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ABBREVIATIONS LIST         Res         Part         Res         Part         Res         Res         Part         Res         Res         Part         Res         Res         Part         Res         Res         Part         Res	STAT JAR SGROOVE NE ATURE\ DUD ARY JONCRETE RANING JARU JONCRETE RANING JARL JARU J	ATE OF CALIFORN IENT OF GENERAL A DEPARTMEN A DEPARTME	NIA SERVICES NT OF STATE SCADERO SCADERO SCADERO ACCENTERNE IT VIT VIT VALACE GROUP 612 CLARION CT. SAN LUIS OBISPO, CA 93401 (805) 544-4011 CONTACT: BRETT HADLEY E-MAIL: bretth @Wallacegroup.us HVAC ELECTRICAL ENGINEER VHITTINGTON ELECTRIC INC. 1940 INDUSTRIAL ORIVE AUBURN, CA 95603 (S3) 823-3055 CONTACT: NATHAN BEAR E-MAIL: nathan@Whittingtonelectric.com CONSTRUCTION MANAGEMENT 8835 RESEARCH DRIVE AUSUSTRUCTION MANAGEMENT 8835 RESEARCH DRIVE RVINE, CA 92518
D.G. DECOMPOSED GRANITE SYM. SYMMETRICAL	(906) 934-5103 CONTACT: JUAN JOSE VILLATORO E-MAIL: jvillatoro@glumac.com		(949) 679-2752 CONTACT: DAVID DUNSTAN E-MAIL: david.dunstan@apsicm.com
SYMBOLS LEGERDD         CONCRETE       COOR FAMING (CONT, MEMBER)       CONT, MEMBER)       Control FAMING Section Space       Control Faming Section Space <thcontrol faming<br="">Section Space       Control Fam</thcontrol>	PROJECT CODE DATA CODES USED: 2019 CALIFORNIA ADMINISTRATIVE CODE, CCR, TITLE 24, PART 1 2019 CALIFORNIA BUILDING CODE, CCR, TITLE 24, PART 3 2019 CALIFORNIA ELECTRICAL CODE, CCR, TITLE 24, PART 5 2019 CALIFORNIA ENECHANICAL CODE, CCR, TITLE 24, PART 5 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 5 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 6 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 6 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 6 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 6 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 6 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 6 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 6 2019 CALIFORNIA FRE CODE, CCR, TITLE 24, PART 9 2019 CALIFORNIA FRE CODE, CR, TITLE 24, PART 9 2010 CT 200 F 2019 COD F 2019 COD COLPART FADIO COVERAGE I 2010 CL	MU       SCOPE OF WO         1       THIS WORK IS WITHIN ADDITIONAL REQUIRE POINT OF CONNECTIO PATHWAY, AND PG&E DISTRIBUTION SWITCH GENERATOR.         1:       2:       CONSTRUCT NEW ELE POINT OF CONNECTIO SWITCH GENERATOR.         1:       1:       3:       CONSTRUCT MASONR         4:       CONSTRUCT MASONR       4:       CONSTRUCT MASONR         4:       CONSTRUCT MASONR       5:       THE SCOPE OF THIS PI         5:       THE SCOPE OF THIS PI       2019 CBC 11B-203 GEI         4:       DSA ACCESS       PACIFIC GAS & ELECTRIC         MU       TEEL & METAL DECK       DEFERRED API         1:       FIRE ALARM SYSTEM:       STATE FIRE MARSHALL         MU       TEEL & METAL DECK       DEFERRED API         1:       FIRE ALARM SYSTEM:       STATE FIRE MARSHAL.	RK A SECURE FACILITY. SEE CONTRACT DOCUMENTS FOR MENTS. CTRICAL SERVICE FROM PACIFIC GAS AND ELECTRIC (PG&E) N INCLUDING METER AND SWITCHGEAR, PRIMARY CONDUCTOR DESIGNATED UPGRADES. IN ADDITION, CONSTRUCT NEW IGEAR, TRANSFORMERS, AND EMERGENCY BACK-UP Y STRUCTURE TO HOUSE ELECTRICAL DISTRIBUTION GEAR. ROVEMENTS AROUND THE AREAS OF THE NEW SWITCHGEAR GENERATOR EQUIPMENT. SITE IMPROVEMENTS SHALL INCLUDE AGE IMPROVEMENTS, ASPHALT PAVING, CONCRETE PAVING, WALLS, ETC. SITE IMPROVEMENTS SHALL INCLUDE ALL ELECTRICAL PATHWAYS. AT CONTRACTORS OPTION, OF ELECTRICAL PATHWAYS SHALL BE PERMITTED. ROJECT IS EXEMPT FROM DSA ACCESSIBILITY REQUIREMENTS PER VERAL EXCEPTIONS, SECTION 11B-203.5. DIST M 119-40-51-0001-00001 22-5-4869 FOR FIREHOUSE OSFM #19-40-51-0001-00001 22-5-4867 FOR STEAM PLANT OSFM #19-40-51-0001-00031 22-5-4872 FOR ELECTRICAL UPGRADE EXEMPT APP.# 123054312 THE FIRE ALARM SYSTEM SHALL CONFORM TO THE CALIFORNIA E) ARTICLE 760 AND THE CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS INCLUDING CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS INCOLDING CALIFORNIA STATE FIRE MARSHALL USTING NUMBERS INCOLDING CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS INCOLDING CALIFORNIA STATE FIRE MARSHALL LOTIONS TO THE STATE IN ETT HAT THE SYSTEM HAS BEEN INFOLLED AND TESTED IN HE 2019 MFPA 72 SECTIONS 7.5.6.2, 10.18.1, AND 14.1.1. FMODIFICATIONS TO THE EXISTING FIRE ALARM SYSTEM, A FTHE SYSTEM HASE BEEN APPROVED BY THE CALIFORNIA BEFOR REQUESTING FINAL APPROVAL OF THE INSTALLATION, ACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE STATE HING HE 2019 MFPA 72 SECTIONS 7.5.6.2, 10.18.1, AND 14.1.1.1
<ul> <li>8. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL ADJACENT WORK AND SHALL COORDINATE WITH ALL OTHER TRADES SO AS TO FACILITATE THE GENERAL PROSES OF THE WORK EACH TRADES SHALL AFOR NALL OTHER TRADES SO AS TO FACILITATE THE GENERAL PROSES OF THE WORK EACH TRADE SHALL AFOR NALL OTHER TRADES SUBMIT AL OF BID. G.C. SHALL FOR THE INSTALLATION OF THEIR WORK AND QUANTITIES OF THEMS TO BE REMOVED/REPLACED OR TO BE REINSTALLED PRIOR TO SUBMITTAL OF BID. G.C. SHALL HOUTDY ARCHTECT IN WRITING OF ANY DISCREPANCIES PRIOR TO THE BID DUE DATE FOR FURTHER CLARIFICATION - AS DEFINED IN BID INSTRUCTIONS.</li> <li>10. G.C. WILL BE HELD RESPONSIBLE FOR COMPLETION OF ENTIRE WORK IN A MANNER/INTENT FOR THIS TYPE OF PROJECT REGARDLESS OF QUANTITIES SHOWN IN PLANS</li> <li>11. ANY EXISTING ITEMS SHOWN WITHOUT NOTATION FOR REMOVAL SHALL BE REQUIRED TO REMISE NORM TO AND ARDOXATIONS. G.C. WILL BE REQUIRED TO REMAIN TOTATION FOR REMOVAL ISS OF QUANTITIES SHOWN IN PLANS</li> <li>12. SEE ALSO ENGINEERED DRAWINGS FOR FULL EXTENT OF THE DEMOLITION WORK.</li> <li>13. ITEMS SHOWN TO BE REMOVED SHALL BE DISPOSED OF PROPERLY BY THE G.G. UNLESS OTHER WISE NOTED.</li> <li>14. BUILDINGS WILL BE FULLY OCCUPIED DURING CONSTRUCTION. CONTRACTOR SHALL BE REQUIRED TO ASS. SAND AUGO STATUCTION. CONTRACTOR SHALL BE REMOVED SHALL BE DISPOSED OF PROPERLY BY THE G.G. UNLESS OTHER WISES CORDINANCE DURING CONSTRUCTION. CONTRACTOR SHALL BE REMOVED SHALL BE DISPOSED OF PROPERLY BY THE G.G. UNLESS OTHER WISES CORDINATED WITH AVAIL MADA SSOCIATED REMANDED STRUCTION. CONTRACTOR SHALL BE REMOVED SHALL BE DISPOSED OF PROPERLY BY THE G.G. UNLESS OTHER WISE NOTED.</li> <li>15. MAXIMUM CONTINUOUS SOM THME FOR SPECIFIC SERVICES IS AS FOLLOWS: CONTROLS, FTC.</li> <li>16. MAXIMUM CONTINUOUS DOWN TIME FOR SPECIFIC SERVICES IS AS FOLLOWS: CONTROLS, FTC.</li> <li>17. MAXIMUM CONTINUOUS DOWN TIME FOR SPECIFIC SERVICES IS AS FOLLOWS: CONTROLS, FTC.</li> <li>18. MAXIMUM CONTINUOUS DOWN TIME FOR SPECIFIC SERVICES IS AS FOLLOWS: CONTROLS, FTO DISCONNECTING REMOVAL OF EX</li></ul>	tocode	<ul> <li>MANUFACTURER'S SH EXHAUST SYSTEM. CC SAN LUIS OBISPO AIR THE GENERATOR WITH SUBMITTAL SHALL INC EMISSIONS OUTPUT OF TH</li> <li>ELECTRICAL TRAPEZE, PARTY FIRM HIRED BY PRODUCT CUT SHEETS STAMPED BY A LICENS COMPLIANCE WITH 20</li> <li>ELECTRICAL SHORT CH THE WINNING ELECTR</li> <li>ELECTRICAL SHORT CH THE WINNING ELECTR</li> <li>I. NO DEMOLITION WOR COMPONENTS WITHOUT FIRE SPRINKLER AND F PERFORMED ONLY BY ALARM CONTRACTOR FOR DEMOLITION/INS</li> <li>CONTRACTOR SHALL E CBC PART 2 AND CHAI WORK.</li> </ul>	OP DRAWINGS AND TEST RESULTS FOR THE GENERATOR WITH INTRACTOR SHALL SUBMIT A COMPILED COMPLETE SUBMITTAL T POLLUTION CONTROL DISTRICT (SLO APCD) SUBSTANTIATING THA 4 EXHAUST SYSTEM COMPLIES WITH TIER-4 CARB REQUIREMENT CLUDE EITHER MANUFACTURER'S IN-HOUSE TEST DATA FOR R FIELD VERIFIED TEST RESULTS TO DOCUMENT THE FULL CONTE E GENERATOR EXHAUST, NOISE, AND DIRECTION OF FLOW. AND ELECTRICAL EQUIPMENT ANCHORING - PREPARED BY A 3 <sup>rd</sup> THE ELECTRICAL CONTRACTOR. SUBMITTAL SHALL INCLUDE - FOR ALL MATERIALS USED AND STRUCTURAL CALCULATIONS ED CALIFORNIA CIVIL OR STRUCTURAL ENGINEER TO SO 019 CBC PART 1 AND PART 2-VOLUME 2. ACUIT, COORDINATION AND ARC-FLASH STUDIES - PREPARED BY ICAL EQUIPMENT VENDOR.

	INDEX	TO DRAWINGS	INDEX <sup>-</sup>	TO DRAWINGS (CONT.)		
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	MPE0.1 MPE1	MECHANICAL PLUMBING LEGENDS, NOTES & SCHEDULES MECHANICAL PLUMBING GENERATOR YARD FLOOR				
	MPE2 MPE3	PLAN MECHANICAL PLUMBING PIPING P&ID & SCHEMATICS MECHANICAL PLUMBING DETAILS				
IEER	E1.11 EE0.0 EE1.0	ROOF PLAN - LAUNDRY & AUDITORIUM ELECTRICAL COVER SHEET ELECTRICAL SITE PLAN				
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	EE6.2 EE9.1 EE9.2 EE9.3	ELECTRICAL ENLARGED PLANS ELECTRICAL DETAILS ELECTRICAL DETAILS ELECTRICAL DETAILS				
EMENT	EE9.4 EE9.5 EE9.6 EE9.7 SHEETS	FUEL TANK DETAILS FUEL TANK DETAILS 12KV & 5KV DISTRIBUTION SWITCHGEAR DETAILS DETAILS 41				
	TOTAL SHE	ETS = 55 FRMIT #22-S-4872 FOR ELECTRICAL				
	UPGRADE OSFM #19-	40-27-0001-00032				
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N/A RESPON. PARTY	CHAPTER 3	Y N/A RESPON PARTY	<b>_</b>
	GREEN BUILDING SECTION 301 GENERAL		<b>5.106.4 BICYCLE PARKING.</b> For buildings within specified in Section 103, comply with Section 5.10 State Architect pursuant to Section 105, comply w
	<b>301.1 SCOPE.</b> Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures asymptotic but this code.		5.106.4.1 Bicycle parking. [BSC-CG] Comply applicable local ordinance, whichever is strict
	not required unless adopted by a city, county, or city and county as specified in Section 101.7. 301.3 NONRESIDENTIAL ADDITIONS AND ALTERATIONS. IBSC-CG1		5.106.4.1.1 Short-term bicycle parking. generate visitor traffic, provide permane entrance, readily visible to passers-by, fo added, with a minimum of one two-bike
	The provisions of individual sections of Chapter 5 apply to newly constructed buildings, building additions of 1,000 square feet or greater, and/or building alterations with a permit valuation of \$200,000 or above (for occupancies within the authority of California Building Standards Commission). Code sections relevant to additions and		Exception: Additions or alterations whic 5.106.4.1.2 Long-term bicycle parking. F tenant-occupants, provide secure bicycle
	alterations shall only apply to the portions of the building being added or altered within the scope of the permitted work.		spaces with a minimum of one bicycle pa 5.106.4.1.3 For additions or alterations th
	A code section will be designated by a banner to indicate where the code section only applies to newly constructed buildings [N] or to additions and/or alterations [A]. When the code section applies to both, no banner will be used.		<ul> <li>provide secure bicycle parking for 5 percenting for 5 percent</li></ul>
	<b>Note:</b> On and after January 1, 2014, certain commercial real property, as defined in Civil Code Section 1101.3, shall have its noncompliant plumbing fixtures replaced with appropriate water-conserving plumbing fixtures		anticipated tenant-occupant vehicular pa 5.106.4.1.5 Acceptable bicycle parking far
	under specific circumstances. See Civil Code Section 1101.1 <i>et seq.</i> for definitions, types of commercial real property affected, effective dates, circumstances necessitating replacement of noncompliant plumbing fixtures, and duties and responsibilities for ensuring compliance.		1. Covered, lockable enclosures wi 2. Lockable bicycle rooms with per
	<b>301.3.2 Waste Diversion.</b> The requirements of Section 5.408 shall be required for additions and alterations whenever a permit is required for work.		<ol> <li>Lockable, permanently anchored Note: Additional information on record from Sacramento Area Bicycle Advoct</li> </ol>
	301.4 POBLIC SCHOOLS AND COMMONITY COLLEGES. (see GBSC) 301.5 HEALTH FACILITIES. (see GBSC) SECTION 302 MIXED OCCUPANCY BUILDINGS		5.106.4.2 Bicycle parking. [DSA-SS] For pub 5.106.4.2.1 and 5.106.4.2.2
	<b>302.1 MIXED OCCUPANCY BUILDINGS.</b> In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.		with a minimum of four two-bike capacity 5.106.4.2.2 Staff bicycle parking. Provid a minimum of two staff bicycle parking sp
	SECTION 303 PHASED PROJECTS		be convenient from the street or staff par 1.Covered, lockable enclosures with 2.Lockable bicycle rooms with perma
	only those code measures relevant to the building components and systems considered to be new construction (or newly constructed) shall apply.		3.Lockable, permanently anchored b 5.106.5.2 DESIGNATED PARKING FOR CLEA that add 10 or more vehicular parking spaces.
	<b>303.1.1 Initial Tenant improvements.</b> The provisions of this code shall apply only to the initial tenant improvements to a project. Subsequent tenant improvements shall comply with the scoping provisions in Section 301.3 non-residential additions and alterations.		TABLE 5 106 5 2 - PARKING
	ABBREVIATION DEFINITIONS: HCD Department of Housing and Community Development RSC Control Collifornia Building Standards Commission		TOTAL NUMBER OF PARKING SPAC
	DSA-SS       Division of the State Architect, Structural Safety         OSHPD       Office of Statewide Health Planning and Development         LR       Low Rise		10-25
	HRHigh RiseAAAdditions and AlterationsNNew		51-75 76-100
	CHAPTER 5 NONRESIDENTIAL MANDATORY MEASURES		101-150 151-200
	DIVISION 5.1 PLANNING AND DESIGN		201 AND OVER
	SECTION 5.101 GENERAL 5.101.1 SCOPE The provisions of this chapter outline planning, design and development methods that include environmentally		L. Calculation for spaces shall be re Note: Designated parking for clean air vehicles shall enforcing agencies.
	responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.		<b>5.106.5.2.1 - Parking stall marking</b> . Paint that the lower edge of the last word aligns
	<b>5.101 3.102 DEFINITIONS</b> <b>5.102.1 DEFINITIONS</b> The following terms are defined in Chapter 2 (and are included here for reference)		vehicle: CLEAN AIR / VAN POOL / EV Note: Vehicles bearing Clean Air Vehicle s
	<b>CUTOFF LUMINAIRES.</b> Luminaires whose light distribution is such that the candela per 1000 lamp lumens does not numerically exceed 25 (2.5 percent) at an angle of 90 degrees above nadir, and 100 (10 percent) at a vertical angle of 80 degrees above nadir. This applies to all lateral angles around the luminaire		5.106.5.3 Electric vehicle (EV) charging. [N]     5.106.5.3.2 to facilitate future installation of electric
	LOW-EMITTING AND FUEL EFFICIENT VEHICLES. Eligible vehicles are limited to the following:		installed, it shall be in accordance with the Calif 5.106.5.3.1 Single charging space requir
	<ol> <li>Zero emission vehicle (ZEV), including neighborhood electric vehicles (NEV), partial zero emission vehicle (PZEV), advanced technology PZEV (AT ZEV) or CNG fueled (original equipment manufacturer only) regulated under Health and Safety Code section 43800 and CCR, Title 13, Sections 1961 and 1962.</li> <li>High officiane unchicles regulated by the SEC to the section 43800 and CCR.</li> </ol>		accordance with the California Electrical C not limited to, the following:
	<ul> <li>A mign-efficiency vehicles, regulated by U.S. EPA, bearing High-Occupancy Vehicle (HOV) car pool lane stickers issued by the Department of Motor Vehicles.</li> <li>NEIGHBORHOOD ELECTRIC VEHICLE (NEV) A motor vehicle that meets the definition of "low speed vehicle."</li> </ul>		<ol> <li>The type and location of the EVS</li> <li>A listed raceway capable of acco</li> <li>The raceway shall not be less that</li> </ol>
	either in Section 385.5 of the Vehicle Code or in 49CFR571.500 (as it existed on July 1, 2000), and is certified to zero-emission vehicle standards.		<ol> <li>The raceway shall originate at a sclose proximity to the proposed lo enclosure or equivalent.</li> <li>The service panel or subpanel school or subpa</li></ol>
	<b>TENANT-OCCUPANTS.</b> Building occupants who inhabit a building during its normal hours of operation as permanent occupants, such as employees, as distinguished from customers and other transient visitors.		40-ampere dedicated branch circ 5.106.5.3.2 Multiple charging space requ
	<b>VANPOOL VEHICLE.</b> Eligible vehicles are limited to any motor vehicle, other than a motortruck or truck tractor, designed for carrying more than 10 but not more than 15 persons including the driver, which is maintained and used primarily for the nonprofit work-related transportation of adults for the purpose of ridesharing.		Table 5.106.5.3.3 raceway(s) is/are require in accordance with the California Electrical not limited to, the following:
	<b>ZEV.</b> Any vehicle certified to zero-emission standards.		<ol> <li>The type and location of the EVS</li> <li>The raceway(s) shall originate at terminate in close provimity to the</li> </ol>
	SECTION 5.106 SITE DEVELOPMENT 5.106.1 STORM WATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB LESS THAN ONE ACRE OF LAND. Nowly constructed assists and additions which distributed by the second statement of the second		<ul> <li>suitable cabinet(s), box(es), ender</li> <li>3. Plan design shall be based upon</li> <li>4. Electrical calculations shall subst</li> </ul>
	a larger common plan of development or sale, shall prevent the pollution of storm water runoff from the construction activities through one or more of the following measures:		equipment and any on-site distrib charge all required EVs at its full 5. The service panel or subpanel(s)
	<ul> <li>5.106.1.1 Local ordinance. Comply with a lawfully enacted storm water management and/or erosion control ordinance.</li> <li>5.106.1.2 Best Management Practices (BMPs). Prevent the loss of soil through wind or water provide by</li> </ul>		5.106.5.3.3 EV charging space calculation multiple charging space requirements appl
	<ul> <li>implementing an effective combination of erosion and sediment control and good housekeeping BMPs.</li> <li>Soil loss BMPs that should be considered for implementation as appropriate for each project include, but are not limited to, the following:</li> </ul>		Exceptions: On a case-by-case basis wher infrastructure is not feasible based upon or
	<ul> <li>a. Scheduling construction activity during dry weather, when possible.</li> <li>b. Preservation of natural features, vegetation, soil, and buffers around surface waters.</li> <li>c. Drainage swales or lined ditches to control stormwater flow.</li> <li>d. Mulching or hydroseeding to stabilize disturbed soils.</li> </ul>		<ol> <li>Where there is insufficient ele</li> <li>Where there is evidence suita local utility infrastructure desir</li> </ol>
	<ul> <li>e. Erosion control to protect slopes.</li> <li>f. Protection of storm drain inlets (gravel bags or catch basin inserts).</li> <li>g. Perimeter sediment control (perimeter silt fence, fiber rolls).</li> <li>h. Sediment trap or sediment basin to retain sediment on site.</li> </ul>		implementation of Section 5.1 project.
	<ul> <li>i. Stabilized construction exits.</li> <li>j. Wind erosion control.</li> <li>k. Other soil loss BMPs acceptable to the enforcing agency.</li> </ul>		TABLE 5.106.5.3.3TOTAL NUMBER OF PARKING SF
	<ol> <li>Good housekeeping BMPs to manage construction equipment, materials, non-stormwater discharges and wastes that should be considered for implementation as appropriate for each project include, but are not limited to the following:</li> </ol>		0-9 10-25
	<ul> <li>a. Dewatering activities.</li> <li>b. Material handling and waste management.</li> <li>c. Building materials stockpile management.</li> </ul>		26-50 51-75
	<ul> <li>d. Management of washout areas (concrete, paints, stucco, etc.).</li> <li>e. Control of vehicle/equipment fueling to contractor's staging area.</li> <li>f. Vehicle and equipment cleaning performed off site.</li> <li>g. Spill prevention and control</li> </ul>		76-100 101-150
	h. Other housekeeping BMPs acceptable to the enforcing agency.		151-200 201 AND OVER
	<b>5.106.2 STORMWATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB ONE OR MORE ACRES OF LAND.</b> Comply with all lawfully enacted stormwater discharge regulations for projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of a larger common plan of development sale.		1. Calculation for spaces shall be 5 106 5 3 4 INI Identification. The con-
	<b>Note:</b> Projects that (1) disturb one acre or more of land, or (2) disturb less than one acre of land but are part of the larger common plan of development or sale must comply with the post-construction requirements detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General permit for Stormwater Discharges		reserved overcurrent protective device raceway termination location shall be pe
	Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board or the Lahontan Regional Water Quality Control Board (for projects in the Lake Tahoe Hydrologic Unit).		<b>5.106.5.3.5 [N]</b> Future charging spaces 5.106.5.2 Designated parking for clean
	(pre-project hydrology) with the installation of postconstruction stormwater management measures. The NPDES permits emphasize runoff reduction through on-site stormwater use, interception, evapotranspiration, and infiltration through nonstructural controls, such as Low Impact Development (LID) practices, and conversation		5.106.8 LIGHT POLLUTION REDUCTION. [N] 100
	aesign measures. Stormwater volume that cannot be addressed using nonstructural practices is required to be captured in structural practices and be approved by the enforcing agency. Refer to the current applicable permits on the State Water Resources Control Board website at:		comply with the following: 1. The minimum requirements in the Cali
	www.waterboards.ca.gov/constructionstormwater. Consideration to the stormwater runoff management measures should be given during the initial design process for appropriate integration into site development.		<ol> <li>Backlight (B) ratings as defined in IES TI</li> <li>Uplight and Glare ratings as defined in in Chapter 8) and</li> </ol>
			<ol> <li>Allowable BUG ratings not exceeding t ordinance lawfully enacted pursuant to</li> </ol>
			Exceptions: [N] 1. Luminaires that qualify as exceptions in 2. Emergency lighting
			<ol> <li>Building facade meeting the requireme</li> <li>Custom lighting features as allowed by Alternate materials, designs and method</li> </ol>
			5. Luminaires with less than 6,200 initial lu
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# **2019 CALIFORNIA GREEN BUILDING STANDARDS** FIAL MANDATORY MEASURES, SHEET 1 (July 2021, Includes .

							YN	A RESPO	N.	
authority of California Building Standards Commission as 1. For buildings within the authority of the Division of the Section 5.106.4.2	TABLE 5.106.8 [N] AND GLARE (BUG) R	MAXIMUM A ATINGS 1,2	ALLOWABLE	BACKLIGHT	, UPLIGHT			PARTY	SECTION 5.303 INDOOR WATER USE 5.303.1 METERS. Separate submeters or metering dev Sections 503.1.1 and 503.1.2.	vices shall be installed for the uses described
th Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the	ALLOWABLE RATIN	G LIGHTING	LIGHTING ZONE LZ1	LIGHTING ZONE LZ2	LIGHTING ZONE LZ3	LIGHTING ZONE LZ4			5.303.1.1 Buildings in excess of 50,000 square fe	et. Separate submeters shall be installed as f
the new project or an addition or alteration is anticipated to anchored bicycle racks within 200 feet of the visitors' 6 of new visitor motorized vehicle parking spaces being	MAXIMUM ALLOWABLE	LZU							<ol> <li>For each individual leased, rented or other termore than 100 gal/day (380 L/day), including cleaners, restaurant or food service, medical</li> </ol>	nant space within the building projected to co ,, but not limited to, spaces used for laundry of or dental office, laboratory, or beauty salon o
acity rack. dd nine or less visitor vehicular parking spaces.	Luminaire greater than 2 mounting heights (MH) fro	n N/A	No Limit	No Limit	No Limit	No Limit			shop. 2. Where separate submeters for individual the following subsystems:	building tenants are unfeasible, for water sup
new buildings with tenant spaces that have 10 or more rking for 5 percent of the tenant-occupant vehicular parking ng facility.	property line Luminaire back hemisphere	is N/A	P2	<b>D</b> 2	D4	D4			<ul> <li>a. Makeup water for cooling towers w</li> <li>b. Makeup water for evaporative cool</li> <li>c. Steam and hot water boilers with example.</li> </ul>	here flow through is greater than 500 gpm (30 ers greater than 6 gpm (0.04 L/s). nergy input more than 500,000 Btu/h (147 kW
add 10 or more tenant-occupant vehicular parking spaces, of the tenant vehicular parking spaces being added, with a	1-2 MH from property line Luminaire back hemisphere	is N/A	B2	83	B4	B4			<b>5.303.1.2 Excess consumption.</b> A separate subm tenant within a new building or within an addition	eter or metering device shall be provided for n that is projected to consume more than 1,00
projects provide secure bicycle parking for 5 percent of the	0.5-1 MH from property lin	e N/A	B1	B2	83	ВЗ			gal/day. 5.303.3 WATER CONSERVING PLUMBING FIXTURES AN	ND FITTINGS. Plumbing fixtures (water closets
ng spaces with a minimum of one bicycle parking facility. ty for Sections 5.106.4.1.2, 5.106.4.1.3, and 5.106.4.1.4 shall	less than 0.5 MH from property line	N/A	BO	BO	B1	B2			urinals) and fittings (faucets and showerheads) shall co 5.303.3.1 Water Closets. The effective flush volu	mply with the following: ume of all water closets shall not exceed 1.28 g
t one of the following: permanently anchored racks for bicycles;	MAXIMUM ALLOWABLE UPLIGHT RATING (U)								per flush. Tank-type water closets shall be certifie WaterSense Specification for Tank-Type toilets.	d to the performance criteria of the U.S. EPA
nently anchored racks; or icycle lockers. mended bicycle accommodations may be obtained	For area lighting 3 For all other outdoor	N/A	UO	U0	U0	UO			Note: The effective flush volume of dual flush toil of two reduced flushes and one full flush.	ets is defined as the composite, average flush
es. schools and community colleges, comply with Sections	lighting,including decorativ luminaires	e N/A	U1	U2	U3	UR			5.303.3.2 Urinals 5.303.3.2.1 Wall-mounted Urinals. The effect	tive flush volume of wall-mounted urinals sha
de permanently anchored bicycle racks conveniently accessed	MAXIMUM ALLOWABLE GLARE RATING ₅ (G)								5.303.3.2.2 Floor-mounted Urinals. The effect	ctive flush volume of floor-mounted or other ເ
icks per new building. Dermanent, secure bicycle parking conveniently accessed with es per new building. Acceptable bicycle parking facilities shall	Luminaire greater than 2 M from property line	H N/A	G1	G2	G3	G4			shall not exceed 0.5 gallons per flush. 5.303.3.3 Showerheads. [BSC-CG]	
g area and shall meet one of the following: manently anchored racks for bicycles;	Luminaire front hemispher 1-2 MH from property line	e is N/A	G0	G1	G1	G2			5.303.3.3.1 Single showerhead. Showerhead 1.8 gallons per minute at 80 psi. Showerhead U.S. EPA WaterSense Specification for Showe	Is shall have a maximum flow rate of not more ds shall be certified to the performance criteria rheads.
ntly anchored racks; or cle lockers.	Luminaire front hemispher 0.5-1 MH from property lin	e is N/A	G0	G0	G1	G1			5.303.3.3.2 Multiple showerheads serving on showerhead, the combined flow rate of all th	e shower. When a shower is served by more showerheads and/or other shower outlets
AIR VEHICLES. In new projects or additions or alterations by de designated parking for any combination of vehicles as follows:	Luminaire back hemisphere less than 0.5 MH from property line	n/A	G0	G0	G0	G1			controlled by a single valve shall not exceed designed to allow only one shower outlet to	1.8 gallons per minute at 80 psi, or the shower be in operation at a time.
	1. IESNA Lighting Zones 0 a the California Energy Code	nd 5 are not app and Chapter 10 c	licable; refer to I f the <i>Callifornia</i>	⊥ _ighting Zones a A <i>dministrative</i> (	as defined in <i>Code.</i>				Note: A hand-held shower shall be considere	d a showerhead.
NUMBER OF REQUIRED SPACES           0	2. For property lines that a property line may be consi	but public walkw lered to be 5 fee	ays, bikeways, p t beyond the act	lazas and parki ual property lir	ng lots, the ne for purpose				5.303.3.4 Faucets and fountains. 5.303.3.4.1 Nonresidential Lavatory faucets.	Lavatory faucets shall have a maximum flow
3	of determining compliance roadways and public transi	with this section corridors, the p	. For property lin roperty line may	hes that abut pu be considered	ublic to be the				not more than 0.5 gallons per minute at 60 ps	j.
9	compliance with this section	dway or public tr n.	ansit corridor fo	r the purpose c					gallons per minute at 60 psi. Kitchen faucets r maximum rate, but not to exceed 2.2 gallons	may temporarily increase the flow above the per minute at 60 psi, and must default to a m
12 18	3. General lighting luminain meet these reduced rating <i>U</i> -value limits for "all other	es in areas such a . Decorative lum outdoor lighting	as outdoor parki inaries located ir "	ng, sales or stor n these areas sh	rage lots shall nall meet				flow rate of 1.8 gallons per minute at 60 psi.	shall have a maximum flow rate of not more
21 AT LEAST 12% OF TOTAL <sup>1</sup>	5.106.8.1 Facing- Back	ight							gallons per minute/20 [rim space (inches) at 6	50 psi].
ided up to the nearest whole number.	Luminaries within 2MH the fixture, and shall co zone and distance to th	of a property line mply with the ba e nearest point of	shall be oriented cklight rating spe f that property lir	d so that the ne ecified in Table ! ne.	arest property 5.106.8 based o	line is behind n the lighting			5.303.3.4.4 Metering faucets. Metering faucets	ets shall not deliver more than 0.20 gallons pe
ount towards the total parking spaces required by the local	Exception: Corners. If f point to the luminaire, t	wo property lines hen the luminaire	s (or two segmen e may be oriente	ts of the same d so that the int	property line) h tersection of th	ave equidistant e two lines (the			maximum flow rate of not more than 0.20 ga Note: Where complying faucets are unavailab	Illons per minute/20 [rim space (inches) at 60 ole, aerators or other means may be used to a
the paint used for stall striping, the following characters such h the end of the stall striping and is visible beneath a parked	corner) is directly behin on the property lines to	d the luminaire. determine the re	The luminaire sha equired backlight	all still use the or rating.	distance to the	nearest points(s	;)		reduction.	
kers from expired HOV lane programs may be considered	5.106.8.2 Facing-Glare. For luminaires covered	by 5.106.8.1, if a	property line also	o exists within o	or extends into	he front			When installed, shall meet the requirements (Appliance Efficiency Regulations), Section 16	in the California Code of Regulations, Title 20 j05.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A)
nstruction shall comply with Section 5 106 5 3 1 or Section	rating specified in Table nearest property line w	5.106.8 based of thin the front her	n the lighting zor nisphere.	ie and distance	to the nearest	point on the			FOR REFERENCE ONLY: The following table a	and code section have been reprinted from the
c vehicle supply equipment (EVSE). When EVSE(s) is/are nia Building Code, the California Electrical Code and as follows:	Note: [N] 1 See also Califo requirements	rnia Building Code	e, Chapter 12, Se	ction 1205.6 fo	r college campi	is lighting			California Code of Regulations, Title 20 (Appli Section 1605.3 (h)(4)(A).	ance Efficiency Regulations), Section 1605.1 (
ents. [N] When only a single charging space is required per e installed at the time of construction and shall be installed in	2. Refer to Chapt Table A-1, Cal	er 8 (Compliance fornia Energy Coc	Forms, Workshe Forms 130.2-A	eets and Refere and 130.2-B.	nce Material) fo	or IES TM-15-11			TABLE H-2	
e. Construction plans and specifications shall include, but are	3. Refer to the C	VING. Construct	ion plans shall inc	dicate how site	ons and alterat	ions. inage system will			STANDARDS FOR COMMERCIAL I	PRE-RINSE SPRAY VALUES JANUARY 28, 2019
nodating a 208/240 -volt dedicated branch circuit.	manage all surface wate surface water include, b	r flows to keep wa it are not limited to	ater from entering o, the following:	buildings. Exa	mples of method	ls to manage			PRODUCT CLASS	MAXIMUM FLOW RATE (gpm)
vice panel or a subpanel serving the area, and shall terminate in tion of the charging equipment and listed suitable cabinet, box,	1. Swales. 2. Water collection an	d disposal system	5.						[spray force in ounce force (ozf)] 5.0 ozf Product Class 1 (	1.00
have sufficient capacity to accommodate a minimum for the future installation of the EVSE.	4. Water retention gar 5. Other water measu	dens. es which keep su	rface water away	from buildings	and aid in grour	dwater recharge	.		8.0 ozfProduct Class 2 (> 5.0 ozf and $\leq$ )	1.20
ements. [N] When multiple charging spaces are required per to be installed at the time of construction and shall be installed ode. Construction plans and specifications shall include but are	Exception: Additions a	ad alterations not	altering the draina	age path.	with Sactions E	106 12 1			Product Class 3 (> 8.0 ozf) 5.303.4 COMMERCIAL KITCHEN EQUIP	1.28
	5.106.12.5 STADE TREES [53 5.106.12.2, and 5.106.1 Landscape irrigation net	2.3. Percentages essary to establis	shown shall be n shown shall be n sh and maintain t	ree health shal	on on the summ l comply with S	er solstice. ection 5.304.6.			5.303.4.1 Food Waste Disposers. Disposers shal	Il either modulate the use of water to no more
service panel or a subpanel(s) serving the area, and shall roposed location of the charging equipment and into listed	5.106.12.1 Surface part installed to provide sha	i <b>ng areas.</b> Shade de over 50 perce	e tree plantings, r nt of the parking	minimum #10 c area within 15 y	ontainer size o years.	equal, shall be			gpm when the disposer is not in use (not actively g shut off after no more than 10 minutes of inactivi <b>Note:</b> This code section does not affect local juris	grinding food waste/no-load) or shall automative. Disposers shall use no more than 8 gpm of diction authority to prohibit or require disposed.
rre(s) or equivalent. -ampere minimum branch circuits. tiate the design of the electrical system, to include the rating of	<b>Exceptions:</b> The s structures, with roo	urface parking ar fing materials that	ea covered by so t comply with Tat	olar photovoltaic ble A5.106.11.2	shade structur .2 in Appendix A	es, or shade \5, are not			installation.	
on transformers and have sufficient capacity to simultaneously ed amperage. all have sufficient capacity to accommodate the required	included in the tota 5.106.12.2 Landscape a	area calculations <b>reas.</b> Shade tres	s plantings, miniı	num #10 conta	iiner size or equ	al shall be			<ul> <li>5.303.5 AREAS OF ADDITION OR ALTERATION. For</li> <li>California Building Standards Commission as specified i</li> <li>5.303.4 shall apply to new fixtures in additions or area</li> </ul>	in Section 103, the provisions of Section 5.303 is of alteration to the building.
s) for the future installation of the EVSE [N] Table 5.106.5.3.3 shall be used to determine if single or	installed to provide sha Exceptions: Playf	de of 20% of the l elds for organized	landscape area w d sport activity ar	ithin 15 years. e not included i	n the total area	calculation.			5.303.6 STANDARDS FOR PLUMBING FIXTURES AN installed in accordance with the <i>California Plumbing</i> Co	<b>D FITTINGS.</b> Plumbing fixtures and fittings shode, and shall meet the applicable standards
br the future installation of EVSE.	5.106.12.3. Hardscape installed to provide sha	<b>areas.</b> Shade tre de over 20 perce	e plantings, mini nt of the hardsca	mum #10 conta pe area within 1	ainer size or eq 15 years.	ual shall be			referenced in Table 1701.1 of the California Plumbing C	ode and in Chapter 6 of this code.
or more of the following conditions:	Exceptions: Walk areas covered by s	s, hardscape area nade structures w	as covered by sol vith roofing mater	ar photovoltaic ials that comply	shade structure with Table A5.	s, and hardscape 106.11.2.2 in	e		5.304.1 OUTDOOR POTABLE WATER USE IN LANDS comply with a local water efficient landscape ordinance	<b>CAPE AREAS.</b> Nonresidential developments or the current California Department of Water R
e to the local enforcing agency substantiating that additional requirements, directly related to the	Appendix A5, are n	ot included in the <b>CEFFICIENCY</b>	total area calcula	ition.					Model Water Efficient Landscape Ordinance (MWELO), <b>Notes:</b> 1 The Model Water Efficient Landscape Ordinal	whichever is more stringent.
.5.3, may adversely impact the construction cost of the	SECTION 5.201 GENE	RAL	e [DSA-SS] For	the nurnoses of	f mandatory en	ergy efficiency			Regulations, Title 23, Chapter 2.7, Division 2. 2. MWELO and supporting documents, includin	g a water budget calculator, are available at:
	standards in this code, the C standards.	alifornia Energy C	ommission will c	ontinue to ado	pt mandatory b	uilding			https://www.water.ca.gov/. 5.304.6 OUTDOOR POTABLE WATER USE IN LANDS	SCAPE AREAS. For public schools and comm
0	DIVISION 5.3 WATER		AND CONSER	VATION					colleges, landscape projects as described in Sections 5. Department of Water Resources Model Water Efficient L	304.6.1 and 5.304.6.2 shall comply with the Cal andscape Ordinance (MWELO) commencing w
2 4	5.301.1 Scope. The provisio outdoors and in wastewater	<b>TAL</b> ns of this chapter conveyance.	shall establish tł	ne means of cor	nserving water	use indoors,			evapotranspiration adjustment factor (ETAF) shall be 0.6 landscape areas (SLA) of 0.35.	a Code of Regulations, except that the 35 with an additional water allowance for special
7	SECTION 5.302 DEFIN 5.302.1 Definitions. The follow	ITIONS owing terms are c	lefined in Chapte	er 2 (and are inc	cluded here for	reference)			<b>Exception</b> : Any project with an aggregate landscaper prescriptive measures contained in Appendix D of the second	pe area of 2,500 square feet or less may comply ne MWELO.
13	EVAPOTRANSPIRATION ADJ reference evapotranspiratio	USTMENT FACTO	R (ETAF) [DSA-S plant factors and	<b>5]</b> . An adjustme irrigation effici	ent factor whe iency, which ae	n applied to two major			<b>5.304.6.1 Newly constructed landscapes.</b> New of equal to or greater than 500 square feet.	construction projects with an aggregate landsca
18 10% of total <sup>1</sup>	influences on the amount of <b>FOOTPRINT AREA [DSA-SS].</b>	water that needs The total area of	to be applied to	the landscape. erior wall of the	e structure proj	ected to natural			<b>5.304.6.2 Rehabilitated landscapes.</b> Rehabilitate equal to or greater than 1,200 square feet.	d landscape projects with an aggregate landsca
bunded up to the nearest whole number.	grade, not including exterior	areas such as sta	airs, covered walk	ways, patios ar	nd decks.	actuation cycle			DIVISION 5.4 MATERIAL CONSERVATION	N AND RESOURCE EFFICIENCY
ce panel or subpanel(s) circuit directory shall identify the ace(s) for future EV charging as "EV CAPABLE". The papently and visibly marked as "EV CAPABLE".	The volume or cycle duration	i can be fixed or a	adjustable.						SECTION 5.401 GENERAL	utling means of achieving material concervation
ualify as designated parking as described in Section	wastewater that has not bee contaminated, or unhealthy	n contaminated bodily wastes, ar	by any toilet discl	harge, has not k ent a threat from	been affected b m contaminatic	y infectious, n by unhealthful	1		resource efficiency through protection of buildings from employment of techniques to reduce pollution through	m exterior moisture, construction waste diver n recycling of materials, and building commiss
ces shall count towards the total parking spaces required by	bathtubs, showers, bathroor waste water from kitchen sin	n washbasins, clo Iks or dishwasher	thes washing ma s.	chines and laur	ndry tubs, but c	oes not include	n		testing and adjusting.	
oor lighting systems shall be designed and installed to	MODEL WATER EFFICIENT L landscape design, installatio	ANDSCAPE ORDIN	NANCE (MWELO)	. The California will ensure com	a ordinance reg nmercial, multif	ulating amily and other			5.402.1 DEFINITIONS. The following terms are defined	l in Chapter 2 (and are included here for refer
nia Energy Code for Lighting Zones 0-4 as defined in	based on landscaped area ar	es greater than 2 d climatological p	2500 square feet parameters.	meet an irrigati	on water budge	et developed			<b>ADJUST.</b> To regulate fluid flow rate and air patterns at or adjust a damper.	the terminal equipment, such as to reduce fa
hia Administrative Code; and 15-11 (shown in Table A-1 in Chapter 8); lifornia Energy Code (shown in Tables 130.2-A and 130.2-B	MODEL WATER EFFICIENT L (California Code of Regulatic and maintenance practices.	ANDSCAPE ORDIN ns, Title 23, Divisi Local agencies a	NANCE (MWELO) on 2, Chapter 2.7 re required to ad	I. [HCD] The Ca 7), regulating la opt the update	ilifornia model ndscape desigr d MWELO, or a	ordinance , installation lopt a local			<b>BALANCE.</b> To proportion flows within the distribution according to design quantities.	system, including sub-mains, branches and te
se shown in Table 5.106.8, [N] or Comply with a local ection 101.7, whichever is more stringent.	ordinance at least as effectiv	e as the MWELO. at is drinkable an	d meets the U.S.	Environmental	Protection Age	ncv (EPA)			<b>BUILDING COMMISSIONING.</b> A systematic quality assu construction process, including verifying and documen	urance process that spans the entire design ar iting that building systems and components ar
	Drinking Water Standards. S	ee definition in th	ne California Plum	bing Code, Par	t 5.	oses. and meets			planned, designed, installed, tested, operated and main ORGANIC WASTE Food waste green worter landscore	ntained to meet the owner's project requirem
ctions 130.2 (b) and 140.7 of the California Energy Code.	the U.S. Environmental Prot Health Authority Having Juris	ection Agency (El diction.	PA) Drinking Wat	er Standards an	id the requirem	ents of the			food soiled paper waste that is mixed in with food was	te.
e local enforcing agency, as permitted by Section 101.8 of construction.	<b>RECYCLED WATER.</b> Water w controlled use that would no	hich, as a result o t otherwise occu	of treatment of w r [Water Code Se	aste, is suitable ction 13050 (n)	e for a direct be )]. Simply put, r	neficial use or a ecycled water is			SECTION 5.407 WATER RESISTANCE	ance of a system or equipment AND MOISTURF MANAGEMENT
	SUBMETER. [HCD 1] A secon	dary device beyo	nd a meter that	measures water	r consumption	of an individual			<b>5.407.1 WEATHER PROTECTION</b> . Provide a weather- required by California Building Code Section 1402.2 (W	resistant exterior wall and foundation envelo /eather Protection), manufacturer's installatio
	Civic Code Section 1954.202	(g) and Water co	de Section 517 fc	e residential an or additional de	a commercial s tails.)	d the			Instructions or local ordinance, whichever is more strin         5.407.2 MOISTURE CONTROL. Employ moisture contr	gent. rol measures by the following methods.
	WATER BUDGET. Is the esti applied water allowance cal Landscape Ordinance (MWE	nated total lands ulated in accorda .0).	cape irrigation w ince with the Dep	ater use which partment of Wa	snall not excee ater Resources	a the maximum Nodel Efficient			5.407.2.1 Sprinklers. Design and maintain landsc	ape irrigation systems to prevent spray on str
									<b>5.407.2.2 Entries and openings</b> . Design exterior wind-driven rain to prevent water intrusion into b	entries and/or openings subject to foot traffic uildings as follows:
									<b>5.407.2.2.1 Exterior door protection.</b> Primatintrusion by using nonabsorbent floor and wa	ry exterior entries shall be covered to prevent all finishes within at least 2 feet around and
									perpendicular to such openings plus at least of 1. An installed awning at least 4 feet in 2. The door is protected by a roof over	ne of the following: 1 depth. rhang at least 4 feet in depth
									<ol> <li>The door is protected by a root ove</li> <li>The door is recessed at least 4 feet.</li> <li>Other methods which provide equiv</li> </ol>	/alent protection.
										and a state of the state

