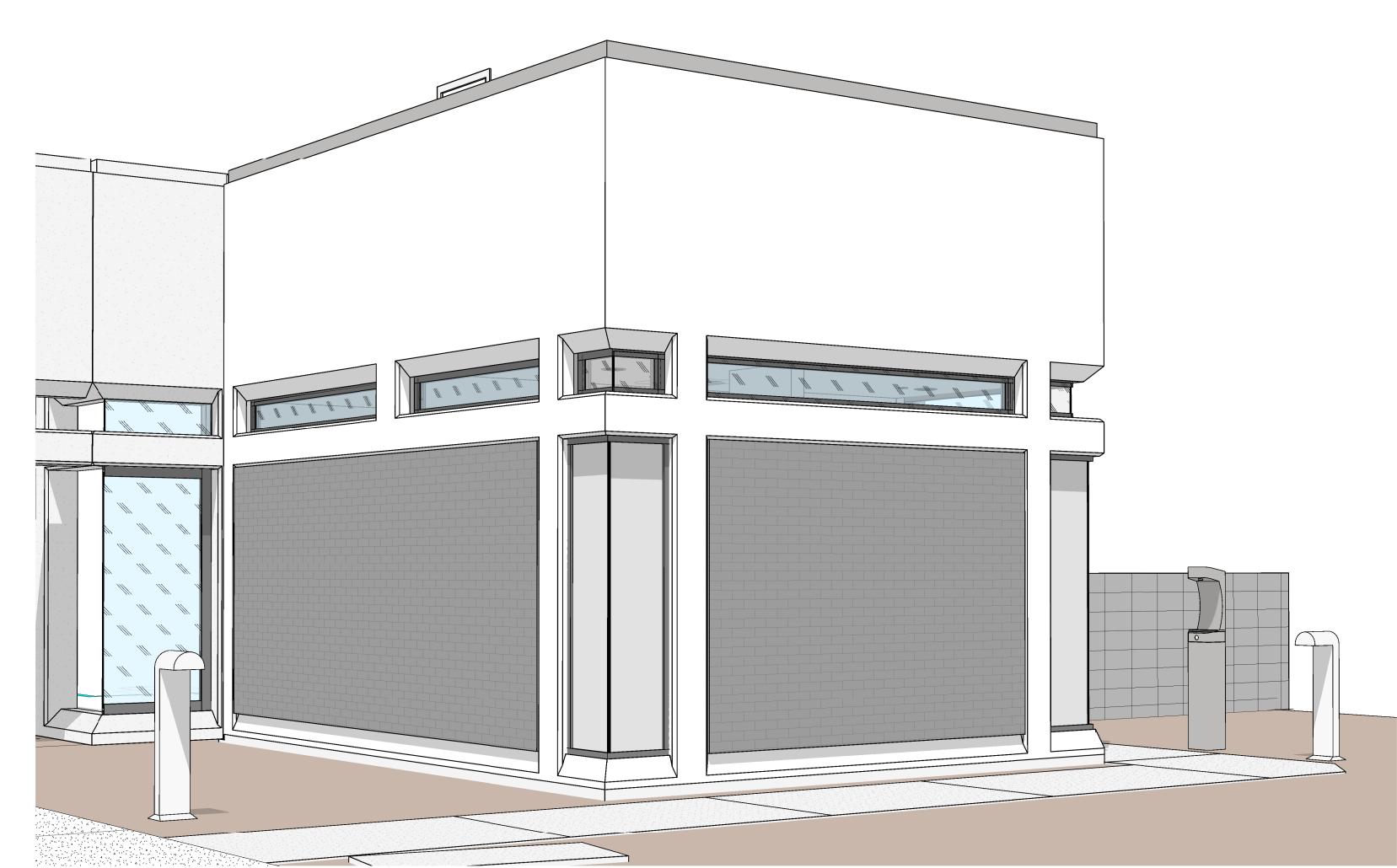
**5.303.6 Standards for plumbing fixtures and fittings.** Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code*, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code and in Chapter 6 of this code.

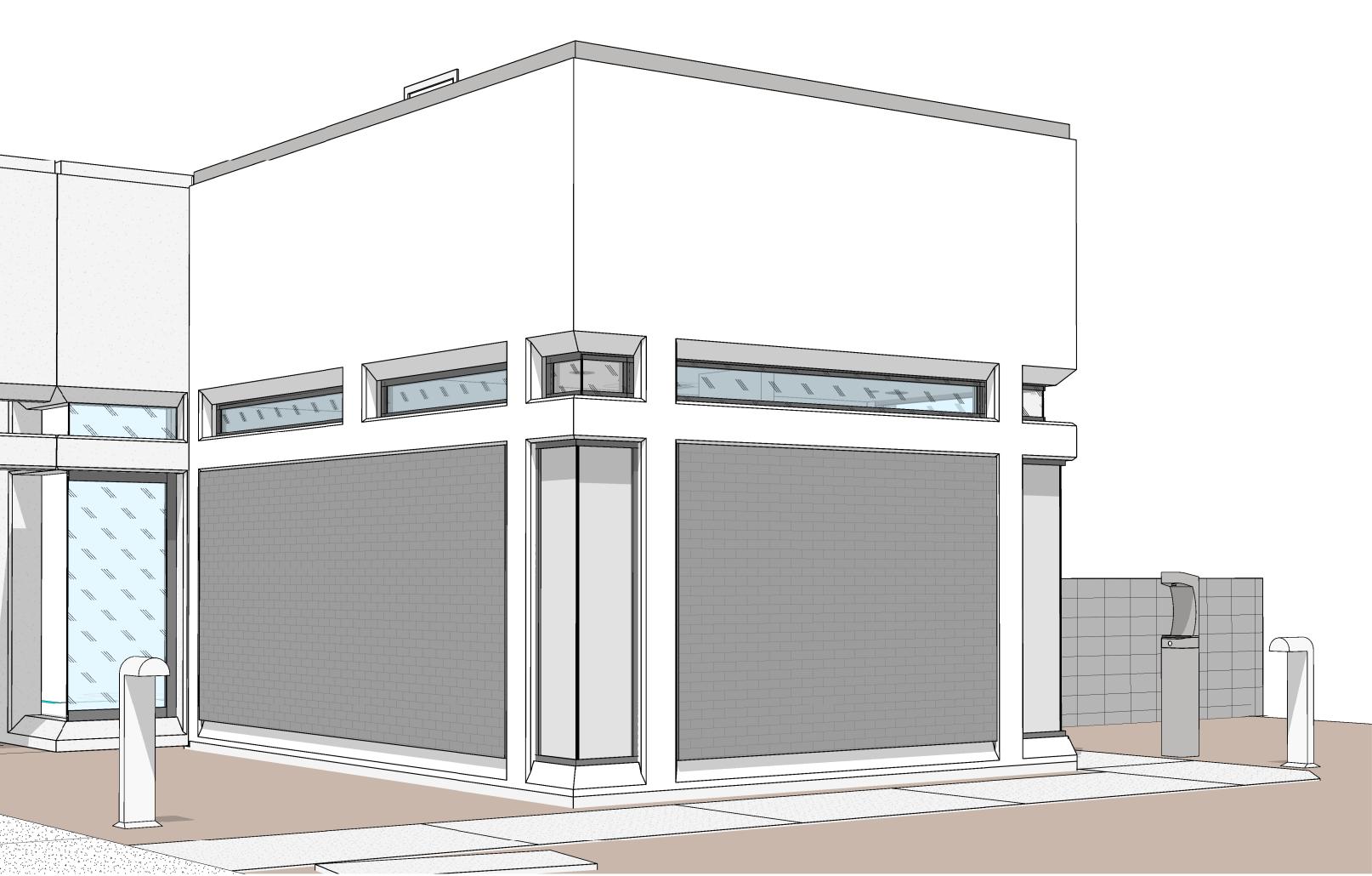
### **DIVISION 5.5 ENVIRONMENTAL QUALITY** SECTION 5.504.1 – POLLUTANT CONTROL

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 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.

- 5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6. 5.504.4.1 Adhesives, sealants, and caulks. 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. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene),
- except for aerosol products as specified in subsection 2, below. 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.** Architectural paints and coatings shall comply with VOC limits in
- Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3, shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36 and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply. TABLE 5.504.4.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS

(See CALGreen for TABLE) 5.504.4.3.1 Aerosol paints and coatings. Aerosol paints and coatings shall meet the PWMIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.







# ACCESSIBILITY REQUIREMENTS

I AM THE DESIGNER/OWNER IN RESPONSIBLE CHARGE OF PROPOSED TENANT IMPROVEMENT PROJECT; I HAVE INS THE SITE/PREMISES AND DETERMINED THAT EXISTING CO ARE IN FULL COMPLIANCE WITH CURRENT SITE ACCESSIE REQUIREMENTS TO THE EXTENT REQUIRED BY LAW.

TAAL SAFDIE	TY	11/19
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I AM THE OWNER O	R DESIGNER IN RESPON	ISIBLE CHARG
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TAAL SAFDIE	T	11/19
NAME (PRINT)	SIGNATURE	DATE

# FAA SELF CERTIFICATION

I, TAAL SAFDIE, DO HEREBY CERTIFY THAT THE STRUCT MODIFICATION TO EXISTING STRUCTURE(S) SHOWN ON PLANS DO NOT REQUIRE FEDERAL AVIATION ADMINISTR NOTIFICATION BECAUSE PER SECTION 77.15 (A) OF TITLE CODE OF FEDERAL REGULATIONS CFR PART 77, NOTIFIC NOT REQUIRED.

TAAL SAFDIE	TI	11/1
NAME (PRINT)	SIGNATURE	DAT

A PRE-CONSTRUCTION INSPECTION IS REQUIRED DUE TO THE HEIGHT OF PROPOSED STRUCTURE IN RELATION TO THE FAA PART 77 NOTIFICATION S REQUIREMENTS. THE PRE-CONSTRUCTION INSPECTION MUST BE SCHEDU CLEARED BY THE FIELD INSPECTOR BEFORE ANY SUBSEQUENT INSPECTION SCHEDULED. CALL (858) 581-7111 TO SCHEDULE THE PRE-CONSTRUCTION INSPECTION. THE INSPÉCTION SERVICES OFFICE AT (858) 492-5070, IF YOU HAVE ANY QU PERTAINING TO THE PRE-CONSTRUCTION INSPECTION.

5

# **JEWISH FAMILY SERVICE - RESTROOM ADDITION 100% CONSTRUCTION DOCUMENT**

	PROJECT TE	AM	APPLICABLE CODE	DEVELOPMENT SUMMARY
OF THIS	OWNER:	JEWISH FAMILY SERVICE	PARTIAL LIST OF APPLICABLE CODES AS OF January 1, 2020 2019 California Administrative Code (CAC), Part 1, Title 24 CCR	<ul> <li>PROJECT DESCRIPTION / SCOPE</li> <li>DEMO OF (E) PLANTER</li> </ul>
ISPECTED CONDITIONS SIBILITY		8804 BALBOA AVENUE San Diego, ca 92123 (619) 637-3000	2019 California Building Code (CBC), Part 2, Title 24 CCR (2018 International Building Code, Vol. 1 & 2, and 2019 California amendments) 2019 California Electrical Code (CEC), Part 3, Title 24 CCR (2017 National Electrical Code and 2019 California Amendments)	<ul> <li>DEMO AND NEW CONCRETE WALKWAY</li> <li>ADDITION OF (2) SINGLE ACCOMMODATION RESTROOMS WITH WINDOWS, SHOWERS, WITH ASSOCITED MECHANICAL, ELECTRICAL, PLUMBING, FIRE ALARM AND FIRE SPRINKLERS AND ROOFING.</li> </ul>
	ARCHITECT:	SAFDIE RABINES ARCHITECTS 925 FORT STOCKTON DRIVE SAN DIEGO, CA 92103 (619) 297-6153	2019 California Mechanical Code (CMC), Part 4, Title 24 CCR (2018 IAPMO Uniform Mechanical Code and 2019 California amendments) 2019 California Plumbing Code (CPC), Part 5, Title 24 CCR (2018 IAPMO Uniform Plumbing Code and 2019 California amendments)	<ul> <li>ADDITION OF AN EXTERIOR WATER BOTTLE FILLER AND DEVICE CHARGING STATIONS</li> <li>REPLACED FENCE AND GATE</li> <li>RELOCATION OF LIGHT BOLLARD</li> </ul>
19/21	CIVIL ENGINEER:	NASLAND ENGINEERING 4740 RUFFNER STREET	2019 California Energy Code (CEC), Part 6, Title 24 CCR 2019 California Fire Code (CFC), Part 9, Title 24 CCR (2018 International Fire Code and 2019 California Amendments)	PROJECT ADDRESS 8788 BALBOA AVENUE
TE		SAN DIEGO, CA 92111 (858) 292-7770	2019 California Existing Building Code (CEBC), Part 10, Title 24 CCR (2018 International Existing Building Code and 2019 California Amendments) 2019 California Green Building Standards Code (CALGreen), Part 11, Title 24 CCR	SAN DIEGO, CA 92123
	STRUCTURAL ENGINEER:	<b>IMEG</b> 10920 VIA FRONTERA, SUITE 200	2019 California Referenced Standards Code, Part 12, Title 24 CCR Title 19 CCR, Public Safety, State Fire Marshal Regulations	EXISITNG OFFICE FACILITIES FOR A NON-PROFIT ORGANIZATION. NO CHANGE IN USE
RGE OF THIS		SAN DIEGO, CA 92127 (858) 368-3400	2016 ASME A17.1/CSA B44-13 Safety Code for Elevators and Escalators (per 2019 CBC Part 2 Ch 35)	ASSESSOR'S PARCEL NUMBER 369-150-1700 (8804 BALBOA AVE) 369-150-1600 (8788 BALBOA AVE)
T AND /ING AREA(S)	MECHANICAL & PLUMBING ENGINEER:	DUFOE CONSULTING ENGINEERING 10680 TREENA STREET	Note: Cal/OSHA Elevator Unit enforces CCR Title 8 and uses the 2004 ASME A17.1 by adoption	LOT SIZE
Y LAW.		SUITE 163 San Diego, ca 92131 (858) 368-8630	PARTIAL LIST OF APPLICABLE STANDARDS NFPA 13 - Standard for the Installation of Sprinkler Systems (CA amended, 2016 Edition NFPA 14 - Standard for the Installation of Standpipe and Hose Systems (CA amended),	71,275.68 sq ft (1.64 ACRES) (8804 BALBOA AVE) 70,732.20 sq ft (1.62 ACRES) (8788 BALBOA AVE)
19/21	ELECTRICAL, FIRE ALARM, FIRE SPRINKLER ENGINEER:	SALAS O'BRIEN 3220 EXECUTIVE RIDGE, SUITE 200	2016 Edition NFPA 17 - Standard for Dry Chemical Extinguishing Systems, 2017 Edition NFPA 17A - Standard for Wet Chemical Extinguishing Systems, 2017 Edition	<b>LEGAL DESCRIPTION</b> <u>369-150-1700</u> PARCEL 2 OF PARCEL MAP NO.6191, CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDER
TE		VISTA, CA 92081 (760) 560-0100	NFPA 20 - Standard for the Installation of Stationary Pumps for Fire Protection, 2016 Edition NFPA 22 - Standard for Water Tanks for Private Fire Protection, 2013 Edition NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their	of San Diego County, July 22, 1977 as instrument no. 77-295384 of official records.
			Appurtenances (CA amended), 2016 Edition NFPA 72 - National Fire Alarm and Signaling Code (CA amended), 2016 Edition NFPA 80 - Standard for Fire Doors and Other Opening Protectives, 2016 Edition NFPA 2001 - Standard on Clean Agent Fire Extinguishing Systems (CA amended), 2015	<u>369-150-1600</u> PARCEL 3 OF PARCEL MAP NO. 6191, CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 22, 1977 AS INSTRUMENT NO. 77-295384 OF OFFICIAL RECORDS.
	VICINITY MAF	)	Edition UL 300 - Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial	BASE ZONE
TURE(S) OR N THESE	<sup>547</sup> St 78	Sharp Healthcare	Cooking Equipment, 2005 (R2010) UL 464 - Audible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories, 2003 Edition	1L-2-1 OVERLAY ZONES
RATION LE 14 OF THE		Tech Way Tech Way	UL 521 - Standard for Heat Detectors for Fire Protective Signaling Systems, 1999 Edition UL 1971 - Standard for Signaling Devices for the Hearing Impaired, 2002 (R2010) ICC 300 - Standard for Bleachers, Folding and Telescopic Seating, and Grandstands, 2017	AIRPORT INFLUENCE AREA FIRE BRUSH ZONES 300' BUFFER FIRE HAZARD SEVERITY ZONE
ICATION IS	763 Mila Rd		Edition For a complete list of applicable NFPA standards refer to 2019 CBC (SFM) Chapter 35 and	PRIME INDUSTRIAL LAND
	Prearry St	Balboa Ave Ponde	California Fire Code Chapter 80.	CONSTRUCTION TYPE: VB SPRINKLERED OCCUPANCY CLASSIFICATION : B NUMBER OF STORIES: 1
19/21	W	Balboa Ave	See California Building Code Chapter 35 for State of California amendments to the NFPA Standards.	BUILDING HEIGHT: 30'-0" PROPOSED (60'-0" ALLOWABLE )
TE	C4-163	Ave	GEOTECH REPORT	TOTAL BASIC ALLOWABLE AREA: 38,000 SF (TABLE 506.2) FLOOR AREA PROPOSED: 341 SF + 18,846 SF (EXISTING) = 19,187 SF (OK)
			THE SOILS REPORT ASSOCIATED WITH THIS SITE WAS PREPARED BY CHRISTIAN	FIRE SEPERATION DISTANCE: 0 (TABLE 602, $\geq$ 30)
OF THE N SURFACE DULED AND TIONS CAN BE			WHEELER ENGINEERING AT 3980 HOME AVENUE, SAN DIEGO, CA 92105 ON JUNE 19TH, 2014 (CWE 2140269.01) AND AMENDED ON NOVEMBER 19, 2021.	REQUIRED SETBACKS: FRONT: 15' REAR: 0' SIDES: 10'
N. CONTACT QUESTIONS				STREET SIDE: 15'

GENERAL

G001	TITLE SHEET
G002	GENERAL NOTES, SYMBOLS, ABBREVIATIONS
G003	ACCESSABILITY REQUIREMENTS
CIVIL	
C-2	BMP NOTES
C-2 C-3	GRADING PLAN & EROSION CONTROL PLAN
C-3 C-4	UTILITY PLAN
0-4	
ARCHITECT	URE
A001	SITE PLAN
A001 A002	ENLARGED SITE PLANS - DEMO AND PROPOSED
A101	PLANS
A200	BUILDING ELEVATIONS
A300	BUILDING SECTIONS
A400	INTERIOR PLAN & ELEVATIONS
A600	DETAILS - EXTERIOR
A601	DETAILS - ROOF
A650	DETAILS - SITE
A700	DETAILS - INTERIOR
A750	DETAILS - SIGNAGE
A800	DOOR, WINDOW, FINISH & WALL SCHEDULE
A801	INTERIOR TILE LAYOUT
STRUCTUR	AL
S001	GENERAL NOTES
S010	TYPICAL DETAILS
S011	TYPICAL DETAILS
S012	TYPICAL DETAILS
S013	TYPICAL DETAILS
S014	TYPICAL DETAILS
S015	TYPICAL DETAILS
S200	FRAMING PLANS

## MECHANICAL

MO

M001	MECHANICAL LEGEND, NOTES AND SHEET INDEX
M002	MECHANICAL SPECIFICATIONS
M003	MECHANICAL SPECIFICATIONS
M004	TITLE 24 CALCULATIONS
M005	TITLE 24 CALCULATIONS
M201	MECHANICAL PLANS
M501	MECHANICAL DETAILS

### ELECTRICAL

E0.1	ELECTRICAL LEGEND AND GENERAL NOTES
E0.2	ELECTRICAL FIXTURE SCHEDULE
E0.3	TITLE 24 INTERIOR
E0.4	TITLE 24 EXTERIOR
E1.1	ELECTRICAL SITE PLAN
E2.1	LIGHTING FLOOR PLAN
E4.1	SINGLE LINE DIAGRAM AND PANEL SCHEDULES
E6.1	ELECTRICAL SPECIFICATIONS
E6.2	ELECTRICAL SPECIFICATIONS

# PLUMBING

P001	PLUMBING LEGEND, NOTES AND SHEET INDEX
P002	PLUMBING SPECIFICATIONS
P003	PLUMBING SPECIFICATIONS
P200	PLUMBING PLANS - OVERALL
P201	PLUMBING PLANS - ENLARGED
P501	PLUMBING DETAILS

### FIRE ALARM

FA0.1	FIRE ALARM LEGEND AND GENERAL NOTES
FA1.1	FIRE ALARM SITE PLAN
FA2.1	FIRE ALARM FLOOR PLAN

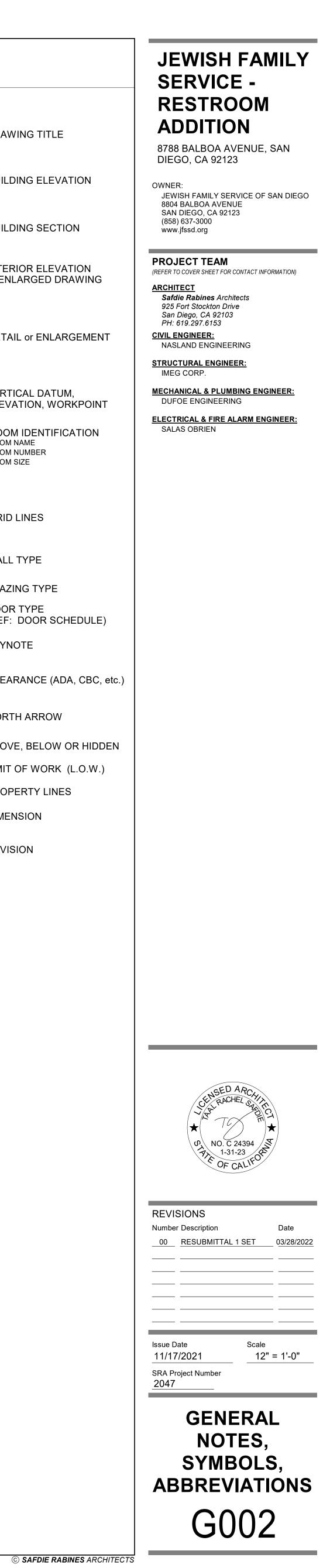
### FIRE PROTECTION

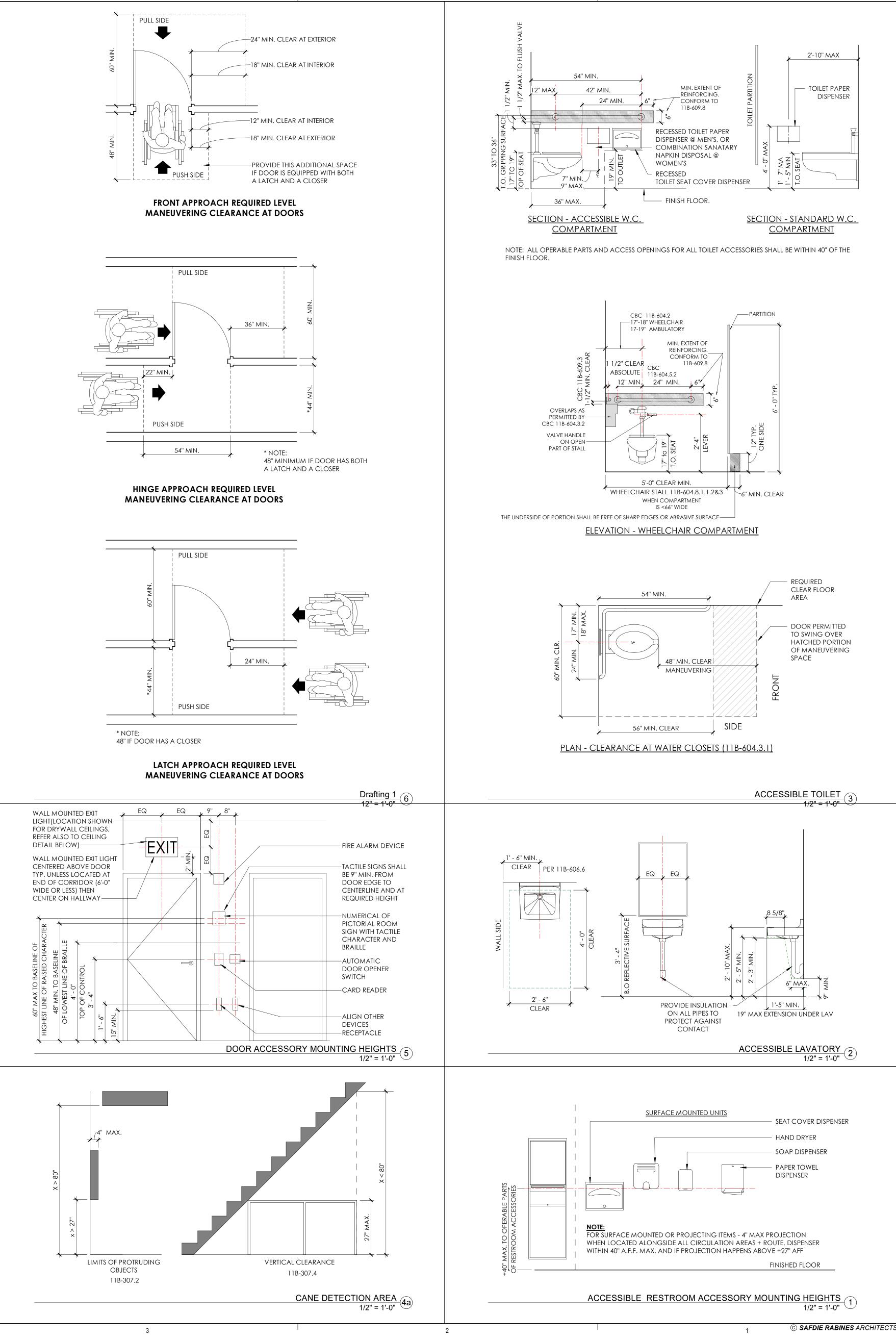
FP0.1	FIRE PROTECTION GENERAL
FP2.1	FIRE PROTECTION PLAN

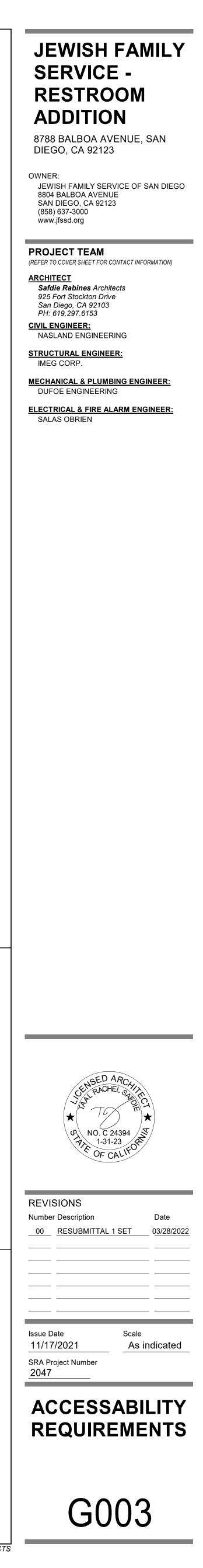


6	5 GENERAL NOTES 2	4 GENERAL NOTES 1	3 ABBREVIATIONS
	<ol> <li>THE CONTRACTOR MAIL VIEWS DIMENSIONA AND ICCURSION CALMMAN. THE CONTRACTOR MAIL VIEWS DIMENSIONA AND ICCURSION CALMMAN. THE CONTRACTOR DURING CONTRACTOR SHOLL BE DIMENSIONAL CONTRACTOR SHOLL BE DISTORDED THAT IS PRIVE CONTRACTOR SHILL BE DIMENSIONAL CONTRACTOR DURING CONTRACTOR SHILL BE DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL ON THE CONTRACTOR AND THE DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL THE RESULTAND AND THE DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL OF DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL THE RESULTAND AND THE DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL OF DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL OF DIMENSIONAL THE SHILL BOTTOR CONTRACTOR SHILL BE DIMENSIONAL OF DIMENSIONAL CONTRACTOR SHILL BE DIMENSIONAL DIMENS</li></ol>	<ol> <li>ALL WORK SHALL BE DONE IN A PROTESSIONAL MANNER AND SHALL GONEYMM IN THE CHARGE SHALL BE NOT MANY AND THE ADDITIONAL CONFIGURATION UNDER THE ADDITIONAL MECHANICAL CONFIGURATION ADDITIONAL CONFIGURATION CONFIGURATIONAL CONFIGURATION AND THE CONFIGURATION ADDITIONAL CONFIGURATIONAL CONFIGURATION AND THE CONFIGURATION ADDITIONAL CONFIGURATIONAL CONFIGURATION ADDITIONAL CONFIGURATION CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATION CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATION CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATIONAL CONFIGURATION CONFIGURATIONAL CONFIGURATIONAL CONFIG</li></ol>	A.S.ACC (CP 200"A.S.ACC (CP 200"A.C.L.ACC (CP 200"A.C.L.ACC (CP 200"A.C.L.ACC (CP 200"A.C.L.ACC (CP 200"A.C.L.ACC (CP 200"A.C. ALDA ACACC (CP 200"B.T.C.HICK <t< td=""></t<>
6	5	4	3

		SYMBOLS	
		View Name	
MECH. MET. MEMB.	MECHANICAL METAL	1/8" = 1'-0"	— DRAWING TITLE
⊿FR.			
ΛIN. ΛIR	MINIMUM OR MINUTE MIRRORED INFORMATION		BUILDING ELEVATION
ISC. .O.	MISCELLANEOUS MASONRY OPENING	A 101	
TD	MOUNTED	SIM	
1.) .I.C.	NORTH NOT IN CONTRACT	1 (A101)	BUILDING SECTION
 O. OR # .R.	NUMBER NOT RATED		
.S.	NOT TO SCALE	NUMBER	INTERIOR ELEVATION or ENLARGED DRAWING
C. D.	on center outside diameter		OF ENERINGED DIVENING
	OR OVERFLOW DRAIN OPPOSITE HAND/MIRRORED		
NG. 2.0.1.	OPENING OWNER PURCHASED, OWNER INSTALLED		
C.I.	OWNER PURCHASED, CONTRACTOR INSTALLED OPPOSITE	SHEET	
	OVERFLOW SCUPPER	NUMBER	
RT. F.	PARTITION PERFORATED		
Ρ.	PERPENDICULAR PROPERTY LINE		VERTICAL DATUM, ELEVATION, WORKPOINT
M.	PLATE PLASTIC LAMINATE		
.S. 1B.	PLASTER PLUMBING	ROOM NAME 🔫	ROOM IDENTIFICATION
WD.	PLYWOOD PANEL	101	ROOM NUMBER ROOM SIZE
	PAIR PRESSURE TREATED		
	PHOTOVOLTAIC CELL - SOLAR PANEL		
).	RADIUS OR RISE ROOF DRAIN	0)	GRID LINES
WD. C.	REDWOOD RECESSED		
E. R.	REFLECTED REFRIGERATOR		
NF. Q'D.	REINFORCED REQUIRED		WALL TYPE
IL.	RESILIENT RETAINING	[W01]	GLAZING TYPE
	ROOM ROUGH OPENING		DOOR TYPE
0	South		(REF: DOOR SCHEDULE)
	Shelf and pole Solid Core	- ?	KEYNOTE
Э.	SCHEDULE STORM DRAIN		REINOIL
	SECTION SINGLE		CLEARANCE (ADA, CBC, e
	SHOWER SHEET		( ) )
G.	SHEATING SIMILAR		NORTH ARROW
C.	SPECIFICATION SQUARE		
L.	SERVICE SINK STAINLESS STEEL		ABOVE, BELOW OR HIDD
).  	STANDARD OR STUD STEEL	_ · _ · _ · _	LIMIT OF WORK (L.O.W.)
DR. LUCT.	STORAGE STRUCTURAL		PROPERTY LINES
5Ρ. Λ.	SUSPENDED SYMMETRICAL		
	TREAD TOP OF CURB	4 1 3/8" A	DIMENSION
NP.	TELEPHONE TEMPERED		REVISION
ηρ. G	TONGUE AND GROOVE THICK	<b>#</b>	
 ). ).C.	TOP OF TOP OF CONCRETE		
).C. ).P. ).S.	TOP OF CONCRETE TOP OF PARAPET TOP OF SHEATING		
лэ. 9.W. .H.	TOP OF WALL TOILET PAPER HOLDER		
.п.	TUBE STEEL TELEVISION		
	TYPICAL		
Э. N.O.	UNDERGROUND UNLESS NOTED OTHERWISE		
в.	VAPOR BARRIER		
ERT. I.F.	VERTICAL VERIFY IN FIELD		
P. S.	VENT PIPE VENT STACK		
RT	VERTICAL		
/	WASHING MACHINE WITH		
'.C. 'D.	WATER CLOSET WOOD		
DW.	WINDOW		
JVV.			
Dvv.			







PRIOR TO ANY SOIL DISTURBANCE, TEMPORARY EROSION AND SEDIMENT CONTROLSHALL BE INSTALLED BY THE CONTRACTOR OR QUALIFIED PERSON(S) AS INDICATED BELOW:

1. ALL REQUIREMENTS OF THE CITY OF SAN DIEGO "LAND DEVELOPMENT MANUAL, STORM WATER STANDARDS" MUST BE INCORPORATED INTO THE DESIGN AND CONSTRUCTION OF THE PROPOSED GRADING/IMPROVEMENTS CONSISTENT WITH THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND/OR WATER POLLUTION CONTROL PLAN (WPCP) FOR CONSTRUCTION LEVEL BMP'S AND, IF APPLICABLE, THE STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) FOR POST CONSTRUCTION TREATMENT CONTROL BMP'S.

2. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL STORM DRAIN INLETS. INLET PROTECTION IN THE PUBLIC RIGHT OF WAY MAY BE TEMPORARILY REMOVED WHERE IT IS PRONE TO FLOODING PRIOR TO A RAIN EVENT AND REINSTALLED AFTER RAIN IS OVER.

3. ALL CONSTRUCTION BMPS SHALL BE INSTALLED AND PROPERLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.

4. THE CONTRACTOR SHALL ONLY GRADE, INCLUDING CLEARING AND GRUBBING, AREAS FOR WHICH THE CONTRACTOR OR QUALIFIED PERSON CAN PROVIDE EROSION AND SEDIMENT CONTROL MEASURES.

5. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUB-CONTRACTORS AND SUPPLIERS ARE AWARE OF ALL STORM WATER QUALITY MEASURES AND IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED SWPPP/WPCP WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS, CIVIL PENALTIES AND/OR STOP WORK NOTICES.

6. THE CONTRACTOR OR QUALIFIED PERSON SHALL BE RESPONSIBLE FOR CLEANUP OF ALL SILT, DEBRIS AND MUD ON AFFECTED AND ADJACENT STREET(S) AND WITHIN STORM DRAIN SYSTEM DUE TO CONSTRUCTION VEHICLES/EQUIPMENT AND CONSTRUCTION ACTIVITY AT THE END OF EACH WORK DAY.

7. THE CONTRACTOR SHALL PROTECT NEW AND EXISTING STORM WATER CONVEYANCE SYSTEMS FROM SEDIMENTATION, CONCRETE RINSE, OR OTHER CONSTRUCTION RELATED DEBRIS AND DISCHARGES WITH THE APPROPRIATE BMPS THAT ARE ACCEPTABLE TO THE ENGINEER AND AS INDICATED IN THE SWPPP/WPCP

8. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CLEAR DEBRIS, SILT, AND MUD FROM ALL DITCHES AND SWALES PRIOR TO AND WITHIN 3 BUSINESS DAYS AFTER EACH RAIN EVENT OR PRIOR TO THE NEXT RAIN EVENT, WHICHEVER IS SOONER.

9. IF A NON-STORMWATER DISCHARGE LEAVES THE SITE, THE CONTRACTOR SHALL IMMEDIATELY STOP THE ACTIVITY AND REPAIR THE DAMAGES. THE CONTRACTOR SHALL NOTIFY THE CITY RESIDENT ENGINEER OF THE DISCHARGE, PRIOR TO RESUMING CONSTRUCTION ACTIVITY. ANY AND ALL WASTE MATERIAL, SEDIMENT, AND DEBRIS FROM EACH NON-STORMWATER DISCHARGE SHALL BE REMOVED FROM THE STORM DRAIN CONVEYANCE SYSTEM AND PROPERLY DISPOSED OF BY THE CONTRACTOR. .

10. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES. ALL NECESSARY MATERIALS SHALL BE STOCKPILED ON SITE AT CONVENIENT LOCATIONS TO FACILITATE RAPID DEPLOYMENT OF CONSTRUCTION BMPS WHEN RAIN IS IMMINENT.

11. THE CONTRACTOR SHALL RESTORE AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL BMPS TO WORKING ORDER YEAR ROUND.12. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DUE TO GRADING INACTIVITY

OR UNFORESEEN CIRCUMSTANCES TO PREVENT NON-STORM WATER AND SEDIMENT-LADEN DISCHARGES. 13. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.

14. ALL EROSION AND SEDIMENT CONTROL MEASURES PROVIDED PER THE APPROVED SWPPP/WPCP SHALL BE INSTALLED AND MAINTAINED. ALL EROSION AND SEDIMENT CONTROL FOR INTERIM CONDITIONS SHALL BE PROPERLY DOCUMENTED AND INSTALLED TO THE SATISFACTION OF THE RESIDENT ENGINEER.

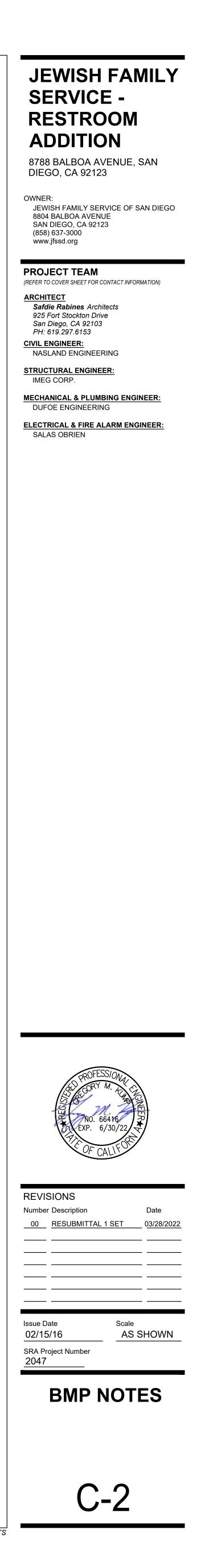
15. UPON NOTIFICATION BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL ARRANGE FOR MEETINGS DURING OCTOBER 1ST TO APRIL 30TH FOR PROJECT TEAM (GENERAL CONTRACTOR, QUALIFIED PERSON, EROSION CONTROL SUBCONTRACTOR IF ANY, ENGINEER OF WORK, OWNER/DEVELOPER AND THE RESIDENT ENGINEER) TO EVALUATE THE ADEQUACY OF THE EROSION AND SEDIMENT CONTROL MEASURES AND OTHER BMPS RELATIVE TO ANTICIPATED CONSTRUCTION ACTIVITIES.

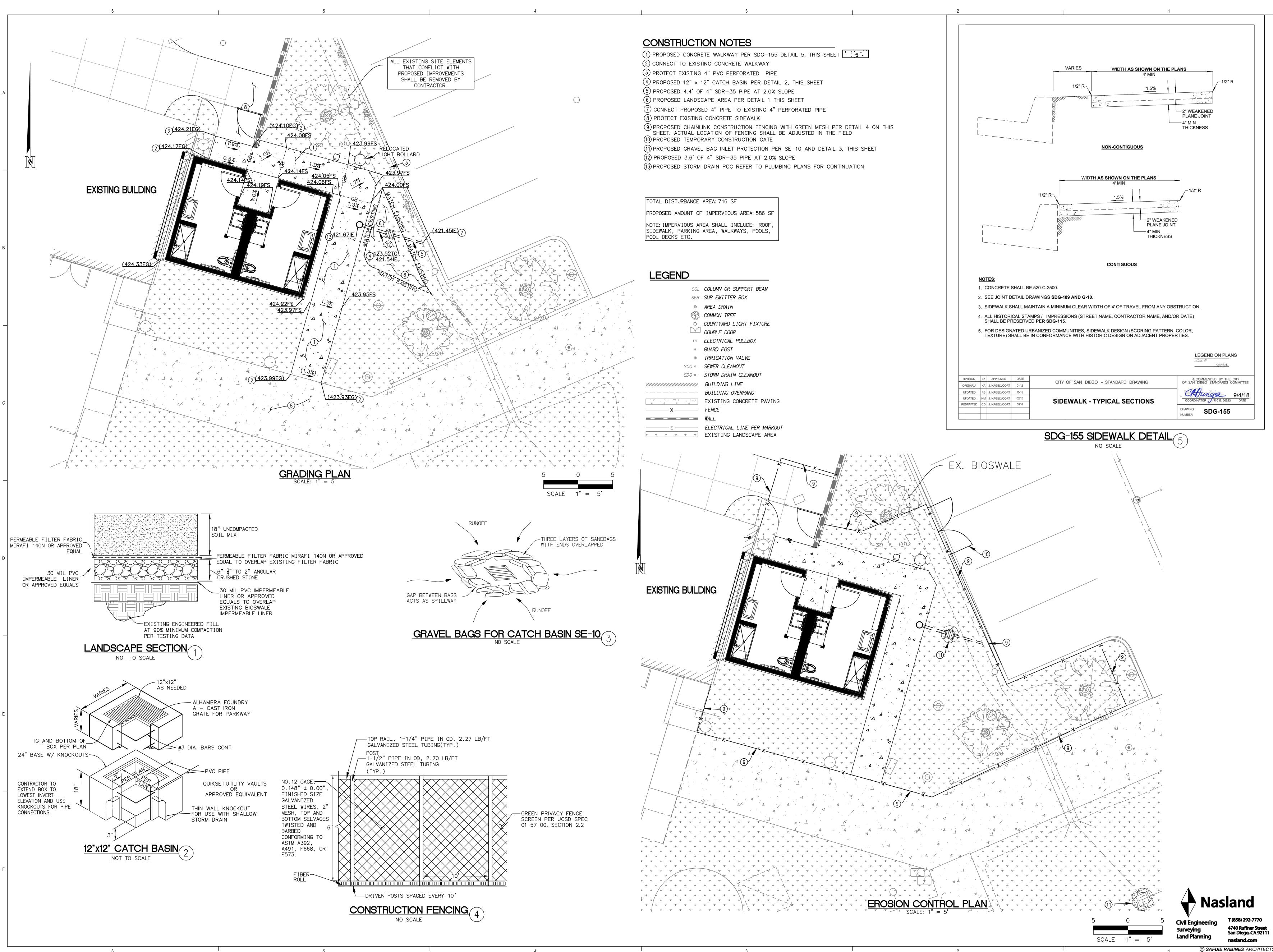
16. THE CONTRACTOR SHALL CONDUCT VISUAL INSPECTIONS DAILY AND MAINTAIN ALL BMPS AS NEEDED. VISUAL INSPECTIONS AND MAINTENANCE OF ALL BMPS SHALL BE CONDUCTED BEFORE, DURING AND AFTER EVERY RAIN EVENT AND EVERY 24 HOURS DURING ANY PROLONGED RAIN EVENT. THE CONTRACTOR SHALL MAINTAIN AND REPAIR ALL BMPS AS SOON AS POSSIBLE AS SAFETY ALLOWS.

17. CONSTRUCTION ENTRANCE AND EXIT AREA. TEMPORARY CONSTRUCTION ENTRANCE AND EXITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CASQA FACT SHEET TC-10R CALTRANS FACT SHEET TC-01 TO PREVENT TRACKING OF SEDIMENT AND OTHER POTENTIAL POLLUTANTS ONTO PAVED SURFACES AND TRAVELED WAYS. WIDTH SHALL BE 10' OR THE MINIMUM NECESSARY TO ACCOMMODATE VEHICLES AND EQUIPMENT WITHOUT BY PASSING THE ENTRANCE.

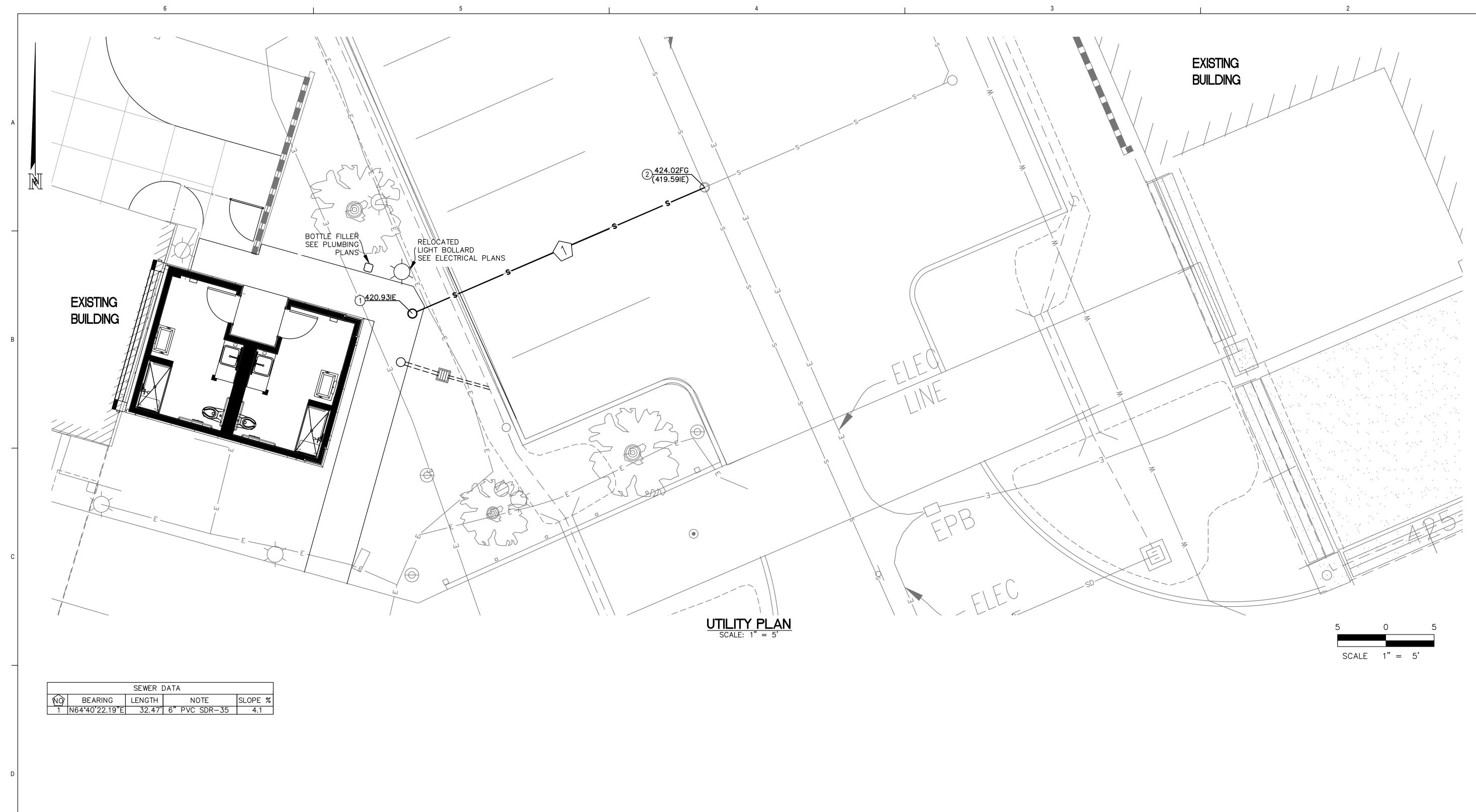
(a) NON-STORMWATER DISCHARGES SHALL BE EFFECTIVELY MANAGED PER THE SAN DIEGO MUNICIPAL CODE CHAPTER 4, ARTICLE 3, DIVISION 3 "STORM WATER MANAGEMENT AND DISCHARGE CONTROL".











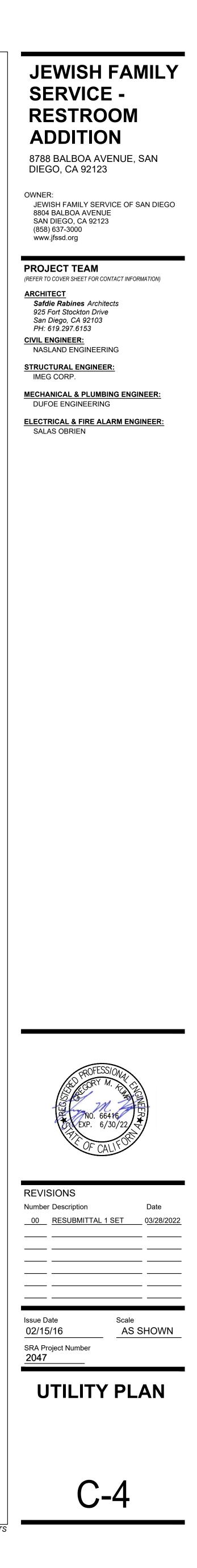
# CONSTRUCTION NOTES

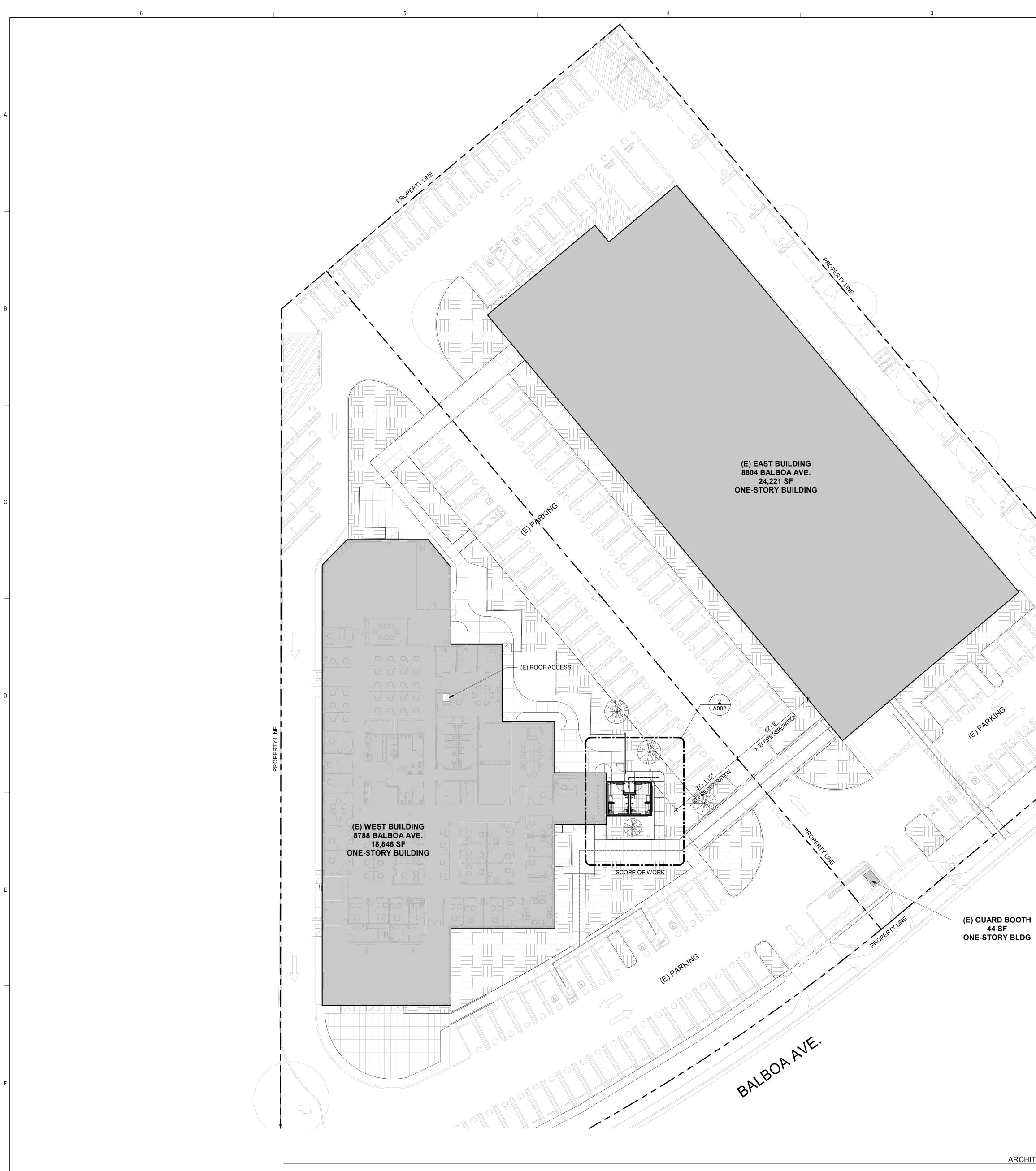
 PROPOSED SEWER POINT OF CONNECTION REFER TO PLUMBING PLANS FOR CONTINUATION.
 CONNECT PROPOSED 4" SEWER TO EXISTING 4" SEWER WITH PRIVATE SEWER CLEANOUT PER DETAIL 1 THIS SHEET.

LEGEND	
COL	COLUMN OR SUPPORT BEAM
SEB	SUB EMITTER BOX
0	AREA DRAIN
	COMMON TREE
\$	COURTYARD LIGHT FIXTURE
Y	DOUBLE DOOR
7	ELECTRICAL PULLBOX
۵	GUARD POST
۲	IRRIGATION VALVE
SCO o	SEWER CLEANOUT
SDO o	STORM DRAIN CLEANOUT
	BUILDING LINE
	BUILDING OVERHANG
	EXISTING CONCRETE PAVING
X	FENCE
	WALL
——— E ———	ELECTRICAL LINE PER MARKOUT
	EXISTING LANDSCAPE AREA



© SAFDIE RABINES ARCHITECTS

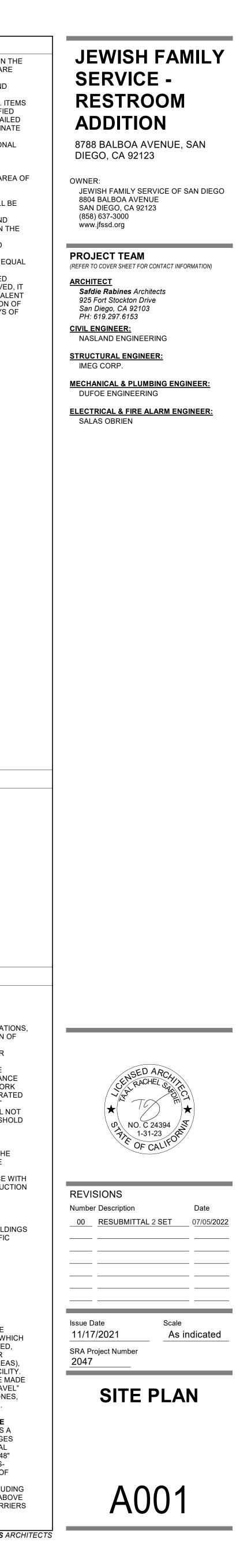


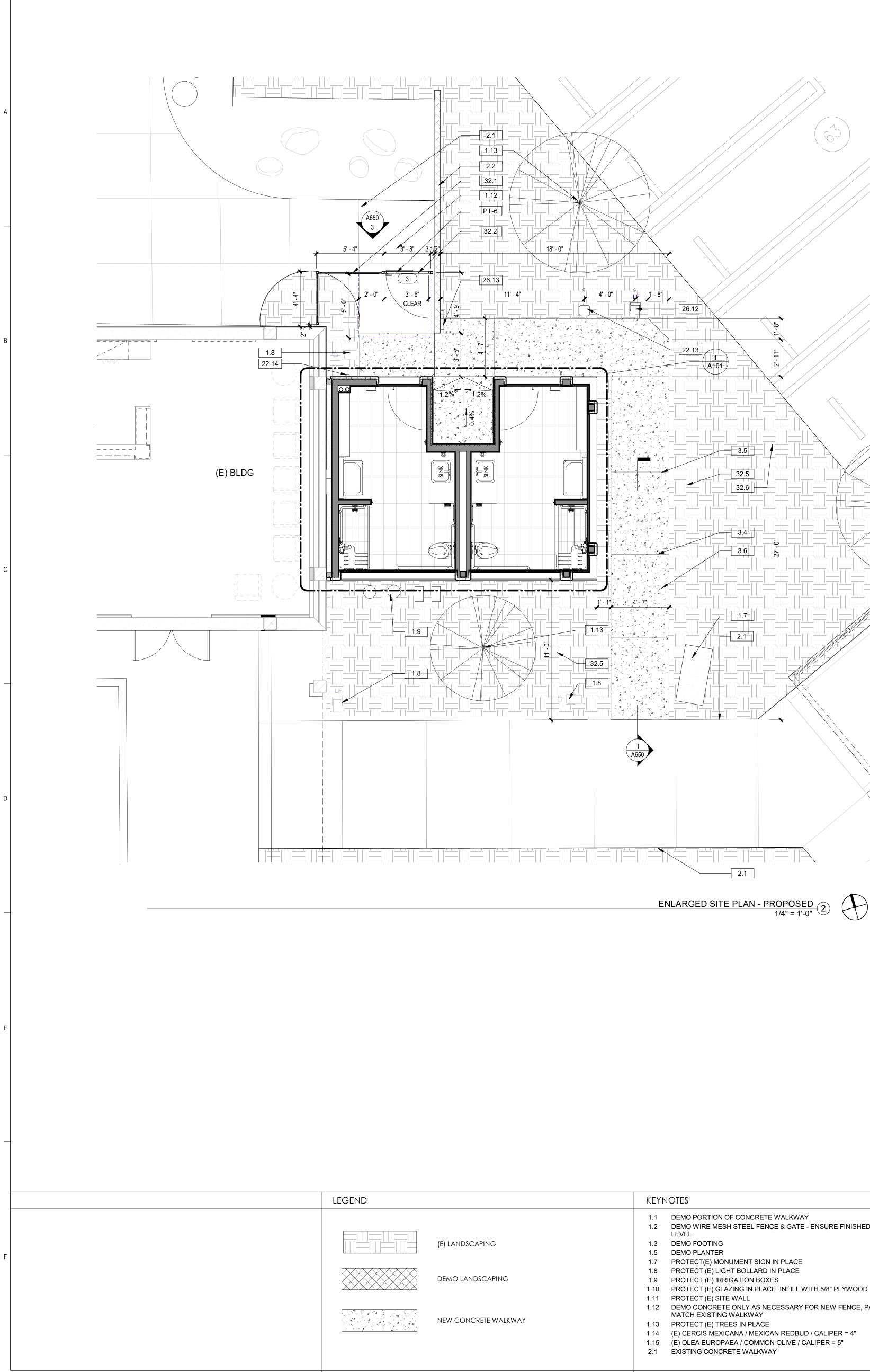


6

2	1
	SITE PLAN GENERAL NOTES  1. NOTES ON THIS SHEET ARE AN ACCUMULATION OF ITEMS ON THE PLANS, ELEVATIONS, AND SECTION PLANS; NOT ALL ITEMS ARE
	<ul> <li>FOUND ON EACH SHEET.</li> <li>2. NOT ALL UNDERGROUND AND ABOVE GROUND UTILITIES AND EQUIPMENT ARE SHOWN IN THESE DRAWINGS.</li> <li>3. NOT ALL PROJECT ITEMS ARE SHOWN IN THESE DRAWINGS. ITEMS</li> </ul>
	SHOWN ARE FOR GRAPHIC PURPOSES AND SHALL BE VERIFIED WITH THE APPROPRIATE DISCIPLINES FOR ADDITIONAL DETAILED INFORMATION + REQUIREMENTS. CONTRACTOR TO COORDINATE ALL PROJECT ITEMS.
	<ol> <li>REFER TO RESPECTIVE DISCIPLINE DRAWINGS FOR ADDITIONAL INFORMATION.</li> <li>REFER TO G003 FOR RESTROOM ACCESSIBILITY DETAILS.</li> </ol>
	<ol> <li>SEE SHEET A800 FOR DOOR AND GATE SCHEDULE</li> <li>EXISTING TREES TO REMAIN ON SITE WITHIN 10-FT OF THE AREA OF WORK WILL BE PROTECTED IN PLACE. THE FOLLOWING PROTECTION MEASURES WILL BE PROVIDED:</li> </ol>
	<ul> <li>A. A BRIGHT YELLOW OR ORANGE TEMPORARY FENCE WILL BE PLACED AROUND EXISTING TREES AT THE DRIP LINE.</li> <li>B. STOCKPILING, TOPSOIL DISTURBANCE, VEHICLE USE, AND MATERIAL STORAGE OF ANY KIND IS PROHIBITED WITHIN THE</li> </ul>
	DRIP LINE. C. A TREE WATERING SCHEDULE WILL BE MAINTAINED AND DOCUMENTED DURING CONSTRUCTION. D. ALL DAMAGED TREES WILL BE REPLACED WITH ONE OF EQUAL
	OR GREATER SIZE. 8. IF ANY REQUIRED LANDSCAPE INDICATED ON THE APPROVED CONSTRUCTION DOCUMENT PLANS IS DAMAGED OR REMOVED, IT SHALL BE REPAIRED AND/OR REPLACED IN KIND AND EQUIVALENT
	SIZE PER THE APPROVED DOCUMENTS TO THE SATISFACTION OF THE DEVELOPMENT SERVICES DEPARTMENT WITHIN 30 DAYS OF DAMAGE.
	LEGEND
	NEW ADA PATH
	(E) ADA PATH
Salar Control Control	
Control Contro	
	PATH OF TRAVEL NOTES
	<b>"DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT:</b> THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT
	APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT,
	THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE
	HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT
	ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE INDICATED IN THESE CONSTRUCTION DOCUMENTS.
	DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION
	TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT."
i	11B-202.4 PATH OF TRAVEL REQUIREMENTS IN ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. WHEN ALTERATIONS OR ADDITIONS ARE MADE TO EXISTING BUILDINGS OR FACILITIES, AN ACCESSIBLE PATH OF TRAVEL TO THE SPECIFIC AREA OF ALTERATION OR ADDITION SHALL BE PROVIDED. THE DRIMARY DATH OF TRAVEL SHALL INCLUDE:
	<ul> <li>PRIMARY PATH OF TRAVEL SHALL INCLUDE:</li> <li>1. A PRIMARY ENTRANCE TO THE BUILDING OR FACILITY,</li> <li>2. TOILET AND BATHING FACILITIES SERVING THE AREA,</li> <li>3. DRINKING FOUNTAINS SERVING THE AREA,</li> <li>4. PUBLIC TELEPHONES SERVING THE AREA, AND</li> </ul>
	5. SIGNS AS REQUIRED 2019 CBC SECTION 202: PATH OF TRAVEL. [DSA-AC] AN IDENTIFIABLE ACCESSIBLE ROUTE
	WITHIN AN EXISTING SITE, BUILDING OR FACILITY BY MEANS OF WHICH A PARTICULAR AREA MAY BE APPROACHED, ENTERED AND EXITED, AND WHICH CONNECTS A PARTICULAR AREA WITH AN EXTERIOR APPROACH (INCLUDING SIDEWALKS, STREETS AND PARKING AREAS),
	AN ENTRANCE TO THE FACILITY, AND OTHER PARTS OF THE FACILITY. WHEN ALTERATIONS, STRUCTURAL REPAIRS OR ADDITIONS ARE MADE TO EXISTING BUILDINGS OR FACILITIES, THE TERM "PATH OF TRAVEL" ALSO INCLUDES THE TOILET AND BATHING FACILITIES, TELEPHONES,
	PATH OF TRAVEL, TECHNICAL REQUIREMENTS FOR ACCESSIBLE ROUTE "ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS A
	BARRIER-FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" MAXIMUM AND AT LEAST 48"
SCALE 1" = 20'	WIDTH. SURFACE IS STABLE, FIRM, AND SLIP-RESISTANT. CROSS- SLOPE SHALL NOT BE STEEPER THATN 1:20. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND FREE OF OBJECTS PROTRUDING
ITECTURAL SITE PLAN     0'     10'     20'       1" = 20'-0"     1     0'     10'     20'	MORE THAN 4" FROM THE WALL, ABOVE27" AND LESS THAN 80" ABOVE THE FLOOR. ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS 80' IN THE PATH OF TRAVEL."
2	1 © SAFDIE RABINES ARCHITECTS

3



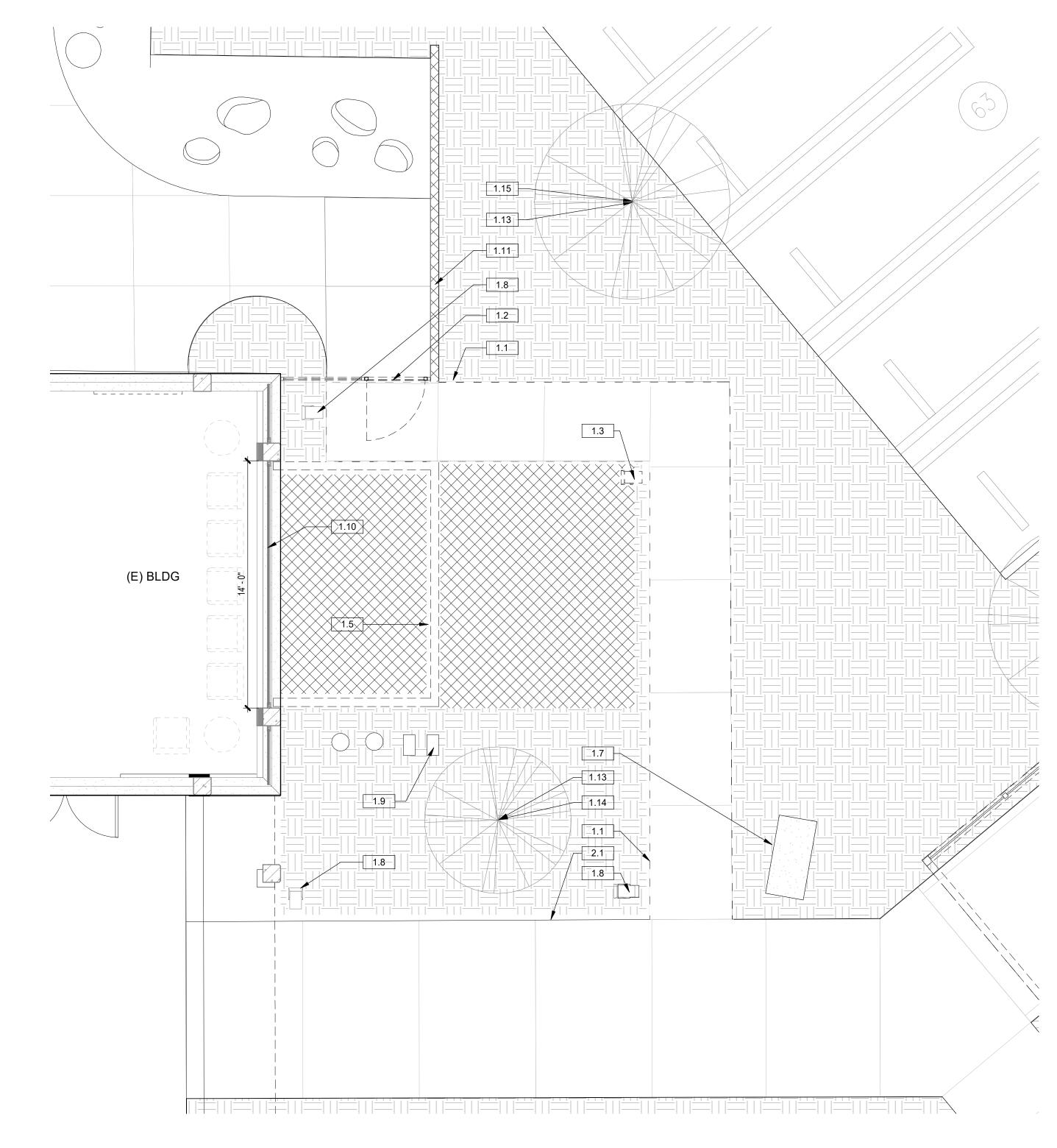


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KEYN	IOTES		
1.1	DEMO PORTION OF CONCRETE WALKWAY	2.2	EXISTING MASONRY WALL
1.2	DEMO WIRE MESH STEEL FENCE & GATE - ENSURE FINISHED SURFACE IS	3.4	CONCRETE EXPANSION JOINT - MATCH EXISTING
	LEVEL	3.5	CONCRETE CONTROL JOINT - MATCH EXISTING
1.3	DEMO FOOTING	3.6	CONCRETE WALKWAY - MATCH EXISTING COLOR AND TEXTURE
1.5	DEMO PLANTER	22.13	BOTTLE FILLER, REF. PLUMBING
1.7	PROTECT(E) MONUMENT SIGN IN PLACE	22.14	ROOF DRAIN OVERFLOW DOWNSPOUT
1.8	PROTECT (E) LIGHT BOLLARD IN PLACE	26.12	RELOCATED BOLLARD LIGHT FIXTURE, REF. ELECTRICAL
1.9	PROTECT (E) IRRIGATION BOXES	26.13	CHARGING LOCKER
1.10	PROTECT (E) GLAZING IN PLACE. INFILL WITH 5/8" PLYWOOD	32.1	WELDED WIRE FENCE (4'-6" TALL)
1.11	PROTECT (E) SITE WALL	32.2	WELDED WIRE GATE WITH PANIC HARDWARE
1.12	DEMO CONCRETE ONLY AS NECESSARY FOR NEW FENCE, PATCH TO MATCH EXISTING WALKWAY	32.5	ADJUST (E) IRRIGATION SYSTEM TO PROVIDE HEAD TO HEAD COVERAGE IN REMAINING PLANTING AREAS
1.13	PROTECT (E) TREES IN PLACE	32.6	PROVIDE (10) 5 GALLON SUNSET MANZANITA PLANTS
1.14	(E) CERCIS MEXICANA / MEXICAN REDBUD / CALIPER = 4"	PT-6	EXTERIOR PAINT - MATCH EXISTING METAL FENCE COLOR
1.15	(E) OLEA EUROPAEA / COMMON OLIVE / CALIPER = 5"		
2.1	EXISTING CONCRETE WALKWAY		

3

4



3

ENLARGED SITE PLAN - DEMO 1/4" = 1'-0" 1

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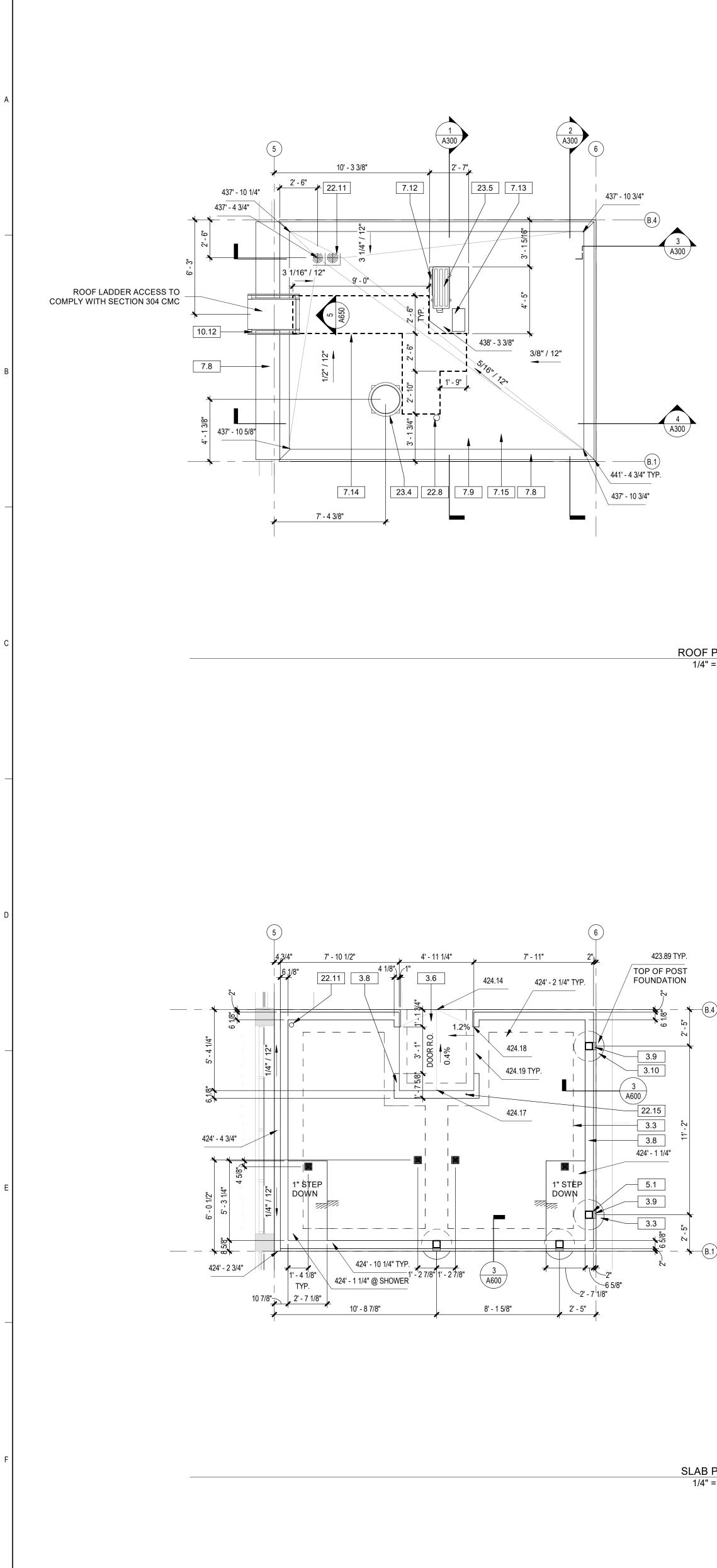
GENERAL NOTES

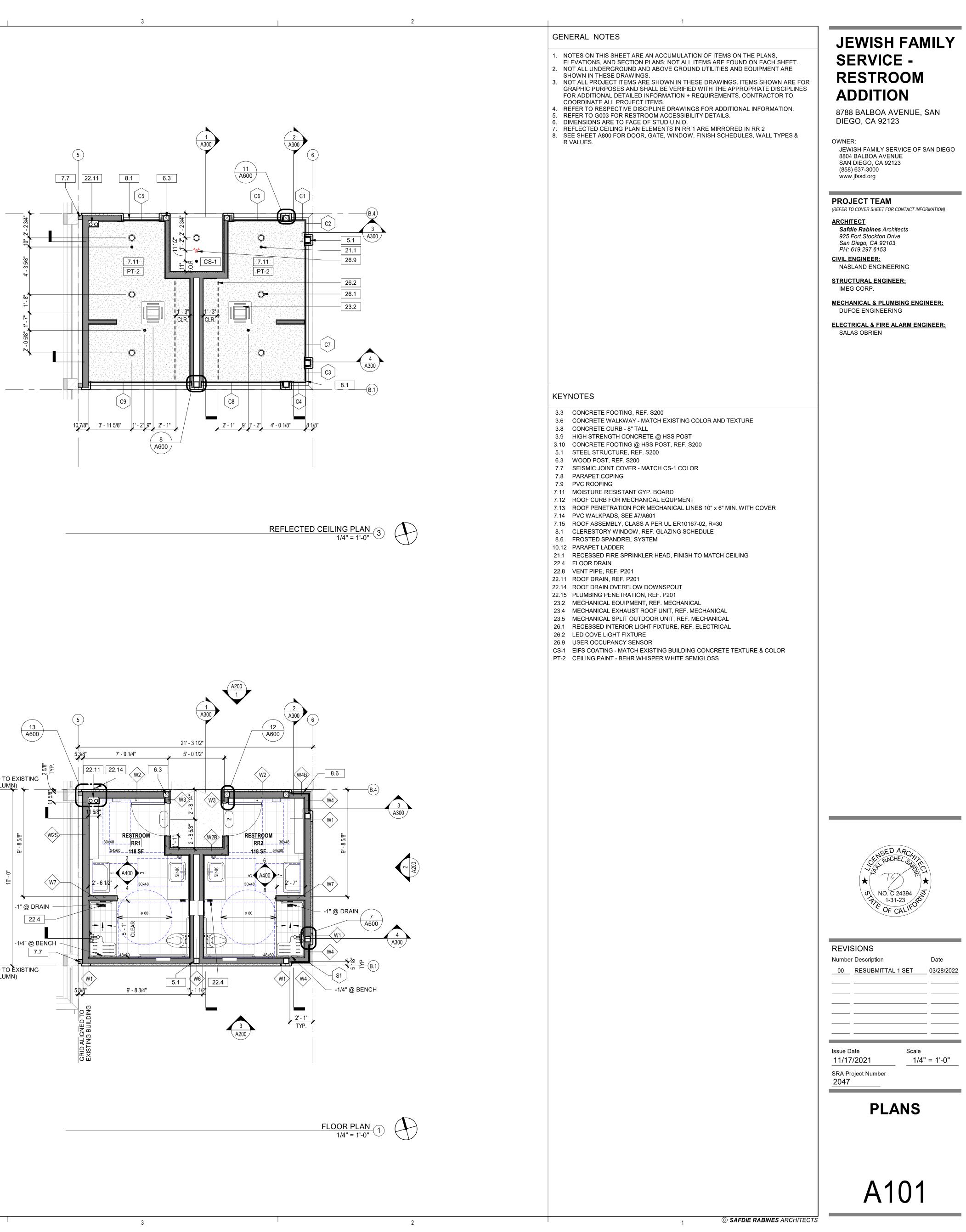
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   B. STOCKPILING, TOPSOIL DISTURBANCE, VEHICLE USE, AND MATERIAL STORAGE OF ANY KIND IS PROHIBITED WITHIN THE DRIP LINE.
   A TREE WATERING SOLUEDING WILL BE MAINTAINED AND DOOLMENTED DUDING CONSTRUCTION.
- C. A TREE WATERING SCHEDULE WILL BE MAINTAINED AND DOCUMENTED DURING CONSTRUCTION. D. ALL DAMAGED TREES WILL BE REPLACED WITH ONE OF EQUAL OR GREATER SIZE.
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- TO THE SATISFACTION OF THE DEVELOPMENT SERVICES DEPARTMENT WITHIN 30 DAYS OF DAMAGE.
  3. SEE SHEET A001 FOR ACCESSIBLE PATH OF TRAVEL
  4. SEE SHEET A800 FOR DOOR, GATE, WINDOW, FINISH SCHEDULES AND WALL TYPES

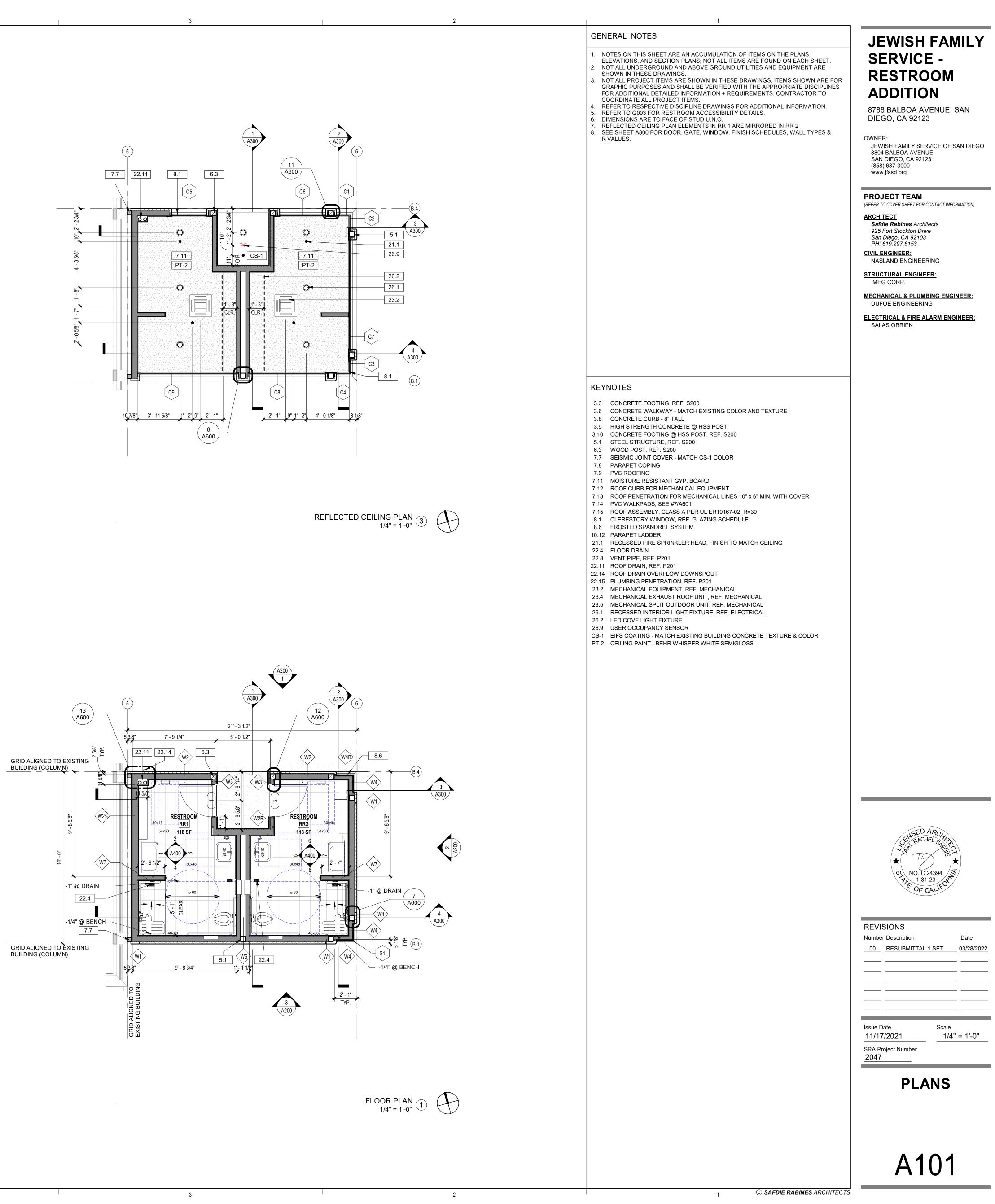
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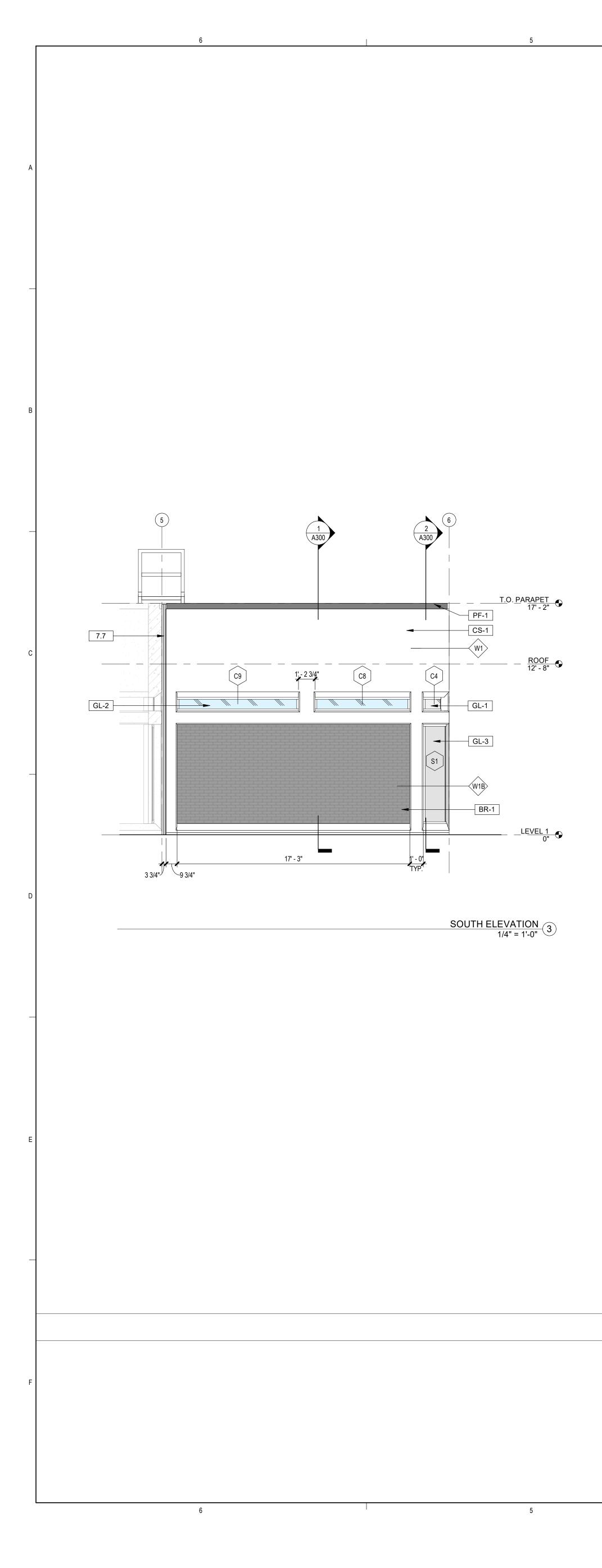
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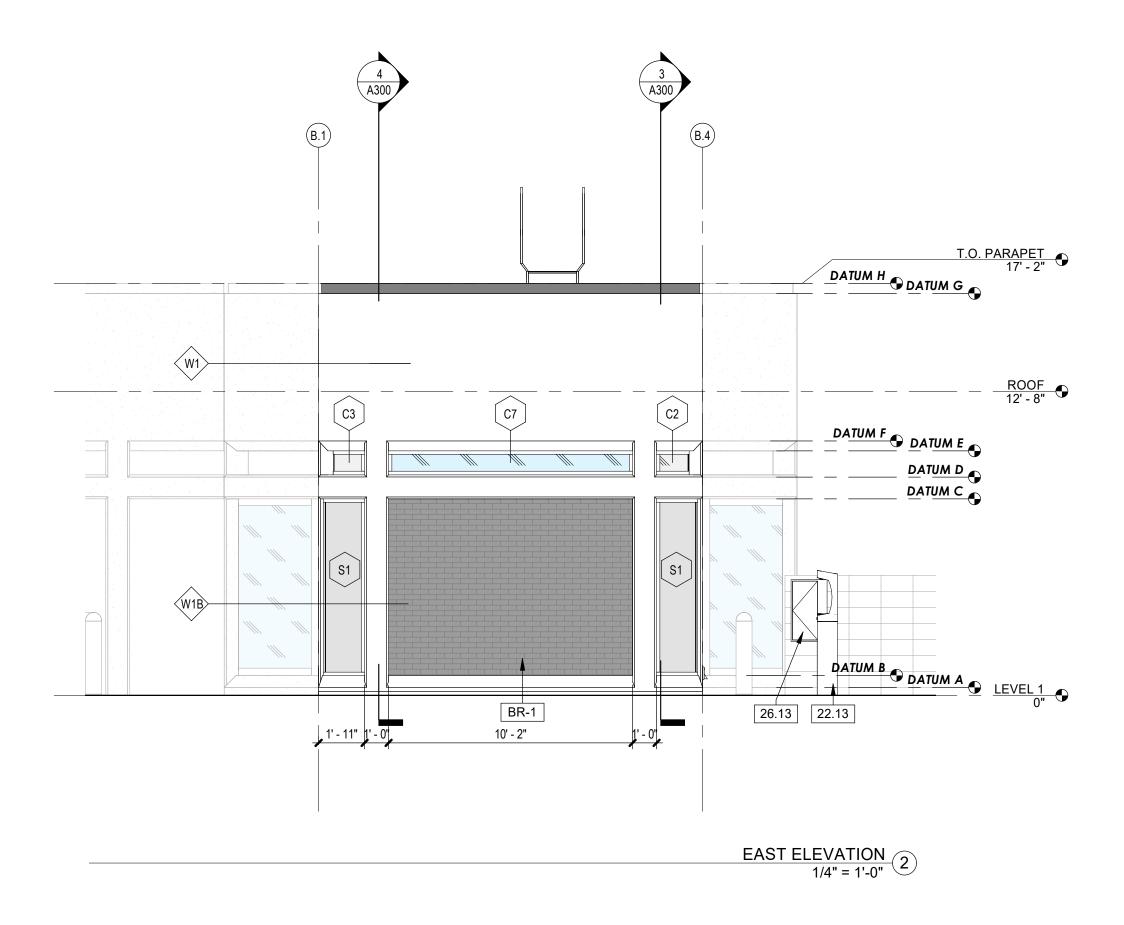






SLAB PLAN 1/4" = 1'-0" 2





7.7 SEISMIC JOINT COVER - MATCH CS-1 COLOR

10.12 PARAPET LADDER 22.13 BOTTLE FILLER, REF. PLUMBING

22.14 ROOF DRAIN OVERFLOW DOWNSPOUT 26.13 CHARGING LOCKER

BR-1 EIFS MASONRY COATING - MATCH EXISTING BUILDING BRICK TEXTURE & COLOR

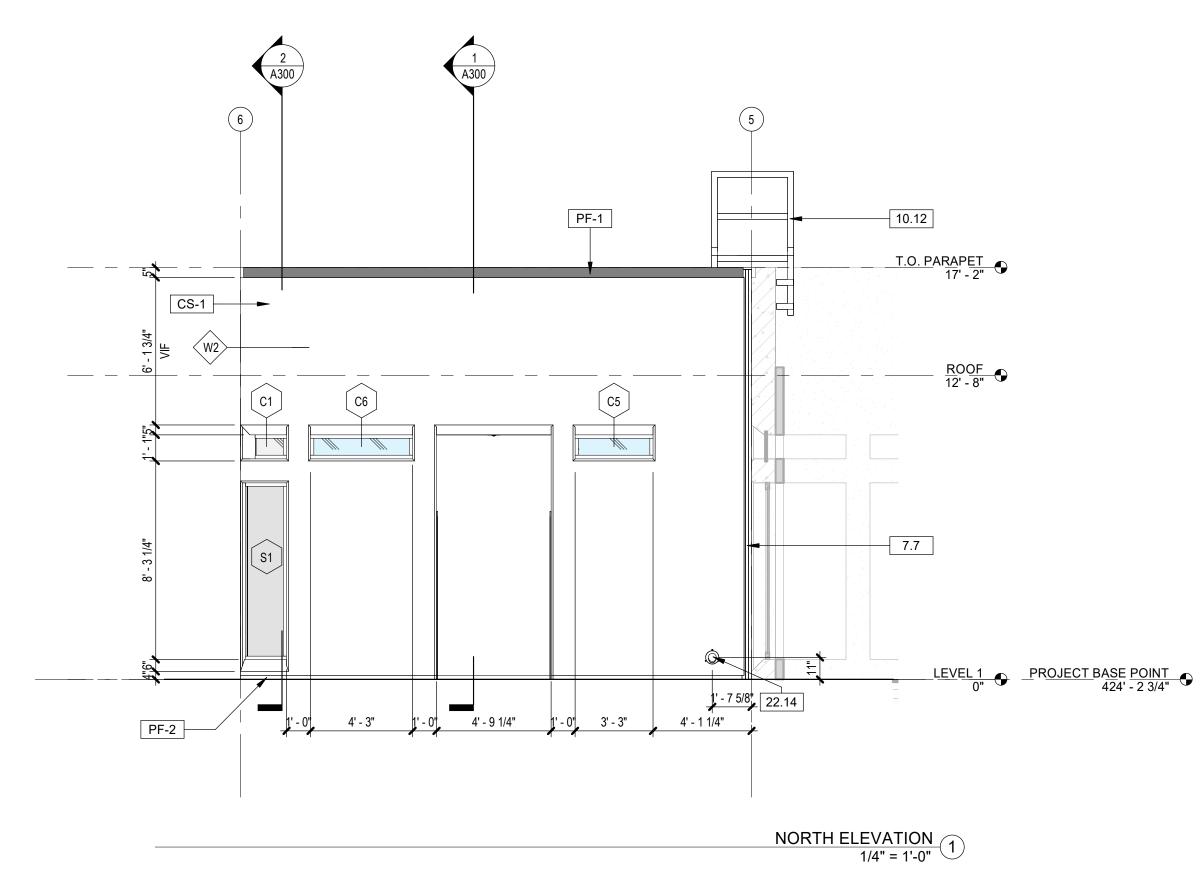
CS-1 EIFS COATING - MATCH EXISTING BUILDING CONCRETE TEXTURE & COLOR GL-1 LAMINATED GLAZING

4

GL-1 LAMINATED GLAZ GL-2 CLEAR 1" IGU

GL-2 CLEAR TIGO GL-3 SPANDREL GLAZING

PF-1 PREFINISHED FLASHING - MATCH EXISTING COPING COLOR PF-2 PREFINISHED FLASHING - MATCH CONCRETE COLOR



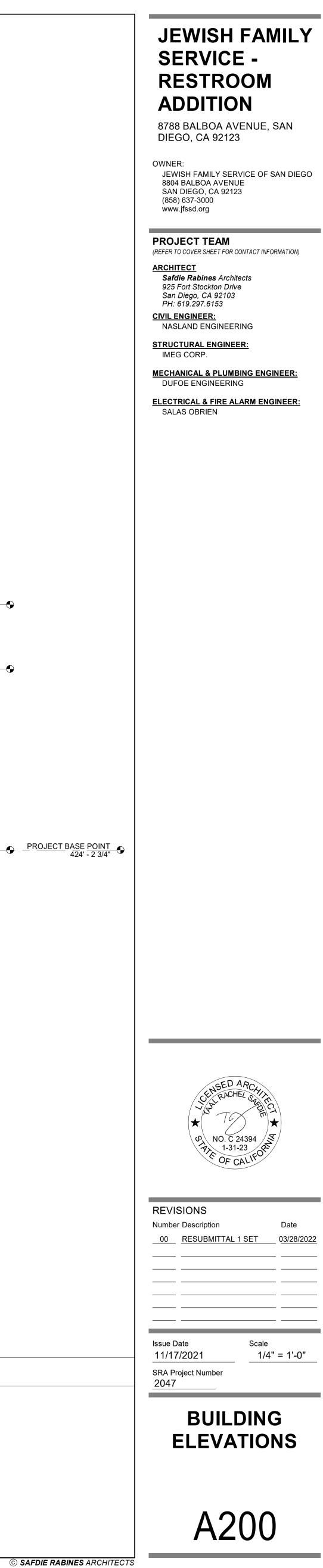
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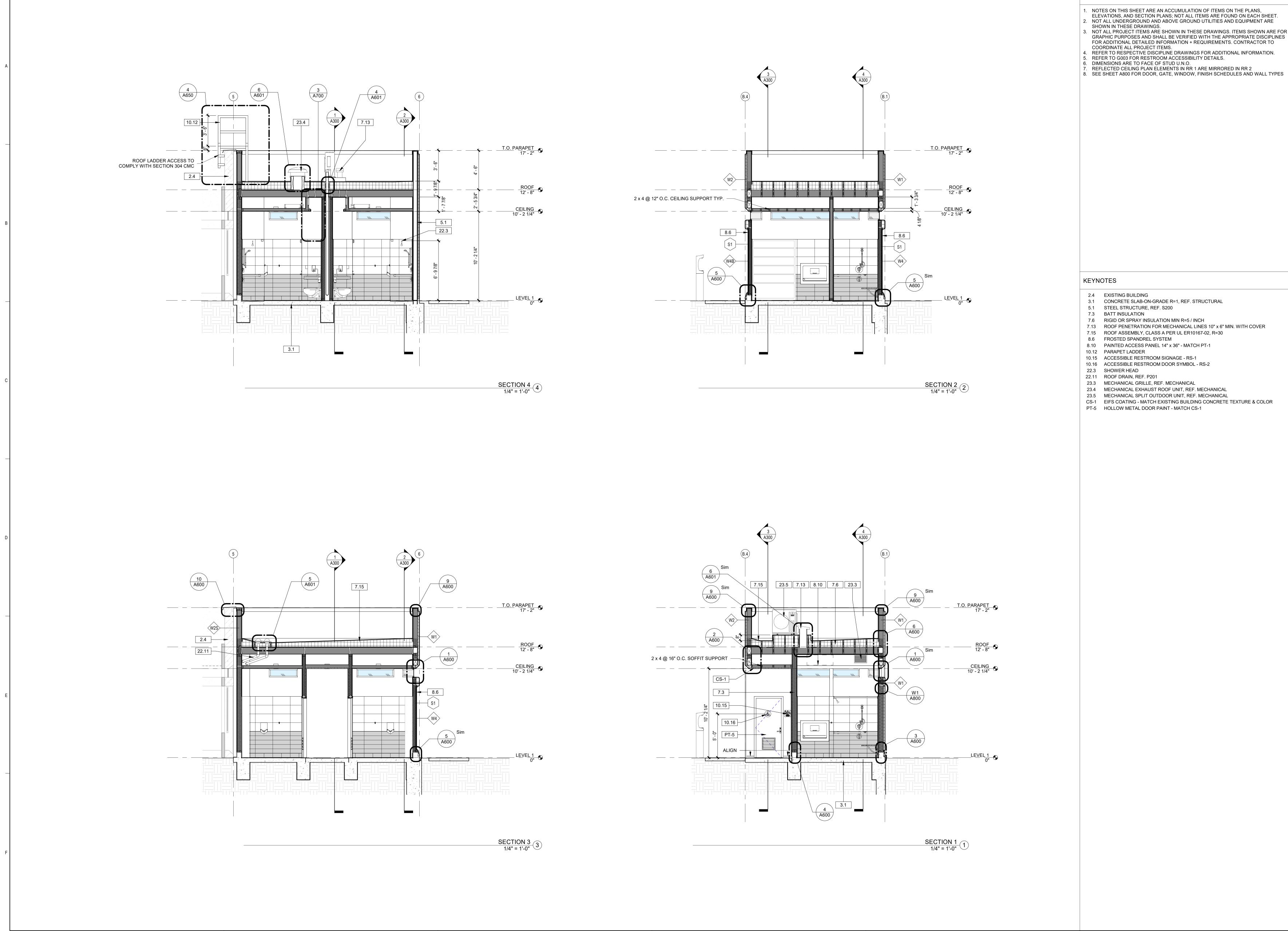
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# GENERAL NOTES

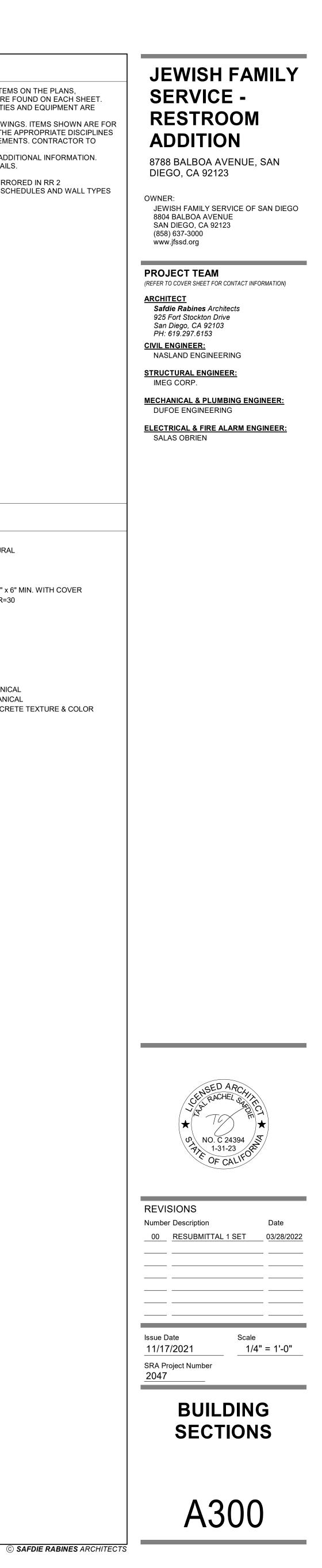
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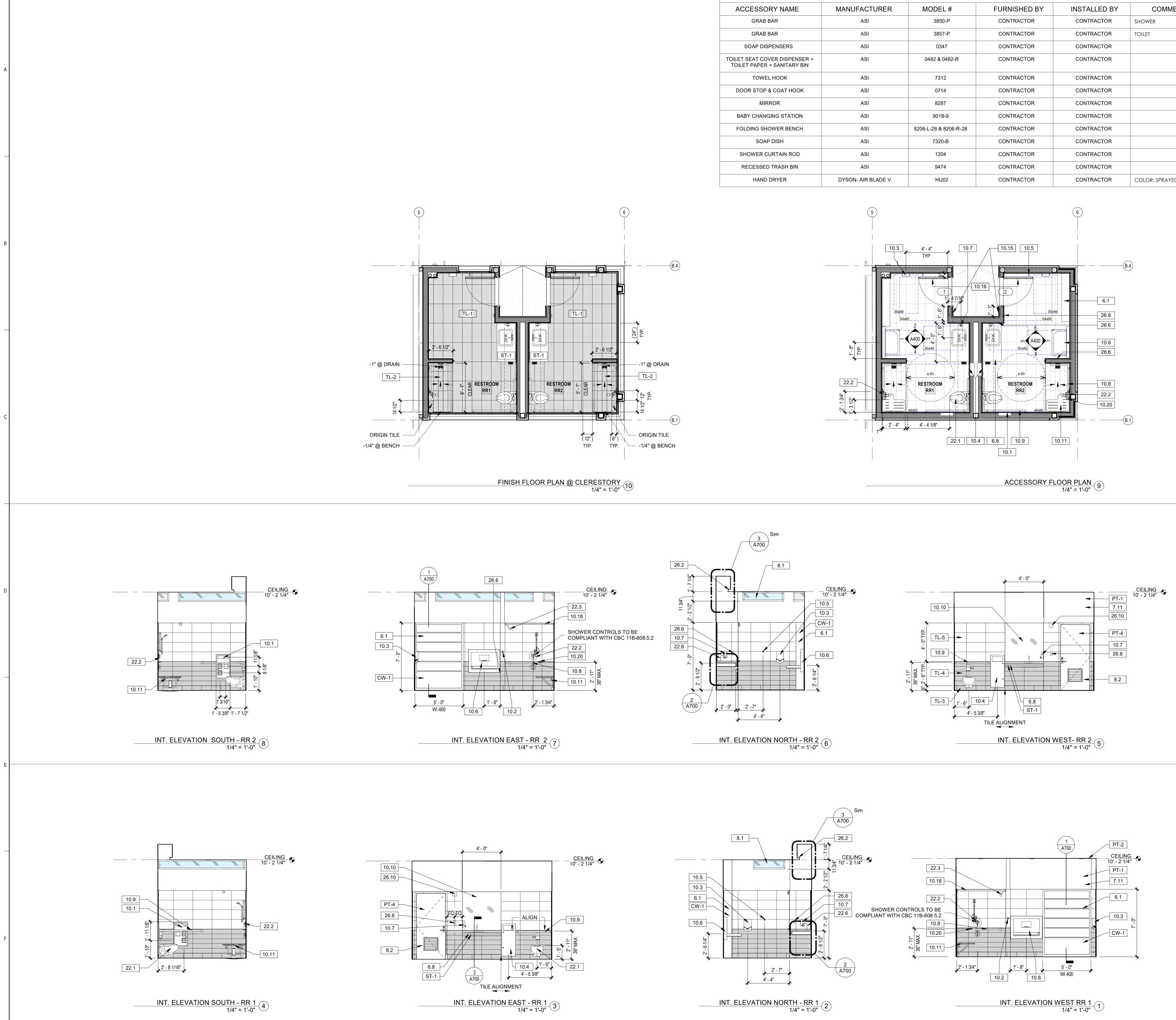
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  REFER TO RESPECTIVE DISCIPLINE DRAWINGS FOR ADDITIONAL INFORMATION.
  DIMENSIONS ARE TO FACE OF FINISH U.N.O.
- SEE SHEET A800 FOR DOOR, GATE, WINDOW, FINISH SCHEDULES AND WALL TYPES
   DATUM A H ELEVATION IS BASED ON EXISTING ADJACENT BUILDING.
   FIELD VERIFY DATUMS ELEVATIONS. NOTIFY ARCHITECT OF DISCREPANCIES BEFORE COMENCING WORK.





