INDEX OF DRAWINGS

INDEX CODE NO.	DRAWING NO.	SHEET NO.	REVISION NO.	DRAWING TITLE	REMARKS
	95X-5900-X-00410	X0001	0	PROJECT TITLE SHEET	
	95X-5900-X-00411	X0002	1	DRAWING INDEX	
	95X-5900-X-00412	X0003	0	LEGEND AND SYMBOLS	
	95X-5900-G-00392	G0001	0	CIVIL - OVERALL SITE PLAN	
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	95X-5900-G-00402	G0011	0	CIVIL - DETAILS - 1 OF 5	
	95X-5900-G-00403	G0012	0	CIVIL - DETAILS - 2 OF 5	
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	95X-5900-G-00451	G0015	0	CIVIL - DETAILS - 5 OF 5	
	95X-5900-G-00452	G0016	0	CIVIL - PIPE PROFILE	
	95X-5900-G-00479	G0017	0	CIVIL - ROAD 18 PROFILE	
	95X-5900-G-00480	G0018	0	CIVIL - ROAD 19 AND ROAD 20 PROFILES	
	95X-5900-A-00429	A0001	0	ARCHITECTURAL - PLAN, ELEVATIONS, SECTIONS, AND DETAILS - SPO VALVE HOUSE	
	95X-5900-S-00431	S0001	0	STRUCTURAL - PLANS, SECTIONS, AND DETAILS - INJECTION WATER SUPPLY TANK AND PUMP PADS	
	95X-5900-S-00432	S0002	0	STRUCTURAL - PLAN, SECTIONS, AND DETAILS - INJECTION WELLS NUMBER 8 THRU 12 PADS	
	95X-5900-P-00418	P0001	0	PIPING/PLANT DESIGN - PIPING PLAN AND SECTION - INJECTION WATER SUPPLY TANK AND PUMPS	
	95X-5900-P-00420	P0002	0	PIPING/PLANT DESIGN - PIPING SECTIONS - INJECTION WATER SUPPLY TANK AND PUMPS	
	95X-5900-P-00419	P0003	0	PIPING/PLANT DESIGN - PIPING PLAN AND SECTION - INJECTION WELL NUMBER 8	
	95X-5900-P-00428	P0004	0	PIPING/PLANT DESIGN - PIPING PLAN AND SECTION - INJECTION WELLS NUMBER 9 THRU 12	
	95X-5900-P-00453	P0005	0	PIPING/PLANT DESIGN - PIPING PLAN - SOUTH PLUME OPTIMIZATION VALVE HOUSE	
	95X-5900-P-00454	P0006	0	PIPING/PLANT DESIGN - PIPING SECTIONS - SOUTH PLUME OPTIMIZATION VALVE HOUSE	
	95X-5900-P-00423	P0007	0	PIPING/PLANT DESIGN - PIPE SUPPORT DETAILS	
	95X-5900-E-00455	E0001	1	ELECTRICAL - SINGLE LINE/ELEVATION - SOUTH PLUME INJECTION WATER SUPPLY	
	95X-5900-E-00456	E0002	0	ELECTRICAL - SINGLE LINE/ELEVATIONS - SOUTH PLUME OPTIMIZATION VALVE HOUSE	
	95X-5900-E-00457	E0003	0	ELECTRICAL - SCHEMATIC DIAGRAMS - SOUTH PLUME INJECTION WATER SUPPLY PUMPS	
	95X-5900-E-00458	E0004	0	ELECTRICAL - SCHEMATIC DIAGRAMS - SOUTH PLUME OPTIMIZATION WELL PUMPS	
	95X-5900-E-00471	E0005	0	ELECTRICAL - INTERCONNECTION DIAGRAM - SOUTH PLUME OPTIMIZATION/RECOVERY WELL PUMPS	
	95X-5900-E-00459	E0006	0	ELECTRICAL - INTERCONNECTION DIAGRAM - SOUTH PLUME INJECTION WATER SUPPLY	
	95X-5900-E-00460	E0007	0	ELECTRICAL - SCHEMATIC DIAGRAMS - SOUTH PLUME RECOVERY WELLS	
	95X-5900-E-00461	E0008	1	ELECTRICAL - CABLE SCHEDULE (101-150) - SOUTH PLUME INJECTION WATER SUPPLY	
	95X-5900-E-00470	E0009	0	ELECTRICAL - CABLE SCHEDULE (151-200) - SOUTH PLUME INJECTION WATER SUPPLY	
	95X-5900-E-00462	E0010	0	ELECTRICAL - CABLE SCHEDULE (201-250) - SOUTH PLUME OPTIMIZATION AND RECOVERY WELLS	
	95X-5900-E-00463	E0011	0	ELECTRICAL - CONDUIT SCHEDULE - SOUTH PLUME INJECTION WATER SUPPLY	
	95X-5900-E-00464	E0012	0	ELECTRICAL - CONDUIT SCHEDULE - SOUTH PLUME OPTIMIZATION AND RECOVERY WELLS	
	95X-5900-E-00465	E0013	1	ELECTRICAL - SITE POWER PLAN - INJECTION WATER PUMP AREA	
	95X-5900-E-00466	E0014	0	ELECTRICAL - SITE POWER PLAN - SOUTH PLUME OPTIMIZATION WELL AREA	
	95X-5900-E-00467	E0015	0	ELECTRICAL - SITE POWER PLAN - SOUTH PLUME INJECTION WELL AREA	
	95X-5900-E-00468	E0016	0	ELECTRICAL - POWER INSTRUMENTATION AND LIGHTING PLANS - SOUTH PLUME VALVE HOUSE	
	95X-5900-E-00469	E0017	1	ELECTRICAL - POWER PLAN - S.PLUME INJECTION WATER SUPPLY TANK AND PUMPS	
	95X-5900-E-00473	E0018	0	ELECTRICAL - SYMBOLS AND LEGEND	
	95X-5900-E-00474	E0019	0	ELECTRICAL - SYMBOLS AND LEGEND	
	95X-5900-N-00447	N0001	0	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - SYMBOLS AND LEGEND	
	95X-5900-N-00448	N0002	0	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - SOUTH PLUME OPTIMIZATION	
	95X-5900-N-00449	N0003	0	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - SOUTH PLUME INJECTION	
	95X-5900-N-00439	N0004	0	INSTRUMENTATION - I/O DRAWING - INJECTION WATER SUPPLY TANK	
	95X-5900-N-00438	N0005	0	INSTRUMENTATION - INTERCONNECTION DIAGRAM - OPTIMIZATION AND RECOVERY WELLS	
	95X-5900-N-00442	N0006	0	INSTRUMENTATION - INTERCONNECTION DIAGRAM - INJECTION SYSTEM	
	~~95X-5900-N-00472~~	~~N0007~~	~~0~~	~~INSTRUMENTATION - REMOTE TERMINAL UNIT 22 - PANEL WIRING DIAGRAM~~	THIS DRAWING IS VOID.
	95X-5900-N-00443	N0008	0	INSTRUMENTATION - LOGIC DIAGRAM ACRONYM LIST	
	95X-5900-N-00444	N0009	0	INSTRUMENTATION - LOGIC DIAGRAM	
	95X-5900-N-00445	N0010	0	INSTRUMENTATION - LOGIC DIAGRAM	
	95X-5900-N-00478	N0011	0	INSTRUMENTATION - LOGIC DIAGRAM	
	95X-5900-N-00482	N0012	0	INSTRUMENTATION - DCS COMMUNICATIONS PLAN - INJECTION WELLS	
	95X-5900-N-00273	N0005	1	INSTRUMENTATION - CONTROL SYSTEM ARCHITECTURE	MODIFICATIONS/CHANGES TO SFES DRAWINGS
	95X-5900-N-00271	N0006	1	INSTRUMENTATION - INTERCONNECTION DIAGRAM - WELL HOUSE DCS PCS	MODIFICATIONS/CHANGES TO SFES DRAWINGS

NOTES

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000014

REF DWG NO.	DRAWING TITLE
95X-5900-X-00410	PROJECT TITLE SHEET
95X-5900-X-00412	LEGEND AND SYMBOLS

INFORMATION ONLY

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
1	ELECTRICAL WORK REMOVED FROM CONTRACT	WW	N/A	6/26/97
0	CERTIFIED FOR CONSTRUCTION	TH	N/A	03/13/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH PLUME OPTIMIZATION AND INJECTION DEMONSTRATION

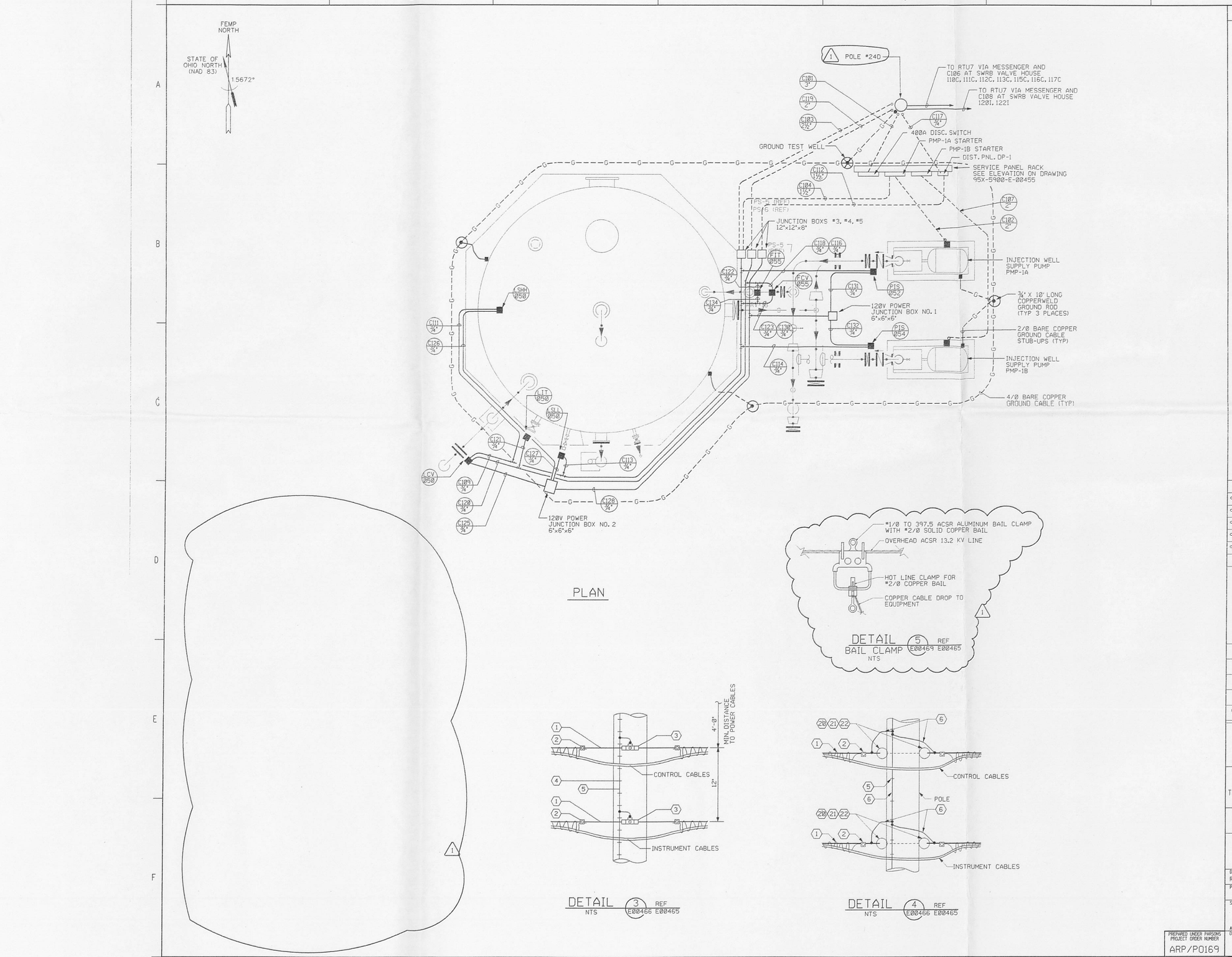
DRAWING TITLE
DRAWING INDEX

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
R. LINDGREN	06/28/96	K. GERARD	06/13/97	E.KUBRIN	11/11/96

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
TIM HILES 06/13/97	N/A	SPO-53300 ID-53100
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
ARP/P0169		WBS 1.1.1.1.1.2.1 00-90701	95X-5900-X-00411	X0002	1



NOTES

1. CONDUIT RUNS ARE SHOWN DIAGRAMATICALLY. ACTUAL RUNS MAY BE DETERMINED BY THE SUB-CONTRACTOR TO FACILITATE INSTALLATION.

E-878

INFORMATION ONLY

000013

REF DWG NO.	DRAWING TITLE
95X-5900-E-00411	DRAWING INDEX
95X-5900-E-00455	SINGLE LINE / ELEVATION
95X-5900-E-00465	SITE POWER PLAN
95X-5900-E-00461	CABLE SCHEDULLE
95X-5900-E-00463	CONDUIT SCHEDULE

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
1	ELECTRICAL WORK REMOVED FROM CONTRACT	WTHL	N/A	6/26/97
0	CERTIFIED FOR CONSTRUCTION	TH	N/A	06/13/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH PLUME OPTIMIZATION AND INJECTION DEMONSTRATION

DRAWING TITLE
ELECTRICAL
POWER PLAN AND DETAILS
S. PLUME INJECTION WATER SUPPLY TANK AND PUMPS

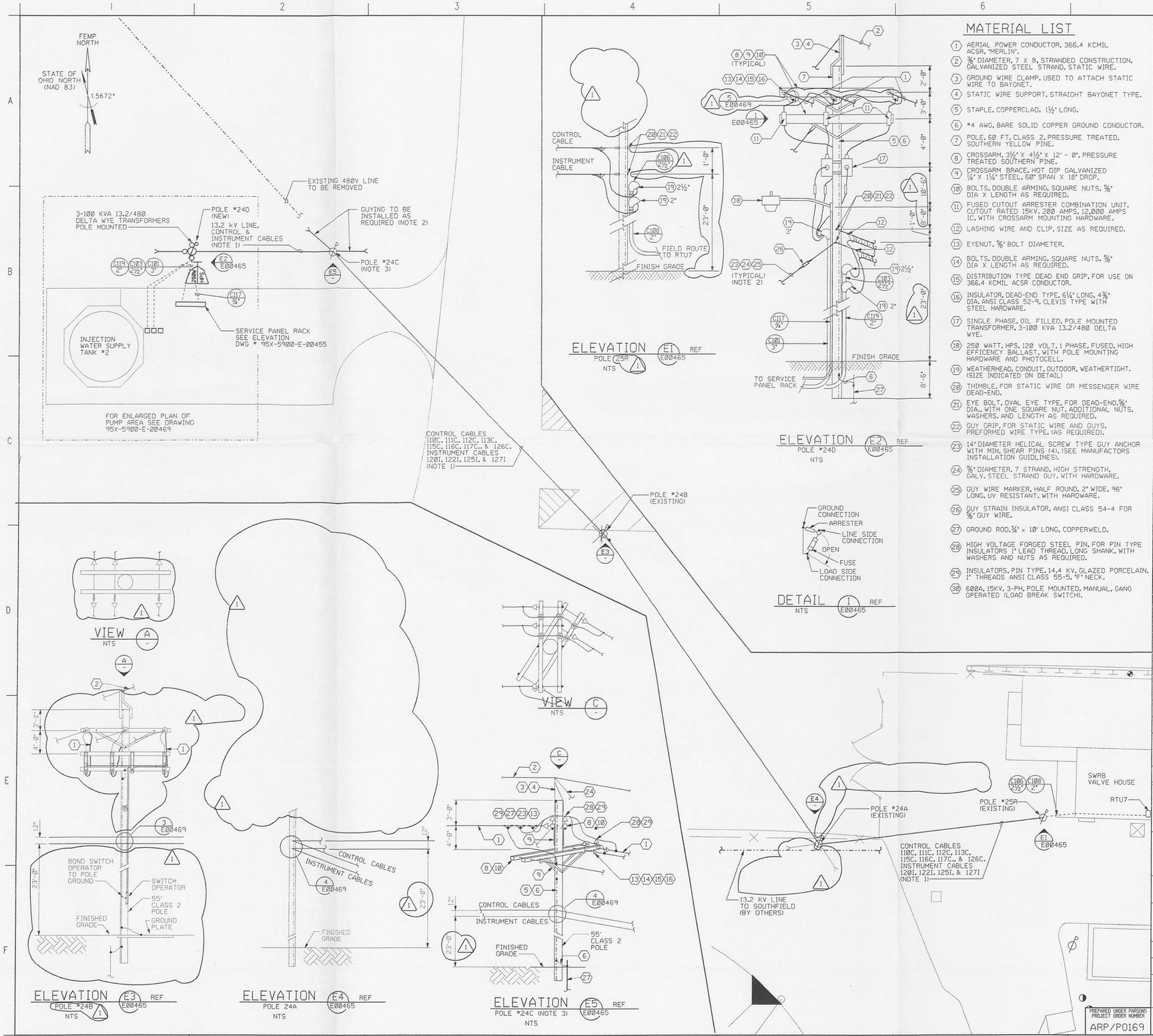
DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
R.B. CATO	11/17/96	J. L. COOPER	06/13/97	R L HOLLAND	11/20/96