5 CODE July 2021	Supplemer	nt)		Y = YES N/A = NOT APPLICABLE RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER, OWNER, CONTRACTOR, INSPECTOR ETC.)
.303 INDOOR WATER USE	<b>.</b>	Y	N/A RESPO	SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND
<ol> <li>Separate submeters or metering devi 1 and 503.1.2.</li> </ol>	ces shall be installed for the uses describ	bed in		<ul> <li>RECYCLING</li> <li>5.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 69 the non-hazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2</li> </ul>
ch individual leased, rented or other ten	ant space within the building projected t	to consume		5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is ma stringent.
ers, restaurant or food service, medical o	but not infitted to, spaces used for faund or dental office, laboratory, or beauty sald	on or barber		<b>5.408.1.1 Construction waste management plan.</b> Where a local jurisdiction does not have a construction and demolition waste management ordinance, submit a construction waste management ordinance.
he following subsystems: Makeup water for cooling towers wh Makeup water for evaporative coole	rere flow through is greater than 500 gpn rs greater than 6 gpm (0.04 L/s).	m (30 L/s).		<ul> <li>plan that:</li> <li>1. Identifies the construction and demolition waste materials to be diverted from disposal efficient usage, recycling, reuse on the project or salvage for future use or sale.</li> </ul>
Steam and hot water boilers with en	ergy input more than 500,000 Btu/h (147	7 kW). d for any		<ol> <li>Determines if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream).</li> <li>Identifies diversion facilities where construction and demolition waste material collected</li> </ol>
nin a new building or within an addition	that is projected to consume more than :	1,000		be taken. 4. Specifies that the amount of construction and demolition waste materials diverted shal calculated by weight or volume, but not by both.
CONSERVING PLUMBING FIXTURES AND ngs (faucets and showerheads) shall con	) FITTINGS. Plumbing fixtures (water closingly with the following:	osets and		<b>5.408.1.2 Waste Management Company.</b> Utilize a waste management company that can provid verifiable documentation that the percentage of construction and demolition waste material div
Nater Closets. The effective flush volun Fank-type water closets shall be certified e Specification for Tank-Type toilets.	ne of all water closets shall not exceed 1.7 I to the performance criteria of the U.S. F	.28 gallons EPA		from the landfill complies with this section.
effective flush volume of dual flush toile uced flushes and one full flush.	ts is defined as the composite, average f	flush volume		<b>Note:</b> The owner or contractor shall make the determination if the construction and demolition material will be diverted by a waste management company.
Jrinals 3.2.1 Wall-mounted Urinals. The effective 0.125 college new fluch	ve flush volume of wall-mounted urinals	s shall not		<ul> <li>Exceptions to Sections 5.408.1.1 and 5.408.1.2:</li> <li>1. Excavated soil and land-clearing debris.</li> <li>2. Alternate waste reduction methods developed by working with local agencies if diversion</li> </ul>
3 0.125 gallons per flush. 3.2.2 Floor-mounted Urinals. The effect	tive flush volume of floor-mounted or oth	her urinals		<ul> <li>recycle facilities capable of compliance with this item do not exist.</li> <li>3. Demolition waste meeting local ordinance or calculated in consideration of local recycli facilities and markets.</li> </ul>
Showerheads. [BSC-CG]	s shall have a maximum flow rate of not i	more than		<b>5.408.1.3 Waste stream reduction alternative.</b> The combined weight of new construction dispo
lons per minute at 80 psi. Showerheads A WaterSense Specification for Showerheads	s shall have a maximum flow fate of not r s shall be certified to the performance cri neads.	riteria of the		minimum requirement as approved by the enforcing agency.
3.3.2 Multiple showerheads serving one rhead, the combined flow rate of all the	shower. When a shower is served by m showerheads and/or other shower outl	nore than one lets		5.408.1.4 Documentation. Documentation shall be provided to the enforcing agency which demonstrates compliance with Sections 5.408.1.1, through 5.408.1.3. The waste management p be updated as necessary and shall be accessible during construction for examination by the enforcement of the section of the
ed to allow only one shower outlet to be	.8 gallons per minute at 80 psi, or the sho e in operation at a time.	ower shall be		agency.
aucets and fountains.	a showenledu.			1. Sample forms found in "A Guide to the California Green Building Standards Code (Nonreside located ww.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-
<b>3.4.1 Nonresidential Lavatory faucets.</b> L	avatory faucets shall have a maximum fl.	low rate of		<ul> <li>Mesources-List-Folder/CALGreen may be used to assist in documenting compliance with the management plan.</li> <li>Mixed construction and demolition debris processors can be located at the California Depart</li> </ul>
<b>3.4.2 Kitchen faucets.</b> Kitchen faucets sh	nall have a maximum flow rate of not mc	ore than 1.8		ot Resources Recycling and Recovery (CalRecycle). 5.408.2 UNIVERSAL WASTE. [A] Additions and alterations to a building or tenant space that meet t
ium rate, but not to exceed 2.2 gallons pate of 1.8 gallons per minute at 60 psi.	ber minute at 60 psi, and must default to	a maximum		scoping provisions in Section 301.3 for nonresidential additions and alterations, shall require verificat Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as v other California prohibited Universal Waste materials are disposed of properly and are diverted from
<b>3.4.3 Wash fountains.</b> Wash fountains s s per minute/20 [rim space (inches) at 60	hall have a maximum flow rate of not m ) psi].	nore than 1.8		landfills. A list of prohibited Universal Waste Rule link at http://www.dtea.co.gov/function.documen
3.4.4 Metering faucets. Metering faucet	ts shall not deliver more than 0.20 gallon	ns per cycle.		5.408.3 EXCAVATED SOIL AND LAND CLEARING DEBRIS. 100 percent of trees, stumps, rocks and
<b>3.4.5 Metering faucets for wash fountai</b> num flow rate of not more than 0.20 gall	ins. Metering faucets for wash fountains ons per minute/20 [rim space (inches) at	s shall have a t 60 psi]. to achieve		associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.
ion.	2, aerators of other means may be used	to achieve		<b>Exception</b> : Reuse, either on or off-site, of vegetation or soil contaminated by disease or pest infestation.
3.4.6 Pre-rinse spray value installed, shall meet the requirements ir ance Efficiency Regulations), Section 160	۱ the California Code of Regulations, Title المارين (4) Table H-2, Section 1605.3 (h)،	e 20 4)(A), and		Notes: 1. If contamination by disease or pest infestation is suspected, contact the County Agricultural Commissioner and follow its direction for recycling or disposal of the material
n 1607 (d)(7), and shall be equipped with	n an integral automatic shutoff.	m the		<ol> <li>For a map of know pest and/or disease quarantine zones, consult with the California Depart Food and Agriculture. (www.cdfa.ca.gov)</li> </ol>
nia Code of Regulations, Title 20 (Applia n 1605.3 (h)(4)(A).	nce Efficiency Regulations), Section 1605	5.1 (h)(4) and		<b>SECTION 5.410 BUILDING MAINTENANCE AND OPERATIONS</b> 5.410.1 RECYCLING BY OCCUPANTS. Provide readily accessible areas that serve the entire building
LE H-2				are identified for the depositing, storage and collection of non-hazardous materials for recycling, inclu (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a law
NDARDS FOR COMMERCIAL P	RE-RINSE SPRAY VALUES ANUARY 28, 2019			enacted local recycling ordinance, if more restrictive. <b>Exception</b> : Rural jurisdictions that meet and apply for the exemption in Public Resources Code
DUCT CLASS	MAXIMUM FLOW RATE (gpm)	-		42649.82 (a)(2)(A) et seq. shall also be exempt from the organic waste portion of this section. <b>5.410.1.1 Additions.</b> All additions conducted within a 12-month period under single or multiple
$\frac{5.0 \text{ ozf}}{\text{uct Class 1 (} \leq )}$	1.00	-		resulting in an increase of 30% or more in floor area, shall provide recycling areas on site.  Exception: Additions within a tenant space resulting in less than a 30% increase in the tena
$\frac{8.0 \text{ ozf}}{1000 \text{ ozf and } \leq 0.0}$	1.20	-		space floor area.
				Division 30 of the <i>Public Resources Code</i> . Chapter 18 is known as the California Solid Waste Reus Recycling Access Act of 1991 (Act).
Food Waste Disposers. Disposers shall the disposer is not in use (not actively gr	either modulate the use of water to no r rinding food waste/no-load) or shall autc	more than 1 omatically		<b>Note:</b> A sample ordinance for use by local agencies may be found in Appendix A of the documen CalRecycle's web site.
er no more than 10 minutes of inactivity code section does not affect local jurisdi .	y. Disposers shall use no more than 8 gpi iction authority to prohibit or require dis	om of water.		5.410.2 COMMISSIONING. [N] New buildings 10,000 square feet and over. For new buildings 10,000 feet and over, building commissioning shall be included in the design and construction processes of the statement of the design and construction processes of the design and con
<b>OF ADDITION OR ALTERATION.</b> For the	hose occupancies within the authority of	f the		building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this see trained personnel with experience on projects of comparable size and complexity. For I-occupancies
ply to new fixtures in additions or areas	of alteration to the building.			not regulated by OSHPD or for I-occupancies and L-occupancies that are not regulated by the Californ Energy Code Section 100.0 Scope, all requirements in Sections 5.410.2 through 5.410.2.6 shall apply.
ARDS FOR PLUMBING FIX TURES AND rdance with the <i>California Plumbing Cod</i> able 1701.1 of the <i>California Plumbing Co</i>	e, and shall meet the applicable standard de and in Chapter 6 of this code.	gs shall be rds		<b>Note:</b> For energy-related systems under the scope (Section 100) of the California Energy Code, includ heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting systems and controls
.304 OUTDOOR WATER USE	E APE AREAS Nonresidential developme	ents shall		well as water heating systems and controls, refer to California Energy Code Section 120.8 for commiss requirements
cal water efficient landscape ordinance or icient Landscape Ordinance (MWELO), w	r the current California Department of Wate hichever is more stringent.	ter Resources'		<ul> <li>Commissioning requirements shall include:</li> <li>1. Owner's or Owner representative's project requirements.</li> <li>2. Basis of design.</li> </ul>
odel Water Efficient Landscape Ordinan itions, Title 23, Chapter 2.7, Division 2.	ce (MWELO) is located in the California C	Code of		<ol> <li>Commissioning measures shown in the construction documents.</li> <li>Commissioning plan.</li> <li>Eurotional performance testing</li> </ol>
O and supporting documents, including //www.water.ca.gov/.	a water budget calculator, are available a	at:		<ol> <li>6. Documentation and training.</li> <li>7. Commissioning report.</li> </ol>
OOR POTABLE WATER USE IN LANDS( ape projects as described in Sections 5.3 Vater Resources Model Water Efficient La	<b>CAPE AREAS.</b> For public schools and co 04.6.1 and 5.304.6.2 shall comply with the andscape Ordinance (MWELO) commencir	ommunity e California ing with		Exceptions: 1. Unconditioned warehouses of any size.
Chapter 2.7, Division 2, Title 23, <i>California</i> on adjustment factor (ETAF) shall be 0.65 5 (SLA) of 0.35.	Code of Regulations, except that the 5 with an additional water allowance for sp	pecial		<ol> <li>Areas less than 10,000 square feet used for offices or other conditioned accessory spaces with unconditioned warehouses.</li> <li>Tenant improvements less than 10,000 square feet as described in Section 303.1.1.</li> </ol>
Any project with an aggregate landscape measures contained in Appendix D of the	e area of 2,500 square feet or less may co ∋ MWELO.	omply with the		<ol> <li>Open parking garages of any size, or open parking garage areas, of any size, within a structur</li> <li>Note: For the purposes of this section, unconditioned shall mean a building, area, or room which</li> </ol>
lewly constructed landscapes. New co greater than 500 square feet.	nstruction projects with an aggregate land	dscape area		not provide heating and or air conditioning.
Rehabilitated landscapes. Rehabilitated greater than 1,200 square feet.	landscape projects with an aggregate lan	ndscape area		<ol> <li>IAS AC 476 is an accreditation criteria for organizations providing training and/or certification commissioning personnel. AC 476 is available to the Authority Having Jurisdiction as a reference of the second second second second seco</li></ol>
4 MATERIAL CONSERVATION	I AND RESOURCE EFFICIENCY			<ul> <li>performance tests or to adjust and balance systems.</li> <li>Functional performance testing for heating, ventilation, air conditioning systems and lighting</li> </ul>
.401 GENERAL The provisions of this chapter shall out	line means of achieving material conser	rvation and		controls must be performed in compliance with the California Energy Code.
ncy through protection of buildings from techniques to reduce pollution through isting.	exterior moisture, construction waste d recycling of materials, and building com	uiversion, missioning or		<b>5.410.2.1 Owner's or Owner Representative's Project Requirements (OPR). [N]</b> The expectative requirements of the building appropriate to its phase shall be documented before the design phat the project begins. This documentation shall include the following:
<b>102 DEFINITIONS</b>	in Chanter 2 (and are included here for	reference)		<ol> <li>Environmental and sustainability goals.</li> <li>Building sustainable goals.</li> <li>Indoor environmental quality requirements</li> </ol>
ulate fluid flow rate and air patterns at t	the terminal equipment, such as to reduc	ce fan speed		<ol> <li>Project program, including facility functions and hours of operation, and need for after operation.</li> <li>Equipment and systems expectations</li> </ol>
oportion flows within the distribution sy	ystem, including sub-mains, branches an	nd terminals,		<ol> <li>Equipment and systems expectations.</li> <li>Building occupant and operation and maintenance (O&amp;M) personnel expectations.</li> </ol>
sign quantities. MISSIONING. A systematic quality assur	rance process that spans the entire desic	gn and		<b>5.410.2.2 Basis of Design (BOD). [N]</b> A written explanation of how the design of the building sy meets the OPR shall be completed at the design phase of the building project. The Basis of Desig document shall cover the following systems:
ocess, including verifying and documenti ed, installed, tested, operated and main	ng that building systems and component tained to meet the owner's project requ	nts are uirements.		<ol> <li>Renewable energy systems.</li> <li>Landscape irrigation systems.</li> <li>Water reuse system</li> </ol>
<b>FE.</b> Food waste, green waste, landscape er waste that is mixed in with food waste	and pruning wste, nonhazardous wood v e.	waste, and		5.410.2.3 Commissioning plan. [N] Prior to permit issuance a commissioning plan shall be comp
ure to determine quantitative performar	nce of a system or equipment			to document how the project will be commissioned. The commissioning plan shall include the following: 1. General project information.
.407 WATER RESISTANCE A ER PROTECTION. Provide a weather-referric Building Code Control of the Code Code Code Code Code Code Code Cod	ND MOISTURE MANAGEMEN esistant exterior wall and foundation envetor	NT velope as		<ol> <li>Commissioning goals.</li> <li>Systems to be commissioned. Plans to test systems and components shall include:</li> <li>An explanation of the original design intent</li> </ol>
ornia Building Code Section 1402.2 (We ocal ordinance, whichever is more string	ather Protection), manufacturer's install jent.	nation		<ul> <li>b. Equipment and systems to be tested, including the extent of tests.</li> <li>c. Functions to be tested.</li> </ul>
<b>IRE CONTROL.</b> Employ moisture contro	I measures by the following methods.	n structures.		<ul> <li>d. Conditions under which the test shall be performed.</li> <li>e. Measurable criteria for acceptable performance.</li> <li>4. Commissioning team information.</li> </ul>
ntries and openings. Design exterior el	ntries and/or openings subject to foot tra	raffic or		5. Commissioning process activities, schedules and responsibilities. Plans for the complet commissioning shall be included.
n rain to prevent water intrusion into bu 2.2.1 Exterior door protection. Primary	<pre>number of the second seco</pre>	event water		

5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.



				201	9 CALIFO			
				UNKESIDENHAL	MANDAIUK			
5 410 2 4 Functional performance testing, IN1 Functional performance tests shall demonstrate the	Y	Y N/A	RESPON. PARTY	SCHRADER ACCESS VALVES. Access fittings with a valve co	are installed			
correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made				SHORT RADIUS ELBOW. Pipe fitting installed between two le direction, with a radius 1.0 times the pipe diameter.	engths of pipe or tubing to allow a change of			
<b>5.410.2.5 Documentation and training. [N]</b> A Systems Manual and Systems Operations Training are required, including Occupational Safety and Health Act (OSHA) requirements in <i>California Code of Regulations</i> (CCR), Title 8, Section 5142, and other related regulations.				<b>SUPERMARKET</b> . For the purposes of Section 5.508.2, a super square feet or more conditioned area, and that utilizes either freezers connected to remote compressor units or condensing	rmarket is any retail food facility with 8,000 refrigerated display cases, or walk-in coolers o g units.			
<b>5.410.2.5.1 Systems manual. [N]</b> Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representative. The systems manual shall include the following:				<b>VOC.</b> A volatile organic compound broadly defined as a chemi with vapor pressures greater than 0.1 millimeters of mercury typically contain hydrogen and may contain oxygen, nitrogen a 94508(a)	ical compound based on carbon chains or rings at room temperature. These compounds and other elements. See CCR Title 17, Section			
<ol> <li>Site information, including facility description, history and current requirements.</li> <li>Site contact information.</li> <li>Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log.</li> </ol>				Note: Where specific regulations are cited from different ager definition included in that specific regulation is the one that pr	ncies such as SCAQMD, ARB, etc., the VOC revails for the specific measure in question.			
<ol> <li>Major systems.</li> <li>Site equipment inventory and maintenance notes.</li> <li>A copy of verifications required by the enforcing agency or this code.</li> <li>Other resources and documentation, if applicable.</li> </ol>				<b>SECTION 5.503 FIREPLACES</b> <b>5.503.1 FIREPLACES.</b> Install only a direct-vent sealed-combus sealed woodstove or pellet stove, and refer to residential require Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and	stion gas or sealed wood-burning fireplace, or a ements in the California Energy Code, Title 24, and fireplaces shall comply with applicable local			
<b>5.410.2.5.2 Systems operations training. [N]</b> A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:				ordinances. 5.503.1.1 Woodstoves. Woodstoves and pellet stoves st Performance Standards (NSPS) emission limits as applicable, a	hall comply with U.S. EPA New Source and shall have a permanent label indicating they			
<ol> <li>System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces).</li> <li>Review and demonstration of servicing/preventive maintenance.</li> <li>Review of the information in the Systems Manual</li> </ol>				are certified to meet the emission limits.  SECTION 5.504 POLLUTANT CONTROL 5.504 1 TEMPORARY VENTUATION. The permanent HVAC	system shall only be used during construction			
<ul> <li>4. Review of the record drawings on the system's equipment.</li> <li>5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the</li> </ul>				necessary to condition the building or areas of addition or alto for material and equipment installation. If the HVAC system is with a Minimum Efficiency Reporting Value (MERV) of 8, base	eration within the required temperature range s used during construction, use return air filter ed on ASHRAE 52.2-1999, or an average			
<ul> <li>5.410.4 TESTING AND ADJUSTING. New buildings less than 10,000 square feet. Testing and adjusting of</li> </ul>				<ul> <li>building is occupied during alteration, at the conclusion of con</li> <li>5.504.3 Covering of duct openings and protection of mecha</li> </ul>	anical equipment during construction.			
systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1. 5.410.4.2 (Reserved)				time of rough installation and during storage on the construct cooling and ventilation equipment, all duct and other related a covered with tape, plastic, sheetmetal or other methods accep amount of dust, water and debris which may enter the system	tion site until final startup of the heating, air distribution component openings shall be ptable to the enforcing agency to reduce the n.			
Note: For energy-related systems under the scope (Section 100) of the California Energy Code, including				5.504.4 FINISH MATERIAL POLLUTANT CONTROL. Finish m	 naterials shall comply with Sections 5.504.4.1			
heating, ventilation, air conditioning (HVAC) systems and controls, indoor lighting system and controls, as well as water heating systems and controls, refer to California Energy Code Section 120.8 for commissioning requirements and Sections 120.5, 120.6, 130.4, and 140.9(b)3 for additional testing requirements of specific systems.				through 5.504.4.6. 5.504.4.1 Adhesives, sealants and caulks. Adhesives, se meet the requirements of the following standards:	ealants, and caulks used on the project shall			
<ul> <li>5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include at a minimum, as applicable to the project: <ol> <li>Renewable energy systems.</li> <li>Landscape irrigation systems.</li> </ol> </li> </ul>				<ol> <li>Adhesives, adhesive bonding primers, adhesive shall comply with local or regional air pollution of where applicable, or SCAQMD Rule 1168 VOC li 5.504.4.2. Such products also shall comply with toxic compounds (chloroform, ethylene dichlority)</li> </ol>	primers, sealants, sealant primers and caulks control or air quality management district rule imits, as shown in Tables 5.504.4.1 and the Rule 1168 prohibition on the use of certain ide, methylene chloride, perchloroethylene an			
<ol> <li>Water reuse systems.</li> <li>5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system.</li> </ol>				<ul> <li>trichloroethylene), except for aerosol products a</li> <li>2. Aerosol adhesives, and smaller unit sizes of adhe units of product, less packaging, which do not w of more than 16 fluid ounces) shall comply with</li> </ul>	as specified in subsection 2, below. esives, and sealant or caulking compounds (in veigh more than one pound and do not consist statewide VOC standards and other			
<b>5.410.4.3.1 HVAC balancing.</b> In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, the system shall be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards: the National Environmental Balancing Bureau Procedural Standards: Associated Air				requirements, including prohibitions on use of certain toxic compounds, of <i>California Code o</i> <i>Regulations</i> , Title 17, commencing with Section 94507. TABLE 5.504.4.1 - ADHESIVE VOC LIMIT <sub>1,2</sub>				
Balance Council National Standards or as approved by the enforcing agency.				Less Water and Less Exempt Compounds in Grams	per Liter			
<b>5.410.4.4 Reporting.</b> After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.				ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT       50			
5.410.4.5 Operation and maintenance (O & M) manual. Provide the building owner or representative				CARPET PAD ADHESIVES	50			
system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142,					150			
5 410 4 5 1 Inspections and reports. Include a conv of all inspection verifications and reports				RUBBER FLOOR ADHESIVES	60			
required by the enforcing agency.				SUBFLOOR ADHESIVES	50			
DIVISION 5.5 ENVIRONMENTAL QUALITY				CERAMIC TILE ADHESIVES	65			
SECTION 5.501 GENERAL				VCT & ASPHALT TILE ADHESIVES	50			
<b>5.501.1 SCOPE.</b> The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous irritating and/or harmful to the comfort and well-being of a building's				COVE BASE ADHESIVES	50			
installers, occupants and neighbors.				MULTIPURPOSE CONSTRUCTION ADHESIVES	70			
SECTION 5.502 DEFINITIONS				STRUCTURAL GLAZING ADHESIVES	100			
5.502.1 DEFINITIONS. The following terms are defined in Chapter 2 (and are included here for reference)				SINGLE-PLY ROOF MEMBRANE ADHESIVES	250			
<b>ARTERIAL HIGHWAY.</b> A general term denoting a highway primarily for through traffic usually on a continuous route.				SPECIALTY APPLICATIONS				
A-WEIGHTED SOUND LEVEL (dBA). The sound pressure level in decibels as measured on a sound level				PVC WELDING	510			
meter using the internationally standardized A-weighting filter or as computed from sound spectral data to which A-weighting adjustments have been made.				CPVC WELDING	490			
1 BTU/HOUR. British thermal units per hour, also referred to as Btu. The amount of heat required to raise				ABS WELDING	325			
one pound of water one degree Fahrenheit per hour, a common measure of heat transfer rate. A ton of refrigeration is 12,000 Btu, the amount of heat required to melt a ton (2,000 pounds) of ice at 32 <sup>0</sup>				ADHESIVE PRIMER FOR PLASTIC	550			
				CONTACT ADHESIVE	80			
(Ldn), except that a 5 decibel adjustment is added to the equivalent continuous sound exposure level for evening hours (7pm to 10pm) in addition to the 10 dB nighttime adjustment used in the Ldn				SPECIAL PURPOSE CONTACT ADHESIVE	250			
COMPOSITE WOOD PRODUCTS. Composite wood products include bardwood plywood, particlobaard and				TOP & TRIM ADHESIVE	250			
medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, struc				SUBSTRATE SPECIFIC APPLICATIONS				
prefabricated wood I-joists or finger-jointed lumber, all as specified in California Code of Regulations (CCR), Title 17. Section 93120 1(a)				METAL TO METAL	30			
Note: See CCR. Title 17 Section 93120.1				PLASTIC FOAMS	50			
DAY-NIGHT AVERAGE SOLIND LEVEL (Ldn). The A-weighted equivalent continuous cound expecting level				WOOD	30			
for a 24-hour period with a 10 dB adjustment added to sound levels occurring during nighttime hours				FIBERGLASS	80			

(10p.m. to 7 a.m.).

**DECIBEL (db).** A measure on a logarithmic scale of the magnitude of a particular quantity (such as sound pressure, sound power, sound intensity) with respect to a reference quantity. ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, such as passenger automobiles,

buses, trucks, vans, neighborhood electric vehicles, electric motorcycles, and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array, or other source of electric current. Plug-in hybrid electric vehicles (PHEV) are considered electric vehicles. For purposes of the California Electrical Code, off-road, self-propoelled electric vehicles, such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not included. ELECTRIC VEHICLE CHARGING STATION(S) (EVCSj). One or more spaces intended for charging electric

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). The conductors, including the ungrounded, grounded, and equipment grounding conductors and the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.

**ENERGY EQUIVALENT (NOISE) LEVEL (Leq).** The level of a steady noise which would have the same energy as the fluctuating noise level integrated over the time of period of interest.

**EXPRESSWAY**. An arterial highway for through traffic which may have partial control of access, but which may or may not be divided or have grade separations at intersections.

FREEWAY. A divided arterial highway with full control of access and with grade separations at intersections. GLOBAL WARMING POTENTIAL (GWP). The radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time. Carbon dioxide is the reference compound with a GWP of one.

GLOBAL WARMING POTENTIAL VALUE (GWP VALUE). A 100-year GWP value published by the Intergovernmental Panel on Climate Change (IPCC) in either its Second Assessment Report (SAR) (IPCC, 1995); or its Fourth Assessment A-3 Report (AR4) (IPCC, 2007). The SAR GWP values are found in column "SAR (100-yr)" of Table 2.14.; the AR4 GWP values are found in column "100 yr" of Table 2.14.

HIGH-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that is: (a) a chlorofluorocarbon, a hdrochlorofluorocarbon, a hydrofluorocarbon, a perfluorocarbon, or any compound or blend of compounds, with a GWP value equal to or greater than 150, or (B) any ozone depleting substance as defined in Title 40 of the Code of Federal Regulations, Part 82, sec.82.3 (as amended March 10, 2009). **LONG RADIUS ELBOW.** Pipe fitting installed between two lengths of pipe or tubing to allow a change of

direction, with a radius 1.5 times the pipe diameter. LOW-GWP REFRIGERANT. A compound used as a heat transfer fluid or gas that: (A) has a GWP value less than 150, and (B) is not an ozone depleting substance as defined in Title 40 of the Code of Federal

**MERV.** Filter minimum efficiency reporting value, based on ASHRAE 52.2–1999.

Regulations, Part 82, sec.82.3 (as amended March 10, 2009).

**PSIG.** Pounds per square inch, guage.

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base REactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundreths of a gram (g O<sup>3</sup>/g ROC).

**PRODUCT-WEIGHTED MIR (PWMIR).** The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).

**REACTIVE ORGANIC COMPOUND (ROC).** Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

# **RNIA GREEN BUILDING STANDARDS CODE** Y MEASURES, SHEET 2 (July 2021, Includes July 2021 Supplement)

Y N/A RESPON. PARTY

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER. THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE

TABLE 5.504.4.2 - SEALANT VOC LIMIT

1168, www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF

MANAGEMENT DISTRICT RULE 1168.

SEALANTS	CURRENT VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NONPOROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

THE VOC CONTENT SPECIFIED IN THESE TABLES, SEE SOUTH COAST AIR QUALITY

**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.

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.

COATING CATEGORY			
FLAT COATINGS	50		
NONFLAT COATINGS	100		
SPECIALTY COATINGS		F	
ALUMINUM ROOF COATINGS	400		
BITUMINOUS ROOF COATINGS	50		
BITUMINOUS ROOF PRIMERS	350		
BOND BREAKERS ————————————————————————————————————	350		
CONCRETE/MASONRY SEALERS	100		
DRIVEWAY SEALERS	50		
FAUX FINISHING COATINGS	350		
FIRE RESISTIVE COATINGS	350		
FLOOR COATINGS FORM-RELEASE COMPOUNDS	250		
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500		
HIGH-TEMPERATURE COATINGS	420		
LOW SOLIDS COATINGS1	120		
MAGNESITE CEMENT COATINGS	450		
MASTIC TEXTORE COATINGS 	500		
MULTICOLOR COATINGS	250		
PRETREATMENT WASH PRIMERS PRIMERS, SEALERS, & UNDERCOATERS	420		
REACTIVE PENETRATING SEALERS	350		
	250		
RUST PREVENTATIVE COATINGS	250		
SHELLACS:	700		
OPAQUE	/30 550		
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100		
STAINS	250		
	450		
TRAFFIC MARKING COATINGS	100		
TUB & TILE REFINISH COATINGS	420		
WATERPROOFING MEMBRANES WOOD COATINGS	250		
WOOD PRESERVATIVES	350		
ZINC-RICH PRIMERS  1. GRAMS OF VOC PER LITER OF COATING. INCLUDING WATER & EXEMPT C	340 OMPOUNDS		
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#### Y N/A RESPON. PARTY CHAPTER 7

5.504.7 ENVIRONMENTAL TOBACCO SMOKE (ETS) CONTROL. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent. When ordinances, regulations or policies are not in place, post signage to inform building occupants of the

### SECTION 5.505 INDOOR MOISTURE CONTROL

**5.505.1 INDOOR MOISTURE CONTROL**. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1202 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures, see Section 5.407.2 of this code.

### SECTION 5.506 INDOOR AIR QUALITY

prohibitions.

**5.506.1 OUTSIDE AIR DELIVERY.** For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements For Ventilation) of the California Energy Code, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.

5.506.2 CARBON DIOXIDE (CO<sub>2</sub>) MONITORING. For buildings or additions equipped with demand control ventilation, CO<sub>2</sub> sensors and ventilation controls shall be specified and installed in accordance with the requirements of the California Energy Code, Section 120(c)(4).

#### SECTION 5.507 ENVIRONMENTAL COMFORT

5.507.4 ACOUSTICAL CONTROL. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413, or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or

**Exception:** Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage,

performance method in Section 5.507.4.1 or 5.507.4.2.

enclosed parking structures and utility buildings.

Exception: [DSA-SS] For public schools and community colleges, the requirements of this section and all subsections apply only to new construction. 5.507.4.1 Exterior noise transmission, prescriptive method. Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a

composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations: Within the 65 CNEL noise contour of an airport.

### Exceptions

1. Ldn or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone (AICUZ) plan. 2. Ldn or CNEL for other airports and heliports for which a land use plan has not been developed shall be determined by the local general plan noise element.

### Within the 65 CNEL or Ldn noise contour of a freeway or expressway, railroad, industrial source or

fixed-guideway source as determined by the Noise Element of the General Plan. 5.507.4.1.1. Noise exposure where noise contours are not readily available. Buildings exposed to

a noise level of 65 dB L<sub>eg</sub> - 1-hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).

#### 5.507.4.2 Performance Method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1Hr) of 50 dBA in occupied areas during any hour of operation.

5.507.4.2.1 Site Features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the

5.507.4.2.2 Documentation of Compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.

#### **5.507.4.3 Interior sound transmission.** Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40. **Note:** Examples of assemblies and their various STC ratings may be found at the California Office of Noise Control: www.toolbase.org/PDF/CaseStudies/stc\_icc\_ratings.pdf.

### SECTION 5.508 OUTDOOR AIR QUALITY

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

5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs. 5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.

**5.508.2 Supermarket refrigerant leak reduction.** New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote

#### compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities.

**Exception:** Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO<sub>2</sub>), and potentially other refrigerants.

**5.508.2.1 Refrigerant piping.** Piping compliant with the California Mechanical Code shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside

### refrigerant systems except as noted below.

**5.508.2.1.1 Threaded pipe.** Threaded connections are permitted at the compressor rack.

diameter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in

#### 5.508.2.1.2 Copper pipe. Copper tubing with an OD less than 1/4 inch may be used in systems with a refrigerant charge of 5 pounds or less.

**5.508.2.1.2.1 Anchorage.** One-fouth-inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils.

### **5.508.2.1.3 Flared tubing connections.** Double-flared tubing connections may be used for pressure

controls, valve pilot lines and oil. **Exception:** Single-flared tubing connections may be used with a multiring seal coated with industrial

#### sealant suitable for use with refrigerants and tightened in accordance with manufacturer's recommendations.

5.508.2.1.4 Elbows. Short radius elbows are only permitted where space limitations prohibit use of long

# radius elbows.

**5.508.2.2 Valves.** Valves Valves and fittings shall comply with the *California Mechanical Code* and as

#### **5.508.2.2.1 Pressure relief valves.** For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.

**5.508.2.2.1.1 Pressure detection.** A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve.

# 5.508.2.2.2 Access valves. Only Schrader access valves with a brass or steel body are permitted for

5.508.2.2.2.1 Valve caps. For systems with a refrigerant charge of 5 pounds or more, valve caps

## shall be brass or steel and not plastic.

**5.508.2.2.2 Seal caps.** If designed for it, the cap shall have a neoprene O-ring in place.

#### 5.508.2.2.2.1 Chain tethers. Chain tethers to fit ovr the stem are required for valves designed to have seal caps.

**Exception:** Valves with seal caps that are not removed from the valve during stem

5.508.2.3 Refrigerated service cases. Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances.

5.508.2.3.1 Coil coating. Consideration shall be given to the heat transfer efficiency of coil coating to maximize energy efficiency. 5.508.2.4 Refrigerant receivers. Refrigerant receivers with capacities greater than 200 pounds shall be

### fitted with a device that indicates the level of refrigerant in the receiver.

5.508.2.5 Pressure testing. The system shall be pressure tested during installation prior to evacuation and

#### 5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and appropriate tracer gas to bring system pressure up to 300 psig minimum.

**5.508.2.5.2 Leaks.** Check the system for leaks, repair any leaks, and retest for pressure using the same gauge.

5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more than a +/- one pound pressure change from 300 psig, measured with the same gauge.

## **5.508.2.6 Evacuation.** The system shall be evacuated after pressure testing and prior to charging.

5.508.2.6.1 First vacuum. Pull a system vacuum down to at least 1000 microns (+/- 50 microns), and hold for 30 minutes. 5.508.2.6.2 Second vacuum. Pull a second system vacuum to a minimum of 500 microns and hold for

### 30 minutes.

charging.

**5.508.2.6.3 Third vacuum.** Pull a third vacuum down to a minimum of 300 microns, and hold for 24 hours with a maximum drift of 100 microns over a 24-hour period.

# **INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS**

### 702 QUALIFICATIONS

702.1 INSTALLER TRAINING. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and esponsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the

#### 1. State certified apprenticeship programs. Public utility training programs.

Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.

4. Programs sponsored by manufacturing organizations. 5. Other programs acceptable to the enforcing agency.

**702.2 SPECIAL INSPECTION [HCD].** When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the enforcing agency, the following certifications or education may be considered by the enforcing agency when evaluating the qualifications of a special inspector:

#### 1. Certification by a national or regional green building program or standard publisher. 2. Certification by a statewide energy consulting or verification organization, such as HERS raters,

building performance contractors, and home energy auditors. 3. Successful completion of a third party apprentice training program in the appropriate trade. 4. Other programs acceptable to the enforcing agency.

- Notes
- 1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

**[BSC-CG]** When required by the enforcing agency, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate ompliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the enforcing agency for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national or international association, as determined by the local agency. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

703 VERIFICATIONS 703.1 DOCUMENTATION. Documentation used to show compliance with this code shall include but is not imited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the enforcing agency which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be

specified in the appropriate section or identified applicable checklist.





Gavis Newson Covernor	
DEPARTMENT OF FORESTRY AND FIRE PROTECTION Office of the State Fire Marshal P.O. Box 944246 SACRAMENTO, CA 94244-2460 (916) 568-2993 Website: www.osfm.fire.ca.goy	
LOCAL FIRE AUTHORITY – ACCESS APPROVAL	
Department of State Hospitals, Agency & Project Name DSH-Atascadero Re-Roof, HVAC Replacement, & Electrical Upgrades	
Address: 10333 El Camino Real, Atascadero, CA 93422	
GovMotus Control Number: 22-3319, 22-4869, 22-4870, & 22-4872	
suant to CCR Title 19 §3.00 and §3.05, the California State Fire Marshal is requesting	
form shall be scanned to the accompanying fire access plan reflecting all items under	
ideration, and wet signed by the local fire authority. Please complete all applicable items ad on scope. California State Fire Marshal project approval may be delayed until this is completed and returned. If you have any questions, please contact the California e Fire Marshal Plan Review Section at (916) 568-2993.	
ApprovedYesNoFire Department AccessX	
Fire Department ConnectionXFire HydrantX	
Fire Alarm Annunciator     X       Fire Alarm Control Panel     X	
Knox Box     X       Emergency Responder Radio Coverage     X       Medical Emergency Service Elevator     X	
Fire Service Access Elevator     X       Bi-Directional Amplification (BDA) Systems     X	
Local Fire Authority: <u>Atascadero State Hospital Fire Department</u> Address: 10333 El Camino Real	
Approval issued by: <u>Gustavo Avalos</u>	
Phone Number:         (805) 468-2501           Signature:         Date:           01/27/2023	
partment of Forestry and Fire Protection serves and safeguards the people and protects the property and resources of California."	
	LEGEND: OSFM #19-40 & PERMIT #22-S-4872, ELECTRICAL UPGRADE
	AREA OF ROOFING WORK. REFER TO AD-SHEETS FOR DEMO & A-SHEETS FOR NEW WORK.
	(E) FIRE DEPARTMENT ACCESS OVER (E) PAVED SURFACES.
	(E) F.H. (E) FIRE HYDRANT ADJACENT PAVED ACCESS ROAD.
x x x	
(E) F.H.	GENERAL NOTES:         1.       FOR DESIGNED CONSTRUCTION PHASING SEQUENCE AND LOCATIONS OF TEMPORARY
(E) SLIDING GATE	FACILITIES AND CONSTRUCTION MATERIALS ROOF ACCESS, REFER TO AP-SHEETS.
GATE A: 16.5'W x 14'H	<ol> <li>2. PORTELETER EXERCISE EXECUTE ROOT INFORMATION RELEATED CIVIL ROOT FOR OTHER OF THE ROOT FOR OTHER OTHER</li></ol>
	ELECTRICAL SERVICE UPGRADE. CONTRACTOR IS MADE AWARE THAT THIS FACILITY HAS ANOTHER PROJECT, BY OTHERS, INTENDED FOR CONSTRUCTION SIMULTANEOUS WITH THIS PROJECT ALSO INVOLVING PG&E SERVICE UPGRADE.
,s <sup>2</sup>	4. CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL SITE REQUIRED SECURITY CLEARANCES FOR ALL PERSONNEL PRIOR TO COMMENCEMENT OF WORK. COORDINATE WITH
(E) PR. SWING GATES	<ol> <li>5. FIRE DEPARTMENT ACCESS PER 2019 CFC 3310.1 REQUIRED ACCESS.</li> <li>5. FIRE DEPARTMENT ACCESS PER 2019 CFC 3310.1 REQUIRED ACCESS.</li> </ol>
GATE 6: 11.5'W x 12'H (E) PR. SWING GATES	APPROVED VEHICLE ACCESS FOR FIRE FIGHTING SHALL BE PROVIDED TO ALL CONSTRUCTION OR DEMOLITION SITES. VEHICLE ACCESS SHALL BE PROVIDED TO WITHIN 100 FEET (30 480 MM) OF TEMPORARY OR PERMANENT FIRE DEPARTMENT
WARDS 18 & 19	CONNECTIONS. VEHICLE ACCESS SHALL BE PROVIDED BY EITHER TEMPORARY OR PERMANENT ROADS, CAPABLE OF SUPPORTING VEHICLE LOADING UNDER ALL WEATHER CONDITIONS. VEHICLE ACCESS SHALL BE MAINTAINED UNTIL PERMANENT
	<ul><li>FIRE APPARATUS ACCESS ROADS ARE AVAILABLE.</li><li>6. LOCATIONS OF DUMPSTERS FOR DEMO RUBBISH PER 2019 CFC 3304.2.3 RUBBISH</li></ul>
	CONTAINERS. WHERE RUBBISH CONTAINERS WITH A CAPACITY EXCEEDING 5.33 CUBIC FEET (40
	RUBBISH, AND WASTE MATERIAL, THEY SHALL HAVE TIGHT-FITTING OR SELF-CLOSING LIDS. SUCH RUBBISH CONTAINERS SHALL BE CONSTRUCTED ENTIRELY OF MATERIALS
	THAT COMPLY WITH EITHER OF THE FOLLOWING: A. NONCOMBUSTIBLE MATERIALS. B. MATERIALS THAT MEET A PEAK RATE OF HEAT RELEASE NOT EXCEEDING 300
	KW/M2 WHEN TESTED IN ACCORDANCE WITH ASTM E1354 AT AN INCIDENT HEAT FLUX OF 50 KW/M2 IN THE HORIZONTAL ORIENTATION.
	7. WATER SUPPLY PER 2019 CFC 3312.1 WHEN REQUIRED.
: 7.5'W x 7.5'H	PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ARRIVES ON THE SITE.
	8. LOCATIONS OF FIRE EXTINGUISHERS PER 2019 CFC 3317.3 FIRE EXTINGUISHERS FOR ROOFING OPERATIONS.
	FIRE EXTINGUISHERS SHALL COMPLY WITH SECTION 906. THERE SHALL BE NOT LESS THAN ONE MULTIPLE-PURPOSE PORTABLE FIRE EXTINGUISHER WITH A MINIMUM 3-A 40-B:C RATING ON THE ROOF BEING COVERED OR REPAIRED.
$\frown$	
52.5' 17.5' <b>VW</b> 70' 35' 0' 70'	
SCALE: 1"=70'	

















# SHEET LAYOUT AND SURVEY CONTROL



SURVEY NOTES

SCALE

1 INCH = 30 FEET

- 1. THE HORIZONTAL DATUM FOR THIS SURVEY IS THE NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT [NAD83(2011)], EPOCH DATE OF 2010.00.
- THE PROJECTION USED IS THE CALIFORNIA COORDINATE SYSTEM OF  $19_83$ (CCS83), ZONE 5 PROJECTION.
- THIS SURVEY TIED TO 3 NATIONAL GEODETIC SURVEY (NGS) CONTINUOUSLY OPERATING REFERENCE STATIONS (CORS). THOSE STATIONS ARE: STATION NORTHING EASTING 2,309,259.75' 5,708,342.52' P523
  - 2,429,968.36' 5,708,964.53' P526
- P539 2,449,108.52' 5,913,791.93' THE RESULTING BEARING FROM "P523" TO "P539" BEING: NORTH 55° 45' 25.21" EAST. THE BEARINGS SHOWN HEREON ARE REFERENCED TO CCS83, ZONE 5 GRID NORTH.
- 4. ALL MEASUREMENTS LISTED, SHOWN AND REPRESENTED HEREON ARE BASED ON GRID DISTANCES OF THE CALIFORNIA COORDINATE SYSTEM OF 1983 ZONE 5 PROJECTION. THE COMBINED SCALE FACTOR FOR THE PROJECT IS 0.99996182. THIS SCALE FACTOR WAS CALCULATED USING AN ELEVATION OF 905.19 FEET FOR PT. NO. 1. DIVIDE THE DISTANCES HEREON BY THE COMBINED SCALE FACTOR TO OBTAIN GROUND DISTANCES. ALL DISTANCES SHOWN ARE U.S. SURVEY FEET
- 5. THE CONVERGENCE ANGLE IS: -1° 30' 09.13389" AT POINT NUMBER 1.
- 6. THE ORTHOMETRIC HEIGHTS (ELEVATIONS) ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND ARE DERIVED CALIFORNIA ORTHOMETRICHEIGHTS OF 1988 (DERIVED COH88). THE DERIVED COH88 WAS CALCULATED AT POINT NUMBER 1 USING THE FOLLOWING VALUES: A NAD83 ELLIPSOID HEIGHT OF 792.93 FEET, AND A GEOID12B GEOID HEIGHT OF -112.26 FEET, RESULTING IN A DERIVED COH88 ELEVATION OF 905.19 FEET.
- 8. ORTHOPHOTOGRAPHY PRODUCED BY:

WALLACE GROUP 612 CLARION COURT SAN LUIS OBISPO, CA 93401

PHONE: (805) 544-4011

### PHOTOGRAPHY DATED: 10/27/2021

### SURVEY CONTROL POINTS

PT. NO.	NORTHING	EASTING	ELEV.	DESC.			
1	2366034.57	5776776.03	905.18	SET5RBWG			
140	2365337.11	5776496.31	883.38	SET 60D NAIL			
150	2364989.58	5776737.93	911.60	SET 5RB WG			
151	2365151.55	5776629.92	902.40	SET 60D NAIL PINK			
152	2364938.70	5776766.96	912.25	SET X BSW			
156	2365055.16	5776797.14	911.90	SET MAG NAIL WG WASHER			
177	2364997.57	5776654.12	906.94	SET 5RB WG			
203	2364887.47	5776704.45	911.94	SET MAG			

PROJECT NO. 1143-0003					
SURVEYED BY:	мС	10/27/21-11/10/21			
DRAFTED BY:	мC/JV	11/15/2021			
CHECKED BY:	СВ	11/15/2021			









5 10 1 INCH = 10 FEET

	VU-1.2
VU-1.3	VU-1.4
KEY MAP	NOT TO SCALE
KEY MAP	NOT TO SCALE

/2023 11:02 AM MARKM (1143-HMR ARCHITECTS\0003 - ASH ROOF SURVEY\04 - DRAWINGS\05 SURVEY\1143-0003-TOPO.DWG



![](_page_8_Figure_6.jpeg)

![](_page_9_Figure_0.jpeg)

![](_page_9_Figure_1.jpeg)

# LEGEND

	- INTERMEDIATE CONTOUR
	- EDGE OF PAVEMENT
	- EDGE OF DIRT ROAD
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ELE O	
— ELE — — — — — — — — — — — — — — — — —	- UNDERGROUND EIBER OPTIC LINE
— GAS——— ———	- GAS LINE
— OIL — — — — — — — — — — — — — — — — — — —	– OIL LINE
SD	- STORM DRAIN LINE
— SS — — — — —	- SANITARY SEWER LINE
— TEL — — — — — — — — — — — — — — — — — — —	- UNDERGROUND TELEPHONE LINE
STM	- UNDERGROUND STEAM CONDESNATE LINE
— UIL —— —— ——	
	- WATER LINE
??	– UNKNOWN UTILITY LINE
	TRAFFIC STRIPING (SOLID)
	- TRAFFIC STRIPING (DASHED)
	– BUILDING LINE (INTERIOR)
¢	AREA LIGHT
	STORM DRAIN MANHOLE
COM	
	ELECTRICAL BOX
	GAS BOX
SLB	STREET LIGHT BOX
	TELEPHONE BOX
	CABLE TELEVISION PEDESTAL
	GAS METER
GM	WATER METER
WM X	GAS VALVE
RWV	RECYCLED WATER VALVE
ICV	IRRIGATION CONTROL VALVE
$\bigotimes$	WATER VALVE
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۹ <del>۶</del> (	GUY WIRE
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Орр	POWER POLE
$\boldsymbol{\Theta}$	BOLLARD/SMALL POLE
©CO	SANITARY SEWER CLEAN OUT
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	BRUSH LINE/DRIP LINE
~ G →	GAS PAINT MARK
<del>~</del> \$\$~	SANITARY SEWER PAINT MARK
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← E →	UNDERGROUND ELECTRIC PAINT MARK
-ru- 	
20" PINE	TREE WITH DIAMETER NOTED
#P TREE	TREE WITH MULTIPLE PRONGS
/	
	BUILDING
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	CONODETE
	CUNCKETE

WALL

![](_page_9_Figure_6.jpeg)

V2

![](_page_10_Picture_0.jpeg)

![](_page_10_Figure_1.jpeg)

![](_page_10_Figure_2.jpeg)

5/2023 11:02 AM MARKM \1143-HMR ARCHITECTS\0003 - ASH ROOF SURVEY\04 - DRAWINGS\05 SURVEY\1143-0003-TOPO.DWG

![](_page_10_Picture_4.jpeg)

![](_page_10_Figure_5.jpeg)

![](_page_11_Figure_0.jpeg)

![](_page_11_Figure_1.jpeg)

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	1-1-11		
ELECTRICAL LINE INSIDE CONCRETE ENCASEMENT. WIDTH = 1.3', HEIGHT = 2.3'. TOP OF CONC. = 914.22'			
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	GAS OIL OIL	C	GAS LINE DIL LINE STORM DRAIN LINE
		s	ANITARY SEWER LINE
		——— u ——— c	INDERGROUND STEAM CONDESNATE LINE INDERGROUND UTILITY LINE IVERHEAD UTILITY LINE
SEE SHEET VU-1.6 FOR DETAIL	WL ?	V L T	VATER LINE INKNOWN UTILITY LINE 'RAFFIC STRIPING (SOLID)
		T B o A	RAFFIC STRIPING (DASHED) UILDING LINE (INTERIOR)
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			COMMUNICATION BOX CABLE TELEVISION BOX
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		© <sub>JP</sub> J ● <sub>PP</sub> P ⊕ B	OINT UTILITY POLE OWER POLE OLLARD/SMALL POLE
			ANITARY SEWER CLEAN OUT TREET SIGN/SIGN POST
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![](_page_11_Figure_4.jpeg)

ISSUE DATE: JANUARY 14, 2025

V2

![](_page_12_Figure_0.jpeg)

![](_page_12_Figure_1.jpeg)

![](_page_12_Figure_2.jpeg)

![](_page_12_Figure_3.jpeg)

![](_page_12_Figure_4.jpeg)

## LEGEND

	- INDEX CONTOUR
	- INTERMEDIATE CONTOUR
	- EDGE OF PAVEMENT
	- EDGE OF DIRT ROAD
x x	- RAZOR WIRE FENCE
0 0	- CHAIN LINK FENCE
ELE	- UNDERGROUND ELECTRICAL LINE
F/O	- UNDERGROUND FIBER OPTIC LINE
GAS	- GAS LINE
SD	
	UNDERGROUND TELEPHONE LINE
O/H	- OVERHEAD LITHITY LINE
	- WATER LINE
??	- UNKNOWN UTILITY LINE
	TRAFFIC STRIPING (SOLID)
	- TRAFFIC STRIPING (DASHED)
	- BUILDING LINE (INTERIOR)
¢	AREA LIGHT
*	LIGHT STANDARD
D	STORM DRAIN MANHOLE
S	SANITARY SEWER MANHOLE
COM	COMMUNICATION BOX
	CABLE TELEVISION BOX
ELEC	ELECTRICAL BOX
GAS	GAS BOX
	STREET LIGHT BOX
	TELEPHONE BOX
	CABLE TELEVISION PEDESTAL
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⊕	BOLLARD/SMALL POLE
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@ FO	FIBER OPTIC PLACARD
G	GAS PLACARD
<u>1</u>	SURVEY CONTROL POINT AND NUMBER
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	BUILDING
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	CONCRETE
	WALL

![](_page_12_Picture_7.jpeg)

SCALE 2.5 1 INCH = 5 FEET

![](_page_12_Figure_15.jpeg)

![](_page_13_Figure_0.jpeg)

![](_page_13_Figure_1.jpeg)

## LEGEND

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		- INDEX CONTOUR
		- INTERMEDIATE CONTOUR
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		- STORM DRAIN LINE
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		– BUILDING LINE (INTERIOR)
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1 INCH = 5 FEET

![](_page_13_Figure_4.jpeg)

![](_page_14_Picture_0.jpeg)

SHEEE	SHEEET INDEX		
C-1.1	COVER SHEET		
C-1.2	NOTES SHEET		
C-1.3	PROJECT CONTROL PLAN		
C-2.1	OVERALL GRADING PLAN		
C-2.2	GRADING PLAN		
C-2.3	GRADING PLAN		
C-3.1	UTILITY PLAN		
C-4.1	CONSTRUCTION DETAILS		
C-4.2	CONSTRUCTION DETAILS		

![](_page_14_Figure_2.jpeg)

- 0

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# SITE IMPROVEMENT PLANS FOR ATASCADERO STATE HOSPITAL ELECTRICAL BUILDING CITY of ATASCADERO, CALIFORNIA

LEGEND	
EXISTING	PROPOSED
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# DESCRIPTION

EWER MANHOLE	 	— WL ———
EWER CLEANOUT	 — SS —	— ss ———
ERVICE LATERAL V=WATER, G=GAS, U=UTILITIES)	 — SD —	— SD ———
ERVICE METER (W=WATER)	 — GAS —	— GAS ————
OUBLE SERVICE METER (W=WATER)	 — UTL —	– UTL ———
EWER LATERAL		
RE HYDRANT	 — ELE —	- ELE
TORM DRAIN MANHOLE	 — CTV —	– ctv ———
TORM DRAIN CATCH BASIN		
ATE VALVE	 — TEL —	- TEL
KISTING TREES	 	
	 — PS —	— PS ———
	 — RCW—	- RCW

EXISTING

PROPOSED

![](_page_14_Figure_13.jpeg)

![](_page_14_Picture_14.jpeg)

# **PROJECT INFORMATION**

OWNER:	DEPARTMENT OF STATE HOSPITALS - ATASCADERO 10333 EL CAMINO REAL ATASCADERO, CALIFORNIA 93422
ADDRESS:	ATASCADERO STATE HOSPITAL 10333 EL CAMINO REAL ATASCADERO, CALIFORNIA 93422

DESCRIPTION

WATER LINE

GRAVITY SEWER LINE

STORM DRAIN UNDERGROUND

GAS LINE

UNDERGROUND UTILITY LINE LOCATION

UNDERGROUND ELECTRICAL LINE

UNDERGROUND CABLE TELEVISION LINE

UNDERGROUND TELEPHONE LINE

RIGHT OF WAY

EASEMENT

CENTERLINE

PROCESS WASTE LINE

RECLAIMED WATER LINE

FIRE LINE

Know what's **below.** Call before you dig.

