A:       E:       EAST       H.B.         A:       AND       E       EAST       H.B.         A.B.       ANCHOR BOLT       (E)       EXISTING       H.C.       F         A.C.       ASPHALT CONCRETE       EA.       EACH       HDWD.       F         A.C.       ASPHALT CONCRETE       EA.       EACH       HDWD.       F         ACC.       ACCOUSTICAL       E.E.       EACHTRIN HDWE.       HDWE.       FOUNTAIN       HDRIZ.       F         ADJ. SH.       ADUISTABLE SHELVING       ELLC.       ELECTRICAL PANEL       HR.       F         ADJ. SH.       ADUISTABLE SHELVING       ELEV.       ELEVATION       HT.       F         AGGRE ATE       ENCL       ENCLOSURE       ID.       ID.       ID.       ID.         AUM.       ALUMINUM       E.P.       ELECTRICAL PANEL       ID.       ID. <td>H:         P:         T:           HOSE BIB         PART, PARTITION         T. HERMOSTAT           HARDWOOD         P.B.         PANIC BAR         T.B.         TOWEL BAR           HARDWOOD         P.L.         PROPERTY LUNE         T.C.         TOP OF CURB           HARDWOARD         P.LAM.         PLASTIC LAMINATE         T&amp;G.         TOUNCE &amp; GROOVE           HARDWARE         PLAS.         PLASTIC LAMINATE         TEL.         TELEPHONE           HOLLOW METAL         PLYWD.         PLYWOOD         TEM.         TEMPORARY           HOUR         P.M.         PRESSED METAL FRAME         THRESH.         THRESH.           HOUR         P.M.         PROPERTY         T.O.F.         TOP OF CORCECTE           INSIDE DIAMETER         PROP.         PROPERTY         T.O.F.         TOP OF FRAMING           INSUEATION         P.S.F.         POUNDS PER SUGARE         T.P.         TOT.         TOTAL           INVERT ELEVATION         P.S.F.         POUNS PER SUGARE         T.P.         TOP OF PAUING           INSULATION         P.S.F.         POUNS PER SUGARE         T.P.         TOP OF PAUING           INSULATION         P.J.R.         PAPER TOWEL         T.S.         STRUCTURAL TUBE      &lt;</td> <td>STA DEPARTMA CALIFORRALAGA ALIFORRALAGA ALIFORRALAGA ALAGAAAAAAAAAAAAAAAAAAAAAAAAAAAA</td> <td>ATE OF CA ENT OF G DEPAR DEPAR LS, DSH LS, DSH STEAM PLAN STEAM PLAN STEAM PLAN 10333 EL CAN ATASCADERO ARCHITECTS 130 21st STRET SACRAMENTO CA 95818 (916) 736-2724 CONTACT: SCOTT PULLEN E-MAIL: SCO</td> <td>ALIFORN ENERAL TMEN I-ATAS CREPL IT PERMIT VINO REAL O, CA 93422</td> <td>IA SERVICES IT OF STATE CADERO CADERO ACENER</td>	H:         P:         T:           HOSE BIB         PART, PARTITION         T. HERMOSTAT           HARDWOOD         P.B.         PANIC BAR         T.B.         TOWEL BAR           HARDWOOD         P.L.         PROPERTY LUNE         T.C.         TOP OF CURB           HARDWOARD         P.LAM.         PLASTIC LAMINATE         T&G.         TOUNCE & GROOVE           HARDWARE         PLAS.         PLASTIC LAMINATE         TEL.         TELEPHONE           HOLLOW METAL         PLYWD.         PLYWOOD         TEM.         TEMPORARY           HOUR         P.M.         PRESSED METAL FRAME         THRESH.         THRESH.           HOUR         P.M.         PROPERTY         T.O.F.         TOP OF CORCECTE           INSIDE DIAMETER         PROP.         PROPERTY         T.O.F.         TOP OF FRAMING           INSUEATION         P.S.F.         POUNDS PER SUGARE         T.P.         TOT.         TOTAL           INVERT ELEVATION         P.S.F.         POUNS PER SUGARE         T.P.         TOP OF PAUING           INSULATION         P.S.F.         POUNS PER SUGARE         T.P.         TOP OF PAUING           INSULATION         P.J.R.         PAPER TOWEL         T.S.         STRUCTURAL TUBE      <	STA DEPARTMA CALIFORRALAGA ALIFORRALAGA ALIFORRALAGA ALAGAAAAAAAAAAAAAAAAAAAAAAAAAAAA	ATE OF CA ENT OF G DEPAR DEPAR LS, DSH LS, DSH STEAM PLAN STEAM PLAN STEAM PLAN 10333 EL CAN ATASCADERO ARCHITECTS 130 21st STRET SACRAMENTO CA 95818 (916) 736-2724 CONTACT: SCOTT PULLEN E-MAIL: SCO	ALIFORN ENERAL TMEN I-ATAS CREPL IT PERMIT VINO REAL O, CA 93422	IA SERVICES IT OF STATE CADERO CADERO ACENER
DIAG.DIAGONALGALV.GALVANIZEDO.C.O.C.DIM.DIMENSIONG.B.GRAB BARO.D.O.D.DIS.DISABLEDG.C.GENERAL CONTRACTORO.H.O.H.	ON CENTER     STD.     STANDARD     W.W.F.     WEIGHT       OUTSIDE DIAMETER     STL.     STEEL     W.W.F.     WELDED WIRE FABRIC       OVERHEAD OR     STOR.     STORAGE	E-MAIL: tthorp@buehlerengineering.com	E-MAIL: bprovencal@turleymech.	.com	E-MAIL: nathan@whittingtonelectric.com
D.L.DOOR LOUVERG.I.GALVANIZED IRONOCDN.DOWNGLU-LAMGLUE LAMINATEROFF.OCDR.DOORGND.GROUNDOPNG.OCD.S.DOWN SPOUTGYP. BD.GYPSUM WALLBOARDOPPOPP	OVERHANG       STRUCT.       STRUCTURAL         OFFICE       S.T.S.M.S.       SELF TAPPING SHEET         OPENING       METAL SCREW         OPPOSITE       S.S	SITE ELECTRICAL ENGINEER			CONSTRUCTION MANAGEMENT
D.S.P. DRY STANDPIPE O/ C DWG. DRAWING D.G. <b>DECOMPOSED GRANITE</b>	OVER S/S SERVICE SINK SUSP. SUSPENDED SYM. SYMMETRICAL	910 GLENN DRIVE FOLSOM, CA 95630 (906) 934-5103 CONTACT: ILLAN LOSE VILLATORO			8885 RESEARCH DRIVE IRVINE, CA 92618 (949) 679-2752 CONTACT: DAVID DUNISTAN
SYMBOLS LEGEND		E-MAIL: jvillatoro@glumac.com			E-MAIL: david.dunstan@apsicm.com
Image: Concrete	Image: Section NUMBER       Image: Section is drawn         Image: Section is drawn       Image: Section is drawn         Image: Detail is drawn       Image: Match line         Image: Detail is drawn       Image: Detail is drawn         Image: Detail is drawn       Image: Detail is drawn	PROJECT CODE DATACODES USED:2019 CALIFORNIA ADMINISTRATIVE CODE, CCR, TITLE 24, PART 12019 CALIFORNIA BUILDING CODE, VOL. 1 & 2, CCR, TITLE 24, PART 32019 CALIFORNIA ELECTRICAL CODE, CCR, TITLE 24, PART 42019 CALIFORNIA ENERGY CODE, CCR, TITLE 24, PART 52019 CALIFORNIA ENERGY CODE, CCR, TITLE 24, PART 52019 CALIFORNIA ENERGY CODE, CCR, TITLE 24, PART 62019 CALIFORNIA ENERGY CODE, CCR, TITLE 24, PART 62019 CALIFORNIA GREEN BUILDING STANDARDS CODE, CCR, TITLE 24, PART 92019 CALIFORNIA GREEN BUILDING STANDARDS CODE, CCR, TITLE 24, PART 1JURISDICTION:CALIFORNIA EXISTING BUILDING STANDARDS CODE, CCR, TITLE 24, PART 1JURISDICTION:CALIFORNIA EXISTING BUILDING CODE, CCR, TITLE 24, PART 1JURISDICTION:CALIFORNIA DEPAROCCUPANCY GROUP:G (1949 UBC) = F-1TYPE OF CONSTRUCTION:IV (1949 UBC - INCFIRE SPRINKLER:NOT SPRINKLEREDSQUARE FOOTAGE OF BUILDING:11,629 SQ. FT.NUMBER OF STORIES:1YEARS CONSTRUCTED:ORIGINAL: 1952ADDITIONS/MODI19 CBC TABLES 504.3 & 506.2:ALLOWABLE AREA:UNLIMITEDALLOWABLE AREA:NONE<	T 2 24, PART 11 0 RTMENT OF STATE HOSPITALS 1 (2019 CBC) COMBUSTIBLE) 5	<ol> <li>DEMOLISH ROOFING SYS DEMOLISH ALL FLASHING AND PREPARE SURFACE I</li> <li>DEMOLISH ROOFING MA CLEAN AND PREP FOR NE</li> <li>INSTALL ROOFING SYSTEI CONTINUOUS LAYER OF I COVER BOARD. INSULAT SLOPE. INSTALL ALL ASSO</li> <li>THIS WORK IS WITHIN A 3 ADDITIONAL REQUIREME</li> <li>SITE AND BUILDING ACCE 2017 AND 2020 UNDER D ACCESSIBILITY UPGRADES 11B-203.5</li> </ol>	K TEM INCLUDING WALKMATS TO STRUCTURAL ROOF DECK. IS ASSOCIATED WITH ROOFING SYSTEM, CLEAN SUBSTRATE FOR NEW FLASHINGS. TERIALS FROM DUCTS OR PIPES PENETRATING ROOF DECK. W ROOF SYSTEM FLASHING. M CONSISTING OF SINGLE PLY MEMBRANE. INSTALL OVER / RIGID INSULATION BOARD WITH TAPERED INSULATION AND ION TAPER TO ACHIEVE A MINIMUM OF 1/4" PER FOOT OF DCIATED FLASHINGS. SECURE FACILITY. SEE CONTRACT DOCUMENTS FOR ENTS. ESSIBILITY UPGRADES HAVE BEEN CONSTRUCTED BETWEEN ISA APP # 02-115786 UNDER 2016 CBC. NO ADDITIONAL S ARE IN THIS SCOPE PER 2019 CBC 11B-202.4 Ex. 2 and 7 ar
3. CONTRACTOR SHALL VERIFY A.S.H. REQUIREMENTS FOR WORK HOURS, ETC. WITH A.S.H. PROJECT MANAGER PRIOR TO BIDDING AND COMMENCEMENT OF WORK. CONTRACTOR SHALL COMPLY WITH ALL A.S.H. REQUIREMENTS.	<ul> <li>SERVICE IS CONNECTED TO THE THE EXISTING SYSTEM.</li> <li>5 DAYS FOR BUILDING TO BE WITHOUT THE KITCHEN REFRIGERATION UNIT.</li> </ul>	HIGH FIRE HAZARD SEVERITY ZONE:NOSEISMIC EXPANSION JOINTS:NO		PERMIT & PLAN	CHECK NUMBERS:
4. CONTRACTOR SHALL PROVIDE A JOB SITE PHONE & EMAIL WITHIN 5 WORKING DAYS AND INFORM ARCHITECT OF PHONE NUMBER AT CONSTRUCTION KICK-OFF MEETING. G.C. SHALL MAINTAIN A COMPUTER W/ EMAIL CAPABILITIES ON SITE AT ALL TIMES.	<ul> <li>A LIMITED AMOUNT OF TOOLS AND MATERIALS CAN BE STORED ON THE ROOF.</li> <li>CONTRACTOR SHALL ATTAIN APPROVAL FROM STATE PRIOR TO STORING ITEMS ON ROOF.</li> </ul>	EMERGENCY RESPONDER RADIO COVERAGE: NO MATERIALS OF CONSTRUCTION:		ВРК CONSULTING GROUP STATE FIRE MARSHALL	JUB # ATA22-0001 PERMIT # 22-S-3319 FOR MAIN FACILITY OSFM #19-40-11-0001-00001
<ol> <li>CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND NOTING ANY DISCREPANCIES WITH THE CONTRACT DOCUMENTS PRIOR TO BIDDING THE PROJECT. CONTRACTOR SHALL CONTACT ARCHITECT FOR RESOLUTION PRIOR TO PROCEEDING WITH RELATED WORK. OTHERWISE, CONTRACTOR IS RESPONSIBLE FOR CORRECTIONS AT NO EXTRA COST TO OWNER.</li> <li>G.C. SHALL BE SOLELY RESPONSIBLE FOR OBTAINING ALL FINISH MATERIALS &amp; EQUIPMENT AS SPECIFIED HEREIN. ANY DEVIATION IN COST DUE TO SHIPPING DELAYS, MATERIAL UPGRADES, SHALL BE BORN BY THE G.C. ALL MATERIALS NOT IDENTIFIED AS PROBLEMS PRIOR TO BID, SHALL BE THE RESPONSIBILITY OF THE G.C. TO SUPPLY AS</li> </ol>	<ul> <li>18. PROJECT IS WITHIN A MAXIMUM SECURITY FACILITY. ALL VEHICLES AND PROJECT PERSONAL WILL BE SUBJECT TO SEARCH AND SCREENING WHILE ENTERING AND EXITING THE PROJECT SITE.</li> <li>19. ALL ITEMS SHOWN FOR NEW WORK ARE NEW UNLESS NOTED OTHERWISE ON THE DRAWING.</li> <li>5.</li> </ul>	WALLS ROOFCONCRETE FOUND STEEL FRAMINGROOFING CLASS:A	DATION WITH STEEL FRAME	DSA ACCESS	22-S-4869 FOR FIREHOUSE OSFM #19-40-61-0001-00041 22-S-4870 FOR STEAM PLANT OSFM #19-40-27-0001-00032 22-S-4872 FOR ELECTRICAL UPGRADE EXEMPT
<ul> <li>NOTED ON THE BID FORM.</li> <li>ALL DEMOLITION IS INCLUDED IN THE BASE BID. CONTRACTOR SHALL PROVIDE ALL DEMOLITION NECESSARY TO COMPLETE ALL NEW WORK AS INDICATED ON THE PLANS</li> </ul>				DEFERRED APP	ROVAL
8. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL ADJACENT WORK AND SHALL COORDINATE WITH ALL OTHER TRADES SO AS TO FACILITATE THE GENERAL PROGRESS OF THE WORK. EACH TRADE SHALL AFFORD ALL OTHER TRADES EVERY				1. NONE.	
<ul> <li>9. GENERAL CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS AND QUANTITIES OF ITEM TO BE REMOVED/REPLACED OR TO BE REINSTALLED PRIOR TO SUBMITTAL OF BID. G.C. SHALL NOTIFY ARCHITECT 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 PROTECTED THROUGHOUT DEMOLITION AND RENOVATIONS. G.C. WILL BE REQUIRED TO REPLACE ANY/ALL ITEMS TO REMAIN THAT ARE DAMAGED BY WORK AT NO ADDITIONAL COST TO D.G.S. AND ALSO AT A QUALITY LEVEL EQUAL TO OR EXCEEDING THE ORIGINAL CONDITIONS.</li> <li>12. SEE ALSO ENGINEERED DRAWINGS FOR FULL EXTENT OF THE DEMOLITION WORK.</li> </ul>	AS Santa Lusia e <sup>nd</sup> To To To Charles Paddock Zoo Co	Nover connored			
<ol> <li>ITEMS SHOWN TO BE REMOVED SHALL BE DISPOSED OF PROPERLY BY THE G.G. UNLESS OTHERWISE NOTED.</li> <li>BUILDINGS WILL BE FULLY OCCUPIED DURING CONSTRUCTION. CONTRACTOR SHALL REPLACE AIR HANDLING SYSTEMS (SUPPLY FAN, RETURN FAN AND ASSOCIATED EXHAUST FANS) IN PHASES COORDINATED WITH AVAILABLE TEMPORARY AIR HANDLING SYSTEMS. REFER TO PHASING PLANS FOR SEQUENCING.</li> <li>NOTIFY STATE A MINIMUM OF 5 DAYS PRIOR TO DISCONNECTING ANY PART OF THE EXISTING HVAC SYSTEMS, i.e. HYDRONIC PIPING, ELECTRICAL WORK, DUCTWORK, CONTROLS, ETC.</li> </ol>	PROJECT LOCATIO	Atascadero State Hospital	A I	<ol> <li>FIRE MARSHALL</li> <li>NO DEMOLITION WORK S COMPONENTS WITHOUT FIRE SPRINKLER AND FIRE PERFORMED ONLY BY TH ALARM CONTRACTOR RE FOR DEMOLITION/INSTAL</li> <li>CONTRACTOR SHALL BE FOR DEAD TO AND SUMMER</li> </ol>	SHALL COMMENCE ON ANY FIRE SPRINKLER OR FIRE ALARM APPROVED FIRE SPRINKLER AND FIRE ALARM DRAWINGS. ALARM DEMO OR TENANT IMPROVEMENT WORK SHALL B E LICENSED C-16 FIRE SPRINKLER CONTRACTOR OR C-10 FIR SPONSIBLE FOR THIS PROJECT. REFERENCE ONLY-NOT APPE LLATION OF FIRE ALARM/FIRE SPRINKLER SYSTEM COMPON RESPONSIBLE FOR FULL COMPLIANCE WITH CHAPTER 33 OF
<ul> <li>MAXIMUM CONTINUOUS DOWN TIME FOR SPECIFIC SERVICES IS AS FOLLOWS:</li> <li>4 HOURS FOR SPACES TO BE WITHOUT ANY AIRFLOW DURING REMOVAL OF EXISTING</li> </ul>	NOT TO SCALE Google		<b>'</b> 仚 <b>'</b>	WORK.	33 01 2013 CFC. INCLUDING CHAPTER 35 OF 2019 CFC FC

				O DRAWINGS (CONT.)		
	SHEET	DESCRIPTION	SHEET	DESCRIPTION	SHEET	DESCRIPTION
	A0 CG1-R	COVER SHEET CALGREEN MANDATORY MEASURES CHECKUST	NUMBER		NUMBER	
	CG2-R AS1 SHEETS	CALGREEN MANDATORY MEASURES CHECKLIST CALGREEN MANDATORY MEASURES CHECKLIST REFERENCE SITE PLAN 4				
c	AD1.0	ARCHITECTURAL OVERALL DEMO ROOF PLAN				
	AD1.24 A1.0 A1.24	DEMO ROOF PLAN - STEAM PLANT OVERALL ROOF PLAN ROOF PLAN - STEAM PLANT DETAU S				
	A2.0 A2.1 A2.2 A2.3	DETAILS DETAILS DETAILS DETAILS				
	A2.4 A2.5 A2.6 A2 7	DETAILS DETAILS DETAILS FIRE ASSEMBLY LISTINGS				
		$\frac{110}{12}$				
	FOR SFM PE	RMIT #22-S-4870 FOR STEAM				
	OSFM #19-4	40-27-0001-00032				
EER						
EMENT						
DECK.						
DVEK A N AND DT OF						
WEEN						
nd 7 and						
LARM NGS. ALL						
10 FIRE T APPROVED						
33 OF 2019 CFC FOR मот						
UN HUT						



