

KLAMATH ENERGY

4940 HIGHWAY 97 SOUTH

KLAMATH FALLS, OR 97603

FIRE ALARM/DETECTION & FIRE SUPPRESSION UPGRADES



8686 SOUTHWEST PARKWAY • HARRISON, OH 45030
 OFFICE: 513-202-5070 • FAX: 513-367-5678
www.3S-Incorporated.com

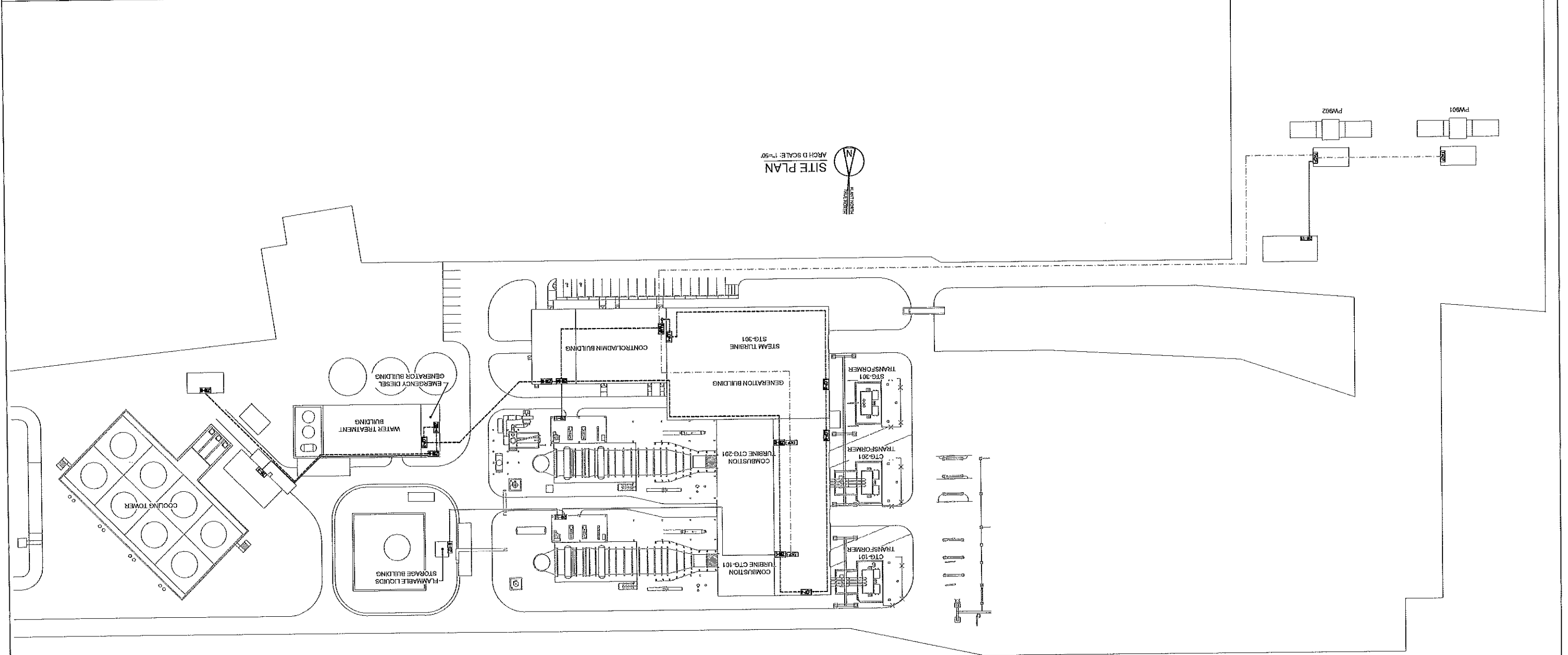
3S JOB # 17-2690



REV.	DATE	BY	DESCRIPTION
B	1-16-17	KAL	ISSUED FOR 100% DESIGN REVIEW
A	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW
PROJECT:			
KLAMATH ENERGY 4940 HIGHWAY 97 SOUTH KLAMATH FALLS, OR 97603			
DESCRIPTION:			
FIRE PROTECTION/DETECTION UPGRADES COVER SHEET			
DRAWN BY:	DATE:	SCALE:	
KAL	12-3-2017	NONE	
CHECKED BY:	PROJECT NO.:	DRAWING:	
JJW	17-2690	I of 1	
3S DRAWING NO.:	CUSTOMER DRAWING NO.:	REV.:	
2690-C01		B	

PROJECT		Klamath Energy 4940 Highway 97 South Klamath Falls, OR 97603	
DESCRIPTION		FIRE PROTECTION/DETECTION UPGRADES SITE PLAN	
DATE	SCALE	DRAWN BY	PROJECT NO.
10-31-2017	1"=50'	KAL	2690-C02
PROJECT NO.	DATE	DESIGNED BY	DISTRICT ENGINEER NO.
17-2690	10-31-2017	JLV	
SHEET NO.		SHEET	
1 OF 1		2690-C02	

3S Incorporated
 Engineered Fire Protection Systems
 8886 Southwest Parkway • Harrison, OH 45030
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SYMBOL LEGEND

[FACP]	FIRE ALARM CONTROL PANEL
[ZIB]	ZONE INTERFACE BOX

--- EXISTING WIRE TO BE RE-USED
 --- NEW WIRE TO BE PULLED
 --- NEW FIBER TO BE PULLED

PANEL BILL OF MATERIALS			
QTY.	PART NUMBER	DESCRIPTION	MANUFACTURER
5	3-CHAS7	CHASSIS ASSEMBLY FOR 7 LRM	EST
5	3-CPU3	CENTRAL PROCESSOR MODULE	EST
5	3-LCD	LIQUID CRYSTAL DISPLAY MODULE	EST
1	3-RS232	RS232 COMMUNICATION CARD	EST
6	3-SDDC1	SIGNATURE DUAL DRIVER MODULE	EST
5	3-PPS/M	PRIMARY POWER SUPPLY	EST
5	3-BPS/M	BOOSTER POWER SUPPLY	EST
10	3-LRMF	BLANK LRM FILLER	EST
5	3-FIBMB2	FIBER CARD W/INTERFACE	EST
5	MMXVR	MULTIMODE PLUG-IN TRANSCEIVER	EST
1	FSB-PC2	EST3 TO MODBUS COMMUNICATION BRIDGE	EST
58	SIGA-U06R	6 POSITION RISER SELECTION MODULE	EST
171	SIGA-MCT2	DUAL INPUT MODULE, UID MOUNT	EST
58	SIGA-MCC1	CONTROL MODULE, UID MOUNT	EST
20	SIGA-MCC1S	SYNCHRONIZED CONTROL MODULE, UID MOUNT	EST
1	MN-COM1S	ETHERNET DEVICE SERVER NETWORK INTERFACE	EST
1	MN-BRKT2	BRACKET FOR MN-COM1S	EST
89	SIGA-MCR	RELAY MODULE, UID MOUNT	EST
11	BPS10A	REMOTE BOOSTER POWER SUPPLY	EST
11	SIGA-CC1S	SYNCHRONIZATION OUTPUT MODULE	EST
5	SIGA-REL	RELEASING MODULE	EST
5	SIGA-CT1	SINGLE INPUT MODULE	EST
12	B4-732001-901	AGSIS 2.0 RELEASING PANEL	KIDDE
6	3006142	PFC-4410RC RELEASING PANEL	POTTER
19	PK9GTA	GROUND BAR	SQUARE D
19	SOSA1175T	SURGE ARRESTER, 120VAC	SQUARE D
23	2510K62	BATTERY DISCONNECT SWITCH	SQUARE D
4	1595W	15A WHITE GFI RECEPTACLE	PASS & SEYMOUR
24	55.33.9.024	JPDT RELAY	FINDER
24	94.03	RELAY BASE	FINDER
2	48.61.9.024.0074	1PDT RELAY	FINDER
2	97.01	RELAY BASE	FINDER
2	LB-16/1/C	15 AMP CIRCUIT BREAKER	SPRECHER+SCHUH
2	LB-10/1/C	10 AMP CIRCUIT BREAKER	SPRECHER+SCHUH
34	LB-5/1/C	5 AMP CIRCUIT BREAKER	SPRECHER+SCHUH
1450	V7-W4	SINGLE TIERED TERMINAL BLOCK	SPRECHER+SCHUH
46	V7-EB3	TERMINAL END BARRIER	SPRECHER+SCHUH
92	V7-EA35	TERMINAL BLOCK END CLAMP	SPRECHER+SCHUH
6	V7-CJ5-50	TERMINAL JUMPER, 50 POLE	SPRECHER+SCHUH
5	D7D-P3N3	GREEN LED PILOT LIGHT, 24V	SPRECHER+SCHUH
5	D7D-P4N3	RED LED PILOT LIGHT, 24V	SPRECHER+SCHUH
5	D7D-PCN3	AMBER LED PILOT LIGHT, 24V	SPRECHER+SCHUH
5	D7D-PSN3	YELLOW LED PILOT LIGHT, 24V	SPRECHER+SCHUH
8	4KSW-PLATE	4 KEY SWITCH PLATE	3S
30	D7M-KM23PX11	KEY-OPERATED SELECTOR SWITCH, 1 N.O./1 N.C.	SPRECHER+SCHUH
8	D7-X10	NORMALLY OPEN CONTACT BLOCK	SPRECHER+SCHUH
4	3S CUSTOM	FREE-STANDING ENCLOSURE, 88x48x20	RITTAL
8	8018.447	WKO905C WINDOW KIT, RED	RITTAL
8	8812.650	20" CHASSIS SUPPORT, 2 PACK	RITTAL
8	WM302408NC	ENCLOSURE, NEMA 12, 30x24x8, RED	RITTAL
1	WM483608NC	ENCLOSURE, NEMA 12, 36"x48"x8", RED	RITTAL
1	WMLHK	3 POINT KEY LOCKING HANDLE	RITTAL
1	3105.360	100W HEATER	RITTAL
1	311000	THERMOSTAT 24-230V AC/DC	RITTAL
10	APCDASS	BREATHER KIT	HOFFMAN
3	A16P20G	16X20 BACK PANEL	HOFFMAN
1	A20P20G	20X20 BACK PANEL	HOFFMAN
2	A30P30G	30X30 BACK PANEL	HOFFMAN
1	A42P36G	42X36 BACK PANEL	HOFFMAN
3	A48P36G	48X36 BACK PANEL	HOFFMAN
4	3S CUSTOM	WRNG WALL	3S
4	H361AWK	DISCONNECT SWITCH	SQUARE D
11	Z28838762	VENTED BATTERY ENCLOSURE W/SHELF	RITTAL
5	ALFSWD	DOOR SWITCH	HOFFMAN
5	C117MVOLTACNP	PANEL LIGHT	COOPER LIGHTING
5	20100217	MANUAL DISCHARGE TOGGLE SWITCH	KIDDE
10	BB01K22	TOGGLE SWITCH	CUTLERHAMMER
10	8491K1	SWITCH COVER	CUTLERHAMMER
3	3S-TS	CUSTOM SWITCH PLATE	3S
4	PS-12750	12V 75AH SEALED LEAD ACID BATTERY	POWER SONIC
4	PS-12550	12V 55AH SEALED LEAD ACID BATTERY	POWER SONIC
8	PS-12260	12V 26AH SEALED LEAD ACID BATTERY	POWER SONIC
52	PS-1270	12V 7AH SEALED LEAD ACID BATTERY	POWER SONIC

FIELD DEVICE BILL OF MATERIALS			
QTY.	PART NUMBER	DESCRIPTION	MANUFACTURER
86	SIGA-PS	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	EST
11	SIGA-HRS	ADDRESSABLE HEAT DETECTOR, RATE OF RISE	EST
97	SIGA-SB	DETECTOR BASE, STANDARD	EST
5	SIGA-SD	DUCT SMOKE DETECTOR	EST
66	SIGA-CT1	MONITOR MODULE	EST
14	SIGA-CT2	DUAL MONITOR MODULE	EST
4	SIGA-CR	RELAY MODULE	EST
21	SP-1-TB-LP	FIRE PULL STATION, RED	RSG
23	SP-BB-RED	PULL STATION BACKBOX, RED	RG
25	RMS-1T-WP-LP-KL	FIRE PULL STATION, RED, WEATHERPROOF, W/BOX	RSG
8	RMS-1T-WP-LP-KL	VORTEX PULL STATION, GREEN, WEATHERPROOF, W/BOX	RSG
20	RMS-1T-WP-LP-KL	CO2 PULL STATION, BLUE, WEATHERPROOF, W/BOX	RSG
2	SP-1-TB-LP	NOVEC PULL STATION, RED	RSG
10	RMS-1T-WP-LP-KL	NOVEC PULL STATION, RED, WEATHERPROOF, W/BOX	RSG
2	SP-1-TB-LP	STAT-X PULL STATION, RED	RSG
8	RMS-1T-WP-LP-KL	STAT-X PULL STATION, RED, WEATHERPROOF, W/BOX	RSG
22	RELA-ABT	ABORT STATION	EST
10	028100-001	X3301A4N11W1 LWIR FLAME DETECTOR	DET-TRONICS
10	GUS-2	3/4" SWVEL ELBOW	HUBBELL-KILLARK
10	GUM-2	3/4" UNION	HUBBELL-KILLARK
30	CUP-2	3/4" PLUG	HUBBELL-KILLARK
2	1508-AQNS	SURFACE MOUNT DOOR HOLDER	EST
12	4390-6AIR	ALARM BELL, RED, 6"	EST
21	449	WEATHERPROOF BACKBOX	EST
5	EGCFR-HDVM	CEILING MOUNT HORN/STROBE	EST
66	2452THS-1576-R	HORN/STROBE, 1576CD, INDOOR/OUTDOOR	EST
49	2452THS-110-R	HORN/STROBE, 110CD, INDOOR/OUTDOOR	EST
26	2459-WPB-R	WEATHERPROOF BACKBOX	EST
9	CS405-BA-T	STROBE, 110CD, INDOOR/OUTDOOR	EST
15	CS405-7A-T	STROBE, 150CD, INDOOR/OUTDOOR	EST
2	YL90B/D50R/UL	EXPLOSION PROOF HORN/STROBE, RED LENS	STAHL
4	FL60B/D50R/UL	EXPLOSION PROOF STROBE, RED LENS	STAHL

MECHANICAL BILL OF MATERIAL - CLEAN AGENT			
TOTAL QTY.	PART NUMBER	DESCRIPTION	MANUFACTURER
1	45-100070-001	70 LB CYLINDER w/ 53 LBS NOVEC 1230	KIDDE
1	45-100121-001	125 LB CYLINDER w/ 111 AND 79 LBS NOVEC 1230	KIDDE
1	45-100121-001	125 LB CYLINDER w/ 111 AND 88 LBS NOVEC 1230	KIDDE
1	45-100121-001	125 LB CYLINDER w/ 111 AND 94 LBS NOVEC 1230	KIDDE
1	45-100121-001	125 LB CYLINDER w/ 111 AND 102 LBS NOVEC 1230	KIDDE
1	45-100121-001	125 LB CYLINDER w/ 111 AND 103 LBS NOVEC 1230	KIDDE
1	45-100201-101	200 LB CYLINDER w/ 111 AND 126 LBS NOVEC 1230	KIDDE
1	45-100201-101	200 LB CYLINDER w/ 111 AND 135 LBS NOVEC 1230	KIDDE
1	45-100201-101	200 LB CYLINDER w/ 111 AND 161 LBS NOVEC 1230	KIDDE
1	45-100201-101	200 LB CYLINDER w/ 111 AND 175 LBS NOVEC 1230	KIDDE
1	45-100351-001	350 LB CYLINDER w/ 111 AND 321 LBS NOVEC 1230	KIDDE
1	WK-283934-000	70 LB CYLINDER MOUNTING STRAP	KIDDE
9	06-235317-001	125 LB / 200 LB CYLINDER MOUNTING STRAP	KIDDE
1	WK-281866-000	350 LB CYLINDER MOUNTING STRAP	KIDDE
6	WK-283904-000	1-1/2" VALVE OUTLET ADAPTER	KIDDE
5	WK-283905-000	2" VALVE OUTLET ADAPTER	KIDDE
11	85-890181-000	MANUAL/ELECTRIC CONTROL HEAD - 24VDC w/MONITOR SWITCH	KIDDE
11	81-485536-000	DISCHARGE PRESSURE SWITCH (1/2" FNPT INLET)	KIDDE
2	45-194017-438	1-1/2"-180° RADIAL NOZZLE - BRASS (0.2368)	KIDDE
1	45-194017-391	1-1/2"-180° RADIAL NOZZLE - BRASS (0.9896)	KIDDE
1	45-194017-358	1-1/2"-180° RADIAL NOZZLE - BRASS (0.8439)	KIDDE
3	45-194016-339	1-1/4"-180° RADIAL NOZZLE - BRASS (0.7401)	KIDDE
1	45-194016-316	1-1/4"-180° RADIAL NOZZLE - BRASS (0.6439)	KIDDE
1	45-194016-295	1-1/4"-180° RADIAL NOZZLE - BRASS (0.5536)	KIDDE
1	45-194015-290	1"-180° RADIAL NOZZLE - BRASS (0.5379)	KIDDE
1	45-194015-261	1"-180° RADIAL NOZZLE - BRASS (0.4400)	KIDDE
1	45-194015-234	1"-180° RADIAL NOZZLE - BRASS (0.3504)	KIDDE
1	45-194015-228	1"-180° RADIAL NOZZLE - BRASS (0.3364)	KIDDE
1	45-194015-185	1"-180° RADIAL NOZZLE - BRASS (0.2215)	KIDDE
1	45-194014-161	3/4"-180° RADIAL NOZZLE - BRASS (0.1694)	KIDDE
1	45-194014-156	3/4"-180° RADIAL NOZZLE - BRASS (0.1605)	KIDDE
1	45-194013-150	1/2"-180° RADIAL NOZZLE - BRASS (0.1426)	KIDDE
15	VA710-CA-ENTER	CLEAN AGENT WARNING SIGN - DO NOT ENTER - ON DOOR	GEMCOM
24	VA710-CA-LEAVE	CLEAN AGENT WARNING SIGN - LEAVE AREA - ON DOOR	GEMCOM

MECHANICAL BILL OF MATERIAL - VORTEX			
TOTAL QTY.	PART NUMBER	DESCRIPTION	MANUFACTURER
2	70985022	LOCKOUT VALVE, 1", W/ LIMIT SWITCH AND INDICATOR	KIDDE
2	70985024	LOCKOUT VALVE, 1 1/2", W/ LIMIT SWITCH AND INDICATOR	KIDDE
38	5006953400	1/2" EMITTER, MS, BRASS - 150 SCF	VICTAULIC
38	5006952003	MACHINE SPACE FLOW CARTRIDGE, 1.06GPM, BRASS	VICTAULIC
38	50069532TK	EMITTER TRIM KIT, GALVANIZED	VICTAULIC
38	5006953201	STRAINER, 3/4", BRASS	VICTAULIC
2	5010951025	1" COMBO PANEL H2O BALL VALVE, NON-ACTIVE RELEASE MANIFOLD	VICTAULIC
2	5014951035	1.5" COMBO PNL, H2O BALL VALVE NON-ACTIVE RELEASE MANIFOLD	VICTAULIC
2	5000950200	200 GALLON WATER SUPPLY	VICTAULIC
8	2000950011	INSIDE ZONE ALARM VACATING PLACARD	VICTAULIC
8	2000950012	ZONE EXTERNAL LOW OXYGEN CONDITION PLACARD	VICTAULIC
2	3S CUSTOM	WATER TANK REGULATOR CABINET	3S
2	PL-PTSC	PLUG-TYPE SUPERVISORY SWITCH	POTTER
1	3427K5	PRESSURE SWITCH, 180-300PSI	McMASTER CARR
1	3715K21	PRESSURE GAUGE, LIQUID FILLED, 0-3000PSI	McMASTER CARR
1	20475224VDC	ELECTRIC VALVE ACTUATOR	FLOWSERVE
1	MKS10	ACTUATOR MOUNTING KIT	FLOWSERVE
4	636-2	EXPLOSION PROOF PRESSURE TRANSDUCER, 0-300PSI	DWYER

MECHANICAL BILL OF MATERIAL - STAT-X			
TOTAL QTY.	PART NUMBER	DESCRIPTION	MANUFACTURER
8	15160	1500E STAT-X AEROSOL GENERATOR	STAT-X
34	15170	2500E STAT-X AEROSOL GENERATOR	STAT-X
42	18016	8" HEAVY-DUTY MOUNTING BRACKET	STAT-X
42	3005014	EMATCH PROTECTION DEVICE	STAT-X
6	3005012	EOLD-R DIODE ASSEMBLY	STAT-X

DRAWING INDEX	
DRAWING NUMBER	DESCRIPTION
2690-C01	COVER PAGE
2690-C02	SITE PLAN
2690-B01	DRAWING INDEX/BILL OF MATERIAL
2690-EL01	STG-301 OPERATING FLOOR ELECTRICAL DEVICE LAYOUT
2690-EL02	STG-301 GROUND FLOOR ELECTRICAL DEVICE LAYOUT
2690-EL03	CT AREA GROUND FLOOR ELECTRICAL DEVICE LAYOUT
2690-EL04	GENERATOR BUILDING ROOF PLAN ELECTRICAL DEVICE LAYOUT
2690-EL05	CONTROL-ADMIN BLDG GROUND FLOOR ELECTRICAL DEVICE LAYOUT
2690-EL06	CONTROL-ADMIN BLDG OPERATING FLOOR ELECTRICAL DEVICE LAYOUT
2690-EL07	WATER TREATMENT/FIRE PUMP/EMER. GENERATOR ELECTRICAL DEVICE LAYOUT
2690-EL08	CTG-101 & CTG-201 BOILER FEED PUMP BLDGS/VFD SHEETS ELECTRICAL DEVICE LAYOUT
2690-EL09	COOLING TOWER VALVES HOUSE & CHEMICAL BLDG ELECTRICAL DEVICE LAYOUT
2690-EL10	FLAMMABLE LIQUID STORAGE ELECTRICAL DEVICE LAYOUT
2690-EL11	TRANSFORMERS FLAME DETECTION ELECTRICAL DEVICE LAYOUT
2690-ER01	CONTROL ROOM FIRE ALARM CONTROL PANEL ELECTRICAL RISER DIAGRAM
2690-E01 ~ E100	CONTROL ROOM FIRE ALARM CONTROL PANEL WIRING SCHEMATICS
2690-F01 ~ F20	CONTROL ROOM FAC & RELATED REMOTE I/O ENCLOSURE PANEL LAYOUTS
2690-101-EL01	CTG-101 ELECTRICAL DEVICE LAYOUT PLAN
2690-101-ER01	CTG-101 FIRE ALARM CONTROL PANEL ELECTRICAL RISER DIAGRAM
2690-101-ED1 ~ ED2	CTG-101 FIRE ALARM CONTROL PANEL WIRING SCHEMATICS
2690-101-F01	CTG-101 FIRE ALARM CONTROL PANEL LAYOUT
2690-201-EL01	CTG-201 ELECTRICAL DEVICE LAYOUT PLAN
2690-201-ER01	CTG-201 FIRE ALARM CONTROL PANEL ELECTRICAL RISER DIAGRAM
2690-201-E01 ~ E27	CTG-201 FIRE ALARM CONTROL PANEL WIRING SCHEMATICS
2690-201-F01	CTG-201 FIRE ALARM CONTROL PANEL LAYOUT
2690-901-EL01	PW901 ELECTRICAL DEVICE LAYOUT PLAN
2690-901-ER01	PW901 FIRE ALARM CONTROL PANEL ELECTRICAL RISER DIAGRAM
2690-901-E01 ~ E24	PW901 FIRE ALARM CONTROL PANEL WIRING SCHEMATICS
2690-901-F01	PW901 FIRE ALARM CONTROL PANEL LAYOUT
2690-902-EL01	PW902 ELECTRICAL DEVICE LAYOUT PLAN
2690-902-EL02	PEAKER WAREHOUSE ELECTRICAL DEVICE LAYOUT PLAN
2690-902-ER01	PW902 FIRE ALARM CONTROL PANEL ELECTRICAL RISER DIAGRAM
2690-902-E01 ~ E27	PW902 FIRE ALARM CONTROL PANEL WIRING SCHEMATICS
2690-902-F01	PW902 FIRE ALARM CONTROL PANEL LAYOUT
2690-902-F02	PEAKER WAREHOUSE REMOTE I/O PANEL LAYOUT
2690-M01	CTG-101/201 PROGRAMMING I/O MATRIX
2690-M02	PW901/902 PROGRAMMING I/O MATRIX
2690-ML01	COMPUTER ROOM & CONTROL EQUIPMENT ROOM NOVEC PIPING LAYOUT/ISOMETRIC
2690-ML02	CTG-101/201 ELECTRICAL PACKAGE NOVEC PIPING LAYOUT/ISOMETRIC
2690-ML03	PW901/902 CONTROL ENCLOSURE NOVEC PIPING LAYOUT/ISOMETRIC
2690-ML04	STAT-X PROTECTED AREAS AEROSOL GENERATOR LAYOUT
2690-ML05	CTG-101/201 VORTEX NITROGEN SUPPLY PIPING LAYOUT AND ELEVATION
2690-ML06	CTG-101/201 VORTEX DISCHARGE PIPING LAYOUT
2690-MI01	CTG-101/201 VORTEX NITROGEN/WATER SUPPLY PIPING ISOMETRIC
2690-MI02	CTG-101/201 VORTEX DISCHARGE PIPING ISOMETRIC
2690-MD01	NOVEC 1230 EQUIPMENT DETAILS
2690-MN01	NOVEC 1230 NOTES AND MOUNTING DETAILS
2690-MN02	VORTEX NOTES AND DETAILS

REV	DATE	BY	DESCRIPTION
B	1-16-18	KAL	ISSUED FOR 100% DESIGN REVIEW
A	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW
PROJECT:			
KLAMATH ENERGY 4940 HIGHWAY 97 SOUTH KLAMATH FALLS, OR 97603			
DESCRIPTION: FIRE PROTECTION/DETECTION UPGRADES BILL OF MATERIAL/DRAWING INDEX			
DRAWN BY:	KAL	DATE:	12-3-2017
CHECKED BY:	JW	PROJECT NO.:	17-2690
3S DRAWING NO.:	2645-B01	CUSTOMER DRAWING NO.:	
SCALE:	NONE	DRAWN:	1 OF 1
REV:			B