![](_page_14_Picture_33.jpeg)

### **GENERAL NOTES**

1. THESE PLANS ARE PART OF A SET OF CONTRACT DOCUMENTS AND SHALL NOT BE CONSIDERED THE SOLE SOURCE OF CONSTRUCTION INFORMATION. ALL CONSTRUCTION WORK AND INSTALLATIONS SHALL CONFORM TO THE CITY OF ATASCADERO STANDARDS AND SPECIFICATIONS, THE CONTRACT DOCUMENTS AND WORK SHALL BE SUBJECT TO THE APPROVAL OF THE CITY OF ATASCADERO PUBLIC WORKS DEPARTMENT.

2. THE CONTRACTOR SHALL HAVE COPIES OF THE APPROVED CONTRACT DOCUMENTS FOR THIS PROJECT ON THE SITE AT ALL TIMES AND SHALL BE FAMILIAR WITH ALL APPLICABLE STANDARDS AND SPECIFICATIONS.

3. CONTRACTOR AGREES THAT HE OR SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE DURING THE COURSE OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER AND OWNER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER. OR THIRD PARTY IN VIOLATION OF THE LAW OR IN TRESPASS. THE CONTRACTOR SHALL PRACTICE SAFETY AT ALL TIMES AND SHALL FURNISH, ERECT, AND MAINTAIN, SUCH FENCES, BARRICADES, LIGHTS, AND SIGNS NECESSARY TO GIVE ADEQUATE PROTECTION TO THE PUBLIC AT ALL TIMES.

4. INFORMATION PERTAINING TO EXISTING UNDERGROUND FACILITIES IS BASED ON RECORD INFORMATION AND IS SHOWN FOR INFORMATION PURPOSES ONLY. UNDERGROUND FEATURES SHOWN IN PLAN VIEW ON THE PLANS ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT, AND MAY NOT APPEAR IN PROFILE OR SECTIONS VIEWS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL AGENCIES INVOLVED AND SHALL LOCATE ALL FACILITIES PRIOR TO EXCAVATION IN ANY AREA. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA), TOLL FREE AT 811 AND THE CITY OF ATASCADERO FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.

5. THE CONTRACTOR SHALL CONTINUALLY REVIEW JOB SITE CONDITIONS. CONDITIONS REQUIRING CONSTRUCTION DIFFERENT FROM THAT SHOWN ON THE PLANS SHALL BE REPORTED TO THE ENGINEER PRIOR TO PROCEEDING WITH THE AFFECTED CONSTRUCTION.

6. THESE DRAWINGS REPRESENT THE FINISHED CONDITION AND UNLESS OTHERWISE INDICATED, THEY DO NOT SHOW THE METHOD OF CONSTRUCTION.

7. ALL IMPROVEMENTS SHOWN OR INDICATED ON THESE DRAWINGS ARE TO BE CONSTRUCTED AND/OR INSTALLED BY THE CONTRACTOR IN THIS PROJECT, UNLESS THEY ARE CALLED OUT AS: "EXISTING", "FUTURE", "NIC", NOT A PART; OR HAVE SOME OTHER EXCLUDING NOTATION.

8. CONTRACTOR SHALL KEEP A SET OF PROJECT DRAWINGS ON WHICH RECORD INFORMATION SHALL BE PLACED NOTING DEVIATIONS FROM THE PLANS IN THE LOCATION, GRADE, SIZE, TYPE, AND SCOPE OF WORK WHICH IS CONSTRUCTED.

9. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) REQUIREMENTS AND STANDARDS SHALL BE OBSERVED AT THE JOB SITE AT ALL TIMES.

10. CONTRACTOR SHALL ORGANIZE A PRE-CONSTRUCTION MEETING PRIOR TO COMMENCEMENT OF WORK. THE MEETING SHALL INCLUDE (AT A MINIMUM) THE OWNER/REPRESENTATIVE, CONTRACTORS, ENGINEER OF RECORD, SOILS ENGINEER, PERTINENT UTILITY COMPANIES, SURVEYOR AND CITY INSPECTOR. TO SCHEDULE MEETING, CONTACT CITY OF ATASCADERO AT (805) 461-5000.

11. EXISTING SURVEY MONUMENTS SHALL BE PROTECTED IN PLACE OR SHALL BE TIED OUT BY A LICENSED LAND SURVEYOR PRIOR TO DISTURBANCE. PROPER RESETTING OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS SHALL BE AT THE CONTRACTOR'S OWN EXPENSE. ANY SURVEY MONUMENTS DISTURBED BY THE CONTRACTOR SHALL BE REPLACED PRIOR TO OCCUPANCY BY A PROFESSIONAL LICENSED LAND SURVEYOR IN ACCORDANCE WITH SECTION 8771 OF THE CALIFORNIA BUSINESS AND PROFESSIONS ACT

12. ALL CONSTRUCTION SHALL BE IN COMPLETE COMPLIANCE WITH ALL RECOMMENDATIONS AND REQUIREMENTS AS SET FORTH IN THE GEOTECHNICAL ENGINEERING REPORT FOR ATASCADERO STATE HOSPITAL.

13. A SEPARATE ENCROACHMENT PERMIT IS REQUIRED OF ANY WORK IN THE PUBLIC RIGHT-OF-WAY, WORK REQUIRING AN ENCROACHMENT PERMIT INCLUDES BUT IS NOT LIMITED TO CURB AND GUTTER, SIDEWALKS, DRIVEWAY RAMPS, CURB RAMPS, SIDEWALK UNDERDRAINS, STREET LIGHTS, WATER, SEWER, AND FIRE SERVICES, DRAINAGE IMPROVEMENTS, WORK IN A PUBLIC EASEMENT, CONNECTION TO CITY OFFSITE SEWER MAIN, STREET TREE PLANTING, STREET PAVING, AND PEDESTRIAN PROTECTION OR CONSTRUCTION STAGING IN THE RIGHT-OF WAY.

14. CONTACT THE PUBLIC WORKS AT 461-5000 WITH AT LEAST A 48 HOUR NOTICE FOR ANY REQUIRED CITY OF ATASCADERO ENCROACHMENT PERMIT OR FINAL INSPECTIONS.

15. A TRAFFIC CONTROL AND PEDESTRIAN PROTECTION PLAN SHALL BE SUBMITTED TO THE CITY OF ATASCADERO PUBLIC WORKS DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE ENCROACHMENT PERMIT ISSUANCE.

16. NO CONSTRUCTION SHALL BE STARTED WITHOUT PLANS APPROVED BY THE CITY. THE CITY SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO STARTING OF CONSTRUCTION. ANY CONSTRUCTION DONE WITHOUT APPROVED PLANS OR PRIOR NOTIFICATION TO THE CITY WILL BE REJECTED AND WILL BE AT THE CONTRACTOR'S AND/OR OWNER'S RISK.

17. ALL CONSTRUCTION SHALL BE IN COMPLETE COMPLIANCE WITH ALL RECOMMENDATIONS AND REQUIREMENTS SET FORTH IN THE SOILS REPORT: GEOTECHNICAL REPORT ATASCADERO STATE HOSPITAL ELECTRICAL BUILDING, YEH AND ASSOCIATES, INC., DATED FEBRUARY 10, 2022.

18. SOILS TESTS SHALL BE DONE IN ACCORDANCE WITH THE CITY OF ATASCADERO STANDARDS AND SPECIFICATIONS. ALL TESTS MUST BE MADE WITHIN 15 DAYS PRIOR TO THE PLACING OF MATERIAL. THE TEST RESULTS SHALL CLEARLY INDICATE THE LOCATION AND SOURCE OF THE MATERIAL.

19. COMPACTION TESTS SHALL BE MADE ON SUBGRADE MATERIAL AND MATERIAL AS SPECIFIED BY THE SOILS ENGINEER. SAID TESTS SHALL BE MADE PRIOR TO THE PLACING OF THE NEXT MATERIAL. COMPACTION REPORTS TO BE PROVIDED TO THE ENGINEER OF RECORD.

20. A REGISTERED CIVIL ENGINEER MUST VERIFY THAT THE IMPROVEMENTS WHEN COMPLETED ARE IN CONFORMANCE WITH THE PLANS PRIOR TO THE REQUEST FOR FINAL INSPECTION. RECORD DRAWINGS ARE TO BE PREPARED AFTER CONSTRUCTION IS COMPLETED. THE CIVIL ENGINEER PREPARING THE RECORD DRAWING PLANS WILL BE PRESENT WHEN THE FINAL INSPECTION IS MADE. CONTRACTOR TO KEEP A RECORD OF ALL REVISIONS/ "AS-BUILT" CHANGES ON AN APPROVED SET OF PLANS AND PROVIDE TO THE EOR IN A TIMELY MANNER AFTER FINAL INSPECTION SITE WALK.

21. ALL UTILITY COMPANIES SHALL BE NOTIFIED PRIOR TO THE START OF

CONSTRUCTION.

22. THE FINAL STRUCTURAL SECTION SHALL BE BASED ON 'R' VALUE TESTS MADE AT THE TIME OF CONSTRUCTION.

23. CONSTRUCTION ACTIVITY ON-SITE SHALL BE LIMITED TO THE HOURS OF 7:00AM TO 7:00PM MONDAY THROUGH SATURDAY.

24. GRADING OPERATIONS SHALL BE MONITORED BY OR UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER TO PROVIDE PROPER SELECTION AND COMPACTION

OF FILL AND ATTEMPT TO IDENTIFY ANY UNDISCOVERED SOIL CONDITIONS OR FEATURES THAT MIGHT AFFECT THE CONSTRUCTION OF THE DEVELOPMENT.

25. THE CONTRACTOR SHALL CLEARLY POST THE PROJECTS NOISE RESTRICTIONS ON THE SITE UNTIL THE PROJECT IS COMPLETE. 26. DESIGNS OF ALL FOUNDATIONS, ROADWAYS, CURBS AND OTHER STRUCTURES

SHALL BE REVIEWED BY A GEOTECHNICAL ENGINEER TO ENSURE THAT THEY ARE COMPATIBLE WITH THE SOILS PROPERTIES AND CONDITIONS ON THE PROJECT SITE. 27. A CAL-OSHA PERMIT IS REQUIRED FOR EXCAVATIONS OR TRENCHING GREATER THAN 5 FEET IN DEPTH. A COPY OF THE ANNUAL OR PROVISIONAL PERMIT SHALL BE

PROVIDED TO THE BUILDING DIVISION PRIOR TO BUILDING, UTILITY, AND/OR GRADING PERMIT ISSUANCE IF APPLICABLE. 28. FINISH GRADES AROUND THE STRUCTURE SHALL SLOPE DRAIN A MINIMUM OF 5% FOR 10 FEET OR 2% FOR IMPERVIOUS SURFACES TOWARD A PUBLIC STREET OR ENGINEERED DRAINAGE STRUCTURE.

29. ALL WORK LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY OR WITHIN THE JURISDICTION OF THE CITY UTILITIES AND PUBLIC WORKS DEPARTMENTS SHALL COMPLY WITH THE MOST CURRENT EDITION OF THE ENGINEERING STANDARD AND STANDARD SPECIFICATIONS.

30. PUBLIC IMPROVEMENTS SHOWN ON THESE PLANS ARE FOR INFORMATION ONLY. APPROVAL OF THESE PLANS DOES NOT AUTHORIZE OR PERMIT WORK IN THE PUBLIC RIGHT OF WAY OR CONNECTION TO PUBLIC UTILITIES.

31. ALL PUBLIC IMPROVEMENTS SHALL BE COMPLETED TO THE SATISFACTION OF THE PUBLIC WORKS INSPECTOR PRIOR TO FINAL INSPECTION APPROVALS OR OCCUPANCY OF ANY NEW BUILDING.

32. PURSUANT TO GOVERNMENT CODE SECTION 66474.9(B), THE SUBDIVIDER SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS THE CITY AND/OR ITS AGENTS, OFFICERS AND EMPLOYEES FROM ANY CLAIM, ACTION OR PROCEEDING AGAINST THE CITY AND/OR ITS AGENTS, OFFICERS OR EMPLOYEES TO ATTACK, SET ASIDE, VOID OR ANNUL, THE APPROVAL BY THE CITY OF THIS SUBDIVISION, AND ALL ACTIONS RELATING THERETO, INCLUDING BUT NOT LIMITED TO ENVIRONMENTAL REVIEW.

33. EXPORT MATERIAL SHALL BE DISPOSED OF OUTSIDE THE CITY LIMITS IN AN ACCEPTABLE LOCATION.

34. STORMWATER AND DRAINAGE SYSTEM CERTIFICATION IS REQUIRED FROM THE ENGINEER OF RECORD PRIOR TO FINAL INSPECTION APPROVALS. THE ENGINEER SHALL CERTIFY THAT THE DRAINAGE AND STORMWATER SYSTEM COMPONENTS HAVE BEEN INSPECTED AND ARE IN GENERAL CONFORMANCE WITH THE DRAINAGE REPORT, SYSTEM DESIGN, AND THE APPROVED PLANS, INCLUDING ALL FINAL ELEVATIONS, COMPONENT SIZING, BIORETENTION BASINS, AND INLETS.

35. ALL SURFACE AND SUBSURFACE DRAINAGE SYSTEMS DESIGNED AT LESS THAN 2% FINAL GRADIENTS CERTIFIED BY A LICENSED SURVEYOR OR ENGINEER PRIOR TO FINAL INSPECTION APPROVALS.

### CONSTRUCTION NOTES

1. CONTRACTOR SHALL INVESTIGATE THE SITE DURING CLEARING, DEMOLITION AND EARTHWORK OPERATION FOR ANY EXISTING HAZARD SUCH AS CESSPOOLS. CISTERNS, FOUNDATIONS OR LARGE DEPOSITS OF ORGANIC MATERIAL, ETC. IF ANY SUCH HAZARDS ARE FOUND, THE OWNER AND ENGINEER SHALL BE NOTIFIED. ALL EXISTING SURFACE STRUCTURES, FENCES, TANKS, PIPES, ETC., AND ANY BURIED MATERIAL SPECIFIED IN THE PLANS FOR REMOVAL FROM THE SITE SHALL BE DISPOSED OF AT A LICENSED DISPOSAL FACILITY.

2. CONTRACTOR SHALL PROVIDE A MIN. OF 48 HOURS WRITTEN NOTICE TO THE PROJECT REPRESENTATIVE AND SURVEYOR WHEN REQUESTING SURVEY STAKES.

3. ANY SECTIONS OF DAMAGED OR DISPLACED CURB, GUTTER & SIDEWALK, OR DRIVEWAY APPROACH SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE PUBLIC WORKS DIRECTOR.

4. A COMPACTION REPORT SHALL BE PROVIDED FROM A LICENSED SOILS ENGINEER STATING THAT THE BASE AND SUBGRADE WERE PREPARED IN ACCORDANCE WITH THE PROJECT SOILS REPORT OR THE CITY PARKING AND DRIVEWAY STANDARDS. PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATION, NON-VEHICULAR AREAS SHALL BE 90% COMPACTION AND VEHICULAR AREAS SHALL BE 95% COMPACTION.

5. THE ELEVATION OF THE FOUNDATION FORMS SHALL BE CERTIFIED BY A LICENSED SURVEYOR OR ENGINEER FOR COMPLIANCE WITH THE APPROVED BUILDING PLANS AND CITY ORDINANCES PRIOR TO FOUNDATION INSPECTION APPROVALS

CUT: 326 CY FILL: 79 CY NET: 247 CY

QUANTITY ESTIMATES SHOWN ON THIS PLAN ARE TO BE USED FOR BONDING AND PERMIT PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL QUANTITIES FOR THE PURPOSES OF CONSTRUCTION & BIDDING. THESE QUANTITIES DO NOT ASSUME ANY LOSSES DUE TO SHRINKAGE, DIRT REMOVAL DUE TO UNSUITABLE SUBGRADE MATERIAL OR REUSE OF EXISTING ASPHALT ON-SITE.

### **GRADING NOTES**

1. YEH AND ASSOCIATES, INC., HEREINAFTER DESCRIBED AS THE GEOTECHNICAL ENGINEER, WILL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS BEFORE SITE CLEARING OR GRADING OPERATIONS COMMENCE, AND WILL BE PRESENT TO OBSERVE THE STRIPPING OF DELETERIOUS MATERIAL AND PROVIDE CONSULTATION TO THE GRADING CONTRACTOR IN THE FIELD.

2. IF EXCAVATIONS ENCOUNTER SIGNIFICANT PALEONTOLOGICAL RESOURCES, ARCHAEOLOGICAL RESOURCES, OR CULTURAL MATERIAL, THEN CONSTRUCTION ACTIVITIES THAT MAY AFFECT THEM SHALL CEASE UNTIL THE EXTENT OF THE RESOURCE IS DETERMINED AND THE COMMUNITY DEVELOPMENT DIRECTOR APPROVES APPROPRIATE PROTECTIVE MEASURES. THE COMMUNITY DEVELOPMENT DIRECTOR SHALL BE NOTIFIED OF THE EXTENT AND LOCATION OF DISCOVERED MATERIALS SO THAT A QUALIFIED ARCHAEOLOGIST MAY RECORD THEM.

IF PRE-HISTORIC NATIVE AMERICAN ARTIFACTS ARE ENCOUNTERED, A NATIVE AMERICAN MONITOR SHOULD BE CALLED INTO WORK WITH THE ARCHAEOLOGIST TO DOCUMENT AND REMOVE THE ITEMS. DISPOSITION OF ARTIFACTS SHALL COMPLY WITH STATE AND FEDERAL LAWS.

CITY OF ATASCADERO PUBLIC WORKS DEPARTMENT 6500 PALMA AVE ATASCADERO, CA 93422

(805) 461-5000

APPLICABLE CODES:

CALTRANS STANDARD PLANS - 2018 CBC - 2019 California Building Code GBC - 2019 Green Building Code CFC - 2019 California Fire Code

# **EROSION CONTROL**

1. EROSION CONTROL MEASURES FOR WIND, WATER, MATERIAL STOCKPILES, AND TRACKING SHALL BE IMPLEMENTED ON ALL PROJECTS AT ALL TIMES AND SHALL INCLUDE SOURCE CONTROL. INCLUDING PROTECTION OF STOCKPILES. PROTECTION OF SLOPES, PROTECTION OF ALL DISTURBED AREAS, PROTECTION OF ACCESSES, AND PERIMETER CONTAINMENT MEASURES. EROSION CONTROL SHALL BE PLACED PRIOR TO THE COMMENCEMENT OF GRADING AND SITE DISTURBANCE ACTIVITIES UNLESS THE PUBLIC WORKS DEPARTMENT DETERMINES TEMPORARY MEASURES TO BE UNNECESSARY BASED UPON LOCATION, SITE CHARACTERISTICS OR TIME OF YEAR. THE INTENT OF EROSION CONTROL MEASURES SHALL BE TO KEEP ALL GENERATED SEDIMENTS FROM ENTERING A SWALE, DRAINAGE WAY, WATERCOURSE, ATMOSPHERE, OR MIGRATE ONTO ADJACENT PROPERTIES OR ONTO THE PUBLIC RIGHT-OF-WAY.

2. SITE INSPECTIONS AND APPROPRIATE MAINTENANCE OF ALL EROSION CONTROL MEASURES/DEVICES SHALL BE CONDUCTED AND DOCUMENTED AT ALL TIMES DURING CONSTRUCTION AND ESPECIALLY PRIOR TO, DURING, AND AFTER RAIN EVENTS.

3. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE PLACEMENT AND MAINTENANCE OF ALL EROSION CONTROL MEASURES/DEVICES AS SPECIFIED BY THE APPROVED PLAN UNTIL SUCH TIME THAT THE PROJECT IS ACCEPTED AS COMPLETE BY THE PUBLIC WORKS DEPARTMENT OR UNTIL RELEASED FROM THE CONDITIONS OF APPROVAL OF THEIR GENERAL PERMIT. EROSION CONTROL MEASURES/DEVICES MAY BE RELOCATED, DELETED OR ADDITIONAL MEASURES/DEVICES MAY BE REQUIRED DEPENDING ON THE ACTUAL CONDITIONS ENCOUNTERED DURING CONSTRUCTION. ADDITIONAL EROSION CONTROL MEASURES/DEVICES SHALL BE PLACED AT THE DISCRETION OF THE ENGINEER OF WORK, CITY INSPECTOR, OR RWQCB INSPECTOR. GUIDELINES FOR DETERMINING APPROPRIATE EROSION CONTROL DEVICES SHALL BE INCLUDED IN THE PLANS WITH ADDITIONAL MEASURES/DEVICES NOTED FROM THE APPENDIX OF THE PUBLIC IMPROVEMENT STANDARDS.

4. EROSION CONTROL DEVICES SHALL BE THE FIRST ORDER OF WORK AND SHALL BE IN PLACE AT ALL TIMES DURING CONSTRUCTION. ADDITIONAL MEASURES /DEVICES SHALL BE AVAILABLE DURING THE RAINY SEASON (BETWEEN OCTOBER 15 AND APRIL 15) OR ANYTIME WHEN THE RAIN PROABALITY EXCEEDS 30%. THESE MEASURES/DEVICES SHALL BE AVAILABLE, INSTALLED, AND/OR APPLIED AFTER EACH AREA IS GRADED AND NO LATER THAN FIVE (5) WORKING DAYS AFTER COMPLETION OF EACH AREA.

5. THE CONTRACTOR, DEVELOPER SHALL BE RESPONSIBLE TO REVIEW THE PROJECT SITE PRIOR TO OCTOBER 15 (RAINY SEASON) AND TO COORDINATE AN IMPLEMENTATION PLAN FOR WET WEATHER EROSION CONTROL DEVICES. A LOCALLY BASED STANDBY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON (OCTOBER 15 THROUGH APRIL 15). NECESSARY MATERIALS SHALL BE AVAILABLE AND STOCK PILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OR MAINTENANCE OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.

6. IN THE EVENT OF A FAILURE, THE DEVELOPER AND/OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR CLEANUP AND ALL ASSOCIATED COSTS OR DAMAGE. IN THE EVENT THAT DAMAGE OCCURS WITHIN THE RIGHT-OF-WAY AND THE CITY IS REQUIRED TO PERFORM CLEANUP, THE OWNER SHALL BE RESPONSIBLE FOR CITY REIMBURSEMENT OF ALL ASSOCIATED COSTS OR DAMAGE.

7. IN THE EVENT OF FAILURE AND/OR LACK OF PERFORMANCE BY THE OWNER AND/OR CONTRACTOR TO CORRECT EROSION CONTROL RELATED PROBLEMS THE PUBLIC WORKS DEPARTMENT MAY REVOKE ALL ACTIVE PERMITS AND RECOMMEND THAT CITY CODE ENFORCEMENT PROVIDE A WRITTEN NOTICE OR STOP WORK ORDER IN ACCORDANCE WITH SECTION 22.52.140 [23.10] OF THE LAND USE ORDINANCE.

8. PERMANENT EROSION CONTROL SHALL BE PLACED AND ESTABLISHED WITH 70% COVERAGE ON ALL DISTURBED SURFACES OTHER THAN PAVED OR GRAVEL SURFACES, PRIOR TO FINAL INSPECTION. PERMANENT EROSION CONTROL SHALL BE FULLY ESTABLISHED PRIOR TO FINAL ACCEPTANCE. TEMPORARY EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL PERMANENT MEASURES ARE ESTABLISHED.

9. ALL DISTURBED AREAS SHALL BE HYDROSEEDED OR PLANTED WITH AN APPROVED EROSION CONTROL VEGETATION WITHIN 14 DAYS AFTER CONSTRUCTION IS COMPLETE OR IF INACTIVE FOR MORE THAN 14 DAYS.

10. EFFECTIVE SOIL COVER WILL BE IMPLEMENTED FOR AREAS SCHEDULED TO BE INACTIVE FOR AT LEAST 14 DAYS AND ALL FINISHED SLOPES, OPEN SPACE, UTILITY BACKFILL, AND COMPLETED LOTS.

11. THE USE OF PLASTIC MATERIALS WILL BE LIMITED WHEN ALTERNATIVES EXIST. 12. EFFECTIVE WIND EROSION CONTROL SHALL BE IMPLEMENTED.

13. AFTER EACH RAIN STORM, REMOVE ALL SILT AND DEBRIS FROM EROSION & SEDIMENT CONTROL MEASURES, INCLUDING BASINS, SEDIMENT BASINS, SEDIMENT TRAPS, AND DIVERSION EARTH SWALES.

14. ALL EQUIPMENT/ VEHICLES WILL BE FUELED, MAINTAINED AND STORED IN THE DESIGNATED STAGING AREA FITTED WITH APPROPRIATE BMPS.

15. STORAGE AREAS FOR MATERIALS, WASTE, WATER STORAGE, WATER TRANSFER FOR DUST CONTROL AND COMPACTION PRACTICES SHALL BE LOCATED WITHIN THE DESIGNATED STAGING AREAS.

16. STOCKPILED CONSTRUCTION MATERIALS NOT BEING ACTIVELY USED SHALL BE COVERED AND BERMED PRIOR TO QUALIFYING RAIN EVENT.

17. TRACKING ONTO THE PUBLIC STREET SHALL BE MINIMIZED. THE ADJOINING STREETS SHALL BE CLEANED BY SWEEPING TO REMOVE DIRT, DUST, MUD AND CONSTRUCTION DEBRIS AT THE END OF EACH DAY.

18. TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WHEN PERMANENT IMPROVEMENTS, PLANTINGS, AND FACILITIES ARE IN PLACE. TEMPORARY MEASURES SHALL BE REMOVED PRIOR TO FINAL INSPECTION.

19. MINIMIZE THE AMOUNT OF DISTURBED/EXPOSED AREA WHERE POSSIBLE. DISTURB ONLY AREAS NECESSARY TO COMPLETE THE WORK SHOWN IN THESE PLANS.

20. IN THE EVENT OF A RELEASE OF A REPORTABLE QUANTITY OF A POLLUTANT. THE CONTRACTOR SHALL ADVISE THE OWNER TO NOTIFY THE NATIONAL RESPONSE CENTER AND THE CITY OF ATASCADERO. A REPORTABLE QUANTITY IS ESTABLISHED BY 40 CODE OF FEDERAL REGULATIONS (CFR) 117.3 OR 40 CFR 302.4.

21. ALL PREVENTION AND CLEAN UP MEASURES SHOULD BE CONDUCTED IN ACCORDANCE WITH CITY OF ATASCADERO ORDINANCES, AS WELL AS STATE AND FEDERAL REGULATIONS. WASTE MATERIALS SHOULD BE DISPOSED OF IN A LEGAL MANNER.

22. ALL DISCHARGES OF STORM WATER MUST COMPLY WITH THE LAWFUL REQUIREMENTS OF THE CITY OF ATASCADERO AND OTHER LOCAL AGENCIES REGARDING THE DISCHARGES OF STORM WATER TO STORM DRAIN SYSTEMS.

23. THIS PLAN DOES NOT COVER THE REMOVAL OF HAZARDOUS OR TOXIC WASTE. IN THE EVENT OF A DISCHARGE OR RELEASE OF A REPORTABLE QUANTITY OF TOXIC WASTE, CONSTRUCTION ACTIVITIES SHOULD BE STOPPED UNTIL THE SPILL CAN BE ASSESSED AND A MITIGATION REPORT PREPARED BY A QUALIFIED ENVIRONMENTAL CONSULTANT, AND IF NECESSARY, REVIEWED BY THE CITY OF SAN LUIS OBISPO AND ANY OTHER AGENCY HAVING JURISDICTION.

# **AIR QUALITY MITIGATION NOTES**

THE FOLLOWING DUST MITIGATION MEASURES ARE REQUIRED AT THE START AND MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION OR GRADING ACTIVITY:

1. CONSTRUCTION VEHICLE SPEED AT THE WORK SITE MUST BE LIMITED TO FIFTEEN (15) MILES PER HOUR OR LESS;

2. PRIOR TO ANY GROUND DISTURBANCE, SUFFICIENT WATER MUST BE APPLIED TO THE AREA TO BE DISTURBED TO PREVENT VISIBLE EMISSIONS FROM CROSSING THE PROPERTY LINE;

3. AREAS TO BE GRADED OR EXCAVATED MUST BE KEPT ADEQUATELY WETTED TO PREVENT VISIBLE EMISSIONS FROM CROSSING THE PROPERTY LINE:

STORAGE PILES MUST BE KEPT ADEQUATELY WETTED, TREATED WITH A CHEMICAL DUST SUPPRESSANT, OR COVERED WHEN MATERIAL IS NOT BEING ADDED TO OR REMOVED FROM THE PILE;

5. EQUIPMENT MUST BE WASHED DOWN BEFORE MOVING FROM THE PROPERTY ONTO A PAVED PUBLIC ROAD;

6. VISIBLE TRACK-OUT ON THE PAVED PUBLIC ROAD MUST BE CLEANED USING WET SWEEPING OR HEPA FILTER EQUIPPED VACUUM DEVICE AT THE END IF EACH DAY.

7. NO PERSON SHALL ENGAGE IN ANY CONSTRUCTION OR GRADING OPERATION ON PROPERTY WHERE THE AREA TO BE DISTURBED IS GREATER THAN ONE (1.0) ACRE UNLESS A GEOLOGIC EVALUATION HAS OCCURRED ON SITE. IF ASBESTOS CONTAINING ROCK IS DETERMINED TO BE ON SITE AN ASBESTOS DUST MITIGATION PLAN WILL BE REQUIRED TO BE SUBMITTED TO AND APPROVED BY THE DISTRICT BEFORE THE START OF ANY CONSTRUCTION OR GRADING ACTIVITY; AND THE PROVISIONS OF THAT DUST MITIGATION PLAN MUST BE IMPLEMENTED AT THE BEGINNING AND MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION OR GRADING ACTIVITY; AND

8. A PRE-CONSTRUCTION MEETING SHALL BE REQUIRED TO INFORM CONSTRUCTION CREW OF SITE REQUIREMENTS.

9. ALL MATERIAL EXCAVATED OR GRADED SHALL BE SUFFICIENTLY WATERED TO PREVENT EXCESSIVE AMOUNTS OF DUST. DURING THE TIME PERIOD IN WHICH GRADING WILL OCCUR, WATERING SHALL OCCUR USING NONPOTABLE WATER, OR OTHERWISE AS NEEDED TO THE APPROVAL OF THE CITY INSPECTOR, AT LEAST TWICE DAILY INCLUDING WEEKENDS WITH COMPLETE COVERAGE, PREFERABLY IN THE LATE MORNING AND AFTER WORK IS FINISHED FOR THE DAY.

10. ALL CLEARING, GRADING EARTH-MOVING, OR EXCAVATING ACTIVITIES SHALL CEASE DURING PERIODS OF HIGH WINDS (GREATER THAN 15MPH AVERAGED OVER ONE HOUR) TO PREVENT EXCESSIVE AMOUNTS OF DUST.

11. IF SOIL MATERIALS ARE TRANSPORTED OFF-SITE, TRUCKS SHOULD BE COVERED OR HAVE ALT LEAST TWO FEET OF FREEBOARD TO MINIMIZE DUST AND PREVENT LOOSE SOIL FROM SPILLING OUT.

12. ALL DISTURBED AREAS NOT SUBJECT TO REVEGETATION SHALL BE STABILIZED USING APPROVED LANDSCAPED PLANTING. CHEMICAL SOIL BINDERS, JUTE NETTING OR OTHER METHODS APPROVED IN ADVANCE BY THE ENGINEER OF RECORD.

![](_page_15_Picture_113.jpeg)

![](_page_16_Figure_0.jpeg)

![](_page_16_Picture_7.jpeg)

OFFICE OF THE STATE FIRE MARSHAL APPROVED FIRE AND PANIC ONLY
GENERAL SERVICES Department of General Services Architecture & Engineering Sections State of California
Real Estate Services Division Project Management & Development Branch 707 Third Street, Suite 4-105 West Sacramento, California 95605 Project Director: Michael Salyer (916) 376-1606 michael.salyer@dgs.ca.gov
HNRARCHITECTS 2130 21st Street Sacramento, CA 95818 T 916 736 2724
No. 24706 REN. 12/31/23 OF CALIFOR 11/29/2023
No. 80124 No. 80124 No. C /V IL OF CALLFORMIT 11/17/2023
WALLACE GROUP® 612 CLARION COURT SAN LUIS OBISPO, CA 93401 T 805 544-4011 F 805 544-4294 www.wallacegroup.us
REROOF & HVAC REPLACEMENT & ELECT. UPGRADE CALIFORNIA DEPARTMENT OF STATE HOSPITALS, DSH-ATASCADERO
REVISIONS
NO. DATE DESCRIPTION
ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL & UNPUBLISHED WORK OF HMR ARCHITECTS AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF HMR ARCHITECTS
PROJECT CONTROL PLAN
DRAWN BY:
CHECKED BY: C-1.3 JOB NO. 19056 V2

![](_page_17_Figure_0.jpeg)

*	Summary						
		Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
FG-1	SWITCHGEAR BUILDING	1.000	1.000	10951.32 Sq. Ft.	326.24 Cu. Yd.	78.96 Cu. Yd.	247.28 Cu. Yd.
				10951.32 Sq. Ft.	326.24 Cu. Yd.	78.96 Cu. Yd.	247.28 Cu. Yd.

OFFICE OF THE STATE FIRE MARSHAL APPROVED FIRE AND PANIC ONLY 22-4872 Approval of this plan does not authorize of approve any omission or deviation from applicable regulations. Final approval is subject to field inspection. One set of approved plans shall be available on the project site at all times GENERAL SERVICES **Department of General Services** Architecture & Engineering Sections State of California Real Estate Services Division Project Management & Development Branch 707 Third Street, Suite 4-105 West Sacramento, California 95605 Project Director: Michael Salyer (916) 376-1606 michael.salyer@dgs.ca.gov **HMR**ARCHITECTS 2130 21st Street Sacramento, CA 95818 T 916 736 2724 NERON O WALLACE GROUP® 612 CLARION COURT SAN LUIS OBISPO, CA 93401 T 805 544-4011 F 805 544-4294 www.wallacegroup.us **REROOF & HVAC REPLACEMENT &** ELECT. UPGRADE CALIFORNIA DEPARTMENT OF STATE HOSPITALS, DSH-ATASCADERO REVISIONS NO. | DATE | DESCRIPTION ├──├───┼───── ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL & UNPUBLISHED WORK OF HMR ARCHITECTS AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF HMR ARCHITECTS OVERALL GRADING PLAN SEPTEMBER 29, 2023 DRAWN BY: C-2.1 CHECKED BY: JOB NO. 19056 V2 ISSUE DATE: JANUARY 14, 2025

![](_page_18_Figure_0.jpeg)

![](_page_18_Picture_2.jpeg)

![](_page_19_Figure_0.jpeg)

REFERENCE KEYNOTES			
XXX	DESCRIPTION		
1	BIORETENTION BASIN PER DETAIL 1, SHEET C-4.1		
2	ENERGY DISSIPATION PER COUNTY OF SLO DETAIL 122, SHEET C-4.2		
3	SIDEWALK UNDERDRAIN PER CITY OF ATASCADERO DETAIL 511, SHEET C-4.1, 3"x12.5" RECTANGULAR PIPE		
4	12"x12" STORM DRAIN CATCH BASIN PER MIDSTATE DETAIL, SHEET C-4.2		
5	NOT USED		
6	24" VALLEY GUTTER PER DETAIL 2, SHEET C-4.2		
7	FIXED BOLLARD PER DETAIL 6, SHEET C-4.2. DIMENSION ON PAD PER DETAIL 5B ON ASE2 SHEETS		
8	REMOVABLE BOLLARD PER DETAIL 6, SHEET C-4.2. DIMENSION ON PAD PER DETAIL 5B ON ASE2 SHEETS		
9	FIRST DEFENSE STORMWATER SEPARATOR PER HYDRO INTERNATIONAL DETAIL 7, SHEET C-4.2		
10	NOT USED		
11	6" STEEL PIPE TO BE INSTALLED ABOVE CONCRETE PAD TO DIRECT ROOF RUNOFF AWAY FROM EQUIPMENT PADS, MOUNT PER DETAIL 1, SHEET C-4.2		

![](_page_19_Picture_6.jpeg)

REFERENCE KEYNOTES		
XXX	DESCRIPTION	
1	FIRE HYDRANT AND VALVE PER SLO COUNTY DETAIL W-2 AND W-3, SHEET C-4.1	
2	THRUST BLOCK PER SLO COUNTY DETAIL W-1a, SHEET C-4.1	
3	REMOVE EXIST FIRE HYDRANT TEE AND CUT IN TEE PER SLO COUNTY DETAIL W-10	
4	RELOCATE EXIST ELECTRICAL LINE PER ELECTRICAL PLANS	
5	RELOCATE EXIST IRRIGATION VALVE BOXES	
6	EXIST UNDERGROUND GAS LINE TO REMAIN, PROTECT IN PLACE	
7	EXIST WATER LINE	
8	RELOCATE EXIST GATE CALL BOX BEHIND CURB	
9	REMOVE EXIST HYDRANT AND VALVE	
10	EXIST TELEPHONE LINE TO BE RELOCATED	
11	EXIST IRRIGATION BOX	
12	EXIST WATER METER	
13	EXIST WATER LINE. CONTRACTOR TO VERIFY DEPTH OF WATER LINE. LOWER WATER LINE IF REQUIRED TO MAINTAIN 3' COVER (MIN)	
NOTES:		

~ 6

 STORM DRAIN SYSTEM SHOWN FOR REFERENCE, SEE SHEET C-2.2 AND SHEET C-2.3.
 CONTRACTOR TO COORDINATE ALL UTILITIES SHOWN WITH OTHER TRADES INCLUDING BUT NOT LIMITED TO PLUMBING FUEL LINES, ELECTRICAL CONDUITS, ETC. COORDINATE MINIMUM DEPTH OF EACH UTILITY AND MAINTAIN CODE

≓ ≥

![](_page_20_Figure_4.jpeg)

GRAPHIC SCALE 0 5 10 2 (IN FEET) 1 IN = 10 FT

![](_page_20_Picture_6.jpeg)

![](_page_21_Figure_0.jpeg)

![](_page_21_Figure_1.jpeg)

![](_page_21_Figure_2.jpeg)

# (6) IMPERMEABLE LINER ON SIDES OF BIORETENTION

NOTES:

REQUIRED.

