

K:\drawings\Humboldt State University\1901734 Forbes Gymnasium Emergency Generator\1901734G-0.0.dwg 1/13/2021 4:38 PM Jason Rodriguez

# HUMBOLDT State University

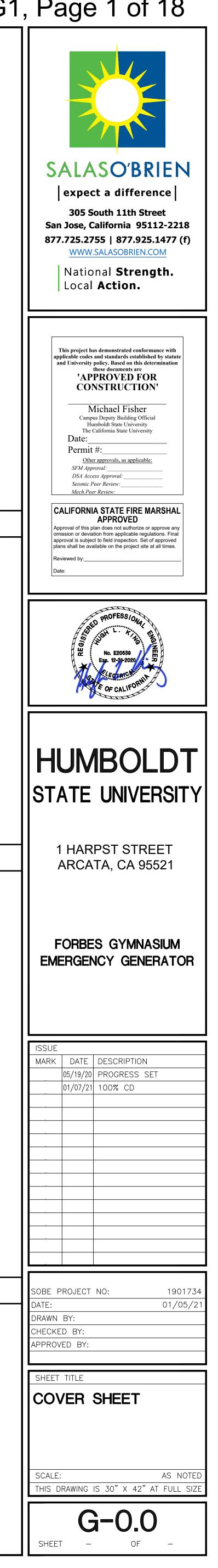
1 HARPST STREET ARCATA, CA 95521

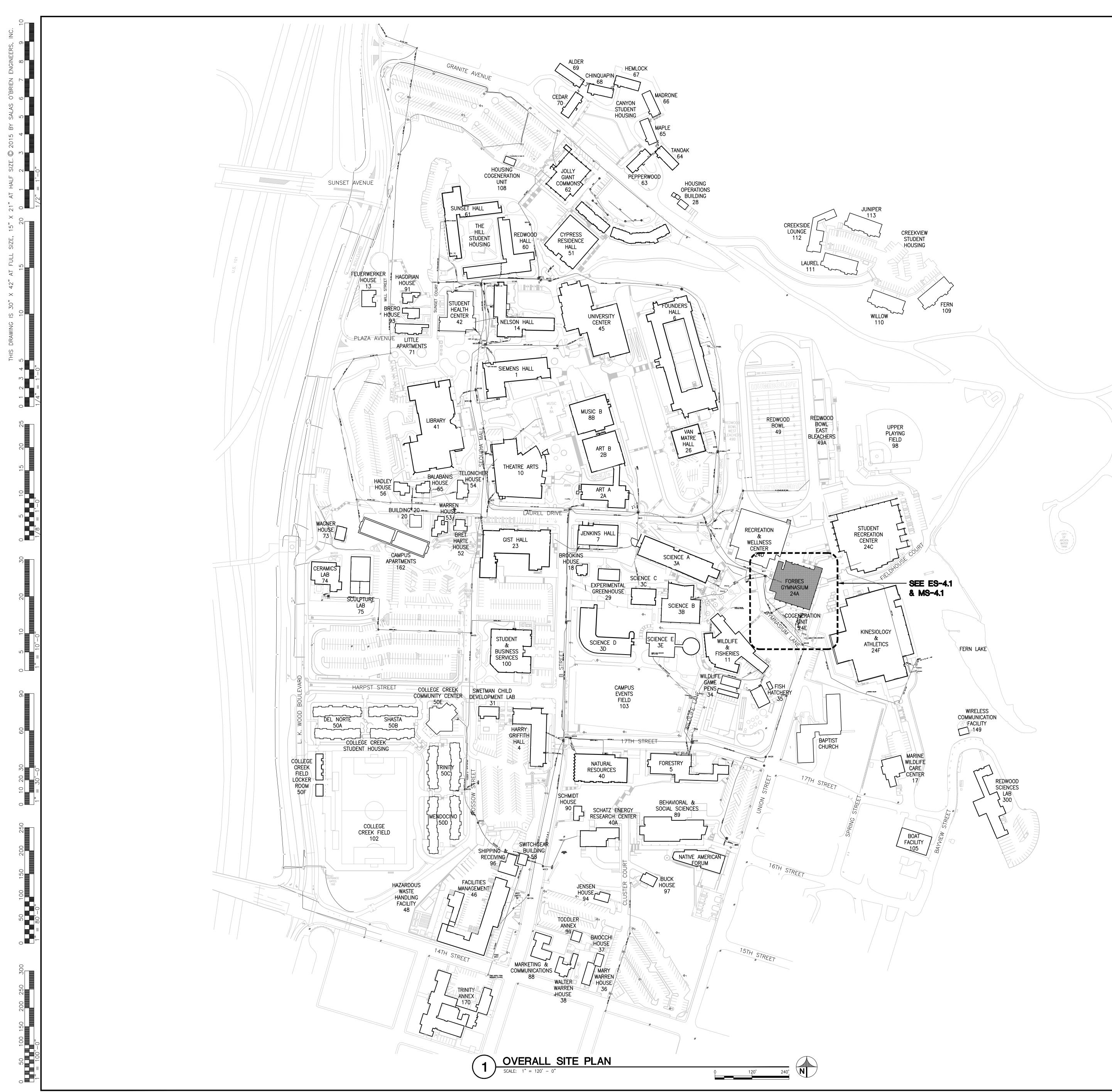
# FORBES GYMNASIUM EMERGENCY GENERATOR

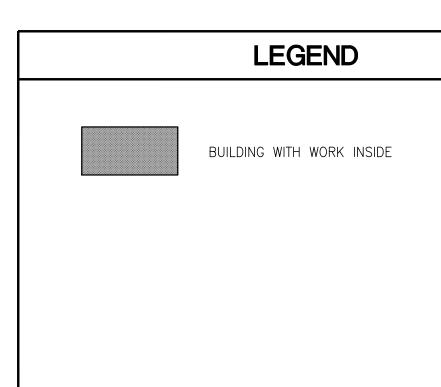
#### APPLICABLE CODES SUMM/ REMOVE EXISTING COGENERATION UNIT UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE DIESEL GENERATOR. LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: 2. DEMOLISH ALL ELECTRIC AND GAS CON 1. CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24): 2019 3. FURNISH AND INSTALL NEW TRANSFORM 2. CALIFORNIA BUILDING CODE (PART 2, TITLE 24): 2018 IBC WITH 2019 CA AMENDMENTS 3. CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24): 2017 NEC WITH 2019 CA AMENDMENTS 4. GENERATOR TO BE: 4. CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24): 2018 UMC WITH 2019 CA AMENDMENTS 4.1. 2MW/2.5MVA 5. CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2018 UPC WITH 2019 CA AMENDMENTS 4.2. 277/480V 4.3. 3-PHASE, 4 WIRE 6. CALIFORNIA ENERGY CODE (PART 6, TITLE 24): 2019 4.4. DIESEL WITH 4000G BELLY TANK 7. CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24): 2019 4.5. OPTIONAL STAND-BY 8. CALIFORNIA FIRE CODE (PART 9, TITLE 24): 2018 IFC WITH 2019 CA AMENDMENTS 4.6. DIESEL PARTICULATE FILTER (DPF). 4.7. INTEGRATED LOAD BANK 9. CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24): (2018 INTERNATIONAL EXISTING BUILDING CODE WITH 2019 CA AMENDMENTS) 10. CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24): 2019 11. CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24): 2019 12. CALIFORNIA CODE OF REGULATIONS PUBLIC SAFETY (TITLE 19), STATE FIRE MARSHAL: CURRENT EDITION 13. NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS: 2019 (CA AMENDED) 14. NFPA 14 INSTALLATION OF STANDPIPE, PRIVATE HYDRANT AND HOSE SYSTEMS: 2019 (CA AMENDED) 15. NFPA 17 DRY CHEMICAL EXTINGUISHING SYSTEM: 2017 EDITION 16. NFPA 17A TO A UL 300 FOR CLASS I HOOD FIRE SUPPRESSION SYSTEM. (WET CHEMICAL EXTINGUISHING SYSTEMS) 2017 17. NFPA 20 INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION: 2019 EDITION Wes 18. NFPA 22 WATER TANKS FOR PRIVATE FIRE PROTECTION: 2018 EDITION EQUIPMEN 19. NFPA 24 INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES: 2019 EDITION (CA AMENDED) 20. NFPA 25 INSPECTION, TESTING, MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS: 2020 EDITION (CA EDITION) M/E/P COMPONENT ANCHORAGE 21. NFPA 72 NATIONAL FIRE ALARM CODE, WITH CA AMENDMENTS: 2019 EDITION (CA AMENDED) ALL MECHANICAL, PLUMBING, AND ELEC 22. NFPA 80 FIRE DOORS AND OTHER OPENING PROTECTIVE: 2019 EDITION PER THE DETAILS ON-THE DSA APPROV 23. NFPA 110 EMERGENCY AND STANDBY POWER SYSTEMS: 2019 EDITION COMPONENTS SHALL BE ANCHORED OR REQUIREMENTS PRESCRIBED IN THE 201 24. NFPA 170 STANDARD FOR FIRE SAFETY AND EMERGENCY SYMBOLS: 2018 EDITION ASCE 7-16 CHAPTERS 13, 26, AND 30 25. NFPA 2001 CLEAN AGENT FIRE EXTINGUISHING SYSTEMS 2018 1. ALL PERMANENT EQUIPMENT AND 26. ICC 300-12 STANDARD ON BLEACHERS, FOLDING AND TELESCOPIC SEATING AND GRANDSTANDS 2. TEMPORARY OR MOVABLE OR MOBI 27. SFM 12-10-1 POWER OPERATED EXIT DOORS HARD WIRED) TO THE BUILDING U 28. SFM 12-10-2 SINGLE POINT LATCHING OR LOCKING DEVICES "PERMANENTLY ATTACHED" SHALL 29. SFM 12-10-3 EMERGENCY EXIT & PANIC HARDWARE FOR 110/220 VOLT RECEPTACLES 30. ASTM STANDARD CHANGES (EXAMPLE: ASTM E648-04 STANDARD TEST METHOD FOR CRITICAL 3. TEMPORARY, MOVABLE OR MOBILE RADIANT FLUX OF FLOOR) HAS A CENTER OF MASS LOCATED 31. UL 38 MANUAL OPERATED SIGNAL BOXES, WITH REVISIONS, LATEST EDITION AS ROOF LEVEL THAT DIRECTLY SUPF AMENDED A MANNER APPROVED BY DSA. 32. UL 268 SMOKE DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS THE FOLLOWING MECHANICAL AND ELECT 33. UL 268A SMOKE DETECTORS DUCT APPLICATIONS THE STRUCTURE BUT NEED NOT DEMON NOTED ABOVE. THESE COMPONENTS SHA 34. UL 300 FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF COMPONENT AND ASSOCIATED DUCTWORK RESTAURANT COOKING AREAS ALLOW MOVEMENT IN BOTH TRANSVERSE 35. UL 305 PANIC HARDWARE A. COMPONENTS WEIGHING LESS THAN 36. UL 464 AUDIBLE SIGNAL APPLIANCES LOCATED 4 FEET OR LESS ABOVE 37. UL 521 HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS SUPPORT THE COMPONENT. 38. UL 864 CONTROL UNITS FOR FIRE PROTECTIVE SIGNALING SYSTEMS B. COMPONENTS WEIGHING LESS THAN AMERICANS WITH DISABILITIES ACT (A.D.A.) FEDERAL ACCESSIBILITY STANDARDS SYSTEMS, LESS THAN 5 POUNDS FLOOR OR HUNG FROM A WALL. ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AISC MANUAL OF STEEL CONSTRUCTION THE ANCHORAGE OF ALL MECHANICAL, ASCE/SEJ 7-16, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES SUBJECT TO THE APPROVAL OF THE D NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION OR STRUCTURAL ENGINEER DELEGATED INSPECTOR WILL VERIFY THAT ALL COMF ACCORDANCE WITH ABOVE REQUIREMENT PIPING, DUCTWORK, AND ELECTE PIPING, DUCTWORK, AND ELECTRICAL DI THE FORCES AND DISPLACEMENTS PRES ASCE 7-16 SECTION 13.6.5, 13.6.6, 1617A.1.25 AND 1617A.1.26. THE METHOD OF SHOWING BRACING AND DISTRIBUTION SYSTEM ARE AS NOTED E A PREAPPROVED INSTALLATION GUIDE ( THE BRACING SYSTEM INSTALLATION GU PRIOR TO THE START OF AND DURING SYSTEMS. THE STRUCTURAL ENGINEER STRUCTURE TO SUPPORT THE HANGER MECHANICAL PIPING (MP), MECHANICAL DISTRIBUTION SYSTEMS (E): PRO. PRE-

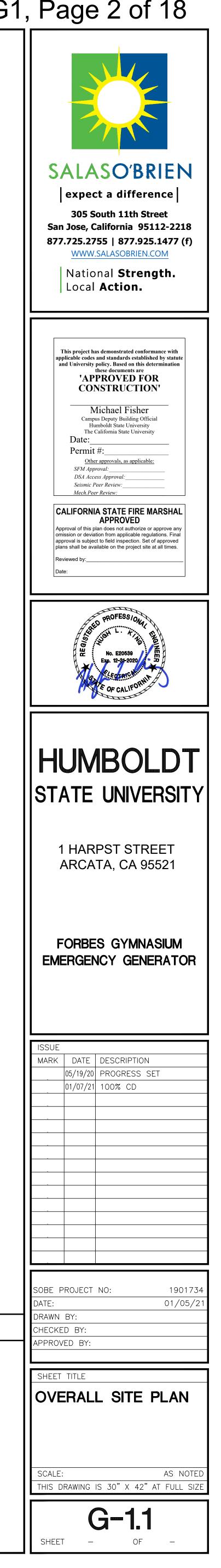
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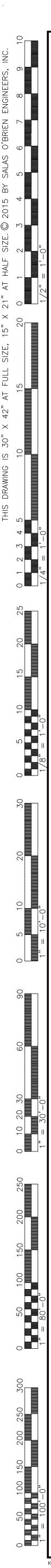
MARY OF WORK		DRAWING INDEX
IIT NEAR FORBES, HSU BLDG #24A , AND REPLACE WITH	<u>SHEET NO.</u>	DESCRIPTION
CONNECTION.	G-0.0 G-1.1	COVER SHEET OVERALL SITE PLAN
ORMER AND SWITCHBOARD FOR NEW GENERATOR.	E-0.1 E-0.2 ES-4.1 E-1.1	SYMBOLS & ABBREVIATIONS GENERAL NOTES PARTIAL SITE PLAN FIRST FLOOR PLAN
< (+24HRS @ FULL LOAD) F).	E-4.1 E-5.1 E-5.2 E-6.1 ED-7.1 E-7.1 E-7.2	COGEN UNIT FLOOR PLAN – DEMO AND NEW ELECTRICAL DETAILS ELECTRICAL DETAILS FEEDER AND EQUIPMENT SCHEDULES, AND SIGNAL LINE DIAGRAM CAMPUS SINGLE LINE DIAGRAM – DEMO CAMPUS SINGLE LINE DIAGRAM – NEW PARTIAL FORBES SINGLE LINE DIAGRAM
	MP-0.1 MS-4.1 MP-5.1	MECHANICAL & PLUMBING GENERAL NOTES, SYMBOLS & ABBREVIATIONS MECHANICAL PARTIAL SITE PLAN MECHANICAL & PLUMBING DETAILS
	S-1.0 S-1.1	STRUCTURAL SPECIFICATIONS AND FOUNDATION PLAN STRUCTURAL DETAILS
ENT ANCHORAGE		BUILDING INFORMATION
<u>GE NOTE:</u>	FO	RBES BUILDING
ECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED ROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING OR BRACED TO MEET THE FORCE AND DISPLACEMENT 2019 CBC SECTION 1617A.1.18 THROUGH 1617A.1.26 AND 30: ID COMPONENTS.	OCC CON YEA NUM	SU BLDG #24ACUPANCY CLASSIFICATION & USE:B, GENERAL USENSTRUCTION TYPE:TYPE IIIAR CONSTRUCTED, APPROX:1957MBER OF STORIES:2LDING HEIGHT:± 30 FT
UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. LL INCLUDE ALL ELECTRICAL CONNECTION EXCEPT PLUGS .ES HAVING A FLEXIBLE CABLE.		
ILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR TED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR IPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN		
ECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO IONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE ORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST RSE AND LONGITUDINAL DIRECTIONS:		
HAN 400 POUNDS AND HAVING A CENTER OF MASS WE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY		
HAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED DS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR 		
., ELECTRICAL AND PLUMBING COMPONENTS SHALL BE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE D RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT OMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ENTS.		
CTRICAL DISTRIBUTION SYSTEM BRACING NOTE:		
DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH RESCRIBED IN ASCE 7–16 SECTION 13.3 AS DEFINED IN 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24,		PROJECT DATA
AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON	PROJECT ADDRE	ESS: 1 HARPST STREEET ARCATA, CA 95521
(E.G., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE G THE HANGING AND BRACING OF THE DISTRIBUTION R OF RECORD SHALL VERIFY THE ADEQUACY OF THE R AND BRACE LOADS.	PROJECT OWNER	
AL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL		PROJECT MANAGER: MICHAEL FISHER DIRECTOR PLANNING, DESIGN & CONSTRUCTION FACILITIES MANAGEMENT /PLANNING & DESIGN
PTION 1: DETAIL ON THE APPROVED DRAWINGS WITH ROJECT SPECIFIC NOTES AND DETAILS. PTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD RE—APPROVAL (OPM #) #		PHONE: 707-826-4444
	<u>MEP_ENGINEER:</u>	SALAS O'BRIEN       STRUCTURAL ENGINEER:       MESITI-MILLER ENGR.         305 S. 11TH STREET       224 WALNUT AVE, SUITE B         SAN JOSE, CA 95112       SANTA CRUZ, CA 95060         PHONE: 408-282-1500       PHONE: 831-426-3186         FAX: 408-297-2995       FAX: 831-426-6607











	FUSE		ELECTRICAL PANEL BOARD
	TRANSFORMER, DRY TYPE	PBX WP XR	PULLBOX
	TRANSFORMER, OIL FILLED		RMS & STROBE DOOR CONTACT (INTRUSION
Ţ	GROUND CONNECTION		JUNCTION BOX ONLY.
	DRAWOUT OR PLUG-IN CONNECTION	H M HCL	JUNCTION BOX ONLY.
	CIRCUIT BREAKER		CARD READER LOCATION IN
LSIG	MOLDED CASE BREAKER W/ SOLID STATE TRIP UNIT (LONG, SHORT, INSTANTANEOUS, GROUND)		PROVIDE CONDUIT, WIRING, SECURITY SOUNDER (INTRUS
-~~~~	LOAD INTERRUPTER SWITCH/FUSE (CURRENT LIMITING FUSE)		JUNCTION BOX ONLY. KEYPAD (INTRUSION DETECT
$\textcircled{M} \longrightarrow$	PG&E METER W/ CT'S	K K	BOX ONLY. INTERCOM (ACCESS CONTRC
$\mathbb{M} \longrightarrow$	CUSTOMER OWNED METER W/ CT'S	S	EQUIPMENT NECESSARY. SLIDING GATE SENSOR
ŧ	CURRENT TRANSFORMER, RATIO & QTY AS SHOWN	(05)	OCCUPANCY SENSOR
	25KV, 600A, JUNCTION ELBOW, DEAD BREAK		CAMERA LOCATION (SURVEIL ALL EQUIPMENT NECESSARY
<b>●</b>	CABLE SPLICE	∲ ̂\$	HALF-SWITCHED CONTROLLE COMBINATION
·····	6-WAY AND 4-WAY JUNCTION	, ₽ FI	WALL-MOUNTED RECEPTACL COUNTER, TYP, +44"AFF
°	DISCONNECT SWITCH		DUPLEX GFI RECEPTACLE
	CONDUIT OR CABLE AS NOTED UNDERGROUND ELECTRICAL (OR OTHER UTILITY)		DEDICATED RECEPTACLE
	NEW (BOLD) DEVICE, CONDUIT, WIRE, ETC.	₩₽₽₽₽GFI	DUPLEX GFI RECEPTACLE-W 20A, 125V, 3WG, NEMA 5-
—— E ——	<e> ELECTRICAL</e>	\$ <sup>a</sup>	SINGLE POLE SWITCH, +44 LAMPS OR FAN CONTROLLE
— 21KV— — T —	UNDERGROUND 21KV CONDUIT UNDERGROUND TELECOM CONDUIT	\$ <sup>3</sup>	SWITCH - THREE WAY
LV	CONTROLS OR LOW VOLTAGE CONDUIT	\$ <sup>D</sup>	SWITCH – DEDICATED
OHE	OVERHEAD ELECTRICAL CABLE – MEDIUM VOLTAGE BRANCH CIRCUIT HOME RUN TO PANEL. CONCEALED IN CEILING SPACE	\$ <sup>T</sup>	SWITCH – TIMER OPERATED SWITCH – LOW VOLTAGE DA
-	OR WHERE POSSIBLE.	\$ <sup>LV</sup>	GREENGATE, OR APPROVED
	SURFACE RACEWAY.	\$ <sup>HP</sup> HSPK <sub>2</sub>	SWITCH – HORSE POWER F SPEAKER AND MICROPHONE
, #	REFERENCE SHEET NOTE. DETAIL TAG. REFER TO DETAIL 1	$\langle 150NG \rangle$	WIRING, AND ALL EQUIPMEN FEEDER CALLOUT
( <u>1</u> [4.01)	ON SHEET E4.01.	Ø	
<del> </del>	TO BE DEMOLISHED		ULTILITY POLE
A, The second se	TRANSFORMER		
PM	POWER MONITORING SYSTEM WITH CONNECTION		
	FUSED DISCONNECT, HEAVY DUTY		
	DISCONNECT, HEAVY DUTY		
	COMBINATION MOTOR STARTER/DISCONNECT WITH HOA & INDICATOR LIGHTS		
M	MOTOR		
$\sim\sim\sim$	FLEX CONNECTION		
	CONTACT/STARTER		
G	GROUNDING WELL, CHRISTY G5T WITH METALLIC INSPECTION COVER, UON (WITH ROD ELECTRODE: 3/4"x10' COPPER CLAD STEEL UON)		
U	JUNCTION BOX		
PC) T	PHOTOCELL THERMOSTAT		
	CONDUIT OPENING		
$\bigotimes$	EMPTY CONDUIT		
P	EQUIPMENT TAG		
<u>17</u>	DOINT OF CONNECTION ZNS TO ZES		
₽ ₽	POINT OF CONNECTION <n> TO <e></e></n>		
VFD	VARIABLE FREQUENCY DRIVE, FURNISH BY MECHANICAL CONTRACTOR INSTALLED & CONNECTED BY ELECTRICAL CONTRACTOR		
(K) (E)	KIRK KEY INTERLOCK		
	GROUNDING ROD ELECTRODE		
@ ⊕ Φ	(3/4" x 10' COPPER CLAD UON) GROUND, CEILING, WALL-MOUNTED DUPLEX RECEPTACLE 20A, 125V, 3WG, NEMA 5–20R		
₩ ₩ ₩ ₽ <sub>USB</sub>	DUPLEX RECEPTACLE WITH BUILT-IN USB PORT		
$\Phi_{HP}$	HORSEPOWER		
	NEW TRENCH		
50/51N	INSTANTANEOUS/ OVERCURRENT/ TIME OVER CURRENT RELAY(S) AND CURRENT TRANSFORMERS		
<b>⊤</b> ⊤ ↑	COPPER GROUND BAR		
52 ↓	MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER		
* -0-	ELECTRICAL POLE		
$\bigtriangledown$	CAT6 COMMUNICATON OUTLET – SINGLE GANG BACKBOX MOUNTED AT PANEL HEIGHT		
$\checkmark$	VOICE/DATA		
$\bigcirc$	(2) DATA WIRELESS ACCESS POINT (CEILING MOUNTED)		
ŒΕ	(2) DATA WIRELESS ACCESS POINT (EXTERIOR WALL MOUNTED)		
WW	VOICE WALL MOUNTED PHONE		

SYMBOLS

# IFB #PW20-1, Exhibit G1, Page 3 of 18

ION DETECTION). PROVIDE CONDUIT PATH AND RUSION DETECTION). PROVIDE CONDUIT PATH AND SS COMMUNICATION. PROVIDE WIRED POWER. I INTERGRAL W/ LOCKSET (ACCESS CONTROL). NG, AND ALL EQUIPMENT NECESSARY. IRUSION DETECTION). PROVIDE CONDUIT PATH AND FECTION). PROVIDE CONDUIT PATH AND JUNCTION ITROL). PROVIDE CONDUIT, WIRING, AND ALL

VEILLANCE SYSTEM). PROVIDE CONDUIT, WIRING, AND ARY. DLLED RECEPTACLE. SWITCH PLATE TO BE PROVIDED WITH GFI ACLE-ABOVE

E-WEATHERPROOF 5-20R

-44" AFF. (LOWER CASE LETTER INDICATES CIRCUIT, LLED BY SWITCH)

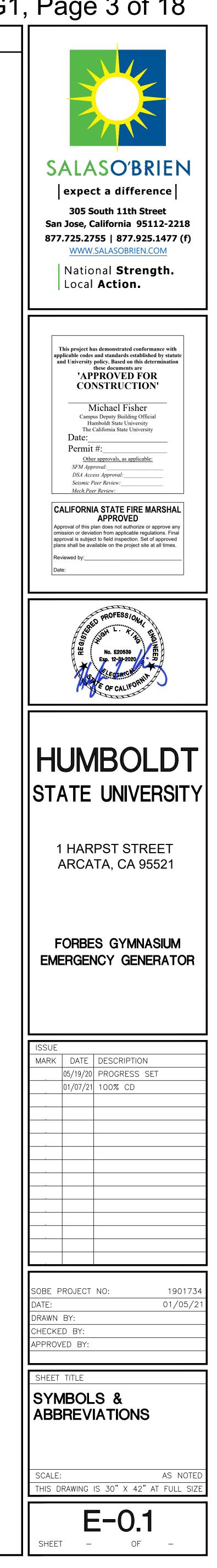
TED E DATALINE # INDICATES NUMBER SWITCHES. GDS, ED EQUAL ER RATED

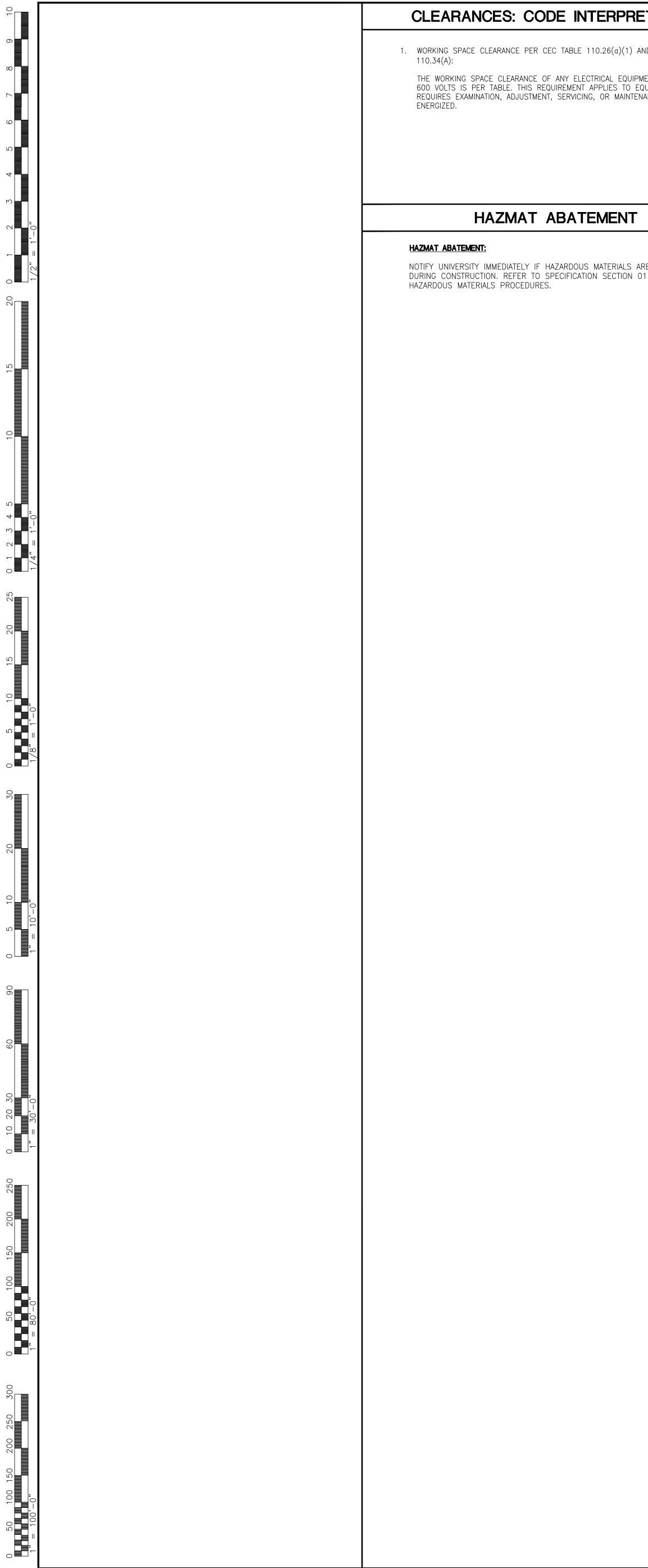
ONE AUDIO MONITORING SYSTEM. PROVIDE CONDUIT, MENT NECESSARY.