# 2019 CALIFORNIA GREEN BUILDING STANDARDS NONRESIDENTIAL MANDATORY MEASURES, SHEET 1 (July 2021, Includes 4

Y	N/A RE		Y N/A RESPON	
		SECTION 301 GENERAL		5.106.4 BICYCLE PARKING. For buildings within the specified in Section 103, comply with Section 5.106.4 State Architect pursuant to Section 105, comply with
		<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 covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.		5.106.4.1 Bicycle parking. [BSC-CG] Comply w applicable local ordinance, whichever is stricter. 5.106.4.1.1 Short-term bicycle parking. If generate visitor traffic, provide permanentl entrance readily visible to passers-by for 5
		<b>301.3 NONRESIDENTIAL ADDITIONS AND ALTERATIONS. [BSC-CG]</b> 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 alterations shall only apply to the portions of the building being added or altered within the scope of the permitted		added, with a minimum of one two-bike cap Exception: Additions or alterations which a 5.106.4.1.2 Long-term bicycle parking. For tenant-occupants, provide secure bicycle park spaces with a minimum of one bicycle park
		work. 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.		<b>5.106.4.1.3</b> For additions or alterations that provide secure bicycle parking for 5 percent minimum of one bicycle parking facility.
		301.3.1 Nonresidential additions and alterations that cause updates to plumbing fixtures only: Note: 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 under specific circumstances. See Civil Code Section 1101.1 <i>et seq.</i> for definitions, types of commercial real property affected, effective dates, circumstances pecessitating replacement of noncompliant plumbing fixtures.		5.106.4.1.4 For new shell buildings in phase anticipated tenant-occupant vehicular parki 5.106.4.1.5 Acceptable bicycle parking facili be convenient from the street and shall me
		and duties and responsibilities for ensuring compliance. <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>Covered, lockable enclosures with</li> <li>Lockable bicycle rooms with perm</li> <li>Lockable, permanently anchored bicycle</li> <li>Note: Additional information on reconfrom Sacramento Area Bicycle Advocation</li> </ol>
		<ul> <li>301.4 PUBLIC SCHOOLS AND COMMUNITY COLLEGES. (see GBSC)</li> <li>301.5 HEALTH FACILITIES. (see GBSC)</li> <li>SECTION 302 MIXED OCCUPANCY BUILDINGS</li> <li>302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.</li> </ul>		<ul> <li>5.106.4.2 Bicycle parking. [DSA-SS] For public 5.106.4.2.1 and 5.106.4.2.2</li> <li>5.106.4.2.1 Student bicycle parking. Provid with a minimum of four two-bike capacity r 5.106.4.2.2 Staff bicycle parking. Provide a minimum of two staff bicycle parking space</li> </ul>
		SECTION 303 PHASED PROJECTS 303 1 PHASED PROJECTS For shell buildings and others constructed for future tenant improvements		be convenient from the street or staff parki 1.Covered, lockable enclosures with pe 2.Lockable bicycle rooms with perman
		only those code measures relevant to the building components and systems considered to be new construction (or newly constructed) shall apply. <b>303.1.1 Initial Tenant improvements.</b> The provisions of this code shall apply only to the initial tenant improvements and systems are shall apply only to the initial tenant.		3.Lockable, permanently anchored bicy 5.106.5.2 DESIGNATED PARKING FOR CLEAN that add 10 or more vehicular parking spaces, pr low-emitting, fuel-efficient and carpool/van poo
		Improvements to a project. Subsequent tenant improvements shall comply with the scoping provisions in Section 301.3 non-residential additions and alterations.         ABBREVIATION DEFINITIONS:         HCD       Department of Housing and Community Development         BSC       California Building Standards Commission         DSA-SS       Division of the State Architect, Structural Safety		TABLE 5.106.5.2 - PARKING         TOTAL NUMBER OF PARKING SPACES         0-9         10.25
		OSHPDOffice of Statewide Health Planning and DevelopmentLRLow RiseHRHigh RiseAAAdditions and AlterationsNNew		10-25 25-50 51-75 76-100
		CHAPTER 5 NONRESIDENTIAL MANDATORY MEASURES DIVISION 5.1 PLANNING AND DESIGN		101-150 151-200 201 AND OVER
		SECTION 5.101 GENERAL 5.101.1 SCOPE The provisions of this chapter outline planning, design and development methods that include environmentally		<ol> <li>Calculation for spaces shall be rou</li> <li>Note: Designated parking for clean air vehicles shall or enforcing agencies.</li> </ol>
		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>SECTION 5.102 DEFINITIONS</b> <b>5.102.1 DEFINITIONS</b> The following terms are defined in Chapter 2 (and are included here for reference).		5.106.5.2.1 - Parking stall marking. Paint, in that the lower edge of the last word aligns wi vehicle: CLEAN AIR / VAN POOL / EV
		<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.		<ul> <li>eligible for designated parking spaces.</li> <li>5.106.5.3 Electric vehicle (EV) charging. [N] Co 5.106.5.3.2 to facilitate future installation of electr installed, it shall be in accordance with the Califor</li> </ul>
		<ul> <li>LOW-EMITTING AND FUEL EFFICIENT VEHICLES.</li> <li>Eligible vehicles are limited to the following:         <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> </ol> </li> <li>High officiane webicles, regulated by U.S. EPA, baseing High Occumancy (Abido (HOV) car page lange)</li> </ul>		<b>5.106.5.3.1 Single charging space requirer</b> Table 5.106.5.3.3, a raceway is required to b accordance with the California Electrical Cod not limited to, the following:
		<ul> <li>NEIGHBORHOOD ELECTRIC VEHICLE (NEV). A motor vehicle that meets the definition of "low-speed vehicle" 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.</li> </ul>		<ol> <li>The type and location of the EVSE</li> <li>A listed raceway capable of accom</li> <li>The raceway shall not be less than</li> <li>The raceway shall originate at a se close proximity to the proposed loc enclosure or equivalent.</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. <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		<ol> <li>The service panel or subpanel shal 40-ampere dedicated branch circui</li> <li>5.106.5.3.2 Multiple charging space required Table 5.106.5.3.3 raceway(s) is/are required in accordance with the California Electrical C</li> </ol>
		<ul> <li>used primarily for the nonprofit work-related transportation of adults for the purpose of ridesharing.</li> <li>Note: Source: Vehicle Code, Division 1, Section 668</li> <li>ZEV. Any vehicle certified to zero-emission standards.</li> </ul>		<ol> <li>The type and location of the EVSE.</li> <li>The raceway(s) shall originate at a terminate in close proximity to the province of the terminate in close proximity to the province of the terminate in close proximity to the province of the terminate in terminate in the terminate in terminate in terminate in the terminate in terminate in the terminate in terminate in the terminate in terminate in</li></ol>
		<ul> <li>SECTION 5.106 SITE DEVELOPMENT</li> <li>5.106.1 STORM WATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB LESS THAN ONE ACRE</li> <li>OF LAND. Newly constructed projects and additions which disturb less than one acre of land, and are not part of 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:</li> </ul>		<ul> <li>suitable cabinet(s), box(es), enclos</li> <li>Plan design shall be based upon 40</li> <li>Electrical calculations shall substar equipment and any on-site distribut charge all required EVs at its full ra</li> <li>The service panel or subpanel(s) s</li> </ul>
		<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 erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMPs.         <ol> <li>Soil loss BMPs that should be considered for implementation as appropriate for each project</li> </ol> </li> </ul>		5.106.5.3.3 EV charging space calculations multiple charging space requirements apply to Exceptions: On a case-by-case basis where
		<ul> <li>include, but are not limited to, the following:</li> <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> <li>e. Erosion control to protect slopes.</li> <li>f. Protection of storm drain inlets (gravel bags or catch basin inserts).</li> </ul>		infrastructure is not feasible based upon one 1. Where there is insufficient electr 2. Where there is evidence suitabl local utility infrastructure design implementation of Section 5.106
		<ul> <li>g. Perimeter sediment control (perimeter silt fence, fiber rolls).</li> <li>h. Sediment trap or sediment basin to retain sediment on site.</li> <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 5.106.5.3.3
		<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:         <ul> <li>a. Dewatering activities.</li> <li>b. Material bandling and waste management</li> </ul> </li> </ol>		0-9 10-25 26-50
		<ul> <li>c. Building materials stockpile management.</li> <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>		51-75 76-100 101-150
		<ul> <li>b. Other housekeeping BMPs acceptable to the enforcing agency.</li> <li>5.106.2 STORMWATER POLLUTION PREVENTION FOR PROJECTS THAT DISTURB ONE OR MORE ACRES OF</li> <li>LAND. Comply with all lawfully opacted stormwater discharge regulations for projects that (1) disturb one acre or</li> </ul>		151-200 201 AND OVER 1. Calculation for spaces shall be
		<ul> <li>Note: Projects that (1) disturb less than one acre of land but are part of a larger common plan of development sale.</li> <li>Note: 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 Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board</li> </ul>		<ul> <li>5.106.5.3.4 [N] Identification. The service reserved overcurrent protective device spraceway termination location shall be per</li> <li>5.106.5.3.5 [N] Future charging spaces quantum service of the service o</li></ul>
		or the Lahontan Regional Water Quality Control Board (for projects in the Lake Tahoe Hydrologic Unit). The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff (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		5.106.5.2 Designated parking for clean ai Note: Future electric vehicle charging spa the local enforcing agencies.
		<ul> <li>design 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.</li> <li>Refer to the current applicable permits on the State Water Resources Control Board website at: 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.</li> </ul>		1. The minimum requirements in the Califor Chapter 10, Section 10-114 of the Califor 2. Backlight (B) ratings as defined in IES TM
				<ol> <li>Oplight and Glare ratings as defined in C in Chapter 8) and</li> <li>Allowable BUG ratings not exceeding the ordinance lawfully enacted pursuant to S Exceptions: [N]</li> </ol>
				<ol> <li>Luminaires that qualify as exceptions in Section 2. Emergency lighting.</li> <li>Building facade meeting the requirement</li> <li>Custom lighting features as allowed by the Alternate materials, designs and method</li> <li>Luminaires with less than 6 200 initial luminaires with less than 6 200 initial</li></ol>
L				

/2023 11:20 AM BRYANF \$\19056 ATASCADERO STATE HOSPITAL\02-ASH\_CG.DWG

							Y	I/A RESPON. PARTY	
authority of California Building Standards Commission as . For buildings within the authority of the Division of the ection 5.106.4.2	TABLE 5.106.8 [N] MA AND GLARE (BUG) RATII	XIMUM AL	LOWABLE	BACKLIGHT	, UPLIGHT				SECTION 5 5.303.1 METERS Sections 503.1.2
n Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the	ALLOWABLE RATING	LIGHTING							5.303.1.1 B
ne new project or an addition or alteration is anticipated to anchored bicycle racks within 200 feet of the visitors'	MAXIMUM ALLOWABLE	LZ0				ZONE LZ4			1. For ead more t cleane
of new visitor motorized vehicle parking spaces being city rack. d nine or less visitor vehicular parking spaces.	Luminaire greater than 2 mounting heights (MH) from	N/A	No Limit	No Limit	No Limit	No Limit			shop. 2. Wh th
new buildings with tenant spaces that have 10 or more king for 5 percent of the tenant-occupant vehicular parking g facility.	property line Luminaire back hemisphere is								a. b. c.
dd 10 or more tenant-occupant vehicular parking spaces, f the tenant vehicular parking spaces being added, with a	1-2 MH from property line Luminaire back hemisphere is	N/A	B2	B3	B4	В4			<b>5.303.1.2 E</b> tenant with
projects provide secure bicycle parking for 5 percent of the	0.5-1 MH from property line Luminaire back hemisphere is	IN/A	L L L L L L L L L L L L L L L L L L L	B2	<u>В</u> З	<u>Б</u> З			gal/day. 5.303.3 WATER
g spaces with a minimum of one bicycle parking facility. y 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 fittin 5.303.3.1 V
one of the following: ermanently anchored racks for bicycles;	MAXIMUM ALLOWABLE UPLIGHT RATING (U)								per flush. T WaterSense
ycle lockers. ended bicycle accommodations may be obtained	For area lighting 3 For all other outdoor	N/A	00	00	00				Note: The e
chools and community colleges, comply with Sections	Iuminaires MAXIMUM ALLOWABLE			02	03				5.303.3.2 U 5.303.3 exceed
e permanently anchored bicycle racks conveniently accessed ks per new building.	GLARE RATING 6 (G)	N/A	G1	62	63	G4			5.303.3 shall n
s per new building. Acceptable bicycle parking facilities shall area and shall meet one of the following:	from property line Luminaire front hemisphere is	N/A	GO	G1	G1	G2			5.303.3.3 S 5.303.3 1.8 gal
nanently anchored racks for bicycles; tly anchored racks; or e lockers.	Luminaire front hemisphere is 0.5-1 MH from property line	N/A	G0	G0	G1	G1			U.S. EP 5.303.3
IR VEHICLES. In new projects or additions or alterations vide designated parking for any combination of	Luminaire back hemisphere is less than 0.5 MH from	N/A	G0	G0	G0	G1			showe contro design
	property line 1. IESNA Lighting Zones 0 and 5	are not applic	cable; refer to L	ighting Zones	as defined in				Note:
	the California Energy Code and     2. For property lines that abut p     property line may be considered	Chapter 10 of public walkway	the <i>Callifornia</i> / ys, bikeways, pl	Administrative ( lazas and parki	ng lots, the				5.303.3.4 F
	of determining compliance with roadways and public transit cor	this section. Fridors, the pro	For property lin perty line may	les that abut p be considered	ublic to be the				5.303.3 not mo
9	centerline of the public roadway compliance with this section.	y or public trai	nsit corridor fo	r the purpose o	of determining				5.303.3 gallons maxim
12 18	meet these reduced ratings. Dec U-value limits for "all other outo	corative lumin door lighting"	aries located ir	тв, затез or sto these areas s	nage lots shall hall meet				flow ra
21 AT LEAST 12% OF TOTAL <sup>1</sup>	5.106.8.1 Facing- Backlight Luminaries within 2MH of a r	property line s	hall be oriented	so that the ne	arest property	line is behind			gallons
led up to the nearest whole number.	the fixture, and shall comply zone and distance to the nea	with the back arest point of t	light rating spe hat property lin	cified in Table ne.	5.106.8 based o	on the lighting			5.303.
be paint used for stall striking spaces required by the local	<b>Exception: Corners.</b> If two p point to the luminaire, then t corner) is directly behind the	property lines ( the luminaire r e luminaire. Th	or two segmen nay be oriented le luminaire sha	ts of the same d so that the in all still use the	property line) ł tersection of th distance to the	nave equidistant le two lines (the nearest points(s)			maxim Note: \ reduct
the end of the stall striping, the following characters such the end of the stall striping and is visible beneath a parked	on the property lines to dete 5.106.8.2 Facing-Glare.	ermine the req	uired backlight	rating.					<b>5.303</b> . When
ers from expired HOV lane programs may be considered	For luminaires covered by 5. hemisphere within 2MH of th rating specified in Table 5.10	.106.8.1, if a pr he luminaire th 06.8 based on t	operty line also nen the luminai the lighting zon	o exists within o re shall comply le and distance	or extends into with the more to the nearest	the front stringent glare point on the			(Applia Section
struction shall comply with Section 5.106.5.3.1 or Section vehicle supply equipment (EVSE). When EVSE(s) is/are	Note: [N]	the front hemi	sphere.			P. 1. 4			FOR RE Califor Section
a Building Code, the California Electrical Code and as follows: ents. [N] When only a single charging space is required per installed at the time of construction and shall be installed in	1 See also <i>California I</i> requirements for pa 2. Refer to Chapter 8	Building Code, arking facilities (Compliance F	Chapter 12, Sec and walkways orms, Workshe	ction 1205.6 fo eets and Refere	r college campi nce Material) fo	us lighting or IES TM-15-11			ТАВ
Construction plans and specifications shall include, but are	3. Refer to the California	nia Building Co	de for requiren	nents for addit	ions and alterat	ions.			STAI
odating a 208/240 -volt dedicated branch circuit.	5.106.10 GRADING AND PAVING manage all surface water flow surface water include, but are	<b>G.</b> Construction vs to keep wate e not limited to,	n plans shall inc er from entering the following:	dicate how site buildings. Exa	grading or a dra mples of methoo	inage system will ds to manage			
ice panel or a subpanel serving the area, and shall terminate in ion of the charging equipment and listed suitable cabinet, box,	<ol> <li>Swales.</li> <li>Water collection and display for the second design.</li> </ol>	posal systems.							[spray
nave sufficient capacity to accommodate a minimum or the future installation of the EVSE.	<ol> <li>French drains.</li> <li>Water retention gardens.</li> <li>Other water measures w</li> </ol>	/hich keep surfa	ace water away	from buildings	and aid in grour	ndwater recharge.			Produ
nents. [N] When multiple charging spaces are required per be installed at the time of construction and shall be installed de. Construction plans and specifications shall include, but are	Exception: Additions and alt	terations not all	tering the draina	ige path.	with Sections 5	106 12 1			Produ 5 <b>.303.4 COI</b>
	5.106.12.2, and 5.106.12.3. F Landscape irrigation necessa	Percentages sh ry to establish	own shall be m and maintain t	ree health shal	on on the summ I comply with S	ner solstice. ection 5.304.6.			5.303.4.1 F
ervice panel or a subpanel(s) serving the area, and shall oposed location of the charging equipment and into listed e(s) or equivalent.	5.106.12.1 Surface parking a installed to provide shade ov	<b>areas.</b> Shade t ver 50 percent	ree plantings, r of the parking	minimum #10 c area within 15	ontainer size o years.	r equal, shall be			shut off aft Note: This
ampere minimum branch circuits. ate the design of the electrical system, to include the rating of n transformers and have sufficient capacity to simultaneously	<b>Exceptions:</b> The surface structures, with roofing r included in the total area	ce parking area materials that c a calculations.	a covered by so comply with Tab	lar photovoltaio ble A5.106.11.2	shade structur .2 in Appendix A	es, or shade \5, are not			5.303.5 AREAS
d amperage. Ill have sufficient capacity to accommodate the required ) for the future installation of the EVSE.	5.106.12.2 Landscape areas installed to provide shade of	<ul> <li>Shade tress  </li> <li>f 20% of the lar</li> </ul>	olantings, minir ndscape area w	num #10 conta ithin 15 years.	iiner size or equ	ual shall be			California Buildi 5.303.4 shall ap
<b>[N]</b> Table 5.106.5.3.3 shall be used to determine if single or the future installation of EVSE.	Exceptions: Playfields	for organized	sport activity ar	e not included i	n the total area	calculation.			5.303.6 STANDA installed in acco referenced in Ta
e local enforcing agency has determined EV charging and r more of the following conditions:	5.106.12.3. Hardscape areas installed to provide shade ov	s. Shade tree ver 20 percent	plantings, minin of the hardscap	mum #10 conta pe area within	ainer size or eq 15 years.	ual shall be			SECTION 5
al supply. to the local enforcing agency substantiating that additional	<b>Exceptions:</b> Walks, has areas covered by shade Appendix A5, are not inc	rdscape areas e structures with cluded in the to	covered by sol h roofing mater otal area calcula	ar photovoltaic ials that comply tion.	shade structure with Table A5.	es, and hardscape 106.11.2.2 in			5.304.1 OUTDO comply with a loo Model Water Effi
equirements, directly related to the 5.3, may adversely impact the construction cost of the	DIVISION 5.2 ENERGY EF	FICIENCY							Notes: 1. The Ma Regula
	5.201.1 Scope [BSC-CG]. California standards in this code, the Califor	a Energy Code rnia Energy Cor	[DSA-SS]. For t mmission will c	the purposes o ontinue to ado	f mandatory en pt mandatory b	ergy efficiency ouilding			2. MWEL https:/
ES NUMBER OF REQUIRED SPACES	DIVISION 5.3 WATER EFF		ND CONSER	VATION					<b>5.304.6 OUTDC</b> colleges, landsca Department of W
2 <u>A</u>	<b>SECTION 5.301 GENERAL</b> 5.301.1 Scope. The provisions of outdoors and in wastewater conv	this chapter s veyance.	hall establish th	ne means of co	nserving water	use indoors,			Section 490 of C evapotranspiration
7	<b>SECTION 5.302 DEFINITIO</b> 5.302.1 Definitions. The following	<b>DNS</b> g terms are de	fined in Chapte	r 2 (and are ind	cluded here for	reference)			Exception: prescriptive
9 13	<b>EVAPOTRANSPIRATION ADJUSTN</b> reference evapotranspiration that	<b>MENT FACTOR</b> t adjusts for pl	(ETAF) [DSA-SS ant factors and	<b>5]</b> . An adjustm irrigation effic	ent factor when iency, which ae	n applied to two major			5.304.6.1 N equal to or
18 10% of total <sup>1</sup>	influences on the amount of wate FOOTPRINT AREA [DSA-SS]. The	er that needs to total area of t	b be applied to	the landscape. erior wall of th	e structure proj	ected to natural			5.304.6.2 F equal to or
unded up to the nearest whole number.	grade, not including exterior area METERING FAUCET. A self-closin	as such as stair g faucet that d	s, covered walk	ways, patios a	nd decks. water for each	actuation cycle.			DIVISION 5.
ce(s) for future EV charging as "EV CAPABLE". The anently and visibly marked as "EV CAPABLE".	GRAYWATER. Pursuant to Health	be fixed or ad	Justable.	922.12, "grayw	ater" means un	treated			SECTION 5 5.401.1 SCOPE
alify as designated parking as described in Section vehicles.	wastewater that has not been con contaminated, or unhealthy bodi processing, manufacturing, or op	ily wastes, and erating wastes	any collet disch does not prese s. "Graywater"	arge, nas not ent a threat fro includes, but is chines and b	been arrected b m contaminatic s not limited to	by infectious, on by unhealthful wastewater from			resource efficient employment of testing and adju
es shall count towards the total parking spaces required by	waste water from kitchen sinks of	r dishwashers.		. The Californi	a ordinance re-	ives not include			SECTION 5.4
or lighting systems shall be designed and installed to	landscape design, installation and developer installed landscapes gr based on landscaped area and clin	d maintenance reater than 25 matological pa	practices that v 00 square feet rameters	will ensure con meet an irrigat	ion water budge	amily and other et developed			ADJUST. To reg
ia Energy Code for Lighting Zones 0-4 as defined in a Administrative Code; and 5-11 (shown in Table A-1 in Chapter 8);	MODEL WATER EFFICIENT LANDS (California Code of Regulations T	SCAPE ORDINA	NCE (MWELO) n 2, Chapter 2 7	. [HCD] The Ca 7), regulating la	alifornia model Indscape design	ordinance n, installation			BALANCE. To p
ifornia Energy Code (shown in Tables 130.2-A and 130.2-B e shown in Table 5.106.8, [N] or Comply with a local	and maintenance practices. Loca ordinance at least as effective as	al agencies are the MWELO.	required to ad	opt the update	d MWELO, or a	dopt a local			BUILDING COM
ction 101.7, whichever is more stringent.	<b>POTABLE WATER.</b> Water that is o Drinking Water Standards. See de	drinkable and efinition in the	meets the U.S. California Plum	Environmental Ibing Code, Par	Protection Age t 5.	ncy (EPA)			construction pro planned, design
tions 130.2 (b) and 140.7 of the California Energy Code.	<b>POTABLE WATER. [HCD]</b> Water t the U.S. Environmental Protectio Health Authority Having Jurisdicti	that is satisfact on Agency (EPA ion.	ory for drinkin ) Drinking Wate	g, culinary, and er Standards ar	domestic purp nd the requirem	oses, and meets ents of the			ORGANIC WAST food soiled pape
In Table 140.7-B of the California Energy Code, Part 6. local enforcing agency, as permitted by Section 101.8 of construction.	<b>RECYCLED WATER.</b> Water which, controlled use that would not oth	, as a result of nerwise occur [	treatment of w 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
aire iumens.	water treated to remove waste n SUBMETER. [HCD 1] A secondary	natter attainin device beyond	g a quality that d a meter that r	is suitable to u measures wate	se the water ag	ain. of an individual			5.407.1 WEATH required by Cali
	rental unit within a multiunit resid Civic Code Section 1954.202 (g) a	dential structu and Water code	re or mixed-use e Section 517 fc	e residential an or additional de	d commercial s tails.)	tructure. (See			instructions or la 5.407.2 MOISTI
	<b>WATER BUDGET</b> . Is the estimate applied water allowance calculate Landscape Ordinance (MWELO).	a total landsca ed in accordan	pe irrigation w ce with the Dep	ater use which partment of Wa	snall not excee ater Resources	α τηε maximum Model Efficient			5.407.2.1 S
									<b>5.407.2.2 E</b> wind-drive
									<b>5.407</b> .2 intrusi
									perper 1. 2.
									3.
									5.407.2