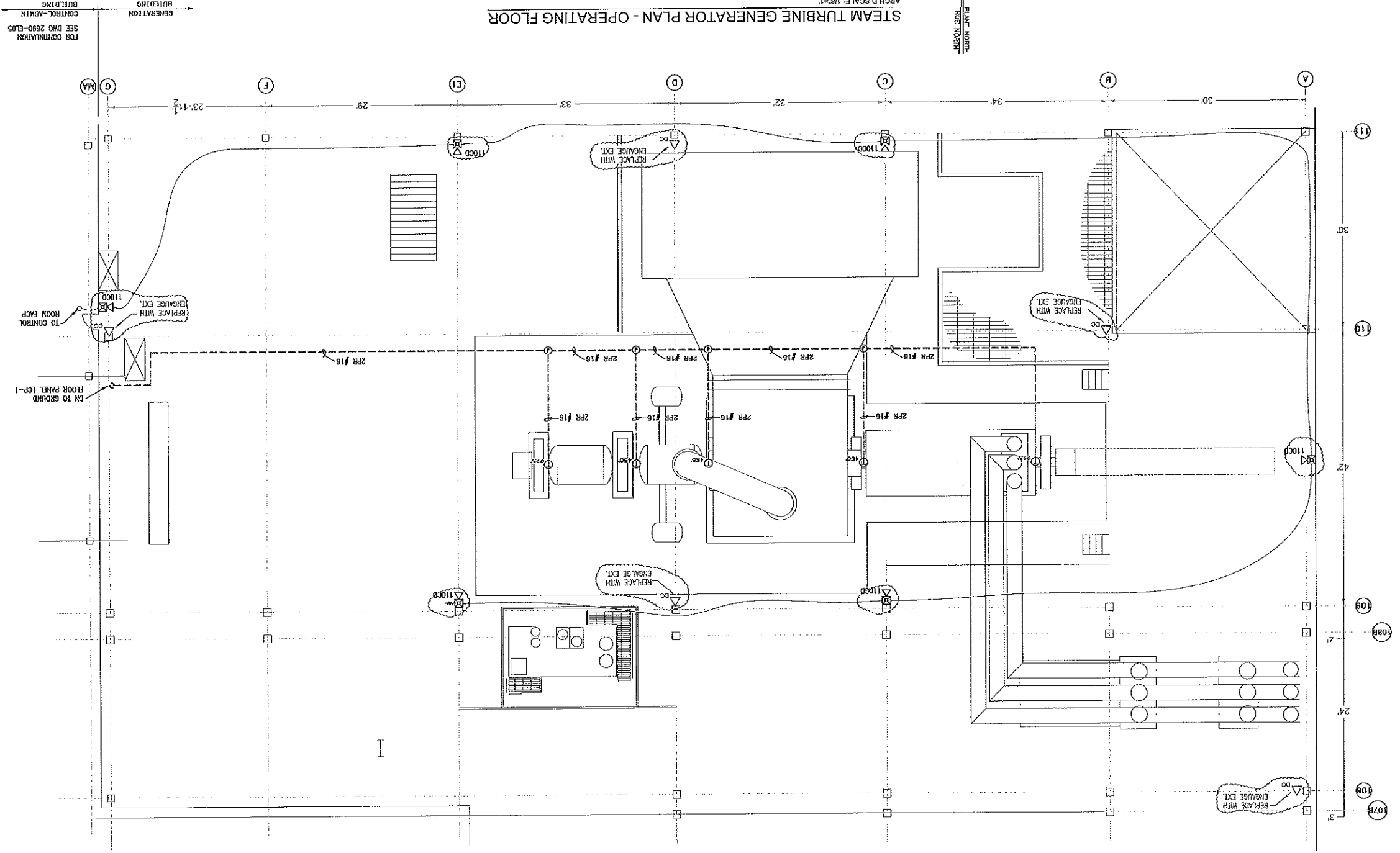
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Office: 513-202-5070 • Fax: 513-367-5678
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WIRE LEGEND	
A	120VAC POWER
B	NAC OR RELEASING CIRCUIT (2 - #14 AWG, TWISTED (BELDEN 5100L OR EQUIVALENT))
C	SIGNALING LINE CIRCUIT (2 - #16 AWG, TWISTED (BELDEN 5200L OR EQUIVALENT))
D	INITIATING DEVICE CIRCUIT (2 - #16 AWG, THHN 600 VOLT)
E	24 VDC POWER
F	NETWORK FIBER
G	EM-485 DATA (2 - #18 AWG, TWISTED/SHIELDED (BELDEN 5300L OR EQUIVALENT))

LEGEND
 - - - - - EXISTING WIRE TO BE RE-USED
 _____ NEW WIRE TO BE PULLED

ARCH D SCALE: 1/8"=1'
 STEAM TURBINE GENERATOR PLAN - OPERATING FLOOR



- FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANELS (DO NOT NEGLECT).
- HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
- ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS.
- FIELD BY INSTALLING SUB-CONTRACTOR, THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
- A SEPARATE FUSE AND DELETED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SUPPLY SHOULD BE FROM A STAND-BY POWERBUS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
- ALL EXPOSED CONDUIT TO BE PER NEC.
- SIGNALING LINE CIRCUITS (SLC LOOP).
- ALL SLC CIRCUITS ARE RATED POWER LIMITED AND MUST BE IN ACCORDANCE WITH APPLICABLE CODES.
- MINIMUM WIRE SIZE PERMITTED IS 18 AWG, MAXIMUM 12 AWG.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- NON-NECESSARY WIRING DEVICES GROUNDING.
- ALL WIRING DEVICES ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
- WIRE SIZE SHALL BE 18 AWG.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
- PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- NOTIFICATION APPLIANCE CIRCUITS.
- PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- ALL NAC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDING SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
- ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH 35 INC.
- THE THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
- MANUAL PULL STATIONS SHALL BE MOUNTED 4' - 0" ABOVE FLOOR TO BOTTOM OF BOX.
- HORN/STROBE SHALL BE MOUNTED 80" - 96" AFF, OR 8" BELOW CEILING, WHICHEVER IS LOWER, 90" MIN, FOR HORNS ONLY.

NOTE:
 1. EXISTING DEVICES SHALL REMAIN AS SHOWN.
 2. CLOUSED AREAS INDICATE NEW DEVICES TO BE INSTALLED AND REQUIRE NEW WIRING AND RACEWAY.
 3. SUCH DEVICES TO BE REMOVED ARE NOTED AS SUCH.

SYMBOL LEGEND

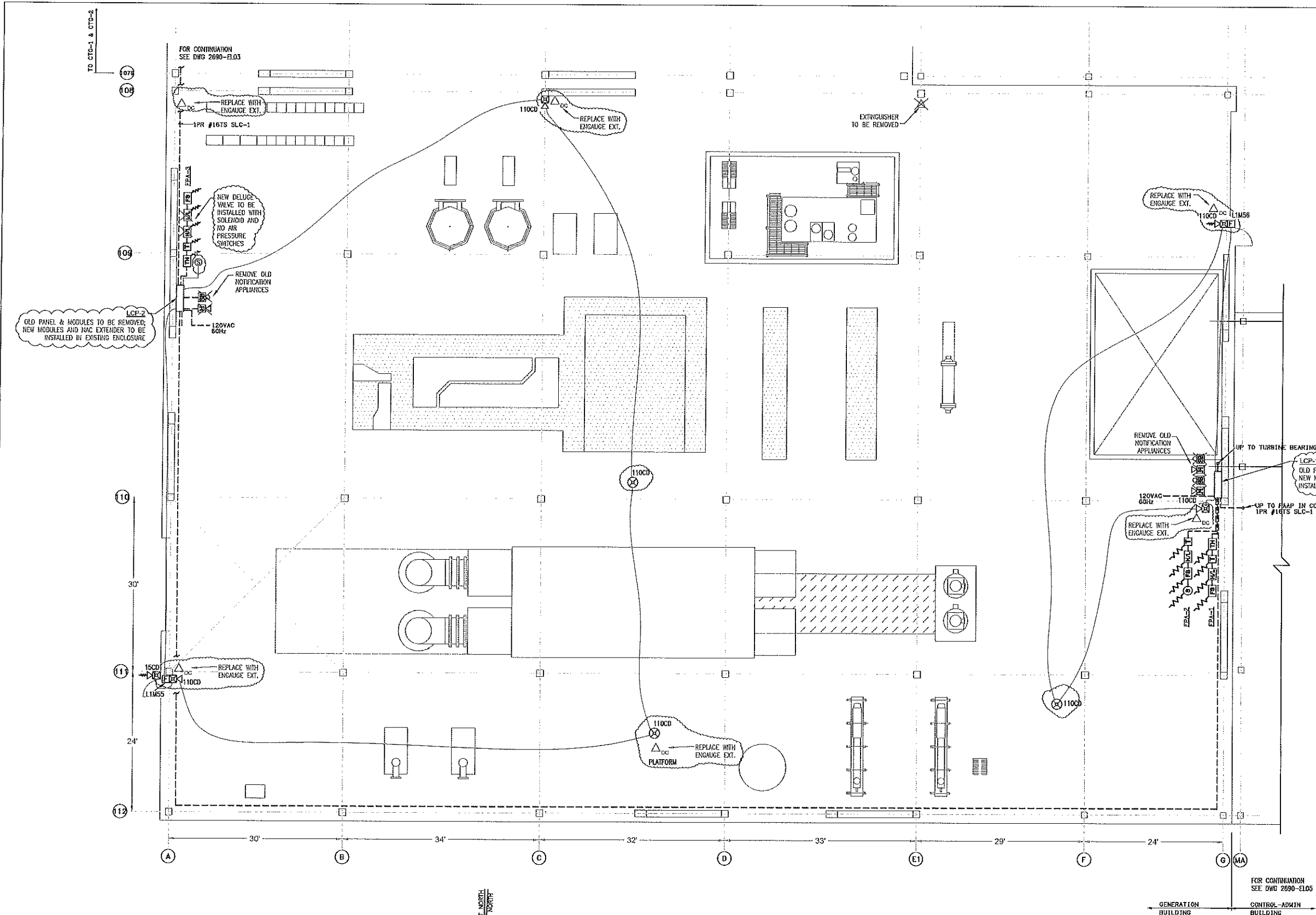
[Symbol]	FIRE ALARM CONTROL PANEL
[Symbol]	NOTIFICATION APPLIANCE PANEL
[Symbol]	BATTERY CABINET
[Symbol]	NETWORK WORK STATION
[Symbol]	ZONE INTERFACE BOX
[Symbol]	REMOTE START
[Symbol]	TANK LOW TEMPERATURE
[Symbol]	TANK LOW LEVEL
[Symbol]	JOCKEY PUMP ON
[Symbol]	MANUAL PULL STATION
[Symbol]	SOLENOID VALVE
[Symbol]	SMOKE DETECTOR
[Symbol]	HEAT DETECTOR
[Symbol]	LOW AIR SWITCH
[Symbol]	LOW AIR PRESSURE SWITCH
[Symbol]	FLOW/PRESSURE SWITCH
[Symbol]	VALVE TAMPER SWITCH
[Symbol]	HORN/STROBE, WALL MOUNT
[Symbol]	HORN/STROBE, CEILING MOUNT
[Symbol]	END-OF-LINE RESISTOR
[Symbol]	ENGLAGE FIRE EXTINGUISHER, DRY CHEMICAL

REV	DATE	DESCRIPTION
C	10-31-2017	DATE DTD
B	12-11-17	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	ISSUED FOR 50% DESIGN REVIEW

PROJECT: KIAMATH ENERGY
 4940 HIGHWAY 97 SOUTH
 KIAMATH FALLS, OR 97603
 FIRE PROTECTION/DETECTION UPGRADES
 STEAM TURBINE GENERATOR - ST 301 AREA
 OPERATING FLOOR EL. 4160'-0"

DATE: 10-31-2017
 DRAWING NO.: 2690-EL01
 SHEET: 1 OF 1

3S Incorporated
 Engineered Fire Protection Systems
 8866 Southwest Parkway • Harrison, OH 45030
 Office: 513-202-5070 • Fax: 513-367-5878
 www.3s-incorporated.com

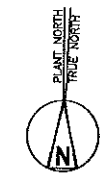


SYMBOL LEGEND	
[FACP]	FIRE ALARM CONTROL PANEL
[NAC]	NOTIFICATION APPLIANCE PANEL
[BATT]	BATTERY CABINET
[NWS]	NETWORK WORK STATION
[ZIB]	ZONE INTERFACE BOX
[RS]	REMOTE START
[TL]	TANK LOW TEMPERATURE
[TLU]	TANK LOW LEVEL
[JP]	JOCKEY PUMP ON
[F]	MANUAL PULL STATION
[S]	SOLENOID VALVE
[SD]	SMOKE DETECTOR
[H]	HEAT DETECTOR
[LPS]	LOW AIR SWITCH
[LPL]	LOW/LOW AIR PRESSURE SWITCH
[FSP]	FLOW/PRESSURE SWITCH
[VTS]	VALVE TAMPER SWITCH
[HWS]	HORN/STROBE, WALL MOUNT
[SWS]	STROBE, WALL MOUNT
[HCS]	HORN/STROBE, CEILING MOUNT
[ELR]	END-OF-LINE RESISTOR
[DC]	ENGAGE FIRE EXTINGUISHER, DRY CHEMICAL
[H]	TROUBLE HORN
[SB]	STROBE/BELL

- NOTE:
- EXISTING DEVICES SHALL REMAIN AS SHOWN.
 - CLOUDED AREAS INDICATE NEW DEVICES TO BE INSTALLED AND REQUIRE NEW WIRING AND RACEWAY.
 - ITEMS TO BE REMOVED ARE NOTED AS SUCH.

- GENERAL INSTALLATION AND WIRING NOTES:
- FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL (DO NOT MEGGER).
 - HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
 - ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS. EXACT CONDUIT ROUTING IS TO BE DETERMINED IN THE FIELD BY INSTALLING SUB-CONTRACTOR. THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
 - A SEPARATELY FUSED AND DEDICATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SUPPLY SHOULD BE FROM A STAND-BY POWERBUSS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
 - ALL EXPOSED CONDUIT TO BE PER NEG.
 - SIGNALING LINE CIRCUITS (SLC LOOP):
 - ALL SLC CIRCUITS ARE RATED POWER LIMITED AND MUST BE IN WIRE ACCORDANCE WITH APPLICABLE CODES.
 - MINIMUM WIRE SIZE PERMITTED IS 16 AWG. MAXIMUM 12 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - NON-ADDRESSABLE INITIATING DEVICE CIRCUITS:
 - ALL INITIATING DEVICE CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRE IN ACCORDANCE WITH APPLICABLE CODES.
 - WIRE SIZE SHALL BE 16 AWG.
 - ALL WIRING SHOULD BE BY A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - NOTIFICATION APPLIANCE CIRCUITS:
 - ALL NAC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRE IN ACCORDANCE WITH APPLICABLE CODES.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - POLARITY MUST BE OBSERVED.
 - THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
 - ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH JS INC.
 - THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
 - MANUAL PULL STATIONS SHALL BE MOUNTED 4' - 0" ABOVE FLOOR TO BOTTOM OF BOX.
 - HORN/STROBES SHALL BE MOUNTED 80" - 96" AFF, OR 6" BELOW CEILING, WHICHEVER IS LOWER. 90" MIN. FOR HORNS ONLY.

WIRE LEGEND		
A	120VAC POWER	3 - #12 AWG 600 VOLT
B	NAC OR RELEASING CIRCUIT	2 - #14 AWG. TWISTED (BELDEN 5100UL OR EQUIVALENT)
C	SIGNALING LINE CIRCUIT	2 - #16 AWG. TWISTED (BELDEN 5200UL OR EQUIVALENT)
D	INITIATING DEVICE CIRCUIT	2 - #16 AWG. THHN
E	24 VDC POWER	2 - #14 AWG. THHN 600 VOLT
F	NETWORK FIBER	12 STRAND MULTIMODE - 62.5/125 MICROMETERS; 50/125 MICROMETERS
G	EIA-485 DATA	2 - #18 AWG. TWISTED/SHIELDED (BELDEN 5300FL OR EQUIVALENT)



STEAM TURBINE GENERATOR PLAN - GROUND FLOOR

ARCH D SCALE: 1/8"=1'

- LEGEND
- EXISTING WIRE TO BE RE-USED
 - NEW WIRE TO BE PULLED

3S Incorporated
Engineered Fire Protection Systems

8686 Southwest Parkway • Harrison, OH 45030
Office: 513-202-5070 • Fax: 513-367-5678
www.3s-incorporated.com

REV.	DATE	BY	DESCRIPTION
C	1-16-17	DLD	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	DLD	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	DLD	ISSUED FOR 50% DESIGN REVIEW

PROJECT: KLAMATH ENERGY
4940 HIGHWAY 97 SOUTH
KLAMATH FALLS, OR 97603

DESCRIPTION: FIRE PROTECTION/DETECTION UPGRADES
STEAM TURBINE GENERATOR - ST301 AREA
GROUND FLOOR EL. 4140'-0"

DRAWN BY: DLD	DATE: 10-31-2017	SCALE: 1/8" = 1'-0"
CHECKED BY: JJW	PROJECT NO: 17-2630	DRAWING: 1 of 1
3S DRAWING NO: 2690-EL02	CUSTOMER DRAWING NO:	REV: C

REV	DATE	DESCRIPTION
C	1-16-17	ISSUED FOR 100% DESIGN REVIEW
B	11-16-17	ISSUED FOR 75% DESIGN REVIEW
A	10-31-2017	ISSUED FOR 50% DESIGN REVIEW

PROJECT NO. 17-2690
DATE 10-31-2017
SCALE 1/8" = 1'-0"

DESIGNER
KIAMATH ENERGY
4940 HIGHWAY 97 SOUTH
KIAMATH FALLS, OR 97603

CLIENT
FIRE PROTECTION/DETECTION UPGRADES
COMBUSTION TURBINES - CT AREA
GROUND FLOOR EL. 4140'-0"

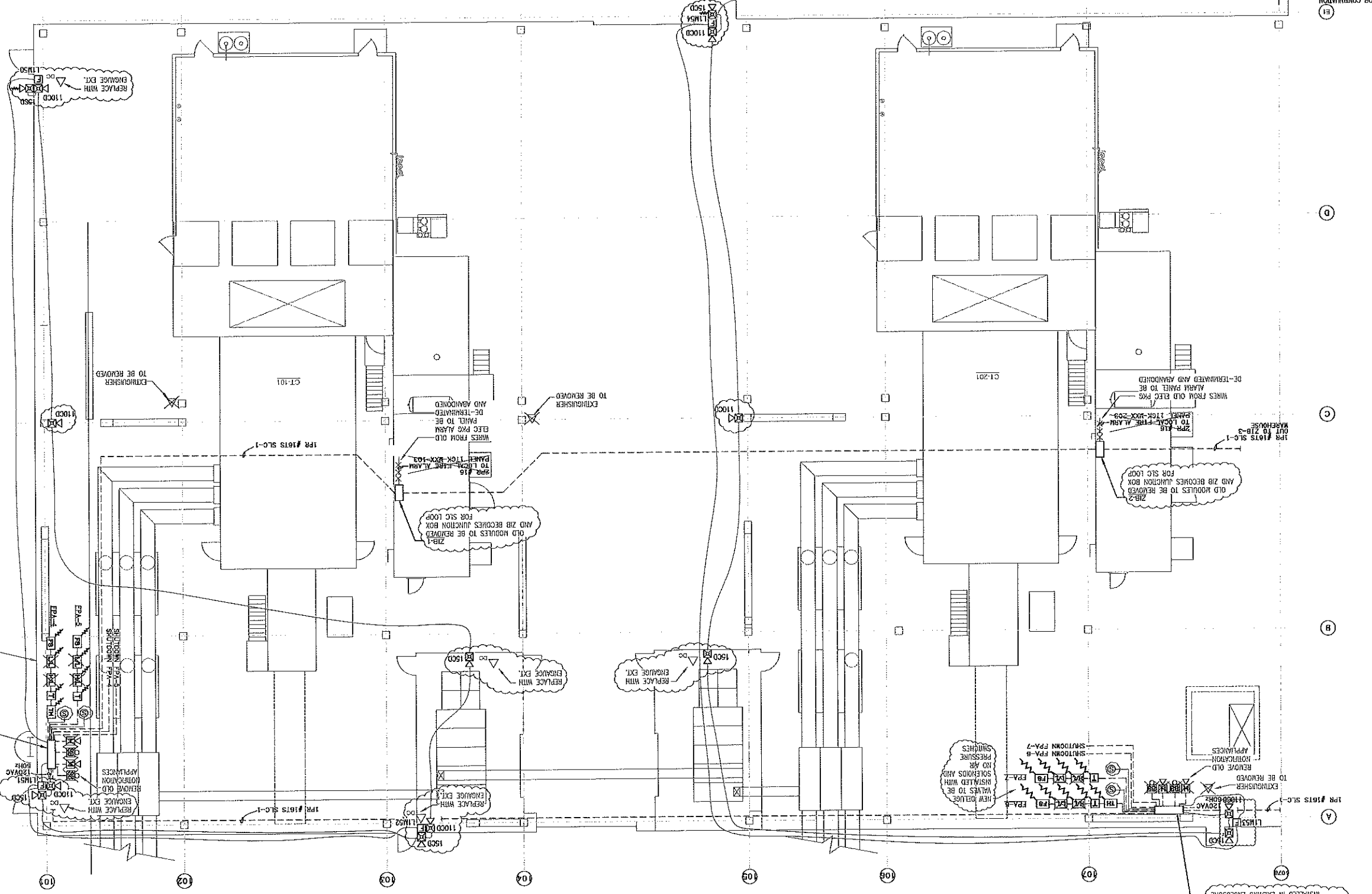
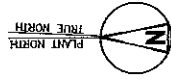
2690-EL03

3S Incorporated
Engineered Fire Protection Systems
8686 Southwest Parkway • Hartsville, OH 45030
Office: 513-202-5070 • Fax: 513-367-5678
www.3s-incorporated.com

A	120VAC POWER	2 - #12 AWG, TWISTED (Belden 5100L OR EQUIVALENT)
B	NAC OR RELEASING CIRCUIT	2 - #14 AWG, TWISTED (Belden 5200L OR EQUIVALENT)
C	SIGNALING LINE CIRCUIT	2 - #16 AWG, THHN
D	INITIATING DEVICE CIRCUIT	2 - #16 AWG, THHN
E	24 VDC POWER	2 - #14 AWG, THHN 600 VOLT
F	NETWORK FIBER	12 STRAND MULTIMODE - 62.5/125 MICROMETERS; 50/125 MICROMETERS
G	EIA-485 DATA	2 - #18 AWG, TWISTED/SHIELDED (Belden 5300L OR EQUIVALENT)

WIRE LEGEND

COMBUSTION TURBINES PLAN
ARCHD SCALE: 1/8"=1'



- GENERAL INSTALLATION AND WIRING NOTES
- FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL (DO NOT MEGGER).
 - HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
 - ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL FIRE ALARM AND SIGNALING INSTITUTE (NFPA) STANDARD 72, THE NATIONAL FIRE ALARM AND SIGNALING INSTITUTE HAVING JURISDICTION.
 - A SEPARATE FUSED AND DETECTED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS CIRCUIT SHOULD BE FROM A STAND-BY POWERBUS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
 - ALL EXPOSED CONDUIT TO BE PER NEC.
 - SIGNALING LINE CIRCUITS (SIC LOOP).
 - ALL SIC CIRCUITS ARE RATED PER NEC.
 - MINIMUM WIRE SIZE PERMITTED IS 16 AWG, MAXIMUM 12 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - NON-ADMISSIBLE INITIATING DEVICE CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
 - WIRE SIZE SHALL BE 16 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - POLARITY MUST BE OBSERVED.
 - THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDING SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
 - ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH 3S INC.
 - THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 6" TO 6" ABOVE CEILING.
 - MANUAL PULL STATIONS SHALL BE MOUNTED 4' - 0" ABOVE FLOOR TO BOTTOM OF BOX.
 - HORN/STROBES SHALL BE MOUNTED 80" - 96" AFF, OR 6" BELOW CEILING, WHICHEVER IS LOWER, 90" MIN. FOR HORNS ONLY.

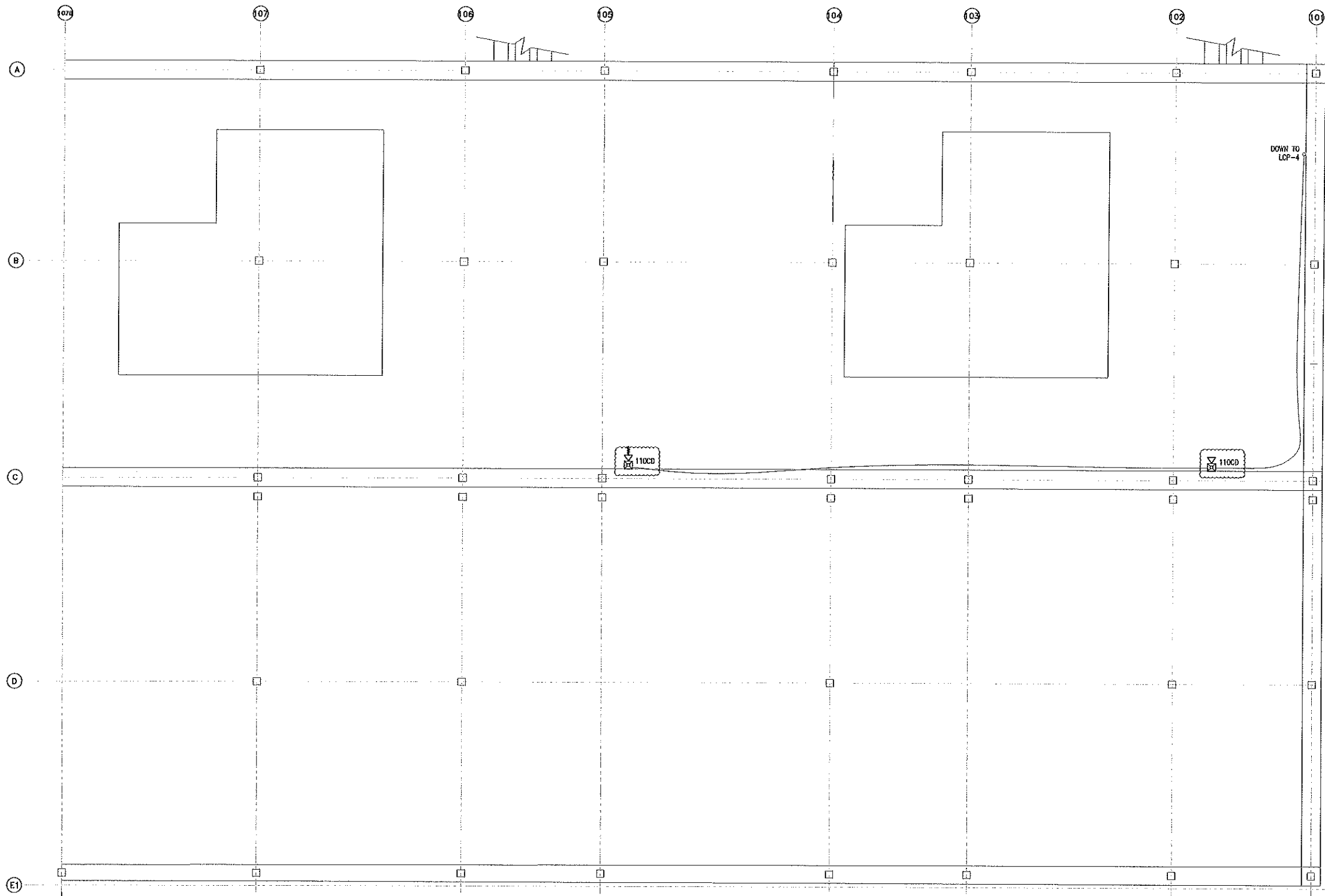
- NOTE:
- EXISTING DEVICES SHALL REMAIN AS SHOWN.
 - CLOUDED AREAS INDICATE NEW DEVICES TO BE INSTALLED AND REQUIRE NEW WIRING AND RERUN.
 - SUCH DEVICES TO BE REMOVED ARE NOTED AS SUCH.