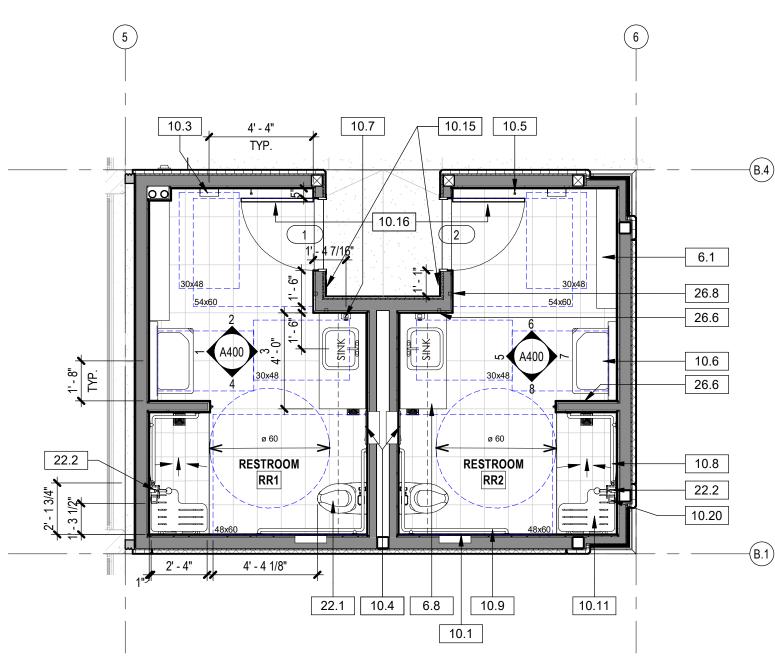
GENERAL NOTES





4

	3			2	
		TOILET ROOM ACC	ESSORY SCHEDULE		
ACCESSORY NAME	MANUFACTURER	MODEL #	FURNISHED BY	INSTALLED BY	COMMENTS
GRAB BAR	ASI	3850-P	CONTRACTOR	CONTRACTOR	SHOWER
GRAB BAR	ASI	3857-P	CONTRACTOR	CONTRACTOR	TOILET
SOAP DISPENSERS	ASI	0347	CONTRACTOR	CONTRACTOR	
TOILET SEAT COVER DISPENSER + TOILET PAPER + SANITARY BIN	ASI	0482 & 0482-R	CONTRACTOR	CONTRACTOR	
TOWEL HOOK	ASI	7312	CONTRACTOR	CONTRACTOR	
DOOR STOP & COAT HOOK	ASI	0714	CONTRACTOR	CONTRACTOR	
MIRROR	ASI	8287	CONTRACTOR	CONTRACTOR	
BABY CHANGING STATION	ASI	9018-9	CONTRACTOR	CONTRACTOR	
FOLDING SHOWER BENCH	ASI	8206-L-28 & 8206-R-28	CONTRACTOR	CONTRACTOR	
SOAP DISH	ASI	7320-В	CONTRACTOR	CONTRACTOR	
SHOWER CURTAIN ROD	ASI	1204	CONTRACTOR	CONTRACTOR	
RECESSED TRASH BIN	ASI	9474	CONTRACTOR	CONTRACTOR	
HAND DRYER	DYSON- AIR BLADE V	HU02	CONTRACTOR	CONTRACTOR	COLOR: SPRAYED NICKEL



6

6

5

2

GENERAL NOTES

. NOTES ON THIS SHEET ARE AN ACCUMULATION OF ITEMS ON THE PLANS, ELEVATIONS, AND SECTION PLANS; NOT ALL ITEMS ARE FOUND ON EACH SHEET.

1

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- INFORMATION. 5. REFER TO G003 FOR RESTROOM ACCESSIBILITY DETAILS. 6. DIMENSIONS ARE TO FACE OF FINISH U.N.O.
- 7. ACCESSORIES AND PLUMBING FIXTURES IN RR 1 ARE MIRRORED IN RR 2 8. SEE SHEET A800 FOR DOOR, GATE, WINDOW, FINISH SCHEDULES AND WALL TYPES
- 9. FOLLOW TILE LAYOUT ON THIS SHEET & DETAIL 4 / A800 10. TL-1, TL-2, TL-4, TL-5 MINIMUM TILE DIMENSION TO BE 4"
- 11. ALIGN ANY ITEMS NOT DIMENSIONED TO TILE PATTERN

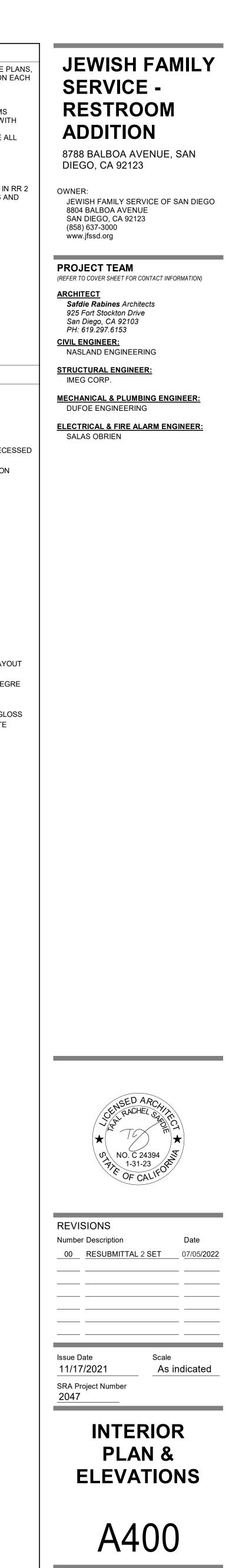
# KEYNOTES

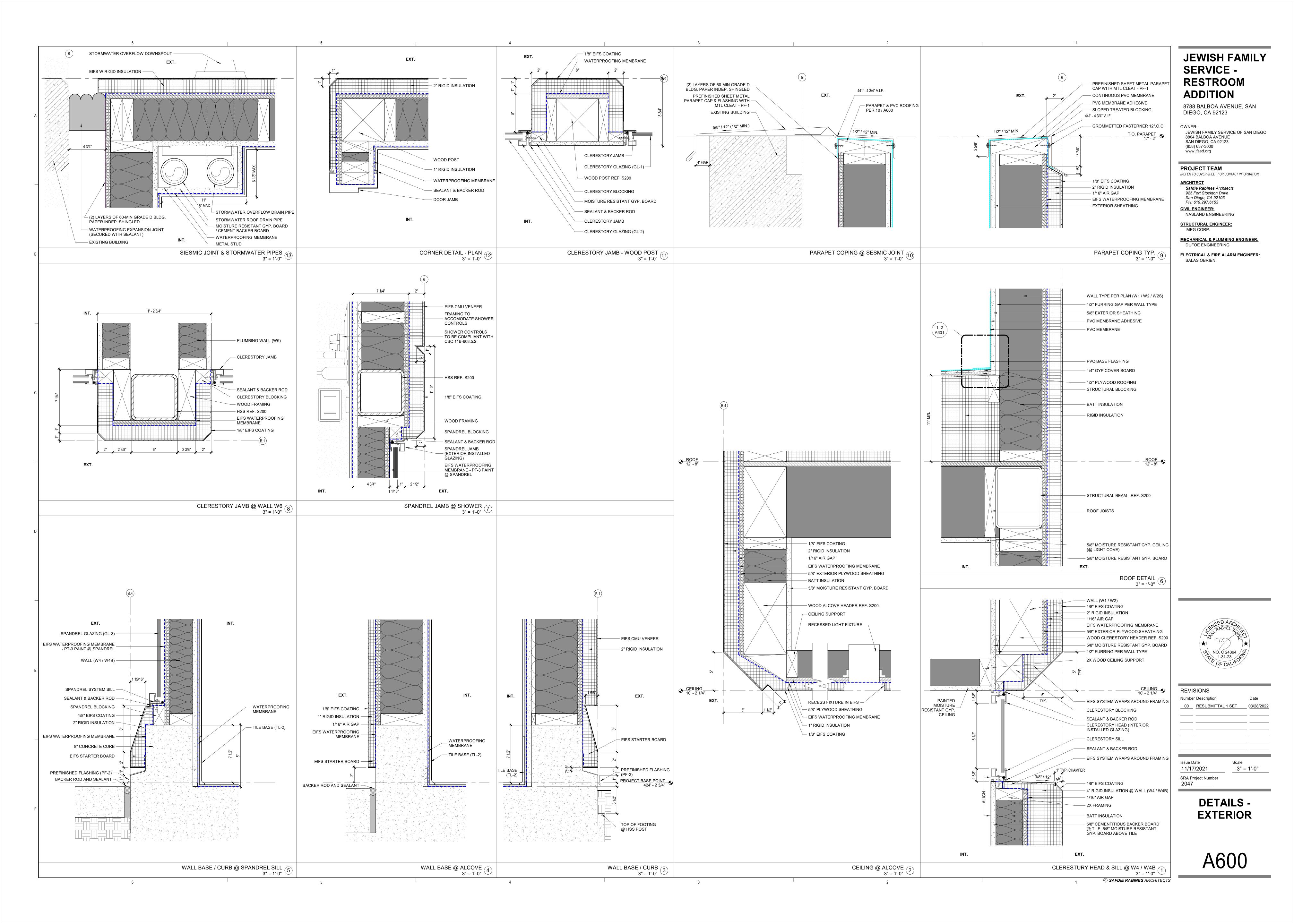
6.1	CASEWORK
6.8	FIXED COUNTERTOP
7.11	MOISTURE RESISTANT GYP. BOARD
8.1	CLERESTORY WINDOW, REF. GLAZING SCHEDULE
8.2	EXTERIOR DOOR W LOUVER, REF. DOOR SCHEDULE
10.1	TOILET TISSUE, SEAT COVER DISPENSER, SANITARY BIN, RECES
10.2	TOWEL HOOK
10.3	SURFACE MOUNTED HAND DRYER, LESS THAN 4" PROJECTION
10.4	TRASH RECEPTACLE, RECESSED
10.5	DOOR STOP & COAT HOOK
10.6	BABY CHANGING STATION, SURFACE MOUNTED
10.7	SOAP DISPENSER
10.8	36" x 24" GRAB BAR
10.9	54" x 42" GRAB BAR
10.10	48" x 48" VANITY MIRROR
10.11	ACCESSIBLE FOLDING SHOWER BENCH
10.15	ACCESSIBLE RESTROOM SIGNAGE - RS-1
10.16	ACCESSIBLE RESTROOM DOOR SYMBOL - RS-2
10.18	SHOWER CURTAIN ROD
10.20	SOAP DISH
22.1	WATER CLOSET
22.2	ADA COMPLIANT SHOWER FIXTURE
22.3	SHOWER HEAD
22.6	SINK FAUCET
26.2	LED COVE LIGHT FIXTURE
26.6	ELECTRICAL OUTLET - ALIGN WITH TILE LAYOUT
26.8	LIGHT SWITCH & OCCUPANCY SENSOR - ALIGN WITH TILE LAYOU
26.10	SMOKE SENSOR W INTEGRATED STROBE
CW-1	CASEWORK / SHELVING - ARBORITE LAMINATE NATURAL ANEGRI
PT-1	INTERIOR PAINT - BEHR WHISPER WHITE SEMIGLOSS
PT-2	CEILING PAINT - BEHR WHISPER WHITE SEMIGLOSS
PT-4	HOLLOW METAL DOOR PAINT - BEHR WHISPER WHITE SEMIGLOS
ST-1	SOLID SURFACE COUNTER - CORIAN WEATHERED CONCRETE
TL-1	FLOOR TILE - CROSSVILLE CLAY 12" x 24"
TL-2	SHOWER FLOOR TILE - CROSSVILLE CLAY 6" x 24"

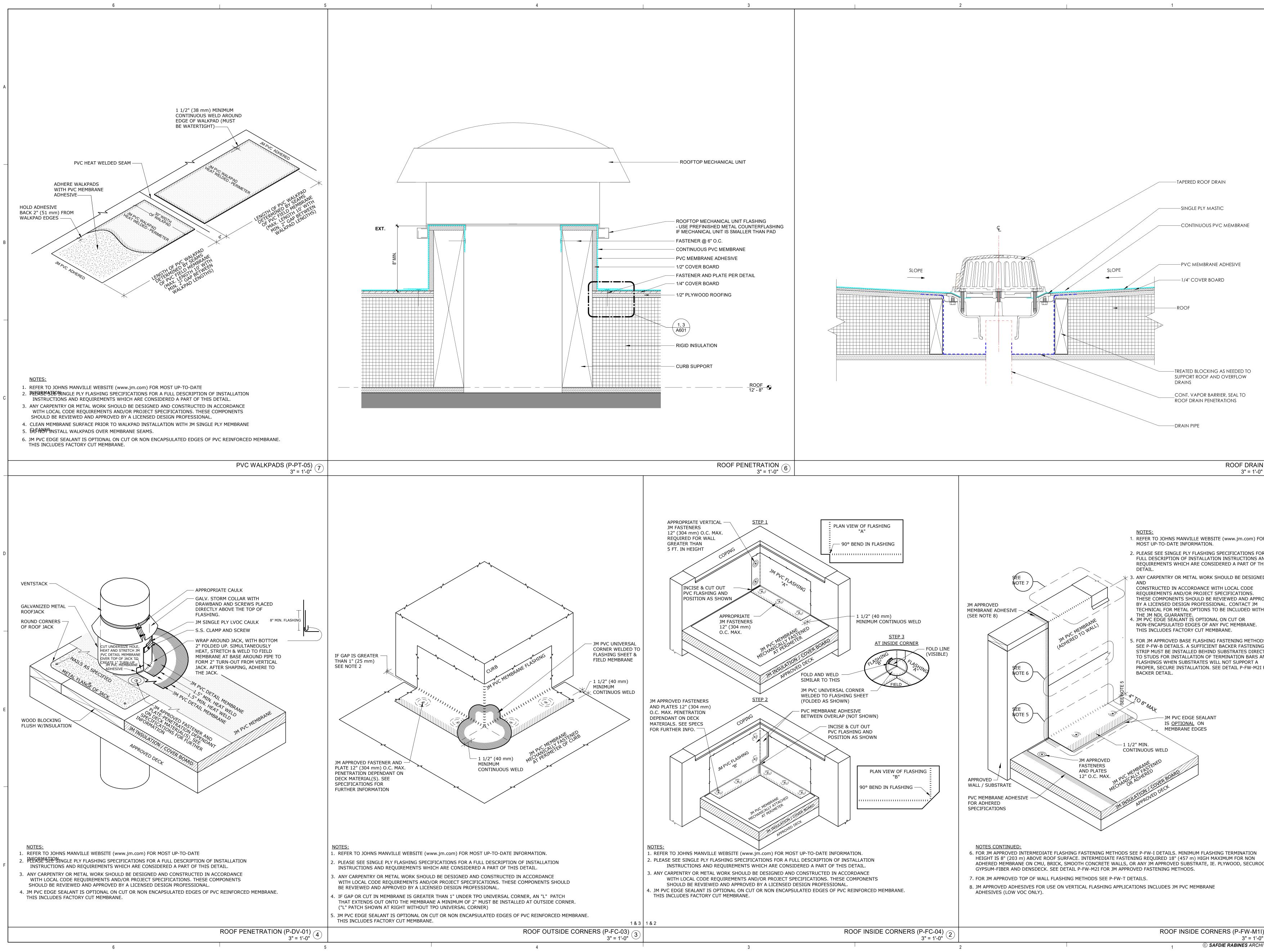
- TL-2 SHOWER FLOOR TILE CROSSVILLE CLAY 6" x 24" TL-3 BASE COVE TILE - CROSSVILLE CLAY 6" x 12"
- TL-4 LOWER WALL TILE CROSSVILLE CLAY 6" x 24"

TL-5 UPPER WALL TILE - CROSSVILLE FROST 12" x 24"

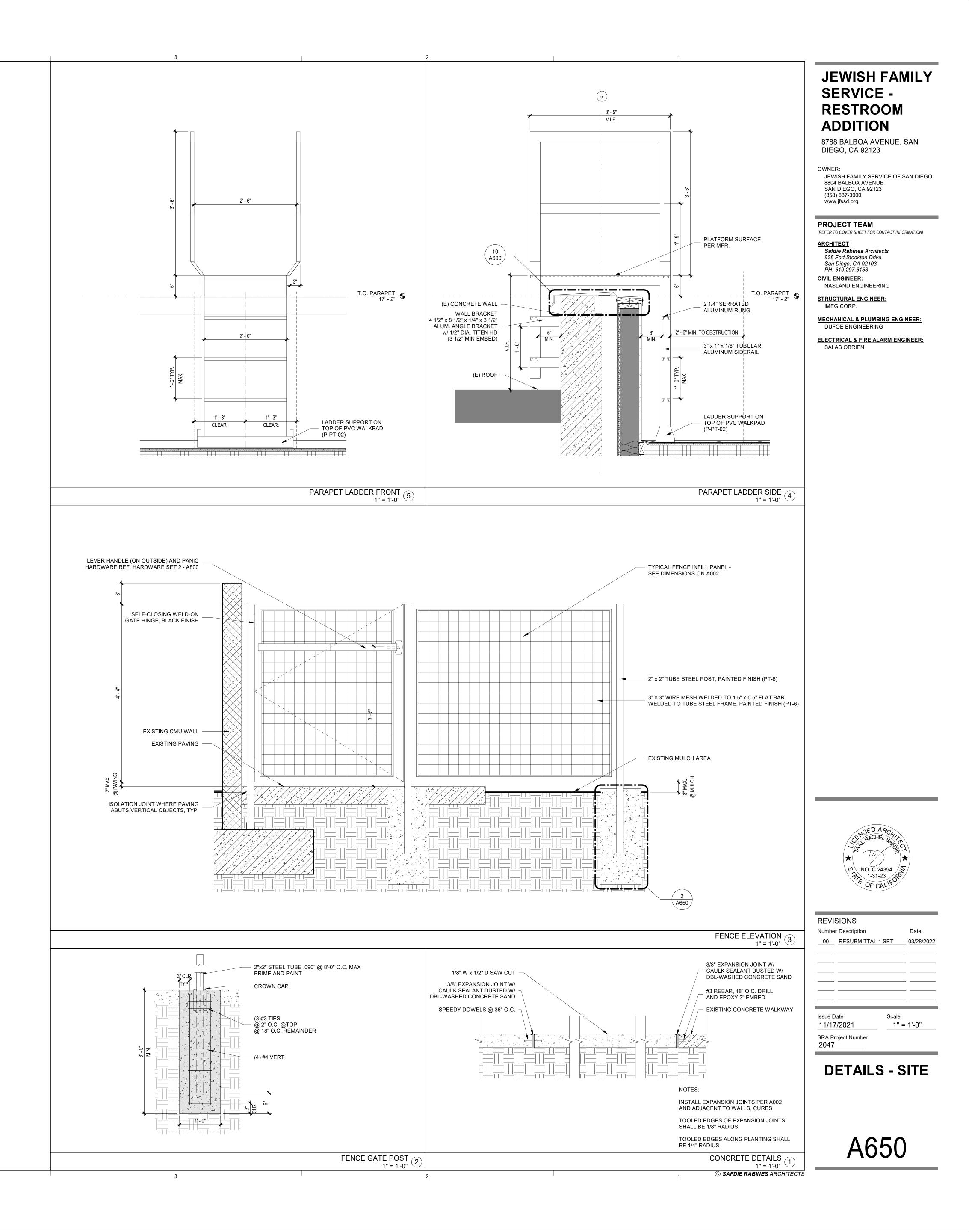




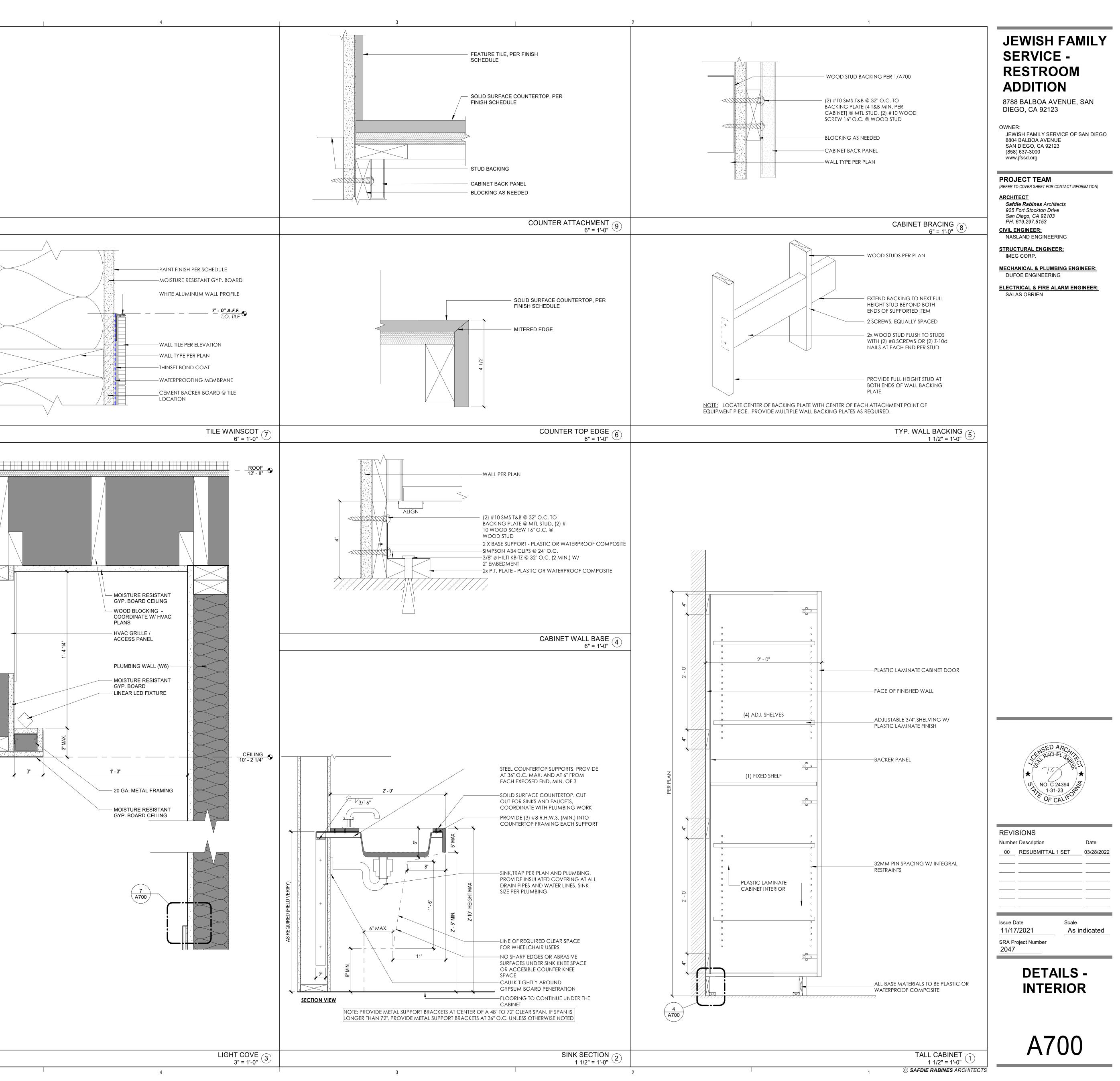




	JEWISH FAMILY
	SERVICE -
	RESTROOM
	ADDITION
	8788 BALBOA AVENUE, SAN DIEGO, CA 92123
	OWNER: JEWISH FAMILY SERVICE OF SAN DIEGO 8804 BALBOA AVENUE SAN DIEGO, CA 92123 (858) 637-3000
	(858) 637-3000 www.jfssd.org
	PROJECT TEAM (REFER TO COVER SHEET FOR CONTACT INFORMATION)
	<u>ARCHITECT</u> Safdie Rabines Architects 925 Fort Stockton Drive San Diego, CA 92103
	PH: 619.297.6153 CIVIL ENGINEER: NASLAND ENGINEERING
	STRUCTURAL ENGINEER: IMEG CORP.
	MECHANICAL & PLUMBING ENGINEER: DUFOE ENGINEERING
	ELECTRICAL & FIRE ALARM ENGINEER: SALAS OBRIEN
<b>1</b> (5)	
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D	
OVED	
HIN	
DS G CTLY	
FOR	CENSED ARCHIN RACHEL GREET
	0, NO. C 24394 7, 1-31-23 0F CALIFOR
	REVISIONS
	Number Description     Date       00     RESUBMITTAL 1 SET     03/28/2022
	Issue Date Scale 11/17/2021 3" = 1'-0"
	SRA Project Number 2047
СК	DETAILS -
	ROOF
	<b>VCU1</b>
) (1)	A601

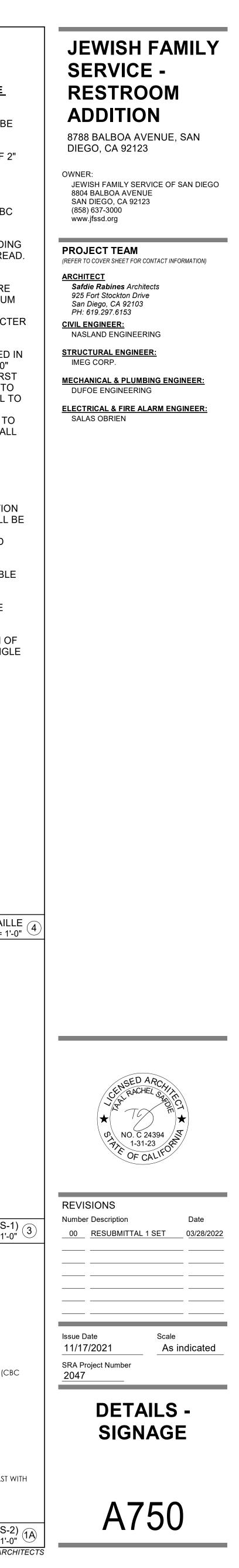


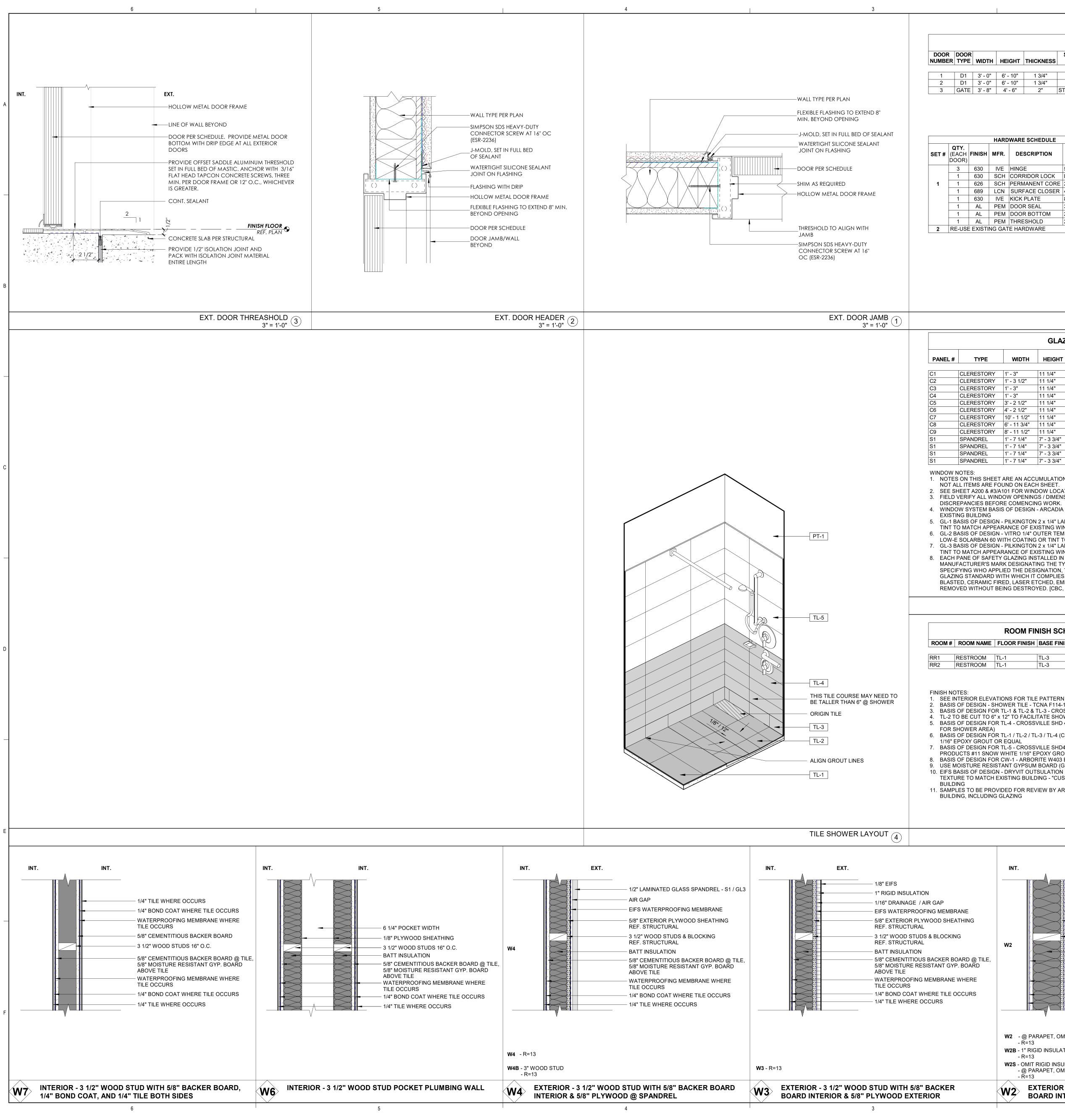
	6		5
А			
В			
c			
D			VERIFY CLEAR SPACE NECESSARY @ ACCESS PANEL
E			
F			



3
<u>NOTE:</u> SIGN MATERIAL TO BE ETCHED METAL WITH 1/32" RAISED BORDER, O MOUNTING WITH VANDAL RESISTANT FASTENERS. COMPLY WITH AF
4" MIN12" MAX. AWAY FROM STRIKE SIDE WITHOUT BEING HIT BY DOOR SWING. WHEN DOOR OPENS OUTWARD, CENTER OF SIGN SHALL BE 9" TO ADJACENT LATCH SIDE OF
5/8"-2" HIGH LETTERING (CONTRAST COLOR)
60" MAX. TO THE BASELINE OF HIGHEST TEXT 48" MIN. TO BASELINE OF LOWEST BRAILLE CELLS
HE BASELIN BILINE OF LC
MAX. TO TI IN. TO BASI
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 3

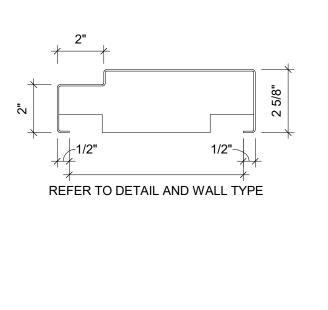
	2 1
	ALL INDICATED CODE SECTIONS ARE IN REFERENCE TO THE 2019 CALIFORNIA BUILDING CODE
	C. <u>FINISH AND CONTRAST:</u> CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND (CBC 11B-703.5.1).
	D. <u>VISUAL CHARACTER SIZE</u> : CHARACTERS AND NUMBERS ON SIGNS SHALL BE SIZED ACCORDING TO THE VIEWING DISTANCE AND HEIGHT FROM FINISH FLOOR FROM WHICH THEY ARE TO BE READ. SEE CBC TABLE 11B-703.5.5 FOR COMPLIANT REQUIREMENTS.
	E. <u>VISUAL CHARACTER PROPORTIONS:</u> CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER 'O' IS 60 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER 'I' (CBC 11B-703.5.4). STROKE THICKNESS OF THE UPPERCASE LETTER 'I' SHALL BE 10 PERCENT MINIMUM AND 20 PERCENT MAXIMUM OF CHARACTER HEIGHT (CBC 11B-703.5.7).
	F. <u>BRAILLE:</u> CONTRACTED (GRADE 2 BRAILLE) SHALL BE USED WHEREVER BRAILLE IS REQUIRED IN OTHER PORTIONS OF THESE STANDARDS. DOTS SHALL BE 0.100" O.C. IN EACH CELL WITH 0.300" SPACE BETWEEN ADJACENT CELLS, MEASURED FROM THE FIRST COLUMN OF DOTS IN THE FIRST CELL TO THE FIRST COLUMN OF DOTS IN THE SECOND CELL. DOTS SHALL BE BETWEEN 0.395" TO 0.400" BETWEEN BELOW CELLS, MEASURED FROM THE FIRST ROW OF DOTS IN THE FIRST CELL TO THE FIRST ROW OF DOTS IN THE BELOW CELL. DOTS SHALL BE RAISED A MIN OF 0.025" TO A MAXIMUM OF 0.037" ABOVE THE BACKGROUND (CBC TABLE 11B-703.3.1). DOTS ARE REQUIRED TO BE ROUNDED OR DOMED, EACH DISTINCT AND SEPARATE. PICTOGRAMS, WHERE OCCURS, SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW THE PICTOGRAM IN RAISED LETTERS & GRADE 2 BRAILLE.
	G. PROVIDE POST OR WALL IDENTIFIER SIGNS, "ACCESSIBLE PARKING" SURFACE SIGNS AND MARKINGS AT ACCESSIBLE PARKING SPACES (CBC 11B-502.6).
	H. SITE ENTRANCE SIGNAGE - WARNING SIGNAGE WITH ADDRESS AND TELEPHONE INFORMATION FOR TOWED VEHICLES REGARDING UNAUTHORIZED USE OF DISABLED PARKING SPACES SHALL BE POSTED CONSPICUOUSLY AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL OR SPACE (CBC 11B-502.8, MUTCD R100B).
	J. INTERNATIONAL SYMBOL OF ACCESSIBILITY SIGNAGE SHALL BE PROVIDED AT ALL ACCESSIBLE ENTRANCES, ONLY IF NON-ACCESSIBLE ENTRANCES ARE PRESENT (CBC 11B-216.6). K. SIGNS MOUNTED AND PROTRUDING FROM POSTS OR PYLONS LOWER THAN 80" SHALL HAVE
	ROUNDED CORNERS (CBC 11B-307.3.1). L. FOR EASE OF READABILITY, SIGNAGE SHALL BE POSITIONED PERPENDICULAR TO THE PATH OF TRAVEL WHEREVER POSSIBLE, OR CLOSEST TO THE PERPENDICULAR, NOT TO EXCEED AN ANGLE OF 30 DEGREES TO EITHER SIDE.
	M. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL HAVE A WHITE FIGURE ON A BLUE BACKGROUND = COLOR NO. 15090 IN FEDERAL STANDARD 595C UNLESS THE ENFORCING AUTHORITY APPROVES OTHERWISE (CBC 11B-703.7.2.1).
	MEASUREMENT RANGE       Min. in Inches Max. in Inches Ma
	GRADE 2 BRAILLE 3" = 1'-0"
	SEE FOR MOUNTING HEIGHTS
	HEIGHT OF LETTERING 5/8" MIN 2" MAX. CORRESPONDING CONTRACT GRADE 2 BRAILLE
	RS-1 RESTROOM WALL MOUNTED SIGN (RS-1) 3" = 1'-0"
RDER, GRAPHICS & LETTERS, PROVIDE MECHANICAL VITH ARTICLE 4.30 AND 4.30.5 OF ADAAG INC. 4.30.6	
EQ GEOMETRIC DOOR SYMBOL AT TOILET ROOMS ONLY	60" A.F.F. MOUNTING     VERTICES 1/8" RADIUSED (CBC 11B.703.7.2.6.4)
MAX.	EDGES TO BE 1/16"-1/8" RADIUSES (CBC 11B.703.7.2.6.4) GENDER NEUTRAL 1/2' THICK EQUILATERAL TRIANGLE OVER
60" MAN - 60" MA © CENTERLINE	1/4" THICK 12" DIA. CIRCLE (MIN. OF 70% IN CONTRAST WITH EACH OTHER) CIRCLE SHALL CONTRAST WITH DOOR RS-2
	<ol> <li>SYMBOLS ARE TO BE CENTERED ON THE DOOR AND HAVE NON GLARE FINISH. SYMBOLS ARE TO BE WHITE IN CONTRAST WITH FEDERAL BLUE BACKGROUND. DOOR TO HAVE A CONTRASTING COLOR WITH CIRCLE/TRIANGLE SYMBOL</li> <li>PROVIDE INTERNATIONAL SYMBOL OF ACCESSIBILITY ONLY WHEN RESTROOM IS ACCESSIBLE</li> </ol>
TOILET ROOM SIGN MOUNTING HEIGHTS 3/8" = 1'-0" 1	ACCESSIBLE RESTROOM DOOR SYMBOL (RS-2) 3" = 1'-0" 2 1 © SAFDIE RABINES ARCHITE

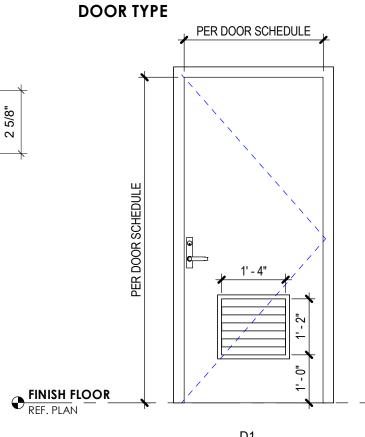




	DOOR SCHEDULE											
OOR YPE	WIDTH	HEIGHT	THICKNESS		DOOR FINISH TYPE	FRAME MATERIAL	FRAME FINISH TYPE	HARDWARE SET		HEAD DETAIL	THRESHOLD DETAIL	COMMENTS
D1	3' - 0"	6' - 10"	1 3/4"	HMD	PT-5	PAINTED STEEL	PT-5	1	1 / A800	2 / A800	3 / A800	DOOR WITH LOUVER
D1	3' - 0"	6' - 10"	1 3/4"	HMD	PT-5	PAINTED STEEL	PT-5	1	1 / A800	2 / A800	3 / A800	DOOR WITH LOUVER
ATE	3' - 8"	4' - 6"	2"	STEEL WIRE	PT-6	PAINTED STEEL	PT-6	2	3 / A650	3 / A650	N/A	PANIC HARDWARE

			HARD	WARE SCHEDULE	
SET #	<b>QTY.</b> (EACH DOOR)	FINISH	MFR.	DESCRIPTION	CATALOG NUMBER
	3	630	IVE	HINGE	5BB1 4.5 X 4.5
	1	630	SCH	CORRIDOR LOCK	L9456T 06N L583-363 L283-722
1	1	626	SCH	PERMANENT CORE	23-030 (MATCH EXISTING KEY SYSTEM)
	1	689	LCN	SURFACE CLOSER	4050A DEL RW/PA (MOUNT PULL SIDE)
	1	630	IVE	KICK PLATE	8400 10" X 2" LDW B-CS
	1	AL	PEM	DOOR SEAL	303CS
	1	AL	PEM	DOOR BOTTOM	210APK
	1	AL	PEM	THRESHOLD	256A
2	RE-USE	EXISTI	NG GAT	E HARDWARE	





DOOR & FRAME

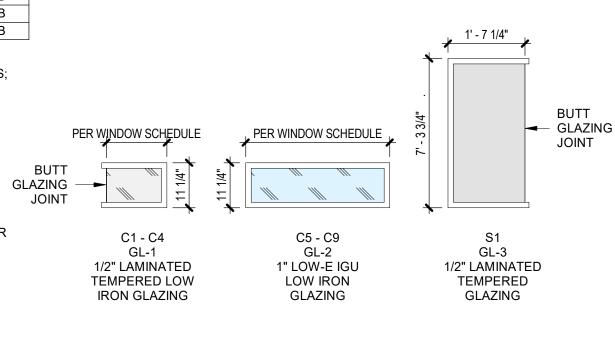
GLAZING SCHEDULE													
TYPE	WIDTH	HEIGHT	GLASS TYPE	U FACTOR (MAX.)	S.H.G.C. (MAX.)	V.T.	COMMENTS						
LERESTORY	1' - 3"	11 1/4"	GL-1	0.36	0.25	0.5	BUTT JOINED CORNER						
LERESTORY	1' - 3 1/2"	11 1/4"	GL-1	0.36	0.25	0.5	BUTT JOINED CORNER						
LERESTORY	1' - 3"	11 1/4"	GL-1	0.36	0.25	0.5	BUTT JOINED CORNER						
LERESTORY	1' - 3"	11 1/4"	GL-1	0.36	0.25	0.5	BUTT JOINED CORNER						
LERESTORY	3' - 2 1/2"	11 1/4"	GL-2	0.36	0.25	0.5							
LERESTORY	4' - 2 1/2"	11 1/4"	GL-2	0.36	0.25	0.5							
LERESTORY	10' - 1 1/2"	11 1/4"	GL-2	0.36	0.25	0.5							
LERESTORY	6' - 11 3/4"	11 1/4"	GL-2	0.36	0.25	0.5							
LERESTORY	8' - 11 1/2"	11 1/4"	GL-2	0.36	0.25	0.5							
PANDREL	1' - 7 1/4"	7' - 3 3/4"	GL-3	0.36	0.25	0.5	SEE WALL W4 / W4B						
PANDREL	1' - 7 1/4"	7' - 3 3/4"	GL-3	0.36	0.25	0.5	SEE WALL W4 / W4B						
PANDREL	1' - 7 1/4"	7' - 3 3/4"	GL-3	0.36	0.25	0.5	SEE WALL W4 / W4B						
PANDREL	1' - 7 1/4"	7' - 3 3/4"	GL-3	0.36	0.25	0.5	SEE WALL W4 / W4B						

1. NOTES ON THIS SHEET ARE AN ACCUMULATION OF ITEMS ON THE PLANS, ELEVATIONS, AND SECTION PLANS; NOT ALL ITEMS ARE FOUND ON EACH SHEET. 2. SEE SHEET A200 & #3/A101 FOR WINDOW LOCATIONS & ORIENTATIONS 3. FIELD VERIFY ALL WINDOW OPENINGS / DIMENSIONS PRIOR TO FABRICATION, NOTIFY ARCHITECT OF

4. WINDOW SYSTEM BASIS OF DESIGN - ARCADIA T200 - FRAME COLOR TO MATCH WINDOW SYSTEM IN 5. GL-1 BASIS OF DESIGN - PILKINGTON 2 x 1/4" LAMINATED TEMPERED LOW IRON GLASS WITH COATING OR TINT TO MATCH APPEARANCE OF EXISTING WINDOWS 6. GL-2 BASIS OF DESIGN - VITRO 1/4" OUTER TEMPERED LOW IRON + 1/2" SPACER + 1/4" INNER LOW IRON -

LOW-E SOLARBAN 60 WITH COATING OR TINT TO MATCH APPEARANCE OF EXISTING WINDOWS 7. GL-3 BASIS OF DESIGN - PILKINGTON 2 x 1/4" LAMINATED TEMPERED BACK PAINTED GLASS WITH COATING OR TINT TO MATCH APPEARANCE OF EXISTING WINDOWS 8. EACH PANE OF SAFETY GLAZING INSTALLED IN HAZARDOUS LOCATIONS SHALL BEAR THE PERMANENT MANUFACTURER'S MARK DESIGNATING THE TYPE AND THICKNESS OF THE GLASS OR GLAZING MATERIAL,

SPECIFYING WHO APPLIED THE DESIGNATION. THE MANUFACTURER OR INSTALLER AND THE SAFETY GLAZING STANDARD WITH WHICH IT COMPLIES. THIS IDENTIFICATION MARK SHALL BE ACID ETCHED, SAN BLASTED, CERAMIC FIRED, LASER ETCHED, EMBOSSED OR OF A TYPE THAT, ONCE APPLIED, CANNOT BE REMOVED WITHOUT BEING DESTROYED. [CBC, 2406.3, 2403.1]

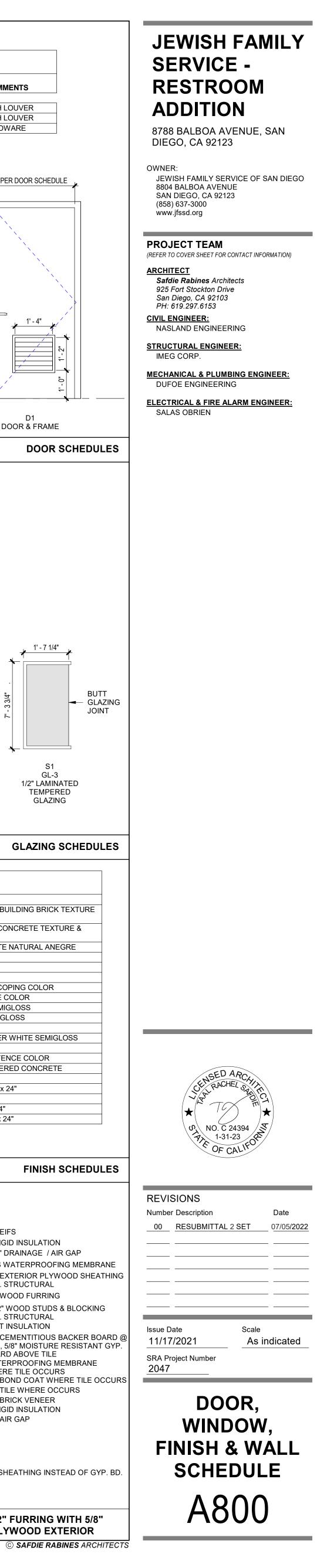


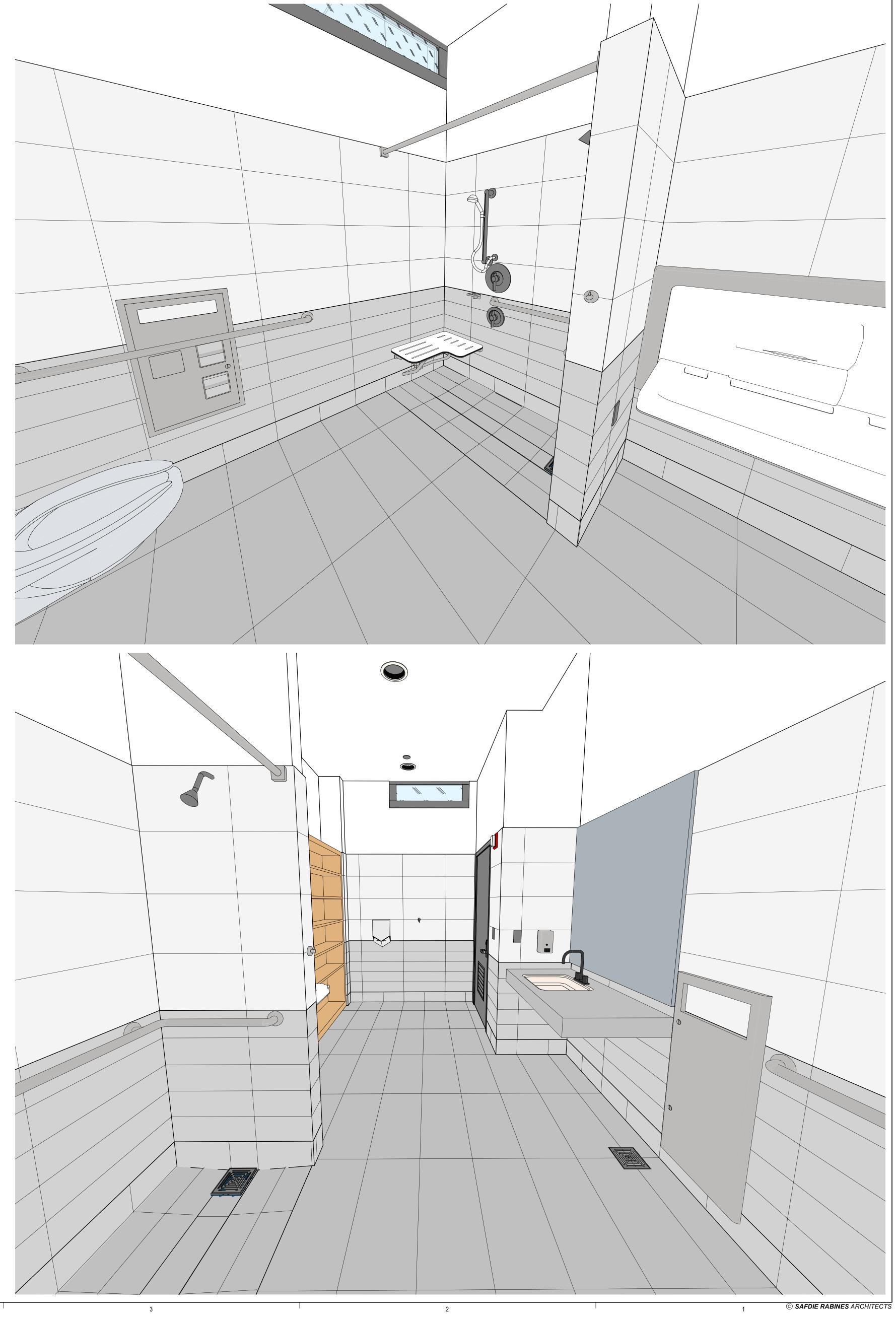
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**GLAZING SCHEDULES** 

ROOM FINISH SCHEDULE	FINISH KEYNOTES
OM NAME   FLOOR FINISH   BASE FINISH   WALL FINISH   CEILING FINISH	# DESCRIPTION
TROOM   TL-1   TL-3   TL-4 / TL-5 / PT-1   PT-2 (G.B.M.R.)	BR-1 EIFS MASONRY COATING - MATCH EXISTING BUILDING BRICK TEXTUR
TROOM         TL-1         TL-3         TL-4 / TL-5 / PT-1         PT-2 (G.B.M.R.)           TROOM         TL-1         TL-3         TL-4 / TL-5 / PT-1         PT-2 (G.B.M.R.)	CS-1 EIFS COATING - MATCH EXISTING BUILDING CONCRETE TEXTURE & COLOR
	CW-1 CASEWORK / SHELVING - ARBORITE LAMINATE NATURAL ANEGRE
	GL-1 LAMINATED GLAZING
:	GL-2 CLEAR 1" IGU
RIOR ELEVATIONS FOR TILE PATTERN / ALIGNMENTS	GL-3 SPANDREL GLAZING
DESIGN - SHOWER TILE - TCNA F114-19 / B415-19 - RESTROOM TILE - F115-19 / W244C-19	PF-1 PREFINISHED FLASHING - MATCH EXISTING COPING COLOR
DESIGN FOR TL-1 & TL-2 & TL-3 - CROSSVILLE SHD 45 CLAY UPS E CUT TO 6" x 12" TO FACILITATE SHOWER SLOPE WITH EXCEPTION OF ORIGIN TILE ROW	PF-2 PREFINISHED FLASHING - MATCH CONCRETE COLOR
DESIGN FOR TL-4 - CROSSVILLE SHD 45 CLAY SPO (6" x 24" - SOME 12" x 24" TILES MAY BE NEEDED	PT-1 INTERIOR PAINT - BEHR WHISPER WHITE SEMIGLOSS
VER AREA)	PT-2 CEILING PAINT - BEHR WHISPER WHITE SEMIGLOSS
DESIGN FOR TL-1 / TL-2 / TL-3 / TL-4 (CLAY) GROUT - CUSTOM BUILDING PRODUCTS #183 CHATEAU	PT-3 SPANDREL WALL PAINT - EXTERIOR
(Y GROUT OR EQUAL	PT-4 HOLLOW METAL DOOR PAINT - BEHR WHISPER WHITE SEMIGLOSS
DESIGN FOR TL-5 - CROSSVILLE SHD41 FROST SPO (12" x 24") WITH 1/16" CUSTOM BUILDING	PT-5 HOLLOW METAL DOOR PAINT - MATCH CS-1
S #11 SNOW WHITE 1/16" EPOXY GROUT OR EQUAL DESIGN FOR CW-1 - ARBORITE W403 EV NATURAL ANEGRE	PT-6 EXTERIOR PAINT - MATCH EXISTING METAL FENCE COLOR
TURE RESISTANT GYPSUM BOARD (G.B.M.R.) WHERE GYP. BOARD OCCURS	ST-1 SOLID SURFACE COUNTER - CORIAN WEATHERED CONCRETE
S OF DESIGN - DRYVIT OUTSULATION PLUS MD WITH STARTER BOARD - CONCRETE COLOR &	TL-1 FLOOR TILE - CROSSVILLE CLAY 12" x 24"
TO MATCH EXISTING BUILDING - "CUSTOM BRICK" COLOR AND TEXTURE TO MATCH EXISTING	TL-2 SHOWER FLOOR TILE - CROSSVILLE CLAY 6" x 24"
	TL-3 BASE COVE TILE - CROSSVILLE CLAY 6" x 12"
TO BE PROVIDED FOR REVIEW BY ARCHITECT OF ALL FINISH ELEMENTS TO MATCH EXISTING	TL-4 LOWER WALL TILE - CROSSVILLE CLAY 6" x 24"
INCLUDING GLAZING	TL-5 UPPER WALL TILE - CROSSVILLE FROST 12" x 24"

						FINISH SCHEDULES
ie IING RD @ TILE, OARD HERE SURS	INT. W2	EXT.	<ul> <li>1/8" EIFS</li> <li>2" RIGID INSULATION</li> <li>1/16" DRAINAGE / AIR GAP</li> <li>EIFS WATERPROOFING MEMBRANE</li> <li>5/8" EXTERIOR PLYWOOD SHEATHING REF. STRUCTURAL</li> <li>5 1/2" WOOD STUDS &amp; BLOCKING REF. STRUCTURAL</li> <li>BATT INSULATION</li> <li>5/8" CEMENTITIOUS BACKER BOARD @ TILE, 5/8" MOISTURE RESISTANT GYP. BOARD ABOVE TILE</li> <li>WATERPROOFING MEMBRANE WHERE TILE OCCURS</li> <li>1/4" BOND COAT WHERE TILE OCCURS</li> <li>1/4" TILE WHERE OCCURS</li> </ul>	INT. W1 W1B		<ul> <li>1/8" EIFS</li> <li>2" RIGID INSULATION</li> <li>1/16" DRAINAGE / AIR GAP</li> <li>EIFS WATERPROOFING MEMBRANE</li> <li>5/8" EXTERIOR PLYWOOD SHEATHING REF. STRUCTURAL</li> <li>1/2" WOOD FURRING</li> <li>5 1/2" WOOD STUDS &amp; BLOCKING REF. STRUCTURAL</li> <li>BATT INSULATION</li> <li>5/8" CEMENTITIOUS BACKER BOARD @ TILE, 5/8" MOISTURE RESISTANT GYP. BOARD ABOVE TILE</li> <li>WATERPROOFING MEMBRANE WHERE TILE OCCURS</li> <li>1/4" BOND COAT WHERE TILE OCCURS</li> <li>1/4" TILE WHERE OCCURS</li> <li>1/4" TILE WHERE OCCURS</li> <li>1/8" BRICK VENEER</li> <li>2" RIGID INSULATION</li> <li>1/8" AIR GAP</li> </ul>
	- R= W2B - 1" - R= W2S - ON	=13 RIGID INSULATION (+ 1/4" EIFS) =13 MIT RIGID INSULATION & EIFS PARAPET, OMIT INSULATION 8	TION & USE EXT. SHEATHING INSTEAD OF GYP. BD.	- R=13	K VENEER SUBSTIT	E EXT. SHEATHING INSTEAD OF GYP. BD.
	<b>W2</b>		DD STUD WITH 5/8" BACKER " PLYWOOD EXTERIOR			D + 1/2" FURRING WITH 5/8" 5/8" PLYWOOD EXTERIOR







	ALL WORK SHALL COMPLY WITH EDITION, AND ALL OTHER LOCAL PROJECT.				ON THIS	
2.	NEITHER THE PROFESSIONAL AG ENGINEER OR THEIR EMPLOYEE SHALL RELIEVE THE CONTRACT DUTIES AND RESPONSIBILITIES I METHODS, SEQUENCE, TECHNIC SUPERINTENDING OR COORDIN	S AND SUBCONSULTA OR AND ANY OTHER E NCLUDING BUT NOT L QUES OR PROCEDURE	NTS AT THE CON NTITY OF THEIR IMITED TO, CONS S NECESSARY F	NSTRUC <sup>®</sup> OBLIGAT STRUCTI OR PERI	TION SITE, TIONS, ON MEANS, FORMING,	
	ACCORDANCE WITH THE CONTR PRECAUTIONS REQUIRED BY AN PERSONNEL HAVE NO AUTHORI	IY REGULATORY AGEN	CIES. THE ENGIN	NEER AN ANY	D THEIR	
	CONSTRUCTION CONTRACTOR O WITH THEIR WORK OR ANY HEAR SOLELY RESPONSIBLE FOR THE CONSULTANTS SHALL BE MADE	LTH OR SAFETY PREC. JOBSITE SAFETY. THE ADDITIONAL INSURED	AUTIONS. THE CO E ENGINEER AND	ONTRAC THE EN	TOR IS GINEER'S	
3.	GENERAL LIABILITY INSURANCE ALL DRAWINGS ARE CONSIDERE GENERAL CONTRACTOR SHALL	ED TO BE A PART OF T				
	OF ALL DRAWINGS PRIOR TO TH BE BROUGHT TO THE ATTENTIO CONSTRUCTION SO A CLARIFICA	N OF THE ARCHITECT	PRIOR TO THE S	TART OF	D IN	
	CONFLICT WITH THE CONTRACT CORRECTED BY THE CONTRACT OWNER OR ARCHITECT.					
4.	ALL DIMENSIONS AND SITE CON JOBSITE PRIOR TO CONSTRUCT CONSTRUCTION, AND/OR FABRIC ENCOUNTERED, OR CONDITIONS DOCUMENTS, THE ARCHITECT S	ION, START OF SHOP I CATION OF MATERIALS S DEVELOP THAT ARE	DRAWINGS, STAF S. IF DISCREPANO NOT COVERED E	RT OF CIES ARI BY THE C	Ξ	
5.	CONTRACTOR SHALL PROVIDE A OF ADJACENT EXISTING SURFAC OF NEW WORK.	_				
5.	STRUCTURAL DRAWINGS INCLU STRUCTURAL INTEGRITY BUT DO ARCHITECTURAL AND MECHANIO WORK SO IT WILL CONFORM TO MECHANICAL AND ELECTRICAL I	O NOT SHOW ALL DET CAL DETAILS. CONTRA THE CLEARANCES RE	AIL DIMENSIONS	TO FIT IN CONST	NTRICATE RUCT THE	
7.	ALL SYMBOLS AND ABBREVIATIO CONSTRUCTION STANDARDS. IF NOTIFY THE ARCHITECT PRIOR	CLARIFICATION IS RE	QUIRED, THE CO		-	
3.	DO NOT SCALE DRAWINGS. PRIN DRAWINGS AND LARGE-SCALE ( DETERMINE FINAL DIMENSION W	ITED DIMENSIONS HAY	VE PRECEDENCE	-	-	
9.	TYPICAL DETAILS SHALL APPLY THE SAME OR SIMILAR TO THOS GIVEN, CONSTRUCTION SHALL E	TO SITUATIONS OCCU E SPECIFICALLY REFE	RENCED. WHERE			
10.	THE CONTRACT DOCUMENTS RE INDICATE THE METHOD OF CONS MEASURES NECESSARY TO PRO	EPRESENT THE FINISH STRUCTION. THE CON	IED STRUCTURE. TRACTOR SHALL	PROVID	E ALL	
	MEASURES NECESSARY TO PRO DURING CONSTRUCTION. SUCH BRACING AND SHORING FOR LO OBSERVATION VISITS TO THE SI NOT INCLUDE INSPECTION OR A WAY RELIEVE THE CONTRACTOR	MEASURES SHALL INC ADS DUE TO CONSTR TE BY THE ARCHITECT PPROVAL OF THE ABC	CLUDE, BUT NOT UCTION EQUIPME FOR STRUCTURA OVE ITEMS AND D	BE LIMIT ENT, ETC AL ENGIN OES NO	ED TO, C. IEER SHALL T IN ANY	
11.	SEE ARCHITECTURAL, ELECTRIC CONDITIONS, PITS, TRENCHES, F SLEEVES, ITEMS TO BE EMBEDD	PADS, DEPRESSIONS, DED OR ATTACHED TO	ROOF/FLOOR OF	ENINGS	, STAIRS,	
12.	SHOWN ON THE STRUCTURAL D ESTABLISH AND VERIFY ALL OPE PLUMBING WITH APPROPRIATE	ENINGS AND INSERTS	S. OPENING SIZE	S AND LO	OCATIONS	
13.	SHOWN FOR DUCTS, PIPE, INSEI GENERAL INFORMATION ONLY A NO HOLES, NOTCHES, BLOCKOU	ND SHALL BE VERIFIE ITS, ETC. ARE ALLOWE	D PRIOR TO FOR ED IN STRUCTUR	MING. AL ELEM	ENTS	
14.	UNLESS SPECIFICALLY DETAILED STRUCTURAL ENGINEER. BEFORE SUBMITTING A PROPOS			_		
	PREMISES AND BECOME FULLY. TEMPORARY CONSTRUCTION RI BID SHALL INCLUDE ALL SUMS R CONDITIONS.	EQUIRED, QUANTITIES EQUIRED TO DO THE '	S AND TYPE OF EG WORK WITHIN TH	QUIPMEI IE EXIST	ŃT, ETC. THE ING	
15.	SHOP DRAWINGS SHALL BE REV ARCHITECT. EACH SHOP DRAWI BY THE CONSTRUCTION MANAG	NG SUBMITTED SHALL		DICATIN		
	ARCHITECT SHALL NOT BEGIN U WITHOUT REVIEW BY THE ARCH	NTIL THIS IS COMPLET	FE. WORK SHALL			
16.	ARCHITECT SHALL NOT BEGIN U WITHOUT REVIEW BY THE ARCH SHOP DRAWINGS SHALL BE REV GENERAL CONFORMANCE WITH ARCHITECT/STRUCTURAL ENGIN	NTIL THIS IS COMPLET ITECT/STRUCTURAL E IEWED BY THE ARCHI DESIGN CONCEPT ON IEER ON THE SHOP DI	TE. WORK SHALL INGINEER. TECT/STRUCTUR NLY. NOTATIONS RAWINGS DO NO	NOT BE	GIN NEER FOR Y THE /E THE	
	ARCHITECT SHALL NOT BEGIN U WITHOUT REVIEW BY THE ARCH SHOP DRAWINGS SHALL BE REV GENERAL CONFORMANCE WITH	NTIL THIS IS COMPLET ITECT/STRUCTURAL E IEWED BY THE ARCHI DESIGN CONCEPT ON IEER ON THE SHOP DF G WITH THE REQUIRE JCTURAL TESTS AN PLY WITH THE APPL	TE. WORK SHALL INGINEER. NLY. NOTATIONS RAWINGS DO NO MENTS OF THE D ID STRUCTURA ICABLE PROVIS	NOT BE AL ENGI MADE B T RELIEV RAWING	GIN NEER FOR Y THE /E THE SS.	
17.	ARCHITECT SHALL NOT BEGIN U WITHOUT REVIEW BY THE ARCH SHOP DRAWINGS SHALL BE REV GENERAL CONFORMANCE WITH ARCHITECT/STRUCTURAL ENGIN CONTRACTOR FROM COMPLYIN SPECIAL INSPECTIONS, STRU OBSERVATIONS SHALL COMI 2019 CBC, CHAPTER 17, SPEC ALL CONCRETE WORK SHALL CO	NTIL THIS IS COMPLET ITECT/STRUCTURAL E IEWED BY THE ARCHI DESIGN CONCEPT ON IEER ON THE SHOP DI G WITH THE REQUIRE JCTURAL TESTS AN PLY WITH THE APPL CIAL INSPECTIONS / CONCRETE DNFORM TO THE AMEI	TE. WORK SHALL INGINEER. TECT/STRUCTUR NLY. NOTATIONS RAWINGS DO NO MENTS OF THE D ID STRUCTURA ICABLE PROVIS AND TESTS.	NOT BE MADE B T RELIEV RAWING L SIONS (	GIN NEER FOR Y THE /E THE SS. OF THE UTE	
17.	ARCHITECT SHALL NOT BEGIN U WITHOUT REVIEW BY THE ARCH SHOP DRAWINGS SHALL BE REV GENERAL CONFORMANCE WITH ARCHITECT/STRUCTURAL ENGIN CONTRACTOR FROM COMPLYIN SPECIAL INSPECTIONS, STRU OBSERVATIONS SHALL COMI 2019 CBC, CHAPTER 17, SPEC ALL CONCRETE WORK SHALL CO PUBLICATIONS: ACI 117, ACI 301, CONCRETE MATERIALS SHALL CO CEMENT	NTIL THIS IS COMPLET ITECT/STRUCTURAL E IEWED BY THE ARCHI DESIGN CONCEPT ON IEER ON THE SHOP DF G WITH THE REQUIRE JCTURAL TESTS AN PLY WITH THE APPL CIAL INSPECTIONS A CONCRETE DNFORM TO THE AMEI ACI 305.1, ACI 306.1, A SONFORM TO: ASTM C150,	TE. WORK SHALL INGINEER. TECT/STRUCTUR NLY. NOTATIONS RAWINGS DO NO MENTS OF THE D D STRUCTURA ICABLE PROVIS AND TESTS. RICAN CONCRET CI 308.1, ACI 318 TYPE II	NOT BE MADE B T RELIEV RAWING L SIONS (	GIN NEER FOR Y THE /E THE SS. OF THE UTE	
17.	ARCHITECT SHALL NOT BEGIN U WITHOUT REVIEW BY THE ARCH SHOP DRAWINGS SHALL BE REV GENERAL CONFORMANCE WITH ARCHITECT/STRUCTURAL ENGIN CONTRACTOR FROM COMPLYIN SPECIAL INSPECTIONS, STRU OBSERVATIONS SHALL COMI 2019 CBC, CHAPTER 17, SPEC ALL CONCRETE WORK SHALL CO PUBLICATIONS: ACI 117, ACI 301, CONCRETE MATERIALS SHALL CO	NTIL THIS IS COMPLET ITECT/STRUCTURAL E IEWED BY THE ARCHI DESIGN CONCEPT ON IEER ON THE SHOP DF G WITH THE REQUIRE JCTURAL TESTS AN PLY WITH THE APPL CIAL INSPECTIONS / CONCRETE DNFORM TO THE AMEI ACI 305.1, ACI 306.1, A SONFORM TO: ASTM C150, ASTM C150, ASTM C618, ATE ASTM C33 POTABLE	TE. WORK SHALL INGINEER. TECT/STRUCTUR NLY. NOTATIONS RAWINGS DO NO MENTS OF THE D ID STRUCTURA ICABLE PROVIS AND TESTS. RICAN CONCRET CI 308.1, ACI 318	NOT BE MADE B T RELIEV RAWING L SIONS (	GIN NEER FOR Y THE /E THE SS. OF THE UTE	
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GENERAL

12. PROVIDE SLEEVES FOR ELECTRICAL AND PLUMBING OPENINGS. IF CONFLICT OCCURS BETWEEN REINFORCING AND SLEEVES, REPOSITION REINFORCING OR SLEEVES OR BOTH. DO NOT CUT ANY REINFORCING. CORING IS NOT PERMITTED UNLESS APPROVED IN WRITING BY THE ARCHITECT (STRUCTURAL ENGINEER).

17.	SANDBLAST ALL EXISTING CONCRETE SURFACES OLD CONCRETE IS TO BE PLACED, UNLESS DIRECTED OTH STRUCTURAL ENGINEER.
18.	PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL BEFORE PLACING. SECURE SUCH SLEEVES TO PREVE OPERATIONS. REFER TO MECHANICAL AND ELECTRIC PENETRATIONS.
19.	CORE DRILLING CONCRETE IS NOT PERMITTED UNLES IN WRITING BY THE ARCHITECT. NOTIFY THE ARCHITE SHOWN ON THE DRAWINGS.
20	. CONFIRM WITH ARCHITECT THAT MATERIALS TO BE E EMBEDMENT IN CONCRETE.
21.	THE OUTSIDE DIAMETER OF EMBEDDED CONDUIT OR STRUCTURAL SLAB THICKNESS, INCLUDING AT CROS BETWEEN THE TOP AND BOTTOM REINFORCING WITH CONDUIT OR PIPE RUNNING PARALLEL TO EACH OTH APART AND NO MORE THAN 2 RUNS STACKED VERTIC SHALL NOT BE EMBEDDED IN SLAB THICKNESSES LES
22	DO NOT PLACE PIPES, DUCTS, REGLETS OR CHASES APPROVAL OF THE STRUCTURAL ENGINEER THROUG
23	NO ALUMINUM SHALL BE ALLOWED IN THE CONCRETE ALUMINUM-CONCRETE REACTION.
24	WATERSTOPS SHALL BE A FLEXIBLE BENTONITE PVC INCLUDE: CETCO WATERSTOP-RX AND GREENSTREA TECHNOLOGIES TPE-R WATERSTOP AND GREENSTRE
25	PROJECTING CORNERS OF BEAMS, WALLS, COLUMNS
26	SLOPE SLABS TO DRAINS OR FOR POSITIVE DRAINAG PROVIDE DEPRESSIONS WHERE SHOWN ON THE STR DRAWINGS, WITHOUT REDUCING THE THICKNESS OF GRADE DEPRESSIONS GREATER THAN 1 INCH, REFER REINFORCING.
27.	INTERNALLY VIBRATE ALL CAST-IN-PLACE CONCRETE NEED ONLY BE VIBRATED AROUND UNDER FLOOR DU VIBRATE TOPS OF COLUMNS.
28	PROVIDE VERTICAL CONTROL JOINTS IN EXPOSED CO UNIFORM SPACING NOT TO EXCEED 25 FEET PER ACI WITH ARCHITECTURAL DRAWINGS.
29	CONCRETE SHALL NOT BE PERMITTED TO DROP MOR
30	NOTIFY THE ARCHITECT/STRUCTURAL ENGINEER 48 MINIMUM PRIOR TO ALL POURS.
31	THE DESIGN AND ENGINEERING OF FORMWORK, AS W BE THE RESPONSIBILITY OF THE CONTRACTOR. FORM SUFFICIENT STRENGTH TO SAFELY WITHSTAND THE L PLACEMENT AND VIBRATION OF THE CONCRETE, AND SUFFICIENT RIGIDITY TO MAINTAIN SPECIFIED TOLERA DETAILED FORMWORK SHOP DRAWINGS TO THE ARC GENERAL COMPLIANCE WITH THE DESIGN CONCEPT (
32	THE STRUCTURAL STEEL FRAME WILL DEFLECT WHILL WILL RESULT IN THE NEED TO ADJUST SCREEDS AFTE PRODUCE A LEVEL SURFACE. ADDITIONAL CONCRETE ANTICIPATED, AT NO EXTRA COST.
33	NO CONCRETE SHALL BE PLACED ONTO OR AGAINST WATER, FROST, ICE OR SNOW.
34	DURING WINTER CONSTRUCTION, ALL FOOTINGS SHA
35	. THE CONCRETE CONTRACTOR SHALL FURNISH MIX D
36	. GENERAL CONTRACTOR TO PROVIDE SHOP DRAWING OF MECHANICAL EQUIPMENT PADS ON STEEL DECK A
37.	AT LEAST TWO HOURS MUST ELAPSE BETWEEN THE E PLACEMENT AND THE BEGINNING OF SLAB PLACEMEN
38.	CONCRETE SHALL BE MAINTAINED ABOVE 50 DEGREE CONDITION FOR A MINIMUM OF 7 DAYS AFTER PLACEM ACCEPTED BY ARCHITECT (STRUCTURAL ENGINEER).
39.	CURING COMPOUNDS, SEALERS, HARDENERS, ETC., U A FINISH SHALL BE APPROVED BY THE ARCHITECT BE
40.	LEAN CONCRETE SHALL CONTAIN 2 SACKS OF CEMEN USE ONLY WHERE SPECIFICALLY INDICATED.
41.	READY MIX CONCRETE SHALL BE PLACED AFTER BATC CONCRETE OVER 90MINUTES OLD SHALL NOT BE PLACED
42.	ROUGHEN (E) CONCRETE SURFACE TO A FULL OF 1/4" ABUTS (N) CONCRETE OR (N) MANSONRY INTERSECTS
43.	PERFORM CONCRETE WORK IN COMPLIANCE WITH AC
44.	DO NOT EMBED CONDUITS, PIPES OR SLEEVES IN STR SLABS EXCEPT WHERESPECIFICALLY DETAILED OR AC STRUCTURAL ENGINEER.

EMBEDMENTS SHALL BE WELL SECURED IN POSITION.

WALLS/GRADE BEAMS AND PIERS.

## STRUCTURAL STEEL

1. ASTRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "DETAILING FOR STEEL CONSTRUCTION" AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".

2.	STRUCTURAL STEEL SHALL CONFORM 1	O AST
	WIDE FLANGE SHAPES	AST
	OTHER ROLLED SHAPES	AST
	PIPE SECTIONS	AST
	HSS SECTIONS, ROUND	AST
	HSS SECTIONS, (SMRF COLUMNS)	AST
	HSS SECTIONS, SQ/RECT	AST
	BASE AND CONNECTION PLATES	AST
	ANCHOR RODS	AST
	HIGH STRENGTH BOLTS	AST
	HIGH STRENGTH BOLTS	AST
	HIGH STRENGTH TWIST-OFF BOLTS	AST
	HIGH STRENGTH TWIST-OFE BOILTS	Δςτ

ANGHUR RODS	ASTNET 1554, GR 55	ry – 55 KSI U
HIGH STRENGTH BOLTS	ASTM F3125, GR A325	Fv = 120 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A490	Fv = 150 KSI
HIGH STRENGTH TWIST-OFF BOLTS	ASTM F3125, GR F1852	Fv = 120 KSI
HIGH STRENGTH TWIST-OFF BOLTS	ASTM F3125, GR F2280	Fv = 150 KSI
HEAVY HEX NUTS	ASTM A563	
WASHERS	ASTM F436	
HEADED STUDS	ASTM A108, TYPE B	
ELECTRODES FOR ARC WELDING	AWS 5.1, E70XX	

"SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". REFER TO DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.

- 4. USE TENSION-CONTROL, "TWIST-OFF", BOLTS FOR ALL HIGH STRENGTH BOLTS REQUIRING
- FULL TENSION AS INDICATED ON THE DRAWINGS. 5. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM F3125, GRADE A325N, UNO. FOR
- ALL DRAG STRUT BOLTS, HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM F3125, GRADE A490SC.
- 6. ALL BOLTED CONNECTIONS SHALL BE BEARING TYPE, UNLESS NOTED OTHERWISE.
- 7. STANDARD BOLT HOLES IN STEEL SHALL BE 1/16 INCH LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, UNO.
- 8. BOLTS IN SLOTTED HOLES SHALL BE LOCATED IN THE CENTER OF THE HOLE AFTER FIELD ASSEMBLY IS COMPLETE, UNLESS DETAILED OTHERWISE.
- 9. ALL WELDS SHALL CONFORM TO THE AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE - STEEL" (AWS D1.1), "STRUCTURAL WELDING CODE - SEISMIC
- 10. WELD LENGTHS INDICATED ON THE DRAWINGS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM SIZE WELDS AS SPECIFIED IN AISC 360, SECTION J2.4 AND CHAPTER 22 OF THE CALIFORNIA BUILDING CODE.
- 11. USE BACKING FOR ALL FULL PENETRATION WELDS, ALL FULL AND/OR PARTIAL PENETRATION WELDS SHALL BE FULLY DETAILED ON THE SHOP DRAWINGS.
- 12. WELD ACCESS HOLES SHALL BE FABRICATED IN ACCORDANCE WITH THE **RECOMMENDATIONS OF AWS D1.1.**
- 13. ALL WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE AND CERTIFICATION IN THE TYPES OF WELDING CALLED FOR. WELDERS SHALL HAVE BEEN RECENTLY QUALIFIED AS PRESCRIBED IN "QUALIFICATION PROCEDURES" OF THE AMERICAN WELDING SOCIETY (AWS).

### 14. CONCRETE PLACEMENT SHALL CONFORM TO ACI 304 AND CONTRACT DOCUMENTS. INTENTIONALLY ROUGHEN ALL PREVIOUSLY HARDENED CONCRETE SURFACES TO A FULL AMPLITUDE OF 1/4-INCH AGAINST WHICH FRESH CONCRETE IS PLACE.

15. CROSS REFERENCE ARCHITECTURAL AND STRUCTURAL DRAWINGS TO ASSURE PROPER

DIMENSIONS AND PLACEMENT OF ALL ANCHOR BOLTS, INSERTS, NOTCHES, EDGES OF

16. UNO, ALL FOOTINGS SHALL BE CENTERED UNDER WALLS, PIERS OR COLUMNS.

DER THAN 28 DAYS AGAINST WHICH HERWISE IN WRITING BY THE

PENETRATIONS THROUGH CONCRETE ENT MOVEMENT DURING PLACING

CAL DRAWINGS FOR LOCATIONS OF

SS NOTED OTHERWISE OR APPROVED ECT IN ADVANCE OF CONDITIONS NOT

EMBEDDED ARE SUITABLE FOR

R PIPE SHALL NOT EXCEED 1/3 OF THE S-OVERS, AND SHALL BE PLACED

H A MINIMUM 3" CLEAR COVER. IER SHALL BE SPACED AT LEAST 8" CALLY IN THE SLAB. CONDUIT OR PIPE SS THAN 6 INCHES.

IN STRUCTURAL CONCRETE WITHOUT GH THE ARCHITECT.

E WORK UNLESS COATED TO PREVENT

PRODUCT. ACCEPTABLE PRODUCTS AK SWELLSTOP WESTEC BARRIER EAK PVC WATERSTOP.

S, ETC., SHALL BE FORMED WITH A 3/4 CHITECTURAL DRAWINGS. GE IF NO DRAINS ARE PRESENT, AND RUCTURAL AND/OR ARCHITECTURAL SLAB INDICATED, FOR SLAB-ON-

R TO DETAILS FOR ADDITIONAL

E EXCEPT SLABS-ON-GRADE WHICH UCTS AND OTHER EMBEDDED ITEMS.

ONCRETE WALLS AT A MINIMUM I 224.3. COORDINATE JOINT LOCATIONS

RE THAN 5 FEET.

HOURS

WELL AS ITS CONSTRUCTION, SHALL VIS SHALL BE DESIGNED TO HAVE OADS RESULTING FROM O SHALL ALSO BE DESIGNED FOR ANCES. CONTRACTOR SHALL SUBMI CHITECT TO BE REVIEWED FOR

ONLY. E CONCRETE IS BEING PLACED. THIS ER CONCRETE HAS BEEN PLACED TO E WILL BE REQUIRED, AND IS

SUBGRADES CONTAINING FREE

ALL BE PROTECTED FROM FROST D TEMPORARY HEAT IS PROVIDED.

ESIGN SHOP DRAWINGS FOR REVIEW. GS FOR SIZE, LOCATION AND HEIGHT AND SLAB-ON-GRADE.

END OF COLUMN OR WALL

S FAHRENHEIT AND IN A MOIST MENT UNLESS OTHERWISE

USED ON CONCRETE THAT RECEIVES FORE USE.

IT PER CUBIC YARD OF CONCRETE. CHING IN LESS THAN 90 MINUTES.

' AMPLITUDE WHERE (E) CONCRETE S (E) CONCRETE.

CI 301. RUCTURAL CONCRETE INCLUDING CCEPTED BY ARCHITECT &

IM STANDARDS AS NOTED BELOW: Fv = 50 KS M A36 Fy = 36 KSI TM A53, GR B Fv = 35 KSI Fy = 46 KSIM A500. GR C  $F_{V} = 50 \text{ KSI}$ M A1085 TM A500, GR C Fv = 50 KSI M A572 Fy = 50 KSI U.N.O. M F1554, GR 55 Fv = 55 KSI U.N.O. F3125, GR A325 Fv = 120 KSI F3125, GR A490 Fv = 150 KSI F3125, GR F1852 Fv = 120 KSI

3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC

SUPPLEMENT" (AWS D1.8), AND BE MADE WITH APPROVED ELECTRODES.

STRUCTURAL STEEL CONT. 14. FIELD CONNECTIONS SHALL BE WELDED OR BOLTED. SHOP CONNECTIONS SHALL BE WELDED, UNO. WELDS INDICATED WITH A SHOP WELD SYMBOL MAY BE MADE IN THE

FIELD WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. LOCATIONS OF ALL FIELD WELDS SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS. WELDS SHALL BE DESIGNED TO BE FULLY EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS DETAILED TO MINIMIZE BENDING IN THE CONNECTION. 15. HEADED STUDS:

A. SHALL BE FABRICATED IN ACCORDANCE WITH AWS D1.1 AND WITHIN THE TOLERANCES SET FORTH IN AWS D1.1. B. SHALL BE NELSON GRANULAR FLUX-FILLED SHEAR CONNECTOR OR ANCHOR STUDS (OR APPROVED EQUIVALENT). STUDS SHALL BE MANUFACTURED OF COLD ROLLED STEEL WHICH CONFORMS TO ASTM A108.

C. STUDS SHALL BE AUTOMATICALLY END WELDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE STUD AND THE PLATE. THERE SHOULD BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE. THE STUD SHALL DECREASE IN LENGTH DURING WELDING APPROXIMATELY 1/8" FOR 5/8"Ø AND SMALLER AND 3/16" FOR LARGER THAN 5/8"Ø. WELDING SHALL BE DONE ONLY BY QUALIFIED WELDERS APPROVED BY THE INSPECTION AGENCY.

16. ALL STEEL EXPOSED TO WEATHER SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. ABRADED AREAS TO BE TOUCHED UP WITH GALVALOY. ALL HOLLOW SECTIONS SHALL HAVE WELDED CAP PLATES TO SEAL EXPOSED ENDS.

17. PROVIDE ONE SHOP COAT OF PAINT ON STRUCTURAL STEEL EXPOSED TO PUBLIC VIEW ONLY.

18. REFER TO DRAWINGS FOR DETAIL OF DECK OPENINGS. REFER TO ARCHITECTURAL. MECHANICAL, AND ELECTRICAL DRAWINGS, ETC. FOR EXACT SIZE, LOCATION, AND COUNT OF REQUIRED OPENINGS.

19. CUTS, HOLES, OPENINGS, ETC., REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OF HOLES AND CUTS IN THE FIELD SHALL NOT BE ALLOWED. EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER. NO HOLES SHALL BE CUT IN STRUCTURAL STEEL BY OTHER TRADES UNLESS SHOWN ON STRUCTURAL DRAWINGS OR APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

20. FURNISH AND INSTALL MISCELLANEOUS STEEL (CURBS, HANGERS, EXPANSION JOINT ANGLES, STRUTS, ETC.) AS CALLED FOR OR AS NECESSARY PER ARCHITECTURAL AND MECHANICAL/ELECTRICAL DRAWINGS.

21. NON-SHRINK GROUT FOR BASE AND BEARING PLATES SHALL BE A PRE-MIXED, NON-METALLIC, NON-CORROSIVE, NON-STAINING PRODUCT CONTAINING SELECTED SILICA SAND. PORTLAND CEMENT. SHRINKAGE COMPENSATING AGENTS AND PLASTICIZING/WATER REDUCING AGENTS. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 7000 PSI.

22. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR ARCHITECT/STRUCTURAL ENGINEER'S REVIEW BEFORE

23. ALL FIELD WELDING, EXCEPT TACK WELDING, SHALL BE CONTINUOUSLY INSPECTED BY AN APPROVED WELDING INSPECTOR.

24. ALL COMPLETE PENETRATION GROOVE WELDS CONTAINED IN JOINTS AND SPLICES SHALL BE TESTED FORULTRASONIC TESTING OF COMPLETE PENETRATION GROOVE WELDS AND BY TENSION TEST SECTION 6.2.5 AWS.

25. ALL WELDING SHALL BE INSPECTED BY CITY APPROVED AWS/CWI WELDING INSPECTOR. 26. WELDING PROCEDURE SPECIFICATIONS FOR ALL WELDS SHALL BE SUBMITTED TO

STRUCTURAL ENGINEER FOR APPROVAL. 27. ALL ANCHOR BOLT SHALL BE ASTM F1554, GRADE 50 & WELDABLE.

FABRICATION.

CONCRETE PROTECTION FOR REINFORCING STEEL (U.N.O.)

A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH......3" FARTH OR WEATHE NO. 6 THROUGH NO. 18 BARS. NO. 5 BARS, W31 OR D31 WIRE, AND SMALLER ... C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: SLAB, WALLS, JOISTS: NO. 14 AND NO. 18 BARS.. NO. 11 BARTS AND SIMILAR (\*)..... BEAMS AND COLUMNS

PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS......1-1/2" D. SLAB ON GRADE... ...MID-HEIGHT OF SLAB

# REINFORCING

1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE AMERICAN CONCRETE INSTITUTE "ACI DETAILING MANUAL" (SP-066) EXCEPT AS OTHERWISE SHOWN, NOTED OR SPECIFIED.

2.	CONCRETE REINFORCING STEEL SHALL E THE FOLLOWING STANDARDS:	BE HIGH STRENGTH NEW B	ILLET STEEL CONFORMING TO
		ASTM A615, GR60	
	DEFORMED BARS	ASTM A706, GR 60	Fy = 60  KSI
		ASTM A1064 ASTM A775	Fy = 65 KSI Fy = 60 KSI
	GALVANIZED-COATED BARS	ASTM A775 ASTM A767	Fy = 60  KSI $Fy = 60  KSI$
		ASTM A1064	Fy = 60  KSI
~			-
3.	MINIMUM CONCRETE COVER SHALL BE PF REINFORCING BARS:		
	CAST AGAINST AND PERMANENTLY IN EXPOSED TO WEATHER OR IN CONTA		3"
	#6 BARS OR LARGER		2"
	#5 BARS OR SMALLER		1 1/2"
	NOT EXPOSED TO WEATHER OR IN CO		
	SLABS, JOISTS AND WALLS WITH #		1 1/2"
	SLABS, JOISTS AND WALLS WITH #		3/4" 1 1/2"
	BEAMS, COLUMNS, PEDESTALS AN	ND TEINSION TIES	1 1/2
4.	ALL REINFORCING IN CONCRETE USED FO GALVANIZED OR EPOXY-COATED.	OR THE CONTAINMENT OF	WATER SHALL BE HOT-DIP
5.	USE LOW HYDROGEN ELECTRODES, GRA	DE E-90, FOR WELDING OF	REINFORCING BARS.
6.	PROVIDE ADEQUATE TIES FOR ALL REINF BEAMS. ANCHOR BOLTS, DOWELS, REINF TIED IN PLACE PRIOR TO POURING CONCI SUPPORT REINFORCING OFF GRADE.	ORCING STEEL, INSERTS, E	ETC., SHALL BE SECURELY
7.	SUPPORTS FOR REINFORCEMENT SHALL MANUAL OF STANDARD PRACTICE, UNO.	HAVE CLASS 2 PROTECTIC	ON AS DEFINED IN THE CRSI
8.	SUPPORTS FOR COATED REINFORCEMEN THE CRSI MANUAL OF STANDARD PRACTI	-	ROTECTION AS DEFINED IN
9.	CONTINUOUS REINFORCING SHALL BE LA THE SUPPORT FOR BOTTOM BARS.	PPED AT MIDSPAN FOR TO	P BARS AND DIRECTLY OVER
10.	ALL WELDED WIRE REINFORCING (WWR)	SHALL BE LAPPED 2 PANEL	S AT EDGES AND ENDS.
11.	DOWELS BETWEEN FOOTINGS AND WALL SPACING OR NUMBER AS THE VERTICAL F		
12.	ALL TOP BARS IN GRADE BEAMS SHALL BE BETWEEN SUPPORTS. WHERE GRADE BE CONTINUOUS FOR FULL LENGTH AND HO	AMS ARE SIMPLE SPAN, TO	OP BARS SHALL BE
13.	ALL BOTTOM BARS IN GRADE BEAMS SHA OVER SUPPORTS.	LL BE CONTINUOUS BETW	EEN SUPPORTS AND LAP
14.	REINFORCING IN WALL FOOTINGS BETWE A MINIMUM OF 2 FEET.	EN COLUMNS SHALL EXTE	ND INTO COLUMN FOOTINGS

15. REINFORCING IN FOOTINGS AND GRADE BEAMS SHALL BE ACCURATELY PLACED, SPACED,

SUPPORTED AND SECURED BEFORE PLACING CONCRETE. 16. CUTTING OF REINFORCING WHICH CONFLICTS WITH EMBEDDED OBJECTS IS NOT ACCEPTABLE.

