4556 006

CONSTRUCTION QUALITY ASSURANCE
FINAL REPORT

ON-SITE DISPOSAL FACILITY
PHASE III CELL 1
FINAL COVER CONSTRUCTION

United States Department of Energy
Fernald Environmental Management Project
Fernald, Ohio

prepared by

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under

Fluor Fernald, Inc.
Contract No. 95PS005028
Document No. 20103-CA-0001

REVISION 0
VOLUME VI of VI
MAY 2002

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VOLUME VI of VI
MAY 2002

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APPENDIX Q

HDPE PIPE TEST LOGS

BUTT FUSION JOINING

GEOSYNTEC CONSULTANTS

FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 4.1

DESCRIPTION: Phase III YEAR: 2002

CONTRACTOR: DeBrew / IT Corp

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☒ CARRIER: ☒ OTHER: ☐

PIPE DIAMETER: 6 in (Facing PSI 50) SDR: 11 bin / 10 JAN 8

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE (165) WELDING	GAUGE PRESSURE (165) COOL DOWN	PLATE TEMPERATURE (F)	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/ FAIL	QA ID
Test ① 1-Y	7/JAN	M/H	440	165 1050	.50	500°	✓ Time comp 0910	1/4	P	DLE
6-5 6R To 6-3	7/JAN	M/H	440	165 1109	.50	500°	✓ Time comp 1100	1/4	P	DLE
6-3 To 1-Y 6-2 To 1-Y	7 JAN	M/H	440	165 1305	.50	500°	✓ 1315 comp	1/4	P	DLE
	7 JAN	M/H	440	165 1324	.50	500°	✓ 1336 comp	1/4	P	DLE
T-F To 6-4	7 JAN	M/H	440	165 1500	.50	500°	1520 comp	1/4	P	DLE
T-F To 6-2	7 JAN	M/H	440	165 1538	.50	500°	1542 comp	1/4	P	DLE
① 1-B 1-T	8 JAN	M/H	440	435 0830	.50	~~500°~~	✓ 0840 comp	1/4	P	DLE
② T-1 10-1-P	8 JAN	M/H	440	435 0837	.50	0952 500°	0956 ✓ comp	1/4	P	DLE
10-1 1-T	8 JAN	M/H	440	435 1005	.50	500°	1015 comp	1/4	P	DLE
	8 JAN	M/H	440	435 1015	.50	500°	1025 comp	1/4	P	DLE
	8 JAN	M/H	440	435 1119	.50	500°	1130 comp	1/4	P	DLE
Test Cap 6 in Flange To 6-5	9 JAN	BB	440	165 0815	.250	500°	0820 comp	1/4	P	DLE
② 6-5 6-6	9 JAN	BB	440	165 0823	.250	500°	0829 comp	1/4	P	DLE
6-6 6-6-A	9 JAN	BB	440	165 0835	.250	500°	0941 comp	1/4	P	DLE
Flange 1-P 6-1-A	9 JAN	BB	440	165 0942	.250	500°	0950 comp	1/4	P	DLE
6-BU-1 EB-6-1	9 JAN	BB	440	165 1005	.250	500°	1010 comp	1/4	P	DLE
6-BU-2 5-P-A	9 JAN	BB	440	165 1021	.250	500°	1023 comp	1/4	P	DLE
5-P-B 6-T-1	9 JAN	BB	440	165 1058	.250	500°	1108 comp	1/4	P	DLE
6-T-1	9 JAN	BB	440	165 1110	.250	500°	1114 comp	1/4	P	DLE
	9 JAN	BB	440	165 1125	.250	500°	1130 comp	1/4	P	DLE
	9 JAN	BB	440	165 1255	.250	500°	1310 comp	1/4	P	DLE

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GEOSYNTEC CONSULTANTS

FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 4.1

DESCRIPTION: Phase III YEAR: 2002

CONTRACTOR:

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☐ CARRIER: ☐ OTHER: ☒

PIPE DIAMETER: SDR: 11 Monitoring Well PeRS. Pipe

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE ( ) WELDING	GAUGE PRESSURE ( ) COOL DOWN	PLATE TEMPERATURE (F)	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/ FAIL	QA ID
6 T-1 / 1-P-A	9 5 AM	BB	440	1320 hrs / 165	.25	500°	1330 hr	1/4	P	DLE
EB-6-1 / 5-P-A	9 5 AM	BB	440	1338 / 165	.25	500°	1359 hr Comp / Comp	1/4	P	DLE
6-2 To 6-2-1-A	9 5 AM	BB	440	1540 / 165	.25	500°	1555 Comp	1/4	P	DLE

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FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG

10 in @ 435° - @ 500° / 6 in 165° at 500°

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 4.1

DESCRIPTION: Phase III YEAR: 2002

CONTRACTOR: DeBra / IT Corp

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☐ CARRIER: ☐ OTHER: ☑

PIPE DIAMETER: SDR: VH-4 Montana Well Assy

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE ( ) WELDING	GAUGE PRESSURE ( ) COOL DOWN	PLATE TEMPERATURE (F)	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/ FAIL	QA ID
① Coupon ①	14 JAN	MH	440	0759 165°	.25	0814 500°	✓	1/4	P	DLE
2 Flange 6-1-C	14 JAN	MH	440	0838 165°	.25	0845 500°	✓	1/4	P	DLE
6-7 6-2-2	14 JAN	MH	440	0948 165°	.25	1000 500°	✓	1/4	P	DLE
6-5 Pots	14 JAN	MH	440	1420 165	.25	1435 500	✓	1/4	P	DLE
Coupon	15 JAN	MH	440	0957 165°	.25	1011 500°	✓	1/4	P	DLE
7-A 6-2-Y	15 JAN	MH	440	1030 165°	.25	1040 500°	✓	1/4	P	DLE
2-Y 6-1-C	15 JAN	MH	440	1043 165°	.25	1053 500°	✓	1/4	P	DLE
6-7-B 6-2-Y	15 JAN	MH	440	1100 165°	.25	1113 500°	✓	1/4	P	DLE
6-7B Flange	15 JAN	MH	440	1224 165°	.25	1138 500°	✓	1/4	P	DLE
Test Coupon END CAP	15 JAN	BB	440	1505 435°	.25	1521 500°	✓	1/4	P	DLE
10-1-D	15 JAN	BB	440	1524 435°	.25	1530 500°	✓	1/4	P	DLE
10-1-O	15 JAN	BB	440	1534 435°	.25	1544 500°	✓	1/4	P	DLE
10-T-2 10-1-C	15 JAN	BB	440	1548 435°	.25	1600 500°	✓	1/4	P	DLE
10-T-2 Flange 10-1-C	15 JAN	BB	440	1602 435°	.25	1620 500°	✓	1/4	P	DLE
Test Coupon 10 in	16 JAN									
① 10-1-C	16 JAN	MH	440	0826 435°	.25	0847 500°	✓	1/4	P	DLE
② 10-T-2	16 JAN	MH	440	930 435°	.25	1000 500°	✓	1/4	P	DLE
③ 10-RQR 10-2-T	16 JAN	MH	440	1029 435°	.25	1040 500°	✓	1/4	P	DLE
10-2-T 10-1-C Bent	16 JAN	MH	440	1446 435°	.25	1501 500°	✓	1/4	P	DLE
10-1-C To Bent	16 JAN	MH	440	1510 435°	.25	1522 500°	✓	1/4		

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FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG 10 in @ 435° @ 500°/ 6 in 165° @ 500°

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 4.1

DESCRIPTION: Phase III YEAR: 2002

CONTRACTOR: DeBRA / IT CORP.

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☐ CARRIER: ☐ OTHER: ☒

PIPE DIAMETER: 6 in and 10 in SDR: 11 VH-4 Monitoring Well Assy.

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE ( ) 2 last time WELDING	COOL DOWN	PLATE TEMPERATURE (F) comp	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/ FAIL	QA ID
(1) Test coupon 6-7-A / 6-7-B	17 JAN	MH	440	0815 165	.25	0835 500°	✓	1/4	P	DLE
(2) 6-7-B / 6-8	17 JAN	MH	440	0852 165	.25	0900 500°	✓	1/4	P	DLE
(3) 6-8 / 6-9	17 JAN	MH	440	0943 165	.25	0952 500°	✓	1/4	P	DLE
(4) 6-9 / 6-10	17 JAN	MH	440	1020 165°	.25	1032 500°	✓	1/4	P	DLE
(5) 6-10 / 6-8	17 JAN	MH	440	1038 165°	.25	1052 500°	✓	1/4	P	DLE
(6) 6-8 / 6-P-A	17 JAN	MH	440	1117 165°	.25	1135 500°	✓	1/4	P	DLE
6-P-A / 6-P-B	17 JAN	MH	440	1210 165°	.25	1320 500°	✓	1/4	P	DLE
6-P-B / 6-2-T	17 JAN	MH	440	1322 165°	.25	1330 500°	✓	1/4	P	DLE
7-P / 6-2-T	17 JAN	MH	440	1330 165°	.25	1340 500°	✓	1/4	P	DLE
7-P-B / 6-BL-3	17 JAN	MH	440	1343 165°	.25	1400 500°	✓	1/4	P	DLE
6P-A / 6-EB-2	17 JAN	MH	440	1430 165°	.25	1509 500°	✓	1/4	P	DLE
6-2T / 7-P-B	17 JAN	MH	440	1548 165°	.25	1605 500°	✓	1/4	P	DLE
				↓	18 JAN	2002 ↓				
Test coupon 6-9 / 6-8	18 JAN	MH	440	0825 165°	.25	0835 500°	✓	1/4	P	DLE
6-8 / 6-10	18 JAN	MH	440	0900 165°	.25	0915 500°	✓	1/4	P	DLE
6-10 / [illegible]	18 JAN	MH	440	1050 165°	.25	1102 500°	✓	1/4	P	DLE
					22 JAN					
Test coupon 11-A / 10-1-A	22 JAN	MH	440	0802 435	.25	0822 500°	✓	1/4	P	DLE
	22 JAN	MH	440	1040 435	.25	1050 500				

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FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG

10 in @ 435 PSI / 6 in 11" 165 PSI @

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 4.1

DESCRIPTION: Phase III YEAR: 2002

CONTRACTOR: De Bra / IT Corp

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☒ CARRIER: ☒ OTHER: ☐

PIPE DIAMETER: SDR: 11 Leach Action of V14-44

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE ( ) WELDING (start time)	COOL DOWN	PLATE TEMPERATURE (F) Fusion Temp	Time	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/ FAIL	QA ID
10 in 1	24 JAN	MH	440	0810 165 psi	.125	0829	500	✓	1/4	P	DLE
10 in 2	24 JAN	MH	440	1105 435	.25	1130	420	✓	1/4	P	DLE
change 6 in											
11-B 3	24 JAN	MH	440	1248 165 psi	.125	1310	420°	DLE	1/4	P	DLE
11-B 12 4	24 JAN	MH	440	1333 165 psi	.25		425° 420°	✓ DLE	1/4 1/4	P	DLE
12 To 13 5	24 JAN	MH	440	1433 435	.25		422	DLE	1/4	P	
13				165	.125		421				
change 6"											
11B 3	24 JAN	MH	440	1248 165	.125	1310	420°	✓	1/4	P	DLE
6 in 11-B 12 4	24 JAN	MH	440	1333 165	.125	1348	420	✓	1/4	P	DLE
10 in 11B 12 5	24 JAN	MH	440	1350 435	.125	1420	420	✓ Split Ring mold	1/4	P	DLE
6 in 12 To 13 6	24 JAN	MH	440	1433 165	.125	1442	420°	✓	1/4	P	DLE
10 in 12 To 13 7	24 JAN	MH	440	1450 435	.125	1503	420°	✓ Split Ring mold	5/16	P	DLE
Flange 6 in → 14 8	24 JAN	MH	440	1520 165	.125	1540	420°	✓	1/4	P	DLE

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FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: 601341 TASK NO.: 4.1

DESCRIPTION: YEAR: ~~2001~~ 2002

CONTRACTOR:

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☐ CARRIER: ☐ OTHER: ☐

PIPE DIAMETER: SDR:

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE ( ) WELDING	GAUGE PRESSURE ( ) COOL DOWN	PLATE TEMPERATURE (°F)	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/ FAIL	QA ID
6in Trial	25 Jan	MH	440	165	(10:40)	420	Accept	1/4	P	CS
10in Trial	25 Jan	MH	440	435	(10:55)	415/410	Accept	1/4	P	CS
13/14	25 Jan	MH	440	165		425	Accept	1/4	P	CS
13/14	25 Jan	MH	440	435		420/425	ACCEPT	1/4	P	CS
6in Trial	28 Jan	MH	~~440~~ 9740440	165	(0843)	420	Accept	1/4	P	CS
10in Trial	28 Jan	MH	9740440	435	(1251)	420	Accept	1/4	P	CS
Test Flange 3 units	28 Jan	MH	9740440	165	(0955)	425	Accept	1/4	P	CS
VH4 RLCS 14 units	28 Jan	MH	9740440	200		420	Accept	1/4	P	CS
VH4-RLCS 3 units	28 Jan	MH	9740440	600		425	Accept	1/4	P	CS
Test Flange 3 units	29 Jan	MH	9740440	~~425~~ 465		425	Accept	1/4	P	CS
3/17	29 Jan	MH	9740440	435		420	Accept	1/4	P	CS
3/17 10in Trial	29 Jan	MH	9740440	435	(1316)	420	Accept	1/4	P	CS
6in Trial	29 Jan	MH	9740440	165	(1320)	420	Accept	1/4	P	CS
10in Trial	31 Jan	MH	9740440	435	(1045)	420	Accept	1/4	P	CS
6in Trial	31 Jan	MH	440	165	(1310)	395	Accept	1/4	P	CS
3/17	31 Jan	MH	440	165		420	Accept	1/4	P	CS
3/17	31 Jan	MH	440	435		420/420	Accept	1/4	P	CS
17/16	31 Jan	MH	440	165		415	Accept	1/4	P	CS
17/16	31 Jan	MH	440	435		405/400	Accept	1/4	P	CS
16/15	31 Jan	MH	440	165		415	Accept	1/4	P	CS
16/15	31 Jan	MH	440	435		395/410	Accept	1/4	P	CS
10/9 trial	1 Feb	MH	440	435		400/425	Accept	1/4	P	CS
6in Trial	1 Feb	MH	440	165	(0846)	405	Accept	1/4	P	CS
Trial	1 Feb	MH	440	165		420	Accept	1/4	P	CS
10/9	1 Feb	MH	440	165		410/420	Accept	1/4	P	CS

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GEOSYNTEC CONSULTANTS

FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 4.1

DESCRIPTION: YEAR: 2001

CONTRACTOR:

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☐ CARRIER: ☐ OTHER: ☐

PIPE DIAMETER: SDR:

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE ( ) WELDING	GAUGE PRESSURE ( ) COOL DOWN	PLATE TEMPERATURE (F)	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/ FAIL	QA ID
9/8	1 Feb	MH	440	165		400	Accept	1/4	P	CL
9/8	1 Feb	MH	440	435		410/415	Accept	1/4	P	CL
8/7	1 Feb	MH	440	165		405	ACCEPT	1/4	P	CL
8/7	1 Feb	MH	440	435		410/415	Accept	1/4	P	CL
10 in Trial	4 Feb	MH	440	435	(0855)	410/420	Accept	1/4	P	CL
6 in Trial	4 Feb	MH	440	165	(0915)	405	Accept	1/4	P	CL
18/19	4 Feb	MH	440	165		410	Accept	1/4	P	CL
19	4 Feb	MH	440	435		400/410	Accept	1/4	P	CL
1/2 LCS-VH-4	5 Feb	MH	440	220*		420	Accept	1/4	P	CL
10 in Trial	5 Feb	MH	440	435	(0840)	405/415	Accept	1/4	P	CL
6 in Trial	5 Feb	MH	440	165	(0910)	420	Accept	1/4	P	CL
7/8 LCS-VH4	5 Feb	MH	440	510*		415/420	Accept	1/4	P	CL
15/16 DS-VH4	6 Feb	MH	440	225*		420	Accept	1/4	P	CL
6 in Trial	6 Feb	MH	440	165	(0820)	400	Accept	1/4	P	CL
10 in Trial	6 Feb	MH	440	435	(0900)	400/405	Accept	1/4	P	CL
15/16 DS-VH4	6 Feb	MH	440	500*		420/425	Accept	1/4	P	CL
10 in Trial	7 Feb	MH	440	435	(0840)	415/420	Accept	1/4	P	CL
6 in Trial	7 Feb	MH	440	165	(0800)	400	Accept	1/4	P	CL
19/20	7 Feb	MH	440	435		405/420	Accept	1/4	P	CL
20/21	7 Feb	MH	440	165		420	Accept	1/4	P	CL
20/21	7 Feb	MH	440	435		410/415	Accept	1/4	P	CL
22/23	7 Feb	MH	440	165		420	Accept	1/4	P	CL
22/23	7 Feb	MH	440	435		410/420	Accept	1/4	P	CL
24	7 Feb	MH	440	165		415	Accept	1/4	P	CL
23/24	7 Feb	MH	440	435		410/420	Accept	1/4	P	CL
24/25	7 Feb	MH	440	165		420	Accept	1/4	P	CL

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COPY TO: *Additional 75 psi required to pull weight of new pipe assembly

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FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 4.1

DESCRIPTION: YEAR: 2001

CONTRACTOR:

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☐ CARRIER: ☐ OTHER: ☐

PIPE DIAMETER: SDR:

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE ( ) WELDING	GAUGE PRESSURE ( ) COOL DOWN	PLATE TEMPERATURE (F)	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/ FAIL	QA ID
24/25	7 Feb	MH	440	435		420/420	~~Accept~~ Accept	1/4	P	CL
6 in Trial	8 Feb	MH	440	165		420	Accept	1/4	P	CL
10 in Trial	8 Feb	MH	440	435		420	Accept	1/4	P	CL

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FLUOR FERNALD, INC.

BUTT FUSION JOINING LOG ~~TRIAL~~

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: ~~G01029~~ G0134 TASK NO.: 4.12

DESCRIPTION: PHASE IV YEAR: ~~2000~~ 2002

CONTRACTOR: DEBRA, FLUOR FERNALD INC.

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☐ CARRIER: ☐ OTHER: ☐

PIPE DIAMETER: SDR:

JOINT NO.	DATE (day/mo)	OPER. ID	MACH. ID	GAUGE PRESSURE (psi) WELDING	GAUGE PRESSURE (psi) COOL DOWN	PLATE TEMPERATURE (°F)	PIPE ALIGNMENT ACCEPT/REJECT	ROLL BACK DIMENSION	PASS/FAIL	QA ID
6" 0730	06 APR	MARK HUBER	SAME AS TRIALS	165	165	500	ACCEPT	1/4"	P	TBC
10" 0800	06 APR	MARK HUBER		435	435	500	ACCEPT	1/4"	P	TBC
← TRIAL WELDS →										
← PRODUCTION WELDING →										
6" LDS TO LDS STUB	06 APR	M.H	SAME	215	215	450	ACCEPT	1/4"	P	TBC
10" " "	06 APR	M.H	SAME	600	600	450	ACCEPT	1/2"	P	TBC
6" RLCS TO STUB	06 APR	MH	SAME	215	215	450	ACCEPT	1/4"	P	TBC
10" RLCS STUB	06 APR	MH	SAME	600	600	450	ACCEPT	1/2"	P	TBC
10-in trial 0849	08 Apr	MH	440	435	435	450	ACCEPT	1/4"	P	CS
6-in Trial 0915	08 Apr	MH	440	165	165	450	ACCEPT	1/4"	P	CS
LDS 6in To VH5	08 Apr	MH	440	200	200	450	ACCEPT	1/4"	P	CS
LDS 10in To VH5	08 Apr	MH	440	300	300	785	ACCEPT	1/4"	P	CS

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PNEUMATIC TESTING RESULTS

QUALITY EVALUATION PLAN

QEP No. _____ Rev. ____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF PRELIMINART PNEUMATIC TESTS

3. Project/Task: CDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS — Date: 1-8-02

6. Reviewed By: MIKE GODBER — Date: 1/08/02

7. NDE Level III: (If Required) NA — Date: NA

8. Approved By: (If Required) NA — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Text, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: 6" PIPE #11 → PIPE #14 (11/12/01)			CELL #: 4 ☐ CAP ☒ LINER
	TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12/13/01			
1.	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	PW 1/25/02		VALVE INSTALLED CORRECTLY.
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	PW 1/25/02		

RECORD

000013

13. QA Team Member (Printed Name): VOLKER 7121 (Signature) — Date: 1/25/02

14. QA Team Coach (Completed QEP): M. GODBER (Signature) — Date: 3/23/02

4556

QUALITY EVALUATION PLAN
(Continuation Sheet)
QEP No. _____ Rev. _____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	TW 1/25/02		
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	TW 1/25/02		
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	TW 1/25/02		No Leaks Detected.
	Attached: Test Summary			

RECORD

000014

4556

TEST LOG

CELL #: | PIPE DIAMETER: 6" | PIPE DESCRIPTION: 11/12/13/14

FROM: CELL 4 (LINER) VH TO: FUTURE PEN. BOX.

TIME	PHASE	PRESSURE		COMMENTS
1117	EQUAL.	5 psi		
1133.	FILL/TEST	10 psi		
1148	TEST	10 psi		
1150	COMPLETE	0 psi		TEST PASSED.

RECORD

QUALITY EVALUATION PLAN

QEP No. _____ Rev. _____

1. Source: ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item Title/Description:

VERIFICATION OF PRELIMINART PNEUMATIC TESTS

3. Project Task: OSDF PHASE III		4. Specification/Drawing/PO/Req.: SPEC SECTION 2605	
5. Prepared By: MURIAL VIGUS	Date: 1-8-02	6. Reviewed By: MIKE GODBER	Date: 1/08/02
7. NDE Level III: (When Required) NA	Date: NA	8. Approved By: (When Required) NA	Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: 10" CTMT 11B/12/13/14 TW 1/25/02			CELL#: 4
	TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12/13/01			☐ CAP ☒ LINER
1.	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	TW 1/25/02		
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	TW 1/25/02		

RECORD

13. QA Team Member (Printed Name) T. VOLIZER 7121	(Signature)	Date: 1/25/02
14. QA Team Coach (Completed QEP): M. GODBER	Michael W. Godber	Date: 3/23/02

000016

4556

FS 1 1100

(Continuation Sheet)

QEP No. _____ Rev. _____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of the gauge.	PW 1/25/02		
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	PW 1/25/02		
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	PW 1/25/02		TEST COMPLETE; NO LEAKAGE
	Attached: Test Summary			

RECORD

000017

4556

TEST LOG

CELL #: 4 | PIPE DIAMETER: 10" | PIPE DESCRIPTION: 11B/12/13/14

FROM: VH TO: FUTURE PEN. BOX END.

TIME	PHASE	PRESSURE	COMMENTS
1451	EQUAL	5 psi	
1506	FILL/TEST	10 psi	
1521	TEST	10 psi	
1525	COMPLETE	0 psi	TEST PASSED

QUALITY EVALUATION PLAN

QEP No. _____ Rev. _____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF PRELIMINART PNEUMATIC TESTS

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS — Date: 1-8-02

6. Reviewed By: MIKE GODBER — Date: 1/08/02

7. NDE Level III: (When Required) NA — Date: NA

8. Approved By: (When Required) NA — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: 10" CTMT 11B/12/13/14			CELL#: 4 [ ] CAP [X] LINER
	TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12/13/01			
1.	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	PW 1/25/02		
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	PW 1/25/02		

RECORD

000019

4556

13. QA Team Member (Printed Name) P. VOLIZER 7121 (Signature) — Date: 1/25/02

14. QA Team Coach (Completed QEP): — Date:

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. _____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	PW 1/25/02		
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	PW 1/25/02		
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	PW 1/25/02		TEST COMPLETE; NO LEAKAGE
	Attached: Test Summary			

RECORD

0000020

4556

TEST LOG

CELL #: 4 | PIPE DIAMETER: 10" | PIPE DESCRIPTION: 11B/12/13/14

FROM: VH TO: FUTURE PEN. BOX END.

TIME	PHASE	PRESSURE	COMMENTS
1451	EQUAL	5 psi	
1506	FILL/TEST	10 psi	
1521	TEST	10 psi	
1525	COMPLETE	0 psi	TEST PASSED

RECORD

QUALITY EVALUATION PLAN

QEP No. _____ Rev. _____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF PRELIMINART PNEUMATIC TESTS

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS — Date: 1-8-02

6. Reviewed By: MIKE GODBER — Date: 1/08/02

7. NDE Level III: (When Required) NA — Date: NA

8. Approved By: (When Required) NA — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: 6" PIPE #11 → PIPE #14 (11/12/13/14)			CELL #: 4 [ ] CAP [X] LINER
	TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12/13/01			
1.	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	PW 1/25/02		VALVE INSTALLED CORRECTLY.
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	PW 1/25/02		

RECORD

000022

4556

13. QA Team Member (Printed Name) PVOLKER 7121 (Signature) — Date: 1/25/02

14. QA Team Coach (Completed QEP): — Date:

QEP No. _____ Rev. _____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status		12. General Remarks
		SAT	UNSAT	
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	PW 1/25/02		
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	PW 1/25/02		
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	PW 1/25/02		No Leaks Detected.
	Attached: Test Summary			

RECORD

000023

4556

TEST LOG

CELL #: | PIPE DIAMETER: 6" | PIPE DESCRIPTION: 11/12/13/14

FROM: CELL 4 (LINER) VH TO: FUTURE PEN. BOX

TIME	PHASE	PRESSURE	COMMENTS
1117	EQUAL	5 psi	
1133	FILL/TEST	10 psi	
1148	TEST	10 psi	
1150	COMPLETE	0 psi	TEST PASSED.

RECORD

CEF NO.

Source [ ] Receiving [ ] Const./Remediation [X] Maint./Operations [ ] Tests [ ] Other [ ]

Item/Title/Description:

VERIFICATION OF PRELIMINARY PNEUMATIC TESTS

Project/Task: OSDF PHASE III	4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

Prepared By: MURIAL VIGUS	Date: 1-8-02	6. Reviewed By: MIKE GODBER	Date: 1/08/02
7. Approved By: (When Required)	Date: NA	8. Approved By: (When Required) NA	Date: NA

Char. No.	Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: CELL 4 MONITORING WELL 6" RECORD			CELL#: 4 [ ] CAP [X] LINER MONITORING WELL
	TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12/13/01			
1	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	PW 1/18/02		
2	Verify the gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to National or Industry standards.	PW 1/18/02		

Test Member (Printed Name): T VOLKER (Signature): T Volker — Date: 1/18/02

Test Coach (Completed OLP): — Date:

000025

4556

CEP No.

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF PRELIMINARY PNEUMATIC TESTS

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS Date: 1-8-02

6. Reviewed By: MIKE GODBER Date: 1/18/02

7. QDE Level III: (When Required) Date: NA

8. Approved By: (When Required) Date: NA

9. Char. No.	10. Evaluation Characteristic (Code Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: CELL 4 MONITORING WELL 6" RECORD			CELL#: 4 ☐ CAP ☒ LINER MONITORING WELL
	TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12/13/01			
1	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	PW 1/18/02		
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	PW 1/18/02		

QA Team Member (Printed Name): P. VOLKER (Signature) Date: 1/18/02

QA Team Coach (Completed QCP): M. GODBER (Signature) Date: 3/23/02

000026

4556

(Cont[illegible]on Sheet)

QEP N[illegible] Rev.

9. Char. No.	10. Evaluation Characteristic (Code/Specific [illegible] Inspection/Test/Examination [illegible], Acceptance Criteria	11. Status SAT	UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	PW 1/18/02		
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	PW 1/18/02		
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	PW 1/18/02		No leaks observed.
	Attached: Test Summary			

RECORD

T-4556

000027

TEST LOG

CELL #: 4 | PIPE DIAMETER: 6" | PIPE DESCRIPTION: VH4

FROM: | TO: MONITORING WELL ASSY.

TIME	PHASE	PRESSURE	COMMENTS
1003	START	5#	Held for 15 MIN
1018	TEST	10#	Filled to 10#
1035	FINAL	10#	Test Complete.

RECORD

Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection, Test/Examination Technique, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	TW 1/18/02		
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	TW 1/18/02		
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	TW 1/18/02		No leaks observed.
	Attached: Test Summary			

RECORD

000029

4556

TEST LOG

CELL #: 4 PIPE DIAMETER: 6" PIPE DESCRIPTION: VH4

FROM: TO: MONITORING WELL ASSY.

TIME	PHASE	PRESSURE	COMMENTS
1003	START	5#	Held for 15 MIN
1014	TEST	10#	Filled to 10#
1035	FINAL	10#	Test Complete.

RECORD

QUALITY EVALUATION PLAN

QEP No. _____ Rev. 0

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF PRELIMINARY PNEUMATIC TESTS

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS	Date: 1-8-02	6. Reviewed By: MIKE GODBER	Date: 1-8-02
7. NDE Level III: (When Required) NA	Date: NA	8. Approved By: (When Required) NA	Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: 6/5 - 6/6 - 6/7A - Monitoring Well TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12-13-01 / 12-13-02			CELL#: 5 [ ] CAP [ ] LINER
1.	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	N/A		Pressure relief valve is not needed, however I have documentation on De Bra's valves (relief) Sat. Please see attached
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	X MVV 1-9-02		

13. QA Team Member (Printed Name) Muriel Vigus (Signature) Muriel Vigus Date: 1-9-02

14. QA Team Coach (Completed QEP): RECORD Date:

4556

000031

FS-F-4400
REV 2: 01/02/01 QP-07.06

QUALITY F[illegible]UATION PLAN
(Continu[illegible]ion Sheet)

QEP No. _____ Rev. 0

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	X MKU 1-9-03		Met.
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	X MKU 1-9-03		Met
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	X MKU 1-9-03		Sat.
	Attached: Test Summary			

000032

4556

RECORD

TEST LOG

CELL #: 5 | PIPE DIAMETER: 6" | PIPE DESCRIPTION: Monitoring well

FROM: 6/5 TO: 6/1A

TIME	PHASE	PRESSURE	COMMENTS
1039	Fill	5 psi	Filling for initial
1040	Start Test	5 psi	
1045	Test	—	No change
1050		—	No change
1055	PASS	—	Filling to 10 psi
1055	Test	10 psi	
1100	Test	—	no change
1105	Test	—	No change
1110	Pass	10 psi	Pass

DAUGHTRIDGE SALES COMPANY
501 SOUTH PINE STREET + P.O. BOX 4364
ROCKY MOUNT, NC 27803-0364

4556

TOLL-FREE 1-800-334-9720 FAX 252-977-2192

CERTIFICATE OF ACCURACY

Customer MAIN LINE SUPPLY CO. Customer No. 1568
Customer Order P1028214 ITEM NO. 56500001
Size 2½ Type 1009AW Range 0-100-PSI
Serial or Tag No. 1213 DASCO Shop No. 103121

TRUE VALUE	Indicated Value			
	Increasing		Decreasing	
0	~~0~~		0	
10	10		10	
20	20		20	
40	40		40	
60	60		60	
80	80		80	
100	100		—	

RECORD

Calibration Standard Y100 OF 1% OF TEST Serial No. 374-30
Date Calibrated 12-13-01 Recalibration Due 12-13-02

THE ABOVE IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)*

*FORMERLY NATIONAL BUREAU OF STANDARDS (NBS)

Tested By R.D. Certified By [signature]
Date 12/13/01

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	8 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-02-1
Set Pressure :	16.5	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

RECORD

Pop Point	16.5	Sta
Warn		
Blow Down		
Back Pressure	4	St

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotola

Division of Quality Control

Seal

North American Safety Valve Industries, Inc.

1500 Iron Street 4556
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	17 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-01-1
Set Pressure :	66.0	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

RECORD

Pop Point	66	Ste
Warn		
Blow Down		
Back Pressure	15	Ste

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotolo

Division of Quality Control

Seal

QUALITY EVALUATION PLAN

QEP No. _____ Rev. 0

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF PRELIMINART PNEUMATIC TESTS

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS — Date: 1-8-02

6. Reviewed By: MIKE GODBER — Date: 1-08-02

7. NDE Level III: (When Required) NA — Date: NA

8. Approved By: (When Required) NA — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: 10" Monitoring Well (6 inch into 10 inch Pipe)			CELL#: 5 [ ] CAP [ ] LINER
	TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12-13-01 / 12-13-02			
1.	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	N/A		
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	X MVU 1-8-02		See attached.

13. QA Team Member (Printed Name) Muriel Vigus (Signature) — Date: 1-8-02

14. QA Team Coach (Completed QEP): — Date:

RECORD

4556

000037

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. 0

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	X MKU 1-8-02		Sat.
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	X MKU 1-8-02		Sat.
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	X MKU 1-8-02		Satisfactory
	Attached: Test Summary			

RECORD

000038

4556

2-8-02 4556

TEST LOG

CELL #: 5 | PIPE DIAMETER: 6" to 10" | PIPE DESCRIPTION: Monitoring Well

FROM: TO:

TIME	PHASE	PRESSURE	COMMENTS
1450	Fill		Filling line with air.
1452	Start Test	5 psi	Starting test MKW
1457	Test	—	
1502	Test	—	
1507	Pass	5 psi	DeBra can fill line to 10 psi
1525	Fill	10 psi	Filling to 10 psi
1527	Start	—	Testing
1532	Test	—	—
1537	Test	—	—
1542	Pass	10 psi	Passed

N A

N A

RECORD

DAUGHTRIDGE SALES COMPANY
501 SOUTH PINE STREET + P.O. BOX 4364
ROCKY MOUNT, NC 27803-0364

4556

TOLL-FREE 1-800-334-9720 FAX 252-977-2192

CERTIFICATE OF ACCURACY

Customer MAIN LINE SUPPLY CO. Customer No. 1568
Customer Order P1028214 ITEM NO. 56500001
Size 2½ Type 1009AW Range 0-100-PSI
Serial or Tag No. 1213 DASCO Shop No. 103121

TRUE VALUE	Indicated Value			
	Increasing		Decreasing	
0	~~0~~		0	
10	10		10	
20	20		20	
40	40		40	
60	60		60	
80	80		80	
100	100		—	

Calibration Standard 1/100 OF 1% OF TEST Serial N 374-50
Date Calibrated 12-13-01 Recalibration Due 12-13-02

THE ABOVE IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)*

*FORMERLY NATIONAL BUREAU OF STANDARDS (NBS)

Tested By R.D. Certified By [signature]
Date 12/13/01

000040

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	8 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-02-1
Set Pressure :	16.5	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

RECORD

Pop Point	16.5	Sta
Warn		
Blow Down		
Back Pressure	4	St

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotola

Division of Quality Control

Seal

000041

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	17 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-01-1
Set Pressure :	66.0	Code Stamp :	
ust P.O.# :	P1028211	Tag :	

RECORD

Pop Point	66	Ste
Warn		
Blow Down		
Back Pressure	15	Ste

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

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Division of Quality Control

Seal

QUALITY EVALUATION PLAN

QEP No. _____ Rev. ____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF PRELIMINARY PNEUMATIC TESTS

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS — Date: 1-8-02

6. Reviewed By: MIKE GODBER — Date: 1/9/02

7. NDE Level III: (When Required) NA — Date: NA

8. Approved By: (When Required) NA — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection, Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: 6/5 - 6/6 - 6/1A - Monitoring Well TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12-13-01 / 12-13-02			CELL#: 5 [ ] CAP [ ] LINER
1.	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	N/A		Pressure relief valve is not needed, however I have documentation on De Bra's valves (relief)
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	X MVG 1-9-02		Sat. Please see attached

13. QA Team Member (Printed Name) Muriel Vigus (Signature) — Date: 1-9-02

14. QA Team Coach (Completed QEP): M. GODBER — Date: 2/23/02

RECORD

4556

0000043

FS-F-4400
REV 2: 01/02/01, QP-07.06

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. _____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Technique, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	X MKU 1-9-03		Met.
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	X MKU 1-9-03		Met
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	X MKU 1-9-03		Sat.
	Attached: Test Summary			

000044

4556

RECORD

TEST LOG

CELL #: 5 ; PIPE DIAMETER: 6" ; PIPE DESCRIPTION: Monitoring well

FROM: 6/5 TO: 6/1A

TIME	PHASE	PRESSURE	COMMENTS
1039	Fill	5 psi	Filling for initial
1040	Start Test	5 psi	
1045	Test	—	No change
1050		—	No change
1055	PASS	—	Filling to 10 psi
1055	Test	10 psi	
1100	Test	—	No change
1105	Test	—	No change
1110	Pass	10 psi	Pass

RECORD

DAUGHTRIDGE SALES COMPANY
501 SOUTH PINE STREET + P.O. BOX 4364
ROCKY MOUNT, NC 27803-0364

TOLL FREE 1-800-334-9720 FAX 252-977-2192

4556

CERTIFICATE OF ACCURACY

Customer MAIN LINE SUPPLY CO. Customer No. 1568
Customer Order P1028214 ITEM NO. 56500001
Size 2½ Type 1009AW Range 0-100-PSI
Serial or Tag No. 1213 DASCO Shop No. 103121

TRUE VALUE	Indicated Value			
	Increasing		Decreasing	
0	0		0	
10	10		10	
20	20		20	
40	40		40	
60	60		60	
80	80		80	
100	100		—	

BEFORE

Calibration Standard 1/100 OF 1% OF TEST Serial No. 374-30
Date Calibrated 12-13-01 Recalibration Due 12-13-02

THE ABOVE IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)*

*FORMERLY NATIONAL BUREAU OF STANDARDS (NBS)

Tested By R.D. Certified By [signature]
Date 12/13/01

000046

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	8 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-02-1
Set Pressure :	16.5	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

RECORD

Pop Point	16.5	Sta
Warn		
Blow Down		
Back Pressure	4	Sta

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Patola

Quality Control

Seal

North American Safety Valve Industries, Inc.

1500 Iron Street 4556
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	17 GPM
Size :			
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-01-1
Set Pressure :	66.0	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

Pop Point	66	Stm
Warn		
Blow Down		
Back Pressure	15	Stm

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotolo

000048

QUALITY E[illegible]UATION PLAN

QEP No. _____ Rev. 8

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF PRELIMINARY PNEUMATIC TESTS

3. Project/Task: OSDF PHASE III		4. Specification/Drawing/PO/Req.: SPEC SECTION 2605	
5. Prepared By: MURIAL VIGUS	Date: 1-8-02	6. Reviewed By: MIKE GODBER	Date: 1/08/02
7. NDE Level III: (When Required) NA	Date: NA	8. Approved By: (When Required) NA	Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	RECORD THE IDENTIFICATION OF THE PIPE BEING TESTED: 10" Monitoring Well (6 inch into 10 inch pipe)			CELL#: 5 [ ] CAP [ ] LINER
	TEST GAUGE ID#: 1213 DATE OF CALIBRATION: 12-13-01 / 12-13-02			
1.	Verify a pressure relief valve is installed prior to pneumatic testing of pipe sections. The valve shall be set to release pressure within 10% of the test pressure.	N/A		
2.	Verify the gauge has been calibrated within (1) year of date of testing calibration shall be traceable to National or Industry standards.	X MVU 1-8-02		See attached.

13. QA Team Member (Printed Name)	(Signature)	Date:
Muriel Vigus	[signature]	1-8-02
14. QA Team Coach (Completed QEP):		**Date:**
M. GODBER	[signature]	3/23/02

RECORD

4556

000049

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. 8

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the pressure is increased to one-half of the full pneumatic test pressure (5 psi). This pressure should be held for approximately 15 minutes to allow the pipe strains to become somewhat equalized and to detect any possible major leaks by means of soap bubbles or monitoring of test gauge.	X MKV 1-8-03		Sat.
4.	Verify the pressure is gradually increased to the full pneumatic test pressure (10 psi) and held for 15 minutes.	X MKV 1-8-03		Sat.
5.	Verify the gauge pressure does not drop below the full pneumatic test pressure and no leaks are detected.	X MKV 1-8-03		Satisfactory
	Attached: Test Summary			

RECORD

4556

000050

2-8-02 4556

TEST LOG

CELL #: 5 | PIPE DIAMETER: 6" to 16" | PIPE DESCRIPTION: Monitoring Well

FROM: TO:

TIME	PHASE	PRESSURE	COMMENTS
1450	Fill		Filling line with air.
1452	Start Test	5 psi	Starting test MKW
1457	Test	—	
1502	Test	—	
1507	Pass	5 psi	Debra can fill line to 10 psi
1525	Fill	10 psi	Filling to 10 psi
1527	Start	—	Testing
1532	Test	—	—
1537	Test	—	—
1542	Pass	10 psi	Passed

RECORD

DAUGHTRIDGE SALES COMPANY
501 SOUTH PINE STREET + P.O. BOX 4364
ROCKY MOUNT, NC 27803-0364

TOLL-FREE 1-800-334-9720 FAX 252-977-2192

4556

CERTIFICATE OF ACCURACY

Customer MAIN LINE SUPPLY CO. Customer No. 1568
Customer Order P1028214 ITEM NO. 56500001
Size 2½ Type 1009AW Range 0-100-PSI
Serial or Tag No. 1213 DASCO Shop No. 103121

TRUE VALUE	Indicated Value			
	Increasing		Decreasing	
0	0		0	
10	10		10	
20	20		20	
40	40		40	
60	60		60	
80	80		80	
100	100		—	

Calibration Standard 1/100 OF 1% OF TEST Serial N 374-30
Date Calibrated 12-13-01 Recalibration Due 12-13-02

THE ABOVE IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)* *FORMERLY NATIONAL BUREAU OF STANDARDS (NBS)

Tested By R.D. Certified By [signature]
Date 12/13/01

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

d To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	8 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-02-1
[illegible] :	[illegible]	Code Stamp :	
Cu[illegible] P.O.# :	P1028211	Tag :	

RECORD

Pop Point	165	Stu
Warn		
Blow Down		
Back Pressure	4	St

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotola
Division of Quality Control

Seal

000053

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	17 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-01-1
Set Pressure :	66.0	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

Pop Point	66	Ste
Warn		
Blow Down		
Back Pressure	15	Ste

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotolo
Division of Quality Control

Seal

RECORD

000054

HYDROSTATIC PRESSURE TESTING RESULTS

QUALITY EVALUATION PLAN

QEP No. _____ Rev. _____

1. Source ☐ Receiving ☐ Construction/Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF HDPE PIPE AND FITTINGS HYDROSTATIC TESTING 10 INCH CONTAINMENT PIPE (ALTERNATE METHOD) 15 PSI TEST

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIEL VIGUS — Date: 1-31-02

6. Reviewer: MIKE GODBER — Date: 1/31/02

7. NDE Level III: (When Required) NA — Date: NA

8. Approver: (When Required) A — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11 Status SAT	11 Status UNSAT	12. General Remarks
	IDENTIFICATION OF PIPE THAT IS BEING TESTED: [X] CELL NUMBER 4 [ ] CELL NUMBER 5 [ ] 10 INCH LDS CONTAINMENT [ ] 10 INCH LCS CONTAINMENT [X] 10 INCH LCS REDUNDANT CONTAINMENT FROM: VH 4 TO: BOX ID: TEST GAUGE ID#: 12[illegible]5 CALIBRATION DATE: 12/13/01			CELL#: 4 [ ] CAP [X] LINER
1.	Verify the test gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to national or industry standards.	PW 2/4/01		Certification Reviewed
2.	Verify the carrier pipe is at atmospheric pressure during the testing of the containment pipe.	PW 2/4/01		Carrier full; 0 psi

13. QA Team Member (Printed Name) VOLKER 7121 (Signature) — Date: 2/4/01

14. QA Team Coach (Completed QEP): M. GODBER — Date: 3/23/02

FS-F-4400
REV 2: 01/02/01, QP-07.06

4556

(Continuation Sheet)

QE No. _____ Rev. _____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Examination Tests, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the initial expansion phase test is performed at 5 psi over the test pressure of **15 psi**. The expansion phase pressure shall be 2[illegible] **psi** and shall be maintained for a period of [illegible] hours. MAXIMUM 2/4/02	TU 2/4/02		See Test Log
4.	Verify following the expansion phase, the pressure is reduced by [illegible]0 **psi** to the actual test pressure of ~~25~~ 15 **psi**. TU [illegible]/02	TU 2/4/02		
5.	Verify the test pressure remains steady (within **5 per**[illegible]t of test pressure) for a period of one hour and verify there is no visible leakage.	TU 2/4/02		All joints inspected; no leaks observed.
	Attached: Test Summary.			

RECORD

4556

000057

TEST LOG

CELL #: 4	PIPE DIAMETER: 10"	PIPE DESCRIPTION: LCS RED.

FROM: VH 4 TO: (FUTURE) TEN BOX TERMINATION

TIME	PHASE	PRESSURE	MAKEUP WATER	COMMENTS
1320	FILL	0 psi	NA	CARRIER FILLED
1345	FILL	25 psi	NA	INITIAL CTHT FILL
1400	STABILIZE	21		REFILL TO 25 psi
1415	"	23		↓ ↓ ↓
1430	"	24		
1500	"	25		NA
1530	"	25		STABIZE COMPLETE
1530	TEST	15		NA
1600	"	15		↓

RECORD

NA

QEP No. _____ Rev. _____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item Title/Description:

VERIFICATION OF HDPE PIPE AND FITTINGS HYDROSTATIC TESTING 6 INCH CARRIER PIPE (ALTERNATE METHOD) 60 PSI TEST

3. Project/Task: OSDF PHASE III

Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS	Date: 1-31-02	Reviewed By: MIKE GODBER	Date: 1/31/02
7. NDE Level III: (When Required) NA	Date: NA	Approved By: (When Required) NA	Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test Examination Technique, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	IDENTIFICATION OF PIPE THAT IS BEING TESTED: [X] CELL NUMBER 4 [ ] CELL NUMBER 5 [ ] 6 INCH LDS CARRIER [ ] 6 INCH LCS CARRIER [X] 6 INCH LCS REDUNDANT CARRIER PIPE 1/12/13/14 ESR ST. EVH (FUTURE PENETRATION) FROM: VH4 TO: BOX 2D TEST GAUGE ID#: 1213 CALIBRATION DATE: 12-13-01/12-13-02			CELL#: 4 [ ] CAP [ ] LINER
1.	Verify the test gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to national or industry standards	X MKV 1-30-02		Verified, see attached.
2.	Verify the containment pipe is at atmospheric pressure during the testing of the carrier pipe.	X MKV 1-30-02		Met.

13. QA Team Member (Printed Name) Muriel Vigus	(Signature)	Date: 1-30-02
14. QA Team Coach (Completed QEP): MIKE GODBER	RECORD	Date: 3/23/02

4556

FS-F-4400
Rev 2: 01/02/01, QP-07.06

Page 1 of

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. C

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Technique, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the initial expansion phase test is performed at [illegible] over the test pressure of **60 psi**. The expansion phase pressure [illegible] be **70 psi** and shall be maintained for a period of 4 hours.	X MCU 1-30-03		Sat. We increased press for stabilization to get the pipe to expand.
4.	Verify following the expansion phase, the pressure is reduced by **10 psi** to the actual test pressure of **60 psi.**	X MCU 1-30-03		Met.
5.	Verify the test pressure remains steady (within **5 percent** of test pressure) for a period of one hour and verify there is no visible leakage	X MCU 1-30-03		Sat.

RECORD

000060

4556

4556
1-30-02

TEST LOG

CELL #: 4	PIPE DIAMETER: 6"	PIPE DESCRIPTION: RLCS - Carrier

FROM: TO:

TIME	PHASE	PRESSURE	COMMENTS
0904	Fill	76 psi	Filling and Pressurizing for
—	—	—	Stabilization Period
0905	Stabilize	76 psi	Starting Stabilization
1005		65 psi	-11 psi drop
1025	Re-Fill	80 psi	Pressurize again
1030	Stabilize	78 psi	-2 psi
1130	"	73 psi	-5 psi
1210	"	71 psi	-2 psi
1240	"	69 psi	-2 psi
1330	"	69 psi	No change
	"		No change
[illegible]	[illegible]	60 psi	Reduced pressure for test (start)
1405	"	62 psi	+2 psi
1420	"	62 psi	No change
1435	"	62 psi	No change
1450	Pass	62 psi	Passed

N/A

N

RECEIVED

DAUGHTRIDGE SALES COMPANY
501 SOUTH PINE STREET + P.O. BOX 4364
ROCKY MOUNT, NC 27803-0364

TOLL-FREE 1-800-334-9720 FAX 252-977-2192

4556

CERTIFICATE OF ACCURACY

Customer MAIN LINE SUPPLY CO. Customer No. 1568
Customer Order P1028214 ITEM NO. 56500001
Size 2½ Type 1009AW Range 0-100-PSI
Serial or Tag No. 1213 DASCO Shop No. 103121

TRUE VALUE	Indicated Value			
	Increasing		Decreasing	
0	0		0	
10	10		10	
20	20		20	
40	40		40	
60	60		60	
80	80		80	
100	100		—	

RECORD

Calibration Standard 1/10 OF 1% OF TEST Serial No. 374-30:
Date Calibrated 12-13-01 Recalibration Due 12-13-02

THE ABOVE IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)* *FORMERLY NATIONAL BUREAU OF STANDARDS (NBS)

Tested By R.D. Certified By [signature] 000062
Date 12/13/01

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity :	8 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	--
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-02-1
Set Pressure :	165	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

RECORD

Pop Point	165	Stu
Seat		
Blow Down		
Back Pressure	4	Stu

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotolo
Division of Quality Control

Seal

000063

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/2001

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI, OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-[illegible]-MG	Capacity :	17 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	--
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-01-
Set Pressure :	66.0	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

RECORD

Pop Point	66	Stem
Main		
Blow Down		
Back Pressure	15	Stem

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

Division of Quality Control

Seal

QUALITY E[illegible]UATION PLAN

QEP No. _____ Rev. _____

1. Source ☐ Receiving ☐ Const./Ren[illegible]tion X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF HDPE PIPE AN[illegible] FITTINGS HYDROSTAT[illegible] TESTING 10 [illegible]NCH CONTAINMENT PIPE (ALTERNATE METHOD) 15 PSI TEST

3. Project/Task: OSDF PHASE III

4. Specification/D[illegible]wing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIEL VIGUS — Date: 1-31-02

6. Reviewed By: [illegible]KE GODBER — Date: 1/31/02

7. NDE Level III: (When Required) NA — Date: NA

8. Approved By: [illegible]n Required) N[illegible] — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination T[illegible]iques, Acceptance Crit[illegible])	11. Status SAT	11. Status UNSAT	12. General Remarks
	IDENTIFICATION OF PIPE THAT IS BEING TESTED: ☒ CELL NUMBER 4 [ ] CELL NUMBER 5 [ ] 10 INCH LDS CONTAINMENT ☒ 10 INCH LCS CONTAINMENT [ ] 10 INCH LCS REDUNDANT CONTAINMENT FROM: VH4 TO (FUTURE) PENETRATION BOX TEST GAUGE ID#: 1213 CALIBRATION D[illegible]E: 12/13/01			CELL#: 4 [ ] CAP ☒ LINER
1.	Verify the test gauge has been calibrated within (1) [illegible]ar of date of testing. Calibration shall be traceable to national or [illegible]dustry standa[illegible]s.	RW 2/6/02		
2.	Verify the carrier pipe is at atmospheric pressure du[illegible]g the testing [illegible] the containment pipe.	RW 2/6/02		Carrier full, Ops.

VH4/7/8/9 RECORD

4556

13. QA Team Member (Printed Name) VOLKER 7121 (Signature) [illegible] — Date: 2/6/02

14. QA Team Coach (Completed QEP): M. GODBER (Signature) [illegible] — Date: 3/23/02

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Page 1 o

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. _____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the initial expansion phase test is performed at [illegible] psi over the test pressure of **15 psi**. The expansion phase pressure shall be 2[illegible] psi and shall be maintained for a period of 4 hours. [illegible] TW 2/6/02	TW 2/6/02		
4.	Verify following the expansion phase, the pressure is reduced by **10** [illegible] to the actual test pressure of **25 psi.**	TW 2/6/02		See Test Log
5.	Verify the test pressure remains steady (within **5 percent** of test pressure) for a period of one hour and verify there is no visible leakage.	TW 2/6/02		No Visual Leaks.
	Attached: Test Summary			

RECORD

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TEST LOG

CELL #: 4	PIPE DIAMETER: 10"	PIPE DESCRIPTION: LCS
FROM: VH4	TO: 7/8/9/10	

TIME	PHASE	PRESSURE	MAKEUP WATER	COMMENTS
1230	FILL	26 psi	N/A	N/A
1245	STABILIZE	25 psi		
1315		25 psi		
1345		25 psi		PRESS. DECREASED TO
1415	TEST	15 psi		15 psi @ 1345
1445	TEST	15 psi		TEST COMPLETE

RECORD

QEP No. _____ Rev. _____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF HDPE PIPE AND FITTINGS HYDROSTATIC TESTING 6 INCH CARRIER PIPE (ALTERNATE METHOD) 60 PSI TEST

3. Project/Task: OSDF PHASE III		4. Specification/Drawing/PO/Req.: SPEC SECTION 2605	
5. Prepared By: MURIAL VIGUS	Date: 1-31-02	6. Reviewed By: MIKE GODBER	Date: 1/31/02
7. NDE Level III: (When Required) NA	Date: NA	8. Approved By: (When Required) NA	Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	IDENTIFICATION OF PIPE THAT IS BEING TESTED: [X] CELL NUMBER 4 [ ] CELL NUMBER 5 [ ] 6 INCH LDS CARRIER [X] 6 INCH LCS CARRIER [ ] 6 INCH LCS REDUNDANT CARRIER FROM: VH4 TO: (FUTURE) PENETRATION FIX TEST GAUGE ID#: 1213 CALIBRATION DATE: 12/13/01			CELL#: 4 [ ] CAP [X] LINER
	Verify the test gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to national or industry standards.	TW 2/6/02		
	Verify the containment pipe is at atmospheric pressure during the testing of the carrier pipe.	TW 2/6/02		

RECORD

PIPE SECTIONS. VH4 STUBS/7/8/9/10

4556

13. QA Team Member (Printed Name)	(Signature)	Date:
VOLKER TIZI		2/6/02
14. QA Team Coach (Completed QEP): M. GODBER		Date: 3/23/02

890000

QEP No. _____ Rev. ____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the initial expansion phase test is performed at **10 psi** over the test pressure of **60 psi**. The expansion phase pressure shall be **70 psi** and shall be maintained for a period of 4 hours. MAX TW 2/6/02	TW 2/6/02		See test Log.
4.	Verify following the expansion phase, the pressure is reduced by **10 psi** to the actual test pressure of **60 psi**.	TW 2/6/02		
5.	Verify the test pressure remains steady (within **5 percent** of test pressure) for a period of one hour and verify there is no visible leakage.	TW 2/6/02		No leakage evident.

RECORD

690000

TEST LOG

CELL #: 4	PIPE DIAMETER: 6"	PIPE DESCRIPTION: VH4/7/8/9/10
FROM: VH4		TO: (FUTURE) TEN. BOX TERM.

TIME	PHASE	PRESSURE	MAKEUP WATER	COMMENTS
0910	FILL	70 psi	N/A	N/A
0915	STARILIZE	64 psi		fill to 70
0930		69 psi		fill to 70
0945		63 psi		fill to 70
1000		62 psi		N/A
1015		62 psi		fill to 70 psi
1030		70 psi		N/A
1100		70 psi		N/A
1130		70 psi		stabilize complete
1130	TEST	60 psi		Begin test
1200		60 psi		N/A
1230		60 psi		Test passed

QUALITY EVALUATION PLAN

QEP No. _____ Rev. 0

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF HDPE PIPE AND FITTINGS HYDROSTATIC TESTING 10 INCH CONTAINMENT PIPE (ALTERNATE METHOD) 15 PSI TEST

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIEL VIGUS — Date: 1-9-02

6. Reviewed By: MIKE GODBER — Date: 1/31/02

7. NDE Level III: (When Required) NA — Date: NA

8. Approved By: (When Required) NA — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	IDENTIFICATION OF PIPE THAT IS BEING TESTED: [X] CELL NUMBER 4 [ ] CELL NUMBER 5 [✓] 10 INCH LDS CONTAINMENT [✓] 10 INCH LCS CONTAINMENT [ ] 10 INCH LCS REDUNDANT CONTAINMENT 15, 16, 17, 3 2-8-02 MKG FROM: _____ TO: _____ TEST GAUGE ID#: 123 CALIBRATION DATE 12-13-01/12-13-02			CELL#: 4 [ ] CAP [ ] LINER
1.	Verify the test gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to national or industry standards.	X MKG 2-8-02		Not. See Attached
2.	Verify the carrier pipe is at atmospheric pressure during the testing of the containment pipe.	X MKG 2-8-02		This is Sat.

13. QA Team Member (Printed Name) Muriel Vigus (Signature) — Date: 2-8-02

14. QA Team Coach (Completed QEP): M. GODBER (Signature) — Date: 2/23/02

RECORD

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000071

FS-F-4400
REV 2: 01/02/01, QP-07.06

Page 1 of

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. 0

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	General Remarks
3.	Verify the initial expansion phase test is performed at **10 psi** over the test pressure of **15 psi**. The expansion phase pressure shall be **25 psi** and shall be maintained for a period of 4 hours.	X MCG 2-8-07		This is the Alternate Method
4.	Verify following the expansion phase, the pressure is reduced by **10 psi** to the actual test pressure of ~~25~~ 15 **psi**. MG 2/8/02	X MCG 2-8-07		
5.	Verify the test pressure remains steady (within **5 percent** of test pressure) for a period of one hour and verify there is no visible leakage.	X MCG 2-8-07		
	Attached: Test Summary			

RECORD

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2-8-02 4556

15, 16, 17 and 3 (pipe #'s)

TEST LOG

CELL #: 4	PIPE DIAMETER: 10"	PIPE DESCRIPTION: LDS Containment

FROM: TO:

TIME	PHASE	PRESSURE	MAKEUP WATER	COMMENTS
0730	Stabilizing	25 psi	N/A	Stabilization Period
0750		25 psi		No change
0810		25 psi		
0820		25 psi		
0830		25 psi		
0835		25 psi		Pass - reducing press
0845	Test	15 psi		Begin Test
0900		17 psi		+ 2 psi
0915		17 psi		No change
0930		17 psi		
0945	Pass	17 psi		Pass

N/A

N/A

N/A

RECORD

DAUGHTRIDGE SALES COMPANY
501 SOUTH PINE STREET + P.O. BOX 4364
ROCKY MOUNT, NC 27803-0364

4556

TOLL-FREE 1-800-334-9720 FAX 252-977-2192

CERTIFICATE OF ACCURACY

Customer MAIN LINE SUPPLY CO. Customer No. 1568
Customer Order P1028214 ITEM NO. 56500001
Size 2½ Type [illegible] Range [illegible]
Serial or Tag No. 1213 DASCO Shop No. 103121

TRUE VALUE	Indicated Value			
	Increasing		Decreasing	
0	0		0	
10	10		10	
20	20		20	
40	40		40	
60	60		60	
80	80		80	
100	100		—	

Calibration Standard 1/10 OF 1% OF TEST Serial No. 374-30[illegible]
Date Calibrated 12-13-01 Recalibration Due 12-13-02

THE ABOVE IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)*

*FORMERLY NATIONAL BUREAU OF STANDARDS (NBS)

Tested By R.D. Certified By [signature]
Date 12/13/01

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/20

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity	6 GPM
Size :	3/4X3/4 MALEXFE	Temperature :	--
Manufacturer :	KUNKLE	Service :	LIQ
Mfg Serial # :		NASV Serial #:	1102249-02-1
Set Pressure :	16.5	Code Stamp :	
Cust P.O.# :	P1028211	Tag :	

Pop Point	16.5	Sta
Warn		
Blow Down		
Back Pressure	4	St

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotola

Division of Quality Control

Seal

North American Safety Valve Industries, Inc.

1500 Iron Street
North Kansas City,
Missouri 64116 U.S.A.
Telephone: (816) 421-7042
1-800-800-8882
FAX: (816) 421-0297
E-MAIL SALES@NASVI.COM

4556

TEST REPORT
SAFETY VALVE CERTIFICATION REPORT

Date: 12/13/200

Sold To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI. OH 45215

Ship To: MAIN LINE SUPPLY
121 HOSEA AVE
CINCINNATI OH 45215

Figure Number:	20-D01-MG	Capacity	: 17 GPM
Size	: 3/4X3/4 MALEXFE	Temperature	:
Manufacturer	: KUNKLE	Service	: LIQ
Mfg Serial #	:	NASV Serial #:	1102249-01-1
Cust P.O.#	: P1028211	Tag	:

Pop Point	66	Sta
Warn		
Blow Down		
Back Pressure	15	Sta

We certify that the above tests were performed in full accordance with all applicable safety valve Standards and Codes.

North American Safety Valve

B Rotolo
Division of Quality Control

Seal

QUALITY EVALUATION PLAN

QEP No. _____ Rev. _____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF HDPE PIPE AND FITTINGS HYDROSTATIC TESTING 6 INCH CARRIER PIPE (ALTERNATE METHOD) 60 PSI TEST

3. Project/Task: OSDF PHASE III

4. Specification/Drawing/PO/Req.: SPEC SECTION 2605

5. Prepared By: MURIAL VIGUS — Date: 1-[illegible]-02

6. Reviewed By: MIKE GODBER — Date: 1/31/02

7. NDE Level III: (When Required) NA — Date: NA

8. Approved By: (When Required) NA — Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Information Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	IDENTIFICATION OF PIPE THAT IS BEING TESTED: [X] CELL NUMBER 4 [ ] CELL NUMBER 5 [X] 6 INCH LDS CARRIER [ ] 6 INCH LCS CARRIER [ ] 6 INCH LCS REDUNDANT CARRIER FROM: VH4 TO: PEN. B TEST GAUGE ID#: 1213 CALIBRATION DATE: 12/13			CELL#: 4 [ ] CAP [X] LINER
1.	Verify the test gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to national or industry standards.	PW 2/7/02		
2.	Verify the containment pipe is at atmospheric pressure during the testing of the carrier pipe.	PW 2/7/02		

13. QA Team Member (Printed Name) VOLKER-7121 (Signature) — Date: 2/7/02

14. QA Team Coach (Completed QEP): M. GODBER (Signature) — Date: 3/23/02

LDS: H4/15/16/17

FROM: VH4 TO: PEN. B

TEST GAUGE ID#: 1213 CALIBRATION DATE: 12/13

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QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. _____

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Determination Technique, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the initial expansion phase test is performed at [illegible] psi over the test pressure of **60 psi**. The expansion phase pressure shall be **70 psi** and shall be maintained for a period of 4 hours.	TW 2/7/02		See Test Log
4.	Verify following the expansion phase, the pressure is reduced by **10 psi** to the actual test pressure of **60 psi**.	TW 2/7/02		
5.	Verify the test pressure remains steady (within **5 percent** of test pressure) for a period of one hour and verify there is no visible leakage.	TW 2/7/02		

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TEST LOG

LDS

CELL #: 4 | PIPE DIAMETER: 6" | PIPE DESCRIPTION: V+4

FROM: V+4 TO: 15/16/17/3

TIME	PHASE	PRESSURE	MAKEUP WATER	COMMENTS
0800	FILL	72 psi	NA	NA
0815	STABILIZE	68 psi		FILL TO 72 psi
0820		65 psi		NA
0830		62 psi		FILL TO 72 psi
0845		71 psi		NA
0900		71 psi		
0945		71 psi		
0945	TEST	60 psi		Start Test
1015		60 psi		
1045		60 psi		Test Passed

DECORE

QUALITY EVALUATION PLAN

QEP No. _____ Rev. ____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF HDPE PIPE AND FITTINGS HYDROSTATIC TESTING 6 INCH CARRIER PIPE (ALTERNATE METHOD) 60 PSI TEST

3. Project/Task: OSDF PHASE III		4. Specification/Drawing/PO/Req.: SPEC SECTION 2605	
5. Prepared By: MURIAL VIGUS	Date: 1-31-02	6. Reviewed By: MIKE GODBER	Date: 1/31/02
7. NDE Level III: (When Required) NA	Date: NA	8. Approved By: (When Required) NA	Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	IDENTIFICATION OF PIPE THAT IS BEING TESTED: [ ] CELL NUMBER 4 [X] CELL NUMBER 5 [X] 6 INCH LDS CARRIER [X] 6 INCH LCS CARRIER [X] 6 INCH LCS REDUNDANT CARRIER FROM: Test flange, in the trench TO: to VH-5 TEST GAUGE ID#: 1213 CALIBRATION DATE: 12-13-01 / 12-13-02			CELL#: 5 [ ] CAP [ ] LINER These test required 2 days
1.	Verify the test gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to national or industry standards.	X NKW ~~4-10-02~~ NKW 4-9-02		Met.
2.	Verify the containment pipe is at atmospheric pressure during the testing of the carrier pipe.	X NKW 4-9-02 4-10-02		Met.

13. QA Team Member (Printed Name)	(Signature)	Date:
Muriel Vigus	Muriel Vigus	4-9-02 / 4-10-02
14. QA Team Coach (Completed QEP):		**Date:**
MIKE GODBER	Mike Godber	4/15/02

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RECORD

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. 8

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the initial expansion phase test is performed at **10 psi** over the test pressure of **60 psi**. The expansion phase pressure shall be **70 psi** and shall be maintained for a period of 4 hours.	X MKW 4-9-02 4-10-02		Met.
4.	Verify following the expansion phase; the pressure is reduced by **10 psi** to the actual test pressure of **60 psi**.	X MKW 4-9-02 4-10-02		Pressure was reduced
5.	Verify the test pressure remains steady (within **5 percent** of test pressure) for a period of one hour and verify there is no visible leakage.	X MKW 4-9-02 4-10-02		No leaks

RECORD

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000081

60°F 4.9.02 4556

TEST LOG

CELL #: 5 | PIPE DIAMETER: 6" | PIPE DESCRIPTION: LCS - Carrier

FROM: Test Flange - Trench TO: VH-5

TIME	PHASE	PRESSURE	COMMENTS
0930	Fill	N/A	Filling Line
0956	Stabilization	70 psi	N/A
1029	↓	63 psi	-9 psi
1037	↓	↓	repressurizing
1040	Stabilization	72 psi	N/A
1115	↓	67 psi	-5 psi
1310	↓	63 psi	-4 psi
1402	↓	65 psi	+2 psi
1412	↓	65 psi	
1421	↓	65 psi	N/A
1430	↓	65 psi	
1440	↓	65 psi	
1450	↓	65 psi	
1503	↓	65 psi	Pass
1508	Test	60 psi	Decreased Pressure
1530	↓	62 psi	+2 psi
1608	↓	62 psi	N/A
1630	↓	62 psi	Pass
			N/A

RECORD

4-9-02 4556

TEST LOG

CELL #: 5 | PIPE DIAMETER: 6" | PIPE DESCRIPTION: RLCS - Carrier

FROM: Test Flange - Trench TO: VH-5

TIME	PHASE	PRESSURE		COMMENTS
0938	Fill	N/A		Filling Line
0956	Stabilization	70 psi		N/A
1029	~~Stabilization~~	63 psi		-9 psi
1037		↓		repressurizing
1040	Stabilization	72 psi		
1115		67 psi		-5 psi
1310		63 psi		-4 psi
1402		65 psi		+2 psi
1412		65 psi		
1421		65 psi		N/A
1420		65 psi		
1450		65 psi		
1503	↓	65 psi		Pass
1508	Test	60 psi		Decreased the pressure
1530		62 psi		+2 psi
1608		62 psi		N/A
1630	↓	62 psi		Pass
				N/A

RECORD

10 MEV
4-9-02 4556

TEST LOG

CELL #: 5 | PIPE DIAMETER: 6" | PIPE DESCRIPTION: LDS - Carrier

FROM: Test Flange - Trench TO: VH-5

TIME	PHASE	PRESSURE		COMMENTS
0804	Stabilization	N/A		Repressurizing this Line from yesterday. Water still in the Line
N/A	N/A			
0805	Stab.	71 psi		
0820		71 psi		
0830		71 psi		N/A
0840		71 psi		
0855		71 psi		
0905		71 psi		Pass
0906	Test	60 psi		Decreased pressure on the Line.
0916		60 psi		
0926		60 psi		
0936		60 psi		N/A
0946		60 psi		
0956		60 psi		
1006		60 psi		Pass
				N/A

RECORD

DAUGHTRIDGE SALES COMPANY
501 SOUTH PINE STREET + P.O. BOX 4364
ROCKY MOUNT, NC 27803-0364

TOLL-FREE 1-800-334-9720 FAX 252-977-2192

4556

CERTIFICATE OF ACCURACY

Customer MAIN LINE SUPPLY CO. Customer No. 1568
Customer Order P1028214 ITEM NO. 56500001
Size 2½ Type 1009AW Range 0-100-PSI
Serial or Tag No. 1213 DASCO Shop No. 102121

TRUE VALUE	Indicated Value			
	Increasing		Decreasing	
0	~~0~~		0	
10	10		10	
20	20		20	
40	40		40	
60	60		60	
80	80		80	
100	100		—	

RECORD

Calibration Standard 1/10 OF 1% OF TEST Serial No. 374-30
Date Calibrated 12-13-01 Recalibration Due 12-13-02

THE ABOVE IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)* *FORMERLY NATIONAL BUREAU OF STANDARDS (NBS)

Tested By R.D. Certified By [signature]
Date 12/13/01

QUALITY EVALUATION PLAN

QEP No. _____ Rev. ____

1. Source ☐ Receiving ☐ Const./Remediation X Maint./Operations ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF HDPE PIPE AND FITTINGS HYDROSTATIC TESTING 10 INCH CONTAINMENT PIPE (ALTERNATE METHOD) 15 PSI TEST

3. Project/Task: OSDF PHASE III		4. Specification/Drawing/PO/Req.: SPEC SECTION 2605	
5. Prepared By: MURIEL VIGUS	Date: 1-31-02	6. Reviewed By: MIKE GODBER	Date: 1/31/02
7. NDE Level III: (When Required) NA	Date: NA	8. Approved By: (When Required) NA	Date: NA

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
	IDENTIFICATION OF PIPE THAT IS BEING TESTED: [ ] CELL NUMBER 4 [X] CELL NUMBER 5 [X] 10 INCH LDS CONTAINMENT [X] 10 INCH LCS CONTAINMENT [X] 10 INCH LCS REDUNDANT CONTAINMENT FROM: Test Flange in the trench TO: VH-5 TEST GAUGE ID#: 1213 CALIBRATION DATE: 12-13-01 / 12-13-02			CELL#: 5 [ ] CAP [ ] LINER
1.	Verify the test gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to national or industry standards.	X MCV 4-10-02		
2.	Verify the carrier pipe is at atmospheric pressure during the testing of the containment pipe.	X MCV 4-10-02		Water is still in the Line's

13. QA Team Member (Printed Name)	(Signature)	Date:
Muriel Vigus	Muriel Vigus	4-10-02 / 4-11-02
14. QA Team Coach (Completed QEP):		**Date:**
MIKE GODBER	Michael W. Godber	4/18/02

RECORD

4556

000086

QUALITY EVALUATION PLAN
(Continuation Sheet)

QEP No. _____ Rev. 8

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
3.	Verify the initial expansion phase test is performed at **10 psi** over the test pressure of **15 psi**. The expansion phase pressure shall be **25 psi** and shall be maintained for a period of 4 hours.	X MCW 4-10-02 4-11-02		Met.
4.	Verify following the expansion phase, the pressure is reduced by **10 psi** to the actual test pressure of **25 psi.**	X MCW 4-10-02 4-11-02		Met. pressure was reduced.
5.	Verify the test pressure remains steady (within **5 percent** of test pressure) for a period of one hour and verify there is no visible leakage.	X MCW 4-10-02 4-11-02		Met. no leaks
	Attached: Test Summary			

RECORD

080087

4556

57° F 4-10-02 4556

TEST LOG

CELL #: 5 | PIPE DIAMETER: 10" | PIPE DESCRIPTION: LDS-Containment

FROM: Test Flange - Trench TO: VH-5

TIME	PHASE	PRESSURE	COMMENTS
0900	Fill	N/A	Filling line
0926	Stabilization	26 psi	N/A
0936		24 psi	-2 psi
0946		23 psi	-1 psi
0956		22.5 psi	-.5 psi
1006		22 psi	-.5 psi
1016		26 psi	repressurized
1030		25 psi	-1 psi
1045		24 psi	-1 psi
1055		23 psi	-1 psi
1115		22 psi	-1 psi
1120		25 psi	repressurized
1135		24 psi	-1 psi
1150		23 psi	-1 psi
210		22 psi	-1 psi
N/A	N/A	N/A	No leaks, pipe was examined for Leakage. Will go to Test.
1337	Test	15 psi	Pressure was decreased.
1358		15 psi	N/A
1412		15 psi	
1437		15 psi	Pass
N/A	N/A	N/A	N/A

RECORD

4-10-02 4556

TEST LOG

CELL #: 5 | PIPE DIAMETER: 10" | PIPE DESCRIPTION: LCS - Containment

FROM: Test Flange - Trench TO: VH-5

TIME	PHASE	PRESSURE	COMMENTS
1335	Stab. Period	26 psi	Line was filled 4-9-02
1430		24.5 psi	-1.5 psi
1440		24.5 psi	
1450		24.5 psi	
1500		24.5 psi	
1505	Test	15 psi	Pressure decreased.
1515		15 psi	
1530		15 psi	
1545		15 psi	
1605		15 psi	Pass

N/A

N/A

RECORD

4-10-02 / 4-11-02 *

4-10-02 4556

TEST LOG

CELL #: 5 | PIPE DIAMETER: 10" | PIPE DESCRIPTION: RLCS - Containment

FROM: Test Flange - Trench TO: VH-5

TIME	PHASE	PRESSURE	COMMENTS
1500	Stab. Period	25 psi	Pipe was filled 4-9-02
1512		25 psi	N/A
1530		24 psi	-1 psi
1545		24 psi	N/A
1605		24 psi	
1612		24 psi	Pass, Stabilized for the
N/A	N/A	N/A	night will Test in the morn.
*	4-11-02 *		* 4-11-02 *
N/A	N/A	N/A	Pipe lost some pressure
			overnight due to the Link
			Seal leaking overnight.
0831	—	—	Repressurizing the line,
N/A	N/A	N/A	tighten Link Seal
0840	Stabilization	25 psi	N/A
0855		24 psi	-1 psi
0905		23 psi	-1 psi
0920		22 psi	-1 psi
0937		21 psi	-1, Link seal dripping again
N/A		N/A	going to test.
0940	Test	15 psi	
0955		15 psi	N/A
1010		15 psi	
1025		15 psi	
1040	Pass	15 psi	Pass
N/A	N/A	N/A	N/A

RECORD

DAUGHTRIDGE SALES COMPANY
501 SOUTH PINE STREET + P.O. BOX 4364
ROCKY MOUNT, NC 27803-0364

TOLL-FREE 1-800-334-9720 FAX 252-977-2192

4556

CERTIFICATE OF ACCURACY

Customer MAIN LINE SUPPLY CO. Customer No. 1568
Customer Order P1028214 ITEM NO. 56500001
Size 2½ Type 1009AW Range 0-100-PSI
Serial or Tag No. 1213 DASCO Shop No. 103121

TRUE VALUE	Indicated Value			
	Increasing		Decreasing	
0	0		0	
10	10		10	
20	20		20	
40	40		40	
60	60		60	
80	80		80	
100	100		—	

RECORD

Calibration Standard Y100F 1% of TEST Serial No. 374-30
Date Calibrated 12-13-01 Recalibration Due 12-13-02

THE ABOVE IS TRACEABLE TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)* *FORMERLY NATIONAL BUREAU OF STANDARDS (NBS)

Tested By R.D. Certified By [signature]
Date 12/13/01

Receiving ☐ Const./Remediation X Main ☐ Waste ☐ Other ☐

2. Item/Title/Description:

VERIFICATION OF HDPE PIPE AND FITTINGS IN STATIC TESTING 6 INCH CARRIER PIPE (ALTERNATE METHOD) 60 PSI TEST

3. Project/Task: OSDF PHASE III	4. Specification/Drawing/PO/Req.: SPEC SECTION 2605
5. Prepared By: MURIAL VIGUS Date	6. Reviewed By: MIKE GODBER Date:
7. TPE Level III: (When Required) N/A Date	8. Approved By: (When Required) N/A Date:

9. Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Evaluation Techniques, Acceptance Criteria)	11. Status SAT	UNSAT	12. General Remarks.
	IDENTIFICATION OF PIPE THAT IS BEING TESTD. [ ] CELL NUMBER 3 [ ] CELL NUMBER 4 [X] Cell NUMBER 5 [ ] 6 INCH LDS CARRIER [ ] 6 INCH LCS CARRIER [ ] 6 INCH LCS REDUNDANT CARRIER [X] 6 inch 20 inch Horizontal Monitoring Well FROM: TO: TEST GAUGE ID#: 1213 CALIBRATION DATE: 12/13/01			CELL#: 5 [ ] CAP [X] LINER (MONITORING WELL)
1.	Verify the test gauge has been calibrated within (1) year of date of testing. Calibration shall be traceable to national or industry standards.	TW 1/11/02		
2.	Verify the containment pipe is at atmospheric pressure during the testing of the carrier pipe.	TW 1/11/02		

13. QA Team Member (Printed Name) PAUL VOLKER Signature Date 1/11/02

14. QA Team Coach (Completed QEP): M. GOOBER Signature Date: 3/23/02

RECORD

(Continuation Sheet)

QEP No. _____ Rev. _____

Char. No.	10. Evaluation Characteristic (Code/Specification, Inspection/Test/Examination Techniques, Acceptance Criteria)	11. Status SAT	11. Status UNSAT	12. General Remarks
1.	Verify the initial expansion phase test is performed at **10 psi** over the test pressure of **60 psi**. The expansion phase pressure shall be **70 psi** and shall be maintained for a period of 4 hours.	TW 1/11/02		
2.	Verify following the expansion phase, the pressure is reduced by **10 psi** to the actual test pressure of **60 psi**.	TW 1/11/02		Pressure reduced to ~~60~~ 61 psi @ 0955 TW 1/11/02
3.	Verify the test pressure remains steady (within **5 percent** of test pressure) for a period of one hour and verify there is no visible leakage.	TW 1/11/02		Pressure still @ 61psi @ 1055 hrs. Test complete.

RECORD

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GEOSYNTEC CONSULTANTS

FLUOR FERNALD, INC.

PRESSURE TEST LOG

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO. 6Q1341 TASK NO.: 04.1

DESCRIPTION: Phase III YEAR: 2002

CONTRACTOR: DeBAA / IT Corp

TEST DESCRIPTION: 1 hour @ 70 PSI (stabilization) 1 hour @ 60 PSI (Hydro)

PASS/FAIL CRITERION:

MATERIAL DESCRIPTION: FORCEMAIN: ☐ CONTAINMENT: ☐ MANHOLE: ☐ OTHER: X

TEST LOCATION: VH 5 Monitoring Well / 6in and 10in Pipe

* Drop Pressure To 60 PSI for 1 hr Test

READING NO.	DATE (day/mo)	TIME	READING	CHANGE IN READING	PASS/ FAIL	COMMENTS	QA ID
1	11 JAN	0840	FILL	Pipe Assy	TO	70 PSI	DLE
2	11 JAN	0843	Removed	Fill Hose,	Plugged	Pipe Assy	DLE
3	11 JAN	0845	70 PSI	N/A		Start of Stab. Test	DLE
4	11 JAN	0915	70 PSI	No Change 70		No change	DLE
5	11 JAN	0945	70 PSI	No Change 70	P	Pass Stab. Test	DLE
6	11 JAN	0955	61 PSI			Pressure Lowered To 61	DLE
7	11 JAN	1025	61 PSI	No Change		Pressure Held	DLE
8	11 JAN	1055	61 PSI	No Change	P	No change	DLE
						End of Test	DLE

VISUAL MONITORING: Barry Buchman — CONTRACTOR'S REPRESENTATIVE day/mo/yr

David Lane — CQA REPRESENTATIVE 11/Jan/02 day/mo/yr

FINAL APPROVAL: _____ CONTRACTOR'S REPRESENTATIVE day/mo/yr

Collin L. Gibson — CQA REPRESENTATIVE 14 Jan 2002 day/mo/yr

000094

COPY TO:

©GEOSYNTEC CONSULTANTS FILE NO. 1-18-PTL

SHEET NO. 1 OF 1

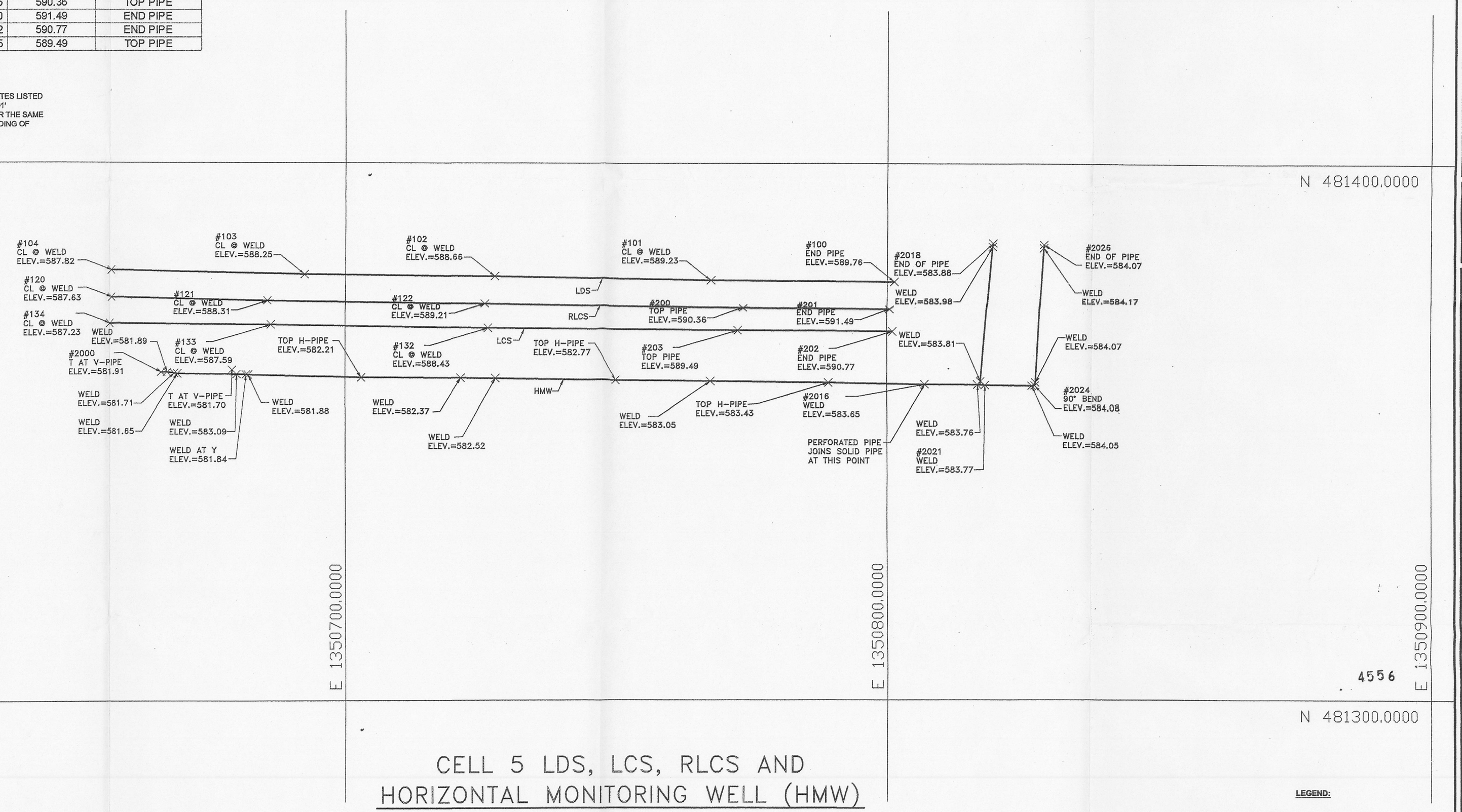
AS-BUILT SURVEY DATA

POINT	NORTHING	EASTING	ELEVATION (AS-BUILT)	DESCRIPTION
100	481377.72	1350801.32	589.76	END PIPE
101	481377.95	1350767.54	589.23	CL @ WELD
102	481378.62	1350727.54	588.66	CL @ WELD
103	481379.03	1350692.46	588.25	CL@ WELD
104	481379.73	1350656.82	587.82	CL @ WELD
120	481374.72	1350656.90	587.63	CL @ WELD
121	481374.11	1350685.62	588.31	CL @ WELD
122	481373.55	1350725.71	589.21	CL @ WELD
132	481368.90	1350726.35	588.44	CL @ WELD
133	481369.55	1350686.32	587.59	CL @ WELD
134	481369.78	1350656.60	587.23	CL @ WELD
200	481372.67	1350773.45	590.36	TOP PIPE
201	481372.30	1350800.50	591.49	END PIPE
202	481368.20	1350801.02	590.77	END PIPE
203	481368.43	1350772.45	589.49	TOP PIPE

POINT	NORTHING	EASTING	ELEVATION (AS-BUILT)	DESCRIPTION
2000	481360.77	1350666.32	581.91	T AT V-PIPE
2016	481358.43	1350806.94	583.65	WELD
2018	481384.94	1350819.43	583.88	END OF PIPE
2021	481358.24	1350817.99	583.77	WELD
2024	481358.18	1350827.16	584.08	90 DEG BEND
2026	481384.68	1350828.77	584.07	END PIPE

NOTE:

NORTHING AND EASTING COORDINATES LISTED ON THESE DRAWINGS MAY BE +/- 0.01' DIFFERENT THAN THOSE LISTED FOR THE SAME POINT ON THE TABLE DUE TO ROUNDING OF SURVEY DATA.



CELL 5 LDS, LCS, RLCS AND HORIZONTAL MONITORING WELL (HMW)

LEGEND:

——— = AS-BUILT PIPE

NOTE:

ALL ELEVATIONS WERE TAKEN AT THE CENTERLINE OF TOP OF AS-BUILT PIPE.

10 5 0 20 10 30

SCALE: 1"=10'

000096

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Y:\201\225\dwg\9-25-02 asblt VH-5 Pipe.dwg

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Designed By:
Drawn By: F.A.M.
Checked By: L.E.H.
Approved By: L.E.H.

REVISIONS:

THE IT GROUP
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
OSDF CELL 5

CELL 5 HORIZONTAL MONITORING PIPE AS-BUILT DRAWING

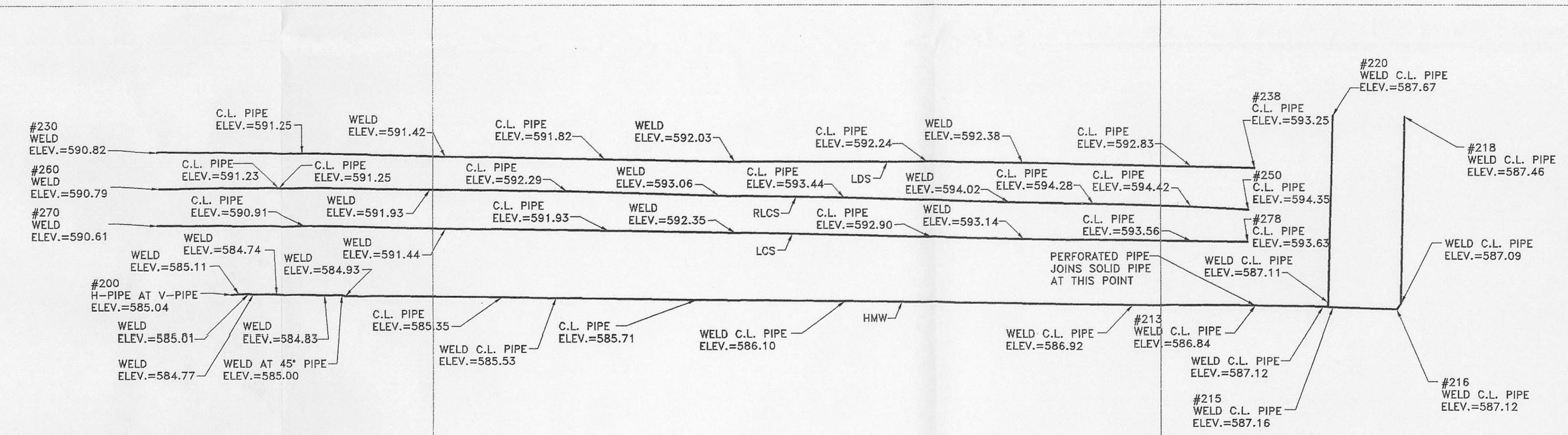
Scale: 1" = 10'
Date: 9-25-2002
Sheet No. 1
Project No. 201-225

POINT	NORTHING	EASTING	ELEVATION (AS-BUILT)	DESCRIPTION
200	481760.30	1350672.23	585.04	H-PIPE AT V-PIPE
213	481758.64	1350813.00	586.84	WELD CL PIPE
215	481758.41	1350823.62	587.16	WELD CL PIPE
216	481758.22	1350832.41	587.12	WELD CL PIPE
218	481784.48	1350833.48	587.46	WELD CL PIPE
220	481784.61	1350823.59	587.67	WELD CL PIPE

POINT	NORTHING	EASTING	ELEVATION (AS-BUILT)	DESCRIPTION
230	481779.79	1350662.08	590.82	CL@WELD
238	481777.44	1350812.98	593.25	CL PIPE @ END
250	481771.74	1350812.09	594.35	CL PIPE @ END
260	481774.76	1350662.43	590.80	CL PIPE @ WELD
270	481769.76	1350662.12	590.61	CL PIPE @ WELD
278	481767.34	1350811.98	593.63	CL PIPE @ END

NOTE:

NORTHING AND EASTING COORDINATES LISTED ON THESE DRAWINGS MAY BE +/- 0.01' DIFFERENT THAN THOSE LISTED FOR THE SAME POINT ON THE TABLE DUE TO ROUNDING OF SURVEY DATA.



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CELL 4 LDS, LCS, RLCS AND HORIZONTAL MONITORING WELL (HMW)

LEGEND:

——— = AS-BUILT PIPE

NOTE:

ALL ELEVATIONS WERE TAKEN AT THE CENTERLINE OF TOP OF AS-BUILT PIPE.

10 5 0 20 10 30

SCALE: 1"=10'

000097

STATE OF OHIO LYNN E. HIRSCH S-5738 SURVEYOR
Lynn Edward Hirsch 3-13-2002

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Checked By: L.E.H.
Approved By: L.E.H.

REVISIONS:
REVISED 5/2/02

THE IT GROUP
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
OSDF CELL 4

CELL 4
LDS, LCS, RLCS, HM PIPES
AS-BUILT DRAWING

Scale: 1" = 10'
Date: 3-13-2002
Sheet No. 1
Project No. 201-159

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TRENCH BACKFILL

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO

PROJECT NO.: 6Q134/ TASK NO.: 04.1

DESCRIPTION: PHASE III / LTS Removal

DATE: 08 day Nov month 2001 year (THURSDAY)

SPECIFICATION REQUIREMENTS: (ASTM D 698) / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4 LIFT THICKNESS (LOOSE/COMPACTED): 10"

MATERIAL SOURCE: SPOILS FROM EXCAVATION MATERIAL TYPE: (FILL) SUBGRADE / SUBBASE / CLAY / OTHER: (CIRCLE ONE)

NUCLEAR GAUGE TYPE: TROXLER 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = NA QA ID: (TRX) TO

TEST NO.	TEST LOCATION (SEE ATTACHED SKETCH)	PROBE DEPTH/ LIFT NO.	LAB RESULTS: SAMPLE NO.	LAB RESULTS: OMC (%)	LAB RESULTS: MAX DRY UNIT WT (PCF)	FIELD TEST RESULTS: FMC (1) (%)	FIELD TEST RESULTS: WET UNIT WT (PCF)	FIELD TEST RESULTS: DRY UNIT WT (PCF)	FIELD TEST RESULTS: PERCENT COMPACT (%)	PASS	FAIL	RETEST NO.	RETEST PASS	RETEST FAIL
LTR-1	24+75	4"/L-1	LCS-14	17.2	111.0	18.1	125.2	106.0	95.5	P	—	—	—	—
2	24+75	4"/L2	~~LCS-14~~ LCS-6	~~17.2~~ 16.4	~~111.0~~ 115.0	15.9	132.4	114.2	~~99.3~~ 99.4	P	—	—	—	—
3	24+75	4"/L-3	LCS 6	16.4	115.0	15.0	133.2	~~115.8~~	100.7	P	—	—	—	—
4	24+75	4"/L-4	LCS6	16.4	115.0	13.3	133.9	118.2	102.7	P	—	—	—	—

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

GEOSYNTEC CONSULTANTS FILE NO.: 2-20-FNM CHECKED BY: CA SHEET NO. 1 OF 2

4556

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GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: GQ1341 TASK NO.: 04.1

DESCRIPTION: Phase III DATE: 9 day Nov month 2001 year

SPECIFICATION REQUIREMENTS: ASTM D (698) / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4 LIFT THICKNESS (LOOSE/COMPACTED): 10"

MATERIAL SOURCE: Excavation Spoils MATERIAL TYPE: (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER: (CIRCLE ONE)

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: CA

TEST NO.	TEST LOCATION	PROBE DEPTH/ LIFT NO.	LAB RESULTS			FIELD TEST RESULTS						RETEST NO.	RETEST	
			SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL		PASS	FAIL
LTR-5	STA 24+00	/1	LCS-14	17.2	111.0	17.9	127.8	108.4	97.6	✓				
6	STA 24+00	/2	LCS-6	16.4	115.0	15.1	131.4	114.1	99.2	✓				
7	STA 24+00	/3	LCS-6	16.4	115.0	15.1	130.7	113.6	98.8	✓				
8	Sta 24+00	/4	LCS-6	16.4	115.0	16.2	131.1	112.8	98.1	✓				
9	STA 24+00	/5	LCS-14	~~17.2~~ 17.2	111.0	17.5	125.7	107.0	96.4	✓				
		/												
		/												
		/												
		/												
		/												

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

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GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO

PROJECT NO.: 601341 TASK NO.: 04.1

DESCRIPTION: LTS Removal

DATE: 9 day Nov month 2001 year

SPECIFICATION REQUIREMENTS: ASTM D 698 / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4% LIFT THICKNESS (LOOSE/COMPACTED): 10"

MATERIAL SOURCE: On-Site MATERIAL TYPE: (CIRCLE ONE) FILL / SUBGRADE / SUBBASE / CLAY / OTHER:

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: KS

TEST NO.	TEST LOCATION	PROBE DEPTH/ LIFT NO.	LAB RESULTS			FIELD TEST RESULTS						RETEST NO.	RETEST	
			SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL		PASS	FAIL
LTR-10	St 24+00	8"/6	LCS6	16.4	115.0	13.2	135.9	120.0	104.6	P	–	–	–	–
11	St 24+00	8"/7	LCS6	16.4	115.0	15.1	130.3	113.2	98.4	P	–	–	–	–
12	St 24+00	8"/8	LCS6	16.4	115.0	16.3	128.2	110.3	95.9	P	–	–	–	–
13	St 24+00	8"/9	LCS6	16.4	115.0	14.0	134.1	117.6	102.3	P	–	–	–	–
		/												
		/												
		/												
		/												
		/												
		/												

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

GEOSYNTEC CONSULTANTS FILE NO.: 2-20-FNM CHECKED BY: CA SHEET NO. 1 OF 1

4556

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GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO

PROJECT NO.: GQ1341 TASK NO.: 04.1

DESCRIPTION: LCS Removal

DATE: 13 day Nov month 2001 year

SPECIFICATION REQUIREMENTS: ASTM D 698 / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4% LIFT THICKNESS (LOOSE/COMPACTED): 8"/6"

MATERIAL SOURCE: on-site MATERIAL TYPE: (CIRCLE ONE) FILL / SUBGRADE / SUBBASE / CLAY / OTHER:

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: KS

TEST NO.	TEST LOCATION	PROBE DEPTH/ LIFT NO.	LAB RESULTS			FIELD TEST RESULTS						RETEST NO.	RETEST	
			SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL		PASS	FAIL
LTR-14	St. 17+75	6"/L-1	LCS-06	16.4	115.0	14.8	132.0	114.9	99.9	✓	—	—	—	—
15	St. 17+75	6"/L-2	LCS-06	16.4	115.0	14.8	131.5	114.6	99.7	✓	—	—	—	—
16	St. 17+75	6"/L-3	LCS-14	17.2	111.0	16.9	127.1	108.8	98.0	✓	—	—	—	—
17	St. 17+75	6"/L-4	LCS-06	16.4	115.0	16.6	130.1	111.6	97.0	✓	—	—	—	—
18	St. 17+75	6"/L-5	LCS-14	17.2	111.0	17.8	127.6	108.3	97.6	✓	—	—	—	—
19	St. 17+75	6"/L-6	LCS-06	16.4	115.0	16.6	128.4	110.1	95.7	✓	—	—	—	—

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

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GEOSYNTEC CONSULTANTS FILE NO.: 2-20-FNM CHECKED BY: CA SHEET NO. 1 OF 1

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO

PROJECT NO.: GQ1341 TASK NO.: 04.1

DESCRIPTION: Phase III - LTS Removal

DATE: 15 day Nov month 2000 year

SPECIFICATION REQUIREMENTS: (ASTM D 698) / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4% LIFT THICKNESS (LOOSE/COMPACTED): 10"-12"

MATERIAL SOURCE: On-Site/trench spoils MATERIAL TYPE: (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER: (CIRCLE ONE)

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: KS

TEST NO.	TEST LOCATION	PROBE DEPTH/ LIFT NO.	LAB RESULTS			FIELD TEST RESULTS						RETEST NO.	RETEST	
			SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL		PASS	FAIL
LTR-20	~St 15+00	8"/L-1	LCS-06	16.4	115.0	14.3	128.0	112.0	97.4	✓	—	—	—	—
21	~St. 15+00	8"/L-2	LCS-06	16.4	115.0	14.8	131.0	114.1	99.2	✓	—	—	—	—
22	~St. 15+00	8"/L-3	LCS-06	16.4	115.0	16.9	130.0	111.2	96.7	✓	—	—	—	—
23	~St. 15+00	8"/L-4	LCS-14	17.2	111.0	14.7	123.5	107.7	97.0	✓	—	—	—	—
24	~St. 15+00	8"/L-5	LCS-06	16.4	115.0	14.1	126.9	111.2	96.7	✓	—	—	—	—
25	~St 15+00	8"/L-6	LCS-06	16.4	115.0	15.0	129.5	112.6	97.9	✓	—	—	—	—

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

4556

000103

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: 6Q1341 TASK NO.: 04.1

DESCRIPTION: Phase III - LTS Removal DATE: 20 day Nov month 2001 year

SPECIFICATION REQUIREMENTS: (ASTM D 698) / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4% LIFT THICKNESS (LOOSE) COMPACTED): 10"-12"

MATERIAL SOURCE: on-site MATERIAL TYPE: (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER: (CIRCLE ONE)

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: KS

TEST NO.	TEST LOCATION	PROBE DEPTH/ LIFT NO.	LAB RESULTS			FIELD TEST RESULTS						RETEST NO.	RETEST	
			SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL		PASS	FAIL
LTR-26	St. 12+75	6"/L-1	CF-8	10.4	126.2	11.4	139.3	125.1	99.1	✓	—	—	—	—
27	St. 12+75	8"/L-2	CF-8	10.4	126.2	11.2	138.2	124.3	98.5	✓	—	—	—	—
28	St. 12+75	8"/L-3	CF-8	10.4	126.2	11.8	137.5	123.0	97.5	✓	—	—	—	—
29	St 12+75	8"/L-4	CF-8	10.4	126.2	11.5	139.5	125.1	99.1	✓	—	—	—	—
30	St 12+75	8"/L-5	CF-8	10.4	126.2	12.3	142.3	126.8	100.5	✓	—	—	—	—
31	St 12+75	8"/L-6	CF-8	10.4	126.2	11.8	136.7	122.3	96.9	✓	—	—	—	—
32	St 12+75	8"/L-7	CF-8	10.4	126.2	11.4	139.9	125.6	99.5	✓	—	—	—	—
33	St 12+75	8"/L-8	CF-8	10.4	126.2	12.1	138.7	123.7	98.0	✓	—	—	—	—
34	St 12+75	8"/L-9	CF-8	10.4	126.2	11.9	137.1	122.5	97.1	✓	—	—	—	—
35	St 12+75	8"/L-10	CF-8	10.4	126.2	10.6	135.7	~~122.8~~ 122.7	~~97.3~~ 97.2	✓	—	—	—	—

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

4556

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: GQ 1341 TASK NO.: 04.1

DESCRIPTION: Phase III - LTS Removal DATE: 10 day Dec month 2001 year

SPECIFICATION REQUIREMENTS: ASTM D 698 / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4% LIFT THICKNESS (LOOSE/COMPACTED): 20"

MATERIAL SOURCE: On-Site MATERIAL TYPE: (CIRCLE ONE) FILL / SUBGRADE / SUBBASE / CLAY / OTHER:

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: BL

TEST NO.	TEST LOCATION	PROBE DEPTH/ LIFT NO.	LAB RESULTS			FIELD TEST RESULTS						RETEST NO.	RETEST	
			SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL		PASS	FAIL
LTR-36	11+75	8"/1	EP-1Ø	15.3	114.7	14.2	127.3	111.5	97.2	P				
37	11+75	8"/2	EP-1Ø	15.3	114.7	13.9	127.9	112.3	97.9	P				

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

GEO SYNTEC CONSULTANTS FILE NO.: 2-20-FNM CHECKED BY: BL SHEET NO. 1 OF 1

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000105

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 041

DESCRIPTION: Phase III LTS Removal DATE: 16 day Dec month 2001 year

SPECIFICATION REQUIREMENTS: ASTM D (698) / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4% LIFT THICKNESS (LOOSE/COMPACTED): 10"

MATERIAL SOURCE: On Site MATERIAL TYPE: (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER: (CIRCLE ONE)

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 30979 CORRECTION FACTOR Y = N/A QA ID: [illegible]

TEST NO.	TEST LOCATION	PROBE DEPTH/ LIFT NO.	LAB RESULTS			FIELD TEST RESULTS						RETEST NO.	RETEST	
			SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL		PASS	FAIL
UR-38	11+75	8"/3	EP-10	15.3	114.7	14.9	127.4	110.9	96.7	P				
39	11+75	8"/4	EP-10	15.3	114.7	15.7	127.9	110.5	96.4	P				
40	11+75	8"/5	EP-10	15.3	114.7	15.4	126.8	109.9	95.8	P				

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

©GEOSYNTEC CONSULTANTS FILE NO.: 2-20-FNM CHECKED BY: [illegible] SHEET NO. 1 OF 1

4556

000106

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: G01341 TASK NO.: 04.1

DESCRIPTION: Compacted Fill over the VH-5 horizontal monitoring well DATE: 15 day Jan month 2002 year

SPECIFICATION REQUIREMENTS: ASTM D (698) / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4% LIFT THICKNESS (LOOSE/COMPACTED): 10"

MATERIAL SOURCE: On-site. MATERIAL TYPE: (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER: (CIRCLE ONE)

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: CA

TEST NO.	TEST LOCATION See location Map	PROBE DEPTH/ LIFT NO.	LAB RESULTS SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FIELD TEST RESULTS FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL	RETEST NO.	RETEST PASS	RETEST FAIL
41	VH-5	8" / 1	EP10	15.3	114.7	16.3	129.6	111.4	97.2	P				
42	VH-5	8" / 2	EP10	15.3	114.7	15.4	131.0	113.5	99.0	P				
43	VH-5	8" / 3	EP10	15.3	114.7	16.9	128.2	109.7	95.6	P				
44	VH-5	8" / 4	EP10	15.3	114.7	14.8	130.6	113.8	99.2	P				
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		/												

COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

CHECKED BY: CA

SHEET NO. 1 OF 1

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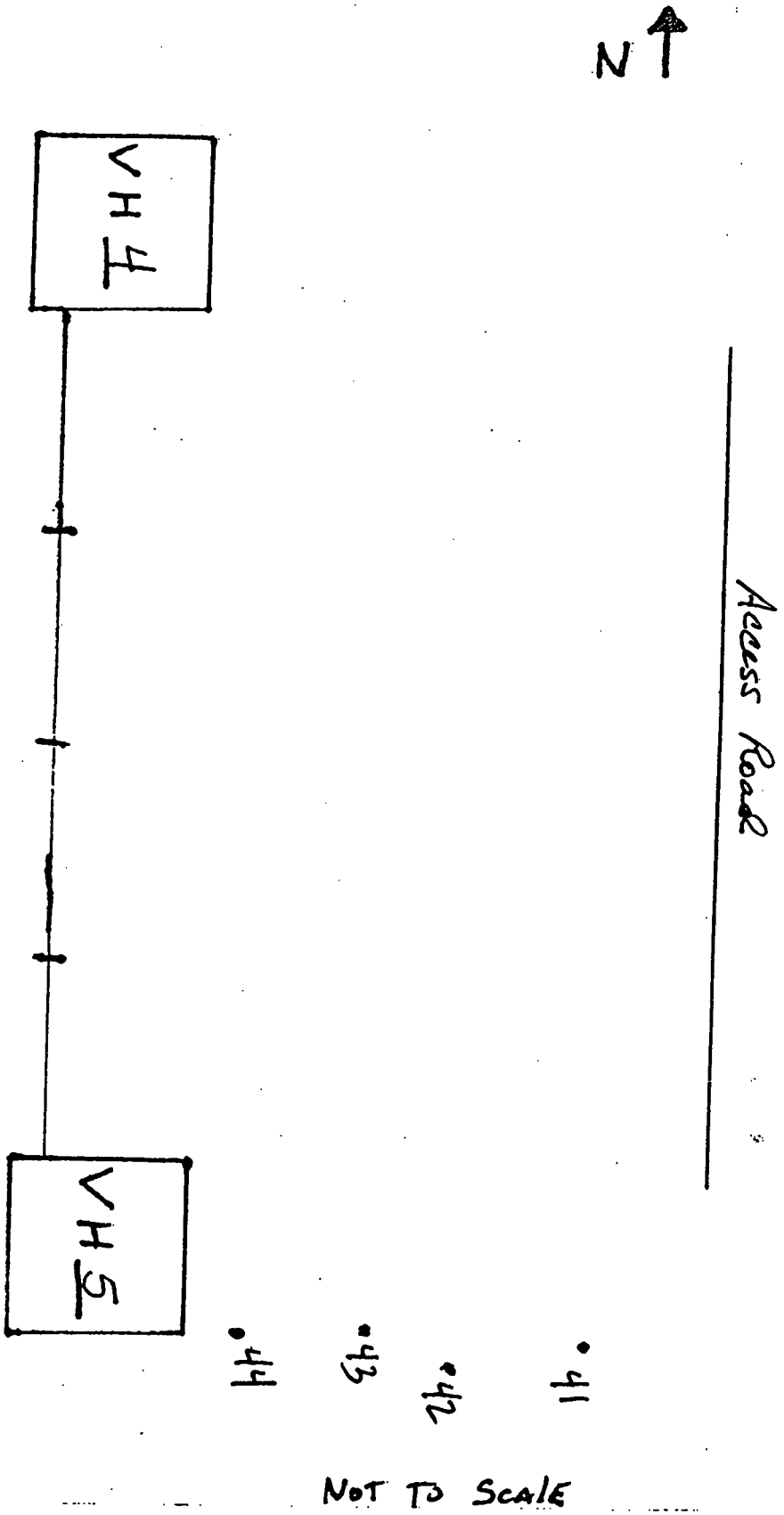
:itten by:_____ Date:____/____/____ (YY MM DD) Reviewed by:_____ Date:____/____/____ (YY MM DD)

:ent:_____ Project:_____ Project/Proposal No.:_____ Task No.:_____

000108



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GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: GR1341 TASK NO.: 04.1

DESCRIPTION: Compacted fill over the VH-4 Monitoring well DATE: 18 day Jan month 2002 year

SPECIFICATION REQUIREMENTS: ASTM D (698) / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4 LIFT THICKNESS (LOOSE/COMPACTED): 10"

MATERIAL SOURCE: ~~Troxler 3440~~ On Site MATERIAL TYPE: (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER: (CIRCLE ONE)

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: CJ

TEST NO.	TEST LOCATION See location Map	PROBE DEPTH/ LIFT NO.	LAB RESULTS SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FIELD TEST RESULTS FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL	RETEST NO.	RETEST PASS	RETEST FAIL
45	VH-4	8" / 1	EP10	15.3	114.7	14.5	128.9	112.6	98.2	P				
46	VH4	8" / 2	EP6	15.5	112.0	~~16~~ 15.6	124.1	107.4	95.9	P				
47	VH-4	8" / 3	EP10	15.3	114.7	16.9	128.7	110.1	96.0	P				
48	VH-4	8" / 4	EP-10	15.3	114.7	16.8	129.1	110.5	96.4	P				
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COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

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GEO SYNTEC CONSULTANTS FILE NO.: 2-20-FNM CHECKED BY: CJ SHEET NO. 1 OF 1

000109

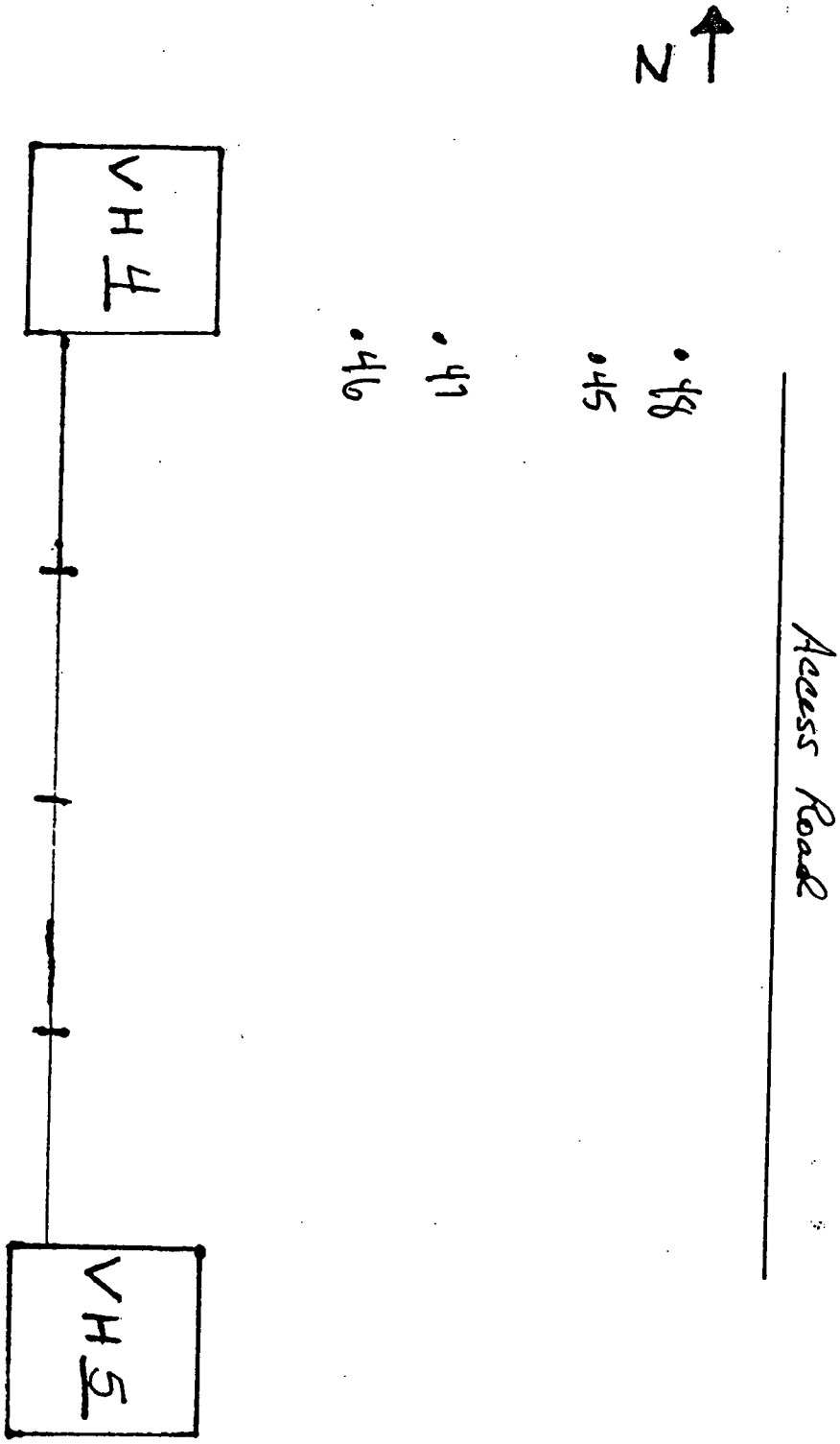
GEOSYNTEC CONSULTANTS

Page____of____

Written by:_____ Date:___/___/___ (YY MM DD) Reviewed by:_____ Date:___/___/___ (YY MM DD)

Client:_____ Project:_____ Project/Proposal No.:_____ Task No.:_____

000110



NOT TO SCALE

4556

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

FIELD NUCLEAR MOISTURE/DENSITY TEST LOG

(ASTM D 3017 AND ASTM D 2922)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: GQ1341 TASK NO.: 04.1

DESCRIPTION: Compacted fill over VH-4 LCS, LDS, & LCSR VH-4 DATE: 11 day Feb month 2002 year

SPECIFICATION REQUIREMENTS: ASTM (D 698) / ASTM D 1557 95 % COMPACTION / MOISTURE RANGE: ±4% LIFT THICKNESS (LOOSE/COMPACTED): 10"

MATERIAL SOURCE: On-Site MATERIAL TYPE: (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER: (CIRCLE ONE)

NUCLEAR GAUGE TYPE: Troxler 3440 GAUGE SERIAL NO. 20979 CORRECTION FACTOR Y = N/A QA ID: CA

TEST NO.	TEST LOCATION See location Map	PROBE DEPTH/ LIFT NO.	LAB RESULTS SAMPLE NO.	OMC (%)	MAX DRY UNIT WT (PCF)	FIELD TEST RESULTS FMC (1) (%)	WET UNIT WT (PCF)	DRY UNIT WT (PCF)	PERCENT COMPACT (%)	PASS	FAIL	RETEST NO.	RETEST PASS	RETEST FAIL
49	VH-4	8"/1	EP-10	15.3	114.7	15.7	128.8	111.3	97.0	P				
50	VH-4	8"/2	EP-10	15.3	114.7	16.1	128.3	110.6	96.4	P				
51	VH-4	8"/3	EP-10	15.3	114.7	16.3	127.7	109.8	95.7	P				
52	VH-4	8"/4	EP-10	15.3	114.7	16.8	128.9	110.4	96.2	P				
		/												
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COMMENTS: (1) FIELD MOISTURE CONTENT (FMC) = GAUGE READING/CORRECTED MOISTURE (Y)

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GEOSYNTEC CONSULTANTS FILE NO.: 2-20-FNM CHECKED BY: CA SHEET NO. 1 OF 1

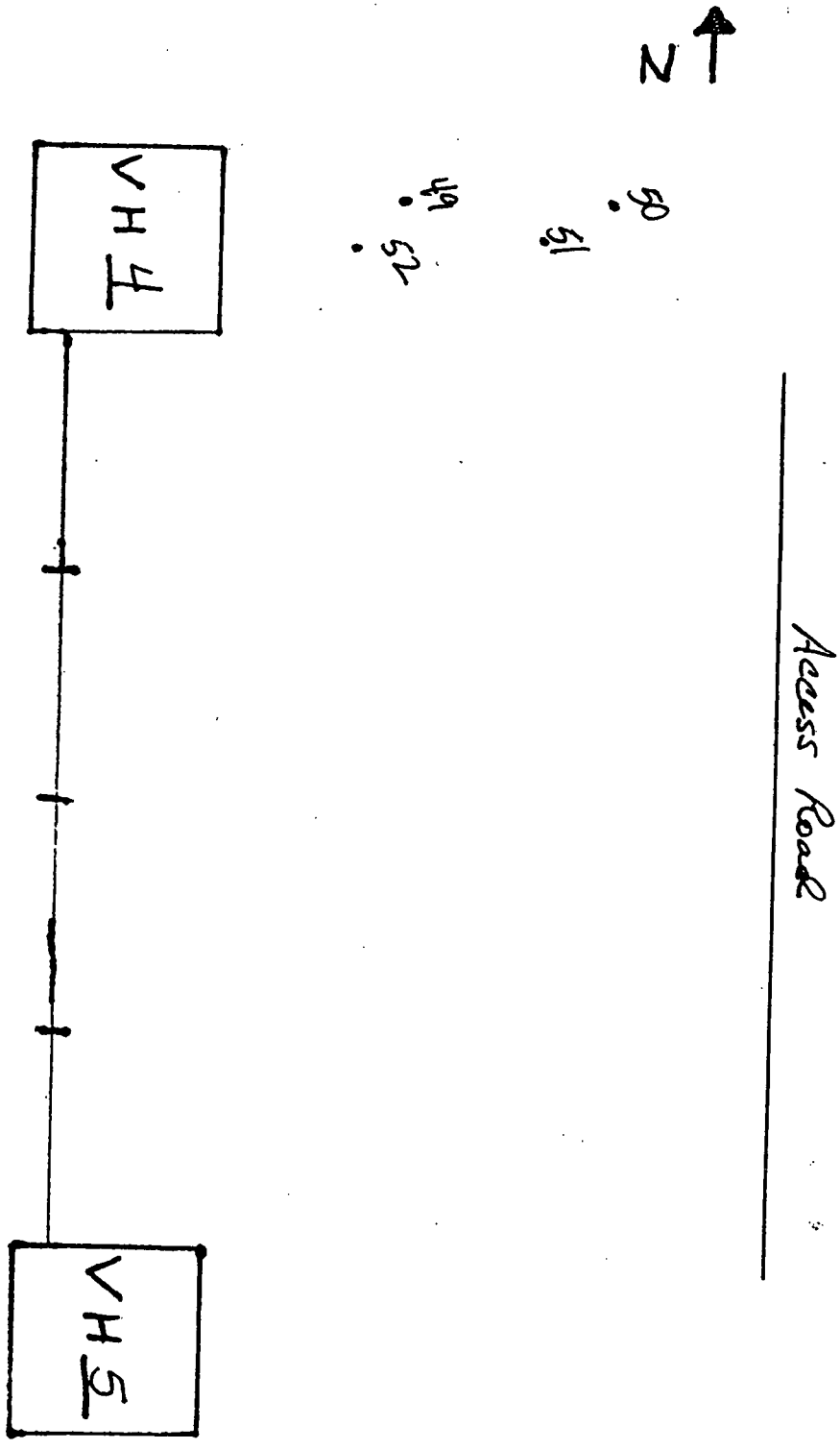
GEOSYNTEC CONSULTANTS

Page ____ of ____

Written by: _____ Date: ___/___/___ (YY MM DD) Reviewed by: _____ Date: ___/___/___ (YY MM DD)

Client: _____ Project: _____ Project/Proposal No.: _____ Task No.: _____

000112



NOT TO SCALE

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GEOSYNTEC CONSULTANTS

FLUOR FERNALD

DETERMINATION OF DENSITY (DRIVE CYLINDER) (ASTM D 2937)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: GR134 TASK NO.: 041

DESCRIPTION: Phase III DATE: 9 day Nov month 2001 year

TEST NO.: LTR DT-1

SPECIFICATION REQUIREMENTS:

MATERIAL TYPE: (CIRLCLE ONE) (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER:

% COMPACTION: 95% MOISTURE CONTENT RANGE: ±4%

FDT LOCATION: STA 24+00 FDT TEST NO.: LTR 7

FIELD TEST DATA – ASTM D 2937 QA ID: CA

A	CYLINDER NO. 01-5 VOLUME[1]	(cf)	0.03357	E	WET UNIT WEIGHT = D/A	(lbs) 129.9
B	WEIGHT OF SAMPLE & CYLINDER	(lbs)	5.71	F	DRY UNIT WEIGHT = E/[1+(T/100)]	(pcf) 112.5
C	WEIGHT OF CYLINDER	(lbs)	1.35	G		
D	WEIGHT OF WET SAMPLE = B–C	(lbs)	4.36			

NOTE: DRIVE CYLINDER VOLUME IS OBTAINED BY MEASURING THE HEIGHT AND DIAMETER, OF FOUR EQUALLY SPACED POINTS, TO AN ACCURACY OF 0.01-in., AND CALCULATING VOLUME USING AVERAGE HEIGHT AND DIAMETER.

FIELD MOISTURE CONTENT – ASTM D 2216 QA ID: CA

O	WT. OF TARE NO. 1	(grams)	8.3	R	WT. OF WATER = P–Q	(grams) 39.9
P	WT. OF WET SOIL & TARE	(grams)	307.8	S	WT. OF DRY SOIL = Q–O	(grams) 259.6
Q	WT. OF DRY SOIL & TARE	(grams)	267.9	T	MOISTURE CONTENT = (R/S)X100	(%) 15.4

PROCTOR TEST DATA: [L] MAXIMUM DRY UNIT WT. 115.0 (pcf) OPTIMUM MOISTURE CONTENT 16.4 (%)

COMPARISON WITH NUCLEAR GAUGE – ASTM D 2922 AND D 3017 QA ID: CA

DELTA MOISTURE CONTENT = T – U		0.3	U	FDT MOISTURE CONTENT	(%) 15.1
FDT WET UNIT WT.	(pcf)	130.7	V	FDT DRY UNIT WT.	(pcf) 113.6
DELTA DRY UNIT WT. = F – V		1.1		FDT #	

COMMENTS:

000113

GEOSYNTEC CONSULTANTS

4556

FLUOR FERNALD

DETERMINATION OF DENSITY (DRIVE CYLINDER) (ASTM D 2937)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: GR1341 TASK NO.: 04.1

DESCRIPTION: Phase III DATE: 10 day Dec month 2001 year

TEST NO.: LTR DT-2

SPECIFICATION REQUIREMENTS:

MATERIAL TYPE: (CIRCLE ONE) (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER:

% COMPACTION: 95% MOISTURE CONTENT RANGE: ±4%

FDT LOCATION: 11+75 FDT TEST NO.: LTR-37

FIELD TEST DATA – ASTM D 2937 QA ID: [illegible]

A	CYLINDER NO. 01-5 VOLUME[1] (cf)	0.03357	E	WET UNIT WEIGHT = D/A (lbs)	129.3
B	WEIGHT OF SAMPLE & CYLINDER (lbs)	5.69	F	DRY UNIT WEIGHT = E/[1+(T/100)] (pcf)	112.3
C	WEIGHT OF CYLINDER (lbs)	1.35	G		
D	WEIGHT OF WET SAMPLE = B–C (lbs)	4.34			

NOTE: DRIVE CYLINDER VOLUME IS OBTAINED BY MEASURING THE HEIGHT AND DIAMETER, OF FOUR EQUALLY SPACED POINTS, TO AN ACCURACY OF 0.01–in., AND CALCULATING VOLUME USING AVERAGE HEIGHT AND DIAMETER.

FIELD MOISTURE CONTENT – ASTM D 2216 QA ID: [illegible]

O	WT. OF TARE NO. 11 (grams)	8.1	R	WT. OF WATER = P–Q (grams)	38.3
P	WT. OF WET SOIL & TARE (grams)	299.4	S	WT. OF DRY SOIL = Q–O (grams)	253.0
Q	WT. OF DRY SOIL & TARE (grams)	261.1	T	MOISTURE CONTENT = (R/S)X100 (%)	15.1

PROCTOR TEST DATA: [L] MAXIMUM DRY UNIT WT. 114.7 (pcf) OPTIMUM MOISTURE CONTENT 15.3 (%)

COMPARISON WITH NUCLEAR GAUGE – ASTM D 2922 AND D 3017 QA ID: [illegible]

DELTA MOISTURE CONTENT = T – U		1.1	U	FDT MOISTURE CONTENT (%)	13.9
FDT WET UNIT WT. (pcf)		127.9	V	FDT DRY UNIT WT. (pcf)	112.3
DELTA DRY UNIT WT. = F – V		Ø		FDT #	

COMMENTS:

000114

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FLUOR FERNALD

4556.

DETERMINATION OF DENSITY (DRIVE CYLINDER) (ASTM D 2937)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: GQ1341 TASK NO.: 04.1

DESCRIPTION: Phase III DATE: 15 day Jan month 2001 year

TEST NO.: LTR-DT-3

SPECIFICATION REQUIREMENTS:

MATERIAL TYPE: (CIRLCLE ONE) (FILL) / SUBGRADE / SUBBASE / CLAY / OTHER:

% COMPACTION: 95% MOISTURE CONTENT RANGE: ± 4%

FDT LOCATION: ~~LTR-2~~ VH-5 FDT TEST NO.: LTR-44

FIELD TEST DATA – ASTM D 2937 QA ID: CJ

A	CYLINDER NO. 01-06 VOLUME(1)	(cf)	0.03351	E	WET UNIT WEIGHT = D/A	(lbs) 130.7
B	WEIGHT OF SAMPLE & CYLINDER	(lbs)	5.72	F	DRY UNIT WEIGHT = E/[1+(T/100)]	(pcf) 112.9
C	WEIGHT OF CYLINDER	(lbs)	1.34	G		
D	WEIGHT OF WET SAMPLE = B–C	(lbs)	4.38			

NOTE: DRIVE CYLINDER VOLUME IS OBTAINED BY MEASURING THE HEIGHT AND DIAMETER, OF FOUR EQUALLY SPACED POINTS, TO AN ACCURACY OF 0.01-in., AND CALCULATING VOLUME USING AVERAGE HEIGHT AND DIAMETER.

FIELD MOISTURE CONTENT – ASTM D 2216 QA ID: CJ

O	WT. OF TARE NO. 20	(grams)	8.3	R	WT. OF WATER = P–Q	(grams) 42.7
P	WT. OF WET SOIL & TARE	(grams)	320.1	S	WT. OF DRY SOIL = Q–O	(grams) 269.1
Q	WT. OF DRY SOIL & TARE	(grams)	277.4	T	MOISTURE CONTENT = (R/S)X100	(%) 15.9

PROCTOR TEST DATA: [L] MAXIMUM DRY UNIT WT. 114.7 (pcf) OPTIMUM MOISTURE CONTENT 15.3 (%)

COMPARISON WITH NUCLEAR GAUGE – ASTM D 2922 AND D 3017 QA ID: CJ

DELTA MOISTURE CONTENT = T – U		1.1	U	FDT MOISTURE CONTENT	(%) 14.8
FDT WET UNIT WT.	(pcf)	130.6	V	FDT DRY UNIT WT.	(pcf) 113.8
DELTA DRY UNIT WT. = F – V		0.9		FDT #	

COMMENTS:

000115

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CONCRETE TEST RESULTS

Fuller Mossbarger Scott & May
ENGINEERS

10018 International Boulevard
Cincinnati, Ohio 45246
(513) 860-1070

REPORT OF TEST ON CONCRETE CYLINDERS

RECEIVED
MAR 25 2002

4556

Cylinder/Set No. 1

Project No. CN2002001

PROJECT DATA

Project Name: On-Site Disposal Facility

Contractor:

Designer:

Concrete Supplier: Miami Valley Ready Mix

Specified Strength & Type: 4,000 AE

Supplied Strength & Type: 4,000 AE

Location of Concrete: Slab for horizontal monitoring wells at VH #4 and #5

FIELD DATA

Date Sampled: 2/14/02

Slump: 3"

Air Content: 3%

Truck No.: 80

Ticket No.: 71343

Ambient Temp.: 35°F

Concrete Temp.: 63°F

Technician:

Time of Test:

LABORATORY DATA

Cylinder No.	A	B	C			
Date Received	02/16/02	02/16/02	02/16/02			
Date Tested	02/21/02	03/14/02	03/14/02			
Age When Tested, Days	7	28	28			
Maximum Load, Pounds	79,000	125,500	135,500			
Compressive Strength, psi	2,790	4,440	4,790			
Cylinder Weight in Lbs.	28.4	28.8	28.6			
Type of Break	Shear	Shear & Cone	Shear			

REMARKS:
Time batched:
Time arrived:
Time departed:
Water added:
Load size:
Cumulative CY:
Total CY:

FULLER, MOSSBARGER, SCOTT AND MAY ENGINEERS, INC.

APPENDIX R

REQUESTS FOR CLARIFICATION OF INFORMATION (RCIs)

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.: FSC-599	(5) Pg 1 Of 2	(6) DATE
20103			9/14/2000

(3) S/C TITLE: On-Site Disposal Facility – Construction Laydown Area

(11) RCI NO.: RCI - 20103-001R

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]

(4A) RCI/DCN TITLE: Removal of silt fence from southern edge of Construction Laydown Area

(11) DCN NO.: DCN – 20103-008

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Drawings	90X-5500-G-00547	0	

(9) [X] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [x] NOT REQUIRED

VOID

The Construction Drawings show a silt fence along the southern portion of the Construction Laydown Area. Does this fence need to be installed since the slopes of the construction area is minimal and the swale the silt fence is to protect [illegible] vegetated.

The above referenced construction drawings shows the chain-link fence on the east side of Construction Laydown Area. Please clarify that this is the same fence which was removed according to DCN -20103-004.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Rick McGuire	Fluor Fernald	9/14/00	Chuck Van Arsdale	9/14/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

After reviewing the field conditions, it is not necessary to place a silt fence in this area. The contributing slopes are designed at approximately 1% and the vegetation in the swale itself will absorb the minimal surface erosion. It appears the accumulated silt will not pose a problem for downstream conditions.

The fence shown on the construction drawing noted above is the same fence which was removed in DCN-20103-004. The fence is not to be placed as shown in the drawing.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE:

Surinder Kumar 9/20/00

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) Chuck Van Arsdale DATE: 9/20/00

PERFORMANCE GRADE: (17) 5 SBDR – 2000 – 0027 APPLIES

(18) CONSTRUCTION CONCURRENCE DATE: 9/19/00 Bill Zebich

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99

ECDC CONTROLLED COPY NO C 011

ORIGINAL

000118

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

KAT

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC - 642	(5) Pg 1 Of 1	(6) DATE 1/10/01

(3) S/C TITLE: On – Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.: RCI – 20103 – 002R

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]

(4A) RCI/DCN TITLE: Sacrificial Geotextile Cushion in Final Cover System

(11) DCN NO.:

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Drawings - OSDF - Phase III	90X-6000-G-00317	1	Sheet G-22
Technical Specifications (OSDF) Phase III	20103 - TS – 0001	0	Section 02714
Technical Specifications (OSDF) Phase III – Final Cover Construction	20103 – TS - 0003	0	Section 02714

(9) [X] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Sacrificial Geotextile Cushion is specified to be placed on the Final Cover System Temporary Termination as shown on Construction Drawing 90X – 6000 – G – 00317, Detail 39. Please verify what type of geotextile material shall be used.

INFORMATION ONLY

(10) REQUESTOR: Charles Van Arsdale COMPANY: Fluor Fernald, Inc. DATE: 1/10/01

(12) CE / PE: Sam Wolinsky DATE: 1/10/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [X] NO [ ] YES (14) FOR DCN: [ ] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

Use the 16 ounce/sy supplemental geotextile cushion as the sacrificial geotextile cushion for the final cover system temporary termination. The material properties for this geotextile are shown on Table 02714 – 4 of Technical Specification Section 02714.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 1/10/2001
KWASI BADU-TWENEBOAH, GEOSYNTEC

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE:

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE: 1/11/01

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

Bill Zebrak

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99

ORIGINAL

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC - 642	(5) Pg 1 Of 2	(6) DATE 02/21/01

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.: 20103 – 004R

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]

(4A) RCI/DCN TITLE: CQA Plan change for biointrusion barrier and choke stone

(11) DCN NO.:

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Quality Assurance Plan	20100-PL-0006	1D	Table 6-7

(9) [X] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Due to changes in the biointrusion barrier material and choke stone layer of the final cover system, what additional changes need to be applied to the Construcion Quality Assurance Plan?

(10) REQUESTOR: Charles C. Van Arsdale COMPANY: Fluor Fernald, Inc. DATE: 2/22/01

(12) CE / PE: Sam Wolinsky DATE: 2/28/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [X] NO [ ] YES (14) FOR DCN: [ ] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

Please see following page for response.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 2/23/01
KHASI BADU-TWEBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 2/28/01
PERFORMANCE GRADE: (17) 5 SBDR – 2000 – 0027 APPLIES
SH WOLINSKY

(18) CONSTRUCTION CONCURRENCE DATE: 2/28/01
Bill Zebich
PURCHASE REQUISITION REQUIRED: [ ] YES [✓] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99

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RCI 20103 – 004R

CHANGES TO CONSTRUCTION QUALITY ASSURANCE PLAN – BIOINTRUSION BARRIER

Table 6-7 under biointrusion barrier:

Replace "Type C Riprap" with "ODOT Type D Dumped Rock Fill" and add Item 703.04(3).

Remove reference (2.) of testing for soundness and replace with "Shall be tested for specific gravity in accordance with ASTM C 127 and have a minimum bulk specific gravity of 2.60."

Change maximum absorption rate to 2.0 percent and change ASTM designation to C 127

Table 6-7 under chokestone layer:

Replace "No. 1 course aggregate" with "No. 57 coarse aggregate"

Remove reference (2.) of testing for soundness and replace with "Shall be tested for specific gravity in accordance with ASTM C 127 and have a minimum bulk specific gravity of 2.60."

Change maximum absorption rate to 2.0 percent and change ASTM designation to C 127

2/23/01

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg. 1 Of 2	(6) DATE 03/05/2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction		(11) RCI NO.: 20103-005R	
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Changes to Granular Drainage Material Requirements in CQA Plan	(11) DCN NO.:	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Quality Assurance (CQA) Plan	20100-PL-0006	1D	Table 6-4, Table 6=7

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

What are the necessary changes to the granular drainage material requirements in the CQA Plan as a result of changes to Technical Specification Section 02710?

(10) REQUESTOR:	COMPANY:	DATE:	(12) ~~CE/PE~~	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	March 5, 2001	SH Wolinsky	3/5/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [X] NO [ ] YES (14) FOR DCN: [ ] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

See page 2 of 2 for response.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 3/5/01

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [X] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE:

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE: 3/05/01

Bill Zebich

PURCHASE REQUISITION REQUIRED: [ ] YES [✓] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99

INFORMATION ONLY

ORIGINAL

CHANGES TO CONSTRUCTION QUALITY ASSURANCE PLAN - GRANULAR DRAINAGE MATERIAL

Table 6-4 (under Conformance Testing Requirements for Leachate Detection System (Section 02710) and Leachate Collection System (Section 02710); and Table 6-7 (under Conformance Testing Requirements for Cover Drainage Layer (Section 02710):

Revise as follows:

1. The granular drainage material will be tested in accordance to ASTM C 136 and the gradation shall meet the following gradation requirements for modified No. 78 stone:

Sieve	Total Percent Passing (by weight)
¾ in.	100
½ in.	85 - 100
3/8 in.	40 - 75
No. 4	5 - 25
No. 8	0 - 10
No. 16	0 - 5
No. 200	0 - 2

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 2	(6) DATE
20103	S/C FSC 642		3/26/01

(3) S/C TITLE: OSDF PHASE III – CELL 1 FINAL CONSTRUCTION COVER

(11) RCI NO.: 20103-006R

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: EROSION MAT CLARIFICATION

(11) DCN NO.: ~~20103-006R~~ CN

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
FINAL COVER SYSTEM DETAILS, SHEET G-22	90X-6000-G-00317	1	
SURFACE-WATER MANAGEMENT AND EROSION CONTROL	02270	0	
VEGETATION	02930	1	
VEGETATION AND EROSION CONTROL MODIFICATIONS	DCN 20103-007		

(9) [X] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Discussions with Fluor Fernald indicate that there is an expectation for an erosion mat cover to be placed over the entire Cell Cap. This appears in contradiction with the above referenced specifications. Please clarify the specifications in considerations of the following:

- Drawing Sheet G-22, Final Cover System Detail, indicates an erosion mat to be in accordance with Specification Section 02270, Surface-Water Management and Erosion Control
- Specification 02270 provides the technical requirements for the erosion mat (Paragraph 2.02) and references Specification Section 02930 for installation requirements (Paragraph 3.01b).
- Section 02930, Vegetation, Paragraph 3.02F states: "Stabilization of permanent slopes between 2H:1V and 3H:1V (horizontal to vertical) shall utilize an erosion mat as specified in Section 02270 after application of seed mixture." The slope was later changed by DCN 20103-007 to be from between 3H:1V and 4H:1V.
- IT Slope Analysis (attached) indicate there is no slope greater than 5H:1V. Under these current conditions there would be no need to place an erosion mat.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Dave Sablosky	IT Corp	3/26/01		4/3/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [X] NO [ ] YES (14) FOR DCN: [ ] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

SEE ATTACHED RESPONSE ON PAGE 3

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 4/3/01

[ ] FIT [X] FORM [ ] FUNCTION

KYPAS BADU-TWEREBOAH, CHESS GWIZEC

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE:

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

BRUCE SCHWEITZER

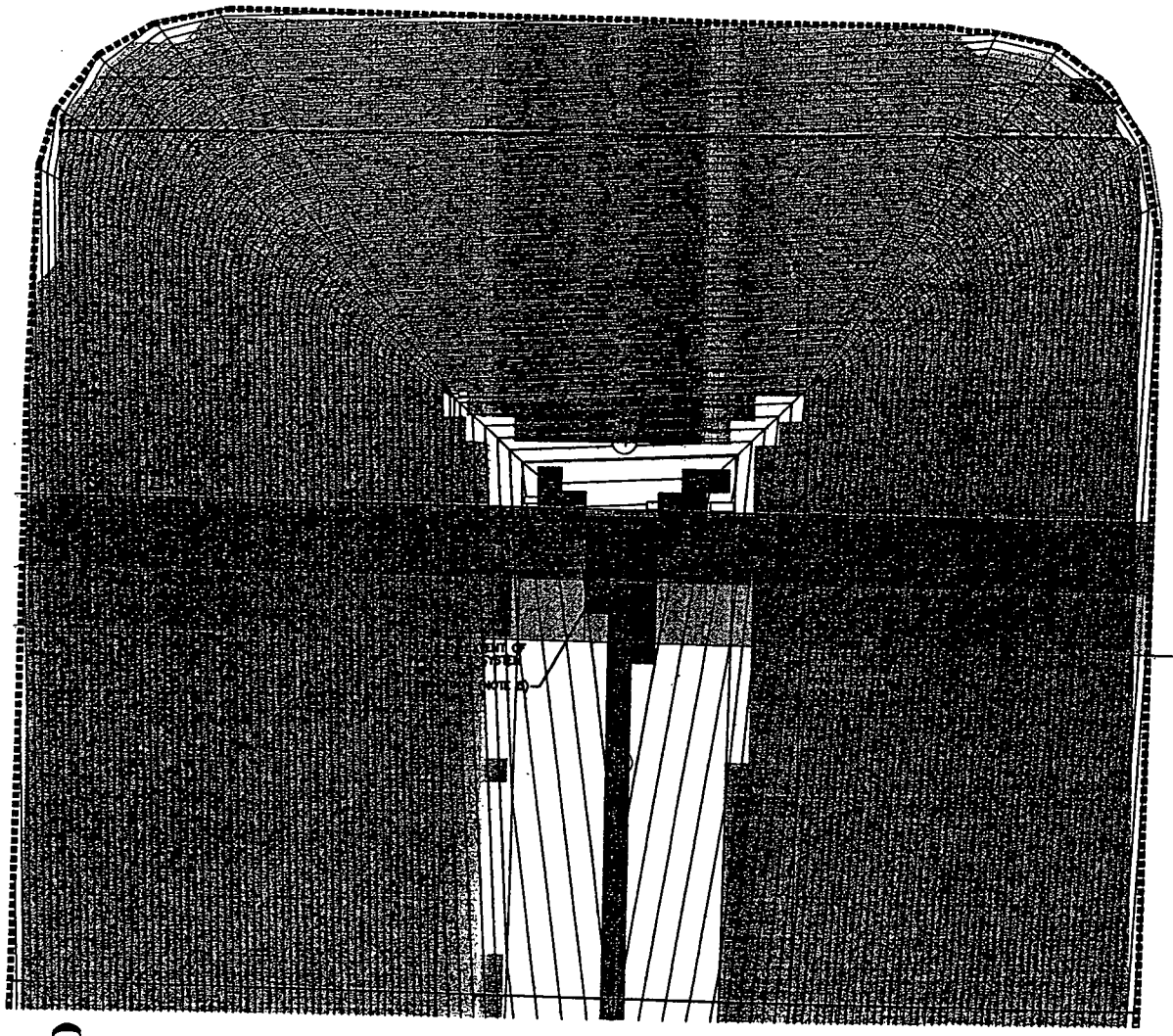
(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

Bruce A. Schweitzer

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

INFORMATION ONLY

ORIGINAL



LEGEND:

- ZONE 1
- ZONE 2
- ZONE 3
- ZONE 4
- ZONE 5

Slope Report 03/14/2001
Number of 3DFaces analyzed> 5878

Zone		Range	Horizontal Surface Area S.F.	Acres	% of Total
1	<=	5.00	52000.00	1.19	2.22
2	>	5.00	340000.00	7.81	14.48
3	>	10.00	292075.00	6.71	12.44
4	>	15.00	1655787.50	38.01	70.54
5	>	20.00	7512.50	0.17	0.32

Total Hz Surface Area> 2347375.00
Average Slope > 14.18
Minimum Slope%> 0.00 Maximum Slope%> 43.31

Slope Report 03/14/2001
Processing GRID file: O:\IT Offices - CAD Files\Findlay\820045\Geo Syntec\FINAL.grd
Lower left grid corner : 1350532.87,480532.78
Upper right grid corner: 1351812.87,483432.78
X grid resolution: 64, Y grid resolution: 145
X grid cell size: 20.00, Y grid cell size: 20.00
Horizontal Area: 2409943.750 sq ft, 55.325 acres
Slope Area: 2436278.541 sq ft, 55.929 acres
Average Slope: 13.973

1. Drawing G-22, Final Cover System Detail does require that an erosion mat be placed in accordance with Specification Section 02270, Surface Water Management and Erosion Control. The erosion mat is necessary because the vegetation on the final cover is a critical part of the design. The erosion mat will stabilize the seed and help maintain the moisture in the ground. Outside the final cover system, erosion mat is limited to seeded areas which are steeper than 4H:1V.