![](_page_21_Figure_9.jpeg)

![](_page_21_Figure_10.jpeg)

![](_page_21_Figure_11.jpeg)

![](_page_21_Figure_12.jpeg)

![](_page_21_Figure_13.jpeg)

![](_page_21_Figure_14.jpeg)

![](_page_21_Picture_15.jpeg)

![](_page_22_Figure_0.jpeg)

![](_page_22_Figure_1.jpeg)

NTS

11/17/20 M:\1143-

![](_page_22_Figure_5.jpeg)

NTS

![](_page_22_Figure_6.jpeg)

![](_page_22_Figure_7.jpeg)

![](_page_22_Figure_8.jpeg)

![](_page_22_Picture_9.jpeg)

![](_page_23_Figure_0.jpeg)

![](_page_23_Picture_1.jpeg)

![](_page_24_Figure_0.jpeg)

00	R SCH	EDUL	Ē						DOOR SCHEDULE REMARKS:	
RDWR	DWR MATERIAL FINISH			FINISH	FINISH				DEMARKO	MANUFACTURER DESIGNATIONS IDENTIFIED IN THE DRAWINGS ARE USED AS A BAS
ROUP	DOOR	FRAME	DOOR	FRAME	GLAZING	G VENT	VENT RATING	RATING REMARKS	DESIGN. DESIGNATIONS ARE AS FOLLOWS: (D) DETEX, (H) HAGER, (L) IVES, (LCN) LC (P) PEMKO, (S) SCHLAGE.	
MFR	STL	STL	FF	FF	-	-	90 MIN.	1	1 1/2 PR.BUTT HINGES H BB1199-5X5-NRP STAINLESS STEEL 1 EA. EXIT DEVICE D F-10XW-03W-630-LHR-630-LD-99-36-EC	
A	НМ	PM	PT	РТ	-	-	90 MIN.	1	1 EA. CYLINDER S 20-057 1 EA. CLOSER (REGULAR ARM) LCN 5014-689 1 SET SMOKE SEAL P S88-BL 1 EA THREEHOLD P 1716 A	
A	НМ	PM	PT	РТ	-	-	90 MIN.	1	1 EA. THRESHOLD P 1710_A 1 EA. DOOR BOTTOM SWEEP P 209_V-A 1 EA. FLOOR STOP I FS434	
									DOOR SCHEDULE ABBREVATIONS <u>FF</u> = FACTORY FINISH	
									HM =HOLLOW METAL DOOR MFR = BY MANUFACTURER PM = PRESSED METAL FRAME PT = FIELD PAINTED OVER FACTORY PRIMER STL = STEEL	
									DOOR SYMBOL ON PLANS	
									# DOOR REFERENCE NUMBER	
									SCALE: F	

![](_page_25_Figure_0.jpeg)

## <u>GENERAL NOTES</u>

- 1. INTERPRETATION OF DRAWINGS & SPECIFICATIONS a. WHERE SPECIFICATIONS HAVE BEEN PREPARED FOR THIS PROJECT, THEY ARE ARRANGED IN SEVERAL SECTIONS, BUT SUCH SEPARATION SHALL NOT BE CONSIDERED AS THE LIMITS OF THE WORK REQUIRED OF ANY SEPARATE TRADE. THE TERMS AND CONDITIONS OF SUCH LIMITATIONS ARE WHOLLY BETWEEN THE CONTRACTOR AND THEIR SUBCONTRACTORS. b. IN GENERAL, THE WORKING DETAILS WILL INDICATE DIMENSIONS, POSITION AND KIND OF CONSTRUCTION, AND THE SPECIFICATIONS, QUALITIES AND METHODS. ANY WORK INDICATED ON THE WORKING DETAILS AND NOT MENTIONED IN THE SPECIFICATIONS, OR VICE VERSA, SHALL BE FURNISHED AS THOUGH FULLY SET FORTH IN BOTH. WORK NOT PARTICULARLY DETAILED. MARKED OR SPECIFIED, SHALL BE IDENTICAL OR SIMILAR TO LIKE CASES OF CONSTRUCTION THAT ARE DETAILED, MARKED OR SPECIFIED. IF CONFLICTS OCCUR ON
- DRAWINGS AND/OR SPECIFICATIONS, THE MOST EXPENSIVE MATERIALS OR METHODS WILL PRFVAII . SHOULD AN ERROR APPEAR IN THE WORKING DETAILS OR SPECIFICATIONS OR IN WORK DONE BY OTHERS AFFECTING THIS WORK, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AT ONCE AND IN WRITING. IF THE CONTRACTOR PROCEEDS WITH THE WORK SO AFFECTED WITHOUT HAVING GIVEN SUCH WRITTEN NOTICE AND WITHOUT RECEIVING THE NECESSARY APPROVAL, DECISION OR INSTRUCTIONS IN WRITING FROM THE OWNER, THEN THE CONTRACTOR SHALL HAVE NO VALID CLAIM AGAINST THE OWNER, FOR THE COST OF SO PROCEEDING AND SHALL MAKE GOOD ANY RESULTING DAMAGE OR DEFECT. NO VERBAL APPROVAL, DECISION, OR INSTRUCTION SHALL BE VALID OR BE THE BASIS FOR ANY CLAIM AGAINST THE OWNER, ITS OFFICERS, EMPLOYEES OR AGENTS. THE FOREGOING INCLUDES TYPICAL ERRORS IN THE SPECIFICATIONS OR NOTATIONAL ERRORS IN THE WORKING DETAILS WHERE THE INTERPRETATION IS DOUBTFUL OR WHERE THE ERROR IS SUFFICIENTLY
- APPARENT AS TO PLACE A REASONABLY PRUDENT CONTRACTOR ON NOTICE THAT, SHOULD THE CONTRACTOR ELECT TO PROCEED. THEY ARE DOING SO AT THEIR OWN RISK. CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND REGULATIONS. SHOP DRAWING NOTE: a. WHEN NOT ADDRESSED BY DIVISION 1 OF THE SPECIFICATIONS, PAPER FORMAT STRUCTURAL SHOP DRAWINGS SHALL BE SUBMITTED IN THE FORM OF THREE COPIES MINIMUM OF EACH
- SHEET. WHERE SUBMITTALS ARE ELECTRONIC, FORMAT SHALL BE PDF. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE STRUCTURAL ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT BY INDICATING WHICH MATERIAL THE CONTRACTOR INTENDS TO FURNISH AND INSTALL, AND BY DETAILING THE FABRICATION AND INSTALLATION METHODS THE CONTRACTOR INTENDS TO USE ON A STAND ALONE SET OF DOCUMENTS. DUPLICATION OF DESIGN DOCUMENTS FOR THE PURPOSE OF SHOP DRAWINGS IS NOT ACCEPTABLE.
- PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER. SHOP DRAWING SUBMITTALS SHALL INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, STRUCTURAL STEEL, REINFORCING STEEL, & GLUE-LAMINATED
- d. PRIOR TO SUBMISSION THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SHALL STAMP SUBMITTALS AS BEING "REVIEWED FOR CONFORMANCE".
- e. SHOP DRAWING SUBMITTALS PROCESSED BY THE STRUCTURAL ENGINEER ARE NOT CHANGE ORDERS. f. ANY DETAIL ON THE SHOP DRAWINGS THAT DEVIATES FROM THE CONTRACT DOCUMENTS
- SHALL CLEARLY BE MARKED WITH THE NOTE "THIS IS A CHANGE" SHOP DRAWINGS OR CALCULATIONS SUBMITTED FOR REVIEW THAT REQUIRE RESUBMITTAL FOR RE-REVIEW SHALL BE BILLED HOURLY FOR SUCH TIME TO THE GENERAL CONTRACTOR. RE-REVIEW WILL NOT PROCEED WITHOUT WRITTEN APPROVAL FROM THE GENERAL CONTRACTOR FOR ADDITIONAL ENGINEERING REVIEW SERVICES.
- SAFETY NOTE: a. IT IS THE CONTRACTORS RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS, AS THEY APPLY TO THIS PROJECT, OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA LATEST EDITION, AND ALL OSHA REQUIREMENTS b. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS AND SHORING REQUIRED. SHORING INDICATIONS (LOCATION, DIRECTION, DURATION, ETC.) ARE ONLY SHOWN ON THE STRUCTURAL DWGS WHEN REQUIRED TO IMPLEMENT THE DESIGN INTENT OF THE FINAL WORK PRODUCT. DETERMINATION WHETHER
- SHORING IS REQUIRED FOR TEMPORARY OR INTERMEDIATE CONDITIONS DURING CONSTRUCTION IS WHOLLY THE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER AND THE STRUCTURAL ENGINEER DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE REQUIREMENTS. 5. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER WHERE A CONFLICT OR DISCREPANCY OCCURS BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER PORTION OF THE CONTRACT DOCUMENTS OR EXISTING FIELD CONDITIONS. SUCH NOTIFICATION SHALL BE GIVEN IN DUE TIME SO AS NOT TO AFFECT THE CONSTRUCTION SCHEDULE. IN CASE OF
- A CONFLICT BETWEEN STRUCTURAL DRAWINGS AND SPECIFICATIONS THE MORE RESTRICTIVE CONDITION SHALL TAKE PRECEDENCE UNLESS WRITTEN APPROVAL HAS BEEN GIVEN FOR THE LEAST RESTRICTIVE. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PRIOR O COMMENCING ANY WORK 6. WHEN CONSTRUCTION ATTACHES TO OR IS WITHIN AN EXISTING BUILDING, A COMPLETE SET OF
- DRAWINGS OF THE EXISTING BUILDING SHALL BE KEPT ON THE JOB SITE. CONTRACTOR TO OBTAIN THESE DRAWINGS FROM THE OWNER (IF THEY ARE AVAILABLE). 7. CONTRACTOR SHALL PROVIDE AN ALLOWANCE EQUAL TO 2% OF THE BID FOR STRUCTURAL STEEL, MISC, IRON AND REINFORCING STEEL TO BE USED AT THE DISCRETION OF THE
- STRUCTURAL ENGINEER. UNUSED AMOUNT TO REVERT TO THE OWNER UPON COMPLETION OF THF JOB 8. ANY SUBSTITUTIONS FOR STRUCTURAL MEMBERS, HARDWARE OR DETAILS SHALL BE REVIEWED BY THE ARCHITECT AND STRUCTURAL ENGINEER. SUCH REVIEW WILL BE BILLED ON A TIME AND MATERIALS BASIS TO THE GENERAL CONTRACTOR WITH NO GUARANTEE THAT THE SUBSTITUTION WILL BE ALLOWED.
- 9. DO NOT SCALE DRAWINGS. CONTACT THE ARCHITECT OR STRUCTURAL ENGINEER FOR ANY DIMENSIONS NOT SHOWN. 10. THESE DRAWINGS ARE NOT COMPLETE UNTIL REVIEWED AND ACCEPTED BY AUTHORITIES HAVING JURISDICTION AND THE OWNER AND SIGNED BY THE STRUCTURAL ENGINEER.

### DESIGN CRITERIA

- 1. CODES AND STANDARDS 2019 CALIFORNIA BUILDING CODE (CBC) ASCE 7-16 ACI 318-14 AISC 360-16, 341-16, 358-16
- AISI S100-16, S240-15, S400-15 TMS 402/602-16 2018 NDS, 2015 SDPWS
- VERTICAL LOADS ROOF LIVE LOAD = <u>20</u> PSF CORRIDORS = 60 PSF
- LIVE LOADS ARE REDUCED WHERE PERMITTED BY CODE. 3. SOILS VALUES (SWITCHGEAR BLDG & ENCLOSURE) ALLOWABLE SOILS PRESSURE
- A. DL <u>3000</u> PSF B. DL + LL 3000 PSF C. DL + LL + SEISMIC 4000 PSF FOOTING MINIMUM DEPTH = 1
- MINIMUM WIDTH = 1
- 4. LATERAL LOADS SEISMIC SITE CLASS D  $S_{S} = 1.118$ ;  $S_{DS} = 0.894$ S<sub>1</sub> = <u>0.412</u>; S<sub>D1</sub> = <u>0.519</u> SEISMIC R = 5.5;  $I_E = 1.25$  $\Omega_0 = 2.5$ ;  $C_D = 4.0$ I<sub>P</sub> = 1.0 TYPICAL I<sub>P</sub> = 1.5 PER ASCE 7-16 SECT 13.1.3 RISK CATEGORY: III SEISMIC DESIGN CATEGORY: D SEISMIC FORCE RESISTING SYSTEM SPECIAL REINFORCED MASONRY SHEAR WALLS ANALYSIS PROCEDURE: ELF WIND:
  - V = <u>102</u> MPH RISK CATEGORY: EXPOSURE CATEGORY: C GC<sub>PI</sub> = <u>±0.18</u>

### **FOUNDATIONS**

- 1. ALL FOUNDATION WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SOILS REPORT # 221-397 BY YEH AND ASSOCIATES DATED JANUARY 31, 2022 FOUNDATIONS SHALL BEAR ON NON-EXPANSIVE IMPORTED COMPACTED FIL
- SEE NOTES AND DETAILS ON SHEET SE5. 3. ALL FILLING, BACKFILLING AND COMPACTION SHALL BE DONE UNDER THE OBSERVATION OF A
- REPRESENTATIVE OF THE SOILS ENGINEER AND MUST BE COMPACTED TO THE MINIMUM DENSITY SPECIFIED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN THE SOILS REPORT. 4. BUILDING PAD CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE SOILS REPORT.
- THE EXTENT AND DEPTH OF OVEREXCAVATION AND PLACEMENT OF ENGINEERED FILL SHALL AT A MINIMUM BE AS SHOWN ON THE PLANS. FINAL DEPTH AND EXTENT OF EXCAVATION AND FILL SHALL BE DETERMINED AT TIME OF CONSTRUCTION BY A REPRESENTATIVE OF THE SOILS ENGINEER. FOUNDATION DEPTHS INDICATED ON PLANS ARE FOR ESTIMATING PURPOSES ONLY.
- . BOTTOMS OF ALL FOUNDATIONS SHALL BE LEVEL. CHANGES IN BOTTOM OF FOUNDATION ELEVATION SHALL BE MADE ACCORDING TO STEPPED FOOTING DETAIL ON THE TYPICAL DETAIL SHEFT FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT ─ 2x12
- EXCAVATIONS PROVIDED THE EXCAVATIONS ARE STABLE 2x12 ¬ \_ 1x8 — (AS DETERMINED BY A REPRESENTATIVE OF THE SOILS ENGINEER). OTHERWISE, FOUNDATIONS SHALL BE FULLY FORMED. USE MINIMUM PLANKING SHOWN TO PROTECT AGAINST SLOUGHING, AS REQUIRED. PLANKING DOES
- NOT REPLACE FORMWORK REQUIRED TO STABILIZE EXCAVATION. . THE SURFACE OF ALL HORIZONTAL CONSTRUCTION JOINTS SHALL BE CLEANED & ROUGHENED BY EXPOSING CLEAN AGGREGATE SOLIDLY EMBEDDED IN MORTAR MATRIX. NOTIFY THE STRUCTURAL ENGINEER 48 HOURS BEFORE CASTING FOUNDATIONS 9. A REPRESENTATIVE OF THE SOILS ENGINEER SHALL ADVISE THE BUILDING OFFICIAL IN WRITING
- a. THE BUILDING PAD WAS PREPARED IN ACCORDANCE WITH THE SOILS REPORT. b. THE UTILITY TRENCHES HAVE BEEN PROPERLY BACKFILLED AND COMPACTED AND; . THE FOUNDATION EXCAVATION DEPTH AND MATERIAL ARE ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY: AND FORMING COMPLY WITH THE SOILS REPORT AND APPROVED PLAN.

- MAXIMUM SLUMP SHALL NOT EXCEED 4 INCHES. 2. CONCRETE MIX DESIGNS SHALL BE PREPARED ACCORDING TO ACI 318-14 CHAPTER 26.4 AND
- STRUCTURAL ENGINEER FOR REVIEW. 3. CEMENTITIOUS MATERIALS CEMENT SHALL CONFORM TO ASTM C-150 TYPE II OR V.
- FLY ASH SHALL CONFORM TO ASTM C-618. MAX. QUANTITY OF FLY ASH SHALL BE 25% OR AS GIVEN IN SPECS.
- CONCRETE AGGREGATES SHALL CONFORM TO ASTM C-33 FOR NORMAL WEIGHT CONCRETE AND ASTM C-330 FOR LIGHTWEIGHT CONCRETE. 5. NON-SHRINK GROUT OR DRYPACK SHALL CONSIST OF A PREMIXED NONMETALLIC FORMULA. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60 UNO. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A-706 GRADE 60. CONTRACTOR SHALL SUBMIT REBAR MILL CERTIFICATES. REINFORCING STEEL IN SPECIAL REINFORCED SHEAR WALLS OR MOMENT FRAMES, EXCEPT TIES AND HOOPS, SHALL CONFORM TO ASTM A-706.
- AWS D1.4 LATEST EDITION AND SHALL BE CONTINUOUSLY INSPECTED BY A QUALIFIED LABORATORY. CONTRACTOR SHALL FURNISH WPS FOR ALL REBAR WELDING TO THE **LABORATORY** 8. REINFORCING STEEL SHALL BE FABRICATED ACCORDING TO "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION".
- 9. WIRE FABRIC SHALL CONFORM TO ASTM A1064. 10. DIMENSIONS SHOWN FOR LOCATION OF REINFORCING ARE TO THE FACE OF BARS LISTED AND DENOTE CLEAR COVERAGE. NON-PRESTRESSED, CAST-IN-PLACE CONCRETE COVERAGE SHALL BE AS FOLLOWS, UNO: CONCRETE DEPOSITED DIRECTLY AGAINST GROUND (EXCEPT SLABS)------- 3"

#### CONCRETE EXPOSED TO GROUND OR WEATHER BUT PLACED IN FORMS: #5 AND SMALLER--#6 AND LARGER---BEAMS & COLUMNS (TIES)--BEAMS & COLUMNS (MAIN REINFORCING)---CAST-IN-PLACE WALLS (EXTERIOR FACE & SOIL SIDE)----CAST-IN-PLACE WALLS (INTERIOR FACE-#11 & SMALLER)---

- TILT-UP WALLS---SLABS (ON FORMS)-SLABS (ON GROUND)-11. SPLICES IN CONTINUOUS REINFORCEMENT SHALL BE LAPPED UNO. SEE SCHEDULE THIS SHEET. SPLICES IN ADJACENT BARS SHALL BE GREATER THAN 5'-0" APART. SPLICE CONTINUOUS BARS IN SOIL-BEARING GRADE BEAMS, STRUCTURAL SLABS ON GRADE AND MAT
- MID-SPAN. SPLICE CONTINUOUS BARS IN ELEVATED SLABS AND BEAMS, ETC. AS FOLLOWS UNO: TOP BARS AT MID-SPAN; BOTTOM BARS AT CENTERLINE OF SUPPORT. ALL BARS SIZE #14 AND LARGER SHALL BE CONTINUOUS FOR FULL LENGTH SHOWN OR SPLICED WITH MECHANICAL COUPLERS AS NOTED IN DETAILS. SPLICES IN WWF SHALL BE 1-1/2 MESHES WIDE 12. THE MINIMUM CLEAR SPACING BETWEEN PARALLEL BARS IN A LAYER SHALL NOT BE LESS THAN THE LARGER OF BAR DIAMETER, 1", OR 33% GREATER THAN THE MAXIMUM AGGREGATE
- SIZE (NOMINAL), WHICHEVER IS GREATEST. THIS REQUIREMENT ALSO APPLIES TO THE CLEAR SPACING BETWEEN DIFFERENT LAYERS OF PARALLEL BARS AND TO THE CLEAR DISTANCE BETWEEN A CONTACT LAP SPLICE AND ADJACENT SPLICES OR BARS. 13. ALL HOOKS SHALL BE STANDARD HOOKS UNLESS OTHERWISE SHOWN OR NOTED. AT WALLS, PROVIDE HOOKS AT ENDS OF ALL REINFORCING AT ENDS, CORNERS AND INTERSECTIONS,
- 14. CONSTRUCTION JOINTS SHALL BE MADE ROUGH AND ALL LAITANCE REMOVED FROM THE SURFACE. CONCRETE MAY BE ROUGHENED BY CHIPPING THE ENTIRE SURFACE, SAND BLASTING, OR RAKING THE SURFACE TO PROVIDE 1/4" DEEP DEFORMATIONS.
- 15. REMOVE ALL DEBRIS FROM FORMS BEFORE CASTING ANY CONCRETE. 16. REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC. TO BE EMBEDDED IN CONCRETE
- SHALL BE SECURELY POSITIONED BEFORE PLACING CONCRETE 17. ANCHOR BOLTS (AB'S) CAST IN CONCRETE FOR WALL SILL AND LEDGER APPLICATIONS SHALL BE HEADED BOLTS WITH CUT THREADS CONFORMING TO ASTM F1554, UNO. REFER TO "WOOD" NOTES FOR ADDITIONAL REQUIREMENTS FOR BOLTS IN CONTACT WITH PRESSURE TREATED OR FIRE RETARDANT MATERIAL. REFER TO 'STRUCTURAL STEEL' NOTE FOR REQUIREMENTS FOR ANCHOR RODS (AR'S) CAST IN CONCRETE FOR COLUMN BASE PLATE AND STEEL EMBED APPLICATIONS.
- 18. WALLS SHALL BE CAST IN HORIZONTAL LAYERS OF 2'-0" MAXIMUM DEPTH 19. CONCRETE IN WALLS, PIERS OR COLUMNS SHALL SET AT LEAST 2 HOURS BEFORE PLACING CONCRETE IN BEAMS, SPANDRELS, OR SLABS SUPPORTED THEREON. HORIZONTAL WALL BARS IN MULTI-CURTAIN CAST IN PLACE WALLS SHALL BE STAGGERED.
- 21. DOWEL ALL VERTICAL REINFORCING IN WALLS AND COLUMNS FROM FOUNDATION WITH SAME SIZE BAR 22. CONSOLIDATE CONCRETE PLACED IN FORMS BY MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND-SPADING, RODDING OR TAMPING. USE EQUIPMENT AND PROCEDURES FOR CONSOLIDATION OF CONCRETE IN ACCORDANCE WITH THE RECOMMENDED PRACTICES OF ACI 309 TO SUIT THE TYPE OF CONCRETE AND PROJECT CONDITIONS. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALLS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. IN SUCH CASES HOPPERS AND CHUTES OR TRUNKS OF VARIABLE LENGTHS SHALL BE USED SO THAT THE FREE UNCONFINED
- FALL OF CONCRETE SHALL NOT EXCEED 6 FEET. 23. NO WOOD SPREADERS ALLOWED. NO WOOD STAKES ALLOWED IN AREAS TO BE CONCRETED. 24. ADDITIONAL REINFORCING IN PRECAST OR TILT-UP PANELS REQUIRED FOR LIFTING STRESSES SHALL BE SUPPLIED BY CONTRACTOR.
- DECK, AND ELEVATED STRUCTURAL SLAB CONDITIONS. 26. ALL SAW CUTTING SHALL BE DONE AFTER INITIAL SET HAS OCCURRED TO AVOID TEARING OR DAMAGE BY THE SAW BLADE, BUT BEFORE INITIAL SHRINKAGE HAS OCCURRED.
- 27. NOTIFY STRUCTURAL ENGINEER A MINIMUM OF 48 HOURS BEFORE PLACING ANY CONCRETE. 28. CONCRETE STRENGTHS & MIX PROPERTIES:
- A. FOUNDATIONS, ELEVATOR PITS, TIE BEAMS B. LW CONC FILL OVER DECK . SLAB ON GRADE
- 3500 PSI SITE & MISCELLANEOUS - SEE CIVIL OR ARCH DRAWINGS \* W/CM = WATER : CEMENTITIOUS MATERIAL RATIO

### LAP SPLICE LENGTHS FOR GRADE 60 REINFORCING BARS IN TENSION (Lst) (ALL LENGTHS SHOWN ARE IN INCHES)

(ALL LENGTHS SHOWN ARE IN INCHES)					
				f'c= 30	00
SPLICE CLASS	REINF LOCATION	#3	#4	#5	
	TOP	28	38	47	
В	OTHER	22	29	36	
				f'c = 35	60
SPLICE CLASS	REINF LOCATION	#3	#4	#5	
	TOP	26	35	43	
	OTHER	20	27	33	

### $\frac{\text{DEFINITIONS:}}{\text{L}_{D}} = \text{DEVELOPMENT LENGTH OF DEFORMED BARS IN TENSION}$ L<sub>ST</sub> = TENSION LAP SPLICE LENGTH TOP = HORIZONTAL REINFORCEMENT LOCATED SUCH THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE.

- . SCHEDULE APPLIES TO NORMAL WEIGHT CONCRETE WITH UNCOATED, GRADE 60 **REINFORCING STEEL FOR #3 BARS AND LARGER.** ROUND UP TO THE NEAREST WHOLE NUMBER FOR ALL LENGTH CALCULATIONS.
- . Lst SHALL BE 12 INCHES MINIMUM. 4. WHERE EPOXY-COATED BARS ARE USED, MULTIPLY LAP LENGTHS BY 1.2, BUT WHERE EPOXY-BAR DIA., MULTIPLY LAP LENGTHS BY 1.31 FOR TOP REBAR AND 1.5 FOR OTHER REBAR.
- WHEN LIGHTWEIGHT CONCRETE IS USED, MULTIPLY LAP LENGTHS BY 1.33. WHERE CLEAR SPACING OF BARS BEING SPLICED IS LESS THAN 2 BAR DIA. OR WHERE CLEAR COVER OF BARS BEING SPLICED IS LESS THAN 1 BAR DIA., MULTIPLY LAP LENGTHS BY 1.50, UNO
- 8. FOR GRADE 75 REINFORCING BARS, MULTIPLY THE TABULATED VALUES BY 1.25. FOR GRADE 80 REINFORCING BARS, MULTIPLE THE TABULATED VALUES BY 1.33. 9. DEVELOPMENT LENGTH OF DEFORMED BARS, Ld, SHALL BE CALCULATED BY DIVIDING THE
- LENGTH ABOVE BY 1.30. Ld SHALL BE 12 INCHES MINIMUM. 10. WHEN SPLICING DIFFERENT SIZE BARS, Lst SHALL BE THE GREATER OF Ld OF THE LARGER BAR AND Lst OF THE SMALLER BAR.
- 20 PERCENT FOR A THREE-BAR BUNDLE AND 33 PERCENT FOR A FOUR-BAR BUNDLE 12. THE LENGTHS SHOWN IN THE SCHEDULE SHALL BE INCREASED BY ALL APPLICABLE
- MULTIPLIERS LISTED IN THE NOTES ABOVE. ETAL DECK NOTES
- 1. PROVIDE METAL DECKING OF TYPE AND GAUGE AS SHOWN ON PLANS.
- G60 COATING DESIGNATION.
- TO SUPPORTS AND SIDE LAP DETAILS. COMPLY WITH AWS CODE, E60 SERIES MINIMUM.
- 6. ALL REINFORCED OPENINGS IN METAL DECK SHALL BE INSTALLED BY METAL DECK SUBCONTRACTOR.
- 8. AT METAL DECK WITHOUT CONCRETE FILL THE FOLLOWING MAY BE ATTACHED WITHOUT WIRE HANGER LOAD = 60#.
- LOCATIONS, PATTERNS, SPACINGS, ETC. WITH THE APPROPRIATE TRADE. DRILL OR PUNCH HOLES AT BOTTOM OF DECK FLUTES OF SUFFICIENT SIZE TO PASS SUPPORT WIRES. WIRE SUPPORTS SHALL BE LOOPED AND SECURED WITH A MINIMUM OF THREE (3) TIGHT TURNS CENTERED ABOVE THE HOLE AND LAID IN THE DECK FLUTES.

![](_page_26_Figure_72.jpeg)

![](_page_26_Figure_73.jpeg)

# APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

# 1. CONCRETE SHALL ATTAIN 28 DAY COMPRESSIVE STRENGTH AS REQUIRED IN NOTE #28.

# ACI 301-10 SECTION 4, REVIEWED BY OWNER'S TESTING LABORATORY AND SUBMITTED TO THE

ALL PREHEATING AND WELDING OF REINFORCING BARS SHALL BE DONE IN ACCORDANCE WITH

----- 1-1/2

---- 1-1/2' ---- SEE ABOVE ----- 3/4' ----- SEE DETAILS ---- 3/4" 2" CLEAR FROM

FOUNDATIONS AS FOLLOWS UNO: TOP BARS AT CENTERLINE OF SUPPORT; BOTTOM BARS AT

25. PROVIDE #4x4'-0" DIAGONAL REINFORCING AT EACH REINFORCING LAYER OF SLAB AT ALL RE-ENTRANT CORNERS TYPICAL UNO. THIS APPLIES TO SLAB ON GRADE, CONCRETE OVER METAL

> MAX W/CM\* MAX AGGE <u>28 DAYS</u> SIZE WEIGHT RATIO

0.58 3000 PSI 1-1/2" NW 3000 PSI LW 0.52 3/4" NW 0.45

ACI 318 CBC/IBC 00 PSI CONC #6 #7 #8 #9 #10 #11 56 81 93 105 118 131 43 63 72 81 91 101 00 PSI CONC #6 #7 #8 #9 #10 #11 52 75 86 97 109 121 40 58 66 75 84 93

COATED BARS HAVE CLEAR COVER LESS THAN 3 BAR DIA. OR CLEAR SPACING LESS THAN 6

. WHERE CLASS A LAP SPLICE IS NOTED IN DETAIL, DIVIDE LENGTHS ABOVE BY 1.30. 11. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. INCREASE LAP LENGTHS BY

2. METAL FLOOR DECK SHALL BE COMPOSITE TYPE. CONFORMING TO ASTM A653. STRUCTURAL QUALITY, WITH MINIMUM YIELD STRENGTH OF 38 KSI AND SHALL BE ZINC COATED PER ASTM A653, 3. METAL ROOF DECK SHALL CONFORM TO ASTM A653, STRUCTURAL QUALITY, WITH MINIMUM YIELD STRENGTH OF 38 KSI AND SHALL BE ZINC COATED PER ASTM A653, G60 COATING DESIGNATION. 4. PRIOR TO FABRICATION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE METAL DECKING, SHOWING DECK GAUGE, SIZE AND LAYOUT AS WELL AS CLOSURE CONDITIONS, WELDS

5. CONNECTION AND WELDING OF DECKING TO STRUCTURAL SUPPORTS AND DECK SIDE SEAMS SHALL BE AS SPECIFIED IN THE STRUCTURAL DRAWINGS. ALL ELECTRODES FOR WELDING SHALL

7. AT METAL DECKS TO RECEIVE CONCRETE, ABSOLUTELY NO CONDUIT OR PIPING OF ANY TYPE IS TO BE PLACED HORIZONTALLY WITHIN THE DEPTH OF THE CONCRETE ABOVE THE METAL DECK. SPECIFIC APPROVAL OF THE STRUCTURAL ENGINEER: ACOUSTICAL THE AND GYPSUM BOARD CEILINGS ONLY; NO PIPING, DUCTING OR CONDUIT. MAXIMUM CEILING WEIGHT - 3.5 PSF. MAXIMUM

9. WHERE SUSPENSION OR HANGER WIRES ARE REQUIRED BY OTHERS, VERIFY AND COORDINATE AROUND A MINIMUM 1-1/2" X 12" LONG FURRING CHANNEL OR NO. 3 X 12" LONG REINFORCING BAR

- STRUCTURAL STEEL 1. FABRICATION, ERECTION AND MATERIALS SHALL CONFORM WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, THE AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, AND THE CALIFORNIA BUILDING CODE, LATEST EDITIONS UNO IN THE DESIGN CRITERIA NOTES
- 2. STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM WITH ASTM A992. ALL OTHER STRUCTURAL STEEL ROLLED SHAPES (CHANNELS, ANGLES, ETC) AND PLATES SHALL CONFORM WITH ASTM A36, UNO.
- 3. STEEL PIPE SHALL CONFORM TO ASTM A53, TYPES E OR S, GRADE B. ALL HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE C OPTIONALLY, OR WHERE SPECIFIED ON DRAWINGS, ASTM A1085 MATERIAL SHALL BE SUPPLIED. 5. ALL STRUCTURAL STEEL SHALL RECEIVE A MINIMUM OF ONE SHOP COAT OF RED PRIMER PAINT. DO NOT PAINT AREAS TO BE FIELD WELDED, FIREPROOFED, GALVANIZED, TO RECEIVE SLIP-
- CRITICAL HIGH STRENGTH BOLTS, OR TO BE EMBEDDED IN CONCRETE. PROVIDE ADDITIONAL PAINTING AS NOTED IN THE SPECIFICATIONS. 6. ALL STRUCTURAL STEEL SHALL BE ERECTED PLUMB AND TRUE TO LINE. TEMPORARY BRACING SHALL BE INSTALLED AND SHALL BE LEFT IN PLACE UNTIL OTHER MEANS ARE PROVIDED TO ADEQUATELY BRACE THE STRUCTURE. CONTRACTOR RESPONSIBLE FOR REVIEWING ALL BASE
- PLATE AND SUPPORT CONDITIONS DURING ERECTION AND BRACING AS REQUIRED. SEE AISC AND OSHA REQUIREMENTS 7. PLACE NON-SHRINK GROUT UNDER ALL BASE PLATES BEFORE ADDING VERTICAL LOAD. 8. STRUCTURAL STEEL BELOW GRADE SHALL HAVE 3 INCHES MINIMUM OF CONCRETE COVER. 9. BOLTED CONNECTIONS:
- a. BOLTED CONNECTIONS SHALL CONSIST OF UNFINISHED BOLTS CONFORMING TO ASTM A325 b. WHERE HIGH-STRENGTH BOLT GAVE SPECIFIED, BOLTS CONFORMING TO ASTM F3125, GRADE A325 OR A490 SHALL BE PROVIDED AS INDICATED. c. ANCHOR RODS CAST IN CONCRETE OR MASONRY SHALL BE HEADED BOLTS WITH CUT THREAD FULL DIAMETER BODY STYLE CONFORMING TO ASTM F1554 GR. 36, 55 (WELDABLE PER S1
- SUPPLEMENTARY REQUIREMENTS), OR 105 AS INDICATED ON DRAWINGS. IN LIEU OF HEADED ANCHOR BOLTS, THREADED ROD CONFORMING TO THE ABOVE SPECIFICATION MAY BE USED WITH A SINGLE NUT WELDED TO THE ROD OR DOUBLE NUTS TIGHTENED TO PREVENT ROTATION. ANCHOR ROD PROJECTION ABOVE TOP OF FOUNDATION SHALL BE AS NOTED ON THE DRAWINGS d. BOLTED CONNECTIONS SHALL HAVE WASHERS CONFORMING TO ASTM F436 UNO. WASHERS
- MAY BE OMITTED AT SNUG-TIGHTENED AND SLIP-CRITICAL CONNECTIONS, EXCEPT WHERE REQUIRED BY THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS, LATEST EDITION. e. BASE PLATES SHALL HAVE NUTS AND WASHERS AT TOP AND BOTTOM OF PLATE. WASHERS FOR BASE PLATES SHALL BE A36 SQUARE OR CIRCULAR PLATE UNLESS ASTM F844 WASHERS
- ARE PERMITTED. SEE BASE PLATE DETAILS FOR PLATE SIZE AND PERMISSIBLE WASHER TYPE. DEMENTS FOR "SLID ODITION " BOI TED CONNECTIO 10. ADDITIONAL REQUI IAL INSPECTION) ARE a. "SLIP-CRITICAI IONS ALONG CHORD LINES REQUIRED AT AND DRAG LIN OVERSIZED OR SLOTTED HOLES.
- AND TIGHTENING b. THE SPECIAL OPERATION 11. PROVIDE 3/4" DIAI MORE THAN 2'-0" ON CENTER FOR AL
- TS AT MAXIMUM 24"CC 12. AT WOOD TO STE 13. HOLES FOR UNFIN TER OF THE BOLT PLUS 1/16". USE STAND TED OTHERWISE.
- NCE WITH AMERICAN 14. WELDING SHALL WELDING SOCIETY STANDARDS, USING ONLY CERTIFIED WELDERS. ALL GROOVE WELDS SHALL HAVE COMPLETE PENETRATION UNLESS NOTED OTHERWISE. ALL EXPOSED WELDS SHALL BE
- GROUND SMOOTH. ALL ELECTRODES FOR WELDING SHALL COMPLY WITH AWS CODE, E70 SERIES MINIMUM 15. WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTHS REQUIRED. 16. MINIMUM FILLET WELDS: 3/16" @ T < 1/2"
- 1/4" @ T < 3/4" 5/16" @ T > 3/4" 17. WELDING PROCEDURE SPECIFICATIONS (WPS) FOR SHOP AND FIELD PREQUALIFIED WELD JOINTS AND WELD JOINTS QUALIFIED BY TEST SHALL BE PREPARED FOR REVIEW PRIOR TO FABRICATION. ALL WELDING PROCEDURE ITEMS SUCH AS BASE METALS, WELDING PROCESSES, FILLER METALS AND JOINT DETAILS THAT MEET THE REQUIREMENTS OF AWS D1.1 SECTION 3 SHALL BE CONSIDERED AS PREQUALIFIED. ANY CHANGE OR SUBSTITUTION THAT IS BEYOND THE RANGE OR OLERANCE OR REQUIREMENTS FOR PREQUALIFICATION SHALL BE QUALIFIED BY TEST PER AWS
- D1.1 SECTION 4 PART B. QUALIFICATION TESTING IS REQUIRED FOR PARTIAL PENETRATION AND COMPLETE PENETRATION WELDS. 18. FOR NONDESTRUCTIVE TESTING OF WELDED CONNECTIONS EXCLUDING PRIMARY MEMBERS OF MOMENT RESISTING FRAMES: a. WELDED CONNECTIONS SHALL BE TESTED BY NONDESTRUCTIVE METHODS FOR COMPLIANCE
- WITH AISC N5.5, AND JOB SPECIFICATIONS. ULTRASONIC TESTING SHALL BE IN ACCORDANCE WITH AWS D1.1, ASTM E164 AND ASME SECTION V. RADIOGRAPHY SHALL BE IN ACCORDANCE WITH AWS D1.1. ASTM E94 AND E99, AND ASME SECTION V. THIS TESTING SHALL BE PART OF THE SPECIAL INSPECTION REQUIREMENTS OF CBC SECTION 1705 PERFORMED BY AN APPROVED INDEPENDENT TESTING LABORATORY AS FOLLOWS: 1. BASE METAL THICKER THAN 1-1/2 INCH WHEN SUBJECT TO THROUGH THICKNESS WELD
- SHRINKAGE STRAINS. 2. ALL COMPLETE JOINT PENETRATION GROOVE OR BUTT WELDS. 3. ALL PARTIAL JOINT PENETRATION GROOVE WELDS WHEN USED IN COLUMN SPLICES.
- b. ANY MATERIAL DISCONTINUITIES SHALL BE ACCEPTED OR REJECTED ON THE BASIS OF DEFECT RATING IN ACCORDANCE WITH THE (LARGER REFLECTOR) CRITERIA OF AISC N5.5.

# POST-INSTALLED ANCHORS

1. FOR CONCRETE CONSTRUCTION, POST-INSTALLED ANCHORS SHALL BE ONE OF THE FOLLOWING

- A. ADHESIVE ANCHORS FOR THRD ROD & REBAR: a. HILTI HIT-HY 200 PER ESR-3187
- b. SIMPSON SET-3G PER ESR-4057 DEWALT/PURE ESR-3298
- B. EXPANSION ANCHORS: a. HILTI KB-TZ2 PER ESR-4266
- SIMPSON STRONG BOLT 2 PER ESR-3037 c. DEWALT/POWER-STUD+ SD2 ESR-2502
- C. SCREW ANCHORS: a. HILTI KWIK HUS-EZ (KH-EZ) PER ESR-3027
- b. SIMPSON TITEN HD PER ESR-2713 c. DEWALT/SCREWBOLT+ PER ESR-3889
- 2. FOR GROUT-FILLED MASONRY CONSTRUCTION, POST-INSTALLED ANCHORS SHALL BE ONE OF THE FOLLOWING: A. ADHESIVE ANCHORS FOR THRD ROD & REBAR:
- a. HILTI HIT-HY 270 PER ESR-4143 SIMPSON SET-XP IAPMO UES ER-265
- c. DEWALT/AC 100+ GOLD ESR-3200 B. EXPANSION ANCHORS: a. HILTI KB-TZ2 PER ESR-4561
- SIMPSON WEDGE-ALL PER ESR-1396 DEWALT/POWER-STUD+ SD1 ESR-2966
- C. SCREW ANCHORS: a. HILTI KWIK HUS-EZ (KH-EZ) PER ESR-3056 b. SIMPSON TITEN HD PER ESR-1056
- DEWALT/SCREWBOLT+ PER ESR-4042 3. FOR UNREINFORCED MASONRY CONSTRUCTION, ADHESIVE ANCHORS SHALL BE ONE OF THE
- FOLLOWING: a. HILTI HY-270 PER ESR-4144 b. DEWALT AC100+ GOLD PER ESR-4105
- 4. PLASTIC MESH SCREEN TUBES SHALL BE PROVIDED AND EXISTING WALL THICKNESS AND MORTAR SHEAR STRENGTH SHALL MEET THE REQUIREMENTS OF THE EVALUATION REPORT
- 5. ANCHOR TYPE, SIZE & EMBEDMENT SHALL BE AS INDICATED IN DRAWINGS. POST-INSTALLED ANCHORS FOR REPAIR SHALL BE EVALUATED ON A CASE BY CASE BASIS. NOTIFY STRUCTURAL ENGINEER FOR REPAIRS. 6. ALL EMBEDMENT DEPTHS CALLED OUT IN DRAWINGS REFER TO EFFECTIVE EMBEDMENT
- UNLESS OTHERWISE NOTED. SEE DIAGRAM BELOW AND ICC REPORTS 7. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN THE
- EVALUATION REPORT. PROVIDE MINIMUM EMBEDMENT PROVIDED IN ICC ESR REPORT UNLESS NOTED OTHERWISE 8. PROVIDE SPECIAL INSPECTION AS INDICATED IN THE STATEMENT OF STRUCTURAL SPECIAL
- INSPECTIONS AND TESTING AND THE EVALUATION REPORT. 9. WHEN INSTALLING POST-INSTALLED ANCHORS IN EXISTING CONCRETE OR MASONRY, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING EXISTING REINFORCING BARS. DO NOT INSTALL ANCHORS WITHIN 1 1/2" OF CMU HEAD JOINTS. DO NOT INSTALL ANCHORS IN PRESTRESSED CONCRETE ELEMENTS.
- 10. ANCHORS INSTALLED FROM THE BOTTOM INTO METAL DECK WITH CONCRETE SHALL BE INSTALLED IN THE CENTER OF THE LOW FLUTE OF THE DECKING UNLESS NOTED OTHERWISE IN EVALUATION REPORT. THE DECKING SHALL HAVE A MINIMUM THICKNESS OF 20 GAUGE. THE MINIMUM THICKNESS OF THE CONCRETE ABOVE THE HIGH FLUTE OF THE METAL DECK SHALL BE AS INDICATED IN THE EVALUATION REPORT. SEE EVALUATION REPORT FOR ADDITIONAL REQUIREMENTS, INCLUDING MINIMUM DIMENSIONS FOR FLUTE WIDTH AND DEPTH. 11. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS
- AT THE TIME OF ANCHOR INSTALLATION PER ACI 318. CHAPTER 17. 12. THE CONCRETE SHALL HAVE ATTAINED ITS MINIMUM DESIGN STRENGTH PRIOR TO INSTALLATION OF THE ANCHORS. 13. INSTALLER CERTIFICATION AND INSPECTION IS REQUIRED FOR HORIZONTAL AND UPWARDLY
- INCLINED ADHESIVE ANCHORS SUBJECTED TO SUSTAINED TENSION LOADING IN ACCORDANCE WITH ACI 318, CHAPTER 17. 14. IF TEMPERATURE OF BASE MATERIAL AT TIME OF ADHESIVE ANCHOR INSTALLATION IS 45 DEGREES FARENHEIT OR LOWER, AN "ACRYLIC" OR COLD WEATHER ADHESIVE IS REQUIRED.
- USE DEWALT AC200+, SIMPSON AT-XP, OR HILTI HIT-HY200 WHEN THIS OCCURS. 15. THE INSPECTION OF THE ANCHORS SHALL BE DONE BY A QUALIFIED INSPECTION AGENCY AND A REPORT OF THE INSPECTION RESULTS SHALL BE SUBMITTED TO THE GOVERNING AGENCY AND ARCHITECT/STRUCTURAL ENGINEER.

**INSTALLED ANCHOR DIAGRAMS** 

![](_page_26_Figure_147.jpeg)

![](_page_26_Figure_148.jpeg)

**EXPANSION ANCHOR** 

SCREW ANCHOR

26. ALL REBAR REBAR IS U MECHANIC							
	BAR SIZE	fy (KSI)					
	#3	60					
	#4	60					
	#5	60					
	#6	60					
	#7	60					

#8 60

PLUMB

PERMITTED

UIREMENTS FOR "SLIP-CRITICAL" BULTED CONNECTION
L" CONNECTIONS (A325SC DESIGN VALUES WITH SPECIA
ALL BRACED FRAME CONNECTIONS, AT ALL CONNECTIONS
NES (AS NOTED ON PLANS), AND UNO, AT ALL BOLTS IN (
INSPECTOR MUST BE PRESENT DURING INSTALLATION /
DF "SLIP-CRITICAL" CONNECTIONS.
METER STITCH BOLTS AND RING FILLS, SPACED AT NOT
DOUBLE ANGLE MEMBERS UNO.
EL PARALLEL CONTACT, BOLT WITH 1/2" DIAMETER BOL
NISHED BOLTS SHALL BE OF THE SAME NOMINAL DIAME
DARD AISC GAGE AND PITCH FOR BOLTS EXCEPT AS NO
BE DONE BY THE ELECTRIC ARC PROCESS IN ACCORDA

### CONCRETE MASONRY UNITS (CMU)

STRUCTURES".

CERTIFICATES

OTHERWISE

1. ALL MASONRY SHALL BE MANUFACTURED AND PLACED IN ACCORDANCE WITH TMS 402, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", AND TMS 602 "SPECIFICATION FOR MASONRY

2. MASONRY UNITS AND COMPONENTS THAT ARE DAMAGED ARE NOT TO BE INSTALLED IN THIS PROJECT. REINFORCEMENTS AND ACCESSORIES ARE NOT TO BE STORED ON THE GROUND AND

ARE TO BE PROTECTED FROM PERMANENT DISTORTIONS. 3. WHEN THE AMBIENT AIR TEMPERATURE IS BELOW 40°F, THE COLD WEATHER PROCEDURES FROM TMS 602. ARTICLE 1.8C ARE TO BE IMPLEMENTED. WHEN THE AMBIENT AIR TEMPERATURE IS ABOVE 90°F. THE HOT WEATHER PROCEDURES FROM TMS 602, ARTICLE 1.8D ARE TO BE IMPLEMENTED. 4. CONCRETE BLOCK UNITS SHALL CONFORM TO ASTM C90 . F'M = 2000 PSI. F'M SHALL BE VERIFIED IN ACCORDANCE WITH TMS 602, ARTICLE 1.4 B.2. CONCRETE BLOCK UNITS SHALL BE MEDIUM WEIGHT. ALL MASONRY CONSTRUCTION IS TO BE GROUTED SOLID. MORTAR SHALL BE TYPE S PER ASTM C270.

6. GROUT SHALL BE PROPORTIONED TO ATTAIN A 28 DAY COMPRESSIVE STRENGTH EQUAL TO THE SPECIFIED F'M VALUE NOTED ABOVE. NOT MORE THAN 5% OF THE PEA GRAVEL SHALL PASS THE NO. 8 SIEVE AND 100% SHALL PASS THE 3/8" SIEVE. WHEN REQUIRED, GROUT STRENGTH SHALL BE VERIFIED IN ACCORDANCE WITH ASTM C1019. GROUT MIX SHALL HAVE APPROXIMATELY 1 LB OF SIKAGROUT AID, OR APPROVED EQUAL, PER 100 LBS OF CEMENTITIOUS MATERIAL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 UNO. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706 GRADE 60. CONTRACTOR SHALL SUBMIT REBAR MILL

8. VERTICAL REINFORCING SHALL CONSIST OF #5 BARS AT 16" ON CENTER UNO, LOCATED AT EACH FACE OF MASONRY WALL, UNO. LOCATE BARS AT ALL CORNERS, WALL ENDS, INTERSECTIONS, JAMBS AND AT EACH SIDE OF A WALL JOINT. LOCATE BARS OR ADD ADDITIONAL BARS DIRECTLY UNDER FRAMING MEMBERS SUCH AS BEAMS, JOISTS, GIRDERS, AND TRUSSES WHERE CENTER TO CENTER SPACING OF FRAMING MEMBERS EXCEED 48" CC. DOWELS WITH STANDARD 90° HOOKS INTO THE FOUNDATION SHALL MATCH AND LAP VERTICAL REINFORCING, TYPICAL, UNLESS NOTED

9. INTERMEDIATE HORIZONTAL REINFORCING SHALL CONSIST OF #4 BARS AT 24" ON CENTER, LOCATED AT THE CENTER OF THE MASONRY WALL, UNO. LOCATE TWO (2) #5 HORIZONTAL BARS AT ALL ELEVATED FRAMING ASSEMBLIES, SUCH AS ROOFS, FLOORS, AND STAIRS. ALSO, LOCATE ONE #5 HORIZONTAL BAR AT TOPS OF PARAPETS, TOPS OF FREE-STANDING WALLS, AT THE BOTTOM OF ALL WALLS, AND ALIGNED WITH THE SLAB-ON-GRADE. PLACE A #5 BAR AT EACH FACE OF THE MASONRY WALL ABOVE AND BELOW ALL WALL OPENINGS, UNO. EXTEND THESE BARS A MINIMUM OF A LAP LENGTH PAST THE EDGE OF THE OPENING. WHERE EXTENSION CAN NOT BE ACHIEVED, BEND BARS UP OR DOWN FOR A DISTANCE EQUAL TO THE SPECIFIED LAP LENGTH. 10. PLACE ALL HORIZONTAL BARS IN BOND BEAM UNITS. WHEN 2 BARS ARE USED, STAGGER LAPS MINIMUM OF 5'-0". 11. MINIMUM REBAR CLEARANCE TO FACE SHELL IS ONE BAR DIAMETER OR 1/2", WHICHEVER IS

GREATER. WHERE WALLS ARE EXPOSED TO EARTH OR WEATHER, A MINIMUM COVER FOR THE REINFORCING BARS OF 2" SHALL BE MAINTAINED. 12. BEFORE BLOCK IS PLACED ON CONCRETE, THOROUGHLY CLEAN CONCRETE OF ALL LAITANCE AND ALL LOOSE MATERIAL. ROUGHEN AS IN A CONCRETE CONSTRUCTION JOINT.

