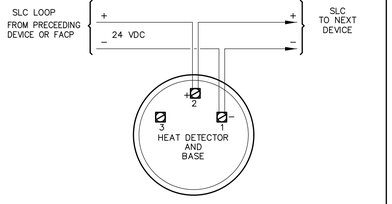
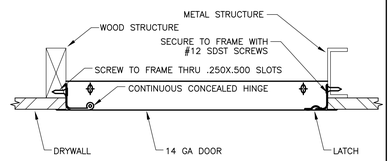


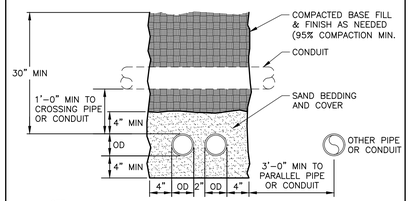
FILENAME

HEAT DETECTOR
POINT TO POINT DIAGRAM | NTS | 4



FILENAME

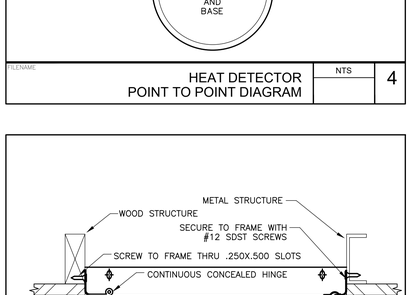
CEILING ACCESS PANEL DETAIL | NTS | 5



NOTE:
TRENCHING LOCATED IN PAVED AREAS – ALL EARTHWORK AND REPAIR SHALL BE IN ACCORDANCE WITH AGENCY THAT HAS JURISDICTION.

EEGSLOTA

TYPICAL TRENCH DETAIL | NTS | 6



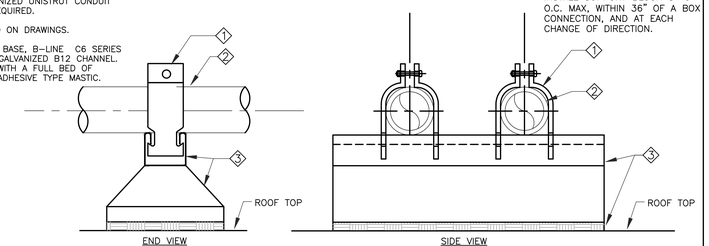
FILENAME

SURFACE MOUNTED JUNCTION BOX
ANCHOR DETAIL FOR CONCRETE WALL | NTS | 7

KEYED NOTES

1. HOT–DIPPED GALVANIZED UNISTRUT CONDUIT CLAMP. SIZE AS REQUIRED.
2. RACEWAY AS NOTED ON DRAWINGS.
3. ROOFTOP SUPPORT BASE, B–LINE C6 SERIES WITH HOT–DIPPED GALVANIZED B12 CHANNEL. SECURE TO ROOF WITH A FULL BED OF NON–HARDENING ADHESIVE TYPE MASTIC.

NOTE:
INSTALL SUPPORT BLOCK 8'–0" O.C. MAX, WITHIN 36" OF A BOX CONNECTION, AND AT EACH CHANGE OF DIRECTION.



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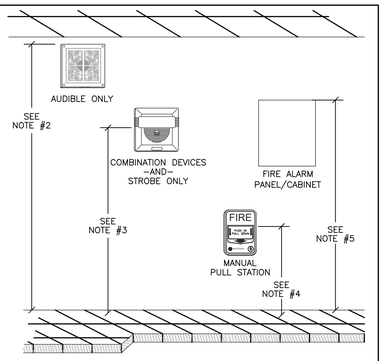
ROOF CONDUIT SUPPORT DETAIL | NTS | 8



NOTE #1 ALL DEVICES SHOWN MAY NOT BE USED ON THIS PROJECT.

NOTE #2 NFPA 72 2016 EDITION, 18.4.8 LOCATION OF AUDIBLE NOTIFICATION APPLIANCES.

NFPA 72 2016 EDITION, 18.4.8.1 IF CEILING HEIGHTS ALLOW WALL–MOUNTED APPLIANCES SHALL HAVE THEIR TOPS ABOVE THE FINISHED FLOORS AT HEIGHTS OF NOT LESS THAN 2.30m (90in.) AND BELOW THE FINISHED CEILINGS AT DISTANCES OF NOT LESS THAN 150mm (6in.).

NOTE #3 NFPA 72 2016 EDITION, 18.4.8.3 IF COMBINATION AUDIBLE/VISIBLE APPLIANCES ARE INSTALLED, THE LOCATION OF THE INSTALLED APPLIANCE SHALL BE DETERMINED BY THE REQUIREMENTS OF 18.5.5.

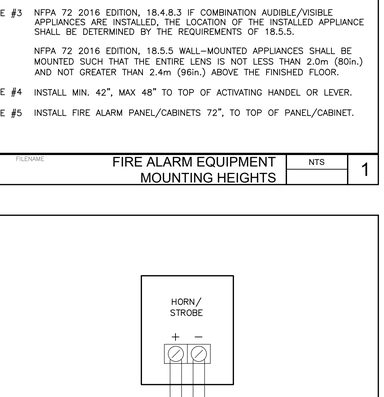
NFPA 72 2016 EDITION, 18.5.5 WALL–MOUNTED APPLIANCES SHALL BE MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 2.0m (80in.) AND NOT GREATER THAN 2.4m (96in.) ABOVE THE FINISHED FLOOR.

NOTE #4 INSTALL MIN. 42", MAX 48" TO TOP OF ACTIVATING HANDEL OR LEVER.

NOTE #5 INSTALL FIRE ALARM PANEL/CABINETS 72", TO TOP OF PANEL/CABINET.

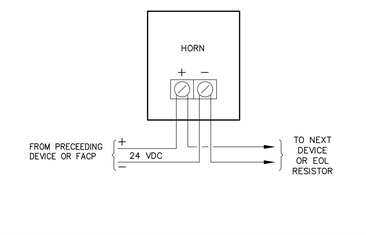
FILENAME

FIRE ALARM EQUIPMENT
MOUNTING HEIGHTS | NTS | 1



FILENAME

HORN STROBE
POINT TO POINT DIAGRAM | NTS | 2



FILENAME

HORN
POINT TO POINT DIAGRAM | NTS | 3

FIRE ALARM GENERAL NOTES

1. THE INTENT OF THE FIRE ALARM WORK SHOWN IS TO EXTEND EXISTING FIRE ALARM SYSTEM TO NEW CONCESSIONS BUILDING. THE DRAWINGS AND SPECIFICATIONS DESCRIBE A COMPLETE, FUNCTIONING FIRE ALARM SYSTEM WITH UPGRADED DEVICES, WIRING AND FIRE ALARM CONTROL PANEL.
2. PROVIDE FIRE ALARM DETECTION AND NOTIFICATION SYSTEM, PER SB575 REQUIREMENT. LOCATIONS OF EXISTING EQUIPMENT AND DEVICES SHOWN ON PLAN ARE BASED ON AVAILABLE AS BUILT PLANS AND INFORMATION. CONTRACTOR SHALL THOROUGHLY INSPECT THE EXISTING SYSTEM AND SITE CONDITIONS BEFORE BID. ADVISE THE DISTRICT'S REPRESENTATIVE OF ALL CONDITIONS REQUIRING IMMEDIATE ATTENTION OR MIGHT CAUSE DIFFICULTIES THAT ARE NOT ADDRESSED, OR INFERRED TO, IN THE CONTRACT DRAWINGS AND SPECIFICATIONS PRIOR TO NEW CONSTRUCTION AND THE COMMENCEMENT OF THE GUARANTEE PERIOD.
3. FIRE WATCH IN CONFORMANCE WITH THE CALIFORNIA FIRE CODE SHALL BE PROVIDED AT THE DIRECTION OF THE CONTRACTOR FOR EVERY OFF–LINE BUILDING. THE SCHOOL DISTRICT SHALL ASSIST WITH FIRE WATCH ACTIVITIES DURING SCHOOL HOURS AND WHENEVER THE CAMPUS IS OCCUPIED BY STUDENTS, TEACHERS AND STAFF. THE CONTRACTOR SHALL PROVIDE ALL FIRE WATCH ACTIVITIES AFTER SCHOOL HOURS AND WHENEVER THE CAMPUS IS NOT OCCUPIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING AND MAINTAINING ALL FIRE WATCH LOGS.
4. WHERE NEW CONDUITS CANNOT RUN CONCEALED WITHIN THE EXISTING WALLS AND CEILINGS, INSTALL WIRING AND/OR CABLING IN TWO PIECE NON–METALLIC SURFACE–MOUNTED RACEWAY AS MANUFACTURED BY WIREMOLD, #800 SERIES, OR AN ACCEPTED SUBSTITUTED EQUAL. SURFACE RACEWAY ARE SHOWN DIAGRAMMATICALLY ON PLAN. ROUTE SURFACE RACEWAY ALIGNED TO THE CORNER EDGES OF WALLS AND CEILINGS, U.O.N.
5. CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONAL CODE COMPLIANT SYSTEM WITH ALL REQUIRED HARDWARE. DEVICES AND PROGRAMMING REGARDLESS IF THEY ARE NOT SHOWN OR SPECIFIED IN THE BID DRAWINGS OR SPECIFICATIONS.
6. CONTRACTOR SHOP DRAWINGS SHALL BE COMPLETE SHOWING ALL CIRCUITING, POINT TO POINT WIRING DIAGRAM, DIMENSIONED PANEL LAYOUTS, DEVICE LABELING AND POINT/DEVICE DESCRIPTION SCHEDULES.
7. CONTRACTOR SHALL AFFIX TO EACH FIELD DEVICE A DEVICE LABEL. DEVICE LABEL SHALL BE ARRANGED IN THE FOLLOWING MANNER.

   FIRE ALARM NOTIFICATION DEVICE DESCRIPTORS:

   XX.XX
   - NOTIFICATION APPLIANCE ID NUMBER
   - NOTIFICATION APPLIANCE CIRCUIT (NAC) CIRCUIT NUMBER
   - POWER EXTENDER ID

   FIRE ALARM INITIANTING DEVICE DESCRIPTORS:

   X.X.XX
   - LOOP POINT ID
   - CARD NUMBER
   - CABINET NUMBER
8. CONTRACTOR SHALL PROVIDE INTELLIGIBILITY TESTING USING INTELLIGIBILITY METERS APPROVED FOR SUCH USE. REFERENCE NFPA 72 CHAPTER 24. AN STI SCORE OF 7.0 IS A MINIMUM REQUIREMENT. CONTRACTOR SHALL IDENTIFY ALL ACOUSTICALLY DISTINGUISHABLE SPACES (ADS) ON CONTRACTOR SHOP DRAWINGS.
9. NEW FIRE ALARM WIRING SHALL BE INSTALLED IN DEDICATED RACEWAYS.
10. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE ENFORCING AGENCY AND DSA INSPECTOR OF RECORD. THE BUILDING SHALL NOT BE IN OPERATION UNTIL THE LOCAL FIRE MARSHAL HAS SIGNED OFF ON OPERATIONAL CAPACITY OF THE FIRE ALARM SYSTEM.
11. FINAL FIRE ALARM SYSTEM TEST SHALL BE WITNESSED BY LOCAL FIRE AUTHORITY WITH THE DSA INSPECTOR OF RECORD (IOR) NFPA CERTIFICATE OF COMPLIANCE FORM SHALL BE SUBMITTED TO THE DISTRICT FOR SUBMITTAL TO DSA.
12. ARCHITECT SHALL SUBMIT ANY ALTERATIONS OF THE APPROVED CONSTRUCTION DOCUMENTS TO THE IOR/DSA FOR NEW APPROVALS. DSA APPROVAL IS REQUIRED BEFORE ANY MODIFICATIONS ARE MADE BY THE CONTRACTOR.
13. LOCATE SMOKE AND HEAT DETECTORS MINIMUM OF 3 FEET FROM AN AIR SUPPLY DIFFUSER OR AN AIR RETURN VENT. THE DETECTORS SHOULD NOT BE LOCATED IN THE PATH OF THE AIR FLOW SUPPLY OR RETURN DUCT.
14. LOCATE SMOKE AND HEAT DETECTORS AT LEAST ONE FOOT AWAY FROM FLUORESCENT/LED LIGHT FIXTURES.
15. THE CONTRACTOR SHALL PROVIDE AS–BUILT SHOP DRAWINGS INDICATING CIRCUITING OF ALL DETECTORS AND OTHER DEVICES IN ALL THE BUILDINGS OF THIS PROJECT.
16. WHERE ACCESSIBILITY NOT AVAILABLE TO THE NEW FIRE ALARM DEVICES LOCATED ABOVE THE CEILING/ATTIC SPACES, PROVIDE ACCESS PANELS TO THESE DEVICES, COORDINATE IN THE FIELD.
17. UNDERGROUND AND EXTERIOR CONDUITS SHALL HAVE WATERTIGHT FITTINGS.
18. FIRE ALARM SYSTEM SHALL TRANSMIT ALARM, SUPERVISORY AND TROUBLE SIGNAL TO AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH NFPA 72 AND CBC 907.6.5.3.
19. NO SPLICES SHALL BE ALLOWED FOR FIRE ALARM SYSTEM UNDERGROUND CABLES.
20. PROVIDE DOCUMENTATION CABINET TO BE INSTALLED PROXIMAL TO FACP (NFPA 72, 7.7.2.1). ALL RECORD DOCUMENTATION SHALL BE STORED IN THE DOCUMENTATION CABINET (NFPA 72 7.7.2.2). THE DOCUMENTATION CABINET TO BE PROMINENTLY LABELED "SYSTEM RECORD DOCUMENTS" (NFPA 72 7.7.2.4).
21. THE CONTRACTOR SHALL PROVIDE AS–BUILT SHOP DRAWINGS INDICATING CIRCUITING OF ALL DETECTORS AND OTHER DEVICES IN ALL THE BUILDINGS OF THIS PROJECT.
22. WHERE ACCESSIBILITY NOT AVAILABLE TO THE NEW FIRE ALARM DEVICES LOCATED ABOVE THE CEILING/ATTIC SPACES, PROVIDE ACCESS PANELS TO THESE DEVICES.
23. UNDERGROUND AND EXTERIOR CONDUITS SHALL HAVE WATERTIGHT FITTINGS.
24. NEW FIRE ALARM WIRING SHALL NOT BE INSTALLED IN ANY RACEWAY WITH WIRING IN EXCESS OF 24 VOLT.

GOVERNING CODES & APPLICABLE STANDARDS

TITLE 24 CODES:

1. 2019 CALIFORNIA BUILDING STANDARD ADMINISTRATIVE CODE (CAC), (PART 1, TITLE 24, CCR).
2. 2019 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1 AND 2 (PART 2, TITLE 24, CCR), (2012 EDITION INTERNATIONAL BUILDING CODE WITH 2013 CALIFORNIA AMENDMENTS).
3. 2019 CALIFORNIA ELECTRICAL CODE, (PART 3, TITLE 24, CCR), (2011 EDITION NATIONAL ELECTRICAL CODE WITH 2013 CALIFORNIA AMENDMENTS).
4. 2019 CALIFORNIA MECHANICAL CODE (CMC), (PART 4, TITLE 24, CCR), (2012 EDITION IAPMO UNIFORM MECHANICAL CODE).
5. 2019 CALIFORNIA PLUMBING CODE (CPC), (PART 5, TITLE 24, CCR), (2012 EDITION IAPMO UNIFORM PLUMBING CODE WITH 2013 CALIFORNIA AMENDMENTS).
6. 2019 CALIFORNIA ENERGY CODE, (PART 6, TITLE 24. CCR), (2011 EDITION CALIFORNIA ENERGY COMMISSION BUILDING ENERGY EFFICIENCY STANDARDS).
7. 2019 CALIFORNIA FIRE CODE (CFC), (PART 9, TITLE 24, CCR) (2012 EDITION INTERNATIONAL FIRE CODE WITH 2013 CALIFORNIA AMENDMENTS).
8. 2019 CALIFORNIA REFERENCE CODE, (PART 12, TITLE 24. CCR).

REFERENCE CODE SECTIONS FOR APPLICABLE STANDARDS:

1. 2019 CBC, CHAPTER 35.
2. 2019 CFC, CHAPTER 80.
3. 2016 NFPA 72, AS AMENDED.

FIRE ALARM

SYM	MODEL #	MFG	DESCRIPTION	CSFM
FACP	EST–3	EST	(E) FIRE ALARM CONTROL PANEL	7165–1657:0186
FAPS	BPS6A	EST	REMOTE BOOSTER POWER SUPPLY	7300–1657:0229
FF	SIGA–CT1	EST	INPUT MODULE	7300–1657:0121
SYNC	SIGA–CC1S	EST	SYNCHRONIZATION OUTPUT MODULE	7300–1657:0121
INITIATING DEVICES				
	SIGA–HRD	EST	HEAT DETECTOR 135 DEG.	7270–1657:0333
$_A$	302–194	THERMOTECH	HEAT DETECTOR 194 DEG.	7270–0021:0001
	SIGA–OSD	EST	PHOTO DETECTOR	7272–1657–0511
MONITORING CONTROL DEVICES				
MM	SIGA–CT1	EST	MONITOR MODULE	7300–1657:0121
INDICATING DEVICES				
15	G1RF–VM	EST	STROBE (15cd, 30cd, 75cd, 110cd)	7125–1657:0218
15 H	G1RF–HDVM	EST	HORN STROBE (15cd, 30cd, 75cd, 110cd)	7125–1657:0202
H	757–1A–T	EST	HORN (WEATHER PROOF)	7125–1657:0184
	757A–WB	EST	WEATHERPROOF BOX, RED, SURFACE	7300–1657:0191
J	J–BOX			

NOTE: NOT ALL DEVICES ARE USED.

FIRE ALARM CABLE SCHEDULE

TYPE	DESCRIPTION	USE
CABLES INSTALLED IN CONDUIT (MINIMUM 3/4" C.)		
A	WEST PENN D980 (2#18 SOL, UTP, FPL)	SLC (ADDRESSABLE LOOP) INTERIOR
AE	WEST PENN AQ224 (2#18 STR, UTP, FPL)	SLC (ADDRESSABLE LOOP) EXTERIOR
M	ESSEX 2#14 THHN/THWN SOL	IDC (INITIATING DEVICE CIRCUIT) – INTERIOR/EXTERIOR
R	WEST PENN D975 (2#18 SOL, STP, FPL)	ANNUNCIATOR INTERIOR
	ESSEX 2#14 THHN/THWN SOL	
B	WEST PENN 998 (2#12 STR, FPLR)	NAC (NOTIFICATION APPLIANCE CIRCUIT) INTERIOR
C	WEST PENN 975 (2#18 SOL, STP)	AUDIO SPEAKER CABLE – INTERIOR
CE	WEST PENN AQ294 (2#16 STR, STP, FPL)	AUDIO SPEAKER CABLE – EXTERIOR
DE	WEST PENN AQ225 (2#16 SOL, UTP, FPL)	NETWORK COMMUNICATION CABLE – EXTERIOR

CABLE DESCRIPTION ABBREVIATIONS

ABBREV.	DEFINITION	ABBREV.	
FPL	FIRE ALARM POWER–LIMITED	STR	STRANDED CONDUCTOR
FPLP	FIRE ALARM POWER–LIMITED, PLENUM	STP	SHIELDED TWISTED PAIR
FPLR	FIRE ALARM POWER–LIMITED, RISER	US	UNSHIELDED CABLE
OS	OVERALL SHIELDED CABLE	UTP	UNSHIELDED TWISTED PAIR
SOL	SOLID CONDUCTOR		

FIRE ALARM STROBE/HORN NOTES

1. PER NFPA 72 2016 SECTION 10.12.2: WHEN AN OCCUPANT NOTIFICATION ALARM SIGNAL DEACTIVATION MEANS IS ACTUATED, BOTH AUDIBLE AND VISIBLE NOTIFICATION APPLIANCES SHALL BE SIMULTANEOUSLY DEACTIVATED.
2. PER NFPA 72 2016 SECTION A10.12.2: WHERE IT IS DESIRED TO DEACTIVATE THE NOTIFICATION APPLIANCES FOR FIRE SERVICE OPERATIONS INSIDE THE BUILDING AND SIGNAL EVACUATED OCCUPANTS THAT AN ALARM IS STILL PRESENT, IT IS RECOMMENDED THAT A SEPARATE NON–SILENCEABLE NOTIFICATION RECOMMENDED THAT A SEPARATE NON–SILENCEABLE NOTIFICATION ZONE BE PROVIDED ON THE EXTERIOR OF THE BUILDING. THE AUDIBLE AND VISIBLE NOTIFICATION APPLIANCES LOCATED AT THE BUILDING ENTRANCES COULD SERVE AS A WARNING TO PREVENT OCCUPANT RE–ENTRY.
3. A FLASHING VISUAL WARNING DEVICE HAVING A FREQUENCY OF NOT MORE THAN TWO (2) FLASHES OR LESS THAN ONE (1) FLASH PER SECOND BE INSTALLED TO WARN THE HEARING IMPAIRED AS SHOWN ON THE DRAWINGS. (SEC. 2–7204)
4. ALL STROBE CIRCUITS SHALL BE SYNCHRONIZED NFPA 72 A.18,5.2.6

FIRE ALARM SHEET INDEX

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SPORT PLANNING & DESIGN
1843 Iron Point Rd. Suite 140
Folsom, CA 95630
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www.VerdeDesignInc.com

STAMP

REGISTERED LANDSCAPE ARCHITECT
MARK S. BASINGER
No. 4083
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER K. SAEKI
No.18211
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE

FIRE ALARM LEGEND, ABBREVIATIONS, AND NOTES

PROJECT NAME

MESA VERDE
HIGH SCHOOL
ATHLETIC FACILITY
IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE
1		
2		
3		
4		
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DRAWN BY	CHECKED BY
	CS/MB
DATE ISSUED: 01/20/2021	SCALE
PROJ. NO.: 1819500	
SHEET NO.: FA0.00	

LP CONSULTING ENGINEERS
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1209 Pleasant Grove Blvd.
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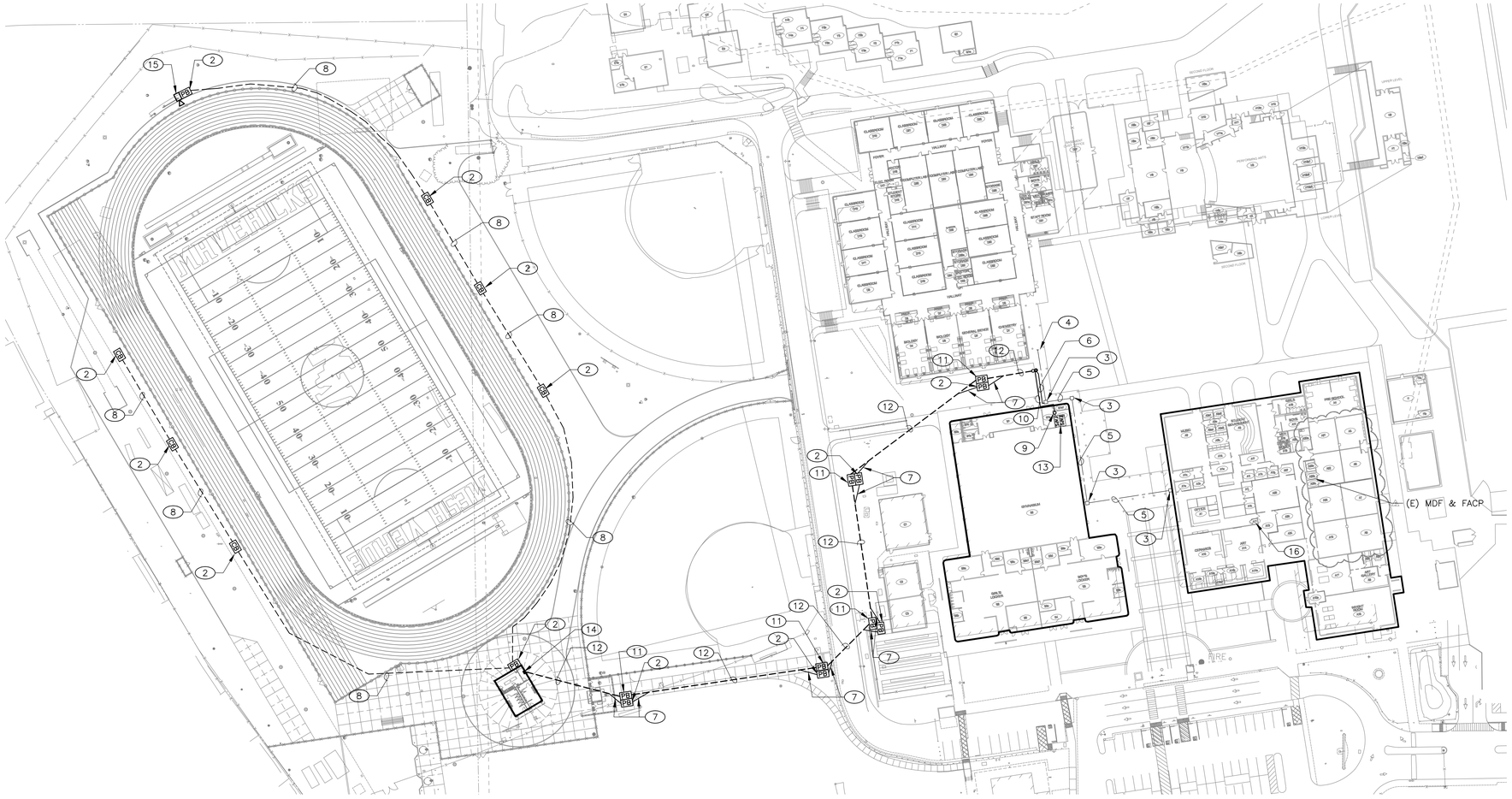
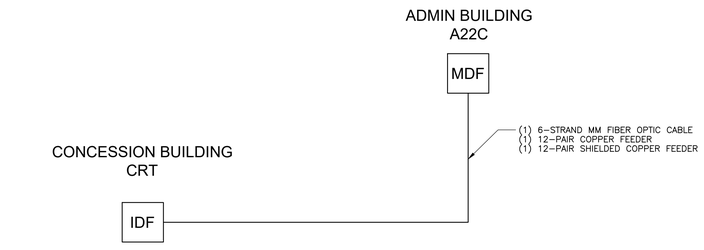
Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Electrical\E-Sheets\192245_FA0_00 (FA_COVER_SHEET).dwg
PLOT DATE: 01-12-21 PLOTTED BY: Jessica



FIRE ALARM AND TELECOMMUNICATION OVERALL SITE PLAN (1)

SCALE: 1/50" = 1'-0"



TELECOMMUNICATION RISER DIAGRAM (2)

GENERAL NOTES

1. ALL DEVICES ARE EXISTING UNLESS OTHERWISE NOTED.
2. ALL EXISTING EQUIPMENT, DEVICES, CONDUIT, AND WIRING, ETC., WHERE SHOWN ON DEMO PLANS ARE BASED ON AVAILABLE EXISTING DOCUMENTS AND LIMITED SITE SURVEYS.
   a. REFER TO RECORD SET DSA A#02-105232 FOR PREVIOUS FIRE ALARM SYSTEM.
3. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY WORK. REPORT TO ENGINEERS ANY DISCREPANCIES.
4. THE CURRENT PROJECT SCOPE DOE NOT INCLUDE HVAC UPGRADES, THEREFORE, CARBON MONOXIDE DETECTION HAS BEEN OMITTED FROM THIS DESIGN PER THE FOLLOWING DSA INTERPRETATION OF CBC 915 THAT EXISTING BUILDINGS SHALL HAVE CO DETECTION INSTALLED IN THE FOLLOWING CIRCUMSTANCES:
   a. INSTALLATION OF NEW FUEL-BURNING APPLIANCE IN NEW AND EXISTING BUILDINGS.
   b. REPLACEMENT OF EXISTING FUEL-BURNING APPLIANCES IN EXISTING BUILDINGS.
   c. REPLACEMENT OF EXISTING FIRE ALARM SYSTEM WHERE CO DETECTION IS CURRENTLY INTEGRATED.

KEY NOTES

1. (N) 360 DEGREE SECURITY CAMERA MOUNTED ON SCOREBOARD.
2. PROVIDE ELECTRICAL LOW VOLTAGE COMMUNICATION BOX 2'X3'. (TYPICAL).
3. (E) ROOF MOUNTED J-BOX TO REMAIN. RE-USE TO PULL-IN NEW CONDUCTORS AS INDICATED.
4. (E) CONDUIT ON CANOPY TO REMAIN.
5. (E) CONDUIT ON CANOPY TO REMAIN. RE-USE TO PULL-IN NEW CONDUCTORS AS INDICATED.
6. (3)2"C.O.(LV) ROUTED ON (E) CANOPY TO (N) J-BOX (12"x12"x10"D. NEMA 3R) LOCATED ON 9E) CANOPY. ROUTE DOWN (E) COLUMN TO (N) PULL BOX LOCATED ON SITE AS INDICATED. REFER TO DETAIL 7/FA0.00 AND 8/FA0.00 FOR ADDITIONAL INFORMATION.
7. (5)2"C.O.(LV). INSTALL PER DETAIL 6/FA0.00.
8. (2)2"C.O.(LV). INSTALL PER DETAIL 6/FA0.00.
9. (1)2"C W/ 2/AE ROUTED UP TO (E) CEILING IN ROOM. TRANSITION TO (E) CANOPY WITH CORE THROUGH EXTERIOR WALL.
10. (1)2"C W/ 2/AE ROUTED ON (E) CANOPY TO (N) J-BOX. ROUTE DOWN (E) COLUMN TO (N) PULL BOX AS INDICATED.
11. PROVIDE N9 PULL BOX.
12. (1)2"C W/ 2/AE(FA) AND (5)2"C.O.(LV). INSTALL PER DETAIL 6/FA0.00.
13. (E) FAPS'S TO REMAIN. EXTEND FIRE ALARM CIRCUITS FROM THIS LOCATION. PROVIDE ALL NECESSARY PARTS FOR A COMPLETE AND FULLY FUNCTIONING SYSTEM.
14. (N) 'FAPS'. REFER TO DETAIL 1/FA0.00 FOR INSTALLATION REQUIREMENTS. PROVIDE ALL NECESSARY PARTS FOR A COMPLETE AND FULLY FUNCTIONING SYSTEM.
15. NEW SECURITY CAMERA MOUNTED ON SCOREBOARD. CAT6 CABLE WITH DATA EXTENDER. ROUTE CABLING TO CONCESSION BUILDING IDF.
16. BOGEN INTERCOM TERMINATION, CONTRACTOR TO PROVIDE END-TO-END TERMINATION, PROGRAMMING AND TESTING.