17. REINFORCING BARS SHALL BE BENT COLD, AND NO METHOD OF FABRICATION SHALL BE USED WHICH WOULD BE INJURIOUS TO THE MATERIAL. HEATING OF BARS FOR BENDING IS NOT

PERMITTED 18. FIELD WELDING OR BENDING OF REINFORCING IS NOT PERMITTED EXCEPT AS INDICATED ON THE DRAWINGS OR AS APPROVED BY THE STRUCTURAL ENGINEER.

19. SUBMIT SHOP DRAWINGS FOR FABRICATION AND PLACEMENT OF REINFORCING STEEL. INCLUDE SCHEDULES AND DIAGRAMS OF BENT BARS AND SHOW ARRANGEMENT OF REINFORCEMENT. STRUCTURAL ENGINEER'S REVIEW WILL BE FOR COMPLIANCE WITH DESIGN REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS AND QUANTITIES.

# DESIGN LOADS

1. STRUCTURE HAS BEEN DESIGNED IN COMPLIANCE WITH 2019 CALIFORNIA BUILDING CODE

2. SITE CLASS C. A) SEISMIC IMPORTANCE FACTOR, I = 1.0

B) OCCUPANCY CATEGORY: II C) MAPPED SPECTRAL ACCELERATIONS,

Ss : 1.046 S1 : 0.367 Sms : 1.255 Sm1 : 0.551

D) SPECTRAL RESPONSE COEFFICIENTS, SDS : 1.837 SD1 : 0.367

E) SEISMIC DESIGN CATEGORY: D

F) ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE ANALYSIS; ASCE 7-16, SECTION 1208

- REPORT #2210654.01, DATED NOVEMBER 19, 2021.
- EXISTING STRUCTURES OR IMPROVEMENTS SO AS NOT TO DAMAGE OR UNDERMINE
- IMPORTING
- FOOTINGS SHOULD HAVE A MINIMUM WIDTH OF 12 INCHES AND 24 INCHES, RESPECTIVELY.

10. RESISTANCE TO LATERAL LOADS SHALL BE PROVIDED BY FRICTION AGAINST BASE OR BY PASSIVE EARTH PRESSURE. ALLOWABLE CO-EFFICIENT OF FRICTION SHALL BE 0.3 AND ALLOWABLE PASSIVE PRESSURE SHALL BE 300 PCF.

11. PASSIVE AND FRICTIONAL RESISTANCE CAN BE COMBINED WITHOUT ANY REDUCTION. THESE LATERAL RESISTANCES ARE NET ALLOWABLE VALUES AND CAN BE INCREASED BY ONE-THIRD FOR SHORT DURATION TRANSIENT LOADING.

12. ALL REQUIRED FILL SHALL BE APPROVED BY THE SOIL ENGINEER AND BE PLACED IN LOOSE LIFTS NOT MORE THAN 8 INCHES THICK. EACH LAYER SHALL BE COMPACTED TO AT LEAST 90% OF THE MAXIMUM UNIT WEIGHT AS DETERMINED BY ASTM DESIGNATION D1557-02 FOR MATERIAL USED. THE MOISTURE CONTENT OF THE ON-SITE SOIL AT THE TIME OF COMPACTION SHALL BE NEAR THE OPTIMUM MOISTURE CONTENT.

13. INSPECTION AND FIELD DENSITY TESTS SHALL BE CONDUCTED BY THE GEOTECHNICAL ENGINEER OF RECORD TO ASSURE ADEQUATE COMPACTION IS ATTAINED. WHERE COMPACTION LESS THAN 90 PERCENT IS INDICATED ADDITIONAL COMPACTIVE EFFORTS SHALL BE MADE UNTIL AT LEAST 90 PERCENT COMPACTION IS OBTAINED.

14. GEOTECHNICAL OBSERVATION: THE REWORKING OF THE UPPER SOILS AND THE COMPACTION AND PLACEMENT OF ALL REQUIRED FILL, AS WELL AS INSTALLATION OF MICROPILE FOUNDATIONS SHOULD BE OBSERVED AND TESTED BY A REPRESENTATIVE OF OUR FIRM. THIS REPRESENTATIVE SHOULD PERFORM AT LEAST THE FOLLOWING DUTIES: a. OBSERVE THE CLEARING OPERATIONS FOR PROPER REMOVAL OF ALL UNSUITABLE

b. OBSERVE THE EXPOSED SUBGRADE IN AREAS TO RECEIVE FILL AND IN AREAS WHERE EXCAVATION HAS RESULTED IN THE DESIRED FINISHED SUBGRADE. THE REPRESENTATIVE SHOULD ALSO OBSERVE PROOFROLLING AND DELINEATION OF

d. OBSERVE THE FILL AND BACKFILL FOR UNIFORMITY DURING PLACEMENT. e. TEST BACKFILL FOR FIELD DENSITY AND COMPACTION TO DETERMINE THE PERCENTAGE OF COMPACTION ACHIEVED DURING BACKFILL PLACEMENT.

SPREAD/CONTINUOUS FOOTINGS, IF USED.

REQUIREMENTS, OF THE REVIEWING AGENCIES. AREAS REQUIRING OVEREXCAVATION. TESTING WHERE NECESSARY.

1. ALL LUMBER SHALL BE GRADED PER GRADING RULES #17 OF WEST COAST LUMBER INSPECTION BUREAU.

3. ALL PRESSURE TREATED LUMBER SHALL BE MARKED WITH A STAMP PER AWPB AS

LP-2 OR LP-22.

EXTERIOR GLUE".

H. METAL DECK

I MASONRY

Rafters a 4x beam Beams, 4x posts

## EARTHWORK

1. SEE REPORT OF GEOTECHNICAL ENGINEERING AND ENGINEERING GEOLOGY EVALUATION REPORT PREPARED BY CHRISTIAN WHEELER ENGINEERING.

2. ANY EXISTING FILL OR UNSUITABLE SOILS, AS DETERMINED BY THE GEOTECHNICAL ENGINEER, SHALL BE EXCAVATED AND REPLACE AS PROPERLY COMPACTED FILL. 3. EXTREME CARE SHALL BE EXERCISED WHEN EXCAVATING OR GRADING ADJACENT TO

FOUNDATIONS, WALLS, SLABS, UTILITIES, ETC. 4. ANY IMPORT FILL SOIL THAT MAY BE REQUIRED SHALL HAVE A LOW POTENTIAL FOR

EXPANSION AND SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO

5. ALL EARTHWORK AND SITE PREPARATION SHALL BE PERFORMED IN ACCORDANCE WITH THE ABOVE MENTIONED REPORT WHICH IS ON FILE WITH THE ARCHITECT. ALL FOUNDATION EXCAVATIONS SHALL BE OBSERVED AND APPROVED BY THE GEOTECHNICAL ENGINEER. 6. CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT LISTED ABOVE AND BE FAMILIAR

WITH ITS CONTENTS. COPIES ARE AVAILABLE FOR REVIEW AT ARCHITECTS OFFICE. 7. SPREAD FOOTINGS SUPPORTING THE PROPOSED STRUCTURE SHOULD BE EMBEDDED AT LEAST 12 INCHES BELOW LOWEST ADJACENT FINISH PAD GRADE, AND SHOULD EXTEND AT LEAST 12 INCHES INTO VERY OLD PARALIC DEPOSITS, WHICHEVER IS MORE. CONTINUOUS AND ISOLATED

8. SPREAD FOOTINGS SUPPORTING THE PROPOSED STRUCTURE WITH A MINIMUM DEPTH OF 12 INCHES AND A MINIMUM WIDTH OF 12 INCHES MAY BE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 3,000 POUNDS PER SQUARE FOOT (PSF).

9. THE VALUES GIVEN ABOVE MAY BE INCREASED BY 700 PSF FOR EACH ADDITIONAL FOOT OF EMBEDMENT AND 500 PSF FOR EACH ADDITIONAL FOOT OF WIDTH UP TO A MAXIMUM OF 6,000 PSF. THESE VALUES MAY BE INCREASED BY ONE-THIRD FOR COMBINATIONS OF TEMPORARY LOADS SUCH AS THOSE DUE TO WIND OR SEISMIC LOADS.

c. EVALUATE THE SUITABILITY OF ON-SITE AND IMPORT SOILS FOR FILL PLACEMENT; COLLECT AND SUBMIT SOIL SAMPLES FOR REQUIRED OR RECOMMENDED LABORATORY

OBSERVE AND PROBE FOUNDATION MATERIALS TO CONFIRM THAT SUITABLE BEARING MATERIALS ARE PRESENT AT THE DESIGN FOUNDATION DEPTHS FOR CONVENTIONAL

g. OBSERVE THE INSTALLATION AND TESTING MICROPILES TO CONFIRM THAT THE DESIRED DEPTHS, DIAMETERS, AND CAPACITIES ARE ACHIEVED. THE GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE PROJECT SHOULD BE NOTIFIED PRIOR TO COMMENCEMENT OF GRADING SO THAT THE NECESSARY GRADING

INSPECTION(S). THE CONTRACTOR SHOULD BE FAMILIAR WITH THE INSPECTION PERMITS CAN BE OBTAINED, AND ARRANGEMENTS CAN BE MADE FOR THE REQUIRED

WOOD

2. WOOD SHALL BE GRADE MARKED DOUGLAS FIR LARCH AND AS FOLLOWS:

MEMBER Rafters and joists larger than 2x4	SIZE CLASSIFICATION	GRADE
, ,	2" to 4" thk.; 2" and wide	r No. 2
4x beams, headers and stringers	2" to 4" thk.; 2" and wide	r No. 2
Beams, headers and stringers larger the	han 4x	
beams and stringers		No. 1
4x posts	2" to 4" thk.; 2" and wide	r No. 2
Posts larger than 4x posts and timbers	3	No. 1
Wall stud and plates	4" wide	No. 2
·	6" wide	No. 2
Blocking		Stud Grade

4. ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED PER CBC SECTION 2303.1.8. ALL FASTENERS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE HOT-DIPPED AND ZINC GALVANIZED.

5. PLYWOOD SHEATHING SHALL BE DOUGLAS FIR PLYWOOD, 5 PLY, STRUCTURAL 1, CONFORMING TO PS 1 95. ALL PLYWOOD SHALL BE GRADE MARKED "APA WITH

6. PLYWOOD NAILING SHALL BE APPROVED BY THE JOB INSPECTOR PRIOR TO COVERING

7. FRAMING HARDWARE SHALL BE AS MANUFACTURED BY THE SIMPSON STRONG TIE OR APPROVED EQUAL. FASTENERS TO BE FURNISHED BY THE

8. MACHINE APPLIED NAILING IS SUBJECT TO A SATISFACTORY JOBSITE DEMONSTRATION FOR EACH PROJECT AND THE APPROVAL BY THE PROJECT ARCHITECT OR STRUCTURAL ENGINEER. THE APPROVAL IS SUBJECT TO CONTINUED SATISFACTORY PERFORMANCE. IF NAILHEADS PENETRATE THE OUTER PLY MORE THAN WOULD BE NORMAL FOR A HAND HAMMER, OR IF MINIMUM ALLOWABLE EDGE DISTANCES ARE NOT MAINTAINED, THE PERFORMANCE WILL BE DEEMED UNSATISFACTORY

9. PROVIDE PLATE WASHERS UNDER ALL BOLTS, NUTS AND HEADS.

10. RE-TIGHTEN ALL BOLTS PRIOR TO CLOSING IN.

MANUFACTURER AND ALL FASTENER HOLES TO BE FILLED.

11. ALL NAILING SHALL CONFORM TO TABLES SET FORTH IN THE TITLE 24 OF THE CALIFORNIA CODE OF REGULATIONS EXCEPT SPECIFICALLY DETAILED CONNECTIONS. USE ONLY COMMON NAILS, ASTM 1667

12. TIE-DOWN DEVICES FOR WOOD SHEAR WALLS SHALL BE ZONE FOUR, (ICC ESR-2190, LA RR# 25623).

13. ALL BOLT HOLES SHALL BE DRILLED 1/32" TO 1/16" OVERSIZED.

SPECIAL INSPECTIONS

1. STRUCTURAL TESTS AND SPECIAL INSPECTION REQUIREMENTS OF CHAPTER 17 OF CBC AND REQUIREMENTS OF LABC SECTION 91.1703, 91.1704, 91.1705, 91.1707, 91.1708, 91.1709, 91.1710, 91.1712 AND 91.1716 APPLY TO THE FOLLOWING: A. CAST-IN-PLACE CONCRETE **B. BOLTS INSTALLED IN CONCRETE** 

C. DRILLED DOWELS AND ANCHORS INSTALLED IN CONCRETE D. REINFORCING STEEL E. STRUCTURAL STEEL WELDING HIGH-STRENGTH BOLTING INCLUDING QUALITY ASSURANCE PER TABLE SECTION Q5.1 OF AISC 341-05

F. SPECIAL MOMENT RESISTING STEEL FRAMES, WELDING OF STE REINFORCEMENT BARS G. WELDED STUDS

J. SPECIAL GRADING, EXCAVATION AND FILING K. SHEAR WALLS AND FLOOR SYSTEMS USED AS SHEAR DIAPHRAGMS

L. TIEDOWN ANCHOR BOLTS M. SPRAY APPLIED FIREPROOFING

2. APPROVAL BY INSPECTOR OF RECORD (IOR) DOES NOT MEAN APPROVAL OR FAILURE TO COMPLY WITH THE PLANS OR SPECIFICATIONS. ANY DETAIL WHICH FAILS TO BE CLEAR OR IS AMBIGUOUS MUST BE REFERRED TO THE ENGINEER OF RECORD FOR INTERPRETATION OR CLARIFICATION.

3. CONTINUOUS AND PERIODIC SPECIAL INSPECTION SHALL BE PERFORMED AS PER SECTION 1704 OF CBC AND SECTION 91.1704 OF LABC AND AS PER TABLES 1704.3 (STEEL), 1704.4 (CONCRETE), 1704.5.1 AND 1704.5.3 (MASONRY). 1704.7 (SOILS) AND 1704.9 (CAST-IN-PLACE DEEP FOUNDATIONS) PROVIDE BELOW.

4. FIELD WELDING TO BE DONE BY WELDERS CERTIFIED BY THE LADBS FOR STRUCTURAL STEEL. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED.

NAILING SCHEDULE - 2019 CALIFORNIA BUILDING CODE THE CONNECTIONS LISTED ARE THE MINIMUM PERMISSIBLE. USE COMMON WIRE NAILS FOR ALL NAILED CONNECTIONS.

WHERE POSSIBLE, NAILS DRIVEN PERPENDICULAR TO THE GRAIN SHALL BE USED INSTEAD OF TOE

NAILS. NAILING SHALL COMPLY WITH 2019 C.B.C. TABLE 2304.9.1

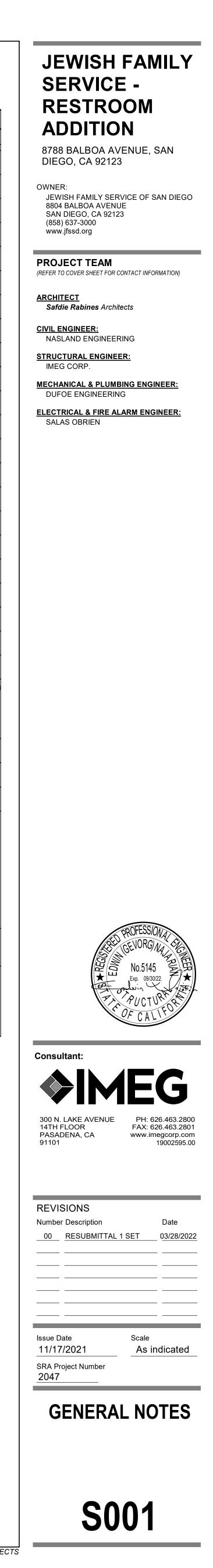
FASTENING SCHEI	DULE	
CONNECTION	FASTENING	LOCATION
1. JOIST TO SILL OR GIRDER	3 - 8d COMMON (2-1/2" x 0.131")	TOENAIL
2. BRIDGING TO JOIST	3 - 8d COMMON (2-1/2" x 0.131")	TOENAIL EACH END
3. 1" X 6" SUBFLOOR OR LESS TO EACH JOIST	2 - 8d COMMON (2-1/2" x 0.131")	FACE NAIL
4. WIDER THAN 1" X 6" SUBFLOOR TO EACH JOIST	3 - 8d COMMON (2-1/2" x 0.131")	FACE NAIL
5. SOLE PLATE TO JOIST OR BLOCKING. SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANEL.	16d (3-1/2" X 0.135") @ 16" O.C. 3" - 16d (3-1/2" x 0.135") @ 16"	TYPICAL FACE NAIL BRACED WALL PANELS
6. TOP PLATE TO STUD	2 - 16d COMMON (3 1/2" x 0.162")	END NAIL
7. STUD TO SOLE PLATE	4 - 8d COMMON (2-1/2" x 0.131") 2 - 16d COMMON (3-1/2" x 0.162")	TOE NAIL END NAIL
8. DOUBLE STUDS	16d (3-1/2" x 0.135") @ 24" O.C.	FACE NAIL
9. DOUBLE TOP PLATES DOUBLE TOP PLATES	16d (3-1/2" x 0.135") @ 16" O.C. 8-16d COMMON (3-1/2" x 0.162")	TYPICAL FACE NAIL LAP SPLICE
10. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PL	3-8d COMMON (2-1/2" x 0.131")	TOE NAIL
11. RIM JOIST TO TOP PLATE	8d (2-1/2" x 0.131") @ 6" O.C.	TOE NAIL
12. TOP PLATES, LAPS, AND INTERSECTIONS	2 - 16d COMMON (3-1/2" x 0.162")	FACE NAIL
13. CONTINUOUS HEADER, TWO PIECES	2 - 16d COMMON (3-1/2" x 0.162")	16" O.C. ALONG EDGE
14. CEILING JOISTS TO PLATE	3-8d COMMON (2-1/2" x 0.131")	TOE NAIL
15. CONTINUOUS HEADER TO STUD	4-8d COMMON (2-1/2" x 0.131")	TOE NAIL
16. CEILING JOISTS, LAPS OVER PARTITIONS (SEE SECTION 2308.10.4.1 TABLE 2308.10.4.1)	3 - 16d COMMON (3-1/2" x 0.162") MINIMUM, TABLE 2308.10.4.1	FACE NAIL
17. CEILING JOISTS TO PARALLEL RAFTERS (SEE SECTION 2308.10.4.1 TABLE 2308.10.4.1)	3 - 16d COMMON (3-1/2" x 0.162") MINIMUM, TABLE 2308.10.4.1	FACE NAIL
18. RAFTER TO PLATE (SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1)	3 - 8d COMMON (2-1/2" x 0.131")	TOENAIL
19. 1" DIAGONAL BRACE TO EACH STUD PLATE	2 - 8d COMMON (2-1/2" x 0.131")	FACE NAIL
20. 1" x 8" SHEATHING TO EACH BEARING.	3 - 8d COMMON (2-1/2" x 0.131")	FACE NAIL
21. WIDER THAN 1" x 8" SHEATHING TO EACH BEARING.	3 - 8d COMMON (2-1/2" x 0.131")	FACE NAIL
22. BUILT-UP CORNER STUDS	16d COMMON (3-1/2" x 0.131")	24" O.C.
23. BUILT-UP GIRDER AND BEAMS	20d COMMON (4" x 0.192") 32" O.C.	FACE NAIL AT TOP AN BOTTOM STAGGERED ON OPPOSITE SIDES
	2 - 20d COMMON (4" x 0.192")	FACE NAIL AT ENDS AT EACH SPLICE
24. JACK RAFTER TO HIP	3 - 10d COMMON (3" x 0.148") 2 - 16d COMMON (3-1/2" x 0.162")	TOENAIL FACE NAIL
25. ROOF RAFTER TO 2 BY RIDGE BEAM	2 - 16d COMMON (3-1/2" x 0.162") 2 - 16d COMMON (3-1/2" x 0.162")	TOENAIL FACE NAIL
26. LEDGER STRIP	2 - 16d COMMON (3-1/2" x 0.162")	FACE NAIL
27. WOOD STRUCTURAL PANELS AND PARTICLEBOARD SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING)	1/2" and LESS     6d <sup>c,1</sup> 19/32" TO 3/4"     8d <sup>d</sup> or 6d <sup>e</sup> 7/8" TO 1"     8d <sup>c</sup> 4 4/9" TO 1     40 <sup>d</sup> or 0d <sup>d</sup>	
SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING)	1-1/8" TO 1-1/4"       10d or 8d         3/4" AND LESS       6d         7/8" TO 1"       8d         1-1/8" TO 1-1/4"       10d or 8d	
28. PANEL SIDING (TO FRAMING)	1/2" OR LESS 6d 5/8" 8d	
29. FIBERBOARD SHEATHING	<ul> <li>1/2" NO. 11 GAGE ROOFING NAIL<sup>h</sup> 6d COMMON NAIL (2" x 0.113") NO. 16 GAGE STAPLE<sup>i</sup></li> <li>25/32" NO. 11 GAGE ROOFING NAIL<sup>h</sup> 6d COMMON NAIL (2" x 0.113") NO. 16 GAGE STAPLE<sup>i</sup></li> </ul>	

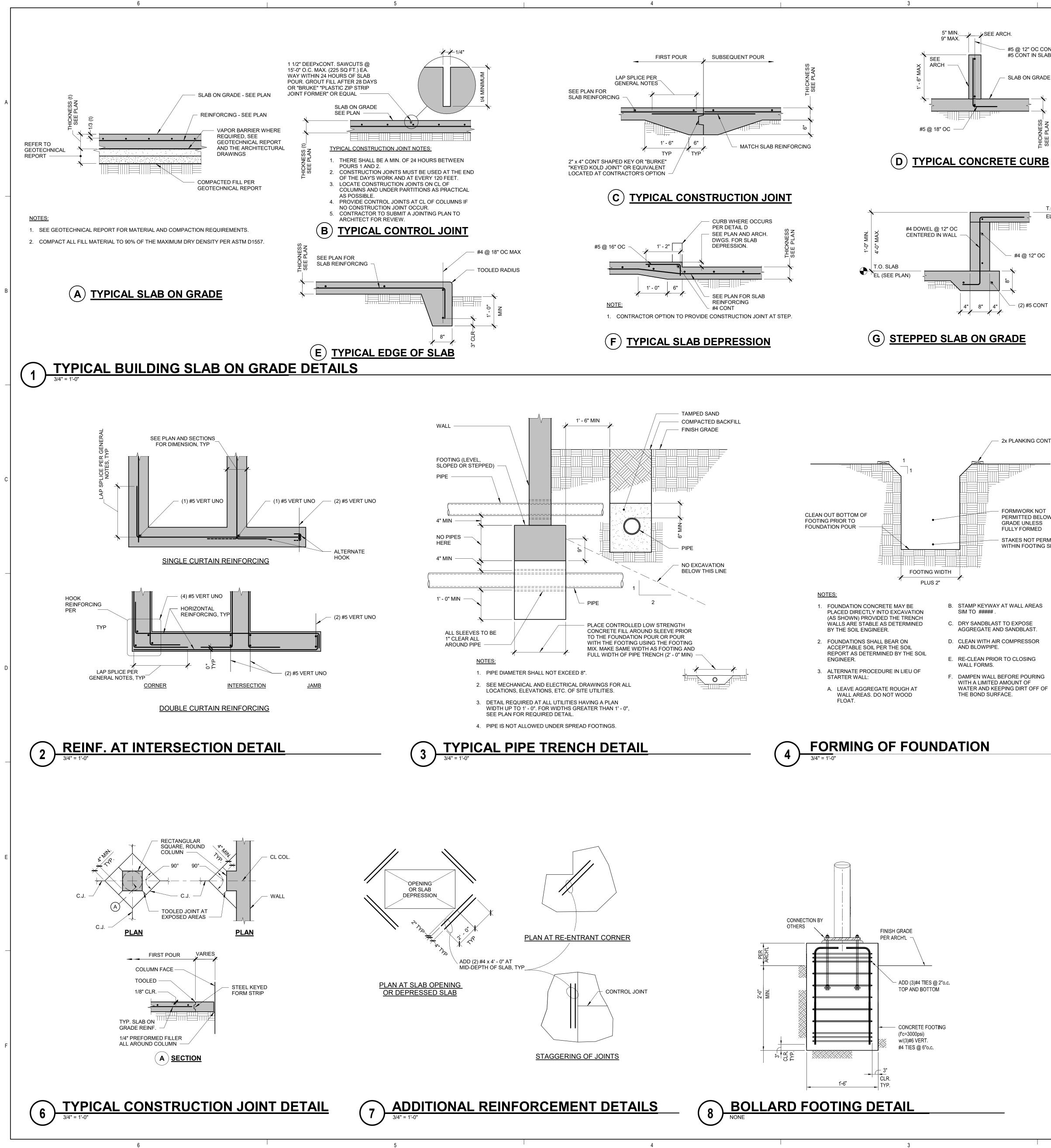
SPECIAL INSPECTIONS CONT.

5. SPECIAL INSPECTIONS, STRUCTURAL TESTS AND STRUCTURAL OBSERVATIONS SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE 2019 CBC, CHAPTER 17, SPECIAL

INSPECTIONS AND TESTS.

- 6. NOTICE TO THE APPLICANT/OWNER/ OWNER'S AGENT/ARCHITECT OR ENGINEER OF RECORD: BY USING THIS PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF CITY OF SAN DIEGO FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND, AS REQUIRED BY THE CALIFORNIA CONSTRUCTION CODES.
- 7. NOTICE TO THE CONTRACTOR/BUILDER/INSTALLER/SUB-CONTRACTOR/OWNER-BUILDER: BY USING THIS PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU ACKNOWLEDGE AND ARE AWARE OF, THE REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS. YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF CITY OF SAN DIEGO FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND, AS REQUIRED BY THE CALIFORNIA CONSTRUCTION CODES.
- 8. THE SPECIAL INSPECTOR MUST BE REGISTERED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES, IN THE CATEGORY OF WORK REQUIRED TO HAVE SPECIAL INSPECTION.
- 9. THE CONSTRUCTION MATERIALS TESTING LABORATORY MUST BE APPROVED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES, FOR TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND EQUIPMENT.
- 10. OFFSITE FABRICATOR MUST BE APPROVED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES FOR THE FABRICATION OF MEMBERS AND ASSEMBLIES ON THE PREMISES OF THE FABRICATOR'S SHOP.
- 11. OFFSITE FABRICATOR SHALL SUBMIT AN 'APPLICATION TO PERFORM OFF-SITE FABRICATION' TO THE INSPECTION SERVICES DIVISION FOR APPROVAL PRIOR TO COMMENCEMENT OF FABRICATION.
- 12. OFFSITE FABRICATOR SHALL SUBMIT A 'CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION' TO THE INSPECTION SERVICES DIVISION PRIOR TO ERECTION OF FABRICATED ITEMS AND ASSEMBLIES.
- 13. THE SPECIAL INSPECTIONS IDENTIFIED ON PLANS ARE, IN ADDITION TO, AND NOT A SUBSTITUTE FOR, THOSE INSPECTIONS REQUIRED TO BE PERFORMED BY A CITY'S BUILDING INSPECTOR.





### #5 CONT IN SLAB

SLAB ON GRADE - SEE PLAN

# T.O. SLAB EL (SEE PLAN)

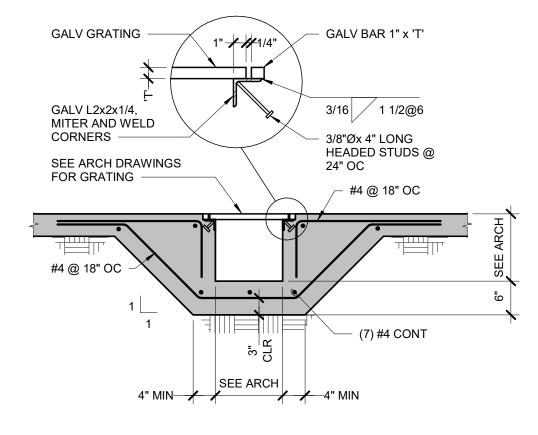
- #4 @ 12" OC

(2) #5 CONT

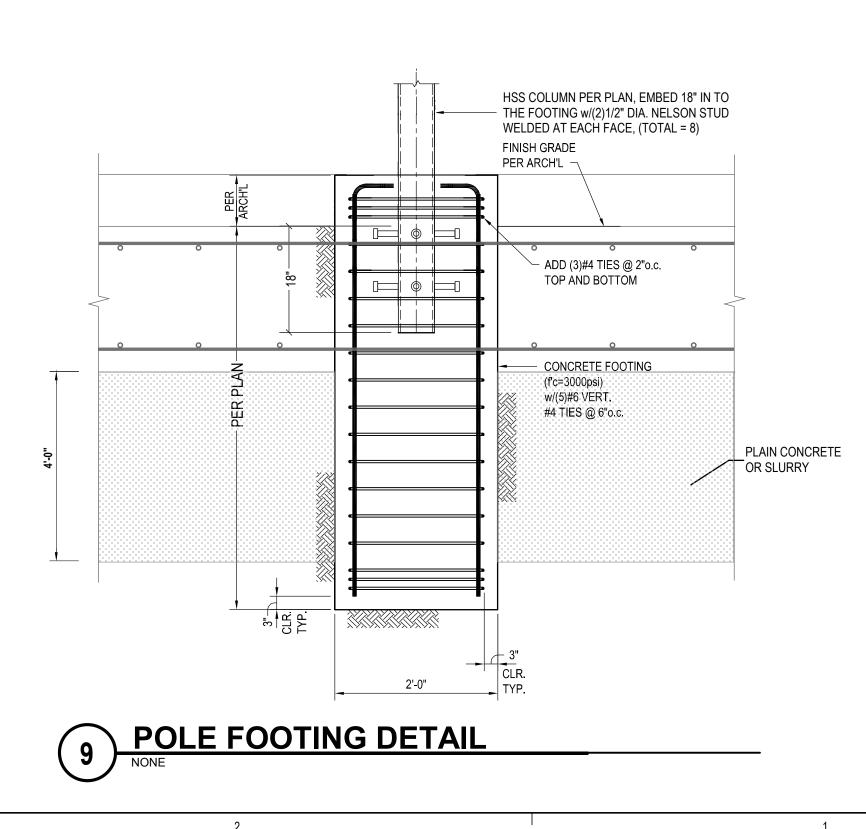
2x PLANKING CONT, TYP

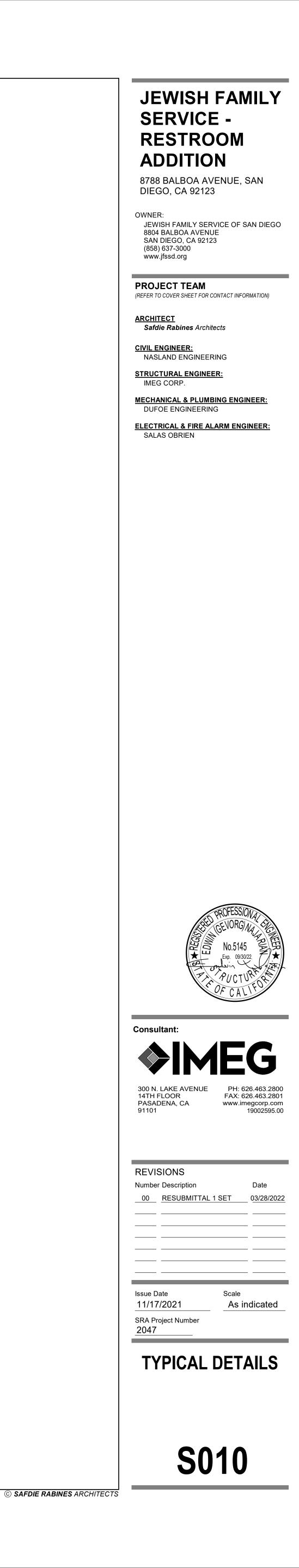
FORMWORK NOT PERMITTED BELOW GRADE UNLESS FULLY FORMED

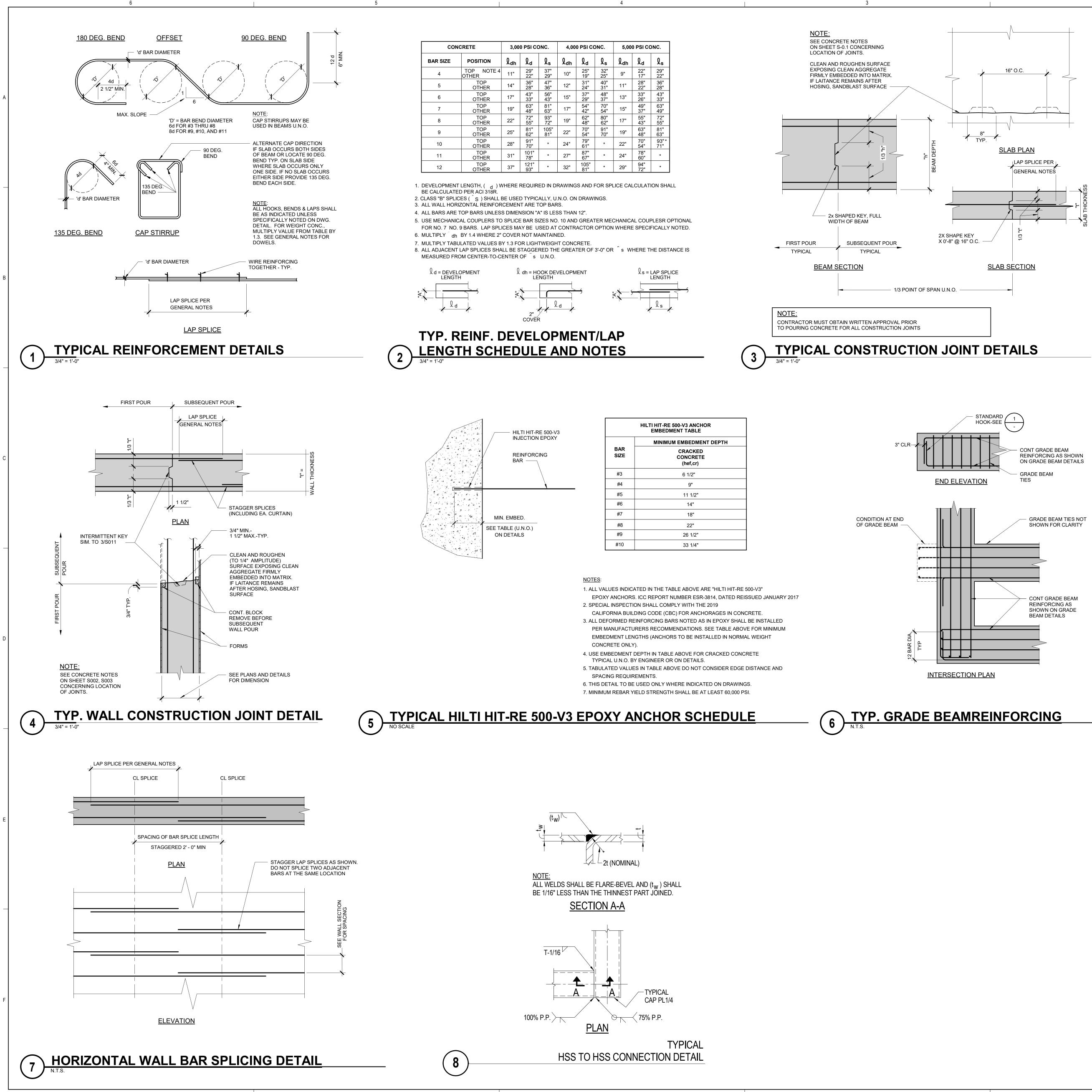
STAKES NOT PERMITTED WITHIN FOOTING SECTION



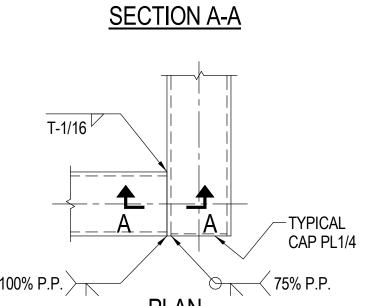
TYPICAL TRENCH DRAIN DETAIL

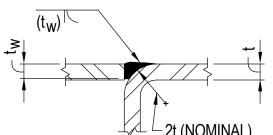




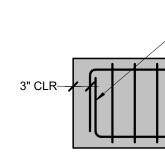




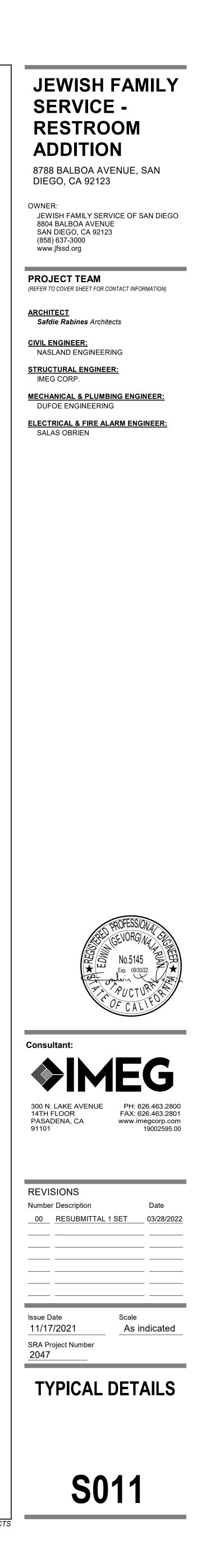


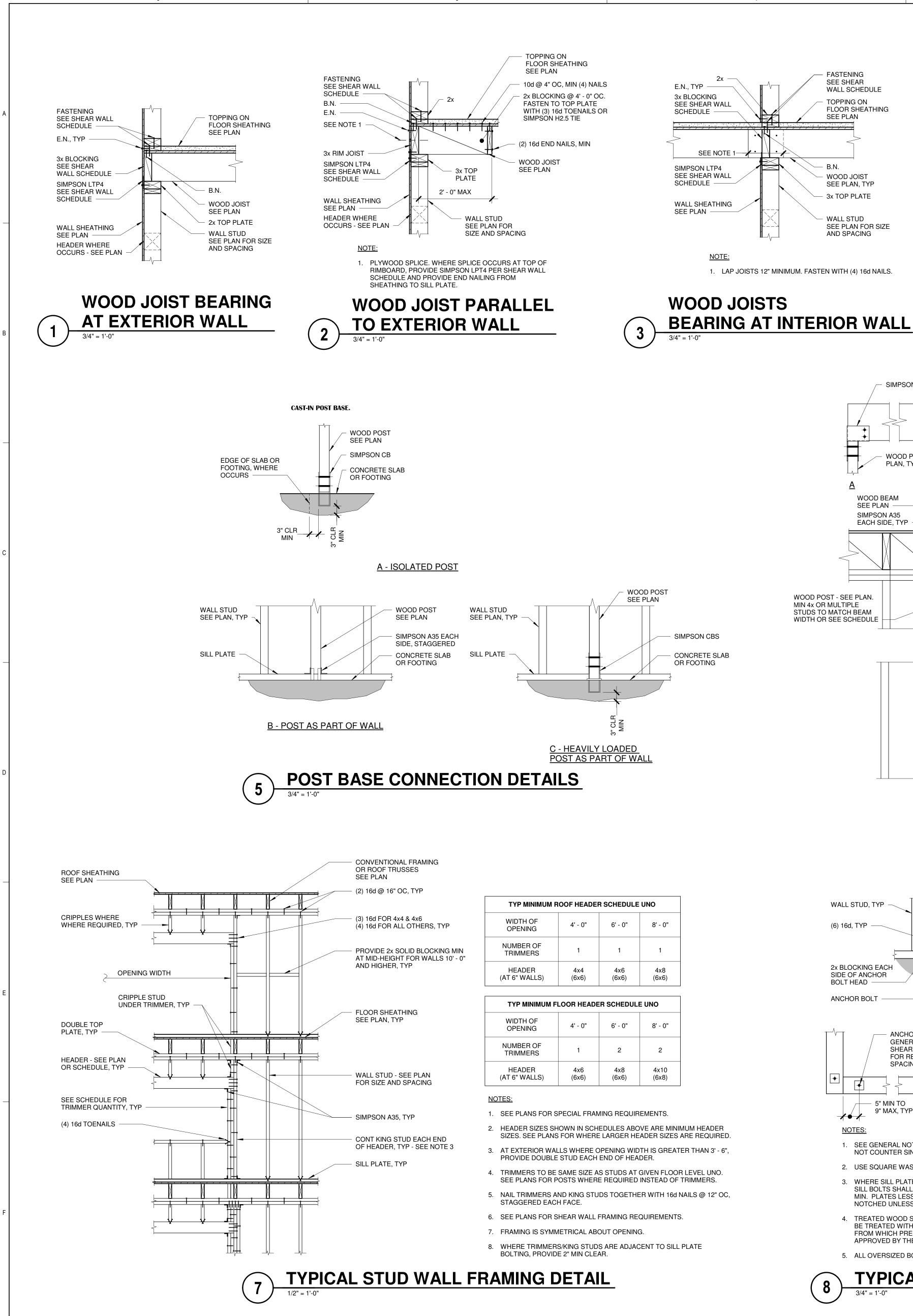






NCRETE		3,00	0 951 00	JNC.	4,00	0 951 00	JNC.	5,000 PSI CONC.			
	POSITION	l <sub>dh</sub>	ld	ls	l <sub>dh</sub>	ld	ls	l <sub>dh</sub>	ld	ls	
	TOP NOTE 4 OTHER	11"	29" 22"	37" 29"	10"	25" 19"	32" 25"	9"	22" 17"	29" 22"	
	TOP OTHER	14"	36" 28"	47" 36"	12"	31" 24"	40" 31"	11"	28" 22"	36" 28"	
	TOP OTHER	17"	43" 33"	56" 43"	15"	37" 29"	48" 37"	13"	33" 26"	43" 33"	
	TOP OTHER	19"	63" 48"	81" 63"	17"	54" 42"	70" 54"	15"	49" 37"	63" 49"	
	TOP OTHER	22"	72" 55"	93" 72"	19"	62" 48"	80" 62"	17"	55" 43"	72" 55"	
	TOP OTHER	25"	81" 62"	105" 81"	22"	70" 54"	91" 70"	19"	63" 48"	81" 63"	
	TOP OTHER	28"	91" 70"	*	24"	79" 61"	*	22"	70" 54"	93"* 71"	
	TOP OTHER	31"	101" 78"	*	27"	87" 67"	*	24"	78" 60"	*	
	TOP OTHER	37"	121" 93"	*	32"	105" 81"	*	29"	94" 72"	*	

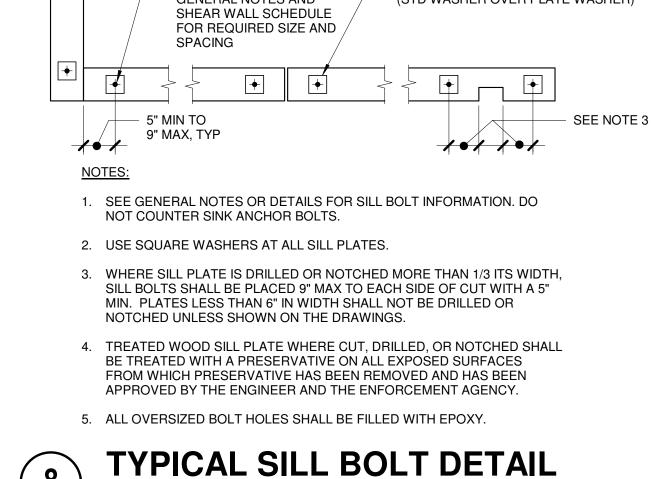


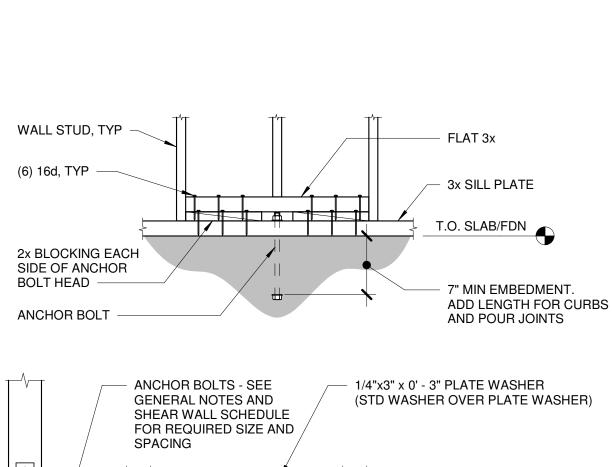


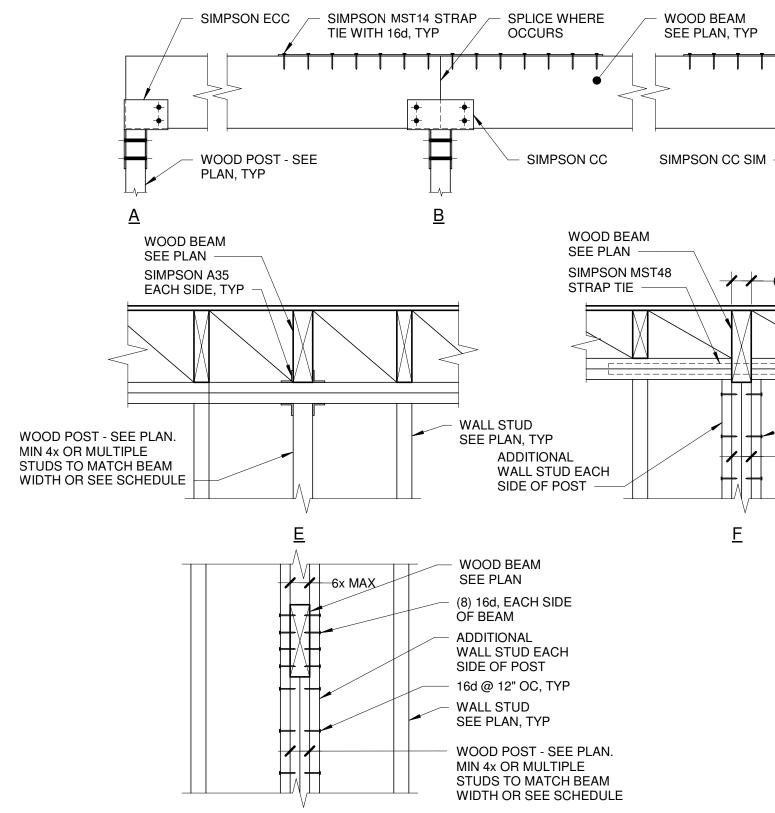
4

LOOR HEADER SCHEDULE UNO						
4' - 0"	6' - 0"	8' - 0"				
1	2	2				
4x6 (6x6)	4x8 (6x6)	4x10 (6x8)				

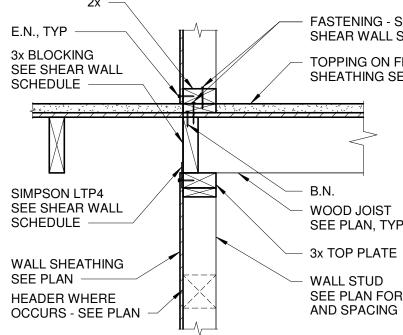
OOF HEADER SCHEDULE UNO					
4' - 0" 6' - 0" 8' - 0"					
1 1 1					
4x4 4x6 4x8 (6x6) (6x6) (6x6)					







# WOOD JOIST BEARING **CHANGE IN DIRECTION 4**



FASTENING - SEE SHEAR WALL SCHEDULE TOPPING ON FLOOR SHEATHING SEE PLAN

SEE PLAN FOR SIZE

OMIT BOLT SIMPSON ECCL WHERE "d" < 2" ┢┙┆ PROVIDE FILLER BLOCK AS REQUIRED FOR DIFFERENCE IN BEAM HEIGHTS, MATCH **BEAM MATERIAL** WOOD BEAM SEE PLAN ------SIMPSON MST48 6x MAX STRAP TIE - (4) 16d, EACH SIDE ADDITIONAL OF BEAM WALL STUD EACH - 16d @ 12" OC, TYP SIDE OF POST - 16d @ 12" OC, TY - WALL STUD - WALL STUD SEE PLAN, TYP SEE PLAN, TYP WOOD POST - SEE PLAN. WOOD POST - SEE PLAN. MIN 4x OR MULTIPLE MIN 4x OR MULTIPLE STUDS TO MATCH BEAM STUDS TO MATCH BEAM WIDTH OR SEE SCHEDULE WIDTH OR SEE SCHEDULE NOTES: 1. DETAIL B: IF CONTINUOUS BEAM, OMIT STRAP.

2. ROTATE SIMPSON CAPS AS REQUIRED TO LOCATE THE STRAPS

WITH ARCHITECTURAL FINISHES.

WOOD BEAM

6

9

AND BOLTS INSIDE THE WALL FRAMING AND NOT INTERFERE

3. AT STEEL COLUMN, USE SIMPSON CCO WITH MIN 1/8" FILLET WEL

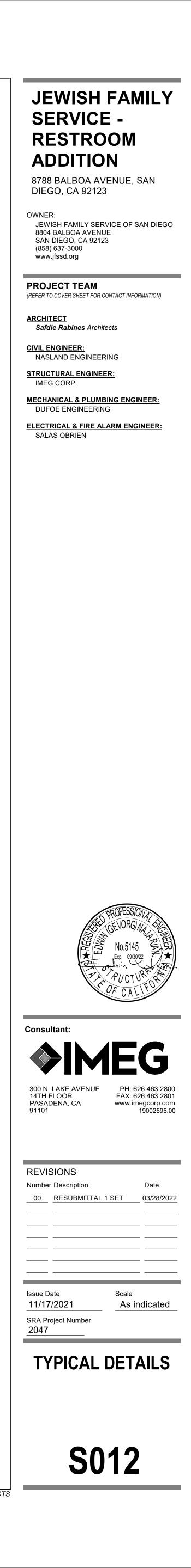
4. SEE PLAN FOR BEAM SLOPE. SLOPE COLUMN CAP TO MATCH.

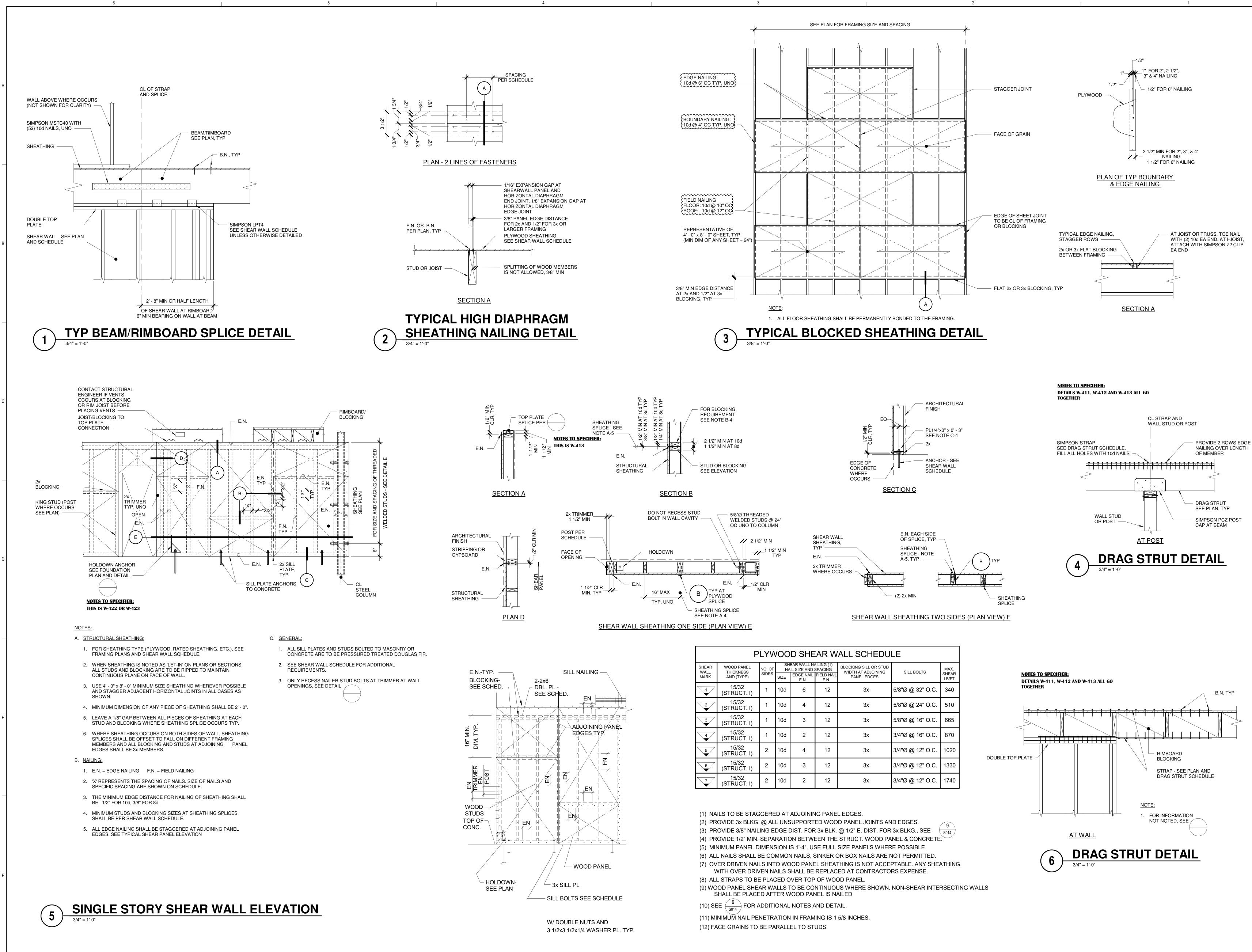
**CONNECTION DETAILS** 3/4" = 1'-0"

# EQ STRAP PER SCHEDULE, CENTERED ON LEDGER SPLICE LEDGER -(2) 2x STUDS OR (1) 4x STUD ÀT LEDGER SPLICE, TYP

STR	AP SCHE	DULE	
MARK SIMPSON HARDWARE		FASTENERS	CAPACITY (LBS)
Α	MST60	(68) 16d NAILS	5380
В	(2) MST60	2x (68) 16d NAILS	10,760

# **CONTINUOUS LEDGER DETAIL**





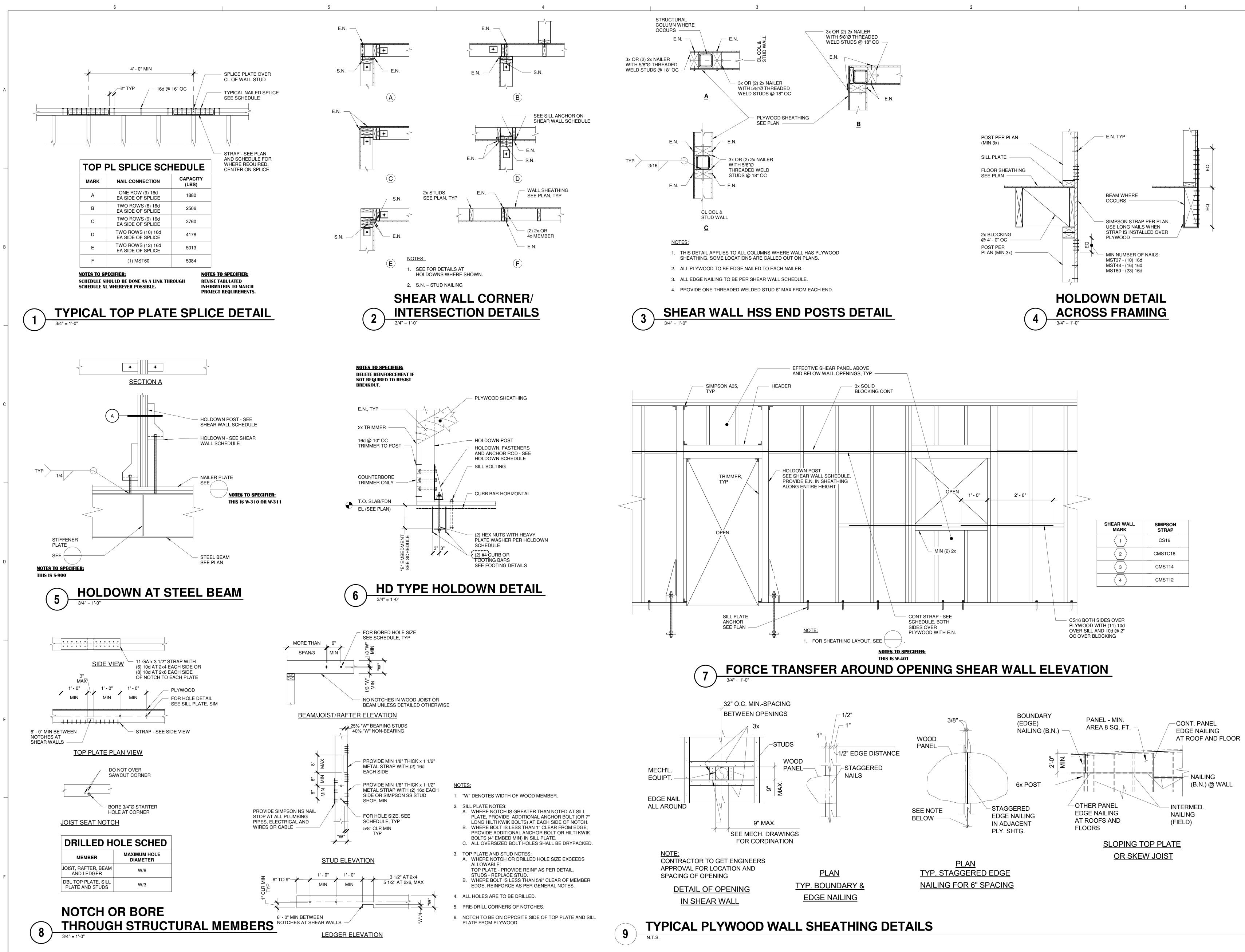
4

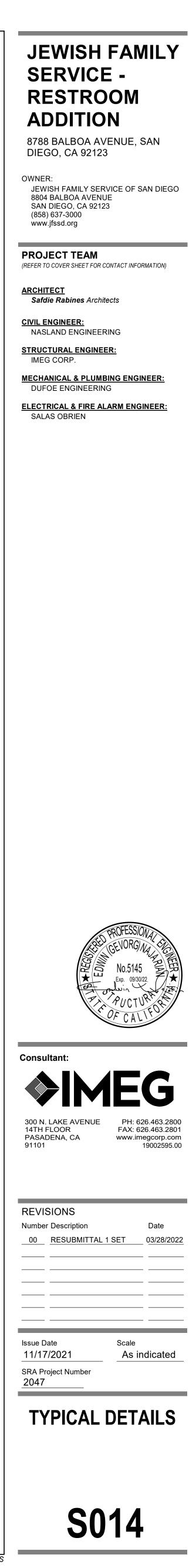
PLYWOOD SHEAR V	V
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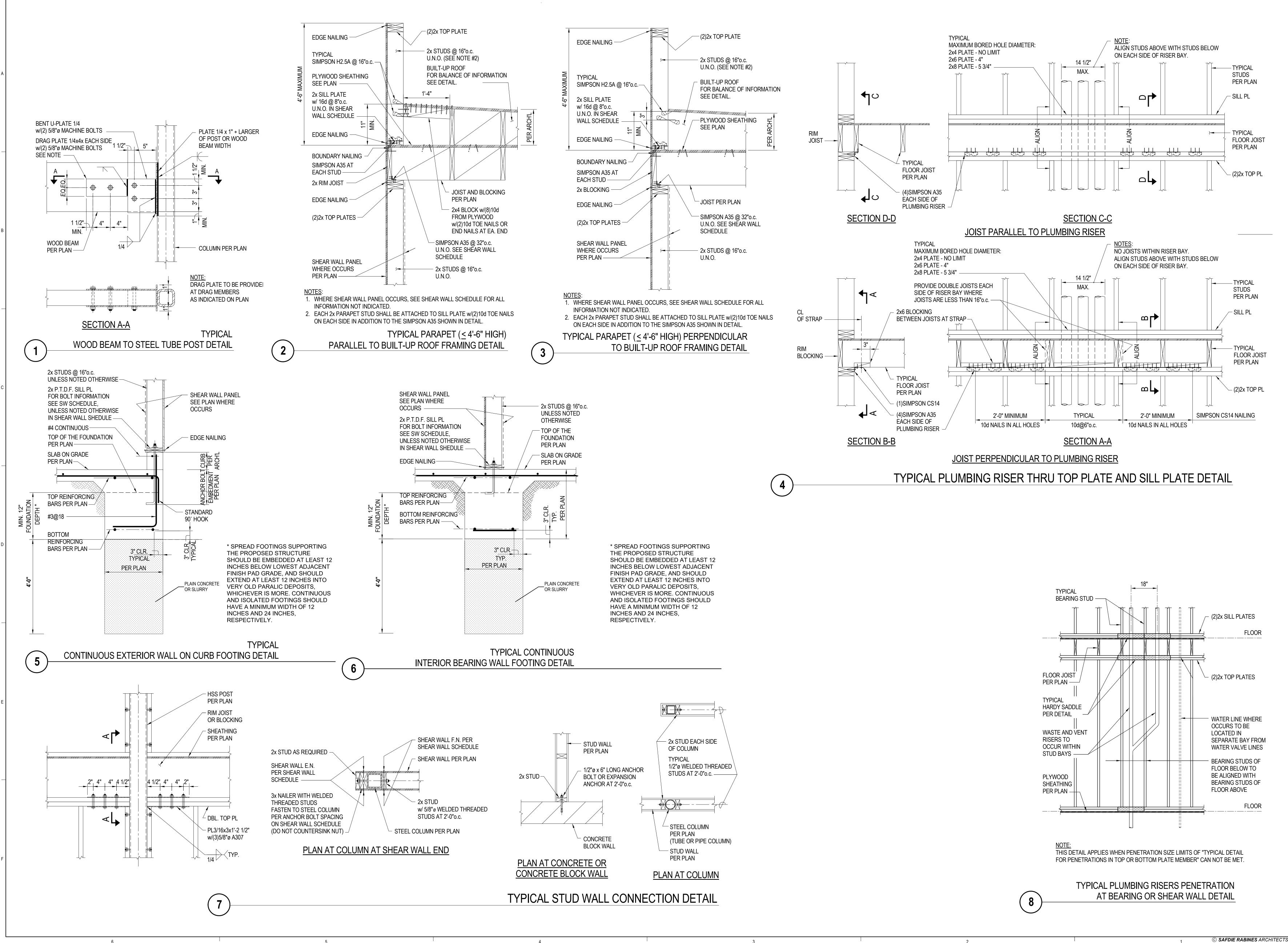
SHEAR WOOD PANEL WALL THICKNESS	NO. OF	SHEAR WALL NAILING (1) NAIL SIZE AND SPACING		SPACING	BLOCKING SILL OR STUD WIDTH AT ADJOINING	SILL BOLTS	MAX.	
MARK	_	SIDES	SIZE	EDGE NAIL E.N.	FIELD NAIL F.N.	PANEL EDGES		SHEAR LB/FT
	15/32 (STRUCT. I)	1	10d	6	12	Зx	5/8"Ø @ 32" O.C.	340
2	15/32 (STRUCT. I)	1	10d	4	12	Зх	5/8"Ø @ 24" O.C.	510
3	15/32 (STRUCT. I)	1	10d	3	12	Зx	5/8"Ø @ 16" O.C.	665
4	15/32 (STRUCT. I)	1	10d	2	12	Зx	3/4"Ø @ 16" O.C.	870
5	15/32 (STRUCT. I)	2	10d	4	12	Зx	3/4"Ø @ 12" O.C.	1020
6	15/32 (STRUCT. I)	2	10d	3	12	Зx	3/4"Ø @ 12" O.C.	1330
	15/32 (STRUCT. I)	2	10d	2	12	Зx	3/4"Ø @ 12" O.C.	1740

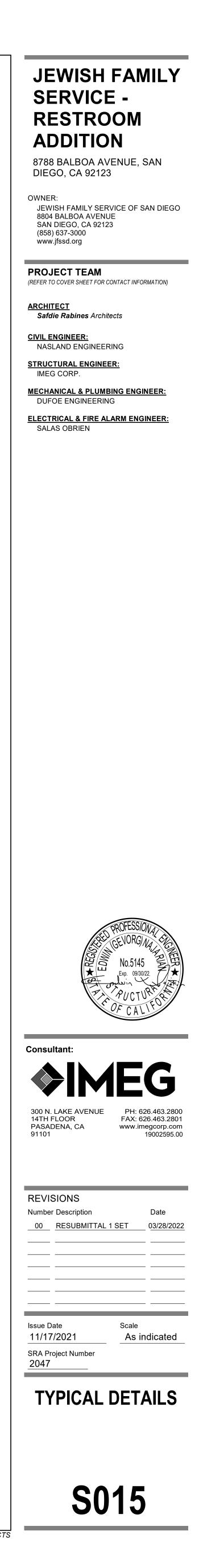
- 3

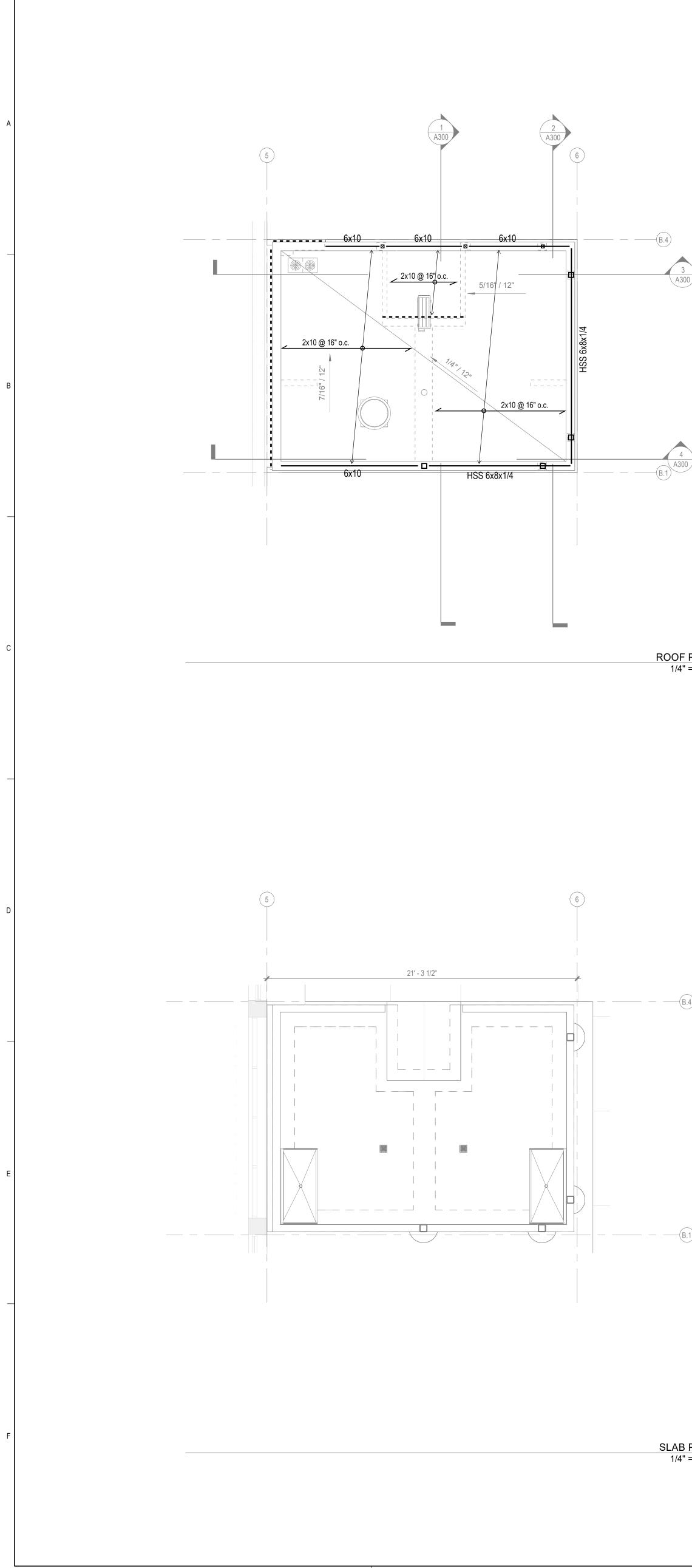




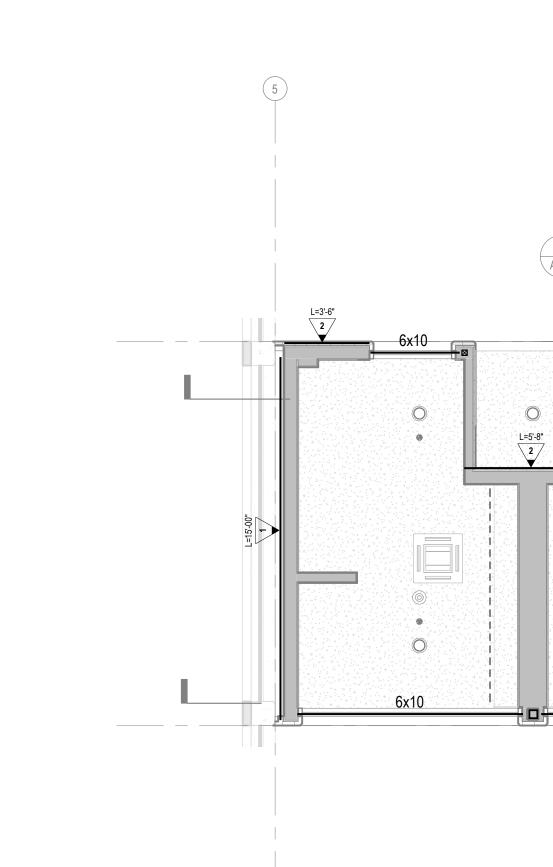








6



# ROOF PLAN (4)

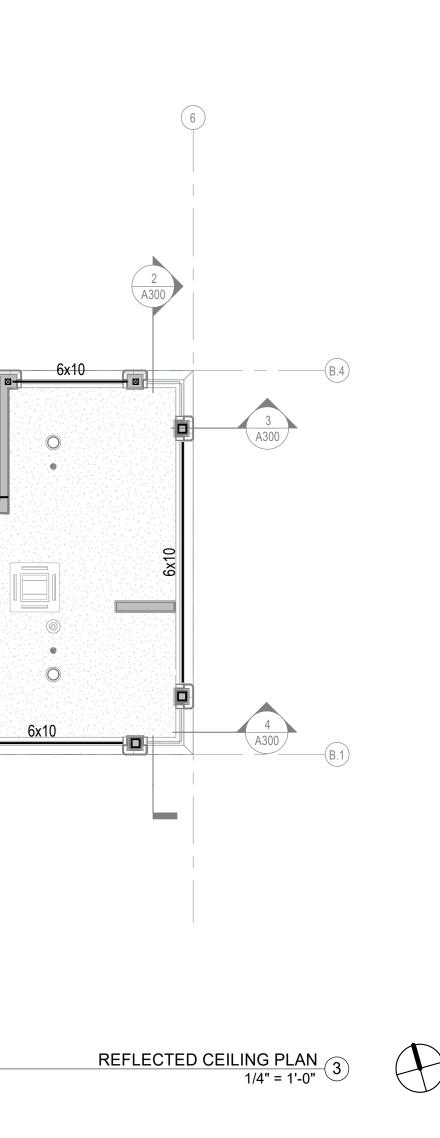
4

SLAB PLAN (2)

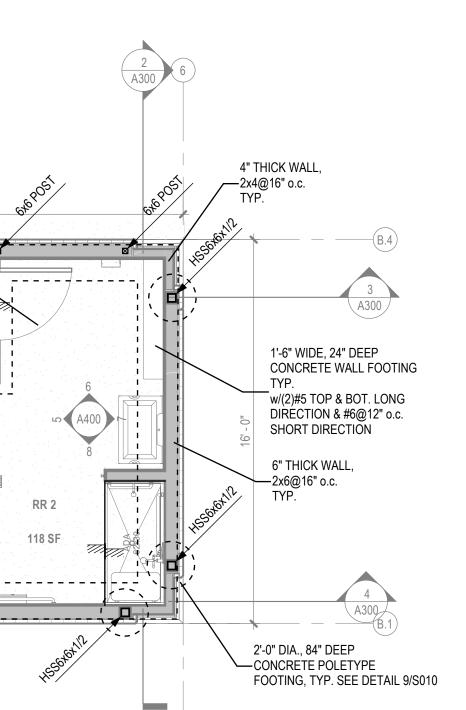
5

6" THICK CONCRETE SLAB ON GRADE w/#4@12" o.c. EA. WAY \_\_\_\_\_ \_\_\_\_ SIMPSC HDU8-SDS2.5-╯┗╼╢╾╼╘╝╼ - '-' - - |-' -**RR 1** 118 SF \_\_\_\_\_ \_\_\_\_ `~\_/

4

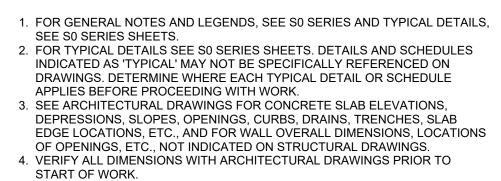


2



FLOOR PLAN 1/4" = 1'-0" 1

TYPICAL FRAMING PLAN NOTES:



1

- 5. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND LOCATING ALL OPENINGS THROUGH THE SLAB INCLUDING BUT NOT LIMITED TO ELECTRICAL, MECHANICAL, PLUMBING, SPRINKLER AND TELEPHONE. SUBMIT TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR SUBMITTAL OF REINFORCING STEEL SHOP DRAWINGS. 6. ALL NAILS SHALL BE COMMON NAILS.
- 7. ROOF SHEATHING TO BE 5/8" CDX PLYWOOD WITH 10d RING SHANK (GLUED AND NAILED) NAILS @ 4:6:12, UNLESS NOTED OTHERWISE. BLOCK ALL EDGES. (ALLOWABLE VALUE = 425 PLF)
  8. ALL HARDWARE SHALL BE SIMPSON OR APPROVED EQUAL.
- 9. SPLICE ALL DOUBLE PLATES, UNLESS NOTED OTHERWISE.
   10. SHEATH ALL EXTERIOR WALLS WITH 1/2" CDX PLYWOOD, UNLESS NOTED OTHERWISE. PLYWOOD NAILING SHALL BE 8d @ 12"o.c. AT ALL INTERMEDIATE SUPPORTS MINIMUM.
- 11. NO PENETRATIONS ARE ALLOWED THROUGH SHEAR WALLS UNLESS SPECIFICALLY DETAILED ON THESE PLANS.

# TYPICAL FRAMING PLAN SYMBOLS:

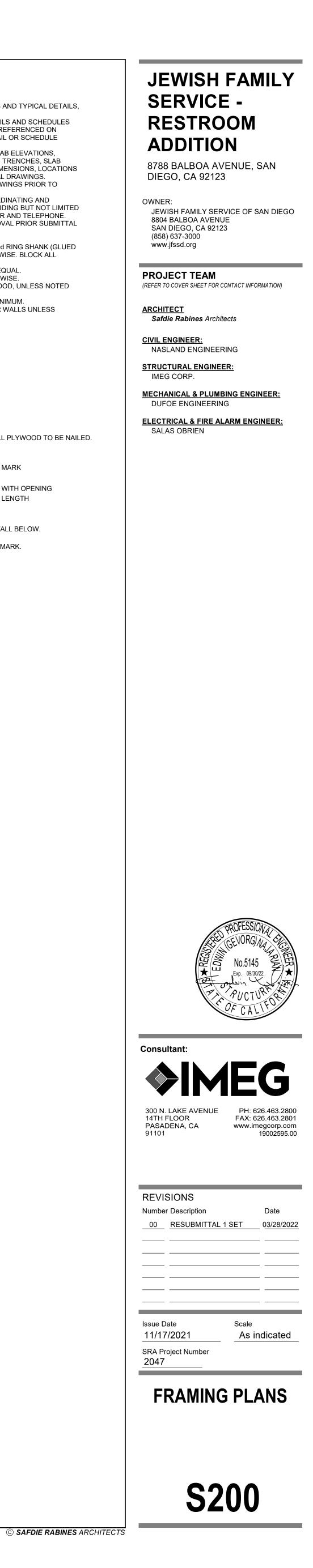
1. –		
2.	A/S X'-X"	*

2. A/S X'-X"	INDICATES WOOD SHEAR WALL MARK INDICATES WOOD SHEAR WALL WITH OPENING INDICATES WOOD SHEAR WALL LENGTH
3. —————	INDICATES PLYWOOD SHEAR WALL BELOW.
4. <b>J#</b>	INDICATES FLOOR/ROOF JOIST MARK.
WB	INDICATES WOOD BEAM.

1

INDICATES SIDE OF SHEAR WALL PLYWOOD TO BE NAILED.

SB INDICATES STEEL BEAM.



# LIST OF MATERIALS

# **EXHAUST AIR DUCTWORK:**

RIGID DUCTWORK: RIGID SHEET METAL SHALL COMPLY WITH ANSI/SMACNA 006-2006 HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, 3RD EDITION. FLEXIBLE DUCTWORK: NOT MORE THAN 5 FEET IN LENGTH AND SHALL COMPLY WITH ANSI/SMACNA 006-2006 HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, 3RD EDITION. **REFRIGERANT PIPING ABOVE GRADE:** 

NPS 2 AND SMALLER: TYPE "L" DRAWN-TEMPER COPPER TUBING WITH SOLDERED OR BRAZED JOINTS OR SCHEDULE 40 STEEL PIPE WITH THREADED JOINTS.

# SEISMIC BRACING NOTES

# ANCHORAGE AND SEISMIC BRACING NOTES

- 1. SUPPORTS AND ATTACHMENTS OF ALL EQUIPMENT TO BE INSTALLED AS A PART OF THIS PROJECT SHALL BE DETAILED ON THE CONSTRUCTION DOCUMENTS, EXCEPT THOSE EXEMPT BY THE 2019 CBC, SECTION 1617A.1.18. 2. EQUIPMENT SUPPORTS AND ANCHORAGE SHALL BE APPROVED BY THE APPROPRIATE
- DESIGN PROFESSIONAL OF RECORD (RDP) AND OSHPD AS A PART OF FIELD REVIEWS/OBSERVATIONS. THE INSPECTOR OF RECORD (IOR) SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.
- 3. SEISMIC BRACING OF PIPES, DUCTS AND CONDUITS: CONTRACTOR SHALL PROVIDE SUPPORTS, ATTACHMENTS AND BRACING FOR PIPES, DUCTS AND CONDUITS IN ACCORDANCE WITH ONE OF THE FOLLOWING SYSTEMS POSSESSING A CURRENT OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM):
- a. MASON INDUSTRIES, INC. (OPM-0043-13) b. B-LINE/TOLCO (OPM-0052-13)
- c. ERICO INTERNATIONAL CORP, FIRE SPRINKLERS ONLY (OPM-0062-13)

LAYOUT DRAWINGS OF THE SUPPORTS, ATTACHMENTS, AND BRACING SYSTEMS IN ACCORDANCE WITH THE PREAPPROVAL SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL (RDP) IN RESPONSIBLE CHARGE OF THE PROJECT FOR REVIEW TO VERIFY THAT THE DETAILS ARE IN CONFORMANCE WITH THE CODE REQUIREMENTS. THE LAYOUT DRAWINGS SHALL AS A MINIMUM SATISFY THE REQUIREMENTS OF ASCE 7 SECTION 13.6 AS MODIFIED BY THE 2019 CBC SECTION 1617A.

- a. THE STRUCTURAL ENGINEER OF RECORD (SEOR) SHALL VERIFY THAT THE SUPPORTING STRUCTURE IS ADEQUATE FOR THE FORCES IMPOSED ON IT THE SUPPORTS, ATTACHMENTS, AND BRACES INSTALLED IN ACCORDANCE WITH THE PREAPPROVAL IN ADDITION TO ALL OTHER LOADS.
- b. THE SEOR SHALL FORWARD THE SUPPORTS, ATTACHMENTS, AND BRACING DRAWINGS (INCLUDING APPROVED AMENDED CONSTRUCTION DOCUMENTS FOR SUPPLEMENTARY FRAMING, WHERE REQUIRED) TO THE DISCIPLINE IN RESPONSIBLE CHARGE WITH A NOTATION INDICATING THAT THE DRAWINGS HAVE BEEN REVIEWED AND ARE IN GENERAL CONFORMANCE WITH THE PREAPPROVAL AND THE DESIGN OF THE PROJECT.
- c. A "SHOP DRAWING STAMP" MAY BE USED TO INDICATE COMPLIANCE WITH THIS REQUIREMENT.
- d. THE REGISTERED DESIGN PROFESSIONAL (RDP), OTHER THAN SEOR, MAY PROVIDE THE SHOP DRAWING STAMP FOR SMALL PROJECTS AT THE DISCRETION OF THE OSHPD DISTRICT STRUCTURAL ENGINEER.

THE SEOR SHALL DESIGN ANY SUPPLEMENTARY FRAMING THAT IS NEEDED TO RESIST THE LOADS, MAINTAIN STABILITY, AND/OR TO SATISFY THE INSTALLATION REQUIREMENTS OF THE PRE-APPROVED SYSTEM. THE SUPPLEMENTARY FRAMING SHALL BE SUBMITTED TO OSHPD AS AN AMENDED CONSTRUCTION DOCUMENT (ACD). THE LAYOUT DRAWINGS WITH THE SHOP DRAWINGS STAMP SHALL BE SUBMITTED TO THE OSHPD DISTRICT STRUCTURAL ENGINEER FOR REVIEW OF THE FOLLOWING:

- e. STRUCTURE SUPPORTING THE DISTRIBUTION SYSTEM HAS ADEQUATE STRUCTURAL CAPACITY
- f. SEISMIC DESIGN FORCES (Fp) ARE IN ACCORDANCE WITH THE 2019 CBC q. VERIFICATION THAT SUBMITTAL IS WITHIN THE SCOPE OF THE OSHPD
- PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM), INCLUDING: SIZE OF DISTRIBUTION SYSTEM COMPONENTS
- SPACING OF BRACING AND FLEX JOINTS
- SUBSTRATE FOR ATTACHMENTS

THE LAYOUT DRAWINGS WITH THE SHOP DRAWING STAMP SHALL BE KEPT ON THE JOBSITE AT ALL TIMES AND SHALL BE USED FOR INSTALLATION OF THE SUPPORT AND BRACING. THE OSHPD FIELD STAFF WILL REVIEW THE INSTALLATION. A COPY OF THE CHOSEN BRACING SYSTEM(S) INSTALLATION GUIDE/ MANUAL SHALL BE ON THE JOBSITE PRIOR TO STARTING THE INSTALLATION OF HANGERS AND/ OR BRACES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN COPIES OF EACH OPM AND FURNISH THE IOR WITH ONE COPY OF EACH. COMPONENTS OF TWO OR MORE PRE-APPROVED BRACING SYSTEMS SHALL NOT BE MIXED. ONLY ONE PRE-APPROVED BRACING SYSTEM MAY BE USED FOR A RUN OF PIPE,

- DUCT OR CONDUIT. ANY SUBSTITUTION OF COMPONENT OF A PRE-APPROVED BRACING SYSTEM SHALL REQUIRE OSHPD REVIEW AND APPROVAL.
- 4. MECHANICAL COMPONENTS THAT ARE INSTALLED IN-LINE WITH THE DUCT SYSTEM AND HAVE AN OPERATING WEIGHT GREATER THAN 75 LBS SHALL BE SUPPORTED AND LATERALLY BRACED INDEPENDENT OF THE DUCT SYSTEM (ASCE 7 SECTION 13.6.7).
- 5. APPURTENANCES SUCH AS DAMPERS, LOUVERS AND DIFFUSERS SHALL BE POSITIVELY ATTACHED WITH MECHANICAL FASTENERS (ASCE 7 SECTION 13.6.7). 6. SEISMIC RESTRAINTS FOR DUCTS, PIPING AND CONDUITS MAY BE OMITTED FOR ANY OF
- THE FOLLOWING CONDITIONS: a. CONDUITS, CABLE TRAYS, AND OTHER ELECTRICAL DISTRIBUTION SYSTEMS (RACEWAYS) OR HVAC DUCTS SUSPENDED FROM HANGERS WHERE EACH HANGER IN THE DUCT RUN IS 12 INCHES OR LESS IN LENGTH. WHERE ROD HANGERS WITH A DIAMETER GREATER THAN 3/8-INCH ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD (2019 CBC 1617A.1.24).
- b. HVAC DUCTS WITH A CROSS-SECTIONAL AREA LESS THAN 6 SQUARE FEET WHERE PROVISIONS ARE MADE TO AVOID IMPACT WITH LARGER DUCTS OR MECHANICAL COMPONENTS, OR PROVISIONS ARE MADE TO PROTECT THE DUCTS IN THE EVENT OF SUCH AN IMPACT (2019 CBC 1617A.1.25).
- c. HVAC DUCTS WITH A WEIGHT OF 10 LBS/FT OR LESS WHERE PROVISIONS ARE MADE TO AVOID IMPACT WITH LARGER DUCTS OR MECHANICAL COMPONENTS, OR PROVISIONS ARE MADE TO PROTECT THE DUCTS IN THE EVENT OF SUCH AN IMPACT (2019 CBC 1617A.1.25).
- d. TRAPEZE ASSEMBLIES USED TO SUPPORT RACEWAYS, DUCTWORK OR PIPING WHERE THE TOTAL WEIGHT OF THE UTILITIES SUPPORTED BY TRAPEZE ASSEMBLIES IS LESS THAN 10 LBS/FT AND THE MAXIMUM NOMINAL SIZE OF ANY SUPPORTED PIPE DOES NOT EXCEED 1 INCH (2019 CBC 1617A.1.23, 1617A.1.24 & 1617A.1.26).
- e. PIPING SUPPORTED BY ROD HANGERS WHERE EACH HANGER IN THE PIPE RUN IS 12 INCHES OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON TRAPEZES, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 INCHES OR LESS. WHERE ROD HANGERS WITH A DIAMETER GREATER THAN 3/8-INCH ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD (2019 CBC 1617A.1.25).
- f. PIPING SATISFYING ALL OF THE FOLLOWING CONDITIONS: HAVING A NOMINAL DIAMETER OF 1 INCH OR LESS; CONFORMING TO ASME B31 OR CONSTRUCTED OF HIGH OR LIMITED DEFORMABILITY MATERIALS: HAVING JOINTS MADE BY WELDING, BRAZING, THREADING, BONDING, COMPRESSION COUPLINGS, OR GROOVED COUPLINGS: PROVISIONS ARE MADE TO AVOID IMPACT WITH OTHER STRUCTURAL OR NONSTRUCTURAL COMPONENTS, OR TO PROTECT THE PIPING IN THE EVENT OF SUCH IMPACT (2019 CBC 1617A.1.25).

# **PROJECT SHEET INDEX**

MECHANICAL LEGEND, NOTES AND SHEET INDEX MECHANICAL SPECIFICATIONS MECHANICAL SPECIFICATIONS TITLE 24 CALCULATIONS TITLE 24 CALCULATIONS MECHANICAL PLANS MECHANICAL DETAILS

M001

M002

M003

M004

M005

M201

M501

- AS SHOWN ON SHEET G1.1.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND PROVIDE REPAIR OF ADJACENT EXISTING SURFACES.
- AND GOVERNING REGULATIONS AND SHALL MEET WITH THE APPROVAL OF THE CITY AND STATE FIRE MARSHALL.
- NO EXPENSE TO THE OWNER.
- STRUCTURAL, AND ALL OTHER TRADES.
- ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED & TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF PREFABRICATED SPIRAL LOCKSEAM DUCTS AND FITTINGS.
- DUCT MATERIALS SHALL COMPLY WITH ANSI/SMACNA 006-2006 HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE, 3RD EDITION.
- PROVIDE DUCT MANUAL VOLUME DAMPERS IN EACH BRANCH DUCT AND IN EACH MAIN DUCT TO PROVIDE FOR COMPLETE AIR BALANCE OF THE SYSTEM. PROVIDE ADEQUATE ACCESS AND IDENTIFICATION.
- BEEN INSTALLED.
- 2. INSULATION MATERIAL SHALL MEET THE CALIFORNIA QUALITY STANDARD PER SECTION 110.8 OF E.E.S.
- °F. AND COOLING AT A TEMPERATURE NOT LESS THAN 78° F. OPERATION.
- SENSORS SHALL BE WALL MOUNTED 60" A.F.F.
- 608.0 2019 CMC.
- 7. OUTSIDE AIR INTAKES SHALL BE LOCATED A MINIMUM OF 25 FEET AWAY FROM EXHAUST OUTLETS, PLUMBING VENTS,
- NOXIOUS FUMES, AND OTHER SOURCES OF CONTAMINATION. 18. HVAC UNITS SHUTDOWN TO BE ACCOMPLISHED USING THE BUILDING'S FIRE ALARM SYSTEM.
- 19. SEE PLUMBING DRAWINGS FOR PRIMARY AND SECONDARY CONDENSATE DRAINS
- SEPARATION WALLS.
- DUCTWORK, STRUCTURAL CONDITIONS AND ARCHITECTURAL LAYOUT. 23. SEE ARCHITECTURAL DRAWINGS FOR ROOF ACCESS AND ADDITIONAL ENERGY CONSERVATION NOTES.
- ALL CEILING DIFFUSERS SHALL BE 4-WAY THROW UNLESS SHOWN OTHERWISE.
- 26. AIRCRAFT CABLE SHALL BE PRE-STRETCHED.
- 28. ALL H.V.A.C. EQUIPMENT AND APPLIANCES SHALL MEET THE REQUIREMENTS PER SECTIONS 110.1-110.3, 110.5, 120.1-120.4 TITLE 24 ENERGY STANDARDS.
- AND PRIOR TO OCCUPANCY.
- COMPLETED AND PROVIDED TO THE OWNER OR REPRESENTATIVE.
- SECITON 120.4(a).
- SECTION 140.4(I).
- 33. REFER TO ARCH. DRAWINGS FOR ROOF ACCESS DETAILS. ISSUED UNTIL THESE FORMS ARE REVIEWED AND APPROVED.

# AIR DISTRIBUTION LEGEND REGISTER NECK SIZE (EXHAUST) EXHAUST REGISTER AIRFLOW (CFM)

	F	AIR DIS	SIRIB
TAG	MAKE/MODEL	NECK SIZE	REMARKS
A	TITUS 56FS	12x6	SURFACE-M GRILLE. 3/4" TITUS TYPE MODEL #ABE

# **GENERAL NOTES**

ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY CODES, 2019 CALIFORNIA BUILDING CODE, 2019 CALIFORNIA MECHANICAL CODE, 2019 CALIFORNIA ENERGY CODE, 2019 CALIFORNIA FIRE CODE, 2019 CALIFORNIA GREEN BUILDING STANDARDS, NFPA 90 & 91, STATE AND LOCAL FIRE DEPARTMENT REGULATIONS, AND ALL OTHER APPLICABLE CODES

EQUIPMENT, AREAS, AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF ANY DEMOLITION AND/OR NEW WORK. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION, AND SERVICES NECESSARY FOR THE COMPLETION OF THE WORK. ALL MATERIALS & WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES

ALL DRAWINGS ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO ANY CONSTRUCTION, INCLUDING ARCHITECTURAL, STRUCTURAL, AIR CONDITIONING, PLUMBING, AND ELECTRICAL. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION MAY BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE, AND AT

DO NOT SCALE DRAWINGS - ALL DIMENSIONS AND JOB SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO BID SUBMITTAL, START OF CONSTRUCTION AND / OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.

CONTRACTOR SHALL COORDINATE ALL DUCT. PIPE AND EQUIPMENT LOCATIONS WITH PLUMBING. ELECTRICAL.

LOCAL REGULATIONS AND PROCEDURES DETAILED IN THE A.S.H.R.A.E. HANDBOOK OF FUNDAMENTALS OR THE APPLICABLE STANDARDS ADOPTED BY S.M.A.C.N.A. PROVIDE RECTANGULAR DUCTS OF GALVANIZED STEEL &

. WHERE INTERNAL ACOUSTICAL DUCT LINER IS INDICATED, DUCT DIMENSIONS ARE NET CLEAR - e.g. AFTER LINER HAS

. ALL DUCTWORK AND PIPING SHALL BE INSULATED CONSISTENTLY WITH THE REQUIREMENTS OF SECTIONS 120.3, 120.4, & 120.7 OF THE 2019 ENERGY EFFICIENCY STANDARDS (E.E.S.) AND TABLES 503.7.1(10) AND 503.7.1(11) OF 2019 C.M.C.

. ROOM THERMOSTATS SHALL BE CAPABLE OF BEING SET TO MAINTAIN SPACE TEMPERATURE SET POINTS FROM 55 °F. TO 85 °F. AND BE CAPABLE OF OPERATING THE HEATING AND COOLING IN SEQUENCE. THERMOSTATS SHALL BE ADJUSTABLE TO PROVIDE A TEMPERATURE RANGE OF UP TO 10°F. BETWEEN FULL HEATING AND FULL COOLING BEING SUPPLIED. CONTROLS SHALL HAVE CAPABILITY OF TERMINATING ALL HEATING AT A TEMPERATURE NOT MORE THAN 70

4. TEMPERATURE CONTROL SYSTEM SHALL OPERATE IN ACCORDANCE WITH THE BASE BUILDING SEQUENCE OF

5. WALL MOUNTED THERMOSTATS SHALL BE MOUNTED 48" A.F.F. TO THE HIGHEST OPERABLE PART. TEMPERATURE

b. PROVIDE SMOKE DETECTORS IN MAIN SUPPLY AIR DUCTS OF AIR MOVING SYSTEMS EXCEEDING 2000 CFM PER SECTION

COOLING TOWERS, COMBUSTION EQUIPMENT STACKS, AREAS THAT MAY COLLECT VEHICULAR EXHAUST OR OTHER

20. NO COMBUSTION VENTS, DRYER VENTS, RANGE HOOD VENTS, OR HEATING DUCTS ARE PERMITTED IN AREA

21. MATERIAL EXPOSED WITHIN A DUCT OR PLENUM SHALL COMPLY WITH SECTION 602.2 OF 2019 C.M.C.

22. ALL OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED SO AS TO PERMIT EASY CONNECTION. COORDINATE

24. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING DIFFUSERS AND GRILLES.

