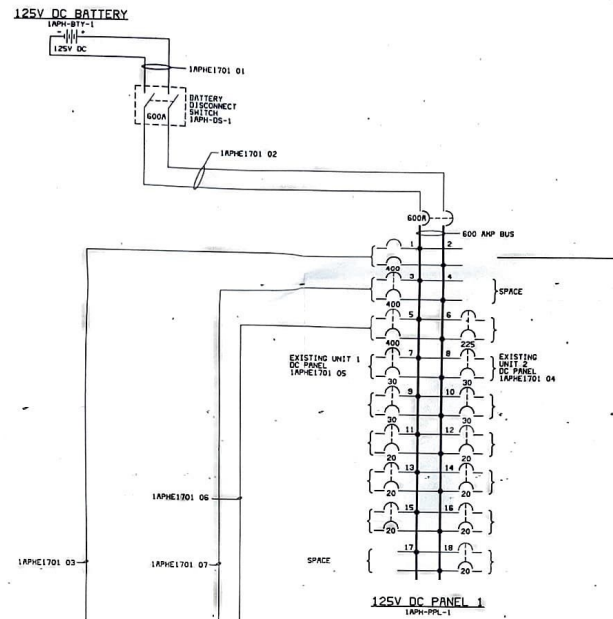
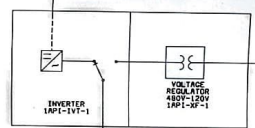
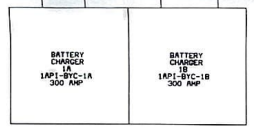


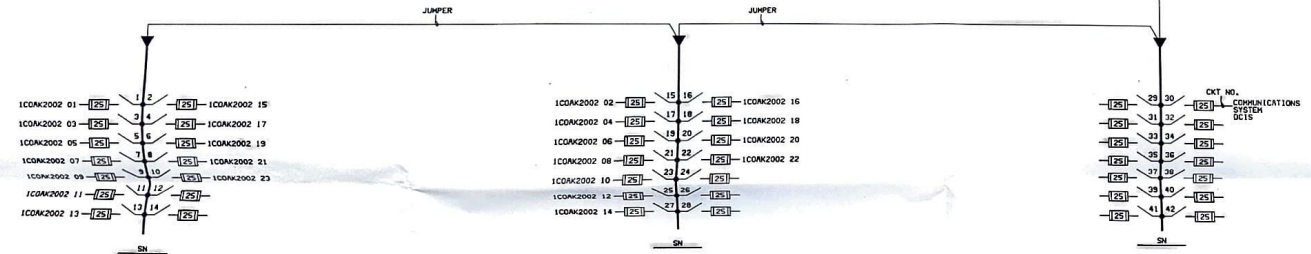
12.c3  
131  
1533 WORKSHEET  
DATE PLOTTED: 16 08 15 16



IAPHE1004 02  
TO MCC 1F SECT 3C  
SEE DWG E1004  
IAPHE1701 01  
TO MCC 2B  
SEE DWG E0201



IAPHE1004 01  
TO MCC 1C SECT  
SEE DWG E1004  
**Backup Power**



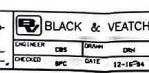
120V AC UPS PANEL 1 IAPHE1701-1



REF DWG: E3.2001.05-10004 10005

NO	DATE	REVISIONS AND RECORD OF ISSUE	DES	CHK
2	03-01-96	CONFORMED TO CONST RECORDS	YOC	JAY
2	12-18-94	CONSTRUCTION ISSUE	EDR	BJD
1	06-09-94	CONTRACT ISSUE	DES	DES
0	01-03-94	BID ISSUE	DES	DES
0				

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF OKLAHOMA.  
DESIGNED BY: TERRY D. CROFT  
DATE: 12-18-94, RCD NO.: 18817

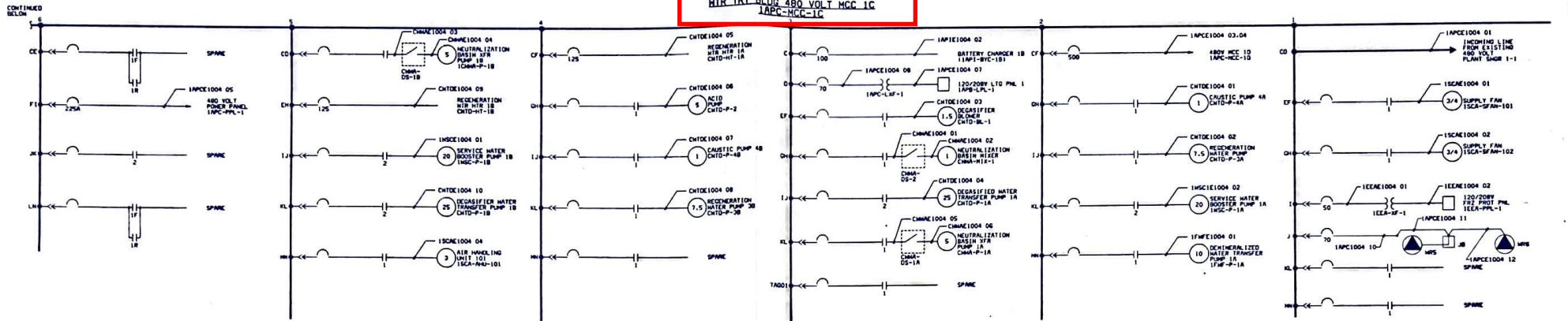


OKLAHOMA MUNICIPAL POWER AUTHORITY  
PONCA CITY UNIT 1 REPLACEMENT  
ONE-LINE DIAGRAM  
125V DC AND 120V AC ESSENTIAL SERVICE