2. Technical Specification 02270 provides technical requirements for the erosion mat material and the installation. DCN-007 revises the material specification to use coir or jute erosion matting per request by the OEPA. Part 3.01B.1., 2nd sentence states: "Begin installation in an area within 48 hours after seeding, as specified in Section 02930, has been completed in that area." The reference to Specification Section 02930 is referring to Seeding alone, and not installation of erosion mat.

3. The erosion mat for the final cover system is specified on Construction Drawings and is referred to a Technical Specification Section which describes the type of material and installation. Therefore, the erosion mat will be placed on the final cover as specified.

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 5	(6) DATE Sep 18, 2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction			(11) RCI NO.: 20103-009R
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: North Perimeter at Cell 1 Detail		(11) DCN NO.:

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Phase III Construction Drawing	90X-6000-G-00311	1	Detail 12

(9) [x] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & EQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Field staking of the toe of biointrusion barrier and granular filter layers does not correspond to the details shown on the referenced drawing. ase advise.

REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Don Goetz	Fluor Fernald	Sep18, 2001	SH WOLINSKY	9/21/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [X] NO [ ] YES (14) FOR DCN: [ ] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

The subgrade elevations and limits shown on Detail 12 should match those, including control points data, shown on Drawing No. 90X-6000-G-00297 (Sheet G-2: Subgrade Grading Plan). Detail review of G-2 and Drawing 90X-6000-G-00302 (Sheet G-7: Final Cover Grading Plan) revealed that North Perimeter Detail should look like the East Perimeter at Cell 1 Detail 10 (Dwg. No. 90X- 6000-G-310). Therefore, the distance from the crest to the toe of the biointrusion barrier layer on the 3H:1V slope should be 14.78 ft (as on Detail 10) and not the 18.25 ft on Detail 12. Construct the North Perimeter using Detail 10 for the East Perimeter. Provide as-built information on the " red-line" drawings.

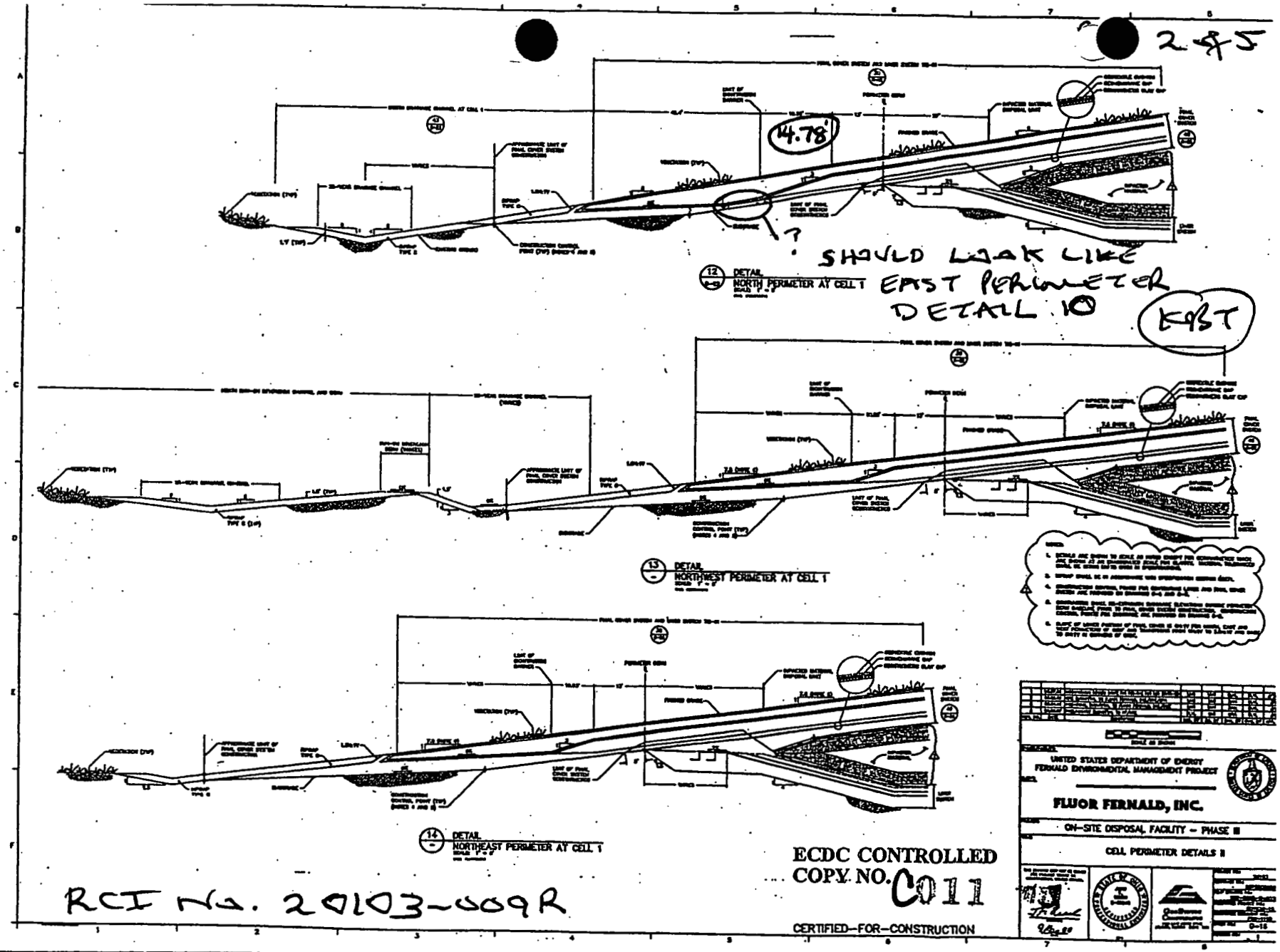
RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 9/21/01 Kwasi Badu-Tweneboah, GeoSyntec [ ] FIT [x] FORM [ ] FUNCTION	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) PERFORMANCE GRADE: (17)	DATE:
(18) CONSTRUCTION CONCURRENCE DATE: 9/25/01 PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19) Bill Zebed	(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

INFORMATION ONLY

ORIGINAL

2 of 5



RCI No. 20103-009R

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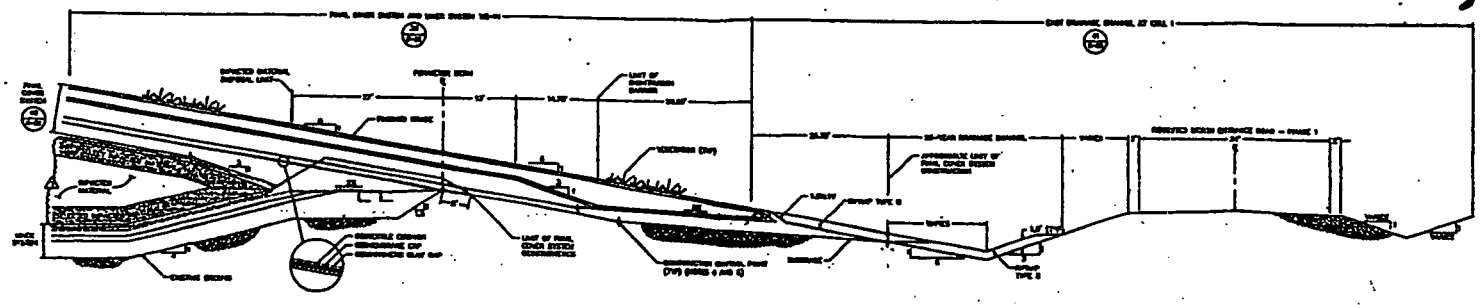
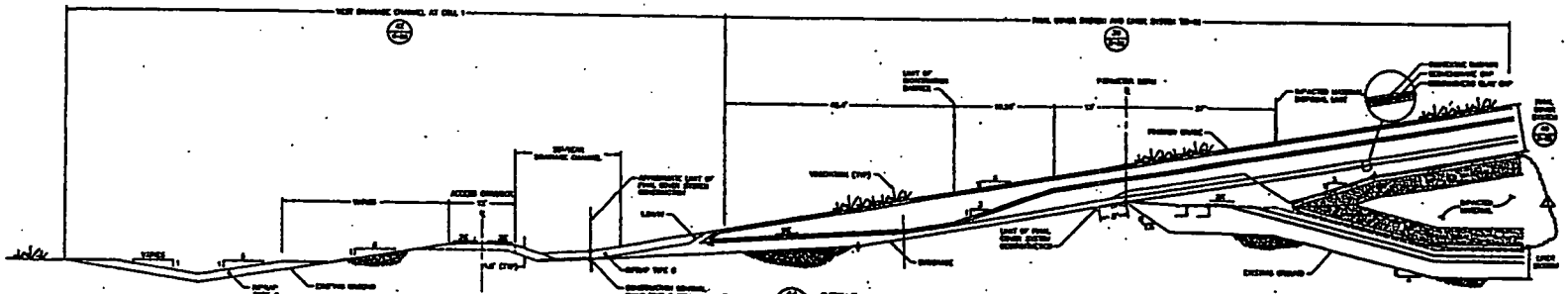
Page 3/5



10 DETAIL
EAST PERIMETER AT CELL 1

NORTH AND



11 DETAIL
WEST PERIMETER AT CELL 1

ECDC CONTROLLED
COPY NO. C011

RCI No. 20103-009R

NOTES:
1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR REINFORCED AREAS AND SHOWN AT AN ENLARGED SCALE FOR CLARITY. DIMENSIONAL TOLERANCES SHALL BE WITHIN LIMITS SHOWN IN SPECIFICATIONS.
2. GROUP SHALL BE AS REINFORCING AND SPECIFICATION DRAWING PROVIDES.
4. CONSTRUCTION CONTROL POINTS FOR CONTROLLING LINES AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-2 AND G-3.
5. CONTRACTOR SHALL RE-ESTABLISH SUPPORTING ELEVATIONS BEFORE PROVIDING FINAL SURVEYS FROM TO FINAL COVER SYSTEM CONSTRUCTION. ENGINEERING CONTROL POINTS FOR DRAWING ARE PROVIDED ON DRAWING G-2.

1	10/24/89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	10/24/89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	10/24/89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	10/24/89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	10/24/89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	10/24/89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	10/24/89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	10/24/89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NO.	DATE	REVISION	DR.	CK.	DES.	SUP.	PM.	PE.

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

CELL PERIMETER DETAILS I

STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER

9-15

CERTIFIED-FOR-CONSTRUCTION

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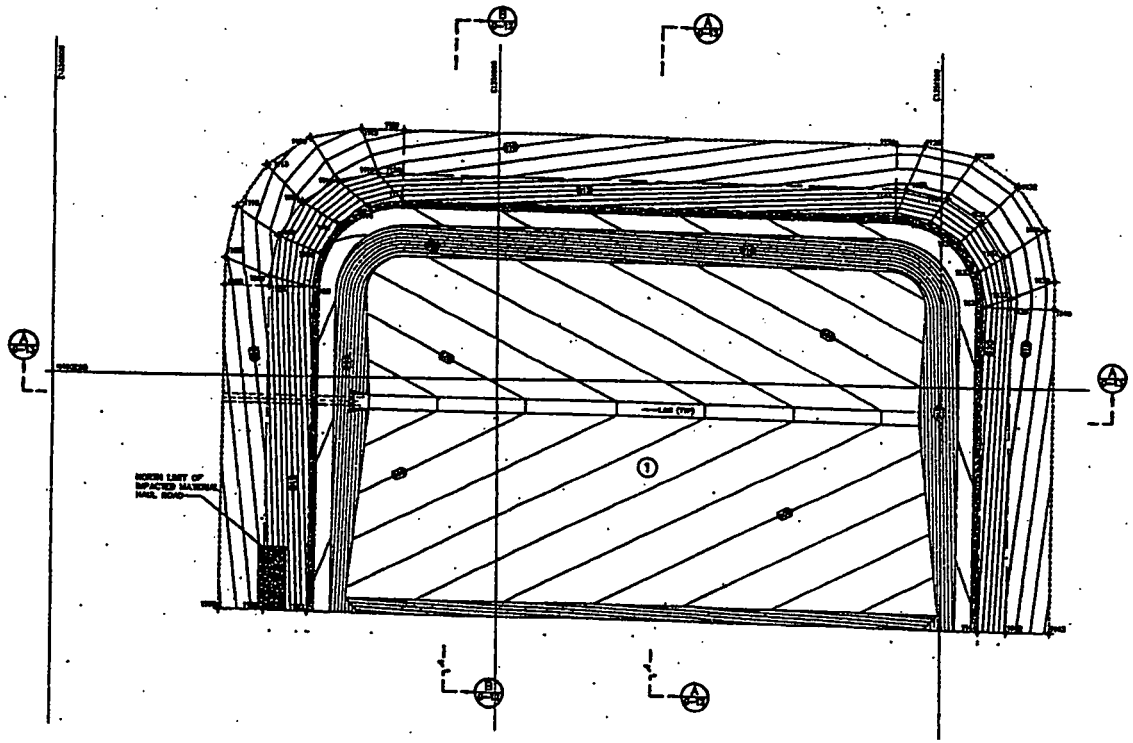
00130

RCI No. 20103-009R Page 4 of 5



LEGEND

SUBGRADE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

SUBGRADE GRADING PLAN I

ECDC CONTROLLED COPY NO.

C011

CERTIFIED-FOR-CONSTRUCTION

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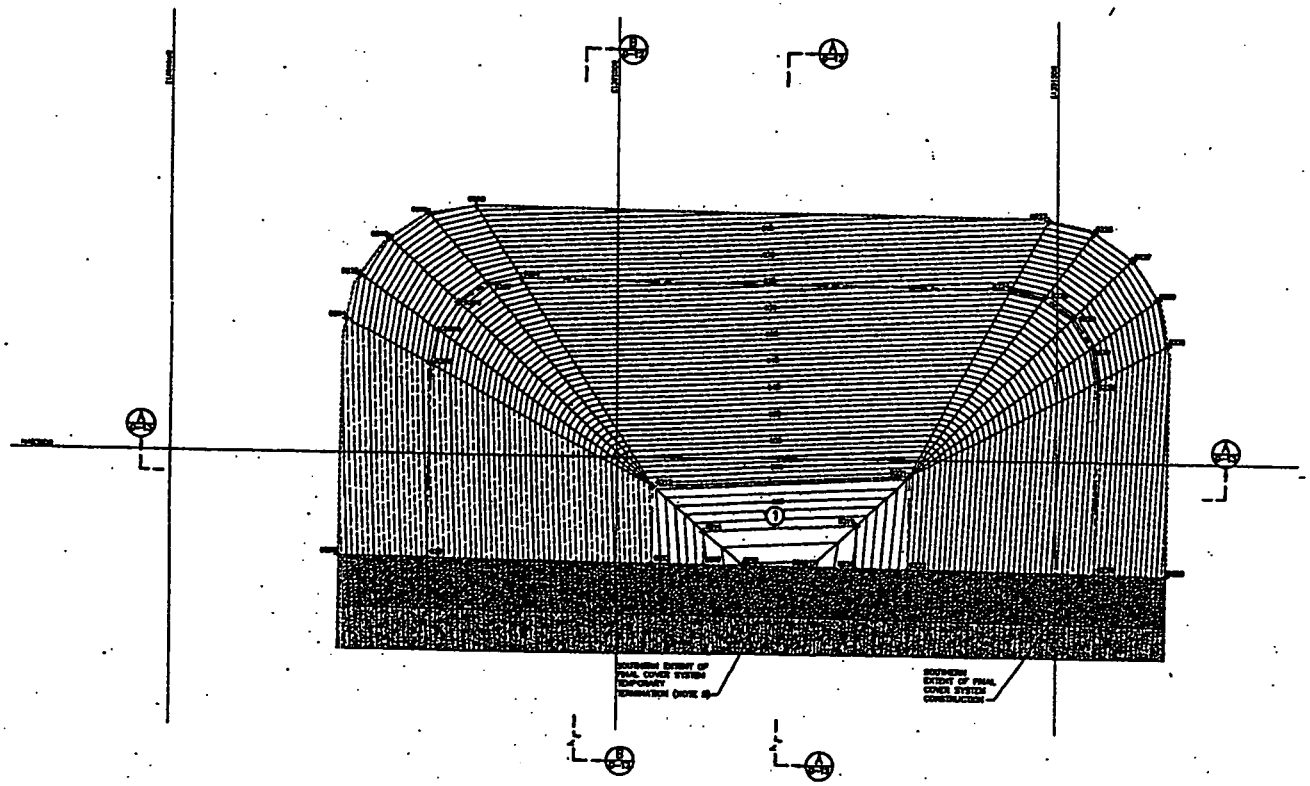
RCI No. 20L03-009R Page 5 of 5



FINAL COVER SYSTEM CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

LEGEND

NOTES:

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

FINAL COVER GRADING PLAN

ECDC CONTROLLED COPY NO. C011

CERTIFIED-FOR-CONSTRUCTION

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 1	(6) DATE
20103	FSC-642		Oct. 8, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.: 20103-010R

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Granular Filter Layer Thickness Tolerance

(11) DCN NO.:

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications OSDF Phase III – Cell 1 Final Cover Const.	20103-TS-0003	1	Section 02712

(9) [X] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Part 3.04.A of Section 02712 (page 02712-4) states that: "Construct the granular filter within 0.0 to ±0.1 feet of the thickness shown on the Construction Drawings". There appears to be a typographical error, please verify the correct thickness tolerance.

(10) REQUESTOR: Samuel H. Wolinsky COMPANY: Fluor Fernald, Inc. DATE: 10/8/01

(12) CE / PE: Samuel H. Wolinsky DATE: 10/9/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [X] NO [ ] YES (14) FOR DCN: [ ] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

The correct thickness tolerance for the granular filter layer is "within 0.0 to +0.1 feet of the thickness shown on the Construction Drawings".

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 10/9/01

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [X] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE:

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE: 10/10/01

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

Bill Zebuch

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

INFORMATION ONLY

-F-4259
EV. 5: 10/01/99: ED-12-5002

ORIGINAL

APPENDIX S

DESIGN CHANGE NOTICES (DCNs)

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 14	(6) DATE
20103	FSC-642		6/21/00

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Modification to Original CFC Drawings – Support for RFP

(11) DCN NO.: 20103-001

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Drawings per ~~attached List Entitled DCN No. 20103-001~~ LIST ON DRAWING 40X-6000-X-00293 SHEET X-1	~~See attached list~~	1	~~See attached list~~
Technical Specification Section 02930, Vegetation	20103-TS-0001	0	02930-3.03D.1.e

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Change supports OSDF Phase III - Cell 1 Final Cover Construction RFP. Listed drawings are marked to indicate scope of this work. Original CFC drawings addressed a work scope which consisted of Cell 1 Final Cover construction, Cell 4 Liner construction and Borrow Area clay material screening, stockpiling, management, and restoration to support this construction. Funding constraints and a revised procurement strategy have resulted in postponement of the Cell 4 Liner construction and it's associated borrow area clay material screening, stockpiling, management, and restoration to the out-years. The borrow area clay cap material screening, stockpiling of other earthen material and the associated management and restoration to support Cell 1 Final Cover construction will be done in FY00 by the Site Support Contractor.

Delete Tech. Specification Section 02930--3.03D.1.e as mulch is unnecessary for the seed drilling method.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE/PE	DATE:
Sam Wolinsky	Fluor Fernald, Inc.	6/21/00	Sam Wolinsky	6/21/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

GEOSYNTEC

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 7/5/00

KWASI BADU-TWENEBOAH, GEOSYNTEC

[ ] FIT [X] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 7/6/00

SAMUEL H. WOLINSKY

PERFORMANCE GRADE: (17) 4

(18) CONSTRUCTION CONCURRENCE DATE: 7/6/00

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

Bill Zebuck

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

S-F-4259
REV. 5: 10/01/99

000134

ECDC CONTROLLED COPY NO. C011

ORIGINAL

Safety Basis Document (SBD) Proposed Change Checklist (Page 1 of 2)

Use procedure NS-0008 to complete this checklist. See Page 2 of this form for procedure/document exclusions.

Type of document being reviewed:	Number, Rev and Title of Document Being Reviewed/in which the change is described:
Design Change Notice	DCN No. 20103 - 001

4556

No	Question	Yes	No	Comments
Items 1 through 4 shall be answered for each procedure review or proposed change.				
1	Does the proposed procedure/change, project, or activity address/include handling, storing, moving, or potentially impacting enriched restricted materials, including movement or modification of RDA(s)?		X	If YES, answer items 2-4 & 6 and implement NS-0001. If NO, go to next question.
2	Could the proposed change or procedure affect the activities or requirements of a nearby or adjacent facility or activity?		X	If YES, answer items 3, 4 & 6. If NO, go to next question.
3	Could the proposed change or procedure impact an SBR or a Process Requirement (PR) documented in SBD?		X	If YES, answer items 4 & 6 and implement NS-0003. If NO, go to next question.
4	Does the proposed change or procedure change the type or form, or increase the amount of hazardous material inventory?		X	If YES, answer item 6. If NO, go to next question.
If the answer to any one or more of items 1 through 4 is YES, skip item 5 and continue with item 6.				
5	If the document being reviewed is a procedure, is this change/procedure listed on Page 2 as an Exclusion? List Exclusion number(s) here: _____		X	If YES, list number(s), skip items 6 & 7, continue with item 8. If NO, go to next question.
6	Does the project, activity, and/or facility being changed or document being reviewed have or is associated with an established safety basis? ~~If YES, list SBD here and go to item 7:~~	X		If NO AND this issue is NOT a procedure review, go to item 8 and implement NS-0003, form FS-F-2706. IF NO AND this issue is a procedure review, go to item 8.
7	If item 6 is YES, is the safety basis documentation DOE-approved?		X	If YES, go to item 8 and implement NS-0002, form FS-F-4040. If NO, go to item 8, then transmit to SA Lead for final determination.

8. Implementation has been initiated as checked above for this proposed change or procedure.

Samuel H. Wolinsky
Change Initiator: Print/Sign Name

6/21/00
Date

9. Submit this checklist and proposed change control document/procedure to SA Lead for review.

10. IF the reviewed document is NOT a procedure: the change/issue IS_____ IS NOT_____ addressed within the safety envelope established by the SBD listed in item 6. IF the SBD is DOE-approved AND the change/issue is NOT addressed within the SBD, THEN implement NS-0002.

11. This change/procedure DOES_____ DOES NOT_____ require additional evaluation/analysis.

SA Lead/Analyst: Print/Sign Name _____ Date _____

SA Lead/Analyst:: If additional evaluation is required, list the SBDR or USQD number here: _____

000135

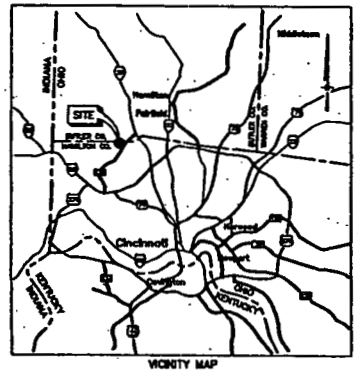
FS-F-4883
REV. 3: 08/23/99

4556

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
ON-SITE DISPOSAL FACILITY-PHASE III

FLUOR FERNALD, INC. PROJECT NUMBER 20103
HAMILTON COUNTY AND BUTLER COUNTY, OHIO
CONSTRUCTION CONTRACT NO. FSC-642

000136



VICINITY MAP

SCALE IN MILES

CONSTRUCTION DRAWING INDEX

SHEET NO.	REVISION NO.	FEMP DRAWING NO.	TITLE
GENERAL			
X-1	1	920-0000-S-00293	TITLE SHEET I
X-2	1	920-0000-S-00294	TITLE SHEET II
X-3	1	920-0000-S-00295	LEGEND AND SYMBOLS
CIVIL			
C-1	1	920-0000-C-00296	SITE DEVELOPMENT PLAN
C-2	1	920-0000-C-00297	SUBGRADE GRADING PLAN I
C-3	1	920-0000-C-00298	SUBGRADE GRADING PLAN II
C-4	1	920-0000-C-00299	[illegible]
C-5	1	920-0000-C-00300	CELL [illegible]
C-6	1	920-0000-C-00301	CONTOURING LAYER GRADING PLAN
C-7	1	920-0000-C-00302	FINAL COVER GRADING PLAN
C-8	1	920-0000-C-00303	BORROW AREA SUBAREA I EXCAVATION GRADING PLAN
C-9	1	920-0000-C-00304	BORROW AREA SUBAREA I RESTORATION PLAN AND SUBAREA 2A EXCAVATION GRADING PLAN
C-10	1	920-0000-C-00305	BORROW AREA DETAILS
C-11		[illegible]	[illegible]
C-12	1	920-0000-C-00307	OSDF NORTH-SOUTH SECTIONS
C-13	1	920-0000-C-00308	OSDF WEST-EAST SECTIONS I
C-14		[illegible]	[illegible]
C-15	1	920-0000-C-00310	CELL PERIMETER DETAILS I
C-16	1	920-0000-C-00311	CELL PERIMETER DETAILS II
C-17	1	920-0000-C-00312	CELL PERIMETER DETAILS III
C-18	1	920-0000-C-00313	LINER SYSTEM DETAILS I
C-19	1	920-0000-C-00314	LINER SYSTEM DETAILS II
C-20	1	920-0000-C-00315	LINER SYSTEM DETAILS III
C-21	1	920-0000-C-00316	LINER SYSTEM DETAILS IV
C-22	1	920-0000-C-00317	FINAL COVER SYSTEM DETAILS
C-23	1	920-0000-C-00318	SURFACE-WATER MANAGEMENT SYSTEM DETAILS I
C-24	1	920-0000-C-00319	SURFACE-WATER MANAGEMENT SYSTEM DETAILS II
C-25	1	920-0000-C-00320	SURFACE-WATER MANAGEMENT SYSTEM DETAILS III
C-26		[illegible]	[illegible]
C-27	1	920-0000-C-00322	IMPACTED MATERIAL PLACEMENT DETAILS
C-28	1	920-0000-C-00323	CHAIN LINK FENCE DETAILS

[illegible] - NOT INCLUDED IN CONSTRUCTION CONTRACT NO. FSC-642

LOCATION MAP
U.S.G.S. SHANDON QUADRANGLE, OHIO

SCALE IN FEET

ECDC CONTROLLED
COPY NO. 011

1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	ISSUED FOR CONSTRUCTION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	ISSUED FOR REVIEW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	ISSUED FOR REVIEW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DRN. BY	CHK. BY	DES. BY	APP. BY	APP. BY

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

TITLE SHEET I

STATE OF OHIO PROFESSIONAL ENGINEER

GEOSYNTEC CONSULTANTS

PROJECT NO.	20103
CONTRACT NO.	FSC-642
DRAWING NO.	920-0000-S-00293
	920-0000-S-00293
	20103-18
	FSC-1700
SHEET NO.	X-1
REVISION NO.	1

FLUOR FERNALD, INC.

FLUOR FERNALD, INC.
P.O. BOX 398704
CINCINNATI, OHIO 45239

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE, N.E., SUITE 200
ATLANTA, GEORGIA 30342-1523

CERTIFIED-FOR-CONSTRUCTION

4556

000137

REFERENCE DRAWING INDEX

SHEET NO.	REVISION NO.	FEMP DRAWING NO.	TITLE
REFERENCE			
X-3	0	903-8000-S-00003	FACILITY PLOT PLAN
X-4	0	903-8000-S-00004	SITE PLAN
X-9	0	903-8000-S-00008	PERCHED ZONE POTENTIOMETRIC SURFACE MAP
X-10	0	903-8000-S-00009	BROWN TILL/GRAY TILL INTERFACE CONTOUR MAP
X-11	0	903-8000-S-00010	GRAY TILL CONTOUR MAP
X-12	0	903-8000-S-00011	SURFACE-GEOLOGY MAP
X-13	0	903-8000-S-00012	GEOLOGIC SECTION A-A
X-14	0	903-8000-S-00013	GEOLOGIC SECTION B-B
X-15	0	903-8000-S-00014	GEOLOGIC SECTION C-C and D-D
X-1A	2	903-8000-S-00070	TITLE SHEET
X-2B	0	903-8000-S-00071	LEGEND AND SYMBOLS
0-2A	0	903-8000-0-00072	SITE DEVELOPMENT PLAN
0-5A	1	903-8000-0-00073	SUBGRADE GRADING PLAN I
0-5B	2	903-8000-0-00074	SUBGRADE GRADING PLAN II
0-5C	0	903-8000-0-00075	SUBGRADE GRADING PLAN III
0-10	0	903-8000-0-00204	SUBGRADE GRADING PLAN
0-14	0	903-8000-0-00206	BIFACED MATERIAL HAUL ROAD GRADING PLAN
0-15A	2	903-8000-0-00077	OSDF SECTIONS
0-41A	0	903-8000-0-00089	SEDIMENTATION BASIN DETAILS
-	2	903-8000-E-00522	ELECTRICAL POWER FOR OSDF
-	0	903-8000-E-00543	ELECTRIC FOR OSDF AIR MONITORS
-	1	923-8000-0-00234	PLAN AND PROFILE SHEET 1 OF 4
-	3	923-8000-0-00235	PLAN AND PROFILE SHEET 2 OF 4
-	2	923-8000-0-00236	PLAN AND PROFILE SHEET 3 OF 4
-	1	923-8000-0-00237	PLAN AND PROFILE SHEET 4 OF 4
-	1	923-8000-0-00232	CIVIL MASTER PLAN
-	-	903-04381	EXISTING UTILITIES - REFERENCE DRAWINGS - OVERALL PLAN
-	-	903-04383	EXISTING UTILITIES - REFERENCE DRAWINGS - SHEET 1 OF 6
-	-	903-04382	EXISTING UTILITIES - REFERENCE DRAWINGS - SHEET 2 OF 6
-	-	903-04384	EXISTING UTILITIES - REFERENCE DRAWINGS - SHEET 3 OF 6
-	-	903-04385	EXISTING UTILITIES - REFERENCE DRAWINGS - SHEET 4 OF 6
-	-	903-04386	EXISTING UTILITIES - REFERENCE DRAWINGS - SHEET 5 OF 6
-	-	903-04387	EXISTING UTILITIES - REFERENCE DRAWINGS - SHEET 6 OF 6
-	3	006-8300-0-01843	FEMP ON-SITE EASEMENTS AND RIGHT-OF-WAYS
-	13	321-8300-P-00839	MASTER GRID OF UNDERGROUND UTILITY PLANS
-	10	220-8300-P-00881	GRID 2 - UNDERGROUND UTILITIES
-	10	221-8300-P-00883	GRID 3 - UNDERGROUND UTILITIES
-	10	222-8300-P-00884	GRID 4 - UNDERGROUND UTILITIES
-	10	223-8300-P-00885	GRID 5 - UNDERGROUND UTILITIES
-	10	224-8300-P-00886	GRID 6 - UNDERGROUND UTILITIES
-	10	225-8300-P-00887	GRID 7 - UNDERGROUND UTILITIES
-	10	226-8300-P-00888	GRID 8 - UNDERGROUND UTILITIES
-	10	22A-8300-P-00787	GRID 32 - UNDERGROUND UTILITIES
-	7	73A-8300-0-00448	AREA I PHASE I SITE PLAN 3 OF 3
-	2	76A-8300-S-00450	AREA I PHASE I (EAST) DETAIL SHEET 1
03023	0	934-8300-0-00294	CIVIL EXISTING SITE AND UTILITY PLAN - GRID 13
03029	0	934-8300-0-00302	CIVIL EXISTING SITE AND UTILITY PLAN - GRID 21
03030	0	934-8300-0-00303	CIVIL EXISTING SITE AND UTILITY PLAN - GRID 29
03037	0	934-8300-0-00310	CIVIL EXISTING SITE AND UTILITY PLAN - GRID 30
03038	0	934-8300-0-00311	CIVIL EXISTING SITE AND UTILITY PLAN - GRID 37
03046	0	934-8300-0-00318	CIVIL EXISTING SITE AND UTILITY PLAN - GRID 38
03049	3	903-8300-E-00336	CIVIL EXISTING SITE AND UTILITY PLAN - GRID 46
-	1	903-8300-E-00336	13.2 kV ELECTRICAL MASTER PLOT
-	1	903-8300-S-00538	INTERIM LCS COVER SHEET
-	1	903-8300-S-01537	INTERIM LCS PLAN AND PROFILE, SHEET 1 OF 3
-	1	903-8300-S-00539	INTERIM LCS PLAN AND PROFILE, SHEET 2 OF 3
-	1	903-8300-S-00539	INTERIM LCS PLAN AND PROFILE, SHEET 3 OF 3

SHEET NO.	REVISION NO.	FEMP DRAWING NO.	TITLE
REFERENCE			
X-2	0	903-8000-S-00340	LEGEND AND SYMBOLS
0-3	0	903-8000-0-00281	LTS PIPE PLAN AND PROFILE STATIONS 0+00 TO 5+00
0-4	0	903-8000-0-00282	LTS PIPE PLAN AND PROFILE STATIONS 5+00 TO 11+00
0-5	0	903-8000-0-00283	LTS PIPE PLAN AND PROFILE STATIONS 11+00 TO 17+00
0-6	0	903-8000-0-00284	LTS PIPE PLAN AND PROFILE STATIONS 17+00 TO 23+00
0-7	0	903-8000-0-00285	LTS PIPE PLAN AND PROFILE STATIONS 23+00 TO 29+00
0-8	0	903-8000-0-00286	LTS PIPE PLAN AND PROFILE STATIONS 29+00 TO 34+34.34
0-14	0	903-8000-0-00291	VALVE HOUSE AND CONTROL VALVE HOUSE GENERAL LAYOUTS
0-20	0	903-8000-0-00291	SURFACE-WATER MANAGEMENT SYSTEM DETAILS
E-1	0	903-8000-E-00298	OVERHEAD POWER TRANSMISSION SYSTEM PLAN
M-3	0	903-8000-M-00288	VALVE HOUSE MECHANICAL DETAILS II
0-41	0	903-8000-0-00224	IMPACTED MATERIAL PLACEMENT DETAILS

ECDC CONTROLLED COPY NO. C011

1	ISSUED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	ISSUED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B	ISSUED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A	ISSUED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	REV. BY	CHK. BY	ENGR. BY	ENGR. BY	APP. BY

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

TITLE SHEET II

9/26/00

STATE OF OHIO REGISTERED PROFESSIONAL ENGINEER

GeoSyntec Consultants

PROJECT NO. 3P-03
CONTRACT NO. DE-AC24-92OH2115
DRAWING NO. 903-8000-S-00294
DRAWING TITLE NO. 03029-13
DRAWING TITLE DATE FEB-1-1-01
SHEET NO. X-2
REVISION NO. 1

CERTIFIED-FOR-CONSTRUCTION

4556

SYMBOLS LEGEND

EXISTING	NEW	COMPONENT
		IMPACTED MATERIAL DISPOSAL UNIT
		BATTERY UNIT
		BORROW AREA UNIT
		FDMP PROPERTY LINE
		BUTLER COUNTY/HAMILTON COUNTY LINE
		ADJACENT LANDOWNER PROPERTY LINE
		FENCE
		RAIL FENCE
		FENCE GATE
		RAILROAD TRACK
		PAVED ROAD, SIDEWALK OR PARKING LOT
		IMPAVED ROAD, SIDEWALK OR PARKING LOT
		CENTERLINE OR BASELINE
		PERIMETER BORN BASELINE
		SLOPE CREST OR TOE
		LTS PIPE
		LTS PIPE
		UTILITY CABOVHT
		WATER TABLE OR PIEZOMETRIC SURFACE
		DECIDUOUS TREE
		CONIFEROUS TREE
		TREE LINE
		PARKING LOT STRIPING
		CELL DESIGNATION
		TRAILER OR BUILDING
		DRAINAGE FLOW DIRECTION
		REFERENCE
		SIGN
		POST
		SLOPE INDICATOR
		PILE
		TRANSMISSION TOWER
		CATCH BASIN
		MANHOLE
		POWER POLE
		TYPE 2 MONITORING WELL
		TYPE 3 MONITORING WELL
		GEOTECHNICAL BORING
		CONE PENETROMETER TEST (CPT) SOUNDING
		BENCHMARK
		LYSIMETER
		MONITORING WELL
		VALVE HOUSE
		LEACHATE TRANSMISSION SYSTEM PERMANENT LIFT STATION
		CONSTRUCTION CONTROL POINT
		DRAINAGE CHANNEL GRAVITY INLET STRUCTURE
		CULVERT
		VENTILATION
		HORIZONTAL MONITORING WELL WITH COVER SLAB (BY OTHERS)
		CONSTRUCTION CONTRACT NO. FSO-042 BATTERY UNIT

SYMBOLS LEGEND (CONTINUED)

SYMBOL	COMPONENT
	PRIMARY GEOMEMBRANE LINER
	SECONDARY GEOMEMBRANE LINER
	PRIMARY GEOSYNTHETIC CLAY LINER
	SECONDARY GEOSYNTHETIC CLAY LINER
	GEOTEXTILE FILTER
	GEOTEXTILE CUSHION
	SUPPLEMENTAL GEOTEXTILE CUSHION
	SUBGRADE
	COMPACTED CLAY LINER/PROTECTIVE CLAY LAYER
	LDS DRAINAGE LAYER
	LDS DRAINAGE CORRIDOR
	LCS DRAINAGE LAYER
	LCS DRAINAGE CORRIDOR
	PROTECTIVE LAYER (IMPACTED)
	PROTECTIVE LAYER (NON-IMPACTED GRANULAR)
	PROTECTIVE LAYER (NON-IMPACTED NON-GRANULAR)
	SELECT IMPACTED MATERIAL
	TRENCH BACKFILL
	PIPE EMBEDMENT FILL
	GEOMEMBRANE CAP
	GEOSYNTHETIC CLAY CAP
	COMPACTED CLAY CAP
	COVER DRAINAGE LAYER
	MONITORING BARRIER
	GRANULAR FILTER
	TOPSOIL
	CONTOURING LAYER
	RIPRAP LINT
	RIPRAP
	EROSION MAT

DETAIL AND SECTION IDENTIFICATION LEGEND

SECONDARY DETAIL NUMBER

SHEET ON WHICH ABOVE DETAIL IS PROVIDED

SECONDARY DETAIL NUMBER

SHEET ON WHICH ABOVE DETAIL IS REFERENCED

DETAIL
LINER SYSTEM ON CELL BASE
SCALE 1" = 2'

EXAMPLE: DETAIL NUMBER 31, WHICH IS PRESENTED ON SHEET D-22, WAS REFERENCED ON SHEET D-23.

SECTION LETTER

SHEET ON WHICH ABOVE SECTION IS PRESENTED

SECTION LETTER

SHEET ON WHICH ABOVE SECTION IS REFERENCED

SECTION
CELL PERIMETER
SCALE 1" = 2'

EXAMPLE: SECTION LETTER "C", WHICH IS PRESENTED ON SHEET D-10, WAS REFERENCED ON SHEET D-6.

ABBREVIATIONS

ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BAMP	BORROW AREA MANAGEMENT AND RESTORATION PLAN
BCY	BULK CUBIC YARDS
BL	BASELINE
BM	BENCH MARK
CFC	CERTIFIED-FOR-CONSTRUCTION
CL	CENTERLINE
CLR	CLEARANCE
CO.	COMPANY
CMP	CORRUGATED METAL PIPE
CPT	CONE PENETROMETER TEST
CQC	CONSTRUCTION QUALITY CONTROL
CRA	CONSTRUCTION SITE ACCESS
CVH	CONTROL VALVE HOUSE
D	DEPTH
DECON	DECONTAMINATION
DIA	DIAMETER
DOE	DEPARTMENT OF ENERGY
DOT	DEPARTMENT OF TRANSPORTATION
E	EASTING
EL	ELEVATION
EPA	ENVIRONMENTAL PROTECTION AGENCY
EPLTS	ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM
FDMP	FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
HDPE	HIGH DENSITY POLYETHYLENE
IDS	DRAINAGE CHANNEL GRAVITY INLET STRUCTURE
H:V	HORIZONTAL TO VERTICAL LENGTH RATIO FOR A SLOPE
ID	INSIDE DIAMETER
ILTS	INTERIM LEACHATE TRANSMISSION SYSTEM
IMP	IMPACTED MATERIAL PLACEMENT
INC.	INCORPORATED
IP	IRON PIN
LCS	LEACHATE COLLECTION SYSTEM
LDS	LEAK DETECTION SYSTEM
LTS	LEACHATE TRANSMISSION SYSTEM
(MAX)	MAXIMUM
(MIN)	MINIMUM
N	NORTHING
NAD	NORTH AMERICAN DATUM
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NO.	NUMBER
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODOT	OHIO DEPARTMENT OF TRANSPORTATION
OMTA	ORRP MATERIAL TRANSFER AREA
OSDF	ON-SITE DISPOSAL FACILITY
PLS	PERMANENT LIFT STATION
RAD	RADIOLOGICAL
RCP	REINFORCED CONCRETE PIPE
REV.	REVISION
RLCS	REDUNDANT LEACHATE COLLECTION SYSTEM
(TYP)	TYPICAL
WAC	WASTE ACCEPTANCE CRITERIA
WE	WICKED ELEVATION
VH-1	VALVE HOUSE
3"\/8"	3"\/8" NOMINAL PIPE SIZE (CARRIER/CONTAINMENT)

CERTIFIED-FOR-CONSTRUCTION

CONTOUR LEGEND

EXISTING	NEW
500	EXISTING GROUND ELEVATION (FEET)
500	SUBGRADE ELEVATION (FEET)
500	COMPACTED CLAY LINER ELEVATION (FEET)
500	LEACHATE COLLECTION SYSTEM ELEVATION (FEET)
500	PROTECTIVE LAYER ELEVATION (FEET)
	CONTOURING LAYER ELEVATION (FEET)
500	FINISHED GRADE ELEVATION (FEET)

000138

– NOT INCLUDED IN CONSTRUCTION CONTRACT NO. FSO-042

GENERAL NOTES

NOTES:

1. TOPOGRAPHY BASED ON 12 JANUARY 2000 FLYOVER.
2. ELEVATIONS ARE IN FEET ABOVE SEA LEVEL DATUM (NGVD "SEA LEVEL DATUM" REFERS TO NATIONAL GEODETIC VERTICAL DATUM (NGVD)).
3. OHIO COORDINATE SYSTEM CORRESPONDS TO STATE PLANE NORTH AMERICAN DATUM (NAD) 1983 OHIO SOUTH.
4. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY.
5. SURVEY COORDINATES AND DIMENSIONS SHALL BE USED FOR CONSTRUCTION. DRAWINGS SHALL NOT BE SCALED TO OBTAIN LOCATIONS AND DIMENSIONS.
6. BATTERY UNIT REFERS UNIT OF THIS WORK PROVIDED FOR ORRP AND SUPPORT FACILITIES AND LOCATION OF INDEPENDENT WORK WHICH WORK PROCEEDS. CONTRACTOR SHALL PERFORM DUST CONTROL WITHIN BATTERY UNIT AS SPECIFIED IN PART 3 OF CONTRACT DOCUMENT.
7. THE TERM "IMPACTED MATERIAL" REFERS TO SMALL INCIDENTAL MIXING ORRP WASTE ACCEPTANCE CRITERIA (WAC) RESTRICTED FOR ORRP DISPOSAL. "SELECT IMPACTED MATERIAL" LOCATIONS SHOWN ON THESE DRAWINGS SHALL CONSIST OF IMPACTED MATERIAL. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION [illegible].

ECDC CONTROLLED COPY NO. 011

REV.	DATE	DESCRIPTION	DRN.	CHK.	DSN.	D.E.	APP.
1	01/07/00	[illegible]	[illegible]	[illegible]	D.L.	[illegible]	[illegible]
2	05/01/00	[illegible]	[illegible]	[illegible]	D.L.	[illegible]	[illegible]
3	06/01/00	[illegible]	[illegible]	[illegible]	D.L.	[illegible]	[illegible]
4	09/01/00	[illegible]	[illegible]	[illegible]	D.L.	[illegible]	[illegible]
5	09/01/00	[illegible]	[illegible]	[illegible]	D.L.	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DRN. BY	CHK. BY	DSN. BY	D.E. BY	APP. BY

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

LEGEND AND SYMBOLS

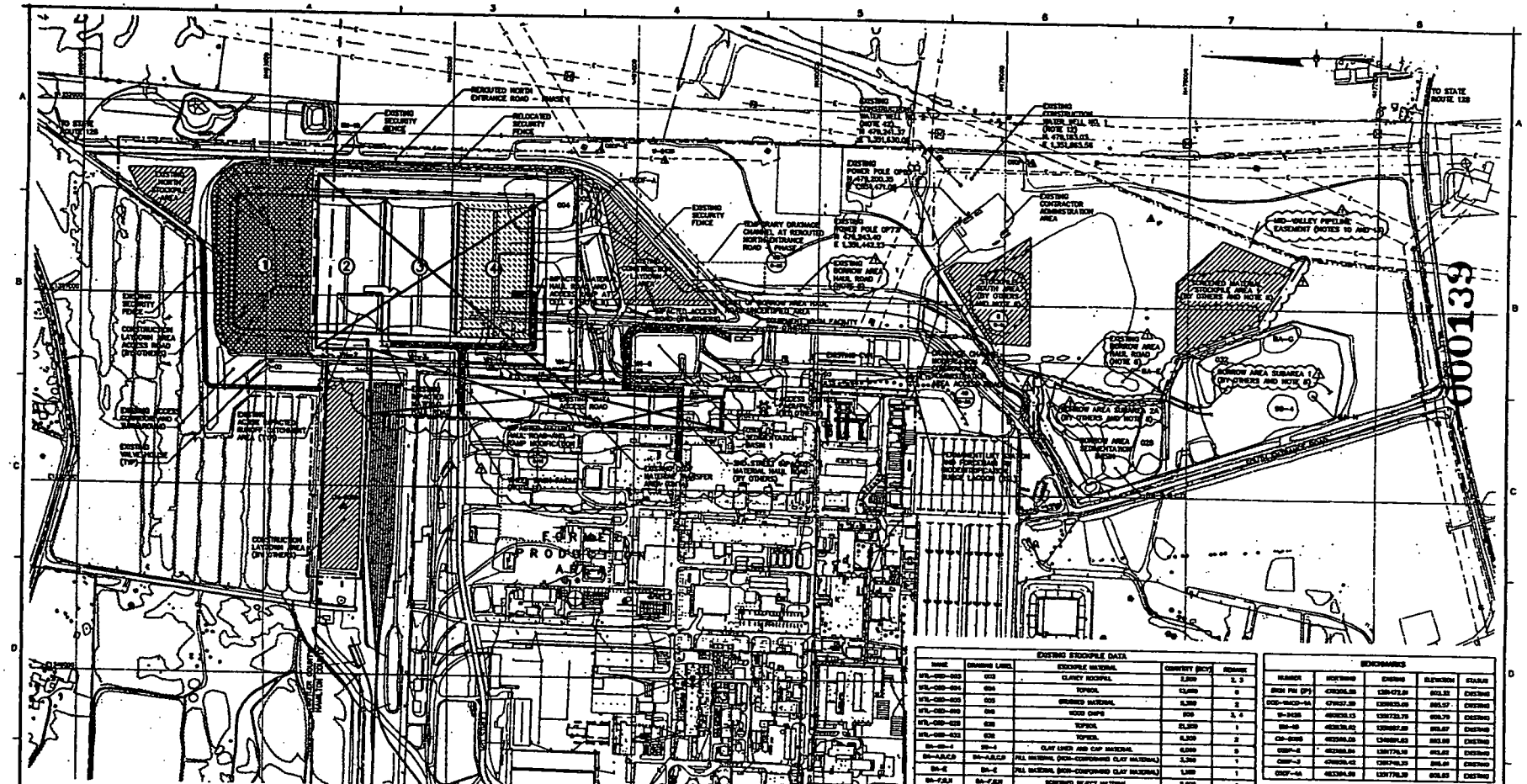
9/29/00

STATE OF OHIO

GeoSyntec Consultants

PROJECT TITLE	20493
PROJECT NO.	FF-250209
DRAWING NO.	FSO-000-G-00020
DRAWING REVISION NO.	0
DRAWING NO.	000138-15
DRAWING REVISION NO.	1
SHEET NO.	FSO-1102
SHEET TITLE	X-3
SHEET REV.	1

4556



EXISTING STOCKPILE DATA

NAME	DRAWING LABEL	STOCKPILE MATERIAL	QUANTITY (BCY)	REMARKS
STL-CSD-003	003	CLAYEY SUBSOIL	2,200	2, 3
STL-CSD-004	004	TOPSOIL	12,000	0
STL-CSD-005	005	GRUBBED MATERIAL	5,300	2
STL-CSD-006	006	WOOD CHIPS	900	3, 4
STL-CSD-028	028	TOPSOIL	21,500	1
STL-CSD-031	031	TOPSOIL	5,300	2
BA-CL-1	BA-1	CLAY LINER AND CAP MATERIAL	6,000	5
BA-A,B,C,D	BA-A,B,C,D	FILL MATERIAL (NON-CONFORMING CLAY MATERIAL)	3,300	1
BA-E	BA-E	FILL MATERIAL (NON-CONFORMING CLAY MATERIAL)	1,100	1
BA-F,G,H	BA-F,G,H	SCREENED REJECT MATERIAL	2,600	4
OSDF-A,B,C,D,E	OSDF-A,B,C,D,E	FILL MATERIAL (NON-CONFORMING CLAY MATERIAL)	4,700	2, 3

BENCHMARKS

NUMBER	NORTHING	EASTING	ELEVATION	STATUS
BM# PM (P)	478205.88	1351472.51	601.32	EXISTING
DOE-BMCD-1A	479937.39	1350923.49	603.57	EXISTING
B-3435	480203.13	1350722.75	606.79	EXISTING
BM-10	482838.62	1350857.80	608.67	EXISTING
CM-0295	482348.08	1349891.63	592.00	EXISTING
OSDF-E	482348.84	1350776.30	601.00	EXISTING
OSDF-J	479905.42	1350740.39	598.04	EXISTING
OSDF-1A	482324.98	1350776.30	600.63	EXISTING

LEGEND

- BUTLER COUNTY/HAMILTON COUNTY LINE
- FEMP PROPERTY LINE
- BATTERY LIMIT
- IMPACTED MATERIAL DISPOSAL LIMIT
- BORROW AREA LIMIT
- RADIOLOGICAL (RAD) CONTROL LIMIT/FENCE (NOTE 7)
- 4.125 EXISTING 0.75 PIPE
- 8.625 EXISTING 1.75 PIPE
- OSDF-A BENCHMARK
- ON-SITE DISPOSAL FACILITY (OSDF) CELL DESIGNATION
- 8.625 CELL 1 FINAL COVER SYSTEM (NOTE 4)
- CELL 1 FINAL COVER SYSTEM (NOTE 4)
- ACCESS CORRIDOR, ACCESS ROAD OR HAUL ROAD
- CONSTRUCTION CONTRACT NO. F50-042 BATTERY LIMIT

NOTES

1. PURPOSE OF THIS DRAWING IS TO CONCEPTUALLY ILLUSTRATE SITE DEVELOPMENT FOR OSDF-PHASE II WITH SUPPORT FACILITIES INCLUDING BUT NOT LIMITED TO HAUL ROADS, EQUIPMENT WASH FACILITY, CONTRACTOR ADMINISTRATION AREA, CONSTRUCTION LAYDOWN AREA, ACCESS CONTROL FACILITY, RADIOLOGICAL CONTROL LIMIT/FENCE, EXISTING STOCKPILES AND TEMPORARY DRAINS. SIZE AND LOCATION OF SUPPORT FACILITIES MAY VARY FROM THOSE SHOWN.
2. CONTRACTOR SHALL CONTROL AND CONTROL SURFACE GENERATED DURING CONSTRUCTION AND FILLING OF OSDF IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
3. CONTRACTOR SHALL SUBMIT EARTHWORK WORK PLAN IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
4. EXISTING CONTOURS ARE NOT SHOWN FOR CLARITY. EXISTING CONTOURS ARE SHOWN ON DRAWING PLANS, REFERENCE. EXISTING CONTOURS ARE SHOWN ON REFERENCE DRAWINGS AND SHALL BE VERIFIED IN ACCORDANCE WITH SPECIFICATION SECTION 02100.
5. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL CONTRACTOR OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPHOLDMENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
6. STATEMENT OF WORK FOR OSDF-PHASE II CONSTRUCTION IS SPECIFIED IN PART 6 OF CONTRACT DOCUMENTS.
7. RADIOLOGICAL (RAD) CONTROL LIMIT/FENCE REDUCES LIMIT OF RADIOLOGICAL CONTROL FOR IMPACTED MATERIAL HAULING AND PLACEMENT. RAD FENCE LOCATED IN CELL 1 AREA SHALL BE REMOVED AFTER COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED. RAD FENCE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
8. BORROW AREA MANAGEMENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13000.
9. [illegible] SECTION 0-11.
10. MID-VALLEY PIPELINE EASEMENT SHALL BE LOCATED IN ACCORDANCE WITH SPECIFICATION SECTION 02200 BY OTHERS.
11. LOCATE [illegible] FACILITY TO BE REMOVED BY OTHERS. CONTRACTOR SHALL LOCATE NEW WATER WELL [illegible] IN ACCORDANCE WITH SPECIFICATION SECTION 13090 AND CONTRACT DOCUMENTS SECTION 00400.
12. CONSTRUCTION WATER SHALL BE OBTAINED FROM EXISTING WELL SOURCES LOCATED WEST OF FORMER PRODUCTION AREA AT LOCATIONS N 482,964.4 AND E 1,348,453.7 AND N 481,464.8 AND E 1,350,482.4 AND EXISTING CONSTRUCTION WATER WELLS SHOWN.
13. CONTRACTOR SHALL NOT ENTER MID-VALLEY PIPELINE EASEMENT.

REMARKS

1. STOCKPILE TO BE RELOCATED TO SOUTH STOCKPILE AREA BY OTHERS. CONTRACTOR SHALL USE RELOCATED STOCKPILE IN OSDF CONSTRUCTION.
2. STOCKPILE TO BE RELOCATED TO NORTH STOCKPILE AREA BY OTHERS.
3. STOCKPILES WITHIN CELL 4 NOT SHOWN ON DRAWING FOR CLARITY.
4. STOCKPILE TO BE RELOCATED TO SOUTH STOCKPILE AREA BY OTHERS.
5. STOCKPILE TO BE RELOCATED TO SCREENED MATERIAL STOCKPILE AREA 1 BY OTHERS. CONTRACTOR SHALL USE RELOCATED STOCKPILE IN OSDF CONSTRUCTION.
6. STOCKPILE TO BE RELOCATED TO NORTH STOCKPILE AREA BY OTHERS. CONTRACTOR SHALL USE RELOCATED STOCKPILE IN OSDF CONSTRUCTION.

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CERTIFIED-FOR CONSTRUCTION

1	05.27.97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	03.26.97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	03.26.97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A	03.25.97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	ENG. BY	CHK. BY	APP. BY

SCALE IN FEET

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

SITE DEVELOPMENT PLAN

9/26/00

STATE OF OHIO PROFESSIONAL ENGINEER

Geo Services Consultants

PROJECT NO. 20993
DRAWING NO. 20-0000-0-00224
DRAWING PROJECT NO. 00000-13
DRAWING REVISION NO. F50-1101
SHEET NO. C-1
REVISION NO. 1

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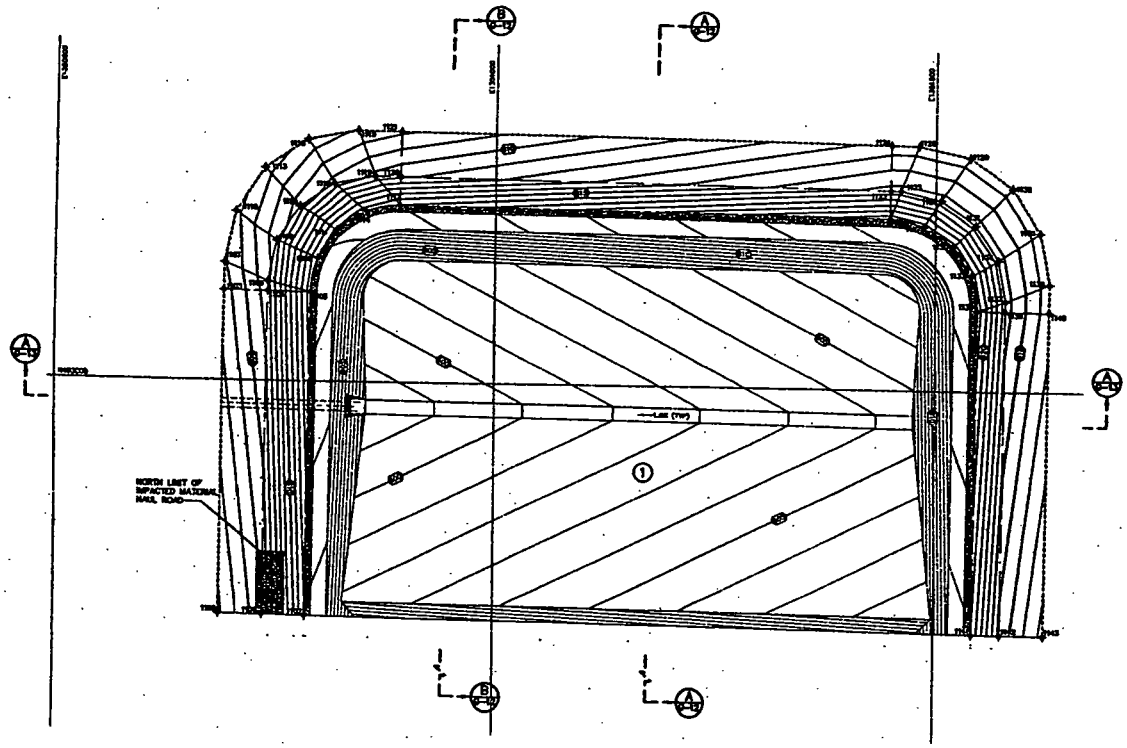

LEGEND

- EXISTING SUBGRADE ELEVATION (FIELD) (NOTE 1)
- SUBGRADE ELEVATION (FIELD) (NOTES 1 AND 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF RAIL COVER SYSTEM CONSTRUCTION
- CONSTRUCTION CONTROL POINT
- EXISTING CELL DESIGNATION
- EXISTING IMPACTED MATERIAL RAIL ROAD (NOTE 2)

SUBGRADE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
1100	482736.70	1,2[illegible]	860.70
1101	482736.14	1,2[illegible]26.73	863.76
1102	482727.84	1,2[illegible]740.47	861.34
1103	482727.22	1,2[illegible]70.[illegible]	863.44
1104	482[illegible].[illegible]	1,2[illegible]70.[illegible]	863.44
1105	482[illegible].[illegible]	1,2[illegible]790.16	864.00
1106	482[illegible].[illegible]	1,2[illegible]2.[illegible]	866.53
1107	482[illegible].[illegible]	1,2[illegible].[illegible]	868.62
1108	482[illegible].[illegible]	1,2[illegible].[illegible]	870.62
1109	482[illegible].[illegible]	1,2[illegible].[illegible]	872.86
1110	482[illegible].[illegible]	1,2[illegible].[illegible]	874.86
1111	482[illegible].[illegible]	1,2[illegible].[illegible]	876.37
1112	482[illegible].[illegible]	1,2[illegible].[illegible]	878.40
1113	482[illegible].[illegible]	1,2[illegible].[illegible]	880.00
1114	482[illegible].[illegible]	1,2[illegible].[illegible]	881.72
1115	482[illegible].[illegible]	1,2[illegible].[illegible]	883.28
1116	482[illegible].[illegible]	1,2[illegible].[illegible]	884.88
1117	482[illegible].[illegible]	1,2[illegible].[illegible]	886.40
1118	482[illegible].[illegible]	1,2[illegible].[illegible]	887.97
1119	482[illegible].[illegible]	1,2[illegible].[illegible]	889.49
1120	482[illegible].[illegible]	1,2[illegible].[illegible]	891.00
1121	482[illegible].[illegible]	1,2[illegible].[illegible]	892.62
1122	482[illegible].[illegible]	1,2[illegible].[illegible]	894.18
1123	482[illegible].[illegible]	1,2[illegible].[illegible]	895.74
1124	482[illegible].[illegible]	1,2[illegible].[illegible]	897.30
1125	482[illegible].[illegible]	1,2[illegible].[illegible]	898.86
1126	482[illegible].[illegible]	1,2[illegible].[illegible]	900.42
1127	482[illegible].[illegible]	1,2[illegible].[illegible]	901.98
1128	482[illegible].[illegible]	1,2[illegible].[illegible]	903.54
1129	482[illegible].[illegible]	1,2[illegible].[illegible]	905.10
1130	482[illegible].[illegible]	1,2[illegible].[illegible]	906.66
1131	482[illegible].[illegible]	1,2[illegible].[illegible]	908.22
1132	482[illegible].[illegible]	1,2[illegible].[illegible]	909.78
1133	482[illegible].[illegible]	1,2[illegible].[illegible]	911.34
1134	482[illegible].[illegible]	1,2[illegible].[illegible]	912.90
1135	482[illegible].[illegible]	1,2[illegible].[illegible]	914.46
1136	482[illegible].[illegible]	1,2[illegible].[illegible]	916.02
1137	482[illegible].[illegible]	1,2[illegible].[illegible]	917.58
1138	482[illegible].[illegible]	1,2[illegible].[illegible]	919.14
1139	482[illegible].[illegible]	1,2[illegible].[illegible]	920.70
1140	482[illegible].[illegible]	1,2[illegible].[illegible]	922.26
1141	482[illegible].[illegible]	1,2[illegible].[illegible]	923.82
1142	482[illegible].[illegible]	1,2[illegible].[illegible]	925.38
1143	482737.52	1,2[illegible].[illegible]	926.94

NOTES:

1. SUBGRADE ELEVATIONS CORRESPOND TO TOP OF SUBGRADE, INCLUDING ANY COMPACTED FILL. SUBGRADE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
2. CONTRACTOR SHALL RE-ESTABLISH SUBGRADE ELEVATIONS TO LIMITS SHOWN HEREON AFTER REMOVAL OF NON-IMPACTED MATERIAL BELOW IMPACTED MATERIAL RAIL ROAD AND PRIOR TO RAIL COVER SYSTEM CONSTRUCTION.

1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	ISSUED FOR CONSTRUCTION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	ISSUED FOR REVIEW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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0	ISSUED FOR REVIEW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DRN. BY	DSN. BY	CHK. BY	TECH. SUP.	APP. BY

SCALE IN FEET

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY - PHASE III

SUBGRADE GRADING PLAN I

9/29/00

STATE OF OHIO

PROJECT NO. 20143
CONTRACT NO. [illegible]
FDF DRAWING NO. [illegible]
CONTRACTOR PROJECT NO. [illegible]
CONTRACTOR DRAWING NO. [illegible]
SHEET NO. 0-2
REVISION NO. 1

ECDC CONTROLLED COPY NO.

C011

CERTIFIED-FOR-CONSTRUCTION

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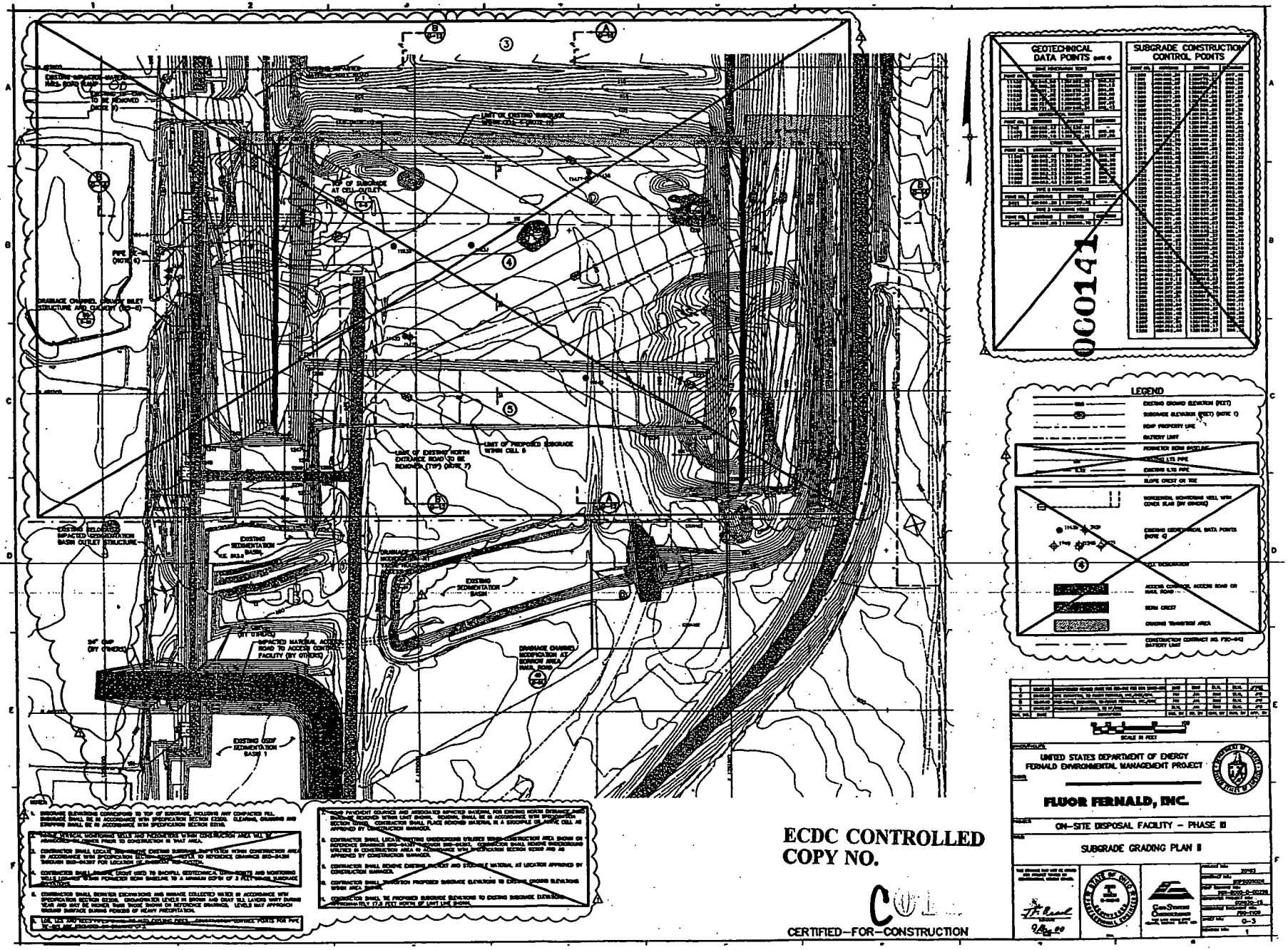
GEOTECHNICAL DATA POINTS
SUBGRADE CONSTRUCTION CONTROL POINTS
LEGEND
EXISTING GROUND ELEVATION (FEET)
SUBGRADE ELEVATION (FEET) (NOTE 1)
RCRA PROPERTY LINE
BATTERY LIMIT
PERIMETER BERM BASELINE
EXISTING 1.75 PIPE
EXISTING 1.75 PIPE
SLOPE CREST OR TOE
HORIZONTAL MONITORING WELL WITH CONCS PLAN (BY OWNERS)
EXISTING GEOTECHNICAL DATA POINTS (NOTE 4)
CELL DESIGNATION
ACCESS CONTROL, ACCESS ROAD OR HAUL ROAD
BERM CREST
GRADING TRANSITION AREA
CONSTRUCTION CONTRACT NO. F30-042 BATTERY LIMIT
LIMIT OF EXISTING SUBGRADE
TOP OF SUBGRADE AT CELL OUTLET
LIMIT OF EXISTING NORTH ENTRANCE ROAD TO BE REMOVED (TYP) (NOTE 7)
LIMIT OF PROPOSED SUBGRADE WITHIN CELL 5
EXISTING SEDIMENTATION BASIN
EXISTING SEDIMENTATION BASIN 1
EXISTING CCDF SEDIMENTATION BASIN 1
DRAINAGE CHANNEL
24" CMP (BY OTHERS)
IMPACTED MATERIAL ACCESS ROAD TO ACCESS CONTROL FACILITY (BY OTHERS)
DRAINAGE CHANNEL MODIFICATION AT BERMUDA AREA HAUL ROAD
EXISTING DRAINAGE CHANNEL
PIPE (NOTE 6)
SCALE IN FEET
UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FLUOR FERNALD, INC.
ON-SITE DISPOSAL FACILITY - PHASE III
SUBGRADE GRADING PLAN II
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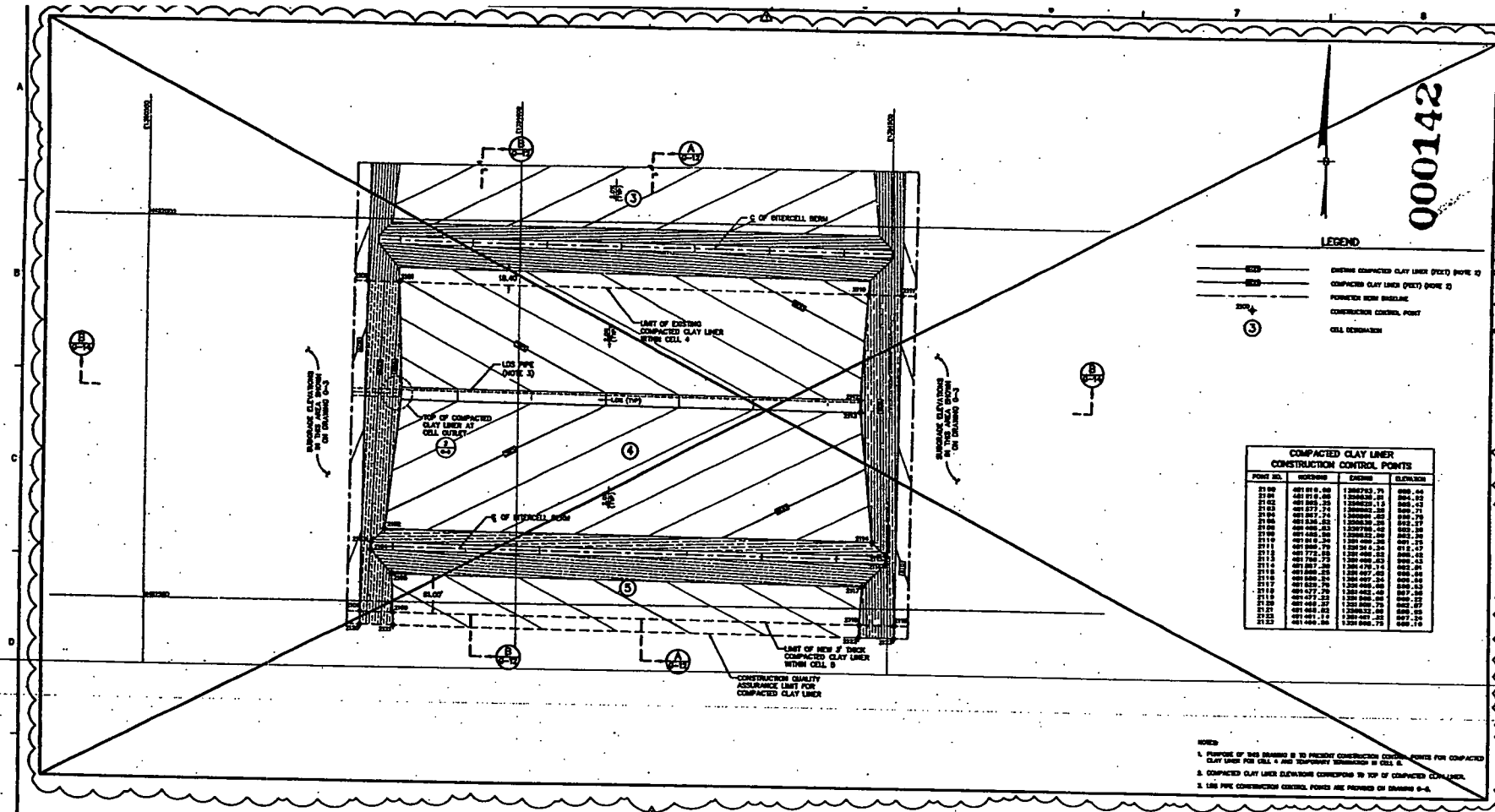

COMPACTED CLAY LINER CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
2100	481818.50	1366743.71	888.44
2101	481810.00	1366838.81	884.03
2102	481803.25	1366933.12	880.43
2103	481797.74	1366931.30	880.71
2104	481792.24	1366929.48	881.00
2105	481786.73	1366927.65	881.29
2106	481781.23	1366925.83	881.57
2107	481775.72	1366924.01	881.86
2108	481770.22	1366922.18	882.14
2109	481764.71	1366920.36	882.43
2110	481759.21	1366918.53	882.72
2111	481753.70	1366916.71	883.00
2112	481748.20	1366914.89	883.29
2113	481742.69	1366913.06	883.57
2114	481737.19	1366911.24	883.86
2115	481731.68	1366909.41	884.14
2116	481726.18	1366907.59	884.43
2117	481720.67	1366905.76	884.72
2118	481715.17	1366903.94	885.00
2119	481709.66	1366902.12	885.29
2120	481704.16	1366900.29	885.57
2121	481698.65	1366898.47	885.86
2122	481693.15	1366896.64	886.14
2123	481687.64	1366894.82	886.43
2124	481682.14	1366892.99	886.72

NOTES:

1. PURPOSE OF THIS DRAWING IS TO PROVIDE CONSTRUCTION CONTROL POINTS FOR COMPACTED CLAY LINER FOR CELL 4 AND TEMPORARY TERMINATION IN CELL 5.
2. COMPACTED CLAY LINER ELEVATIONS CORRESPOND TO TOP OF COMPACTED CLAY LINER.
3. LCS PIPE CONSTRUCTION CONTROL POINTS ARE PROVIDED ON DRAWING G-4.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	CHK. BY	APP. BY
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SCALE IN FEET

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

COMPACTED CLAY LINER GRADING PLAN

ECDC CONTROLLED COPY NO. C011

CERTIFIED–FOR–CONSTRUCTION

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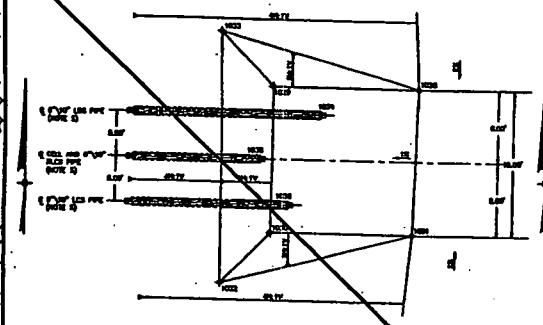
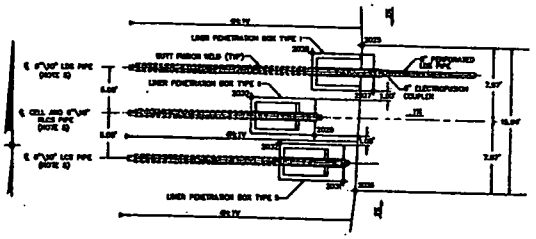
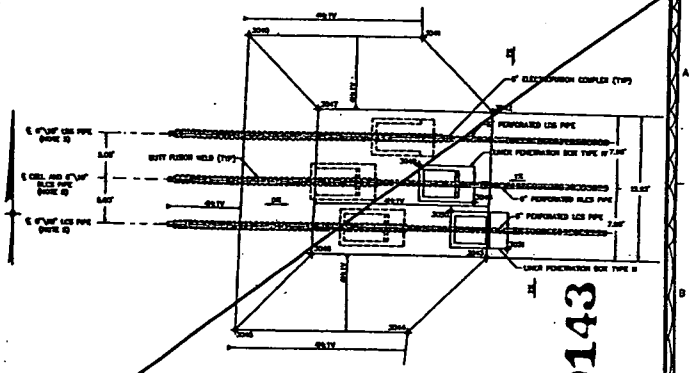


1 PLAN
TOP OF SUBGRADE AT CELL OUTLET
SCALE 1" = 5'



2 PLAN
TOP OF COMPACTED CLAY LINER AT CELL OUTLET
SCALE 1" = 5'



3 PLAN
TOP OF LDS DRAINAGE LAYER AT CELL OUTLET
SCALE 1" = 5'

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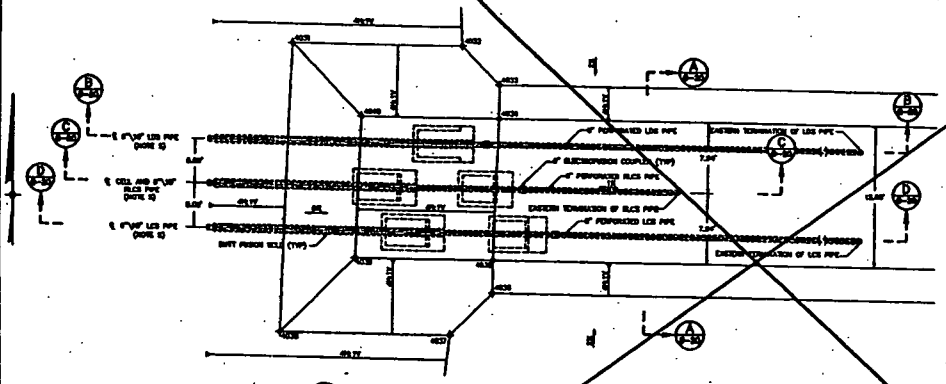
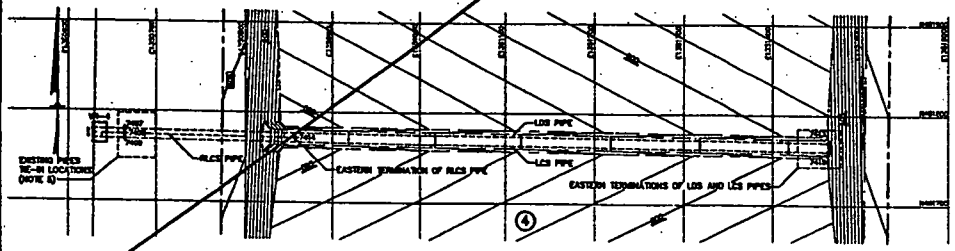


4 PLAN
TOP OF LCS DRAINAGE LAYER AT CELL OUTLET
SCALE 1" = 5'



5 PLAN
CONSTRUCTION CONTROL POINT LOCATIONS FOR CELL 4 LDS, LCS AND RLCS PIPES

CONSTRUCTION CONTROL POINTS

TOP OF SUBGRADE AT CELL OUTLET

CELL 4

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

TOP OF COMPACTED CLAY LINER AT CELL OUTLET

CELL 4

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

TOP OF LDS DRAINAGE LAYER AT CELL OUTLET

CELL 4

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

TOP OF LCS DRAINAGE LINER AT CELL OUTLET

CELL 4

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

EXISTING LDS, LCS AND RLCS PIPES TIE-IN LOCATIONS (NOTE 6)

CELL 4

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

LDS, LCS AND RLCS PIPES EASTERN TERMINATIONS

CELL 4

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

LEGEND

- COMPACTED CLAY LINER ELEVATION (PCCL)
- LEACHATE COLLECTION SYSTEM ELEVATION (PCCT)
- PERIMETER BERM BASELINE
- CONSTRUCTION CONTROL POINT
- EXISTING LDS PIPE
- 4 CELL DESIGNATION

NOTES:

1. LDS, LCS AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION [illegible].
2. SEE DRAWING [illegible] FOR LINER PENETRATION BOX DETAILS.
3. TRENCH FOR LDS, LCS AND RLCS PIPES IS NOT SHOWN ON THIS DRAWING FOR CLARITY. BEDDING AND BACKFILLING FOR LDS, LCS AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02233 AND 02223.
4. HORIZONTAL MONITORING WELL IS NOT SHOWN ON THIS DRAWING FOR CLARITY.
5. LDS, LCS AND RLCS PIPES SHALL BE WITH EXISTING PIPES. TIE-IN LOCATIONS ARE SHOWN IN CONSTRUCTION CONTROL POINT TABLE PROVIDED ON THIS DRAWING. TIE-IN CONSTRUCTION CONTROL POINTS REPRESENT ENTIRE EXTENT OF TIE-INCH PIPE. CONTRACTOR SHALL REMOVE PLUGS OR OTHER TEMPORARY PROTECTION INSTALLED IN EXISTING PIPES PRIOR TO TIE-INS. AS-BUILT TIE-IN LOCATIONS MAY VARY SLIGHTLY FROM CONSTRUCTION CONTROL POINTS SHOWN ON THIS DRAWING.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	ENG. BY	APR. BY
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SCALE AS SHOWN

OWNER/CLIENT:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

CONTRACTOR:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE III

TITLE:
CELL OUTLET GRADING PLANS AND DETAILS

ECDC CONTROLLED
COPY NO. C011

CERTIFIED FOR CONSTRUCTION

9/28/00

STATE OF OHIO REGISTERED PROFESSIONAL ENGINEER

CONSTRUCTION DRAWINGS

PROJECT NO. 20102
CONTRACT NO. 4000-00-C-00100
PROJECT DRAWING NO. 1000-C-13
CONTRACT DRAWING NO. FOS-1116
SHEET NO. C-3
DRAWING NO. 1

4556

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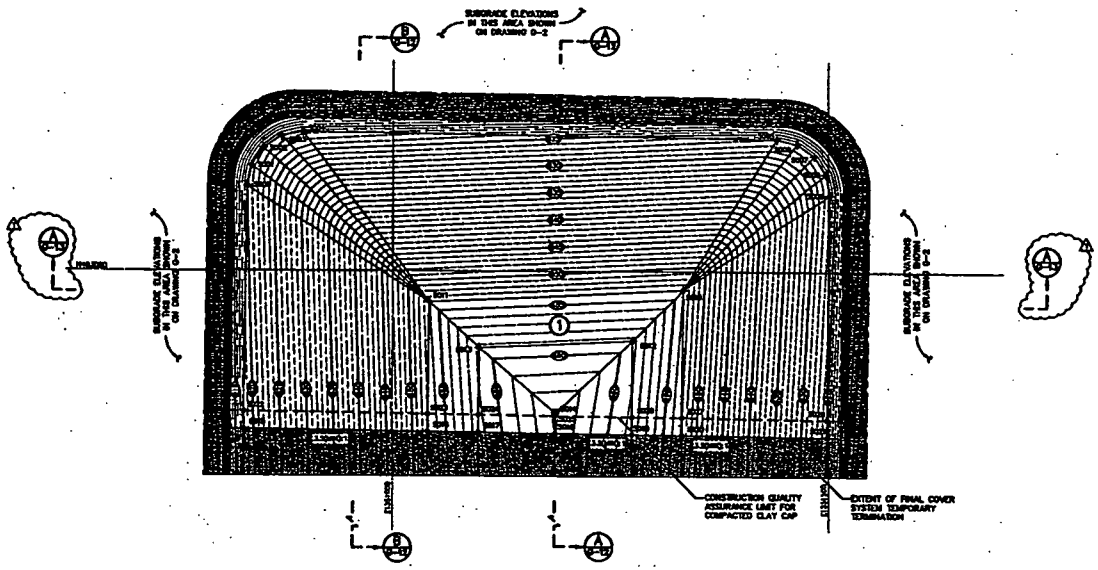

LEGEND

- PROTECTIVE CLAY LAYER ELEVATION (FEET) (NOTE 2)
- CONTOURING LAYER ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- CONSTRUCTION CONTROL POINT
- CELL DESIGNATION
- DRAINAGE FLOW DIRECTION (NOTE 4)
- FUTURE CONTOURING LAYER GRADES (NOTE 3)
- EXISTING PROTECTIVE CLAY LAYER GRADES

CONTOURING LAYER CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]

NOTES:

1. PURPOSE OF THIS DRAWING IS TO PROVIDE CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER FOR CELL 1 AND CONSTRUCTION QUALITY ASSURANCE LIMIT FOR COMPACTED CLAY CAP FOR CELL 1.
2. PROTECTIVE CLAY LAYER AND CONTOURING LAYER ELEVATIONS CORRESPOND TO TOP OF PROTECTIVE CLAY LAYER AND CONTOURING LAYERS, RESPECTIVELY.
3. CONTOURS IN SHADED AREA DEPICTED FUTURE CONTOURING LAYER GRADES, WHICH WILL BE CONSTRUCTED UNDER A FUTURE CONTRACT.
4. RUNOFF FROM NON-IMPACTED CONTOURING LAYER SHALL BE DIRECTED TO IMPACTED RUNOFF CATCHMENT AREA UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED. DRAINAGE FLOW DIRECTION INDICATES LOCATION OF EXPOSED DRAINAGE CHANNEL. RUNOFF SHALL BE USED TO DIVERT RUNOFF FROM CONTOURING LAYER TO IMPACTED RUNOFF CATCHMENT AREA. CONTRACTOR SHALL CONTROL AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF RUNOFF IN ACCORDANCE WITH SPECIFICATION SECTION 02274A.

1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	PROJ. ENG.	CONT. ENG.

SCALE IN FEET

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

CONTOURING LAYER GRADING PLAN

ECDC CONTROLLED COPY NO. C011

CERTIFIED–FOR–CONSTRUCTION

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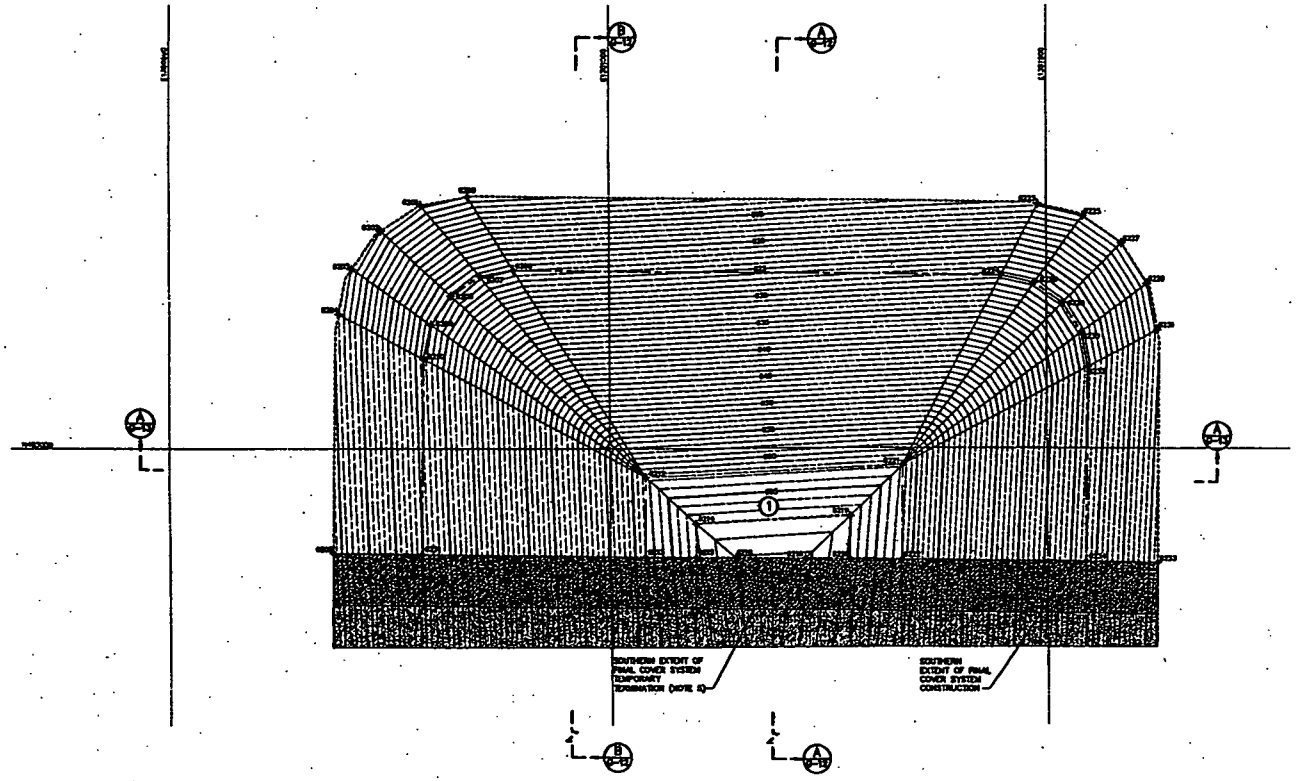

FINAL COVER SYSTEM CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
0100	463379.24	1356434.98	898.32
0101	463379.97	1356787.08	898.34
0102	463378.53	1356743.21	897.98
0103	463381.84	1356715.38	897.14
0104	463340.98	1356693.19	895.98
0105	463283.07	1356689.42	893.42
0106	463198.79	1356684.32	889.63
0107	463132.01	1356680.97	886.63
0108	463078.33	1356678.59	883.32
0109	463038.17	1356796.32	881.88
0110	463138.34	1356798.19	881.36
0111	463243.79	1356797.42	881.88
0112	463287.27	1356848.08	882.91
0113	463279.17	1356938.86	882.85
0114	463216.28	1356988.87	885.87
0115	463178.48	1356988.21	887.78
0116	463278.48	1356988.21	887.78
0117	463343.48	1357142.41	879.98
0118	463377.43	1357224.36	878.94
0119	463434.78	1357375.63	880.14
0120	463478.79	1357373.40	887.79
0121	463484.35	1357335.67	892.74
0122	463478.08	1357333.79	887.48
0123	463378.08	1357488.12	815.71
0124	463318.07	1357447.63	820.08
0125	463238.12	1357441.48	818.98
0126	463163.07	1357488.11	820.01
0127	463237.98	1357882.41	815.77
0128	463141.08	1357814.72	818.71
0129	463141.48	1357814.77	815.94
0130	463129.11	1357838.98	820.32
0131	463132.14	1357839.71	815.68
0132	463080.79	1357848.72	820.33
0133	463072.34	1357853.38	815.28
0134	463073.31	1357844.97	820.30

LEGEND

- 842 — FINISHED GRADE ELEVATION (FEET) (NOTE 2)
- FERMACHEK BERM BARRIERS
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- CONSTRUCTION CONTROL POINT
- 1 — CELL DESIGNATION
- FINAL COVER SYSTEM TEMPORARY TERMINATION AREA (NOTES 3 AND 4)
- FUTURE FINAL COVER SYSTEM AREA (NOTE 4)

NOTES:

1. PURPOSE OF THIS DRAWING IS TO PROVIDE CONSTRUCTION CONTROL POINTS FOR FINAL COVER SYSTEM FOR CELL 1.
2. FINISHED GRADE ELEVATIONS CORRESPOND TO TOP OF TOPSOIL AND RIPRAP COMPONENTS OF FINAL COVER SYSTEM.
3. SHADED AREA REPRESENTS EXTENT OF TEMPORARY TERMINATION OF FINAL COVER SYSTEM. TEMPORARY TERMINATION SHALL BE CONSTRUCTED ACCORDING TO DETAIL SHOWN ON DRAWING 0-05.
4. CONTOURS IN SHADED AREA REPRESENT FUTURE FINAL COVER SYSTEM GRADES, WHICH WILL BE CONSTRUCTED UNDER A FUTURE CONTRACT.
5. CONSTRUCTION CONTROL POINTS FOR SOUTHERN EXTENT OF FINAL COVER SYSTEM TEMPORARY TERMINATION FOR CELL 1 ARE PROVIDED ON DRAWING 0-6.
6. CONSTRUCTION CONTROL POINTS FOR CONSTRUCTION QUALITY ASSURANCE UNIT FOR COMPACTED CLAY CAP FOR CELL 1 ARE PROVIDED ON DRAWING 0-6.

NO.	DATE	DESCRIPTION	DRN	CHKD	P.A.	E.A.	APPD
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DESIGN BY	DR. BY	CHKD. BY	REVD. BY	APPD. BY

SCALE IN FEET

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

FINAL COVER GRADING PLAN

GeoSyntec Consultants

PROJECT NO. 20143
CONTRACT NO. 97F10000029
DWG. ORIGINAL FILE: 20143-0000-G-00002
CONTRACTOR PROJECT NO. 20143
CONTRACTOR DRAWING NO. 20143-1124
SHEET NO. 0-7
DRAWING NO. 1

ECDC CONTROLLED COPY NO. C 011

CERTIFIED-FOR-CONSTRUCTION

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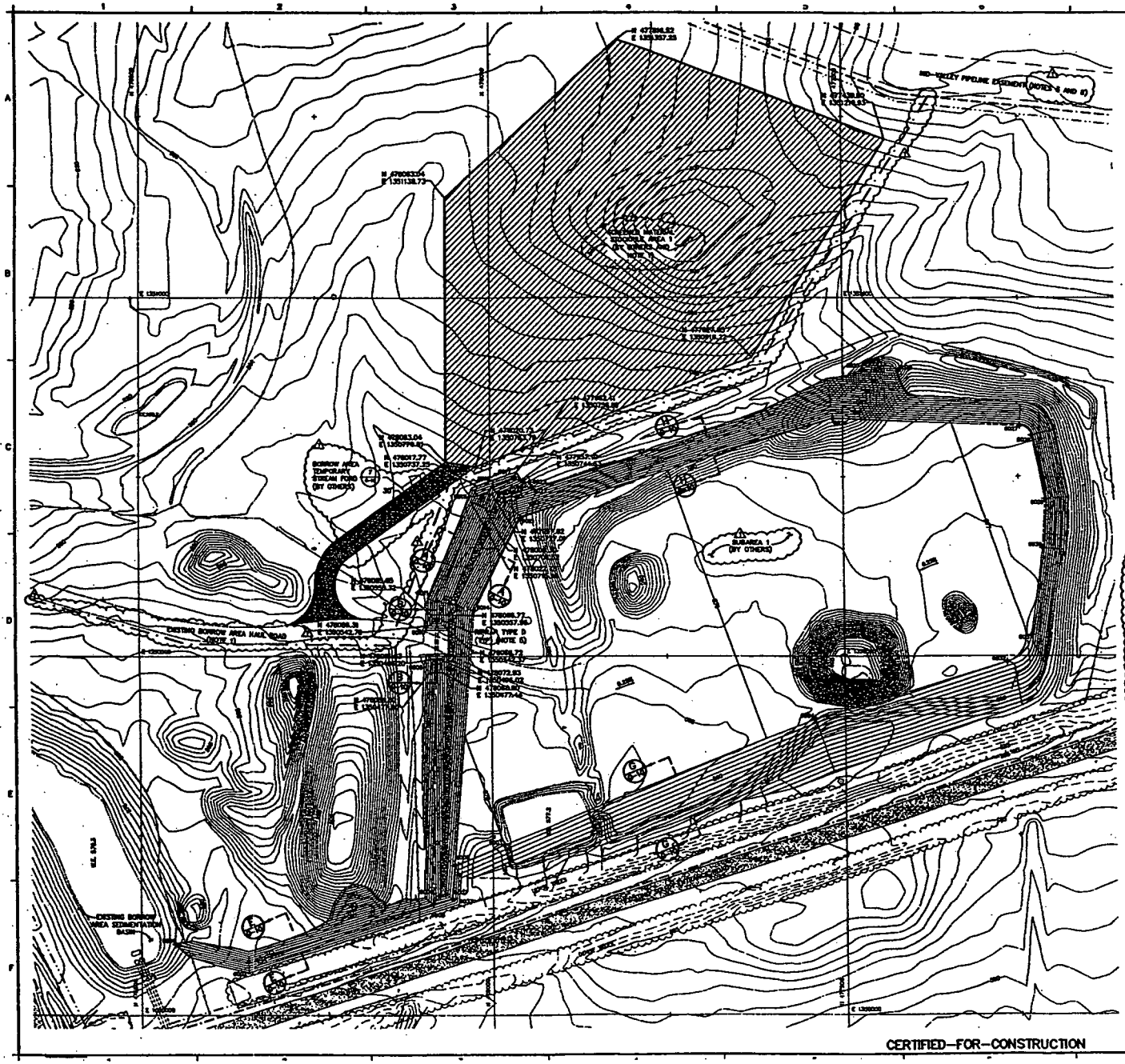


LEGEND

- EXISTING GROUND ELEVATION (FEET)
- FINISHED GRADE ELEVATION (FEET)
- BATTERY LIMIT
- BORROW AREA LIMIT
- EASEMENT BOUNDARY
- SLOPE CREST OR TOE
- CONSTRUCTION CONTROL POINT
- NEW BORROW AREA HAUL ROAD (BY OTHERS AND NOTE 1)
- BERM CREST (NOTE 7)
- RIPRAP LIMIT
- CONSTRUCTION CONTRACT NO. F60-042 BATTERY LIMIT

FINISHED GRADE
CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
0001	478452.10	1350000.00	572.00
0002	478348.00	1350070.87	573.21
0003	478250.00	1350137.00	575.00
0004	478141.00	1350217.00	576.10
0005	478041.00	1350291.00	576.62
0006	477979.53	1350338.00	577.00
0007	478000.07	1350356.11	577.00
0008	478000.07	1350356.13	571.00
0009	478073.00	1350400.00	571.00
0010	478073.00	1350400.00	571.00
0011	478073.00	1350400.14	571.00
0012	478073.00	1350577.70	578.00
0013	478073.00	1350577.70	584.00
0014	478046.00	1350572.35	584.00
0015	478023.00	1350564.28	578.19
0016	478001.00	1350750.46	576.17
0017	477980.00	1350739.40	582.13
0018	477980.10	1350740.22	582.00
0019	477980.10	1350743.07	584.00
0020	477980.10	1350737.30	580.63
0021	477980.10	1350737.30	580.63
0022	477937.00	1350903.46	575.46
0023	477946.00	1350942.00	567.22
0024	477913.70	1350931.50	576.01
0025	477912.00	1350931.51	580.00
0026	477425.70	1350807.31	577.00
0027	477425.70	1350807.31	577.00
0028	477239.17	1350947.00	577.20
0029	477239.25	1350918.00	577.00
0030	477211.00	1350908.14	577.10
0031	477211.00	1350908.14	577.10
0032	477237.30	1350920.01	577.00
0033	478057.00	1350000.76	574.74

ECDC CONTROLLED COPY NO. 011

GENERAL NOTES:

1. BORROW AREA MANAGEMENT SHALL BE IN ACCORDANCE WITH [illegible]
2. CONTRACTOR SHALL NOT ENTER MID-VALLEY PIPELINE EASEMENT.

NOTES FOR WORK TO BE PERFORMED BY OTHERS:

3. SUBAREA BOUNDARIES ARE APPROXIMATE AND MAY BE ADJUSTED BY CONSTRUCTION MANAGER TO ENABLE EXCAVATION OF MATERIALS THAT CONFORM WITH SPECIFICATIONS.
4. MID-VALLEY PIPELINE EASEMENT SHALL BE LOCATED IN ACCORDANCE WITH SPECIFICATION SECTION 02950 BY OTHERS.
5. BASIS FOR EXISTING STOCKPILES LOCATED WITHIN BORROW AREA LIMIT ARE PROVIDED ON DRAWING G-4.
6. CONTRACTOR SHALL PLACE RIPRAP TYPE D WITHIN AREAS SHOWN. RIPRAP THICKNESS SHALL BE 1 FOOT. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270. CONTRACTOR SHALL SUBMIT RIPRAP WITH GEOTEXTILE FILTER. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
7. CONTRACTOR SHALL REMOVE DEBRIS/SOIL AND MAINTAIN COLLECTED WATER IN ACCORDANCE WITH SPECIFICATION SECTION 02200. GROUNDWATER LEVELS IN BERMS AND GRAY TAIL LAYERS VARY DURING YEAR AND MAY BE HIGHER THAN THOSE SHOWN ON REFERENCE DRAWINGS. LEVELS MAY APPROACH GROUND SURFACE DURING PERIODS OF HEAVY PRECIPITATION.
8. BORROW AREA DRAINAGE CHANNEL AND DIVERSION WORK SHALL BE CONSTRUCTED PRIOR TO INITIATING EXCAVATION IN SUBAREA 1.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	QAL. BY	APP. BY
1	09/01/99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	09/01/99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	09/01/99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	09/01/99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	09/01/99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SCALE IN FEET

CONSULTANTS:

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

CLIENT:

FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE III

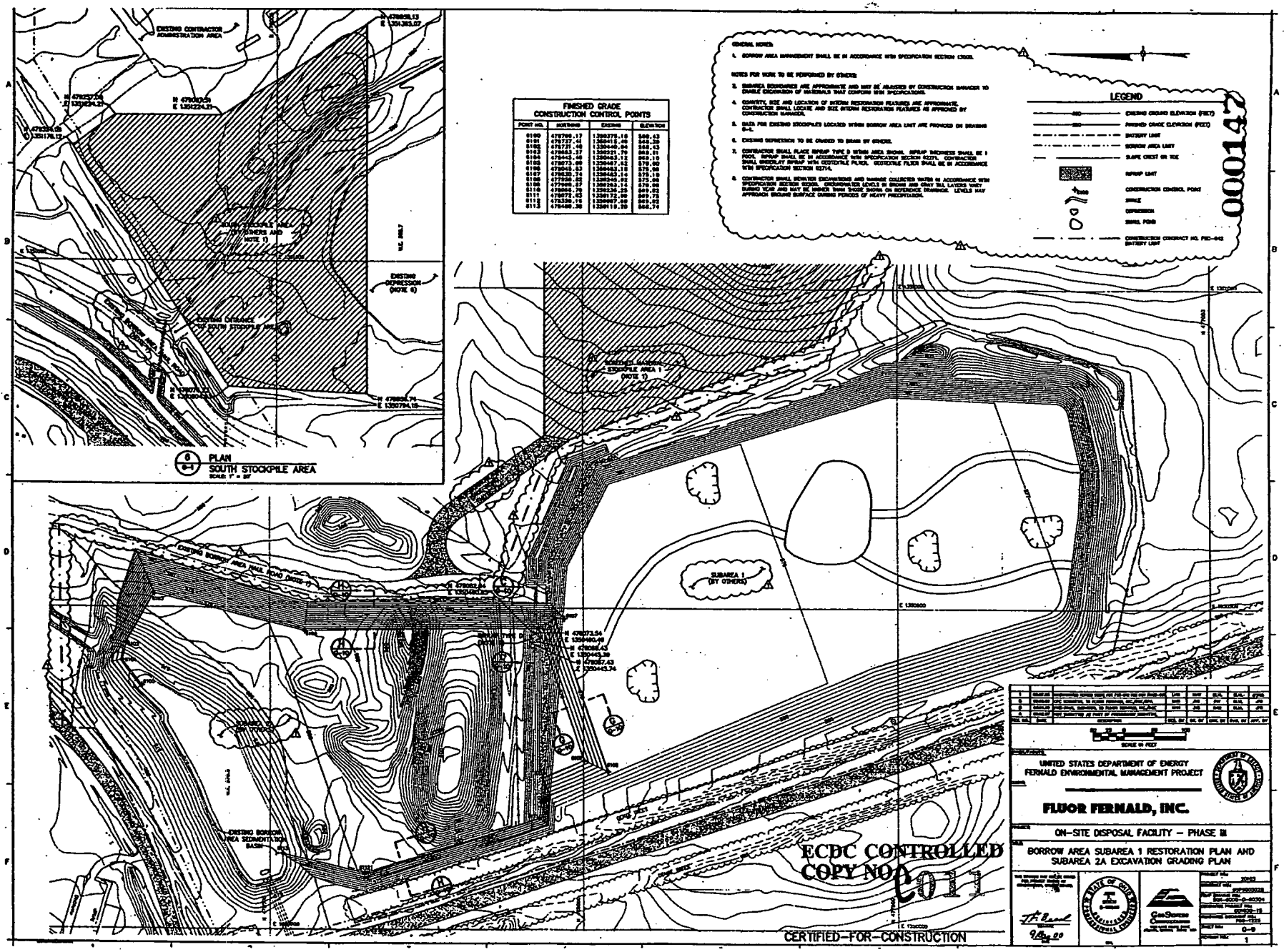
TITLE: BORROW AREA SUBAREA 1
EXCAVATION GRADING PLAN

THE SEAL OF THE STATE OF OHIO

Geo-Systems Consultants

PROJECT NO. 20153
CONTRACT NO. DE-AC05-92OR21972
DRAWING NO. 20153-G-00363
DRAWING PROJECT NO. 20153-13
DRAWING SUBGROUP NO. F60-1234
SHEET NO. G-8
DRAWING REV. 1

4556



FINISHED GRADE CONSTRUCTION CONTROL POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
0100	479799.17	1350375.16	566.43
0101	479737.41	1350412.49	565.32
0102	479731.48	1350440.94	566.43
0103	479643.17	1350521.79	565.97
0104	479443.48	1350643.12	565.19
0105	479273.08	1350647.12	570.00
0106	479043.03	1350643.12	570.00
0107	478835.74	1350643.14	570.18
0108	477968.82	1350643.12	572.00
0109	477988.87	1350543.14	570.00
0110	478064.79	1350536.25	569.02
0111	478071.63	1350172.00	569.72
0112	478336.16	1350087.40	569.92
0113	478488.38	1350119.35	566.74

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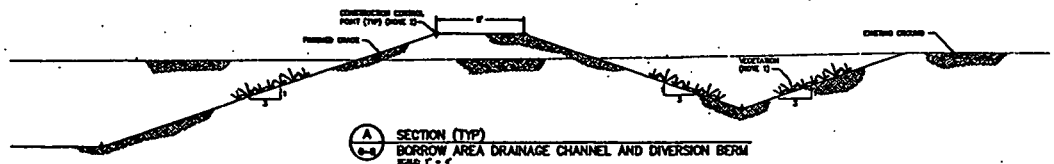
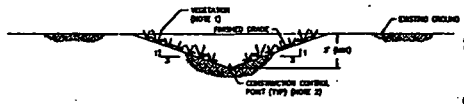
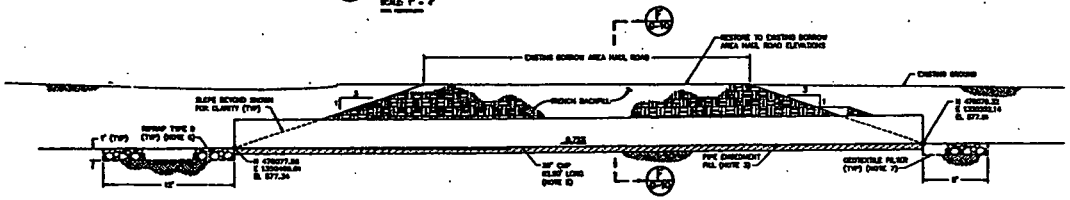


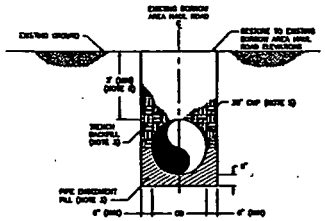
A 0-6 SECTION (TYP)
BORROW AREA DRAINAGE CHANNEL AND DIVERSION BERM
SCALE: 1" = 4'



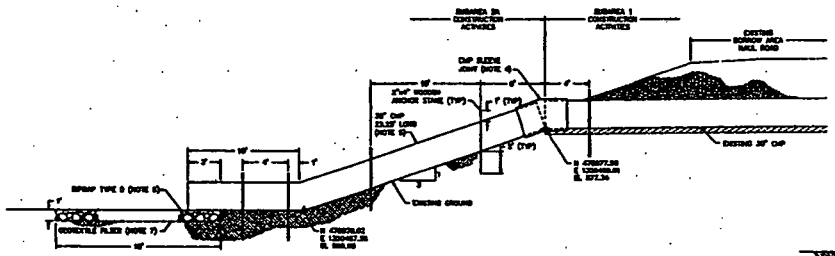
E 0-6 SECTION (TYP)
TEMPORARY BORROW AREA DRAINAGE CHANNEL TO EXISTING BORROW AREA SEDIMENTATION BASIN
SCALE: 1" = 4'



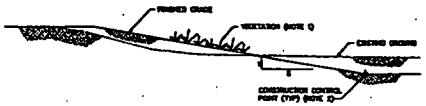
B 0-6 SECTION
EXISTING BORROW AREA HAUL ROAD 30-IN CMP CULVERT
SCALE: 1" = 4'



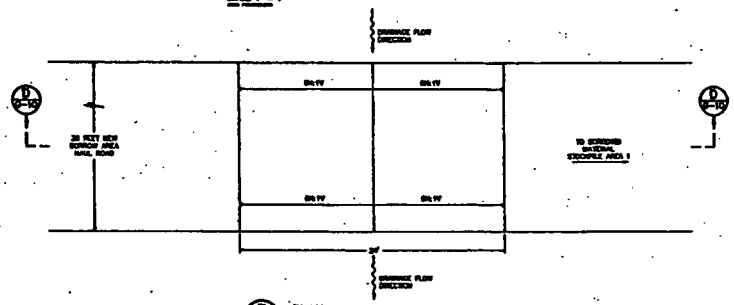
F 0-10 SECTION
BORROW AREA HAUL ROAD 30-IN CMP CULVERT EMBEDMENT
SCALE: 1" = 2'



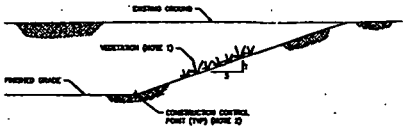
C 0-6 SECTION
BORROW AREA SUBAREA 2A 30-IN CMP CULVERT EXTENSION
SCALE: 1" = 4'



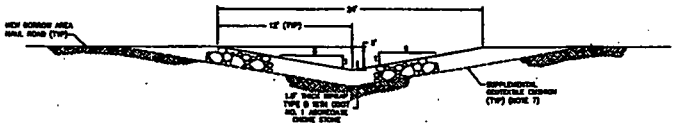
G 0-6 SECTION (TYP)
RESTORED BORROW AREA EXTERIOR SIDESLOPE
SCALE: 1" = 10'



7 0-6 PLAN
BORROW AREA TEMPORARY STREAM FORD
SCALE: 1" = 4'



H 0-6 SECTION (TYP)
TEMPORARY BORROW AREA SIDESLOPE
SCALE: 1" = 10'



D 0-10 SECTION
BORROW AREA TEMPORARY STREAM FORD
SCALE: 1" = 4'

NOTES:

1. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
2. CONSTRUCTION CONTROL POINTS ARE PROVIDED ON DRAWINGS 0-5 AND 0-6.
3. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02221A.
4. INLET END OF TEMPORARY CMP CULVERT AT EXISTING BORROW AREA HAUL ROAD SHALL BE CONNECTED TO TEMPORARY CMP CULVERT EXTENSION AND BORROW AREA SUBAREA 2A.
5. CORRUGATED METAL PIPE CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02722.
6. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271A.
7. SUPPLEMENTAL GEOTEXTILE CUSHION AND GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271A.
8. CONTRACTOR SHALL MAINTAIN COVER ABOVE CROWN OF PIPE TO EXISTING BORROW AREA HAUL ROAD ELEVATION. COVER ABOVE CROWN OF PIPE SHALL NOT BE LESS THAN 3 FEET.
9. SCOPE OF WORK SHOWN ON THIS DRAWING TO BE PERFORMED BY OTHERS.

1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DRN. BY	CHK. BY	DWG. BY	APP. BY

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

BORROW AREA DETAILS

9/8/00

Geo-Systems Consultants

PROJECT NO. 22192
CONTRACT NO. DE-AC05-92OR21972
PROJECT DRAWING NO. 0-6-6000-0-60003
DRAWING NO. 0000-00-173
DRAWING NO. 700-1707
SHEET NO. 0-10
REVISION NO. 1

ECDC CONTROLLED COPY NO. C011

CERTIFIED-FOR-CONSTRUCTION

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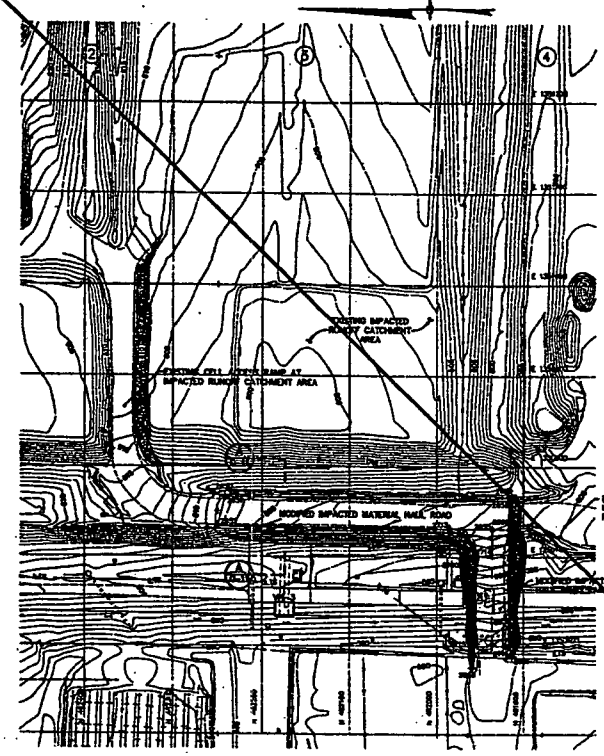
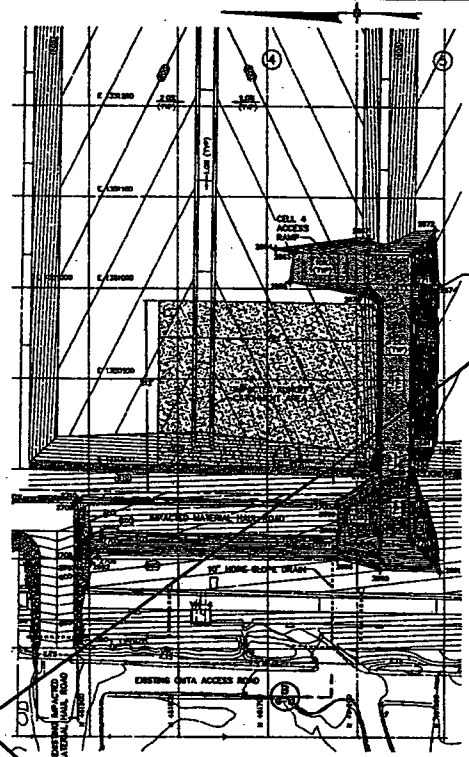


B 6-1 PLAN
IMPACTED MATERIAL HAUL ROAD AND RAMP MODIFICATION
SCALE 1" = 50'



9 6-1 PLAN
IMPACTED MATERIAL HAUL ROAD AND ACCESS RAMP AT CELL 4
SCALE 1" = 50'

IMPACTED MATERIAL HAUL ROAD CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
2650	482234.08	1390770.82	898.87
2651	482240.13	1390753.98	898.38
2652	482298.18	1390732.95	897.37
2653	482291.91	1390730.11	896.50
2654	481984.79	1390730.72	897.38
2655	481933.54	1390730.90	897.80
2656	481918.54	1390730.98	896.97
2657	481918.54	1390737.67	896.97
2658	481918.76	1390749.89	896.91
2659	481918.76	1390749.89	897.46
2660	481918.76	1390749.89	897.46
2661	481913.75	1390588.54	893.88
2662	481438.67	1390591.54	893.88
2663	481438.67	1390573.71	891.73
2664	481438.38	1391643.38	890.87
2665	481438.75	1391639.11	890.87
2666	481574.17	1391597.18	890.87
2667	481586.22	1391594.61	892.44
2668	481586.22	1391594.61	892.44
2669	481586.44	1391598.88	897.46
2670	481586.44	1391598.88	897.46
2671	481537.23	1391637.48	897.46
2672	481537.23	1391637.48	897.46
2673	481540.42	1391603.43	897.17
2674	481540.42	1391603.43	897.17
2675	481565.77	1391603.10	898.46
2676	481565.77	1391603.10	898.46
2677	481579.88	1390985.77	891.34
2678	481579.88	1390985.77	891.34
2679	481577.88	1390823.76	892.91
2680	481577.88	1390823.76	892.91
2681	481586.88	1390822.32	898.88
2682	481586.88	1390822.32	898.88
2683	481586.44	1390822.18	898.88
2684	481586.44	1390822.18	898.88
2685	481586.44	1390799.52	894.61
2686	481586.44	1390799.52	894.61
2687	481586.44	1390799.52	894.61
2688	481541.15	1390821.91	897.79
2689	481541.15	1390821.91	897.79
2690	481546.14	1390799.18	896.88
2691	481546.14	1390799.18	896.88
2692	481525.48	1390799.23	894.88
2693	481525.48	1390799.23	894.88
2694	481525.48	1390799.23	894.88
2695	481572.32	1390792.18	896.88
2696	481572.32	1390792.18	896.88
2697	481572.32	1390792.18	896.88
2698	481584.96	1390696.71	892.54
2699	481584.96	1390696.71	892.54
2700	481584.20	1390696.88	892.88
2701	481572.40	1390696.72	893.02
2702	481572.40	1390696.72	893.02
2703	481572.54	1390723.49	897.31
2704	481572.54	1390723.49	897.31
2705	481572.54	1390723.49	897.31
2706	481531.66	1390721.22	894.15
2707	481531.66	1390721.22	894.15
2708	481531.54	1390722.28	892.53
2709	481531.54	1390722.28	892.53
2710	481531.54	1390722.28	892.53
2711	481522.91	1390742.38	895.31
2712	481522.91	1390742.38	895.31
2713	481511.08	1390723.30	897.31
2714	481511.08	1390723.30	897.31
2715	481511.08	1390723.30	897.31
2716	481488.53	1390723.52	896.64
2717	481488.53	1390723.52	896.64
2718	481488.53	1390723.52	896.64
2719	481511.12	1390699.16	893.57
2720	481511.12	1390699.16	893.57
2721	481511.12	1390699.16	893.57
2722	481488.79	1390701.88	893.31
2723	481488.79	1390701.88	893.31
2724	481511.32	1391092.16	811.38
2725	481511.32	1391092.16	811.38
2726	481511.32	1391092.16	811.38
2727	481488.11	1390730.22	895.54
2728	481488.11	1390730.22	895.54
2729	481488.11	1390730.22	895.54
2730	481488.11	1390730.22	895.54
2731	481488.11	1390730.22	895.54
2732	481488.11	1390730.22	895.54
2733	481488.11	1390730.22	895.54
2734	481488.11	1390730.22	895.54
2735	481488.11	1390730.22	895.54
2736	481488.11	1390730.22	895.54
2737	481488.11	1390730.22	895.54
2738	[illegible]	[illegible]	[illegible]

ECDC CONTROLLED COPY NO.
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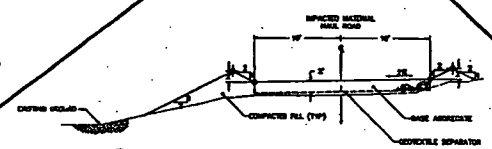
NOTES:

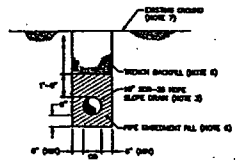
1. CONTOURS WITHIN SHADED SECTION ON IMPACTED MATERIAL HAUL ROAD REPRESENT TOP OF BASE AGGREGATE. BASE AGGREGATE SHALL BE 6 INCHES THICK AND GEOTEXTILE 8T, GEOTEXTILE SEPARATOR. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02235.
2. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING ACTIVE CELL AREA AT REMOVAL BERM. REMAINING UNDER DIVISION REMEDIATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL PADS OF REMAINING UNDER DIVISION REMEDIATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13080.
3. HDPE SLOPE DRAIN SHALL BE 20IN-28 IND IN ACCORDANCE WITH SPECIFICATION SECTION 02935.
4. RIPRAP APRON SHALL BE CONSTRUCTED AT INLET AND OUTLET OF 10-INCH HDPE SLOPE DRAIN. RIPRAP APRON SHALL BE 4 FEET WIDE AND EXTENDED ON 10-INCH HDPE SLOPE DRAIN. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02274.
5. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02274.
6. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02220.
7. CONTRACTOR SHALL RE-ESTABLISH EXISTING GRADES, RIPRAP, VEGETATION, GEOTEXTILE SEPARATOR AND BASE AGGREGATE WITHIN AREA OF SLOPE DRAIN TRENCH EXCAVATION. BASE AGGREGATE THICKNESS SHALL BE 1 FOOT.

LEGEND

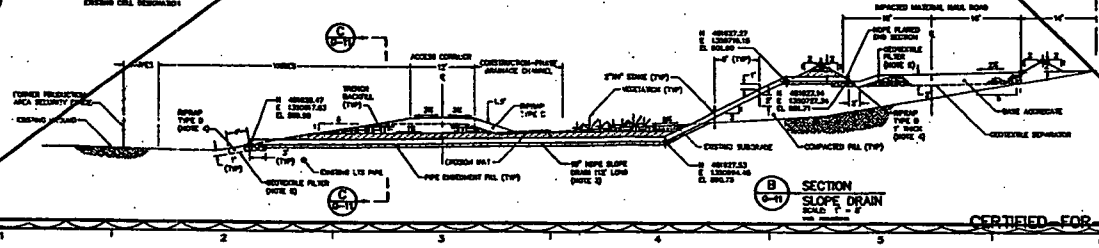
- EXISTING GROUND ELEVATION (FEET)
- FINISHED GRADE ELEVATION (FEET)
- EXISTING SUBGRADE ELEVATION (FEET)
- EXISTING COMPACTED CLAY LINER/PROTECTIVE CLAY LAYER ELEVATION (FEET)
- EXISTING PROTECTIVE LAYER ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- EXISTING LTD PIPE
- EXISTING ILTD PIPE
- CONSTRUCTION CONTROL POINT
- IMPACTED MATERIAL HAUL ROAD (NOTE 1)
- CELL ACCESS RAMP
- EXISTING CELL DESIGNATION



A 6-11 SECTION
IMPACTED MATERIAL HAUL ROAD MODIFICATION AT CELL 3



C 6-11 SECTION (TYP)
10-IN HDPE SLOPE DRAIN EMBEDMENT
SCALE 1" = 2'



B 6-11 SECTION
SLOPE DRAIN
SCALE 1" = 5'

CERTIFIED FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	DRN.	CHK.	APP.	DATE
1	9/26/00	[illegible]	LMS	TMH	RJS	9/26/00
0	9/26/00	[illegible]	SMS	JAS	RJS	9/26/00
2	9/26/00	[illegible]	SMS	JAS	RJS	9/26/00
1	9/26/00	[illegible]	SMS	JAS	RJS	9/26/00

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

IMPACTED MATERIAL HAUL ROAD
GRADING PLANS AND DETAILS

STATE OF OHIO
TIMOTHY H. HOWARD
E-60396
REGISTERED PROFESSIONAL ENGINEER

9/26/00

CamSteven Construction
FULFILLING SOLUTIONS

PROJECT NO. 32003
CONTRACT NO. DE-AC05-92OR21972
PROJ. MANAGER CODE 500-8000-0-00308
CONTRACT TITLE ON-SITE DISPOSAL FACILITY
DRAWING NO. 500000-12
DRAWING SHEET NO. 1
DATE 9/26/2000
SHEET NO. G-11
SHEET NO. 1

4556

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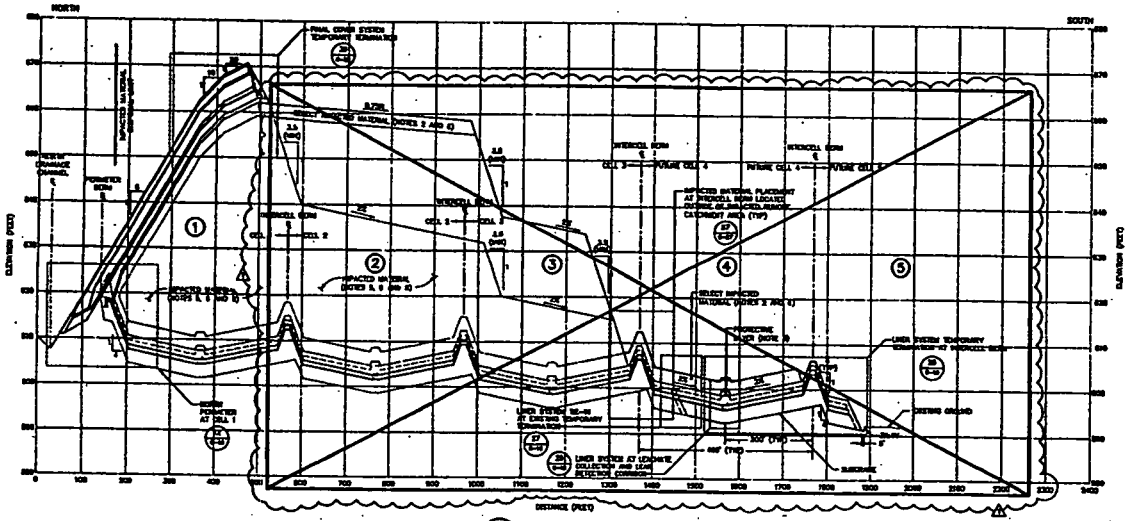
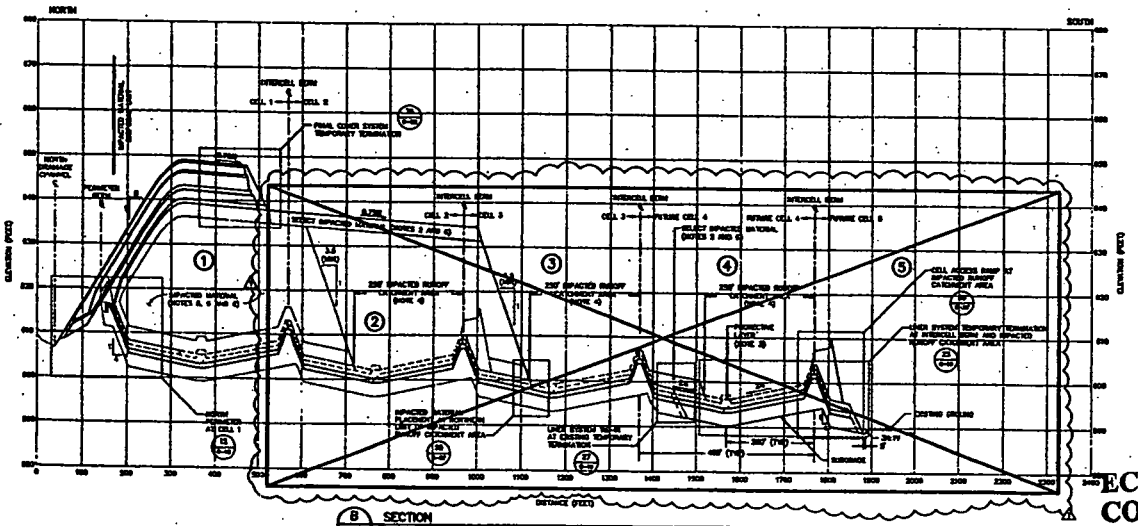


A SECTION
NORTH–SOUTH
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'



B SECTION
NORTH–SOUTH AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'

NOTES:

1. DESIGNS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR DIMENSIONS WHICH ARE SHOWN AT AN ENLARGED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL SHOWN ABOVE PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF AREAS LEFT OF IMPACTED MATERIAL TO BE PLACED THEN SELECT IMPACTED MATERIAL IS CONSIDERED 1 IMPACTED MATERIAL.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED IMPACTED MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN NONCATCHMENT CELL AREAS EXCLUDING ACTIVE CELL AREA AT INTERCELL BERM EXPANSION AND LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-IMPACTED MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
4. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL PLACEMENT OF 2 FEET (2FT) OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT PERMANENT CELL. THE IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONTOURED AND OPERATIONAL.
5. IMPACTED MATERIAL SHOWN SLOPED SHALL BE AND STEEPER THAN 3.5%:1%. SYSTEM SLOPE CONFIGURATION SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCE AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS.
6. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
7. LINE 1C23 AND PLACE [illegible] IN ACCORDANCE WITH SPECIFICATION SECTION 02200 AND [illegible] PER SCALE B-2 PUBLISHED ON CAP.
8. CHECKED IMPACTED MATERIAL SHADED SHOWN ARE APPROXIMATE.

REV.	DATE	DESCRIPTION	DRN.	CHK'D	DES.	DES.	APP'D
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

HORIZONTAL SCALE IN FEET
VERTICAL SCALE IN FEET

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

OSDF NORTH–SOUTH SECTIONS

ECDC CONTROLLED COPY NO. C01

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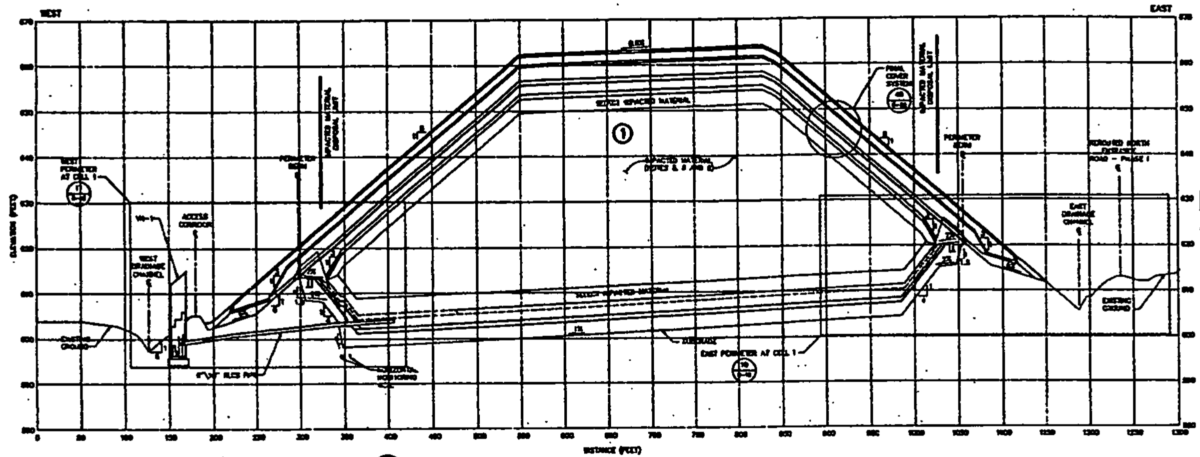
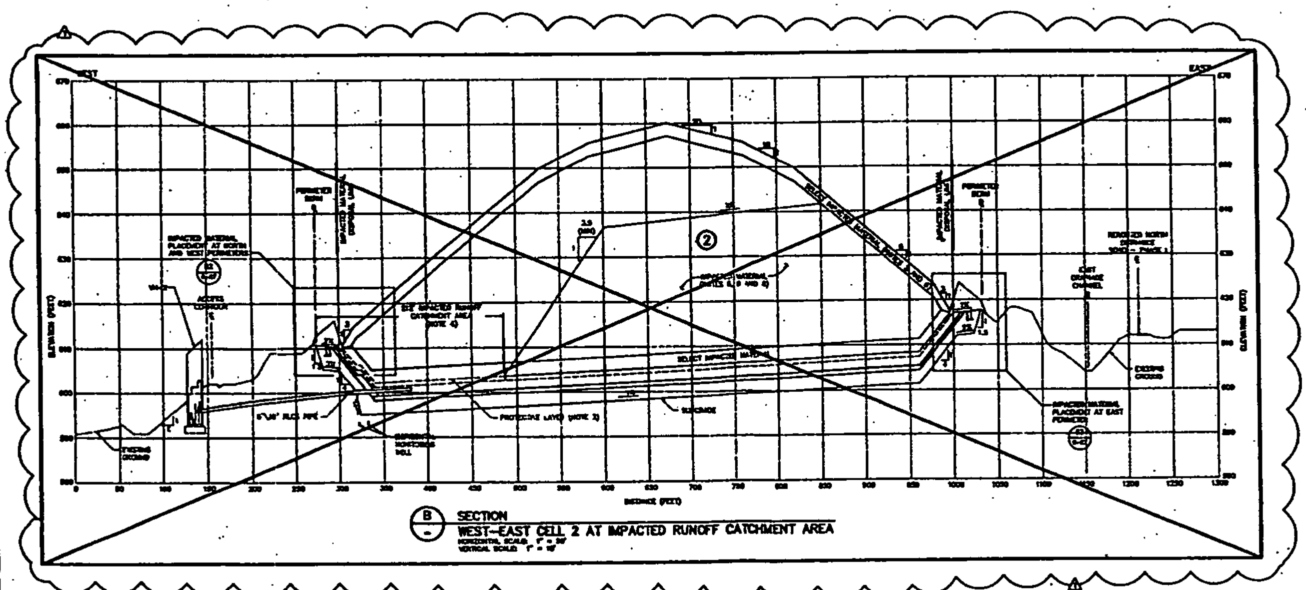


A SECTION
WEST-EAST CELL 1 AT IMPACTED RUNOFF CATCHMENT AREA

ECDC CONTROLLED COPY NO.



B SECTION
WEST-EAST CELL 2 AT IMPACTED RUNOFF CATCHMENT AREA

HORIZONTAL SCALE IN FEET

VERTICAL SCALE IN FEET

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

OSDF WEST-EAST SECTIONS I

0-13

CERTIFIED-FOR-CONSTRUCTION

4556

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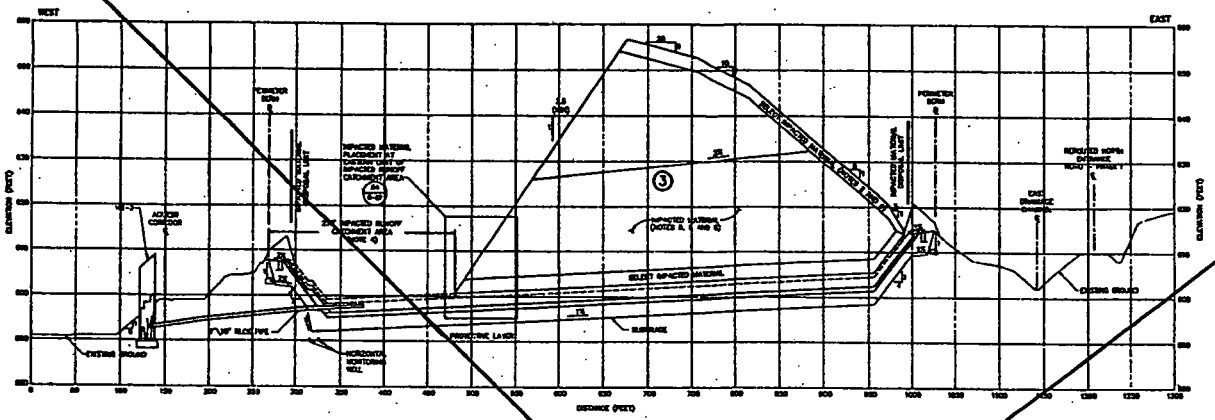
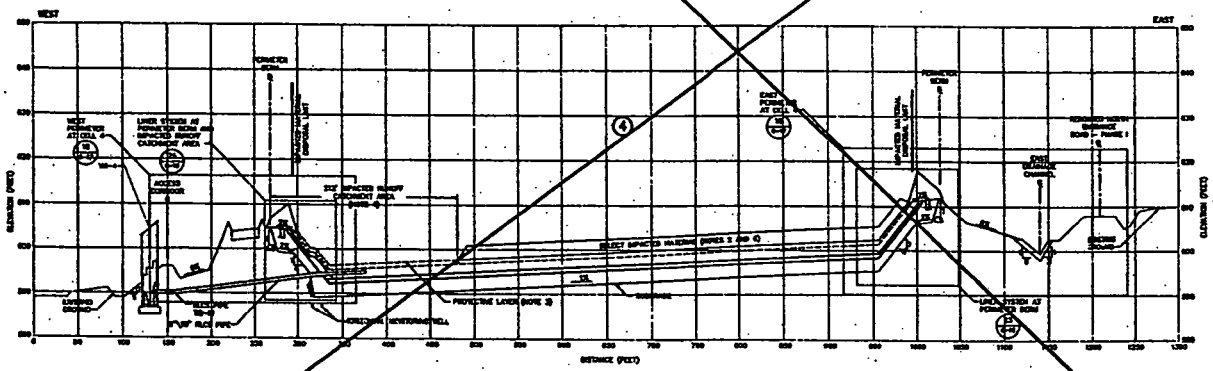


A SECTION
WEST-EAST CELL 3 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



B SECTION
WEST-EAST CELL 4 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

ECDC CONTROLLED COPY NO. C011

NOTES:

1. SECTIONS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS ONCE IN SPECIFICATIONS.
2. A MINIMUM THICKNESS OF 2 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL ENCLOSING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIELD LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CHANGED TO IMPACTED MATERIAL.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS (INCLUDING ACTIVE CELL AREA AT INTERCELL/AREA TEMPORARY LINED SYSTEM TERMINATION). PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13080.
4. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT OPERATIONAL CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
5. IMPACTED MATERIAL MINIMUM SLOPES SHALL BE NO LESSER THAN 3.5H:1V. MINIMUM SLOPE CONFIGURATIONS SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCING AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS.
6. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
7. CAP LICD AND BLOCK PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200 AND TERMINATE AT THE OPERATIONAL CAP WITH A 6-INCH HOLDED END CAP.
8. EXISTING IMPACTED MATERIAL GRADES SHOWN ARE APPROXIMATE.