27. ALL H.V.A.C. SYSTEMS SHALL MEET THE CONTROL REQUIREMENTS PER SECTIONS 110.2 AND 120.2 OF E.E.S.

29. H.V.A.C. EQUIPMENT AND SYSTEMS SHALL MEET THE ACCEPTANCE REQUIREMENTS PER SECTION 120.5 OF 2016 E.E.S. AS SPECIFIED BY THE REFERENCE NONRESIDENTIAL APPENDIX NA7. CERTIFICATE OF ACCEPTANCE AND ALL RELATED ACCEPTANCE DOCUMENTS SHALL BE SUBMITTED BY CONTRACTOR TO THE CITY INSPECTOR DURING CONSTRUCTION

30. A COMPLETE REPORT OF COMMISSIONING PROCESS ACTIVITIES UNDERTAKEN THROUGH THE DESIGN, CONSTRUCTION, AND REPORTING RECOMMENDATIONS FOR POST-CONSTRUCTION PHASES OF THE BUILDING PROJECT SHALL BE

1. ALL AIR DISTRIBUTION SYSTEM DUCTS AND PLENUS MUST BE INSTALLED, SEALED AND INSULATED PER 2019 C.E.C.

2. ALL DUCTWORK SHALL BE SEALED TO A LEAKAGE RATE NOT TO EXCEED 6% OF THE NOMINAL AIR HANDLER AIRFLOW RATE. TO BE CONFIRMED THROUGH FIELD VERIFICATION AND DIAGNOSTIC TESTING DURING CXA PER 2019 C.E.C.

34. ALL ENVELOPE AND MECHANICAL CERTIFICATE OF ACCEPTANCE FORMS AND ALL RELATED ACCEPTANCE DOCUMENTS SHALL BE SUBMITTED TO THE FIELD INSPECTOR DURING CONSTRUCTION. CERTIFICATE OF OCCUPANCY WILL NOT BE

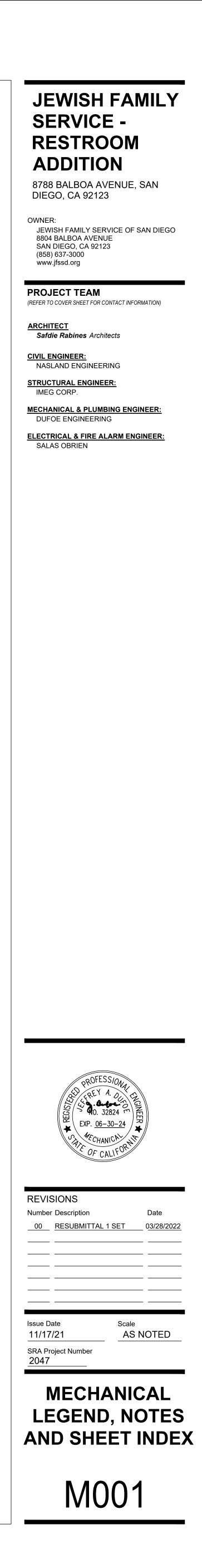
# AIR DISTRIBUTION SCHEDULE

OUNTED ALUMINUM CONSTRUCTION MATERIAL, AEROBLADE EXHAUS 'BLADE SPACING, 0 DEG. DEFLECTION, STANDARD WHITE FINISH WITH 1 BORDER, 12"x6" NECK-MOUNTED OPPOSED BLADE DAMPER (TITUS D-AG-35AA), AND TYPE 8 LEVEL OPERATOR. WALL-MOUNTED.

Ν	ЛЕСНИ
SYMBOL	ABBREV.
	10 x 6 M.V.D. M.O.D. F.S.D. F.D. F.C.
	S.A. R.A./O.A. E.A.
	T'STAT S.D. C.H.W.R. C.H.W.S. H.H.W.R. H.H.W.S. F.S. E.R. C.R. BL.V. B.V. BF.V. CH.V. C.V. (2W) C.V. (2W) C.V. (3W) F.M. A.F.C.V. F.C.V. F.C.V. P.R.V. P.R.V. GL.V. GL.V. C.V. S.TR. B.F. T.D.V.
	U. A.L. A.F.F. C.F.M. CONC. CONTR. D.L. DN. EXH. FLR. FLR. FT. H.O.A. ISO. O.A. O.B.D. P.O.C. QTY. REQ'D. RET. SHT. TYP. U.N.O. U.T.R. V.F.D. W/

# IANICAL LEGEND

BREV.	DESCRIPTION
10 x 6	DUCTWORK (1ST NUMBER INDICATES SIDE SHOWN, DOUBLE OR SINGLE LINE)
M.V.D.	MANUAL VOLUME DAMPER
M.O.D.	MOTOR OPERATED DAMPER
F.S.D.	COMBINATION FIRE AND SMOKE DAMPER AUTOMATIC FIRE AND SMOKE DAMPER
F.D.	FIRE DAMPER WITH FUSIBLE LINK
F.C.	FLEXIBLE CONNECTION (DUCTWORK)
	LINED DUCTWORK (OR PLENUM)
	STAINLESS STEEL DUCTWORK (OR PLENUM)
	RECTANGULAR DUCT UP
	RECTANGULAR DUCT DOWN
	DUCT TRANSITION (RECTANGULAR TO ROUND)
	FLEXIBLE DUCTWORK
S.A.	SUPPLY AIR DUCT
E.A.	RETURN AIR DUCT/OUTSIDE AIR DUCT EXHAUST AIR DUCT
L./ (.	PIPE DOWN
T'STAT	PIPE UP THERMOSTAT (NUMBER INDICATES EQUIPMENT OR
S.D.	ZONE SERVED) SMOKE DETECTOR (DUCT MOUNTED)
C.H.W.R. C.H.W.S.	CHILLED WATER RETURN CHILLED WATER SUPPLY
H.H.W.R.	HEATING HOT WATER RETURN
H.H.W.S. F.S.	HEATING HOT WATER SUPPLY
E.R.	ECCENTRIC REDUCER
C.R.	CONCENTRIC REDUCER
BL.V.	BALANCING VALVE
B.V. BF.V.	BALL VALVE BUTTERFLY VALVE
CH.V.	CHECK VALVE
.V. (2W)	CONTROL VALVE (2-WAY)
.V. (3W)	CONTROL VALVE (3-WAY)
F.M. A.F.C.V.	ELECTROMAGNETIC FLOW METER AUTOMATIC FLOW CONTROL VALVE
F.C.V.	FLOW CONTROL VALVE
P.R.V.	PRESSURE REDUCING VALVE
C.V. (2W)	PRESSURE INDEPENDENT CONTROL VALVE (2-WAY)
P.S.V. G.V.	PRESSURE SUSTAINING VALVE GATE VALVE
GL.V.	GLOBE VALVE
T.D.V.	TRIPLE DUTY VALVE (COMB. SHUT-OFF, CHECK & BALANCING)
P.R.V.	PRESSURE RELIEF VALVE
P.G.	PRESSURE GAUGE WITH GAUGE COCK
STR. B.F.	STRAINER W/ DRAIN VALVE & 3/4" HOSE END & CAP BLIND FLANGE
TH.	THERMOMETER
T.W.	TEST WELL (PETE'S PLUG - PRESSURE AND/OR TEMPERATURE)
U. A.L.	UNION ACOUSTICAL DUCT LINER
A.F.F. C.F.M. CONC.	ABOVE FINISH FLOOR CUBIC FEET PER MINUTE CONCRETE
CONTR. D.L.	CONTRACTOR ACOUSTICAL DUCT LINER
DN. EXH.	DOWN EXHAUST
FLR. FT.	FLOOR FEET OR FOOT
H.O.A. ISO.	HANDS - OFF - AUTOMATIC ISOLATION
O.A. O.B.D.	OUTSIDE AIR OPPOSED BLADE DAMPER
P.O.C. QTY.	POINT OF CONNECTION QUANTITY
REQ'D.	REQUIRED
RET. SHT.	RETURN SHEET
TYP. U.N.O.	TYPICAL UNLESS NOTED OTHERWISE
U.T.R. V.F.D.	UP THRU ROOF VARIABLE FREQUENCY DRIVE
W/	WITH



SECT PART	TON 233113 - METAL DUCTS
1.1	RELATED DOCUMENTS
A.	
1.2	SUMMARY
A.	Section Includes:
	1. Single-wall rectangular ducts and fittings.
	2. Sheet metal materials.
	3. Sealants and gaskets.
	4. Hangers and supports.
2.1	SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS
В.	General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" based on indicated static-pressure class unless otherwise indicated.
	1. Construct ducts of galvanized sheet steel unless otherwise indicated.
C.	Transverse Joints: Fabricate joints in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-1, "Rectangular Duct/Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
А.	Elbows, Transitions, Offsets, Branch Connections, and Other Duct Construction: Select types and fabricate in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Ch. 4, "Fittings and Other Construction," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
2.2	SHEET METAL MATERIALS
А.	General Material Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
2.3	SEALANT AND GASKETS
A.	General Sealant and Gasket Requirements: Surface-burning characteristics for sealants and gaskets shall be a maximum flame-spread index of 25 and a maximum smoke-developed index of 50 when tested in accordance with UL 723; certified by an NRTL.
PAR	Γ3- EXECUTION
3.1	DUCT INSTALLATION
B.	Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and coordination drawings.
C.	Install ducts in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.
D.	Install ducts in maximum practical lengths with fewest possible joints.
E.	Install factory- or shop-fabricated fittings for changes in direction, size, and shape and for branch connections.
F.	Elbows: Use long-radius elbows wherever they fit.

- F. Branch Connections: Use lateral or conical branch connections.
- 3.2 DUCT SEALING
- G. Seal ducts for duct static-pressure, seal classes, and leakage classes specified in "Duct Schedule" Article in accordance with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- 3.3 HANGER AND SUPPORT INSTALLATION
- A. Comply with SMACNA's "HVAC Duct Construction Standards Metal and Flexible," Chapter 5, "Hangers and Supports."
- B. Install upper attachments to structures. Select and size upper attachments with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
- 3.4 DUCT SCHEDULE
- A. Fabricate ducts with galvanized sheet steel except as otherwise indicated and as follows:
- 1. Fabricate all ducts to achieve SMACNA pressure class, seal class, and leakage class as indicated below. B. Exhaust Ducts:
- 1. Ducts Connected to Fans Exhausting (ASHRAE 62.1, Class 1 and 2) Air:
- a. Pressure Class: -1 inch wg.
- b. Minimum SMACNA Seal Class: C if negative pressure, and A if positive pressure.
- c. SMACNA Leakage Class for Rectangular: 8
- d. SMACNA Leakage Class for Round and Flat Oval: 8
- 2. Ducts Connected to Equipment Not Listed above: a. Pressure Class: Positive or negative -2 inch wg.
- b. Minimum SMACNA Seal Class: B if negative pressure; A if positive pressure.
- c. SMACNA Leakage Class for Rectangular: 8.
- d. SMACNA Leakage Class for Round and Flat Oval: 8.

### END OF SECTION 233113

PART 1 - GENERAL

Section

1.2 SUMMARY

A. Section Includes:

PART 2 - PRODUCTS

B. Accessories:

1. Greenheck Fan Corporation.

2. Loren Cook Company.

5. Inspection Door: Hinged.

1.1 RELATED DOCUMENTS

- 3.2 DUCTWORK CONNECTIONS
- 3.3 ELECTRICAL CONNECTIONS
- 1. Nameplate shall be laminated acrylic or melamine plastic signs.
- 3.4 CONTROL CONNECTIONS
- A. Install control and electrical power wiring to field-mounted control devices, by electrical trade.
- 3.5 ADJUSTING
- A. Adjust damper linkages for proper damper operation.
- END OF SECTION 233423

# SECTION 233423 - HVAC POWER VENTILATORS

C. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this

1. Down blast or upblast propeller roof exhaust fans.

2.1 UPBLAST / DOWN BLAST PROPELLER ROOF EXHAUST FANS A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

3. Disconnect Switch: Nonfusible type, with thermal-overload protection mounted inside fan housing, factory wired through an internal aluminum conduit. 4. Bird Screens: Removable, 1/2-inch mesh, aluminum or brass wire.

6. Dampers: Counterbalanced, parallel-blade, backdraft dampers mounted in curb base; factory set to close when fan stops.

D. Prefabricated Roof Curbs: Galvanized steel; mittered and welded corners; 1-1/2-inch thick, rigid, fiberglass insulation adhered to inside walls; and 1-1/2-inch

C. Drawings indicate general arrangement of ducts and duct accessories. Make final duct connections with flexible connectors.

# A. Install electrical devices furnished by manufacturer, but not factory mounted, according to NFPA 70 and NECA 1.

SECTION 238129 - VARIABLE-REFRIGERANT-FLOW HVAC SYSTEMS

# PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division Section.

1.2 SUMMARY

- A. Section includes complete Multizone DX HP system(s) including, but not limited to the following components to according to requirements indicated: 1. Indoor, recessed, ceiling-mounted units.
- 2. Outdoor, air-source, heat-pump units.
- 3. System refrigerant piping.
- 4. Metal hangers and supports.
- 5. Miscellaneous support materials.
- 6. Piping and tubing insulation.
- 7. System control cable and raceways.
- 1.3 DEFINITIONS
- B. Heat-Pump System Operation: System capable of operation with all zones in either heating or cooling, but not wi that transfer heat between zones.
- C. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, D. Two-Pipe System Design: One refrigerant vapor line and one refrigerant liquid line connect a single outdoor unit single system to associated system HRCUs. One refrigerant liquid line and refrigerant vapor line connect HRCUs two pipe systems act as an intermediate heat exchanger and include diverting valves and gas/liquid separators to n between indoor units.
- E. VRF: Variable refrigerant flow.
- 1.4 DELIVERY, STORAGE, AND HANDLING
- A. Deliver and store products in a clean and dry place.
- B. Comply with manufacturer's written rigging and installation instructions for unloading and moving to final installed
- C. Handle products carefully to prevent damage, breaking, denting, and scoring. Do not install damaged products.
- D. Protect products from weather, dirt, dust, water, construction debris, and physical damage. 1. Retain factory-applied coverings on equipment to protect finishes during construction and remove just prior t
- 2. Cover unit openings before installation to prevent dirt and dust from entering inside of units. If required to rem reapply coverings over openings after unit installation and remove just prior to operating unit.
- E. Replace installed products damaged during construction.

## PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. Direct-expansion (DX) VRF HVAC system(s) with variable capacity in response to varying cooling and heating indoor units (FC) outdoor unit (HP), piping, controls, and electrical power to make complete operating systems c 3. Two-pipe system design.
- 4. Systems operation, **heat pump** as indicated on Drawings.
- 5. Each system with one refrigerant circuit for each indoor unit connected to system.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testin and application.
- C. AHRI Compliance: System and equipment performance certified according to AHRI 1230 and products listed

D. ASHRAE Compliance:

- 1. ASHRAE 15: For safety code for mechanical refrigeration.
- 2. ASHRAE 62.1: For indoor air quality.
- 3. ASHRAE 135: For control network protocol with remote communication.
- 4. ASHRAE/IES 90.1 Compliance: For system and component energy efficiency.
- E. UL Compliance: Comply with UL 1995.
- 2.2 PERFORMANCE REQUIREMENTS
- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirement HVAC system(s) complying with requirements indicated.
- 1. Provide system refrigerant calculations.
- a. Refrigerant concentration limits shall be within allowable limits of ASHRAE 15 and governing codes. b. Indicate compliance with manufacturer's maximum vertical and horizontal travel distances. Prepare a con calculated distances compared to manufacturer's maximum allowed distances.
- 2. System Refrigerant Piping and Tubing:
- a. Arrangement: Arrange piping to interconnect indoor units, FC-1 & FC-2, and outdoor unit HP-1 in com requirements indicated.
- b. Routing: Conceal piping above ceilings and behind walls to maximum extent possible. c. Sizing: Size piping system, using a software program acceptable to manufacturer, to provide performance
- requirements to accommodate future change requirements. 3. System Controls:
- a. Network arrangement.
- b. Network interface with other building systems.
- c. Product selection.
- d. Sizing.
- B. Service Access:
- 1. Provide and document service access requirements.
- 2. Locate equipment, system isolation valves, and other system components that require service and inspection locations that are difficult to access if possible.
- 3. Where serviceable components are installed behind walls and above inaccessible ceilings, provide finished as access. Properly size the openings to allow for service, removal, and replacement.
- 4. If less than full and unrestricted access is provided, locate components within an 18-inch reach of the finished
- 5. Where ladder access is required to service elevated components, provide an installation that provides for suff written instructions for use.
- 6. Comply with OSHA regulations.
- C. System Design and Installation Requirements:
- 1. Design and install systems indicated according to manufacturer's recommendations and written instructions. 2. Where manufacturer's requirements differ from requirements indicated, contact Architect for direction. The manufacturer's requirements differ from requirements indicated, contact Architect for direction.
- unless otherwise directed in writing by Architect. D. Isolation of Equipment: Provide isolation valves to isolate each indoor unit and outdoor unit for service, removal,
- system operation. E. System Capacity Ratio: The sum of connected capacity of all indoor units shall be within the following range of o
- 1. Not less than **50** percent.
- 2. Not more than **130** percent.
- 3. Range acceptable to manufacturer.
- F. System Turndown: Stable operation down to 30 percent of outdoor-unit capacity.
- G. System Auto Refrigerant Charge: Each system shall have an automatic refrigerant charge function to ensure the p system.
- H. Outdoor Conditions:
- 1. Suitable for outdoor ambient conditions encountered.
- a. Design equipment and supports to withstand wind loads of governing code and ASCE/SEI 7 b. Provide corrosion-resistant coating for components and supports where located in coastal or industrial clin materials and finishes.
- 2. Maximum System Operating Outdoor Temperature: See Drawings.
- 3. Minimum System Operating Outdoor Temperature: See Drawings.
- I. Sound Performance: Sound levels generated by operating HVAC equipment shall be within requirements indicated 1. Indoor: See Drawings
- 2. Outdoor: See Drawings
- J. Capacities and Characteristics: As indicated on Drawings.
- 2.3 INDOOR, RECESSED, CEILING-MOUNTED UNITS
- K. Description: Factory-assembled and tested complete unit with components, piping, wiring, and controls required fo controls field connections.
- L. Cabinet:
- 1. Material: Painted steel, or coated steel frame covered by a plastic cabinet, with an architectural acceptable fir surfaces. 2. Insulation: Manufacturer's standard internal insulation, complying with ASHRAE 62.1, to provide thermal re

	3. Mounting: Manufacturer-designed provisions for field installation.
	<ol> <li>Mounting: Manufacturer-designed provisions for field instantation.</li> <li>Internal Access: Removable panels of adequate size for field access to internal components for inspection, cleaning, service, and replacement.</li> </ol>
	C. DX Coil Assembly:
on 01 Specification Sections, apply to this	<ol> <li>Coil Casing: Aluminum, galvanized, or stainless steel.</li> <li>Coil Einer Aluminum mechanically handed to takes with amongoment required by performance</li> </ol>
	<ol> <li>Coil Fins: Aluminum, mechanically bonded to tubes, with arrangement required by performance.</li> <li>Coil Tubes: Copper, of diameter and thickness required by performance.</li> </ol>
to make a complete operating system	4. Expansion Valve: Electronic modulating type with linear or proportional characteristics.
	<ol> <li>Internal Tubing: Copper tubing with brazed joints.</li> <li>Internal Tubing Insulation: Manufacturer's standard insulation, of thickness to prevent condensation.</li> </ol>
	<ol> <li>Field Piping Connections: Manufacturer's standard.</li> </ol>
	8. Factory Charge: Dehydrated air or nitrogen.
	<ul><li>9. Testing: Factory pressure tested and verified to be without leaks.</li><li>D. Drain Assembly:</li></ul>
	1. Pan: Non-ferrous material, with bottom sloped to low point drain connection.
	2. Condensate Removal: Unit-mounted pump or other integral lifting mechanism, capable of lifting drain water to an elevation above top of cabinet.
	<ol> <li>Field Piping Connection: Non-ferrous material with threaded NPT.</li> <li>E. Fan and Motor Assembly:</li> </ol>
with simultaneous heating and cooling zones	1. Fan(s):
trol, signaling power-limited circuits. nit or multiple manifold outdoor units in a	a. Direct-drive arrangement.
to move high and low pressure refrigerant	<ul><li>b. Single fan connected to a motor shaft and driven by a single motor.</li><li>c. Fabricated from non-ferrous components or ferrous components with corrosion protection finish.</li></ul>
	d. Wheels statically and dynamically balanced.
	<ol> <li>Motor: electronically commutated with permanently lubricated bearings.</li> <li>Motor Description and the standard bearing and thearing and the standard bearing and the standard b</li></ol>
	<ol> <li>Motor Protection: Integral protection against thermal, overload, and voltage fluctuations.</li> <li>Speed Settings and Control: three (low, medium, high), or more than three speed settings or variable speed with a speed range of least 50 percent.</li> </ol>
talled location.	5. Vibration Control: Integral isolation to dampen vibration transmission.
	F. Filter Assembly:
or to operating unit.	<ol> <li>Access: Bottom, to accommodate filter replacement without the need for tools.</li> <li>Efficiency: ASHRAE 52.2, MERV 7.</li> </ol>
remover coverings during unit installation,	3. Media:
	a. Washable: Manufacturer's standard filter with antimicrobial treatment.
	<ul> <li>G. Discharge-Air Grille Assembly: Mounted in bottom of unit cabinet.</li> <li>2.4 OUTDOOR, AIR-SOURCE HEAT-PUMP UNITS</li> </ul>
	A. Description: Factory-assembled and -tested complete unit with components, piping, wiring, and controls required for mating to piping, power, and controls field connections.
ng loads. System shall consist of multiple	1. Specially designed for use in systems with either all heating or all cooling demands, but not for use in systems with simultaneous heating and cooling.
s complying with requirements indicated.	2. Systems shall consist of one unit, or multiple unit modules that are designed by variable refrigerant system manufacturer for field interconnection to make a single refrigeration circuit that connects multiple indoor units.
	3. All units installed shall be from the same product development generation.
	B. Cabinet:
sting agency, and marked for intended location	<ol> <li>Galvanized steel and coated with a corrosion-resistant finish.</li> <li>a. Coating with documented salt spray test performance of 1000 hours according ASTM B117 surface scratch test (SST) procedure.</li> </ol>
d in AHRI directory.	<ol> <li>Mounting: Manufacturer-designed provisions for field installation.</li> </ol>
	C. Compressor and Motor Assembly:
	<ol> <li>One or more positive-displacement, direct-drive and hermetically sealed scroll compressor(s) with inverter drive and turndown to 15 percent of rated capacity.</li> </ol>
	2. Protection: Integral protection against the following:
	<ul><li>a. High refrigerant pressure.</li><li>b. Low oil level.</li></ul>
	c. High oil temperature.
ents," to design complete and operational VRF	d. Thermal and overload.
	<ul><li>e. Voltage fluctuations.</li><li>f. Phase failure and phase reversal.</li></ul>
	g. Short cycling.
comparison table for each system showing	3. Speed Control: Variable to automatically maintain refrigerant suction and condensing pressures while varying refrigerant flow to satisfy system cooling and heating loads.
	4. Oil management system to ensure safe and proper lubrication over entire operating range.
ompliance with manufacturer requirements and	<ol> <li>Crankcase heaters with integral control to maintain safe operating temperature.</li> <li>Fusible plug.</li> </ol>
	2.5 SYSTEM REFRIGERANT PIPING
nce requirements indicated. Consider	A. Refrigerant Piping:
	1. Copper Tube: ASTM B280, Type ACR.
	<ol> <li>Wrought-Copper Fittings: ASME B16.22.</li> <li>Brazing Filler Metals: AWS A5.8/A5.8M.</li> </ol>
	B. Refrigerant Tubing Kits:
	1. Furnished by HVAC system manufacturer.
	<ol> <li>Factory-rolled and -bundled, soft-copper tubing with tubing termination fittings at each end.</li> <li>Standard one-piece length for connecting to indoor units.</li> </ol>
on in easily accessible locations. Avoid	4. Pre-insulated with flexible elastomeric insulation of thickness to comply with governing energy code and sufficient to eliminate condensation.
assembly with access doors or panels to gain	5. Factory Charge: Dehydrated air or nitrogen.
hed assembly.	C. Divided-Flow Specialty Fittings: Where required by VRF HVAC system manufacturer for proper system operation, VRF HVAC system manufacturer shall furnish specialty fittings with identification and instructions for proper installation by Installer.
ufficient access within ladder manufacturer's	<ul> <li>D. Refrigerant Isolation Ball Valves:</li> <li>1. Description: Uni-body full port design, rated for maximum system temperature and pressure, and factory tested under pressure to ensure tight shutoff.</li> </ul>
	Designed for valve operation without removing seal cap.
	<ol> <li>Seals: Compatible with system refrigerant and oil. Seal service life of at least 20 years.</li> <li>Valve Connections: Flare or sweat depending on size.</li> </ol>
is. e most stringent requirements should apply	<ol> <li>Varve Connections: Frare or sweat depending on size.</li> <li>METAL HANGERS AND SUPPORTS</li> </ol>
	2.0       METAL HANGERS AND SUPPORTS         A.       Copper Tube Hangers:
val, and replacement without interrupting	1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.
of outdoor-unit rated capacity:	2. Hanger Rods: Continuous-thread rod, nuts, and washer made of galvanized or copper-coated steel.
	<ul><li>2.7 MISCELLANEOUS SUPPORT MATERIALS</li><li>A. Grout: ASTM C1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.</li></ul>
	<ul> <li>A. Grout: ASTM C1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.</li> <li>1. Properties: Nonstaining, noncorrosive, and nongaseous.</li> </ul>
e proper amount of refrigerant is installed in	2. Design Mix: 5000-psi, 28-day compressive strength.
e proper amount of refrigerant is instance in	<ul><li>B. Structural Steel: ASTM A36/A36M, carbon-steel plates, shapes, and bars; galvanized.</li><li>C. Threaded Rods: Continuously threaded. Zinc-plated steel or galvanized steel for indoor applications and stainless steel for outdoor applications. Mating nuts</li></ul>
	C. Threaded Rods: Continuously threaded. Zinc-plated steel or galvanized steel for indoor applications and stainless steel for outdoor applications. Mating nuts and washers of similar material as rods.
	2.8 PIPING AND TUBING INSULATION
climates that are known to be harmful to	<ul> <li>D. Condensate Drain Piping and Tubing Insulation and Jacket Requirements:</li> <li>1. Flexible Elastomeric Insulation:</li> </ul>
	a. Closed-cell, sponge- or expanded-rubber materials, complying with ASTM C534, Type I for tubular materials.
sated	b. Indoors: 1 inch thick.
cated.	<ul><li>c. Outdoors: 1 inch thick.</li><li>B. Refrigerant Tubing Insulation and Jacket Requirements:</li></ul>
	<ol> <li>Kerrigerant Fuoling insulation and sacket Requirements.</li> <li>Flexible Elastomeric Insulation:</li> </ol>
	a. Closed-cell, sponge- or expanded-rubber materials, complying with ASTM C534, Type I for tubular materials.
ad for matter to be the state	<ul><li>b. Indoors: 1 inch thick.</li><li>c. Outdoors: 1 inch thick.</li></ul>
ed for mating to ductwork, piping, power, and	2.9 SYSTEM CONTROL CABLE
finish suitable for tangent occurrer	<ul><li>A. Cable Rating: Listed and labeled for application according to NFPA 70.</li></ul>
finish suitable for tenant occupancy on exposed	1. Flame Travel and Smoke Density in Plenums: As determined by testing identical products according to NFPA 262, by a qualified testing agency. Identify products for installation in plenums with appropriate markings of applicable testing agency.
resistance and prevent condensation.	a. Flame Travel Distance: 60 inches or less.



b.	Peak Optical Smoke Density: 0.5 or less.

# c. Average Optical Smoke Density: 0.15 or less.

2. Flame Travel and Smoke Density for Riser Cables in Non-Plenum Building Spaces: As determined by testing identical products according to UL 1666.

3. Flame Travel and Smoke Density for Cables in Non-Riser Applications and Non-Plenum Building Spaces: As determined by testing identical products according to UL 1685.

# B. Low-Voltage Control Cabling:

- 1. Paired Cable: NFPA 70, Type CMG.
- a. One pair, twisted, No. 16 AWG, stranded (19x29) or No. 18 AWG, stranded (19x30) tinned-copper conductors as required by VRF HVAC system manufacturer.
- b. PVC insulation.
- c. Braided or foil shielded.
- d. PVC jacket. e. Flame Resistance: Comply with UL 1685.
- PART 3 EXECUTION

- 3.1 EXAMINATION
- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine products before installation. Reject products that are wet, moisture damaged, or mold damaged.
- C. Examine roughing-in for piping and tubing to verify actual locations of connections before equipment installation. D. Examine roughing-in for ductwork to verify actual locations of connections before equipment installation.
- E. Examine roughing-in for wiring and conduit to verify actual locations of connections before equipment installation. F. Examine walls, floors, roofs, and outdoor pads for suitable conditions where equipment will be installed.
- G. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- H. Proceed with installation only after unsatisfactory conditions have been corrected.
- 3.2 EOUIPMENT INSTALLATION, GENERAL A. Clearance:
- 1. Maintain manufacturer's recommended clearances for service and maintenance.
- 2. Maintain clearances required by governing code.
- B. Loose Components: Install components, devices, and accessories furnished by manufacturer, with equipment, that are not factory mounted. 3. Loose components shall be installed by system Installer under supervision of manufacturer's service representative
- 3.3 INSTALLATION OF INDOOR UNITS
- A. Install units to be level and plumb while providing a neat and finished appearance. B. Unless otherwise required by HVAC system manufacturer, support ceiling-mounted units from structure above using threaded rods; minimum rod size of 3/8
- inch. C. Adjust supports of exposed and recessed units to draw units tight to adjoining surfaces.
- D. Protect finished surfaces of ceilings, floors, and walls that come in direct contact with units. Refinish or replaced damaged areas after units are installed. E. In rooms with ceilings, conceal piping and tubing, controls, and electrical power serving units above ceilings.
- F. In rooms without ceiling, arrange piping and tubing, controls, and electrical power serving units to provide a neat and finished appearance.
- G. Provide lateral bracing if needed to limit movement of suspended units to not more than 0.25 inch.
- H. Attachment: Install hardware for proper attachment to supported equipment.
- I. Grouting: Place grout under equipment supports and make bearing surface smooth.
- 3.4 INSTALLATION OF OUTDOOR UNITS A. Install units to be level and plumb while providing a neat and finished appearance. B. Roof-Mounted Installations: Install outdoor units on equipment supports specified in Section 077200 "Roof Accessories." Anchor units to supports with removable, stainless-steel fasteners.
- 3.5 INSTALLATION OF REFRIGERANT PIPING
- A. Install refrigerant piping according to ASHRAE 15 and governing codes.
- B. Select system components with pressure rating equal to or greater than system operating pressure. C. Install piping as short and direct as possible, with a minimum number of joints and fittings. D. Arrange piping to allow inspection and service of equipment. Install valves and specialties in accessible locations to allow for service and inspection. Install
- access doors or panels as specified in Section 083113 "Access Doors and Frames" if valves or equipment requiring maintenance is concealed behind finished surfaces.
- E. Install refrigerant piping and tubing in rigid or flexible conduit in locations where exposed to mechanical damage. F. Unless otherwise required by HVAC system manufacturer, slope refrigerant piping and tubing as follows:
- 1. Install horizontal hot-gas discharge piping and tubing with a uniform slope downward away from compressor
- 2. Install horizontal suction lines with a uniform slope downward to compressor.
- 3. Install traps to entrain oil in vertical runs. 4. Liquid lines may be installed level.
- H. When brazing, remove or protect components that could be damaged by heat.
- I. Before installation, clean piping, tubing, and fittings to cleanliness level required by HVAC system manufacturer.
- J. Joint Construction: 1. Ream ends of tubes and remove burrs.
- 2. Remove scale, slag, dirt, and debris from inside and outside of tube and fittings before assembly.
- 3. Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter.
- a. Use Type BCuP (copper-phosphorus) alloy for joining copper fittings with copper tubing. b. Use Type BAg (cadmium-free silver) alloy for joining copper with bronze.
- 3.6 INSTALLATION OF METAL HANGERS AND SUPPORTS
- K. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.
- L. Metal Framing System Installation: Arrange for grouping of parallel runs of piping, and support together on field-assembled metal framing systems. M. Comply with MFMA-103 for metal framing system selections and applications that are not specified.
- N. Fastener System Installation:
- 4. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction. O. Pipe Stand Installation:
- 1. Pipe Stand Types except Curb-Mounted Type: Assemble components and mount on smooth roof surface. Do not penetrate roof membrane.
- F. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- G. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- H. Install lateral bracing with pipe hangers and supports to prevent swaying. I. Install building attachments within concrete slabs or attach to structural steel.
- 1. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
- J. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- K. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.
- L. Piping and Tubing Insulation:
- 2. Shield Dimensions for Pipe: Not less than the following: a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
- M. Horizontal-Piping Hangers and Supports: Install the following types: 1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated, stationary pipes NPS 1/2 to NPS 30. 2. Pipe Hangers (MSS Type 5): For suspension of pipes NPS 1/2 to NPS 4, to allow off-center closure for hanger installation before pipe erection. 3. Clips (MSS Type 26): For support of insulated pipes not subject to expansion or contraction.
- 4. Multiple horizontal pipes located indoors may use metal framing systems with split clamp attachment for each pipe in lieu if individual clevis hangers.
- 5. Provide copper-clad hangers and supports for hangers and supports in direct contact with copper pipe. 6. On plastic pipe, install pads or cushions on bearing surfaces to prevent hanger from scratching pipe.
- N. Horizontal Piping Hanger Spacing and Rod Size: Install hangers for drawn-temper copper piping with the following maximum horizontal spacing and minimum rod sizes: 1. Sizes through NPS 3/4: Maximum span, 5 feet ; minimum rod size, 1/4 inch.
- 2. NPS 1: Maximum span, 6 feet ; minimum rod size, 1/4 inch. 3. NPS 1-1/4: Maximum span, 7 feet; minimum rod size, 3/8 inch. 4. NPS 1-1/2: Maximum span, 8 feet; minimum rod size, 3/8 inch.
- O. Vertical-Piping Clamps: Install the following types: 1. Extension Pipe or Riser Clamps (MSS Type 8).

# P. Support vertical runs at roof, at each floor, and at midpoint intervals between floors, not to exceed 5 feet.

# Q. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified.

- R. Use hangers, supports, and attachments with galvanized coatings unless otherwise indicated.
- S. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- T. Trim excess length of continuous-thread hanger and support rods to 1 inch.
- U. Hanger-Rod Attachments: Install the following types:
- 1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
- 2. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.
- 3. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments. 4. Steel Weldless Eye Nuts (MSS Type 17): For 120 to 450 deg F piping installations.
- V. Building Attachments: Install the following types:
- 1. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
- 2. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles. 3. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
- 4. Top-Beam Clamps (MSS Type 25): For top of beams if hanger rod is required tangent to flange edge.
- 5. Side-Beam Clamps (MSS Type 27): For bottom of steel I-beams.
- 6. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
- 3.7 INSTALLATION OF PIPING AND TUBING INSULATION
- A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated. Installation to maintain a continuous vapor barrier. B. Insulation Installation on Pipe Fittings and Elbows:
- 1. Install mitered sections of pipe insulation.
- 2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to
- surface being insulated. C. Insulation Installation on Valves and Pipe Specialties:
- 1. Install preformed valve covers manufactured of same material as pipe insulation when available.
- 2. When preformed valve covers are unavailable, install cut sections of pipe and sheet insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
- 3. Secure insulation to valves and specialties and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- D. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints; for horizontal applications. Seal with manufacturer's recommended adhesive. 1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.
- E. Where metal jackets are indicated, install with 2-inch overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless-steel bands 12 inches o.c. and at end joints.
- 3.8 ELECTRICAL INSTALLATION
- A. Comply with requirements indicated on Drawings and in applicable Division 26 Sections.
- B. To extent electrical power is required for system equipment, components, and controls, and is not indicated on Drawings and addressed in the Specifications, the design for such electrical power shall be delegated to HVAC system provider. 1. Delegated design of electrical power to equipment, components and controls, and associated installation shall be included at no additional cost to Owner.
- C. Connect field electrical power source to each separate electrical device requiring field electrical power. Coordinate termination point and connection type with Installer.
- D. Comply with requirements in Section "Low-Voltage Electrical Power Conductors and Cables" for wiring connections
- E. Comply with requirements in Section "Grounding and Bonding for Electrical Systems" for grounding connections.
- F. Install nameplate or acrylic label with self-adhesive back for each electrical connection indicating electrical equipment designation and circuit number feeding connection 1. Nameplate shall be laminated phenolic layers of black with engraved white letters. Letters at least 1/2 inch high.
- 2. Locate nameplate or label where easily visible. G. Comply with requirements in Section "Raceways and Boxes for Electrical Systems" for raceway selection and installation requirements for boxes, conduits, and wireways as supplemented or revised in this Section.
- 3. Outlet boxes shall be no smaller than 2 inches wide, 3 inches high, and 2-1/2 inches deep. 4. Flexible metal conduit shall not be used.
- H. Comply with TIA-569-D for pull-box sizing and length of conduit and number of bends between pull points.
- I. Install manufactured conduit sweeps and long-radius elbows if possible.
- J. Install metal conduits with grounding bushings and connect with grounding conductor to grounding system.
- 3.9 INSTALLATION OF SYSTEM CONTROL CABLE
- A. Comply with NECA 1.
- B. Installation Method:
- 1. Install cables in raceways except as follows:
- a. Within equipment and associated control enclosures.
- b. In accessible ceiling spaces where open cable installation method may be used 2. Conceal raceway and cables except in unfinished spaces.
- C. Balanced Twisted-Pair Cable Installation:
- 1. Comply with TIA-568-C.2.
- 2. Do not untwist balanced twisted-pair cables more than 1/2 inch at the point of termination to maintain cable geometry. D. Separation from EMI Sources: Comply with BICSI TDMM and TIA-569-D recommendations for separating unshielded cable from potential EMI sources including electrical power wiring and equipment
- 3.11 GROUNDING INSTALLATION
- E. For data communication wiring, comply with TIA-607-B and with BICSI TDMM, "Bonding and Grounding (Earthing)" Chapter F. For low-voltage control cabling, comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."
- 3.12 IDENTIFICATION
- A. Identify system equipment, piping, tubing, and valves. B. Identify system electrical and controls components, wiring, cabling, and terminals.
- 1. Identify each control cable on each end and at each terminal with a number-coded identification tag. Each cable shall have a unique tag.
- 3.13 STARTUP SERVICE
- A. Engage a HVAC system manufacturer's service representative to perform system(s) startup service. 1. Service representative shall be an employee or a factory-trained and -authorized service representative of HVAC system manufacturer.
- 2. Complete startup service of each separate system.
- 3. Complete system startup service according to manufacturer's written instructions.
- B. Startup checks shall include, but not be limited to, the following: 1. Check control communications of equipment and each operating component in system(s).
- 2. Check each indoor unit's response to demand for cooling and heating.
- 3. Check each indoor unit's response to changes in airflow settings.
- 4. Check each indoor unit and outdoor unit for proper condensate removal.
- 5. Check sound levels of each indoor and outdoor unit.
- C. Installer shall accompany manufacturer's service representative during startup service and provide manufacturer's service representative with requested documentation and technical support during startup service.
- 1. Installer shall correct deficiencies found during startup service for reverification. D. System Operation Report:
- 1. After completion of startup service, manufacturer shall issue a report for each separate system.
- 2. Report shall include complete documentation describing each startup check, the result, and any corrective action required. 3. Manufacturer shall electronically record not less than [two] < Insert number> hours of continuous operation of each system and submit with report for
- historical reference. a. All available system operating parameters shall be included in the information submitted.
- E. Witness:
- 1. Invite **Owner** to witness startup service procedures.
- 2. Provide written notice not less than 10 business days before start of startup service.
- 3.14 ADJUSTING
- A. Adjust equipment and components to function smoothly and lubricate as recommended by manufacturer.
- B. Adjust initial temperature and humidity set points. Adjust initial airflow settings and discharge airflow patterns.
- C. Set field-adjustable switches and circuit-breaker trip ranges according to VRF HVAC system manufacturer's written instructions, and as indicated.

# 2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): If longer ends are required for riser clamps.

- 3.15 PROTECTION
- A. Protect products from moisture and water damage. Remove and replace products that are wet, moisture damaged, or mold damaged. B. Protect equipment from physical damage. Replace equipment with physical damage that cannot be repaired to new condition. Observable surface
- imperfections shall be grounds for removal and replacement.

- 1. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.

- C. Protect equipment from electrical damage. Replace equipment suffering electrical damage.
- D. Cover and seal openings of equipment to keep inside of equipment clean. Do not remove covers until finish work is complete.
- 3.16 DEMONSTRATION
- A. Engage a HVAC system manufacturer's employed training instructor or factory-authorized service representative to train Owner's maintenance
- personnel to adjust, operate, and maintain entire system. B. Instructor:
- 1. Instructor shall be factory trained and certified by HVAC system manufacturer with current training on the system(s), equipment, and controls that are installed C. Schedule and Duration:
- 1. Schedule training with Owner at least 10 business days before first training session.
- 2. Training shall occur before Owner occupancy. 3. Perform not less than 4 total hours of training.
- D. Location: Owner shall provide a suitable on-site location to host classroom training. E. Training Format: Individual training modules shall include classroom training followed by hands-on field demonstration and training.
- F. Training Materials: Provide training materials in electronic format to each attendee.
- G. Acceptance: Obtain **Owner** written acceptance that training is complete and requirements indicated have been satisfied.

END OF SECTION 238129



Project Address:		JFS Restroom							RCC-PRF-01-E		Page 3 of 1			
Input File Name:		8788 Balboa JFS Restroom		Diego 921	123			Ca	alculation Date	e/Time:	08:26, Thu,	Jun 16,	, 2022	
C3. ENERGY USE				St	andard Design S	ite P	roposed D	)esign Sit	te Marg	in	Standard Des	sign Site	e Pro	posed Desi
E		Component e Heating			(MWh)		(MW) 0.3	Vh)	(MW -0.3	h)	(MBtu 16.2	ı)		(MBtu)
	-	e Cooling or Fans			0.1		0.1		0.0					
	Heat F	Rejection s & Misc.												
D	Domesti	c Hot Water												
	Compli	r Lighting <b>ance Total</b>			0.3 <b>2.1</b>		0.3 1.7		0.0 <b>0.4</b>		 16.2			0.0
		eptacle ocess												
		ner Ltg ss Motors												
	т	OTAL			2.1		1.7	7	0.4		16.2			0.0
D. EXCEPTIONAL This project uses the requirements are required. E. HERS VERIFIC/ This Section Does I	he Simp met. PRI <b>ATION</b>	lified Geome ESCRIPTIVE C	try Performa OMPLIANCE	ance Mode documen	eling Approach w tation (form NRC	hich is not C-LTI-02-E)	capable of for the rea	f modelii quireme	ng daylighting nts of section	controls 140.6(d)	and assumes Automatic Da	the pre-	escriptive Se	econdary I in Second
CA Building Energy Project Name: Project Address: Input File Name:		cy Standards- JFS Restroom 8788 Balboa JFS Restroom	ns Avenue San			Repo	ort Version	N	PRF-01-E-1209 RCC-PRF-01-E alculation Date		44 Page 6 of 1 08:26, Thu,	2	Report Gene	erated at: 2
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1 Equipment Nat	me	2 Equipme		3 Qty	4 Total Heating Output (kBtu/h)	5 H Supp H Outpu (kBtul	ut En	6 ficiency Unit	7 Efficiency	8 Tota Coolin Outp	l ng ut Efficien	oling	10 Efficien	cy Eco
HP-1 / FC-1&		VF	RF	1	22	NA		HSPF	9.65	<b>(kBtu</b> ) 18	( <b>h)</b> EE	R	11.35	;
<sup>1</sup> Status: N - New, A – Alt														
1	2	3	4		5	6	7		8	9	10		11	12
		_			Su	pply Fan							<b>Return Fan</b>	
Name or Item Tag	g Qty	Design OA		Mode		pply Fan Power	Power Units		Control	СҒМ	Modeling Me		Return Fan Power	Powe Units
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Name or Item Tag 2-FC-1-VRF	1	Design OA           CFM           167           205	<b>CFM</b> 335	Brakel	ling Method HorsePower	<b>Power</b> 0.057	<b>Units</b> bhp	_	TwoSpeed	NA	NA		<b>Power</b> NA	Powe Unit
Name or Item Tag 2-FC-1-VRF 3-FC-2-VRF	1 1 tered, E – 1	Design OA CFM 167 205 Existing	<b>CFM</b> 335	Brakel	ling Method HorsePower	<b>Power</b> 0.057	<b>Units</b> bhp		TwoSpeed	NA	NA		<b>Power</b> NA	Powe Unit NA
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Name or Item Tag 2-FC-1-VRF 3-FC-2-VRF <sup>1</sup> Status: N - New, A – Alt H3. EXHAUST FA 1 System FC-1 FC-2: <sup>1</sup> Status: N - New, A – Alt H4. Wet System This Section Does I	1 1 tered, E – 1 N SUM n ID 13 22 tered, E – 1 Equipn Not App	Design OA CFM 167 205 Existing IMARY Existing	CFM 335 335	2 Zone Nar 2-FC-2	ling Method HorsePower HorsePower	Power 0.057 0.057 3 Qty 1	Units bhp bhp 4 CFM 250	м 0	TwoSpeed TwoSpeed 5 Motor BHI 0.050	NA NA Pov	NA NA 6 ver Per Flow (W/cfm) 0.174	ethod	Power NA NA 7 I Static Pres	Pow Unit NA NA
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Provide in the second control of the product of th				CATIONS <sup>1</sup>					This	project is pu	rsuing CalGree	en Tier 2			
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i         z         i         s         f         f         s         f         s         g           Sufface Name         Sufface Type         Area (th')         Frenchet         Centimotory         Units         Value         Description of Assembly Laye           Sufface Name	Project Address:	8788 6	Balboa Avenue		92123							2022			
Surface Name         Surface Type         Area (IC)         Family Evolution         Units         Value         Description of Assembly Lype           B:33 Wall91         InterforVall         350         Wood         13         MA         U Hactor         0.075         Wood finance and Jin Go. C.S. 3           Suite OF Grade21         UndergroundFloor         223         NA         0         NA         PFactor         0.73         Suite Streame 27 PM In. Suite OF Grade21         UndergroundFloor         223         NA         0         NA         PFactor         0.73         Suite Streame 27 PM In. Suite OF Grade21         UndergroundFloor         223         NA         0         NA         PFactor         0.73         Suite Streame 27 PM In. Suite OF Grade21         UndergroundFloor         2         3           Assembly Name         1         2         3         <	G3. OPAQUE S		IBLY SUMM		<b>)</b>	2			c	7	•		0		- 
Image: State in the intervention of the state in the state i	S						Framing	Cavity	Continuous			Description		ly Layers	10 Status <sup>1</sup>
Image: Stab On Grade21       UndergroundTioor       23       NA       0       NA       Fractor       0.3       Sub Type = Understanding Angle A		R-13 Wall91					Туре			U-Factor	0.095	Stu Vapor peri	cco - 7/8 ir neable felt	- 1/8 in.	
Sub On Gradis 21         Underground Rison         2.23         NA         0         NA         Fractor         0.73         Instablish colonitation         Number of the set of the												Gypsur	R-13 n Board - 1	/2 in.	
<sup>1</sup> Show X. Yook AAlterd EDamag         G6. OPAQUE DOOR SUMMARY         1       2         Assembly Name       Overall Usetor         5. FENESTRATION ASSEMBLY SUMMARY         1       2         4       0.700         N         65. FENESTRATION ASSEMBLY SUMMARY         1       2         4       5         66. FENESTRATION ASSEMBLY SUMMARY         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2         4       0         1       2     <	Sla	b On Grade21		Undergro	oundFloor	223	NA	о	NA	F-Factor	0.73	Insulation	Orientatior	i = None	N
1     2     3       Assembly Name     Overall U-factor     Status <sup>3</sup> Metal Door13     0.700     N       GS. FENESTRATION ASSEMBLY SUMMARY     1     2     3       G. FENESTRATION ASSEMBLY SUMMARY     2     3     4     5     6     7     8       Fenestration Assembly Name / Tag     Fenestration Type / Product Type / Frame Type     Certification Method!     Assembly Method     Area ft <sup>3</sup> Overall     Overall       Commercial Prescriptive     Vertical/Generation     Fenestration Method!     Assembly Method     Area ft <sup>3</sup> Overall     Overall     Overall       * for print the prescriptive     Vertical/Generation     Fenestration Method!     Assembly Method     Area ft <sup>3</sup> Overall     Overall       * for print the prescriptive     Vertical/Generation     NR     NR     Manufactured     37     0.36     0.25     0.55       * for print the prescriptive     Vertical/Generation     NR     NR     Manufactured     37     0.36     0.25     0.55       * for print the prescriptive     Vertical/Generation     NR     NR     Manufactured     37     0.36     0.55       * for print the prescriptive and print the scription     NR     Report Generated at 2022-05-16     NR     NR     NR     NR	<sup>1</sup> Status: N - New, A – J	Altered, E – Existing	I			- 1			. <u> </u>	I	I				
Assembly Name         Overall U-factor         Statul           Metal Door13         0.700         N           Statul           Overall U-factor           Statul           Overall U-factor           No	G4. OPAQUE D	OOR SUMMA	RY												
G5. FENESTRATION ASSEMBLY SUMMARY         1       2       3       4       5       6       7         Fenestration Assembly Name / Tag       Fenestration Type / Product Type / Certification Method <sup>1</sup> Assembly Method       Area ft <sup>2</sup> Overall       <			lame						tor					L	
1         2         3         4         5         6         7         8           Fenestration Assembly Name / Tag         Fenestration Type / Product Type / or LD.         Certification Method!         Assembly Method         Area R <sup>2</sup> Overall Overall         Overall Overall         Overall         Ove		Metal Doo	or13					0.700					N		
Fenestration Assembly Name / Tig         Fenestration Type / Product Type / Frame Type         Certification Method <sup>1</sup> Assembly Method         Area ft <sup>2</sup> Overall U-factor         Overall Side         Overall Overall U-factor         Overall Side         Overall U-factor         Overall Side         Overalll	G5. FENESTRAT	ION ASSEMBL	Y SUMMAR	Y											
or LD.         Frame Type         Leftmittation interior         Assembly Method         Afeatr         U-factor         Stell         Vir           Commercial Prescriptive         Vertical Fenestration N/A         NFRC Rated         Manufactured         37         0.36         0.25         0.53 <sup>1</sup> Newly installed fenestration of the base with one a calculated per formational Appendix MdL and er accel in the manufacture, and ere acccel	Fenestration As		Tag Fenes			: Type /						Overall		8 Overall	9 Sta
<sup>1</sup> Note y isolated for sources and the control of the formation of the control of the formation of the second in the analyse. <sup>1</sup> Note y isolated formations shall have a control of the formation				Fram	е Туре		ertification Me	thod1	Assembly	Method	Area ft <sup>2</sup>			VT	atus <sup>2</sup>
a structure of webses are calculated per Nonresidential Agendity MAG and are used in the analysis. <sup>2</sup> struct: WNew, A - Altered, I - Existing         CA Building Energy Efficiency Standards- 2019 Nonresidential Compliance       Report Version: NRCC-PRF-01-E-12092021-6844       Report Generated at: 2022-06-16 0         Project Name:       JFS Restrooms       NRCC-PRF-01-E       Page 8 of 12       Project Name:       Description         Project Name:       JFS Restrooms       NRCC-PRF-01-E       Page 8 of 12       Project Name:       Description         Houter       JFS Restrooms, cibd19x       Calculation Date/Time:       08:26, Thu, Jun 16, 2022       Description         Houter       JFS Restrooms, cibd19x       Imput File Name:       JFS Restrooms, cibd19x       Imput File Name         Hater       JFS Restrooms, cibd19x       JFS Restrooms, cibd19x       JFS Restrooms, cibd19x       JFS Restrooms, cibd19x         Manne       JFS Restrooms, cibd19x       JFS Restrooms, cibd19x       JFS Restrooms, cibd19x       JFS Restrooms, cibd19x         JS Report To Does Not Apply       JS Report Tank Type       Qty       Tank Vol       Rated Input Ginput Rated Input Ginput Rated Input R	Commerc	ial Prescriptive		FixedV	Vindow		NFRC Rated	ł	Manufac	tured	37	0.36	0.25	0.50	N
Project Address:         8788 Balboa Avenue San Diego 92123         Calculation Date/Time:         08:26, Thu, Jun 16, 2022           Input File Name:         JFS Restrooms.cibd19x               H11. HEAT RECOVERY SUMMARY	<sup>2</sup> Status: N - New, A – J	Altered, E – Existing						n: NRCC-PRF-	01-E-1209202	1-6844	Re	eport Generate	d at: 2022-	06-16 08:20	6:38
Image: Section Does Not Apply         In WATER HEATER EQUIPMENT SUMMARY         1       2       3       4       5       6       7       8       9       10       11       12       13         1       2       3       4       5       6       7       8       9       10       11       12       13         Name       Heater Element Type       Tank Type       Qty       Tank Vol (gal)       Rated Input Rated Input Unit       Efficiency Unit       Tank Insulation Roter (Int/Ext)       Standby Loss Fraction       Ist Hour Rating or Flow Rate (gal)       Heat Pump Type       Leater Heat Pump Rated Input Unit       Efficiency Unit       NA       NA <td></td> <td></td> <td></td> <td>e San Diego</td> <td>92123</td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td>2022</td> <td></td> <td></td> <td></td>				e San Diego	92123					_		2022			
This Section Does Not Apply         I1. WATER HEATER EQUIPMENT SUMMARY         1       2       3       4       5       6       7       8       9       10       11       12       13         Name       Heater Element Type       Tank Type       Qty       Tank Vol (gal)       Rated Input (gal)       Rated Input Unit       Efficiency Unit       Tank Insulation R-value (Int/Ext)       Standby Is Hour Rating or Flow Rate (gal)       Heat Pump Type       L         AO SMITH DEN-522       - specify-       I       I       I       I       I       NA       Int       Int <td>· · · · · · · · · · · · · · · · · · ·</td> <td></td> <td></td> <td>L9x</td> <td></td>	· · · · · · · · · · · · · · · · · · ·			L9x											
12345678910111213NameHeater Element TypeTank TypeQtyTank Vol (gal)Rated Input (gal)Rated Input UnitEfficiency UnitEfficiency UnitTank Insulation UnitStandby Loss FractionIst Hour Rating or Flow Rate (gal)Heat Pump TypeLAO SMITH DEN-522- specify-II			AKY												
NameHeater Element TypeTank TypeQtyTank Vol (gal)Rated Input (gal)EfficiencyEfficiency UnitTank Insulation (Int/Ext)Standby Loss FractionIst Hour Rating or Flow Rate (gal)Heat Pump TypeLAO SMITH DEN-522- specify -Image: Specify -<	I1. WATER HEA	TER EQUIPME		RY											
NameHeater Element TypeTank TypeQtyTank Vol (gal)Rated Input (gal)Rated Input UnitEfficiency UnitEfficiency UnitInsulation R-value (Int/Ext)Standby Loss FractionRating or Flow Rate (gal)Heat Pump TypeLAO SMITH DEN-522- specifyIINANANANANANANANANANANANANAImage: specify -Image: specify -	1		3	4	5	6	7	8	9			1st Hour	_		14 Fank
AO SMITH DEN-522     - specify -     Image: Specify -	Name	Element	Tank Type	e Qty		Rated Input		Efficiency		Insulation R-value	Loss	Rating or Flow Rate	Heat P	ump Loca e Am	ation o nbient ndition
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	DEN-522	,··· <i>1</i>			<u> </u>				<u> </u>						
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K1. INDOOR CONDITIONED LIGHTING GENERAL INFO123456			IGHTING GE		o	3			4		5			6	
Occupancy Type <sup>1</sup> Conditioned Floor Area <sup>2</sup> (ft <sup>2</sup> ) Installed Lighting Power Lighting Control Credits Additional (Custom) Allowance			Conditioned		<sup>2</sup> (ft <sup>2</sup> )	Installed Ligh	ting Power		Control Credi	ts	Ado			ce	
Restrooms2231450Area Category Footnotes (Watts)Tailored Method		. ,, -			· /					Are	(Watts)		Tailored I		atts)
Restrooms         223         145         0         0         0         0         0           Building Totals:         223         145         0         <		Building Totals:													
<sup>1</sup> See Table 140.6-C <sup>2</sup> See NRCC-LTI-01-E for unconditioned spaces	<sup>1</sup> See Table 140 6-C														

CA Building Energy Efficiency Standards- 2019 Nonresidential Compliance Report Version: NRCC-PRF-01-E-12092021-6844

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| List Biolog         307         128         0           South Garge         2011         219         0         0           Note: Forcing         001         2011         219         0         0           Note: Forcing         001         22.11         219         0         0           Note: Forcing         000         100         0         0         0         0           Note: Forcing         0.000         100         0         0         0         0           Note: Forcing is oriented to with a fighters of three statil, holding a SV0000 with and static fighter and statility a SV0000 with and statility a SV00  |   
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| R-13 Wall9       ExteniorWall       650       Wood       13       NA       U-Factor       0.102       Wood momental Life (C.S.Br., N.B.)         R-30 Roof No Attict7       Roof       242       Wood       30       NA       U-Factor       0.102       Wood from wall, Ein (C.S.Br., N.B.)         R-30 Roof No Attict7       Roof       242       Wood       30       NA       U-Factor       0.034       Wood from Celling - 4 m. or   
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  |   | 0 <b>5.7%</b><br>00.0%   |  |   |      |  |   |       |
| B-30 Roof No Atils17       Roof       242       Wood       30       NA       U Festor       0.03       Wapper permeable filt 128 m. Nr. Nr. C-2MP. Mill Roof Colling - in. Nr. C-2MP. Mill Roof Colling - in. Nr. C-2MP. Mill Roof Colling - in. Nr. Mill Roof Colling  | lote<br>Nor<br>East<br>Sou<br>Wes  
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  | ed to within 45<br>ated to within<br>ted to within 4<br>E ASSEMBLY S  | 45 degre<br>5 degrees<br>45 degree<br>15 degree  | s of true east, inclua<br>es of true south, inc<br>es of true west, inclu<br>RY<br>2  | ling 45°00'0<br>cluding 45°0<br>uding 45°00'<br><b>3</b>  
   | 242 ft <sup>2</sup><br>10'00" east of 1<br>10" south of ec<br>10'00" west of<br>'00" north of c<br>4<br>Framing  | ast (SE),<br>south (S<br>due west<br>due st<br>5<br>Cavity                                   
  | but excluding 4<br>W), but excludi<br>(NW), but excl<br>(NW), but excl<br>6<br>Continuous  | 5°00'00"<br>ng 45°00<br>uding 45°<br><b>7</b>  | 0 ft<br>00" west of<br>north of ea<br>'00" east o<br>200'00" sou   
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| roject Name:<br>PS Restrooms <   
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  | ed to within 45<br>ated to within<br>ted to within 4<br>E ASSEMBLY S<br>Name  | 45 degre<br>5 degrees<br>45 degree<br>15 degree  | s of true east, inclua<br>es of true south, inc<br>es of true west, inclu<br>RY<br>2<br>Surface Type  | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>3<br>Area (ft²)   
   | 242 ft <sup>2</sup><br>00'00" east of 1<br>00" south of ea<br>00'00" west of<br>'00" north of a<br><b>4</b><br><b>Framing</b><br><b>Type</b>  
  | sst (SE),<br>south (S<br>lue west<br>S<br>5<br>Cavity<br>R-Valu   | but excluding 4<br>W), but excludi<br>(NW), but excl<br>(NW), but excl<br>Continuous<br>R-Value  | 5°00'00"<br>ng 45°00<br>uding 45°<br>7<br>Units  | 0 ft<br>00" west of<br>north of ea<br>'00" east o<br>200'00" sou<br>8<br>00'00" sou<br>8<br>Valu   
  | north (NW)<br>st (NE).<br>South (SE).<br>th of west (Section 1997)<br>Desc<br>Desc<br>Vap<br>Wood   | SW).<br>cription of<br>Stucco<br>por permea<br>framed wa<br>F<br>Gypsum B<br>Asphalt shi   | Assembly Lay<br>7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>-13<br>toard - 1/2 in.<br>ingles - 1/4 in.  
  | yers<br>in.<br>3.5in.,  | 10   |  |   |      |  |   |       |
| System Name         Equipment Type         §140.4(n)         Other Special Features and Controls           HP:1 / FC:18.2         VRF         NA         Heat Recovery           Plant1 - SHW         Service Hot Water, Primary Only         NA         Fixed Temperature Controls           res: This table includes controls regimements are documented on the NRC-MCHE.         Fixed Temperature Control         Fixed Temperature Control           7. NONRESIDENTIAL VENTILATION         2         3         4         5         6         7           Cone Name         2         3         4         5         6         7           Methanistic Schwer rooms         0.50         167         250         100         NA           1         Exhaust - Shower rooms         0.61         205         250         123         NA           1         2         3         4         5         6         7         South Schwer         South Schwer           1.FC-1         Exhaust - Shower rooms         0.61         205         250         100         NA           1.FC-2         Exhaust - Shower rooms         0.61         205         250         123         NA           1         2         3         4         5         6  
  | ote<br>Nor<br>East<br>Sou<br>Wes  | es:<br>eth-Facing is orien<br>t-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFAC</b><br>1<br>Surface N<br>R-13 W  
  | ed to within 45<br>ated to within 4<br>E ASSEMBLY S<br>Name   | 45 degre<br>5 degrees<br>45 degree<br>15 degree  | s of true east, includ<br>res of true south, inc<br>es of true west, inclu<br>RY<br>2<br>Surface Type<br>ExteriorWall   | ling 45°00'0<br>cluding 45°0<br>uding 45°00'<br>3<br>Area (ft²)<br>650  
   | 242 ft <sup>2</sup><br>00'00" east of 1<br>00" south of ec<br>10'00" west of<br>'00" north of c<br>4<br>Framing<br>Type<br>Wood   
  | sst (SE),<br>south (S<br>due west<br>due west<br>5<br>Cavity<br>R-Valu  | but excluding 4.<br>W), but excludi<br>(NW), but excl<br>Continuous<br>R-Value<br>NA   | 5°00'00"<br>ng 45°00<br>uding 45°<br>Units<br>U-Facto  | 0 ft<br>00" west of<br>north of ea<br>'00" east o<br>'00'00" sou<br>'00'00" sou<br>8<br>Valu   
  | north (NW)<br>st (NE).<br>south (SE).<br>th of west (S<br>Desc<br>2<br>2<br>2<br>2<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4<br>4   | SW).<br>cription of<br>Stucco<br>framed wa<br>framed wa<br>R<br>Gypsum B<br>Asphalt shi<br>por permea<br>Plywoo<br>avity - Wal<br>or<br>ramed roo<br>R   | Assembly Lay<br>- 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>-13<br>   
  | 9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9   | 10 Status <sup>1</sup>   |  |   |      |  |   |       |
| Plant1 - SHW         Service Hot Water, Primary Only         NA         Fixed Temperature Control           test: This table includes controls related to the performance path only. For projects using the prescriptive path, mandetary and prescriptive controls requirements are documented on the NRC-MCHE.         7           1         2         3         4         5         6         7           Mechanical Ventilation           Zone Name         Ventilation Function         # of people         Supply OA         Exhaust controls requirements are documented on the NRC-MCHE.         DCV or Occupant Sense Controls, or Both           1-FC-1         Exhaust - Shower rooms         0.50         167         250         100         NA           2-FC-2         Exhaust - Shower rooms         0.61         205         250         123         NA           IB. HIGH-RISE RESIDENTIAL DWELLING UNIT AND HOTEL/MOTEL VENTILATION           IB. Addition Function           IS controls rooms         0.61         205         250         123         NA           IB. HIGH-RISE RESIDENTIAL DWELLING UNIT AND HOTEL/MOTEL VENTILATION           IB. Resident And TERMINAL UNIT SUMMARY           ID 2         3         4         5         6         7         8         9         10   
  | A Bui   | es:<br>rth-Facing is orient<br>t-Facing is orient<br>ith-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>DPAQUE SURFACE</b><br><b>1</b><br>Surface N<br>R-13 W<br>R-13 W<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No  
  | ed to within 45<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>/all9<br>o Attic17<br>o Attic17<br>ency Standards-<br>JFS Restroom<br>8788 Balboa<br>JFS Restroom  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, include<br>es of true south, ind<br>es of true west, inclue<br>es of true west, inclue<br>RY<br>2<br>Surface Type<br>ExteriorWall<br>Roof<br>nresidential Complian  | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>3<br>Area (ft <sup>2</sup> )<br>650<br>242   
  | 242 ft <sup>2</sup> 0'00" east of h 00" south of ea 0'00" west of '00" north of a  4 Framing Type Wood Wood Report Versior   | nst (SE),<br>south (S<br>lue west<br>5<br>Cavity<br>R-Valu<br>13<br>30  
   | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>6<br>Y Continuous<br>R-Value<br>NA<br>PRF-01-E-1209202<br>RCC-PRF-01-E   | 5°00'00"<br>ng 45°00<br>uding 45°<br>Units<br>U-Facto<br>U-Facto   | 0 ft<br>00" west of<br>north of ea<br>'00" east o<br>200'00" sou<br>200'00" sou<br>200'0" sou<br>200'0" sou<br>200       | north (NW)<br>st (NE).<br>south (SE).<br>th of west
(S<br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Des</b> | SW).<br>cription of<br>Stucco<br>framed wa<br>framed wa<br>Gypsum B<br>Asphalt shi<br>oor permea<br>Plywoo<br>avity - Wal<br>or<br>ramed roo<br>Gypsum B   | Assembly Lay<br>- 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>-13<br>toard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>-30<br>toard - 1/2 in.   | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>L.25in.,   | 00.0%  |   
  |   |      |  |   |       |
| tes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the NRCC-MCH-E.           TONORESIDENTIAL VENTILATION           1         2         3         4         5         6         7           Mechanical Ventilation           Ventilation Function         # of people         Supply OA         Exhaust         Conditioned Area (sf)         DCV or Occupant Sense Controls, or Both           1-FC-1         Exhaust - Shower rooms         0.50         167         250         100         NA           2-FC-2         Exhaust - Shower rooms         0.61         205         250         123         NA           Section Does Not Apply           Femile         Femile         Femile         Femile         Section Does Not Apply           System ID         Zone Name         System Type         Qu         Rated capacity (kBruh)         Airflow (cfm)         Fender           System ID         Zone Name         System Type         Qu         Rated capacity (kBruh) <th colspan="6" in="" prescriptive="" rindis="" rindow="" system="" td="" the="" type<=""><td>A Bui</td><td>es:<br/>rth-Facing is orient<br/>t-Facing is orient<br/>ith-Facing is orient<br/>st-Facing is orient<br/><b>DPAQUE SURFACE</b><br/><b>DPAQUE SURFACE</b><br/><b>1</b><br/>Surface N<br/>R-13 W<br/>R-13 W<br/>R-30 Roof No<br/>R-30 Roof No<br/>ct Name:<br/>ct Address:<br/>File Name:<br/>SYSTEM SPECIAL I<br/>1</td><td>ed to within 45<br/>ated to within 4<br/>E ASSEMBLY S<br/>Name<br/>/all9<br/>o Attic17<br/>ency Standards-<br/>JFS Restroom<br/>8788 Balboa<br/>JFS Restroom<br/>FEATURES</td><td>45 degrees<br/>5 degrees<br/>45 degrees<br/>5 de</td><td>s of true east, inclue<br/>es of true south, inc<br/>es of true west, inclue<br/>es of true west, inclue<br/>RY<br/>2<br/>Surface Type<br/>ExteriorWall<br/>Roof<br/>nresidential Complian</td><td>ling 45°00'0<br/>cluding 45°0<br/>iding 45°00'<br/>3<br/>Area (ft<sup>2</sup>)<br/>650<br/>242</td><td>242 ft<sup>2</sup> 0'00" east of ion south of each of the south of t</td><td>ss (SE),<br/>south (S<br/>lue west<br/>5<br/>Cavity<br/>R-Valu<br/>13<br/>30<br/>30</td><td>but excluding 4.<br/>W), but excludi<br/>(NW), but excludi<br/>Continuous<br/>R-Value<br/>NA<br/>NA<br/>PRF-01-E-1209202<br/>RCC-PRF-01-E<br/>alculation Date/T</td><td>5°00'00"<br/>ng 45°00<br/>uding 45°<br/>Units<br/>U-Facto<br/>U-Facto</td><td>0 ft<br/>00" west of<br/>north of ec<br/>'00" east o<br/>'00'00" sou<br/>'00'00" sou<br/>'00'0" s</td><td>north (NW)<br/>st (NE).<br/>south (SE).<br/>th of west (S<br/>Desc<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q</td><td>SW).</td><td>Assembly Lay<br/>5 - 7/8 in.<br/>able felt - 1/8 i<br/>iall, 16in. OC, 3<br/>3 - 13<br/>3 - 1/2 in.<br/>ingles - 1/4 in.<br/>able felt - 1/8 i<br/>od - 1/2 in.<br/>II Roof Ceiling -<br/>more<br/>of, 16in. OC, 11<br/>3 - 30<br/>10 - 1/2 in.<br/>at: 2022-06-16</td><td>0<br/>yers<br/>in.<br/>3.5in.,<br/>in.<br/>- 4 in.<br/>L.25in.,</td><td>00.0%</td></th> | <td>A Bui</td> <td>es:<br/>rth-Facing is orient<br/>t-Facing is orient<br/>ith-Facing is orient<br/>st-Facing is orient<br/><b>DPAQUE SURFACE</b><br/><b>DPAQUE SURFACE</b><br/><b>1</b><br/>Surface N<br/>R-13 W<br/>R-13 W<br/>R-30 Roof No<br/>R-30 Roof No<br/>ct Name:<br/>ct Address:<br/>File Name:<br/>SYSTEM SPECIAL I<br/>1</td> <td>ed to within 45<br/>ated to within 4<br/>E ASSEMBLY S<br/>Name<br/>/all9<br/>o Attic17<br/>ency Standards-<br/>JFS Restroom<br/>8788 Balboa<br/>JFS Restroom<br/>FEATURES</td> <td>45 degrees<br/>5 degrees<br/>45 degrees<br/>5 de</td> <td>s of true east, inclue<br/>es of true south, inc<br/>es of true west, inclue<br/>es of true west, inclue<br/>RY<br/>2<br/>Surface Type<br/>ExteriorWall<br/>Roof<br/>nresidential Complian</td> <td>ling 45°00'0<br/>cluding 45°0<br/>iding 45°00'<br/>3<br/>Area (ft<sup>2</sup>)<br/>650<br/>242</td> <td>242 ft<sup>2</sup> 0'00" east of ion south of each of the south of t</td> <td>ss (SE),<br/>south (S<br/>lue west<br/>5<br/>Cavity<br/>R-Valu<br/>13<br/>30<br/>30</td> <td>but excluding 4.<br/>W), but excludi<br/>(NW), but excludi<br/>Continuous<br/>R-Value<br/>NA<br/>NA<br/>PRF-01-E-1209202<br/>RCC-PRF-01-E<br/>alculation Date/T</td> <td>5°00'00"<br/>ng 45°00<br/>uding 45°<br/>Units<br/>U-Facto<br/>U-Facto</td> <td>0 ft<br/>00" west of<br/>north of ec<br/>'00" east o<br/>'00'00" sou<br/>'00'00" sou<br/>'00'0" s</td> <td>north (NW)<br/>st (NE).<br/>south (SE).<br/>th of west (S<br/>Desc<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q<br/>Q</td> <td>SW).</td> <td>Assembly Lay<br/>5 - 7/8 in.<br/>able felt - 1/8 i<br/>iall, 16in. OC, 3<br/>3 - 13<br/>3 - 1/2 in.<br/>ingles - 1/4 in.<br/>able felt - 1/8 i<br/>od - 1/2 in.<br/>II Roof Ceiling -<br/>more<br/>of, 16in. OC, 11<br/>3 - 30<br/>10 - 1/2 in.<br/>at: 2022-06-16</td> <td>0<br/>yers<br/>in.<br/>3.5in.,<br/>in.<br/>- 4 in.<br/>L.25in.,</td> <td>00.0%</td> |   |   |  |   |   | A Bui  | es:<br>rth-Facing is orient<br>t-Facing is orient<br>ith-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>DPAQUE SURFACE</b><br><b>1</b><br>Surface N<br>R-13 W<br>R-13 W<br>R-30 Roof No<br>R-30 Roof No<br>ct Name:<br>ct Address:<br>File Name:<br>SYSTEM SPECIAL I<br>1   | ed to within 45<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>/all9<br>o Attic17<br>ency Standards-<br>JFS Restroom<br>8788 Balboa<br>JFS Restroom<br>FEATURES  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>RY<br>2<br>Surface Type<br>ExteriorWall<br>Roof<br>nresidential Complian   | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>3<br>Area (ft <sup>2</sup> )<br>650<br>242  | 242 ft <sup>2</sup> 0'00" east of ion south of each of the south of t | ss (SE),<br>south (S<br>lue west<br>5<br>Cavity<br>R-Valu<br>13<br>30<br>30  | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T  | 5°00'00"<br>ng 45°00<br>uding 45°<br>Units<br>U-Facto<br>U-Facto | 0 ft<br>00" west of<br>north of ec<br>'00" east o<br>'00'00" sou<br>'00'00" sou<br>'00'0" s | north (NW)<br>st (NE).<br>south (SE).<br>th of west (S<br>Desc<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q | SW). | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>iall, 16in. OC, 3<br>3 - 13<br>3 - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>II Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>3 - 30<br>10 - 1/2 in.<br>at: 2022-06-16 | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>L.25in., | 00.0% |
| 1         2         3         4         5         6         7           Zone Name         Mechanical Ventilation         DCV or Occupant Sense Controls, or Both           1.FC-1         Exhaust - Shower rooms         0.50         167         250         100         NA           2.FC-2         Exhaust - Shower rooms         0.61         205         250         100         NA           1.FGH-RISE RESIDENTIAL DWELLING UNIT AND HOTEL/MOTEL VENTILATION         0.61         205         250         123         NA           18. HIGH-RISE RESIDENTIAL DWELLING UNIT AND HOTEL/MOTEL VENTILATION         0.61         205         250         100         1         12         1           2.ORAL SYSTEM AND TERMINAL UNIT SUMMARY         System Type         6         7         8         9         10         11         12         13           9.ZONAL SYSTEM AND TERMINAL UNIT SUMMARY         Image: Cooling Cool  | A Bui  
  | es:<br>rth-Facing is orient<br>t-Facing is orient<br>st-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACI</b><br>1<br>Surface N<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-14 W<br>R-14 W<br>R-15    | ed to within 45<br>ated to within 45<br>ted to within 4<br>E ASSEMBLY S<br>Name<br>Vall9<br>o Attic17<br>ency Standards-<br>JFS Restroom<br>8788 Balboa<br>JFS Restroom<br>FEATURES<br>me<br>&2  
  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, include<br>es of true south, inclue<br>es of true west, inclue<br>es of true west, inclue<br>RY<br>2<br>Surface Type<br>Exterior Wall<br>Roof<br>nresidential Complian<br>an Diego 92123<br>c<br>2<br>Equipment Type<br>VRF   | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>Area (ft <sup>2</sup> )<br>650<br>242<br>ce  
  | 242 ft <sup>2</sup><br>0'00" east of i<br>00" south of ea<br>0'00" west of<br>'00" north of a<br><b>4</b><br><b>Framing</b><br><b>Type</b><br>Wood<br>Wood<br>Report Versior<br>Sidu<br>Window Int<br>§140   | nst (SE),<br>south (S<br>lue west<br>5<br>Cavity<br>R-Valu<br>13<br>30<br>n: NRCC-F   | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T  
  | 5°00'00"<br>ng 45°00<br>uding 45°<br>Units<br>U-Facto<br>U-Facto   | Offwest of<br>north of ea<br>'00" east o<br>200'00" sou<br>200'00" sou<br>or 0.10<br>or 0.10<br>or 0.10<br>ge 7 of 12<br>s:26, Thu, Ju  | north (NW)<br>st (NE).<br>south (SE).<br>th of west (Second<br>b Descond<br>Conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>conditional<br>cond  
   | SW).  cription of Stuccc framed wa framed wa Gypsum B Asphalt shi oor permea Plywoo avity - Wal or ramed roo avity - Wal or se and Con very   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>-13<br>ioard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>-30<br>ioard - 1/2 in.<br>at: 2022-06-16<br>at: 2022-06-16   | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>L.25in.,   | 00.0%  |  |   |      |  |   |       |
| Mechanical Ventilation         DCV or Occupant Sense<br>Controls, or Both Sense<br>Sense<br>Sense<br>Sense Sense<br>Sense Sense<br>Sense Sense Sense<br>Sense Sense Sense<br>Sense Sense Sense<br>Sense Sense Sense<br>Sense Sense Sense Sense<br>Sense Sense Sense Sense<br>Sense Sense Sense Sense Sense Sense Sense Sense<br>Sense Sense Sens Sens   | A Bui  
  | es:<br>rth-Facing is orient<br>t-Facing is orient<br>st-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>DPAQUE SURFACE</b><br><b>1</b><br>Surface N<br>R-13 W<br>R-13 W<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-13 W<br>R-13 W   
                                    | ed to within 45<br>ated to within 4<br>ted to within 4<br>E ASSEMBLY S<br>Name<br>(all9<br>o Attic17<br>ency Standards-<br>B788 Balboa<br>JFS Restroom<br>8788 Balboa<br>B788 Balboa<br>Market S<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Standards-<br>Stan  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>RY<br>2<br>Surface Type<br>ExteriorWall<br>Roof<br>nresidential Complian<br>an Diego 92123<br>c<br>Equipment Type<br>VRF<br>vice Hot Water, Primar   | ling 45°00'0<br>cluding 45°00'<br>ading 45°00'<br>Area (ft <sup>2</sup> )<br>650<br>242<br>ce  
  | 242 ft <sup>2</sup><br>0'00" east of i<br>00" south of ea<br>0'00" west of<br>'00" north of a<br>Framing<br>Type<br>Wood<br>Wood<br>Wood<br>Wood<br>Wood<br>Wood<br>Wood<br>Woo  | ss (SE),<br>south (S<br>lue west<br>5<br>Cavity<br>R-Valu<br>13<br>30   | but excluding 4.<br>W), but excludi<br>(NW), but
excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T   | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08  | 0 ft<br>00" west of<br>north of ec<br>'00" east o<br>'00" or<br>0.10<br>or<br>0.10<br>or<br>0.10<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0   | north (NW)<br>st (NE).<br>south (SE).<br>th of west (S<br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>Desc</b><br><b>N</b><br><b>N</b><br><b>N</b><br><b>N</b><br><b>N</b><br><b>N</b><br><b>N</b><br><b>N</b>  
   | SW).  cription of Stuccc framed wa framed wa Gypsum B Asphalt shi oor permea Plywoo avity - Wal or ramed roo avity - Wal or se and Con very   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>-13<br>ioard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>-30<br>ioard - 1/2 in.<br>at: 2022-06-16<br>at: 2022-06-16   | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>L.25in.,   | 00.0%  |  |   |      |  |   |       |
| Ventilation Function         # of<br>people         Suppry QA         Exhaust         Conditioned Area<br>(sf)         Controls, or Both           1.FC.1         Exhaust - Shower rooms         0.50         167         250         100         NA           2.FC.2         Exhaust - Shower rooms         0.61         205         250         123         NA           8. HIGH-RISE RESIDENTIAL DWELLING UNIT AND HOTEL/MOTEL VENTILATION         Ventilation Function         Ventilation Function<  | Iote<br>Nor<br>East<br>Sou<br>Wes<br>i3. C   
  | es:<br>rth-Facing is orient<br>t-Facing is orient<br>ith-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>DPAQUE SURFACE</b><br><b>1</b><br>Surface N<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-14 W<br>R-14 W<br>R-14 W<br>R-14 W<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R   
  | ed to within 45<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>/all9<br>o Attic17<br>ency Standards-<br>B788 Balboa<br>JFS Restroom<br>8788 Balboa<br>JFS Restroom<br>FEATURES<br>me<br>&2<br>IW<br>ols related to the pe   | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>RY<br>2<br>Surface Type<br>Exterior Wall<br>Roof<br>Roof<br>nresidential Complian<br>an Diego 92123<br>C<br>Equipment Type<br>VRF<br>Vice Hot Water, Priman<br>ath only. For projects using to   | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>Area (ft <sup>2</sup> )<br>650<br>242<br>ce  
  | 242 ft <sup>2</sup><br>0'00" east of i<br>00" south of ea<br>0'00" west of<br>'00" north of a<br>Framing<br>Type<br>Wood<br>Wood<br>Wood<br>Wood<br>Wood<br>Wood<br>Wood<br>Woo  | sst (SE),<br>south (S<br>lue west<br>5<br>Cavity<br>R-Valu<br>13<br>30<br>30<br>n: NRCC-F   
   | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T<br>per  | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08   | Of west of<br>north of ea<br>'00" east o<br>200'00" sou<br>200'00" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou          | north (NW)<br>st (NE).<br>south (SE).<br>th of west (Second<br>a Descond<br>b Descond<br>b Descond<br>c Descond<br>c Descond<br>c Descond<br>c Descond<br>c Cond<br>c C-MCH-E.<br>c C-MCH-E.  
   | SW).  cription of Stuccc framed wa framed wa Gypsum B Asphalt shi oor permea Plywoo avity - Wal or ramed roo avity - Wal or se and Con very   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>-13<br>  | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>L.25in.,   | 00.0%  |  |   |      |  |   |       |
| 1-FC-1         Exhaust - Shower rooms         0.50         167         250         100         NA           2-FC-2         Exhaust - Shower rooms         0.61         205         250         123         NA           Image: Section Does Not Apply           Section Does Not Apply           Image: Section Does Not Apply           Imag   | Iote<br>Nor<br>East<br>Sou<br>Wes<br>i3. C   
  | es:<br>rth-Facing is orient<br>t-Facing is orient<br>ith-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>DPAQUE SURFACE</b><br><b>1</b><br>Surface N<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-14 W<br>R-14 W<br>R-14 W<br>R-14 W<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R<br>R   
  | ed to within 45<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>/all9<br>o Attic17<br>ency Standards-<br>B788 Balboa<br>JFS Restroom<br>8788 Balboa<br>JFS Restroom<br>FEATURES<br>me<br>&2<br>IW<br>ols related to the pe   | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>RY<br>2<br>Surface Type<br>Exterior Wall<br>Roof<br>Roof<br>nresidential Complian<br>an Diego 92123<br>C<br>Equipment Type<br>VRF<br>Vice Hot Water, Priman<br>ath only. For projects using to   | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>Area (ft <sup>2</sup> )<br>650<br>242<br>ce  
  | 242 ft <sup>2</sup> 0'00" east of h 00" south of ea 0'00" west of '00" north of a  4 Framing Type Wood Wood Wood Wood Wood N Report Versior 3 Window Int §140 N path, mandatory and  | ss (SE),<br>south (S<br>lue west<br>5<br>Cavite<br>R-Valu<br>13<br>30<br>30<br>5<br>: NRCC-F  
   | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>6<br>y Continuous<br>R-Value<br>NA<br>NA<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-12092           | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08   | Of west of<br>north of ea<br>'00" east o<br>200'00" sou<br>200'00" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou          | north (NW)<br>st (NE).<br>south (SE).<br>th of west (Second<br>a Descond<br>b Descond<br>b Descond<br>c Descond<br>c Descond<br>c Descond<br>c Descond<br>c Cond<br>c C-MCH-E.<br>c C-MCH-E.  
   | SW).   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>-13<br>ioard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>-30<br>-30<br>-30<br>-30<br>-30<br>-30<br>-30<br>-30   | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>  | 00.0%  |  |   |      |  |   |       |
| Image: Night and section poes Not Apply       Image: Not Apply       Image: Not Apply         9. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY       3       4       5       6       7       8       9       10       11       12       13         System ID       Zone Name       System Type       Qty       Rated Capacity<br>(kBtuh)       Airflow (cfm)       Min.       Min.       Nin. Ratio       Power       Power       Virits       Cycles       VS         2.FC-1-VRF       1.FC-1       VRF       1       11.00       9.00       335       0       NA       0.057       bhp<   
  | Nor<br>East<br>Sou<br>Wes<br>3. C   | es:<br>rth-Facing is orient<br>t-Facing is orient<br>ith-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>1</b><br><b>Surface N</b><br>R-13 W<br>R-13 W<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-13 W<br>R-13 W<br>R-14 M<br>R-14 M<br>R-15 W<br>R-15 W<br>R- | ed to within 45 ated to within 45 ated to within 4 E ASSEMBLY S Name Aall9 o Attic17 o Attic17 concy Standards- all9
all9 all9 all9 all9 all9 all9 all  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, include<br>es of true south, include<br>es of true west, include<br>es of true west, include<br>as of true west, incl             | ling 45°00'0<br>cluding 45°0<br>ading 45°00'<br>Area (ft <sup>2</sup> )<br>650<br>242<br>ce   
   | 242 ft <sup>2</sup> 0'00" east of h 00" south of ea 0'00" west of '00" north of a  4 Framing Type Wood Wood Wood Wood Wood N Report Versior 3 Window Int §140 N path, mandatory and  | ss (SE),<br>south (S<br>lue west<br>5<br>Cavite<br>R-Valu<br>13<br>30<br>30<br>an cavite<br>R-Valu<br>13<br>30<br>an cavite<br>R-Valu<br>13<br>an cavite<br>R-Valu<br>13<br>an cavite<br>R-Valu<br>14<br>an | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>6<br>y Continuous<br>R-Value<br>NA<br>NA<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-12092           | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08<br>5<br>Exha  | Of west of<br>north of ea<br>'00" east o<br>200'00" sou<br>200'00" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou           | north (NW)<br>st (NE).<br>South (SE).<br>th of west
(S<br>Desc<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q<br>Q   | SW).   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>-13<br>ioard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>-30<br>-30<br>-30<br>-30<br>-30<br>-30<br>-30<br>-30   | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>   | 00.0%  |   
  |   |      |  |   |       |
| his Section Does Not Apply<br>9. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY<br>1 2 3 4 5 6 7 8 9 10 11 12 13<br>System ID Zone Name System Type Qt Rated Capacity (kBtuh)<br>2. FC-1-VRF 1-FC-1 VRF 1 10.0 9.00 335 0 NA 0.057 bhp Cycles VS<br>3. FC-2-VRF 2FC-2 VRF 1 10.0 9.00 335 0 NA 0.057 bhp C   
  | Nor<br>East<br>Sou<br>Wes<br>3. C   | es:<br>rth-Facing is orient<br>t-Facing is orient<br>st-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>1</b><br><b>Surface N</b><br>R-13 W<br>R-13 W<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-14 N<br>R-14 N<br>R-15 N<br>NONRESIDENTIAL<br>1<br><b>Zone Na</b><br>1-FC-1          
  | ed to within 45<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>/all9<br>o Attic17<br>o Attic17<br>ancy Standards-<br>EATURES<br>FEATURES<br>Mane<br>&2<br>NU<br>ols related to the person<br>L VENTILATION<br>me  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>RY<br>2<br>Surface Type<br>ExteriorWall<br>Roof<br>Roof<br>nresidential Complian<br>an Diego 92123<br>C<br>Equipment Type<br>VRF<br>Vice Hot Water, Primar<br>ath only. For projects using to<br>Exhaust - Sh  | ling 45°00'0<br>cluding 45°00'<br>ading 45°00'<br>Area (ft²)<br>650<br>242<br>ce<br>ce   
  | 242 ft <sup>2</sup> 0'00" east of i 00" south of ea 0'00" west of '00" north of a  4 Framing Type Wood Wood Wood Wood Wood N Report Versior 3 Window Int §140 N path, mandatory and Mecha  | sst (SE),<br>south (S<br>lue west<br>south (S<br>lue west<br>S<br>Cavity<br>R-Valu<br>13<br>13<br>30<br>30<br>30<br>30<br>5<br>cerlocks p<br>.4(n)<br>A<br>A<br>A<br>d prescription<br>3<br>mical Ven<br>9<br>0.50  
   | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T<br>per<br>alculation Date/T<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T<br>A<br>CFM  | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>4<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1  | Of west of<br>north of ec<br>'00" east o<br>200'00" sou<br>200'00" sou<br>200'0" sou | north (NW)<br>st (NE).<br>south (SE).<br>th of west (Second<br>be Descond<br>be Descond<br>conditioned At<br>(sf)<br>100   
  | SW).   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>3 - 13<br>ioard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>3 - 30<br>ioard - 1/2 in.<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16   | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>   | 00.0%  |  |   |      |  |   |       |
| 9. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY         1       2       3       4       5       6       7       8       9       10       11       12       13         System ID       Zone Name       System Type       Rated Capacity<br>(kB±uh)       Airflow (cfm)       Fan         2-FC-1-VRF       1-FC-1       VRF       1       10.001ng       Design       Min.       Min. Ratio       Power<br>Units       Cycles       VS         2-FC-1-VRF       1-FC-1       VRF       1       11.00       9.00       335       0       NA       0.057       bhp   
  | a Bui   | es:<br>rth-Facing is orient<br>t-Facing is orient<br>st-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>1</b><br><b>Surface N</b><br>R-13 W<br>R-13 W<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-30 Roof No<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-14 W<br>R-14 W<br>R-15
W<br>NONRESIDENTIAL<br>1<br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b>   | ed to within 45<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>/all9<br>o Attic17<br>o Attic17<br>ancy Standards-<br>EATURES<br>FEATURES<br>Mane<br>&2<br>NU<br>ols related to the person<br>L VENTILATION<br>me  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>RY<br>2<br>Surface Type<br>ExteriorWall<br>Roof<br>Roof<br>nresidential Complian<br>an Diego 92123<br>C<br>Equipment Type<br>VRF<br>Vice Hot Water, Primar<br>ath only. For projects using to<br>Exhaust - Sh  | ling 45°00'0<br>cluding 45°00'<br>ading 45°00'<br>Area (ft²)<br>650<br>242<br>ce<br>ce  
   | 242 ft <sup>2</sup> 0'00" east of i 00" south of ea 0'00" west of '00" north of a  4 Framing Type Wood Wood Wood Wood Wood N Report Versior 3 Window Int §140 N path, mandatory and Mecha  | sst (SE),<br>south (S<br>lue west<br>south (S<br>lue west<br>S<br>Cavity<br>R-Valu<br>13<br>13<br>30<br>30<br>30<br>30<br>5<br>cerlocks p<br>.4(n)<br>A<br>A<br>A<br>d prescription<br>3<br>mical Ven<br>9<br>0.50   
  | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PR     | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08<br>5<br>Exha<br>CF<br>25  | Of west of<br>north of ea<br>'00" east o<br>200'00" sou<br>or 0.10<br>or 0.10<br>or 0.10<br>ge 7 of 12<br>::26, Thu, Ju<br>::26, Thu, Ju<br>::26, Thu, Ju   | north (NW)<br>st (NE).<br>south (SE).<br>th of west (Second<br>be Descond<br>be Descond<br>conditioned At<br>(sf)<br>100   
  | SW).   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>3 - 13<br>ioard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>3 - 30<br>ioard - 1/2 in.<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16   | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>   | 00.0%  |   
  |   |      |  |   |       |
| 1       2       3       4       5       6       7       8       9       10       11       12       13         System ID       Zone Name       System Type $M_{P}$ $Rated Capacity (kBub)$ $Airflow (cfm)$ Since $reflow (cfm)$ $Fare       Fare         $   | A Bui  
  | es:<br>Th-Facing is orient<br>t-Facing is orient<br>th-Facing is orient<br>st-Facing is orient<br>and the state of the state<br>oppaque surface N<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-14 W<br>R-14 W<br>R-14 W<br>R-15 W               | ed to within 45 ated to within 45 ated to within 4 ated to within 4 E ASSEMBLY S Name Aall9 Aall  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west,
inclue<br>RY<br>2<br>Surface Type<br>ExteriorWall<br>Roof<br>Roof<br>nresidential Complian<br>an Diego 92123<br>C<br>Equipment Type<br>VRF<br>vice Hot Water, Primar<br>ath only. For projects using to<br>C<br>Ventilatio<br>Exhaust - Sh<br>Exhaust - Sh   | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>Area (ft <sup>2</sup> )<br>650<br>650<br>242<br>242<br>ce   
   | 242 ft <sup>2</sup> 0'00" east of h 0" south of ea 0'00" west of '00" north of a 4 Framing Type Wood Wood Wood Wood Wood N outh, mandatory and outh, mandato | sst (SE),<br>south (S<br>lue west<br>south (S<br>lue west<br>S<br>Cavity<br>R-Valu<br>13<br>13<br>30<br>30<br>30<br>5<br>cerlocks p<br>.4(n)<br>A<br>A<br>A<br>d prescription<br>3<br>mical Ven<br>9<br>0.50  | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PR     | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08<br>5<br>Exha<br>CF<br>25   
  | Of west of<br>north of ea<br>'00" east o<br>200'00" sou<br>or 0.10<br>or 0.10<br>or 0.10<br>ge 7 of 12<br>::26, Thu, Ju<br>::26, Thu, Ju<br>::26, Thu, Ju   | north (NW)<br>st (NE).<br>south (SE).<br>th of west (Second<br>be Descond<br>be Descond<br>conditioned Att<br>(Sf)<br>100   | SW).   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>3 - 13<br>ioard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>3 - 30<br>ioard - 1/2 in.<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16  
  | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>   | 00.0%  |  |   |      |  |   |       |
| System ID         Zone Name         System Type         Qt         Rated Capacity<br>(kB++)         Airflow (cfm)         Min. Ratio         Power         Power         Cycles         VS           2-FC-1-VRF         1-FC-1         VRF         1         11.00         9.00         335         0         NA         0.057         bhp   
  | a Buil  | es:<br>rth-Facing is orient<br>t-Facing is orient<br>ith-Facing is orient<br>st-Facing is orient<br><b>DPAQUE SURFACE</b><br><b>DPAQUE SURFACE</b><br><b>1</b><br>Surface N<br>R-13 W<br>R-13 W<br>R-30 Roof No<br>R-30 Roof No<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-13 W<br>R-14 W<br>R-14 W<br>R-15 W<br>NONRESIDENTIAL<br>1<br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b>                             
  | ed to within 45<br>ated to within 4<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>softrue west, inclue<br>RY<br>2<br>Surface Type<br>ExteriorWall<br>Roof<br>Roof<br>Roof<br>an Diego 92123<br>C<br>Equipment Type<br>VRF<br>Vice Hot Water, Priman<br>ath only. For projects using to<br>Exhaust - Sh<br>Exhaust - Sh<br>Exhaust - Sh   | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>Area (ft <sup>2</sup> )<br>650<br>650<br>242<br>242<br>ce  
  | 242 ft <sup>2</sup> 0'00" east of h 0" south of ea 0'00" west of '00" north of a 4 Framing Type Wood Wood Wood Wood Wood N outh, mandatory and outh, mandato | sst (SE),<br>south (S<br>lue west<br>south (S<br>lue west<br>S<br>Cavity<br>R-Valu<br>13<br>13<br>30<br>30<br>30<br>5<br>cerlocks p<br>.4(n)<br>A<br>A<br>A<br>d prescription<br>3<br>mical Ven<br>9<br>0.50  | but
excluding 4.<br>W), but excludi<br>(NW), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-1209203<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PR     | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08<br>5<br>Exha<br>CF<br>25  | Of west of<br>north of ea<br>'00" east o<br>200'00" sou<br>or 0.10<br>or 0.10<br>or 0.10<br>ge 7 of 12<br>::26, Thu, Ju<br>::26, Thu, Ju<br>::26, Thu, Ju   | north (NW)<br>st (NE).<br>south (SE).<br>th of west (Second<br>be Descond<br>be Descond<br>conditioned Att<br>(Sf)<br>100  
  | SW).   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>3 - 13<br>ioard - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>3 - 30<br>ioard - 1/2 in.<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16<br>at: 2022-06-16   | 0<br>yers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>   | 00.0%  |  |   |      |  |   |       |
| System ID     Zone Name     System Type     Qty     Heating     Cooling     Design     Min.     Min. Ratio     Power     Power     Quest     Vs       2-FC-1-VRF     1-FC-1     VRF     1     11.00     9.00     335     0     NA     0.057     bhp<   
  | a Bui<br>roje<br>roje<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C  | es:<br>Th-Facing is orient<br>t-Facing is orient<br>th-Facing is orient<br>st-Facing is orient<br>atth-Facing is orient<br>att   
          | ed to within 45 ated to within 45 ated to within 4 ated to atter to at  | 45 degrees<br>5 degrees<br>45 degrees<br>5 de | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>softrue west, inclue<br>as Surface Type<br>ExteriorWall<br>Roof<br>Roof<br>Roof<br>Roof<br>an Diego 92123<br>C<br>Equipment Type<br>VRF<br>Vice Hot Water, Primar<br>ath only. For projects using to<br>Ventilatio<br>Exhaust - Sh<br>Exhaust - Sh<br>Exhaust - Sh<br>Exhaust - Sh   | ling 45°00'0<br>cluding 45°0<br>iding 45°00'<br>Aling 45°00'<br>Area (ft <sup>2</sup> )<br>650<br>650<br>242<br>242<br>ce<br>ce  
  | 242 ft <sup>2</sup> 0'00" east of i 0'00" south of ea 0'00" west of '00" north of a 4 Framing Type Wood Wood Wood Wood Wood Wood N Stath, mandatory and State ATION  | sst (SE),<br>south (S<br>lue west<br>Cavite<br>R-Valu<br>13<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30   | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>A<br>NA   
  | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>4<br>21-6844<br>Pa<br>ime: 08<br>5<br>CF<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25  | Of west of<br>north of ec<br>'00" east o<br>200'00" sou<br>200'00" sou<br>200'0" sou | north (NW)<br>st (NE).<br>south (SE).<br>th of west (S<br>book of  | SW).   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>3 - 13<br>3 - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>3 - 30<br>3 - 30<br>5 - | yers<br>in.<br>3.5in.,<br>- 4 in.<br>1.25in.,<br>5 08:26:3  | 00.0%  |  | | | | | | | | | | | | | | | |
   |      |  |   |       |
| 2-FC-1-VRF       1-FC-1       VRF       1       11.00       9.00       335       0       NA       0.057       bhp       □       □         3-FC-2-VRF       2-FC-2       VRF       1       11.00       9.00       335       0       NA       0.057       bhp       □       □       □         10. EVAPORATIVE COOLER SUMMARY       1       11.00       9.00       335       0       NA       0.057       bhp       □       □  | a Bui<br>roje<br>roje<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C<br><b>3.</b> C  | es:<br>rth-Facing is orient<br>t-Facing is orient<br>st-Facing is orient<br>st-Facing is orient<br>atth-Facing is orient<br>at  | ed to within 45<br>ated to within 4<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>Aame<br>Aall9<br>o Attic17<br>o Attic17<br>o Attic17<br>arrow Standards-<br>B788 Balboa<br>JFS Restroom<br>FEATURES<br>me<br>&2<br>IV<br>ols related to the pe<br>AD TERMINA<br>2<br>I<br>ND TERMINA<br>2<br>I<br>ND TERMINA   | 45 degrees<br>45 degrees<br>45 degrees<br>45 degrees<br>45 degrees<br>5 degrees<br>5 degrees<br>45 degre   | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>so of true west, inclue<br>as of tru | Img 45°00'0         Img 45°00'0         Img 45°00'         Img 45°00' <tr< td=""><td>242 ft<sup>2</sup> 0'00" east of io 0'00" west of 0'00" west of '00" north of c  4 Framing Type Wood Wood Wood Wood Wood Wood Wood N Report Version State ATION</td><td>st (SE),<br/>south (S<br/>lue west<br/>5<br/>Cavite<br/>R-Valu<br/>13<br/>30<br/>30<br/>30<br/>30<br/>5<br/>cerlocks p<br/>.4(n)<br/>A<br/>A<br/>d prescription<br/>6<br/>6</td><td>but excluding 4.<br/>W), but excludi<br/>(NW), but excludi<br/>(NW), but excludi<br/>Continuous<br/>R-Value<br/>NA<br/>NA<br/>NA<br/>NA<br/>PRF-01-E-1209202<br/>RCC-PRF-01-E<br/>alculation Date/T<br/>A<br/>CFM<br/>4<br/>167<br/>205<br/>7</td><td>5°00'00"<br/>ng 45°00<br/>uding 45°<br/>U-Facto<br/>U-Facto<br/>21-6844<br/>Pa<br/>ime: 08<br/>4<br/>21-6844<br/>Pa<br/>ime: 08<br/>5<br/>CF<br/>25<br/>25<br/>25<br/>25<br/>25<br/>25<br/>25<br/>25<br/>25<br/>25</td><td>Of west of<br/>north of ec<br/>'00" east o<br/>200'00" sou<br/>200'00" sou<br/>200'0" sou</td><td>north (NW)<br/>st (NE).<br/>south (SE).<br/>th of west (S<br/>book of</td><td>SW).</td><td>Assembly Lay<br/>5 - 7/8 in.<br/>able felt - 1/8 i<br/>all, 16in. OC, 3<br/>3 - 13<br/>3 - 1/2 in.<br/>ingles - 1/4 in.<br/>able felt - 1/8 i<br/>od - 1/2 in.<br/>Il Roof Ceiling -<br/>more<br/>of, 16in. OC, 11<br/>3 - 30<br/>3 - 30<br/>5 -</td><td>yers<br/>in.<br/>3.5in.,<br/>- 4 in.<br/>1.25in.,<br/>5 08:26:3</td><td>00.0%</td></tr<> | 242 ft <sup>2</sup> 0'00" east of io 0'00" west of 0'00" west of '00" north of c  4 Framing Type Wood Wood Wood Wood Wood Wood Wood N Report Version State ATION   | st (SE),<br>south (S<br>lue west<br>5<br>Cavite<br>R-Valu<br>13<br>30<br>30<br>30<br>30<br>5<br>cerlocks p<br>.4(n)<br>A<br>A<br>d prescription<br>6<br>6   | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209202<br>RCC-PRF-01-E<br>alculation Date/T<br>A<br>CFM<br>4<br>167<br>205<br>7  | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>4<br>21-6844<br>Pa<br>ime: 08<br>5<br>CF<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25  | Of west of<br>north of ec<br>'00" east o<br>200'00" sou<br>200'00" sou<br>200'0" sou | north (NW)<br>st (NE).<br>south (SE).<br>th of west (S<br>book of  | SW).   | Assembly Lay<br>5 - 7/8 in.<br>able felt - 1/8 i<br>all, 16in. OC, 3<br>3 - 13<br>3 - 1/2 in.<br>ingles - 1/4 in.<br>able felt - 1/8 i<br>od - 1/2 in.<br>Il Roof Ceiling -<br>more<br>of, 16in. OC, 11<br>3 - 30<br>3 - 30<br>5 - | yers<br>in.<br>3.5in.,<br>- 4 in.<br>1.25in.,<br>5 08:26:3  | 00.0%  |  |   |      |  |   |       |
| 10. EVAPORATIVE COOLER SUMMARY   
  | A Bui   | es:<br>rth-Facing is orient<br>t-Facing is orient<br>st-Facing is orient<br>st-Facing is orient<br>atth-Facing is orient<br>at   
          | ed to within 45<br>ated to within 4<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>Aame<br>Aall9<br>o Attic17<br>o Attic17<br>o Attic17<br>arrow Standards-<br>B788 Balboa<br>JFS Restroom<br>FEATURES<br>me<br>&2<br>IV<br>ols related to the pe<br>AD TERMINA<br>2<br>I<br>ND TERMINA<br>2<br>I<br>ND TERMINA   | 45 degrees<br>45 degrees<br>45 degrees<br>45 degrees<br>45 degrees<br>5 degrees<br>5 degrees<br>45 degre   | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>so of true west, inclue<br>as of tru | Image 45°00'0   Cluding 45°00'0   Cluding 45°00'   Area (ft²)   650   650   242   242   ce   ry Only   the prescriptive p   nower rooms   nower rooms   nower rooms   TEL VENTILA   A   Qty   
   | 242 ft <sup>2</sup> 0'00" east of io 0'00" west of 0'00" west of '00" north of c  4 Framing Type Wood Wood Wood Wood Wood Wood Wood N Report Version State ATION N Type State Capace (kBtuh)   | set (SE),<br>south (S<br>lue west<br>Sue west<br>S<br>Cavity<br>13<br>13<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30  | but excluding 4.<br>W), but excludi<br>(NW), but excludi<br>(NW), but
excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PR | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08<br>ime: 08<br>CF<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25   | 0 ft<br>00" west of<br>100" east o<br>200'00" sou<br>200'00" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou<br>200'0" sou<br>200'  | north (NW)<br>st (NE).<br>south (SE).<br>th of west (S<br>b of wes  | SW).   | Assembly Lay         0 - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         ioard - 1/2 in.         at: 2022-06-16  
  | yers<br>in.<br>3.5in.,<br>in.<br>4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>5 08:26:3<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:   | 00.0%  |  |   |      |  |   |       |
|  
  | A Bui   | es:<br>Th-Facing is orient<br>t-Facing is orient<br>th-Facing is orient<br>st-Facing is orient<br>atth-Facing is orient<br>att   
          | ed to within 43<br>ated to within 4<br>ated to within 4<br>E ASSEMBLY S<br>Name<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame<br>Aame | 45 degrees<br>45 deg   | s of true east, inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>so ftrue west, inclue<br>as Surface Type<br>ExteriorWall<br>ExteriorWall<br>Roof<br>Roof<br>Roof<br>Roof<br>an Diego 92123<br>Equipment Type<br>VRF<br>Vice Hot Water, Priman<br>ath only. For projects using to<br>Exhaust - Sh<br>Exhaust - Sh   | Img 45°00'0         Cluding 45°00'0         Image: A5°00'0         Image: A5°00'  
  | 242 ft <sup>2</sup> 0'00" east of i 0'0" south of ea 0'00" west of 00" north of a  4 Framing Type  Wood  Wood  Keport Version  Window Int §140 N N N N N N N N N N N N N N N N N N N   | st (SE),<br>south (S<br>fue west<br>Sue west<br>Cavity<br>13<br>13<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30  | but excluding 4<br>W), but excludi<br>(NW), but excludi<br>(NW), but
excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200    | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08<br>CF<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25  | 0 ft         00" west of         00" east o         '00" east o         '00" oo" sou         or       0.10         or       0.03         ge 7 of 12         ::26, Thu, Ju         ::26, Thu, Ju         ::26, Thu, Ju         :00 <td:00< td=""><td>north (NW)   st (NE).   south (SE).   south (SE).   south (SE).   south (SE).   a   a   a   a   a   b   a   a   b   a   b   a   b   b   a   b   b   b   b   b   b   b   b   b   c   b   b   b   c   b   c   b   c   <td< td=""><td>SW).</td><td>Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20</td><td>vers<br/>in.<br/>3.5in.,<br/>in.<br/>- 4 in.<br/>1.25in.,<br/>5 08:26:3<br/>5 08:26:3<br/>5 08:26:4<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:</td><td>00.0%</td></td<></td></td:00<>   | north (NW)   st (NE).   south (SE).   south (SE).   south (SE).   south (SE).   a   a   a   a   a   b   a   a   b   a   b   a   b   b   a   b   b   b   b   b   b   b   b   b   c   b   b   b   c   b   c   b   c <td< td=""><td>SW).</td><td>Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20</td><td>vers<br/>in.<br/>3.5in.,<br/>in.<br/>- 4 in.<br/>1.25in.,<br/>5 08:26:3<br/>5 08:26:3<br/>5 08:26:4<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:</td><td>00.0%</td></td<>   
  | SW).   | Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20  | vers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>5 08:26:4<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1: | 00.0%  |  |   |      |  |   |       |
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  | 242 ft <sup>2</sup> 0'00" east of i 0'0" south of ea 0'00" west of 00" north of a  4 Framing Type  Wood  Wood  Keport Version  Window Int §140 N N N N N N N N N N N N N N N N N N N   | st (SE),<br>south (S<br>fue west<br>Sue west<br>Cavity<br>13<br>13<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30  | but excluding 4<br>W), but excludi<br>(NW), but excludi<br>(NW), but
excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200    | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08<br>CF<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25  | 0 ft         00" west of         00" east o         '00" east o         '00" oo" sou         or       0.10         or       0.03         ge 7 of 12         ::26, Thu, Ju         ::26, Thu, Ju         ::26, Thu, Ju         :00 <td:00< td=""><td>north (NW)   st (NE).   south (SE).   south (SE).   south (SE).   south (SE).   a   a   a   a   a   b   a   a   b   a   b   a   b   b   a   b   b   b   b   b   b   b   b   b   c   b   b   b   c   b   c   b   c   <td< td=""><td>SW).</td><td>Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20</td><td>vers<br/>in.<br/>3.5in.,<br/>in.<br/>- 4 in.<br/>1.25in.,<br/>5 08:26:3<br/>5 08:26:3<br/>5 08:26:4<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:</td><td>00.0%</td></td<></td></td:00<>   | north (NW)   st (NE).   south (SE).   south (SE).   south (SE).   south (SE).   a   a   a   a   a   b   a   a   b   a   b   a   b   b   a   b   b   b   b   b   b   b   b   b   c   b   b   b   c   b   c   b   c <td< td=""><td>SW).</td><td>Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20</td><td>vers<br/>in.<br/>3.5in.,<br/>in.<br/>- 4 in.<br/>1.25in.,<br/>5 08:26:3<br/>5 08:26:3<br/>5 08:26:4<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:</td><td>00.0%</td></td<>   
  | SW).   | Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20  | vers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>5 08:26:4<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1: | 00.0%  |  |   |      |  |   |       |
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inclue<br>es of true south, inc<br>es of true west, inclue<br>es of true west, inclue<br>so ftrue west, inclue<br>as Surface Type<br>ExteriorWall<br>ExteriorWall<br>Roof<br>Roof<br>Roof<br>Roof<br>an Diego 92123<br>Equipment Type<br>VRF<br>Vice Hot Water, Priman<br>ath only. For projects using to<br>Exhaust - Sh<br>Exhaust - Sh   | Img 45°00'0         Cluding 45°00'0         Image: A5°00'0         Image: A5°00'   
   | 242 ft <sup>2</sup> 0'00" east of i 0'0" south of ea 0'00" west of 00" north of a  4 Framing Type  Wood  Wood  Keport Version  Window Int §140 N N N N N N N N N N N N N N N N N N N   | st (SE),<br>south (S<br>fue west<br>Sue west<br>Cavity<br>13<br>13<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30<br>30  | but excluding 4<br>W), but excludi<br>(NW), but excludi<br>(NW), but excludi<br>Continuous<br>R-Value<br>NA<br>NA<br>NA<br>NA<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-1209202<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-120920<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200<br>PRF-01-E-1200    | 5°00'00"<br>ng 45°00<br>uding 45°<br>U-Facto<br>U-Facto<br>U-Facto<br>21-6844<br>Pa<br>ime: 08<br>ime: 08<br>CF<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25   
  | 0 ft         00" west of         00" east o         '00" east o         '00" oo" sou         or       0.10         or       0.03         ge 7 of 12         ::26, Thu, Ju         ::26, Thu, Ju         ::26, Thu, Ju         :00 <td:00< td=""><td>north (NW)   st (NE).   south (SE).   south (SE).   south (SE).   south (SE).   a   a   a   a   a   b   a   a   b   a   b   a   b   b   a   b   b   b   b   b   b   b   b   b   c   b   b   b   c   b   c   b   c   <td< td=""><td>SW).</td><td>Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20</td><td>vers<br/>in.<br/>3.5in.,<br/>in.<br/>- 4 in.<br/>1.25in.,<br/>5 08:26:3<br/>5 08:26:3<br/>5 08:26:4<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:</td><td>00.0%</td></td<></td></td:00<>   | north (NW)   st (NE).   south (SE).   south (SE).   south (SE).   south (SE).   a   a   a   a   a   b   a   a   b   a   b   a   b   b   a   b   b   b   b   b   b   b   b   b   c   b   b   b   c   b   c   b   c <td< td=""><td>SW).</td><td>Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20</td><td>vers<br/>in.<br/>3.5in.,<br/>in.<br/>- 4 in.<br/>1.25in.,<br/>5 08:26:3<br/>5 08:26:3<br/>5 08:26:4<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:<br/>1:</td><td>00.0%</td></td<>  | SW).   | Assembly Lay         o - 7/8 in.         able felt - 1/8 i         all, 16in. OC, 3         ingles - 1/2 in.         ingles - 1/2 in.         ingles - 1/2 in.         Il Roof Ceiling -         of, 16in. OC, 11         aoard - 1/2 in.         at: 2022-06-16         at: 202         at: 202         at: 202         at: 202         at: 20         at: 20   
  | vers<br>in.<br>3.5in.,<br>in.<br>- 4 in.<br>1.25in.,<br>5 08:26:3<br>5 08:26:3<br>5 08:26:4<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1:<br>1: | 00.0%  |  |   |      |  |   |       |