5 CODE	_				Y = YES N/A = NOT APPLICABLE RESPON. PARTY = RESPONSIBLE PARTY (ie: ARCHITECT, ENGINEER,
5 July 2021	Supplemen	<b>nt)</b>	-1	1	OWNER, CONTRACTOR, INSPECTOR ETC.)
<b>5.303 INDOOR WATER USE</b> S. Separate submeters or metering devi	ces shall be installed for the uses describ	bed in	Y N//	A RESPON PARTY	SECTION 5.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING
Buildings in excess of 50,000 square fee	et. Separate submeters shall be installed	as follows:			<b>5.408.1 CONSTRUCTION WASTE MANAGEMENT.</b> Recycle and/or salvage for reuse a minimum of 65% of the non-hazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent
than 100 gal/day (380 L/day), including, ers, restaurant or food service, medical c	but not limited to, spaces used for laundr or dental office, laboratory, or beauty salc	o consume ry or on or barber			<ul> <li>5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance, submit a construction waste management</li> </ul>
here separate submeters for individual b he following subsystems: . Makeup water for cooling towers wh . Makeup water for evaporative coole	uilding tenants are unfeasible, for water ere flow through is greater than 500 gpm rs greater than 6 gpm (0.04 L/s).	supplied to n (30 L/s).			plan that: 1. Identifies the construction and demolition waste materials to be diverted from disposal by efficient usage, recycling, reuse on the project or salvage for future use or sale.
<b>Excess consumption.</b> A separate subme	ergy input more than 500,000 Btu/h (147 eter or metering device shall be provided	' kW). 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 will</li> </ol>
hin a new building or within an addition	that is projected to consume more than 1 D FITTINGS. Plumbing fixtures (water clos	1,000 sets and			<ul> <li>be taken.</li> <li>4. Specifies that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.</li> </ul>
ings (faucets and showerheads) shall con Water Closets. The effective flush volun	nply with the following: ne of all water closets shall not exceed 1.2	28 gallons			<b>5.408.1.2 Waste Management Company.</b> Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section.
effective flush volume of dual flush toile	ts is defined as the composite, average fl	ush volume			<b>Note:</b> The owner or contractor shall make the determination if the construction and demolition waste material will be diverted by a waste management company.
uced flushes and one full flush. Urinals 3.2.1 Wall-mounted Urinals The effectiv	ve flush volume of wall-mounted urinals	shall not			Exceptions to Sections 5.408.1.1 and 5.408.1.2: 1. Excavated soil and land-clearing debris.
d 0.125 gallons per flush.	tive flush volume of floor-mounted or oth	ner urinals			<ol> <li>Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.</li> <li>Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets.</li> </ol>
not exceed 0.5 gallons per flush. Showerheads. [BSC-CG] 3 3 1 Single showerhead, Showerheads	s shall have a maximum flow rate of not n	nore than			<b>5.408.1.3 Waste stream reduction alternative.</b> The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65%
Ilons per minute at 80 psi. Showerheads PA WaterSense Specification for Showerh	s shall be certified to the performance crineads.	teria of the			<ul><li>5.408.1.4 Documentation. Documentation shall be provided to the enforcing agency which</li></ul>
.3.3.2 Multiple showerheads serving one erhead, the combined flow rate of all the olled by a single valve shall not exceed 1. ned to allow only one shower outlet to be	shower. When a shower is served by mo showerheads and/or other shower outle .8 gallons per minute at 80 psi, or the sho e in operation at a time	ore than one ets ower shall be			demonstrates compliance with Sections 5.408.1.1, through 5.408.1.3. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.
A hand-held shower shall be considered	a showerhead.				Notes: 1. Sample forms found in "A Guide to the California Green Building Standards Code (Nonresidential)"
Faucets and fountains. .3.4.1 Nonresidential Lavatory faucets. L	avatory faucets shall have a maximum flo	ow rate of			Resources-List-Folder/CALGreen may be used to assist in documenting compliance with the waste management plan.
ore than 0.5 gallons per minute at 60 psi. <b>3.4.2 Kitchen faucets.</b> Kitchen faucets sh	all have a maximum flow rate of not mo	ore than 1.8			of Resources Recycling and Recovery (CalRecycle).
is per minute at 60 psi. Kitchen faucets m num rate, but not to exceed 2.2 gallons p ate of 1.8 gallons per minute at 60 psi.	ay temporarily increase the flow above t per minute at 60 psi, and must default to a	he a maximum		-	scoping provisions in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from
. <b>3.4.3 Wash fountains.</b> Wash fountains s is per minute/20 [rim space (inches) at 60	hall have a maximum flow rate of not mo ) psi].	ore than1.8			landfills. A list of prohibited Universal Waste materials shall be included in the construction documents. <b>Note</b> : Refer to the Universal Waste Rule link at: http://www.dtsc.ca.gov/universalwaste/
.3.4.4 Metering faucets. Metering faucet	ts shall not deliver more than 0.20 gallons	s per cycle.			<b>5.408.3 EXCAVATED SOIL AND LAND CLEARING DEBRIS.</b> 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a
num flow rate of not more than 0.20 gall Where complying faucets are unavailable tion.	ons per minute/20 [rim space (inches) at e, aerators or other means may be used t	60 psi]. to achieve			phased project, such material may be stockpiled on site until the storage site is developed.  Exception: Reuse, either on or off-site, of vegetation or soil contaminated by disease or pest infostation
<b>.3.4.6 Pre-rinse spray value</b> installed, shall meet the requirements ir	n the California Code of Regulations, Title	20			Notes: 1. If contamination by disease or pest infestation is suspected, contact the County Agricultural
ance Efficiency Regulations), Section 160 in 1607 (d)(7), and shall be equipped with	15.1 (h)(4) Table H-2, Section 1605.3 (h)(4 n an integral automatic shutoff.	l)(A), and			<ul> <li>Commissioner and follow its direction for recycling or disposal of the material.</li> <li>For a map of know pest and/or disease quarantine zones, consult with the California Department of Food and Agriculture. (www.cdfa.ca.gov)</li> </ul>
rnia Code of Regulations, Title 20 (Applia) on 1605.3 (h)(4)(A).	nce Efficiency Regulations), Section 1605	5.1 (h)(4) and			SECTION 5.410 BUILDING MAINTENANCE AND OPERATIONS 5.410.1 RECYCLING BY OCCUPANTS. Provide readily accessible areas that serve the entire building and
BLE H-2		-			are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.
NUFACTURED ON OR AFTER JA	ANUARY 28, 2019				<b>Exception</b> : Rural jurisdictions that meet and apply for the exemption in Public Resources Code 42649.82 (a)(2)(A) et seq. shall also be exempt from the organic waste portion of this section.
DUCT CLASS ay force in ounce force (ozf)] 5.0 ozf	MAXIMUM FLOW RATE (gpm)	-			<b>5.410.1.1 Additions.</b> All additions conducted within a 12-month period under single or multiple permits resulting in an increase of 30% or more in floor area, shall provide recycling areas on site.
uct Class 1 ( $\leq$ ) 8.0 ozf uct Class 2 (> 5.0 ozf and $\leq$ )	1.20				Exception: Additions within a tenant space resulting in less than a 30% increase in the tenant space floor area.
uct Class 3 (> 8.0 ozf) MMERCIAL KITCHEN EQUIPI	1.28 MENT.				<b>5.410.1.2 Sample ordinance.</b> Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the <i>Public Resources Code</i> . Chapter 18 is known as the California Solid Waste Reuse and 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 n rinding food waste/no-load) or shall auto	more than 1 matically			<b>Note:</b> A sample ordinance for use by local agencies may be found in Appendix A of the document at the CalRecycle's web site.
code section does not affect local jurisdi	iction authority to prohibit or require dis	poser			<b>5.410.2 COMMISSIONING. [N] New buildings 10,000 square feet and over.</b> For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner
<b>OF ADDITION OR ALTERATION.</b> For thing Standards Commission as specified in oply to new fixtures in additions or areas	hose occupancies within the authority of Section 103, the provisions of Section 5. of alteration to the building.	the .303.3 and			representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. For I-occupancies that are not regulated by OSHPD or for I-occupancies and L-occupancies that are not regulated by the California
ARDS FOR PLUMBING FIXTURES AND prodance with the California Plumbing Cod	<b>FITTINGS.</b> Plumbing fixtures and fitting (e, and shall meet the applicable standard	gs shall be ds			<b>Note:</b> For energy-related systems under the scope (Section 100) of the California Energy Code, including heating worthlation air conditioning (UVAC) systems and controls indeer lighting systems and controls as
5.304 OUTDOOR WATER USE	are and in Chapter 6 of this code.	a ta a ba ll			well as water heating systems and controls, refer to California Energy Code Section 120.8 for commissioning requirements
ocal water efficient landscape ordinance of ficient Landscape Ordinance (MWELO), w	r the current California Department of Wate hichever is more stringent.	er Resources'			Commissioning requirements shall include: 1. Owner's or Owner representative's project requirements. 2. Basis of design.
lodel Water Efficient Landscape Ordinan ations, Title 23, Chapter 2.7, Division 2. 20 and supporting documents, including	ce (MWELO) is located in the California C a water budget calculator. are available a	Code of			<ol> <li>Commissioning measures shown in the construction documents.</li> <li>Commissioning plan.</li> <li>Functional performance testing.</li> </ol>
//www.water.ca.gov/.	CAPE AREAS. For public schools and co	mmunity			<ol> <li>Documentation and training.</li> <li>Commissioning report.</li> </ol>
cape projects as described in Sections 5.3 Water Resources Model Water Efficient La Chapter 2.7, Division 2, Title 23, <i>California</i>	04.6.1 and 5.304.6.2 shall comply with the andscape Ordinance (MWELO) commencin <i>Code of Regulations</i> , except that the	California ng with			<ol> <li>Unconditioned warehouses of any size.</li> <li>Areas less than 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses.</li> </ol>
s (SLA) of 0.35. Any project with an aggregate landscape measures contained in Appendix D of the	e area of 2,500 square feet or less may col	mply with the			<ol> <li>Tenant improvements less than 10,000 square feet as described in Section 303.1.1.</li> <li>Open parking garages of any size, or open parking garage areas, of any size, within a structure.</li> </ol>
<b>Newly constructed landscapes.</b> New co greater than 500 square feet.	onstruction projects with an aggregate land	dscape area			<b>Note:</b> For the purposes of this section, unconditioned shall mean a building, area, or room which does not provide heating and or air conditioning.
<b>Rehabilitated landscapes.</b> Rehabilitated greater than 1,200 square feet.	landscape projects with an aggregate lan	dscape area			<ul> <li>Informational Notes:</li> <li>1. IAS AC 476 is an accreditation criteria for organizations providing training and/or certification of commissioning personnel. AC 476 is available to the Authority Having Jurisdiction as a reference for</li> </ul>
.4 MATERIAL CONSERVATION	I AND RESOURCE EFFICIENCY				<ul> <li>qualifications of commissioning personnel. AC 476 des not certify individuals to conduct functional performance tests or to adjust and balance systems.</li> <li>2. Functional performance testing for heating, ventilation, air conditioning systems and lighting controls much be performed in compliance with the Colifornia Energy Code.</li> </ul>
<b>5.401 GENERAL</b> The provisions of this chapter shall out many through protection of buildings from	line means of achieving material conserv exterior moisture, construction waste di	vation and iversion,			5.410.2.1 Owner's or Owner Representative's Project Requirements (OPR). [N] The expectations and
techniques to reduce pollution through usting.	recycling of materials, and building comr	missioning or			requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following: 1. Environmental and sustainability goals.
<b>402 DEFINITIONS</b> <b>TIONS.</b> The following terms are defined i	in Chapter 2 (and are included here for r	eference)			<ol> <li>Building sustainable goals.</li> <li>Indoor environmental quality requirements.</li> <li>Project program, including facility functions and hours of operation, and need for after hours</li> </ol>
gulate fluid flow rate and air patterns at t per.	he terminal equipment, such as to reduc	e fan speed			<ul><li>operation.</li><li>5. Equipment and systems expectations.</li><li>6. Building occupant and operation and maintenance (O&amp;M) personnel expectations.</li></ul>
isign quantities.	rance process that spans the entire docion	n and			<b>5.410.2.2 Basis of Design (BOD). [N]</b> A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the following systems:
ocess, including verifying and documenti ned, installed, tested, operated and main	ng that building systems and component tained to meet the owner's project requi	ts are irements.			<ol> <li>Renewable energy systems.</li> <li>Landscape irrigation systems.</li> <li>Water reuse system.</li> </ol>
<b>TE.</b> Food waste, green waste, landscape er waste that is mixed in with food waste	and pruning wste, nonhazardous wood v e.	waste, and			, <b>5.410.2.3 Commissioning plan. [N]</b> Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning plan shall include the
lure to determine quantitative performar 5.407 WATER RESISTANCE A	nce of a system or equipment	NT			following: 1. General project information. 2. Commissioning goals.
IER PROTECTION. Provide a weather-ra ifornia Building Code Section 1402.2 (We local ordinance, whichever is more string	esistant exterior wall and foundation env ather Protection), manufacturer's installa ent.	velope as ation			<ul> <li>3. Systems to be commissioned. Plans to test systems and components shall include:</li> <li>a. An explanation of the original design intent.</li> <li>b. Equipment and systems to be tested, including the extent of tests.</li> </ul>
URE CONTROL. Employ moisture contro	I measures by the following methods.				<ul> <li>c. Functions to be tested.</li> <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>
Entries and openings. Design exterior el	ntries and/or openings subject to foot tra	affic or			<ol> <li>Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included.</li> </ol>

**7.2.2.1 Exterior door protection.** Primary exterior entries shall be covered to prevent water sion by using nonabsorbent floor and wall finishes within at least 2 feet around and endicular to such openings plus at least one of the following:

An installed awning at least 4 feet in depth. The door is protected by a roof overhang at least 4 feet in depth. The door is recessed at least 4 feet.

Other methods which provide equivalent protection.
 5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.