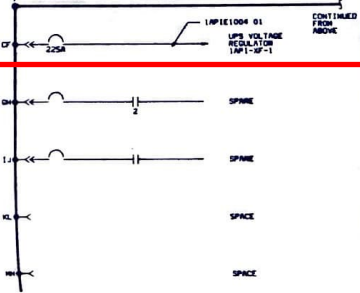
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DATE		SCALE	



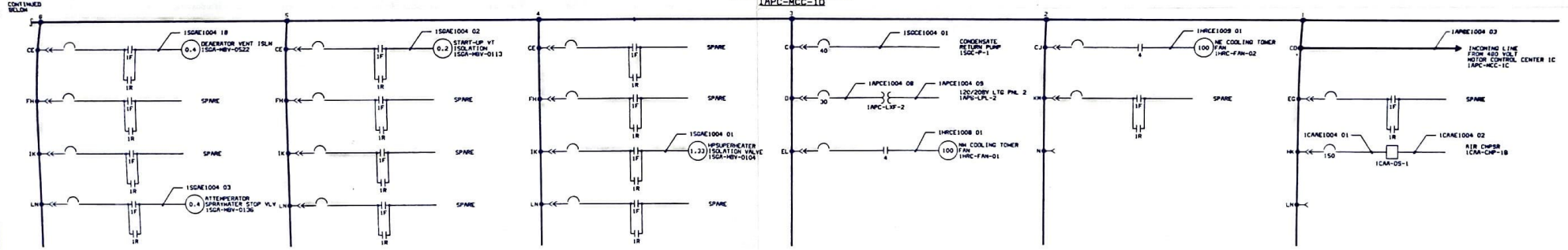
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1APC-MCC-1C



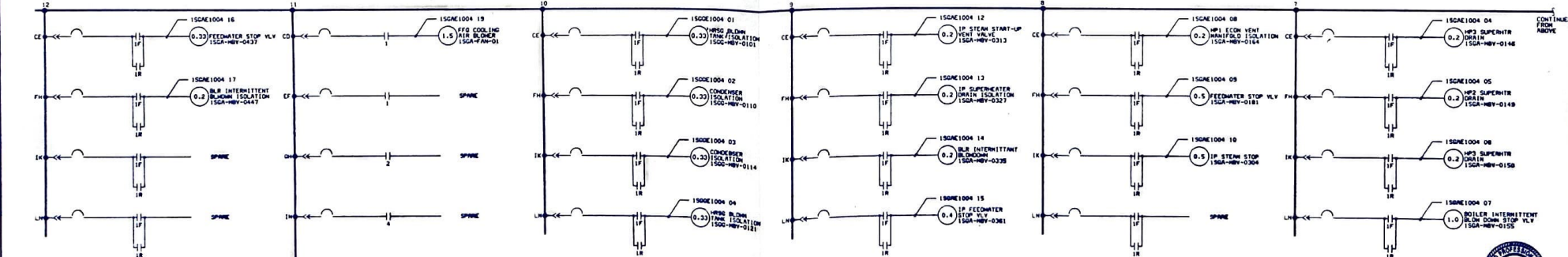
HTR TRT BLDG 480 VOLT MCC 1C (CONTINUED)



HRSG 480 VOLT MCC 1D  
1APC-MCC-1D



HRSG 480 VOLT MCC 1D (CONTINUED)



153300000 AC40 12-83  
000000000 10-17-83

3	03-01-86	CONFORMED TO CONST RECORDS	100%	1/4"
2	12-16-84	CONSTRUCTION ISSUE	100%	1/4"
1	06-09-84	CONTRACT ISSUE	100%	1/4"
0	03-31-84	BID ISSUE	100%	1/4"
NO	DATE	REVISIONS AND RECORD OF ISSUE	BY	APP'D