Project Name:JFS RestroomsNRCC-PRF-01-EPage 12 of 12Project Address:8788 Balboa Avenue San Diego 92123Calculation Date/Time:08:26, Thu, Jun 16, 2022Insut File Name:IFG Restrooms eight/10gInsut File Name:Insut File Name:	Project Name:     JFS Restrooms       Project Address:     8788 Balboa Avenue San Diego 92123	NRCC-PRF-01-E     Page 11 of       Calculation Date/Time:     08:26, Thu		Project Name:     JFS Restrooms     NRCC-PRF-01-E     Page 10 of 12       Project Address:     8788 Balboa Avenue San Diego 92123     Calculation Date/Time:     08:26, Thu, Jun 16, 2022
Input File Name:       JFS Restrooms.cibd19x         DOCUMENTATION AUTHOR'S DECLARATION STATEMENT         I certify that this Certificate of Compliance documentation is accurate and complete.	Input File Name:       JFS Restrooms.cibd19x         M. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE         Table to structure of the time of a flow of the time of a flow of the time of a flow of the time of tim			Input File Name:       JFS Restrooms.cibd19x         L. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION         Table Instructions Colorations and the Decementation Anthenetical instructions for the flucture of the state
Documentation Author Name: Jeffery A. Dufoe Signature: Signature: Signature:	Table Instructions: Selections shall be made by Documentation Author compliance. These documents must be provided to the building inspect	tor during construction and must be completed through an	Acceptance Test Technician Certification	Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Installation must be submitted for the features to compliance. These documents bust be retained and provided to the building inspector during construction and can be found online at:
Company: Dufoe Consulting Engineers     0       Address: 10680 Treena St #163     Signature Date: 2022-06-16	Provider (ATTCP). For more information visit:https://www.energy.ca.go Building Component	ov/title24/2019standards/2019_compliance_documents/N Form/Title	Ionresidential_Documents/NRCA/	https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/         Building Component       Form/Title
City/State/Zip:       San Diego CA 92131         CEA/ HERS Certification Identification (if applicable):	Envelope NRCA-ENV-02-F - NRFC label verification for fenestra	tion		Envelope NRCI-ENV-01-E - Must be submitted for all buildings
Phone: 858-368-8630 RESPONSIBLE PERSON'S DECLARATION STATEMENT	Mechanical NRCA-MCH-11-A Automatic Demand Shed Controls NRCA-MCH-13-A Automatic FDD for Air Handling Un	its and Zone Terminal Units Accentance		Mechanical       NRCI-MCH-01-E - Must be submitted for all buildings         Plumbing       NRCI-PLB-01-E - Must be submitted for all buildings
I certify the following under penalty of perjury, under the laws of the State of California:				
<ol> <li>The information provided on this Certificate of Compliance is true and correct.</li> <li>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)</li> <li>The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance (rompliance conform to the requirements)</li> </ol>				
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 Envelope Designer Name: Taal Safdie Signature:				
Company: Safdie Rabines     Date Signed: 07/01/2022				
City/State/Zip: San Diego CA 92103				
Phone: 6192976153     Title:     Principal     License #:     C 24394       Responsible Lighting Designer Name:     N/A     Image: Comparison of the second secon				
Responsible Lighting Designer Name: N/A     Signature:     Currando G       Company:     Data Signature:     00/40/2020				
Address:     Date Signed:     08/16/2022       City/State/Zip:				
Phone: Title: Principal License #: E18809				
Responsible Mechanical Designer Name: Jeffery A. Dufoe       Signature: 3. Outpee         Company: Dufoe Consulting Engineers       Signature: 3. Outpee				
Address: 10680 Treena St #163     Date Signed: 6/16/2022       City/State/Zip: San Diego CA 92131     Date Signed: 6/16/2022				
Phone:       858-368-8630       Title:       President       License #: 32824				
CA Building Energy Efficiency Standards- 2019 Nonresidential Compliance Report Version: NRCC-PRF-01-E-12092021-6844 Report Generated at: 2022-06-16 08:26:38	CA Building Energy Efficiency Standards- 2019 Nonresidential Compliance	Report Version: NRCC-PRF-01-E-12092021-6844	Report Generated at: 2022-06-16 08:26:38	CA Building Energy Efficiency Standards- 2019 Nonresidential Compliance Report Version: NRCC-PRF-01-E-12092021-6844 Report Generated a
state of california Domestic Water Heating System	state of california Domestic Water Heating System			state of california Domestic Water Heating System
NRCC-PLB-E CALIFORNIA ENERGY COMMISSION CERTIFICATE OF COMPLIANCE NRCC-PLB-E	NRCC-PLB-E CERTIFICATE OF COMPLIANCE		CALIFORNIA ENERGY COMMISSION NRCC-PLB-E	NRCC-PLB-E CALIFC
Project Name:Jewish Family Center Restroom AdditionReport Page:(Page 3 of 6)Project Address:8788 Balboa AvenueDate Prepared:6/16/2022		r Restroom Addition <b>Report Page:</b> 3788 Balboa Avenue <b>Date Prepared:</b>	(Page 2 of 6) 6/16/2022	This document is used to demonstrate compliance for nonresidential occupancies with requirements in <u>§110.1</u> , <u>§110.3</u> , <u>§120.3</u> , and <u>§140.5</u> , and with require additions and alterations, for domestic water heating scopes using the prescriptive path. For high-rise residential and hotel/motel occupancies compliance is requirements in <u>§110.1</u> , <u>§110.3</u> , <u>§120.3</u> , and <u>§140.5</u> , and with requirements in <u>§110.1</u> , <u>§110.3</u> , <u>§120.3</u> , and <u>§140.5</u> , and with requirements is <u>§110.1</u> , <u>§110.3</u> , <u>§120.3</u> , and <u>§140.5</u> , and with requirements is <u>§110.1</u> , <u>§110.3</u> , <u>§120.3</u> , and <u>§140.5</u> , and with requirements is <u>§110.1</u> , <u>§110.3</u> , <u>§120.3</u> , and <u>§140.5</u> , and with requirements <u>§150.3</u> , for additions
				requirements in §110.1, §110.3, §120.3, §150.0and §150.1(c)8, and with requirements §150.2for additions.Project Name:Jewish Family Center Restroom AdditionReport Page:
F. DOMESTIC HOT WATER EQUIPMENT         This table is used to demonstrate compliance with mandatory equipment requirements in \$110.1 and \$110.3. For high-rise residential and hotel/motel occupancies, compliance with	C. COMPLIANCE RESULTS Table C will indicate if the project data input into the compliance document		le says "DOES NOT COMPLY" or "COMPLIES with	Project Address: 8788 Balboa Avenue Date Prepared:
prescriptive requirements in <u>§150.1(c)8</u> must also be demonstrated and with <u>§150.2</u> for addition and alteration scopes. Equipment Schedule: Individual Systems	Exceptional Conditions" refer to Table D. or the table indicated as not comp 01 02		04	A. GENERAL INFORMATION         01       Project Location (city)       San Diego       02       Climate Zone
O1     O2     O3     O4     O5     O6       Number of the second	Domestic Hot Water Equipment     Distribution Systems       Table F     Table G	s Controls Table H	Compliance Results	03 Occupancy Types Within Project (select all that apply):
Name or Item Tag     Equipment Type     Volume (gal)     Hour Rating (FHR)     Energy Factor (UEF)     Minimum Required Uniform Energy Factor (UEF) <sup>1</sup>	Yes Yes	Yes	COMPLIES	Nonresidential       High-Rise Residential       Hotel/Motel         State Building       Healthcare Facility       Other (Write In)
AO SMITH DEN-52         Electric Storage         51-55         51 <= FHR <75         0.93         0.93	D. EXCEPTIONAL CONDITIONS			B. PROJECT SCOPE
<sup>1</sup> FOOTNOTE: Compliant equipment may be found in the Modernized Appliance Efficiency Database System (MAEDBS) on the Energy Commission website:	This table is auto-filled with uneditable comments because of selections me	ade or data entered in tables throughout the form.		This table includes domestic water heating systems that are within the scope of the permit application and are demonstrating compliance using the prescripti <u>§150.1(c)8</u> , and <u>§141.0(a)</u> , or <u>§141.0(b)2N</u> for additions or alterations. Solar water heating systems are documented on the NRCC-SRA compliance document
https://cacertappliances.energy.ca.gov/Pages/Search/AdvancedSearch.aspx Water Heating Equipment All Occupancies	<b>E. ADDITIONAL REMARKS</b> This table is includes remarks made by the permit applicant to the Authority	ty Having Jurisdiction		heating systems are documented on the NRCC-MCH compliance document. 01 02
Yes       No       Not Applicable       Requirement         18       Image: Constraint of the storage tank insulation shall have Internal + External >=R-16 OR External >=R-12. Label required				My project consists of (check all that apply):     System Type <sup>1,2</sup> System
18     L     X     per §110.3(c)3				New system (DHW system being installed for the first time in newly constructed building)       Individual System (serving nonresidential spaces)       Image: Constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in newly constructed building being installed for the first time in new ly constructed building being installed for the first time in new ly constructed building being installed for the first time in new ly constructed building being installed for the first time in new ly constructed building being installed for the first time in new ly constructed building being installed for the first time in new ly cons
19     L     M     per §110.3(c)5				System Alteration (equipment, distribution or controls)       Equipment <sup>1</sup> FOOTNOTES: Point of use water heaters, or other non-central systems used to serve nonresidential spaces, are considered individual systems.
20     Isolation values for instantaneous water heater with input rating >6.8 kBTUH or 2 kW has been specified per §110.3(c)6				<sup>2</sup> Dwelling units refers to hotel/motel guest rooms and units in a high-rise residential occupancy.
G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM				
This table is used to demonstrate compliance for nonresidential occupancies with distribution requirements in <u>\$120.3</u> and <u>\$140.5</u> . For high-rise residential and hotel/motel occupancies, compliance is demonstrated with requirements <u>\$110.3(c)</u> , <u>\$120.3</u> , <u>\$150.0</u> , <u>\$150.1</u>				
Mandatory Pipe Insulation All Occupancies         For systems serving nonresidential spaces, pipe insulation for the following applications is specified to comply with Table 120.3-A (see below) per §120.3				
<ul> <li>12 A Recirculating system piping, including supply and return piping of the water heater</li> <li>The first 8 ft of hot and cold outlet piping, including between storage tank and heat trap, for a nonrecirculating storage system</li> </ul>				
Pipes that are externally heated      Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind, insulation exposed to weather shall				
13 $\square$ Installed with a cover suitable for outdoor service per <u>§120.3(b)</u> and <u>§150.0(j)3</u>				
Registration Number: Registration Date/Time: Registration Provider: Energysoft	Registration Number:	Registration Date/Time:	Registration Provider: Energysoft	Registration Number: Registration Date/Time: Reg
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Generated: 2022-06-16 08:27:41 Schema Version: rev 20200601	CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance	Report Version: 2019.1.003 Schema Version: rev 20200601	Report Generated: 2022-06-16 08:27:41	CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Gen Schema Version: rev 20200601
state of California Domostic Water Heating System	state of california Domostic Water Heating System			state of california Domostic Water Heating System
Domestic Water Heating System         NRCC-PLB-E         CALIFORNIA ENERGY COMMISSION         CERTIFICATE OF COMPLIANCE	Domestic Water Heating System NRCC-PLB-E CERTIFICATE OF COMPLIANCE		CALIFORNIA ENERGY COMMISSION NRCC-PLB-E	Domestic Water Heating System NRCC-PLB-E CALIFO CERTIFICATE OF COMPLIANCE
Project Name:Jewish Family Center Restroom AdditionReport Page:(Page 6 of 6)	Project Name: Jewish Family Center	r Restroom Addition <b>Report Page:</b>	(Page 5 of 6)	Project Name: Jewish Family Center Restroom Addition Report Page:
Project Address:8788 Balboa AvenueDate Prepared:6/16/2022	Project Address: 8	3788 Balboa Avenue Date Prepared:	6/16/2022	Project Address:       8788 Balboa Avenue       Date Prepared:
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION			G. DOMESTIC HOT WATER DISTRIBUTION SYSTEM
I certify that this Certificate of Compliance documentation is accurate and complete.         Documentation Author Name: Jeffery A. Dufoe         Documentation Author Signature: 3-Outpec	Selections have been made based on information provided in this documer Additional Remarks. These documents must be provided to the building ins	spector during construction and can be found online at	, an explanation should be included in Table E.	TABLE 120.3-A PIPE INSULATION THICKNESS           Conductivity Range         Nominal Pipe Diameter (in
Company: Dufoe Consulting Engineers Signature Date: 2022-06-16	https://www.energy.ca.gov/title24/2019standards/2019_compliance_doc		Field Inspector	Fluid Temperature Range ( °F)       (Btu-in per hour per ft <sup>2</sup> per °F)       Insulation Mean Rating Temp ( °F)       < 1
Address:       10680 Treena St #163       CEA/ HERS Certification Identification (if applicable):         City/State/Zip:       San Diego CA 92131       Phone:       858-368-8630	NRCI-PLB-01-E - Must be submitted for all buildings		Pass Fail	105-140         0.22 - 0.28         100         1.0 in or R-7.7         1.5 in or R-12.5
RESPONSIBLE PERSON'S DECLARATION STATEMENT I certify the following under penalty of perjury, under the laws of the State of California:	J.DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE			H. DOMESTIC HOT WATER CONTROLS
<ol> <li>The information provided on this Certificate of Compliance is true and correct.</li> <li>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)</li> <li>The energy features and performance specifications materials components and manufactured devices for the building design or system design identified on this Certificate of Compliance (responsible designer)</li> </ol>	There are no Certificates of Acceptance applicable to service water heating	g requirements.		This table is used to demonstrate compliance with control requirements in <u>§110.3</u> for all occupancies. For high-rise residential and hotel/motel occupancies, demonstrated with requirements in <u>§150.1(c)8</u> .
<ol> <li>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.</li> <li>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,</li> </ol>	K. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION			Yes     No     Not     Requirement
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.	There are no NRCV forms required for this project.			01       Image: Construction documents require manufacturer certification that service water-heating systems are extemperature controls capable of adjusting temperature settings per §110.3(a).
Responsible Designer Name: Jeffery A. Dufoe				02 Systems with capacity > 167,000 BTUH equipped with outlet temperature controls per §110.3(c)1 un
Jenery A. Dube     O       Company:     Date Signed:       Dufoe Consulting Engineers     2022-06-16				02     D     Plumbing Code 613.0.       03     D     D     Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps or electrical heat trace systems are capable of automatically turning of Controls for circulating pumps
Address:     License:       10680 Treena St #163     32824				§110.3(c)2     unless systems serves healthcare facility.       04     Image: Sector of the sector
IUbso freena st #163         52824           City/State/Zip:         Phone: 858-368-8630           San Diego CA 92131         Phone: 858-368-8630				04       Image: Constraint of the second secon
				US     L     Appendix RA4.4.9 per §150.1(c)8.
				06 D D Por replacement single neat pump water neaters serving individual dwelling units in climate zone 1-15 communication interface that meets demand responsive control requirements of §110.12(a) per §150
	Registration Number:	Registration Date/Time:	Registration Provider: Energysoft	Registration Number: Registration Date/Time: Reg
Registration Number: Registration Date/Time: Registration Provider: Energysoft	-			
Registration Number:       Registration Date/Time:       Registration Provider: Energysoft         CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance       Report Version: 2019.1.003       Report Generated: 2022-06-16 08:27:41         Schema Version: rev 20200601       Schema Version: rev 20200601       Report Generated: 2022-06-16 08:27:41	CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance	Report Version: 2019.1.003 Schema Version: rev 20200601	Report Generated: 2022-06-16 08:27:41	CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.1.003 Report Gen Schema Version: rev 20200601

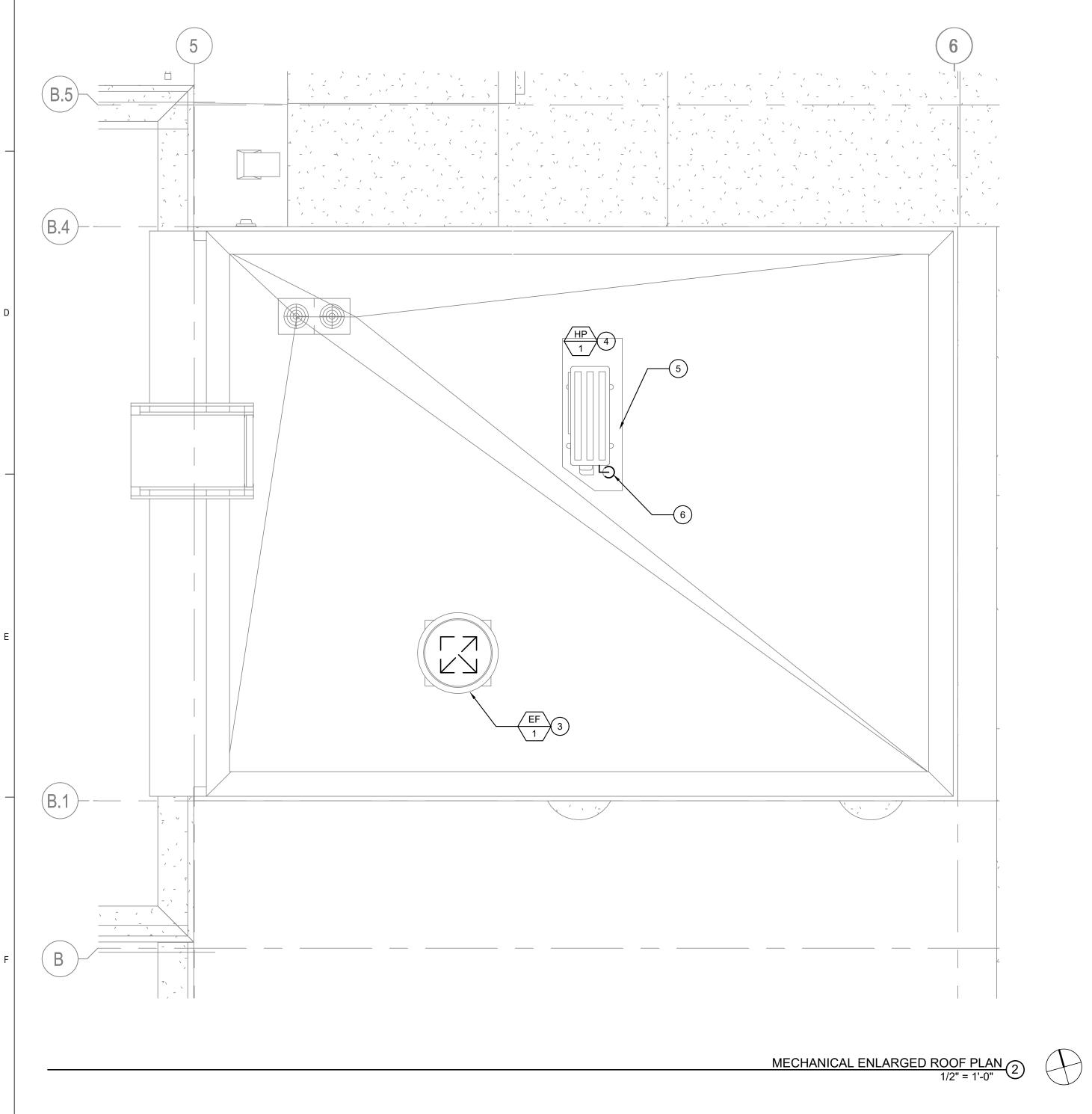
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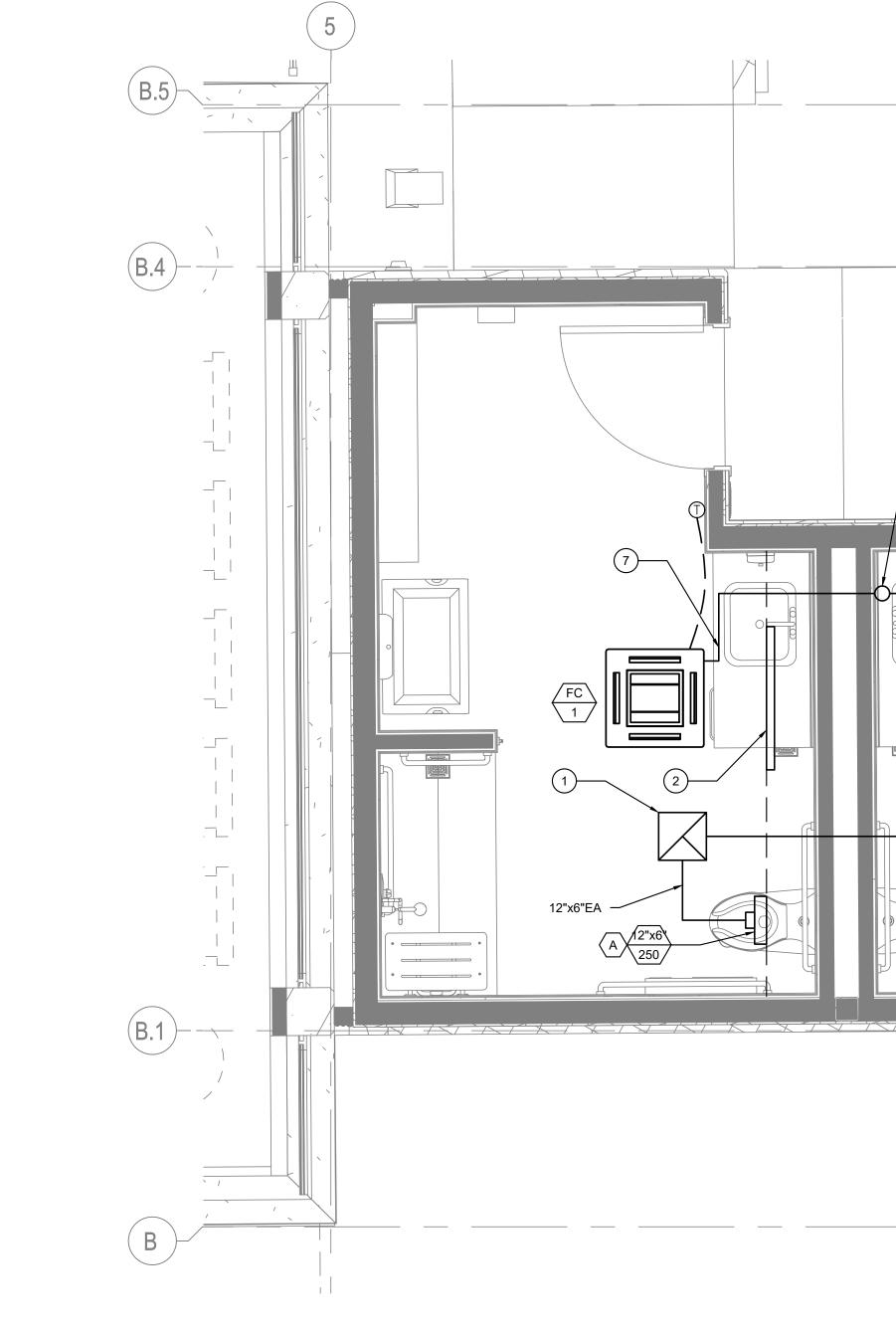


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ſ	JNIT NO.	MANUF	ACTURER N	MODEL NO.	SERVICE	FAN T	YPE	DRIVE	CFM ES	P VG) RPN	°M —		OPE	RATING WEI	GHT (LBS)	E-POWER	EQUIPMEN	T REDUNDANCY	REMARKS									1		4)HP-1 REFER T	O ARCH. DRAWI	G FOR SUPPORT [	DETAILS.	
ŀ	$\left\langle \begin{array}{c} EF \\ 1 \end{array} \right\rangle$	CC	юк	1215 AQD	RESTROOMS	ROOF POWER	VENTILATOR	DIRECT	540 0.2			IP BHP V 20 0.1 2	08 / 1 / 60	100		N		NONE	1, 2, 3, 4									-		BELOW TO FC	-1 AND FC-2 SEF RER'S INSTRUCTI	ARATELY. INSTALL DN.	PES GO DOWN TO C THE PIPING PER	
L						GRAVITY BACK DRAFT	DAMPER AND 12" H	HEIGHT ROOF CURB (	COOK MODEL RCG				DCCUPANCY SENSOR		OL WIRING BY E	ELECTRICAL TRA	ADE.																IS ROOF PENETRAT	
г																												-		INDICATED ON PIPING AND A	N REFRIGERANT CCESSORIES PE	PIPING DIAGRAM, 2 R MANUFACTURER	T GAS PIPES DOWN S FC-1 AND FC-2 SE //M501. INSTALL REF 'S INSTALLATION IN	RIGERANT
								SPLIT S	SYSTEN	I SCH	IEDU	LE (CON	DENSING	G UNIT	- HEA	AT PUM	IP APP	LICATIO	N)											THE INSTALLA CONTROL WIE PIPING INSTA	RING DETAILS. R	EFER TO ELECTRI FER TO PLUMBING	CAL DRAWING FOR	POWER AND ONDENSATE
ſ	JNIT NO.	MANUF	ACTURER	MODEL	NO. LOCA	TION SERVICE	DIMENSIC HxWxD	ONS COOLING	CAPACITY H BH)	EATING CAF (MBH)	PACITY )	COOLING OUTDOOR TEM DB (°F)	HEATING OUTDOOR TEI DB (°F)	MP SEER	HSPF		RICAL	REFRIGERANT	WEIGHT (LBS)	E-POWE		JIPMENT JNDANCY	REMARKS											
ł	$\left\langle \frac{\text{HP}}{1} \right\rangle$	MITS	JBISHI I	NTXMMX20/	A122AC RO	OF FC-1 & FC-2	27-15/16 33-1/16" x		18	22		95	47	18		7.2 20	208/230 / 1 /	R410A	126	N		NONE <sup>,</sup>	1					1						
L		L DE REFRIGE	RANT PIPING AN	ND SYSTEM CO	ONTROLS AS SHOWN	ON PIPING DIAGRAM 2/M5																						_						
ſ																												7						
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	JNIT NO.	MANUFA	CTURER	MODEL	NO. SERV	/ICE FAI	N TYPE	DIMENSIO HxWxD	NS COOLI	NG CAPACI <sup>-</sup>	ITY (MBH) ENSIBLE	) HEATING ( CAPACITY (MBH) E	COOLING TEMP (°I	F) HEATIN	G TEMP (°F)	) REFRIG F G LIQUID/S (IN	PIPE DIM PE SUCTION AII	RFLOW	ELECTRICAL	С	OPERATII WEIGH1 (LBS)	NG F E-POWE		PMENT NDANCY	REMARK	ŚŚ								
ŀ	FC 1	MITS	JBISHI	NTXCKS094	A112AA RESTR	ROOM 4-WAY CEI	LING CASSET	T 9-21/32" x 22-7 22-7/16"	7/16" x		7.82	10.5	DB/WB         DB           80/67         57.9	<u>DB</u> 70	<u>DB</u> 99.1	1/4 /					31	N	NC	ONE	1			1						
	FC 2	MITS	JBISHI	NTXCKS094	A112AA RESTR	ROOM 4-WAY CEI	LING CASSET	0.01/20" x 00.7	7/16" x	95	7.82	10.5	80/67 57.9	70	99.1	1/4 /	' 3/8	335 POWERI	ED BY OUTDO	OR UNIT	31	N	NC	ONE	1			-						
-		SH ROOM TH	IERMOSTAT, MI	ITSUBISHI MODI	EL #TAR-40MAAU FOF	CONTROL.																												
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		5									(	6				5										(F	6		1.	SEE ARCHITEC			ROOF ACCESS LOC	ATION
				/			-, ' - ` `,		- , - , -	N N																								
3.5						- , - , - ,	· · · · · · · · · · · · · · · · · · ·		$\frac{1}{2} \left( \begin{array}{c} \frac{1}{2} \\ -\frac{1}{2} \end{array} \right) \left( \begin{array}{c} \frac{1}{2} \end{array} \right) \left( \begin{array}{c} \frac{1}{2} \\ -\frac{1}{2} \end{array} \right) \left( \begin{array}{c} \frac{1}{2} \end{array} \right) \left( \begin{array}{c} \frac{1}{2} \\ -\frac{1}{2} \end{array} \right) \left( \begin{array}{c} \frac{1}{2} \end{array} \right) \left( \begin{array}$			- , , , , , , , , , , , , , , , , , , ,	(	B.5																				
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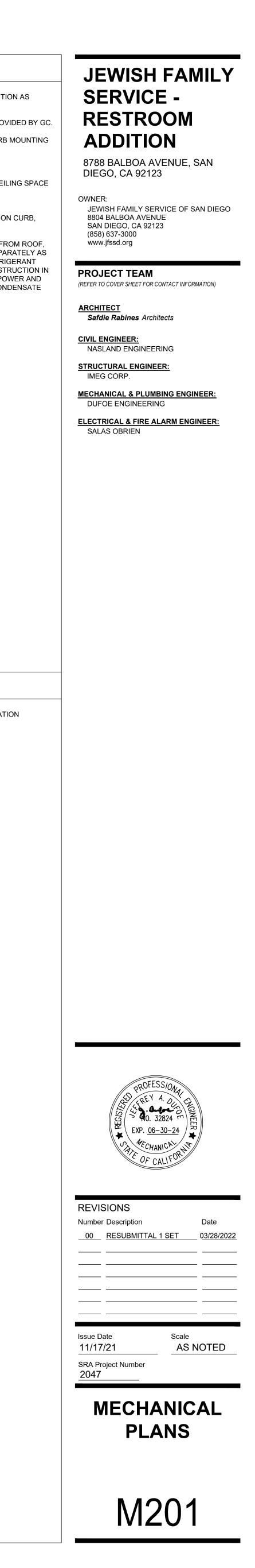
	KEYNOTES
	1)12"x12" EXHAUST DUCT UP TO EF-1 ON ROOF, PROVIDE DUCT TRANSITIO REQUIRED AT FAN INLET.
EXHAUST FAN SCHEDULE	2 36"x14" ACCESS PANEL IN LIGHT COVE FOR EQUIPMENT ACCESS, PROV 3 EF-1 MOUNTED ON ROOF CURB, REFER TO ARCH. DRAWING FOR CURB DETAIL.
UNIT NO. MANUFACTURER MODEL NO. SERVICE FAN TYPE DRIVE CFM ESP (IN. WG) RPM ELECTRICAL OPERATING WEIGHT (LBS) E-POWEI	R EQUIPMENT REDUNDANCY REMARKS
$\frac{1}{1} COOK 1215 AQD RESTROOMS ROOF POWER VENTILATOR DIRECT 540 0.25 155 1/20 0.1 208/1/60 100 N$	NONE       1, 2, 3, 4
1 PROVIDE BIRD SCREEN. (2) PROVIDE DISCONNECT SWITCH. (3) GRAVITY BACK DRAFT DAMPER AND 12" HEIGHT ROOF CURB (COOK MODEL RCG-18) FROM FAN MANUFACTURER. (4) SPACE OCCUPANCY SENSOR AND FAN CONTROL WIRING BY ELECTRICAL T	6 REFRIGERANT PIPING AND ELECTRICAL CONDUITS ROOF PENETRATION REFER TO ARCH. DRAWINGS FOR EXACT LOCATION AND SIZE.
	7       1/4" REFRIGERANT LIQUID AND 3/8" REFRIGERANT GAS PIPES DOWN FRO         ROUTED FROM HP-1 TO INDOOR CASSETTE UNITS FC-1 AND FC-2 SEPAR         INDICATED ON REFRIGERANT PIPING DIAGRAM, 2/M501. INSTALL REFRIGE         PIPING AND ACCESSORIES PER MANUFACTURER'S INSTALLATION INSTR
SPLIT SYSTEM SCHEDULE (CONDENSING UNIT - HEAT PU	THE INSTALLATION MANUAL. REFER TO ELECTRICAL DRAWING FOR POW CONTROL WIRING DETAILS. REFER TO PLUMBING DRAWINGS FOR CONE PIPING INSTALLTION.
	TRICAL WEIGHT LBS) E-POWER EQUIPMENT REMARKS
HP       MITSUBISHI       NTXMMX20A122AC       ROOF       FC-1 & FC-2       27-15/16" x 33-1/16" x13"       18       22       95       47       18       9.65       17.2       20	208/230 / 1 / 60         R410A         126         N         NONE         1
1 PROVIDE REFRIGERANT PIPING AND SYSTEM CONTROLS AS SHOWN ON PIPING DIAGRAM 2/M501.	
SPLIT SYSTEM SCHEDULE (FAN COIL INDOOR	
UNIT NO. MANUFACTURER MODEL NO. SERVICE FAN TYPE DIMENSIONS CAPACITY ENTERING LEAVING ENTERING LEAVING LEAVING	S PIPE DIM PEAK FAN ELECTRICAL OPERATING WEIGHT E-POWER EQUIPMENT REDUNDANCY REMARKS
	1/3/8 335 POWERED BY OUTDOOR UNIT 31 N NONE 1
FC         MITSUBISHI         NTXCKS09A112AA         RESTROOM         4-WAY CEILING CASSETT         9-21/32" x 22-7/16" x 22-7/16"         8.95         7.82         10.5         80/67         57.9         70         99.1         1/4	1 335 POWERED BY OUTDOOR UNIT 31 N NONE 1
1 FURNISH ROOM THERMOSTAT, MITSUBISHI MODEL #TAR-40MAAU FOR CONTROL.	
	GENERAL NOTE
(5)       (5)	6 1. SEE ARCHITECTURAL SHEET A001 FOR EXISTING ROOF ACCESS LOCATION
$5) \xrightarrow{\square}$	

	1										I			KEYNOTES
														 1)12"x12" EXHAUST DUCT UP TO EF-1 ON ROOF, PROVIDE DUCT TRAI REQUIRED AT FAN INLET.
				E	ΞΧΗΑΙ	JST FAN S	CHEDU	LE						2 36"x14" ACCESS PANEL IN LIGHT COVE FOR EQUIPMENT ACCESS, I 3 EF-1 MOUNTED ON ROOF CURB, REFER TO ARCH. DRAWING FOR C DETAIL.
INIT NO. MANUFACTURER MODEL NO. SE	RVICE FAN TYPE	DRIVE CFM	ESP (IN. WG) RPI	м — нь		CAL V / PH / HZ	RATING WEIGH	T (LBS) E-POWER	EQUIPMENT REDUNDANCY	REMARKS				<ul> <li>4 HP-1 REFER TO ARCH. DRAWING FOR SUPPORT DETAILS.</li> <li>5 TWO SETS OF REFRIGERANT LIQUID AND GAS PIPES GO DOWN TO</li> </ul>
EF COOK 1215 AQD REST	ROOF POWER VENTILATOR	DIRECT 540	0.25 155			208 / 1 / 60	100	N	NONE	1, 2, 3, 4				 BELOW TO FC-1 AND FC-2 SEPARATELY. INSTALL THE PIPING PER MANUFACTURER'S INSTRUCTION.
1) PROVIDE BIRD SCREEN. (2) PROVIDE DISCONNECT SWI	TCH. 3 GRAVITY BACK DRAFT DAMPER AND 12" H	HEIGHT ROOF CURB (COOK MOD	DEL RCG-18) FROM FAN	N MANUFACTUR	RER. (4) SPAC	E OCCUPANCY SENSOR A	AND FAN CONTROL W	/IRING BY ELECTRICAL TRA	ÞE.					6 REFRIGERANT PIPING AND ELECTRICAL CONDUITS ROOF PENETRA REFER TO ARCH. DRAWINGS FOR EXACT LOCATION AND SIZE.
														7 1/4" REFRIGERANT LIQUID AND 3/8" REFRIGERANT GAS PIPES DOW ROUTED FROM HP-1 TO INDOOR CASSETTE UNITS FC-1 AND FC-2 S INDICATED ON REFRIGERANT PIPING DIAGRAM, 2/M501. INSTALL R PIPING AND ACCESSORIES PER MANUFACTURER'S INSTALLATION
		SPLIT SYST	TEM SCH	IEDUL	E (COI	NDENSING	G UNIT -	HEAT PUM	P APPLICATIO	N)				THE INSTALLATION MANUAL. REFER TO ELECTRICAL DRAWING FO CONTROL WIRING DETAILS. REFER TO PLUMBING DRAWINGS FOR PIPING INSTALLTION.
IIT NO. MANUFACTURER MODEL NO.	LOCATION SERVICE DIMENSION	ONS COOLING CAPACI	ITY HEATING CAI (MBH)		COOLING UTDOOR TE DB (°F)	HEATING MP OUTDOOR TEN DB (°F)		PF MCA MOCP	REFRIGERAN	T WEIGHT (LBS) E-POV	/ER EQUIPMENT REDUNDANCY	REMARKS		
HP     MITSUBISHI     NTXMMX20A122AC	ROOF FC-1 & FC-2 27-15/16" x		22		95	47	18 9.6	65 17.2 20	208/230 / 1 / 60 R410A	126 N	NONE 1	1		
PROVIDE REFRIGERANT PIPING AND SYSTEM CONTROLS AS				I			I			I	I			
			SPLIT S	YSTE	M SCH	IEDULE (F	AN COIL	INDOOR I	JNIT)					
NO. MANUFACTURER MODEL NO.	SERVICE FAN TYPE	DIMENSIONS HxWxD		ITY (MBH)	HEATING CAPACITY	COOLING TEMP (°F ENTERING LEAVIN DB/WB DB	F) HEATING TE	EMP (°F) REFRIG F LIQUID/S	IPE DIM PEAK FAN JCTION AIRFLOW		OPERATING WEIGHT E-POWE	R EQUIPMENT	REMARKS	
MITSUBISHI NTXCKS09A112AA	RESTROOM 4-WAY CEILING CASSET	9-21/32" x 22-7/16" x	TOTAL SE 8.95	ENSIBLE 7.82	(MBH) 10.5	DB/WB         DB           80/67         57.9		<u>DB</u> (IN 99.1 1/4 /		MOCP V / PH / HZ	(LBS) 31 N	NONE	1	
MITSUBISHI NTXCKS09A112AA			8.95	7.82	10.5	80/67 57.9		99.1 1/4 /		ED BY OUTDOOR UNIT		NONE	1	
/ I JRNISH ROOM THERMOSTAT, MITSUBISHI MODEL #TAR-40	MAAU FOR CONTROL.													
				× × /		(	B.5							1. SEE ARCHITECTURAL SHEET A001 FOR EXISTING ROOF ACCES
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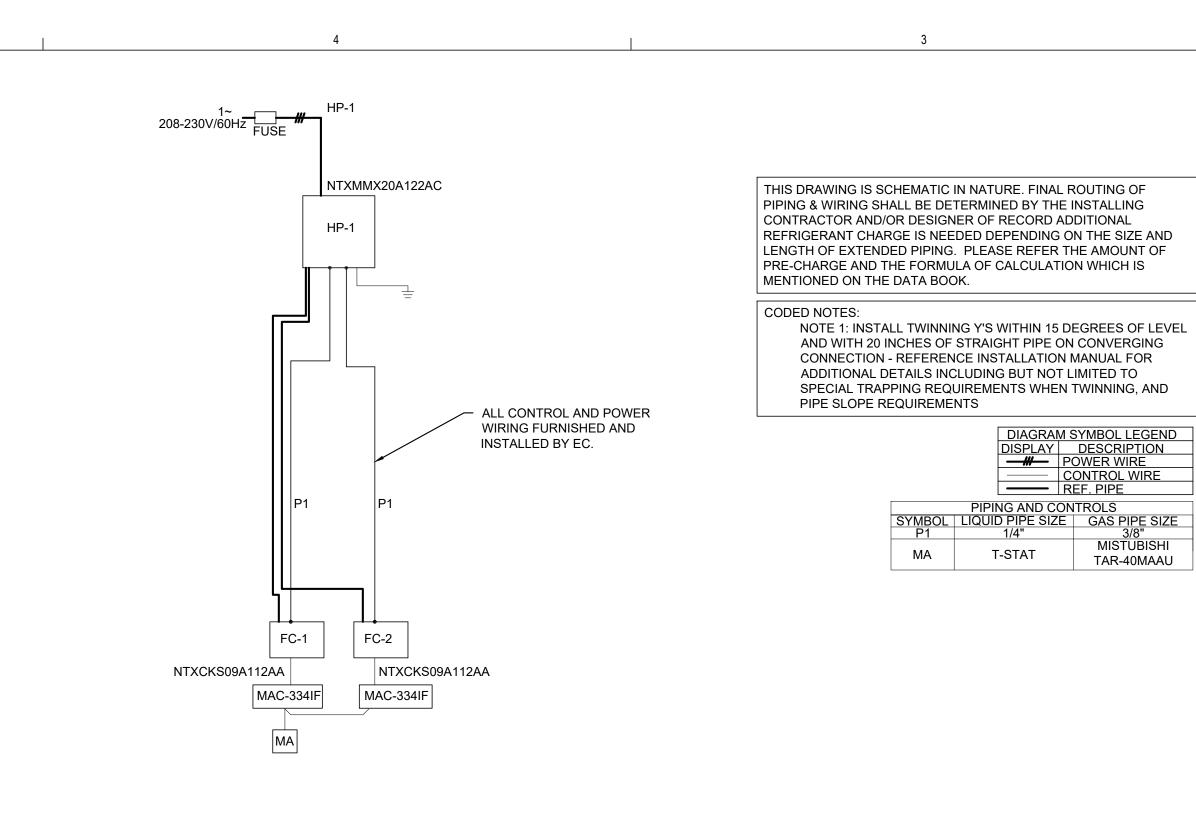




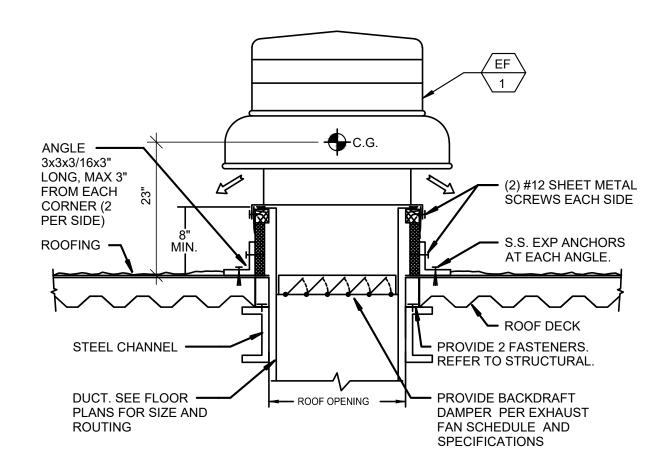
MECHANICAL ENLARGED RESTROOM PLAN 1/2" = 1'-0"



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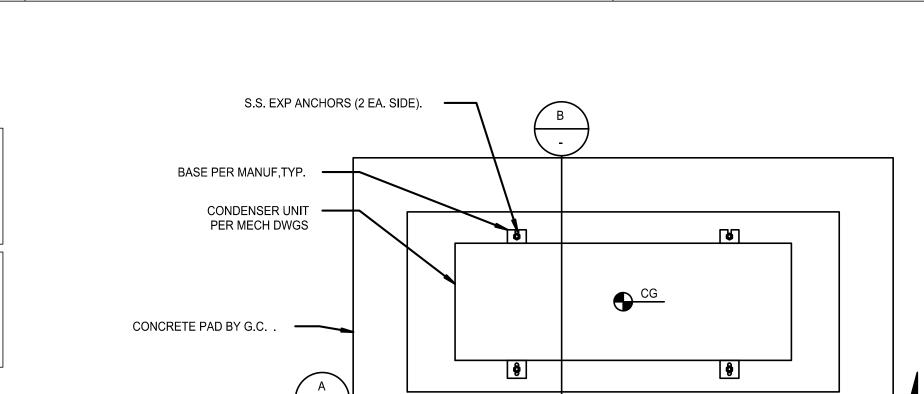


REFRIGERANT PIPING DIAGRAM 2

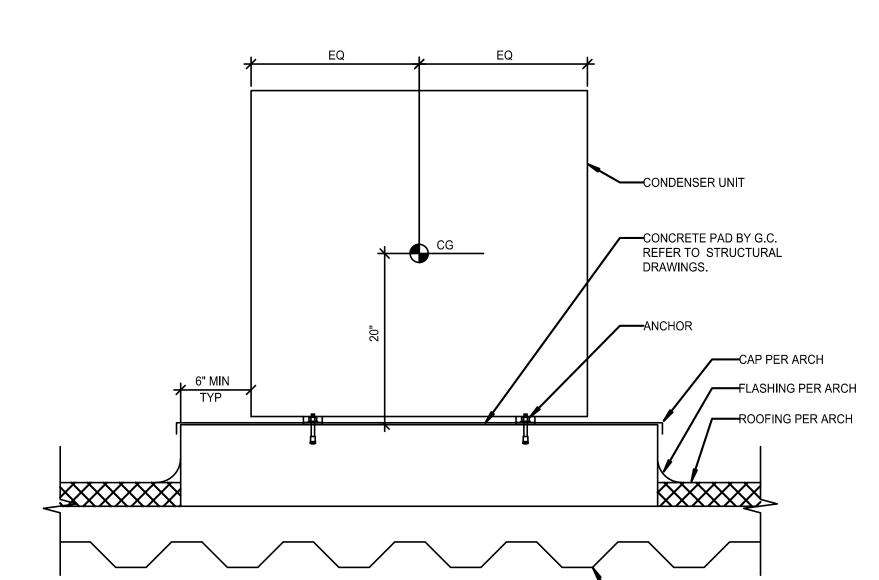


4

EXHAUST FAN MOUNTING DETAIL NOT TO SCALE

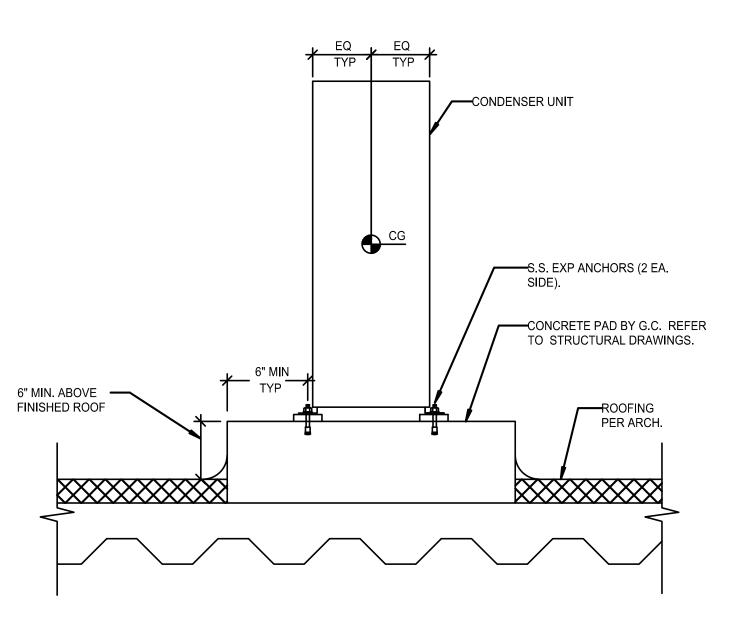


PLAN VIEW



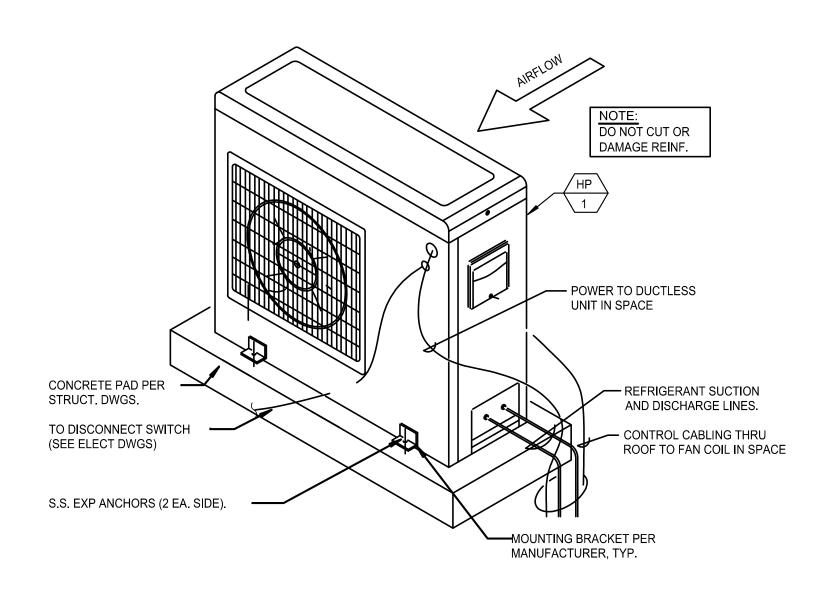


METAL DECK



AIL 3

ELEVATION B



CONDENSING UNIT MOUNTING DETAIL NOT TO SCALE



6	5 4 S LEGEND MAY OR MAY NOT BE USED IN THIS PROJECT. FLOOR		2
 RICAL SYMBOL LEGEND PLANS SHALL DICTATE	WHICH SYMBOLS ARE APPLICABLE.		
NICAL STIVIDUL LEGEIND PLANS SHALL DICTATE		<ol> <li>PROJECT NOTES</li> <li>PROJECT</li></ol>	<ol> <li>A. Sobert Trade Statu De Service in vitte The Tool Statu Tool Status Property in the service in th</li></ol>
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XR

XFMR TRANSFORMER

# ABBREVIATIONS AMPS



XT ES	SYMBOL	LAMP TYPE	FIXTURE MOUNTING	LAMP DESC	WATTS	VOLTS	MFR/CATALOG	DESCRIPTION
F1	0	LED	RECESSED	LED 3000K 1000 LUMENS	18	MVOLT	LITHONIA LIGHTING LDN6-35/10-L06- AR-120	6" DIAMETER LED DOWNLIGHT FIXTURE. WET LOCATION LISTED
1E	<b>O</b> <sup>EB</sup>	LED	RECESSED	LED 3000K 1000 LUMENS	18	MVOLT	LITHONIA LIGHTING LDN6-35/10-L06- AR-120-EL	6" DIAMETER LED DOWNLIGHT FIXTURE WITH EMERGENCY BATTERY PACK. WET LOCATION LISTED
2		LED	WALL	LED 3000K 1176 LUMENS	17.7	MVOLT	MODA LIGHT MMCI-S-S-0-30H -4	4' LED COVE LIGHT FIXTURE. WET LOCATION LISTED
F3>	•	LED	RECESSED	LED 3000K 1000 LUMENS	18	MVOLT	LITHONIA LIGHTING LDN6-35/10-L06- AR-120	6" DIAMETER LED DOWNLIGHT FIXTURE. WET LOCATION LISTED. PROVIDE FIXTURE WITH MOTION SENSOR



### STATE OF CALIFORNIA Indoor Lighting

NRCC-LTI-E CERTIFICATE OF COMPLIANCE Project Name: Jewish Family Service of San Diego Report Page: Project Address: 8804 Balboa Avenue Date Prepared: DOCUMENTATION AUTHOR'S DECLARATION STATEMENT I certify that this Certificate of Compliance documentation is accurate and complete. Documentation Author Name: Ed David cumentation Author Signature: Guardu Company: Salas Obrien gnature Date: Address: 3220 Executive Ridge, Suite 210 EA/ HERS Certification Identification (if applicable): City/State/Zip: Vista, CA 92108 **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. 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 (respo The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compl of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance docur 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 enforminspections. 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 Responsible Designer Signature: Responsible Designer Name:

Ed David	Edu
Company:	Date Signed:
Salas Obrien	2022-03-21
Address:	License:
3220 Executive Ridge, Suite 210	E18809
City/State/Zip:	Phone:
Vista CA 92108	760-560-0100

**Registration Number:** 

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CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Registration Date/Time: Report Version: 2019.1.003 Schema Version: rev 20200601

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Image: Marca-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.       Image: Marca-LTI-03-A - Must be submitted for automatic daylight controls.       Image: Marca-LTI-03-A - Must be submitted for automatic daylight controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.       Image: Marca-LTI-03-A - Must be submitted for demand responsive lighting controls.		CA Building Energy Efficiency Sta STATE OF CALIFORNIA Indoor Lighting NRCC-LTI-E CERTIFICATE OF COMPLIANCE Project Name: Project Address: U. DECLARATION OF REQUI Selections have been made ba Additional Remarks. These door	Jewish Family IRED CERTIFICATES OF ACCEPTANCE ased on information provided in this docume cuments must be provided to the building in	Report Version: 2019.1.003 Schema Version: rev 20200601 Service of San Diego Report Page: 8804 Balboa Avenue Date Prepared: ent. If any selection have been changed by the spector during construction and any with "-A	Report Ge CALIFC e permit applicant, an explanation sho \" in the form name must be completed	enerated: 2022-03-21 16:21: DRNIA ENERGY COMMISSI NRCC-LT (Page 6 o 3/21/20 uld be included in Table E.
NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.		CA Building Energy Efficiency Sta STATE OF CALIFORNIA Indoor Lighting NRCC-LTI-E CERTIFICATE OF COMPLIANCE Project Name: Project Address: U. DECLARATION OF REQUI Selections have been made ba Additional Remarks. These doo Test Technician Certification Pr	Jewish Family IRED CERTIFICATES OF ACCEPTANCE ased on information provided in this docume cuments must be provided to the building in	Report Version: 2019.1.003 Schema Version: rev 20200601 Service of San Diego Report Page: 8804 Balboa Avenue Date Prepared: ent. If any selection have been changed by the spector during construction and any with "-A http://www.energy.ca.gov/title24/attcp/pro	Report Ge CALIFC e permit applicant, an explanation sho \" in the form name must be completed	enerated: 2022-03-21 16:21: DRNIA ENERGY COMMISSI NRCC-LT (Page 6 o 3/21/20 uld be included in Table E. d through an Acceptance Field Inspector
NRCA-LTI-05-A Must be submitted for institutional tuning power adjustment factor (PAF)		CA Building Energy Efficiency Sta STATE OF CALIFORNIA Indoor Lighting NRCC-LTI-E CERTIFICATE OF COMPLIANCE Project Name: Project Address: U. DECLARATION OF REQUI Selections have been made ba Additional Remarks. These doo Test Technician Certification Pr Yes No Yes No NRC	Jewish Family IRED CERTIFICATES OF ACCEPTANCE ased on information provided in this docume cuments must be provided to the building in rovider (ATTCP). For more information visit: CA-LTI-02-A - Must be submitted for occupan	Report Version: 2019.1.003 Schema Version: rev 20200601 Service of San Diego Report Page: 8804 Balboa Avenue Date Prepared: ent. If any selection have been changed by the spector during construction and any with "-A http://www.energy.ca.gov/title24/attcp/pro Form/Title	Report Ge CALIFC e permit applicant, an explanation sho A" in the form name must be completed oviders.html	PRNIA ENERGY COMMISSI NRCC-LT (Page 6 or 3/21/20 uld be included in Table E. d through an Acceptance Field Inspector Pass Fail □ □
		CA Building Energy Efficiency State STATE OF CALIFORNIA Indoor Lighting NRCC-LTI-E CERTIFICATE OF COMPLIANCE Project Name: Project Address: U. DECLARATION OF REQUI Selections have been made ba Additional Remarks. These doo Test Technician Certification Pri Yes No Yes No NRC	Jewish Family IRED CERTIFICATES OF ACCEPTANCE ased on information provided in this docume cuments must be provided to the building in rovider (ATTCP). For more information visit: CA-LTI-02-A - Must be submitted for occupan CA-LTI-03-A - Must be submitted for automa	Report Version: 2019.1.003         Schema Version: rev 20200601         Service of San Diego         Report Page:         8804 Balboa Avenue         Date Prepared:         ent. If any selection have been changed by the spector during construction and any with "-A http://www.energy.ca.gov/title24/attcp/pro         Form/Title         ncy sensors and automatic time switch contratic daylight controls.	Report Ge CALIFC e permit applicant, an explanation sho A" in the form name must be completed oviders.html	PRNIA ENERGY COMMISSI NRCC-LT (Page 6 of 3/21/20 uld be included in Table E. d through an Acceptance Field Inspector Pass Fail 
		CA Building Energy Efficiency State STATE OF CALIFORNIA Indoor Lighting NRCC-LTI-E CERTIFICATE OF COMPLIANCE Project Name: Project Address: U. DECLARATION OF REQUI Selections have been made ba Additional Remarks. These doo Test Technician Certification Pri Yes No Yes No NRC NRC NRC	Jewish Family IRED CERTIFICATES OF ACCEPTANCE ased on information provided in this docume cuments must be provided to the building in rovider (ATTCP). For more information visit: CA-LTI-02-A - Must be submitted for occupan CA-LTI-03-A - Must be submitted for automa CA-LTI-04-A - Must be submitted for demand	Report Version: 2019.1.003 Schema Version: rev 20200601 Service of San Diego Report Page: 8804 Balboa Avenue Date Prepared: ent. If any selection have been changed by the spector during construction and any with "-A http://www.energy.ca.gov/title24/attcp/pro Form/Title ncy sensors and automatic time switch contr atic daylight controls.	Report Ge CALIFC e permit applicant, an explanation sho A" in the form name must be completed oviders.html	enerated: 2022-03-21 16:21: DRNIA ENERGY COMMISSI NRCC-L (Page 6 o 3/21/2 uld be included in Table E d through an Acceptance Field Inspector Pass Fail Question Question Pass Fail Question Question
		CA Building Energy Efficiency State STATE OF CALIFORNIA Indoor Lighting NRCC-LTI-E CERTIFICATE OF COMPLIANCE Project Name: Project Address: U. DECLARATION OF REQUI Selections have been made ba Additional Remarks. These doo Test Technician Certification Pri Yes No Yes No NRC NRC NRC	Jewish Family IRED CERTIFICATES OF ACCEPTANCE ased on information provided in this docume cuments must be provided to the building in rovider (ATTCP). For more information visit: CA-LTI-02-A - Must be submitted for occupan CA-LTI-03-A - Must be submitted for automa CA-LTI-04-A - Must be submitted for demand	Report Version: 2019.1.003 Schema Version: rev 20200601 Service of San Diego Report Page: 8804 Balboa Avenue Date Prepared: ent. If any selection have been changed by the spector during construction and any with "-A http://www.energy.ca.gov/title24/attcp/pro Form/Title ncy sensors and automatic time switch contr atic daylight controls.	Report Ge CALIFC e permit applicant, an explanation sho A" in the form name must be completed oviders.html	enerated: 2022-03-21 16:21: DRNIA ENERGY COMMISSI NRCC-L (Page 6 o 3/21/2 uld be included in Table E. d through an Acceptance Field Inspector Pass Fail C. C. C

4

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

4

Registration Date/Time: Report Version: 2019.1.003 Schema Version: rev 20200601

**Registration Provide** Report Generated: 2022-03

3

**Registration Number:** 

STATE OF CALIFORNIA Indoor Lighting

CERTIFICATE OF COMPLIANCE

C. COMPLIANCE RESULTS

Lighting in

conditioned and

unconditioned

combined for

compliance per

<u>§140.6(b)1</u>

Conditioned

Unconditioned

D. EXCEPTIONAL CONDITIONS

F. INDOOR LIGHTING FIXTURE SCHEDULE

Complete Luminaire

F1-18w

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Description

Designed Wattage: Conditioned Spaces

E. ADDITIONAL REMARKS

01

Name or Item

Tag

F1/F1E

Registration Number:

STATE OF CALIFORNIA Indoor Lighting

CERTIFICATE OF COMPLIANCE

F. INDOOR LIGHTING FIXTURE SCHEDULE

G. MODULAR LIGHTING SYSTEMS

**Building Level Controls** 

Area Level Controls

to §130.1(d)2

Registration Number:

04

Area Description

This section does not apply to this project.

F2-17.7w

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

this adjustment, the permit applicant should enter full rated wattage in column 05.

01

Mandatory Demand Response §110.12(c)

Required > 10,000 SF

Complete Building or Area

**Category Primary Function** 

Area

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

NRCC-LTI-E

Project Name:

Project Address:

F2

the lamp.

spaces must not be

NRCC-LTI-E

Project Name:

Project Address:

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

02

Area

195

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

03

Modular

(Track) Fixture

No

No

This table includes all permanent designed lighting and all portable lighting in offices.

01

Complete

Building

§140.6(c)1

CERTIFICATE OF COMPLIANCE											NRCC-LT
This document is used to der path.	nonstrate comp	liance with requirements	s in §	<u>\$110.9</u> , <u>\$110.12(c)</u> , <u>\$</u>	<u>130.0</u> , <u>:</u>	<u>§130.1, §140.6</u>	and <u>§141.0(b)2</u> for ind	loor	lighting scopes using	g the	e prescriptive
Project Name:		Jewish Fa	amily	y Service of San Diego I	Report P	age:					(Page 1 of
Project Address:				8804 Balboa Avenue	Date Pre	pared:					3/21/20
A. GENERAL INFORMATIC	N					ži.			-		
01 Project Location (city) San Diego		197 197	04	Total Conditio	ned Floor Area (ft <sup>2</sup> )		300				
02 Climate Zone		7			05	Total Unconditioned Floor Area (ft <sup>2</sup> )			0		
03 Occupancy Types Within	Project (select a	all that apply):			06	# of Stories (Habitable Above Grade)			1		
Office		Retail		Warehouse		Hotel/Motel			School		Support Areas
								-			
Parking Garage B. PROJECT SCOPE This table includes any lighti.		High-Rise Residential		Relocatable		Healthcare	ompliance using the pre		Other (Write in)	n <u>§1</u>	See Table I 40.6 or
B. PROJECT SCOPE This table includes any lighti	ng systems that	are within the scope of t			nd are d	emonstrating co			ptive path outlined i		40.6 or
B. PROJECT SCOPE		are within the scope of t			nd are d						40.6 or
<b>B. PROJECT SCOPE</b> This table includes any lighti <u>§141.0(b)2</u> for alterations.	ng systems that Scope of Wo 01	are within the scope of t		permit application an	nd are d Ca	emonstrating conditioned Space	es		ptive path outlined i	ed S	40.6 or paces
<b>B. PROJECT SCOPE</b> This table includes any lighti <u>§141.0(b)2</u> for alterations.	ng systems that Scope of Wo 01	are within the scope of t		permit application an	ad are d Ca 02	emonstrating conditioned Space	es 03		ptive path outlined i Uncondition 04	ed S	<u>40.6</u> or paces 05
B. PROJECT SCOPE This table includes any lighti. §141.0(b)2 for alterations. My Project	ng systems that Scope of Wo 01 Consists of (che	are within the scope of t rk ck all that apply):		permit application an	ad are d Ca 02	emonstrating conditioned Space	es 03		ptive path outlined i Uncondition 04	ed S	<u>40.6</u> or paces 05
B. PROJECT SCOPE This table includes any lighti §141.0(b)2 for alterations. My Project New Lighting System	ng systems that Scope of Wo 01 Consists of (che Parking Garage	are within the scope of t rk ck all that apply):		Dermit application an Calcu	nd are d Co 02 Jation f	emonstrating conditioned Space	es 03	escri	ptive path outlined i Uncondition 04	ed Sj	<u>40.6</u> or paces 05

Registration Date/Time:

Report Version: 2019.1.003

Jewish Family Service of San Diego Report Page:

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 <u>§140.6(b)</u> (Watts)

04

Tailored

(+)

03

Area

Category

Category Additional §140.6(c)3

(+)

0

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

04

Small

Aperture &

Color Change<sup>1</sup>

No

05

Watts per

luminaire<sup>2</sup>

18

Jewish Family Service of San Diego Report Page:

8804 Balboa Avenue Date Prepared:

No 17.7 Mfr. Spec 4

<sup>1</sup>FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per <u>§140.6(a)4B</u> is adjusted to be 75% of their rated wattage. Table F automatically makes

<sup>2</sup>Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per <u>§130.0(c)</u> Wattage used must be the maximum rated for the luminaire, not

This table includes lighting controls for conditioned and unconditioned spaces. When a control having a \* is shown, the notes section of this table provides more detail on how

Multi-Level

Controls

§130.1(b)

compliance is achieved. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.

Area Controls

<u>§130.1(a)</u>

§140.6(c)2 §140.6(c)2G

(See Table I) (See Table I) (See Table J) (See Table K)

8804 Balboa Avenue Date Prepared:

05

Total

Allowed

(Watts)

195 ≥

| ≥ |

06

determined

Mfr. Spec

Registration Date/Time:

Report Version: 2019.1.003

Schema Version: rev 20200601

Schema Version: rev 20200601

Adjusted Lighting Power per §140.6(a) (Watts)

0 =

Controls Compliance (See Table H for Details)

08

No

No

Total Designed Watts: CONDITIONED SPACES 178.8

02

Shut-off controls §130.1(c)

Whole Building Auto Time Switch

Shut-Off Controls

§130.1(c)

mary/S

lit

Daylighting

Secondary

Daylighting Systems

140.6(d) §140.6(a)1

Plan Sheet Showing Daylit Zones:

Adjustment

PAF Lighting

§140.6(a)2

Rated Power Reduction Compliance (See Table Q for Details)

(-)

Designed Control Credits

(See Table F) (See Table P)

How is Wattage Total Number Excluded per

6

of Luminaires §140.6(a)3

08

**Total Adjusted** 

(Watts)

\*Includes

Adjustments

178.8

09

Design Watts

108

70.8

06

Total

(Watts)

178.8

ler: Energysoft	

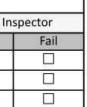
	NRCC-LTI-E
1	(Page 5 of 7)
	3/21/2022

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03-21 16:21:20

	NRC	C-LTI-E
(	Page	6 of 7
	3/2	1/2022
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03-21 16:21:20	

2

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Registration Date/Time: Report Version: 2019.1.003 Schema Version: rev 20200601

Registration Provider: Energysoft Report Generated: 2022-03-21 16:21:20

Registration Provider: Energysoft

Report Generated: 2022-03-21 16:21:20

CALIFORNIA ENERGY COMMISSION

Compliance Results

09

05 must be >= 08

§140.6

COMPLIES

COMPLIES

10

Field Inspector

Pass Fail

Registration Provider: Energysoft

Report Generated: 2022-03-21 16:21:20

CALIFORNIA ENERGY COMMISSION

NRCC-LTI-E

(Page 3 of 7)

03

Field Inspector

Pass Fail

12

Field Inspector

Pass Fail

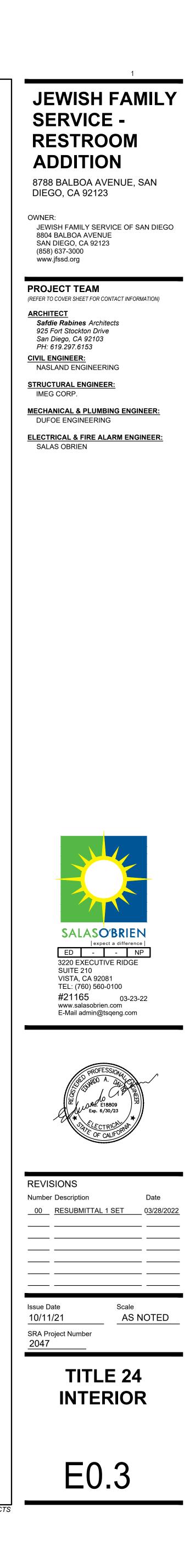
3/21/2022

NRCC-LTI-E

(Page 2 of 7)

3/21/2022

© SAFDIE RABINES ARCHITECTS



### STATE OF CALIFORNIA **Outdoor Lighting**

NRCC-LTO-E CERTIFICATE OF COMPLIANCE

Project Name: Jewish Fan	nily Service of San Diego Report Page:
Project Address:	8804 Balboa Avenue Date Prepared:
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
I certify that this Certificate of Compliance documentation is a	ccurate and complete.
Documentation Author Name: Ed David	Documentation Author Signature:
Company: Salas Obrien	Signature Date:
Address: 3220 Executive Ridge, Suite 210	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Vista, CA 92108	Phone:
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 Cer plans and specifications submitted to the enforcement agency for approval 5. I will ensure that a completed signed copy of this Certificate of Compliance	s, and manufactured devices for the building design or system design identified on this Certificate of rtificate of Compliance are consistent with the information provided on other applicable compliance with this building permit application. shall be made available with the building permit(s) issued for the building, and made available to the f Compliance is required to be included with the documentation the builder provides to the building.
Responsible Designer Name: Ed David	Responsible Designer Signature: - Colucardo Gi
Company: Salas Obrien	Date Signed: 2022-03-21
Address:	
3220 Executive Ridge, Suite 210	License: E18809

1

**Registration Number:** 

6

CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance

Registration Date/Time: Report Version: 2019.1.003

Schema Version: rev 20200601

5

5

1

4

4

1

NRCC-LTO-E CERTIFICATE OF COMPLIANCE	CALIFORNIA ENERGY COMMISSION NRCC-LTO-E	Outdoor Lighting NRCC-LTO-E CERTIFICATE OF COMPLIANCE		CALIFORNIA ENERGY COMMISSIO		
Project Name: Jewish Family Service of San Diego Rep Project Address: 8804 Balboa Avenue Dat	port Page: (Page 4 of 7)		Family Service of San Diego Report Page: 8804 Balboa Avenue Date Prepared:	(Page 1 of 7 3/21/202		
H. OUTDOOR LIGHTING CONTROLS		A. GENERAL INFORMATION		5, 23, 202		
This table demonstrates compliance with controls requirements for all new or altered luminaires existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only		01     Project Location (city)     San Diego       02     Climate Zone     7	04 Total Illuminated Hardscape Area	a (ft <sup>2</sup> ) 0		
the permit application. When an option having a * is selected, the notes section of this table must be completed. The lig "DOES NOT COMPLY" if the notes are left blank.	hting controls section of the Compliance Summary Table on the first page will show	03       Outdoor Lighting Zone per Title 24 Part 1 §10.114 or as des         □       LZ-0: Very Low - Undeveloped Parkland       □       LZ-2: Moder	rate - Rural Areas   LZ-4: High - Must be reviewed by	CA Energy Commission for Approval		
Mandatory Controls 01 02	03 04 05	LZ-1: Low - Developed Parkland       IZ-3: Moder         B. PROJECT SCOPE	rately High - Urban Areas			
Area Description Shut-Off A	uto-Schedule Motion Sensor Field Inspector		pe of the permit application and are demonstrating compliance using	the prescriptive path outlined in <u>§140.7</u> or		
* NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.	<u>§130.2(c)2</u> <u>§130.2(c)3</u> Pass Fail	My Project Consists of: 01	02			
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to <u>\$130.2(c)</u>		New Lighting System       Altered Lighting System	Must Comply with Allowances from <u>§140.7</u> Is your alteration increasing the connected lighting load (Watts)?	🔹 Yes 💿 No		
I. LIGHTING POWER ALLOWANCE (per §140.7)         This table includes areas using 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.	01	03 % of Existing Luminaires Being Altered <sup>1</sup>	04 Sum Total of Luminaires Being Added or Altered	05 Calculation Method		
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	General       "Use it or lose it" Allowance (select all that apply) (select all that apply)         ardscape       Image: Comparison of the second select all that apply)         lowance       Application         Table K       Table K	< 10%	efine the project's luminaires.			
it or loca it! allowance	e I (below) Table J Table K Table L Table M	<sup>1</sup> FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total o	of Luminaires Being Added or Altered / Existing Luminaires within the	Scope of the Permit Application) x 100.		
This section does not apply to this project. Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 2 & 3)						
This section does not apply to this project.						
Registration Number: Registration	Date/Time: Registration Provider: Energysoft	Registration Number:	Registration Date/Time:	Registration Provider: Energysoft		
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J. LIGHTING ALLOWANCE: PER APPLICATION		C. COMPLIANCE RESULTS				
This table includes areas using the wattage allowance per application from <u>Table 140.7-B</u> .	05 06 07 08 09 10		nd calculations in Tables F through I. Note: If any cell on this table say. able referenced below.	s "COMPLIES with Exceptional Conditions" refer		
	WANCE (Watts) DESIGN WATTS Additional	Calculations of Total Allowed Lighting Power		Compliance Results		
Area Description Application per Table 140.7-B <sup>1</sup> # of Locations Locations	Allowance Name or Luminaire Luminaires (Watts)	General Hardscape + Application + Eroptage + Ornar	mental + Per Specific Power = Total Allower			
Extrance Building Entrance/Exit 1 19	19 F3 18 1 18 18	Allowance $\underline{\$140.7(d)1}$ (See Table I) $\underline{\$140.7(d)2}$ (See Table J) $\underline{\$140.7(d)2}$ (See Table K) $\underline{\$140.7(d)2}$ (See Table K)	Allowance (Watts)	(Watts) 07 must be >= 08		
	Total Design Watts for this Area:       18         Total Allowance (Watts) All Areas:       18	0 + 18 + + -	+ OR = 18 pliance (See Table G for Details)	≥ 18 COMPLIES		
<sup>1</sup> FOOTNOTES: Primary entrance applications are only available for senior care facilities, healthcare facilities <sup>2</sup> The Allowance per Location for ATMs is 100W for the first ATM and 35W for each additional per <u>Table 140</u> <sup>3</sup> For luminaires indicated in Table F as linear, wattage in column 07 is W/lf instead of Watts/luminaire. Tota	<u>9.7-В</u> .	Controls Com	pliance (See Table H for Details)	COMPLIE		
<ul> <li>For luminaires indicated in Table F as linear, wattage in column 07 is W/If instead of Watts/luminaire. Tota</li> <li>K. LIGHTING ALLOWANCE: SALES FRONTAGE</li> </ul>		<b>D. EXCEPTIONAL CONDITIONS</b> This table is auto-filled with uneditable comments because of select	tions made or data entered in tables throughout the form.			
This section does not apply to this project.		E. ADDITIONAL REMARKS	therity Heving Indiation			
L. LIGHTING ALLOWANCE: ORNAMENTAL This section does not apply to this project.		This table includes remarks made by the permit applicant to the Au	anoncy naving julistiction.			
M. LIGHTING ALLOWANCE: PER SPECIFIC AREA This section does not apply to this project.						
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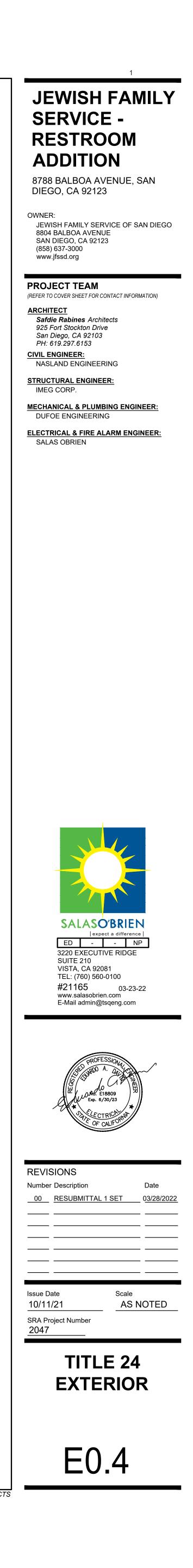
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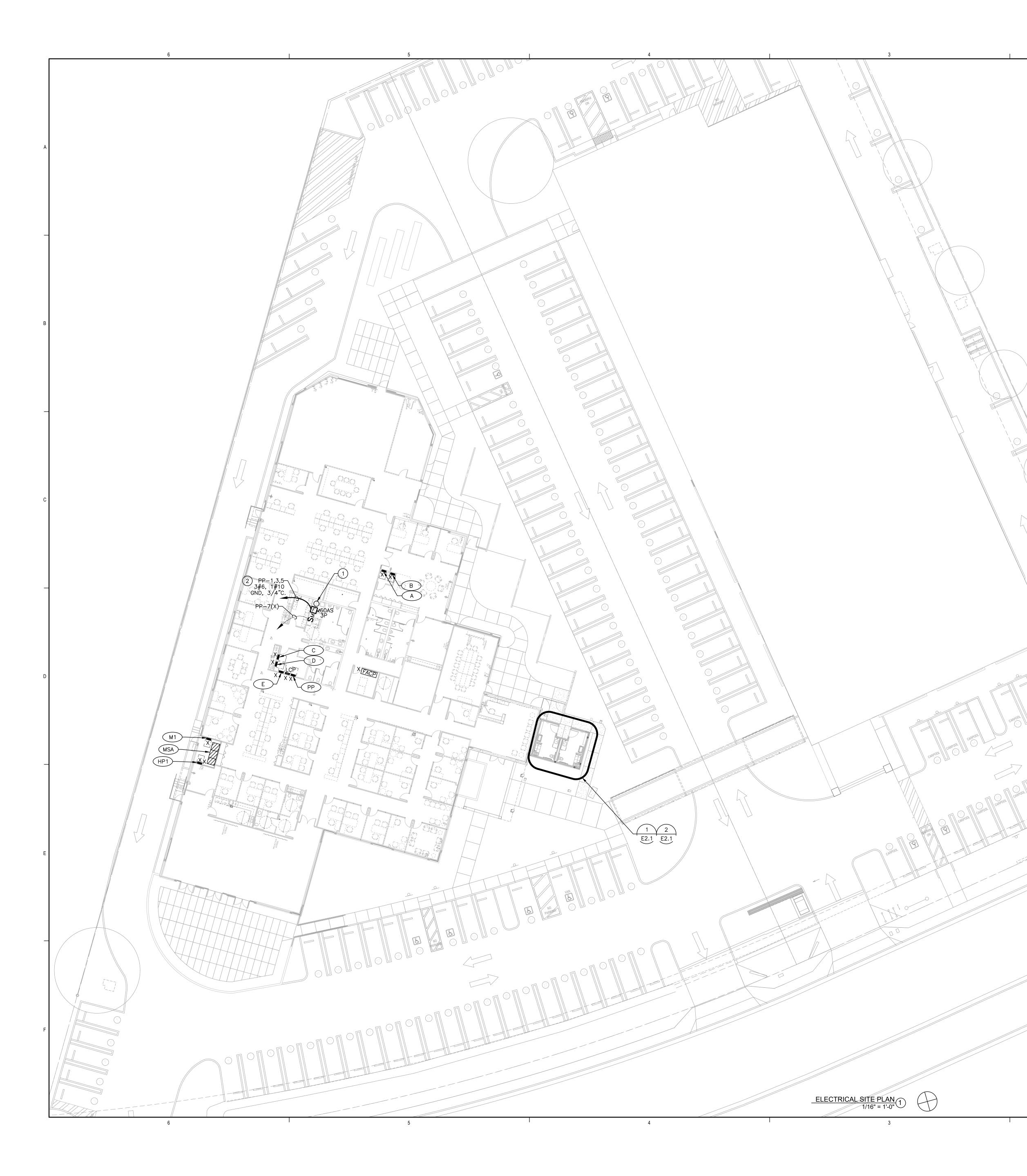
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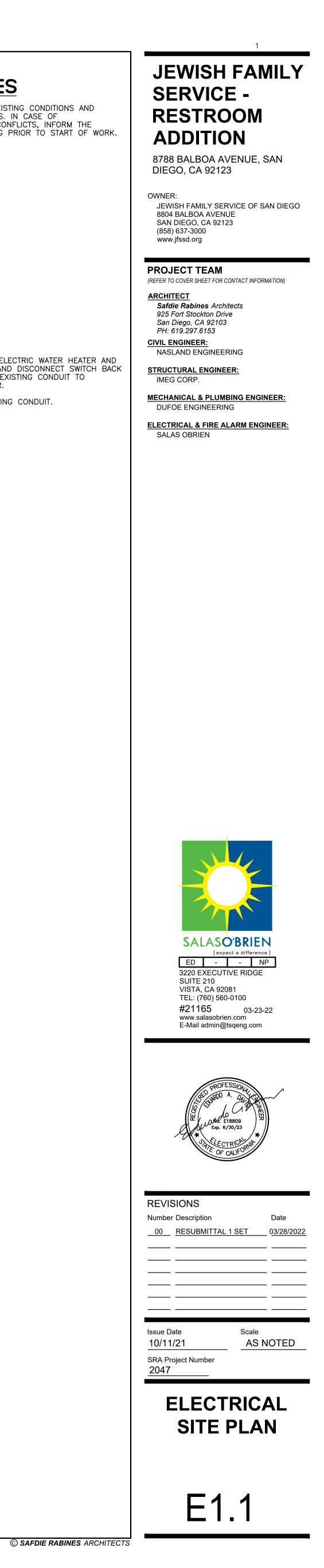
# GENERAL NOTES

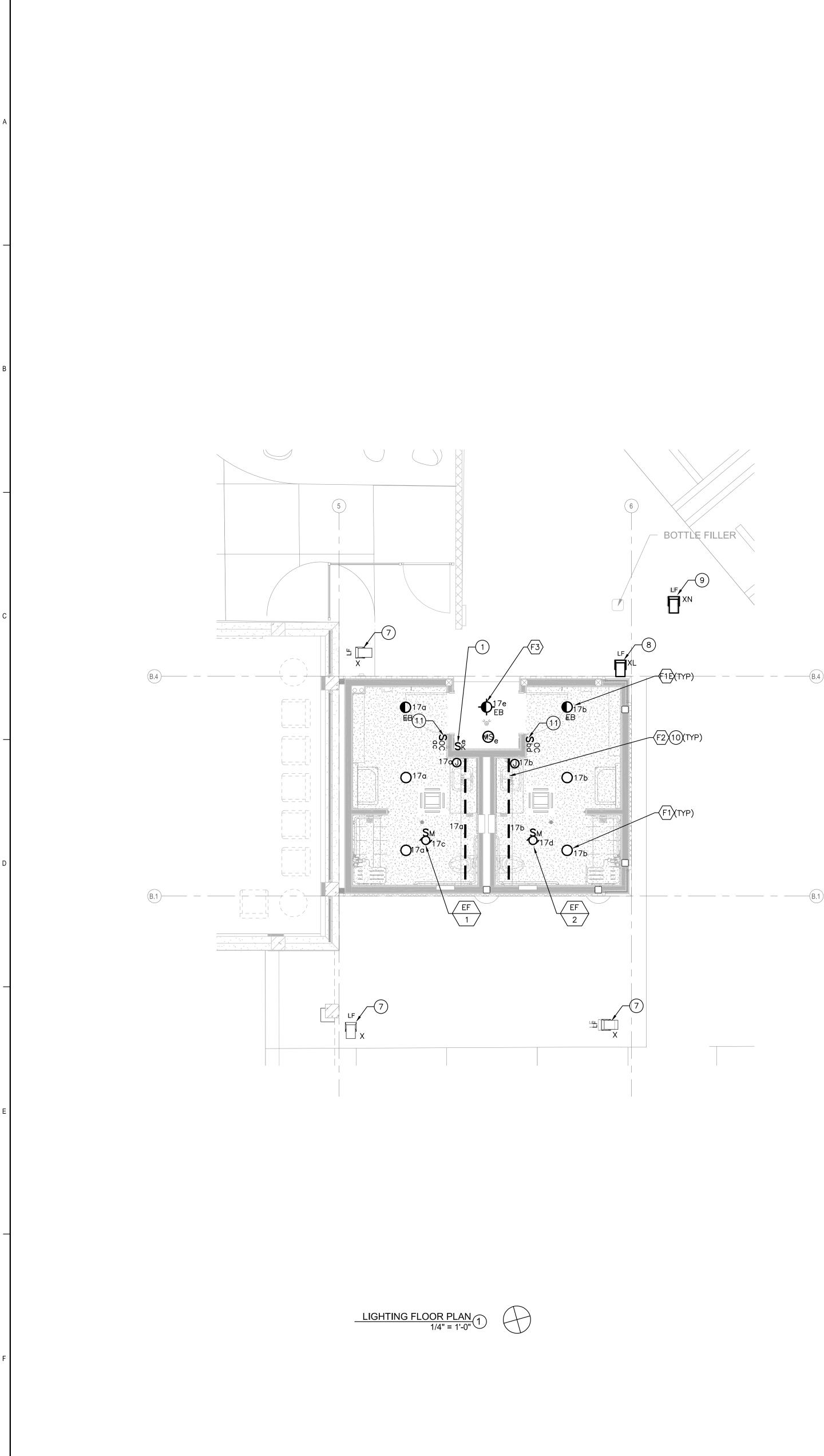
A. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH ALL OTHER TRADES. IN CASE OF DISCREPANCIES OR ANY POTENTIAL CONFLICTS, INFORM THE ARCHITECT AND ENGINEER IN WRITING PRIOR TO START OF WORK.