			Ν	IONRESIDENTIAL	MANDATOR
Y N/A RESPON PARTY	5.410.2.4 Functional performance testing. [N] Functional performance tests shall demonstrate the	Y	N/A RESPO PARTY	SCHRADER ACCESS VALVES. Access fittings with a valve c	ore 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.			<b>SHORT RADIUS ELBOW</b> . Pipe fitting installed between two direction, with a radius 1.0 times the pipe diameter.	lengths of pipe or tubing to allow a change of
	and include any readings and adjustments made.			<b>SUPERMARKET.</b> For the purposes of Section 5.508.2, a super square feet or more conditioned area, and that utilizes either	ermarket is any retail food facility with 8,000
	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.			freezers connected to remote compressor units or condensin <b>VOC.</b> A volatile organic compound broadly defined as a chem	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:			with vapor pressures greater than 0.1 millimeters of mercury typically contain hydrogen and may contain oxygen, nitrogen 94508(a)	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</li> </ol>			Note: Where specific regulations are cited from different age	encies such as SCAQMD, ARB, etc., the VOC
	<ul> <li>troubleshooting, recommended maintenance requirements, site events log.</li> <li>Major systems.</li> </ul>			SECTION 5.503 FIREPLACES	
	<ol> <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>			5.503.1 FIREPLACES. Install only a direct-vent sealed-combuse sealed woodstove or pellet stove, and refer to residential requirements of the store o	stion gas or sealed wood-burning fireplace, or a rements 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			5.503.1.1 Woodstoves. Woodstoves and pellet stoves	shall comply with U.S. EPA New Source
	<ol> <li>System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces).</li> </ol>			are certified to meet the emission limits.	and shall have a permanent label indicating they
	<ol> <li>Review and demonstration of servicing/preventive maintenance.</li> <li>Review of the information in the Systems Manual.</li> <li>Review of the record drawings on the system/equipment.</li> </ol>			SECTION 5.504 POLLUTANT CONTROL     5.504.1 TEMPORARY VENTILATION. The permanent HVAC     necessary to condition the building or areas of addition or all	system shall only be used during constructior teration within the required temperature rang
	<b>5.410.2.6 Commissioning report. [N]</b> A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the			for material and equipment installation. If the HVAC system with a Minimum Efficiency Reporting Value (MERV) of 8, bas efficiency of 30% based on ASHRAE 52.1-1992 Replace all filt	is used during construction, use return air filte ed on ASHRAE 52.2-1999, or an average ers immediately prior to occupancy, or, if the
	5.410.4 TESTING AND ADJUSTING. New buildings less than 10,000 square feet. Testing and adjusting of			5.504.3 Covering of duct openings and protection of mech	nstruction. anical equipment during construction. At the
	or alteration subject to Section 303.1.			cooling and ventilation equipment, all duct and other related covered with tape, plastic, sheetmetal or other methods acce	air distribution component openings shall be eptable to the enforcing agency to reduce the
	5.410.4.2 (Reserved) Note: For energy-related systems under the scope (Section 100) of the California Energy Code, including			amount of dust, water and debris which may enter the syster 5.504.4 FINISH MATERIAL POLLUTANT CONTROL. Finish r	n. 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			through 5.504.4.6. 5.504.4.1 Adhesives, sealants and caulks. Adhesives, s	ealants, and caulks used on the project shall
	requirements of specific systems. 5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to			meet the requirements of the following standards: 1. Adhesives, adhesive bonding primers, adhesive shall comply with local or regional air pollution	e primers, sealants, sealant primers and caulks control or air quality management district rule
	<ul> <li>be included for testing and adjusting shall include at a minimum, as applicable to the project:</li> <li>1. Renewable energy systems.</li> <li>2. Landscape irrigation systems.</li> </ul>			where applicable, or SCAQMD Rule 1168 VOC 5.504.4.2. Such products also shall comply with toxic compounds (chloroform, ethylene dichlor	limits, as shown in Tables 5.504.4.1 and n the Rule 1168 prohibition on the use of certa ide, methylene chloride, perchloroethylene a
	<ol> <li>Water reuse systems.</li> <li>5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's</li> </ol>			<ul><li>trichloroethylene), except for aerosol products</li><li>2. Aerosol adhesives, and smaller unit sizes of adh units of product, less packaging. which do not</li></ul>	as specified in subsection 2, below. nesives, and sealant or caulking compounds (ir weigh more than one pound and do not consis
	specifications and applicable standards on each system. 5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning			of more than 16 fluid ounces) shall comply with requirements, including prohibitions on use of <i>Regulations</i> . Title 17, commencing with Section	n statewide VOC standards and other certain toxic compounds, of <i>California Code of</i> 194507.
	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			TABLE 5.504.4.1 - ADHESIVE VOC LIM	IT <sub>1,2</sub>
	Balance Council National Standards or as approved by the enforcing agency. 5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of			Less Water and Less Exempt Compounds in Grams <b>ARCHITECTURAL APPLICATIONS</b>	current voc limit
	testing signed by the individual responsible for performing these services. 5.410.4.5 Operation and maintenance (O & M) manual. Provide the building owner or representative			INDOOR CARPET ADHESIVES CARPET PAD ADHESIVES	50 50
	with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.			OUTDOOR CARPET ADHESIVES	150
	<b>5.410.4.5.1 Inspections and reports.</b> Include a copy of all inspection verifications and reports required by the enforcing agency.			RUBBER FLOOR ADHESIVES	60
	DIVISION 5.5 ENVIRONMENTAL QUALITY			CERAMIC TILE ADHESIVES	65
	<b>SECTION 5.501 GENERAL</b> <b>5.501.1 SCOPE.</b> The provisions of this chapter shall outline means of reducing the quantity of air			VCT & ASPHALT TILE ADHESIVES DRYWALL & PANEL ADHESIVES	50
	contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors.			COVE BASE ADHESIVES MULTIPURPOSE CONSTRUCTION ADHESIVES	50 70
	SECTION 5.502 DEFINITIONS 5.502.1 DEFINITIONS. The following terms are defined in Chapter 2 (and are included here for reference)			STRUCTURAL GLAZING ADHESIVES SINGLE-PLY ROOF MEMBRANE ADHESIVES	100 250
	<b>ARTERIAL HIGHWAY.</b> A general term denoting a highway primarily for through traffic usually on a continuous route.			OTHER ADHESIVES NOT SPECIFICALLY LISTED SPECIALTY APPLICATIONS	50
	<b>A-WEIGHTED SOUND LEVEL (dBA).</b> The sound pressure level in decibels as measured on a sound level meter using the internationally standardized A-weighting filter or as computed from sound spectral data to which A weighting adjustments have been made.			PVC WELDING CPVC WELDING	510 490
	<b>1 BTU/HOUR.</b> British thermal units per hour, also referred to as Btu. The amount of heat required to raise one pound of water one degree Fabrenbeit per hour, a common measure of heat transfer rate. A top of			ABS WELDING PLASTIC CEMENT WELDING	325
	refrigeration is 12,000 Btu, the amount of heat required to melt a ton (2,000 pounds) of ice at 32 <sup>0</sup> Fahrenheit.			ADHESIVE PRIMER FOR PLASTIC	550
	<b>COMMUNITY NOISE EQUIVALENT LEVEL (CNEL).</b> A metric similar to the day-night average sound level (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
	<b>COMPOSITE WOOD PRODUCTS.</b> Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardwood plywood, structural plywood			TOP & TRIM ADHESIVE	250
	structural panels, structural composite lumber, oriented strand board, glued laminated timber, timber, prefabricated wood I–joists or finger–jointed lumber, all as specified in California Code of Regulations (CCR), Title 17, Section 93120 1(a)			SUBSTRATE SPECIFIC APPLICATIONS           METAL TO METAL	30
	Note: See CCR, Title 17, Section 93120.1.			PLASTIC FOAMS POROUS MATERIAL (EXCEPT WOOD)	50 50
	<b>DAY-NIGHT AVERAGE SOUND LEVEL (Ldn).</b> The A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to sound levels occurring during nighttime hours (10p m to 7 a m)			WOOD FIBERGLASS	30 80
	<b>DECIBEL (db).</b> 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.			1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR S	SUBSTRATES TOGETHER, THE ADHESIVE
	<b>ELECTRIC VEHICLE (EV)</b> . An automotive-type vehicle for on-road use, such as passenger automobiles, buses trucks wars paighborhood electric vehicles, electric metercucles, and the like primarily powered by			WITH THE HIGHEST VOC CONTENT SHALL BE ALLO	WED.
	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 <i>California Electrical Code</i> , off-road, self-propoelled electric vehicles, such as industrial trucks			SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR C 1168, www.arb.ca.gov/DRDB/SC/CURHTML/R1168	QUALITY MANAGEMENT DISTRICT RULE 3.PDF
	hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats, and the like, are not included.			TABLE 5.504.4.2 - SEALANT VOC LIMIT	Г
	ELECTRIC VEHICLE CHARGING STATION(S) (EVCSj). One or more spaces intended for charging electric vehicles.			Less Water and Less Exempt Compounds in Grams	per Liter
	<b>ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE).</b> The conductors, including the ungrounded, grounded, and equipment grounding conductors and the electric vehicle connectors, attachment plugs, and all other			ARCHITECTURAL	250
	fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.			NONMEMBRANE ROOF	300
	energy as the fluctuating noise level integrated over the time of period of interest.			ROADWAY SINGLE-PLY ROOF MEMBRANE	450
	<b>EXPRESSWAY.</b> 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.			OTHER SEALANT PRIMERS	420
	<b>FREEWAY.</b> A divided arterial highway with full control of access and with grade separations at intersections. <b>GLOBAL WARMING POTENTIAL (GWP).</b> The radiative forcing impact of one mass-based unit of a given			ARCHITECTURAL NONPOROUS	250
	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.			POROUS MODIFIED BITUMINOUS	775 500
	<b>GLOBAL WARMING POTENTIAL VALUE (GWP VALUE).</b> 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			MARINE DECK	760
	"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			NOTE: FOR ADDITIONAL INFORMATION REGARDIN THE VOC CONTENT SPECIFIED IN THESE TABLES, S	NG METHODS TO MEASURE EE SOUTH COAST AIR QUALITY
	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).			MANAGEMENT DISTRICT RULE 1168. 5.504.4.3 Paints and coatings. Architectural paints and	coatings shall comply with VOC limits in Table
	<b>LONG RADIUS ELBOW.</b> 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.			of the ARB Architectural Coatings Suggested Control Me stringent local limits apply. The VOC content limit for co specialty coatings categories listed in Table 5.504.4.3 sha	easure, as shown in Table 5.504.4.3, unless more atings that do not meet the definitions for the all be determined by classifying the coating as
	<b>LOW-GWP REFRIGERANT.</b> 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			Flat, Nonflat or Nonflat-High Gloss coating, based on its 4.37 of the 2007 California Air Resources Board Suggest Nonflat or Nonflat-High Gloss VOC limit in Table 5 504 4	gloss, as defined in Subsections 4.21, 4.36 and ed Control Measure, and the corresponding Fla 3 shall apply.
	Regulations, Part 82, sec.82.3 (as amended March 10, 2009). MERV. Filter minimum efficiency reporting value, based on ASHRAF 52 2–1999			<b>5.504.4.3.1 Aerosol Paints and coatings</b> . Aerosol p for ROC in Section 94522(a)(3) and other requirement	baints and coatings shall meet the PWMIR Lim nts, including prohibitions on use of certain
	<b>MAXIMUM INCREMENTAL REACTIVITY (MIR).</b> 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			toxic compounds and ozone depleting substances, i Code of Regulations, Title 17, commencing with Sector of the Bay Area Air Quality Management District add	n Sections 94522(c)(2) and (d)(2) of California tion 94520; and in areas under the jurisdiction ditionally comply with the percent VOC by
	hundreths of a gram (g O <sup>3</sup> /g ROC). <b>PRODUCT-WEIGHTED MIR (PWMIR)</b> The sum of all weighted MIR for all ingradiants in a product subject to			weight of product limits of Regulation 8 Rule 49.	, , , percent voe by
	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).				

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

contribute to ozone formation in the troposphere.

**REACTIVE ORGANIC COMPOUND (ROC).** Any compound that has the potential, once emitted, to

# 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE RY MEASURES, SHEET 2 (July 2021, Includes July 2021 Supplement)

N/A RESPON. PARTY

			Y N		RESPON. PARTY	5.504.7 ENVIRONMENTAL TOBACCO SMOKE (ETS) CONTROL
TABLE 5.504.4.3 - VOC CONTENT LIMITS FOR A	RCHITECTURAL COATINGS <sub>2,3</sub>			_		smoking, prohibit smoking within 25 feet of building entries, out within the building as already prohibited by other laws or regulat regulations or policies of any city, county, city and county, Califor
GRAMS OF VOC PER LITER OF COATING, LESS WATER & LESS EXEMPT COM COATING CATEGORY	CURRENT VOC LIMIT					California State University, or campus of the University of Califor ordinances, regulations or policies are not in place, post signage
FLAT COATINGS	50					prohibitions.
NONFLAT COATINGS NONFLAT HIGH GLOSS COATINGS	100					SECTION 5.505 INDOOR MOISTURE CONTRO 5.505.1 INDOOR MOISTURE CONTROL. Buildings shall meet or
SPECIALTY COATINGS						measures, see Section 5.407.2 of this code.
ALUMINUM ROOF COATINGS BASEMENT SPECIALTY COATINGS	400			_		SECTION 5.506 INDOOR AIR QUALITY 5.506.1 OUTSIDE AIR DELIVERY. For mechanically or naturally
BITUMINOUS ROOF COATINGS	50			╧┤		minimum requirements of Section 120.1 (Requirements For Vent applicable local code, whichever is more stringent, and Division 1
BITUMINOUS ROOF PRIMERS BOND BREAKERS	350					5.506.2 CARBON DIOXIDE (CO2) MONITORING. For buildings of
CONCRETE CURING COMPOUNDS	350					ventilation, CO <sub>2</sub> sensors and ventilation controls shall be specifie requirements of the California Energy Code, Section 120(c)(4).
CONCRETE/MASONRY SEALERS	100					SECTION 5.507 ENVIRONMENTAL COMFORT
DRY FOG COATINGS	150					Class (STC) values determined in accordance with ASTM E 90 and Transmission Class (OITC) determined in accordance with ASTM
FAUX FINISHING COATINGS	350					performance method in Section 5.507.4.1 or 5.507.4.2.
FIRE RESISTIVE COATINGS	350 100					<b>Exception:</b> Buildings with few or no occupants or where oc exterior noise, as determined by the enforcement authority,
ORM-RELEASE COMPOUNDS	250					enclosed parking structures and utility buildings.
GRAPHIC ARTS COATINGS (SIGN PAINTS)	500					all subsections apply only to new construction.
NDUSTRIAL MAINTENANCE COATINGS	250					5.507.4.1 Exterior noise transmission, prescriptive method to the noise source making up the building or addition envel
LOW SOLIDS COATINGS1	120					composite STC rating of at least 50 or a composite OITC rati of a minimum STC of 40 or OITC of 30 in the following location
MAGNESTIE CEMENT COATINGS MASTIC TEXTURE COATINGS	100					1. Within the 65 CNEL noise contour of an airport.
METALLIC PIGMENTED COATINGS	500					Exceptions: 1. Ldn or CNEL for military airports shall be determined by the state of the state
MULTICOLOR COATINGS	250					<ol> <li>Use Zone (AICUZ) plan.</li> <li>Ldn or CNEL for other airports and heliports for which a be determined by the local general plan poise element.</li> </ol>
RIMERS, SEALERS, & UNDERCOATERS	100	1				<ol> <li>Within the 65 CNEL or L<sup>dn</sup> noise contour of a freeway of</li> </ol>
	350					fixed-guideway source as determined by the Noise Elen
RECYCLED COATINGS	250	$\left  \right $				<b>5.507.4.1.1. Noise exposure where noise contours are</b> a noise level of 65 dB L <sub>eq</sub> - 1-hr during any hour of operative of the second s
RUST PREVENTATIVE COATINGS	250					alteration exterior wall and roof-ceiling assemblies expo composite STC rating of at least 45 (or OITC 35), with e
SHELLACS:	720					OITC 30).
DPAQUE	550	$\left  \right $				5.507.4.2 Performance Method. For buildings located as de wall and roof-ceiling assemblies exposed to the noise source
SPECIALTY PRIMERS, SEALERS & UNDERCOATERS	100	11				envelope or altered envelope shall be constructed to provid to exterior sources that does not exceed an hourly equivale
STAINS	250					<b>5.507.4.2.1 Site Features.</b> Exterior features such as so appropriate to the building addition or alteration prov
	450					interior. 5.507.4.2.2 Documentation of Compliance. An acoust
RAFFIC MARKING COATINGS	100					sound levels shall be prepared by personnel approved by
TUB & TILE REFINISH COATINGS	420					<b>5.507.4.3 Interior sound transmission.</b> Wall and floor-ceilin tenant spaces and public places shall have an STC of at least
	250					<b>Note:</b> Examples of assemblies and their various STC ratings Noise Control: www.toolbase.org/PDF/CaseStudies/stc_icc_
NOOD PRESERVATIVES	350					SECTION 5.508 OUTDOOR AIR QUALITY
ZINC-RICH PRIMERS	340	] [		┓		<b>5.508.1 Ozone depletion and greenhouse gas reductions.</b> Insta suppression equipment shall comply with Sections 5.508.1.1 and 5
L. GRAMS OF VOC PER LITER OF COATING, INCLUDING WATER & EXEMPT ( 2. THE SPECIFIED LIMITS REMAIN IN EFFECT UNLESS REVISED LIMITS ARE L	COMPOUNDS ISTED IN SUBSEQUENT COLUMNS IN THE					5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrige
TABLE. 3. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CA	LIFORNIA AIR RESOURCES BOARD,					<b>5.508.1.2 Halons.</b> Install HVAC, refrigeration and fire suppre
THE AIR RESOURCES BOARD.	. MORE INFORMATION IS AVAILABLE FROM	Ī				<b>5.508.2 Supermarket refrigerant leak reduction.</b> New commercitive provisions of this section when installed in retail food stores
<b>5.504.4.3.2 Verification.</b> Verification of compliance with this request of the enforcing agency. Documentation may include	section shall be provided at the , but is not limited to, the following:					and that utilize either refrigerated display cases, or walk-in coole compressor units or condensing units. The leak reduction measured to the second se
<ol> <li>Manufacturer's product specification</li> <li>Field verification of on-site product containers</li> </ol>						high-global-warming potential (high-GWP) refrigerants with a GN systems include both new facilities and the replacement of existi
04.4.4 Carpet Systems.	ants of the California Donartmont of					<b>Exception:</b> Refrigeration systems containing low-global warming GWP value less than 150 are not subject to this section. Low-GW
blic Health, "Standard Method for the Testing and Evaluation of m Indoor Sources Using Environmental Chambers " Version 1	Volatile Organic Chemical Emissions					refrigerants that include ammonia, carbon dioxide ( $CO_2$ ), and pot
thod for California Specifications).						<b>5.508.2.1 Refrigerant piping.</b> Piping compliant with the Califor accessible for leak protection and repairs. Piping runs using the second sec
e California Department of Public Health's website for certificat ps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/	ion programs and testing labs. Pages/VOC.aspx#material					diameter (OD) less than 1/4 inch, flared tubing connections ar refrigerant systems except as noted below.
5.504.4.4.1 Carpet cushion. All carpet cushion installed in the	e building interior shall meet the					5.508.2.1.1 Threaded pipe. Threaded connections are p
requirements of the California Department of Public Health," Evaluation of Volatile Organic Chemical Emissions from Indoc	Standard Method for the Testing and or Sources Using Environmental					<b>5.508.2.1.2 Copper pipe.</b> Copper tubing with an OD less refrigerant charge of 5 pounds or less
Chambers, "Version 1.2, January 2017 (Emission testing methods)	od for California Specifications).					5.508.2.1.2.1 Anchorage. One-fouth-inch OD tubing
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/	IAQ/Pages/VOC.aspx#material					keep vibration levels below 8 mils.
5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet t	he requirements of Table 5.504.4.1.					<b>5.508.2.1.3 Flared tubing connections.</b> Double-flared tu controls, valve pilot lines and oil.
<b>5.504.4.5 Composite wood products</b> . Hardwood plywood, p fiberboard composite wood products used on the interior	articleboard and medium density r or exterior of the buildings shall					<b>Exception:</b> Single-flared tubing connections may be used
meet the requirements for formaldehyde as specified in ARB for Composite Wood (17 CCR 93120 et seq.). Those material	s Air Toxics Control Measure (ATCM) s not exempted under the ATCM must					searant suitable for use with refrigerants and tightened in recommendations.
meet the specified emission limits, as shown in Table 5.504.4	.5.					<b>5.508.2.1.4 Elbows.</b> Short radius elbows are only permiting radius elbows.
<b>5.504.4.5.3 Documentation.</b> Verification of compliance with requested by the enforcing agency. Documentation shall include the set of the set	tnis section shall be provided as ude at least one of the following:					5.508.2.2 Valves. Valves Valves and fittings shall comply with
<ol> <li>Product certifications and specifications.</li> <li>Chain of custody certifications.</li> <li>Product labeled and invested or machine the Comparison of t</li></ol>	site Wood Products regulation (					follows.
<ul> <li>CCR, Title 17, Section 93120, et seq.).</li> <li>Exterior grade products marked as meeting the DS</li> </ul>	1 or PS-2 standards of the Engineered					5.300.2.2.1 Pressure relief valves. For vessels containing be installed between the outlet of the vessel and the inlet
Wood Association, the Australian AS/NZS 2269 or E 5. Other methods acceptable to the enforcing agency	uropean 636 3S standards.]					<b>5.508.2.2.1.1 Pressure detection.</b> A pressure gauge installed in the space between the rupture disc and the space between the rupture disc and the space between the rupture disc and the space between the space
		,				or discharge of the relief valve.
BLE 5.504.4.5 - FORMALDEHYDE LIMITS						<b>5.508.2.2.2 Access valves.</b> Only Schrader access valves use.
XIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION						<b>5.508.2.2.2.1 Valve caps.</b> For systems with a refrig
RDWOOD PLYWOOD VENEER CORE	0.05					shall be brass or steel and not plastic.
RDWOOD PLYWOOD COMPOSITE CORE	0.05					5.508 2 2 2 2 1 Chain tothers. Chain tothers to
	0.09					designed to have seal caps.
N MEDIUM DENSITY FIBERBOARD2	0.13					<b>Exception:</b> Valves with seal caps that are not operation.
ALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFO TROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WIT	DRNIA AIR RESOURCES BOARD, AIR TOXICS H ASTM E 1333. FOR ADDITIONAL	-				5.508.2.3 Refrigerated service cases. Refrigerated service
DRMATION, SEE CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS	93120 THROUGH 93120.12.					vinegar and salt shall have evaporator coils of corrosion-resis coated to prevent corrosion from these substances.
HIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/10	o INCHES (8 MM).					5.508.2.3.1 Coil coating. Consideration shall be given to maximize energy efficiency
<b>04.4.6 Resilient flooring systems.</b> Where resilient flooring is i a receiving resilient flooring shall meet the requirements of the	nstalled, at least 80 percent of floor e California Department of Public					5.508.2.4 Refrigerant receivers. Refrigerant receivers with ca
alth, "Standard Method for the Testing and Evaluation of Vola oor Sources Using Environmental Chambers," Version 1.2. Jan	atile Organic Chemical Emissions from uary 2017 (Emission testing method for					fitted with a device that indicates the level of refrigerant in the
fornia Specifications)						<b>5.508.2.5 Pressure testing.</b> The system shall be pressure te charging.
e California Department of Public Health's website for certificat ps://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/	ion programs and testing labs. Pages/VOC.aspx#material					5.508.2.5.1 Minimum pressure. The system shall be ch
5.504.4.6.1 Verification of compliance. Documentation shall	be provided verifying that resilient					<b>5.508.2.5.2 Leaks.</b> Check the system for leaks, repair on
TIOORING materials meet the pollutant emission limits.						same gauge.
the infiltration media for outside and return air that provide register (MERV) of 13 MERV 13 filters shall be installed prior to the second prior	Guiany occupied areas of the building least a Minimum Efficiency Reporting					<b>5.508.2.5.3 Allowable pressure change</b> . The system sh than a +/- one pound pressure change from 300 psig, me
intenance with filters of the same value shall be included in the	e operation and maintenance manual.					5.508.2.6 Evacuation. The system shall be evacuated after p
<b>:eptions:</b> Existing mechanical equipment.						5.508.2.6.1 First vacuum. Pull a system vacuum down to
<b>5.504.5.3.1 Labeling.</b> Installed filters shall be clearly labeled MERV rating.	by the manufacturer indicating the					noia for 30 minutes.
						30 minutes.
						<b>5.508.2.6.3 Third vacuum.</b> Pull a third vacuum down to a hours with a maximum drift of 100 microns over a 24-hour
		1				