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		3/8" = 1'-0"	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
TIM HILES 06/13/97	N/A	ID-53100

A-E DATE

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
ARP/P0169		WBS 1.1.1.1.1.2.1 00-90701	95X-5900-E-00469	E0017	1



MATERIAL LIST

1. AERIAL POWER CONDUCTOR, 366.4 KCMIL ACSR, "MERLIN".
2. 3/8" DIAMETER, 7 X 8, STRANDED CONSTRUCTION, GALVANIZED STEEL STRAND, STATIC WIRE.
3. GROUND WIRE CLAMP, USED TO ATTACH STATIC WIRE TO BAYONET.
4. STATIC WIRE SUPPORT, STRAIGHT BAYONET TYPE.
5. STAPLE, COPPERCLAD, 1½" LONG.
6. #4 AWG, BARE SOLID COPPER GROUND CONDUCTOR.
7. POLE, 60 FT, CLASS 2, PRESSURE TREATED, SOUTHERN YELLOW PINE.
8. CROSSARM, 3½" X 4½" X 12' - 0", PRESSURE TREATED SOUTHERN PINE.
9. CROSSARM BRACE, HOT DIP GALVANIZED ¼" X 1¼" STEEL, 60" SPAN X 18" DROP.
10. BOLTS, DOUBLE ARMING, SQUARE NUTS, ⅝" DIA X LENGTH AS REQUIRED.
11. FUSED CUTOUT ARRESTER COMBINATION UNIT, CUTOUT RATED 15KV, 200 AMPS, 12,000 AMPS IC, WITH CROSSARM MOUNTING HARDWARE.
12. LASHING WIRE AND CLIP, SIZE AS REQUIRED.
13. EYENUT, ⅝" BOLT DIAMETER.
14. BOLTS, DOUBLE ARMING, SQUARE NUTS, ⅝" DIA X LENGTH AS REQUIRED.
15. DISTRIBUTION TYPE DEAD END GRIP, FOR USE ON 366.4 KCMIL ACSR CONDUCTOR.
16. INSULATOR, DEAD-END TYPE, 6¼" LONG, 4⅜" DIA, ANSI CLASS 52-9, CLEVIS TYPE WITH STEEL HARDWARE.
17. SINGLE PHASE, OIL FILLED, POLE MOUNTED TRANSFORMER, 3-100 KVA 13.2/480 DELTA WYE.
18. 250 WATT, HPS, 120 VOLT, 1 PHASE, FUSED, HIGH EFFICENCY BALLAST, WITH POLE MOUNTING HARDWARE AND PHOTOCELL.
19. WEATHERHEAD, CONDUIT, OUTDOOR, WEATHERTIGHT. (SIZE INDICATED ON DETAIL)
20. THIMBLE, FOR STATIC WIRE OR MESSENGER WIRE DEAD-END.
21. EYE BOLT, OVAL EYE TYPE, FOR DEAD-END, ⅝" DIA., WITH ONE SQUARE NUT, ADDITIONAL NUTS, WASHERS, AND LENGTH AS REQUIRED.
22. GUY GRIP, FOR STATIC WIRE AND GUYS, PREFORMED WIRE TYPE. (AS REQUIRED).
23. 14" DIAMETER HELICAL SCREW TYPE GUY ANCHOR WITH MIN. SHEAR PINS (4), (SEE MANUFACTORS INSTALLATION GUIDLINES).
24. ⅜" DIAMETER, 7 STRAND, HIGH STRENGTH, GALV. STEEL STRAND GUY, WITH HARDWARE.
25. GUY WIRE MARKER, HALF ROUND, 2" WIDE, 96" LONG, UV RESISTANT, WITH HARDWARE.
26. GUY STRAIN INSULATOR, ANSI CLASS 54-4 FOR ⅜" GUY WIRE.
27. GROUND ROD, ¾" x 10' LONG, COPPERWELD.
28. HIGH VOLTAGE FORGED STEEL PIN, FOR PIN TYPE INSULATORS 1" LEAD THREAD, LONG SHANK, WITH WASHERS AND NUTS AS REQUIRED.
29. INSULATORS, PIN TYPE, 14.4 KV, GLAZED PORCELAIN, 1" THREADS ANSI CLASS 55-5, "F" NECK.
30. 600A, 15KV, 3-PH, POLE MOUNTED, MANUAL, GANG OPERATED (LOAD BREAK SWITCH).

NOTES

1. CONSTRUCT OVERHEAD LINES TO CLEAR ROADS BY 24'-0" MIN. AND EXISTING OVERHEAD ELECTRICAL BY 2'-0" MIN.
2. PRIOR TO THE INSTALLATION OF SCREW ANCHORS, VERIFY LOCATION FOR UNDERGROUND OBSTRUCTIONS.
3. REPLACE EXISTING POLE (WITH POLE) 24C.

INFORMATION ONLY

000012

REF DWG NO.	DRAWING TITLE
95X-5900-E-00411	DRAWING INDEX
95X-5900-E-00455	SINGLE LINE / ELEVATION
95X-5900-E-00461	CABLE SCHEDULE
95X-5900-E-00463	CONDUIT SCHEDULE
95X-5900-E-00469	POWER PLAN

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
1	ELECTRICAL WORK REMOVED FROM CONTRACT	WW	N/A	6/12/97
0	CERTIFIED FOR CONSTRUCTION	TH	N/A	06/13/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH PLUME OPTIMIZATION AND INJECTION DEMONSTRATION

DRAWING TITLE
ELECTRICAL
SITE POWER PLAN
INJECTION WATER PUMP AREA

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
R.B. CATO	11/07/96	J. L. COOPER	06/13/97	R.L. HOLLAND	11/20/96

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		1" = 10'-0"	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO
TIM HILES 06/13/97	N/A	ID-53100

A-E DATE

DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
	WBS 1.1.1.1.1.2.1 00-90701	95X-5900-E-00465	E0013	1

PREPARED UNDER PARSONS PROJECT ORDER NUMBER ARP/PO169

CABLE SCHEDULE

CABLE NO	FROM	TO	CONDUCTOR NUMBER	CONDUCTOR SIZE	INSUL	CONDUCTOR FUNCTION	WIRE TERMINATIONS 1	2	3	4	5	6	7	8	9	10	11	12	ROUTING	REF DWG	REMARKS
101P	1 300 KVA TRANSFORMER @ POLE 24D	400A DISCONNECT SWITCH	6-1/C 1-1/C	#4/0 #2 GND	600V	480V AC PWR FDR	X1-A	X1-B	X2-A	X2-B	X3-A	X3-B	GND						C101	E00455	1
102P	400A DISCONNECT SWITCH	TAP IN WIREWAY	6-1/C 1-1/C	#4/0 #4 GND	600V	480V AC PWR FDR	L1-A	L1-B	L2-A	L2-B	L3-A	L3-B	GND						FIELD ROUTE	E00455	FIELD ROUTE THRU CONDUIT NIPPLE
103P	INJECTION WELL PUMP PMP-1A STARTER	INJECTION WELL PUMP MOTOR PMP-1A	3-1/C 1-1/C	#2/0 #6 GND	600V	MOTOR POWER	1A-T1	1A-T2	1A-T3	1A-G									C102	E00455	
104P	INJECTION WELL PUMP PMP-1B STARTER	INJECTION WELL PUMP MOTOR PMP-1B	3-1/C 1-1/C	#2/0 #6 GND	600V	MOTOR POWER	1B-T1	1B-T2	1B-T3	1B-G									C107	E00455	
105P	TAP IN WIREWAY	DISTRIBUTION PANEL DP-1	3-1/C 1-1/C	#8 #6 GND	600V	120/240VAC PWR FDR	DP1-L1	DP1-L2	DP1-L3	DP1-G									C110	E00455	
106P	DISTRIBUTION PANEL DP-1 CKT.1	250W HPS LTG.	1-3/C	#12	600V	120V AC PWR FDR	DP1-1L	DP1-1N	DP1-1G										C117	E00455	
107P	1 LOAD BREAK SWITCH LB-24B @ POLE 24B	300 KVA TRANSFORMER @ POLE 24D	3-1/C	336KCMIL	BARE	13.2KV POWER	F4A1-5 -L1	F4A1-5 -L2	F4A1-5 -L3										POLE 24B THRU POLE 24D	E00455	AERIAL CONDUCTOR "MERLIN"
110C	INJECTION WELL PUMP PMP-1A STARTER	RTU7	1-5/C	#14	600V	CONTROL	1A-X2	1A-1	1A-4	1A-5	1A-6								C104,JB3,C103,OVERHEAD, C106	E00459	
111C	PRESSURE SWITCH PSH052	RTU7	1-3/C	#16	600V	CONTROL	PS052 -1	PS052 -2	PS052 -N										C116,C109,JB3,C103, OVERHEAD,C106	E00459	
112C	INJECTION WELL PUMP PMP-1B STARTER	RTU7	1-5/C	#14	600V	CONTROL	1B-X2	1B-1	1B-4	1B-5	1B-6								C105,C104,JB3,C103, OVERHEAD,C106	E00459	
113C	PRESSURE SWITCH PSH054	RTU7	1-3/C	#16	600V	CONTROL	PS054 -1	PS054 -2	PS054 -N										C114,C109,JB3,C103, OVERHEAD,C106	E00459	
115C	LEVEL SWITCH LSHH050	RTU7	1-2/C	#16	600V	CONTROL	LSHH0 50-1	LSHH0 50-N											C111,C109,JB3,C103, OVERHEAD,C106	E00459	
116C	LEVEL SWITCH LSLL050	RTU7	1-2/C	#16	600V	CONTROL	LSLL0 50-1	LSLL0 50-N											C113,C109,JB3,C103, OVERHEAD,C106	E00459	
117C	CONTROL VALVE LCV050	RTU7	1-2/C	#16	600V	CONTROL	ZSL050 -1	ZSL050 -N											C109,JB3,C103, OVERHEAD,C106	E00459	
119P	DISTRIBUTION PANEL DP-1 CKT.3	CONTROL VALVE LCV050 VIA 120V PWR.J.B.NO.2	1-3/C	#12	600V	120V AC PWR FDR	DP1-3L	DP1-3N	DP1-3G										C225,JB2,C228,JB5,C112	E00459	
120I	CONTROL VALVE LCV050	RTU7	1 PAIR TWSH	#16	BELDEN 8719	DCS I/O	LCV050 -(+)	LCV050 -(-)											C220,JB4,C119, OVERHEAD,C108	N00439	
121P	DISTRIBUTION PANEL DP-1 CKT.4	PRESS. SW. PIS052, PIS054, LEVEL SW. LSHH050, LSLL050	1-3/C	#12	600V	120V AC PWR FDR	DP1-4L	DP1-4N	DP1-4G										FIELD ROUTE	E00459	SEE DWG. E00469 FOR CONDUIT ROUTING
122I	LEVEL TRANSMITTER LIT050	RTU7	1 PAIR TWSH	#16	BELDEN 8719	DCS I/O	LIT050 -(+)	LIT050 -(-)											C221,C220,JB4,C119, OVERHEAD,C108	N00439	
123P	DISTRIBUTION PANEL DP-1 CKT.7	CONTROL VALVE FCV055	1-3/C	#12	600V	120V AC PWR FDR	DP1-7L	DP1-7N	DP1-7G										C118,C128,JB5,C112	E00459	
124P	DISTRIBUTION PANEL DP-1 CKT.9	FLOW TRANSMITTER FIT055	1-3/C	#12	600V	120V AC PWR FDR	DP1-9L	DP1-9N	DP1-9G										C122,C118,C128,JB5,C112	E00459	
125I	CONTROL VALVE FCV055	RTU7	1 PAIR TWSH	#16	BELDEN 8719	DCS I/O	FCV055 -(+)	FCV055 -(-)											C118, C120,JB4,C119, OVERHEAD,C108	N00439	
126C	CONTROL VALVE FCV055	RTU7	1-2/C	#16	600V	CONTROL	ZSL055 -1	ZSL055 -N											C118,C109,JB3,C103, OVERHEAD,C106	E00459	
127I	FLOW TRANSMITTER FIT055	RTU7	1 PAIR TWSH	#16	BELDEN 8719	DCS I/O	FIT055 -(+)	FIT055 -(-)											C122,C118, C120,JB4, C119,OVERHEAD,C108	N00439	
130I	PCS18	PCS11	2/BNDL	62.5/125 MULTIMOD	FIBER OPTIC	COMM	1	2											FIELD ROUTE DIRECT BURIAL	N00482 N00442	
131I	PCS11	PCS12	2/BNDL	62.5/125 MULTIMOD	FIBER OPTIC	COMM	1	2											FIELD ROUTE DIRECT BURIAL	N00482 N00442	
132I	PCS12	PCS10	2/BNDL	62.5/125 MULTIMOD	FIBER OPTIC	COMM	1	2											FIELD ROUTE DIRECT BURIAL	N00482 N00442	
133I	PCS10	PCS9	2/BNDL	62.5/125 MULTIMOD	FIBER OPTIC	COMM	1	2											FIELD ROUTE DIRECT BURIAL	N00482 N00442	
134I	PCS9	PCS8	2/BNDL	62.5/125 MULTIMOD	FIBER OPTIC	COMM	1	2											FIELD ROUTE DIRECT BURIAL	N00482 N00442	
146C	INJECTION WELL NO.8 PCS8	INJECTION WELL NO.8 LIMIT SWITCH ZSL060	2-1/C	#14	600V	CONTROL	ZS060 -1	ZS060 -2	ZS060 -3										FIELD ROUTE	N00442	
147C	INJECTION WELL NO.9 PCS9	INJECTION WELL NO.9 LIMIT SWITCH ZSL062	2-1/C	#14	600V	CONTROL	ZS062 -1	ZS062 -2	ZS062 -3										FIELD ROUTE	N00442	
148C	INJECTION WELL NO.10 PCS10	INJECTION WELL NO.10 LIMIT SWITCH ZSL064	2-1/C	#14	600V	CONTROL	ZS064 -1	ZS064 -2	ZS064 -3										FIELD ROUTE	N00442	
149C	INJECTION WELL NO.11 PCS11	INJECTION WELL NO.11 LIMIT SWITCH ZSL066	2-1/C	#14	600V	CONTROL	ZS066 -1	ZS066 -2	ZS066 -3										FIELD ROUTE	N00442	
150C	INJECTION WELL NO.12 PCS12	INJECTION WELL NO.12 LIMIT SWITCH ZSL068	2-1/C	#14	600V	CONTROL	ZS068 -1	ZS068 -2	ZS068 -3										FIELD ROUTE	N00442	