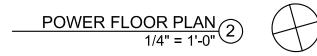


1 DISCONNECT AND REMOVE EXISTING ELECTRIC WATER HEATER AND ALL THE ASSOCIATED CONDUCTORS AND DISCONNECT SWITCH BACK TO ITS ORIGINAL SOURCE. MAINTAIN EXISTING CONDUIT TO RECONNECT FOR NEW WATER HEATER.

2 PROVIDE NEW CONDUCTORS IN EXISTING CONDUIT.



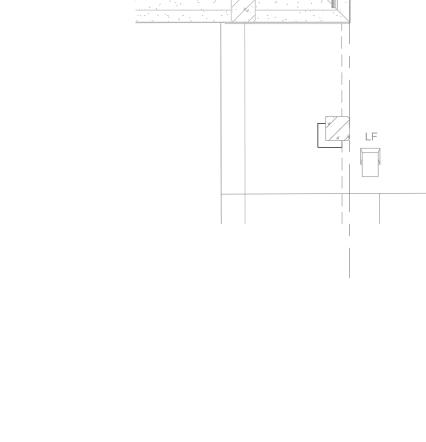


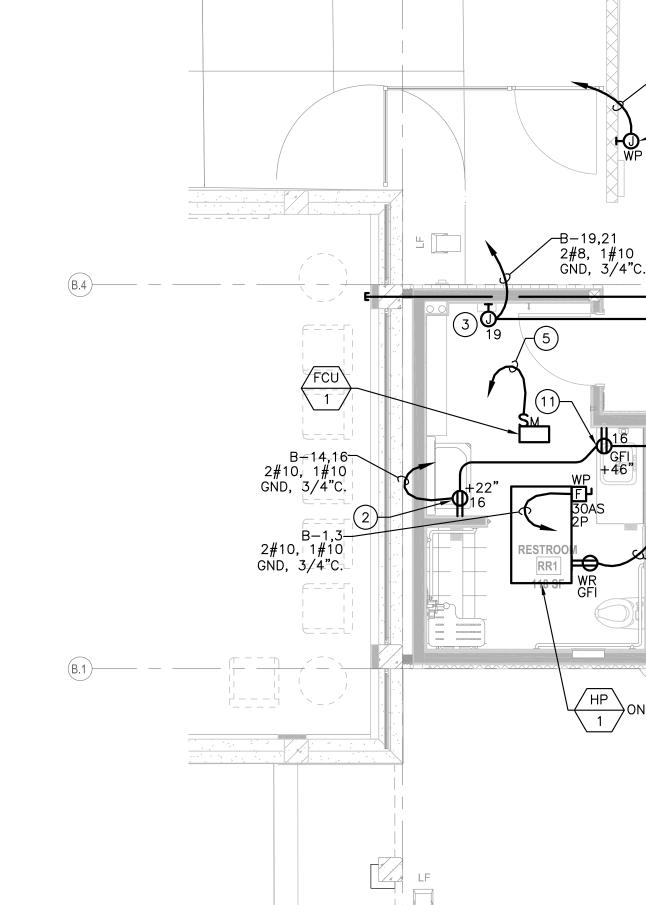












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# <u>GENERAL NOTES</u>

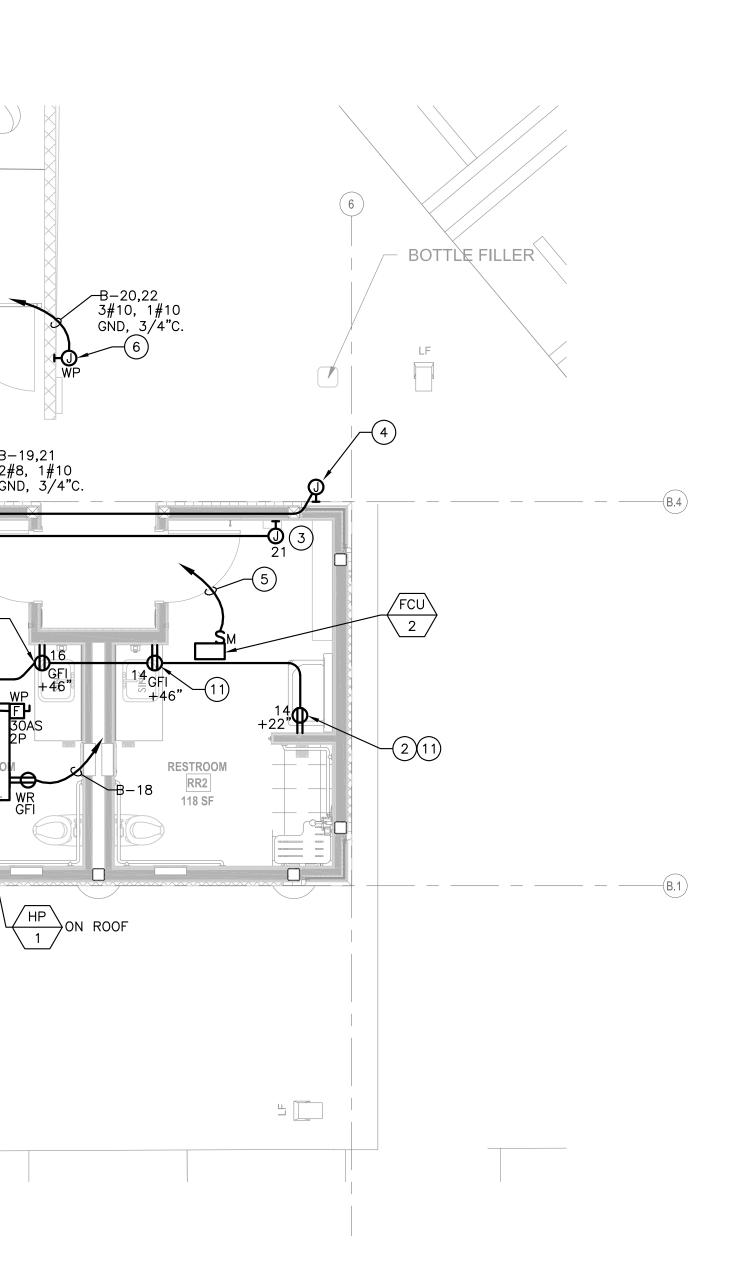
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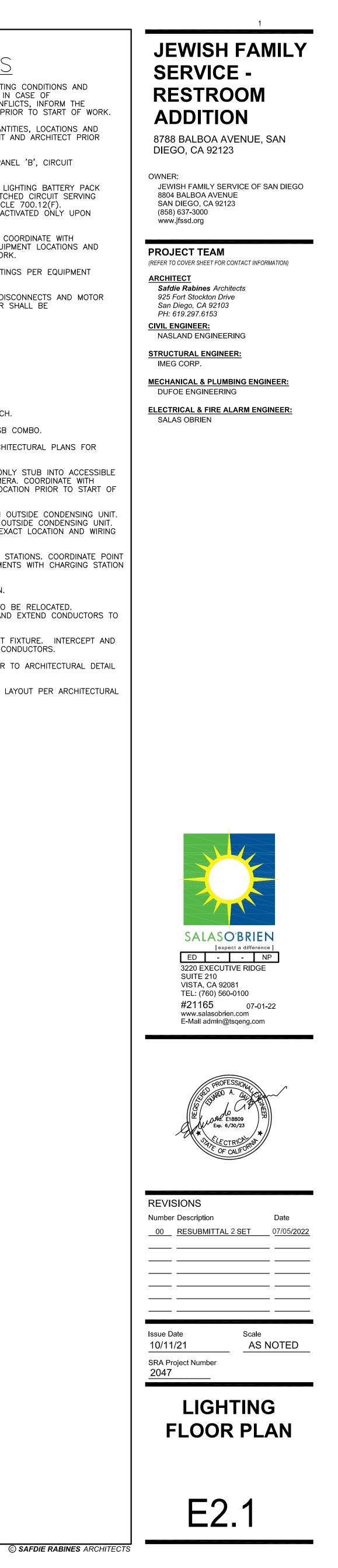
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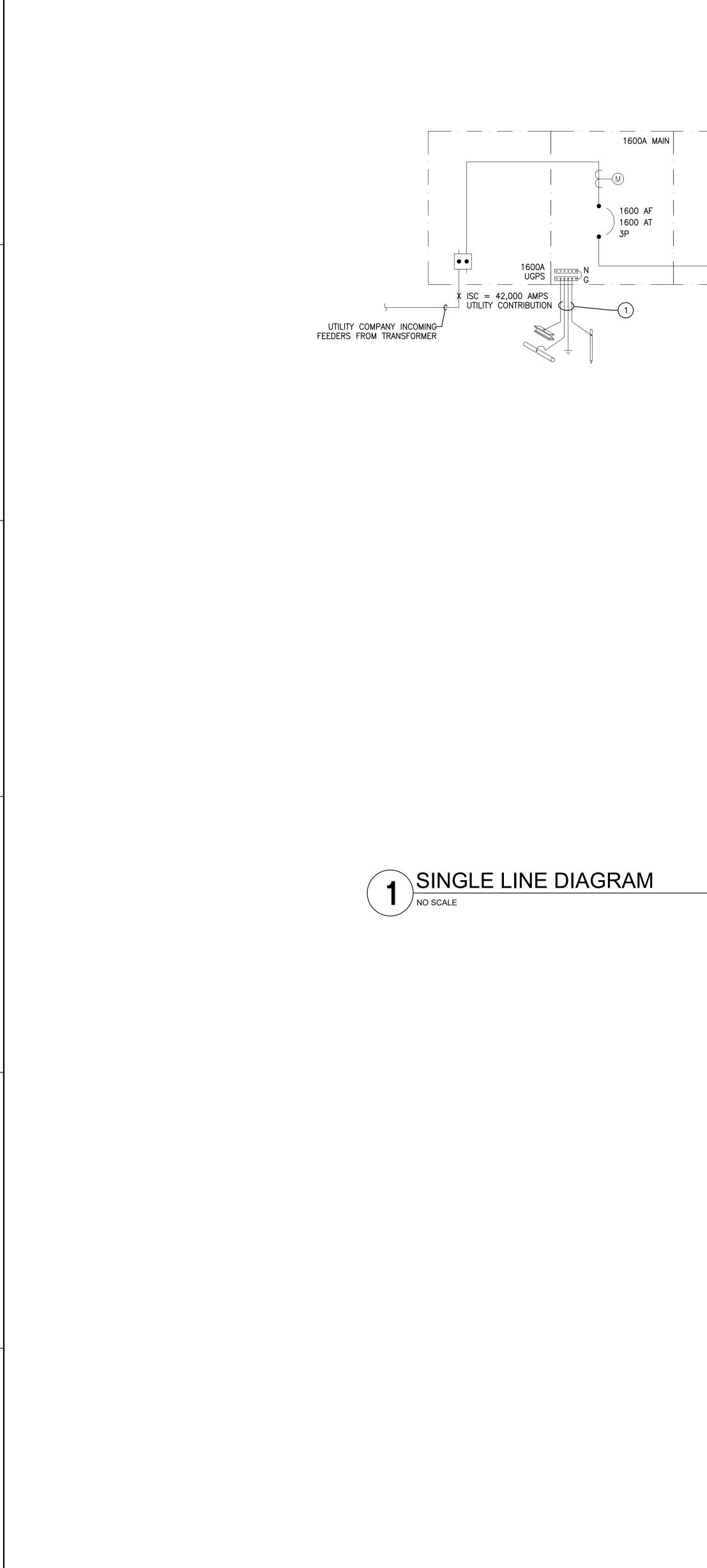
- B. CONTRACTOR SHALL VERIFY EXACT QUANTITIES, LOCATIONS AND HEIGHTS OF ALL FIXTURES WITH TENANT AND ARCHITECT PRIOR TO START OF WORK.
- C. ALL LIGHTING TO BE CONNECTED TO PANEL 'B', CIRCUIT NUMBER(S) AS SHOWN.
- D. ALL FIXTURES PROVIDED WITH EGRESS LIGHTING BATTERY PACK BACK-UP SHALL BE FED FROM UNSWITCHED CIRCUIT SERVING LIGHTING IN SAME AREA PER NEC ARTICLE 700.12(F). EMERGENCY BATTERY PACK SHALL BE ACTIVATED ONLY UPON NORMAL POWER FAILURE.
- C. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH MECHANICAL DRAWINGS FOR EXACT EQUIPMENT LOCATIONS AND REQUIREMENTS PRIOR TO START OF WORK.
- D. MECHANICAL EQUIPMENT FUSE SIZE RATINGS PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- E. ALL MECHANICAL EQUIPMENT FUSIBLE DISCONNECTS AND MOTOR RATED SWITCHES EXPOSED TO WEATHER SHALL BE WEATHERPROOF RATED.

# KEY NOTES

- (1) EXTERIOR LIGHT OVERRIDE KEYED SWITCH.
- (2) PROVIDE DUPLEX RECEPTACLE WITH USB COMBO.
- 3 ELECTRIC HAND DRYER. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
- 4 PROVIDE JUNCTION WITH 1" CONDUIT ONLY STUB INTO ACCESSIBLE CEILING SPACE FOR FUTURE CCTV CAMERA. COORDINATE WITH OWNER REPRESENTATIVE FOR EXACT LOCATION PRIOR TO START OF WORK.
- 5 FAN COIL UNIT RECEIVES POWER FROM OUTSIDE CONDENSING UNIT. PROVIDE 2#12, 1#12 GND, 3/4"C TO OUTSIDE CONDENSING UNIT. REFER TO MECHANICAL DRAWING FOR EXACT LOCATION AND WIRING PRIOR TO START OF WORK.
- 6 CONNECT TO LOCKERS WITH CHARGING STATIONS. COORDINATE POINT OF CONNECTION AND WIRING REQUIREMENTS WITH CHARGING STATION INSTALLER PRIOR TO START OF WORK.
- (7) EXISTING WALKWAY LIGHTING TO REMAIN.
- 8 EXISTING WALKWAY LIGHTING FIXTURE TO BE RELOCATED. DISCONNECT EXISTING LIGHT FIXTURE AND EXTEND CONDUCTORS TO NEW LOCATION.
- (9) NEW LOCATION OF DISCONNECTED LIGHT FIXTURE. INTERCEPT AND EXTEND TO EXISTING BRANCH CIRCUIT CONDUCTORS.
- (10) SURFACE MOUNT COVE LIGHTING. REFER TO ARCHITECTURAL DETAIL 3/A700.
- $\overbrace{11}^{11}$  ALIGN THE RECEPTACLE WITH THE TILE LAYOUT PER ARCHITECTURAL SHEET A400 AND A801





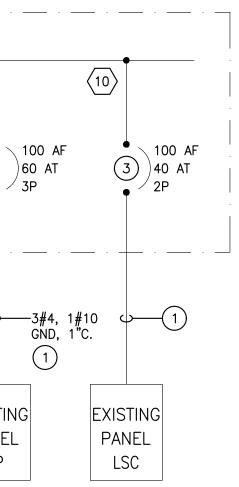


EXISTING 'MS	SA' 1600A	208Y/120	/ 3ø 4W 6	5kaic nen	/A 1		•	•
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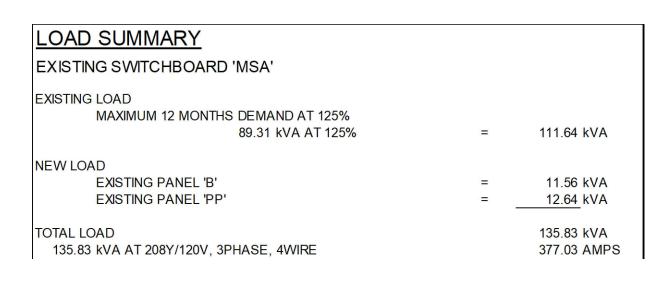
	PANEL: PP (EXIST)	LOCA	FION:		SEE PL	ANS		MAIN:	60A/3P			BUS:	100A	NEMA 1	
	VOLTAGE: 208 / 120	AIC RA	TING:		10000			FEED:	TOP			MTG:	SURFACE		
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	SPACE				25		A		26				SPACE		
	SPACE				27		В		28				SPACE		
	SPACE				29		С		30				SPACE		
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	SPACE				35		С		36				SPACE		
	SPACE				37		А		38				SPACE		
	SPACE				39		В		40				SPACE		
	SPACE				41		С		42				SPACE		
CO	NNECTED VA Ø A 50	39	CONN	IECTE	DVA()	139	PANEL C	ONN. AMPS	WTH LCL		35.08	PANE	L DEMAND KVA WITH LCL	12.64	
CO	NNECTED VA Ø B 50	00	CONN	ECTE	ED VA (L)	10000	CONNEC		THLCL (L)		12500	PANEL	DEMAND A MPS WITH LCL	35.08	
CO	NNECTED VA Ø C 1	00	CONN	IECTE	DVA (R)	0		DEMA	ND VA (R)		0		PANEL CONNECTED AMPS	28.14	
	TOTAL VA 101	39	CONN	IECTE	DVA (K)	0		DEMA	ND VA (K)		0	DEMAN	ND HIGH Ø AMPS WITH LCL	52.37	
1 2 3	EXISTING LOAD TO REMAIN PROVIDE NEW CIRCUIT BREAKER TO R OF SAME TYPE, STYLE AND AIC RATIN												SPECIAL NOTES:		

# GENERAL NOTES

- A. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH ALL OTHER TRADES. IN CASE OF DISCREPANCIES OR ANY POTENTIAL CONFLICTS, INFORM THE ARCHITECT AND ENGINEER IN WRITING PRIOR TO START OF WORK.
- B. ALL WORK SHOWN LIGHT IS EXISTING, ALL WORK SHOWN DARK IS NEW UNLESS NOTED OTHERWISE.

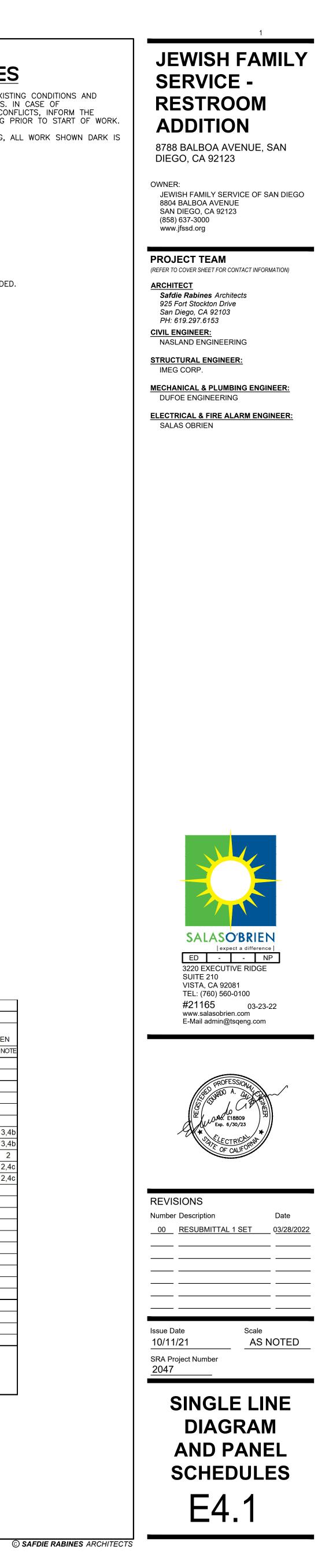






	PANEL: B (EXIST)	LOCAT	rion:		SEE PL	ANS		MAIN:	MLO			BUS:	DE ORIGINAL ME	
	VOLTAGE: 208 / 120	AIC RA	TING:		10000			FEED:	TOP			MTG:	SURFACE	
	PHASE: 3	CIRCU	IT COI	DE:										
	WIRE: 4	blank	<=NON	-CO	NTINUOU	S, N=NON		ENTAL, L=	LONG CC	NTIN	IUOUS	, R=RE	CEPT (NEC ART. 220-44), K=KITC	CHEN
NOTE	DESCRIPTION	CODE	BKR	Ρ	#	VA	PHASE	VA	#	Ρ	BKR	CODE	DESCRIPTION	NOT
2	HP-1	L	20	2	1	1788	A		2	3	50		SPARE	
	-	L			3	1788	В		4				-	
	SPARE		40	3	5		С		6				-	
	-				7		A		8	2	40		SPARE	
	-				9		В		10				-	
	SPARE		50	2	11		C		12				-	
	-				13		A	540	14	1	20		RESTROOM REC/EXTERIOR	3,4b
1	ROOF REC		20	1	15	1080	В	360	16	1	20		RESTROOM REC	3,4b
2	RESTROOM LTG/EF	L	20	1	17	261	С	180	18	1	20		ROOF REC	2
2,4a	RESTROOM HAND DRYER		20	1	19	1800	А	500	20	1	20		LOCKER CHARGING STATION	2,40
2,4a	RESTROOM HAND DRYER		20	1	21	1800	В	500	22	1	20		LOCKER CHARGING STATION	V 2,4c
	SPACE				23		C		24				SPACE	
	SPACE				25		A		26				SPACE	
	SPACE				27		В		28				SPACE	
	SPACE				29		С		30				SPACE	
	SPACE				31		A		32				SPACE	
	SPACE				33		В		34				SPACE	
	SPACE				35		С		36				SPACE	
	SPACE				37		A		38				SPACE	
	SPACE				39		В		40				SPACE	
	SPACE				41		С		42				SPACE	
CO	NNECTED VA Ø A 462	28	CON	VECTE	ÐVA()	6760	PANEL C	onn. Amps	WITH LCL		32.08	PANE	L DEMAND KVA WITH LCL 11.5	6
CO	NNECTED VA Ø B 552	28	CON	VECTE	DVA (L)	3837	CONNEC	TED VA WI	TH LCL (L)		4796	PANEL	. DEMAND A MPS WITH LCL 32.0	18
CO	NNECTED VA Ø C 44	41	CONN	IECTE	DVA (R)	0		DEMA	NDVA(R)		0		PANEL CONNECTED AMPS 29.4	1
	TOTAL VA 105	97	CONN	IECTE	DVA (K)	0		DEMAND VA (K) 0			0	0 DEMAND HIGH Ø AMPS WITH LCL 49.75		
1 2	EXISTING LOAD PROVIDE NEW CIRCUIT BREAKER TO RE OF SAME TY PE, STY LE AND AIC RATIN								15	SPEC	CIAL NO	DTES:		

3 EXISTING CIRCUIT BREAKER WITH REVISED LOAD4 PROVIDE LISTED HANDLE-TIE DEVICE



	6	5	4 3	I
	PART 1 – GENERAL CONDITIONS 1.01 SUMMARY	<ol> <li>Fire Seals: Heat activated intumescent material, elastomeric sealing ring, socket head cap screws, steel pressure discs and flange, O-Z/Gedney Type CFSF, Nelson Flame Seal, or equal.</li> <li>End belles black discerd eclassical, three ded as ellegble ison - 0, 7 (Orderer)</li> </ol>	D. Wall Plates: Single and combination, of types, sizes, and with ganging and cutouts as indicated. Provide plates which mate and match with wiring devices to which they are attached, and are from the same manufacturer. Provide metal screws for securing plates to devices with screw heads colored to match finish of plates. Provide wall plate	2. Provide a switcht bolted together t features:
	A. Work Included: All labor, materials, appliances, tools, equipment, facilities, transportation and services necessary for and incidental to performing all operations in connection with furnishing, delivery and installation of the work of this Division, complete, as shown on the drawings and/or	<ol> <li>End bells: Hot-dipped galvanized, threaded malleable iron, O-Z/Gedney Type THS, or equal.</li> <li>Evablance 1, 1/4" and employed blick impact thermal acting phanelia, 150°C</li> </ol>	color to match wiring devices except as otherwise indicated. Provide wall plates with engraved legend where indicated. Conform to requirements for electrical identification.	a. The sides, top plates.
	specified herein. The work includes, but is not limited to: 1. Examine all divisions for related work required to be included as work under this Division.	<ol> <li>Bushings 1-1/4" and smaller: High-impact thermo-setting phenolic, 150°C, O-Z/Gedney Type "A", or equal. Bushings 1-1/2" and larger: Hot-dipped galvanized with thermosetting phenolic insulation, 150°C, O-Z/Gedney Type</li> </ol>	<ol> <li>Interior Areas: Smooth, high—impact resistant plastic, of the same manufacturer as the device.</li> <li>a. Voice, data, or video communications system outlets: Same as for wiring devices</li> </ol>	b. Include all pro necessary inte c. Bus bars mou
~	2. General provisions and requirements for electrical work.	"B", or equal. 6. Locknuts 1-1/2" and smaller: Zinc plated heavy stock steel, O-Z/Gedney,	except with 3/8" or 1" rubber grommets as required.	c. Bus bars mou braced to with symmetrical sł
A	A. Drawings and general provisions of the Contract, including General and Supplementary	or equal. Locknuts 2" and larger: Cadmium plated malleable iron, O-Z/Gedney, or equal.	b. Surface mounted outlet boxes: Zinc coated sheet steel rounded edges, same size as outlet box.	3. Chemically clean metal surfaces. F
	Conditions and Division 01, apply to these Specifications. B. In addition, the products covered in this Specification, except as noted, shall be designed,	<ol> <li>Hubs: Cadmium plated malleable iron, tapered threads, neoprene "O" ring, insulated throat, O-Z/Gedney, or equal.</li> <li>Supervise Fittings: List disped aslumpized melleable iron with bonding.</li> </ol>	c. Kitchen and food preparation areas: Polished stainless steel type, 0.04 inches thick.	suitable protectiv 4. Provide full lengt
	manufactured, and tested in accordance with the latest revisions of the applicable standards of:	8. Expansion Fittings: Hot—dipped galvanized malleable iron with bonding jumpers. Linear: O—Z/Gedney Type AX and TX, or equal. Linear, with deflection: O—Z/Gedney Type AXDX, or equal.	<ol> <li>Exterior areas: Weatherproof, corrosion-resistant type, die cast aluminum with self-closing gasketed cover. For duplex receptacles, use Hubbell 5206-WO or equal; for wall switches, use Hubbell 7420 or equal; for GFI receptacles, use manufacturer's</li> </ol>	section of struct 5. Provide switchboo
	1. ANS — American National Standards Institute 2. ASTM — American Society for Testing and Materials 3. IEEE — Institute of Electrical and Electronics Engineers	9. Escutcheons: Chrome plated sectional floor and ceiling plates, Crane No. 10, or equal.	listed plate. 2.06 GROUNDING AND BONDING	moved into insta of floor sills.
	<ol> <li>NEC - National Electrical Code (NFPA 70)</li> <li>NECA - National Electrical Contractors Association: "Standard of Installation"</li> <li>NEMA - National Electrical Manufacturers Association</li> </ol>	2.03 WIRE AND CABLE	A. Materials: All materials shall be copper. Provide types indicated and sizes and ratings required to comply with NEC. Where types, sizes, ratings, and quantities indicated are in	6. Use A-B-C type front-to-rear th front, including c
	7. NFPA - National Fire Protection Association 8. UL - Underwriters Laboratories, Inc.	A. Provide wire and cable suitable for the temperature, conditions, and location where installed, except as otherwise indicated.	excess of NEC requirements, the more stringent requirements and the greater size, rating, and quantity indications govern.	7. Provide group mo straps, with devic "an approximation of the straps, with device
	1.03 SUBMITTALS (ADDITIONAL REQUIREMENTS) A. General: Submit the following in accordance with the Conditions of the Contract and Division	<ol> <li>Conductor: Copper. Provide solid conductor for #10 AWG and smaller. Provide stranded conductors for sizes #8 AWG and larger.</li> </ol>	<ul> <li>B. Wire and cable conductors shall be as follows, except as otherwise indicated:</li> <li>1. Equipment grounding conductor: Green insulated copper.</li> </ul>	"spaces" are sch Provide full heigh
	01 Specification Sections, and these Specifications. B. Product Data: Submit product data for each type of product specified.	a. Use stranded conductors at motors and other applications where subject to vibration, and for control circuits.	<ol> <li>Grounding electrode conductor: Stranded copper cable.</li> <li>Bare copper conductors: Shall conform to the following:</li> </ol>	8. The switchboard bolted or riveted plastic name pla
	C. Shop Drawings: Submit shop drawings for the following:	<ol> <li>Minimum Size Conductor: #12 AWG, except as otherwise indicated.</li> <li>a. Control circuits: #14 AWG.</li> </ol>	a. Solid Conductors: ASTM B 3.	9. At top of switch pull box for term
В	<ol> <li>Lighting fixtures, supports, and controls.</li> <li>1.04 QUALITY ASSURANCE</li> </ol>	3. Insulation voltage rating: 600 volts.	b. Assembly of Stranded Conductors: ASTM B 8.	12" in height and front of the pull and pull box enc
	A. Qualifications of Manufacturer: Company specializing in manufacturing products specified in these Specifications with minimum five years documented experience.	B. Building wire and cable: Single conductor insulated wire. Insulation: ANSI/NFPA 70, Type THHN/THWN, rated 75°C or Type XHHW, rated 90°C.	c. Tinned Conductors: ASTM B 33. C. Connector products:	10. Switches shall be indicated.
	B. Electrical Component Standard: Components and installation shall comply with NFPA 70, "National Electrical Code."	C. Connectors: Provide UL Listed factory fabricated, solderless metal connectors of sizes, ampacity ratings, materials, types and classes for applications and for services indicated. Use connectors with temperature ratings equal to or	1. General: Listed and labeled as grounding connectors for the materials used.	11. Main busses shal density to hold t
	C. NEMA and UL Compliance: Products shall comply with applicable requirements of NEMA and UL standards. Provide products and components listed and labeled by UL.	greater than those of the wires upon which used. D. Pull Cord: 1/8" polypropylene or nylon.	<ol> <li>Pressure Connectors: High—conductivity plated units.</li> <li>Bolted Clamps: Heavy—duty units listed for the application.</li> </ol>	shall be braced t shown on the dr
	D. NECA Installation Standards: Perform work in accordance with NECA "Standard of Installation."	2.04 BOXES AND FITTINGS	<ol> <li>Exothermic Welded Connections: Provided in kit form and selected for the specific types, sizes, and combinations of conductors and other items to be connected.</li> </ol>	12. The switchboard and shall be buil board shall be fu
	E. Source Quality Control: Quality control testing shall meet applicable Underwriters' Laboratories Inc. Standards.	A. Provide indicated types, sizes, and NEMA enclosure classes. Where not indicated, provide units of types, sizes, and classes appropriate for the use and location. Provide all items complete with covers and accessories required	D. Grounding electrodes:	13. Circuit Breakers:
	F. Electrical contractor shall perform all work in strict accordance with all local, state, and	for the intended use. Provide gaskets for units in damp or wet locations.	1. Ground Rods: Copper—clad steel with high—strength steel core and electrolytic—grade copper outer sheath, molten—welded to core. Size: 3/4" diameter by 10 feet long.	a. Resettable, qu separate trip p
	national governing codes. 1.05 DELIVERY, STORAGE AND HANDLING	<ol> <li>Materials and Finishes:</li> <li>a. Sheet steel: Flat rolled, code gauge, galvanized steel.</li> </ol>	2. Plate Electrodes: Copper plates, minimum 0.10 inch thick, size as indicated.	b. Multiple pole b
	A. General: Deliver, store, protect, and handle products to the site in accordance with the General and Supplementary Conditions, Division 01 Specification Sections, and these	b. Fasteners for general use: Corrosion resistant screws and hardware, including cadmium and zinc plated items.	E. Test (ground) wells: Precast concrete, 12" round x 18" deep open bottom valve box, with cast iron grate cover plate marked "GROUND".	c. Wire with sequ 14. Furnish record dr
	Specifications. B. Store and protect product in accordance with manufacturer's instructions, and in a manner	c. Fasteners for wet or damp locations: Stainless steel screws and hardware.	2.07 SUPPORTING DEVICES A. Supports: Individual conduits shall be rigidly supported and clamped with one hole	a. Complete ratin
с	to prevent damage from the elements, personnel, equipment, and moisture.	d. Cast metal for boxes, enclosures and covers: Copper—free aluminum except as otherwise indicated.	malleable iron conduit clamps, conduit beam clamps, conduit hangers, or wall brackets, as necessary for the type of construction and as indicated. The use of perforated flat steel straps or wire for supporting conduits will not be permitted.	b. Short circuit v c. Overall outline
	A. Verify that field measurements are as shown prior to commencing the work.	e. Exterior finish: Gray-baked enamel for items exposed in finished locations except as otherwise indicated.	B. Support Attachments: Kwik-bolt, sleeve anchors, wedge anchors, toggle bolts, and hollow all anchors, as manufactured by Hilti or Red Head.	d. Circuit schedul
	PART 2 – PRODUCTS 2.01 MATERIALS AND EQUIPMENT	f. Painted interior finish: Where indicated, white baked enamel.	C. Light steel framing: Light steel framing members for conduit hangers and other supports shall be formed from 12 gauge (minimum) steel, unless otherwise indicated.	e. Device descript f. Feeder circuit
	A. Materials, equipment, and devices shall, as a minimum, meet requirements of UL, where UL standards are established for those items, and requirements of NFPA 70.	g. Fittings for boxes, cabinets, and enclosures: Conform to UL 514B. Malleable iron or zinc-plated steel for conduit hubs, bushings and box	1. Finish: Hot-dipped galvanized steel for light steel framing members and fittings and	g. Conductor rati
	2.02 RACEWAYS	connectors. B. Metal outlet, device, and small wiring boxes:	all hardware, such as hanger rods, couplings, bolts, nuts, etc., shall be electro—galvanized, unless otherwise indicated.	15. Provide switchboo The U.L. label sh
	A. Metal Conduit and Tubing:	1. General: Conform to UL 514A and UL 514B. Boxes shall be of type, shape, size, and depth to suit each location and application.	2. Acceptable manufacturers: B—Line, Superstrut, Unistrut, or equal. 2.08 ELECTRICAL IDENTIFICATION	devices. 16. Provide ground fo
	<ol> <li>Rigid Metal Conduit: Steel, hot-dipped galvanized including the threads, with an outer coating of zinc bichromate, complete with one coupling and one end thread protector, manufactured in accordance with ANSI C80.1 and UL 6. Fittings: threaded, hot-dipped</li> </ol>	2. Steel Boxes: NEMA OS 1. Boxes shall be sheet steel with stamped knockouts, threaded screw holes and accessories suitable for each location	A. Manufacturers: Brady, Ideal Industries, Markal, Panduit, Thomas & Betts.	wye, 1000 amps a. U.L. listed gro
	galvanized, manufactured in accordance with ANSI C80.4. a. Where indicated, provide galvanized rigid steel conduit and fittings with polyvinyl	including mounting brackets and straps, cable clamps, exterior rings and fixture studs.	B. Electrical identification products: 1. Adhesive Marking Labels for Raceway and Metal—clad Cable: Pre-printed, flexible,	ground break (CR) and integ trip circuit on
	chloride (PVC) coating of nominal .020 inch (20 mil ) thickness conforming to NEMA RN-1, Type A, Robroy Industries, or equal.	<ol> <li>Cast Aluminum Boxes: Copper-free aluminum with gasketed covers, threaded raceway entries, and features and accessories suitable for each location including mounting ears, threaded screw holes for devices and</li> </ol>	self—adhesive labels with legend indicating voltage and service (Emergency, Power, Lighting, Air Conditioning, Voice and Data Communications, Control, Fire Alarm and Detection, Public Address (Paging), Electronic Security).	b. Use time relay
	<ol> <li>Intermediate Metal Conduit: Hot-dipped galvanized steel including the threads, manufactured in accordance with UL 1242.</li> </ol>	closure plugs. C. Pull and junction boxes:	2. Label Size, as follows:	1) Continuously 2) Continuously
D	3. Electrical Metallic Tubing: Welded, electro—galvanized thin wall steel tubing, manufactured in accordance with ANSI C80.3 and UL 797. Maximum size: 2". Fittings: compression type (indenter or setscrew type not allowed); gland compression type, zinc plated steel	1. General: Conform to UL 50, for boxes over 100 cubic inches in volume. Boxes shall have bolted—on covers of material same as box, and shall be	a. Raceways 1" and Smaller: 1—1/8" high by 4" long. b. Raceways Larger than 1": 1—1/8" high by 8" long.	to one seco 3) Memory fun
	body, cadmium plated malleable iron nut, O-Z/Gedney. 4. Flexible Metal Conduit: Hot-dipped galvanized steel interlocking, single strip type	of the size and shape to suit the application. 2. Steel Boxes: Sheet steel with welded seams. Where necessary to provide a	3. Color: Black legend on orange background.	faults. c. Install panel w
	manufactured in accordance with UL1. Connectors: squeeze type, malleable iron, cadmium plated, straight and angle connectors for all sizes and twist—in connectors for 1/2" and 3/4" flexible metal conduit.	<ul> <li>rigid assembly, construct with internal structural steel bracing.</li> <li>3. Hot-Dip Galvanized Steel Boxes: Sheet steel with welded seams. Where</li> </ul>	4. Colored Adhesive Marking Tape for Raceways, Wires, and Cables: Self—adhesive vinyl tape not less than 3 mils thick by 1" to 2" in width.	1) Indicates re
	<ol> <li>Liquidtight Flexible Conduit: Hot-dipped galvanized steel strip core with extruded liquid-tight polyvinyl jacket. Use O-Z/Gedney Type UAG, or equal. Liquid-tight fittings.</li> </ol>	necessary to provide a rigid assembly, construct with internal structural steel bracing. Hot—dip galvanize after fabrication. Cover shall be gasketed.	5. Pretensioned Flexible Wraparound Colored Plastic Sleeves for Raceway and Cable Identification: Flexible acrylic bands sized to suit the raceway diameter and arranged to stay in place by pre— tensioned gripping action when coiled around the raceway	2)Provides me electrical se
	ANSI/NEMA FB 1. Connectors: Cadmium plated malleable iron body and nut, cadmium plated steel ferrule, insulated throat, integral cast external ground lug, O-Z/Gedney.	2.05 WIRING DEVICES A. General: Provide wiring devices, in types, characteristics, grades, colors, and	<ul> <li>6. Underground line marking tape: Permanent, bright-colored, continuous printed,</li> </ul>	3)Does not pe inactive or
	B. Nonmetallic Conduits: 1. Rigid Nonmetallic Conduit: NEMA TC 2 and UL 651, Schedule 40. Polyvinyl chloride (PVC)	electrical ratings for applications indicated which are UL listed and which comply with NEMA WD 1 and other applicable UL and NEMA standards. Coordinate color selection, prior to ordering materials, with Architect/Engineer.	plastic tape compounded for direct burial service not less than 6" wide by 4 mils thick. Printed legend indicative of general type of underground line below.	d. Use ground se entrance devic
	heavy—wall conduit, with tapered sleeve couplings, rated and labeled for use with 90°C rated conductors, manufactured in accordance with ANSI C33.91. Fittings: NEMA TC-3, cemented type, from the same manufacturer as the conduit.	B. Receptacles: UL 498 and NEMA WD 6. Straight blade, two-pole, three-wire grounding type, as indicated below:	7. Wire/cable designation tape markers: Vinyl or vinyl—cloth, self—adhesive, wraparound, cable/conductor markers with preprinted numbers and letters	17. Provisions for pa positions.
	2. PVC and ABS Plastic Fittings: NEMA TC 9-1. Match to conduit type and material.	1. Duplex: 20Amps, 125V, NEMA 5—20R, Heavy Duty — Hubbell #5362	8. Aluminum, wraparound, cable marker bands: Bands cut from 0.014" thick, aluminum sheet, fitted with slots or ears for securing permanently around wire or cable jacket or around groups of conductors. Provide for legend application with stamped letters	18. Provide full rated 2.10 DISCONNECT (SAFETY)
	3. Conduit, Tubing, and Duct Accessories: Types, sizes, and materials complying with manufacturer's published product information. Mate and match accessories with raceway.	2. Duplex, GFCI [1]: 20Amps, 125V, NEMA 5—20R, Heavy Duty — Hubbell #GF5362	or numbers.	A. Disconnect switches
	C. Conduit Bodies: Provide types, shapes, and sizes as required to suit individual applications and NEC requirements. Provide matching gasketed covers secured with corrosion resistant	3. Simplex: 20Amps, 125V, NEMA 5-20R, Heavy Duty - Hubbell #5361	9. Plasticized card stock tags: Vinyl cloth with preprinted and field printed legends to suit the application. Orange background, except as otherwise indicated, with eyelet for fastener.	horsepower—rated, qu the number of poles lockable. Maximum v
E	screws. For metallic conduit and tubing, use metallic conduit bodies. Use bodies with threaded hubs for threaded raceways.	<ol> <li>Simplex: 20Amps, 250V, NEMA 6-20R, Heavy Duty - Hubbell #5461</li> <li>Simplex, Locking [2]: 20Amps, 125V, NEMA L5-20R, Heavy Duty - Hubbell</li> </ol>	10. Aluminum-faced card stock tags: Weather-resistant, 18-point minimum card stock faced on both sides with embossable aluminum sheet, 0.002" thick, and laminated	the switch enclosure. permanently labeled
	D. Wireways and Auxiliary Gutters: Provided electrical wireways and gutters shall be of types, sizes, and number of channels as indicated. Fittings and accessories including but not limited to couplings, offsets, elbows, expansion joints, adapters, hold-down straps, and end	#2310 Notes:	with moisture—resistant acrylic adhesive. Pre—print legend to suit the application, and punch for tie fastener.	1. For outdoor loca NEMA Type 3R, u
	caps shall match and mate with wireway or gutter as required for complete system. Where specifications are not indicated, select to fulfill wiring requirements compling with applicable provisions of NEC. Use sheet steel wireways with screw—on covers and corrosion resistant	<ol> <li>GFCI receptacles shall protect downstream receptacles on same circuit.</li> <li>Provide locking receptacle with black nylon face, except as indicated otherwise.</li> </ol>	11. Brass or aluminum tags: Metal tags with tamped legend, punched for fastener. Dimensions: 2" by 2" by 19 gauge.	2.11 OVERCURRENT PROTEC A. Manufacturers:
	hardware. For dry locations coat with rust inhibitor and finish with gray baked enamel. For wet locations use hot—dipped galvanized material finished with gray baked enamel, provide gaskets for covers.	C. Switches: UL20 and NEMA WD 1. Quiet toggle type AC switch. Rating and type as indicated below:	12. Engraved, plastic—laminated labels, signs, and instruction plates: Engraving stock melamine plastic laminate, 1/16" minimum thick for signs up to 20 square inches, or 8" in length; 1/8" thick for larger sizes. Engraved legend in white letter on black	1. Circuit Breakers:
	E. Surface Raceway:	1. Single Pole: 20Amps, 120/277V, Heavy Duty — Hubbell #HBL—1221	face and punched for mechanical fasteners. 13. Warning and caution signs for indoor use: Shall be minimum 18 gauge steel, white	j. General Electri k. Square D
	<ol> <li>Provide sizes and channels as indicated. Provide fittings that match and mate with raceway.</li> </ol>	2. Double Pole: 20Amps, 120/277V, Heavy Duty — Hubbell #HBL—1222 3. Three Way: 20Amps, 120/277V, Heavy Duty — Hubbell #HBL—1223	porcelain enamel finish, with red lettering, punched for fasteners, with colors, legend, and size appropriate to the location. Lettering to read, "Danger — High Voltage", unless otherwise indicated.	I. Siemens
	<ol> <li>Surface metal raceway: Construct of galvanized steel with snap—on covers, with 1/8" mounting screw knockouts in base approximately 8" O.C Finish with manufacturer's standard prime coating suitable for painting. Provide raceways of types suitable for each</li> </ol>	<ul> <li>4. Single Pole w/Pilot Light [1]: 20Amps, 120/277V, Heavy Duty - Hubbell #HBL-1221-PL7</li> </ul>	14. Exterior metal—backed butyrate warning and caution signs: Weather—resistant, nonfading, preprinted cellulose acetate butyrate signs with 20-gauge, galvanized	m.Eaton 2. Fuses: Bussmanr
	application required. Provided by Hoffman Engineering Co., the Wiremold Co., or approved equal.	#HBL-1221-FL7 5. Single Pole w/Keyed Switch: 20Amps, 120/277V, Heavy Duty — Hubbell #HBL-1221-L	steel backing, with colors, legend, and size appropriate to the location. Provide 1/4" grommets in corners for mounting.	B. Materials and fabrica
	3. Surface Nonmetallic Raceway: Two-piece construction, manufactured of rigid PVC compound with matte texture and manufacturer's standard color. Raceway and system components shall meet UL 94 requirements for nonflammable, self-extinguishing	#HBL-1221-L 6. Momentary Contact [2]: 20Amps, 120/277V, Heavy Duty — Hubbell #HBL-1557	15. Fasteners for plastic—laminated and metal signs: Self—tapping stainless steel screws or #10—32 stainless steel machine screws with nuts and flat lock washers.	1. Circuit Breakers: trip—free with inc lugs rated for co
	components shall meet OL 94 requirements for nonflammable, self-extinguishing characteristics. Provided by Hubbell, Inc., Panduit Corp., The Wiremold Co., or approved equal.	Notes:	16. Cable ties: Fungus—inert, self—extinguishing, one—piece, self—locking nylon cable ties, 0.18" minimum width, 50 lb minimum tensile strength, and suitable for a temperature range from minus 50°f to 350°f. Provide ties in specified colors when	interrupting capa All breakers shall
F	F. Accessories:	<ol> <li>For switch with pilot light, the light is "ON" when the load is "ON".</li> <li>For momentary contact type switch, operation is three position – two circuit momentary contact and center off.</li> </ol>	used for color coding.	indicated on sing a. Use magnetic-
	<ol> <li>General: Reducers, bushings, washers, etc., shall be cadmium plated malleable iron of the shape and dimension best suited for the application.</li> <li>Scale for Walls and Floor Departmeticacy Malleable iron body, symplex closes closes are for the start of the</li></ol>		2.09 SWITCHBOARDS A. Manufacturers: Eaton, General Electric, Siemens or Square D.	b. Provide Class required.
	2. Seals for Walls and Floor Penetrations: Malleable iron body, oversize sleeve, sealing ring, pressure clamp and rings and sealing grommet, hex head cap screws, O—Z/Gedney Type FSK, or equal.		B. Materials:	c. Provide "HACR indicated on t
			1. Main Switchboard: Provide a totally enclosed, dead front, safety type switchboard designed for voltage and service ampacity as indicated on drawings and mounted on $2-1/2$ " thick concrete pad.	d. No tie handle

-1/2 nick concrete pac

3

4

e. Provide ambient compensated type breaker where the breaker is installed in the ambient in excess of 40°C (104°F).

rovide a switchboard consisting of the required number of vertical sections olted together to form one metal enclosed, rigid switchboard with the following eatures:

The sides, top and rear covered with removable screw-on code gauge steel plates.

. Include all protective devices and equipment as listed on drawings with necessary interconnections.

Bus bars mounted on supports of high impact nontracking insulation material braced to withstand mechanical forces exerted during 100,000 AMPS RMS symmetrical short circuit conditions, or as required by serving utility.

hemically clean steel surfaces and treat to aid bonding between paint and netal surfaces. Provide high tensile strength hardware on conductors and uitable protective finish.

Provide full length copper ground bus. Secure a ground bus to each vertical section of structures and extend it the entire length of the switchboard.

Provide switchboard with adequate lifting means, capable of being rolled or noved into installation position and bolted directly to the floor without the use floor sills.

Jse A-B-C type bus arrangement, left-to-right, top-to-bottom and ront-to-rear throughout. Switchboard shall be entirely accessible from the ront, including cable and bus connections, unless specifically noted otherwise.

Provide group mounted, quick—break protective devices with bar connection traps, with device line and load connections accessible from the front. Where spaces" are scheduled furnish entire bus except device connecting straps. Provide full height wiring gutter covers for quick access to wiring terminals.

The switchboard frame work shall be made of formed steel angles securely polted or riveted together. Adjacent to each switch unit provide a lamacoid lastic name plate engraved with proper circuit designation, screw-on type only.

top of switchboard and supported on the frame, there shall be provided a bull box for termination of the conduits to the board. It shall not be less than " in height and shall be built as an integral part of the switchboard. The ront of the pull box shall be removable. The entire exterior of the switchboard and pull box enclosures shall be light gray per ANS -61 .

witches shall be quick—make, quick—break of capacity and number of poles ndicated.

Main busses shall be silver or tin plated copper sized on the basis of a current density to hold temperature rise to 50°c above 40°c ambient. The bus structure shall be braced to withstand the mechanical forces exerted during a fault as hown on the drawings.

The switchboard shall bear the label of approval of the underwriter's laboratories and shall be built to NEMA and IEEE standards. Shop drawings of the proposed board shall be furnished to comply with these specifications.

. Resettable, quick-make, quick-break, bolt-in place type, trip-free, with separate trip position from on and off positions.

. Multiple pole breakers with common trip and one operation handle. Wire with sequence phasing.

urnish record drawings providing the following information;

Complete rating.

Short circuit withstand-ability of bus and lowest rated device.

. Overall outline dimensions including space available for conduits.

I. Circuit schedule showing circuit number.

. Device description.

. Feeder circuit identification.

. Conductor ratings and one-line diagram with each circuit device numbered. Provide switchboards meeting U.L. Standard #UL891 and NEMA Standard PB-2. The U.L. label shall appear on all switchboard sections which contain U.L. listed evices.

Provide ground fault protection on each main devices, rated 480/277 ground wye, 1000 amps or larger, as follows:

. U.L. listed ground sensor relay system equal to General Electric GSR. Provide ground break components for each system with coordinated ground sensor (CR) and integral test winding. Provide with solid state relay to operate shunt trip circuit on the switch and monitor panel.

. Use time relay with the following features:

1) Continuously adjustable current pick—up settings of 100 to 1200 amperes. 2) Continuously adjustable time delay setting from instantaneous (.03 seconds) to one second.

3) Memory function to recognize and initiate tripping on intermittent ground faults.

Install panel which:

1) Indicates relay operation.

2) Provides means for testing the system with or without interruption of electrical service.

3) Does not permit the ground fault system to be inadvertently left in an inactive or "off" state.

I. Use ground sensor for zero sequence arrangement on the main service entrance devices.

rovisions for padlocking the circuit breakers or disconnect in the "on" and "off" ositions.

Provide full rated bussing (no cascading).

NNECT (SAFETY) SWITCHES

onnect switches shall be rated 600 volts A.C., NEMA Type HD heavy duty, epower—rated, quick—make/quick—break, non—fusible or fusible, Class "R", with number of poles and ampere rating as shown. Enclosure shall be NEMA Type 1, able. Maximum voltage, current and horsepower rating shall be clearly marked on switch enclosure. Switches equipped with dual-element time-delay fuses shall be nanently labeled with fuse type and rating.

For outdoor locations, or shown as "WP" (weatherproof), the enclosure shall be NEMA Type 3R, unless otherwise indicated. JRRENT PROTECTIVE DEVICES

facturers:

General Electric

uses: Bussmann only.

ials and fabrication:

ircuit Breakers: Molded case, quick—make, quick—break, thermal—magnetic, rip—free with individual inverse time tripping mechanism on each pole. Terminal ugs rated for copper and aluminum conductors. Minimum 10,000 amperes terrupting capacity, RMS symmetrical short circuit rating shall be as required. breakers shall meet or exceed the maximum available fault current as ndicated on single line diagram.

. Use magnetic—only circuit breakers for motor applications.

. Provide Class A (5ma sensitivity) breakers where GFI type breakers are required.

Provide "HACR" type circuit breakers for HVAC loads. Ratings shall be as indicated on the drawings.

I. No tie handle on multi-pole circuit breaker is accepted.

2.12 OVERCURRENT PROTECTIVE DEVICES

1. Fuses, as follows, unless otherwise indicated:

a. Class RK1:

1) 250V; LPN-RK, Lowpeak 2)600V; LPS-RK

b. Class L: KRP-C, Hi-Cap

2.13 MOTOR CONTROLLERS

A. Manual motor controllers: NEMA ICS 6. AC general purpose Class A manually operated, full voltage controller with thermal overload element. Also provide red pilot light, auxiliary contacts: 2 N.O. and 2 N.C., and push button operator. Enclosure: NEMA ICS 6, Type 1 except as otherwise shown.

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B. Magnetic motor controllers: Provide full voltage, non-reversing, across the line, magnetic controller, except where another type is indicated.

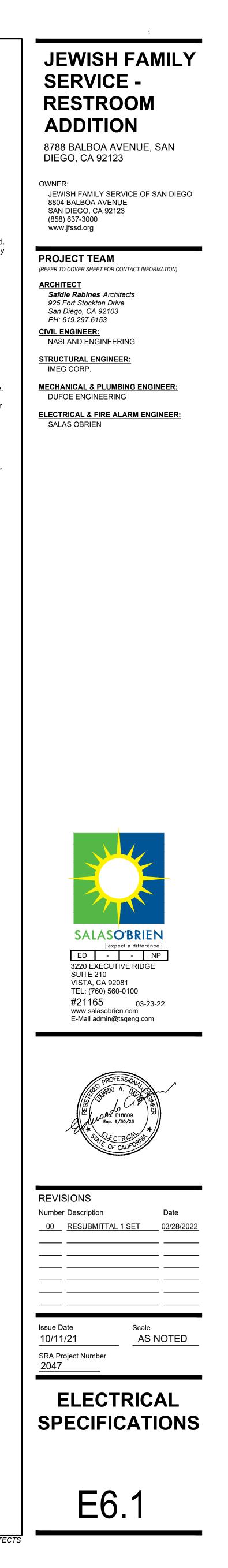
1. Control Circuit: Control circuit shall be 120 volts, except as otherwise indicated. Provide control power transformer integral with controller where no other supply of 120 volt control power is indicated. Provide control power transformer with adequate capacity to operate connected pilot, indicating and control devices, plus 100 percent spare capacity.

2. Combination Controller:

a. Circuit Breaker Type: NEMA AB 1. Motor circuit protector; molded-case circuit breaker type with magnetic only trip element calibrated to coordinate with the actual locked rotor current of the connected motor and the controller overload relays. Provide breakers that are factory assembled with the controller, interlocked with unit cover or door, and arranged to disconnect the controller. Provide motor circuit protectors with field adjustable trip elements as specified in "Overcurrent Protective Devices."

b. Fuse Type: NEMA KS 1. Enclosed knife switch with externally operable handle. Fuse interrupting rating: 200,000 rms amperes. Fused or non-fused as indicated; quick-make, quick-break switch; factory assembled with controller and arranged to disconnect it. For fused switches, provide rejection-type fuse clips and fuses rated as indicated. Interlock switch with unit cover or door.

C. Multispeed motor controllers: Match controller to motor type, application, and to number of speeds. Conform to the requirements for magnetic motor controllers. Provide auxiliary devices as indicated. Provide auxiliary switches, 2 N.O. and 2 N.O., except as otherwise indicated. Provide all required relays factory installed in controller enclosure.



### 2.14 LIGHTING

A. Manufacturers: As indicated herein, and as shown on the Lighting Fixture Schedule. B. Lighting Fixtures, General:

- 1. Work covered includes manufacturing, equipping, wiring, and assembling of all lighting fixtures. Provide lighting fixtures complete for each and every light outlet in the type, quality, and size of fixture indicated in lighting fixture schedule.
- 2. The lighting fixtures shown on fixture schedule are marked with the corresponding type letter, indicating thereby the particular type of fixture to be installed on the respective outlets.
- 3. Include a lighting fixture on every light outlet shown, unless otherwise indicated to be omitted. If the type of lighting fixture is not specifically noted, provide without extra cost to the Owner, a lighting fixture of the same type called for under a similar condition elsewhere on the Contract Drawings.
- 4. Catalog number on the lighting fixture schedule are for the purpose of indicating the general type, quality, and size of fixtures that will be required. The use of Catalog Numbers for a lighting fixture does not necessarily include all accessories that may be required for a complete and operational installation.
- 5. All luminaries and other lighting equipment delivered to the job complete, wired and including all supporting means, such as plaster frames, supports, hangers, canopies, sockets, holds, all current or voltage modifiers, such as ballasts, starters, all light control materials; specifically diffusers, louvers, lenses, reflectors and refractors.
- 6. All lighting fixtures constructed and installed in accordance with local building codes and directives by the NFPA and shall bear the label of approval of the U.L. All materials new and of best grade of approved manufacturing standards. Workmanship of highest order to assure trouble-free operation and durability of equipment. Lighting fixtures constructed by labor agreeable with that employed on the project
- 7. Lighting fixtures to be designed for highest relative efficiency and service. Maintenance to be simple and re-lamping possible without use of special tools.
- 8. Provide all light-sources, lamps and other light-producing media called for and suitable for specified equipment and functions. C. Lighting fixtures:
- 1. Luminaries to use not less than #16 gauge SF-2 wire. No splice or tap located within a fixture arm, stem or chain. Wire continuous from lamp socket, or from internally mounted ballast or driver, to splice with building wire whether splice box is mounted on fixture or attached to building.
- 2. Lighting fixture body parts, comprising the lighting fixture housing, reflectors, wire channels, end plates, ballast housing, and similar body parts, to be made of extruded aluminum, galvanized stampings, or bonderized steel, as indicated in the lighting fixture schedule. Wireways to have adequate wiring space, accessible after fixture installation. Housing adequately ventilated where required. All screws and nuts have rust-proof finish.
- 3. Where recessed lighting fixtures are installed in ceiling finished with acoustical tile or grid system, the lighting fixture shall conform to the patterns indicated on the Architectural Reflected Ceiling Plan.
- 4. The final installation must present a symmetrical appearance, with all lighting fixtures free of any damage and thoroughly clean.
- 5. Provide all additional means necessary to support lighting fixtures that would put excessive stress on the ceiling system.
- 6. Lighting fixtures mounted end-to-end and used as a raceway to be mechanically bonded together to insure continuity of ground. Lighting fixtures used as "feed through" to have wireways of
- 7. All plastic lens of shielding for fluorescent lighting fixtures to be made from 100% virgin acrylic unless otherwise specified. D. Additional Fixture Related Requirements:
- 1. Recessed lighting fixtures in plaster or drywall ceilings to be furnished with plaster frames.
- 2. Lighting fixtures recessed in furred ceiling installed so that they can be removed from below the ceiling without damage to the ceiling.
- 3. Recessed lighting fixtures to be installed with metal bar hangers for attaching to ceiling supports. Lighting fixtures not supported directly from ceiling, provide galvanized steel wire as required for supporting lighting fixture from structure. No wood or other combustible material to be used for supporting fixtures.
- 4. Provide stems with swivel joints and canopies for all suspended lighting fixtures. Finish of all exposed parts to match that of the associated fixture, unless otherwise noted. Design to conform to Drawinas. Wiring to pendant fixtures contained within stems. Wire entry by means of heavy malleable iron hickeys.
- 5. A canopy to be furnished for each stem and all canopies to match for each fixture type, as shown.
- 6. Ascertain type of ceiling construction for each fixture and provide suitable frames and fixture accessories to suit. Furnish substantial mounting frames or plaster rings for all recessed and semi-recessed lighting fixtures indicated or required. All frames made of galvanized steel with extra cross members where required to insure maintenance or proper opening dimensions during installation.
- E. Accessories:
- 1. Provide manufacturer's standard mounting rings, trim flanges, hanger bars, spacers, supports, plaster frames of nonferrous material or cadmium plated steel. Do not use painted steel plaster frames.
- PART 3 EXECUTION
- 3.01 INSTALLATION
- A. General: The electrical installation shall conform to the requirements of NFPA 70, "National Electrical Code," and to the requirements specified herein
- B. Wiring Method: The wiring method shall be as follows, except as otherwise noted.
- 1. Exterior:
- a. Exposed: Rigid steel conduit.
- b. Concealed: Rigid steel conduit.
- 1) In or under slab on grade: Nonmetallic conduit, Schedule 40 PVC. Conduit leaving the slab (including exposed conduit riser) shall be rigid steel conduit.
- 2) Underground: Rigid nonmetallic conduit. Use Schedule 40 PVC. Provide concrete encasement as indicated.
- c. Connection to vibrating equipment, including transformers and hydraulic, pneumatic, or electric solenoid or motor-driven equipment: Liquidtight flexible metal conduit, maximum length

2. Interior:

1

- a. Exposed: Electrical metallic tubing.
- 1) Areas where exposed conduit may be subject to physical Rigid metal conduit.
- 2) Damp or wet locations: Rigid metal conduit.

5

- 3) Classified locations: Rigid metal conduit.
- b. Concealed: Electrical metallic tubing.
- 1) In or under slab on grade: Nonmetallic conduit, Schedul Conduit leaving the slab (including exposed conduit riser) rigid steel conduit.
- 2) In slab, above grade: Rigid nonmetallic conduit Schedule Maximum size conduit in slab: 1".
- c. Connection to vibrating equipment, including transformers pneumatic, or electric solenoid or motor-driven equipment: metal conduit, maximum length 18".
- 1) For moist or humid locations or corrosive atmosphere, subject to water spray or dripping oil, grease, or water: flexible metal conduit.
- d. Connection to lighting fixtures located in suspended acoust ceilings: Flexible metal conduit, maximum length 72".
- e. Final connections to lighting fixtures which have isolated ju Flexible metal conduit.
- 1) Damp locations: Liquidtight flexible conduit.
- C. Grounding and Bonding:
- 1. General: Grounding shall be provided in accordance with all ap codes and regulations and the local authorities having jurisdic
- 2. An equipment grounding conductor shall be provided in all rad containing phase conductors.
- 3. The maximum resistance to ground shall not exceed 5 ohms.
- D. Raceway Installation:
- 1. General Requirements: Install electrical raceways in accordance with manufacturer's written installation instructions, applicable requirement and as follows.
- a. Minimum size: 3/4" unless otherwise indicated. b. Size conduits as indicated on the drawings and as required by
- the number and sizes of wires to be installed into the conduit. c. Make conduit field cuts square with saw and ream out to full s conduits in couplings. Remove burrs, and swab inside conduits b conductors are pulled in.
- d. Make all conduit joints mechanically tight, electrically continuous, watertight. Pitch conduits in a manner to avoid creating moistur
- e. Install minimum 1/8" polypropylene pull cords from end-to-end raceways, tagged with the identification of service intended and opposite end. Leave at least 24" of pull cord at each end.
- f. Restore wall, ceiling, and floor penetrations to the requirements Authority Having Jurisdiction.
- g. Communications/Signal System Raceways 2" Trade Size and Smc addition to the above requirements, install raceways 2" and sma in maximum lengths at 150'-0" and with a maximum of two, 90 equivalent. Install pull or junction boxes where necessary to com requirements.
- h. Provide code sized green grounding conductor in all conduit. 2. Perform excavating, trenching, backfilling, and compacting as showr specified in Division 02 which prescribes excavation, backfilling and for utilities. Minimum cover for runs below finished grade outside b
- except where noted. 3. Complete installation of electrical raceways before starting installati conductors within raceways.
- a. Protect inside of conduit from dirt and rubbish during construct all openings with plastic caps intended for the purpose. Cap or with standard manufactured accessories as soon as the conduits permanently installed in place.
- 4. Install all conduits at elevations and locations to avoid interference or other work, the structure, finished ceilings, walls. Avoid causing masonry structural members.
- a. Do not place conduits in close proximity to equipment, systems, lines, such as hot water supply and return lines, which could be the conduit and its contents. Maintain a minimum 3" separation crossing, which shall be a minimum 1".
- 1) Minimum separation from uninsulated hot water pipes, steam flues or vents: 6". Avoid running conduit directly under water
- 2) Elevation of Raceway: Where possible, install horizontal racewo water and steam piping.
- 5. Conceal conduit, unless indicated otherwise, within finished walls, co floors. Keep raceways at least six 6" away from parallel runs of flu or hot water pipes. Install raceway level and square and at proper
- a. To prevent displacement, securely support and hold in place all installed in advance of other work and to be concealed in the structure. Carefully lay out conduits run within the structure, suc beams, walls, to avoid densities excessive for the construction. conduits when excessive densities occur.
- b. Run conduits embedded in structural slabs in the middle of the top and above the bottom reinforcing steel. Minimum cover for concrete floors, walls or roof: 1/3 thickness of slab, but in no 1-1/2" cover except where penetration is made. Do not install than 1" in slabs. Tie raceways to reinforcing rods or otherwise prevent sagging or shifting during concrete placement. Space rac laterally to prevent voids in the concrete. Where nonmetallic con raceways must be converted to Schedule 80 or rigid steel condu rising above the floor.
- c. Where conduit installed in concrete or masonry extends across construction joints, provide expansion fittings as manufactured Crouse-Hinds; Appleton; or equal, with approved ground straps Expansion fittings installed in concrete shall be water tight, conc deflection/expansion type.
- d. Run concealed raceways with a minimum of bends in the shorter distance considering the type of building construction and obstru as otherwise indicated. This does not apply to conduits in crawl
- 6. Install and neatly rack exposed conduits parallel with and perpendic building walls. Do not install exposed diagonal conduit runs.
- a. Run exposed, parallel, or banked raceways together. Make bends banked runs from the same center line so that the bends are Factory elbows may be used in banked runs only where they car parallel. This requires that there be a change in the plane of th from wall to ceiling and that the raceways be of the same size. cases provide field bends for parallel raceways.
- b. Use blockouts for concentrations of conduits in a confined area
- c. Route and suspend conduits crossing expansion joints to permit contraction, and deflection utilizing approved fittings to prevent building, conduits, and supporting devices.
- d. Install exposed raceways parallel and perpendicular to nearby sur structural members and follow the surface contours as much as
- e. Provide conduit bodies for exposed conduit runs at junctions, be where required. Do not use elbows or bends around outside corn walls or equipment. Make conduit body covers accessible.
- 7. Concrete Wall or Stab Penetrations: All core drilling, sleeves, blocka penetrations must be approved by the Structural Engineer prior to
- a. Space sleeves and core drills to insure a minimum dimension of 3 times the nominal trade diameter of the largest adjacent conduit between sleeves or core drills.
- b. Use blockouts for concentrations of conduits in a confined area.

1	4
cal damage:	8. Join raceways with fittings designed and approved for the purpose and make joints tight. Where joints cannot be made tight, use bonding jumpers to provide electrical continuity of the raceway system. Make raceway terminations tight. Where terminations are subject to vibration, use bonding bushings or wedges to assure electrical continuity. Where subject to vibration or dampness, use insulating bushings to protect conductors.
	<ol> <li>Make bends and offsets so the inside diameter is not effectively reduced. Unless otherwise indicated, keep the legs of a bend in the same plane and the straight legs of offsets parallel.</li> </ol>
	f. Make no bends with a radius less than 12 times the diameter of the cable it contains nor more than 90°. Make field bends with tools designed for conduit bending. Heating of metallic conduit to facilitate bending is not permitted.
ule 40 PVC. er) shall be	g. Bends and offsets in 1" and smaller conduits may be done with approved bending devices. Do not install conduits which have had their walls crushed and deformed and their surface finish damaged due to bending.
le 40 PVC.	c Run conduits parallel to and at right angles to building lines.
and hydraulic, t: Flexible	d. Where space conditions prohibit the use of standard ells, elbows, and conduits, use cast ferrous alloy fittings of such forms and dimensions as best required for application.
or where	10. Surface Raceway: a. Install a separate green ground conductor in raceway from the junction box supplying the
r: Liquidtight	raceway to receptacle of fixture ground terminals. b. Select each surface raceway outlet box to which a lighting fixture is attached to be of sufficient
stical or metal	diameter to provide a seat for the fixture canopy. c. Where a surface raceway is used to supply a lighting fixture having central stem suspension with
junction boxes:	a backplate and a canopy, with or without extension ring, the backplate and canopy will serve as the outlet box and no separate outlet box need be provided. d. Provide surface raceway outlet box, in addition to the backplate and canopy, at the feed—in
	e. Where a surface raceway extension is made from an existing outlet box on which a lighting
applicable diction. raceway	<ul> <li>fixture is installed, provide a backplate slightly smaller than the fixture canopy, and no additional surface mounted outlet box need be installed.</li> <li>f. Surface raceways shall be securely fastened to the mounting surface. Use expansion type anchors in concrete.</li> </ul>
S.	11. Do not run conduits exposed on the roof unless approval is obtained from the Owner prior to installation.
ith	12. Other Requirements:
nents of NEC, the NEC for	a. Connect motors, equipment containing motors, equipment mounted on an isolated foundation, transformers, and other equipment and devices which are subject to vibration and which require adjustment with liquidtight flexible metallic conduit from the device to the conduit serving it. Size the flexible conduit length more than 12 diameters, but less than 18 diameters. Rigidly support the points of attachment on each side of the connection. Use external bonding jumpers on sizes 1-1/2" and above.
size. Shoulder	' b. Install escutcheons on all exposed conduits passing through interior floors, walls, or ceilings. Install fire seals on all conduits passing through fire rated partitions. Install wall and floor fire
before	seals on all conduits passing through exterior walls and floors, or use standard galvanized steel pipe sleeves; diameters 12" greater than the outside diameter of the sleeved conduit and fill the annular space with mastic or caulk with lead.
us, and ture traps. Id in all empty	c. Fire pump room: All wiring shall be installed in rigid metal, liquidtight flexible metal conduit. d. Raceway for panelboards:
d location of	<ol> <li>All homeruns shown shall be run to the panel indicated independently of all other homeruns.</li> <li>Provide pull points so as not to exceed total bends of 270°.</li> </ol>
s of the	<ul> <li>2) Run a minimum of one 3/4" empty conduit for every three single pole spare circuit breakers,</li> <li>spaces or fraction thereof and not less than two 3/4" conduits from every flush mounted</li> </ul>
maller: In naller trade size 90° bends or	panel to an accessible space above the ceiling and below the floor. e. Make conduit projections from covered areas to areas exposed to the weather watertight by
omply with these	proper flashing. Extend flashing a minimum of 6" in all directions from conduit. f. Cap conduits indicated to be stubbed—out underground using glued on PVC caps intended for
wn, and as	this purpose. g. Install a coupling flush with the floor on all conduits stubbed—up through the floor slab.
d compacting buildings: 24"	h. Do not penetrate walls with flexible conduit where subject to physical damage. Use recessed box with extension ring for transition from interior to exterior of wall.
ation of	i. Terminations: 1) Where raceways are terminated with locknuts and bushings, align the raceway to enter
ction by capping r plug conduits its have been	squarely and install the locknuts with dished part against the box. Where terminations cannot be made secure with one locknut, use two locknuts, one inside and one outside the box.
ce with grading g cutting of	2) Where terminating in threaded hubs, screw the raceway or fitting tight into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align the raceway so the coupling is square to the box, and tighten the chase nipple so no threads are exposed.
ns, and service be detrimental to on, except in	3) At switchboards, manholes and floor standing distribution panelboards, provide insulated throat bushings or bell ends on all non—metallic conduit entries and bushings on all metallic conduit entries.
n pipes, heater	4) Install insulated throat threaded hubs on conduits entering enclosures without threaded hubs. 5) Install end bells on conduits stubbed through slabs and foundations into electrical enclosures.
er lines. way runs above	j. Install raceway sealing fittings in accordance with the manufacturer's written instructions. Locate fittings at suitable, approved, accessible locations and fill them with UL Listed sealing compound.
ceilings, and flues and steam er evaluations.	For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points and elsewhere as indicated: 1) Where conduits enter or leave hazardous locations.
ll conduits building	2) Where conduits pass from warm locations to cold locations, such as the boundaries of refrigerated spaces and air conditioned spaces.
such as floors, . Relocate those	3) Where required by the NEC.
e slab below the r conduit in c case less than l conduit larger	k. Stub—up Connections: Extend conduits through concrete floor for connection to freestanding equipment with an adjustable top or coupling threaded inside for plugs and set flush with the finished floor. Extend conductors to equipment with rigid steel conduit; flexible metal conduit may be used 6" above the floor. Where equipment connections are not made under this contract, install screwdriver operated threaded flush plugs flush with floor.
secure them to raceways onduit is used, duit before	1) Protect stub—ups from damage where conduits rise from floor slabs. Arrange so that curved portion of bends is not visible above the finished slab.
building	I. Flexible Connections: Use short length (maximum of 6'-0") of flexible conduit for recessed and semi-recessed lighting fixtures, for equipment subject to vibration, noise transmission, or movement; and for all motors. Use liquidtight flexible conduit in wet locations. Install separate
by O.Z.; s and clamps. oncrete tight,	ground conductor across flexible connections. m.PVC Coated Rigid Steel Conduit:
test practical	1) Do not store conduit in direct sunlight.
tructions except wl spaces.	<ol> <li>Use pipe straps, no pipe wrenches or channel wrenches, when tightening connections to avoid damaging PVC coating.</li> <li>Deteteet and the properties of the tighten with the tighten withet the tighten with the tighten with the tighten with the tig</li></ol>
dicular to ds in parallel or e parallel.	3) Patch all gouges or cuts in the PVC coating after installing conduit. Use manufacturer's recommended patching paste. Build up area to be patched to full mil thickness of coating and feather out paste on sides of damaged area a minimum of 1/2" to provide a completely bonded seal.
a parallel. can be installed the run such as ze. In other	4) Field bend conduit with shoes for a mechanical bender sized for the next larger size conduit. 5) Bends used in or below concrete slabs shall be, rigid steel type elbows, use for all stub-ups
ea.	with flush floor coupling at transitions. n. Use raceway fittings that are of types compatible with the associated raceway and suitable for
it expansion, t damage to the	the use and location. For intermediate steel conduit, use threaded rigid steel conduit fittings except as otherwise indicated. E. Underground Duct Banks:
surfaces of as practical.	1. Exercise care in excavating, trenching and working near existing utilities. Trenching and backfill: a. Contractor shall trench underground duct path and manhole location with utmost care in order
bends or offsets orners of beams,	to avoid existing underground facilities. Trench size shall be kept to a minimum. No oversized trench shall be made unnecessarily.
kouts or other o installation.	<ul> <li>b. All trench excavations by the Contractor shall be backfilled by same in accordance with this specification.</li> <li>c. All material excavated during underground electrical work is not pre-gualified for backfill.</li> </ul>
of 3 times the n sleeves or	c. All material excavated during underground electrical work is not pre-qualified for backfill. d. All fill must be placed in layers not exceeding 8" in depth and hand tamped or machine

d. All fill must be placed in layers not exceeding 8" in depth and hand tamped or machine compacted to at least 95% of its maximum dry density as computed by the ASTM method of performing a compaction test (D-1557-70).

e. All compacted fill will be under continuous inspection by the Inspector. Compaction tests will be arranged for by the Inspector in cooperation with the Contractor.

tamp procedures.

- surrounding material and to a quality equal or exceeding its surround. g. Do not backfill for a period of at least 24 hours after pouring concrete. Upon receipt of the Inspector's approval proceed with backfill. Backfill with 1 sack slump concrete and repair of surface to be completed within 24 hours of approval. Provide wet sand backfill in landscape
- h. Survey slope of trenches and ducts between terminations to provide drainage. No pockets shall be permitted.
- 2. Underground Duct with Concrete Encasement: a. Underground ductbanks lines shall be constructed of individual conduits encased in concrete. Conduit shall be of PVC Schedule 40. The kind of conduit used shall not be mixed in any one duct bank. PVC ducts shall not be smaller than 2" in diameter unless otherwise indicated. The concrete encasement surrounding the bank shall be rectangular in cross—section and shall provide at least 3" of concrete outer encasement for ducts. Conduit shall be separated by a minimum concrete thickness of 2".
- b. The top of the concrete envelope shall not be less than 30" below grade, except that under roads and pavement it shall be not less than 36" below grade.
- c. Ductbanks shall have a continuous slope downward toward manholes with a pitch of not less than 1-1/2" in 100'-0". Except at conduit risers, changes in direction of runs exceeding a total of 10°, either vertically or horizontally, shall be accomplished by long sweep bends having a minimum radius of curvature of 25'-0". Sweep bends may be made of one or more curved or straight sections or combinations thereof. Manufactured bends shall have a minimum radius of 24" for use with conduits of less than 3" in diameter and a minimum radius of 48" for ducts of 3" in diameter and larger.
- d. PVC conduits shall terminate in end-bells where duct lines enter pullboxes or manholes. Separators shall be of precast concrete, high-impact polystyrene, steel, or any combination of these. The joints of the conduits shall be staggered by rows and layers so as to provide a duct line having maximum strength.
- e. During construction, partially completed duct lines shall be protected from the entrance of debris such as mud, sand, concrete and dirt by means of suitable conduit. As each section of a duct line is completed, a testing mandrel not less than  $12^{"}$  long with a diameter 1/4"less than the size of the conduit shall be drawn through each conduit, after which a brush having the diameter of the duct and having stiff bristles shall be drawn through the conduit until it is clear of all particles of earth, sand, or gravel. Conduit plugs shall then be immediately installed.
- f. Locate spacers no greater than 5'-0" center to center, along entire length of ductbank.
- g. Duct couplings may be placed side by side horizontally, but staggered at least 6" vertically. h. Make conduit joints in accordance with manufacturer's recommendations. In the absence of specific recommendations, make the joints as follows: 1) Brush a plastic solvent cement on the inside of the coupling and on the outside of the duct ends.
- 2) Slip duct and fitting together with a quick one-quarter turn to set the joints. i. Follow ductbank sections on the drawings for size, arrangement and spacing of ducts.
- j Secure ducts and spacers to prevent movement during placement of concrete.
- k. At connection to existing manhole, dowel the concrete encasement with one #4 reinforcing bar 36" long per duct. (Minimum of two required.)
- I. Provide a #2/0 soft bare copper ground conductor throughout the continuous length of ductbanks containing conductors having more than 150 volts to ground. m. Concrete; in accordance with the following:
- 2) Provide rebar and tie-downs to prevent conduits from floating to top of concrete during
- curing.
- 5) Use plastic film to retain moisture for proper curing. n. Ductbank concrete may be poured without forming, provided trench walls are firm and will not cave in during installation. Unless noted otherwise, encase the raceway on all sides with a minimum of 3" of concrete.
- o. Where conduits are stubbed out for future connection, stop concrete 12" from end of conduit. Provide a waterproof cap on the end of the conduit.
- p. The top of the concrete ductbank shall be as shown on the drawings, or as otherwise required by code and as required to coordinate with other underground obstructions.
- 3. Connections to Existing Ducts: Where connections to existing duct lines are indicated, excavate the lines to the maximum depth necessary. Cut off the lines and remove loose concrete from the conduits before installing new concrete encased ducts. Provide a reinforced concrete collar, poured monolithically with the new duct line, to take the shear at the joint of the duct lines. Remove existing cables which constitute interference with the work.
- 4. Connection to Existing Handholes and Manholes: For duct line connections to existing structures, break the structure wall out to the dimensions required and preserve steel in the structure wall. Cut steel and band out to tie into the reinforcing of the duct line encasement. Chip out the structure wall to form a key for the duct line encasement.
- 5. Connections to Existing Concrete Pads: For duct line connections to concrete pads break an opening in the pad out to the dimensions required and preserve steel in pad. Cut the steel and bend out to tie into the reinforcing of the duct line encasement. Chip out the opening in the pad to form a key for the duct line encasement.
- 6. Removal of Ducts: Where duct lines are removed from existing manholes, close openings and waterproof manhole. Chip out the wall opening to provide a key for the new section of wall.
- 7. Precast pullboxes shall be of sizes required.
- F. Installation of boxes and fittings: 1. Outlet boxes and Fittings: Install outlet and device boxes and associated covers and fittings of materials and NEMA types suitable for each locations and in conformance with the following requirements, except as otherwise indicated:
  - a. Interior dry locations: NEMA type 1, sheet steel. 1) In dry walls for single and two gang outlets provide 4S and 4D boxes, for 3 or more outlets use masonry boxes.
  - 2) In block and masonry walls provide masonry boxes of depths required for wall thickness. 3) In poured concrete and plastered walls provide 4S and 4D boxes for single gang
  - outlets and 2G and 3G-5075 boxes for multiple ganged outlets. 4) In concrete ceilings provide OCR rings. In other ceilings provide 40 and 40D boxes. Omit covers if standard canopy and device plates entirely cover the ceiling
  - opening. b. Locations exposed to weather or dampness: Cast metal, NEMA type 3R. c. Wet locations: NEMA type 4 enclosures.
  - 1) In exposed work, exterior of buildings, in wet location, and flush in non-waterproofed walls below grade provide FS and FD boxes.
  - d. Corrosive locations: NEMA type 4X enclosures. e. Hazardous (Classified) locations: Cast metal, UL 886, NEMA type listed and labeled for the location and class of hazard indicated.
- 2. Pull and Junction Boxes: Install pull and junction boxes of materials and NEMA types as follows, except as otherwise indicated: a. Interior dry locations: NEMA type 1, sheet steel. b. Locations exposed to weather or dampness: NEMA type 3R, sheet steel.
- c. Wet locations: NEMA type 4 enclosures.
- d. Corrosive locations: NEMA type 4X enclosures.
- e. Hazardous (Classified) locations: Cast metal, UL 886, NEMA type listed and labeled for the location and class of hazard indicated.
- 3. Floor Boxes: In slabs on grade and wet locations: Use NEMA type 4 boxes. At other locations in slabs, use concrete-tight NEMA 1 boxes. a. Provide floor boxes with quantity of gangs as required for power, communication or control as indicated. Use boxes with barriers where required. Provide carpet flanges in carpeted areas.

f. Where Contractor trenches crosses any finished road (paved or gravel), he shall be responsible for restoring the road to its original condition. Repaying shall be with the same

- 1) Provide #4 rebar dowels at each concrete joint/pour transition. A minimum of 8'-0" long #4 rebar dowel, one per conduit in ductbank.
- 3) Make ductbank construction monolithic top to bottom and side to side. 4) Do not exceed the outside dimension of the completed ductbank by more than 1" in the
- vertical or 4" in the horizontal from dimensions indicated.

- 4. Hinged Door Enclosures: NEMA type 12, except as indicated.
- 5. Hinged Door Enclosures Outdoors: NEMA type 3R, with drip hood, factory tailored to individual units. 6. Hinged Door Enclosures in Corrosive Locations: NEMA type 4X metal
- enclosure. 7. Cabinets: Flush mounted, NEMA type 1, except as otherwise indicated.
- G. Lighting:
- Inspect Architectural drawings and specifications, including ceiling alternates, to determine ceiling material to be installed. 2. Inspect Architectural reflected ceiling plans.
- 3. Inspect installed ceiling components for defects affecting the quality and execution of work.
- 4. Preparation:
- b. Verify ceiling material and alignment.
- c. Lay out exact locations of fixtures in accordance with reflected ceiling plans, fixtures' and switches' outlet boxes and supports. d. Provide outlet boxes and conduit.
- e. Provide appropriate hardware and fixture accessories to support from ceiling system 5. Installation:
- a. Installation of all lighting fixtures done by experienced electrician. Lighting fixtures not installed where finished coat of paint has been applied to ceiling and walls until paint is thoroughly dry. Verify ceiling type with architectural plan and provide all necessary framing and mounting hardware.
- b. Contractor to be responsible for proper coordination of all lighting fixture locations. Provide support for all lighting fixtures mounted on or recessed in hung ceiling. Confer with Ceiling Contractor and other trades to coordinate lighting systems.
- c. Lighting fixtures to be rigidly mounted to fixture stud in outlet boxes. Malleable iron hickeys or extension pieces provided where required.
- d. Provide suitable coverplate or canopy for each lighting fixture outlet box where the lighting fixture does not provide a suitable cover.
- e. Lighting fixtures located on exterior of building installed with cadmium plated brass screws and gasketed.
- f. Lighting fixture to be installed in suspended T-Bar ceiling shall be attached to the ceiling grid with an attachment device with a capacity capable to resist a force equal to the weight of the light fixture acting in any direction. Lighting fixtures shall be supported directly from the structure above by hangers capable of supporting the weight of the fixture with #12 galvanized steel wire from all 4 corners.
- g. Verify all ceiling heights and clearances if mounting height is not indicated on plans or in lighting fixture schedule, or if lighting fixture is relocated because of a conflict with another trade. A mounting height for the lighting fixture is to be submitted for review.
- h. Each lighting fixture completely wired in an approved manner with #14 AWG copper stranded wire, 600 volt, with type SF-2 insulation; recessed lay-in lighting fixtures furnished with 7'-0'' #14 SF wire and 6'-0'' Greenfield, when installed in an air plenum.
- i. Circuit wiring running through the lighting fixtures to be #12 AWG with type SF insulation. No joints in the wires other than those absolutely required. Provide wires of sufficient length for making approved connections at the light outlets and at the lampholders or ballasts.
- j. Joints and splices within lighting fixtures to be either soldered and taped with plastic electrician's tape or secured by wire nuts or indent type lug fasteners. k. Protect the lighting fixtures from damage during their unloading or removal,
- storage or installation, any broken fixtures, lenses, etc., must be replaced with new parts, without any additional expense to the Owner, undue delay or inconvenience.
- I. Upon completion of the installation of the lighting fixtures and lighting equipment, they must be in first-class operating order and in perfect condition as to finish, etc. Check for proper operation and appearance, alignment of fixtures and proper placement of lenses, louvers, lamps and other light—controlling or modifying appurtenances.
- m. Where special lighting effects, flood or spotlighting is involved, perform final adjustment under the direct supervision of Architect
- n. Cleaning: Immediately prior to occupancy, damp clean all lenses, lighting fixture trims, reflectors, clean lamps or install new lamps as directed, with lenses and fixtures free of labels.
- o. Use of Lighting Fixtures: As soon as any portion of lighting fixture work is ready for operation, the Owner shall have the right to operate under the supervision of the Contractor. This shall in no way be interpreted to mean the acceptance of such part of the installation or relieve the Contractor of his responsibility for the complete work or any part thereof.
- p. Color and type of finish of all lighting fixtures as approved by the Architect.
- q. Install fixtures and accessories in accordance with manufacturer's recommendations and industry standard practice.
- r. Coordinate work of this section with that of other trades. s. Provide lighting fixtures, lamps, switches, and control systems, and wiring.
- t. If designation omitted on drawings, provide same type fixture employed in
- rooms of similar usage (contact this engineer for final direction).
- u. Provide spacers for fixtures mounted on low density ceiling material. v. Provide plaster frames for recessed fixtures in plaster ceilings.
- w. Install fixtures in fiber decking and formboard so outlet boxes and openings
- will not be sight exposed. x. Prepare fixtures and trim required to be painted.
- y. Outlet boxes locations on drawings are diagrammatic only. Position outlet
- boxes to coincide with suspension hangers and knock-outs. z. Install in accordance with manufacturer's instructions, submittal data, and details on drawings.
- 6. Adjustment and cleaning:
- a. Adjust lamp positions for desired effects.
- 1) Align fixtures with building walls and tile joints.
- b. Cleaning:
- 1) Remove dirt, grease, and foreign materials from fixtures.
- 2) Remove fingerprints, smudges, and dirt from fixtures' lenses and lamps. 3.02 FIELD QUALITY CONTROL
- A.Examine surfaces to which conduits are to be secured for:
- 1. Defects which will adversely affect the execution and quality of work.
- 2. Deviations from allowable tolerances for the building material.
- B.Do not start work until defects and deviations are corrected.
- 3.03 CLEANING
- A. Upon completion of installations of raceways, inspect interiors of raceways; clear all blockages and remove burrs, dirt, and construction debris.
- 3.04 PROTECTION OF FINISHED WORK
- A. Protect inside of conduit from dirt and rubbish during construction by capping all openings with plastic caps intended for the purpose. B.Protect stub-ups from damage where conduits rise from floor slabs. Arrange so curved portion of bends is not visible above the finished slab.
- 3.05 GROUNDING
- A. Electrically ground metallic cabinets, boxes, and enclosures. Where wiring to item includes a grounding conductor, provide a grounding terminal in the interior of the cabinet, box, or enclosure. 3.06 CLEANING AND FINISH REPAIR
- A. Upon completion of installation, inspect components. Remove burrs, dirt, and construction debris and repair damaged finish including chips, scratches, abrasions and weld marks. Clean surfaces to be painted.
- B.Galvanized finish: Repair damage using a zinc-rich paint recommended by the manufacturer.
- C.Painted finish: Repair damage using matching corrosion-inhibiting touch-up coatina.