1/C 3/C	(
& @	(   
AFF A OR AMF	) }
ACM AIC	ŀ
AL, ALUM APPROX	ŀ
ATC AUX	ŀ
AWG BAS BC	E
BC BKR BLDG	E
C C CA	E (
CB CHG	(
CKT CL	
CLG CLR	(
CMS C.O.	(
CP CPT	(
CT CTRL	(
D DP DN	] [ [
EA EASA	E
ECB EF	E
EHH ELEC	E
EM EMH	E
EMS EMT	E
ENC. EQUIP	E
<e> <err></err></e>	E
EST EX	E
<f> FA</f>	F
FDR FLA	F
FLC FT, ' GND	F F (
GFI GS	( ( (
HOA HP	ł
HT HV	ł
HZ ", IN	ł
INS JB, J Komil	
Kcmil KV KVA	ł
KW	ł
LCM LF	l
LTG LTS	l
LV MAX	ا ۲
MCB MCP	١
MEZZ CMH	(
MIN MFG MSB	۱ ۱ ۱
MV <b><n></n></b>	١
NEC NEMA	• 1 1
NIC	' 1 1
N.T.S. NC	1 1
NO OC	1
OHE P	( F
PB PF	F
PH OR Ø PNL	F
PPMH PT	F
PV PWR	F
<r> <rel></rel></r>	F
<rr> <rrn></rrn></rr>	F
REC REF	F
R/S RM RMC	F F F
RSC	, ł ł
S SA	
S.A.D. S.E.D.	
SEL SF	
SH, SHT SPEC	
SQ S.S.D.	SWG
STD SVC	e E
SW SWBD	
SWGR OR SSW	SWG S
TEL TR TVD	T T
TYP TX, XFMR	- - -
UG UON V	ר נ ע
V VA VFD	
VFD W WP	

ABBREVIATIONS ONE CONDUCTOR THREE CONDUCTOR AND ΔT ABOVE FINISHED FLOOR AMPERES ASBESTOS CONTAINING MATERIAL AMPERE INTERRUPTING CAPACITY ALUMINUM APPROXIMATE AIR TERMINAL CABINET AUXILIARY AMERICAN WIRE GAGE BUILDING AUTOMATION SYSTEM BARE COPPER BREAKER BUILDING CONDUIT CABLE CIRCUIT BREAKER CHARGING STATION CIRCUIT CURRENT LIMITING CEILING CLEARANCE COMBINATION MOTOR STARTER CONDUIT ONLY W/PULLROPE CENTRAL PLANT CONTROL POWER TRANSFORMER CURRENT TRANSFORMER CONTROL DEDICATED DISTRIBUTION PANEL DOWN EACH ELECTRICAL ASSOCIATION SERVICE OF AMERICA ENCLOSED CIRCUT BREAKER EXHAUST FAN ELECTRIC HANDHOLE ELECTRICAL EMERGENCY; ON EMERGENCY POWER SUPPLY/PANEL ELECTRIC MANHOLE ENERGY MANAGEMENT SYSTEM ELECTRICAL METALLIC TUBING ENCLOSED EQUIPMENT EXISTING EXISTING TO REMAIN AND RECONNECTED ESTIMATED EXAMPLE FUTURE FORCE AIR FEEDER FULL LOAD AMPS FULL LOAD CURRENT FEET GROUND GROUND FAULT CIRCUIT-INTERRUPTER GROUND SENSOR CURRENT TRANSFORMER HAND-OFF-AUTO HORSEPOWER HEIGHT HIGH VOLTAGE HERTZ INCHES INSULATION JUNCTION BOX THOUSAND CIRCULAR MILS KILOVOLT KILOVOLT AMPERE KILOWATT LENGTH LOCAL CONTROL MODULE LINEAR FEET LIGHTING LIGHTS LOW VOLTAGE MAXIMUM MAIN CIRCUIT BREAKER MOTOR CIRCUIT PROTECTOR MEZZANINE COMMUNICATION MANHOLE MINIMUM MANUFACTURERS MAIN SWITCHBOARD MEDIUM VOLTAGE NEW (BOLD) NATIONAL ELECTRIC CODE NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION NOT IN CONTRACT NUMBER NOT TO SCALE NORMALLY CLOSED NORMALLY OPEN ON CENTER OVERHEAD ELECTRIC POWER PULLBOX POWER FACTOR PHASE PANEL PRIMARY POWER MANHOLE/ PULLBOX OR VAULT POTENTIAL TRANSFORMER PHOTOVOLTAIC POWER REMOVE RELOCATED REMOVE & RELOCATE REMOVE & REPLACE WITH NEW RECEPTACLE REFERENCE REMOVE AND SALVAGE OFF SITE ROOM RIGID METALLIC CONDUIT RIGID STEEL CONDUIT RIGID GALVANIZED STEEL SIGNAL SURGE ARRESTER SEE ARCHITECTURAL DRAWINGS SEE ELECTRICAL DRAWINGS SELECTOR SQUARE FEET SHEET SPECIFICATIONS SQUARE SEE STRUCTURAL DRAWINGS STANDARD ELECTRIC SERVICE SWITCH SWITCHBOARD SWITCHGEAR MV SELECTOR SWITCH TELEPHONE TO REMAIN TYPICAL TRANSFORMER UNDERGROUND UNLESS OTHERWISE NOTED VOLT VOLT-AMPERE VARIABLE FREQUENCY DRIVE WATT

WEATHERPROOF





	DEMOLITION NOTES	
ID TABLE	1. REMOVE EXISTING EQUIPMENT (NOT INCLUDING FIRE ALARM EQUIPMENT OR FIRE ALARM CONDUIT) IN CONFLICT WITH NEW CONDITIONS. REMOVE ALL WIRE NOT IN SERVICE AND FROM ABANDONED RACEWAYS. PROTECT EXISTING CIRCUITING PASSING THROUGH DEMOLITION AREAS.	<ol> <li>CONTRACTOR IS RESPONSIBLE TO OBTAIN A COMP ADDENDA, DRAWINGS, AND SPECIFICATIONS. PRIOR SHALL EXAMINE ARCHITECTURAL, STRUCTURAL AND SPECIFICATIONS AND SHALL HAVE HAD VISITED TH</li> </ol>
ENT OVER UIPMENT THAT ANCE WHILE	EXTEND AND/OR RELOCATE AS NECESSARY. 2. ALL ABANDONED EQUIPMENTS INCLUDING LIGHT, RECEPTACLES, DATA, FIRE ALARM, ETC., SHALL BE COVERED WITH BLANK METAL PLATES AND PAINTED TO MATCH THE ADJACENT FINISH OF SURROUNDING WALLS OR CEILING TO THE SATISFACTION OF THE UNIVERSITY.	FAMILIAR WITH THE EXISTING CONDITIONS UNDER N WHICH WILL IN ANY WAY AFFECT THE WORK UNDE ALLOWANCE WILL BE MADE IN THIS CONNECTION I ERROR OR NEGLIGENCE ON HIS/HER PART. DETE
	3. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO DISCONNECT AND REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AFFECTED BY THE PROJECT. THIS INCLUDES REROUTING OR THE EXTENSION OF EXISTING CONDUIT AND FEEDER WHERE NECESSARY TO MAINTAIN OPERATIONAL OF ANY EXISTING EQUIPMENT.	THROUGHOUT THE PROJECT, INCLUDING TEMPORAR FOR THE DURATION OF THE PROJECT. 2. ALL TEMPORARY CONNECTIONS SHALL BE CONSIDE EXTRA CHARGES WILL BE ALLOWED. THIS SHALL
	4. CIRCUIT NUMBERS AND CONDUIT HOMERUNS SHOWN ON THESE DRAWINGS WERE TAKEN FROM EXISTING RECORD DRAWINGS. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CIRCUITING AND CONDUIT HOMERUNS. ADJUST CIRCUIT NUMBERS ACCORDING TO THE ACTUAL CONDITIONS.	EQUIPMENT NECESSARY TO MEET THE REQUIREMEN 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TH AND SHALL PROVIDE INSURANCE COVERAGE AS NE PROPERTY DAMAGE, TO FULLY PROTECT THE UNIVE
	5. WHERE EXISTING CONDUIT IS TO BE ABANDONED OR DEMOLISHED, THE CONDUIT SHALL BE REMOVED IF IT IS EXPOSED, IN A CRAWL SPACE OR IN AN ACCESSIBLE CEILING. ABANDONED OR DEMOLISHED CONDUIT FEEDS UP THROUGH THE FLOOR SHALL BE CUT OFF	RESULTING FROM THIS WORK. 4. THE CONTRACTOR SHALL PROVIDE TO THE UNIVER ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE MILESTONES WITH COMPLETION DATES.
RE FOUND 1 35 10	AND PLUGGED FLUSH WITH THE FLOOR. 6. ALL ELECTRICAL EQUIPMENT INCLUDING LIGHTS, RECEPTACLES, DATA, THAT ARE TO BE REMOVED, SHALL BE REMOVED COMPLETELY, INCLUDING CONDUIT AND WIRING BACK TO THE LAST DEVICE REMAINING IN SERVICE, OR SOURCE.	5. THE CONTRACTOR SHALL MAINTAIN RECORD DRAWI MODIFICATIONS TO ELECTRICAL SYSTEMS. THE CON THE PROJECT, PROVIDE A SET OF REPRODUCIBLE AND SPECIFICATIONS TO BE REVIEWED FOR APPRO
	<ol> <li>EXISTING CIRCUITS WHICH ARE REMOVED AND NOT REUSED SHALL BE IDENTIFIED ON THE PANEL SCHEDULE AS "SPARE".</li> </ol>	<ul> <li>6. THESE DRAWINGS DO NOT REPRESENT THE EXACT ON SITE. CONTRACTOR SHALL TAKE STANDARD PR</li> </ul>
	8. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE UNIVERSITY PRIOR TO REMOVAL OF EXISTING ELECTRICAL EQUIPMENT AND TURN OVER REMOVED EQUIPMENT THAT THE UNIVERSITY REQUESTS IN AN "AS-FOUND" CONDITION.	FACILITIES. 7. EXISTING ELECTRICAL WIRING WHICH WILL NOT BE DISTURBED DUE TO CONSTRUCTION CHANGES REQ
	9. ALL DEMOLITION WORK SHOWN, IF ANY, WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. NO REPRESENTATION HAS BEEN MADE THAT ALL ITEMS THAT MAY REQUIRE DEMOLITION HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CAREFULLY EXAMINE THE SITE AND THE CONTRACT DOCUMENTS AND TO PERFORM ALL DEMOLITION AND RECONSTRUCTION WHICH MAY BE REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK.	RESTORED TO OPERATING CONDITION, AS REQUIRE SHOWN AND/OR DIRECTED, OUTLETS AND CONDUI CASES IT MAY BE NECESSARY TO EXTEND CONDU JUNCTION BOXES AND SPLICE IN NEW WIRING OR 8. CERTAIN REMODELING OF ELECTRICAL FACILITIES W BUILDING. EXISTING CONDUIT RUNS ARE GENERAL
	10. WHEN CALLED FOR, OR SCOPE OF WORK REQUIRES ELECTRICAL EQUIPMENT TO BE REMOVED, ALL CONDUIT, WIRE, BOXES, HANGERS SHALL BE REMOVED COMPLETELY. ALL OPENINGS SHALL BE REPAIRED AND FIRE CAULKED PER APPLICABLE LISTED FIRE RATED ASSEMBLY. SEAL AND PAINT TO MATCH THE ADJACENT FINISH.	ATTEMPT HAS BEEN MADE TO SHOW SOME EXISTIN BEEN TAKEN FROM EXISTING RECORD DRAWINGS A DRAWINGS SHOWING LOCATION OF EXISTING EQUIP APPROXIMATE ONLY (CONTRACTOR TO FIELD VERIF 9. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL
	ELECTRICAL SERVICE SHUTDOWN NOTES	LABELED BY A NATIONALLY RECOGNIZED TESTING I PER LISTING OR LABELING (IE. MAXIMUM FUSE SIZ WHERE EXISTING ELEMENTS, NOT OTHERWISE SPEC ANY NEWLY CONNECTED ELEMENTS BEING OUT OF LABELING, THEN THOSE OFFENDING EXISTING ELEM
	<ol> <li>INTERRUPTION OF THE ELECTRICAL SERVICE WILL AFFECT ALL BUILDINGS. CONTRACTOR SHALL COORDINATE SHUTDOWN AND RECONNECTION WITH THE UNIVERSITY PRIOR TO BEGINNING WORK. ALL ELECTRICAL CONNECTIONS REQUIRING AN OUTAGE SHALL BE MADE DURING AN APPROVED TIME PERIOD, AT THE CONVENIENCE OF THE UNIVERSITY. REFER TO SPECIAL CONDITIONS. NOTIFY UNIVERSITY AT LEAST 10 DAYS IN ADVANCE OF ANY PROPOSED POWER SHUTDOWN.</li> </ol>	SATISFY THE INSTALLATION REQUIREMENTS. 10. ALL ELECTRICAL EQUIPMENT AND INSTALLATION SH REQUIREMENTS: a. AMERICAN STANDARD ASSOCIATION (ASA) b. AMERICAN NATIONAL STANDARD INSTITUTE (A
	<ol> <li>CONDUCTORS FROM GENERATOR TO POINT OF CONNECTION SHALL BE RATED FOR OUTDOOR USE, 90°C TEMPERATURE RATING MINIMUM.</li> <li>VERIFY ALL POINTS OF TEMPORARY GENERATOR CONNECTION &amp; MAKE ALLOWANCES FOR</li> </ol>	<ul> <li>c. AMERICAN SOCIETY OF TESTING MATERIALS (</li> <li>d. CALIFORNIA CODE OF REGULATIONS TITLE 24</li> <li>e. INSTITUTE OF ELECTRICAL AND ELECTRONIC</li> <li>f. INSULATED POWER CABLE ENGINEERS ASSOC</li> </ul>
	<ol> <li>VERIFT ALL POINTS OF TEMPORART GENERATOR CONNECTION &amp; MARE ALLOWANCES FOR TEMPORARY MODIFICATIONS.</li> <li>PHASE ROTATION MAY BE REVERSED AT SOME LOCATIONS, VERIFY PHASE ROTATION AT POINT OF CONNECTION PRIOR TO SHUT DOWN OF NORMAL ELECTRICAL POWER IN ALL BUILDINGS IN THE</li> </ol>	g. NATIONAL ELECTRICAL MANUFACTURERS ASSO h. NATIONAL FIRE PROTECTION AGENCY (NFPA) i. STATE FIRE MARSHAL 11. CONTRACTOR SHALL COORDINATE WITH THE UNIVER
	SCOPE OF WORK. 5. CONTRACTOR SHALL FURNISH AND INSTALL ¾" X 10' CU GROUND ROD AND BOND TO GENERATOR HOUSING WITH #2 BARE COPPER CONDUCTOR. BOND CONDUCTOR TO GROUND ROD. REMOVE GROUND ROD AND PATCH SURFACE AFTER POWER IS RESTORED. TYPICAL FOR ALL	CONTRACTOR SHALL BE RESPONSIBLE FOR THE EI AND START-UP. CONTRACTOR SHALL BE RESPONS OTHER AGENCIES AND UTILITY COMPANIES. ENSURI COMMUNICATIONS WITH ANY AGENCIES OR UTILITY
	GENERATORS. 6. TURN ON ALL TEMPORARY GENERATORS PRIOR TO SHUTDOWN. 7. CONTRACTOR IS RESPONSIBLE TO IMPLEMENT UNIVERSITY AND OSHA SAFETY STANDARDS	<ol> <li>CONTRACTOR IS RESPONSIBLE FOR COORDINATING THOSE EXISTING ON SITE AND IN ADJACENT PROP OF ANY DEVIATIONS OR DISCREPANCIES FROM THIS</li> <li>CONTRACTOR SHALL COORDINATE HIS/HER WORK</li> </ol>
	APPLICABLE TO THIS PROJECT. 8. PRIOR TO DISCONNECTION OF ELECTRICAL EQUIPMENT/CABLES. CONTRACTOR SHALL VERIFY OR TEST EQUIPMENT FOR FUNCTIONALITY. NOTIFY UNIVERSITY OF ABNORMALITIES.	COST TO PERFORM WORK TO ACCOMPLISH SAID O WORK AS SHOWN ON THE DRAWINGS SHALL BE IN DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL UNIVERSITY DURING BID TIME FOR CLARIFICATIONS.
	9. ALL TERMINATIONS SHALL BE TIGHTENED AND TORQUED PER MANUFACTURER RECOMMENDATIONS. 10. TEMPORARY GENERATORS SHALL MEET HUMBOLDT COUNTY FUEL CONTAINMENT REQUIREMENTS.	PRIOR TO BID SHALL BE SUBJECT TO THE INTERF ADDITIONAL COST TO THE UNIVERSITY. 14. COORDINATE WITH OTHER TRADES AS TO THE EXA EQUIPMENT. PROVIDE POWER AND CONNECTION TO
	<ol> <li>CONTRACTOR IS RESPONSIBLE FOR REFUELING OF GENERATORS FOR ENTIRE SHUTDOWN DURATION.</li> <li>ALLOW FOR MINIMUM 200 FEET LENGTH OF CABLE FOR TEMPORARY GENERATOR CONNECTION. CONTRACTOR SHALL COORDINATE GENERATOR LOCATIONS WITH UNIVERSITY.</li> <li>CONTRACTOR SHALL PROVIDE FIRE WATCH FOR THE ENTIRE DURATION OF THE SHUTDOWN IN</li> </ol>	ELECTRICAL CONNECTIONS AS INDICATED ON ELEC TRADES. CONTRACTOR SHALL REVIEW DRAWINGS O SIZE AND LOCATION OF EQUIPMENT. DISCONNECT CONTROL WIRING FOR MECHANICAL AND PLUMBING ELECTRICAL CONTRACTOR. CONTRACTOR SHALL BE MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROU EQUIPMENT.
	ACCORDANCE WITH SFM REQUIREMENTS. 14. TWO DAYS BEFORE THE SCHEDULED OUTAGE: a. ALL RENTED TEMPORARY GENERATORS, CABLING, CONNECTION, SECONDARY CONTAINMENT,	15. BEFORE ROUGH—IN, VERIFY AND OBTAIN APPROVAI LOCATIONS FOR ALL EQUIPMENT ELECTRICAL CONN OUTLETS, CONDUIT RUNS, ETC. FROM THE UNIVER COUNTERS, SHELVING, ETC. AND IN BATHROOMS S
	<ul> <li>CABLE GUARDS AND RAMPS AND TEMPORARY FENCING ASSOCIATED WITH PORTABLE GENERATORS SHALL BE IN PLACE, FUELED AND TESTED. EQUIPMENT SHALL BE SECURED TO PREVENT THEFT. ALL TEMPORARY FENCING AND SECONDARY CONTAINMENT MUST MEET THE REQUIREMENTS OF THE STATE FIRE MARSHAL &amp; HAZARDOUS MATERIALS PERMIT.</li> <li>b. TEMPORARY GENERATOR CABLE PATHWAYS SHALL BE INSTALLED, IF REQUIRED.</li> </ul>	<ul> <li>WAINSCOTING, BACKSPLASH, SHELVING, ETC. REFERENCE</li> <li>MOUNTING HEIGHTS OF ALL CONTROL DEVICES TO AREA SHALL BE MOUNTED AT THE FOLLOWING HEIRECEPTACLES OUTLETS : +18" (TO</li> </ul>
	<ul> <li>c. LOCK-OUT/TAG-OUT DEVICES SHALL BE ON-HAND AND LOCATIONS IDENTIFIED (RETURN TO SERVICE &amp; COORDINATE WITH UNIVERSITY TO RE-START SYSTEMS AFTER OUTAGE).</li> <li>d. ALL HAZARDOUS MATERIALS PERMIT FOR ALL GENERATORS SHALL BE PAID FOR AND PROVIDED BY THE CONTRACTOR.</li> </ul>	TELEPHONE/TV/DATA OUTLETS : +18" (TO LIGHT SWITCHES : +44" (TO OUTLETS ABOVE COUNTER : +12" ABO MOUNTING HEIGHTS OF ALL DEVICES AND EQUIPME LOCATION OF DEVICE AS NOTED. EQUIPMENT INSTA
	15. CONTRACTOR RESPONSIBLE FOR SUBMITTING AND PAYING FOR ALL AIR QUALITY PERMITS REQUIRED BY AHJ.	UNIVERSITY SHALL BE RELOCATED AS DIRECTED B' TO THE UNIVERSITY. 17. COORDINATE ALL OUTLET BOX INSTALLATION WITH SPACE BETWEEN FACEPLATE AND DEVICE BOX SHA
		18. FOR RENOVATION WORK, THE CONTRACTOR SHALL EXPOSED RACEWAY AND BOXES IN OCCUPIED ARE PAINTED TO MATCH ADJACENT FINISHES.
		19. THE CONTRACTOR SHALL BE HELD FULLY RESPON ALL EXISTING SURFACES REQUIRING PATCHING, PL DUE TO THE INSTALLATION OF ELECTRICAL WORK CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETG
		20. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE INSTALL FIRE RATED BACKBOXES AS REQUIRED MA WALLS WHERE RECESSED ELECTRIC EQUIPMENT SU RECEPTACLES, PANEL, ETC. ARE INSTALLED IN RAT FIRE RATED WALLS, CEILINGS, OR FLOORS SHALL REQUIREMENTS. CONDUIT PENETRATIONS THAT AR SHALL MEET F AND T RATING. ALL FIRE PROOFIN
		21. ALL EXTERIOR EQUIPMENT SHALL BE NEMA 3R RA WALLS SHALL BE SEALED WATERTIGHT.
		22. PULLING TAPES: ALL RACEWAY WITHOUT CABLE C MINIMUM 1100 LBS. STRENGTH TEST POLYESTER F DETECTABLE MULE—TAPE WITH SEQUENTIAL FOOTAG
		<ol> <li>RUN NO MORE THAN 3 CURRENT CARRYING COND IS APPROVED BY UNIVERSITY OR SHOWN ON DRAW</li> <li>ALL BRANCH CIRCUIT CONDUCTORS SHALL BE CON THHN/THWN, 75 DEGREE CELSIUS. ALL CONDUCTORS</li> </ol>
		ANNEALED COPPER WIRE 98% CONDUCTIVITY, BEAF SHALL BE IDENTIFIED AS TO VOLTAGE AND PHASE IMPREGNATED INSULATION OR APPROVED COLORED 25. THERE SHALL BE NO MULTI-WIRE HOMERUNS.
		26. REFER TO THE SINGLE LINE DIAGRAM FOR THE CO TO ELECTRICAL PANELS. CONDUIT RUNS MAY NOT OF THIS CONTRACT.
		27. ALL CONDUIT RUNS INCLUDING STRAIGHT FEEDER WITH SUFFICIENT PULL BOXES OR JUNCTION BOXE SINGLE CABLE PULL TO 100 FEET. PULL BOXES S INDICATED ON DRAWINGS. LOCATIONS SHALL BE DI ON THE DRAWINGS.

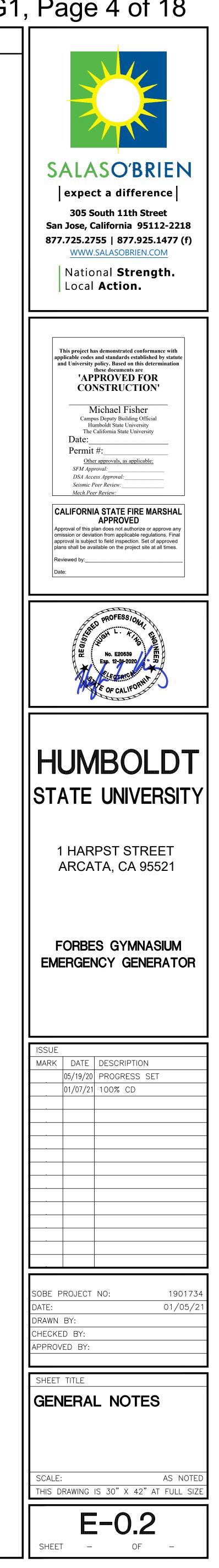
28. FINAL CONNECTIONS TO ALL EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIAL AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.