NOTES

INFORMATION ONLY

000011

REF DWG NO.	DRAWING TITLE
95X-5900-X-00411	DRAWING INDEX
95X-5900-E-00455	SINGLE LINE / ELEVATION
95X-5900-E-00459	INTERCONNECTION DIAGRAM
95X-5900-N-00439	I/O DRAWING - INJECTION WATER SUPPLY TANK
95X-5900-N-00482	DCS COMMUNICATIONS PLAN INJECTION WELLS

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
1	ELECTRICAL WORK REMOVED FROM CONTRACT	WJW	N/A	6/26/97
0	CERTIFIED FOR CONSTRUCTION	TH	N/A	05/13/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH PLUME OPTIMIZATION AND INJECTION DEMONSTRATION

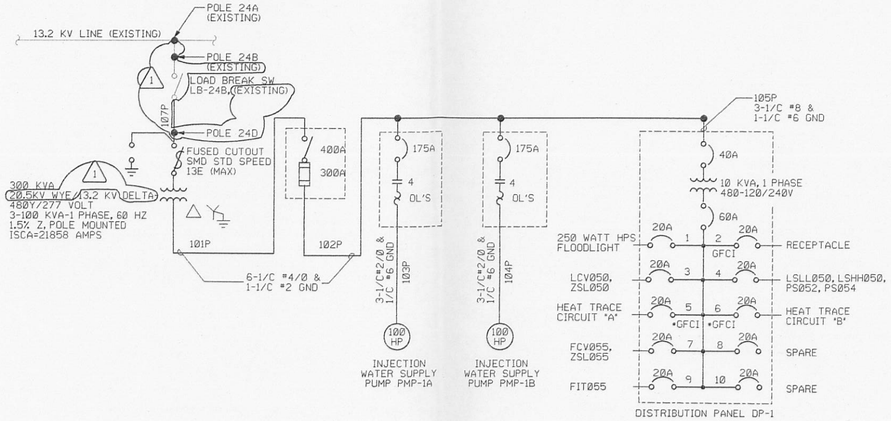
DRAWING TITLE
ELECTRICAL
CABLE SCHEDULE (101-150)
SOUTH PLUME INJECTION WATER SUPPLY

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
R.B. CATO	11/11/96	J. L. COOPER	6/13/97	R.L.HOLLAND	11/20/96

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

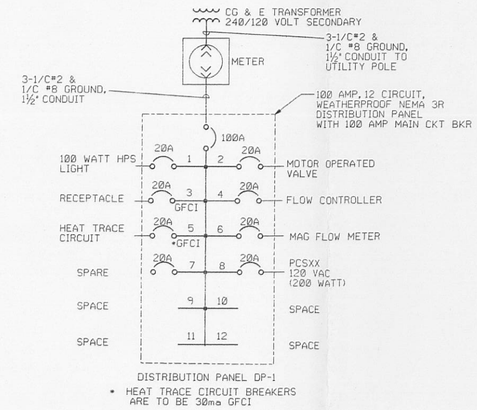
SUBMITTED FOR APPROVAL (A-E)	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
TIM HILES 6/13/97	N/A	ID-53100

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	TEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
ARP/P0169		WBS 1.1.1.1.1.2.1 00-90701	95X-5900-E-00461	E0008	1



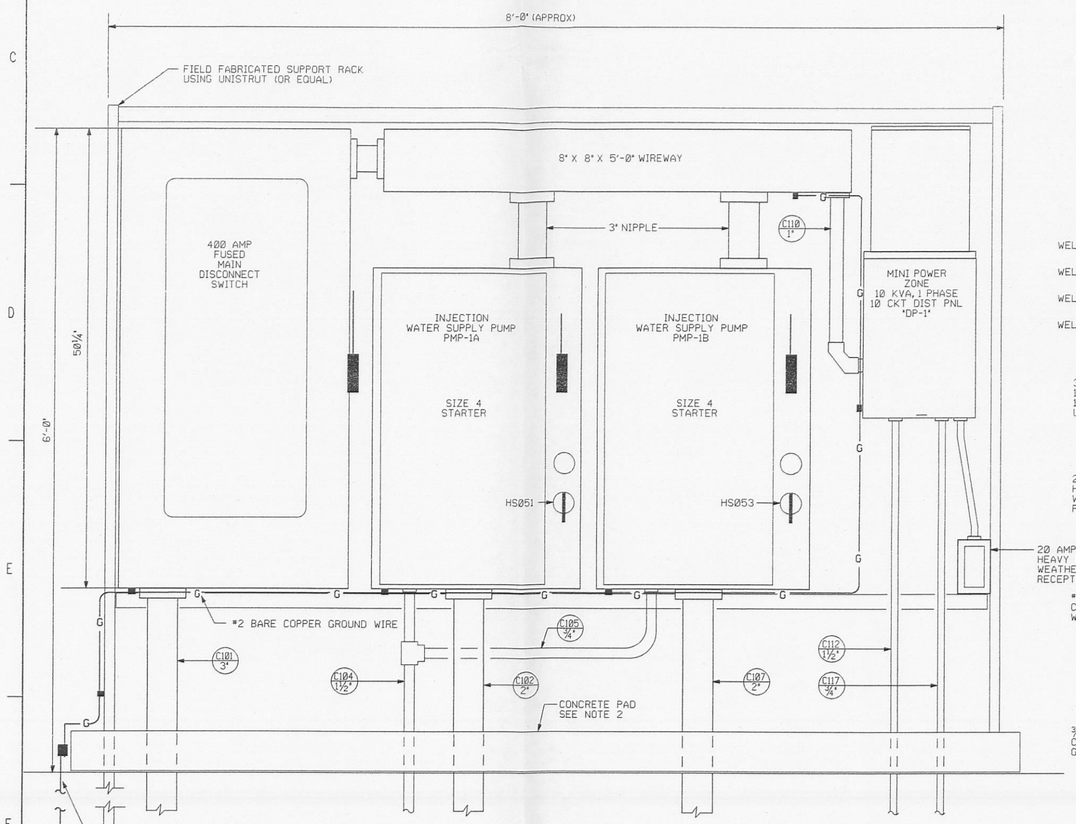
SINGLE LINE DIAGRAM

SOUTH PLUME INJECTION WATER SUPPLY PUMPS



SINGLE LINE DIAGRAM

TYPICAL
SEE NOTE 1

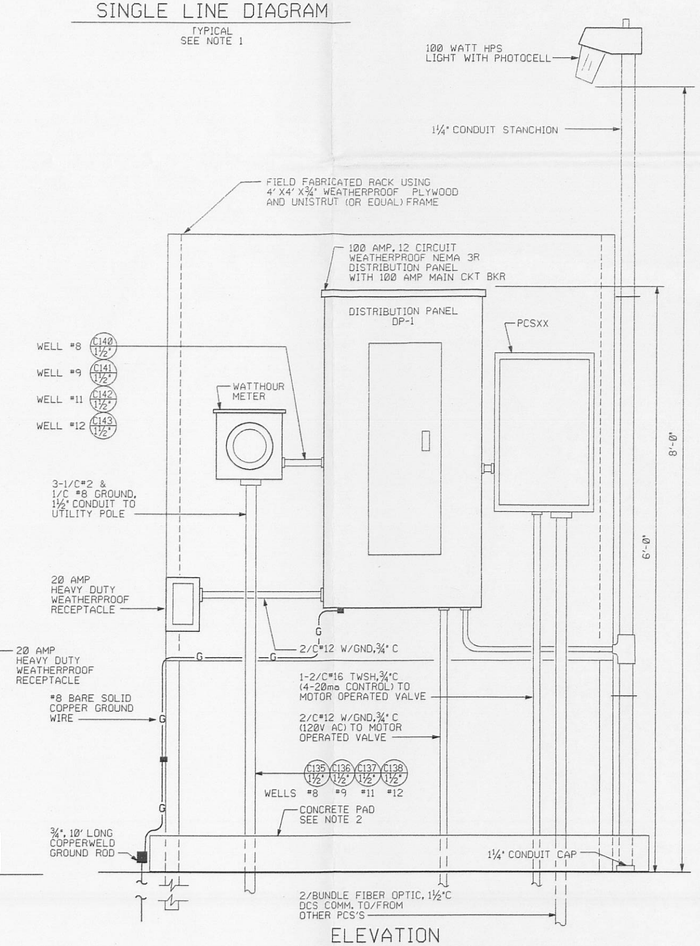


ELEVATION

SERVICE PANEL RACK

INJECTION WATER SUPPLY TANK

NTS



ELEVATION

SERVICE PANEL RACK

TYPICAL FOR INJECTION WELLS #8, #9, #11 AND #12

NTS

NOTES

1. TYPICAL 100 AMP SERVICE SUPPLIED FROM UTILITY COMPANY FOR INJECTION WELLS NO. 8, 9, 11 AND 12 ALONG WILLEY ROAD. INJECTION WELL NO. 10 SHALL BE FED FROM SIMILIAR EXISTING DISTRIBUTION PANEL DP-1 LOCATED IN PUBLIC WATER SUPPLY VALVE HOUSE. (INSTALL 20 AMP BREAKERS IN SPACES 7 THRU 11 IN EXISTING DISTRIBUTION PANEL DP-1).
2. PROVIDE 4" THICK CONCRETE PAD EXTENDING 3'-0" IN FRONT OF SERVICE RACK AND 6" ON SIDES AND REAR.
3. ALL ELECTRICAL ENCLOSURES SHALL BE WEATHERPROOF, NEMA 3R.
4. ALL ELECTRICAL ENCLOSURES AND DEVICES SHALL BE GROUNDED.
5. "XX" REPRESENTS THE CORRESPONDING WELL NUMBER.

INFORMATION ONLY

000010

REF DWG NO.	DRAWING TITLE
95X-5900-X-00411	DRAWING INDEX
95X-5900-E-00457	SCHEMATIC DIAGRAMS
95X-5900-E-00459	INTERCONNECTION DIAGRAM
95X-5900-N-00439	I/O DRAWING - INJECTION WELLS WATER TANK
95X-5900-E-00469	POWER PLAN
95X-5900-E-00461	CABLE SCHEDULE
95X-5900-E-00463	CONDUIT SCHEDULE
95X-5900-E-00470	CABLE SCHEDULE
95X-5900-E-00467	SITE POWER PLAN

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
1	ELECTRICAL WORK REMOVED FROM CONTRACT	[illegible]	N/A	6/24/97
0	CERTIFIED FOR CONSTRUCTION	TH	N/A	06/13/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

PARSONS

THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.

CINCINNATI, OHIO

PROJECT NAME

SOUTH PLUME OPTIMIZATION AND INJECTION DEMONSTRATION

DRAWING TITLE

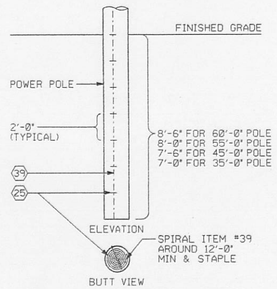
ELECTRICAL
SINGLE LINE / ELEVATION
SOUTH PLUME INJECTION WATER SUPPLY

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
R. D. PROSKI	10/25/96	J. L. COOPER	06/13/97	R.L.HOLLAND	11/20/96

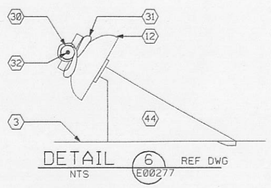
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL (A-E)	DATE	FERMCO CRU APPROVAL	DATE	FERMCO PROJECT NO.
TIM HILES	06/13/97	N/A		ID-53100

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
ARP/P0169		WBS 1.1.1.1.1.2.1 00-90701	95X-5900-E-00455	E0001	1

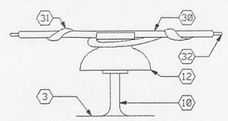


DETAIL 5 REF DWG
POLE GROUNDING E00277 E00240 E00241 E00246 E00276
NTS



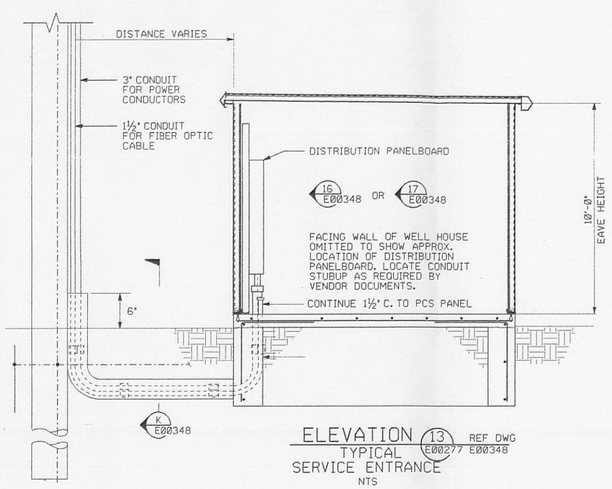
DETAIL 6 REF DWG
NTS E00277

CROSSARM CORNER TYPE PINS
USE ON POLES AS REQUIRED

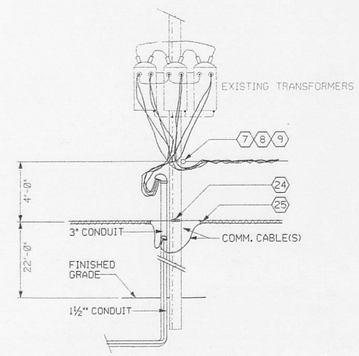


DETAIL 7 REF
NTS E00277 E00240 E00241 E00246 E00276 E00277

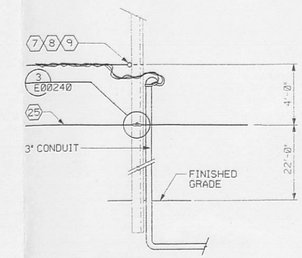
STRAIGHT ATTACHMENT TYPE PINS
USE ON POLES AS REQUIRED



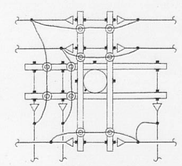
ELEVATION 13 REF DWG
TYPICAL SERVICE ENTRANCE E00277 E00348
NTS



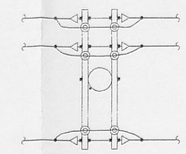
ELEVATION 21 REF
POLE 12R E00277 E00244 E00240
NTS



ELEVATION 22 REF
POLE 13R E00277 E00244 E00240
NTS



VIEW N
NTS



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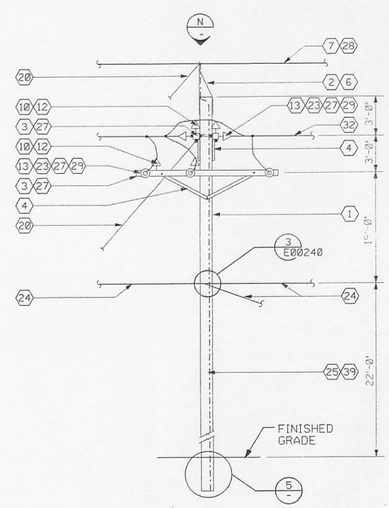
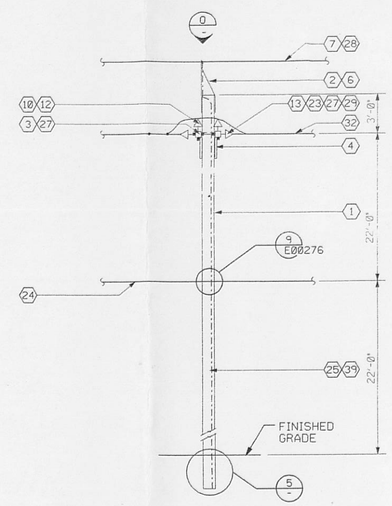


ELEVATION 23 REF
POLE 48 & 51 E00277 E00244 E00240
NTS



ELEVATION 24 REF
POLE 29B 3 E00277 E00244 E00240
NTS

NOTES

1. SEE DRAWING 95X-5900-E-00240 FOR MATERIAL LIST.

E-878

INFORMATION ONLY

000009

REF DWG NO.	DRAWING TITLE
95X-5900-X-00203	DRAWING INDEX
95X-5900-E-00244	13.2 KV DISTRIBUTION & COMMUNICATION PLAN
95X-5900-E-00240	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00241	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00246	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00276	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00348	ELEVATIONS, SECTIONS, AND DETAILS