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STAMP

REGISTERED LANDSCAPE ARCHITECT
MIKE S. BAGNESI
No. 4089
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
CA K-SAE
No.18211
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE

FIRE ALARM AND TELECOM OVERALL SITE PLAN

PROJECT NAME

MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA 95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
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1819500	
SHEET NO.	
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Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Electrical\E-Sheets\192245_FA1_00 (FA_SITE).dwg
PLOT DATE: 01-12-21 PLOTTED BY: Jessica

PRE-CAST CONCRETE WALL NOTES

1. ALL PENETRATIONS 12" OR LARGER TO BE CAST AT THE PRE-CAST MANUFACTURER'S PLANT AND WILL BE COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER PRIOR TO CASTING.
2. ALL PENETRATIONS SMALLER THAN 12" SHALL BE CORED IN THE FIELD AND COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER. PRIOR TO CORING, PRE-CAST ENGINEER TO REVIEW LOCATIONS TO ENSURE THE PENETRATIONS ARE NOT GOING THROUGH FLEXURAL REINFORCEMENT.

KEY NOTES

(1) TERMINAL CAN FOR LOW VOLTAGE SYSTEMS, SEE KEY NOTE 5 SHEET E1.00

(2) FIRE ALARM DEVICE IDENTIFICATION SHALL BE PER SJUSD STANDARD ON SHEET FA0.00 (TYPICAL FOR ALL INITIATING AND NOTIFICATION DEVICES).

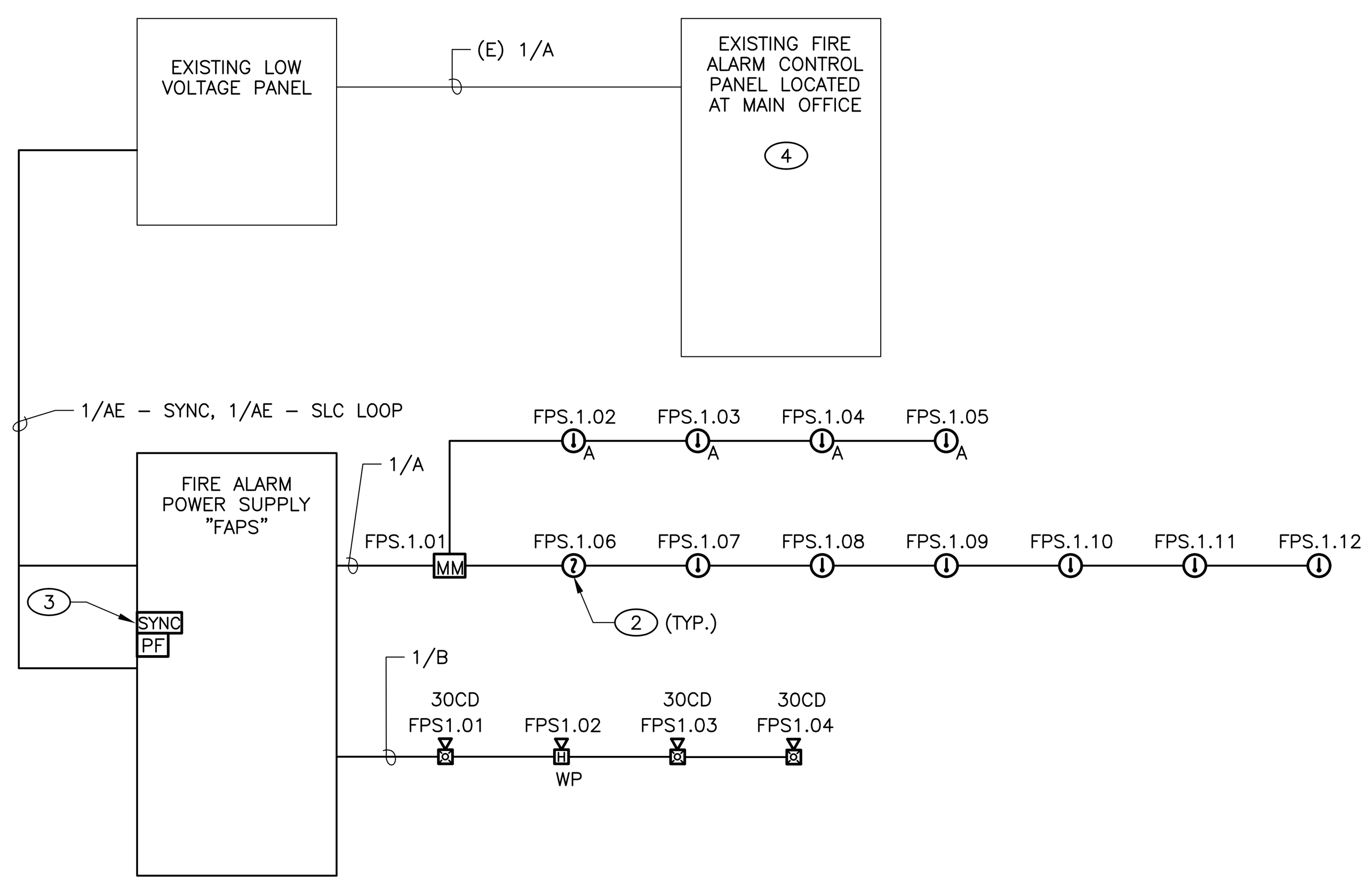
(3) NOTIFICATION DEVICES SHALL BE SYNCHRONIZED SITE-WIDE. CONNECT SYNCHRONIZATION OUTPUT MODULE TO FIRE ALARM CONTROL PANEL AND/OR ANOTHER FIRE ALARM POWER SUPPLY AS REQUIRED. PROVIDE ALL COMPONENTS AND PROGRAMMING AS REQUIRED.

(4) VERIFY AVAILABLE CAPACITY ON EXISTING A SLC CARDS AND PROVIDE NEW CARD AS NECESSARY.

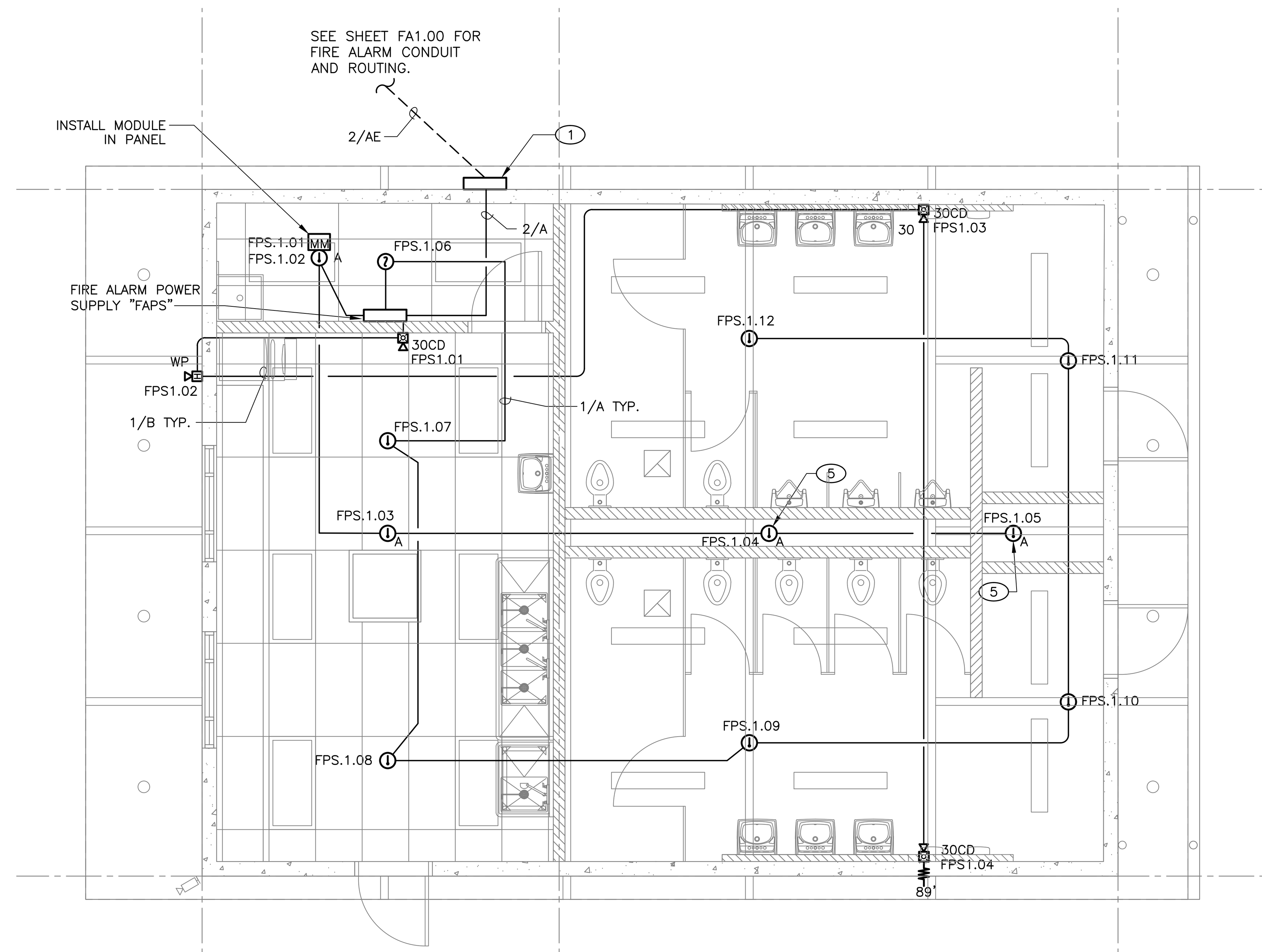
(5) INSTALL DEVICE IN PLUMBING CHASE AND PROVIDE ACCESS PANEL PER 6/FA0.1 FOR MAINTENANCE AND TESTING. COORDINATE LOCATION OF ACCESS PANEL WITH ALL TRADES PRIOR TO EXECUTION OF WORK.

GENERAL NOTES

1. ALL DEVICES ARE EXISTING UNLESS OTHERWISE NOTED.
2. ALL EXISTING EQUIPMENT, DEVICES, CONDUIT, AND WIRING, ETC., WHERE SHOWN ON DEMO PLANS ARE BASED ON AVAILABLE EXISTING DOCUMENTS AND LIMITED SITE SURVEYS.
   a. REFER TO RECORD SET DSA A#02-105232 FOR PREVIOUS FIRE ALARM SYSTEM.
3. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY WORK. REPORT TO ENGINEERS ANY DISCREPANCIES.
4. THE CURRENT PROJECT SCOPE DOE NOT INCLUDE HVAC UPGRADES, THEREFORE, CARBON MONOXIDE DETECTION HAS BEEN OMITTED FROM THIS DESIGN PER THE FOLLOWING DSA INTERPRETATION OF CBC 915 THAT EXISTING BUILDINGS SHALL HAVE CO DETECTION INSTALLED IN THE FOLLOWING CIRCUMSTANCES:
   a. INSTALLATION OF NEW FUEL-BURNING APPLIANCE IN NEW AND EXISTING BUILDINGS.
   b. REPLACEMENT OF EXISTING FUEL-BURNING APPLIANCES IN EXISTING BUILDINGS.
   c. REPLACEMENT OF EXISTING FIRE ALARM SYSTEM WHERE CO DETECTION IS CURRENTLY INTEGRATED.



FIRE ALARM RISER DIAGRAM (2)



STORAGE / RESTROOM FIRE ALARM FLOOR PLAN (1)

SCALE: 1/4" = 1'-0"

FIRE ALARM CONTROL PANEL (FACP) BATTERY CALCULATIONS

		STANDBY CURRENT		ALARM CURRENT	
DEVICE	QUANTITY	AMPS	TOTAL	AMPS	TOTAL
FACP (ADDRESSIBLE)	1	0.75	0.75	0.75	0.75
ANNUNCIATOR	1	0.12	0.12	0.14	0.14
HEAT DETECTOR	24	0.0003	0.0072	0.0065	0.156
SMOKE DETECTOR	438	0.0003	0.1314	0.0065	2.847
DUCT SMOKE DETECTOR	0	0.0003	0	0.012	0
PULL STATIONS	17	0.0004	0.0068	0.0004	0.0068
LINE ISOLATOR	40	0.000045	0.0018	0.056	2.24
BEAM DETECTORS	4	0.02	0.08	0.05	0.2
FLOW CONTACT MOD	3	0.0004	0.0012	0.0007	0.0021
RELAY MODULE	2	0.0001	0.0002	0.0001	0.0002
LAN INTERFACE	1	0.25	0.25	0.25	0.25
INTRUSION	177	0.00006	0.01062		0
	0		0	0	0
TOTAL			1.0972		6.3398
TOTAL 24 HR STANDBY			26.3328		
TOTAL 15 MIN ALARM					1.58495
TOTAL REQUIRED AH	27.91775				
+20% SPARE	33.5013				
FACP BATTERY AH	55				

POWER BOOSTER PANEL (FAPS) BATTERY CALCULATIONS

		STANDBY CURRENT		ALARM CURRENT	
DEVICE	QUANTITY	AMPS	TOTAL	AMPS	TOTAL
BOOSTER (ADDRESSIBLE)	1	0.056	0.056	0.056	0.056
15CD HORN/STROBE	0		0	0.054	0
30CD HORN/STROBE	3		0	0.074	0.222
75CD HORN/STROBE	0		0	0.121	0
110CD HORN/STROBE	0		0	0.162	0
15CD STROBE	0		0	0.06	0
30CD STROBE	0		0	0.083	0
EXTERIOR HORN	1			0.075	0.075
TOTAL			0.056		0.353
TOTAL 24 HR STANDBY			1.344		
TOTAL 15 MIN ALARM					0.08825
TOTAL REQUIRED AH	1.43225				
+20%SPARE	1.7187				
BOOSTER AH	7				

VOLTAGE DROP CALCULATIONS FAPS

CIRCUIT NO.	BLDG	PANEL	INTERIOR HORN 96dBA @ 0.075 A	EXTERIOR HORN 99dBA @ 0.075 A	HORN STROBE 30cd @ 0.074 A	STROBE ONLY 15cd @ 0.060 A	STROBE ONLY 30cd @ 0.083 A	WIRE SIZE (AWG)	RESISTANCE (IN OHMS/ 1000FT)	LENGTH (IN FEET)	TOTAL CURRENT (IN AMPS)	VOLTAGE DROP	% OF VOLTAGE DROP
N1	1	FAPS		1	3			12	1.98	89	0.297	0.10	0.44%
N2	1	SPARE						12	1.98				
N3	1	SPARE						12	1.98				
N4	1	SPARE						12	1.98				

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LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
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1843 Iron Point Rd. Suite 140
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REGISTERED LANDSCAPE ARCHITECT
MARK S. BAGINSKI
No. 4089
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
No. 18211
Exp. 12/31/21
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE

FIRE ALARM FLOOR PLANS

PROJECT NAME

MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE
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DRAWN BY	CHECKED BY CS/MB
DATE ISSUED 01/20/2021	SCALE
PROJ. NO. 1819500	
SHEET NO. FA2.00	

LP CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
Roseville, CA 95678
p 916-771-0778
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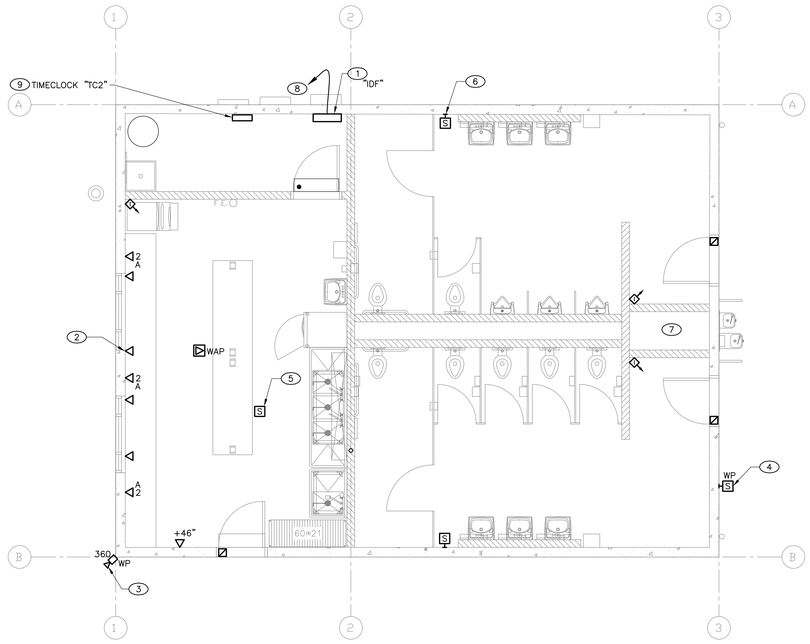
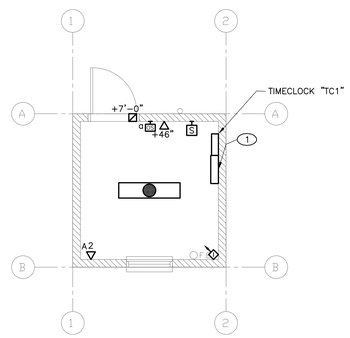
Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Electrical\E-Sheets\192245_FA2_00 (FA_PLAN).dwg
PLOT DATE: 01-12-21 PLOTTED BY: Jessica



STORAGE / RESTROOM LOW VOLTAGE FLOOR PLAN — 1/4" = 1'-0" — 1



TICKET BOOTH LOW VOLTAGE FLOOR PLAN — 1/4" = 1'-0" — 2

KEY NOTES

1. LOW VOLTAGE CABINET, SEE BOTTOM SHEET FA1.00 MOUNT CABINET @ +8'-0" TO BOTTOM OF CABINET
2. PROVIDE WALL MOUNTED DATA LOCATION PER SPECIFICATIONS.
3. PROVIDE EXTERIOR WALL MOUNTED CAMERA PER SPECIFICATIONS.
4. PROVIDE EXTERIOR OUT DOOR SPEAKER PER SPECIFICATIONS.
5. PROVIDE INTERIOR CEILING MOUNT SPEAKER PER SPECIFICATIONS.
6. PROVIDE INTERIOR WALL MOUNT SPEAKER PER SPECIFICATIONS.
7. PROVIDE INTERIOR WALL MOUNT MOTION SENSOR
8. PROVIDE (1) 2"C (DATA-FIBER) BACK TO MDF
9. TIMECARD LOCATION

GENERAL NOTES

1. ANY SHEETNOTES OR OTHER CALLOUTS IN THESE DRAWINGS THAT ASSIGN RESPONSBILITY OF WORK TO SPEPCIFIC DISCIPLINES IS TO BE CONSDIERED AS A RECOMMENDATION ONLY.
2. REFER TO DISTRICT SPECIFICATION FOR PRODUCT SPECS AND INSTALLTION REQUIREMENTS
3. DRAWINGS REPRESENT CONCEPTUAL LOCATIONSS OF DEVICES. REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFIC LOCATIONS AS REQUIRED
4. REFER TO RESPECTIVE DISCIPLINES FOR EXACT MOUNTING LOCATIONS OF DEVICES UNLESS OTHERWISE NOTED. COORDINATE THOSE DISCIPLINES FOR TERMINATION REQUIREMENTS WITH DISTRICT IT REPRESENTITIVE.
5. COMPLY WITH ADA REQUIREMENTS FOR MOUNTING HEIGHTS OF ALL DEVICES
6. ALL WORK TO BE DONE BY DIVISION 27 AND 28 UNLESS OTHERWISE NOTED
7. REFER TO DIVISION 26 FOR POWER AND LIGHTING REQUIREMENTS
8. REFER TO DIVISION 23 FOR ALL COOLING REQUIREMENTS
9. ALL UTP CABLING IS CAT6 PLENUM

CONDUIT AND BOXES

1. PROVIDE 1-1/4 INCH CONDUIT TO TELECOMMUNICATIONS 5' SQUARE BACKBOXES, 2-7/8 DEEP WITH SINGLE GANG MUDING UNLESS OTHERWISE NOTED IN DETAILS
2. PROVIDE J HOOK PATHWAY FROM CONDUIT CHASE TO NEW IDF
3. MAXIMUM NUMBER OF BENDS IN CONDUIT BETWEEN PULLPOINTS NOT TO EXCEED 180 DEGREES

TELECOMMUNICATION ROOM

1. COMMUNICATION SYSTEM CONTRACTOR IS RESPONSBILE FOR ALL DATA CABLING THAT IS TO BE INSTALLED IN IDF
2. TELECOM ROOM FLOORS TO BE ANTISTATIC SEALED. ALL FLOORS SHALL BE CLEANED AND SEALED PRIOR TO INSTALLATION OF ANY ELECTRONICS AND ACTRIVE EQUIPMENTS
3. PROVIDE 3/4' FIRE TREATED PLYWOOD BACKBOARDS WITH 2 COATS OF FIRE RETARDANT PAINT (COLOR-WHITE). LEAVE FIREPROOF SEALS EXPOSED/ UNPAINTED
4. BUSBAR SHALL BE BONDED TO BUILDING STRUCTURAL STEEL, WHEN AVAILABLE

HANGERS AND SUPPORT FOR COMMUNICATION SYSTEMS

1. J HOOKS SHALL BE SPACED AT A MAXIMUM OF 48 INCHES IN THE MAIN BUNDLE, 48 TO 60 INCHES IN SECONDARY BUNDLES AND WITHIN 6 INCHES OF AN EMT CONDUIT STUB UP
2. MAIN BUNDLE SHALL EMPLOY 4 INCH JHOOKS/ SADDLE BAGS AND SEOCNDARY CAN EMPLOY 2 INCH J HOOKS
3. 3.CABLES SHALL NOT BE SECURED TO THE J HOOK WITH CABLE TIES OR VINYL TAPE

TECHNOLOGY SYMBOLS

- DATA LOCATION
- S CEILING MOUNT INTERIOR SPEAKER
- S WALL MOUNT INTERIOR SPEAKER
- S WP WALL MOUNT EXTERIOR SPEAKER
- WALL MOUNT INTERIOR MOTION SENSOR
- 360 WP WALL MOUNT EXTERIOR CAMERA
- DOOR CONTACT

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CONSULTANT
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER K. SAEU
No.18211
ELECTRICAL
STATE OF CALIFORNIA

SHEET TITLE
TECHNOLOGY FLOOR PLANS

PROJECT NAME
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PROJECT ADDRESS
7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA 95621

SUBMITTAL	DATE
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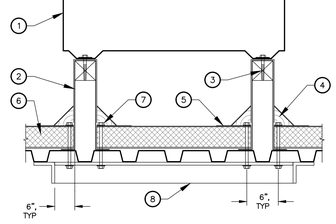
Job #: 19-2245

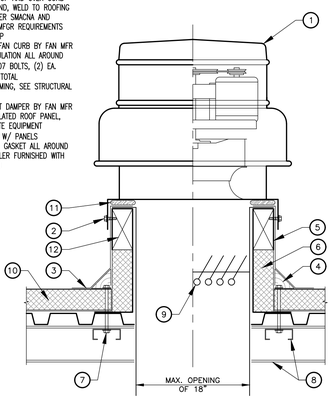
DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Technology\192245_T2_00 (TECHNOLOGY_PLAN) (1).dwg
PLOT DATE: 01-12-21 PLOTTED BY: Jessica

1. OUTDOOR CONDENSING UNIT, SEE SCHEDULE
2. PREFAB PRESLOPED GALV. SHEET METAL CURB, MIN. 12" HIGH x 24" LONG WITH PRESSURE TREATED WOOD NAILER, TYP. 2
3. 3/8"ø S.S. LAG SCREW INTO WOOD NAILER AT (4) CORNERS, SILICONE SEAL PENETRATION WATERTIGHT
4. CANT STRIP, TYP.
5. GALVANIZED SHEET METAL FLASHING UP AND OVER CURB ALL AROUND, WELD TO ROOFING SYSTEM PER SMACNA AND ROOFING MFGR REQUIREMENTS
6. PRE-INSULATED ROOF PANEL, COORDINATE EQUIPMENT MOUNTING W/ PANELS
7. 3/8"ø A307 BOLTS TO ANGLE FRAME BELOW, (2) BOLTS EACH END OF CURB, BOTH SIDES.
8. L4X4 ANGLE FRAME, SEE STRUCTURAL 2/S4.00 FOR ATTACHMENT



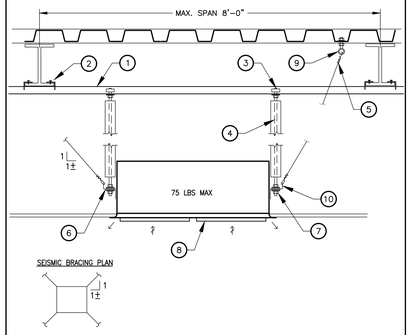
ME02A02D | OUTDOOR UNIT MOUNTING | NTS | 4

1. ROOF MOUNTED EXHAUST FAN
2. SECURE FAN TO CURB WITH #12 SM SCREWS, 4 PER SIDE.
3. GALVANIZED SHEET METAL FLASHING UP AND OVER CURB ALL AROUND, WELD TO ROOFING SYSTEM PER SMACNA AND ROOFING MFGR REQUIREMENTS
4. CANT STRIP
5. EXHAUST FAN CURB BY FAN MFR
6. RIGID INSULATION ALL AROUND
7. 3/8"ø A307 BOLTS, (2) EA. SIDE, (4) TOTAL
8. ROOF FRAMING, SEE STRUCTURAL 3/S4.00
9. BACKDRAFT DAMPER BY FAN MFR
10. PRE-INSULATED ROOF PANEL, COORDINATE EQUIPMENT MOUNTING W/ PANELS
11. NEOPRENE GASKET ALL AROUND
12. WOOD NAILER FURNISHED WITH FAN CURB



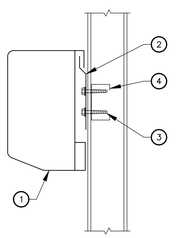
MEXHF02A | ROOF EXHAUST FAN MOUNTING | NTS | 1

1. P1000 UNISTRUT CHANNEL BETWEEN WF BEAMS
2. P1386 CLAMPS, (2) REQUIRED AT EACH END OF EACH P1000 CHANNEL.
3. CHANNEL NUT, TYP
4. 3/8"ø THREADED ROD WITH UNISTRUT P1000T CHANNEL STIFFENER, TYP 4 AT EACH CORNER. PROVIDE CHANNEL WITH 3/8"ø BOLTS AT 10" MAX O.C.
5. 12 GA SLACK WIRE, TYP 4, (4) TIGHT TURNS WITH 1-1/2", TYP AT EACH END
6. HANGER BRACKET PROVIDED BY FAN MANUFACTURER
7. LOCKNUT, TYP
8. CEILING CASSETTE AC UNIT, SEE SCHEDULES
9. 3/8"ø EYE BOLT TYP. AT BRACE WIRES WITH DOUBLE NUT TOP AND BOTTOM OF DECK.
10. 3"x2"x2" WIDE 16 GA. ANGLE, TYP.



ME02A03C | CASSETTE INDOOR UNIT MOUNTING | NTS | 2

1. INDOOR UNIT, SEE SCHEDULE
2. MOUNTING BRACKET SUPPLIED WITH INDOOR UNIT
3. #10x3/4" SMS, (TYP 4)
4. 6"x16 GA BACKING TRACK, SEE STRUCTURAL FOR TYPICAL BACKING DETAIL.



NOTE:
1. INSTALL INDOOR UNIT PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ADDITIONAL BLOCKING AND HARDWARE WHERE REQUIRED BY MANUFACTURER.

ME03A03B | INDOOR UNIT MOUNTING (WALL MOUNT) | NTS | 3

OUTDOOR UNIT SCHEDULE

NUMBER	ODU-1	ODU-2
TYPE	PROP FAN	PROP FAN
MOUNTING	ROOF	ROOF
MCA/MOCP	11 / 28	11 / 28
VOLTS/PHASE	208/1	208/1
SEER/EER	20.8 / 12.0	20.8 / 12.0
HSPF	10.2	11.0
COP	4.31	4.28
COOLING CAP. (MBH)	12.0	18.0
HEATING CAP. (MBH) @47°F	14.0	19.0
SERVICE	SEE PLAN	SEE PLAN
ACCESSORIES	SEE NOTES	SEE NOTES
OPER. WT. (LBS.)	95	100
MANUFFCTURER	MITSUBISHI	MITSUBISHI
MODEL	PUZ-A12NKA7	PUZ-A18NKA7

NOTES:
1. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH.
2. PROVIDE CONDENSER COIL HAIL GUARDS.

INDOOR UNIT SCHEDULE

NUMBER	IDU-1	IDU-2
TYPE	DUCTLESS	DUCTLESS
MOUNTING	WALL	CEILING
MCA/MOCP	1 / 15	1 / 15
VOLTS/PHASE	208/1	208/1
DRIVE	DIRECT	DIRECT
CFM	370	570
OUTSIDE AIR (CFM)	-	-
COOLING CAP. (MBH)	12.0	18.0
HEATING CAP. (MBH) @47°F	14.0	19.0
SERVICE	SEE PLAN	SEE PLAN
ACCESSORIES	SEE NOTES	SEE NOTES
OPER. WT. (LBS.)	30	60
MANUFACTURER	MITSUBISHI	MITSUBISHI
MODEL	PKA-A12HA7	PLA-A18EA7

NOTES:
1. PROVIDE OPTIONAL SAUERMANN CONDENSATE PUMP, COORDINATE VOLTAGE WITH ELECTRICAL CONTRACTOR.
2. PROVIDE MITSUBISHI PAR-33MAA-J WIRED PROGRAMMABLE T-STAT.
3. INDOOR UNIT POWERED FROM OUTDOOR UNIT.
4. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH.

MECHANICAL GENERAL NOTES

A. THIS CONTRACTOR SHALL COMPLY WITH ALL CODES AND REGULATIONS IN EFFECT AT THE JOB SITE, INCLUDING, BUT NOT LIMITED TO:
- A.1. 2019 CALIFORNIA BUILDING CODE
- A.2. 2019 CALIFORNIA MECHANICAL CODE
- A.3. 2019 CALIFORNIA PLUMBING CODE
- A.4. 2019 CALIFORNIA ELECTRICAL CODE
- A.5. 2019 CALIFORNIA GREEN BUILDING STANDARDS
- A.6. 2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS – TITLE 24
- A.7. NATIONAL FIRE PROTECTION ASSOCIATION
- A.8. CALIFORNIA STATE FIRE MARSHAL

B. ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE GUARANTEED FREE FROM ALL MECHANICAL, ELECTRICAL AND WORKMANSHIP DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ALL DAMAGED ITEMS INSTALLED UNDER THIS CONTRACT WITHOUT ADDITIONAL COST TO OWNER.

C. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE OWNER COPIES OF OPERATION, MAINTENANCE AND PREVENTATIVE MAINTENANCE MANUALS FOR EACH MODEL AND TYPE OF MECHANICAL EQUIPMENT.

D. CHECK AND VERIFY EXISTING CONDITIONS AT THE JOB SITE BEFORE BEGINNING WORK. ADJUST THE LOCATION AND CONFIGURATION OF THE WORK NECESSARY TO SUIT ACTUAL CONDITIONS AND OTHER TRADES. ANY CHANGES REQUIRED MUST FIRST BE APPROVED BY THE ARCHITECT OR ENGINEER.