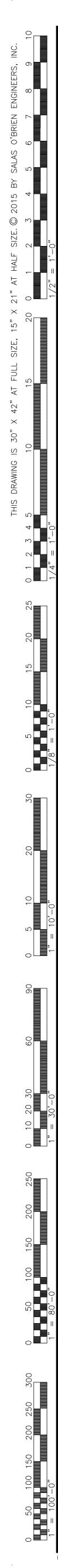
# GENERAL NOTES

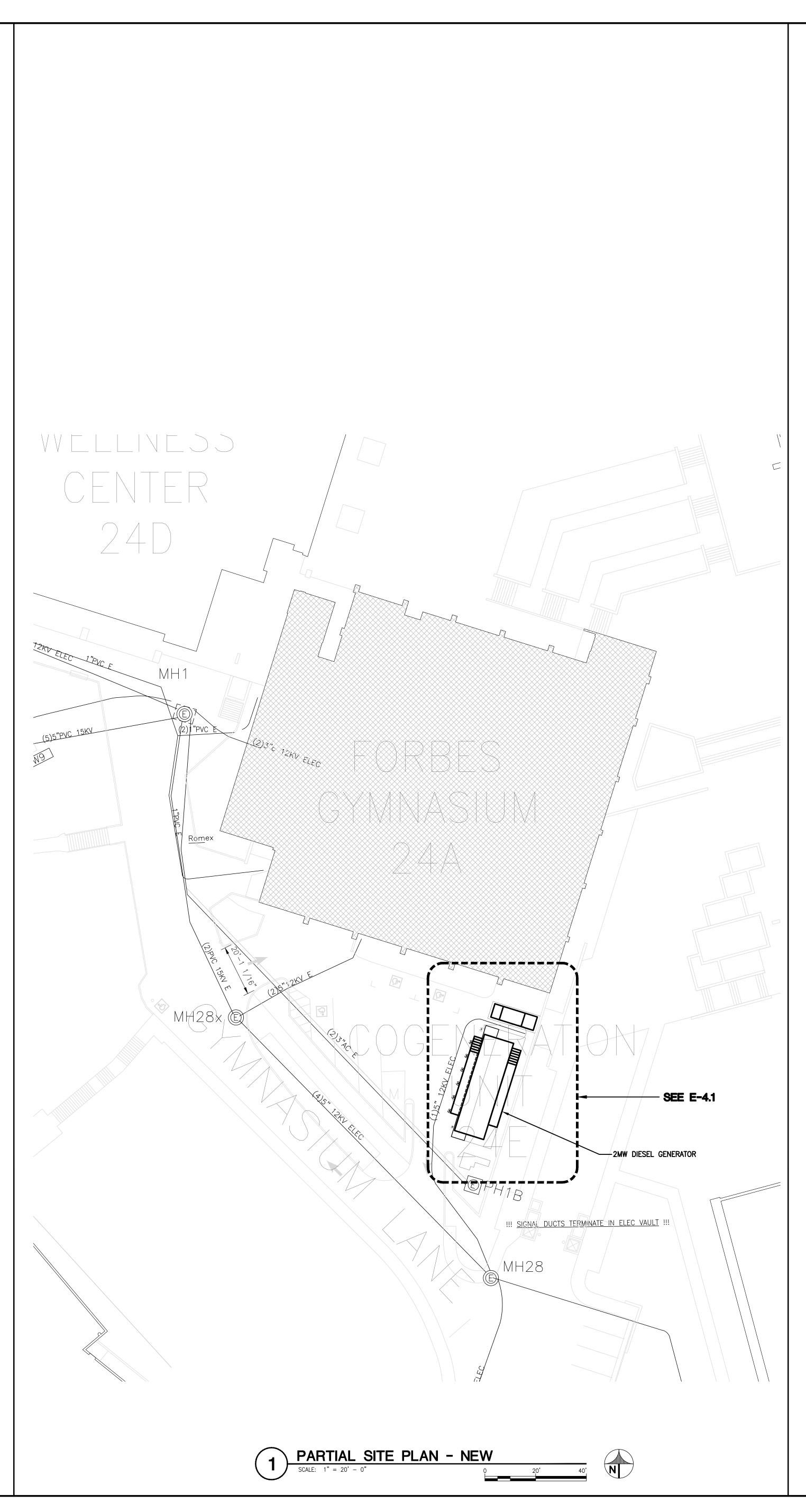
- TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, ECIFICATIONS. PRIOR TO SUBMITTING PROPOSAL, CONTRACTOR \_, STRUCTURAL AND MECHANICAL CONSTRUCTION DRAWINGS AND AVE HAD VISITED THE CONSTRUCTION SITE. HE/SHE SHALL BE ONDITIONS UNDER WHICH HE/SHE WILL HAVE TO OPERATE AND ECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT THIS CONNECTION IN BEHALF OF THE CONTRACTOR FOR ANY IS/HER PART. DETERMINE THE SEQUENCE OF CONSTRUCTION ICLUDING TEMPORARY FACILITIES AND CONNECTIONS REQUIRED ROJECT.
- SHALL BE CONSIDERED A PART OF THIS CONTRACT AND NO WED. THIS SHALL INCLUDE MINOR ITEMS OF MATERIAL OR EET THE REQUIREMENTS AND INTENT OF THE PROJECT.
- RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY CE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, AND PROTECT THE UNIVERSITY FROM ANY AND ALL CLAIMS
- IDE TO THE UNIVERSITY A CONSTRUCTION SCHEDULE OF ALL RUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT DATES.
- TAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL SYSTEMS. THE CONTRACTOR SHALL, AT THE CONCLUSION OF OF REPRODUCIBLE (AUTOCAD AND PDF) "AS-BUILT" DRAWINGS EVIEWED FOR APPROVAL BY THE UNIVERSITY AND ENGINEER OF
- PRESENT THE EXACT LOCATIONS, SIZES OR EXTENT OF UTILITIES TAKE STANDARD PRECAUTIONS FOR WORK IN EXISTING
- WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE CTION CHANGES REQUIRED BY THIS CONTRACT SHALL BE IDITION. AS REQUIRED AND/OR DIRECTED. WHERE REQUIRED. JTLETS AND CONDUIT RUNS SHALL BE RELOCATED. IN SOME TO EXTEND CONDUITS AND PULL IN NEW WIRING OR INSTALL IN NEW WIRING OR REPLACE OLD WIRING WITH NEW.
- CTRICAL FACILITIES WILL BE REQUIRED IN THE EXISTING RUNS ARE GENERALLY NOT SHOWN, ALTHOUGH A FULL SHOW SOME EXISTING CONDITIONS, OF WHICH INFORMATION HAS RECORD DRAWINGS AND/OR LIMITED FIELD INVESTIGATIONS. THE OF EXISTING EQUIPMENT, OUTLETS, FIXTURES, ETC., ARE TOR TO FIELD VERIFY).
- ND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED AND COGNIZED TESTING LABORATORY AND SHALL BE INSTALLED AS MAXIMUM FUSE SIZE MEANS FUSE PROTECTION IS REQUIRED). NOT OTHERWISE SPECIFIED TO BE REPLACED, WOULD RESULT IN ENTS BEING OUT OF COMPLIANCE WITH THE LISTING OR IDING EXISTING ELEMENTS SHALL BE REPLACED IN ORDER TO
- ND INSTALLATION SHALL COMPLY WITH THE FOLLOWING
- SOCIATION (ASA) NDARD INSTITUTE (ANSI) TESTING MATERIALS (ASTM) EGULATIONS TITLE 24 (CCR) AND ELECTRONIC ENGINEERS (IEEE) E ENGINEERS ASSOCIATION (IPCEA) ANUFACTURERS ASSOCIATION (NEMA)
- ATE WITH THE UNIVERSITY ON OBTAINING ALL PERMITS. DNSIBLE FOR THE ELECTRICAL UTILITY SYSTEM SHUT-DOWNS SHALL BE RESPONSIBLE FOR COORDINATION REQUIRED WITH COMPANIES. ENSURE TO INCLUDE THE UNIVERSITY IN ALL AGENCIES OR UTILITY COMPANIES.
- FOR COORDINATING ALL CROSSINGS OF NEW UTILITIES WITH IN ADJACENT PROPERTIES. NOTIFY THE UNIVERSITY IMMEDIATELY EPANCIES FROM THIS PLAN.
- ATE HIS/HER WORK WITH OTHER CONTRACTORS ON SITE. ANY ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE AWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE FOR CLARIFICATIONS. ANY SUCH CONFLICTS NOT CLARIFIED JECT TO THE INTERPRETATION OF THE UNIVERSITY AT NO ERSITY.
- ADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE AND CONNECTION TO MOTORS AND EQUIPMENT REQUIRING INDICATED ON ELECTRICAL DRAWINGS AND DRAWINGS OF OTHER REVIEW DRAWINGS OF OTHER TRADES FOR CONTROL DIAGRAMS, MENT. DISCONNECT SWITCHES, STARTERS, AND CONDUITS FOR IICAL AND PLUMBING EQUIPMENT SHALL BE PROVIDED BY TRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NGS PRIOR TO ROUGHING IN ALL CONDUITS TO THIS
- ND OBTAIN APPROVAL OF ALL MOUNTING HEIGHTS AND EXACT IT ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, FROM THE UNIVERSITY. PLACE DEVICES LOCATED ABOVE AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF HELVING, ETC. REFER TO ELECTRICAL ELEVATIONS FOR EXACT /ICES.
- ONTROL DEVICES TO BE USED BY OCCUPANT OF THE ROOM OR THE FOLLOWING HEIGHTS: +18" (TO BOTTOM OF OUTLETS)
- LETS : +18" (TO BOTTOM OF OUTLETS) : +44" (TO HIGHEST OPERABLE PART) : +12" ABOVE COUNTER (TO BOTTOM OF OUTLETS) EVICES AND EQUIPMENT ARE FROM FINISHED FLOOR TO ED. EQUIPMENT INSTALLED IN LOCATIONS NOT APPROVED BY THE
- TED AS DIRECTED BY THE UNIVERSITY AT NO ADDITIONAL COST
- INSTALLATION WITH ARCHITECTURAL WALL FINISH SCHEDULES. AND DEVICE BOX SHALL NOT EXCEED 1/8".
- CONTRACTOR SHALL CONCEAL ALL WORK WHERE POSSIBLE. ALL S IN OCCUPIED AREAS OR ON EXTERIOR WALLS SHALL BE FINISHES.
- HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF IRING PATCHING, PLASTERING, PAINTING AND/OR OTHER REPAIR ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. ALL SURFACES, ETC., AS REQUIRED.
- ONS THROUGH FIRE RATED WALLS AND CEILINGS. FURNISH AND ES AS REQUIRED MAINTAINING FIRE RATING OF CEILING OR TRIC EQUIPMENT SUCH AS LIGHT FIXTURES. SWITCHES. E INSTALLED IN RATED WALL OR CEILINGS. PENETRATIONS OF OR FLOORS SHALL COMPLY WITH UBC CHAPTER 7 NETRATIONS THAT ARE NOT STUBBED-OUT INSIDE THE WALL ALL FIRE PROOFING METHODS SHALL BE UL APPROVED.
- ALL BE NEMA 3R RATED. ALL WALL PENETRATIONS TO EXTERIOR WITHOUT CABLE OR WIRE SHALL BE INSTALLED WITH A I TEST POLYESTER PULLING TAPE. PULLING TAPES SHALL BE
- SEQUENTIAL FOOTAGE MARKING. ENT CARRYING CONDUCTORS IN ANY WIREWAY UNLESS DERATING OR SHOWN ON DRAWINGS.
- TORS SHALL BE COPPER, #10 AWG MINIMUM, RATED FOR 600V, SIUS. ALL CONDUCTORS SHALL BE STRANDED. SOFT DRAWN CONDUCTIVITY, BEARING THE UL LABEL. SYSTEM VOLTAGE VOLTAGE AND PHASE CONNECTIONS BY MEANS OF COLOR APPROVED COLORED MARKING TAPE.
- WIRE HOMERUNS. IAGRAM FOR THE CONDUIT AND CONDUCTOR SIZES HOMERUN OUIT RUNS MAY NOT BE SHOWN ON DRAWINGS, BUT ARE PART
- STRAIGHT FEEDER AND BRANCH CIRCUIT SHALL BE PROVIDED OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS ATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED

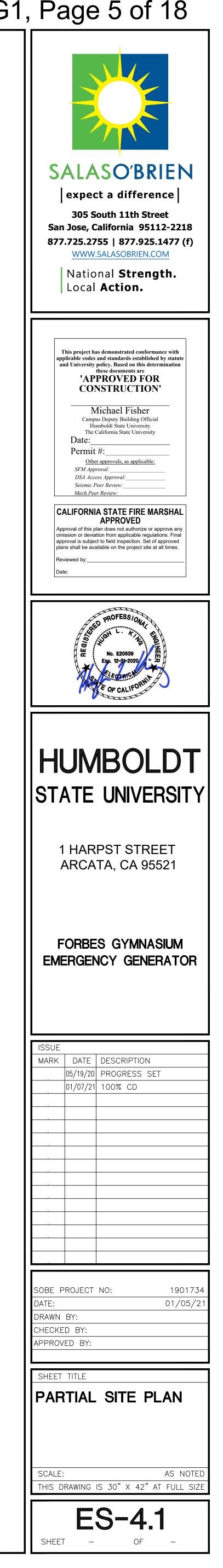
- 29. DO NOT COMBINE DIFFERENT SYSTEM VOLTAGES IN SAME CONDUIT (EG., 120/208V WITH 277/480V), UNLESS IS APPROVED BY UNIVERSITY OR SHOWN ON DRAWINGS
- 30. ELECTRICAL SYSTEMS SHALL BE INSTALLED FOR FINAL INSPECTIONS. PROVIDE NEUTRAL TEST AND PROOF OF TORQUE DURING FINAL INSPECTION FOR ALL UNITS. FINAL TERMINATIONS OF CONDUCTORS TO ELECTRICAL EQUIPMENT AND DEVICES SHALL BE TORQUE WRENCH TIGHTENED TO THE MANUFACTURER'S RECOMMENDED SPECIFICATION, NO EXCEPTION.
- 31. CIRCUIT BREAKER TERMINALS IN SWITCHBOARDS AND LOAD CENTER SHALL BE UL LISTED AND APPROVED FOR USE WITH COPPER 75 DEGREE CELSIUS CONDUCTORS.
- 32. SIZES OF BREAKERS, SWITCHES, FUSES AND FEEDERS ARE BASED ON DESIGNED EQUIPMENT SIZES. THESE SIZES SHALL BE ADJUSTED TO SATISFY REQUIREMENTS OF ACTUAL INSTALLED OR SUBSTITUTE EQUIPMENT. UP SIZING OR DOWNSIZING OF FEEDERS SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE UNIVERSITY.
- 33. AS REQUIRED ALL OVERSIZED FEEDERS THAT WERE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP SHALL BE PROVIDED WITH ADAPTER LUGS OR SPLICE BOX. ADAPTER LUGS SHALL BE PROVIDED IF SIZE IS AVAILABLE. OTHERWISE PROVIDE CABLE SPLICES IN THE SPLICE BOX TO REDUCE CABLES TO THE MAXIMUM SIZE THAT THE BREAKER LUGS CAN ACCOMMODATE.
- 34. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAW-CUTTING, TRENCHING, BACKFILLING, COMPACTION AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO COMPLETE WORK. USE EXTREME CAUTION WHEN TRENCHING NEAR EXISTING UNDERGROUND UTILITY LINE. CONTRACTOR SHALL PROVIDE ALL REQUIRED CUTTING, PATCHING, PAINTING, AND REPAIRS NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT THE START OF WORK.
- 35. RIGID GALVANIZED STEEL CONDUIT SHALL BE USED FOR ALL EXTERIOR APPLICATIONS, ALL CONDUITS LARGER THAN 2" TRADE DIAMETER, AND ALL INDOOR CONDUITS BELOW EIGHT (8) FEET FROM FINISHED FLOOR.
- 36. ELECTRICAL METALLIC TUBING (EMT) IS ONLY ALLOWED IN INTERIOR LOCATION ABOVE EIGHT (8) FEET FROM FINISHED FLOOR AND WHEN ENTERING A PANEL FROM ABOVE.
- 37. CONNECTIONS TO VIBRATING EQUIPMENT (MOTOR, TRANSFORMER ENCLOSURE, ETC.) AND SEISMIC SEPARATIONS SHALL BE PROVIDED WITH LIQUID-TIGHT FLEXIBLE STEEL CONDUIT WITH WATERTIGHT CONNECTORS. MAXIMUM LENGTH OF CONDUIT SHALL BE SIX FEET, UNLESS OTHERWISE NOTED.
- 38. POLYVINYL CHLORIDE (PVC) SCHEDULE 40 MAY BE INSTALLED BENEATH SLAB AND UNDERGROUND INSTALLATION. INSTALL PVC COATED RIGID STEEL CONDUIT FOR TRANSITION FROM UNDERGROUND TO ABOVE GRADE INSTALLATION.
- 39. CONTRACTOR SHALL PROVIDE TERMINATIONS FOR ALL DATA/VOICE CABLES INDICATED AT OUTLET LOCATIONS INDICATED ON DRAWINGS. WHERE DATA/VOICE SYSTEMS ARE ALTERED, COMPLY WITH CSU TELECOMMUNICATION INFRASTRUCTURE PLANNING STANDARDS (TIPS) FOURTH EDITION, EFFECTIVE FEBRUARY 2014.
- 40. CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS IN NON-ACCESSIBLE CEILINGS WHERE REQUIRED TO ACCESS ELECTRICAL EQUIPMENT IN CEILING SPACE. ACCESS DOORS SHALL HAVE FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.
- 41. ALL FIRE LIFE SAFETY EQUIPMENT, SUCH AS FIRE ALARM CONTROL PANEL AND REMOTE POWER SUPPLIES SHALL BE PROVIDED WITH DEDICATED CIRCUITS. IDENTIFY CIRCUIT DESIGNATION AND PROVIDE PERMANENT LABELING, "FIRE ALARM CIRCUIT" ON ELECTRICAL PANEL. PROVIDE LOCKABLE CIRCUIT BREAKER. CIRCUIT BREAKER SHALL BE RED IN COLOR.
- 42. CONTROL CONDUIT FOR ENERGY/BUILDING MANAGEMENT SYSTEM (E/BMS) SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- 43. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.
- 44. WHEN A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, CIRCUIT BREAKERS, ETC., ARISES ON THE DRAWINGS OR SPECIFICATIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL REQUIRED BY THE MOST STRINGENT CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERABLE SYSTEM, OR AS DIRECTED BY UNIVERSITY.
- 45. FOR SMALL AC MOTORS NOT HAVING BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE MANUAL MOTOR STARTERS WITH OVERLOAD HEATER ELEMENTS SIZED TO PER MANUFACTURER'S RECOMMENDATION. FOR SMALL AC MOTORS WITH BUILT-IN THERMAL OVERLOAD PROTECTION. PROVIDE A HORSEPOWER RATED TOGGLE DISCONNECT SWITCH.
- 46. DISCONNECT SAFETY SWITCHES SHALL BE HEAVY DUTY AND BE RATED FOR THE NUMBER OF POLES, VOLTAGE, CURRENT AND HORSEPOWER RATING AS REQUIRED. PROVIDE FUSE PROTECTION BASED ON THE MOTOR NAMEPLATE RATINGS.
- 47. PROVIDE PERMANENT IDENTIFICATION (NAMEPLATES) FOR ALL ELECTRICAL PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, TRANSFORMERS, TERMINAL CABINETS, ETC.
- 48. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO VERIFY TYPE OF CEILING SYSTEMS AND TO FURNISH APPROVED LIGHTING FIXTURES OF THE TYPE REQUIRED FOR MOUNTING IN SUBJECT CEILING. PROVIDE ALL NECESSARY MOUNTING KIT/HARDWARE TO PROVIDE A COMPLETE WORKING LIGHTING SYSTEM.
- 49. ALL FINAL ELECTRICAL CONNECTIONS TO UNIVERSITY FURNISHED EQUIPMENT SHALL BE MADE BY THE ELECTRICAL CONTRACTOR.
- 50. ALL SPLICES AND TERMINALS SHALL BE COMPRESSION TYPE, OF SEAMLESS PURE COPPER, TIN PLATED, LONG BARREL, INSPECTION WINDOW, TERMINALS WITH TWO-HOLE PAD (WITH NEMA DRILLING). CLEAN ALL SURFACES AND INSTALL WITH OXIDE INHIBITING COMPOUND BURNDY PENETROX-E OR EQUAL. APPLY COMPOUND BETWEEN BUS BAR AND LUG PAD AND BETWEEN CONDUCTOR AND LUG BARREL. INSTALL COMPRESSION CONNECTORS WITH A FULLY CIRCUMFERENTIAL COMPRESSION DIE BURNDY HYPRESS OR EQUAL.
- 51. LABEL ALL CONDUIT WHERE IT BEGINS, AND WHERE IT TERMINATES INTO A BOX, PANEL, DEVICE, LOAD, OR DISCONNECT. CONDUIT SHALL BE LABELED EVERY 30 FEET OR LESS. CONDUIT SHALL BE LABELED WHERE IT PENETRATES ANY WALL OR FLOOR. LABEL SHALL BE PERMANENT PRINTED LABELS (DESCRIBING SOURCE, CIRCUIT, AND LOAD) LEGIBLE FROM FLOOR WHERE POSSIBLE (STANDING POSITION).
- 52. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT OR INSTALLATION METHODS.
- 53. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE TRENCHING FOR NEW UTILITIES. THESE DRAWINGS HAVE BEEN COMPILED FROM RECORD DOCUMENTS, FIELD SURVEYS AND OTHER AVAILABLE INFORMATION. NOT ALL UTILITIES AND/OR OBSTRUCTIONS ARE SHOWN. CONTRACTOR SHALL VERIFY THE LOCATIONS OF UTILITIES PRIOR TO EXCAVATION, EITHER BY HAND EXCAVATION OR WITH THE ASSISTANCE OF AN UNDERGROUND UTILITY LOCATION SERVICE. CONTRACTOR TO FOLLOW PROCEDURES PER USA NORTH'S CALIFORNIA EXCAVATION MANUAL, AND CALL 811 (HTTP://USANORTH811.ORG) PRIOR TO ANY DIGGING . CONTRACTOR SHALL HIRE A LOCATING SERVICE AND COORDINATE WORK WITH THE UNIVERSITY.
- 54. ASBESTOS-CEMENT PIPE (ACP): ACP MAY BE PRESENT THROUGHOUT THE SITE. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES WHEN ACP IS ENCOUNTERED TO AVOID DISTURBING EXISTING INSTALLATIONS.
- 55. ALL LANDSCAPING AND HARDSCAPING DAMAGED AS A RESULT OF UNDERGROUND WORK SHALL BE RESTORED TO AS-FOUND CONDITION. SAW CUTTING OF HARDSCAPE SHALL BE FROM SCOREMARK TO SCOREMARK. REPAIRS SHALL BE MADE WITH #4 DOWELS @ 12" O.C., 4-1/2" MIN. EMBED IN 6000 PSI EPOXY.
- 56. PROVIDE OCCUPANT AND PEDESTRIAN ACCESS & EGRESS AT ALL TIMES. PROVIDE BARRICADES, WARNING SIGNS, TEMPORARY BRIDGES AND TEMPORARY PATH OF TRAVEL TO PUBLIC RIGHT-OF-WAY & CONSTRUCTION SIGNS AS REQUIRED TO FULFILL THIS REQUIREMENT.
- 57. CONTRACTOR TO FOLLOW PROCEDURES PER USA NORTH'S CALIFORNIA EXCAVATION MANUAL, AND CALL 811 (HTTP://USANORTH811.ORG) PRIOR TO DIGGING. CONTRACTOR IS RESPONSIBLE TO PROVIDE PRIVATE SERVICE FOR LOCATION OF UNDERGROUND SERVICES. PROVIDE ACCESS REQUEST PRIOR TO DISRUPTION OF ANY SERVICE, OR ACCESS TO ANY SENSITIVE/OCCUPIED AREA.
- 58. CONTRACTOR SHALL POTHOLE A MINIMUM OF 10 FEET IN ADVANCE OF TRENCHING/EXCAVATING ACTIVITIES TO LOCATE AND PROTECT EXISTING UTILITIES AND TO ALLOW FOR ANY ALTERATION OF DIRECTION OR ELEVATION OF TRENCHING. POTHOLING ACTIVITIES SHALL BE CONSIDERED A PORTION OF THE ACTIVE HEADING LENGTH.
- 59. IRRIGATION LATERALS, PARKING LOT LIGHTING AND OTHER SYSTEMS NOT SHOWN. VERIFY CONNECTIONS PRIOR TO ANY EXCAVATION. REPAIR OR REPLACE IMMEDIATELY WHERE DAMAGED TO PROVIDE UNINTERRUPTED SERVICE. NOTIFY THE UNIVERSITY IMMEDIATELY OF ANY UTILITIES ENCOUNTERED THAT ARE NOT SHOWN ON THESE DRAWINGS. MAINTAIN ALL UTILITIES IN OPERATING CONDITION. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CROSSINGS ON NEW UTILITIES WITH THAT OF EXISTING. NOTIFY THE UNIVERSITY IMMEDIATELY OF ANY DEVIATIONS OR DISCREPANCIES FROM THIS PLAN.
- 60. CONTRACTOR TO SEAL ALL UNDERGROUND CORE DRILL PENETRATIONS PER ELECTRICAL DETAIL.
- 61. FIRE ALARM SYSTEM DEVICES, CONDUITS, WIRES, AND JUNCTION BOXES TO BE INSTALLED OR REMOVED BY C-10 LICENSED CONTRACTOR ONLY.