SYMBOL LEGEND

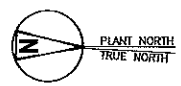
[Symbol]	FIRE ALARM CONTROL PANEL
[Symbol]	NOTIFICATION APPLIANCE PANEL
[Symbol]	BATTERY CABINET
[Symbol]	NETWORK WORK STATION
[Symbol]	ZONE INTERFACE BOX
[Symbol]	REMOTE START
[Symbol]	TANK LOW TEMPERATURE
[Symbol]	TANK LOW LEVEL
[Symbol]	JOCKEY PUMP ON
[Symbol]	MANUAL PULL STATION
[Symbol]	SOLENOID VALVE
[Symbol]	SMOKE DETECTOR
[Symbol]	HEAT DETECTOR
[Symbol]	LOW/LOW AIR PRESSURE SWITCH
[Symbol]	FLOW/PRESSURE SWITCH
[Symbol]	HIGH/LOW AIR PRESSURE SWITCH
[Symbol]	VALVE TAPPER SWITCH
[Symbol]	HORN/STROBE, WALL MOUNT
[Symbol]	STROBE, WALL MOUNT
[Symbol]	HORN/STROBE, CEILING MOUNT
[Symbol]	END-OF-LINE RESISTOR
[Symbol]	ENGINE FIRE EXTINGUISHER, DRY CHEMICAL
[Symbol]	TRouble HORN
[Symbol]	STROBE/BELL

FOR CONTINUATION
SEE DWG 2690-EL02
STEAM TURBINE GENERATOR
3101 AREA

SYMBOL LEGEND	
[FACP]	FIRE ALARM CONTROL PANEL
[NAC]	NOTIFICATION APPLIANCE PANEL
[BATT]	BATTERY CABINET
[GUT]	NETWORK WORK STATION
[ZIB]	ZONE INTERFACE BOX
[RS]	REMOTE START
[TT]	TANK LOW TEMPERATURE
[TL]	TANK LOW LEVEL
[JP]	JOCKEY PUMP ON
[MPS]	MANUAL PULL STATION
[S]	SOLENOID VALVE
[SD]	SMOKE DETECTOR
[HD]	HEAT DETECTOR
[LWS]	LOW AIR SWITCH
[L/PA]	LOW/LOW AIR PRESSURE SWITCH
[F/PS]	FLOW/PRESSURE SWITCH
[VTS]	VALVE TAMPER SWITCH
[H/W]	HORN/STROBE, WALL MOUNT
[S/W]	STROBE, WALL MOUNT
[H/C]	HORN/STROBE, CEILING MOUNT
[ER]	END-OF-LINE RESISTOR



STEAM TURBINE GENERATOR
S1301 AREA



GENERATION BUILDING ROOF PLAN
ARCH D SCALE: 1/8"=1'

REV.	DATE	BY	DESCRIPTION
C	3-16-17	DLD	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	DLD	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	DLD	ISSUED FOR 50% DESIGN REVIEW

PROJECT: KLAMATH ENERGY
4940 HIGHWAY 97 SOUTH
KLAMATH FALLS, OR 97603

DESCRIPTION: FIRE PROTECTION/DETECTION UPGRADES
GENERATION BUILDING
ROOF PLAN

DRAWN BY: DLD	DATE: 10-31-2017	SCALE: 1/8" = 1'-0"
DESIGNED BY: JW	PROJECT NO.:17-2650	DRAWING: 1 of 1

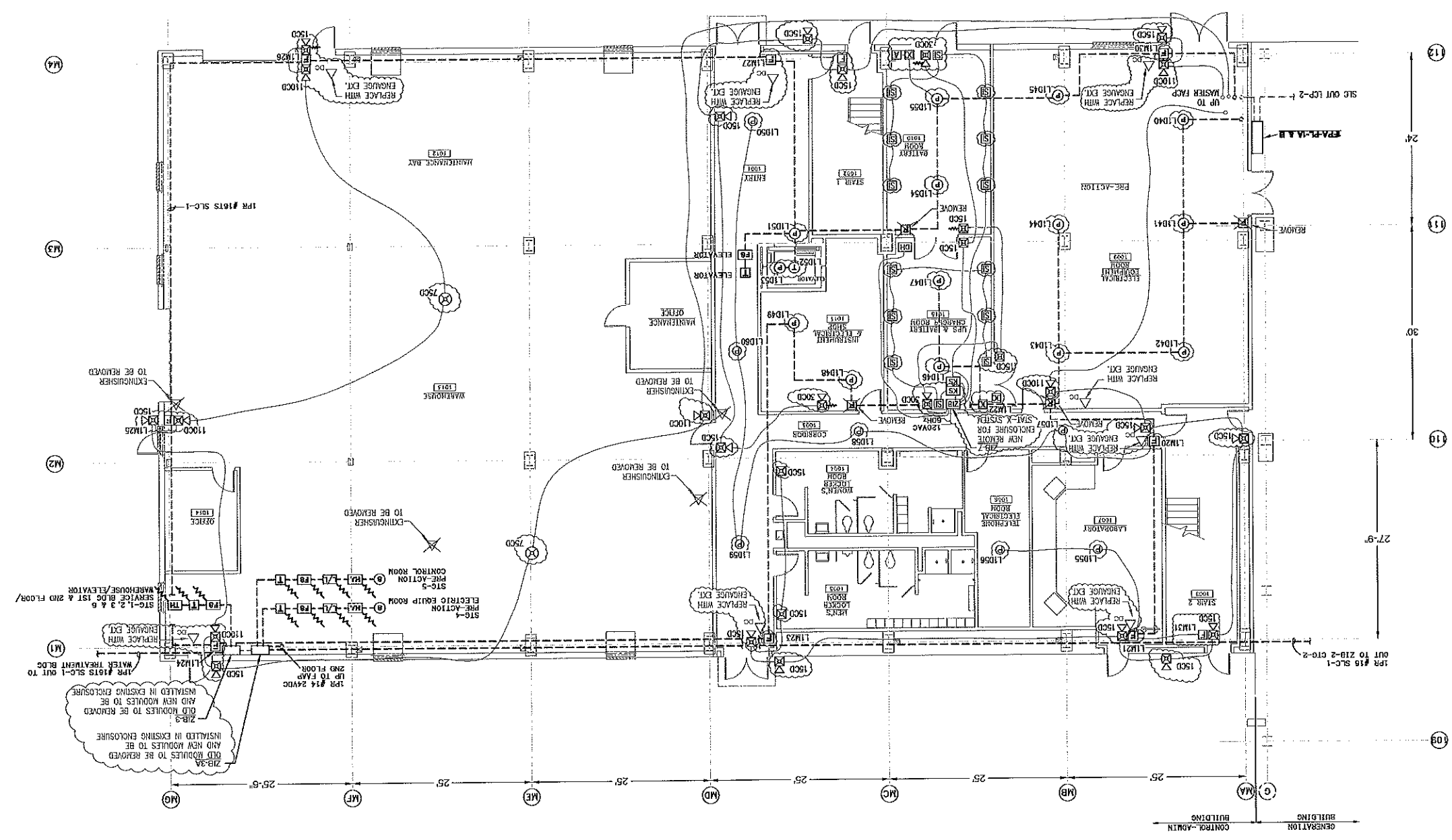
3S DRAWING NO.: 2690-EL04 CUSTOMER DRAWING NO.: C

3S Incorporated
Engineered Fire Protection Systems
8686 Southwest Parkway • Harrison, OH 45030
Office: 513-202-5070 • Fax: 513-367-5678
www.3s-incorporated.com

WIRE LEGEND	
A	120VAC POWER
B	NAC OR RELAYING CIRCUIT - 2 - #14 AWG. TWISTED (BELOW 5100V OR EQUIVALENT)
C	SIGNALING LINE CIRCUIT - 2 - #16 AWG. THIN (BELOW 5200V OR EQUIVALENT)
D	INITIATING DEVICE CIRCUIT - 2 - #16 AWG. THIN
E	24 VDC POWER
F	NETWORK FIBER
G	EA-485 DATA
2 - #18 AWG. TWISTED/SHIELDED (BELOW 5300V OR EQUIVALENT)	
12 STRAND MULTIMODE - 62.5/125 MICROMETERS; 50/125 MICROMETERS	

LEGEND
 --- EXISTING WIRE TO BE RE-USED
 --- NEW WIRE TO BE PULLED

CONTROL-ADMIN BUILDING PLAN - GROUND FLOOR
 ARCH D SCALE: 1/8"=1'



- GENERAL INSTALLATION AND WIRING NOTES:
- FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL (DO NOT MESS).
 - HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
 - ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE STANDARDS AND THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
 - A SEPARATELY FUSED AND DERATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SEPARATE CIRCUIT SHOULD BE FROM A STAND-BY POWERBUS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
 - ALL EXPOSED CONDUIT TO BE PER NEC.
 - SIGNALING LINE CIRCUITS (SIC LOOP).
 - ALL SIC CIRCUITS ARE RATED POWER LIMITED AND MUST BE IN ACCORDANCE WITH APPLICABLE CODES.
 - MINIMUM WIRE SIZE PERMITTED IS 16 AWG. MAXIMUM 12 AWG. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - NON-ADDRESSABLE INITIATING DEVICE CIRCUITS.
 - ALL INITIATING DEVICES ARE RATED POWER LIMITED AND MUST BE WIRING IN ACCORDANCE WITH APPLICABLE CODES.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - WIRE SIZE SHALL BE 16 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - POLARITY MUST BE OBSERVED.
 - THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN. AT THE CONTROL PANEL.
 - ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH JS INC.
 - THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
 - HAZARD. FILL STATIONS SHALL BE MOUNTED 4' - 0" ABOVE FLOOR TO BOTTOM OF BOX.
 - HORN/STROBES SHALL BE MOUNTED 80" - 96" AFT. OR 6" BELOW CEILING, WHICHEVER IS LOWER. 90" MIN. FOR HORNS ONLY.

SYMBOL LEGEND

[Symbol]	RELAY MODULE (DOOR HOLDER)
[Symbol]	DOOR HOLDER
[Symbol]	RELAY MODULE (ELEVATOR LIGHT)
[Symbol]	RELAY MODULE (PRIMARY)
[Symbol]	RELAY MODULE (SECONDARY)
[Symbol]	RELAY MODULE (ELEVATOR SHUNT TRIP)
[Symbol]	STROBE/BELL
[Symbol]	TROUBLE HORN
[Symbol]	ENGINE FIRE EXTINGUISHER, DRY CHEMICAL
[Symbol]	END-OF-LINE RESISTOR
[Symbol]	HORN/STROBE, CEILING MOUNT
[Symbol]	STROBE, WALL MOUNT
[Symbol]	HORN/STROBE, WALL MOUNT
[Symbol]	BLUE HORN/STROBE, WALL MOUNT
[Symbol]	BLUE STROBE, WALL MOUNT
[Symbol]	KEY MAINTENANCE SWITCH
[Symbol]	DISCHARGE PRESSURE SWITCH
[Symbol]	HEADERT TAMPERS SWITCH
[Symbol]	HIGH/LOW AIR SWITCH
[Symbol]	VALVE TAMPERS SWITCH
[Symbol]	FLOW/PRESSURE SWITCH
[Symbol]	LOW/LOW AIR PRESSURE SWITCH
[Symbol]	JOCKEY PUMP ON
[Symbol]	HEAT DETECTOR
[Symbol]	SMOKE DETECTOR
[Symbol]	SOLENOID VALVE
[Symbol]	MANUAL PULL STATION
[Symbol]	STAT-X MANUAL RELEASE STATION
[Symbol]	STAT-X INITIATOR
[Symbol]	CLEAR AGENT MANUAL RELEASE STATION
[Symbol]	REAROTE START
[Symbol]	ZONE INTERFACE BOX
[Symbol]	NETWORK WORK STATION
[Symbol]	BATTERY CABINET
[Symbol]	FIRE ALARM CONTROL PANEL
[Symbol]	NOTIFICATION APPLIANCE PANEL
[Symbol]	NOTIFICATION APPLIANCE PANEL

NOTES:
 1. EXISTING SPRINKLER DEVICES SHALL REMAIN AS SHOWN.
 2. CIRCLED AREAS INDICATE NEW DEVICES TO BE INSTALLED OR REPLACED.
 3. ITEMS TO BE REMOVED ARE NOTED AS SUCH.

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 8886 Southwest Parkway • Harrison, OH 45030
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 www.3s-incorporated.com

PROJECT: KIAMATH ENERGY
 4940 HIGHWAY 97 SOUTH
 KIAMATH FALLS, OR 97603

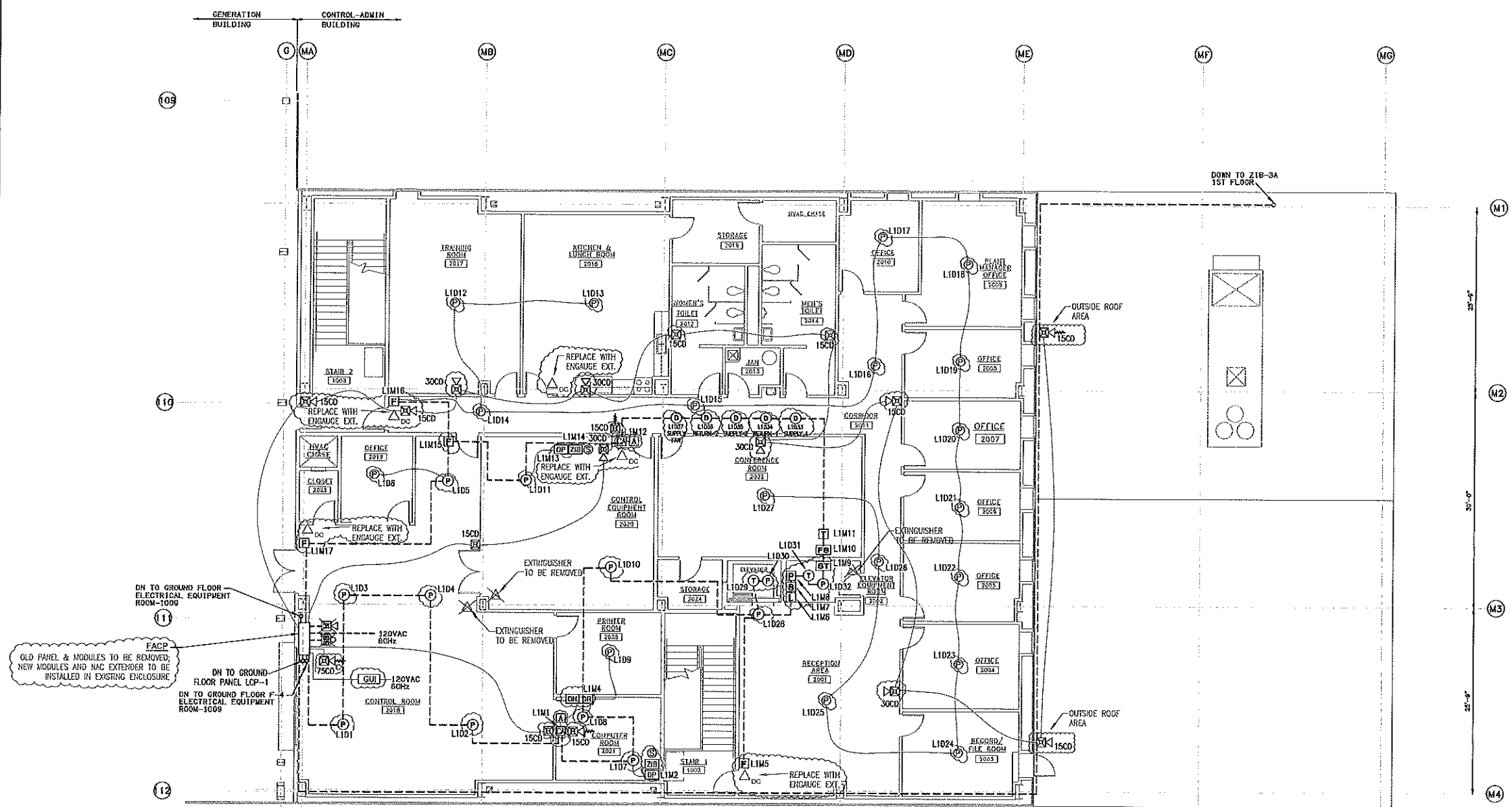
DATE: 10-31-2017
 PROJECT NO: 2690-EL05

ISSUED FOR 100% DESIGN REVIEW
 1-16-17
 ISSUED FOR 75% DESIGN REVIEW
 12-16-17
 ISSUED FOR 50% DESIGN REVIEW
 11-16-17

- NOTE:
- EXISTING SPRINKLER DEVICES SHALL REMAIN AS SHOWN.
 - CLOUDED AREAS INDICATE NEW DEVICES TO BE INSTALLED OR REPLACED.
 - ITEMS TO BE REMOVED ARE NOTED AS SUCH.

SYMBOL LEGEND	
[FACP]	FIRE ALARM CONTROL PANEL
[NAC]	NOTIFICATION APPLIANCE PANEL
[BATT]	BATTERY CABINET
[GUI]	NETWORK WORK STATION
[ZIB]	ZONE INTERFACE BOX
[MPS]	MANUAL PULL STATION
[CAMS]	CLEAN AGENT MANUAL RELEASE STATION
[S]	SOLENOID VALVE
[SD]	SMOKE DETECTOR
[HD]	HEAT DETECTOR
[DSM]	DUCT SMOKE DETECTOR
[JPO]	JOCKEY PUMP ON
[LPS]	LOW/LOW AIR PRESSURE SWITCH
[FPS]	FLOW/PRESSURE SWITCH
[VTS]	VALVE TAMPER SWITCH
[HWS]	HIGH/LOW AIR SWITCH
[HTS]	HEADER TAMPER SWITCH
[DPS]	DISCHARGE PRESSURE SWITCH
[KMS]	KEY MAINTENANCE SWITCH
[BS]	BLUE STROBE, WALL MOUNT
[BSW]	BLUE HORN/STROBE, WALL MOUNT
[HSW]	HORN/STROBE, WALL MOUNT
[SSW]	STROBE, WALL MOUNT
[HSC]	HORN/STROBE, CEILING MOUNT
[CSW]	CHIME/STROBE, WALL MOUNT
[EOLR]	END-OF-LINE RESISTOR
[DC]	ENGINE FIRE EXTINGUISHER, DRY CHEMICAL
[TH]	TROUBLE HORN
[SB]	STROBE/BELL
[ST]	RELAY MODULE (ELEVATOR SHUNT TRIP)
[S2]	RELAY MODULE (SECONDARY)
[S1]	RELAY MODULE (PRIMARY)
[LR]	RELAY MODULE (ELEVATOR LIGHT)
[DH]	DOOR HOLDER
[DR]	RELAY MODULE (DOOR HOLDER)

- GENERAL INSTALLATION AND WIRING NOTES:
- FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL (DO NOT WEDGE).
 - HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
 - ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS. EXACT CONDUIT ROUTING IS TO BE DETERMINED IN THE FIELD BY INSTALLING SUB-CONTRACTOR. THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
 - A SEPARATELY FUSED AND DEDICATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SUPPLY SHOULD BE FROM A STAND-BY POWERBUS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
 - ALL EXPOSED CONDUIT TO BE PER NEC.
 - SIGNALING LINE CIRCUITS (SLC LOOP):
 - ALL SLC CIRCUITS ARE RATED POWER LIMITED AND MUST BE IN WIRING ACCORDANCE WITH APPLICABLE CODES.
 - MINIMUM WIRE SIZE PERMITTED IS 16 AWG. MAXIMUM 12 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - NON-ADDRESSABLE INITIATING DEVICE CIRCUITS:
 - ALL INITIATING DEVICE CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRING IN ACCORDANCE WITH APPLICABLE CODES.
 - WIRE SIZE SHALL BE 16 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - NOTIFICATION APPLIANCE CIRCUITS:
 - ALL NAC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRING IN ACCORDANCE WITH APPLICABLE CODES.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
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 - THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
 - ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH 3S INC.
 - THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
 - MANUAL PULL STATIONS SHALL BE MOUNTED 4' - 0" ABOVE FLOOR TO BOTTOM OF BOX.
 - HORN/STROBES SHALL BE MOUNTED 80" - 96" AFF, OR 6" BELOW CEILING, WHICHEVER IS LOWER. 90" MIN. FOR HORNS ONLY.



CONTROL-ADMIN BUILDING PLAN - OPERATING FLOOR
 ARCH D SCALE: 1/8"=1'

WIRE LEGEND		
A	120VAC POWER	3 - #12 AWG 600 VOLT
B	NAC OR RELEASING CIRCUIT	2 - #14 AWG. TWISTED (BELDEN 5100UL OR EQUIVALENT)
C	SIGNALING LINE CIRCUIT	2 - #16 AWG. TWISTED (BELDEN 5200UL OR EQUIVALENT)
D	INITIATING DEVICE CIRCUIT	2 - #16 AWG. THHN
E	24 VDC POWER	2 - #14 AWG. THHN 600 VOLT
F	NETWORK FIBER	12 STRAND MULTIMODE - 62.5/125 MICROMETERS; 50/125 MICROMETERS
G	EIA-485 DATA	2 - #18 AWG. TWISTED/SHELDDED (BELDEN 5300FL OR EQUIVALENT)

LEGEND
 - - - - - EXISTING WIRE TO BE RE-USED
 _____ NEW WIRE TO BE PULLED

3S Incorporated
 Engineered Fire Protection Systems
 8686 Southwest Parkway • Harrison, OH 45030
 Office: 513-202-5070 • Fax: 513-367-5678
 www.3s-incorporated.com

REV.	DATE	BY	DESCRIPTION
C	1-16-17	DLD	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	DLD	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	DLD	ISSUED FOR 50% DESIGN REVIEW

PROJECT: KLAMATH ENERGY
 4940 HIGHWAY 97 SOUTH
 KLAMATH FALLS, OR 97603

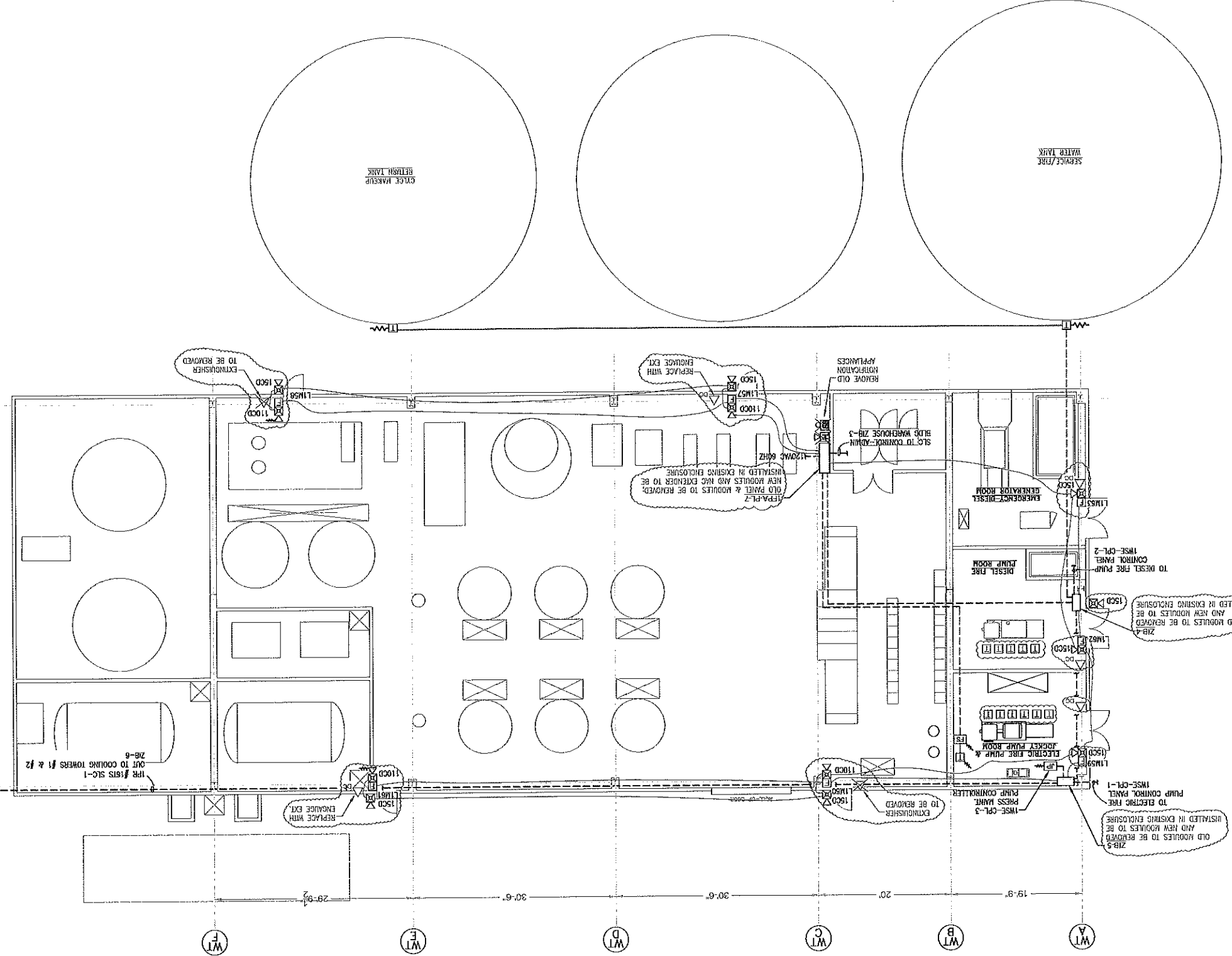
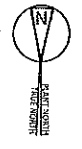
DESCRIPTION: FIRE PROTECTION/DETECTION UPGRADES
 CONTROL - ADMIN BUILDING
 OPERATING FLOOR EL. 4160'-0"

OWNER: DLD	DATE: 10-31-2017	SCALE: 1/8" = 1'-0"
DESIGNED BY: JHW	PROJECT NO: 17-2690	DRAWING: 1 of 1
3S DRAWING NO: 2690-EL06	CUSTOMER DRAWING NO:	REV: C

WIRE LEGEND	
A	120VAC POWER
B	NAC OR RELAYING CIRCUIT (BELDEN 5100UL OR EQUIVALENT)
C	SIGNALING LINE CIRCUIT (BELDEN 5200UL OR EQUIVALENT)
D	INITIATING DEVICE CIRCUIT (BELDEN 5200UL OR EQUIVALENT)
E	24 VDC POWER
F	NETWORK FIBER
G	EM-465 DATA

LEGEND
 --- EXISTING WIRE TO BE PULLED
 --- NEW WIRE TO BE PULLED

WATER TREATMENT/FIRE PUMP/EMR DIESEL GENERATOR BUILDING
 ARCHD SCALE: 1/8"=1'



SYMBOL LEGEND

[FACP]	FIRE ALARMA CONTROL PANEL
[NAC]	NOTIFICATION APPLIANCE PANEL
[BATT]	BATTERY CABINET
[GWS]	NETWORK WORK STATION
[ZIB]	ZONE INTERFACE BOX
[RS]	REARTE START
[TT]	TANK LOW TEMPERATURE
[TL]	TANK LOW LEVEL
[DP]	DOCKERY PUMP ON
[M]	MANUAL PULL STATION
[CA]	CLEAN AGENT MANUAL RELEASE STATION
[SI]	STAT-X INITIATOR
[SI]	STAT-X MANUAL RELEASE STATION
[S]	SOLENOID VALVE
[SD]	SMOKE DETECTOR
[D]	HEAT DETECTOR
[P]	DOCKERY PUMP ON
[A]	LOW/LOW AIR PRESSURE SWITCH
[V]	FLOW/PRESSURE SWITCH
[T]	VALVE TAPPER SWITCH
[H]	HIGH/LOW AIR SWITCH
[HT]	HEADER TAPPER SWITCH
[DP]	DISCHARGE PRESSURE SWITCH
[KS]	KEY MAINTENANCE SWITCH
[M]	BLUE STROBE, WALL MOUNT
[M]	BLUE HORN/STROBE, WALL MOUNT
[M]	HORN/STROBE, WALL MOUNT
[M]	STROBE, WALL MOUNT
[M]	HORN/STROBE, CEILING MOUNT
[M]	END-OF-LINE RESISTOR
[M]	ENGEAGE FIRE EXTINGUISHER, DRY CHEMICAL
[M]	TROUBLE HORN
[M]	STROBE/BELL

- EXISTING DEVICES SHALL REMAIN AS SHOWN.
- CLOUDED AREAS INDICATE NEW DEVICES TO BE INSTALLED AND REQUIRE NEW WIRING AND RACEWAY.
- SYMBOLS TO BE REMOVED ARE NOTED AS SUCH.