#### Y N/A RESPON. PARTY CHAPTER 7

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

### ON 5.505 INDOOR MOISTURE CONTROL

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

## ON 5.506 INDOOR AIR QUALITY

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

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

### ON 5.507 ENVIRONMENTAL COMFORT

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

## eption: Buildings with few or no occupants or where occupants are not likely to be affected by

erior noise, as determined by the enforcement authority, such as factories, stadiums, storage, osed parking structures and utility buildings.

#### eption: [DSA-SS] For public schools and community colleges, the requirements of this section and ubsections apply only to new construction.

7.4.1 Exterior noise transmission, prescriptive method. Wall and roof-ceiling assemblies exposed ne noise source making up the building or addition envelope or altered envelope shall meet a posite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows minimum STC of 40 or OITC of 30 in the following locations: Within the 65 CNEL noise contour of an airport.

#### Exceptions

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

## 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

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

pied 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.

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

## ON 5.508 OUTDOOR AIR QUALITY

Dzone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration and fire sion equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.

#### 3.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do ontain CFCs. 3.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.

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

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

on: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a ue less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting

### ants that include ammonia, carbon dioxide (CO<sub>2</sub>), and potentially other refrigerants. 3.2.1 Refrigerant piping. Piping compliant with the California Mechanical Code shall be installed to be

ssible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside eter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in gerant systems except as noted below.

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

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.

# **.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.

**5.508.2.2.2.2 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

## **3.2.3 Refrigerated service cases.** Refrigerated service cases holding food products containing

gar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be ted 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. **3.2.4 Refrigerant receivers.** Refrigerant receivers with capacities greater than 200 pounds shall be

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

**3.2.6 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.

**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 responsibility 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 ollowina

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

3. 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 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, 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 limited 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.





DEPARTMENT OF FORESTRY AND FIRE PROTECTION     Gavin Newsom, Governor       DEPARTMENT OF FORESTRY AND FIRE PROTECTION     Image: Content of the State Fire Marshal       P.O. Box 944246 SACRAMENTO,     CA 94244-2460 (916) 568-2993       Website:     www.osfm.fire.ca.gov	
Department of State Hospitals,         gency & Project Name_DSH-Atascadero Re-Roof, HVAC Replacement, & Electrical Upgrades         ddress:       10333 El Camino Real, Atascadero, CA 93422         woMotus Control Number: 22-3319, 22-4869, 22-4870, & 22-4872         ant to CCR Title 19 §3.00 and §3.05, the California State Fire Marshal is requesting cation from the local fire authority that the above sections are met to their satisfaction.         om shall be scanned to the accompanying fire access plan reflecting all items under for scope. California State Fire Marshal project approval may be delayed until this s completed and returned. If you have any questions, please contact the California Fire Marshal Plan Review Section at (916) 568-2993.         Xepproved         Yes         No         Fire Department Accesss         Xep No         Fire Anom Annunciator	
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:       Atascadero State Hospital Fire Department         Address:       10333 El Camino Real         City/State/ZIP:       93422         Approval issued by:       Gustavo Avalos         Rank/Title:       Capitan/Acting Chief         Phone Number:       (805) 468-2501         Signature:       Date: 01/27/2023	
XX	LEGEND:       OSFM #19-40-61-0001-00041 & PERMIT #22-S-4869, FIREHOUSE        xx-       (E) CHAIN LINK SECURITY FENCING         AREA OF ROOFING WORK. REFER TO AD1.23 FOR DEMO & A1.23 FOR NEW WORK.        >>>       (E) FIRE DEPARTMENT ACCESS OVER (E) PAVED SURFACES.         (E) F.H       (E) FIRE HYDRANT ADJACENT PAVED ACCESS ROAD.
(E) SLIDING GATE GATE A: 16.5'W x 14'H (E) GATE: 12'W x 14.5'H (E) PR. SWING GATES GATE 6: 11.5'W x 12'H (E) PR. SWING GATES GATE 6A: 11.5'W x 12'H	<ol> <li>GENERAL NOTES:         <ol> <li>FOR DESIGNED CONSTRUCTION PHASING SEQUENCE AND LOCATIONS OF TEMPORARY FACILITIES AND CONSTRUCTION MATERIALS ROOF ACCESS, REFER TO AP-SHEETS.</li> <li>FOR REFERENCE EXISTING ROOF INFORMATION REFER TO CIVIL ROOF TOPO ON V-SHEETS.</li> <li>CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL SITE REQUIRED SECURITY CLEARANCES FOR ALL PERSONNEL PRIOR TO COMMENCEMENT OF WORK. COORDINATE WITH ON-SITE SECURITY FOR SUBMITTAL FORMS AND PROCESS / TIME FRAME INFORMATION.</li> </ol> </li> <li>FIRE DEPARTMENT ACCESS PER 2019 CFC 3310.1 REQUIRED ACCESS. 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 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 PROVIDED BY EITHER TEMPORARY OR PERMANENT ROADS, CAPABLE OF SUPPORTING VEHICLE LOADING UNDER ALL WEATHER CONDITIONS. VEHICLE ACCESS SHALL BE MAINTAINED UNTIL PERMANENT FIRE APPARATUS ACCESS ROADS ARE AVAILABLE.</li> <li>LOCATIONS OF DUMPSTERS FOR DEMO RUBBISH PER 2019 CFC 3304.2.3 RUBBISH CONTAINERS. WHERE RUBBISH CONTAINERS WITH A CAPACITY EXCEEDING 5.33 CUBIC FEET (40 GALLONS) (0.15 M3) ARE USED FOR TEMPORARY STORAGE OF COMBUSTIBLE DEBRIS, RUBBISH, AND WASTE MATERIAL, THEY SHALL HAVE TIGHT-FITTING OR SELF-CLOSING LIDS. SUCH RUBBISH CONTAINERS SHALL BE CONSTRUCTED ENTIRELY OF MATERIALS</li> </ol>
(E) VISITOR PARKING CONST. LAY-DOWN YARD	<ul> <li>THAT COMPLY WITH EITHER OF THE OF THE OLLOWING:</li> <li>A. NONCOMBUSTIBLE MATERIALS.</li> <li>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.</li> <li>6. WATER SUPPLY PER 2019 CFC 3312.1 WHEN REQUIRED.</li> <li>AN APPROVED WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ARRIVES ON THE SITE.</li> <li>7. LOCATIONS OF FIRE EXTINGUISHERS PER 2019 CFC 3317.3 FIRE EXTINGUISHERS FOR ROOFING OPERATIONS.</li> <li>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.</li> </ul>
TRUE REF 52.5' 17.5' 70' 35' 0' 70' SCAL F: 1"=70'	





GE	NERAL DEMO ROOF NOTES:
1.	EXISTING ROOFING, WALK PADS, INSULATION, COUNTER FLASHING, ETC. TO BE DEMO'ED. TO EXISTING CONCRETE ROOF DECK OR WALL. (ONE AREA @ ADMISSIONS ALREADY DEMO'ED TO (E) METAL DECK.) PREP FOR NEW ROOF INSTALLATION THROUGHOUT.
2.	REFER TO M-SHEETS FOR ALL HYDRONIC PIPING ROUTING. ALL HYDRONIC PIPING SUPPORTS TO BE DEMO'ED INCLUDING ANCHORAGE TO STRUCTURE (FLUSH W/ CONC.).
3.	REFER TO E-SHEETS FOR SPECIFIC CONDUIT ROUTING. (E) CONDUIT SUPPORTS ASSOCIATED WITH RUNS THAT ARE TO REMAIN SHALL BE PREP'ED FOR NEW FLASHING. PROVIDE EXTENSIONS OF PIPE RISER AS REQ'D TO ACCOMMODATE NEW ROOFING. PREP PIPE & FITTINGS FOR PAINTING PER SPECIFICATION 09 97 13.
4.	REFER TO E-SHEETS FOR SUPPORTING OR RELOCATING OF ELECTRICAL PANELS TO REMAIN THAT ARE MOUNTED ON HVAC EQUIP/DUCT WORK THAT IS TO BE DEMO'ED.
5.	DEMOLITION REQUIREMENTS THAT ARE SHOWN ON THE DEMOLITION DRAWINGS ARE DIAGRAMMATIC AND/OR IMPLIED AND DO NOT REPRESENT EVERY ITEM TO BE REMOVED. THE CONTRACTOR IS TO PROVIDE ALL DEMOLITION WORK NECESSARY TO COMPLETE THE WORK SHOWN IN THE CONSTRUCTION DOCUMENTS, WHETHER OR NOT SPECIFIC DEMOLITION REQUIREMENTS ARE INDICATED IN THE DEMOLITION DRAWINGS. REVIEW ALL DOCUMENTS FOR A FULL AND COMPLETE UNDERSTANDING OF DEMOLITION, SALVAGE/REUSE, RELOCATION, AND MODIFICATION OF SYSTEMS OR COMPONENTS.
6.	ITEMS DAMAGED DURING THE COURSE OF CONSTRUCTION, OR ITEMS UNCOVERED AS A RESULT OF DEMOLITION WORK MUST BE REPAIRED OR REPLACED WITH NEW MATERIALS AS REQUIRED TO RESTORE DAMAGED ITEMS OR SURFACES, EQUAL TO OR BETTER THAN PRE-CONSTRUCTION CONDITION, AS APPROVED BY THE STATE REPRESENTATIVE.
7.	BEFORE BEGINNING ANY CUTTING, TEAR OFF, OR DEMOLITION WORK, THE CONTRACTOR MUST CAREFULLY INSPECT THE EXISTING FACILITIES AND EXAMINE THE CONTRACT DOCUMENTS TO DETERMINE THE EXTENT OF THE WORK. THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO EXISTING FACILITIES WHICH ARE TO REMAIN IN PLACE AND/OR IN OPERATION. THE CONTRACTOR MUST CAREFULLY COORDINATE THE DEMOLITION WORK WITH ALL OTHER WORK AND MUST PROVIDE SHORING, SHEETING, BRACING, AND/OR SUPPORTS AS REQUIRED. THE CONTRACTOR MUST ENSURE THAT EXISTING STRUCTURAL ELEMENTS ARE NOT OVERLOADED AND MUST BE RESPONSIBLE FOR INCREASING STRUCTURAL SUPPORTS OR ADDING NEW SUPPORTS AS MAY BE REQUIRED AS A RESULT OF ANY CUTTING, REMOVAL, OR DEMOLITION WORK PERFORMED UNDER ANY PART OF THIS CONTRACT. THE CONTRACTOR MUST REMOVE ALL TEMPORARY PROTECTION WHEN THE WORK IS COMPLETE OR WHEN SO AUTHORIZED BY THE STATE REPRESENTATIVE.
8.	COORDINATE WITH THE A.S.H. FACILITY REPRESENTATIVE FOR THE ISOLATION OF THE PROJECT UTILITIES FROM OVERALL SITE UTILITIES. CONTRACTOR MUST COORDINATE TO ELIMINATE THE LOSS OF UTILITY SERVICE, INCLUDING GAS, ELECTRIC, TELEPHONE, WATER, SEWER, STEAM, OR STORM DRAINAGE, TO ACTIVE AREAS OF THE OVERALL FACILITY UTILITIES AND ANCILLARY FACILITIES.
9.	ALL ROOF PENETRATIONS OF CONDUIT, PIPING, HYDRONICS, REFRIGERATION LINE-SETS, ETC. SHALL HAVE ALL CAULKING/SEALANT AND PACKING/BACKING REMOVED FOR THE FULL DEPTH OF THE CONCRETE ROOF SLAB IN PREPARATION FOR NEW RATED SEALING.
10.	COORDINATE WITH A.S.H. FACILITY REPRESENTATIVE FOR DEACTIVATION OF MOTION DETECTION WIRING INSTALLED ON ROOF SECURITY FENCING IN AREA OF WORK. MAINTAIN SYSTEM WHERE EVER POSSIBLE AND MINIMIZE DOWN TIME.