LEGEND:

INFORMATION SHOWN IN 'LIGHT LINE WEIGHT' REPRESENTS WORK TO BE COMPLETED UNDER 'WASTE UNITS REMEDIATION PROJECT - SOUTHERN WASTE UNITS - SITE PREPARATION PACKAGE'

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
3	ELECTRICAL WORK REMOVED FROM CONTRACT	WRL	N/A	06/30/97
2	ISSUED FOR DESIGN UPGRADE	TPH	N/A	06/13/97
1	ISSUED IN RESPONSE TO EPA COMMENTS, AND DCN'S 25-SF-001/002	RWB	N/A	03/26/96
0	CERTIFIED FOR CONSTRUCTION	RWB	N/A	09/15/95

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

DRAWING TITLE
ELECTRICAL
ELEVATIONS, SECTIONS, AND DETAILS

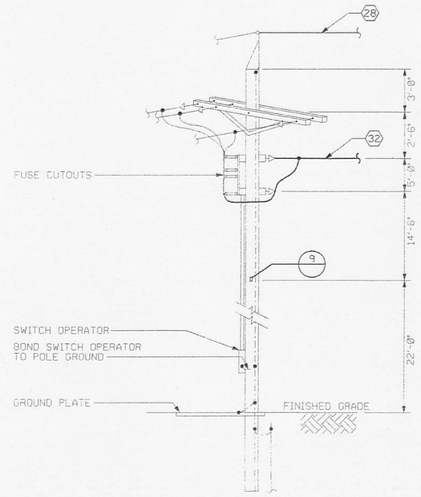
DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
J. ALLFORD	06/15/95	T. FERRELL	09/15/95	J.L. COOPER	09/02/95

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

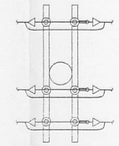
SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FDF PROJECT NUMBER
R. BRETTIN 09/15/95	N/A	SFES-53200

A-E DATE DATE

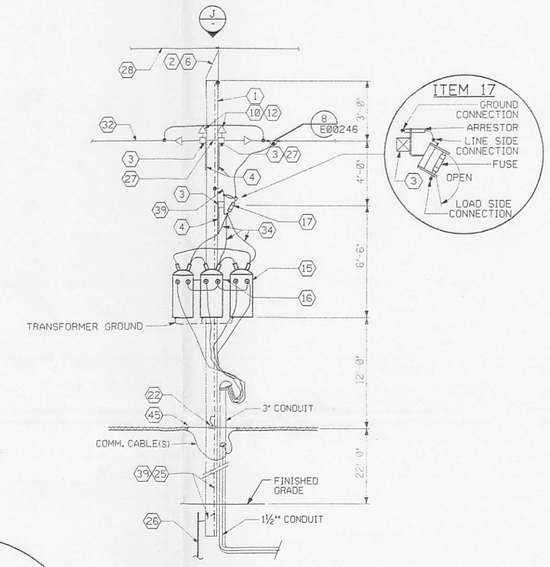
PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
CRU5/P0126		WBS 1.1.1.1.5.3.1 00-90701	95X-5900-E-00277	E0017	3



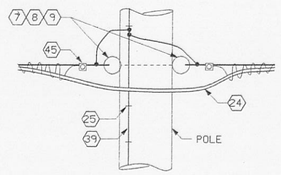
ELEVATION (E11) REF E00276 E00244
POLE 41
NTS



VIEW (J)
NTS



ELEVATION (E12) REF E00276 E00244
POLE 46
NTS



DETAIL (9) REF E00276
NTS

NOTES

1. 1½" CONDUIT AND WEATHERHEAD FOR FIBER OPTIC CABLE REQUIRED ON POLES 12 AND 48 ONLY.

000008

REF DWG NO.	DRAWING TITLE
95X-5900-X-00203	DRAWING INDEX
95X-5900-E-00244	13.2 KV DISTRIBUTION & COMMUNICATION PLAN
95X-5900-E-00240	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00241	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00246	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00277	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00348	ELEVATIONS, SECTIONS, AND DETAILS

INFORMATION ONLY

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
3	ELECTRICAL WORK REMOVED FROM CONTRACT	WW	N/A	6/25/97
2	ISSUED FOR DESIGN UPGRADE	TPH	N/A	06/13/97
1	ISSUED IN RESPONSE TO EPA COMMENTS, AND DCNS 25-SF-001/002	RWB	N/A	3/25/96
0	CERTIFIED FOR CONSTRUCTION	RWB	N/A	09/15/95

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

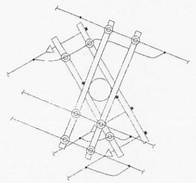
DRAWING TITLE
ELECTRICAL
ELEVATIONS, SECTIONS, AND DETAILS

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
J. ALLFORD	06/15/95	T. FERRELL	09/15/95	J. L. COOPER	08/02/95

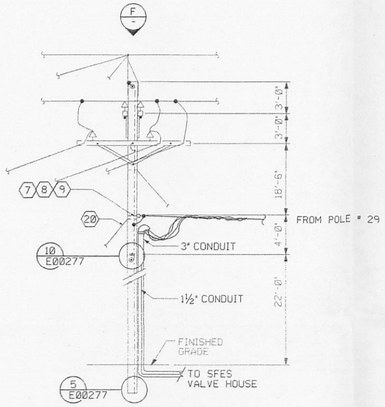
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FDF PROJECT NUMBER
R. BRETTIN 09/15/95 (A-E, DATE)	N/A (DATE)	SFES-53200

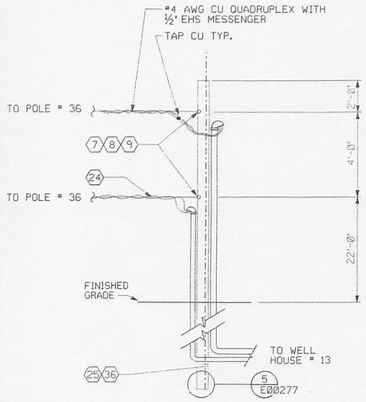
PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
CRU5/P0126		WBS 1.1.1.1.5.3.1 00-90701	95X-5900-E-00276	E0016	3



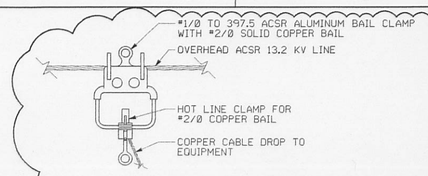
VIEW F
NTS



ELEVATION E6 REF E00246 E00244
POLE 28
NTS



ELEVATION E7 REF E00246 E00244
POLE 36A
NTS



DETAIL 8
BAIL CLAMP
NTS

3

NOTES

1. SEE DRAWING 95X-5900-E-00240 FOR MATERIAL LIST.

000007

REF DWG NO.	DRAWING TITLE
95X-5900-X-00203	DRAWING INDEX
95X-5900-E-00244	13.2 KV DISTRIBUTION & COMMUNICATION PLAN
95X-5900-E-00240	ELEVATIONS, SECTIONS, AND DETAILS

LEGEND:

INFORMATION SHOWN IN 'LIGHT LINE WEIGHT' REPRESENTS WORK TO BE COMPLETED UNDER WASTE UNITS REMEDIATION PROJECT - SOUTHERN WATER TREATMENT PLANT PACKAGE

INFORMATION ONLY

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
3	ELECTRICAL WORK REMOVED FROM CONTRACT	WJW	N/A	1/23/97
2	ISSUED FOR DESIGN UPGRADE	TPH	N/A	06/13/97
1	ISSUED IN RESPONSE TO EPA COMMENTS, AND DCN'S 25-SF-001/002	RWB	N/A	03/26/96
0	CERTIFIED FOR CONSTRUCTION	RWB	N/A	09/15/95

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

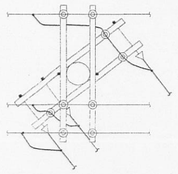
DRAWING TITLE
ELECTRICAL
ELEVATIONS, SECTIONS, AND DETAILS

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
J. ALLFORD	06/14/95	T. FERRELL	09/15/95	J. L. COOPER	08/02/95

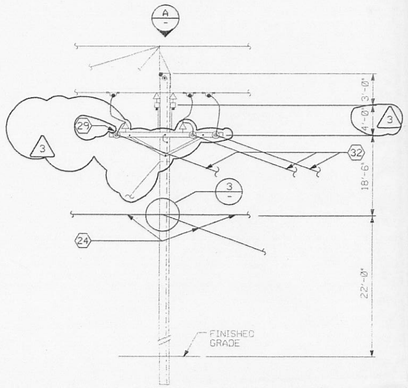
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FDF PROJECT NUMBER
R. BRETTIN 09/15/95 (A-E DATE)	N/A (DATE)	SFES-53200

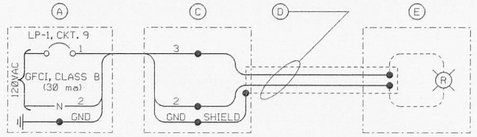
PREPARED UNDER PARSONS PROJECT UNDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
CRU5/P0126		WBS 1.1.1.1.5.3.1 00-90701	95X-5900-E-00246	E0015	3



VIEW A
NTS



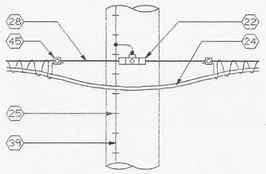
ELEVATION E1 REF DWG E00240 E00244
EXISTING POLE 11R
NTS



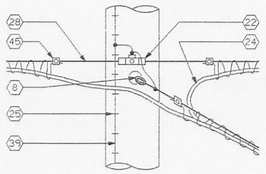
TYPICAL WIRING DIAGRAM FOR HEAT TRACING SYSTEM

BILL OF MATERIAL		
ITEM	QUANTITY	DESCRIPTION
A	1	CIRCUIT BKR, 20A, GFCI, CLASS B, 30MA, 1 POLE
C	1	POWER CONNECTION KIT
D	65 FT	SELF REGULATING HEAT TRACE, NOMINAL 15 W/FT
E	1	PILOT LIGHT CONNECTION KIT, WITH RED LIGHT

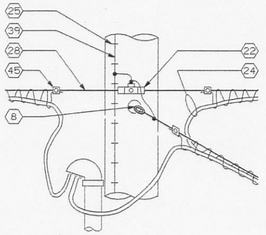
DETAIL 1 REF DWG E00240 E00239
HEAT TRACE
RISER DIAGRAM
NTS



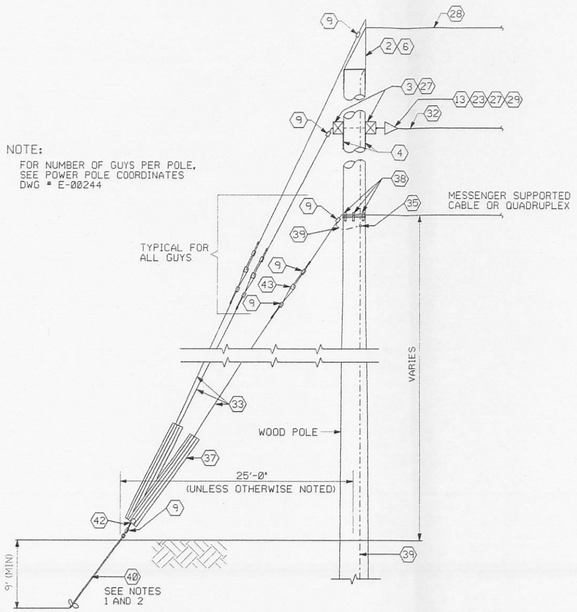
DETAIL 2 REF DWG E00240 E00241 E00246 E00276 E00277
COMM. CABLE
ATTACHMENT
NTS



DETAIL 3 REF DWG E00240 E00241 E00246 E00276 E00277
COMM. CABLE
INTERSECTION
NTS

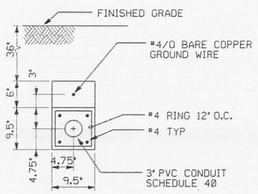


DETAIL 10 REF DWG E00240 E00246
COMM. CABLE
INTERSECTION
NTS



NOTE:
FOR NUMBER OF GUYS PER POLE, SEE POWER POLE COORDINATES DWG # E-00244

ELEVATION E14 REF DWG E00240 E00241 E00246 E00276 E00277
GUY HARDWARE
NTS



SECTION A REF DWG E00240 E00375
NTS

MATERIAL LIST

1. POLE, CLASS 2, PRESSURE TREATED, SOUTHERN YELLOW PINE. TO BE INSTALLED PER PARSONS SPEC #16370. SEE NOTE 5.
2. GROUND WIRE CLAMP, USED TO ATTACH STATIC WIRE TO BAYONET.
3. CROSSARM, 3½" x 4½" x 8'-0", PRESSURE TREATED DOUGLAS FIR.
4. CROSSARM BRACE, 5'-3" LONG x 1'-6" DROP, HOT DIP GALVANIZED.
5. STATIC WIRE SUPPORT, STRAIGHT BAYONET TYPE.
6. STATIC WIRE SUPPORT, CORNER BAYONET TYPE.
7. THIMBLE, FOR STATIC WIRE OR MESSENGER WIRE DEAD-END.
8. EYE BOLT, OVAL EYE TYPE, FOR DEAD-END, ⅝" DIA., WITH ONE SQUARE NUT, ADDITIONAL NUTS, WASHERS, AND LENGTH AS REQUIRED.
9. GUY GRIP, FOR STATIC WIRE, PREFORMED WIRE TYPE.
10. HIGH VOLTAGE FORGED STEEL PIN, FOR PIN TYPE INSULATORS 1" LEAD THREAD, LONG SHANK, WITH WASHERS AND NUTS AS REQUIRED.
11. SECONDARY RACK FOR 4 WIRES, MEDIUM DUTY WITH INSULATORS.
12. INSULATORS, PIN TYPE, 14.4 KV, GLAZED PORCELAIN, 1" THREADS ANSI CLASS 55-5, "F" NECK.
13. INSULATOR, DEAD-END TYPE, 6¼" LONG, 4⅜" DIA. ANSI CLASS 52-9, CLEVIS TYPE WITH STEEL HARDWARE.
14. AERIAL POWER CONDUCTOR #336 KCMIL, ACSR "MERLIN".
15. TRANSFORMER, POLE MOUNTED, 1 PHASE. SEE SINGLE LINE DWG # E-00477 FOR SIZE AND QUANTITY.
16. EQUIPMENT MOUNT, FOR 3 POLE MOUNTED, TRANSFORMERS DOUBLE-BANDED ALUMINUM CLUSTER MOUNT W/ GND LUG.
17. FUSED CUTOUT ARRESTER COMBINATION UNIT, WITH CROSSARM MOUNTING HARDWARE. FOR ARRESTER, SEE ITEM 18, THIS MATERIAL LIST.
18. SURGE ARRESTER, DIRECT CONNECTED, METAL OXIDE VALVE.
19. TERMINATOR, 15 KV, SIZED TO FIT INSULATION DIAMETER.
20. FOR GUY INSTALLATION, SEE ELEVATION E14 ON THIS DRAWING.
21. CABLE SUPPORT, CONDUIT TOP, OUTDOOR, WATERTIGHT, FILL WITH SEALING COMPOUND.
22. CLAMP, SUSPENSION, FOR ⅜" MESSENGER.
23. EYENUT, ⅝" BOLT DIA.
24. COMMUNICATIONS CABLE, LASHED TO ⅜" MESSENGER. SEE NOTE 3.
25. STAPLE, COPPERCLAD, 1½" LONG.
26. GROUND ROD, ¾" DIAMETER x 10' LONG, COPPERWELD INSTALLED 12" MIN. BELOW FINISHED GRADE.
27. BOLTS, DOUBLE ARMING, SQUARE NUTS, ⅝"DIA. x LENGTH AS REQUIRED.
28. ¾" DIAMETER, 7X8, STANDARD CONSTRUCTION, GALVANIZED STEEL STRAND.
29. DISTRIBUTION TYPE DEAD-END GRIP, FOR USE ON #2 AWG, ACSR CONDUCTOR.
30. ARMOR ROD, FOR USE ON #32, THIS MATERIAL LIST.
31. CONDUCTOR TIE ROD FOR ACSR CONDUCTOR TO "F" NECK PIN TYPE INSULATOR. SIZE TIE RODS TO FIT OVER ARMOR ROD ASSEMBLY.
32. AERIAL POWER CONDUCTOR, #2 AWG, ACSR, "SPARROW".
33. ⅝" DIA. GALVANIZED STEEL STRUCTURAL ROPE WITH A MINIMUM BREAKING STRENGTH OF 15 TONS.
34. #2 AWG BARE CU.
35. COMPRESSION GROUND FITTING.
36. #2 AWG, BARE SOLID COPPER GROUND CONDUCTOR.
37. GUY WIRE MARKER, HALF ROUND, 2" WIDE, 84" LONG, W/ REQ'D HARDWARE, UV RESISTANT.
38. GUY AND LOAD PLATE, W/ ANGLE THIMBLE EYE BOLT.
39. #4 AWG, BARE SOLID COPPER GROUND CONDUCTOR.
40. 12" DIA. HELICAL SCREW TYPE GUY ANCHOR WITH MINIMUM PULLOUT CAPACITY OF 23000 POUNDS.
41. NOT USED.
42. ½" THREADED ROD WITH NUTS, LENGTH AS REQUIRED.
43. GUY STRAIN INSULATOR, ANSI CLASS 54-4, FOR ⅝" GUY WIRE.
44. CROSSARM CORNER TYPE PIN, MALLABLE IRON, GALVANIZED 1" THREAD MOUNTING WITH HARDWARE.
45. LASHING WIRE CLIP, SIZE AS REQUIRED.
46. TRANSFORMER, POLE MOUNTED, THREE 37.5 KVA, 13.2KV - 480V, 1 PHASE, W/ 2 - 2 1/2% TAPS ABOVE AND 2 - 2 1/2% TAPS BELOW, OIL FILLED.
47. 600A, 15KV, 3-PH, 20 KAYMME POLE MOUNTED, MANUAL, GANG OPERATED (LOAD BREAK FUSED SWITCH) 806 FUSE.
48. 600A, 15KV, 3-PH, 20 KAYMME POLE MOUNTED, MANUAL, GANG OPERATED (LOAD BREAK SWITCH).
49. AERIAL POWER CONDUCTOR, 336 kcmil, ASCR, "MERLIN".