1	REVISED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	ISSUED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B	ISSUED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A	ISSUED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DRN. BY	DSN. BY	CHK. BY	APPV. BY	APPV. BY

HORIZONTAL SCALE IN FEET: 10 20 0 20 100
VERTICAL SCALE IN FEET: 10 5 0 5 10 20

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

OSDF WEST-EAST SECTIONS B

STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER

9/29/00

CONSTRUCTION COMPANY

PROJECT NO. 20103
DRAWING NO. [illegible]
OSF DRAWING NO. [illegible]
PDR-0001-S-00005
DRAWING TITLE NO. [illegible]
PDR05-13
DRAWING NUMBER NO. PDR-1313
SHEET NO. G-14
REVISION NO. 1

CERTIFIED FOR CONSTRUCTION

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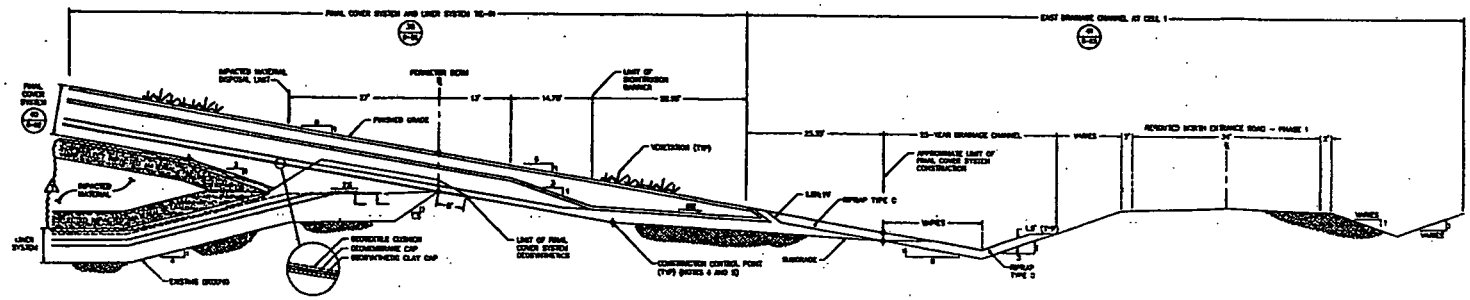
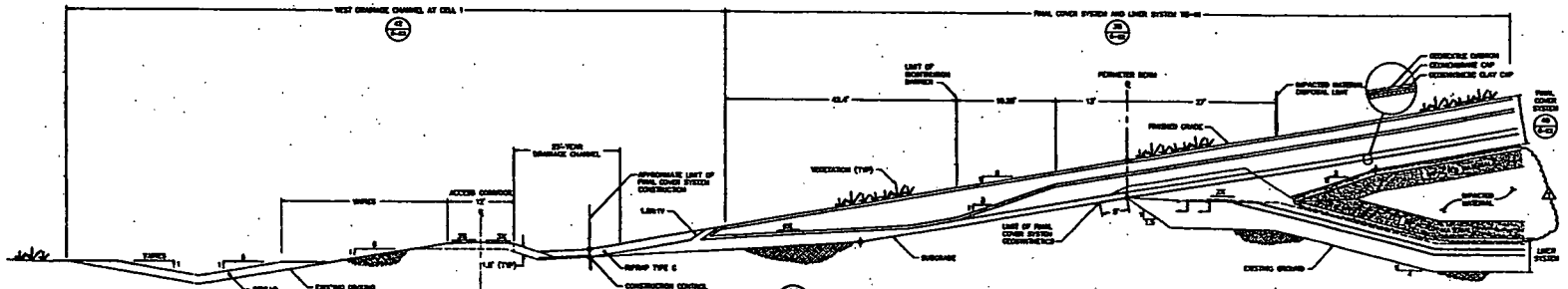


10 / 0-13 DETAIL
EAST PERIMETER AT CELL 1
SCALE 1" = 5'



11 / 0-13 DETAIL
WEST PERIMETER AT CELL 1
SCALE 1" = 5'

ECDC CONTROLLED
COPY NO C011

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN UNACCEPTABLE SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS 0-2 AND 0-3.
4. CONTRACTOR SHALL RE-ESTABLISH SUBGRADE ELEVATIONS OUTSIDE PERIMETER BERM BASELINE PRIOR TO FINAL COVER SYSTEM CONSTRUCTION. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWING 0-5.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	PROJ. ENG.	PROJ. MGR.
1	05/01/97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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A	12/01/97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY - PHASE III

CELL PERIMETER DETAILS I

CERTIFIED-FOR-CONSTRUCTION

9/Aug/00

STATE OF OHIO
T. BOOCH
9-9-2000
PROFESSIONAL ENGINEER

CONSTRUCTION COMMENCED

PROJECT NO. 32162
CONTRACT NO. 96-C-0000
SHEET NO. 0-13
REVISION NO. 1

4556

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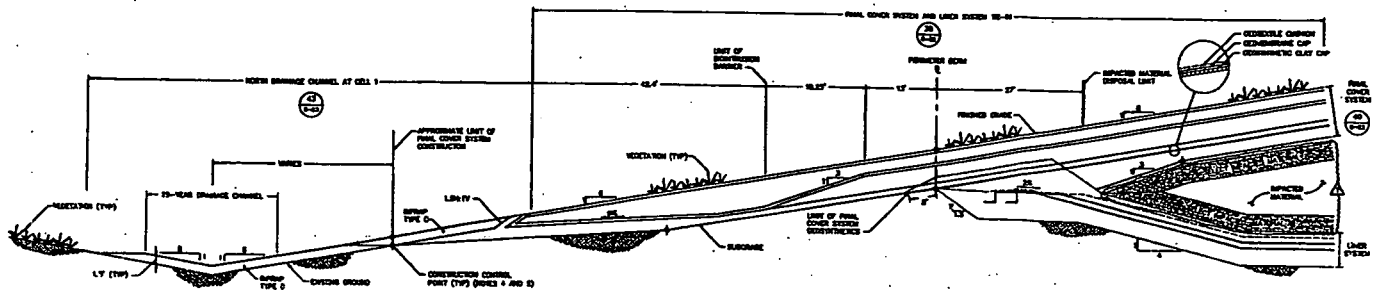
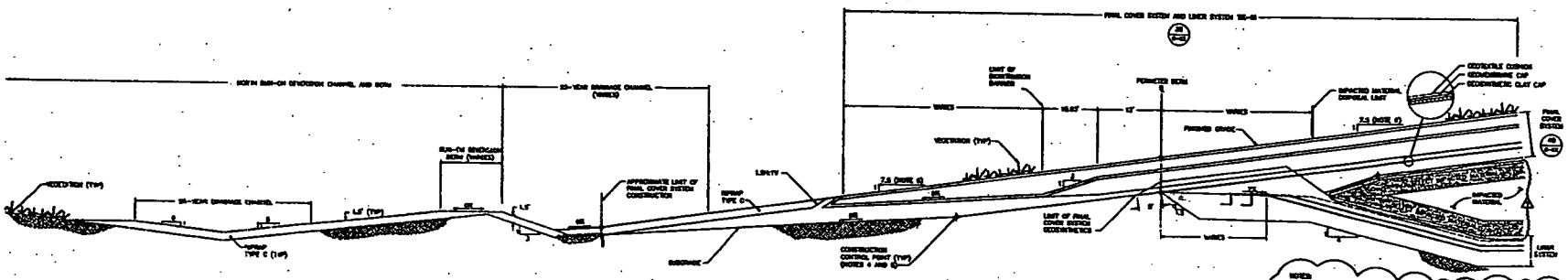
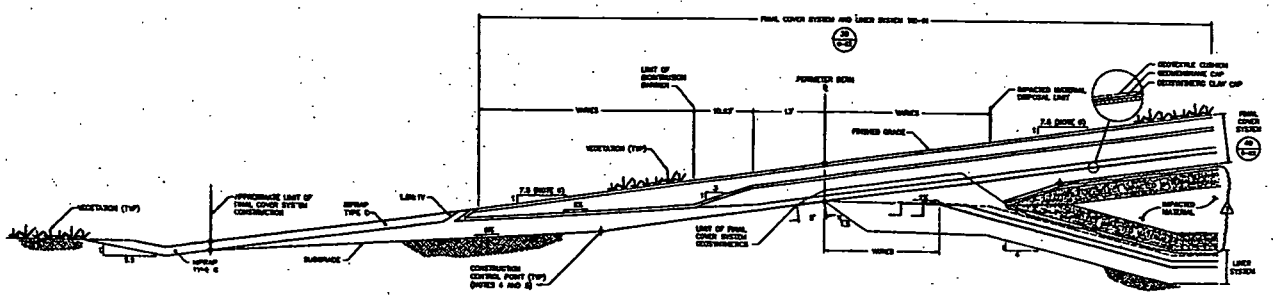


12 DETAIL
NORTH PERIMETER AT CELL 1
SCALE 1" = 5'



13 DETAIL
NORTHWEST PERIMETER AT CELL 1
SCALE 1" = 5'



14 DETAIL
NORTHEAST PERIMETER AT CELL 1
SCALE 1" = 5'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE SHOWN LIKE TO OVER IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
4. CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-4 AND G-7.
5. CONTRACTOR SHALL RE-ESTABLISH SUBGRADE ELEVATIONS BEFORE PERIMETER BERM BASELINE PRIOR TO FINAL COVER SYSTEM CONSTRUCTION. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWING G-5.
6. SLOPE OF LINER PORTION OF FINAL COVER IS 6%1V FOR NORTH, EAST AND WEST PERIMETERS OF UDCF AND TRANSITIONS FROM 6%1V TO 7.5%1V AND BACK TO 6%1V IN CORNERS OF UDCF.

1	05.05.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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0	03.31.00	PRELIMINARY SUBMITTAL TO EPA/FERNALD	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

CELL PERIMETER DETAILS II

9/26/00

STATE OF OHIO
PROFESSIONAL ENGINEER

CONSTRUCTION

ECDC CONTROLLED
COPY NO. C011

CERTIFIED–FOR–CONSTRUCTION

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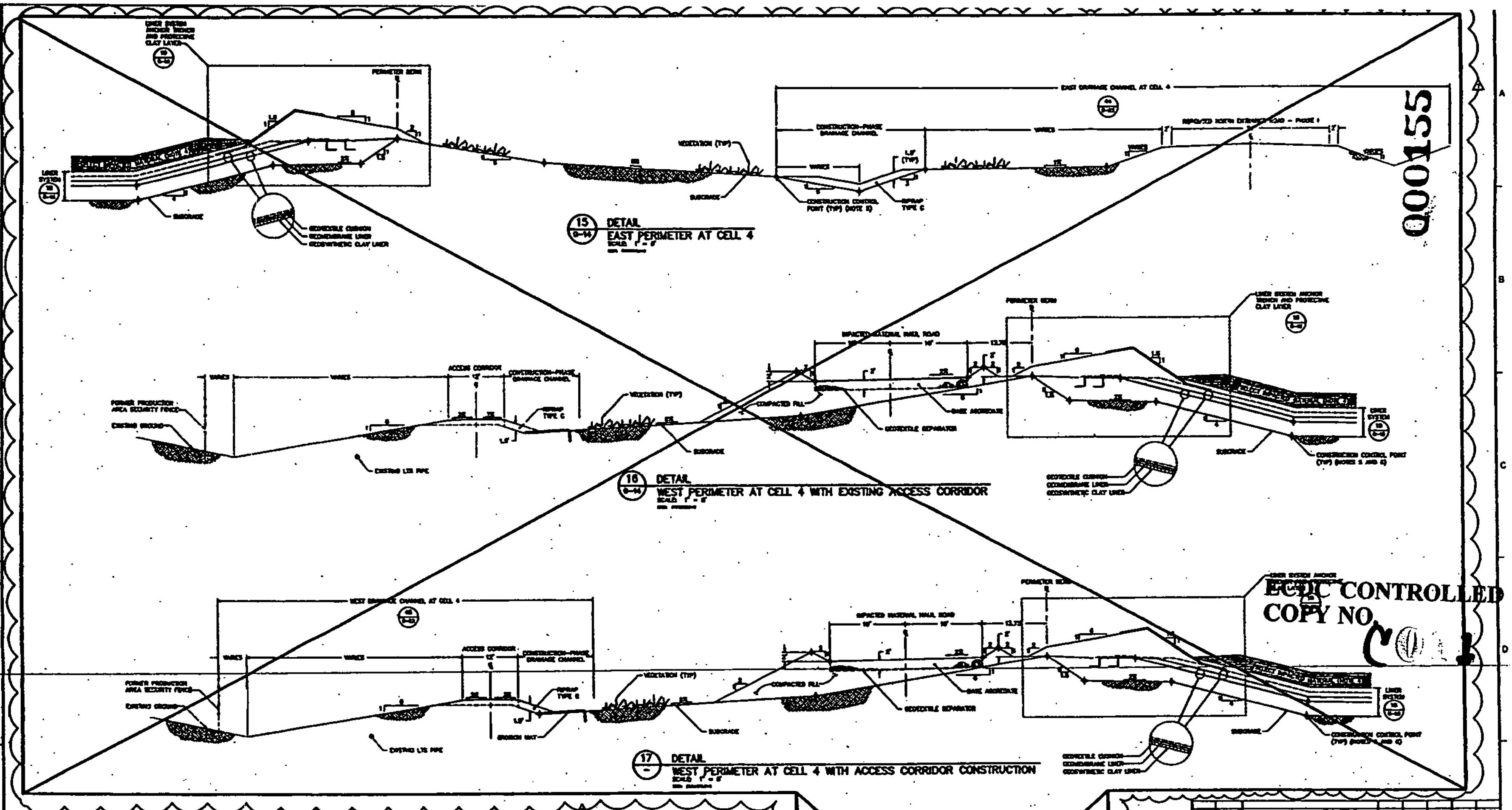

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NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION [illegible].
4. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION [illegible].
5. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS G-3 AND G-4.
6. CONSTRUCTION CONTROL POINTS FOR IMPACTED MATERIAL HAUL ROAD ARE PROVIDED ON DRAWING G-11.

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY - PHASE III

CELL PERIMETER DETAILS III

GeoSyntec Consultants

9 Aug 00

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CERTIFIED-FOR-CONSTRUCTION

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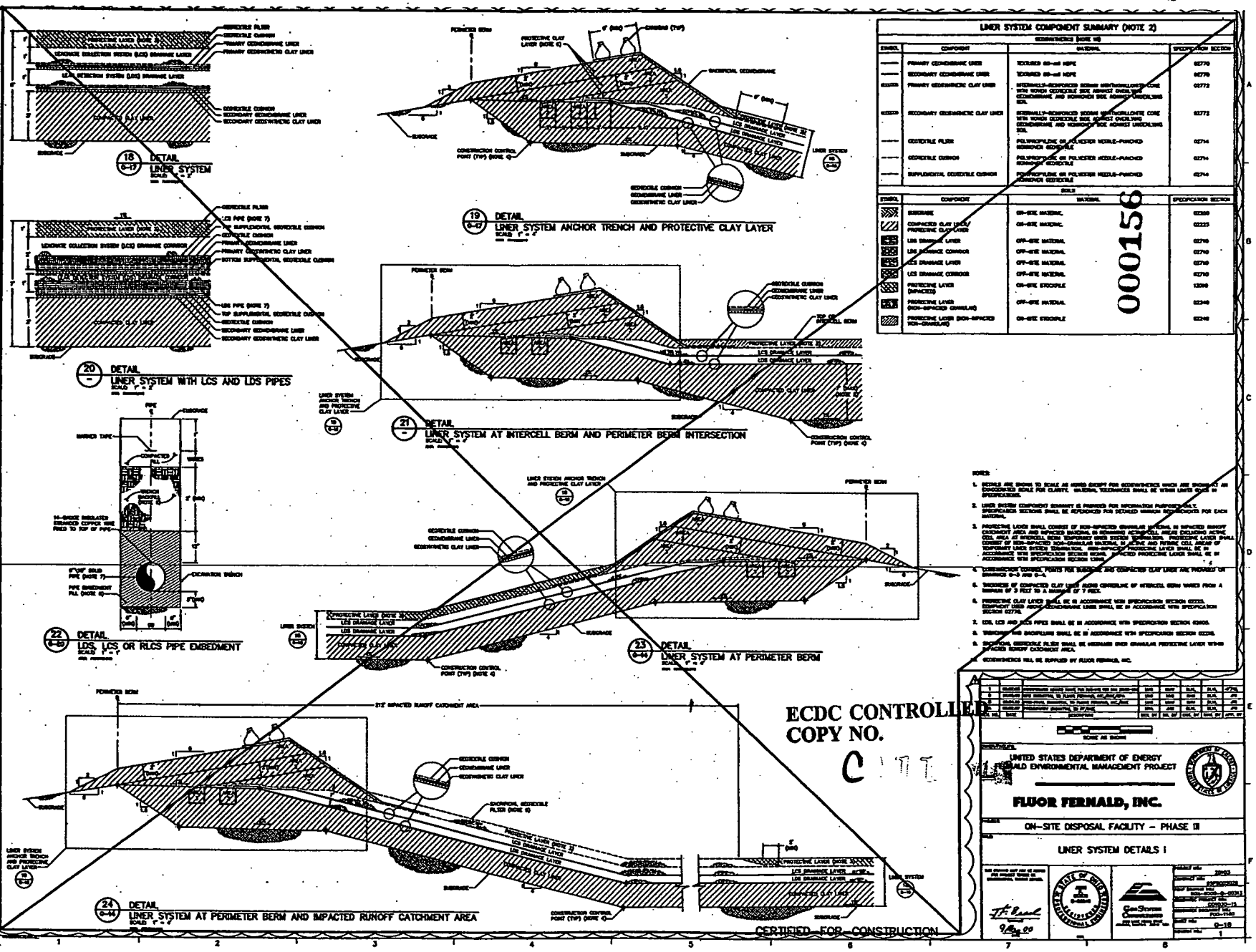
18 DETAIL
LINER SYSTEM
19 DETAIL
LINER SYSTEM ANCHOR TRENCH AND PROTECTIVE CLAY LAYER
20 DETAIL
LINER SYSTEM WITH LCS AND LDS PIPES
21 DETAIL
LINER SYSTEM AT INTERCELL BERM AND PERIMETER BERM INTERSECTION
22 DETAIL
LDS, LCS OR RLCS PIPE EMBEDMENT
23 DETAIL
LINER SYSTEM AT PERIMETER BERM
24 DETAIL
LINER SYSTEM AT PERIMETER BERM AND IMPACTED RUNOFF CATCHMENT AREA
LINER SYSTEM COMPONENT SUMMARY (NOTE 2)
GEOSYNTHETICS (NOTE 10)
SOILS
NOTES:
1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. LINER SYSTEM COMPONENT SUMMARY IS PROVIDED FOR INFORMATION PURPOSES ONLY. SPECIFICATION SECTIONS SHALL BE REFERENCED FOR DETAILED MINIMUM REQUIREMENTS FOR EACH MATERIAL.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS (EXCLUDING ACTIVE CELL AREA AT INTERCELL BERM TEMPORARY SINGLE SYSTEM TERMINATION). PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02340. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13280.
4. DIMENSIONS CONTROL POINTS FOR SUBGRADE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS 0-3 AND 0-4.
5. THICKNESS OF COMPACTED CLAY LINER ALONG PERIMETER OF INTERCELL BERM VARIES FROM A MINIMUM OF 3 FEET TO A MAXIMUM OF 7 FEET.
6. PROTECTIVE CLAY LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02223. EQUIPMENT USED ABOVE GEOMEMBRANE LINER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02276.
7. LDS, LCS AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
8. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02220.
9. SACRIFICIAL GEOTEXTILE FILTER SHALL BE MINIMUM ONE GRANULAR PROTECTIVE LAYER WITHIN IMPACTED RUNOFF CATCHMENT AREA.
10. GEOSYNTHETICS WILL BE SUPPLIED BY FLUOR FERNALD, INC.
ECDC CONTROLLED COPY NO.
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CERTIFIED FOR CONSTRUCTION
UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FLUOR FERNALD, INC.
ON-SITE DISPOSAL FACILITY – PHASE III
LINER SYSTEM DETAILS I
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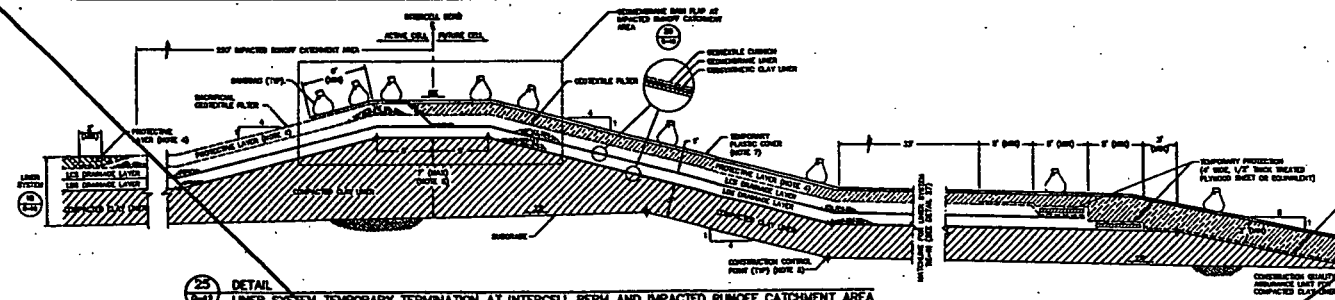
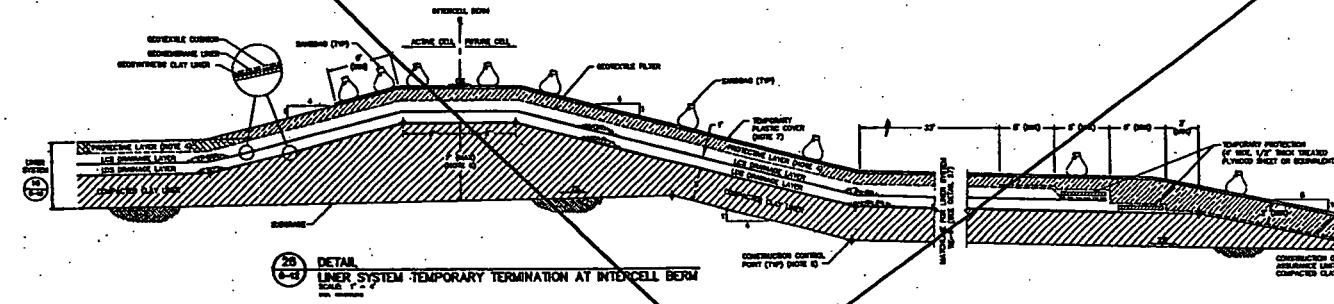
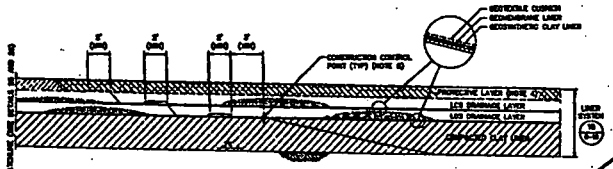


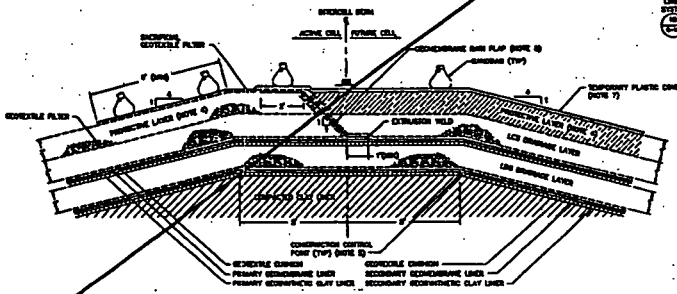
25 DETAIL
LINER SYSTEM TEMPORARY TERMINATION AT INTERCELL BERM AND IMPACTED RUNOFF CATCHMENT AREA
SCALE 1" = 4'



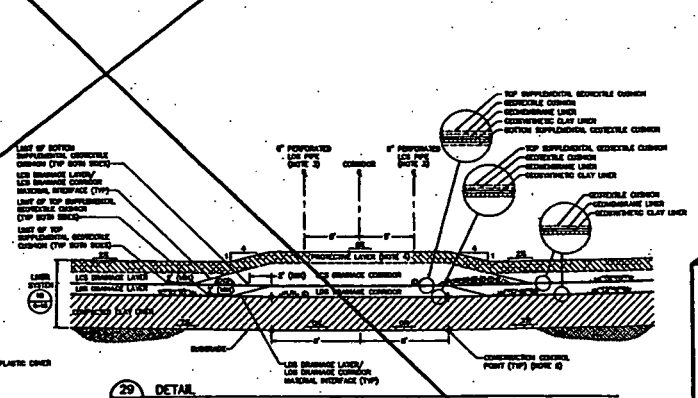
26 DETAIL
LINER SYSTEM TEMPORARY TERMINATION AT INTERCELL BERM
SCALE 1" = 4'



27 DETAIL
LINER SYSTEM TIE-IN AT EXISTING TEMPORARY TERMINATION
SCALE 1" = 4'



28 DETAIL
GEOMEMBRANE RAIN FLAP AT IMPACTED RUNOFF CATCHMENT AREA
SCALE 1" = 4'



29 DETAIL
LINER SYSTEM AT LEACHATE COLLECTION AND LEAK DETECTION CORRIDOR
SCALE 1" = 4'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS SHOWN IN SPECIFICATIONS.
2. MATERIAL IN DRAINAGE LAYERS AND DRAINAGE CORRIDORS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02741.
3. LDS AND LCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02664.
4. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING ACTIVE CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM DRAINAGE. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN FUTURE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM DRAINAGE. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02241. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13244.
5. CONSTRUCTION CONTROL POINTS FOR DRAINAGE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS 9-3 AND 9-4.
6. THICKNESS OF COMPACTED CLAY LINER ALONG CENTERLINE OF INTERCELL BERM VARIES FROM A MINIMUM OF 3 FEET TO A MAXIMUM OF 7 FEET.
7. TEMPORARY PLASTIC COVER SHALL CONSIST OF 20-mil THICK (MIN) POLYETHYLENE, POLYVINYL CHLORIDE OR OTHER SUCH APPROVED BY CONSTRUCTION MANAGER. CONTRACTOR SHALL WEIGHT TEMPORARY PLASTIC COVER WITH DRAINAGE OR 6 INCHES OF NON-IMPACTED SOIL PLACED ABOVE PLASTIC COVER TO PREVENT DAMAGE FROM WIND UPLIFT.
8. RAIN FLAP SHALL BE CONTINUOUSLY EXTENDED WELDED TO PRIMARY GEOMEMBRANE LINER ALONG INTERCELL BERM. FLAP SHALL TIE-IN TO DRAINAGE AT CREST OF PERIMETER BERM AND EXTEND 100 FEET EAST FROM WEST PERIMETER BERM BASELINE.
9. CONTRACTOR SHALL PLACE COMPACTED FILL TO PROVIDE PRESENT DRAINAGE TO TEMPORARY DRAINAGE CHANNEL.

REV. NO.	DATE	DESCRIPTION	DRAWN BY	DES. BY	CHK. BY	APP. BY
1	01/01/00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	01/01/00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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5	01/01/00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

LINER SYSTEM DETAILS II

9/29/99

STATE OF OHIO PROFESSIONAL ENGINEER

CONSTRUCTION QUALITY ASSURANCE UNIT

PROJECT NO. 22013
CONTRACT NO. DE-AC05-92OR21972
PROJECT NO. 22013-18
DRAWING NO. 0-19
SHEET NO. 1

ECDC CONTROLLED
COPY NO. C011

CERTIFIED FOR CONSTRUCTION

4556

30 DETAIL
LINER SYSTEM GEOSYNTHETICS TERMINATION TYPE I AT LINER PENETRATION

31 DETAIL
LINER SYSTEM GEOSYNTHETICS TERMINATION TYPE II AT LINER PENETRATION

32 DETAIL
LINER SYSTEM GEOSYNTHETICS TERMINATION TYPE III AT LINER PENETRATION

A SECTION
LEACHATE COLLECTION AND LEAK DETECTION CORRIDOR AT CELL OUTLET

B SECTION
PENETRATION OF LDS PIPE THROUGH LINER SYSTEM

C SECTION
PENETRATION OF RLCS PIPE THROUGH LINER SYSTEM

D SECTION
PENETRATION OF LCS PIPE THROUGH LINER SYSTEM

33 DETAIL
6-INCH PERFORATED PIPE

ECDC CONTROLLED COPY NO. C01

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN [illegible] SPECIFICATIONS.
2. MATERIAL IN DRAINAGE LAYERS AND DRAINAGE CORRIDORS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02768.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED TEMPORARY EASEMENT AREA AND IMPACTED MATERIAL IN DRAINAGE ACTIVE COLLAPSE EXCLUDING ACTIVE CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS AT TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240.
4. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS 0-3 AND 0-4. CONSTRUCTION CONTROL POINTS FOR LINER PENETRATION BORES AND LDS, LCS AND RLCS PIPES ARE PROVIDED ON DRAWING 0-5.
5. LDS, LCS AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02850.
6. LINER PENETRATION BORES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02850. 6-INCH AND 10-INCH PIPE SECTIONS SHALL BE FACTORY WELDED TO LINER PENETRATION BORES AND EXTEND BEYOND BUTT FUSION WELDS AND ELECTROFUSION COUPLERS AS SHOWN. FIXED END SEALS AND PIPE COUPLINGS SHALL BE INSTALLED AS SHOWN.
7. HORIZONTAL MONITORING WELL IS NOT SHOWN IN THIS SECTION FOR CLARITY.
8. SACRIFICIAL GEOTEXTILE FILTER SHALL BE INSTALLED OVER GRANULAR PROTECTIVE LAYER WITHIN IMPACTED EASEMENT DISCHARGE AREA.
9. GEOMEMBRANE LINER SHEET SHALL BE FACTORY WELDED TO LINER PENETRATION BORE. GEOMEMBRANE LINER SHEET SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02279 AND WILL BE PROVIDED BY FLUOR FERNALD, INC. GEOMEMBRANE LINER SHEET SHALL BE A MINIMUM 7 FEET WIDE BY 7 FEET LONG.

NO.	DATE	REVISIONS	DWN	CHKD	DES.	DES.	APPD
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

LINER SYSTEM DETAILS III

CERTIFIED FOR CONSTRUCTION

9/8/00

STATE OF OHIO REGISTERED PROFESSIONAL ENGINEER

CONSTRUCTION

0-20

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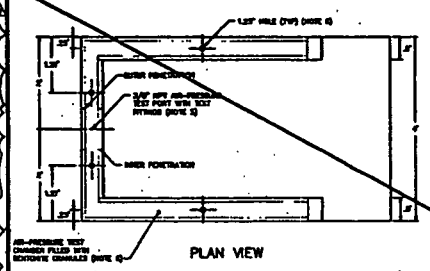
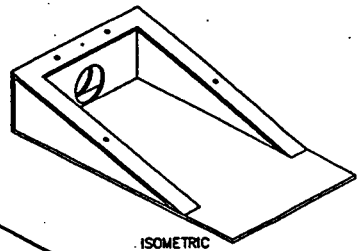
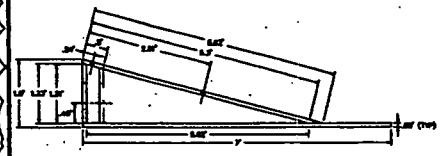
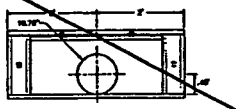
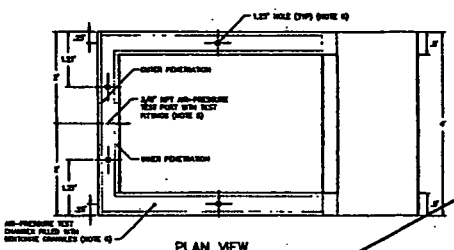


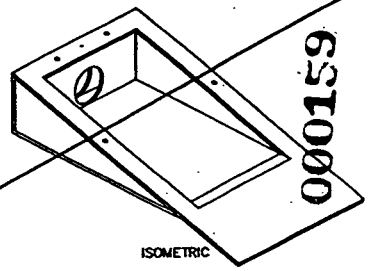


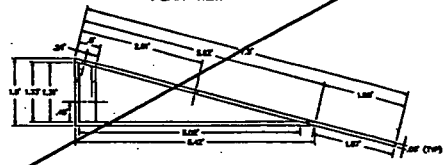


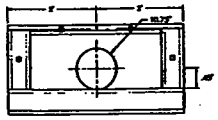


34 DETAIL
LINER PENETRATION BOX TYPE I
SCALE 1" = 1'

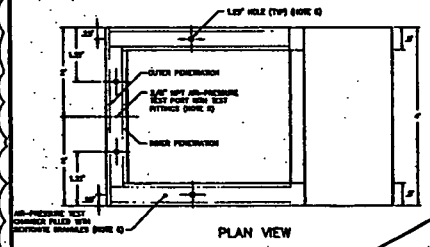


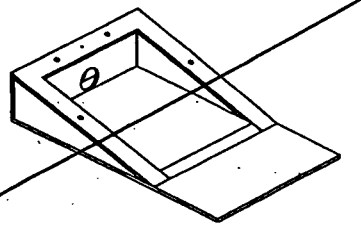


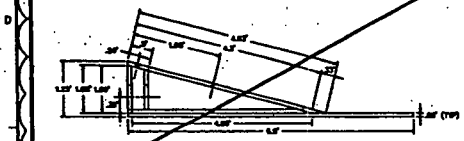


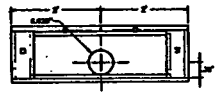


35 DETAIL
LINER PENETRATION BOX TYPE II
SCALE 1" = 1'

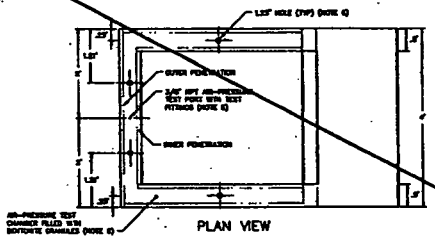


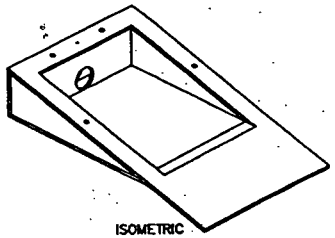


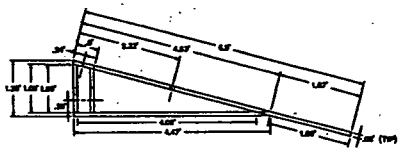


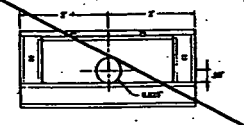


36 DETAIL
LINER PENETRATION BOX TYPE III
SCALE 1" = 1'









37 DETAIL
LINER PENETRATION BOX TYPE IV
SCALE 1" = 1'

ECDC CONTROLLED
COPY NO. C011

NOTES:

1. LINER PENETRATION BOXES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13003.
2. 6-INCH AND 10-INCH PIPE SEGMENTS SHALL BE FACTORY WELDED TO LINER PENETRATION BOXES WITH LENGTHS SHOWN DIMENSIONED 6-36. PROCEDURE NOT SHOWN ON THIS DRAWING FOR CLARITY. PIPE END SEALS AND PIPE COUPLINGS SHALL BE INSTALLED AS SHOWN ON DRAWING 6-35.
3. SECONDARY LINER SHEET SHALL BE FACTORY WELDED TO LINER PENETRATION BOX. SECONDARY LINER SHEET SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13170 AND SHALL BE PROVIDED BY FLUOR FERNALD, INC. SECONDARY LINER SHEET SHALL BE A MINIMUM 7 FEET WIDE BY 7 FEET LONG.
4. LINER PENETRATION BOXES SHALL BE CONSTRUCTED USING 1-INCH THICK HDPE PLATE STOCK.
5. LINER PENETRATION BOXES AND ATTACHED CONTAINMENT PIPING SHALL BE AIR-PRESSURE TESTED IN FIELD AFTER INSTALLATION.
6. AIR-PRESSURE TEST CHAMBER SHALL BE BACKFILLED WITH BENTONITE GRANULES USING 1/2-INCH HOLES AFTER AIR-PRESSURE TESTING IS COMPLETED. EACH HOLE SHALL BE SEALED WITH TYPE EXTRUDABLE AFTER BENTONITE FILLING IS COMPLETED.

CERTIFIED FOR CONSTRUCTION

1	CHANGED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	CHANGED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	CHANGED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	CHANGED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A	ISSUED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
REV. NO.	DATE	DESCRIPTION	DRN.	CHK.	DSN.	PROJ. ENG.	APPR.

SCALE IN FEET

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

LINER SYSTEM DETAILS IV

9/Aug 00

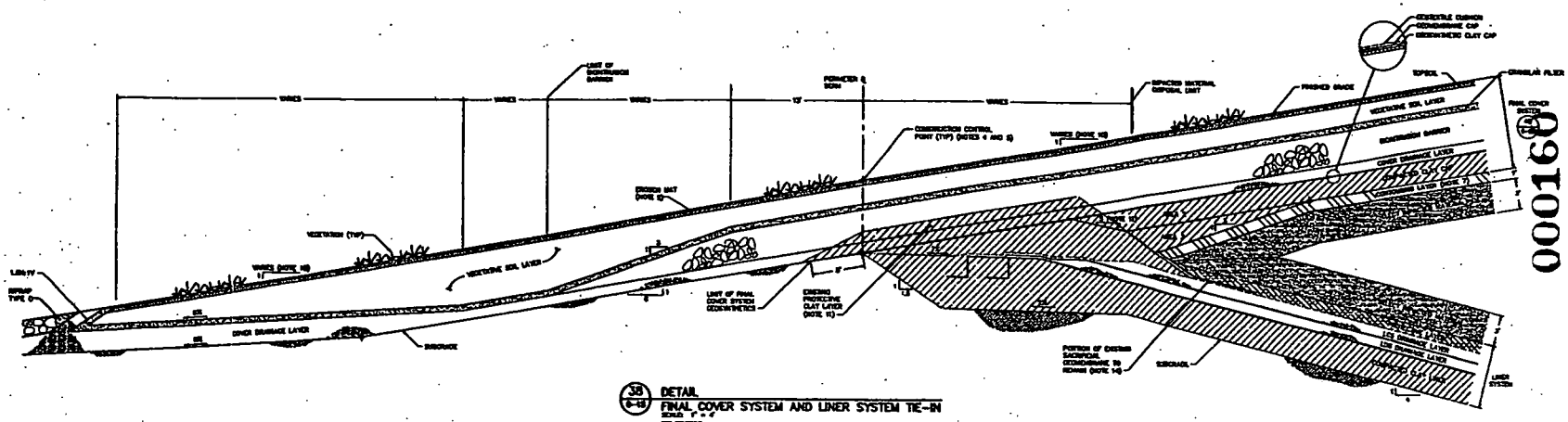
STATE OF OHIO
PROFESSIONAL ENGINEER

CONSTRUCTION COORDINATOR

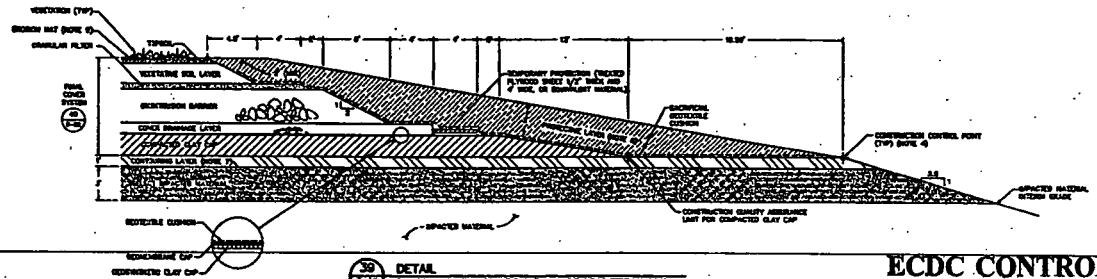
PROJECT NO. 20003
DOCUMENT NO. FDF0000078
SHEET SEQUENCE NO. 0004-0-00394
PROJECT NO. 20003-13
DOCUMENT SEQUENCE NO. 0004
SHEET NO. 750-143
DRAWING NO. 6-35
REVISION NO. 1

4556

000160



38 8-13 DETAIL
FINAL COVER SYSTEM AND LINER SYSTEM TIE-IN
SCALE 1" = 4'

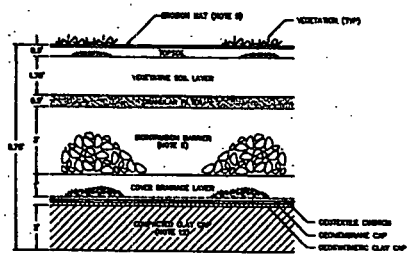


39 8-13 DETAIL
FINAL COVER SYSTEM TEMPORARY TERMINATION

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. FINAL COVER SYSTEM COMPONENT SUMMARY IS PROVIDED FOR INFORMATION PURPOSES ONLY. SPECIFICATION SECTIONS SHALL BE REFERENCED FOR DETAILED MINIMUM REQUIREMENTS FOR EACH MATERIAL.
4. CONSTRUCTION CONTROL POINTS FOR CONTAINING LAYER AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS 8-6 AND 8-8.
5. CONTRACTOR SHALL RE-ESTABLISH SUBGRADE ELEVATIONS OUTSIDE FORMATION GRAD BASELINE PRIOR TO FINAL COVER SYSTEM CONSTRUCTION. CONTRACTOR CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWING 8-4.
6. CHOKE STONE LAYER SHALL BE PLACED WITH TOP OF EROSION BARRIER IN ACCORDANCE WITH SPECIFICATION SECTION 02240.
7. CONTAINING LAYER SHALL CONSIST OF NON-IMPACTED MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02240. SUBGRADE FROM NON-IMPACTED CONTAINING LAYER SHALL BE ENDSTED TO IMPACTED MARGIN EXCEPT AREA SHALL COMPLETION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED. CONTRACTOR SHALL CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND PRIOR OF CGCP IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
8. FINAL LINE LAYER IN FINAL COVER SYSTEM TEMPORARY TERMINATION SHALL BE NON-IMPACTED NON-GRANULAR MATERIAL. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240.
9. EROSION MAT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
10. SLOPE OF LOWER PORTION OF FINAL COVER SYSTEM IS 0.5H:1V FOR NORTH, EAST AND WEST EXTENSIONS OF CGCP AND SUBSEQUENT FROM 0.5H:1V TO 7.5H:1V AND BACK TO 0.5H:1V IN CORNERS OF CGCP.
11. EXISTING PROTECTIVE CLAY LAYER PLACED ABOVE FINAL COVER SYSTEM GRADES SHALL BE CUT BACK AND PRIOR TO FINAL COVER CONSTRUCTION. TRANSITION FROM PROTECTIVE CLAY LAYER TO COMPACTED CLAY CAP SHALL BE CUT BACK AT A 0.5H:1V SLOPE OR FLATTER IN ACCORDANCE WITH SPECIFICATION SECTION 02223.
12. COMPACTED CLAY CAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02223.
13. GEOSYNTHETICS WILL BE SUPPLIED BY FLUOR FERNALD, INC.
14. CONTRACTOR SHALL REMOVE EXPOSED PORTION OF EXISTING SACRIFICIAL GEOMEMBRANE BY CUTTING PRIOR TO CONSTRUCTION OF COMPACTED CLAY CAP IN TEMPORARY DRAINAGE CHANNEL.

ECDC CONTROLLED COPY NO. C011



40 8-13 DETAIL
FINAL COVER SYSTEM
SCALE 1" = 2'

FINAL COVER SYSTEM COMPONENT SUMMARY (NOTE 3)

SYMBOL	COMPONENT	MATERIAL	SPECIFICATION SECTION
	GEOSYNTHETICS (NOTE 13)		
	GEOMEMBRANE CAP	TEXTURED 60-mil HDPE	02770
	GEOSYNTHETIC CLAY CAP	INTERNALLY-REINFORCED SODIUM BENTONITE CORE WITH WOVEN GEOTEXTILE SIDE AGAINST OVERLYING GEOMEMBRANE AND NONWOVEN SIDE AGAINST UNDERLYING SOIL	02772
	GEOTEXTILE CUSHION	POLYPROPYLENE OR POLYESTER NEEDLE-PUNCHED NONWOVEN GEOTEXTILE	02774
	EROSION MAT	EXCELSIOR MATRIX COVERED WITH PLASTIC NETTING OR SIMILAR	02270
	SOILS		
	COMPACTED CLAY CAP	ON-SITE BORROW	02223
	COVER DRAINAGE LAYER	OFF-SITE BORROW	02240
	EROSION BARRIER	OFF-SITE BORROW	02240
	GRANULAR FILTER	OFF-SITE BORROW	02272
	VEGETATIVE SOIL LAYER	ON-SITE BORROW	02230
	TOPSOIL	ON-SITE	02230
	PROTECTIVE LAYER (NON-IMPACTED NON-GRANULAR)	ON-SITE BORROW	02240
	CONTAINING LAYER (NON-IMPACTED)	ON-SITE BORROW	02240
	VEGETATION		
SYMBOL	COMPONENT	MATERIAL	SPECIFICATION SECTION
	VEGETATION	SEED MIX	02930

CERTIFIED-FOR-CONSTRUCTION

NO.	REVISION	DRAWN	CHKD	APPD	DATE
1	REVISED PER CONSTRUCTION COMMENTS	GMP	GMP	RJH	4/28/00
2	REVISED PER COMMENTS FOR PERMIT PACKAGE	GMP	RJH	RJH	4/28
3	REVISED PER COMMENTS FOR PERMIT PACKAGE	GMP	RJH	RJH	4/28
4	REVISED PER COMMENTS FOR PERMIT PACKAGE	GMP	RJH	RJH	4/28
5	REVISED PER CONSTRUCTION COMMENTS	GMP	RJH	RJH	9/28
NO.	DATE	REVISION	DRN. BY	CHK. BY	APP. BY

SCALE AS SHOWN

DEPARTMENT
UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

PROJECT
ON-SITE DISPOSAL FACILITY – PHASE III

TITLE
FINAL COVER SYSTEM DETAILS

THIS DRAWING MAY NOT BE CHANGED WITHOUT WRITTEN CONSENT OF FLUOR FERNALD, INC.

9/28/00

STATE OF OHIO REGISTERED PROFESSIONAL ENGINEER

GeoSyntec Consultants

PROJECT NO. 30053
DRAWING NO. 8-22
SHEET NO. 1

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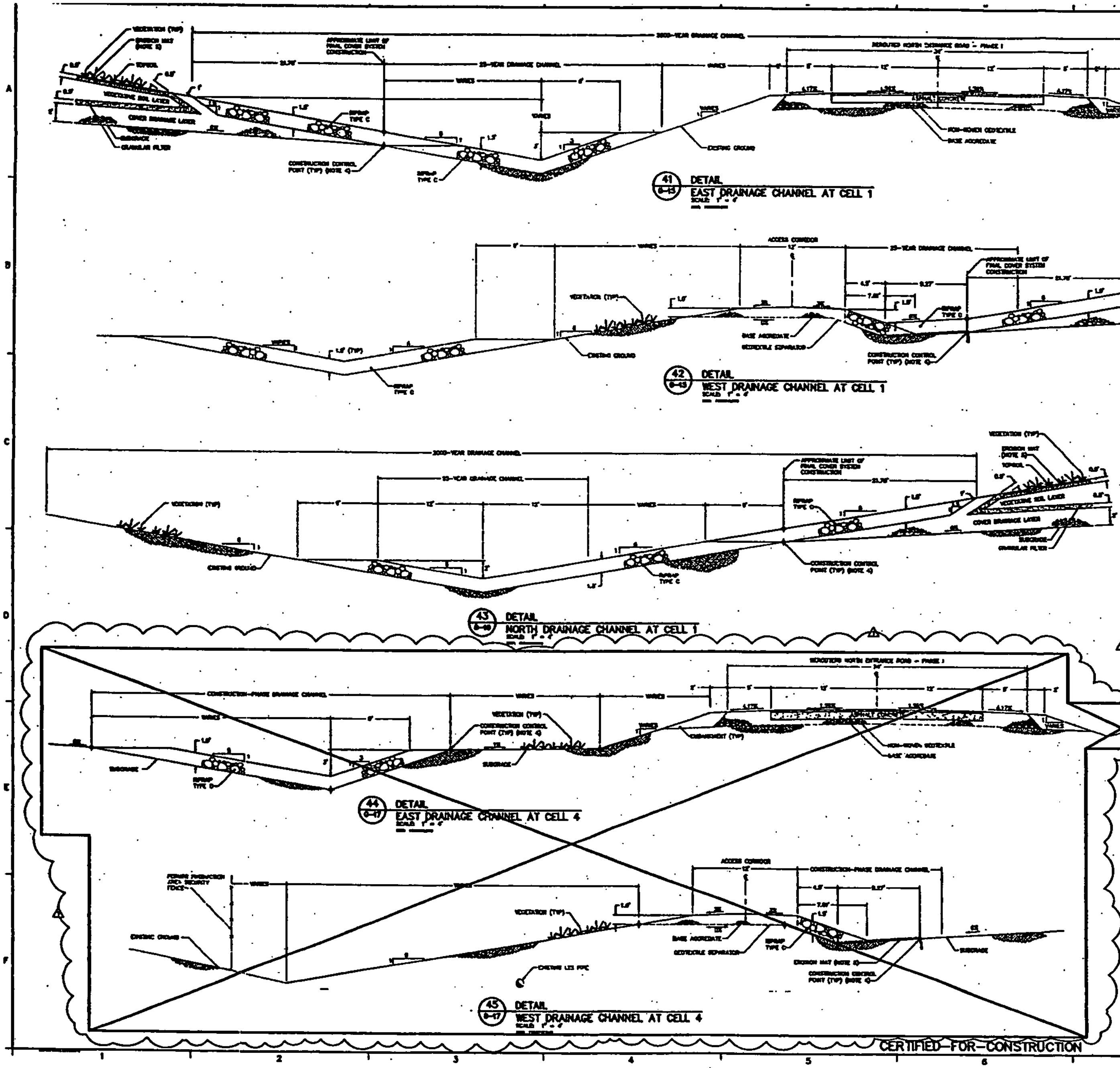

ECDC CONTROLLED
COPY NO. C011

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION [illegible].
3. ~~[illegible]~~
4. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWINGS [illegible]. CONSTRUCTION CONTROL POINTS FOR FINAL COVER SYSTEM ARE PROVIDED ON DRAWING [illegible].
5. EROSION MAT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION [illegible].

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY - PHASE III

SURFACE-WATER MANAGEMENT SYSTEM DETAILS I

9 Aug 00

SHEET: 0-23

REV: 1

4556

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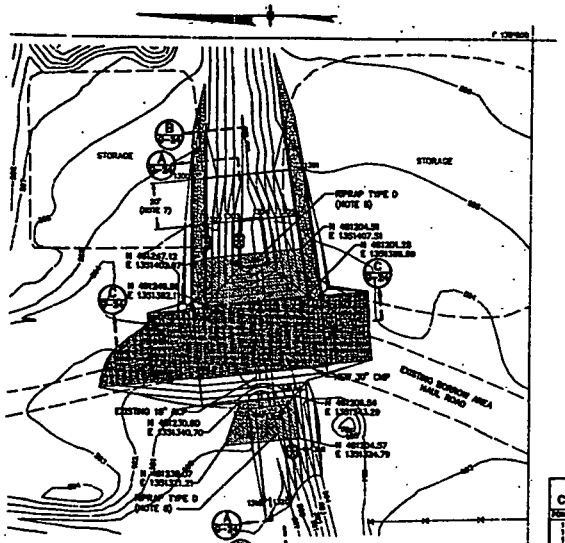
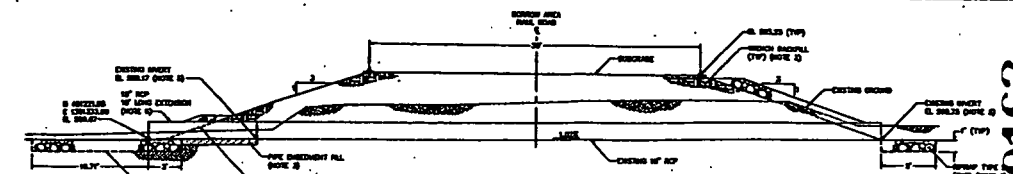
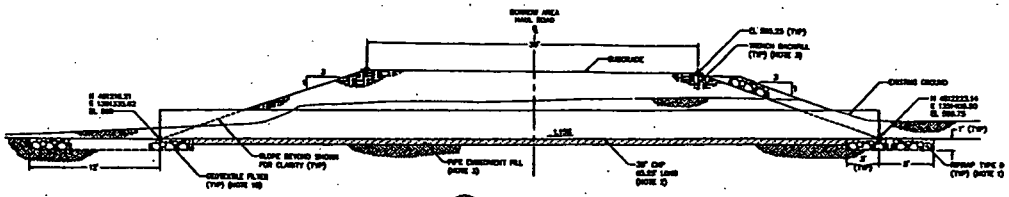


46 / 0-3 PLAN
DRAINAGE CHANNEL MODIFICATION AT BORROW AREA HAUL ROAD
SCALE 1" = 20'

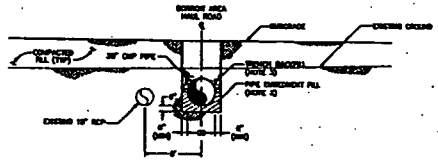


A / 0-34 SECTION
BORROW AREA HAUL ROAD
18-IN RCP CULVERT EXTENSION



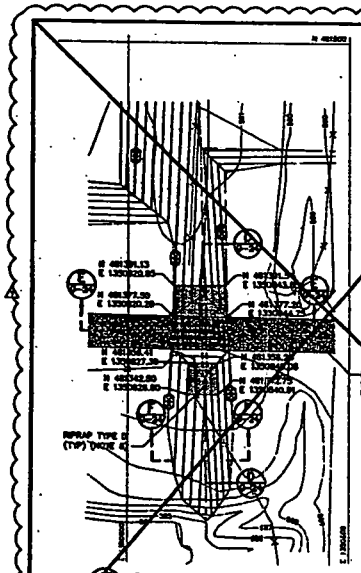
B / 0-34 SECTION
BORROW AREA HAUL ROAD
30-IN CMP CULVERT

FINISHED GRADE CONSTRUCTION CONTROL POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1300	481232.18	1351427.63	590.22
1301	481240.54	1351416.31	590.22
1302	481247.87	1351407.06	590.22
1303	481251.46	1351419.72	590.75
1304	481222.63	1351429.68	589.79
1305	481206.18	1351432.43	590.25
1306	481231.28	1351384.23	590.25
1307	481210.91	1351406.90	590.75
1308	481252.73	1351388.74	590.25
1309	481247.72	1351391.22	590.25
1310	481240.44	1351388.22	590.25
1311	481188.44	1351386.80	590.25
1312	481240.63	1351358.81	590.25
1313	481183.23	1351367.63	590.25
1314	481206.42	1351346.53	590.25
1315	481233.03	1351334.79	590.00
1316	481210.47	1351339.02	590.00
1317	481202.12	1351327.19	590.00
1318	481204.63	1351313.84	590.00
1319	481219.98	1351327.11	590.00
1320	481206.36	1351298.34	589.00

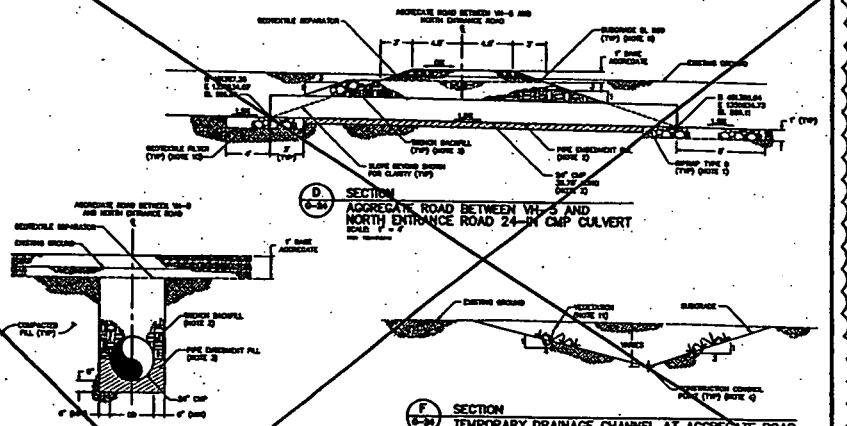


C / 0-34 SECTION
BORROW AREA HAUL ROAD
30-IN CMP CULVERT EMBEDMENT
SCALE 1" = 4'

ECDC CONTROLLED COPY NO. C011



47 / 0-3 PLAN
DRAINAGE CHANNEL MODIFICATION AT VALVE HOUSE 5 ACCESS ROAD
SCALE 1" = 20'



D / 0-34 SECTION
AGGREGATE ROAD BETWEEN VH-5 AND NORTH ENTRANCE ROAD 24-IN CMP CULVERT

E / 0-34 SECTION
AGGREGATE ROAD BETWEEN VH-5 AND NORTH ENTRANCE ROAD 24-IN CMP CULVERT EMBEDMENT
SCALE 1" = 4'

F / 0-34 SECTION
TEMPORARY DRAINAGE CHANNEL AT AGGREGATE ROAD BETWEEN VH-5 AND NORTH ENTRANCE ROAD
SCALE 1" = 4'

CERTIFIED-FOR-CONSTRUCTION

NOTES:

1. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02375.
2. CORRUGATED METAL PIPE CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02720.
3. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02221.
4. CONSTRUCTION [illegible] DRAWING 0-43.
5. EXISTING CULVERT INVERT ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ELEVATIONS IN FIELD PRIOR TO CONSTRUCTION.
6. REINFORCED CONCRETE PIPE CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02725.
7. CONTRACTOR SHALL TRANSITION SUBGRADE ELEVATIONS TO EXISTING GROUND ELEVATIONS WITHIN AREA SHOWN.
8. CONTRACTOR SHALL PLACE RIPRAP TYPE D WITHIN AREA SHOWN.
9. CONTRACTOR SHALL [illegible] AGGREGATE ROAD BETWEEN VH-5 AND NORTH ENTRANCE ROAD 24-IN CULVERT [illegible].
10. GEOTEXTILE FILLER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02274.
11. [illegible] DRAWING 0-43.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHKD. BY	APVD. BY	APVD. BY
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

SURFACE-WATER MANAGEMENT SYSTEM DETAILS II

STATE OF OHIO
[illegible]
PROFESSIONAL ENGINEER

9/26/00

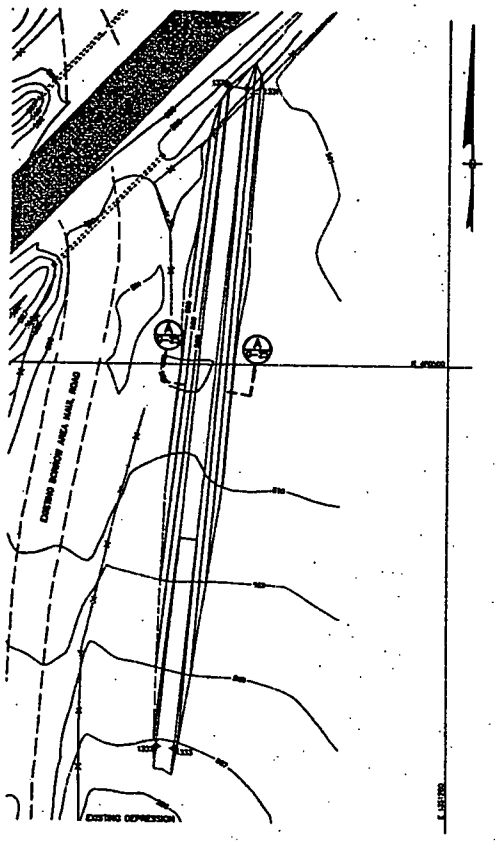
PROJECT NO. 20953
CONTRACT NO. DE-AC05-92OR21860
DRAWING NO. 0-24
SHEET NO. 1

4556

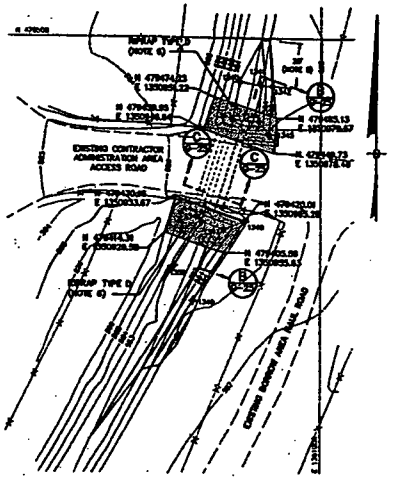
000163

FINISHED GRADE CONSTRUCTION CONTROL POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1330	480422.41	1301108.33	586.00
1331	480431.36	1301108.55	586.00
1332	480330.70	1301118.16	586.53
1333	480329.93	1301129.65	586.53

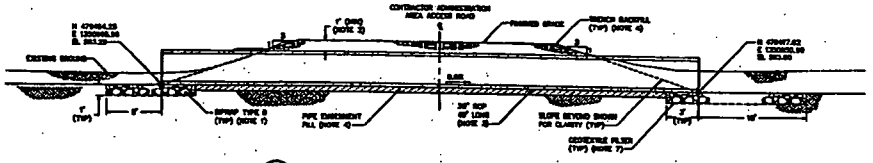
FINISHED GRADE CONSTRUCTION CONTROL POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1340	479488.83	1300871.76	583.29
1341	479479.91	1300871.76	583.29
1342	479478.94	1300877.55	583.38
1343	479467.29	1300880.53	583.29
1344	479479.91	1300871.55	583.29
1345	479487.00	1300870.96	583.00
1346	479416.39	1300846.71	583.00
1347	479416.14	1300883.71	583.00
1348	479416.40	1300884.91	583.00
1349	479384.38	1300841.91	583.00
1350	479380.00	1300832.00	583.00



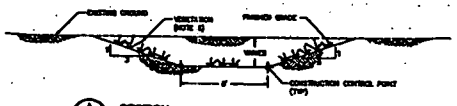
48 / 6-1 PLAN
TEMPORARY DRAINAGE CHANNEL AT REROUTED NORTH ENTRANCE ROAD – PHASE I
SCALE 1" = 30'



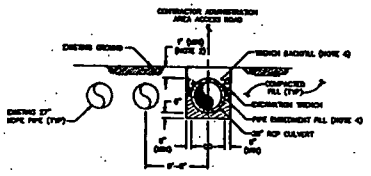
49 / 6-1 PLAN
DRAINAGE CHANNEL MODIFICATION AT CONTRACTOR ADMINISTRATION AREA ACCESS ROAD
SCALE 1" = 30'



B / 6-25 SECTION
CONTRACTOR ADMINISTRATION AREA ACCESS ROAD 30-IN RCP CULVERT
SCALE 1" = 5'



A / 6-25 SECTION
TEMPORARY DRAINAGE CHANNEL AT REROUTED NORTH ROAD ENTRANCE – PHASE I
SCALE 1" = 5'



C / 6-25 SECTION
CONTRACTOR ADMINISTRATION AREA ACCESS ROAD 30-IN RCP CULVERT EMBEDMENT
SCALE 1" = 5'

ECDC CONTROLLED COPY NO. C011

NOTES:
1. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
2. CONTRACTOR SHALL PROVIDE A MINIMUM COVER OF 1 FOOT ABOVE CROWN OF PIPE.
3. REINFORCED CONCRETE PIPE CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02231.
4. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02223.
5. CONTRACTOR SHALL TRANSITION SUBGRADE ELEVATIONS TO EXISTING GROUND ELEVATIONS WITHIN AREA SHOWN.
6. CONTRACTOR SHALL PLACE RIPRAP TYPE D WITHIN AREA SHOWN.
7. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02274.
8. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.

NO.	DATE	DESCRIPTION	DES. BY	DWN. BY	CHK. BY	APPD. BY
1	09/08/97	[illegible]	JKP	JKP	RJA	JPB
2	09/08/97	[illegible]	JKP	JKP	RJA	JPB
3	09/08/97	[illegible]	JKP	JKP	RJA	JPB
4	09/08/97	[illegible]	JKP	JKP	RJA	JPB
5	09/08/97	[illegible]	JKP	JKP	RJA	JPB

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

SURFACE-WATER MANAGEMENT SYSTEM DETAILS III

THIS DRAWING MAY NOT BE REUSED FOR PROJECT WORK IN ADMINISTRATIVE, PROJECT DESIGN.

STATE OF OHIO REGISTERED PROFESSIONAL ENGINEER

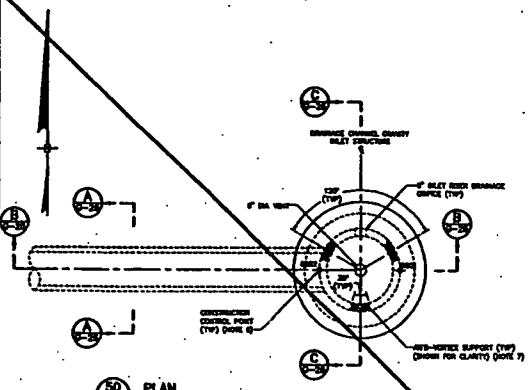
GeoSyntec Consultants

PROJECT NO. 30103
CONTRACT NO. DE-AC05-92OR21860
Contract Info. 9301-0001-0-00320
Contract Subject Info. 00-08-13
Contract Subject Info. 02-1-01
SHEET NO. G-25
Sheet No. 1

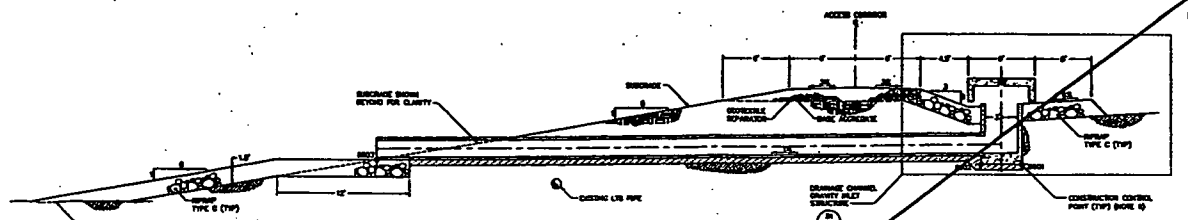
CERTIFIED-FOR-CONSTRUCTION

4556

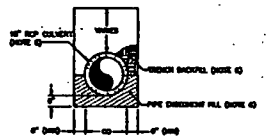
000164



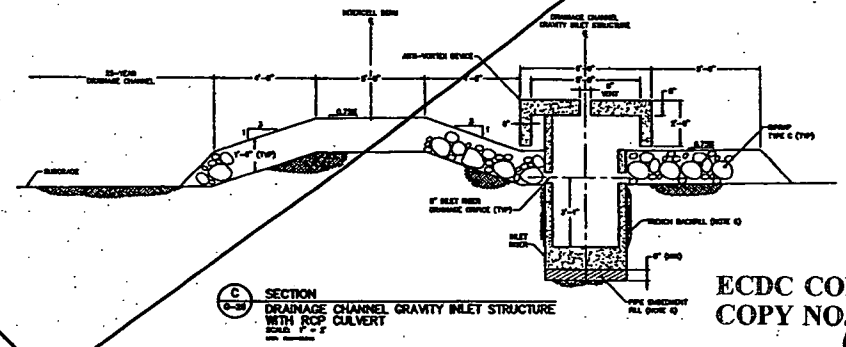
50 PLAN
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE WITH RCP CULVERT
SCALE 1" = 5'



B 6-30 SECTION
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE WITH RCP STRUCTURE
SCALE 1" = 5'

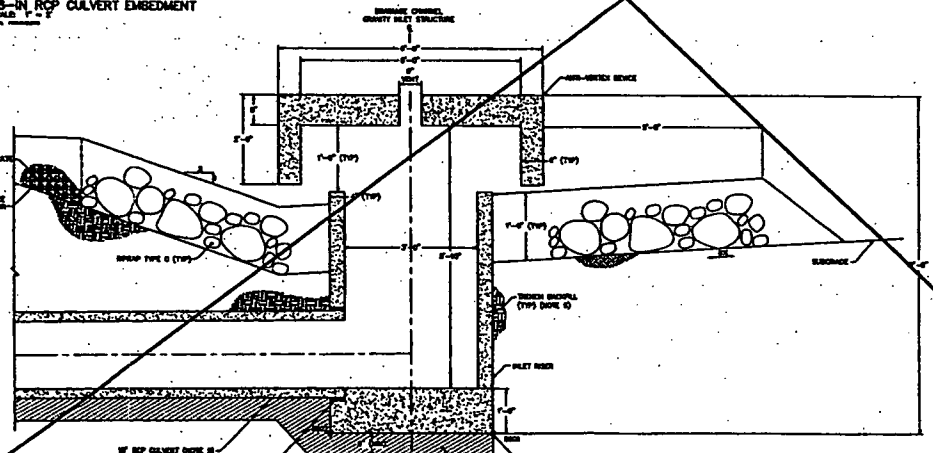


A 6-30 SECTION (TYP)
18-IN RCP CULVERT EMBEDMENT
SCALE 1" = 5'



C 6-30 SECTION
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE WITH RCP CULVERT
SCALE 1" = 5'

ECDC CONTROLLED COPY NO. C011



51 DETAIL
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE
SCALE 1" = 5'

DRAINAGE CHANNEL GRAVITY INLET STRUCTURE AND REINFORCED CONCRETE PIPE CONSTRUCTION CONTROL POINTS

G5-6

POINT NO.	NORTHING	EASTING	ELEVATION
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR DIMENSIONS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. DIMENSIONAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. BASE AGGREGATE AND CONCRETE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02234.
4. DRAINAGE CHANNEL GRAVITY INLET STRUCTURE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02722.
5. REINFORCED CONCRETE PIPE, CULVERT AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
6. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
7. ANTI-VORTEX SUPPORTS DO NOT APPEAR IN ALL SECTIONS. SEE PLAN ON THIS SHEET FOR LOCATIONS.
8. CONSTRUCTION CONTROL POINTS ASSOCIATED WITH DRAINAGE CHANNEL GRAVITY INLET STRUCTURE AND REINFORCED CONCRETE PIPE ARE PROVIDED IN TABLE SHOWN ON THIS DRAWING.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	CHK. BY	APP. BY
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	PRELIMINARY DRAWING, NOT FOR CONSTRUCTION	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

SURFACE-WATER MANAGEMENT SYSTEM DETAILS IV

THIS DRAWING HAS BEEN SEALED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER.

9/28/00

STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER

CONSTRUCTION COORDINATED BY CH2M HILL

PROJECT NO. 22903
CONTRACT NO. FF2000028
RCP Submittal No. 506-0000-0-00021
Drawing Project No. 22903-13
Drawing Number 700-1166
SHEET NO. G-28
Sheet No. 1

CERTIFIED FOR CONSTRUCTION

4556

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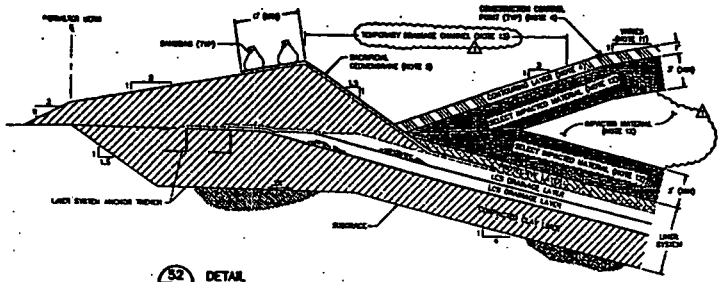
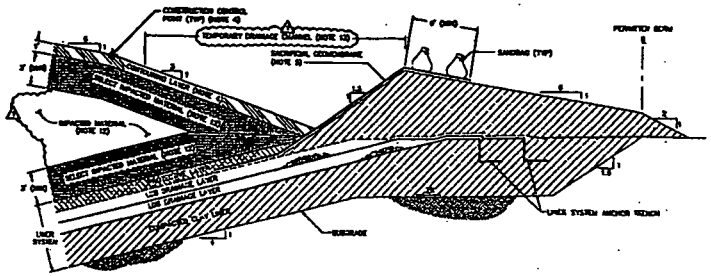
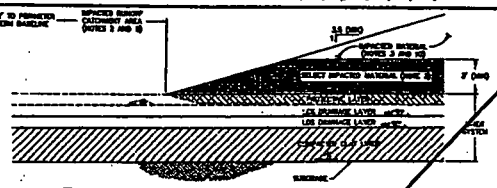


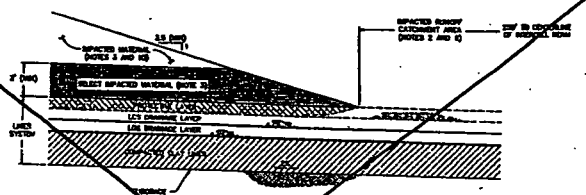
52 (8-13) DETAIL
IMPACTED MATERIAL PLACEMENT AT NORTH AND WEST PERIMETERS
SCALE 1" = 4'



53 (8-13) DETAIL
IMPACTED MATERIAL PLACEMENT AT EAST PERIMETER
SCALE 1" = 4'

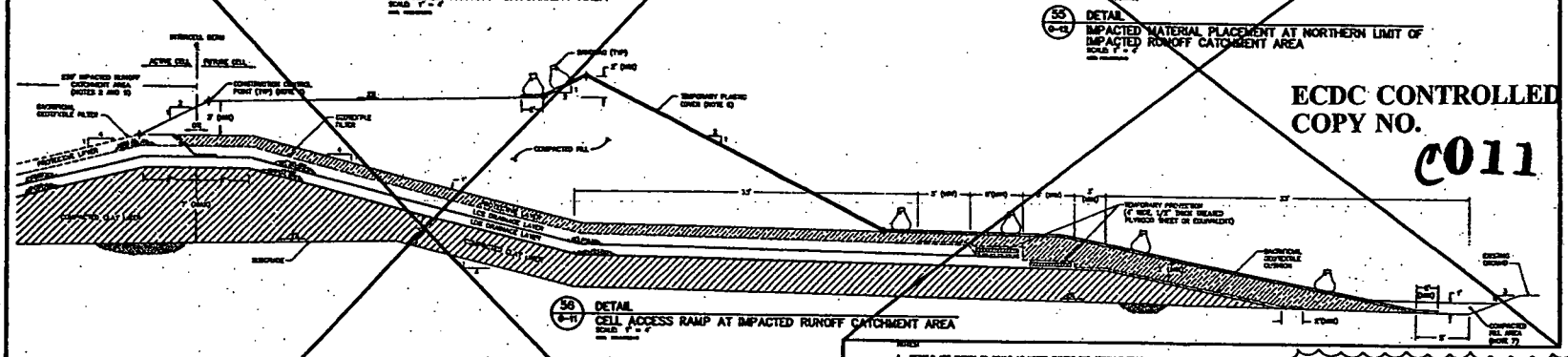


54 (8-14) DETAIL
IMPACTED MATERIAL PLACEMENT AT EASTERN LIMIT OF IMPACTED RUNOFF CATCHMENT AREA
SCALE 1" = 4'

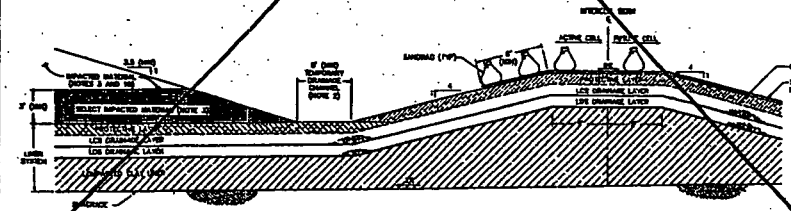


55 (8-15) DETAIL
IMPACTED MATERIAL PLACEMENT AT NORTHERN LIMIT OF IMPACTED RUNOFF CATCHMENT AREA
SCALE 1" = 4'

ECDC CONTROLLED COPY NO.
C011



56 (8-16) DETAIL
CELL ACCESS RAMP AT IMPACTED RUNOFF CATCHMENT AREA
SCALE 1" = 4'



57 (8-17) DETAIL
IMPACTED MATERIAL PLACEMENT AT INTERCELL BERM LOCATED OUTSIDE OF IMPACTED RUNOFF CATCHMENT AREA
SCALE 1" = 4'

NOTES

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR REFERENCE SHEET AND SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. PURPOSE OF THIS DRAWING IS TO ILLUSTRATE PLACEMENT OF SELECT IMPACTED MATERIAL, IMPACTED MATERIAL AND CONTAINING LAYER, PROVIDE TO AND EXTRACT FROM CELLS AND CONVENIENT CONTROL OF IMPACTED RUNOFF IN CELLS DURING FILLING. CONTRACTOR SHALL CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF CELLS IN ACCORDANCE WITH SPECIFICATION SECTION 02240.
3. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTAINING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL (INCLUDING PROTECTIVE LAYER) MAY BE REDUCED TO 2 FEET ALONG THE LIFT OF IMPACTED MATERIAL TO BE PLACED THROUGH SELECT IMPACTED MATERIAL IS CONTAINED LANDFILL MATERIAL. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240.
4. CONTAINING LAYER SHALL CONSIST OF NON-IMPACTED MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02240. CONSTRUCTION CONTROL POINTS FOR CONTAINING LAYER ARE PROVIDED ON DRAWING 8-11.
5. SACRIFICIAL EXTRAORDINARY SHALL BE SIZED TO CONTROL IMPACTED RUNOFF IN CELLS DURING FILLING. EXPOSED SACRIFICIAL EXTRAORDINARY SHALL BE REMOVED BY CUTTING PRIOR TO CONSTRUCTION OF COMPACTED CLAY CAP IN TEMPORARY DRAINAGE CHANNEL.
6. TEMPORARY PLASTIC COVER SHALL CONSIST OF 30-mil THICK (MIN) POLYETHYLENE, POLYVINYL CHLORIDE OR EQUIVALENT PROVIDED BY CONSTRUCTION MANAGER. CONTRACTOR SHALL SECURE IMPERVIOUS COVER WITH TEMPORARY OR SEE INCHES OF NON-IMPACTED SOIL PLACED ABOVE PLASTIC COVER TO PROVIDE DRAINAGE FROM WEBS.
7. CONTRACTOR SHALL PLACE COMPACTED FILL TO PROVIDE POSITIVE DRAINAGE TO TEMPORARY DRAINAGE CHANNEL.
8. CONSTRUCTION CONTROL POINTS FOR CELL ACCESS RAMP ARE PROVIDED ON DRAWING 8-11.
9. IMPACTED RUNOFF CATCHMENT AREA — TEMPORARY CELL SHALL REMAIN TEMPORARY, COMPACTED OF SECOND LIFT OF COMPACTED CLAY CAP SUBJECTED IN IMPACT IMPROVEMENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
10. IMPACTED MATERIAL MAXIMUM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V IN ACCORDANCE WITH SPECIFICATION 02240.
11. SLOPE OF LOWER PORTION OF FINAL COVER SYSTEM IS 5H:1V FOR NORTH, EAST AND WEST PERIMETERS OF CELL AND TRANSITIONS FROM 5H:1V TO 7.5H:1V AND BACK TO 5H:1V AT CORNERS OF CELL.
12. IMPACTED MATERIAL PLACEMENT IS NOT INCLUDED IN CONSTRUCTION CONTRACT NO. FEC-042.
13. PURPOSE OF THIS DRAWING IS TO ILLUSTRATE PLACEMENT OF CONTAINING LAYER AND CONVENIENT CONTROL OF IMPACTED RUNOFF IN CELLS DURING FILLING. CONTRACTOR SHALL CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF CELLS IN ACCORDANCE WITH SPECIFICATION SECTION 02240.

REV	DATE	DESCRIPTION	DRN	CHK	PLN	PJM	PTM
3	05/01/00	CONSTRUCTION ISSUED (NOTE FOR FOR ISSUE)	JPR	MJP	BLN	BLN	JPR
2	04/28/00	CDR SUBMITTAL, 90 PERCENT REVISION, 100 PERCENT	JPR	MJP	BLN	BLN	JPR
1	03/31/00	PRELIMINARY SUBMITTAL, 90 PERCENT REVISION, 100 PERCENT	JPR	JMW	BLN	BLN	JPR
0	03/01/00	PRELIMINARY SUBMITTAL, 100 PERCENT	JPR	JMW	BLN	BLN	JPR
DATE	DATE	DESCRIPTION	DES. BY	DR. BY	PLN. BY	CHK. BY	APP. BY

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE III

IMPACTED MATERIAL PLACEMENT DETAILS

CERTIFIED-FOR-CONSTRUCTION

9 May 00

STATE OF OHIO
REGISTERED PROFESSIONAL ENGINEER

CH2M HILL
CONSTRUCTORS

PROJECT NO.	30103
CONTRACT NO.	00P0000028
FEDF DRAWING NO.	000-0000-G-00022
DRAWING SUBJECT NO.	000-0000-G-00022
DRAWING SUBJECT TITLE	000-0000-G-00022
DRAWING SUBJECT NO.	000-0000-G-00022
DRAWING SUBJECT TITLE	000-0000-G-00022
DRAWING NO.	FDO-1172
SHEET NO.	G-27
SHEET NO.	1

4556

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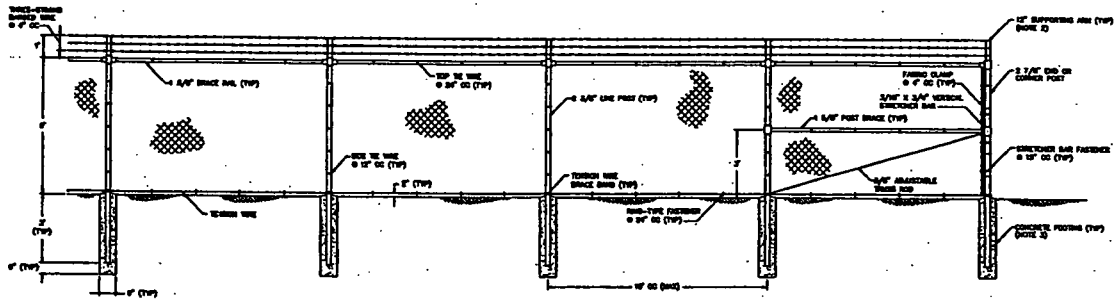
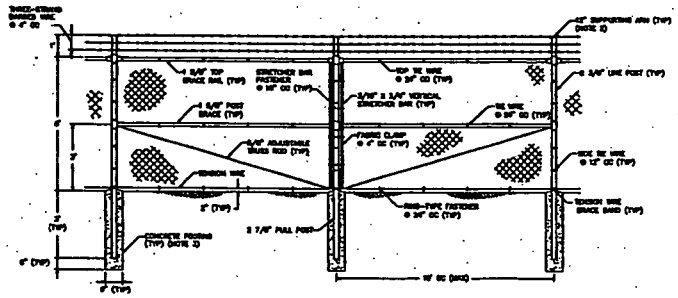
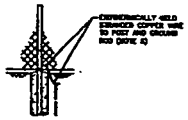


58 DETAIL
LINE POST CONNECTION TO END OR CORNER POST
SCALE: 1" = 2'



59 DETAIL
FULL POST
SCALE: 1" = 2'



60 DETAIL
CHAIN LINK FENCE GROUND
SCALE: NONE

ECDC CONTROLLED
COPY NO. C011

NOTES:

1. CHAIN LINK FENCE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02831.
2. SUPPORTING ARMS SHALL SLOPE TO OUTSIDE OF FENCE AT 45 DEGREES FROM VERTICAL.
3. EXPOSED TOPS OF CONCRETE FOOTINGS SHALL HAVE A 1-INCH CROWN TO PROMOTE DRAINAGE.
4. SEE DRAWING 0-1 FOR LOCATION OF FENCE.
5. GROUNDING EYEBOLT SHALL BE EVERY 400 FEET ALONG FENCE, ON BOTH SIDES OF GATES AND ON BOTH SIDES OF FENCE GROUND OR BELOW GROUND STRUCK.

REV. NO.	DATE	DESCRIPTION	DRN. BY	CHK. BY	DES. BY	ENG. BY	APPR. BY
1	03/05/99	[illegible]	BWS	CHP	BJA	BJA	JTB
2	07/01/99	[illegible]	BWS	BWS	BHT	BJA	JTB
3	01/21/99	[illegible]	BWS	BHT	BHT	BJA	JTB
4	03/02/99	[illegible]	BWS	BHT	BHT	BJA	JTB
5	09/02/99	[illegible]	BWS	BHT	BHT	BJA	JTB

SCALE AS SHOWN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE II

CHAIN LINK FENCE DETAILS

9/Aug 99

STATE OF OHIO
J. T. BERNARD
E-59240
PROFESSIONAL ENGINEER

CONSTRUCTION COMMUNICATIONS

PROJECT NO. 20912
CONTRACT NO. DE-AC24-92OH
PROP. DRAWING NO. 000-0000-G-00012
DRAWING PROJECT NO. 20912
DRAWING TYPE NO. 000-0000-15
DRAWING TYPE NO. 000-1172
SHEET NO. 0-28
REVISION NO. 1

CERTIFIED–FOR–CONSTRUCTION

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 2	(6) DATE July 13, 2000
(3) S/C TITLE: OSDF ~~SPLIT~~ PHASE III (SHW)		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]	(4A) RCI/DCN TITLE: Riprap Material Requirements	(11) DCN NO.: 20103-002	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications	20103-TS-0001	0	02271, REV. 0
	20103-TS-0003	0	02271, REV. 0

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Justification: Revise 02271, Parts 1.03, 1.04A, and 2.01E to reflect previous testing performed by Fluor Fernald, Inc. to pre-qualify riprap sources, and to meet the requirements of the Ohio Department of Transportation (DOT) Specifications for riprap.

Existing Condition: Submittal and material requirements for Riprap Types C and D are inconsistent with previous studies by Fluor Fernald as well as Ohio DOT requirements for riprap used for slope and channel protection.

Proposed Change: See page 2 of 2.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	July 13, 2000		7/13/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 7/13/00 Kwasi Badu-Tweneboah, GeoSyntec [ ] FIT [X] FORM [ ] FUNCTION	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 7/13/00 PERFORMANCE GRADE: (17) 4 - SBDR-2000-0027 APPLIES -	
(18) CONSTRUCTION CONCURRENCE DATE: 7/17/00 PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19) Bill Zebeck	(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. C011

ORIGINAL

FS-F-4259
REV. 5: 10/01/99

Add the following to Section 02271, Part 1.03B (page 02271-1):

2. ASTM C 535. Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

3. ASTM D 5240. Standard Test Method for Testing Rock Slabs to Evaluate Soundness of Riprap by Use of Sodium or Magnesium Sulfate.

Delete Section 02271, Part 1.03C (page 02271-1).

Revise Section 02271, Part 1.04A, subparagraphs 2 and 3 (page 02271-2) as follows:

2. for approved sources identified in Parsons [1996] or by Fluor Fernald, Inc., certification from the supplier that the Riprap Type C, as shown on the Construction Drawings, meets the material requirements of this Section, and results of tests conducted in accordance with ASTM C 127 on Type C Dumped Rock Fill, as defined in Item 601.07 of Ohio DOT Specifications; and

3. certification from the supplier that the Riprap Type D, as shown on the Construction Drawings, meets the material requirements of this Section, and results of tests conducted in accordance with ASTM C 535 and ASTM D 5240 on Type D Dumped Rock Fill, as defined in Item 601.07 of Ohio DOT Specifications.

Revise Section 02271, Part 2.01, paragraphs E (page 02271-3) as follows:

E. The Riprap Type D shall have a maximum loss of 15 percent from a sodium sulfate soundness test conducted in accordance with ASTM D 5240, and a maximum loss of 50 percent in a Los Angeles Abrasion test conducted in accordance with ASTM C 535.

7/13/00

RECEIVED
AUG 23 2000 4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-599	(5) Pg 1 Of 2	(6) DATE 8/16/2000
(3) S/C TITLE: On-Site Disposal Facility - Phase III (Borrow Area)		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]	(4A) RCI/DCN TITLE: Revised ditch configuration to borrow area sedimentation basin	(11) DCN NO.: 20103-003	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Drawings	90X-6000-G-00303 (G-8)	1	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Justification: Design of outlet drainage channel to existing sedimentation basin is in close proximity to outlet structure.

Proposed Change: Realign channel so it outlets further east away from the outlet control structure, as shown in attached drawing, to allow sediment more time to settle out before the runoff approaches the outlet control structure.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE Sam Wolinsky	DATE:
Don Goetz	Fluor Fernald	08/16/00		8/16/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/16/00
KWASI BADU-TWEREBOAH, GROUNDWATER
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/17/00
PERFORMANCE GRADE: (17) 5 - SBER-2000-0027 APPLIES Sam Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED [✓] YES [ ] NO (19)
Bill Zebrek

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

F-4259
V. 5: 10/01/99

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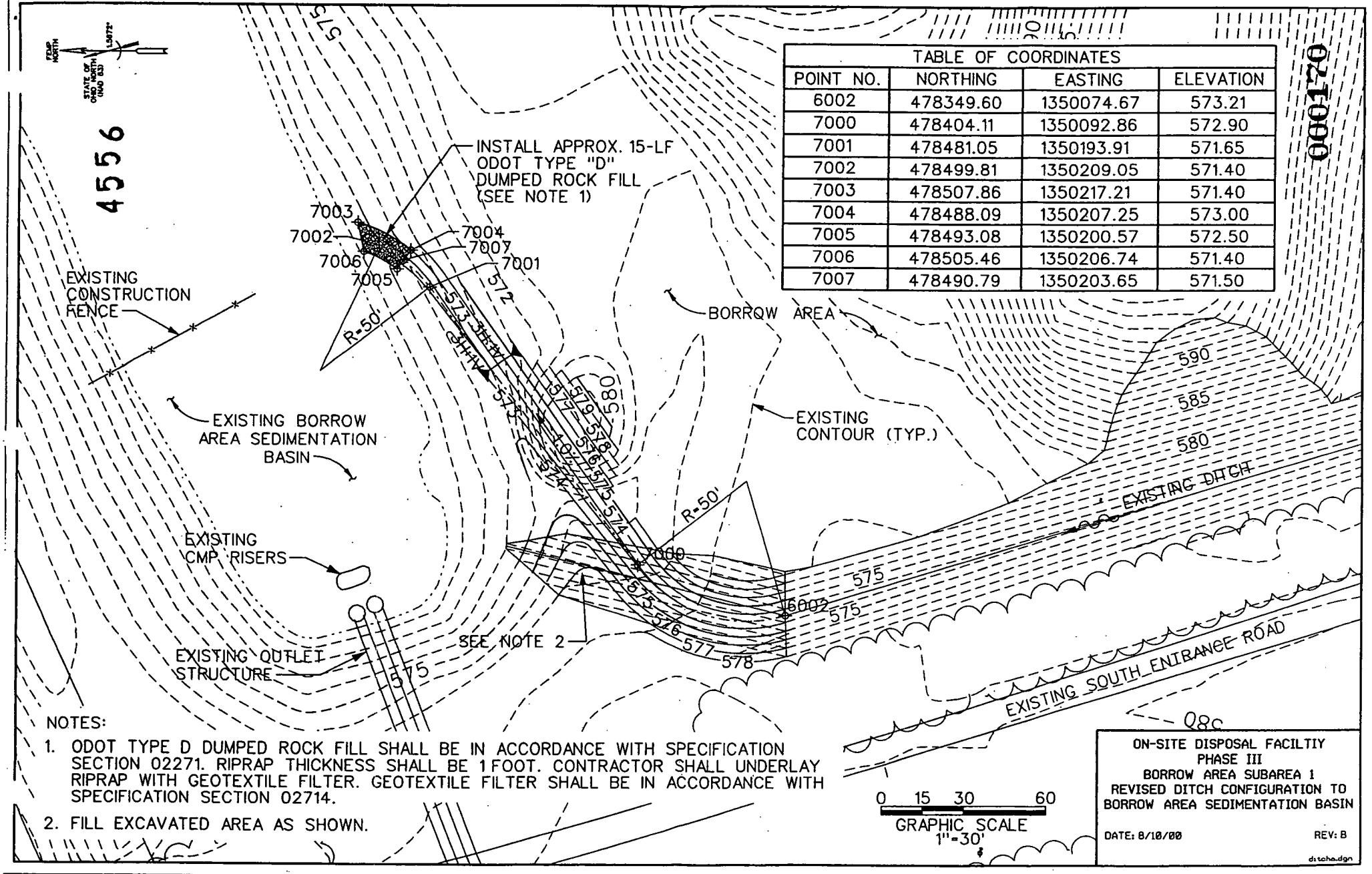
TABLE OF COORDINATES			
POINT NO.	NORTHING	EASTING	ELEVATION
6002	478349.60	1350074.67	573.21
7000	478404.11	1350092.86	572.90
7001	478481.05	1350193.91	571.65
7002	478499.81	1350209.05	571.40
7003	478507.86	1350217.21	571.40
7004	478488.09	1350207.25	573.00
7005	478493.08	1350200.57	572.50
7006	478505.46	1350206.74	571.40
7007	478490.79	1350203.65	571.50



NOTES:

1. ODOT TYPE D DUMPED ROCK FILL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271. RIPRAP THICKNESS SHALL BE 1 FOOT. CONTRACTOR SHALL UNDERLAY RIPRAP WITH GEOTEXTILE FILTER. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
2. FILL EXCAVATED AREA AS SHOWN.

ON-SITE DISPOSAL FACILTIY
PHASE III
BORROW AREA SUBAREA 1
REVISED DITCH CONFIGURATION TO
BORROW AREA SEDIMENTATION BASIN

DATE: 8/10/00 REV: B

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-599	(5) Pg 1 Of 2	(6) DATE 8/15/2000

(3) S/C TITLE: On-Site Disposal Facility – Construction Laydown Area Access Road & Construction Laydown Area

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Removal of fence and gates from design at Construction Laydown Area Access Road Ramp to Laydown Area

(11) DCN NO.: 20103 - 004

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Drawings	90X-5500-G-00543	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Remove fence gates which are not required to have monitored access.

Existing conditions: Security fencing is not needed within the FEMP property perimeter.

Proposed Change: Delete proposed fencing and gate from fire training road to railroad yard as shown in attached drawing.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Rick McGuire R. McGuire	Fluor Fernald	8/17/00	Charles Van Arsdale Charles Van Arsdale	8/16/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE:

Bhumar (Surinder Kumar) 8/23/00

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/23/00

PERFORMANCE GRADE: (17) 5 – SBDR-2000-0027 APPLIES Charles Van Arsdale

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

Bill Zebeck

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

S-F-4259
EV. 5: 10/01/99

ORIGINAL

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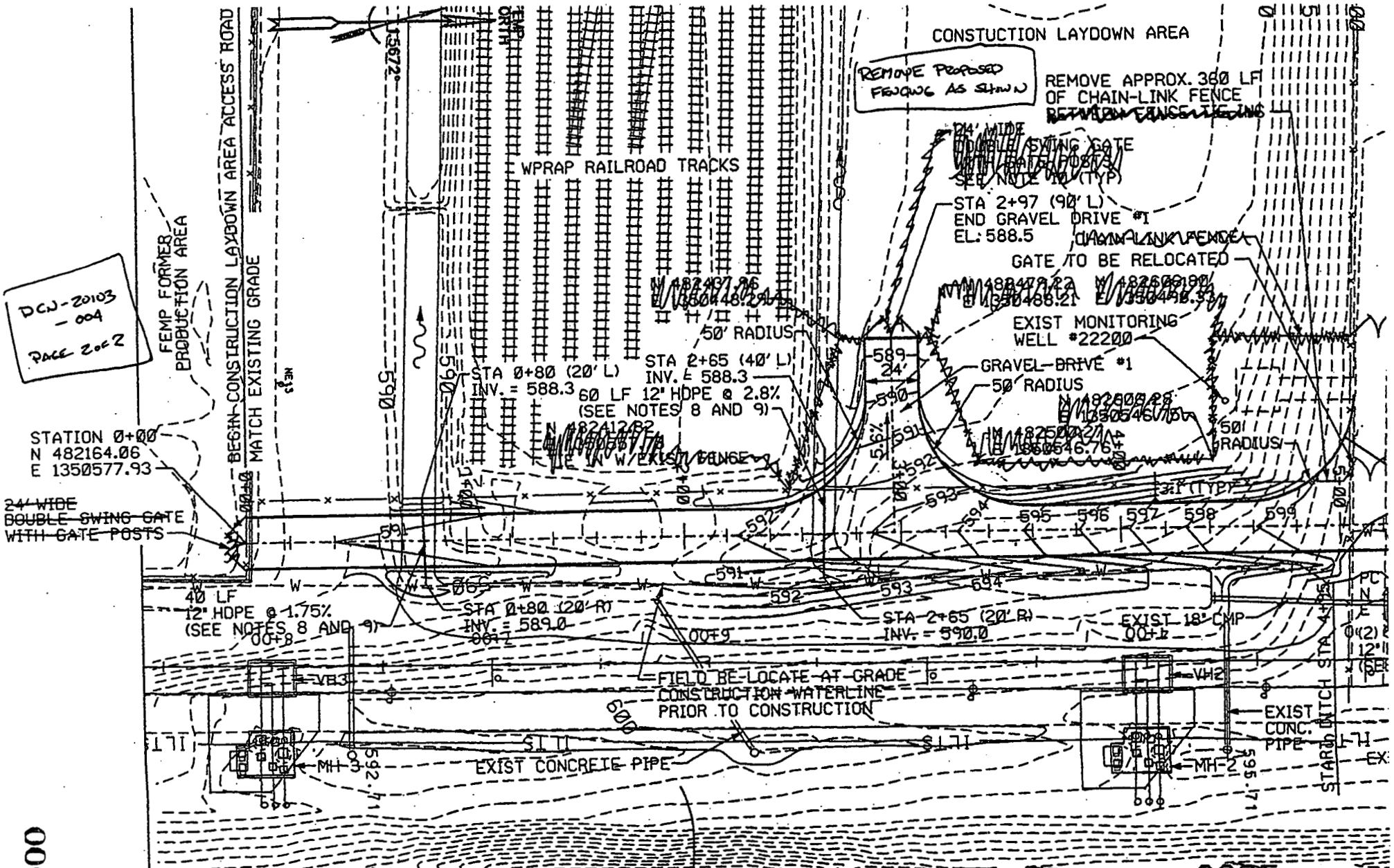
DCN-20103
-004
PAGE 2 of 2
FEMP FORMER PRODUCTION AREA
BEGIN CONSTRUCTION LAYDOWN AREA ACCESS ROAD
MATCH EXISTING GRADE
STATION 0+00
N 482164.06
E 1350577.93
24' WIDE
DOUBLE SWING GATE
WITH GATE POSTS
40 LF
12" HDPE @ 1.75%
(SEE NOTES 8 AND 9)
WPRAP RAILROAD TRACKS
STA 0+80 (20' L)
INV. = 588.3
STA 0+80 (20' R)
INV. = 589.0
STA 2+65 (40' L)
INV. = 588.3
60 LF 12" HDPE @ 2.8%
(SEE NOTES 8 AND 9)
50' RADIUS
STA 2+65 (20' R)
INV. = 590.0
FIELD BE-LOCATE AT GRADE
CONSTRUCTION WATERLINE
PRIOR TO CONSTRUCTION
EXIST CONCREIE PIPE
MH-3
MH-2
VB3
VB2
EXIST 18" CMP
EXIST CONC. PIPE
STARD DITCH STA
CONSTUCTION LAYDOWN AREA
REMOVE PROPOSED FENCING AS SHOWN
REMOVE APPROX. 360 LF OF CHAIN-LINK FENCE
24' WIDE
DOUBLE SWING GATE
WITH GATE POSTS
SEE NOTE 10 (TYP)
STA 2+97 (90' L)
END GRAVEL DRIVE #1
EL: 588.5
CHAIN LINK FENCE
GATE TO BE RELOCATED
EXIST MONITORING
WELL #22200
GRAVEL DRIVE #1
50' RADIUS
50' RADIUS
3:1 (TYP)
OSDF

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-599	(5) Pg 1 Of 04	(6) DATE 8/21/2000
(3) S/C TITLE: OSDF -Phase III – Construction Laydown Area Access Road & Construction Laydown Area			(11) RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Access Road overflow drain / Laydown Area monitoring well protection		(11) DCN NO.: 20103-005

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Drawings	90X-5500-G-00544	0	
	90X-5500-G-00546	0	
	90X-5500-G-00547	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification/Existing Conditions: A potential low area at approx. Station 19+00 of the Construction Laydown Area Access Road has been created during excavation activities associated with road construction.
Guard posts were called out to be placed around the existing monitoring wells in the Construction Laydown Area. Since the design was completed, Jersey barriers were identified on the site that can be used in place of guard posts.
Proposed Change: A 12-in-dia overflow pipe will be placed at approx. Station 19+00 to drain low area as shown on pages 2 and 3 attached. Jersey barriers will be used to isolate the existing monitoring wells in place of guard posts as shown on pages 4 and 5 attached.
(WELLS 2423, 3423, 2436, AND 4436 ONLY)

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Rick McGuire	Fluor Fernald	8/22/00	Charles Van Arsdale	8/22/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: SKUMAR (SURINDER KUMAR) 8/23/00

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/23/00

PERFORMANCE GRADE: (17)5 SBDR-2000-0027 APPLIES Charles Van Arsdale

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19) Bill Zebrek

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

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S-F-4259
V. 5: 10/01/99

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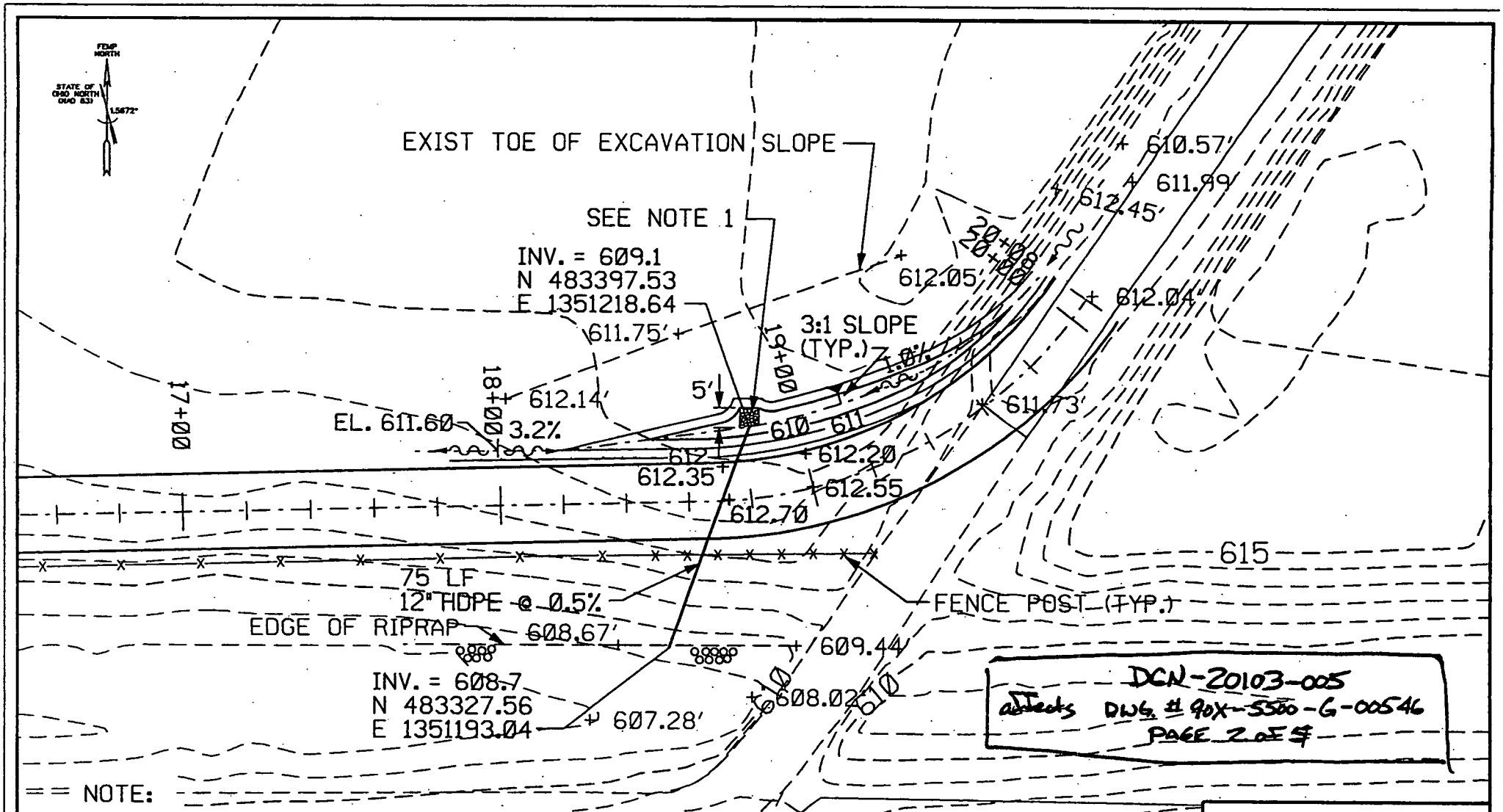

NOTE:

1. USE ODOT TYPE D DUMPED ROCK FILL AT CULVERT INLET AS SPECIFIED IN SECTION 02271. PLACE RIPRAP 3 FEET WIDE, AND 5 FEET LONG. RIPRAP SHALL BE 1 FOOT THICK UNDERLAIN BY GEOTEXTILE FILTER.

ON-SITE DISPOSAL FACILTIY
PHASE III
CONSTRUCTION LAYDOWN AREA
ACCESS ROAD
DRAINAGE PIPE AT STATION 19+00
SCALE: 1"=30'

DATE: 8/17/00

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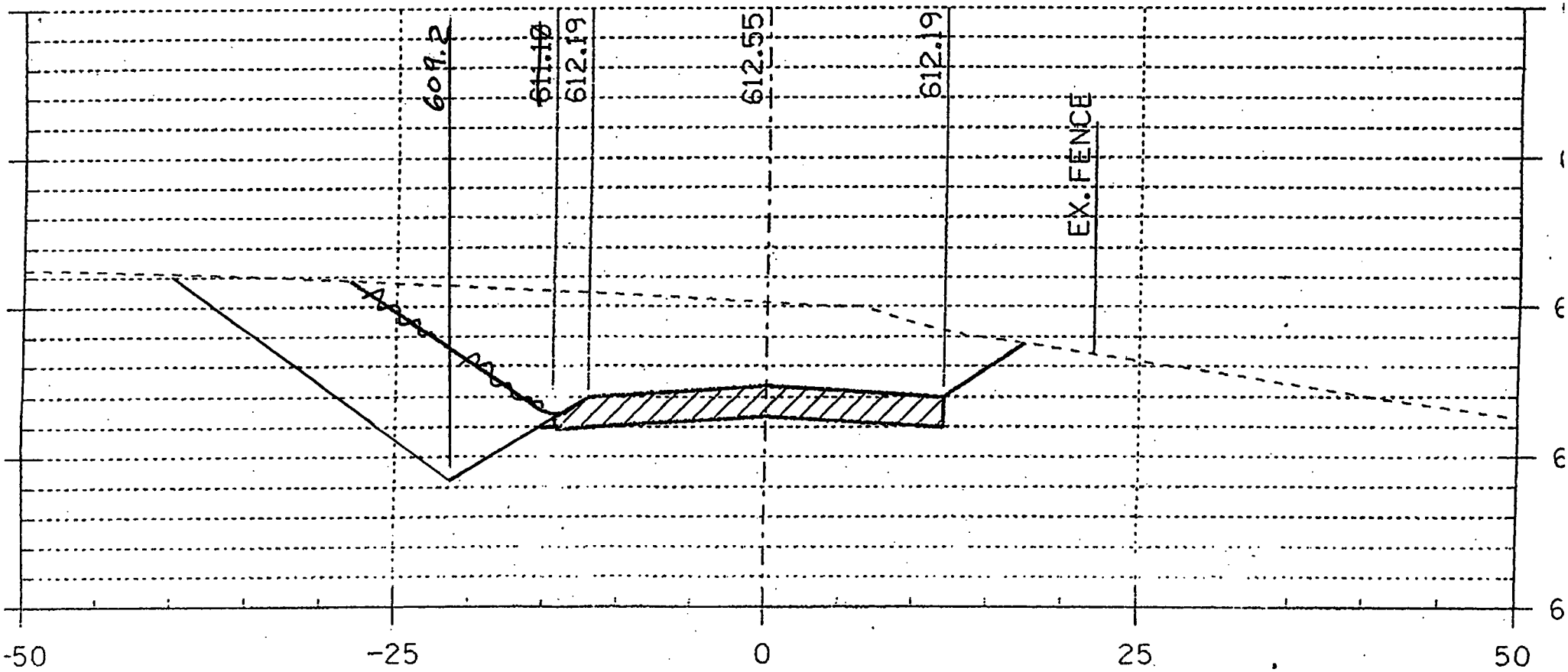

19+00

DCN-20103-005
DWG. # 90X-5500-G-00546
PAGE 3 OF 54

0 10 20
HORIZONTAL SCALE IN F
1"=10'

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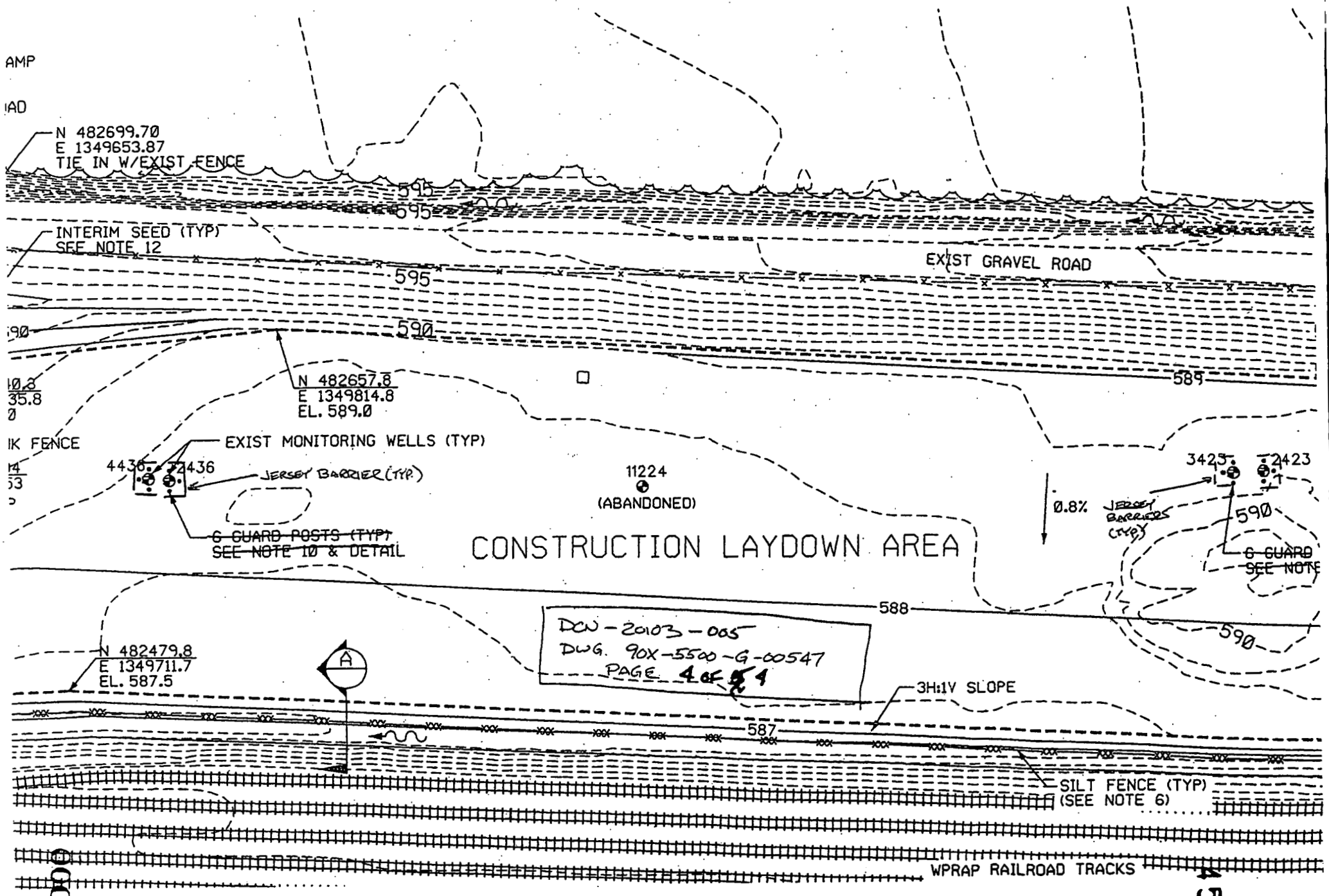
AMP
IAD
N 482699.70
E 1349653.87
TIE IN W/EXIST FENCE
595
595
INTERIM SEED (TYP)
SEE NOTE 12
EXIST GRAVEL ROAD
595
590
590
589
N 482657.8
E 1349814.8
EL. 589.0
IK FENCE
EXIST MONITORING WELLS (TYP)
4436
2436
JERSEY BARRIER (TYP)
11224
(ABANDONED)
0.8%
JERSEY BARRIERS (TYP)
3423
2423
590
~~G GUARD POSTS (TYP)~~
~~SEE NOTE 10 & DETAIL~~
CONSTRUCTION LAYDOWN AREA
~~G GUARD~~
~~SEE NOTE~~
588
590
DCN - 20103 - 005
DWG. 90X-5500-G-00547
PAGE 4 of 4
N 482479.8
E 1349711.7
EL. 587.5
A
3H:1V SLOPE
587
SILT FENCE (TYP)
(SEE NOTE 6)
WPRAP RAILROAD TRACKS

RCI/DCN FORM

- 4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg	(6) DATE
20103	FSC - 642	1 Of 4	8/18/00

(3) S/C TITLE: ON-SITE DISPOSAL FACILITY PHASE III - CELL 1 FINAL COVER CONSTRUCTION

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: INCORPORATION OF RFP AMENDMENT 1

(11) DCN NO.: 20103-006

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
DRAWING: SITE DEVELOPMENT PLAN	90X-6000-G-00296	1	SHEET NO. 6-1

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

PROPOSED CHANGES: 1) SPECIFIC STOCKPILES INDICATED ON ATTACHED SKETCHES 20103-SK-001, REV. 2 AND SK-002 WILL BE RELOCATED AND UTILIZED BY CONTRACTOR AS INDICATED.
2) NORTH STOCKPILE AREA HAS BEEN RENAMED AND A SCOPE CHANGE RELATED TO AN EXISTING ROAD CROSSING ARE INDICATED ON SKETCH NO. 20103-SK-003
JUSTIFICATION: TO CONFORM DRAWINGS WITH AMENDMENT 1 OF THE RFP.
EXISTING CONDITION: STOCKPILES ON 20103-SK-001 REMAIN IN PLACE, AS DOES THE SK-003 ROAD CROSSING

(1) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
SAM WOLINSKY,	FLUOR FERNALD INC.	8/18/00	SAM WOLINSKY,	8/18/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/23/00
KWASI BADU-TWENEBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/24/00
PERFORMANCE GRADE: (17) 5- SBDR-2000-0027 APPLIES SM WOLINSKY

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19) Bill Zebuch 8/21/00

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. C011

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V. 5: 10/01/99

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AMENDMENT No. 1
(20103-SK-003)

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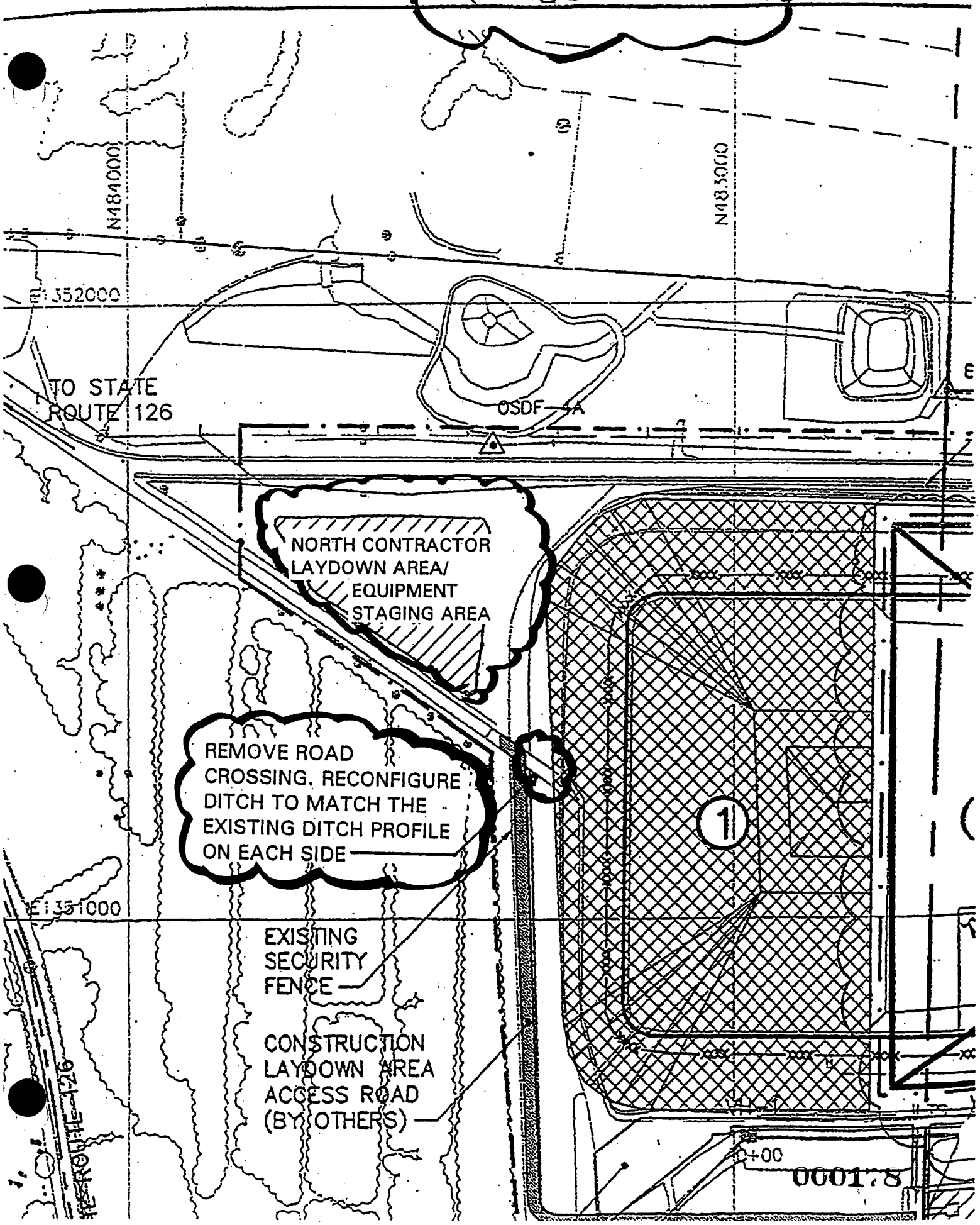

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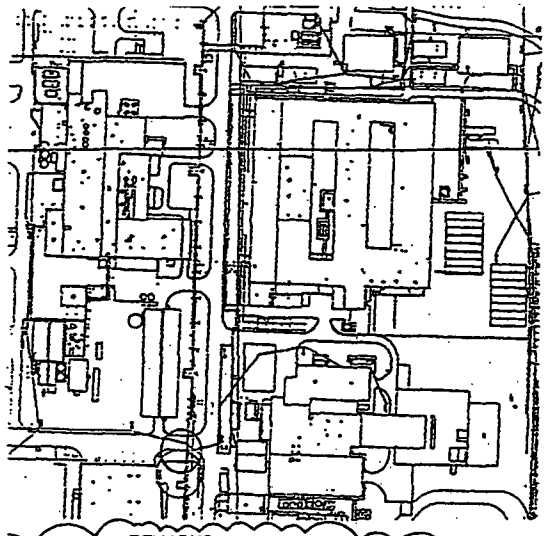

EXISTING STOCKPILE DATA

NAME	DRAWING LABEL	STOCKPILE MATERIAL	QUANTITY (BCY)	REMARK
MTL-OSD-003	003	CLAYEY ROCKFILL	2,500	3, 6
MTL-OSD-004	004	TOPSOIL	13,600	2
MTL-OSD-005	005	GRUBBED MATERIAL	5,300	6
MTL-OSD-010	010	WOOD CHIPS	900	3
MTL-OSD-028	028	TOPSOIL	21,200	2
MTL-OSD-032	032	TOPSOIL	8,300	1
BA-99-4	99-4	CLAY LINER AND CAP MATERIAL	8,000	5
BA-A,B,C,D	BA-A,B,C,D	FILL MATERIAL (NON-CONFORMING CLAY MATERIAL)	3,300	2
BA-E	BA-E	FILL MATERIAL (NON-CONFORMING CLAY MATERIAL)	1,100	2
BA-F,G,H	BA-F,G,H	SCREENED REJECT MATERIAL	5,800	4
OSDF-A,B,C,D,E	OSDF-A,B,C,D,E	FILL MATERIAL (NON-CONFORMING CLAY MATERIAL)	4,700	3

REMARKS:

1. STOCKPILE TO BE RELOCATED TO SOUTH STOCKPILE AREA BY OTHERS. CONTRACTOR SHALL USE RELOCATED STOCKPILE IN OSDF CONSTRUCTION.
2. CONTRACTOR SHALL USE STOCKPILE IN OSDF CONSTRUCTION.
3. STOCKPILES WITHIN CELL 4 NOT SHOWN ON DRAWING FOR CLARITY.
4. STOCKPILE TO BE RELOCATED TO SOUTH STOCKPILE AREA BY OTHERS.
5. STOCKPILE TO BE RELOCATED TO SCREENED MATERIAL STOCKPILE AREA 1 BY OTHERS. CONTRACTOR SHALL USE RELOCATED STOCKPILE IN OSDF CONSTRUCTION.
6. EXISTING STOCKPILE TO REMAIN.

AMENDMENT No. 1
20103-SK-002

REV. NO.	DATE	
1	00.07.05	INCORI
0	00.05.09	CFC
B	00.04.10	PRE-
A	00.02.07	PRELI

OWNER/FACILITY:

UNITED
FERNALD E

CLIENT:

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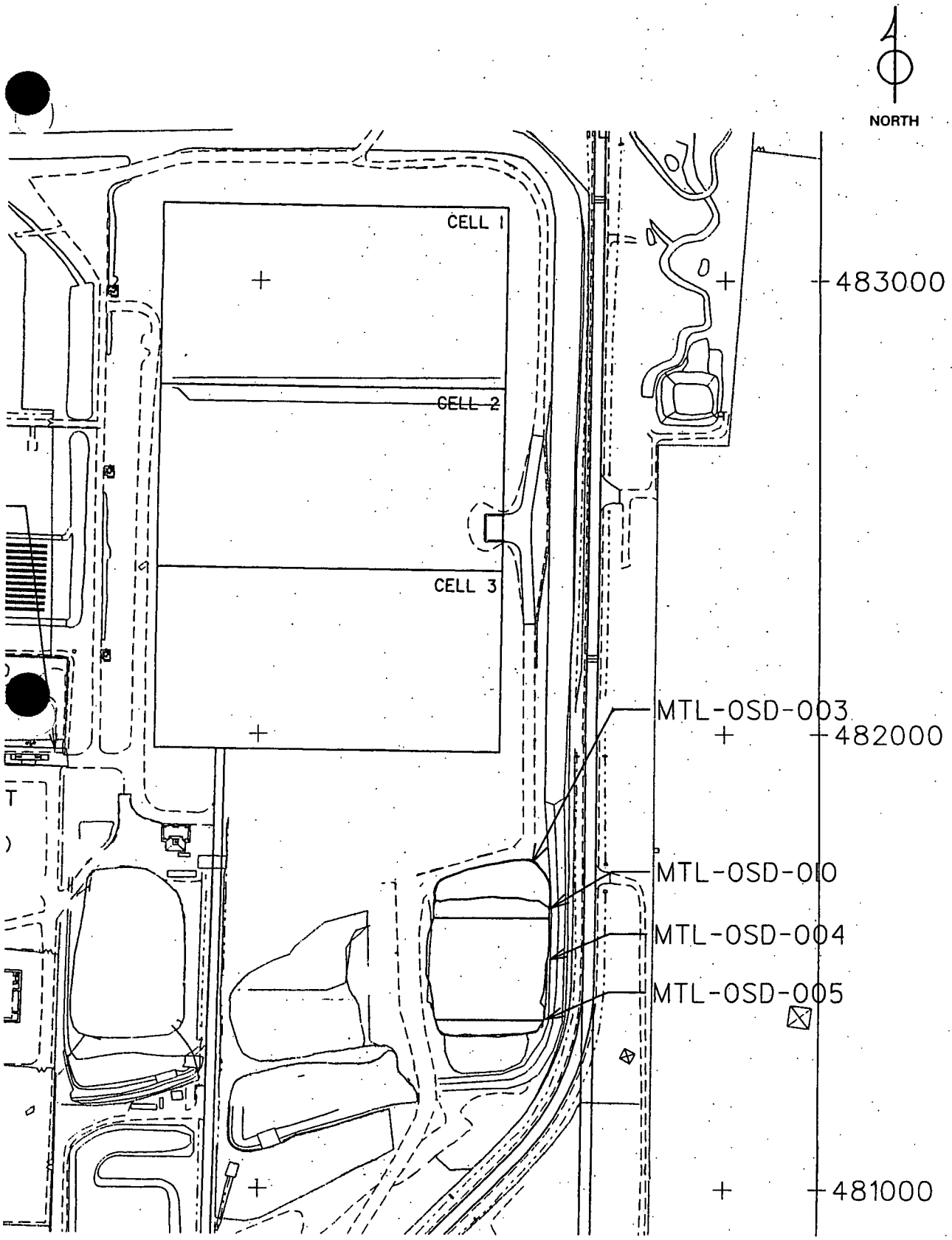

OSDF CELL 4 FOOTPRINT
STOCKPILE LOCATIONS

(REV. 2)

(20103-SK-001)

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 8	(6) DATE
20103	FSC-599		09/05/2000

(3) S/C TITLE: On-Site Disposal Facility – Phase III

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Vegetation and Erosion Control Modifications

(11) DCN NO.: 20103-007

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications On-Site Disposal Facility Phase III	20103-TS-0001	0	Sections 02270 (Rev. 0), 02930 (Rev. 1), & Table of Contents
Technical Specifications On-Site Disposal Facility Phase III Final Cover Construction	20103-TS-0003	0	Sections 02270 (Rev. 0), 02930 (Rev. 1), & Table of Contents

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

ECDC CONTROLLED COPY NO. 011

Justification: For the following changes to specifications:

1 Revise erosion control matting (02270)
2 Revise interim seed mix (02930)
3 Add Scientific names of vegetation (02930)
4 Revise hydraulic mulch particle size (02930) – to allow flexibility in procurement
5 Revise fertilizer proportions (02930) - to allow flexibility in procurement
6 Revise permanent slopes requiring protection (02930)
7 Revise seeding dates for permanent vegetation (02930)
8 Add mulch mix (02930) – to define wood fiber and binder mix for hydroseeding application method
9 Revise wood cellulose moisture content (02930) – to allow flexibility in procurement
10 Add Revision Summary Page (Table of Contents) – to document revisions to specific sections

All changes are made in accordance with Responses to OEPA Comments on OSDF Phase III Revised Final or CFC packages unless specified otherwise (see DOE letter DOE-0982-00).

Proposed Changes: See Attachment

(10) REQUESTOR:	COMPANY:	DATE:	(12) FDF PE:	DATE:
A. C. Snider	FDF	09/05/2000	Sam Wolinsky	9/13/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

KWASI BADU-TWENEBOAH

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 9/22/00 Erbacher, Geomatec

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/2/00

PERFORMANCE GRADE: (17) 5
4; SBDR-2000-0027 Applies.

(18) CONSTRUCTION CONCURRENCE DATE: 10/2/00

PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19) Bill Zebuck

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

S-F-4259
EV. 5: 10/01/99

ORIGINAL

1 Revise section 02270, 2.02. A. (Page 02270-3), to read:

A. Furnish erosion mat which shall be a woven blanket-like fabric made of biodegradable yarn with the following material properties:
1. Yarn Content: 100% coconut fibers or jute
2. Weight: Minimum 11.5 ounces per square yard
3. Open Area: 55 $\pm$ 10%
4. Minimum Mesh Opening: 0.5 inches

Revise Section 02270, 3.01.B.3. (Page 02270-4), to read:

"Overlap adjacent erosion mats in accordance with the Manufacturer's recommendations."

2&3 Replace Tables 02930-1A, 02930-1B, and 02930-2 with the attached Tables.

4 In Section 02930, 2.01.C.4, revise the maximum particle length for mulch applied by hydrospraying from 0.4 inches to 0.8 inches.

5 Add the following sentence between the last 2 sentences of Section 02930, 2.01.G.3 (Page 02930-5):

"Other fertilizers may be approved by the Construction Manager for areas outside the former production area provided the fertilizer mix does not contain more than 6% phosphorous."

6 Revise Section 02930, 3.02.F (Page 02930-6) to read as follows: "Stabilization of permanent slopes between 3H:1V and 4H:1V (horizontal to vertical) shall utilize an erosion mat as specified in Section 02270 after application of seed mixture."

7 In Section 02930, 3.03.B (Page 02930-7), replace the date July 1 with June 15.

8 Add the following sentence after the first sentence of Section 02930, 2.01.C.4 (Page 02930-4):

"Mulch shall be comprised of 39 parts wood fiber to one part binder by weight."

9 Revise the wood cellulose fiber moisture content specification listed in Section 02930, 2.01.C.4. (Page 02930-4) from 12% ± 3% (by weight) to 12% ± 4% (by weight).

10 Add an extra page to the end of the Table of Contents section in accordance with the Revision Summary attachments (20103-TS-0001 [Page 7] and 20103-TS-0003 [Page 8]).

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TABLE 1A

SEED MIX IN DRY AREAS FOR PERMANENT VEGETATION

Species	Pounds Per Acre (lb/ac)
Big Bluestem (*Andropogen gerardi*)	3
Little Bluestem (*Andropogen scoparius*)	2
Side-Oats Grama (*Bouteloua curtipendula*)	0.5
Indian Grass (*Sorghastrum nutans*)	2
Canada Wild-Rye (*Elymus canadensis*)	3
Switch grass (*Panicum virgatum*)	0.5
ReGreen	10
Wildflowers [1]:	1.5
Butterflyweed (*Asclepias tuberosa*)	
New England Aster (*Aster novae-angliae*)	
Smooth Aster (*Aster laevis*)	
Canada Milkvetch (*Astragalus canadensis*)	
Purple Prairie Clover (*Petalostemum purpureum*)	
Ox-eye Sunflower (*Heliopsis helianthoides*)	
Bergamot (*Monarda fistulosa*)	
Purple Coneflower (*Echinacea purpurea*)	
Pale Purple Coneflower (*Echinacea pallida*)	
Yellow Coneflower (*Ratibida pinnata*)	
Black-Eyed Susan (*Rudbeckia hirta*)	
Spiderwort (*Tradescantia ohioensis*)	
Blue Vervain (*Verbena hastata*)	
Hoary Vervain (*Verbena stricta*)	
Beardtongue (*Penstemon grandiflorus*)	
Cupplant (*Silphium perfoliatum*)	
Sweet Joe Pye-Weed (*Eupatorium purpureum*)	
White False Indigo (*Baptisia leucantha*)	
Blue False Indigo (*Baptisia australis*)	
Partridge Pea (*Cassia fasciculata*)	
Rattlesnake Master (*Eryngium yuccifolium*)	
Round-headed Bush Clover (*Lespedeza capitata*)	
Stiff Goldenrod (*Solidago rigida*)	

[1] – Wildflower mix to be apportioned according to species aggressiveness and seed counts as approved by the Construction Manager. If certain species are not available, appropriate substitutions will be approved by the Construction Manager.

TABLE 1B

SEED MIX IN WET AREAS[1] FOR PERMANENT VEGETATION

Species	Pounds Per Acre (lb/ac)
Big Bluestem (*Andropogen gerardi*)	3
Canada Wild-Rye (*Elymus canadensis*)	3
Switch Grass (*Panicum virgatum*)	0.5
Blue Joint Grass (*Calamagrostis canadensis*)	0.5
Porcupine Sedge (*Carex hystericina*)	1 ounce per acre (oz/ac)
Fox Sedge (*Carex stipata*)	1 ounce per acre (oz/ac)
Dark Green Bulrush (*Scirpus atrovirens*)	1 ounce per acre (oz/ac)
ReGreen	10
Prairie Cordgrass (*Spartina pectinata*)	1
Wildflowers [2]:	1.5
Red Milkweed (*Asclepias incarnata*)	
New England Aster (*Aster novae-angliae*)	
Wild Senna (*Cassia hebecarpa*)	
Canada Tick Trefoil (*Desmodium canadense*)	
Prairie Blazingstar (*Liatris pycnostachya*)	
Great Blue Lobelia (*Lobelia siphilitica*)	
Bergamot (*Monarda fistulosa*)	
Yellow Coneflower (*Ratibida pinnata*)	
Branched Coneflower (*Rudbeckia hirta*)	
Blue Vervain (*Verbena hastata*)	
Angelica (*Angelica atropurpurea*)	
Sweet Joe-Pye Weed (*Eupatorium maculatum*)	

(1) Seeding in drainage ditches or swales shall contain erosion mats as specified in Section 02270 after application of seed mixture.

(2) Wildflower mix to be apportioned according to species aggressiveness and seed counts as approved by the Construction Manager. If certain species are not available, appropriate substitutions will be approved by the Construction Manager.

4556

TABLE 2

SEED MIX FOR INTERIM VEGETATION

Species	Pounds Per Acre (lb/ac)
ReGreen	50
Partidge Pea (*Cassia fasciculata)*	10
Canada Wild Rye (*Elymus canadensis)*	40

REVISION SUMMARY
(20103-TS-0001)

4556

Effected Section/Rev.	DCN Number	Approval Date	Description of Revision
02271 (Rev. 0)	20103-002	07/17/2000	Revise Riprap testing requirements
02930 (Rev. 0)	20103-001	07/06/2000	Elimination of straw mulch for seed drilling
02930 (Rev. 1)	20103-007	*TBD*	Modifications to vegetation and erosion control requirements

REVISION SUMMARY
(20103-TS-0003)

Effected Section/Rev.	DCN Number	Approval Date	Description of Revision
02271 (Rev. 0)	20103-002	07/17/2000	Revise Riprap testing requirements
02930 (Rev. 1)	20103-007	*TBD*	Modifications to vegetation and erosion control requirements

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.: FSC-599	(5) Pg 1 Of 2	(6) DATE
20103			9/14/2000

(3) S/C TITLE: On-Site Disposal Facility – Construction Laydown Area

(11) RCI NO.: RCI - 20103- 001R

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]

(4A) RCI/DCN TITLE: Removal of silt fence from southern edge of Construction Laydown Area

(11) DCN NO.: DCN – 20103 - 008

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Drawings	90X-5500-G-00547	0	

(9) [X] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [x] NOT REQUIRED

The Construction Drawings show a silt fence along the southern portion of the Construction Laydown area. Does this fence need to be installed since the slopes of the construction area is minimal and the swale the silt fence is to protect is fully vegetated?

The above referenced construction drawings shows the chain-link fence on the east side of Construction Laydown Area. Please clarify that this is the same fence which was removed according to DCN –20103- 004.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Rick McGuire R McGuire	Fluor Fernald	9/14/00	Chuck Van Arsdale	9/14/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

After reviewing the field conditions, it is not necessary to place a silt fence in this area. The contributing slopes are designed at approximately 1% and the vegetation in the swale itself will absorb the minimal surface erosion. It appears the accumulated silt will not pose a problem for downstream conditions.

The fence shown on the construction drawing noted above is the same fence which was removed in DCN-20103-004. The fence is not to be placed as shown in the drawing.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE:

Surinder Kumar SKumar 9/20/00

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) Chuck Van Arsdale DATE: 9/20/00

PERFORMANCE GRADE: (17) 5 SBDR – 2000 – 0027 APPLIES

(18) CONSTRUCTION CONCURRENCE DATE: 9/19/00 Bill Zebich

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

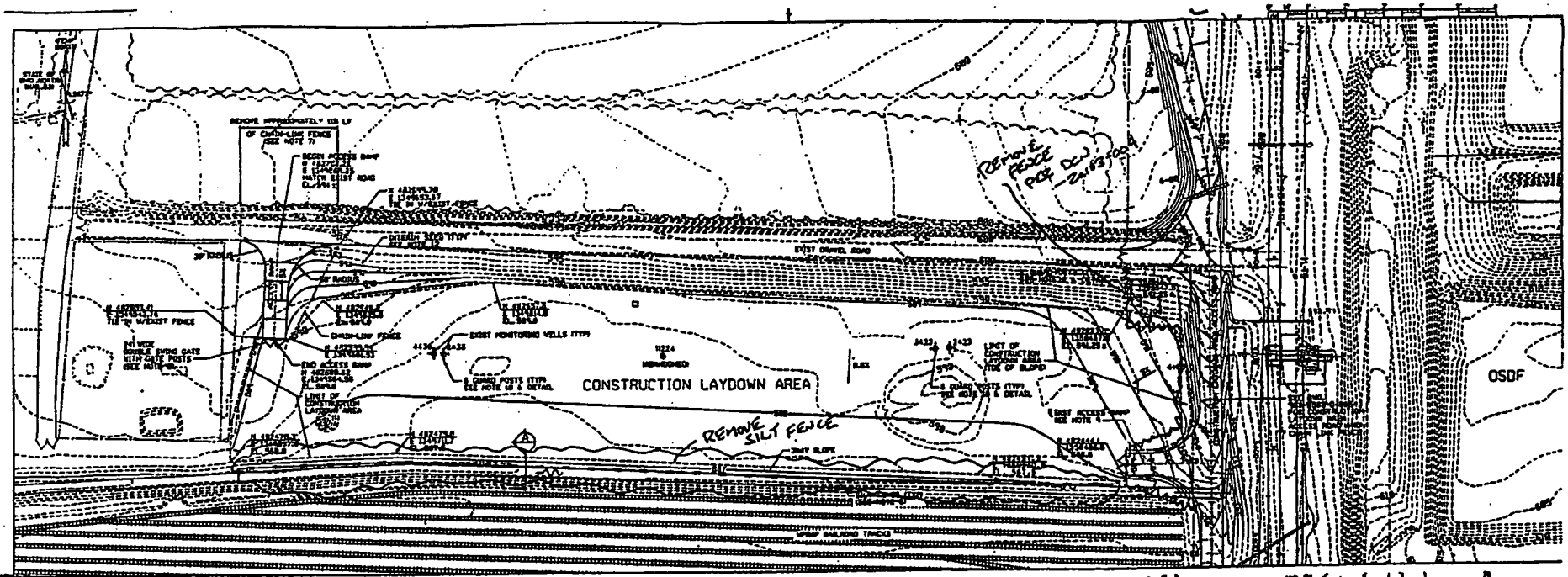
(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

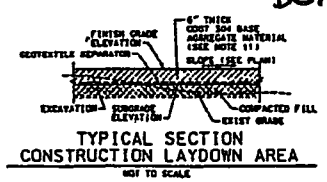
S-F-4259
REV. 5: 10/01/99

ECDC CONTROLLED COPY NO. C011

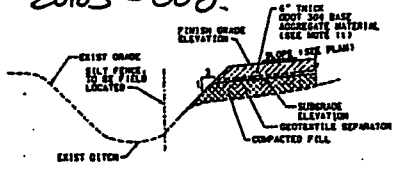
ORIGINAL



DCN - 20103 - 008



TYPICAL SECTION
CONSTRUCTION LAYDOWN AREA
NOT TO SCALE



SECTION A
TYPICAL
NOT TO SCALE

PLAN
SCALE 1"=40'

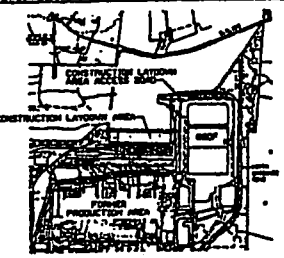
INFORMATION ONLY

GENERAL NOTES:

1. TOPOGRAPHY BASED ON JANUARY 12, 2000 FLYOVER AND FIELD SURVEY CHECKS PERFORMED IN JUNE 2000.
2. ELEVATIONS ARE IN FEET ABOVE SEA LEVEL, DATUM NOTED "SEA LEVEL DATUM" REFERS TO NATIONAL GEODETIC VERTICAL DATUM (NGVD).
3. GRID COORDINATE SYSTEM CORRESPONDS TO STATE PLANE NORTH AMERICAN DATUM (NAD) 1983 GRID SOUTH.
4. SURVEY COORDINATES, STATIONING AND DIMENSIONS SHALL BE USED FOR CONSTRUCTION. DRAWINGS SHALL NOT BE SCALED TO OBTAIN LOCATIONS, ELEVATIONS, OR DIMENSIONS.
5. CONSTRUCTION OF CONSTRUCTION LAYDOWN AREA SHALL CONFORM TO THE FOLLOWING TECHNICAL SPECIFICATIONS (USDF PHASE III, REVISION 0):

   SECTION 02010 - SURVEYING
   SECTION 02110 - CLEARING, GRUBBING AND STRIPPING
   SECTION 02200 - EARTHWORK
   SECTION 02220 - ROAD CONSTRUCTION
   SECTION 02270 - SURFACE WATER MANAGEMENT AND EROSION CONTROL
   SECTION 02274 - GEOTEXTILES
   SECTION 02410 - CHAIN-LINK FENCES
   SECTION 02930 - VEGETATION

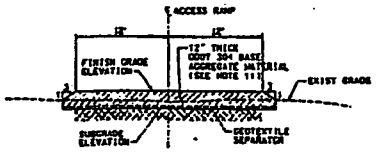
6. ~~[illegible]~~
7. RE-USE EXISTING CHAIN LINK FABRIC AT RELOCATED CHAIN LINK FENCE.
8. CHAIN LINK FENCE AND GATES SHALL BE INSTALLED AS PER DETAILS AS PER DETAILS SHOWN ON DRAWING NO. [illegible]. THE FENCE HEIGHT SHALL MATCH EXISTING FENCE HEIGHT. GATE POSTS SHALL BE A MINIMUM OF 2 FEET FROM CORNER POST.
9. ELEVATIONS WITHIN LIMIT OF BASE AGGREGATE FOR ACCESS RAMP AND CONSTRUCTION LAYDOWN AREA OFFSET SUBGRADE ELEVATIONS UNLESS OTHERWISE NOTED. ELEVATIONS SHOWN FOR CONSTRUCTION LAYDOWN AREA ACCESS ROAD AND EAST ACCESS RAMP ARE FOR FINISHED GRADE ELEVATIONS.
10. DO NOT DISTURB EXISTING MONITORING WELLS. INSTALL GUARD POSTS (SEE TYPICAL GUARD POST DETAIL) BEFORE BEGINNING EARTHWORK.
11. PLACEMENT AND COMPACTION OF BASE AGGREGATE MATERIAL SHALL BE IN ACCORDANCE WITH TECHNICAL SPECIFICATION 02220.
12. VEGETATE DISTURBED AREAS WITH DITCHER SEED AS SPECIFIED IN SECTION 02930.