SYMBOL	DESCRIPTION		MIN.C	ONNE	CTION	I SIZE	REMARKS
	DESCRIPTION	MANOFACTORER / MODEL NUMBER	W / SD	VENT	CW	HW	REWARKS
<u>WC-1</u>	WALL MOUNTED WATER CLOSET - ADA	TOTO CT708E, COMMERCIAL WALL-MOUNTED TOILET WITH 1-1/2" TOP SPUD INLET. TOTO TET1LA32#CP, 1.28 GPF FLUSH VALVE W/ 1-1/2" VACUUM BREAKER TUBE AND 1" ANGLE STOP. TOTO SC534, ELONGATED OPEN FRONT TOILET SEAT.	4"	2"	1"	-	INSTALL PER ADA REQUIREMENTS
<u>LV-1</u>	UNDERCOUNTER LAVATORY - ADA	TOTO UNDERCOUNTER LAVATORY LT587, VITREOUS CHINA. TOTO TEL153-D20ET GOOSENECK ECOPOWER FAUCET, SENSOR OPERATED WITH THERMAL MIXING.	1-1/2"	1-1/2"	1/2"	1/2"	SET TO 110°F MAX TEMPERATURE REQUIREMENTS
<u>SH-1</u>	SHOWER - ADA	SYMMONS #C-96-500-B30-V-X-2.0 TEMPTROL SHOWER/HAND SHOWER SYSTEM WITH TEMPTROL PRESSURE BALANCING TUB/SHOWER VALVE AND SYMMONS DUAL OUTLET DIVERTER VALVE.	2"	1-1/2"	1/2"	1/2"	SET TO 110°F MAX TEMPERATURE REQUIREMENTS. PROVIDE WITH F PRIMER.
<u>FD-1</u>	FLOOR DRAIN	ZURN Z415S FLOOR DRAIN, DURA-COATED CAST IRON BODY, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND "TYPE S" POLISHED NICKEL BRONZE, LIGHT-DUTY HEEL PROOF STRAINER.	2"	1-1/2"	-	-	PROVIDE WITH TRAP PRIMER CON DETAIL 4/P501.
<u>TP-1</u>	TRAP PRIMER	PRECISION PLUMBING PRODUCTS #P2-500 LEAD FREE PRESSURE DROP ACTIVATED TRAP PRIMER.	-	-	1/2"	-	SEE DRAWINGS FOR LOCATION. F PANEL BELOW LAVATORY COUNT 1/P501.
<u>WHA-1</u>	WATER HAMMER ARRESTOR	PRECISION PLUMBING PRODUCTS SC-750B LEAD FREE THREADED WATER HAMMER ARRESTOR.	-	-	3/4"	-	-
<u>BF-1</u>	BOTTLE FILLER	HAWS MODEL 3610 MODULAR OUTDOOR BOTTLE FILLER.	1-1/2"	1-1/2"	1/2"	-	-
<u>RD-1</u> ORD-1	ROOF DRAIN / OVERFLOW ROOF DRAIN	ZURN Z165, 8-3/8" DIAMETER ROOF DRAIN AND OVERFLOW DRAIN WITH LOW SILHOUETTE DOMES AND DOUBLE TOP-SET DECK PLATE.	3"	-	-	-	-
<u>DN-1</u>	DOWNSPOUT NOZZLE	ZURN Z199 DOWNSPOUT NOZZLE.	3"	-	-	-	DAYLIGHT @ 9+" AFG. SEE DETAIL
<u>WCO-1</u>	WALL CLEANOUT	ZURN Z1446 CLEANOUT WITH ROUND WALL ACCESS COVER.	-	2"	-	-	SEE DETAIL 2/P501.
<u>WCO-2</u>	WALL CLEANOUT	ZURN Z1446 CLEANOUT WITH ROUND WALL ACCESS COVER.	4"	-	-	-	SEE DETAIL 2/P501.
<u>FCO-1</u>	FLOOR CLEANOUT	ZURN ZS1400 EXTRA HEAVY-DUTY "LEVEL-TROL" ADJUSTABLE FLOOR CLEANOUT WITH STAINLESS STEEL TOP.	3"	-	-	-	-
FCO-2	FLOOR CLEANOUT	ZURN ZS1400 EXTRA HEAVY-DUTY "LEVEL-TROL" ADJUSTABLE FLOOR CLEANOUT WITH STAINLESS STEEL TOP.	4"	-	-	-	-

# MAT

A) ALL PIPING PASSING UNDER OR THROUGH WALLS SHALL

B) ALL PIPING PASSING THROUGH OR UNDER CINDERS OF C

C) APPROVED PROVISIONS SHALL BE MADE FOR EXPANSION D) VOIDS AROUND PIPING PASSING THROUGH CONCRETE F

6

MBING FIXT	UR	ES	CHED	ULE	GENERAL NOTES (CONT.) GENERAL NO	TES	
A / MODEL NUMBER		ONNE VENT	CTION SIZE	- REMARKS	38. WATER HEATER SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION PER SECTION 507.2 CPC. 1. ALL PIPES, EQUIPMENT AND CONDUIT SHALL BE SUPPORTED AN SEISMIC RESTRAINT OF MECHANICAL SYSTEMS AND PLUMBING		ES FOR
L WALL-MOUNTED TOILET T. TOTO TET1LA32#CP, 1.28 VACUUM BREAKER TUBE SC534, ELONGATED OPEN	4"	2"	1" -	INSTALL PER ADA REQUIREMENTS.	<ol> <li>ALL ATTACHMENTS TO THE STRUCTURE FOR SUPPORT OF EQUI SPECIFICALLY DETAILED SHALL BE IN ACCORDANCE WITH SMAC OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS.</li> </ol>	PMENT, PIPING AND DUCTWOR	
/ATORY LT587, VITREOUS GOOSENECK ECOPOWER ED WITH THERMAL MIXING.	1-1/2"	1-1/2"	1/2" 1/2"	SET TO 110°F MAX TEMPERATURE. INSTALL PER ADA REQUIREMENTS	3. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH EQUIPMENT MAI ALL EQUIPMENT HAS ADEQUATE CLEARANCE AS REQUIRED FOR PROVIDE ALL PIPING AND DUCTWORK ACCESSORIES AS REQUIR SYSTEMS.	R PROPER SERVICE AND MAINTE	FENANCE.
-X-2.0 TEMPTROL YSTEM WITH TEMPTROL B/SHOWER VALVE AND IVERTER VALVE.	2"	1-1/2"	1/2" 1/2"	SET TO 110°F MAX TEMPERATURE. INSTALL PER ADA REQUIREMENTS. PROVIDE WITH FD-1 WITH NO TRAP PRIMER.	4. COORDINATE INSTALLATION OF ALL EQUIPMENT, PIPING AND DU INSTALLATION. ENSURE THAT ALL CONTROL DEVICES, MANUAL FILTERS ETC. ARE ACCESSIBLE FOR MAINTENANCE.		
DURA-COATED CAST IRON TIBLE MEMBRANE CLAMP WITH SEEPAGE SLOTS AND BRONZE, LIGHT-DUTY HEEL	2"	1-1/2"		PROVIDE WITH TRAP PRIMER CONNECTION. SEE DETAIL 4/P501.	UTILITY SEISMIC BRACING NOTES       5. CONTRACTOR SHALL COMPLETELY FAMILIARIZE HIMSELF WITH E WORK ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND INSTALLATION OF EQUIPMENT, DUCTWORK AND PIPING AS SHOW FOLLOWING CONDITIONS, UNLESS OTHERWISE INDICATED IN THE PROJECT DOCUMENTS:       5. CONTRACTOR SHALL COMPLETELY FAMILIARIZE HIMSELF WITH E WORK ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND INSTALLATION OF EQUIPMENT, DUCTWORK AND PIPING AS SHOW ARCHITECTS ATTENTION.         a. DUCTS, PIPES AND RACEWAYS WEIGHING 5 LBS/FT OR LESS AND HAVING FLEXIBLE CONNECTIONS       6. ANY EXISTING CONDITIONS (STRUCTURAL EIDERPROCEING DAMAGED DUDING AS SHOW)	ND DRAWINGS WHICH PREVENT WN SHALL BE BROUGHT TO THE	ITS THE E
DUCTS #P2-500 LEAD FREE ED TRAP PRIMER.	-	-	1/2" -	SEE DRAWINGS FOR LOCATION. PROVIDE ACCESS PANEL BELOW LAVATORY COUNTER. SEE DETAIL 1/P501.	<ul> <li>a. DOCTS, PIPES AND RACEWAYS WEIGHING'S LBS/FT OR LESS AND HAVING PLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCT, PIPE OR RACEWAY (CBC 1616A.1.18).</li> <li>b. RACEWAYS OR DUCTS SUSPENDED FROM HANGERS WHERE EACH HANGER IN THE DUCT RUN IS 12 INCHES OR LESS IN LENGTH. WHERE ROD HANGERS WITH A DIAMETER GREATER THAN 3/8-INCH ARE</li> <li>6. ANY EXISTING STRUCTURAL FIREPROOFING DAMAGED DURING (REPLACED AT NO COST TO THE OWNER. REPLACED AT NO COST TO THE OWNER.</li> <li>7. PLUMBING VENTS SHALL BE LOCATED MINIMUM 10 FEET FROM CONTENTS AND HAVING PLEXIBLE CONNECTIONS</li> </ul>		
DUCTS SC-750B LEAD FREE R ARRESTOR.	-	-	3/4" -	-	USED, THEY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD. (CBC 1616A.1.24 & 1616A.1.25). c. PIPING SUPPORTED BY HANGERS WHERE EACH HANGER IN THE PIPE RUN IS 12 INCHES OR LESS IN 8. ANCHORAGE OF EQUIPMENT WEIGHING LESS THAN 400 POUNDS	S AND SUPPORTED DIRECTLY O	ON THE
AR OUTDOOR BOTTLE	1-1/2"	1-1/2"	1/2" -	-	LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON TRAPEZES, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 INCHES OR LESS. WHERE ROD HANGERS WITH A DIAMETER GREATER THAN 3/8-INCH ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD. (CBC 1616A.1.26). EVALUATION OF THE PIPE TO THE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 INCHES OR LESS. WHERE ROD HANGERS WITH A DIAMETER GREATER THAN 3/8-INCH ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD. (CBC 1616A.1.26). EVALUATION OF THE PIPE TO THE SUPPORTED AND ANCHORY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD. (CBC 1616A.1.26). EVALUATION OF THE PIPE TO THE SUPPORTED AND ANCHORY SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD. (CBC 1616A.1.26). EVALUATION OF THE PIPE TO THE PIPE TO THE SUPPORTED AND ANCHORY SHORE THE PIPE TO THE PIPE TO THE SUPPORTED AND ANCHORY SHORE THE PIPE TO THE PIPE TO THE PIPE TO THE PIPES ARE SHORE THE PIPE TO THE PIPE TO THE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 SHORE THE PIPE TO THE PIPE TO THE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 SHORE THE PIPE TO THE PIPE TO THE PIPE TO THE PIPES ARE SHORE THE PIPE TO THE PIPE TO THE PIPE TO THE PIPES ARE SHORE THE PIPE TO THE PIPE TO THE PIPE TO THE PIPES ARE SHORE THE PIPE TO THE PIPE TO THE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 SHORE THE PIPE TO THE PIPE TO THE PIPE TO THE PIPES ARE SHORE THE PIPE TO THE PIPE TO THE PIPE TO THE PIPES ARE SHORE THE PIPE TO THE PIPE TO THE PIPE TO THE PIPES ARE SHORE THE PIPE TO THE PIPE	ISOLATION DEVICES SUSPENDE ANS. (CBC TITLE 24 PART 2 SEC	ED FROM
R ROOF DRAIN AND W SILHOUETTE DOMES AND ATE.	3"	-		-	<ul> <li>d. DUCTS WITH A WEIGHT OF 10 LBS/FT OR LESS OR A CROSS-SECTIONAL AREA LESS THAN 6 SQUARE FEET WHERE PROVISIONS ARE MADE TO AVOID IMPACT WITH LARGER DUCTS OR MECHANICAL COMPONENTS, OR PROVISIONS ARE MADE TO PROTECT THE DUCTS IN THE EVENT OF SUCH AN IMPACT</li> <li>HOWEVER, SUCH EQUIPMENT MOST BE SUPPORTED AND ANCHORAGE PRESCRIBED BY SECTION 1630B.2 AND THE ANCHORAGE SHALL ENGINEER OF RECORD AS A PART OF FIELD REVIEWS/ INSPECTION ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.</li> </ul>	BE APPROVED BY THE STRUCT	-
DZZLE.	3"	-		DAYLIGHT @ 9+" AFG. SEE DETAIL 7/P501.	<ul> <li>(CBC 1616A.1.25).</li> <li>e. TRAPEZE ASSEMBLIES USED TO SUPPORT DUCTS, PIPES OR RACEWAYS WHERE THE TOTAL WEIGHT OF THE SUPPORTED UTILITIES IS 10 LBS/FT OR LESS AND THE MAXIMUM NOMINAL SIZE OF ANY SUPPORTED PIPE DOES NOT EXCEED 1 INCH (CBC 1616A.1.24, 1616A.1.25 &amp; 1616A.1.26).</li> <li>9. CONTRACTOR SHALL VERIFY ALL EQUIPMENT MODEL NUMBERS, OTHER SCHEDULED INFORMATION WITH OTHER APPLICABLE TRA PRIOR TO INSTALLATION.</li> </ul>		
TH ROUND WALL ACCESS	-	2"		SEE DETAIL 2/P501.	<ul> <li>f. PIPING SATISFYING ALL OF THE FOLLOWING CONDITIONS: (a) HAVING A NOMINAL DIAMETER OF 1 INCH OR LESS; (b) CONFORMING TO ASME B31 OR CONSTRUCTED OF HIGH OR LIMITED DEFORMABILITY MATERIALS; (c) HAVING JOINTS MADE BY WELDING, BRAZING, THREADING, BONDING, COMPRESSION</li> <li>10. CONTRACTOR SHALL VERIFY ALL LOCATIONS, SIZES, P.O.C'S, INV ALL EXISTING UTILITIES PRIOR TO INSTALLATION OF ANY MATERIALS</li> </ul>	- ,	ABILITY OF
TH ROUND WALL ACCESS	4"	-		SEE DETAIL 2/P501.	COUPLINGS, OR GROOVED COUPLINGS; (d) PROVISIONS ARE MADE TO AVOID IMPACT WITH OTHER STRUCTURAL OR NONSTRUCTURAL COMPONENTS, OR TO PROTECT THE PIPING IN THE EVENT OF SUCH IMPACT (CBC 1616A.1.26). 11. THESE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ARE MADE AND NECESSARY OFFSETS OF PIPING. THE CONTRACTOR SHALL MANNER AS TO CONFORM TO STRUCTURE, AVOID OBSTRUCTION	L INSTALL MATERIAL AND EQUIF NS, PRESERVE HEADROOM, ANI	IPMENT IN A ND KEEP
Y-DUTY "LEVEL-TROL" NOUT WITH STAINLESS STEEL	3"	-		-	<ol> <li>MECHANICAL COMPONENTS THAT ARE INSTALLED IN-LINE WITH THE DUCT SYSTEM AND HAVE AN OPERATING WEIGHT GREATER THAN 75 LBS SHALL BE SUPPORTED AND LATERALLY BRACED INDEPENDENT OF THE DUCT SYSTEM (ASCE 7 SECTION 13.6.7).</li> <li>APPURTENANCES SUCH AS DAMPERS, LOUVERS AND DIFFUSERS SHALL BE POSITIVELY ATTACHED WITH</li> <li>OPENINGS AND PASSAGEWAYS CLEAR. ALL INSTALLATIONS SHA ACCEPTABLE INDUSTRY STANDARDS. THE CONTRACTOR SHALL ANY DISCREPANCIES OR CONFLICTS THAT WOULD EFFECT THE ADDITIONAL COSTS. THIS NOTIFICATION SHALL BE SUBMITTED F</li> </ol>	NOTIFY THE ARCHITECT IN WR SYSTEM PERFORMANCE OR INC	RITING OF NCUR
Y-DUTY "LEVEL-TROL" NOUT WITH STAINLESS STEEL	4"	-		-	<ul> <li>MECHANICAL FASTENERS (ASCE 7 SECTION 13.6.7).</li> <li>SEISMIC BRACING OF DISTRIBUTION SYSTEMS: CONTRACTOR SHALL PROVIDE SUPPORTS, ATTACHMENTS AND BRACING FOR PIPES, DUCTS AND ELECTRICAL RACEWAYS IN ACCORDANCE WITH ONE OF THE FOLLOWING SYSTEMS POSSESSING A CURRENT OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM):</li> <li>MASON INDUSTRIES, INC, OPM-0043-13</li> </ul>	ICATE THAT THE INSTALLATION TRARY TO MANUFACTURERS 5. THE CONTRACTOR IS RESPON	NS OR
ROTECTION	V O	FΡ	PING,	J	<ul> <li>b. B-LINE/TOLCO, OPM-0052-13</li> <li>c. ISAT, OPM-0403-13</li> <li>MANUFACTURERS INSTRUCTIONS AND TO ALL APPLICABLE CODE</li> <li>13. ALL PLUMBING EQUIPMENT, MATERIAL, AND ALL CONNECTIONS</li> </ul>	ES AND REGULATIONS. THERETO SHALL BE INSTALLED	D PER
ERIALS AND	D S	TRL	ICTUR	RES	d. ERICO INTERNATIONAL CORP (FIRE SPRINKLERS ONLY), OPM-0062-13       MANUFACTURERS INSTRUCTIONS TO PROVIDE A COMPLETE AND         e. ANVIL INTERNATIONAL (FIRE SPRINKLERS ONLY), OPM-0351-13       14. ALL PLUMBING PIPING SOLDER SHALL BE LEAD FREE.	) FULLY OPERATIONAL SYSTEM	Л.
L BE PROTECTED FROM BREAK OTHER CORROSIVE MATERIAL		BE PROT	ECTED FROM E	EXTERNAL CORROSION IN AN APPROVED MANNER.	<ul> <li>A. LAYOUT DRAWINGS OF THE SUPPORTS, ATTACHMENTS, AND BRACING SYSTEMS IN ACCORDANCE WITH THE PREAPPROVAL SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL (RDP) IN RESPONSIBLE CHARGE OF THE PROJECT FOR REVIEW TO VERIFY THAT THE DETAILS ARE IN CONFORMANCE WITH THE CODE REQUIREMENTS. THE LAYOUT DRAWINGS SHALL AS A MINIMUM SATISFY THE REQUIREMENTS OF ASCE 7 SECTION 13.6 AS MODIFIED BY THE 2019 CBC SECTION 1616A.</li> <li>THE STRUCTURAL ENGINEER OF RECORD (SEOR) SHALL VERIFY THAT THE SUPPORTING STRUCTURE IS</li> <li>THE STRUCTURAL ENGINEER OF RECORD (SEOR) SHALL VERIFY THAT THE SUPPORTING STRUCTURE IS</li> </ul>	S. IF THE CONTRACTOR CHOOS FOR THE RE-CALCULATION AND	SES TO D
FLOORS ON THE GROUND SHAI	LL BE AP	PROPRIA	TELY SEALED.		ADEQUATE FOR THE FORCES IMPOSED ON IT THE SUPPORTS, ATTACHMENTS, AND BRACES INSTALLED IN ACCORDANCE WITH THE PREAPPROVAL IN ADDITION TO ALL OTHER LOADS. b. THE SEOR SHALL FORWARD THE SUPPORTS, ATTACHMENTS, AND BRACING DRAWINGS (INCLUDING	TANCE OF 5 FEET ON EITHER S	SIDE
					CONSTRUCTION DOCUMENTS FOR SUPPLEMENTARY FRAMING, WHERE REQUIRED) TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE WITH A NOTATION INDICATING THAT THE DRAWINGS HAVE BEEN REVIEWED AND ARE IN GENERAL CONFORMANCE WITH THE PREAPPROVAL AND THE DESIGN OF THE PROJECT. 17. PLUMBING PIPING SYSTEMS SHALL BE INSULATED PER BUILDING SECTION 123. 18. PLUMBING EQUIPMENT SHALL BE CERTIFIED BY AND COMPLY WI		
SD Developme Services	ent			THE CITY OF SAN DIEGO	<ul> <li>c. A REVIEW STAMP SHALL BE PERMITTED TO BE USED BY THE STRUCTURAL ENGINEER OF RECORD TO INDICATE COMPLIANCE WITH THIS REQUIREMENT.</li> <li>B. THE LAYOUT DRAWINGS, WITH THE REVIEW STAMP, SHALL BE SUBMITTED TO OSHPD AS PART OF THE</li> <li>10 ALL INSULATING MATERIAL SUBSTALLED MUST BE CERTIFIED BY.</li> </ul>		
FORM DS-16 July 2021	Vater I	Meter	Data Card		<ul> <li>a. STRUCTURE SUPPORTING THE DISTRIBUTION SYSTEM HAS ADEQUATE STRUCTURAL CAPACITY</li> <li>b. THE LAYOUT DRAWINGS, WITH THE REVIEW STAMP, SHALL BE SUBMITTED TO USHPD AS PART OF THE ORIGINAL CONSTRUCTION DOCUMENTS OR AS DEFERRED SUBMITTAL ITEMS IN ACCORDANCE WITH 2019 CAC SECTION 7-126 AND 2019 CBC SECTION 107.3.4.1 FOR VERIFICATION THAT:</li> <li>a. STRUCTURE SUPPORTING THE DISTRIBUTION SYSTEM HAS ADEQUATE STRUCTURAL CAPACITY</li> <li>b. THE LAYOUT DRAWINGS, WITH THE REVIEW STAMP, SHALL BE SUBMITTED TO USHPD AS PART OF THE ORIGINAL CONSTRUCTION DOCUMENTS OR AS DEFERRED SUBMITTAL ITEMS IN ACCORDANCE WITH 2019 CAC SECTION 7-126 AND 2019 CBC SECTION 107.3.4.1 FOR VERIFICATION THAT:</li> <li>c. STRUCTURE SUPPORTING THE DISTRIBUTION SYSTEM HAS ADEQUATE STRUCTURAL CAPACITY</li> <li>d. ALL HOSE BIBBS INSTALLED SHALL BE EQUIPPED WITH INTEGRAL</li> </ul>	118, 123 & 124.	SION TO
Project No:		Notificat	on No:	Sales Order No:	<ul> <li>b. SEISMIC DESIGN FORCES (Fp) ARE IN ACCORDANCE WITH THE 2019 CBC</li> <li>c. BRACING IS WITHIN THE SCOPE OF THE OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM), INCLUDING: SIZE OF DISTRIBUTION SYSTEM COMPONENTS, SPACING OF BRACING AND FLEX</li> </ul>	S PER FLUSH. URINALS SHALL	CONSUME
Water Meter Address: Building or Project Address: 8 Maximum Length of Water Sys			go, CA 92123 ilding Stories: 1	Connection Object No: Flushometer Valve Fixtures Used: 🗹 Yes 🗌 No	JOINTS, AND SUBSTRATE FOR ATTACHMENTS22. LAVATORY FAUCETS IN RESTROOMS SHALL BE SELF CLOSING TOC. THE APPROVED LAYOUT DRAWINGS WITH THE REVIEW STAMP SHALL BE KEPT ON THE JOBSITE AT ALL22. LAVATORY FAUCETS IN RESTROOMS SHALL BE SELF CLOSING TOTIMES AND SHALL BE USED FOR INSTALLATION OF THE SUPPORT AND BRACING.24. LAVATORY FAUCETS IN RESTROOMS SHALL BE SELF CLOSING TO	YPE AND SHALL NOT EXCEED A	\ WATER
Appliances, Appurtenance		Min. Fix		ations, see 2019 CPC, page 154 # of Existing # of # of Fixture # Sembly Fixtures to Fixtures Increase/	<ul> <li>a. THE APPROVED SPECIAL INSPECTION AGENCY OR INSPECTOR OF RECORD SHALL PROVIDE INSPECTION IN ACCORDANCE WITH 2019 CBC SECTIONS 1704 OR 1704A AND 2019 CAC SECTION 7-145</li> <li>23. NO CPVC SHALL BE INSTALLED FOR POTABLE WATER SUPPLY.</li> <li>24. PLUMBING FIXTURES &amp; PIPING USED TO CONVEY DRINKING WAT</li> </ul>	ER SHALL BE AB1953 COMPLIAI	NT.
Bathtub or Combination Bath/ ¾" Bathtub Fill Valve	Shower (fill)		4.0 4.0	RemainAddedRemovedDecreasexImage: state stat	<ul> <li>b. OSHPD FIELD STAFF WILL REVIEW AND INSPECT THE INSTALLATION IN ACCORDANCE WITH 2019 CAC SECTION 7-147</li> <li>D. THE STRUCTURAL ENGINEER OF RECORD SHALL DESIGN ANY SUPPLEMENTAL FRAMING THAT IS NEEDED</li> <li>D. THE STRUCTURAL ENGINEER OF RECORD SHALL DESIGN ANY SUPPLEMENTAL FRAMING THAT IS NEEDED</li> <li>26. "NO GATE VALVES SHALL TO BE INSTALLED ON THIS PROJECT".</li> </ul>	JRE.	
Bidet Clothes Washer, domestic Dental Unit, cuspidor		1⁄2″	1.0        4.0     4.0        1.0	x 0	TO RESIST THE LOADS FROM, MAINTAIN STABILITY OF, AND/OR IS REQUIRED FOR INSTALLATION OF THE PREAPPROVED SYSTEM. THE SUPPLEMENTAL FRAMING SHALL BE SUBMITTED TO OSHPD AS PART OF THE ORIGINAL CONSTRUCTION DOCUMENTS OR AS A DEFERRED APPROVAL ITEM; DEFERRED APPROVAL ITEMS SHALL BE LISTED ON THE COVER PAGE OF THE OSHPD APPROVED CONSTRUCTION DOCUMENTS OR IS A CCESIBLE TO THE MOUTH		
Dishwasher, domestic Drinking Fountain or Water Co Fire Sprinkler GPM (residential		1⁄2″	1.5     1.5       0.5     0.5	x	E. A COPY OF THE CHOSEN BRACING SYSTEM(S) INSTALLATION GUIDE OR MANUAL SHALL BE ON THE JOBSITE PRIOR TO STARTING THE INSTALLATION OF HANGERS AND/ OR BRACES. THE APPROVED AGENCY OR INSPECTOR OF RECORD SHALL MAINTAIN ON SITE AN APPROVED COPY OF THE OPM (ORTAINED FROM	AND OUTLETS SHALL COMPLY \	WITH
Hose Bib Hose Bib, each additional Lavatory (restroom sinks only)		1/2" 1/2"	2.5     2.5       1.0     1.0       1.0     1.0	x         Image: x         0           1.0         x         2         2	OK INSPECTOR OF RECORD SHALL MAINTAIN ON SITE AN APPROVED COPT OF THE OPM (OBTAINED FROM OSHPD'S WEBSITE) IN ACCORDANCE WITH 2019 CAC 7-145, ITEM #4.       SECTION 614.0 OF THE CPC.         F. COMPONENTS OF TWO OR MORE PRE-APPROVED BRACING SYSTEMS SHALL NOT BE MIXED. ONLY ONE PRE-APPROVED BRACING SYSTEM MAY BE USED FOR A RUN OF PIPE, DUCT OR RACEWAY. ANY       29. EACH FIXTURE TRAP SHALL HAVE A PROTECTING VENT SO LOCA THE TRAP ARM FROM THE TRAP WEIR TO THE INNER EDGE OF THE OPM (OBTAINED FROM		
Lawn Sprinkler, each head Mobile Home, each (minimum) Sinks	)		1.0     1.0       12.0	x 0	SUBSTITUTION OF COMPONENT OF A PRE-APPROVED BRACING SYSTEM SHALL REQUIRE OSHPD REVIEW AND APPROVAL. G. CONTRACTOR SHALL INCLUDE IN THE PROJECT SCHEDULE ADEQUATE TIME FOR DESIGN TEAM AND 30. BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY W	MES THE DIAMETER OF THE TRA	RAP ARM.
Bar Clinic Faucet Clinic Flushometer Valve v	with or withou	1/2"		x      *        x       0        x       0	OSHPD REVIEW OF EACH DEFERRED SUBMITTAL ITEM. NO LESS THAN EIGHT WEEKS SHALL BE ALLOWED FOR THE REVIEW AND APPROVAL PROCESS FOR EACH DEFERRED SUBMITTAL ITEM. CALIFORNIA BUILDING CODE. ALL SANITARY SYSTEM MATERIALS LISTING AGENCY.		
faucet Kitchen, domestic Laundry		1⁄2″	1.5 1.5		31. EACH VENT SHALL RISE VERTICALLY TO A POINT NOT LESS THAN RIM OF THE FIXTURE SERVED BEFORE OFFSETTING HORIZONTA ANY OTHER VENT.		
Service Sink or Mop Basin Washup, each set of Fauc Shower, per head	ets	1/2" 1/2"	2.0           2.0         2.0	x 0 x 2 4	PIPE MATERIALS SCHEDULE 32. VENTS LESS THAN SIX (6) INCHES ABOVE THE FLOOD-LEVEL RIM WITH APPROVED DRAINAGE FITTINGS, MATERIAL, AND GRADE TO		STALLED
Urinal, 1.0 GPF Flushometer Va Urinal, Greater than 1.0 GPF Fl Urinal, Flush Tank	ushometer Va	lve 34" ½"	2.0 2.0	6.0     x     Image: A state of the	SANITARY WASTE, STORM DRAIN       CISPI SERVICE WEIGHT CAST IRON, NO-HUB FITTINGS WITH       33. BACKWATER VALVES SHALL BE INSTALLED ON THE DOWNSTREAL         LOCATED ON A FLOOR LEVEL THAT IS LOWER THAN THE NEXT UPUBLIC OR PRIVATE SEWER SYSTEM PER SECTION 701.1 CPC AND	PSTREAM MANHOLE COVER OF	F THE
Water Closet, 1.6 GPF Gravity T Water Closet, 1.6 GPF Flushom Water Closet 1.6 GPF Flushom	eter Tank eter Valve	½" 1"	2.5     2.5       5.0     5.0	3.5     x       *       8.0     x     2     *	AND VENT PIPING (ABOVE & BELOW GRADE)       NEOPRENE GASKET & STAINLESS STEEL HEAVY DUTY 4 BAND COUPLINGS.       NEOPRENE GASKET & STAINLESS STEEL HEAVY DUTY 4 BAND         APPROVAL.       34. DOMESTIC HOT WATER PIPING SHALL BE INSULATED PER SECTION		
Water Closet > 1.6 GPF Gravity Water Closet > 1.6 GPF Flushor Other Water Requirements	meter Valve	1"	3.0         5.5           7.0         8.0         1           GPM for         1	10.0 x	CONDENSATE DRAIN PIPING (ABOVE GRADE)       COPPER TYPE "L" HARD DRAWN WITH WROUGHT FITTINGS AND SOLDERED JOINTS.       35. EACH SHOWER HEAD SHALL NOT EXCEED A WATER FLOW OF 2.0		
Total Fix		*THIS TOTAL	VILL BE CALCULATED BY CIT	or non-residential use ONLY) TY STAFF OR ADDITIONAL DEMAND	DOMESTIC HOT & COLD WATER PIPING       COPPER TYPE "L" SEAMLESS COPPER TUBING, FITTINGS, SHALL BE       36. SHOWERS AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDE         408.3 CPC.	ED WITH MIXING VALVES PER S	SECTION
	The portion l	below will be	ompleted by the Develo	convert all use to GPM for meter sizing Iopment Services Department Fees: (Total F.U. for Meter Sizing)	(ABOVE GRADE)       WROUGHT SWEAT TYPE. ALL JOINTS SHALL BE SOLDERED WITH SOLDER CONFORMING TO ASTMB3.2. THE ENTIRE SYSTEM SHALL BE LEAD FREE.       37. PROVIDE EXPANSION TANK OR OTHER APPROVED METHOD OF FORMULA	ELIEVING PRESSURE PER SEC	CTION 608.3
Pressure regulation required? Approved meter size:	Yes N	lo Backf Wate	supply line size:	P □ Yes □ No			
Development Services Departr		Visit	our web site: <u>sandiego.g</u> available in alternative fi DS-16 (07-21)	Date approved: gov/dsd. formats for persons with disabilities. CLEAR FORM	ELECTRIC WATER HEATER SCHEDULE		
			0 (0/-21)		UNIT NO. MANUFACTURER NO LOCATION TANK FLOW RATE RISE (°F) ELECTRICAL DIMENSIONS WEIGH		KS
					UNIT NO.MANUFACTURERMODEL NO.LOCATIONCAPACITY (GAL)RATE (GAL)RATE (GPH)NO.FLA (TERMINALS)DIMENSIONS (TERMINALS)WEIGH (LBS) $\langle WH \\ 1 \rangle$ A.O.SMITHDEN-52JANITOR'S CLOSET #134505180208 / 3Ø10,00041.624.054-7/8" x 20-1/2"131		<u>ری</u>

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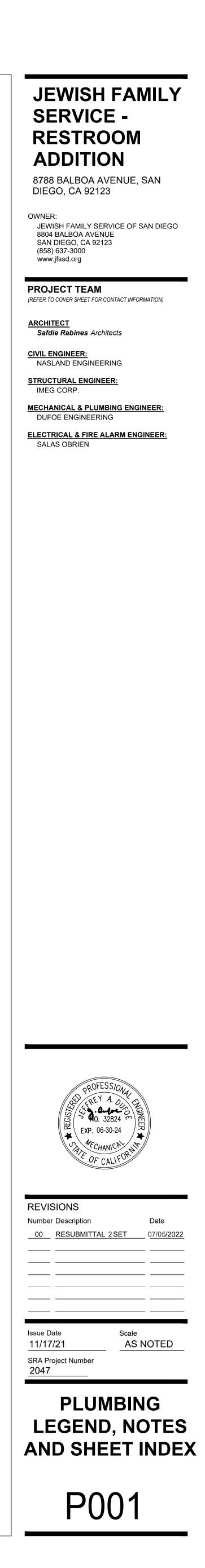
DUIT SHALL BE SUPPORTED AND BRACED SMACNA GUIDELINES FOR ICAL SYSTEMS AND PLUMBING PIPING SYSTEMS. ICTURE FOR SUPPORT OF EQUIPMENT, PIPING AND DUCTWORK NOT BE IN ACCORDANCE WITH SMACNA GUIDELINES FOR SEISMIC RESTRAINTS PLUMBING PIPING SYSTEMS. ORDANCE WITH EQUIPMENT MANUFACTURES INSTRUCTIONS AND ENSURE CLEARANCE AS REQUIRED FOR PROPER SERVICE AND MAINTENANCE.	SYMBOL		
BE IN ACCORDANCE WITH SMACNA GUIDELINES FOR SEISMIC RESTRAINTS PLUMBING PIPING SYSTEMS. ORDANCE WITH EQUIPMENT MANUFACTURES INSTRUCTIONS AND ENSURE CLEARANCE AS REQUIRED FOR PROPER SERVICE AND MAINTENANCE.		ABBREV.	DESCRIPTION
CLEARANCE AS REQUIRED FOR PROPER SERVICE AND MAINTENANCE.	CAP [?		PIPE CAP
ORK ACCESSORIES AS REQUIRED FOR COMPLETE AND WORKABLE	wc ○ Fco Φ		NEW FIXTURE ABOVE FLOOR CLEANOUT PIPE DOWN
ALL EQUIPMENT, PIPING AND DUCTWORK WITH OTHER TRADES PRIOR TO L CONTROL DEVICES, MANUAL VOLUME DAMPERS, SHUT-OFF VALVES,	،ک بک	DCW	PIPE UP DOMESTIC COLD WATER
OR MAINTENANCE.	، بے بے بے میں ج	DHW HWR	DOMESTIC HOT WATER HOT WATER RETURN
WEEN EXISTING CONDITIONS AND DRAWINGS WHICH PREVENTS THE UCTWORK AND PIPING AS SHOWN SHALL BE BROUGHT TO THE	، بې	TW V	TEMPERED WATER VENT
EPROOFING DAMAGED DURING CONSTRUCTION SHALL BE PREPARED OR DWNER.	۶۔۔۔۔۔۶ ۶۵ −−−−۶	W SD	SANITARY WASTE STORM DRAIN
ATED MINIMUM <u>10 FEET</u> FROM OUTSIDE AIR INTAKES, COMBUSTION ES OF CONTAMINATION.	ک—OSD —` ک CD`	OSD CD	STORM DRAIN (OVERFLOW) CONDENSATE DRAIN
IGHING LESS THAN 400 POUNDS AND SUPPORTED DIRECTLY ON THE JRNITURE OR TEMPORARY OR MOVABLE EQUIPMENT AND EQUIPMENT IS SUPPORTED BY VIBRATION ISOLATION DEVICES SUSPENDED FROM D NOT BE DETAILED ON THE PLANS. (CBC TITLE 24 PART 2 SECTION1613A)	← PCD ← · · · · · · · · · · · · · · · · · ·	PCD G	PUMPED CONDENSATE DRAIN LOW PRESSURE NATURAL GAS
JST BE SUPPORTED AND ANCHORED TO RESIST THE FORCES 2 AND THE ANCHORAGE SHALL BE APPROVED BY THE STRUCTURAL T OF FIELD REVIEWS/ INSPECTIONS. THE INSPECTOR OF RECORD SHALL	→ MPG → A	MPG PRV	MEDUIM PRESSURE NATURAL GAS PRESSURE REDUCING VALVE
IREMENTS ARE ENFORCED. EQUIPMENT MODEL NUMBERS, CAPACITIES, SIZES, VOLTAGES, AND ALL	,, , , , , , , , , , , , , , , , ,	BLV.	BALANCING VALVE REDUCER
N WITH OTHER APPLICABLE TRADES AND WITH THE MANUFACTURER	، جو و		DIRECTION OF FLOW CIRCUIT SETTER (GPM)
D INSTALLATION OF ANY MATERIAL OR EQUIPMENT.		WHA WHA	WATER HAMMER ARRESTOR
PING. THE CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT IN A RUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP CLEAR. ALL INSTALLATIONS SHALL BE CONSISTENT WITH NORMALLY		CH.V.	CHECK VALVE
RDS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF CTS THAT WOULD EFFECT THE SYSTEM PERFORMANCE OR INCUR ICATION SHALL BE SUBMITTED PRIOR TO INSTALLATION OF THE ITEMS		N.O. N.C.	SHUT OFF VALVE (NORMALLY OPEN) SHUT OFF VALVE (NORMALLY CLOSED)
CORDANCE WITH ALL APPLICABLE CODES. NOTHING SHOWN ON THE	، ، ۔ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ		PIPE CONTINUATION DIRECTION OF FLOW
FICATIONS IS INTENDED TO INDICATE THAT THE INSTALLATIONS OR DEVICE SHOULD BE DONE CONTRARY TO MANUFACTURERS BLE CODES AND REGULATIONS. THE CONTRACTOR IS RESPONSIBLE TO S AND CONNECTIONS OF ALL ITEMS AND DEVICES CONFORMS TO		FD FS	FLOOR DRAIN FLOOR SINK
S AND TO ALL APPLICABLE CODES AND REGULATIONS. ERIAL, AND ALL CONNECTIONS THERETO SHALL BE INSTALLED PER S TO PROVIDE A COMPLETE AND FULLY OPERATIONAL SYSTEM.		F.C.	FLEXIBLE CONNECTION (PIPE)
HALL BE LEAD FREE.	<u> </u>	P.G.	PRESSURE GAUGE W/ GAUGE COCK
UIPMENT WITH EFFICIENCIES LOWER THAN THOSE INDICATED ON THE ATION OF TITLE 24 DOCUMENTS. IF THE CONTRACTOR CHOOSES TO SSUMES FULL RESPONSIBILITY FOR THE RE-CALCULATION AND TITLE 24 DOCUMENTS.	<u> </u>	TH. H.B.	THERMOMETER HOSE BIBB
ENETRATES AREA SEPARATION, 1 HOUR, OR 2 HOUR WALLS, THE PIPE E WALLS AND EXTENDING A DISTANCE OF 5 FEET ON EITHER SIDE ONLY.	<b>o</b>	T.P. WHA	TRAP PRIMER WATER HAMMER ARRESTOR
LL BE INSULATED PER BUILDING ENERGY EFFICIENCY STANDARDS (E.E.S.)		LAV / <u>L-*</u> WC	LAVATORY WATER CLOSET
E CERTIFIED BY AND COMPLY WITH THE STATE OF CALIFORNIA ENERGY E.S.) SECTION 113. COMPLIANCE CERTIFICATES SHALL BE PROVIDED WITH		SH SK / <u>S-*</u>	SHOWER SINK
TALLED MUST BE CERTIFIED BY CALIFORNIA ENERGY COMMISSION TO Y STANDARDS (E.E.S.) SECTION 118, 123 & 124.		DIA. DWGS.	DIAMETER DRAWINGS
LL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.		EA. B.F.F.	EACH BELOW FINISH FLOOR
WE NO MORE THAN 1.28 GALLONS PER FLUSH. URINALS SHALL CONSUME FLUSH. DMS SHALL BE SELF CLOSING TYPE AND SHALL NOT EXCEED A WATER		A.F.F. ARCH. CONTR.	ABOVE FINISH FLOOR ARCHTECT OR ARCHITECTURAL CONTRACTOR
OR POTABLE WATER SUPPLY.		DN. FLR.	DOWN FLOOR
SED TO CONVEY DRINKING WATER SHALL BE AB1953 COMPLIANT. S UNDER EACH PLUMBING FIXTURE.		FT. GPF	FEET OR FOOT GALLONS PER FLUSH
NSTALLED ON THIS PROJECT". /E A JET OF WATER EXTENDING AT LEAST TWO INCHES FROM THE WATER		GPM GAL.	GALLONS PER MINUTE GALLONS
T BE ACCESIBLE TO THE MOUTH OF THE DRINKER NOR SUBJECT TO		IE. QTY. REQ'D.	INVERT ELEVATION QUANTITY REQUIRED
A PROTECTING VENT SO LOCATED THAT THE DEVELOPED LENGTH OF		TYP. V.T.R.	TYPICAL VENT THRU ROOF
WEIR TO THE INNER EDGE OF THE VENT SHALL BE WITHIN THE DISTANCE IN NO CASE LESS THAN TWO TIMES THE DIAMETER OF THE TRAP ARM. G MATERIALS SHALL COMPLY WITH SECTIONS 701.0 AND 903.0 OF THE		W/	WITH
SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED		L.O.D.	EQUIPMENT TAG
LLY TO A POINT NOT LESS THAN SIX (6) INCHES ABOVE THE FLOOD-LEVEL FORE OFFSETTING HORIZONTALLY OR BEFORE BEING CONNECTED TO	6	P.O.C. A/C	POINT OF CONNECTION ABOVE CEILING
S ABOVE THE FLOOD-LEVEL RIM OF THE FIXTURE SHALL BE INSTALLED INGS, MATERIAL, AND GRADE TO THE DRAIN.		A/C B/G ABV	ABOVE CEILING BELOW GRADE ABOVE
NSTALLED ON THE DOWNSTREAM OF PLUMBING FIXTURES THAT ARE AT IS LOWER THAN THE NEXT UPSTREAM MANHOLE COVER OF THE TEM PER SECTION 701.1 CPC AND SUBJECT TO FIELD INSPECTION		BEL	BELOW

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# PLUMBING SHEET INDEX

P001	PLUMBING LEGEND, NOTES, SCHEDULE AND SHEET INDEX
P002	PLUMBING SPECIFICATIONS
P003	PLUMBING SPECIFICATIONS
P200	PLUMBING PLAN - OVERALL
P201	PLUMBING PLAN - ENLARGED
P501	PLUMBING DETAILS

DL	DULE							
ALS) L3	DIMENSIONS HxD	WEIGHT (LBS)	E-POWER	REMARKS				
0	54-7/8" x 20-1/2"	131	Ν					



	6	5 4
	SECTION 220523.12 - BALL VALVES FOR PLUMBING PIPING	SECTION 221116 - DOMESTIC WATER PIPING
	PART 1 - GENERAL	PART 1 - GENERAL
	1.1     SUMMARY       A.     Section Includes:	<ul><li>1.1 FIELD CONDITIONS</li><li>A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following</li></ul>
	<ol> <li>Bronze ball valves.</li> </ol>	conditions and then only after arranging to provide temporary water service according to requirements indicated:
		1. Notify Architect no fewer than two days in advance of proposed interruption of water service.
	PART 2 - PRODUCTS	2. Do not interrupt water service without Architect's written permission.
A	2.1 GENERAL REQUIREMENTS FOR VALVES	PART 2 - PRODUCTS
	A. NSF Compliance: NSF 61 and NSF 372 for valve materials for potable-water service.	2.1 PIPING MATERIALS
	B. Bronze valves shall be made with dezincification-resistant materials. Bronze valves made with copper alloy (brass) containing more than 15 percent zinc are not permitted.	A. Potable-water piping and components shall comply with NSF 61ply with NSF 372 for low lead.
	Caution: Revise pressure ratings and insert temperature ratings in value articles if values with higher ratings are required. Values larger than NPS 12 (DN 300)	
	typically have a lower pressure rating than smaller valves. Verify pressure requirements for large valves.	2.2 COPPER TUBE AND FITTINGS
	C. Valve Pressure-Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.	A. Hard Copper Tube: ASTM B 88, Type L (ASTM B 88M, Type B) and ASTM B 88, Type M (ASTM B 88M, Type C) water tube, drawn temper.
	D. Valves in Insulated Piping:	<ul><li>B. Soft Copper Tube: ASTM B 88, Type K (ASTM B 88M, Type A) and ASTM B 88, Type L (ASTM B 88M, Type B) water tube, annealed temper.</li><li>C. Cast-Copper, Solder-Joint Fittings: ASME B16.18, pressure fittings.</li></ul>
	<ol> <li>Include 2-inch (50-mm) stem extensions.</li> </ol>	<ul><li>D. Wrought-Copper, Solder-Joint Fittings: ASME B16.22, wrought-copper pressure fittings.</li></ul>
_	<ol><li>Extended operating handles of nonthermal-conductive material and protective sleeves that allow operation of valves without breaking vapor seals or disturbing insulation.</li></ol>	<ul> <li>E. Bronze Flanges: ASME B16.24, Class 150, with solder-joint ends.</li> </ul>
	3. Memory stops that are fully adjustable after insulation is applied.	F. Copper Unions:
	2.2 BRONZE BALL VALVES	1. Solder-joint or threaded ends.
	A. Bronze Ball Valves, Two-Piece with Full Port, and Bronze or Brass Trim, Threaded or Soldered Ends:	PART 3 - EXECUTION
	1. Description:	PARTS - EXECUTION
	a. Standard: MSS SP-110 or MSS-145.	3.1 PIPING INSTALLATION
	b. CWP Rating: 600 psig (4140 kPa).	A. Drawing plans, schematics, and diagrams indicate general location and arrangement of domestic water piping. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on
	c. Body Design: Two piece.	coordination drawings.
В	d. Body Material: Bronze.	B. Install copper tubing under building slab according to CDA's "Copper Tube Handbook."
	e. Ends: Threaded and soldered.	C. Install domestic water piping level with 0.25 percent slope downward toward drain and plumb.
	f. Seats: PTFE.	D. Install piping concealed from view and protected from physical contact by building occupants unless otherwise indicated and except in equipment rooms and service areas.
	g. Stem: Bronze or brass.	E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal, and coordinate with other services occupying that space.
	h. Ball: Chrome-plated brass.	F. Install piping to permit valve servicing.
	i. Port: Full.	G. Install nipples, unions, special fittings, and valves with pressure ratings the same as or higher than the system pressure rating used in applications below unless otherwise indicated.
	END OF SECTION 220523.12	unless otherwise indicated. H. Install piping free of sags and bends.
		<ul> <li>Install fittings for changes in direction and branch connections.</li> </ul>
_		J. Install unions in copper tubing at final connection to each piece of equipment, machine, and specialty.
		K. Install sleeves for piping penetrations of walls, ceilings, and floors.
		L. Install escutcheons for piping penetrations of walls, ceilings, and floors.
		3.2 JOINT CONSTRUCTION
		<ul><li>A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.</li></ul>
		<ul><li>B. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.</li></ul>
	SECTION 220719 - PLUMBING PIPING INSULATION	C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to
	PART 1 - GENERAL	remove burrs and restore full ID. Join pipe fittings and valves as follows:
C	1.1 SUMMARY	1. Apply appropriate tape or thread compound to external pipe threads.
Ũ	A. Section includes insulating the following plumbing piping services:	2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.
	1. Domestic hot-water piping.	D. Brazed Joints for Copper Tubing: Comply with CDA's "Copper Tube Handbook," "Brazed Joints" chapter.
	2. Domestic recirculating hot-water piping.	E. Soldered Joints for Copper Tubing: Apply ASTM B 813, water-flushable flux to end of tube. Join copper tube and fittings according to ASTM B 828 or CDA's "Copper Tube Handbook."
	3. Roof drains and rainwater leaders.	F. Joints for Dissimilar-Material Piping: Make joints using adapters compatible with materials of both piping systems.
	4. Supplies and drains for handicap-accessible lavatories and sinks.	3.3 INSTALLATION OF HANGERS AND SUPPORTS
	PART 2 - PRODUCTS	A. Comply with requirements for hangers, supports, and anchor devices in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment."
	2.1 INSULATION MATERIALS	1. Vertical Piping: MSS Type 8 or 42, clamps.
	A. Comply with requirements in "Piping Insulation Schedule, General," "Indoor Piping Insulation Schedule," "Outdoor, Aboveground Piping Insulation	B. Install hangers for, with maximum horizontal spacing and minimum rod diameters, to comply with MSS-58, locally enforced codes, and authorities having
	Schedule," and "Outdoor, Underground Piping Insulation Schedule" articles for where insulating materials shall be applied.	jurisdiction requirements, whichever are most stringent. C. Support horizontal piping within 12 inches (300 mm) of each fitting.
	B. Products shall not contain asbestos, lead, mercury, or mercury compounds.	
	C. Products that come into contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested in accordance with ASTM C871.	3.4 CLEANING
	<ul> <li>D. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.</li> <li>E. Cellular Glass: Inorganic, incombustible, foamed or cellulated glass with annealed, rigid, hermetically sealed cells. Comply with ASTM C552.</li> </ul>	A. Clean and disinfect potable domestic water piping as follows:
	<ol> <li>Preformed Pipe Insulation: Type II, Class 2, with factory-applied ASJ-SSL jacket.</li> </ol>	<ol> <li>Purge new piping and parts of existing piping that have been altered, extended, or repaired before using.</li> <li>Use purging and disinfecting procedures prescribed by authorities having jurisdiction; if methods are not prescribed, use procedures described in either</li> </ol>
	<ol> <li>Factory fabricate shapes in accordance with ASTM C450 and ASTM C585.</li> </ol>	AWWA C651 or AWWA C652 or follow procedures described below:
	<ol> <li>Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.</li> </ol>	a. Flush piping system with clean, potable water until dirty water does not appear at outlets.
п		b. Fill and isolate system according to either of the following:
U	2.2 INSULATING CEMENTS Mineral-fiber insulating cement is suitable for temperatures from 100 to 1600 deg F (38 to 871 deg C). Vermiculite insulating cement is suitable for temperatures	1) Fill system or part thereof with water/chlorine solution with at least 50 ppm (50 mg/L) of chlorine. Isolate with valves and allow to stand for 24 hours.
	Mineral-fiber insulating cement is suitable for temperatures from 100 to 1600 deg F (38 to 8/1 deg C). Vermiculite insulating cement is suitable for temperatures from 100 to 1800 deg F (38 to 982 deg C).	<ul> <li>Fill system or part thereof with water/chlorine solution with at least 200 ppm (200 mg/L) of chlorine. Isolate and allow to stand for three hours.</li> </ul>
	A. Mineral-Fiber Insulating Cement: Comply with ASTM C195.	c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.
	1. Manufacturers: Subject to compliance with requirements, provide products by the following:	d. Repeat procedures if biological examination shows contamination.
	a. Ramco Insulation, Inc.	e. Submit water samples in sterile bottles to authorities having jurisdiction.
	2.3 SECUREMENTS	B. Prepare and submit reports of purging and disinfecting activities. Include copies of water-sample approvals from authorities having jurisdiction.
	A. Staples: Outward-clinching insulation staples, nominal 3/4-inch- (19-mm-) wide, stainless steel or Monel.	C. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.
	PART 3 - EXECUTION	3.5 VALVE SCHEDULE
	3.1 EXAMINATION	A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
	A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation	<ol> <li>Shutoff Duty: Use ball or gate valves for piping NPS 2 (DN 50) and smaller. Use butterfly, ball, or gate valves with flanged ends for piping NPS 2-1/2 (DN 65) and larger.</li> </ol>
	application.	<ol> <li>Hot-Water Circulation Piping, Balancing Duty: Calibrated balancing valves.</li> </ol>
	1. Verify that systems to be insulated have been tested and are free of defects.	3. Drain Duty: Hose-end drain valves.
	<ol> <li>Verify that surfaces to be insulated are clean and dry.</li> <li>Descend with installation only ofference of division have been connected.</li> </ol>	<ul> <li>B. Use check valves to maintain correct direction of domestic water flow to and from equipment.</li> </ul>
	B. Proceed with installation only after unsatisfactory conditions have been corrected.	
	3.2 INDOOR PIPING INSULATION SCHEDULE	END OF SECTION 221116
┍╵	A. Domestic Hot and Recirculated Hot Water:	
Ē	1. NPS 1-1/4 (DN 32) and Smaller: Insulation shall be the following:	
	<ul> <li>a. Cellular Glass: 1-1/2 inches (38 mm) thick.</li> <li>2. NPS 1-1/2 (DN 40) and Larger: Insulation shall be the following:</li> </ul>	
	<ol> <li>NPS 1-1/2 (DN 40) and Larger: Insulation shall be the following:</li> <li>a. Cellular Glass: 1-1/2 inches (38 mm) thick.</li> </ol>	
	<ul><li>a. Cellular Glass: 1-1/2 inches (38 mm) thick.</li><li>B. Stormwater and Overflow:</li></ul>	
	<ol> <li>Stormwater and Overnow:</li> <li>All Pipe Sizes: Insulation shall be the following:</li> </ol>	
	<ul> <li>a. Cellular Glass: 1-1/2 inches (38 mm) thick.</li> </ul>	
	C. Roof Drain and Overflow Drain Bodies:	
	1. All Pipe Sizes: Insulation shall be the following:	
	a. Cellular Glass: 1-1/2 inches (38 mm) thick.	
	END OF SECTION 220719	

### PING

# Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following g to provide temporary water service according to requirements indicated:

### ns indicate general location and arrangement of domestic water piping. Indicated locations and arrangements are used expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on

### b according to CDA's "Copper Tube Handbook."

### D SUPPORTS

### SECTION 221119 - DOMESTIC WATER PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
- 1. Balancing valves. 2. Drain valves.
- 3. Water-hammer arresters.
- 4. Trap-seal primer valves.
- PART 2 PRODUCTS
- 2.1 GENERAL REQUIREMENTS FOR PIPING SPECIALTIES
- A. Potable-water piping and components shall comply with NSF 61.
- B. Comply with NSF 372 for low lead.
- 2.2 PERFORMANCE REQUIREMENTS
- A. Minimum Working Pressure for Domestic Water Piping Specialties: 125 (860) psig (kPa) unless otherwise indicated.
- 2.3 BALANCING VALVES A. Copper-Alloy Calibrated Balancing Valves:
- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- a. Armstrong International, Inc.
- b. ITT Corporation. c. NIBCO INC.
- d. Schneider Electric USA, Inc.
- e. TACO Comfort Solutions, Inc.
- 2. Size: Same as connected piping, but not larger than NPS 2 (DN 50).
- 3. Accessories: Meter hoses, fittings, valves, differential pressure meter, and carrying case.
- 2.4 DRAIN VALVES
- A. Ball-Valve-Type, Hose-End Drain Valves:
- 1. Standard: MSS SP-110 for standard-port, two-piece ball valves.
- 2. Pressure Rating: 400-psig (2760-kPa) minimum CWP.
- 3. Size: NPS 3/4 (DN 20).
- 4. Body: Copper alloy.
- 5. Ball: Chrome-plated brass.
- 6. Seats and Seals: Replaceable. 7. Handle: Vinyl-covered steel.
- 8. Inlet: Threaded or solder joint.
- 9. Outlet: Threaded, short nipple with garden-hose thread complying with ASME B1.20.7 and cap with brass chain. 2.5 WATER-HAMMER ARRESTERS

# A. Water-Hammer Arresters:

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- a. AMTROL, Inc. b. Jay R. Smith Mfg. Co.
- c. Precision Plumbing Products.
- d. Sioux Chief Manufacturing Company, Inc.
- e. Tyler Pipe; a subsidiary of McWane Inc.
- 2. Standard: ASSE 1010 or PDI-WH 201.
- 3. Type: Copper tube with piston.
- 4. Size: ASSE 1010, Sizes AA and A through F, or PDI-WH 201, Sizes A through F.
- 2.6 TRAP-SEAL PRIMER DEVICE
- A. Supply-Type, Trap-Seal Primer Device <Insert drawing designation if any>:
- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following: a. Jay R. Smith Mfg. Co.
- b. Precision Plumbing Products.
- c. Sioux Chief Manufacturing Company, Inc.
- 2. Standard: ASSE 1018.
- 3. Pressure Rating: 125 psig (860 kPa) minimum.
- 4. Body: Bronze.
- 5. Inlet and Outlet Connections: NPS 1/2 (DN 15) threaded, union, or solder joint.
- 6. Gravity Drain Outlet Connection: NPS 1/2 (DN 15) threaded or solder joint.
- 7. Finish: Chrome plated, or rough bronze for units used with pipe or tube that is not chrome finished.
- PART 3 EXECUTION
- 3.1 INSTALLATION
- A. Balancing Valves: Install in locations where they can easily be adjusted.
- B. Water-Hammer Arresters: Install in water piping according to PDI-WH 201.
- C. Supply-Type, Trap-Seal Primer Device: Install with outlet piping pitched down toward drain trap a minimum of 1 percent, and connect to floor-drain body. trap, or inlet fitting. Adjust valve for proper flow.

END OF SECTION 221119

### SECTION 221316 - SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

- 1.1 SUMMARY
- A. Section Includes:
- 1. Hub-and-spigot, cast-iron soil pipe and fittings.

2. Hubless, cast-iron soil pipe and fittings.

### 1.2 FIELD CONDITIONS

- A. Interruption of Existing Sanitary Waste Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
- 1. Notify Architect no fewer than two days in advance of proposed interruption of sanitary waste service. 2. Do not proceed with interruption of sanitary waste service without Architect's written permission.

PART 2 - PRODUCTS

- 2.1 PERFORMANCE REQUIREMENTS
- A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated:
- 1. Soil, Waste, and Vent Piping: 10-foot head of water (30 kPa).
- B. Seismic Performance: Soil, waste, and vent piping and support and installation shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- 2.2 PIPING MATERIALS
- A. Piping materials shall bear label, stamp, or other markings of specified testing agency.
- See piping materials articles in the Evaluations for a discussion of piping materials covered by referenced standards
- 2.3 HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS
- A. Pipe and Fittings: ASTM A 74, class(es).
- B. Gaskets: ASTM C 564, rubber.
- 2.4 HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS
- A. Pipe and Fittings: ASTM A 888 or CISPI 301.
- B. Heavy-Duty, Hubless-Piping Couplings: 1. Standards: ASTM C 1277 and ASTM C 1540.
- 2. Description: Stainless-steel shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.
- PART 3 EXECUTION
- 3.1 PIPING INSTALLATION
- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems.
- 1. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations.
- 2. Install piping as indicated unless deviations to layout are approved on coordination drawings. B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping at indicated slopes.
- D. Install piping free of sags and bends.
- E. Install fittings for changes in direction and branch connections.
- F. Install piping to allow application of insulation.
- G. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends.
- 1. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical.
- 2. Use long-turn, double Y-branch and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe. a. Straight tees, elbows, and crosses may be used on vent lines.
- 3. Do not change direction of flow more than 90 degrees.
- 4. Use proper size of standard increasers and reducers if pipes of different sizes are connected.
- a. Reducing size of waste piping in direction of flow is prohibited.
- H. Lay buried building waste piping beginning at low point of each system.
- 1. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream.
- 2. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. 3. Maintain swab in piping and pull past each joint as completed.
- I. Install soil and waste and vent piping at the following minimum slopes unless otherwise indicated:
- 1. Building Sanitary Waste: 2 percent downward in direction of flow for piping NPS 3 (DN 80) and smaller; 2 percent downward in direction of flow for piping NPS 4 (DN 100) and larger.
- 2. Horizontal Sanitary Waste Piping: 2 percent downward in direction of flow.
- 3. Vent Piping: 1 percent down toward vertical fixture vent or toward vent stack.
- J. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings." K. Plumbing Specialties:
- 1. Install cleanouts at grade and extend to where building sanitary drains connect to building sanitary sewers in sanitary waste gravity-flow piping.
- L. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
- M. Install sleeves for piping penetrations of walls, ceilings, and floors.
- N. Install sleeve seals for piping penetrations of concrete walls and slabs.
- O. Install escutcheons for piping penetrations of walls, ceilings, and floors.
- 3.2 JOINT CONSTRUCTION
- A. Join hub-and-spigot, cast-iron soil piping with gasket joints according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for compression joints.
- B. Join hubless, cast-iron soil piping according to CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-piping coupling joints.
- 3.3 INSTALLATION OF HANGERS AND SUPPORTS
- A. Comply with requirements for pipe hanger and support devices.
- 1. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.
- 2. Install carbon-steel pipe support clamps for vertical piping in noncorrosive environments.
- 3. Vertical Piping: MSS Type 8 or Type 42, clamps.
- 4. Install individual, straight, horizontal piping runs:
- a. 100 Feet (30 m) and Less: MSS Type 1, adjustable, steel clevis hangers.
- B. Install hangers for soil piping, with maximum horizontal spacing and minimum rod diameters, to comply with MSS-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.
- C. Install hangers for piping, with maximum horizontal spacing and minimum rod diameters, to comply with manufacturer's written instructions, locally
- enforced codes, and authorities having jurisdiction requirements, whichever are most stringent. D. Support horizontal piping and tubing within 12 inches (300 mm) of each fitting and coupling.
- E. Support vertical runs of soil piping to comply with MSS-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most
- F. Support vertical runs of piping to comply with manufacturer's written instructions, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.
- 3.4 CLEANING AND PROTECTION
- A. Clean interior of piping. Remove dirt and debris as work progresses.
- B. Protect sanitary waste and vent piping during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
- C. Place plugs in ends of uncompleted piping at end of day and when work stops. D. Repair damage to adjacent materials caused by waste and vent piping installation.
- 3.5 PIPING SCHEDULE
- A. Aboveground, soil and waste piping NPS 4 (DN 100) and smaller shall be the following:
- 1. Hubless, cast-iron soil pipe and fittings; heavy-duty hubless-piping couplings; and coupled joints.
- B. Aboveground, vent piping NPS 4 (DN 100) and smaller shall be the following:
- 1. Hubless, cast-iron soil pipe and fittings; heavy-duty hubless-piping couplings; and coupled joints. C. Underground, soil, waste, and vent piping NPS 4 (DN 100) and smaller shall be the following:
- 1. Extra Heavy class, cast-iron soil piping; gaskets; and calked joints.
- 2. Hubless, cast-iron soil pipe and fittings; cast-iron hubless-piping couplings; and coupled joints.
- 3. PVC pipe, PVC socket fittings, and solvent-cemented joints.

END OF SECTION 221316



# SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS Section
- 1.2 SUMMARY
- A. Section Includes:
- 1. Cleanouts.
- 2. Miscellaneous sanitary drainage piping specialties. PART 2 - PRODUCTS

# 2.1 CLEANOUTS

A. Cast-Iron Exposed Cleanouts:

- a. Jay R. Smith Mfg. Co.
- b. Josam Company. c. Zurn Industries, LLC
- 2. Standard: ASME A112.36.2M.
- 3. Size: Same as connected drainage piping
- 5. Closure: Countersunk, plug.
- B. Cast-Iron Wall Cleanouts:
- 1. Standard: ASME A112.36.2M. Include wall access. 2. Size: Same as connected drainage piping.
- 2.2 MISCELLANEOUS SANITARY DRAINAGE PIPING SPECIALTIES
- A. Floor-Drain, Trap-Seal Primer Fittings:
- 2. Size: Same as floor drain outlet with NPS 1/2 (DN 15) side inlet.

# PART 3 - EXECUTION

- 3.1 INSTALLATION
- 2. Locate at each change in direction of piping greater than 45 degrees.
- 4. Locate at base of each vertical soil and waste stack.
- END OF SECTION 221319

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

# 4. Body Material: Hub-and-spigot, cast-iron soil pipe T-branch as required to match connected piping.

6. Closure Plug Size: Same as or not more than one size smaller than cleanout size.

1. Description: Cast iron, with threaded inlet and threaded or spigot outlet, and trap-seal primer valve connection.

A. Install cleanouts in aboveground piping and building drain piping according to the following, unless otherwise indicated: 1. Size same as drainage piping up to NPS 4 (DN 100). Use NPS 4 (DN 100) for larger drainage piping unless larger cleanout is indicated.

3. Locate at minimum intervals of 50 feet (15 m) for piping NPS 4 (DN 100) and smaller and 100 feet (30 m) for larger piping.

B. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.

C. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.

### SECTION 221413 - FACILITY STORM DRAINAGE PIPING

### PART 1 - GENERAL

- 1.1 SUMMARY
- A. Section Includes:
- 1. Hub-and-spigot, cast-iron soil pipe and fittings.
- 2. Hubless, cast-iron soil pipe and fittings. 3. Specialty pipe and fittings.
- PART 2 PRODUCTS
- 2.1 PERFORMANCE REQUIREMENTS
- A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated: 1. Storm Drainage Piping: 10-foot head of water (30 kPa).
- 2.2 HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS
- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Charlotte Pipe and Foundry Company.
- 2. Tyler Pipe; a part of McWane family of companies.
- B. Pipe and Fittings:
- 1. Marked with CISPI collective trademark and NSF certification mark. 2. Class: ASTM A 74, Service class(es).
- C. Gaskets: ASTM C 564, rubber.
- D. Caulking Materials: ASTM B 29, pure lead and oakum or hemp fiber.
- 2.3 HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS
- A. CISPI, Hubless-Piping Couplings:
- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following: a. Charlotte Pipe and Foundry Company.
- b. Tyler Pipe; a subsidiary of McWane Inc. 2. Couplings shall bear CISPI collective trademark and NSF certification mark.
- 3. Standards: ASTM C 1277 and CISPI 310.
- B. Heavy-Duty, Hubless-Piping Couplings:
- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following: a. Charlotte Pipe and Foundry Company.
- b. Tyler Pipe; a subsidiary of McWane Inc.
- 2. Standard: ASTM C 1540.
- PART 3 EXECUTION

### 3.1 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. 1. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations.
- 2. Install piping as indicated unless deviations from layout are approved on coordination drawings. B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- D. Install piping at indicated slopes.
- E. Install piping free of sags and bends.
- F. Install fittings for changes in direction and branch connections.
- G. Make changes in direction for piping using appropriate branches, bends, and long-sweep bends.
- 1. Do not change direction of flow more than 90 degrees.
- 2. Use proper size of standard increasers and reducers if pipes of different sizes are connected. a. Reducing size of drainage piping in direction of flow is prohibited.
- H. Lay buried building piping beginning at low point of each system.
- 1. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream.
- 2. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
- 3. Maintain swab in piping and pull past each joint as completed.
- I. Install piping at the following minimum slopes unless otherwise indicated: 1. Building Storm Drain: 2 percent downward in direction of flow for piping NPS 3 (DN 80) and smaller; 2 percent downward in direction of flow for piping NPS 4 (DN 100) and larger.
- 2. Horizontal Storm Drainage Piping: 2 percent downward in direction of flow.
- J. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings." K. Install underground piping according to ASTM D 2321.
- L. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.
- M. Install sleeves for piping penetrations of walls, ceilings, and floors. N. Install sleeve seals for piping penetrations of concrete walls and slabs.
- O. Install escutcheons for piping penetrations of walls, ceilings, and floors.
- 3.2 JOINT CONSTRUCTION
- A. Hub-and-Spigot, Cast-Iron Soil Piping Gasketed Joints: Join according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for compression joints. B. Hub-and-Spigot, Cast-Iron Soil Piping Caulked Joints: Join according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for lead-and-oakum caulked
- joints. C. Hubless, Cast-Iron Soil Piping Coupled Joints:
- 1. Join according to CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-piping coupling joints.
- 3.3 INSTALLATION OF HANGERS AND SUPPORTS
- A. Comply with requirements for seismic-restraint devices specified in Section 220548 "Vibration and Seismic Controls for Plumbing Piping and Equipment." B. Comply with requirements for hangers, supports, and anchor devices specified in Section 220529 "Hangers and Supports for Plumbing Piping and Equipment.'
- 1. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.
- 2. Install carbon-steel pipe support clamps for vertical piping in noncorrosive environments.
- 3. Vertical Piping: MSS Type 8 or Type 42, clamps.
- 4. Install individual, straight, horizontal piping runs:
- a. 100 Feet (30 m) and Less: MSS Type 1, adjustable, steel clevis hangers.
- C. Install hangers for cast-iron soil piping, with maximum horizontal spacing and minimum rod diameters, to comply with MSS-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.
- D. Support horizontal piping and tubing within 12 inches (300 mm) of each fitting and coupling. E. Support vertical cast-iron piping to comply with MSS-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most
- stringent, but as a minimum at base and at each floor. F. Support vertical piping with manufacturer's written instructions, locally enforced codes, and authorities having jurisdiction requirements, whichever are most
- stringent. 3.4 CONNECTIONS
- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Connect interior storm drainage piping to exterior storm drainage piping. Use transition fitting to join dissimilar piping materials. C. Connect storm drainage piping to roof drains and storm drainage specialties.
- 1. Install test tees (wall cleanouts) in conductors near floor, and floor cleanouts with cover flush with floor.
- 3.5 FIELD QUALITY CONTROL A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.
- 1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in. 2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
- B. Test storm drainage piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows: 1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.
- a. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested. 2. Leave uncovered and unconcealed new, altered, extended, or replaced storm drainage piping until it has been tested and approved. a. Expose work that was covered or concealed before it was tested.
- 3. Test Procedure:
- a. Test storm drainage piping on completion of roughing-in.

b. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water (30 kPa). From 15 minutes before inspection starts until completion of inspection, water level must not drop. Inspect joints for leaks.

# 5. Prepare reports for tests and required corrective action.

- C. Piping will be considered defective if it does not pass tests and inspections. D. Prepare test and inspection reports.

# 3.6 PIPING SCHEDULE

- A. Aboveground storm drainage piping NPS 6 (DN 150) and smaller shall be the following: 1. Service class, cast-iron soil pipe and fittings; gaskets; and gasketed joints.
- 2. Hubless, cast-iron soil pipe and fittings; heavy-duty, hubless-piping couplings; and coupled joints.
- B. Underground storm drainage piping NPS 6 (DN 150) and smaller shall be any of the following:
- 1. Service class, cast-iron soil pipe and fittings; gaskets; and gasketed joints. 2. Hubless, cast-iron soil pipe and fittings; cast-iron, hubless-piping couplings; and coupled joints.

END OF SECTION 221413

# SECTION 221423 - STORM DRAINAGE PIPING SPECIALTIES

# PART 1 - GENERAL

- 1.1 SUMMARY
- A. Section Includes:
- 1. Metal roof drains.
- 2. Miscellaneous storm drainage piping specialties.

# 3. Cleanouts.

# PART 2 - PRODUCTS

# 2.1 METAL ROOF DRAINS

- A. Cast-Iron, Medium-Sump, General-Purpose Roof Drains:
- 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
- a. Jay R. Smith Mfg. Co.
- b. Zurn Industries, LLC.
- 2. Standard: ASME A112.6.4.
- 3. Body Material: Cast iron. 4. Dimension of Body: 8- to 12-inch (203- to 305-mm) diameter.
- 5. Outlet: Bottom.
- 6. Outlet Type: No hub.
- 7. Dome Material: Cast iron.
- 8. Water Dam: 2 inches (50 mm) high.

### 2.2 MISCELLANEOUS STORM DRAINAGE PIPING SPECIALTIES

### A. Downspout Adaptors:

- 1. Description: Manufactured, gray-iron casting, for attaching to horizontal-outlet, parapet roof drain and to exterior, sheet metal downspout.
- 2. Size: Inlet size to match parapet drain outlet.

# 2.3 CLEANOUTS

A. Cast-Iron Exposed Cleanouts:

a. Jay R. Smith Mfg. Co.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- b. Zurn Industries, LLC. 2. Standard: ASME A112.36.2M.
- 3. Size: Same as connected branch.
- 4. Body Material: Hub-and-spigot, cast-iron soil pipe T-branch as required to match connected piping.
- 5. Closure Plug Size: Same as, or not more than, one size smaller than cleanout size.

# PART 3 - EXECUTION

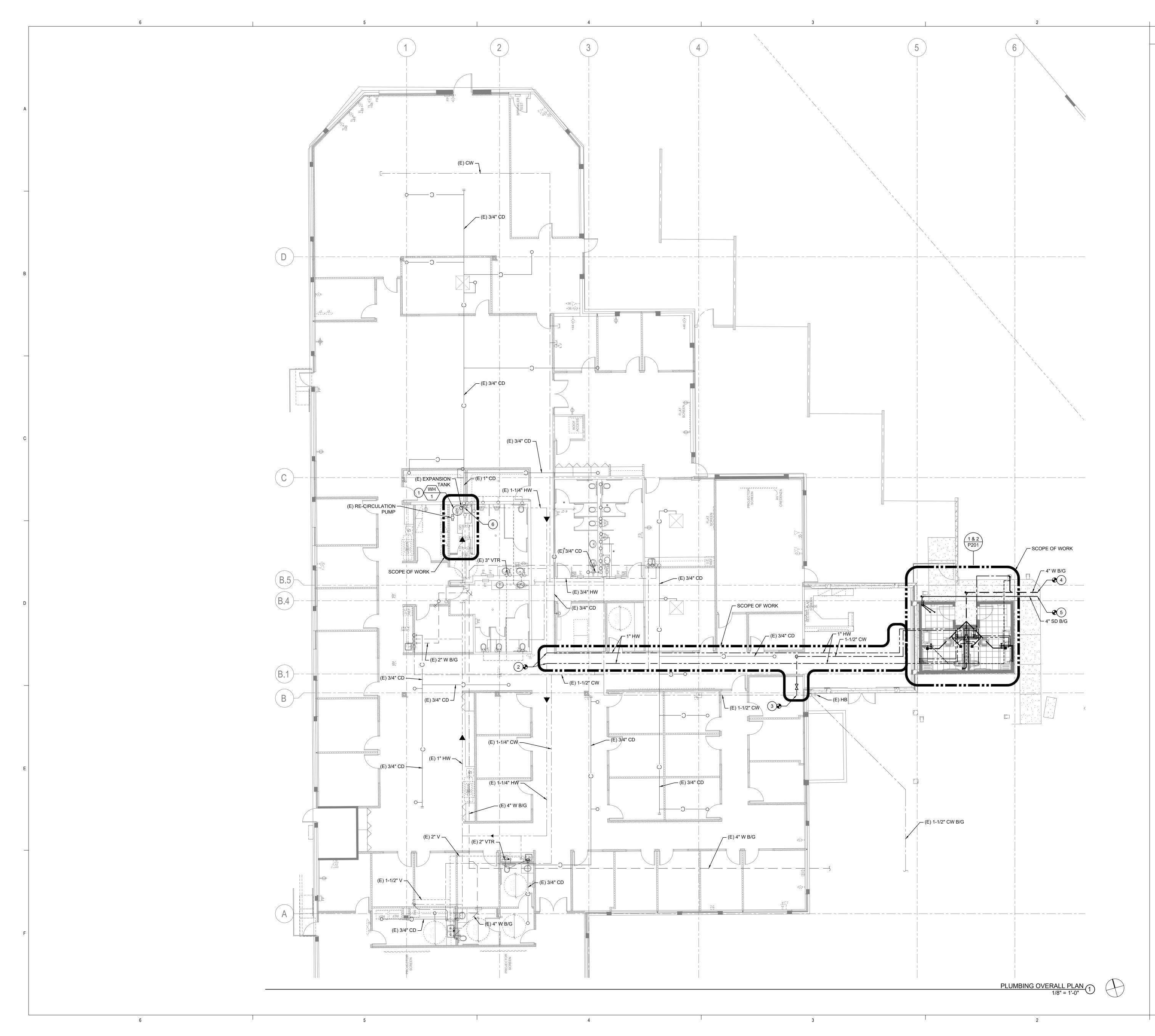
- 3.1 INSTALLATION
- A. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions. 1. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
- 2. Install expansion joints, if indicated, in roof drain outlets.
- 3. Position roof drains for easy access and maintenance.
- B. Install cleanouts in aboveground piping and building drain piping according to the following instructions unless otherwise indicated:
- 1. Use cleanouts the same size as drainage piping up to NPS 4 (DN 100). Use NPS 4 (DN 100) for larger drainage piping unless larger cleanout is indicated. 2. Locate cleanouts at each change in direction of piping greater than 45 degrees.
- 3. Locate cleanouts at minimum intervals of 50 feet (15 m) for piping NPS 4 (DN 100) and smaller and 100 feet (30 m) for larger piping.
- 4. Locate cleanouts at base of each vertical storm piping conductor.
- C. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.
- D. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.
- E. Install test tees in vertical conductors and near floor.
- F. Install wall cleanouts in vertical conductors. Install access door in wall if indicated.

- D. Secure flashing into sleeve and specialty clamping ring or device. END OF SECTION 221423

- A. Fabricate flashing from single piece of metal unless large pans, sumps, or other drainage shapes are required.
- B. Install sheet flashing on pipes, sleeves, and specialties passing through or embedded in floors and roofs with waterproof membrane.
- C. Set flashing on floors and roofs in solid coating of bituminous cement.

3.2 FLASHING INSTALLATION





# KEYNOTES

1 REPLACE EXISTING WATER HEATER WITH NEW WATER HEATER (WH-1) AND SUPPORTS.

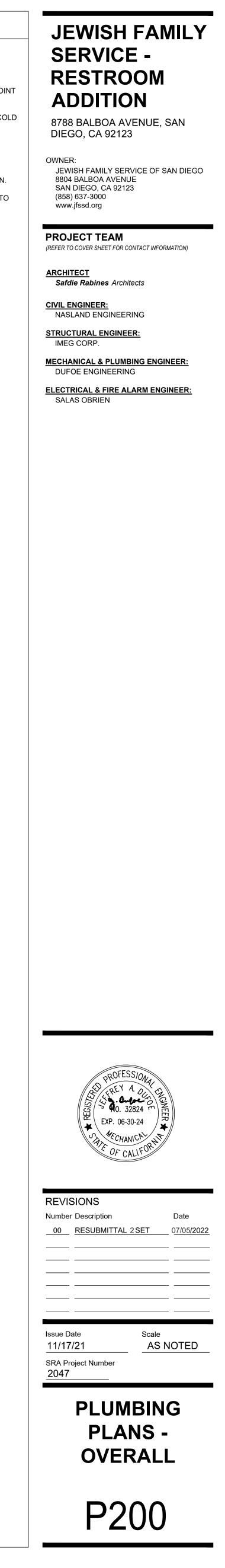
2 INTERCEPT EXISTING 1" DOMESTIC HOT WATER CIRCULATION LOOP LINE AND ROUTE TO NEW RESTROOM ADDITION. THEN ROUTE BACK TO CONNECTION POINT TO MAINTAIN THE LINE AS A CIRCULATION LOOP.

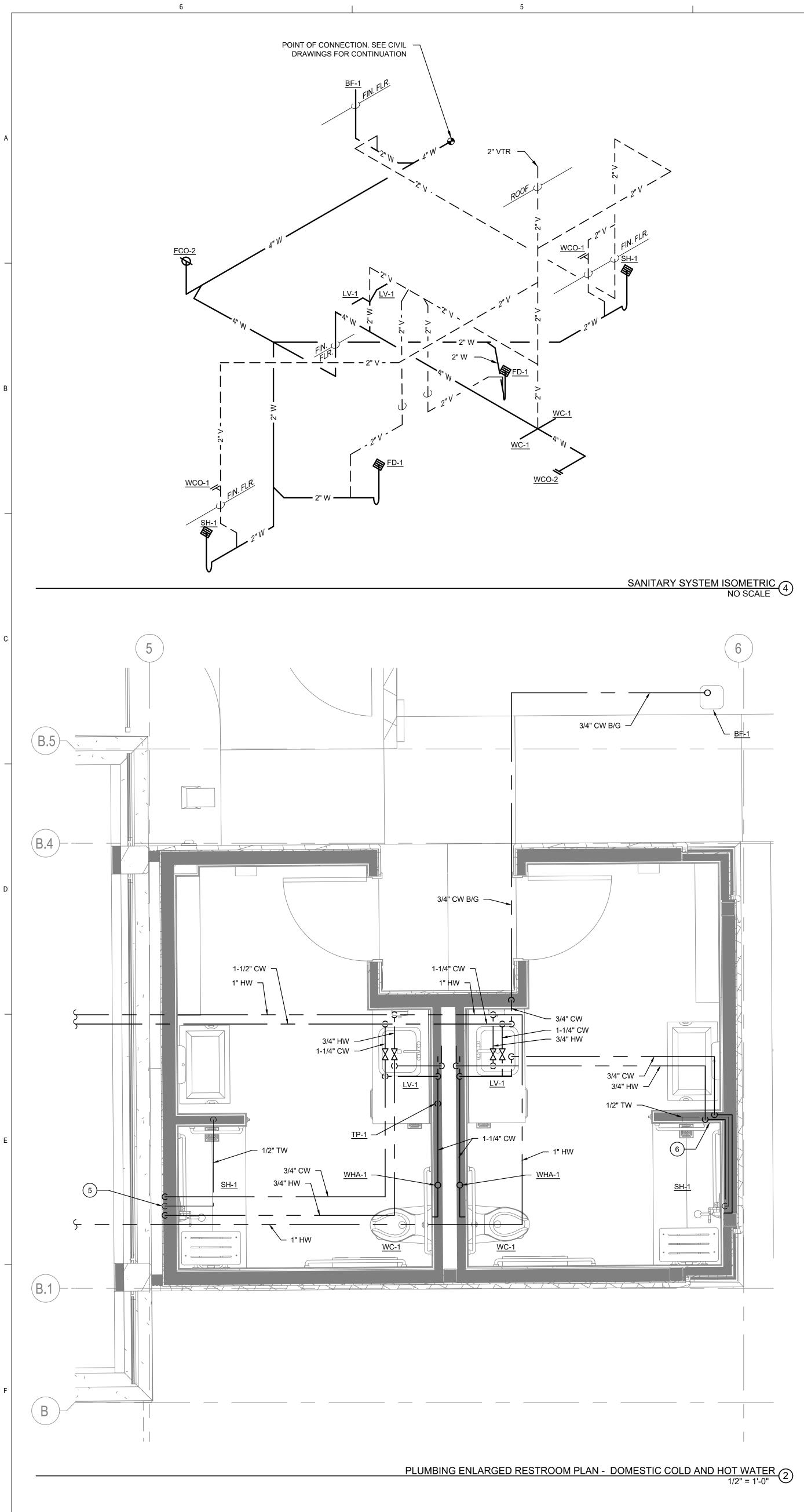
(3) CONNECT NEW 1-1/2" DOMESTIC COLD WATER TO EXISTING 1-1/2" DOMESTIC COLD WATER SERVING THE BUILDING. ROUTE TO NEW RESTROOM ADDITION.

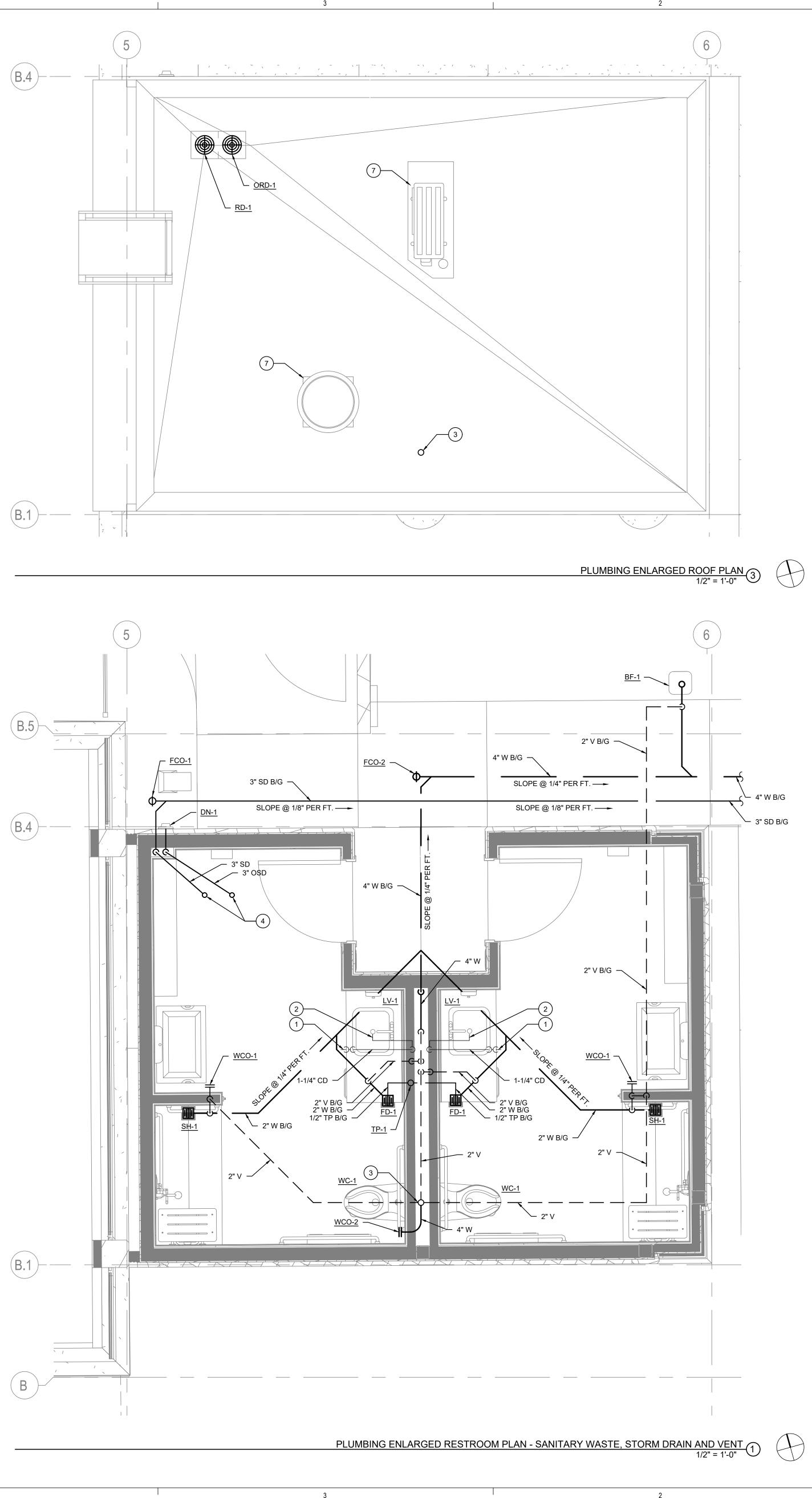
4 POINT OF CONNECTION NEW 4" SEWER LINE BELOW GRADE TO EXISTING 4" SEWER. SLOPE @ 1/4" PER FT. SEE CIVIL DRAWINGS FOR CONTINUATION.

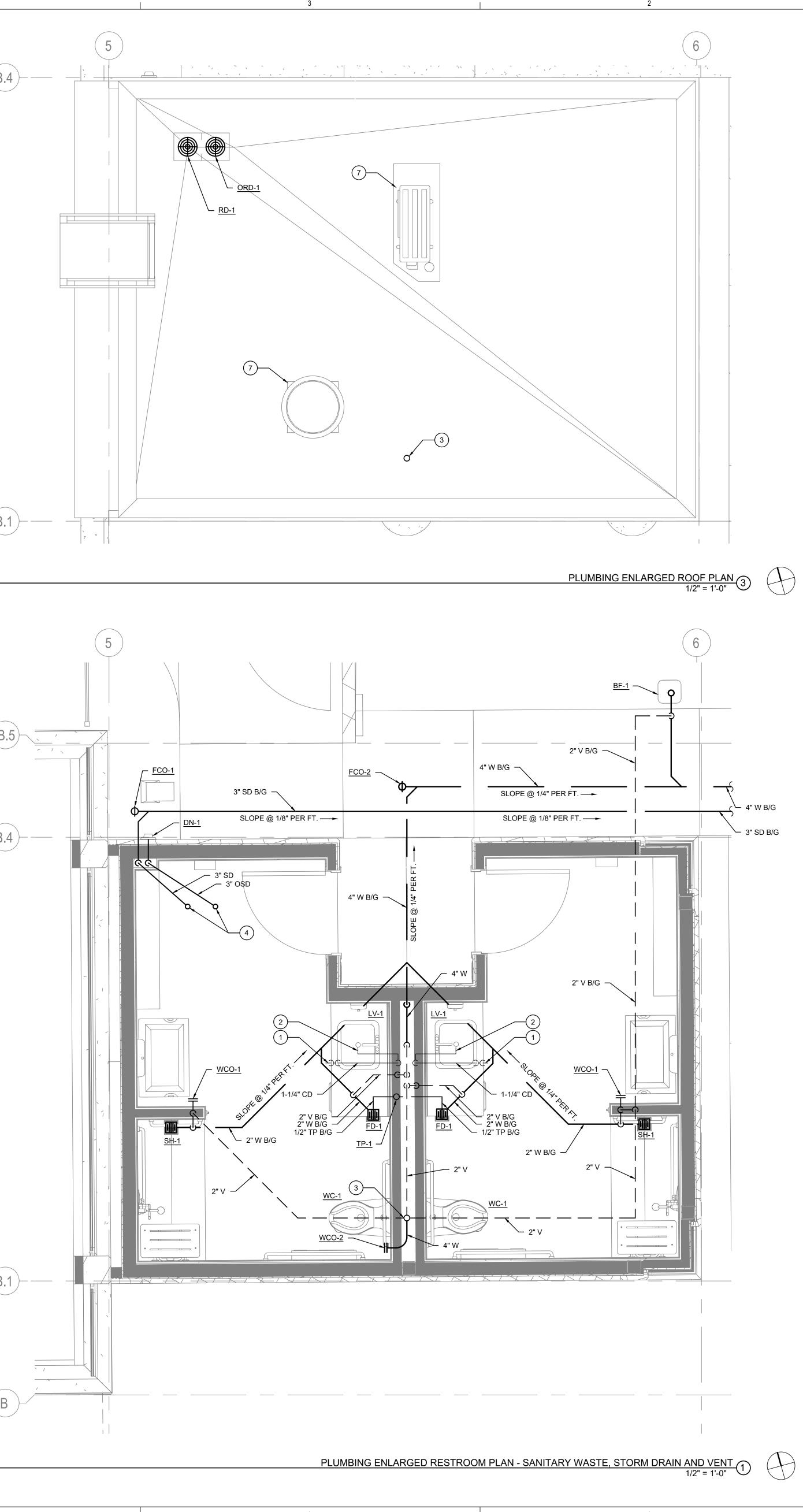
5 POINT OF CONNECTION NEW 3" STORM DRAIN BELOW GRADE TO EXISTNG 4" STORM DRAIN. SLOPE @ 1/8" PER FT. SEE CIVIL DRAWINGS FOR CONTINUATION.

6 ROUTE PRESSURE AND TEMPERATURE RELIEF DRAIN FROM WATER HEATER TO EXISTING MOP SINK AND TERMINATE.









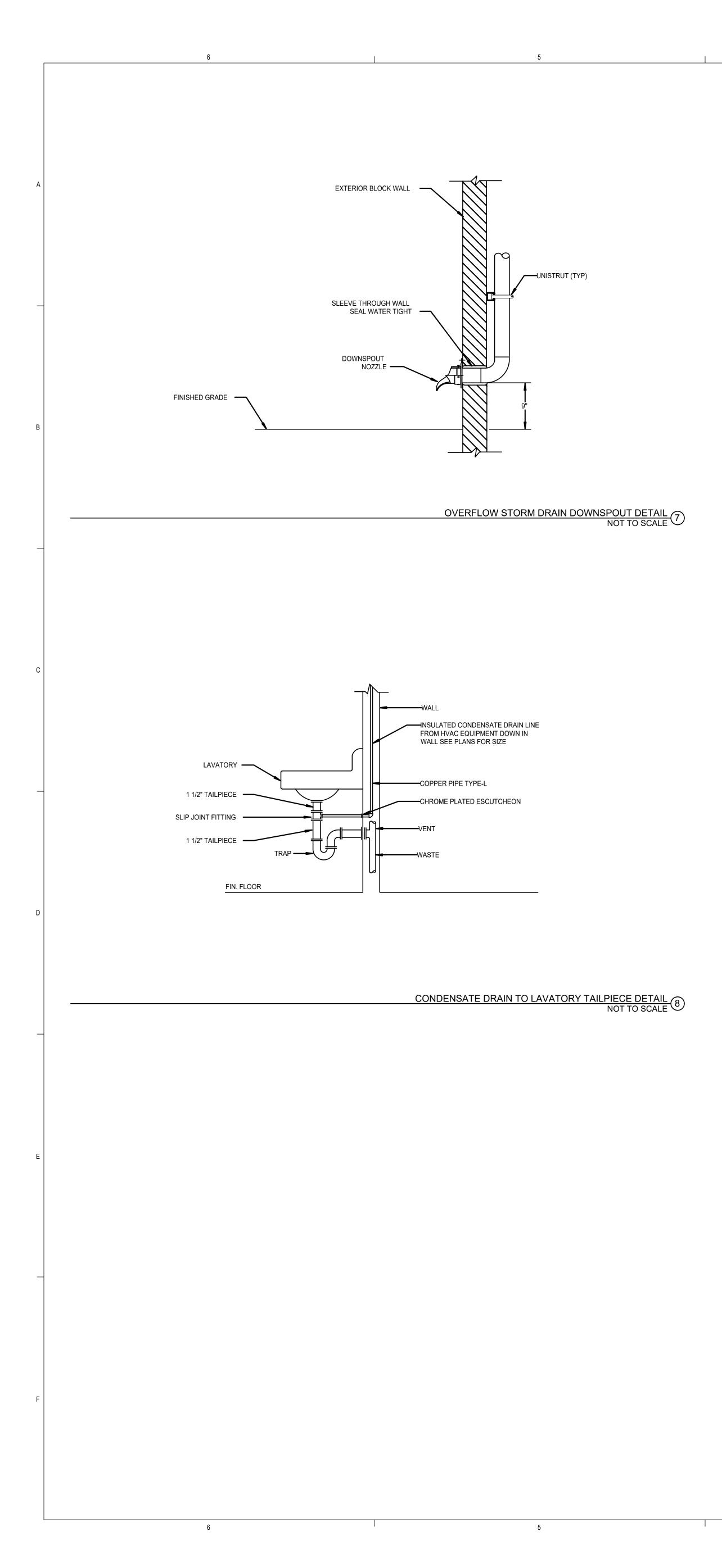
# **KEYNOTES**

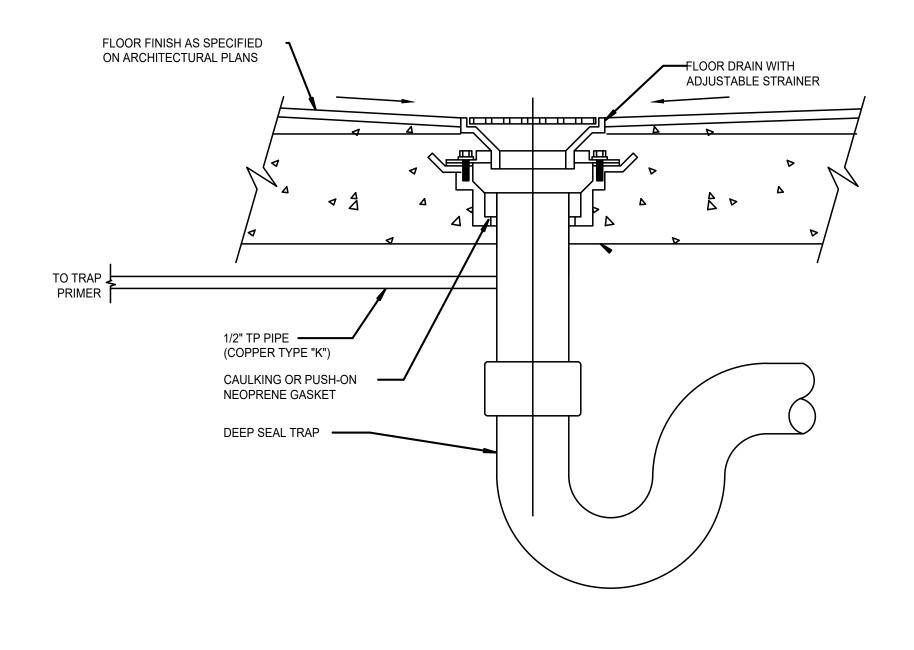
1

- 1)1-1/4" CONDENSATE CONNECTION TO MECHANICAL EQUIPMENT. SEE DETAIL 5/P501. SLOPE @ 1/8" PER FT. REFER TO MECHANICAL DRAWINGS FOR LOCATION. (2)1-1/4" CONDENSATE CONNECTION TO LAVATORY TAILPIECE. SEE DETAIL 8/P501. (3)2" VENT THRU ROOF. SEE DETAIL 3/P501.
- (4)3" SD / OSD UP TO <u>RD-1</u> / <u>ORD-1</u>.
- 5 3/4" DCW / DHW DN SHEAR WALL TO SHOWER VALVE. ROUTE 1/2" TW IN CEILING TO SHOWER HEAD LOCATED ON SIDE WALL.
- 6 3/4" DCW / DHW DN SIDE WALL AND ROUTE IN WALL TO SHOWER VALVE. ROUTE 1/2" TW IN WALL TO SHOWER HEAD LOCATED ON SIDE WALL.