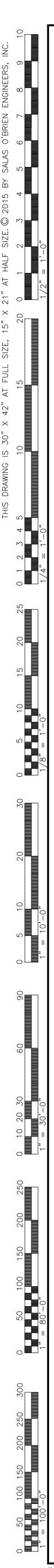
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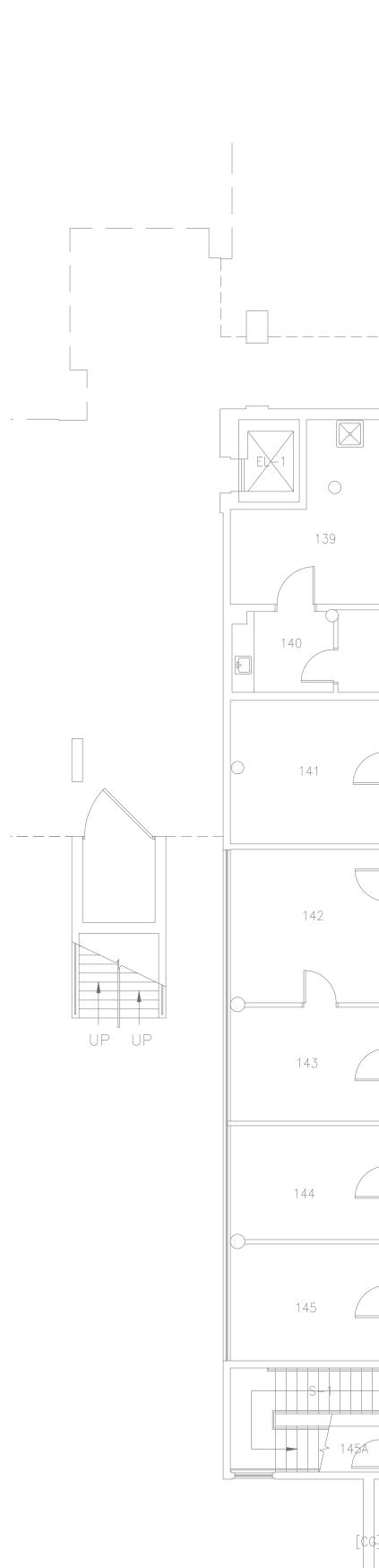








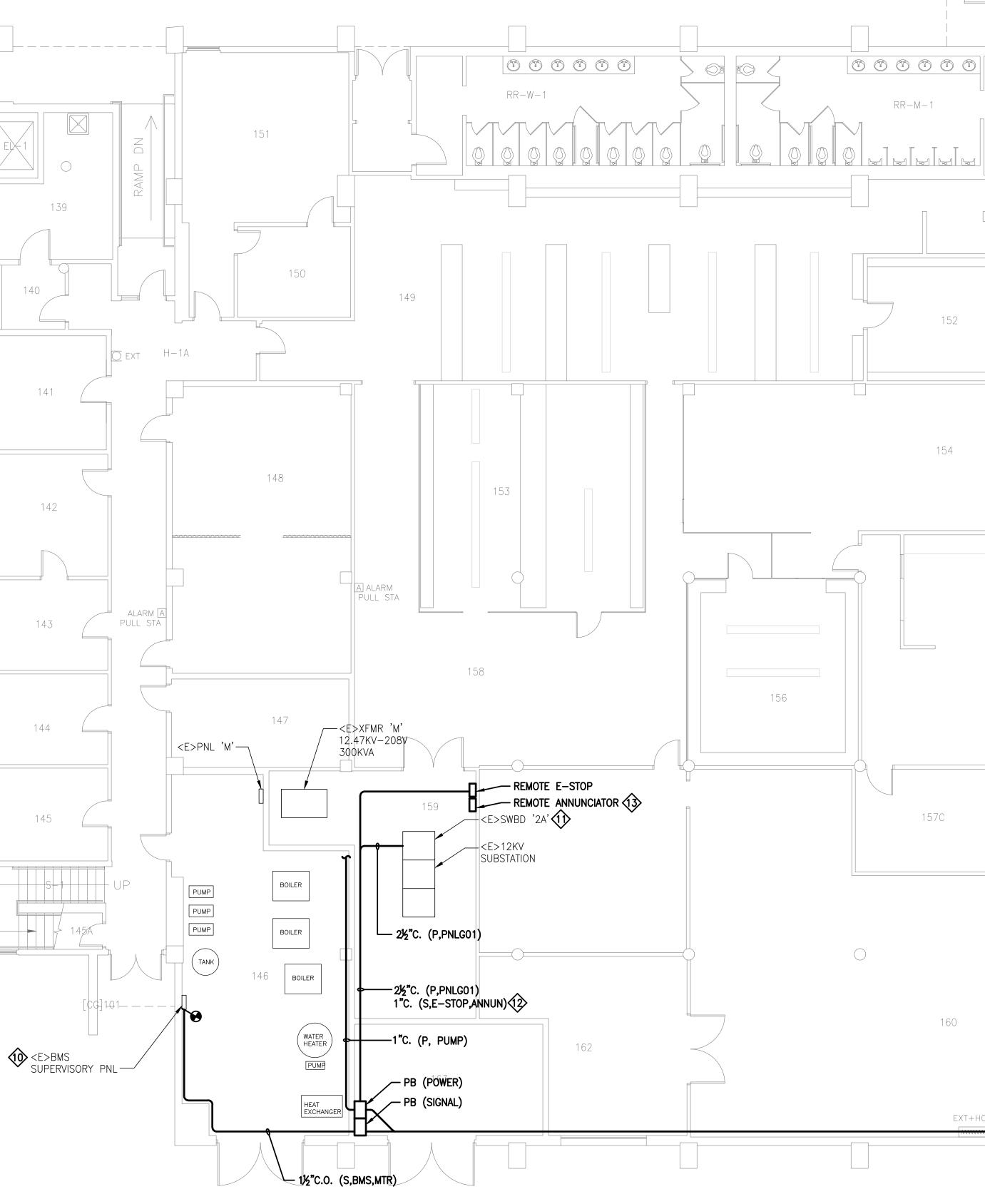


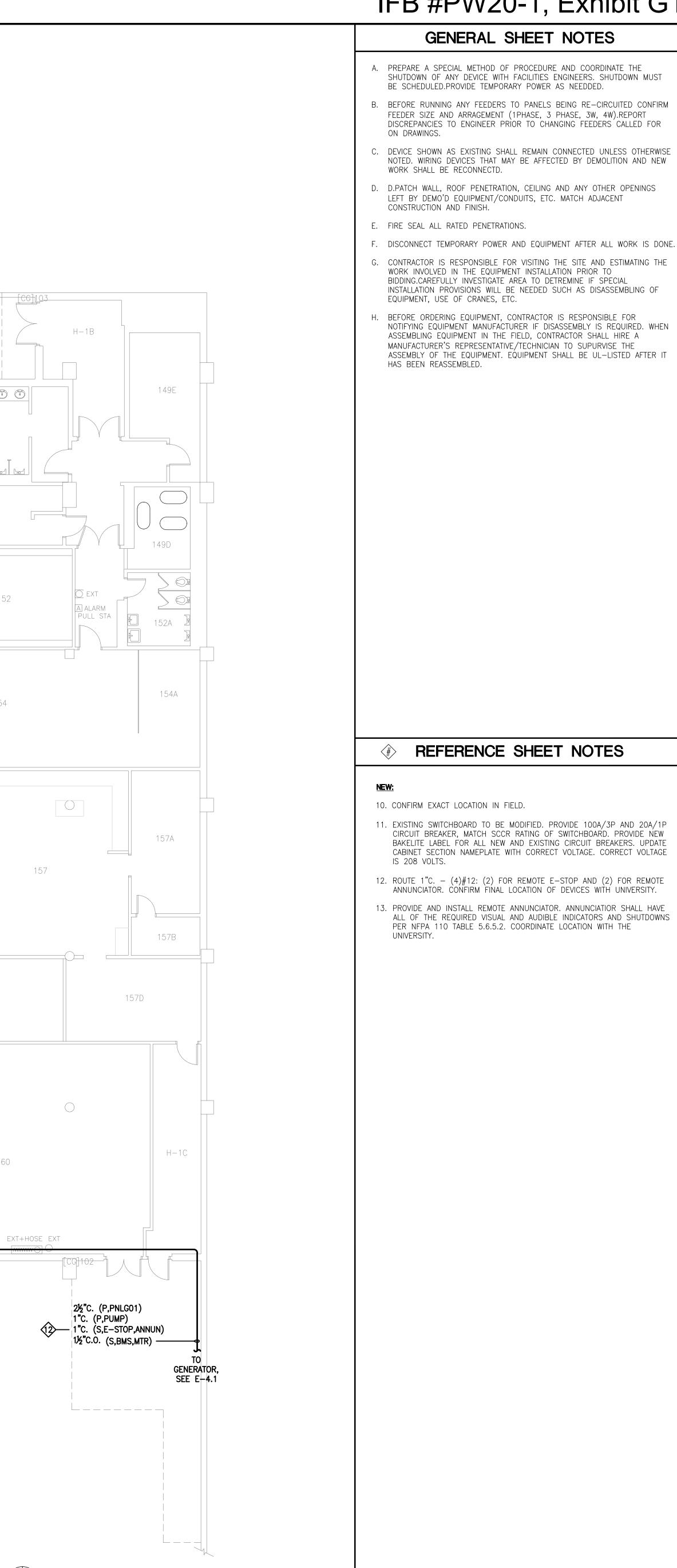




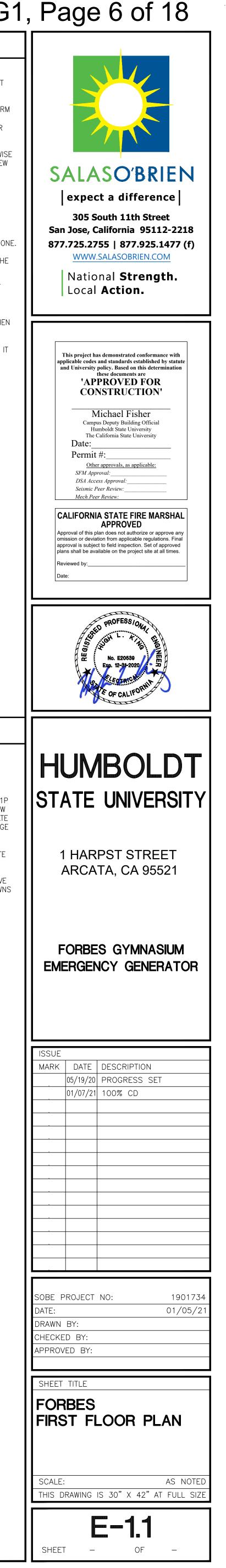
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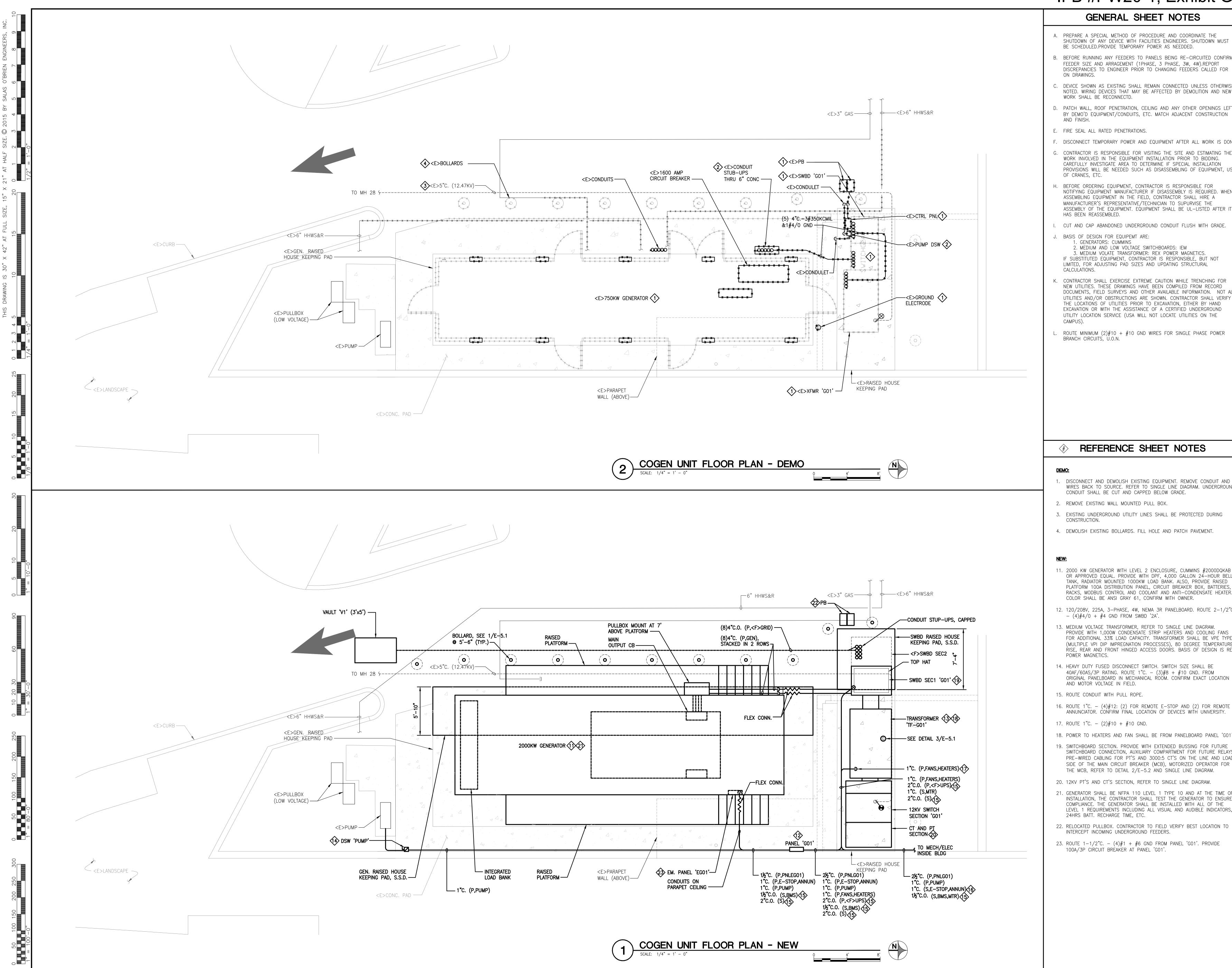
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GENERAL SHEET NOTES

В.	BEFORE RUNNING ANY FEEDERS TO PANELS BEING RE-CIRCUITED CONFI FEEDER SIZE AND ARRAGEMENT (1PHASE, 3 PHASE, 3W, 4W).REPORT DISCREPANCIES TO ENGINEER PRIOR TO CHANGING FEEDERS CALLED FOR ON DRAWINGS.
C.	DEVICE SHOWN AS EXISTING SHALL REMAIN CONNECTED UNLESS OTHERW NOTED. WIRING DEVICES THAT MAY BE AFFECTED BY DEMOLITION AND NE WORK SHALL BE RECONNECTD.
D.	PATCH WALL, ROOF PENETRATION, CEILING AND ANY OTHER OPENINGS L BY DEMO'D EQUIPMENT/CONDUITS, ETC. MATCH ADJACENT CONSTRUCTION AND FINISH.
E.	FIRE SEAL ALL RATED PENETRATIONS.
F.	DISCONNECT TEMPORARY POWER AND EQUIPMENT AFTER ALL WORK IS D
G.	CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND ESTIMATING T WORK INVOLVED IN THE EQUIPMENT INSTALLATION PRIOR TO BIDDING. CAREFULLY INVESTIGATE AREA TO DETERMINE IF SPECIAL INSTALLATION PROVISIONS WILL BE NEEDED SUCH AS DISASSEMBLING OF EQUIPMENT, OF CRANES, ETC.
Н.	BEFORE ORDERING EQUIPMENT, CONTRACTOR IS RESPONSIBLE FOR NOTIFYING EQUIPMENT MANUFACTURER IF DISASSEMBLY IS REQUIRED. WH ASSEMBLING EQUIPMENT IN THE FIELD, CONTRACTOR SHALL HIRE A MANUFACTURER'S REPRESENTATIVE/TECHNICIAN TO SUPURVISE THE ASSEMBLY OF THE EQUIPMENT. EQUIPMENT SHALL BE UL-LISTED AFTER HAS BEEN REASSEMBLED.
١.	CUT AND CAP ABANDONED UNDERGROUND CONDUIT FLUSH WITH GRADE.
J.	<ul> <li>BASIS OF DESIGN FOR EQUIPEMT ARE:</li> <li>1. GENERATORS: CUMMINS</li> <li>2. MEDIUM AND LOW VOLTAGE SWITCHBOARDS: IEM</li> <li>3. MEDIUM VOLATE TRANSFORMER: REX POWER MAGNETICS.</li> <li>IF SUBSTITUTED EQUIPMENT, CONTRACTOR IS RESPONSIBLE, BUT NOT LIMITED, FOR ADJUSTING PAD SIZES AND UPDATING STRUCTURAL CALCULATIONS.</li> </ul>
K.	CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE TRENCHING FOR

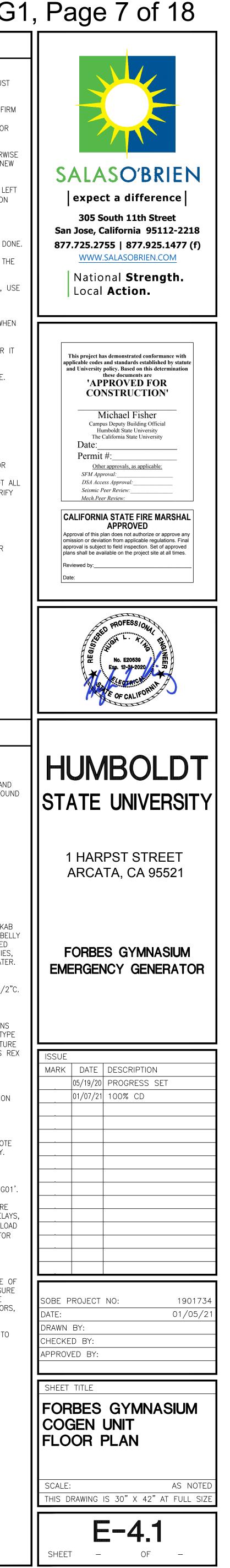
UTILITIES. THESE DRAWINGS HAVE BEEN COMPILED FROM RECOR DOCUMENTS, FIELD SURVEYS AND OTHER AVAILABLE INFORMATION. NOT ALL UTILITIES AND/OR OBSTRUCTIONS ARE SHOWN. CONTRACTOR SHALL VERIFY THE LOCATIONS OF UTILITIES PRIOR TO EXCAVATION, EITHER BY HAND EXCAVATION OR WITH THE ASSISTANCE OF A CERTIFIED UNDERGROUND UTILITY LOCATION SERVICE (USA WILL NOT LOCATE UTILITIES ON THE CAMPUS).

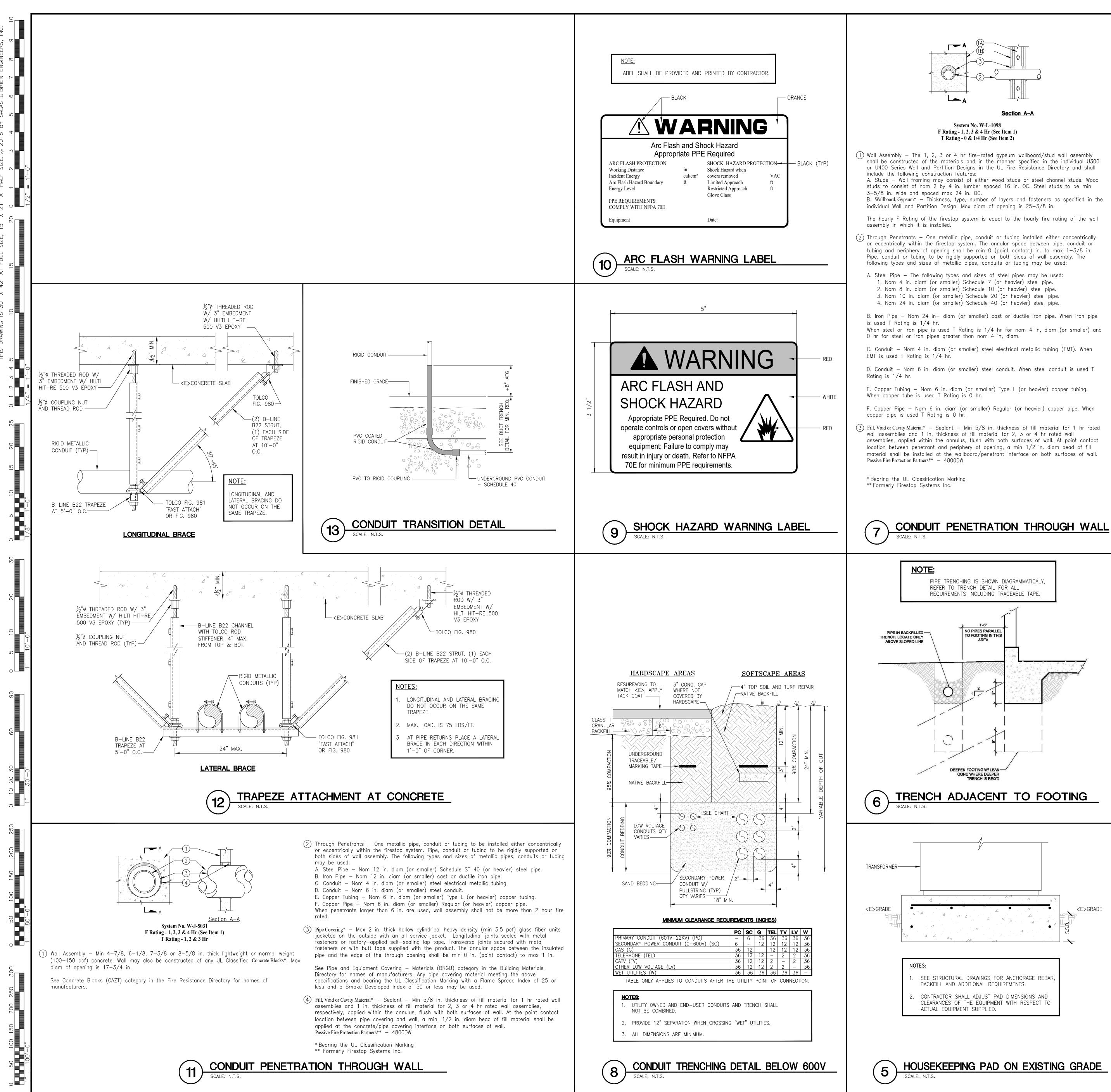
ROUTE MINIMUM (2)#10 + #10 GND WIRES FOR SINGLE PHASE POWER BRANCH CIRCUITS, U.O.N.

### **REFERENCE SHEET NOTES**

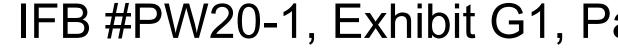
#### DEMO:

- 1. DISCONNECT AND DEMOLISH EXISTING EQUIPMENT. REMOVE CONDUIT AND WIRES BACK TO SOURCE. REFER TO SINGLE LINE DIAGRAM. UNDERGROUND CONDUIT SHALL BE CUT AND CAPPED BELOW GRADE.
- 2. REMOVE EXISTING WALL MOUNTED PULL BOX.
- 3. EXISTING UNDERGROUND UTILITY LINES SHALL BE PROTECTED DURING CONSTRUCTION.
- 4. DEMOLISH EXISTING BOLLARDS. FILL HOLE AND PATCH PAVEMENT.
- 11. 2000 KW GENERATOR WITH LEVEL 2 ENCLOSURE, CUMMINS #2000DQKAB OR APPROVED EQUAL. PROVIDE WITH DPF, 4,000 GALLON 24-HOUR BELLY TANK, RADIATOR MOUNTED 1000KW LOAD BANK. ALSO, PROVIDE RAISED PLATFORM 100A DISTRIBUTION PANEL, CIRCUIT BREAKER BOX, BATTERIES, RACKS, MODBUS CONTROL AND COOLANT AND ANTI-CONDENSATE HEATER. COLOR SHALL BE ANSI GRAY 61, CONFIRM WITH OWNER.
- 12. 120/208V, 225A, 3-PHASE, 4W, NEMA 3R PANELBOARD. ROUTE 2-1/2"C. - (4)#4/0 + #4 GND FROM SWBD '2A'.
- 13. MEDIUM VOLTAGE TRANSFORMER, REFER TO SINGLE LINE DIAGRAM. PROVIDE WITH 1,000W CONDENSATE STRIP HEATERS AND COOLING FANS FOR ADDITIONAL 33% LOAD CAPACITY. TRANSFORMER SHALL BE VPE TYPE (MULTIPLE VPI DIP IMPREGNATION PROCESSES), 80 DEGREE TEMPERATURE RISE, REAR AND FRONT HINGED ACCESS DOORS. BASIS OF DESIGN IS REX POWER MAGNETICS.
- 14. HEAVY DUTY FUSED DISCONNECT SWITCH. SWITCH SIZE SHALL BE 40AF/60AS/3P RATING. ROUTE 1"C. – (3)#8 + #10 GND. FROM ORIGINAL PANELBOARD IN MECHANICAL ROOM. CONFIRM EXACT LOCATION AND MOTOR VOLTAGE IN FIELD.
- 15. ROUTE CONDUIT WITH PULL ROPE.
- 16. ROUTE 1"C. (4)#12: (2) FOR REMOTE E-STOP AND (2) FOR REMOTE ANNUNCIATOR. CONFIRM FINAL LOCATION OF DEVICES WITH UNIVERSITY.
- 17. ROUTE 1"C. -(2)#10 + #10 GND.
- 18. POWER TO HEATERS AND FAN SHALL BE FROM PANELBOARD PANEL 'GO1'.
- 19. SWITCHBOARD SECTION. PROVIDE WITH EXTENDED BUSSING FOR FUTURE SWITCHBOARD CONNECTION, AUXILIARY COMPARTMENT FOR FUTURE RELAYS, PRE-WIRED CABLING FOR PT'S AND 3000:5 CT'S ON THE LINE AND LOAD SIDE OF THE MAIN CIRCUIT BREAKER (MCB), MOTORIZED OPERATOR FOR THE MCB, REFER TO DETAIL 2/E-5.2 AND SINGLE LINE DIAGRAM.
- 20. 12KV PT'S AND CT'S SECTION, REFER TO SINGLE LINE DIAGRAM.
- 21. GENERATOR SHALL BE NFPA 110 LEVEL 1 TYPE 10 AND AT THE TIME OF INSTALLATION, THE CONTRACTOR SHALL TEST THE GENERATOR TO ENSURE COMPLIANCE. THE GENERATOR SHALL BE INSTALLED WITH ALL OF THE LEVEL 1 REQUIREMENTS INCLUDING ALL VISUAL AND AUDIBLE INDICATORS, 24HRS BATT. RECHARGE TIME, ETC.
- 22. RELOCATED PULLBOX. CONTRACTOR TO FIELD VERIFY BEST LOCATION TO INTERCEPT INCOMING UNDERGROUND FEEDERS.
- 23. ROUTE 1-1/2"C. (4)#1 + #6 GND FROM PANEL 'GO1'. PROVIDE 100A/3P CIRCUIT BREAKER AT PANEL 'GO1'.