REF DNCS: 18078.71.0201.05-10115 480V MCC

BLACK & VEATCH

OKLAHOMA MUNICIPAL POWER AUTHORITY  
PONCA CITY UNIT 1 IMPROVEMENT

PROJECT: 18078-1APC-E1004

DATE: 12-16-84

480V MOTOR CONTROL CENTERS

100% DRAWN BY: DATE: 12-16-84

100% CHECKED BY: DATE: 12-16-84

100% APPROVED BY: DATE: 12-16-84

100% DESIGNED BY: DATE: 12-16-84

100% ENGINEERED BY: DATE: 12-16-84

100% SUPERVISOR BY: DATE: 12-16-84

100% OPERATOR BY: DATE: 12-16-84

100% MAINTENANCE BY: DATE: 12-16-84

100% SAFETY BY: DATE: 12-16-84

100% QUALITY BY: DATE: 12-16-84

100% RECORDING BY: DATE: 12-16-84

100% TRANSMISSION BY: DATE: 12-16-84

100% DISTRIBUTION BY: DATE: 12-16-84

100% INSTALLATION BY: DATE: 12-16-84

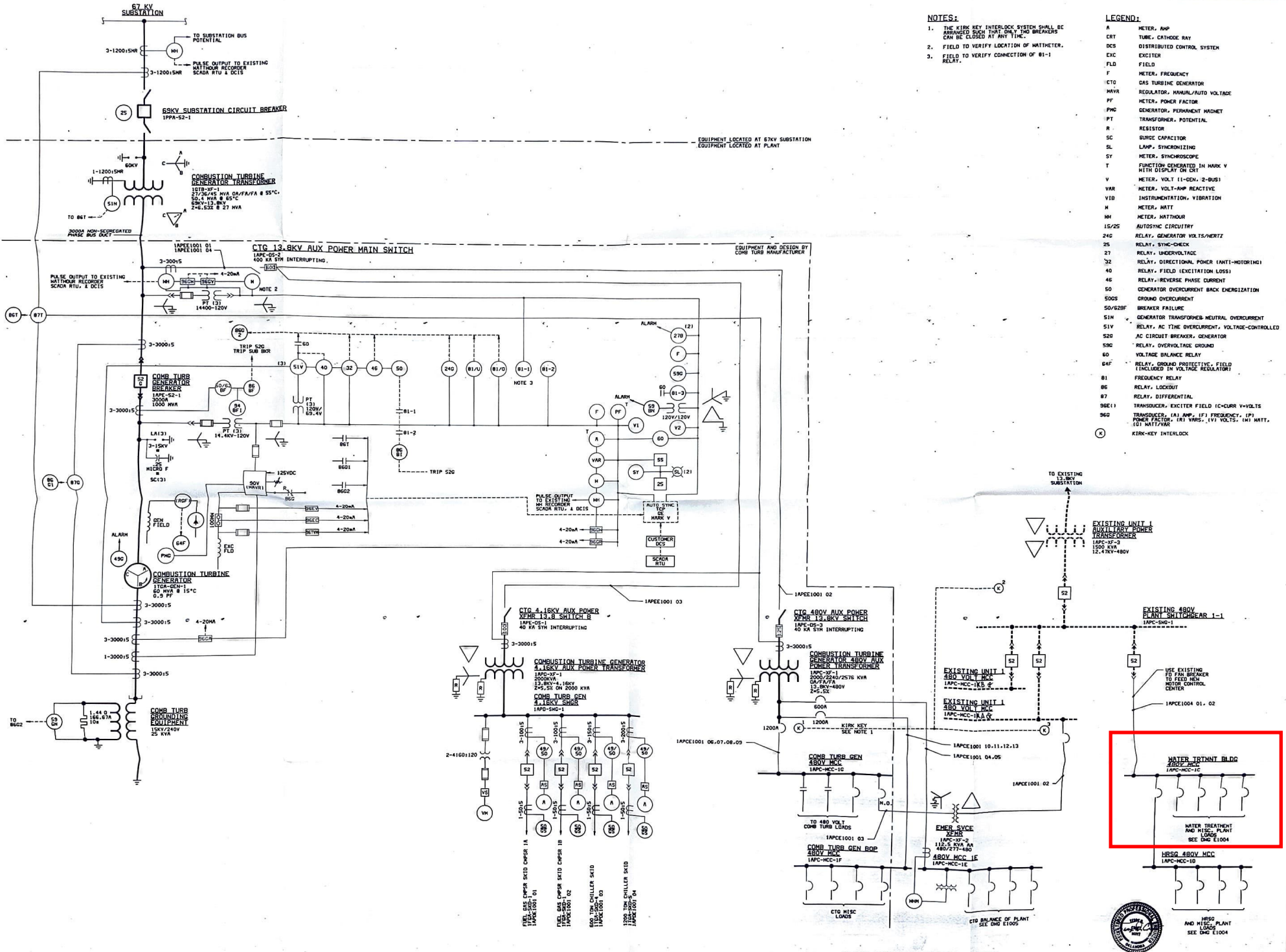
100% COMPLETION BY: DATE: 12-16-84

100% AS-BUILT BY: DATE: 12-16-84

100% ARCHIVE BY: DATE: 12-16-84

100% RETIRE BY: DATE: 12-16-84





**NOTES:**

1. THE KIRK KEY INTERLOCK SYSTEM SHALL BE ARRANGED SUCH THAT ONLY TWO BREAKERS CAN BE CLOSED AT ANY TIME.
2. FIELD TO VERIFY LOCATION OF MATTMETER.
3. FIELD TO VERIFY CONNECTION OF 81-1 RELAY.