E. THE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK AND SYSTEMS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. CHANGES REQUIRED TO SUIT EXISTING CONDITIONS AND DUE TO COORDINATION WITH OTHER TRADES SHALL BE MADE AT NO EXTRA COST TO THE OWNER.

F. SUBMIT MANUFACTURER'S PRODUCT DATA INCLUDING NAME OF MANUFACTURER, TRADE NAME, MODEL, CAPACITY, OPTIONS, DIMENSIONS, WEIGHTS, INSTALLATION AND STARTUP DATA. EQUIPMENT PERFORMANCES SCHEDULED ARE MINIMUM CAPACITY, AIR FLOW, EFFICIENCY, ETC. REQUIRED. WEIGHTS AND ELECTRICAL DATA SCHEDULED IS MAXIMUM AVAILABLE OR ALLOWABLE.

G. ALL EQUIPMENT IS TO BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER. USING ALL ACCESSORY EQUIPMENT AVAILABLE FROM THE MANUFACTURER FOR SUPPORTS, CONTROLS, ETC., TO MAKE A COMPLETE SYSTEM. ALL EQUIPMENT OR ACCESSORIES NEEDED AND NOT SHOWN OR SPECIFIED SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. ADJUST THE EQUIPMENT FOR PROPER OPERATION, CHECK ALL CONTROLS AND VERIFY THAT ALL SAFETY DEVICES ARE FUNCTIONING PROPERLY.

H. PROVIDE ACCESS DOORS WHERE ACCESS THROUGH FLOORS, WALLS OR CEILINGS IS REQUIRED TO ACCESS MECHANICAL CONTROL SYSTEM COMPONENTS, FIRE/SMOKE DAMPERS, SMOKE DETECTORS, ETC., OR OTHER SYSTEMS REQUIRING ACCESS FOR MAINTENANCE, TESTING OR OBSERVATION. COORDINATE THE EXACT TYPE AND LOCATION OF ACCESS DOORS TO PROVIDE PROPER ACCESS TO THE ITEM CONCEALED.

I. CHECK ALL PIPE AND DUCTWORK FOR LEAKS AND EXCESSIVE AIR LOSS AND NOISE. CORRECT ANY DEFICIENCIES AS SOON AS DISCOVERED. OPERATE THE SYSTEMS AS A TEST AND DEMONSTRATE TO THE OWNER AND ARCHITECT OR ENGINEER THAT THE SYSTEM IS FUNCTIONING PROPERLY.

J. GALVANIZED STEEL DUCTS SHALL BE ASTM A 653/A 653M GALVANIZED STEEL SHEET, FORMING STEEL (FS) DESIGNATION, WITH G90/Z275 ZINC COATING.

K. FABRICATE, SUPPORT AND SEAL DUCTWORK IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAGES, REINFORCING, AND SEALING FOR 4" STATIC PRESSURE UPSTREAM OF TERMINAL UNITS (VAV, CAV BOXES) AND 2" STATIC PRESSURE DOWNSTREAM OF TERMINAL UNITS (VAV, CAV BOXES).

L. CONSTRUCT DUCTWORK T'S, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES WIDTH OF DUCT ON CENTERLINE. WHERE NOT POSSIBLE RECTANGULAR ELBOWS MUST BE USED, PROVIDE AIR FOIL TURNING VANES. WHERE ACOUSTICAL LINING IS INDICATED, PROVIDE TURNING VANES OF PERFORATED METAL WITH GLASS FIBER INSULATION.

M. COMBINATION FIRE AND SMOKE DAMPERS SHALL MEET THE REQUIREMENTS OF NFPA 90A, UL 555, UL 555S, AND AS INDICATED. PROVIDE FACTORY SLEEVE AND COLLAR FOR EACH DAMPER.

N. ALL INSULATION AND LINER PRODUCTS SURFACE BURNING CHARACTERISTICS: FLAME SPREAD/SMOKE DEVELOPED INDEX OF 25/50, MAXIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM E 84, NFPA 255, OR UL 723.

O. DUCT INSULATION BLANKET (INTERIOR APPLICATIONS):
- O.1. INSULATION: ASTM C553; FLEXIBLE, NONCOMBUSTIBLE BLANKET. 'K' ('KSI') VALUE: 0.31 AT 75 DEGREES F (0.045 AT 24 DEGREES C), WHEN TESTED IN ACCORDANCE WITH ASTM C 518. MAXIMUM SERVICE TEMPERATURE: 250 DEGREES F (121 DEGREES C). MAXIMUM MOISTURE ABSORPTION: 0.20 PERCENT BY VOLUME. DUCT APPLICATION: 2" THICK, 3/4 LB. DENSITY.
- O.2. VAPOR BARRIER JACKET: KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM. MOISTURE VAPOR TRANSMISSION: ASTM E 96; 0.02 PERM. SECURE WITH PRESSURE SENSITIVE TAPE.

P. DUCT INSULATION BOARD (EXTERIOR APPLICATIONS):
- P.1. INSULATION: ASTM C 612; RIGID, NONCOMBUSTIBLE BLANKET. 'K' ('KSI') VALUE: 0.24 AT 75 DEGREES F (0.036 AT 24 DEGREES C), WHEN TESTED IN ACCORDANCE WITH ASTM C 518. MAXIMUM SERVICE TEMPERATURE: 250 DEGREES F (121 DEGREES C). MAXIMUM MOISTURE ABSORPTION: 0.20 PERCENT BY VOLUME. DENSITY: 3.0 LB/CU FT (48 KG/CU M).
- P.2. VAPOR BARRIER JACKET: KRAFT PAPER WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM. MOISTURE VAPOR TRANSMISSION: ASTM E 96; 0.04 PERM. SECURE WITH PRESSURE SENSITIVE TAPE.
- P.3. ALUMINUM JACKET: ASTM B 209 (ASTM B 209M). THICKNESS: 0.016 INCH (0.40 MM) SHEET. FINISH: SMOOTH. JOINING: LONGITUDINAL SLIP JOINTS AND 2 INCH (50 MM) LAPS. FITTINGS: 0.016 INCH (0.4 MM) THICK DIE SHAPED FITTING COVERS WITH FACTORY ATTACHED PROTECTIVE LINER. METAL JACKET BANDS: 3/8 INCH (10 MM) WIDE, 0.015 INCH (0.38 MM) THICK ALUMINUM.

Q. DUCT LINER:
- Q.1. INSULATION: INCOMBUSTIBLE GLASS FIBER COMPLYING WITH ASTM C 1071; FLEXIBLE BLANKET; WITH ACRYLIC POLYMER SHOWN TO BE FUNGUS AND BACTERIA RESISTANT BY TESTING TO ASTM G 21 IMPREGNATED SURFACE AND EDGE COAT. APPARENT THERMAL CONDUCTIVITY: MAXIMUM OF 0.31 AT 75 DEGREES F (0.045 AT 24 DEGREES C). DUCT APPLICATION: 1-1/2" THICK, 1-1/2 POUND DENSITY. SERVICE TEMPERATURE: UP TO 250 DEGREES F (121 DEGREES C). RATED VELOCITY ON COATED AIR SIDE FOR AIR EROSION: 5,000 FPM (25.4 M/S), MINIMUM.
- Q.2. LINER FASTENERS: GALVANIZED STEEL, SHEET METAL WELD PINS OR CLINCH PINS AND WASHERS.

R. SEAL ALL STANDING SEAMS AND TRANSVERSE JOINTS IN ALL SHEETMETAL DUCTWORK WITH HARDCAST IRON GRIP PREMIUM FLEXIBLE WATER BASED DUCT SEALANT.

S. DURING CONSTRUCTION PROVIDE TEMPORARY CLOSURES OF METAL OR TAPED POLYETHYLENE ON OPEN DUCTWORK TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM.

T. ALL BRANCH DUCTS SHALL HAVE BALANCING DAMPERS WITH ACCESSIBLE LOCKING TYPE QUADRANT. WHERE DAMPER IS INACCESSIBLE, PROVIDE YOUNG REGULATOR MODEL 270-301 CABLE KIT WITH EITHER 830A-CC (RECTANGULAR) OR 5020-CC (ROUND) DAMPER.

U. PERFORM TOTAL SYSTEMS BALANCE IN ACCORDANCE WITH AABC, ASHRAE STD 111, OR NEBB PROCEDURAL STANDARDS FOR TESTING, BALANCING AND ADJUSTING OF ENVIRONMENTAL SYSTEMS.

AIR DISTRIBUTION SCHEDULE

SYMBOL	TYPE	DESCRIPTION
D	DOOR LOUVER	SIGHT PROOF DOOR RETURN GRILLE, INVERTED-V BLADES WITH 1/2" BLADE SPACING, AUXILIARY FRAME FOR DOOR MOUNTING. TITUS MODEL CT-700 SERIES.
E	SURFACE CEILING EXHAUST	EGGCRATE GRILLE WITH 1/2"x1/2"x1/2" GRID, FRAME FOR SURFACE MOUNTING. TITUS MODEL 50F.

NOTES:
1. REFER TO THE MECHANICAL PLANS FOR NECK SIZE, CFM, AIR DIFFUSION PATTERN, AND FIRE DAMPER (IF REQUIRED).

EXHAUST FAN SCHEDULE

NUMBER	REF-1	REF-2	REF-3
TYPE	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL
MOUNTING	ROOF	ROOF	ROOF
HP / WATTS	1/8 / -	1/8 / -	1/60 / -
VOLTS / PHASE	115 / 1	115 / 1	115 / 1
CFM	600	600	100
E.S.P. (IN.WC.)	0.2	0.2	0.2
DRIVE	DIRECT	DIRECT	DIRECT
FAN RPM	1194	1194	1358
SONES/TIP SPD.(FPM)	5.5/-	5.5/-	2.8/-
SERVICE	SEE PLAN	SEE PLAN	SEE PLAN
CONTROL	LIGHT CIRCUIT	LIGHT CIRCUIT	LIGHT CIRCUIT
OPER. WT. (LBS.)	50	50	35
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK
MODEL	G-095-D	G-095-D	G-060-D

NOTES:
1. PROVIDE FACTORY BACKDRAFT DAMPER.
2. PROVIDE FACTORY PREWIRED DISCONNECT SWITCH.
3. PROVIDE FACTORY PREWIRED FAN SPEED CONTROLLER.
4. PROVIDE FACTORY PRESLOPED ROOF CURBS WITH DAMPER TRAY.

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP MD PP E OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT
☐ ☒ ☐ ☐ SPECIFIC NOTES AND DETAILS.

MP MD PP E OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL
☐ ☐ ☐ ☐ (OPM#) #0043-13.

MECHANICAL SHEET INDEX

MECHANICAL LEGEND

SYMBOL	ITEM	ABBR.
	SUPPLY AIR	SA
	RETURN AIR	RA
	EXHAUST AIR	EA
	OUTSIDE AIR	OSA
	TRANSFER AIR	TA
1 / M-2.1	DETAIL DESIGNATION, DETAIL NUMBER, SHEET NO. WHERE SHOWN	
AC-1	EQUIPMENT DESIGNATION, UNIT ABBREVIATION, NUMBER	
A 10x10-3 120 FD	GRILLE DESIGNATION, NECK SIZE & BLOW (4 UON), FIRE DAMPER WHERE REQ'D, CFM	
	ACOUSTIC LINED DUCT	L
	TURNING VANES	TV
	DUCT FLEXIBLE CONNECTION	
	DUCT RISER	
	DUCT DROP	
	RECTANGULAR TO ROUND FITTING	
	ROUND DUCT RISER	
	VOLUME CONTROL DAMPER	VD
FD	FIRE DAMPER W/ ACCESS	FD
FSD	FIRE SMOKE DAMPER W/ ACCESS	FSD
	OPPOSED BLADE DAMPER	OBD
	BACKDRAFT DAMPER	BDD
M	MOTORIZED DAMPER	
T	THERMOSTAT @ +48" AFF	T-STAT
S	SENSOR @ +48" AFF	
TC	TIMECLOCK @ +48" AFF	
TCP	TEMPERATURE CONTROL PANEL	TCP
SD	DUCT SMOKE DETECTOR	SD
	ABOVE FINISHED FLOOR	AFF
	UNLESS OTHERWISE NOTED	UON
	TYPICAL	(TYP)
	BOTTOM OF DUCT	BOD
	UNDERCUT DOOR 3/4"	UCD
	NEW	(N)
	EXISTING	(E)
	POINT OF DIS/CONNECTION	POD/POC

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VERDE DESIGN
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
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REGISTERED LANDSCAPE ARCHITECT
MARK S. BASINGER
No. 4082
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT
REGISTERED PROFESSIONAL ENGINEER
JEAN POURNAZARIAN
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE
MECHANICAL NOTES, LEGENDS, & SPECIFICATIONS

PROJECT NAME
MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS
7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA 95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE

DRAWN BY	CHECKED BY
	CS/MB
DATE ISSUED: 01/20/2021	SCALE
PROJ. NO.: 1819500	
SHEET NO.: M0.1	

LP CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
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Roseville, CA 95678
p 916-771-0778
www.lpengineers.com
Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Mechanical\MP Sheets\192245_M0_1_(COVER).dwg

PRE-CAST CONCRETE WALL NOTES

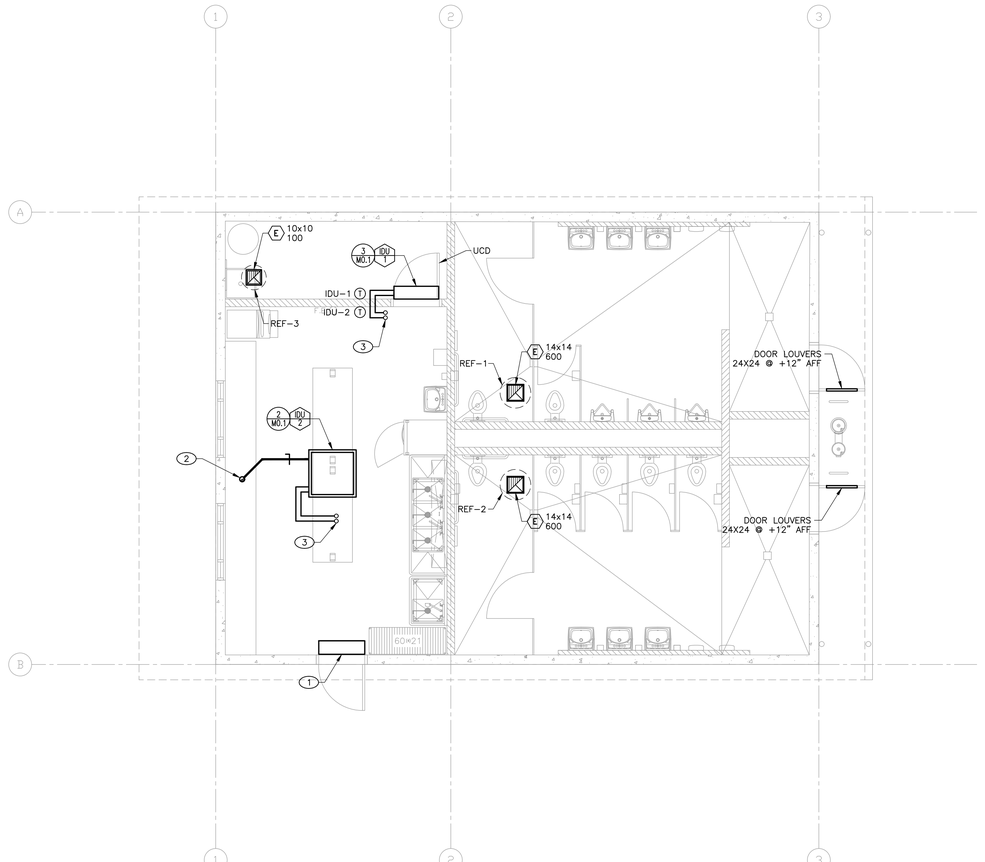
1. ALL PENETRATIONS 12" OR LARGER TO BE CAST AT THE PRE-CAST MANUFACTURER'S PLANT AND WILL BE COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER PRIOR TO CASTING.
2. ALL PENETRATIONS SMALLER THAN 12" SHALL BE CORED IN THE FIELD AND COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER. PRIOR TO CORING, PRE-CAST ENGINEER TO REVIEW LOCATIONS TO ENSURE THE PENETRATIONS ARE NOT GOING THROUGH FLEXURAL REINFORCEMENT.

KEY NOTES

(1) AIR CURTAIN. SEE FOOD SERVICE DRAWINGS FOR REQUIREMENTS.

(2) 4"ø OSA UP THROUGH ROOF WITH CAP AND FLASHING. BALANCE OSA TO 60 CFM. MAINTAIN MINIMUM 10FT FROM ANY EXHAUST OR PLUMBING VENT.

(3) REFRIGERANT PIPING UP THROUGH ROOF TO ODU.



MECHANICAL FLOOR PLAN 1

SCALE: 1/4" = 1'-0"

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MARK S. BAGINSKI
No. 4089
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
JEAN POURTAHERI
M 32311
REN. 6-30-21
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STATE OF CALIFORNIA

SHEET TITLE

MECHANICAL FLOOR PLAN

PROJECT NAME

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2		
3		
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6		

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SHEET NO.: M2.1	

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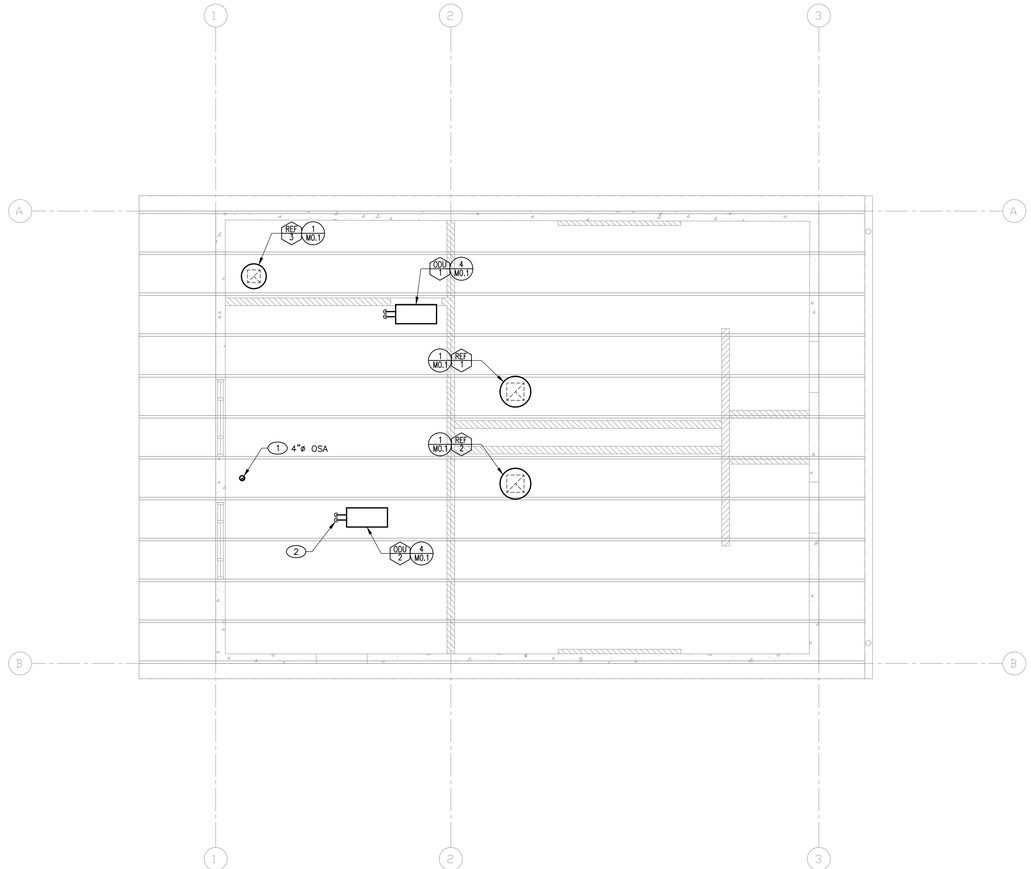
PRE-CAST CONCRETE WALL NOTES

1. ALL PENETRATIONS 12" OR LARGER TO BE CAST AT THE PRE-CAST MANUFACTURER'S PLANT AND WILL BE COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER PRIOR TO CASTING.
2. ALL PENETRATIONS SMALLER THAN 12" SHALL BE CORED IN THE FIELD AND COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER. PRIOR TO CORING, PRE-CAST ENGINEER TO REVIEW LOCATIONS TO ENSURE THE PENETRATIONS ARE NOT GOING THROUGH FLEXURAL REINFORCEMENT.

KEY NOTES

(1) OUTSIDE AIR DUCT UP THROUGH ROOF WITH CAP AND FLASHING. COORDINATE FLASHING REQUIREMENTS WITH ROOFING. SEE ARCHITECTURAL DETAILS.

(2) REFRIGERANT PIPE DROP THROUGH ROOF WITH FLASHING BOOT. SEE ARCHITECTURAL DETAIL 8/A8.21.



MECHANICAL ROOF PLAN (1)

SCALE: 1/4" = 1'-0"

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Signature
EXPIRATION DATE: JULY 2021
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CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
JEAN POURTAHERIAN
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE

MECHANICAL ROOF PLAN

PROJECT NAME

MESA VERDE
HIGH SCHOOL
ATHLETIC FACILITY
IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
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DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Mechanical\MP Sheets\192245_M3_1_(RP).dwg

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	S or W	V	CW	HW	DESCRIPTION
WC 1	ADULT WATER CLOSET CBC ACCESS	4"	2"	1"	---	AMERICAN STANDARD MODEL 2257.101, "AFWALL" ADA COMPLIANT WALL MOUNTED VITREOUS CHINA ELONGATED BOWL, 1.28 GPF WITH SLOAN ROYAL MODEL 111-1.28 MANUAL FLUSH VALVE, PROVIDE OLSONITE 10SSCT OPEN FRONT SEAT WITH SELF-SUSTAINING CHECK HINGE, PROVIDE JR SMITH WATER CLOSET SUPPORT MODEL 0240 OR EQUAL. INSTALL NOTED ADA PER CBC ACCESS REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
U 1	ADULT URINAL CBC ACCESS	2"	2"	1"	---	AMERICAN STANDARD MODEL 6590.001, "WASHBROOK" ADA COMPLIANT WALL MOUNTED VITREOUS CHINA BOWL, 0.125 GPF WITH SLOAN ROYAL MODEL 186-0.125 MANUAL FLUSH VALVE, PROVIDE STAINLESS STEEL STRAINER MODEL 047068-0070A, PROVIDE JR SMITH MODEL 0635 WALL CARRIER SYSTEM. INSTALL NOTED ADA PER CBC ACCESS REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT.
L 1	ADULT LAVATORY CBC ACCESS	2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD MODEL 0356.015, "LUCERNE" ADA COMPLIANT WALL HUNG 20"X18" VITREOUS CHINA LAVATORY, SINGLE HOLE FOR CHICAGO MODEL 404-VE2805-665ABCP PUSH BUTTON METERING FAUCET WITH 0.5 GPM AERATOR, PROVIDE SUPPLIES, STOPS AND 17 GAGE CHROME PLATED BRASS P-TRAP. METERING FAUCETS SHALL BE ADJUSTED TO FLOW FOR 10 SECONDS MINIMUM. WRAP SUPPLIES, STOPS AND P-TRAP PER CBC ACCESS REQUIREMENTS. INSTALL PER CBC ACCESS REQUIREMENTS.
DF 1	DRINKING FOUNTAIN CBC ACCESS	2"	1-1/2"	1/2"	---	MOST DEPENDABLE FOUNTAINS MODEL 440 SMFA, FLOOR MOUNT HI-LO, 14 GAUGE, TYPE 304, NO. 10 STAINLESS STEEL DRINKING FOUNTAIN WITH PUSH BUTTON VALVES AND BOTTLE FILLER. PROVIDE WITH FILTER. INSTALL PER ADA REQUIREMENTS. FINISH BY ARCHITECT. SET BUBBLER JET TO 4" HEIGHT.
JS 1	SERVICE SINK	3"	2"	3/4"	3/4"	WILLIAMS MODEL SBC-1700-BP, 6" DROP FRONT CORNER FLOOR MOUNTED SERVICE SINK, 24"x24"x12" WITH WILLIAMS MODEL T-35 HOSE AND BRACKET AND MODEL T-40 STAINLESS STEEL MOP HANGER. PROVIDE CHICAGO MODEL 445-VBRRCF, FAUCET WITH VACUUM BREAKER AND PAIL HOOK.
HB 1	HOSE BIBB	---	---	3/4"	---	ACORN MODEL 8151, RECESSED WALL HYDRANT WITH VACUUM BREAKER AND SCREW-DRIVER OPERATED STOP VALVE.
HB 2	HOSE BIBB	---	---	3/4"	---	ACORN MODEL 8121, BENT NOSE WITH VACUUM BREAKER, POLISHED CHROME FINISH, VANDAL RESISTANT, REMOVABLE LOOSE KEY HANDLE.
WH 1	ELECTRIC WATER HEATER	---	---	3/4"	3/4"	A.O. SMITH MODEL DSE-50A, STORAGE TANK TYPE, 50 GALLON CAPACITY, 82 GPH RECOVERY AT 90°F RISE. UNIT WEIGHS 291 LBS. EMPTY AND 725 LBS. FILLED. (1) 18 KW ELEMENT. 208V/3ø, 50 FLA ELECTRICAL SERVICE. UL LISTED. SET WATER HEATER OUTLET TEMPERATURE TO 140°F.
ET 1	EXPANSION TANK	---	---	1/2"	---	BELL & GOSSETT MODEL PT-5, STEEL SHELL, BUTYL DIAPHRAGM TYPE EXPANSION TANK PRE-CHARGED TO 40 PSI WITH 2.0 GALLON TANK CAPACITY, 0.9 GALLON ACCEPTANCE CAPACITY.
FD 1	FLOOR DRAIN	2"	1-1/2"	TP	---	JR SMITH MODEL 2005Y, 5" DIAMETER ROUND NICKEL BRONZE TOP WITH 2" PIPE, FLANGE AND SEEPAGE PAN. PROVIDE TRAP PRIMER CONNECTION.
FS 1	FLOOR SINK	3"	2"	TP	---	ZURN MODEL Z1902, COATED CAST IRON, ACID RESISTANT PAINTED INTERIOR, 12" SQUARE TOP WITH 1/2 GRATE, 10" DEEP SUMP, DOUBLE DRAINAGE FLANGE BOTTOM CAULK OUTLET, & DOME STRAINER. PROVIDE TRAP PRIMER CONNECTION.
TP 1	TRAP PRIMER	---	---	1/2"	---	PRECISION PLUMBING PRODUCTS, INC. #PR-500 PRIME-RITE. PROVIDE 12"X12" WALL ACCESS PANEL PER SPECIFICATIONS, FINISH BY ARCHITECT.
WHA 1	WATER HAMMER ARRESTOR	---	---	PER PDI	---	SIOUX CHIEF SERIES 650, TYPE 'L' COPPER TUBE PISTON TYPE WATER HAMMER ARRESTOR, SUITABLE FOR CONCEALED INSTALLATION, SIZE PER PDI REQUIREMENTS. ASSE 1010 LISTED. INSTALL PER MANUFACTURER RECOMMENDATIONS. PROVIDE 14"X14" WALL ACCESS PANEL PER SPECIFICATIONS, FINISH BY ARCHITECT.
GT 1	GREASE TRAP	3"	2"	---	---	JR. SMITH MODEL 8220 GREASE TRAP, RECESSED FLUSH WITH GRADE, 20 GPM, 40 LBS GREASE CAPACITY, 3" NO-HUB ADAPTER INLET/OUTLET, WITH FLOW CONTROL DEVICE (MUST BE VENTED). PROVIDE H-20 TRAFFIC RATED LID AND EXTENSIONS AS NEEDED.
TMV 1	THERMOSTATIC MIXING VALVE	---	---	3/4"	3/4"	POWERS MODEL LFMM432, LEAD-FREE MASTER THERMOSTATIC MIXING VALVE, MINIMUM 0.5 GPM FLOW, MAXIMUM 9.49 GPM FLOW AT 1 PSI PRESSURE LOSS, ASSE 1017 LISTED, CA AB-1953 COMPLIANT. SET OUTLET TEMPERATURE TO 105°F. PROVIDE TRERICE THERMOSTAT DOWNSTREAM OF MIXING VALVE.
PRV 1	PRESSURE REDUCING VALVE	---	---	1/2"-2"	---	WATTS SERIES LFU5B, LEAD FREE, DIRECT OPERATED WATER PRESSURE REDUCING VALVE. PROVIDE WITH STRAINER. SET PRV TO 75 PSI. SEE PLAN FOR SIZE.

PLUMBING LEGEND

SYMBOL	ITEM	ABBR.
S / 1	FIXTURE DESIGNATION UNIT ABBREVIATION NUMBER	
1 / P-1	DETAIL DESIGNATION DETAIL NUMBER SHEET NO. WHERE SHOWN	
-CW---	DOMESTIC COLD WATER	CW
-HW----	DOMESTIC HOT WATER	HW
-TW----	DOMESTIC TEMPERED WATER	TW
	DOMESTIC HOT WATER SUPPLY	HWS
	DOMESTIC HOT WATER RETURN	HWR
---V---	VENT	V
—G—	GAS	G
—MG—	MEDIUM PRESSURE GAS	MG
—LPG—	LIQUID PROPANE GAS	LPG
—S—	SEWER	S
—GW—	GREASE WASTE	GW
—OS—	OIL/SAND WASTE	OS
—AW—	ACID WASTE	AW
—SD—	STORM DRAIN	SD
—RD—	ROOF DRAIN	RD
—OD—	OVERFLOW DRAIN	OD
—C—	CONDENSATE DRAIN	C
—D—	SECONDARY DRAIN	D
—T&P—	TEMPERATURE & PRESSURE RELIEF	T&P
—FS—	FIRE SPRINKLER	FS
	PIPE CAP	
	PIPE RISER/DROP	(R)/(D)
	SHUT-OFF VALVE IN BOX	SOV
FCO	FLOOR CLEANOUT	FCO
COTG	CLEANOUT TO GRADE	COTG
	WALL CLEANOUT	WCO
	CLEANOUT	CO
	HOSE BIBB @ +18" AFF	HB
	OVERFLOW DRAIN OUTLET	
	BALL VALVE	
	GATE VALVE	
	CHECK VALVE	
	MIXING VALVE	
	SHUT-OFF COCK	
	CIRCULATION PUMP	
	BALANCING VALVE	
	TRAP PRIMER	TP
	TYPICAL	(TYP)
	VENT THRU ROOF	VTR
	UNDERGROUND	UG
	CONTINUATION	
	NEW	(N)
	EXISTING	(E)
	POINT OF DIS/CONNECTION	POD/POC

WHA SIZING

FIXTURE TYPE	FIXTURE UNITS (PER FIXTURE)
WATER CLOSET	8
URINAL	4
LAVATORY	2

PDI SIZE	FIXTURE UNITS (PER ARRESTOR)
A	1-11
B	12-32
C	33-60
D	61-113
E	114-154
F	155-330

NOTES:
1. PROVIDE WATER HAMMER ARRESTORS AS REQUIRED IN SPECIFICATIONS.
2. WATER HAMMER ARRESTOR SIZING SHALL BE THE MORE STRINGENT OF THE TABLE ABOVE AND CURRENT PDI (PLUMBING & DRAINAGE INSTITUTE) REQUIREMENTS.
3. LOCATE WATER HAMMER ARRESTORS AS CLOSE TO BRANCH PIPING AS POSSIBLE.