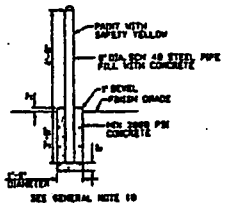
KEY PLAN
NOT TO SCALE

LEGEND

- EXIST FENCE
- PROPOSED CHAIN-LINK FENCE
- SILT FENCE
- EXIST GRADE
- PROPOSED GRADE
- EXIST CONSTRUCTION WATERLINE
- FLOW DIRECTION
- EXIST MANHOLE
- EXIST VALVE HOUSE
- EXIST MONITORING WELL



TYPICAL SECTION
ACCESS RAMP
NOT TO SCALE



TYPICAL GUARD POST DETAIL
NOT TO SCALE

NO.	REVISIONS	DATE/INIT.	APPD.	NO.	REVISIONS	DATE/INIT.	APPD.	REF. DWG. NO.
				0	CERTIFIED FOR CONSTRUCTION			

FLUOR FERNALD CAD DRAWING, DO NOT REVISE MANUALLY.

Fernald Environmental Management Project
FLUOR FERNALD, INC.
U.S. DEPARTMENT OF ENERGY

ON-SITE DISPOSAL FACILITY
CONSTRUCTION LAYDOWN AREA
PLAN AND DETAILS

90X-5500-G-00547

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 5	(6) DATE
20103	FSC-599		10/02/2000

(3) S/C TITLE: On-Site Disposal Facility – Phase III

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: OSDF Construction Laydown Area West End Modifications

(11) DCN NO.: 20103-009

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
On-Site Disposal Facility Construction Laydown Area Plan and Detail Drawing	90X-5500-G-00547	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification:

Certification samples collected east of the Former Fire Training Facility in Certification Unit (CU) A1P3P2-C-01 showed a failure for benzo(a)pyrene. The top 12 inches within the affected area of the CU, approximately 15,400 square feet, have been excavated and disposed appropriately, by others. The resulting excavation footprint has been redesignated as CU A1P3P2-C-04. Since the original design for the construction laydown area extends into CU A1P3P2-C-04, the western boundary of the OSDF construction laydown area along with the associated access ramp and fencing must be moved to the east. Details of CU A1P3P2-C-04 certification sampling are provided in Variance/Field Change Notice 20720-PSP-0002-4 (see Pages 3 through 5 of this DCN).

ECDC CONTROLLED COPY NO. 011

Proposed Changes:

Modify drawing 90X-5500-G-00547 in accordance with the attached sketch 20103SK-002 (see page 2 of this DCN).

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
A. C. Snider A. C. Snider	Fluor Fernald, Inc.	10/02/2000	Charles Van Arsdale Charles Van Arsdale	10/4/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE:
Surinder Kumar Surinder Kumar 10/6/00
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) Charles C. Van Arsdale DATE: 10/9/00

PERFORMANCE GRADE: (17)
4; SBDR-2000-0027 Applies.

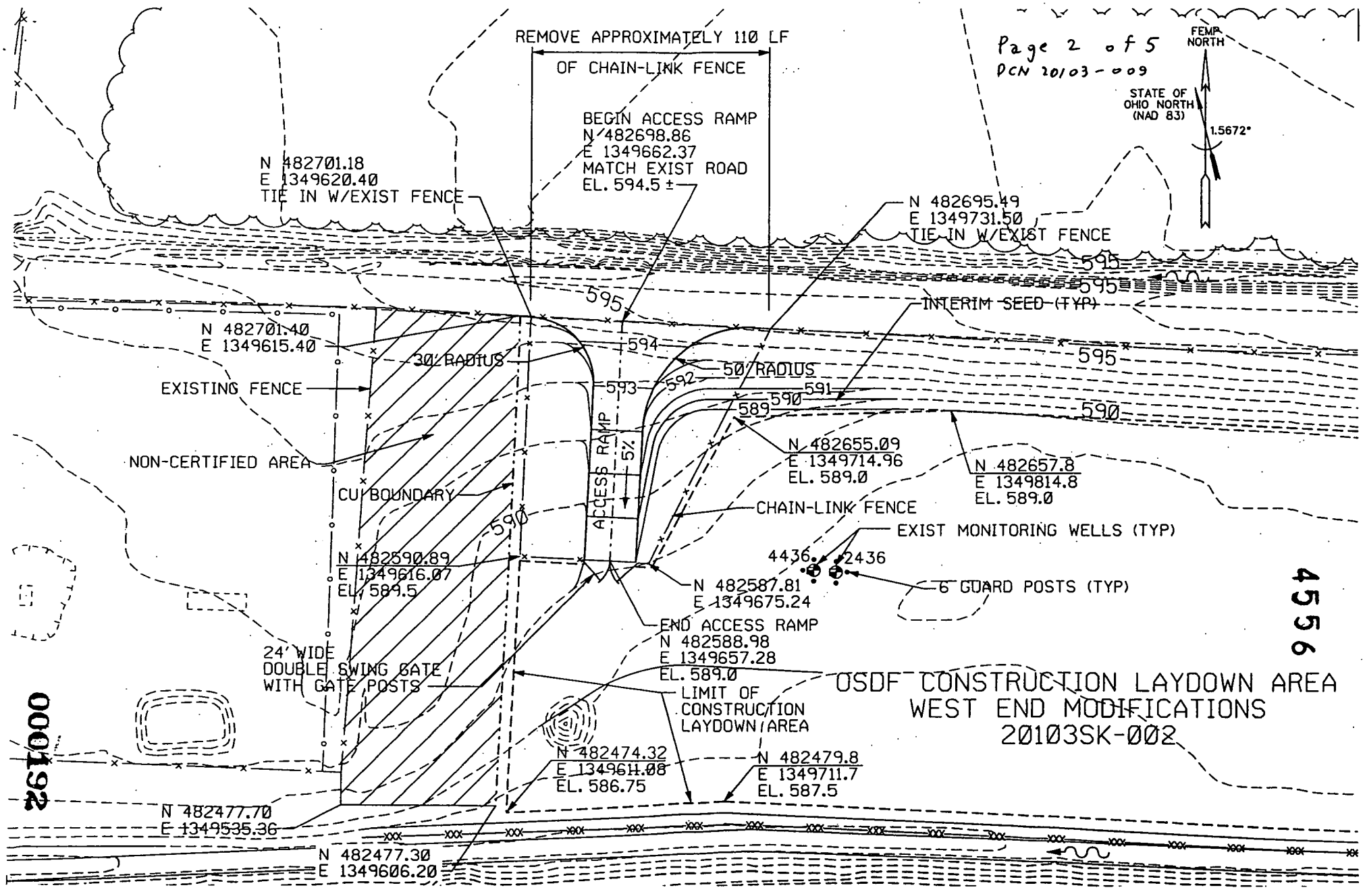
(18) CONSTRUCTION CONCURRENCE DATE: 10/5/00

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)
Bill Zebrch

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

S-F-4259
REV. 5: 10/01/99

ORIGINAL


Page 2 of 5
DCN 20103-009
FEMP NORTH
STATE OF OHIO NORTH (NAD 83)
1.5672°
REMOVE APPROXIMATELY 110 LF
OF CHAIN-LINK FENCE
BEGIN ACCESS RAMP
N 482698.86
E 1349662.37
MATCH EXIST ROAD
EL. 594.5 ±
N 482701.18
E 1349620.40
TIE IN W/EXIST FENCE
N 482695.49
E 1349731.50
TIE IN W/EXIST FENCE
INTERIM SEED (TYP)
N 482701.40
E 1349615.40
30' RADIUS
50' RADIUS
EXISTING FENCE
NON-CERTIFIED AREA
CU BOUNDARY
ACCESS RAMP
5%
N 482655.09
E 1349714.96
EL. 589.0
N 482657.8
E 1349814.8
EL. 589.0
CHAIN-LINK FENCE
EXIST MONITORING WELLS (TYP)
4436
2436
6' GUARD POSTS (TYP)
N 482590.89
E 1349616.07
EL. 589.5
N 482587.81
E 1349675.24
END ACCESS RAMP
N 482588.98
E 1349657.28
EL. 589.0
24' WIDE
DOUBLE SWING GATE
WITH GATE POSTS
LIMIT OF
CONSTRUCTION
LAYDOWN AREA
N 482474.32
E 1349611.08
EL. 586.75
N 482479.8
E 1349711.7
EL. 587.5
N 482477.70
E 1349535.36
N 482477.30
E 1349606.20
595
594
593
592
591
590
589
OSDF CONSTRUCTION LAYDOWN AREA
WEST END MODIFICATIONS
20103SK-002

4556

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VARIANCE / FIELD CHANGE NOTICE

V/F 20720-PSP-0002-4

PSP NO.: 20720-PSP-0002, Rev. 0

PROJECT TITLE: PROJECT SPECIFIC PLAN FOR CERTIFICATION SAMPLING OF AREA 1, PHASE III, PART TWO

Date: 09/22/00

/ARIANCE / FIELD CHANGE NOTICE (Include justification)

Variance:

Certification samples collected in CU A1P3P2-C-01 showed a failure for benzo(a)pyrene. Additionally, results for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and chrysene were above the BTV value. The affected area is approximately 15378 square feet to the east of the former Fire Training Facility. Twelve inches will be excavated in this area and the resulting excavation footprint will be designated as CU A1P3P2-C-04. Samples will be collected and analyzed for PAHs including benzo(a)pyrene by CLP methodology. Samples will not be analyzed for dibenzo(a,h)anthracene by SW-846 method 8310 to achieve lower detection limits because the initial analysis confirmed that concentrations of this analyte are below BTV. Additionally, all other COCs were below their associated FRLs and resampling and analysis for these constituents will not be performed. This Variance/Field Change Notice (V/FCN) documents the certification design and sampling for CU A1P3P2-C-04.

The attached figure shows the sample locations (Figure 1) and boundary for CU A1P3P2-C-04 (Figure 2). The sample locations were generated per the SEP as discussed in the PSP. Thirteen six-inch samples, collected at twelve locations, will be analyzed for the PAHs. Rinsates, if required, will be collected in accordance with the PSP. The archive sample locations will be marked in the field and collected as needed. Analysis and data validation will be at ASL D as described in Section 4 of the PSP. Sample containers and preservation will comply with Table 3-1 of the PSP. The following are the sample identifications and coordinates for CU A1P3P2-C-04.

Location	Sample ID	Northing	Easting	Analysis
01	A1P3P2-C-04-01-S	482701	1349580	PAHs
02	A1P3P2-C-04-02-S	482681	1349591	PAHs
03	A1P3P2-C-04-03-V	482671	1349577	Archive
04	A1P3P2-C-04-04-S	482668	1349609	PAHs
05	A1P3P2-C-04-05-S	482627	1349558	PAHs
06	A1P3P2-C-04-06-S	482619	1349583	PAHs
06	A1P3P2-C-04-06-S-D	482619	1349583	PAHs
07	A1P3P2-C-04-07-S	482595	1349551	PAHs
08	A1P3P2-C-04-08-V	482612	1349607	Archive
09	A1P3P2-C-04-09-S	482586	1349574	PAHs
10	A1P3P2-C-04-10-S	482583	1349604	PAHs
11	A1P3P2-C-04-11-V	482548	1349559	Archive
12	A1P3P2-C-04-12-S	482548	1349594	PAHs
13	A1P3P2-C-04-13-S	482527	1349567	PAHs
14	A1P3P2-C-04-14-V	482515	1349585	Archive
15	A1P3P2-C-04-15-S	482488	1349551	PAHs
16	A1P3P2-C-04-16-S	482501	1349603	PAHs

Unofficial Review By OEPA 9-22-00

Justification:

Sampling and analysis of the excavated area is necessary to verify removal of the benzo(a)pyrene contamination and to certify the area.

REQUESTED BY: Jenny Vance Date: September 22, 2000

	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE Tracy Thompson	9/26/00	X	CHARACTERIZATION LEAD Jenny Vance for Mike Polfes	09/22/00
	DATA QUALITY MANAGEMENT		X	FIELD MANAGER Tom Bulnlage	9/25/00
X	ANALYTICAL CUSTOMER SUPPORT Audrey L Hartman	09/25/00	X	AREA MANAGER	9-22-00
	RTIMP MANAGER			WASTE ACCEPTANCE ORGANIZATION	

VARIANCE/FCN APPROVED [X]YES [ ]NO

REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

PROJECT MANAGER:	DOCUMENT CONTROL:	OTHER:
QUALITY ASSURANCE:	OTHER:	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

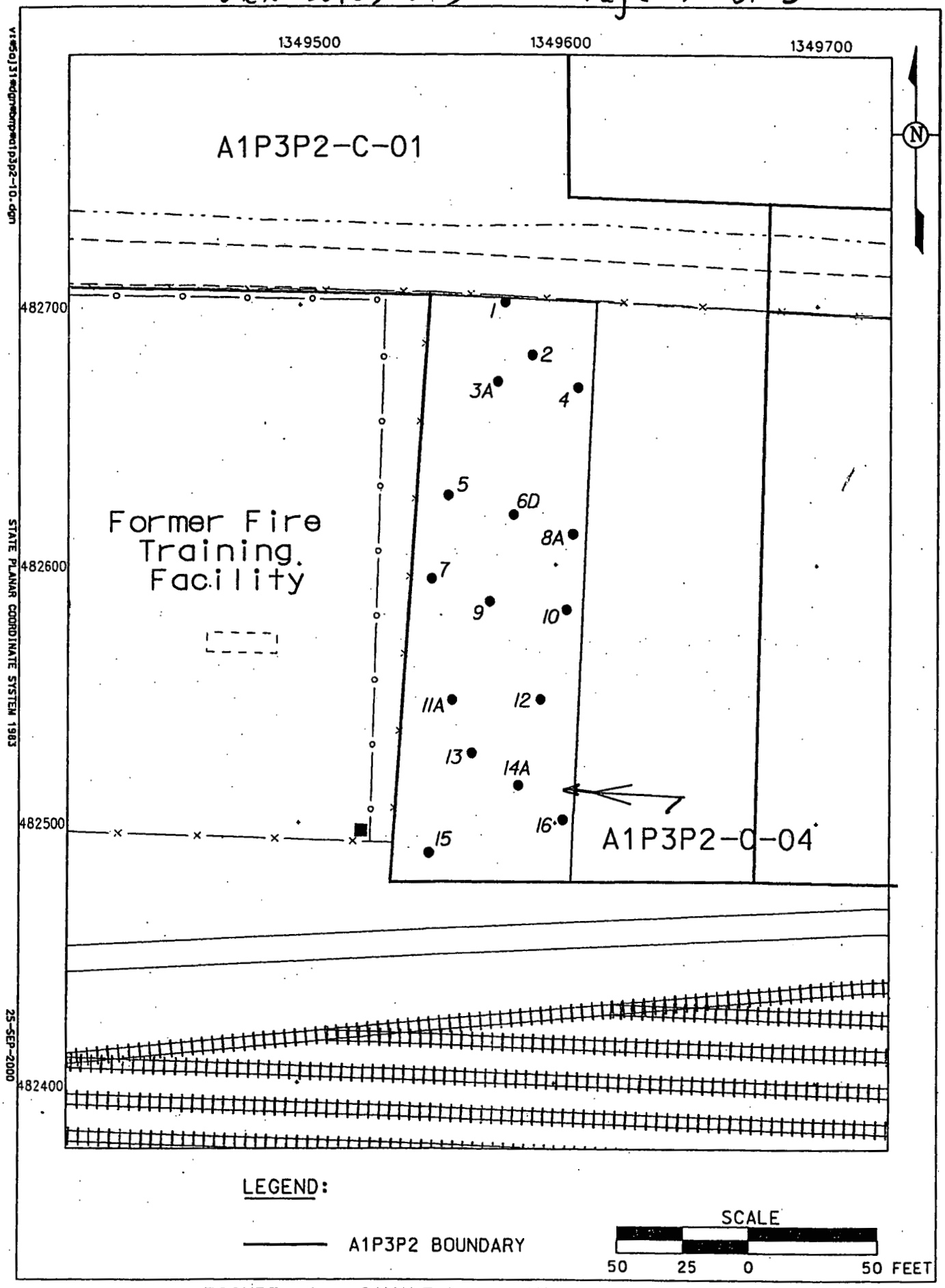

FIGURE 1. SAMPLE LOCATIONS IN A1P3P2-C-04

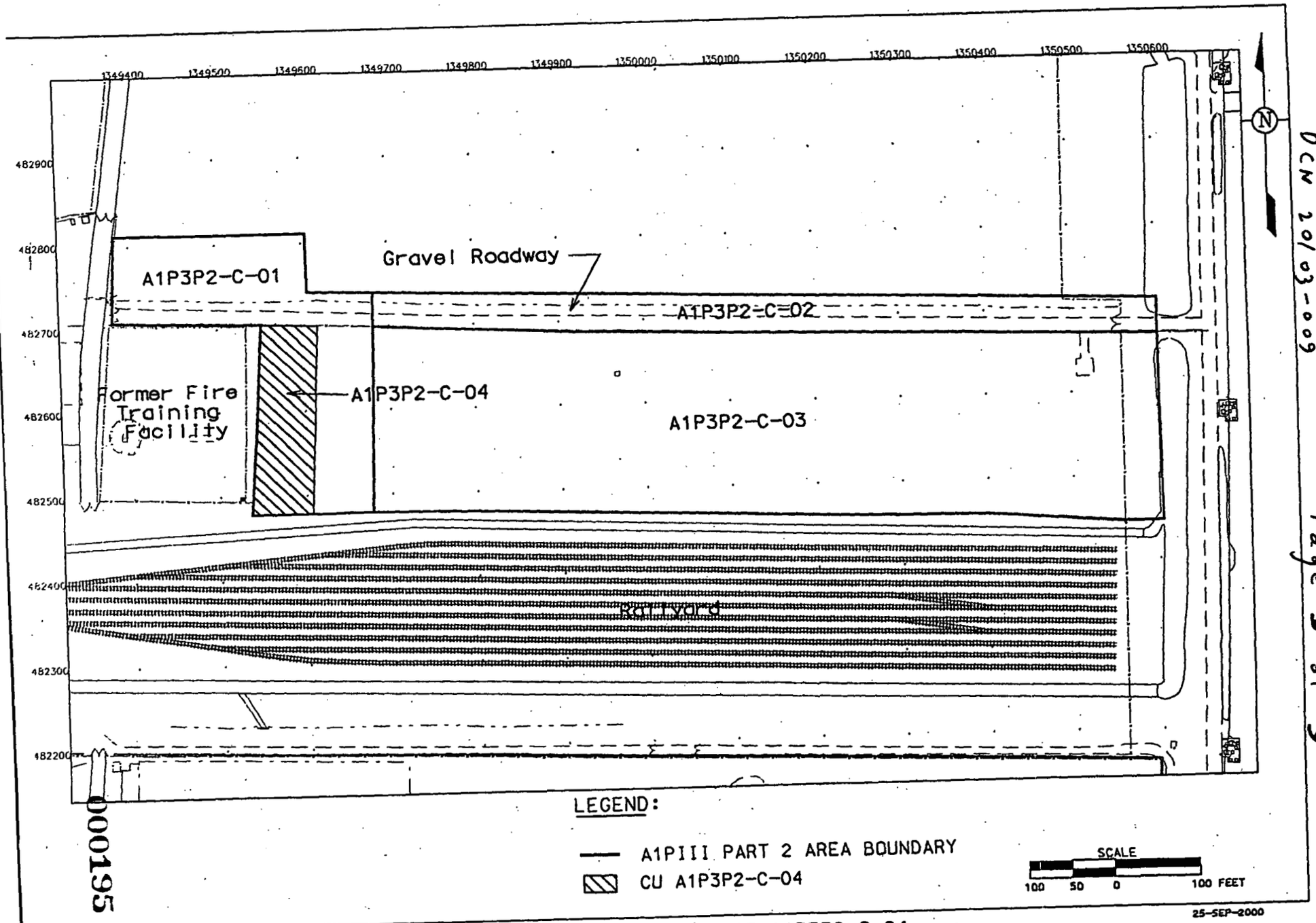

FIGURE 2. LOCATION OF A1P3P2-C-04

:#5cj31#dgn#bmp#a1p3p2-9.dgn
TATE PLANAR COORDINATE SYSTEM 1983

DCN 20/03-009

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 2	(6) DATE October 9, 2000
(3) S/C TITLE: OSDF Phase III			(11) RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]	(4A) RCI/DCN TITLE: Changes to Geosynthetic Clay Liner and Cap Property Values		(11) DCN NO.: 20103-010

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications Section 02772	20103-TS-0001 + 0003	0	Table 02772-1

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Revise the qualifier for hydraulic conductivity in Table 02772-1 to correct a typographic error.
Existing Condition: The "minimum" qualifier specified for hydraulic conductivity in Table 02772-1 is incorrect due to a typographic error.

Proposed Change: Replace "minimum" with "maximum" for hydraulic conductivity in Table 02772-1. Add "[END OF SECTION]" to page 02772-9. The proposed changes are presented on attached Table 02772-1 of this DCN.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	October 9, 2000		10/10/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 10/9/2000
Kwasi Badu-Tweneboah, GeoSyntec
[ ] FIT [x] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/16/00
PERFORMANCE GRADE: (17) 4 SBDR 2000-0027 APPLIES

(18) CONSTRUCTION CONCURRENCE DATE: 10/10/00
PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. 011

FS-F-4259
REV. 5: 10/01/99

ORIGINAL

000196

TABLE 02772-1

REQUIRED GEOSYNTHETIC CLAY LINER AND CAP PROPERTY VALUES

PROPERTIES	QUALIFIERS	UNITS[4]	SPECIFIED[1] PROPERTY VALUES	TEST METHOD
Geosynthetic Clay Liner and Cap Properties				
Bentonite Content[2]	minimum	lb/ft^2	1.0	ASTM D 5993
Bentonite Moisture Content	maximum	%	25	ASTM D 4643
Bentonite Fluid Loss	maximum	ml	8	ASTM D 5891
Bentonite Free Swell	minimum	ml/2g	24	ASTM D 5890
Hydraulic Conductivity[3]	maximum	cm/s	5×10^{-9}	ASTM D 5887
Geotextile Properties				
Polymer Composition	minimum	%	95 polyester or polypropylene	

Notes:
1. All values represent minimum average roll values (i.e., any roll in a lot should meet or exceed the values in this table).
2. Measured at a moisture content not exceeding 25 percent.
3. Test at an effective confining stress of 5 psi.
4. lb/ft^2 = pounds per square foot
   cm/s = centimeter per second
   g = grams
   % = percent
   lb = pound
   lb/in. = pounds per inch
   ml/2g = milliliters per two grams

[END OF SECTION]

4556 REV. RECEIVED 9/12/00 (NO DCN)

TABLE 02772-1

REQUIRED GEOSYNTHETIC CLAY LINER AND CAP PROPERTY VALUES

PROPERTIES	QUALIFIERS	UNITS[4]	SPECIFIED[1] PROPERTY VALUES	TEST METHOD
Geosynthetic Clay Liner and Cap Properties				
Bentonite Content[2]	minimum	lb/ft²	1.0	ASTM D 5993
Bentonite Moisture Content	maximum	%	25	ASTM D 4643
Bentonite Fluid Loss	maximum	ml	8	ASTM D 5891
Bentonite Free Swell	minimum	ml/2g	24	ASTM D 5890
Hydraulic Conductivity[3]	maximum	cm/s	5×10^{-9}	ASTM D 5887
Geotextile Properties				
Polymer Composition	minimum	%	95 polyester or polypropylene	

Notes:
1. All values represent minimum average roll values (i.e., any roll in a lot should meet or exceed the values in this table).
2. Measured at a moisture content not exceeding 25 percent.
3. Test at an effective confining stress of 5 psi.
4. lb/ft² = pounds per square foot
   cm/s = centimeter per second
   g = grams
   % = percent
   lb = pound
   lb/in. = pounds per inch
   ml/2g = milliliters per two grams

[END OF SECTION]

TABLE 02772-1

REQUIRED GEOSYNTHETIC CLAY LINER AND CAP PROPERTY VALUES

PROPERTIES	QUALIFIERS	UNITS[4]	SPECIFIED[1] PROPERTY VALUES	TEST METHOD
Geosynthetic Clay Liner and Cap Properties				
Bentonite Content[2]	minimum	lb/ft^2	1.0	ASTM D 5993
Bentonite Moisture Content	maximum	%	25	ASTM D 4643
Bentonite Fluid Loss	maximum	ml	8	ASTM D 5891
Bentonite Free Swell	minimum	ml/2g	24	ASTM D 5890
Hydraulic Conductivity[3]	minimum	cm/s	5×10^{-9}	ASTM D 5887
Geotextile Properties				
Polymer Composition	minimum	%	95 polyester or polypropylene	

Notes:
1. All values represent minimum average roll values (i.e., any roll in a lot should meet or exceed the values in this table).
2. Measured at a moisture content not exceeding 25 percent.
3. Test at an effective confining stress of 5 psi.
4. lb/ft^2 = pounds per square foot
   cm/s = centimeter per second
   g = grams
   % = percent
   lb = pound
   lb/in. = pounds per inch
   ml/2g = milliliters per two grams

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC - 642	(5) Pg 1 Of 2	(6) DATE 02/21/01

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]

(4A) RCI/DCN TITLE: Biointrusion Barrier and Choke Stone Material Changes

(11) DCN NO.: 20103 - 011

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specification Section 02280	20103-TS-0001	0	
	20103-TS-0003	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: New information became available to re-evaluate the stone size for Biointrusion Barrier material including additional testing on rock at local quarries, technical literature on internal frition angles, and it was discovered that the original calculations were overly conservative. Revise Biointrusion barrier rock size to allow for better placement by mechanical equipment, higher percentage of voids which deters root penetration, and smaller void space to discourage burrowing fauna. Revise choke stone layer stone size to adhere to the new biointrusion barrier material size.

Existing Conditions: ODOT Type C dumped rock fill is specified for biointrusion barrier material and AASHTO No. 1 coarse aggregate is specified for the choke stone.

Proposed Changes: Revise biointrusion barrier material to ODOT Type D dumped rock fill and the choke stone layer to AASHTO No. 57 coarse aggregate. Specific changes to Specification Section 02280 are presented on the following page.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Charles C. Van Arsdale	Fluor Fernald, Inc.	2/21/01	Sam Wolinsky	2/21/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 2/21/01

KWASI BADU-THENKEBAH, GEOSYNTEC

[ ] FIT [X] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 2/21/01

PERFORMANCE GRADE: (17) 5 SBDR – 2000 – 0027 APPLIES SH WOLINSKY

(18) CONSTRUCTION CONCURRENCE DATE: 2/22/01

Bill Zebuck

PURCHASE REQUISITION REQUIRED: [ ] YES [✓] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99

ECDC CONTROLLED COPY NO. C011

000200

ORIGINAL

DCN 20103-011

CHANGES TO TECHNICAL SPECIFICATION 02280 – BIOINTRUSION BARRIER

Part 1.03C: Remove reference to AASHTO T103 test method;

Parts 1.03 E, F, and G: Add references to state:

"E. *"Evaluation of Materials for the On-Site Disposal Facility (OSDF) Biointrusion Barrier"* **[University of Cincinnati, 2000].** This report presents riprap testing from various local quarries and assigns a rock quality factor based on the Uranium Mill Tailings Remedial Action Project (UMTRA) Technical Approach and the Nuclear Regulatory Commission (NRC) approach to each quarry material.

F. *"UMTRA – Technical Approach Document, Revision II"* **[USDOE, 1989].** This technical document describes the general technical approaches and design criteria adopted by the USDOE to implement remedial action plans and final designs that comply with EPA standards. This document describes a rock quality rating approach for biointrusion barriers in final cover systems.

G. *"Final Staff Technical Position Design of Erosion Protection Covers for Stabilization of Uranium Mill Tailings Sites"* **[USNRC, 1990].** This technical document presents general technical approaches and design criteria for final cover systems. The document provides a slightly revised rock quality rating approach to that of the UMTRA technical approach [USDOE, 1989]".

Part 1.04A.2. Revise as follows: "2. for approved sources identified in University of Cincinnati [2000] or by Fluor Fernald, Inc., certification from the supplier that biointrusion barrier material meets the material requirements including rock quality rating of this Section and that tests were performed on representative samples in accordance with the respective ASTM test methods in USNRC [1990]".

Part 2.01B: Change "Type C Dumped Rock Fill" to "Type D Dumped Rock Fill" and revise to read, "...specified in Item 601.07 and 703.04(3) of the Ohio DOT Specifications."

Part 2.01C. Revise as follows: "Biointrusion barrier material shall have a minimum rock quality rating of 60 when rated in accordance with the USNRC [1990] scoring criteria based on USDOE [1989].

Part 2.01D. Change from No.1 to No. 57 coarse aggregate for the choke stone.

Part 2.01E. Change maximum absorption value from 0.83 to 2.0.

These changes are based on calculations entitled "Addendum 2 to Final Design Calculation Package, On-Site Disposal Facility, Rev. 1". The calculations were reviewed and approved by USEPA and OEPA.

Construction Quality Assurance Plan shall be revised accordingly due to these changes

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103

(2) S/C NO.: FSC-642

(5) Pg 1 Of 2

(6) DATE 03/05/2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Changes to Gradation of Granular Drainage Layer Material

(11) DCN NO.: 20103-012

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications Section 02710	20103-TS-0001	0	
Technical Specifications Section 02710	20103-TS-0003	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Justification: The gradation requirements for the granular drainage material have been evaluated in response to a supplier's submittal request and to be consistent with previous OSDF cell construction (e.g., see Phase I DCN No. 1702-015).
Existing Condition: Standard M 43 gradation requirements for No. 78 coarse aggregate specified.
Proposed Change: Change the total percent (by weight) passing through U.S. sieve size ½-in. to 85 to 100. Specific changes to Section 02710 are presented on the following page.

(10) REQUESTOR: Kwasi Badu-Tweneboah

COMPANY: GeoSyntec

DATE: March 5, 2001

(12) CE / PE: SH WOLINSKY

DATE: 3/5/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES

(14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 3/5/01

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [X] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 3/5/01

PERFORMANCE GRADE: (17) 4 SBDR-2000-0027 SH WOLINSKY

(18) CONSTRUCTION CONCURRENCE DATE: APPLIES 3/05/01

Bill Zebich

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99

ECDC CONTROLLED COPY NO. C011

ORIGINAL

DCN NO. 20103-012
(page 2 of 2)

CHANGES TO TECHNICAL SPECIFICATION 02710 - GRANULAR DRAINAGE MATERIAL

Part 2.01B: Revise as follows: "Granular drainage material for the leachate collection system (LCS) drainage layer, leak detection system (LDS) drainage layer, protective layer in the Impacted Runoff Catchment Area, and cover drainage layer shall be classified as GP in accordance with the Unified Soil Classification System per ASTM D 2487, and shall meet the AASHTO M 43 modified gradation requirements for No. 78 coarse aggregate. The modified No. 78 coarse aggregate shall meet the following gradation (per ASTM C 136) requirements:

Sieve	Total Percent Passing (by weight)
¾ in.	100
½ in.	85 to 100
3/8 in.	40 to 75
No. 4	5 to 25
No. 8	0 to 10
No. 16	0 to 5

3/5/01

4556

RCI/DCN FORM **ORIGINAL**

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-842	(5) Pg 1 Of 1	(6) DATE 04/05/2001
(3) S/C TITLE: On-Site Disposal Facility (ODF) Phase III - Cell 1 Final Cover Construction		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Change to Non-Impacted Contouring Layer Thickness Tolerance	(11) DCN NO.: 20103-013	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications	20103-TS-0001	0	Section 02240, Pt. 3.08.A
Technical Specifications	20103-TS-0003	0	Section 02240, Pt. 3.08.A

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Field conditions require additional non-impacted contouring layer material be placed to meet design top of contouring layer elevations.
Existing Condition: Existing elevations based on current survey of top of select impacted layer in Cell 1 indicates the existing elevation is lower than the elevation grades surveyed last fall.
Proposed Change: Revise thickness tolerance specified for the non-impacted contouring layer in Part 3.08A to read as follows: "Construct the non-impacted contouring layer to within 0.0 to +0.1 feet of the thickness shown on the Construction Drawings. Construct the non-impacted contouring layer to no less than the thickness shown on the Construction Drawings." Top of contouring layer elevation grade tolerance remains the same as stated in the Technical Specifications.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	April 5, 2001	A. C. Snider for Samuel H. Wolinsky	4/09/2001

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

Revise Parts 3.03F, 3.03H and 3.03I to read as follows:
F. "Place the non-impacted contouring layer in two or more loose lifts with the first lift 10 inches ±1 inch thick. The loose thickness of subsequent lifts shall be 8 inches ± 1 inch."
H. " Prior to placing a succeeding lift of non-impacted contouring layer material over a previously compacted lift, thoroughly scarify the previous lift by discing, raking, or tracking with a bulldozer."
I. "Place the last lift of the non-impacted contouring layer to meet the minimum thickness and grades indicated on the Construction Drawings and this DCN. Meet the tolerance requirements of this Section."

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 4/9/01 Kwasi Badu-Tweneboah, GeoSyntec Consultants, Inc. [ ] FIT [X] FORM [ ] FUNCTION	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies A. C. Snider for Sam Wolinsky	DATE: 4/24/01
(18) CONSTRUCTION CONCURRENCE DATE: 04/24/01 PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)	(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. 011

DUPLICATE ORIGINAL

From: Kwasi Badu-Tweneboah

To: 'Vanarsdale, Chuck '; 'Wolinsky, Sam '; Kwasi Badu-Tweneboah

Cc: 'Snider, Anthony '; 'Kumthekar, Uday '

Subject: RE: Electronic File for Draft DCN on Contouring Layer Thickness

Sent: 4/6/2001 9:21 AM **Importance:** Normal

Gentlemen:
If the thickness of the contouring layer is going to be significantly greater than the 1 ft specified on the drawings, based on the new survey data, then we need to address the number of lifts and thicknesses required for placement and compaction. Presently, we only have two lifts for a 1-ft compacted lift. What if the thickness is now 1.5 ft or more?

Kwasi

-----Original Message-----
From: Vanarsdale, Chuck
To: Wolinsky, Sam; 'kwasib@geosyntec.com'
Cc: Snider, Anthony; Vanarsdale, Chuck; Kumthekar, Uday
Sent: 4/5/2001 4:41 PM
Subject: RE: Electronic File for Draft DCN on Contouring Layer Thickness

Sam,

Please find attached a revised version of DCN. This includes Uday's and my comments. Please insert the number in the Specs. of 3.08.A.(?) (See bold section)

Chuck

-----Original Message-----
From: Wolinsky, Sam
Sent: Thursday, April 05, 2001 4:09 PM
To: 'kwasib@geosyntec.com'; Vanarsdale, Chuck
Cc: Snider, Anthony; Wolinsky, Sam
Subject: Electronic File for Draft DCN on Contouring Layer Thickness

KWASI - Here's an electronic file of the Draft DCN I faxed to you earlier. Please review and send any comments you may have to Tony Snider and me. Thanks...SAM

<<dcn 20103-013.doc>>

From: Vanarsdale, Chuck [SMTP:Chuck.Vanarsdale@fernald.gov]

To: Wolinsky, Sam; 'kwasib@geosyntec.com'

Cc: Snider, Anthony; Vanarsdale, Chuck; Kumthekar, Uday

Subject: RE: Electronic File for Draft DCN on Contouring Layer Thickness

Sent: 4/5/2001 4:41 PM **Importance:** Normal

Sam,

Please find attached a revised version of DCN. This includes Uday's and my comments. Please insert the number in the Specs. of 3.08.A.(?) (See bold section)

Chuck

-----Original Message-----
From: Wolinsky, Sam
Sent: Thursday, April 05, 2001 4:09 PM
To: 'kwasib@geosyntec.com'; Vanarsdale, Chuck
Cc: Snider, Anthony; Wolinsky, Sam
Subject: Electronic File for Draft DCN on Contouring Layer Thickness

KWASI - Here's an electronic file of the Draft DCN I faxed to you earlier. Please review and send any comments you may have to Tony Snider and me. Thanks...SAM

dcn 20103-013.doc

000206

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 9	(6) DATE
20103	FSC-642		5-11-01

(3) S/C TITLE: OSDF Phase III

(11) RCI NO.: —

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: OMTA AMS ELEC. SERVICE

(11) DCN NO.: 20103-014

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
BULK DEBRIS STORAGE ELEC. LAYOUT	90X-5500-E-00549	Rev	
BULK DEBRIS STORAGE ELEC. DETAILS	90X-5500-E-00550	Rev	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [✓] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [✓] NOT REQUIRED

PROVIDE ELEC POWER TO NEW AREAS AROUND THE EXPANDED OMTA AREA

VOID

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE/PE	DATE:
Richard McGuire	Fluor Fernald	5/18/01	JOH GOETZ	05/18/01

(13) RESPONSE: FOR RCI, IS A DCN REQUIRED? [ ] NO [✓] YES (14) FOR DCN: [✓] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

THIS WORK WILL REQUIRE DWG CHANGES.

THIS DCN IS IN RESPONSE TO RES 4247

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: J. E. Kerl 5-17-01

[ ] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) J. E. Kerl DATE: 5-17-01

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE DATE: Richard E. McGuire 5/18/01

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C011

ORIGINAL

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 of 9	(6) DATE
20103	FSC-642		5-16-01

(3) S/C TITLE: OSDF Phase III

(11) RCI NO.: —

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: OMTA AMS ELEC. SERVICE

(11) DCN NO.: 20103-014

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
BULK DEBRIS STORAGE ELEC. LAYOUT	90X-5500-E-00549	Rev 0	
BULK DEBRIS STORAGE ELEC. DETAILS	90X-5500-E-00550	Rev 0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [✓] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [✓] NOT REQUIRED

PROVIDE ELEC POWER TO 4 NEW AMS AROUND THE EXPANDED OMTA AREA

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE/PE	DATE:
R. McGuire Richard McGuire	Fluor Fernald	5/18/01	DON GOETZ	05/18/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [✓] YES (14) FOR DCN: [✓] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

THIS WORK WILL REQUIRE DWG CHANGES.

THIS DCN IS IN RESPONSE TO RES 4247

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: J. E. Kerl 5-17-01

[✓] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) J. E. Kerl DATE: 5-17-01

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE DATE: Richard L. McGuire 5/18/01

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

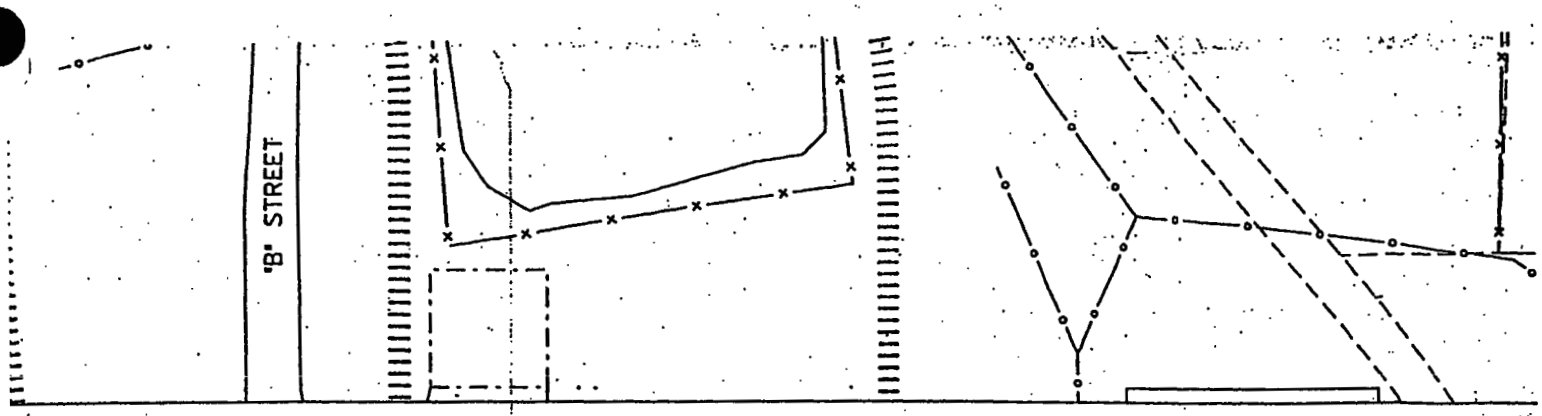
(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED ORIGINAL
COPY NO. C 011

4556
Res 4247



GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER (CU) WITH THWN INSULATION UNLESS OTHERWISE NOTED.
2. PRIOR TO DIGGING, CONSULT UNDERGROUND UTILITIES DRAWINGS 22C-5500-P-00660 AND 22C-5500-P-00668 (GRIDS 1 & 9) FOR THE LATEST UNDERGROUND UTILITY INFO. ON FILE.
3. DIG SETTING HOLES LARGE ENOUGH TO PERMIT USE OF POWER TAMPERS TO FULL DEPTH. PLACE EARTH IN MINIMUM 6 INCH LAYERS AND PACK TO 95% DENSITY PER ASTM D698. BANK EARTH 12" ABOVE GRADE.
4. NEW POLES SHALL BE 35 FEET, CLASS 2 SOUTHERN PINE, 100% TREATED WITH 5½ FEET MINIMUM BURIAL.
5. NEW AERIAL WIRING TO BE #4/0 AL QUADRAPLEX (3 INSULATED AND 1 BARE) ATTATCHED TO POLES WITH CHANCE #7911 UNIVERSAL MESSENGER HANGERS WITH MAX. 3 FEET CABLE SAG BETWEEN POLES. FOR POLE GUY, ANCHORING AND ATTACHMENT DETAILS SEE DRAWINGS 16X-5500-E-00105 AND 16X-5500-E-00106. INSTALL POLE GROUNDING SYSTEM AS SHOWN ON 16X-5500-E-00106.
6. MAINTAIN 1 FOOT SPACING BETWEEN EXISTING 480V WIRING AND NEW 240V WIRING.
7. FOR POLE COORDINATES FOR EXISTING POLES SEE DRAWING 22X-5500-E-00958.
8. AS BUILT LOCATION COORDINATES (NAD83) FOR PROPOSED POLES TO BE SUBMITTED TO CADD SERVICES UPON COMPLETION OF JOB.

REF. DWG. NO.
44X-5500-E-00363
90X-5500-E-00549
78X-4445-E-00029
78X-4445-E-00027
44X-5500-E-00366
44X-5500-S-00364

DWG 90X-5500-E-00549

DCN 20103-014
Page 2 of 9
000209

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	4247
BY:	JGK
DATE:	5-16-01
PAGE:	OF
REVISED:	

SUBJECT:

Mod. Notes

1) Install 7 New Poles - NW 81, 82, 83, 84, 85, 86, + 87
2) Install new 240V feeder from electrical panel in T191 on exting and new poles to air monitor stations
3) Four new air monitor location will be at poles NW 20, NW82, NW86, and NW29.
4) Remove existing conduit, wiring and hardware on pole to grade level
5) Install guys on the following poles - NE108, NW29, NW 82, NW85, and NW86.

Guy Wire Anchoring

Pole No	Anchors	Guys(s)	angle of Guy Wire to ground
NE108	1-12"	1-1/2"	60°
NE29	1-12"	1-1/2"	60°
NE 82	2-12"	2-1/2"	60°
NE 85	2-12"	2-1/2"	60°
NE 86	1-12"	1-1/2"	60°

DCN 20103-014
Page 3 of 9

DWG
90X-5500-E-00549

000210

FS-F-76 B (RE

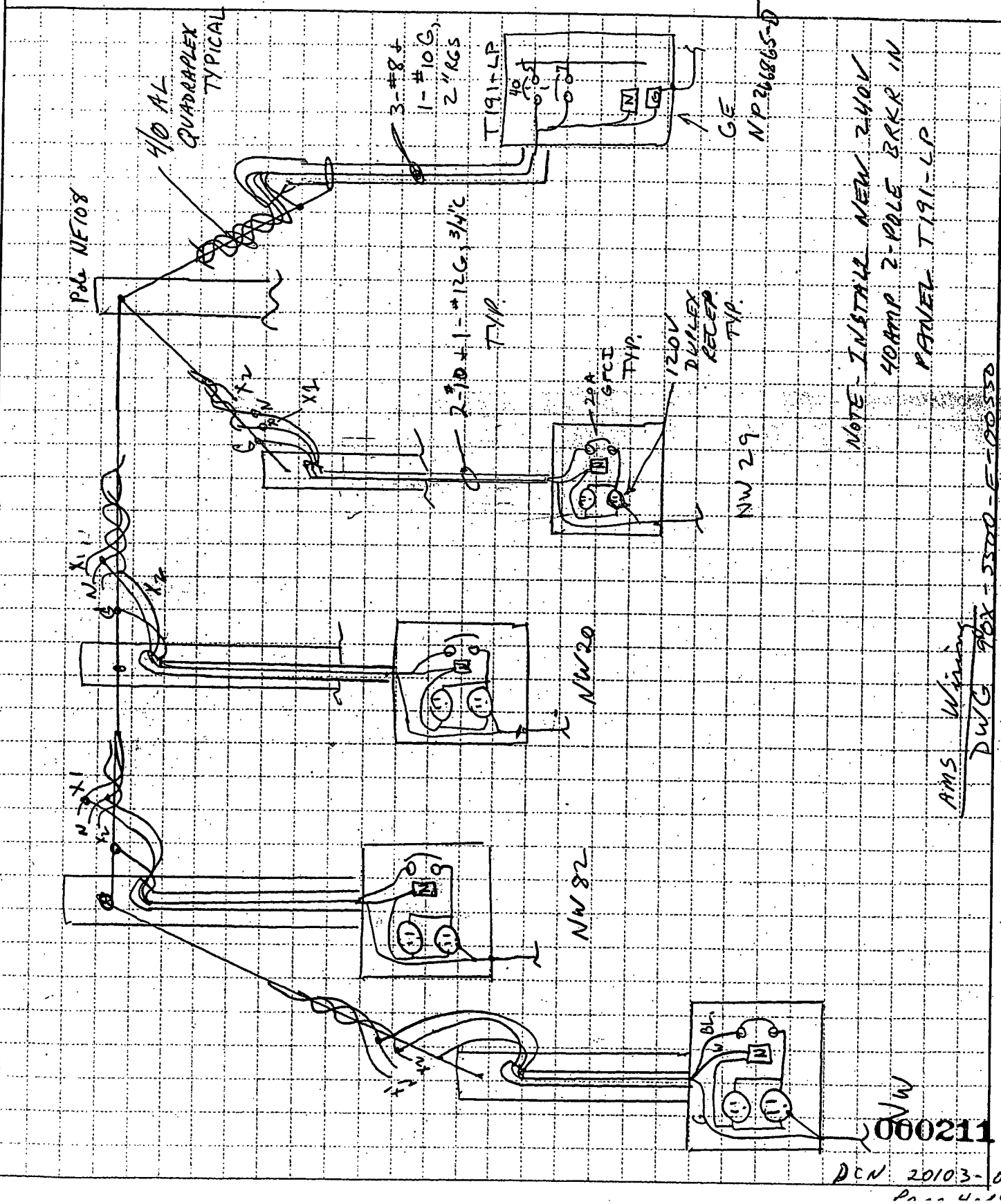
Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	4247
BY:	JEK
DATE:	5-17-01
PAGE:	OF
REVISED:	

SUBJECT:



000211

DCN 20103-014

FS-F-76 B (RE

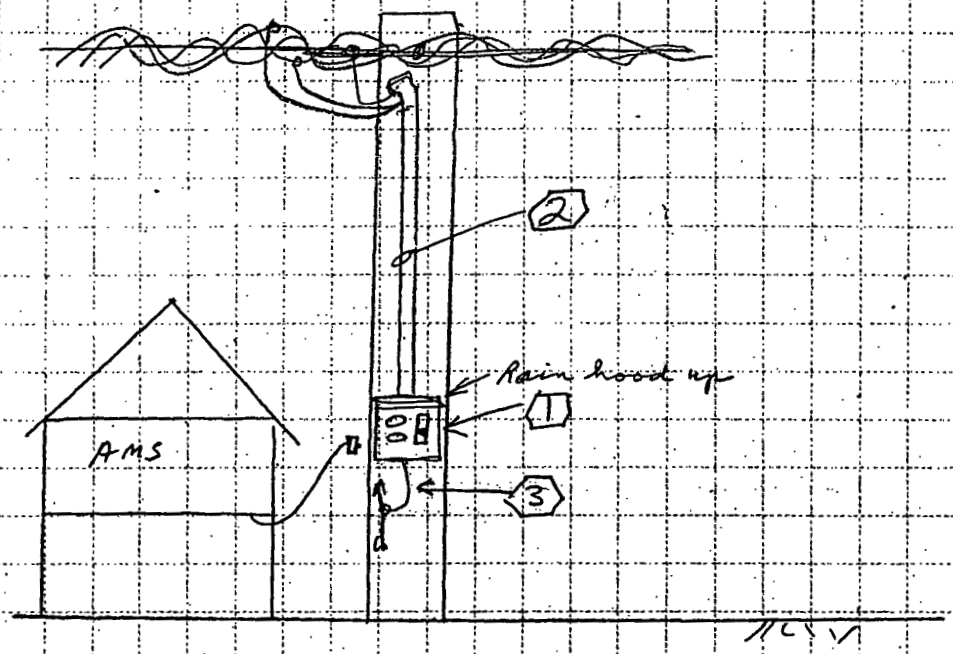
Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	4247
BY:	J.E.K
DATE:	5-17-01
PAGE:	OF
REVISED:	

SUBJECT:



C Elevation
AM Receptacle
TYP (4) Places

⬡ Elev C notes
1) Install a power outlet panel (Square D # PAK10C-1) onto the poles shown in the plan view.
2) Feed the power outlet panel from the 240 V. line with 2-#10 + 1-#12 G in a 3/4" C.
3) Connect panel ground to pole ground with #10 copper ground wire

GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER (CU) WITH THWN INSULATION UNLESS OTHERWISE NOTED.
2. USE STRUCTURAL CHANNEL TO SECURE ELECTRICAL EQUIPMENT.
3. TRAILER SHALL BE INSTALLED ACCORDING TO TRAILER TYPICAL INSTALLATION DRAWINGS 44X-5500-E-00363 AND 44X-5500-E-00366.

FS-F-78 B (RF

DCN 20103-014
DWG 90X-5500-E-00550
Page 5 of 9

000212

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 3	(6) DATE
20103	FSC-642		September 4, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III - Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Removal of OSDF Temporary Leachate Line & Equipment Decontamination Facility including Surrounding Soil

(11) DCN NO.: 20103-015

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawings: Leachate Conveyance System LTS Plan & Profile Data I & II	90X-6000-G-00057 & 00058	0	2 Reference Drawings
Drawing: OSDF Equipment Decontamination Facility	90X-6000-G-00043	0	Reference Drawing
Drawing: Interim Leachate Conveyance Sys. Plan & Profile Sht 3 of 3	90X-5500-G-00539	1	Reference Drawing
Sketch: OSDF-Phase III Temp Leach Line & Eqpmt Wash Drain Removal	20103-SK-027	1	FSC-642 CO#6 Sketch
Sketch: OSDF-Phase III Equip Wash Pad & Access Control Fac Removal	20103-SK-029	1	FSC-642 CO#6 Sketch

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The Temporary Leachate Line between Stations 9+10 & 28+00, Equipment Decontamination Facility (EDF), EDF drain piping, an. Interim Leachate Conveyance Sys (ILCS) segment, & the surrounding soil must be removed to perform OSDF construction over a certified area.
Existing Conditions: The section of Temporary Leachate Line addressed by this DCN, has been deemed defective and is currently abandoned place. The ILCS segment is abandoned. The EDF & its drainage piping and surrounding soil must be removed to permit Liner 4 construction.
Proposed Change: Excavate/remove/backfill: EDF, EDF drain piping, Temporary Leachate Line between Stations 9+10 & 28, and approx. 325 feet of Interim Leachate Line as shown on revised sketches 20103-SK-027 & -029. Also, cancel sketch 20103-SK-026 (FSC-642 CO#6).

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE:	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	9/13/01	Samuel H. Wolinsky	9/13/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 9/13/01
KWASI BADU-TWENEBOAH, CHEMENGTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE. (DCN ONLY) DATE: 9/13/01
PERFORMANCE GRADE: (17) 4; SBDR-2000-0027 Applies
SH Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED? [X] YES [ ] NO (19)
9/13/01
FRANK L. FLACK

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED
COPY NO. C-01

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ORIGINAL

4556

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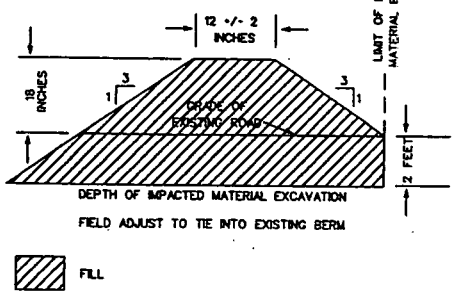
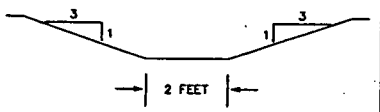
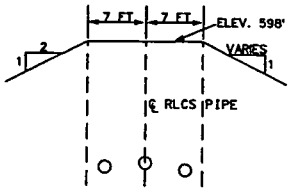


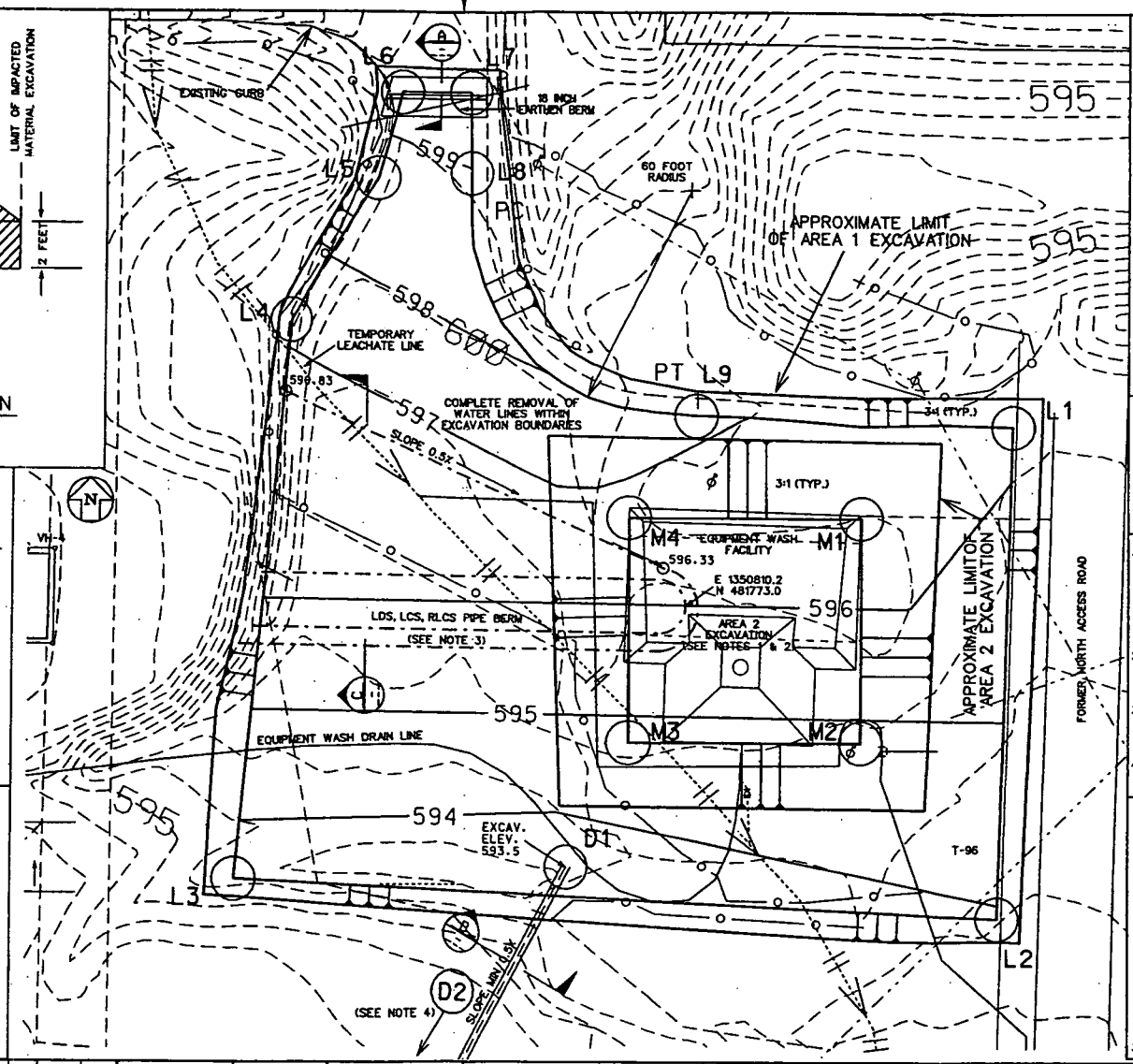
A EARTHEN BERM SECTION
NTS



B DRAINAGE DITCH SECTION
NTS



C PIPE BERM SECTION
NTS



AREA 1
2 FOOT DEEP EXCAVATION INNER BOUNDARY

ID	EASTING	NORTHING	EXCAVATION GRADE ELEV
L1	1350895.4	481819.3	596.2
L2	1350891.7	481692.5	594.0
L3	1350692.9	481702.5	594.0
L4	1350707.1	481846.0	597.3
L5	1350729.4	481882.0	598.7
L6	1350735.5	481903.9	599.3
L7	1350753.6	481903.9	599.5
L8	1350753.9	481883.4	598.9
L9	1350812.9	481821.9	597.3

AREA 2
6 FOOT DEEP EXCAVATION INNER BOUNDARY

ID	EASTING	NORTHING	EXCAVATION GRADE ELEV.
M1	1350855.9	481795.6	592.9
M2	1350855.9	481737.5	591.8
M3	1350795.6	481737.5	591.8
M4	1350795.6	481795.6	592.9

DRAINAGE DITCH POINTS

ID	EASTING	NORTHING
D1	1350779.7	481705.6
D2	1350677.4	481534.6

NOTES:

FOR REMOVAL OF TEMPORARY LEACHATE TRANSMISSION LINE AND EQUIPMENT WASH DRAIN LINE SEE SKETCH 20103-SK-027.

EXCAVATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02205 (IMPACTED MATERIAL EXCAVATION).

AFTER EXCAVATION/FILL PLACEMENT ARE COMPLETE, APPLY CRUSTING AGENT TO DISTURBED AREAS PER TECHNICAL SPECIFICATION SECTION 02930.

KEYED NOTES:

1) AREA 2 TO BE FILLED WITH CERTIFIED MATERIAL TO MATCH SURROUNDING AREA 1 GRADES AND COMPACTED PER TECHNICAL SPECIFICATION 02200. DO NOT FILL AREA 2 FOR AT LEAST TEN DAYS AFTER COMPLETION OF EXCAVATION TO ALLOW FOR CERTIFICATION SAMPLING (BY OTHERS).

2) PLACE CERTIFIED, COMPACTED FILL IN AREA 2 IN ACCORDANCE WITH NOTE 1. THEN EXCAVATE TRENCH FOR PIPE (SEE SKETCH 20103-SK-30)

3) PLACE CERTIFIED, COMPACTED FILL FOR PIPE BERM PER TECHNICAL SPECIFICATION 02200 AFTER CERTIFICATION IS RECEIVED.

4) DO NOT EXCAVATE DRAINAGE DITCH UNTIL BOTH AREAS HAVE BEEN CERTIFIED.

LEGEND:

- 595 — EXCAVATION CONTOURS
- EXCAVATION BOUNDARY
- PIPE BERM FILL
- DRAINAGE DITCH
- EXISTING LEACHATE TRANSMISSION LINE (WITH FLOW ARROW)
- M2 COORDINATE LOCATION POINT

SCALE
30 15 0 30 FEET

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
2	REVISED EXCAVATION DEPTHS, FILL AND DRAINAGE	9/06/01	JLE		
1	REVISED FOR CONSTRUCTION	5/21/01	LM		
0.	ISSUED CERTIFIED FOR CONSTRUCTION	5/22/01	LM		

APPROVALS

CIVIL & STR.		SAFETY ENG.	
ELECTRICAL		MAINTENANCE	
ENGINEER		FIRE PROTECT.	
INSTRUMENT		WASTE MANAGE.	
MECHANICAL		SECURITY	
		PROJECTS	
CHECKED		QUALITY	
APPROVED		CONSTRUCTION	

Fernald Environmental Management Project

FLUOR FERNALD, INC.

U.S. DEPARTMENT OF ENERGY

ON-SITE DISPOSAL FACILITY PHASE III

EQUIPMENT WASH PAD AND ACCESS CONTROL FACILITY EXCAVATION PLAN

PROJ. 20103
DATE 9/06/2001
DRAWN LM/JLE

20103-SK-029 | 2

DCN 20103-015, PAGE 3

FILE NAME: V:\OSDF\LEACHATE\AS-BUILT_05_01\WASHPAD.DGN

000213

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 10	(6) DATE
20103	FSC-642		June 20, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III - Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Addition of Monitoring Devices for Cell 1 Final Cover

(11) DCN NO.: 20103-016

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing: Final Cover Grading Plan	90X-6000-G-00302	1	Sheet G-7

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER [X] NON-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The OU5 ROD committed DOE to a minimum of 30 years of OSDF monitoring and maintenance. DOE has further committed to a goal of ensuring FEMP stewardship activities in perpetuity. The addition of monitoring devices for the Cell 1 Final Cover is an early step in a technology demonstration helping to achieve this goal.
Existing Conditions: The OSDF Cell 1 Final Cover design does not now contain a remote monitoring capability for the final cover system.
Proposed Change: Add the following monitoring devices per the Attachment: ground penetrating radar targets, settlement plates, soil water status nests, and pressure transducer risers. A forthcoming DCN will add cables and instrumentation for these monitoring devices.

(10) REQUESTOR	COMPANY:	DATE:	(12) CE / PE	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	6/21/01	Samuel H. Wolinsky	6/21/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

Provide as-built on Drawing No. 90X-6000-G-00302 "red line" drawing.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 6/22/01
KWASI BADU-TWENEBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 6/22/01
PERFORMANCE GRADE: (17) 4; SBDR-2000-0027 Applies For Sam Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE: 6/22/01
Bill Zebich
PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

Bill Zebich 7/12/01

VOID 7/12/01

Amber Wolinsky for Sam Wolinsky 07/12/01

F-4259
5: 10/01/99: ED-12-000

EGDC CONTROLLED
COPY NO 001

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000214

ORIGINAL

ENTERED

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 10	(6) DATE
20103	FSC-642		June 20, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III - Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Addition of Monitoring Devices for Cell 1 Final Cover

(11) DCN NO.: 20103-016

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing: Final Cover Grading Plan	90X-6000-G-00302	1	Sheet G-7

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The OU5 ROD committed DOE to a minimum of 30 years of OSDF monitoring and maintenance. DOE has further committed to a goal of ensuring FEMP stewardship activities in perpetuity. The addition of monitoring devices for the Cell 1 Final Cover is an early step in a technology demonstration helping to achieve this goal.
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(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE:	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	6/21/01	Samuel H. Wolinsky	6/21/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

Provide as-built on Drawing No. 90X-6000-G-00302 "red line" drawing.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 6/22/01
KWASI BADU-TWENEBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETED (DCN ONLY): For Sam Wolinsky DATE: 6/22/01
PERFORMANCE GRADE: (17) 4; SBDR-2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE: 6/22/01 Bill Zebick
PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED
COPY NO. C-01 of 0215

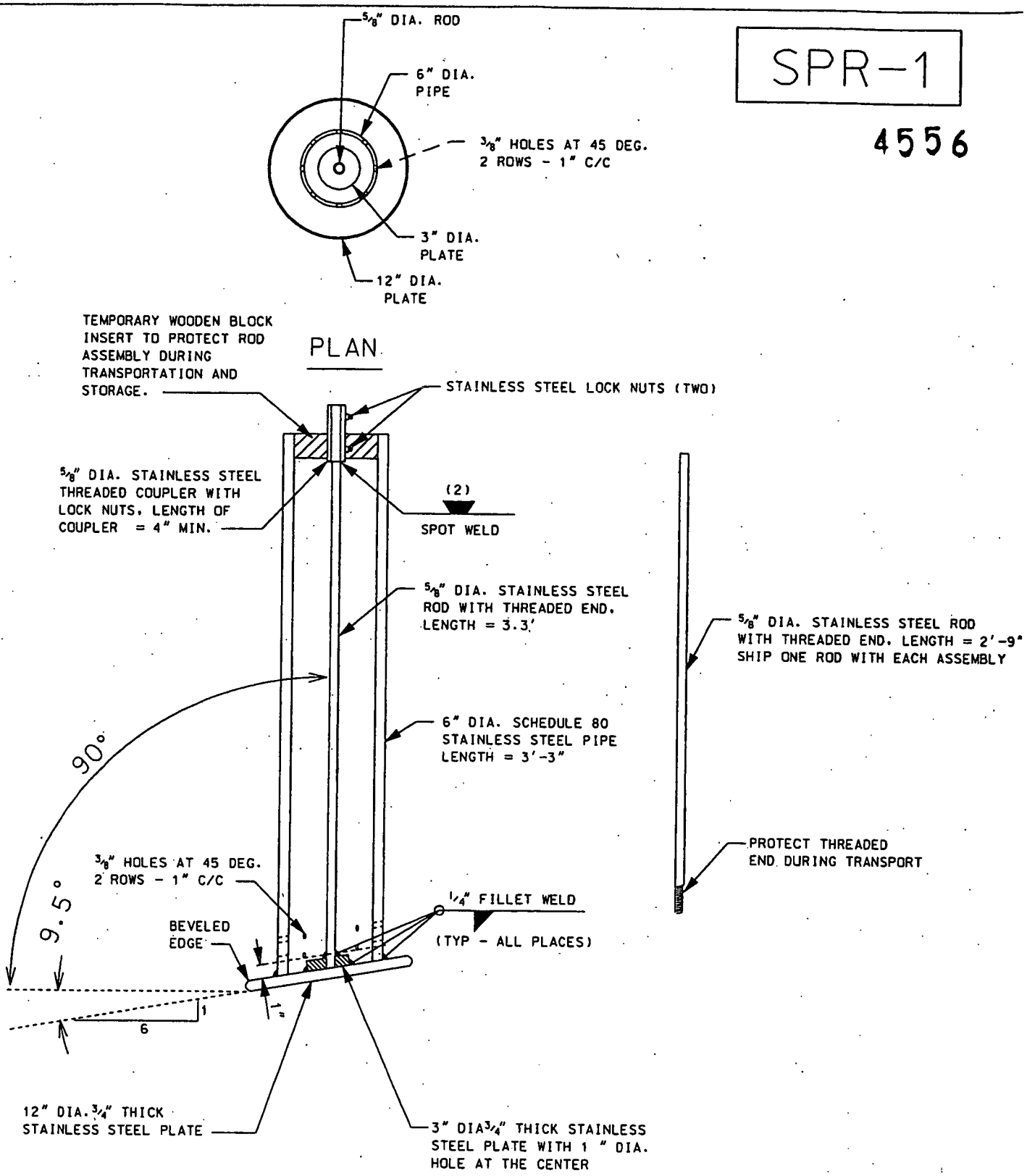
ATTACHMENT
TO
DCN 20103-016

This sheet contains a list of the installation and shop drawings which are attached to this design change notice.

Drawing/Detail Type	Drawing/Detail No.	Drawing/Detail Title
Installation	90X-5500-G-00577	OSDF - Cell 1 Final Cover Monitoring Devices Installation Details
Fabrication	SPR-1	SPR - Settlement Plate & Rod Assembly (Typ.)
Fabrication	PT-1-A	Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	PT-1-B	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	PT-1-C	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SP-1A	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SP-1B	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SW-1	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail

SPR-1

4556



NOTE: SEQUENTIALLY LABEL EACH ASSEMBLY FROM SPR-1-01 TO SPR-1-05.

STAINLESS STEEL PLATES, PIPE AND ROD SHALL BE ANSI A304.

000217

SPR- SETTLEMENT PLATE & ROD ASSEMBLY (TYP.)

(5 REQUIRED)

DCN 20103016
Pg 3 of 10

(OSK-O DGN 6/18/01)

PT-1-A
8 Pcs.

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

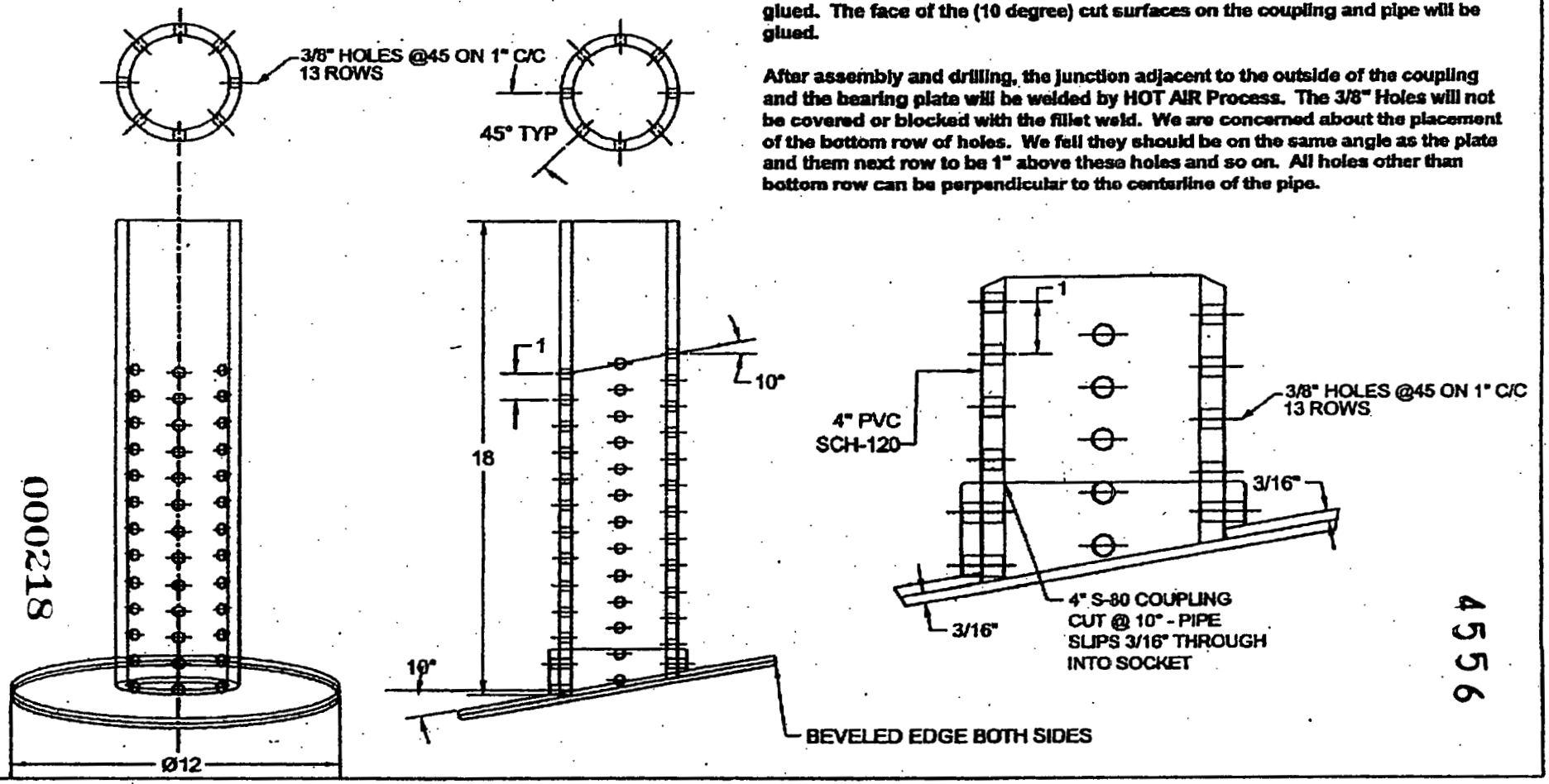
2) LABEL EACH PIECE "PT-1-A"

Specifics of PT-1
As described in offer two (2) 3/16" thick sheets will be glued together to form one 3/8" thick disk.

This assembled disk will have an elliptical socket to accept 4.50" OD PVC Pipe. The PVC coupling section shown was added to provide additional bearing surface. This coupling piece will be glued to the outside of the 4" pipe.

In addition, the pipe stub setting in the socket on top half of bearing plate will be glued. The face of the (10 degree) cut surfaces on the coupling and pipe will be glued.

After assembly and drilling, the junction adjacent to the outside of the coupling and the bearing plate will be welded by HOT AIR Process. The 3/8" Holes will not be covered or blocked with the fillet weld. We are concerned about the placement of the bottom row of holes. We fell they should be on the same angle as the plate and them next row to be 1" above these holes and so on. All holes other than bottom row can be perpendicular to the centerline of the pipe.



000218

DCN 20103016
P6 4 of 10

4556

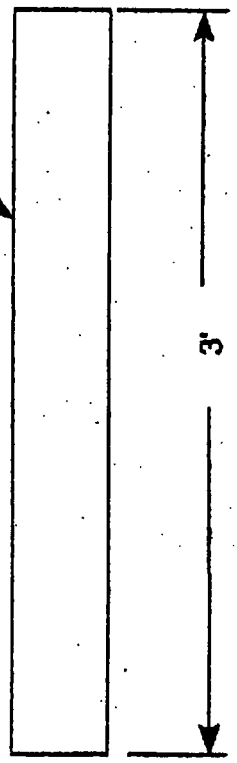
SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

4556

PT-1-B
16 Pcs.

4" SCH 80 PVC COUPLING (SLIP X SLIP)

4" DIA SCH 120 PVC SPOOL PIPE



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

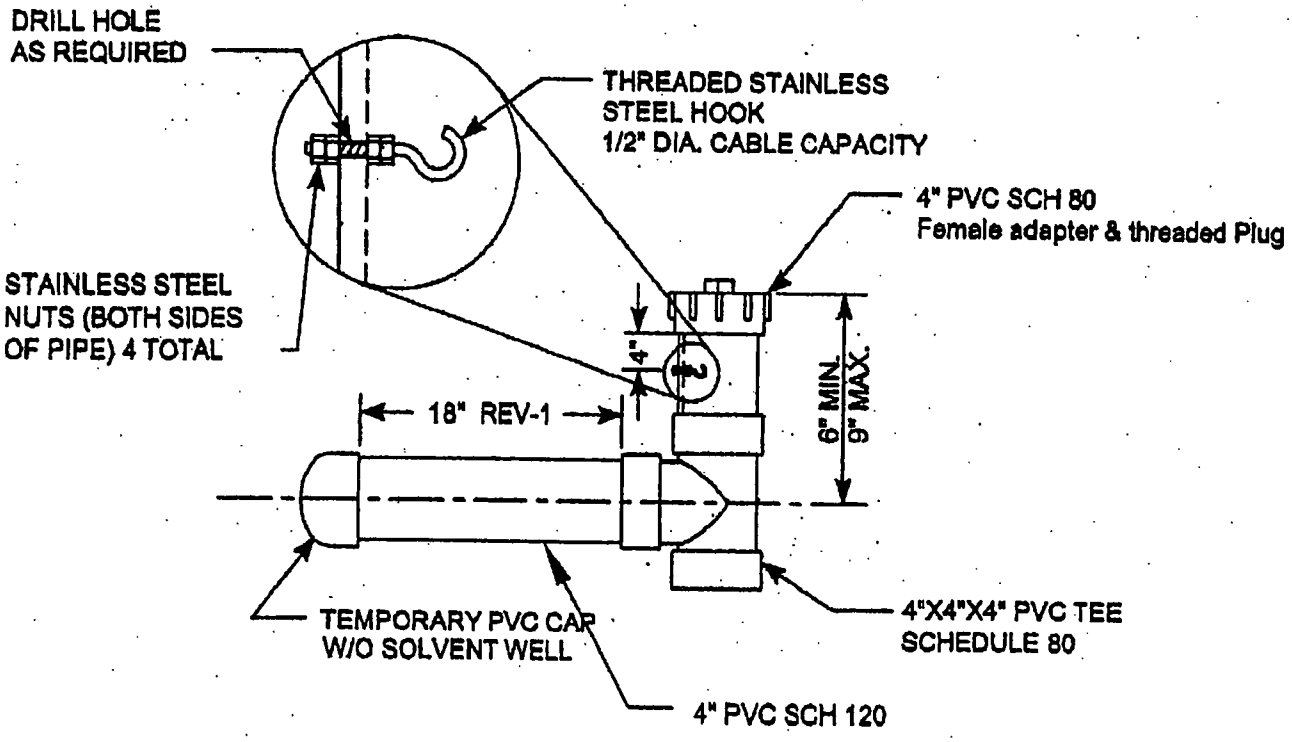
2 LABEL EACH PIECE "PT-1-B"

000219

DCN 20103-016
Pg 5 of 10

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

PT-1-C
8 Pcs.



NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

2) LABEL EACH PIECE "PT-1-C"

000220

REVISIONS:
1 CHANGED FROM 12" TO 18" 06/19/2001 MARTY PROCHASKA

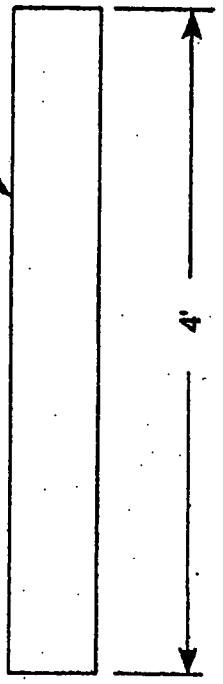
DCN 20103-016
pg 6 of 10

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

SP-1A
5 Pcs.

4" SCH80 PVC COUPLING (SLIP X SLIP)

4" DIA SCH 120 PVC SPOOL PIPE



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

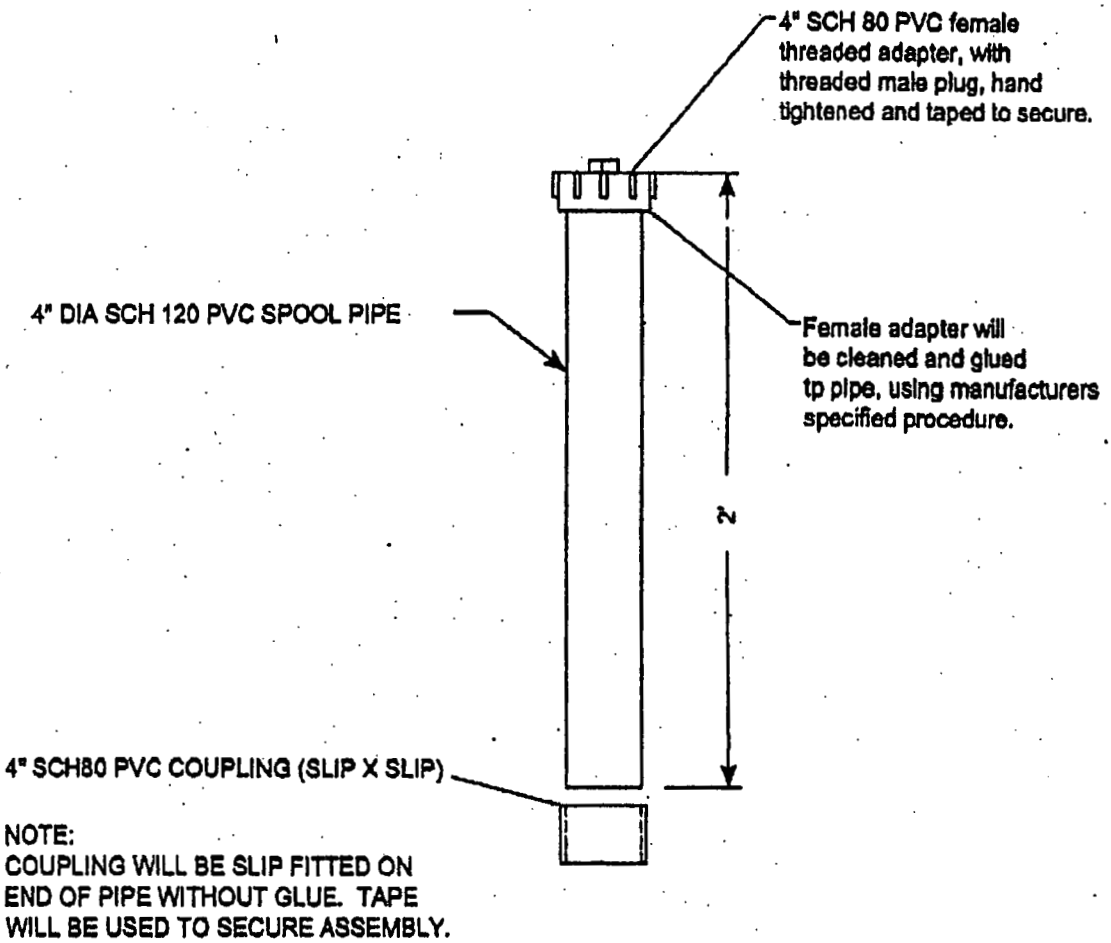
NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "SP-1A"

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

SP-1B
5 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "SP-1B"

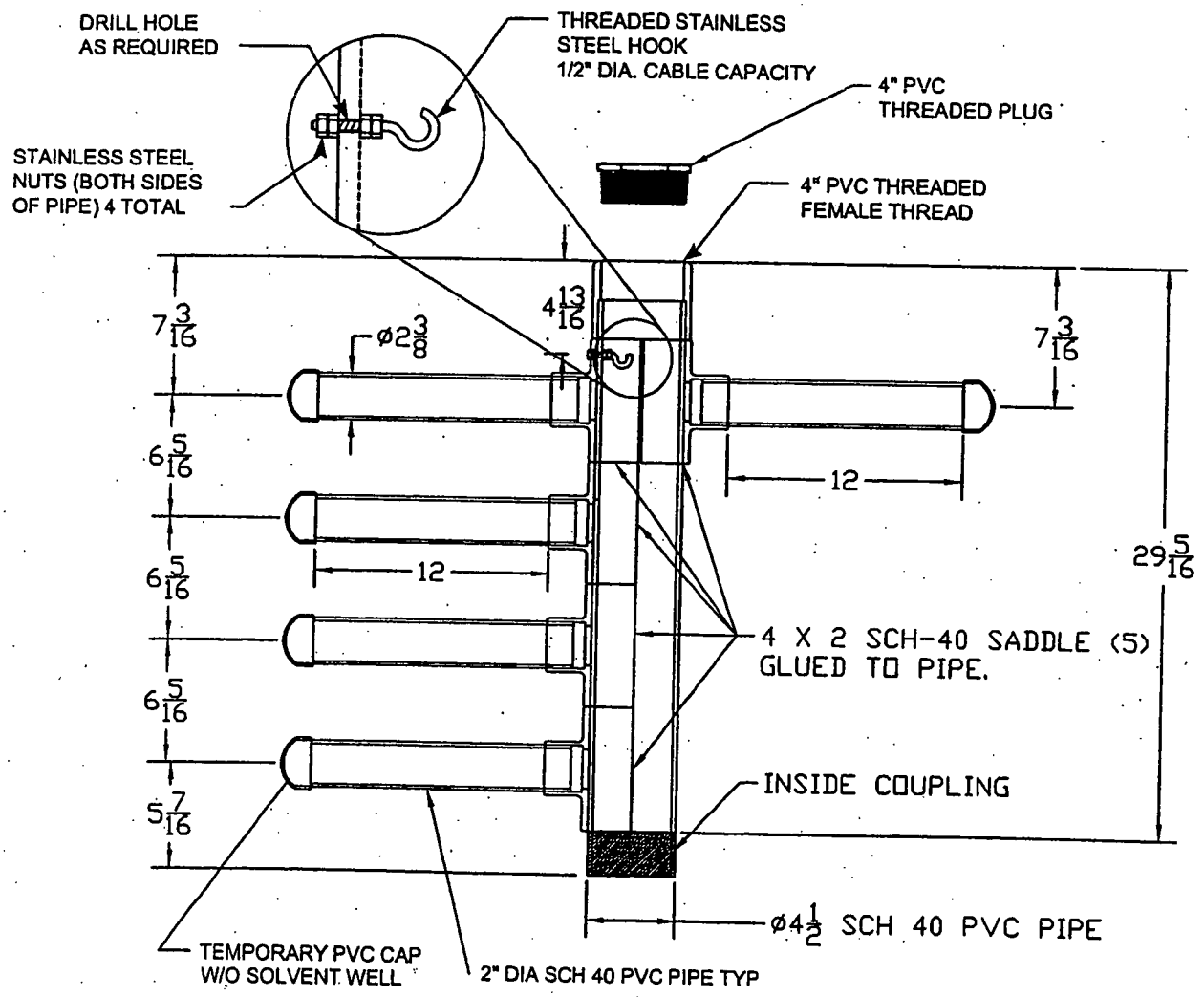
000222

DCN 20103-016
PS 8 of 10

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

SW-1

11 Pcs.



NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

2) LABEL EACH PIECE 'SW-1-01 THRU SW-1-11'

REVISIONS:
06/18/2001 SCHEDULE 40 CROSS AND TEE'S ALONG WITH 4X2 BUSHING WERE REPLACED WITH SADDLE ADAPTERS ALLOWING OVERALL HEIGHT TO BE REDUCED FROM 38.5' TO ABOUT 29'

DCN 20103-016
PG 9 of 10

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 6	(6) DATE
20103/4272			7-3-01

(3) S/C TITLE:

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: ELEC. SERVICE TO TRAILER T-90 AND T125

(11) DCN NO.: 20103-017

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
DWG	90X-6000-E-00259	0	
"	90X-5500-E-00549	0	
"	90X-5500-E-00550	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

PROVIDE ELEC. POWER TO THE RELOCATED TRAILERS

(10) REQUESTOR:	DATE:	(12) CE / PE	DATE:
J.E. KERL	7-3-01	J Kell Ellis	05/07/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

DWG UPDATES

VOID

James E. Kerl 7-3-01

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerl 7-3-01

[X] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC 21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) J Kell Ellis DATE: 07/05/01

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE: 07/05/01 J Kell Ellis

PURCHASE REQUISITION REQUIRED: [ ] YES [ ] NO (19)

(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

000224

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C011

ORIGINAL

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 6	(6) DATE
20103 / 4272			7-3-01

(3) S/C TITLE:

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: ELEC. SERVICE TO TRAILER T-90 AND T125

(11) DCN NO.: 20103-017

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
DWG	90X-6000-E-00259	0	
"	90X-5500-E-00549	0	
"	90X-5500-E-00550	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

PROVIDE ELEC. POWER TO THE RELOCATED TRAILERS

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
J.E. KERL	FLUOR FERNALD	7-3-01	J Kell Ellis	05/07/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

DWG UPDATES

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerl 7-3-01

[✓] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC 21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) J Kell Ellis DATE: 07/05/01

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE: 07/05/01 J Kell Ellis

PURCHASE REQUISITION REQUIRED: [ ] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:

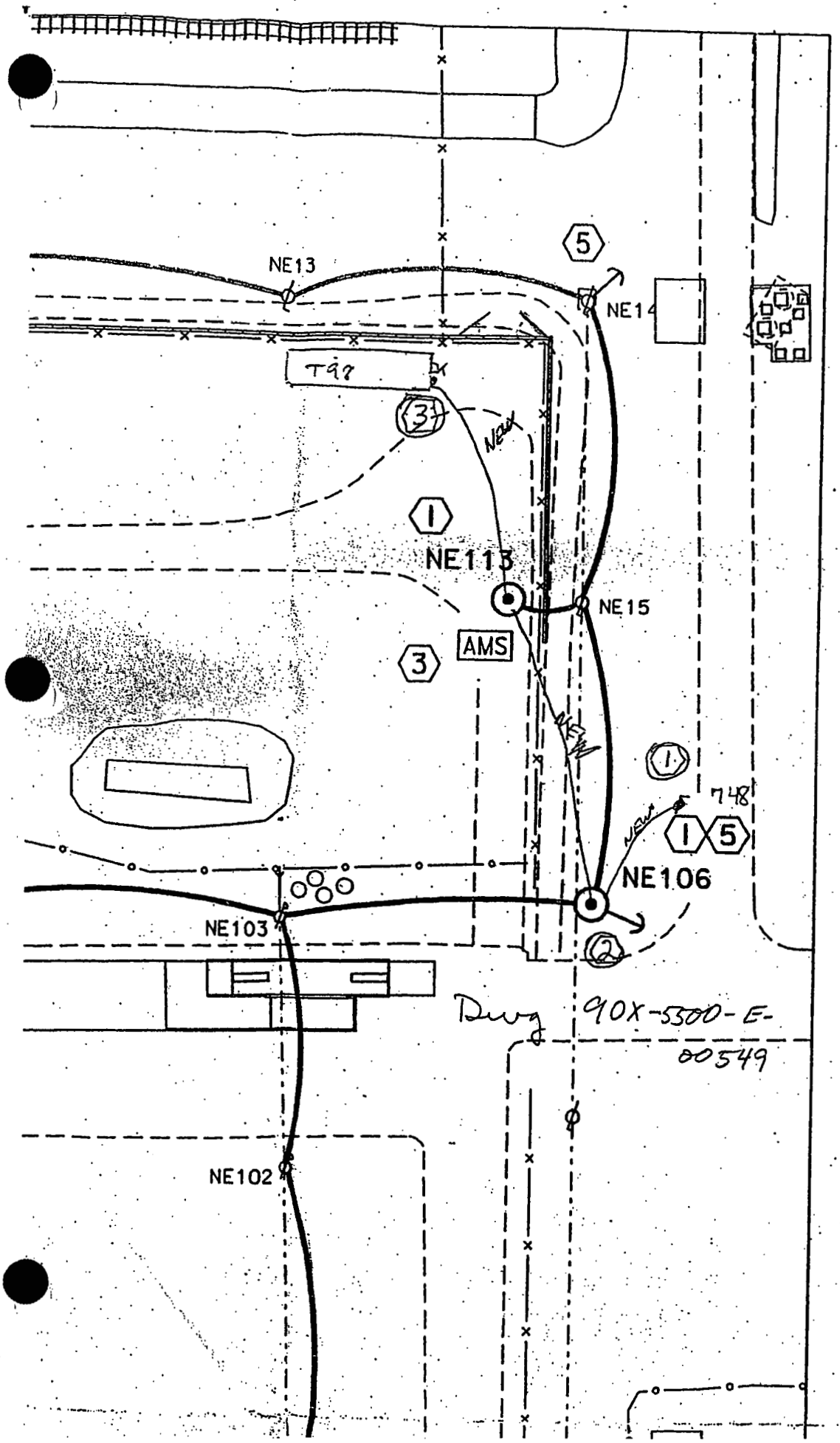
(SIGNOFF BY CE OR PE) DATE:

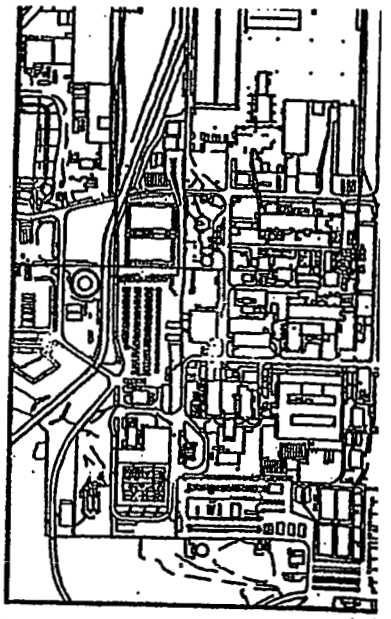
000225

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C 011

ORIGINAL





Page 2 of 6
20103-017

Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	
BY:	JKK
DATE:	7-3-01
PAGE:	OF
REVISED:	

SUBJECT:

Construction Notes

1. Install new 480V feeder from 200 A fused disconnect switch on pole 748 to pole NE106, NE113 and to trailer T98.
2. Repower 100 A fused disconnect switch on pole NE106
3. Power existing 100 A. disconnect switch at T98. Maintain aerial cable 15 feet above grade at T98 and connect aerial cable on Pole NE113 at a min. of 30 feet above grade.

General Notes

1) See dwg 90X-6000-E-00259 for wiring and conduit details on pole 748 and single line
2) All wiring shall be copper with THWN insulation unless otherwise stated.
3) Maintain 1 foot spacing between existing 480 V. wiring and new 480V wiring on poles.
4) For pole guy, anchoring and attachment details see drawings 16X-5500-E-00105 and 16X-5500-E-00106
5) Use structural channel to secure electrical equipment
6) Trailer(s) shall be installed according to trailer typical installation drawings 44X-5500-E-00363, -5-00364, and -E-00366

Page 3 of 6

Notes for Dwg 90X-5500-E-00549 T98 Installation.

20103-017

000227

FS-F-76 B (REV.

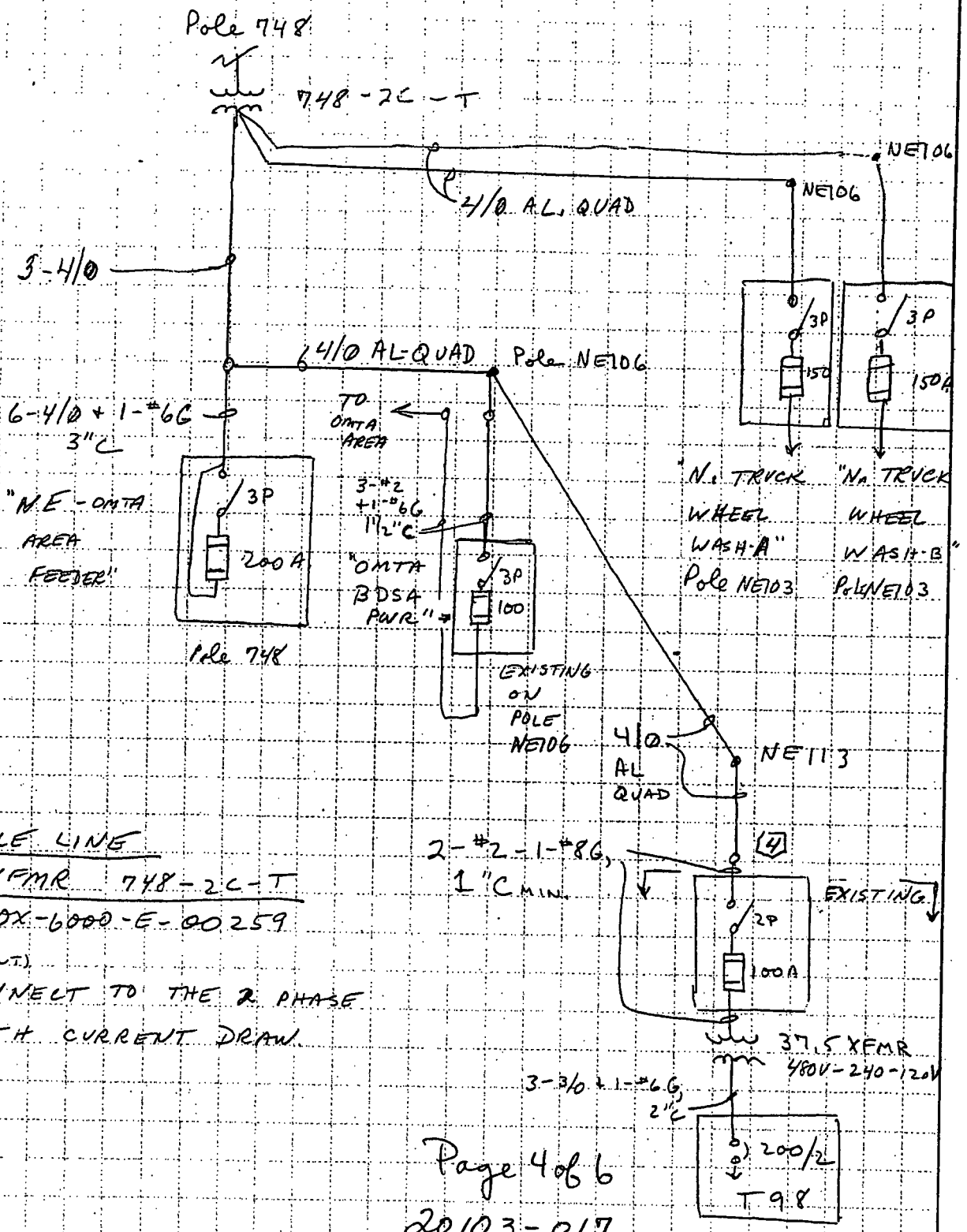
Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	
BY:	JK
DATE:	7-3-01
PAGE:	OF
REVISED:	

SUBJECT:



SINGLE LINE
FOR XFMR 748-2C-T
DWG 90X-6000-E-00259

NOTES (CONT.)
4. CONNECT TO THE 2 PHASE WITH CURRENT DRAW.

Page 4 of 6
20103-017

000228

FS-F-78 B (REV.

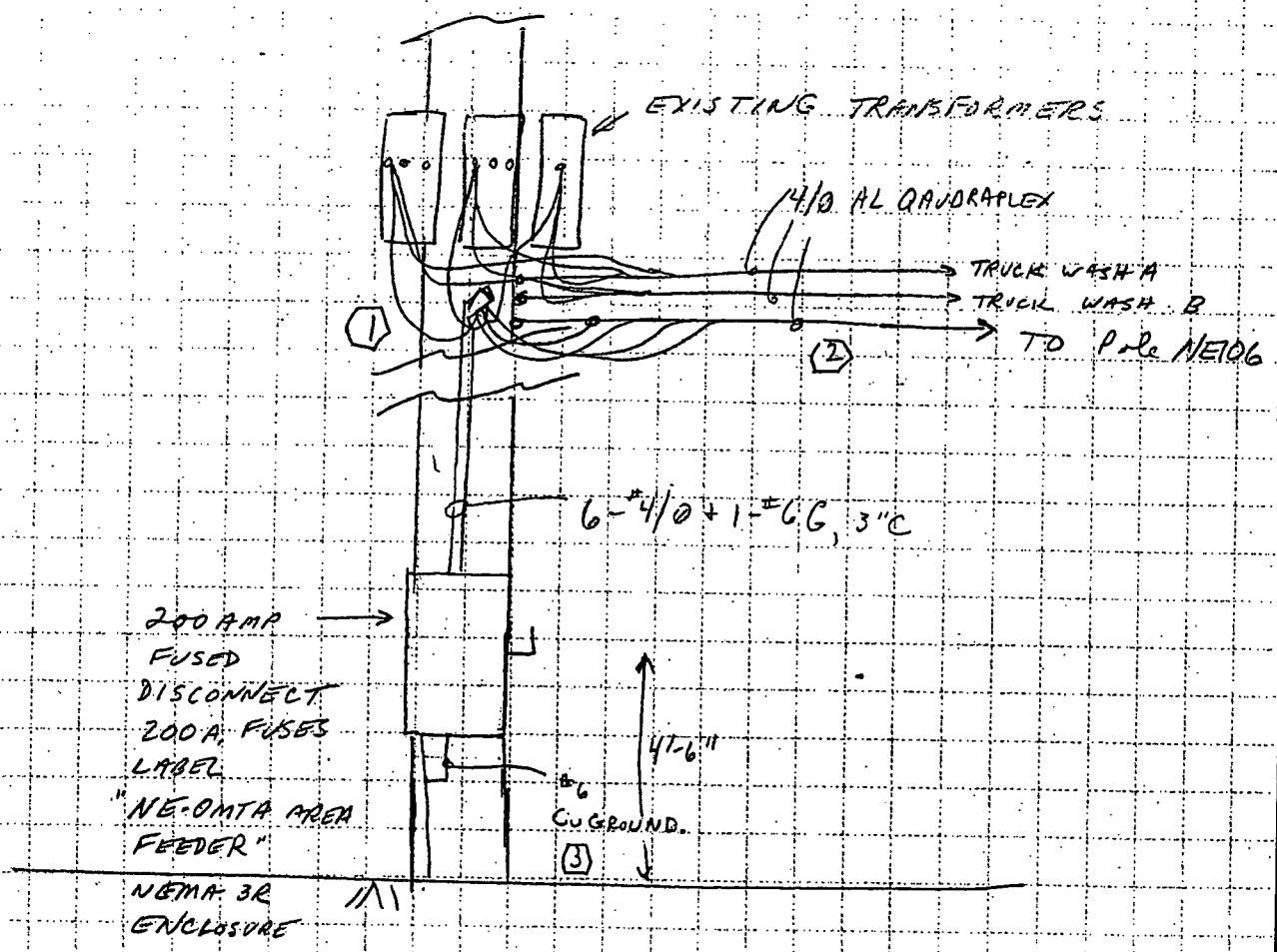
Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	
BY:	JGK
DATE:	7-3-01
PAGE:	OF
REVISED:	

SUBJECT:

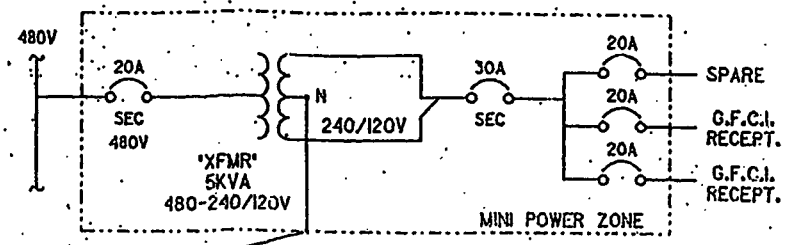


Pole 748
Details
DWG 90X-6000-E-00259

1. INSTALL NEW 200A 3 POLE 480V FUSED DISCONNECT ON POLE 748.
2. POWER SWITCH WITH FEEDER FROM XFMR 748-2C-T AND FEED NEW FEEDER TO OMTA BDSA SWITCH ANT T98.
3. CONNECT GROUND WIRE TO POLE GROUND SYSTEM WITH APPROVED GROUND CLAMP.

FS-F-78 B (REV

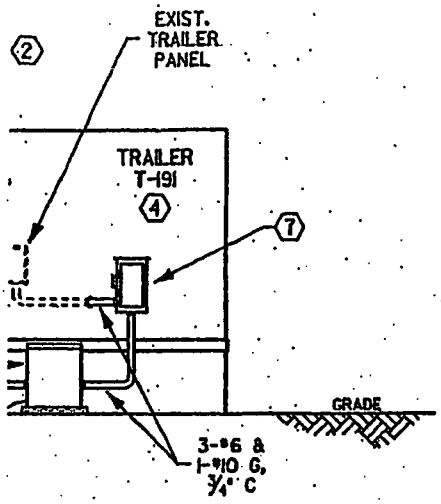
4556

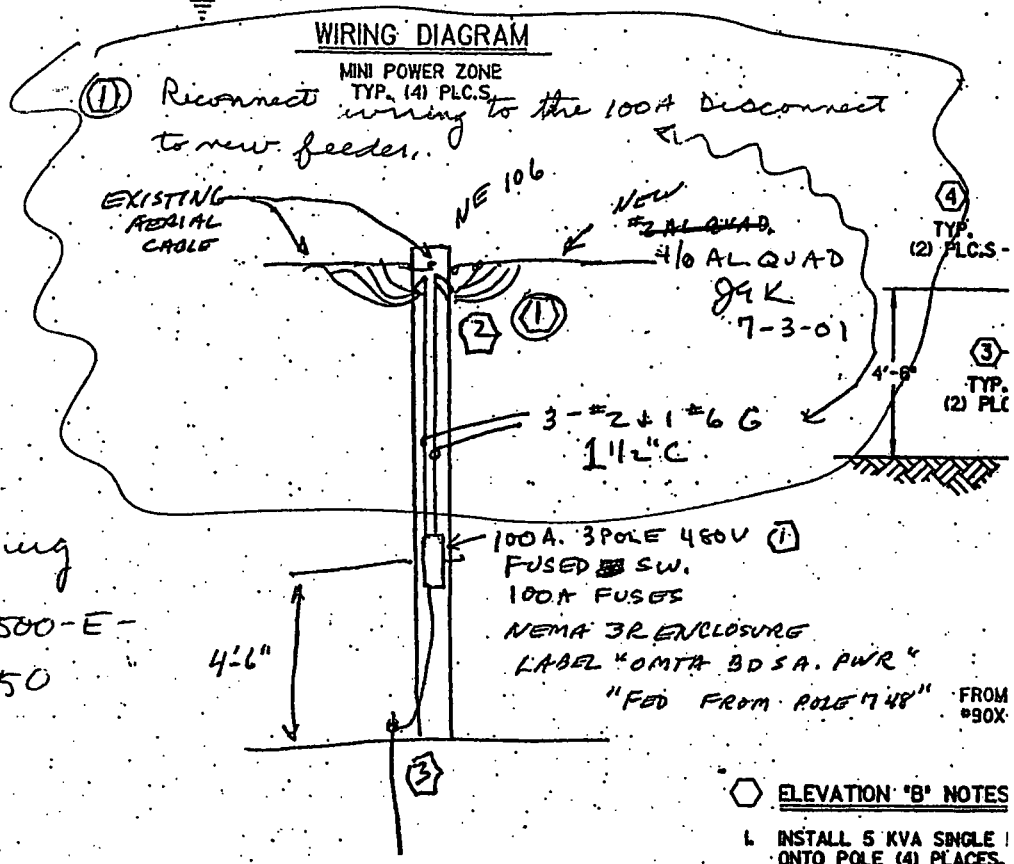


WIRING DIAGRAM

MINI POWER ZONE
TYP. (4) PLC.S

(1) Reconnect wiring to the 100A Disconnect to new feeder.





Dwg
90X-5500-E-
00550

TRAILER T-191. (ONE PHASE WILL
NGLE PHASE).

NDE.

DER TO 5/8" x 8' GROUND ROD.

LER TYPICAL INSTALLATION DRAWINGS

TCH WITH 40 AMP FUSES - LABEL

MOUNT TRANSFORMER WITH 2" PRECAST

TCH WITH 60 AMP FUSES - LABEL

N.

ELEV. C.

1. INSTALL NEW 3POLE 480V FUSED SWITCH WITH 100A FUSES IN NEMA 3R ENCLOSURE
2. POWER SWITCH WITH NEW AERIAL FEED FROM POLE 748 REPOWER EXISTING AERIAL FEEDER.
3. INSTALL 5/8"x8' LONG CU GROUND ROD WITH 1-#6 CU GROUND WIRE.

ECDC CONTROLLED
COPY NO.
463

ELEVATION 'B' NOTES

1. INSTALL 5 KVA SINGLE
ONTO POLE (4) PLACES.
2. FEED MINI POWER ZONE
3. INSTALL SINGLE GANG C
WEATHER PROOF COVER
4. FEED DUPLEX RECEPTAC
20 AMP CIRCUIT BREAKE
5. INSTALL 5/8" x 8' LONG

Page 6 of 6
20103-017

GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER
2. USE STRUCTURAL CHANNEL TO
3. TRAILER SHALL BE INSTALLED
44X-5500-E-00363 AND 44X-

000230

DCN NO.	DATE	DWN. BY	APPD.	REF. DWG. NO.
				44X-5500-E-00363
				16X-5500-E-00106
				16X-5500-E-00105
				22X-5500-E-00958
				22C-5500-P-00668
				22C-5500-P-00660
DCN NO. 20102-108	1/5/01	SJS	MLB	90X-5500-E-00549
NS				

NOTE:
FLUOR FERNALD CADD DRAWING. DO NOT REVISE MANUALLY.

CONFIGURATION MANAGEMENT DRAWING — YES X NO
SYSTEMS, STRUCTURES OR COMPONENTS DEPICTED ON THIS DRAWING ARE UNDER CONFIGURATION MANAGEMENT CONTROL. SEE NOTES.
J. E. Kirk 4-26-00
COGNIZANT ENGINEER DATE

APPROVALS

CIVIL & STR.			SAFETY ENG.	
ELECTRICAL	J. E. Kirk	4/26/00	MAINTENANCE	
ENGINEER			FIRE PROTECT.	
INSTRUMENT			WASTE MANAGE	
MECHANICAL			SECURITY	
			PROJECTS	
CHECKED	MLB			
APPROVED	McPaul	4/26/00		

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 10	(6) DATE
20103	FSC-642		JULY 12, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]

(4A) RCI/DCN TITLE: Addition of Monitoring Devices for Cell 1 Final Cover

(11) DCN NO.: 20103-018

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing: Final Cover Grading Plan	90X-6000-G-00302	1	Sheet G-7

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [x] NOT REQUIRED

Justification: The OU5 ROD committed DOE to a minimum of 30 years of OSDF monitoring and maintenance. DOE has further committed to a goal of ensuring FEMP stewardship activities in perpetuity. The addition of monitoring devices for Cell 1 Final Cover is an early step in a technology demonstration helping to achieve this goal.

Existing Conditions: The OSDF Cell 1 Final Cover design does not now contain a remote monitoring capability for the final cover system.

Proposed Change: Add the following monitoring devices per the Attachment: ground penetrating radar targets, settlement plates, soil water status nests, and pressure transducer risers. A forthcoming DCN will add cables and instrumentation for these monitoring devices.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
A. C. Snider Anthony Snider	Fluor Fernald, Inc.	7/12/01	A. C. Snider Anthony Snider for Sam Wolinsky	7/12/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

Provide as-built on Drawing No. 90X-6000-G-00302 "red-line" drawing

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 6/22/01
K. Boothmanand
KUVASI BADU-TWEREBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 07/12/01
PERFORMANCE GRADE: (17) A. C. Snider for Sam Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE: 7/12/01
Bill Zebuch
PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED
COPY NO. C- 011

ORIGINAL

ATTACHMENT
TO
DCN 20103-016

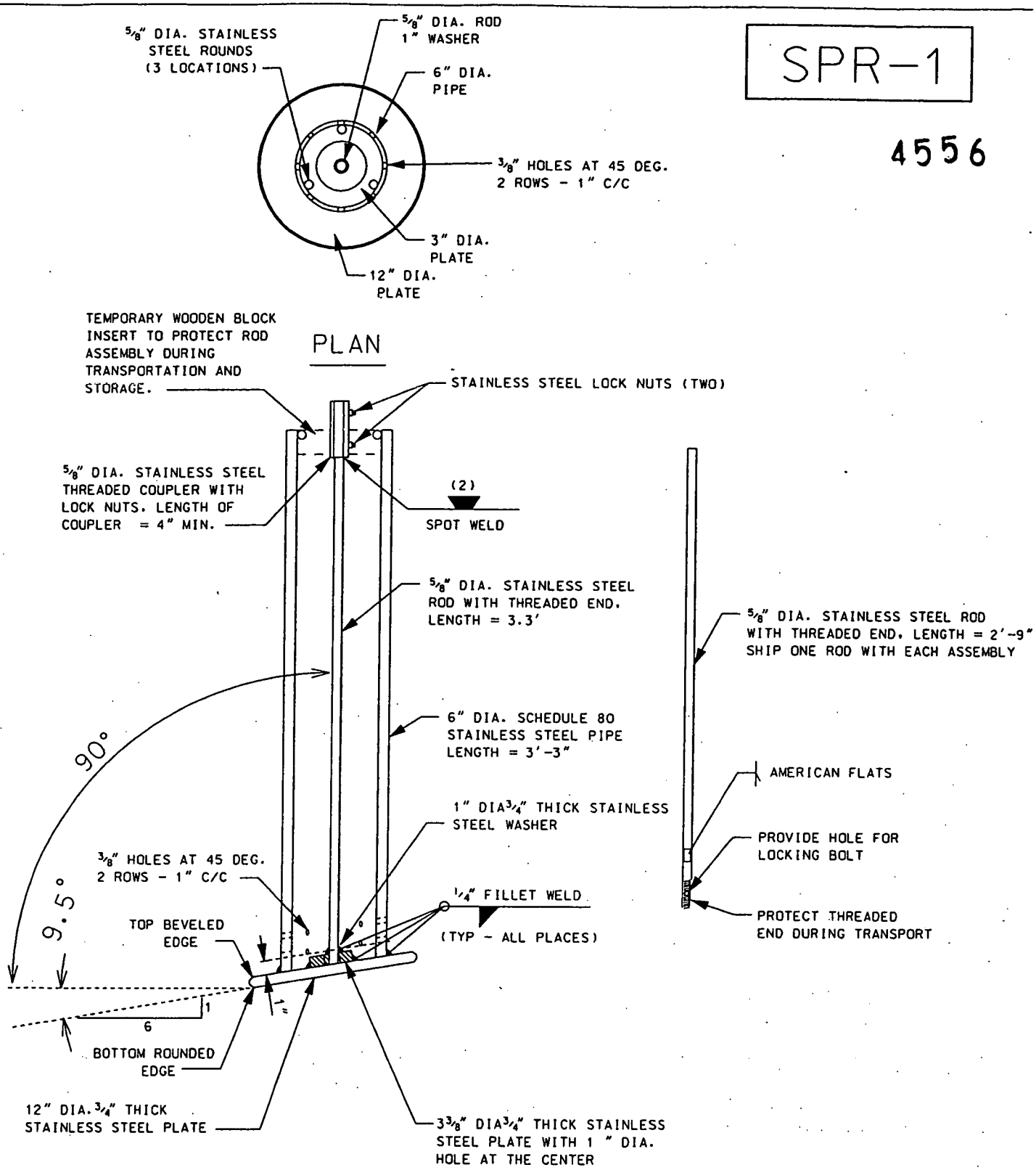
This sheet contains a list of the installation and shop drawings which are attached to this design change notice.

Drawing/Detail Type	Drawing/Detail No.	Drawing/Detail Title
Installation	90X-5500-G-00577	OSDF - Cell 1 Final Cover Monitoring Devices Installation Details
Fabrication	SPR-1	SPR - Settlement Plate & Rod Assembly (Typ.)
Fabrication	PT-1-A	Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	PT-1-B	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	PT-1-C	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SP-1A	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SP-1B	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SW-1	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail

DCN 20103-016
Pg 2810

SPR-1

4556



NOTE: SEQUENTIALLY LABEL EACH ASSEMBLY FROM SPR-1-01 TO SPR-1-05.

STAINLESS STEEL PLATES, PIPE AND ROD SHALL BE ANSI A304.

DCN 20103-018
Pg 3 of 10

SPR- SETTLEMENT PLATE & ROD ASSEMBLY (TYP.)

(5 REQUIRED)

000233

REV. 3

(OSK .DGN 7/11/01 REV. 4)

(REV. 1)

OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail
VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

PT-1-A
8 PCS.

NOTES:

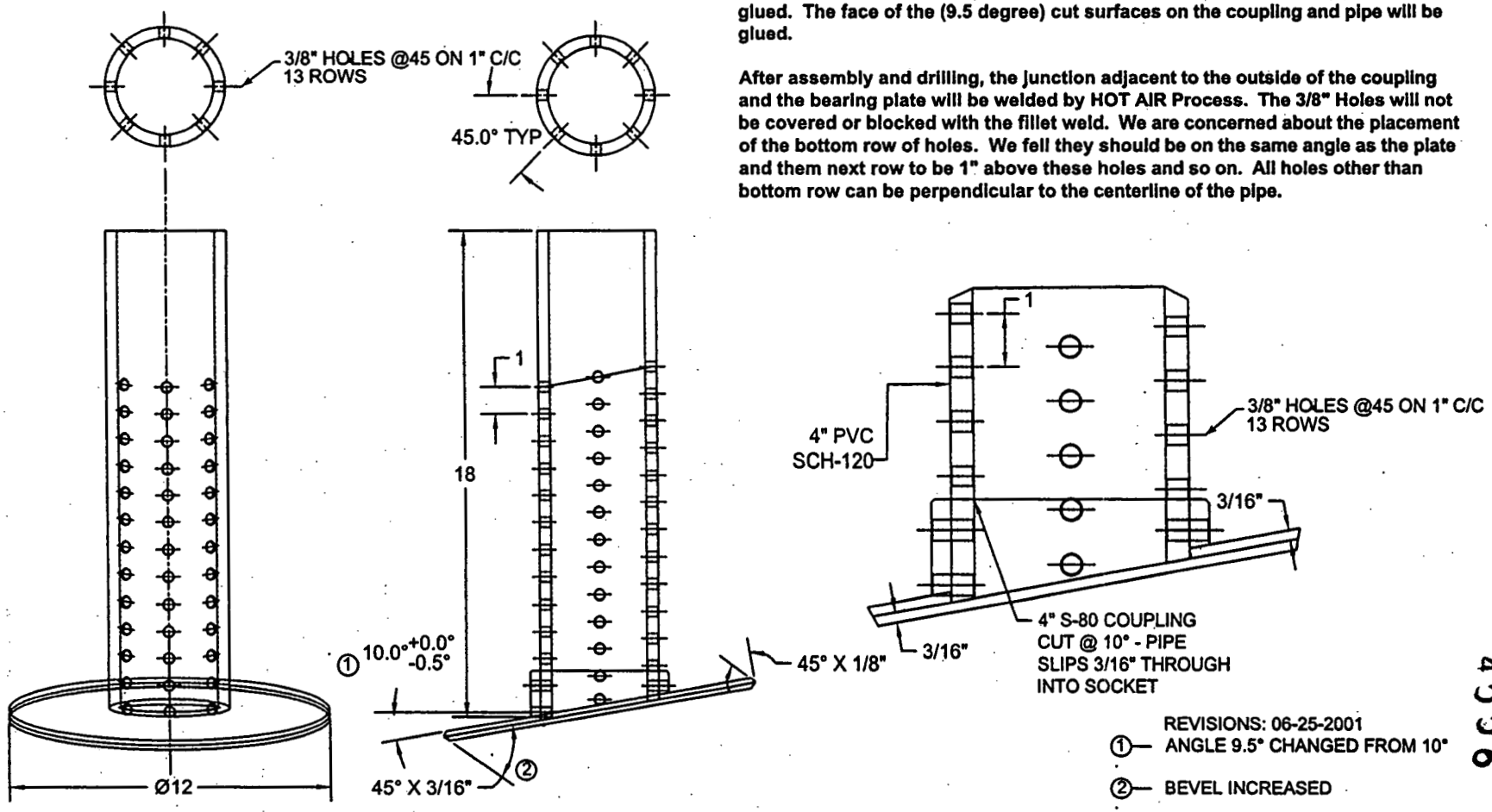
1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)
2) LABEL EACH PIECE "PT-1-A-01 THRU PT-1-A-08"

Specifics of PT-1
As described in offer two (2) 3/16" thick sheets will be glued together to form one 3/8" thick disk.

This assembled disk will have an elliptical socket to accept 4.50" OD PVC Pipe. The PVC coupling section shown was added to provide additional bearing surface. This coupling piece will be glued to the outside of the 4" pipe.

In addition, the pipe stub setting in the socket on top half of bearing plate will be glued. The face of the (9.5 degree) cut surfaces on the coupling and pipe will be glued.

After assembly and drilling, the junction adjacent to the outside of the coupling and the bearing plate will be welded by HOT AIR Process. The 3/8" Holes will not be covered or blocked with the fillet weld. We are concerned about the placement of the bottom row of holes. We fell they should be on the same angle as the plate and them next row to be 1" above these holes and so on. All holes other than bottom row can be perpendicular to the centerline of the pipe.



REVISIONS: 06-25-2001
① ANGLE 9.5° CHANGED FROM 10°
② BEVEL INCREASED

DCN 20103-018
Pg 4 of 18
00234

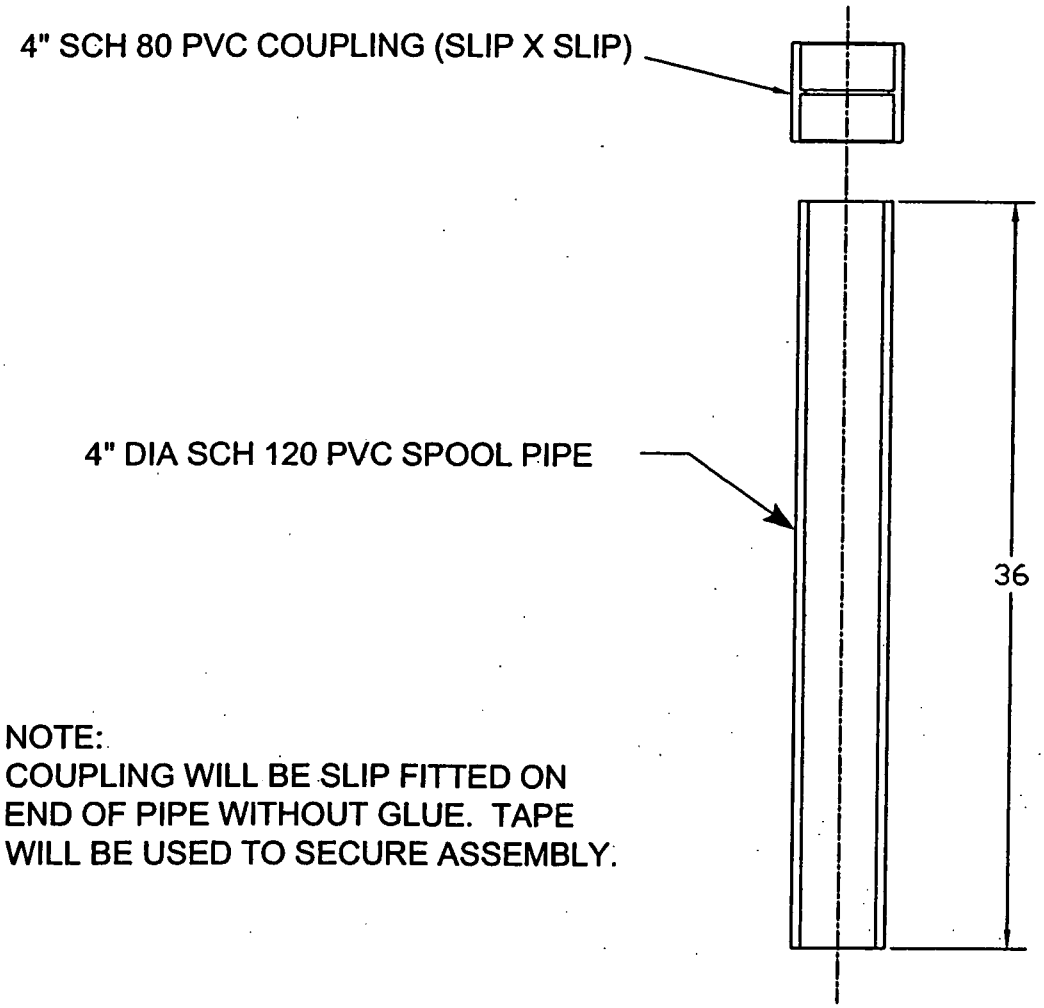
4556

OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246 (REV. 1)

4556

PT-1-B
16 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "PT-1-B-01 thru PT-1-B-16"

DCN 20103-018
Pg 5 of 10

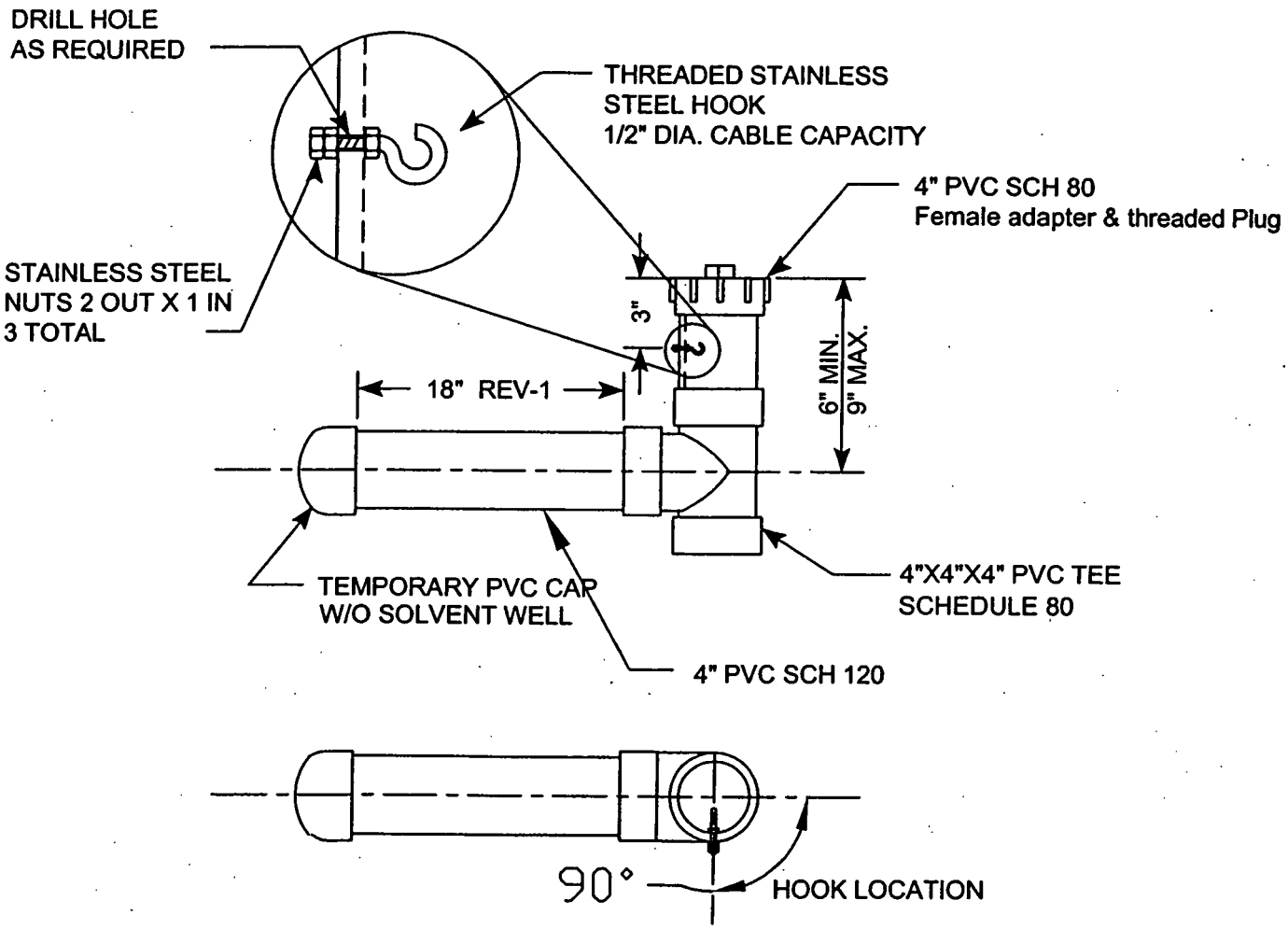
OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

(REV. 1)

4556

PT-1-C
8 Pcs.



NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

2) LABEL EACH PIECE "PT-1-C"

3) ONE (1) CARBON STEEL WRENCH FOR PLUG REMOVAL

REVISIONS:

1 CHANGED FROM 12" TO 18" 06/19/2001 MARTY PROCHASKA

2 ITEM 3 ADDED 06-25-2001

000236

DCN 20103-018

Pg 6 of 10

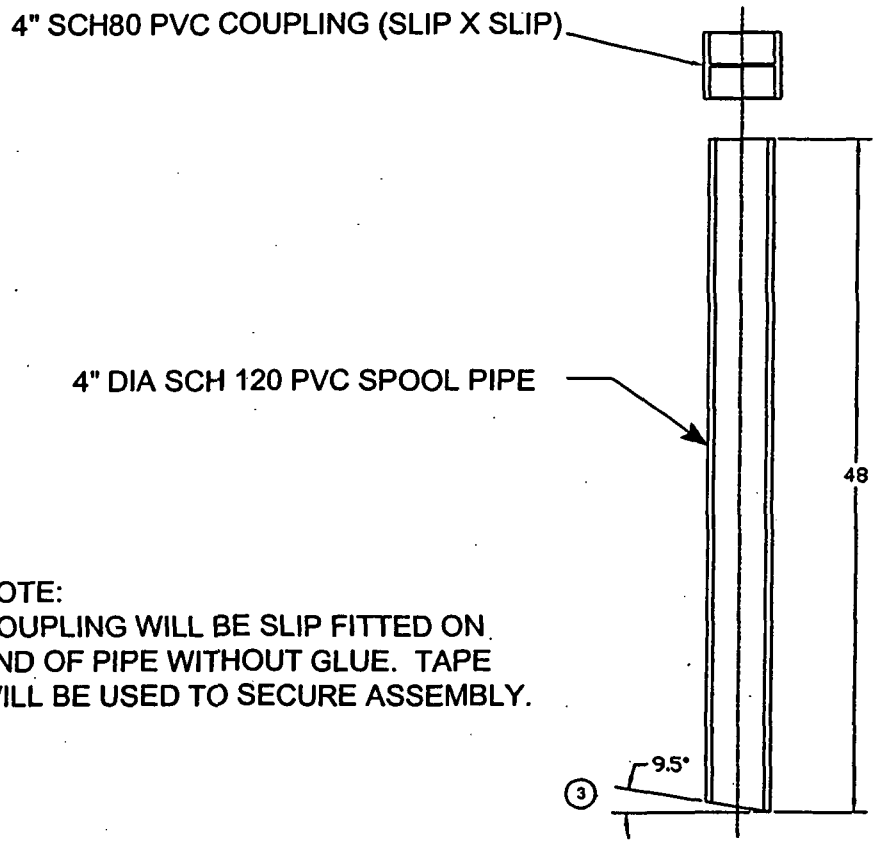
OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

(REV. 1)

SP-1A

5 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "SP-1A-01 thru SP-1-A-05"

3 9.5 DEGREE CUT ADDED 06-21-2001

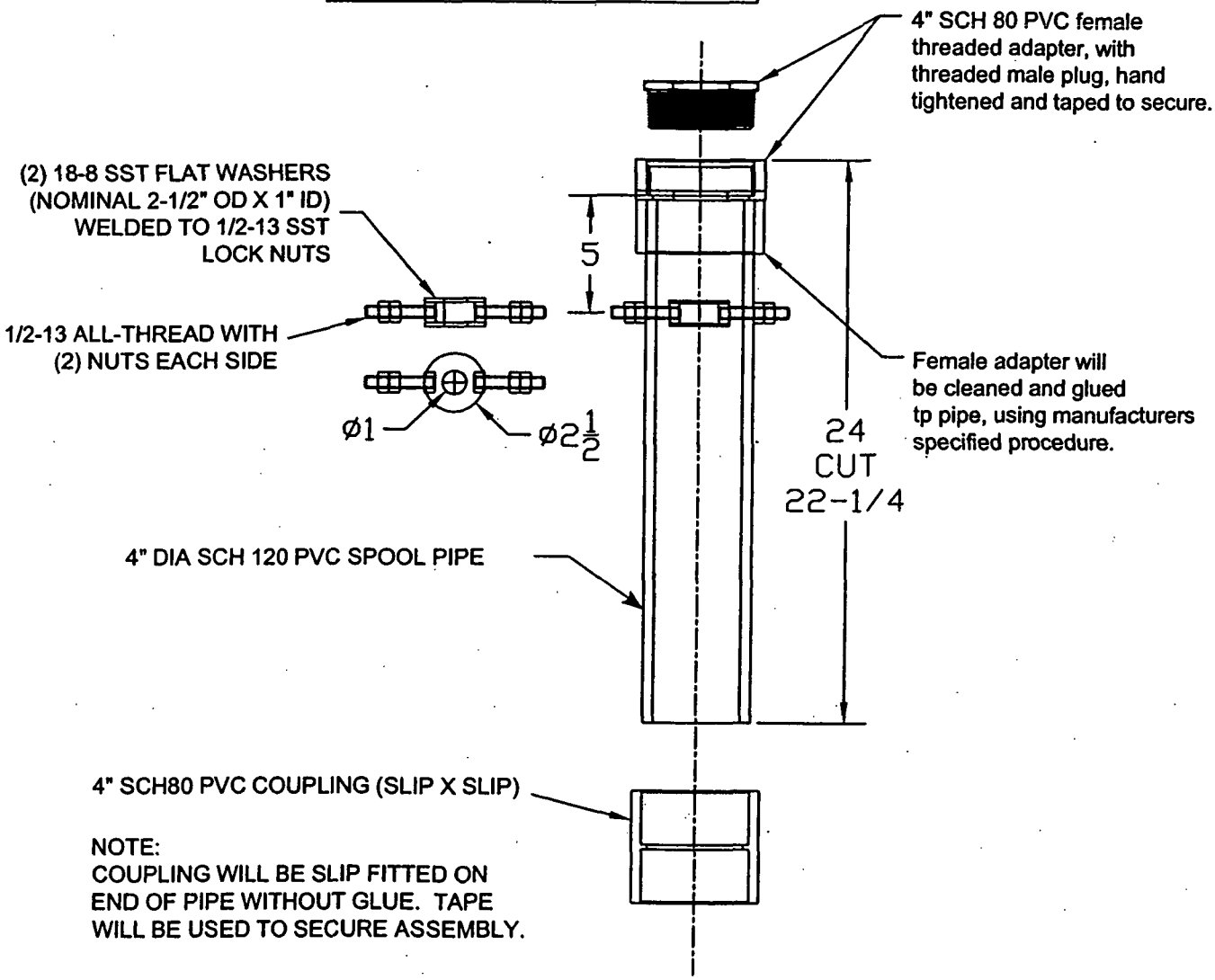
DCN 20103-018
Pg 7 of 10

OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

(REV. 1)

SP-1B
5 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

000238

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "SP-1B-01 thru SP-1B-05"

DCN 20103-018
Pg 8 of 10

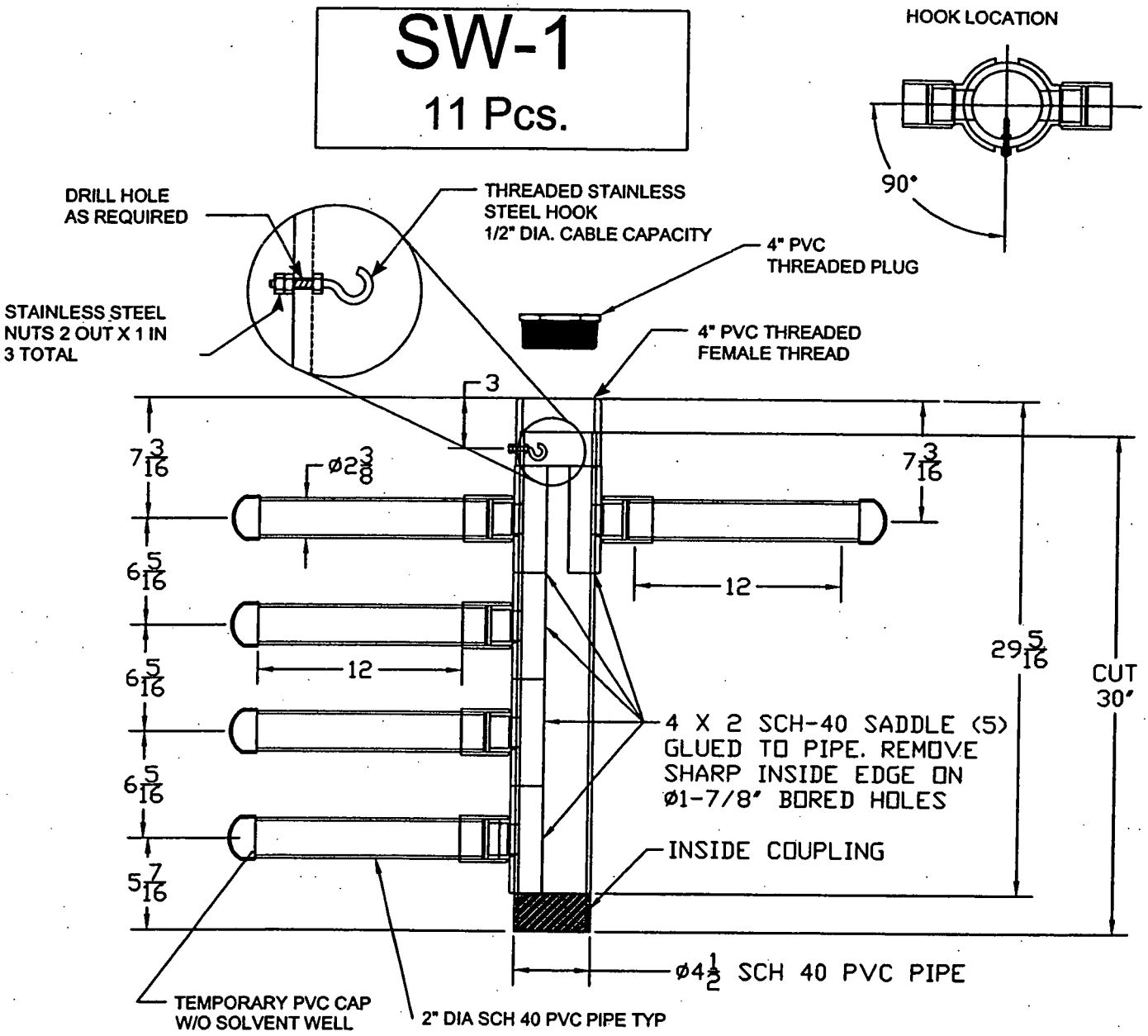
OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

(REV. 1) 4556

SW-1

11 Pcs.



NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

2) LABEL EACH PIECE 'SW-1-01 THRU SW-1-11'

3) ONE (1) CARBON STEEL WRENCH FOR PLUG REMOVAL

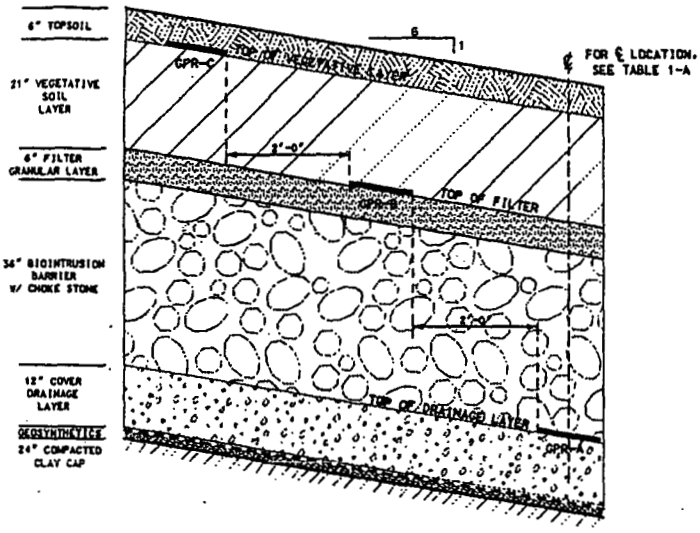
REVISIONS:
06/18/2001 SCHEDULE 40 CROSS AND TEE'S ALONG WITH 4X2 BUSHING WERE REPLACED WITH SADDLE ADAPTERS ALLOWING OVERALL HEIGHT TO BE REDUCED FROM 38.5' TO ABOUT 29'

ITEM 3 ADDED 06-25-2001

000239

DCN 20103-018

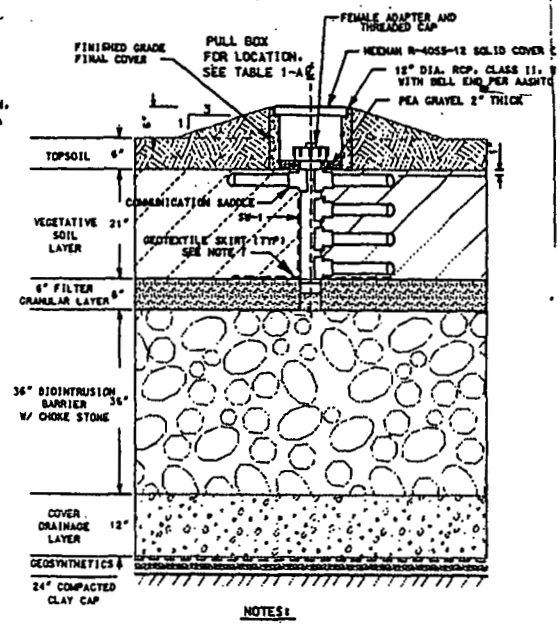
Pg 9 of 10



NOTES:

1. GPR- A, GPR- B & GPR- C (12" X 12" X 3/16" THICK A304 STAINLESS STEEL) WILL BE FURNISHED BY FLUOR FERNALD
2. GPR- A IS TO BE LOCATED ACCORDING TO THE COORDINATES SHOWN ON TABLE 1.
3. GPR-B AND GPR- C ARE TO BE PLACED DIRECTLY UPSLOPE FROM PLATE A AS INDICATED IN THIS DETAIL.
4. SURVEY LOCATION AND ELEVATION OF GPR-A, GPR-B AND GPR-C AFTER INSTALLATION AND PROVIDE TO CONSTRUCTION MANAGER IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02100

GPR-1 THRU GPR-8
TYPICAL INSTALLATION DETAIL 1
SCALE 1"=1'



NOTES:

1. FOR LOCATION OF THE PULLBOX REFER TO TABLE 1.
2. PREFABRICATED ASSEMBLY SW-1 TO BE FURNISHED BY FLUOR FI
3. PLACE TEFLON TAPE ON THREADS IN THREADED CAP
4. BASE OF SW-1 ASSEMBLY TO REMAIN OPEN.
5. INSTALL SW-1 ASSEMBLY VERTICAL.
6. EXCAVATE AND BACKFILL IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02200.
7. WRAP NON-WOVEN GEOTEXTILE (MIN. MASS/UNIT WEIGHT OF 7 PIPE WITH AN OVERLAP OF AT LEAST 6". AFFIX GEOTEXTILE SPACED AT 4". WRAP NON-WOVEN GEOTEXTILE AROUND PVC PLA AND AFFIX WITH RUBBER CEMENT OR EQUIVALENT. SP-A, SP-B PT-1-8 WILL BE INSTALLED IN SECTIONS. PVC PIPE CONNECT BE SOLVENT WELDED WITH FLUSH INTERIOR. GEOTEXTILE SHAL WEIGHT PER SQUARE YARD MIN.