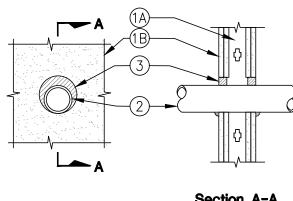


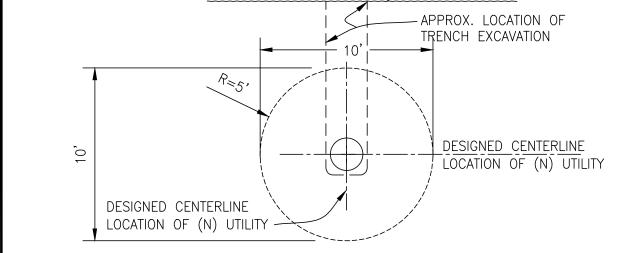


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- GROUND SURFACE

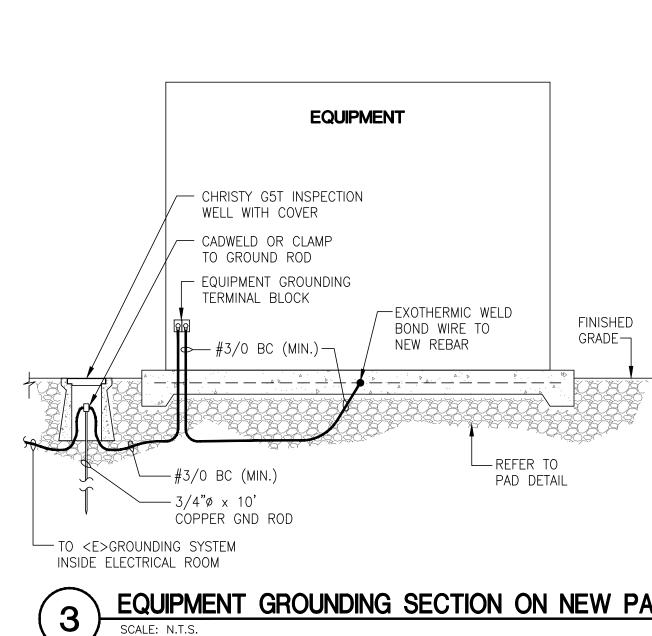


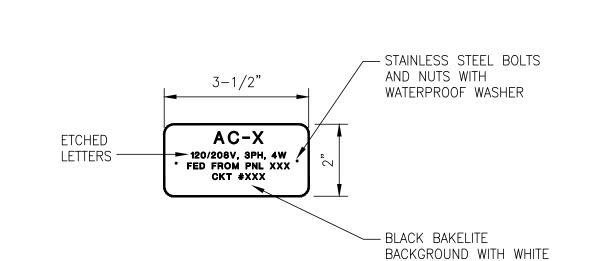


NOTES:

- ANY FIELD ADJUSTMENTS TO THE PROPOSED LOCATION OF (N) UTILITIES WITHIN A 5 FOOT RADIUS OF THE DESIGN CENTERLINE LOCATION SHALL BE DONE AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL PROPOSED ADJUSTMENTS SHALL BE SUBJECT TO PRIOR APPROVAL OF THE OWNER. SHOULD THE OWNER AGREE THAT IT IS NECESSARY TO ADJUST THE DESIGN LOCATION OF THE (N) UTILITY TO A POSITION OUTSIDE THE ABOVE 5 FOOT RADIUS, SUCH ADJUSTMENT SHALL BE SUBJECT TO REVIEW AS AN ITEM OF EXTRA EXPENSE OR CREDIT.
- . IF IT IS NECESSARY TO RELOCATE (E) UTILITIES IN ORDER TO ALLOW THE (N) UTILITY TO BE INSTALLED WITHIN A 5 FOOT RADIUS OF ITS DESIGNED CENTERLINE, THEN SUCH RELOCATION OF (E) UTILITIES SHALL BE PAID FOR AS AN ITEM OF EXTRA EXPENSE BY THE CONTRACTOR. ANY SUCH RELOCATION SHALL BE SUBJECT TO PRIOR APPROVAL OF THE OWNER.
- 3. IN AREAS WHERE SHORING IS NOT REQUIRED AS PER SPECIFICATIONS, THE MAXIMUM DEPTH OF TRENCHING TO AVOID OBSTACLES WITHOUT ADDITIONAL COST SHALL BE 5' BELOW GRADE. IN AREAS WHERE SHORING IS REQUIRED TO MEET DESIGN GRADE, THE LINE MAY BE ADJUSTED AN ADDITIONAL 5' BELOW THAT SHOWN WITH NO INCREASE IN COST.





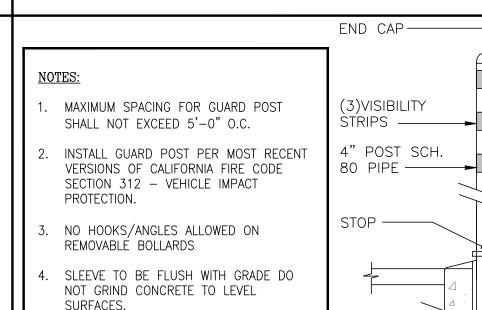


LETTERS

ELECTRICAL EQUIPMENT LABELING SCALE: N.T.S.

5" PIPE WITH

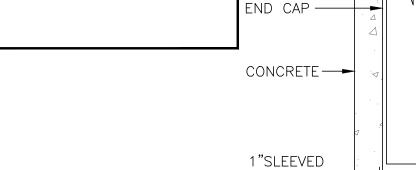
HOLE. —



APPROXIMATE WEIGHT OF POST IS 90

2

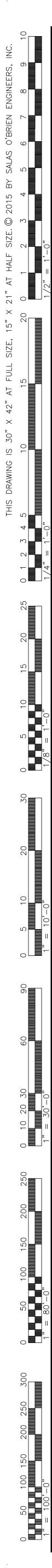
SCALE: N.T.S

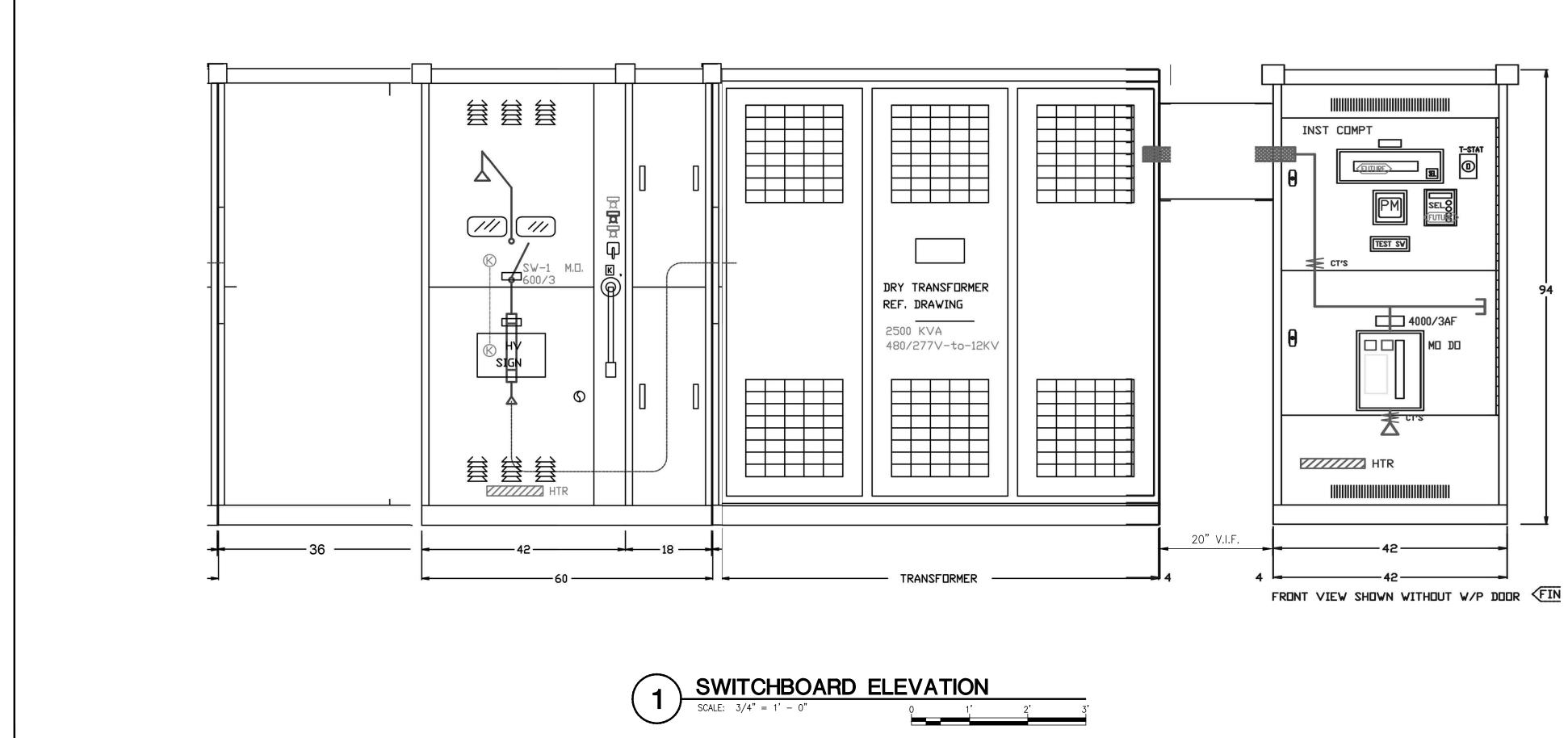


BOLLARD DETAIL

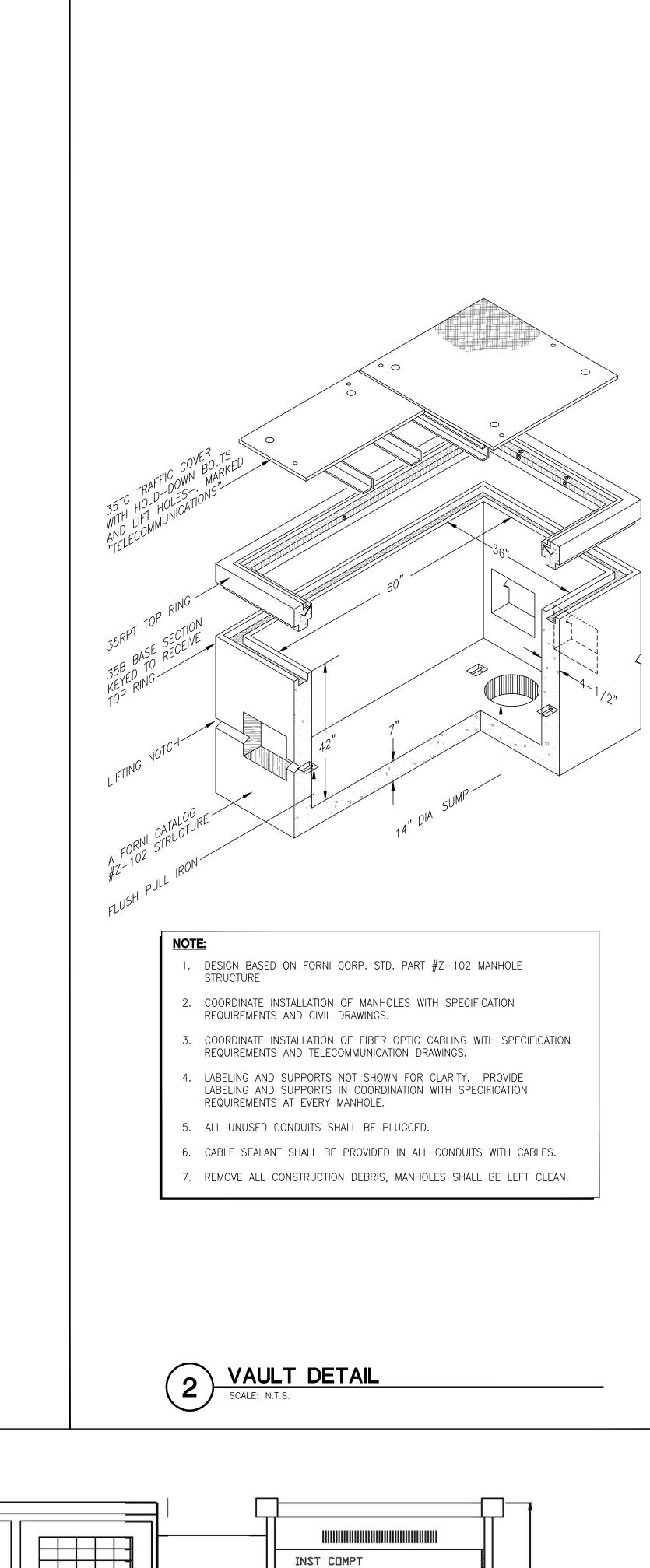
SCALE: 1'' = 1' - 0''

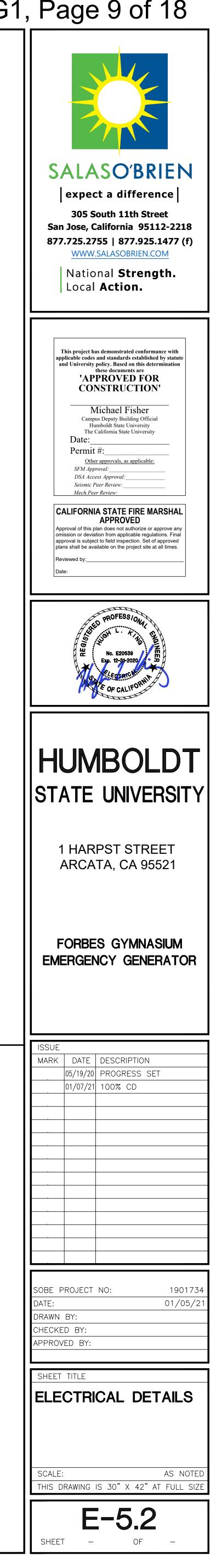
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Y 5 FOOT EXPENSE ROVAL OF DESIGN SUCH REDIT. TY TO BE LOCATION ITRACTOR.	biointervalue of the second strength of the s
NISHED RADE	<text></text>
	PROFESS/044 WE No. E20639 Exp. 12-31-2020 F OF CALIFORNIA
W PAD	<section-header><text><text><text></text></text></text></section-header>
	ISSUE         MARK       DATE       DESCRIPTION         05/19/20       PROGRESS SET       01/07/21         01/07/21       100% CD       01/07/21
LOCKABLE METAL LOOPS 	SOBE PROJECT NO: 1901734 DATE: 01/05/21 DRAWN BY: CHECKED BY: APPROVED BY: SHEET TITLE ELECTRICAL DETAILS
— 1 CU.FT. PEA GRAVEL 2'	SCALE: AS NOTED THIS DRAWING IS 30" X 42" AT FULL SIZE E-5.1 SHEET - OF -

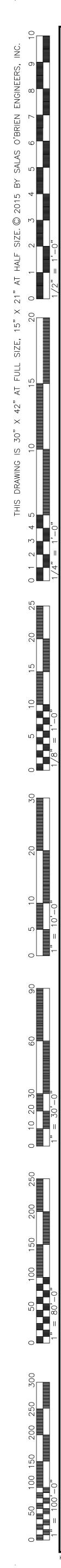




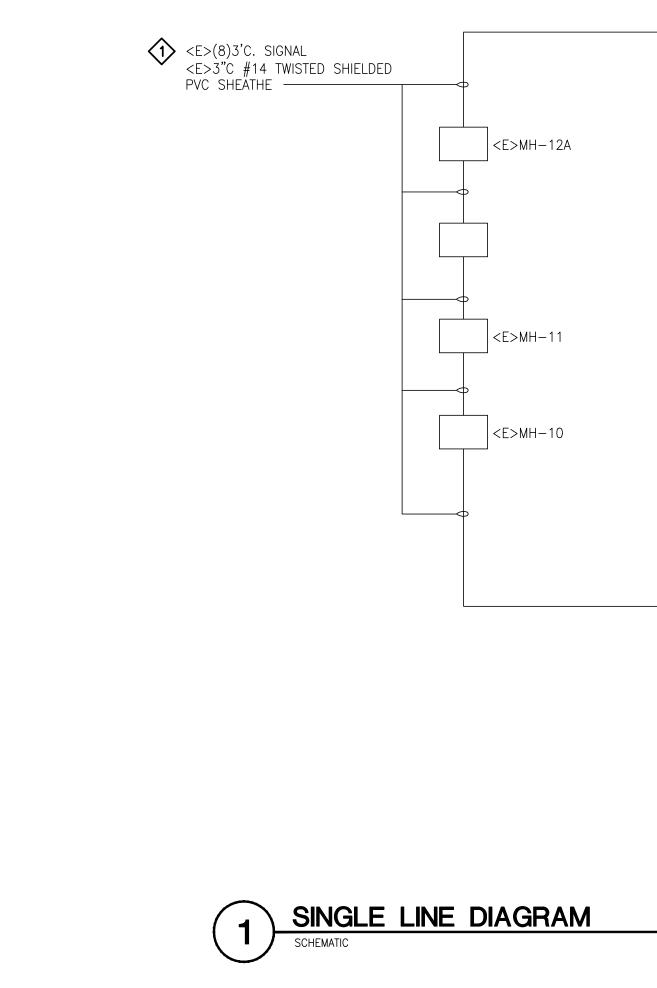
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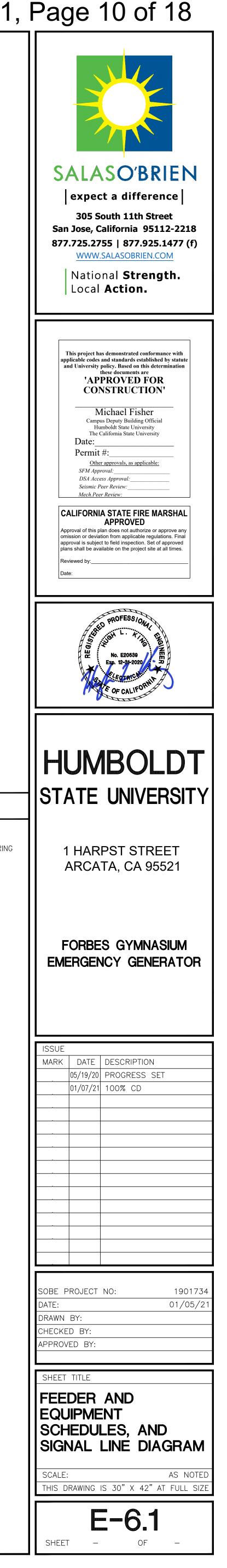


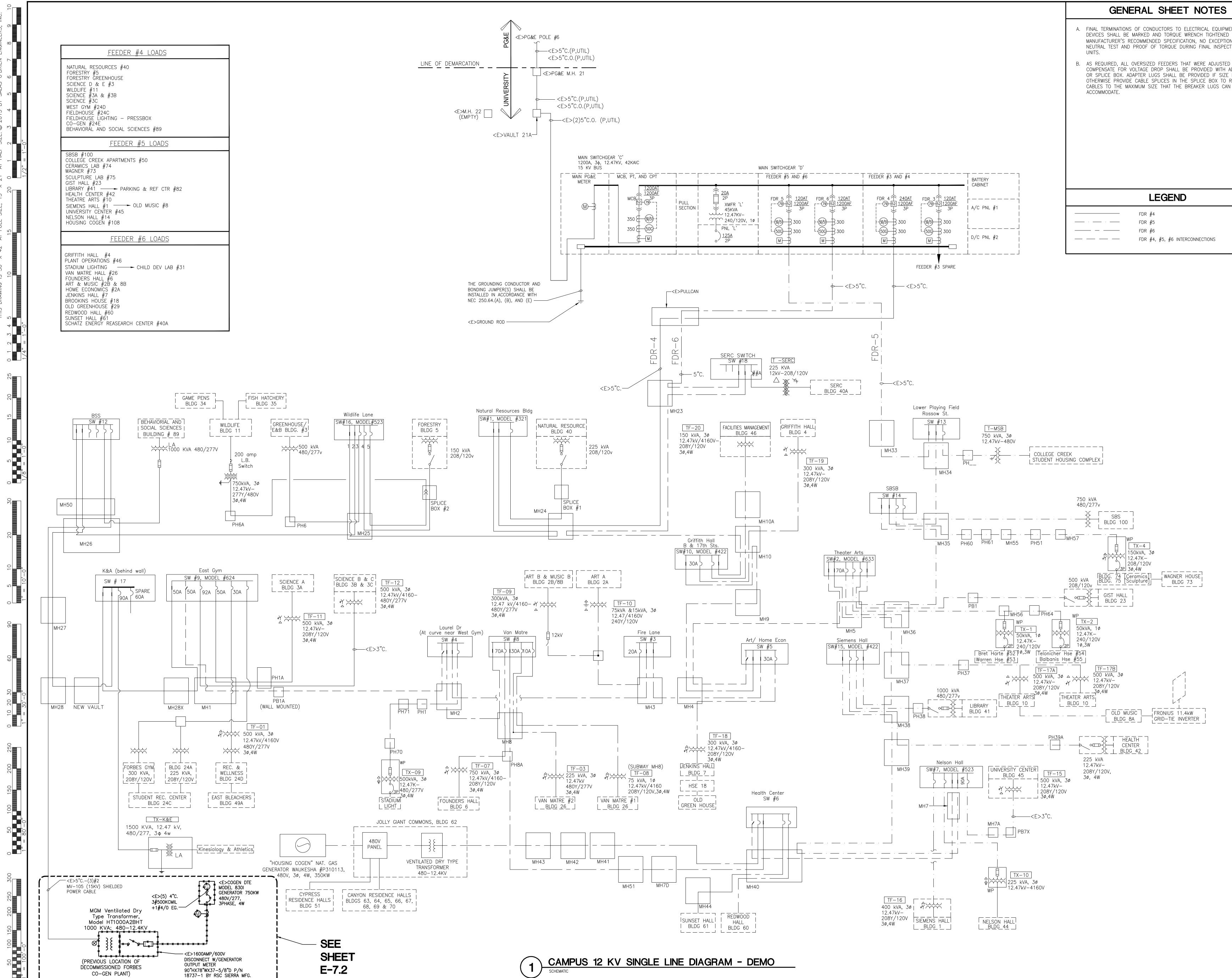


		LOW	VOLTAGE (600)	/) FEEDER \$	SCHEDULE		
		3-PHASE, 3-WIRE				3-PHASE, 4-WIRE	
SYMBOL	CONDUIT	CONDUCTORS	GROUND	SYMBOL	CONDUIT	CONDUCTORS	GROUND
20G	3/4"C	(3) #12	#12	20NG	3/4"C	(4) #12	#12
30G	3/4"C	(3) #10	<i>#</i> 10	30NG	3/4"C	(4) #10	#10
40G	1 "C	(3) #8	<i>#</i> 10	40NG	1 "C	(4) #8	#10
50G	1 "C	(3) #6	<i>#</i> 10	50NG	1 "C	(4) #6	#10
60G	1-1/4"C	(3) #4	<i>#</i> 10	60NG	1-1/4"C	(4) #4	#10
70G	1-1/4"C	(3) #4	#8	70NG	1-1/4"C	(4) #4	#8
80G	1-1/2"C	(3) #2	#8	80NG	1-1/2"C	(4) #2	#8
90G	1-1/2"C	(3) #2	#8	90NG	1-1/2"C	(4) #2	#8
100G	2"C	(3) #1	#8	100NG	2"C	(4) #1	#8
125G	2"C	(3) #1	#6	125NG	2"C	(4) #1	#6
150G	2"C	(3) #1/0	#6	150NG	2"C	(4) #1/0	#6
175G	2"C	(3) #2/0	#6	175NG	2"C	(4) #2/0	#6
200G	2-1/2"C	(3) #3/0	#6	200NG	2-1/2"C	(4) #3/0	#6
225G	2-1/2"C	(3) #4/0	#4	225NG	2-1/2"C	(4) #4/0	#4
250G	3"C	(3) #250 Kcmil	#4	250NG	З"С	(4) #250 Kcmil	#4
300G	3"C	(3) #350 Kcmil	#4	300NG	З"С	(4) #350 Kcmil	#4
350G	3-1/2"C	(3) #500 Kcmil	#3	350NG	4"C	(4) #500 Kcmil	#3
400G	4"C	(3) #600 Kcmil	#3	400NG	4"C	(4) #600 Kcmil	#3
450G	(2) 2-1/2"C	2 SETS: (3) #4/0	(2) #2	450NG	(2) 2-1/2"C	2 SETS: (4) #4/0	(2) #2
500G	(2) 3"C	2 SETS: (3) #250 Kcmil	(2) #2	500NG	(2) 3"C	2 SETS: (4) #250 Kcmil	(2) #2
600G	(2) 3"C	2 SETS: (3) #350 Kcmil	(2) #1	600NG	(2) 3"C	2 SETS: (4) #350 Kcmil	(2) #1
700G	(2) 3-1/2"C	2 SETS: (3) #500 Kcmil	(2) #1/0	700NG	(2) 4"C	2 SETS: (4) #500 Kcmil	(2) #1/0
800G	(3) 3"C	3 SETS: (3) #300 Kcmil	(3) #1/0	800NG	(3) 3"C	3 SETS: (4) #300 Kcmil	(3) #1/0
1000G	(3) 3"C	3 SETS: (3) #400 Kcmil	(3) #2/0	1000NG	(3) 3-1/2"C	3 SETS: (4) #400 Kcmil	(3) #2/0
1200G	(4) 3"C	4 SETS: (3) #350 Kcmil	(4) #3/0	1200NG	(4) 3"C	4 SETS: (4) #350 Kcmil	(4) #3/0
1600G	(5) 3"C	5 SETS: (3) #400 Kcmil	(5) #4/0	1600NG	(5) 3-1/2"C	5 SETS: (4) #400 Kcmil	(5) #4/0
2000G	(5) 4"C	5 SETS: (3) #600 Kcmil	(5) #250 Kcmil	2000NG	(5) 4"C	5 SETS: (4) #600 Kcmil	(5) #250 Kci
2500G	(6) 4"C	6 SETS: (3) #600 Kcmil	(6) #350 Kcmil	2500NG	(6) 4"C	6 SETS: (4) #600 Kcmil	(6) #350 Kci
3000G	(8) 4"C	8 SETS: (3) #600 Kcmil	(8) #400 Kcmil	3000NG	(8) 4"C	8 SETS: (4) #600 Kcmil	(8) #400 Kcr
4000G	(10) 4"C	10 SETS: (3) #600 Kcmil	(10) #500 Kcmil	4000NG	(10) 4"C	10 SETS: (4) #600 Kcmil	(10) #500 Kc

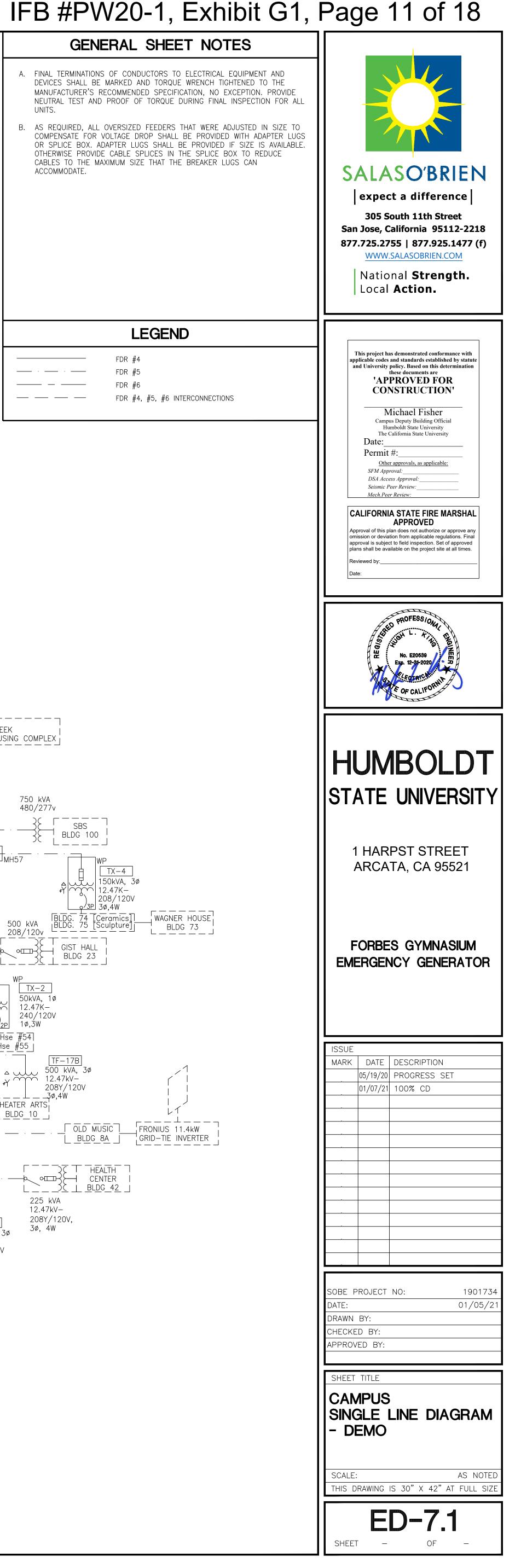


	REFERENCE SHEET NOTES	
	1. REMOVE LOW VOLTAGE WIRING FROM GENERATOR BACK TO MAIN SWITCHGEAR BUILDING. CONTRACTOR TO PULL PULL ROPE BEHIN AND LABEL POINT TO POINT.	ID WIRING
<pre></pre>		
<e>SWITCHGEAR SERVICE BUILDING</e>		