- FIELD WIRING MUST BE CHECKED FOR OPEENS, SHORTS OR GROUNDS. HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
- ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS. EACH CONDUIT ROUTING IS TO BE DETERMINED IN THE FIELD BY INSTALLED WIRING CONTRACTOR. THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
- A SEPARATELY FUSED AND DEICATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS CIRCUIT SHOULD BE FROM A STAND-BY POWERBUS IF SUCH IS AVAILABLE. BREAKERS NEED LOCKOUT. ALL EXPOSED CONDUIT TO BE PER NEC.
- SIGNALING LINE CIRCUITS (SIC LOOP):
- ALL SIC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED ACCORDANCE WITH APPLICABLE CODES.
- MINIMUM WIRE SIZE PERMITTED IS 18 AWG. MAXIMUM 12 AWG.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- NON-ADDRESSABLE INITIATING DEVICE CIRCUITS:
- ALL INITIATING DEVICES ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
- WIRE SIZE SHALL BE 16 AWG.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
- PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- NOTIFICATION APPLIANCE CIRCUITS:
- ALL NAC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
- ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH AS INC.
- THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
- MAYON/PULL STATIONS SHALL BE MOUNTED 4' - 0" ABOVE FLOOR TO BOTTOM OF BOX.
- HORN/STROBES SHALL BE MOUNTED 80" - 96" AFF, OR 6" BELOW CEILING, WHICHEVER IS LOWER, 90" MIN. FOR HORNS ONLY.

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 8688 Southwest Parkway • Harrison, OH 45030
 www.3s-incorporated.com

REV	DATE	DESCRIPTION
C	1-16-17	ISSUED FOR 30% DESIGN REVIEW
B	12-11-17	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	ISSUED FOR 50% DESIGN REVIEW

PROJECT: KIAMATH ENERGY
 4940 HIGHWAY 97 SOUTH
 KIAMATH FALLS, OR 97603

DESCRIPTION: FIRE PROTECTION/DETECTION UPGRADES
 WATER TREATMENT/FIRE PUMP
 EMR DIESEL GENERATOR BUILDING

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

DATE: 10-31-2017

PROJECT NO: 17-2690

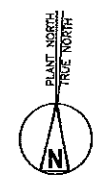
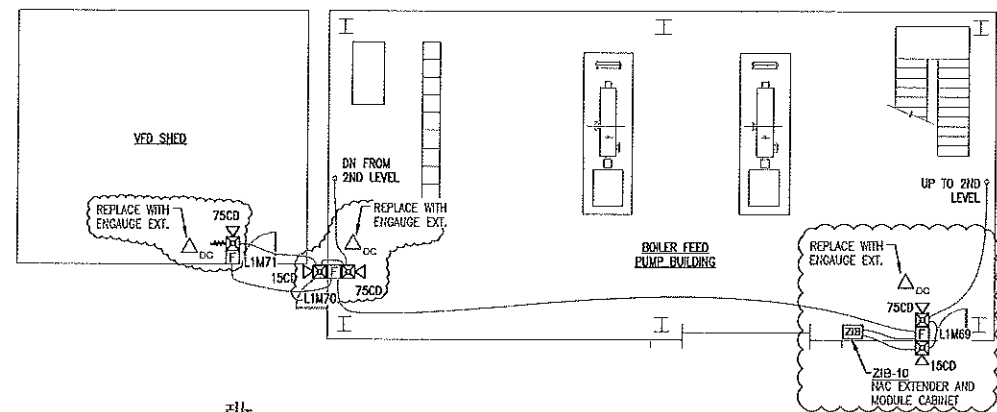
DESIGNER: JIM

3S ENGINEERING INC.

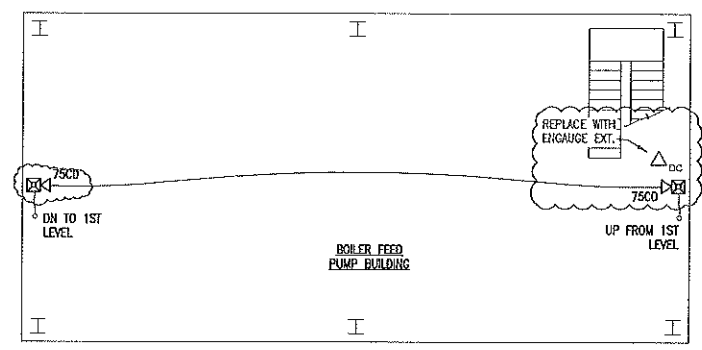
2690-EL07

NOTE:
1. CLOUDED AREAS INDICATE NEW DEVICES TO BE INSTALLED AND REQUIRE NEW WIRING AND RACEWAY.

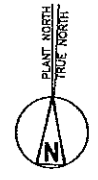
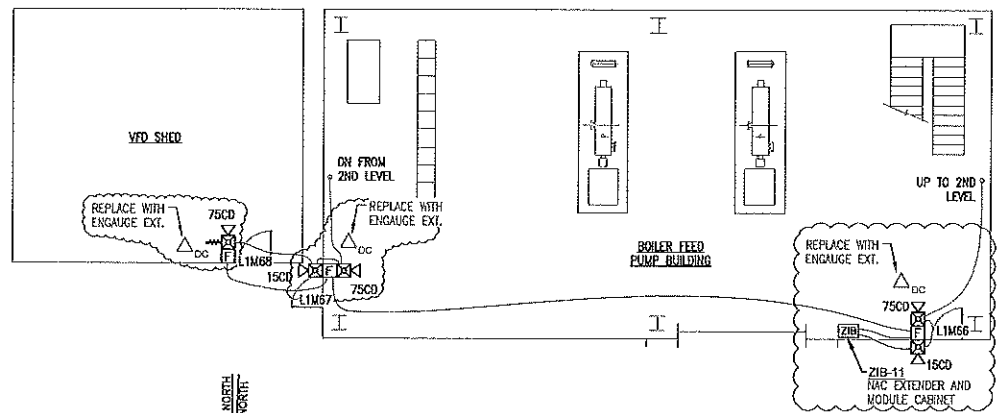
SYMBOL LEGEND	
[FACP]	FIRE ALARM CONTROL PANEL
[NAC]	NOTIFICATION APPLIANCE PANEL
[BATT]	BATTERY CABINET
[GWS]	NETWORK WORK STATION
[ZIB]	ZONE INTERFACE BOX
[RS]	REMOTE START
[TT]	TANK LOW TEMPERATURE
[TL]	TANK LOW LEVEL
[JP]	JOCKEY PUMP ON
[MPS]	MANUAL PULL STATION
[S]	SOLENOID VALVE
[SD]	SMOKE DETECTOR
[HT]	HEAT DETECTOR
[JP]	JOCKEY PUMP ON
[ZL]	LOW/LOW AIR PRESSURE SWITCH
[FS]	FLOW/PRESSURE SWITCH
[T]	VALVE TAMPER SWITCH
[HA]	HIGH/LOW AIR SWITCH
[HT]	HEADER TAMPER SWITCH
[LT]	LOW TEMPERATURE SWITCH
[DPS]	DISCHARGE PRESSURE SWITCH
[KMS]	KEY MAINTENANCE SWITCH
[BS]	BLUE STROBE, WALL MOUNT
[BHS]	BLUE HORN/STROBE, WALL MOUNT
[HS]	HORN/STROBE, WALL MOUNT
[S]	STROBE, WALL MOUNT
[CS]	HORN/STROBE, CEILING MOUNT
[WR]	END-OF-LINE RESISTOR
[DC]	ENGUAGE FIRE EXTINGUISHER, DRY CHEMICAL
[H]	TROUBLE HORN
[SB]	STROBE/BELL
[ST]	RELAY MODULE (ELEVATOR SHUNT TRIP)
[S]	RELAY MODULE (SECONDARY)
[P]	RELAY MODULE (PRIMARY)
[L]	RELAY MODULE (ELEVATOR LIGHT)



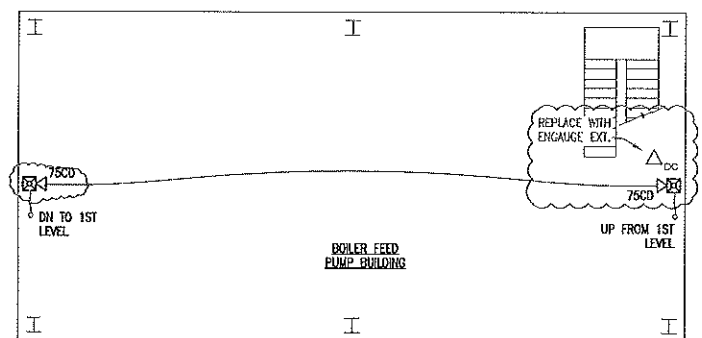
CT-101 BOILER FEED PUMP BUILDING - FIRST FLOOR
ARCH D SCALE: 1/8"=1'



CT-101 BOILER FEED PUMP BUILDING - SECOND FLOOR
ARCH D SCALE: 1/8"=1'



CT-201 BOILER FEED PUMP BUILDING - FIRST FLOOR
ARCH D SCALE: 1/8"=1'



CT-201 BOILER FEED PUMP BUILDING - SECOND FLOOR
ARCH D SCALE: 1/8"=1'

- GENERAL INSTALLATION AND WIRING NOTES:
- FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL (DO NOT MEGGER).
 - HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
 - ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS. EXACT CONDUIT ROUTING IS TO BE DETERMINED IN THE FIELD BY INSTALLING SUB-CONTRACTOR. THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
 - A SEPARATELY FUSED AND DEDICATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SUPPLY SHOULD BE FROM A STAND-BY POWERBUSS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT. ALL EXPOSED CONDUIT TO BE PER NEC.
 - SIGNALING LINE CIRCUITS (SLC LOOP):
 - ALL SLC CIRCUITS ARE RATED POWER LIMITED AND MUST BE IN WIRING ACCORDANCE WITH APPLICABLE CODES.
 - MINIMUM WIRE SIZE PERMITTED IS 16 AWG. MAXIMUM 12 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - NON-ADDRESSABLE INITIATING DEVICE CIRCUITS:
 - ALL INITIATING DEVICE CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRING IN ACCORDANCE WITH APPLICABLE CODES.
 - WIRE SIZE SHALL BE 16 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - NOTIFICATION APPLIANCE CIRCUITS:
 - ALL NAC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRING IN ACCORDANCE WITH APPLICABLE CODES.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - POLARITY MUST BE OBSERVED.
 - THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
 - ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH 3S INC.
 - THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
 - MANUAL PULL STATIONS SHALL BE MOUNTED 4' - 0" ABOVE FLOOR TO BOTTOM OF BOX.
 - HORN/STROBES SHALL BE MOUNTED 80" - 96" AFF, OR 6" BELOW CEILING, WHICHEVER IS LOWER. 90° MIN. FOR HORNS ONLY.

WIRE LEGEND		
A	120VAC POWER	3 - #12 AWG 600 VOLT
B	NAC OR RELEASING CIRCUIT	2 - #14 AWG. TWISTED (BELDEN 5100UL OR EQUIVALENT)
C	SIGNALING LINE CIRCUIT	2 - #16 AWG. TWISTED (BELDEN 5200UL OR EQUIVALENT)
D	INITIATING DEVICE CIRCUIT	2 - #16 AWG. THHN
E	24 VDC POWER	2 - #14 AWG. THHN 600 VOLT
F	NETWORK FIBER	12 STRAND MULTIMODE -- 62.5/125 MICROMETERS; 50/125 MICROMETERS
G	EIA-485 DATA	2 - #18 AWG. TWISTED/SHIELDED (BELDEN 5300FL OR EQUIVALENT)

LEGEND
 --- EXISTING WIRE TO BE RE-USED
 --- NEW WIRE TO BE PULLED

3S Incorporated
 Engineered Fire Protection Systems
 8686 Southwest Parkway • Harrison, OH 45030
 Office: 513-202-5070 • Fax: 513-367-5678
 www.3s-incorporated.com

REV.	DATE	BY	DESCRIPTION
C	1-16-17	DLD	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	DLD	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	DLD	ISSUED FOR 50% DESIGN REVIEW

PROJECT:
KLAMATH ENERGY
 4940 HIGHWAY 97 SOUTH
 KLAMATH FALLS, OR 97603

DESCRIPTION:
**FIRE PROTECTION/DETECTION UPGRADES
 CT-101 & CT-201 BOILER FEED PUMP
 BUILDINGS & VFD SHEDS**

DESIGN BY: DLD	DATE: 10-31-2017	SCALE: 1/8" = 1'-0"
CHECKED BY: JW	PROJECT NO.:17-2690	DRAWING: 1 OF 1
3S DRAWING NO.:2690-EL08	CUSTOMER DRAWING NO.:C	

WIRE LEGEND	
A	120VAC POWER
B	NAC OR RELEASING CIRCUIT
C	SIGNALING LINE CIRCUIT
D	INITIATING DEVICE CIRCUIT
E	24 VDC POWER
F	NETWORK FIBER
G	EM-485 DATA
2 - #18 AWG, TWISTED/SHIELDED (BULDEN 5300FL OR EQUIVALENT)	
12 STRAND MULTIMODE - 62.5/125 MICROMETERS, 50/125 MICROMETERS	
2 - #14 AWG, THHN 600 VOLT	
2 - #16 AWG, THHN	
2 - #16 AWG, TWISTED (BULDEN 5200UL OR EQUIVALENT)	
2 - #14 AWG, TWISTED (BULDEN 5100UL OR EQUIVALENT)	
3 - #12 AWG 600 VOLT	

LEGEND
 ----- EXISTING WIRE TO BE RE-USED
 - - - - - NEW WIRE TO BE PULLED

REV.	DATE	DESCRIPTION
C	1-16-17	ISSUED FOR 100% DESIGN REVIEW
B	12-13-17	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	ISSUED FOR 50% DESIGN REVIEW

PROJECT: KLAMATH ENERGY
 4940 HIGHWAY 97 SOUTH
 KLAMATH FALLS, OR 97603

CLIENT: FIRE PROTECTION/DETECTION UPGRADES
 COOLING TOWER
 VALVE HOUSE & CHEMICAL BUILDING

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

DATE: 10-31-2017

PROJECT NO: 17-2590

DESIGNER: JIM

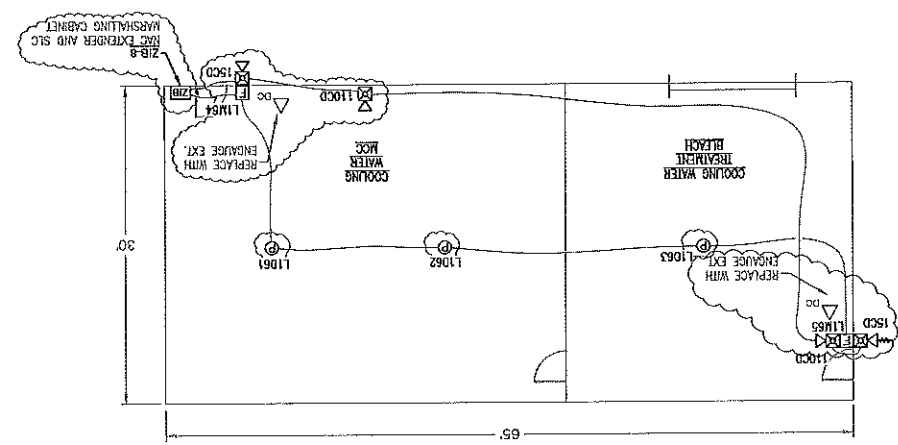
CUSTOMER DRAWING NO: 2690-EL09

3S Incorporated
 Engineered Fire Protection Systems

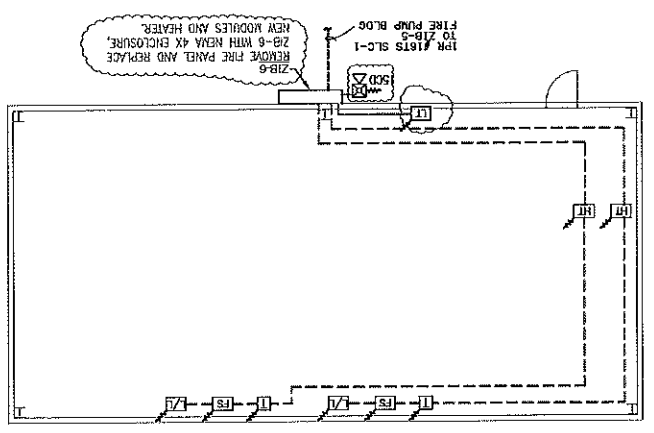
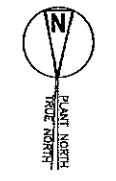
8886 Southwest Parkway • Harrison, OH 45030
 Office: 513-202-5070 • Fax: 513-367-5678
 www.3s-incorporated.com

- FIELD WIRING MUST BE CHECKED FOR SPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL (DO NOT NEGGERS).
- HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
- ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS. EXACT CONDUIT ROUTING IS TO BE DETERMINED IN THE FIELD BY INSTALLING SUB-CONTRACTOR. THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
- A SEPARATELY FUSED AND DERATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SUPPLY SHOULD BE FROM A STAND-BY POWERBUS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
- ALL EXPOSED CONDUIT TO BE PER NEC.
- SIGNALING LINE CIRCUITS (SLS LOOP)
- ALL SLS CIRCUITS ARE RATED LIMITED AND MUST BE IN WIRED ACCORDANCE WITH APPLICABLE CODES.
- MINIMUM WIRE SIZE PERMITTED IS 16 AWG, MAXIMUM 12 AWG.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
- PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- NOTIFICATION APPLIANCE CIRCUITS.
- ALL WAC CIRCUITS ARE RATED LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
- ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- THE WIRE SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
- PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
- THE WIRE SHOULD BE OBSERVED AND THE WIRE SHOULD BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
- ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH 3S INC.
- TERMINAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 6" TO 6" ABOVE HAZARD.
- MANUAL PULL STATIONS SHALL BE MOUNTED 4'-0" ABOVE FLOOR TO BOTTOM OF BOX.
- HORN/STROBES SHALL BE MOUNTED 80" - 96" AFT, OR 6" BELOW CEILING, WHICHEVER IS LOWER, 90" MIN. FOR HORNS ONLY.

COOLING TOWER CHEMICAL BUILDING



COOLING TOWER FIRE PROTECTION VALVE HOUSE



SYMBOL LEGEND

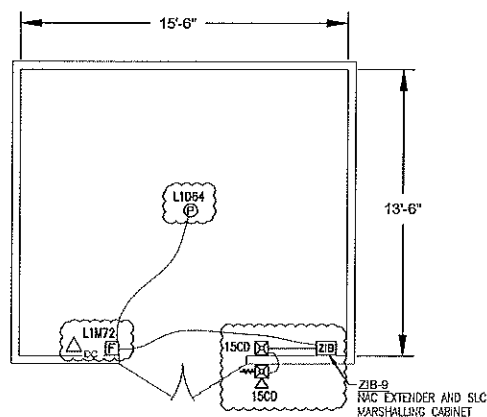
[Symbol]	FIRE ALARM CONTROL PANEL
[Symbol]	NOTIFICATION APPLIANCE PANEL
[Symbol]	BATTERY CABINET
[Symbol]	NETWORK WORK STATION
[Symbol]	ZONE INTERFACE BOX
[Symbol]	REMOTE START
[Symbol]	TANK LOW TEMPERATURE
[Symbol]	TANK LOW LEVEL
[Symbol]	DOCKERY PUMP ON
[Symbol]	LOW/LOW AIR PRESSURE SWITCH
[Symbol]	FLOW/PRESSURE SWITCH
[Symbol]	VALVE TAMPER SWITCH
[Symbol]	HIGH/LOW AIR SWITCH
[Symbol]	HEADER TAMPER SWITCH
[Symbol]	LOW TEMPERATURE SWITCH
[Symbol]	DISCHARGE PRESSURE SWITCH
[Symbol]	KEY MAINTENANCE SWITCH
[Symbol]	BLUE STROBE, WALL MOUNT
[Symbol]	BLUE HORN/STROBE, WALL MOUNT
[Symbol]	HORN/STROBE, WALL MOUNT
[Symbol]	STROBE, WALL MOUNT
[Symbol]	HORN/STROBE, CEILING MOUNT
[Symbol]	END-OF-LINE RESISTOR
[Symbol]	ENGINE FIRE EXTINGUISHER, DRY CHEMICAL

NOTE:
 1. EXISTING DEVICES SHALL REMAIN AS SHOWN.
 2. GLOUDED AREAS INDICATE NEW DEVICES TO BE INSTALLED AND REMOVE NEW WIRING AND RACEWAY.
 3. ITEMS TO BE REMOVED ARE NOTED AS SUCH.

SYMBOL LEGEND

[FACP]	FIRE ALARM CONTROL PANEL
[NAC]	NOTIFICATION APPLIANCE PANEL
[BATT]	BATTERY CABINET
[GUT]	NETWORK WORK STATION
[ZIB]	ZONE INTERFACE BOX
[RS]	REMOTE START
[TT]	TANK LOW TEMPERATURE
[TL]	TANK LOW LEVEL
[JP]	JOCKEY PUMP ON
[F]	MANUAL PULL STATION
[WA]	CLEAN AGENT MANUAL RELEASE STATION
[S]	STAT-X INITIATOR
[M]	STAT-X MANUAL RELEASE STATION
⊙	SOLENOID VALVE
⊕	SMOKE DETECTOR
⊖	HEAT DETECTOR
[JP]	JOCKEY PUMP ON
[LPS]	LOW/LOW AIR PRESSURE SWITCH
[FS]	FLOW/PRESSURE SWITCH
[V]	VALVE TAMPER SWITCH
[HSA]	HIGH/LOW AIR SWITCH
[HT]	HEADER TAMPER SWITCH
[DP]	DISCHARGE PRESSURE SWITCH
[KS]	KEY MAINTENANCE SWITCH
[S]	BLUE STROBE, WALL MOUNT
[S]	BLUE HORN/STROBE, WALL MOUNT
[S]	HORN/STROBE, WALL MOUNT
[S]	STROBE, WALL MOUNT
[S]	HORN/STROBE, CEILING MOUNT
— —	END-OF-LINE RESISTOR
△ _{DC}	ENGLAGE FIRE EXTINGUISHER, DRY CHEMICAL

NOTE:
1. CLOUDED AREAS INDICATE NEW DEVICES TO BE INSTALLED OR REPLACED.