TRUE REF

M

**B** 



ISSUE DATE: JANUARY 14, 2025

19056

V2



DO1 AIR HANDLER & DUCTWORK TO BE DEMOLISH - SEE M-SHEETS FOR COMPLETE SCOPE
D02 HVAC UNIT CONCRETE CURB TO REMAIN - DEMO ROOFING & FLASHING COMPLETELY
bog s-sheets for complete scope
ROOF SLAB - SEE M-SHEETS FOR COMPLETE SCOPE
EXHAUST FAN TO BE REMOVED - CURB & ROOF PENETRATION TO REMAIN, SAFE OFF ELECTRICAL CONNECTIONS - SEE M-SHEETS FOR COMPLETE SCOPE
SPLIT SYSTEM/ R.T.U. HVAC UNIT TO BE REMOVED, CLEANED, & STORED FOR REINSTALLATION. SAFE OFF ALL UTILITY CONNECTIONS ABOVE ROOF - SEE M-SHEETS
FOR COMPLETE SCOPE
REINSTALLATION - SEE ALSO M-SHEETS FOR COORDINATION WITH NEW WORK
Image: Description of the control o
PREP FOR (N) FLASHING - SEE ALSO E-SHEETS FOR ADDITIONAL WORK
ELECTRICAL CONDUIT PENETRATION TO BE DEMO'ED TO FLUSH WITH CONC DECK. PACK HOLE W/ GROUT.
D10 ROOF DRAIN (& OVERFLOW DRAIN WHERE OCCURS) TO REMAIN - REMOVE STRAINER & CLAMP RING, CLEAN BOWL, & FLUSH DOWNSPOUT. PROTECT DOWNSPOUT INLET DURING WORK
(E) FALL PROTECTION BARRIER SCREEN. REMOVE CORRUGATED METAL PANELS - CLEAN & PREP FOR PAINTING. STORE FOR REINSTALLATION. EXISTING SUPPORT POST TO REMAIN - PREP FOR PAINT & (N) FLASHING
D11a) DEMO CORRUGATED SCREEN PANELING AND STL. POSTS COMPLETELY
D12 DEMO STEEL OK ALOWINOM STARS, LANDINGS, & KAILINGS INCLODING BASE MOUNTS COMPLETELY. DEMO ANCHORS TO FLUSH WITH CONCRETE SURFACE
D13 STEEL RAILINGS TO REMAIN. DEMO FLASHING, CLEAN, & PREP FOR PAINTING
ALUMINUM CATWALK PANELS (& RAILING WHERE OCCURS) TO BE REMOVED, CLEANE & STORED FOR REINSTALLATION. SUPPORT POSTS & FRAME TO BE DEMO'ED AS REQUIRED FOR RELOCATION. ALL REMAINING SUPPORT POSTS ARE TO BE CLEANED O FLASHING
D15 WOOD CATWALKS TO BE DEMOLISHED COMPLETE PARAPET CAP FLASHING TO BE DEMOLISHED INCLUDING WOOD NAILERS - ANCHORS D16 TO BE DEMOLISHED TO FLUSH WITH CMU/CONCRETE. DEMO ALL ASSOCIATED
SEALANTS CHAIN LINK FENCING WITH OUTRIGGERS (WHERE OCCURS) & CHAIN LINK GATES (WHERE OCCURS) TO BE REMOVED & STORED FOR REINSTALLATION. PROTECT ANCHORS IN PLACE
STEEL PIPE & CHANNEL SUPPORTS TO REMAIN. DEMO FLASHING FROM PIPES & PREP FOR PAINTING
5 SKYLIGHT TO BE DEMOLISHED COMPLETELY INCLUDING WOOD CURBS. ALL ANCHORS
(D20) GUTTER & TAILPIPE TO BE DEMOLISHED COMPLETELY. DOWNSPOUTS TO REMAIN
(E) HOSE BIB ON EXPOSED PIPE. DISCONNECT PIPING AS REQ'D FOR WORK. STORE
DEMO COUNTERFLASHING, SEALANT, & ANCHORS TO FLUSH WITH FACE OF WALL OR
FROM KERF. PREP WALL FOR (N) WORK
D23) DEMO (E) STEEL LADDER. DEMO FLASHING & SEALANT
ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE
D25 ROOF EDGE: DEMO ROOFING SYSTEM & NAILERS TO CONCRETE SLAB. DEMO ALL FLASHING & CLEATS, INCLUDING ANCHORS TO FLUSH WITH CONCRETE. (E) RAZOR
D26 METAL ROOFING AREA. N.I.C.
D27 SECURITY DEVICE. DISCONNECT MOUNT FROM ROOF & PROTECT FOR REINSTALL
D28 DEMO PITCH POCKET COMPLETELY. CLEAN UTILITIES & PROTECT IN PLACE. SEE ALSO M- & E-SHEETS FOR ADDITIONAL INFORMATION
(E) ELECTRICAL PANEL. SEE E-SHEETS
D30 SCUPPER/WALL PENETRATION. DEMO ALL ROOFING & FLASHING FROM ALL SIDES OF
<ul> <li>WALL PENETRATION. LEADER HEAD OR RECEIVER (AS OCCURS) TO REMAIN</li> <li>ROOF EDGE - DEMOLISH ROOFING SYSTEM &amp; NAILERS TO METAL DECKING. DEMOLISH</li> </ul>
(D31) ALL FLASHING & GUTTER (WHERE OCCURS), INCLUDING ANCHORS. DOWNSPOUTS TO REMAIN
DEMO EXPANSION JOINT COVER & ALL WOOD ELEMENTS BELOW DOWN TO CONCRETE/CMU CURB, WALL OR DECK
D33 ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE</li> <li>D33 DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>D34 DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> </ul>
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING</li> </ul>
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> </ul>
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> <li>KEY PLAN:</li> </ul>
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> </ul>
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> </ul>
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> </ul>
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> </ul>
BOOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.         Image: DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         Image: DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         Image: DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         Image: DEMO MORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         Image: DEMO MORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         Image: DEMO MORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> </ul>
ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO. DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO. (E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS. KEY PLAN: AREA OF WORK FOR THIS SHEET
ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO. DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO. (E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS. KEY PLAN: AREA OF WORK FOR THIS SHEET
ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.          133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       (E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN:         AREA OF WORK FOR THIS SHEET
<ul> <li>ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, &amp; STORED FOR ROOFING WORK. DEWO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> </ul> KEY PLAN: AREA OF WORK FOR THIS SHEET
0033       ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.         034       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         035       (E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         KEY PLAN:         AREA OF WORK FOR THIS SHEETS
033       DEMOLISHED TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.         034       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         035       (E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMIING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS. <b>KEY PLAN: KEY PLAN:</b>
033       DEMOLSHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFIL - SEE S-SHEETS FOR ADD'L. INFO.         033       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         033       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         033       (e) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN:         AREA OF WORK FOR THIS SHEET
133       DEMOLISHED TO FLUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.         133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       CE) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN:         CONTROL OF PLANE         UNIT CONCRETE A STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN:         CONTROL OF POR ROOFING WORK FOR THIS SHEET         OF ROOFING WORK FOR THIS SHEETS         CONTROL OF POR ROOFING WORK FOR THIS SHEETS         CONTROL OF POR ROOFING WORK FOR THIS SHEETS         OF ROOFING WORK FOR THIS SHEETS
<ul> <li>(1) BOOFED-IN CURB TO BE DEEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.</li> <li>(1) DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(1) DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS FOR ADD'L. INFO.</li> <li>(1) DEMO MECH. UNIT COMPLETELY INCLUDING CURB &amp; DUCTWORK. SEE M &amp; E-SHEETS ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> <li>(2) REPENDER OF ING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M &amp; E-SHEETS.</li> </ul>
(33)       BOOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOLISHED TO FUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE SHEETS FOR ADD'L. INFO.         (34)       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS         (35)       (E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ROOFING WORK. DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN: <b>KEY PLAN: CONTACT CONTACT</b> <td< td=""></td<>
(1)33       DEMOLISHED TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE FOR ADD'L. INFO.         (1)33       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         (1)33       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         (1)33       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         (1)33       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         (1)33       ROOFING WORK, DEMO CURB/PLATFORM FRAMING COMPLETELY INCLUDING ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN: <b>LEGEND: LEGEND: EXPANSION JOINT:</b> DEMO SHT. MTL., JOINT FILLER, BELLOWS, ETC. COMPLETELY:         CHAIN INK EENCING: DEMOVED ONTS 9. MICKED AS DECUMPED FOR MODELY
(33)       DEMOMENTION CURB TO BE DEMOUSHED COMPLETELY TO DECK. ALL ANCHORS TO BE DEMOUSHED TO FUSH WITH CONCRETE. PREP DECK VOID FOR INFILL - SEE S-SHEETS FOR ADD'L. INFO.         (33)       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS         (33)       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS         (33)       (E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN:         OUT OF COUPLING UNDER TO BE DISCONNECTED, REMOVED, & STORED FOR ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN:         OUT OF COUPLING UNDER TO BE DISCONNECTED, REMOVED, & STORED FOR ANCHORS. SEE ALSO M & E-SHEETS.         KEEY PLAN:         OUT OF COUPLING UNDER TO BE DISCONNECTED, REMOVED, & STORED FOR MORK FOR THIS SHEET         FOR ADD'L INFO.         AREA OF WORK         FOR THIS SHEET         OUT OF COUPLING ON THE TO REMAIN IN PLACE         FOR ADD UNIT: DEMO SHT. MTL., JOINT FILLER, BELLOWS, ETC.         COMPLETELY.         X CHAIN LINK FENCING: REMOVE POSTS & KICKERS AS REQUIRED FOR WORK
ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE FOR ADD'L. INFO.         Image: Completency of the comple
133       ROOFED-IN CURB TO BE DEMOLISHED COMPLETELY TO DECK. ALL ANCHORS TO BE FOR ADD'L. INFO.         133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       DEMO MECH. UNIT COMPLETELY INCLUDING CURB & DUCTWORK. SEE M & E-SHEETS FOR ADD'L. INFO.         133       C(E) REFRIGERATION EQUIPMENT TO BE DISCONNECTED, REMOVED, & STORED FOR ANCHORS. SEE ALSO M & E-SHEETS.         KEY PLAN: <b>CHAPTERINAL OF WORK</b> FOR THIS SHEET <b>INFO INFO CHAPTERINAL OF WORK</b> FOR THIS SHEET <b>CHAPTERINAL OF WORK</b> FOR THIS SHEET

WALKPAD LAYOUT: DEMO

\*\*\* \*\*\* \*\*\* \*\*\* MECH. DEMO WORK: (SEE M-SHEETS)

PD - PD - PD - PIPING DEMO WORK (HYDRONIC OR WATER): (SEE M-SHEETS)

WOODEN CATWALK OVER WOOD SLEEPERS: DEMO

- ε ---- ε ---- ELECTRICAL CONDUIT PATH. REFER TO E-SHEETS FOR WORK.

SCALE: 1/8"=1'-0'

TRUE REF

- N /

K



ISSUE DATE: JANUARY 14, 2025



$\vee$ $\vee$ $\vee$ $\vee$	
+++++++++++++++++++++++++++++++++++++++	EXPANSION JOINT
— EJ-2HR ——	2-HR RATED EXPANSION JOINT
— x — _ x —	CHAIN LINK FENCING
0 0	FALL PROTECTION SCREEN PANELS
oo	PIPE GUARD RAIL
	OUTSIDE EDGE OF WALL BELOW
	ELEVATED 4' WIDE CATWALK OR MAINTENANCE PLATFORM SYSTEM. SI 1/8" SCALE PLANS FOR ADD'L. INFO.
	3' WIDE WALKPAD LAYOUT
- w w	HYDRONIC PIPING LAYOUT (SEE MP-SHEETS)
- CD CD	CONDENSATE PIPING LAYOUT (SEE MP-SHEETS)
- E E	ELECTRICAL CONDUIT LAYOUT (SEE E-SHEETS)
	STRUCTURAL STEEL FRAME FOR AIR HANDLER SUPPORT ABOVE ROOF (S S-SHEETS)
<b>X</b> #"	FINISHED ROOFING ELEVATION MARKER. ELEVATIONS RELATIVE TO ROO DRAIN IN SAME AREA. ALL SLOPE TO BE DEVELOPED IN TAPERED RIGID INSUL. ON STRUCTURAL SUBSTRATE.
	MINIMUM AREA OF FLUID APPLIED ROOFING. SEE 1/8'' SCALE PLANS FOL LAYOUT.

- ROOFING SHALL BE SINGLE PLY MEMBRANE UNLESS SPECIFICALLY NOTED TO BE FLUID APPLIED MEMBRANE, EACH O/ 1-1/2" MIN. RIGID INSUL. REFER TO SPECIFICATIONS FOR
- FINISHED SLOPES OF ROOFING SHALL BE 1/4" PER FOOT MINIMUM. ELEVATIONS TAGGED ON THESE DRAWINGS ARE MINIMUM ELEVATION CHANGES FROM DRAIN INLET ELEVATION TO HIGH POINTS. CONTRACTOR SHALL FIELD VERIFY REQUIREMENTS FOR ADDITIONAL TAPERED INSULATION AFTER DEMO IS COMPLETE AND INCLUDE DIMENSIONS FOR ADDITIONAL INSULATION IN THE SHOP DRAWINGS.
- CONTRACTOR TO REVIEW THE M-SHEETS AND E-SHEETS FOR PIPING AND CONDUIT SUPPORTS. WHERE NO SUPPORT IS NOTED ON THE M-SHEETS OR E-SHEETS,
- CONTRACTOR TO REVIEW THE M-SHEETS AND S-SHEETS FOR DUCTWORK SUPPORTS. WHERE NO SUPPORT IS NOTED ON THE M-SHEETS, CONTRACTOR SHALL PROVIDE
- CURBS AROUND MECH. EQUIPMENT SHALL BE PROVIDED AND INSTALLED PER M-SHEETS.
- ALL ROOF PENETRATIONS OF CONDUIT, PIPING, HYDRONICS, REFRIGERATION LINE-SETS, ETC. SHALL HAVE THE PENETRATIONS SEALED PER U.L. LISTED RATED DETAILS. SEE
- REFER TO STRUCTRUAL PLANS FOR ALL UNIT LOCATION CONTROL DIMENSIONS.
- (E) SMALL (<12") CONDUIT "T" SUPPORTS TO REMAIN SHALL HAVE THE STEEL PIPE & STRUT EXPOSED ABOVE THE NEW ROOFING FLASHING PREP'ED AND COATED PER SPEC 09 97 13. PROVIDE PIPE EXTENSIONS AS REQ'D BASED ON NEW TAPER INSUL. ELEVATION AND FLASHING REQMT'S.
- FOR TYPICAL FLASHING FOR ALL DUCT THRU ROOF PENETRATION DETAILS REFER TO SHEET A2.3.

ISSUE DATE: JANUARY 14, 2025

TRUE REF

N

B

![](_page_6_Picture_17.jpeg)

![](_page_7_Picture_0.jpeg)

![](_page_7_Figure_1.jpeg)

![](_page_7_Figure_2.jpeg)

TRUE REF

[H

SCALE: 1/8"=1'-0'

8'6'4'2'0'

![](_page_7_Figure_3.jpeg)

![](_page_7_Picture_4.jpeg)

![](_page_8_Figure_0.jpeg)

23 3:15 PM BRYANF 19056 ATASCADERO STATE HOSPITAL\06-ASH

![](_page_9_Figure_0.jpeg)

![](_page_10_Figure_0.jpeg)

![](_page_11_Figure_0.jpeg)

![](_page_12_Figure_0.jpeg)

![](_page_13_Figure_0.jpeg)

21/2023 3:21 PM BRYANF .G.S/19056 ATASCADERO STATE HOSPITAL

![](_page_13_Picture_2.jpeg)

![](_page_14_Figure_0.jpeg)

![](_page_14_Figure_3.jpeg)