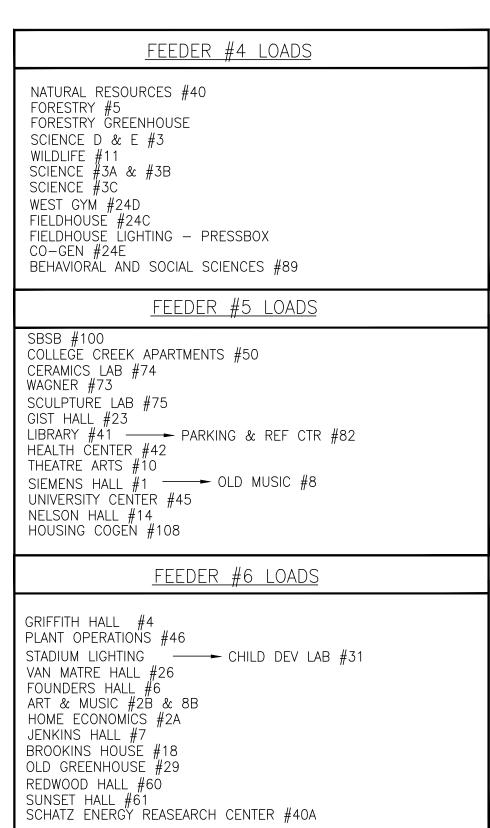


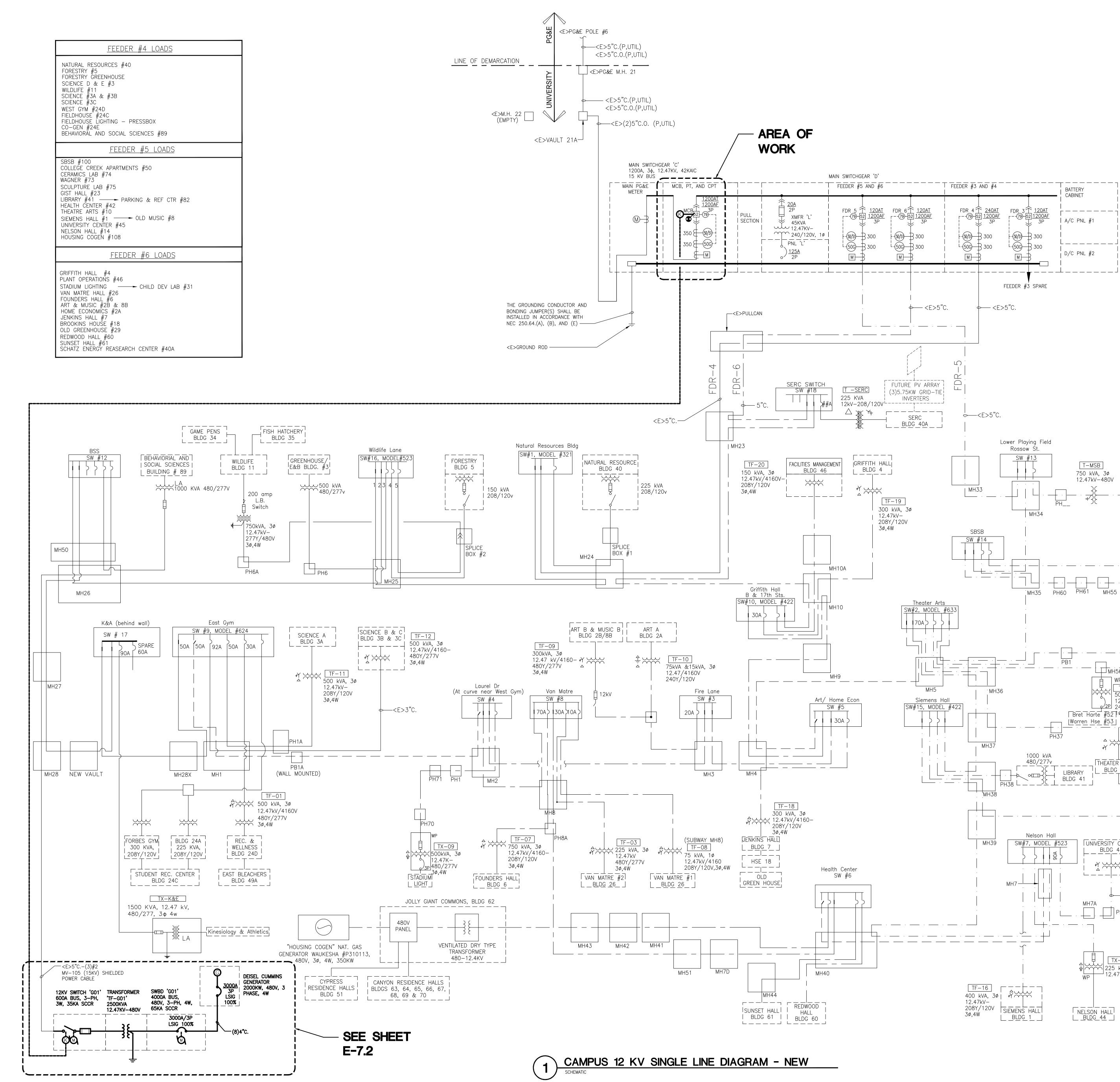


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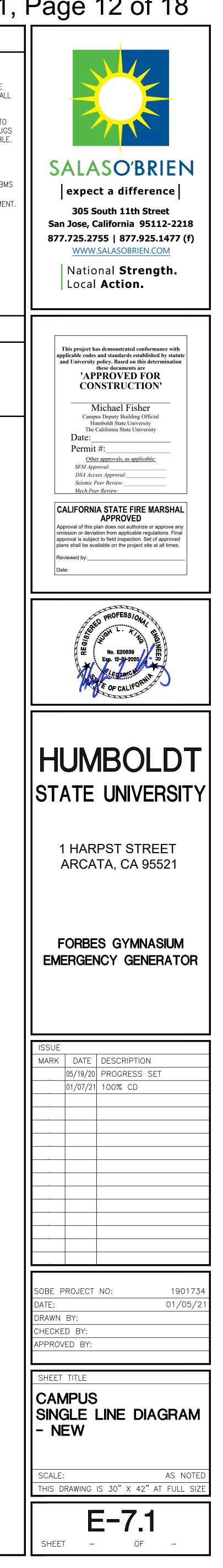


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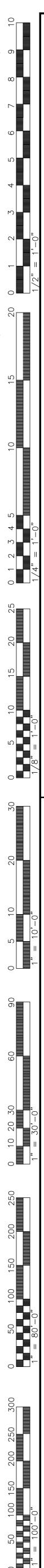
#### IFB #PW20-1, Exhibit G1, Page 12 of 18 GENERAL SHEET NOTES A. FINAL TERMINATIONS OF CONDUCTORS TO ELECTRICAL EQUIPMENT AND DEVICES SHALL BE MARKED AND TORQUE WRENCH TIGHTENED TO THE MANUFACTURER'S RECOMMENDED SPECIFICATION, NO EXCEPTION. PROVIDE NEUTRAL TEST AND PROOF OF TORQUE DURING FINAL INSPECTION FOR ALL UNITS. B. AS REQUIRED, ALL OVERSIZED FEEDERS THAT WERE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP SHALL BE PROVIDED WITH ADAPTER LUGS OR SPLICE BOX. ADAPTER LUGS SHALL BE PROVIDED IF SIZE IS AVAILABLE. OTHERWISE PROVIDE CABLE SPLICES IN THE SPLICE BOX TO REDUCE CABLES TO THE MAXIMUM SIZE THAT THE BREAKER LUGS CAN ACCOMMODATE. . NEW HOUSE METERS SHALL BE CONNECTED TO THE UNIVERSITY'S EMS/BMS SYSTEM. ROUTE ETHERNET (BACNET COMPLIANT OR PROVIDE BACNET GATEWAY) CONNECTION, INSIDE 3/4" CONDUIT, TO NEAREST EMS EQUIPMENT. REFER TO OVERALL FLOOR PLANS FOR LOCATION OF EMS PANELS. BATTERY CABINET \_\_\_\_\_ LEGEND | A/C PNL #1 FDR #4 \_\_\_\_\_ - (50/51) R 300 - (50/51) - B 300 \_\_\_\_\_ · \_\_\_\_ · \_\_\_\_ FDR #5 L-50G-300 L-50G-300 \_\_\_\_\_ FDR #6 D/C PNL #2 M-B M-B FDR #4, #5, #6 INTERCONNECTIONS \_\_\_\_\_ ┝╶╴╴╴╴┫╾┙╴╴└└╴╴╴╴╴╴╴└╴╴╴┥╴╴╴╴╴┽╴╴╴╴└╴╴╴╴┝╴╴╴╴╴┢╴╴╴╴┴╴╴╴╴╴┙ FEEDER #3 SPARE **←** <E>5"C. → <E>5"C. \_\_\_\_ · \_\_\_\_ · \_\_\_\_ · \_\_\_\_ · \_\_\_\_ · \_\_\_\_ FUTURE PV ARRAY (3)5.75KW GRID-TIE INVERTERS \_\_\_\_\_ ⇔—<E>5"C. SERC \_\_\_\_<u>BLDG\_40A</u>\_\_\_ Lower Playing Field Rossow S SW #1 T-MSB 750 kVA, 3ø 12.47kV-480V | MH33 COLLEGE CREEK TF-19 300 kVA, 3ø \_\_\_\_ MH34 12.47kV-208Y/120V 3ø,4Ŵ SBSB SW #14 750 kVA 480/277v SBS BLDG 100 PH60 PH61 TX-4 ₹ 150kVA, 3ø 12.47K-Theater Arts SW#2, MODEL #6. 208/120V 500 kVA 208/120v BLDG. 74 [Ceramics]] BLDG. 75 [Sculpture] BLDG 73 GIST HALL |70A þ GIST HALL Дин56 TX - 1MH5 12.47K-50kVA, 1ø 240/120 Siemens Hall 12.47K-1ø,3W SW#15, MODEL #422 <u>9<sup>/</sup>2P</u> 240/120V Bret Harte #52 Ø, 3W [Telonicher Hse #54] | Balbanis Hse #55 TF-17A 500 kVA, 30 a www. 500 kvA, 3 12.47kV - + 12.47kV - 208Y/12C 500 kVA, 3ø 208Y/120V 208Y/120V 1000 kVA \_\_\_\_3ø,4₩ THEATER ARTS 480/277v 'THEATER ARTS' \_\_\_\_\_BLDG\_\_10\_\_\_ BLDG\_10\_ LIBRARY \_\_\_\_FRONIUS 11.4kW · | ------BLDG 41 BLDG 8A GRID-TIE INVERTER HEALTH ——♠< अ□□□¬}}── CENTER $BLDG_{42}$ 225 kVA Nelson Hall 12.47kV-UNIVERSITY CENTER SW#7, MODEL #523 MH39 UNIVERSITY CENTER I TF-15 - - BLDG 45 - 500 kVA, 30 + 12.47kV - 1208Y/120V208Y/120V, 3ø, 4W ₽¥ ₩₩ ←<E>3"C. MH7A \_\_\_\_\_PB7X

TX-10 TF-16 -400 kVA, 3¢ + 7 ~ ~ ~ 12.47kV-208Y/120V SIEMENS HALL 3ø,4W \_\_\_\_BLDG\_1\_\_\_ NELSON HALL

\_\_\_\_\_ · \_\_\_\_ · \_\_\_\_ · \_\_\_\_ · \_\_\_\_

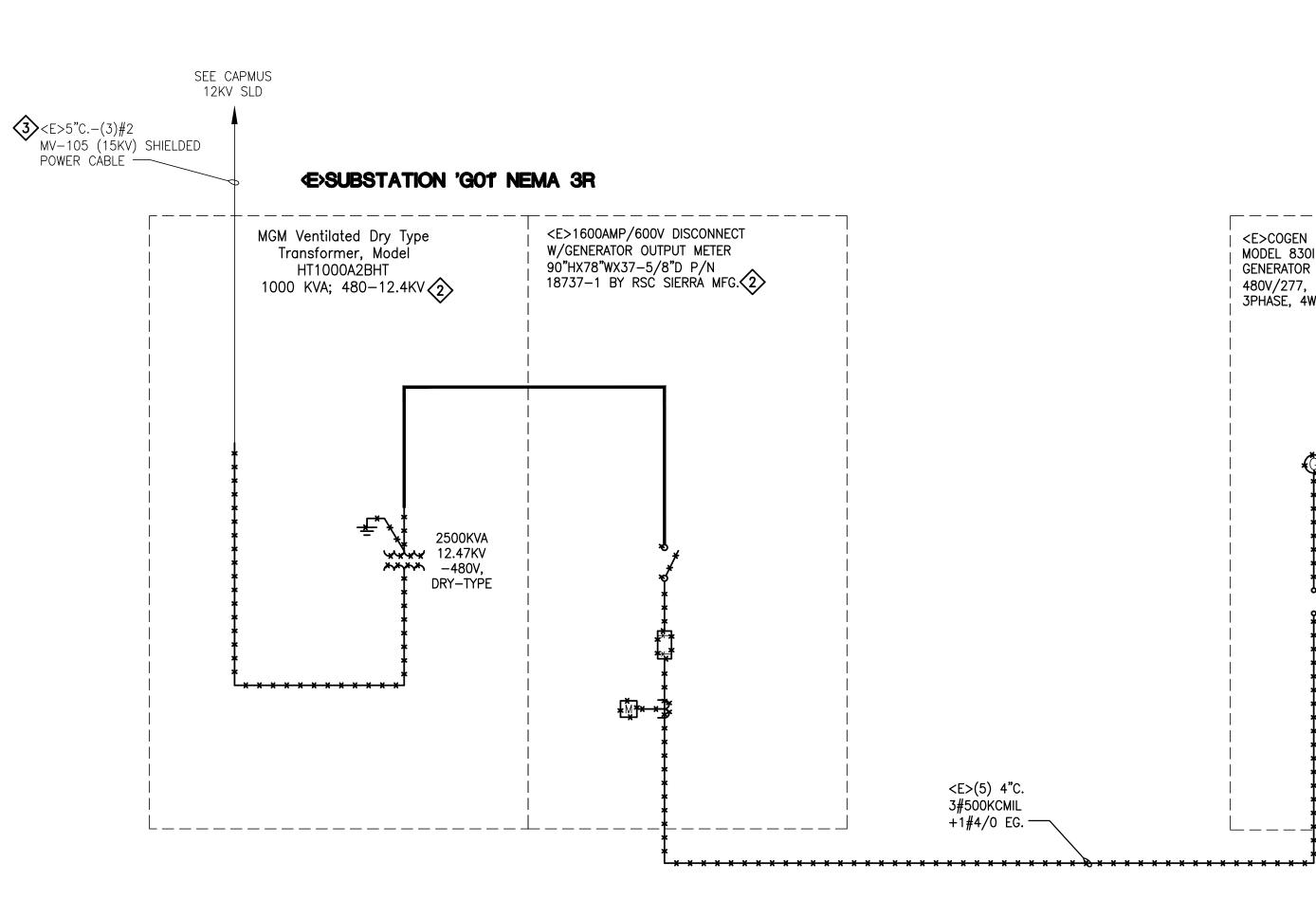




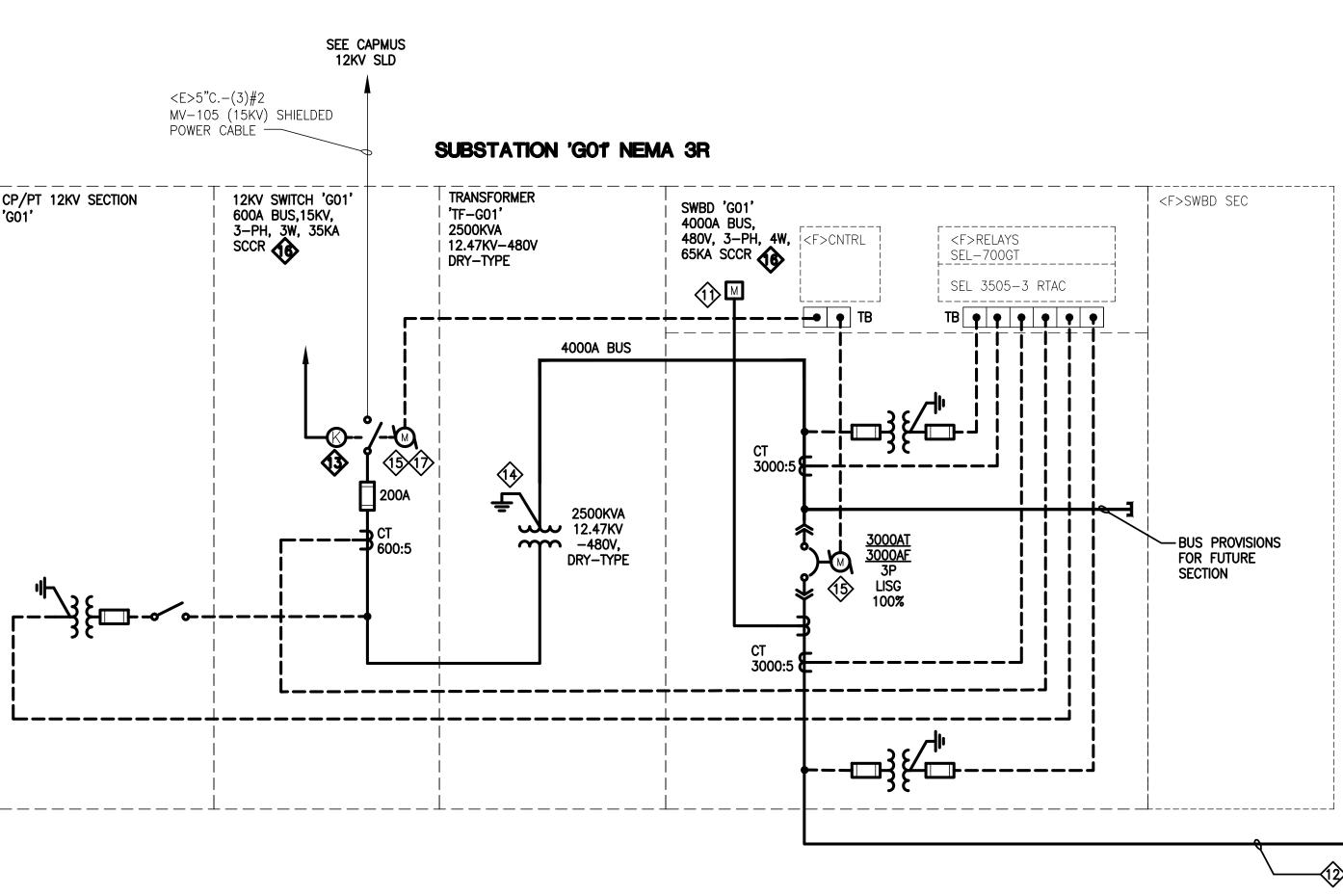


\_\_\_\_\_ CP/PT 12KV SECTION 

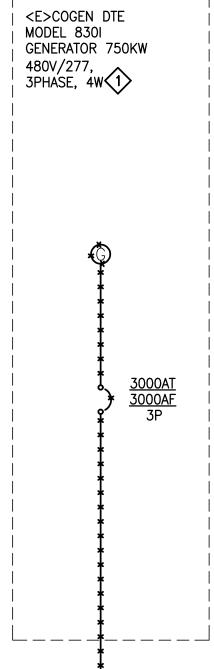
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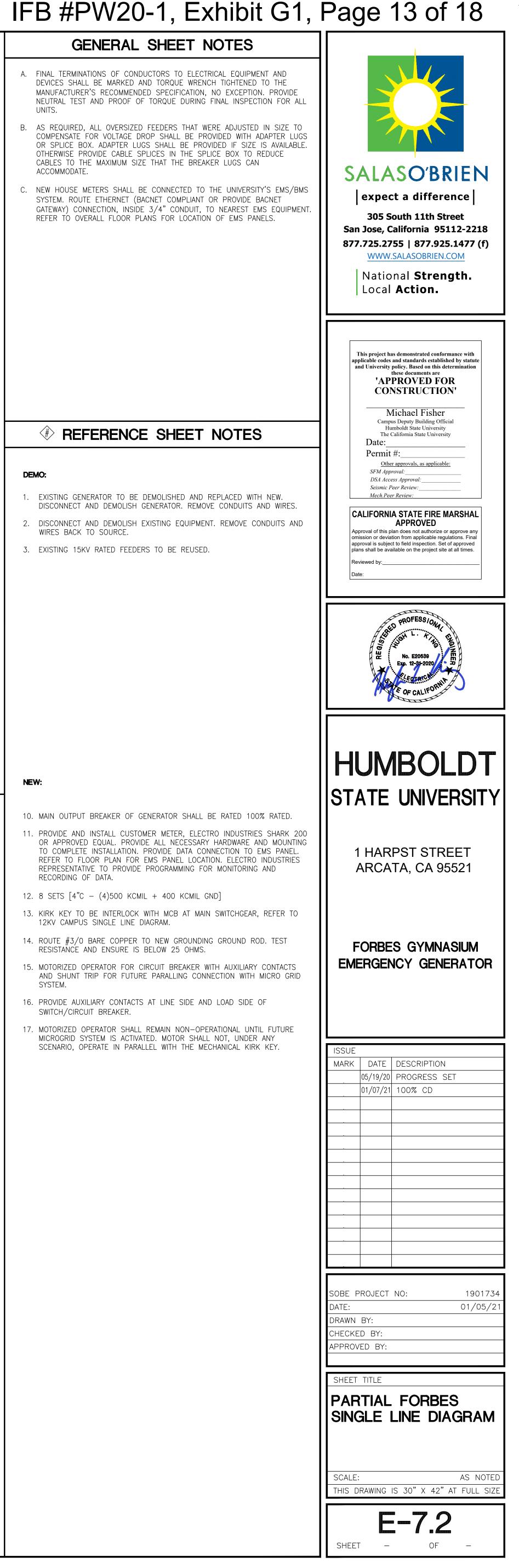
**PARTIAL FORBES SINGLE LINE DIAGRAM - DEMO** (2) SCHEMATIC



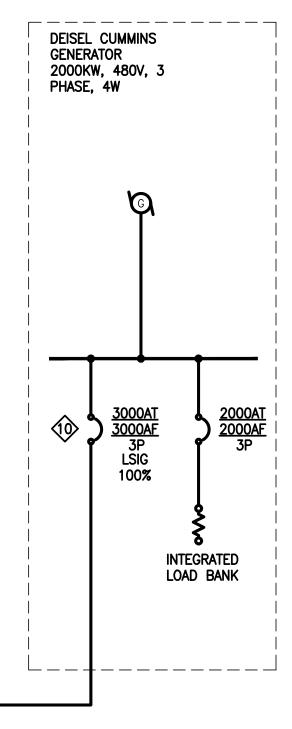
**PARTIAL FORBES SINGLE LINE DIAGRAM - NEW** 



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Α.	FINAL TERMINATIONS OF CONDUCTORS TO ELECTRICAL EQUIPMENT AND
	DEVICES SHALL BE MARKED AND TORQUE WRENCH TIGHTENED TO THE
	MANUFACTURER'S RECOMMENDED SPECIFICATION, NO EXCEPTION. PROVIDE
	NEUTRAL TEST AND PROOF OF TORQUE DURING FINAL INSPECTION FOR A
	UNITS.