PLANT NORTH
TRUE NORTH

FLAMMABLE LIQUID STORAGE
ARCH D SCALE: 1/4"=1'

- GENERAL INSTALLATION AND WIRING NOTES:**
- FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL (DO NOT MESS).
 - HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
 - ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS. EXACT CONDUIT ROUTING IS TO BE DETERMINED IN THE FIELD BY INSTALLING SUB-CONTRACTOR. THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
 - A SEPARATELY FUSED AND DEDICATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SUPPLY SHOULD BE FROM A STAND-BY POWERBUS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
 - ALL EXPOSED CONDUIT TO BE PER NEC.
 - SIGNALING LINE CIRCUITS (SLC LOOP):
 - ALL SLC CIRCUITS ARE RATED POWER LIMITED AND MUST BE IN WIRE ACCORDANCE WITH APPLICABLE CODES.
 - MINIMUM WIRE SIZE PERMITTED IS 16 AWG. MAXIMUM 12 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - NON-ADDRESSABLE INITIATING DEVICE CIRCUITS:
 - ALL INITIATING DEVICE CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
 - WIRE SIZE SHALL BE 16 AWG.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - NOTIFICATION APPLIANCE CIRCUITS:
 - ALL NAC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
 - ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - POLARITY MUST BE OBSERVED.
 - THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
 - ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH JS INC.
 - THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
 - MANUAL PULL STATIONS SHALL BE MOUNTED 4' -0" ABOVE FLOOR TO BOTTOM OF BOX.
 - HORN/STROBES SHALL BE MOUNTED 80" -96" AFF, OR 6" BELOW CEILINGS, WHICHEVER IS LOWER. 90" MIN. FOR HORNS ONLY.

WIRE LEGEND

A	120VAC POWER	3 - #12 AWG 600 VOLT
B	NAC OR RELEASING CIRCUIT	2 - #14 AWG. TWISTED (BELDEN 5100UL OR EQUIVALENT)
C	SIGNALING LINE CIRCUIT	2 - #16 AWG. TWISTED (BELDEN 5200UL OR EQUIVALENT)
D	INITIATING DEVICE CIRCUIT	2 - #16 AWG. THHN
E	24 VDC POWER	2 - #14 AWG. THHN 600 VOLT
F	NETWORK FIBER	12 STRAND MULTIMODE - 62.5/125 MICROMETERS; 50/125 MICROMETERS
G	EIA-485 DATA	2 - #18 AWG. TWISTED/SHIELDED (BELDEN 5300FL OR EQUIVALENT)

LEGEND

— — — — — EXISTING WIRE TO BE RE-USED
 — — — — — NEW WIRE TO BE PULLED

REV.	DATE	BY	DESCRIPTION
C	1-16-17	DLD	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	DLD	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	DLD	ISSUED FOR 50% DESIGN REVIEW
PROJECT:			
KLAMATH ENERGY 4940 HIGHWAY 97 SOUTH KLAMATH FALLS, OR 97603			
DESCRIPTION:			
FIRE PROTECTION/DETECTION UPGRADES FLAMMABLE LIQUID STORAGE			
DRAWN BY:	DATE:	SCALE:	
DLD	10-31-2017	1/4" = 1'-0"	
CHECKED BY:	PROJECT NO.:	DRAWING NO.:	
JWV	17-2690	1 OF 1	
3S DRAWING NO.:	CUSTOMER DRAWING NO.:	REV.:	
2690-E110		C	

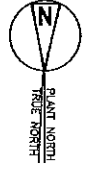
3S Incorporated
Engineered Fire Protection Systems

8686 Southwest Parkway • Harrison, OH 45030
Office: 513-202-5070 • Fax: 513-367-5678
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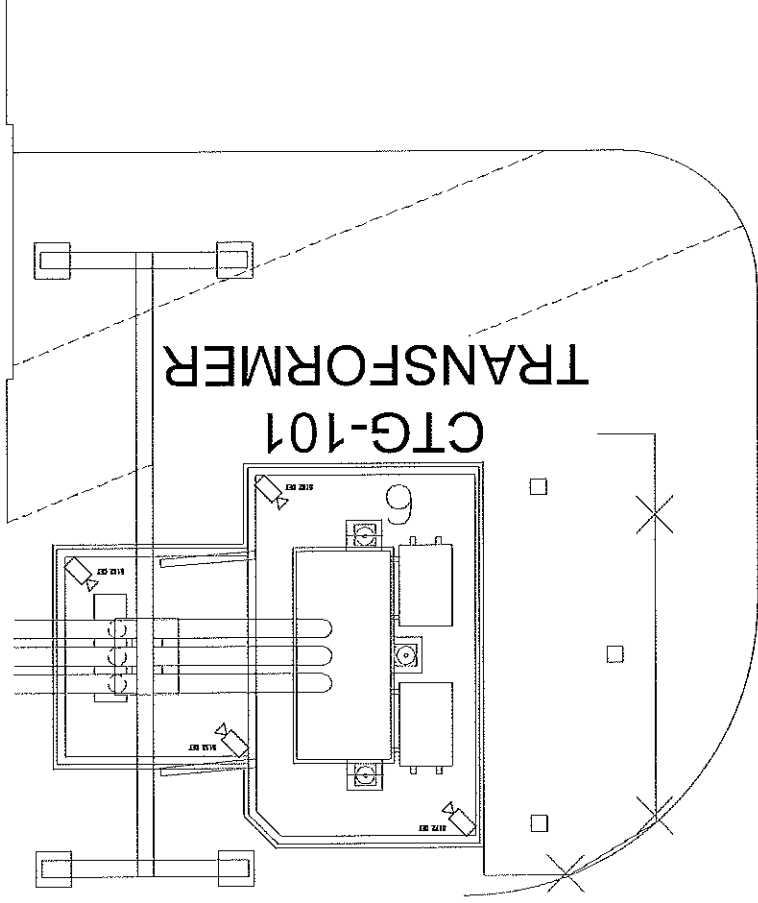
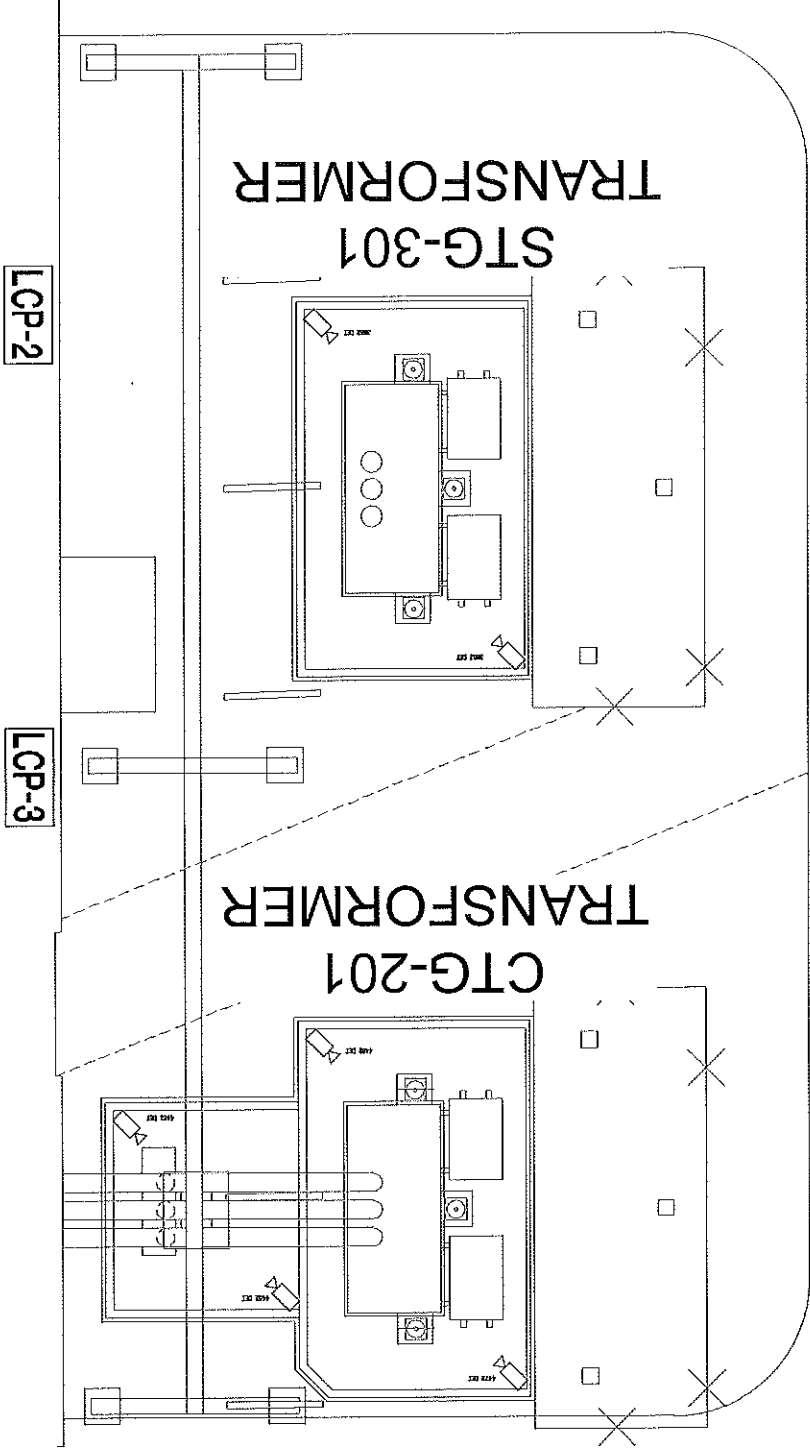
KIAMATH ENERGY 4940 HIGHWAY 97 SOUTH KIAMATH FALLS, OR 97603		DATE: 10-31-2017		SCALE: 3/32" = 1'-0"	
PROJECT: FIRE PROTECTION/FLAME DETECTION TYPICAL INSTALLATION		REV. DATE		SHEET NO. 1 OF 1	
DESIGNER: JLV		CHECKED: JLV		DATE: 12-28-2017	
DRAWN BY: JLV		DATE: 10-31-2017		SCALE: 3/32" = 1'-0"	
PROJECT NO. 2690-ELL1		CUSTOMER DRAWING NO.		REV. C	

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TRANSFORMERS PLAN - DETECTION LAYOUT
ARCH D SCALE: 3/32"=1"

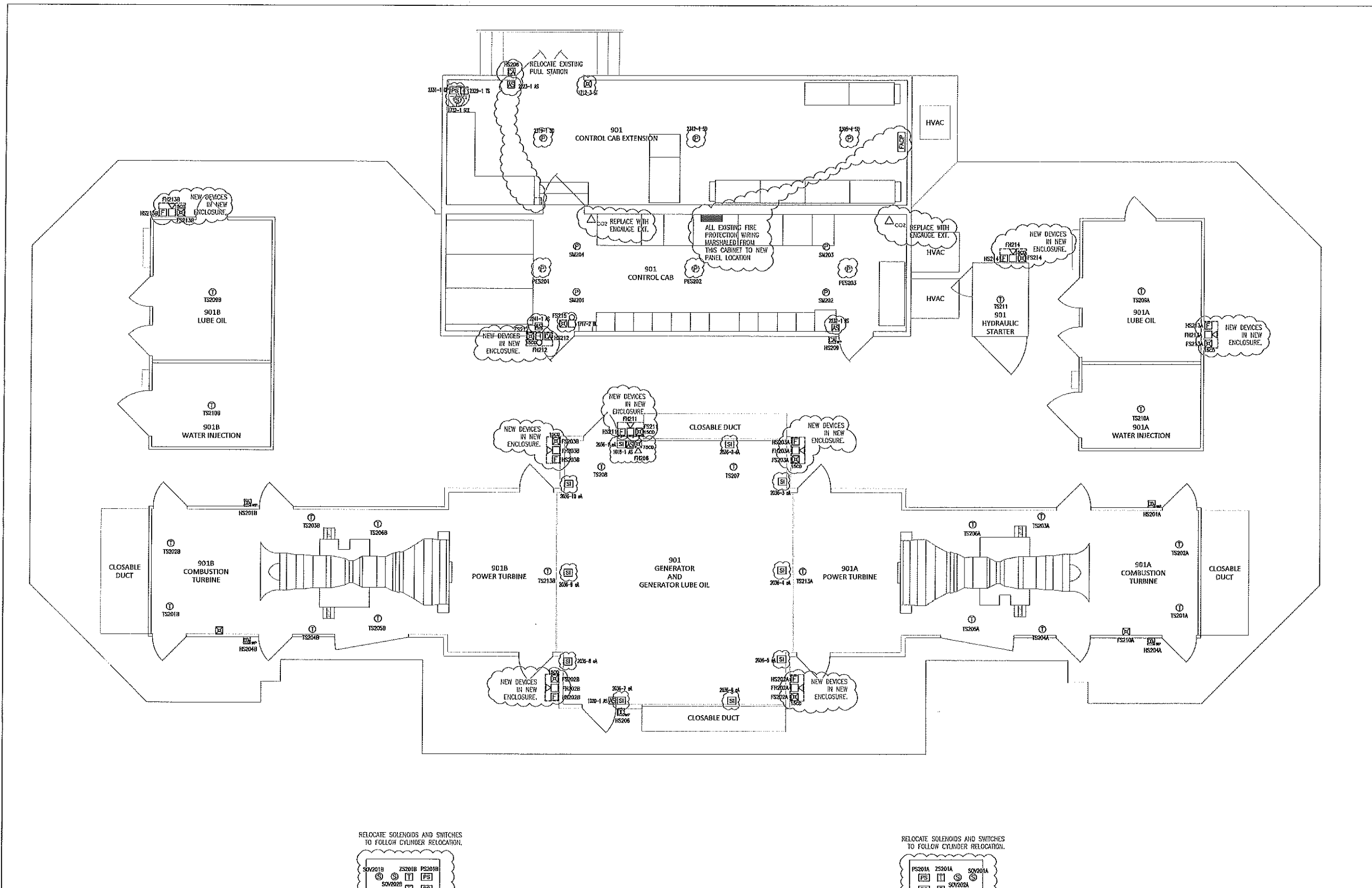


1. FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL. (DO NOT MEAGER).
2. HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
3. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE NOTATIONS. EXACT CONDUIT ROUTING IS TO BE DETERMINED IN THE FIELD BY INSTALLING SUB-CONTRACTOR THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
4. A SEPARATELY FUSED AND DEDICATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SUPPLY CIRCUIT BREAKERS NEED LOCKOUT. POWERLESS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
5. ALL EXPOSED CONDUIT TO BE PER NEC.
6. SIGNALING LINE CIRCUITS (S.L.C. LOOP):
7. ALL S.L.C. CIRCUITS ARE RATED POWER LIMITED AND MUST BE IN WIRE IN ACCORDANCE WITH APPLICABLE CODES.
8. MINIMUM WIRE SIZE PERMITTED IS 16 AWG. MAXIMUM 12 AWG.
9. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
10. NON-ADDRESSABLE WIRING DEVICES CIRCUITS:
11. ALL WIRING DEVICES ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
12. WIRE SIZE SHALL BE 16 AWG.
13. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
14. THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
15. PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
16. NOTIFICATION APPLIANCE CIRCUITS:
17. ALL MAG CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
18. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
19. PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
20. POLARITY MUST BE OBSERVED.
21. THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
22. ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH 3S INC.
23. THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
24. MANUAL PULL STATIONS SHALL BE MOUNTED 4' -0" ABOVE FLOOR TO BOTTOM OF BOX.
25. HORN/STROBES SHALL BE MOUNTED 80" -96" AFF. OR 6" BELOW CEILING, WHICHEVER IS LOWER. 90" MIN. FOR HORNS ONLY.



SYMBOL LEGEND

	LOCAL CONTROL PANEL / I-O PANEL
	FLAME DETECTOR



SYMBOL LEGEND	
[FACP]	FIRE ALARM CONTROL PANEL
[NAC]	NOTIFICATION APPLIANCE PANEL
[BATT]	BATTERY CABINET
[GWI]	NETWORK WORK STATION
[ZIB]	ZONE INTERFACE BOX
[MPS]	MANUAL PULL STATION
[MPS-C]	MANUAL PULL STATION, CLEAN AGENT
[MPS-S]	MANUAL PULL STATION, STAT-X
[MPS-CO2]	MANUAL PULL STATION, CO2
[SI]	STAT-X INITIATOR
[S]	SOLENOID VALVE
[SD]	SMOKE DETECTOR
[H]	HEAT DETECTOR
[AS]	ABORT STATION
[L/AS]	LOW/LOW AIR PRESSURE SWITCH
[F/PS]	FLOW/PRESSURE SWITCH
[V]	VALVE TAMPER SWITCH
[H-W]	HORN, WALL MOUNT
[H-W]	HORN/STROBE, WALL MOUNT
[S-W]	STROBE, WALL MOUNT
[H-C]	HORN/STROBE, CEILING MOUNT
[R]	END-OF-LINE RESISTOR
[CA]	ENCHARGE FIRE EXTINGUISHER, CLEAN AGENT
[DC]	ENCHARGE FIRE EXTINGUISHER, DRY CHEMICAL
[CO2]	ENCHARGE FIRE EXTINGUISHER, CO2

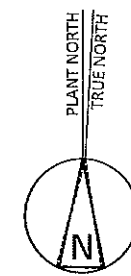
NOTE:
 1. EXISTING DEVICES SHALL REMAIN AS SHOWN.
 2. CLOUDED AREAS INDICATE NEW DEVICES TO BE INSTALLED AND REQUIRE NEW WIRING AND RACEWAY.
 3. ITEMS TO BE REMOVED ARE CLOUDED AND NOTED AS SUCH.

- GENERAL INSTALLATION AND WIRING NOTES:
- FIELD WIRING MUST BE CHECKED FOR OPENS, SHORTS OR GROUNDS BEFORE CONNECTING TO CONTROL PANEL. (DO NOT MESSEGE).
 - HIGH VOLTAGE WIRING MUST BE RUN IN SEPARATE CONDUIT FROM EITHER INPUT OR OUTPUT WIRING.
 - ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH ABOVE INSTRUCTIONS. EXACT CONDUIT ROUTING IS TO BE DETERMINED IN THE FIELD BY INSTALLING SUB-CONTRACTOR. THE INSTALLATION SHALL CONFORM TO NFPA STANDARD 72, THE NATIONAL ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
 - A SEPARATELY FUSED AND DEDICATED CIRCUIT SHALL BE PROVIDED FOR EACH CONTROL PANEL. THIS SUPPLY SHOULD BE FROM A STAND-BY POWERBUS IF SUCH IS AVAILABLE. CIRCUIT BREAKERS NEED LOCKOUT.
 - ALL EXPOSED CONDUIT TO BE PER NEC.
 - SIGNALING LINE CIRCUITS (SLC LOOP):
 A. ALL SLC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED ACCORDANCE WITH APPLICABLE CODES.
 B. MINIMUM WIRE SIZE PERMITTED IS 16 AWG, MAXIMUM 12 AWG.
 C. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 D. PARALLEL WIRING (T-TAPPING) IS PERMISSIBLE.
 - NON-ADDRESSABLE INITIATING DEVICE CIRCUITS:
 A. ALL INITIATING DEVICE CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
 B. WIRE SIZE SHALL BE 16 AWG.
 C. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 D. THE MAXIMUM LINE RESISTANCE DUE TO WIRING IS 20 OHMS.
 - PARALLEL WIRING (T-TAPPING) IS NOT PERMISSIBLE.
 - NOTIFICATION APPLIANCE CIRCUITS:
 A. ALL NAC CIRCUITS ARE RATED POWER LIMITED AND MUST BE WIRED IN ACCORDANCE WITH APPLICABLE CODES.
 B. ALL WIRING SHOULD BE IN A CONTINUOUSLY GROUNDED METAL RACEWAY.
 C. POLARITY MUST BE OBSERVED.
 D. THE WIRE SHIELDS OF SHIELDED CABLE MUST BE CONTINUOUS AND MUST BE GROUNDED SOLELY AT THE POINT OF ORIGIN, AT THE CONTROL PANEL.
 - ALL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. FINAL LOCATIONS TO BE COORDINATED WITH 3S INC.
 - THERMAL DETECTORS IN OPEN AREAS SHOULD BE MOUNTED 5' TO 6' ABOVE HAZARD.
 - MANUAL PULL STATIONS SHALL BE MOUNTED 4' -0" ABOVE FLOOR TO BOTTOM OF BOX.
 - HORN/STROBES SHALL BE MOUNTED 80" -96" AFF, OR 6" BELOW CEILING, WHICHEVER IS LOWER. 90" MIN. FOR HORNS ONLY.

WIRE LEGEND		
A	120VAC POWER	3 - #12 AWG 600 VOLT
B	NAC OR RELEASING CIRCUIT	2 - #14 AWG, TWISTED (BELDEN 5100UL OR EQUIVALENT)
C	SIGNALING LINE CIRCUIT	2 - #16 AWG, TWISTED (BELDEN 5200UL OR EQUIVALENT)
D	INITIATING DEVICE CIRCUIT	2 - #16 AWG, THIN
E	24 VDC POWER	2 - #14 AWG, THIN 600 VOLT
F	NETWORK FIBER	12 STRAND MULTIMODE -- 62.5/125 MICROMETERS; 50/125 MICROMETERS
G	EIA-485 DATA	2 - #18 AWG, TWISTED/SHIELDED (BELDEN 5300FL OR EQUIVALENT)

LEGEND
 - - - - - EXISTING WIRE TO BE RE-USED
 _____ NEW WIRE TO BE PULLED

CTG901 DEVICE LAYOUT PLAN
 ARCH D SCALE: 1/4"=1'-0"



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 Office: 513-202-5070 • Fax: 513-387-5678
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REV.	DATE	BY	DESCRIPTION
C	1-16-18	KAL	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	KAL	ISSUED FOR 50% DESIGN REVIEW

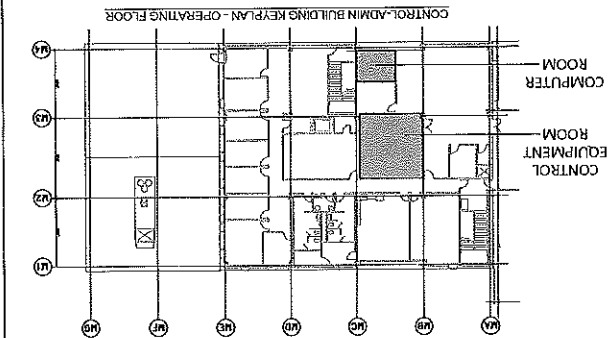
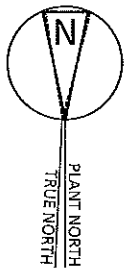
PROJECT: KLAMATH ENERGY
 4940 HIGHWAY 97 SOUTH
 KLAMATH FALLS, OR 97603

DESCRIPTION: FIRE PROTECTION/DETECTION UPGRADES
 CTG901 TURBINE GENERATOR
 DEVICE LAYOUT PLAN

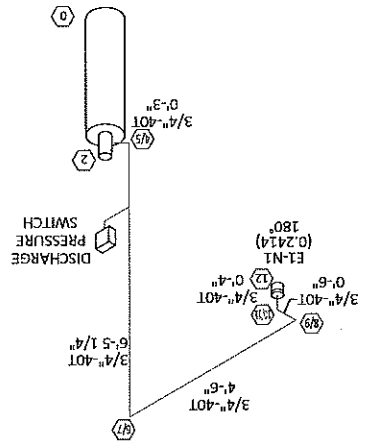
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CHECKED BY: JIW	PROJECT NO.: 17-2690	DRAWING: 1 of 1
3S DRAWING NO.: 2690-901-EL01	CUSTOMER DRAWING NO.:	REV: C

REV. 1	DATE	BY	DESCRIPTION
1	10-31-2017	KAL	ISSUED FOR 100% DESIGN REVIEW
2	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW
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4	11-16-17	KAL	ISSUED FOR 75% DESIGN REVIEW
5	10-31-2017	KAL	ISSUED FOR 100% DESIGN REVIEW
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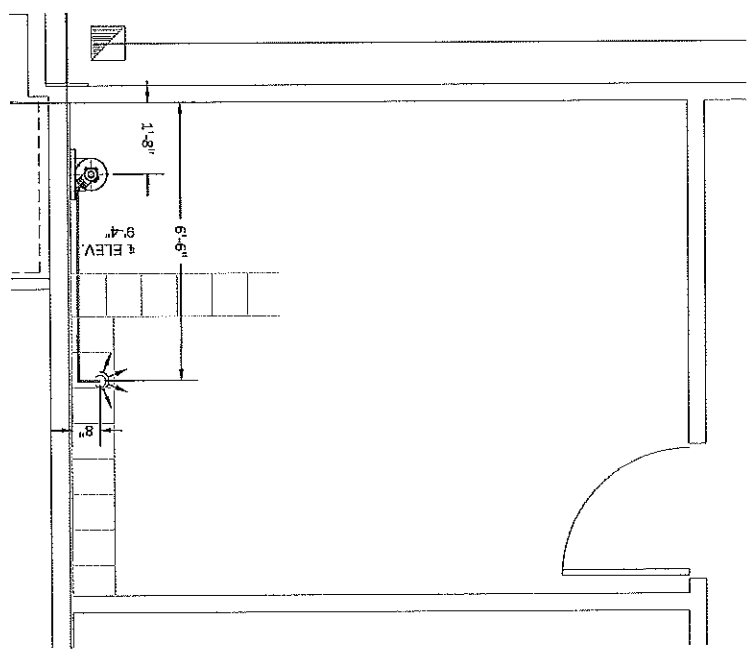
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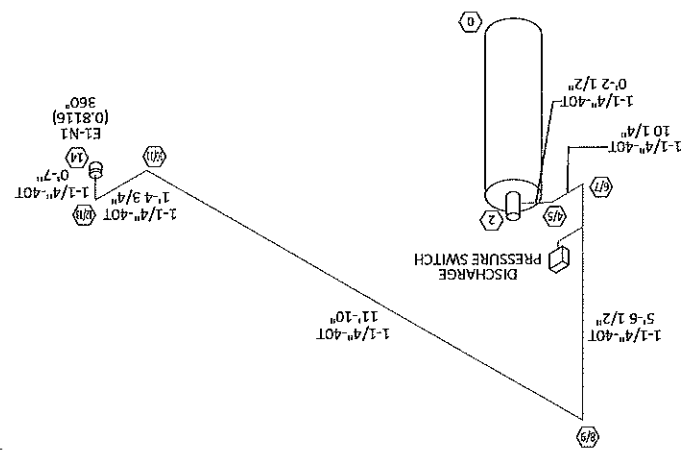
COMPUTER ROOM 2021
 SYSTEM PIPING ISOMETRIC
 ARCH D SCALE: 1/2"=1'-0"