PLUMBING GENERAL NOTES

A. THIS CONTRACTOR SHALL COMPLY WITH ALL CODES AND REGULATIONS IN EFFECT AT THE JOB SITE, INCLUDING, BUT NOT LIMITED TO:
- A.1. 2019 CALIFORNIA BUILDING CODE
- A.2. 2019 CALIFORNIA MECHANICAL CODE
- A.3. 2019 CALIFORNIA PLUMBING CODE
- A.4. 2019 CALIFORNIA ELECTRICAL CODE
- A.5. 2019 CALIFORNIA GREEN BUILDING STANDARDS
- A.6. 2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS – TITLE 24
- A.7. NATIONAL FIRE PROTECTION ASSOCIATION
- A.8. CALIFORNIA STATE FIRE MARSHAL

B. ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE GUARANTEED FREE FROM ALL MECHANICAL, ELECTRICAL AND WORKMANSHIP DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ALL DAMAGED ITEMS INSTALLED UNDER THIS CONTRACT WITHOUT ADDITIONAL COST TO OWNER.

C. THE PLUMBING CONTRACTOR SHALL PROVIDE THE OWNER COPIES OF OPERATION, MAINTENANCE AND PREVENTATIVE MAINTENANCE MANUALS FOR EACH MODEL AND TYPE OF PLUMBING EQUIPMENT.

D. CHECK AND VERIFY EXISTING CONDITIONS AT THE JOB SITE BEFORE BEGINNING WORK. ADJUST THE LOCATION AND CONFIGURATION OF THE WORK NECESSARY TO SUIT ACTUAL CONDITIONS AND OTHER TRADES. ANY CHANGES REQUIRED MUST FIRST BE APPROVED BY THE ARCHITECT OR ENGINEER.

E. THE LOCATIONS OF EQUIPMENT, PIPING, AND SYSTEMS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. CHANGES REQUIRED TO SUIT EXISTING CONDITIONS AND DUE TO COORDINATION WITH OTHER TRADES SHALL BE MADE AT NO EXTRA COST TO THE OWNER.

F. SUBMIT MANUFACTURER'S PRODUCT DATA INCLUDING NAME OF MANUFACTURER, TRADE NAME, MODEL, CAPACITY, OPTIONS, DIMENSIONS, WEIGHTS, INSTALLATION AND STARTUP DATA. EQUIPMENT PERFORMANCES SCHEDULED ARE MINIMUM CAPACITY, FLOW, EFFICIENCY, ETC. REQUIRED. WEIGHTS AND ELECTRICAL DATA SCHEDULED IS MAXIMUM AVAILABLE OR ALLOWABLE.

G. ALL EQUIPMENT IS TO BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER. USING ALL ACCESSORY EQUIPMENT AVAILABLE FROM THE MANUFACTURER FOR SUPPORTS, CONTROLS, ETC., TO MAKE A COMPLETE SYSTEM. ALL EQUIPMENT OR ACCESSORIES NEEDED AND NOT SHOWN OR SPECIFIED SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. ADJUST THE EQUIPMENT FOR PROPER OPERATION, CHECK ALL CONTROLS AND VERIFY THAT ALL SAFETY DEVICES ARE FUNCTIONING PROPERLY.

H. PROVIDE ACCESS DOORS WHERE ACCESS THROUGH FLOORS, WALLS OR CEILINGS IS REQUIRED TO ACCESS PLUMBING COMPONENTS OR OTHER SYSTEMS REQUIRING ACCESS FOR MAINTENANCE, TESTING OR OBSERVATION. COORDINATE THE EXACT TYPE AND LOCATION OF ACCESS DOORS TO PROVIDE PROPER ACCESS TO THE ITEM CONCEALED.

I. CHECK ALL SYSTEMS FOR LEAKS. CORRECT ANY DEFICIENCIES AS SOON AS DISCOVERED. OPERATE THE SYSTEMS AS A TEST AND DEMONSTRATE TO THE OWNER AND ARCHITECT OR ENGINEER THAT THE SYSTEM IS FUNCTIONING PROPERLY.

J. BEFORE COMMENCING WORK CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS, CONFIRM INVERTS AND ENSURE THAT THESE CAN BE PROPERLY CONNECTED WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING. VERIFY THE LOCATION OF ALL SERVICES. NO EXTRA COSTS SHALL BE ALLOWED IF SERVICES ARE NOT AS SHOWN.

K. COORDINATE ALL NEW OR CHANGING UTILITY SERVICES WITH UTILITY PROVIDER AS SOON AS POSSIBLE. ALL WORK PERFORMED NOT IN ACCORDANCE WITH THE UTILITY COMPANIES REQUIREMENTS PRIOR TO COORDINATING WITH THE UTILITY COMPANY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

L. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

M. MAKE ALL CONNECTIONS TO EQUIPMENT AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER AS FAR AS TRAPS, DRAINS, FLEXIBLE CONNECTIONS, ETC. AND AS REQUIRED BY THE EQUIPMENT AND LOCATION.

N. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS, FIXTURE MOUNTING HEIGHTS AND ADA ACCESSIBILITY REQUIREMENTS.

O. PIPING INSULATION (INTERIOR APPLICATIONS):
- O.1. GLASS FIBER INSULATION: ASTM C 547 AND ASTM C 795. 'K' ('KSI') VALUE: 0.24 AT 75 DEGREES F, WHEN TESTED IN ACCORDANCE WITH ASTM C 177. MAXIMUM SERVICE TEMPERATURE: 850 DEGREES F. MAXIMUM MOISTURE ABSORPTION: 0.20 PERCENT BY VOLUME.
- O.2. VAPOR BARRIER JACKET: WHITE KRAFT PAPER WITH GLASS FIBER YARN, BONDED TO ALUMINIZED FILM; MOISTURE VAPOR TRANSMISSION WHEN TESTED IN ACCORDANCE WITH ASTM E 96/E 96M OF 0.02.
- O.3. INSULATION THICKNESS SCHEDULES:
  - O.3.1. DOMESTIC HOT AND TEMPERED WATER SUPPLY:
    - O.3.1.1. 1-1/2 INCH THICKNESS FOR PIPING 1 INCH AND LARGER.
    - O.3.1.2. 1 INCH THICKNESS FOR PIPING LESS THAN 1 INCH.
  - O.3.2. DOMESTIC COLD WATER LOCATED IN UNHEATED AREAS:
    - O.3.2.1. 1 INCH THICKNESS FOR PIPING 1-1/2 INCHES AND LARGER.
    - O.3.2.2. 3/4 INCH THICKNESS FOR PIPING 1 INCHES AND SMALLER.

P. INSULATE DOMESTIC HOT WATER, TEMPERED WATER AND WASTE PIPING BELOW HANDICAPPED PLUMBING FIXTURES WITH MOLDED SINGLE PIECE REMOVABLE INSULATION COVERS, FOAM, FIRE RESISTANT, TRUEBRO, OR EQUAL. INSTALL INSULATION COVERS IN ACCORDANCE WITH CBC ACCESS REQUIREMENTS.

Q. FIXTURES, DOMESTIC WATER PIPING AND COMPONENTS SHALL BE PROVIDED AND INSTALLED IN COMPLIANCE WITH CALIFORNIA AB 1953 LEGISLATION WHICH LIMITS THE ALLOWABLE LEAD CONTENT IN CERTAIN DOMESTIC WATER SYSTEM COMPONENTS.

R. PROVIDE COMPRESSION SHUTOFF CONTROL STOP VALVES WITH IPS INLETS AND THREADED BRASS NIPPLES AT PIPE CONNECTION ON WATER SUPPLIES TO EACH FIXTURE.

S. PROVIDE CHROMIUM-PLATED FINISH ON FITTINGS AND ACCESSORIES EXPOSED TO VIEW.

T. FIXTURE FITTINGS AND TRIM: CONFORM TO ASME A112.18.1M AND ASME A112.19.5, AS APPLICABLE.

U. PROVIDE WATER HAMMER ARRESTORS PER SPECIFICATIONS AND IN ACCORDANCE WITH PDI-WH201 RECOMMENDATIONS.

V. PROVIDE PIPE SLEEVES WHERE PIPES AND TUBING PASS THROUGH WALLS, FLOORS, ROOFS, AND PARTITIONS. FINISH FLUSH AT BOTH ENDS. EXTEND 2 INCHES (50 MM) ABOVE FINISHED FLOORS. PACK SPACE BETWEEN PIPE OR TUBING AND SLEEVE, AND CALK.

W. IDENTIFY PIPING WITH TAPE AND DECALS. INSTALL LABELING ON PIPE AT INTERVALS OF NOT MORE THAN 20 FEET (6 METERS) AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY PIPELINE.

X. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.

Y. ALL PLUMBING VENTS SHALL TERMINATE NOT LESS THAN 10' FROM ANY OUTSIDE AIR INTAKE OR OPENING TO THE BUILDING.

Z. ALL EXPOSED MATERIAL SHALL BE PREPARED WITH A PRIME COAT AND THEN PAINTED.

AA. PROVIDE VIBRA-SORB NEOPRENE PIPE ISOLATION CLAMPS WHERE PLUMBING PIPE IS CONNECTED TO WALL AND HAS WATER HAMMER ARRESTORS.

KITCHEN EQUIPMENT SCHEDULE

EQUIP. NO.	DESCRIPTION	S or W	IND. WASTE	V	CW	HW	GAS (MBH)
P2	HAND SINK	2"	---	1-1/2"	1/2"	1/2"	---
P3	POTWASH SINK	---	2"	---	3/4"	3/4"	---
P4	PREP SINK	---	2"	---	1/2"	1/2"	---
P5	ICE MAKER	---	1/2"	---	1/2"	---	---

NOTES:
1. COORDINATE CLOSELY WITH KITCHEN EQUIPMENT COMPANY FOR EQUIPMENT LOCATIONS, CONNECTION SIZES AND REQUIREMENTS.
2. SEE KITCHEN EQUIPMENT PLANS FOR EQUIPMENT SCHEDULE AND REQUIREMENTS.
3. PROVIDE INDIVIDUAL SHUT-OFF VALVES AT ALL CW, HW & GAS CONNECTIONS.
4. COORDINATE WITH KITCHEN EQUIPMENT PLUMBING PLAN FOR PLUMBING ROUGH-IN DIMENSIONS.

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTES

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PRE-APPROVED INSTALLATION GUIDE (E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP MD PP E
☐ ☐ ☒ ☐ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP MD PP E
☐ ☐ ☐ ☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#) #0043-13.

PLUMBING SHEET INDEX

SHEET NO.	SHEET TITLE
P0.1	PLUMBING NOTES, LEGENDS, & SPECIFICATIONS
P0.2	PLUMBING DETAILS
P2.1	PLUMBING FLOOR PLAN
P3.1	PLUMBING ROOF PLAN

WATER AND WASTE MAINS CALCULATIONS

JOB NAME: Mesa Verde Concession Stand DATE 20-10-12

USE	FIXTURE TYPE	NO.	WASTE FU	WASTE TOTAL	WATER BOTH FU	WATER CW FU	WATER HW FU	WATER TOTAL
U	DRINKING FOUNTAIN	1	0.5	0.5	0.5	0.5		0.5
	HOSE BIBB (FIRST)	1	0	0	2.5	2.5		2.5
	HOSE BIBB (ADDITIONAL)	3	0	0	1	1.0		3
	LAVATORY (SINGLE)	6	1	6	1	0.8	0.8	6
U	SERVICE SINK	1	3	3	3	2.3	2.3	3
	FLOOR DRAIN	4	2	8	0			0
	FLOOR SINK RECEPTOR	3	3	9	0			0
U	SINK, 2" TRAP	2	4	8	2	1.5	1.5	4
U	URINAL	3	2	6	4	4.0		12
U	WATER CLOSET, FLUSH VALVE	7	4	28	5	5.0		35
	3-COMPARTMENT SINK	1	4	4	2	1.5	1.5	2
	TOTAL FIXTURE UNITS			72.5			11.3	68.0

EQUIVALENT COLD WATER FLOW RATE (GPM):	57
ADDITIONAL WATER DEMAND LOAD (GPM)	
AVAILABLE STATIC PRESSURE IN WATER MAIN (PSI)	75
MINIMUM REQUIRED FIXTURE PRESSURE (PSI):	25
ELEVATION RISE (FT):	5
METER LOSS (PSI):	0.0
BACKFLOW PREVENTER LOSS (PSI):	0.0
ADDITIONAL LOSSES (PSI):	0
EQUIVALENT PIPE LENGTH FROM METER TO MOST REMOTE FIXTURE (FT):	75
FRICTION LOSS PRESSURE AVAILABLE (PSI):	47.83
MAXIMUM ALLOWABLE FRICTION LOSS (PSI/100 FT):	63.77
WATER FLOW VELOCITY (FPS):	5.96
CALCULATED FRICTION HEAD LOSS (PSI/100 FT):	3.55
MINIMUM REQUIRED 'WATER' PIPE SIZE (INCHES):	2
MINIMUM REQUIRED 'WASTE' PIPE SIZE (INCHES):	4
(CALCULATIONS PER THE UPC/CPC)	

WATER PIPE SIZING CHART

PIPE SIZES CALCULATED BASED ON UPC/CPC APPENDIX A

SIZE: TYPE L COPPER		COLD WATER				HOT WATER		
NOMINAL DIAMETER	INTERNAL DIAMETER	GPM	FPS	FIXTURE UNITS TANK	FIXTURE UNITS VALVE	GPM	FPS	FIXTURE UNITS
1/2"	0.545	5.8	8.0	7	0	3.6	5.0	4
3/4"	0.785	12.1	8.0	16	0	7.5	5.0	10
1"	1.025	20.6	8.0	32	0	12.9	5.0	18
1-1/4"	1.265	31.3	8.0	56	14	19.6	5.0	30
1-1/2"	1.505	44.4	8.0	103	35	27.7	5.0	49
2"	1.985	77.2	8.0	259	136	48.2	5.0	119
2-1/2"	2.465	119.0	8.0	474	358	74.4	5.0	245

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MARK S. BAGINSKI
No. 4089
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
SEAN POURVAKIL
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE
PLUMBING NOTES, LEGENDS, & SPECIFICATIONS

PROJECT NAME
MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS
7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE
△		
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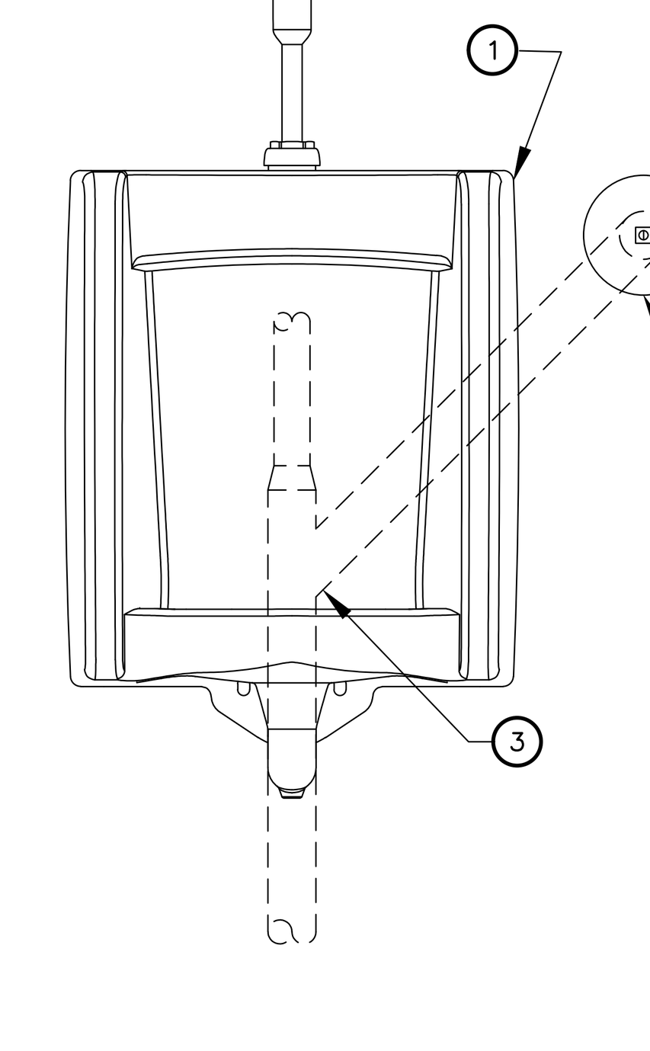
DRAWN BY	CHECKED BY CS/MB
DATE ISSUED 01/20/2021	SCALE
PROJ. NO. 1819500	
SHEET NO. P0.1	

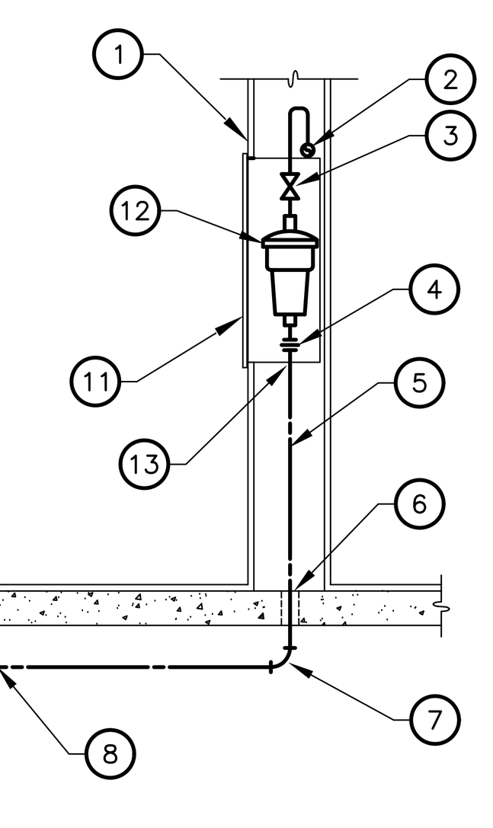


1. URINAL, SEE FIXTURE SCHEDULE
2. WALL CLEANOUT COVER, CAN BE LOCATED ON EITHER SIDE OF URINAL
3. CLEANOUT SEWER CONNECTION, LOCATE ABOVE URINAL TRAP AND BELOW URINAL VENT CONNECTION
4. INSTALL CLEAN-OUT PLUG WITHIN 1/2" FROM INTERIOR WALL TILE.

NOTES:
1. INSTALL URINAL WALL CLEANOUTS AT MATCHING HEIGHTS FOR MULTIPLE URINAL INSTALLATIONS.
2. CLEAN-OUT ACCESS ELEVATION SHALL BE BELOW TOP OF FIXTURE.

TYPICAL URINAL CLEANOUT PIPING — NTS — 4

1. FACE OF WALL
2. 3/4" CW
3. 1/2" GV
4. UNION
5. 1/2" CW DOWN
6. SEAL WATERTIGHT
7. 1/2" CW BELOW FLOOR
8. 1/2" WRAPPED CW, CONNECT AS REQ'D.
9. FINISH FLOOR
10. FLOOR DRAIN
11. ACCESS PANEL (STAINLESS STEEL) WITH ENCLOSED VALVE BOX AND WEEP HOLE TO SPACE, SEAL WALL BOARD ALONG PANEL BOTTOM AND SIDES
12. TRAP PRIMER
13. SEAL PIPE PENETRATIONS THROUGH ENCLOSURE OR COLLECTOR PAN



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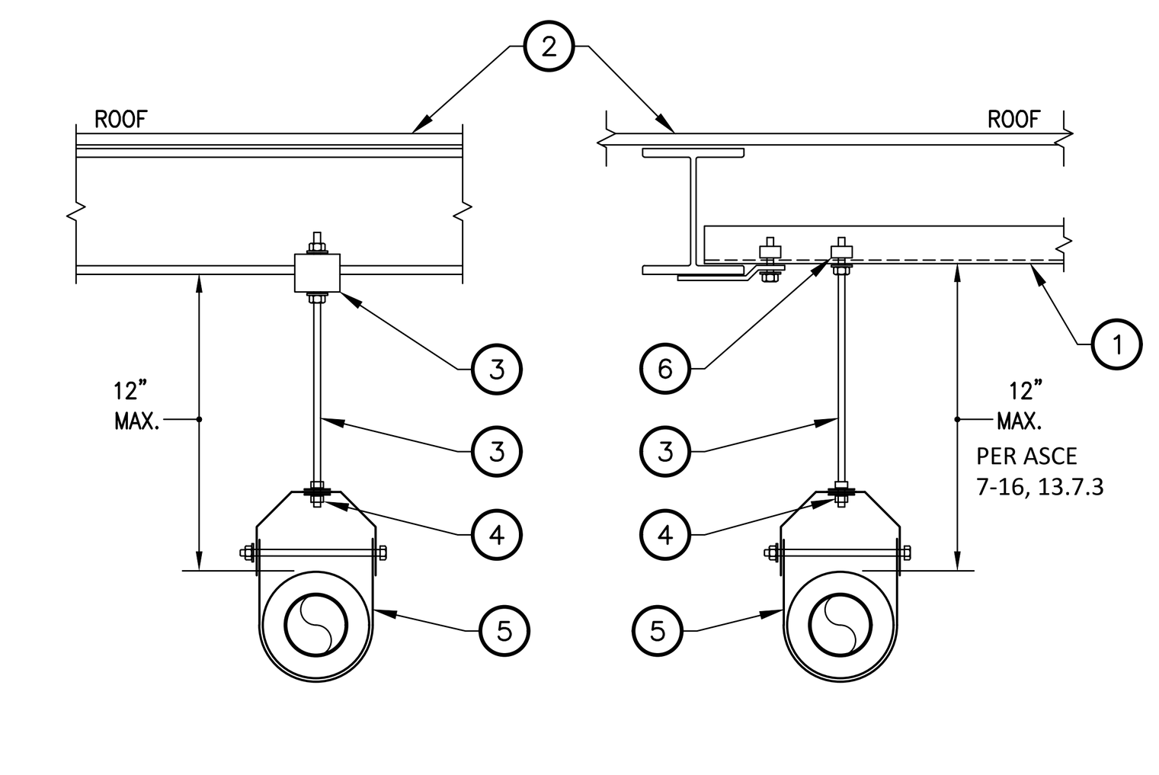
TRAP PRIMER PIPING DETAIL — NTS — 5

1. 1-5/8" UNISTRUT BETWEEN WIDE FLANGE BEAMS, SECURE TO BEAM WITH BEAM CLAMPS EACH END
2. ROOFING
3. 3/8"ø THREADED ROD
4. 3/8"ø NUT AND WASHER, TOP AND BOTTOM, TYP.
5. "UNISTRUT" "J" SERIES CLAMP, TYP.
6. CONNECT THREADED ROD TO UNISTRUT WITH NUT, WASHER AND CHANNEL NUT



NOTES:
1. SEISMIC RESTRAINTS ARE NOT REQUIRED FOR ALL PIPING SUSPENDED BY INDIVIDUAL HANGERS 12" OR LESS IN LENGTH FROM TOP OF PIPE TO BOTTOM OF ATTACHMENT TO STRUCTURE.
2. TRAPEZE SUPPORTS SHALL NOT BE USED.

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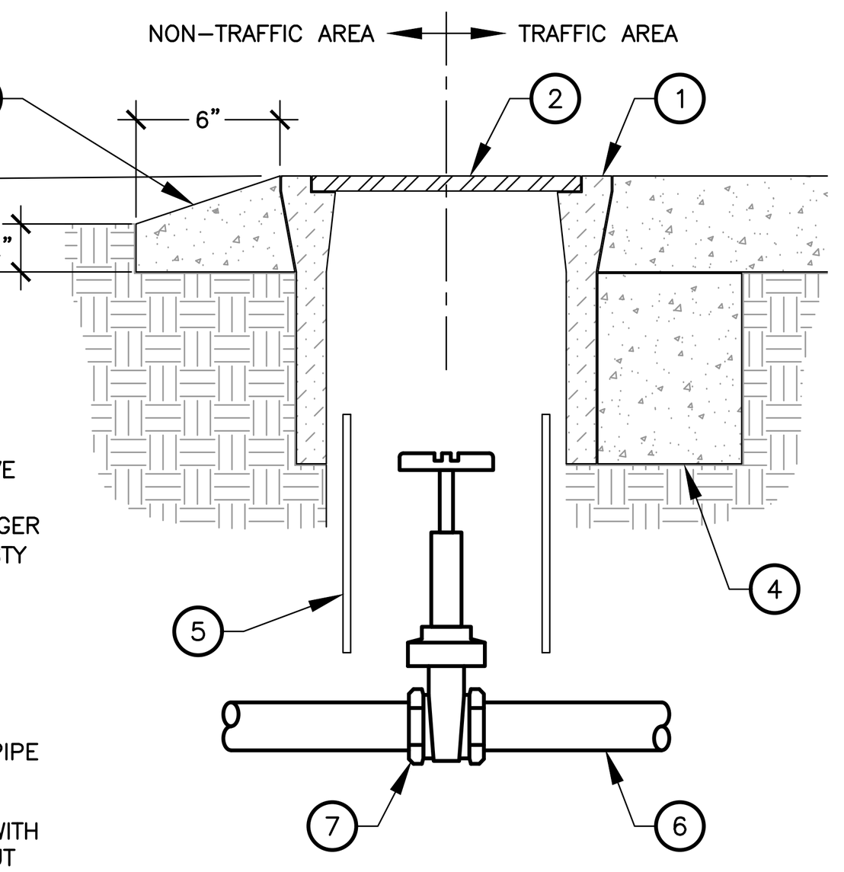
TYPICAL PIPE SUPPORT DETAIL — NTS — 6

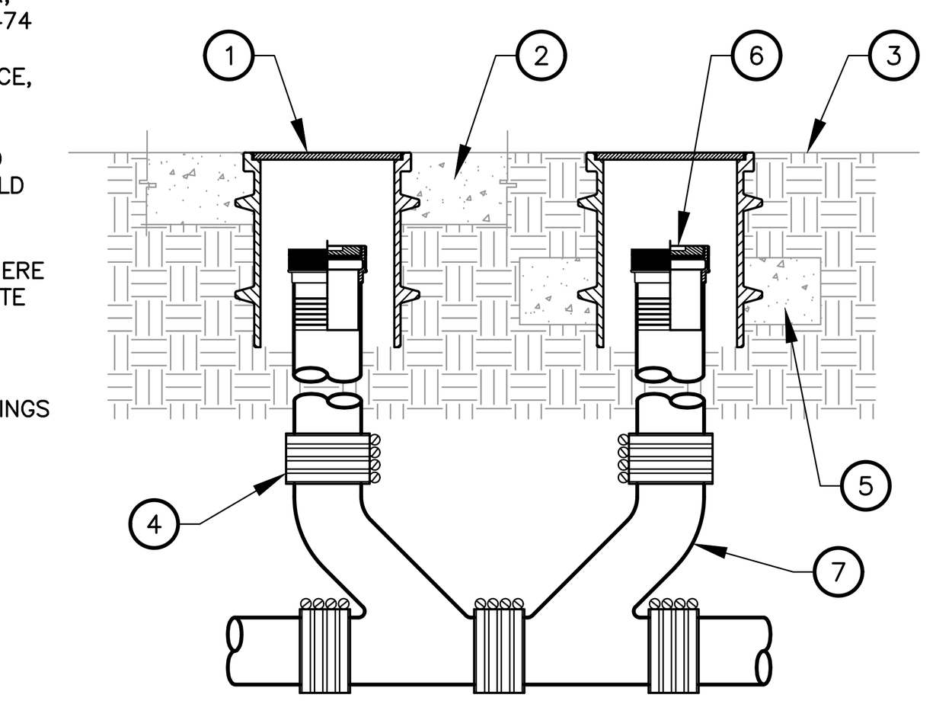


1. PRECAST CONCRETE VALVE BOX, CHRISTY G05, OR EQUAL (FOR VALVES LARGER THAN 2", PROVIDE CHRISTY B12, OR EQUAL)
2. H20 TRAFFIC RATED LID WITH LABEL "WATER"
3. TAPERED CONCRETE CIRCULAR COLLAR
4. 6" CONCRETE COLLAR
5. 8" SCH 40 PVC RISER PIPE WHERE NECESSARY
6. COLD WATER SUPPLY
7. SHUT-OFF GATE VALVE WITH RISING STEM OR KEY-NUT

PPIEQ01C

CW SHUT-OFF VALVE — NTS — 1

1. CLEANOUT IN DOUBLE FLANGED HOUSING WITH HEAVY DUTY CAST IRON COVER, ZURN MODEL Z1474 (TYP 2)
2. CONCRETE SURFACE, MIN. 4" THICK
3. FINISHED GRADE
4. SANITARY 4-BAND CLAMP WITH SHIELD
5. MIN. 18"X18"X4" THICK CONCRETE COLLAR (OMIT WHERE SURFACE CONCRETE OCCURS)
6. CLEAN-OUT PLUG (TYP 2)
7. LONG T-WYE FITTINGS AND RISERS