NOTES

1. INSTALL SOIL ANCHORS ACCORDING TO MANUFACTURER'S INSTRUCTIONS. DEPTH CALCULATION BASED ON SOIL DATA FOR MINIMUM BLOW COUNT OF 7. IF BLOW COUNT IS LESS THAN 7 THEN CONTACT FDF.
2. PRIOR TO INSTALLATION OF EARTH ANCHORS, VERIFY LOCATION OF NEARBY UNDERGROUND UTILITIES AND PUSH SMALL DIAMETER STEEL SOIL PROBE THROUGH AREA TO VERIFY THAT NO UNDERGROUND OBSTRUCTIONS ARE PRESENT.
3. PLACE SIGNAL/COMMUNICATIONS CABLE SIX (6) FEET MINIMUM BELOW 13.2KV POWER LINE CONDUCTORS; FOUR (4) FEET MINIMUM BELOW 600V (OR LESS) POWER CONDUCTORS; AND TWO (2) FEET MINIMUM BELOW POLE-GUY ATTACHMENTS.
4. ROUTE POWER TO HEAT TRACE POWER CONNECTION KIT FROM LP-1, CKT #9. SEE DWG # E-00245 FOR APPROX. LOCATION.
5. SEE DWG # E-00244 "POWER POLE COORDINATES - POLE HEIGHTS" FOR POLE LENGTHS.

INFORMATION ONLY

000006

REF DWG NO.	DRAWING TITLE
95X-5900-X-00203	DRAWING INDEX
95X-5900-E-00244	13.2 KV DISTRIBUTION & COMMUNICATION PLAN
95X-5900-E-00241	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00246	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00276	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00277	ELEVATIONS, SECTIONS, AND DETAILS

LEGEND:

INFORMATION SHOWN IN "LIGHT LINE WEIGHT" REPRESENTS WORK TO BE COMPLETED UNDER "WASTE UNITS REMEDIATION PROJECT - SOUTHERN WASTE UNITS - SITE PREPARATION PACKAGE"

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
3	ELECTRICAL WORK REMOVED FROM CONTRACT	KWL	N/A	6/26/97
2	ISSUED FOR DESIGN UPGRADE	TPH	N/A	06/13/97
1	ISSUED IN RESPONSE TO EPA COMMENTS, AND DCN'S 25-SF-001/002	RWB	N/A	3/26/96
0	CERTIFIED FOR CONSTRUCTION	RWB	N/A	09/15/95

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

DRAWING TITLE
ELECTRICAL
ELEVATIONS, SECTIONS, AND DETAILS

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
J. ALLFORD	06/15/95	T. FERRELL	09/15/95	J. L. COOPER	08/02/95

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FDF PROJECT NUMBER
R. BRETTIN 09/15/95	N/A	SFES-53200

A-E DATE

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
CRU5/P0126		WBS 1.1.1.1.5.3.1 00-90701	95X-5900-E-00240	E0013	3

0" 1" 2"

E-878

CONDUIT SCHEDULE

CONDUIT NO	FROM	TO	COND SIZE	CONTAINS CABLE(S)	REMARKS
3					
CXX1	WEATHERHEAD ON POLE	WELL HOUSE DISTRIBUTION PANEL DP-XX	3"	XX1P	WELL HOUSE XX CONDUITS
CXX1A	STUB-UP AT POLE	STUB-UP BELOW DISTRIBUTION PANEL DP-XX	1½"	(EMPTY)	
CXX2	WELL HOUSE DISTRIBUTION PANEL DP-XX	VARIABLE SPEED DRIVE VSD-XX	1½"	XX2P	
CXX3	VARIABLE SPEED DRIVE VSD-XX	EXTRACTION WELL PUMP MOTOR PMP-XX	1½"	XX3P	
CXX4	WELL HOUSE DISTRIBUTION PANEL DP-XX	DISCONNECT SWITCH DSW-XX	¾"	XX4P	
CXX5	DISCONNECT SWITCH DSW-XX	UNIT HEATER UH-XX	¾"	XX5P	
CXX6	WELL HOUSE DISTRIBUTION PANEL DP-XX	COMBINATION TRANSFORMER/ PANELBOARD LP-XX	¾"	XX6P	
CXX7	COMBINATION TRANSFORMER/ PANELBOARD LP-XX	PCS-XX	¾"	XX7P	
CXX8	COMBINATION TRANSFORMER/ PANELBOARD LP-XX	FLOW INDICATING TRANSMITTER FITA	¾"	XX8P	
CXX9	COMBINATION TRANSFORMER/ PANELBOARD LP-XX	EXHAUST FAN EF-XX HAND-OFF-AUTO SWITCH	¾"	XX9P, XX11P, 1112P	
CXX10	EXHAUST FAN EF-XX HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-XX MOTOR	¾"	XX10P	
CXX11	TEE IN CXX9	EXHAUST FAN EF-XX MOTORIZED DAMPER M-XX	¾"	XX11P	
CXX12	TEE IN CXX9	EXHAUST FAN EF-XX ADJUSTABLE THERMOSTAT	¾"	XX12P	
CXX13	TEE IN CXX20	FLOW ELEMENT FEB (RECIEVER)	¾"	XX03I	WELL HOUSE XX CONDUITS
CXX14	PCS-XX	FLOW INDICATING TRANSMITTER FITA	¾"	XX01I, XX04I, XX01C, XX02C	
CXX15	TEE IN CXX14	POSITION SWITCHES ZSHA & ZSLA	¾"	XX01C	
CXX16	TEE IN CXX14	POSITION SWITCHES ZSHB & ZSLB	¾"	XX02C	
CXX17	TEE IN CXX14	PRESSURE INDICATING TRANSMITTER PITA	¾"	XX04I	
CXX18	UNIT HEATER UH-XX	UNIT HEATER HAND-OFF-AUTO SWITCH	¾"	XX03C	
CXX19	VARIABLE SPEED DRIVE VSD-XX	PCS-XX	¾"	XX05I	
CXX20	FLOW INDICATING TRANSMITTER FITA	FLOW ELEMENT FEA (TRANSMITTER)	¾"	XX02I, XX03I	
CXX21	WEATHERHEAD AT POLE	PCS-XX	1½"	CONTAINS PCS COMM. CABLES	
C301	WEATHERHEAD AT XFMR T-28 (POLE #28)	VALVE HOUSE COMBO XFMR/ PNLBRD LP-1	3"	301P	VALVE HOUSE CONDUITS
C301A	STUB-UP AT POLE #28	STUB-UP @ COMBO XFMR/ PNLBRD LP-1	1½"	(EMPTY)	
C302	VALVE HOUSE COMBO XFMR/ PNLBRD LP-1	CIRCUIT BREAKER CB-1	¾"	302P	
C303	CIRCUIT BREAKER CB-1	FLOW CONTROL VALVE FCV001	¾"	303P	
C304	VALVE HOUSE COMBO XFMR/ PNLBRD LP-1	FLOW INDICATING TRANSMITTER FIT001	¾"	304P, 310P	
C305	VALVE HOUSE COMBO XFMR/ PNLBRD LP-1	JUNCTION BOX JB-1	¾"	305P	
C306	JUNCTION BOX JB-1	DISCONNECT SWITCH DSW-1	¾"	306P	
C307	DISCONNECT SWITCH DSW-1	UNIT HEATER UH-1	¾"	307P	
C308	JUNCTION BOX JB-1	DISCONNECT SWITCH DSW-2	¾"	308P	
C309	DISCONNECT SWITCH DSW-2	UNIT HEATER UH-2	¾"	309P	
C310	TEE IN C304	FLOW INDICATING TRANSMITTER FIT003	¾"	310P	
C311	VALVE HOUSE COMBO XFMR/ PNLBRD LP-1	EXHAUST FAN EF-1 HAND-OFF-AUTO SWITCH	¾"	311P, 312P, 313P	
C312	TEE IN C311	EXHAUST FAN EF-1 MOTOR	¾"	312P	
C313	TEE IN C311	EXHAUST FAN EF-1 MOTORIZED DAMPER M-1	¾"	313P	
C314	EXHAUST FAN EF-1 HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-1 ADJUSTABLE THERMOSTAT	¾"	314P	
C315	VALVE HOUSE COMBO XFMR/ PNLBRD LP-1	PSCVH1	¾"	315P	
C401	WEATHERHEAD AT XFMR T-13R (POLE #13R)	BACK PRESS. CNTRL. BLDG COMBO XFMR/PNLBRD LP-2	3"	401P	BACK PRESS.CNTRL.BLDG.CONDUITS
C402	BACK PRESS. CNTRL. BLDG COMBO XFMR/PNLBRD LP-2	DISCONNECT SWITCH DSW-3	¾"	402P	
C403	DISCONNECT SWITCH DSW-3	UNIT HEATER UH-3	¾"	403P	
C404	BACK PRESS. CNTRL. BLDG COMBO XFMR/PNLBRD LP-2	EXHAUST FAN EF-2 HAND-OFF-AUTO SWITCH	¾"	404P, 405P, 406P, 407P	
C405	TEE IN C404	EXHAUST FAN EF-2 MOTOR	¾"	405P	
C406	TEE IN C404	EXHAUST FAN EF-2 MOTORIZED DAMPER M-2	¾"	406P, 407P	
C407	TEE IN C406	EXHAUST FAN EF-2 ADJUSTABLE THERMOSTAT	¾"	407P	

CONDUIT SCHEDULE

CONDUIT NO	FROM	TO	COND SIZE	CONTAINS CABLE(S)	REMARKS
C572	WEATHERHEAD AT POLE #28	PCSVH1	1½"	CONTAINS PCS COMM. CABLES	VALVE HOUSE CONDUITS
C573	TEE IN C307	UNIT HEATER UH-1 HAND-OFF-AUTO SWITCH	¾"	573C	
C574	TEE IN C309	UNIT HEATER UH-2 HAND-OFF-AUTO SWITCH	¾"	574C	
C575	PCSVH1	FLOW INDICATING TRANSMITTER FIT001	1½"	1001C - 4C, 6C, 8C 1020I, 23I, 24I	
C576	TEE IN C575	FLOW INDICATING TRANSMITTER FIT003	¾"	1024I	
C577	TEE IN C575	POSITION SWITCHES ZSH025 & ZSL025	¾"	1004C	
C578	TEE IN C575	POSITION SWITCHES ZSH030 & ZSL030	¾"	1008C	
C579	TEE IN C575	PRESSURE INDICATING TRANSMITTER PIT002	¾"	1023I	
C580	TEE IN C575	POSITION SWITCHES ZSH022 & ZSL022	¾"	1001C	
C581	TEE IN C575	POSITION SWITCHES ZSH024 & ZSL024	¾"	1003C	
C582	TEE IN C575	POSITION SWITCHES ZSH023 & ZSL023	¾"	1002C	
C583	TEE IN C575	POSITION SWITCHES ZSH027 & ZSL027	¾"	1006C	
C584	TEE IN C575	FLOW CONTROL VALVE FCV001	¾"	1009C, 1027I	
C585	FLOW INDICATING TRANSMITTER FIT001	FLOW ELEMENT (TRANSMITTER) FE001A	¾"	1021I, 1022I	
C586	TEE IN C585	FLOW ELEMENT (RECIEVER) FE001B	¾"	1022I	
C587	FLOW INDICATING TRANSMITTER FIT003	FLOW ELEMENT (TRANSMITTER) FE003A	¾"	1025I	
C588	TEE IN C587	FLOW ELEMENT (RECIEVER) FE003B	¾"	1026I	
C601	UNIT HEATER UH-3 HAND-OFF-AUTO SWITCH	UNIT HEATER UH-3	¾"	601C	BACK PRESS.CNTRL.BLDG.CONDUITS
C1323	WEATHERHEAD AT WELL HOUSE #13	PCS-13	1½"	CONTAINS PCS COMM. CABLES	WELL HOUSE 13 CONDUITS NOTE 4

NOTES

1. CONDUIT RIGID GALVANIZED UNLESS OTHERWISE INDICATED.
2. "XX" REPRESENTS THE CORRESPONDING EXTRACTION WELL HOUSE NUMBER.
3. "ZZZ" REPRESENTS THE CORRESPONDING POLE MOUNTED TRANSFORMER NUMBER FROM WHICH CABLE IS CONNECTED TO. SEE DWG # E-00477 SINGLE LINE FOR CLARITY.