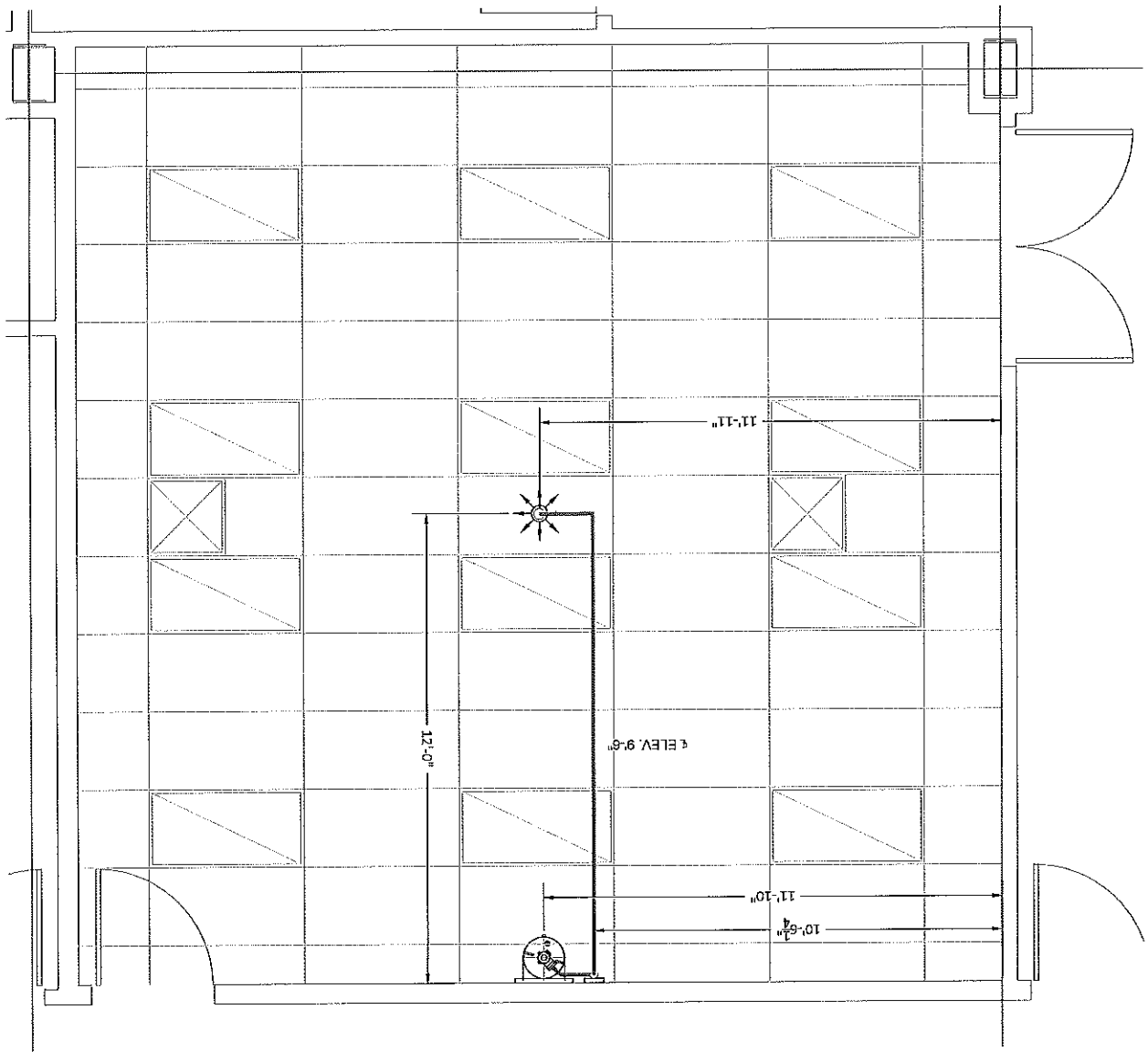
COMPUTER ROOM 2021 PLAN
 ROOM VOLUME CALCULATION
 174.6 SQ. FT.
 9'-0" CEILING HEIGHT
 1571.8 CU. FT.
 DESIGN CONCENTRATION 4.5% (1.0407 MULTIPLIER)
 56 LBS. AGENT REQUIRED
 ATMOSPHERIC CORRECTION FACTOR (.86x)

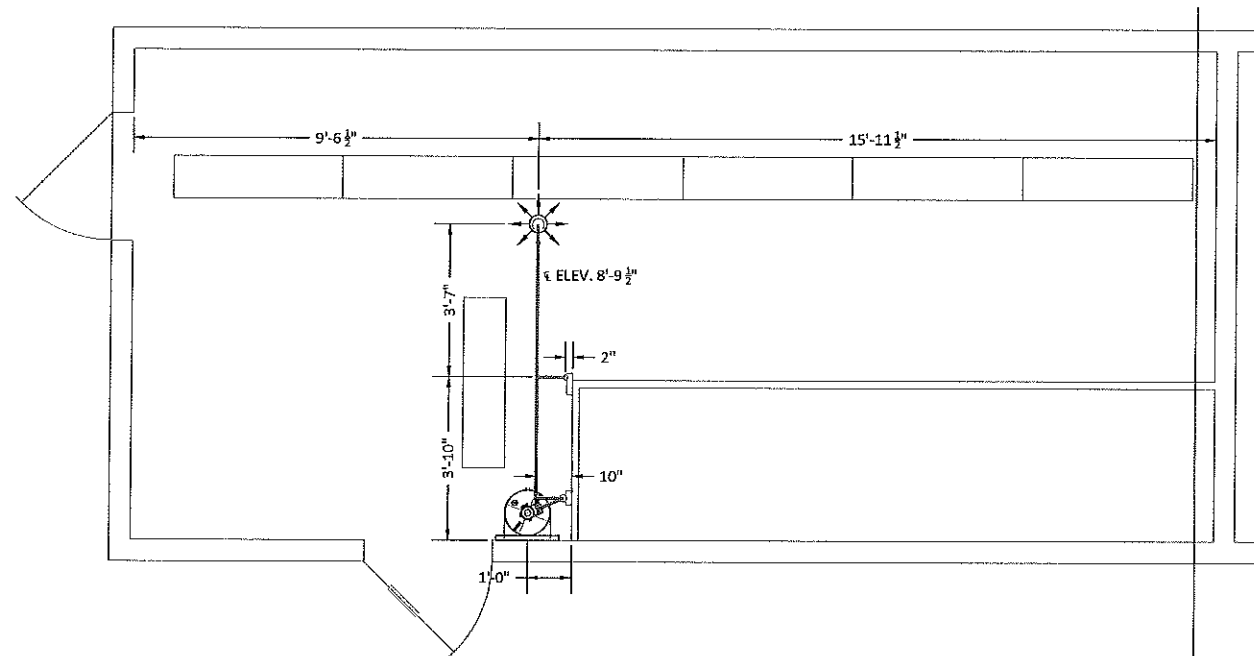


CONTROL EQUIPMENT ROOM 2020
 SYSTEM PIPING ISOMETRIC
 ARCH D SCALE: 1/2"=1'-0"

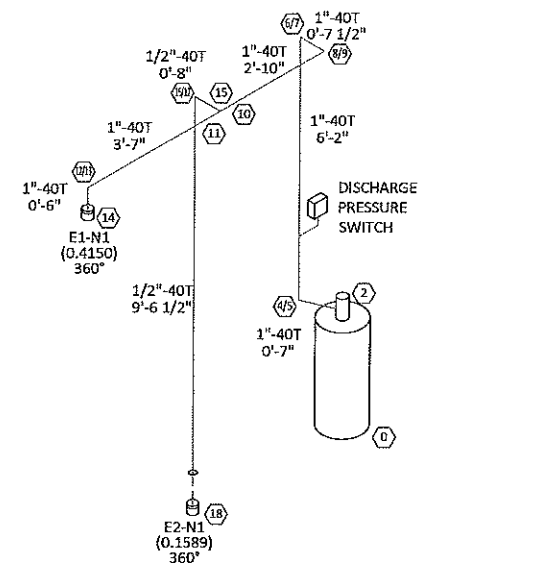


CONTROL EQUIPMENT ROOM 2020 PLAN
 ROOM VOLUME CALCULATION
 572.2 SQ. FT.
 9'-0" CEILING HEIGHT
 5149.8 CU. FT.
 DESIGN CONCENTRATION 4.5% (1.0407 MULTIPLIER)
 181 LBS. AGENT REQUIRED
 ATMOSPHERIC CORRECTION FACTOR (.86x)

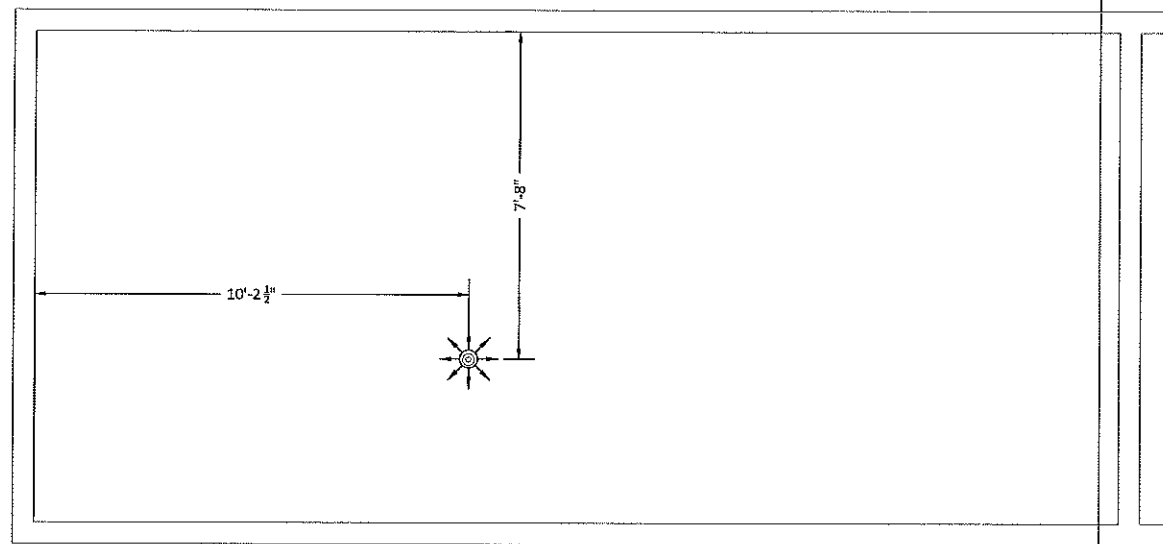




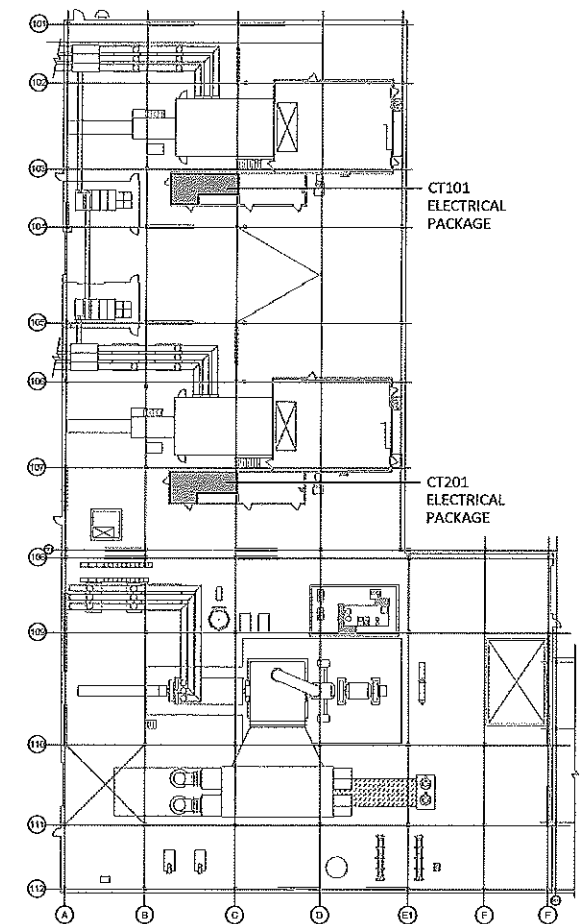
CT101/CT201 ELECTRICAL PACKAGE FLOOR PLAN
 ARCH D SCALE: 1/2"=1'-0"



ELECTRICAL PACKAGE SYSTEM PIPING ISOMETRIC
 ARCH D SCALE: 1/2"=1'-0"



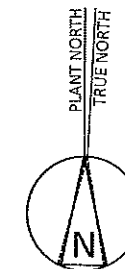
CT101/CT201 ELECTRICAL PACKAGE SUBFLOOR PLAN
 ARCH D SCALE: 1/2"=1'-0"



ROOM VOLUME CALCULATION
 236.5 SQ. FT.
 9'-0" CEILING HEIGHT
 2129.4 CU. FT.
 DESIGN CONCENTRATION 4.5% (.0407 MULTIPLIER)
 ATMOSPHERIC CORRECTION FACTOR (.86x)
 77 LBS. AGENT REQUIRED

SUBFLOOR VOLUME CALCULATION
 293.2 SQ. FT.
 2'-0" CEILING HEIGHT
 586.4 CU. FT.
 DESIGN CONCENTRATION 4.5% (.0407 MULTIPLIER)
 ATMOSPHERIC CORRECTION FACTOR (.86x)
 21 LBS. AGENT REQUIRED

98 LBS. AGENT TOTAL



3S Incorporated
 Engineered Fire Protection Systems
 8686 Southwest Parkway • Harrison, OH 45030
 Office: 513-202-5070 • Fax: 513-367-5678
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REV.	DATE	BY	DESCRIPTION
C	1-16-18	KAL	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	KAL	ISSUED FOR 50% DESIGN REVIEW

PROJECT: **KLAMATH ENERGY**
 4940 HIGHWAY 97 SOUTH
 KLAMATH FALLS, OR 97603

DESCRIPTION: **FIRE PROTECTION/DETECTION UPGRADES**
CT101 & CT201 ELECTRICAL PACKAGES
NOVEC 1230 FIRE SUPPRESSION

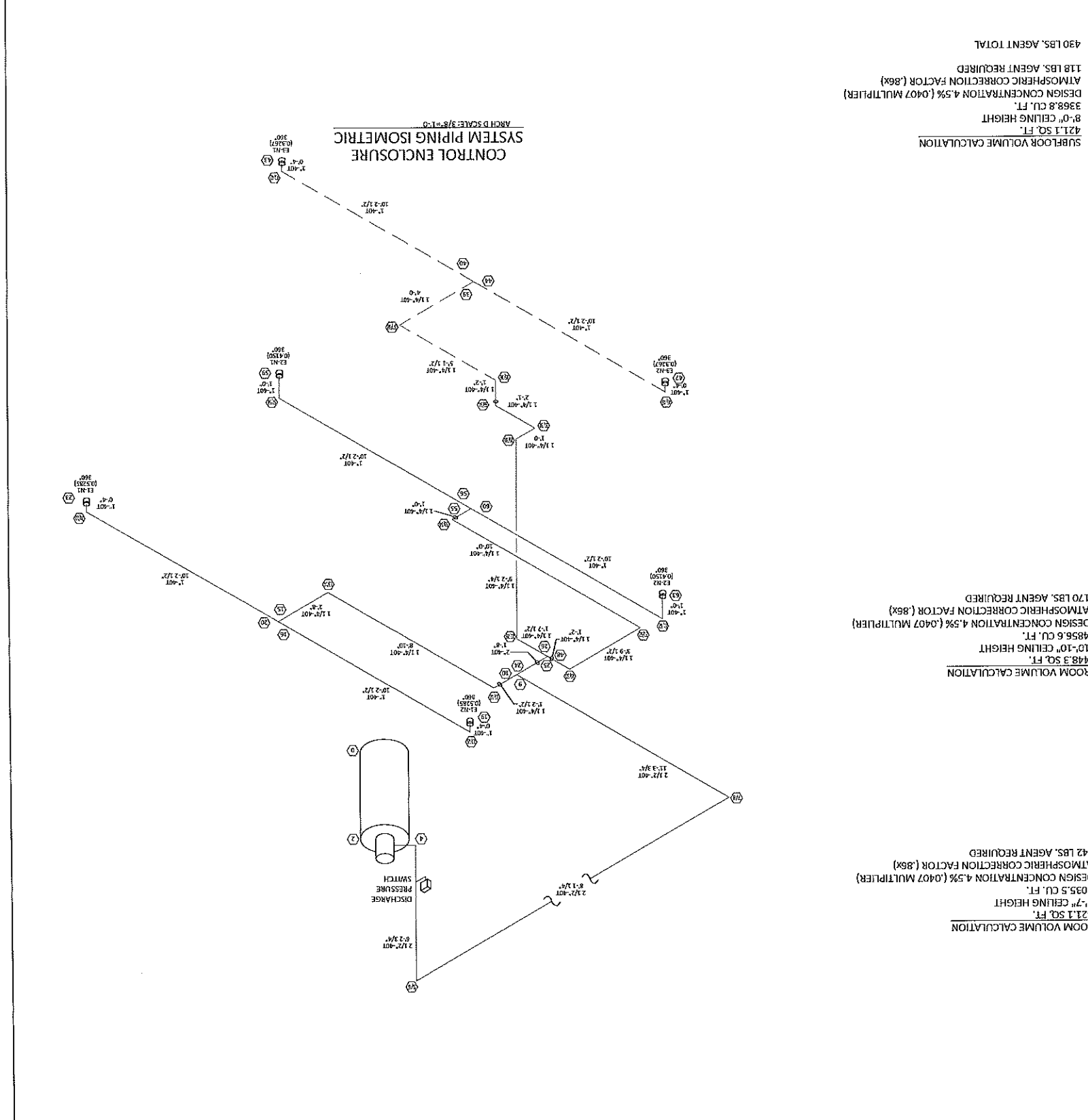
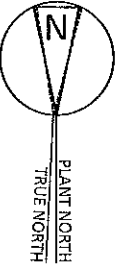
DRAWN BY	DATE	SCALE
KAL	11-3-2017	1"=50'

CHECKED BY	PROJECT NO.	DRAWING
JJW	17-2690	1 of 1

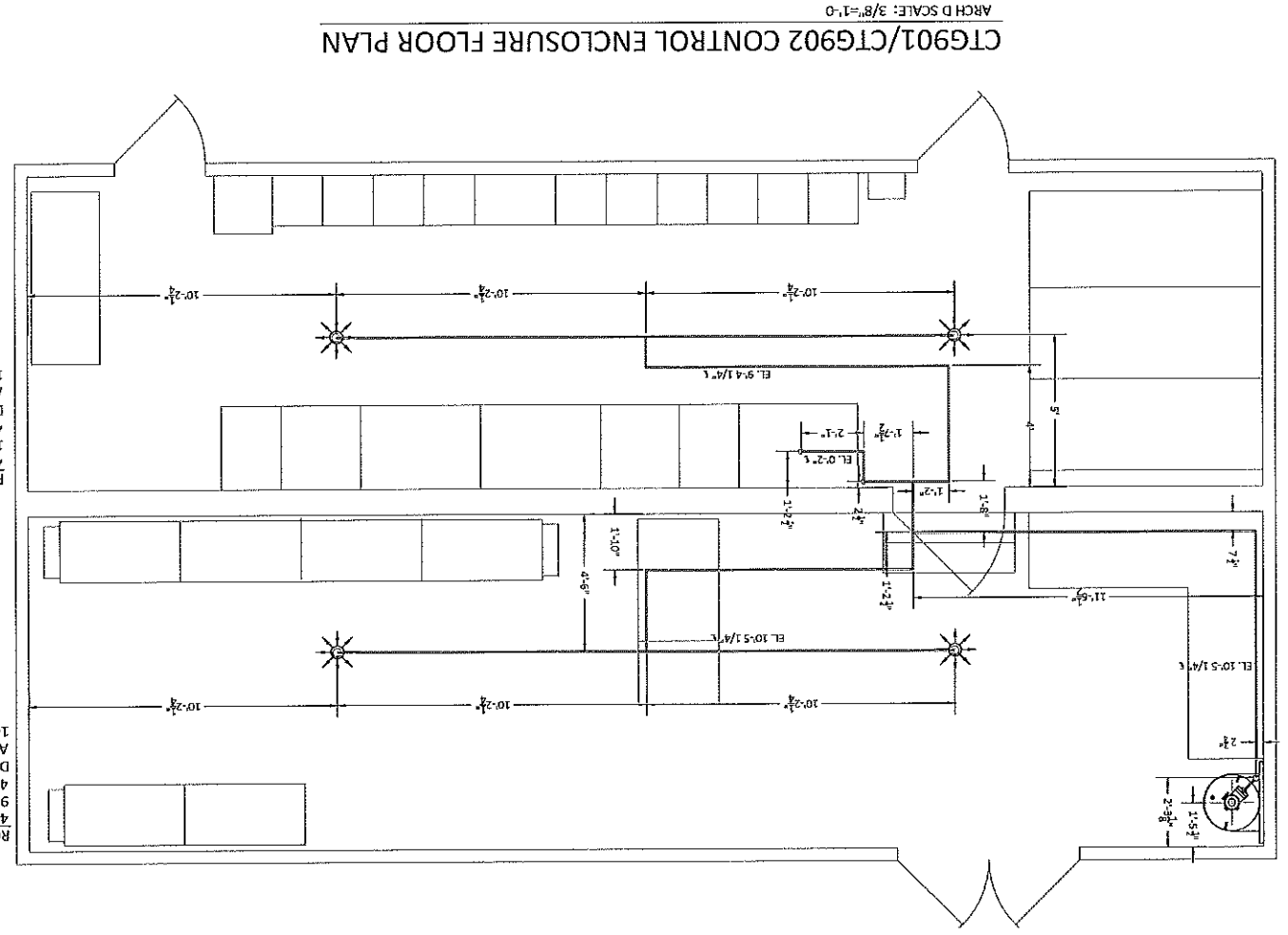
3S DRAWING NO.	CUSTOMER DRAWING NO.	REV.
2690-ML02		C

PROJECT		KIAMATH ENERGY 4940 HIGHWAY 97 SOUTH KIAMATH FALLS, OR 97603	
REV.	DATE	BY	DESCRIPTION
C	1-16-18	KAL	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	KAL	ISSUED FOR 50% DESIGN REVIEW
DESIGNER			
FIRE PROTECTION/DETECTION UPGRADES CTG901 & CTG902 CONTROL ENCLOSURES NOVEC 1230 FIRE SUPPRESSION			
DATE	11-4-2017	SCALE	3/8"=1'-0"
PROJECT NO.	17-2690	WORKSHEET NO.	1 OF 1
CLIENT DRAWING NO.			
2690-M103			

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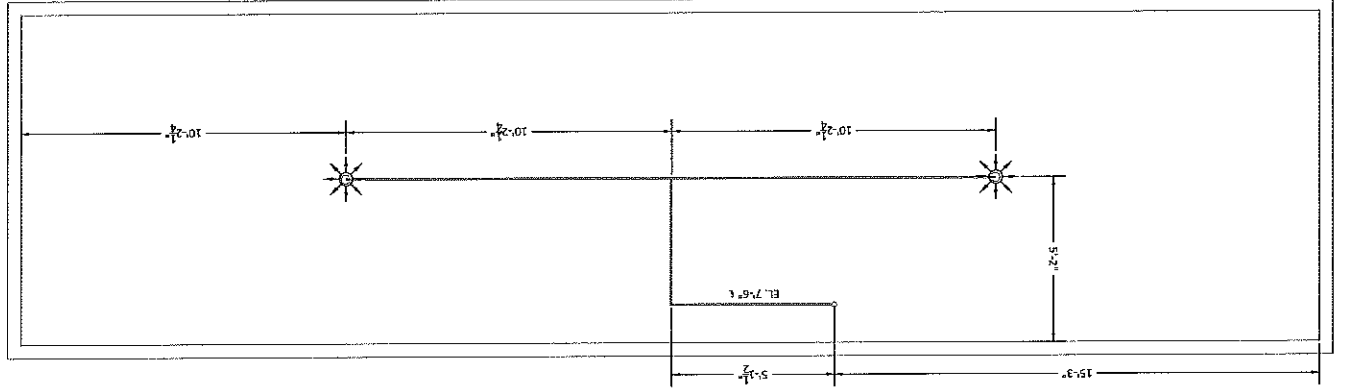


CONTROL ENCLOSURE
 SYSTEM PIPING ISOMETRIC
 ARCH D SCALE: 3/8"=1'-0"



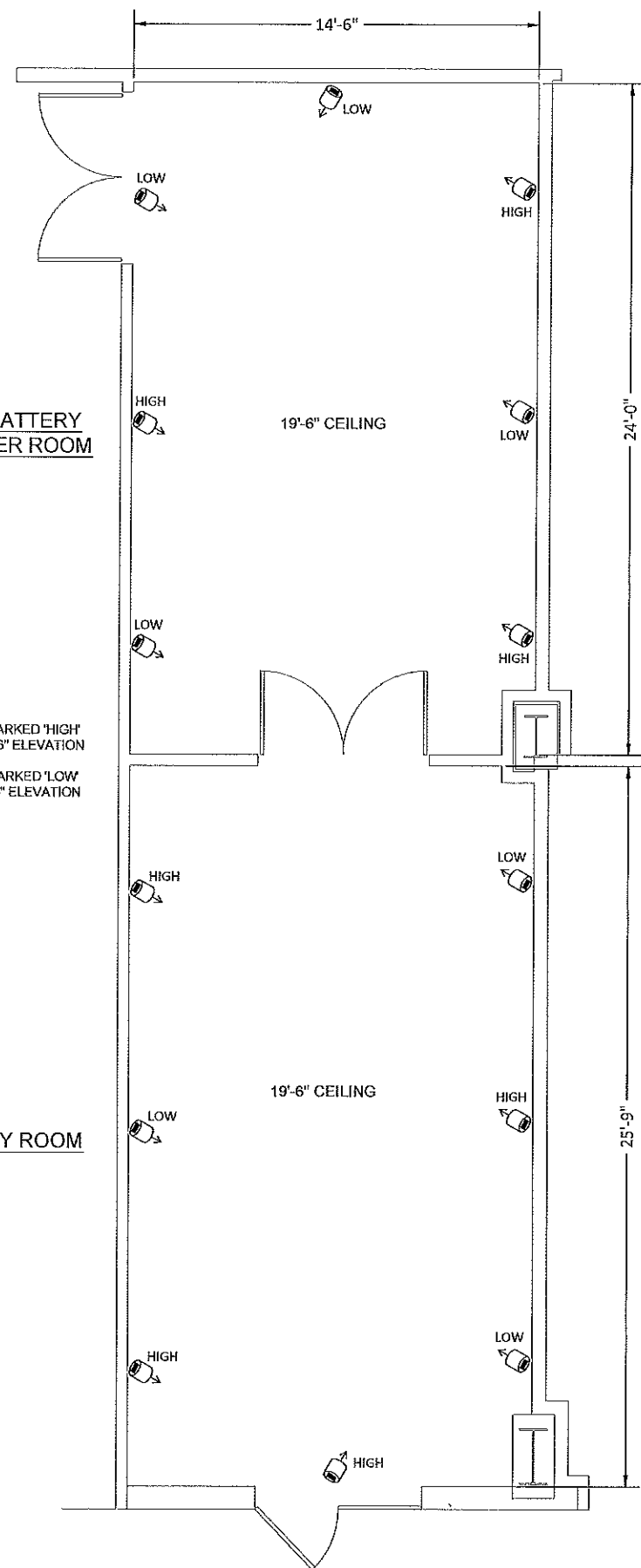
CTG901/CTG902 CONTROL ENCLOSURE FLOOR PLAN
 ARCH D SCALE: 3/8"=1'-0"