 CONCRETE BLOCK MASONRY SHALL BE BUILT TO PRESERVE THE UNOBSTRUCTED VERTICAL CONTINUITY OF THE CELLS. ALL HEAD AND END JOINTS SHALL BE SOLIDLY FILLED WITH MORTAR FOR A DISTANCE IN FROM THE FACE OF THE WALL OR UNIT NOT LESS THAN THE THICKNESS OF THE LONGITUDINAL FACE SHELLS. BOND SHALL BE PROVIDED BY LAPPING SUCCESSIVE COURSES OR BY EQUIVALENT MECHANICAL ANCHORAGE. 14. VERTICAL CELLS SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR

UNOBSTRUCTED CONTINUOUS VERTICAL CELL 15. GROUT PLACEMENT SHALL CONFORM TO TMS 602 SECTION 3.5. 16. CLEAN OUT OPENINGS SHALL BE PROVIDED AT THE BOTTOMS OF ALL CELLS TO BE FILLED AT EACH

OR KEYS, SHALL BE FORMED BY STOPPING THE POUR OF GROUT 1-1/2" BELOW THE TOP OF THE

LIFT OR POUR OF GROUT WHERE SUCH LIFT OR POUR OF GROUT IS IN EXCESS OF 5'-4" IN HEIGHT, IN ACCORDANCE WITH TMS 602 SECTION 3.2F. ANY OVERHANGING MORTAR OR OTHER OBSTRUCTION OR DEBRIS SHALL BE REMOVED FROM INSIDE OF SUCH CELLS. THE CLEAN OUTS SHALL BE SEALED AFTER INSPECTION AND BEFORE GROUTING. MECHANICALLY VIBRATE ALL GROUT POURS. 17. REINFORCEMENT IS TO BE SUPPORTED IN PLACE TO PREVENT DISPLACEMENTCAUSED BY PLACEMENT OF GROUT AND MORTAR OR BY CONSTRUCTION LOADS.

18. THOROUGHLY CLEAN ALL CELLS AND BOND BEAMS OF MORTAR BEFORE GROUTING. 19. ALL CELLS SHALL BE FILLED SOLIDLY WITH GROUT. ALL GROUTING SHALL BE DONE UNDER THE OBSERVATION OF A QUALIFIED INSPECTOR. REFER TO SPECIAL STRUCTURAL INSPECTION SECTION OF THESE NOTES FOR FREQUENCY OF GROUTING INSPECTION. 20. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS,

UPPERMOST UNIT 21. EVERY VERTICAL BAR IN WALLS SHALL BE LAPPED PER THE TABLE BELOW WITH A DOWEL OF THE SAME SIZE EXTENDING FROM THE FOUNDATION. CARRY EACH DOWEL TO WITHIN 3" OF THE BOTTOM OF THE FOUNDATION AND TERMINATE WITH 90 DEGREE HOOK. DOWELS SHALL BE STRAIGHT AND

22. ALL EMBEDDED ITEMS (BOLTS, STRAPS, ETC.) SHALL BE SECURED IN PLACE PRIOR TO GROUTING CUT A HOLE IN THE FACE SHELL TO ATTAIN A MINIMUM OF 1/2" GROUT ALL AROUND EMBEDDED ITEMS AT THE FACE SHELL. WITHIN THE CELL OF THE UNIT. PROVIDE A MINIMUM OF 8" OF GROUT AROUND EMBEDDED ITEMS. AT HORIZONTAL ANCHOR INSTALLATIONS, MAINTAIN A MINIMUM CLEAR DISTANCE OF 1/2" BETWEEN END OF ANCHOR AND FACE SHELL OF UNIT. 23. SINGLE CONDUITS (3/4" MAX) MAY BE PLACED IN VERTICAL CELLS NOT CONTAINING VERTICAL. REBAR. NO HORIZONTAL CONDUITS ALLOWED IN WALL CONSTRUCTION. 24. ANCHOR BOLTS CAST IN MASONRY SHALL BE HEADED BOLTS WITH CUT THREADS CONFORMING TO

ASTM F1554 GRADE 36, OR ASTM A307 GRADE A, UNO, BENT BAR ANCHOR BOLTS ARE NOT 25. USE OPEN END BLOCK FOR ALL CONSTRUCTION NOT LAID IN RUNNING BOND. R SHALL BE LAP SPLICED AND DEVELOPED AS FOLLOWS (UNO). WHERE EPOXY COATED

> JSED, MULTIPLY LAP LENGTHS BY 1.5. BARS LARGER THAN #8 ARE TO BE LAPPED WITH AL SPLICES THAT DEVELOP AT LEAST 125 PERCENT OF THE YIELD STRENGTH OF THE BAR.

	CIVID SFLICE & DEVELOFINIENT LENGTHS (THI - 2000 FSI)								
	6" C	MU	8" CMU		10" CMU		12" CMU		
g	CENTER	E.F.	CENTER	E.F.	CENTER	E.F.	CENTER	E.F.	
1.0	12"	-	12"	12"	12"	13"	12"	12"	
1.0	18"	-	13"	24"	13"	22"	13"	21"	
1.0	28"	-	20"	37"	20"	35"	20"	33"	
1.3	53"	-	38"	54"	38"	54"	38"	54"	
1.3	-	-	52"	-	52"	63"	52"	63"	
1.5	-	-	-	_	72"	-	72"	72"	

STRUCTURAL OBSERVATION

IN ACCORDANCE WITH SECTION 1704.6 OF THE CBC, THIS PROJECT IS REQUIRED TO HAVE STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION MEANS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM, FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS, AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED BY CBC SECTIONS 110 OR 1705. THE FOLLOWING PROJECT MILESTONES SHALL BE OBSERVED:

A. FOUNDATIONS (PRIOR TO CONCRETE PLACEMENT) B. CMU SHEAR WALLS (PRIOR TO GROUTING)

C. STEEL ERECTION PRIOR TO COMPLETION OF FIRST ELEVATED LEVEL (FLOOR OR ROOF) D. METAL DECK AND CONCRETE OVER DECK REINFORCING (PRIOR TO CONCRETE PLACEMENT)

THE OWNER SHALL EMPLOY THE ARCHITECT OR STRUCTURAL ENGINEER OF RECORD, OR ANOTHER REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT DESIGNATED TO PERFORM STRUCTURAL OBSERVATION. OBSERVED DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER'S REPRESENTATIVE, SPECIAL INSPECTOR, CONTRACTOR AND BUILDING OFFICIAL. THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A STATEMENT THAT THE FIELD VISITS HAVE OCCURRED AND IDENTIFY ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL OBSERVER A MINIMUM OF 48 HOURS IN ADVANCE OF PROJECT MILESTONES SO THAT OBSERVATIONS MAY BE SCHEDULED.

ABBREVIATIONS

HT - HEIGHT

![](_page_26_Figure_177.jpeg)

STRUCTURAL SHEET INDEX SE0.00 GENERAL NOTES SE0.01 STRUCTURAL SPECIAL INSPECTIONS & TESTING

SE0.02	STRUCTURAL SPECIAL INSPECTIONS & TESTING
SE1.01	SWITCHGEAR BUILDING PLANS
SE3.00	SWITCHGEAR BUILDING SECTIONS
SE4.00	ELEVATIONS
SE5.01	SWITCHGEAR BUILDING SECTIONS & DETAILS
SE5.02	TYPICAL CMU DETAILS
SE5.03	TYPICAL STEEL DETAILS
SE5.04	EQUIPMENT ANCHORAGE DETAILS

![](_page_26_Figure_181.jpeg)

![](_page_27_Figure_1.jpeg)

OF COMPACTED FILL. PRIOR TO PLACEMENT C SUBGRADE AND VERIFY

PROPERLY.

a. APPLICATION OF PRESTRESSING FORCES b. GROUTING OF BONDED PRESTRESSING TENDONS. ). INSPECT ERECTION OF PRECAST ACI 318: Ch. 26.9.2 Х CONCRETE MEMBERS. . VERIFY IN-SITU CONCRETE STRENGTH, ACI 318: 26.11.2 Х PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS ACI 318: 26.11.1.2(b) 2. INSPECT FORMWORK FOR SHAPE, Х LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED . BATCH PLANT - QUALITY AND QUANTITY -OF MATERIALS USED IN TRANSIT-MIXED CONCRETE AND BATCHED AGGREGATES. AT LOCATION WHERE MATERIALS ARE MEASURED. d I. CONCRETE PREPLACEMENT INSPECTION - CONCRETE SHALL NOT BE PLACED UNTIL THE FORMS AND REINFORCEMENT HAVE BEEN INSPECTED, ALL PREPARATIONS FOR THE PLACEMENT HAVE BEEN COMPLETED, AND THE PREPARATIONS HAVE BEEN CHECKED BY THE INSPECTOR OF RECORD. 15. PLACING RECORD - A RECORD SHALL BE KEPT ON THE SITE OF THE TIME AND DATE OF PLACING THE CONCRETE IN EACH PORTION OF THE STRUCTURE. SUCH RECORD SHALL BE KEPT UNTIL THE COMPLETION OF THE STRUCTURE AND SHALL BE OPEN TO THE INSPECTION OF THE ENFORCEMENT AGENCY 16. COMPOSITE CONSTRUCTION CORES - COMPOSITE CONSTRUCTION CORES SHALL BE TAKEN AND TESTED IN ACCORDANCE WITH CBC SECTION 1910A.4

<sup>a</sup> WHERE APPLICABLE, SEE ALSO SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE. <sup>b</sup> SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO COMMENCEMENT OF THE WORK.

INSTALLATION OF ALL ADHESIVE ANCHORS IN HORIZONTAL AND UPWARDLY INCLINED POSITIONS SHALL BE PERFORMED BY AN ACI/CRSI CERTIFIED ADHESIVE ANCHOR INSTALLER. EXCEPT WHERE THE FACTORED DESIGN TENSION ON THE ANCHORS IS LESS THAN 100 LBS AND THOSE ANCHORS ARE CLEARLY NOTED ON THE APPROVED CONSTRUCTION DOCUMENTS OR WHERE THE ANCHORS ARE SHEAR DOWELS ACROSS COLD JOINTS IN SLABS ON GRADE WHERE THE SLAB IS NOT PART OF THE LATERAL FORCE-RESISTING SYSTEM. <sup>d</sup> SEE 1705A.3.3 FOR WAIVER/EXCEPTIONS.

QUIRED SPECIAL INSPECTIONS & TESTS						
	CONTINUOUS	PERIODIC	REFERENCED STANDARD			
ON AND TESTING OF H	IIGH-STRENGT	H BOLTS, N	UTS AND WASHERS:			
NGS TO CONFORM SPECIFIED IN THE TION DOCUMENTS	-	х	RCSC: 1.5, AISC 360: SECTION A3.3, J3.1 AND APPLICABLE ASTM MATERIAL STANDARDS			
	-	Х	RCSC: 1.5 & 2.1, AISC 360: A3 3 & N3 2			
ENGTH BOLTS,	-	-	RCSC: 7.2, APPLICABLE ASTM			
RENGTH BOLTING			MATERIAL STANDARDS			
	-	х				
LIP-CRITICAL JOINTS	-	Х				
T-OFF BOLT OR ATOR METHODS OF			RCSC: 7-9, AISC 360: J3.1, J3.2, M2.5 & N5.6			
_IP-CRITICAL NUT WITHOUT	х	-				
ALIBRATED						
ON AND TESTING OF	STRUCTURAL S	STEEL AND (	COLD-FORMED			
	_	x	AISC 360 SECTION A3 1			
RM TO AISC 360						
RM TO ASTM D IN THE CTION DOCUMENT	-	Х	APPLICABLE ASTM MATERIAL STANDARDS			
RTIFIED TEST	-	Х	AISC 360: A3.1 & N3.2			
FIED STEEL	-	-	APPLICABLE ASTM MATERIAL STANDARDS			
ON OF WELDING CON	SUMABLES AN	D TESTING	OF WELDED ELEMENTS:			
NGS TO CONFORM N IN THE CTION DOCUMENTS	-	х	AISC 360, A3.5 & N3.2 AND APPLICABLE AWS A5 DOCUMENTS			
RTIFICATE OF	-	Х	AISC 360: N3.2			
STING OF	-	-	AISC 360: N5.5			
G						
ND COLD-FORMED S	TEEL DECK:					
RTIAL JOINT	х	-				
WELDS	Х	-	AISC 360: J2,			
T WELDS > 5/16"	X	-	M2.4, & M4.5 AWS D1.1 AWS D1.8			
T WELDS <u>&lt;</u> 5/16"	-	Х				
DECK WELDS	-	Х	AWS D1.3, SDI QA/QC			
DS FEL FOR COLD-	-	X	AWS D1.1			
MEMBERS	_	Λ	AWS D1.3			
VELDABILITY OF EL OTHER THAN	-	Х				
EL RESISTING AL FORCES IN	х	-	AWS D1.4 ACI 318:			
NDARY ELEMENTS TURAL WALLS OF IEAR			SECTIONS 26.6.4.1, 18.2.8, 25.5.7.4			
MENT	x	-				
NG STEEL	-	Х				
CING BARS	-	-	-			
RAME JOINT CE:						
CING AND	-	Х				
		X	AISC 360: N5.8			
DETAILS AT	-	Х				

a. WHERE APPLICABLE, SEE ALSO SECTION 1705A.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE

	CONTINUOUS	PERIODIC
W SHALLOW FOUNDATIONS ARE THE DESIGN BEARING CAPACITY.	-	Х
RE EXTENDED TO PROPER DEPTH AND	-	х
ON AND TESTING OF COMPACTED FILL	-	Х
T, VERIFY USE OF PROPER MATERIALS CORDANCE WITH THE PROVISIONS OF HNICAL REPORT. VERIFY DENSITIES DURING PLACEMENT AND COMPACTION	Х	-
F COMPACTED FILL, INSPECT THAT SITE HAS BEEN PREPARED	-	Х

#### TEEL CONSTRUCTION - BOLTING - REQUIRED SPECIAL INSPECTIONS NSC360 TABLE N5.6-1, N5.6-2, N5.6-3

110TN503	
INSPECTION TASKS PRIOR TO BOLTING	
MANUFACTURER CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	
CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE)	
CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	
INSPECTION TASKS DURING BOLTING	
FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED	
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	
INSPECTION TASKS AFTER BOLTING	
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	

STEEL CONSTRUCTION - BOLTING - REQUIRED TESTING OF HIGH STRENGTH BOLTS CBC SECTION 1705A.2.6

HIGH-STRENGTH BOLTS, NUTS AND WASHERS SHALL BE SAMPLED AND TESTED BY AN APPROVED AGENCY FOR CONFORMANCE WITH THE REQUIREMENTS OF APPLICABLE ASTM STANDARDS.

COLD-FORMED STEEL DECK - REQUIRED SPECIAL INSPECTIONS AND TESTS CBC SECTION 1705A.2.2/SDI QA/QC STANDARD TABLES 1.1-1.8 110TN505		
INSPECTION OR EXECUTION TASKS PRIOR TO DECK PLACEMENT	QC	QA
A. VERIFY COMPLIANCE OF MATERIALS (DECK AND ALL ACCESSORIES) WITH CONSTRUCTION DOCUMENTS, INCLUDING PROFILES, MATERIAL PROPERTIES, AND BASE METAL THICKNESS	Р	Р
B. DOCUMENT ACCEPTANCE OR REJECTION OF DECK AND DECK ACCESSORIES	Ρ	Р
INSPECTION OR EXECUTION TASKS AFTER DECK PLACEMENT	QC	QA
A. VERIFY COMPLIANCE OF DECK AND ALL DECK ACCESSORIES INSTALLATION WITH CONSTRUCTION DOCUMENTS	Ρ	Р
B. VERIFY DECK MATERIALS ARE REPRESENTED BY THE MILL CERTIFICATIONS THAT COMPLY WITH THE CONSTRUCTION DOCUMENTS	N/A	Р
C. DOCUMENT ACCEPTANCE OR REJECTION OF INSTALLATION OF DECK AND DECK ACCESSORIES	Р	Р
INSPECTION OR EXECUTION TASKS PRIOR TO WELDING	QC	QA
A. WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	0	0
B. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	0	0
C. MATERIAL IDENTIFICATION (TYPE/GRADE)	0	0
D. CHECK WELDING EQUIPMENT	0	0
INSPECTION OR EXECUTION TASKS DURING WELDING	QC	QA
A. USE OF QUALIFIED WELDERS	0	0
B. CONTROL AND HANDLING OF WELDING CONSUMABLES	0	0
C. ENVIRONMENTAL CONDITIONS (WIND SPEED, MOISTURE, TEMPERATURE)	0	0
D. WPS FOLLOWED	0	0
INSPECTION OR EXECUTION TASKS AFTER WELDING	QC	QA
A. VERIFY SIZE AND LOCATION OF WELDS, INCLUDING SUPPORT, SIDELAP, AND PERIMETER WELDS	Р	Р
B. WELDS MEET VISUAL ACCEPTANCE CRITERIA	Р	Р
C. VERIFY REPAIR ACTIVITIES	Р	Р
D. DOCUMENT ACCEPTANCE OR REJECTION OF WELDS	Р	Р
INSPECTION OR EXECUTION TASKS PRIOR TO MECHANICAL FASTENING	QC	QA
A. MANUFACTURER INSTALLATION INSTRUCTIONS AVAILABLE FOR MECHANICAL FASTENERS	0	0
B. PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION	0	0
C. PROPER STORAGE FOR MECHANICAL FASTENERS	0	0
INSPECTION OR EXECUTION TASKS DURING MECHANICAL FASTENING	QC	QA
A. FASTENERS ARE POSITIONED AS REQUIRED	0	0
B. FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS	0	0
INSPECTION OR EXECUTION TASKS AFTER MECHANICAL FASTENING	QC	QA
A. CHECK SPACING, TYPE, AND INSTALLATION OF SUPPORT FASTENERS	Р	Р
B. CHECK SPACING, TYPE, AND INSTALLATION OF SIDELAP FASTENERS	Р	Р
C. CHECK SPACING, TYPE, AND INSTALLATION OF PERIMETER FASTENERS	Р	Р
D. VERIFY REPAIR ACTIVITIES	Р	Р
E. DOCUMENT ACCEPTANCE OR REJECTION OF MECHANICAL FASTENERS	Р	Р
ADDITIONAL INSPECTIONS: SEE REQUIREMENTS IN 'STEEL CONSTRUCTION - REQUIRED VERIFICATION AN TABLE, AND 'STEEL CONSTRUCTION - WELDING - REQUIRED SPECIAL INSPECT	D SPECIAL IN IONS' TABLE	SPECTIONS

CBC SECTION 1705A.2.5 110TN509 INSPECTION AND TESTING (INCLUDING NON-DESTRUCTIVE TESTING) OF ALL SHOP AND FIELD WELDING OPERATIONS SHALL BE MADE BY A QUALIFIED WELDING INSPECTOR APPROVED BY THE ENFORCEMENT

AGENCY. THE MINIMUM REQUIREMENTS FOR A QUALIFIED WELDING INSPECTOR SHALL BE AS THOSE FOR AN AWS CERTIFIED WELDING INSPECTOR (CWI), AS DEFINED IN THE PROVISIONS OF THE AWS QC1 THE WELDING INSPECTOR SHALL MAKE A SYSTEMATIC DAILY RECORD OF ALL WELDS. IN ADDITION TO OTHER REQUIRED RECORDS, THIS RECORD SHALL INCLUDE:

1. IDENTIFICATION MARKS OF WELDERS 2. LIST OF DEFECTIVE WELDS 3. MANNER OF CORRECTION OF DEFECTS

THE WELDING INSPECTOR SHALL CHECK THE MATERIAL, DETAILS OF CONSTRUCTION AND PROCEDURE, AS WELL AS WORKMANSHIP OF THE WELDS. THE INSPECTOR SHALL VERIFY THAT THE INSTALLATION OF END-WELDED STUD SHEAR CONNECTORS RECEIVES SAMPLING AND TESTING IN ACCORDANCE WITH THE REQUIREMENTS OF AWS D1.1 AND THE APPROVED PLANS AND SPECIFICATIONS. THE APPROVED AGENCY SHALL FURNISH THE ARCHITECT, STRUCTURAL ENGINEER, AND THE ENFORCEMENT AGENCY WITH A VERIFIED REPORT THAT THE WELDING HAS BEEN DONE IN

QA
Р
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QA
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QA
Р

CONFORMANCE WITH AWS D1.1, D1.3, D1.4, D1.8, AND THE APPROVED CONSTRUCTION DOCUMENTS.

#### STEEL CONSTRUCTION - WELDING - REQUIRED TESTING AISC 360 - SECTION N5.5 NONDESTRUCTIVE TESTING (NDT) OF WELDED JOINTS PROCEDURES ULTRASONIC TESTING (UT), MAGNETIC PARTICLE TESTING (MT), PENETRANT TESTING (PT) AND RADIOGRAPHIC TESTING (RT), WHERE REQUIRED. SHALL BE PERFORMED BY QA IN ACCORDANCE WITH AWS D1.1/D1.1M. CJP GROOVE WELD NDT FOR STRUCTURES IN RISK CATEGORY II (DSA ONLY), III OR IV, UT SHALL BE PERFORMED BY QA ON ALL CJP GROOVE WELDS SUBJECT TO TRANSVERSELY APPLIED TENSION LOADING IN BUTT, T- AND CORNER JOINTS, IN MATERIALS 5/16" THICK OR GREATER. FOR STRUCTURES IN RISK CATEGORY II, UT SHALL BE PERFORMED BY QA ON 10% OF CJP GROOVE WELDS IN BUTT, T- AND CORNER JOINTS SUBJECT TO TRANSVERSELY APPLIED TENSION LOADING, IN MATERIALS 5/16" THICK OR GREATER. WELDED JOINTS SUBJECTED TO FATIGUE WHEN REQUIRED BY APPENDIX 3, TABLE A-3.1, WELDED JOINTS REQUIRING WELD SOUNDNESS TO BE ESTABLISHED BY RADIOGRAPHIC OR ULTRASONIC INSPECTION SHALL BE TESTED BY QA AS PRESCRIBED. REDUCTION IN THE RATE OF UT IS PROHIBITED. ULTRASONIC TESTING REJECTION RATE THE ULTRASONIC TESTING REJECTION RATE SHALL BE DETERMINED AS THE NUMBER OF WELDS CONTAINING DEFECTS DIVIDED BY THE NUMBER OF WELDS COMPLETED. WELDS THAT CONTAIN ACCEPTABLE DISCONTINUITIES SHALL NOT BE CONSIDERED AS HAVING DEFECTS WHEN THE REJECTION RATE IS DETERMINED. FOR EVALUATING THE REJECTION RATE OF CONTINUOUS WELDS OVER 3 FEET IN LENGTH WHERE THE EFFECTIVE THROAT IS 1 INCH OR LESS, EA 12 INCH INCREMENT OR FRACTION THEREOF SHALL BE CONSIDERED AS ONE WELD. FOR EVALUATING THE REJECTION RATE ON CONTINUOUS WELDS OVER 3 FEET IN LENGTH WHERE THE EFFECTIVE THROAT IS GREATER THAN 1 INCH, EA 6 INCH OF LENGTH. OR FRACTION THEREOF, SHALL BE CONSIDERED ONE WELD.

- REDUCTION OF ULTRASONIC TESTING RATE FOR PROJECTS THAT CONTAIN 40 OR FEWER WELDS, THERE SHALL BE NO REDUCTION IN THE ULTRASONIC TESTING RATE. THE RATE OF UT IS PERMITTED TO BE REDUCED IF APPROVED BY THE EOR AND THE AHJ. WHERE THE INITIAL RATE OF UT IS 100%. THE NDT RATE FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR IS PERMITTED TO BE REDUCED TO 25%, PROVIDED THE REJECTION RATE, THE NUMBER OF WELDS CONTAINING UNACCEPTABLE DEFECTS DIVIDED BY THE NUMBER OF WELDS COMPLETED, IS DEMONSTRATED TO BE 5% OR LESS OF THE WELDS TESTED FOR THE WELDER OR WELDING OPERATOR. A SAMPLING OF AT LEAST 40 COMPLETED WELDS SHALL BE MADE FOR SUCH REDUCED EVALUATION ON EA PROJECT.
- INCREASE IN ULTRASONIC TESTING RATE FOR STRUCTURES IN RISK CATEGORY II AND HIGHER, (WHERE THE INITIAL RATE FOR UT IS 10%) THE NDT RATE FOR AN INDIVIDUAL WELDER OR WELDING OPERATOR SHALL BE INCREASED TO 100% SHOULD THE REJECTION RATE (THE NUMBER OF WELDS CONTAINING UNACCEPTABLE DEFECTS DIVIDED BY THE NUMBER OF WELDS COMPLETED) EXCEEDS 5% OF THE WELDS TESTED FOR THE WELDER OR WELDING OPERATOR. SEE AISC 360. SECTION N5.5F FOR ADDITIONAL INFORMATION.
- DOCUMENTATION ALL NDT PERFORMED SHALL BE DOCUMENTED. FOR SHOP FABRICATION, THE NDT REPORT SHALL IDENTIFY THE TESTED WELD BY PIECE MARK AND LOCATION IN THE PIECE. FOR FIELD WORK, THE NDT REPORT SHALL IDENTIFY THE TESTED WELD BY LOCATION IN THE STRUCTURE, PIECE MARK, AND LOCATION IN THE PIECE. WHEN A WELD IS REJECTED ON THE BASIS OF NDT, THE NDT RECORD SHALL INDICATE THE LOCATION OF THE DEFECT AND THE BASIS OF REJECTION.

MA TM	MASONRY CONSTRUCTION - LEVEL 2 REQUIRED SPECIAL INSPECTIONS AND TESTS TMS 602 TABLE 3 AND 4							
110								
PR		MPLIANCE SUE	BMITTALS	TMS 602 ART 1 5				
PR	IOR TO CONSTRUCTION, VERIFICATION OF FIN	AND F'AAC, E	XCEPT	TMS 602 ART. 1.4B				
DU ST	RING CONSTRUCTION, VERIFICATION OF SLUI ABILITY INDEX (VSI) WHEN SELF-CONSOLIDATI	MP FLOW AND ING GROUT IS	VISUAL	TMS 602 A	RT. 1.5 & 1.6.3			
	MINIMUM SP	ECIAL INSPECT	ΓΙΟΝ					
		FREQUE	NCY	REFERENCE	FOR CRITERIA			
	INSPECTION TASK	CONTINUOUS	PERIODIC	TMS 402	TMS 602			
1.	AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE							
	a. PROPORTIONS OF SITE-PREPARED MORTAR	-	х		ART. 2.1, 2.6A & 2.6C			
	b. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	-	х		ART. 2.4 B, 2.4 H			
	c. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES	-	х		ART. 3.4 , 3.6 A			
	d. PRESTRESSING TECHNIQUE	-	х		ART. 3.6 B			
	e. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X <sup>(a)</sup>	X <sup>(b)</sup>		ART. 2.1 C			
	f. SAMPLE PANEL CONSTRUCTION	-	Х		ART. 1.6D			
2.	PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:							
	a. GROUT SPACE	-	х		ART. 3.2 D, 3.2 F			
	b. PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES	-	х	SEC. 10.8 & 10.9	ART. 2.4, 3.6			
	c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS	-	х	SEC. 6.1, 6.3.1, 6.3.6, 6.3.7	ART. 3.2 E, 3.4			
	d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	-	х		ART. 2.6 B, 2.4 G.1.b			
3.	VERIFY COMPLIANCE OF THE FOLLOWING DURING CONSTRUCTION:							
	a. MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS	-	х		ART. 1.5			
	b. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION	-	х		ART. 3.3 B			
	c. SIZE & LOCATION OF STRUCTURAL MEMBERS	-	х		ART. 3.3 F			
	d. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO	-	x	SEC. 1.2.1(e), 6.2.1, 6.3.1				
	STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION (INCLUDES POST-INSTALLED ANCHORS)			ICC/IAPMO INSTALLED	REPORT (POST- ANCHORS)			
	e. WELDING OF REINFORCEMENT	х	-	SEC. 6.1.6.1.2				
	f. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C))	-	х		ART. 1.8 C, 1.8D			
	g. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	х	-		ART. 3.6 B			
	h. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	х	-		ART. 3.5, 3.6 C			
	i. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X(a)	X(p)		ART. 3.3 B.9, 3.3 F.1.b			
4.	OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	-	х		ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4B.3, 1.4 B.4			

a REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY. B REQUIRED AFTER THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.

![](_page_27_Picture_35.jpeg)

0 ( 1	STEEL CBC	<u>CONSTRUCTION - REQUIRED SPECIAL INS</u> TABLE 1705A.2.1 <sup>3-1</sup>	PECTIONS & TE	<u>ESTS</u>	ſ
		TYPE	CONTINUOUS	PERIODIC	REFERENCED STANDARD
1	. MA	TERIAL IDENTIFICATION AND TESTING OF H	HIGH-STRENGT	H BOLTS, N	UTS AND WASHERS:
	a. II T A	DENTIFICATION MARKINGS TO CONFORM O ASTM STANDARDS SPECIFIED IN THE PPROVED CONSTRUCTION DOCUMENTS	-	Х	RCSC: 1.5, AISC 360: SECTION A3.3, J3.1 AND APPLICABLE ASTM MATERIAL STANDARDS
	b. N	ANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED	-	Х	RCSC: 1.5 & 2.1, AISC 360: A3.3 & N3.2
	N	IUTS AND WASHERS	-	-	MATERIAL STANDARDS
2	2. INS	SPECTION OF HIGH-STRENGTH BOLTING			[
	a. S	NUG-TIGHT JOINTS	-	X	
	D. F L N L II	JSING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF NSTALLATION	-	X	RCSC: 7-9, AISC 360: J3.1, J3.2, M2.5 & N5.6
	c. P J N V	RETENSIONED AND SLIP-CRITICAL OINTS USING TURN-OF-NUT WITHOUT IATCHMARKING, OR CALIBRATED VRENCH METHODS OF INSTALLATION	Х	-	
3	3. MA ST	ATERIAL IDENTIFICATION AND TESTING OF	STRUCTURAL S	STEEL AND (	COLD-FORMED
	a. F N	FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360	-	Х	AISC 360, SECTION A3.1
	b. F N S	FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENT	-	х	APPLICABLE ASTM MATERIAL STANDARDS
	C. N F	MANUFACTURER'S CERTIFIED TEST REPORTS	-	х	AISC 360: A3.1 & N3.2
	d. 1	ESTING OF UNIDENTIFIED STEEL	-	-	APPLICABLE ASTM MATERIAL STANDARDS
4	4. MA	ATERIAL IDENTIFICATION OF WELDING CON	ISUMABLES AN	D TESTING	OF WELDED ELEMENTS:
	a. II T A	DENTIFICATION MARKINGS TO CONFORM O AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS	-	Х	AISC 360, A3.5 & N3.2 AND APPLICABLE AWS A5 DOCUMENTS
	b. N	ANUFACTURER'S CERTIFICATE OF	-	Х	AISC 360: N3.2
	c. N V	NONDESTRUCTIVE TESTING OF VELDED JOINTS	-	-	AISC 360: N5.5
Į	5. IN	SPECTION OF WELDING			
	a. S	STRUCTURAL STEEL AND COLD-FORMED S	TEEL DECK:		
	1	. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	х	-	
	2	. MULTIPASS FILLET WELDS	Х	-	AISC 360: J2, M2.4. & M4.5
	3	. SINGLE-PASS FILLET WELDS > 5/16"	X	-	AWS D1.1
	5	SINGLE-PASS FILLET WELDS < 5/16"	-	- X	
	6	. FLOOR AND ROOF DECK WELDS	-	Х	AWS D1.3, SDI QA/QC
	7	. END-WELDED STUDS	-	Х	AWS D1.1
	8	. WELDED SHEET STEEL FOR COLD- FORMED FRAMING MEMBERS	-	Х	AWS D1.3
	b. F	REINFORCING STEEL:	ı ————————————————————————————————————		
	1	. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706	-	Х	
	2	. REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	х	-	AWS D1.4 ACI 318: SECTIONS 26.6.4.1, 18.2.8, 25.5.7.4
	3	. SHEAR REINFORCEMENT	Х	-	
-	4	. UTHER REINFORCING STEEL	-	- X	
6	) B. INS	SPECTION OF STEEL FRAME JOINT			
-	a. C	DETAILS FOR COMPLIANCE:	-	Х	
-	b. N	MEMBER LOCATIONS	_	x	AISC 360: N5.8
-	C. A	APPLICATION OF JOINT DETAILS AT	-	x	
L	<b>`</b>				I

a. WHERE APPLICABLE, SEE ALSO SECTION 1705A.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE

![](_page_28_Picture_5.jpeg)

![](_page_28_Picture_7.jpeg)

![](_page_29_Figure_0.jpeg)

![](_page_29_Figure_1.jpeg)

![](_page_29_Figure_2.jpeg)

EB

![](_page_29_Figure_3.jpeg)

## FOUNDATION PLAN NOTES

1. NOTES AND DETAILS ON SHEETS LABELED AS "GENERAL" OR "TYPICAL" ARE APPLICABLE TO ALL DRAWINGS, UNO.

- 2. VERIFY ALL BUILDING DIMENSIONS AND ELEVATIONS w/ ARCH DRAWINGS. NOTIFY THE ARCHITECT IMMEDIATELY IF THERE ARE ANY CONFLICTS w/ DIMENSIONS SHOWN.
- 3. DIMENSIONS SHOWN ARE TO THE FACE OF BLOCK.
- 4. SITE PREPARATION AND BUILDING PAD CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT LISTED IN THE FOUNDATION GENERAL NOTES. BOTTOM OF FOOTING EXCAVATIONS SHALL BE REVIEWED BY GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL. THE BOTTOM OF ALL FOOTINGS SHALL BE AT LEAST 18" BELOW ADJACENT MINIMUM PREPARED BUILDING PAD ELEVATION ON ALL SIDES, TYP UNO OR AS SHOWN ON SECTIONS.
- 5. SLAB ON GRADE SHALL BE 5" THICK CONCRETE w/ #4 @ 18"CC EW AT MID-DEPTH. CONCRETE SHALL BE INSTALLED OVER 6" OF AGGREGATE BASE w/ A 15 MIL VAPOR RETARDER LOCATED AT MID-DEPTH OF AGGREGATE BASE. TOP OF CONCRETE SLAB IN SWITCHGEAR BUILDING IS 0'-0" AND SERVES AS DATUM FOR STRUCTURAL SE SHEETS UNO.
- CONTRACTOR SHALL SUBMIT AN EDGE OF SLAB PLAN TO ARCHITECT & SEOR FOR REVIEW. SUBMITTAL SHALL BE DIMENSIONED AND LOCATED RELATIVE TO STRUCTURAL GRIDS.
- 7. PROVIDE SLAB ON GRADE CONTROL JOINTS (SJ) AS INDICATED PER <u>7/SE5.01</u> TYP AT ALL INTERIOR SLABS. CONSTRUCTION JOINTS (CJ) MAY REPLACE CONTROL JOINTS AS REQUIRED. CONTROL JOINTS IN MAT SLAB NOT REQUIRED.
- 8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE SLAB CONTROL JOINTS WITH ANY ARCHITECTURALLY EXPOSED SLAB AREAS OR THE LOCATION OF TILE CRACK CONTROL JOINTS. VERIFY SPECIAL CONDITION CONTROL JOINTS WITH ARCH DRAWINGS.
- 9. CONTRACTOR TO COORDINATE EXACT DIMENSIONS AND LOCATIONS OF THICKENED SLABS, HOUSEKEEPING PADS, ETC. WITH ALL OTHER DISCIPLINE'S DRAWINGS AS WELL AS WITH THE EQUIPMENT PROVIDED, PRIOR TO COMMENCING WORK.
- 10. ALL DEPRESSIONS, SLOPES, ETC. ARE SHOWN FOR REFERENCE ONLY. FOR EXACT DEPTHS, SLOPES, EXTENTS, ETC. SEE OTHER DISCIPLINES' DRAWINGS.
- 11. TEMPORARY LOADS APPLIED DURING CONSTRUCTION HAVE NOT BEEN CONSIDERED IN SLAB ON GRADE DESIGN.
- 12. SEE ARCH & CIVIL DRAWINGS FOR ALL EXTERIOR CURBS, FLATWORK, PLANTERS, RAMPS, ETC.
- 13. PROVIDE 3" MIN. CONCRETE COVER AT STRUCTURAL STEEL AND ANCHOR BOLTS BELOW GRADE, TYP.

## FOUNDATION LEGEND

- CONCRETE HOUSEKEEPING PAD PER <u>2/SE5.01</u>. SEE ARCH FOR EXTENT. SEE NOTE#11 FOR ADDL INFO.
- CMU WALL. FOR REINFORCING, SEE <u>1/SE5.02</u> AND CMU GENERAL NOTES. CONDUITS IN CMU TO BE PER CMU GENERAL NOTES.SEE AE SHEETS FOR BLOCK TEXTURE TYPES.
- WCJ WALL CONTROL JOINT. WCJ 1 PER <u>3/SE5.02</u>.
- S —— S FOOTING STEP PER <u>8/SE5.01</u> STEP LOCATIONS ARE DIAGRAMMATIC ONLY. CONTRACTOR TO COORDINATE IN FIELD. —— - —— LINE OF OVEREXCAVATION SEE GEOTECHNICAL REPORT AND <u>2/SE5.01</u>.

## FRAMING PLAN NOTES

 NOTES AND DETAILS ON SHEETS LABELED AS "GENERAL" OR "TYPICAL" ARE APPLICABLE TO ALL DRAWINGS, UNO.

- 2. VERIFY ALL BUILDING DIMENSIONS AND ELEVATIONS w/ ARCH DRAWINGS. NOTIFY THE ARCHITECT IMMEDIATELY IF THERE ARE ANY CONFLICTS w/ DIMENSIONS SHOWN.
- 3. DIMENSIONS SHOWN ARE TO FACE OF BLOCK.
- SEPARATION JOINT DIMENSIONS SHOWN ON PLAN INDICATE MINIMUM CLEAR DISTANCE REQUIRED BETWEEN ADJACENT BLDG ELEMENTS. WHERE BLDG FINISHES/FIRE PROTECTION OCCUR, CLEAR DIMENSION SHALL BE MAINTAINED BTWN THOSE ELEMENTS.
- 5. FOR TYPICAL STEEL DETAILS, SEE SHEETS <u>SE5.03</u>
- 6. ALL BEAMS SHALL BE EQUALLY SPACED BETWEEN DIMENSIONED COLUMNS, GRIDS, OR BEAMS WHERE OCCURS, TYP UNO.
- 7. FOR TYPICAL BEAM TO BEAM CONNECTION, SEE <u>2/SE5.03</u> OR <u>3/SE5.03</u> UNO.
- VERIFY ALL FLOOR OR ROOF OPENINGS, LOCATIONS, & DIMENSIONS WITH ARCH DWGS PRIOR TO FABRICATION AND DETAILING. ALL ROOF OPENINGS SHALL BE REINFORCED AS SHOWN ON TYPICAL METAL DECK SHEET <u>SE5.03</u>. ADDL WF BLKG MAY BE REQD AT OPNGS AS SHOWN ON PLAN OR WHERE OPNGS EXCEED PROVISIONS OF TYPICAL DETAILS.
- 9. CONTRACTOR TO COORDINATE EXACT LOCATION OF FRAMING MEMBERS SUPPORTING MECHANICAL UNITS & SIMILAR ITEMS NOT DIMENSIONED ON PLANS.

### FRAMING LEGEND

X-XX" TO	ELEVATION OF TOP OF STEEL FRAMING AND BOTTOM OF METAL DECK. RELATIVE TO DATUM, USE PLAN NOTES.
Mk	CONC FILLED METAL DECK. ORIENTATION AS SHOWN ON PLAN. Mk INDICATES TYPE, SEE <u>A/SE5.03</u> .
W10	W10x12 TYP, UNO
C12	C12x20.7 TYP, UNO
/ / /	MECHANICAL UNIT. ALL BLOCKING BEAMS SHALL BE W10x12 UNO AND SHALL BE LOCATED DIRECTLY BELOW UNIT EDGES AND/OR CURBS. SEE MECHANICAL UNIT SCHEDULE FOR WEIGHTS AND ATTACHMENT OF UNIT/CURBS TO STRUCTURE. FOR ADDITIONAL INFORMATION, SEE <u>6/SE5.04</u> MECHANICAL UNIT TYPE MARK w/ MAX OPERATING WEIGHT INDICATED.
/ / /	SOLID GROUTED CMU WALL. SEE FOUNDATION PLAN FOR ADDL INFO. SEE AE SHEETS FOR BLOCK TEXTURE TYPES.

![](_page_29_Picture_36.jpeg)

![](_page_30_Figure_0.jpeg)

![](_page_30_Figure_1.jpeg)

![](_page_30_Picture_3.jpeg)

![](_page_31_Figure_0.jpeg)

![](_page_31_Figure_1.jpeg)

 $\frac{\text{ELEVATION}}{\text{GRID E5}} \left( \begin{array}{c} 2 \\ \text{SE4.00} \end{array} \right) \frac{1/4"}{\text{Elevation 7-a}} = 1'-0"$ 

![](_page_31_Figure_3.jpeg)

![](_page_31_Figure_4.jpeg)

<u>GENERAL NOTE:</u> REFER TO ARCH DWGS FOR BLOCK SURFACE TYPES, COLOR & LAYOUT.

KEY NOTES

- $\overbrace{1}$  JAMB BARS, TYP UNO; SEE <u>5/SE5.02</u> .
- (2) (2) #6 CHORD BARS, TYP UNO.
- (3) LINTEL BARS PER <u>4/SE5.02</u> , (2) #5 MIN.
- (4) (2) #5 SILL BARS, TYP UNO; SEE <u>4/SE5.02</u>.
- #5 BARS @ 16"CC EW CENTERED IN WALL, TYP UNO.
   5 SEE A-SHEETS FOR CMU TEXTURE ON EA FACE AND COLOR (TYP).
- 6 8"x24" PILASTER 6/SE5.02.

![](_page_31_Picture_15.jpeg)

![](_page_32_Figure_0.jpeg)

![](_page_33_Figure_0.jpeg)

![](_page_33_Picture_4.jpeg)

![](_page_34_Figure_0.jpeg)

![](_page_34_Figure_3.jpeg)

![](_page_34_Picture_4.jpeg)

![](_page_35_Figure_0.jpeg)

	MECHANICAL A	BBREVI	ATIONS
BHP CFM, f CO CONC. CONN. CU FT CU IN CW DB DIA, Ø ESP FC FLA FPM GALV. GA GC GSM HP HZ LBS	BRAKE HORSEPOWER CUBIC FEET OF AIR PER MINUTE CLEANOUT CONCRETE CONNECT CUBIC FEET CUBIC INCHES COLD WATER DRY BULB DIAMETER EXTERNAL STATIC PRESSURE FLEXIBLE CONNECTION FULL LOAD AMPS FEET PER MINUTE GALVANIZED GAUGE GENERAL CONTRACTOR GALVANIZED SHEET METAL HORSE POWER FREQUENCY (HERTZ) POUNDS	LRA MAX MIN (N) (E) N.C. PH POC PSI RPBP (R) (D) REF RPM SMS SOV TYP UG, UF VAC VFD	LOCKED ROTOR AMPS MAXIMUM MINIMUM NEW, EXISTING NORMALLY CLOSED PHASE POINT OF CONNECTION POUNDS PER SQUARE INCH REDUCED PRESSURE BACKFLOW RISE, DROP ROOF EXHAUST FAN REVOLUTIONS PER MINUTE SHEET METAL SCREWS SHUT OFF VALVE TYPICAL UNDERGROUND, UNDER FLOOR VOLTS ALTERNATING CURRENT VARIABLE FREQUENCY DRIVE

P	LUN
(IWH) 1	INSTAN BRADLE PER M BOX. 3

![](_page_36_Figure_3.jpeg)

# MBING EQUIPMENT SC

ANTANEOUS WATER HEATER:

DLEY MODEL #CLE-25, 99% ENERGY EFFICIENT. POINT-MINUTE WITH A MINIMUM PRESSURE OF 25 PSI. 25 KW 30 AMP, 480v, 25.0kw.