INFORMATION ONLY

000005

REF DWG NO.	DRAWING TITLE
95X-5900-X-00203	DRAWING INDEX
95X-5900-E-00245	480/120V POWER, INSTRUMENT, AND LIGHTING PLAN - WELL HOUSE AND VALVE HOUSE
95X-5900-E-00375	480/120V POWER, INSTRUMENT, AND LIGHTING PLAN - BACK PRESSURE CONTROL BUILDING
95X-5900-E-00242	CABLE SCHEDULE
95X-5900-E-00270	CABLE SCHEDULE

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
3	ELECTRICAL WORK REMOVED FROM CONTRACT	WRW	N/A	6/25/97
2	ISSUED FOR DESIGN UPGRADE	TPH	N/A	06/13/97
1	ISSUED IN RESPONSE TO EPA COMMENTS, AND DCNS 25-SF-001/002	RWB	N/A	03/25/96
0	CERTIFIED FOR CONSTRUCTION	RWB	N/A	09/15/95

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

DRAWING TITLE
ELECTRICAL
CONDUIT SCHEDULE

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
B. JASPER	06/15/96	T. FERRELL	09/15/95	J. L. COOPER	08/02/95

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FDF PROJECT NUMBER
R. BRETTIN 09/15/95 (A-E DATE)	N/A (DATE)	SFES-53200

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
CRU5/P0126		WBS 1.1.1.1.5.3.1 00-90701	95X-5900-E-00243	E0010	3

E-878

CABLE SCHEDULE

CABLE NO	FROM	TO	CONDUCTOR NUMBER	SIZE	MATL.	INSUL	FUNCTION	WIRE TERMINATIONS 1	2	3	4	5	6	7	8	9	10	11	12	ROUTING	REF DWG	REMARKS
(2)																						
F1A1-3	FUSED LOAD BREAK SWITCH FLB-41 (POLE #41)	DEADEND TERMINATION @ POLE #56	3-1/C	#2 AWG	ACSR	BARE	13.2KV POWER	F1A1-3 -L1	F1A1-3 -L2	F1A1-3 -L3										POLE #41 TO POLE #56	E-00244	AERIAL CONDUCTOR "SPARROW"
F1A1-4	TAP F1A1-3 @ POLE #46	FUSED CUTOUT FC-46 (POLE #46)	3-1/C	#2 AWG	AL	BARE	13.2KV POWER	F1A1-4 -L1	F1A1-4 -L2	F1A1-4 -L3										POLE #46		
F1A1-5	FUSED CUTOUT FC-46 (POLE #46)	TRANSFORMER T-46 (POLE #46)	3-1/C	#2 AWG	CU	BARE	13.2KV POWER	F1A1-5 -L1	F1A1-5 -L2	F1A1-5 -L3										POLE #46		
F1A1-6	TAP F1A1-3 @ POLE #48	DEADEND TERMINATION @ POLE #49	3-1/C	#2 AWG	ACSR	BARE	13.2KV POWER	F1A1-6 -L1	F1A1-6 -L2	F1A1-6 -L3										POLE #48 TO POLE #49		AERIAL CONDUCTOR "SPARROW"
F1A1-7	TAP F1A1-6 @ POLE #49	FUSED CUTOUT FC-49 (POLE #49)	3-1/C	#2 AWG	AL	BARE	13.2KV POWER	F1A1-7 -L1	F1A1-7 -L2	F1A1-7 -L3										POLE #49		
F1A1-8	FUSED CUTOUT FC-49 (POLE #49)	TRANSFORMER T-49 (POLE #49)	3-1/C	#2 AWG	CU	BARE	13.2KV POWER	F1A1-8 -L1	F1A1-8 -L2	F1A1-8 -L3										POLE #49		
F1A1-9	TAP F1A1-3 @ POLE #51	DEADEND TERMINATION @ POLE #53	3-1/C	#2 AWG	ACSR	BARE	13.2KV POWER	F1A1-9 -L1	F1A1-9 -L2	F1A1-9 -L3										POLE #51 TO POLE #53		AERIAL CONDUCTOR "SPARROW"
F1A1-10	TAP F1A1-9 @ POLE #53	FUSED CUTOUT FC-53 (POLE #53)	3-1/C	#2 AWG	AL	BARE	13.2KV POWER	F1A1-10 -L1	F1A1-10 -L2	F1A1-10 -L3										POLE #53		
F1A1-11	FUSED CUTOUT FC-53 (POLE #53)	TRANSFORMER T-53 (POLE #53)	3-1/C	#2 AWG	CU	BARE	13.2KV POWER	F1A1-11 -L1	F1A1-11 -L2	F1A1-11 -L3										POLE #53		
F1A1-12	TAP F1A1-3 @ POLE #56	FUSED CUTOUT FC-56 (POLE #56)	3-1/C	#2 AWG	AL	BARE	13.2KV POWER	F1A1-12 -L1	F1A1-12 -L2	F1A1-12 -L3										POLE #56		
F1A1-13	FUSED CUTOUT FC-56 (POLE #56)	TRANSFORMER T-56 (POLE #56)	3-1/C	#2 AWG	CU	BARE	13.2KV POWER	F1A1-13 -L1	F1A1-13 -L2	F1A1-13 -L3										POLE #56		
F1A1-14	TAP EXISTING F4A1-4 @ POLE #11R	DEADEND TERMINATION @ POLE #11D	3-1/C	#2 AWG	ACSR	BARE	13.2KV POWER	F1A1-14 -L1	F1A1-14 -L2	F1A1-14 -L3										POLE #11R TO POLE #11D		AERIAL CONDUCTOR "SPARROW"
F1A1-15	TAP F1A1-14 @ POLE #11D	FUSED CUTOUT FC-11D (POLE #11D)	3-1/C	#2 AWG	AL	BARE	13.2KV POWER	F1A1-15 -L1	F1A1-15 -L2	F1A1-15 -L3										POLE #11D		
F1A1-16	FUSED CUTOUT FC-11D (POLE #11D)	TRANSFORMER T-11D (POLE #11D)	3-1/C	#2 AWG	CU	BARE	13.2KV POWER	F1A1-16 -L1	F1A1-16 -L2	F1A1-16 -L3										POLE #11D		
F1A1-17	TAP EXISTING F4A1-8 @ POLE #29	DEADEND TERMINATION @ POLE #29F	3-1/C	#2 AWG	ACSR	BARE	13.2KV POWER	F1A1-17 -L1	F1A1-17 -L2	F1A1-17 -L3										POLE #29 TO POLE #29F		AERIAL CONDUCTOR "SPARROW"
F1A1-18	TAP F1A1-17 @ POLE #29F	FUSED CUTOUT FC-29F (POLE #29F)	3-1/C	#2 AWG	AL	BARE	13.2KV POWER	F1A1-18 -L1	F1A1-18 -L2	F1A1-18 -L3										POLE #29F		
F1A1-19	FUSED CUTOUT FC-29F (POLE #29F)	TRANSFORMER T-29F (POLE #29F)	3-1/C	#2 AWG	CU	BARE	13.2KV POWER	F1A1-19 -L1	F1A1-19 -L2	F1A1-19 -L3										POLE #29F		
XX1P	TRANSFORMER ZZZ	WELL HOUSE DISTRIBUTION PANEL DP-XX	4-1/C	#2 AWG	CU	600V	480V POWER	ZZZ -L1	ZZZ -L2	ZZZ -L3	ZZZ -GND									CXX1	E-00477, E-00245, E-00375	NOTE 4
XX2P	WELL HOUSE DISTRIBUTION PANEL DP-XX	VARIABLE SPEED DRIVE VSD-XX	3-1/C 1-1/C	#2 AWG #8 GND	CU	600V	480V POWER	VSD-XX -L1	VSD-XX -L2	VSD-XX -L3	VSD-XX -GND									CXX2	E-00477, E-00245, E-00375	NOTE 5
XX3P	VARIABLE SPEED DRIVE VSD-XX	EXTRACTION WELL PUMP MOTOR PMP-XX	3-1/C 1-1/C	#2 AWG #8 GND	CU	600V	480V POWER	PMP-XX -L1	PMP-XX -L2	PMP-XX -L3	PMP-XX -GND									CXX3	E-00477, E-00245, E-00375	NOTE 6
XX4P	WELL HOUSE DISTRIBUTION PANEL DP-XX	DISCONNECT SWITCH DSW-XX	4-1/C	#12 AWG	CU	600V	480V POWER	DSW-XX -L1	DSW-XX -L2	DSW-XX -L3	DSW-XX -GND									CXX4	E-00477, E-00245, E-00375	NOTE 7
XX5P	DISCONNECT SWITCH DSW-XX	UNIT HEATER UH-XX	4-1/C	#12 AWG	CU	600V	480V POWER	UH-XX -L1	UH-XX -L2	UH-XX -L3	UH-XX -GND									CXX5	E-00477, E-00245, E-00375	NOTE 8
XX6P	WELL HOUSE DISTRIBUTION PANEL DP-XX	COMBINATION TRANSFORMER/ PANELBOARD LP-XX	4-1/C	#6 AWG	CU	600V	480V POWER	LP-XX -L1	LP-XX -L2	LP-XX -L3	LP-XX -GND									CXX6	E-00477, E-00245, E-00375	NOTE 9
XX7P	COMBINATION TRANSFORMER/ PANELBOARD LP-XX, CKT. 2	INSTRUMENT POWER TO PCS-XX	3-1/C	#12 AWG	CU	600V	120V POWER	L	N	GND										CXX7	E-00245, N-00271	
XX8P	COMBINATION TRANSFORMER/ PANELBOARD LP-XX, CKT. 2	INSTRUMENT POWER TO FITA	3-1/C	#12 AWG	CU	600V	120V POWER	L	N	GND										CXX8	E-00245, N-00271	
XX9P	COMBINATION TRANSFORMER/ PANELBOARD LP-XX, CKT. 6	EXHAUST FAN EF-XX HAND-OFF-AUTO SWITCH	3-1/C	#12 AWG	CU	600V	120V POWER	EF-XX -1	EF-XX -N	EF-XX -GND										CXX9	E-00245, E-00243, E-00238, E-00239	
XX10P	EXHAUST FAN EF-XX HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-XX MOTOR	3-1/C	#12 AWG	CU	600V	120V POWER	EF-XX -3	EF-XX -N	EF-XX -GND										CXX10	E-00245, E-00243, E-00238, E-00239	
XX11P	EXHAUST FAN EF-XX HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-XX MOTORIZED DAMPER M-XX	3-1/C	#12 AWG	CU	600V	120V POWER	M-XX -3	M-XX -N	M-XX -GND										CXX11	E-00245, E-00243, E-00238, E-00239	
XX12P	EXHAUST FAN EF-XX HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-XX ADJUSTABLE THERMOSTAT	2-1/C	#12 AWG	CU	600V	120V POWER	T -2	T -3											CXX12	E-00245, E-00243, E-00238, E-00239	
301P	TRANSFORMER T-29 (POLE #29)	VALVE HOUSE COMBO XFMR/ PNLBRD LP-1	4-1/C	2/0 AWG	CU	600V	480V POWER	LP-1 -L1	LP-1 -L2	LP-1 -L3	LP-1 -GND									POLE #29 TO C301	E-00477, E-00245,	NOTE 10
302P	TAP LINE SIDE OF 70A BRK @ COMBO XFMR/PNLBRD LP-1	CIRCUIT BREAKER CB-1	4-1/C	#6 AWG	CU	600V	480V POWER	CB-1 -L1	CB-1 -L2	CB-1 -L3	CB-1 -GND									C302	E-00235, E-00245	
303P	CIRCUIT BREAKER CB-1	INSTRUMENT POWER TO FCV001	4-1/C	#12 AWG	CU	600V	480V POWER	CB-1 -L1	CB-1 -L2	CB-1 -L3	CB-1 -GND									C303	E-00235, E-00245	
304P	COMBINATION TRANSFORMER/ PANELBOARD LP-1, CKT. 2	INSTRUMENT POWER TO FIT001	3-1/C	#12 AWG	CU	600V	120V POWER	L	N	GND										C304	E-00245, E-00239, N-00272	
305P	COMBINATION TRANSFORMER/ PANELBOARD LP-1, CKT. 4	JUNCTION BOX JB-1	4-1/C	#10 AWG	CU	600V	208V POWER	JB1 -L1	JB1 -L2	JB1 -L3	JB1 -GND									C305	E-00245, E-00239, N-00272	
306P	JUNCTION BOX JB-1	DISCONNECT SWITCH DSW1	4-1/C	#10 AWG	CU	600V	208V POWER	UH-1 -L1	UH-1 -L2	UH-1 -L3	UH-1 -GND									C306	E-00245, E-00239, N-00272	
307P	DISCONNECT SWITCH DSW1	UNIT HEATER UH-1	4-1/C	#10 AWG	CU	600V	208V POWER	UH-1 -L1	UH-1 -L2	UH-1 -L3	UH-1 -GND									C307	E-00245, E-00239, N-00272	
308P	JUNCTION BOX JB-1	DISCONNECT SWITCH DSW2	4-1/C	#10 AWG	CU	600V	208V POWER	UH-2 -L1	UH-2 -L2	UH-2 -L3	UH-2 -GND									C308	E-00245, E-00239, N-00272	
309P	DISCONNECT SWITCH DSW2	UNIT HEATER UH-2	4-1/C	#10 AWG	CU	600V	208V POWER	UH-2 -L1	UH-2 -L2	UH-2 -L3	UH-2 -GND									C309	E-00245, E-00239, N-00272	
310P	COMBINATION TRANSFORMER/ PANELBOARD LP-1, CKT. 6	INSTRUMENT POWER TO FIT003	3-1/C	#12 AWG	CU	600V	120V POWER	L	N	GND										C304, C310	E-00245, E-00239, N-00272	
311P	COMBINATION TRANSFORMER/ PANELBOARD LP-1, CKT. 7	EXHAUST FAN EF-1 HAND-OFF-AUTO SWITCH	3-1/C	#12 AWG	CU	600V	120V POWER	EF-1 -1	EF-1 -N	EF-1 -GND										C311	E-00245, E-00243, E-00238, E-00239	
312P	EXHAUST FAN EF-1 HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-1 MOTOR	3-1/C	#12 AWG	CU	600V	120V POWER	EF-1 -3	EF-1 -N	EF-1 -GND										C311, C312	E-00245, E-00243, E-00238, E-00239	
313P	EXHAUST FAN EF-1 HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-1 MOTORIZED DAMPER M-1	3-1/C	#12 AWG	CU	600V	120V POWER	M-1 -3	M-1 -N	M-1 -GND										C311, C313	E-00245, E-00243, E-00238, E-00239	
314P	EXHAUST FAN EF-1 HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-1 ADJUSTABLE THERMOSTAT	2-1/C	#12 AWG	CU	600V	120V POWER	T -2	T -3											C314	E-00245, E-00243, E-00238, E-00239	
315P	COMBINATION TRANSFORMER/ PANELBOARD LP-1, CKT. 8	INSTRUMENT POWER TO PCSVH1	3-1/C	#12 AWG	CU	600V	120V POWER	L	N	GND										C315	E-00245, E-00239, N-00272	
401P	TRANSFORMER T-12R (POLE #12R)	BACK PRESS. CNTRL. BLDG. COMBO XFMR/PNLBRD LP-2	4-1/C	#4 AWG	CU	600V	480V POWER	LP-2 -L1	LP-2 -L2	LP-2 -L3	LP-2 -GND									POLE 12R TO POLE #13R TO C401	E-00477, E-00245,	NOTE 10
402P	COMBINATION TRANSFORMER/ PANELBOARD LP-2, CKT. 4	DISCONNECT SWITCH DSW3	4-1/C	#10 AWG	CU	600V	208V POWER	UH-3 -L1	UH-3 -L2	UH-3 -L3	UH-3 -GND									C402	E-00375, E-00239, N-00272	
403P	DISCONNECT SWITCH DSW3	UNIT HEATER UH-3	4-1/C	#10 AWG	CU	600V	208V POWER	UH-3 -L1	UH-3 -L2	UH-3 -L3	UH-3 -GND									C403	E-00375, E-00239, N-00272	
404P	COMBINATION TRANSFORMER/ PANELBOARD LP-2, CKT. 7	EXHAUST FAN EF-2 HAND-OFF-AUTO SWITCH	3-1/C	#12 AWG	CU	600V	120V POWER	EF-2 -1	EF-2 -N	EF-2 -GND										C404	E-00245, E-00243, E-00238, E-00239	
405P	EXHAUST FAN EF-2 HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-2 MOTOR	3-1/C	#12 AWG	CU	600V	120V POWER	EF-2 -3	EF-2 -N	EF-2 -GND										C404, C405	E-00245, E-00243, E-00238, E-00239	
406P	EXHAUST FAN EF-2 HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-2 MOTORIZED DAMPER M-2	3-1/C	#12 AWG	CU	600V	120V POWER	M-2 -3	M-2 -N	M-2 -GND										C404, C406	E-00245, E-00243, E-00238, E-00239	
407P	EXHAUST FAN EF-2 HAND-OFF-AUTO SWITCH	EXHAUST FAN EF-2 ADJUSTABLE THERMOSTAT	2-1/C	#12 AWG	CU	600V	120V POWER	T -2	T -3											C404, C406, C407	E-00245, E-00243, E-00238, E-00239	

NOTES

1. "XX" REPRESENTS THE CORRESPONDING EXTRACTION WELL HOUSE NUMBER.
2. "ZZZ" REPRESENTS THE CORRESPONDING POLE MOUNTED TRANSFORMER NUMBER FROM WHICH CABLE IS CONNECTED TO. SEE E000477 SINGLE LINE FOR CLARITY.