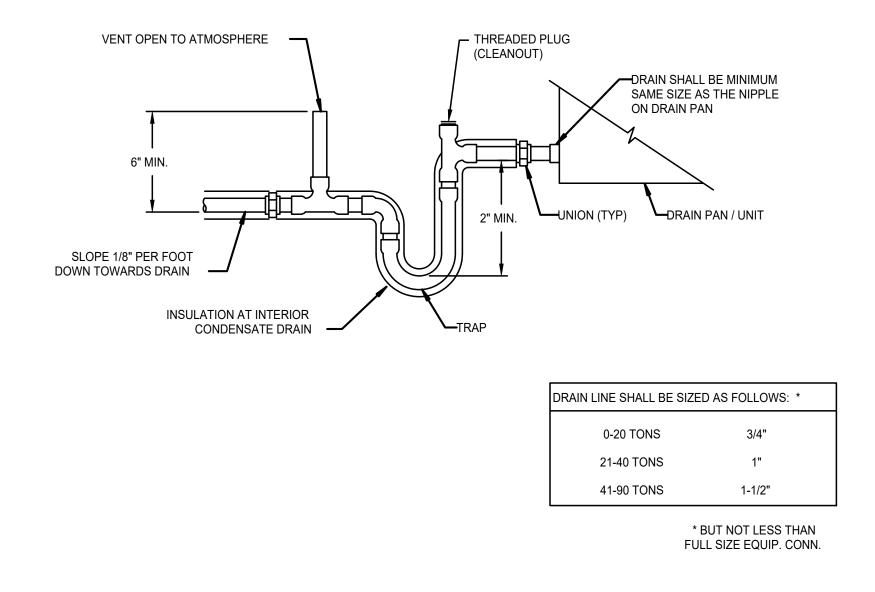
7 MECHANICAL EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE MECHANICAL DRAWINGS FOR EXACT LOCATION.



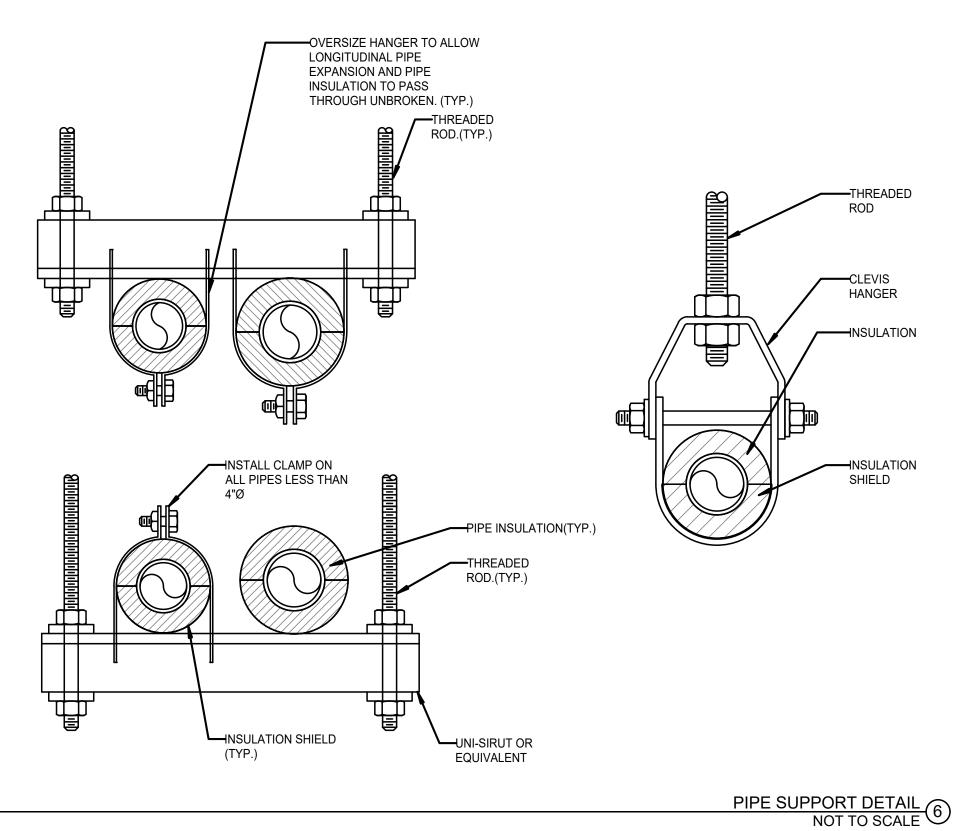




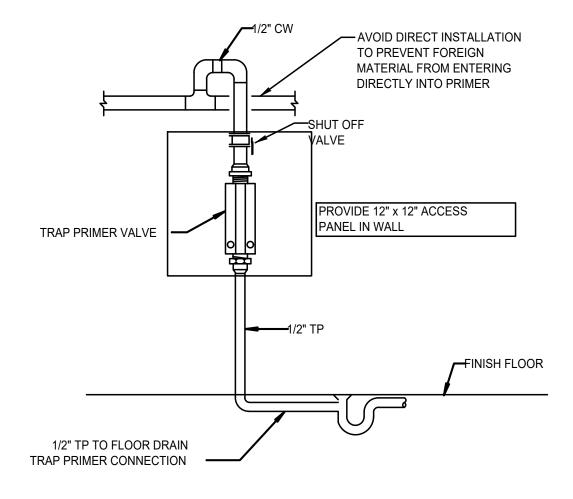
FLOOR DRAIN WITH TRAP PRIMER DETAIL NOT TO SCALE



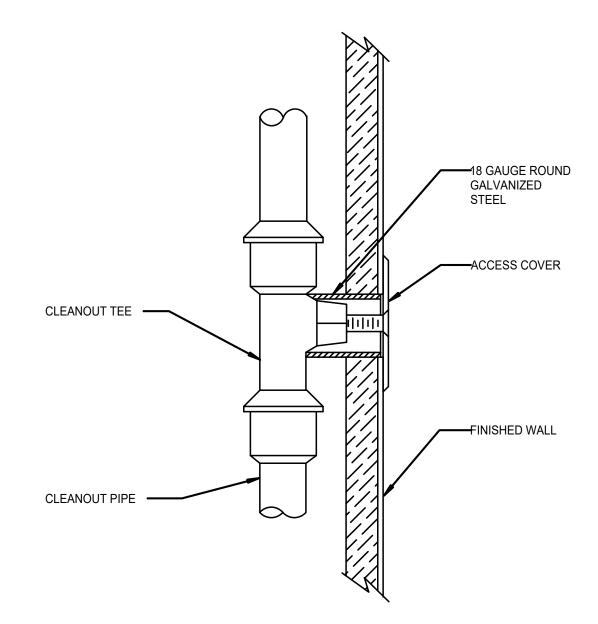




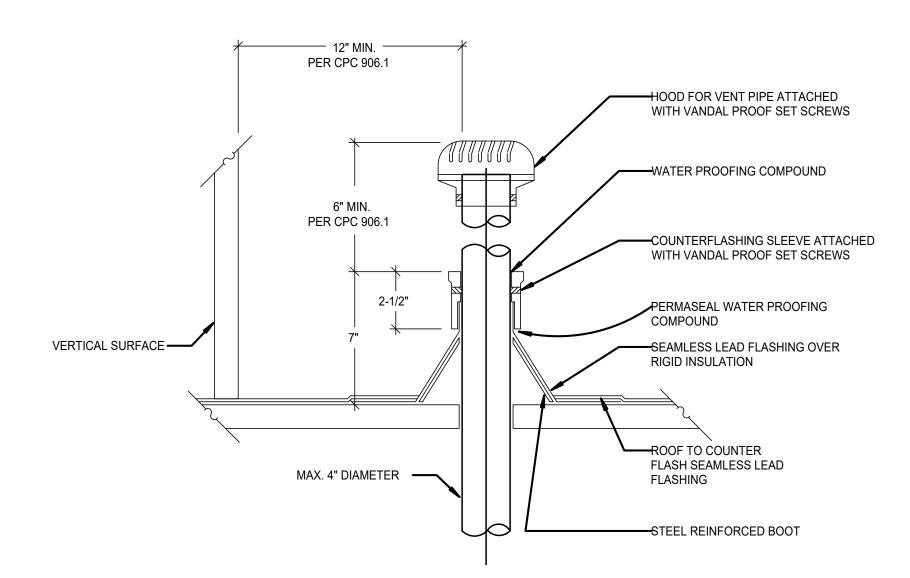
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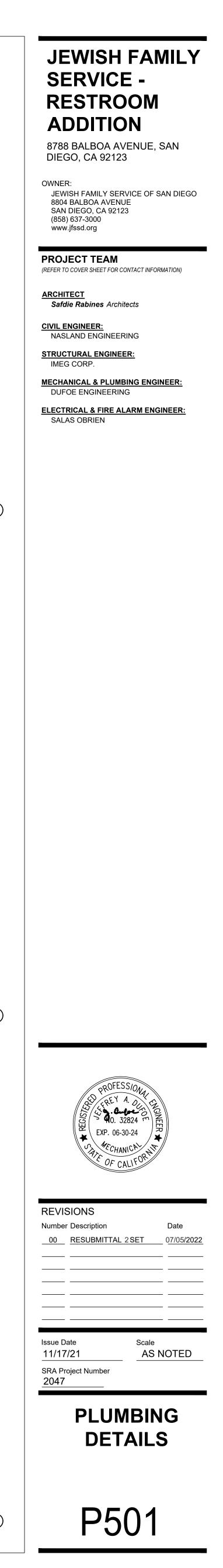
# TRAP PRIMER DETAIL NOT TO SCALE

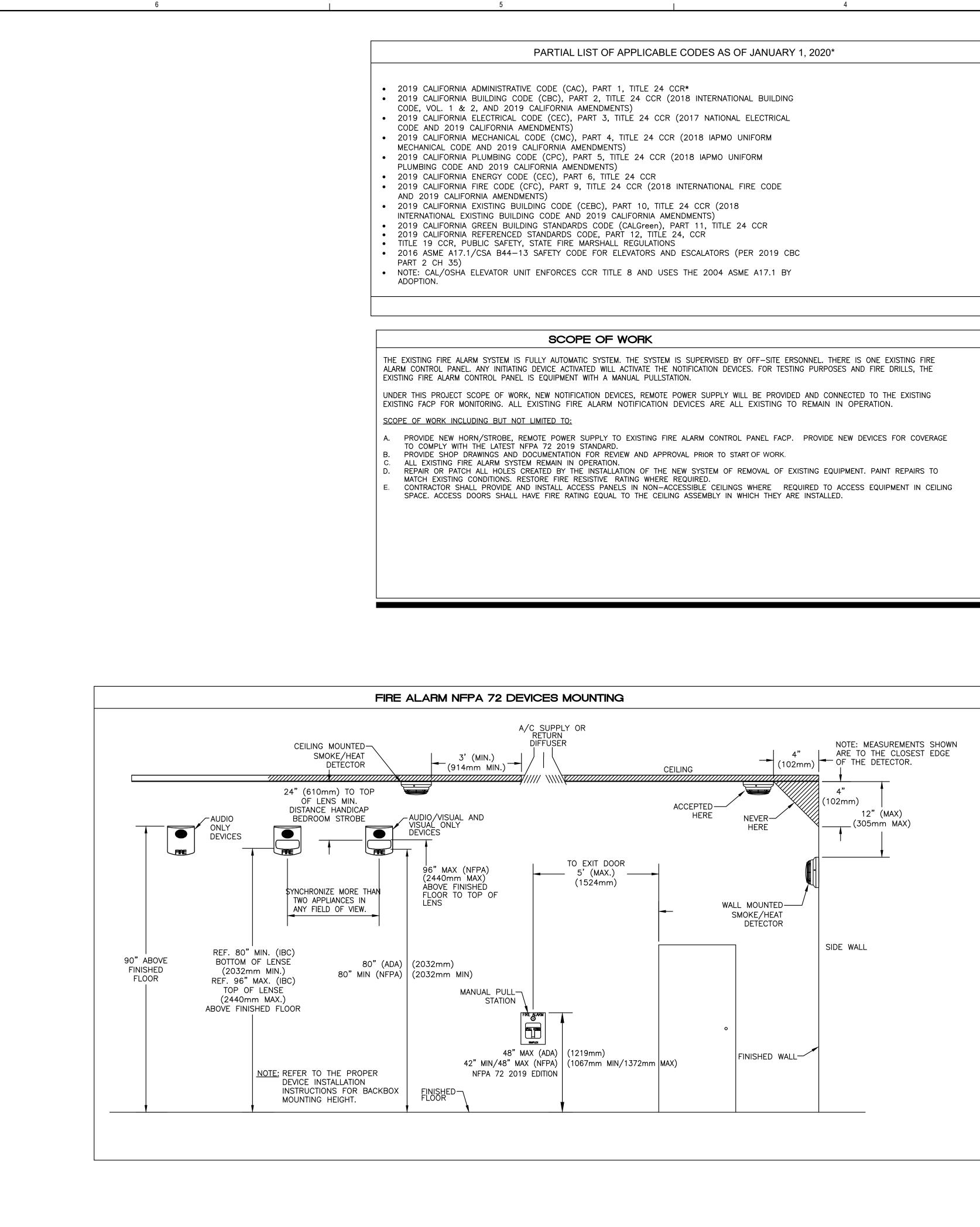


# WALL CLEANOUT DETAIL NOT TO SCALE



1





M	ONITORING INFORMATION	PROJECT INFORMATION	FIRE ALARM GENERAL NOTES
LISTED ALARM CENTR/ SUITE 14231 POWAY SERVIC CENTR/ SUITE 14231	SERVICE FROM: POWAY, CA SERVICE COMPANY: (731846–001) AL MONITORING CORP 1–4 GARDEN RD CA 92064 E CENTER: (731846–001) AL MONITORING CORP	PROJECT ADDRESS: JEWISH FAMILY SERVICES 8788 BALBOA AVENUE SAN DIEGO, CA 92123 OCCUPANCY: B AREA OF WORK: 250 SQ. FT CONSTRUCTION TYPE: TYPE V-N, FULLY SPRIN NUMBER OF STORIES: ONE FLOOR FIRE SPRINKLERS: FULLY SPRINKLERED APN: 369-150-1600	<ol> <li>AN APPROVED, STAMPED SET OF THE FIRE ALARM PLANS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION. ANY DEVIATIONS FROM THE APPROVED PLANS, INCLUDING SUBSTITUTION OF DEVICES, SHALL BE APPROVED BY THE FIRE MARSHAL.</li> <li>ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF THE INSPECTOR OF RECORD.</li> <li>ALL DEVICES OF THE FIRE ALARM SYSTEM SHALL BE APPROVED AND LISTED BY THE CALIFORNIA STATE FIRE MARSHAL.</li> <li>A "RECORD OF COMPLETION" SHALL BE PREPARED BY THE INSTALLER AND GIVEN TO THE FIRE MARSHAL UPON COMPLETION OF THE INSTALLATION.</li> </ol>
			8. ALL TERMINAL CABINETS AND JUNCTION BOXES SHALL BE CLEARLY MARKED THAT THE ENCLOSURE IS PART OF THE FIRE ALARM SYSTEM.
		I DEVICE LEGEND	9. THE CONTRACTOR SHALL LOCATE ALL SMOKE DETECTION DEVICES A MINIMUM OF 36" FROM ANY MECHANICAL REGISTERS.
SYMBOL	DESCRIPTION	MOUNTING/BACKBOX/RING	10. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. WIRE LENGTHS USED TO CALCULATE VOLTAGE DROPS REPRESENT ESTIMATES BASED ON MEASUREMENTS OF SCALED FLOOR PLAN DRAWINGS. CONTRACTOR TO ROUTE CONDUIT AS FIELD CONDITIONS REQUIRE. CONTRACTOR TO INSTALL ALL DEVICES ACCORDING TO MANUFACTURERS INSTRUCTIONS AND IN
FACP	EXISTING FIRE ALARM CONTROL PANEL MANUFACTURER: SILENT KNIGHT MODEL: IFP-100 CSFM# - 7165-0559:142	EXISTING	COMPLIANCE WITH ALL APPLICABLE CODES. 11. CONTRACTOR SHALL VERIFY LOCATION OF POST INDICATOR VALVES (PIV's) AND/OR OUTSIDE STEM & YOKE (OS&Y) VALVES INSTALLED ON FIRE SPRINKLER SERVICE. CONTRACTOR SHALL PROVIDE AND INSTALL TAMPER SWITCH(ES) AT EACH OF THESE VALVES AND INTERCONNECT TAMPER SWITCH(ES) TO THE FIRE ALARM CONTROL PANEL (FACP).
ANN	EXISTING ANNUNCIATOR MANUFACTURER: SILENT KNIGHT MODEL: 5860 CSFM# – 7165–0559:142	EXISTING	GENERAL NOTES
F	EXISTING ADDRESSABLE PULLSTATION MANUFACTURER: SILENT KNIGHT MODEL: SD500-PS CSFM# - 7150-0559:136	EXISTING	<ol> <li>APPLICABLE STANDARD 2019 NFPA 72</li> <li>INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.</li> <li>UPON COMPLETION OF THE SYSTEM A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.</li> <li>A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.</li> </ol>
EH Ç	WALL MOUNTED MANUFACTURER: SYSTEM SENSOR MODEL: P2W CSFM# – 7125–1653:188	4 SQUARE DEEP BOX WITH EXTENSION TAP SPEAKER AT 1 WATT U.O.N.	<ol> <li>5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.</li> <li>6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND / OR TESTING.</li> <li>7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER LAB TESTING CRITERIA APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.</li> </ol>
RPS	REMOTE POWER SUPPLY MANUFACTURER: FIRELITE MODEL: FL-PS6(C) CSFM# - 7315-0075:0510	6 AMP, 24 VOLT REMOTE POWER SUPPLY 20.0"H X 14.5"W X 3.5"D WITH TWO 7AH BATTERS	<ol> <li>WALL MOUNTED VISUAL NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THAN 6"TO A HORIZONTAL STRUCTURE.</li> <li>AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIM HEARING DISTANCE. SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECONDS, 5 DBA MUST BE MAINTAINED.</li> <li>AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.</li> <li>THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE</li> </ol>
x	EXISTING DEVICE TO REMAIN	·	ALARMS. 12. VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. VISUAL DEVICES WITHIN
XR	EXISTING DEVICE TO BE REMOVED AND	REPLACED	<ul> <li>55'FROM EACH OTHER SHALL BE SYNCHRONIZED.</li> <li>13. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVAL FOR WET LOCATIONS.</li> <li>14. ALL FIRE ALARM WIRING SHALL BE FLP OR FPLP (FIRE POWER LIMITED OR FIRE POSER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.</li> <li>15. PER 2016 CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTION DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.</li> <li>16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD WIRE FROM THE BOX TO THE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD THE DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD THE DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD THE DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD WIRE FROM THE BOX TO THE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD WIRE FROM THE BOX TO THE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD WIRE FROM THE BOX TO THE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD WIRE FROM THE BOX TO THE</li> </ul>
	SEQUENCE	OF OPERATIONS	<ul> <li>DEVICE. ALL BOXES TO BE SIZED PER CEC.</li> <li>17. SMOKE DETECTORS SHALL NOT BE CLOSER THAN 1'FROM FIRE SPRINKLERS OR 3'FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.</li> <li>18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.</li> <li>19. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICES SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS</li> <li>20. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE 'ON"POSITION. THE CIRCUIT BREAKER SHALL BE LABELED 'FIRE ALARM CIRCUIT CONTROL''. CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS.</li> <li>21. THE INSTALLING CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.</li> <li>22. CONTRACTOR SHALL CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.</li> <li>23. THE INSTALLIC CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1.</li> </ul>
			901.6.2.

MC	ONITORING INFORMATION	PROJECT INFOR	RMATION FIRE ALARM GENERAL NOTES
ALARM CENTRA SUITE 14231 POWAY SERVICE CENTRA SUITE 14231	GARDEN RD CA 92064 E CENTER: (731846–001) AL MONITORING CORP	PROJECT ADDRESS: JEWISH FAMIL 8788 BALBOA SAN DIEGO, O OCCUPANCY: B AREA OF WORK: 250 SQ. FT CONSTRUCTION TYPE: TYPE V-N, NUMBER OF STORIES: ONE FLOOF FIRE SPRINKLERS: FULLY SPRIN APN: 369-150-16	<ul> <li>DA AVENUE CA 92123</li> <li>2. Or of our down of the presence of the authority having jurgibility, the contractor shall provide all be made in the presence of the authority having jurgibility, and remains so once the system is approved. Upon approval of the fire alarm system, the contractor shall provide the owner with complete set of operating instructions for the system.</li> <li>3. A MINIMUM OF 48 HOURS NOTICE SHALL BE REQUIRED PRIOR TO ANY INSPECTION AND/OR TEST.</li> <li>4. AN APPROVED, STAMPED SET OF THE FIRE ALARM PLANS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION. ANY DEVIATIONS FROM THE APPROVED PLANS, INCLUDING SUBSTITUTION OF DEVICES, SHALL BE APPROVED BY THE FIRE MARSHAL.</li> <li>5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF THE INSPECTION OF RECORD.</li> <li>6. ALL DEVICES OF THE FIRE ALARM SYSTEM SHALL BE APPROVED AND LISTED BY THE CALIFORNIA STATE FIRE MARSHAL.</li> <li>7. A "RECORD OF COMPLETION" SHALL BE PREPARED BY THE INSTALLATION.</li> <li>8. ALL TERMINAL CABINETS AND JUNCTION BOXES SHALL BE CLEARLY MARKED THAT THE ENCLOSURE IS PART OF THE</li> </ul>
			FIRE ALARM SYSTEM. 9. THE CONTRACTOR SHALL LOCATE ALL SMOKE DETECTION DEVICES A MINIMUM OF 36" FROM ANY MECHANICAL REGISTERS.
	FIRE ALARM	I DEVICE LEGEND	10. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. WIRE LENGTHS USED TO CALCULATE VOLTAGE DROPS REPRESENT
SYMBOL	DESCRIPTION EXISTING FIRE ALARM CONTROL PANEL	MOUNTING/BACKBOX/RING EXISTING	ESTIMATES BASED ON MEASUREMENTS OF SCALED FLOOR PLAN DRAWINGS. CONTRACTOR TO ROUTE CONDUIT AS FIELD CONDITIONS REQUIRE. CONTRACTOR TO INSTALL ALL DEVICES ACCORDING TO MANUFACTURERS INSTRUCTIONS AND IN COMPLIANCE WITH ALL APPLICABLE CODES.
FACP	MANUFACTURER: SILENT KNIGHT MODEL: IFP-100 CSFM# - 7165-0559:142		11. CONTRACTOR SHALL VERIFY LOCATION OF POST INDICATOR VALVES (PIV's) AND/OR OUTSIDE STEM & YOKE (OS&Y) VALVES INSTALLED ON FIRE SPRINKLER SERVICE. CONTRACTOR SHALL PROVIDE AND INSTALL TAMPER SWITCH(ES) AT EACH OF THESE VALVES AND INTERCONNECT TAMPER SWITCH(ES) TO THE FIRE ALARM CONTROL PANEL (FACP).
ANN	EXISTING ANNUNCIATOR MANUFACTURER: SILENT KNIGHT MODEL: 5860 CSFM# – 7165–0559:142	EXISTING	GENERAL NOTES
Ē	EXISTING ADDRESSABLE PULLSTATION MANUFACTURER: SILENT KNIGHT MODEL: SD500-PS	EXISTING	<ol> <li>APPLICABLE STANDARD 2019 NFPA 72</li> <li>INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY DSA.</li> <li>UPON COMPLETION OF THE SYSTEM A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE</li> </ol>
	CSFM# - 7150-0559:136	4 SQUARE DEEP BOX WITH EXTENSION	<ul> <li>S. OPON COMPLETION OF THE STSTEM A SATISFACTOR'T TEST OF THE ENTIRE STSTEM SHALL BE MADE IN THE PRESENCE OF A DSA PROJECT INSPECTOR.</li> <li>4. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.</li> <li>5. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO</li> </ul>
EH ♀	MANUFACTURER: SYSTEM SENSOR MODEL: P2W CSFM# – 7125–1653:188	TAP SPEAKER AT 1 WATT U.O.N.	<ul> <li>THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.</li> <li>6. DSA, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND / OR TESTING.</li> <li>7. ALL PENETRATIONS THROUGH RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER LAB TESTING CRITERIA</li> </ul>
RPS	REMOTE POWER SUPPLY MANUFACTURER: FIRELITE MODEL: FL-PS6(C) CSFM# - 7315-0075:0510	6 AMP, 24 VOLT REMOTE POWER SUPPLY 20.0"H X 14.5"W X 3.5"D WITH TWO 7AH BATTERS	<ul> <li>APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.</li> <li>8. WALL MOUNTED VISUAL NOTIFICATION DEVICES SHALL HAVE THEIR BOTTOMS MOUNTED AT 80"MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THAN 6"TO A HORIZONTAL STRUCTURE.</li> <li>9. AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIM HEARING DISTANCE. SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECONDS, 5 DBA MUST BE MAINTAINED.</li> <li>10. AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL CODE 3 PATTERN.</li> <li>11. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.</li> </ul>
x	EXISTING DEVICE TO REMAIN		12. VISUAL DEVICES SHOULD NOT EXCEED 2 FLASHES PER SECOND AND NOT BE SLOWER THAN 1 FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. VISUAL DEVICES WITHIN
XR	EXISTING DEVICE TO BE REMOVED AND	REPLACED	55'FROM EACH OTHER SHALL BE SYNCHRONIZED. 13. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVAL FOR WET LOCATIONS.
			<ul> <li>14. ALL FIRE ALARM WIRING SHALL BE FLP OR FPLP (FIRE POWER LIMITED OR FIRE POSER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.</li> <li>15. PER 2016 CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUCH EACH JUNCTION BOX AND CONNECTION DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.</li> <li>16. PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. ALL BOXES TO BE SIZED PER CEC.</li> <li>17. SMOKE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6'OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.</li> <li>17. SMOKE DETECTORS SHALL NOT BE CLOSER THAN 1'FROM FIRE SPRINKLERS OR 3'FROM ANY SUPPLY DIFFUSER. IN AREA OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION ON NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.</li> <li>18. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUIT ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.</li> <li>19. FIRE ALARM PANEL, REMOTES, AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICES SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS</li> <li>20. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE</li> </ul>
	SEQUENCE	E OF OPERATIONS	ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL HAVE A RED LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON"POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL". CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDERS. 21. THE INSTALLING CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72, FIGURE 10.18.2.1.1. 22. CONTROL PANELS, REMOTE ANNUNCIATOR SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48" 23. THE INSTALL CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTIO

	SEQUI	ENCE C	F OPE	RATION	S		
DEVICE	MANUAL PULL STATION	SMOKE DETECTOR	DUCT DETECTOR	SPRINKLER WATER FLOW SWITCH	SPRINKLER SUPERVISORY SWITCH	OPEN SHORT CIRCUIT	BUILDING POWER FAILURE
ANNUNCIATE AT FIRE CONTROL PANEL & REMOTE ANNUNCIATOR (ALARM)	●	•		•			
ANNUNCIATE AT FIRE CONTROL PANEL & REMOTE ANNUNCIATOR (TROUBLE)							•
ANNUNCIATE AT FIRE CONTROL PANEL & REMOTE ANNUNCIATOR (SUPERVISORY)			●		•		
ACTIVATE AUDIBLE/ VISUAL ALARM SIGNAL DEVICES	•						
TRANSMIT ALARM TO SIGNAL TO CENTRAL STATION	•	•		•			
TRANSMIT TROUBLE TO SIGNAL TO CENTRAL STATION							
TRANSMIT SUPERVISORY TO SIGNAL TO CENTRAL STATION							
SHUT DOWN AIR MOVEMENT SYSTEMS SERVING SAME AREA, OF CLOSE ASSOC. SMOKE FIRE DAMPER	?						

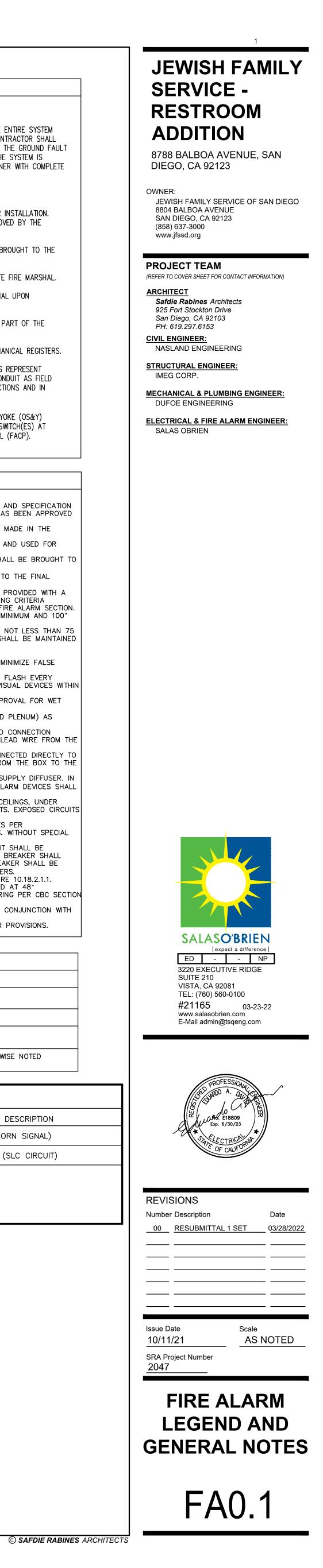
MAXIMUM NUMBER OF CONDUCTORS IN TRADE SIZES OF CONDUIT OR TUBING MINIMUM CONDUIT SIZE FOR THIS PROJECT IS 3/4"													
CONDUIT TR (INCHE	S)	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
TYPE LETTERS	ĆONDUCTOR SIZE AWG, kcmil												
THUN	14 12	13 10	24 18	39 29	69 51	94 70	154 114	164					
THHN	10 8	6 3	11 5	18 9	32 16	44 22	73 36	104 51	160 79	106	136		

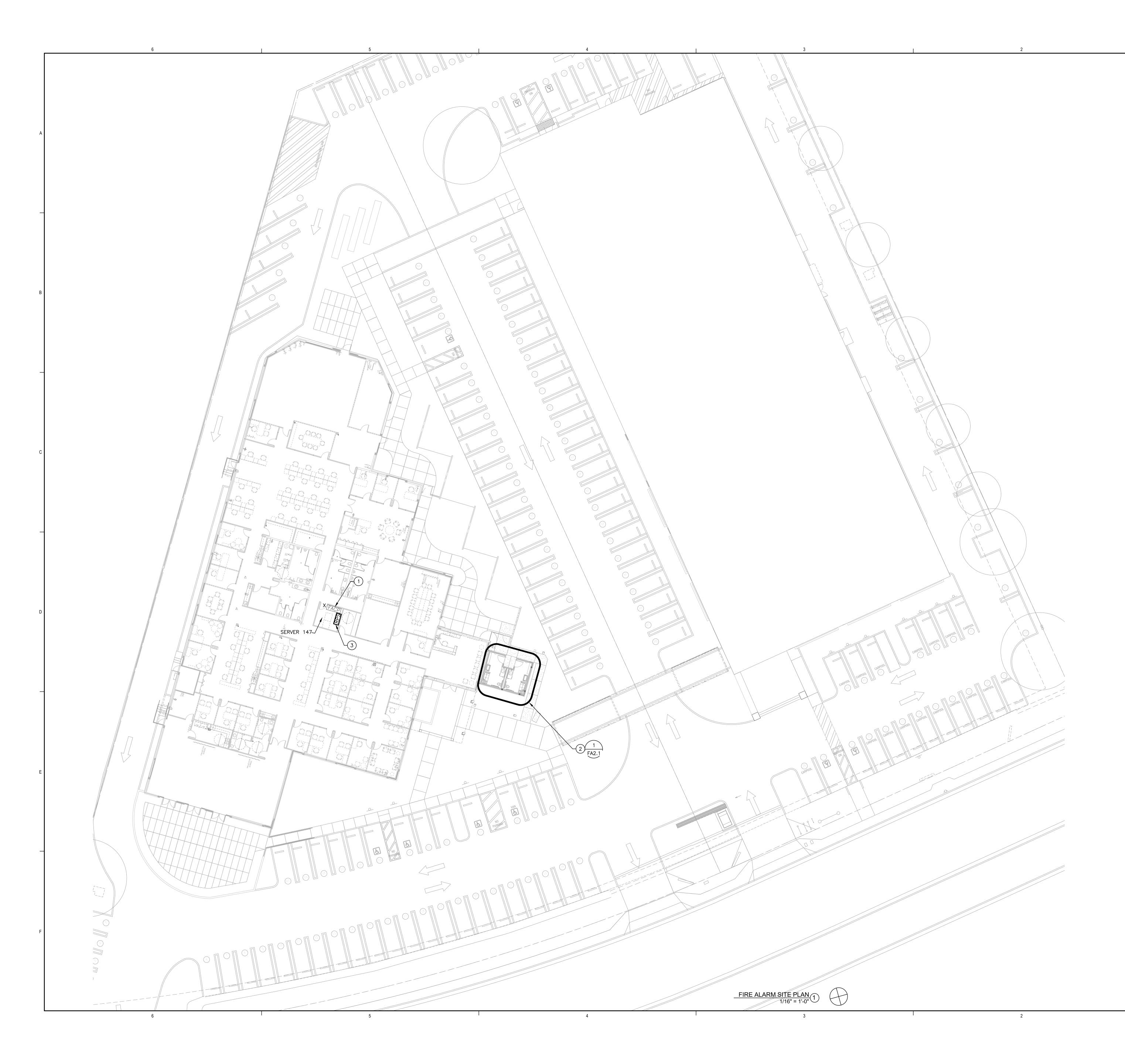
		DEVICE LEGEND								
SYMBOL		DESCRIPTION								
CONDUIT LEGEND										
		CONDUIT CONCEALED IN WALL OR CEILING SPACE, UNLESS OTHERWISE NOTED								
		CONDUIT CONCEALED UNDER FLOOR OF SLAB OR UNDERGROUND, UNLESS OTHERWISE NOTED								

24. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.

25. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT OR PROVISIONS.

INDOOR WIRE LEGEND											
SYMBOL	WIRE SIZE	MANUFACTURER	MODEL NO.	DESCRIPTION							
$\langle A \rangle$	(2)#14	WEST PENN	975	BLACK/RED (HORN SIGNAL)							
$\langle N \rangle$	(2)#18	WEST PENN	THHN	ORANGE/BLUE (SLC CIRCUIT)							





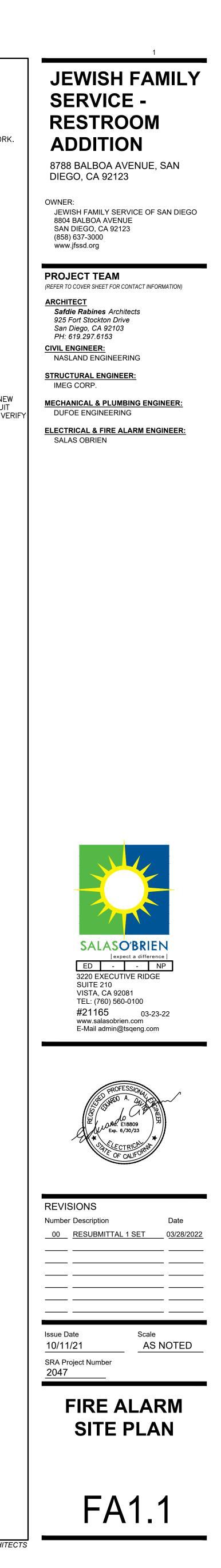
# GENERAL NOTES

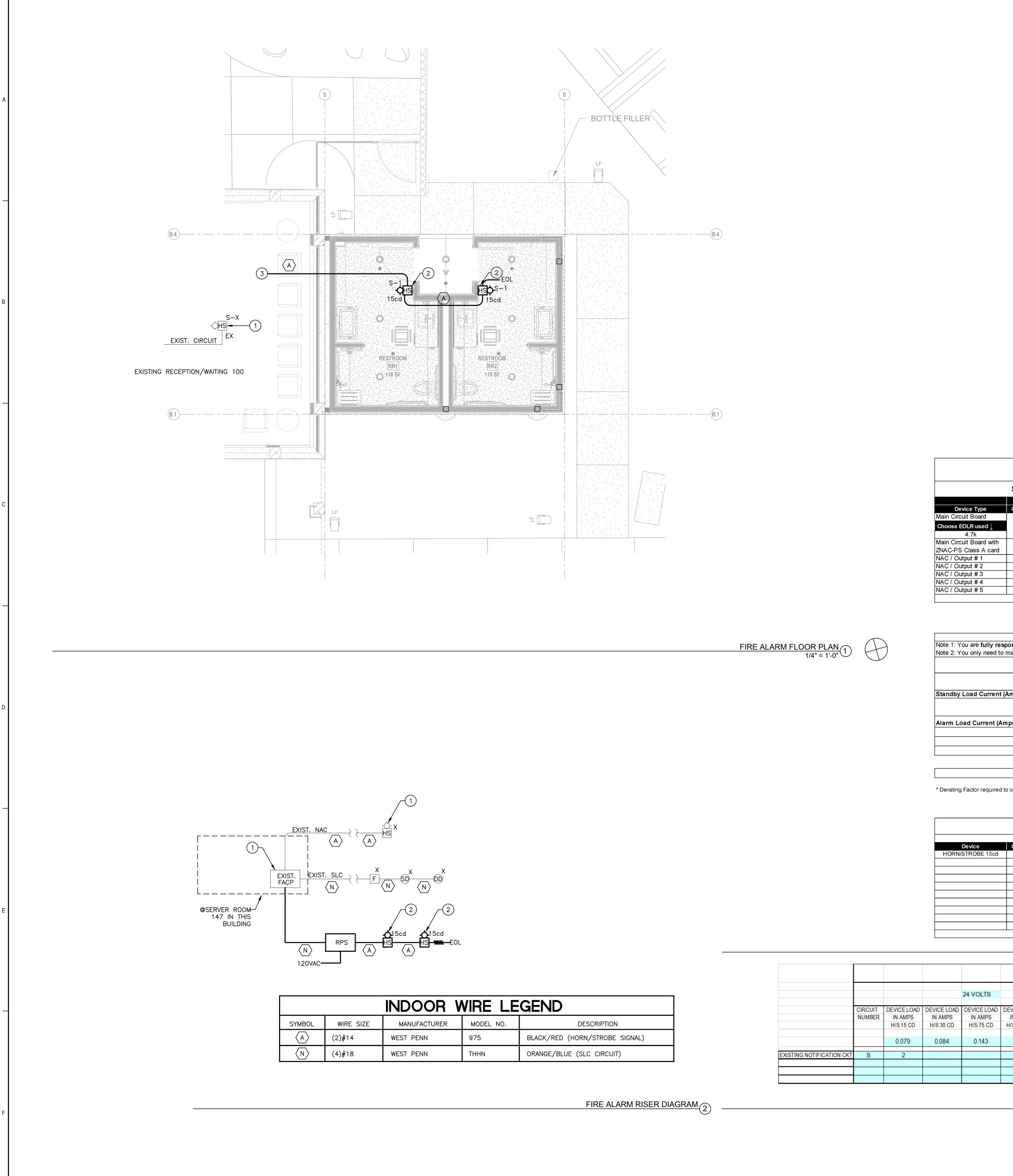
A. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH ALL OTHER TRADES. IN CASE OF DISCREPANCIES OR ANY POTENTIAL CONFLICTS, INFORM THE ARCHITECT AND ENGINEER IN WRITING PRIOR TO START OF WORK.



EXISTING FIRE ALARM CONTROL PANEL.
 AREA OF SCOPE WORK.
 PROVIDE NEW REMOTE POWER SUPPLY FOR EVENTS AND CONNECT TO THE POWER SUPPLY FOR EVENTS AND CONNECT FOR EVENTS AND CONNECT FOR EVENTS AND CONNECT FOR EVENTS AND CONTROL FOR EVENTS AND CONTROL POWER SUPPLY FOR EVENTS AND CONTROL FO

3 PROVIDE NEW REMOTE POWER SUPPLY FOR DEVICES IN THE NEW RESTROOM. INTERCEPT AND CONNECT TO EXISTING 120V CIRCUIT THAT BEING CONNECTING TO THE EXISTING MAIN FACP. FIELD VERIFY MOUNTING LOCATION IN THE SAME ROOM WITH EXISTING FACP.





6

	Sec	10	ndary Powe	r٤	Source Requ	ireme	en	ts		
			Standby Curre	ndary Alarm C	Alarm Current (amps)					
Device Type	Qty		Current Draw		Total	Qty	Current Draw		/	Total
Main Circuit Board										
Choose EOLR used ↓										
4.7k	1	X	0.1390	=	0.1390	1	Х	0.1570	=	0.1570
Main Circuit Board with										
ZNAC-PS Class A card	0	X	0.1350	=	0.0000	0	X	0.1420	=	0.0000
NAC / Output # 1	1	X	0.1580	=	0.1580	1	Х	0.1580	=	0.1580
NAC / Output # 2		X	0.0000	=	0.0000	0	Х	0.0000	=	0.0000
NAC / Output # 3		X	0.0000	=	0.0000	0	Х	0.0000	=	0.0000
NAC / Output # 4		Х	0.0000	=	0.0000	0	Х	0.0000	=	0.0000
NAC / Output # 5		X	0.0000	=	0.0000	0	Х	0.0000	=	0.0000
	Тс	otal	Standby Loa	d	0.2970	To	ota	l Alarm Loa	d	0.3150

	FL-PS6 Battery	v Ca	Iculation						
	for verifying these calculations.								
Note 2: You only need to make entries in the <b>yellow</b> cells									
	Calculation in Total Sheet								
		Req	uired Standby	Tir	ne in Hours				
			24 Hoi	urs					
Standby Load Current (Amps)	0.2970 Amps	Х	24	=	7.128 AH				
		Ree	quired Alarm <sup>·</sup>	Tim	e in Hours				
			5 Minu	tes					
Alarm Load Current (Amps)	0.3150 Amps	х	0.084	=	0.026 AH				
		Tot	al Current Loa	d	7.15 AH				
	*Multiply by the Derating Factor		1.2	=	x 1.20				
Total Ampere Hours Required 8.59 AH									
				•					
	Recommended Batteries:	В	AT-12180 - 184	λH I	Batteries				

\* Derating Factor required to compensate for the non-linear discharge characteristic of a battery.

FL-PS6 Circuit Detail										
NAC / Output # 1										
Device	Qty		Ion-Alarm Drav	N	Total	Qty		Alarm Draw		Total
HORN/STROBE 15cd	2	x	0.079000	=	0.158000	2	х	0.079000	=	0.158000
	0	X	0.000000	=		0	х	0.000000	=	
	0	x	0.000000	=		0	х	0.000000	=	
	0	x	0.000000	=		0	х	0.000000	=	
	0	x	0.000000	=		0	х	0.000000	=	
	0	x	0.000000	=		0	х	0.000000	=	
	0	x	0.000000	=		0	х	0.000000	=	
	0	x	0.000000	=		0	х	0.000000	=	
	0	x	0.000000	=		0	х	0.000000	=	
	0	x	0.000000	=		0	х	0.000000	=	
	T	ota	Standby Loa	ad	0.158000	То	tal	Alarm Load		0.158000

			24 VOLTS						
IRCUIT UMBER	DEVICE LOAD IN AMPS	DEVICE LOAD IN AMPS	DEVICE LOAD IN AMPS	DEVICE LOAD IN AMPS	TOTAL DEVICE LOAD	CONDUCTOR CROSS-SECTIONAL	SEGMENT LENGTH	VOLTAGE LOSS	LINE LOSS
	H/S 15 CD	H/S 30 CD	H/S 75 CD	H/S 110 CD	IN AMPS	AREA IN	IN FEET	IN VOLT	IN %
	0.079	0.084	0.143	0.178					
S	2				0.158	4110	150	0.091	0.381%
U	MBER	MBER IN AMPS H/S 15 CD 0.079	CUIT DEVICE LOAD DEVICE LOAD MBER IN AMPS IN AMPS H/S 15 CD H/S 30 CD 0.079 0.084	MBER         IN AMPS         IN AMPS         IN AMPS           H/S 15 CD         H/S 30 CD         H/S 75 CD           0.079         0.084         0.143	CUITDEVICE LOADDEVICE LOADDEVICE LOADMBERIN AMPSIN AMPSIN AMPSIN AMPSH/S 15 CDH/S 30 CDH/S 75 CDH/S 110 CD0.0790.0840.1430.178	Image: CUIT       DEVICE LOAD       DEVICE LOAD       DEVICE LOAD       DEVICE LOAD       TOTAL         MBER       IN AMPS       IN AMPS       IN AMPS       IN AMPS       DEVICE LOAD       DEVICE LOAD         H/S 15 CD       H/S 30 CD       H/S 75 CD       H/S 110 CD       IN AMPS         0.079       0.084       0.143       0.178       Image: Comparison of the	CUITDEVICE LOADDEVICE LOADDEVICE LOADDEVICE LOADTOTALCONDUCTORMBERIN AMPSIN AMPSIN AMPSIN AMPSDEVICE LOADDEVICE LOADCROSS-SECTIONALH/S 15 CDH/S 30 CDH/S 75 CDH/S 110 CDIN AMPSAREA IN0.0790.0840.1430.178CINCULAR	CUITDEVICE LOADDEVICE LOADDEVICE LOADDEVICE LOADTOTALCONDUCTORSEGMENTMBERIN AMPSIN AMPSIN AMPSIN AMPSDEVICE LOADDEVICE LOADCROSS-SECTIONALLENGTHH/S 15 CDH/S 30 CDH/S 75 CDH/S 110 CDIN AMPSAREA ININ FEET0.0790.0840.1430.178IntervalueIntervalueIntervalue	CUITDEVICE LOADDEVICE LOADDEVICE LOADDEVICE LOADTOTALCONDUCTORSEGMENTVOLTAGEMBERIN AMPSIN AMPSIN AMPSIN AMPSDEVICE LOADDEVICE LOADCROSS-SECTIONALLENGTHLOSSH/S 15 CDH/S 30 CDH/S 75 CDH/S 110 CDIN AMPSAREA ININ FEETIN VOLT0.0790.0840.1430.178InterpreteinInterpreteinInterpreteinInterpretein

3

5

4

# GENERAL NOTES

- A. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH ALL OTHER TRADES. IN CASE OF DISCREPANCIES OR ANY POTENTIAL CONFLICTS, INFORM THE ARCHITECT AND ENGINEER IN WRITING PRIOR TO START OF WORK.
- B. CONTRACTOR SHALL VERIFY EXACT QUANTITIES, LOCATIONS AND HEIGHTS OF ALL FIXTURES WITH TENANT AND ARCHITECT PRIOR TO START OF WORK.

# KEY NOTES

- (1) EXISTING FIRE ALARM TO REMAIN.
- 2 PROVIDE NEW HORN/STROBE AND CONNECT TO NEW REMOTE POWER SUPPLY.
- 3 ROUTE TO NEW REMOTE POWER SUPPLY LOCATE IN SERVER ROOM 147. SEE SHEET FA1.1 FOR LOCATION.

# FL-PS6 Battery Calculation

VOTLAGE DROP CALCULATION (4)

2

\*END OF LINE RESISTOR REQUIRED ONLY ON LAST DEVICE OF A CLASS "B" CIRCUIT. NOTE: FOR ADDITIONAL SPECIFICATIONS SEE PRODUCT DOCUMENTATION. FIELD SELECTABLE CANDELA VALUES - SET CANDELA RATING PER FLOOR PLANS  $\bigcirc \bigcirc$ FIRE  $\mathcal{O}$  $\triangleleft \triangleright$ + + NMMA FIRE 0 3 TO NEXT DEVICE < • + -FROM PREVIOUS DEVICE OR 0000 POWER SOURCE L HORN 11

HORN/STROBE WIRING DETAIL 5



FIRE PROTECTION SPECIFICATIONS	2.2 EQUIPMENT: A. FIRE PROTECTION EQUIPMENT SHALL BE AS INDICATED IN THE EQUIPMENT SCHEDULE.
PART 1.0 GENERAL	COORDINATE WITH ELECTRICAL BEFORE ORDERING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. EQUIPMENT WITH MOTORS SHALL BE PROVIDED WITH BUILT-IN STARTERS AND DISCONNECT SWITCHES, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
. THESE PLANS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO ESTABLISH SIZE, GENERAL ROUTING AND LOCATION, AND PERFORMANCE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE	2.3 FIRE PROTECTION:
CONDITIONS. ALL WORK SHALL BE FULLY COORDINATED WITH OTHER TRADES TO INSURE THE INSTALLATION OF A COMPLETE, OPERATING SYSTEM THAT FITS IN THE SPACE ALLOTTED. PROVIDE ALL LABOR, EQUIPMENT, APPURTENANCES AND MATERIALS NECESSARY, AND PERFORM ALL OPERATIONS REQUIRED FOR THE INSTALLATION OF COMPLETE, FUNCTIONAL PLUMBING AND FIRE PROTECTION SYSTEMS AS OUTLINED ON THE DRAWINGS AND DESCRIBED IN THE	A. PROVIDE FULL DESIGN/BUILD SERVICES TO INSTALL NEW FIRE SPRINKLER SYSTEM TO COVER ALL AREAS OF THE BUILDING PER NFPA 13. PROVIDE DESIGN, COORDINATION AND PERMITTING SERVICES. PROVIDE SPRINKLERS AS REQUIRED TO COVER ALL AREAS PER ARCHITECTURAL FLOOR PLANS AND REFLECTED CEILING PLANS.
SPECIFICATIONS. THIS PROJECT IS A TENANT IMPROVEMENT OF AN EXISTING BASE BUILDING SHELL SYSTEM. THE SPACE UNDER THIS SCOPE IS CURRENTLY OCCUPIED BY OR HAS BEEN PREVIOUSLY OCCUPIED BY AN EXISTING TENANT, THEREFORE, THIS PROJECT IS NOT A "FIRST GENERATION" FIT-UP. THE EXACT CONDITION OF THE EXISTING WORK IS NOT NECESSARILY REFLECTED IN THESE DRAWINGS. ONLY THE APPROXIMATE CONDITIONS OF THE BASE BUILDING DESIGN AND PREVIOUS FIT-UP DESIGNS ARE REFLECTED IN THESE DRAWINGS. SOME UNDOCUMENTED WORK MAY HAVE BEEN PERFORMED, THE CONDITIONS OF WHICH ARE NOT INDICATED ON THESE DRAWINGS. REMOVE EXISTING TENANT WORK NOT INDICATED ON THESE DRAWINGS AND CAP AND	B. UNLESS NOTED OTHERWISE, PROVIDE SEMI-RECESSED PENDANT TYPE SPRINKLERS IN LAY-IN TILE CEILING AREAS. UNLESS NOTED OTHERWISE, PROVIDE NEW CONCEALED FLUSH MOUNTED TYPE SPRINKLERS IN ALL HARD CEILING AREAS. PROVIDE UPRIGHT SPRINKLERS IN SHELI TENANT AREAS WITH CEILING GRID ONLY (WITHOUT CEILING TILES). LOCATE ALL SPRINKLERS WITHIN LAY-IN CEILING AREAS IN THE CENTER OF CEILING TILES, +/- 2". SIDEWALI SPRINKLERS MAY BE UTILIZED WHERE APPROPRIATE AND ALLOWED BY CODE. PROVIDE LAYOUT OF PROPOSED SPRINKLER LOCATIONS IN HARD CEILING AREAS AND SUBMIT TO ARCHITECT FOF APPROVAL. SUBMIT MANUFACTURER'S DATA ON SPRINKLERS AND PROPOSED SPRINKLER LAYOUT TO ARCHITECT AND ENGINEER FOR APPROVAL PRIOR TO START OF WORK.
SEAL CONNECTION POINTS TO EXISTING WORK SHOWN. FINAL WORK SHOULD REFLECT, AS CLOSELY AS POSSIBLE, THE LAYOUT SHOWN OF THESE DRAWINGS.	C. THE PIPING SYSTEM SHALL BE COORDINATED WITH ALL OTHER NEW AND EXISTING TRADES
BECAUSE THIS PROJECT IS AN ADAPTION TO AND PARTIAL RENOVATION OF AN EXISTING SYSTEM, UNKNOWN CIRCUMSTANCES AND INTERFERENCES MAY OCCUR. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO ANY BID SUBMISSION TO FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS. THE CONTRACTOR SHALL MAKE ADJUSTMENTS IN ROUTING AND LOCATION AND, IF NECESSARY, IN SIZE, IN ORDER TO ACHIEVE THE SPECIFIED PERFORMANCE WITHOUT INCURRING ADDITIONS TO THE CONTRACT. WHERE EXISTING CONDITIONS DIFFER SIGNIFICANTLY ENOUGH TO AFFECT PRICING, THE CONTRACTOR SHALL NOTIFY THE BUILDING OWNER/MANAGER PRIOR TO BID SUBMISSION FOR A RESOLUTION. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS. EXISTING WORK (PIPING, DEVICES AND EQUIPMENT) IS SHOWN DASHED. NEW OR RELOCATED WORK IS SHOWN SOLID LINED. EXISTING WORK TO BE REMOVED IS SHOWN CROSS-HATCHED OR	(MECHANICAL, ELECTRICAL, TELE./DATA, ETC.) AND BUILDING COMPONENTS (ARCHITECTURAL AND STRUCTURAL) TO AVOID CONFLICTS WITH OTHER ELEMENTS (CEILING LIGHTING PLAN, DUCTWORK, OTHER MECHANICAL PIPING, MECHANICAL UNITS AND ACCESS CLEARANCES, ELECTRICAL COMPONENT CLEARANCES, CABLE TRAYS AND WIREWAYS, ETC.). WHERE TYPICAL PIPING ROUTING ELEVATIONS ARE INTERRUPTED BY NON-TYPICAL CONDITIONS, PROVIDE OFFSETS WITH DRAIN VALVES AS REQUIRED AT LOW POINTS, AND ROUTE ABOVE, BELOW, OF AROUND CONFLICTS. AS FP PIPING IS NOT SHOWN ON DESIGN DRAWINGS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE OFFSETS IN FP PIPING AS REQUIRED FOF ROUTING OF ALL OTHER TRADES, PARTICULARLY DUCTWORK AND MECHANICAL AND ELECTRICAL EQUIPMENT AND CLEARANCE REQUIREMENTS, AND COORDINATE WITH THOSE TRADES FOR THEIF REQUIREMENTS. FP PIPING ROUTING ZONE WITHIN THE TYPICAL CEILING PLENUM AREAS HAS BEEN COORDINATED ALONG WITH THE REMAINDER OF THE TRADES TO BE ROUTED BELOW THE DUCTWORK.
NOTED. ALL DATA FOR EXISTING WORK SHOWN (LOCATIONS, SIZES, CAPACITIES, ETC.) IS TAKEN FROM BASE BUILDING AND PREVIOUS FIT-UP DESIGN DRAWINGS (NOT "AS-BUILT" OR SHOP DRAWINGS) AND ARE THEREFORE APPROXIMATE AND FOR REFERENCE ONLY. ALL DATA, SIZES AND EXACT LOCATIONS AND SIZES MUST BE FIELD VERIFIED.	D. ALL NEW WET SPRINKLER PIPING SHALL BE AS PER NFPA 13 EXCEPT THAT THE USE OF PLASTIC PIPING IS STRICTLY PROHIBITED. THE USE OF MECHANICAL CONNECTION SADDLE TAPS IS STRICTLY PROHIBITED. ALL WET SPRINKLER SYSTEM PIPING SHALL BE SCHEDULE 40 BLACK STEEL WITH WROUGHT
REFER TO ARCHITECTURAL FLOOR PLANS AND REFLECTED CEILING PLANS TO COORDINATE EQUIPMENT WITH LAYOUT OF WALLS AND PARTITIONS AND LOCATIONS OF ALL CEILING MOUNTED DEVICES. FOR ANY ITEMS NOT SHOWN ON THE REFLECTED CEILING PLANS, PREPARE DRAWINGS OF THE PROPOSED LOCATIONS AND PRESENT TO THE ARCHITECT FOR APPROVAL PRIOR TO	FITTINGS AND THREADED JOINTS. SCHEDULE 10 STEEL MAY BE USED WITH MACHINED ROLLED GROOVED FITTINGS AND MECHANICAL COUPLINGS (THREADED JOINTS NOT ALLOWED FOR SCHEDULE 10 PIPING).
NSTALLATION. DUE TO THE FACT THAT AREAS ADJACENT TO THIS WORK AREA WILL CONTINUE TO OPERATE DURING THIS CONSTRUCTION PHASE, GREAT CARE MUST BE TAKEN TO MAINTAIN A CLEAN JOB SITE. ANY INTERRUPTION OF SERVICES (ELECTRICITY, FIRE PROTECTION WATER, DOMESTIC	E. PROVIDE SPRINKLER SYSTEM FABRICATION DRAWINGS AND HYDRAULIC CALCULATIONS FOR PERMITTING SHOWING SPRINKLER LAYOUT, PIPING, AND OTHER COMPONENTS REQUIRING COORDINATION (STRUCTURE, CEILING LIGHTING PLAN, DUCTWORK, OTHER MECHANICAL PIPING, MECHANICAL UNITS, MECHANICAL AND ELECTRICAL EQUIPMENT AND CLEARANCE REQUIREMENTS, CABLE TRAYS AND WIREWAYS, ETC.).
NATER, SEWER, GAS, AIR CONDITIONING, HVAC CHILLED AND HOT WATER, AND STEAM AND CONDENSATE RETURN) TO THE BUILDING SHALL BE COORDINATED WITH THE BUILDING OWNER. ANY WORK THAT REQUIRES ACTIVITY OUTSIDE THIS AREA SHALL BE COORDINATED WITH THE BUILDING OWNER. PROVIDE BARRIERS, DUST ENCLOSURES, ETC., AS REQUIRED TO PROTECT	PART 3.0 EXECUTION
ADJACENT AREAS AND STAFF. PROVIDE TEMPORARY CONSTRUCTION FILTERS TO PREVENT THE CONTAMINATION OF ADJACENT AREAS AND EQUIPMENT WITH CONSTRUCTION DUST AT THE OLLOWING LOCATIONS: OVER ALL RETURN AIR OPENINGS IN TENANT DEMISING WALLS; ON THE RETURN AIR INLET OF ALL CENTRAL STATION AIR CONDITIONING UNITS SERVING FLOORS OR PORTIONS OF FLOORS UNDER THIS SCOPE; AND ON THE RETURN AIR INLET OF ALL REMOTE	3.1 DESCRIPTION: A. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH APPLICABLE CODES, NFPA, NEC, APPLICABLE INDUSTRY STANDARDS (SMACNA, ASME, ARI, AMCA, AGA, CISPI, ETC.), MANUFACTURER'S RECOMMENDATIONS, EQUIPMENT UL LISTING REQUIREMENTS, AND THESE DOCUMENTS. COVEDNO.
AUXILIARY UNITS SERVING PORTIONS OF THIS TENANT SPACE. CONTRACTOR SHALL COORDINATE ALL WORK REQUIRED FOR UTILITY SERVICE CONNECTIONS ELECTRICITY, DOMESTIC WATER, SEWER, FIRE PROTECTION WATER, GAS) TO THE BUILDING WITH THE SITE WORK CONTRACTOR, CIVIL ENGINEER, LOCAL UTILITY COMPANIES, THE LOCAL AUTHORITIES HAVING CODE JURISDICTION.	DOCUMENTS. SHOULD CONFLICTS ARISE, THE MORE STRINGENT REQUIREMENT SHALL GOVERN. B. ANY DAMAGE TO EXISTING STRUCTURE OR FINISHES RESULTING FROM THE INSTALLATION OF ANY EQUIPMENT SPECIFIED UNDER THIS DIVISION SHALL BE REPAIRED TO MATCH SURROUNDING AREAS. COORDINATE ALL CUTTING AND PATCHING WITH OTHER TRADES.
ALL WORK SHALL BE DONE IN CONFORMANCE WITH THESE SPECIFICATIONS AND LOCAL CODES AND ORDINANCES. WHERE CONFLICTING REQUIREMENTS MAY OCCUR, THE MORE STRINGENT SHALL GOVERN.	C. CLEAN ALL EQUIPMENT AND TOUCH UP ANY MARS OR SCRATCHES BEFORE BENEFICIAL OCCUPANCY. D. WHERE EXISTING EQUIPMENT IS TO BE RE-USED, CONTRACTOR SHALL CHECK THE EQUIPMENT FOR PROPER OPERATION UPON INITIAL JOB SITE MOBILIZATION AND PRIOR TO BEGINNING
CODES AND REGULATIONS: ALL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LOCALLY ADOPTED BUILDING CODES, MECHANICAL CODES, ENERGY CODES, PLUMBING AND GAS CODES, AND NFPA (LATEST CDITIONS).	RELATED WORK. ANY NON-FUNCTIONING EQUIPMENT MUST BE REPORTED TO THE OWNER/LANDLORD AND DESIGN TEAM. ANY EXISTING BASE BUILDING EQUIPMENT WILL BE REPLACED OR REPAIRED BY THE OWNER/LANDLORD AT THE OWNER/LANDLORD'S EXPENSE. ANY EXISTING SUPPLEMENTAL EQUIPMENT WILL BE REPAIRED BY THE CONTRACTOR UNDER THIS SCOPE AT THE EXPENSE OF THE TENANT. ANY EQUIPMENT NOT REPORTED WILL BE ASSUMED TO BE IN WORKING ORDER AND MUST BE FULLY FUNCTIONAL WHEN RE-INSTALLED, OTHERWISE CONTRACTOR
THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES, ARRANGE FOR ALL INSPECTIONS, PERFORM ALL TESTS AND PAY ALL FEES INCIDENTAL THERETO, AS REQUIRED FOR THE EXECUTION OF THE CONTRACT AND AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.	WILL BE RESPONSIBLE FOR REPAIRING OR REPLACING SAID ITEMS WITH NO ADDITIONAL COST TO THE OWNER/LANDLORD OR TENANT. E. PRESSURE TEST ALL PIPING SYSTEMS FOR LEAKS PRIOR TO INSTALLATION OF INSULATION AND AFTER CLEANING, FLUSH, AND FILL, AT 1.5 TIMES THE MAXIMUM SYSTEM OPERATING PRESSURE
SHOP DRAWINGS:	OR AT THE PIPING SYSTEM CONSTRUCTION PRESSURE RATING, WHICH EVER IS LESS. TEST FOR 24 HOURS WITH NO LOSS OF PRESSURE.
CATALOGUE DATA FOR ALL NEW EQUIPMENT AND APPURTENANCES TO BE USED ON THIS PROJECT. CATALOGUE DATA SHALL INCLUDE PERFORMANCE DATA, DIMENSIONAL DATA, STANDARD AND OPTIONAL FEATURES AND APPROPRIATE TESTING AGENCY LABELS. THE SHOP DRAWINGS SHALL BE LEGIBLE AND SHALL CLEARLY INDICATE THE EQUIPMENT TAG OR MARK, RELATED SPECIFICATION SECTION, OPTIONAL FEATURES TO BE PROVIDED, AND ANY DEVIATIONS FROM THE SPECIFICATIONS OR SCHEDULED CAPACITIES NOTED IN RED OR HIGHLIGHTED. VERIFICATION AND ASSIGNMENT OF DIMENSIONS, QUANTITIES, AND CONSTRUCTION MEANS, METHODS, SEQUENCES OR PROCEDURES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.	F. FOR GROOVED END PIPING SYSTEMS, ALL GROOVED PRODUCTS UTILIZED SHALL BE SUPPLIED BY ONE MANUFACTURER. GROOVING TOOLS SHALL BE SUPPLIED BY THE SAME MANUFACTURER AS THE GROOVED COMPONENTS. A FACTORY TRAINED EMPLOYEE FROM THE MANUFACTURER SHALL PROVIDE PERIODIC JOBSITE VISITS AND ON-SITE TRAINING FOR CONTRACTOR'S FIELD PERSONNEL IN THE USE OF GROOVING TOOLS, APPLICATION OF GROOVE, AND PRODUCT INSTALLATION. CONTRACTOR SHALL REMOVE AND REPLACE ANY IMPROPERLY INSTALLED PRODUCTS AT NO ADDITIONAL COST TO THE OWNER.
ALL SUBMITTAL DATA SHALL BE IN ELECTRONIC (ADOBE .PDF) FORMAT AND ONE (1) HARD COPY FORMAT ON 8-1/2"X11" AND SHALL BE BOUND TOGETHER IN A BINDER OR UNDER A REPORT COVER. THE SUBMITTAL SHEET(S) FOR EACH PIECE OF EQUIPMENT SHALL INCLUDE A BLANK AREA 3"X 3", ON THE FRONT, FOR REVIEW STAMP AND COMMENTS. IF THE CATALOG DATA SHEET DOES NOT HAVE AN OPEN AREA AS SPECIFIED, PROVIDE A COVER SHEET FOR THAT	G. PROVIDE FOR EACH PIECE OF EQUIPMENT A PERMANENT LABEL (METAL, BAKELITE, PLASTIC, OR EQUIVALENT) WITH THE EQUIPMENT NAME/TAG/MARK PERMANENTLY EMBOSSED INTO THE LABEL. MOUNT LABEL ON UNIT, PERMANENTLY AFFIXED TO UNIT, LOCATED ADJACENT TO NAMEPLATE OR ADJACENT TO ACCESS DOOR IF NAMEPLATE IS MOUNTED WITHIN UNIT. LABEL SHALL INDICATE EQUIPMENT TAG, TENANT NAME, AND FLOOR.
PIECE OF EQUIPMENT WITH EQUIPMENT TAG AND BRIEF DESCRIPTION FOR REVIEW AND COMMENT USE. ILLEGIBLE SUBMITTALS AND INCOMPLETE SUBMITTALS (LACKING EQUIPMENT DESIGNATIONS, PERFORMANCE DATA, DIMENSIONAL DATA, OR INDICATION OF OPTIONAL FEATURES) MAY BE SUMMARILY REJECTED WITHOUT REVIEW. ANY DELAY IN THE CONSTRUCTION SCHEDULE	H. ALL PIPING BELOW FLOOR SHALL HAVE A MINIMUM COVER OF 12"; ALL PIPING BELOW GRADE SHALL HAVE A MINIMUM COVER OF 36" OR AS REQUIRED FOR INVERT ELEVATION OF CIVIL UTILITY CONNECTIONS. PIPING BELOW FLOOR/GRADE SHALL BE LAID ON COMPACTED LOOSE FILL (SAND OR FINE GRAVEL), BACK FILLED WITH COMPACTED LOOSE FILL TO ABOVE TOP OF PIPE, AND COVERED TO FLOOR/GRADE WITH COMPACTED FILL OF EARTH REMOVED DURING TRENCHING. REPAIR FLOORING TO MATCH EXISTING.
RESULTING FROM REJECTED SUBMITTALS IS THE RESPONSIBILITY OF THE CONTRACTOR FOR FAILURE TO ADHERE TO THESE SPECIFICATIONS. THE CONTRACTOR SHALL PREPARE "AS BUILT" DRAWINGS NEATLY AND CLEARLY INDICATING ALL	I. ALL EXTERIOR UNINSULATED STEEL PIPING INSTALLED EXPOSED TO WEATHER OR UNDER COVERED, UNCONDITIONED AREAS SHALL BE PAINTED WITH A RUST RESISTANT PRIMER AND A WEATHER PROOF FINAL COAT. ALL EXPOSED INSULATED PIPING SHALL HAVE A WEATHER PROOF JACKET FOR NON-WATER PROOF INSULATION SYSTEMS OR THE INSULATION SHALL BE PAINTED
DESIGN REVISIONS AND THE ACTUAL INSTALLED CONDITIONS OF ALL FIRE PROTECTION BYSTEMS. "AS BUILT" DRAWINGS SHALL NOT BE EXACT DUPLICATES OF DESIGN DRAWINGS. THE CONTRACTOR SHALL SUBMIT 3 TO 5 COPIES TO THE ARCHITECT/ENGINEER FOR REVIEW AND COMMENT, AND SHALL PROVIDE TWO RECORD COPIES (ONE REPRODUCIBLE AND ONE NON-REPRODUCIBLE) TO THE OWNER WITH ALL ARCHITECTURAL AND ENGINEERING COMMENTS	WITH A UV RESISTANT PAINT FOR WATER PROOF INSULATION SYSTEMS. J. PROVIDE OPERATION & MAINTENANCE MANUAL FOR ALL NEW EQUIPMENT. PROVIDE TRAINING FOR OWNER'S REPRESENTATIVES ON MAINTENANCE AND OPERATION FOR ALL NEW EQUIPMENT.
INCORPORATED. "AS BUILT" DRAWINGS SHALL BEAR THE NAME/LOGO OF THE CONTRACTOR AND ANY STAMP FROM THE ENGINEER OF RECORD SHALL BE REMOVED. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE DESIGNER FOR USE OF DESIGN DRAWING TITLE BLOCKS.	3.2 EQUIPMENT & MATERIALS INSTALLATION: A. FIRE PROTECTION EQUIPMENT AND FIXTURES SHALL BE AS INDICATED IN THE EQUIPMENT
ELECTRONIC COPIES OF ENGINEERING DESIGN FILES: SUBJECT TO THE APPROVAL OF THE ARCHITECT AND OWNER, THE CONTRACTOR MAY OBTAIN COPIES OF THE ENGINEER'S ELECTRONIC DRAWING FILES. A NOMINAL FEE PER FILE MAY BE REQUESTED. PLANS CAN BE PROVIDED IN AUTOCAD .DWG FORMAT IN THE ENGINEER'S STANDARD CAD CONFIGURATION; CONVERSION TO ANY OTHER FORMAT AND CONFIGURATION IS THE RESPONSIBILITY OF THE CONTRACTOR. NON-PLAN FILES (SPECIFICATIONS, SCHEDULES, DETAILS, RISERS, ETC.) WILL BE PROVIDED IN .PDF FORMAT ONLY.	A. FIRE PROTECTION EQUIPMENT AND FIXTURES SHALL BE AS INDICATED IN THE EQUIPMENT SCHEDULE OR APPROVED EQUIVALENT, AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. COORDINATE WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS; COORDINATE QUANTITY, SIZE, AND TYPE OF CONNECTION(S) AND OVERCURRENT PROTECTION; AND DISCONNECT(S), AND STARTER(S) REQUIREMENTS. DO NOT MOUNT DISCONNECT SWITCHES OVER UNIT NAMEPLATES. ALL ELECTRICAL WORK SHALL BE DONE IN CONFORMANCE WITH THESE SPECIFICATIONS, ELECTRICAL SPECIFICATIONS, THE NATIONAL ELECTRIC CODE, AND LOCAL CODES. WHERE CONFLICTING REQUIREMENTS MAY OCCUR, THE MORE STRINGENT SHALL GOVERN.
THE CONTRACTOR MUST OBTAIN WRITTEN (EMAIL) PERMISSION AND REQUEST THESE FILES THROUGH PROPER PROJECT CHANNELS (VIA THE GENERAL CONTRACTOR, ARCHITECT, AND OWNER/LANDLORD). AS THE BACKGROUNDS ARE NOT THE PROPERTY OF THE ENGINEER, THE ARCHITECT MUST PROVIDE WRITTEN PERMISSION FOR USE AND TRANSMISSION OF THEIR FILES PRIOR TO ISSUE.	B. SUPPORT ALL PIPING AND EQUIPMENT FROM STRUCTURE ABOVE OR FLOOR BELOW. DO NOT SUPPORT FROM OTHER DUCTWORK, PIPING, CONDUIT, ETC. SUPPORT ALL PIPING WITH HANGERS, SUPPORTS, ANCHORS AND GUIDES PER ANSI CODE FOR PRESSURE PIPING, ANS B31.3 WITH ADDENDA 31.1 OA-69. SIZING AND SPACING OF HANGERS SHALL BE PER THESE STANDARDS, UNLESS OTHERWISE NOTED. "C" CLAMPS SHALL NOT BE USED UNLESS TACK WELDED OR STRAPPED TO STRUCTURAL STEEL MEMBERS.
RT 2.0 PRODUCTS	C. INSULATION SHALL BE CONTINUOUS AT ALL WALL AND FLOOR PENETRATIONS AND AT HANGEF SUPPORTS. HANGER SUPPORTS FOR INSULATED PIPING SHALL BE OUTSIDE INSULATION; PROVIDE
1 DESCRIPTION: ALL MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT THOSE EXISTING ITEMS INDICATED TO BE RE-USED. ANY EQUIPMENT OR DEVICES TO BE RE-USED SHALL BE THOROUGHLY CLEANED AND SERVICED TO GOOD WORKING CONDITION. ALL NEW EQUIPMENT SHALL BEAR THE LABEL OF THE APPROPRIATE TESTING AGENCY (UL, ETL, FM, CSA, AGA, ASTM, AMCA, PDI, CISPI,	SUPPORTS. HANGER SUPPORTS FOR INSULATED PIPING SHALL BE OUTSIDE INSULATION; PROVIDE INSULATED INSERTS AND SLEEVES AT HANGERS. INSULATION VAPOR BARRIER SHALL BE SEALED AT ALL JOINTS AND SEAMS, AND AT PENETRATIONS BY APPURTENANCES (VALVE STEMS, ETC.) REPAIR INSULATION AT EXISTING PIPING WHICH HAS BEEN REWORKED. TEARS AND PUNCTURES OF VAPOR BARRIER SHALL BE REPAIRED AND SEALED. ALL PIPING PRESSURE TESTING SHALL BE PERFORMED BEFORE INSULATION IS APPLIED.
ETC.). PROVIDE ONE (1) YEAR PARTS AND LABOR WARRANTY ON ALL NEW EQUIPMENT, SYSTEMS AND COMPONENTS, INCLUDING WORKMANSHIP.	D. PROVIDE SLEEVES, CLAMPS FOR PIPING AT ALL WALL AND FLOOR PENETRATIONS, AND FIRE PROOFING AT ALL RATED WALL AND FLOOR PENETRATIONS. PROVIDE ESCUTCHEON PLATES AT ALL VISIBLE WALL AND CEILING PENETRATIONS.
THE PRODUCTS OF PARTICULAR MANUFACTURERS HAVE BEEN USED AS THE BASIS OF DESIGN. ANY MODIFICATIONS REQUIRED TO THE PLUMBING OR FIRE PROTECTION SYSTEM, ELECTRICAL SYSTEM, BUILDING STRUCTURE OR FINISHES DUE TO THE USE OF EQUIPMENT OTHER THAN THE BASIS OF DESIGN SHALL BE COORDINATED WITH ALL TRADES AND PERFORMED WITHOUT ADDITIONAL COST TO THE CONTRACT.	E. RELOCATE ANY EXISTING EQUIPMENT AND LOCATE NEW EQUIPMENT AWAY FROM WALLS TO STRUCTURE AND RATED WALLS AS NECESSARY TO PROVIDE REQUIRED CLEARANCES FOR PROPER OPERATION, MAINTENANCE AND INSPECTION. RELOCATE EXISTING WORK (DUCTS, PIPING, & CONDUIT) AND LOCATE NEW WORK AS REQUIRED TO MAINTAIN REQUIRED CLEARANCES FOR
. ALL CONSTRUCTION PRODUCTS INSTALLED WITHIN RETURN AIR PLENUMS SHALL BE PLENUM RATED MATERIALS WITH A MAXIMUM FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50.	PROPER OPERATION, MAINTENANCE AND INSPECTION. F. INSTALL ALL PIPING ABOVE CEILING AS HIGH AS POSSIBLE, WITH SLOPED PIPING AS HIGH AS SLOPE WILL ALLOW. RAISE ANY EXISTING PIPING AS REQUIRED TO AVOID CONFLICT WITH NEW CEILING FEATURES AND NEW LIGHT FIXTURES, FIELD VERIFY HEIGHT OF ALL EXISTING (PLUMBING, FIRE PROTECTION AND HVAC) WORK. ROUTE NO PIPING THROUGH ELECTRICAL

### ECTION EQUIPMENT SHALL BE AS INDICATED IN THE EQUIPMENT SCHEDULE. WITH ELECTRICAL BEFORE ORDERING EQUIPMENT REQUIRING ELECTRICAL S. EQUIPMENT WITH MOTORS SHALL BE PROVIDED WITH BUILT-IN STARTERS AND SWITCHES, UNLESS INDICATED OTHERWISE ON THE DRAWINGS. ECTION:

### ULL DESIGN/BUILD SERVICES TO INSTALL NEW FIRE SPRINKLER SYSTEM TO COVER OF THE BUILDING PER NFPA 13. PROVIDE DESIGN, COORDINATION AND PERMITTING PROVIDE SPRINKLERS AS REQUIRED TO COVER ALL AREAS PER ARCHITECTURAL IS AND REFLECTED CEILING PLANS.

### UTION ON:

### ENT SPECIFIED UNDER THIS DIVISION SHALL BE REPAIRED TO MATCH SURROUNDING ORDINATE ALL CUTTING AND PATCHING WITH OTHER TRADES.

# & MATERIALS INSTALLATION:

### ROM OTHER DUCTWORK, PIPING, CONDUIT, ETC. SUPPORT ALL PIPING WITH UPPORTS, ANCHORS AND GUIDES PER ANSI CODE FOR PRESSURE PIPING, ANS B31.1 NDA 31.1 OA-69. SIZING AND SPACING OF HANGERS SHALL BE PER THESE UNLESS OTHERWISE NOTED. "C" CLAMPS SHALL NOT BE USED UNLESS TACK STRAPPED TO STRUCTURAL STEEL MEMBERS.

LL PIPING ABOVE CEILING AS HIGH AS POSSIBLE, WITH SLOPED PIPING AS HIGH VILL ALLOW. RAISE ANY EXISTING PIPING AS REQUIRED TO AVOID CONFLICT WITH NG FEATURES AND NEW LIGHT FIXTURES, FIELD VERIFY HEIGHT OF ALL EXISTING , FIRE PROTECTION AND HVAC) WORK. ROUTE NO PIPING THROUGH ELECTRICAL

### TO SERVE THEM, ROUTE AROUND (NOT OVER) ELECTRICAL EQUIPMENT OR COMPUTER EQUIPMENT AND PROVIDE AUX. DRAIN PANS BELOW PIPING WITH MOISTURE SENSORS TO PROVIDE LOCAL AUDIO AND VISUAL ALARMS AND TO SEND AN ALARM SIGNAL TO THE BUILD ENERGY MANAGEMENT CONTROLS SYSTEM.

- G. REMOVE ALL INACTIVE EXISTING PIPING WITHIN THE SCOPE OF THIS WORK WHICH IS NOT REUSED. WORK NOT SHOWN AS NEW OR EXISTING ON THESE DOCUMENTS SHALL BE REMOVED BACK TO ACTIVE MAINS. CONNECTION POINTS FROM PIPING REMOVED TO EXISTING PIPING TO REMAIN SHALL BE CAPPED AND SEALED WATER/GAS TIGHT, AND RE-INSULATED TO MATCH EXISTING INSULATION ON EXISTING PIPING TO REMAIN. REMOVE ALL UNUSED PIPING BACK TO SOURCE (ACTIVE MAINS OR RISERS) AND CAP.
- H. PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND IN WALLS TO STRUCTURE TO ALLOW ADEQUATE ROOM FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEM. ACCESS PANELS SHALL MAINTAIN THE FIRE RATING OF THE WALL OR CEILING WHERE REQUIRED. SEE ARCHITECTURAL DRAWINGS AND COORDINATE WITH ARCHITECT PRIOR TO INSTALLING ANY ACCESS PANELS.
- I. EQUIPMENT MOUNTED ABOVE CEILING SHALL BE SUSPENDED FROM STRUCTURE ABOVE MOUNTED ON STRUCTURAL STEEL SUPPORTS FRAME MEMBERS (CHANNELS OR ANGLES) WITH ALL-THREAD HANGER RODS, SIZED PER EQUIPMENT WEIGHT REQUIREMENTS. ALL EQUIPMENT SUSPENDED FROM CONCRETE STRUCTURE SHALL BE SUPPORTED BY SHALLOW INSERT CONCRETE ANCHORS, RATED FOR 200 PERCENT OF POINT LOADS; COORDINATE WITH STRUCTURAL REINFORCING OR POST TENSIONING ELEMENTS. ALL EQUIPMENT SUSPENDED FROM STEEL OR WOOD STRUCTURE ABOVE SHALL BE SUSPENDED FROM STRUCTURAL STEEL SUPPORTS FRAMES (CHANNELS OR ANGLES) POSITIVELY BOLTED TO A MINIMUM OF THREE ROOF/FLOOR FRAME MEMBERS ABOVE. SUPPORT FRAMING SYSTEM SHALL BE SIZED TO SUPPORT 200 PERCENT OF THE TOTAL DISTRIBUTED EQUIPMENT WEIGHT, FRAME MEMBERS AND ALL-THREAD RODS SHALL BE SIZED TO SUPPORT 200 PERCENT OF THEIR RESPECTIVE POINT LOAD WEIGHTS. BOLT EQUIPMENT TO SUPPORTS AT EACH EQUIPMENT SUPPORT POINT (MIN. TWO POINTS EACH ON A MIN. OF TWO FRAME MEMBERS). PROVIDE COMBINATION SPRING/NEOPRENE VIBRATION ISOLATORS FOR EQUIPMENT WITH MOVING PARTS (FANS, COMPRESSORS, ETC.). EQUIPMENT SUPPORTS (ANGLES, CHANNELS, ETC.) SHALL EXTEND SUFFICIENTLY PAST FOOTPRINT OF EQUIPMENT TO ALLOW FOR INSTALLATION OF VIBRATION ISOLATORS ABOVE SUPPORTS AND WITHIN EQUIPMENT HEIGHT. EQUIPMENT SUPPORT HANGERS SHALL BE LOCATED TO ALLOW FOR UNRESTRICTED OPENING OF EQUIPMENT ACCESS DOORS/PANELS TO ALLOW FOR PROPER EQUIPMENT MAINTENANCE. LOCATE EQUIPMENT TO PROVIDE ADEQUATE ROOM FROM STRUCTURE, WALLS ABOVE CEILING, AND CEILING FEATURES TO ALLOW FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEM. PROVIDE AUXILIARY
- J. FLASH ALL ROOF AND EXTERIOR WALL PENETRATIONS AND SEAL WATER-TIGHT. PROVIDE WALL SLEEVES FOR ALL WALL PENETRATIONS. PROVIDE ROOF CURB BY EQUIPMENT MANUFACTURER FOR ALL ROOF MOUNTED EQUIPMENT. ALL PIPING AND WIRING CONNECTIONS TO ROOF MOUNTED EQUIPMENT SHALL CONNECT THROUGH THE BOTTOM OF THE UNIT WITHIN THE UNITS' ROOF CURB WHERE UNITS ARE OFFERED WITH STANDARD BOTTOM CONNECTION OPTIONS. WHERE EQUIPMENT IS OFFERED WITH ONLY SIDE EXTERNAL CONNECTIONS, ROUTE CONNECTIONS UP BELOW UNIT, THROUGH THE SIDE OF THE ROOF CURB (MIN. 8" ABOVE THE ROOF) AND SEAL CURB PENETRATION WATER TIGHT. WHERE ROOF MOUNTED EQUIPMENT HAS NO CURB, PROVIDE A SEPARATE 12" HIGH ROOF CURB "PITCH POCKET" WITH CURB CAP AND MIN. 4" OVERHANG WITH DRIP EDGE ON ALL SIDES FOR PIPING/WIRING PENETRATION THROUGH SIDE OF CURB AT 8" ABOVE ROOF. SEAL CURB PENETRATIONS LEAK-PROOF WITH SILICON TYPE, NON-HARDENING SEALANT. UNPROTECTED, DIRECT PENETRATIONS THROUGH ROOF AND STANDARD PITCH POCKETS WITHOUT DRIP PROOF COVERS ARE NOT ACCEPTABLE.

EQUIPMENT WITH COOLING COILS.

- K. PROVIDE PIPE SUPPORTS AT ALL PIPING CHANGES IN DIRECTION AND AT MAXIMUM CENTER DISTANCES PER ANSI CODE FOR PRESSURE PIPING, WITH SIZING AND SPACING OF HANGERS PER THESE STANDARDS, UNLESS OTHERWISE NOTED. MOUNT PIPING ON HANGERS WITHIN 12" OF ROOF SUPPORT STRUCTURE ABOVE OR PROVIDE SEISMIC BRACING FOR LONGER HANGER SUPPORT GROUPED PIPING ON TRAPEZE TYPE CHANNEL SUPPORTS WITH TWO HANGE RODS, ANCHORED TO STRUCTURE ABOVE; OR RACK TYPE CHANNELS, SUPPORTED FROM FLOOR OR GRADE BELOW WITH TWO PIPE STANDS AND FLOOR PLATES BOLTED TO FLOOR; CLAMP PIPING TO SUPPORTS. SUPPORT INDIVIDUAL PIPES FROM ABOVE WITH CLEVIS, ADJUSTABLE "J", OR ADJUSTABLE BAND TYPE HANGERS WITH HANGER RODS ANCHORED TO STRUCTURE ABOVE; OR FROM WALL WITH WALL BRACKET. PROVIDE RISER CLAMPS AT FLOOR PENETRATIONS AND WALL SUPPORT BRACKETS AT VERTICAL PIPING. VERTICAL RISERS SHALL BE RACKED ON WALLS, RESILIENTLY MOUNTED TO WALLS WITH "UNISTRUT" WALL BRACKETS AND "UNISORB" CLAMPING,
- ANCHORS, BEAM CLAMPS, OR "C" CLAMPS TACK WELDED OR STRAPPED TO STEEL STRUCTURE. HANGERS SHALL NOT SUPPORT INSULATED PIPING DIRECTLY FROM PIPE AND SHALL NOT CRUSH THE INSULATION SYSTEM. HANGERS SHALL BE MOUNTED OUTSIDE THE INSULATION WITH
- ALL INSULATED PIPING HANGERS, SADDLES SHALL HAVE WIDTH EOUAL TO 1/2 THE PIPE CIRCUMFERENCE AND LENGTH EQUAL TO 4 TIMES THE INSULATION OUTER DIAMETER.

# FIRE PROTECTION GENERAL NOTES:

- 1. COORDINATE ALL WORK WITH ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL TRADES. PIPE ROUTING SHOWN IS DIAGRAMMATIC. PROVIDE ALL OFFSETS, ETC., TO AVOID INTERFERENCES WITH EQUIPMENT, PIPING, DUCTWORK, LIGHTS, CONDUIT, ETC..
- 2. PROVIDE ACCESS PANELS WHERE REQUIRED FOR VALVES, TESTS, DRAINS, ETC. EXACT LOCATION MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION.
- 3. ALL PIPING SHALL BE SLOPED AS PER SPECS, UNLESS NOTED OTHERWISE ON DRAWINGS.
- 4. PROVIDE PORTABLE FIRE EXTINGUISHERS, QUANTITY AND SPACING, IN ACCORDANCE WITH NFPA 10 AND FIRE MARSHAL'S PREFERENCE.
- AND ELECTRICAL DISCIPLINES. PROVIDE INDIVIDUAL DROPS FOR SPRINKLERS IN CROPPED CEILINGS.
- 6. SEAL ALL THROUGH PENETRATIONS WITH A METHOD APPROVED BY BUILDING OFFICIAL
- ALLOWANCES FOR SUCH IN BID
- 8. ALL NEW PIPING MUST BE COORDINATED WITH ALL OTHER TRADES TO AVOID DUCTWORK, LIGHTING, ETC.
- 9. NOTE CAREFULLY THAT THE FIRE PROTECTION DRAWINGS ARE INTENDED TO INDICATE, ONLY DIAGRAMMATICALLY, THE EXTENT AND GENERAL CHARACTER AND LOCATIONS OF THE WORK INCLUDED. PROVIDE ALL WORK OBVIOUSLY INTENDED, BUT HAVING MINOR DETAILS OMITTED OR NOT SHOWN. COMPLETE AS REQUIRED TO PERFORM THE FUNCTIONS INTENDED. FOLLOW THE ARCHITECTURAL AND/OR CONSTRUCTION SET OF DRAWINGS AND SPECIFICATIONS FOR BUILDING DETAILS AND FIT THE
- 10. ALL SPRINKLER DEFLECTOR DISTANCE REQUIREMENTS SHALL BE IN ACCORDANCE TO THE STANDARDS OUTLINED IN NFPA 13.
- 11. WHERE SURFACE MOUNTED LIGHT FIXTURES DESTRUCT THE DISCHARGE PATTERN OF SPRINKLERS, THE DEFLECTORS SHALL BE MOUNTED BELOW THE BOTTOM OF THE LIGHT FIXTURES NOT TO EXCEED
- 12. SUCCESSFUL BIDDER SHALL REVIEW COMPONENTS OF SPRINKLER SYSTEM WITH ENGINEER PRIOR TO AWARD OF CONTRACT.

12" BELOW ASSOCIATED CEILINGS.

- 13. ALL SYSTEMS MUST BE DRAINABLE THROUGH VALVES LOCATED AT 5' TO 7' A.F.F DISCHARGED OUTSIDE ON GRADE AT 12" A.F.G
- 14. CONTRACTOR TO BE RESPONSIBLE FOR REPAIRING OR REPLACING ITEMS DAMAGED DURING CONSTRUCTIONS.
- 15. ALL SYSTEMS TO BE LEFT IN SERVICE PRIOR TO THE END OF EACH WORKDAY.
- 16. SPRINKLER PIPE SHALL BE PER NFPA STANDARDS. ACCORDING TO THEIR LISTING, "DYNA-FLO", "EZ-FLO" AND XL TYPES ARE ALSO ACCEPTABLE. ALL PIPING SHALL HAVE A CORROSION RESISTANCE RATIO OF 1.0 OR GREATER, CRIMP TYPE INSTALLATIONS ARE NOT ACCEPTABLE.
- 17. DROPS TO SPRINKLERS FROM OVERHEAD BRANCHLINES TO BE 1" UNO.
- 18. SHOP DRAWINGS TO BE SUBMITTED BY CONTRACTOR.
- BELOW BEAMS, NO MORE THAN 22" BELOW DECK.
- 20. ALL COUPLINGS TO BE RIGID TYPE UNO.

# ROOMS OR COMPUTER EQUIPMENT ROOMS, UNLESS SPECIFICALLY SERVING THAT AREA ALONE. WHERE PIPING MUST BE ROUTED THROUGH ELECTRICAL ROOMS OR COMPUTER EQUIPMENT ROOMS

DRAIN PAN BENEATH ENTIRE UNIT FOR WATER STORING EQUIPMENT (WATER HEATERS) AND

OR EQUIVALENT. HANGER RODS SHALL BE ANCHORED TO STRUCTURE ABOVE WITH CONCRETE FOAM-GLAS INSERTS AT ALL SUPPORT POINTS. PROVIDE 18 GA. SHEET METAL SADDLES AT

5. ALL SPRINKLER PIPING AND SUPPLY PIPING MUST BE MOUNTED AS COORDINATED WITH MECHANICAL

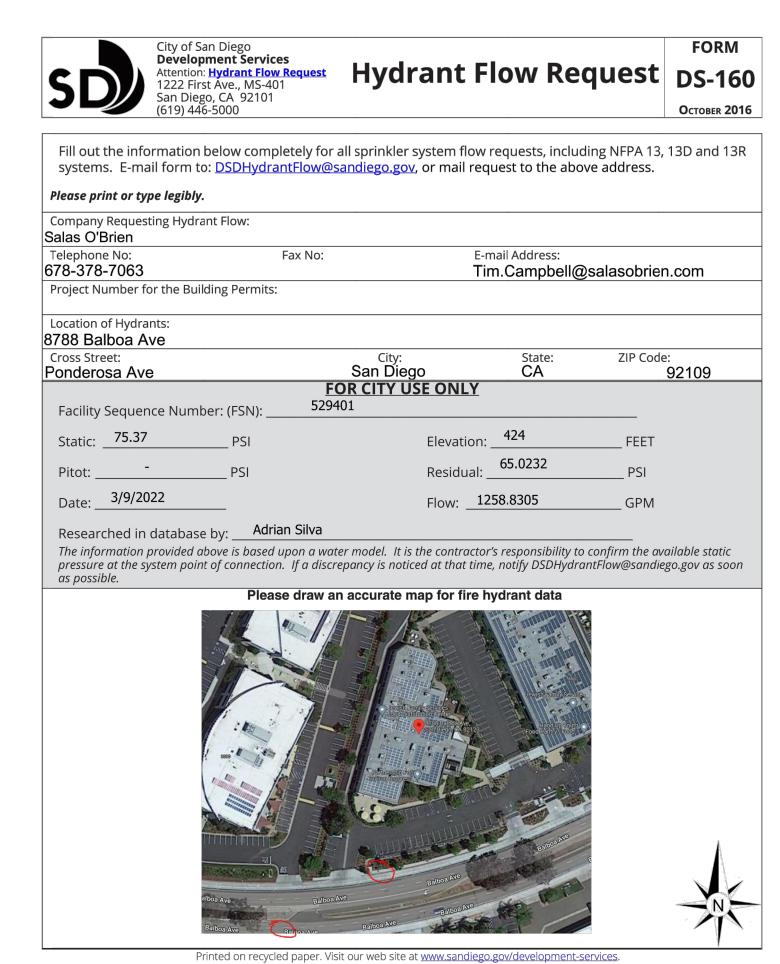
7. CONTRACTOR MUST VISIT THE BUILDING SITE, DETERMINE THE EXISTING CONDITIONS, AND MAKE

WORK OF THE FIRE PROTECTION DRAWINGS AND SPECIFICATIONS THERETO.

19. CONSTRUCTION IS NONCOMBUSTIBLE OBSTRUCTED CONSTRUCTION SPRINKLERS TO BE INSTALLED 1"

LEGEND								
SYMBOL	DESCRIPTION							
	EXTENDED CROSSMAIN							
	BRANCHLINE							
	VALVE							
XXX	HYDRAULIC CALCULATION REFERENCE NUMBER							
CIID F	FLEXIBLE COUPLING - GRUVLOCK 7000 OR EQUIV.							
*	HANGER - * DENOTES HANGER NUMBER PER 2/FP0.1							
×	RESTRAINT							
	ZONE OF INFLUENCE							
	LONGITUDINAL BRACE							
1,	LATERAL BRACE							
4	4 WAY BRACE							

AUTOMATIC FIRE SPRINKLER LEGEND								
SYMBOL	MANUFACTURER	TYPE	TEMP.	ORIFICE	K-FAC	MIN. PSI	FINISH	ESC
•	VIKING MICROFAST HP	SSP	165	1/2"	5.6	7 PSI	CHROME	REC
0	VIKING MICROFAST HP	SSU	200	1/2"	5.6	7 PSI	BRASS	NONE
٢	UPRIGHT/PEND	SSP/SSU	165/200	1/2"	5.6	7 PSI		



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DS-160 (10-16)