ABV ABOVE ABC, OH ABOVE CEILING, OVERHEAE AD ACCESS DOOR ADA AMERICANS WITH DISABILIT AFF ABOVE FINISHED FLOOR BR BRANCH CL CENTERLINE CO CLEANOUT CW COLD WATER DHW DOMESTIC HOT WATER DHWR DOMESTIC HOT WATER RET DHWR DOMESTIC HOT WATER RET DIA, Ø DIAMETER			LLOLIND
ABC, OHABOVE CEILING, OVERHEAEADACCESS DOORADAAMERICANS WITH DISABILITAFFABOVE FINISHED FLOORBRBRANCHCLCENTERLINECOCLEANOUTCWCOLD WATERDHWDOMESTIC HOT WATERDHWRDOMESTIC HOT WATER RETDIA, ØDIAMETER			COLD WATER LINE
ADAAMERICANS WITH DISABILITAFFABOVE FINISHED FLOORBRBRANCHCLCENTERLINECOCLEANOUTCWCOLD WATERDHWDOMESTIC HOT WATER RETDIA, ØDIAMETER			CONDENSATE DRAIN
AFFABOVE FINISHED FLOORBRBRANCHCLCENTERLINECOCLEANOUTCWCOLD WATERDHWDOMESTIC HOT WATERDHWRDOMESTIC HOT WATER RETDIA, ØDIAMETER	IS ACTF		FIRE SERVICE LINE
CL CENTERLINE CO CLEANOUT CW COLD WATER DHW DOMESTIC HOT WATER DHWR DOMESTIC HOT WATER RET DIA, Ø DIAMETER	G — G — G — G — G — G — G — G — G — G —		GAS
CW COLD WATER DHW DOMESTIC HOT WATER DHWR DOMESTIC HOT WATER RET DIA, Ø DIAMETER		·	HOT WATER RETURN
DHWR DOMESTIC HOT WATER RET DIA, Ø DIAMETER	LPG		LIQUID PETROLEUM GAS
DIA, Ø DIAMETER	JRN OFL		OVERFLOW
DS DOWNSPOUT	— <del>X X X</del>	<del>-x x</del>	PIPING OR EQUIPMENT TO BE REMOVED
FC FLEXIBLE CONNECTION			RAINWATER LEADER
FCO FLOOR CLEANOUT FD FLOOR DRAIN	c		RISE OR DROP IN DIRECTION OF FLOW
FSR FIRE SPRINKLER RISER			SANITARY SOIL OR WASTE LINE
HW HOT WATER			SECONDARY CONDENSATE DRAIN LINE
HWR HOT WATER RETURN			TRAP PRIMER LINE
(N) (E) NEW, EXISTING			VENI
POC POINT OF CONNECTION		ሉ	FIRE DEPARTMENT CONNECTION
P, TRV PRESSURE & TEMPERATUR RPBP REDUCED PRESSURE BACK	. RELIEF VALVE FLOW PREVENTER Φ	<b>`</b>	FLOOR / GRADE CLEAN OUT
(R) (D) RISE, DROP	Ū		FLOOR DRAIN
RI ROUGH-IN			HOSE BIBB/ WALL HYDRANT
RO RUN-OUT SMS SHEFT METAL SCREWS		-	TRAP
SOV SHUT OFF VALVE	<u>ס</u>		TRAP PRIMER
TB, FB TO BELOW, FROM BELOW			BALANCING VALVE
TBR TO BE REMOVED			BALL VALVE
UG, UF UNDERGROUND, UNDERFLC	)R → → → → → → → → → → → → → → → → → → →		BUTTERFLY VALVE
UNLESS OTHERWISE NOTED			
V, VR, VTR VENT, VENT RISER, VENT	HRU ROOF		FLEXIBLE CONNECTION
WCO WALL CLEANOUT			SHIT OFF COCK
ZV ZONE VALVE	Ŷ		PRESSURE GAUGE
			PRESSURE REDUCING VALVE
COMPLIANCE NOTES			REDUCER
COMILIANCE NOTES			PRESSURE & TEMPERATURE RELIEF VALVE
MECHANICAL AND PLUMBING EQUIPMENT SHALL CONFORM TO THE FOLLOWING	AS STATED IN		SHUT OFF VALVE
1 DE CEDTIEIED DY THE MANUEACTUDED AS COMPLYING WITH THE EFFICIE'			STRAINER
REQUIREMENTS AS PRESCRIBED IN SECTIONS:			STRAINER & DRAIN VALVE WITH HOSE FITTING
111. APPLIANCES REGULATED BY THE APPLIANCE EFFICIENCY STANDARDS:			SOLENOID VALVE
112. HVAC EQUIPMENT EFFICIENCY AND FACKAGED CONTROLS. 113. SERVICE WATER HEATING EFFICIENCY AND CONTROLS:	μ		
115. RESTRICTIONS ON PILOT LIGHTS:			
2. BE SPECIFIED AND INSTALLED IN ACCORDANCE WITH SECTIONS.			
121. REQUIREMENTS FOR VENTILATION:			FUEL OIL RETURN
122. REQUIRED CONTROLS FOR HVAC STSTEMS: 123. REQUIREMENTS FOR PIPE INSULATION:			
124. REQUIREMENTS FOR DUCT INSULATION.			
EXHAUST FAN SCHEDULE			
CFM         ESP (IN. WG.)         SONES MAX.         ELECTRICAL         WEIGHT LBS	REMARKS	APPLICABL	E CODES
1,700 0.8 13.8 3/4 0.45 460 3 65	SEE BELOW ALL WORK	SHALL BE PERFORMED IN AC	CORDANCE WITH THE APPLICABLE
ITCH. ONTINUOUS.	A) STATE OF	CALIFORNIA CODE DE DECULATION	ED TO THE FULLOWING:
	A) STATE OF		CODE
	2019 EDITION 2019 EDITION	V OF THE CALIFORNIA ELECTRICAL	L CODE.
. IANK EQUIPMENT SCHEDULE	2019 EDITION	OF THE CALIFORNIA FIRE CODE	
	2019 EDITION 2019 EDITION	V OF THE CALIFORNIA PLUMBING	CODE.
-1	2017 EDITION 2016 EDITION	I OF NFPA 70 N OF NFPA 110	
-1 MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R I, 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED. CONTAINMENT SUMP W/ LEAK	2013 EDITION	J OF NFPA 111	
<u>-1</u> MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R E, 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK FEIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER.	B) NATIONAI	_ FIRE PROTECTION ASSOCIAT	ION (NFPA) LIFE SAFETY CODE
<u>-1</u> MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R , 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK EIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER.			
<u>-1</u> MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R , 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK EIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER. <u>TION</u> MODEL AUTOMATIC FUEL PORT, TANK MOUNTED FILL STATION, WITH SPILL NT, STAINLESS STEEL ENCLOSURE, ELECTRONICS PACKAGE, TANK VOLUMETRIC AK SWITCH ALARM 2" CAM LOCK FILL 115 VOLT MOUNTED AND DIDED DY			
<u>-1</u> MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R E, 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK REIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER. ATION MODEL AUTOMATIC FUEL PORT, TANK MOUNTED FILL STATION, WITH SPILL NT, STAINLESS STEEL ENCLOSURE, ELECTRONICS PACKAGE, TANK VOLUMETRIC TAK SWITCH, ALARM. 2" CAM LOCK FILL, 115 VOLT. MOUNTED AND PIPED BY JFACTURER.			
<ul> <li><u>-1</u> MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R</li> <li>E, 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK //EIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER.</li> <li><u>ATION</u> MODEL AUTOMATIC FUEL PORT, TANK MOUNTED FILL STATION, WITH SPILL NT, STAINLESS STEEL ENCLOSURE, ELECTRONICS PACKAGE, TANK VOLUMETRIC 'AK SWITCH, ALARM. 2" CAM LOCK FILL, 115 VOLT. MOUNTED AND PIPED BY JFACTURER.</li> <li><u>HER-1</u></li> <li>ELECTRONICS FUEL FILTRATION SYSTEM WITH</li> </ul>	PLUM	IBING FIXTU	IRE SCHEDULE
<ul> <li><u>-1</u></li> <li>MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R</li> <li>E, 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK (EIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER.</li> <li><u>ATION</u></li> <li>MODEL AUTOMATIC FUEL PORT, TANK MOUNTED FILL STATION, WITH SPILL NT, STAINLESS STEEL ENCLOSURE, ELECTRONICS PACKAGE, TANK VOLUMETRIC TAK SWITCH, ALARM. 2" CAM LOCK FILL, 115 VOLT. MOUNTED AND PIPED BY JFACTURER.</li> <li><u>HER-1</u></li> <li>EL STS 7010 PROGRAMMABLE AUTOMATED FUEL FILTRATION SYSTEM WITH ROOF ENCLOSURE, MULTI-STAGE WATER REMOVAL AND PARTICULATE FILTRATION, T 50 PSI, SPUR GEAR TYPE PUMP, ½ HP 120 VOLT, 1 PHASE, 60 HZ.</li> </ul>	PLUM OFD-1 OVERFLOV CLAMP F	IBING FIXTU N DRAIN, "ZURN" Z100, 2" W EXTENSION AS REQUIRED.	VATER DAM COLLAR, SUMP RECEIVER, UNDERDECK
<ul> <li><u>-1</u></li> <li>MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R</li> <li>E, 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK</li> <li>VEIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER.</li> <li><u>ATION</u></li> <li>MODEL AUTOMATIC FUEL PORT, TANK MOUNTED FILL STATION, WITH SPILL</li> <li>NT, STAINLESS STEEL ENCLOSURE, ELECTRONICS PACKAGE, TANK VOLUMETRIC 2AK SWITCH, ALARM. 2" CAM LOCK FILL, 115 VOLT. MOUNTED AND PIPED BY JFACTURER.</li> <li><u>HER-1</u></li> <li>EL STS 7010 PROGRAMMABLE AUTOMATED FUEL FILTRATION SYSTEM WITH ROOF ENCLOSURE, MULTI-STAGE WATER REMOVAL AND PARTICULATE FILTRATION, T 50 PSI, SPUR GEAR TYPE PUMP, ½ HP 120 VOLT, 1 PHASE, 60 HZ. ATED, WEIGHT 520 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER</li> </ul>	OFD-1 OVERFLOV CLAMP, E RD-1 ROOF DR	IBING FIXTU N DRAIN, "ZURN" Z100, 2" V EXTENSION AS REQUIRED. AIN, "ZURN" Z100, SUMP RE ).	<b>URE SCHEDULE</b> WATER DAM COLLAR, SUMP RECEIVER, UNDERDECK ECEIVER, UNDER DECK CLAMP, EXTENSION AS
-1         MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R         C, 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK         EIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER.         ATION         MODEL AUTOMATIC FUEL PORT, TANK MOUNTED FILL STATION, WITH SPILL         NT, STAINLESS STEEL ENCLOSURE, ELECTRONICS PACKAGE, TANK VOLUMETRIC         AK SWITCH, ALARM. 2" CAM LOCK FILL, 115 VOLT. MOUNTED AND PIPED BY         JFACTURER.         HER-1         EL STS 7010 PROGRAMMABLE AUTOMATED FUEL FILTRATION SYSTEM WITH         ROOF ENCLOSURE, MULTI-STAGE WATER REMOVAL AND PARTICULATE FILTRATION,         F S0 PSI, SPUR GEAR TYPE PUMP, ⅓ HP 120 VOLT, 1 PHASE, 60 HZ.         ATED, WEIGHT 520 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER	OFD-1 OVERFLOV CLAMP, E RD-1 ROOF DR REQUIRED FD-1 FLOOR DR NO-HUB	<b>IBING FIXTU</b> <i>N</i> DRAIN, "ZURN" Z100, 2" V EXTENSION AS REQUIRED. "AIN, "ZURN" Z100, SUMP RE ). RAIN, "ZURN" Z415B, 5" DIA., CONNECTION	<b>IRE SCHEDULE</b> WATER DAM COLLAR, SUMP RECEIVER, UNDERDECK ECEIVER, UNDER DECK CLAMP, EXTENSION AS , NB TOP, DURA-COATED CAST IRON BODY,
1 MODEL SPS-25-SS WITH WEATHER PROOF TYPE 3R , 1500 GPH AT 50 PSI, (2)BI-ROTATIONAL POSITIVE DISPLACEMENT TYPE PUMPS, VOLT, 3 PHASE, 60 HZ. OUTDOOR RATED, CONTAINMENT SUMP W/ LEAK EIGHT 450 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER. TION MODEL AUTOMATIC FUEL PORT, TANK MOUNTED FILL STATION, WITH SPILL IT, STAINLESS STEEL ENCLOSURE, ELECTRONICS PACKAGE, TANK VOLUMETRIC AK SWITCH, ALARM. 2" CAM LOCK FILL, 115 VOLT. MOUNTED AND PIPED BY FACTURER. <u>HER-1</u> L STS 7010 PROGRAMMABLE AUTOMATED FUEL FILTRATION SYSTEM WITH 100F ENCLOSURE, MULTI-STAGE WATER REMOVAL AND PARTICULATE FILTRATION, 50 PSI, SPUR GEAR TYPE PUMP, ⅓ HP 120 VOLT, 1 PHASE, 60 HZ. VIED, WEIGHT 520 LBS. MOUNTED AND PIPED BY TANK MANUFACTURER LOUVER SCHEDULE	OFD-1       OVERFLOV         OFD-1       OVERFLOV         CLAMP, E         RD-1       ROOF DR         REQUIREE         FD-1       FLOOR DF         NO-HUB         EEW/SH-1       "GUARDIAN	<b>IBING FIXTU</b> W DRAIN, "ZURN" Z100, 2" V EXTENSION AS REQUIRED. AIN, "ZURN" Z100, SUMP RE D. RAIN, "ZURN" Z415B, 5" DIA., CONNECTION. " EYEWASH SHOWER STATION	<b>JRE SCHEDULE</b> WATER DAM COLLAR, SUMP RECEIVER, UNDERDECK ECEIVER, UNDER DECK CLAMP, EXTENSION AS , NB TOP, DURA-COATED CAST IRON BODY, MODEL #G1909, AUTOFLOW EYEWASH/SHOWER FOR

TIONS	PLUMB	ING ABBREVIATIONS	PLUI	MBING LEGEND
LOCKED ROTOR AMPS MAXIMUM MINIMUM NEW, EXISTING NORMALLY CLOSED PHASE POINT OF CONNECTION POUNDS PER SQUARE INCH REDUCED PRESSURE BACKFLOW PREVENTER RISE, DROP ROOF EXHAUST FAN REVOLUTIONS PER MINUTE SHEET METAL SCREWS SHUT OFF VALVE TYPICAL UNDERGROUND, UNDER FLOOR VOLTS ALTERNATING CURRENT VARIABLE FREQUENCY DRIVE	ABV ABC, OH AD ADA AFF BR CL CO CW DHW DHWR DIA, Ø DS FC FCO FD FSR GCO HW HWR I.E. (N) (E) NIC POC P, TRV RPBP (R) (D) RD, OFL RI RO SMS SOV TA, FA TB, FB TBR TP UG, UF UON UTR V, VR, VTR WT WCO	ABOVE ABOVE CEILING, OVERHEAD ACCESS DOOR AMERICANS WITH DISABILITIES ACT ABOVE FINISHED FLOOR BRANCH CENTERLINE CLEANOUT COLD WATER DOMESTIC HOT WATER RETURN DIAMETER DOMESTIC HOT WATER RETURN DIAMETER DOWNSPOUT FLEXIBLE CONNECTION FLOOR CLEANOUT FLOOR CLEANOUT FLOOR CLEANOUT HOT WATER HOT WATER RETURN INVERT ELEVATION NEW, EXISTING NOT IN CONTRACT POINT OF CONNECTION PRESSURE & TEMPERATURE RELIEF VALVE REDUCED PRESSURE BACKFLOW PREVENTER RISE, DROP ROOF DRAIN, OVERFLOW ROUGH-IN RUN-OUT SHEET METAL SCREWS SHUT OFF VALVE TO ABOVE, FROM ABOVE TO BELOW, FROM BELOW TO BELOW, FROM BELOW TO BELOW, FROM BELOW TO BELOW, FROM BELOW TO BELOW, FROM ABOVE TO BELO	$ \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	COLD WATER LINE CONDENSATE DRAIN FIRE SERVICE LINE GAS HOT WATER LINE HOT WATER RETURN LIQUID PETROLEUM GAS OVERFLOW PIPING OR EQUIPMENT TO BE REMOVED RAINWATER LEADER RISE OR DROP IN DIRECTION OF FLOW SANITARY SOIL OR WASTE LINE SECONDARY CONDENSATE DRAIN LINE TRAP PRIMER LINE VENT CLEANOUT & WALL CLEANOUT FIRE DEPARTMENT CONNECTION FLOOR/ GRADE CLEAN OUT FLOOR DRAIN HOSE BIBB/ WALL HYDRANT TRAP TRAP PRIMER BALANCING VALVE BALL VALVE BUTTERFLY VALVE CHECK VALVE FLEXIBLE CONNECTION GATE VALVE
	<b>EXHAUST FAMILY</b>	APPLIANCE NOTES JIPMENT SHALL CONFORM TO THE FOLLOWING AS STATED IN ARDS, 2019. IUFACTURER AS COMPLYING WITH THE EFFICIENCY RIBED IN SECTIONS: Y THE APPLIANCE EFFICIENCY STANDARDS: CY AND PACKAGED CONTROLS: FFICIENCY AND CONTROLS: FFICIENCY AND CONTROLS: GHTS: LED IN ACCORDANCE WITH SECTIONS. ATION: HVAC SYSTEMS: INSULATION: INSULATION:		PRESSURE GAUGE PRESSURE REDUCING VALVE REDUCER PRESSURE & TEMPERATURE RELIEF VALVE SHUT OFF VALVE STRAINER STRAINER & DRAIN VALVE WITH HOSE FITTING SOLENOID VALVE THERMOMETER UNION FUEL OIL SUPPLY FUEL OIL RETURN
SYMBOL MANUFACTURER M	10DEL CFM ESP (IN. WG.) SONES MA	AX. ELECTRICAL WEIGHT REMARKS		ICARLE CODES
Image: Provide w/ roof curb sloped for 2.         1.       PROVIDE W/ ROOF CURB SLOPED FOR 2.         2.       PROVIDE GREENHECK MOTOR STARTER, 13.         3.       BACKDRAFT DAMPER.         4.       SPEED CONTROL         FL         Image: PS       PU         Image: View of the state of the st	133-VG 1,700 0.8 13.8 ROOF PITCH. RUNS CONTINUOUS. UEL TANK EQUIPN <u>IMP SET-1</u> IMPLEX" MODEL SPS-25-SS WITH WEATHER ICLOSURE, 1500 GPH AT 50 PSI, (2)BI-ROTA HP 208 VOLT, 3 PHASE, 60 HZ. OUTDOOR INSOR. WEIGHT 450 LBS. MOUNTED AND PIPE LING STATION IMPLEX" MODEL AUTOMATIC FUEL PORT, TAN DNTAINMENT, STAINLESS STEEL ENCLOSURE, E SPLAY LEAK SWITCH. A ADM 2" OUT LOCK	3/4       0.45       460       3       65       SEE BELOW         MENT SCHEDULE         PROOF TYPE 3R         ATIONAL POSITIVE DISPLACEMENT TYPE PUMPS,         RATED, CONTAINMENT SUMP W/ LEAK         D BY TANK MANUFACTURER.         IK MOUNTED FILL STATION, WITH SPILL         LECTRONICS PACKAGE, TANK VOLUMETRIC	ALL WORK SHALL BE PE REGULATIONS, INCLUDING A) STATE OF CALIFORNIA CO 2019 EDITION OF THE CALIF 2019 EDITION OF THE CALIF 2019 EDITION OF THE CALIF 2019 EDITION OF THE CALIF 2019 EDITION OF THE CALIF 2017 EDITION OF NFPA 70 2016 EDITION OF NFPA 110 2013 EDITION OF NFPA 110	REFORMED IN ACCORDANCE WITH THE APPLICABLE BUT NOT LIMITED TO THE FOLLOWING: DDE OF REGULATIONS (CCR) TITLE 24, FORNIA BUILDING CODE. FORNIA ELECTRICAL CODE. FORNIA FIRE CODE. FORNIA MECHANICAL CODE. FORNIA PLUMBING CODE.
FP TA "AX WEA 600 OUT	SPLAY LEAK SWITCH, ALARM. 2 CAM LOCK F         NK MANUFACTURER.         SI POLISHER-1         SI MODEL STS 7010 PROGRAMMABLE AUTON         ATHER PROOF ENCLOSURE, MULTI-STAGE WAT         O GPH AT 50 PSI, SPUR GEAR TYPE PUMP, J         TDOOR RATED, WEIGHT 520 LBS. MOUNTED A	ILL, ITS VOLT. MOUNTED AND PIPED BY MATED FUEL FILTRATION SYSTEM WITH TER REMOVAL AND PARTICULATE FILTRATION, 1/3 HP 120 VOLT, 1 PHASE, 60 HZ. ND PIPED BY TANK MANUFACTURER	OFD-1       OVERFLOW DRAIN, "ZU CLAMP, EXTENSION AS         RD-1       ROOF DRAIN, "ZURN" REQUIRED.         FD-1       FLOOR DRAIN, "ZURN" NO HUB CONNECTION	FIXTURE SCHEDULE WRN" Z100, 2" WATER DAM COLLAR, SUMP RECEIVER, UNDERDECK S REQUIRED. Z100, SUMP RECEIVER, UNDER DECK CLAMP, EXTENSION AS Z415B, 5" DIA., NB TOP, DURA-COATED CAST IRON BODY,
SYMBOL MANUFACTURER MODEL	LOUVER     SCHE       CONSTRUCTION     FREE AREA     OPENING I       5     ALUMINUM     5.2 SQFT     42	NCHES     OPERATING       HEIGHT     OPERATING       36        COLOR BY ARCHITECT	EEW/SH-1 "GUARDIAN" EYEWASH S MOUNTING ON WALL. AL PROVIDE "GUARDIAN"MO INDEPENDENT ROUGH-I	SHOWER STATION MODEL #G1909, AUTOFLOW EYEWASH/SHOWER FOR UMINUM FLAG HANDLE ACTIVATING WATER FLOW. STAINLESS STEEL BOWL DEL G3800 THERMOSTATIC MIXING VALVE SET TO 65°F WITH N. ADA ACCESSIBLE

WEATHE 600 GP OUTDOC	R PROOF H AT 50 DR RATED,	ENCLOSURE PSI, SPUR WEIGHT 52	GEAR TYP 0 LBS. M	STAGE WA E PUMP, OUNTED A	1ER REMO 1/3 HP 120 AND PIPED	VAL AN ) VOLT BY TA

NS			PL		ABBREV	/IATIONS			PLUI	MBING	LEGEND	
NS D ROTOR AMPS M M EXISTING LLY CLOSED OF CONNECTION S PER SQUARE INCH ED PRESSURE BACKFLOW PREVENTER OROP EXHAUST FAN JITONS PER MINUTE METAL SCREWS OFF VALVE L GROUND, UNDER FLOOR ALTERNATING CURRENT LE FREQUENCY DRIVE		A A A A A A A A A A A A A A A A A A A	BV BC, OH DA FF R L O W HW HWR IA, Ø S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C CO S S C C O S S C C C S S C C C S S S C C C S S S C C C S S S C C C S S S C C S S S C C S S S S C C S S S S S S S S S S S S S S S S S S S S	COMPLI LUMBING EQUIPMENT ENCY STANDARDS, 20 BY THE MANUFACTUR S AS PRESCRIBED IN REGULATED BY THE AF ENT EFFICIENCY AND IX HEATING EFFICIENCY ON PILOT LIGHTS: AND INSTALLED IN A S FOR VENTILATION: S FOR PIPE INSULATION S FOR DUCT INSULATION	ABOVE ABOVE CE ACCESS D AMERICANS ABOVE FIN BRANCH CENTERLIN CLEANOUT COLD WAT DOMESTIC DOMESTIC DIAMETER DOWNSPO FLEXIBLE FLOOR CL FLOOR CL FLOOR CL FLOOR DR FIRE SPRII GRADE CL HOT WATE HOT WATE HOT WATE INVERT EL NEW, EXIS NOT IN CO POINT OF PRESSURE REDUCED RISE, DRO ROOF DRA ROUGH-IN RUN-OUT SHEET ME SHUT OFF TO ABOVE TO BELOW TO BE RE TRAP PRIM UNDERGRO UNLESS O UP THROL VENT, VEN WATERTIGH WALL CLE ZONE VAL SHALL CONFORM TO 19. ER AS COMPLYING W SECTIONS: PLIANCE EFFICIENCY PACKAGED CONTROLS: Y AND CONTROLS: Y AND CONTROLS: Y AND CONTROLS:	ILING, OVERHEAD OOR S WITH DISABILITIES IISHED FLOOR IE ER HOT WATER HOT WATER RETURN UT CONNECTION EANOUT AIN NKLER RISER EANOUT R R RETURN EVATION TING DNTRACT CONNECTION & TEMPERATURE F PRESSURE BACKFLO P IN, OVERFLOW TAL SCREWS VALVE , FROM ABOVE 7, FROM BELOW MOVED AER DUND, UNDERFLOOR THERWISE NOTED IGH ROOF IT RISER, VENT THR ANOUT VE <b>OTEES</b> THE FOLLOWING AS ITH THE EFFICIENCY STANDARDS: :	ACT N RELIEF VALVE DW PREVENTER RU ROOF STATED IN		$ \begin{array}{c}                                     $		COLD WATER LINE CONDENSATE DRAIN FIRE SERVICE LINE GAS HOT WATER LINE HOT WATER RETURN LIQUID PETROLEUM GAS OVERFLOW PIPING OR EQUIPMENT TO BE REMOVED RAINWATER LEADER RISE OR DROP IN DIRECTION OF FLOW SANITARY SOIL OR WASTE LINE SECONDARY CONDENSATE DRAIN LINE TRAP PRIMER LINE VENT CLEANOUT & WALL CLEANOUT FIRE DEPARTMENT CONNECTION FLOOR/ GRADE CLEAN OUT FLOOR/ GRADE CLEAN OUT FLOOR/ GRADE CLEAN OUT FLOOR/ GRADE CLEAN OUT FLOOR DRAIN HOSE BIBB/ WALL HYDRANT TRAP TRAP PRIMER BALANCING VALVE BALL VALVE BUTTERFLY VALVE CHECK VALVE FLEXIBLE CONNECTION GATE VALVE SHUT OFF COCK PRESSURE GAUGE PRESSURE REDUCING VALVE REDUCER PRESSURE & TEMPERATURE RELIEF VALVE SHUT OFF VALVE STRAINER & DRAIN VALVE WITH HOSE FITTING SOLENOID VALVE	
		EXF	IAUST	FAN S	CHEDULE	-						
SYMBOL	MANUFACTURER M	IODEL CFM	ESP (IN. WG.)	SONES MAX. HP	ELECTRICAL BHP VOLTS F	WEIGHT R PH LBS R	EMARKS					
REF E1	GREENHECK G-1	133–VG 1,700	0.8	13.8 <sup>3</sup> ⁄ <sub>4</sub>	0.45 460	3 65 S	EE BELOW		ALL WORK SHALL BE PE		CODLS	
PROVIDE GREENHECK WOTOR STARTER, RUNS CONTINUOUS. BACKBRAFT DAMFER. SPEED CONTROL							<u>OFD-1</u> <u>RD-1</u> <u>FD-1</u> <u>FD-1</u> <u>EEW/SH-1</u>	A) STATE OF CALIFORNIA CODE OF REGULATIONS (CCR) TITLE 24, 2019 EDITION OF THE CALIFORNIA BUILDING CODE. 2019 EDITION OF THE CALIFORNIA BUILDING CODE. 2019 EDITION OF THE CALIFORNIA FIRE CODE. 2019 EDITION OF THE CALIFORNIA PLUMBING CODE. 2019 EDITION OF THE CALIFORNIA PLUMBING CODE. 2017 EDITION OF NFPA 70 2016 EDITION OF NFPA 70 2016 EDITION OF NFPA 110 2013 EDITION OF NFPA 111 B) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) LIFE SAFETY COE PLUMBING FIXTURE SCHEDU OFD-1 OVERFLOW DRAIN, "ZURN" Z100, 2" WATER DAM COLLAR, SUMP RI CLAMP, EXTENSION AS REQUIRED. RD-1 ROOF DRAIN, "ZURN" Z100, SUMP RECEIVER, UNDER DECK CLAMP REQUIRED. FD-1 FLOOR DRAIN, "ZURN" Z415B, 5" DIA., NB TOP, DURA-COATED CA NO-HUB CONNECTION.				
SYMBOL MAN	OTTORFF EDD-44	. CONSTRUCTION 5 ALUMINUM	FREE AREA 5.2 SQFT	WIDTH HEIGHT 42 36	WEIGHT LBS.	REMARKS			PROVIDE "GUARDIAN"MOI INDEPENDENT ROUGH—II	DEL G3800 THER N. ADA ACCESSIB	RMOSTATIC MIXING VALVE SET TO 65°F WITH BLE	

	HEAT PUMP UNIT																								
			COOLING CAPACITY				FAN		HEATING CAPACITY SUPP		SUPPLEME	JPPLEMENTAL HEAT		T UNIT ELECTRICAL			MIN. UNIT								
MANUFACTURER	MODEL	NOMINAL TONS	TOTAL MBH	SENSIBLE MBH	EDB ⁺F	EWB •F	AMB °F	eer © Ari	CFM	ESP IN WG	FLA	TOTAL INTERGRATED MBH	AMB EDB	KW	FLA	VOLTS	PHASE	HZ	MCA	моср	DICONNE FLA	CT SIZE LRA	OPERATING WEIGHT LBS.	OUTSIDE AIR CFM	REMARKS
DAIKIN	DFHO904L015	7½	85.48	84.08	85	63	95	11.0	3170	0.75	7.5	85.0	37 68	15	_	460	3	60	44.5	45	67	207	1120	1700	1,2,3

1. ROOF CURB SLOPED FOR ROOF PITCH. MERV 13 FINAL FILTER.
 ECONOMIZER WITH BAROMETRIC RELIEF.
 PROGRAMABLE THERMOSTAT.

![](_page_36_Picture_25.jpeg)

//29/2023 5:36 PM TFLAGG ::\JOB FILES\2019\19200 - 19249\19218 - ATASCADERO STATE HOSPITAL REROOF\MPE1\_19218.I

![](_page_37_Figure_1.jpeg)

![](_page_37_Picture_2.jpeg)

![](_page_38_Figure_0.jpeg)

![](_page_38_Figure_1.jpeg)

			HEDUU	
	PRIMARY PANEL, NORMALLY ACCESSIBLE TO OPERATOR	INSIDE PRIMARY PANEL NOT ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILI LOCAT NORM/ ACCESS TO OPERA
DISCRETE INSTRUMENT	XY #	XY #	XY #	XY #
SHARED DISPLAY, SHARED CONTROL	XY #	XY #	XY #	XY #
PROGRAMMABLE LOGIC CONTROLLER				
	$\left\langle \begin{array}{c} XY\\ \# \end{array} \right\rangle$	$\left< \frac{XY}{\#} \right>$	$\begin{pmatrix} XY \\ \# \end{pmatrix}$	XY #

XY DEVICE TYPE # LOOP NUMBER

DEVICE TYPE KEY: TWO LETTERS - FIRST IS MEASURED/MANIPULATED VARIABLE, SECOND IS FUNCTION

THREE LETTERS - FIRST IS MEASURED/MANIPULATED VARIABLE, SECOND IS FUNCTION OR VARIABLE MO FUNCTION OR FUNCTION MODIFER. USE CONTEXT TO DETERMINE WHAT THE LETTER REPRESENTS. FOUR LETTERS - FIRST IS MEASURED/MANIPULATED VARIABLE, SECOND IS VARIABLE MODIFIER, THIRD IS FOURTH IS FUNCTION MODIFIER.

# SYMBOL LEGEND

M FLOW METER

HAND VALVE Ň CHECK VALVE

PRESSURE RELIEF VALVE

![](_page_38_Figure_11.jpeg)

GENERATOR FUEL SYSTEM SCHEMATIC DIAGRAM

TO GENERATOR

![](_page_38_Figure_13.jpeg)

	INSIDE		VARIA	BLE TYPE		INSTRUMENT TYPE	
liary Tion,	AUXILIARY LOCATION, NORMALLY		MANIPULATED OR MEASURED VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
	NOT	A	ANALYSIS	-	ALARM	-	-
		В	BURNER	-	-	-	-
ATOR	OPERATOR	C	-	-	-	CONTROLLER	-
ý		D	-	DIFFERENTIAL	-	-	DIRECTIONAL
<u>+</u> →	(= ≙≟ =)	Ε	VOLTAGE	-	SENSING ELEMENT	-	-
/		F	FLOW	RATIO	-	-	-
$\overline{\mathbf{v}}$	XY	G	-	-	GAUGE	-	-
*ノ	#	Н	HAND	-	-	-	HIGH
		Ι	CURRENT (AMPS)	-	INDICATOR	-	-
		J	POWER	SCAN	-	-	-
		К	TIME	TIME RATE OF CHANGE	-	CONTROL STATION	-
$\overline{\mathbf{v}}$		L	LEVEL	-	LIGHT	-	LOW
$\overrightarrow{\downarrow}$	$\left\langle \stackrel{\frown}{=} \stackrel{+}{=} \right\rangle$	М	-	MOMENTARY	-	-	MIDDLE
		N	-	-	-	-	-
		0	-	-	ORIFICE PLATE	-	-
		Р	PRESSURE	-	POINT CONNECTION	-	-
		0	QUANTITY	INTEGRATE	-	-	-
		R	RADIATION	-	RECORDER	-	-
		S	SPEED, FREQUENCY	SAFETY	-	SWITCH	-
		Т	TEMPERATURE	-	-	TRANSMITTER	-
DIFIER	, third is	U	MULTIVARIABLE	-	MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
		V	VIBRATION	-	-	VALVE, DAMPER, LOUVER	-
	TION	W/	WEIGHT/FORCE	-	WELL	-	-
	non,	X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
	)	Y	EVENT, STATE	Y-AXIS	-	RELAY	-
		Z	POSITION	Z-AXIS	-	FINAL CONTROL ELEMENT	-

![](_page_38_Figure_16.jpeg)

PROCESS PIPING, INSTRUMENT SUPPLY, OR CONNECTION TO PROCESS

CAPILLARY TUBE

\_\_\_\_\_ ELECTRONIC SIGNAL(ANALOG-4-20mA)

\_\_\_\_\_ ELECTRONIC SIGNAL(DISCRETE)

\_\_\_\_\_ HYDRAULIC SIGNAL

\_\_\_\_\_ RADIO SIGNAL(UNGUIDED)

\_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ RADIO SIGNAL(GUIDED)

SOFTWARE OR FIELDBUS LINK

![](_page_38_Picture_27.jpeg)

![](_page_39_Figure_0.jpeg)

![](_page_39_Figure_2.jpeg)

![](_page_39_Figure_3.jpeg)

- SECURE TO SLAB W/ 3/8"øx2" EMBED. HILTI KB-TZ2 SS, (2) PER CHANNEL.

![](_page_39_Picture_11.jpeg)

![](_page_40_Figure_0.jpeg)

![](_page_40_Figure_1.jpeg)

KEY PLAN:

![](_page_40_Figure_3.jpeg)

![](_page_40_Picture_4.jpeg)

	POWER DEVICES
SYMBOL	DESCRIPTION
	SIMPLEX RECEPTACLE - WALL, CEILING, ON AL
<b>€ \                                   </b>	DUPLEX RECEPTACLE - WALL, CEILING, ON ALT
<b>⊕ ⊛ ⊕ )</b> €	DOUBLE DUPLEX RECEPTACLE - WALL, CLG, O
"ON ALT."	SHADED RECEPTACLES NOTED "ON ALT." ABOVE CONNECTED TO ALTERNATE POWER SOURCE (EN STANDBY, UPS, ETC.) PER CIRCUITING INDICATE
€GFI	DUPLEX RECEPTACLE — WALL — WITH INTEGRA GROUND FAULT CIRCUIT INTERRUPTER
₩P	RECEPT. TYPE SHOWN W/ WEATHERPROOF CON AND INTEGRAL GROUND FAULT CIRCUIT INTERRU
<b>-⊖</b> +42"	RECEPT. TYPE SHOWN AT SPECIAL HEIGHT

	LIGHTING
SYMBOL	DESCRIPTION
+	WALL PACK
<b>⊗⊦⊗</b> ł	ILLUMINATED EXIT SIGN, SHADED QUADRANT
	SHADING OF ANY LUMINAIRE INDICATES
	CONNECTION TO ALTERNATE POWER SOURCE (EMERGENCY, UPS, STANDBY, ETC.) PER CIRCUITING INDICATED
	FIRE ALARM SYSTEM
SYMBOL	DESCRIPTION
<b>746</b> 2	FIRE ALARM CONTROL PANEL AND ASSOCIATED COMPONENTS. PROVIDE 120V POWER AS REQUIF OR AS INDICATED.
<b>3</b> 247	FIRE ALARM SYSTEM ANNUNCIATOR
٢Ē	FIRE ALARM SYSTEM MANUAL PULL STATION, WALL MOUNTED
ድ	ALARM BELL OR GONG
<i></i> д дзо	STROBE LIGHT – WALL, CEILING MOUNTED (# = CANDELA RATING)
হিব হিব	SPEAKER – WALL, CEILING MOUNTED
BX BX15	COMBINATION SPEAKER/STROBE, WALL MOUNTED $(\# = CANDELA RATING)$
HA HA	HORN – CEILING, WALL MOUNTED
HX HHX15	COMBINATION HORN/STROBE – WALL, CEILING MOUNTED (# = CANDELA RATING)
	MINI HORN - WALL, CEILING MOUNTED
	COMBINATION MINI HORN/STROBE – WALL, CEILI MOUNTED (# = CANDELA RATING)
×	SPRINKLER VALVE TAMPER SWITCH CONNECTION
֩	LIGHT BEAM TYPE SMOKE DETECTOR (BR=BEAM
● BR,BT	RECEIVER, BT=BEAM TRANSMITTER)
-0	WIDTH SAMPLING TUBES. PHOTOELECTRIC TYPE UON.
© <sub>D</sub>	SMOKE DETECTOR, LOW AIR VELOCITY IN DUCT MOUNTED PHOTOELECTRIC TYPE U.O.N.
0 0 P,B,R,C	(P=PLENUM MOUNTED, B=W/RELAY BASE, R=ELEVATOR RECALL, C=INTEGRAL TO DOOR CLOSURE)
	SMOKE DETECTOR MOUNTED BELOW RAISED FLO
ю <b>о</b> о <sub>с</sub>	ELECTROMAGNETIC DOOR HOLDER — WALL, FLOO DOOR CLOSURE MOUNTED. VERIFY REQUIREMENT WITH DOOR SUPPLIER.
IM	DATA LOOP ISOLATION MODULE
CM	ADDRESSABLE CONTROL MODULE
MM	ADDRESSABLE MONITOR MODULE
W EOL	END OF LINE RESISTOR (NOT SHOWN ON PLANS
נ נ	FIREMAN'S PHONE HANDSET, WALL MOUNTED
- 777772) 1222	FIRE/SMOKE DAMPER, WIDTH OF SYMBOL WILL VARY WITH DUCT WIDTH. PROVIDE POWER AND MONITORING AS INDICATED.
$\oslash$	FLAME DETECTOR (FLICKER DETECTOR)
٩	HEAT DETECTOR, CEILING MOUNTED. RATE OF RISE AND FIXED TEMPERATURE TYPE, UON.
⊕ <sub>R/C,F,R</sub>	HEAT DETECTOR (R/C=RATE OF COMBUSTION, F=FIXED TEMP. ONLY, R=RATE OF RISE ONLY)
a\\\80	EARLY WARNING SMOKE DETECTION SYSTEM – INCLUDES ALL PIPING BY ELECTRICAL
×	LIGHT (LAMP, SIGNAL LIGHT, INDICATOR LAMP, STROBE)
н	FIRE ALARM OUTPUT OR RELEASE ABORT PUSHBUTTON, REFER TO SPECIFICATIONS AND DETAILS.
3	AGENT RELEASE INITIATING VALVE
	BELL SILENCE SWITCH AGENT DISCHARGE SWITCH

DIS	TRIBUTION & EQUIPMENT		DIAGRAMS	F	REFERENCE SYMBOLS
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BRANCH CIRCUIT PANELBOARDS, SURFACE AND RECESS MOUNTED, SOLID= 120/280V,	• •	TRANSFER SWITCH, AUTOMATIC OR MANUAL AS	12	KEYED NOTE REFERENCE
	MOTOR CONTROL CENTER W/ CODE CLEARANCES		DESCRIBED ON PLANS.		TYPE; REFER TO BRANCH CIRCUIT AND FEEDER SCHEDULES FOR WIRE AND CONDUIT SIZES & QTY.
	SHOWN, DASHED EQUIP. = FUTURE	0 0	SWITCH	$\begin{pmatrix} 1 \\ E4.1 \end{pmatrix}$	REFER TO DETAIL NO. ON DRAWING INDICATED NOT ALL DETAIL REFERENCES ARE SHOWN. ALL
	TRANSFORMER WITH CODE CLEARANCES SHOWN	$  \rightarrow$	FIELD INSTALLED CONTROL CIRCUIT WIRING TO DESTINATION SHOWN, U.O.N.		DETAILS AFFET TO ALL AFFEICABLE SITUATIONS, OUN
	SERVICE AND/OR DISTRIBUTION EQUIPMENT WITH CODE CLEARANCES SHOWN		OVERLOADS	E4.1	DRAWING INDICATED
Ò	CONNECTION TO MOTOR PROVIDED BY OTHERS		CONTACTS NORMALLY OPEN CONTACTOR OR RELAY CONTACTS		SECTION TAG: REFER TO SECTION NUMBER ON
	CONNECTION TO MECHANICAL FURNISHED VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT		BUS DUCT	E4.1	DRAWING INDICATED
	DISCONNECT SWITCH, SIZE AS NOTED OR IF NOT		BUS BAR	<b>▲</b> <u></u> <b>⊮</b> 112>	KITCHEN EQUIPMENT REFERENCE, REFER TO KITCHEN
	EUSED DISCONNECT SWITCH SIZE AS NOTED SIZE	h	BATTERY GENERAL		EQUIPMENT SCHEDULE MECHANICAL EQUIPMENT IDENTIFICATION TAG
	FUSE PER MANUFACTURER'S RECOMMENDATIONS		RESISTOR		EQUIPMENT BY OTHERS IDENTIFICATION TAG
	SWITCH, TRIP SIZE AS NOTED. DISCONNECT W/ MAGNETIC MOTOR STARTER		CONNECTOR, FEMALE AND MALE RESPECTIVELY		
×	(CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED. NEMA SIZE #1 MINIMUM.		CONTACTOR COIL		WIRING
$\boxtimes$	MAGNETIC MOTOR STARTER (CONTROLLER) OR CONTACTOR. SIZE PER LOAD SERVED. NEMA SIZE #1 MINIMUM	R	RELAY COIL	SYMBOL	DESCRIPTION
3 🖬	ELECTRICAL CONNECTION, EQUIPMENT PROVIDED BY	•	CONDUCTOR LANDING LUGS		WIRING CONCEALED IN CEILING OR WALL. LINE WEIGHT TOP TO BOTTOM= NEW, EXISTING TO REMAIN, FUTURE
₽₽₽	ELECTRICAL CONNECTION TO EQUIPMENT WITH	II⊢,I'i	LIGHTNING SURGE ARRESTOR $D=$ DISTRIBUTION CLASS I = INTERMEDIATE CLASS		WIRING CONCEALED IN FLOOR OR UNDER GRADE OR ROUTED IN CEILING SPACE OF FLOOR BELOW.
	OTHERS. SHADED = ON ALT. POWER SOURCE NOTED		SURGE PROTECTION DEVICE		LINE WEIGHT TOP TO BOTTOM= NEW, EXISTING TO REMAIN, FUTURE
	SURFACE AND RECESS MOUNTED		CURRENT TRANSFORMER		
	BUILDING GROUND BUS, SEE DETAILS	→ <b>¥</b> _	POTENTIAL TRANSFORMER		EXISTING WIRING TO BE REMOVED TELEPHONE SYSTEM CONDUIT
	BUSWAY RISER	*	NORMALLY OPEN PUSH BUTTON	MV	MEDIUM VOLTAGE CONDUIT
┙≪╒҇҇҇┙	BUSWAY STAB-IN TYPE CIRCUIT BREAKER	<u>ର</u> ାତ ଅନ	NORMALLY CLOSED PUSH BUTTON		GROUNDING CONDUCTOR(S) ROUTED IN CODE SIZED
	OR FUSE DISCONNECT. SIZE AS NOTED.		FUSED VOLTAGE SENSE LEADS		STROKES INDICATE QUANTITY OF #12 AWG. CONDUCTORS, UON. NOTE: WIRING STROKES FOR
	GROUNDING SYSTEM	(PF)	METER: POWER FACTOR	<del>+ +</del>	20A BRANCH CIRCUITS ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL USE INFORMATION
SYMBOL	DESCRIPTION		METER: KILOWATT HOUR		PROVIDE REQUIRED CIRCUITING.
	BARE GROUNDING GRID OR CONDUCTORS, UON. GROUNDING CONDUCTOR(S) ROUTED IN CODE SIZED		INSTALLED. SQUARE = REMOTE MOUNTED DIGITAL METER UNIT. REFER		GROUND, ISOLATED
•	CONDUIT, UON. GROUND GRID BOND POINT		TO SPECIFICATIONS.		NEUTRAL
•	GROUND GRID BOND POINT - MECHANICAL	STB	CURRENT TRANSFORMER SHORTING TERMINAL BLOCK.		HOME RUN WIRING TO INDICATED DESTINATION, 3/4"C. MIN. OR AS OTHERWISE NOTED. CONTRACTOR
•	GROUND GRID BOND POINT – EXOTHERMIC WELD CONNECTION	0	TERMINAL FOR FIELD CONNECT, SIZE & TYPE SUITABLE FOR CONDUCTOR INSTALLED.	L1A-1,3 HD1A	SHALL USE CIRCUIT SIZES NOTED IN RESPECTIVE SCHEDULES AND INFORMATION IN THE FEEDER AND
	24" GROUND BAR	a a a a a a a a a a a a a a a a a a a	G= GREEN, B= BLUE, Y= YELLOW, W= WHITE	<b></b>	CONDUIT RUN TURNED UP THROUGH FLOOR OR
	60" GROUND BAR				CEILING. CORE & FIREPROOF AS REQUIRED. CONDUIT RUN TURNED DOWN THROUGH FLOOR OR
<b>(</b>	GROUND ROD IN TEST WELL	÷ 	CONNECTION TO GROUND		CEILING. CORE & FIREPROOF AS REQUIRED. CONDUIT STUBBED OUT AT LOCATION SHOWN.
٢	LIGHTNING PROTECTION PARAPET MOUNTED AIR TERMINAL	100AT	CIRCUIT BREAKER WITH TRIP & FRAME AMPERE		PROVIDE INSULATED BUSHING & PULLROPE. TELEPHONE/DATA SLEEVE THROUGH WALL, ABOVE
0	LIGHTNING PROTECTION MID ROOF MOUNTED	225AF	RATING	<b>⊢</b> →	CEILING. EXTEND TO ACCESSIBLE TILE CLG. BOTH SIDES. TERMINATE WITH BUSHINGS. (1) 1.25" CO UON. COORDINATE LOCATIONS WITH CABLE
۲	LIGHTNING PROTECTION AIR TERMINAL	460A5	FUSED SWITCH, WITH FUSE AND SWITCH AMPERE RATING		UNSTALLER(S) PRIOR TO ROUGH-IN.
• <b></b> >	LIGHTNING PROTECTION CONDUCTOR ROUTED DOWN		INDIVIDUALLY MOUNTED CIRCUIT BREAKER	L -MM []	MOUNTED. 4" SQ. BOX MIN., LARGER IF REQUIRED
⊕ <b>⊠</b>	LIGHTNING PROTECTION BOND PLATE	-<<= -<<>>>> -<<>>>>	CIRCUIT BREAKER, MEDIUM VOLTAGE, DRAWOUT DRAWOUT CIRCUIT BREAKER	РВ	PULL BOX, MIN. SIZE PER NEC., UON.
_		<del>-</del> GF	GROUND FAULT TRIP UNIT		
		BA	BELL ALARM TRIP MODULE CONTACTS		
		ST	SHUNT TRIP UNIT, 120VAC OR VOLTAGE AS NOTED		
			MONITORING COMMUNICATION MODULE		
		КК	KIRK KEY INTERLOCK, MANUAL		
			EM DEFERRED SUBMITT		ſES
	1. COLOR OF DEVICES SHALL BE P		SHALL COORDINATE INTERFACE WITH EXISTING CAMPUS	FA SYSTEM WITH	OWNER AND EXISTING
	FA VENDOR/SERVICING AGENT. EX	KISTING SYSTEM IS	S SIEMENS. NEW PANEL AND COMPONENT TO MATCH.		
	2. CONTRACTOR SHALL COORDINATE 3. CONTRACTOR SHALL ENSURE MED	MOUNTING OF FI	RE ALARM CONTROL AND ANNUNCIATOR PANELS WITH AF	RCHITECTURAL PLA	NNS AND DETAILS. DRAWINGS AND
	REQUIREMENTS.				
	4. CONTRACTOR SHALL COORDINATE 5. ALL ESD'S TO BE PROVIDED COM	120V POWER RE	QUIREMENTS WITH ELECTRICAL SHOP DRAWINGS.		
	6. CO-ORDINATE ALL REQUIRED ELE	CTRICAL, TELECON	AND MECHANICAL SYSTEM CONNECTIONS FOR THE FIR	E ALARM WITH AS	SOCIATED SHOP
	7. PROVIDE CUT SHEETS FOR ALL F	TIRE ALARM DEVIC	ES AND CURRENT CSFM LISTINGS FOR REVIEW AND APF	ROVAL BY AUTHO	RITIES HAVING
	JURISDICTION (AHJ)				

- 8. CONTRACTOR SHALL COORDINATE SURFACE MOUNTING OF CONTROL AND ANNUNCIATOR PANELS WITH ARCHITECTURAL PLANS AND DETAILS.
- 9. FURNISH RISER DIAGRAM FOR THE FIRE ALARM SYSTEM, INCLUDING ALL DEVICES, TYPICAL BLOCK DIAGRAM NOT ACCEPTABLE.
- 10. SHOP DRAWINGS ARE TO MATCH DRAWING SCALE SIZE, SHEET SIZE OF CONSTRUCTION DOCUMENTS.
- 11. PROVIDE SUPERVISORY GENERATOR ALARM FROM THE FIRE ALARM PANEL. CONNECT TO GENERATOR 1, AND PROVISIONS FOR FUTURE 2 GENERATORS.
- 12. THE BUILDING SHALL BE PROVIDED WITH AN ANALOGUE ADDRESSABLE FIRE ALARM AND DETECTION SYSTEM. THE FIRE ALARM SYSTEM SHALL INCLUDE THE FOLLOWING, AT A MINIMUM, IN ACCORDANCE WITH NFPA 72 AND THE CALIFORNIA FIRE CODE: MAIN FIRE ALARM CONTROL PANEL
- AREA DETECTION REQUIRED IN ALL AREAS SERVED BY HVAC SMOKE DETECTORS
- STROBE DEVICES COMBINATION HORN/STROBE DEVICES
- MONITORING MODULES ADDRESSABLE CONTROL MODULES
- ALL SMOKE / FIRE DAMPER INTERLOCKS GRAPHIC ANNUNCIATOR PANELS
- HEAT DETECTORS FOR GENERATOR ENCLOSURE
- 13. ALL SMOKE DAMPERS SHALL BE CONTROLLED BY THE TOTAL-COVERAGE SMOKE DETECTOR SYSTEM PROVIDED WITHIN AREAS SERVED A HVAC SYSTEM PER CBC 716.3.3.2(6).
- 14. THE FIRE ALARM CONTRACTOR SHALL BE RESPONSIBLE FOR THE OVERALL COORDINATION AND INTEGRATION OF THE BUILDING FIRE ALARM SYSTEMS FOR A FULLY FUNCTIONING AND INTEGRATED LIFE SAFETY SYSTEM WITH COMMON COMMUNICATION PROTOCOL AND SYSTEM INTERFACE.
- 15. THE FIRE ALARM SYSTEM DESIGN SHALL BE SUBMITTED TO EOR AND OWNER FOR REVIEW PRIOR TO SUBMITTAL TO AHJ.
- 16. THE DESIGN AND INSTALLATION SHALL BE BASED ON SYSTEM RELIABILITY WHILE AT THE SAME TIME AVOIDING FALSE ALARMS. VISUAL ALARM INDICATION SHALL BE INSTALLED, TO ENSURE BOTH ABLE AND DISABLED PERSONS ARE AWARE OF THE EMERGENCY SITUATION. THE AUDIBLE ALARMS SHALL FORM PART OF THE VOICE EVACUATION SYSTEM WITH A PRIORITY GIVEN TO FIRE ALARMS ANNOUNCEMENTS.