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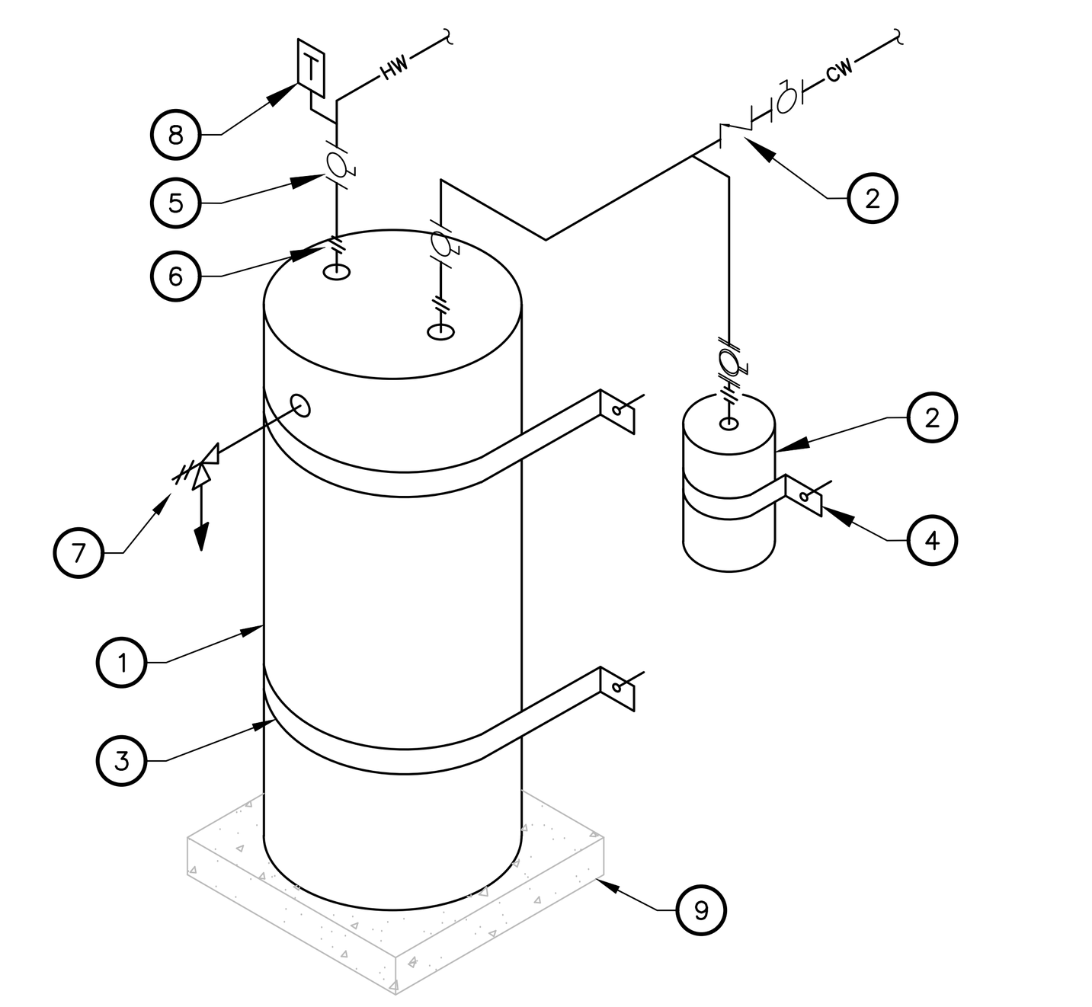
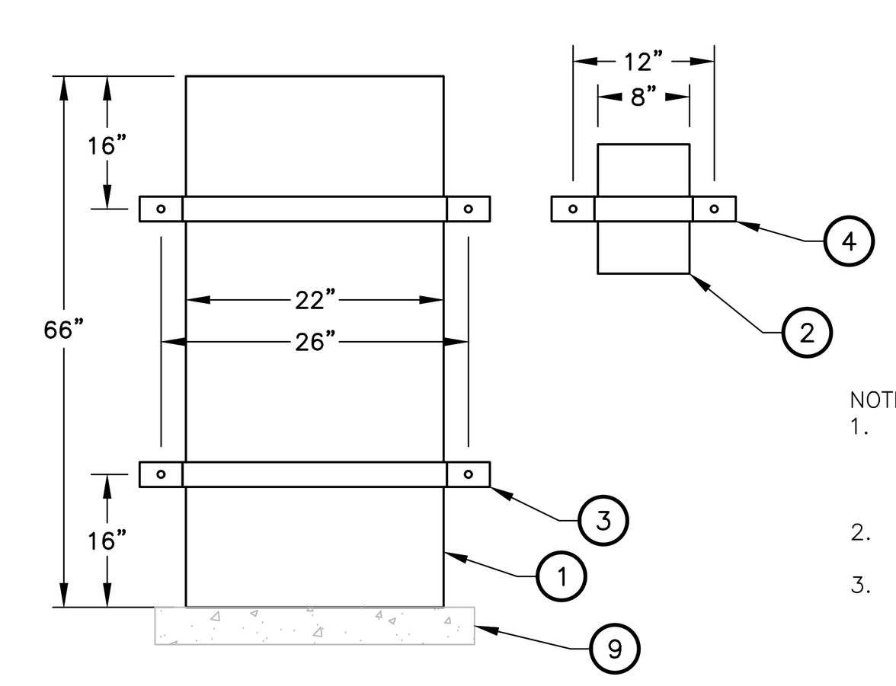
TWO-WAY CLEANOUT (COTG) — NTS — 2

1. WATER HEATER, INSTALL TIGHT AGAINST WALL, SEE PLUMBING FIXTURE SCHEDULE
2. EXPANSION TANK, SEE PLUMBING FIXTURE SCHEDULE
3. 2" WIDE 24 GA STEEL STRAP AROUND WATER HEATER. SECURE TO PRECAST CONCRETE WALL WALL WITH (2) 3/8" HILTI KB-TZ EXPANSION BOLT WITH MIN. 3" EMBED, EACH END, TYP. ICC-ES ESR-1917, TORQUE TEST TO 25 FT-LBS.
4. 2" WIDE 24 GA STEEL STRAP AROUND EXPANSION TANK. SECURE TO PRECAST CONCRETE WALL WITH (2) 3/8" HILTI KB-TZ EXPANSION BOLT WITH MIN. 3" EMBED, EACH END, TYP.
5. BALL VALVE, TYP.
6. HEAT TRAP NIPPLE/UNION, TYP
7. FULL SIZE TEMP. & PRESSURE RELIEF, ROUTE FULL SIZE DRAIN TO APPROVED RECEPTOR WITH 1" AIRGAP.
8. THERMOMETER, TRERICE 'BX' INDUSTRIAL THERMOMETER MODEL BX9-1-403-06, 9" (BX9) 3.5-INCH STEM LENGTH.

4" HIGH CONCRETE HOUSEKEEPING PAD, REINFORCED WITH #3 AT 18" CC EA WAY AT MID-DEPTH OF SLAB. SEE STRUCTURAL FOR DETAILS.





NOTE:
1. PROVIDE DIELECTRIC UNIONS AT ALL CONNECTIONS TO WATER HEATER.
2. SEE PLANS FOR PIPE SIZES.
3. COORDINATE WALL ANCHORS WITH PRECAST CONCRETE WALL

PHEQ20B

ELECTRIC WATER HEATER — NTS — 3

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-118588 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2021

VERDE DESIGN
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
SPORT PLANNING & DESIGN
1843 Iron Point Rd. Suite 140
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tel: 916.415.6554
fax: 916.415.6525
www.VerdeDesigninc.com

STAMP

REGISTERED LANDSCAPE ARCHITECT
MARK S. BAGINSKI
No. 4089
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE

PLUMBING DETAILS

PROJECT NAME

MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE
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Roseville, CA 95678
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www.lpengineers.com
Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Mechanical\MP Sheets\192245_P0_2_(DETAILS).dwg

PRE-CAST CONCRETE WALL NOTES

1. ALL PENETRATIONS 12" OR LARGER TO BE CAST AT THE PRE-CAST MANUFACTURER'S PLANT AND WILL BE COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER PRIOR TO CASTING.
2. ALL PENETRATIONS SMALLER THAN 12" SHALL BE CORED IN THE FIELD AND COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER. PRIOR TO CORING, PRE-CAST ENGINEER TO REVIEW LOCATIONS TO ENSURE THE PENETRATIONS ARE NOT GOING THROUGH FLEXURAL REINFORCEMENT.

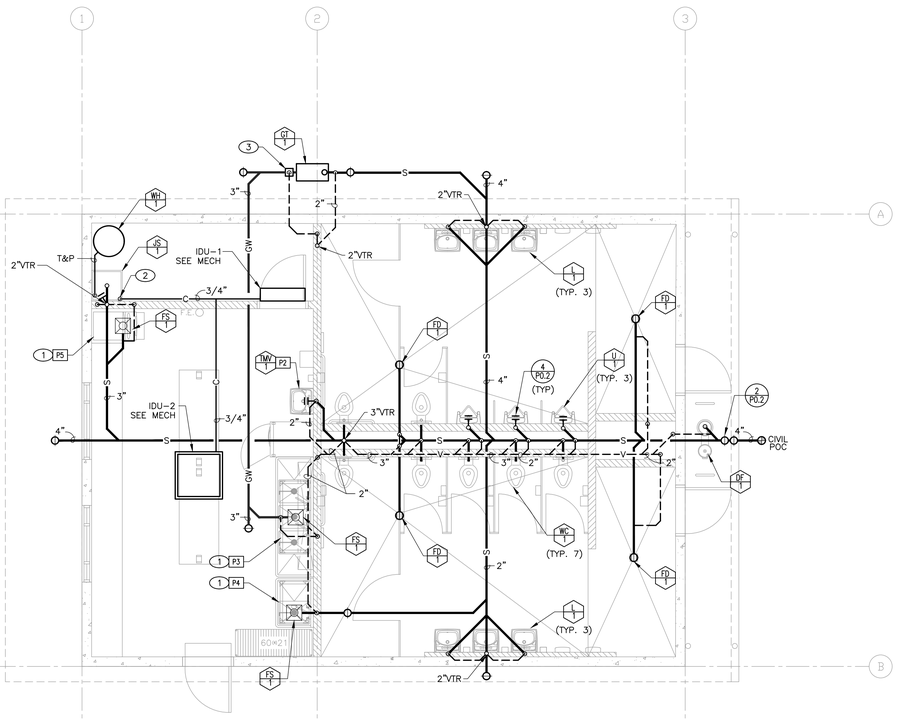
KEY NOTES

(1) DRAIN KITCHEN EQUIPMENT/FIXTURE INDIRECTLY AT FLOOR SINK WITH AIRGAP. SEE FOOD SERVICE DRAWINGS FOR REQUIREMENTS.

(2) 3/4" CONDENSATE FROM IDU DROP DOWN TO SERVICE SINK WITH 1" AIRGAP.

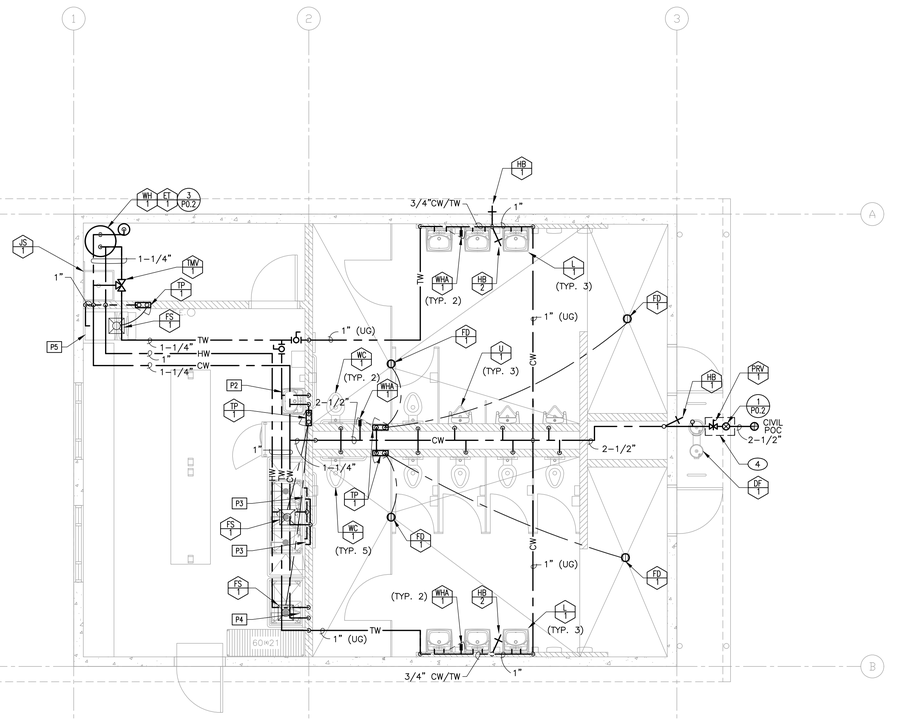
(3) FLOW CONTROL DEVICE PROVIDED WITH GREASE TRAP. PROVIDE FULL SIZE VENT ROUTED TO VTR AS SHOWN.

(4) PROVIDE MAIN COLD WATER SOV AND PRV I NCONCRETE CHRISTY BOX, MODEL N30, OR EQUAL



DWV PLUMBING FLOOR PLAN 2

SCALE: 1/4" = 1'-0"



CW & HW PLUMBING FLOOR PLAN 1

SCALE: 1/4" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER
JEAN POURYAZDI
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE

PLUMBING FLOOR PLAN

PROJECT NAME

MESA VERDE
HIGH SCHOOL
ATHLETIC FACILITY
IMPROVEMENTS

PROJECT ADDRESS

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SHEET NO.	
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PRE-CAST CONCRETE WALL NOTES

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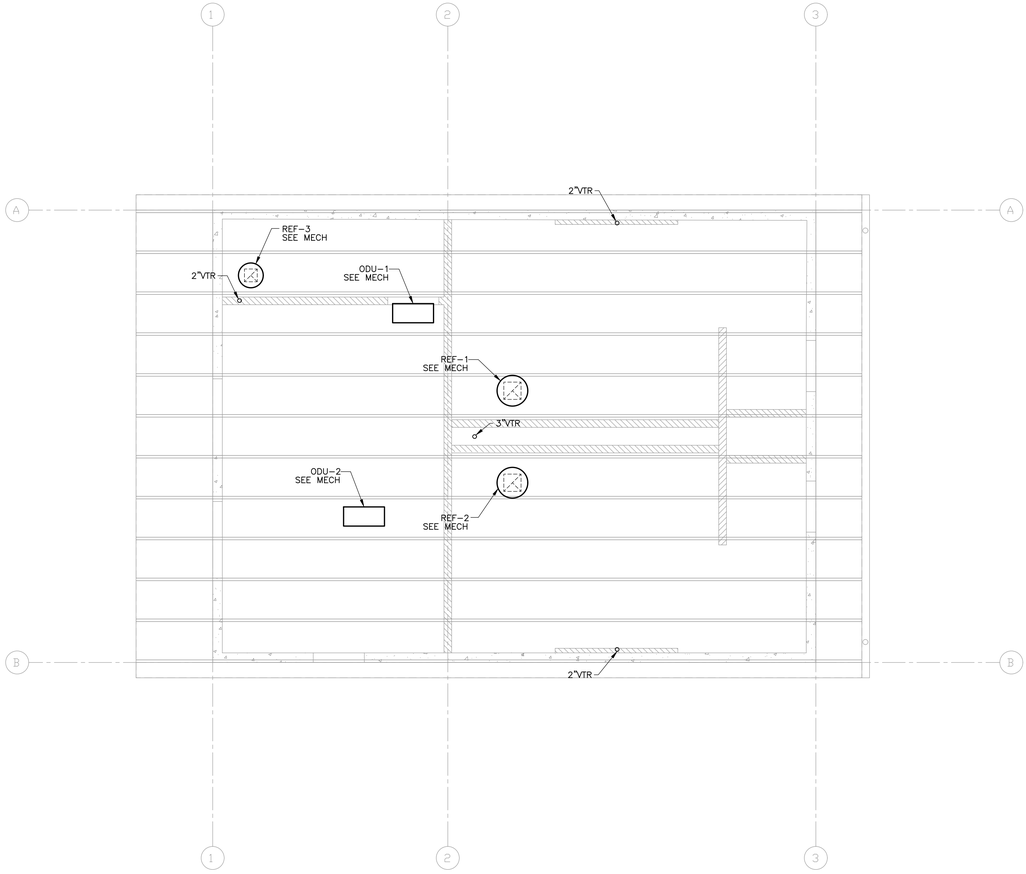

PLUMBING ROOF PLAN 1

SCALE: 1/4" = 1'-0"

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SHEET TITLE

PLUMBING ROOF PLAN

PROJECT NAME

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HIGH SCHOOL
ATHLETIC FACILITY
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Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Mechanical\MP Sheets\192245_P3_1_(RP).dwg

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 3 of 15
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Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

F. ADDITIONAL REMARKS

This Section Does Not Apply

G. ENVELOPE GENERAL INFORMATION

1	2	3	4
Opaque Surfaces & Orientation	**Total Gross Surface Area (ft²)**	**Total Fenestration Area (ft²)**	**Window to Wall Ratio (%)**
North-Facing[1]	138 ft²	0 ft²	00.0%
East-Facing[2]	0 ft²	0 ft²	00.0%
South-Facing[3]	138 ft²	0 ft²	00.0%
West-Facing[4]	266 ft²	0 ft²	00.0%
Total	**542 ft²**	**0 ft²**	**00.0%**
Roof	453 ft²	0 ft²	00.0%

Notes:
[1] North-Facing is oriented to within 45 degrees of true north, including 45°00'00" east of north (NE), but excluding 45°00'00" west of north (NW).
[2] East-Facing is oriented to within 45 degrees of true east, including 45°00'00" south of east (SE), but excluding 45°00'00" north of east (NE).
[3] South-Facing is oriented to within 45 degrees of true south, including 45°00'00" west of south (SW), but excluding 45°00'00" east of south (SE).
[4] West-Facing is oriented to within 45 degrees of true west, including 45°00'00" north of due west (NW), but excluding 45°00'00" south of west (SW).

H. FENESTRATION ASSEMBLY SUMMARY §110.6

This Section Does Not Apply

I. ENVELOPE DETAILS §120.7 & §140.3

I1. OPAQUE SURFACE ASSEMBLY SUMMARY

1	2	3	4	5	6	7	8	9
Surface Name	**Surface Type**	**Description of Assembly Layers**	**Area (ft²)**	**Framing Type**	**Cavity R-Value**	**Continuous R-Value**	**U-Factor / F-Factor / C-Factor**	**Status[1]**
8 Concrete Wall8	ExteriorWall	Concrete - 140 lb/ft3 - 8 in.	1213	NA	0	NA	U-Factor: 0.694	N
Slab On Grade11	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0	1233	NA	0	NA	F-Factor: 0.730	N
Metal Roof13	Roof	Metal Standing Seam - 1/16 in. Metal standing seam roof, R-30	1233	NA	30	NA	U-Factor: 0.072	N

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 2 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
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C1. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft ²-yr)

COMPLIES

Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Space Heating	73.71	72.35	1.36
Space Cooling	91.46	69.63	21.83
Indoor Fans	213.66	84.35	129.31
Heat Rejection	--	--	--
Pumps & Misc.	--	--	--
Domestic Hot Water	42.38	102.89	-60.51
Indoor Lighting	54.11	54.11	--
ENERGY STANDARDS COMPLIANCE TOTAL	**475.32**	**383.33**	**91.99 (19.4%)**

[1] Notes: The number in parenthesis following the Compliance Margin in column 4. represents the Percent Better than Standard.

C2. RESULTS FOR 'ABOVE CODE' QUALIFICATIONS[1]

☐ This project is pursuing CalGreen Tier 1 ☐ This project is pursuing CalGreen Tier 2

Miscellaneous Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Receptacle	95.52	95.52	--
Process	86.70	86.70	--
Other Ltg	76.21	76.21	--
Process Motors	--	--	--
COMPLIANCE TOTAL PLUS MISCELLANEOUS COMPONENTS	**733.75**	**641.76**	**92.0 (12.5%)**

[1] Notes: This table is used to document compliance with programs OTHER THAN Title 24 Part 6, if applicable.

D. EXCEPTIONAL CONDITIONS

The aged solar reflectance and aged thermal emittance must be listed in the Cool Roof Rating Council database of certified products. For projects where initial reflectance is used, the initial reflectance must be listed, and the aged reflectance is calculated by the software program and used in the compliance model.

E. HERS VERIFICATION

This Section Does Not Apply

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 1 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

A. GENERAL INFORMATION

1.	Project Location (city)	Citrus Heights	**8.**	Standards Version	Compliance2019
2.	CA Zip Code	95621	**9.**	Compliance Software (version)	EnergyPro 8.1
3.	Climate Zone	12	**10.**	Weather File	SACRAMENTO-METRO_724839_CZ2010.epw
4.	Total Conditioned Floor Area in Scope	453 ft²	**11.**	Building Orientation (deg)	(N) 0 deg
5.	Total Unconditioned Floor Area	780 ft²	**12.**	Permitted Scope of Work	NewComplete
6.	Total # of Stories (Habitable Above Grade)	1	13	Building Type(s)	Nonresidential
7.	Total # of dwelling units	0	14	Gas Type	NaturalGas

B. PROJECT SUMMARY

Table Instructions: Table B shows which building components are included in the performance calculation. If indicated as not included, the project must show compliance prescriptively if within permit application.

	Building Components Complying via Performance				Building Components Complying Prescriptively	
Envelope	☒ Performance	Covered Process: Commercial Kitchens	☐ Performance		*The following building components are ONLY eligible for prescriptive compliance and should be documented on the NRCC form listed if within the scope of the permit application (i.e. compliance will not be shown on the NRCC-PRF-E).*	
	☐ Not Included		☒ Not Included			
Mechanical	☒ Performance	Covered Process: Computer Rooms	☐ Performance		Indoor Lighting (Unconditioned)§140.6	*NRCC-LTI -E is required*
	☐ Not Included		☒ Not Included		Outdoor Lighting §140.7	*NRCC -LTO-E is required*
Domestic Hot Water	☒ Performance	Covered Process: Laboratory Exhaust	☐ Performance		Sign Lighting §140.8	*NRCC -LTS-E is required*
	☐ Not Included		☒ Not Included		Mandatory Measures	
Lighting (Indoor Conditioned)	☒ Performance				*Electrical power systems, commissioning and solar ready requirements are mandatory and should be documented on the NRCC form listed if applicable (i.e. compliance will not be shown on the NRCC-PRF-E.)*	
	☐ Not Included				Electrical Power Distribution S110.11	*NRCC-ELC-E is required*
Solar Thermal Water Heating	☐ Performance				Commissioning S120.8	*NRCC-CXR-E is required*
	☒ Not Included				Solar Ready S110.10	*NRCC-SRA-E is required*

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 6 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
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K5. SYSTEM FEATURES §120.2

1	2	3	4	5	6
System Name	**Optimum Start**	**Window Interlocks per §140.4(n)**	**Evaporative Cooling**	**Heat Recovery**	**Other Controls**
IDU/ODU-1	No Optimum Start	NA	No Evaporative Cooler	No Heat Recovery	No DCV Controls, No DDC No Economizer No Supply Air Temp. Control
IDU/ODU-2	No Optimum Start	NA	No Evaporative Cooler	No Heat Recovery	No DCV Controls, No DDC No Economizer No Supply Air Temp. Control
WH-11 - SHW	NA	NA	NA	NA	Fixed Temperature Control, No DDC

Notes: This table includes controls related to the performance path only. For projects using the prescriptive path, mandatory and prescriptive controls requirements are documented on the NRCC-MCH-E.

K6. MECHANICAL VENTILATION AND REHEAT §120.1

1	2	3	4	5	6	7	8	9
Zone Name	**Mechanical Ventilation**							**DCV or Occupant Sensor Controls, or Both**
	Ventilation Function	**# hotel rooms**	**# of people**	**# of bedrooms**	**Supply OA CFM**	**Exhaust CFM**	**Conditioned Area (sf)**	
1-Commercial Storage - Gene	General - Occupiable storage rooms for liquids or gels	0	0.09	0	14	0	91	NA
4-Kitchenette	Exhaust - Kitchenettes	0	0.91	0	0	120	362	NA

K7. DISTRIBUTION SUMMARY §120.4/140.4(l)

This Section Does Not Apply

Multifamily or Hotel/Motel Occupancy? (if "Yes", see DOMESTIC/SERVICE HOT WATER SYSTEM SUMMARY)	No
Does the Project include Zonal Systems?	No

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 5 of 15
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Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

K1. Dry System Equipment (furnaces, air handling units, heat pumps, VRF, etc.)

Dry System Equipment [1] (Fan & Economizer info included below in Table N)

1	2	3	4	5	6	7	8	9	10
Equipment Name	**Equipment Type**	**Qty**	**Heating**				**Cooling**		**Status[1]**
			Total Heating Output (kBtu/h)	**Supp Heat Source (Y/N)**	**Supp Heat Output (kBtuh)**	**Efficiency**	**Total Cooling Output (kBtu/h)**	**Efficiency**	
IDU/ODU-1	SZHP (Split3Phase)	1	15	No	0	HSPF-10.20	12	SEER-20.80 / EER-12.00	N
IDU/ODU-2	SZHP (Split3Phase)	1	20	No	0	HSPF-11.00	17	SEER-24.60 / EER-14.40	N

[1] Status: N - New, A – Altered, E – Existing

K2. ECONOMIZER & FAN SYSTEMS SUMMARY §140.4[1]

1	2	3	4	5	6	7	8	9	10	11	12	13
Name or Item Tag	**System Type packaged, DOAS, etc.**	**Design OA**	**Supply Fan**				**Return Fan**				**Economizer Type (if present)**	**Status[1]**
		CFM	**CFM**	**BHP**	**Watts**	**Control**	**CFM**	**BHP**	**Watts**	**Control**		
IDU/ODU-1	SZHP	14	370	0.040	34.9	ConstantVolume	NA	NA	NA	NA	NoEconomizer	N
IDU/ODU-2	SZHP	0	570	0.067	58.4	ConstantVolume	NA	NA	NA	NA	NoEconomizer	N

[1] Status: N - New, A – Altered, E – Existing

K3. EXHAUST FAN SUMMARY

1	2	3	4	5	6	7
System ID	**Zone Name**	**Qty**	**CFM**	**Motor BHP**	**Motor Watts**	**Total Static Pressure (in H20)**
Kitchenette28	4-Kitchenette	1	120	0.125	109.0	4.30

K4. Wet System Equipment (boilers, chillers, cooling towers, etc.)

1	2	3	4	5	6	7	8	9	10	11	12
Name or Item Tag	**Equipment Type**	**Qty**	**Vol (gal)**	**Rated Capacity (kBtu/h)**	**Efficiency**	**Standby Loss**	**Pumps**				**Status[1]**
							Qty	**GPM**	**HP**	**VSD (Y/N)**	

[1] Status: N - New, A – Altered, E – Existing

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 4 of 15
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I. ENVELOPE DETAILS §120.7 & §140.3

I1. OPAQUE SURFACE ASSEMBLY SUMMARY

1	2	3	4	5	6	7	8	9
Surface Name	**Surface Type**	**Description of Assembly Layers**	**Area (ft²)**	**Framing Type**	**Cavity R-Value**	**Continuous R-Value**	**U-Factor / F-Factor / C-Factor**	**Status[1]**
R-13 Wall15	InteriorWall	Stucco - 7/8 in. Vapor permeable felt – 1/8 in. Wood framed wall, 16in. OC, 3.5in., R-13 Gypsum Board - 1/2 in.	266	Wood	13	NA	U-Factor: 0.095	N
R-13 Wall151	ExteriorWall	Stucco - 7/8 in. Vapor permeable felt – 1/8 in. Wood framed wall, 16in. OC, 3.5in., R-13 Gypsum Board - 1/2 in.	360	Wood	13	NA	U-Factor: 0.102	N

[1] Status: N - New, A – Altered, E – Existing

I2. OVERHANG DETAILS

This Section Does Not Apply

I3. OPAQUE DOOR SUMMARY

1	2	3
Assembly Name	**Overall U-factor**	**Status[1]**
Metal Door32	0.700	N

J. CRRC ROOFING PRODUCT SUMMARY S140.3

1	2	3	4	5
Assembly Name	**Roof Pitch**	**Aged Solar Reflectance**	**Thermal Emittance**	**SRI**
Metal Roof13	Low-Slope	0.65	0.75	Not Provided

K. HVAC SYSTEM SUMMARY §110.1 & §110.2

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N6. GENERAL LIGHTING POWER § 140.6-D

This Section Does Not Apply

N7. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS § 140.6(c) 3H

Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed	
							Pass	Fail
NA	NA	NA	NA	NA	NA	NA	☐	☐

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

N8. ROOM CAVITY RATIO

Rectangular Spaces

Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR	Confirmed	
						Pass	Fail
NA	NA	NA	NA	NA	NA	☐	☐

Non-Rectangular Spaces

This Section Does Not Apply

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

N9. ADDITIONAL "USE IT OR LOSE IT"

1.	2.	3.	4.	Allowed Watts	Confirmed	
Wall Display	**Combined Floor Display and Task Lighting**	**Combined Ornamental and Special Effects Lighting**	**Very Valuable Merchandise**		Pass	Fail
0	0	0	0	**0**	☐	☐

N10. Wall Display

This Section Does Not Apply

N11. Floor Display and Task Lighting

This Section Does Not Apply

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N. INDOOR LIGHTING SUMMARY §140.6

N1. INDOOR CONDITIONED LIGHTING GENERAL INFO § 140.6[1]

1	2	3	4	5		Confirmed	
				Additional (Custom) Allowance		Pass	Fail
Occupancy Type [3]	**Conditioned Floor Area [2] (ft²)**	**Installed Lighting Power (Watts)**	**Lighting Control Credits (Watts)**	**Area Category Footnotes (Watts)**	**Tailored Method (Watts)**	☐	☐
Commercial/Industrial Storage (Warehouse)	91	41	0	0	0	☐	☐
Kitchenette or Residential Kitchen	362	344	0	0	0	☐	☐
Building Totals:	**453**	**385**	**0**	**0**	**0**		

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

N2. INDOOR CONDITIONED LIGHTING SCHEDULE § 130.0

This Section Does Not Apply

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

N3. INDOOR CONDITIONED LIGHTING CONTROL CREDITS § 140.6

This Section Does Not Apply

N4: INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS § 130.1

This Section Does Not Apply

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

NS. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST § 140.6

General lighting power (see Table D)	0
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (See Table G)	0
Total watts	0

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 7 of 15
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Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

K8. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY § 140.4

1	2	3	4	5	6	7	8	9	10	11	12
System ID	**Zone Name**	**System Type**	**Rated Capacity (kBtuh)**		**Airflow (cfm)**			**Fan**			
			Heating	**Cooling**	**Design**	**Min.**	**Min. Ratio**	**BHP**	**Watts**	**Cycles**	**ECM Motor**
1-Commercial Storage - Gene-Trm	1-Commercial Storage - Gene	Uncontrolled	NA	NA	370	NA	0.00	NA	NA	NA	☐
4-Kitchenette-Trm	4-Kitchenette	Uncontrolled	NA	NA	570	NA	0.00	NA	NA	NA	☐

K9. EVAPORATIVE COOLER SUMMARY

This Section Does Not Apply

L. DOMESTIC/SERVICE HOT WATER SYSTEM SUMMARY

L1. DHW EQUIPMENT SUMMARY

1	2	3	4	5	6	7	8	9	10	11
DHW Name	**Heater Element Type**	**Tank Type**	**Qty**	**Tank Vol (gal)**	**Rated Input (kBtu/h)**	**Efficiency**	**Tank Insulation R-value (Int/Ext)**	**Standby Loss Fraction**	**Heat Pump Type**	**Tank Location or Ambient Condition**
50 Gallon Electric2	Electricity	Storage	1	50.00	18.0 (kW)	Thrml. Eff.: 0.99	NA	SBLF: 0.020	NA	NA

L2. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS

This Section Does Not Apply

L3. SOLAR HOT WATER HEATING SUMMARY

This Section Does Not Apply

M. COVERED PROCESS SUMMARY §140.9

This Section Does Not Apply

TITLE 24 SHEET INDEX

MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
Roseville, CA 95678
p 916-771-0778
www.lpengineers.com
Job #: 19-2245