ROOM VOLUME CALCULATION
 448.3 SQ. FT.
 10'-10" CEILING HEIGHT
 4856.6 CU. FT.
 DESIGN CONCENTRATION 4.5% (.0407 MULTIPLIER)
 ATMOSPHERIC CORRECTION FACTOR (.86x)
 170 LBS. AGENT REQUIRED

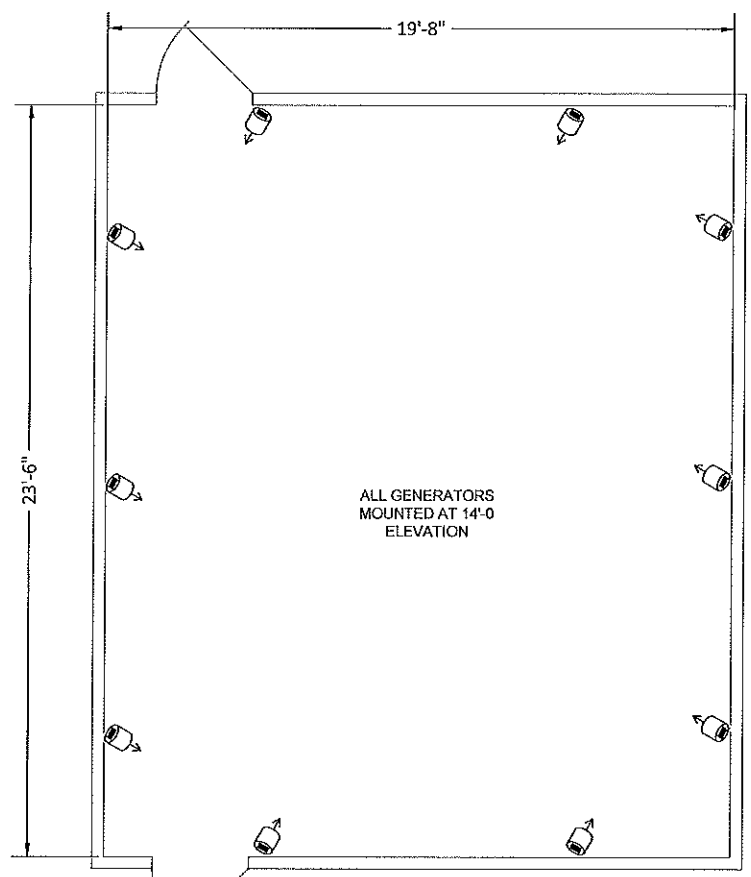


CTG901/CTG902 CONTROL ENCLOSURE SUBFLOOR PLAN
 ARCH D SCALE: 3/8"=1'-0"

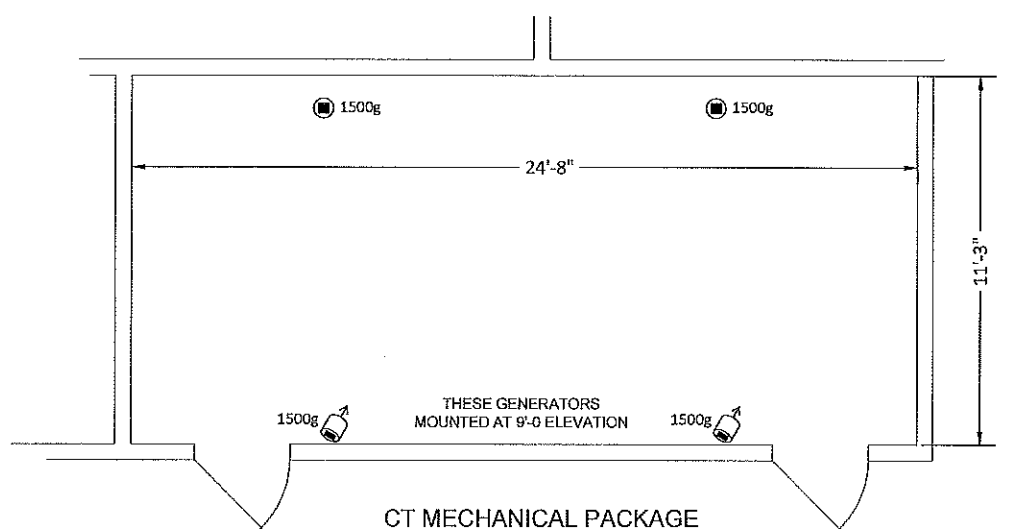
SUBFLOOR VOLUME CALCULATION
 421.1 SQ. FT.
 8'-0" CEILING HEIGHT
 3368.8 CU. FT.
 DESIGN CONCENTRATION 4.5% (.0407 MULTIPLIER)
 ATMOSPHERIC CORRECTION FACTOR (.86x)
 118 LBS. AGENT REQUIRED
 490 LBS. AGENT TOTAL



GENERATORS MARKED 'HIGH'
MOUNTED AT 17'-6" ELEVATION
GENERATORS MARKED 'LOW'
MOUNTED AT 9'-6" ELEVATION



TWINPAC GENERATOR
(THIS AREA TYPICAL x2)



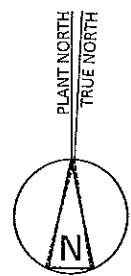
CT MECHANICAL PACKAGE
(THIS AREA TYPICAL x2)

SYMBOL LEGEND	
	STAT-X AEROSOL GENERATOR, CEILING MOUNT
	STAT-X AEROSOL GENERATOR, WALL MOUNT

ALL STAT-X GENERATORS ARE 2500g UNLESS OTHERWISE NOTED

STAT-X AEROSOL GENERATOR NOTES

1. POSITION MOUNTING BRACKETS AND SECURELY FASTEN TO WALL, CEILING, OR OTHER SUPPORT IN A LOCATION AND MANNER WHICH INSURES THE GENERATORS WILL NOT BE SUBJECTED TO ACCIDENTAL DAMAGE OR MOVEMENT.
2. MAKE SURE MOUNTING BRACKETS ARE LOCATED IN A MANNER TO INSURE A CIRCULAR FLOW PATTERN AND MAXIMUM MIXING OF AEROSOL DURING DISCHARGE.
3. REMOVE GENERATORS FROM SHIPPING CONTAINER AND INSPECT INTEGRITY OF THE NON-PERMEABLE MEMBRANE. DO NOT INSTALL IF THE MEMBRANE IS RUPTURED IN ANY WAY OR IF CIRCUIT IS BROKEN. CHECK IGNITER INTEGRITY WITH OHMMETER. DO NOT INSTALL IF READING IS OUTSIDE RANGE OF 1.4 TO 2.0 OHMS.
4. SECURELY ATTACH GENERATORS TO THE MOUNTING BRACKETS WITH GENERATOR CLAMPS TAKING CARE TO INSURE THE CLAMPS ARE FREE OF THE INITIATOR MECHANISM AND THAT ALL BOLTS ARE SECURELY TIGHTENED IN PLACE.
5. POSITION GENERATORS, VIA THE BRACKET-MOUNTING SWIVEL, TO ALLOW FOR UNIMPEDED DISCHARGE UPON ACTIVATION. CARE MUST BE TAKEN SO THAT THE GENERATOR DOES NOT DIRECTLY DISCHARGE AT CLOSE RANGE ON THE WALL, CEILING, OR VERTICAL SURFACES OF THE EQUIPMENT WITHIN THE HAZARD AREA. GENERATORS MUST BE POSITIONED TO PROMOTE CIRCULAR FLOW AND MIXING OF AEROSOL FROM MULTIPLE GENERATORS. AEROSOL GENERATORS MUST NEVER BE POSITIONED TO DISCHARGE DIRECTLY AT EACH OTHER! THIS WILL CAUSE AGGLOMERATION OF THE AEROSOL PARTICULATE, REDUCING THE AEROSOL'S EXTINGUISHING EFFECTIVENESS.
6. GENERATORS ARE TO WIRED IN SERIES ON A LOOP.



REV.	DATE	BY	DESCRIPTION
C	1-16-18	KAL	ISSUED FOR 100% DESIGN REVIEW
B	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW
A	11-16-17	KAL	ISSUED FOR 50% DESIGN REVIEW

PROJECT: KLAMATH ENERGY
4940 HIGHWAY 97 SOUTH
KLAMATH FALLS, OR 97603

DESCRIPTION: FIRE PROTECTION/DETECTION UPGRADES
STAT-X PROTECTED AREAS
AEROSOL GENERATOR LAYOUT

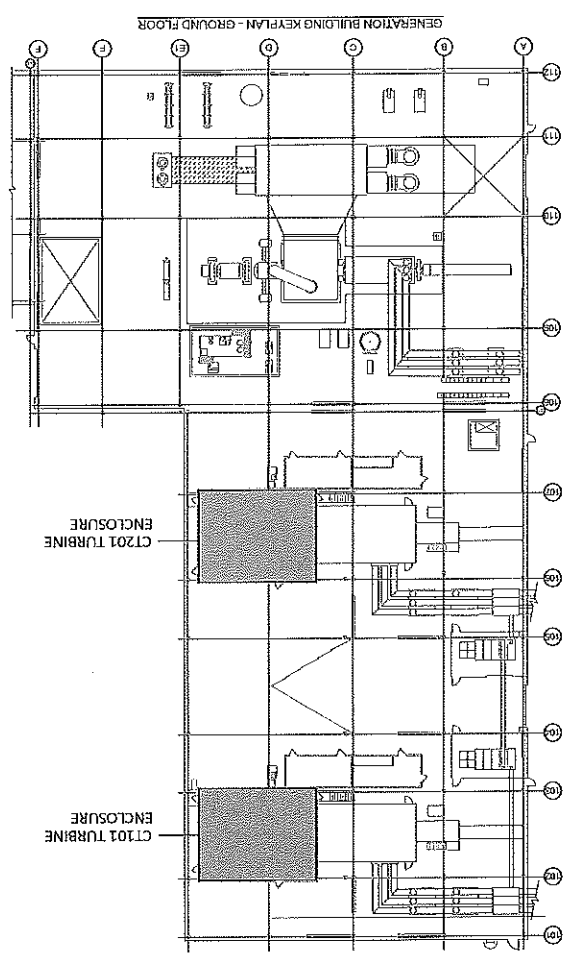
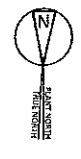
DRAWN BY: KAL	DATE: 11-12-2017	SCALE: 3/8"=1'-0"
CHECKED BY: JUV	PROJECT NO: 17-2690	DRAWING: 1 OF 1

3S DRAWING NO: 2690-ML04 CUSTOMER DRAWING NO: C

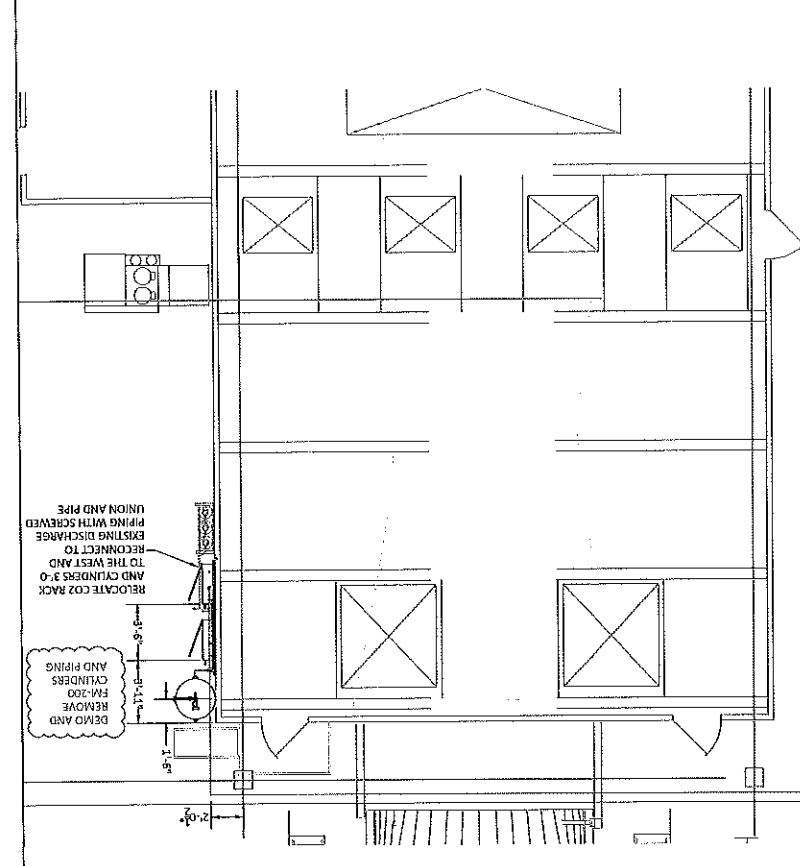
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Engineered Fire Protection Systems
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Office: 513-202-5070 • Fax: 513-367-5678
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PROJECT NO. 12-3-2017		DATE 1/8-1-0	
DESIGNED BY JIM		CHECKED BY	
DRAWN BY KAL		SCALE 1/8"=1'-0"	
DESCRIPTION FIRE PROTECTION/DETECTION UPGRADES CT101 & CT201 TURBINE ENCLOSURES VORTEX FIRE SUPPRESSION			
PROJECT KIAMATH ENERGY 4940 HIGHWAY 97 SOUTH KIAMATH FALLS, OR 97603			
REVISIONS			
NO.	DATE	BY	DESCRIPTION
B	1-16-18	KAL	ISSUED FOR 75% DESIGN REVIEW
A	12-13-17	KAL	ISSUED FOR 75% DESIGN REVIEW
CUSTOMER DRAWING NO. 2690-M105			
SS DRAWING NO.			

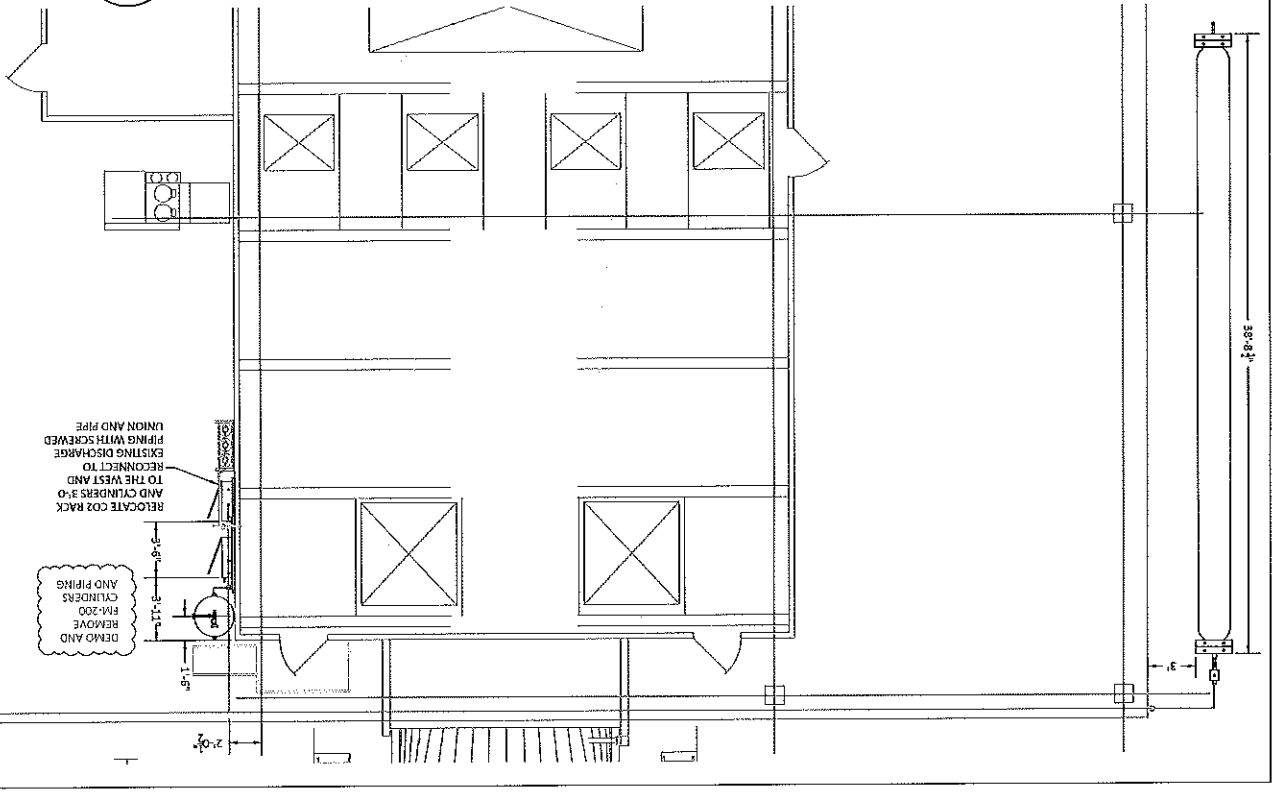
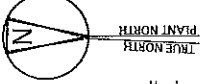
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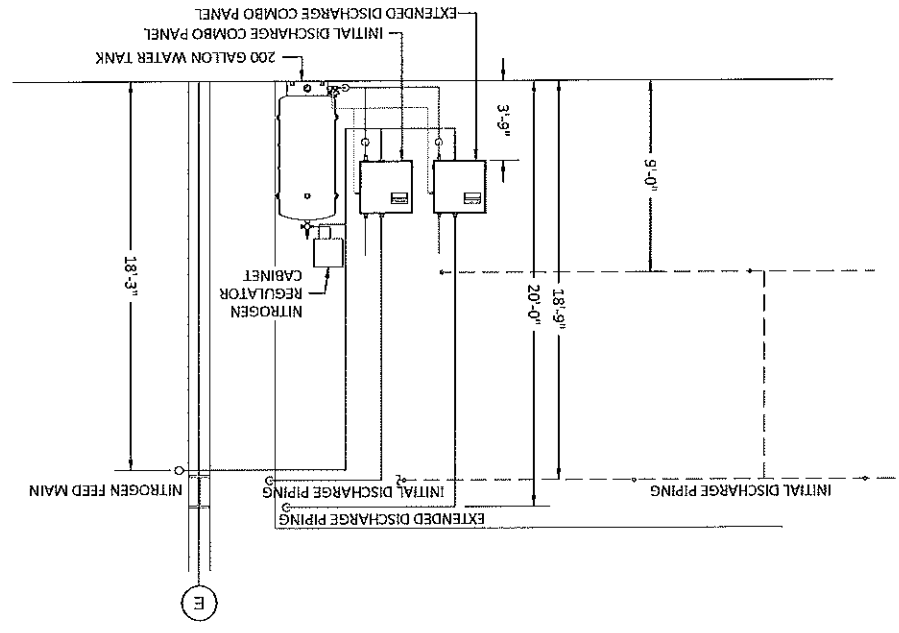
- PIPING NOTE:**
1. ALL PIPE LENGTHS ARE CENTER-OF-PIPE AND DO NOT ACCOUNT FOR FITTING TAKEOUT DIMENSIONS.
 2. DUE TO POSSIBLE OBSTRUCTIONS IN THE FIELD, ALL PIPE LENGTHS AND PIPE ROUTING NEEDS TO BE FIELD VERIFIED.
 3. ALL NITROGEN PIPING FROM THE BULK TUBES TO THE INLET OF EACH COMBO PANEL SHALL BE SCHEDULE 160.
 4. ALL NITROGEN PIPING FROM THE OUTLET OF THE COMBO PANEL SHALL BE SCHEDULE 80, A-106B OR A-53, SEAMLESS IF THREADED, OR SCHEDULE 80, A-106B OR A-53, SEAMLESS IF THREADED, OR ROLLED GROOVE. 3000# FITTINGS SHALL BE USED.
 5. ALL WATER PIPE SHALL BE EITHER COPPER TUBING AND GALVANIZED PIPE, AND OR STAINLESS STEEL PIPING AND HAVE A MINIMUM PRESSURE RATING OF 175PSI.
 6. WATER PIPING FROM THE WATER TANK TO THE INLET OF THE COMBO PANELS SHALL BE 3/4" IN DIAMETER. WATER PIPING FROM THE OUTLET OF THE COMBO PANEL TO THE EMITTERS SHALL BE 1/2" IN DIAMETER.
 7. WATER PIPING WILL FOLLOW NITROGEN PIPING FROM THE COMBO PANEL TO THE EMITTER(S).
 8. 1/2" MACHINE SPACE EMITTERS USE A 3/4" NTP CONNECTION.
 9. SIDEWALL EMITTERS SHALL BE AIMED HORIZONTAL TO THE FLOOR.
 10. SLOPE WATER PIPE 1/4" PER 10' BACK TO COMBO PANEL.
 11. PIPE ROUTING IS APPROXIMATE AND MUST BE FIELD VERIFIED BY INSTALLING CONTRACTOR BEFORE FABRICATION.
 12. COPPER TUBING BETWEEN THE FLOW CARTRIDGE AND THE EMITTER TO BE PROVIDED BY THE INSTALLING CONTRACTOR.
 13. ALL PIPE WITHIN TURBINE ENCLOSURE TO BE SCREWED FITTINGS ONLY. NO GROOVED FITTINGS ALLOWED.

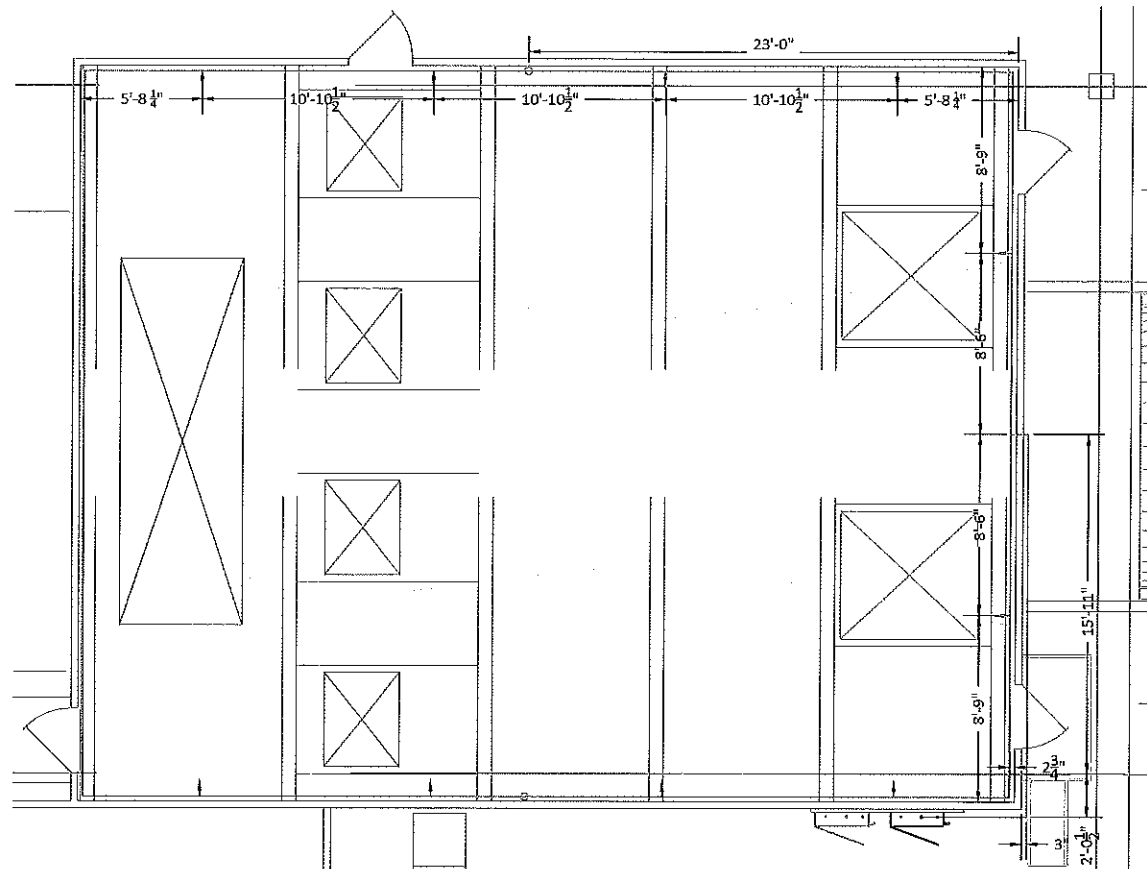


CT101/CT201 NITROGEN SUPPLY PIPING FLOOR PLAN
 ARCH D SCALE: 1/4"=1'-0"