17. THE ADDRESSABLE FIRE ALARM SYSTEM SHALL BE CAPABLE OF IDENTIFYING PRECISE AREAS OF FIRE/ALARM ENABLING RAPID DIRECT RESPONSE TO AN INCIDENT. THE DESIGN OF THE FIRE ALARM SYSTEM SHALL COMPRISE THE DIVISION OF THE BUILDING INTO ZONES FOR EASE OF IDENTIFICATION, THE SIZE OF EACH ZONE SHALL BE IN COMPLIANCE WITH STATUTORY STANDARDS AND REQUIREMENTS.

(E) (F) (R) (RL) AB ACU AC A, AMP AF AFF AFG AIC AL	EXISTING TO REMAIN FUTURE EXISTING TO BE REMOVED EXISTING TO BE RELOCATED ABOVE COUNTER BACKSPLASH AIR CONDITIONING UNIT ALTERNATING CURRENT AMPERES AMPERE (RATED) FUSE OR CB FRAME ABOVE FINISHED FLOOR ABOVE FINISHED GRADE EQUIPMENT SHORT CIRCUIT INTERRUPT RATING (RMS SYM. AMPS) ALUMINUM (ALLOY)
ALC	AMPERE (RATED) SWITCH
AT ATS	CIRCUIT BRKR TRIP SETTING (AMPS) AUTOMATIC TRANSFER SWITCH
AUTO AUX	AUTOMATIC AUXILIARY
AWG	AMERICAN WIRE GAUGE
BAT BG BRKR C CAB CFM CKT CLG CO CPT CT CU	BATTERY BELOW GRADE CIRCUIT BREAKER CONDUIT (CIRCULAR RACEWAY) CABINET CIRCUIT BREAKER CUBIC FEET PER MINUTE CIRCUIT CEILING CONDUIT ONLY CONTROL POWER TRANSFORMER CURRENT TRANSFORMER COPPER
DC DISC	DIRECT CURRENT DISCONNECT
DIA	DIAMETER
DP	DISTRIBUTION PANEL
DPDT	DOUBLE POLE SINGLE THROW
DWG F.FMFRG	DRAWING
EF	EXHAUST FAN
ENCL	ENCLOSURE
EO FOI	ELECTRICALLY OPERATED
EWC	
EWH	ELECTRIC WATER HEATER
FA FAA	FIRE ALARM FIRE ALARM ANNUNCIATOR
FBO	FURNISHED BY OTHERS
FC	FLUSH FLOOR MOUNTED
FLA FLEX	FULL LOAD AMPERES FLEXIBLE
FPB FSD	FAN POWERED BOX FIRE/SMOKE DAMPER
FW FU	FLUSH WALL MOUNTED FUSE
GEN GEI	GENERATOR
GND	GROUND
GRAP GRC	GENERATOR REMOTE ANNUNCIATOR PNL GALVANIZED RIGID STEEL CONDUIT
HLO	HANDLE LOCK-ON(OFF)
HP HPF	HIGH POWER FACTOR
HTR HZ	HEATER HERTZ (CYCLES PER SECOND)
IES	ILLUMINATING ENGINEERING SOCIETY
ID IRC	INDIVIDUAL BRANCH CIRCUIT
IG IMC	ISOLATED GROUND INTERMEDIATE METAL CONDUIT

KCMIL	THOUSAND CIRCULAR MILS
KO	KNOCK OUT
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPERES
MFR	MANUFACTURER
MIN	
MISC	MUUNTING HEIGHT MISCELLANEOUS
MLO	MAIN LUGS ONLY
МО	MANUAL OPERATOR
MTD	MOUNTED
MTR	
	NORMALLY CLOSED
NEC	
NEG	NEGATIVE
NEMA	NATIONAL ELECTRICAL MFGR'S ASSOC.
NL	NIGHT LIGHT (UNSWITCHED)
	NORMALLI OPEN NOT TO SCALE
NP	NAMEPLATE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR
	INSTALLED
OFOI	OWNER FURNISHED, OWNER
00	
DS P	POLE
PB	PUSHBUTTON
PH	PHASE
PNL + POS	PANEL POSITIVE
PRI	PRIMARY
REQD	REQUIRED
RNC	RIGID NON-METALLIC CONDUIT (PVC)
RS	RAPID START
RST	REMOTE STATION TRANSMITTER
S.A.D. SEC	SEE ARCHITECTURAL DRAWINGS
SN	SHEET NOTE
SOL	SOLENOID
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TB	TERMINAL BOARD
TDC	TIME DELAY CLOSING
TEI	THE DELAT OPENING
TYP	TYPICAL
UL	UNDERWRITERS LAB
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT-AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
W/	WITH
W/0	WITHOUT
WP WP	WEATHERPROOF, SEE RECEPT. SYMBOL
	IRANSFURMER EXPLOSION PROOF
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# ELECTRICAL DRAWING LIST

EE0.0 – ELECTRICAL SYMBOL LEGEND AND SHEET INDEX
EE1.0 – ELECTRICAL SITE PLAN
EE5.1 – ELECTRICAL SINGLE LINE DIAGRAM
EE5.2 – ELECTRICAL SCHEDULES
EE6.1 – ELECTRICAL ENLARGED SITE PLAN
EE6.2 – ELECTRICAL ENLARGED PLANS
EE9.1 – ELECTRICAL DETAILS
EE9.2 – ELECTRICAL DETAILS
EE9.3 – ELECTRICAL DETAILS
EE9.4 – GENERATOR DETAILS
EE9.5 – FUEL TANK DETAILS – FOR REFERENCE ONLY
EE9.6 – 12KV & 5KV DISTRIBUTION SWITCHGEAR DETAILS
EE9.7 – ELECTRICAL DETAILS

# **CODE REFERENCES**

- A. 2019 CALIFORNIA BUILDING CODE (CBC), CALIFORNIA CODE OF REGULATIONS, TITLE24, PART 2 (THIS PART INCORPORATES BY ADOPTION THE 2018 INTERNATIONAL BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL WITH NECESSARY CALIFORNIA AMENDMENTS). CHAPTER 27 AND ALL OTHER APPLICABLE CODES ARE MET. 2019 CBHC 2702.1.3 INSTALLATION.
- B. 2019 CALIFORNIA FIRE CODE (CFC), CALIFORNIA CODE OF REGULATIONS, TITLE24, PART 9 (THIS PART INCORPORATES BY ADOPTION THE 2018 CALIFORNIA FIRE CODE OF THE INTERNATIONAL CODE COUNCIL WITH NECESSARY CALIFORNIA AMENDMENTS).
- C. 2019 CALIFORNIA ELECTRIC CODE (CEC), CALIFORNIA CODE OF REGULATIONS, TITLE24, PART 3 (2017 NATIONAL ELECTRICAL CODE WITH STATE AND LOCAL AMENDMENTS). D. 2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARD FOR RESIDENTIAL AND NONRESIDENTIAL BUILDINGS, CALIFORNIA CODE OF REGULATIONS, TITLE24, PART 6.
- . EMERGENCY POWER SYSTEMS AND STANDBY POWER SYSTEMS REQUIRED BY THIS CODE OR THE CALIFORNIA FIRE CODE SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA FIRE CODE, NFPA 70, NFPA 110 AND NFPA 111.

![](_page_41_Picture_42.jpeg)

![](_page_42_Figure_0.jpeg)

![](_page_42_Picture_3.jpeg)

![](_page_43_Figure_0.jpeg)

# **GENERAL NOTES**

- A. ALL CIRCUITS ARE 3 PHASE, UNLESS OTHERWISE NOTED.
- FEEDER SIZES. C. REFER TO DWG. EE6.2 FOR GROUNDING DETAILS.
- D. ALL TRANSFORMERS ARE 480V DELTA PRIMARY TO 208Y/120V
- SECONDARY, 150 DEGREE C. RISE, U.O.N.
- E. ITEMS SHOWN WITH THIN DASH-DOT OR DASHED LINES ARE EXISTING.
- F. ITEMS SHOWN WITH SHADED SHORT-DASHED LINES ARE FUTURE.
- G. THE VALUE IN THE WIDE HEXAGON IS THE AVAILABLE INTERRUPTING SHORT-CIRCUIT CURRENT (AIC) AT THAT PIECE OF EQUIPMENT.
- H. ALL COMPONENTS SHALL BE FULLY RATED. SERIES RATED IS NOT ALLOWED.
- I. ROOF PENETRATIONS SHALL BE WATER PROOF AND
- APPROVED BY THE ARCHITECT. J. ROUTE CONDUITS RUNS BELOW ROOF.
- K. ALL VACUUM BREAKERS OF THE SAME VOLTAGE SHALL BE INTERCHANGEABLE.
- SERVICE EQUIPMENT SHALL HAVE FIELD MARKINGS INCLUDING THE DATE THE FAULT CURRENT CALCULATION WAS PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. CEC (110.9, 110.24)
- M. THE GENERATOR SHALL AUTOMATICALLY RESTORE ALL LIFE SAFETY BRANCH CIRCUITS TO OPERATION WITHIN 10 SECONDS AFTER THE INTERRUPTION OF THE NORMAL SOURCE. DOCUMENTATION AND TESTING SHALL BE FURNISHED TO THE AHJ TO VERIFY PROPER OPERATION. CE (517.43)
- TRANSFER EQUIPMENT, INCLUDING AUTOMATIC TRANSFER SWITCHES, SHALL BE AUTOMATIC, IDENTIFIED FOR EMERGENCY USE, AND APPROVED BY THE AUTHORITY HAVING JURISDICTION. TRANSFER EQUIPMENT SHALL BE DESIGNED AND INSTALLED TO PREVENT THE INADVERTENT INTERCONNECTION OF NORMAL AND EMERGENCY SOURCES OF SUPPLY IN ANY OPERATION OF THE TRANSFER EQUIPMENT. TRANSFER EQUIPMENT SHALL BE LISTED FOR EMERGENCY USE, EQUIPPED WITH MEANS FOR BYPASS, ELECTRICALLY OPERATED, AND MECHANICALLY HELD, CEC (240.12, 517.17 620.62 620.62, TABLE 685.3, 700.27, 700.5 (A) & 701.5)
- O. GROUND-FAULT PROTECTION FOR OPERATION OF THE SERVICE AND FEEDER DISCONNECTING MEANS SHALL BE FULLY SELECTIVE SUCH THAT THE FEEDER DEVICE, BUT NOT THE SERVICE DEVICE, SHALL OPEN ON GROUND FAULTS ON THE LOAD SIDE OF THE FEEDER DEVICE. SEPARATION OF **GROUND-FAULT PROTECTION TIME-CURRENT** CHARACTERISTICS SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS AND SHALL CONSIDER ALL REQUIRED TOLERANCES AND DISCONNECT OPERATING TIME TO ACHIEVE 100 PERCENT SELECTIVITY. SUBMIT OVERCURRENT COORDINATION STUDY PERFORMED BY THE ENGINEER OF RECORD. CEC (517.17 (C))
- P. PROVIDE UL RATED STRESS CONES FOR ALL MEDIUM VOLTAGE CABLE TERMINATIONS.
- Q. PROVIDE TEST SWITCHES FOR ALL MV BREAKERS.
- R. PROVIDE SHORT CIRCUIT STUDY INCLUDING MOTOR CONTRIBUTION PERFORMED BY THE ENGINEER OF RECORD. FUSE LET THRU IS NOT ACCEPTABLE. THE SHORT CIRCUIT STUDY PERFORMED BY THE ENGINEER OF RECORD, SHOULD REFLECT THE THREE- AND SINGLE-PHASE FAULT AS WELL AS GROUND FAULT AND LINE TO LINE TO GROUND FAULT (WHEN APPLICABLE). CEC (110.9 & 10, 240.21, & 430.225)

### **KEYED NOTES** ELECTRICALLY INTERLOCKED SO THAT ONLY ONE MAIN CAN

- BE CLOSED IF THE TIE BREAKER IS CLOSED.
- 450A TRIP AND 1200A FRAME UNLESS NOTED OTHERWISE. 3. PROVIDE UL LISTED CLAMP CONNECTION TO BUILDING COLD
- INTERCEPT EXISTING 12KV FEEDER EXTEND TO EXISTING VAULT. MAINTAIN 310 DEGREE BENDS MAXIMUM, WITHOUT REQUIRING TO INSTALL A NEW VAULT. MAINTAIN A MINIMUM OF 36" OF SEPARATION FROM OTHER UTILITIES WHEN INSTALLED IN PARALLEL. 12" WHEN CROSSING UTILITIES PERPENDICULAR.
- 5. TYPICAL PROVIDE SCREW DOWN JACKMOON PLUGS AND MEASURES NYLON PULL ROPE IN ALL SPARE CONDUITS.
- NEW CAST IN PLACE PULL BOX TO INTERCEPT EXISTING FEEDER AND REPLACE WITH NEW FEEDER.
- PROVIDE METERING AT EACH FEEDER AND METERING FOR SWITCHGEAR.
- AIC RATING SHALL MEET OR EXCEED UTILITY'S AVAILABLE FAULT CURRENT. COORDINATE REQUIREMENT PRIOR TO ORDER SWITCHGEAR.
- PROVIDE LABELED DIN-RAIL FUSES FOR: DIESEL FUEL PUMP. EACH 5KV BREAKER SPRING CHARGING CIRCUIT, ETC. THIS CPT SERVES ITS RESPECTIVE "A" OR "B" SIDE IN BOTH THE 5KV PARALLELING SWITCHGEAR AND IN THE 5KV DISTRIBUTION SWITCHGEAR
- 480V, 3PH, 3W PANEL & 240V, 1PH, 3W PANELS ARE PROVIDED WITH GENERATOR. 480V PANEL SERVES MIRATECH DPF HEATERS, JACKET WATER HEATERS AND SERVICE TO STEP-DOWN TRANSFORMER.
- PROVIDE ARC-FLASH FIBER OPTIC SENSING CABLE IN FRON AND REAR COMPARTMENTS. COUPLE WITH OVERCURRENT ELEMENT TO ACTIVATE BREAKER TRIP. ANY ARC-FLASH EVENT SHALL ALSO ROLL THE 86 LOCKOUT RELAY ON THE MAIN BREAKER.
- . PROVIDE BEST BATTERY SELECTOR FOR THE REDUNDANT INCOMING 125VDC CONTROL POWER CIRCUITS. SUBMIT SIZE OF REQUIRED CONTROL POWER CIRCUIT. 30A, 125VDC CIRCUIT IS ASSUMED. PROVIDE RED LED INDICATOR LIGHT T ALARM LOSS OF EITHER CONTROL POWER CIRCUIT.
- 13. REMOTE HMI IN ENGINEER'S OFFICE INSIDE HOSPITAL PROVIDE 6-STRAND FIBER OPTIC CABLING AND MEDIA CONVERTERS AS REQUIRED. HARDWIRE TO NEAREST 120V BRANCH CIRCUIT FROM AN EMERGENCY OR CRITICAL PANEL

![](_page_43_Picture_34.jpeg)

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL & UNPUBLISHED WORK OF HMR ARCHITECTS AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF HMR ARCHITECTS

**F--F---+-----**

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SINGLE LINE DIAGRAM

SEPTEMBER 29, 2023

DRAWN BY: CHECKED BY: EE5.1 JOB NO. 19056

![](_page_43_Picture_39.jpeg)

ISSUE DATE: JANUARY 14, 2025

		T SCHF							0.0		FEDE	RSC	COPPER FEEDER SCHEDULE													
			s							CONF	ידוו וח	S		R SFT		FEEDER			<b></b> TS		DEB OET	NOTE				
TAG	MET	SETS	RNC	PHASE/NEUTRAL	GROUND	CONFIG.	NOTES		G ME	ET   SE	ETS	RNC	PHASE/NEUTRAL	GROUND	INVIES	TAG	MET	SETS	RNC	PHASE/NEUTRAL	GROUND					
(60.2N)	0.75"	1	1.00"	(2) #6, (1) #6N	#10	1,2W,N	_	(400	0.4) 3.5	io" ·	11	4.00"	(4) 500 KCMIL	500 KCMIL	_	(250.4)	2.50"	1	3.00"	(4) 250 KCMIL	#4	_				
60.2	0.75"	1	1.00"	(2) #6	#10	1Ø,2W	_	(400	0.3) 3.0	0"	11	4.00"	(3) 500 KCMIL	500 KCMIL	_	(250.3)	2.50"	1	3.00"	(3) 250 KCMIL	" #4	-				
60.1	0.75"	1	1.00"	(1) #6, (1) #6N	#10	1Ø,1W,N	_	(350	0.4 3.5	o"	10	4.00"	(4) 500 KCMIL	500 KCMIL	_	(225.4K)	3.00"	1	3.00"	(3) 250 KCMIL,	#4	7				
50.2N	0.75"	1	1.00"	(2) #6, (1) #6N	#10	1Ø,2W,N	_	(350	0.3 3.0	0 <b>0"</b>	10	4.00"	(3) 500 KCMIL	500 KCMIL	-		0 - 0 "		"	(2)#4/0-N						
50.2	0.75"	1	1.00"	(2) #6	#10	1Ø,2W	_	(300	0.4) 3.5	0"	8	4.00"	(4) 500 KCMIL	400 KCMIL	_	(225.4)	2.50"		3.00"	(4) #4/0	#4	-				
50.1	0.75"	1	1.00"	(1) #6, (1) #6N	#10	1Ø,1W,N	-	(300	0.3) 3.0	0"	8	4.00"	(3) 500 KCMIL	400 KCMIL	-	(225.3)	2.00"	1	2.50"	(3) #4/0	#4	-				
(40.2N)	0.75"	1	1.00"	(2) #8, (1) #8N	#10	1Ø,2W,N	-	(250	0.4) 3.5	0"	7	4.00"	(4) 500 KCMIL	350 KCMIL	-	(200.4K)	2.50	1	2.50	(3)#4/0,(2)#3/0-N	#6	-				
40.2	0.75"	1	1.00"	(2) #8	#10	1Ø,2W	-	(250	0.3) 3.0	0"	7	4.00"	(3) 500 KCMIL	350 KCMIL	-	(200.4)	2.00	1	2.50	$(4) \frac{4}{43}/0$	#0 #6					
40.1	0.75"	1	1.00"	(1) #8, (1) #8N	#10	1Ø,1W,N	_	(200	0.4 3.0	0"	6	4.00"	(4) 400 KCMIL	250 KCMIL	-	(200.3)	2.00	1	2.50	(3) #3/0	#6					
30.2N	0.75"	1	1.00"	(2) #10, (1) #10N	#10	1Ø,2W,N	-	(200	0.3 3.0	0"	6	4.00"	(3) 400 KCMIL	250 KCMIL	-	(175.3)	1.50"	1	2.00"	$(-)$ $\#^{2}/0$	#6	_				
30.2	0.75"	1	1.00"	(2) #10	#10	1Ø,2W	-	160	0.4K) 3.5	0"	5	4.00"	(3) 500 KCMIL, (2) 400 KCMIL-N	#4/0	7	(150.4K)	2.00"	1	2.00"	(3) # 2 / 0 (2) # 1 / 0 - N	#6	_				
30.1	0.75"	1	1.00"	(1) #10, (1) #10N	#10	1Ø,1W,N	-	(160	0.4) 3.0	0"	5	4.00"	(4) 400 KCMIL	#4/0	_	(150.4)	2.00"	1	2.00"	(0) / 2 / 0, (2) / (1 / 0)	#6	_				
20.2N	0.50"	1	1.00"	(2) #12, (1) #12N	#12	1Ø,2W,N	7,8	(160	0.3) 3.0	0"	5	4.00"	(3) 400 KCMIL	#4/0	_	(150.3)	1.50"	1	2.00"	(3) #1/0	#6	_				
20.2	0.50"	1	1.00"	(2) #12	#12	1Ø,2W	7,8	(120	0.4) 3.0	0"	4	4.00"	(4) 350 KCMIL	#3/0	_	(125.4)	1.50"	1	1.50"	(4) #1	#6	_				
(20.1)	0.50"	1	1.00"	(1) #12, (1) #12N	#12	1Ø,1W,N	7,8	(120	0.3) 3.0	0"	4	3.00"	(3) 350 KCMIL	#3/0	_	(125.3)	1.25"	1	1.50 <b>"</b>	(3) #1	#6	_				
NOTES	_							100	0.4K) 3.5	o"	3	4.00"	(3) 500 KCMIL,	#2/0	7	(110.4K)	1.50"	1	2.00"	(3) #2,(1)#4/0-N	#6	7				
1. COND WITH	UCTORS THHN/TH'	AND CO //N INSL	NDUITS JLATION	SHOWN IN THIS SCHED	ULE ARE BASED O	ON COPPER CONI	DUCTORS			- "			(2) 400 KCMIL-N	<b>#a /a</b>		(110.4)	1.25"	1	1.50 <b>"</b>	(4) #2	#6	-				
2. THIS S	SCHEDUL	E SHALL MATCHI	. BE USE	D ON ALL BRANCH CIRC	CUITS SERVING LC FR USF THF "MOT	DADS WHERE THE	E CIRCUIT FDUI F"		(0.4) 3.0	0"	3	4.00"	(4) 400 KCMIL	#2/0	_	(110.3)	1.25"	1	1.50"	(3) #2	#6	-				
FORL	OADS, SU			S, PUMPS, FANS, CHILLE	RS, ETC., WHERE	THE CIRCUIT BRI	EAKER SIZE		$\frac{0.3}{10}$ 3.0	0°   .	3	4.00"	(3) 400 KCMIL	#2/0	-	(100.4)	1.25"	1	1.50"	(4) #2	#8	-				
3. PROV	IDE GROU			D ABOVE IN ALL BRANCH	H CIRCUITS.				<u>.4K)</u> 3.0		3	4.00	(3) 350 KCMIL, (2) 300 KCMIL-N	#1/U	/	100.3	1.25"	1	1.50"	(3) #2	#8	-				
4. NOT A 5. "MET"	LL BRAN( = EMT, IM	CH CIRC C, GRC,	UITS SH RAC, OI	OWN ABOVE ARE NECE	SSARILY USED ON PE CONDUITS. "RN	N THIS PROJECT. IC"= PVC 40, PVC	80 OR	(80	).4 3.0	0"	3	3.00"	(4) 300 KCMIL	<b>#</b> 1/0	-	90.4	1.25"	1	1.50"	(4) #2	#8	-				
FIBER COND	GLASS T` UITS ARE	PE CON ROUTE	NDUITS F D ABOVI	ROUTED UNDERGROUN EGROUND, CONDUIT SIZ	D. REFER TO SIZIN ZES NOTED ON SIN	NG ON DRAWINGS	S IF "RNC" AM OR ON	(80	).3) 2.5	i <b>0</b> "	3	3.00"	(3) 300 KCMIL	<b>#</b> 1/0	-	90.3	1.25"	1	1.50"	(3) #2	#8	-				
PLAN	SUPERS		ES NOT	ED ABOVE IF LARGER.				(70	).4 3.5	io"   :	2	4.00"	(4) 500 KCMIL	<b>#</b> 1/0	-	80.4	1.25"	1	1.50"	(4) #4	#8	-				
AS RE				JM VOLTAGE DROP REC		CATED IN SPECIF	ICATIONS.	70	0.3 3.0	00"   2	2	4.00"	(3) 500 KCMIL	<b>#</b> 1/0	-	80.3	1.00"	1	1.50"	(3) #4	#8	-				
GROU NEC.	ND CONL	UCTOR	WILL AL	SO NEED TO BE INCREA	ASED PROPORTION	NATELY AS REQU	JIRED BY	60	0.4 3.0	00"	2	4.00"	(4) 350 KCMIL	#1	-	70.4	1.25"	1	1.50"	(4) #4	#8	-				
7. THESI CONT	E BRANCI RACTOR	I CIRCU SHALL U	ITS TAG JSE THIS	S ARE TYPICALLY NOT S INFORMATION AS IT AF	SHOWN ON PLANS PPLIES FOR ALL CO	FOR CLARITY RI	EASONS. INING ONE	60	).3) 2.5	60"       :	2	3.00"	(3) 350 KCMIL	#1	-	70.3	1.00"	1	1.50"	(3) #4	#8	-				
OR M	DRE 20A/		JITS.				9E	(500	.4K) 3.0	0"  :	2	4.00"	(3) 300 KCMIL, (2) 250 KCMIL-N	#2	7	60.4	1.00"	1	1.00"	(4) #6	#10	-				
COND	UCTORS,	IN ONE	CONDU	IT. ALL 3-PHASE AND CIF	RCUITS LARGER T	HAN 20A SHALL E	BE IN	(50	).4) 2.5	o" :	2	3.00"	(4) 250 KCMIL	#2	_	60.3	0.75"	1	1.00"	(3) #6	#10	-				
DEDIC 9. ALL H	ATED CC OMERUN	NDUITS S SHALL	, UON. P . USE 0.7	ROVIDE DEDICATED NE '5" CONDUIT SIZE MINIM	UTRALS FOR EACH UM.	H 1-POLE CIRCUI	T.	(50	).3) 2.5	o" :	2	2.50"	(3) 250 KCMIL	#2	_	(50.4K)	1.00"	1	1.50"	(3) #6,(1)#2-N	#10	7				
								45	0.4 2.5	io"   :	2	3.00"	(4) #4/0	#2	-	(50.4)	1.00"	1	1.00"	(4) #6	#10	-				
			, í					45	).3) 2.0	0"	2	2.50"	(3) #4/0	#2	_	(50.3)	0.75"		1.00"	(3) #6	#10	-				
EDUI	_E			VOLTA	GE DR	ΟΡ ΤΑ	BLE	(400	.4K) 2.5	io"   :	2	2.50"	(3) #4/0,	#2	7	40.4	0.75	1	1.00"	(4) #8	#10	-				
ARY GR	OUND				MAXIMUM ALLO	OWED RUN LENG	TH (FT)			~"   ·		0.50"	(2)#3/0-N	10		40.3	0.75		1.00	(3) #8	#10	-				
	WG/	WT.		VOLT AMP #	#12 #10	#8 #6	#4		2.0		2	2.50	$(4) {\pi}3/0$	#∠ #0	_	$\begin{array}{c} 30.4 \\ \hline 30.3 \\ \end{array}$	0.75	1	1.00	(4) #10	#10	_				
	#8	275		2 5	500 800	1200 200	0 3250		$\overline{)}$		2 1	2.50	(3) 570	#∠ #2	_		0.75		1.00	(3) # 10	#10	_				
	#8	340		<u>4</u> 2	250 400 175 250	600 1000 400 650	) 1625	(35	(3) 2.5	io"	1	4.00"	(4) 500 KCMIL	#2 #2	_	20.4	0.75	1	1.00	(4) # 12	#12   #12	_				
	#0 #6	475		<b>120</b> 8 1	125 200	325 500	800	$\overline{30}$	$\frac{10}{4}$ 3.0	0"	1	3.00"	(4) 350 KCMII	#4	_	20.5	0.75		1.00	(3) #12	<i>₩</i> '∠					
	#2	1060			100 150	250 400	650	(30)	).3) 2.5	o"	1	3.00"	(3) 350 KCMIL	" · #4	_											
	<u>"-</u> 1/0	1250		12 14	85 125 75 110	200 350 175 300	550 450						.,	и :												
	2/0	2130		16	60 100	150 250	400	1																		
	-/ ~	_,		2 1	100 1800	2750	777	1																		

	TRANSFORMER SCHEDULE														
K\/A	480V P	RIMARY	208Y/120V	SECONDARY	GROUND	wт									
NVA	C.B.	FEEDER	C.B.	FEEDER	KCMIL	VV I.									
15	30/3	30.3	50/3	(50.4K)	#8	275									
30	50/3	50.3	100/3	(110.4K)	<b>#</b> 8	340									
45	70/3	70.3	150/3	(150.4K)	<b>#</b> 6	475									
75	125/3	(125.3)	225/3	(225.4K)	#2	1060									
112.5	175/3	(175.3)	400/3	(400.4K)	<b>#</b> 1/0	1250									
150	225/3	225.3	500/3	(500.4K)	#2/0	2130									
225	350/3	350.3	800/3	(800.4K)	#3/0	2665									
300	450/3	(450.3)	1000/3	(1000.4K)	#3/0	4190									
500	800/3	800.3	1600/3	(1600.4K)	250	3480									
750	1200/3	(1200.3)	2500/3	2500.4K	300	3710									
NOTEC															

<u>NOIES:</u> 1. THIS SCHEDULE APPLIES TO 480V TO 208Y/120V DRY TYPE STEP-DOWN TRANSFORMERS ONLY.

2. ON ONE-LINE DIAGRAMS AND SCHEDULES WHERE FEEDERS AND CIRCUIT BREAKERS ARE SHOWN AS "XFR", PROVIDE RESPECTIVE FEEDERS, GROUND CONDUCTORS AND BREAKERS NOTED ABOVE. PROVIDE SECONDARY BREAKER NOTED ABOVE AS MAIN CIRCUIT BREAKER INTERGRAL IN DISTRIBUTION, PANEL AND SWITCH BOARDS, UON.

3. DELETE "K" SUFFIX IN FEEDER DESIGNATION IF TRANSFORMER IS K-1 RATED. (STANDARD UNLESS "K" RATING IS SHOWN ON ONE-LINE DIAGRAM).

4. GROUND CONDUCTOR SIZES INDICATED ABOVE SUPERSEED GROUND CONDUCTORS SHOWN ON FEEDER SCHEDULE. ROUTE COPPER GROUNDING CONDUCTOR TO GROUNDING ELECTRODE PER NEC. PROVIDE BONDING ALSO PER NEC. COMMON LEAD OF LARGEST REQUIRED SIZE MAY BE EMPLOYED TO SERVE MULTIPLE TRANSFORMERS.

5. NOT ALL TRANSFORMER SIZES INDICATED IN THIS SCHEDULE ARE NECESSARILY USED ON THIS PROJECT.

6. WEIGHTS INDICATED ABOVE ARE APPROXIMATE, ACTUAL VALUES MAY VARY. CONFIRM WITH SUBMITTAL INFO.

VC	DLT	AGE	E DR	OP	TAB	LE
		MAX	XIMUM ALL	OWED RU	N LENGTH	(FT)
VOLT	AMP	#12	#10	#8	#6	#4
	2	500	800	1200	2000	3250
	4	250	400	600	1000	1625
	6	175	250	400	650	1100
120	8	125	200	325	500	800
120	10	100	150	250	400	650
	12	85	125	200	350	550
	14	75	110	175	300	450
	16	60	100	150	250	400
	2	1100	1800	2750	$\overline{//}$	$\overline{}$
	4	550	900	1375	V//	
	6	350	600	950	V/	$\mathbf{V}$
277	8	275	450	700	///	Y/
	10	225	350	550	$\mathbb{Z}$	$\langle / /$
	12	175	300	475	$\Box Z$	V/
	14	150	250	400	$\Box$	$\mathbb{Z}$
	16	140	225	360	$\langle / /$	V / I
NOTES	6: 					

THIS SCHEDULE APPLIES TO ALL BRANCH CIRCUITS. CONTRACTOR SHALL PROVIDE UPSIZED CONDUCTORS AND CONDUIT/ RACEWAYS AS REQUIRED FOR EACH SITUATION.

THIS SCHEDULE IS FOR 3% VOLTAGE DROP USING COPPER CONDUCTORS. ALUMINUM CONDUCTORS ARE NOT ALLOWED TO SERVE BRANCH CIRCUITS.

. USE 12-AMPS FOR ALL CIRCUITS SERVING ONE OR MORE RECEPTACLES, UNLESS HIGHER AMPACITY IS APPROPRIATE OR REQUIRED. USE FULL LOAD AMPS (FLA) OF EQUIPMENT SERVED X 125% FOR ALL OTHER CIRCUITS THAT SERVE A DEDICATED LOAD WITH NO PLANS FOR ADDING FUTURE EQUIPMENT OR A RECEPTACLE TO THAT CIRCUIT.

WHENEVER BRANCH CIRCUIT CONDUCTORS ARE UPSIZED THE ASSOCIATED GROUND CONDUCTOR SHALL ALSO BE UPSIZED, PER NEC 250.122.

NOTES:

1. CONDUCTORS AND CONDUITS SHOWN IN THIS SCHEDULE ARE BASED ON COPPER CONDUCTORS WITH THHN/THWN INSULATION.

THIS SCHEDULE SHALL BE USED ON ALL FEEDERS SERVING LOADS WHERE THE CIRCUIT BREAKER SIZE MATCHES THE AMPACITY OF ITS FEEDER.

. PROVIDE GROUND WIRE NOTED ABOVE IN ALL FEEDERS AND BRANCH CIRCUITS. WHERE MULTIPLE CONDUITS ARE INDICATED PROVIDE NOTED GROUND WIRE IN EACH CONDUIT.

4. NOT ALL FEEDERS ARE NECESSARILY USED ON THIS PROJECT.

. NOMINAL AMPACITIES GREATER THAN 100 AMPS ARE FOR 75 DEG..C TERMINALS.

6. "MET"= EMT, IMC, GRC, RAC, OR PVC COATED GRC TYPE CONDUITS. "RNC"= PVC 40, PVC 80 OR FIBERGLASS TYPE CONDUITS ROUTED UNDERGROUND. REFER TO SIZING ON DRAWINGS IF "RNC" CONDUITS ARE ROUTED ABOVEGROUND. CONDUIT SIZES NOTED ON SINGLE-LINE DIAGRAM OR ON PLANS SUPERSEDE SIZES NOTED ABOVE IF LARGER.

7. OVERSIZED (173% MIN.) NEUTRAL FOR FEEDERS CONNECTED TO A K-4 OR HIGHER RATED TRANSFORMER.

8. GATES SHALL BE BONDED TO THE GATE SUPPORT POST, AND EACH GATE SUPPORT POST SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM. GROUNDING AND BONDING OF FENCES AND OTHER METAL STRUCTURES WITH OVER 1000V EQUIPMENT METALLIC FENCES ENCLOSING, AND OTHER METAL STRUCTURES IN OR SURROUNDING A AREA WITH EXPOSED EQUIPMENT OVER 1000V SHALL BE GROUNDED AND BONDED TO LIMIT STEP, TOUCH, AND TRANSFER VOLTAGES. CEC (250.194

	EFEDER CONDUITS CONDUCTORS DER SET														
FEEDER	C	ONDUI	TS	CONDUCTORS PE	R SET	NOTES									
TAG	MET	SETS	RNC	PHASE/NEUTRAL	GROUND										
M05.85.D1	3"	1	3"	(3) #6 AWG.	#6	5KV TO 480V STEP-DOWN TRANSFORMER, SMALLEST SIZE AVAILABLE									
M05.450.D2	4"	1	4"	(3) #350 KCM	#4/0	5KV, 2.5MVA FEEDER BETWEEN PARALLELING SWGR AND GENERATOR									
M05.470.D1	5"	1	5"	(3) #500 KCM	#4/0	5KV FEEDER BETWEEN 2500/3333KVA MTX AND PARALLELING SWGR									
M05.920.D2	5"	2	5"	(3) #350 KCM	#4/0	5KV, 6MVA FEEDER BETWEEN PARALLELING SWGR AND DIST SWGR									
M15.200.D1	4"	1	4"	(3) #1/0 AWG.	15KV, 3.33MVA PRIMARY FEEDER TO SERVICE TRANSFORMER										
M15.000.D1	0		0	(3) THU KOM ALUMINUM	#4/0										
NOTES:						FEEDER TAG LEGEND									
<ol> <li>CONDUC AS NOTE</li> <li>PROVIDE CONDUI</li> <li>NOT AU</li> </ol>	<ul> <li>1. CONDUCTORS AND CONDUITS SHOWN IN THIS SCHEDULE ARE BASED ON COPPER CONDUCTORS, AS NOTED, WITH 133% EPR INSULATION.</li> <li>2. PROVIDE NOTED SIZE <u>BARE</u> COPPER GROUND CONDUCTOR IN EACH CONDUIT. WHERE MULTIPLE CONDUITS ARE INDICATED PROVIDE NOTED BARE COPPER GROUND WIRE IN EACH CONDUIT.</li> <li>M=MEDIUM VOLTAGE CABLE VOLTAGE RATING: 05= 4160V</li> </ul>														
3. NOT ALL 4. "MET"= C CONDUI PLANS S INFORM	GRC OR P TS ROUTE UPERSED ATION ON	VC COATH D UNDER E SIZES I FITTINGS	EESSARIE ED GRC TY GROUND. NOTED AB AND ELBO	PE CONDUITS. "RNC"= PVC 40, CONDUIT SIZES NOTED ON SIN DVE IF LARGER. REFER TO SPE DWS.	PVC 80 OR FIBERGLA IGLE-LINE DIAGRAM ( CIFICATIONS FOR	ASS TYPE NOMINAL CABLE AMPACITY BASED ON CONFIGURATION NOTED AT 90 DEG. C OR ON CABLE TEMPERATURE RATING (MV-105 TYPE CABLE) ROUTING: D= UNDERGROUND DUCT BANK A= CONDUIT IN AIR									
OVERHE	CASE AMA	E BUILDIN	NDERGRU	UND PORTION) IS SHOWN. SAM		NUMBER OF CIRCUITS IN CONFIGURATION (DERATING)									

![](_page_44_Picture_38.jpeg)

PANEL:       (f) GHA       THIS PANEL SHOWN FOR REFERENCE ONLS         VDTS:       480, 39H, 3W       INTEGRAL TVSS: YES         MOUNTING SURFACE       SID GROUND BUS: NO       CONTON       CONTON         BUS AMPS:       400 A       FEED-THRU LUGS: YES       DUBLE-LUGS: NO       SUPPLY FORM: SWOREN EXCENTER         ACR ATTICS:       SET 4.100       DUBLE-LUGS: NO       SUPPLY FORM: SWOREN EXCENTER       DUBLE-LUGS: NO       SUPPLY FORM: SWOREN EXCENTER         CNT       TATE       DUBLE-LUGS: NO       CPTYPE: FUSE       DUBLE-LUGS: NO       SUPPLY FORM: SWOREN EXCENTER         CNT       TATE       DUBLE-LUGS: NO       CPTYPE: FUSE       SPARE BREAKER       20       3         1       125       3       SUPPLY FORM: SWOREN       SPARE BREAKER       20       3         1       15       3       SUPPLY FORM: SWOREN       SPARE BREAKER       20       3         1       5       SUPPLY FORM: SWOREN       SPARE BREAKER       20       3       6         1       14       SPARE BREAKER       20       3       6       1       1       1         1       15       SUPPLY FORM: SWOREN       SUPPLY SWOREN       SUPPLY SWOREN       1       1       1       1       1       <																					
NUERS: 4607, 979, 979       INTEGRAL TVS: 199       SUBCALURD: 199       SUBCALURD: 199       SUBCALURD: 199       SUBCALURD: 199       SUBLE LUCE: 199		P	ANE	EL:	(F) GHA	T	HIS	PA	NEL	_ SH	<b>IOW</b>	/N F	OR	REF	<b>FERENCE ONI</b>	_Y					
MOUNTING     SURFACE     ISOL GROUND BUS: NO.     CE     CE <t< td=""><td></td><td>v</td><td>OLTS:</td><td>480V, 3PI</td><td>H, 3W</td><td></td><td></td><td>INT</td><td>EGRAL</td><td>. TVSS:</td><td>YES</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		v	OLTS:	480V, 3PI	H, 3W			INT	EGRAL	. TVSS:	YES										
BUS AMPS:         2007         FEED-THRU LUGS: YES         POWER SOURCE: EMERGENCE: SOURCE:		MOUN	NTING:	SURFACI	E			ISOL (	GROUN	D BUS:	OCATION: N	/IV GE									
MAN AMPS         200 FUS         DUBLE-UGS: NO         SUPPLY FRO:         SUPLY FRO:         SUPLY FRO: <th< td=""><td></td><td>BUS</td><td></td><td>400 A</td><td>-</td><td></td><td></td><td>FFF</td><td>-THRII</td><td></td><td>YES</td><td></td><td></td><td colspan="8"></td></th<>		BUS		400 A	-			FFF	-THRII		YES										
NOT PARE       Stor Profer       Double Logs. Not       Both Profer       Both Profer <td></td> <td>SUDD</td> <td></td> <td></td> <td></td> <td>рл.</td>															SUDD				рл.		
Net         Net <td></td> <td></td> <td></td> <td>200 A</td> <td>FUSE</td> <td></td> <td></td> <td>D</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td colspan="8">SUFFLIFROM: SRV GEN AFR A 150KVA</td>				200 A	FUSE			D						SUFFLIFROM: SRV GEN AFR A 150KVA							
KrtArdPOLEUPPEVEPERBBBCTYPEDESCRIPTIONARPPOLECCTYPEDESCRIPTIONARPPOLECCT315SUBFED PAREL (*) GENIZ52.5001010,1500SPARE BRAKER703844444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444			ATING:	SEE 1-LI	NE				OCP	P TYPE:	FUSE		1								
1     1     1     2     3     SUPFED PARE (F) GEMR2     5     2     5     2     7     6     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7     7       1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     <	СКТ	AMP	POLE		DESCRIPTION		TYPE		<b>A</b>	E	3		<u> </u>	TYPE	DESCRIPTION	4	AMP	POLE	СКІ		
3 $\cdot$	1	125	3	SUBFEE	D PANEL (F) GENH2		S	22.55							SPARE BREAKER		20	3	2		
8     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0 <th0< th="">     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0<!--</td--><td>3</td><td>-</td><td>-</td><td></td><td></td><td></td><td>S</td><td></td><td></td><td>17.50</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4</td></th0<>	3	-	-				S			17.50									4		
1     1     3     SUBFED PARE (F) GENH3     S     2.25     Image: Control of the co	5	-	-				S					19.15							6		
a       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·       ·	7	125	3	SUBFEE	D PANEL (F) GENH3		S	22.55							SPARE BREAKER		20	3	8		
11       0       0       0       18.16       18.16       0       0       0       0       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <th< td=""><td>9</td><td>-</td><td>-</td><td></td><td></td><td></td><td>S</td><td></td><td></td><td>17.50</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>-</td><td>10</td></th<>	9	-	-				S			17.50							-	-	10		
	11	-	-				S					19.15					-	-	12		
	13	125	3	SPARE E	BREAKER										BUSED SPACE			1	14		
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	15	-	-												BUSED SPACE			1	16		
$ \begin{array}{ c c c c c c } \hline  c c c c c c c c c c c c c c c c c c $	1/	-	-															1	18		
$ \begin{array}{ c c c c c c } \hline  c c c c c c c c c c c c c c c c c c $	19																	1	20		
$ \begin{array}{ c c c c c c } \hline 1 & BUSED SPACE &   &   &   &   &   &   &   &   &   & $	21								BUSED SPACE							1	22				
$ \begin{array}{ c c c c c c } \hline 1 & BUSED SPACE &                                     $	23		4															1	24		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	25		1															1	20		
$ \begin{array}{ c c c c c c c c } \hline 1 & $	21		1															1	20		
$ \begin{array}{ c c c c c c } \hline \begin the conditional condition$	29		1															1	30		
33       1       B0SED SFACE       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       <	22		1	BUSEDS														1	34		
1         DOCLOR NAL	35		1	BUSEDS														1	36		
Image: book of the construction of the con	37		1	BUSEDS											BUSED SPACE			. 1	38		
A1       BUSED SPACE       A       A       BUSED SPACE       A       A         41       1       BUSED SPACE       45.1 KVA       35.0 KVA       38.3 KVA       BUSED SPACE       1       42         SPECIAL PANEL FEATURES       45.1 KVA       35.0 KVA       38.3 KVA       BUSED SPACE       1       42         HINGED DOR-IN-DOOR COVER       38.3 KVA       38.3 KVA       38.3 KVA       6       6       1       42         BUSSIMANN FUSED PANELBOARD       38.3 KVA       38.3 KVA       38.3 KVA       6       6       1       42         BUSSIMATION COVER       38.3 KVA       38.3 KVA       38.3 KVA       5       6       6       6       6       6       6       6       6       6       6       6       8       6       1       6       1       44       44         M       0.6       125%       0.8       L       L       COMERCIAL-220.42       KVA       AMPS       1       44       44       44       44       44       44       44       44       44       44       44       44       44       44       44       44       44       44       44       44       44       44	39		1	BUSED S	SPACE										BUSED SPACE			1	40		
SPECIAL PANEL FEATURES       45.1 KVA       38.3 KVA       38.3 KVA       GIRCUITING NOTES         HINGED DOOR-IN-DOOR COVER       163 A       126 A       138 A         BUSSMANN FUSED PANELBOARD       38%       30%       32%         SELECTIVE COORDINATION REQUIRED         LOAD TYPE KEY       CONNECTED       KVA       AMPS         R       100%       CERCEPTACLE, NEC 220.44       KVA       AMPS         LOAD TYPE KEY       PANEL TOTAL       KVA       AMPS         LOAD TYPE KEY       PANEL TOTAL       KVA       AMPS         LOAD TYPE KEY       PANEL TOTAL       KVA       AMPS         LOAD TYPE KEY       PANEL TOTAL CONNECTED LOAD:       KVA       AMPS         LOAD TYPE KEY       CONTAL CONNECTED LOAD:       KVA       AMPS         LOAD TYPE KEY       CONTAL CONNECTED LOAD:       118.4       1420	41		1	BUSED S	6PACE										BUSED SPACE			1	42		
HINGED DOOR-IN-DOOR COVER BUSSMAIN FUSED PANELBOARD SELECTIVE COORDINATION REQUIRED163 A126 A138 A38%30%32%LOAD TYPE COAD TYPEDEMAND FACTORDEMAND/ADJUSTED $38%$ 30%32%LOAD TYPE 	SPE		PANEL	EATURE	S			45.1	KVA	35.0	KVA	38.3	KVA	CIRCU	IITING NOTES						
BUSSMANN FUSED PANELBOARD       38%       32%         SBUSSMANN FUSED PANELBOARD         BUSSMANN FUSED PANELBOARD         LOAD TYPE KEY         DEMAND FACTOR       DEMAND ADJUSTED       CONDETED         LOAD TYPE KEY       CONNECTED       MAND/ADJUSTED         CONNECTED       DEMAND FACTOR       DEMAND/ADJUSTED       CONDET TYPE KEY         CONNECTED       DEMAND FACTOR       DEMAND/ADJUSTED       CONDET TYPE KEY         CONNECTED       DEMAND FACTOR       DEMAND/ADJUSTED       KVA       AMPS         A       100%       CONMERCIAL-22.042       TOTAL CONNECTED LOAD:       118.4       1420         Motor       STOTAL DEMAND LOAD:       118.4       1420         Motor       STOTAL CONNECTED LOAD:       118.4       1420         A       100%       STOTAL CONNECTED LOAD:       138.1       166 <th col<="" td=""><td>HI</td><td></td><td>DOOR-I</td><td>N-DOOR C</td><td>OVER</td><td></td><td></td><td>16</td><td>3 A</td><td>12</td><td>6 A</td><td>138</td><td>8 A</td><td></td><td></td><td></td><td></td><td></td><td></td></th>	<td>HI</td> <td></td> <td>DOOR-I</td> <td>N-DOOR C</td> <td>OVER</td> <td></td> <td></td> <td>16</td> <td>3 A</td> <td>12</td> <td>6 A</td> <td>138</td> <td>8 A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	HI		DOOR-I	N-DOOR C	OVER			16	3 A	12	6 A	138	8 A							
SELECTIVORDINATION REQUIRED         LOAD TYPE       CONNECTED       DEMAND FACTOR       DEMAND/ ADJUSTED       LOAD TYPE KEY       PANEL TOTAL         R       100%       R = RECEPTACLE, NEC 220.44       KVA       AMPS         L       0.6       125%       0.8       L = LTG-COMMERCIAL-220.42       TOTAL CONNECTED LOAD:       118.4       142         M       9.8       100%       9.8       M = MOTOR       TOTAL DEMAND LOAD:       138.1       166         Motor       3.3       25%       0.8       LARGEST MOTOR       REQUIRED PANEL CAPACITY:       2%       2%         N       33.0       100%       33.0       N = NON-CONTINUOUS       REQUIRED PANEL CAPACITY:       140.9       170         C       75.0       125%       93.8       C = CONTINUOUS	BL	ISSMAI	NN FUS	ED PANE	LBOARD			38	3%	30	)%	32	2%								
LOAD TYPECONNECTEDDEMAND FACTORDEMAND/ ADJUSTEDLOAD TYPE KEYPANEL TOTALR100%R = RECEPTACLE, NEC 220.44KVAAMPSL0.6125%0.8L = LTG-COMMERCIAL-220.42TOTAL CONNECTED LOAD:118.4142M9.8100%9.8M = MOTORTOTAL DEMAND LOAD:138.1166Motor3.325%0.8LARGEST MOTORSPARE CAPACITY:2%2%N33.0100%33.0N = NON-CONTINUOUSREQUIRED PANEL CAPACITY:140.9170C75.0125%93.8C = CONTINUOUS </td <td>SE</td> <td></td> <td>VE COC</td> <td>RDINATIO</td> <td>ON REQUIRED</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td>	SE		VE COC	RDINATIO	ON REQUIRED									1							
R         100%         R = RECEPTACLE, NEC 220.44         KVA         AMPS           L         0.6         125%         0.8         L = LTG-COMMERCIAL-220.42         TOTAL CONNECTED LOAD:         118.4         142           M         9.8         100%         9.8         M = MOTOR         TOTAL DEMAND LOAD:         138.1         166           Motor         3.3         25%         0.8         LARGEST MOTOR         SPARE CAPACITY:         2%         2%           N         33.0         100%         33.0         N = NON-CONTINUOUS         REQUIRED PANEL CAPACITY:         140.9         170           C         75.0         125%         93.8         C = CONTINUOUS	LOAI	D TYPE	CON	NECTED	DEMAND FACTOR	DEMAND/ ADJ	USTED			LOAD T	YPE KEY				PANEL TOTAL	S					
L         0.6         125%         0.8         L = LTG-COMMERCIAL-220.42         TOTAL CONNECTED LOAD:         118.4         142           M         9.8         100%         9.8         M = MOTOR         TOTAL DEMAND LOAD:         138.1         166           Motor         3.3         25%         0.8         LARGEST MOTOR         SPARE CAPACITY:         2%         2%           N         33.0         100%         33.0         N = NON-CONTINUOUS         REQUIRED PANEL CAPACITY:         140.9         170           C         75.0         125%         93.8         C = CONTINUOUS		R 100%							R = RE	CEPTAC	LE, NEC	220.44				KVA		AMPS			
M         9.8         100%         9.8         M = MOTOR         TOTAL DEMAND LOAD:         138.1         166           Motor         3.3         25%         0.8         LARGEST MOTOR         SPARE CAPACITY:         2%         2%         2%         2%         100%         33.0         N = NON-CONTINUOUS         REQUIRED PANEL CAPACITY:         140.9         170           C         75.0         125%         93.8         C = CONTINUOUS         C         C         C         C         C         C = CONTINUOUS         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C         C		L 0.6 125% 0.8						L = LTG-COMMERCIAL-220.42							TOTAL CONNECTED LOAD:	118.4		142			
Motor         3.3         25%         0.8         LARGEST MOTOR         SPARE CAPACITY:         2%         2%           N         33.0         100%         33.0         N = NON-CONTINUOUS         REQUIRED PANEL CAPACITY:         140.9         170           C         75.0         125%         93.8         C = CONTINUOUS		М		9.8	100%		M = MOTOR							TOTAL DEMAND LOAD:	138.1		166				
N         33.0         100%         33.0         N = NON-CONTINUOUS         REQUIRED PANEL CAPACITY:         140.9         170           C         75.0         125%         93.8         C = CONTINUOUS              170	M	otor		3.3	25%	0.8		LARGEST MOTOR							SPARE CAPACITY: 2%						
C         75.0         125%         93.8         C = CONTINUOUS	N 33.0 100% 33.0							N = NON-CONTINUOUS						REQUIRED PANEL CAPACITY: 140.9 170							
		С		75.0	125%	93.8				C = CON	TINUOUS	6									