<text><text><section-header><section-header><section-header><text><text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text></text></section-header></section-header></section-header></text></text>	<page-header><page-header><page-header><text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><section-header><form></form></section-header></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text></page-header></page-header></page-header>	<text><text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text></text>	<text><section-header><section-header><section-header><section-header><section-header><section-header><pre>point in the second secon</pre></section-header></section-header></section-header></section-header></section-header></section-header></text>				
<image/> <image/> <image/> <image/> <image/> <section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><section-header><form><text><text></text></text></form></section-header></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	<image/> <image/> <image/> <section-header><section-header><image/><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><form><form><form><form></form></form></form></form></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	<image/> <image/> <image/> <section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><section-header><form></form></section-header></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	<text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text>		S		Pa
<image/> <image/> <image/> <image/> <image/> <section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><section-header><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></section-header></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	<image/> <image/> <image/> <image/> <image/> <section-header><text><text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form><form><form><form><form></form></form></form></form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text></text></section-header>	<image/> <image/> <image/> <section-header><section-header><section-header><section-header><section-header><section-header>      Image: Second seco</section-header></section-header></section-header></section-header></section-header></section-header>	<text><section-header><section-header>A Construction of the second secon</section-header></section-header></text>				
<text><section-header><text><list-item><list-item><list-item><list-item><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></list-item></list-item></list-item></list-item></text></section-header></text>	<section-header><text><section-header><section-header><section-header><text><list-item><list-item><list-item><list-item><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></list-item></list-item></list-item></list-item></text></section-header></section-header></section-header></text></section-header>	<section-header><text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text></section-header>	<section-header><text><section-header><section-header><section-header>Provide the problem in the p</section-header></section-header></section-header></text></section-header>	<u>ctory</u> System	<u>Svsten</u>	m No. FF-D-1	153
<text><section-header><text><text><list-item><list-item><list-item><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form><form><form><form></form></form></form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></list-item></list-item></list-item></text></text></section-header></text>	<text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form><form><form></form></form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text>	<text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text>	<form><form><form><form><form><form><form><form><form><form><form><form><form><form></form></form></form></form></form></form></form></form></form></form></form></form></form></form>	XHB Joi	XHI	HBN.FF-D-1153 Joint Systems	
<list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><text><text><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><section-header><form><section-header><form></form></section-header></form></section-header></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></text></text></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><text><text><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></text></text></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<text><text><list-item><list-item><list-item><section-header><section-header><section-header><section-header><form><section-header><form><section-header><form><form></form></form></section-header></form></section-header></form></section-header></section-header></section-header></section-header></list-item></list-item></list-item></text></text>	<text><text><section-header><section-header><section-header><text><section-header><section-header><section-header><form><section-header><form><section-header><form></form></section-header></form></section-header></form></section-header></section-header></section-header></text></section-header></section-header></section-header></text></text>	Construc	n/Constru	ruction/Asseml	Jy Usage Disclaimer
<text><text><section-header><text><section-header><section-header><section-header>••••••••••••••••••••••••••••••••••••</section-header></section-header></section-header></text></section-header></text></text>	<text><text><section-header><text><section-header><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></section-header></text></section-header></text></text>	<text><text><section-header><text><section-header><section-header><section-header><form><section-header><form><form><form><form></form></form></form></form></section-header></form></section-header></section-header></section-header></text></section-header></text></text>	<text><section-header><section-header><section-header></section-header></section-header></section-header></text>	insulted in all c ices, and mater insulted before	e consulted in all devices, and ma e consulted befor	all cases as to the particula materials. efore construction.	r requirements covering the installation and u
<text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text>	<text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text>	<text><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></text>	<text><section-header><section-header></section-header></section-header></text>	rmation cannot the first contac f fire resistance	s are developed to I information can ded the first cont ers of fire resistan combling. The Gui	a by the design submitter a annot always address every ontact for assistance be the tance assemblies are advise Guide Information includes	construction nuance encountered in the field. technical service staff provided by the produc d to consult the general Guide Information for specifice concerning alternate materials and a
<section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form><form></form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	<section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><text><text><text><text></text></text></text></text></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	<section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><form><section-header><form><form></form></form></section-header></form></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	<section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header>	nsidered Certifi	e considered Cert	ertified.	
<text><text><section-header><text><text><text><text><text><text><text></text></text></text></text></text></text></text></section-header></text></text>	<text><text><section-header><text><text><text><text><text><text></text></text></text></text></text></text></section-header></text></text>	<text><text><section-header><section-header><form>Market and the state of the state of</form></section-header></section-header></text></text>		XHBN -	XHBN - loint Sy	N - Joint Syster	1S ed for Canada
<section-header><section-header><section-header><section-header><section-header><form><form><form><text><text><text><text><text><text></text></text></text></text></text></text></form></form></form></section-header></section-header></section-header></section-header></section-header>	<section-header><section-header><section-header><form><form><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></form></form></section-header></section-header></section-header>	<section-header><section-header><section-header><form><form><form><form><form><form><form></form></form></form></form></form></form></form></section-header></section-header></section-header>	<section-header></section-header>	for Canada	tified for Canada	da	
<text><text><text><image/><image/><image/></text></text></text>		NUMBER       Numer       Number       Number	Attributes       Plane 4 - 3 m         When Share - 2 PC       Plane - 2 m         When Share - 2 PC       Plane - 2 m         When Share - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         The Property - 2 PC       Plane - 2 m         Plane - 2 m       Plane - 2 m      <	System	Systen	em No. FF-D-1	153
<form><form></form></form>	<form></form>	bitstand in the set of t	accurate       Image: Distance       Image:		9		CAN/ULC S115
<form><form></form></form>	<form><form></form></form>	Implementary of the second complete of the Second parameter of the second complete of the second comple	accul.com/ge/bit/XYV/emplate/LISEXT/IFRAME/shospage.html?name/x.       418         D113' - Joint System       Page         Image: District Complexity of the state o	9 mm)	i1-89 mm)	F Rating — 2 F FT Rating — 2	r Hr
Important System         Type           type         Statistic           type         Statis	Image: Additional and the additional additionadditionadditadditional additional additionadditional additional	Image: State Distance         Image: State Distance         Image: State Distance           Image: State Distance         Image: State Distance         Image: State Distance         Image: State Distance           Image: State Distance	Image: Name: Name: A = 2.13.77, 65.89 mm         Image: Name: Name: A = 2.13.77, 65.89 mm         Image: Name: Name: A = 2.13.77, 65.80 mm         Image: Name: Name: A = 2.13.77, 65.80 mm         Image: Name: Name: A = 2.13.77, 65.80 mm         Image: Nam       Image: Name: A = 2.12.15, 1	50 % Compress	— 50 % Compre	FTH Rating — 2	нг  2 Hr
L     S     L     L     S     L     S     L     S     L     S     L     S     S     L     S	<pre></pre>	productions and contricupt-bin/XYV/template1.ISEXT/ITRAME/showpage.html/hame-X 4 ISENEF-D-113 - Joint Systems Fall Full Control of the system o	primer: Ase of configi-bit/XYV/template/LISEXT/IPRAME/showyage.html?name-X 4/14 D-113 - Joint Systems Prove Provide the system of the sy			Nominal Joint Class II and II	Nidth — 2 - 3-1/2 in. (51-89 mm) I Movement Capabilities — 50 % Compression
<text><text><image/><image/><text><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><text><list-item><list-item><list-item><list-item><image/><section-header><form><form></form></form></section-header></list-item></list-item></list-item></list-item></text></text></text>	<text><text><image/><image/><text><list-item><list-item><list-item><form><form><form><form></form></form></form></form></list-item></list-item></list-item></text></text></text>	ase al. concegi-bin/XYV/emplated ISEXT/ITRAMES/howpage.htmPname-X 4/13 D-153 - Joint Systems Page Output			or Extension	
<text><text><text><image/><image/><text><list-item><list-item><list-item><form><text><text><text><text></text></text></text></text></form></list-item></list-item></list-item></text></text></text></text>	<text><text><text><image/><image/><text><list-item><list-item><list-item><form><text><text><text><text><text><text></text></text></text></text></text></text></form></list-item></list-item></list-item></text></text></text></text>	<text><text><image/><image/><list-item><list-item><list-item><form><form></form></form></list-item></list-item></list-item></text></text>	ase ut <text>aoni ogé-bin/XYV/emplote/LISEXTOFRAME/showpage.htm?nnne 414 D-115 - Joint System Out of the system o</text>				
<text><text><text><image/><list-item><list-item><list-item><list-item><form><form><form><form><form></form></form></form></form></form></list-item></list-item></list-item></list-item></text></text></text>	<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><form><section-header><form></form></section-header></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><text><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><image/><list-item><list-item><list-item><list-item><form><form><form></form></form></form></list-item></list-item></list-item></list-item></text></text>				
<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text>	<text><text><list-item><list-item><list-item><list-item><form><form></form></form></list-item></list-item></list-item></list-item></text></text>				
<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><image/><image/><list-item><list-item><list-item></list-item></list-item></list-item></text></text>	<text><text><text><image/><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></text></text></text>				
<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><text><image/><list-item><list-item><list-item><list-item><section-header><form><text><text><text><text><text></text></text></text></text></text></form></section-header></list-item></list-item></list-item></list-item></text></text></text>	<text><text><image/><image/><list-item><list-item><list-item><list-item><section-header></section-header></list-item></list-item></list-item></list-item></text></text>	<text><text><text><image/><list-item><list-item><list-item><form><text><text><text></text></text></text></form></list-item></list-item></list-item></text></text></text>				
<text><text><text><image/><image/><text><list-item><list-item><list-item><list-item><text><text><text></text></text></text></list-item></list-item></list-item></list-item></text></text></text></text>	<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><section-header><section-header><form></form></section-header></section-header></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><image/><image/><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></text></text>	<text><text><text><image/><list-item><list-item><list-item><text><text><text></text></text></text></list-item></list-item></list-item></text></text></text>				
<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><text><text><text><text><text><text><text></text></text></text></text></text></text></text></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><section-header><section-header><form></form></section-header></section-header></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	<text><text><text><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></text></text></text>	A sea al convige-bin/XYV/emplate/LISEXT/IFRAME/showpage.html?name=X 4/14 D-D13 - Joint System The Conversion of the second se				
<text><image/><text><list-item><list-item><list-item><list-item><image/><text><text><text><text><text><text></text></text></text></text></text></text></list-item></list-item></list-item></list-item></text></text>	<text><image/><text><list-item><list-item><list-item><image/><form><text><text><text><text><text></text></text></text></text></text></form></list-item></list-item></list-item></text></text>	<text><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><form></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text>	<text><image/><image/><list-item><list-item><list-item><list-item><form><form><form></form></form></form></list-item></list-item></list-item></list-item></text>	template/L	V/template/	e/LISEXT/1FRAM	E/showpage.html?name=X 4
<text><image/><image/><image/><image/><form><list-item><list-item><list-item><list-item><text></text></list-item></list-item></list-item></list-item></form></text>	<page-header><page-header><page-header><image/><list-item><list-item><list-item><list-item><image/><text><text><text><text><text></text></text></text></text></text></list-item></list-item></list-item></list-item></page-header></page-header></page-header>	<text><image/><image/><list-item><list-item><list-item><list-item><list-item><text><text><list-item><text></text></list-item></text></text></list-item></list-item></list-item></list-item></list-item></text>	<text><image/><list-item><list-item><list-item><list-item><form><form><text><text><text><text></text></text></text></text></form></form></list-item></list-item></list-item></list-item></text>		A		
<page-header><page-header><page-header><image/><list-item><list-item><list-item><list-item><image/><text><text><text><text><text></text></text></text></text></text></list-item></list-item></list-item></list-item></page-header></page-header></page-header>	<text><image/><image/><image/><list-item><list-item><list-item><image/><text><list-item><list-item><text></text></list-item></list-item></text></list-item></list-item></list-item></text>	<page-header><page-header><image/><list-item><list-item><list-item><list-item><list-item><list-item><list-item><text></text></list-item></list-item></list-item></list-item></list-item></list-item></list-item></page-header></page-header>	<text><image/><list-item><list-item><list-item><list-item><form><form><text><text><text></text></text></text></form></form></list-item></list-item></list-item></list-item></text>				
<page-header>  The second second</page-header>	<page-header><page-header><page-header><image/><list-item><list-item><list-item><list-item><image/><form><text></text></form></list-item></list-item></list-item></list-item></page-header></page-header></page-header>	<text><image/><image/><list-item><list-item><list-item><list-item><list-item><text><list-item><text><list-item><text></text></list-item></text></list-item></text></list-item></list-item></list-item></list-item></list-item></text>	<text><image/><image/><list-item><list-item><list-item><form></form></list-item></list-item></list-item></text>				
<image/> <image/> <image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><text></text></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> <image/> <image/> <image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><text></text></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><form><text></text></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/>		S		Pa
<image/> <image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><text></text></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> <image/> <image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><form></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/>			$\sim$	$\frown$
<image/> <image/> <image/> <image/>	<image/> <image/> <image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><image/><form></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> A set of the			28	
<image/> <image/> <image/> <form></form>	<image/> <image/> <image/> <image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><image/><form></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> <form><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><form></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></form>	<image/> A which is a set of the set o			Г	
<image/> <image/> <image/> <form></form>	<image/> <image/> <image/> <image/> <form><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></form>	<image/> <form><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><form></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></form>	<form>     A consistence of the product shall be the U. C. C.</form>	Π		1 mm	2.
<image/> <image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><form></form></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<image/> <list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item>	<text><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text>	100	1.5		
<text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text>	<text><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text>	<text><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></text>	Arrow of the second secon	NI		NHHH	4
Even     A second		bergen	<form>     Definition     Output     And and any output     And and any output     And any out</form>	K	P	fund	A.,
<ol> <li>Hoor Assembly – Min 4-1/2 In. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kgm<sup>2</sup>) concrete.</li> <li>Joht System – Norminel width of joint is 2 In. to 3-1/2 (51 to 89 mm). The joint system is designed to accommodate a comparison or activation from its installed width. The joint system is designed to accommodate a concerned of the parts of</li></ol>	1. Hoor Assembly – Win 4-1/2 in. (114 mm) thick referenced lightweight or nermal weight (100-150 pcf or 1600-2400 kg/m <sup>2</sup> ) concrete. 3. nex 50 percent compression or extension from its installed width. The joint system shall consist of the following: a. and so the System – Anomala weight of joint to 3. J.? (51 to 69 mm). The joint system shall consist of the following: a. Brock Adhesive – Consider of two parts; part A (base), and part B (bardener) or one part gardened with installation instructions. b. Brock International Distribution instructions. B. Brock International Distribution instructions. B. BLCD INC – FRB, FRB-UC * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification on ear both sides with factory applied scalant. Foan is installed in jurisdiction on ear both sides with factory applied scalant. Foan is installed in gardened or oxing as a permanent form. ELCO INC – FRB, FRB-UC * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification of 2014-09-15 stone or 1014-09 is forwer. Only these products bearing the UL or cell Certification Directory subject to the following cerditions: 1. The Gurmation form mark regarding on the product. Stone or Mark on the product bearing the UL one Certification Directory subject to the following cerditions: 1. The Gurmation form mark of accompany's name or product in this database does not in itself assure that products as identified have been manufacture. (0 2021 using the regrestration of the marker all contained in the Online Certification Directory subject to the following cerditions: 1. The Gurmation form the instruction of the marker all contained in the Online Certification Directory subject to the following cerditions: 1. The Gurm	1. Floor Assembly — Hin 4-1/2 in. (114 mm) thick relatered liphtweight or normal weight (100-150 pcf or 1980-2400 t/g/m <sup>2</sup> ) concrete. 2. Bit System - Jonisha skills of John is 2,1/2 (SI to 99 mm). The John system is belayed to accummodate a nex 50 servent compression or extension from its installed width. The joirt system is belayed in accummodate a nex 50 servent compression or extension from its installed width. The joirt system is belayed in accummodate a nex 50 servent compression or extension from its installed by field system manufaccurar, and installed in the inclusion installed in the inclusion installed in the inclusion installed in part company as a parameter form. ButCo INC – FRB, FRB-UC * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification and the plane into accummon to manufaccurar, and plane in the intervence of a company's nearest shall bear the UL or cUL Certification forms in the second or could on a company's nearest shall be prove the product shall be prove the product shall be prove the product in this database doe not in basel as a consister of the the following conflored in the intervence of a company's nearest product in this database doe not in basel as a consister of the material consistent in the Online Cartification Directory uplot a collected and covered under UL's following conflored. Data products on the material consistent is beaking the UL and covered under UL's following conflored. Online products or the data (or drawing). The searest of the ballowing conflored. The game is a company is none approximately and covered under UL's following conflored. Online products of the data (or drawing). J. The searest of the ballowing conflored. The Game is a convergence to the extracted material in addition, the reprinted material must include a copyright notice with formating conflored. The game is a convergence to the extracted material. In addition, the reprinted material must include a copyri	<ul> <li>1. Floor Assembly – Kin 4-1/2 in. (114 mm) thick reinfo ced lightweight or normal weight (100-159 pcf or 1000-2400 fg/m) concrete.</li> <li>2. Joint System - Normieal width of joint is 2 in. to 3-1/2 (51 to 69 mm). The joint system is designed to accommendate a max 50 second accorpression or extantion from its installated width. The joint system is designed to accommendate a max 50 second accord accord</li></ul>			ZA	
1. Joint System — Normali width of joint is 2 min. 10: 3-12 (51 to 85 mm). The joint system shall consist of the looking: A. Booxy Adhesive — Consists of two parts: part A (bass), and part B (hardener) or one part gun guide adhesive. The adhesive is sapplied by joint system manufacturer, and installed in accordance with installed one or both sides with factory applied sealart. Fear mis installed in joint constant of the installed or coated on one or both sides with factory applied sealart. Fear mis installed in joint constant of the installed or coated on one or both sides with factory applied sealart. Fear mis installed in joint constant of the installed or coated on one or both sides with factory applied sealart. Fear mis installed in joint constant of the installed on 2014-09-15 <u>Let Updated on 2014-09-15</u> <u>Destinant</u> <u>Ammentary installed on the installed on advectory installed in the installed on advectory installed on adve</u>	1. Joint System — Mornial width of joint is 2 In. 10. 3-12 (21) to 80 mm). The joint system is added of the following of the datasets of the open setuction from its installed width. The joint system manufacturer, and installed in social controls of the following of the datasets. The addeaset is applied by joint system manufacturer, and installed in social controls with factory applied section. B. Mechanical Joint Assembly? — Compressed, fire-related in imprograted, 4 in. (102 mm) does from uncosted or coated on new in our or both addeas with factory applied section. BALCO INC — FRB, FRB-UE * Indicates such products shall beer the UL or CUL Certification Mark for jurisdictions employing the UL or CUL Certification Mark for jurisdictions employing the UL or CUL Certification of the data with factory applied section. The factor is a permanent form. ExtUDINC — FRB, FRB-UE * Indicates such products shall beer the UL or CUL Certification Mark for jurisdictions employing the UL or CUL Certification Mark for jurisdictions employing the UL or CUL Certifications? Part is a permanent form. Part is a permanent f	2. Joint System – Koninal with of joint is 2 in. 16.3-1/2 (51 to 58 mm). The joint system is also accessed to a max 50 protect compression or relation from its installed with. The joint system manufacture, and installed in accessed and a strange of the following or one part gran grade addinates. The addinate is supplied by joint system manufacture, and installed in accessed by form accessed or context on one or both addes with factory applied scalart. Form is installed in joint comprises a permanent form.  a BLCO INC – FRB, FRB-UC  a relation of the following of a context on one or both addes with factory applied scalart. Form is installed in joint comprises a permanent form.  Eatled INC INC – FRB, FRB-UC  a relation of the following of a context on one or both addes with factory applied scalart. Form is installed in joint comprises a permanent form.  Eatled INC INC – FRB, FRB-UC  a relation of the material context on one or both addes with factory applied accessed by the UL or CLI Certification for furnisdictions employing the UL or CLI Certification for furnisdictions employing the UL or CLI Certification for furnisdictions employing the UL or CLI Certification for a company's name or product in this database does not in itself assure that products so identified have been manufare for the reproduction of the material contained in the Online Certification for subject to be Certified and covered under ULF for service. Only these products on the product is to increase the products as identified have been manufare for the reproduction of the material contained in the Online Certification Street or subject in the information Adverse in the order of the following container. If the out of the following containers. If the out of the following containers. If the out of the following containers. The out of the following containers are provided in the contracted intervel of not the other certifications following format: "\$ 2016 ULLC.  Intervention of the material contained in the fonline Certification file material fro	<ul> <li>1. Jeli System – konnel videth of john ki J. In to 3-L/2 (SI to 89 mm). The john system is all consists of the following:</li> <li>a. A. Brocy Adhesive – Consists of two parts; part A (base), and part B (hardware) or one part ging rade achasive. The adhesive is supplied by joint system manufacturer, and installed in sociation on one or both sides with factory applied acadamt. From its installed in joint copening as a permanent form.</li> <li>BACD INC – FRB, FRB-UC</li> <li>Catter Such products shall bear the UL or clt. Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification was a permanent form.</li> <li>Catter Such products shall bear the UL or clt. Certification Mark for jurisdictions employing the UL or cUL Certification was a promoted by a page to a second by the page to the following conditions of the page to the sociation of the socia</li></ul>	. (114 mm) thi	/2 in. (114 mm) t	n) thick reinforced lightweig	it or normal weight (100-150 pcf or 1600-240
the programment is the conduction of the material contained in the Online Cartification Directory subject to the following conditions: 1. The Guide Information of the conduction of the product in this conduction of the destination of the cartification of the cartification of the following conditions: 1. The Guide Information of the cartification of the cartificati	In a proof, neutricity — The object is provided by fund system manufacturer, and installated in according on the installation instructors. I. Acchanical Joint Assembly — Compressed, fire-ctaidant impregnated, 4 m, (102 mm) deep form unobacked or coaled an one or boli sides with factory applied sealent. Form is installed in according and parameters from: I. In a factor is a compared to the back of the coaled and one or boli sides with factory applied sealent. Form is installed in a coaled and one or boli sides with factory applied sealent. Form is installed in a coaled are coaled and one or boli sides with factory applied sealent. Form is installed in the coaled are coaled and one or boli sides with factory applied sealent. Form is installed in the coaled are coaled and one or boli sides with factory applied sealent. Form is installed in the coaled are coaled and the coaled are coaled and the coaled are coaled and the coaled are coaled ar	the spectra manufactor is applied by biolity spectra (10 gaid), and installed in accordance with installation instructions.      B. Enchanical Joint Assembly - Compressed, fire-retardant impregrated, 4 in. (102 nm) deep foarn uncoated or coated on one or both sides with factory applied scalart. Foorn is installed in jain copaning as a permanent form.      BALEO INC – FRB, FRB-UC      'Indicates such products shall beer the UL or cUL Certification Mink for jurisdictions employing the UL or cUL Cert (such as Canada), respectively. <u>Lat Updates</u> on 2014-09-15 <u>Output</u> of a company's name or product in this clatabase does not in latefi assure that products so identified have been manufa dire (U. S roll). The support of the Mark on the product.      Juppents into the material contained in the Online Certification Directory subject to the following conditions: 1. The Gu       Indicates exceeding a specific contained in the Online Certification Directory subject to the following conditions: 1. The Gu      Indicates as company's name or product in this catabase does not in latefi assure that products so identified have been manufa      Service. Always look for the Mark on the product.      Indicates accordance of a company's name or product in this catabase does not in latefi assure that products so identified have been manufa      Service. Always look for the Mark on the product.      Information, Assembles, Constructions, Deelings, Systems, and/or Certification Directory subject to the following conditions: 1. The Gu      Information, Assembles, Constructions, Deelings, Systems, and/or Certification Directory subject to the following conditions: 1. The Gu      Information, Assembles, Constructions, Deelings, Systems, and/or Certification Directory subject to the following conditions: 1. The Gu      Information, Assembles, Constructions, Deelings, Systems, and/or Certification Directory subject to the following conditions: 1. The Gu      Information, Assembles, Constructions, Deelings, Systems, and/or Certi	In radie adiastive. The addinestic is supplied by pink system manufacture, and installed in accordance with indialation individuous. Is Mechanical Joint Assembly — Compressed, free-retardant impregnated, 4 in. (102 nm) deep form uncoated or coated on one or both sides with factory applied scalant. Form is installed in joint coeffing as a permanent form. BALCO INC — FRB, FRB-UC Installed and the system manufacture, and installed in accordance with indialation form. Control = FRB, FRB-UC Installed are applied by a system manufacture, and installed in a control of the system manufacture in a system manufacture i	of joint is 2 in. Attension from i	idth of joint is 2 in or extension from	2 in. to 3-1/2 (51 to 89 mm rom its installed width. The	). The joint system is designed to accommoda Joint system shall consist of the following: (e), and part B (hardener) or one part
the product source of a company of a control of a contro	betroefficient of the second of the sec	In the product of a coaled of a coaled of a coaled of a new of balls sides with factory applied seekint. Four is installed in joint oppoing as a permanent form.  BALCO INC – FRB, FRB-UC  Indicates such products shall beer the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (Secondard), respectively.  Mark Stock State Mark and State	ase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18	<ul> <li>Consists of The adhesive tallation instruction</li> </ul>	esive — Consists esive. The adhesiv h installation instr loint heart	sus or two parts; part A (bas esive is supplied by joint sys instructions.	and part B (hardener) or one part tem manufacturer, and installed in
the next field of the fiel	the state of	* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (see a constant), respectively. <u>Last Updated</u> on 2014-09-15 <u>Ouestions? Print this page Imms of Use Page Top ???</u> The appearance of a company's name or product in this catabase does not in listef assure that products to leaded and covered under UL's Folder-out of the Mark on the product.  LU permits the reproducts of the Mark on the product.  LU permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1, the Gu Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1, the Gu Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1, the Gu Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1, the Gu Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1, the Gu Information, Assemblies Constructions, Designs, Systems, and/or Certification, the reprinted material must include a copyright notice following format: *© 2016 ULLC'.  http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/  ULL SYSTEM # FFF-D-1153, JOINT SYSTEM	Iteates such products shall bear the UL or CUL Certification Mark for Jurisdictions employing the UL or cUL Certification 2014-09-15  Print this page Terms of Jise Page Tog  C 2016  To a company's name or product in this database does not in itself assure that products so identified have been manufactur low-JB Service. Only those products being the UL Mark should be considered to be Certifice and covered under UL's follow  reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide softwork mark on the product.  reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide somebile, Conservations, Deseing, Systems, and/or Certification Officerory subject to the following conditions: Director muter, without any manupulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Director muter, without any manupulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Director muter, without any manupulation of the data (or drawings). 2. The statement "Reprinted material must include a copyright notice in 1 at: "© 2016 UL LC".  Statement is compared without the extracted material. In addition, the reprinted material must include a copyright notice in 1 at: "© 2016 UL LC".  Statement is compared by the data (or drawings). 2. The statement "Reprinted material must include a copyright notice in 1 at: "© 2016 UL LC".	d or coated on a permanent fo	Joint Assembly pated or coated o as a permanent FRB. FDB-UC	on one or both sides with ent form.	aroant impregnated, 4 in. (102 mm) actory applied sealant. Foam is installed
Last Updated on 2014-09-15         Questions2       Print this page       Terms of Use       Page Top	Last Updated on 2014-09-15         Questions?         Cuestions?         Constructions         Constructions <td>Last Undated on 2014-09-15         Questions?       Print this page       Terms of Use       Page Top         @ 20         The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufaurider UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered uncer UL's Follow-Up Service. Only those products or define the Us following conditions: 1. The Gas information, Astebble: Considered to be Certified on Orectification Directory subject to the following conditions: 1. The Gas information, Astebble: Considered to be certified on the control or the presentation of the material contained in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory Subject to the presented in the Online Certification Directory Subject to the converse of the presented in the Online Certification Directory Subject to the presented in the Online Certification Directory Subject to the Subjectory Subjectory Subjectory Subjectory Subjectory Su</td> <td>or 2014-09-15            <u>Phint this page</u>             (a) 2014-09-15                 (c) 2016                 (c) 2016                 (c) 2016</td> <td>he UL or all f</td> <td>ar the III or all</td> <td>cUL Certification Mosk for</td> <td>jurisdictions employing the UL as all a</td>	Last Undated on 2014-09-15         Questions?       Print this page       Terms of Use       Page Top         @ 20         The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufaurider UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered uncer UL's Follow-Up Service. Only those products or define the Us following conditions: 1. The Gas information, Astebble: Considered to be Certified on Orectification Directory subject to the following conditions: 1. The Gas information, Astebble: Considered to be certified on the control or the presentation of the material contained in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory subject to the presented in the Online Certification Directory Subject to the presented in the Online Certification Directory Subject to the converse of the presented in the Online Certification Directory Subject to the presented in the Online Certification Directory Subject to the Subjectory Subjectory Subjectory Subjectory Subjectory Su	or 2014-09-15 <u>Phint this page</u> (a) 2014-09-15                 (c) 2016                 (c) 2016                 (c) 2016	he UL or all f	ar the III or all	cUL Certification Mosk for	jurisdictions employing the UL as all a
Questions2       Print this page       Terms of Use       Page Toe	Questions2       Print this page       Terms of Use       Date Top         I contained of a company's name or product in this clabbase does not in lited? assure that products so identified have been manufac under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Cortification and covered under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be considered on a covered under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be considered in the following conditions: 1. The Quit Service. Always look for the Mark on the product.         UL, permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Quit in a continue of printed material of the data for drawings). 2. The statement "Reprinted from the Online Certifications Directory subject to the following conditions: 1. The Quit in must page and generit to the extracted material. In addition, the reprinted material must include a copyright notice following format: "© 2016 UL LC".         The typ://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X       4/1         To       ULL. SYSTEM # FFF-D-1153, JOINT SYSTEM         ULL       FILE       FILE	Questions2       Pint this page       Terms of Lise       Page Top         \$\$ 20 Comparing the second of the product in this database does not in itself assure that products so identified have been manufared that follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered uncer UL's Foil service. Always look for the Mark on the product.         Up the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Gu information, Assemblies, Constructors, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Gu information, Assemblies, Constructors, Designs, Systems, and/or Certification Directory subject to the Pollowing conditions: 1. The Gu information, Assemblies, Constructors, Designs, Systems, and/or Certifications (Bies) must be presented in the Polline Certification Directory subject to the Online Certifications Directory subject on the Donline Certification Directory subject on the Online Certifications Directory subject on the Online Certification Directory subject on the Online Certifications Directory subject on the Online Certification Directory subject on the Online Certifications Directory subject on the Online Certification Directory subject on the Online Certification Directory Subject	Pint this page       Terms of Use       Page Top         • 0 2016       • 0 2016       • 0 2016         rs of a company's name or product in this database does not in itself assure that products so identified have been manufacture involved Sociot.       • 0 2016         reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide samethies. Constructions, Designs, Systems, and/or Certifications (files) must be presented in the Online Certification Site presented in the Online Certifications Directory subject to the following conditions: 1. The Guide samethies. Constructions, Designs, Systems, and/or Certifications (files) must be presented in the Online Certification Directory subject to the following conditions: 1. The Guide samethies. The Statement "Reprinted from the Online Certifications Directory subject to the following conditions: 1. The Guide samethies. The Statement "Reprinted material must include a copyright notice in that: *(*) 2016 UL LLC'.         asse.ul.com/cgi-bin/XYV/template/LISEXT/IFRAME/showpage.html?name=X       4/18         'STEEM # FFF-D-1153, JOINT SYSTEM       ************************************	or or cut ( (such	UL OF CUI (Suc	such as Canada), respect	yansarations employing the UL or cUL Ce vely.
Determine the presence of a company's name or product in this database does not in itself assure that products so identified have been manufacts under UK's follow-UP Service. Noty also be products bearing the UL Mark should be considered to be Certified and covered under UK's follow in the products of the the material contained in the Online Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Design, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Design, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Assemblies, Constructions, Design, Systems, and/or Certification Directory subject to the following conditions: 1. The Guid Information, Steep 1. The Statement of Information, Steep 1. The Statement of Information (Information, Steep 1. Stee	20         30         31         32	© 21 The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufacture UL's follow-Up Service. Only these products being the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only these products being the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only these products besing the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only these products besing the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only these products besing the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only these products besing the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only these products besing the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only these products besing the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only these products besing the UL Mark should be considered to be Certified and covered under UL's follow-Up Service. Only the service of the only certification between the products be considered to be certified on the data of the only product be of the marker of the only of certification between the products between the products between the products of the data of the only of the tert of the only of the	Parte The of a company's name or product in this database does not in itself assure that products so identified have been manufacture is low for their whark on the products. Dealth these products beginning the UL Mark should be considered to be Certified and covered under UL's Foldow is low for the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide assembles, Constructions, Designs, Systems, and/or Certification (files) must be presented in the Printer entry and in a non-iner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certification birectory subject to the following conditions: 1. The Guide assembles, Constructions, Designs, Systems, and/or Certification, the reprinted material must include a copyright notice in at "® 2016 ULLC". A set of a company's name or product to the extracted material. In addition, the reprinted material must include a copyright notice in at "® 2016 ULLC". A set of a company's have on the data (or drawings). The Statement "Reprinted material must include a copyright notice in at "® 2016 ULLC". A set of a company's have on the data (or drawings). The Statement "Reprinted material must include a copyright notice in at "® 2016 ULLC".	2	page	Terms of Use	Page Top
under ut:s toilow-up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follov Service. Always look for the Mark on the product. UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications, Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications, Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications, Directory permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in following format: "© 2016 UL LLC". http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 ULL SYSTEM # FF-D-1153, JOINT SYSTEM FILE:	under ut.s roliow-up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Folk Service. Always look for the Mark on the product. UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guit Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Guit Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non- misleading manner, without any manipulation of the data (or drawings). 2. The statement the Online Certifications Direc- permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice i following format: "@ 2016 UL LC". http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1 ULL.SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	Inter UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Fol Service. Always look for the Mark on the product. UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Gu Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Gu Information, Assemblies, Constructions, Designs, Systems, and/or Certification Directory subject to the following conditions: 1. The Gu Information, Assemblies, Constructions, Designs, Systems, and/or Certification Sineement "Reprinted from the Online Certifications Dire permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice following format: "© 2016 UL LIC".	iow-up service. Unit those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow is look for the Mark on the product. reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide issembles, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non- inner, without any manipulation of the data for drawings). 2. The statement "Reprinted from the Online Certifications Director mult" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in at: "© 2016 UL LC". asee.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 <u>STEEM # FF-D-1153, JOINT SYSTEM</u>	this database	ict in this databas	base does not in itself assur	© 2 e that products so identified have been manu
Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entriety and in a non- misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directly permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in following format: "© 2016 UL LLC". http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 ULL SYSTEM # FF-D-1153, JOINT SYSTEM ULL SYSTEM # FF-D-1153, JOINT SYSTEM TFLE:	Information, Assembles, Constructions, Designs, Systems, and/or Cartifications (files) must be presented in their entirety and in a non- misseding manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Direct permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice i following format: "© 2016 UL LLC". http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1 ULL.SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in the inform maskeding manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Dire permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice following format: "@ 2016 UL LLC".	assembles. Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entricty and in a non- inner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directo mult' must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in at: "@ 2016 ULLC".           asse.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X         4/18           'STEM # FF-D-1153, JOINT SYSTEM	bearing the UL	ucts bearing the l ct. ntained in the Onl	e UL Mark should be consid	ared to be Certified and covered under UL's For y subject to the following conditions: 1. The G
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 U.L. SYSTEM # FF-D-1153, JOINT SYSTEM	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/ U.L. SYSTEM # FF-D-1153, JOINT SYSTEM	ase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 <u>STEM # FF-D-1153, JOINT SYSTEM</u>	ystems, and/or e data (or draw extracted mater	ns, Systems, and/ of the data (or dr he extracted mat	nd/or Certifications (files) m drawings). 2. The statemen naterial. In addition, the rep	ust be presented in their entirety and in a nor t "Reprinted from the Online Certifications Din rinted material must include a copyright notic
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM 2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/ U.L. SYSTEM # FF-D-1153, JOINT SYSTEM =ULE:	ase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 <b>STEM # FF-D-1153, JOINT SYSTEM</b>				
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM 2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/ U.L. SYSTEM # FF-D-1153, JOINT SYSTEM FILE:	<sup>1</sup> ase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 <b>STEM # FF-D-1153, JOINT SYSTEM</b>				
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM <sup>2.7</sup> FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/ U.L. SYSTEM # FF-D-1153, JOINT SYSTEM FILE:	<sup>ase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 <b>STEM # FF-D-1153, JOINT SYSTEM</b></sup>				
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM 12.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/ U.L. SYSTEM # FF-D-1153, JOINT SYSTEM FILE:	ase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18				
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/13 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM <sup>2.7</sup> FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/ U.L. SYSTEM # FF-D-1153, JOINT SYSTEM FILE:	ase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18 <b>STEM # FF-D-1153, JOINT SYSTEM</b>				
http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/1: 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM <sup>(2.7)</sup> FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/i 2D U.L. SYSTEM # FF-D-1153, JOINT SYSTEM A2.7 FILE:	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/ U.L. SYSTEM # FF-D-1153, JOINT SYSTEM FILE:	pase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X 4/18				
U.L. SYSTEM # FF-D-1153, JOINT SYSTEM	U.L. SYSTEM # FF-D-1153, JOINT SYSTEM	U.L. SYSTEM # FF-D-1153, JOINT SYSTEM	<u>STEM # FF-D-1153, JOINT SYSTEM</u>				
2.7 FILE:	2.7 FILE:	FILE:		template/L	V/template/	e/LISEXT/1FRAM	E/showpage.html?name=X 4
				template/L	V/template/	e/LISEXT/1FRAM	E/showpage.html?name=X 4
				template/L 153, JC	V/template/ -1153, J	æ/LISEXT/1FRAM JOINT SYS	E/showpage.html?name=X 4
				template/L 153, JC	V/template/ -1153, J	æ/LISEXT/1FRAM JOINT SYS	E/showpage.html?name=X 4
				template/L 153, JC	V/template/ -1153, J	æ/LISEXT/1FRAM JOINT SYS	E/showpage.html?name=X 4
				template/L 153, JC	V/template/ -1153, J	æ/LISEXT/1FRAM JOINT SYS	E/showpage.html?name=X 4
				template/L 153, JC	V/template/ -1153, J	æ/LISEXT/1FRAM JOINT SYS	E/showpage.html?name=X 4
				template/L 153, JC	V/template/ -1153, J	æ/LISEXT/1FRAM JOINT SYS	E/showpage.html?name=X 4
				template/L 153, JC	V/template/ -1153, J	æ/LISEXT/1FRAM JOINT SYS	E/showpage.html?name=X 4