SW-1 THRU SW-10
TYPICAL INSTALLATION DETAIL 2
SCALE 1"=1'

TABLE 1-A
LOCATION OF MONITORING POINTS

MONITORING DEVICE	ORIENTATION OF COMMUNICATION TEE/SADDLE	CL LOCATION PULLBOX/GPR PLATE COORDINATES		TOP OF PULL BOX ELEV.**
		NORTH	EAST	TO BE DETERMINED
PT-1*/ SP-1*	WEST	483200.0	1351200.0	
PT-2*/ SP-2*	SOUTH	483075.0	1351535.0	
PT-3*/ SP-3*	WEST	482990.0	1351200.0	
PT-4*/ SP-4*	SOUTH	483070.0	1350825.0	
PT-5	WEST	483125.0	1350695.0	
PT-6	WEST	483270.0	1351190.0	
PT-7	SOUTH	483110.0	1351630.0	
SW-1	EAST	483200.0	1351170.0	
SW-2	EAST	483080.0	1351170.0	
SW-3	EAST	482990.0	1351170.0	
SW-4	NORTH	482925.0	1350790.0	
SW-5	NORTH	482925.0	1350940.0	
SW-6	NORTH	482925.0	1351045.0	
SW-7	NORTH	482925.0	1351190.0	
SW-8	NORTH	482925.0	1351350.0	
SW-9	NORTH	482925.0	1351440.0	
SW-10	NORTH	482925.0	1351545.0	
GPR-1 A	—	483140.0	1351190.0	
GPR-2 A	—	483060.0	1351500.0	
GPR-3 A	—	483020.0	1351190.0	
GPR-4 A	—	483040.0	1350870.0	
GPR-5 A	—	482925.0	1350880.0	
GPR-6 A	—	482980.0	1350995.0	
GPR-7 A	—	482975.0	1351350.0	
GPR-8 A	—	482925.0	1351500.0	

* MULTIPLE MONITORING DEVICES PER PULLBOX

** VERIFY "AS-BUILT" FINAL COVER ELEVATION AT THE PULL BOX BEFORE INSTALLATION OF PULL BOX. LOCATE TOP OF PULLBOX ELEVATION 6" ABOVE THE "AS-BUILT" FINAL COVER ELEVATION.

NO.	REVISIONS	DATE	DWN. BY	APPD.	NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. D
0	NEW DRAWING PER DCN 20103-016	8/21/03								
A	ISSUED FOR FLUOR FERNALD REVIEW	8/21/03								

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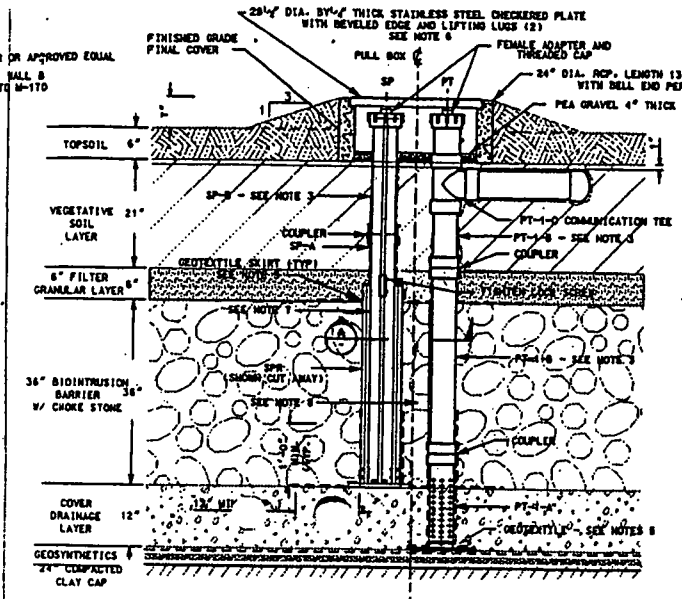
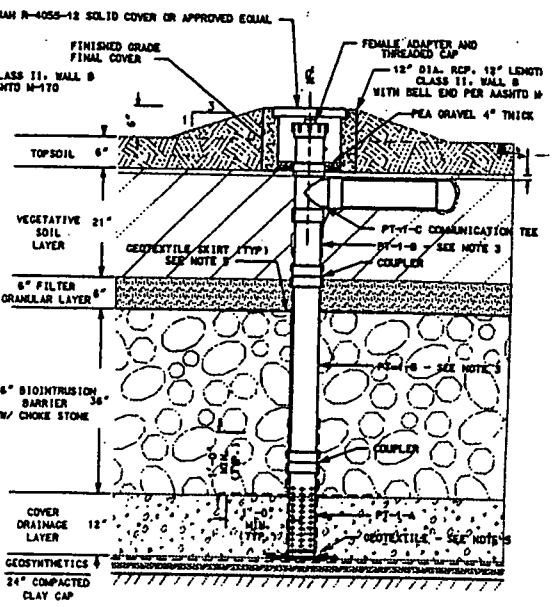
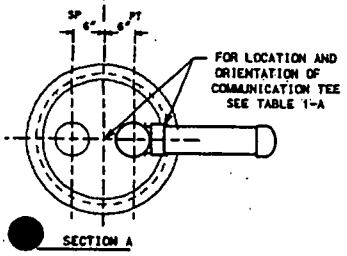




BY FLUOR FERNALD.

CHNICAL

IGHT OF 7 OZ/SQYD) AROUND RISER
EOTEXTILE WITH CABLE TIES
ND PVC PLATE
SP-A, SP-B, AND
PE CONNECTIONS SHALL
XTILE SHALL BE 7 OUNCES



NOTES:

1. FOR LOCATION OF THE PULLBOX REFER TO TABLE 1.
2. PREFABRICATED ASSEMBLIES SPR, SP-A, SP-B, AND PT-1-A, B & C WILL BE FURNISHED BY FLUOR FERNALD.
3. CUT SP-B, PT-1-B, AND ¾" ROD TO MEET REQUIRED DEPTH AND ELEVATIONS. SOLVENT WELD JOINTS USING MANUFACTURER RECOMMENDED SOLVENT.
4. PLACE TEFLON TAPE ON THREADS IN THREADED CAPS.
5. WRAP NON-WOVEN GEOTEXTILE (MIN. MASS/UNIT WEIGHT OF 7 OZ/SQYD) AROUND RISER PIPE WITH AN OVERLAP OF AT LEAST 6". AFFIX GEOTEXTILE WITH CABLE TIES SPACED AT 4". WRAP NON-WOVEN GEOTEXTILE AROUND PVC PLATE AND AFFIX WITH RUBBER CEMENT OR EQUIVALENT. SP-A, SP-B, AND PT-1-B WILL BE INSTALLED IN SECTIONS. PVC PIPE CONNECTIONS SHALL BE SOLVENT WELDED WITH FLUSH INTERIOR. GEOTEXTILE SHALL BE 7 OUNCES WEIGHT PER SQUARE YARD MIN.
6. VERIFY RCP BELL INSIDE DIAMETER (I.D.) BEFORE FABRICATION OF STAINLESS STEEL CHECKERED PLATE. DIAMETER OF CHECKERED PLATE SHALL BE ¼ INCH LESS THAN THE BELL I.D.
7. FILL ANNULAR SPACE BETEWEEN 4" PVC PIPE (SP-A) AND 6" STEEL PIPE (SPR) WITH GRANULAR DRAINAGE MATERIAL IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02710. GRANULAR DRAINAGE MATERIAL TO BE FURNISHED BY FLUOR FERNALD.
8. FILL SPACE BETWEEN SPR AND PT WITH BIOINTRUSION BARRIER MATERIAL TO BE FURNISHED BY FLUOR FERNALD.

PT-1 AND SP-1 THRU PT-4 AND SP-4
TYPICAL INSTALLATION DETAIL (3)
SCALE 1"=1'

NOTES:

1. FOR LOCATION OF THE PULLBOX REFER TO TABLE 1-A.
2. PREFABRICATED ASSEMBLY PT TO BE FURNISHED BY FLUOR FERNALD.
3. CUT RISER PT-1-B TO MEET REQUIRED DEPTH. SOLVENT WELD JOINTS USING MANUFACTURER RECOMMENDED SOLVENT.
4. PLACE TEFLON TAPE ON THREADS IN THREADED CAP
5. WRAP NON-WOVEN GEOTEXTILE (MIN. MASS/UNIT WEIGHT OF 7 OZ/SQYD) AROUND RISER PIPE WITH AN OVERLAP OF AT LEAST 6". AFFIX GEOTEXTILE WITH CABLE TIES SPACED AT 4". WRAP NON-WOVEN GEOTEXTILE AROUND PVC PLATE AND AFFIX WITH RUBBER CEMENT OR EQUIVALENT. SP-A, SP-B, AND PT-1-B WILL BE INSTALLED IN SECTIONS. PVC PIPE CONNECTIONS SHALL BE SOLVENT WELDED WITH FLUSH INTERIOR. GEOTEXTILE SHALL BE 7 OUNCES WEIGHT PER SQUARE YARD MIN.

PT-5 THRU PT-7
TYPICAL INSTALLATION DETAIL (4)
SCALE 1"=1'

GENERAL NOTES:

1. FOR FINAL COVER GRADING PLAN, SEE DRAWING 90X-6000-G-00302, SHEET G-7 FROM OSDF PHASE III CONSTRUCTION.
2. MATERIALS TO BE FURNISHED BY CONTRACTOR UNLESS OTHERWISE INDICATED

CERTIFIED FOR CONSTRUCTION

REF. DWG. NO.	NOTE: FLUOR FERNALD CADD DRAWING, DO NOT REVISE MANUALLY.	CONFIGURATION MANAGEMENT DRAWING	APPROVALS	Fernald Environmental Management Project	OSDF - CELL 1 FINAL COVER MONITORING DEVICES INSTALLATION DETAILS
			CIVIL & STR. / ELECTRICAL / ENGINEER / INSTRUMENT / MECHANICAL / CHECKED / APPROVED	FLUOR FERNALD, INC.	Drawing No. 90X-5300-G-00ST
		6/22/01	SAFETY ENG. / MAINTENANCE / FIRE PROTECT / WASTE MANAGE / SECURITY / PROJECTS / QUALITY / CONTRACTOR	U.S. DEPARTMENT OF ENERGY	DATE 6/19/01 DRAWN VJG A ~~SKETCH 1~~

6/22/01

FILE NAME: MONITOR_INSTALLATION_DETAILS.dgn

DCN 20103-018

Pg 10 of 10

000241

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 6	(6) DATE
20103 14272	FSC-642		JULY 12, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [x] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: Electrical Service to Trailers T-98 and T-125

(11) DCN NO.: 20103-019

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing	90X-6000-E-00259	0	
Drawing	90X-5500-E-00549	0	
Drawing	90X-5500-E-00550	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [x] NOT REQUIRED

Justification: As part of the excavated of impacted soils to support the certification of the OSDF Cell 4 footprint, trailers T-98 and T-125 must be relocated to a new location. T-98 and T-125 must remain operational to provide access control for OSDF construction oversight personnel to support impacted material placement in Cells 2 and 3.

Existing Conditions: Trailers T-98 and T-125 are currently within the footprint of the OSDF Cell 4 Footprint.

Proposed Change: Relocate trailers T-98 and T-125 to the Northeast corner of the former production area/bulk debris storage area (see page 2) and provide electrical service per attachments to T-98.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
A. C. Smith Anthony Snider	Fluor Fernald, Inc.	7/12/01	A. C. Smith Anthony Snider for Sam Wolinsky	7/12/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [x] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE:

James E. Kerl 7-13-01

[ ] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 7/17/01

PERFORMANCE GRADE: (17) A. C. Smith for VAK

(18) CONSTRUCTION CONCURRENCE DATE: 7/17/01

Bill Zebick

PURCHASE REQUISITION REQUIRED: [ ] YES [✓] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

JS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C 011

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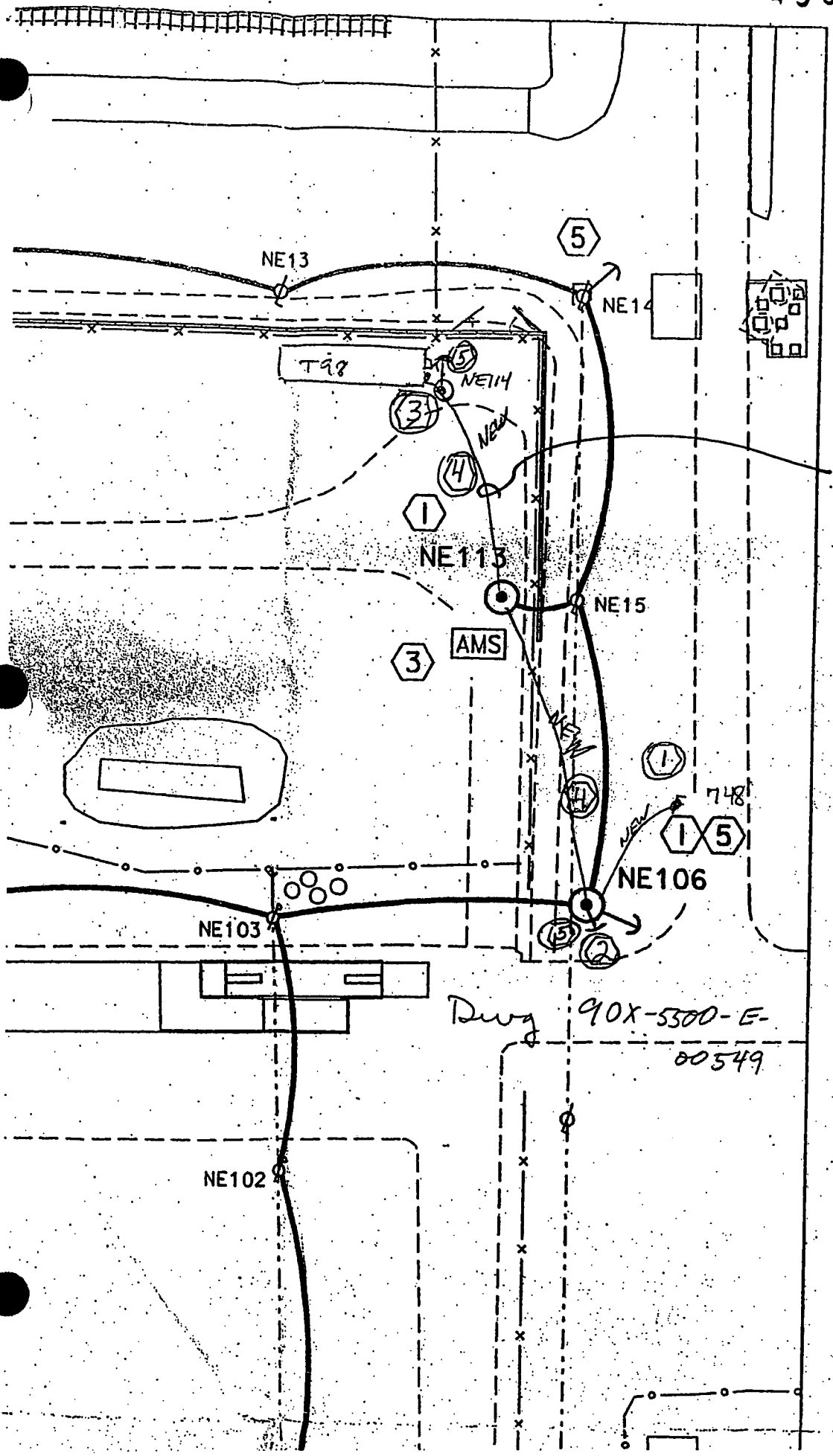
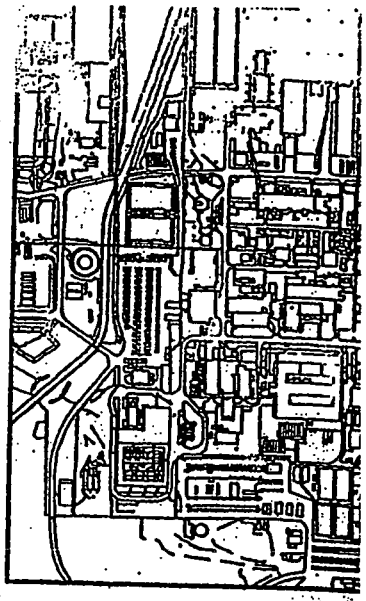




JCK 9-17-01

Page 2 of 2

20103-019

000243

Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:
BY: JKK
DATE: 7-3-01
PAGE: OF
REVISED: 7-17-01

SUBJECT:

Construction Notes

1. Install new 480V feeder from 200 A fused disconnect switch on pole 748 to pole NE106, NE113 and to trailer T98.
2. Repower 100 A. fused disconnect switch on pole NE106
3. Install a new 40 ft Class II pole - NE114 as shown on dwg.
4. Power existing 100 A. disconnect switch at T98 and connect aerial cable 15 ft above grade at T98 and connect aerial cable on poles NE113 and NE114 at a min. of 24 ft. above grade. Maintain 3 ft of sag in the cable
5. Guy poles NE106 and NE114 as shown on the dwg.

Pole #	anchor	Guys	angle of Guy
NE114	1 - 12"	1 - 1/2"	60°
NE106	1 - 12"	1 - 1/2"	60°

General Notes

1) See dwg 90X-6000-E-00259 for wiring and conduit details on pole 748 and single line.
2) All wiring shall be copper with THWN insulation unless otherwise stated.
3) Maintain 1 foot spacing between existing 480 V. wiring and new 480V wiring on poles.
4) For pole guy, anchoring and attachment details see drawings 16X-5500-E-08105 and 16X-5500-E-00106.
5) Use structural channel to secure electrical equipment
6) Trailer(s) shall be installed according to trailer typical installation drawings 44X-5500-E-00363, -S-00364, and -E-00366
7) Dig setting hole large enough to permit use of power tamper to full depth. Place earth in min. 6" layers and pack to 95% density per ASTM D 698. Bank earth 12" above grade.
8) New pole shall be 40 ft. Class 2 southern pine, 100% treated with 6 ft. minimum burial.

000244

20103-019

FS-F-76 B (R)

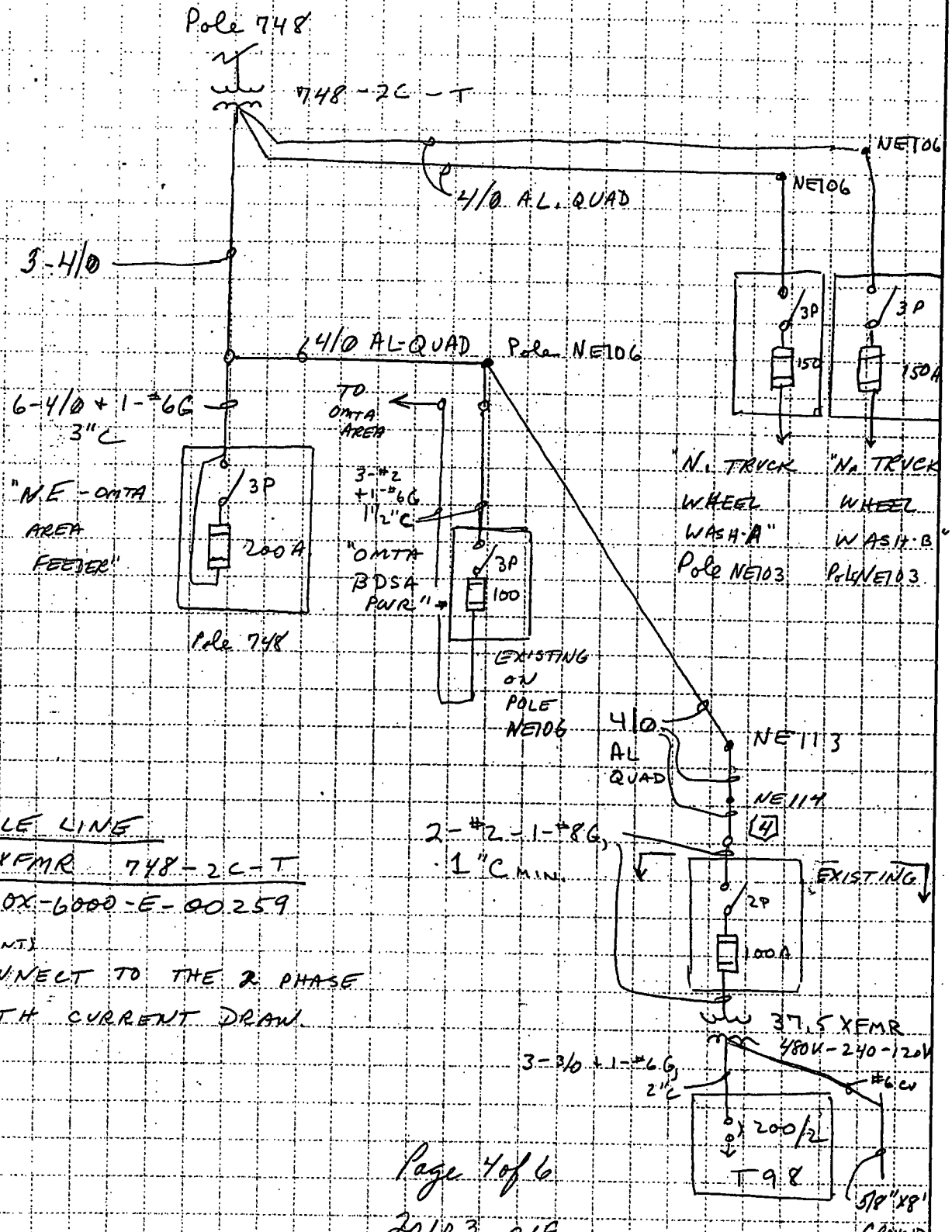
Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

1556

ENGINEERING CALCULATION

BY: JKL
DATE: 7-3-01
PAGE: OF
REVISED: 7-17-01

SUBJECT:



SINGLE LINE
FOR XFMR 748-2C-T
DWG 90X-6000-E-00259

NOTES (CONT)

4 CONNECT TO THE 2 PHASE WITH CURRENT DRAW

Page 4 of 6

20103-019

000245

F9-F-76 B (REV.

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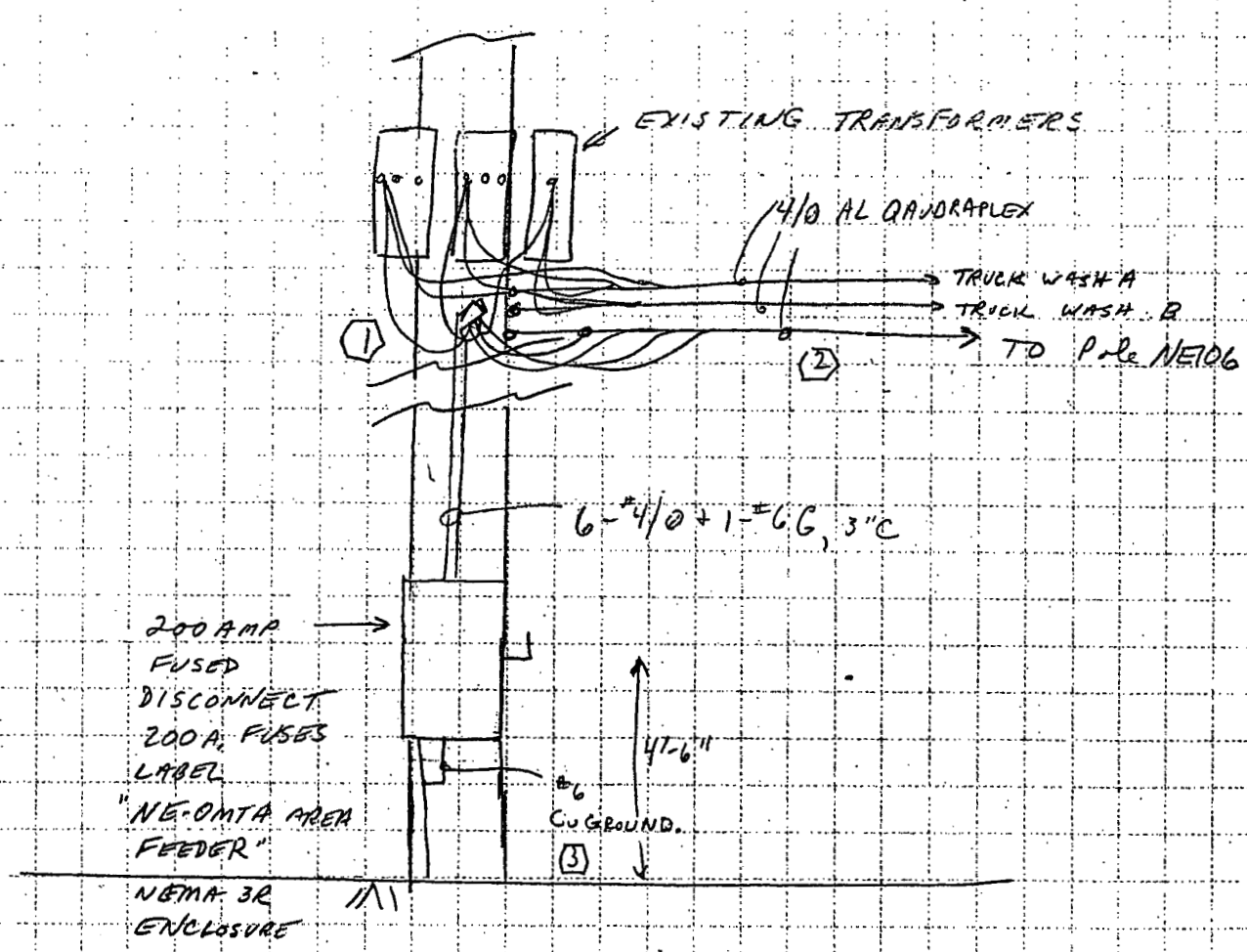
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	
BY:	JJK
DATE:	7-3-01
PAGE:	OF
REVISED:	

SUBJECT:



Pole 748
Details
DWG 90X-6000-E-00259

1. INSTALL NEW 200A 3 POLE 480V FUSED DISCONNECT ON POLE 748.
2. POWER SWITCH WITH FEEDER FROM XFMR 748-2C-T AND FEED NEW FEEDER TO OMTA BDSA SWITCH ANT T98.
3. CONNECT GROUND WIRE TO POLE GROUND SYSTEM WITH APPROVED GROUND CLAMP.

FS-F-76 B (REV.

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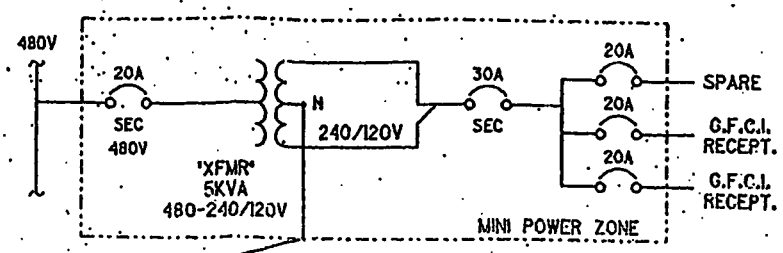
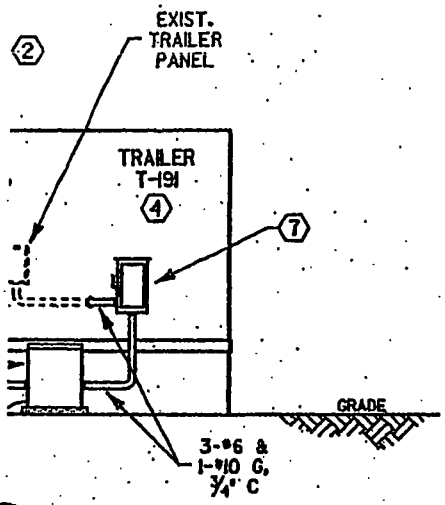
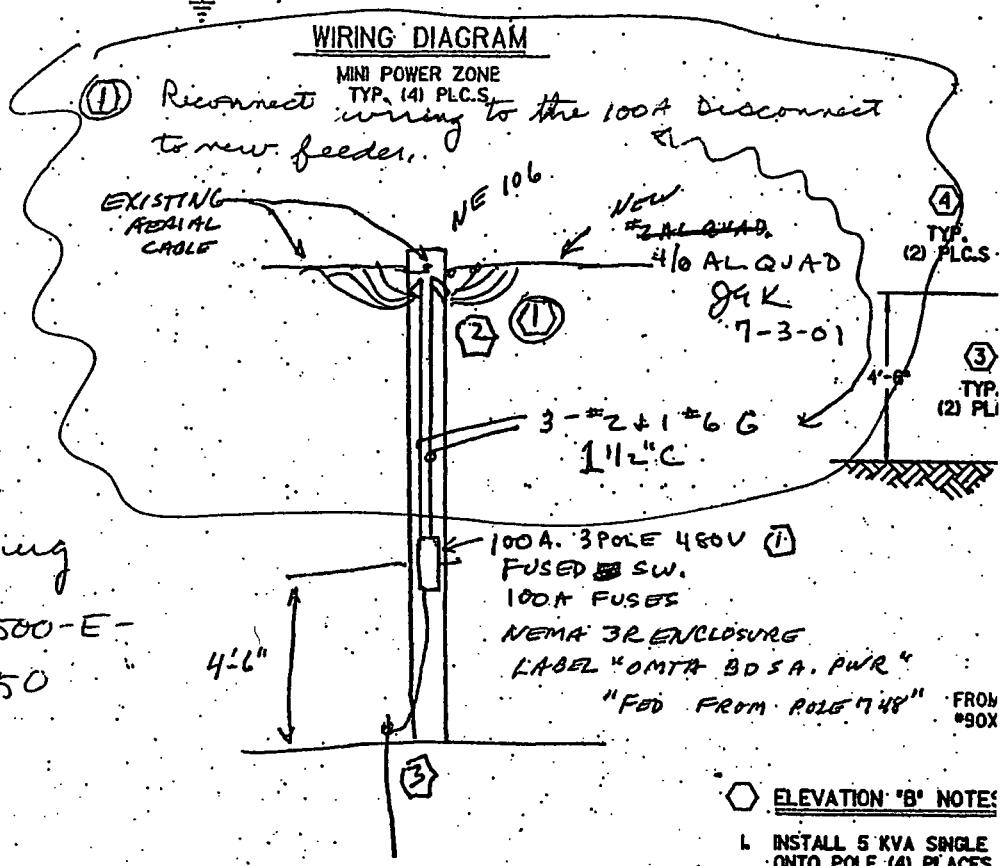






Dwg
90X-5500-E-
00550

:RAILER T-191. (ONE PHASE WILL
IGLE PHASE).

ADE.

ER TO 5/8" x 8' GROUND ROD.

ILER TYPICAL INSTALLATION DRAWINGS

TCH WITH 40 AMP FUSES - LABEL

OUNT TRANSFORMER WITH 2" PRECAST

TCH WITH 60 AMP FUSES - LABEL

N.

ELEV. C.

1. INSTALL NEW 3POLE 480V FUSED SWITCH WITH 100A FUSES IN NEMA 3R ENCLOSURE
2. POWER SWITCH WITH NEW AERIAL FEED FROM POLE 748 REPOWER EXISTING AERIAL FEEDER.
3. INSTALL 5/8"x8' LONG CU GROUND ROD WITH 1-#6 CU GROUND WIRE.

ECDC CONTROLLED
COPY NO.
463

Page 6 of 6
20103-019

ELEVATION "B" NOTES

1. INSTALL 5 KVA SINGLE ONTO POLE (4) PLACES.
2. FEED MINI POWER ZONE
3. INSTALL SINGLE GANG C WEATHER PROOF COVER
4. FEED DUPLEX RECEPTAC 20 AMP CIRCUIT BREAKE
5. INSTALL 5/8" x 8' LONG

GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER
2. USE STRUCTURAL CHANNEL T
3. TRAILER SHALL BE INSTALLED 44X-5500-E-00363 AND 44X-

				44X-5500-E-00363
				16X-5500-E-00106
				16X-5500-E-00105
				22X-5500-E-00958
				22C-5500-P-00668
				22C-5500-P-00660
DCN NO. 20102-108	1/5/00	SJS	MRB	90X-5500-E-00549
NS	DATE	DWN. BY	APPD.	REF. DWG. NO.

NOTE: FLUOR FERNALD CADD DRAWING, DO NOT REVISE MANUALLY.

CONFIGURATION MANAGEMENT DRAWING YES X NO

SYSTEMS, STRUCTURES OR COMPONENTS DEPICTED ON THIS DRAWING ARE UNDER CONFIGURATION MANAGEMENT CONTROL. SEE NOTES.

J. E. Kirk 4-26-00
ASSIGNMENT ENGINEER DATE

APPROVALS

CIVIL & STR.			SAFETY ENG.	
ELECTRICAL	J.E. Kirk	4/26/00	MAINTENANCE	
ENGINEER			FIRE PROTECT.	
INSTRUMENT			WASTE MANAGE	
MECHANICAL			SECURITY	
			PROCESS	
CHECKED	MRB			

000247

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103//4272	(2) S/C NO.: FSC-642	(5) Pg 1 of 7	(6) DATE 7-24-01
(3) S/C TITLE: On Site Disposal Facility (OSDF) Phase III - Cell Final Cover Construction		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]	(4A) RCI/DCN TITLE: Telephone Service for T98	(11) DCN NO.: 20103-020	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
DWG	23X-5500-X-00151	10	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Provide phone service to T98.
Remove Telephone Service to T-96 & Relocate Terminal Equipment to T-98.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
J. E. Kerl	FLUOR	7-25-01	R. C. Smith	07/25/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

UPDATE DWGS

ECDC CONTROLLED COPY NO. C-011

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerl

[X] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) R. C. Smith DATE: 07/25/01

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE DATE: 7/25/01

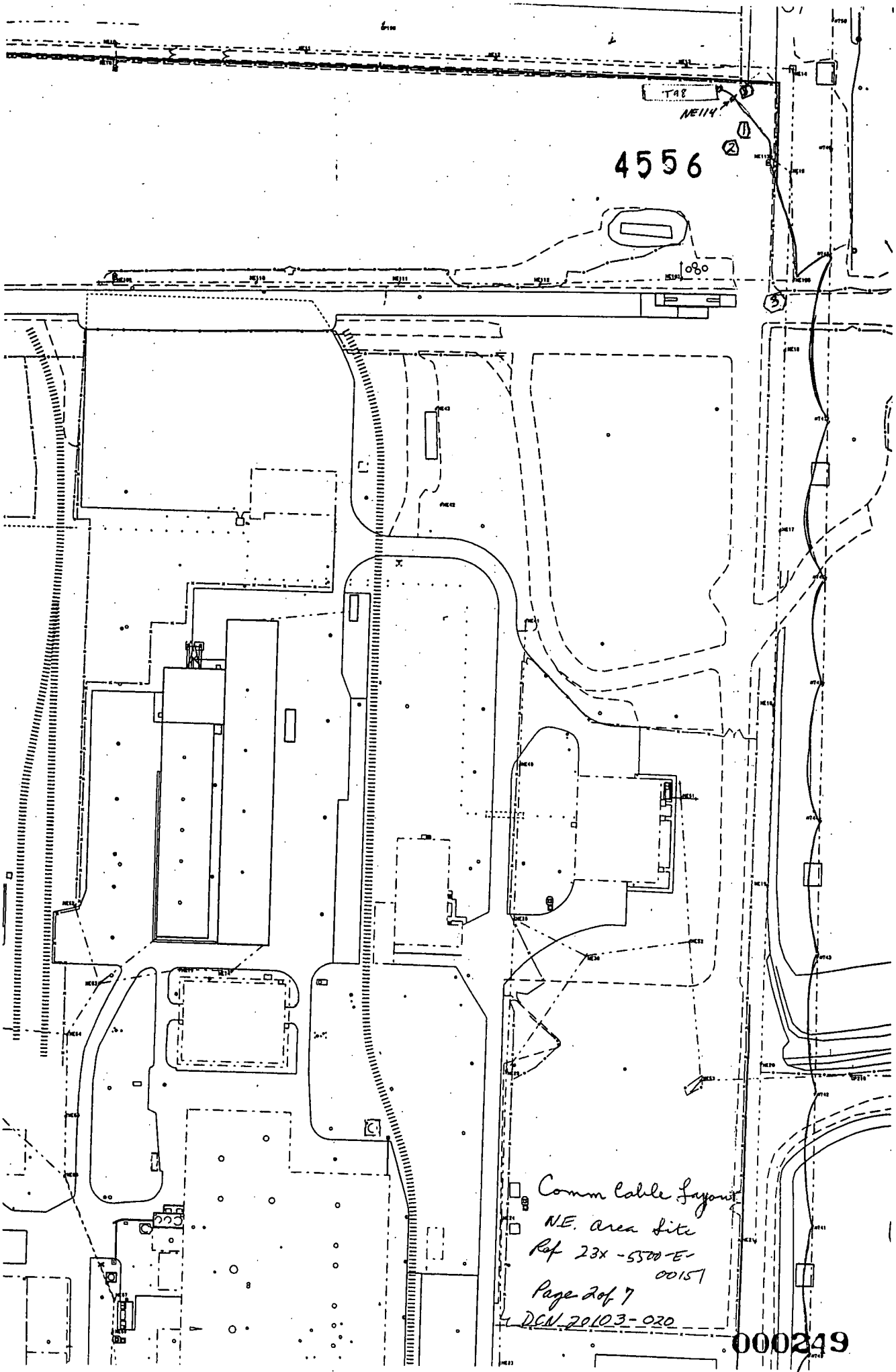
PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

F-4259
. 5: 10/01/99: ED-12-5002

ORIGINAL


T48
NE114
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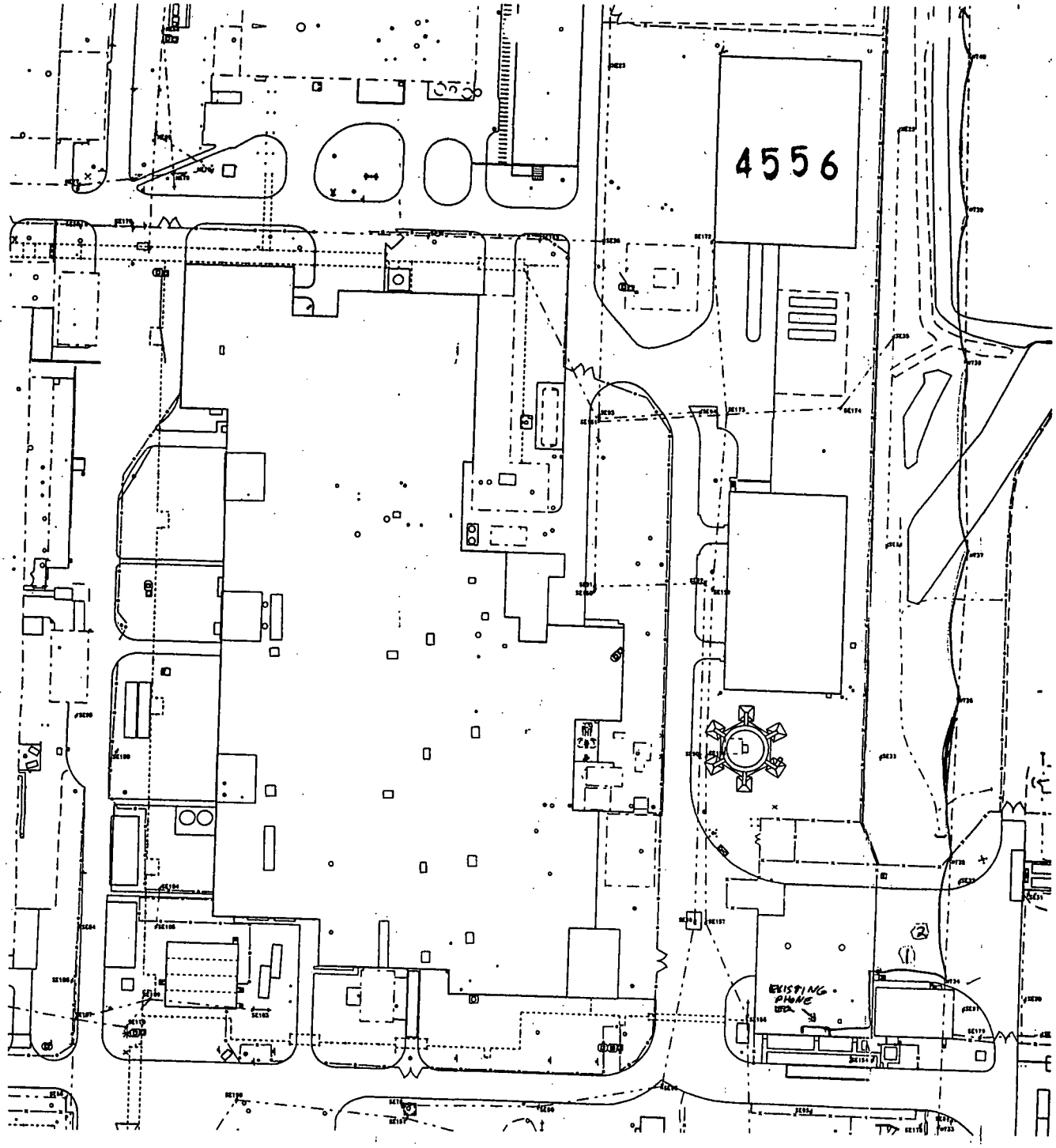
080
Comm Cable Layout
N.E. area Site
Ref 23x-5500-E-00157
Page 2 of 7
DCN 20103-020



Comm cable layout
S.E. area Site
Ref 23x-5500-x-00151

Page 3 of 7

DCN 20103-020

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	RES 4272
BY:	AJK
DATE:	7-25-01
PAGE:	OF
REVISED:	

SUBJECT:

Notes - Mod

(1) - Furnish and install 1-25 pair 24 gauge, aircore copper cable and a 6 strand 62.5/125 um MM aircore fiber in accordance with ANSI/EIA/TIA 568-A, cables to be routed from the phone equipment backboard in RIMIA Bldg to the relocated T98. Install a telephone mast on T98 made of 2" RGS conduit and a 2" bushed sleeve through the wall by phone backboard. Backboard to be 4'x8'x 3/4" A/C Plywood with 2 coats of fire retardant paint. Copper to be terminated to a 110 protector unit with solid state gas tube protectors with #6 green insulated copper ground wire to existing ground rod. at the RIMIA Bldg install and terminate to new 110 protector unit and route phone cables with existing cables through RIMIA Building to a 2" RGS conduit mast installed on building. Cables to be fed through 2" sleeve in RIMIA wall. 6 strand 62.5/125 UM MM fiber to be terminated on both ends in a wall mounted 100A3 light interface unit (LIU) enclosure with ST connectors

(2) New 3/8" galv. messenger to be installed per Sketch # 4237-1, grounded on both ends and at 1/4 mile intervals with a #6 copper ground wire per Sketch # 4237-2

(3) Install additional 1/2" guy wires as required using existing anchors to power wiring.

Page 4 of 7
DCN 20103-020

FS-F-78 B

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	RES 4272
BY:	AGK
DATE:	7-25-01
PAGE:	OF
REVISED:	

SUBJECT:

Notes - General

1) See Dwg 44X-5500-E-00363 for typical phone mast, boards, etc. details

2) See Dwgs 16X-5500-E-00105 and -00106 for guy wire and pole hardware details

3) Install phone cable 40" below power wiring on poles (Remember the annunciator cable is a 120V signal.)

Page 5 of 7
DCN 20103-020

FS-F-76 B (

Figures 5-28, 5-29, and 5-30 show the attachments on in-line poles.

4556

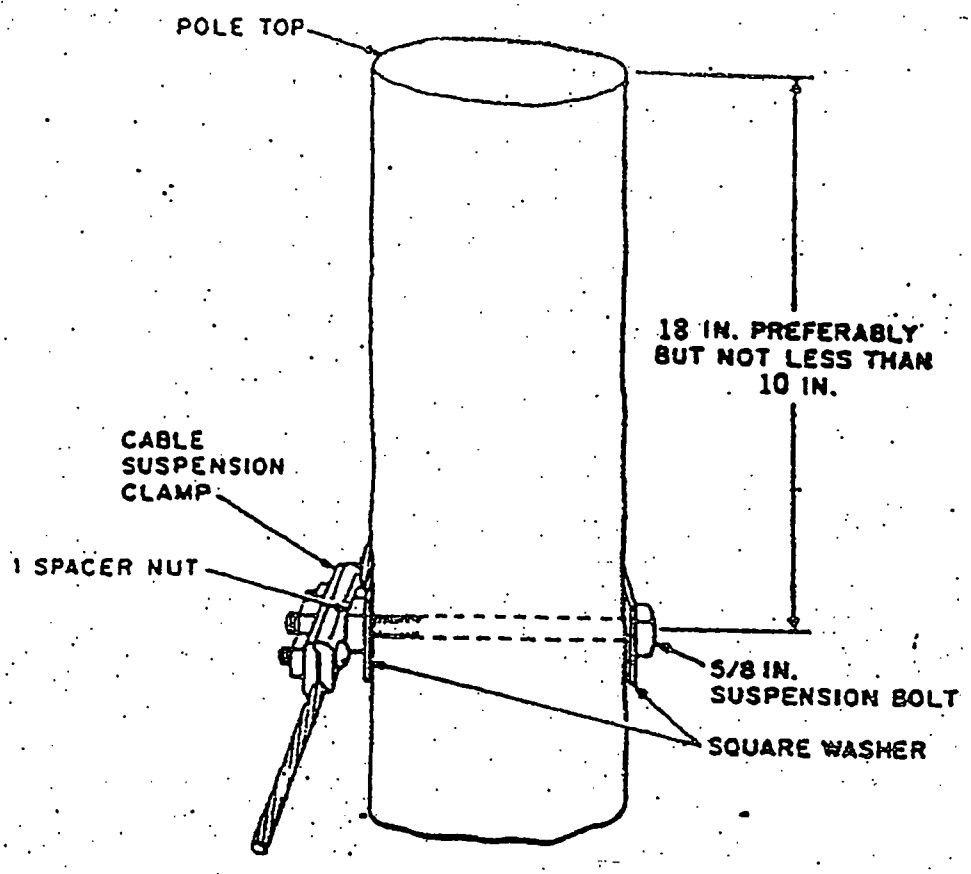
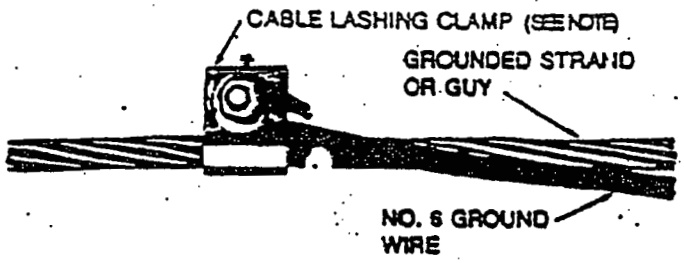


Figure 5-28. Pole Attachment for 6.6M or 6M Suspension Strand Without Reinforcing Strap

SKETCH # 4237-1
Page 6 of 7
DCN 2010.3-020

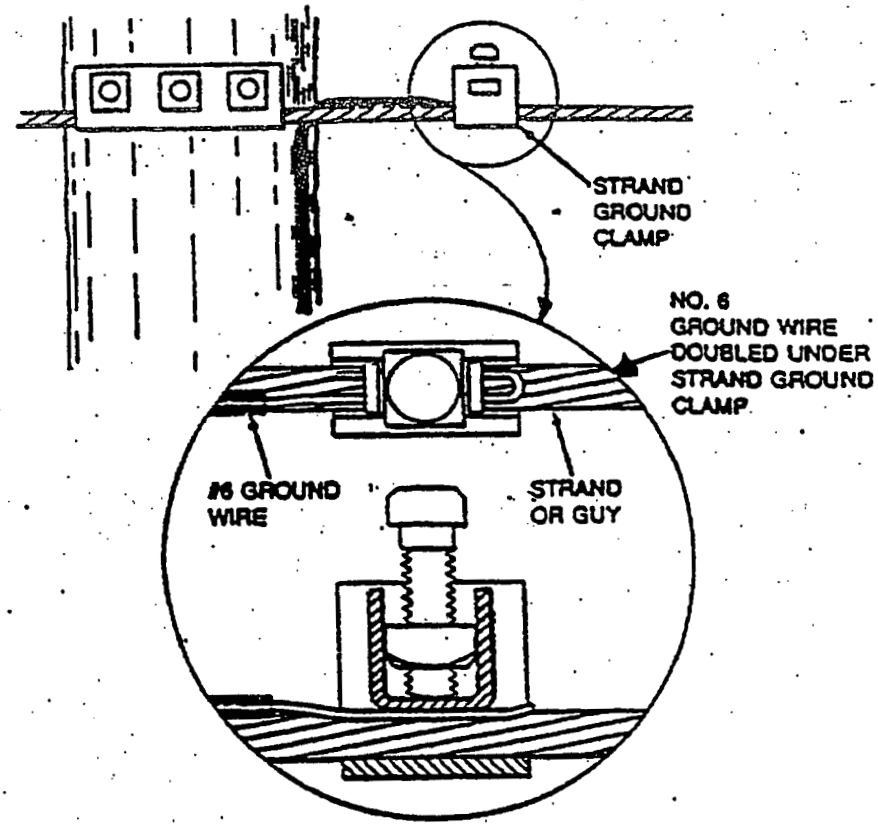
4556

The connection to a guy or strand (except 25M) is made with a cable-lashing clamp or strand ground clamp, or other approved connector. For 25M strand, use only the strand ground clamp. See Figures 10-2 and 10-3.



IMPORTANT NOTE: ***Cable-lashing clamps are not recommended for bonding or grounding connections in a corrosive environment.***

Figure 10-2. Connecting to a Guy or Strand with a Cable-Lashing Clamp



000254

Figure 10-3. Connecting to a Guy or Strand with a Strand Ground Clamp

SKETCH # 4237-2
Page 7 of 7
DCN 20103-020

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 5	(6) DATE
20103	FSC-642		July 30, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: Change to Permanent Vegetation Seed Mix and Crusting Agent

(11) DCN NO.: 20103-021

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications On - Site Disposal Facility Phase III Final Cover Construction	20103-TS-0003	0	Section 02930, Rev. 1: Parts 2.01.E & 3.03.E and Tables 02930-1A& 02930-1B
Technical Specifications On - Site Disposal Facility Phase III	20103-TS-0001	0	Same as above

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Results from FEMP seed test plots and other FEMP seed applications indicate that the Canada Wild-Rye/ReGreen application rates in the permanent vegetation mix should be adjusted to provide better performance of the cover crop. Also, experience with crusting agent applications last fall resulted in the pine sap recommendation.

Existing Condition: Both Canada Wild-Rye and ReGreen are currently specified at rates different from that proposed. A pinesap alternative is currently specified.

Proposed Change: See attached Section 02930 pages with underline/strikeouts indicating specific changes.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Eric Woods	Fluor Fernald, Inc.	7/30/01	Samuel H. Wolinsky	7/30/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/01/01

KWASI BADU-TWENEBOAH, GREENTEC

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/8/01

PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebuch

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. C049

ORIGINAL

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

E. The crusting agent shall be as approved by the Construction Manager and shall meet the following criteria:
   1. pine sap emulsion comprised of a 100 percent organic emulsion produced from naturally occurring resins (pine sap); ~~or a mixture of Conwed Fiber's Enviroblend hydraulic mulch and Finn Corporation's A-500 Hydro-Stik tacking agent (mulch binder);~~ or an approved equal;
   2. not comprised of chloride, lignosulfonate, petroleum, or asphaltic-type emulsions;
   3. provide dust suppression and surface stability for exposed soils, both disturbed and undisturbed soils, and exposed coal fired ash (fly ash);
   4. compatible with application via a hydro seeder, and must not require intense cleaning of equipment after application;
   5. non-tracking (i.e., will not stick to boots or tires) once cured;
   6. not have hazardous characteristics of ignitability, corrosivity, reactivity, or toxicity as defined in 40 CFR Part 261, Subpart C, for a hazardous waste in either its pre-applied or cured states;
   7. have a flash point greater than 200 °F;
   8. be neither a flammable nor combustible liquid per DOT definition; and
   9. not be susceptible to significant deterioration from exposure to the elements, including sunlight.

F. Erosion mat shall be in accordance with Section 02270.

G. Fertilizer:
   1. Furnish commercial grade fertilizer, uniform in composition that meets the requirements of all State and Federal regulations and standards of the Association of Agricultural Chemists.
   2. Fertilizer shall be slow release complete fertilizer.
   3. Two types of fertilizer mixes shall be used. Fertilizer for application within the former production area shall be 34-0-10; other fertilizers may be approved by the Construction Manager for the former production area, but they must not contain phosphorous. Fertilizer for other areas shall be 22-5-10. Fertilizers shall contain not less than 1 percent added sulfur and not more than 8 percent added iron, or an approved equal.
   4. Fertilizer must have MSDS submitted in accordance with this Section.
   5. Fertilizer shall be used for interim seeding only.

H. Construction water shall be obtained from the on-site water source shown on the Construction Drawings.

g. Apply sprayed mulch at a net dry weight of 2,000 pounds per acre minimum and 100 percent continuous coverage. Mix the mulch with water at a ratio of 50 pounds of mulch per 100 gallons of water.

E. Application of Crusting Agent:

1. Apply crusting agent in accordance with manufacturer's directions.
2. Unless otherwise specified by the manufacturer, dilute concentrated pine sap emulsion to ratio of 4 parts water to 1 part concentrate. Apply diluted pine sap emulsion at a rate of 2,500 gallons per acre.
3. ~~Apply a mixture of Conwed Fiber's Enviroblend hydraulic mulch and Finn Corporation's A-500 Hydro-Stik mulch binder, using the hydroseeder, at the rate of 1,000 lbs/acre on flat surfaces; and 1,125 lbs/acre on slopes greater than 3H:1V. The mixture rate for each product shall be 20 lbs/acre on flat surfaces and 30 lbs/acre on greater than 3H:1V slopes for the hydraulic mulch; and 20 lbs/acre on flat surfaces and 30 lbs/acre on slopes greater than 3H:1V for the Hydro-Stik mulch binder.~~

3.04 THIS NUMBER INTENTIONALLY NOT USED

3.05 MAINTENANCE

A. Maintain the vegetated areas in satisfactory condition until acceptance of the vegetation by the Construction Manager. Maintenance of the vegetated areas includes repairing eroded areas, revegetating when necessary, watering, and mowing (if applicable). A satisfactory condition of vegetated area is defined as follows:

1. an area shall have a predominant stand of the seeded vegetation;
2. within 3 weeks, germination must occur over 90 percent of the area with no single bare area greater than 3 square feet; and
3. within 3 months, 90 percent of the area must be covered with mature vegetation.

B. The above timeframes for germination and coverage requirements are to be delayed during the dormant season between November 1 and March 15 application of the seed. The performance criteria shall be measured at the beginning of the growing season (April 1) for seed applied during the previous dormant season.

C. Areas that fail to meet these requirements shall be repaired or reseeded as necessary to produce an acceptable stand of vegetation, as specified in this Section.

D. The acceptance inspection will be performed by the Construction Manager who will determine whether repair of vegetated areas or revegetation is required.

TABLE 02930-1A

SEED MIX IN DRY AREAS FOR PERMANENT VEGETATION

Species	Pounds Per Acre (lb/ac)
Big Bluestem	3
Little Bluestem	2
Side-Oats Grama	0.5
Indian Grass	2
Canada Wild-Rye	~~3~~ 25
Switch grass	0.5
ReGreen	~~10~~ 5
Wildflowers, uniform mix of the following:	1.5
Butterflyweed (*Asclepias tuberosa*)	
New England Aster (*Aster novae-angliae*)	
Smooth Aster (*Aster laevis*)	
Canada Milkvetch (*Astragalus Canadensis*)	
Purple Prairie Clover (*Petalostemum purpureum*)	
Ox-eye Sunflower (*Heliopsis helianthoides*)	
Bergamot (*Monadara fistulosa*)	
Purple Coneflower (*Echinacea purpurea*)	
Pale Purple Coneflower (*Echinacea pallida*)	
Yellow Coneflower (*Ratibida pinnata*)	
Black-Eyed Susan (*Rudbeckia hirta*)	
Spiderwort (*Tradescantia ohioensis*)	
Blue Vervain (*Verbena hastata*)	
Hoary Vervain (*Verbena stricta*)	
Beardtongue (*Penstemon grandiflorus*)	
Cupplant (*Silphium perfoliatum*)	
Sweet Joe Pye-Weed (*Eupatorium purpureum*)	
White False Indigo (*Baptisia leucantha*)	
Blue False Indigo (*Baptisia australis*)	
Partridge Pea (*Cassia fasciculata*)	
Rattlesnake Master (*Eryngium yuccifolium*)	
Round-headed Bush Clover (*Lespedea Capitata*)	
Stiff Goldenrod (*Solidago risida*)	

TABLE 02930-1B

SEED MIX IN WET AREAS[1] FOR PERMANENT VEGETATION

Species	Pounds Per Acre (lb/ac)
Big Bluestem	3
Canada Wild-Rye	~~3~~ 25
Switch Grass	0.5
Blue Joint Grass	0.5
Porcupine Sedge	1 ounce per acre (oz/ac)
Fox Sedge	1 ounce per acre (oz/ac)
Dark Green Bulrush	1 ounce per acre (oz/ac)
ReGreen	~~10~~ 5
Prairie Cordgrass (*Spartina pectinata*)	1
Wildflowers, uniform mix of the following:	1.5
Red Milkweed (*Asclepias incarnata*)	
New England Aster (*Aster novae-angliae*)	
Wild Senna (*Cassia hebecarpa*)	
Canada Tick Trefoil (*Desmodium canadense*)	
Prairie Blazingstar (*Liatris pycnostachya*)	
Great Blue Lobelia (*Lobelia siphilitica*)	
Bergamot (*Monadara fistulosa*)	
Yellow Coneflower (*Ratibida pinnata*)	
Branched Coneflower (*Rudbeckia hirta*)	
Blue Vervain (*Verbena hastata*)	
Angelica (*Angelica atropurpurea*)	
Sweet Joe-Rye Weed (*Eupatorium purpureum*)	

(1) Seeding in drainage ditches or swales shall contain erosion mats as specified in Section 02270 after application of seed mixture. Erosion mat shall cover a minimum width of 12 feet.

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 4	(6) DATE July 16, 2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction			(11) RCI NO.: 20103-008R
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Constructability of Final Cover Toe/Interface with Drainage Channel at Cell 1		(11) DCN NO.: 20103-022

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Phase III Construction Drawing	90X-6000-G-00310	1	Details 10 & 11
Phase III Construction Drawing	90X-6000-G-00311	1	Details 12, 13 & 14
Phase III Construction Drawing	90X-6000-G-00317	2	Detail 38
Phase III Construction Drawing	90X-5500-G-00577	0	Table 1-A

(9) [x] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & EQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

The geometry of the interface of the final cover system to the drainage channel as shown on the Cell 1 perimeter details will be difficult tc ɔnstruct. Please advise.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
David Lockerd David Lockerd	IT Corporation	8/29/01 ~~July 16, 2001~~	SH WOLINSKY	8/29/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [x] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

See attached figures for the proposed change to the geometry, which would improve constructability and also provides an access to the final cover monitoring devices (see DCN No.20103-018). The access (see Figure 1), for the north and east sides only, shall be constructed of base aggregate with a geotextile separator in accordance with the Technical Specifications. The west perimeter shall be constructed as shown on Figure 2 and transition to Figure 1 along the northwest perimeter. The pressure transducer risers shown on Figures 1 and 2 shall be field located. Provide as-built information on the " red-line" drawings. The loading requirements and restrictions for the monitoring access are presented on the attached page (2 of 4).

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/29/01

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [x] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) SH WOLINSKY DATE: 8/30/0

PERFORMANCE GRADE: (17) 4 ; SBDR 20100-027 APPLIES

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebah 8/29/01

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. C 011

OC0260

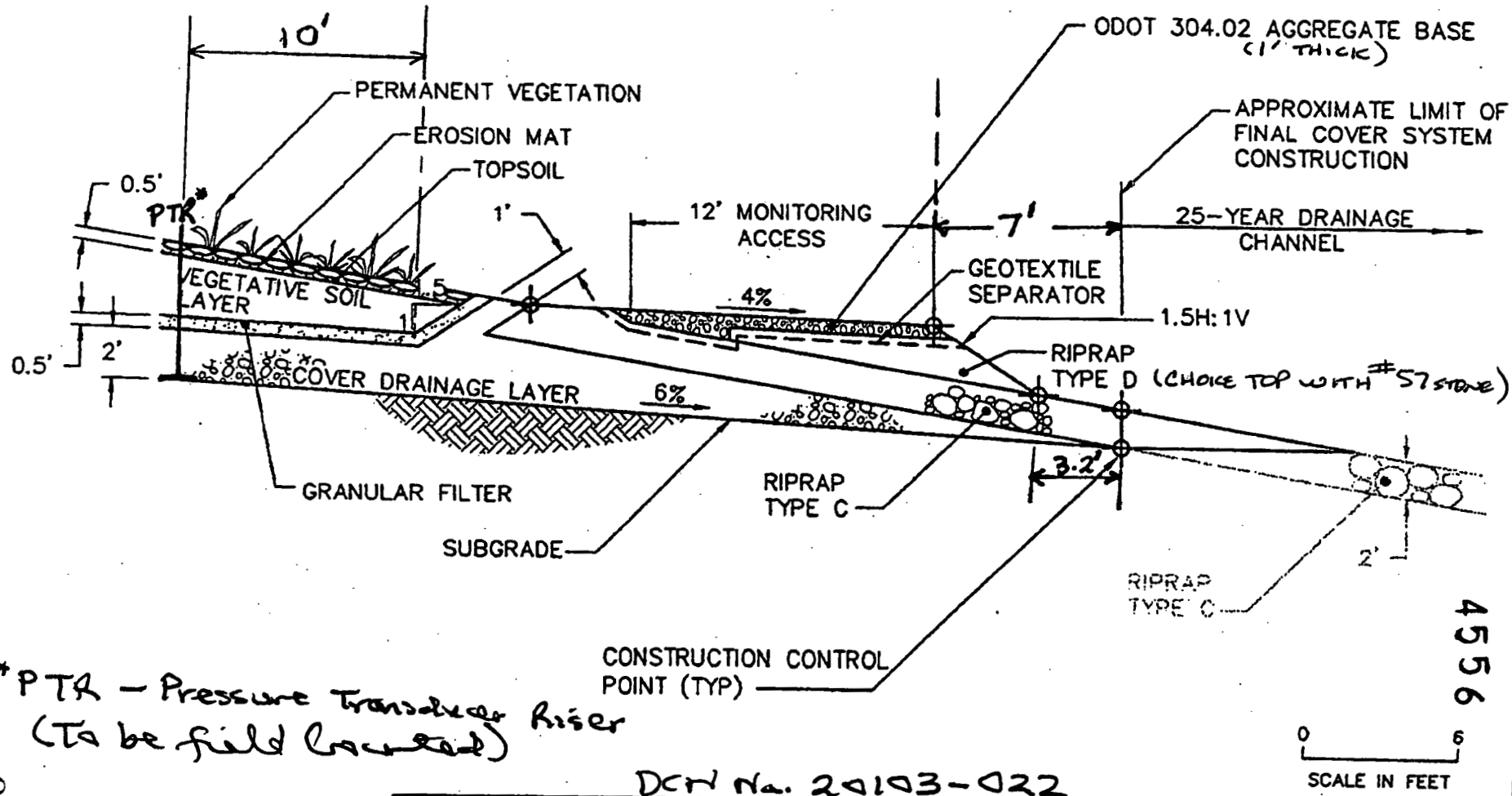
ORIGINAL

REQUIREMENTS AND RESTRICTIONS FOR MONITORING ACCESS

The monitoring access has a design capacity to handle up to a 20-ton vehicular weight (dual-axle). However, the actual weight limit will be set at 10 tons, unless specifically reviewed and approved by engineering and regulatory agencies on special occasions. The monitoring access shall be limited to use by maintenance, seeding, irrigation, monitoring, inspection, FEMP Operations and emergency vehicles only. The monitoring access shall not be used for OSDF construction through traffic. Signs showing the above restrictions shall be installed at the monitoring access ingress and egress points.

Pg 2 of 3 (FBT)

DRAINAGE CHANNEL AT CELL 1 WITH MONITORING ACCESS
(NORTH AND EAST PERIMETER)



*PTR – Pressure Transducer Riser (To be field located)

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DCN No. 20103-022

GEOSYNTEC CONSULTANTS ATLANTA, GEORGIA	FIGURE NO. 1	–
	PROJECT NO.	GQ1342-16.1
	DOCUMENT NO.	–
	FILE NO.	F01XD862.DWG

WEST DRAINAGE CHANNEL AT CELL 1
(NTS)

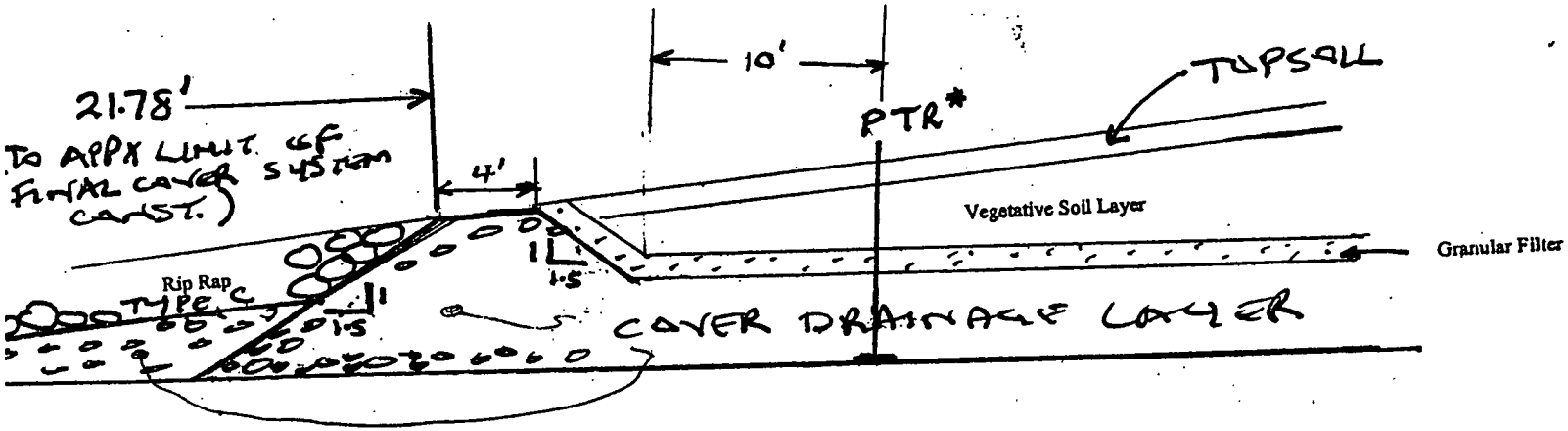

FIGURE 2

* PTR – Pressure Transducer Riser
(To be field located)

DCN No. 20103-022

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-614	(5) Pg 1 Of 5	(6) DATE 07/30/2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction			(11) RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]	(4A) RCI/DCN TITLE: Changes to Final Cover System Temporary Termination Detail		(11) DCN NO.: 20103-023

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Phase III Construction Drawing	90X-6000-G-00317	2	Detail 39
Phase III Construction Drawing	90X-6000-G-00302	1	

(9) [x] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & EQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

)stification: The current drawings do not provide details to protect the protective layer from erosion, and control storm water runoff an liments into Cell 2 and/or east and west perimeter of Cell 1.

Existing Condition: Surface-water management and erosion control of the termination area is not defined in the Phase III package.

Proposed Change: Add the following (see attached page) to the notes on Drawing No. 90X-6000-G-00317:

(10) REQUESTOR	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	8/02/2001	SH Wolinsky	8/2/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/2/2001

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) SH Wolinsky DATE: 8/8/01

PERFORMANCE GRADE: (17) 4 - SBDR 20000027 APPLIES

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebich

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. C049

ORIGINAL

DCN N0. 20103-023

EAST

CHANGES TO DRAWING NO. 90X-6000-G-00317

Add the following to Note 8:

- Install silt fence in accordance with Section 02270 of Technical Specifications at approximately 10 ft north of the toe of the temporary termination (see attached drawings).
- Stabilize the surface of the protective layer using either crusting agent or interim vegetation as directed by the Construction Manager. Crusting agent or interim vegetation shall be in accordance with Section 02930 of Technical Specifications.
- Construct a berm to connect the clay wedge from Cell 2 to the Cell 1 final cover system along the east and west perimeter berms to divert any runoff from the termination area to the impacted runoff catchment area. (See attached drawing for limits of berm.) Height of berm shall vary from 2 ft at the Cell 2 clay wedge to approximately 8 ft at the Cell 1 final cover. Provide as-built information on red-line drawings.

DCN No. 20103-023

page 3 of 5

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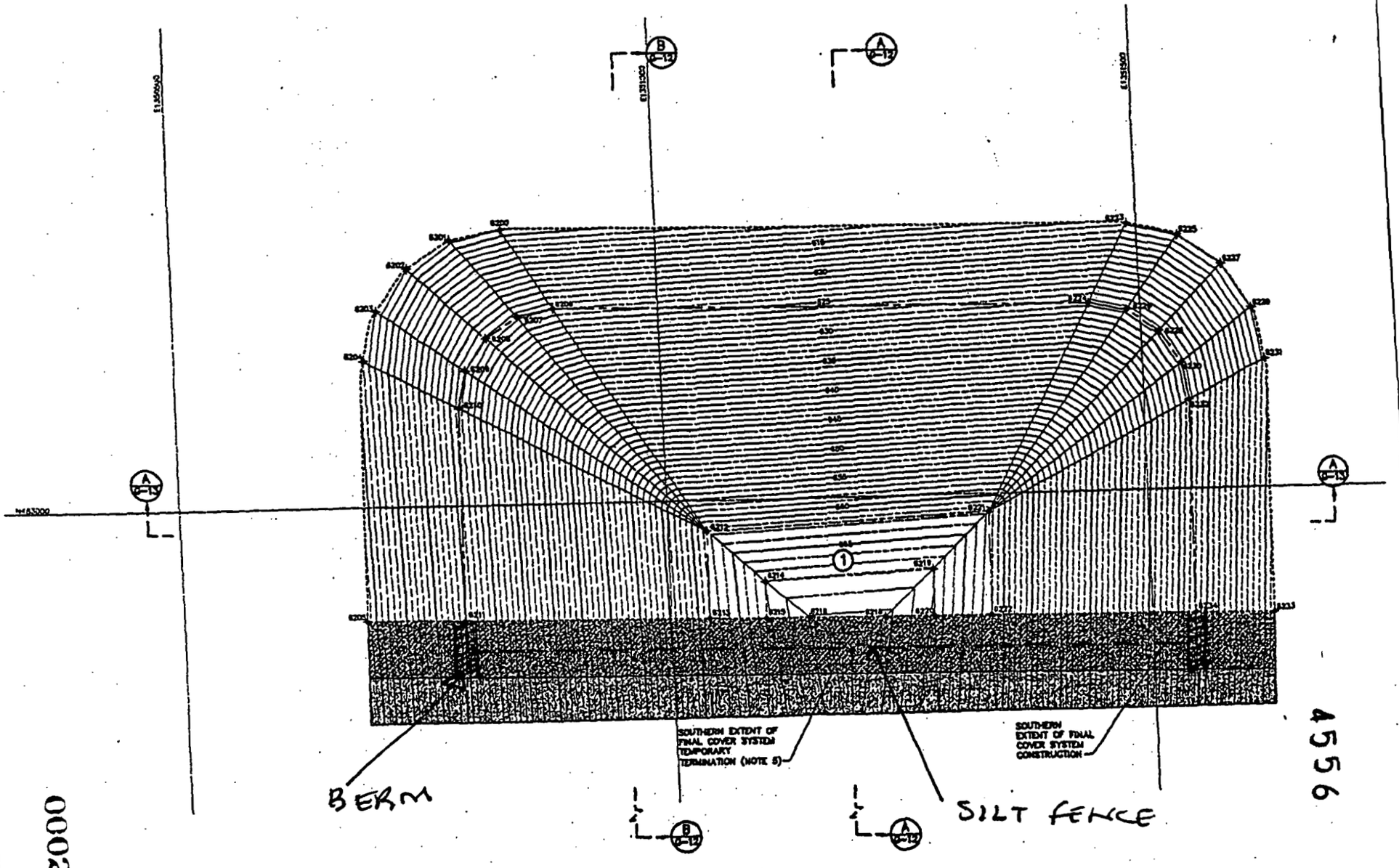

CFC DWG No: 90X-6000-G-00302

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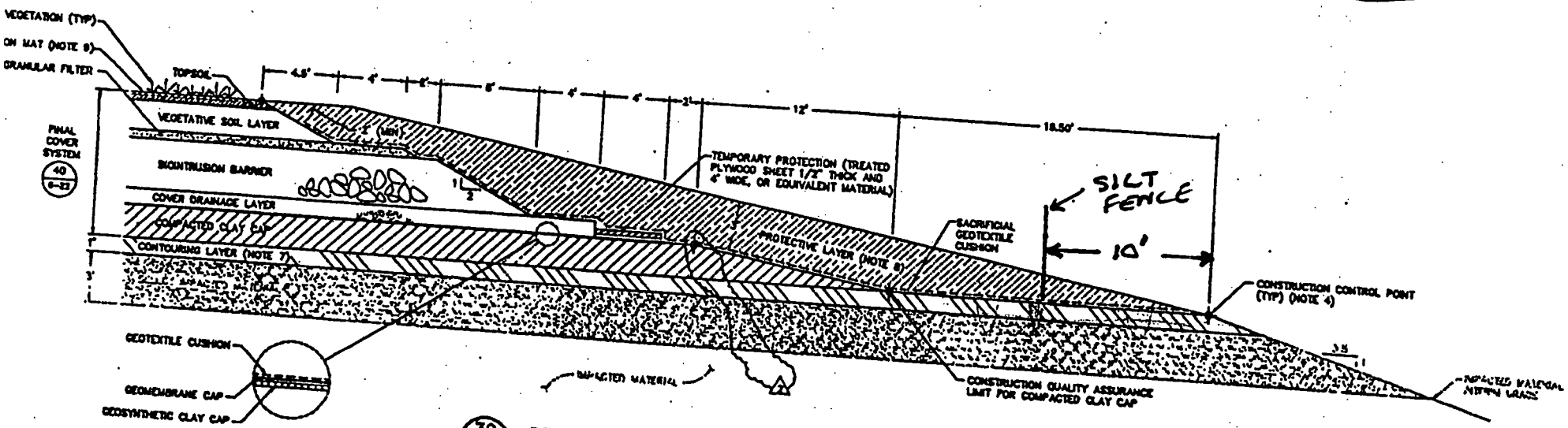
Page 4 of 5

Exhibit



39 / 0-12 DETAIL
FINAL COVER SYSTEM TEMPORARY TERMINATION
SCALE: 1" = 4'

ECDC CONTROLLE
COPY NO. C011

DCN No. 20103-023

CFC Dwg No. 90X-6000-G-00317

000267

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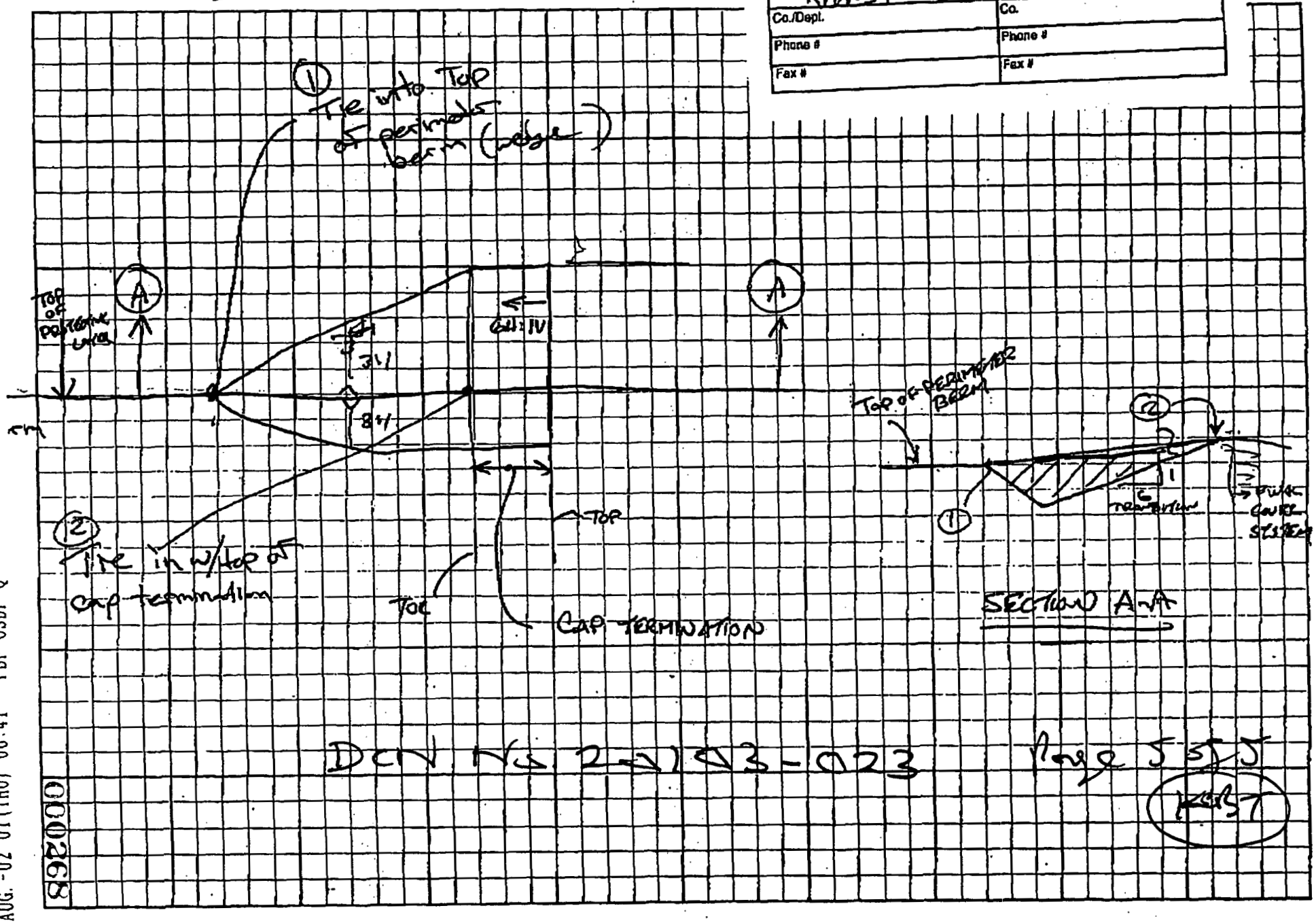
To KWASI	From Jan	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

PLAN



DCN No. 2-21843-023

Page 5 of 5

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-614	(5) Pg 1 Of 2	(6) DATE 07/30/2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction			(11) RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]	(4A) RCI/DCN TITLE: Addition of Soil-Bentonite Plugs		(11) DCN NO.: 20103-024

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications Section 02215	20103-TS-0001	0	
Technical Specifications Section 02215	20103-TS-0003	0	

(9) [x] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & EQUESTED/PROPOSEI CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The current specifications do not address the backfilling requirements for horizontal monitoring well pipe trenches and HDPE pipe trenche etween each valve houses and corresponding cell outlet. These trenches require the use of soil-bentonite plugs.

xisting Condition: Backfilling requirements for the pipe trenches between the cell outlet and valve houses were inadvertently left out in Section 02215.

oposed Change: Add the following (see attached page) to Section 02215, Part 3.03B:

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	8/02/2001	SHWolinsky	8/2/01

(13) RESPONSE. FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVEI

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/02/2001

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: DCN ONLY DATE: 8/8/01

PERFORMANCE GRADE: (17) 4 - SDR 2000-027 APPLIES SHWolinsky

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebuh

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED

COPY NO. C0 4 000269

ORIGINAL

DCN N0. 20103-024

CHANGES TO TECHNICAL SPECIFICATION 02215 – TRENCHING AND BACKFILLING

7 For horizontal monitoring well pipe trenches and HDPE pipe trenches between each valve house tie-in and the cell outlet, construct a soil-bentonite plug every 50-feet along the length of the trench. Prepare soil-bentonite mixture consisting of embedment fill at its natural moisture content mixed with minimum 10 percent (by dry weight basis) bentonite granules. Thoroughly mix with a portable cement mixer or other suitable method. Place and compact the soil-bentonite mixture in the same manner as specified in this Section for the embedment fill.

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 2	(6) DATE
20103	FSC-642		August 2, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: OSDF Cell 1 Final Cover Monitoring Devices - Change to Settlement Plate & Rod Assembly

(11) DCN NO.: 20103-025

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Sketch entitled 'SPR-Settlement Plate & Rod Assembly (Typ.)	Sketch No. SPR-1	4	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Settlement plate and rod assembly requires modification to minimize the effect of surface friction on the protective pipe and allow for free movement of the settlement plate

Existing Condition: Measurement rod and protective pipe are both welded to settlement plate

Proposed Change: Eliminate weld of protective pipe to settlement plate and weld a sleeve to the settlement plate allowing movement of the plate independent of the protective pipe. Sketch SPR-1 is attached showing this revision.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE:	DATE:
Chuck Van Arsdale	Fluor Fernald, Inc.	8/2/01	Samuel H. Wolinsky	8/2/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/6/2001

KRASI BADU-TWENEBOAH, GEOSYNTEC

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) SH WOLINSKY DATE: 8/8/01

PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebish

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C 049

ORIGINAL

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20103-SPR-1

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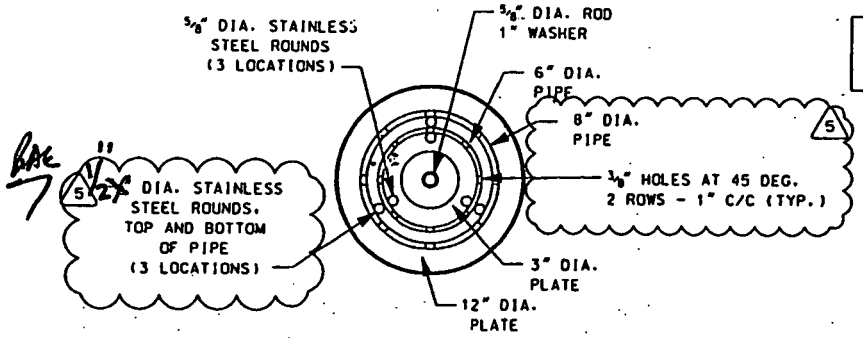
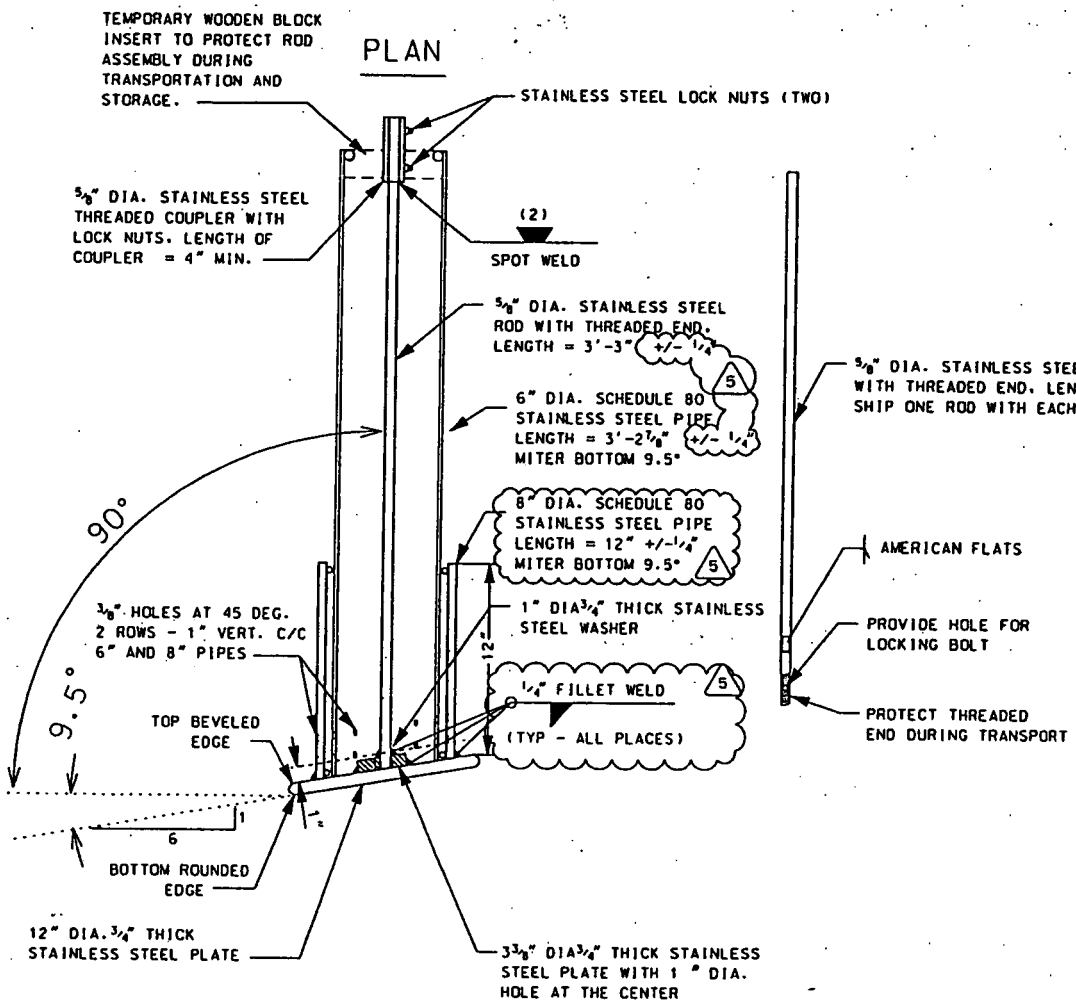


PLAN



SECTION

NOTE: 1. SEQUENTIALLY LABEL EACH ASSEMBLY FROM SPR-1-01 TO SPR-1-05. STAINLESS STEEL PLATES, PIPE AND ROD SHALL BE ANSI A304.

2. STAINLESS STEEL ROUNDS SHALL BE TACK WELDED TO THE INSIDE OF THE STAINLESS STEEL PIPE.

SPR- SETTLEMENT PLATE & ROD ASSEMBLY (TYP.)

(5 REQUIRED)

REV. 5

CERTIFIED FOR CONSTRUCTION

NO.	REVISIONS	DATE	DRN. BY	APPD.	REF. DRG. NO.
2	REVISE PER COMMENTS	7/8/01	KJD		
1	REVISE PER COMMENTS	7/6/01	KJD		

FLUOR FERNALD CADD DRAWING. DO NOT REVISE MANUALLY.

Fernald Environmental Management Project

FLUOR FERNALD, INC.

DEPARTMENT OF ENERGY

ON-SITE DISPOSAL FACILITY
SPR- SETTLEMENT PLATE & ROD ASSEMBLY (TYP.)

20103-SPR-1 | 5

FILE NAME: 20103SPR1.DGN

(OSK-001.DGN 8/1/01 REV. 5)

v:\osdf\res4274\20103SPR1.dgn 08/09/2001 09:40:50 AM

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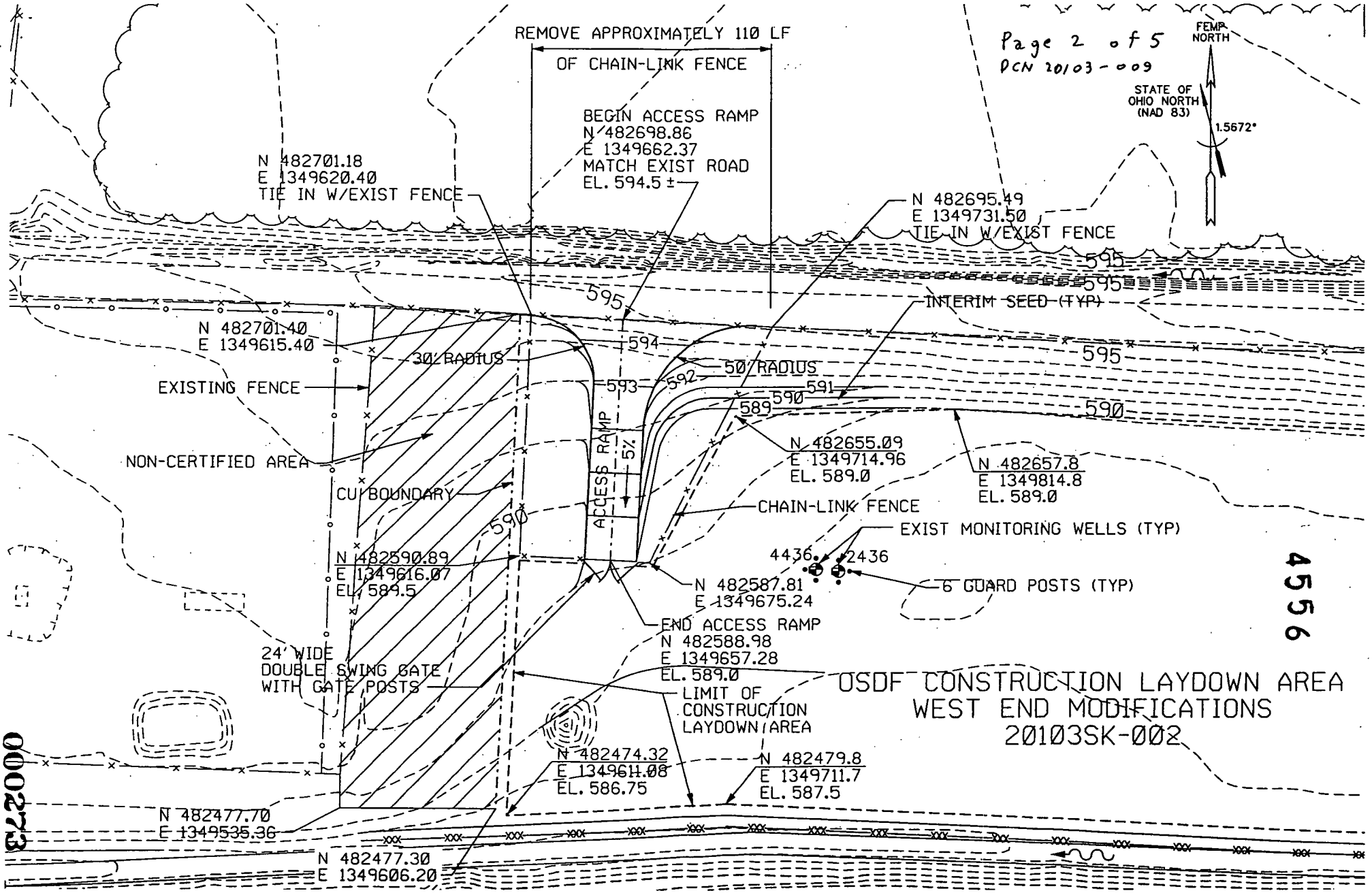

Page 2 of 5
DCN 20103-009
FEMP NORTH
STATE OF OHIO NORTH (NAD 83)
1.5672°
REMOVE APPROXIMATELY 110 LF
OF CHAIN-LINK FENCE
BEGIN ACCESS RAMP
N 482698.86
E 1349662.37
MATCH EXIST ROAD
EL. 594.5 ±
N 482701.18
E 1349620.40
TIE IN W/EXIST FENCE
N 482695.49
E 1349731.50
TIE IN W/EXIST FENCE
INTERIM SEED (TYP)
N 482701.40
E 1349615.40
30' RADIUS
50' RADIUS
EXISTING FENCE
NON-CERTIFIED AREA
CU BOUNDARY
ACCESS RAMP
5%
595
594
593
592
591
590
589
N 482655.09
E 1349714.96
EL. 589.0
N 482657.8
E 1349814.8
EL. 589.0
CHAIN-LINK FENCE
EXIST MONITORING WELLS (TYP)
4436
2436
6 GUARD POSTS (TYP)
N 482590.89
E 1349616.07
EL. 589.5
N 482587.81
E 1349675.24
END ACCESS RAMP
N 482588.98
E 1349657.28
EL. 589.0
24' WIDE
DOUBLE SWING GATE
WITH GATE POSTS
LIMIT OF
CONSTRUCTION
LAYDOWN AREA
N 482474.32
E 1349611.08
EL. 586.75
N 482479.8
E 1349711.7
EL. 587.5
N 482477.70
E 1349535.36
N 482477.30
E 1349606.20
4556
USDF CONSTRUCTION LAYDOWN AREA
WEST END MODIFICATIONS
20103SK-002

000273

VARIANCE / FIELD CHANGE NOTICE

V/F 20720-PSP-0002-4

PSP NO.: 20720-PSP-0002, Rev. 0

Page 1 of 3

PROJECT TITLE: PROJECT SPECIFIC PLAN FOR CERTIFICATION SAMPLING OF AREA 1, PHASE III, PART TWO

Date: 09/22/00

/ARIANCE / FIELD CHANGE NOTICE (Include justification)

Variance:

Certification samples collected in CU A1P3P2-C-01 showed a failure for benzo(a)pyrene. Additionally, results for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and chrysene were above the BTV value. The affected area is approximately 15378 square feet to the east of the former Fire Training Facility. Twelve inches will be excavated in this area and the resulting excavation footprint will be designated as CU A1P3P2-C-04. Samples will be collected and analyzed for PAHs including benzo(a)pyrene by CLP methodology. Samples will not be analyzed for dibenzo(a,h)anthracene by SW-846 method 8310 to achieve lower detection limits because the initial analysis confirmed that concentrations of this analyte are below BTV. Additionally, all other COCs were below their associated FRLs and resampling and analysis for these constituents will not be performed. This Variance/Field Change Notice (V/FCN) documents the certification design and sampling for CU A1P3P2-C-04.

The attached figure shows the sample locations (Figure 1) and boundary for CU A1P3P2-C-04 (Figure 2). The sample locations were generated per the SEP as discussed in the PSP. Thirteen six-inch samples, collected at twelve locations, will be analyzed for the PAHs. Rinsates, if required, will be collected in accordance with the PSP. The archive sample locations will be marked in the field and collected as needed. Analysis and data validation will be at ASL D as described in Section 4 of the PSP. Sample containers and preservation will comply with Table 3-1 of the PSP. The following are the sample identifications and coordinates for CU A1P3P2-C-04.

Location	Sample ID	Northing	Easting	Analysis
01	A1P3P2-C-04-01-S	482701	1349580	PAHs
02	A1P3P2-C-04-02-S	482681	1349591	PAHs
03	A1P3P2-C-04-03-V	482671	1349577	Archive
04	A1P3P2-C-04-04-S	482668	1349609	PAHs
05	A1P3P2-C-04-05-S	482627	1349558	PAHs
06	A1P3P2-C-04-06-S	482619	1349583	PAHs
06	A1P3P2-C-04-06-S-D	482619	1349583	PAHs
07	A1P3P2-C-04-07-S	482595	1349551	PAHs
08	A1P3P2-C-04-08-V	482612	1349607	Archive
09	A1P3P2-C-04-09-S	482586	1349574	PAHs
10	A1P3P2-C-04-10-S	482583	1349604	PAHs
11	A1P3P2-C-04-11-V	482548	1349559	Archive
12	A1P3P2-C-04-12-S	482548	1349594	PAHs
13	A1P3P2-C-04-13-S	482527	1349567	PAHs
14	A1P3P2-C-04-14-V	482515	1349585	Archive
15	A1P3P2-C-04-15-S	482488	1349551	PAHs
16	A1P3P2-C-04-16-S	482501	1349603	PAHs

Unofficial Review By OEPA 9-22-00

Justification:

Sampling and analysis of the excavated area is necessary to verify removal of the benzo(a)pyrene contamination and to certify the area.

REQUESTED BY: Jenny Vance Date: September 22, 2000

	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE [signature]	9/26/00	X	CHARACTERIZATION LEAD Jenny Vance for Mike Polfes	09/22/00
	DATA QUALITY MANAGEMENT		X	FIELD MANAGER Tom Bulnlage	9/25/00
X	ANALYTICAL CUSTOMER SUPPORT [signature]	09/25/00	X	AREA MANAGER [signature]	9-22-00
	RTIMP MANAGER			WASTE ACCEPTANCE ORGANIZATION	

VARIANCE/FCN APPROVED [X]YES [ ]NO

REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

PROJECT MANAGER:	DOCUMENT CONTROL:	OTHER:
QUALITY ASSURANCE:	OTHER:	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

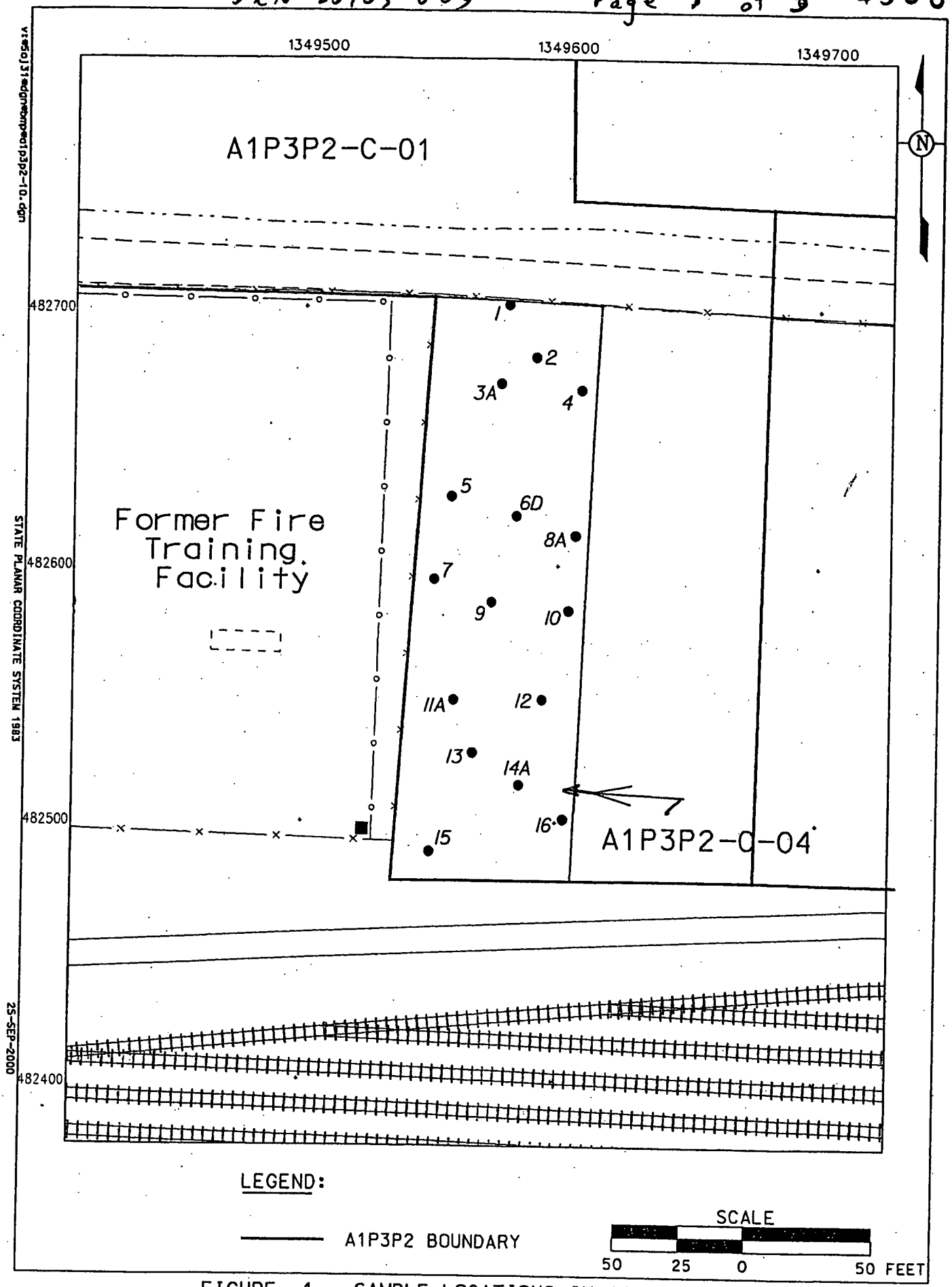
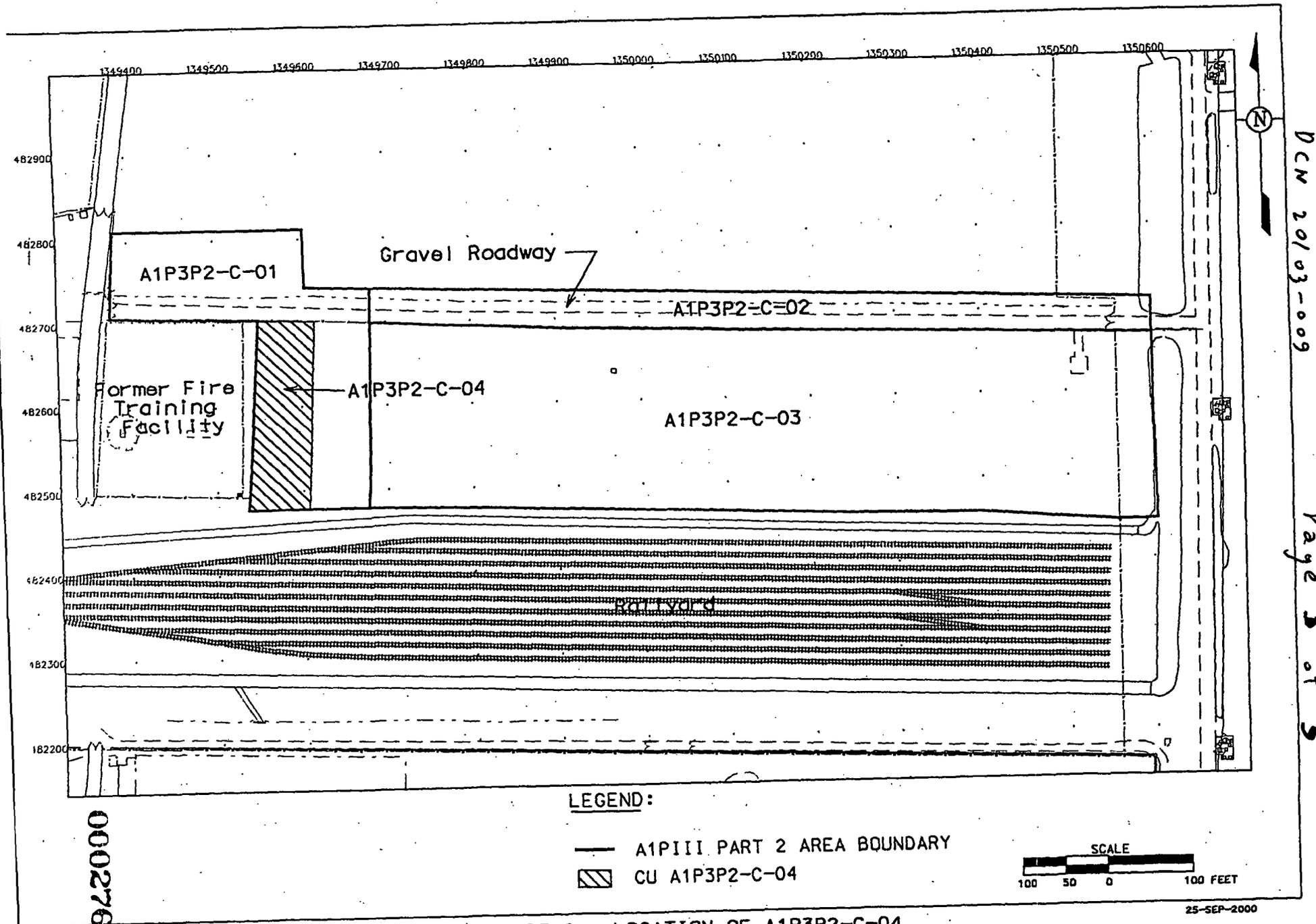


FIGURE 1. SAMPLE LOCATIONS IN A1P3P2-C-04



DCN 20/03-009

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TATE PLANAR COORDINATE SYSTEM 1983

FIGURE 2. LOCATION OF A1P3P2-C-04

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 2	(6) DATE October 9, 2000
(3) S/C TITLE: OSDF Phase III			(11) RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]	(4A) RCI/DCN TITLE: Changes to Geosynthetic Clay Liner and Cap Property Values		(11) DCN NO.: 20103-010

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications Section 02772	20103-TS-0001 + 0003	0	Table 02772-1

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Revise the qualifier for hydraulic conductivity in Table 02772-1 to correct a typographic error.
Existing Condition: The "minimum" qualifier specified for hydraulic conductivity in Table 02772-1 is incorrect due to a typographic error.

Proposed Change: Replace "minimum" with "maximum" for hydraulic conductivity in Table 02772-1. Add "[END OF SECTION]" to page 02772-9. The proposed changes are presented on attached Table 02772-1 of this DCN.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	October 9, 2000		10/10/00

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 10/9/2000
Kwasi Badu-Tweneboah, GeoSyntec
[ ] FIT [x] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/16/00
PERFORMANCE GRADE: (17) 4 SBDR 2000-0027 APPLIES

(18) CONSTRUCTION CONCURRENCE DATE: 10/10/00
Bill Zebick
PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. 011

FS-F-4259
REV. 5: 10/01/99

ORIGINAL

DCN No. 20103-010

Pg 2 of 2

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TABLE 02772-1

REQUIRED GEOSYNTHETIC CLAY LINER AND CAP PROPERTY VALUES

PROPERTIES	QUALIFIERS	UNITS[4]	SPECIFIED[1] PROPERTY VALUES	TEST METHOD
Geosynthetic Clay Liner and Cap Properties				
Bentonite Content[2]	minimum	lb/ft^2	1.0	ASTM D 5993
Bentonite Moisture Content	maximum	%	25	ASTM D 4643
Bentonite Fluid Loss	maximum	ml	8	ASTM D 5891
Bentonite Free Swell	minimum	ml/2g	24	ASTM D 5890
Hydraulic Conductivity[3]	maximum	cm/s	5×10^{-9}	ASTM D 5887
Geotextile Properties				
Polymer Composition	minimum	%	95 polyester or polypropylene	

Notes:
1. All values represent minimum average roll values (i.e., any roll in a lot should meet or exceed the values in this table).
2. Measured at a moisture content not exceeding 25 percent.
3. Test at an effective confining stress of 5 psi.
4. lb/ft^2 = pounds per square foot
   cm/s = centimeter per second
   g = grams
   % = percent
   lb = pound
   lb/in. = pounds per inch
   ml/2g = milliliters per two grams

[END OF SECTION]

REV. RECEIVED 9/12/00 (NO DCN)

4556

TABLE 02772-1

REQUIRED GEOSYNTHETIC CLAY LINER AND CAP PROPERTY VALUES

PROPERTIES	QUALIFIERS	UNITS[4]	SPECIFIED[1] PROPERTY VALUES	TEST METHOD
Geosynthetic Clay Liner and Cap Properties				
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Geotextile Properties				
Polymer Composition	minimum	%	95 polyester or polypropylene	

Notes:
1. All values represent minimum average roll values (i.e., any roll in a lot should meet or exceed the values in this table).
2. Measured at a moisture content not exceeding 25 percent.
3. Test at an effective confining stress of 5 psi.
4. lb/ft² = pounds per square foot
   cm/s = centimeter per second
   g = grams
   % = percent
   lb = pound
   lb/in. = pounds per inch
   ml/2g = milliliters per two grams

[END OF SECTION]

TABLE 02772-1

REQUIRED GEOSYNTHETIC CLAY LINER AND CAP PROPERTY VALUES

PROPERTIES	QUALIFIERS	UNITS[4]	SPECIFIED[1] PROPERTY VALUES	TEST METHOD
Geosynthetic Clay Liner and Cap Properties				
Bentonite Content[2]	minimum	lb/ft^2	1.0	ASTM D 5993
Bentonite Moisture Content	maximum	%	25	ASTM D 4643
Bentonite Fluid Loss	maximum	ml	8	ASTM D 5891
Bentonite Free Swell	minimum	ml/2g	24	ASTM D 5890
Hydraulic Conductivity[3]	minimum	cm/s	5×10^{-9}	ASTM D 5887
Geotextile Properties				
Polymer Composition	minimum	%	95 polyester or polypropylene	

Notes:
1. All values represent minimum average roll values (i.e., any roll in a lot should meet or exceed the values in this table).
2. Measured at a moisture content not exceeding 25 percent.
3. Test at an effective confining stress of 5 psi.
4. lb/ft^2 = pounds per square foot
   cm/s = centimeter per second
   g = grams
   % = percent
   lb = pound
   lb/in. = pounds per inch
   ml/2g = milliliters per two grams

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC - 642	(5) Pg 1 Of 2	(6) DATE 02/21/01

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Biointrusion Barrier and Choke Stone Material Changes

(11) DCN NO.: 20103 - 011

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specification Section 02280	20103-TS-0001	0	
	20103-TS-0003	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: New information became available to re-evaluate the stone size for Biointrusion Barrier material including additional testing on rock at local quarries, technical literature on internal frition angles, and it was discovered that the original calculations were overly conservative. Revise Biointrusion barrier rock size to allow for better placement by mechanical equipment, higher percentage of voids which deters root penetration, and smaller void space to discourage burrowing fauna. Revise choke stone layer stone size to adhere to the new biointrusion barrier material size.

Existing Conditions: ODOT Type C dumped rock fill is specified for biointrusion barrier material and AASHTO No. 1 coarse aggregate is specified for the choke stone.

Proposed Changes: Revise biointrusion barrier material to ODOT Type D dumped rock fill and the choke stone layer to AASHTO No. 57 coarse aggregate. Specific changes to Specification Section 02280 are presented on the following page.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Charles C. Van Arsdale	Fluor Fernald, Inc.	2/21/01	Sam Wolinsky	2/21/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 2/21/01

KWASI BADU-TWENEBOAH, GEOSYNTEC

[ ] FIT [X] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 2/21/01

PERFORMANCE GRADE: (17) 5 SBDR – 2000 – 0027 APPLIES SH WOLINSKY

(18) CONSTRUCTION CONCURRENCE DATE: 2/22/01

Bill Zebich

PURCHASE REQUISITION REQUIRED: [ ] YES [✓] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99

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DCN 20103-011

CHANGES TO TECHNICAL SPECIFICATION 02280 – BIOINTRUSION BARRIER

Part 1.03C: Remove reference to AASHTO T103 test method;

Parts 1.03 E, F, and G: Add references to state:

"E. *"Evaluation of Materials for the On-Site Disposal Facility (OSDF) Biointrusion Barrier"* **[University of Cincinnati, 2000].** This report presents riprap testing from various local quarries and assigns a rock quality factor based on the Uranium Mill Tailings Remedial Action Project (UMTRA) Technical Approach and the Nuclear Regulatory Commission (NRC) approach to each quarry material.

F. *"UMTRA – Technical Approach Document, Revision II"* **[USDOE, 1989].** This technical document describes the general technical approaches and design criteria adopted by the USDOE to implement remedial action plans and final designs that comply with EPA standards. This document describes a rock quality rating approach for biointrusion barriers in final cover systems.

G. *"Final Staff Technical Position Design of Erosion Protection Covers for Stabilization of Uranium Mill Tailings Sites"* **[USNRC, 1990].** This technical document presents general technical approaches and design criteria for final cover systems. The document provides a slightly revised rock quality rating approach to that of the UMTRA technical approach [USDOE, 1989]".

Part 1.04A.2. Revise as follows: "2. for approved sources identified in University of Cincinnati [2000] or by Fluor Fernald, Inc., certification from the supplier that biointrusion barrier material meets the material requirements including rock quality rating of this Section and that tests were performed on representative samples in accordance with the respective ASTM test methods in USNRC [1990]".

Part 2.01B: Change "Type C Dumped Rock Fill" to "Type D Dumped Rock Fill" and revise to read, "...specified in Item 601.07 and 703.04(3) of the Ohio DOT Specifications."

Part 2.01C. Revise as follows: "Biointrusion barrier material shall have a minimum rock quality rating of 60 when rated in accordance with the USNRC [1990] scoring criteria based on USDOE [1989].

Part 2.01D. Change from No.1 to No. 57 coarse aggregate for the choke stone.

Part 2.01E. Change maximum absorption value from 0.83 to 2.0.

These changes are based on calculations entitled "Addendum 2 to Final Design Calculation Package, On-Site Disposal Facility, Rev. 1". The calculations were reviewed and approved by USEPA and OEPA.

Construction Quality Assurance Plan shall be revised accordingly due to these changes

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 2	(6) DATE 03/05/2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Changes to Gradation of Granular Drainage Layer Material	(11) DCN NO.: 20103-012	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications Section 02710	20103-TS-0001	0	
Technical Specifications Section 02710	20103-TS-0003	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Justification: The gradation requirements for the granular drainage material have been evaluated in response to a supplier's submittal request and to be consistent with previous OSDF cell construction (e.g., see Phase I DCN No. 1702-015).
Existing Condition: Standard M 43 gradation requirements for No. 78 coarse aggregate specified.
Proposed Change: Change the total percent (by weight) passing through U.S. sieve size ½-in. to 85 to 100. Specific changes to Section 02710 are presented on the following page.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	March 5, 2001	SH WOLINSKY	3/5/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 3/5/01 Kwasi Badu-Tweneboah, GeoSyntec [ ] FIT [X] FORM [ ] FUNCTION	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 3/5/01 PERFORMANCE GRADE: (17) 4 SBDR-2000-0027 SH WOLINSKY	
(18) CONSTRUCTION CONCURRENCE DATE: APPLIES 3/05/01 Bill Zebrah PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)	(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99

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CHANGES TO TECHNICAL SPECIFICATION 02710 - GRANULAR DRAINAGE MATERIAL

Part 2.01B: Revise as follows: "Granular drainage material for the leachate collection system (LCS) drainage layer, leak detection system (LDS) drainage layer, protective layer in the Impacted Runoff Catchment Area, and cover drainage layer shall be classified as GP in accordance with the Unified Soil Classification System per ASTM D 2487, and shall meet the AASHTO M 43 modified gradation requirements for No. 78 coarse aggregate. The modified No. 78 coarse aggregate shall meet the following gradation (per ASTM C 136) requirements:

Sieve	Total Percent Passing (by weight)
¾ in.	100
½ in.	85 to 100
3/8 in.	40 to 75
No. 4	5 to 25
No. 8	0 to 10
No. 16	0 to 5

3/5/01

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RCI/DCN FORM **ORIGINAL**

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 1	(6) DATE 04/05/2001
(3) S/C TITLE: On-Site Disposal Facility (ODF) Phase III - Cell 1 Final Cover Construction		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Change to Non-Impacted Contouring Layer Thickness Tolerance	(11) DCN NO.: 20103-013	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications	20103-TS-0001	0	Section 02240, Pt. 3.08.A
Technical Specifications	20103-TS-0003	0	Section 02240, Pt. 3.08.A

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Field conditions require additional non-impacted contouring layer material be placed to meet design top of contouring layer elevations.
Existing Condition: Existing elevations based on current survey of top of select impacted layer in Cell 1 indicates the existing elevation is lower than the elevation grades surveyed last fall.
Proposed Change: Revise thickness tolerance specified for the non-impacted contouring layer in Part 3.08A to read as follows: "Construct the non-impacted contouring layer to within 0.0 to +0.1 feet of the thickness shown on the Construction Drawings. Construct the non-impacted contouring layer to no less than the thickness shown on the Construction Drawings." Top of contouring layer elevation grade tolerance remains the same as stated in the Technical Specifications.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE/ PE	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	April 5, 2001	A. C. Smith for Samuel H. Wolinsky	4/09/2001

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [ ] APPROVED [x] APPROVED AS NOTED [ ] DISAPPROVED

Revise Parts 3.03F, 3.03H and 3.03I to read as follows:
F. "Place the non-impacted contouring layer in two or more loose lifts with the first lift 10 inches ±1 inch thick. The loose thickness of subsequent lifts shall be 8 inches ± 1 inch."
H. " Prior to placing a succeeding lift of non-impacted contouring layer material over a previously compacted lift, thoroughly scarify the previous lift by discing, raking, or tracking with a bulldozer."
I. "Place the last lift of the non-impacted contouring layer to meet the minimum thickness and grades indicated on the Construction Drawings and this DCN. Meet the tolerance requirements of this Section."

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 4/9/01
Kwasi Badu-Tweneboah, GeoSyntec Consultants, Inc.

[ ] FIT [X] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE:
PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies A. C. Smith for Sam Wolinsky 4/24/01

(18) CONSTRUCTION CONCURRENCE DATE: 04/24/01

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19)
for Bill Zebick

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. 011

DUPLICATE ORIGINAL

From: Kwasi Badu-Tweneboah

To: 'Vanarsdale, Chuck '; 'Wolinsky, Sam '; Kwasi Badu-Tweneboah

Cc: 'Snider, Anthony '; 'Kumthekar, Uday '

Subject: RE: Electronic File for Draft DCN on Contouring Layer Thickness

Sent: 4/6/2001 9:21 AM **Importance:** Normal

Gentlemen:
If the thickness of the contouring layer is going to be significantly greater than the 1 ft specified on the drawings, based on the new survey data, then we need to address the number of lifts and thicknesses required for placement and compaction. Presently, we only have two lifts for a 1-ft compacted lift. What if the thickness is now 1.5 ft or more?

Kwasi

-----Original Message-----
From: Vanarsdale, Chuck
To: Wolinsky, Sam; 'kwasib@geosyntec.com'
Cc: Snider, Anthony; Vanarsdale, Chuck; Kumthekar, Uday
Sent: 4/5/2001 4:41 PM
Subject: RE: Electronic File for Draft DCN on Contouring Layer Thickness

Sam,

Please find attached a revised version of DCN. This includes Uday's and my comments. Please insert the number in the Specs. of 3.08.A.(?) (See bold section)

Chuck

-----Original Message-----
From: Wolinsky, Sam
Sent: Thursday, April 05, 2001 4:09 PM
To: 'kwasib@geosyntec.com'; Vanarsdale, Chuck
Cc: Snider, Anthony; Wolinsky, Sam
Subject: Electronic File for Draft DCN on Contouring Layer Thickness

KWASI - Here's an electronic file of the Draft DCN I faxed to you earlier. Please review and send any comments you may have to Tony Snider and me. Thanks...SAM

<<dcn 20103-013.doc>>

4556

From: Vanarsdale, Chuck [SMTP:Chuck.Vanarsdale@fernald.gov]

To: Wolinsky, Sam; 'kwasib@geosyntec.com'

Cc: Snider, Anthony; Vanarsdale, Chuck; Kumthekar, Uday

Subject: RE: Electronic File for Draft DCN on Contouring Layer Thickness

Sent: 4/5/2001 4:41 PM **Importance:** Normal

Sam,

Please find attached a revised version of DCN. This includes Uday's and my comments. Please insert the number in the Specs. of 3.08.A.(?) (See bold section)

Chuck

-----Original Message-----
From: Wolinsky, Sam
Sent: Thursday, April 05, 2001 4:09 PM
To: 'kwasib@geosyntec.com'; Vanarsdale, Chuck
Cc: Snider, Anthony; Wolinsky, Sam
Subject: Electronic File for Draft DCN on Contouring Layer Thickness

KWASI - Here's an electronic file of the Draft DCN I faxed to you earlier. Please review and send any comments you may have to Tony Snider and me. Thanks...SAM

dcn 20103-013.doc

000287

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 of 9	(6) DATE 5-11-01
(3) S/C TITLE: OSDF Phase III			(11) RCI NO.: —
(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]	(4A) RCI/DCN TITLE: OMTA AMS ELEC. SERVICE		(11) DCN NO.: 20103-014

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
BULK DEBRIS STORAGE ELEC. LAYOUT	90X-5500-E-00549	Rev	
BULK DEBRIS STORAGE ELEC. DETAILS	90X-5500-E-00550	Rev	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [✓] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [✓] NOT REQUIRED

PROVIDE ELEC POWER TO NEW [illegible] AROUND THE EXPANDED OMTA AREA

(10) REQUESTOR: R. McGuire Richard McGuire COMPANY: Fluor Daniel DATE: 5/18/01 (12) CE/PE JOH GOETZ DATE: 05/18/01

(13) RESPONSE: FOR RCI, IS A DCN REQUIRED? [ ] NO [✓] YES (14) FOR DCN: [✓] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

THIS WORK WILL REQUIRE DWG CHANGES.

THIS DCN IS IN RESPONSE TO RFS 4247

VOID

10-17-01

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: J. E. Kerl 5-17-01

[ ] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) J.E. Kerl DATE: 5-17-01

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE DATE: Richard E. McGuire 5/18/01

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C011

ORIGINAL

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg	(6) DATE
20103	FSC-642	1 of 9	5-16-01

(3) S/C TITLE: OSDF Phase III

(11) RCI NO.: —

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: OMTA AMS ELEC. SERVICE

(11) DCN NO.: 20103-014

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
BULK DEBRIS STORAGE ELEC. LAYOUT	90X-5500-E-00549	Rev 0	
BULK DEBRIS STORAGE ELEC. DETAILS	90X-5500-E-00550	Rev 0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [✓] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [✓] NOT REQUIRED

PROVIDE ELEC POWER TO 4 NEW AMS AROUND THE EXPANDED OMTA AREA

(10) REQUESTOR: R. McGuire COMPANY: DATE:
Richard McGuire Fluor Fernald 5/18/01

(12) CE/PE DATE:
DON GOETZ 05/18/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [✓] YES (14) FOR DCN: [✓] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

THIS WORK WILL REQUIRE DWG CHANGES.

THIS DCN IS IN RESPONSE TO RES 4247

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE:
J. E. Kerl 5-17-01
[✓] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) J. E. Kerl DATE: 5-17-01
PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE DATE: 5/18/01
Richard L. McGuire
PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

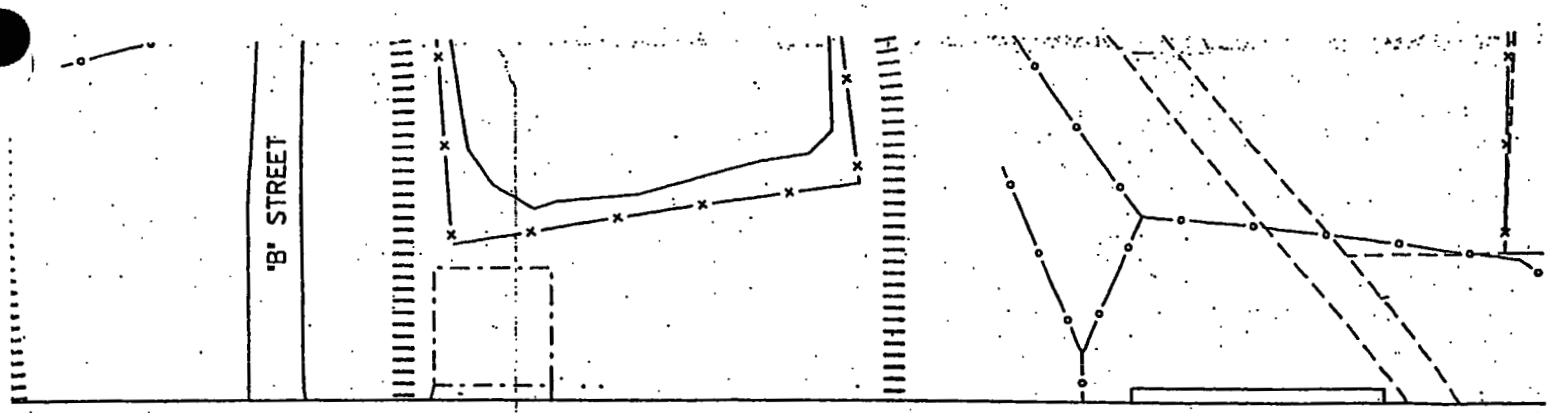
FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C 011

ORIGINAL

000289

4556
Res 4247



GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER (CU) WITH THWN INSULATION UNLESS OTHERWISE NOTED.
2. PRIOR TO DIGGING, CONSULT UNDERGROUND UTILITIES DRAWINGS 22C-5500-P-00660 AND 22C-5500-P-00668 (GRIDS 1 & 9) FOR THE LATEST UNDERGROUND UTILITY INFO. ON FILE.
3. DIG SETTING HOLES LARGE ENOUGH TO PERMIT USE OF POWER TAMPERS TO FULL DEPTH. PLACE EARTH IN MINIMUM 6 INCH LAYERS AND PACK TO 95% DENSITY PER ASTM D698. BANK EARTH 12" ABOVE GRADE.
4. NEW POLES SHALL BE 35 FEET, CLASS 2 SOUTHERN PINE, 100% TREATED WITH 5½ FEET MINIMUM BURIAL.
5. NEW AERIAL WIRING TO BE #4/0 AL QUADRAPLEX (3 INSULATED AND 1 BARE) ATTATCHED TO POLES WITH CHANCE #7911 UNIVERSAL MESSENGER HANGERS WITH MAX. 3 FEET CABLE SAG BETWEEN POLES. FOR POLE GUY, ANCHORING AND ATTACHMENT DETAILS SEE DRAWINGS 16X-5500-E-00105 AND 16X-5500-E-00106. INSTALL POLE GROUNDING SYSTEM AS SHOWN ON 16X-5500-E-00106.
6. MAINTAIN 1 FOOT SPACING BETWEEN EXISTING 480V WIRING AND NEW 240V WIRING.
7. FOR POLE COORDINATES FOR EXISTING POLES SEE DRAWING 22X-5500-E-00958.
8. AS BUILT LOCATION COORDINATES (NAD83) FOR PROPOSED POLES TO BE SUBMITTED TO CADD SERVICES UPON COMPLETION OF JOB.

44X-5500-E-00363
90X-5500-E-00549
78X-4445-E-00029
78X-4445-E-00027
44X-5500-E-00366
44X-5500-S-00364
REF. DWG. NO.

DWG 90X-5500-E-00549

DCN 20103-014
Page 2 of 9

000290

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	4247
BY:	JGK
DATE:	5-16-01
PAGE:	OF
REVISED:	

SUBJECT:

Mod. Notes

1) Install 7 New Poles - NW 81, 82, 83, 84, 85, 86, & 87
2) Install new 240V feeder from electrical panel in T191 on exiting and new poles to air monitor stations
3) Four new air monitor locations will be at poles NW20, NW82, NW86, and NW29.
4) Remove existing conduit, wiring and hardware on pole to grade level
5) Install guys on the following poles - NE108, NW29, NW82, NW85, and NW86

Guy Wire Anchoring

Pole No	Anchors	Guys(s)	angle of Guy Wire to ground
NE108	1-12"	1-1/2"	60°
NE29	1-12"	1-1/2"	60°
NE 82	2-12"	2-1/2"	60°
NE 85	2-12"	2-1/2"	60°
NE 86	1-12"	1-1/2"	60°

DCN 20103-014
Page 3 of 9

DWG
90X-5500-E-00549

000291

FS-F-78 B (RE

Fernald Environmental Restoration Management Corporation

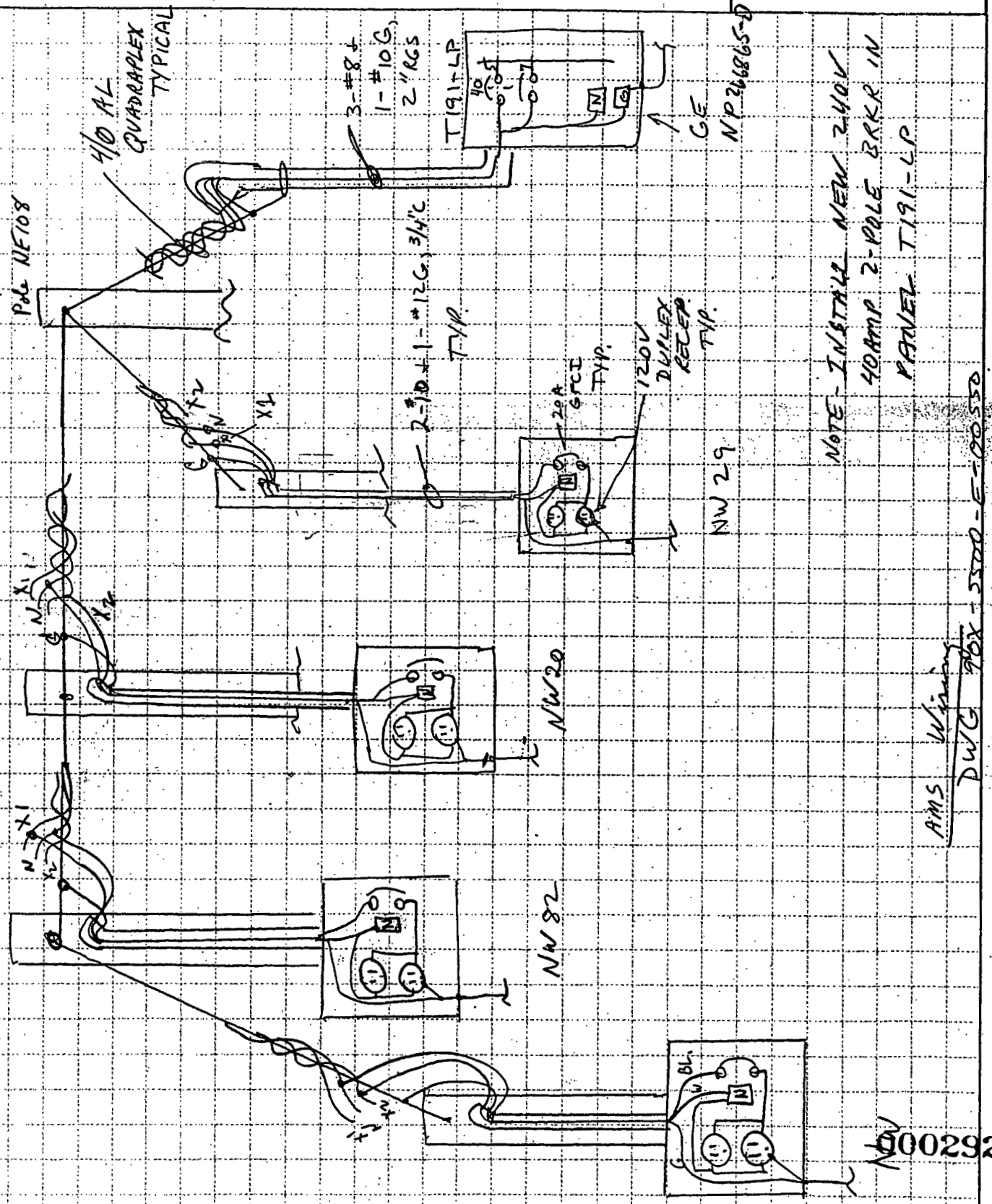
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	4247
BY:	JEK
DATE:	5-17-01
PAGE:	OF
REVISED:	

SUBJECT:



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DCN 20103-014

FS-F-76 B (RE

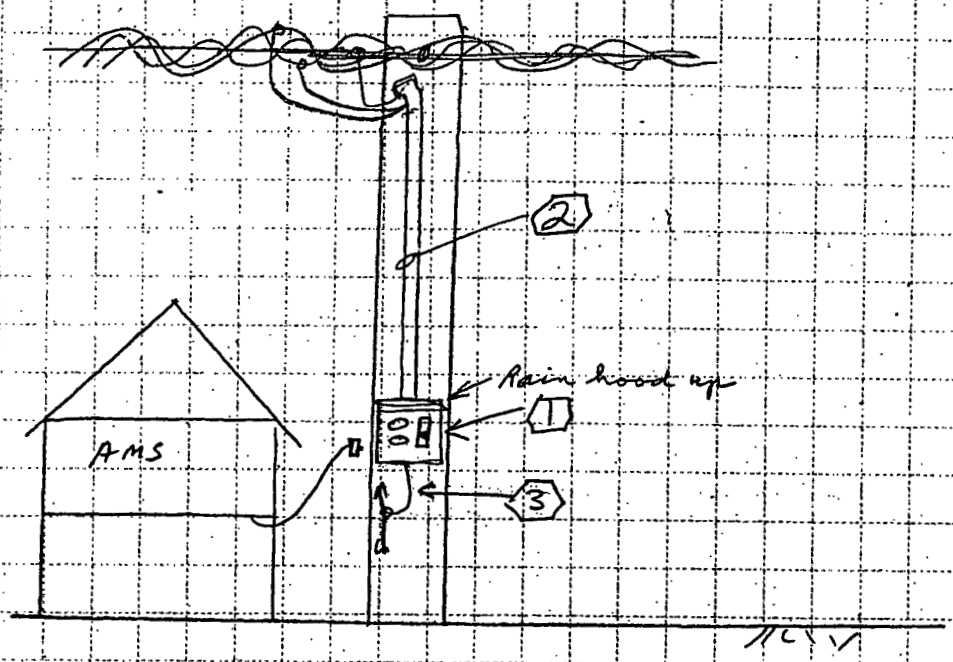
Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	4247
BY:	J.E.K
DATE:	5-17-01
PAGE:	OF
REVISED:	

SUBJECT:



C Elevation
AM Receptacle
TYP (4) Places

Elev C notes

1) Install a power outlet panel (Square D # PAK10C-1) onto the poles shown in the plan view.
2) Feed the power outlet panel from the 240 V. line with 2-#10 + 1-#12G in a 3/4" C.
3) Connect panel ground to pole ground with #10 copper ground wire

GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER (CU) WITH THWN INSULATION UNLESS OTHERWISE NOTED.
2. USE STRUCTURAL CHANNEL TO SECURE ELECTRICAL EQUIPMENT.
3. TRAILER SHALL BE INSTALLED ACCORDING TO TRAILER TYPICAL INSTALLATION DRAWINGS 44X-5500-E-00363 AND 44X-5500-E-00366.

000293

FS-F-76 B (RF

DCN 20103-014
DWG 90X-5500-E-00550
Page 5 of 9

000294

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 3	(6) DATE
20103	FSC-642		September 4, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III - Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Removal of OSDF Temporary Leachate Line & Equipment Decontamination Facility including Surrounding Soil

(11) DCN NO.: 20103-015

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawings: Leachate Conveyance System LTS Plan & Profile Data I & II	90X-6000-G-00057 & 00058	0	2 Reference Drawings
Drawing: OSDF Equipment Decontamination Facility	90X-6000-G-00043	0	Reference Drawing
Drawing: Interim Leachate Conveyance Sys. Plan & Profile Sht 3 of 3	90X-5500-G-00539	1	Reference Drawing
Sketch: OSDF-Phase III Temp Leach Line & Eqpmt Wash Drain Removal	20103-SK-027	1	FSC-642 CO#6 Sketch
Sketch: OSDF-Phase III Equip Wash Pad & Access Control Fac Removal	20103-SK-029	1	FSC-642 CO#6 Sketch

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The Temporary Leachate Line between Stations 9+10 & 28+00, Equipment Decontamination Facility (EDF), EDF drain piping, an Interim Leachate Conveyance Sys (ILCS) segment, & the surrounding soil must be removed to perform OSDF construction over a certified area.
Existing Conditions: The section of Temporary Leachate Line addressed by this DCN, has been deemed defective and is currently abandoned place. The ILCS segment is abandoned. The EDF & its drainage piping and surrounding soil must be removed to permit Liner 4 construction.
Proposed Change: Excavate/remove/backfill: EDF, EDF drain piping, Temporary Leachate Line between Stations 9+10 & 28, and approx. 32 feet of Interim Leachate Line as shown on revised sketches 20103-SK-027 & -029. Also, cancel sketch 20103-SK-026 (FSC-642 CO#6).