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-118588 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2021

VERDE DESIGN
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
SPORT PLANNING & DESIGN
1843 Iron Point Rd. Suite 140
Folsom, CA 95630
tel: 916.415.6554
fax: 916.415.6525
www.VerdeDesignInc.com

STAMP

REGISTERED LANDSCAPE ARCHITECT
MARK S. BASINGER
No. 4082
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
JEAN POURTAL
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE

TITLE 24 COMPLIANCE CALCULATIONS

PROJECT NAME

MESA VERDE
HIGH SCHOOL
ATHLETIC FACILITY
IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE
1		
2		
3		
4		
5		
6		

DRAWN BY
CHECKED BY CS/MB
DATE ISSUED 01/20/2021
SCALE
PROJ. NO. 1819500
SHEET NO. T24.1

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 12 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Acceptance must be submitted for the features to be recognized for compliance. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit:https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Building Component	YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
Envelope	☒	☐	NRCA-ENV-02-F - NRFC label verification for fenestration	☐	☐
	☐	☐	NRCA-ENV-03-F - Daylighting Design PAFs	☐	☐
Indoor Lighting	☒	☐	NRCA-LTI-02-A - Occupancy Sensors and Automatic Time Switch Controls	☐	☐
	☐	☒	NRCA-LTI-03-A - Automatic Daylight Controls	☐	☐
	☐	☒	NRCA-LTI-04-A - Demand Responsive Lighting Controls	☐	☐
	☐	☒	NRCA-LTI-05-A - Institutional Tuning Power Adjustment Factor (PAF)	☐	☐
Covered Process	☐	☒	NRCA-PRC-02-F - Kitchen Exhaust	☐	☐
	☐	☒	NRCA-PRC-03-F - Garage Exhaust	☐	☐
	☐	☒	NRCA-PRC-12-F – Elevator Lighting and Ventilation Controls	☐	☐
	☐	☒	NRCA-PRC-13-F –Escalator and Moving Walkways Speed Control	☐	☐
	☐	☒	NRCA-PRC-14-F – Lab Exhaust Ventilation System	☐	☐
	☐	☒	NRCA-PRC-15-F - Fume Hood Automatic Sash Closures System	☐	☐

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 11 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Installation must be submitted for the features to be recognized for compliance. These documents must be retained and provided to the building inspector during construction and can be found online at: https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Building Component	YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
Envelope	☒	☐	NRCI-ENV-01-E - Must be submitted for all buildings	☐	☐
Mechanical	☒	☐	NRCI-MCH-01-E - Must be submitted for all buildings	☐	☐
Plumbing	☒	☐	NRCI-PLB-01-E - Must be submitted for all buildings	☐	☐
	☐	☒	NRCI-PLB-02-E - Must be submitted for high-rise residential and hotel/ motel central hot water distribution systems to be recognized for compliance	☐	☐
	☐	☒	NRCI-PLB-03-E - Must be submitted for high-rise residential and hotel/motel single dwelling unit hot water system distribution systems to be recognized for compliance	☐	☐
	☐	☒	NRCI-PLB-21-E - Must be HERS verified for central systems in high-rise residential hotel/ motel application	☐	☐
	☐	☒	NRCI-PLB-22-E - Must be HERS verified for single dwelling unit systems in high-rise residential, hotel/motel application	☐	☐
	☐	☒	NRCI-STH-01-E - Must be submitted for solar hot water heating systems	☐	☐
Indoor Lighting	☒	☐	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
	☐	☒	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS) to be recognized for compliance	☐	☐
	☐	☒	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance	☐	☐
	☐	☒	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance	☐	☐
	☐	☒	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance	☐	☐
Covered Process	☐	☒	NRCI-PRC-01-E - Must be submitted for all Covered Processes	☐	☐

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 10 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

N12. Combined Ornamental and Special Effects Lighting

This Section Does Not Apply

N13. Very Valuable Merchandise

This Section Does Not Apply

N14. INDOOR & OUTDOOR LIGHTING ACCEPTANCE TESTS & FORMS § 130.4

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

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

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 15 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Sean Pourvakil	Signature:
Company: LP Consulting Engineers	
Address: 1209 Pleasant Grove Blvd.	Signature Date: 2020-10-07
City/State/Zip: Roseville CA 95678	CEA/ HERS Certification Identification (if applicable):
Phone: 916-771-0778	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Compliance is true and correct..
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Envelope Designer Name:	Signature:	
Company: BCA Architects		
Address: 980 9th St Suite 2050	Date Signed:	
City/State/Zip: Sacramento CA 95814		
Phone:	Title:	License #:
Responsible Lighting Designer Name: Alex K. Saev	Signature: Alex K. Saev	
Company: LP Consulting Engineers		
Address: 1209 Pleasant Grove Blvd.	Date Signed: 2020-10-07	
City/State/Zip: Roseville CA 95678		
Phone: 916-771-0778	Title:	License #: 18211
Responsible Mechanical Designer Name: Sean Pourvakil	Signature:	
Company: LP Consulting Engineers		
Address: 1209 Pleasant Grove Blvd.	Date Signed: 2020-10-07	
City/State/Zip: Roseville CA 95678		
Phone: 916-771-0778	Title:	License #: M32311

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 14 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

Q. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Verification must be submitted for the features to be recognized for compliance. These documents must be retained and provided to the building inspector during construction and can be found online at: https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCV/

Building Component	YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
Mechanical	☐	☒	NRCV-MCH-04-H Duct Leakage Test	☐	☐
	☐	☒	NRCV-MCH-24-H Enclosure Air Leakage	☐	☐
	☐	☒	NRCV-MCH-27 Indoor Air Quality & Mechanical Ventilation	☐	☐
	☐	☒	NRCV-MCH-32-H Local Mechanical Exhaust	☐	☐
Plumbing	☐	☒	NRCV-PLB-21-H - HERS verified central systems in high-rise residential, hotel/motel application	☐	☐
	☐	☒	NRCV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application	☐	☐

R. UNMET LOAD HOURS

This Section Does Not Apply

Project Name:	Mesa Verde Concession Stand	NRCC-PRF-01-E	Page 13 of 15
Project Address:	7501 Carriage Drive Citrus Heights 95621	Calculation Date/Time:	08:35, Wed, Oct 07, 2020
Input File Name:	192245_Concession Stand Mesa Verde.cibd19x		

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections shall be made by Documentation Author to indicate which Certificates of Acceptance must be submitted for the features to be recognized for compliance. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit:https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

Building Component	YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
Mechanical	☒	☐	NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. Note: MCH02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap	☐	☐
	☒	☐	NRCA-MCH-03-A Constant Volume Single Zone HVAC	☐	☐
	☐	☒	NRCA-MCH-04(a)-H Air Distribution Duct Leakage - HERS Verification required	☐	☐
	☐	☐	NRCA-MCH-04(b)-A Air Distribution Duct Leakage - ATT only	☐	☐
	☐	☒	NRCA-MCH-05-A Air Economizer Controls	☐	☐
	☐	☒	NRCA-MCH-06-A Demand Control Ventilation Systems Acceptance must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)3 can vary ouside ventilation flow rates based on maintaining interior carbon dioxide (CO2) concentration setpoints	☐	☐
	☐	☒	NRCA-MCH-07-A Supply Fan Variable Flow Controls	☐	☐
	☐	☒	NRCA-MCH-08-A Valve Leakage Test	☐	☐
	☐	☒	NRCA-MCH-09-A Supply Water Temperature Reset Controls	☐	☐
	☐	☒	NRCA-MCH-10-A Hydronic System Variable Flow Controls	☐	☐
	☐	☒	NRCA-MCH-11-A Automatic Demand Shed Controls	☐	☐
	☐	☒	NRCA-MCH-12-A FDD for Packaged Direct Expansion Units	☐	☐
	☐	☒	NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance	☐	☐
	☐	☒	NRCA-MCH-14-A Distributed Energy Storage DX AC Systems Acceptance	☐	☐
	☐	☒	NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance	☐	☐
	☐	☒	NRCA-MCH-16-A Supply Air Temperature Reset Controls	☐	☐
	☐	☒	NRCA-MCH-17-A Condenser Water Temperature Reset Controls	☐	☐
	☐	☒	NRCA-MCH-18 Energy Management Control Systems	☐	☐
	☐	☒	NRCA-MCH-19 Occupancy Sensor Controls	☐	☐

STATE OF CALIFORNIA

Nonresidential Building Commissioning

NRCC-CXR-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-CXR-E
Project Name:	Mesa Verde HS Concession/Restroom	Report Page:	(Page 3 of 6)
Project Address:	7501 Carriage Drive	Date Prepared:	10/7/2020

F. DESIGN REVIEW KICKOFF MEETING

This table indicates that the design reviewer meets the qualification requirements per Title 24, Part 1 Section 10-103(a)1 and demonstrates compliance with design review kickoff requirements per §120.8(d)2. This meeting should occur during the Schematic Design phase of the project.

Design Review Kickoff Meeting Details

01	Date of Design Review Kickoff Meeting		0001-01-01	
02	Meeting Attendees: (one person may play multiple roles)			
☐	Owner/Facility Manager:	☒	Design Reviewer(s)	
☐	Project Manager:	☐	Design Architect/ Engineer(s):	
☐	Contractor:	☐	Certified Acceptance Test Tech(s):	
☐	Commissioning Provider:	☐	Energy/ T24 Part 6 Consultant:	

Design Reviewer Qualifications per Title 24 Part 1 Section 10-103(a)1

The design reviewer(s) must be licensed professional engineers or licensed architects, or licensed contractors representing services performed by or under the direct supervision of a licensed engineer or architect, as specified in the provisions of Division 3 of the Business and Professions Code.		Do the Design Reviewer(s) meet these qualifications?	
03	In addition, for buildings with >= 10,000 ft² but < 50,000², the design reviewer(s) shall be a qualified in-house engineer or architect with no other project involvement or a third party engineer, architect, or contractor	Yes	No
		●	○
04	The design reviewer(s) for this project will be:		

Preliminary Construction Schedule

		Start Date	Completion Date
05	Schematic Design	0001-01-01	0001-01-01
06	Design Development	0001-01-01	0001-01-01
07	Construction Documents	0001-01-01	0001-01-01
08	Construction	0001-01-01	0001-01-01
09	Building Turnover	0001-01-01	0001-01-01

Project Goals Related to Energy Efficiency

10	Operational Costs	
11	Desired Building Lifespan	
12	Equipment Lifecycle	
13	Project Energy Efficiency Goals	
14	Envelope Goals	

STATE OF CALIFORNIA

Nonresidential Building Commissioning

NRCC-CXR-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-CXR-E
Project Name:	Mesa Verde HS Concession/Restroom	Report Page:	(Page 2 of 6)
Project Address:	7501 Carriage Drive	Date Prepared:	10/7/2020

C. COMPLIANCE RESULTS

Table C will indicate if the project data input into the compliance document is compliant with commissioning requirements per §120.8. This table is not editable by the user. If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, for guidance.

01	02	03	04	05	06	07	08	09
Design Kickoff Review	Owner's Project Requirements	Basis of Design	Design Review	Commissioning Plan	Functional Performance Testing	Documentation and Training	Commissioning Report	Compliance Results
Table F	Table G	Table H	Table I	Table J	Table K	Table L	Table M	
Yes			Yes					COMPLIES
10	Design Reviewer(s) for the project include:							COMPLIES

D. EXCEPTIONAL CONDITIONS

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

E. ADDITIONAL REMARKS

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

STATE OF CALIFORNIA

Nonresidential Building Commissioning

NRCC-CXR-E CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-CXR-E
Project Name:	Mesa Verde HS Concession/Restroom	Report Page:	(Page 1 of 6)
Project Address:	7501 Carriage Drive	Date Prepared:	10/7/2020

This document is used to demonstrate compliance with mandatory commissioning requirements in §120.8 for nonresidential buildings and hotel/motel or mixed-use buildings with nonresidential spaces. This document does not demonstrate compliance with commissioning requirements within Title 24, Part 11, which need to be documented separately if they apply.

A. GENERAL INFORMATION

01	Project Location (city)	Citrus Heights	04	Building Size (ft²)	1233
02	Occupancy Type	Nonresidential	05	Nonresidential Conditioned Floor Area (ft²)	< 10,000 ft²
03	Project Type	Newly constructed	06	HVAC System Type	Unitary or packaged equipment each serving one zone

B. PROJECT SCOPE

Based on project information provided in Table A, Table B indicates which commissioning related requirements apply per §120.8. Table B is not editable by the user.

Commissioning Requirements per §120.8

01	Table F: Design Review Kickoff	§120.8(d)1 and §120.8(d)2	The design review kickoff meeting establishes who will play the role of the design reviewer, the project schedule and identify owner's requirements. This meeting should be conducted during schematic design.
02	Table G: Owner's Project Requirements (OPR)	§120.8(b)	This requirement does not apply.
03	Table H: Basis of Design (BOD)	§120.8(c)	This requirement does not apply.
04	Table I: Design Review	§120.8(d) and §120.8(e)	The design reviewer(s) reviews the construction documents for clarity, completeness, and adherence to the owner's goals. Commissioning measures must be included in the construction documents to facilitate the design review and commissioning process. For projects with >= 10,000 ft² of nonresidential conditioned floor area the design review is for adherence with the Owner's Project Requirements (OPR) and Basis of Design (BOD). This should be conducted during design.
05	Table J: Commissioning Plan	§120.8(f)	This requirement does not apply.
06	Table K: Functional Performance Testing	§120.8(g)	This requirement does not apply.
07	Table L: Documentation and Training.	§120.8(h)	This requirement does not apply.
08	Table M: Commissioning Report	§120.8(i)	This requirement does not apply.

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-118588 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2021

VERDE DESIGN
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
SPORT PLANNING & DESIGN
1843 Iron Point Rd. Suite 140
Folsom, CA 95630
tel: 916.415.6654
fax: 916.415.6525
www.VerdeDesignInc.com

STAMP

REGISTERED LANDSCAPE ARCHITECT
MARK S. BASINGER
No. 4082
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
SEAN POURVAKIL
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE

TITLE 24 COMPLIANCE CALCULATIONS

PROJECT NAME

MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE CITRUS HEIGHTS, CA 95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE
1		
2		
3		
4		
5		
6		

DRAWN BY	CHECKED BY
	CS/MB
DATE ISSUED	SCALE
01/20/2021	

PROJ. NO. 1819500

SHEET NO. T24.2

LP CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
Roseville, CA 95678
p 916-771-0778
www.lpengineers.com
Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Meso Verde CRT bldg\Mechanical\MP Sheets\192245_T24_2 (Title 24).dwg

STATE OF CALIFORNIA
Nonresidential Building Commissioning
NRCC-CXR-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-CXR-E
Project Name:	Mesa Verde HS Concession/Restroom	**Report Page:**	(Page 6 of 6)
Project Address:	7501 Carriage Drive	**Date Prepared:**	10/7/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Sean Pourvakil	Documentation Author Signature:
Company: LP Consulting Engineers, Inc.	Signature Date: 2020-10-07
Address: 1209 Pleasant Grove Blvd.	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Roseville CA 95678	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Responsible Designer Signature:
Company: BCA Architects	Date Signed: 2021/01/13
Address: 980 9th St Suite 2050	License: C 30345
City/State/Zip: Sacramento CA 95814	Phone: (916) 254-6500

Registration Number:	Registration Date/Time:	Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance	Report Version: 2019.1.003 Schema Version: rev 20190401	Report Generated: 2020-10-07 08:36:03

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Mesa Verde HS Concession/Restroom	**Report Page:**	(Page 3 of 5)
Project Address:	7501 Carriage Drive	**Date Prepared:**	10/7/2020

H. VOLTAGE DROP

This table includes entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with §120.5(c). For alterations, only the altered circuits must demonstrate compliance per §141.0(b)2Pii

01	02			03	04	05	
Electrical Service Designation/Description	Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method			Location of Voltage Drop Calculations[1]	Sheet Number for Voltage Drop Calculations in Construction Documents	Field Inspector	
						Pass	Fail
	☒ Voltage drop less than 5%	☐	Permitted by CA Elec Code (Exception to 130.5(c))*	Attached		☐	☐

** NOTES: If "Permitted by CA Elec Code *" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*

[1] *FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".*

I. CIRCUIT CONTROLS FOR 120-VOLT RECEPTACLES AND CONTROLLED RECEPTACLES

This table includes entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(d). Both controlled and uncontrolled receptacles must be provided in office areas, lobbies, conference rooms, kitchen areas in office spaces, copy rooms and hotel/motel guest rooms.

01	02	03	04	05	06	
Room name or Description	Location/ Type of Controlled Receptacles	Shut-Off Controls	Permanent Durable Marking Will be Used	Location of Requirements in Construction Documents	Field Inspector	
					Pass	Fail

** NOTES: If "Other*" is selected under Shut-Off Controls above, please indicate how compliance has been achieved in the space provided below.*

J. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
●	○	NRCI-ELC-01-E - Must be submitted for all buildings	☐	☐

Registration Number:	Registration Date/Time:	Registration Provider: Energysoft
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STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Mesa Verde HS Concession/Restroom	**Report Page:**	(Page 1 of 8)
Project Address:	7501 Carriage Drive	**Date Prepared:**	10/7/2020

A. GENERAL INFORMATION

01	Project Location (city)	Citrus Heights	04	Total Illuminated Hardscape Area (ft²)	1100
02	Climate Zone	12			
03	Outdoor Lighting Zone per Title 24 Part 1 §10.114 or as designated by Authority Having Jurisdiction (AHJ):				
☐	LZ-0: Very Low - Undeveloped Parkland	☐ LZ-2: Moderate - Rural Areas	☐	LZ-4: High - Must be reviewed by CA Energy Commission for Approval	
☐	LZ-1: Low - Developed Parkland	☒ LZ-3: Moderately High - Urban Areas			

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2I, for alterations.

My Project Consists of:

01	02	
☒ New Lighting System	Must Comply with Allowances from §140.7	
☐ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)? ○ Yes ○ No	
03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method
☐ < 10% ☐ >= 10% and < 50% ☐ >= 50%		

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

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

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STATE OF CALIFORNIA
Nonresidential Building Commissioning
NRCC-CXR-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-CXR-E
Project Name:	Mesa Verde HS Concession/Restroom	**Report Page:**	(Page 5 of 6)
Project Address:	7501 Carriage Drive	**Date Prepared:**	10/7/2020

M. COMMISSIONING REPORT

This section does not apply to this project.

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

There are no Certificates of Installation applicable to commissioning requirements.

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Although there are no "CXR" Certificates of Acceptance required to document commissioning requirements, Certificates of Acceptance may be used to supplement functional performance testing required by §120.8(g).

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STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Mesa Verde HS Concession/Restroom	**Report Page:**	(Page 2 of 5)
Project Address:	7501 Carriage Drive	**Date Prepared:**	10/7/2020

D. EXCEPTIONAL CONDITIONS

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

E. ADDITIONAL REMARKS

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

F. SERVICE ELECTRICAL METERING

This table includes new or replacement electrical service systems OR equipment to demonstrate compliance with §130.5(a)

01	02	03				04	05	
Electrical Service Designation/Description	Rating (kVA)	Required Metering Capabilities per Table 130.5-A				Location of Requirements in Construction Documents	Field Inspector	
		Instantaneous Demand (kW)	Historical Peak Demand (kW)	Tracking kWh for user-defined period	kWh per rate period		Pass	Fail
	50	☐	☒	☒	☐		☐	☐

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING

This table includes entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(b). Any load types that are not included in the service do not need to be shown.

01	02	03	04	05	
Load Type per Table 130.5-B[1]	Minimum Required Separation of Load per Table 130.5-B	Compliance Method[2]	Location of Requirements in Construction Documents	Field Inspector	
				Pass	Fail

** NOTES: If "Other*" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.*

[1] *FOOTNOTES: For each separate load type, up to 10% of the connected load may be of any type.*
[2] *Method 1: Switchboards/ motor control centers/ panelboard loads disaggregated for each load type,*
Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type.
Method 3: Branch circuits serve load types individually and provisions for adding future branch circuit monitoring.
Method 4: Complete metering system measures and reports loads by type.
See Chapter 8 of the Nonresidential Compliance Manual for more detail on Compliance Methods.

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STATE OF CALIFORNIA
Electrical Power Distribution
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CERTIFICATE OF COMPLIANCE			NRCC-ELC-E
Project Name:	Mesa Verde HS Concession/Restroom	**Report Page:**	(Page 5 of 5)
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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Alex K. Saev	Documentation Author Signature:
Company: LP Consulting Engineers, Inc.	Signature Date: 2020-10-07
Address: 1209 Pleasant Grove Blvd.	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Roseville CA 95678	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Alex K. Saev	Responsible Designer Signature:
Company: LP Consulting Engineers	Date Signed: 2020-10-07
Address: 1209 Pleasant Grove Blvd.	License: 18211
City/State/Zip: Roseville CA 95678	Phone: 916-771-0778

Registration Number:	Registration Date/Time:	Registration Provider: Energysoft
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STATE OF CALIFORNIA
Nonresidential Building Commissioning
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CERTIFICATE OF COMPLIANCE			NRCC-CXR-E
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F. DESIGN REVIEW KICKOFF MEETING

15	HVAC System Goals
16	Indoor Lighting System Goals
17	Outdoor Lighting System Goals
18	Water Heating System Goals
19	Equipment and System Specifications
20	Operations and Maintenance

G. OWNER'S PROJECT REQUIREMENTS (OPR)

This section does not apply to this project.

H. BASIS OF DESIGN (BOD)

This section does not apply to this project.

I. CONSTRUCTION DOCUMENT DESIGN REVIEW CHECKLIST

This table is only completed if a design review document is not attached to permit application to demonstrate compliance with §120.8(h) and §120.8(e). For buildings with >= 10,000 ft² conditioned floor area, the design review will ensure the construction documents meet the Owner's Project Requirements (Table G.) and the Basis of Design Documents (Table H.). For buildings with < 10,000 ft² conditioned floor area, the design review will ensure the construction documents meet the goals documented in Table F. during the Design Review Kickoff.

		YES	NO
01	Attaching Completed Design Review Documentation?	●	○

J. COMMISSIONING PLAN

This section does not apply to this project.

K. FUNCTIONAL PERFORMANCE TESTING

This section does not apply to this project.

L. DOCUMENTATION AND TRAINING

This section does not apply to this project.

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This document is used to demonstrate compliance with mandatory requirements in §130.5, for electrical systems in newly constructed nonresidential, high-rise residential and hotel/motel occupancies. Additions and alterations to electrical service systems in these occupancies will also use this document to demonstrate compliance per §141.0(a) or §141.0(b)2F for alterations.

A. GENERAL INFORMATION

01	Project Location (city)	Citrus Heights			02	Occupancy Types Within Project:			
☐	Office	☒	Retail	☒	Warehouse	☐	Hotel/Motel	☐	School	☒	Support Areas
☐	Parking Garage	☐	High-Rise Residential	☐	Relocatable	☐	Healthcare Facilities	☒	Other (write in)	See Table I	

B. PROJECT SCOPE

This table includes electrical systems that are within the scope of the permit application.

01	02	03	04	05
Electrical Service Designation/Description	Scope of Work[1]	Rating (kVA)	Utility Provided Metering System Exception to §130.5(a) [2]	System subject to CA Elec Code Article 517 Exception to §130.5(a)and (b)
	New electrical service equipment and meter	50	☐	☐
06 Demand Response Controls	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections §120.2, §130.1 and §130.3 and compliance documents NRCC-MCH, NRCC-LTI and NRCC-LTS will indicate when demand response controls are required.			

[1] *FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c), no other requirements from 130.5 are required.*
[2] *Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.*

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

01		02		03		04	05
Service Electrical Metering §130.5(a) (See Table F)	AND	Separation for Monitoring §130.5(b) (See Table G)	AND	Voltage Drop §130.5(c) (See Table H)	AND	Controlled Receptacles §130.5(d) (See Table I)	
Yes	AND	Yes	AND	Yes	AND	Yes	COMPLIES

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K. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no Certificates of Acceptance applicable to electrical power distribution requirements.

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-118588 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2021

VERDE DESIGN
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
SPORT PLANNING & DESIGN
1843 Iron Point Rd. Suite 140
Folsom, CA 95630
tel: 916.415.6654
fax: 916.415.6525
www.VerdeDesignInc.com

STAMP
REGISTERED LANDSCAPE ARCHITECT
MARK S. BASINGER
No. 4082
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT
REGISTERED PROFESSIONAL ENGINEER
SEAN POURVAKIL
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE
TITLE 24 COMPLIANCE CALCULATIONS

PROJECT NAME
MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS
7501 CARRIAGE DRIVE CITRUS HEIGHTS, CA 95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE
1		
2		
3		
4		
5		
6		

DRAWN BY	CHECKED BY
	CS/MB
DATE ISSUED	SCALE
01/20/2021	
PROJ. NO.	
1819500	
SHEET NO.	
T24.3	

LP CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
Roseville, CA 95678
p 916-771-0778
www.lpengineers.com
Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Mechanical\MP Sheets\192245_T24_3 (Title 24).dwg

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E | CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Mesa Verde HS Concession/Restroom	Report Page:	(Page 4 of 8)
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G. CUTOFF REQUIREMENTS (BUG)
This section does not apply to this project.

H. OUTDOOR LIGHTING CONTROLS
This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Mandatory Controls

01	02	03	04	05	
Area Description	Shut-Off §130.2(c)1	Auto-Schedule §130.2(c)2	Motion Sensor §130.2(c)3	Field Inspector	
				Pass	Fail

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

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F. OUTDOOR LIGHTING FIXTURE SCHEDULE
For new or altered lighting systems demonstrating compliance with §140.7 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2I only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included).

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1,2]	How is Wattage determined	Total number luminaires[2]	Luminaire Status[3]	Excluded per §140.7(a)	Design Watts	Cutoff Req. > 6,200 initial lumen output §130.2(b)[4]	Field Inspector	
										Pass	Fail
3	B	☐ Linear	29	CEC Default	1	New	☐	29	NA: < 6200 lumens	☐	☐
4	BE	☐ Linear	29	CEC Default	1	New	☐	29	NA: < 6200 lumens	☐	☐
B	B	☐ Linear	29	CEC Default	2	New	☐	58	NA: < 6200 lumens	☐	☐
BE	BE	☐ Linear	29	CEC Default	2	New	☐	58	NA: < 6200 lumens	☐	☐
D	D	☐ Linear	27	CEC Default	4	New	☐	108	NA: < 6200 lumens	☐	☐
DE	DE	☐ Linear	27	CEC Default	4	New	☐	108	NA: < 6200 lumens	☐	☐
							Total Design Watts:	390			

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

[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)
[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.
[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
[4] Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by §130.2(b)

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C. COMPLIANCE RESULTS
Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D, Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2L												Compliance Results			
01		02		03		04		05		06		07		08	09
General Hardscape Allowance §140.7(d)1 (See Table I)	+	Per Application §140.7(d)2 (See Table J)	+	Sales Frontage §140.7(d)2 (See Table K)	+	Ornamental §140.7(d)2 (See Table L)	+	Per Specific Area §140.7(d)2 (See Table M)	OR	Existing Power Allowance §141.0(b)2L (See Table N)	=	Total Allowed (Watts)	≥	Total Actual (Watts)	07 must be >= 08
383	+	19	+	---	+	---	+	---	OR	---	=	402	≥	390	COMPLIES
Cutoff Compliance (See Table G for Details)															N/A
Controls Compliance (See Table H for Details)															COMPLIES

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

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

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O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
●	○	NRCI-LTO-01-E - Must be submitted for all buildings	☐	☐
○	●	NRCI-LTO-02-E- Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Yes	No	Form/Title	Field Inspector Pass	Field Inspector Fail
○	●	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	☐	☐

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
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J. LIGHTING ALLOWANCE: PER APPLICATION
This table includes areas using the wattage allowance per application from Table 140.7-B .

01	02	03	04	05	06	07	08	09	10
Area Description	Application per Table 140.7-B[1]	CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				Additional Allowance (Watts)
		# of Locations	Allowance per Location[2]	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	
Exterior Lighting - Ticket Booth	Building Entrance/Exit	1	19	19	3	29	1	29	19
					4	29	1	29	
					Total Design Watts for this Area:			58	
					Total Allowance (Watts) All Areas:				19

[1] FOOTNOTES: Primary entrance applications are only available for senior care facilities, healthcare facilities, police stations, hospitals, fire stations, and emergency vehicle facilities.
[2] The Allowance per Location for ATMs is 100W for the first ATM and 35W for each additional per Table 140.7-B .
[3] For luminaires indicated in Table F as linear, wattage in column 07 is W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.

K. LIGHTING ALLOWANCE: SALES FRONTAGE
This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL
This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA
This section does not apply to this project.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)
This section does not apply to this project.