**LEGEND:**

- A METER, AMP
- CRT TUBE, CATHODE RAY
- DCS DISTRIBUTED CONTROL SYSTEM
- EXC EXCITER
- F LD FIELD
- F METER, FREQUENCY
- CTO GAS TURBINE GENERATOR
- M AVR REGULATOR, MANUAL/AUTO VOLTAGE
- P METER, POWER FACTOR
- P NC GENERATOR, PERMANENT MAGNET TRANSFORMER, POTENTIAL
- R RESISTOR
- SC SURGE CAPACITOR
- SL LAMP, SYNCHROSCOPE
- SY METER, SYNCHROSCOPE
- T FUNCTION GENERATED IN MARK V WITH DISPLAY ON CRT
- V METER, VOLT (1-CEN, 2-BUS)
- VAR METER, VOLT-AMP REACTIVE
- VIB INSTRUMENTATION, VIBRATION
- M METER, MATT
- MH METER, MATTHOUR
- 15/25 AUTOSTATIC CIRCUITRY
- 24/25 RELAY, GENERATOR VOLTS/HERTZ
- 25 RELAY, SYNC-CHECK
- 27 RELAY, UNDERVOLTAGE
- 32 RELAY, DIRECTIONAL POWER (ANTI-MOTING)
- 40 RELAY, FIELD EXCITATION LOSS
- 46 RELAY, REVERSE PHASE CURRENT
- 50 GENERATOR OVERCURRENT BACK ENERGIZATION
- 50/50S GROUND OVERCURRENT
- 50/52SF BREAKER FAILURE
- 51H GENERATOR TRANSFORMER NEUTRAL OVERCURRENT
- 51V RELAY, AC TIME OVERCURRENT, VOLTAGE-CONTROLLED
- 52 AC CIRCUIT BREAKER, GENERATOR
- 520 RELAY, OVERVOLTAGE GROUND
- 60 VOLTAGE BALANCE RELAY
- 64F RELAY, GROUND PROTECTIVE, FIELD (INCLUDED IN VOLTAGE REGULATOR)
- 81 FREQUENCY RELAY
- 86 RELAY, LOCKOUT
- 87 RELAY, DIFFERENTIAL
- 98E1 TRANSducer, EXCITER FIELD (C-CURR V-VOLTS)
- 98E2 TRANSducer, (A) AMP, (F) FREQUENCY, (P) POWER FACTOR, (V) VOLTS, (V) VOLTS, (M) MATT, (C) MATTHOUR
- (K) KIRK-KEY INTERLOCK

REVISIONS: REV 12-03  
 APPROVED BY: [Signature]  
 DATE: 12-16-94

NO	DATE	REVISIONS AND RECORD OF ISSUE	DES	CHK	APP
3	03-01-96	CONFORMED TO CONST RECORDS	DES	CHK	APP
2	12-16-94	CONSTRUCTION ISSUE	DES	CHK	APP
1	06-03-94	CONTRACT ISSUE	DES	CHK	APP
0	02-21-94	BID ISSUE	DES	CHK	APP
			DES	CHK	APP

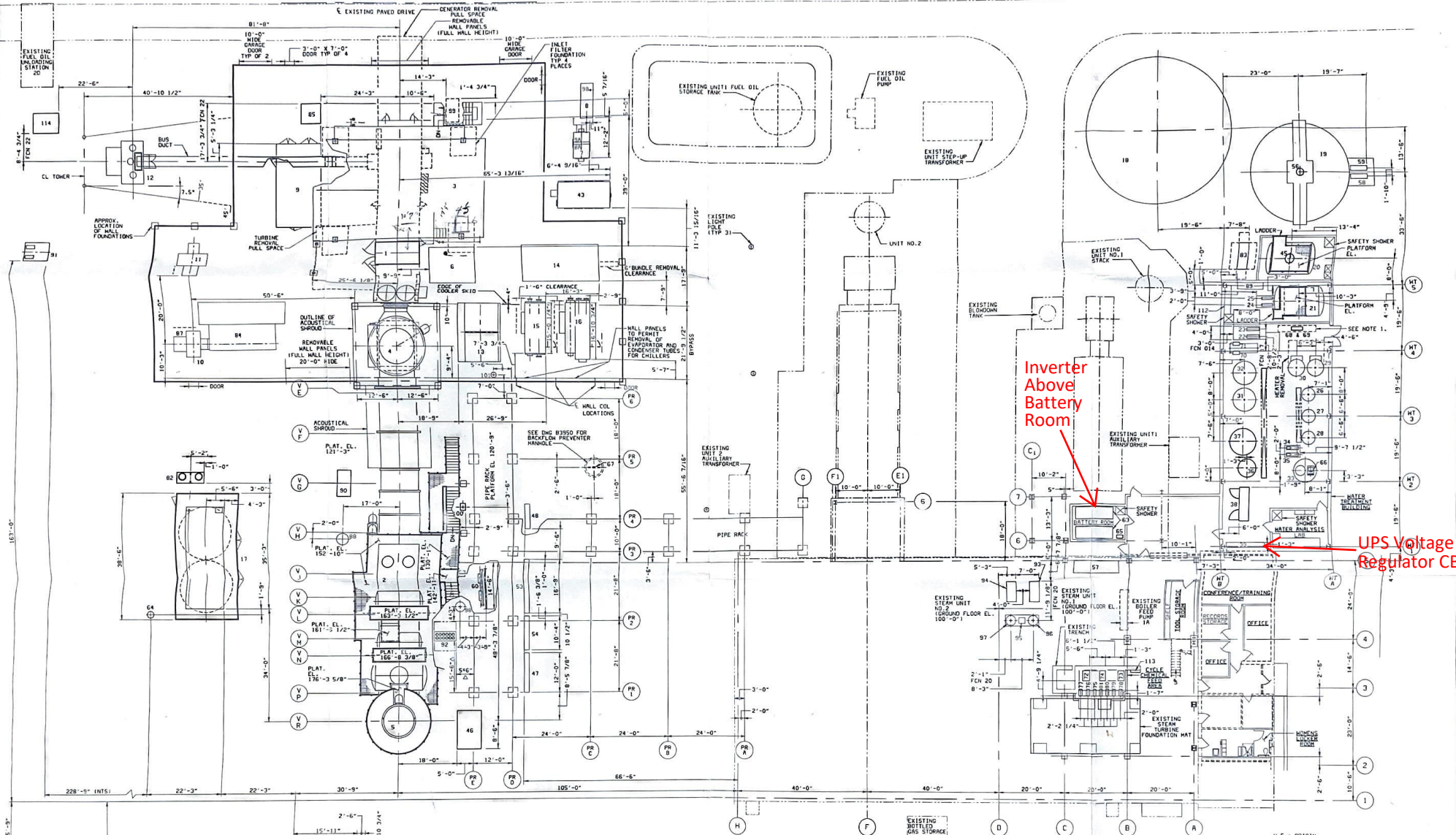
REF DMS: 18078.62.1003.05-13002 ONE-LINE DIAGRAM