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE:	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	9/13/01	Samuel H. Wolinsky	9/13/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 9/13/01
KWASI BADU-TWENEBOAH, CHEMSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 9/13/01
PERFORMANCE GRADE: (17) 4; SBDR-2000-0027 Applies
SH Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED? [X] YES [ ] NO (19)
9/13/01
FRANK L. FLACK

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED
COPY NO. C-0

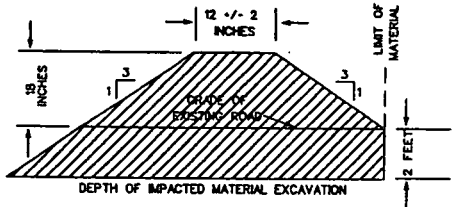
FS-F-4259
REV. 5: 10/01/99: ED-12-5002

4556

ORIGINAL

4556

000295

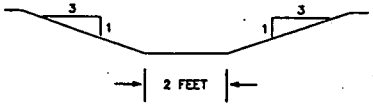


DEPTH OF IMPACTED MATERIAL EXCAVATION

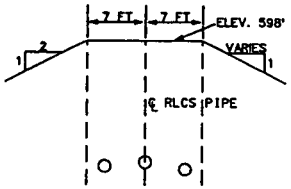
FIELD ADJUST TO TIE INTO EXISTING BERM

FILL

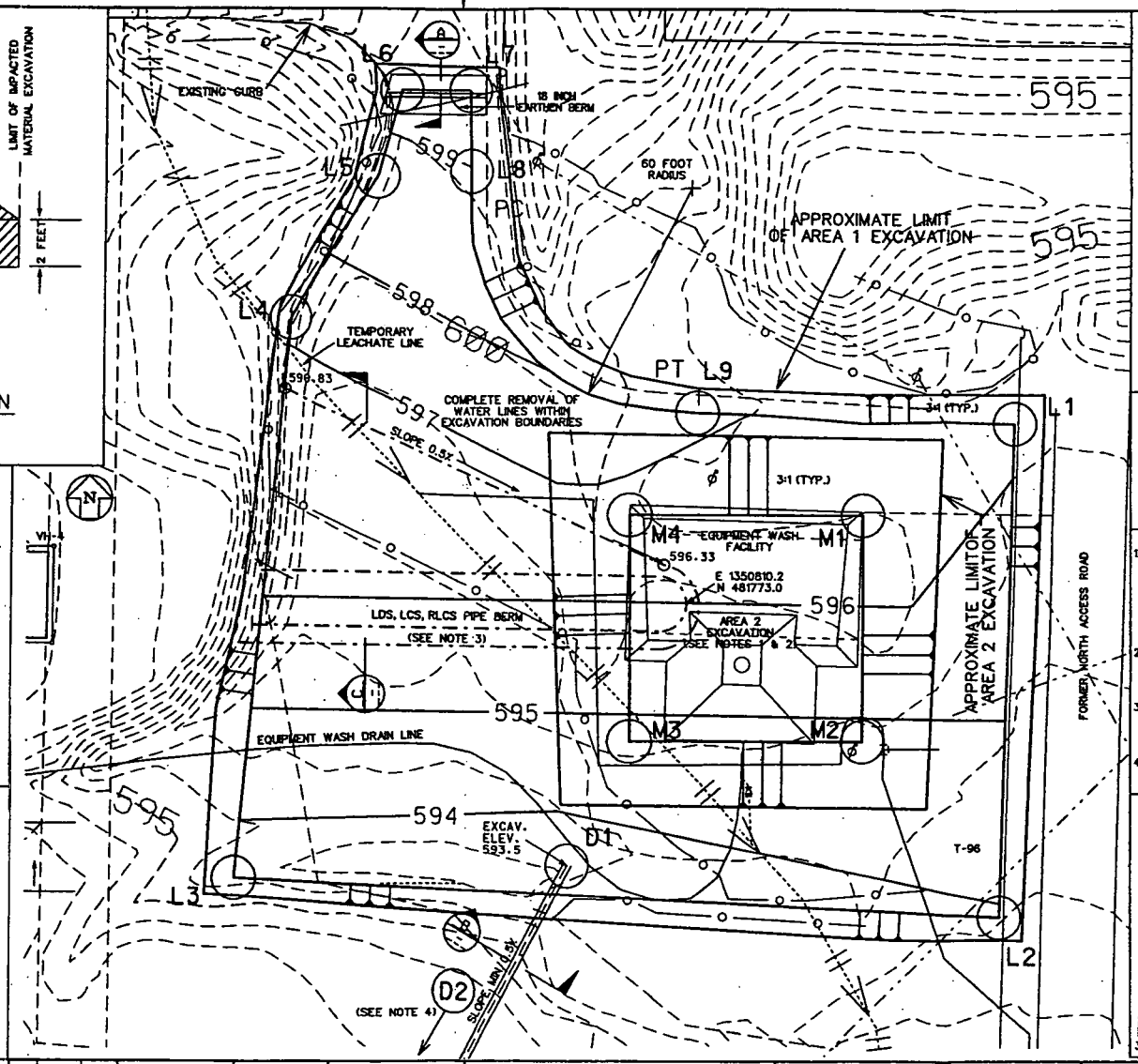
A EARTHEN BERM SECTION
NTS



B DRAINAGE DITCH SECTION
NTS



C PIPE BERM SECTION
NTS



AREA 1
2 FOOT DEEP EXCAVATION INNER BOUNDARY

ID	EASTING	NORTHING	EXCAVATION GRADE ELEV.
L1	1350895.4	481819.3	596.2
L2	1350891.7	481692.5	594.0
L3	1350692.9	481702.5	594.0
L4	1350707.1	481846.0	597.3
L5	1350729.4	481882.0	598.7
L6	1350735.5	481903.9	599.3
L7	1350753.6	481903.9	599.5
L8	1350753.9	481883.4	598.9
L9	1350812.9	481821.9	597.3

AREA 2
6 FOOT DEEP EXCAVATION INNER BOUNDARY

ID	EASTING	NORTHING	EXCAVATION GRADE ELEV.
M1	1350855.9	481795.6	592.9
M2	1350855.9	481737.5	591.8
M3	1350795.6	481737.5	591.8
M4	1350795.6	481795.6	592.9

DRAINAGE DITCH POINTS

ID	EASTING	NORTHING
D1	1350779.7	481705.6
D2	1350677.4	481534.6

NOTES:

FOR REMOVAL OF TEMPORARY LEACHATE TRANSMISSION LINE AND EQUIPMENT WASH DRAIN LINE SEE SKETCH 20103-SK-027.

EXCAVATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02205 (IMPACTED MATERIAL EXCAVATION).

AFTER EXCAVATION/FILL PLACEMENT ARE COMPLETE, APPLY CRUSTING AGENT TO DISTURBED AREAS PER TECHNICAL SPECIFICATION SECTION 02930.

KEYED NOTES:

1) AREA 2 TO BE FILLED WITH CERTIFIED MATERIAL TO MATCH SURROUNDING AREA 1 GRADES AND COMPACTED PER TECHNICAL SPECIFICATION 02200. DO NOT FILL AREA 2 FOR AT LEAST TEN DAYS AFTER COMPLETION OF EXCAVATION TO ALLOW FOR CERTIFICATION SAMPLING (BY OTHERS).

2) PLACE CERTIFIED, COMPACTED FILL IN AREA 2 IN ACCORDANCE WITH NOTE 1. THEN EXCAVATE TRENCH FOR PIPE (SEE SKETCH 20103-SK-30)

3) PLACE CERTIFIED, COMPACTED FILL FOR PIPE BERM PER TECHNICAL SPECIFICATION 02200 AFTER CERTIFICATION IS RECEIVED.

4) DO NOT EXCAVATE DRAINAGE DITCH UNTIL BOTH AREAS HAVE BEEN CERTIFIED.

LEGEND:

- 595 — EXCAVATION CONTOURS
- EXCAVATION BOUNDARY
- PIPE BERM FILL
- DRAINAGE DITCH
- EXISTING LEACHATE TRANSMISSION LINE (WITH FLOW ARROW)
- M2 COORDINATE LOCATION POINT

SCALE
30 15 0 30 FEET

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
2	REVISED EXCAVATION DEPTHS, FILL AND DRAINAGE	9/06/01	JLE		
1	REVISED FOR CONSTRUCTION	5/21/01	LM		
0.	ISSUED CERTIFIED FOR CONSTRUCTION	5/22/01	LM		

APPROVALS

CIVIL & STR.		SAFETY ENG.	
ELECTRICAL		MAINTENANCE	
ENGINEER		FIRE PROTECT.	
INSTRUMENT		WASTE MANAGE	
MECHANICAL		SECURITY	
		PROJECTS	
		QUALITY	
CHECKED		CONSTRUCTION	
APPROVED			

Fernald Environmental Management Project

FLUOR FERNALD, INC.

U.S. DEPARTMENT OF ENERGY

ON-SITE DISPOSAL FACILITY PHASE III

EQUIPMENT WASH PAD AND ACCESS CONTROL FACILITY EXCAVATION PLAN

PROJ. 20103
DATE 9/06/2001
DRAWN LM/JLE

20103-SK-029 | 2

DCN 20103-015, PAGE 3

FILE NAME: V:\OSDF\LEACHATE\AS-BUILT_05_01\WASHPAD.DGN

RCI/DCN FORM 4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 10	(6) DATE
20103	FSC-642		June 20, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III - Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Addition of Monitoring Devices for Cell 1 Final Cover

(11) DCN NO.: 20103-016

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing: Final Cover Grading Plan	90X-6000-G-00302		Sheet G-7

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER [X] NON-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The OU5 ROD committed DOE to a minimum of 30 years of OSDF monitoring and maintenance. DOE has further committed to a goal of ensuring FEMP stewardship activities in perpetuity. The addition of monitoring devices for the Cell 1 Final Cover is an early step in a technology demonstration helping to achieve this goal.
Existing Conditions: The OSDF Cell 1 Final Cover design does not now contain a remote monitoring capability for the final cover system.
Proposed Change: Add the following monitoring devices per the Attachment: ground penetrating radar targets, settlement plates, soil water status nests, and pressure transducer risers. A forthcoming DCN will add cables and instrumentation for these monitoring devices.

(10) REQUESTOR	COMPANY:	DATE:	(12) CE / PE	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	6/21/01	Samuel H. Wolinsky	6/21/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

Provide as-built on Drawing No. 90X-6000-G-00302 "red line" drawing.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 6/22/01
KUNAL BADU-TWENEBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETED (DCN ONLY) DATE: 6/22/01
PERFORMANCE GRADE: (17) 4; SBDR-2000-0027 Applies For Sam Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE: 6/22/01
Bill Zebuch
PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

Bill Zebuch 7/12/01

VOID 7/12/01

Amber for Sam Wolinsky 07/12/01

F-4259
5: 10/01/99: ED-12-001

EFDC CONTROLLED COPY NO 011

000296

ORIGINAL

ENTERED

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 10	(6) DATE
20103	FSC-642		June 20, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III - Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Addition of Monitoring Devices for Cell 1 Final Cover

(11) DCN NO.: 20103-016

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing: Final Cover Grading Plan	90X-6000-G-00302	1	Sheet G-7

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The OU5 ROD committed DOE to a minimum of 30 years of OSDF monitoring and maintenance. DOE has further committed to a goal of ensuring FEMP stewardship activities in perpetuity. The addition of monitoring devices for the Cell 1 Final Cover is an early step in a technology demonstration helping to achieve this goal.
Existing Conditions: The OSDF Cell 1 Final Cover design does not now contain a remote monitoring capability for the final cover system.
Proposed Change: Add the following monitoring devices per the Attachment: ground penetrating radar targets, settlement plates, soil water status nests, and pressure transducer risers. A forthcoming DCN will add cables and instrumentation for these monitoring devices.

(10) REQUESTOR: Samuel H. Wolinsky COMPANY: Fluor Fernald, Inc. DATE: 6/21/01

(12) CE / PE: Samuel H. Wolinsky DATE: 6/21/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

Provide as-built on Drawing No. 90X-6000-G-00302 "red line" drawing.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 6/22/01
KWASI BADU-TWENEBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 6/22/01
PERFORMANCE GRADE: (17) 4; SBDR-2000-0027 Applies for Sam Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE: 6/22/01
Bill Zebuck
PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

S-F-4259
REV. 5: 10/01/99: ED-12-5002

000297

ECDC CONTROLLED
COPY NO. C-011

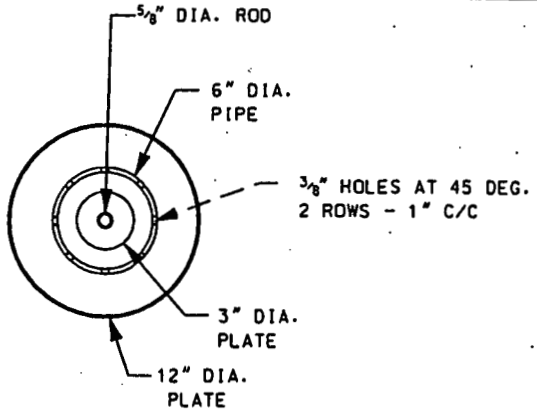
ATTACHMENT
TO
DCN 20103-016

This sheet contains a list of the installation and shop drawings which are attached to this design change notice.

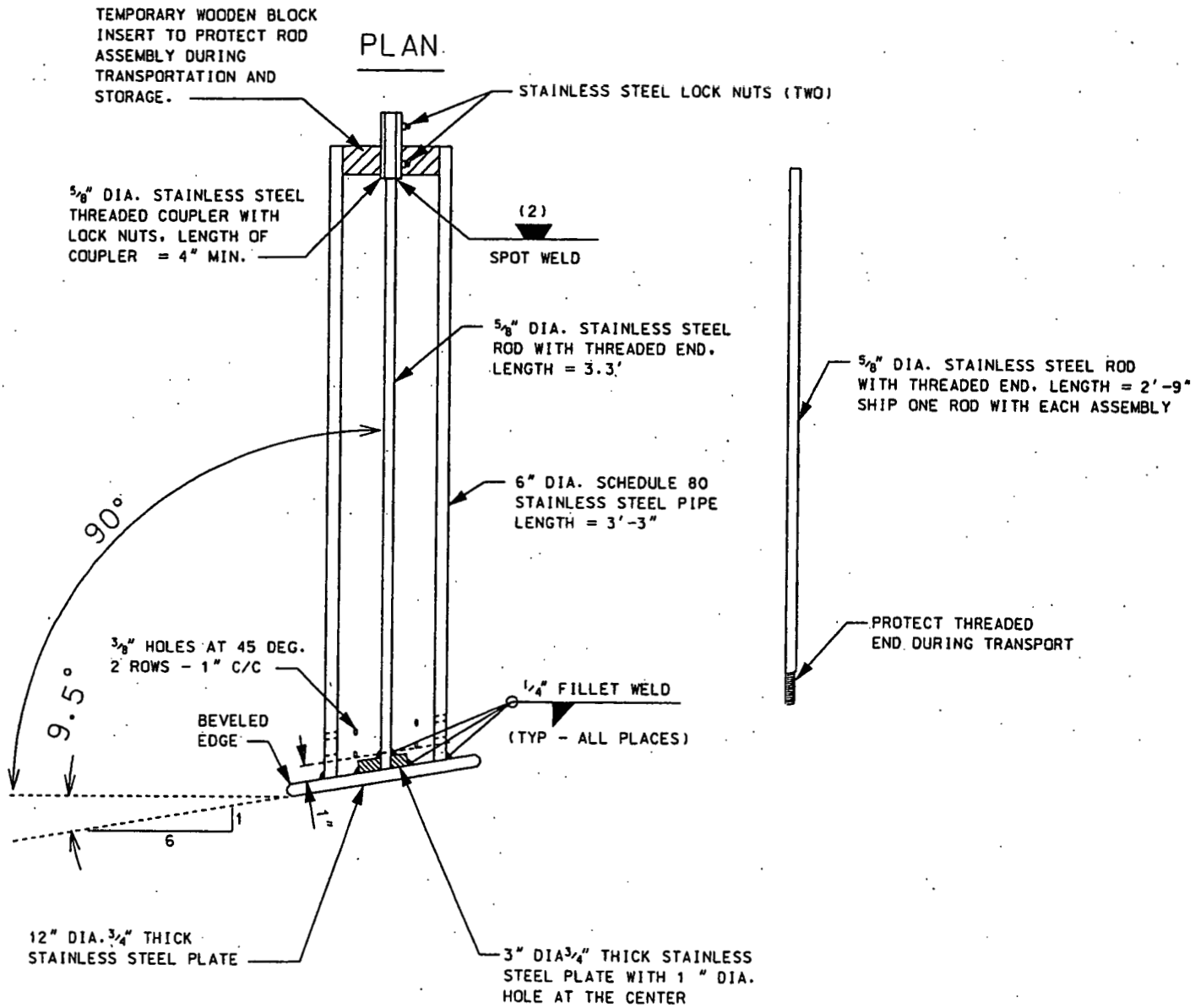
Drawing/Detail Type	Drawing/Detail No.	Drawing/Detail Title
Installation	90X-5500-G-00577	OSDF - Cell 1 Final Cover Monitoring Devices Installation Details
Fabrication	SPR-1	SPR - Settlement Plate & Rod Assembly (Typ.)
Fabrication	PT-1-A	Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	PT-1-B	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	PT-1-C	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SP-1A	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SP-1B	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SW-1	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail

SPR-1

4556



PLAN



SECTION

NOTE: SEQUENTIALLY LABEL EACH ASSEMBLY FROM SPR-1-01 TO SPR-1-05.

STAINLESS STEEL PLATES, PIPE AND ROD SHALL BE ANSI A304.

000299

SPR- SETTLEMENT PLATE & ROD ASSEMBLY (TYP.)

(5 REQUIRED)

DCN 20103016
Pg 3 of 10

(OSK-0 DGN 6/18/01)

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

PT-1-A
8 Pcs.

NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

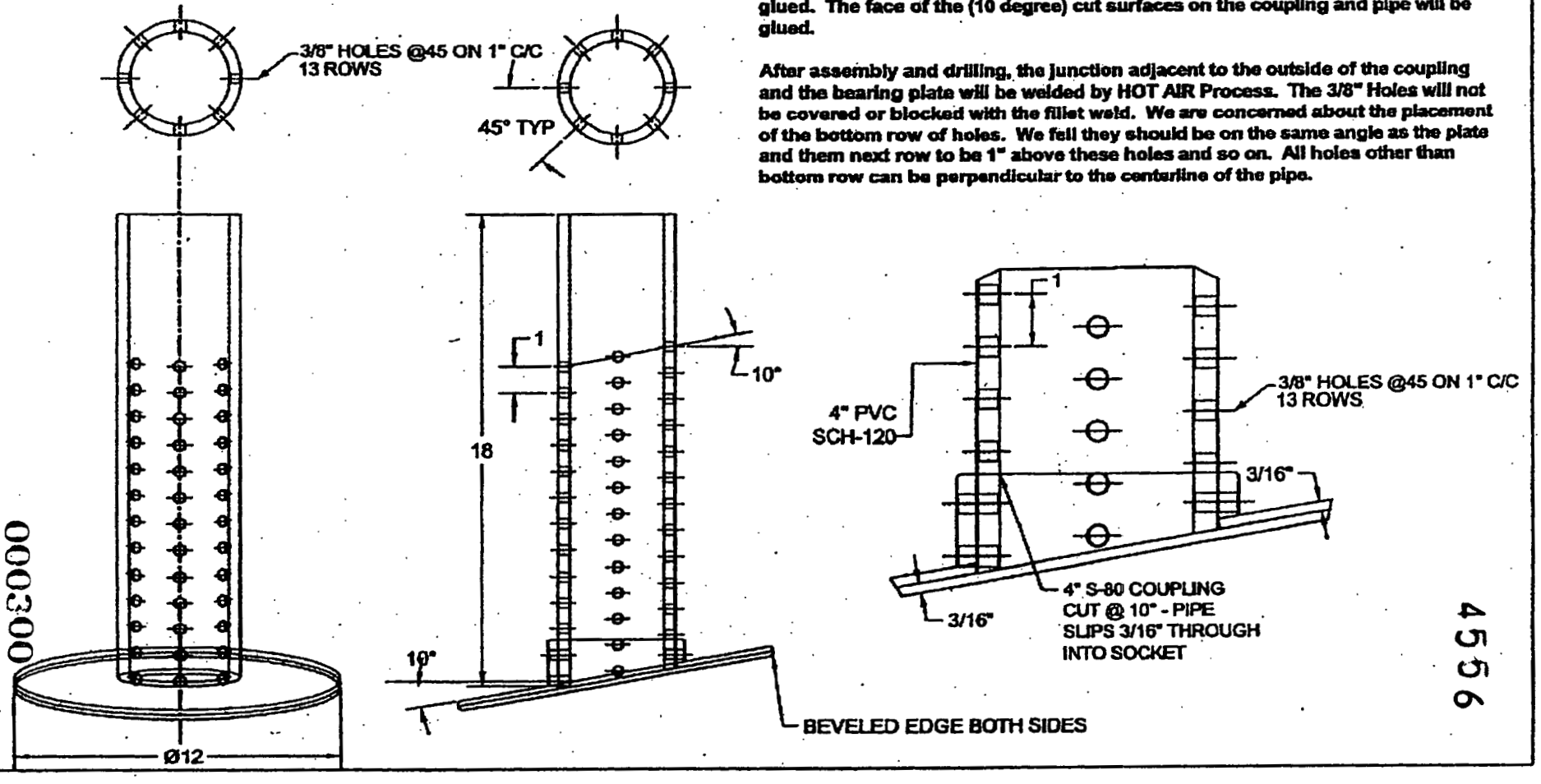
2) LABEL EACH PIECE "PT-1-A"

Specifics of PT-1
As described in offer two (2) 3/16" thick sheets will be glued together to form one 3/8" thick disk.

This assembled disk will have an elliptical socket to accept 4.50" OD PVC Pipe. The PVC coupling section shown was added to provide additional bearing surface. This coupling piece will be glued to the outside of the 4" pipe.

In addition, the pipe stub setting in the socket on top half of bearing plate will be glued. The face of the (10 degree) cut surfaces on the coupling and pipe will be glued.

After assembly and drilling, the junction adjacent to the outside of the coupling and the bearing plate will be welded by HOT AIR Process. The 3/8" Holes will not be covered or blocked with the fillet weld. We are concerned about the placement of the bottom row of holes. We fell they should be on the same angle as the plate and them next row to be 1" above these holes and so on. All holes other than bottom row can be perpendicular to the centerline of the pipe.



000300

DCN 20103016
P6 4 of 10

4556

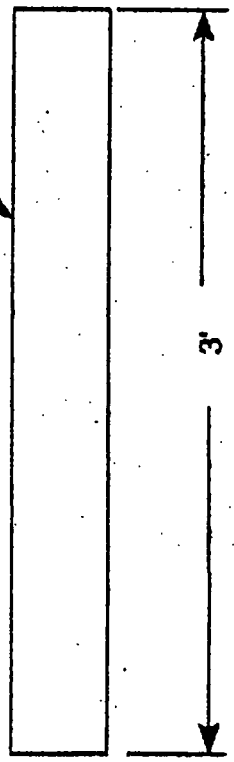
SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

4556

PT-1-B
16 Pcs.

4" SCH 80 PVC COUPLING (SLIP X SLIP)

4" DIA SCH 120 PVC SPOOL PIPE



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

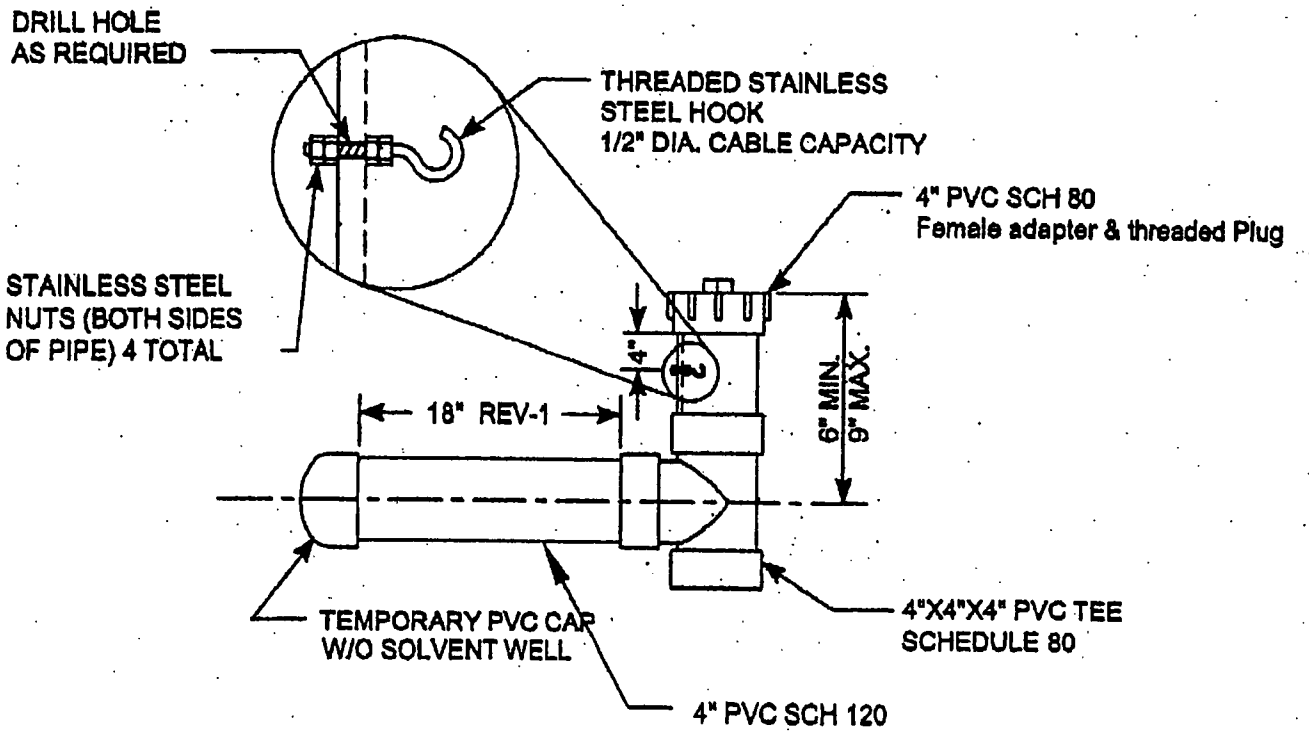
1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "PT-1-B"

DCN 20103-016
Pg 5 of 10

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

PT-1-C
8 Pcs.



NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

2) LABEL EACH PIECE 'PT-1-C'

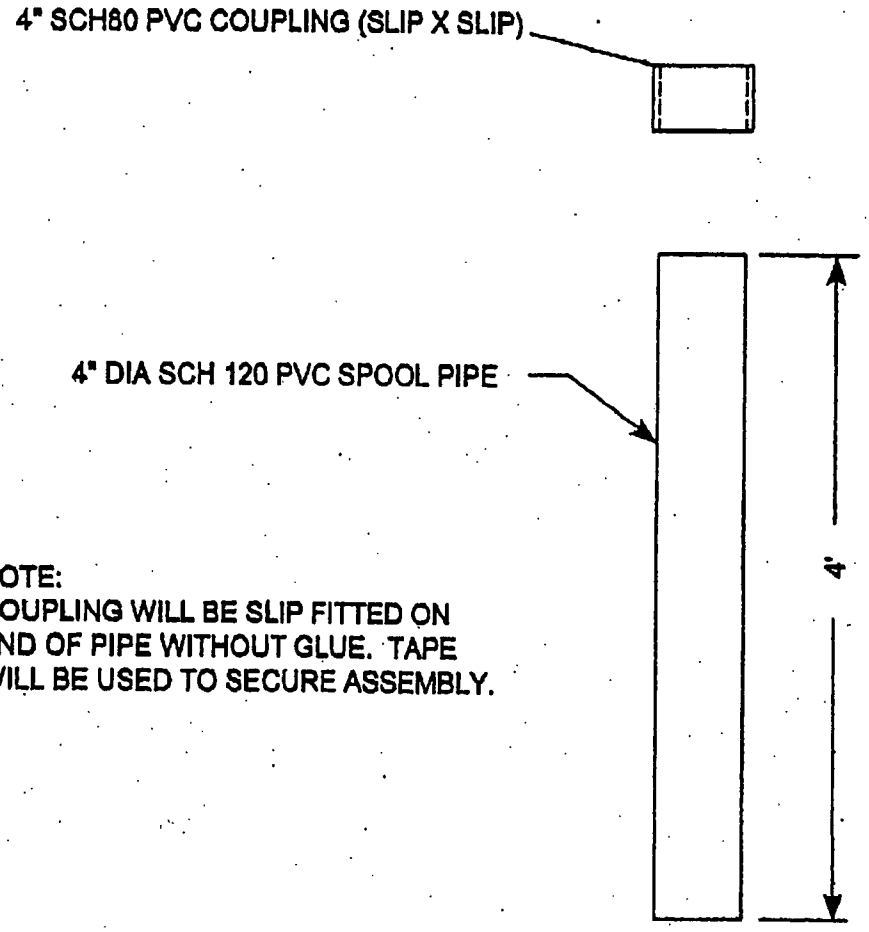
000302

REVISIONS:
1 CHANGED FROM 12" TO 18" 06/19/2001 MARTY PROCHASKA

DCN 20103-016
pg 6 of 10

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

SP-1A
5 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

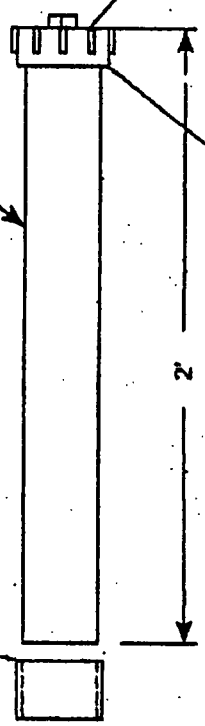
1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "SP-1A"

DCN 20103-016
pg 8 of 10

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

SP-1B
5 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

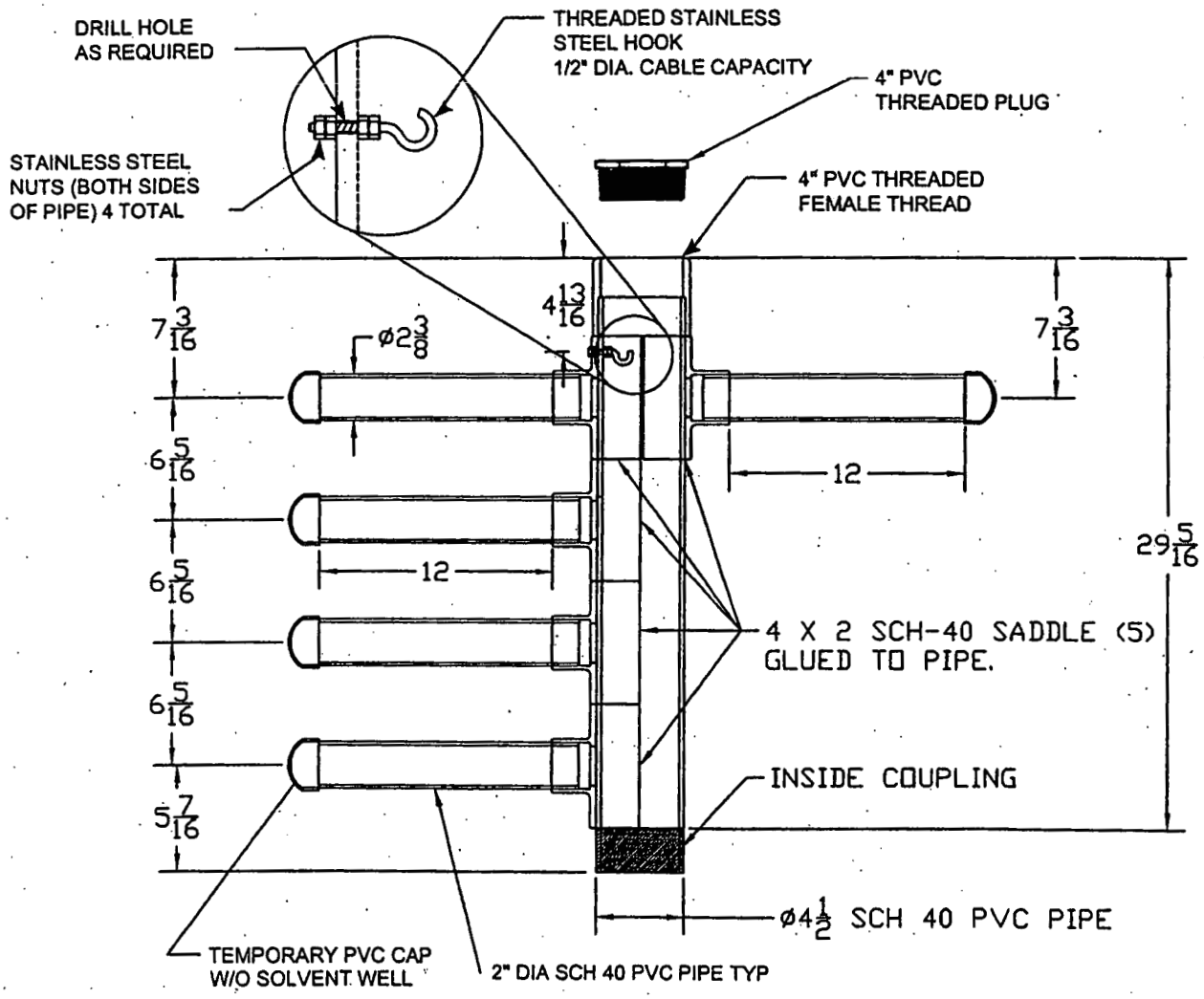
2 LABEL EACH PIECE "SP-1B"

000304

DCN 20103-016
PS 8 of 10

SDF Cell 1 Instrumentation Plan
Final Cover Monitoring System
Fabrication Detail

SW-1
11 Pcs.



NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

2) LABEL EACH PIECE 'SW-1-01 THRU SW-1-11'

REVISIONS:
06/18/2001 SCHEDULE 40 CROSS AND TEE'S ALONG WITH 4X2 BUSHING WERE REPLACED WITH SADDLE ADAPTERS ALLOWING OVERALL HEIGHT TO BE REDUCED FROM 38.5' TO ABOUT 29'

DCN 20103-016
pg 9 of 10

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 6	(6) DATE
20103 / 4272			7-3-01

(3) S/C TITLE:

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: ELEC. SERVICE TO TRAILER T-90 AND T125

(11) DCN NO.: 20103-017

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
DWG	90X-6000-E-00259	0	
"	90X-5500-E-00549	0	
"	90X-5500-E-00550	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

PROVIDE ELEC. POWER TO THE RELOCATED TRAILERS

(10) REQUESTOR: J.E. KERL ORIGINATOR: FLOYD FERNALDO DATE: 7-3-01

(12) CE / PE: Jess Ellis DATE: 05/07/01

(13) RESPONSE: FOR RCI, IS A DCN REQUIRED? [ ] NO [X] YES

(14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

DWG UPDATES

James E. Kerl 7-3-01

VOID

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerl 7-3-01

[X] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC 21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) Jess Ellis DATE: 07/05/01

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE: 07/05/01 Jess Ellis

PURCHASE REQUISITION REQUIRED: [ ] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

000306

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C011

ORIGINAL

RCI/DCN FORM 4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg	(6) DATE
20103/4272		1 Of 6	7-3-01

(3) S/C TITLE:

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: ELEC. SERVICE TO TRAILER T-90 AND T125

(11) DCN NO.: 20103-017

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
DWG	90X-6000-E-00259	0	
"	90X-5500-E-00549	0	
"	90X-5500-E-00550	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

PROVIDE ELEC. POWER TO THE RELOCATED TRAILERS

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
J.E. KERL	FLUOR FERNALD	7-3-01	J Kell Ellis	05/07/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

DWG UPDATES

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerl 7-3-01

[✓] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) J Kell Ellis DATE: 07/05/01

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE: 07/05/01 J Kell Ellis

PURCHASE REQUISITION REQUIRED: [ ] YES [ ] NO (19)

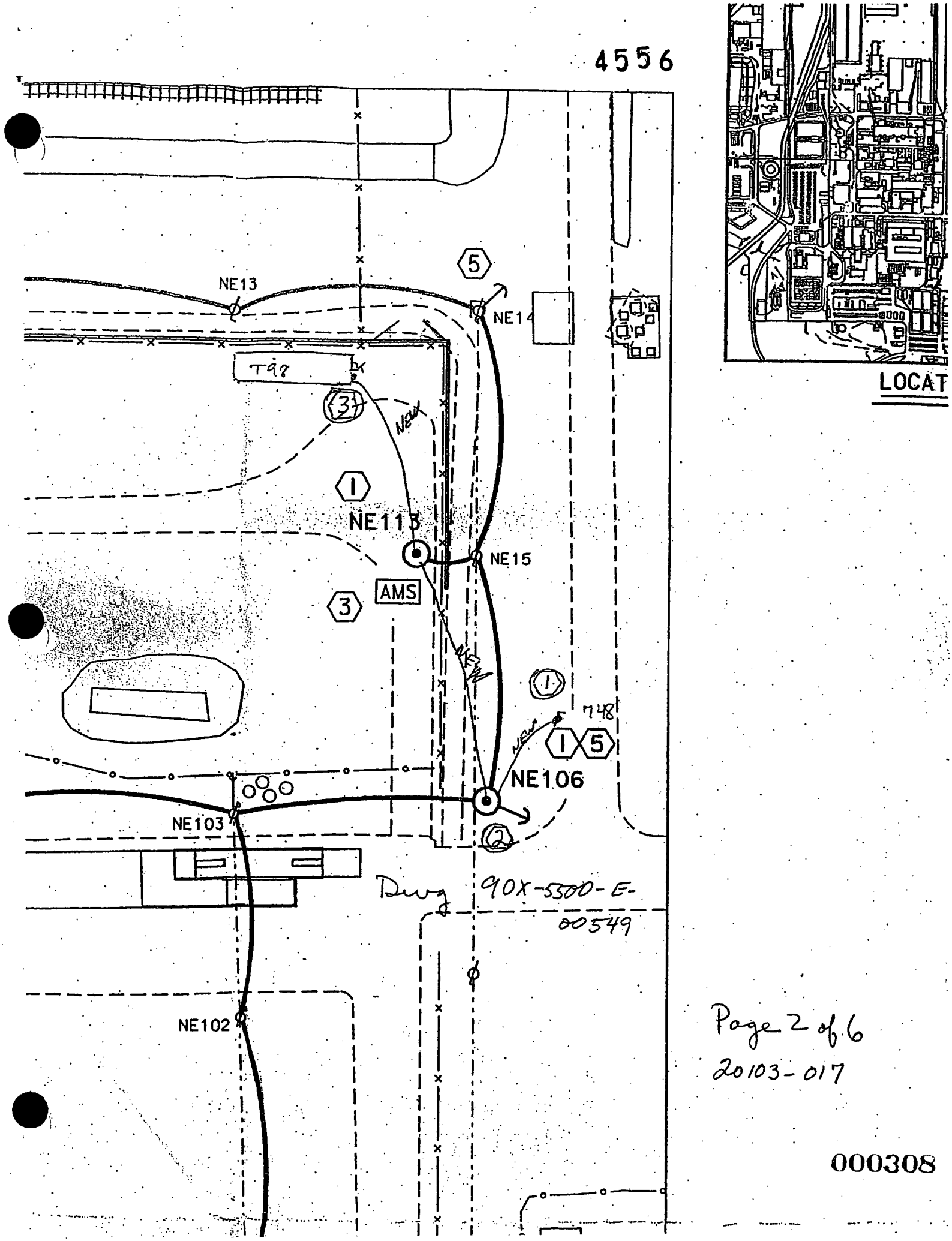
(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C 011

ORIGINAL



Page 2 of 6
20103-017

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	
BY:	JKK
DATE:	7-3-01
PAGE:	OF
REVISED:	

SUBJECT:

Construction Notes

1. Install new 480V feeder from 200 A fused disconnect switch on pole 748 to pole NE106, NE113 and to trailer T98.
2. Repower 100 A. fused disconnect switch on pole NE106
3. Power existing 100 A. disconnect switch at T98. Maintain aerial cable 15 feet above grade at T98 and connect aerial cable on Pole NE113 at a min. of 30 feet above grade.

General Notes

1) See dwg 90X-6000-E-00259 for wiring and conduit details on pole 748 and single line
2) All wiring shall be copper with THWN insulation unless otherwise stated.
3) Maintain 1 foot spacing between existing 480 V. wiring and new 480V wiring on poles.
4) For pole guy, anchoring and attachment details see drawings 16X-5500-E-00105 and 16X-5500-E-00106.
5) Use structural channel to secure electrical equipment
6) Trailer(s) shall be installed according to trailer typical installation drawings 44X-5500-E-00363, -5-00364, and -E-00366

Page 3 of 6

Notes for Dwg 90X-5500-E-00549 T98 Installation.

20103-017

000309

FS-F-76 B (REV.

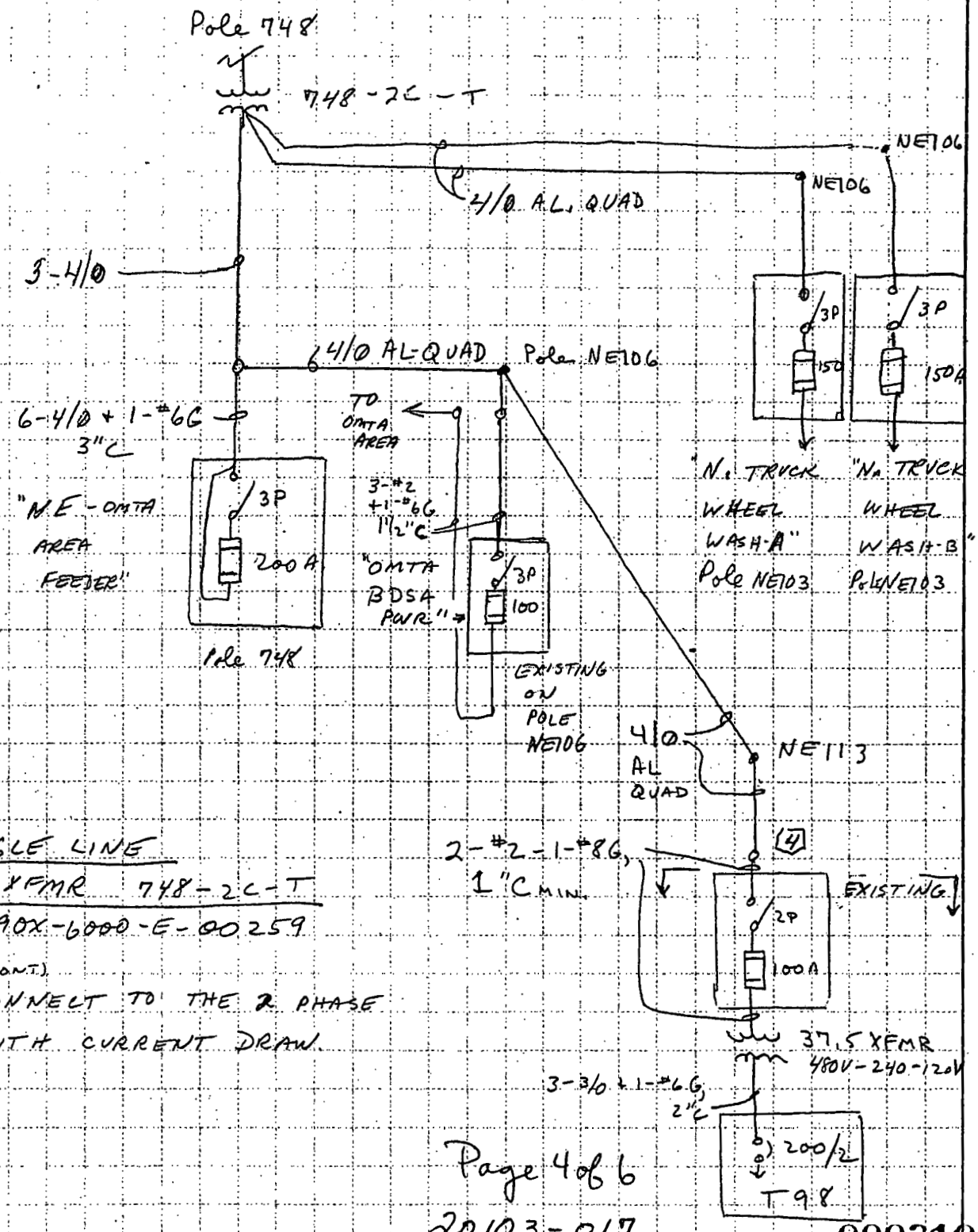
Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	
BY:	JK
DATE:	7-3-01
PAGE:	OF
REVISED:	

SUBJECT:



SINGLE LINE
FOR XFMR 748-2C-T
DWG 90X-6000-E-00259

NOTES (CONT.)
(4) CONNECT TO THE 2 PHASE WITH CURRENT DRAW.

Page 4 of 6
20103-017

000310

FS-F-78 B (REV.

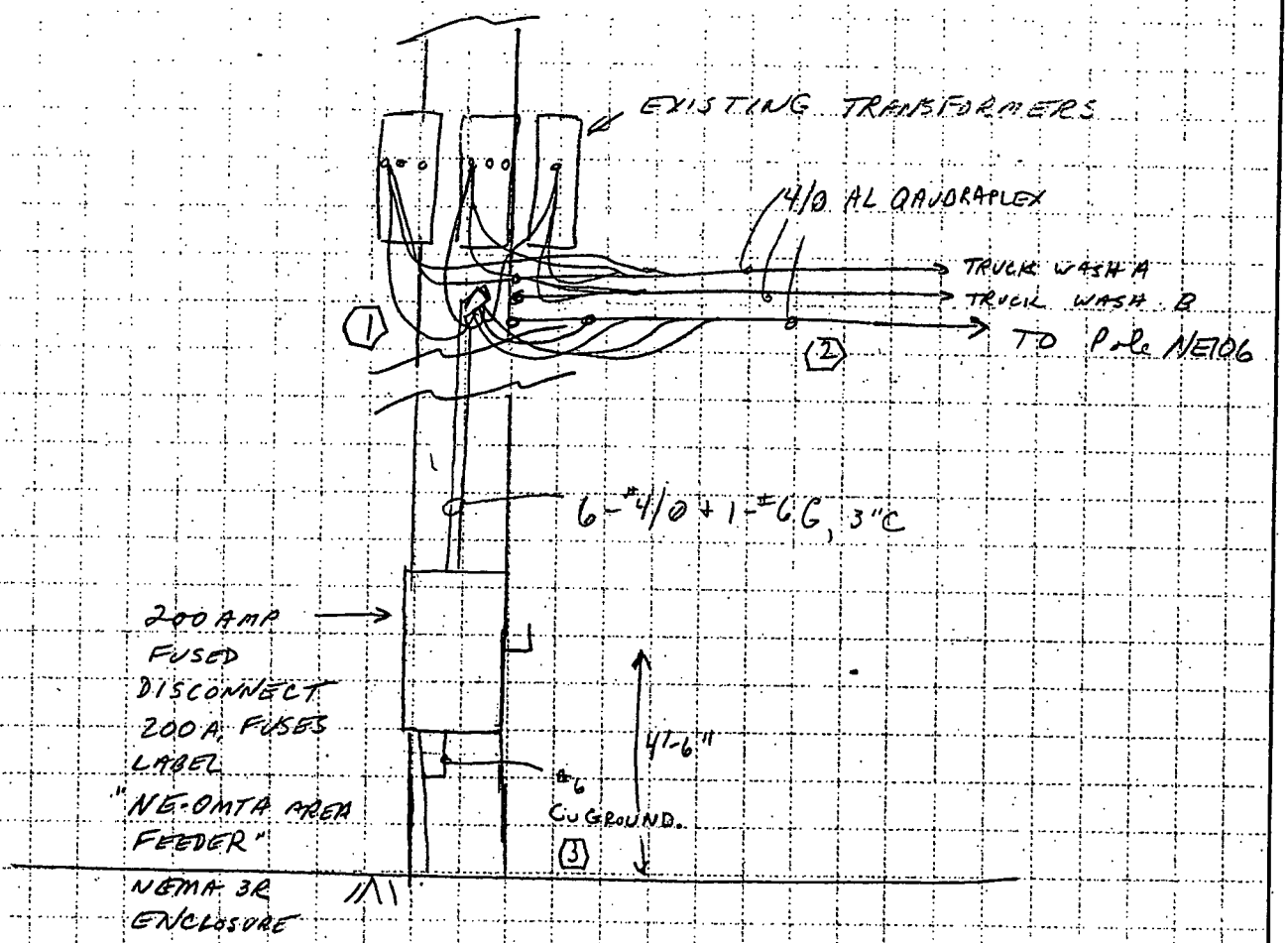
Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	
BY:	JGK
DATE:	7-3-01
PAGE:	OF
REVISED:	

SUBJECT:

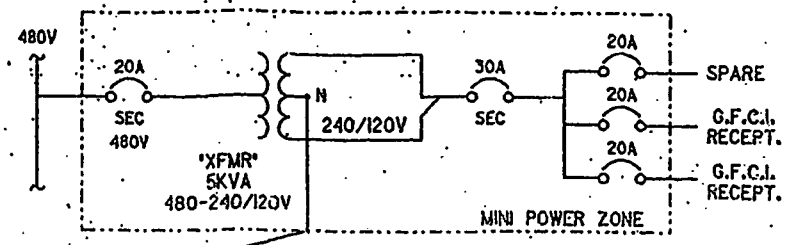


Pole 748
Details
DWG 90X-6000-E-00259

1. INSTALL NEW 200A 3 POLE 480V FUSED DISCONNECT ON POLE 748.
2. POWER SWITCH WITH FEEDER FROM XFMR 748-2C-T AND FEED NEW FEEDER TO OMTA DDSA SWITCH ANT T98.
3. CONNECT GROUND WIRE TO POLE GROUND SYSTEM WITH APPROVED GROUND CLAMP.

FS-F-76 B (REV

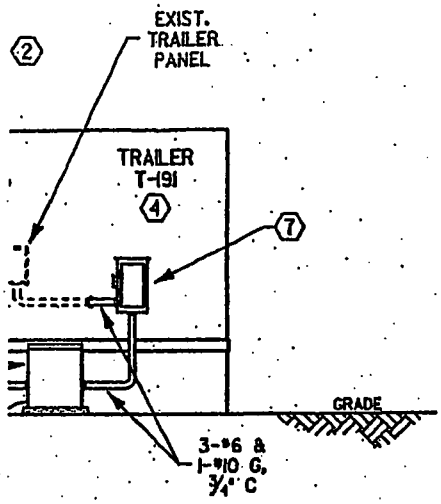
4556

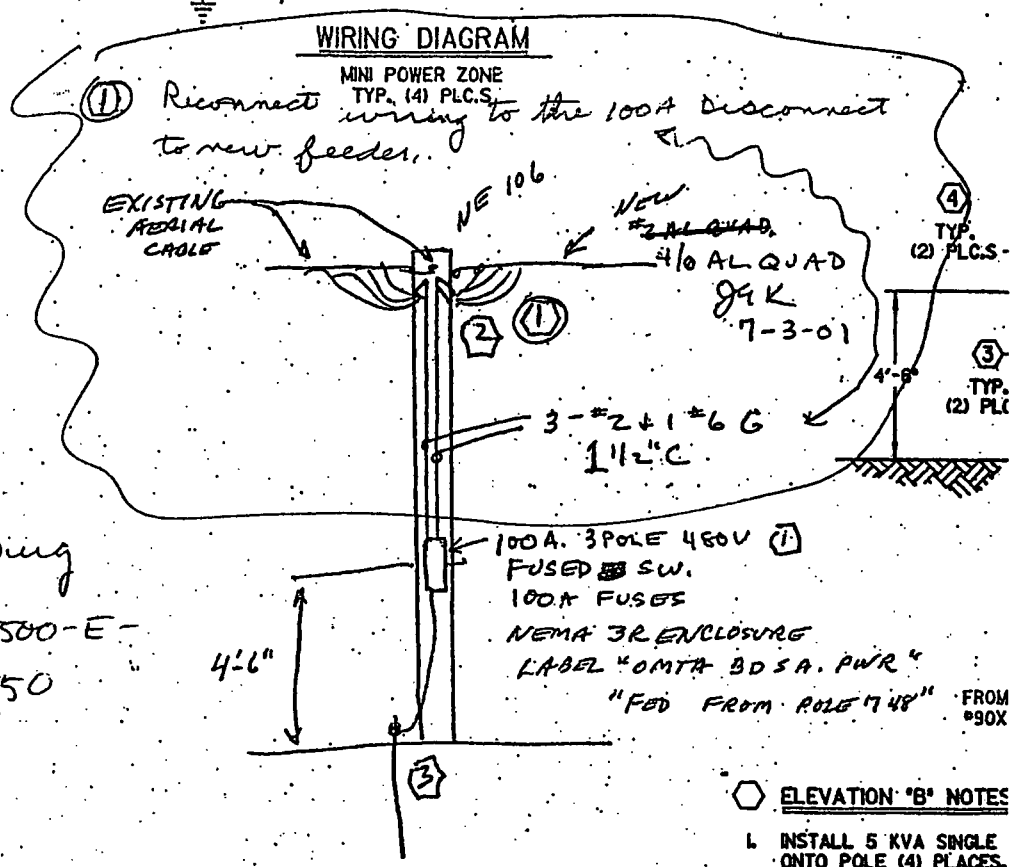


WIRING DIAGRAM

MINI POWER ZONE
TYP. (4) PLC.S.

(1) Reconnect wiring to the 100A Disconnect to new feeder.





Dwg
90X-5500-E-
00550

TRAILER T-191. (ONE PHASE WILL
NGLE PHASE).

ADE.

ER TO 5/8" x 8' GROUND ROD.

ILER TYPICAL INSTALLATION DRAWINGS

TCH WITH 40 AMP FUSES - LABEL

IOUNT TRANSFORMER WITH 2" PRECAST

TCH WITH 60 AMP FUSES - LABEL

N.

ELEV. C.

1. INSTALL NEW 3POLE 480V FUSED SWITCH WITH 100A FUSES IN NEMA 3R ENCLOSURE
2. POWER SWITCH WITH NEW AERIAL FEED FROM POLE 748 REPOWER EXISTING AERIAL FEEDER.
3. INSTALL 5/8"x8' LONG CU GROUND ROD WITH 1-#6 CU GROUND WIRE.

ECDC CONTROLLED
COPY NO.
463

ELEVATION "B" NOTES

1. INSTALL 5 KVA SINGLE ONTO POLE (4) PLACES.
2. FEED MINI POWER ZONE
3. INSTALL SINGLE GANG C WEATHER PROOF COVER
4. FEED DUPLEX RECEPTAC 20 AMP CIRCUIT BREAKE
5. INSTALL 5/8" x 8' LONG

Page 6 of 6
20103-017

GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER
2. USE STRUCTURAL CHANNEL T
3. TRAILER SHALL BE INSTALLED 44X-5500-E-00363 AND 44X-

				44X-5500-E-00363
				16X-5500-E-00106
				16X-5500-E-00105
				22X-5500-E-00958
				22C-5500-P-00668
				22C-5500-P-00660
DCN NO. 20102-108	1/5/01	SJS	MRP	90X-5500-E-00549
NS	DATE	DWN. BY	APPD.	REF. DWG. NO.

NOTE:
FLUOR FERNALD CADD DRAWING, DO NOT REVISE MANUALLY.

CONFIGURATION MANAGEMENT DRAWING
YES X NO
SYSTEMS, STRUCTURES OR COMPONENTS DEPICTED ON THIS DRAWING ARE UNDER CONFIGURATION MANAGEMENT CONTROL. SEE NOTES.
J. E. Kerl 4-26-00
COGNIZANT ENGINEER DATE

APPROVALS

CIVIL & STR.			SAFETY ENG.	
ELECTRICAL	J. E. Kerl	4/26/00	MAINTENANCE	
ENGINEER			FIRE PROTECT.	
INSTRUMENT			WASTE MANAGE.	
MECHANICAL			SECURITY	
			PROJECTS	
CHECKED	MRP			
APPROVED	McPaul	4/26/00		

000312

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 10	(6) DATE
20103	FSC-642		JULY 12, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]

(4A) RCI/DCN TITLE: Addition of Monitoring Devices for Cell 1 Final Cover

(11) DCN NO.: 20103-018

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing: Final Cover Grading Plan	90X-6000-G-00302	1	Sheet G-7

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [x] NOT REQUIRED

Justification: The OU5 ROD committed DOE to a minimum of 30 years of OSDF monitoring and maintenance. DOE has further committed to a goal of ensuring FEMP stewardship activities in perpetuity. The addition of monitoring devices for Cell 1 Final Cover is an early step in a technology demonstration helping to achieve this goal.

Existing Conditions: The OSDF Cell 1 Final Cover design does not now contain a remote monitoring capability for the final cover system.

Proposed Change: Add the following monitoring devices per the Attachment: ground penetrating radar targets, settlement plates, soil water status nests, and pressure transducer risers. A forthcoming DCN will add cables and instrumentation for these monitoring devices.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
A. C. Smith Anthony Snider	Fluor Fernald, Inc.	7/12/01	A. C. Smith Anthony Snider for Sam Wolinsky	7/12/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

Provide as-built on Drawing No. 90X-6000-G-00302 "red-line" drawing

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 6/22/01
K. Bachmann
KUVASI BADU-TWENEBOAH, GEOSYNTEC

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 07/12/01

PERFORMANCE GRADE: (17) A. C. Smith for Sam Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE: 7/12/01
Bill Zebrick

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED
COPY NO. C- 011

ORIGINAL

ATTACHMENT
TO
DCN 20103-016

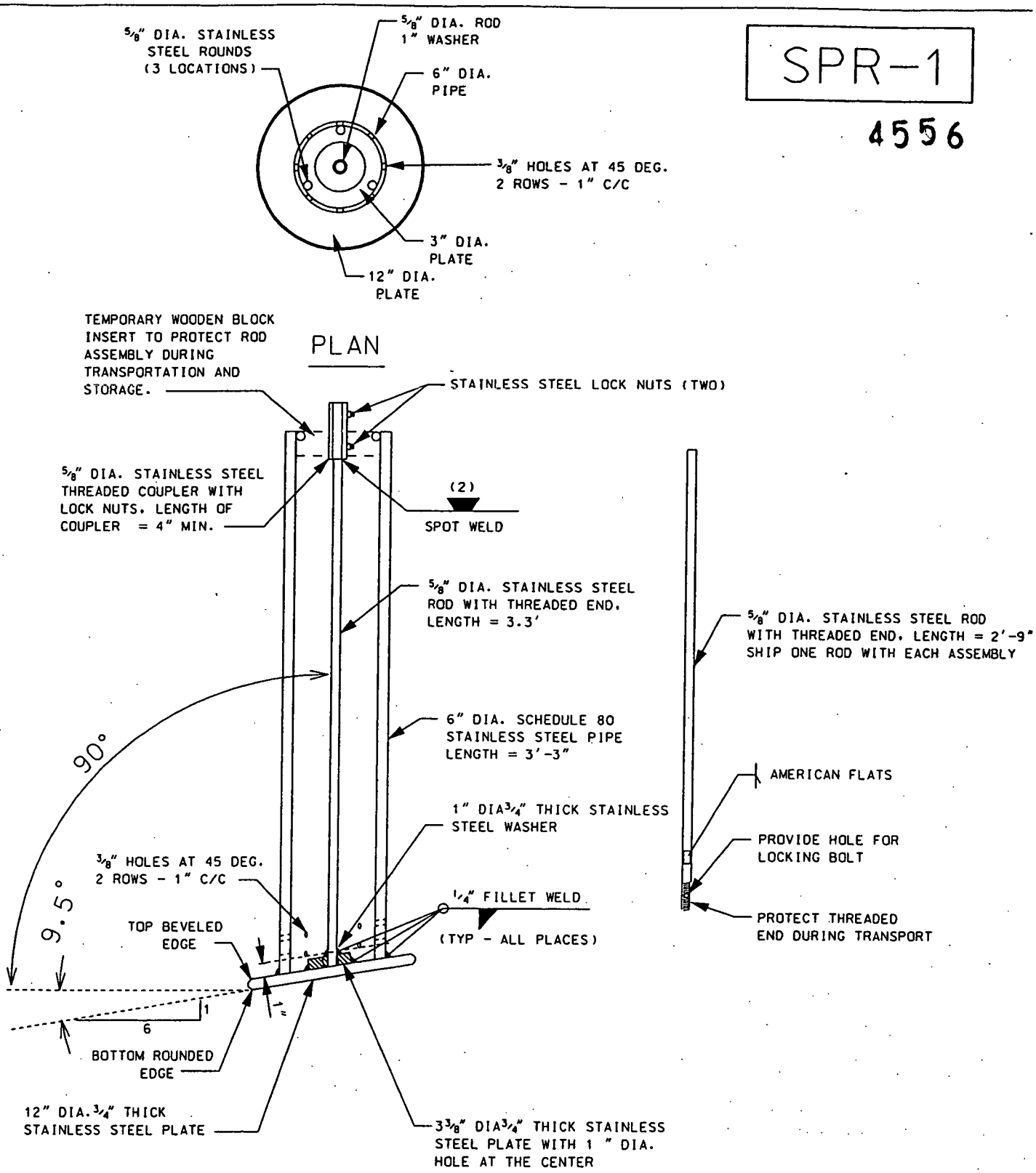
This sheet contains a list of the installation and shop drawings which are attached to this design change notice.

Drawing/Detail Type	Drawing/Detail No.	Drawing/Detail Title
Installation	90X-5500-G-00577	OSDF - Cell 1 Final Cover Monitoring Devices Installation Details
Fabrication	SPR-1	SPR - Settlement Plate & Rod Assembly (Typ.)
Fabrication	PT-1-A	Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	PT-1-B	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	PT-1-C	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SP-1A	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SP-1B	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail
Fabrication	SW-1	SDF Cell 1 Instrumentation Plan Final Cover Monitoring System Fabrication Detail

DCN 20103-016
Pg 2 of 10

SPR-1

4556



NOTE: SEQUENTIALLY LABEL EACH ASSEMBLY FROM SPR-1-01 TO SPR-1-05.

STAINLESS STEEL PLATES, PIPE AND ROD SHALL BE ANSI A304.

DCN 20103-018
Pg 3 of 10

000315

SPR- SETTLEMENT PLATE & ROD ASSEMBLY (TYP.)

(5 REQUIRED)

REV. 3

(OSK 1.DGN 7/11/01 REV. 4)

(REV. 1)

OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail
VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

PT-1-A
8 Pcs.

NOTES:

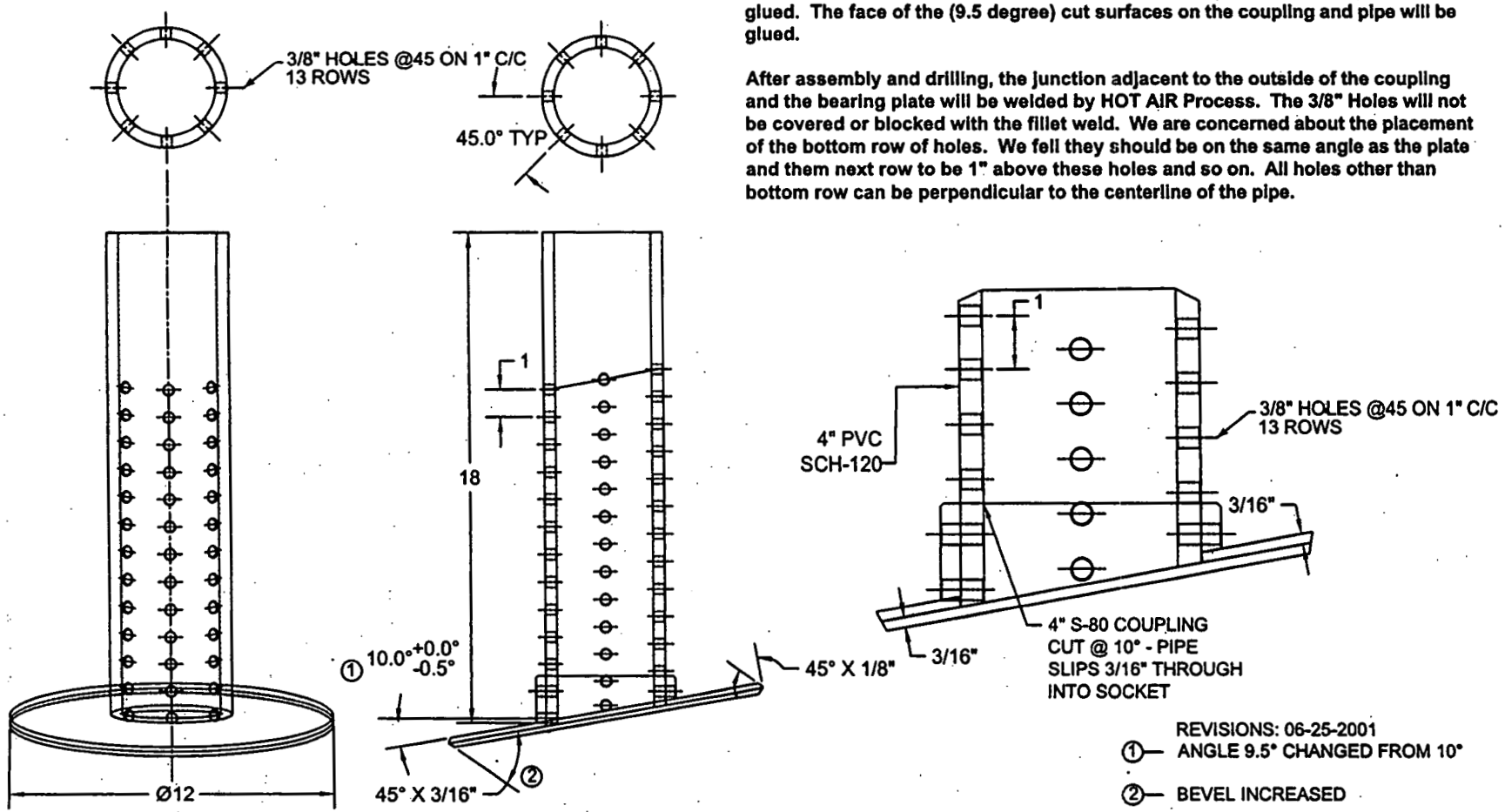
1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)
2) LABEL EACH PIECE "PT-1-A-01 THRU PT-1-A-08"

Specifics of PT-1
As described in offer two (2) 3/16" thick sheets will be glued together to form one 3/8" thick disk.

This assembled disk will have an elliptical socket to accept 4.50" OD PVC Pipe. The PVC coupling section shown was added to provide additional bearing surface. This coupling piece will be glued to the outside of the 4" pipe.

In addition, the pipe stub setting in the socket on top half of bearing plate will be glued. The face of the (9.5 degree) cut surfaces on the coupling and pipe will be glued.

After assembly and drilling, the junction adjacent to the outside of the coupling and the bearing plate will be welded by HOT AIR Process. The 3/8" Holes will not be covered or blocked with the fillet weld. We are concerned about the placement of the bottom row of holes. We feel they should be on the same angle as the plate and them next row to be 1" above these holes and so on. All holes other than bottom row can be perpendicular to the centerline of the pipe.



REVISIONS: 06-25-2001
① ANGLE 9.5° CHANGED FROM 10°
② BEVEL INCREASED

DCN 20103-018
Pg 4 of 10
000316

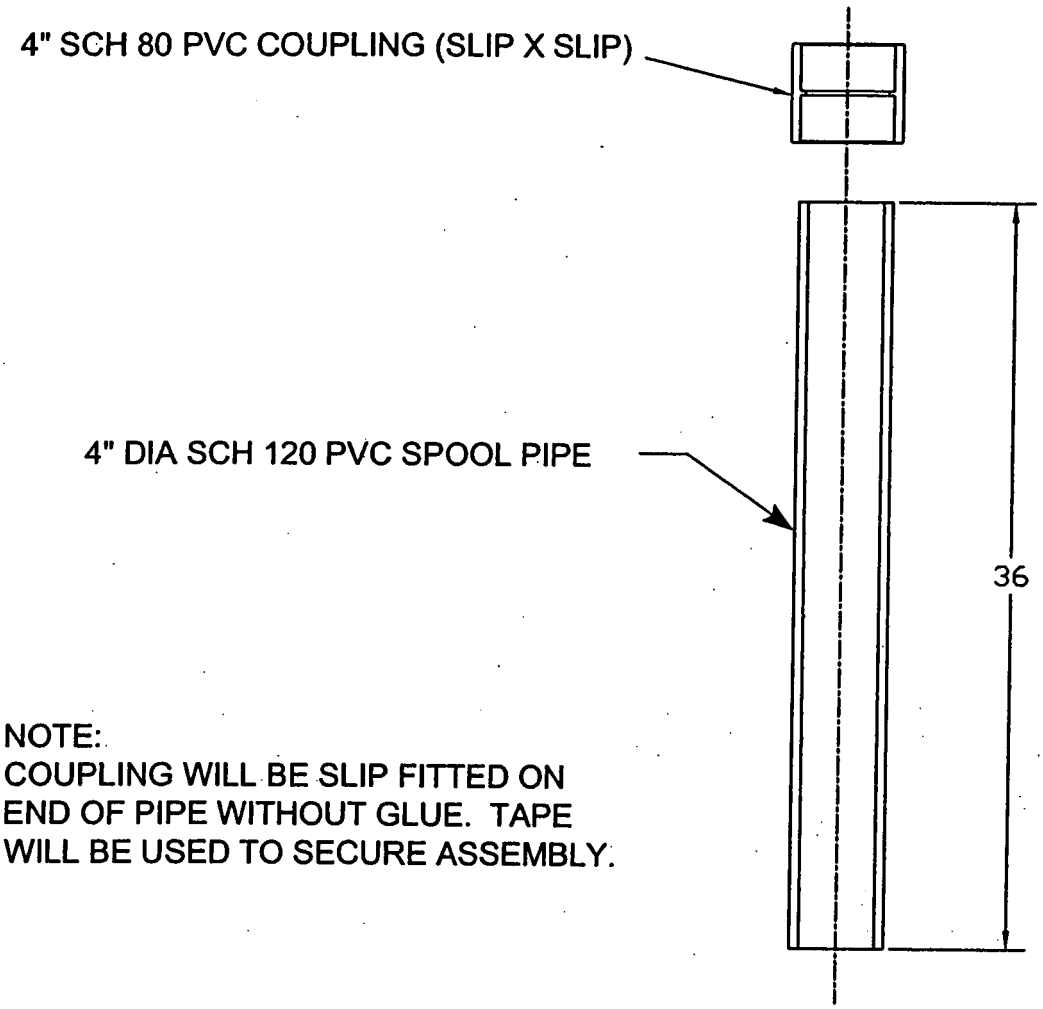
4556

OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246 (REV. 1)

4556

PT-1-B
16 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "PT-1-B-01 thru PT-1-B-16"

DCN 20103-018

Pg 5 of 10

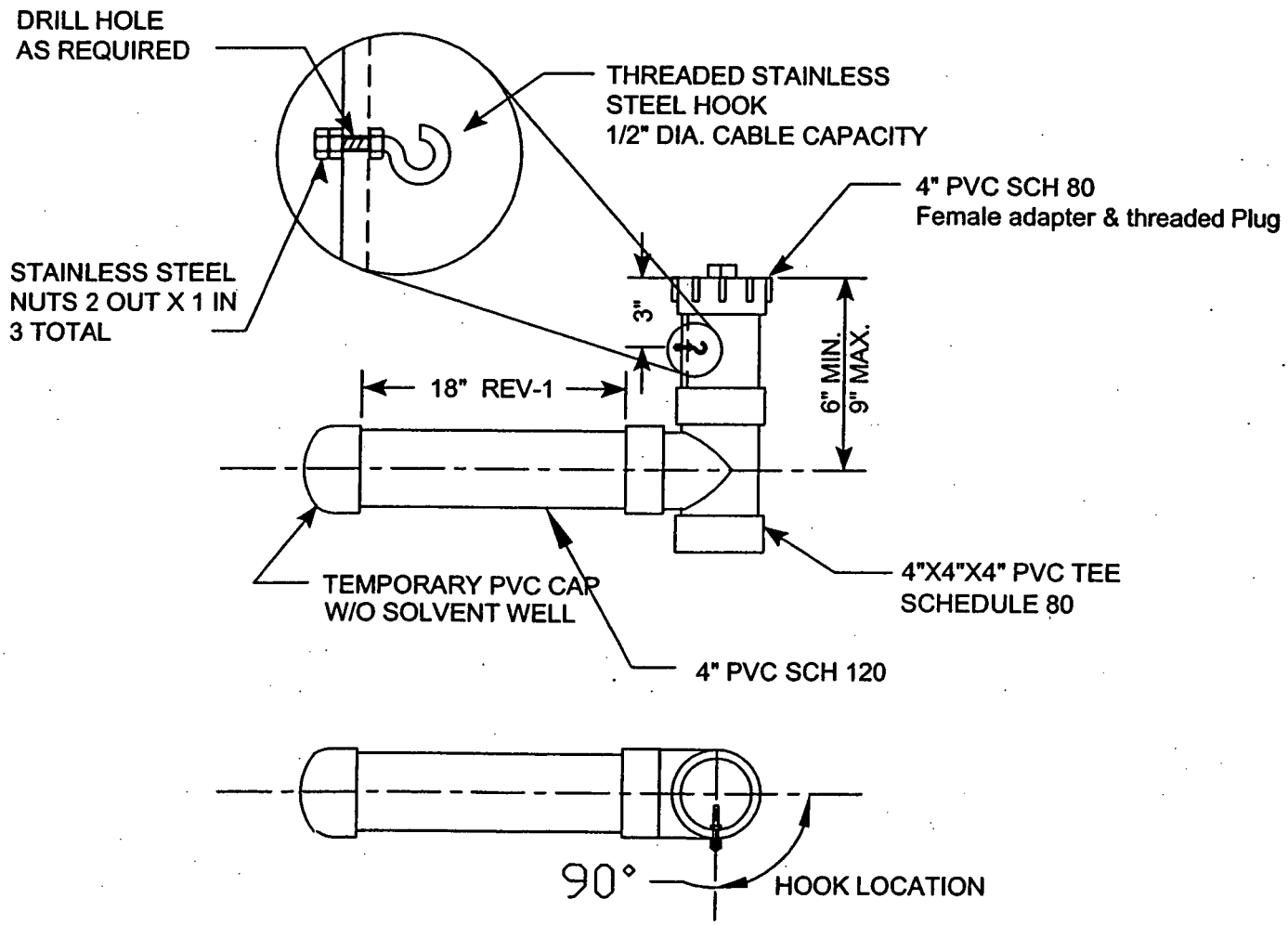
OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

(REV. 1)

4556

PT-1-C
8 Pcs.



NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

2) LABEL EACH PIECE 'PT-1-C'

3) ONE (1) CARBON STEEL WRENCH FOR PLUG REMOVAL

000318

REVISIONS:

1 CHANGED FROM 12" TO 18" 06/19/2001 MARTY PROCHASKA

2 ITEM 3 ADDED 06-25-2001

DCN 20103-018

Pg 6 of 10

4556

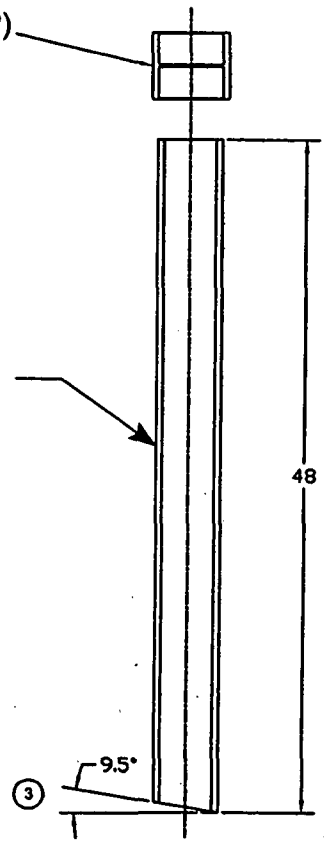
OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

(REV. 1)

SP-1A

5 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "SP-1A-01 thru SP-1-A-05"

3 9.5 DEGREE CUT ADDED 06-21-2001

DCN 20103-018 000319

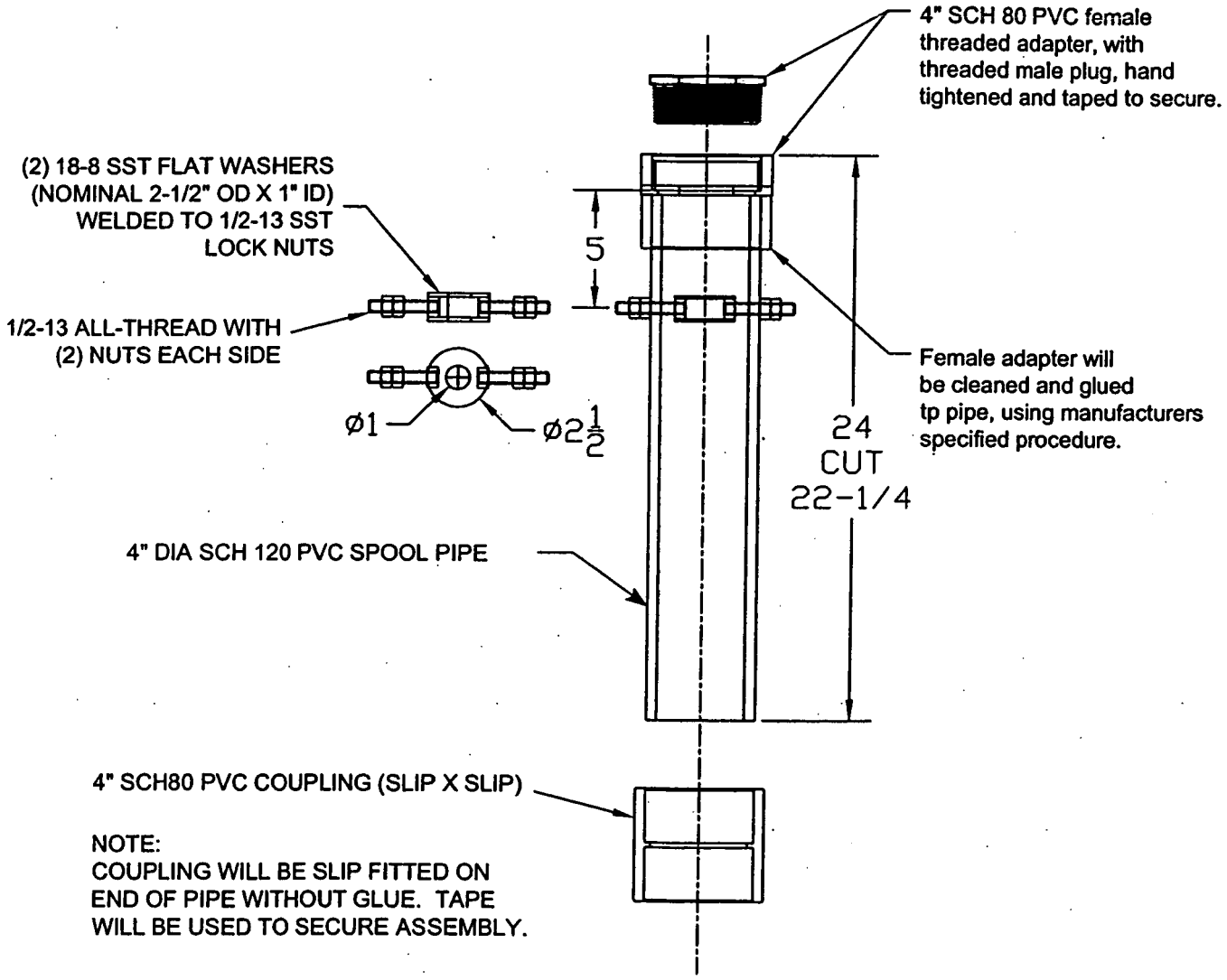
Pg 7 of 10

OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

(REV. 1)

SP-1B
5 Pcs.



NOTE:
COUPLING WILL BE SLIP FITTED ON END OF PIPE WITHOUT GLUE. TAPE WILL BE USED TO SECURE ASSEMBLY.

NOTES:

1 PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS)

2 LABEL EACH PIECE "SP-1B-01 thru SP-1B-05"

000320

DCN 20103-018
Pg 8 of 10

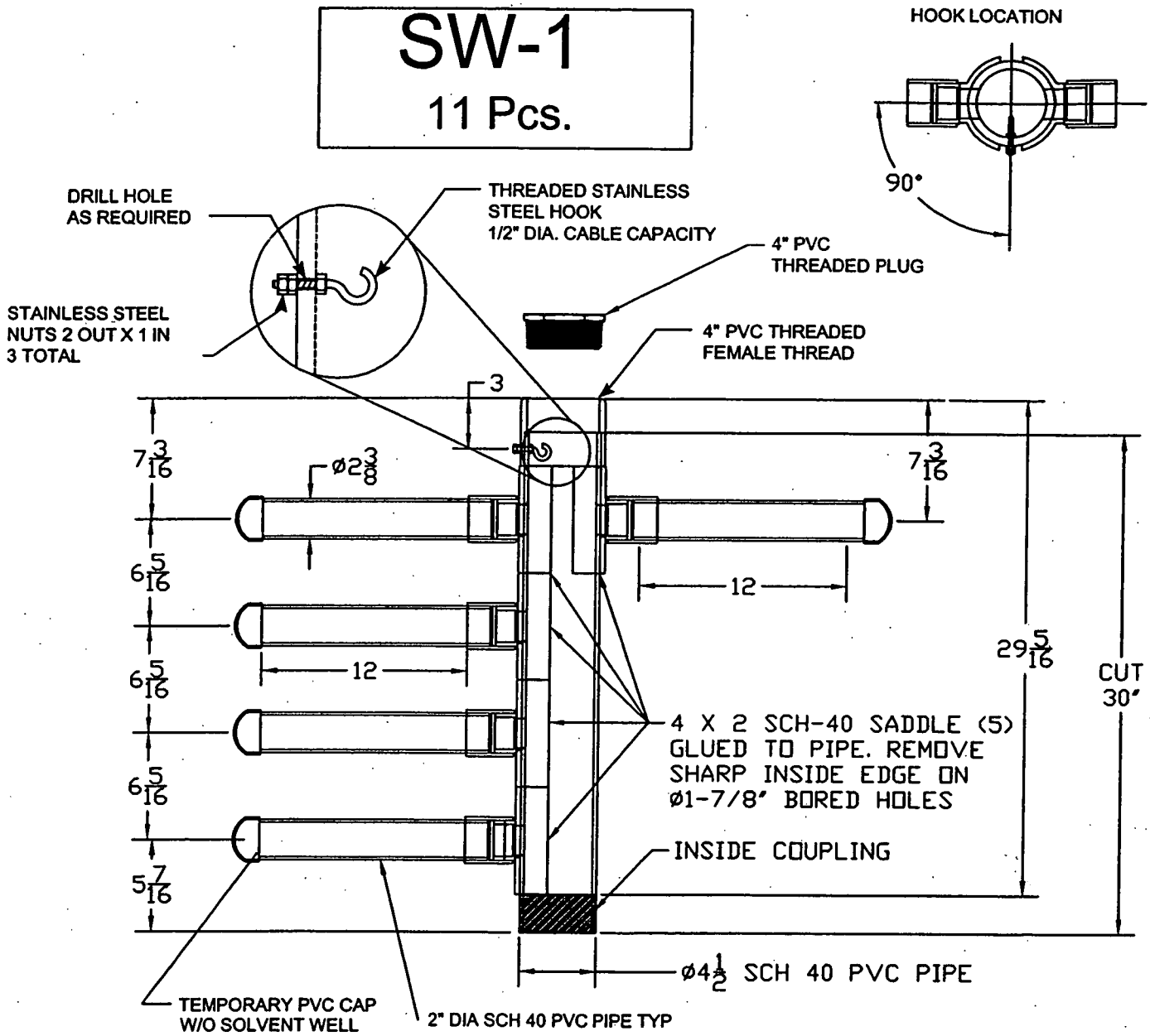
OSDF Cell 1 Instrumentation Plan - Final Cover Monitoring System - Fabrication Detail 4556

VENDOR: GLOBAL DRILLING SUPPLIERS, INC - CINCINNATI, OH 45246

(REV. 1)

SW-1

11 Pcs.



NOTES:

1) PVC PIPE AND FITTINGS TO BE MANUFACTURED IN ACCORDANCE WITH ASTM D-1785 (PIPE) D-2467 (SLIP) D2464 (THREADS) OR D1784-81 (SHEET)

2) LABEL EACH PIECE "SW-1-01 THRU SW-1-11"

3) ONE (1) CARBON STEEL WRENCH FOR PLUG REMOVAL

000321

REVISIONS:
06/18/2001 SCHEDULE 40 CROSS AND TEE'S ALONG WITH 4X2 BUSHING WERE REPLACED WITH SADDLE ADAPTERS ALLOWING OVERALL HEIGHT TO BE REDUCED FROM 38.5" TO ABOUT 29"

ITEM 3 ADDED 06-25-2001

DCN 20103-018
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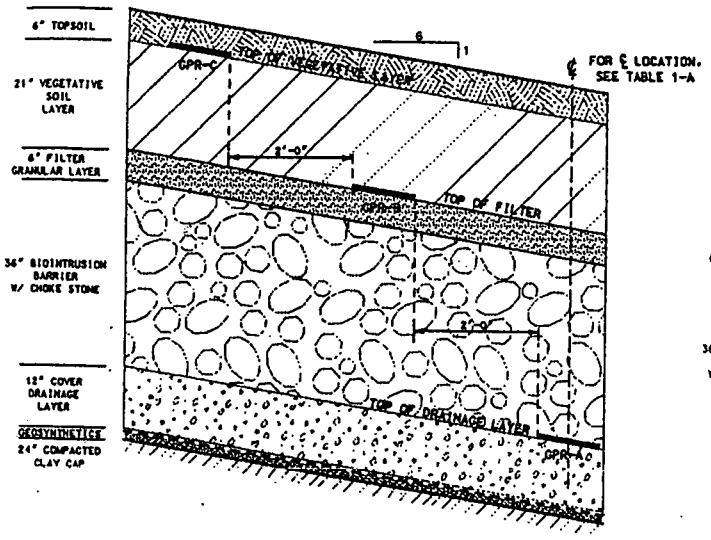
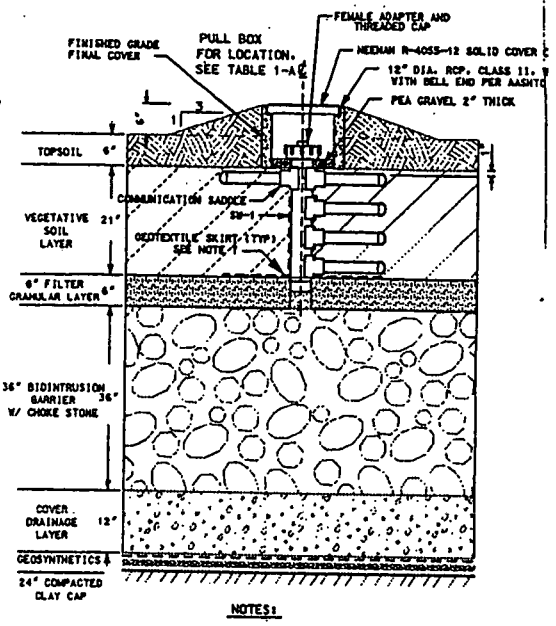


NOTES:

1. GPR- A, GPR- B & GPR- C (12" X 12" X 3/16" THICK A304 STAINLESS STEEL) WILL BE FURNISHED BY FLUOR FERNALD
2. GPR- A IS TO BE LOCATED ACCORDING TO THE COORDINATES SHOWN ON TABLE 1.
3. GPR-B AND GPR- C ARE TO BE PLACED DIRECTLY UPSLOPE FROM PLATE A AS INDICATED IN THIS DETAIL.
4. SURVEY LOCATION AND ELEVATION OF GPR-A, GPR-B AND GPR-C AFTER INSTALLATION AND PROVIDE TO CONSTRUCTION MANAGER IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02100

GPR-1 THRU GPR-8
TYPICAL INSTALLATION DETAIL (1)
SCALE 1"=1'



NOTES:

1. FOR LOCATION OF THE PULLBOX REFER TO TABLE 1.
2. PREFABRICATED ASSEMBLY SW-1 TO BE FURNISHED BY FLUOR F
3. PLACE TEFLON TAPE ON THREADS IN THREADED CAP
4. BASE OF SW-1 ASSEMBLY TO REMAIN OPEN.
5. INSTALL SW-1 ASSEMBLY VERTICAL.
6. EXCAVATE AND BACKFILL IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02200.
7. WRAP NON-WOVEN GEOTEXTILE (MIN. MASS/UNIT WEIGHT OF 7 PIPE WITH AN OVERLAP OF AT LEAST 6". AFFIX GEOTEXTILE SPACED AT 4". WRAP NON-WOVEN GEOTEXTILE AROUND PVC PLA AND AFFIX WITH RUBBER CEMENT OR EQUIVALENT. SP-A, SP-B PT-1-8 WILL BE INSTALLED IN SECTIONS. PVC PIPE CONNECT BE SOLVENT WELDED WITH FLUSH INTERIOR. GEOTEXTILE SHAL WEIGHT PER SQUARE YARD MIN.

SW-1 THRU SW-10
TYPICAL INSTALLATION DETAIL (2)
SCALE 1"=1'

TABLE 1-A
LOCATION OF MONITORING POINTS

MONITORING DEVICE	ORIENTATION OF COMMUNICATION TEE/SADDLE	CL LOCATION PULLBOX/GPR PLATE COORDINATES		TOP OF PULL BOX ELEV.**
		NORTH	EAST	TO BE DETERMINED
PT-1*/ SP-1*	WEST	483200.0	1351200.0	
PT-2*/ SP-2*	SOUTH	483075.0	1351535.0	
PT-3*/ SP-3*	WEST	482990.0	1351200.0	
PT-4*/ SP-4*	SOUTH	483070.0	1350825.0	
PT-5	WEST	483125.0	1350695.0	
PT-6	WEST	483270.0	1351190.0	
PT-7	SOUTH	483110.0	1351630.0	
SW-1	EAST	483200.0	1351170.0	
SW-2	EAST	483080.0	1351170.0	
SW-3	EAST	482990.0	1351170.0	
SW-4	NORTH	482925.0	1350790.0	
SW-5	NORTH	482925.0	1350940.0	
SW-6	NORTH	482925.0	1351045.0	
SW-7	NORTH	482925.0	1351190.0	
SW-8	NORTH	482925.0	1351350.0	
SW-9	NORTH	482925.0	1351440.0	
SW-10	NORTH	482925.0	1351545.0	
GPR-1 A	—	483140.0	1351190.0	
GPR-2 A	—	483060.0	1351500.0	
GPR-3 A	—	483020.0	1351190.0	
GPR-4 A	—	483040.0	1350870.0	
GPR-5 A	—	482925.0	1350880.0	
GPR-6 A	—	482980.0	1350995.0	
GPR-7 A	—	482975.0	1351350.0	
GPR-8 A	—	482925.0	1351500.0	

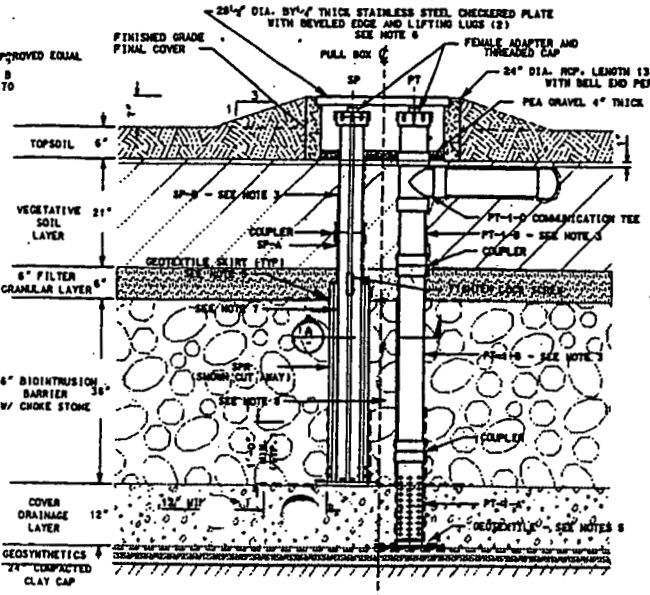
* MULTIPLE MONITORING DEVICES PER PULLBOX

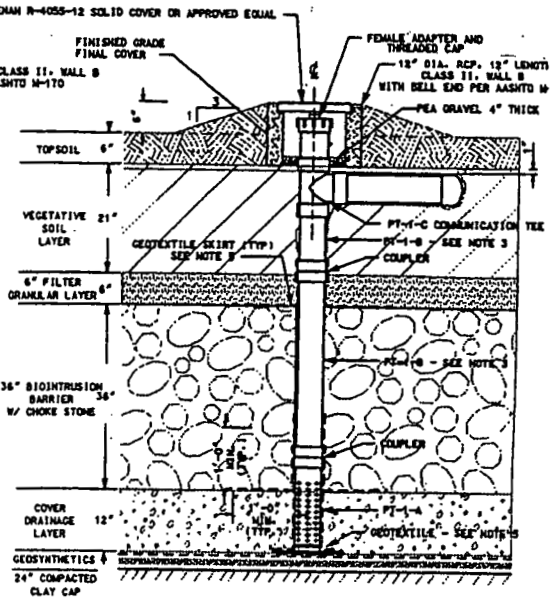
** VERIFY "AS-BUILT" FINAL COVER ELEVATION AT THE PULL BOX BEFORE INSTALLATION OF PULL BOX. LOCATE TOP OF PULLBOX ELEVATION 6" ABOVE THE "AS-BUILT" FINAL COVER ELEVATION.

NO.	REVISIONS	DATE	DWN. BY	APPD.
0	NEW DRAWING PER DCN 20103-016	6/21/06		
A	ISSUED FOR FLUOR FERNALD REVIEW	6/21/06		

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DW

4556

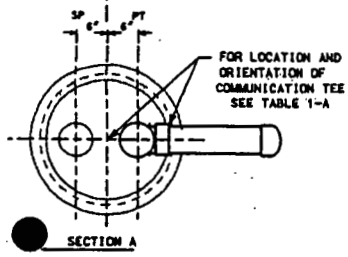




BY FLUOR FERNALD.

CHNICAL

IGHT OF 7 OZ/SQYD) AROUND RISER
EOTEXTILE WITH CABLE TIES
D PVC PLATE
P-A, SP-B, AND
E CONNECTIONS SHALL
TILE SHALL BE 7 OUNCES



NOTES:

1. FOR LOCATION OF THE PULLBOX REFER TO TABLE 1.
2. PREFABRICATED ASSEMBLIES SPR, SP-A, SP-B, AND PT-1-A, B & C WILL BE FURNISHED BY FLUOR FERNALD.
3. CUT SP-B, PT-1-B, AND ¾" ROD TO MEET REQUIRED DEPTH AND ELEVATIONS SOLVENT WELD JOINTS USING MANUFACTURER RECOMMENDED SOLVENT.
4. PLACE TEFLON TAPE ON THREADS IN THREADED CAPS.
5. WRAP NON-WOVEN GEOTEXTILE (MIN. MASS/UNIT WEIGHT OF 7 OZ/SQYD) AROUND RISER PIPE WITH AN OVERLAP OF AT LEAST 6". AFFIX GEOTEXTILE WITH CABLE TIES SPACED AT 4". WRAP NON-WOVEN GEOTEXTILE AROUND PVC PLATE AND AFFIX WITH RUBBER CEMENT OR EQUIVALENT. SP-A, SP-B, AND PT-1-B WILL BE INSTALLED IN SECTIONS. PVC PIPE CONNECTIONS SHALL BE SOLVENT WELDED WITH FLUSH INTERIOR. GEOTEXTILE SHALL BE 7 OUNCES WEIGHT PER SQUARE YARD MIN.
6. VERIFY RCP BELL INSIDE DIAMETER (I.D.) BEFORE FABRICATION OF STAINLESS STEEL CHECKERED PLATE. DIAMETER OF CHECKERED PLATE SHALL BE ¼ INCH LESS THAN THE BELL I.D.
7. FILL ANNULAR SPACE BETEWEEN 4" PVC PIPE (SP-A) AND 6" STEEL PIPE (SPR) WITH GRANULAR DRAINAGE MATERIAL IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02710. GRANULAR DRAINAGE MATERIAL TO BE FURNISHED BY FLUOR FERNALD.
8. FILL SPACE BETWEEN SPR AND PT WITH BIOINTRUSION BARRIER MATERIAL TO BE FURNISHED BY FLUOR FERNALD.

PT-1 AND SP-1 THRU PT-4 AND SP-4
TYPICAL INSTALLATION DETAIL (3)
SCALE P-7

NOTES:

1. FOR LOCATION OF THE PULLBOX REFER TO TABLE 1-A.
2. PREFABRICATED ASSEMBLY PT TO BE FURNISHED BY FLUOR FERNALD.
3. CUT RISER PT-1-B TO MEET REQUIRED DEPTH. SOLVENT WELD JOINTS USING MANUFACTURER RECOMMENDED SOLVENT.
4. PLACE TEFLON TAPE ON THREADS IN THREADED CAP
5. WRAP NON-WOVEN GEOTEXTILE (MIN. MASS/UNIT WEIGHT OF 7 OZ/SQYD) AROUND RISER PIPE WITH AN OVERLAP OF AT LEAST 6". AFFIX GEOTEXTILE WITH CABLE TIES SPACED AT 4". WRAP NON-WOVEN GEOTEXTILE AROUND PVC PLATE AND AFFIX WITH RUBBER CEMENT OR EQUIVALENT. SP-A, SP-B, AND PT-1-B WILL BE INSTALLED IN SECTIONS. PVC PIPE CONNECTIONS SHALL BE SOLVENT WELDED WITH FLUSH INTERIOR. GEOTEXTILE SHALL BE 7 OUNCES WEIGHT PER SQUARE YARD MIN.

PT-5 THRU PT-7
TYPICAL INSTALLATION DETAIL (4)
SCALE P-7

GENERAL NOTES:

1. FOR FINAL COVER GRADING PLAN, SEE DRAWING 90X-6000-G-00302, SHEET G-7 FROM OSDF PHASE III CONSTRUCTION.
2. MATERIALS TO BE FURNISHED BY CONTRACTOR UNLESS OTHERWISE INDICATED

CERTIFIED FOR CONSTRUCTION

REF. DWG. NO.	NOTE: FLUOR FERNALD CADD DRAWING, DO NOT REVISE MANUALLY.	CONFIGURATION MANAGEMENT DRAWING	APPROVALS	Fernald Environmental Management Project
				FLUOR FERNALD, INC.
				U.S. DEPARTMENT OF ENERGY

OSDF - CELL 1 FINAL COVER
MONITORING DEVICES
INSTALLATION DETAILS
DRAWING NO. 90X-5500-G-00571
SHEET 1 OF 1
A ~~SKETCH 1~~
DATE 6/18/01
DRAWN WJD
FILE NAME: MONITOR_INSTALLATION_DETAILS.dgn

6/22/01

DCN 20103-018
Pg 10 of 10

000323

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 6	(6) DATE
20103 /4272	FSC-642		JULY 12, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [x] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: Electrical Service to Trailers T-98 and T-125

(11) DCN NO.: 20103-019

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing	90X-6000-E-00259	0	
Drawing	90X-5500-E-00549	0	
Drawing	90X-5500-E-00550	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [x] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [x] NOT REQUIRED

Justification: As part of the excavated of impacted soils to support the certification of the OSDF Cell 4 footprint, trailers T-98 and T-125 must be relocated to a new location. T-98 and T-125 must remain operational to provide access control for OSDF construction oversight personnel to support impacted material placement in Cells 2 and 3.
Existing Conditions: Trailers T-98 and T-125 are currently within the footprint of the OSDF Cell 4 Footprint.
Proposed Change: Relocate trailers T-98 and T-125 to the Northeast corner of the former production area/bulk debris storage area (see page 2) and provide electrical service per attachments to T-98.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
A. C. Smith Anthony Snider	Fluor Fernald, Inc.	7/12/01	A. C. Smith Anthony Snider for Sam Wolinsky	7/12/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerr 7-13-01

[ ] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 7/17/01
PERFORMANCE GRADE: (17) A. C. Smith for VAK

(18) CONSTRUCTION CONCURRENCE DATE: 7/17/01 Bill Zebuck

PURCHASE REQUISITION REQUIRED: [ ] YES [✓] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

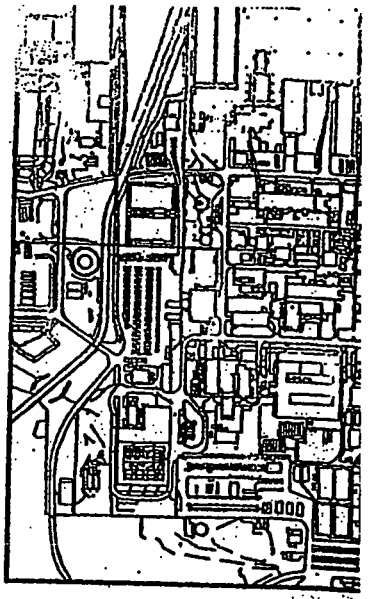
JS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C 011

ORIGINAL

000324

4556



NE13

NE14

T98

NE114

NEW

NE113

AMS

NE15

NEW

NEW

748

NE106

NE103

NE102

MARK CABLE WITH BANNER TAPE

JGK 9-17-01

Dwg 90X-5300-E-00549

Page 2 of 2

20103-019

000325

Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

ENGINEERING CALCULATION

PROJECT NUMBER: 4556
BY: JKK
DATE: 7-3-01
PAGE: OF
REVISED: 7-17-01
SUBJECT:

Construction Notes

1. Install new 480V feeder from 200 A fused disconnect switch on pole 748 to pole NE106, NE113 and to trailer T98.
2. Repower 100 A fused disconnect switch on pole NE106
3. Install a new 40 ft Class II pole - NE114 as shown on dwg.
4. Power existing 100 A disconnect switch at T98 and connect aerial cable 15 ft above grade at T98 and connect aerial cable on poles NE113 and NE114 at a min. of 24 ft. above grade. Maintain 3 ft of sag in the cable
5. Guy poles NE106 and NE114 as shown on the dwg

Pole #	Anchor	Guy	angle of Guy
NE114	1 - 12"	1 - 1/2"	60°
NE106	1 - 12"	1 - 1/2"	60°

General Notes

1) See dwg 90X-6000-E-00259 for wiring and conduit details on pole 748 and single line.
2) All wiring shall be copper with THWN insulation unless otherwise stated
3) Maintain 1 foot spacing between existing 480 V wiring and new 480V wiring on poles.
4) For pole guy, anchoring and attachment details see drawings 16X-5500-E-08105 and 16X-5500-E-00106
5) Use structural channel to secure electrical equipment
6) Trailer(s) shall be installed according to trailer typical installation drawings 44X-5500-E-00363, -S-00364, and -E-00366
7) Dig setting hole large enough to permit use of power tamper to full depth. Place earth in min. 6" layers and pack to 95% density per ASTM D 698. Bank earth 12" above grade.
8) New pole shall be 40 ft. Class 2 southern pine, 100% treated with 6 ft. minimum burial.

000326
20103-019
FS-F-78 B (R)

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Environmental Restoration
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(513) 738 6200

ENGINEERING CALCULATION

4556

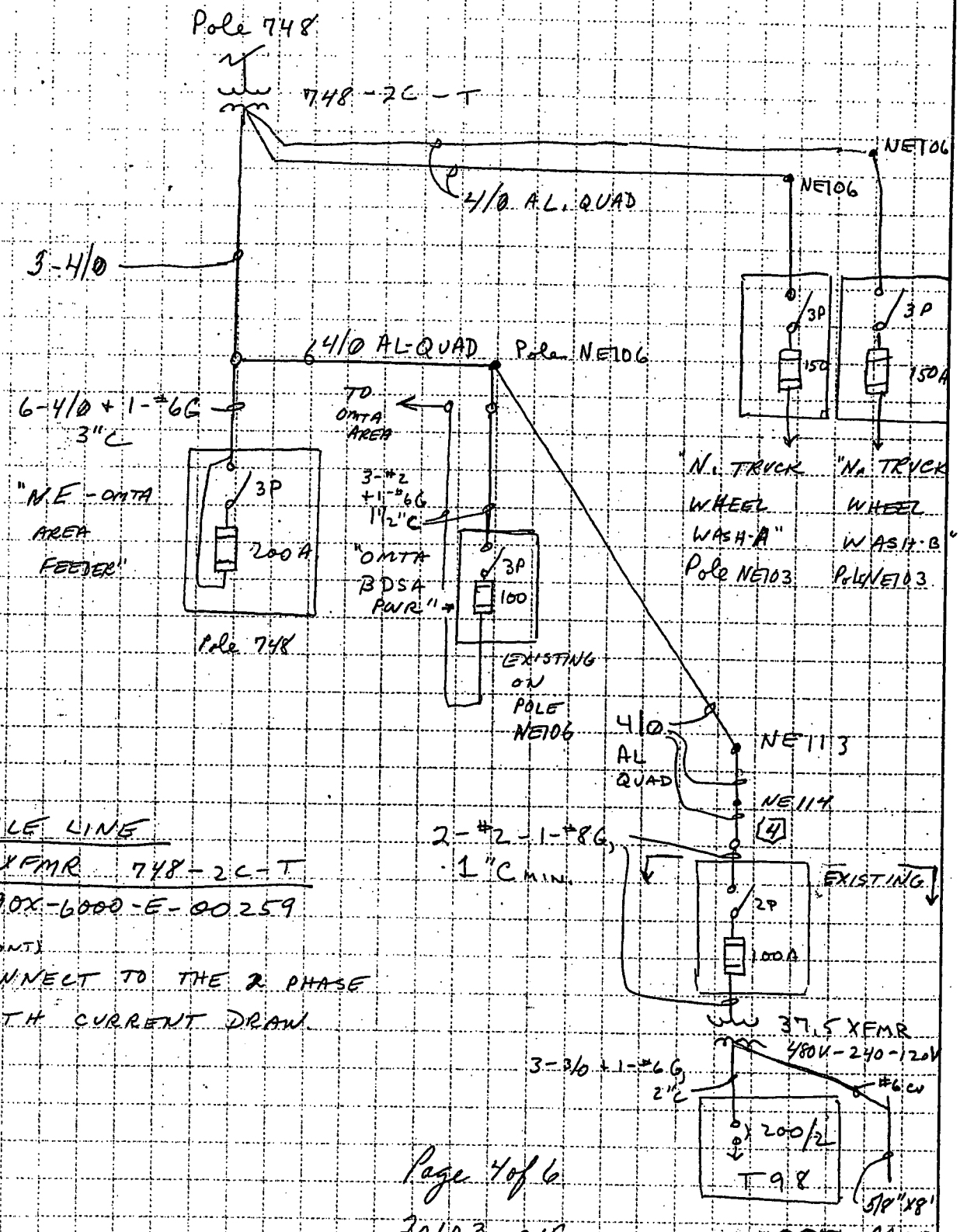
BY: JK

DATE: 7-3-01

PAGE: OF

REVISED: 7-17-01

SUBJECT:



SINGLE LINE
FOR XFMR 748-2C-T
DWG 90X-6000-E-00259

NOTES (CONT.)
4 CONNECT TO THE 2 PHASE WITH CURRENT DRAW.

20103-019

FS-F-76 B (REV.

Fernald
Environmental Restoration
Management Corporation
PO Box 398704
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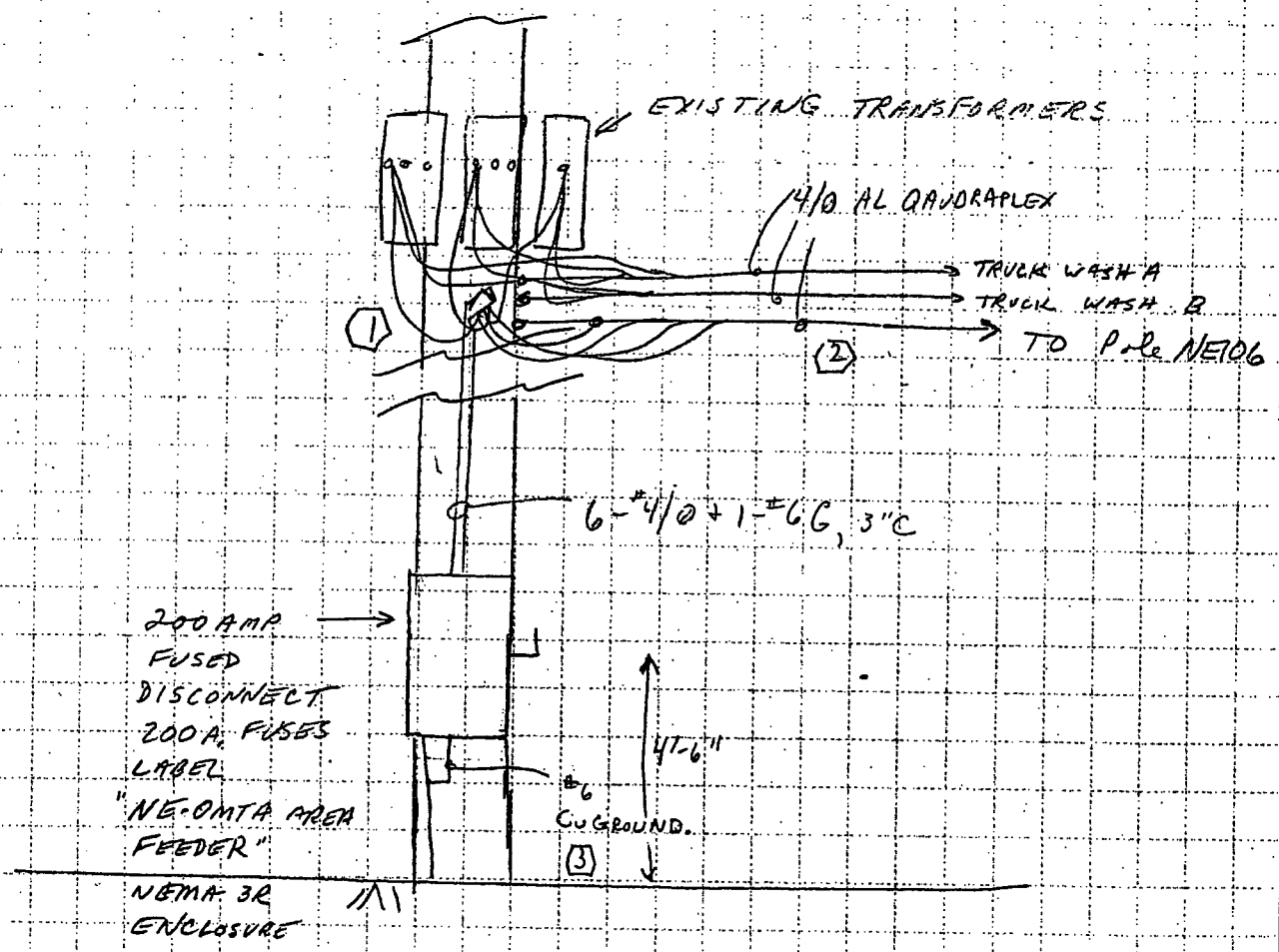
(513) 738 6200

ENGINEERING CALCULATION

PROJECT NUMBER:	4556
BY:	JAK
DATE:	7-3-01
PAGE:	OF
REVISED:	

SUBJECT:



Pole 748
Details
DWG 90X-6000-E-00259

1. INSTALL NEW 200A 3 POLE 480V FUSED DISCONNECT ON POLE 748.
2. POWER SWITCH WITH FEEDER FROM XFMR 748-2C-T AND FEED NEW FEEDER TO OMTA BDSA SWITCH ANT T98.
3. CONNECT GROUND WIRE TO POLE GROUND SYSTEM WITH APPROVED GROUND CLAMP.

000328

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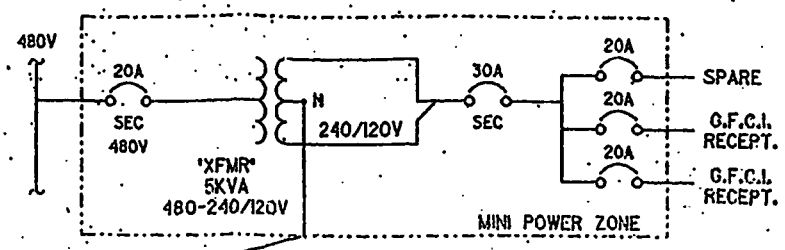
20103-019

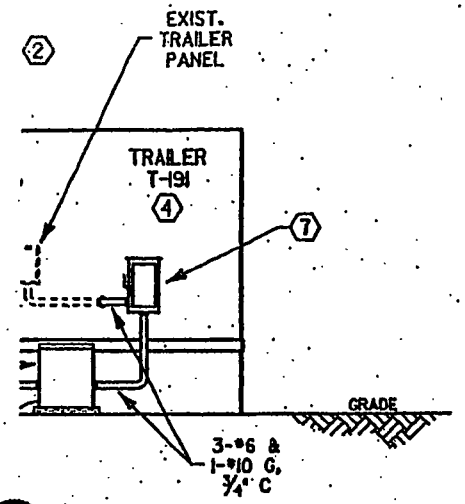
FS-F-76 B (REV.

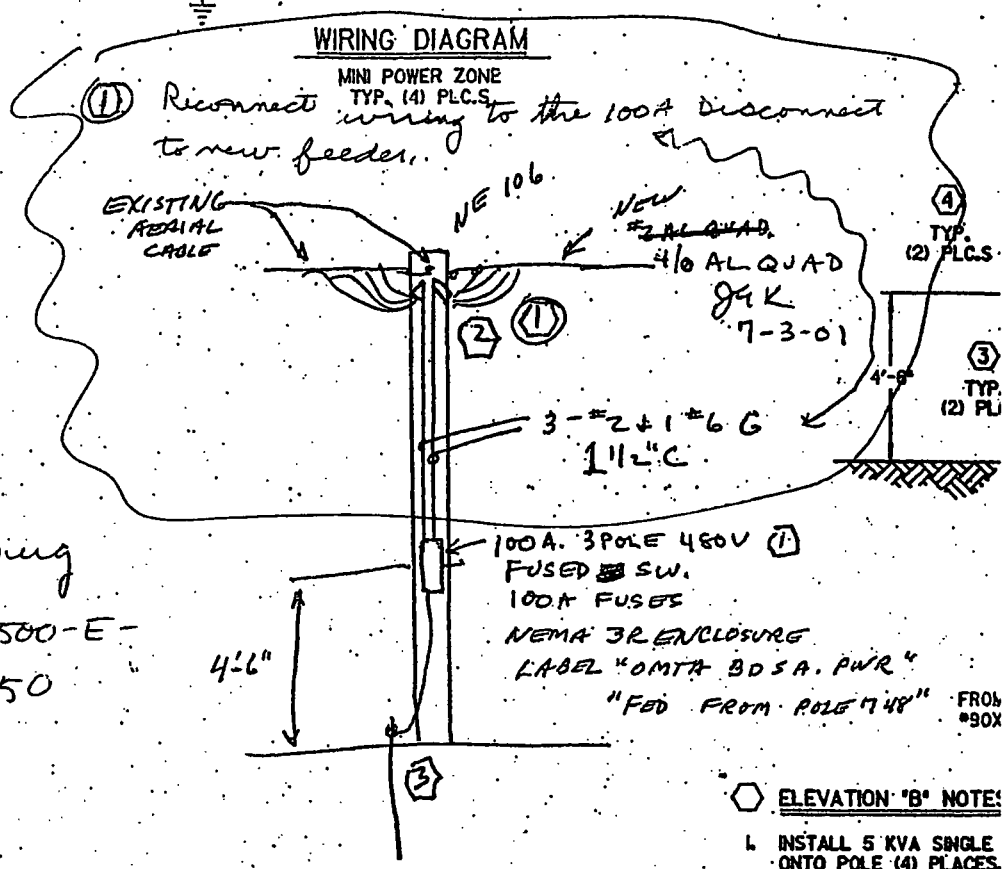


WIRING DIAGRAM

MINI POWER ZONE
TYP. (4) PLC.S

(1) Reconnect wiring to the 100A Disconnect to new feeder.





Dwg
90X-5500-E-
00550

TRAILER T-191. (ONE PHASE WILL
NGLE PHASE).

ADE.

ER TO 5/8" x 8' GROUND ROD.

ILER TYPICAL INSTALLATION DRAWINGS

TCH WITH 40 AMP FUSES - LABEL

OUNT TRANSFORMER WITH 2" PRECAST

TCH WITH 60 AMP FUSES - LABEL

N.

ELEV. C.

1. INSTALL NEW 3POLE 480V FUSED SWITCH WITH 100A FUSES IN NEMA 3R ENCLOSURE
2. POWER SWITCH WITH NEW AERIAL FEED FROM POLE 798 REPOWERS EXISTING AERIAL FEEDER.
3. INSTALL 5/8" x 8' LONG. CU GROUND ROD WITH 1-#6 CU GROUND WIRE.

ECDC CONTROLLED
COPY NO.
465

ELEVATION "B" NOTES

1. INSTALL 5 KVA SINGLE ONTO POLE (4) PLACES.
2. FEED MINI POWER ZONE
3. INSTALL SINGLE GANG C WEATHER PROOF COVER
4. FEED DUPLEX RECEPTAC 20 AMP CIRCUIT BREAK
5. INSTALL 5/8" x 8' LONG

Page 6 of 6
20103-019

GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER
2. USE STRUCTURAL CHANNEL T
3. TRAILER SHALL BE INSTALLED 44X-5500-E-00363 AND 44X-

000329

				44X-5500-E-00363
				16X-5500-E-00106
				16X-5500-E-00105
				22X-5500-E-00958
				22C-5500-P-00668
				22C-5500-P-00660
DCN NO. 20102-108	1/15/00	SJS	MB	90X-5500-E-00549
NS	DATE	DWN. BY	APPD.	REF. DWG. NO.

NOTE:
FLUOR FERNALD CADD DRAWING, DO NOT REVISE MANUALLY.

CONFIGURATION MANAGEMENT DRAWING
YES ☒ NO ☐
STATUS: STRUCTURES OR COMPONENTS DEPICTED ON THIS DRAWING ARE UNDER CONFIGURATION MANAGEMENT CONTROL. SEE NOTES.
J. E. Kerl 4-24-00
COGNIZANT ENGINEER DATE

APPROVALS

CIVIL & STR.			SAFETY ENG.		
ELECTRICAL	J.E. Kerl	4/24/00	MAINTENANCE		
ENGINEER			FIRE PROTECT.		
INSTRUMENT			WASTE MANAGE		
MECHANICAL			SECURITY		
			PROJECTS		
CHECKED	MB				

RCI/DCN FORM

4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103//4272	(2) S/C NO.: FSC-642	(5) Pg 1 of 7	(6) DATE 7-24-01
(3) S/C TITLE: Cell Final Cover Construction On Site Disposal Facility (OSDF) Phase III -		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]	(4A) RCI/DCN TITLE: Telephone Service for T98	(11) DCN NO.: 20103-020	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
DWG	23X-5300-X-00151	10	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Provide phone service to T98.
Remove Telephone service to T-96 & Relocate Terminal Equipment to T-98.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
J. E. Kerl	FLUOR	7-25-01	A. C. Smith	07/25/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

UPDATE DWGS

ECDC CONTROLLED COPY NO. C-011

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerl

[X] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) A. C. Smith DATE: 07/25/01

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE DATE: [signature] 7/25/01

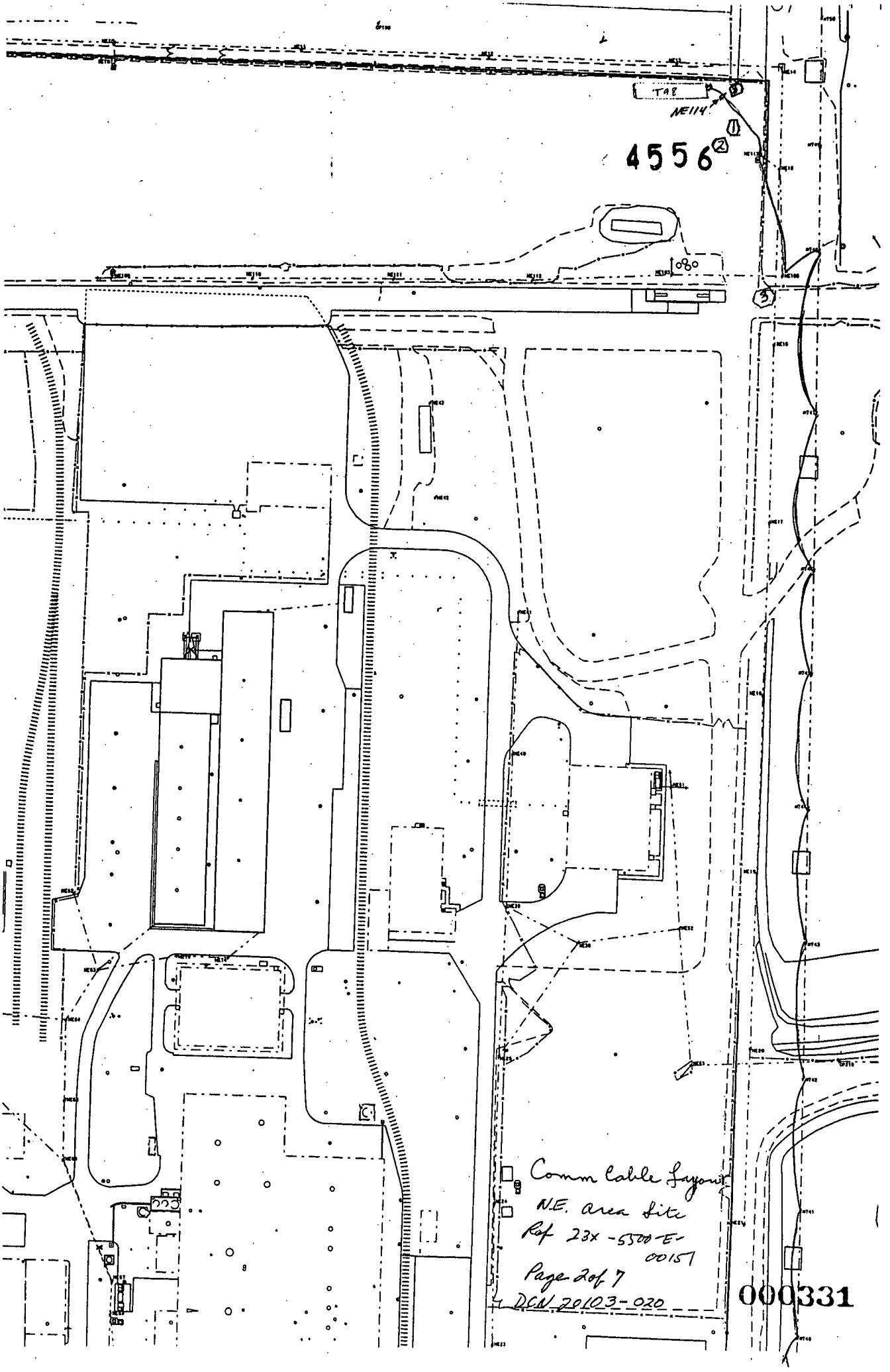
PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19)

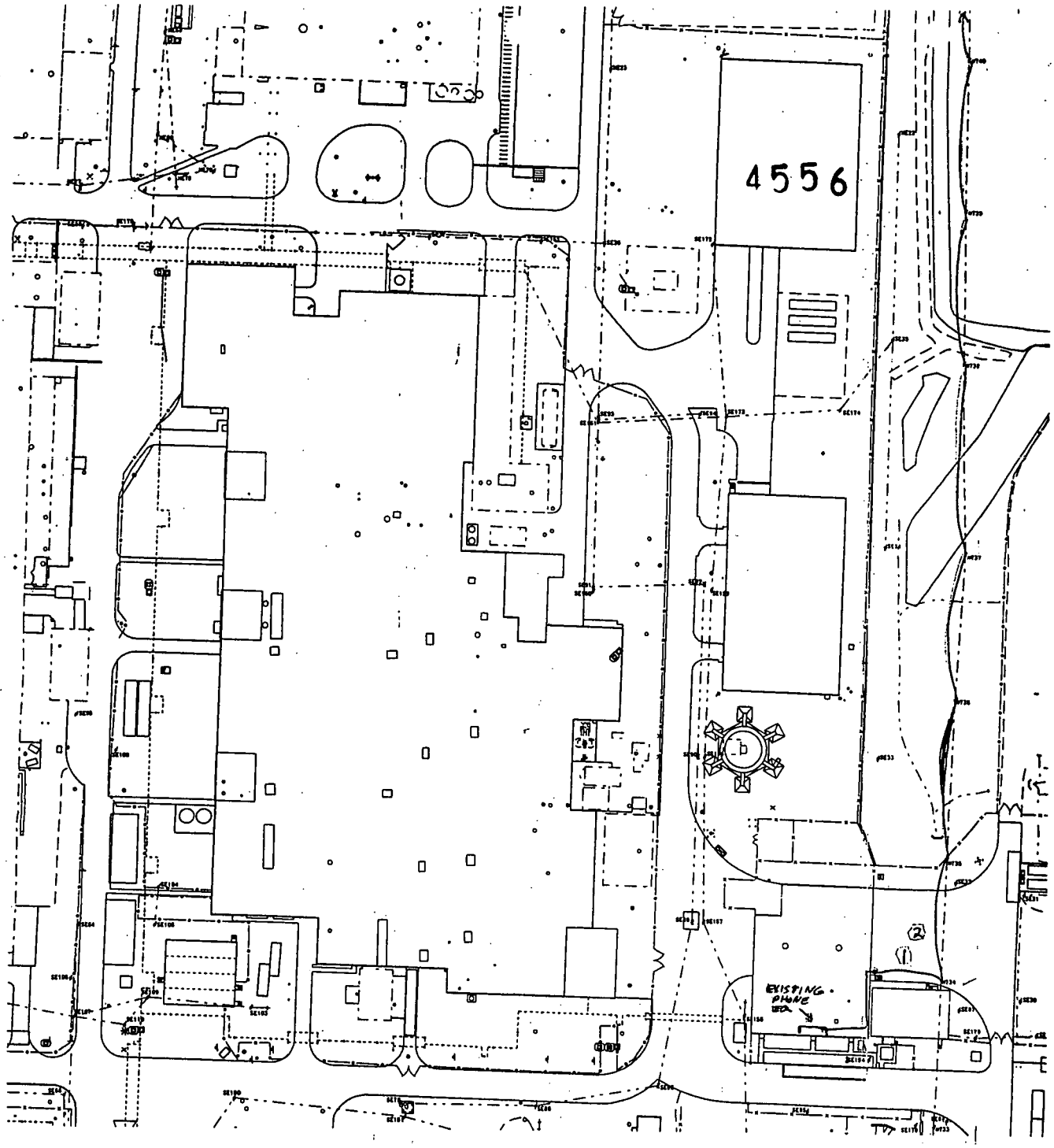
(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

F-4259
. 5: 10/01/99: ED-12-5002

ORIGINAL


TAP
NE114
4556
080
Comm Cable Layout
N.E. area site
Ref 23X-5500-E-00157
Page 2 of 7
DCN 20103-020



Comm cable layout
S.E. area site
Ref 23X-5500-X-00151

Page 3 of 7

DCN 20103-020

Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	RES 4272
BY:	DJK
DATE:	7-25-01
PAGE:	OF
REVISED:	

SUBJECT:

Notes - Mod

(1) - Furnish and install 1-25 pair 24 gauge, aircore copper cable and a 6 strand 62.5/125 UM MM aircore fiber in accordance with ANSI/EIA/TIA 568-A. cables to be routed from the phone equipment backboard in RIMIA Bldg to the relocated T98. Install a telephone mast on T98 made of 2" RGS conduit and a 2" bushed sleeve through the wall by phone backboard. Backboard to be 4'x8'x 3/4" A/C Plywood with 2 coats of fire retardant paint. Copper to be terminated to a 110 protector unit with solid state gas tube protector with #6 green insulated copper ground wire to existing ground rod. at the RIMIA Bldg install and terminate to new 110 protector unit and route phone cables with existing cables through RIMIA Building to a 2" RGS conduit mast installed on building. Cables to be fed through 2" sleeve in RIMIA wall. 6 strand 62.5/125 UM MM fiber to be terminated on both ends in a wall mounted 100A3 light interface unit (LIU) enclosure with ST connector

(2) New 3/8" galv. messenger to be installed per Sketch #4237-1, grounded on both ends and at 1/4 mile intervals with a #6 copper ground wire per Sketch #4237-2

(3) Install additional 1/2" guy wires as required using existing anchors to power wiring.

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DCN 20103-020

FS-F-76 B (

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	RES 4272
BY:	AGK
DATE:	7-25-01
PAGE:	OF
REVISED:	

SUBJECT:

Notes - General

1) See Dwg 44X-5500-E-00363 for typical phone mast, boards, etc. details

2) See Dwgs 16X-5500-E-00105 and -00106 for guy wire and pole hardware details

3) Install phone cable 40" below power wiring on poles (Remember the annunciator cable is a 120V signal.)

Page 5 of 7

DCN 20103-020

FS-F-78 B (F

4556

Figures 5-28, 5-29, and 5-30 show the attachments on in-line poles.

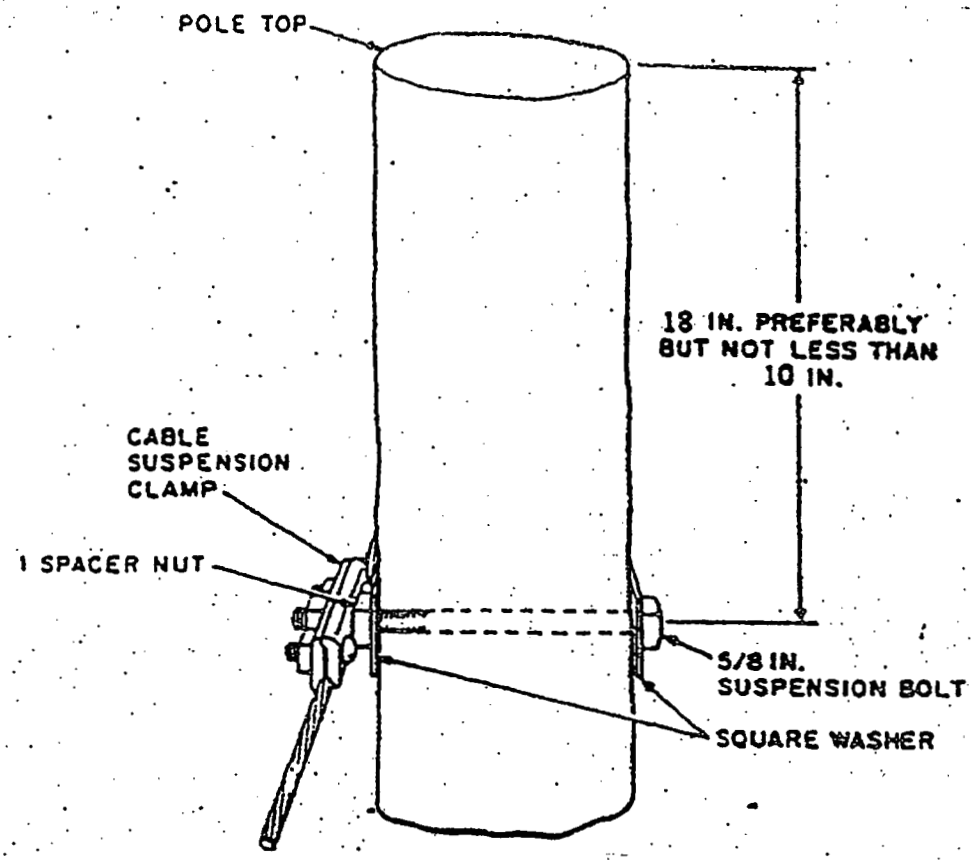


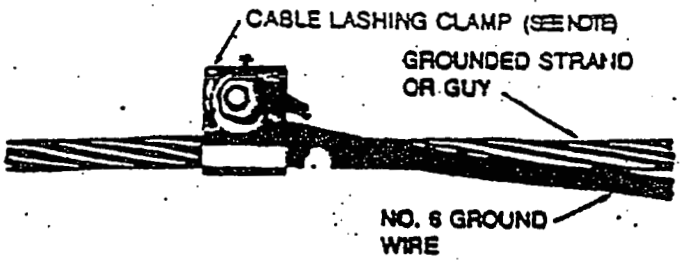
Figure 5-28. Pole Attachment for 6.6M or 6M Suspension Strand Without Reinforcing Strap

SKETCH # 4237-1

Page 6 of 7

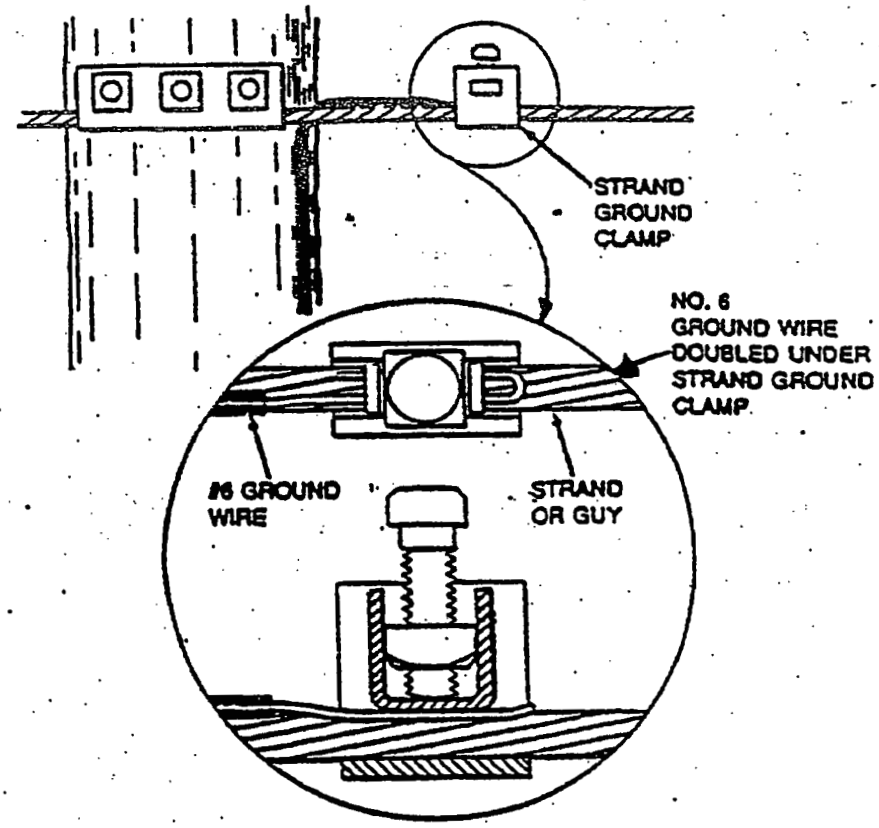
DCN 2010.3-020

The connection to a guy or strand (except 25M) is made with a cable-lashing clamp or strand ground clamp, or other approved connector. For 25M strand, use only the strand ground clamp. See Figures 10-2 and 10-3.



IMPORTANT NOTE: ***Cable-lashing clamps are not recommended for bonding or grounding connections in a corrosive environment.***

Figure 10-2. Connecting to a Guy or Strand with a Cable-Lashing Clamp



000336

Figure 10-3. Connecting to a Guy or Strand with a Strand Ground Clamp

SKETCH # 4237-2
Page 7 of 7
DCN 20103-020

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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 5	(6) DATE
20103	FSC-642		July 30, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: Change to Permanent Vegetation Seed Mix and Crusting Agent

(11) DCN NO.: 20103-021

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications On - Site Disposal Facility Phase III Final Cover Construction	20103-TS-0003	0	Section 02930, Rev. 1: Parts 2.01.E & 3.03.E and Tables 02930-1A& 02930-1B
Technical Specifications On - Site Disposal Facility Phase III	20103-TS-0001	0	Same as above

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Results from FEMP seed test plots and other FEMP seed applications indicate that the Canada Wild-Rye/ReGreen application rates in the permanent vegetation mix should be adjusted to provide better performance of the cover crop. Also, experience with crusting agent applications last fall resulted in the pine sap recommendation.

Existing Condition: Both Canada Wild-Rye and ReGreen are currently specified at rates different from that proposed. A pinesap alternative is currently specified.

Proposed Change: See attached Section 02930 pages with underline/strikeouts indicating specific changes.

(10) REQUESTOR: Eric Woods — COMPANY: Fluor Fernald, Inc. — DATE: 7/30/01

(12) CE / PE: Samuel H. Wolinsky — DATE: 7/30/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES

(14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/01/01
KWASI BADU-TWENEBOAH, GREGORTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) — DATE: 8/8/01
PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)
Bill Zebuck

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. C049

000337

ORIGINAL

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

E. The crusting agent shall be as approved by the Construction Manager and shall meet the following criteria:
   1. pine sap emulsion comprised of a 100 percent organic emulsion produced from naturally occurring resins (pine sap); ~~or a mixture of Conwed Fiber's Enviroblend hydraulic mulch and Finn Corporation's A-500 Hydro-Stik tacking agent (mulch binder);~~ or an approved equal;
   2. not comprised of chloride, lignosulfonate, petroleum, or asphaltic-type emulsions;
   3. provide dust suppression and surface stability for exposed soils, both disturbed and undisturbed soils, and exposed coal fired ash (fly ash);
   4. compatible with application via a hydro seeder, and must not require intense cleaning of equipment after application;
   5. non-tracking (i.e., will not stick to boots or tires) once cured;
   6. not have hazardous characteristics of ignitability, corrosivity, reactivity, or toxicity as defined in 40 CFR Part 261, Subpart C, for a hazardous waste in either its pre-applied or cured states;
   7. have a flash point greater than 200 °F;
   8. be neither a flammable nor combustible liquid per DOT definition; and
   9. not be susceptible to significant deterioration from exposure to the elements, including sunlight.

F. Erosion mat shall be in accordance with Section 02270.

G. Fertilizer:
   1. Furnish commercial grade fertilizer, uniform in composition that meets the requirements of all State and Federal regulations and standards of the Association of Agricultural Chemists.
   2. Fertilizer shall be slow release complete fertilizer.
   3. Two types of fertilizer mixes shall be used. Fertilizer for application within the former production area shall be 34-0-10; other fertilizers may be approved by the Construction Manager for the former production area, but they must not contain phosphorous. Fertilizer for other areas shall be 22-5-10. Fertilizers shall contain not less than 1 percent added sulfur and not more than 8 percent added iron, or an approved equal.
   4. Fertilizer must have MSDS submitted in accordance with this Section.
   5. Fertilizer shall be used for interim seeding only.

H. Construction water shall be obtained from the on-site water source shown on the Construction Drawings.

g. Apply sprayed mulch at a net dry weight of 2,000 pounds per acre minimum and 100 percent continuous coverage. Mix the mulch with water at a ratio of 50 pounds of mulch per 100 gallons of water.