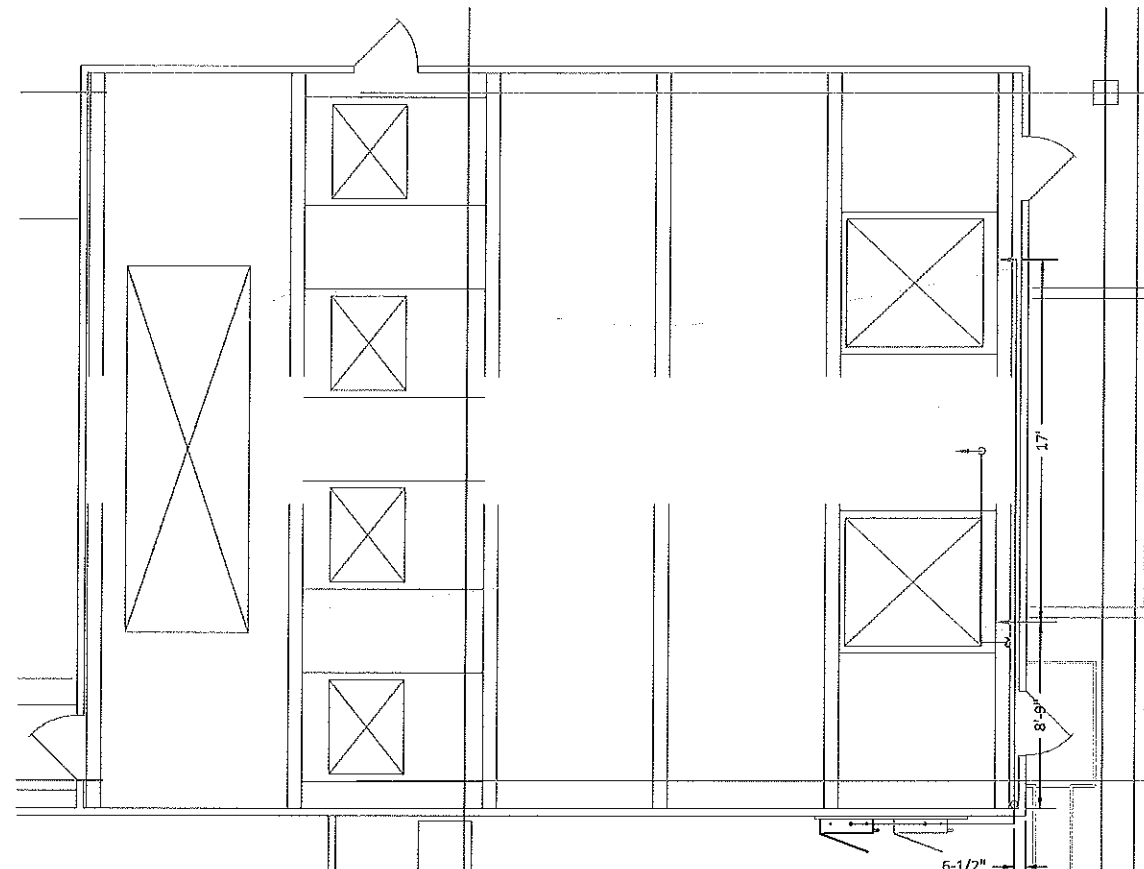
CT101/CT201 N2 & H2O SUPPLY PIPING ELEVATION
 ARCH D SCALE: 1/4"=1'-0"





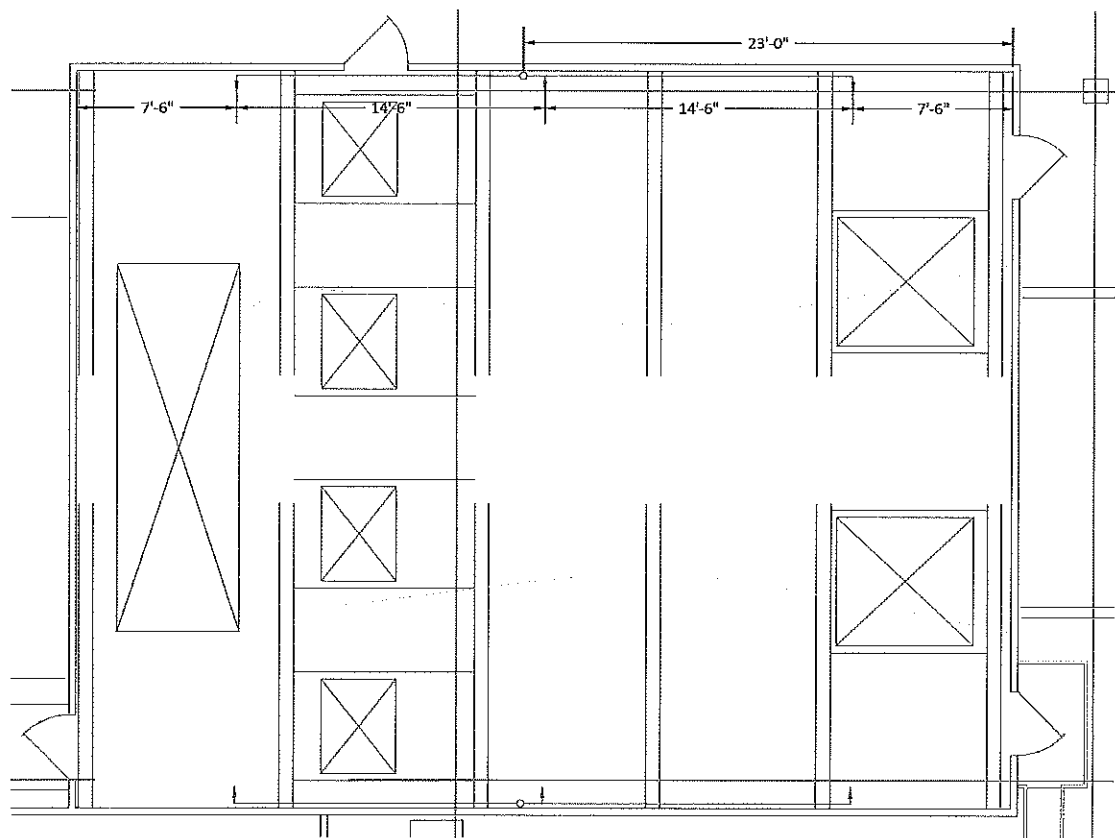
CT101 & CT201 TURBINE ENCLOSURE INITIAL DISCHARGE PIPING (UPPER)

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



CT101 & CT201 TURBINE ENCLOSURE EXTENDED DISCHARGE PIPING

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

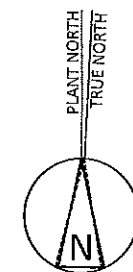
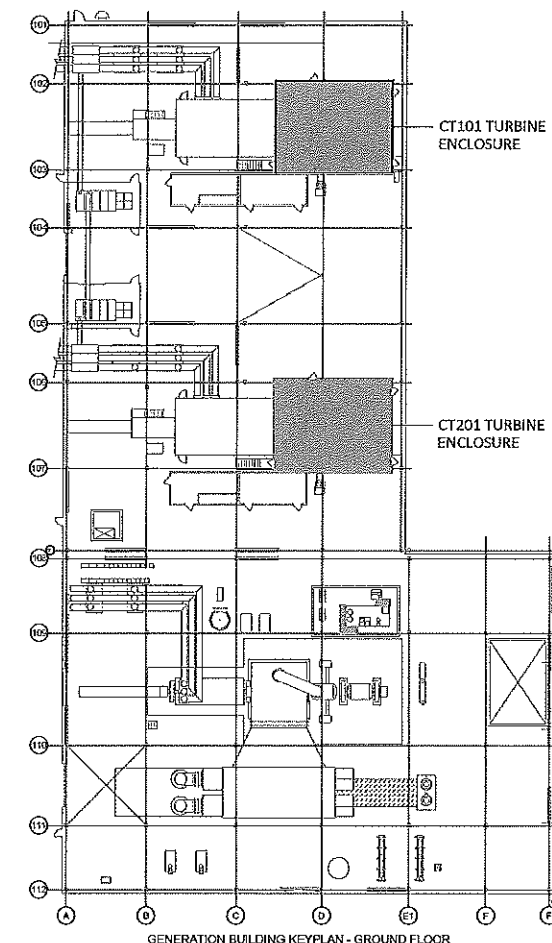


CT101 & CT201 TURBINE ENCLOSURE INITIAL DISCHARGE PIPING (LOWER)

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

PIPING NOTE:

1. ALL PIPE LENGTHS ARE CENTER-OF-PIPE TO CENTER-OF-PIPE AND DO NOT ACCOUNT FOR FITTING TAKEOUT DIMENSIONS.
2. DUE TO POSSIBLE OBSTRUCTIONS IN THE FIELD, ALL PIPE LENGTHS AND PIPE ROUTING NEEDS TO BE FIELD VERIFIED.
3. ALL NITROGEN PIPING FROM THE BULK TUBES TO THE INLET OF EACH COMBO PANEL SHALL BE SCHEDULE 160, A-106C, A-106B OR A-53, SEAMLESS IF THREADED, OR SCHEDULE 80, A-106C, A-106B OR A-53, SEAMLESS IF ROLLED GROOVE. 3000# FITTINGS SHALL BE USED.
4. ALL NITROGEN PIPING FROM THE OUTLET OF THE COMBO PANEL SHALL BE SCHEDULE 40, A-106C, A-106B OR A-53, SEAMLESS. 300# FITTINGS SHALL BE USED.
5. ALL WATER PIPE SHALL BE EITHER COPPER TUBING, GALVANIZED PIPE, AND OR STAINLESS STEEL PIPING AND HAVE A MINIMUM PRESSURE RATING OF 175PSI.
6. WATER PIPING FROM THE WATER TANK TO THE INLET OF THE COMBO PANELS SHALL BE 3/4" IN DIAMETER. WATER PIPING FROM THE OUTLET OF THE COMBO PANEL TO THE EMITTERS SHALL BE 1/2" IN DIAMETER.
7. WATER PIPING WILL FOLLOW NITROGEN PIPING FROM THE COMBO PANEL TO THE EMITTER(S).
8. 1/2" MACHINE SPACE EMITTERS USE A 3/4" NTP CONNECTION.
9. SIDEWALL EMITTERS SHALL BE AIMED HORIZONTAL TO THE FLOOR.
10. SLOPE WATER PIPE 1/4" PER 10' BACK TO COMBO PANEL.
11. PIPE ROUTING IS APPROXIMATE AND MUST BE FIELD VERIFIED BY INSTALLING CONTRACTOR BEFORE FABRICATION.
12. COPPER TUBING BETWEEN THE FLOW CARTRIDGE AND THE EMITTER TO BE PROVIDED BY THE INSTALLING CONTRACTOR.
13. ALL PIPE WITHIN TURBINE ENCLOSURE TO BE SCREWED FITTINGS ONLY. NO GROOVED FITTINGS ALLOWED.



REV.	DATE	BY	DESCRIPTION
B	1-16-18	KAL	ISSUED FOR 100% DESIGN REVIEW
A	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW

PROJECT:
KLAMATH ENERGY
 4940 HIGHWAY 97 SOUTH
 KLAMATH FALLS, OR 97603

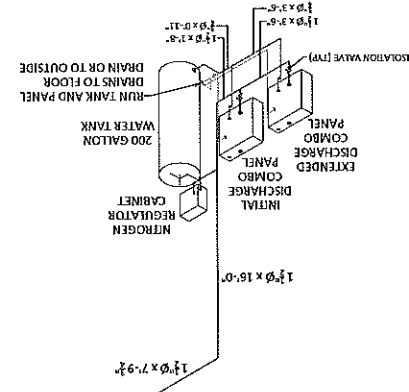
DESCRIPTION:
**FIRE PROTECTION/DETECTION UPGRADES
 CT101 & CT201 TURBINE ENCLOSURE
 VORTEX FIRE SUPPRESSION**

DRAWN BY	DATE	SCALE
KAL	12-3-2017	1/4"=1'-0"
CHECKED BY	PROJECT NO.	DRAWING
JJW	17-2690	1 of 1
3S DRAWING NO.	CUSTOMER DRAWING NO.	REV.
2690-ML06		B

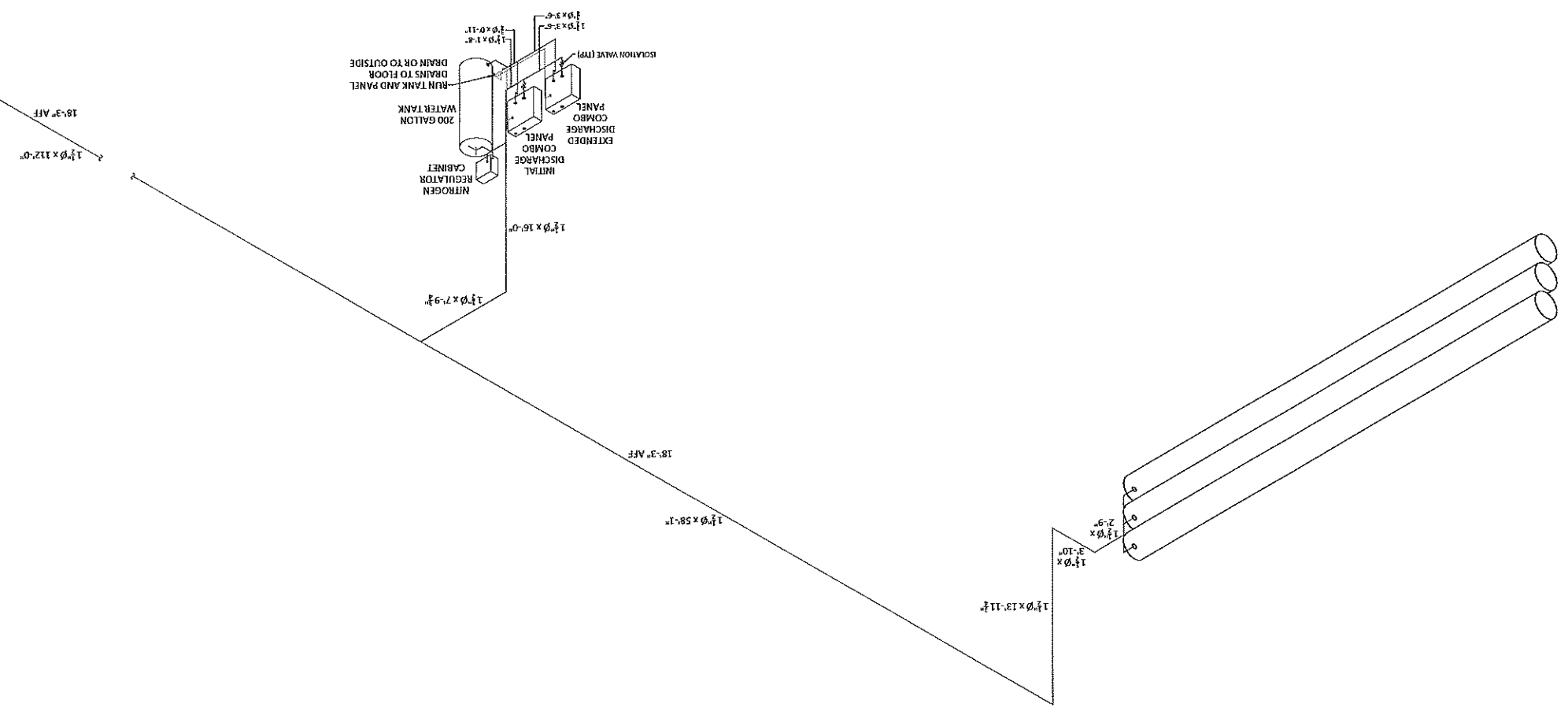
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PIPING NOTE:

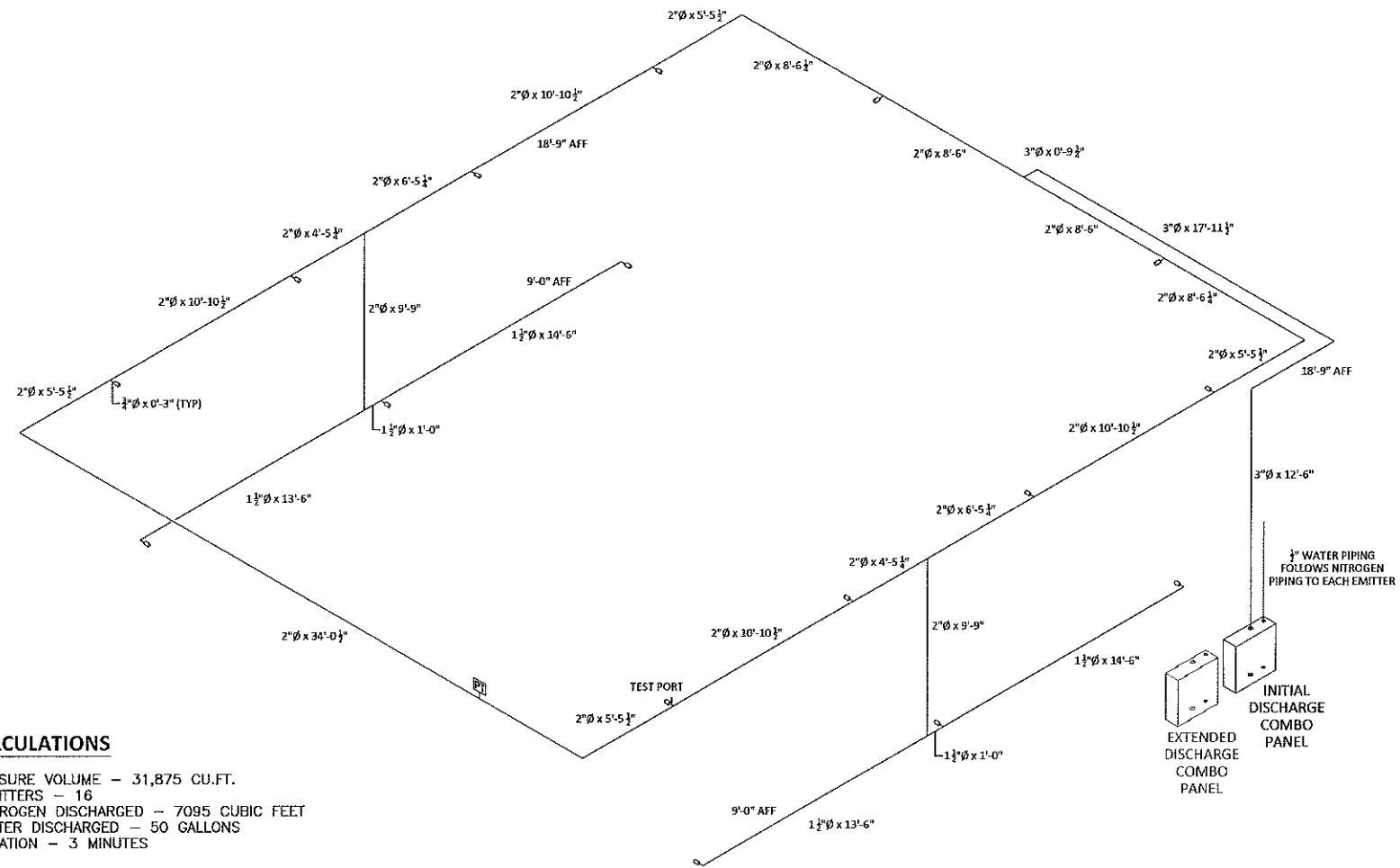
1. ALL PIPE LENGTHS ARE CENTER-TO-CENTER FOR FITTING.
2. DUE TO POSSIBLE OBSTRUCTIONS IN THE FIELD, ALL PIPE LENGTHS AND PIPE ROUTING NEEDS TO BE FIELD VERIFIED.
3. ALL NITROGEN PIPING FROM THE BURK TUBES TO THE INLET OF EACH COMBO PANEL SHALL BE SCHEDULE 160.
4. ALL NITROGEN PIPING FROM THE BURK TUBES TO THE INLET OF EACH COMBO PANEL SHALL BE SCHEDULE 160, OR A-106C, A-106B OR A-53, SEAMLESS IF THREADED, OR SCHEDULE 80, A-106C, A-106B OR A-53, SEAMLESS IF ROLLED GROOVE. 3000# FITTINGS SHALL BE USED.
5. ALL NITROGEN PIPING FROM THE BURK TUBES TO THE INLET OF EACH COMBO PANEL SHALL BE SCHEDULE 160, GALVANIZED PIPE, AND OR STAINLESS STEEL PIPING AND HAVE A MINIMUM PRESSURE RATING OF 175PSI.
6. WATER PIPING FROM THE WATER TANK TO THE INLET OF THE COMBO PANELS SHALL BE 3/4" IN DIAMETER. WATER PIPING FROM THE OUTLET OF THE COMBO PANEL TO THE EMITTERS SHALL BE 1/2" IN DIAMETER.
7. WATER PIPING WILL FOLLOW NITROGEN PIPING FROM THE COMBO PANEL TO THE EMITTER(S).
8. 1/2" MACHINE SPACE EMITTERS USE A 3/4" NTP CONNECTION.
9. SIDEWALL EMITTERS SHALL BE AIMED HORIZONTAL TO THE FLOOR.
10. SLOPE WATER PIPE 1/4" PER 10' BACK TO COMBO PANEL.
11. PIPE ROUTING IS APPROXIMATE AND MUST BE FIELD VERIFIED BY INSTALLING CONTRACTOR BEFORE FABRICATION.
12. COPPER TUBING BETWEEN THE FLOW CARTRIDGE AND THE EMITTER TO BE PROVIDED BY THE INSTALLING CONTRACTOR.
13. ALL PIPE WITHIN TURBINE ENCLOSURE TO BE SCREWED FITTINGS ONLY. NO GROOVED FITTINGS ALLOWED.



NITROGEN AND WATER SUPPLY PIPING ISOMETRIC
ARCH D SCALE: 3/16"=1'-0"



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PROJECT NO: 2690-M101 PROJECT DATE: 1/7/2010 DRAWING NO: 1 OF 1	DRAWING DATE: 3/16-1-0 SCALE: 3/16"=1'-0"
REVISIONS:	PROJECT NO: 2690-M101 PROJECT DATE: 1/7/2010 DRAWING NO: 1 OF 1
A 12-11-17 KAL ISSUED FOR 75% DESIGN REVIEW	DATE: 12-3-2017 SCALE: 3/16"=1'-0"
B 1-16-18 KAL ISSUED FOR 100% DESIGN REVIEW	DATE: 12-3-2017 SCALE: 3/16"=1'-0"
KIAMATH ENERGY 4940 HIGHWAY 97 SOUTH KLAMATH FALLS, OR 97603	PROJECT NO: 2690-M101 PROJECT DATE: 1/7/2010 DRAWING NO: 1 OF 1

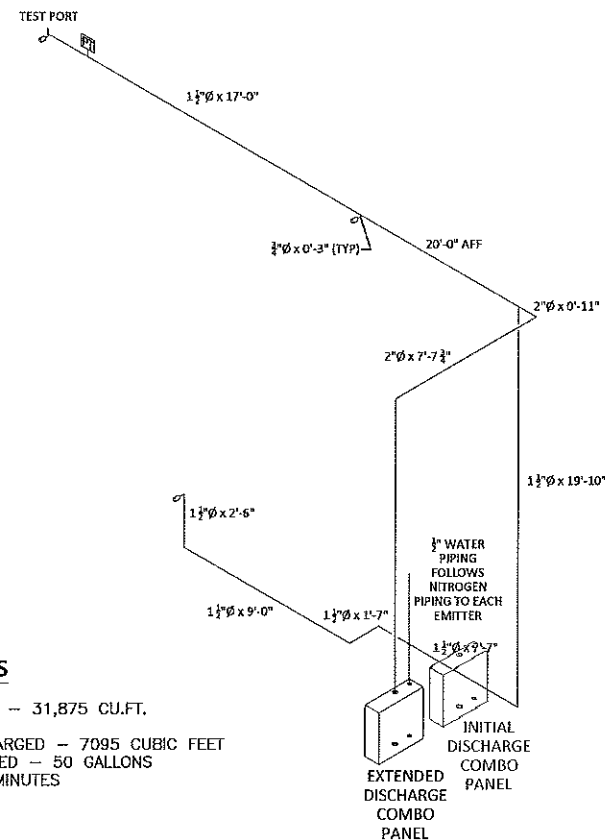


VORTEX CALCULATIONS

TURBINE ENCLOSURE VOLUME - 31,875 CU.FT.
 NUMBER OF EMITTERS - 16
 AMOUNT OF NITROGEN DISCHARGED - 7095 CUBIC FEET
 AMOUNT OF WATER DISCHARGED - 50 GALLONS
 DISCHARGE DURATION - 3 MINUTES

CT101 & CT201 TURBINE ENCLOSURE INITIAL DISCHARGE PIPING

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



VORTEX CALCULATIONS

TURBINE ENCLOSURE VOLUME - 31,875 CU.FT.
 NUMBER OF EMITTERS - 3
 AMOUNT OF NITROGEN DISCHARGED - 7095 CUBIC FEET
 AMOUNT OF WATER DISCHARGED - 50 GALLONS
 DISCHARGE DURATION - 20 MINUTES

CT101 & CT201 TURBINE ENCLOSURE EXTENDED DISCHARGE PIPING

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

PIPING NOTE:

1. ALL PIPE LENGTHS ARE CENTER-OF-PIPE TO CENTER-OF-PIPE AND DO NOT ACCOUNT FOR FITTING TAKEOUT DIMENSIONS.
2. DUE TO POSSIBLE OBSTRUCTIONS IN THE FIELD, ALL PIPE LENGTHS AND PIPE ROUTING NEEDS TO BE FIELD VERIFIED.
3. ALL NITROGEN PIPING FROM THE BULK TUBES TO THE INLET OF EACH COMBO PANEL SHALL BE SCHEDULE 160, A-106C, A-106B OR A-53, SEAMLESS IF THREADED, OR SCHEDULE 80, A-106C, A-106B OR A-53, SEAMLESS IF ROLLED GROOVE. 3000# FITTINGS SHALL BE USED.
4. ALL NITROGEN PIPING FROM THE OUTLET OF THE COMBO PANEL SHALL BE SCHEDULE 40, A-106C, A-106B OR A-53, SEAMLESS. 300# FITTINGS SHALL BE USED.
5. ALL WATER PIPE SHALL BE EITHER COPPER TUBING, GALVANIZED PIPE, AND OR STAINLESS STEEL PIPING AND HAVE A MINIMUM PRESSURE RATING OF 175PSI.
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12. COPPER TUBING BETWEEN THE FLOW CARTRIDGE AND THE EMITTER TO BE PROVIDED BY THE INSTALLING CONTRACTOR.
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REV.	DATE	BY	DESCRIPTION
B	1-16-18	KAL	ISSUED FOR 100% DESIGN REVIEW
A	12-11-17	KAL	ISSUED FOR 75% DESIGN REVIEW
PROJECT: KLAMATH ENERGY 4940 HIGHWAY 97 SOUTH KLAMATH FALLS, OR 97603			
DESCRIPTION: FIRE PROTECTION/DETECTION UPGRADES CT101 TURBINE ENCLOSURE VORTEX FIRE SUPPRESSION ISOMETRIC			
DRAWN BY: KAL	DATE: 12-3-2017	SCALE: 1/4"=1'-0"	
CHECKED BY: JYW	PROJECT NO: 17-2690	DRAWING: 1 OF 1	
JOB DRAWING NO: 2690-M102	CUSTOMER DRAWING NO:	REV: B	