I HEREBY CERTIFY THAT THIS DOCUMENT HAS BEEN PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF OKLAHOMA.  
 ENGINEER: TERRY B. CROFT  
 DATE: 12-16-94 REV NO: 15917

CHECKED: [Signature] DATE: 12-16-94

PROJECT: OKLAHOMA MUNICIPAL POWER AUTHORITY  
 FUNCTIONAL ONE-LINE CT GENERATOR  
 DRAWING NUMBER: 18078-1TGB-E1001  
 SHEET: 3





REF ID NUMBER	EQUIPMENT IDENTIFICATION AND LOCATION LIST	TIEDOWN	REF ID NUMBER	EQUIPMENT IDENTIFICATION AND LOCATION LIST	TIEDOWN	REF ID NUMBER	EQUIPMENT IDENTIFICATION AND LOCATION LIST	TIEDOWN	REF ID NUMBER	EQUIPMENT IDENTIFICATION AND LOCATION LIST	TIEDOWN
1.	11GA-TRC-1 LMSOUD CTC SKID	94'-6" (11) 26.	CMTD-RIX-3	POLISHING ANION EXCHANGER	100'-6" (11) 51.	11PI-PL-1	UPS PANEL	111'-5 3/4" (11) 78.	11FE-P-2A	AIRNE FEED PUMP	101'-0" (11) 78.
2.	11GA-TRC-2 HEAT RECOVERY STEAM GENERATOR	94'-6" (11) 27.	CMTD-CIX-2	POLISHING CATION EXCHANGER	100'-6" (11) 52.	11PI-PL-2	DC PANEL	111'-5 3/4" (11) 79.	11FE-P-2B	AIRNE FEED PUMP	101'-0" (11) 78.
3.	11GA-FLT-1 INLET AIR FILTER HOUSE	94'-6" (11) 28.	CMTD-RIX-2	SECONDARY ANION EXCHANGER	100'-6" (11) 53.	11PC-MCC-10	480 MCC	94'-6" (11) 80.	11FE-P-1A	OXIDEN SCAVENGER FEED PUMP	101'-0" (11) 78.
4.	11GA-STA-2 CT BYPASS EXHAUST STACK	94'-6" (11) 29.	CMTD-HT-18	REGENERATION WATER HEATER	100'-6" (11) 54.	11CA-CMB-2	REMOTE I/O CABINET	94'-6" (11) 81.	11FE-P-1B	OXIDEN SCAVENGER FEED PUMP	101'-0" (11) 78.
5.	11GA-STA-1 HRSG EXHAUST STACK	94'-6" (11) 30.	CMTD-HT-1A	REGENERATION WATER HEATER	100'-6" (11) 55.				11FCR-SK-3	7.5 GPM FILTER SKID	94'-0" (11) 82.
6.	11GA-SKD-1 AUXILIARY FUEL PUMP	94'-6" (11) 31.	CMTD-FLT-1B	ACTIVATED CARBON FILTER IB	100'-6" (11) 56.	CMA-MIX-1	MIXER	100'-3" (11) 83.	11CA-COU-10	HVC CONDENSER	100'-0" (11) 84.
7.	11GA-SKD-2 CT MAIN FUEL PUMP SKID	95'-0" (11) 32.	CMTD-FLT-1A	ACTIVATED CARBON FILTER IA	100'-6" (11) 57.	11SC-SP-1	SAMPLE TABLE	100'-1 1/2" (11) 84.	11APD-SKWR-1	SHUTDOOR	94'-6" (11) 85.
8.	11GA-SKD-3 FUEL OIL FILTER/HEATER SKID	95'-0" (11) 33.	CMTD-DES-1	FORCED DRAHT DESALINATOR	100'-1 1/2" (11) 58.	CMA-P-1A	NEUTRALIZATION BASIN TRANS. PUMP	99'-1 1/2" (11) 85.	11APE-SK-1	13.8 KV SWITCH	94'-6" (11) 86.
9.	11APD-SK-1 ENCLOSURE	94'-6" (11) 34.	CMTD-P-1B	DESALINATED WATER TRANSFER PUMP	100'-1 1/2" (11) 59.	CMA-P-1B	NEUTRALIZATION BASIN TRANS. PUMP	99'-1 1/2" (11) 86.	11APE-SK-2	13.8 KV SWITCH	94'-6" (11) 87.
10.	11APD-XF-1 AUXILIARY TRANSFORMER 4160 V	94'-6" (11) 35.				11FCR-SKD-2	DUCT BURNER FUEL SKID	94'-6" (11) 87.	11APE-SK-2	11.8 KV SWITCH	94'-6" (11) 88.
11.	11APD-XF-2 AUXILIARY TRANSFORMER 4160 V	94'-6" (11) 36.	CMTD-P-1A	DESALINATED WATER TRANSFER PUMP	100'-1 1/2" (11) 60.	11SC-SP-10	COOL COOLING WATER PUMP 10	94'-6" (11) 88.	11SD-TNK-1	H2O BLOWDOWN TANK	92'-0" (11) 89.
12.	11C10-XF-1 GENERATOR TRANSFORMER 63 KV	94'-6" (11) 37.				11SC-SP-11	COOL COOLING WATER PUMP 11	94'-6" (11) 89.	CMTD-CXK-2	CHEMIST REGENERATION SKID	100'-0" (11) 90.