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Project Name:	Mesa Verde HS Concession/Restroom	Report Page:	(Page 5 of 8)
Project Address:	7501 Carriage Drive	Date Prepared:	10/7/2020

I. LIGHTING POWER ALLOWANCE (per §140.7)
This table includes areas using allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lose it" Allowances are per Table 140.7-B . Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

	01			
	☒ General Hardscape Allowance Table I (below)	"Use it or lose it" Allowance (select all that apply) (select all that apply)		
		☒ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☐ Per Specific Area Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 0, 1 & 4)
This section does not apply to this project.
Calculated General Hardscape Lighting Power Allowance per Table 140.7-A (LZ 2 & 3)

02	03	04	05	06	07	08	9	10
Area Description	Surface Type	Area Wattage Allowance (AWA)			Area Wattage Allowance (AWA)			Total General AWA + LWA (Watts)
		Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	
Exterior Lighting - Concession Building	Concrete	1100	0.03	33	0	0.4	0	33
							Initial Wattage Allowance for Entire Site (Watts):	350
							Total General Hardscape Allowance (Watts):	383

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20190401 | Report Generated: 2020-10-07 08:36:03

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E | CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name:	Mesa Verde HS Concession/Restroom	Report Page:	(Page 8 of 8)
Project Address:	7501 Carriage Drive	Date Prepared:	10/7/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Alex K. Saev	Documentation Author Signature: Alex K. Saev
Company: LP Consulting Engineers, Inc.	Signature Date:
Address: 1209 Pleasant Grove Blvd.	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Roseville CA 95678	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Alex K. Saev	Responsible Designer Signature: Alex K. Saev
Company: LP Consulting Engineers	Date Signed: 2020-10-07
Address: 1209 Pleasant Grove Blvd.	License: 18211
City/State/Zip: Roseville CA 95678	Phone: 916-771-0778

Registration Number: | Registration Date/Time: | Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance | Report Version: 2019.1.003 Schema Version: rev 20190401 | Report Generated: 2020-10-07 08:36:03

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-118588 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2021

VERDE DESIGN
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
SPORT PLANNING & DESIGN
1843 Iron Point Rd. Suite 140
Folsom, CA 95630
tel: 916.415.6654
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STAMP
REGISTERED LANDSCAPE ARCHITECT
MARK S. BASINGER
No. 4089
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT
REGISTERED PROFESSIONAL ENGINEER
JEAN POURTAUX
M 32311
REN. 6-30-21
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE
TITLE 24 COMPLIANCE CALCULATIONS

PROJECT NAME
MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS
7501 CARRIAGE DRIVE CITRUS HEIGHTS, CA 95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

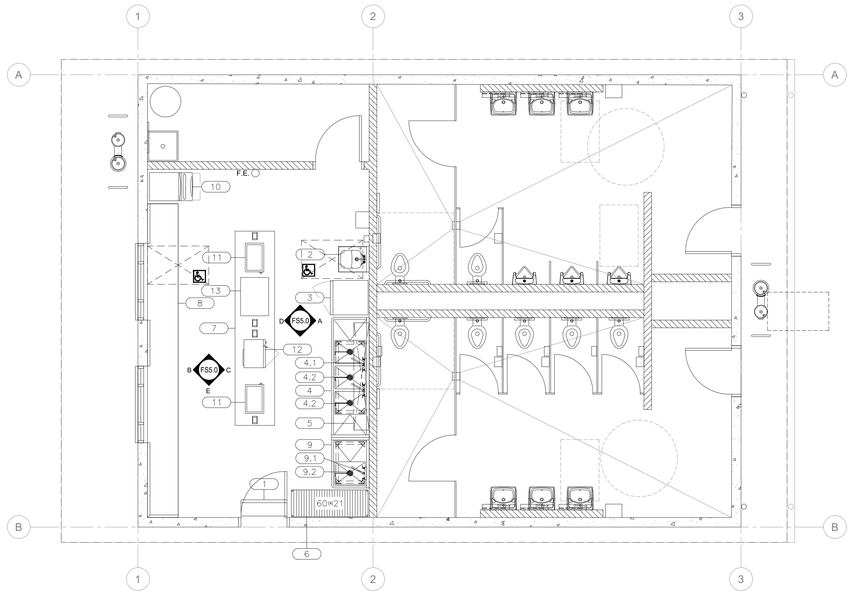
NO.	REVISIONS	DATE
1		
2		
3		
4		
5		
6		

DRAWN BY | CHECKED BY CS/MB
DATE ISSUED 01/20/2021 | SCALE
PROJ. NO. 1819500
SHEET NO. T24.4

LP CONSULTING ENGINEERS
MEP & FS / Sustainability / CxA
1209 Pleasant Grove Blvd.
Roseville, CA 95678
p 916-771-0778
www.lpengineers.com
Job #: 19-2245

DRAWING NAME: P:\1-Project files\2019 LP Projects\19-2245 BCA_Mesa Verde CRT bldg\Mechanical\MP Sheets\192245_T24_4 (Title 24).dwg

QC	
INI	%



FOODSERVICE FLOOR PLAN

SCALE : 1/4" = 1'-0"

1
FS1.0

EQUIPMENT SCHEDULE

ITEM NO	QTY	EQUIPMENT CATEGORY	MANUFACTURER	MODEL NUMBER	ANCHORAGE DETAIL	EQUIPMENT WT. LBS	EQUIPMENT REMARKS	ADDITIVE ALTERNATES
1	1	AIR CURTAIN, UNHEATED	MARS AIR DOORS	N236-1U	E/FS4.0	60		
2	1	HAND SINK, WALL MOUNT	EAGLE MFG	YAMD-HSAP-14-0001-00	I/FS4.0	55	(1)	
3	1	DUAL TEMP REFRIG/FREEZER	TRUE FOOD SERVICE	T-23DT-G	H/FS4.0	380		1
4	1	SINK, SCULLERY, 3 COMPARTMENTS	FSI STAINLESS STEEL FABRICATORS	FABRICATED ITEM	G/FS4.0	165		
4.1	2	FAUCET, BACKSPLASH MOUNT	CHICAGO FAUCET	445-L12RABCP			CA. COMPLIANT FOR LOW LEAD	
4.2	3	DRAIN, LEVER HANDLE	FISHER	22209				
5	1	WALL MOUNTED OVERSHELF	ADVANCE TABCO	WS-12-84	J/FS4.0	25		
6	1	STORAGE SHELVING	METRO	A2160NC	K/FS4.0	65	(5) TIER SHELVES 74" POSTS	
7	1	ISLAND SERVICE COUNTER	FSI STAINLESS STEEL FABRICATORS	FABRICATED ITEM	L/FS4.0	410		
8	1	SERVICE COUNTER	FSI STAINLESS STEEL FABRICATORS	FABRICATED ITEM	L/FS4.0	320		
9	1	PREP SINK	FSI STAINLESS STEEL FABRICATORS	FABRICATED ITEM	G/FS4.0	80		
9.1	1	FAUCET, BACKSPLASH MOUNT	CHICAGO FAUCET	445-L12RABCP		5	CA. COMPLIANT FOR LOW LEAD	
9.2	1	DRAIN, LEVER HANDLE	FISHER	22209		4.5		
10	1	ICE MAKER W/ BIN	MANITOWOC	IYTO620A-161/D-420	H/FS4.0	145		1
11	2	COUNTER TOP WARMER	APW-WYOTT	CW-2Ai		29		1
12	1	MICROWAVE OVEN	AMANA	RCS10DSE		48		1
13	1	POPCORN MAKER (OWNER FURNISHED)	GOLD MEDAL PROPDUCTS CO.	2014				

NOTES:

(1) PROVIDE W/ RIGHT AND LEFT SIDE SPLASHES

FOODSERVICE DRAWING SHEET LIST

HEALTH DEPARTMENT NOTES:

1. PROVIDE THERMOMETER IN ALL REFRIGERATION UNITS CONTAINING PERISHABLE FOODS.
2. PROVIDE PROBE THERMOMETER FOR CHECKING HOT AND COLD FOODS.
3. FOOD STORAGE SHELVES SHALL BE MINIMUM SIZE (6) INCHES ABOVE FLOOR.
4. ALL EQUIPMENT SHALL MEET OR BE EQUIVALENT TO "NSF" STANDARDS.
5. PROVIDE GARMENT STORAGE AREA: LOCKER, CABINET OR HANGERS FOR EMPLOYEE GARMENTS.
6. RODENT AND INSECT-PROOF ALL EXTERIOR DOORS AND WINDOWS. PROVIDE HEAVY-DUTY SELF-CLOSERS ON ALL EXTERIOR DOORS AND RESTROOM DOORS. SEAL ALL HOLES OR GAPS AROUND PIPES ENTERING BUILDING.
7. EXTERIOR DOORS SHALL BE RODENT PROOF WITH NO OPENINGS GREATER THAN 1/4 INCH.
8. PROVIDE HARDWOOD, METAL, FORMICA OR OTHER APPROVED MATERIALS, SMOOTH WITH SEALER ON ALL TABLE, COUNTERS, SHELVES, AND OTHER FOOD CONTACT SURFACES.
9. PROVIDE HAZARDOUS SUBSTANCE LOCATION- SEPARATE CABINET, ROOM OR DESIGNATED AREA FOR STORAGE OF PESTICIDE AND CLEANING COMPOUNDS.
10. INSTALL EQUIPMENT TO FACILITATE CLEANING. PLACE FLOOR MOUNTED UNITS ON CASTERS, MINIMUM SIX (6) INCHES HIGH, ROUND, METAL LEGS, OR SEAL IN POSITION ON MINIMUM FOUR (4) INCH CURB.
11. UNPACKAGED PROCESSED FOODS ON DISPLAY SHALL BE EFFECTIVELY SHIELDED OR COVERED.
12. PROVIDE SOAP AND TOWEL DISPENSERS AT ALL HAND WASHING SINKS.
13. FLOOR SINKS SHALL BE INSTALLED FLUSH WITH FLOOR AND READILY ACCESSIBLE FOR CLEANING.
14. GREASE INTERCEPTORS SHALL BE INSTALLED READILY ACCESSIBLE FOR CLEANING.
15. PROVIDE PROTECTIVE COVERS ON ALL LIGHTS IN FOOD PREPARATION, OPENED FOOD STORAGE ROOM(S), UTENSIL WASH AREAS, OR USE SHATTERPROOF BULBS.
16. LIGHTING REQUIREMENTS:
    -MINIMUM 50FT. CANDLES REQUIRED IN FOOD PREP AREA
    -MINIMUM 20FT. CANDLES REQUIRED IN RESTROOMS AND BARS
    -MINIMUM 10FT. CANDLES REQUIRED IN REFRIGERATORS
    -MINIMUM 10FT. CANDLES REQUIRED IN STORAGE AREAS
    -LIGHTING SHALL BE SHATTERPROOF OR SHIELDED
17. EXISTING FIXTURES, FINISHES, AND EQUIPMENT SHALL BE IN OPERABLE CONDITION AND SUBJECT TO FIELD APPROVAL.
18. WALLS & CEILING IN THE RESTROOMS, PREPARATION, STORAGE, AND JANITORIAL AREAS SHALL BE CONSTRUCTED OF APPROVED MATERIALS SO AS TO BE SMOOTH, WASHABLE, AND EASY TO CLEAN.

NOTE:

1. ALL PENETRATIONS 12" OR LARGER TO BE CAST AT THE PRE-CAST MANUFACTURER'S PLANT AND WILL BE COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER PRIOR TO CASTING.
2. ALL PENETRATIONS SMALLER THAN 12" SHALL BE CORED IN THE FIELD AND COORDINATED WITH THE ENGINEER OF RECORD AND THE PRE-CAST CONCRETE ENGINEER. PRIOR TO CORING, PRE-CAST ENGINEER TO REVIEW LOCATIONS TO ENSURE THE PENETRATIONS ARE NOT GOING THROUGH FLEXURAL REINFORCEMENT.

NOTES:

1. REFER TO ARCH. DRAWINGS FOR FIRE EXTINGUISHER LOCATIONS
2. "All work shall conform to the California Building Code, California Electrical Code, California Mechanical and Plumbing Codes, California Health and Safety Code. ALL FOOD SERVICES EQUIPMENT SHALL MEET AND BE INSTALLED PER THE REQUIREMENTS OF THE CALIFORNIA HEALTH AND SAFETY CODE DIVISION 22 AND ALL LOCAL CODES AND ORDINANCES."

KITCHEN EQUIPMENT ANCHORAGE NOTES

ALL KITCHEN EQUIPMENT SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND 2019 ASCE 7-10 CHAPTER 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.g. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING KITCHEN EQUIPMENT SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHTING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

FLOOR LEGEND

SYMBOL/ABBREVIATION	DESCRIPTION	SYMBOL	DESCRIPTION
OFCI	OWNER FURNISH / CONTRACTOR INSTALLED	30" CLR. / 48" CLR.	ACCESSIBLE CLEARANCES AND SYMBOL 30"x48" MIN CLEARANCE
OFOI	OWNER FURNISH / OWNER INSTALLED		OUTLINE OF FOODSERVICE EQUIPMENT
FSEC	FOODSERVICE EQUIPMENT CONTRACTOR		FOODSERVICE EQUIPMENT BELOW EQUIPMENT TOP
VFVI	VENDER FURNISH / VENDER INSTALLED		FOODSERVICE EQUIPMENT ABOVE EQUIPMENT TOP
(E), EXIST	EXISTING FOODSERVICE EQUIPMENT		MOBILE FOODSERVICE EQUIPMENT
(F)	FUTURE FOODSERVICE EQUIPMENT	F.E.	FIRE EXTINGUISHER & CABINET REFER TO ARCH. DRAWINGS FOR FIRE EXTINGUISHER LOCATIONS
	BUILDING WALLS (SEE ARCH. DWGS.)	FS.01	SHEET NUMBER
	WALK-IN COOLER/ FREEZER INSULATED WALLS	W.H.	WATER HEATER (SEE PLUMBING ENG. DWG.)
1 1	KEY / SHEET NOTE	A FS5.0 B	ELEVATION INDICATOR SYMBOL
1	ITEM NUMBER SYMBOL (SEE EQUIPMENT SCHEDULE FOR DESCRIPTION)		
KITCHEN 1	ROOM/ AREA NAME AND ROOM NUMBER		
C	COLUMN GRIDS WITH COLUMN INDICATORS		
48"W/18	STORAGE SHELVING SIZES (Width x Length)		

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 02-118588 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2021

VERDE DESIGN
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
SPORT PLANNING & DESIGN
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tel: 916.415.6554
fax: 916.415.6525
www.VerdeDesigninc.com

STAMP

REGISTERED LANDSCAPE ARCHITECT
MARK S. BASINGER
No. 4082
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

AMD FOODSERVICE DESIGN

LICENSED ARCHITECT
CHRISTOPHER M. WHITMORE
No. C 30345
Ren.: 9/30/21
STATE OF CALIFORNIA

SHEET TITLE

FOODSERVICE EQUIPMENT FLOOR PLAN

PROJECT NAME

MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE

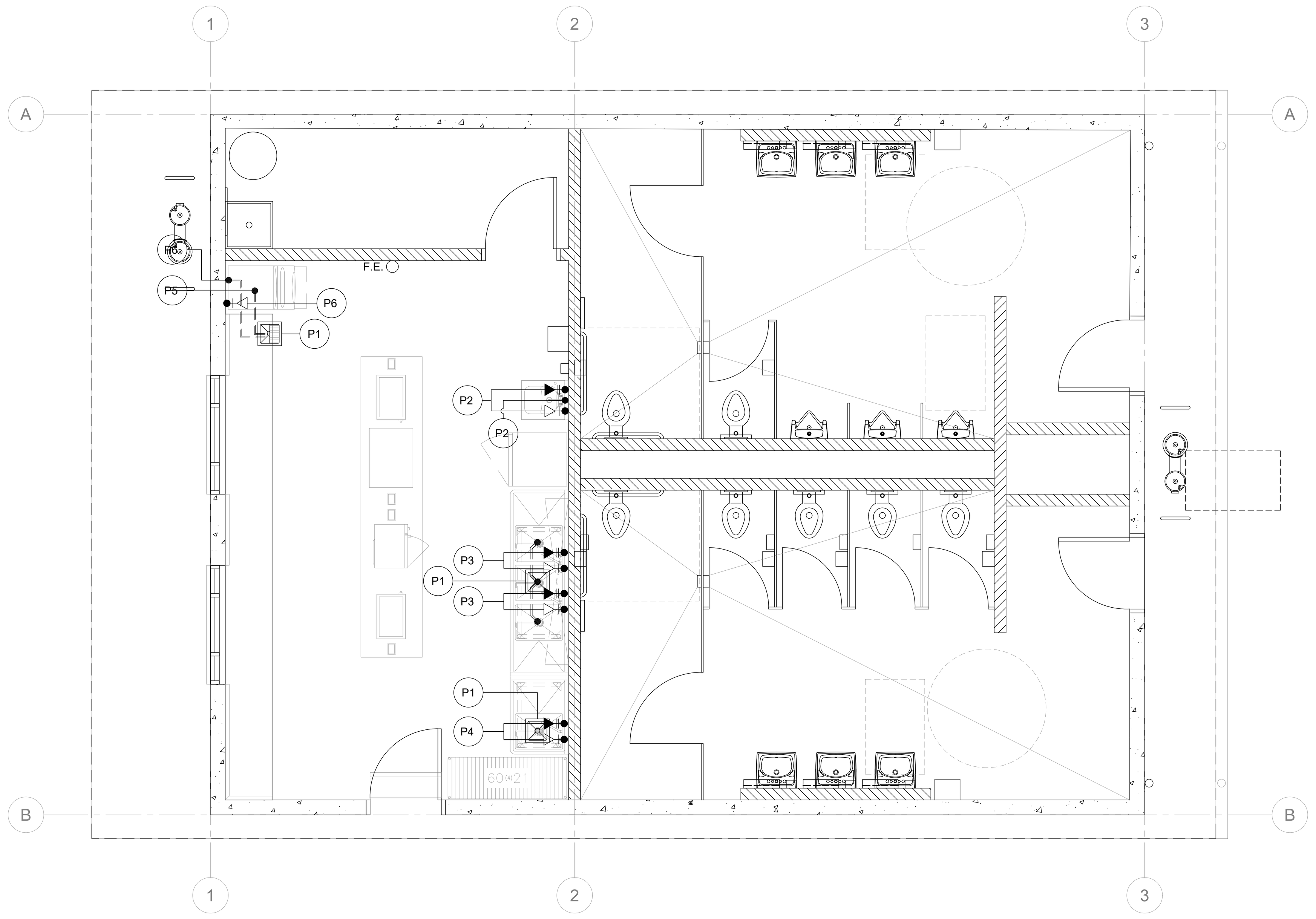
DRAWN BY	CHECKED BY
	CS/MB
DATE ISSUED	SCALE
01/20/2021	
PROJ. NO.	
1819500	
SHEET NO.	
FS1.0	

L:\2017\1701916.001\1200 Drawings\1205 AutoCAD Project Files\FS1.0.DWG - 19 - March 1, 2018

DRAWING NAME: C:\Users\ArtDavis\OneDrive - AMD Foodservice Design\1 Projects\San Juan Unified SD Mesa Verde CTE Concession Building\1200 Drawings\1205 Autocad Project Files\FS1.0.dwg
PLOT DATE: 01-14-21 PLOTTED BY: ArtDavis

PLUMBING SCHEDULE

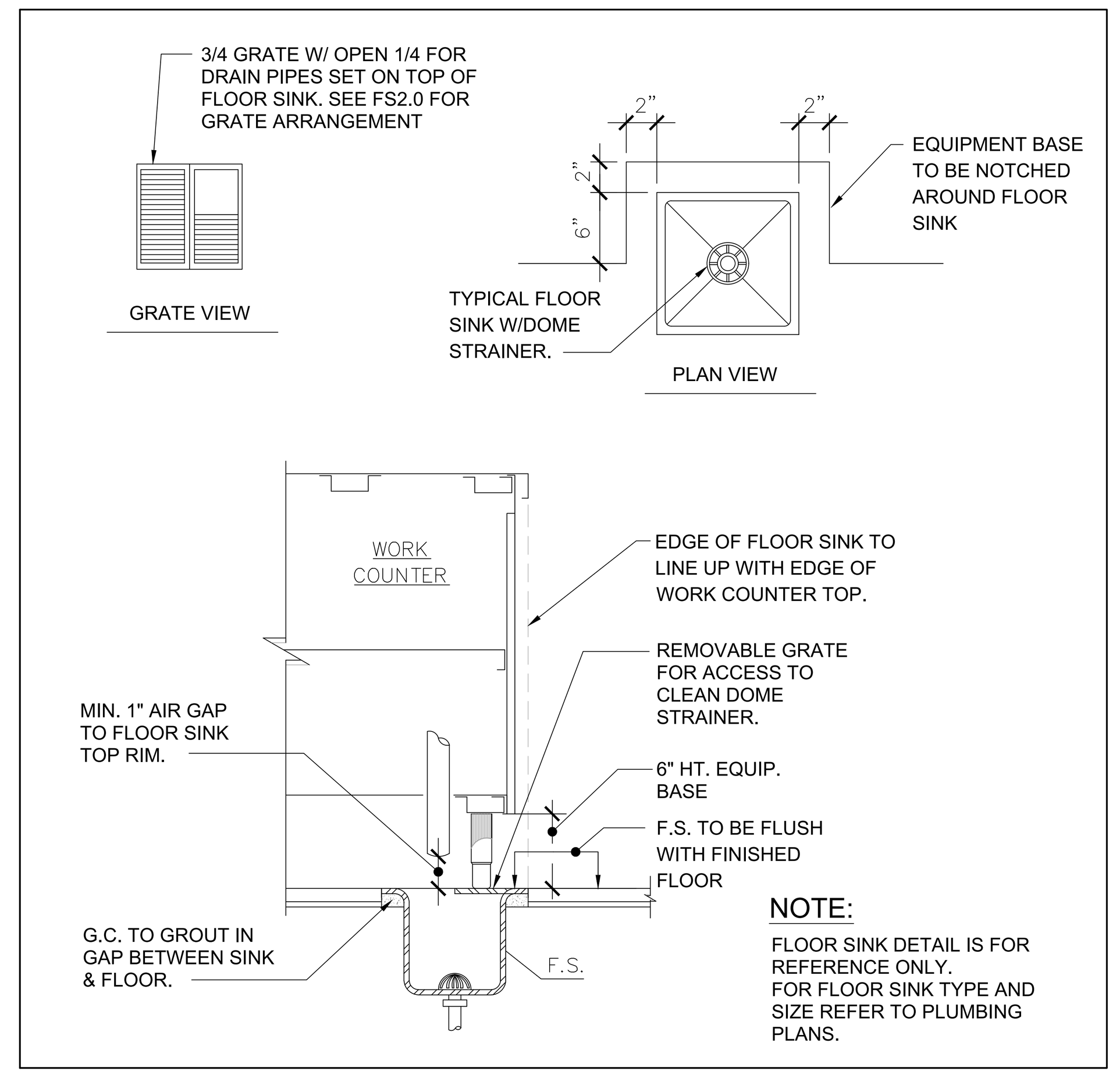
PLUM. NO.	ITEM. NO.	DESCRIPTION	QTY.	WATER CONN. SIZE C.W.	WATER CONN. SIZE H.W.	WATER HGT.@ WALL	WASTE CONN. SIZE DIR.	WASTE CONN. SIZE INDIR.	WASTE HGT.@ WALL	GAS BTU/HR (x1,000)	GAS CONN. SIZE	GAS HGT. @ WALL	REMARKS	NOTE(S)
P1	-	FLOOR SINK	3EA.	-	-	-	-	-	+0"	-	-	-	INSTALL FLUSH WITH FINISH FLOOR, PROVIDE 3/4" GRATE COVER W/ DOME STRAINER, SIZE 12" X 12" X 8"	REFER TO 2&3/FS2.0
P2	2	WALL MOUNTED HAND SINK FAUCET W/ 1/2" INLET 4" CENTER	1EA.	1/2"	1/2"	18"	11/2"	-	24"	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. RUN DIRECT WASTE WITH P-TRAP.	
P3	4	POTWASH SINK FAUCET W/ 3/4" INLET 8" CENTER	1EA.	3/4"	3/4"	16"	-	2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. PROVIDE 2" INDIRECT DRAIN TO F.S P1. (CHROME OR PAINT SILVER)	
P4	9	PREP SINK FAUCET W/ 1/2" INLET 8" CENTER	1EA.	1/2"	1/2"	16"	-	2"	-	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. PROVIDE 2" INDIRECT DRAIN TO F.S P1. (CHROME OR PAINT SILVER)	
P5	10	ICE MAKER (BIN)	1EA.	-	-	-	-	3/4"	-	-	-	-	PROVIDE 3/4" INDIRECT DRAIN TO F.S P1. (CHROME OR PAINT SILVER)	
P6	10	ICE MAKER (HEAD)	1EA.	1/2"	-	52"	-	1/2"	52"	-	-	-	PROVIDE S.O.V., RUN PIPING TO UNIT CONNECTION. INTERCONNECT TO WATER FILTER FURNISHED WITH ICEMACHINE DRAIN TO F.S. P1.	



FOODSERVICE PLUMBING FLOOR PLAN

SCALE : 1/4" = 1'-0"

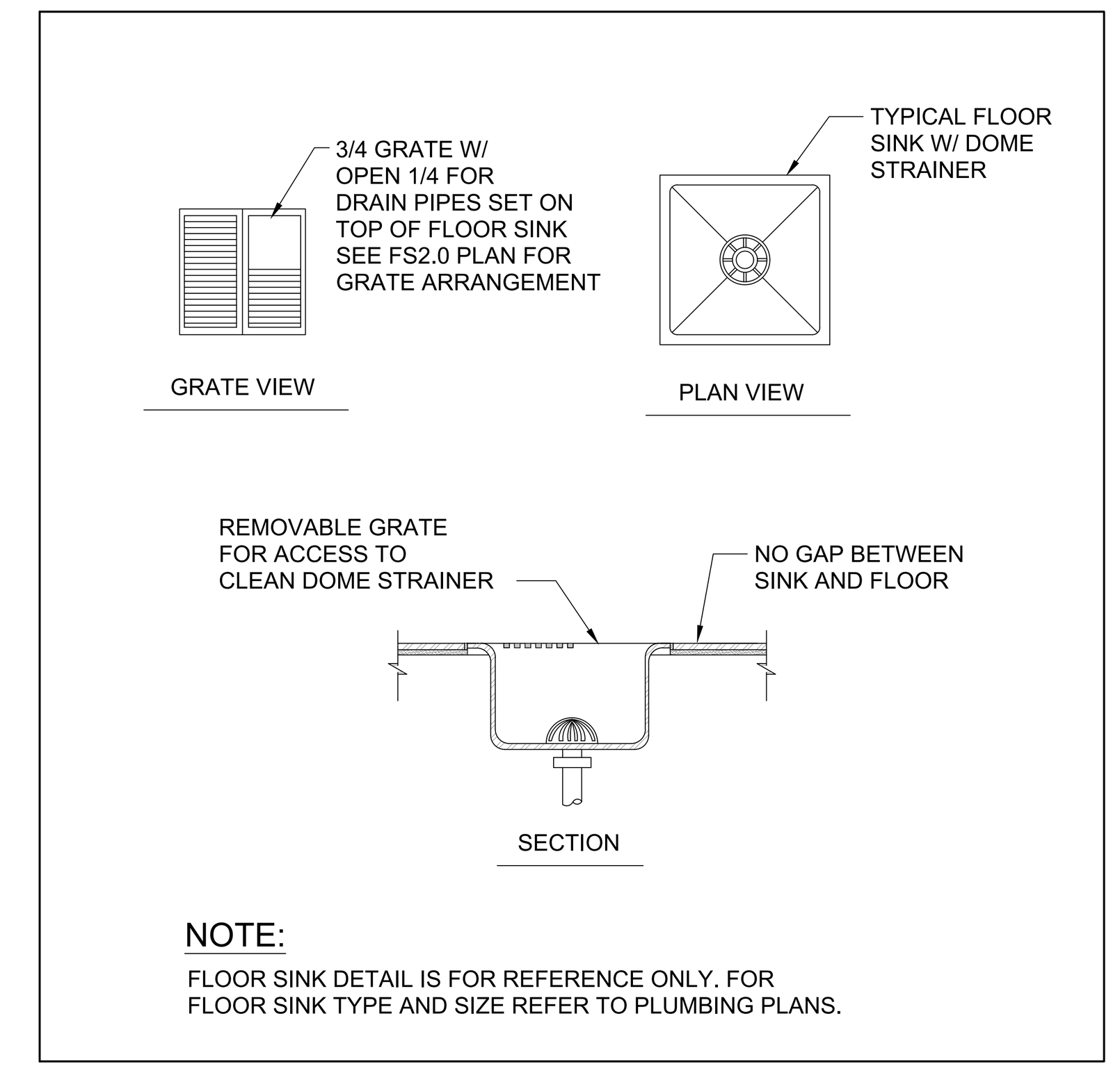
1
FS2.0



FLUSH FLOOR SINK DETAIL

SCALE : NONE LOCATED UNDER WORK COUNTER

3
FS2.0



FLUSH FLOOR SINK DETAIL

SCALE : NONE

2
FS2.0

PLUMBING NOTES

(MINIMUM REQUIREMENTS UNLESS NOTED OTHERWISE)

1. – PLUMBING CONTRACTOR TO VERIFY ALL INCOMING SERVICE AND MAKE FINAL HOOK–UPS TO ALL APPLICABLE EQUIPMENT AND TO PROVIDE ALL PIPING, TEES, ELLS, TRAPS, FILTERS, REGULATORS, FAUCETS, ETC., UNLESS SPECIFICALLY STATED OTHERWISE.
2. – ALL HORIZONTAL DIMENSIONS SHOWN ON PLAN ARE FROM FINISHED FACE OF WALL TO CENTERLINE OF STUB–OUT OR FROM CENTERLINE OF STUB–OUT TO CENTERLINE OF STUB–OUT, UNLESS NOTED OTHERWISE ON PLAN OR DETAILS. (VERIFY ALL DIMENSIONS)
3. – SYMBOLS NOTED +24", +48", ETC., INDICATES TO STUB–OUT OF WALL AT HEIGHT INDICATED. HEIGHT IS GIVEN FROM FINISHED FLOOR (NOT FINISHED CURB) TO CENTERLINE OF STUB–OUT. SYMBOLS INDICATED "STUB–UP" AND "STUB–DOWN" ARE TO EXTEND ABOVE FINISHED FLOOR AND/OR BELOW FINISHED CEILING AT LOCATION SHOWN.
4. – PLUMBING STUBS AND CONNECTIONS SHOWN ON PLANS ARE FOR EQUIPMENT FURNISHED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR.
5. – FLOOR SINKS SHOWN ARE TO BE SET FLUSHED WITH TOP OF FINISHED FLOOR. FLOOR SINKS INDICATED HALF–IN AND HALF–OUT OF EQUIPMENT TO BE SET FLUSHED WITH TOP OF FINISHED FLOOR. FLOOR SINKS LOCATED COMPLETELY WITHIN EQUIPMENT AREA TO BE SET FLUSHED WITH TOP OF FINISHED FLOOR.
6. – PLUMBING CONTRACTOR TO PROVIDE AND INSTALL REMOVABLE COVERS OR GRATES FOR ALL FULLY OR PARTIALLY EXPOSED FLOOR SINKS. GRATES TO HAVE 1/2" MAX OPEN'GS WHERE DRAIN IS EXPOSED TO P.O.T OR TO PEDESTRIAN WAYS TYP.
7. – PLUMBING CONTRACTOR SHALL SEAL ALL PLUMBING PENETRATIONS THROUGH WALLS, FLOORS, AND CEILINGS. WATERTIGHT AND VERMIN–PROOF.
8. – PLUMBING CONTRACTOR TO PROVIDE AND INSTALL SHUT–OFF VALVES ON ALL WATER AND GAS LINES, INCLUDING VALVES IN FIXTURES, LOCATED IN SUCH A WAY AS TO BE ACCESSIBLE WITHOUT USE OF TOOLS.
9. – PLUMBING CONTRACTOR TO PROVIDE AND INSTALL FOR ALL APPLICABLE EQUIPMENT, A TRAPPED FLOOR SINK WITH A LEGAL AIR GAP DRAIN LINE (INDIRECT WASTE) TO FLOOR SINK. INSULATE ALL DRAIN LINES FROM ICE BINS, ICE MACHINES, REFRIG. EQUIP., ETC..