(2)

4. CABLE ROUTING FROM XFMR SECONDARY TO WEATHERHEAD BELOW XFMR, TO CONDUIT UNDERGROUND, TO DISTRIBUTION PANEL. CABLE NO. REPRESENTS THE FOLLOWING CABLE NUMBERS: 141P, 151P, 161P, 171P, 181P, 191P, 201P, 211P, AND 221P. FOR CABLE NO. 131P, CABLE ROUTING FROM XFMR SECONDARY VIA ½" MESSENGER TO POLE #36A, TO WEATHERHEAD AT POLE #36A, TO UNDERGROUND CONDUIT, TO DISTRIBUTION PANEL.
5. CABLE NO. REPRESENTS THE FOLLOWING CABLE NUMBERS: 132P, 142P, 152P, 162P, 172P, 182P, 192P, 202P, 212P, AND 222P.
6. CABLE NO. REPRESENTS THE FOLLOWING CABLE NUMBERS: 133P, 143P, 153P, 163P, 173P, 183P, 193P, 203P, 213P, AND 223P.
7. CABLE NO. REPRESENTS THE FOLLOWING CABLE NUMBERS: 134P, 144P, 154P, 164P, 174P, 184P, 194P, 204P, 214P, AND 224P.
8. CABLE NO. REPRESENTS THE FOLLOWING CABLE NUMBERS: 135P, 145P, 155P, 165P, 175P, 185P, 195P, 205P, 215P, AND 225P.
9. CABLE NO. REPRESENTS THE FOLLOWING CABLE NUMBERS: 136P, 146P, 156P, 166P, 176P, 186P, 196P, 206P, 216P, AND 226P.
10. CABLE ROUTING FROM XFMR SECONDARY TO WEATHERHEAD BELOW XFMR TO CONDUIT UNDERGROUND TO COMBO XFMR/ PNLBRD.

INFORMATION ONLY

000004

REF DWG NO.	DRAWING TITLE
95X-5900-X-00203	DRAWING INDEX
95X-5900-E-00477	SINGLE LINE DIAGRAM - 13.2 KV FEEDERS
95X-5900-E-00235	SINGLE LINE DIAGRAM - 480V FEEDERS
95X-5900-E-00244	13.2 KV DISTRIBUTION & COMMUNICATION PLAN
95X-5900-E-00245	480/120V POWER, INSTRUMENT, AND LIGHTING PLAN - WELL HOUSE AND VALVE HOUSE
95X-5900-E-00375	480/120V POWER, INSTRUMENT, AND LIGHTING PLAN - BACK PRESSURE CONTROL BUILDING
95X-5900-E-00243	CONDUIT SCHEDULE
95X-5900-E-00240	SECTION AND DETAILS

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
2	ELECTRICAL WORK REMOVED FROM CONTRACT	[initials]	N/A	6/25/97
1	ISSUED FOR DESIGN UPGRADE	TPH	N/A	06/13/97
0	CERTIFIED FOR CONSTRUCTION	RWB	N/A	09/15/95

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

DRAWING TITLE
ELECTRICAL CABLE SCHEDULE

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
B. JASPER	06/19/95	T. FERRELL	09/15/95	J. L. COOPER	08/02/95

PLANT/BLDG. NO. | FLOOR | SCALE: NONE | CLASS

SUBMITTED FOR APPROVAL: R. BRETTIN 09/15/95 (A-E, DATE) | FERMCO CRU APPROVAL: N/A (DATE) | FDF PROJECT NUMBER: SFES-53200

PREPARED UNDER PARSONS PROJECT ORDER NUMBER: CRU5/PO126

DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
	WBS 1.1.1.1.5.3.1 00-90701	95X-5900-E-00242	E0008	2

E-878

POWER POLE COORDINATES (NAD83)

POLE NO.	POLE HEIGHT	POLE STATUS	NORTH COORDINATES	EAST COORDINATES	ELEVATION NO.	SHEET NO.	GUYING LOCATIONS: STATIC LINE	13.2KV LINE	480V LINE	COMM. LINE	GUYING TYPE: BISSECTOR	DEADEND
11R	55'	165	477,513.27	1,348,307.75	E1	E0013						
11A	55'	N	477,571.00	1,348,499.00	E2	E0014	X	X		X	X	
11B	55'	N	477,666.00	1,348,624.00	E3	E0014						
11C	55'	N	477,762.00	1,348,750.00	E3	E0014						
11D	55'	N	477,872.00	1,348,862.00	E4	E0014	X	X		X		X
12R	55'	165	477,566.91	1,348,327.04	E21	E0017						
13R	55'	165	477,696.77	1,348,373.72	E22	E0017						
28	55'	165	477,151.13	1,348,285.74	E6	E0015						
29	55'	165	477,065.25	1,348,372.25	E5	E0014						
29B	55'	N	476,924.00	1,348,514.00	E24	E0017						
29C	55'	N	476,866.00	1,348,572.00	E3	E0014						
29D	55'	N	476,783.00	1,348,655.00	E3	E0014						
29E	55'	N	476,642.00	1,348,797.00	E2	E0014	X	X		X	X	
29F	55'	N	476,454.00	1,348,809.00	E4	E0014	X	X		X		X
31	55'	165	477,123.00	1,347,841.00	E20	E0014				X	X	
36	55'	165	477,607.00	1,347,593.00	E19	E0014				X		X
36A	35'	N	477,657.00	1,347,600.00	E7	E0015						
41	55'	165	478,896.00	1,349,557.00	E11	E0016						
42	55'	N	478,712.00	1,349,575.00	E3	E0014						
43	55'	N	478,527.00	1,349,570.00	E3	E0014						
44	55'	N	478,343.00	1,349,549.00	E3	E0014						
45	55'	N	478,161.00	1,349,515.00	E3	E0014						
46	55'	N	477,979.00	1,349,481.00	E12	E0016						
47	55'	N	477,808.00	1,349,449.00	E3	E0014						
48	55'	N	477,654.00	1,349,420.00	E23	E0017	X	X		X		X
49	55'	N	477,684.00	1,349,270.00	E4	E0014	X	X		X		X
50	55'	N	477,491.00	1,349,388.00	E3	E0014						
51	55'	N	477,328.00	1,349,356.00	E23	E0017	X	X		X		X
52	55'	N	477,352.00	1,349,201.00	E3	E0014						
53	55'	N	477,375.00	1,349,046.00	E4	E0014	X	X		X		X
54	55'	N	477,146.00	1,349,320.00	E2	E0014	X	X		X	X	
55	55'	N	477,037.00	1,349,170.00	E2	E0014	X	X		X	X	
56	55'	N	477,035.00	1,349,028.00	E4	E0014	X	X		X		X

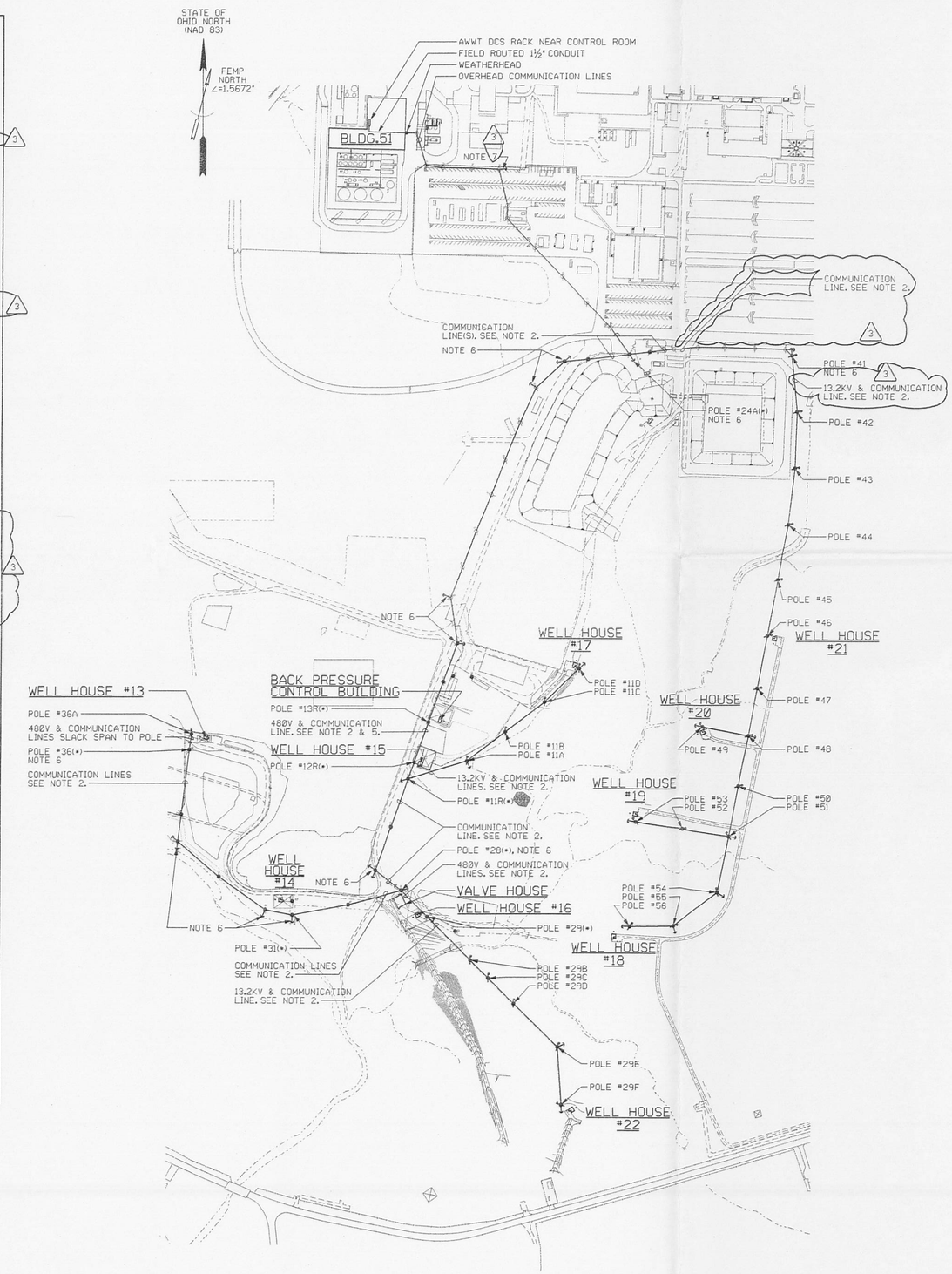
3

3

3

"POLE STATUS" CODES

E = EXISTING POLE
N = NEW POLE IN NEW LOCATION, ASSIGNED POLE NUMBER
RL = NEW POLE/NEW LOCATION ASSIGNED EXISTING POLE NUMBER + "R", OLD POLE REMOVED AFTER INSTALLATION OF NEW POLE
RP = NEW POLE REPLACING EXISTING POLE AT SAME LOCATION, ASSIGNED EXISTING POLE NUMBER + "R"
RP* = NEW POLE REPLACING EXISTING POLE AT SAME LOCATION, ASSIGNED POLE NUMBER (EXISTING POLE NUMBER UNKNOWN)
165 = POLE INSTALLED UNDER PROJECT "SOUTHERN WASTE UNITS" PROJECT # P0165. REQUIRES ADDITIONAL EQUIPMENT INSTALLATION.



NOTES

1. EQUIPMENT/POLE NUMBER(S) FOLLOWED BY "(*)" ARE EXISTING OR ORIGINATE THEIR NUMBERS FROM THE "WASTE UNITS REMEDIATION - SOUTHERN WASTE UNITS - SITE PREPARATION PACKAGE" AND ARE TO BE CONSIDERED EXISTING AT THE TIME THIS JOB IS CONSTRUCTED.
2. COMMUNICATIONS FROM AWWT TO WELL HOUSES -- FIELD ROUTE TWO FIBER OPTIC CABLES IN CONDUIT FROM THE AWWT DCS RACK TO WEATHERHEAD OUTSIDE BUILDING 51, OVERHEAD (AT A MINIMUM OF 22'-0" ELEVATION) USING EXISTING UNMARKED POLES TO POLE #24A. ROUTE ONE FIBER OPTIC CABLE OVERHEAD FROM POLE #24A TO WELL HOUSE EW-22 (SEE CABLE SCHEDULE - DWG #E-00270 NOTES 5 THRU 11 FOR DETAILED ROUTING). ROUTE THE SECOND FIBER OPTIC CABLE OVERHEAD TO WELL HOUSE #18 (SEE CABLE SCHEDULE , NOTES 12 THRU 15 FOR DETAILED ROUTING). SEE DWG # N-00273 FOR THE CONTROL SYSTEM ARCHITECHTURE.
3. MAINTAIN CONDUCTOR CLEARANCES ON OVERHEAD SERVICE IN ACCORDANCE WITH ANSI C2, NATIONAL ELECTRICAL SAFETY CODE.
4. FOR LOCATION OF SWITCHGEAR AND FEEDER ROUTING TO POLE #40(*), SEE ELEVATION E5 ON DWG # E-00240.
5. ROUTE 480V, 3 PHASE SERVICE FROM TRANSFORMER T-12R(*) ON POLE #12R(*) OVERHEAD TO POLE #13R(*). FROM POLE #13R(*), ROUTE SERVICE UNDERGROUND CONDUIT TO COMBINATION TRANSFORMER/LIGHTING PANELBOARD LP-2 LOCATED IN THE BACK PRESSURE CONTROL BUILDING.
6. CONTRACTOR TO CHECK TENSION ON EXISTING COMMUNICATION LINE GUYING AND ADJUST IF NECESSARY UPON INSTALLATION OF NEW COMMUNICATION LINE(S). (3)
7. ADDITIONAL GUYING FOR COMMUNICATION(S) LINE ONLY, ON EXISTING POLES. SEE ELEVATION E14 DWG # E-00240 FOR GUY HARDWARE.