13.	11GA-SKD-2 REMOTE LUBE OIL COOLER SKID	94'-6" (11) 38.	CMTD-RIX-1	PRIMARY ANION EXCHANGER	100'-6" (11) 61.	11PH-BY-1	250V DC BATTERY	100'-0" (11) 90.	11FCR-SK-3	7.5 GPM FILTER SKID	94'-0" (11) 91.
14.	11GA-SKD-3 INLET AIR HEATING AND COOLING SKID	94'-6" (11) 39.	CMTD-CIX-1	PRIMARY CATION EXCHANGER	100'-6" (11) 62.	11FCR-TNK-1	FUEL GAS CROSS DRAIN TANK	UNDERGROUND 91.	11FCR-SK-1	FUEL FORWARDING SKID	83'-6" (11) 92.
15.	11GA-SKD-4 600 TON CHILLER	94'-6" (11) 40.	CMTD-CPL-1	DEMINERALIZER CONTROL PANEL	100'-4" (11) 63.	11APD-DS-1	BATTERY DISCONNECT SWITCH	94'-6" (11) 92.	11CA-BO-1	NITROGEN BOTTLE RACK	100'-0" (11) 93.
16.	11GA-SKD-5 1200 TON CHILLER	94'-6" (11) 41.	11PC-MCC-11	MOTOR CONTROL CENTER	100'-6" (11) 64.	CMTD-BS-1	DESALINATED AIR BLOWER	94'-6" (11) 93.	11CA-CMP-1A	AIR COMPRESSOR IA	100'-0" (11) 94.
17.	11GA-SKD-1 FUEL GAS COMPRESSOR SKID	94'-0" (11) 42.	11SC-P-1A	AUXILIARY COOLING WATER PUMP 1A	94'-6" (11) 65.	11SC-BP-1B	BACKUP PRESENTER	100'-0" (11) 94.	11CA-CMP-1B	AIR COMPRESSOR IB	100'-0" (11) 95.
18.	11FE-TNK-1 DEMINERALIZED WATER STORAGE TANK	98'-0" (11) 43.	11SC-P-1B	AUXILIARY COOLING WATER PUMP 1B	94'-6" (11) 66.	11SC-P-1A	SERVICE WATER BOOSTER PUMP 1A	94'-6" (11) 95.	11CA-DRY-1	DESICCANT AIR DRYER	100'-0" (11) 96.
19.	11CA-CXK-1 NEUTRALIZATION BASIN	95'-0" (11) 44.	11SC-P-1C	AUXILIARY COOLING WATER PUMP 1C	94'-6" (11) 67.	11SC-P-1B	SERVICE WATER BOOSTER PUMP 1B	94'-6" (11) 96.	11CA-TNK-1A	AIR RECEIVER IA	100'-0" (11) 97.
20.	CMTD-TNK-1 ACID STORAGE TANK 1	100'-6" (11) 45.	11WB-SKD-1 MDX WATER INJECTION SKID	95'-0" (11) 70.	11FM-P-1B	DEMIN. WATER TRANSFER PUMP 1B	94'-6" (11) 97.	11CA-TNK-1B	AIR RECEIVER IB	100'-0" (11) 98.	
21.	CMTD-TNK-2 ACID STORAGE TANK 2	100'-6" (11) 46.	11SC-CMP-1	COOLING TOWER	71.	11FM-P-1A	DEMIN. WATER TRANSFER PUMP 1A	94'-6" (11) 98.	11SD-TNK-1	DCI DRINK TANK	94'-6" (11) 99.
22.	CMTD-P-2A REGENERATION WATER PUMP 2A	100'-6" (11) 47.	11SC-P-1E	ACID PUMP	72.	11FE-TNK-3	PHOSPHATE SOLUTION TANK	100'-6" (11) 99.	11SCA-PAN-01	AIR BLOWER (BY CALLIUS)	100'-0" (11) 100.
23.	CMTD-P-2B REGENERATION WATER PUMP 2B	100'-6" (11) 48.	11PC-MCC-12	MOTOR CONTROL CENTER	94'-6" (11) 73.	11FE-TNK-2	AMINE SOLUTION TANK	100'-6" (11) 100.	11SCA-PAN-01	AIR BLOWER (BY CALLIUS)	100'-0" (11) 101.
24.	CMTD-P-4A CAUSTIC PUMP 4A	100'-6" (11) 49.	11PC-MCC-13	MOTOR CONTROL CENTER	94'-6" (11) 74.	11FE-TNK-1	OXIDEN SCAVENGER SOLUTION TANK	101'-0" (11) 101.	11SCG-P-1	COAGULATE RETURN PUMP	100'-0" (11) 102.
25.	CMTD-P-4B CAUSTIC PUMP 4B	100'-6" (11) 50.	11PC-MCC-14	MOTOR CONTROL CENTER	94'-6" (11) 75.	11FE-TNK-2	OXIDEN SCAVENGER SOLUTION TANK	101'-0" (11) 102.	11SCG-P-1	COAGULATE RETURN PUMP	100'-0" (11) 103.
			11PC-MCC-15	INVERTER/VOLTAGE REGULATOR	111'-5 3/4" (11) 76.	11FE-TNK-3	PHOSPHATE FEED PUMP	101'-0" (11) 103.	11SCG-P-1	COAGULATE RETURN PUMP	100'-0" (11) 104.
			11PC-MCC-16	BATTERY CHARGER	111'-5 3/4" (11) 77.	11FE-TNK-3	PHOSPHATE FEED PUMP	101'-0" (11) 104.	11SCG-P-1	COAGULATE RETURN PUMP	100'-0" (11) 105.