	SYMBOLS			VALVES	6	Pl
1/2" = 1'-0"	<ul> <li>EXTENT OF DEMOLITION</li> <li>NEW TO EXISTING CONNECTION</li> <li>NEW TO EXISTING CONNECTION</li> <li>REVISION NUMBER</li> <li>WORK ITEM (MECHANICAL)</li> <li>WORK ITEM (PLUMBING)</li> <li>DETAIL WORK ITEM (PLUMBING)</li> <li>DETAIL DESIGNATION</li> <li>DETAIL DESIGNATION&lt;</li></ul>	e Sheet) E IBER R I <b>PMENT</b>		BALL BUTTERFLY GATE GATE, ANGLE GLOBE, ANGLE THREE WAY	PRS	
	EXISTING PIPING (ABOVE GRADE OR FLOOR          EXISTING PIPING (BELOW GRADE OR FLOOR)          NEW PIPING (ABOVE GRADE OR FLOOR)          NEW PIPING (BELOW GRADE OR FLOOR)          NEW PIPING (BELOW GRADE OR FLOOR)          NEW PIPING (BELOW GRADE OR FLOOR)          PIPE TO BE REMOVED (ABOVE GRADE OR         * * * * * * -       PIPE TO BE REMOVED (BELOW GRADE OR	FLOOR)		MOTOR PNEUMATIC SOLENOID		
3'' = 1' - 0'' $1/4'' = 1' - 0''$	HEATING         BBD       BOILER BLOW DOWN         CR       CONDENSATE RETURN         CW       CITY WATER         FO(R)(S)       FUEL OIL (RETURN)(SUPPLY)         FOV       FUEL OIL TANK VENT         -(P)(S)HHW(R)(S)       (PRIMARY)(SECONDARY) HEATING HOT WATER (RETURN)(SUPPLY)         -(L)(M)(H)PS       (LOW)(MEDIUM)(HIGH) PRESSURE STEAM         -(L)(M)(H)PCR       (LOW)(MEDIUM)(HIGH) PRESSURE CONDENSATE         MU       MAKEUP WATER         PCR       PUMPED CONDENSATE RETURN         VR       VACUUM CONDENSATE RETURN	(SUPPLY)		PRESSURE REGULATOR RELIEF (R) OR SAFET SEISMIC VALVE MAKE UP WATER ASSI BACK PRESSURE PLUG VALVE TRIPLE DUTY VALVE ( BALANCE W/PRESSUR	(NUMBER & SPECIFY) R Y (S) EMBLY STOP CHECK &	
1/8		POIN	NTS LIST			
		C	CONTROL POINT	S		
1" = 10'-0"	GENERATORGEN_ALARMGENERATORGEN_VOLTAGEGENERATORGEN_CURRENTGENERATORGEN_POWERGENERATORGEN_PHASE_A_VOLTAGEGENERATORGEN_PHASE_B_VOLTAGEGENERATORGEN_PHASE_C_VOLTAGEGENERATORGEN_PHASE_C_VOLTAGEGENERATORGEN_PHASE_A_CURRENTGENERATORGEN_PHASE_A_CURRENTGENERATORGEN_PHASE_C_CURRENTGENERATORGEN_PHASE_C_CURRENTGENERATORGEN_PHASE_C_CURRENTGENERATORGEN_HOURS	CONTROL DEVICE MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS MODBUS	GENERATOR RU GENERATOR AL GENERATOR AL GENERATOR RM GENERATOR RM GENERATOR PH GENERATOR PH GENERATOR PH GENERATOR PH GENERATOR PH GENERATOR PH GENERATOR PH	ARM AS VOLTAGE AS CURRENT AL POWER ASE A RMS VOLTAGE ASE B RMS VOLTAGE ASE C RMS VOLTAGE ASE A RMS CURRENT ASE B RMS CURRENT ASE C RMS CURRENT	CONTROL DEVICE LOCATION GEN CONTROLLER GEN CONTROLLER SUBTOTALS:	NOTES 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1" = 30'-0"	<u>NOTES:</u> 1) VIRTUAL POINT. 2) CONTROLS CONTRACTOR SHALL SUBMIT SA	MPLE GRAPHICS	FOR GENERATOR I		OTAL VIRUTAL POINTS:	13
1" = 80' - 0"						

PIPING	SPECIALTIES	ABBREVIATIONS	GENERAL NOTES
	<ol> <li>INTERCEPT <e> M CONDUIT TO NEW DRAWINGS FOR CO PLAN FOR APPROX</e></li> <li>ALL CONTROLS CO</li> <li>PROVIDE CONNECTI</li> <li>PROVIDE PROGRAM</li> <li>PROGRAM REQUEST DISTRICT'S DIRECTI</li> </ol>	AV AUTOMATIC AR WIT AF ADDS: FUNCHED FLOOR AS AN SPRANCE B DECER BFP BACKTLOW PROCENT BOP BOTOM PROCENT BOP BOTOM PROCENT COMPACT AND A PROFE Q CENTERLINE OFF CHEMICAL FEED TANK COMPACT COMMUNICATION DIA DIAMETER DFT DEFENTAL FRESURE TRANSDUCER DFT DEFERENTAL FRESURE DFT DEFERENTAL FRESURE DFT DEFERENTAL FRESURE DFT DEFERENTAL FRESURE TRANSDUCER ELSY ELSATION EQ FOLAL ET DEFENSION TANK F FAIRSMICH PM FLOW METER BS HOW SWICH G AS HERRIGISSION TANK F FAIRSMICH PM FLOW METER BS HOW SWICH G AS HERRIGISSION NN NOTES SATE OF DEFENSIONE HERRIGISSION NN NOTES WITH OULP HAX HEAT EXCHANGE EE WORT ELEMTION NN NOTES WITH OULP HAX MARLAL AR VEN MU MAKE-UP MU MAKE-UP	<ul> <li>A. DECAMPTER DE LA CONTRACT DE CONTRACTOR ALTER A SUBJECT DE LA CONTRACT AL DEPARTY DE CONTRACT AL DEPARTY DE LA CONTRACT AL DEPARTY DE CONTRACT AL DEP</li></ul>
	SUB-PAGE OF THE FROM THE MAIN B 2. PROGRAM GENERAT ON THE POINTS LI 3. SAMPLE GRAPHIC S 4. TRENDS SHALL BE	FOR GRAPHICS DISPLAYING REAL TIME VALUES OF ALL THE POINTS PROVIDED	<ol> <li>ALL LANDSCAPING AND HARDSCAPING DAMAGED AS A RESULT OF UNDERGROUND WORK SHALL BE RESTORED TO AS-FOUND CONDITION. SAWCUTING OF HARDSCAPE SHALL BE FROM SCOREMARK TO SCOREMARK. REPAIRS SHALL BE MADE WITH #4 DOWELS © 12" O.C., 4-1/2" MIN. EMBED IN 6000 PDI EPOXY.</li> <li>THE INTENT OF THIS PROJECT IS TO INSTALL UNDERGROUND UTILITIES THROUGHOUT THE CAMPUS AND TO RESTORE ALL DISTURBED FEATURES OF SURFACE IMPROVEMENTS. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITES ARE TO BE RESTORED TO "AS-FOUND" OR BETTER CONDITION.</li> <li>ALL SURFACE REPAIRS SHALL MATCH ADJACENT SURFACE FEATURES IN CONSTRUCTION, COLOR AND FINISH. AL TURF AREAS DISTURBED ARE TO BE REPAIRED TO CONGINAL CONDITION WITH THE USE OF TOP SOIL, CONDITION AND SOD. MATCH GRASS TYPES BY AREA TO PROVIDE SAME TURF CHARACTERISTICS AS ADJACENT TURF.</li> <li>CONCRETE SIDEWALK REPAIRS: ALL CONCRETE SIDEWALKS ARE TO BE CONSIDERED AS TRAFFIC RATED AND SH BE REPLACED/REPAIRED WITH MINIMUM 6" OF 3000 PSI CONCRETE WITH #4'S AT 12" O.C.E.W. PLACED ON TOF OF 6" OF CLASS II AGBREGATE.</li> <li>ASPHALT ROADWAY REPAIRS: ALL ASPHALT DRIVEWAYS ARE TRAFFIC RATED. ALL ASPHALT REPAIRS SHALL BE REPARED TO MATCH ADJACENT BASE COURSE, BINDER COURSE AND WEARING COURSES. RESTORE ANY/ALL STRIPING TO AS FOUND CONDITION.</li> <li>UNDERGROUND UTILITY NOTE:</li> <li>THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITES AS SHOWN ON THIS TOPOGRAPHIC SURVEY WERE OBTINED FROM SOURCES OF VARING RELIABILITY. A REASONABLE EFFORT HAS BEEN MADE TO FIELD LOCATE AND DELINEARE ALL KNOWN UTILITIES BUT, SINCE ONLY ACTUAL EXCAVATION CAN REVEAL THE TYPES, LOCATION AND PHYSICAL CHARACTERISTICS OF ALL UNDERGROUND UTILITIES AS SHOWN ON THIS TOPOGRAPHIC SURVEY WERE OBTINED FROM SOURCES OF VARTING RELIABILITY. A REASONABLE EFFORT HAS BEEN THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THEIR DELINEATION AS SHOWN ON THIS PLAN.</li> <li>CONTRACTOR TO OFIDID AS SHALLOW AS 6".</li> <li>LAYING OUT THE WORK:</li> <li>L</li></ol>

GENERAL NOTES	APPLICABLE CODES
SAL, BIDDER SHALL EXAMINE CONSTRUCTION DRAWINGS AND SPECIFICATIONS AND CONSTRUCTION SITE. HE SHALL BE FAMILIAR WITH THE CONDITIONS UNDER WHICH ND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO BE MADE IN THIS CONNECTION IN BEHALF OF THE CONTRACTOR FOR ANY ERROR C. DETERMINE THE SEQUENCE OF CONSTRUCTION THROUGHOUT THE PROJECT.	UNLESS OTHERWISE INDICATED OR SPECIFIED, PERFORM THE WORK IN CONFORMANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE REGULATORY REQUIREMENTS, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: 1. CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE (PART 1, TITLE 24): 2019
HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL SURFACES RING, PAINTING AND/OR OTHER WORK DUE TO THE INSTALLATION OF WORK UNDER	2. CALIFORNIA BUILDING CODE (PART 2, TITLE 24): 2018 IBC WITH 2019 CA AMENDMENTS 3. CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24): 2017 NEC WITH 2019 CA AMENDMENTS
CATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.	4. CALIFORNIA MECHANICAL CODE (PART 4, TITLE 24): 2018 UMC WITH 2019 CA AMENDMENTS
BE CONSIDERED A PART OF THIS CONTRACT AND NO EXTRA CHARGES WILL BE	5. CALIFORNIA PLUMBING CODE (PART 5, TITLE 24) 2018 UPC WITH 2019 CA AMENDMENTS
IDE MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE F THE PROJECT.	6. CALIFORNIA ENERGY CODE (PART 6, TITLE 24): 2019
DUGH FIRE WALLS. FURNISH AND INSTALL FIRE RATED BACKBOXES AS REQUIRED TO	7. CALIFORNIA HISTORICAL BUILDING CODE, (PART 8, TITLE 24): 2019

CURRENT EDITION

BUILDING CODE WITH 2019 CA AMENDMENTS)

JGH FIRE WALLS. FURNISH AND INSTALL FIRE RATED BACKBOXES AS REQUIRED TO NG OR WALLS WHERE RECESSED ELECTRIC EQUIPMENT SUCH AS LIGHT FIXTURES, , ETC. ARE INSTALLED IN RATED WALL OR CEILINGS. MATE. THE DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT ALL FITTINGS,

# IFB #PW20-1, Exhibit G1

# 13. NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS: 2019 (CA AMENDED)

- 14. NFPA 14 INSTALLATION OF STANDPIPE, PRIVATE HYDRANT AND HOSE SYSTEMS: 2019 (CA AMENDED) 15. NFPA 17 DRY CHEMICAL EXTINGUISHING SYSTEM: 2017 EDITION
- 16. NFPA 17A TO A UL 300 FOR CLASS I HOOD FIRE SUPPRESSION SYSTEM. (WET CHEMICAL

11. CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24): 2019

EXTINGUISHING SYSTEMS) 2017 17. NFPA 20 INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION: 2019 EDITION

8. CALIFORNIA FIRE CODE (PART 9, TITLE 24): 2018 IFC WITH 2019 CA AMENDMENTS

9. CALIFORNIA EXISTING BUILDING CODE (PART 10, TITLE 24): (2018 INTERNATIONAL EXISTING

10. CALIFORNIA GREEN BUILDING STANDARDS CODE OR CAL GREEN (PART 11, TITLE 24): 2019

12. CALIFORNIA CODE OF REGULATIONS PUBLIC SAFETY (TITLE 19), STATE FIRE MARSHAL:

- 18. NFPA 22 WATER TANKS FOR PRIVATE FIRE PROTECTION: 2018 EDITION
- 19. NFPA 24 INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES: 2019 EDITION (CA AMENDED)
- 20. NFPA 25 INSPECTION, TESTING, MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS: 2020 EDITION (CA EDITION)
- 21. NFPA 72 NATIONAL FIRE ALARM CODE, WITH CA AMENDMENTS: 2019 EDITION (CA AMENDED)
- 22. NFPA 80 FIRE DOORS AND OTHER OPENING PROTECTIVE: 2019 EDITION
- 23. NFPA 110 EMERGENCY AND STANDBY POWER SYSTEMS: 2019 EDITION 24. NFPA 170 STANDARD FOR FIRE SAFETY AND EMERGENCY SYMBOLS: 2018 EDITION
- 25. NFPA 2001 CLEAN AGENT FIRE EXTINGUISHING SYSTEMS 2018
- 26. ICC 300-12 STANDARD ON BLEACHERS, FOLDING AND TELESCOPIC SEATING AND GRANDSTANDS
- 27. SFM 12–10–1 POWER OPERATED EXIT DOORS
- 28. SFM 12-10-2 SINGLE POINT LATCHING OR LOCKING DEVICES 29. SFM 12–10–3 EMERGENCY EXIT & PANIC HARDWARE
- 30. ASTM STANDARD CHANGES (EXAMPLE: ASTM E648-04 STANDARD TEST METHOD FOR CRITICAL
- RADIANT FLUX OF FLOOR)
- 31. UL 38 MANUAL OPERATED SIGNAL BOXES, WITH REVISIONS, LATEST EDITION AS AMENDED
- 32. UL 268 SMOKE DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
- 33. UL 268A SMOKE DETECTORS DUCT APPLICATIONS 34. UL 300 FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF
- RESTAURANT COOKING AREAS
- 35. UL 305 PANIC HARDWARE 36. UL 464 AUDIBLE SIGNAL APPLIANCES
- 37. UL 521 HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
- 38. UL 864 CONTROL UNITS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
- AMERICANS WITH DISABILITIES ACT (A.D.A.) FEDERAL ACCESSIBILITY STANDARDS
- ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

AISC MANUAL OF STEEL CONSTRUCTION ASCE/SEJ 7-16, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION

## SUMMARY OF WORK

### <u>MECHANICAL/PLUMBING – DEMO:</u>

- 1. DEMO ABOVE GRADE GAS PIPING, GAS METER AND GAS CONNECTION TO COGENERATION UNIT.
- 2. DISCONNECT AND CAP <E> GAS PIPING, SERVING ABANDONED COGEN UNIT, IN SHUTOFF VALVE BOX
- 3. ABANDON <E> UNDERGROUND GAS PIPING IN PLACE.

CONFLICT WITH THE NEW GENERATOR PAD.

- 4. <E> HEAT RECOVERY PIPING, RECIRCULATION PUMP, EXPANSION TANK, AIR SEPARATOR AND ALL OTHER EQUIPMENT ON PUMP PAD SHALL BE PROTECTED IN PLACE.
- 5. DEMO <E> HEAT RECOVERY PIPING CONNECTION TO COGEN UNIT AND UNDERGROUND HHW PIPING

### <u>MECHANICAL/PLUMBING – NEW:</u>

- RECONNECT UNDERGROUND HEAT RECOVERY PIPING, AFTER DISCONNECTION FROM COGEN UNIT, TO MAINTAIN <E> HEAT RECOVERY PIPE LOOP. REROUTE PIPING, AS SHOWN, TO AVOID CONFLICT WITH NEW GENERATOR PAD.
- 2. INSTALL AIR TIGHT CAP ON <E> GAS LINE. UNDERGROUND GAS LINE MATERIAL SHALL BE FIELD VERIFIED. IF POLYETHYLENE, PROVIDE SOCKET FUSION WELDED CAP. IF STEEL, THREAD OUTSIDE PIPE AND INSTALL THREADED CAP.

<u>CONTROLS - NEW:</u>

1. PROVIDE & INSTALL NECESSARY CONTROL WIRING AND PROGRAMMING TO CONNECT GENERATOR TO <E> BMS. SEE CONTROLS POINTS LIST ON MP-0.1.

### MECHANICAL & PLUMBING DRAWING INDEX

SHEET NO.

DESCRIPTION

MS-4.1

MP-0.1 MECHANICAL & PLUMBING GENERAL NOTES, SYMBOLS & ABBREVIATIONS MECHANICAL PARTIAL SITE PLAN MP-5.1 MECHANICAL & PLUMBING DETAILS

,	Page 14 of 18
	Image: Constraint of the street of the st
	<text></text>
	HUMBOLDT STATE UNIVERSITY
Χ.	1 HARPST STREET ARCATA, CA 95521
IN	EMERGENCY GENERATOR
OF	ISSUE MARK DATE DESCRIPTION 05/19/20 PROGRESS SET 01/07/21 100% CD
	SOBE PROJECT NO:         1901734           DATE:         01/05/21           DRAWN BY:         01/05/21
	CHECKED BY: APPROVED BY: CM SHEET TITLE MECHANICAL & PLUMBING GENERAL NOTES, SYMBOLS A DEDEEX/LATIONIS
ļ	
	& ABBREVIATIONS SCALE: AS NOTED THIS DRAWING IS 30" X 42" AT FULL SIZE



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### GENERAL SHEET NOTES

- A. REFER TO ELECTRICAL SHEETS FOR GENERATOR EQUIPMENT DEMOLITION.
- B. ALL GAS PIPING DISCONNECTED FROM DEMOLISHED GENERATOR SHALL BE CAPPED AND SEALED AIR TIGHT, U.O.N.
- C. IN LOCATIONS WHERE GAS PIPING IS DEMOLISHED, DEMOLISH <E> PIPE SUPPORTS THAT ONLY SUPPORTED GAS PIPING.
- D. ALL HARDSCAPING AND LANDSCAPING DISTURBED FOR DEMOLITION OF <E> PIPING OR INSTALLATION OF NEW PIPING SHALL BE RESTORED TO ITS ORIGINAL CONDITION. MATCH ADJACENT SURFACES.
- E. CONTRACTOR SHALL VERIFY GAS PRESSURE OF <E> GAS PIPING CONNECTED TO AND REPORT VALUE TO ENGINEER.
- F. ALL EXPOSED NUTS, BOLTS, FASTENERS, ANCHORS, UNISTRUT SUPPORT, STRAPS, ETC. SHALL BE HOT—DIPPED GALVANIZED, U.O.N.
- G. ALL EXPOSED NUTS, BOLTS, FASTENERS, ANCHORS, UNISTRUT SUPPORT, STRAPS, ETC. SHALL BE HOT-DIPPED GALVANIZED, U.O.N.

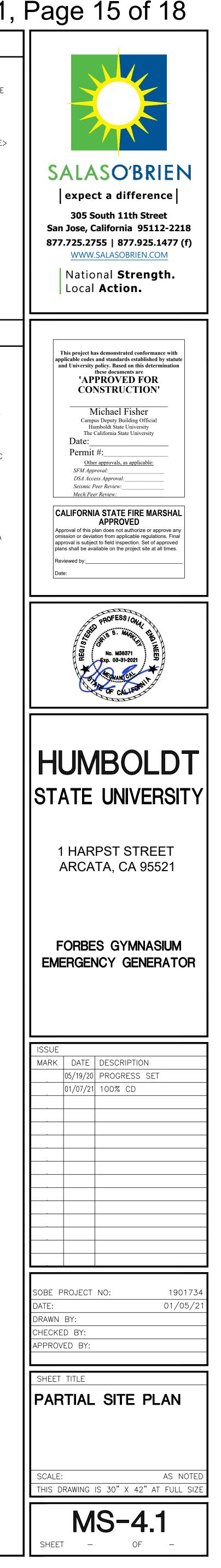
## REFERENCE SHEET NOTES

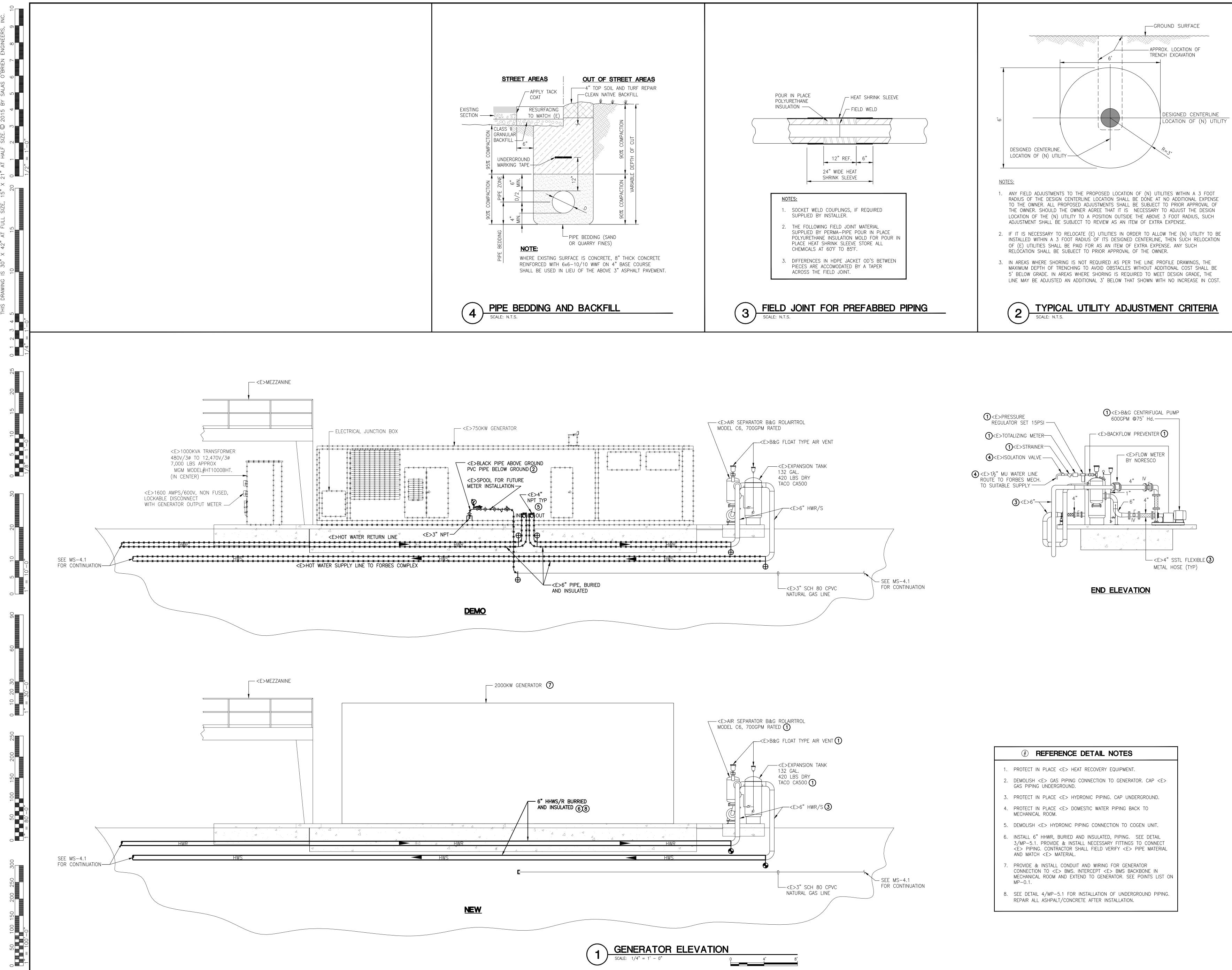
### DEMO:

- 1. DEMO <E> GAS CONNECTION AND PIPING TO GENERATOR. SEE DETAIL 1/MP-5.1.
- 2. PROTECT IN PLACE <E> HHW PUMPS, EXPANSION TANK, AIR SEPARATOR, PIPING, CONCRETE PAD, ETC. SEE DETAIL 1/MP-5.1.
- 3. DISCONNECT GAS PIPING TO <E> COGENERATION UNIT IN <E> GAS SHUTOFF VALVE VAULT. CAP PIPING DOWNSTREAM OF EXISTING SHUT OFF VALVE. PIPING SHALL BE CAPPED WITHIN <E> VAULT AND A PLASTIC TAG STATING "ABANDONED" SHALL BE INSTALLED ON THE ABANDONED GAS PIPE TO THE COGENERATION UNIT.
- 4. ABANDON <E> GAS PIPING UNDERGROUND.
- 5. DEMO <E> HEAT RECOVERY HYDRONIC PIPING AT UNIT. RECONNECT <E> 6" HEAT RECOVERY LOOP PIPING UNDERGROUND. CONTRACTOR SHALL FIELD VERIFY <E> PIPE MATERAL AND SIZE, AND PROVIDE AND INSTALL APPROPRIATE FITTINGS AND PIPE MATERIAL TO RECONNECT PIPING FOR A FULLY OPERABLE HEAT RECOVERY LOOP SYSTEM.
- 6. PROTECT <E> UNDERGROUND HYDRONIC PIPING IN PLACE. LOOP SHALL REMAIN ACTIVE AFTER DEMOLITION OF COGEN UNIT.
- <E> HEAT RECOVERY HYDRONIC LOOP TO WILDLIFE BUILDING 11, BIOSCIENCE BUILDING 3B, SCIENCE BUILDING 3A AND SCIENCE BUILDING 3E.
- 8. DEMOLISH <E> UNDERGROUND HHWS/R PIPING WHERE IT CONFLICTS WITH NEW GENERATOR PAD FOOTPRINT. CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING WITH RESPECT TO NEW PAD.

### <u>NEW:</u>

- 21. INSTALL UNDERGROUND PRE-FABBED (INSULATED & JACKETED) HHWS/R PIPING. ROUTE NEW PIPING TO AVOID FOOTPRINT OF GENERATOR PAD. DEMOLISH <E> ABANDONED GAS PIPING AS REQUIRED, WHERE IT CONFLICTS WITH ROUTING OF NEW HHWS/R PIPING.
- 22. INTERCEPT <E> BMS BACKBONE IN MECHANICAL ROOM. <E> BMS UTILIZES MODBUS PROTOCOL. EXTEND RS485 WIRING IN CONDUIT TO NEW GENERATOR. SEE ELECTRICAL DRAWINGS FOR CONDUIT PATHWAY AND NEW GENERATOR LOCATION.

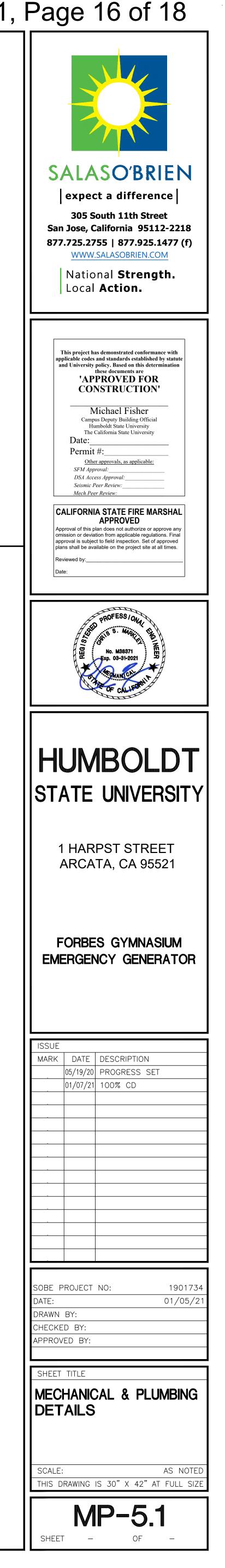




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	(#) REFERENCE DETAIL NOTES
1.	PROTECT IN PLACE <e> HEAT RECOVERY EQUIPMENT.</e>
2.	DEMOLISH <e> GAS PIPING CONNECTION TO GENERATOR. CAP <e> GAS PIPING UNDERGROUND.</e></e>
3.	PROTECT IN PLACE <e> HYDRONIC PIPING. CAP UNDERGROUND.</e>
4.	PROTECT IN PLACE <e> DOMESTIC WATER PIPING BACK TO MECHANICAL ROOM.</e>
5.	DEMOLISH <e> HYDRONIC PIPING CONNECTION TO COGEN UNIT.</e>
6.	INSTALL 6" HHWR, BURIED AND INSULATED, PIPING. SEE DETAIL 3/MP-5.1. PROVIDE & INSTALL NECESSARY FITTINGS TO CONNECT <e> PIPING. CONTRACTOR SHALL FIELD VERIFY <e> PIPE MATERIAL AND MATCH <e> MATERIAL.</e></e></e>
7.	PROVIDE & INSTALL CONDUIT AND WIRING FOR GENERATOR CONNECTION TO <e> BMS. INTERCEPT <e> BMS BACKBONE IN MECHANICAL ROOM AND EXTEND TO GENERATOR. SEE POINTS LIST ON MP-0.1.</e></e>
8.	SEE DETAIL 4/MP-5.1 FOR INSTALLATION OF UNDERGROUND PIPING.



# **STRUCTURAL NOTES & SPECIFICATIONS**

GENERAL Construction and materials shall be as specified and as required by the 2019 edition of the California Building Code (CBC) and locally enforced codes and authorities.