INFORMATION ONLY

000003

REF DWG NO.	DRAWING TITLE
95X-5900-X-00203	DRAWING INDEX
95X-5900-E-00248	SYMBOLS AND LEGEND
95X-5900-E-00477	SINGLE LINE DIAGRAM - 13.2 KV FEEDERS
95X-5900-E-00245	480/120V POWER, INSTRUMENT, AND LIGHTING PLAN - WELL HOUSE AND VALVE HOUSE
95X-5900-E-00375	480/120V POWER, INSTRUMENT, AND LIGHTING PLAN - BACK PRESSURE CONTROL BUILDING
95X-5900-E-00270	CABLE SCHEDULE
95X-5900-E-00240	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00240	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00246	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00276	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-E-00277	ELEVATIONS, SECTIONS, AND DETAILS
95X-5900-N-00273	CONTROL SYSTEM ARCHITECTURE

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
3	ELECTRICAL WORK REMOVED FROM CONTRACT	WJW	N/A	6/24/97
2	ISSUED FOR DESIGN UPGRADE	TPH	N/A	06/13/97
1	ISSUED IN RESPONSE TO EPA COMMENTS, AND DCNS 25-SF-001/002	RWB	N/A	03/26/96
0	CERTIFIED FOR CONSTRUCTION	RWB	N/A	09/15/95

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

DRAWING TITLE
ELECTRICAL
13.2 KV DISTRIBUTION & COMMUNICATIONS PLAN

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
J. ALLFORD	06/14/95	T. FERRELL	09/15/96	J. L. COOPER	08/02/95

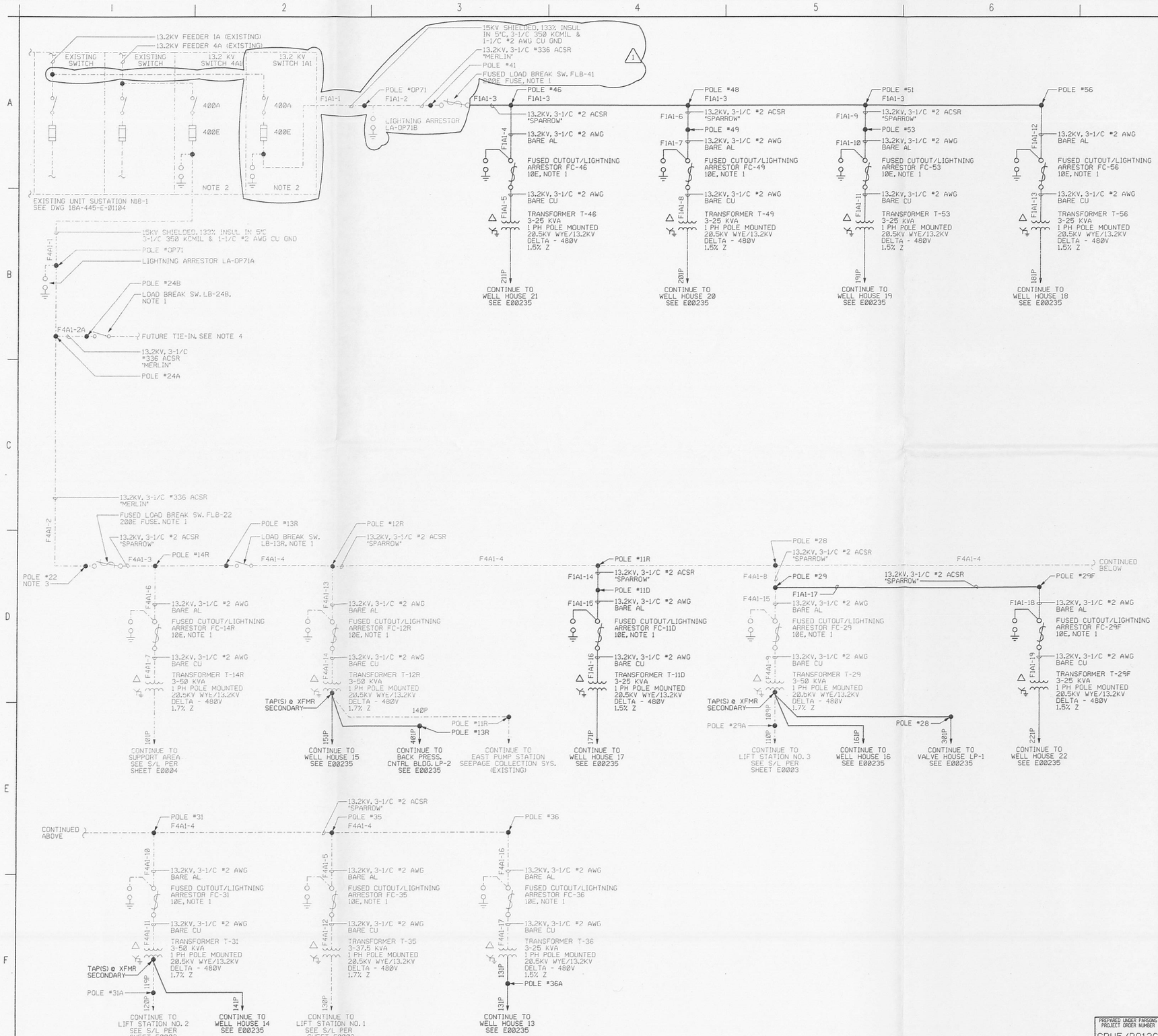
PLANT/BLDG NO.	FLOOR	SCALE	CLASS
		1' = 150'	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FDF PROJECT NUMBER
R. BRETTIN 09/15/95	N/A	SFES-53200

A-E DATE — FERMCO DATE

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
CRU5/P0126		WBS 1.1.1.1.5.3.1 00-90701	95X-5900-E-00244	E0005	3

E-878



NOTES

1. ALL SWITCHES AND CUTOUTS ARE 13.2KV, 110KVBIL, 200A, 12KA SYMMETRICAL INTERRUPTING, UNLESS NOTED.
2. PRIMARY SWITCH AND CONNECTION KIT TO EXISTING SUBSTATION NI8-1, AS SPECIFIED. CABLE AND BUS CONNECTIONS SHALL BE OF SUFFICIENT LENGTH TO ALLOW RECONNECTION IN THE FUTURE TO REVERSE LINE AND LOAD SIDE OF SWITCH, I.E. CABLE CONNECTION WILL BE TO LOAD SIDE.
3. INTERMEDIATE POLES PROVIDING SUPPORT OF OVERHEAD CONDUCTORS ONLY (NO TAPS OR SERVICE DROPS HAVE BEEN OMITTED FOR CLARITY).
4. FOR SOUTH PLUME INJECTION WATER SUPPLY, FOR SINGLE LINE SEE DWG #95X-5900-E-00455.

000002

REF DWG NO.	DRAWING TITLE
95X-5900-X-00203	DRAWING INDEX
95X-5900-E-00248	SYMBOLS AND LEGEND
95X-5900-E-00235	SINGLE LINE DIAGRAM - 480V FEEDERS
95X-5900-E-00244	13.2 KV DISTRIBUTION & COMMUNICATION PLAN
95X-5900-E-00242	CABLE SCHEDULE

LEGEND:

INFORMATION SHOWN IN "LIGHT LINE WEIGHT" REPRESENTS WORK TO BE COMPLETED UNDER "WASTE UNITS REMEDIATION PROJECT - SOUTHERN WASTE UNITS - SITE PREPARATION PACKAGE"

INFORMATION ONLY

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
1	ELECTRICAL REMOVED FROM CONTRACT	WWL	N/A	6/25/97
0	ISSUED FOR DESIGN UPGRADE, CERTIFIED FOR CONSTRUCTION	WFU FOR TPH	N/A	06/13/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

DRAWING TITLE
ELECTRICAL
SINGLE LINE DIAGRAM
13.2 KV FEEDERS

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
L. N. HAGAMAN	05/19/97	J. L. COOPER	06/13/97	J. COOPER	06/04/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL (A-E DATE)	FERMCO CRU APPROVAL	FDF PROJECT NUMBER
BILL UBBES FOR TIM HILES 06/16/97	N/A	SFES-53200

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	TEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
CRU5/P0126		WBS 1.1.1.1.5.3.1 00-90701	95X-5900-E-00477	E0003	1

INDEX OF DRAWINGS

INDEX CODE NO.	DRAWING NO.	SHEET NO.	REVISION NO.	DRAWING TITLE	REMARKS
	95X-5900-X-00202	X0001	1	PROJECT TITLE SHEET	
	95X-5900-X-00203	X0002	3 3	DRAWING INDEX	
	95X-5900-X-00204	X0003	2	LEGEND AND SYMBOLS	
	95X-5900-G-00266	G0001	2	CIVIL - INDEX MAP AND OVERALL SITE PLAN	
	95X-5900-G-00251	G0002	2	CIVIL - GRADING/SITE/UTILITY PLAN - 1 OF 5	
	95X-5900-G-00252	G0003	2	CIVIL - GRADING/SITE/UTILITY PLAN - 2 OF 5	
	95X-5900-G-00253	G0004	2	CIVIL - GRADING/SITE/UTILITY PLAN - 3 OF 5	
	95X-5900-G-00254	G0005	2	CIVIL - GRADING/SITE/UTILITY PLAN - 4 OF 5	
	95X-5900-G-00269	G0006	2	CIVIL - GRADING/SITE/UTILITY PLAN - 5 OF 5	
	95X-5900-G-00265	G0007	2	CIVIL - ENLARGED GRADING/SITE/UTILITY PLANS	
	95X-5900-P-00255	G0008	2	CIVIL - PIPE PROFILE - 1 OF 4	
	95X-5900-P-00256	G0009	2	CIVIL - PIPE PROFILE - 2 OF 4	
	95X-5900-P-00257	G0010	2	CIVIL - PIPE PROFILES - 3 OF 4	
	~~95X-5900-P-00258~~	~~G0011~~	~~2~~	~~CIVIL - PIPE PROFILES - SHEET 4 OF 4~~	THIS DRAWING IS VOID.
	~~95X-5900-G-00260~~	~~G0012~~	~~1~~	~~CIVIL - ROAD 18 PROFILE - SHEET 1 OF 3~~	THIS DRAWING IS VOID.
	~~95X-5900-G-00261~~	~~G0013~~	~~1~~	~~CIVIL - ROAD 17 AND ROAD 20 PROFILES - SHEET 2 OF 3~~	THIS DRAWING IS VOID.
	95X-5900-G-00262	G0014	1	CIVIL - ROAD 17, ROAD 22 AND SFVH ROAD PROFILES	
	95X-5900-G-00219	G0015	2	CIVIL - DETAILS - 1 OF 3	
	95X-5900-G-00220	G0016	2	CIVIL - DETAILS - 2 OF 3	
	95X-5900-G-00221	G0017	2	CIVIL - DETAILS - 3 OF 3	
	95X-5900-A-00224	A0001	2	ARCHITECTURAL - PLAN AND ELEVATIONS - WELL HOUSE NO.13 THRU 22	
	95X-5900-A-00225	A0002	1	ARCHITECTURAL - SECTIONS AND DETAILS - WELL HOUSE NO.13 THRU 22	
	~~95X-5900-A-00226~~	~~A0003~~	~~1~~	~~ARCHITECTURAL - PLANS - WELL HOUSE NO.13 AND 14~~	THIS DRAWING IS VOID.
	~~95X-5900-A-00227~~	~~A0004~~	~~2~~	~~ARCHITECTURAL - ELEVATIONS AND SECTION - WELL HOUSE NO.13 AND 14~~	THIS DRAWING IS VOID.
	95X-5900-A-00231	A0005	2	ARCHITECTURAL - SECTIONS AND DETAILS - CONCRETE PIERS	
	95X-5900-A-00228	A0006	2	ARCHITECTURAL - PLAN - VALVE HOUSE	
	95X-5900-A-00229	A0007	2	ARCHITECTURAL - ELEVATIONS - VALVE HOUSE	
	95X-5900-A-00230	A0008	1	ARCHITECTURAL - SECTIONS AND DETAILS - VALVE HOUSE	
	95X-5900-A-00373	A0009	1	ARCHITECTURAL - PLAN, ELEVATIONS, SECTIONS, AND DETAILS - BACK PRESSURE CONTROL BUILDING	
	95X-5900-P-00207	P0001	1	PIPING / PLANT DESIGN - WELL HOUSE PIPING PLAN	
	95X-5900-P-00208	P0002	1	PIPING / PLANT DESIGN - WELL HOUSE PIPING SECTION	
	95X-5900-P-00223	P0003	2	PIPING / PLANT DESIGN - PIPING PLAN - SOUTH FIELD VALVE HOUSE	
	95X-5900-P-00233	P0004	2	PIPING / PLANT DESIGN - PIPING SECTION - SOUTH FIELD VALVE HOUSE	
	95X-5900-P-00250	P0005	1	PIPING / PLANT DESIGN - PIPE SUPPORT DETAILS	
	95X-5900-P-00374	P0006	1	PIPING / PLANT DESIGN - BACK PRESSURE CONTROL BUILDING - PIPING PLAN AND SECTION	
	95X-5900-E-00248	E0001	1	ELECTRICAL - SYMBOLS AND LEGEND	
	95X-5900-E-00249	E0002	1	ELECTRICAL - SYMBOLS AND LEGEND	
	95X-5900-E-00477	E0003	3 1	ELECTRICAL - SINGLE LINE DIAGRAM - 13.2 KV FEEDERS	
	95X-5900-E-00235	E0004	2	ELECTRICAL - SINGLE LINE DIAGRAM - 480V FEEDERS	
	95X-5900-E-00244	E0005	3 3	ELECTRICAL - 13.2 KV DISTRIBUTION & COMMUNICATION PLAN	
	95X-5900-E-00245	E0006	2	ELECTRICAL - 480/120V POWER, INSTRUMENT, AND LIGHTING PLAN - WELL HOUSE AND VALVE HOUSE	
	95X-5900-E-00375	E0007	1	ELECTRICAL - 480/120V POWER, INSTRUMENT, AND LIGHTING PLAN - BACK PRESSURE CONTROL BUILDING	
	95X-5900-E-00242	E0008	3 2	ELECTRICAL - CABLE SCHEDULE	
	95X-5900-E-00270	E0009	2	ELECTRICAL - CABLE SCHEDULE	
	95X-5900-E-00243	E0010	3 3	ELECTRICAL - CONDUIT SCHEDULE	
	95X-5900-E-00238	E0011	2	ELECTRICAL - ELEMENTARY AND INTERCONNECTION DIAGRAM	
	95X-5900-E-00239	E0012	2	ELECTRICAL - PANEL SCHEDULES	
	95X-5900-E-00240	E0013	3 3	ELECTRICAL - ELEVATIONS, SECTIONS, AND DETAILS	
	95X-5900-E-00241	E0014	2	ELECTRICAL - ELEVATIONS, SECTIONS, AND DETAILS	
	95X-5900-E-00246	E0015	3	ELECTRICAL - ELEVATIONS, SECTIONS, AND DETAILS	
	95X-5900-E-00276	E0016	3 3	ELECTRICAL - ELEVATIONS, SECTIONS, AND DETAILS	
	95X-5900-E-00277	E0017	3	ELECTRICAL - ELEVATIONS, SECTIONS, AND DETAILS	
	95X-5900-E-00348	E0018	1	ELECTRICAL - ELEVATIONS, SECTIONS, AND DETAILS	
	95X-5900-E-00481	E0019	0	ELECTRICAL - ELEMENTARY AND INTERCONNECTION DIAGRAM	
	95X-5900-N-00189	N0001	2	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - SYMBOLS AND LEGEND	
	95X-5900-N-00190	N0002	2	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - WELLS EW-18, EW-19, EW-20, & EW-21	
	95X-5900-N-00191	N0003	2	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - WELLS EW-13, -14, -15, -16, -17, & -22	
	95X-5900-N-00475	N0004	0	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - SFES VALVE HOUSE	
	95X-5900-N-00273	N0005	1	INSTRUMENTATION - CONTROL SYSTEM ARCHITECTURE	
	95X-5900-N-00271	N0006	1	INSTRUMENTATION - INTERCONNECTION DIAGRAM - WELL HOUSE DCS PCS	
	95X-5900-N-00272	N0007	1	INSTRUMENTATION - INTERCONNECTION DIAGRAM - VALVE HOUSE DCS PCS	

NOTES

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000001

REF DWG NO.	DRAWING TITLE
95X-5900-X-00202	PROJECT TITLE SHEET
95X-5900-X-00204	LEGEND AND SYMBOLS

FOR INFORMATION ONLY

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
3	ELECTRICAL WORK REMOVED FROM CONTRACT	WRW	N/A	6/13/97
2	ISSUED FOR DESIGN UPGRADE	TPH	N/A	06/13/97
1	ISSUED IN RESPONSE TO EPA COMMENTS, AND DCNS 25-SF-001/002	RWB	N/A	3-25-96
0	CERTIFIED FOR CONSTRUCTION	RWB 9-15-95	N/A	9-15-95

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
PARSONS
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
SOUTH FIELD EXTRACTION SYSTEM

DRAWING TITLE
DRAWING INDEX

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
K.L. RABBITT	05/18/95	ALAN W. SCHATZ	9/12/95	A.W. SCHATZ	08/02/95

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FDF PROJECT NO.
R.W. BRETTIN 9-15-95	N/A	SFES-53200

A-E DATE — DATE

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
CRU5/P0126		WBS 1.1.1.1.5.3 00-90701	95X-5900-X-00203	X0002	3