111 BOTTOM OF EQUIPMENT BASEPLATE  
 112 FIELD LOCATED ON WORKING MISOZ.  
 113 FIELD TO VERIFY

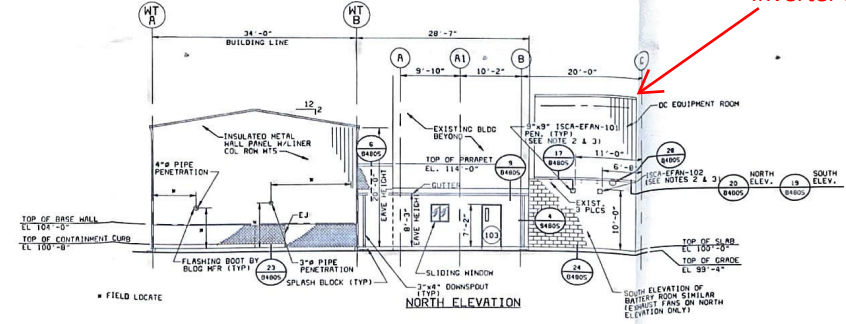
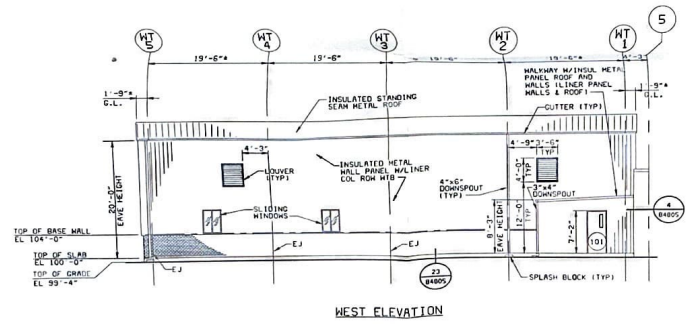
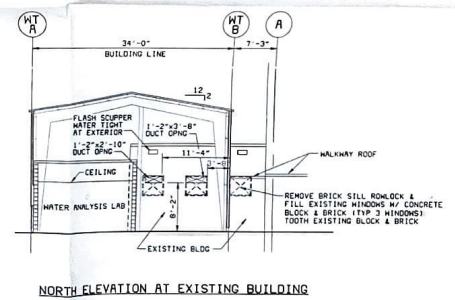
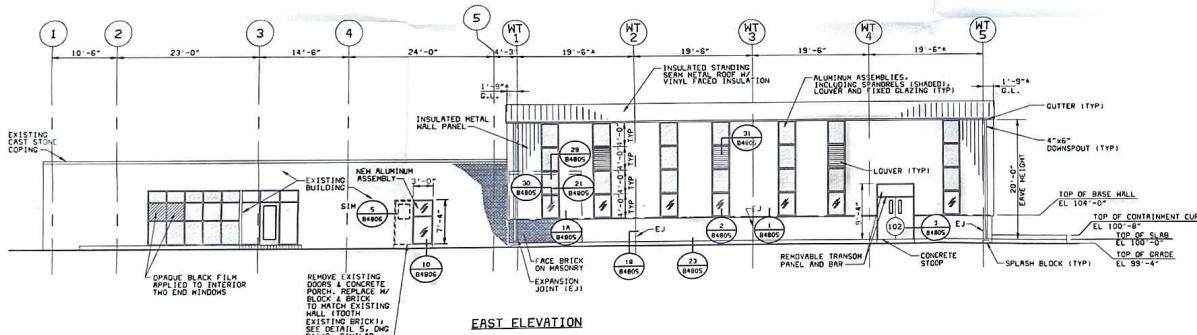
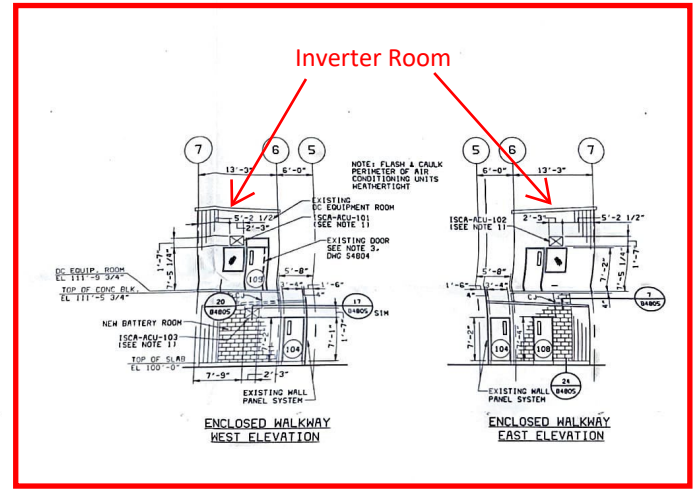
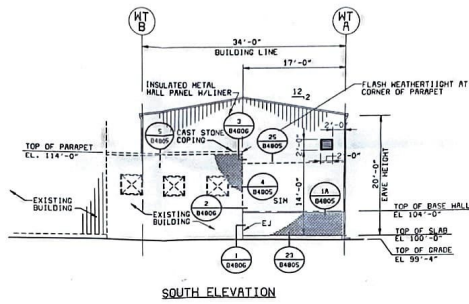
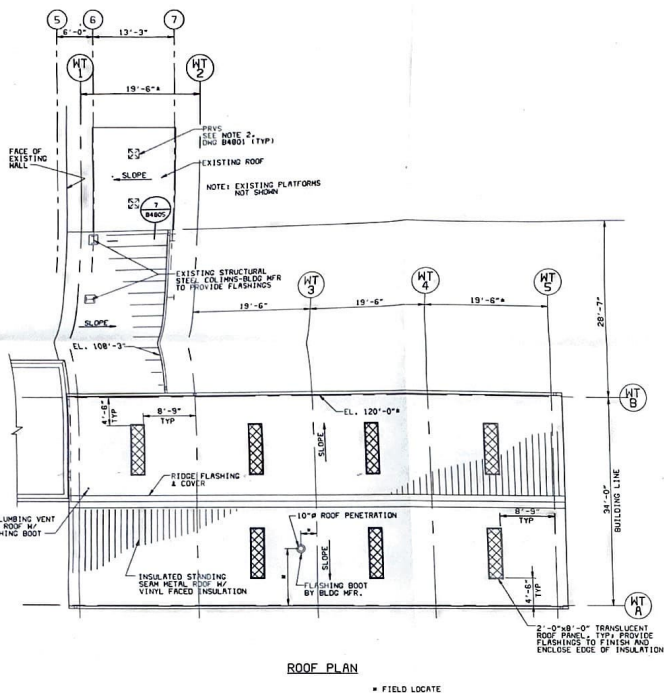
5 01-08-56 CONFIRMED TO CONSTRUCTION RECORDS  
 4 01-08-56 OPEN