E. Application of Crusting Agent:

1. Apply crusting agent in accordance with manufacturer's directions.
2. Unless otherwise specified by the manufacturer, dilute concentrated pine sap emulsion to ratio of 4 parts water to 1 part concentrate. Apply diluted pine sap emulsion at a rate of 2,500 gallons per acre.
3. ~~Apply a mixture of Conwed Fiber's Enviroblend hydraulic mulch and Finn Corporation's A-500 Hydro-Stik mulch binder, using the hydroseeder, at the rate of 1,000 lbs/acre on flat surfaces; and 1,125 lbs/acre on slopes greater than 3H:1V. The mixture rate for each product shall be 20 lbs/acre on flat surfaces and 30 lbs/acre on greater than 3H:1V slopes for the hydraulic mulch; and 20 lbs/acre on flat surfaces and 30 lbs/acre on slopes greater than 3H:1V for the Hydro-Stik mulch binder.~~

3.04 THIS NUMBER INTENTIONALLY NOT USED

3.05 MAINTENANCE

A. Maintain the vegetated areas in satisfactory condition until acceptance of the vegetation by the Construction Manager. Maintenance of the vegetated areas includes repairing eroded areas, revegetating when necessary, watering, and mowing (if applicable). A satisfactory condition of vegetated area is defined as follows:

1. an area shall have a predominant stand of the seeded vegetation;
2. within 3 weeks, germination must occur over 90 percent of the area with no single bare area greater than 3 square feet; and
3. within 3 months, 90 percent of the area must be covered with mature vegetation.

B. The above timeframes for germination and coverage requirements are to be delayed during the dormant season between November 1 and March 15 application of the seed. The performance criteria shall be measured at the beginning of the growing season (April 1) for seed applied during the previous dormant season.

C. Areas that fail to meet these requirements shall be repaired or reseeded as necessary to produce an acceptable stand of vegetation, as specified in this Section.

D. The acceptance inspection will be performed by the Construction Manager who will determine whether repair of vegetated areas or revegetation is required.

TABLE 02930-1A

SEED MIX IN DRY AREAS FOR PERMANENT VEGETATION

Species	Pounds Per Acre (lb/ac)
Big Bluestem	3
Little Bluestem	2
Side-Oats Grama	0.5
Indian Grass	2
Canada Wild-Rye	~~3~~ 25
Switch grass	0.5
ReGreen	~~10~~ 5
Wildflowers, uniform mix of the following:	1.5
Butterflyweed (*Asclepias tuberosa*)	
New England Aster (*Aster novae-angliae*)	
Smooth Aster (*Aster laevis*)	
Canada Milkvetch (*Astragalus Canadensis*)	
Purple Prairie Clover (*Petalostemum purpureum*)	
Ox-eye Sunflower (*Heliopsis helianthoides*)	
Bergamot (*Monadara fistulosa*)	
Purple Coneflower (*Echinacea purpurea*)	
Pale Purple Coneflower (*Echinacea pallida*)	
Yellow Coneflower (*Ratibida pinnata*)	
Black-Eyed Susan (*Rudbeckia hirta*)	
Spiderwort (*Tradescantia ohioensis*)	
Blue Vervain (*Verbena hastata*)	
Hoary Vervain (*Verbena stricta*)	
Beardtongue (*Penstemon grandiflorus*)	
Cupplant (*Silphium perfoliatum*)	
Sweet Joe Pye-Weed (*Eupatorium purpureum*)	
White False Indigo (*Baptisia leucantha*)	
Blue False Indigo (*Baptisia australis*)	
Partridge Pea (*Cassia fasciculata*)	
Rattlesnake Master (*Eryngium yuccifolium*)	
Round-headed Bush Clover (*Lespedea Capitata*)	
Stiff Goldenrod (*Solidago risida*)	

TABLE 02930-1B

SEED MIX IN WET AREAS[1] FOR PERMANENT VEGETATION

Species	Pounds Per Acre (lb/ac)
Big Bluestem	3
Canada Wild-Rye	~~3~~ 25
Switch Grass	0.5
Blue Joint Grass	0.5
Porcupine Sedge	1 ounce per acre (oz/ac)
Fox Sedge	1 ounce per acre (oz/ac)
Dark Green Bulrush	1 ounce per acre (oz/ac)
ReGreen	~~10~~ 5
Prairie Cordgrass (*Spartina pectinata*)	1
Wildflowers, uniform mix of the following:	1.5
Red Milkweed (*Asclepias incarnata*)	
New England Aster (*Aster novae-angliae*)	
Wild Senna (*Cassia hebecarpa*)	
Canada Tick Trefoil (*Desmodium canadense*)	
Prairie Blazingstar (*Liatris pycnostachya*)	
Great Blue Lobelia (*Lobelia siphilitica*)	
Bergamot (*Monadara fistulosa*)	
Yellow Coneflower (*Ratibida pinnata*)	
Branched Coneflower (*Rudbeckia hirta*)	
Blue Vervain (*Verbena hastata*)	
Angelica (*Angelica atropurpurea*)	
Sweet Joe-Rye Weed (*Eupatorium purpureum*)	

(1) Seeding in drainage ditches or swales shall contain erosion mats as specified in Section 02270 after application of seed mixture. Erosion mat shall cover a minimum width of 12 feet.

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 4	(6) DATE July 16, 2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction			(11) RCI NO.: 20103-008R
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Constructability of Final Cover Toe/Interface with Drainage Channel at Cell 1		(11) DCN NO.: 20103-022

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Phase III Construction Drawing	90X-6000-G-00310	1	Details 10 & 11
Phase III Construction Drawing	90X-6000-G-00311	1	Details 12, 13 & 14
Phase III Construction Drawing	90X-6000-G-00317	2	Detail 38
Phase III Construction Drawing	90X-5500-G-00577	0	Table 1-A

(9) [x] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & EQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

The geometry of the interface of the final cover system to the drainage channel as shown on the Cell 1 perimeter details will be difficult tc ɔnstruct. Please advise.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
David Lockerd David Lockerd	IT Corporation	8/29/01 ~~July 16, 2001~~	SHWOLINSKY	8/29/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [x] YES (14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

See attached figures for the proposed change to the geometry, which would improve constructability and also provides an access to the final cover monitoring devices (see DCN No.20103-018). The access (see Figure 1), for the north and east sides only, shall be constructed of base aggregate with a geotextile separator in accordance with the Technical Specifications. The west perimeter shall be constructed as shown on Figure 2 and transition to Figure 1 along the northwest perimeter. The pressure transducer risers shown on Figures 1 and 2 shall be field located. Provide as-built information on the " red-line" drawings. The loading requirements and restrictions for the monitoring access are presented on the attached page (2 of 4).

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/29/01

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [x] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 8/30/01

PERFORMANCE GRADE: (17) 4, SBDR 20100-027 APPLIES SHWOLINSKY

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebah 8/29/01

(21) FIELD WORK COMPLETED:

(SIGNOFF BY SE OR PE) DATE:

ECDC CONTROLLED COPY NO. C 011

000342

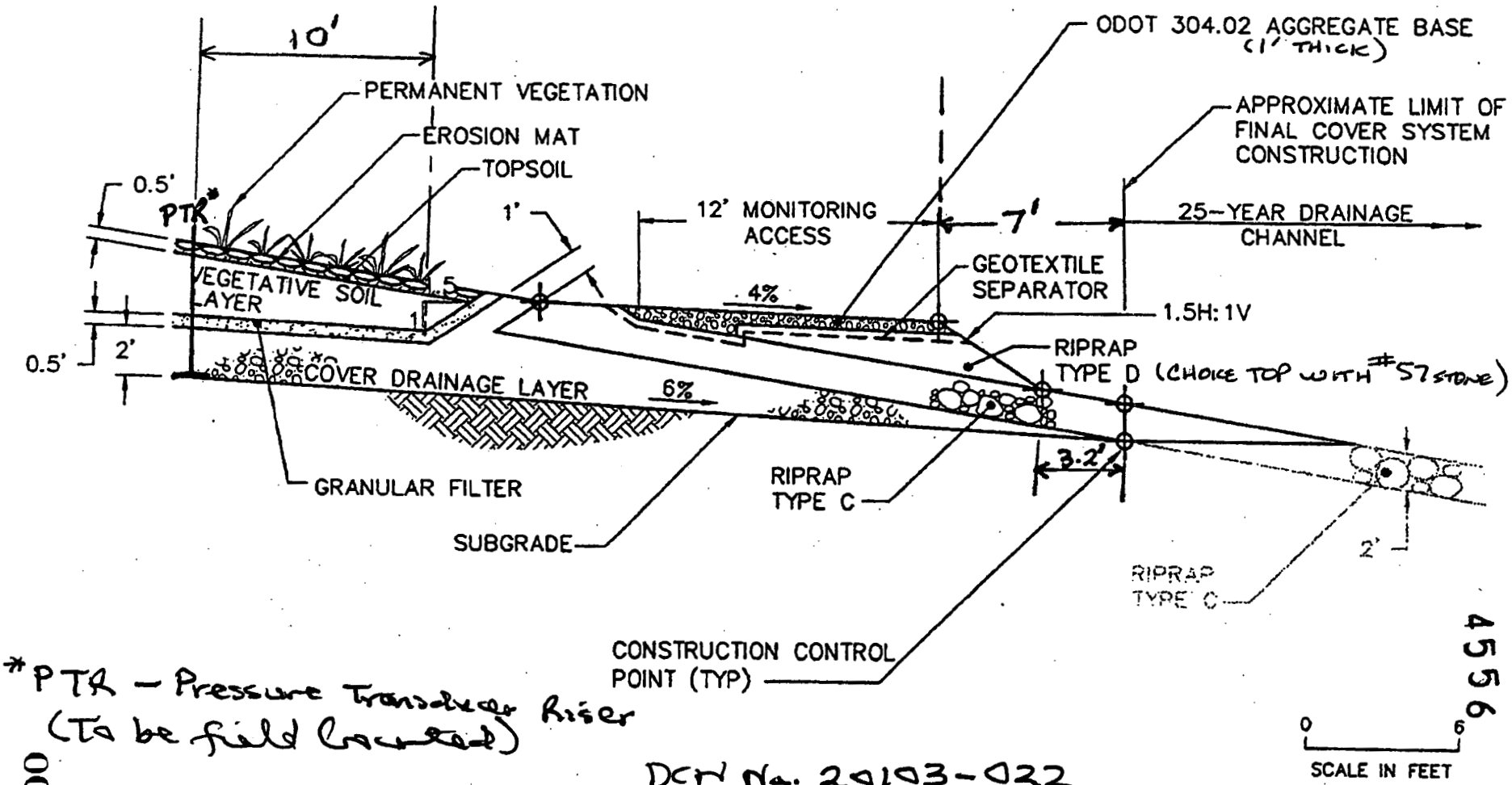
ORIGINAL

REQUIREMENTS AND RESTRICTIONS FOR MONITORING ACCESS

The monitoring access has a design capacity to handle up to a 20-ton vehicular weight (dual-axle). However, the actual weight limit will be set at 10 tons, unless specifically reviewed and approved by engineering and regulatory agencies on special occasions. The monitoring access shall be limited to use by maintenance, seeding, irrigation, monitoring, inspection, FEMP Operations and emergency vehicles only. The monitoring access shall not be used for OSDF construction through traffic. Signs showing the above restrictions shall be installed at the monitoring access ingress and egress points.

Pg 2 of 3 (KBT)

DRAINAGE CHANNEL AT CELL 1 WITH MONITORING ACCESS
(NORTH AND EAST PERIMETER)



*PTR – Pressure Transducer Riser (To be field located)

DCN No. 20103-022

4556

000344

GEOSYNTEC CONSULTANTS ATLANTA, GEORGIA	FIGURE NO. 1 –
	PROJECT NO. GQ1342-16.1
	DOCUMENT NO. –
	FILE NO. F01XD862.DWG

WEST DRAINAGE CHANNEL AT CELL 1
(NTS)

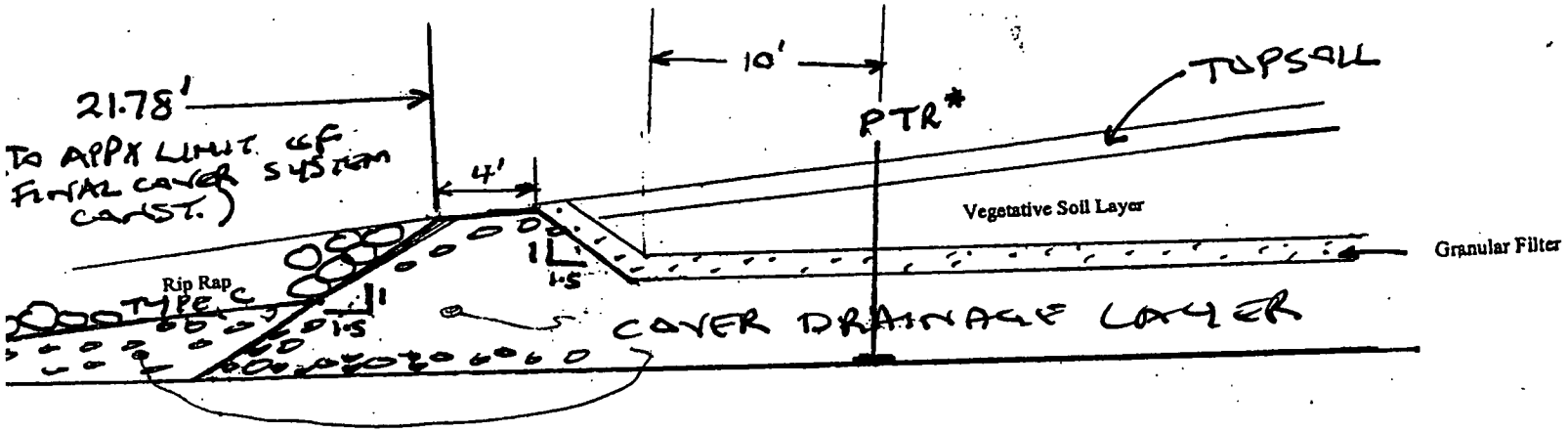


FIGURE 2

* PTR – Pressure Transducer Riser
(To be field located)

DCN No. 20103-022

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-614	(5) Pg 1 Of 5	(6) DATE 07/30/2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction			(11) RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [x] OTHER [ ]	(4A) RCI/DCN TITLE: Changes to Final Cover System Temporary Termination Detail		(11) DCN NO.: 20103-023

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Phase III Construction Drawing	90X-6000-G-00317	2	Detail 39
Phase III Construction Drawing	90X-6000-G-00302	1	

(9) [x] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & EQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The current drawings do not provide details to protect the protective layer from erosion, and control storm water runoff and sediments into Cell 2 and/or east and west perimeter of Cell 1.

Existing Condition: Surface-water management and erosion control of the termination area is not defined in the Phase III package.

Proposed Change: Add the following (see attached page) to the notes on Drawing No. 90X-6000-G-00317:

(10) REQUESTOR	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	8/02/2001	SH Wolinsky	8/2/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/2/2001

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) SH Wolinsky DATE: 8/8/01

PERFORMANCE GRADE: (17) 4 - SBDR 2000-027 APPLIES

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebich

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. C049

ORIGINAL

DCN N0. 20103-023

EAST

CHANGES TO DRAWING NO. 90X-6000-G-00317

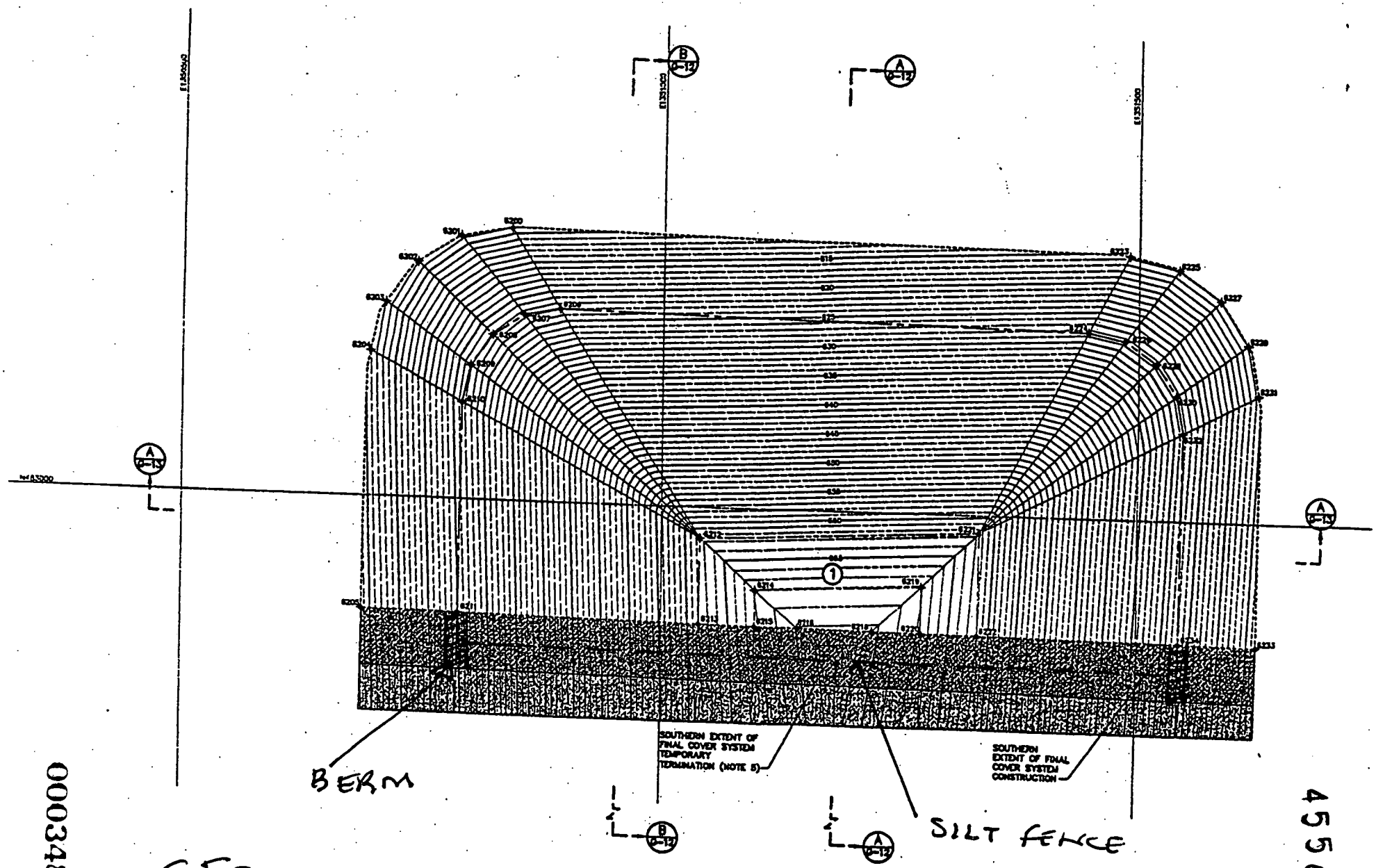
Add the following to Note 8:

- Install silt fence in accordance with Section 02270 of Technical Specifications at approximately 10 ft north of the toe of the temporary termination (see attached drawings).
- Stabilize the surface of the protective layer using either crusting agent or interim vegetation as directed by the Construction Manager. Crusting agent or interim vegetation shall be in accordance with Section 02930 of Technical Specifications.
- Construct a berm to connect the clay wedge from Cell 2 to the Cell 1 final cover system along the east and west perimeter berms to divert any runoff from the termination area to the impacted runoff catchment area. (See attached drawing for limits of berm.) Height of berm shall vary from 2 ft at the Cell 2 clay wedge to approximately 8 ft at the Cell 1 final cover. Provide as-built information on red-line drawings.

DCN No. 20103-023

page 3 of 5

KRT



CFC DWG No: 90X-6000-G-00302

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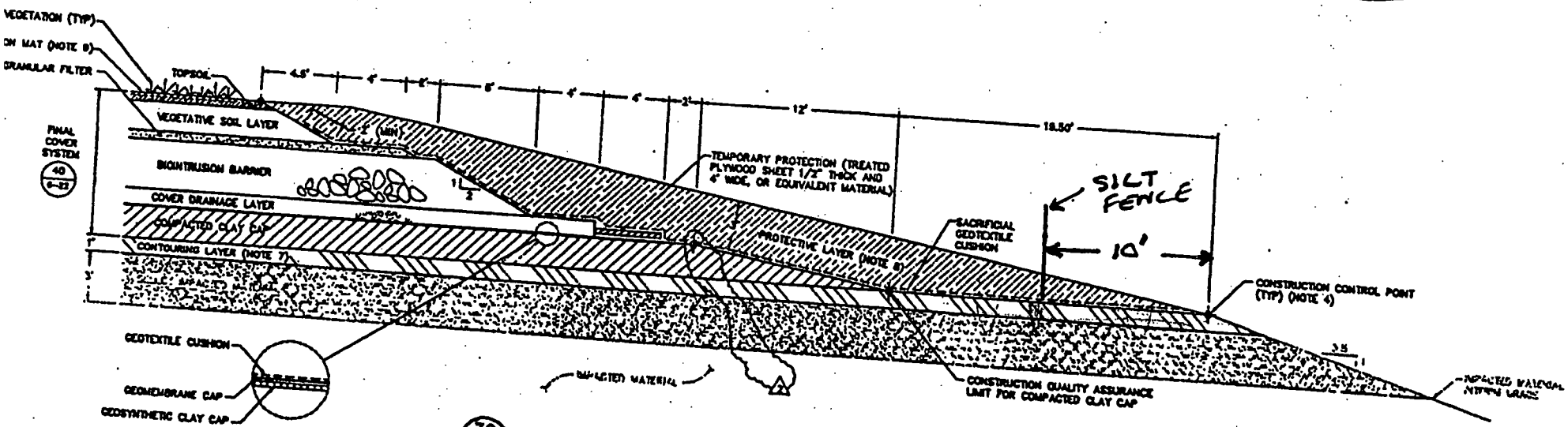
Page 4 of 5

Exh 7



39
9-12
DETAIL
FINAL COVER SYSTEM TEMPORARY TERMINATION
SCALE 1" = 4'

ECDC CONTROLLE
COPY NO. C011

DCN No. 20103-023

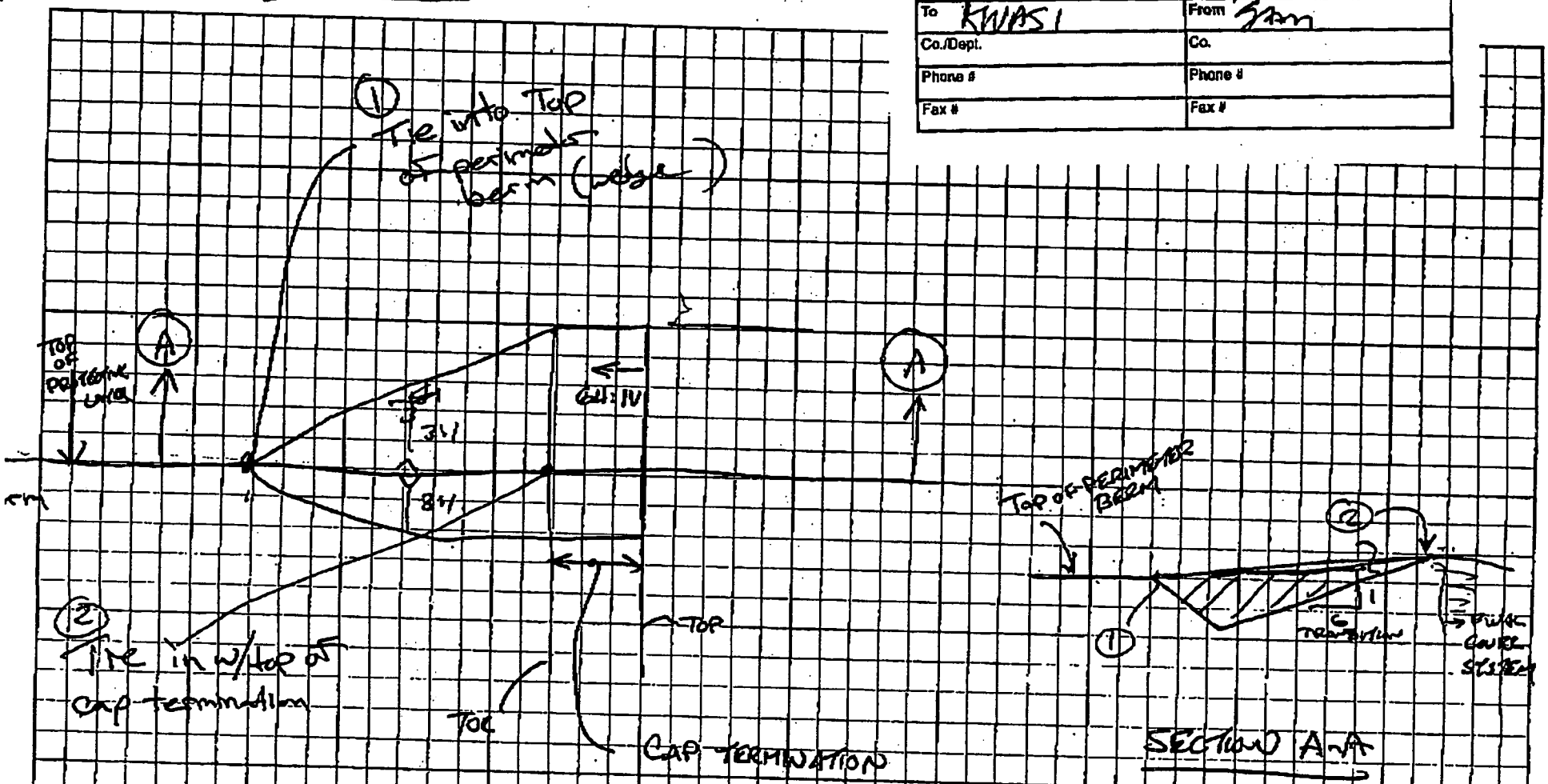
CFC Dwg No. 90X-6000-G-00317

000349

4556

Post-it® Fax Note 7671	Date 8/2/01	# of pages ▶ 1
To KWASI	From Sam	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

PLAN



SECTION A-A

DCN No 2-2103-023

Page 5 of 7

KWS

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-614	(5) Pg 1 Of 2	(6) DATE 07/30/2001
(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III – Cell 1 Final Cover Construction			(11) RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Addition of Soil-Bentonite Plugs		(11) DCN NO.: 20103-024

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications Section 02215	20103-TS-0001	0	
Technical Specifications Section 02215	20103-TS-0003	0	

(9) [x] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & EQUESTED/PROPOSEI CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The current specifications do not address the backfilling requirements for horizontal monitoring well pipe trenches and HDPE pipe trenche etween each valve houses and corresponding cell outlet. These trenches require the use of soil-bentonite plugs.

xisting Condition: Backfilling requirements for the pipe trenches between the cell outlet and valve houses were inadvertently left out in Section 02215.

oposed Change: Add the following (see attached page) to Section 02215, Part 3.03B:

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec	8/02/2001	SHWolinsky	8/2/01

(13) RESPONSE. FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVEI

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/02/2001

Kwasi Badu-Tweneboah, GeoSyntec

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETED (DCN ONLY) SHWolinsky DATE: 8/8/01

PERFORMANCE GRADE: (17) 4 - SBDR 2000-027 Applies

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebuh

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED

COPY NO. C04 000351

ORIGINAL

CHANGES TO TECHNICAL SPECIFICATION 02215 – TRENCHING AND BACKFILLING

7 For horizontal monitoring well pipe trenches and HDPE pipe trenches between each valve house tie-in and the cell outlet, construct a soil-bentonite plug every 50-feet along the length of the trench. Prepare soil-bentonite mixture consisting of embedment fill at its natural moisture content mixed with minimum 10 percent (by dry weight basis) bentonite granules. Thoroughly mix with a portable cement mixer or other suitable method. Place and compact the soil-bentonite mixture in the same manner as specified in this Section for the embedment fill.

RCI/DCN FORM 4556

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 2	(6) DATE
20103	FSC-642		August 2, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: OSDF Cell 1 Final Cover Monitoring Devices - Change to Settlement Plate & Rod Assembly

(11) DCN NO.: 20103-025

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Sketch entitled 'SPR-Settlement Plate & Rod Assembly (Typ.)	Sketch No. SPR-1	4	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Settlement plate and rod assembly requires modification to minimize the effect of surface friction on the protective pipe and allow for free movement of the settlement plate

Existing Condition: Measurement rod and protective pipe are both welded to settlement plate

Proposed Change: Eliminate weld of protective pipe to settlement plate and weld a sleeve to the settlement plate allowing movement of the plate independent of the protective pipe. Sketch SPR-1 is attached showing this revision.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Chuck Van Arsdale	Fluor Fernald, Inc.	8/2/01	Samuel H. Wolinsky	8/2/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 8/6/2001

KWASI BADU-TWENEBOAH, GEOSYNTEC

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) SH WOLINSKY DATE: 8/8/01

PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19)

Bill Zebish

(21) FIELD WORK COMPLETED:

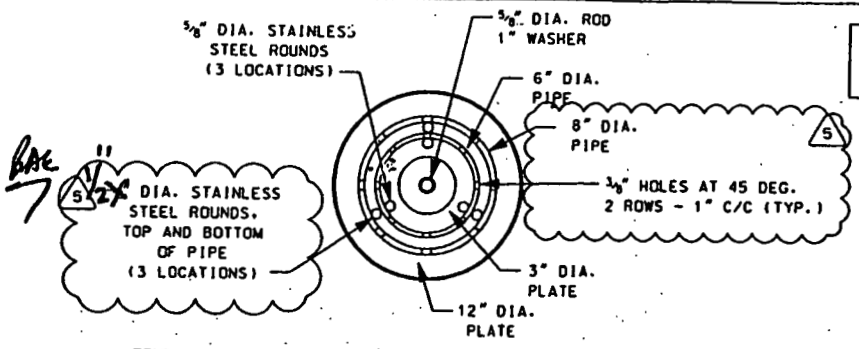
(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

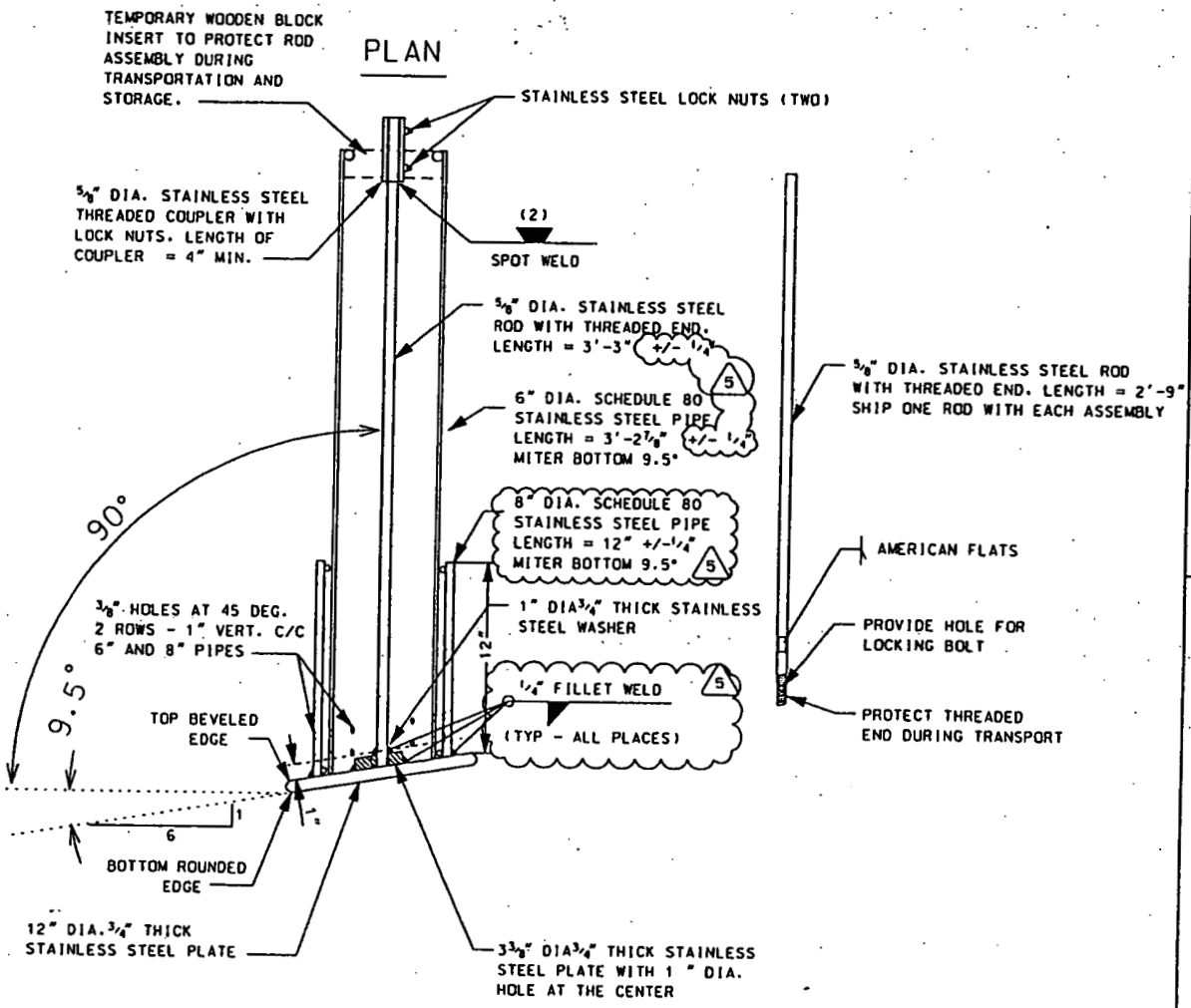
ECDC CONTROLLED COPY NO. C 049 ORIGINAL

20103-SPR-1

4556



PLAN



SECTION

NOTE: 1. SEQUENTIALLY LABEL EACH ASSEMBLY FROM SPR-1-01 TO SPR-1-05. STAINLESS STEEL PLATES. PIPE AND ROD SHALL BE ANSI A304.

2. STAINLESS STEEL ROUNDS SHALL BE TACK WELDED TO THE INSIDE OF THE STAINLESS STEEL PIPE.

SPR- SETTLEMENT PLATE & ROD ASSEMBLY (TYP.)

(5 REQUIRED)

REV. 5

(OSK-001.DGN 8/1/01 REV. 5)

CERTIFIED FOR CONSTRUCTION

NO.	REVISIONS	DATE	DRN.	CHK.	APPD.	REF. DWG. NO.
5	REVISE PER COMMENTS					
1	REVISE PER COMMENTS					

Fernald Environmental Management Project
FLUOR FERNALD, INC.
U.S. DEPARTMENT OF ENERGY

ON-SITE DISPOSAL FACILITY
SPR- SETTLEMENT PLATE & ROD ASSEMBLY (TYP.)

20103-SPR-1 | 5

FILE NAME: 20103SPR.DGN

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RCI/DCN FORM

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 4	(6) DATE
20103	FSC-642		August 7, 2001

(3) S/C TITLE:	(11) RCI NO.:
On-Site Disposal Facility (OSDF) Phase III Final Cover Construction	

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [ ] M [ ] C [ ] OTHER [X]	OSDF Phase III Borrow Area Subareas 1A, 1B, & 2 Excavation, Grading, & Restoration Changes	20103-026

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Construction Drawings: OSDF Site Development Plan,	90X-6000-G-00296	1	Sheet G-1
OSDF Borrow Area (BA) Subarea 1 Excavation Grading Plan,	90X-6000-G-00303	1	Sheet G-8
OSDF BA Subarea 1 Restoration & Subarea 2A Excavation Grading Plan	90X-6000-G-00304	1	Sheet G-9
OSDF Borrow Area Details.	90X-6000-G-00305	1	Sheet G-10
Sketch: OSDF BA Subarea 1B Brown Till Excavation Plan	Sketch No. 20103-SK-028	1	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Accelerated OSDF schedule requires screening of brown till during CY2001 for liners 4 & 5 construction next year.
Existing Condition: Original contract drawings & sketch show borrow area excavation/restoration performed by Others for a different SOW.
Proposed Change: Delete the Borrow Area Subareas 1 & 2A excavation and restoration work shown to be performed by Others on the above-listed drawings and replace with the work for Subareas 1 & 2 shown on the following drawings and sketches to be performed by the OSDF Phase III Contractor: Drawing 90X-5500-G-00578, Rev. 0; Sketch 20103-SK-005, Rev. 1; and Sketch 20103-SK-006, Rev. 1. In addition, Sketch No. 20103-SK-028 is voided and the applicable details on Drawing 90X-6000-G-00305 are considered still valid as shown.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE/PE:	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	8/8/01	Samuel H. Wolinsky	8/9/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
8/9/01 KWASI BADU-TWEREBOAH, GEOSYNTEC [ ] FIT [X] FORM [ ] FUNCTION	

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/9/01 SHWolinsky
PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE: 8/9/01	(21) FIELD WORK COMPLETED:
PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19) Bill Zebeck	(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ORIGINAL

ECDC CONTROLLED COPY NO. C011

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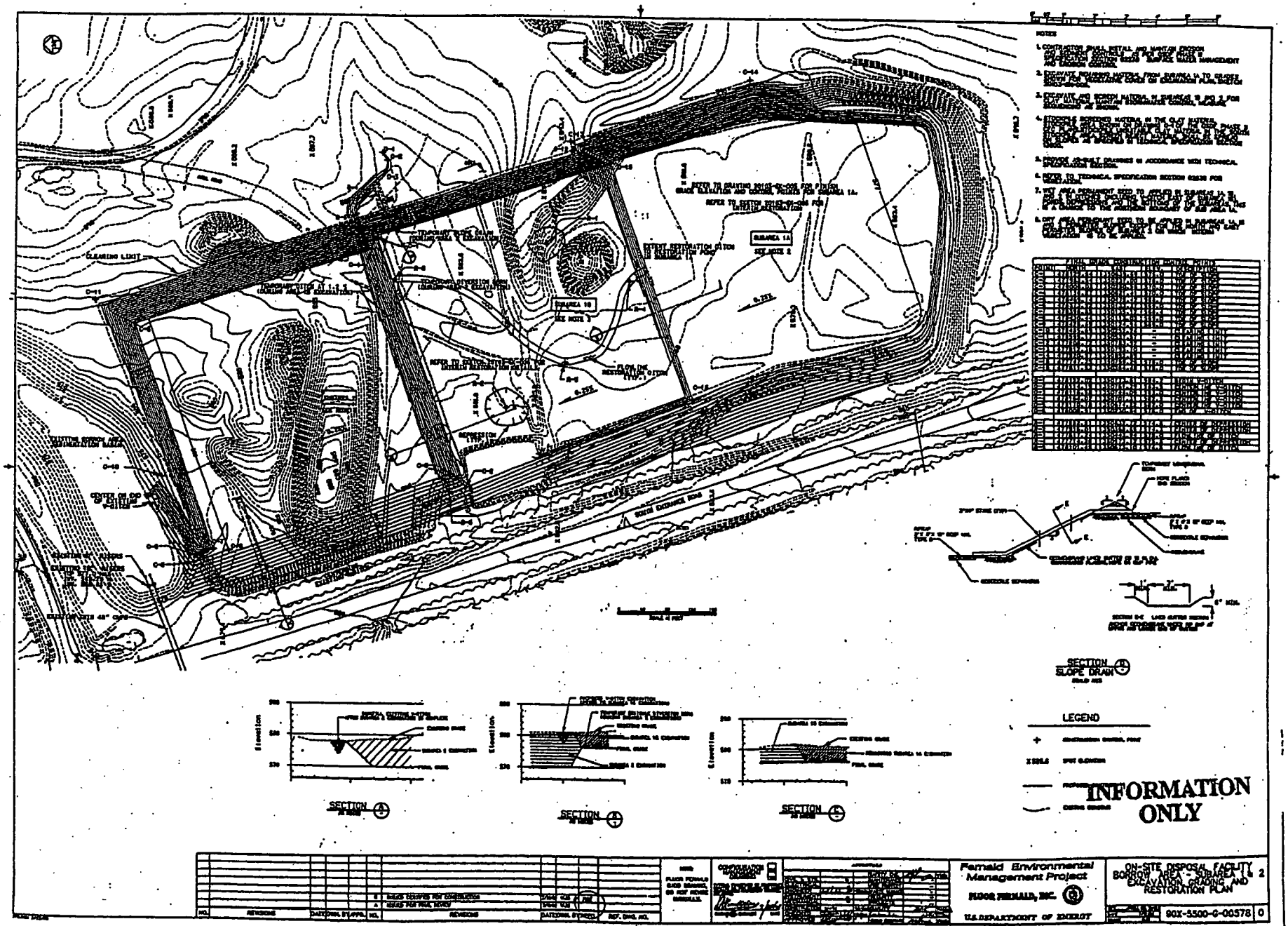

NOT TO SCALE (ORIGINAL IS "E" SIZE)

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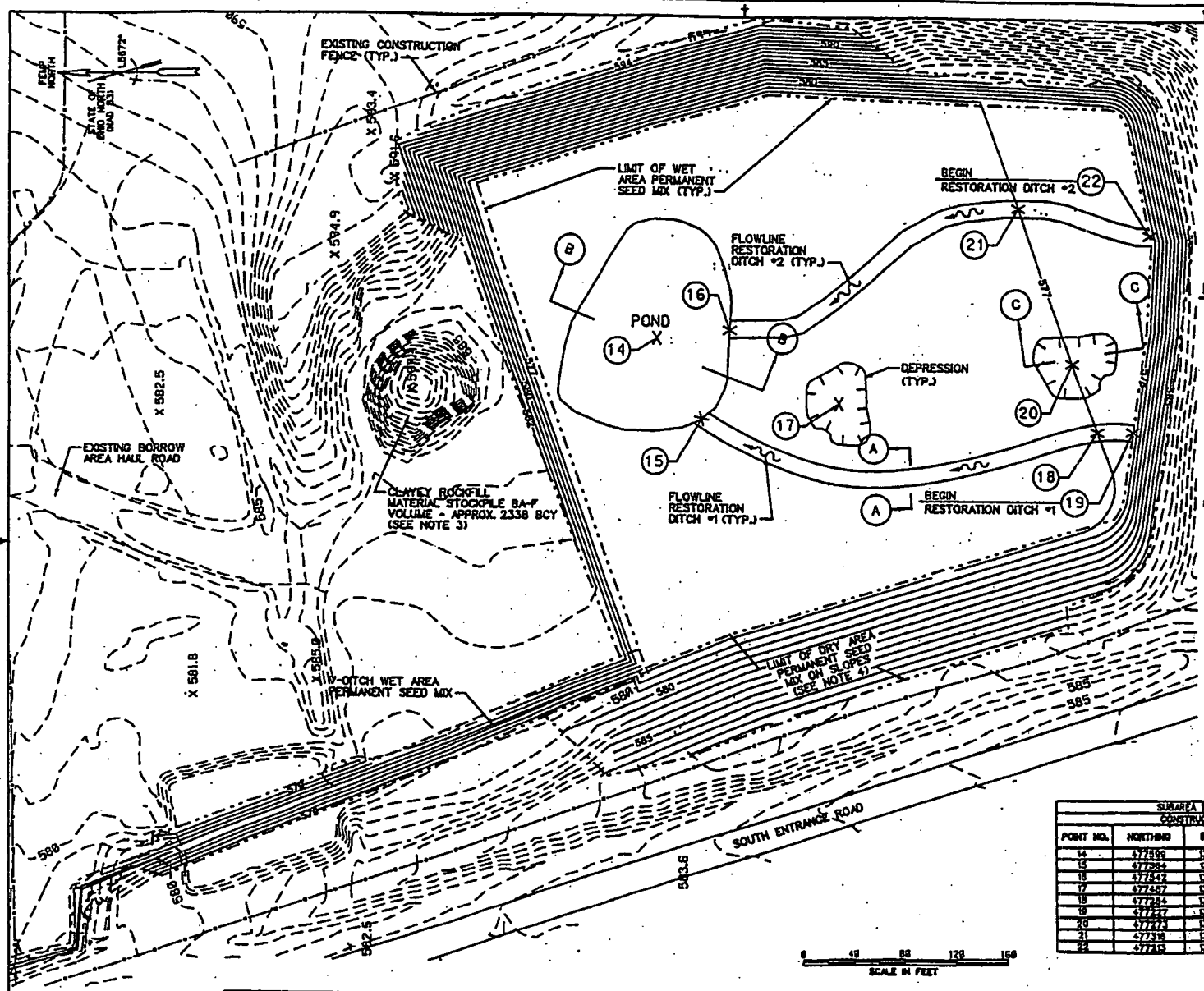

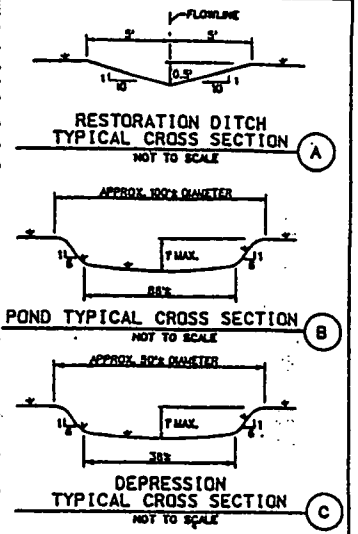

NOTES:

1. SURFACE WATER MANAGEMENT AND EROSION CONTROL SHALL BE IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02370.
2. EXCAVATE DEPRESSION, RESTORATION DITCHES, AND POND IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02300. FIELD LOCATE DEPRESSION, POND AND FLOWLINES FOR THE RESTORATION DITCHES AS DIRECTED BY THE CONSTRUCTION MANAGER.
3. SPREAD CLAYEY ROCKFILL ON OUTER SLOPE (6H:1V) ALONG WEST SIDE OF BORROW AREA.
4. SEED MIX AND VEGETATION SHALL BE IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02930.
5. FOR EXCAVATION AND GRADING PLAN, SEE SKETCH 20103-SK-005.

LEGEND:

- - - - EXISTING GROUND ELEVATION (FEET)
——— FINISHED GRADE ELEVATION (FEET)
BCY BANK CUBIC YARD

(6) CONSTRUCTION CONTROL POINT NO.

INFORMATION ONLY

SUBAREA 1 - INTERIM RESTORATION
CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	FINISHED GRADE ELEVATION	DESCRIPTION
14	477596	1350643	575.0	CENTER OF POND
15	477584	1350581	575.5	FLOWLINE OF DITCH
16	477642	1350649	575.5	FLOWLINE OF DITCH
17	477457	1350593	575.5	CENTER OF DEPRESSION
18	477594	1350572	575.5	FLOWLINE OF DITCH
19	477647	1350573	575.5	BEGIN DITCH #1
20	477473	1350623	575.0	CENTER OF DEPRESSION
21	477318	1350744	575.5	FLOWLINE OF DITCH
22	477313	1350724	575.5	BEGIN DITCH #2

Fernald Environmental Management Project
FLUOR FERNALD, INC.
U.S. DEPARTMENT OF ENERGY

ON-SITE DISPOSAL FACILITY
BORROW AREA - SUBAREA 1A
INTERIM RESTORATION PLAN

20103-SK-006 | 1

NOT TO SCALE (ORIGINAL IS 11" x 17")

4556

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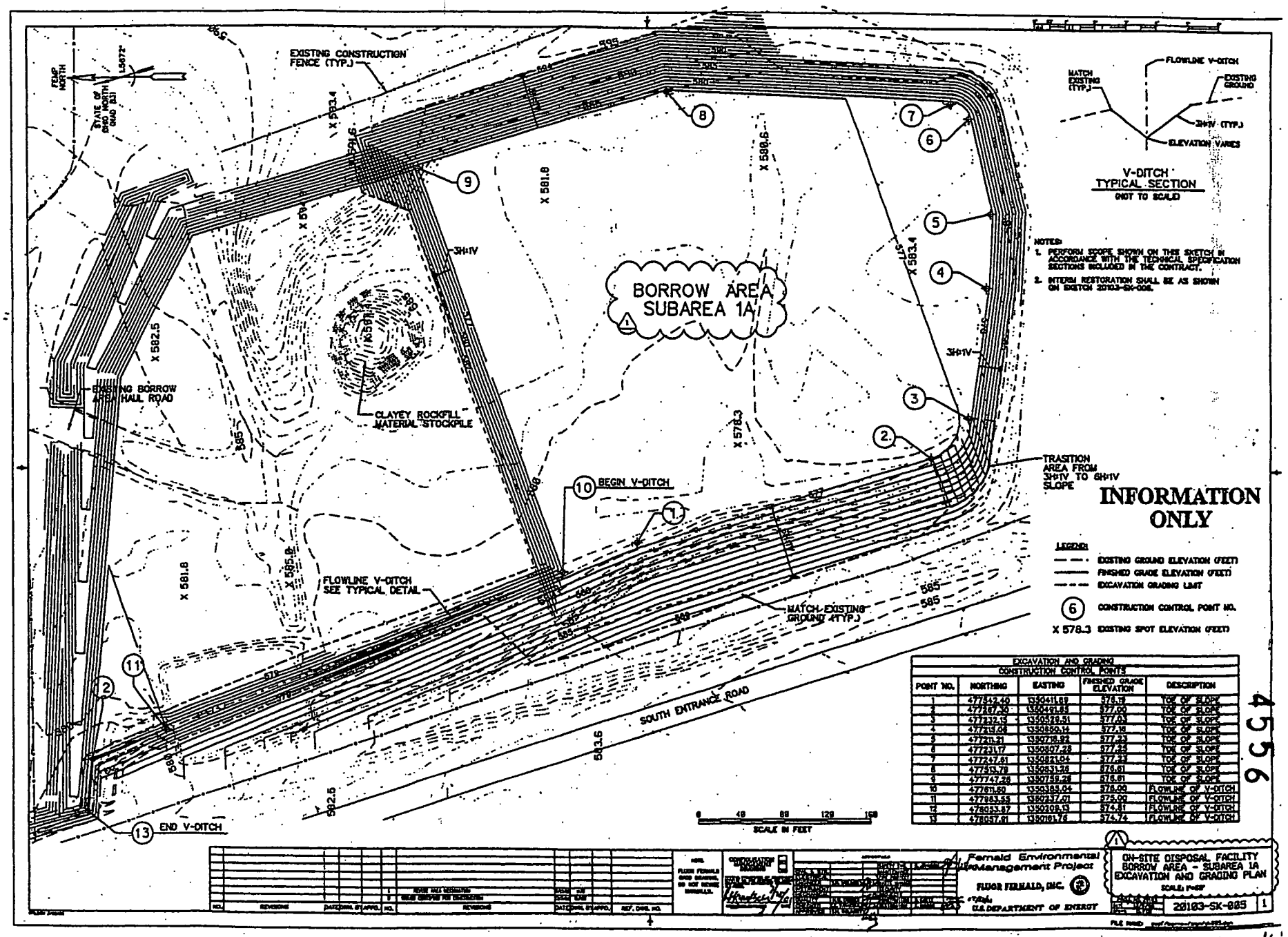


EXCAVATION AND GRADING
CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	FINISHED GRADE ELEVATION	DESCRIPTION
1	477542.40	1350411.89	576.19	TOE OF SLOPE
2	477467.30	1350491.85	577.00	TOE OF SLOPE
3	477332.15	1350539.51	577.03	TOE OF SLOPE
4	477215.08	1350850.14	577.18	TOE OF SLOPE
5	477211.21	1350718.92	577.23	TOE OF SLOPE
6	477231.17	1350807.28	577.25	TOE OF SLOPE
7	477247.81	1350823.04	577.33	TOE OF SLOPE
8	477513.79	1350831.36	576.61	TOE OF SLOPE
9	477747.26	1350739.28	576.61	TOE OF SLOPE
10	477661.50	1350385.04	576.00	FLOWLINE OF V-DITCH
11	477983.55	1350237.01	575.00	FLOWLINE OF V-DITCH
12	478053.87	1350209.13	574.81	FLOWLINE OF V-DITCH
13	478057.91	1350181.78	574.74	FLOWLINE OF V-DITCH

4556

000358

NOT TO SCALE (ORIGINAL IS 11"x17")

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 5	(6) DATE
20103/4272(Expanded Scope)	FSC-642		08/16/2001

(3) S/C TITLE:	(11) RCI NO.:
On Site Disposal Facility (OSDF) Phase III-Cell I Final Cover Construction	N/A

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [√] M [ ] C [ ] OTHER [ ]	Reroute electrical feeder to T-336/337 and OP-280.	20103-027

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
	~~90X-6000-00259~~ JJK	0	
	~~90X-5500-E-00549~~ JJK	0	
	~~90X-5500-E-00550~~ JJK	0	
	90X-5500-E-00506	2	
	90X-5500-E-00522	2	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [√] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [√] NOT REQUIRED

Existing Condition: Change order no. 6 to FSC-42 has a written scope of electrical work (Exhibit "O" of Part6) which includes removal of existing utility poles and associated pole mounted electrical service equipment. Due to the removal of the poles, the remaining overhead 480 volt electrical feeder to contractor's trailer no's. 336 & 337 and OP-280 will have to be rerouted. Any span resulting from the rerouting will not have sufficient support.

Proposed Change: Install two new utility poles and reroute the 480 volt feeder per attached sketch no. 20103-027 to provide proper support and ground clearances for earth moving equipment.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Jim Salyers	Fluor Fernald	8-16-01	A. C. Smith	8/16/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [√] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

UPDATE DWGS.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
James E. Kerl 8-20-01	CCC21
[√] FIT [ ] FORM [√] FUNCTION	

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/20/01

PERFORMANCE GRADE: (17) 5 SBDR-2000-0027 APPLIES [signature]

(18) CONSTRUCTION CONCURRENCE DATE:	(21) FIELD WORK COMPLETED:
Jim Salyers 8-20-01	
PURCHASE REQUISITION REQUIRED: [√] YES [ ] NO (19)	(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED
COPY NO. C 011

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

000359

ORIGINAL

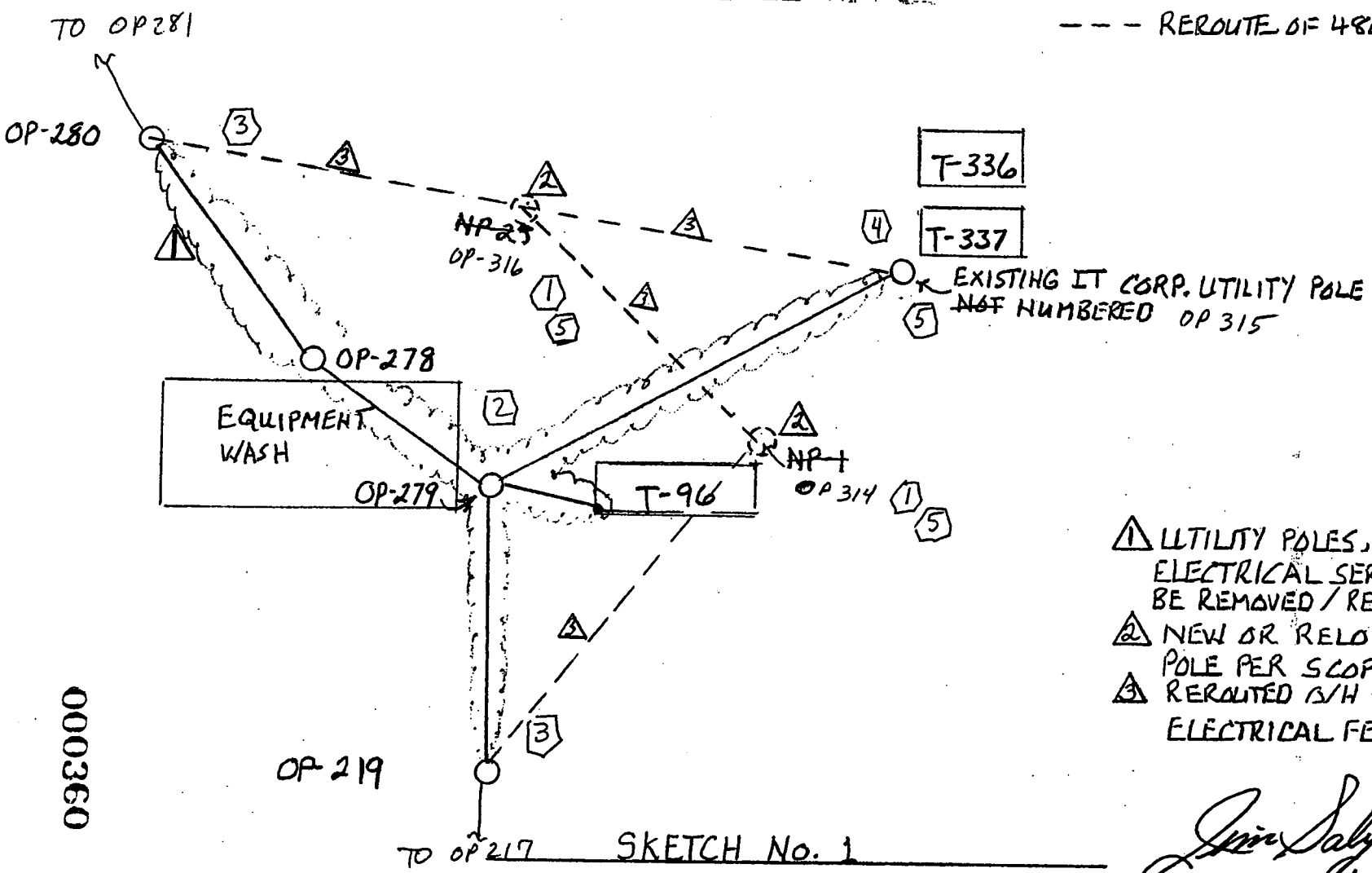
ORIGINAL

JGINAL

NP1 N-481734.89
E-1350926.51
NP2 N-481831.11

SYMBOLS

○ EXISTING UTILITY POLES
◌ PROPOSED UTILITY POLES
—— EXISTING ROUTE OF 480 VOLT O/H FEEDER
- - - REROUTE OF 480 VOLT O/H FEEDER



SKETCH No. 1

1 UTILITY POLES, CABLING & ELECTRICAL SERVICE EQPT. TO BE REMOVED / REROUTED.
2 NEW OR RELOCATED UTILITY POLE PER SCOPE WRITE UP
3 REROUTED O/H 480 VOLT ELECTRICAL FEEDER

Jim Salyer
8-16-61

000360

4556

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

ENGINEERING CALCULATION

PROJECT NUMBER:	4556
BY:	JJK
DATE:	8-20-01
PAGE:	OF
REVISED:	

SUBJECT:

Notes - Sketch #1 DCN 20103-027

Mod. Notes

1. Install 2 poles min. 45 feet, as shown on sketch,
2. Remove wiring between OP219, OP279, OP278, OP280 and trailer.
3. Extend existing 480V feeder by splicing new 4/0 AL. Quadraplex at pole OP219 and installing this cable on poles OP314, OP316, OP315 and OP280. At OP280 splice cable to extend feeder to OP281. Maintain 3 foot of sag in cable. For pole grounding and attachment details see drawings 16X-5500-E-00105 and -00106
4. Reconnect feed to T-337.
5. Label poles with indicated poles numbers using min. 2" AL. numbers.

General notes

1) Prior to digging, consult underground utilities dwgs 22C-5500-P-00660 and -00661 (Grid 1+2)
2) Dig setting holes large enough to permit use of power tampers to full depth. Place earth in min. 6" layers and pack to 95% density per ASTM D698. Bank earth 12" above grade.
3) New poles shall be min of 45 ft. class 2 southern pine, 100% treated with 10% + 2 ft. min burial.
4) For pole coordinates for existing poles see dwg 22X-5500-E-00958.
5) As-built location coordinates (NAD83) for proposed poles to be submitted to cadd services.

000361

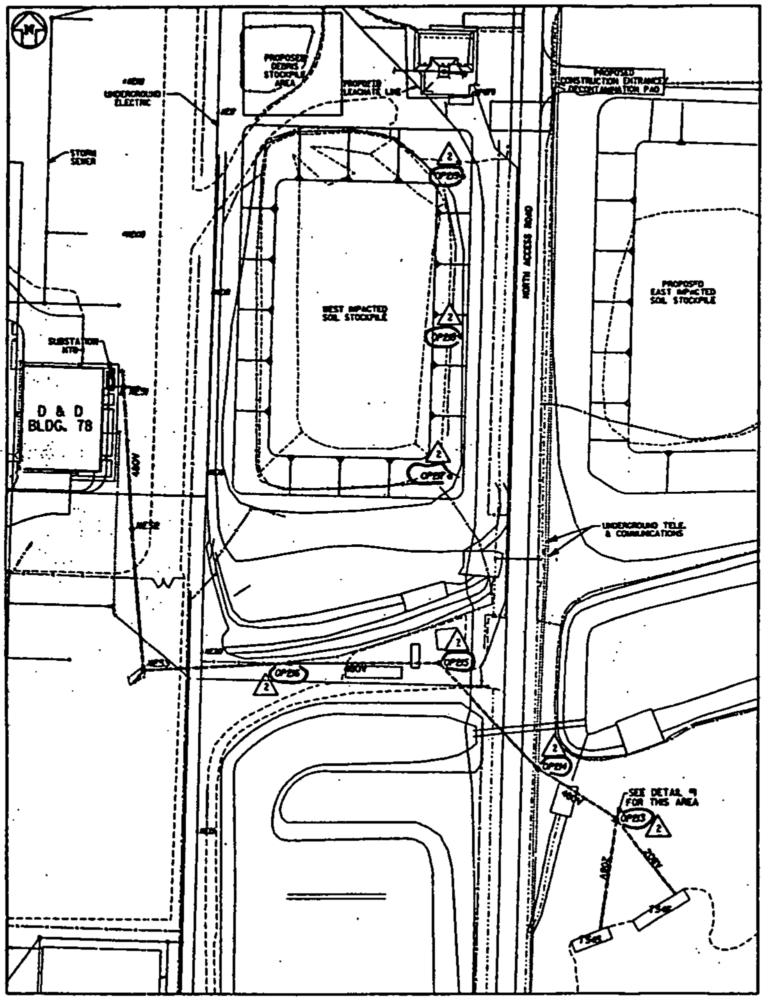
DCN 20103-027

Page 3 of 5

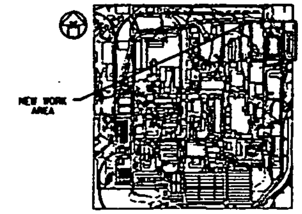
FS-F-78 B (REV.

4556

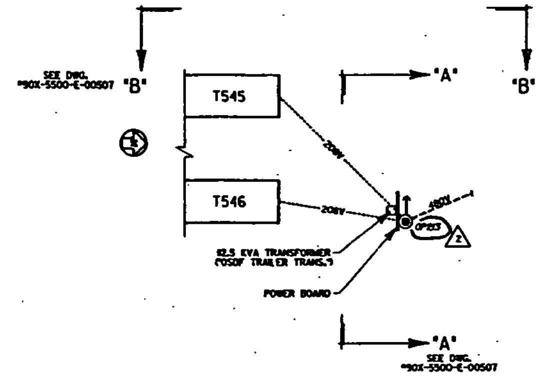
000362



PLAN VIEW



LOCATION MAP



DETAIL #1
NO SCALE

AS-BUILT POLE COORDINATES

OLD POLE #	NEW POLE #	EASTING	NORTHING
N/A	NE51	13500501.06	481447.94
N/A	NE52	1350510.66	481307.65
N/A	NE53	1350522.57	481167.19
NE54	OP216	1350670.26	481174.82
NE55	OP215	1350820.70	481174.80
NE56	OP214	1350920.10	481070.01
NE57	OP213	1351000.65	481019.66
NE58	OP217	1350830.64	481358.66
NE59	OP218	1350841.08	481497.13
NE60	OP219	1350843.27	481654.71

2

NOTE: CONTRACTOR TO FURNISH AS-BUILT COORDINATES.

SEE DWG 90X-5500-E-00522 FOR CURRENT ~~DETAILS~~ POLE ARRANGEMENTS JKK

LEGEND

- 480V NEW 480V POWER LINE
- 208V NEW 208V POWER LINE
- EXISTING POWER LINE
- NEW 45 FT., CLASS II 100% TREATED SOUTHERN PINE POLE
- ELECTRIC POLE WITH GUY
- EXISTING LIGHT POLE
- EXISTING POWER POLE

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
2	REVISED AS PER RES 3990	1/8/01	MWO		78X-4445-E-00029
1	AS BUILT PER DCN 1702-005	2/9/98	MKF	GEP	78X-4445-E-00027
0	ISSUE CFC	5/8/97	SJS	GEP	90X-5500-E-00507

NOTE: FLUOR DANIEL FERNALD CADD DRAWING. DO NOT REVISE MANUALLY.

CONFIGURATION MANAGEMENT DRAWING

APPROVALS: CIVIL & STR. / ELECTRICAL / ENGINEER / INSTRUMENT / MECHANICAL / SAFETY ENG. / MAINTENANCE / FIRE PROTECT. / WASTE MANAGE. / SECURITY / PROJECTS / CHECKED GEP / APPROVED G.E. PAUL

Fernald Environmental Management Project
U.S. DEPARTMENT OF ENERGY

ON-SITE DISPOSAL FACILITY
480V FEED TO OSDF TRAILERS
LAYOUT & DETAIL
SCALE: 1" = 50'- 0"

90X-5500-E-00506 | 2

FILE NAME: /res3276/90xe0506.dgn

FOR INFORMATION ONLY
CADD SERVICES

DCN 20103-027
Page 4 of 5

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 5	(6) DATE
20103/4272(Expanded Scope)	FSC-642		08/16/2001

(3) S/C TITLE: On Site Disposal Facility (OSDF) Phase III-Cell I Final Cover Construction

(11) RCI NO.: N/A

(4) RESPONSIBLE DISCIPLINE: E [√] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: Install electrical service to T-125 and relocate the street light from OP-279 to NE-106.

(11) DCN NO.: 20103-028

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
	90X-6000-00259	0	
	90X-5500-E-00549	0	
	90X-5500-E-00550	0	
	~~90X-5500-E-00506~~ JRK	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [√] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [√] NOT REQUIRED

OP JRK 8/22/01

Existing Condition: Reference previous DCN no. 20103, which provides for electrical connection to relocated T-98. T-125 was also relocated but, at the time, electrical service was not required for it. Now the need has been identified to operate sampling ovens in T-125 and electrical service is required.

Proposed Change: Provide electrical service for T-125 and install a street lighting fixture, which was removed from OP-279 on NE-~~106~~. 114 JRK

(10) REQUESTOR: Jim Salyers COMPANY: Fluor Fernald DATE: 08/16/2001

(12) CE / PE: A. C. Smith DATE: 08/16/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [√] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

DWG UPDATES

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: J. E. Kerl 8-21-01

[ ] FIT [ ] FORM [√] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CCC21

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) A. C. Smith DATE: 8/21/01

PERFORMANCE GRADE: (17) 5

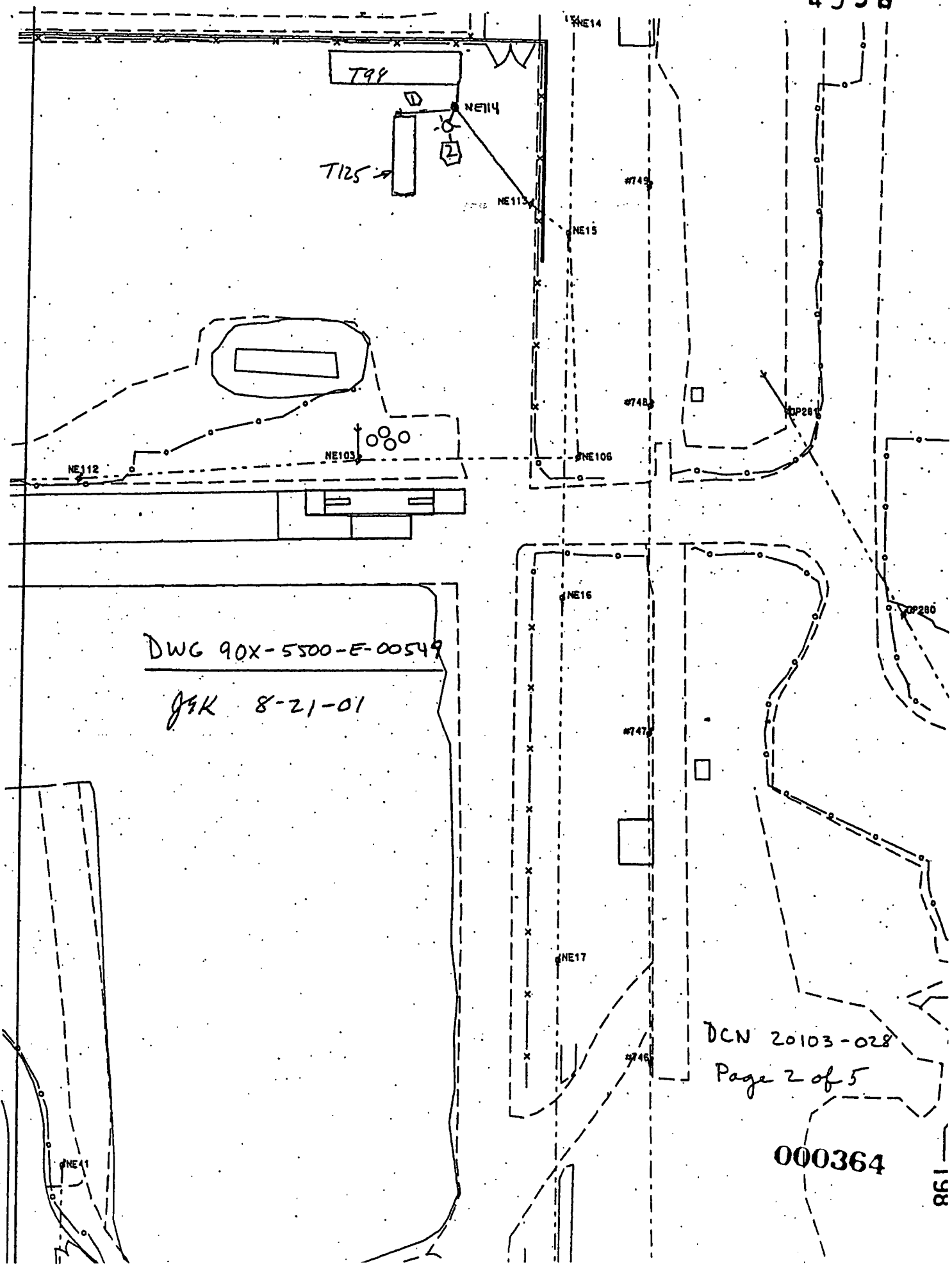
(18) CONSTRUCTION CONCURRENCE DATE: 8-21-01

PURCHASE REQUISITION REQUIRED: [√] YES [ ] NO (19)

(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C 011 ORIGINAL

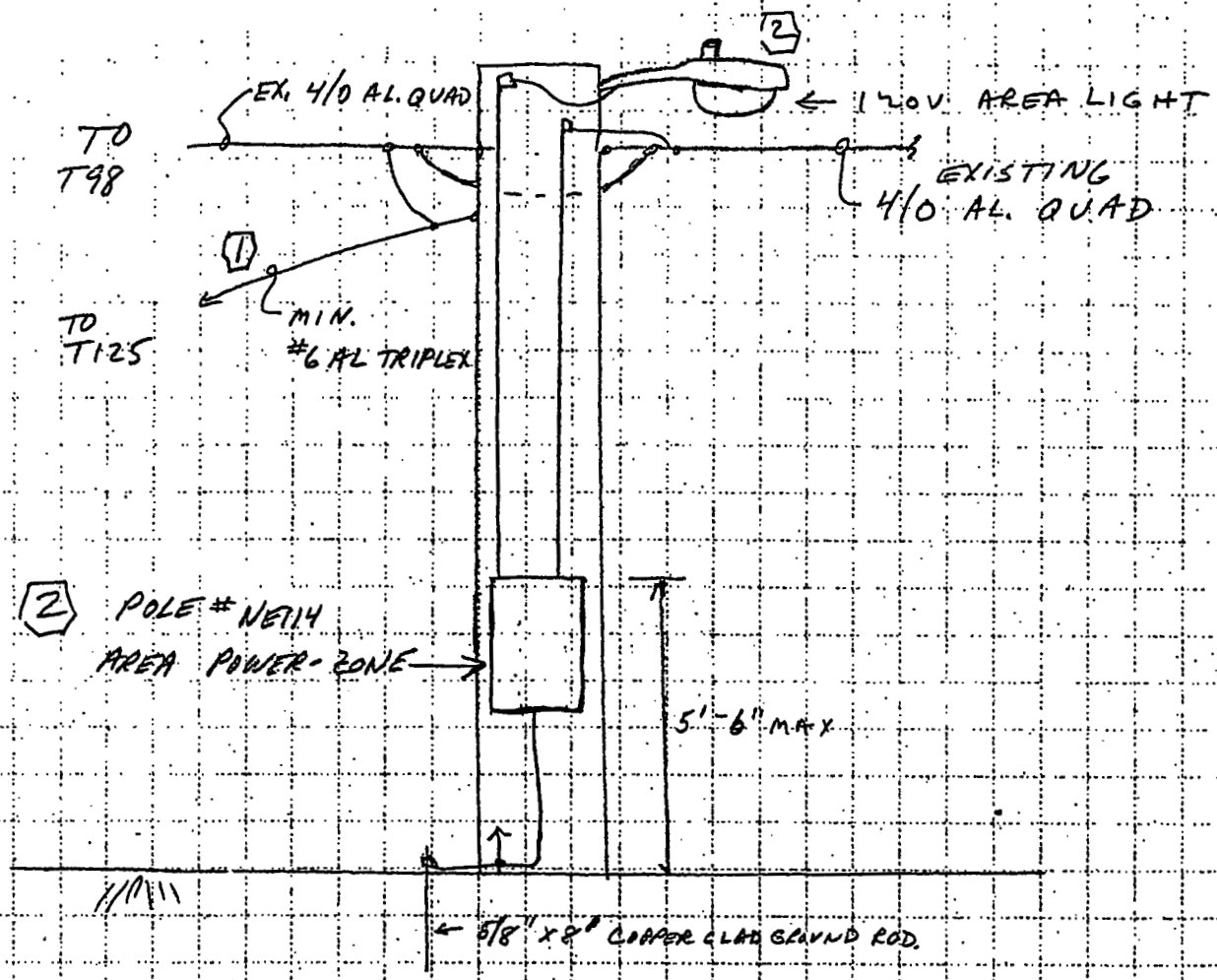

T99
NE114
T125
NE113
NE14
NE15
#749
#748
NE103
NE112
NE106
NE16
NE17
#747
#746
NE41
DWG 90X-5500-E-00549
JSK 8-21-01
DCN 20103-028
Page 2 of 5

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

ENGINEERING CALCULATION

PROJECT NUMBER:	4556
BY:	JGK
DATE:	8-21-01
PAGE:	OF
REVISED:	

SUBJECT:



POLE NE114
DETAILS
DWG 90X-5500-E-00550

DCN 20103-028
Page 3 of 5

FS-F-76 B (REV. 2/22/93)

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

ENGINEERING CALCULATION

PROJECT NUMBER:	4556
BY:	JJK
DATE:	8-21-01
PAGE:	OF
REVISED:	

SUBJECT:

Construction Notes

1. Install new 480V feeder from pole #NE114 to T125.
2. Relocate area light and area power zone from pole OP279 to pole NE114.

General Notes

1) See dwg 90X-6000-E-00259 for wiring and conduit details on pole NE114 and single line for system.
2) All wiring shall be copper with THWN insulation unless otherwise stated.
3) For wiring attachment details see dwgs 16X-5500-E-00106 and -00105.
4) Use structural channel to secure electrical equipment.
5) Trailer(s) shall be installed according to trailer typical installation dwgs 44X-5500-E-00363, -S-00364, and -E-00366.
6) Maintain 120V-480V wiring min. 40" above phone lines.

DCN 20103-028
Page 4 of 5

000366

FS-F-76 B (Rev. 2/22/93)

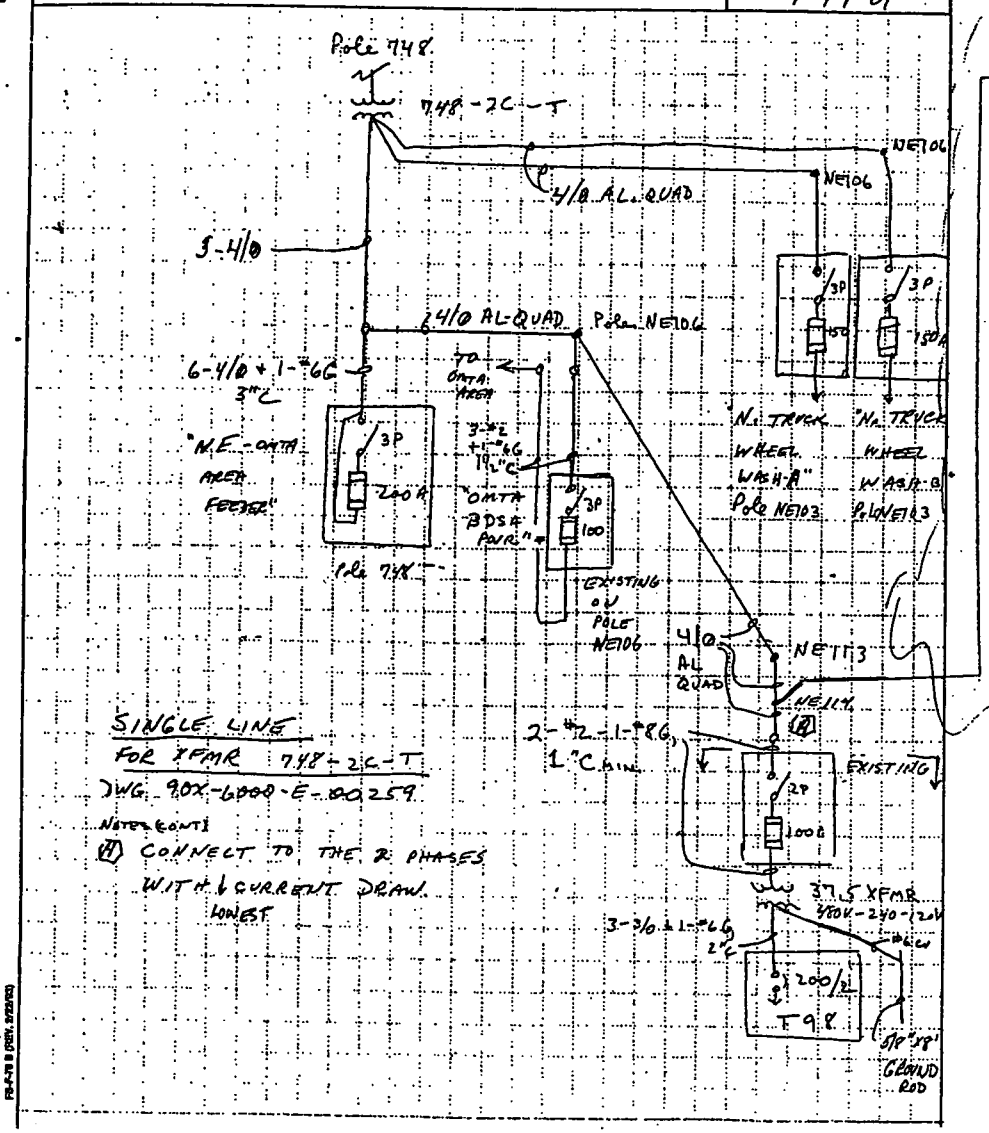
4556

Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

ENGINEERING CALCULATION

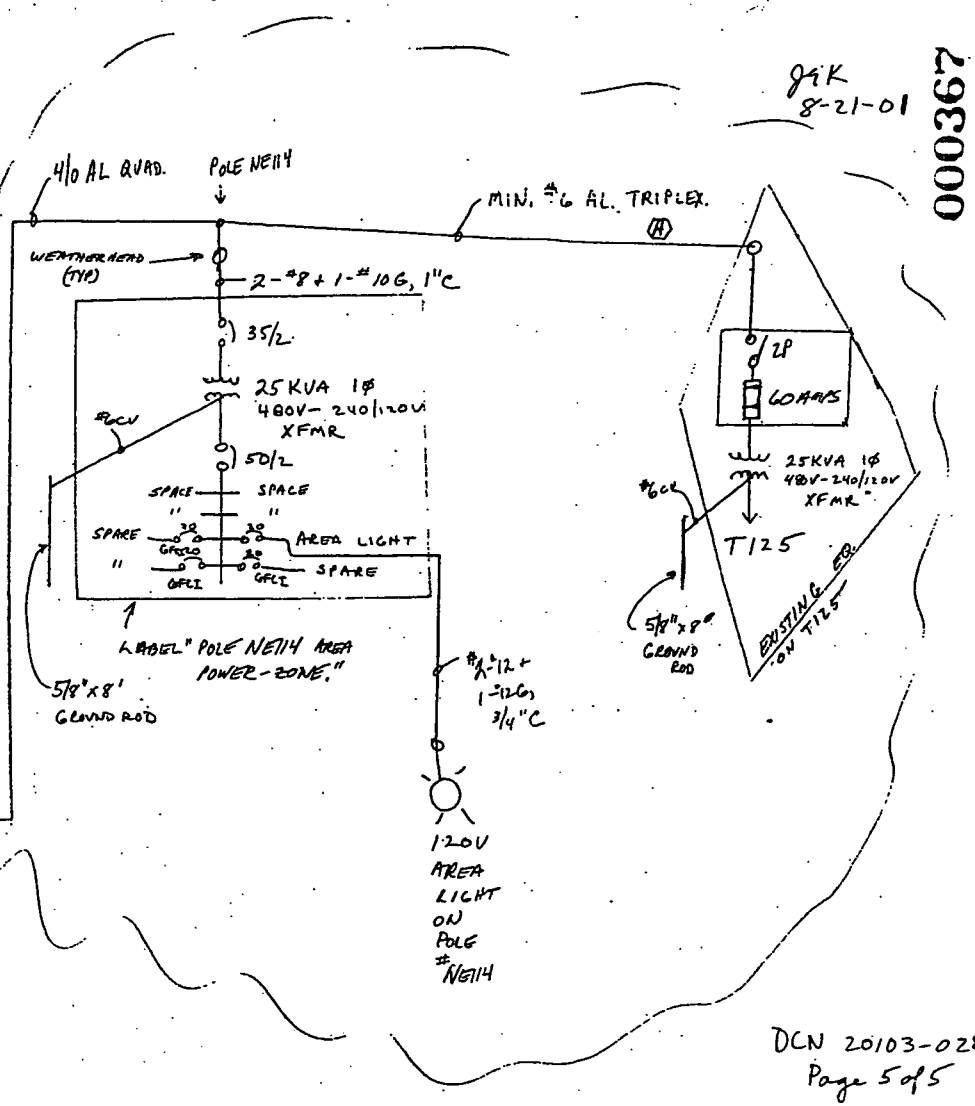
BY: JJK
DATE: 7-3-01
PAGE: OF
REVISED: 7-17-01

SUBJECT:



SINGLE LINE FOR XFMR 748-2C-T
DWG. 90X-6000-E-00259

NOTES CONT:
(H) CONNECT TO THE 2 PHASES WITH LOWEST CURRENT DRAW.



DCN 20103-028
Page 5 of 5

000367

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 2	(6) DATE
20103	FSC-642		Sept. 12, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: OSDF Cell 1 Final Cover Monitoring Devices - Change to Settlement Plate Installation Detail

(11) DCN NO.: 20103-030

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drwg - OSDF Cell 1 Final Cover Monitoring Devices Installation Details	90X-5500-G-00577	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Settlement plate and rod assembly installation detail requires modification to show addition of 8" diameter pipe sleeve and show change to annular space fill material for ease of installation.
Existing Condition: Pipe sleeve not shown and annular space fill material shown as granular drainage material.
Proposed Change: Add 8" diameter pipe sleeve and associated wrapping with geotextile material. In addition change annular space fill material technical specification to granular filter material per technical specification 02712 or approved equal.

(10) REQUESTOR: Samuel H. Wolinsky COMPANY: Fluor Fernald, Inc. DATE: 9/13/01

(12) CE / PE: Samuel H. Wolinsky DATE: 9/13/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES

(14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 9/13/01
KWASI BADU-TWENEBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 9/13/01
PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (19) 9/13/01
FRANK L. FLACK

(21) FIELD WORK COMPLETED:

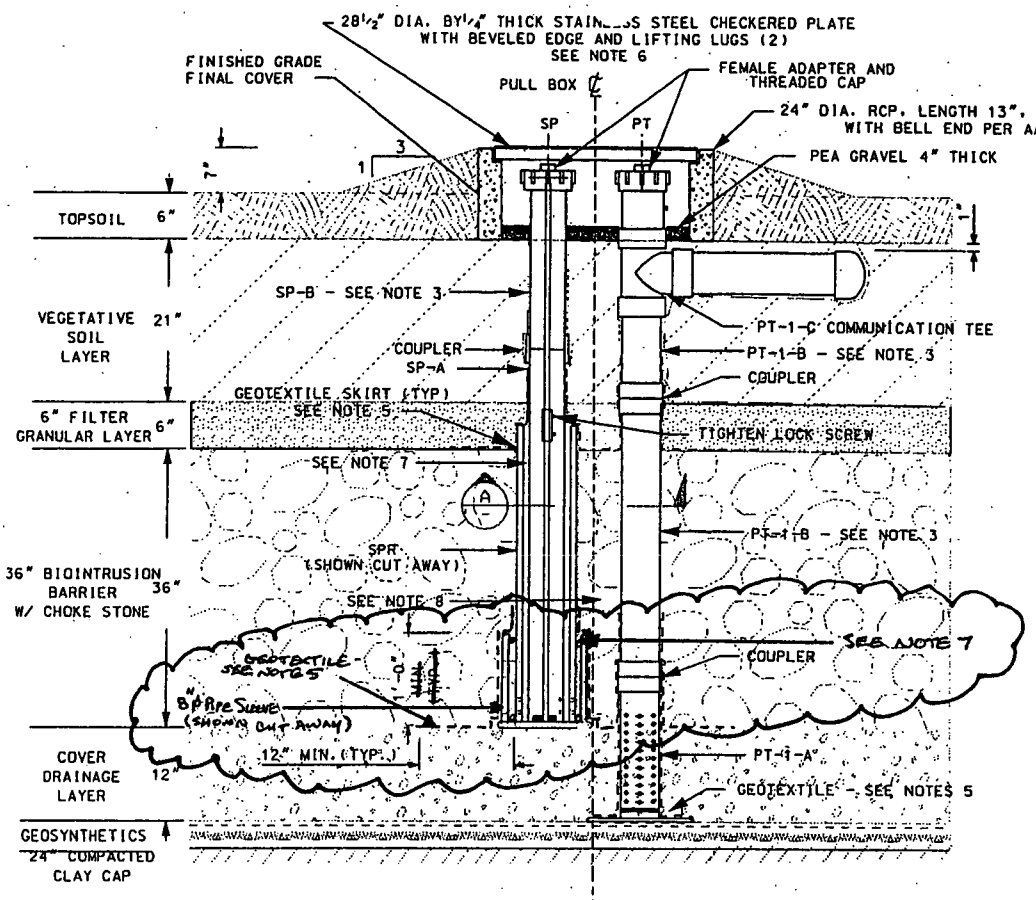
(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED
COPY NO. C-011
ORIGINAL

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

DCN: 103-030
PAGE 2

4556



SECTION A

NOTES:

1. FOR LOCATION OF THE PULLBOX REFER TO TABLE 1.
2. PREFABRICATED ASSEMBLIES SPR, SP-A, SP-B, AND PT-1-A, B & C WILL BE FURNISHED BY FLUOR FERNALD.
3. CUT SP-B, PT-1-B, AND ⅝" ROD TO MEET REQUIRED DEPTH AND ELEVATIONS SOLVENT WELD JOINTS USING MANUFACTURER RECOMMENDED SOLVENT.
4. PLACE TEFLON TAPE ON THREADS IN THREADED CAPS.
5. ~~WRAP~~ NON-WOVEN GEOTEXTILE (MIN. MASS/UNIT WEIGHT OF 7 OZ/SQYD) AROUND RISER PIPES WITH AN OVERLAP OF AT LEAST 6". AFFIX GEOTEXTILE WITH CABLE TIES ~~SPACED~~ AT 4". WRAP NON-WOVEN GEOTEXTILE AROUND PVC PLATE AND AFFIX WITH RUBBER CEMENT OR EQUIVALENT. SP-A, SP-B, AND PT-1-B WILL BE INSTALLED IN SECTIONS. PVC PIPE CONNECTIONS SHALL BE SOLVENT WELDED WITH FLUSH INTERIOR. GEOTEXTILE SHALL BE 7 OUNCES WEIGHT PER SQUARE YARD MIN.

000369

6. VERIFY RCP BELL INSIDE DIAMETER (I.D.) BEFORE FABRICATION OF STAINLESS STEEL CHECKERED PLATE. DIAMETER OF CHECKERED PLATE SHALL BE ¼ INCH LESS THAN THE BELL I.D.
7. FILL ANNULAR SPACES BETWEEN 4" PVC PIPE (SP-A) AND 6" STEEL PIPE ~~(SPR)~~ WITH GRANULAR ~~DRAINAGE~~ FILTER MATERIAL IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION ~~02710~~. GRANULAR ~~DRAINAGE~~ MATERIAL TO BE FURNISHED BY FLUOR FERNALD. 02712 OR APPROVED EQUAL AND ALSO BETWEEN SPR AND 8" STEEL PIPE SLEEVE
8. FILL SPACE BETWEEN SPR AND PT WITH BIOINTRUSION BARRIER MATERIAL. TO BE FURNISHED BY FLUOR FERNALD. TO POSITION DEVICE, FIRST 6" ABOVE BASE OF SETTLE. MEAT PLATE MAY BE FILLED WITH GRANULAR DRAINAGE MATERIAL IN ACCORDANCE WITH TECHNICAL SPECIFICATION 02710. BOTH MATERIALS

PT-1 AND SP-1 THRU PT-4 AND SP-4
TYPICAL INSTALLATION DETAIL

3

NOT TO SCALE

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 9	(6) DATE
20103	FSC-642		10/16/2001

(3) S/C TITLE: OSDF Phase III

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [✓] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: OMTA Expansion Air Monitor Circuits

(11) DCN NO.: 20103-032

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Bulk Debris Storage Electrical Layout	90X-5500-E-00549	0	
Bulk Debris Storage Electrical Details	90X-5500-E-00550	0	
	DCN 20103-014		

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [✓] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Reference voided DCN no. 20103-014. While performing field engineering and penetration permit preparations for the work directed by DCN no. 20103-014, we realized conflicts with some of the intended locations with respect to high contamination areas, underground utilities and potential electrical hazards resulting from electrical cables over SP-7's footprint and affected earth moving equipment.
This DCN is issued to redirect the work and mitigate the conflicts to install four utility poles and electrical circuits to three air monitor locations. This work remains in response to RES 4247.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Jim V. Salyers	Fluor Fernald	10/16/2001		10/16/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [✓] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerl 10-13-01

[ ] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: ~~CCPL3~~ CECP3

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE:

PERFORMANCE GRADE: (17) PG-5

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19) IN PLACE

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

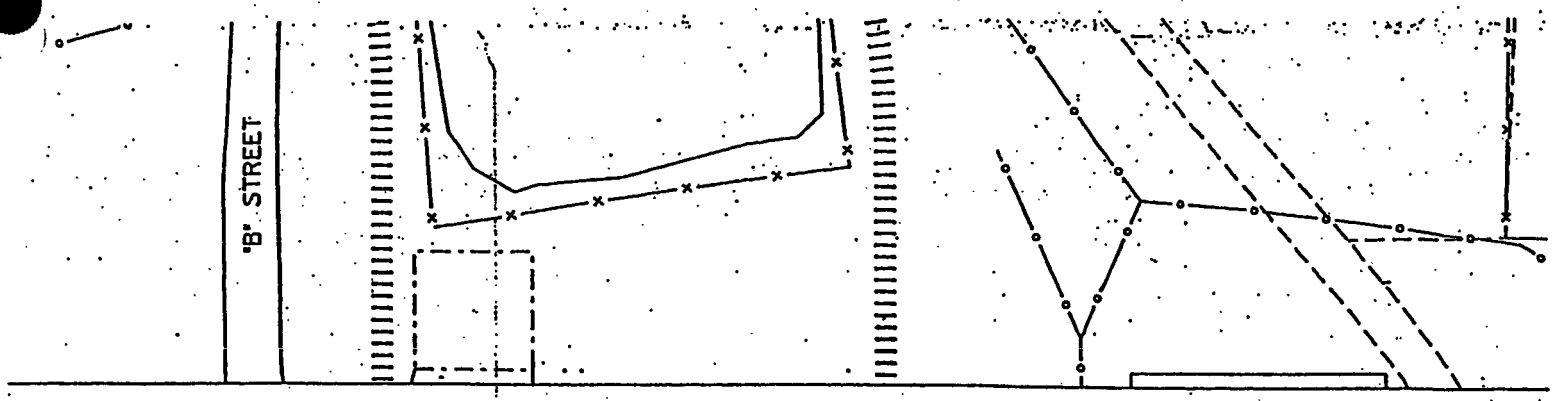
ORIGINAL

000370

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C 008

4556
Res 4247



GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER (CU) WITH THWN INSULATION UNLESS OTHERWISE NOTED.
2. PRIOR TO DIGGING, CONSULT UNDERGROUND UTILITIES DRAWINGS 22C-5500-P-00660 AND 22C-5500-P-00668 (GRIDS 1 & 9) FOR THE LATEST UNDERGROUND UTILITY INFO. ON FILE.
3. DIG SETTING HOLES LARGE ENOUGH TO PERMIT USE OF POWER TAMPERS TO FULL DEPTH. PLACE EARTH IN MINIMUM 6 INCH LAYERS AND PACK TO 95% DENSITY PER ASTM D698. BANK EARTH 12" ABOVE GRADE.
4. NEW POLES SHALL BE 35 FEET, CLASS 2 SOUTHERN PINE, 100% TREATED WITH 5½ FEET MINIMUM BURIAL.
5. NEW AERIAL WIRING TO BE #4/0 AL QUADRAPLEX (3 INSULATED AND 1 BARE) ATTATCHED TO POLES WITH CHANCE #7911 UNIVERSAL MESSENGER HANGERS WITH MAX. 3 FEET CABLE SAG BETWEEN POLES. FOR POLE GUY, ANCHORING AND ATTACHMENT DETAILS SEE DRAWINGS 16X-5500-E-00105 AND 16X-5500-E-00106. INSTALL POLE GROUNDING SYSTEM AS SHOWN ON 16X-5500-E-00106.
6. MAINTAIN 1 FOOT SPACING BETWEEN EXISTING 480V WIRING AND NEW 240V WIRING.
7. FOR POLE COORDINATES FOR EXISTING POLES SEE DRAWING 22X-5500-E-00958.
8. AS BUILT LOCATION COORDINATES (NAD83) FOR PROPOSED POLES TO BE SUBMITTED TO CADD SERVICES UPON COMPLETION OF JOB.

REF. DWG. NO.
44X-5500-E-00363
90X-5500-E-00549
78X-4445-E-00029
78X-4445-E-00027
14X-5500-E-00366
14X-5500-S-00364

DWG 90X-5500-E-00549

DCH 20103-032 P.2/9

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

ENGINEERING CALCULATION

PROJECT NUMBER:	4247
BY:	JJK 4556
DATE:	5-16-01
PAGE:	OF
REVISED:	

SUBJECT:

Mod. Notes

1) Install 7 New Poles - NW 81, 82, 83, 84, 85, 86, + 87
2) Install new 240V feeder from electrical panel in T191 on exiting and new poles to air monitor stations.
3) Four new air monitor location will be at poles NW 20, NW82, NW86, and NW 29.
4) Remove existing conduit, wiring and hardware on pole to grade level
5) Install guys on the following poles - NE108, NW29, NW 82, NW85, and NW86.

Guy Wire Anchoring

Pole No	Anchors	Guys(s)	angle of Guy Wire to ground
NE108	1-12"	1-1/2"	60°
NE29	1-12"	1-1/2"	60°
NE 82	2-12"	2-1/2"	60°
NE 85	2-12"	2-1/2"	60°
NE 86	1-12"	1-1/2"	60°

DCH 20103-032 P3/9

000372

DWG
90X-5500-E-00549

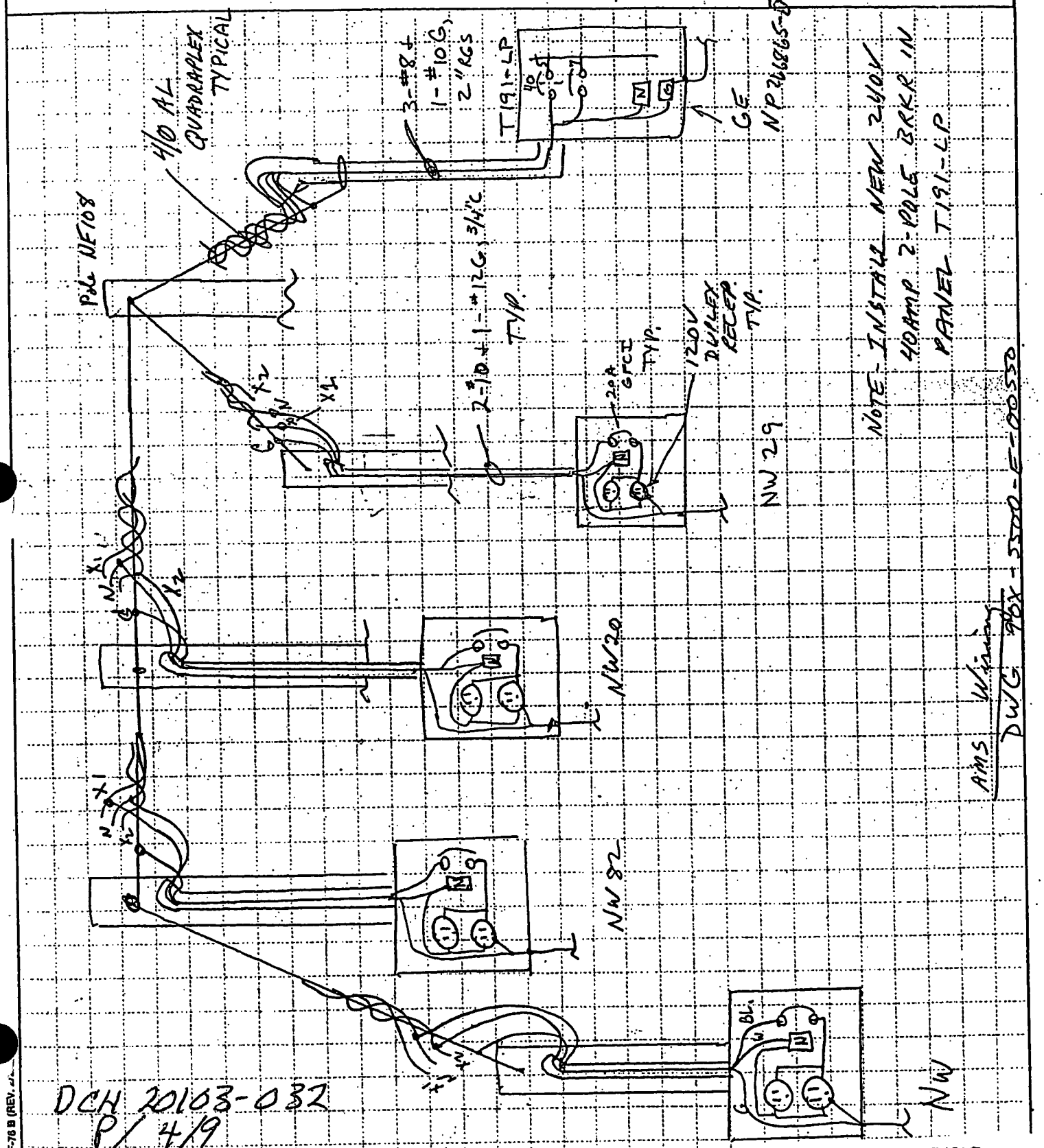
FS-F-76 B (1)

Fernald Environmental Restoration Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

ENGINEERING CALCULATION

PROJECT NUMBER:	4556
	4247
BY:	JEK
DATE:	5-17-01
PAGE:	OF
REVISED:	

SUBJECT:



FS-F-78 B (REV. 4/...)

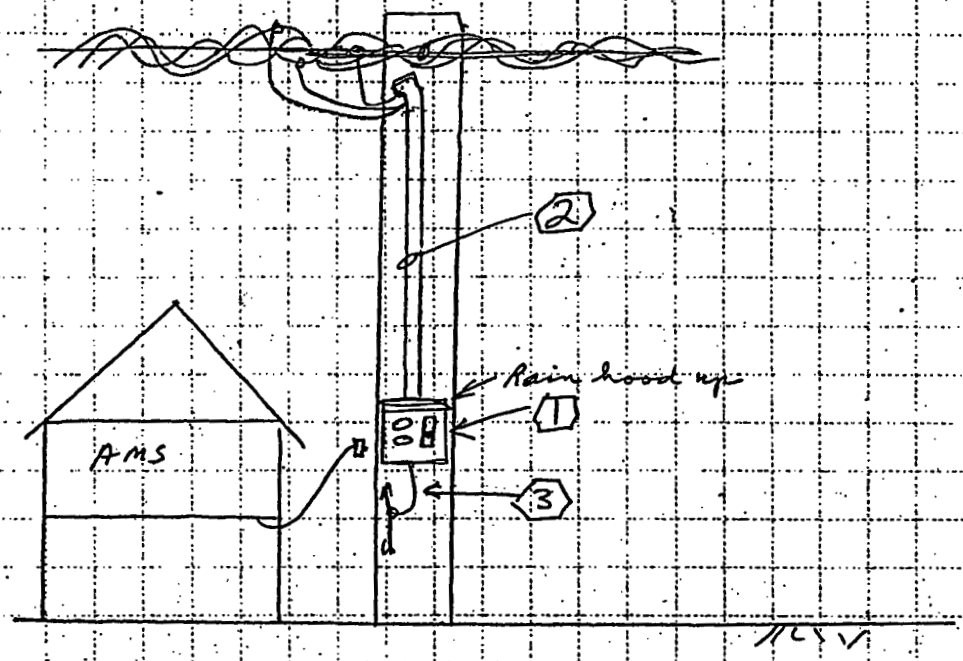
Fernald
Environmental Restoration
Management Corporation
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 738 6200

4556

ENGINEERING CALCULATION

PROJECT NUMBER:	4247
BY:	J.E.K
DATE:	5-17-01
PAGE:	OF
REVISED:	

SUBJECT:



C Elevation
AM Receptacle
TYP (4) Places

Elev C notes

1) Install a power outlet panel (Square D # PAK10C-1) onto the poles shown in the plan view.
2) Feed the power outlet panel from the 240 V. line with 2-#10 + 1-#12G in a 3/4" C.
3) Connect panel ground to pole ground with #10 copper ground wire

GENERAL NOTES:

1. ALL WIRING SHALL BE COPPER (CU) WITH THWN INSULATION UNLESS OTHERWISE NOTED.
2. USE STRUCTURAL CHANNEL TO SECURE ELECTRICAL EQUIPMENT.
3. TRAILER SHALL BE INSTALLED ACCORDING TO TRAILER TYPICAL INSTALLATION DRAWINGS 44X-5500-E-00363 AND 44X-5500-E-00366.

DOE 20103-032
P. 5/9
000374

DWG 90X-5500-E-00550

FS-F-78 B

4556

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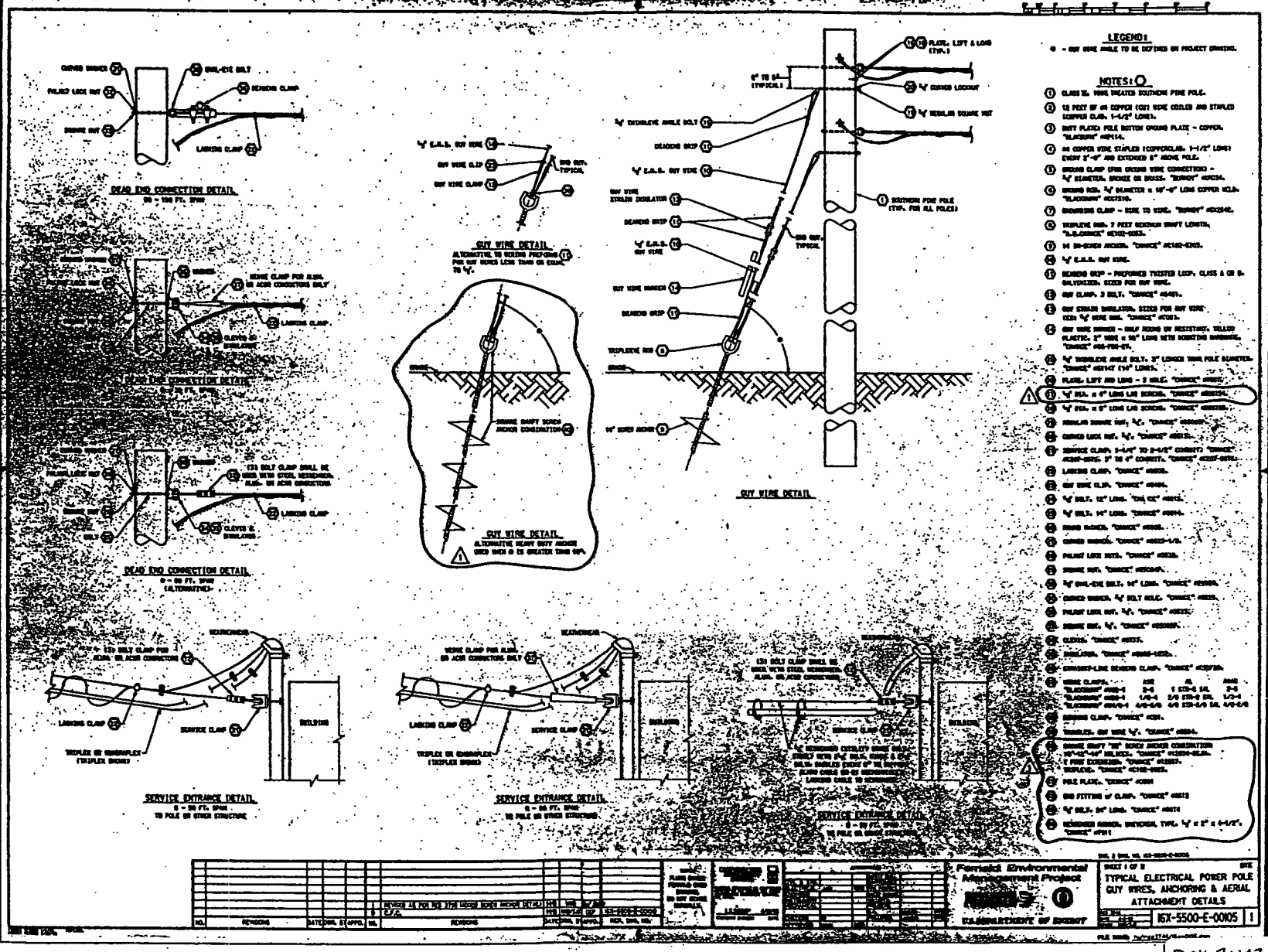
FOR INFORMATION ONLY
CADD SERVICES
MAY 03 2001



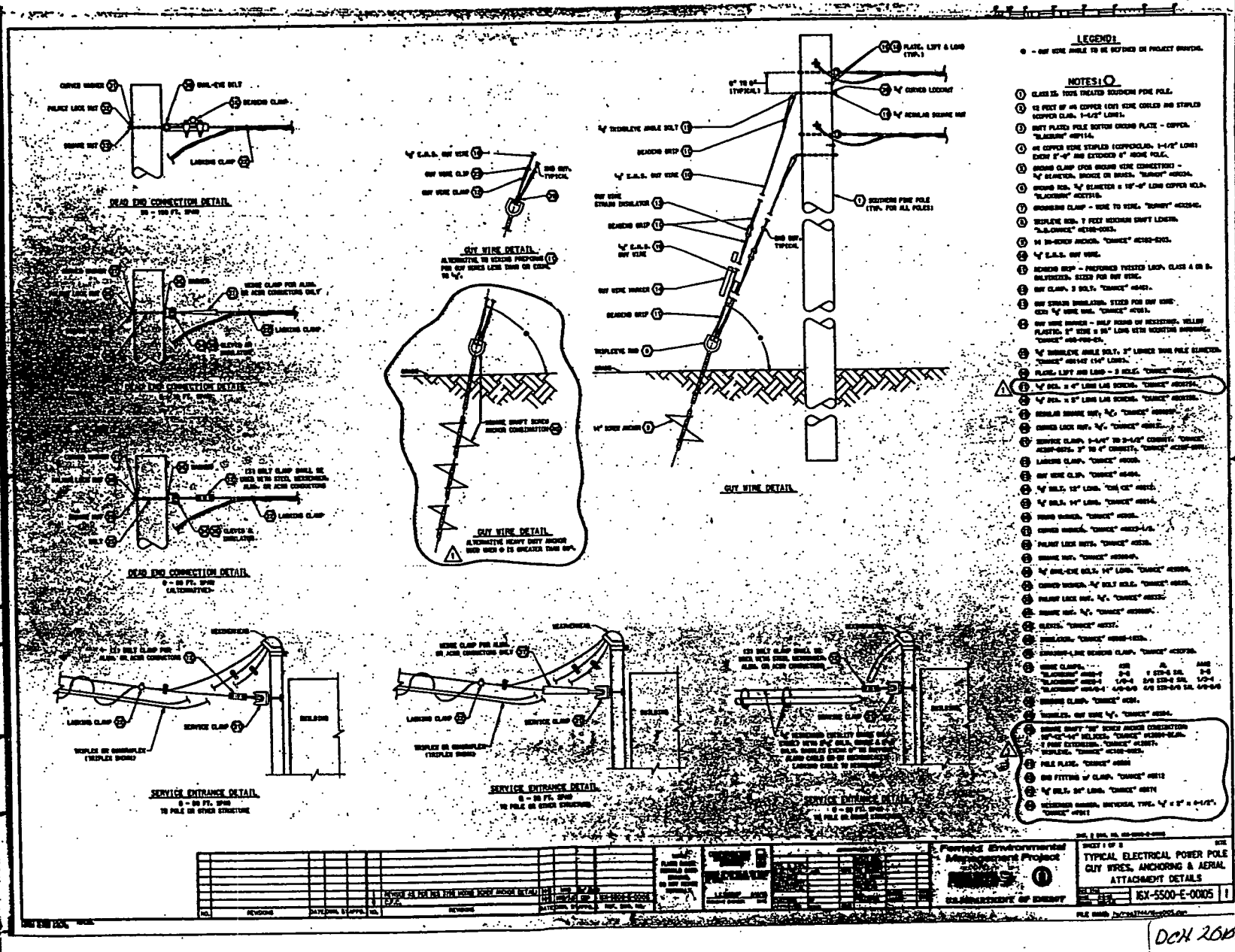
DCH 20103-032

P. 6/9

4556

000376

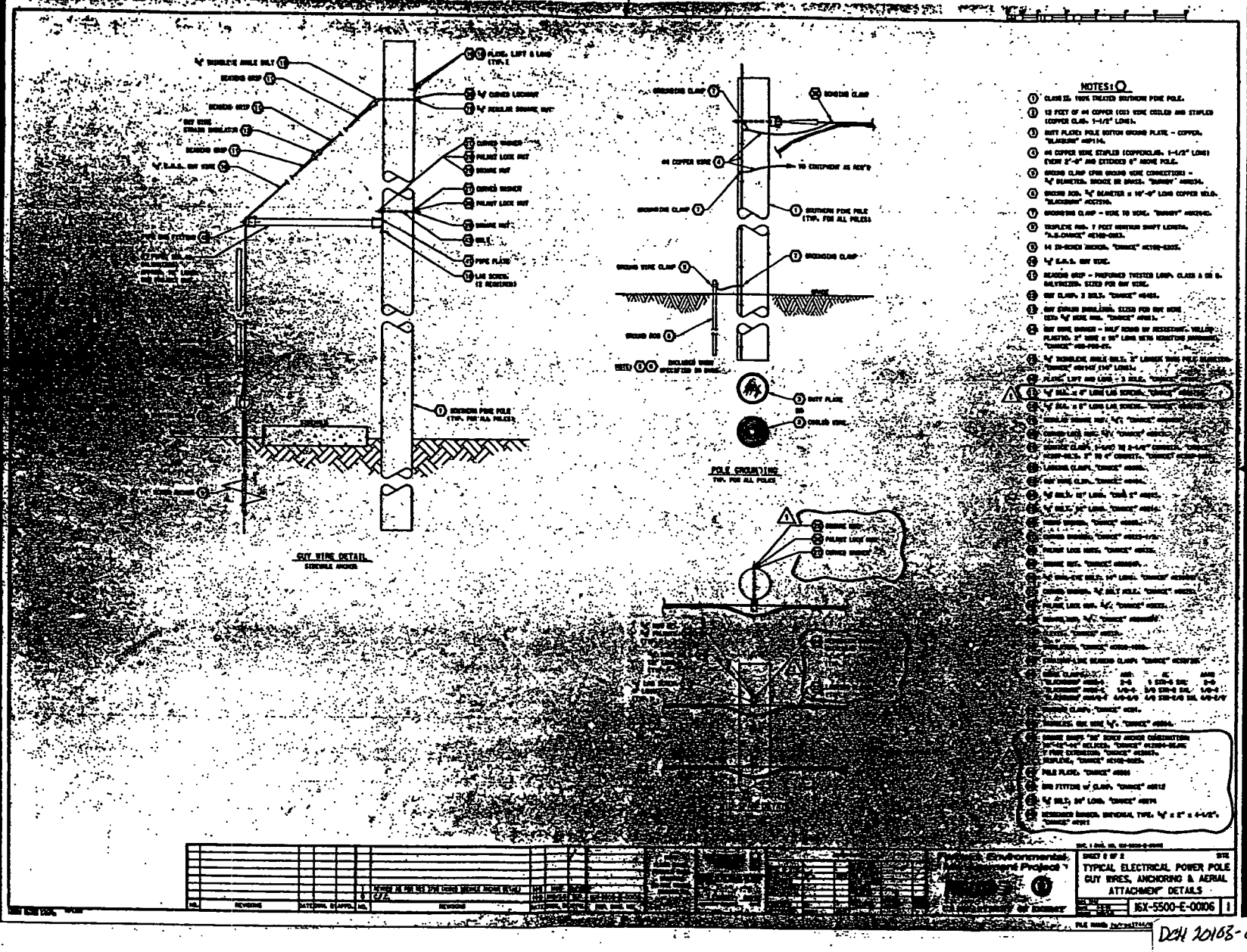
FOR INFORMATION ONLY
CADD SERVICES



DCH 2003-032

P. 7/9

4556



MAY 0 9 2001 FOR INFORMATION ONLY CADD SERVICES

DCH 20103-032

P. 8/9

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 20 (14 pp. of Drwgs)	(6) DATE
20103	FSC-642		October 29, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III - Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN TITLE: Cell 1 Final Cover Monitoring Equipment & Cable Addition

(11) DCN NO.: 20103-033

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing: OSDF Phase III Final Cover Grading Plan	90X-6000-G-00302	1	Sheet G-7
Drwg: OSDF Cell 1 Final Cover Monitoring Devices Installation Details	90X-5500-G-00577	0	Rev. 1A drawing attached
Drwgs: OSDF Final Cover Monitroing System, Instrumentation Site Plan and Interconnection Diagrams 1 and 2	90X-5500-E-00581 - 0583	0	3 Rev. 1A drawings attache
Drwg: OSDF Final Cover Monitoring System, Valve House 1 Elec. Mods.	90X-5500-E-00584	0	Rev. 1A drawing attached
Drwg: OSDF Final Cover Monitoring System, Antenna Installation Dets.	~~90X-5500-E-00585~~ 51X-5500-E-0127B	0 0	Rev. 1A drawing attached ~~Rev 1A Drawing A~~
Drwgs: Valve House & Control Valve House Electrical Details - EPLTS	90X-6000-E-0261 & 0262	0	Sheets E-4 and E-5

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSE CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: The addition of monitoring devices for the OSDF Cell 1 Final Cover was approved in DCN 20103-018 as part of a technology demonstration relative to DOE's commitment on FEMP stewardship beyond the 30 year post-closure period. This DCN represents the next step in completing the installation of this single cell final cover monitoring system.

Existing Conditions: The OSDF Cell 1 Final Cover monitoring devices have been partially installed per DCN 20103-018.

Proposed Change: Complete monitoring device installation per the Attachment: soil matric potential sensors, soil moisture sensors, pressure transducers, data loggers, multiplexors, antennas, transceivers, battery charger and the associated cable connections and conduit.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE:	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	10/29/01	Samuel H. Wolinsky	10/29/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 10/29/01
KWASI BADU-TWEREBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/29/01
PERFORMANCE GRADE: (17) 4; SBDR-2000-0027 Applies SH Wolinsky

(18) CONSTRUCTION CONCURRENCE DATE: 10/29/01

(21) FIELD WORK COMPLETED:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19) Bill Zebich

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. 011

ORIGINAL

DCN 20103-033
ATTACHMENT

4556

Statement of Work
Installation of Monitoring Devices and Equipment For Cell 1 OSDF Final Cover Monitoring System

Introduction

This Statement of Work (SOW) is for installation of the monitoring devices and equipment in OSDF Cell 1 final cover system and includes: installation of pressure transducers, soil water moisture sensors, and soil matric potential sensors; installation of conduit, cables, and junction boxes between the pressure transducer risers and soil water status nests to valve house #1; installation of electrical modifications at valve house #1; installation of data loggers, multiplexors, transceivers, antennas and battery charger; installation of miscellaneous support equipment; and support during the System Operability Test and Functional Acceptance Test.

Scope of Work

- Contractor shall submit technical submittals and complete technical training and medical requirements as required by Part 8 – Environmental Health and Safety Training Requirements.

- Contractor shall submit revised Project Schedule and work plans for the scope of work included herein. The revised work plans shall include a Fugitive Dust Control Plan, Surface Water Management and Erosion and Sediment Control Plan, Traffic Control Plan, Earthwork Plan, Safe Work Plan, Site Specific Health and Safety Program and Quality Assurance Plan.

- Contractor shall install and maintain erosion and sediment controls before the start of earthwork, trenching, and back-filling activities.

- Contractor shall provide the labor and tools to install pressure transducers, soil moisture sensors, and soil matric potential sensors (monitoring devices) shown on drawings 90X-5500-E-00583, Rev.1A; 90X-5500-E-00582, Rev.1A, 90X-5500-E-00592, Rev.0, 90X-5500-E-00593, Rev.0, 90X-5500-E-00594, Rev.0

- Contractor shall provide the labor and material including: conduit, couplings, solvent, bentonite, and other miscellaneous items, as shown on drawings, to install conduit between valve house #1, junction boxes, and pressure transducers, soil moisture sensors and soil matric potential sensors. See drawing 90X-5500-E-00581, Rev. 1A, 90X-5500-E-00584, Rev.1A and 90X-5500-E-00591, Rev.0 for materials and installation requirements.

- Contractor shall provide the necessary labor and material to install 11 in-ground electrical junction boxes, including sliding instrument mounting devices (rail & slide, brake, etc) shown on drawing 90X-5500-E-00581, Rev. 1A; 90X-5500-E-00591, Rev.0, 90X-5500-M-00595, Rev.0, 90X-5500-M-00590, Rev.0, and 90X-5500-M-00596, Rev.0.

- Contractor shall provide the necessary labor and tools to install and pull cable between the multiplexors and dataloggers located in junction boxes and between junction boxes and valve house #1 to the pressure transducers, soil moisture sensors and soil matric potential sensors shown on drawings 90X-5500-E-00583, Rev.1A, 90X-5500-E-00582, Rev.1A, 90X-5500-E-00591, Rev.0, 90X-5500-E-00592, Rev.0, 90X-5500-E-00593, Rev.0, 90X-5500-E-00594, Rev.0, and 90X-5500-E-00594, Rev.0

DCN 20103-033
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- Contractor shall make cable connections at monitoring devices, data loggers, multiplexors, antennas, transceivers, and battery charger at locations shown on drawings 90X-5500E-00581 Rev. 1A; 90X-5500E-00582 Rev. 1A; 90X-5500E-00583, Rev.1A; 90X-5500-E-00584, Rev.1A, 90X-5500-E-00585, Rev. 1A, 90X-5500-E-00591, Rev.0, 90X-5500-E-00592, Rev.0, and 90X-5500-E-00593, Rev.0.

- Contractor shall install one antenna at valve house # 1 and one antenna on the roof of the Building 51A at the Advanced Waste Water Treatment Plant (AWWT) shown on drawings 90X-5500-E-00584 Rev. 1A and 90X-5500-E-00585, Rev. 1A.

- Contractor shall obtain the necessary permit from Fluor Fernald, Inc. before installation of antennas at Valve House #1 and AWWT.

- Contractor shall furnish and install the electrical modifications at valve house # 1 and for the transceiver, battery charger and other equipment shown on drawings 90X-5500-E-00584 Rev.1A; and 90X-5500-E-00585 Rev. 1A.

- Contractor shall install monitoring devices and equipment furnished by Fluor Fernald, Inc listed in this Statement of Work.

- Contractor shall provide one electrician and one laborer for a period of six working days each, based on 10-hours per working day, to assist GeoSystems Analysis during performance of the System Operability Test and Functional Acceptance Test, and for troubleshooting and adjustments.

- After completion of installation of monitoring devices and equipment, contractor shall regrade the OSDF Cell 1 Final Cover System and other areas disturbed during installation. Regrading shall include but not limited to: replacing fill, vegetative layer, topsoil, erosion mat, vegetation and surfacing.

- Contractor shall submit project closeout documents as specified in Part 6 – Statement of Work.

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page 3 of 4
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Monitoring Devices and Equipment Furnished by Fluor Fernald, Inc.

The following table lists the monitoring devices and equipment that will be furnished by Fluor Fernald, Inc.

Table 1

Equipment Furnished by Fluor Fernald, Inc.			
Quantity	Model	Description	Delivered to Contractor
1	CR23X-4M	CR23X data logger with 4 meg extended memory	11/1/01
1	10695	Low profile base without battery	11/1/01
1	CR12R	12 volt charge / regulator	11/1/01
1	9591	18 volt 1.2 amp wall charger	11/1/01
2	BP24	24 amp hour sealed rechargeable battery	11/1/01
6	ENC 16/18	Campbell Scientific, Inc. Model #ENC 16/18 Weather Proof Enclosure	11/1/01
1	PC208W	PC support software	11/1/01
2	RF400	Transceiver – spread spectrum	11/1/01
2	14221	Antenna	11/1/01
1	NL100	Serial server	11/1/01
2	AVW4	4 channel for vibrating wire sensors	11/1/01
2	AM25T	25 channel multiplexor for thermal couples	11/1/01
40	229-L	Heat dissipation water matrix potential sensor (HDU)	11/26/01
6,720feet	Cable	Type T thermocouple, 1 pair, 20 gauge for HDU (Belden 83954)	11/1/01
6,720 feet	Cable	2 conductor with shield, 22 gauge CU wire for HDU (Belden 83552)	11/1/01
5	CE8	8 channel 50mA constant current source	11/1/01
7	AM 16/32	32 differential channel multiplexor	11/1/01
40	CS615 – L	Water content reflectometer sensor (WCR)	11/26/01
10,350 feet	Cable	4 conductor with shield, 24 gauge CU wire for WCR (Belden 83504)	11/1/01
1	CS615G	Installation guide tool	11/1/01
1	CS615P	Installation pilot tool	11/1/01
7	4500AL	10 PSIA vibration wire pressure transducer (GEOKON)	11/26/01
1	4580	Vibration wire barometric pressure transducer	11/1/01
630 feet	Fiber Optic Cable	62.5/125 Um mm Aircore Fiber	11/1/01
2	SVP48	Surge volt protector	11/1/01
2	8206	Spark Gap	11/1/01
1	NA	Ground kit	11/1/01
1,460 feet	Cable	6 conductor, 3 shielded pairs, 24 gauge CU wire for future settlement plate sensors. (Belden 82503)	11/1/01
880 feet	TC Cable (Tray Cable)	Belden 9412	11/1/01
800 feet	Wire	Cu (copper) wire	11/1/01
430 feet	Cable	16 conductor, Shielded, #20 guage, Belden 1077A	11/1/01
2	5843	Dymec Fiber Optic Modem RS232/TTL 12VDC Power	11/1/01
3	Ground Bar	Special AE Ground Bar	11/1/01
3	+12 VDC Bar	Special AA +12VDC Bar	11/1/01
5	10162	ENC RH Sensor	11/1/01
3	AE 1KΩ	Special AE 1K	11/1/01
3	107-L2	TC Ref. Temperature	11/101
1	9-25 adaptor	Special AE cable F.O. Pair (9-25 adaptor)	11/1/01
2	100 A3IIU	Termination Box For 6 Strand Fiber Optic	11/1/01
2	5754-A-004 D	Dymec Duplex Zipcord Cable	11/1/01

000381

DCN 20103-033
ATTACHMENT

Services Provided by Supplier

The following services will be provided by GeoSystems Analysis, Inc (Supplier) of Tucson, Arizona. GeoSystems Analysis, Inc. 2015 N. Forbes Blvd., Suite 105, Tucson, Arizona 85745-1458. Phone 520.628.9330

1. Calibration of monitoring devices and equipment.

2. Provide manufacturer's installation recommendations and oversight during installation of Fluor Fernald Furnished monitoring devices and equipment.

3. Perform System Operability Test and Functional Acceptance Test.

4. Participate in final project closeout

Schedule

The following table presents the schedule for completion of the scope of work.

Table 2

Item number	Description	Completion Date
1	Installation of electrical modifications at valve house #1	November 15, 2001
2	Installation of conduits and cables between all monitoring devices and valve house # 1	November 2, 2001 *(see note 1)*
3	Installation of all monitoring devices in OSDF cell 1 final cover system	November 30, 2001
4	Installation of data loggers, multiplexors, antennas, battery charger and other associated equipment at junction boxes, valve house #1, and the Advanced Waste Water Treatment Plant.	November 30, 2001
5.	System Operability Test and Functional Acceptance Test	December 7, 2001
6.	Scope of Work complete	December 14, 2001

Note 1. Installation to be completed one week prior to beginning of vegetation at Cell 1 Final Cover System.

Applicable Documents

The scope of work included in this contract is shown on the following drawings.

1. 90X-5500-E-00581, Rev. 1A — OSDF Cell 1 Final Cover Monitoring System, Instrumentation Site Plan.

2. 90X-5500-E-00582, Rev.1A — OSDF Cell 1Final Cover Monitoring System, Instrumentation Interconnection Diagram, 1 of 2.

3. 90X-5500-E-00583, Rev.1A — OSDF Cell 1 Final Cover Monitoring System, Instrumentation Interconnection Diagram, 2 of 2.

4. 90X-5500-E-00594, Rev.0 — OSDF Cell 1 Final Cover Monitoring System, Instrumentation Interconnection Diagram, 3 of 3.

5. 90X-5500-E-00584, Rev.1A — OSDF Cell 1 Final Cover Monitoring System, Valve House #1 Electrical Modifications.

6. 90X-5500-E-00585, Rev. 1A — OSDF Cell 1 Final Cover Monitoring System, Antenna Installation Details

7. 90X-5500-G-00577, Rev.1A — OSDF Cell 1 Final Cover Monitoring System, Devices Installation Details.

8. 90X-5500-M-00590, Rev.0 —OSDF Cell 1 Final Cover Monitoring System, Handhole Assembly detail, 1 of 3.

9 90X-5500-M-00595, Rev.0 — OSDF Cell 1 Final Cover Monitoring System, Handhole Assembly detail, 2 of 3.

10. 90X-5500-M-00596, Rev.0 — OSDF Cell 1 Final Cover Monitoring System, Handhole Details, 3 of 3.

11. 90X-5500-E-00591, Rev.0 — OSDF Cell 1 Final Cover Monitoring System Electrical Details – Junction Boxes.

12. 90X-5500-E-00592, Rev.0 — OSDF Cell 1 Final Cover Monitoring System – Instrumentation Interconnection Chart, sheet 1 of 1.

13. 90X-5500-E-00593, Rev.0 — OSDF Cell 1 Final Cover Monitoring System – Instrumentation Interconnection Chart, sheet 2 of 2.

14. 90X-5500-X-00597, Rev.0 — OSDF Cell 1 Final Cover Monitoring System, Project Cover Sheet

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 5	(6) DATE
20103	FSC-642		October 16, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: Change to Final Cover Seed Mix

(11) DCN NO.: 20103-034

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications OSDF - Phase III Final Cover Construction	20103-TS-0003	1	Section 02930, Parts 2.01.A, 3.03,D, 3.05.C

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: These changes resulted from an October 11, 2001 meeting between OEPA, DOE, and Fluor Fernald (meeting notes attached).
Existing Condition: Current design specifies native prarie grasses & forbs planted in combination with a cover crop of faster growing grasses. Concerns were raised regarding the cover crop's ability to establish well enough for short-term erosion control and the mix of prarie grasses limiting the ability to conduct required inspections and monitoring.
Proposed Change: New Table 02930-1C is added as the only seed mix to be used for OSDF Cell Final Cover permanent vegetation (existing Section 02930 tables contain mixes for use in other SDFP applications). See page 2 of this DCN for additional changes.

(10) REQUESTOR: Eric Woods — COMPANY: Fluor Fernald, Inc. — DATE: 10/22/01

(12) ~~CE FOR~~ Samuel H. Wolinsky — DATE: 10/24/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES

(14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 10/22/01
ERNEST BADU-TWEREBOAH GEOTECH
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) — DATE: 10/24/01
PERFORMANCE GRADE: (17) 5 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE: 10/22/01

PURCHASE REQUISITION REQUIRED: [ ] YES [ ] NO (19)
BILL ZEBICK

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED
COPY NO C011 ORIGINAL

000384

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

1. Revise Section 02930, Part 2.01.A (Page 02930-3) as follows:

Add "Table 02930-1C" to the tables listed on the seventh and eighth lines. See page 3 of this DCN for this additional table.

Revise the sentence ending on the tenth line to read as follows: "Areas requiring permanent seeding during the summer months (June 15 - September 20), excluding the OSDF Cell Final Cover, shall be seeded with 30 lbs/acre of ReGreen as specified in this Section. An alternative to ReGreen, and the only acceptable alternative for summer seeding of the OSDF Cell Final Cover, is stabilizing with a crusting agent as specified in this Section. Stabilization performed during the summer shall be followed by fall application of the appropriate permanent seed mix."

2. Revise Section 02930, Part 3.03.D.1.d (Page 02930-7) as follows:

Add "Table 02930-1C" to the tables listed on the second line.

3. Revise Section 02930, Part 3.05.C to read as follows:

"Areas that fail to meet these requirements shall be repaired or reseeded as necessary to produce an acceptable stand of vegetation, as specified in this Section. For the OSDF Cell Final Cover vegetation only, areas that fail to meet these requirements shall be repaired as necessary and reseeded to produce an acceptable stand of vegetation by using an alternate seed mix such as hydroseeding tall fescue as determined to be appropriate by the Construction Manager."

TABLE 02930-1C

SEED MIX FOR CELL FINAL COVER PERMANENT VEGETATION

GRASSES Species (Scientific Name)	Pounds Per Acre (lb/ac)
Big Bluestem (*Andropogen gerardi*)	0.5
Little Bluestem (*Andropogen scoparius*)	3
Side-Oats Grama (*Bouteloua curtipendula*)	5
Buffalo Grass (*Buchloe dactyloides*)	1
Indian Grass (Sorghastrum nutans)	0.5
Canada Wild-Rye (*Elymus canadensis*)	25
Annual Rye (*Lolium multiflorum*)	10
Prarie Dropseed (*Sporobulus heterolepis*)	1.5
WILDFLOWERS (FORBS) **Species (Scientific Name)**	**Ounces Per Acre (oz/ac)**
Butterflyweed (*Asclepias tuberosa*)	3.125
Smooth Aster (*Aster laevis*)	0.25
Ox-eye Sunflower (*Heliopsis helianthoides*)	1.75
Bergamot (*Monadara fistulosa*)	0.25
Purple Coneflower (*Echinacea purpurea*)	2.0
Pale Purple Coneflower (*Echinacea pallida*)	2.0
Yellow Coneflower (*Ratibida pinnata*)	0.375
Black-Eyed Susan (*Rudbeckia hirta*)	1.0
Spiderwort (*Tradescantia ohioensis*)	1.25
Hoary Vervain (*Verbena stricta*)	0.50
Beardtongue (*Penstemon grandiflorus*)	1.0
Sweet Joe Pye-Weed (*Eupatorium purpureum*)	0.25
White False Indigo (*Baptisia leucantha*)	4.25
Blue False Indigo (*Baptisia australis*)	4.25
Partridge Pea (*Cassia fasciculata*)	32
Round-headed Bush Clover (*Lespedea Capitata*)	1.0
Stiff Goldenrod (*Solidago risida*)	0.75

CONFERENCE/MEETING NOTES
NOTES LETTER LOG NO.:2001-0034

SUBJECT: Vegetative Cover of the On-Site Disposal Facility

MEETING DATE: October 11, 2001

LOCATION: Fluor Fernald Office, Administration Building, Executive Conference Room

ISSUE DATE: October 17, 2001

Project Number 20100.1.5/20900.1.5, ECDC

DISTRIBUTION: + Attendees + + Part-time • Author of Notes

DOE
+ Robert Janke, MS45
+ Johnny Reising, MS45
+ Pete Yerace, MS45

Ohio EPA
+ Joe Bartoszek, Ohio EPA
+ Tom Schneider, Ohio EPA

Fluor Fernald
+ Jyh-Dong Chiou, MS64
+ John Homer, MS65-2
+ Uday Kumthekar, MS64
+ Harold Swiger, MS65-2
• Eric Woods, MS65-2

According to the current design specifications, the prairie grasses would be planted in combination with a cover crop of faster growing grasses and a variety of forbs. Recently a concern was raised regarding the ability of the cover crop to establish well enough to provide short-term erosion control. Concerns were also raised regarding the ability to conduct required inspections and monitoring on the On-Site Disposal Facility (OSDF) due to the height of the prairie grass.

The meeting focused on a proposal to change the approved design specification for the vegetative cover on the OSDF from native prairie grasses to a Tall Fescue mix and prairie grasses combination. This combination was proposed to provide better short-term protections of the cell cover and to allow long-term transition into a vegetative cover of prairie grasses.

Major agreements achieved in the meeting regarding the vegetative cover on the OSDF included the following:

1. As directed by GeoSyntec, the long-term goal for the OSDF cover should be a vegetative cover of prairie grasses.

2. There is insufficient site-specific field experience/know-how of successful cover crop or Fescue growth in organic-poor soil conditions, especially when the grasses were seeded in late fall.

3. Both a shorter prairie grass mix and a Tall Fescue mix would allow adequate monitoring and inspection of the OSDF cap.

4. Based on GeoSyntec's evaluation, that there was very little risk to the OSDF cap due to the depth of the prairie grass roots. It is very unlikely that the roots will penetrate below the Bio-Intrusion layer on the OSDF.

5. The use of prairie grass would be maintained for the OSDF vegetative cover with select changes to emphasize the shorter grasses and eliminate deep rooting forbs.

6. It is too late in the season to seed Tall Fescue (or any other grass) in order to provide a sufficient vegetative cover before this coming winter. Therefore, the proposed change was rejected.

7. Current compaction approach of the vegetative soil layer needs to be modified. DOE will develop new vegetative soil layer and topsoil layer placement/compaction requirements through a Design Change Notice.

8. The erosion control matting to be applied to the cell cap would help retain moisture and support growth of the vegetative cover. DOE will evaluate further enhancement of the matting applications at the toe for more erosion protections.

9. If the cover crop used with the prairie grasses did not germinate and provide cover as expected in the spring of 2002, DOE will be allowed to use other appropriate engineering and/or vegetative approaches to provide needed protection of the cell cap against surface erosion. Other appropriate approaches may include but not limited to Tall Fescue mix, silt fences, hay bales, more matting etc. as determined appropriate by DOE.

10. Seeding approach of the caps of subsequent cells will incorporate lessons learned in Cell 1 cap as well as future experiences to be gained in the field restoration works.

In order to facilitate cell inspection, prairie grass would require an annual mowing in the fall and then baling (or equivalent) every three years to remove thatch from the OSDF. Mowing and baling on the OSDF cap would be carried out at the appropriate frequencies depending on completion of the individual cells, until the Site Completion Date when remediation of the FEMP will be complete. Any maintenance of the vegetative cover of the OSDF required after the Site Completion date would be implemented as part of Long-Term Stewardship on the OSDF.

WEW:jkp

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 3	(6) DATE 10/16/2001
(3) S/C TITLE: On-Site Disposal Facility (ODF) Phase III - Cell 1 Final Cover Construction		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Changes to Placement of Topsoil	(11) DCN NO.: 20103-035	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications Section 02920	20103-TS-0003	1	Part 3.01.C

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Justification: Based on the agreements made at the 11 October 2001 meeting with Ohio EPA and DOE on changes to the permanent vegetation mix (see pages 2 and 3), changes to surface preparation of the vegetation soil layer prior to placement of the topsoil are necessary.
Existing Condition: The top surface of the vegetative soil layer is to be scarified to a minimum depth of 1 inch prior to spreading the topsoil.
Proposed Change: Revise Part 3.01.C of Section 02920 to read as follows: "Prior to spreading topsoil, scarify or otherwise loosen the upper surface of the previous layer to a depth of 6 inches ±2 inches. Scarify using a disc harrow or other method approved by the Construction Manager".

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec Consultants, Inc.	Oct. 16, 2001	Samuel H. Wolinsky	10/22/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 10/18/01
Kwasi Badu-Tweneboah, GeoSyntec Consultants, Inc.

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: SH Wolinsky 10/24/01
PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE: 10/22/01

PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19)
BILL ZEBICH

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED
COPY NO. C011 ORIGINAL

000389

DCN No: 20103-035

4556

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

FLUOR FERNALD CONTRACT
DE-AC24-01OH20115
PAGE 1 OF 2

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OCT 18 2001
KBT

CONFERENCE/MEETING NOTES
NOTES LETTER LOG NO.:2001-0034

SUBJECT: Vegetative Cover of the On-Site Disposal Facility

MEETING DATE: October 11, 2001

LOCATION: Fluor Fernald Office, Administration Building, Executive Conference Room

ISSUE DATE: October 17, 2001

Project Number 20100.1.5/20900.1.5, ECDC

DISTRIBUTION: + Attendees +.+ Part-time * Author of Notes

DOE
+ Robert Janke, MS45
+ Johnny Reising, MS45
+ Pete Yerace, MS45

Ohio EPA
+ Joe Bartoszek, Ohio EPA
+ Tom Schneider, Ohio EPA

Fluor Fernald
+ Jyh-Dong Chiou, MS64
+ John Homer, MS65-2
+ Uday Kumthekar, MS64
+ Harold Swiger, MS65-2
+ Eric Woods, MS65-2

According to the current design specifications, the prairie grasses would be planted in combination with a cover crop of faster growing grasses and a variety of forbs. Recently a concern was raised regarding the ability of the cover crop to establish well enough to provide short-term erosion control. Concerns were also raised regarding the ability to conduct required inspections and monitoring on the On-Site Disposal Facility (OSDF) due to the height of the prairie grass.

The meeting focused on a proposal to change the approved design specification for the vegetative cover on the OSDF from native prairie grasses to a Tall Fescue mix and prairie grasses combination. This combination was proposed to provide better short-term protections of the cell cover and to allow long-term transition into a vegetative cover of prairie grasses.

Major agreements achieved in the meeting regarding the vegetative cover on the OSDF included the following:

1. As directed by GeoSyntec, the long-term goal for the OSDF cover should be a vegetative cover of prairie grasses.

DCN NO: 20143-035 3

4556

2. There is insufficient site-specific field experience/know-how of successful cover crop or Fescue growth in organic-poor soil conditions, especially when the grasses were seeded in late fall.

3. Both a shorter prairie grass mix and a Tall Fescue mix would allow adequate monitoring and inspection of the OSDF cap.