All articles, materials and equipment shall be installed, applied and connected as directed by the manufacturer's latest written specifications except where otherwise noted. Material notes on the drawings shall take precedence over these Specifications. In the event certain features of the construction are not fully shown, their construction shall be as shown for similar features. All

dimensions shall take precedence over scale shown on the Plans.

It shall be the Contractor's sole responsibility to design and provide adequate shoring, bracing and formwork as required for the protection of life and property during construction.

The Contractor shall examine and check all existing conditions, dimensions, levels and materials and notify the Engineer of any discrepancies before proceeding with the work. Should a discrepancy appear in the Specifications or Drawings, or in the work done by others from the contract documents that affect any work, notify the Architect or Engineer at once for instruction on how to proceed. If the Contractor proceeds with the work affected without instructions from the Engineer, the Contractor shall make good any resulting damage or defect to the satisfaction of the Engineer. Should a conflict occur in or between Drawings and Specifications, or where detail references on Contract Drawings have been omitted, the Contractor is deemed to have estimated the most expensive materials and construction method involved, unless a written decision of the Engineer has been obtained which describes an alternate method and/or materials.

Do not scale structural drawings.

Materials stored on the site shall be properly stacked and protected to prevent damage and deterioration until use. Failure to protect materials may be cause for rejection of work.

The Contractor shall do all cutting, fitting, or patching of his work that may be required to make its several parts fit together properly and shall not endanger any other work by cutting, or otherwise altering the total work or any part of it. Contractor shall exercise care to protect any existing construction so that integrity and finish are not impaired. All patching, repairing and replacing of materials and surfaces, cut or damaged in execution of work, shall be done with appropriate materials so the surfaces replaced will, upon completion match surrounding similar surfaces.

See architectural, electrical and mechanical drawings for size and location of pipe, vent, duct and other openings and details not shown on the structural drawings. Structural drawings, details, dimensions, etc. shall be checked and verified, by the Contractor, with the drawings by others. Discrepancies shall be brought to the attention of the Engineer for resolution before proceeding with the work.

### CONCRETE

Work done under this section shall conform with the applicable portions of ACI 318, latest edition.

Poured in place concrete work shall be constructed of normal weight, Portland Cement Concrete, having a minimum 28-day compressive strength of 3000 psi. Portland cement concrete shall conform to the requirements of ACI 318, "Building Code Requirements for Reinforced Concrete", latest edition. The concrete shall be placed with a maximum water/cementitious material ratio of 0.50 by weight per cubic yard. Concrete shall have class F fly-ash content equal to 25% of the total cementitious materials. Maximum concrete slump shall be 4 inches. The use of any admixture in the concrete must be approved by the Engineer.

Aggregates: Coarse aggregates shall conform to ASTM C33 size 57, 67 or 7. Pea gravel aggregates shall not be used.

Newly placed concrete shall be cured in accordance with the provisions in ACI 308, "Standard Practice for Curing Concrete," latest edition. Method of curing shall be at the option of the Contractor with approval of the Owner and Engineer.

Metal anchorage devices, anchor bolts, etc. shall be secured in place and inspected prior to placing concrete. Wet setting embedded devices is not acceptable.

#### REINFORCEMENT

Use Grade 60 deformed reinforcing bars conforming to the requirements of ASTM A615. Stagger all reinforcing bar contact splices. Support horizontal steel at bottom on mortar blocks. Minimum 3-inch clearance for surfaces poured against earth; minimum 1-1/2 inch elsewhere unless noted otherwise.

All reinforcing bars to be welded shall be ASTM Designation A706 and welded in accordance with A.W.S. D1.4 "Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction."

All reinforcing, and other embedments shall be secured in place and inspected prior to placing any concrete or grout. Lap bars 40 par diameters minimum

Work done under this section shall conform with the applicable portions of ACI 318, latest edition, particularly Chapter 7, "Details of Reinforcement".

### EARTHWORK

Footings shall be embedded into firm native soil or engineered fill as shown in the plans and as specified in Chapter 18 of the current California Building Code. Footings shall extend a minimum of 12 inches into firm native soil or 12 inches below pad grade which ever is lower. Footings are proportioned for an allowable soil pressure of 1500 PSF per Table 1806.2 of the 2019 California Building Code for class 5 material.

Contractor shall carefully excavate all materials necessary, of whatever nature, for construction of the work. Any material of an unsuitable or deleterious nature discovered below the bottoms of the foundations shall be brought to the attention of the engineer before proceeding with the work.

Backfill placed under paved areas shall be compacted to a relative density of 95%.

All other earthwork shall conform to the requirements of the current CBC Chapter 33, "Safeguards During Construction."

#### **POST-INSTALLED ANCHORAGE NOTES:**

1. Mechanical unit anchorage - Screw Anchors 1.1. Simpson Titen HD (ESR-2713)

Anchors shall have minimum embedment of not less than eight (8) anchor diameters, unless noted otherwise. Torque anchors during installation to the values specified in manufacturer's ICC-ES Report. See Notes Below for special Inspection and testing requirements

- 2. Mechanical unit anchorage Rods and Bars in SET-3G Epoxy Adhesive
- 2.1. Simpson SET-3G Epoxy Adhesive (ESR-4057)
- Anchor minimum embedment, drill bit diameter, maximum tightening torque, installation dimensions and other layout properties shall satisfy Table 1 of ESR Report, unless noted otherwise. Holes shall be prepared and cleaned prior to epoxy injection per ESR Report.
- Tension tests shall be performed on anchors to the values specified in manufacturer's ICC-ES Report. See Notes Below for special Inspection and testing requirements.
- Prior to drilling holes for post installed anchors into existing concrete, all reinforcing bars in area of new anchorage holes shall be located with pachometer or other suitable device and clearly marked in the field. New anchors shall be installed not less than 1" clear from reinforcing. Where reinforcing bars cannot be located, care shall be take while drilling holes so that reinforcing bars are not cut or damaged and holes shall be repaired & relocated as required. Recommend using drills with ground fault interrupters (GFI).

Where reinforcing is encountered, the hole shall be filled with non-shrink grout. New holes shall maintain the 1" clear from reinforcing note above. 4. Substitutions:

Any proposed substitutions of materials or manufacturers shall be submitted in writing to the EOR for review and approval. Approval is required prior to fabrication or installation. Properties and strengths of proposed materials must exceed those specified on these drawings.

- 5. Special Inspections. Testing and Inspection Lab shall be retained according to the ESR report.
- 5.1. Screw and Adhesive type anchors: Special Inspection is required for all anchors per the ESR of those anchors.
- 6. See electrical drawings for locations of equipment.
- 7. See prefabricated curb and electrical units drawings by others for bolt locations and spacing.
- 7.1. Use electrical units' curbs or base as templates for drilling bolt holes in concrete. 7.2. Contractor to verify all dimensions with actual equipment and support systems to be installed.

#### **TESTING AND SPECIAL INSPECTIONS**

All inspections shall conform to applicable requirements of Section 1704 of the 2019 California Building Code. Special Inspection shall be performed by an independent testing laboratory approved by the local jurisdiction and paid by the owner. Copies of all reports shall be submitted to the Engineer. See city-specific requirements for further information.

- See Special Inspection and Testing Agreement.
- Concrete construction per CBC Table 1705.3
- Concrete placing;
- Reinforcement steel placement; Post-installed Anchors and Bars in Concrete
- a. All anchor systems used shall have ICC-ES approval.
- b. Special Inspection is required for all anchors. c. Inspection shall be per ICC-ES report for anchoring system used.
- d. Testing of rods installed in epoxy is required.

Approval by the inspector does not mean approval of failure to comply with the plans or specifications. Any detail that fails to be clear or is ambiguous must be referred to the Engineer for interpretation or clarification prior to performing the work.

#### **STRUCTURAL DESIGN CRITERIA** RISK CATEGORY: (ASCE 7 TABLE 1.5-1) IV

SEISMIC DESIGN CATEGORY SITE CLASS ANALYSIS PROCEDURE USED

SEISMIC IMPORTANCE FACTOR Ss, S1, Sds, Sd1

#### WIND DESIGN CRITERIA: (ASCE 7): BASIC WIND SPEED WIND EXPOSURE IMPORTANCE FACTOR

DESIGN CRITERIA					
UNIT	Ар	Rp	Z/h	Fp or Cs	
GENERATOR	1.0	2.5	0	0.878	
MV SECTION	1.0	2.5	0	0.878	
TRANSFORMER	1.0	2.5	0	0.878	
LV SECTION	1.0	2.5	0	0.878	
RAISED PLATFORM	1.0	2.5	0	0.878	

#### SUBMITTALS

1. Rebar shop drawings for concrete 2. Concrete mix design 3. Prefabricated raised metel platform

4. Altered anchor hole design to Transformer unit

fabrication of components shall not utilize copies of the Engineer's drawings.

stamp and sign each submittal indicating they have reviewed, checked and approved the submittal for compliance with all the requirements of the plans and specifications.

# **DEFERRED SUBMITTALS:**

necessary to determine the adequacy of the deferred submittal item.

- Anchoring of 2000kW Generator to concrete foundation.
- Prefabricated Raised Platform and anchorage. Any equipment changes or modifications.

### ABBREVIATIONS

AITC

AI T

APA APPROX

AVG BLDG BLK(G)

BM **RN** 

BOT BTWN

BVL

CAN<sup>-</sup>

CBC

CLR

CMU

CONC

CONN

CONT

CTR

CVR

DIAG DIV

DWG

ELE\

FN ENGR

EOR

ES

FΝ FDN

FOC FOS

FRMG

FT

GA

FTG

GALV

GLB

HD

COL

CC

ARCH ASTM

Anchor		HDR	Header
	n Concrete Institute	HORIZ	Horizontal
America	n Institute of Steel Construction	ID	Inside Diameter
America	n Institute of Timber Constr.	IN	Inch
Alternate		JST(S)	Joist(s)
	n Plywood Association	KP	King Post
Approxii		L	Angle
Architec	t	LB	Pound
America	n Society for Testing & Materials	LL	Live Load
Average		LTWT	Light Weight
Building		MAX	Maximum
Block(ing	g)	MB	Machine Bolt
Beam		MECH	Mechanical
Boundar	y nailing	MISC	Miscellaneous
Bottom		MIN	Minimum
Betweer		MTL	Metal
Beve		NS&FS	Near Side And Far Side
Channe		NTS	Not To Scale
Cantilev	er	OC	On Center
Carriage	Bolt	OD	Outside Diameter
Californi	a Building Code	Р	Post
Center te	o Center	PERT	Pre-Engineered Roof Truss
Control	Joint	PJP	Partial Joint Penetration
Center L	ine	PL	Plate
Ceiling		PLY	Plywood
Clear, C	learance	PMR	Per Manufacturers Recommendations
Concret	e Masonry Unit	PSF	Pounds per Square Foot
Column	-	PSI	Pounds per Square Inch
Complet	e Joint Penetration	PTDF	Preservative Treated Douglas Fir
Concrete	9	R	Radius
Connect	ion	RC	Relative Compaction
Continuo	bus	REINF	Reinforcement
Center		REQD	Required
Cover		RET	Retaining
Double		R&R	Remove And Replace
Degree		RR	Roof Rafter
Detail		RS	Rough Sawn
Douglas	Fir	RWD	Redwood
Diamete		SAD	See Architectural Drawings
Diagona	l	SCH	Schedule
Dimensi	on	SECT	Section
Dead Lo	ad	SEL	Select
Down		SF	Square Foot
Drawing		SHRWL	Shear wall
Each		SHTG	Sheathing
Each Fa	се	SIM	Similar
Elevatio	1	SPEC	Specifications
Elevatio	า	SQR	Square
Edge Na	il	STD	Standard
Enginee		STL	Steel
-	r Of Record	STRUCT	Structural
Each Sid		Т	Tee Section
Each Wa		T&G	Tongue And Groove
Existing	.,	T&B	Top And Bottom
Exterior		TN	Toe Nail
Finish G	rade	тос	Top Of Concrete
Floor Jo		TOF	Top Of Footing
Floor		TOS	Top Of Steel
Field nai	lina	TOW	Top Of Wall
Foundat	-	TYP	Typical
	Concrete	UNO	Unless Noted Otherwise
	Steel/Stud	VERT	Vertical
Framing		VIF	Verify In Field
Foot or F	Feet	W	Wide flange steel beam
Footing	001	W/	With
Gauge		W/O	Without
Galvaniz	red	WP	Work Point
Galvaniz Glulam I		WWF	Welded Wire Fabric
Holdowr		V V V I	WEILEL WILL ADIL

EARTHQUAKE DESIGN CRITERIA: (ASCE 7, CSU Seismic Requirements: Attachment B, Table 1)

### NONSTRUCTURAL COMPONENTS;

NONBUILDING STRUCTURE 1.5

N/A, N/A, 1.95, 1.22

115 MPH

1.0

Shop drawings shall be submitted to the Engineer, for review, in the following areas of work:

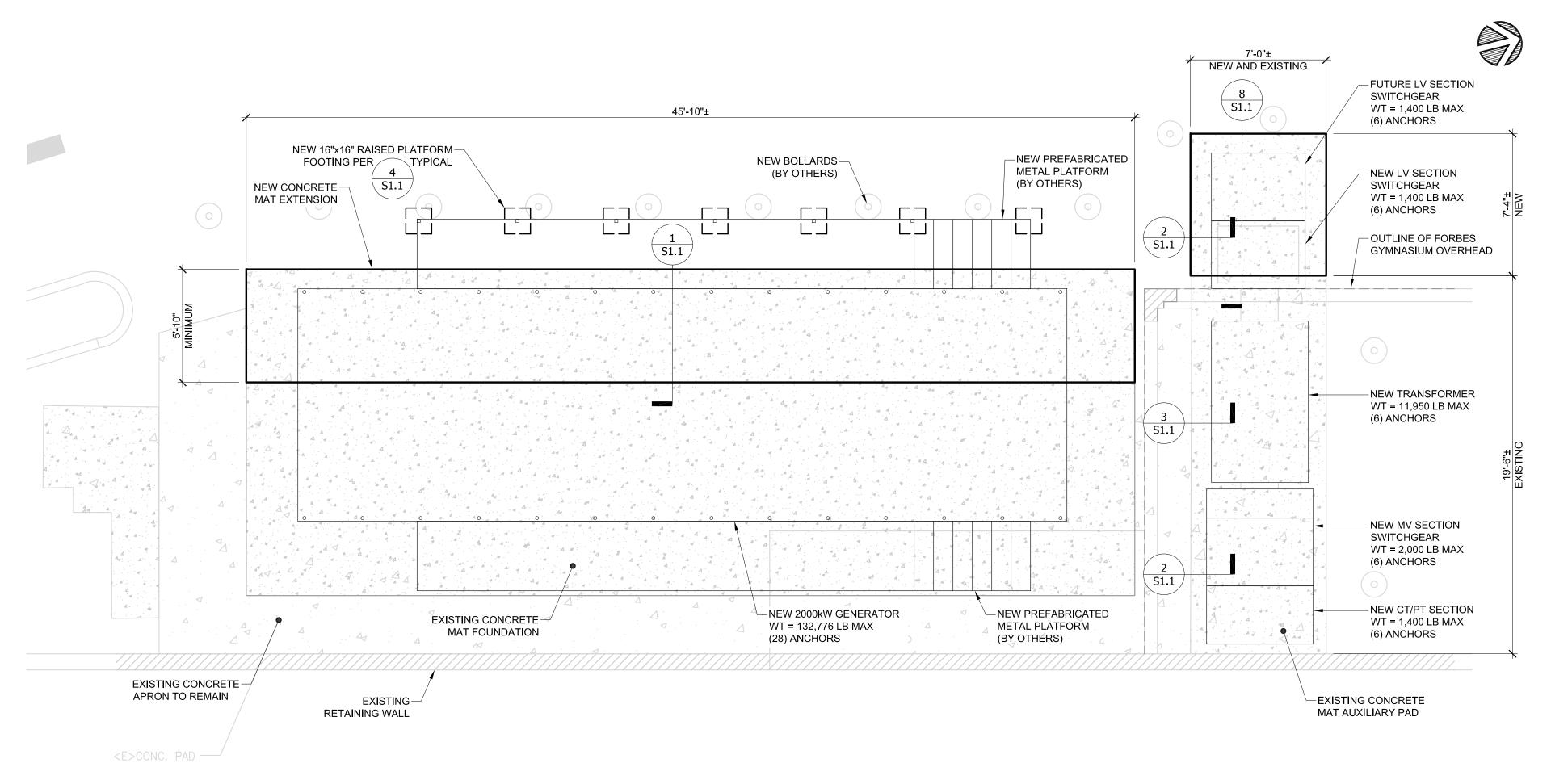
Approval by the Engineer does not mean approval of failure to comply with the plans or specifications. Shop drawings for

All submittals shall be reviewed and checked by the Contractor prior to submittal to Engineer for review. Contractor shall

Deferred submittals shall be submitted to the Engineer. The Contractor shall prepare and provide the engineering design for all deferred submittal items. Calculations and drawings submitted for review shall be signed and sealed by a Professional Engineer who is licensed in the State of California. The calculations shall include all design information

Submittal documents for the following items and as noted elsewhere on plans or specifications shall be deferred:

The engineering for the structural integrity of the element is the responsibility of the contractor or an engineer retained by the contractor. The design team remains responsible for verifying that all components (including those specified for deferred approval) are designed by the appropriate licensed design professional.



PLAN NOTES:

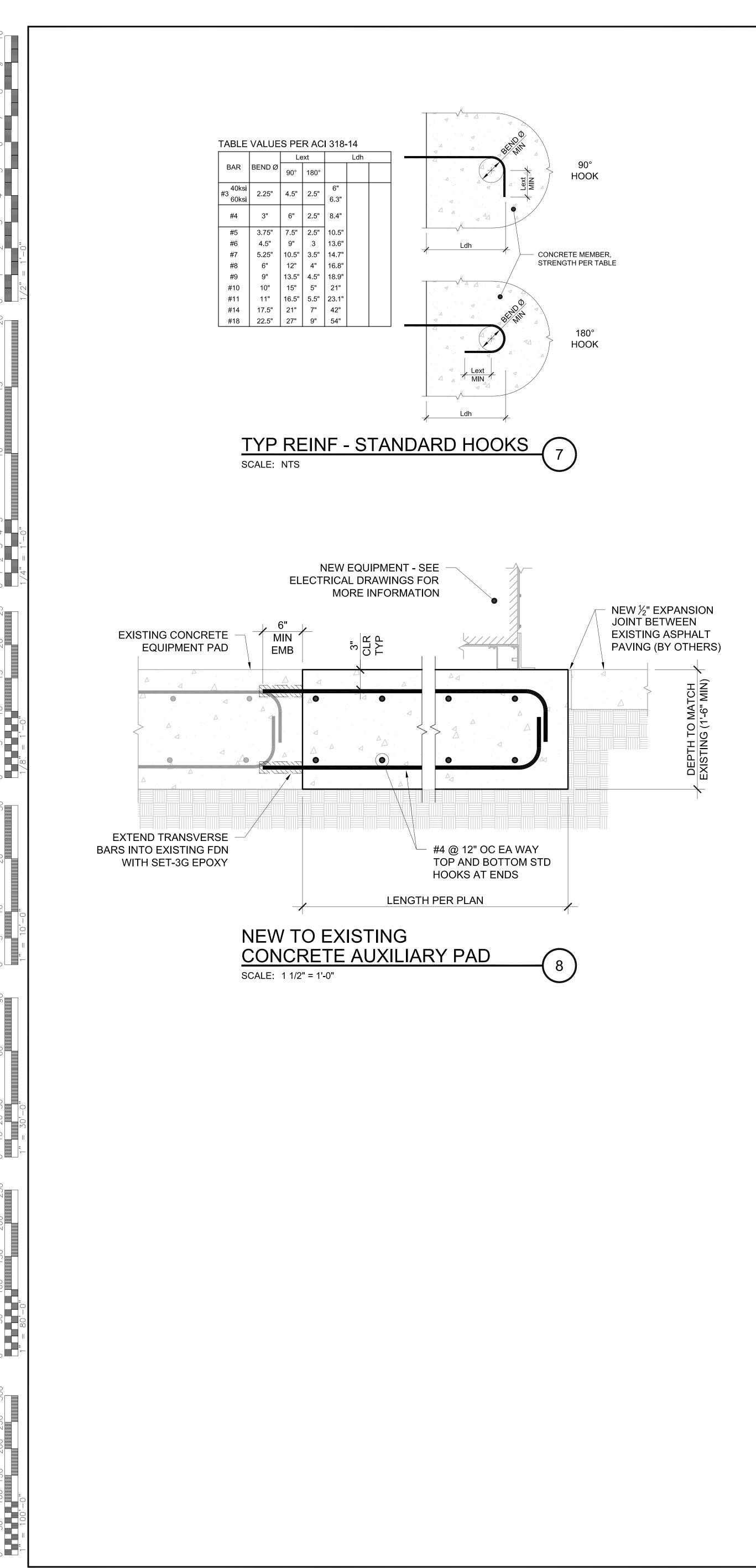
SCALE: 1/4" = 1'-0"

# IFB #PW20-1, Exhibit G1

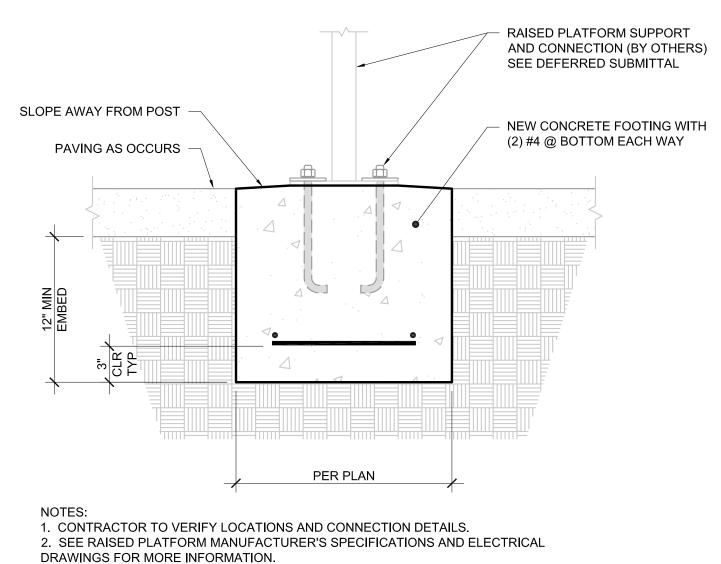
1. PLAN DIMENSIONS ARE MINIMUMS. REFER TO ELECTRICAL DRAWINGS FOR EXACT FOUNDATION LOCATIONS AND DIMENSIONS. 2. FOOTING SIZES AND DETAILS ARE BASED ON PRELIMINARY INFORMATION AVAILABLE WHEN THIS SET OF DRAWINGS WAS PRINTED. CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATING STRUCTURAL DRAWINGS WITH ELECTRICAL DRAWINGS, DEFERRED SUBMITTALS AND ANY REQURIED CHANGES.

### FOUNDATION PLAN - EQUIPMENT PADS

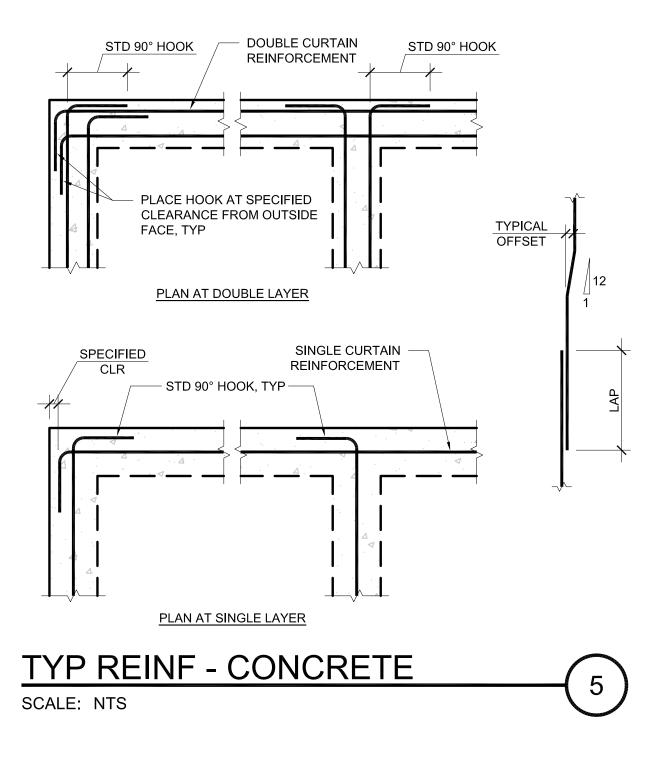
Page 17 of 18							
Image: Constraint of the street of the st							
<text></text>							
ROFESSION ROD DAVID Stand PROFESSION RDO DAVID Edgar Diaz No. 88817 Exp. 6/30/2022 CIVIL OF CALLFORM							
HUMBOLDT STATE UNIVERSITY 1 HARPST STREET ARCATA, CA 95521							
FORBES GYMNASIUM Emergency generator							
ISSUE MARK DATE DESCRIPTION 05/19/20 PROGRESS SET 08/10/20 ISSUED FOR PERMIT 12/17/20 ISSUED FOR PERMIT 1/08/21 ISSUED FOR PERMIT							
SOBE PROJECT NO: 1901734 DATE: 03/25/20 DRAWN BY: EDD CHECKED BY: BR APPROVED BY: SHEET TITLE							
FORBES GYM SPECIFICATIONS AND FOUNDATION PLAN SCALE: AS NOTED THIS DRAWING IS 30" X 42" AT FULL SIZE							
S-1,0 Sheet - OF -							

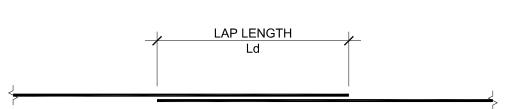


l:\20134 Salas O'Brien — SE Ancorage—Foundation at HSU\dwg\S1.0 HSU\_Forbes Gym.dwg 1/6/2021 12:52 PM Edgar Diaz









### TABLE VALUES PER ACI 318-14

		STEEI	LAP LENGTH (Ld)					
BAR SIZE		STEEL STRENGTH (fy)						
			TOP BARS	OTHER BARS				
#3	0.375"	40ksi	21"	16"				
#3	0.375"	60ksi	31"	24"				
#4	0.500"	60ksi	41"	32"				
#5	0.625"	60ksi	51"	39"				
#6	0.750"	60ksi	61"	47"				
#7	0.875"	60ksi	89"	69"				
#8	1.000"	60ksi	102"	78"				
#9	1.128"	60ksi	115"	88"				
<ul> <li>ACI 318-</li> <li>CONCR</li> <li>NORMA</li> <li>NON-EP</li> <li>CLASS '</li> <li>CLEAR '</li> <li>TOP BA</li> </ul>	L WEIGHT CO OXY COATED 'B" SPLICE SPACING OF I	25.4 EL REINFORCING ST	COATED OR	ZINC-COATEL	R) AND CLEAF	R COVER OF		

TYP REINF - LAP SPLICES SCALE: NTS

6

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