1 03-09-94 CONTRACT ISSUE  
 1 03-09-94 71,0701 ADDENDUM 1 ISSUE  
 1 02-28-94 BID ISSUE  
 NO DATE REVISIONS AND RECORD OF ISSUE



BLACK & VEATCH OKLAHOMA MUNICIPAL POWER AUTHORITY  
 PROJECT: 18078-1BSA-M1001  
 DRAWING NUMBER: MAR 12 1996  
 SHEET: 5  
 DATE: 02-03-94  
 SCALE: 3/32" = 1'-0"

- NOTES:
- SPACE REQUIRED FOR SERVICE WATER BOOSTER PUMPS AND PIPING, ITEM 69 IS BELOW ITEM 62.
  - VOLTS HRSG COLUMN RDN DESIGNATION.
  - BLACK & WEATCH PIPE RACK COLUMN RDN DESIGNATION.



- Inverter Room**
- GENERAL NOTES**
- THRU-THE-WALL AIR CONDITIONING UNITS (ISA-ACU-101, ISA-ACU-102, AND ISA-ACU-103) SHALL BE CARRIER WEATHERSEALER SERIES, MODEL WAKSD30. UNITS SHALL INCLUDE ELECTRIC HEAT, EXHAUST AND VENTILATION TO PROVIDE 6 CFM EXHAUST AND 100 CFM VENTILATION. UNIT SHALL OPERATE ON 208 V/1-PHASE/60 HZ POWER. UNIT CAPACITIES SHALL BE 25,900 BTU/HR COOLING AND 12,400 BTU/HR HEATING.
  - CENTRIFUGAL WALL EXHAUST FANS (ISA-EFAN-101 AND ISA-EFAN-102) SHALL BE PENN VENTILATOR CORP. MODEL WEP80. UNITS SHALL OPERATE ON 115V/1-PHASE/60 HZ POWER. UNIT CAPACITY SHALL BE 125 CFM @ 1/2" INCH A.C. DUCTWORK AND INSTALL WALL GRILLE TO MATCH HOUSING SIZE.
  - MOTOR OPERATED DAMPERS SHALL BE PENN VENTILATOR MODEL P800 PARALLELS. DRAIN DAMPERS WITH ELECTRIC MOTOR OPERATOR. OPERATOR SHALL UTILIZE 115V/1-PHASE/60 HZ. POWER.