F-D-1153 - Joint Systems Page 1 of 2 NLINE CERTIFICATIONS DIRECTORY System No. FF-D-1153 XHBN.FF-D-1153 Joint Systems ottom Design/System/Construction/Assembly Usage Disclaimer horities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL fied products, equipment, system, devices, and materials. orities Having Jurisdiction should be consulted before construction. resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with cable requirements. The published information cannot always address every construction nuance encountered in the field. n field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product nufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each duct category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate nods of construction. products which bear UL's Mark are considered Certified. XHBN - Joint Systems **XHBN7 - Joint Systems Certified for Canada** Information for Joint Systems Information for Joint Systems Certified for Canada System No. FF-D-1153 September 15, 2014 ANSI/UL2079 CAN/ULC S115 sembly Rating — 2 Hr F Rating — 2 Hr ninal Joint Width — 2 - 3-1/2 in. (51-89 mm) FT Rating – 2 Hr ss II and III Movement Capabilities – 50 % Compression or FH Rating – 2 Hr FTH Rating — 2 Hr Nominal Joint Width -2 - 3 - 1/2 in. (51-89 mm) Class II and III Movement Capabilities - 50 % Compression r Extension abase.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/showpage.html?name=X... 4/18/2016 F-D-1153 - Joint Systems Page 2 of 2 1. Floor Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete. 2. Joint System — Nominal width of joint is 2 in. to 3-1/2 (51 to 89 mm). The joint system is designed to accommodate a max 50 percent compression or extension from its installed width. The joint system shall consist of the following: A. Epoxy Adhesive — Consists of two parts; part A (base), and part B (hardener) or one part gun grade adhesive. The adhesive is supplied by joint system manufacturer, and installed in

SCALE: N.I.S.

SECTION A-A 1. Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max diam of opening is 6 in. (152 mm). See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers. 2. Through Penetrants — One metallic pipe, conduit or tubing to be centered within the firestop system. A nom annular space of 3/4 in. (19 mm) is required within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used: A. Steel Pipe — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe. B. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or steel conduit. 3. Firestop System — The firestop system shall consist of the following: A. Packing or Forming Materials — Optional — One of the following packing or forming materials may be used: A1. Foam Backer Rod — Foam backer rod tightly packed into the opening as a permanent form. Packing material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty. A2. Mineral Wool Batt Insulation — Min 4 pcf (64 kg/m3), tightly packed into the opening as a permanent form. Packing material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty. A3. Forming Material\* — Forming material to be foamed into the opening as a permanent form. Forming material to be recessed from the top surface of floor or both surfaces of wall as required to accommodate the required thickness of putty. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CF812 or CF-AS CJP Foam Sealant B. Fill, Void or Cavity Material\* — Putty — Min 1 in. (25 mm) thickness of putty applied within the annulus, flush with top surface of floor or with both surfaces of wall. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP 618 Firestop Putty Stick \*Bearing the UL Classification Mark Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. April 20, 2012 Hilti Firestop Systems 4B U.L. SYSTEM # C-AJ-1276, PIPE PENETRATION A2.7 FILE: System No. C-BJ-8024 ANSI/UL1479 (ASTM E814) Classified by F Rating — 2 Hr Inderwriters Laboratories. Inc. to UL 1479 and CAN/ULC-S115 T Rating — 1/2 Hr 1. Floor or Wall Assembly — Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete floor or min 6-1/2 in. (165 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max area of opening is 256 in2 (1652 cm2) with maximum dimension of 32 in. (813 mm). See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers. 2. Air Conditioning (AC) Line Sets — One or more AC line sets installed within opening. Each AC line set consists of two pipes or tubes (Item 2A), tubing insulation (Item 2B) and a thermostat cable (Item 2C). The space between the AC line sets shall be min 1/2 in. (13 mm) to max 12 in. (305 mm). The space between the AC line sets and the periphery of the opening shall be min 1/2 in. (13 mm) to max 12 in. (305 mm). The AC line sets shall be rigidly supported on both sides of the floor or wall assembly. 2A. Metallic Penetrants — A max of two pipes or tubes to be installed in each AC line set. Of the two pipes or tubes, only one may have a nom diam greater than 3/8 in. (10 mm). The following types and sizes of through penetrants may be used: A. Steel Pipe — Nom 1 in. (25 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe. B. Iron Pipe — Nom 1 in. (25 mm) diam (or smaller) cast or ductile iron pipe. C. Copper Pipe - Nom 1 in. (25 mm) diam (or smaller) Regular (or heavier) copper pipe. D. Copper Tube — Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tube. 2B. Tube Insulation - Plastics# — Nom 1 in. (25 mm) thick acrylonitrile butadiene/polyvinyl chloride (AB/PVC) flexible foam furnished in the form of tubing. The tube insulation may be installed on one max 1 in. (25 mm) diam pipe or tube in each AC line set. The space between the insulated and uninsulated pipes or tubes within each AC line set shall be 0 in. (point contact). See Plastics (QMFZ2) category in the Plastics Recognized Component Directory for names of manufacturers. Any Recognized Component tube insulation meeting the above specifications and having a UL 94 Flammability Classification of 945VA may be used. 2C. Cable — One 4 pair No. 18 AWG (or smaller) thermostat cable with polyvinyl chloride (PVC) insulation and jacket materials may be installed with each AC line set. 3. Firestop System — The firestop system shall consist of the following: A. Packing Material — Min 5-1/2 in. (140 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation tightly packed into opening. Packing material recessed from top surface of floor assembly or from both surfaces of wall to accommodate the required thickness of fill material. B. Fill, Void or Cavity Materials\*-Sealant — Min 1/2 in. depth of fill material applied within the annulus, flush with top surface of floor assembly or with both surfaces of the wall assembly. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE Sealant or FS-ONE MAX Intumescent Sealant. \* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively. #Bearing the UL Recognized Components Mark Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 16, 2015 Hilti Firestop Systems (4D) U.L. SYSTEM # C-AJ-1382, PIPE PENETRATION FILE:

Classified by

Underwriters Laboratories, Inc.

to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)

F Rating — 3 Hr

T Rating — 0 Hr

![](_page_15_Figure_3.jpeg)

![](_page_15_Picture_4.jpeg)