PLUMBING LEGEND

ABREVIATION	DESCRIPTION	SYMBOL	DESCRIPTION
C.W.	COLD WATER	P1	PLUMBING SCHEDULE REFERENCE. REFER TO FS2.0 FOR SCHEDULE
H.W.	HOT WATER	●	WASTE DOWN
DIR.	WASTE (DIRECT CONNECTION)	▷•	COLD WATER INLET
INDIR.	INDIRECT WASTE (AIR GAP)	▶•	HOT WATER INLET
LAV.	LAVATORY		FLOOR SINK
W.C.	WATER CLOSET		I.D. DRAIN LINE
F.S.	FLOOR SINK		
P.C.	PLUMBING CONTRACTOR		
G.C.	GENERAL CONTRACTOR		
S.O.V.	SHUT OFF VALVE		

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APP: 02-118588 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2021

VERDE DESIGN
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tel: 916.415.6554
fax: 916.415.6525
www.VerdeDesignInc.com

STAMP

REGISTERED LANDSCAPE ARCHITECT
MARK S. BAGINSKI
No. 4089
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

AMD FOODSERVICE DESIGN

LICENSED ARCHITECT
No. C 30345
Ren.: 9/30/21
STATE OF CALIFORNIA

SHEET TITLE

FOODSERVICE EQUIPMENT PLUMBING FLOOR PLAN

PROJECT NAME

MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE

DRAWN BY

CHECKED BY CS/MB

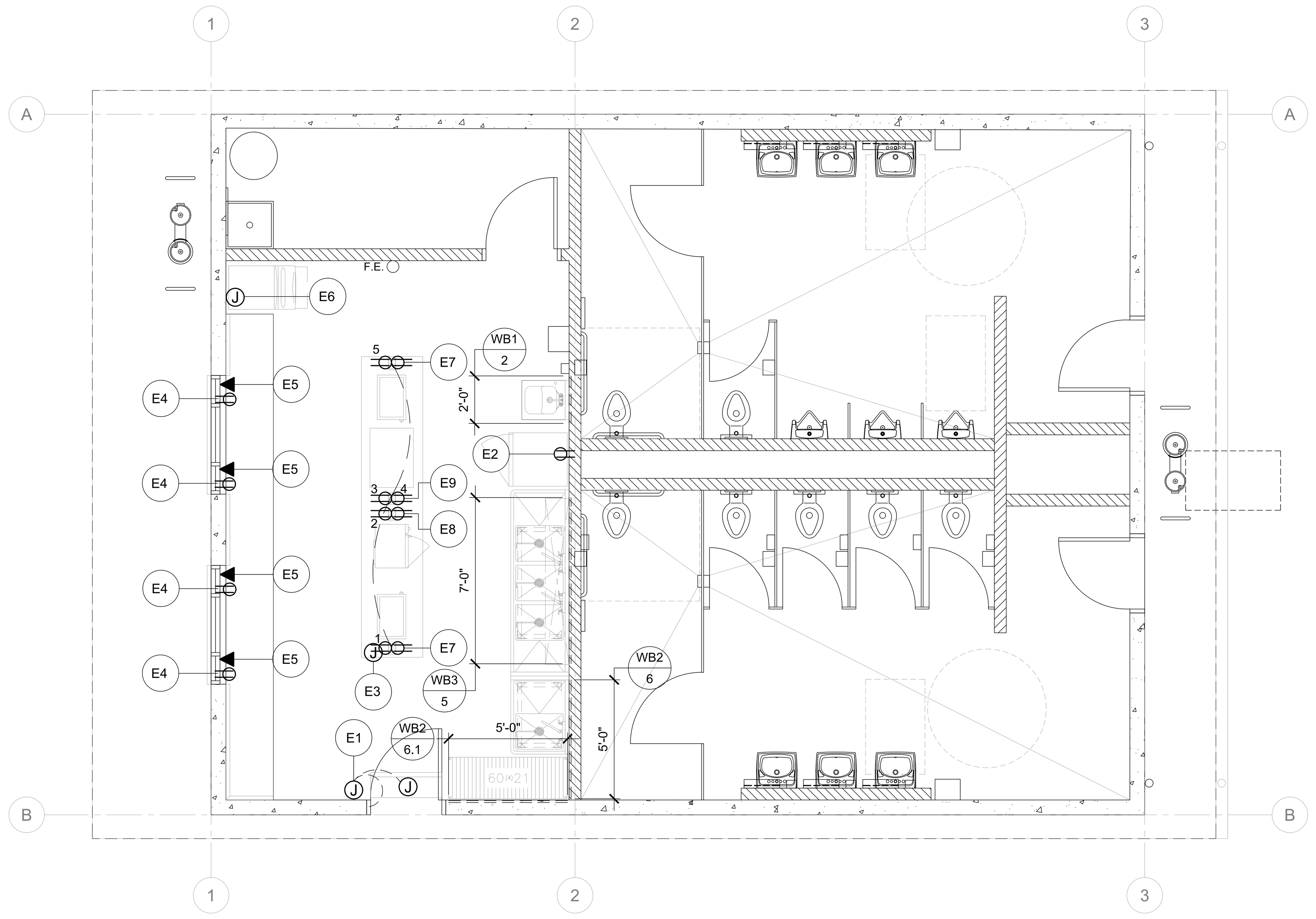
DATE ISSUED 01/20/2021

SCALE

PROJ. NO. 1819500

SHEET NO. FS2.0

DRAWING NAME: C:\Users\ArtDavis\OneDrive – AMD Foodservice Design\1 Projects\San Juan Unified SD Mesa Verde CTE Concession Building\1200 Drawings\1205 Autocad Project Files\FS2.0.dwg
PLOT DATE: 01-12-21 PLOTTED BY: ArtDavis



FOODSERVICE ELECTRICAL & BACKING FLOOR PLAN

SCALE : 1/4" = 1'-0"

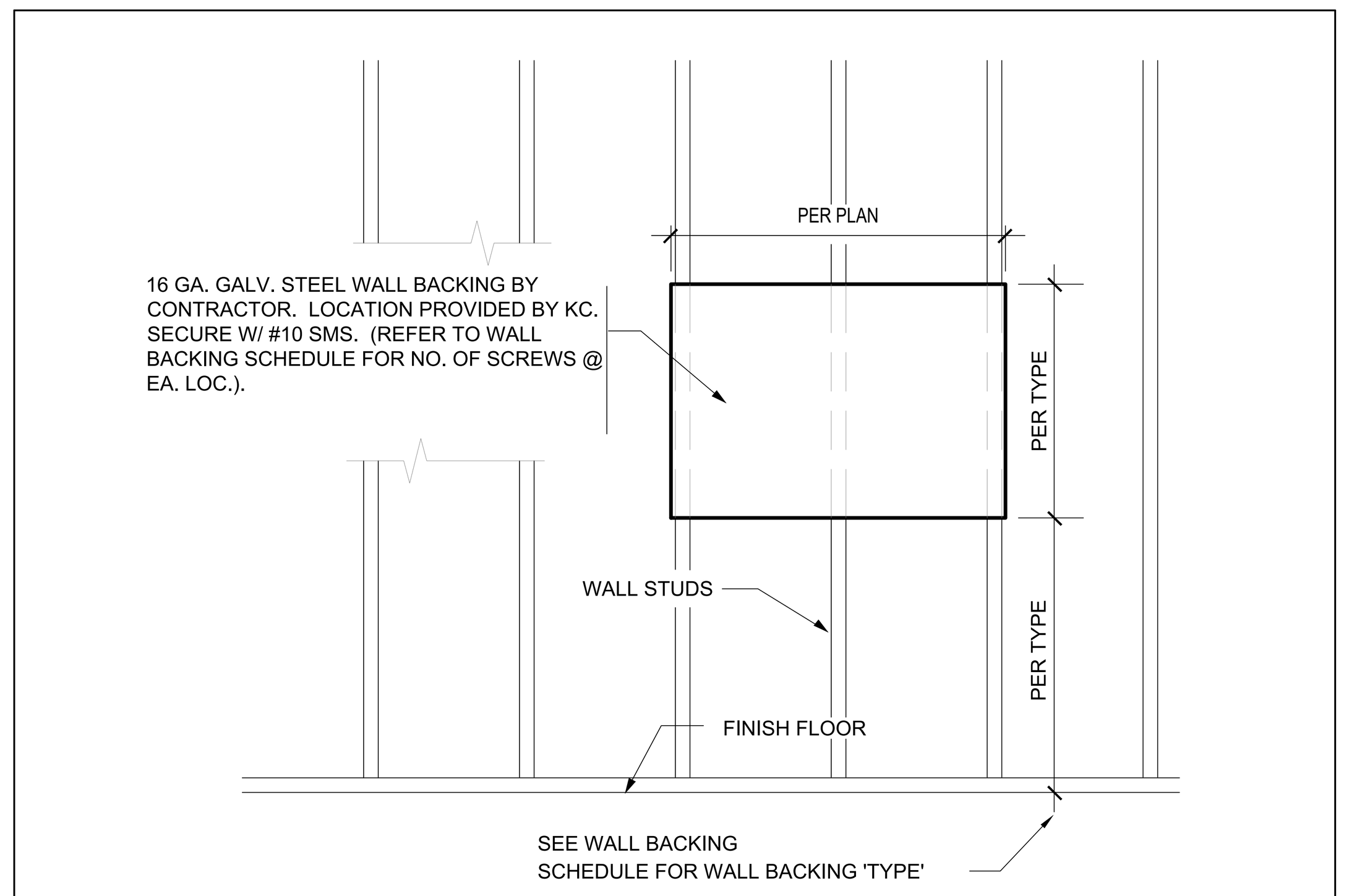
1 / FS3.0

ELECTRICAL SCHEDULE

ELEC. NO.	ITEM NO.	DESCRIPTION	QTY.	VOLT.	PH	DIRECT	PLUG	NEMA	LOAD WATT	LOAD AMPS. DRAW	LOAD HP	OUTLET HEIGHT	REMARKS	NOTE(S)
E1	1	AIR CURTAIN	2EA.	120	1	X		-	-	5.1	1/2	+86"	PROVIDE J-BOX FLUSH MOUNTED IN WALL INSTALL DOOR LIMIT SWITCH FOR INSTANT ON/OFF SWITCH BY F.S.E.C SEE E/FS4.0	
E2	3	DUAL TEMP REFRIG/FREEZER	1EA.	120	1	-	X	5-15R	-	6.3	-	+48"	PROVIDE DUPLEX RECEPTACLE UNIT PROVIDED WITH CORD AND PLUG SET (NEMA 5-15P)	
E3	7	ISLAND SERVICE COUNTER	5EA.	120	1	X		-	-	15EA.	-	+34"	PROVIDE DOUBLE FACED PEDISTAL DUPLEX RECEPTACLE MT'D. ON COUNTER TOP (COMPONENT HARDWARE NO. R58-1020)(R71-0721) (TOTOAL OF 4 DCO OUTLETS) REFER L/FS4.0	1
E4	8	CASHIER STATION VERIFY W/ DISTRICT FURNISHED POS UNIT	4EA.	120	1	-	X	-	-	20.0	-	+26"	PROVIDE DUPLEX RECEPTACLE SURFACE MOUNTED ON WALL BEHIND BACK PANEL OF SERVICE COUNTER	
E5	8	CASHIER STATION (DATA) VERIFY W/ DISTRICT FURNISHED POS UNIT	4EA.	-	-	-	-	-	-	-	-	+26"	PROVIDE WALL MT'D DATA PLUG SURFACE MOUNTED ON WALL BEHIND BACK PANEL OF SERVICE COUNTER	
E6	10	ICE MAKER W/BIN	1EA.	120	1	X	-	-	-	12.2	-	+68"	PROVIDE J-BOX FLUSH MOUNTED IN WALL	
E7	11	COUNTER TOP WARMERS	2EA.	120	1	-	X	5-15R	-	12.5	-	+48"	PROVIDE DUPLEX RECEPTACLE UNIT PROVIDED WITH CORD AND PLUG SET (NEMA 5-15P)	2
E8	12	MICROWAVE OVEN	1EA.	120	1	-	X	5-15R	-	13.0	-	+48"	PROVIDE DUPLEX RECEPTACLE UNIT PROVIDED WITH CORD AND PLUG SET (NEMA 5-15P)	2
E9	13	POPCORN MAKER (OWNER FURNISHED)	1EA.	120	1	-	X	5-15R	1470	-	-	+48"	PROVIDE DUPLEX RECEPTACLE UNIT PROVIDED WITH CORD AND PLUG SET (NEMA 5-15P)	

ELECTRICAL KEYNOTES:

1. STAINLESS STEEL FABRICATOR TO PROVIDE FACTORY MOUNTED OUTLETS AS LISTED AND CONDUIT TO ONE POINT OF CONNECTION E.C TO PROVIDE FINAL WIRING AND RECPT.
2. PROVIDE DEDICATED CIRCUIT



WALL BACKING NOTES:

1. - WALL BACKING TO BE 16 GAUGE GALV. STEEL IN LENGTH AND HEIGHT AS SHOWN ON DRAWINGS.
2. - ALL WALL BACKING TO BE IN FURNISHED AND INSTALLED BY CONTRACTOR
3. - FOOD SERVICE EQUIPMENT CONTRACTOR IS TO FURNISH CONTRACTOR WITH DETAILED DRAWINGS SHOWING ALL WALL BACKING LOCATION AND SIZE.
4. - WALL BACKING AS SHOWN IS MINIMUM, (REFER TO WALL BACKING SCHEDULE FS3.0) EXTEND BACKING TO NEXT STUD EACH DIRECTION AS NECESSARY

WALL BACKING DETAIL

SCALE : NONE

2 / FS3.0

WALL BACKING SCHEDULE

	APPLICATION	TYPE	BOTTOM OF BACKING	BACKING HGT.	FASTENERS PER STUD
WB1 / ITEM	HAND SINK	1	+24" AFF	24" HIGH	4
WB2 / ITEM	STORAGE SHELVING	2	+69"AFF	12" HIGH	2
WB3 / ITEM	WALL SHELF	1	+48"AFF	12" HIGH	4

(16 GA. G.I. or C.R.S.) - AFF=ABOVE FINISH FLOOR
REFER TO SHEET 3/FS3.0 FOR WALL BACKING NOTES & DETAIL
REFER TO 2/FS3.0 FOR WALL BACKING LOCATIONS
W.B. - WALL BACKING

TYPE 1 - 4 PER STUD
TYPE 2 - 2 PER STUD

WB# / ITEM — WALL BACKING NO. / EQUIPMENT ITEM NO.
= = = = — WALL BACKING

ELECTRICAL NOTES

1. PROVIDE ALL ROUGH-INS, FINAL CONNECTIONS AND INTER-CONNECTIONS TO THE FOOD SERVICE EQUIPMENT
2. CONNECTIONS SHOWN ARE FOR THE FOOD SERVICE EQUIPMENT ONLY. REFER TO ELECTRICAL DIVISION DRAWINGS FOR CONVENIENCE OUTLETS AND ADDITIONAL REQUIREMENTS.
3. RECEPTACLES SHALL BE MOUNTED HORIZONTALLY.
4. RECEPTACLES, JUNCTION/HANDY BOXES INDICATED AT WALLS SHALL BE CONCEALED IN THE WALL AND STUBBED OUT OF THE WALL AT THE HEIGHT INDICATED EXCEPT E2,E3,E8 AND E9 REFER TO 1/FS5.0.
5. VERTICAL DIMENSIONS ARE GIVEN FROM FINISHED FLOOR TO CENTER LINE OF ROUGH-IN LOCATION.
6. UTILITIES WHEREVER POSSIBLE SHALL BE BROUGHT IN FROM ABOVE,

ELECTRICAL PLAN LEGEND

ABRV.	DESCRIPTION	SYMBOL	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	E1	ELECTRICAL SCHEDULE REFERENCE, REFER TO FS3.0 FOR SCHEDULE
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR	J	JUNCTION BOX
LOC.	LOCATE	▲	DATA OUTLET
K.C.	KITCHEN CONTRACTOR	⊖	DUPLEX CONVENIENCE OUTLET 115V/1Ø UNLESS OTHERWISE NOTED

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REGISTERED LANDSCAPE ARCHITECT
MARK S. BAGINSKI
No. 4089
Signature
EXPIRATION DATE: JULY 2021
STATE OF CALIFORNIA

CONSULTANT

AMD INC. FOODSERVICE DESIGN

LICENSED ARCHITECT
BRIAN B WHITMORE
No. C 30345
Ren.: 9/30/21
STATE OF CALIFORNIA

SHEET TITLE

FOODSERVICE EQUIPMENT ELECTRICAL & BACKING FLOOR PLAN

PROJECT NAME

MESA VERDE HIGH SCHOOL ATHLETIC FACILITY IMPROVEMENTS

PROJECT ADDRESS

7501 CARRIAGE DRIVE
CITRUS HEIGHTS, CA
95621

SUBMITTAL	DATE
50% SUBMITTAL	08/13/2020
DSA SUBMITTAL	10/15/2020
DSA BACKCHECK SUBMITTAL	01/20/2021

NO.	REVISIONS	DATE
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△		
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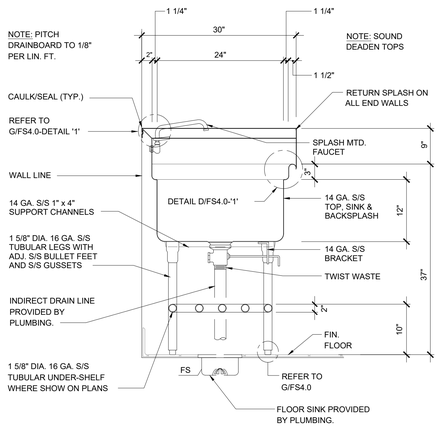
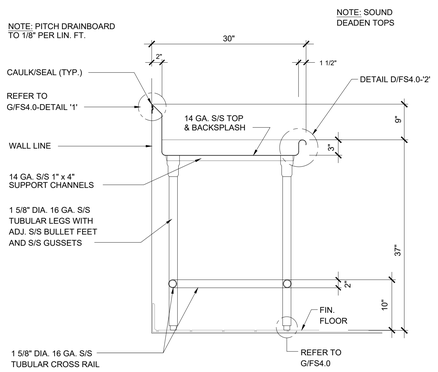
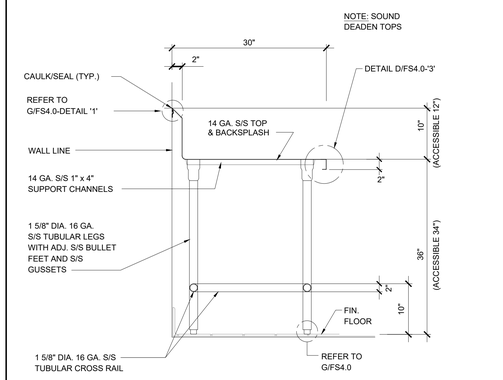
DRAWN BY
CHECKED BY CS/MB
DATE ISSUED 01/20/2021
SCALE
PROJ. NO. 1819500
SHEET NO. FS3.0



A SECTION AT SINK FOR ANCHORAGE NTS



B SECTION AT DISHTABLE NTS



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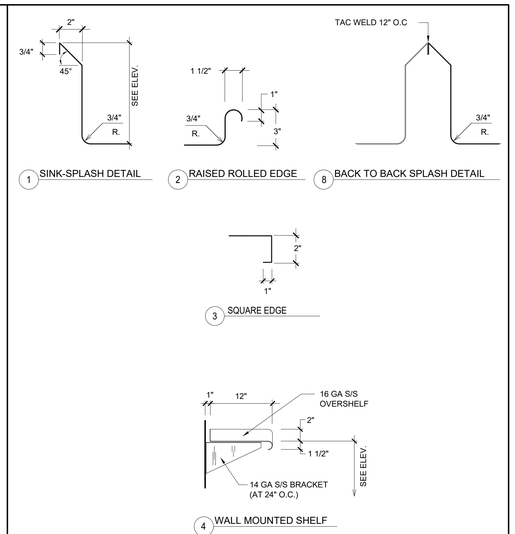
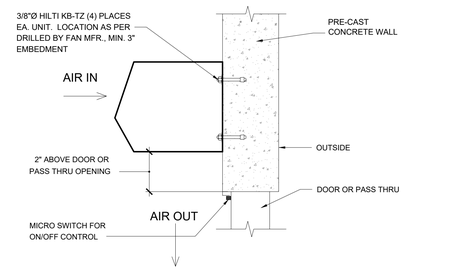


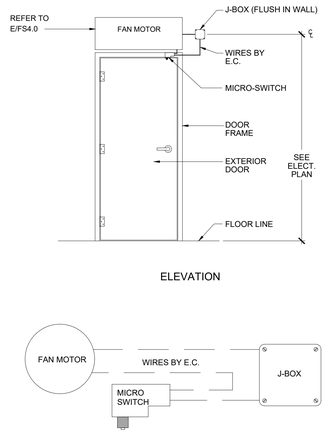
D EDGE/SPLASH/SHELF DETAILS NTS



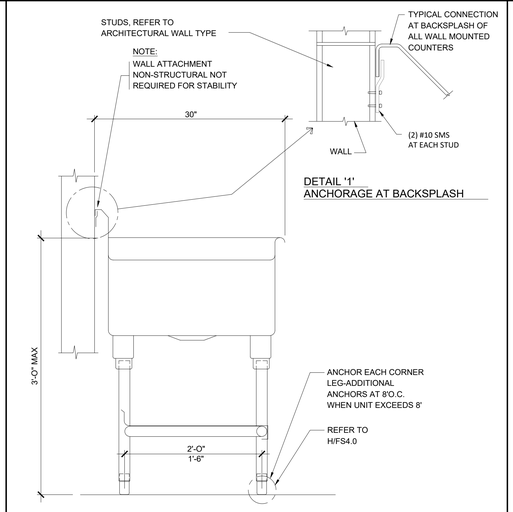
NOTE:

1. REFER TO F/FS4.0 FOR WIRING DIAGRAM.

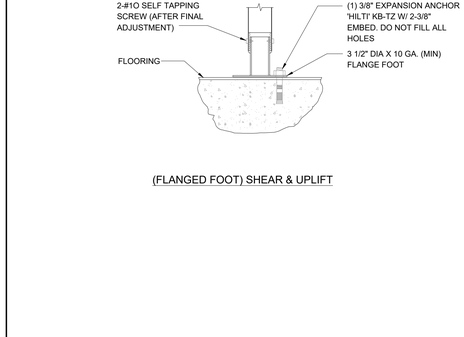
E AIR CURTAIN MOUNTING DETAIL NTS



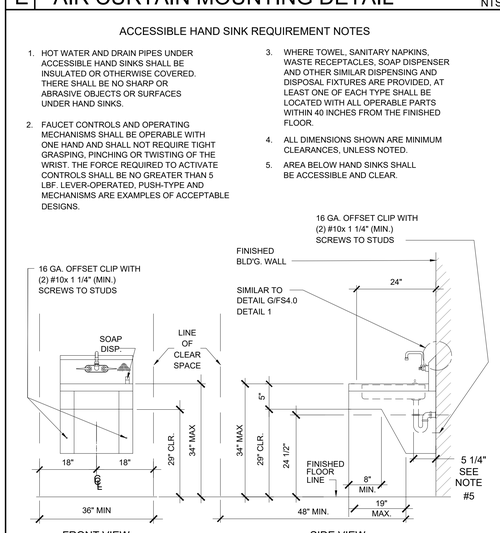
F WALL MTD. AIR CURTAIN MICRO SW. NTS



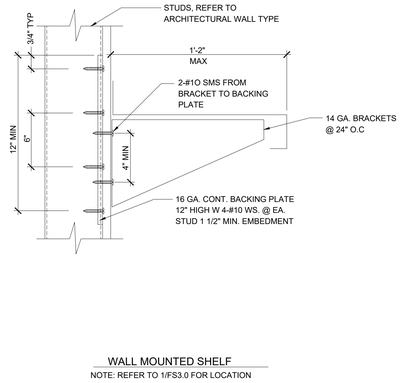
G FLOOR MOUNTED SINK @ WALL NTS



H FOOT ANCHORAGE DETAIL NTS

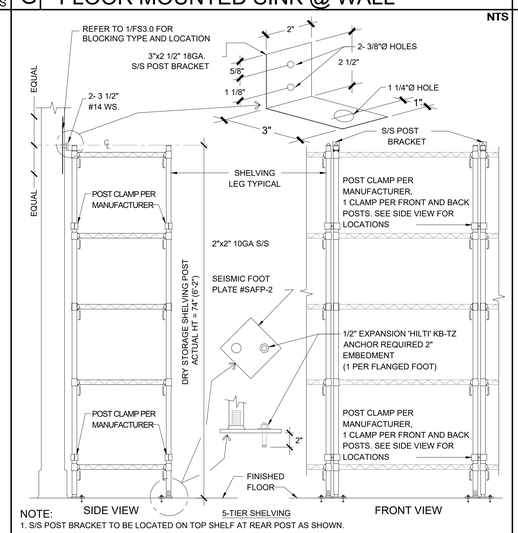


I ACCESSIBLE HAND SINK DETAILS NTS

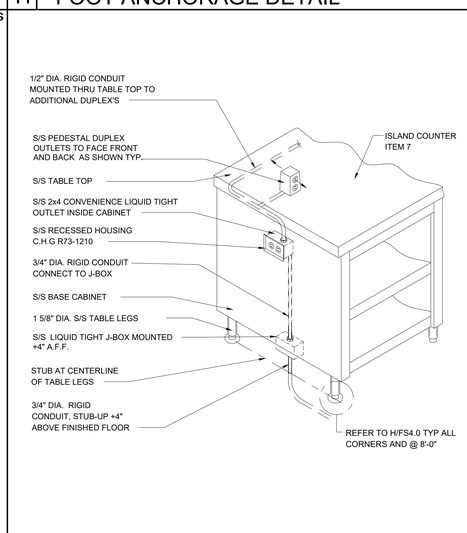


WALL MOUNTED SHELF
NOTE: REFER TO 1/FS3.0 FOR LOCATION

J WALL MOUNTED SHELF NTS



K DRY STORAGE SHELVING ATTACHMENT NTS



L ISLAND WORK COUNTER DETAIL NTS

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PLOT DATE: 01-12-21 PLOTTED BY: ArtDavis

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MARK S. BAGINSKI
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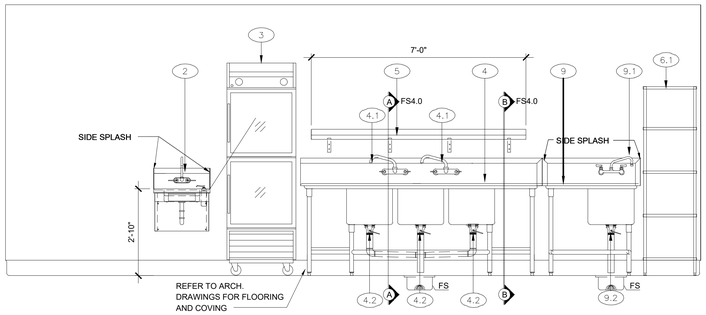
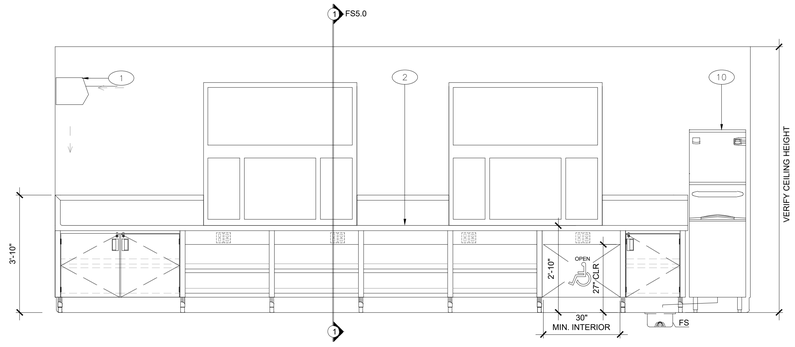


3-COMPARTMENT SINK

SCALE : 1/2" = 1'-0"

A FS5.0

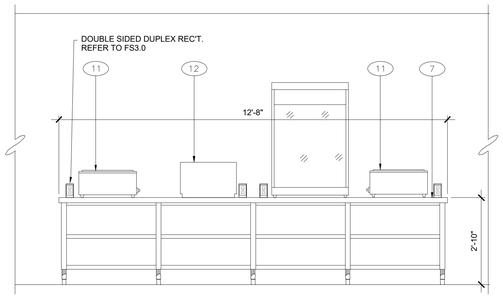


SERVING WINDOW

SCALE : 1/2" = 1'-0"

B FS5.0

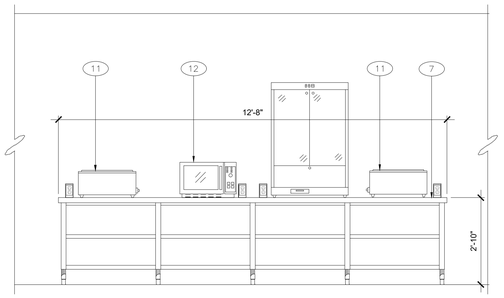
EQUIPMENT SCHEDULE		
ITEM NO	QTY	EQUIPMENT CATEGORY
1	1	AIR CURTAIN, UNHEATED
2	1	HAND SINK, WALL MOUNT
3	1	DUAL TEMP REFRIG/FREEZER
4	1	SINK, SCULLERY, 3 COMPARTMENTS
4.1	2	FAUCET, BACKSPLASH MOUNT
4.2	3	DRAIN, LEVER HANDLE
5	1	WALL MOUNTED OVERSHELF
6	1	STORAGE SHELVING
7	1	ISLAND SERVICE COUNTER
8	1	SERVICE COUNTER
9	1	PREP SINK
9.1	1	FAUCET, BACKSPLASH MOUNT
9.2	1	DRAIN, LEVER HANDLE
10	1	ICE MAKER W/ BIN
11	1	COUNTER TOP WARMER
12	1	MICROWAVE OVEN
13	1	POPCORN MAKER (OWNER FURNISHED)



ISLAND PREPARATION COUNTER

SCALE : 1/2" = 1'-0"

C FS5.0



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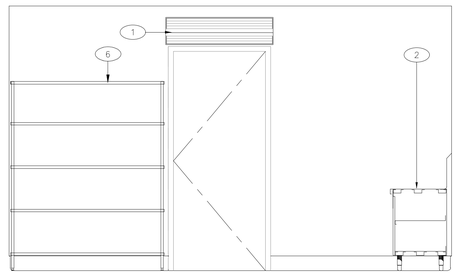
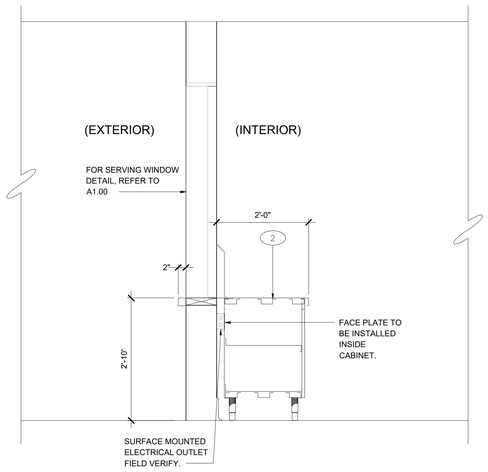


STORAGE SHELVING

SCALE : 1/2" = 1'-0"

E FS5.0



SERVING WINDOW - SECTION

1 FS5.0

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