_																							
	P	ANE	EL:	GENL1	รเ	SUPPLIED WITH GENERATOR													PANEL:				
	V	/OLTS:	120/240V	, 1PH, 3W			INT	EGRAL	TVSS:	YES									v	OLTS:	480V, 3		
	MOUI	NTING:	SURFACI	E		ISOL GROUND BUS: NO LOCATION: INSIDE EGEN1													MOUN	ITING:	SURF/		
	BUS	AMPS:	100 A				FEED	)-THRU	LUGS:	NO		POWER	SOURCE:	EMEF	RGENC	r			BUS	AMPS:	225		
	ΜΔΙΝ		80 A	MCB			D		-I UGS <sup>-</sup>	NO		SUPP	LY FROM:	GENH	11				ΜΔΙΝ		125		
																					9EE 4		
<u>оит</u>					TYPE						DECODIDITION				OKT								
CKI		POLE	E DESCRIPTION			TYPE		4		в т	TYPE				POLE	CKI		KI	AMP	POLE			
1	15	2		CH - AIR COMPRESS	DR	M	0.55	1.50			N	GENSET BATTERY CHARGER	R #1A	20	2	2		1	20	3	GENE		
3	-	-	~0.5			M	0.55	4.50	0.55	1.50	N			-	-	4		3	-	-			
5	15	2	MIRATECH - REACTANT PUMP			M	0.55	1.50		1.50	N	GENSET BATTERY CHARGER	(#1B	20	2	6		5	-	-			
<u> </u>	-					M	0.55	0.00	0.55	1.50	N			-	-	8		7	20	3	GENE		
9	15	2	WIRATECH - SCR CONTROLLER				0.55	0.30	0.55	0.20		GENSET ANTI-CONDESATION	THEATER	15	1	10		9	-	-	<u> </u>		
11	-	-						0.00	0.55	0.30				15	1	12		11	-	-			
15	15	2	" "					0.90						20	1	14		13	20	3	GENE		
15	15	-	MIRATECH REACTANT LEVEL CNTRLLR				0.10	0.70			R M		-0 54n PS-18	20	1	10		15	-	-			
10	15	1	MIRATECH REACTANT LEVEL CNTRLLR			N	0.10	0.70	0.10		141		0.01101 0-10	20	1	20		10	- 20	- 2	SDAE		
21	15	1							0.10						1	20		21	20		- 3FAR		
21	15	1													1	24		21		-			
25	20	1	SPARE E	REAKER								BUSED SPACE			1	26		25	20	3	SPAF		
27	20	1	SPARE E	BREAKER								BUSED SPACE			1	28		27		-			
29	20	1	SPARE E	BREAKER								BUSED SPACE			1	30		29	_	_			
SPE	ECIAL F	PANEL	FEATURE	S			6.7	KVA	5.1	KVA	CIRCU							SPF			FFATU		
н							55	Δ	42	Σ								нім					
F۵					MENT		57	7%	43	3%	1							FΔ					
IN.	TEGRA	1 W/ 1F				CENTE	R	70	<del>``</del>	570	J						ŀ.						
LOA				DEMAND FACTOR	DEMAND/ AD.	JUSTED			YPE KEY			PANEL TOTAL	S				⊢ ⊢		, IFE	CON			
20/1	R			100%			R = RE		LE. NEC	220.44			κνα		AMPS			г 	`		03		
	1		0.3	125%	0.4			G-COMM	IFRCIAL -	220 42		TOTAL CONNECTED LOAD	11 7		49		-	L	- Л		49		
	 M		4.9	100%	4.9			M = M	OTOR			TOTAL DEMAND LOAD:	12.2		51		$\vdash$		tor		1.7		
м	otor		1.7	25%	0.4			LARGES	Т МОТОР	२		SPARE CAPACITY: 5% 5%				$\vdash$		 N		 16.5			
	N		6.5	100%	6.5		N = NON-CONTINUOUS RE(				REQUIRED PANEL CAPACITY:	12.8		53				-		37.5			
	C 125%							C = CON	TINUOUS	6				<u> </u>			L						
											L												

PANEL:										
<b>VOLTS: 480V</b> ,										
MOUNTING: SURF										
BUS AMPS: 400										
OVT										
CKI		POLE								
1	70	3	SUBF							
3	-	-	" V							
5	-	-								
7	125	3	SUBF							
9	-	-								
11	-	•								
13	20	3	STAT							
15	-	-								
17	-	-								
19	20	3	STAT							
21	-	-								
23	-	-								
25		1	BUS							
27		1	BUSE							
29		1	BUSE							
31		1	BUSE							
33		1	BUSE							
35		1	BUSE							
37		1	BUSE							
39		1	BUSE							
41		1	BUSE							
SPE	CIAL F	PANEL	FEATU							
HIN		DOOR-I	N-DOO							
BU	SSMA	NN FUS	ED PA							
SELECTIVE COORDINA										
LOAD TYPE CONNECTED										
	R	0.8								
	L	1.2								
	м	7.4								
Мо	otor	1.7								
	N	64.0								
	С	67.4								

PANEL:											
	VOLTS: 120Y/208										
MOUNTING: SURFAC											
BUS AMPS: 225											
	MAIN		150 A								
СКТ	AMP	POLE									
1	20	1	GEN MA								
3	20	1	GEN YA								
5	20	1	GEN BU								
7	20	1	STATIO								
9	20	1	MVGPS								
11	20	1	MVDS S								
13	20	1	SPARE								
15	20	1	SPARE								
17	20	1	SPARE								
19	20	1	SPARE								
21	20	1	SPARE								
23		1	BUSED								
25		1	BUSED								
27		1	BUSED								
29		1	BUSED								
31		1	BUSED								
33		1	BUSED								
35		1	BUSED								
37		1	BUSED								
39		1	BUSED								
41		1	BUSED								
SPE		ANEL	FEATURE								
ни	NGED I	DOOR-I	N-DOOR								
BU	ISSMA										
SF		VE COC									
LOAD											
	R	0.8									
	L	0.9									
	М	1.2									
М	otor	1.2									
	N	2.5									
	с										

	GHB														
■ V, 3PF	4, 3W			INT	EGRAL	TVSS:	YES								
RFACE	E			ISOL	GROUN	D BUS:	NO				L	OCATION:	MV G	EN ELE	EC RM
400 A 350 A	FUSE			FEEI	D-THRU OUBLE	LUGS:	YES NO				POWER SUPP	SOURCE: LY FROM:	EMER 5KV (	≀GENC` 3EN XF	Y RB-
E 1-LIN	IE			U	OCF	P TYPE:	FUSE						225 K	<b>VA</b>	
	DESCRIPTION		TYPE		A		B	(	C	TYPE	DESCRIPTION		AMP	POLE	СКТ
VIA 4	5 KVA XFR "		S S	2.22	9.97	0.90	9.97			C C	" " ~7.5Hp COMPRESSOR	P-1	45 -	-	4
" "	PANEL GENHI		S	22 55				2.30	9.97	С	" " 15KW HEATER & FAN		- 20	-	6
" "	J FANEL GENHT		S S	22.55		17.50					" "		-	-	0 10
" " TATION		RΔ	S N	3 33	0.43			19.15		M			- 20	-	12 14
' ""			N	3.33	0.43	3.33	0.43			M	1 " "~0.75Hp		- 20	-	16
' "" TATION		RB	N	3 33	8 33			3.33	0.43	M	" " EMERG SHOWER WATER HEA		- 30	-	18 20
	""		N	3.33	0.00	3.33	8.33			N	" "		-	-	20
	"" "PACE		N					3.33	8.33	N	N " "		-	-	24
USED S	PACE										BUSED SPACE			1	28
											BUSED SPACE			1	30 32
USED S	PACE										BUSED SPACE			1	34
USED S											BUSED SPACE BUSED SPACE			1	36 38
USED S	PACE										BUSED SPACE			1	40
	PACE S			50.2	KVA	43.8	KVA	46.9	KVA		BUSED SPACE			1	42
OOR C	OVER			18	1 A	15	8 A	16	9 A						
ΡΑΝΕΙ ΙΝΑΤΙΟ				3	6%	3	1%	33	3%						
TED	DEMAND FACTOR	DEMAND/ AD	JUSTED			LOAD T	YPE KEY				PANEL TOTAL	S			
	100%	0.8			R = RE		CLE, NEC	220.44				KVA		AMPS	
	123%	7.4				M = M		-220.42			TOTAL CONNECTED LOAD: TOTAL DEMAND LOAD:	158.4		191	
	25% 100%	0.4			N			S NIC			SPARE CAPACITY:	10%		10%	
	100%	84.0 84.3				C = CON	TINUOUS	3 3			REQUIRED PANEL CAPACITY:	174.2	<u> </u>		
	<u> </u>														
	GLB														
Y/208V	, 3PH, 4W				EGRAL	TVSS:	YES								
225 A				FEED	-THRU	LUGS:	NU YES				POWER	SOURCE:	MV GE EMER	:N ELE	
50 A I	FUSE			DC	DUBLE-	LUGS:	NO				SUPPL	Y FROM:			
1-LIN	E				OCP	TYPE:	FUSE								
-Ν ΜΔΙΝ			TYPE	A 0 40	1 20	B	;		;	TYPE	DESCRIPTION		AMP 20	POLE	2 CKT
	D EXTERIOR LTG VIA	A PHOTOCELL	L	0.40	1.20	0.50	0.10			N	DIESEL FUEL FILL STATION FS	6-1	20	1	4
EN BUIL	DING RECEPTACLES	S	R	0.02	0.60			0.80	1.20	M	DIESEL TANK FUEL POLISHER	~0.5Hp FP-1	20	1	6 8
/GPS SV		VER	N	0.02	0.00	0.30				14	SPARE BREAKER		20	1	10
DS SW	GR CONTROL POWE	ER	N					0.30			SPARE BREAKER		20	1	12 14
PARE B	REAKER										SPARE BREAKER		20	1	14
											SPARE BREAKER		20	1	18
PARE BE	REAKER										SPARE BREAKER		20	1	20
JSED SF	PACE										SPARE BREAKER		20	1	24
JSED SF	PACE									BUSED SPACE BUSED SPACE			1	28	
JSED SF	PACE										BUSED SPACE			1	30
ISED SF	PACE										BUSED SPACE			1	32 34
JSED SF											BUSED SPACE			1	36
JSED SF	PACE										BUSED SPACE			1	40
	PACE			221		<u>ок</u>	VA	234		CIPCU				1	42
	OVER		-	<u> </u>	A	.9 K	A	<u>2.5 r</u> 19	A	CINCO					
	BOARD		]	41	%	17	%	429	%						
	N REQUIRED	DEMAND/ ADJ	USTED			LOAD TY	PE KEY				PANEL TOTALS	3			
	100%	0.8			R = RE	CEPTAC	LE, NEC 2	220.44				KVA		AMPS	
	125% 100%	1.1			L = LT(	G-COMMI M = M(	ERCIAL-2 DTOR	220.42			TOTAL CONNECTED LOAD: TOTAL DEMAND LOAD:	5.4 5.9		 	
	25%	0.3			L	ARGEST	MOTOR				SPARE CAPACITY:	20%		20%	
	100% 125%	2.5			N =	$\frac{1}{10000000000000000000000000000000000$	NTINUOL INUOUS	JS			REQUIRED PANEL CAPACITY:	7.1		20	
			•						•						
	GENH1				SUF	PLIE	ED W	/ITH	GEN	ERA	TOR				
0V, 3PH	H, 3W			INT	FEGRAL	_ TVSS:	YES								
RFACE	E				GROUN	D BUS:						OCATION:			N1 V
125 A	MLO			D	OUBLE	LUGS.	NO		SUPPLY FROM:				· I		
E 1-LIN	NE			•	OCF	P TYPE:	80% B	REAKE	R	-					
			TYPE	4.47	A		B			TYPE		401/11/		POLE	СКТ
ENERA	TOR DPF HEATER #	·1	C C	4.17	5.00	4.17	5.00			N N	GENERATOR BLOCK HEATER	K - 10KW	- 30	-	4
		4	C	4 4 7				4.17		N	SPARE BREAKER		30	2	6
	TOR DFF HEATER #	1	C C	4.17		4.17				N	SPARE BREAKER		20	2	10
		4	C C	4 17				4.17		N			- 20	-	12
· "	TOR DFF HEATER #	· I	C C	4.17		4.17				N	" "		-	-	14
			С		5.05			4.17	6.65	.65     S     SUBFEED PANEL GENL1     40       S     "     VIA 15 KVA XFR<"		2	18		
·										S         " VIA 15 KVA XFR "         -			22		
	REAKER														24 26
' "															28
,	S			22 6	KVA	17 5	KVV	10.2	ΚVΔ	CIPCI	UITING NOTES				30
OOR C	OVER			8	1 A	63	BA	69	<u>A</u>						
	IEL INSIDE EQUE		11107	3	8%	3		32	2%		BAUEL	<u> </u>			
I EU	DEMAND FACTOR	DEMAND/ AD	ωυδΓΕΪΟ		R = RI		TPE KEY	220.44			PANEL TOTAL	.ə KVA		AMPS	
	125%	0.4			L = L1	TG-COMN		-220.42			TOTAL CONNECTED LOAD:	59.2		71	
	25%	4.9				IVI = N		۲			SPARE CAPACITY:	09.1 20%		<del>مع</del> 20%	
	100%	16.5			N	= NON-C		DUS			REQUIRED PANEL CAPACITY:	82.9		100	
	125%	46.9		1		ບ = CON		נ		1					

![](_page_45_Picture_6.jpeg)

![](_page_46_Figure_0.jpeg)

![](_page_46_Picture_3.jpeg)

Calculation Summary							
Scene: GENERAL							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/M
EXTERIOR	Illuminance	Fc	5.17	26.0	0.4	12.93	65.00
GEN SET YARD	Illuminance	Fc	23.76	42.6	8.5	2.80	5.01
SWITCHGEAR ROOM_Floor	Illuminance	Fc	29.42	36	19	1.55	1.89
	•	•					

![](_page_47_Figure_1.jpeg)

![](_page_47_Figure_2.jpeg)

Max/Min 65.00 5.01 1.89

				<b>†</b> 18	1 <sup>+</sup> 21	5 <sup>+</sup> 22	م ۲ - ۲	37 5	15 17	7 /			
				<sup>†</sup> 21.	.2 <sup>+</sup> 23	.3 <sup>1</sup> 24 MH: 10	3 1 2	5.9	3.3 <sup>1</sup> 18	3.6			
21	*20	<sup>†</sup> 20	20	<b>†</b> 21	<b>†</b> 21	<b>[</b> 20	± 20	<sup>†</sup> 20	<sup>†</sup> 20	†1 <b>87</b>	11.6	<b>1</b> 2.1	<sup>+</sup> 15.1
26	*25	* 24	±25			* <u>2</u> 5	* 24	<b>*</b> 24	<sup>+</sup> 25_	<b>₫</b> <sup>†</sup> 24	17.3	<b>1</b> 6.4	<b>†</b> 14.7
29	28	<b>*</b> 28	29	<sup>+</sup> 30	<b>*</b> 30	<sup>+</sup> 28	* 27	* 28		[ 127	+ <sub>23.7</sub>	<sup>+</sup> 21.5	<b>†</b> 17.4
32	<b>•</b> 31	<b>*</b> 30	<b>*</b> 31	 33	<b>*</b> 33	<b>*</b> 31	<b>*</b> 30	<b>*</b> 30	<b>⊔</b> 31	<b>*</b> 30	<sup>1</sup> 25.9 MH: 10	23.3'	18.6
34	<b>*</b> 33	<b>*</b> 32	+ 33	<sup>†</sup> 34 <b>□</b>	<b>*</b> 34	<b>*</b> 33	<b>*</b> 31	<b>*</b> 32	<sup>†</sup> 33⊓	<b>*</b> 31	<b>HS</b> 22.5	<b>*</b> 20.9	<b>1</b> 8.2
35	<b>*</b> 34	<b>*</b> 33	* 34	<sup>+</sup> 35	<b>*</b> 35	<b>*</b> 33	<sup>+</sup> 32	<b>*</b> 32	+ 34	<b>*</b> 32	17.5	<b>1</b> 6.9	<b>†</b> 18.6
35	<b>*</b> 34	<b>*</b> 33	+ 34	<b>⊔</b> 36	<b>*</b> 36	+ 34	<b>*</b> 33	<b>*</b> 33	- 34	<b>†</b> 32	14.0	<b>1</b> 5.4	<b>†</b> 15.7
35	<b>*</b> 34	<b>*</b> 33	+ 34	⁺36	<b>*</b> 36	+ 34	+ 33	<b>*</b> 33	+34	<sup>+</sup> 32	12.9	13.9	<b>1</b> 2.9
.35	<b>*</b> 34	<b>*</b> 33	+ 34		<b>*</b> 36	+ 34	<b>*</b> 33	<b>*</b> 33	+ 34	<b>*</b> 33	15.3	<b>†</b> 16.1	<b>†</b> 18.9
.35	<b>*</b> 34	<b>*</b> 33	+ 34	*35	* 35	+ 33	*32	*32	+ 34	*32	MH: 1 20.4	0' <sub>+</sub> 19.0	<b>†</b> 17.3
34	+32	+32	+33	+ <sub>34</sub>	+ 34	+32	*31	*31		*31	24.8	<b>*</b> 22.9	<b>1</b> 8.8
30	52 +31	52 *30	+31	ں_ *ع	+ <sub>33</sub>	+31	*30	+30		*20	<sup>+</sup> 25.3	<sup>+</sup> 22.9	<b>†</b> 17.8
	÷	50 *50	+20	•20 <b>—</b>	*20	5 <u>.</u>		<u>50</u>		23 *27	<sup>‡</sup> 20.1	<b>†</b> 19.0	<b>1</b> 6.2
29	20 *c	20 +04	20 +		50 too	20 +or	21 to	21 to 1	29 +or	21 +00	14.0	13.7	<b>†</b> 14.0
26		24		<sup>26</sup> ∐	26 +	25 +	24 +	24 *	<sup>25</sup>	23	10.1	<b>†</b> 11.8	<b>†</b> 13.4
20	20	20	20	21	21	20	20	20	20	19	5.8	<b>†</b> .9	<b>†</b> .0

![](_page_47_Figure_6.jpeg)

![](_page_47_Figure_7.jpeg)

# SHEET NOTES

- A. ALL DEVICES, RACEWAYS AND WIRING INSTALLED IN EXPOSED LOCATIONS ARE TO BE NEMA 3R WEATHERPROOF. PAINT TO MATCH ADJACENT.
- B. ALL CONDUIT TO BE SURFACE MOUNTED TO INTERIOR FACE OF CMU. C. TYP. STRUT TRAPEZE HUNG FROM ROOF BEAMS FOR SUPPORT OF ANY CONDUITS REQUIRED.
- D. A PERMANENT SINGLE LINE DIAGRAM OF THE SWITCHGEAR SHALL BE PROVIDED IN A READILY VISIBLE LOCATION WITHIN THE SAME ROOM OR ENCLOSED AREA WITH THE SWITCHGEAR. THIS DIAGRAM SHALL CLEARLY IDENTIFY INTERLOCKS, ISOLATION MEANS, AND ALL POSSIBLE SOURCES OF VOLTAGE TO THE INSTALLATION UNDER NORMAL OR EMERGENCY CONDITIONS. THE MARKING ON THE SWITCHGEAR SHALL CROSS REFERENCE THE DIAGRAM. CEC (490.48(B
- E. ALL 120V OR 208V POWER & LIGHTING CIRCUITS SHALL BE ROUTED TO PANEL GLB, UON. ONLY THE CIRCUIT NUMBER IS SHOWN ON THE FLOOR PLANS.
- F. CONFIRM ALL UNDERGROUND STUB-UP LOCATIONS WITH ACTUAL EQUIPMENT SUBMITTALS AND MANUFACTURER'S FIELD-INTERCONNECTION WIRING DIAGRAMS.
- G. REFER TO ENLARGED PLAN FOR SITE AND MV UNDERGROUND CONDUITS

# **KEYED NOTES**

- 1. CONTRACTOR SHOULD VERIFY THE ENTRY POINT FOR PENETRATION CONDUITS.
- 2. SEE DETAIL 2/EE9.1 FOR ADDITION EMERGENCY GENERATOR WIRING. 3. STUB-UP AND CAP CONDUITS ABOVE SLAB, PROVIDE MEASURED PULL ROPE FOR (F) GENERATORS IN SAME SPOT AND GROUPING AS INITIAL GENERATOR. CONFIRM LOCATION OF STUB-UP WINDOW WITH ACTUAL
- GENERATOR SUBMITTAL. 4. FOR CONDUIT SIZES REFER TO SHEET EE5.1. CONTRACTOR SHOULD VERIFY THE EXACT STUB-UP LOCATION OF CONNECTION POINT WITH
- ACTUAL SUBMITTAL SHOP DRAWINGS. 5. RETURN FUEL PUMP. PROVIDED WITH GENERATOR. START/ STOP WIRING
- IS FACTORY WIRED TO SKID TANK FUEL LEVEL CONTACTS.
- 6. ALL MOUNTING HEIGHTS TO BE COORDINATED WITH ARCHITECTURAL. EXTERIOR FIXTURES A2 TO BE SET ON BAND OF SMOOTH FACE CMU. SEE ARCHITECTURAL DRAWINGS.
- 7. CONNECT COPPER GROUNDING CONDUCTOR VIA APPROPRIATE CONNECTION TO EQUIPMENT. USE 2-HOLE COMPRESSION LUGS.
- 8. EMPTY CONDUIT FOR FUTURE 150.3 FEEDER
- 9. PROVIDE 1" CONDUIT FOR SUPERVISORY FIRE ALARM OF GENERATOR. DETECTOR SHALL BE COMBINATION SMOKE AND HEAT DETECTOR. PROVIDE ISOLATION MODULE FOR DATALOOP TO GENERATORS.
- 10. SEE DETAIL 3/EE9.1 AND SHEET EE6.1 FOR ADDITIONAL GENERATOR/ DIST SYSTEM WIRING.
- 11. LOW VOLTAGE CONDUIT STUB-UP WINDOW THRU GENERATOR BASE. COORDINATE ACTUAL STUB-UP LOCATION WITH GENERATOR SHOP DRAWINGS. USE SAME RELATIVE LOCATION FOR IDENTICAL STUB-UPS FOR FUTURE GENERATORS #2 & #3.
- 12. MOUNT DUPLEX +12" ABOVE TOP OF CHARGER FOR POWER TO THERMAL RUNAWAY DEVICE FOR EACH STATION BATTERY. PROVIDE .5" C. WITH (2) #12,(1)#12G FROM EACH TR DEVICE TO RESPECTIVE SHUNT-TRIP ON 125VDC CHARGER OUTPUT BREAKER
- 13. CONNECT BATTERY PACK TO UNSWITCHED HOT LEAD TO MONITOR LOSS OF 120V PANEL.
- 14. STUB OUT EMPTY CONDUITS FROM (F) GENERATORS 2 AND 3 PAST CURB FOR FUTURE EXTENSION FOR FUTURE FUEL TANKS.
- 15. PROVIDE 1-1/2" SPARE CONDUIT FOR PROVISIONS FOR RECEPTACLES,
- FUEL POLISHER AND HIGH LEVEL ALARM PANEL FOR (F) GENERATOR. 16. DO NOT RUN CONDUITS ON ROOF. PROVIDE ARCHITECT APPROVED WATERPROOF PENETRATION IF CONDUITS CAN'T BE ROUTED THRU CURB. COORDINATE WITH ROOFING CONTRACTOR.
- 17. LOCATE ROOF RECEPTACLE WITHIN 25' OF BOTH MECHANICAL EQUIPMENT. PROVIDE ARCHITECT APPROVED WATERPROOF PENETRATION IF CONDUITS CAN'T BE ROUTED THRU CURB. COORDINATE WITH ROOFING CONTRACTOR.
- 18. STUB OUT EMPTY FIRE ALARM CONDUITS FOR (F) GENERATORS 2 AND 3.
- 19. DUPLEX FUEL PUMP SHALL BE CONNECTED TO (2) INDEPENDENT CIRCUITS. MAINTAIN TWO SEPARATE CONDUITS.
- 20. REMOTE FILL ENCLOSURE SHALL BE EXTENDED THRU FENCE AND BE FULLY ACCESSIBLE. PROVIDE BARE #6 CU BONDING CONDUCTOR FROM ENCLOSURE TO FENCE.
- 21. EQUIPMENT TO BE FACTORY MOUNTED ON FUEL TANK.

![](_page_47_Picture_40.jpeg)

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![](_page_48_Figure_0.jpeg)

![](_page_48_Figure_2.jpeg)

A. GENERATORS 2 & 3 ARE FUTURE. HOWEVER, PROVIDE ALL UNDERGROUND CONDUITS IDENTICAL TO INITIAL GENERATOR #1. PROVIDE NYLON PULL ROPE IN ALL EMPTY CONDUITS AND PVC CAP ON EXTERIOR CONDUIT STUB-UPS. USE BELL ENDS ON STUB-UPS.

B. BID PRICE SHALL BE PERFORMANCE BASED AND SHALL INCLUDE ALL INTERCONNECTION WIRING AND CONDUITS REQUIRED, WHETHER SHOWN HEREIN OR NOT. THIS DIAGRAM AND THE OTHER SITE AND FLOOR CONDUIT PLANS ARE GENERIC AND IS NOT INTENDED TO FULLY DESCRIBE THE COMPLETE REQUIRED GENERATOR SYSTEM INTERCONNECTION. THE INTENT IS TO INFORM THE CONTRACTOR THAT THE GENERATOR SYSTEM WILL REQUIRE MULTIPLE CONDUITS WITH MULTIPLE CONDUCTORS PER CONDUIT. INTENT IS TO HAVE CONTRACTOR PROVIDE ALL REQUIRED INTERCONNECTIONS, PER THE PDCS & MV SWITCHGEAR INTERCONNECTION SHOP DRAWINGS THAT WILL BE PROVIDED LATER BY THE VENDOR AND AFTER APPROVAL BY ENGINEER. ANY DISCREPANCIES BETWEEN THIS DIAGRAM AND THE FLOOR PLANS SHALL NOT BE ALLOWED AS A CHANGE ORDER. IF LESS CONDUITS ARE ACTUALLY REQUIRED, THEN THEY SHALL STILL BE INSTALLED AS SPARES.

C. DO NOT COMBINE WIRING FROM DIFFERENT GENERATORS TOGETHER AND DO NOT RUN LOW-VOLTAGE (< 50V) AND LOW-CURRENT (< 5A) IN SAME CONDUIT WITH HIGHER VOLTAGE OR HIGHER CURRENT. PROVIDE SEPARATE CONDUITS.

D. ALL WIRING SHALL BE IN CONDUIT: PVC WHEN UNDERGROUND, RED CONCRETE CAP WHERE NO FLOOR SLAB IS ABOVE IT; AND EMT FOR OVERHEAD. ASSUME MINIMUM SIZE OF 1" EMT CONDUIT OVERHEAD AND 1" AND 2" PVC UNDERGROUND FOR CONTROLS AND LV CONTROL POWER, HOWEVER, LARGER SIZES MAY BE REQUIRED AND SHALL BE INCLUDED IN BID. REFER TO FEEDER SCHEDULES FOR POWER FEEDER CONDUIT SIZES.

E. PROVIDE SHIELDED TWISTED PAIR CABLES OR AS REQUIRED BY MANUFACTURER'S INSTALLATION INSTRUCTIONS. CONTRACTOR IS REQUESTED TO USE MULTI-CONDUCTOR CABLES OR DIFFERENT COLORED CONDUCTORS VS. INDIVIDUAL CONDUCTORS OF THE SAME COLOR FOR EASE OF TROUBLE-SHOOTING.

F. ALL CABLES INSTALLED IN UNDERGROUND CONDUITS SHALL BE "DIRECT BURIAL RATED" OR "INDOOR/ OUTDOOR" RATED FOR TELECOM/, FIRE ALARM AND MONITORING CABLES. PROVIDE SUBMITTALS FOR ALL CABLE TYPES.

G. ALL WIRING EXTERNAL TO EQUIPMENT IS PROVIDED BY ELECTRICAL CONTRACTOR.

H. GENERATOR SHALL BE SHIPPED IN PIECES. INCLUDE COST OF RECONNECTION OF FACTORY WIRING SPLITS AND ITEMS SUCH AS LUMINAIRES.

I. ALL CONTROL, SIGNAL AND MONITORING CONDUITS STUB-UP IN THE SAME LOCATION IN THE GENERATOR ENCLOSURE. HOWEVER, VERIFY WITH ACTUAL GENERATOR SHOP DRAWINGS PRIOR TO INSTALLING CONDUIT STUB-UPS.

J. IN-GRADE MANHOLES AND PULL BOXES ARE NOT SHOWN IN THIS DIAGRAM, PROVIDE THEM AS REQUIRED BY NEC AND ACTUAL CABLE PULLING INSTALLATION REQUIREMENTS.

#### 1. (2) 1" C. BETWEEN GENSETS FOR CONTROL WIRING, AS REQUIRED. 11. (1) .75" C. FROM BOTH BATTERY CHARGERS TO MV MASTER CONTROL PANEL FOR BATTERY AND CONTROL POWER SUPPLY ALARM & STATUS MONITORING POINTS TO THE PLC: 11.1. BATTERY CHARGER: (2) HARDWIRED POINTS: "COMMON ALARM", "COMMON TROUBLE" 2. (1) 1" PVC UNDERGROUND CONDUIT FOR FIRE ALARM WIRING TO EACH GENERATOR ENCLOSURE FOR HEAT DETECTOR. 11.2. THERMAL RUNAWAY: (1) HARDWIRED POINTS: "PRE-ALARM / SHUTDOWN ALARM" 3. (1) 2" C. FOR FIRE ALARM SYSTEM FIBER OPTIC HOMERUN WIRING FROM THE 12. (1) 3/4" C. FROM DC PANELBOARD TO MV SWITCHGEAR MASTER CONTROL SECTION FOR 125VDC

CONTROL POWER CIRCUITS. USE SEPARATE CIRCUITS PER END AND FOR GENERATOR BREAKER SECTIONS. USE BEST BATTERY DIODES TO ISOLATE CIRCUITS. USE DEDICATED CONDUITS FROM EACH OF THE REDUNDANT DC PANELBOARDS.

4. (1) 5" PVC C.FOR MV GENERATOR OUTPUT FEEDER (1) 5" PVC C.O. FOR

5. (2) PVC C. FROM GENERATOR TO MV SWGR GENERATOR CONTROL CUBICLE: 5.1. (1) 1.25" C. FOR CONTROL WIRING, AS REQUIRED

6. (1) 5" PVC C.O. STUBBED OUT FOR PORTABLE 3MV LOAD BANK CONNECTION.

7. (2) 5" PVC C.FOR MV FEEDER TO THE MV DIST SWITCHGEAR.

8. PROVIDE COPPER TO FIBER OPTIC MEDIA CONVERTERS AT BOTH ENDS FOR COMMUNICATION AND MONITORING INTERCONNECTION REQUIREMENTS FROM HOSPITAL IDF CLOSET TO GENERATOR PARALLELING SWITCHGEAR MASTER SECTION. PROVIDE ETHERNET NETWORK PORT TO ALLOW FOR REMOTE MONITORING/ ALARMING OVER OWNER'S LAN SYSTEM.

(1) 1.25" FOR 24VDC CONTROL POWER. SIZE AS REQUIRED BY VENDOR.

10. (1) 1.25" C. FROM GENERATOR TO MASTER CONTROL SECTION FOR CONTROL POWER SYSTEM ALARM & STATUS MONITORING TO THE PLC. SEE

13. (1) 3/4" CONDUIT PER MV SECTION TO BRING SEPARATE 30A, 125VDC CONTROL POWER BRANCH CIRCUIT TO EACH MV BREAKER CUBICLE.

14. (1) 2" PVC CONDUIT WITH:

- A. 0-20mA CABLE FOR MAIN TANK FUEL LEVEL READING FROM FILL ALARM PANEL TO PLC ANALOG INPUT.
- B. (3) HARDWIRED POINTS FROM FILL CONTROLLER (MULTI-CONDUCTOR #16AWG, DIRECT- BURIAL RATED CABLE): "MAIN TANK-CRITICAL LOW", "MAIN TANK OVERFILL", "MAIN TANK FUEL LEAK FROM OUTER CONTAINMENT SENSOR (MAY BE STAND-ALONE POINT).
- C. (8) HARDWIRED DUPLEX FUEL PUMP POINTS (MULTI-CONDUCTOR #16AWG, DIRECT-BURIAL RATED CABLE): "PUMP #1 RUNNING", "PUMP #2 RUNNING", "CHECK FUEL STRAINER", "PUMP #1 FAILURE", "PUMP#2 FAILURE", "PUMP FUEL LEAK", "NOT-IN-AUTO", "120V PUMP POWER FAILURE"
- D. (3) HARDWIRED FUEL POLISHER POINTS (MULTI-CONDUCTOR #16AWG, DIRECT- BURIAL RATED CABLE): "POLISHER RUNNING", "POLISHER FUEL LEAK", "COMMON TROUBLE"

15. (1) 2" C. FROM MASTER CONTROL SECTION TO MV DIST SWGR TERMINAL BLOCKS FOR REMOTE CONTROLLING OPEN/CLOSE OF ALL MV BREAKERS. FEEDER BREAKERS SHALL BE AUTOMATICALLY CONTROLLED AS LOAD ADD/ SHED AND MAINS/ TIE SHALL BE AUTOMATICALLY CONTROLLED AS MAIN-TIE-MAIN TRANSFER SCHEME. REFER TO SPECS.

16. (1) 15KV AND (1) 5KV PRIMARY AND SECONDARY FEEDERS.

17. (2) 1.5" PVC C. FOR (F) CONTROLS AND MONITORING CABLES

3.00 157]	- 0.12 [[3]	18.00 18.0 [457] [457] [457] [457 [457]	018.001 '] [457] [ 0.12 [[3]]	8.00 457] 0.12 [[3]
	t	11.50	7.00 [178] 18.50 [470]	t
		$\begin{bmatrix} 292 \end{bmatrix} \qquad \qquad - \begin{pmatrix} + \\ + \end{pmatrix} \\ + \end{pmatrix}$		
	1.25  [32]	1.25  [32]	1.25  [32]	1.25  [32]
/.	* <b>•</b>	// <b>_</b> /	// <b>-</b>	
	8	9	10	11
	36.00 [914]		36.00 [914]	36.00 [914]
		- 2890-[1311]	2100–[953] ·	
		► "B"	"B"	"B"

INFORMATION ON THIS SHEET PROVIDED FOR REFERENCE ONLY. REFER TO PRODUCT SUBMITTAL FOR SPECIFIC REQUIREMENTS.

![](_page_48_Figure_36.jpeg)

![](_page_49_Figure_0.jpeg)

/29/2023 2:36 PM LARRY.HENGESH \SACR\JOBS\2022\22US00079 DSH ATASCADERO HOSP ELEC UPGR TURLE\DRAWINGS\AUTOCAD\EE9.2.DWG

![](_page_49_Picture_2.jpeg)

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![](_page_50_Figure_0.jpeg)

/29/2023 2:36 PM LARRY.HENGESH \SACR\JOBS\2022\22US00079 DSH ATASCADERO HOSP ELEC UPGR TURLE\DRAWINGS\AUTOCAD\EE9.3.DW

![](_page_50_Picture_2.jpeg)

ISSUE DATE: JANUARY 14, 2025

![](_page_51_Figure_0.jpeg)

![](_page_51_Figure_1.jpeg)

THE REQUIRED ANCHORAGE:

- 1. HILITI HDA-PR (STAINLESS STEEL) M16X30.
- 2. MINIMUM EDGE DISTANCES = 16" IN EITHER DIRECTION. 3. A MINIMUM OF 20 BOLTS ALONG THE LONG SIDES (40 TOTAL).
- 4. A MINIMUM OF 4 BOLTS ALONG THE SHORT SIDES (8 TOTAL).
- 5. FINAL ANCHORING DETAILS TO BE COORDINATED WITH SITE SPECIFIC SHOP DRAWINGS AND MANUFACTURER'S ANCHORING REQUIREMENTS.

![](_page_51_Picture_8.jpeg)

![](_page_51_Picture_9.jpeg)

![](_page_51_Picture_10.jpeg)

INFORMATION ON THIS SHEET PROVIDED FOR REFERENCE ONLY. REFER TO PRODUCT SUBMITTAL FOR SPECIFIC REQUIREMENTS.

![](_page_51_Figure_12.jpeg)

- TANK WEIGHT (Dry): 32,000 Lbs. TANK WEIGHT (WET): 41,750 Lbs. GENSET WEIGHT: 37,844 Lbs. ENCLOSURE WEIGHT: 24,500 Lbs. SKIRT WEIGHT: 3,000 Lbs. PACKAGE WEIGHT (Wet Tank with Muffler): 116,000 Lbs.

- 1. PROVIDE DIESEL PARTICULATE FILTER. 2. PROVIDE LOAD BANK TESTING. PROGRAMMED FOR 40% MINIMUM
- LOADING.
- 3. PROVIDE SOUND ATTENUATED ENCLOSURE & NEMA 3R.
- MUFFLER/ SCR SKIRT: \* SIZE – 312" L x 132" W x 70" H \* WEIGHT – 3,000 LBS.

PRIMER – ONE COAT PRIMER (2–4 MILS DFT)

ENCLOSURE SHIPPING SIZE & WEIGHT (WITHOUT SKIRT):

\* COLOR – ENCLOSURE – PRECISION TAN

\* SIZE – 488" L x 138" W x 160" H

TANK – GLOSS BLACK

PACKAGE WEIGHT (Dry Tank with Muffler): 106,500 Lbs.

NOTES:

## \* ALL EXTERIOR GALVANNEALED SURFACES TO BE SOLVENT CLEANED PER SSPC-SP1 AND PAINTED AS FOLLOWS: INTERMEDIATE – ONE COAT INDUSTRIAL POLYURETHANE (1–1.5 MILS DFT) \* ALL CARBON STEEL SURFACES TO BE POWER TOOL CLEANED PER SSPC-SP3 AND PAINTED

NOTES: ENCLOSURE ASSEMBLY: \* FOR AN CUMMINS 2000 DQKAW GEN-SET. \* FULLY ASSEMBLED DROP OVER ENCLOSURE TO BE ANCHORED TO THE BASE TANK. \* PANEL JOINTS ARE SKIP WELDED AND CAULKED.

\* WALLS AND ROOF - 14 GAUGE GALVANNEALED STEEL.

\* THE GEN-SET EQUIPMENT NOISE DOESN'T EXCEED 124 dB.

FINISH – ONE COAT INDUSTRIAL POLYURETHANE (.5–1 MILS DFT)

FINISH - ONE COAT INDUSTRIAL POLYURETHANE (.5-1 MILS DFT)

INTERMEDIATE - ONE COAT INDUSTRIAL POLYURETHANE (1-1.5 MILS DFT)

\* INNER LINER - PERFORATED GALVANIZED STEEL.

\* INSULATION - MINERAL WOOL AND POLY LINER.

\* BOLTING HARDWARE – STAINLEŚS STEEL.

\* ENGINE EXHAUST IS NOT INCLUDED

\* GEN-SET TO BE ISOLATED FROM SKID.

\* FRAME CONSTRUCTION - A36 STRUCTURAL CHANNEL & A-500 TUBING.

\* BAFFLES - 42" DEEP INLET & 60" DEEP DISCHARGE PANELS. GALVANNEALED CONSTRUCTION.

OF 23 FEET FROM THE ENCLOSURE AND 5 1/2 FEET ABOVE GRADE IN A FREE FIELD ENVIRONMENT.

\* LOUVERS - INLET WEATHER LOUVERS W/BIRDSCREEN. GALVANNEALED CONSTRUCTION.

\* ELBOW – DISCHARGE ELBOW W/BIRDSCREEN. GALVANNEALED CONSTRUCTION.

\* DOORS - TWO (2) DOUBLE & TWO (2) SINGLE ACCESS SERVICE DOORS WITH STAINLESS STEEL HINGES AND DOOR LATCHES.

\* DESIGNED TO TO REDUCE THE AIRBORNE GEN-SET EQUIPMENT NOISE LEVELS TO 75 dB(A) WHEN MEASURED AT A DISTANCE

\* BASED ON A TOTAL AIR REQUIREMENT OF 80,232 CFM AT LESS THAN 1/2" W.G. BACK PRESSURE THROUGH THE ENCLOSURE.

![](_page_51_Picture_26.jpeg)

ENCLOSURE CONSTRUCTION:

DESIGN SPECIFICATIONS:

AS FOLLOWS:

\* SEE DRAWING 11183-2.

\* WEIGHT - 24,500 LBS.

PAINTING:

ELECTRICAL:

![](_page_51_Picture_27.jpeg)

![](_page_52_Figure_0.jpeg)

![](_page_52_Picture_1.jpeg)

INFORMATION ON THIS SHEET PROVIDED FOR REFERENCE ONLY. REFER TO SPECIFICATIONS AND PRODUCT SUBMITTAL FOR SPECIFIC REQUIREMENTS. 1 72 HR FUEL TANK DETAIL SCALE: NO SCALE

16138-06

![](_page_52_Picture_6.jpeg)

![](_page_53_Figure_0.jpeg)

![](_page_53_Figure_15.jpeg)

![](_page_53_Figure_16.jpeg)

![](_page_53_Figure_17.jpeg)

# **5KV DISTRIBUTION SWITCHGEAR "MVDSA/B"**

NOTE: A. THIS DETAIL IS PRELIMINARY AND NOT FOR CONSTRUCTION, REFER TO ACTUAL SUBMITTAL SHOP DRAWINGS FOR ACTUAL INFORMATION

16140-01

![](_page_53_Picture_20.jpeg)

![](_page_54_Figure_0.jpeg)

![](_page_54_Picture_3.jpeg)