4. Based on GeoSyntec's evaluation, that there was very little risk to the OSDF cap due to the depth of the prairie grass roots. It is very unlikely that the roots will penetrate below the Bio-Intrusion layer on the OSDF.

5. The use of prairie grass would be maintained for the OSDF vegetative cover with select changes to emphasize the shorter grasses and eliminate deep rooting forbs.

6. It is too late in the season to seed Tall Fescue (or any other grass) in order to provide a sufficient vegetative cover before this coming winter. Therefore, the proposed change was rejected.

7. Current compaction approach of the vegetative soil layer needs to be modified. DOE will develop new vegetative soil layer and topsoil layer placement/compaction requirements through a Design Change Notice.

8. The erosion control matting to be applied to the cell cap would help retain moisture and support growth of the vegetative cover. DOE will evaluate further enhancement of the matting applications at the toe for more erosion protections.

9. If the cover crop used with the prairie grasses did not germinate and provide cover as expected in the spring of 2002, DOE will be allowed to use other appropriate engineering and/or vegetative approaches to provide needed protection of the cell cap against surface erosion. Other appropriate approaches may include but not limited to Tall Fescue mix, silt fences, hay bales, more matting etc. as determined appropriate by DOE.

10. Seeding approach of the caps of subsequent cells will incorporate lessons learned in Cell 1 cap as well as future experiences to be gained in the field restoration works.

In order to facilitate cell inspection, prairie grass would require an annual mowing in the fall and then baling (or equivalent) every three years to remove thatch from the OSDF. Mowing and baling on the OSDF cap would be carried out at the appropriate frequencies depending on completion of the individual cells, until the Site Completion Date when remediation of the FEMP will be complete. Any maintenance of the vegetative cover of the OSDF required after the Site Completion date would be implemented as part of Long-Term Stewardship on the OSDF.

WEW:jkp

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.:FSC-642 to IT Corp.	(5) Pg 1 Of 1	(6) DATE 10/18/2001
(3) S/C TITLE: OSDF Phase III			(11) RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☑ M ☐ C ☐ OTHER ☐	(4A) RCI/DCN TITLE: Remove Overhead Electrical Cable and associated utility poles		(11) DCN NO.: 20103-036

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
480 volt feed to OSDF trailers	90X-5500-E-00506	2	

(9) ☐ RCI-INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER (9) ☑ DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

☐ REQUIRED ☐ NOT REQUIRED

The overhead electrical service from OP215 to trailers T-545 and T-546 is no longer required because the trailers are no longer there and the overhead cable affects excavation work to be performed by IT Corp. to remove phase I of the leachate piping.
This DCN would remove the 480volt cable from OP-215 to OP-213 and OP-214 and remove utility poles OP-213 and OP-214 and have trailers T-545 and T-546 removed from the drawing.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Jimmy V. Salyers	Fluor Fernald	10/18/2001		10/18/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☐ YES (14) FOR DCN: ☑ APPROVED ☐ APPROVED AS NOTED ☐ DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: J. E. Kerl 10-23-01 ☐ FIT ☐ FORM ☒ FUNCTION	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) PERFORMANCE GRADE: (17)	DATE:
(18) CONSTRUCTION CONCURRENCE DATE: 10-29-01 PURCHASE REQUISITION REQUIRED: ☑ YES ☐ NO (19) IN PLACE	(21) FIELD WORK COMPLETED: (SIGNOFF BY CE OR PE) DATE:

000392

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. C011

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4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 1	(6) DATE
20103	FSC-642		10/22/2001

(3) S/C TITLE: OSDF Phase III

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [✓] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: Remove/Replace Utility Poles

(11) DCN NO.: 20103-037

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Bulk debris storage electrical layout	90X-5500-E-00549	0	
Bulk debris storage electrical details	90X-5500-E-00550	0	
Grid 16 Underground Utilities	22B-5500-P-00675	~~10~~ 11	JAL 10/30/01
	DCN-20103-032		

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [✓] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

During the installation of utility poles and overhead electrical cables per DCN 20103-032, we realized that two existing utility poles we were to use are not adequate to support the new cable. This DCN is to direct the removal and replacement of utility poles NW20 and NW19 and the removal with no replacement of NW18. The replacement poles will be 35' class II Southern Pine, 100% treated with 5-1/2' minimum burial. Installation shall be as governed by existing DCN 20103-032.
Replacement poles will keep the same numbers as the removed poles.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Jimmy V. Salyers	Fluor Fernald	10/22/2001		10/22/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [✓] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 10-23-01

[ ] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE: CECP3

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE:

PERFORMANCE GRADE: (17)

(18) CONSTRUCTION CONCURRENCE DATE: 10 29 01

PURCHASE REQUISITION REQUIRED: [ ] YES [✓] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

000393

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. 011

ORIGINAL

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 5	(6) DATE
20103	FSC-642		October 22, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: Change to Final Cover Erosion Mat

(11) DCN NO.: 20103-038

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications OSDF - Phase III Final Cover Construction	20103-TS-0003	1	Section 02270, Part 3.01.B
Drawing: OSDF - Phase III Final Cover System Details	90X-6000-G-00317	2	Sheet G-22

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: These changes resulted from an October 11, 2001 meeting between OEPA, DOE, and Fluor Fernald (meeting notes attached).
Existing Condition: Current design specifies either Coir or jute erosion mat is acceptable over the entire OSDF final cover. The meeting resulted in a DOE commitment to further evaluate enhancement of the erosion mat.
Proposed Change: Coir mat is specified as the only erosion mat to be used in specific OSDF cell final cover locations. See pages 2 and 3 of this DCN for specific changes.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / RE:	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	10/22/01	Samuel H. Wolinsky	10/22/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 10/22/01
KHASI BADU-TWEREBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) SH WOLINSKY DATE: 10/24/01
PERFORMANCE GRADE: (17) 5 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE: 10/22/01

PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19)
BILL ZEBICH

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

ECDC CONTROLLED COPY NO. C 011

000394

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ORIGINAL

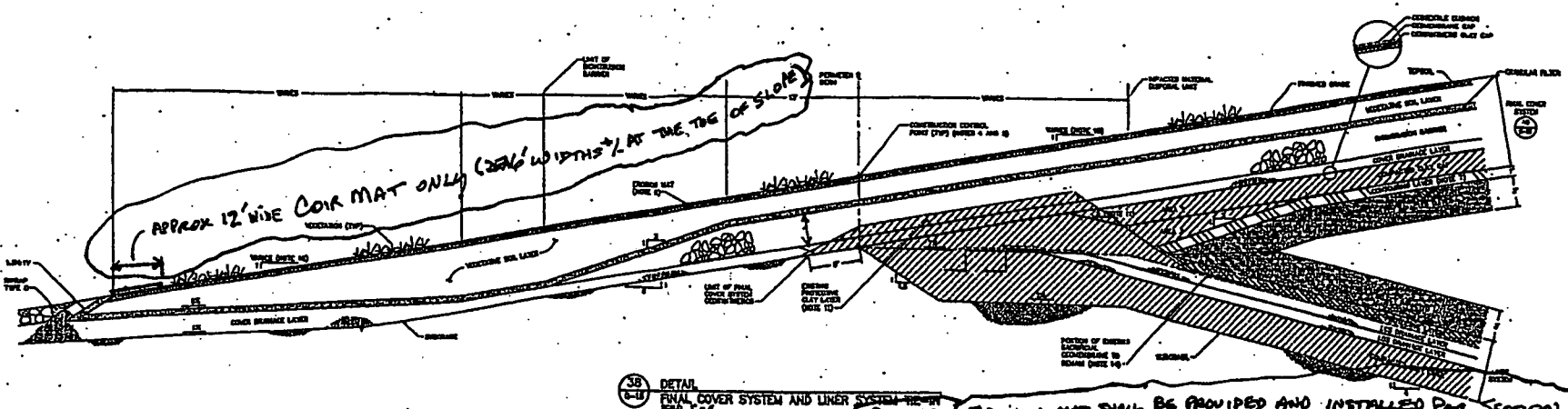
1. Revise Section 02270, Part 3.01.B.1 (Page 02270-4) to read as follows:

"Provide erosion mat at the locations indicated on the Construction Drawings, the locations stated on the Contractor's Surface-Water Management and Erosion Control Work Plan, and those locations resulting from Section 02930 permanent slope stabilization requirements. Begin installation of erosion mat in a specific area within 48 hours after seeding has been completed in that area. See Section 02930 for the seeding mixtures."

2. Revise Section 02270, Part 3.01.B.4 (Page 02270-4) to read as follows:

"Install and staple erosion mat in accordance with Manufacturer's recommendations, except only 4 inch minimum length degradable resin staples, or an alternative approved by the Construction Manager, shall be used."

3. See sketch on page 4 of this DCN for specific OSDF cell final cover locations where Coir mat is specified as the only erosion mat to be used.



38 DETAIL
FINAL COVER SYSTEM AND LINER SYSTEM TIE-IN
SCALE 1" = 5'

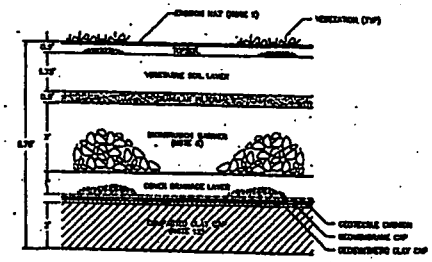
REVISED NOTE 9: EROSION MAT SHALL BE PROVIDED AND INSTALLED PER SECTION 02270, EXCEPT COIRMAT ONLY SHALL BE USED IN 2 LOCATIONS AS FOLLOWS: 1) 2: SIX FOOT WIDTHS AS INDICATED ON DETAIL 38 ABOVE (NORTH, EAST, + WEST SIDES ONLY). 2) AT 10:1 TO 6:1 SLOPE TRANSITION ON NORTH, EAST, + WEST FINAL COVER SLOPES. 1 EA 6 FOOT WIDTH ON 10:1 OVERLAPPING 1 EA 6 FOOT WIDTH ON 6:1. OVERLAP IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

SEE REVISED NOTE 9 ABOVE

39 DETAIL
FINAL COVER SYSTEM TEMPORARY TERMINATION
SCALE 1" = 5'

INFORMATION ONLY

DCN 20103-038 PAGE 3



40 DETAIL
FINAL COVER SYSTEM
SCALE 1" = 5'

FINAL COVER SYSTEM COMPONENT SUMMARY (NOTE 3)

SYMBOL	COMPONENT	MATERIAL	SPECIFICATION SECTION
	GEOMEMBRANE CAP		
	GEOSYNTHETIC CLAY CAP		
	CONCRETE CURBING		
	EROSION MAT		
	COMPACTED CLAY CAP		
	COVER DRAINAGE LAYER		
	GEOSYNTHETIC BARRIER		
	GRANULAR FILTER		
	VEGETATIVE SOIL LAYER		
	TOPSOIL		
	PROTECTIVE LAYER (NON-SPACED NON-GRANULAR)		
	CONTOURING LAYER (NON-SPACED)		
	VEGETATION		

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

FLUOR FERNALD, INC.

ON-SITE DISPOSAL FACILITY – PHASE II

FINAL COVER SYSTEM DETAILS

4556

CERTIFIED–FOR–CONSTRUCTION

000396

4556

CONFERENCE/MEETING NOTES
NOTES LETTER LOG NO.:2001-0034

SUBJECT: Vegetative Cover of the On-Site Disposal Facility

MEETING DATE: October 11, 2001

LOCATION: Fluor Fernald Office, Administration Building, Executive Conference Room

ISSUE DATE: October 17, 2001

Project Number 20100.1.5/20900.1.5, ECDC

DISTRIBUTION: + Attendees + + Part-time • Author of Notes

DOE
+ Robert Janke, MS45
+ Johnny Reising, MS45
+ Pete Yerace, MS45

Ohio EPA
+ Joe Bartoszek, Ohio EPA
+ Tom Schneider, Ohio EPA

Fluor Fernald
+ Jyh-Dong Chiou, MS64
+ John Homer, MS65-2
+ Uday Kumthekar, MS64
+ Harold Swiger, MS65-2
+ * Eric Woods, MS65-2

According to the current design specifications, the prairie grasses would be planted in combination with a cover crop of faster growing grasses and a variety of forbs. Recently a concern was raised regarding the ability of the cover crop to establish well enough to provide short-term erosion control. Concerns were also raised regarding the ability to conduct required inspections and monitoring on the On-Site Disposal Facility (OSDF) due to the height of the prairie grass.

The meeting focused on a proposal to change the approved design specification for the vegetative cover on the OSDF from native prairie grasses to a Tall Fescue mix and prairie grasses combination. This combination was proposed to provide better short-term protections of the cell cover and to allow long-term transition into a vegetative cover of prairie grasses.

Major agreements achieved in the meeting regarding the vegetative cover on the OSDF included the following:

1. As directed by GeoSyntec, the long-term goal for the OSDF cover should be a vegetative cover of prairie grasses.

2. There is insufficient site-specific field experience/know-how of successful cover crop or Fescue growth in organic-poor soil conditions, especially when the grasses were seeded in late fall.

3. Both a shorter prairie grass mix and a Tall Fescue mix would allow adequate monitoring and inspection of the OSDF cap.

4. Based on GeoSyntec's evaluation, that there was very little risk to the OSDF cap due to the depth of the prairie grass roots. It is very unlikely that the roots will penetrate below the Bio-Intrusion layer on the OSDF.

5. The use of prairie grass would be maintained for the OSDF vegetative cover with select changes to emphasize the shorter grasses and eliminate deep rooting forbs.

6. It is too late in the season to seed Tall Fescue (or any other grass) in order to provide a sufficient vegetative cover before this coming winter. Therefore, the proposed change was rejected.

7. Current compaction approach of the vegetative soil layer needs to be modified. DOE will develop new vegetative soil layer and topsoil layer placement/compaction requirements through a Design Change Notice.

8. The erosion control matting to be applied to the cell cap would help retain moisture and support growth of the vegetative cover. DOE will evaluate further enhancement of the matting applications at the toe for more erosion protections.

9. If the cover crop used with the prairie grasses did not germinate and provide cover as expected in the spring of 2002, DOE will be allowed to use other appropriate engineering and/or vegetative approaches to provide needed protection of the cell cap against surface erosion. Other appropriate approaches may include but not limited to Tall Fescue mix, silt fences, hay bales, more matting etc. as determined appropriate by DOE.

10. Seeding approach of the caps of subsequent cells will incorporate lessons learned in Cell 1 cap as well as future experiences to be gained in the field restoration works.

In order to facilitate cell inspection, prairie grass would require an annual mowing in the fall and then baling (or equivalent) every three years to remove thatch from the OSDF. Mowing and baling on the OSDF cap would be carried out at the appropriate frequencies depending on completion of the individual cells, until the Site Completion Date when remediation of the FEMP will be complete. Any maintenance of the vegetative cover of the OSDF required after the Site Completion date would be implemented as part of Long-Term Stewardship on the OSDF.

WEW:jkp

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 2	(6) DATE
20103	FSC-642		Dec. 4, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: Change to Installation Periods and Methods for Permanent Seed Mixes and Erosion Mat

(11) DCN NO.: 20103-039

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications OSDF - Phase III Final Cover Construction	20103-TS-0003	1	Section 2270, Part 3.01.B & Section 02930, Parts 3.03.B & 3.03,D

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Change to the erosion mat staples is required due to the unavailability of the specified staples. Other changes are required due to the extension of the OSDF Cell 1 Final Cover construction schedule.
Existing Condition: Current design specifies 4" minimum degradable resin staples, end of fall seeding season on November 30, use of Broadcast Method for permanent seeding in inaccessible areas only, and initiation of erosion mat installation within 48 hours after seeding.
Proposed Change: See page 2 of this DCN for the proposed changes.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Eric Woods	Fluor Fernald, Inc.	12/4/01	Samuel H. Wolinsky	12/4/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

ECDC CONTROLLED COPY NO. 049

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 12/4/01
KWASI BADU-TWENEBOAH
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE:
PERFORMANCE GRADE: (17) 5 - SBDR 2000-0027 Applies SHWOLINSKY 12/12/01

(18) CONSTRUCTION CONCURRENCE DATE: 12/4/01
PURCHASE REQUISITION REQUIRED: [ ] YES [✓] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ORIGINAL

000399

1. Replace second sentence of Section 02270, Part 3.01.B.1 (Page 02270-4 and DCN 20103-038) with the following:

"Complete installation of erosion mat within 72 hours after seeding has been completed in a specific area unless earlier completion is necessary due to inclement weather. Seeding shall be as specified in Section 02930. If seeding coverage in an area is lost due to inclement weather prior to installation of the erosion mat, Contractor shall reseed the previously seeded area."

2. Revise Section 02270, Part 3.01.B.4 (Page 02270-4 and DCN 20103-038) as follows:

"Install and staple erosion mat in accordance with Manufacturer's recommendations, except staples shall be a minimum 6 inches in length."

3. Revise Section 02930, Part 3.03.B (Page 02930-7 and DCN 20103-007) as follows:

"The permanent seeding in wet and dry areas and the cell final cover shall be performed in the Spring Season between April 1 and June 15 and/or the Fall Season between September 20 and November 30, unless otherwise approved by the Construction Manager."

4. Revise Section 02930, Part 3.03.D.2.b (Page 02930-8) to read as follows:

"This method may also be used for permanent seeding in areas that are not accessible for seeding by the seed drill method or areas where seed drilling cannot be performed perpendicular to the direction of the surface-water flow."

5. Revise Section 02930, Part 3.03.D.2.f (Page 02930-8) to read as follows:

"Install seed by broadcasting evenly over the entire site using the seed rates indicated in this Section."

6. Revise Section 02930, Part 3.03.D.2.g (Page 02930-8) to read as follows:

"After application of seed, perform the following prior to placement of erosion mat:

i. For areas receiving seed mix for cell final cover permanent vegetation (Table 02930-1C), roll seeded area with a 200 to 600 pound drum roller after seeding. If surface is not accessible for the drum roller after seeding, apply sprayed mulch at 1500 pounds per acre minimum and 100 percent continuous coverage. Mix the mulch with water at a ratio of 50 pounds of mulch per 100 gallons of water.

ii. For areas receiving other seed mixes (Tables 02930-1A, 02930-1B, or 02930-2), rake seeded area after seeding."

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 2	(6) DATE
20103	FSC-642		Dec. 17, 2001

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [ ] OTHER [X]

(4A) RCI/DCN TITLE: Addition of Bent Strap and Low Air Pressure Tests for HDPE Pipe

(11) DCN NO.: 20103-040

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications OSDF - Phase III Final Cover Construction	20103-TS-0003	1	Section 2605, Parts 3.04 and 3.05

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: Bent Strap Testing was performed on trial butt-fusion weld joints on EPLTS Project pipe with positive results. In addition, reliminary low air pressure testing for HDPE piping prior to lowering into the trench was also successfully performed on the EPLTS Project. These tests were included in the EPLTS technical specification section 02605 via DCNs 20111-001 and 20111-007.
Existing Condition: OSDF Project Phase III technical specification section 02605 does not require Bent Strap, nor low air pressure testing.
Proposed Change: See page 2 of this DCN for the changes to OSDF Phase III requiring these tests.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE/PE:	DATE:
Samuel H. Wolinsky	Fluor Fernald, Inc.	12/17/01	Samuel H. Wolinsky	12/17/01

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

ECDC CONTROLLED
COPY NO. C011

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 12/17/01
KWASI BADU-TWENEBOAH, CHESHIRE
[ ] FIT [X] FORM [ ] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 12/18/01
PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies SHWOUNSKY

(18) CONSTRUCTION CONCURRENCE DATE: 12/18/01

(21) FIELD WORK COMPLETED:

PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19) Bill Zebek

(SIGNOFF BY CE OR PE) DATE:

000401

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ORIGINAL

1. Add the following new paragraph H to Section 02605, Part 3.04 (Page 02605-9) and re-label existing Part 3.04, paragraphs H and I to I and J respectively:

"Contractor shall destructively test the trial butt-fusion joints made each day to confirm joint integrity, operator procedure, and fusion machine set-up by performing a "Bent Strap" Test as follows:

The bent strap test specimen is prepared from the trial butt fusion spool after it has been allowed to cool to ambient temperature. A test strap that is at least 6" or 15 times the pipe wall thickness long on each side of the fusion, and about 1" or 1.5 times the pipe wall thickness wide is cut out of the trial fusion pipe. The strap is then bent so the ends of the strap touch. Any disbondment at the fusion shall be unacceptable, and indicates poor fusion quality. If failure occurs, fusion procedures and/or machine set-up shall be changed, and a new trial fusion and bent strap test specimen shall be prepared and tested. Field fusion shall not proceed until a trial test joint has passed the bent strap test."

2. Replace first sentence of Section 02605, Part 3.05.E.2 (Page 2605-10) with the following:

"Contractor shall perform preliminary low air pressure (pneumatic) testing at pressure no greater than 10 psi including soaping of joints for HDPE piping prior to lowering into the trench."

4556

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 2	(6) DATE
20103	FSC-642		January 11, 2002

(3) S/C TITLE: On-Site Disposal Facility (OSDF) Phase III - Cell 1 Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: Cell 1 Final Cover Monitoring - Revision at Valve House 1

(11) DCN NO.: 20103-041

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drwg: OSDF Final Cover Monitoring System, Valve House 1 Elec. Mods.	90X-5500-E-00584	0	Also see Rev. 1A of this Drawing per DCN 20103-033
Drawing: Valve House Electrical Details - EPLTS	90X-6000-E-~~0201~~ 00261 JAK 01/15/02	0 JAK 01/15/02	Sheet E-4

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Existing Conditions: The OSDF Cell 1 Final Cover monitoring device power & instrument cables are connected to Valve House 1 with battery and battery charger enclosures and power receptacles to be mounted inside the Valve House.
Proposed Change: Mount the battery and battery charger enclosures and power receptacles outside of Valve House 1 and provide weatherproof seals over related new and existing building penetrations in accordance with the attached sketch.
Justification: Relocating these enclosures and power receptacles outside of Valve House 1 will result in minimizing the potential for water infiltration, preventing interference with LTS pipe accessibility, and minimizing potential safety hazards within the Valve House.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE:	DATE:
James Kerl James E. Kerl	Fluor Fernald, Inc.	1-11-02	Samuel H. Wolinsky	1/11/02

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 1/14/02
KURT BADU-TWEREBOAH, GEOSYNTEC
[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 1/14/02
PERFORMANCE GRADE: (17) 4; SBDR-2000-0027 Applies
SH WOLINSKY

(18) CONSTRUCTION CONCURRENCE DATE: 1/14/02
Bill Zebert
PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

000403

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

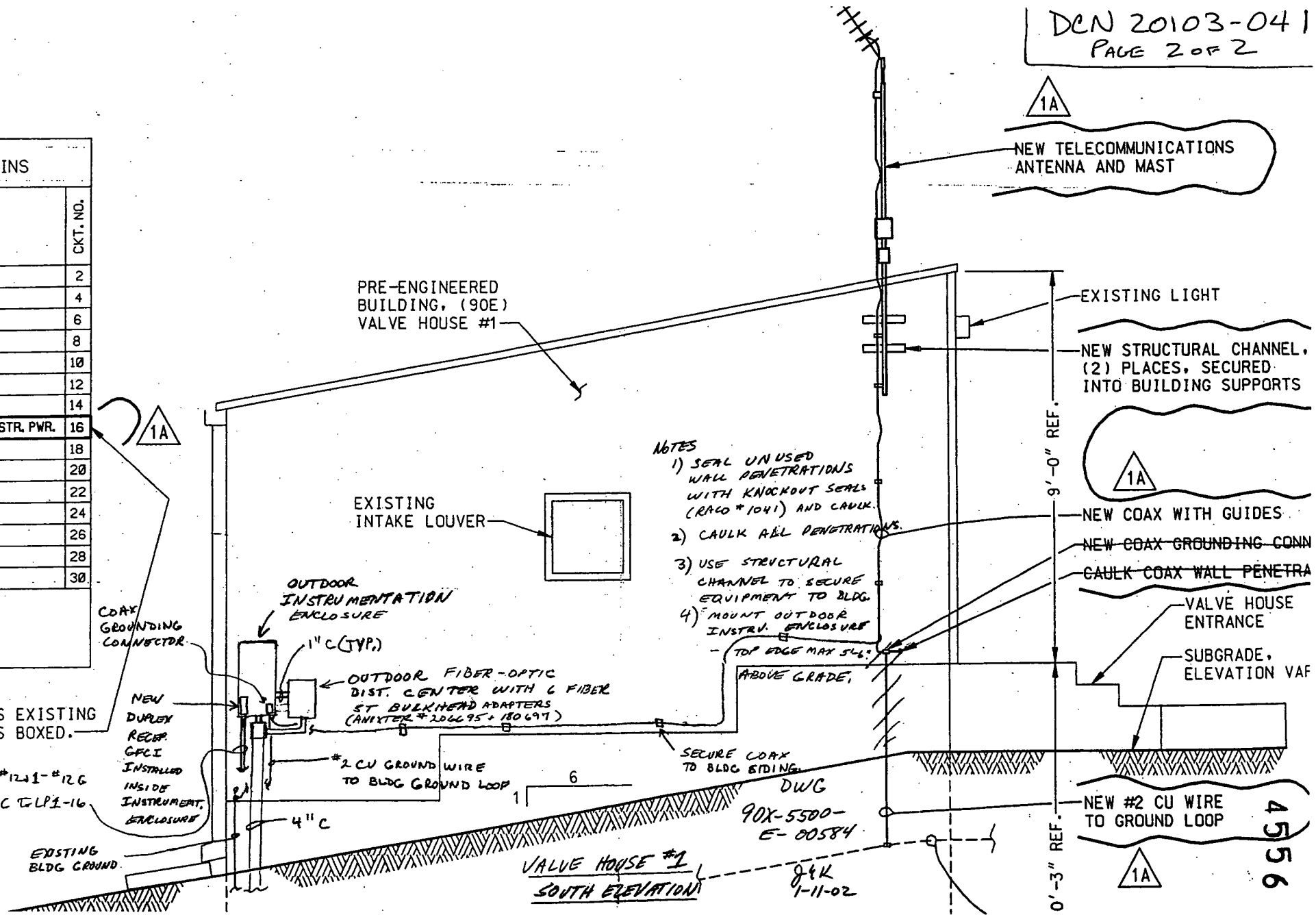
ECDC CONTROLLED COPY NO. C 011

ORIGINAL

DCN 20103-041
PAGE 2 OF 2

25A MAINS	
USE	CKT. NO.
P1 REC.	2
P2 REC.	4
HAUST FAN	6
EILING FAN	8
MCP	10
CEPTACLES	12
CEPTACLES	14
CELL CAP INSTR. PWR.	16
SPARE	18
SPARE	20
SPARE	22
SPACE	24
SPACE	26
SPACE	28
SPACE	30

NOTE :
ALL ITEMS EXISTING EXCEPT AS BOXED.



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RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.: 20103	(2) S/C NO.: FSC-642	(5) Pg 1 Of 1	(6) DATE 1/14/2002
(3) S/C TITLE: On-Site Disposal Facility (ODF) Phase III - Cell 1 Final Cover Construction		(11) RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Hydrostatic Testing Requirements for Horizontal Monitoring wells	(11) DCN NO.: 20103-042	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Technical Specifications Section 02605	20103-TS-0003	1	Part 3.05.E

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [ ] NOT REQUIRED

Justification: The solid components of the horizontal monitoring well pipes do not require final hydrostatic testing.
Existing Condition: Current HDPE pipe specifications require final hydrostatic testing of all solid wall HDPE pipes in the OSDF project including the horizontal monitoring well pipes.
Proposed Change: Revise Part 3.05.E.1. of Section 02605 to read as follows: "Final testing of ~~all~~ solid HDPE piping, excluding the horizontal monitoring well solid wall pipes from the OSDF cells, shall be hydrostatic".

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
Kwasi Badu-Tweneboah	GeoSyntec Consultants, Inc.	Jan 14, 2002	Samuel H. Wolinski	1/14/02

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [ ] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 1/14/02
Kwasi Badu-Tweneboah, GeoSyntec Consultants, Inc.

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 1/17/02
PERFORMANCE GRADE: (17) 4 - SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE: 1/14/02
Bill Zebuck
PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:
(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ORIGINAL

ECDC CONTROLLED COPY NO. C011

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/WO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 10	(6) DATE
20103/4339	FSC-462		1-23-02

(3) S/C TITLE: On Site Disposal Facility (OSDF) Phase III – Call I Final Cover Construction

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: OMTA Trailer Electrical Service

(11) DCN NO.: 20103-043

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing	90x-5500-E -00586	0	
"	90x-5500-E -00587	0	
"	90x-5500-E -00588	0	
"	90x-5500-E -00589	0	
"	96X-5900-E -00358	22	
"	96X-5500-E -02003	0	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: OSDF Requires an access control facility west of the OSDF. Additional trailers will be added to the area for an expanded access control facility.

Existing Condition: An Access control facility exists west of Cell 4. Limited power supply exists to trailers.

Proposed Change: Expand electrical capabilities including additional power poles to supply additional power to expansion of access control facility.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
J. E. Kerl J. E. Kerl	Fluor Fernald	1-23-02	Charles C. Van Arsdale	1/23/02

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: 23 JAN 2002

KURASI BADU-TWENEBOAH, GEOTECH

[ ] FIT [ ] FORM [X] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) Charles C. Van Arsdale DATE: 1/23/02

PERFORMANCE GRADE: (17) SBDR 2000-0027 Applies

(18) CONSTRUCTION CONCURRENCE DATE: 1/23/02

PURCHASE REQUISITION REQUIRED: [X] YES [ ] NO (19)

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE:

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

DOC CONTROLLED COPY NO. C- 011

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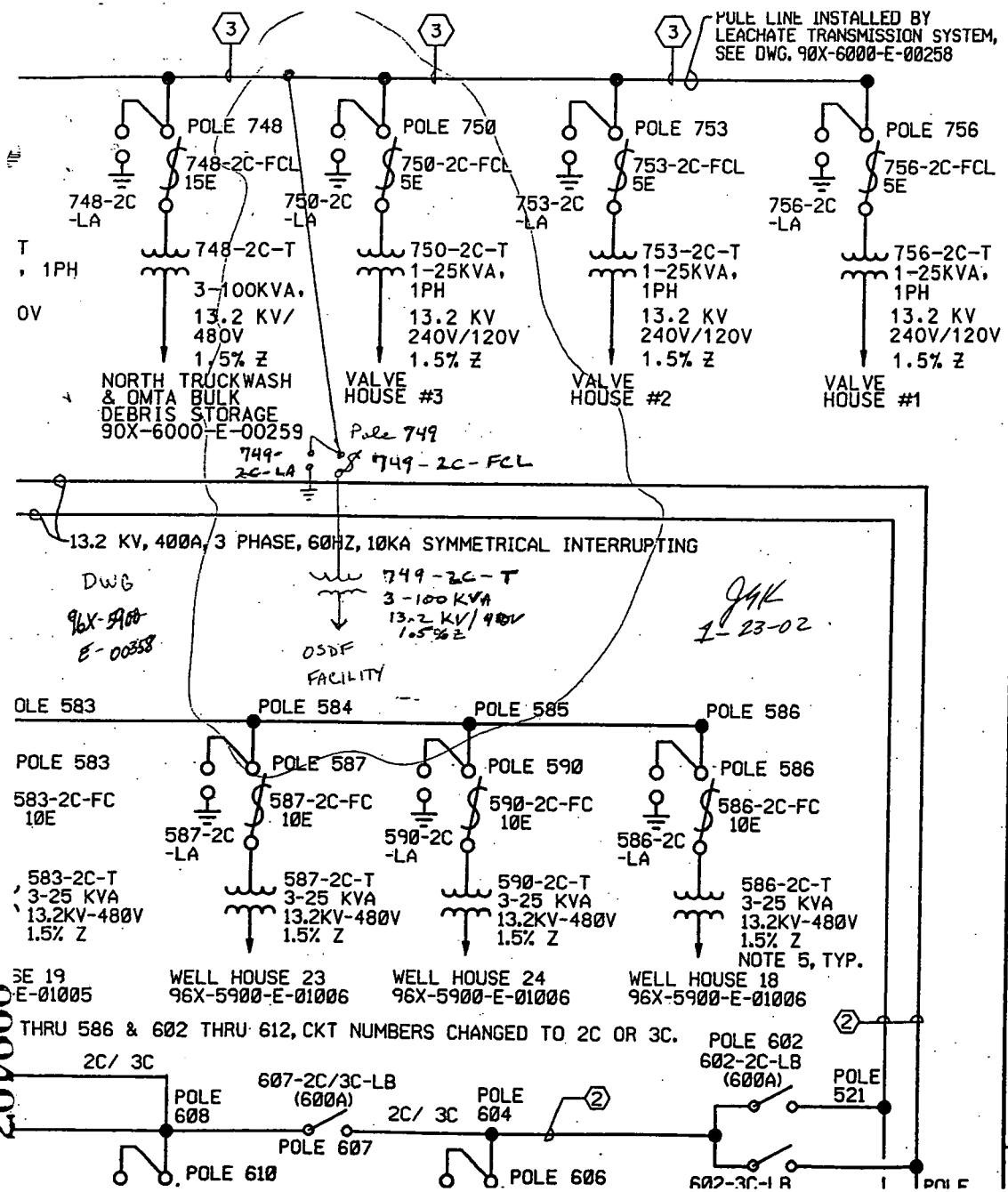


NOTES

1. N - INDICATES NORMAL FEED
   A - INDICATES ALTERNATE OR EMERGENCY FEED
2. UNIT SUBSTATION. UNLESS OTHERWISE NOTED, RATING IS 1000KVA, 13200/480V, 3 PH, 60 HZ, CONNECTED Δ PRIMARY, & Y SECONDARY.
3. ALL SWITCHES AND CUTOUTS RATED 13.2KV, 10KA SYMMETRICAL INTERRUPTING UNLESS NOTED. CUTOUTS ARE RATED 200A EXCEPT FOR FUSES LESS THAN 100E, WHICH ARE 100A.
4. SEE 96X-5900-E-00352 & 96X-5900-E-00356 FOR POLE LOCATIONS, NUMBERS, AND EQUIPMENT.
5. POLE MOUNTED TRANSFORMER RATINGS ARE 20.5KV WYE/13.2KV DELTA, 3 PH. 60 HZ CONNECTED Δ PRIMARY, & Y SECONDARY.
6. SEE LEGEND ON 96X-5900-E-00352 FOR EQUIPMENT IDENTIFICATION.
7. SEE 22X-5500-E-269 FOR UNDERGROUND 13.2 KV DISTRIBUTION SYSTEM SINGLE LINE DIAGRAM & 22X-5500-E-00720 FOR CONDUIT ROUT
8. SEE 96X-5900-E-01002, MASTER SITE ELECTRICAL POWER DISTRIBUTION REFERENCE DRAWING DIAGRAM FOR 480 VOLT SINGLE LINE CONTINUATION REFERENCE DRAWINGS.
9. SET AT 100:5 AMPS.

LEGEND:

INSTRUMENT IDENTIFICATION	
50/51	OVERCURRENT RELAY, TYPE IAC
51	OVERCURRENT RELAY, TYPE IAC
51G	OVERCURRENT RELAY, TYPE IAC
51N	OVERCURRENT RELAY, TYPE IAC
86T	AUXILIARY RELAY
87T	DIFFERENTIAL CURRENT RELAY, TYPE HDD
87TG	OVERCURRENT RELAY, TYPE IAC
A	AMMETER, TYPE AB-18
V	VOLTMETER, TYPE AB-18
W	POLYPHASE WATTMETER, TYPE AB-18
WHM	WATTHOUR METER, TYPE DS-43

CABLE
1. 3- 350 KCMIL, #2 GND, 133% INSUL., 15KV, CU IN 4"C
2. 3-1/C 336 KCMIL, ASCR, 'MERLIN'
3. 3-1/C #2, ACSR, 'SPARROW'

15 KV CABLE TERMINATION

4556

DCN 20103-043

Page 2 of 10

REF DWG NO.	DRAWING TITLE

000402

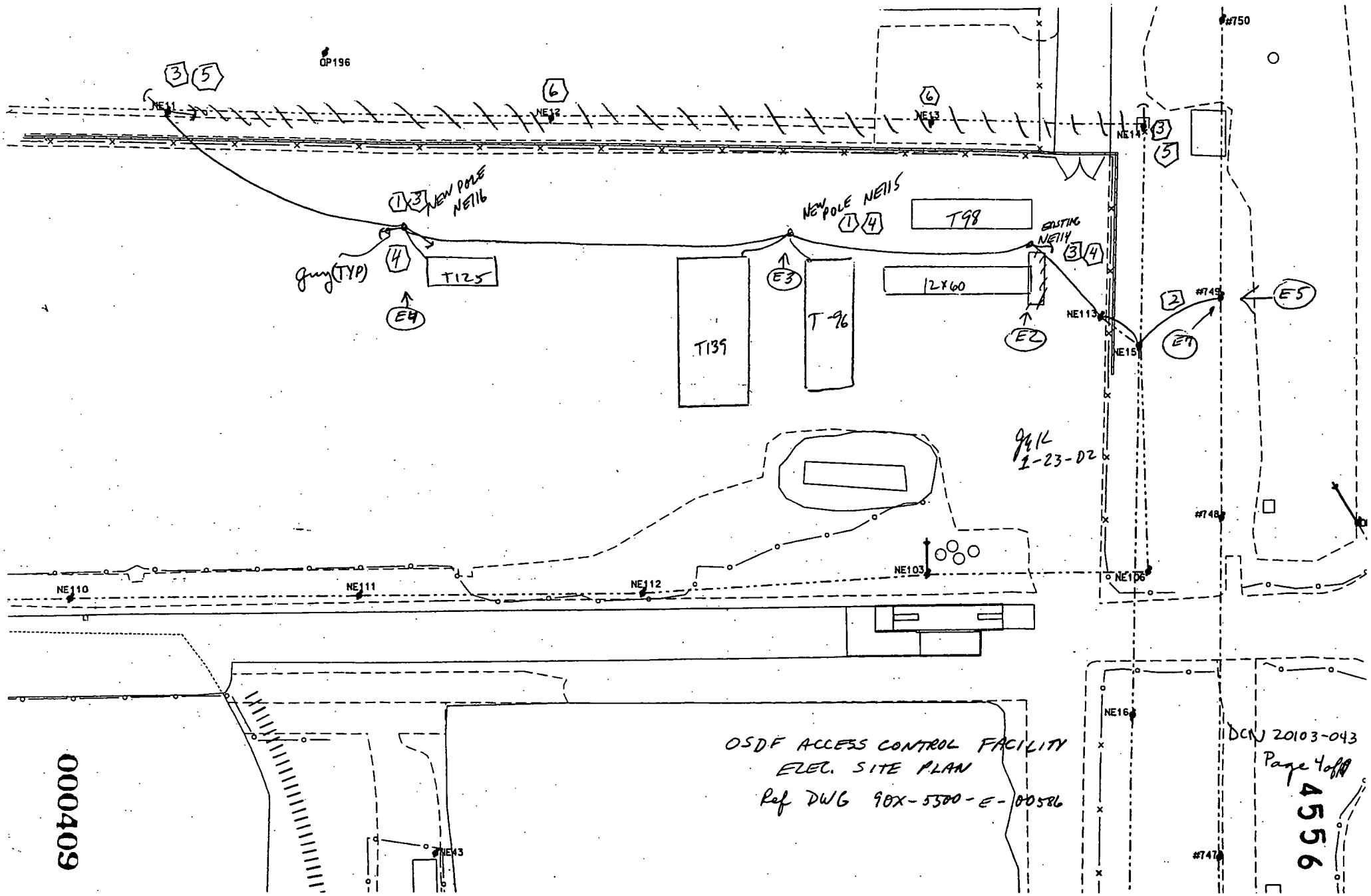
730	N/A	55'	479,568	1,350,592	✓	730-2C-LA	730-2C-FCL	2-5E		730-2C-T	1-25
731	N/A	55'	479,702	1,350,598	✓						
732	N/A	55'	479,834	1,350,603	✓						
733	N/A	55'	479,967	1,350,607	✓						
734	N/A	55'	480,094	1,350,612	✓						
735	N/A	55'	480,197	1,350,616	✓						
736	N/A	55'	480,337	1,350,622	✓						
737	N/A	55'	480,461	1,350,630	✓	737-2C-LA	737-2C-FCL	3-5E		737-2C-T	3-25
738	N/A	55'	480,628	1,350,628	✓						
739	N/A	55'	480,762	1,350,629	✓						
740	N/A	55'	480,895	1,350,631	✓						
741	N/A	55'	481,022	1,350,633	✓	741-2C-LA	741-2C-FCL	2-5E		741-2C-T	1-25
742	N/A	55'	481,156	1,350,635	✓						
743	N/A	55'	481,294	1,350,636	✓						
744	N/A	55'	481,428	1,350,637	✓	744-2C-LA	744-2C-FCL	2-5E		744-2C-T	1-25
745	N/A	55'	481,562	1,350,640	✓						
746	N/A	55'	481,668	1,350,641	✓						
747	N/A	55'	481,828	1,350,643	✓	747-2C-LA	747-2C-FCL	2-5E		747-2C-T	1-25
748	N/A	55'	481,990	1,350,645	✓	748-2C-LA	748-2C-FCL	3-15E		748-2C-T	3-100
749	N/A	55'	482,096	1,350,646	✓	749-2C-LA	749-2C-FCL	3-15E		749-2C-T	3-100
750	N/A	55'	482,229	1,350,648	✓	750-2C-LA	750-2C-FCL	2-5E		750-2C-T	1-25
751	N/A	55'	482,363	1,350,650	✓						
752	N/A	55'	482,496	1,350,650	✓						
753	N/A	55'	482,629	1,350,653	✓	753-2C-LA	753-2C-FCL	2-5E		753-2C-T	1-25
754	N/A	55'	482,762	1,350,654	✓						
755	N/A	55'	482,895	1,350,655	✓						
756	N/A	55'	483,028	1,350,658	✓	756-2C-LA	756-2C-FCL	2-5E		756-2C-T	1-25

DWG 96X-5[illegible]-E 0 2003 JGK 1-23-02

4556

DCN. 20103-04
Page 3 of 10

000408


OP196
NE11
NE12
NE13
NE14
NE15
NE16
NE103
NE106
NE110
NE111
NE112
NE113
NE43
#750
#749
#748
#747
NEW POLE NE116
NEW POLE NE115
EXISTING NE114
Guy (TYP)
T125
T139
T-96
T98
12X60
E1
E2
E3
E4
E5
GJK 1-23-02
OSDF ACCESS CONTROL FACILITY
ELEC. SITE PLAN
Ref DWG 90X-5500-E-00586
DCN 20103-043
Page 4 of 8
4556
000409

Fluor Fernald, Inc.
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 648-6200

4556

ENGINEERING CALCULATIONS

PROJECT NUMBER:	
BY:	MK
DATE:	1-23-02
PAGE:	OF
CHECKED BY:	
REVISED:	

SUBJECT: Notes for SITE PLAN

Installation Notes

1 Install new poles NE115 and NE116

2 Install electrical transformers, equipment, aerial wiring and conduit/wiring as shown on details and single line diagram. Aerial cable shall be maintain 18ft min above grade or higher depending on field conditions

3. Install guys on poles NE114, N14, NE11 & NE116, see chart below. Use sidewalk guy on NE114.

4 Install 4-light fixtures on poles NE114, NE115 and NE116. See details and single line diagram for model and conduit/wiring information.

5) Secure existing wiring on poles with deadend connectors and remove cable between NE14 and NE11. See DCN 20103-019 for existing electrical power single line.

6) Remove poles NE12 and NE13

Cable Sag between Poles

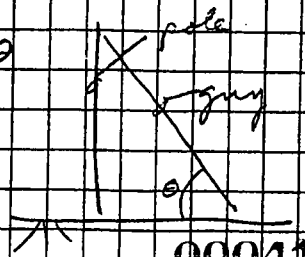
Cable span	Sag
749 to NE15	Slack span
NE15 to NE13	" "
NE13 to NE14	" "
NE14 to NE115	3 ft
NE15 to NE116	3 ft
NE16 to NE11	3 ft

Proposed Pole Coordinates

	E	N
NE115	1350417.81	482153.83
NE116	1350265.01	482156.71

Guy Wire Anchoring

Pole	Anchor	Guys	Angle of guy θ
NE14	1-12"	1-1/2"	60°
NE14	1-12"	1-1/2"	SIDEWALK
NE16	2-12"	ONE 1/2" PER ANCHOR	60°
NE11	2-12"	" " "	60°



000410

DCN 20103-043

~~#737~~	~~(1)-14" EXISTING~~	~~(1)-1/2" NEW~~	~~50°~~
~~SE185~~	~~(1) 12" NEW~~	~~(1)-1/2" NEW~~	~~60°~~

4-23-02

GENERAL NOTES: FOR SITE PLAN

1. ALL WIRING SHALL BE COPPER (CU) WITH THWN INSULATION UNLESS OTHERWISE NOTED.
2. ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED USING STRUCTURAL CHANNEL UNLESS OTHERWISE NOTED.
3. PRIOR TO DIGGING, CONSULT UNDERGROUND UTILITIES DWGS ~~22F-5500-P-00663 (GRID-4)~~ FOR THE LATEST UNDERGROUND UTILITY INFORMATION ON FILE. AND SK 20102-004
4. DIG SETTING HOLES LARGE ENOUGH TO PERMIT USE OF POWER TAMPERS TO FULL DEPTH. PLACE EARTH IN MINIMUM 6 INCH LAYERS AND PACK TO 95% DENSITY PER ASTM D698. BANK EARTH 12" ABOVE GRADE.
5. NEW POLE(S) SHALL BE 45 FEET, CLASS 2 SOUTHERN PINE, 100% TREATED WITH 6-1/2 FEET MINIMUM BURIAL.
6. NEW AERIAL WIRING TO BE AL QUADRAPLEX (3 INSULATED AND 1 BARE) ATTACHED TO POLES WITH MESSENGER HANGERS WITH MAX. 3 FEET CABLE SAG BETWEEN POLES. FOR POLE GUY, ANCHORING, ATTACHMENT AND GROUNDING DETAILS, SEE DWG'S. 16X-5500-E-00105 & 00106.
7. MAINTAIN 1 FOOT SPACING BETWEEN EXISTING 480V WIRING AND NEW ~~240V~~ 480V WIRING (WHERE APPLICABLE).
8. FOR POLE COORDINATES FOR EXISTING POLES, SEE DWG. 22X-5500-E-00953.
9. AS BUILT LOCATION COORDINATES (NAD83) FOR PROPOSED POLE(S) TO BE SUBMITTED TO CADD SERVICES UPON COMPLETION OF JOB.
10. TRAILER(S) SHALL BE INSTALLED ACCORDING TO TYPICAL TRAILER INSTALLATION DWG'S. 44X-5500-E-00363, 44X-5500-E-00366 AND 44X-5500-S-00364.

4556

DCN 20103-049
Page 6 of 18

00041

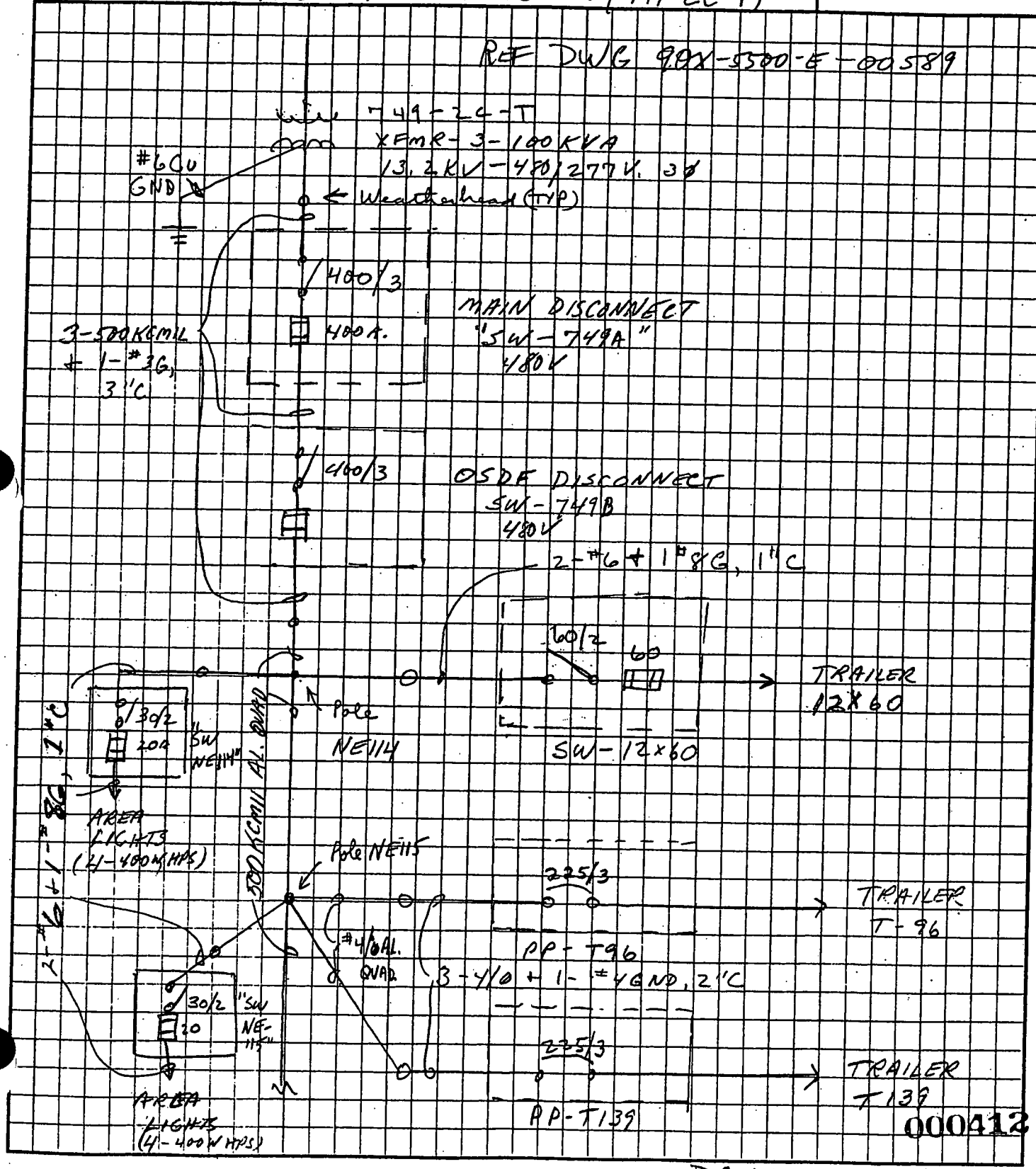
Fluor Fernald, Inc.
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 648-6200

4556

ENGINEERING CALCULATIONS

PROJECT NUMBER:	
BY:	JAK
DATE:	1-21-02
PAGE:	OF
CHECKED BY:	
REVISED:	

SUBJECT: SINGLE LINE DIAGRAM (749-2C-T)



000412

DCN 20103-043

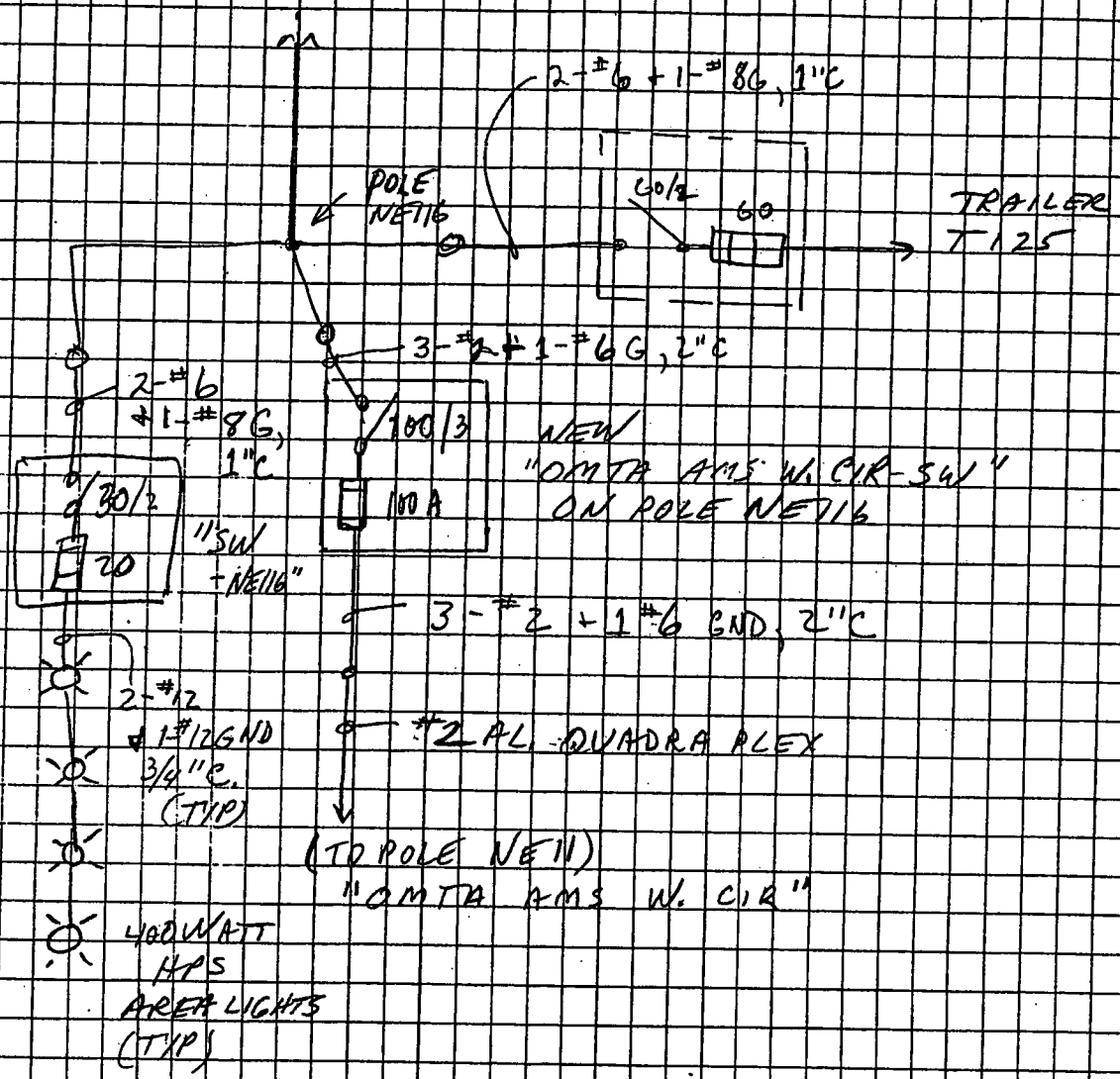
Fluor Fernald, Inc.
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 648-6200

4556

ENGINEERING CALCULATIONS

PROJECT NUMBER:	
BY:	GJK
DATE:	1-21-02
PAGE:	OF
CHECKED BY:	
REVISED:	

SUBJECT: SINGLE LINE (CONT)



000413

DCN 20103-043
Page 8 of 10

4556

RECEIVED

MAR 18 2002

RCI/DCN FORM

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1) PROJECT/CWO/RES NO.:	(2) S/C NO.:	(5) Pg 1 Of 12	(6) DATE
20103/14367			3-08-02

(3) S/C TITLE:

(11) RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [ ] OTHER [ ]

(4A) RCI/DCN TITLE: T139 Electrical Service

(11) DCN NO.: 20103-044

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Drawing	92X-5900-E-00472	4	
"	92X-5900-E-00478	2	
"	92X-5900-E-01003	1	
"	96X-5900-E-00358	22	
"	96X-5900-E-00352	4	
"	96X-5900-E-00320	1	

(9) [ ] RCI-INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER (9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

[ ] REQUIRED [X] NOT REQUIRED

Justification: OSDF is installing T139 south of DOA .
Existing Condition: Existing power is 480 volt single phase, t139 needs 480 volt 3 phase.

Proposed Change: Improve power to provide 480 volt 3 phase power.

(10) REQUESTOR:	COMPANY:	DATE:	(12) CE / PE	DATE:
J. E. Kerl J E Kerl	Fluor Fernald	3-08-02	SH WOCLINSKY	3/12/02

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? [ ] NO [X] YES (14) FOR DCN: [X] APPROVED [ ] APPROVED AS NOTED [ ] DISAPPROVED

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL/DISAPPROVAL DATE: James E. Kerl 3-8-02

[ ] FIT [ ] FORM [✓] FUNCTION

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 3/12/02

PERFORMANCE GRADE: (17) 5-SBDR-2000-0027 APPLIES

(18) CONSTRUCTION CONCURRENCE DATE:

PURCHASE REQUISITION REQUIRED: [✓] YES [ ] NO (19) Bill Zebek 3/12/02

(21) FIELD WORK COMPLETED:

(SIGNOFF BY CE OR PE) DATE 000414

FS-F-4259
REV. 5: 10/01/99: ED-12-5002

ECDC CONTROLLED COPY NO. 011

ORIGINAL

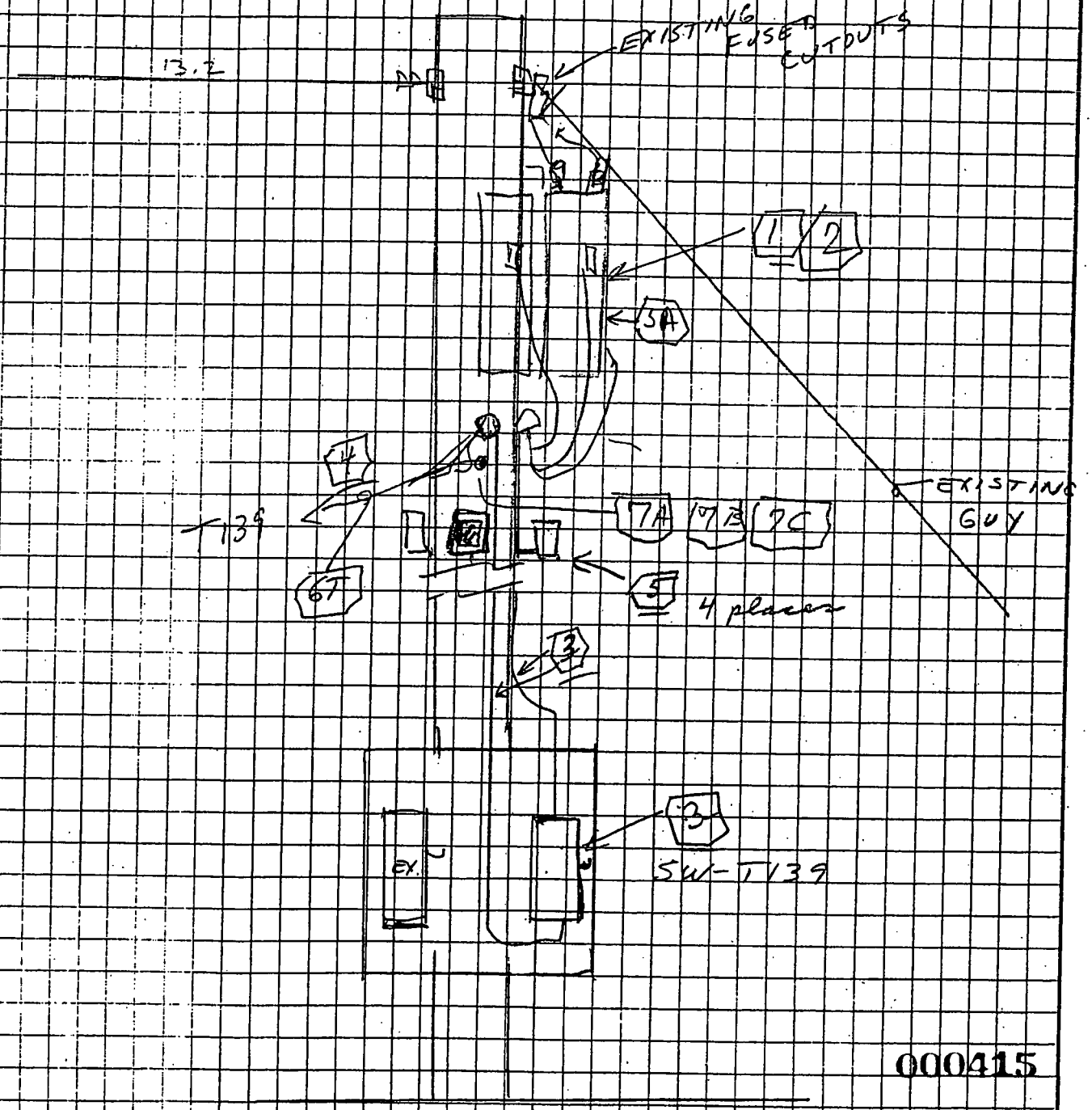
Fluor Fernald, Inc.
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 648-6200

4556

ENGINEERING CALCULATIONS

PROJECT NUMBER:	4367
BY:	JEK
DATE:	3-8-02
PAGE:	OF
CHECKED BY:	
REVISED:	

SUBJECT:



000415

Pole 642 Detail SOUTH SIDE

DWG 92X-5900-E-00478

DCN 20103-044
Page 2 of 12

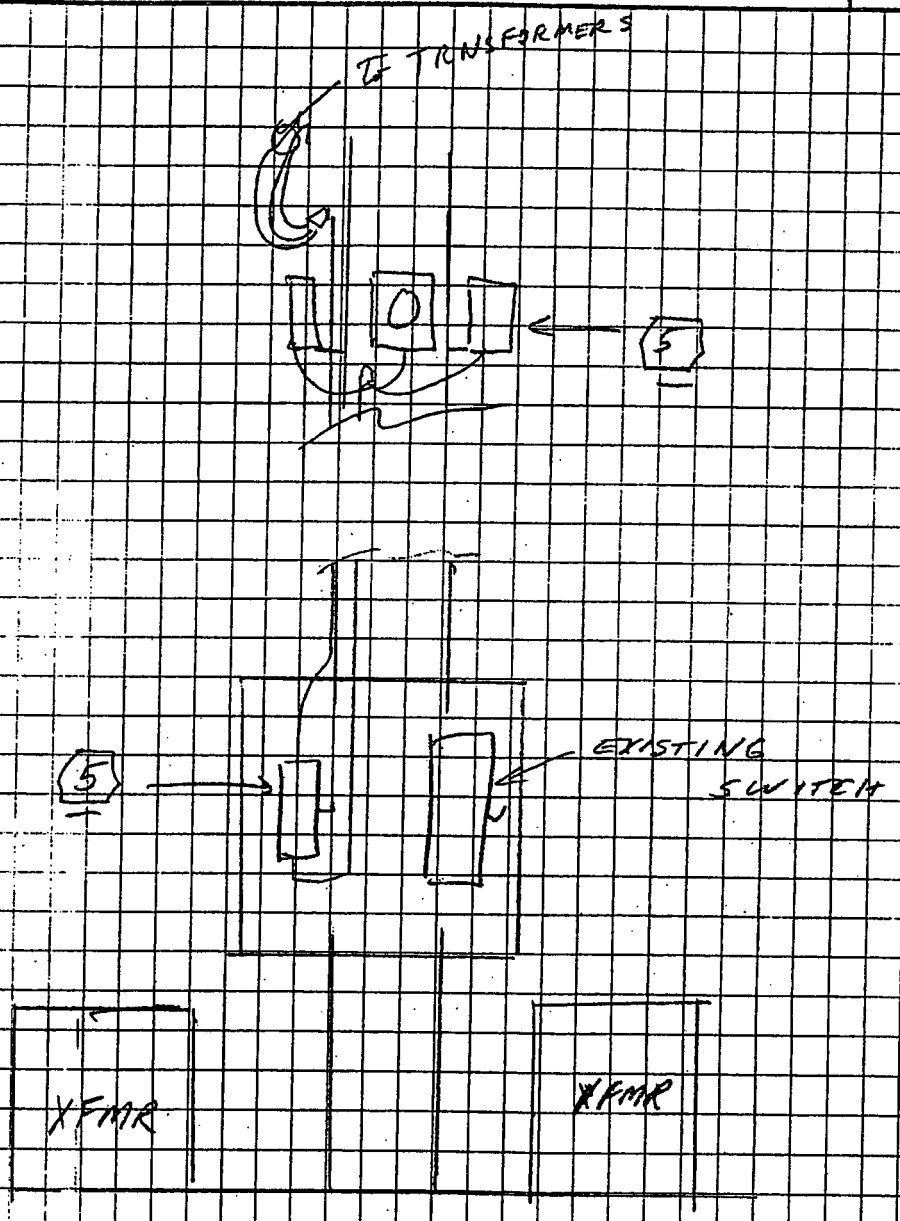
Fluor Fernald, Inc.
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 648-6200

4556

PROJECT NUMBER:	4367
BY:	MK
DATE:	3-8-02
PAGE:	OF
CHECKED BY:	
REVISED:	

ENGINEERING CALCULATIONS

SUBJECT:



Pole 642 Detail NOUTH SIDE

000416

DCN
20103-044
Page 3 of 12

Fluor Fernald, Inc.
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 648-6200

4556

ENGINEERING CALCULATIONS

PROJECT NUMBER:	4367
BY:	JEK
DATE:	
PAGE:	OF
CHECKED BY:	
REVISED:	

SUBJECT:

(1) Install new 100 KVA Transformer. Use existing transformer bracket on pole. Attach primary jumpering to existing fused cutouts with #2 solid copper. Connect three transformer in delta configuration. Reuse cutouts with shown fuse size.

(2) Connect transformer neutral as detail on dwg 25A-5500-E-02222. Neutral connection not shown on sketch.

(3) Install secondary wiring and conduit as shown in detail and sample line. Reuse 200 AMP 3 Pole switch on Pole 615 A/A 50 KVA transformer.

(4) Install aerial wiring to T136 and connect to building wiring.

(5) Install 4 new 400W High Pressure Sodium floodlight fixtures each with photocell. Power fixture with new 30 AMP 480V Disconnect switch conduit and wiring. Install switch in place of 200 AMP switch on back board.

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000417

Fluor Fernald, Inc.
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 648-6200

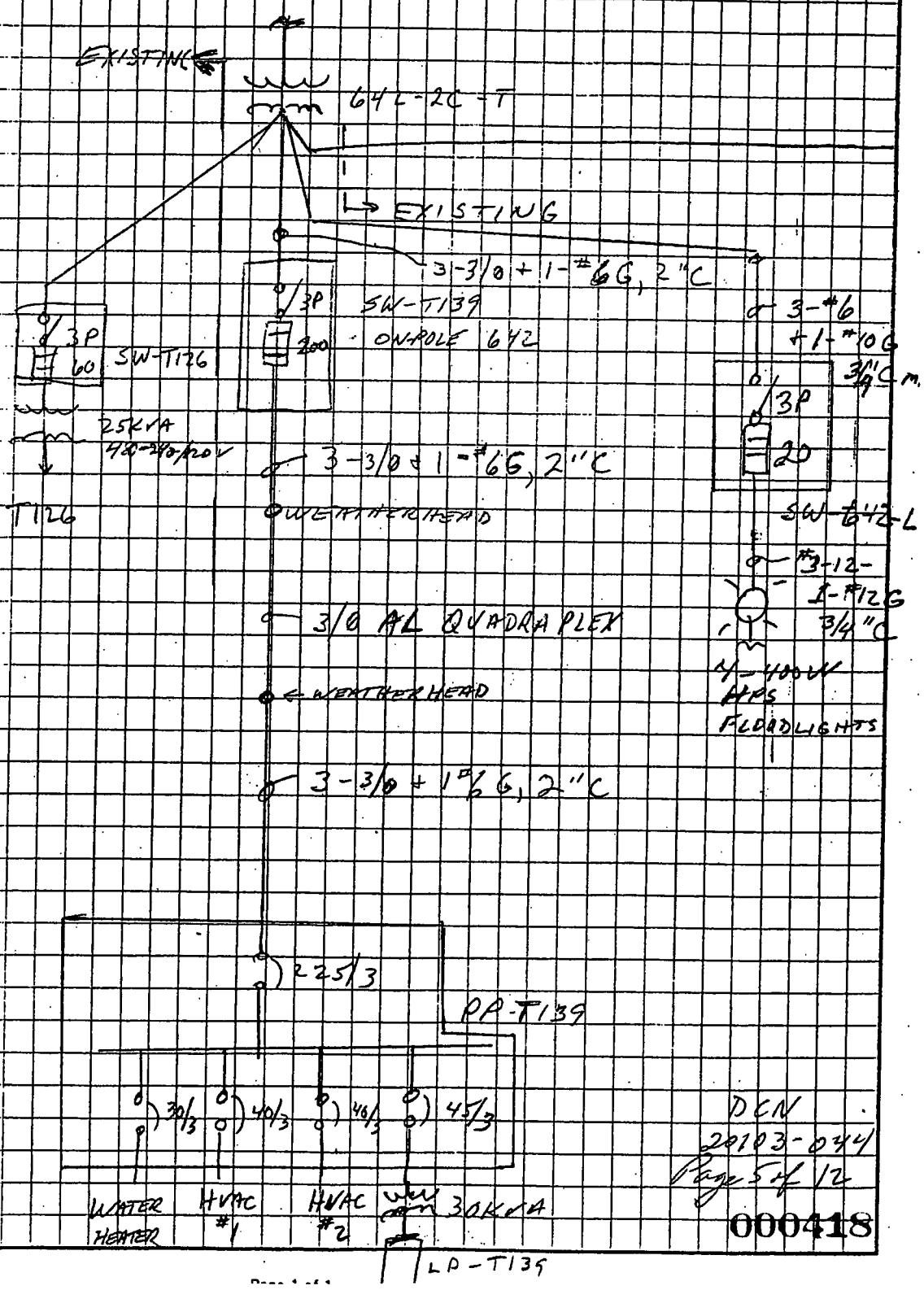
4556

ENGINEERING CALCULATIONS

PROJECT NUMBER:	RES 4367
BY:	JEK
DATE:	3-8-02
PAGE:	OF
CHECKED BY:	
REVISED:	

SUBJECT: SINGLE LINE 92X-5590-E-00472

Page 1 of 2



DCN
20103-044
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000418

FS-F-5792

Fluor Fernald, Inc.
PO Box 398704
Cincinnati, Ohio 45239-8704
(513) 648-6200

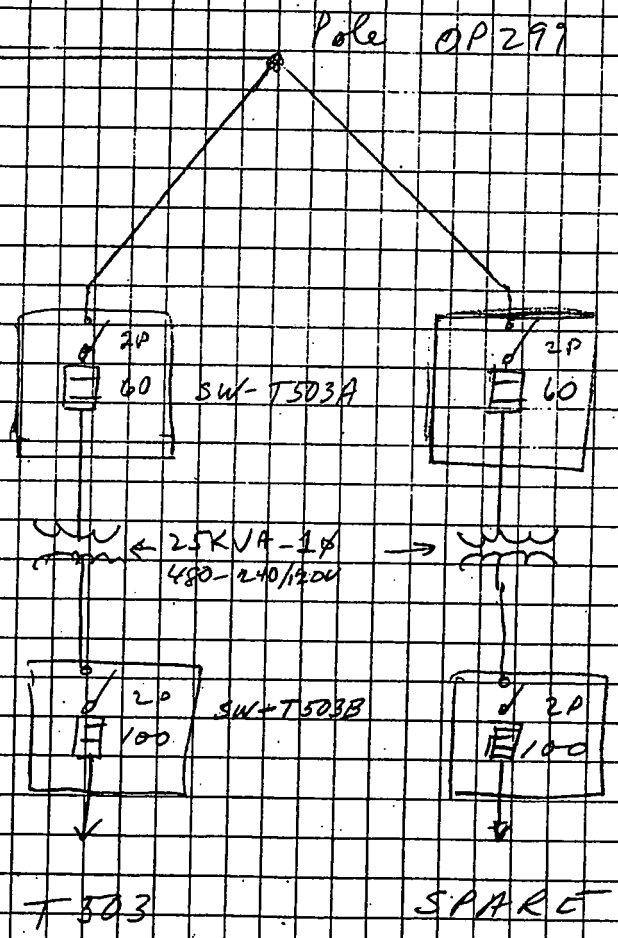
4556

PROJECT NUMBER:	4367
BY:	JEK
DATE:	3-8-02
PAGE:	OF
CHECKED BY:	
REVISED:	

ENGINEERING CALCULATIONS

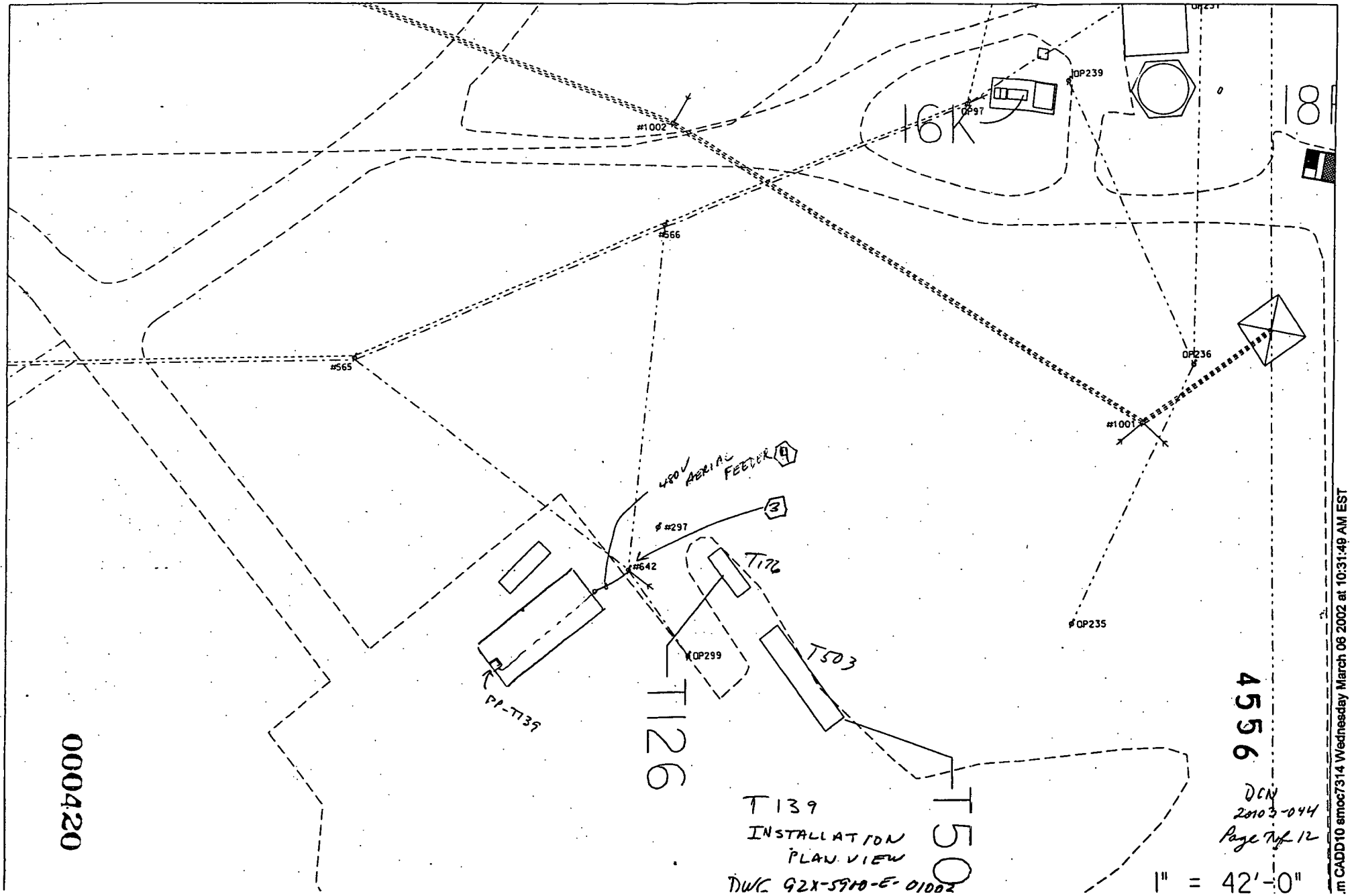
SUBJECT: SINGLE LINE 92X-5900-E-00472

Page 2 of 2



DLN
20103-044
Page 6 of 12

000419


#1002
#566
#565
16K
OP97
OP239
18
OP236
#1001
OP235
480V AERIAL FEEDER
9
3
#297
#642
T126
OP299
T503
PP-T139
T126
T150
T139
INSTALLATION
PLAN VIEW
DWG 92X-5940-E-01002
1" = 42'-0"
4556
DCN
20103-044
Page 7 of 12
000420
.m CADD10 smoc7314 Wednesday March 06 2002 at 10:31:49 AM EST

~~#737~~	~~(1)-14"~~ EXISTING	~~(1)-1/2" NEW~~	~~60°~~
~~SE185~~	~~(1)-12" NEW~~	~~(1)-1/2" NEW~~	~~60°~~

DCN 20103-044

Page 8 of 12

GENERAL NOTES: FOR SITE PLAN

1. ALL WIRING SHALL BE COPPER (CU) WITH THWN INSULATION UNLESS OTHERWISE NOTED.
2. ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED USING STRUCTURAL CHANNEL UNLESS OTHERWISE NOTED.
3. PRIOR TO DIGGING, CONSULT UNDERGROUND UTILITIES DWG~~S~~ ~~22F-5500-P-00663 (GRID-4)~~ FOR THE LATEST UNDERGROUND UTILITY INFORMATION ON FILE. ~~AND SK-20102-004~~
4. DIG SETTING HOLES LARGE ENOUGH TO PERMIT USE OF POWER TAMPERS TO FULL DEPTH. PLACE EARTH IN MINIMUM 6 INCH LAYERS AND PACK TO 95% DENSITY PER ASTM D698. BANK EARTH 12" ABOVE GRADE. - NOT USED
5. NEW POLE(S) SHALL BE 45 FEET, CLASS 2 SOUTHERN PINE, 100% TREATED WITH 6-1/2 FEET MINIMUM BURIAL. NOT USED
6. NEW AERIAL WIRING TO BE AL QUADRAPLEX (3 INSULATED AND 1 BARE) ATTACHED TO POLES WITH MESSENGER HANGERS WITH MAX. 3 FEET CABLE SAG BETWEEN POLES. FOR POLE GUY, ANCHORING, ATTACHMENT AND GROUNDING DETAILS, SEE DWG'S. 16X-5500-E-00105 & 00106.
7. MAINTAIN 1 FOOT SPACING BETWEEN EXISTING 480V WIRING AND NEW ~~240V~~ 480V WIRING (WHERE APPLICABLE). MAINTIAN 40 INCHES BETWEEN 240/480V WIRING AND COMM. WIRING
8. FOR POLE COORDINATES FOR EXISTING POLES, SEE DWG. 22X-5500-E-00953.
9. AS BUILT LOCATION COORDINATES (NAD83) FOR PROPOSED POLE(S) TO BE SUBMITTED TO CADD SERVICES UPON COMPLETION OF JOB.
10. TRAILER(S) SHALL BE INSTALLED ACCORDING TO TYPICAL TRAILER INSTALLATION DWG'S. 44X-5500-E-00363, 44X-5500-E-00366 AND 44X-5500-S-00364.

0004421

4556

(6O) STRAIGHT PIN/INSULATOR/ASSEMBLY. FOR WOOD CROSSARM - FLAT BASE LONG SHANK TYPE, MOUNTING HARDWARE, HOT DIP GALVANIZED; PIN INSULATOR - 14.4KV, GLAZED PORCELAIN, ANSI C29.5, CLASS 55-5 'F' NECK; ARMOR ROD - SIZED AND LENGTH AS REQUIRED BY AERIAL CABLE SIZE/SUPPORT(S); TIE WIRE - TYPE (COPPER OR ALUMINUM), SIZED AND LENGTH AS REQUIRED BY AERIAL CABLE SIZE/SUPPORT(S SEAL WITH SILICON PUTTY WHEN NOT MOUNTED UPRIGHT. 4556

(6P) CORNER ANGLE PIN/INSULATOR/PREFORMED ARMOR ROD/TIE WIRE ASSEMBLY. CORNER ANGLE PIN FOR WOOD CROSSARM - MOUNTING HARDWARE, HOT DIP GALVANIZED; PIN INSULATOR - 14.4KV, GLAZED PORCELAIN, ANSI C29.5, CLASS 55-5, 'F' NECK; ARMOR ROD - SIZED AND LENGTH AS REQUIRED BY AERIAL CABLE SIZE/SUPPORT(S); TIE WIRE - TYPE (COPPER OR ALUMINUM), SIZED AND LENGTH AS REQUIRE BY AERIAL CABLE SIZE/SUPPORT(S). SEAL WITH SILICON PUTTY WHE NOT MOUNTED UPRIGHT.

(6Q) POLE TOP PIN/INSULATOR/ASSEMBLY. POLE TOP PIN - C135.22, 15" LENGTH, MOUNTING HARDWARE FOR WOOD POLE, HOT DIP GALVANIZED; PIN INSULATOR - 14.4KV, GLAZED PORCELAIN, ANSI C29.5, CLASS 55-5 NECK; ARMOR ROD - SIZED AND LENGTH AS REQUIRED BY AERIAL CAE SIZE/SUPPORT(S); TIE WIRE - TYPE (COPPER OR ALUMINUM), SIZED AN LENGTH AS REQUIRED BY AERIAL CABLE SIZE/SUPPORT(S). SEAL WIT SILICON PUTTY WHEN NOT MOUNTED UPRIGHT.

(6S) CABLE TERMINATION - SIZED FOR INSULATED CABLE WITH CROSSARM MOUNTING HARDWARE.

6T Secondary Service Cable - 600V Cross-Linked Polyethylene Insulation 3 Wire or 4 Wire ~~or~~ 5 Wire service cable, 2, 3 or 4 conductor insulated Al. with bare steel or Al clad steel messenger. See single line Diagram for wire size.

MC	ELECTRICAL SWITCH ITEMS
(A)	THIMBLE, FOR STATIC WIRE OR MESSENGER WIRE DEAD-END.
(B)	EYE BOLT, OVAL EYE TYPE, FOR DEAD-END, 5/8" DIA. WITH ONE SQUARE NUT, ADDITIONAL NUTS, WASHERS, AND LENGTH AS REQUIRED.
(C)	GUY GRIP, FOR STATIC WIRE, PREFORMED WIRE TYPE.

DWG 96X-5900.
E-00320

NOTE:

LOCATE GROUNDING PLATE IN ORDER FOR AN OPERATOR TO REMAIN ON PLATE AT ALL TIMES DURING OPENING OR CLOSING SWITCHES. IN GRASSY AREAS, PLACE MINIMUM 3" GRAVEL BENEATH PLATE AND LEVEL.

DCN 20103-044

APPENDIX T

NONCONFORMANCE REPORTS (NCRs)

GEOSYNTEC

FIGURE 1

4556

GeoSyntec Consultants

CONSTRUCTION NON-CONFORMANCE REPORT

[1] ORIGINATOR:	[2] TITLE/ORGANIZATION:	[3] NCR NUMBER:	[4] DATE DISCOVERED:
Collin Sukow	Site CQC Manager/GeoSyntec	~~20102~~ 20103-01	7-Nov-00

[5] RESPONSIBLE ORGANIZATION/PROJECT:	[6] ASSESSMENT ACTIVITY:	[7] HOLD TAG:
Fluor Construction/OSDF Phase III	Construction Quality Control	( ) YES (X) NO
		[8] REMOVED (Initial/Date):

[9] REQUIREMENTS (Identify requirement from document (e.g., CQA plan, specification, drawing, etc.):

02225.2.01.D.3.a. Clay Liner cap material shall meet....100 percent of the particle having a maximum dimension not greater than 2 inches....

[10] NON-CONFORMANCE TYPE: Construction Non-conformance ( ) Material Deviation (X)

[11] NON-CONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):
After review of the testing performed on the clay cap material screened during the 2000 construction season, it was found that one of the samples did not meet the sieve requirements described above. The material passing the 2 inch screen was 99.6% of the sample, not the required 100%. (see attached)

[12] ORIGINATOR'S SIGNATURE:	[13] DATE PROVIDED TO RESPONSIBLE MANAGER:

[14] RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-is (✓) Reject ( ) Other ( ) Repair ( ) Rework ( )

Recommend "use As-is" based on Attachment: 1 & 2.

[15] RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):
Bruce A. Schweitzer CCM Fluor Fernald Inc.

[16] RESPONSIBLE MANAGER'S SIGNATURE	[17] PROPOSED COMPLETION DATE:	[18] DATE FORWARDED TO APPROVAL AUTHORITY:
Bruce A. Schweitzer		

According to GeoSyntec's test results, the 0.4% retained on the 2 inch screen had an approximate weight of 136 grams. This correlates to the general weight of a single particle.

During the process of screening there are many possible ways a larger rock could pass a smaller screen. A particle could be hammered through by heavier larger particles, kicked over the sides of the screener inadvertently landing on the conveyor, or perhaps the material could have been contaminated during transport to the stockpile.

Whatever the reason this particular sample appears to be a separate case as all other sieves performed (17) passed in the 2 inch requirement – use as is.

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS

(ASTM C 136/D 422) (ASTM D 2487)

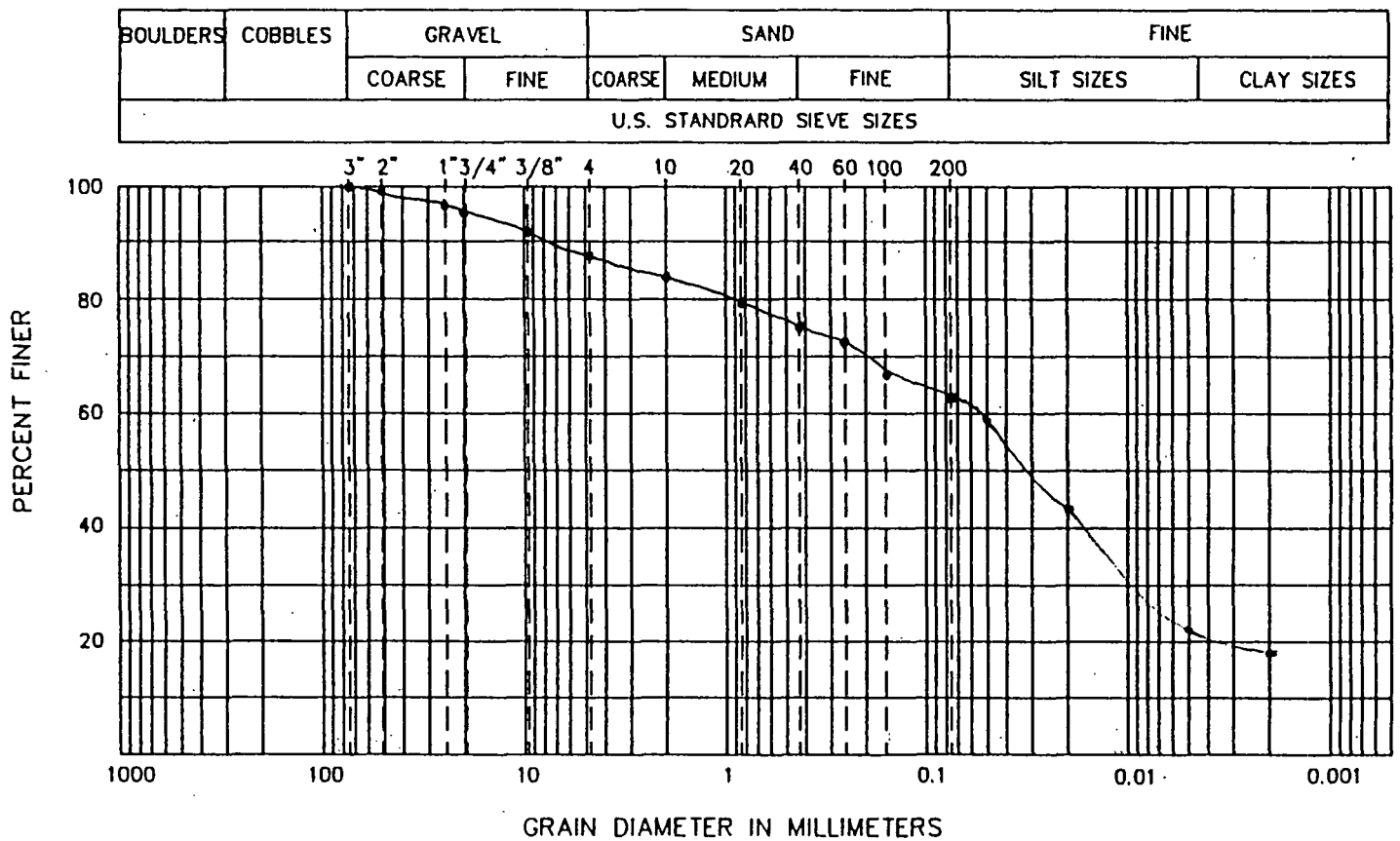
PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO — PROJECT NO.: 6Q1029 TASK NO.: 04.1

DESCRIPTION: Phase III — DATE: 23 day Aug month 2000 year

MATERIAL TYPE: Clay liner/Cap — SAMPLE NO.: CC-3 QA ID: KS

CURVE COEFFICIENTS: (C_u) ..... (C_c) .....



ATTERBERG LIMITS

(LL) 27

(PL) 16

(PI) 11

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	100
2-in.	99.6
1 1/2-in.	98.9
1-in.	96.8
3/4-in.	95.5
1/2-in.	93.1
3/8-in.	91.8
NO. 4	88.7
NO. 10	83.9
NO. 20	79.5
NO. 40	75.6
NO. 60	72.4
NO. 100	68.1
NO. 200	63.0

HYDROMETER RESULTS

PARTICLE DIA.	% FINER
0.05	59.0
0.02	44.0
0.005	22.0
0.002	18.0

SOIL CLASSIFICATION (ASTM D 2487): CL - Sandy lean Clay

©GEOSYNTEC CONSULTANTS FILE NO. 2-16-PSD CHECKED BY: CB

SHEET NO. 2 OF 2

GEOSYNTEC INC. 2103-4 ATTACHMENT C

1556

000427

FIGURE 1

4556

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED
K. Badu-Tweneboah	Certifying Engineer/GeoSyntec	20103-002	29 March 2001

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
Fluor Construction,/OSDF Phase III	Construction Quality Control	( ) YES (☒) NO
		8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

Technical Specifications, Section 02710 Parts 2.01B and 2.01C and DCN No. 20103-012 require the granular drainage material to meet AASHTO M 43 modified gradation requirements for No. 78 coarse aggregate. The modified gradation includes (per ASTM C 136): (i) 85 – 100 percent by weight passing through the U.S. ½-in. sieve size; and (ii) 0 – 2 percent by weight passing through the U.S. No. 200 sieve size.

10. NONCONFORMANCE TYPE: Construction Nonconformance ( ) Material Deviation (×)

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

The first three conformance samples (Nos. C78-1, C78-2, and C78-3) collected from the No. 78 coarse aggregate delivered to the site did not meet the above gradation requirements. Sample Nos. C78-1 and C78-2 had 2.4 and 2.8, respectively, percent by weight passing through the U.S. No. 200 sieve instead of the specified 0 – 2 percent by weight. Sample No. C78-3 had 83 percent by weight passing through the U.S. ½-in sieve size instead of the specified 85 – 100 percent by weight.

12. ORIGINATOR'S SIGNATURE: [signature]

13. DATE PROVIDED TO RESPONSIBLE MANAGER: 29 March 2001

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (x) Reject ( ) Other ( ) Repair ( ) Rework ( )

The results from the first two samples (Nos. C78-1 and C78-2) suggest that the material being produced from the quarry was slightly finer than the specifications require for the No. 78 coarse aggregate. The results for sample No. C78-3, however, suggest that subsequent production of the material was coarser than required. This is probably due to efforts from the quarry to resolve the fines problem. However, the results from all three samples meet the maximum particle size requirement and had a laboratory measured hydraulic conductivity values of 7.0, 4.5, and 6.5 cm/s, each of which exceeds the specified value of 0.1 cm/s minimum. Therefore, use as-is.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

Kwasi Badu-Tweneboah, Resident Engineer, GeoSyntec

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
[signature]	3/30/2001	3/29/2001

GQ0409-03.1/PH2NCR020A.CDA

FIGURE 2

4556

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

20. APPROVAL AUTHORITY SIGNATURE:	21. DATE:
	3/29/01

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

23. VERIFIER'S SIGNATURE:	24. DATE:

25. APPROVAL AUTHORITY SIGNATURE:	26. DATE CLOSED:
	4/2/01

27. CONTINUATION FROM BLOCK _____:

000429

4556

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM ~~D 422~~) C-136

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO — PROJECT NO: ~~GC0465~~ GQ1029 DAE — TASK NO.: 04.1

DESCRIPTION: Phase II — DATE: 9 day Mar month 2001 year

MATERIAL TYPE: 78 Stone — SAMPLE NO.: C78-1

~~SOIL~~ Aggregate CS SAMPLE SIZE	Weight in Pounds	Weight in grams
APPROXIMATE MINIMUM WT. OF SAMPLE (PASSING NO. 10 SIEVE) (grams)	SAND 115	FINE GRAIN 65

	BEFORE WASH	AFTER WASH
TARE NO.	L10	L10
WT. OF DRY SAMPLE PLUS TARE (~~grams~~)	~~5189.2~~ 11.44 lb	
WT. OF TARE (~~grams~~)	2.20 lb	
WT. OF DRY SAMPLE (~~grams~~)	9.24	

SIEVE ANALYSIS — CA ID: CA

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (~~grams~~) lb	% RETAINED		% FINER	PROJECT SPECIFICATIONS
2"	50.06	0		0	100	100
1½"	37.50	0		0	100	
1"	25.00	0		0	100	
¾"	19.00	0		0%	100	100
½"	12.50	3.26 - Tare =	1.06	11.5	88.5	85 To 100
⅜"	9.50	~~5.25~~ 5.25	3.05	33.0	67.0	40 To 75
#4	4.75	9.71	7.51	81.3	18.7	5 To 25
#8	2.36	10.92	8.72	94.4	5.6	0 To 10
#16	1.18	11.09	8.89	96.2	3.8	0 To 5
#30	0.600	11.16	8.96	97.0	3.0	0 To 5
#50	0.300	11.19	8.99	97.3	2.70	0 To 5
#100	0.150	11.21	9.01	97.5	2.50	0 To 5
#200	0.75	11.22	9.02	97.6	2.40	0 To 2
PAN		11.24	9.04			

000430

% FINER = 100 − Σ % RETAINED

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD

(ASTM ~~D 422~~ C-136)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO

PROJECT NO: ~~GG0409~~ GG1029 DOE TASK NO.: 04.1

DESCRIPTION: Phase II

DATE: 12 day March month 2001 year

MATERIAL TYPE: 78 Stone

SAMPLE NO.: C78-2

SOIL SAMPLE SIZE	Weight in Pounds	Weight in grams
APPROXIMATE MINIMUM WT. OF SAMPLE (PASSING NO. 10 SIEVE) (grams)	SAND 115	FINE GRAIN 55

		BEFORE WASH	AFTER WASH
TARE NO.			
WT. OF DRY SAMPLE PLUS TARE	(grams)	6563.6	6409.4
WT. OF TARE	(grams)	939.4 (2.07 lbs)	939.4
WT. OF DRY SAMPLE	(grams)	5624.2	5470.0

SIEVE ANALYSIS

CA ID: KS

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50.06	Ø	Ø	100	100
1½"	37.50	Ø	Ø	100	
1"	25.00	Ø	Ø	100	
¾"	19.00	Ø	Ø	100	100
½"	12.50	505.5	9.0	91.0	~~85~~ 90 To 100
⅜"	9.50	1648.3	29.3	70.7	40 To 75
#4	4.75	4604.0	81.9	18.1	5 To 25
#8	2.36	5266.3	93.6	6.4	0 To 10
#16	1.18	5397.8	96.0	4.0	0 To 5
#30	0.600	5434.1	96.6	3.4	0 To 5
#50	0.300	5443.2	96.8	3.2	0 To 5
#100	0.150	5450.0	96.9	3.1	0 To 5
#200	0.75	5465.9	97.2	2.8	0 To 2
PAN	—	5470.4	—	—	—

000431

%FINER = 100 − Σ% RETAINED

CHECKED BY: [illegible]

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

ARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM D 422)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)
LOCATION: FERNALD, OHIO
DESCRIPTION: PHASE III
MATERIAL TYPE: 78 Stone

PROJECT NO: GQ1029 TASK NO.: 04.1
DATE: 15 day March month 2001 year
SAMPLE NO.: C78-3B (2nd run)

SOIL SAMPLE SIZE		
APPROXIMATE MINIMUM WT. OF SAMPLE (PASSING NO. 10 SIEVE) (grams)	SAND 115	FINE GRAIN 65

		BEFORE WASH	AFTER WASH
TARE NO.			
WT. OF DRY SAMPLE PLUS TARE	(grams)	5992.1	5944.9
WT. OF TARE	(grams)	952.6	952.6
WT. OF DRY SAMPLE	(grams)	5039.5	4992.4

SIEVE ANALYSIS QA ID: _____

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50.0	Ø	Ø		100
1½"	37.50	Ø	Ø		|
1"	25.00	Ø	Ø		|
3/4"	19.00	Ø	Ø		100
1/2"	12.50	839.3	16.7	83.3	85 To 100
3/8"	9.50	2283.8	45.3	54.7	40 To 75
#4	4.75	4657.5	92.4	7.6	5 To 25
#8	2.36	4925.5	97.7	2.3	0 To 10
#16	1.18	4966.6	98.6	1.4	0 To 5
#30	0.60	4975.9	98.7	1.3	0 To 5
#50	0.30	4979.1	98.8	1.2	0 To 5
#100	0.15	4981.8	98.9	1.1	0 To 5
#200	0.75	4985.9	98.9	1.1	0 To 2
PAN		4987.9	—	—	

% FINER 100 - Σ % RETAINED

GEOSYNTEC CONSULTANTS FILE No. 2-14-PMS CHECKED BY:____ SHEET No.____ of ____

4556

RIGID WALL PERMEABILITY TEST

ASTM D2434

Project Name:	FLUOR FERNALD
Project Number:	GTX-G0076
Client Project Number:	GQ1029
Client/Site ID:	C78-1
Sample Number:	4445
Material Type:	GRAVEL
Expected/Specified Value:	
Date Received:	3/14/2001

Specimen Number	Specimen Initial Conditions		Gradient Range	Hydraulic Conductivity
	Dry Unit Weight (pcf)	Moisture Content (%)	(-)	(cm/s)
1	97.9	1.1	0.02 - 0.10	7.0

Notes:

MT
3/16/01

000433

BSS 3-16-01

4556

RIGID WALL PERMEABILITY TEST

ASTM D2434

Project Name:	FLUOR FERNALD
Project Number:	GTX-G0076
Client Project Number:	GQ1029
Client/Site ID:	C78-2
Sample Number:	4446
Material Type:	GRAVEL
Expected/Specified Value:	
Date Received:	3/14/2001

Specimen Number	Specimen Initial Conditions		Gradient Range	Hydraulic Conductivity
	Dry Unit Weight (pcf)	Moisture Content[1] (%)	(-)	(cm/s)
1	110.5	1	0.02 - 0.11	4.5

Notes:

1. Assume 1%; not enough sample to obtain moisture content.

000434

MT
3/16/01

BSS 3-16-01

4556

RIGID WALL PERMEABILITY TEST

ASTM D2434

Project Name:	FLUOR FERNALD
Project Number:	GTX-G0076
Client Project Number:	GQ1029
Client/Site ID:	C78-3
Sample Number:	4469
Material Type:	GRAVEL
Expected/Specified Value:	N/A
Date Received:	3/21/2001

Specimen Number	Specimen Initial Conditions		Gradient Range	Hydraulic Conductivity
	Dry Unit Weight (pcf)	Moisture Content (%)	(-)	(cm/s)
1	105.9	0.1	0.03 - 0.10	6.5

Notes:

000435

MT
3.26.01

BSS 3-26-01

DAVON

4556

February 20, 2001

Mr. Charles Van Arsdale
Fluor Fernald, Inc.
P. O. Box 538704, Mail Stop #64
Cincinnati, Ohio 45253-8704

Re: Contract 01FC000570, Biointrusion Layer –2001

Dear Chuck:

LETTER OF CERTIFICATION

This letter is to certify that Eagle Crushed Stone Division will furnish drainage aggregate for the referenced project meeting the following gradation:

SIEVE SIZE	% PASSING BY WEIGHT
¾"	100%
½"	85-100%
3/8"	40-75%
No. 4	5-25%
No.8	0-10%
No.16	0-5%
No.200	0-2%

This is the same material gradation we supplied on previous cell drainage requirements.

As we discussed previously, it is extremely difficult, mechanically as well as statistically, to hit both the ½" gradation and the 3/8" gradation at the same time when making #78's.

The ½" sieve is in the gradation to assure no oversize material enters into the aggregate. The 3/8" sieve, or the first sieve under that specified to have 100% passing, is the critical sieve and remains the same.

We have certified 85%-100% passing the ½" to assure a consistent product within the limits of the critical sieve in the specification, 40 to 75% passing the 3/8" sieve.

The source of the #78 Limestone, Eagle Crushed Stone Quarry, is located in Brown County Ohio in Eagle Township on 13526 Overstake Road, Winchester, Ohio.

If anything further is required, let me know.

Yours truly,
Robert R. Backer
Robert R. Backer for
Davon, Inc.
Eagle Crushed Stone

000436

4[illegible] Roush Road · Hillsboro, OH 43133-9179 · 937/364-2311 · FAX 937/364-2509

FIGURE 1

4556

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Collin Sukow	Site CQC Manager/GeoSyntec Consultants	20103-093 (155)	25 April 2001

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
Fluor Construction/OSDF Phase III	Construction Quality Control	( ) YES (X) NO 8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

Technical Specification Section 02710 Parts 2.01C requires the drainage material to be less than 2% by weight passing through the U.S. No. 200 Sieve.

10. NONCONFORMANCE TYPE: Construction Nonconformance ( ) Material Deviation (X)

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

78 stone sample C78-10 did not meet the above gradation requirement with 2.9% by weight passing through the U.S. No. 200 Sieve.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Collin P. Sukow	25 May 2001

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework ( )

Samples collected prior to and after C78-10 passed the gradation requirements suggesting this sample was an anomaly and not representative of all 78 stone stockpile. Also, the material from sample C78-10 passed both permeability and carbonate testing. Therefore, use as is.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

Kwasi Badu-Tweneboah, Certifying Engineer, GeoSyntec

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
K Badu-Tweneboah	7 June 2001	31 May 2001

000437

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

20. APPROVAL AUTHORITY SIGNATURE: [illegible]

21. DATE: 7/10/01

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

23. VERIFIER'S SIGNATURE:

24. DATE:

25. APPROVAL AUTHORITY SIGNATURE: [illegible]

26. DATE CLOSED: 7/10/01

27. CONTINUATION FROM BLOCK _____:

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

ARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM C 136)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)
LOCATION: FERNALD, OHIO
DESCRIPTION: PHASE III
MATERIAL TYPE: 78 Stone

PROJECT NO: GO 1341 TASK NO.: 04.1
DATE: 25 day April month 2001 year
SAMPLE NO.: C-78-10

SOIL SAMPLE SIZE	SAND	FINE GRAIN
APPROXIMATE MINIMUM WT. OF SAMPLE (PASSING NO. 10 SIEVE) (grams)	115	65

		BEFORE WASH	AFTER WASH
TARE NO.		Big Pan	Big Pan
WT. OF DRY SAMPLE PLUS TARE	(grams)	10.88 lbs 4935.2	10.63 lbs 4821.8
WT. OF TARE	(grams)	939.1	939.1
WT. OF DRY SAMPLE	(grams)	3996.1	3882.9

SIEVE ANALYSIS CA ID: DLE

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	PROJECT SPECIFICATIONS
2"	50.0	0	Ø	100 %	100
1½"	37.50	0	Ø		/
1"	25.00	0	Ø		/
¾"	19.00	0	Ø	100 %	100
½"	12.50	397.3	9.9	90.1 %	85 To 100
3/8"	9.50	1263.2	31.6	68.4 %	40 To 75
#4	4.75	3197.4	80.0	20.0 %	5 To 25
#8	2.36	3734.4	93.5	6.5 %	0 To 10
#16	1.18	3836.81	96.0	4.0 %	0 To 5
#30	0.60	3861.12	96.6	3.4 %	0 To 5
#50	0.30	3870.84	96.9	3.1 %	0 To 5
#100	0.15	3879.02	97.1	2.9 %	0 To 5
#200	0.75	3881.21	97.1	2.9 %	0 To 2
PAN					

% FINER 100 - Σ % RETAINED

GEOSYNTEC CONSULTANTS FILE No. 2-14-PMS CHECKED BY: CA SHEET No. 1 of 2

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS

(ASTM C 136/D 422) (ASTM D 2487)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO

PROJECT NO. 601341 TASK NO.: 04.1

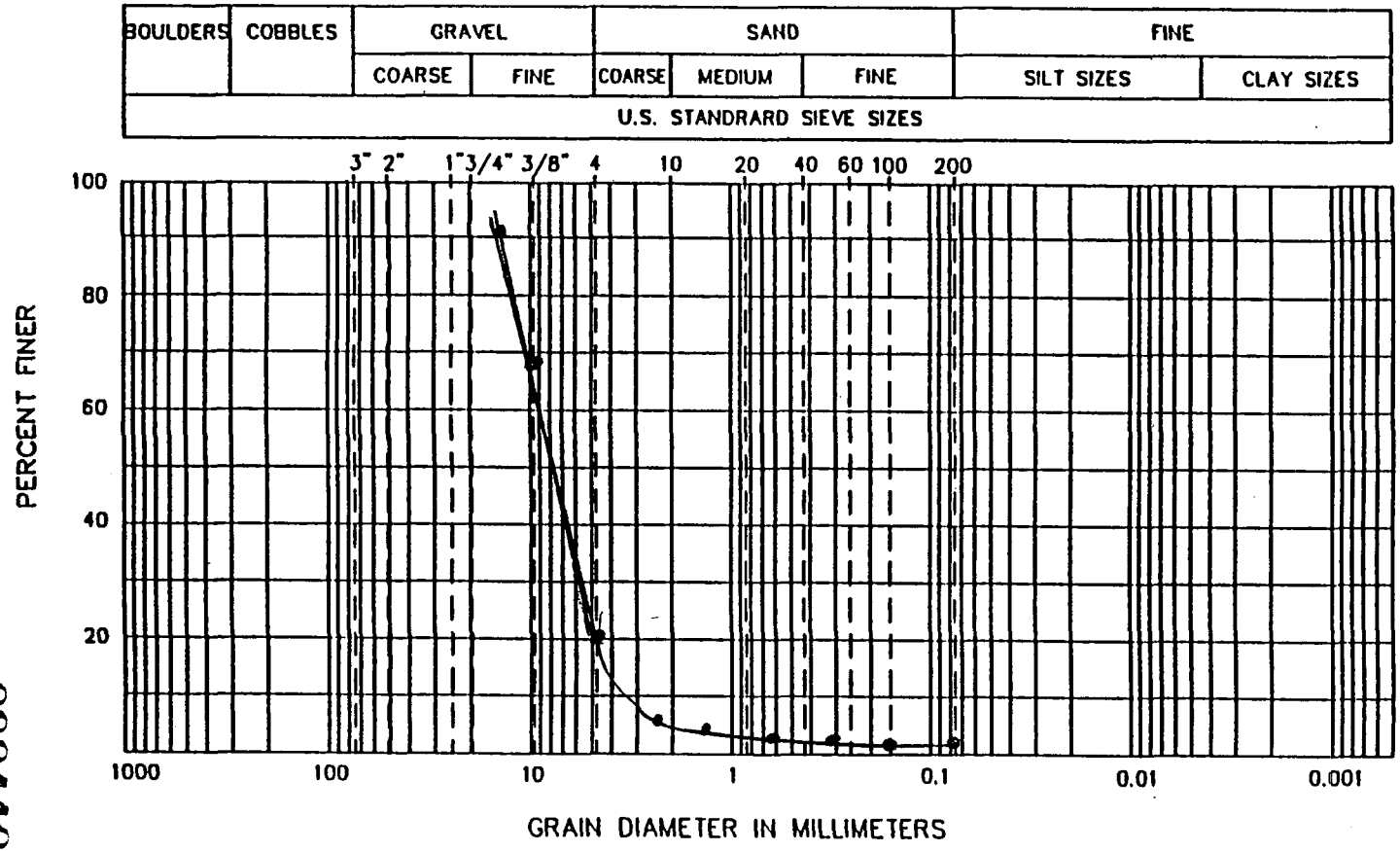
DESCRIPTION: Phase III

DATE: 27 day April month 2001 year

MATERIAL TYPE: 78 Stone

SAMPLE NO.: C-78-10 QA ID: DLE

CURVE COEFFICIENTS: $(C_u) = \frac{D_{60}}{D_{10}} = \frac{4}{3.5} = 2.57$ $(C_c) = \frac{D_{30}^2}{D_{10} \times D_{60}} = \frac{5.8^2}{3.1.5} = \frac{33.64}{31.50}$ 1.07



ATTERBERG LIMITS

(LL) N/A

(PL) N/A

(PI) N/A

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	100
2-in.	100
1 1/2-in.	100
1-in.	100
3/4-in.	100
1/2-in.	90.1
3/8-in.	68.4
NO. 4	20.0
NO. 8	6.5
NO. 16	4.0
NO. 30	3.4
NO. 50	3.1
NO. 100	2.9
NO. 200	2.9

HYDROMETER RESULTS

PARTICLE DIA.	% FINER

SOIL CLASSIFICATION (ASTM D 2487): GP

©GEOSYNTEC CONSULTANTS FILE NO. 2-18-PSD

CHECKED BY:

SHEET NO. 2 OF 2

000440

4556

4556

RIGID WALL PERMEABILITY TEST

ASTM D2434

Project Name:	FLUOR FERNALD
Project Number:	GTX-G0076
Client Project Number:	GQ1029
Client/Site ID:	C78-10
Sample Number:	4587
Material Type:	GRAVEL
Expected/Specified Value:	N/A
Date Received:	5/7/2001

Specimen Number	Specimen Initial Conditions		Gradient Range	Hydraulic Conductivity
	Dry Unit Weight (pcf)	Moisture Content (%)	(-)	(cm/s)
1	113.1	0.6	0.02 - 0.10	3.64

Notes:

000441

BJS 5-10-01

4556

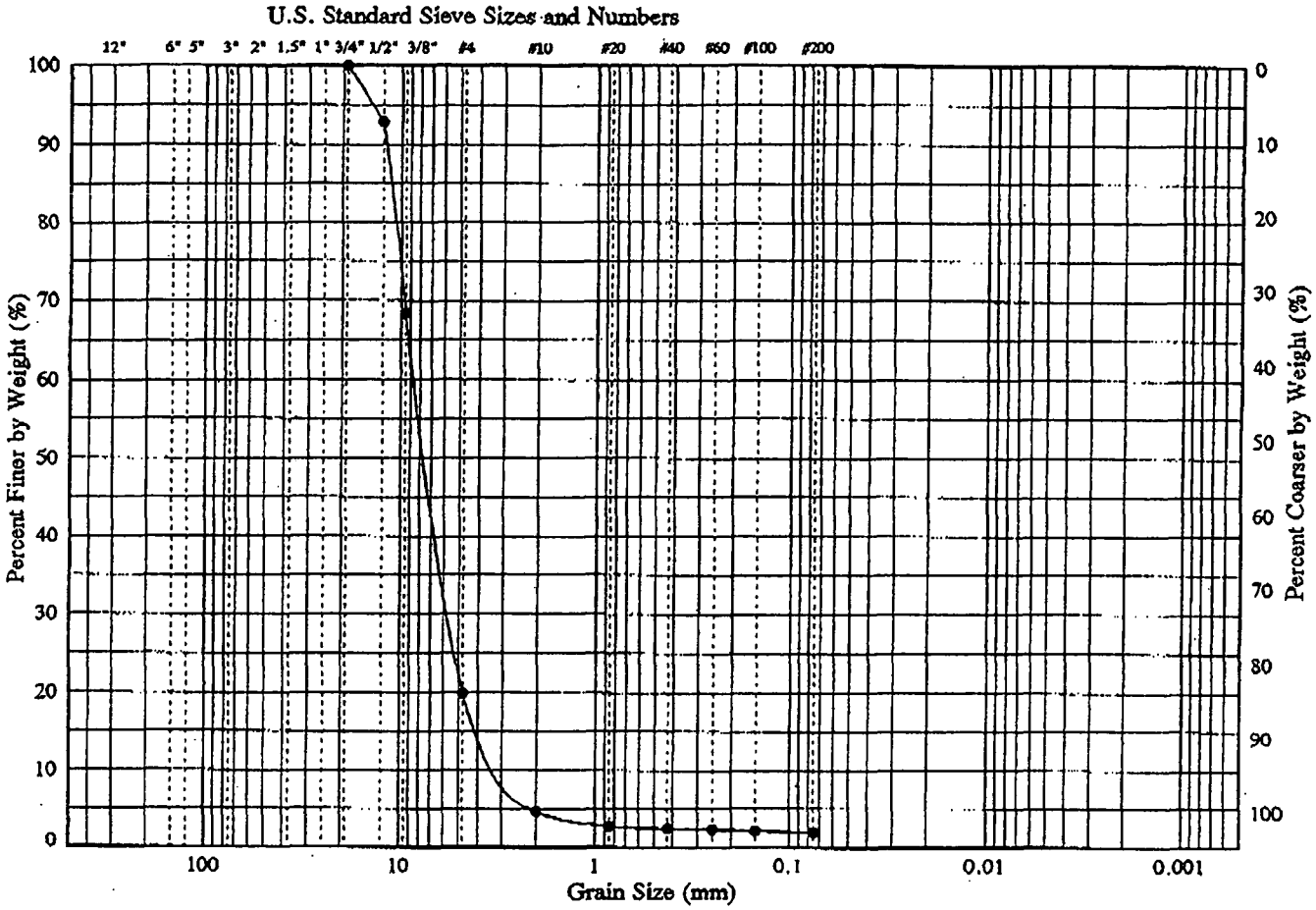
GeoTesting Express, Inc.

Geotechnical and Geosynthetic Testing Services

Sample ID: C78-10
Project Name: FLUOR FERNALD
Project No.: GTX-G0076

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C136, D422, D2487, D3042 AND D4318



Boulders	Cobbles	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
		Gravel		Sand			Fines	

Sample ID	C78-10	Liquid Limit (%)	Soil Fractions	Gravel (%)	80.1
Lab Sample No.	4587.	Plastic Limit (%)		Sand (%)	17.9
Sample Depth (ft)		Plasticity Index		Fines (%)	2.0
Soil Classification: GP - Poorly Graded Gravel with Sand				Silt (%)	
				Clay (%)	
				Coeff. Uniformity (Cu)	3.1
				Coeff. Curvature (Cc)	1.32

Percent Passing U.S. Standard Sieve Sizes and Numbers														Hydrometer Analysis				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
Percent Finer Than Sieve Sizes (mm)														Percent Finer Than (mm)				
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	93	68	20	5	3	3	2	2	2					

Note(s): Before Acid Bath

000442

SD 5/14/01 BSS 5-15-01

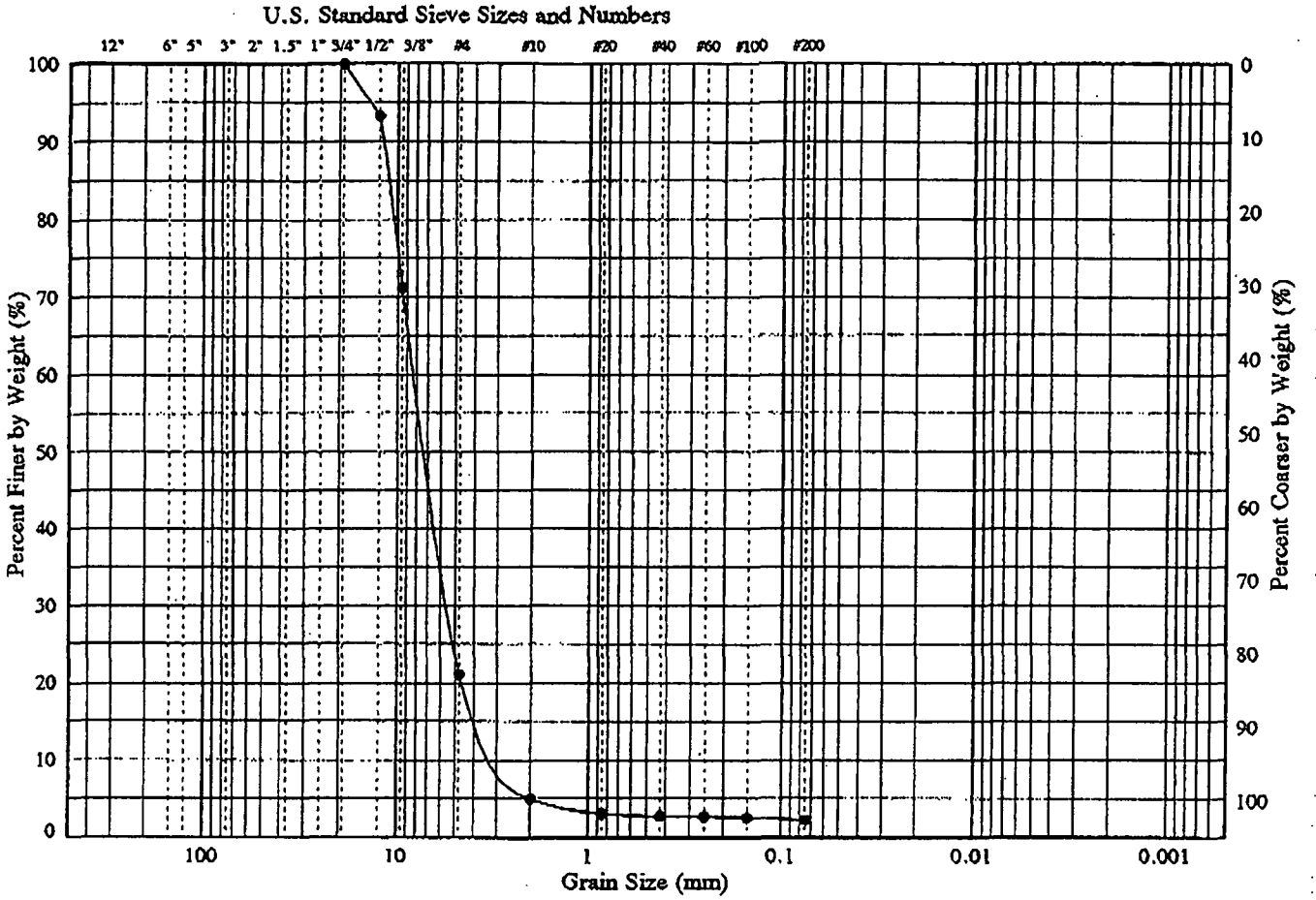
4556

GeoTesting Express, Inc.
Geotechnical and Geosynthetic Testing Services

Sample ID: C78-10
Project Name: FLUOR FERNALD
Project No.: GTX-G0076

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C136, D422, D2487, D3042 AND D4318



Boulders	Cobbles	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
		Gravel		Sand			Fines	

Sample ID	C78-10	Liquid Limit (%)	Soil Fractions	Gravel (%)	78.9
Lab Sample No.	4587..	Plastic Limit (%)		Sand (%)	18.8
Sample Depth (ft)		Plasticity Index		Fines (%)	2.3
Soil Classification: GP - Poorly Graded Gravel with Sand				Silt (%)	
				Clay (%)	
				Coeff. Uniformity (Cu)	3.1
				Coeff. Curvature (Cc)	1.36

Percent Passing U.S. Standard Sieve Sizes and Numbers														Hydrometer Analysis				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
Percent Finer Than Sieve Sizes (mm)														Percent Finer Than (mm)				
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	93	71	21	5	3	3	3	3	2					

Note(s): After Acid Bath-pH4 (Modified HCl)
Carbonate Content = 0.2%.

SO 5/14/01 BSS 5-15-01

000443

FIGURE 1

4556

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED
K. Badu-Tweneboah	Certifying Engineer/GeoSyntec	20103-004	15 May 2001

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
IT Corp./Fluor Construction/OSDF Phase III	Construction Quality Control	( ) YES (☒) NO
		8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

Technical Specifications, Section 02240 Part 3.01B requires the non-impacted contouring layer to be constructed within –0.3 to +0.1 feet of the grades indicated on the Construction Drawings. DCN No. 20103-013 also revised the thickness tolerance to within 0.0 to +0.1 feet within a minimum thickness of 1.0 ft, as shown on the Construction Drawings.

10. NONCONFORMANCE TYPE: Construction Nonconformance (×) Material Deviation ()

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

Final contouring layer as-built data submitted by IT Corporation (see attached) indicate that some of the survey points (Nos. 144, 191, 1835, 1837, 1849 and 1866) have elevations that exceed the tolerances listed above. There were also two survey points (Nos. 1853 and 1859) that had as-built thickness less than the 1-ft minimum.

12. ORIGINATOR'S SIGNATURE: K Badu-Tweneboah

13. DATE PROVIDED TO RESPONSIBLE MANAGER: 31 May 2001

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (x) Reject ( ) Other ( ) Repair ( ) Rework ( )

Section 02240, Part 3.08A of the Technical Specifications and DCN No. 20103-013 required the contouring layer to be constructed to a minimum thickness of 1.0 ft. The Contractor used the previous certification points for the as-built top of select impacted material layer to calculate the contouring layer thickness. In order to meet the minimum contouring layer thickness requirement, some of these points had to exceed the tolerance limits. These points need to be carefully monitored to ensure that the 2-ft minimum compacted clay clap is constructed. Therefore use-as.

The other two points (Nos. 1853 and 1859) with less than 1.0-ft contouring layer thickness resulted from regrading the area to meet the elevation tolerance described above. These areas would result in additional compacted clay cap being placed. Again, these areas would have to be carefully monitored Therefore, use as-is.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

Kwasi Badu-Tweneboah, Resident Engineer, GeoSyntec

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
K Badu-Tweneboah	6/07/01	6/06/01

FIGURE 2

4556

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (✓) Reject ( )
Comments ( )

20. APPROVAL AUTHORITY SIGNATURE:	21. DATE:
SH WOLINSKY	6/12/01

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

N/A

23. VERIFIER'S SIGNATURE:	24. DATE:
SH WOLINSKY	6/12/01
25. APPROVAL AUTHORITY SIGNATURE:	26. DATE CLOSED:
KWASI BADU-THEOREBOAH	6/19/01

27. CONTINUATION FROM BLOCK ____:

000445

Page 3 of 4

KBT 4556

CONTOURING LAYER AS-BUILT

Location		North	East	Select As-Built Elevation	Countour Layer elev.	Contour Design Elev	Difference in Elevation	Contour Layer Thickness
43	PT 5000	483093.260	1350835.110	619.05	620.11	620.10	0.01	1.06
44	PT 5001	483116.630	1350840.020	619.33	620.37	620.47	-0.10	1.04
45	PT5002	483136.320	1350853.500	619.92	620.93	620.85	0.08	1.01
46	PT 5003	483149.350	1350873.490	620.20	621.27	621.22	0.05	1.07
47	PT 5004	483153.730	1350896.960	620.38	621.57	621.60	-0.03	1.19
48	PT 5005	483147.140	1351441.210	625.73	627.07	627.02	0.05	1.34
49	PT 5006	483142.180	1351464.580	625.81	627.13	627.04	0.09	1.32
50	PT 5007	483128.650	1351484.260	626.09	627.12	627.07	0.05	1.03
51	PT 5008	483108.620	1351497.240	625.96	627.20	627.10	0.10	1.24
52	PT 5009	483085.120	1351501.560	626.02	627.16	627.14	0.02	1.14
53	PT 5010	482979.650	1351333.900	652.93	654.00	654.05	-0.05	1.07
54	PT 5011	482966.480	1351042.100	652.86	653.92	653.92	0.00	1.06
55	PT 5012	482923.150	1351275.370	658.31	659.36	659.40	-0.04	1.05
56	pro	482915.200	1351099.310	658.25	659.26	659.33	-0.07	1.01
57	pro	482842.540	1351186.400	662.19	663.25	663.19	0.06	1.06
109		483063.710	1350834.749	618.93	619.95	619.87	0.08	1.02
110		483063.097	1350884.357	626.86	628.10	628.15	-0.05	1.24
111		483013.714	1350834.139	618.34	619.50	619.48	0.02	1.16
112		482963.717	1350833.528	618.05	619.16	619.09	0.07	1.11
113		482913.721	1350832.918	617.58	618.79	618.70	0.09	1.21
114		482863.725	1350832.308	617.28	618.40	618.31	0.09	1.12
116		483012.063	1350967.678	640.71	641.74	641.76	-0.02	1.03
118	pro	482911.144	1351041.422	652.56	653.58	653.51	0.07	1.02
119	pro	482861.148	1351040.810	652.15	653.17	653.14	0.03	1.02
121		483063.401	1350859.747	622.86	623.94	624.04	-0.10	1.08
123		483013.096	1350884.135	626.73	627.91	627.82	0.09	1.18
125		483012.478	1350934.131	635.28	636.29	636.16	0.13	1.01
128		482963.099	1350883.525	626.39	627.42	627.44	-0.02	1.03
130		482962.482	1350933.521	634.69	635.73	635.78	-0.05	1.04
132	pro	482961.864	1350983.517	643.09	644.16	644.12	0.04	1.07
136		482913.103	1350882.914	626.03	627.14	627.05	0.09	1.11
138		482912.485	1350932.910	634.33	635.40	635.40	0.00	1.07
140	pro	482911.867	1350982.907	642.60	643.70	643.75	-0.05	1.10
144		482863.107	1350882.304	625.85	626.86	626.66	0.20	1.01
146		482862.489	1350932.300	633.80	634.96	635.01	-0.05	1.16
148	pro	482861.871	1350982.296	642.36	643.39	643.37	0.02	1.03
162		483036.981	1350926.994	634.01	635.08	635.11	-0.03	1.07
168		483102.861	1350890.655	626.46	627.70	627.64	0.06	1.24
170		483069.402	1350927.810	632.56	633.79	634.06	-0.27	1.23
180		483152.880	1350967.148	621.34	622.36	622.30	0.06	1.02
181		483152.275	1351017.145	621.71	622.89	622.81	0.08	1.18
182		483151.669	1351067.141	622.26	623.32	623.30	0.02	1.06
183		483151.064	1351117.137	622.56	623.88	623.79	0.09	1.32
184		483150.459	1351167.134	623.22	624.30	624.30	0.00	1.08
185		483149.853	1351217.130	623.77	624.80	624.79	0.01	1.03
186		483149.248	1351267.127	624.23	625.35	625.28	0.07	1.12
187		483148.643	1351317.123	624.62	625.82	625.78	0.04	1.20

KBT

KBT

NCR No. 20203-004

CONTOURING LAYER AS-BUILT

Page 3A 5 of 4
Exh 1
4556

Location		North	East	Select As-Built Elevation	Countour Layer elev.	Contour Design Elev	Difference in Elevation	Contour Layer Thickness
188		483148.037	1351367.119	625.14	626.17	626.28	-0.11	1.03
190		483001.086	1351015.276	646.77	647.79	647.95	-0.16	1.02
191	pro	482967.507	1351064.865	653.05	654.08	653.93	0.15	1.03
192		482969.766	1351114.897	652.91	653.94	653.95	-0.01	1.03
193		482972.024	1351164.929	652.85	653.89	653.97	-0.08	1.04
194		482974.282	1351214.960	652.81	654.05	654.00	0.05	1.24
195		482976.540	1351264.992	652.96	654.04	654.02	0.02	1.08
196		482978.798	1351315.024	653.11	654.14	654.04	0.10	1.03
199		483098.041	1351366.501	633.44	634.66	634.60	0.06	1.22
201		483048.045	1351365.883	641.96	643.00	642.92	0.08	1.04
203		483097.521	1351409.420	633.84	634.99	635.03	-0.04	1.15
205		483047.903	1351377.629	642.09	643.13	643.04	0.10	1.04
207		483098.646	1351316.505	632.91	634.05	634.10	-0.05	1.14
209		483048.650	1351315.887	641.35	642.37	642.42	-0.05	1.02
211		482998.654	1351315.269	649.80	650.81	650.74	0.07	1.01
213		483099.252	1351266.509	632.59	633.64	633.60	0.04	1.05
215		483049.256	1351265.891	640.93	641.97	641.92	0.05	1.04
217		482999.259	1351265.273	649.27	650.32	650.24	0.08	1.05
219		483099.857	1351216.512	632.03	633.08	633.11	-0.02	1.05
221		483049.861	1351215.894	640.41	641.52	641.42	0.10	1.11
223		482999.865	1351215.277	648.56	649.63	649.74	-0.11	1.07
225		483100.462	1351166.516	631.59	632.71	632.61	0.10	1.12
227		483050.466	1351165.898	639.83	640.84	640.92	-0.08	1.01
229		483000.470	1351165.280	648.27	649.34	649.24	0.10	1.07
231		483101.068	1351116.520	631.09	632.18	632.11	0.07	1.09
233		483051.072	1351115.902	639.28	640.45	640.43	0.02	1.17
235		483001.075	1351115.284	647.73	648.82	648.74	0.08	1.09
237		483101.673	1351066.523	630.70	631.72	631.61	0.11	1.02
239		483051.677	1351065.905	638.66	639.68	639.93	-0.25	1.02
241	pro	483001.681	1351065.288	647.37	648.38	648.25	0.13	1.01
244		483102.279	1351016.527	630.15	631.17	631.11	0.06	1.02
246		483052.282	1351015.909	638.50	639.51	639.43	0.08	1.01
249		483102.884	1350966.531	629.69	630.71	630.62	0.10	1.02
252		483103.253	1350936.086	629.37	630.41	630.32	0.09	1.04
254		483052.775	1350975.211	637.97	639.06	639.02	0.04	1.09
258		483093.456	1351448.744	632.22	633.53	633.44	0.09	1.31
260		483058.261	1351413.229	638.56	639.68	639.82	-0.14	1.12
263		483055.468	1351501.198	625.81	626.87	626.87	0.00	1.06
264		483005.472	1351500.588	625.44	626.51	626.50	0.01	1.07
265		482955.475	1351499.977	624.84	625.90	626.11	-0.21	1.06
266		482905.479	1351499.367	624.37	625.58	625.71	-0.13	1.21
267		482855.483	1351498.757	624.08	625.25	625.31	-0.06	1.17
269		483056.023	1351455.307	633.43	634.44	634.56	-0.12	1.01
270		483006.964	1351377.320	645.88	647.02	647.08	-0.06	1.14
273		483029.400	1351412.985	640.42	641.44	641.43	0.01	1.02
277		483006.077	1351450.591	633.92	634.94	634.93	0.01	1.02
279		483006.682	1351400.595	642.24	643.28	643.25	0.03	1.04

CONTOURING LAYER AS-BUILT

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KBT
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Location		North	East	Select As-Built Elevation	Countour Layer elev.	Contour Design Elev	Difference in Elevation	Contour Layer Thickness
280		483055.770	1351476.200	629.91	630.97	631.08	-0.11	1.06
281		482907.493	1351333.018	652.53	653.54	653.54	0.00	1.01
282		482857.497	1351332.407	651.92	653.07	653.15	-0.08	1.15
285		482956.081	1351449.981	633.16	634.29	634.46	-0.17	1.13
287		482956.686	1351399.985	641.84	642.89	642.85	0.04	1.05
289		482957.291	1351349.988	650.12	651.14	651.13	0.01	1.02
291		482906.084	1351449.371	632.78	634.04	634.07	-0.03	1.26
293		482906.690	1351399.374	641.23	642.44	642.44	0.01	1.21
295		482907.295	1351349.378	649.48	650.71	650.79	-0.08	1.23
297		482856.088	1351448.760	632.41	633.64	633.68	-0.04	1.23
299		482856.693	1351398.764	640.80	641.96	642.05	-0.08	1.16
301		482857.299	1351348.768	649.33	650.40	650.42	-0.01	1.07
472	pt5015	482824.210	1350831.830	617.13	618.16	618.09	0.07	1.03
473	pt5016	482821.660	1351040.330	651.62	652.68	652.84	-0.16	1.06
474	pt5017	482820.950	1351098.160	657.69	658.71	658.62	0.09	1.02
475	pt5018	482819.880	1351186.130	661.79	662.97	663.02	-0.05	1.18
476	pt5019	482818.800	1351274.090	657.73	658.74	658.62	0.12	1.01
477	pt5020	482818.100	1351331.920	651.57	652.95	652.95	0.00	1.38
478	pt5021	482816.060	1351498.270	624.04	625.10	625.10	0.00	1.06
479	pt5022	482843.710	1350832.060	617.24	618.25	618.15	0.10	1.01
480	pt5023	482841.160	1351040.570	652.06	653.09	652.99	0.10	1.03
481	pt5024	482840.450	1351098.400	657.40	658.66	658.63	0.03	1.26
482	pt5025	482839.380	1351186.370	662.15	663.19	663.13	0.06	1.04
483	pt5026	482838.300	1351274.330	657.58	658.74	658.64	0.10	1.16
484	pt5027	482837.600	1351332.160	651.83	652.87	653.00	-0.13	1.04
485	pt5028	482835.560	1351498.510	623.88	625.12	625.15	-0.03	1.24
1835	10/1+20/1	482922.651	1351264.326	658.54	659.55	659.40	0.15	1.01
1836	10/1+20/1	482920.392	1351214.294	658.25	659.41	659.37	0.04	1.16
1837	10/1+20/1	482918.133	1351164.263	658.52	659.53	659.35	0.18	1.01
1838	10/1+20/1	482915.874	1351114.231	658.36	659.37	659.34	0.03	1.01
1839	ON 10/1	482949.597	1351264.659	655.62	656.77	656.71	0.06	1.15
1840	ON 10/1	482947.339	1351214.627	655.78	656.79	656.69	0.11	1.01
1841	ON 10/1	482945.081	1351164.596	655.79	656.80	656.66	0.14	1.01
1842	ON 10/1	482942.823	1351114.564	655.64	656.74	656.64	0.10	1.10
1843		482908.193	1351275.187	658.40	659.41	659.27	0.14	1.01
1844	pro	482858.197	1351274.577	657.85	658.92	658.82	0.10	1.07
1846	ON 10/1	482907.843	1351304.100	655.25	656.48	656.40	0.08	1.23
[redacted]								
1851	MID PT.pr	482940.843	1351070.702	655.62	656.73	656.63	0.10	1.11
[redacted]								
[redacted]								
1860	pro	482878.873	1351142.851	660.04	661.06	661.26	-0.20	1.02
1864	pro	482882.844	1351230.884	660.09	661.29	661.30	0.00	1.20
1866	pro	482858.730	1351230.590	660.24	661.25	661.08	0.17	1.01
1867	pro	482879.817	1351163.789	660.28	661.37	661.27	0.10	1.09
1868	pro	482882.074	1351213.821	660.22	661.39	661.29	0.10	1.17
2078		482816.671	1351448.278	N/A	633.45	633.44	0.01	N/A

KBT

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KBT

WCR No. 20103-004

FIGURE 1

4556

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED
K. Badu-Tweneboah	Certifying Engineer/GeoSyntec	20103-005	21 May 2001

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
Fluor Construction,/OSDF Phase III	Construction Quality Control	( ) YES (☒) NO
		8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

Technical Specifications, Section 02280, Part 2.01E and DCN No. 20103-013 require the biointrusion barrier material to have a minimum bulk specific gravity of 2.60 and a maximum absorption of 2.0 percent in accordance with ASTM C 127.

10. NONCONFORMANCE TYPE: Construction Nonconformance ( ) Material Deviation (×)

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

The last two conformance samples (Nos. RR01-03 and RR01-04) collected from the Type D Dumped Rock Fill (Riprap Type D) delivered to the site did not meet the above requirement for minimum bulk specific gravity. The average bulk specific gravity for Sample Nos. RR01-03 and RR01-04 were 2.51 and 2.53, respectively.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
K Badu-Tweneboah	31 May 2001

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (x) Reject ( ) Other ( ) Repair ( ) Rework ( )

The average absorption for Sample Nos. RR01-03 and RR01-04 were 0.51 percent and 0.44 percent, respectively, which are significantly less than the maximum specified value of 2.0 percent. Part 2.01C and DCN No. 20103-013 require the biointrusion barrier material to have a minimum rock quality rating of 60 using the UMTRA scoring criteria. The weighted score for bulk specific gravity for Sample No. RR01-03, drops from 70 (BSG=2.60) to 52 (BSG= 2.51), which is a decrease of 26 percent. However, the weighted score for absorption, which has the highest weighting factor, increases from 25 (Abs=2.0%) to 79 (Abs=0.51%), which is an increase of 216 percent. This implies that the material still meets the minimum rock quality rating of 60. Therefore, use as-is.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

Kwasi Badu-Tweneboah, Resident Engineer, GeoSyntec

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
K Badu-Tweneboah	6/06/01	5/31/01

000449

GQ0409-03.1/~~PH2~~NCR020A.CDA

E-B7

FIGURE 2

4556

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept ( ) Reject ( )
Comments ( )

20. APPROVAL AUTHORITY SIGNATURE:	21. DATE:

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

VERIFIER'S SIGNATURE:	24. DATE:
25. APPROVAL AUTHORITY SIGNATURE:	26. DATE CLOSED:

27. CONTINUATION FROM BLOCK _____:

000450

KBT

GQ0409-03.1/~~PH2NCR020A.CDA~~

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

BULK SPECIFIC GRAVITY/ABSORPTION ASTM C-127

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO

PROJECT NO.: 601341 TASK NO.: 04.1

DESCRIPTION: Phase III

DATE: 17 day May month 2001 year

MATERIAL TYPE: Rip Rap

SAMPLE NO.: RR01-03

Specimen	1	2	3	4	5	6	7	8	9	10
Date Immersed in Water:	15 May	←							→	15 May
Time Immersed in Water:	22 hrs	←							→	22 hrs
Date Weighed Wet:	16 May	←							→	16 May
Time Weighed Wet:	0841	0854	0941	0847	0907	0929	0917	0900	0905	0935
A) Weight Wet (Lbs):	3.14	7.47	3.08	3.98	13.25	21.33	14.29	7.33	5.67	2.27
B) Weight in Water (Lbs):	1.87	4.67	1.91	2.47	7.71	12.32	8.57	4.67	3.67	1.41
Date Weighed Dry:	17 May	←							→	17 May
Time Weighed Dry:	1209	1202	1158	1146	1141	1137	1134	1130	1121	1110
C) Dry Weight (Lbs):	3.12	7.43	3.03	3.92	13.21	21.28	14.23	7.25	5.64	2.26
Specific Gravity C/(A-B):	2.46	2.65	2.59	2.60	2.38	2.36	2.49	2.73	2.82	2.63
Absorption [(A-C)/C] % 100	0.64	0.54	1.65	1.53	0.30	0.24	0.42	1.10	0.53	.44

ALE

Average Specific Gravity: 2.51 Average Absorption: 0.51

Checked By: CA

Sheet No. 1 of 1

000451

4556

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

BULK SPECIFIC GRAVITY/ABSORPTION ASTM C-127

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO

PROJECT NO.: GQ1341 TASK NO.: 04.1

DESCRIPTION: Phase III

DATE: 18 day MAY month 2001 year

MATERIAL TYPE: Rip Rap

SAMPLE NO.: RR01-04

Specimen	1	2	3	4	5	6	7	8	9	10
Date Immersed in Water:	16 MAY	←							→	16 MAY
Time Immersed in Water:	24 hrs	←							→	24 hr
Date Weighed Wet:	17 MAY	←							→	17 MAY
Time Weighed Wet:	1320	1314	1306	1300	1254	1250	1245	1225	1230	1337
A) Weight Wet (Lbs):	16.07	13.91	15.50	10.30	11.21	6.89	3.57	3.59	4.05	1.90
B) Weight in Water (Lbs):	9.64	8.36	9.21	6.41	6.68	4.18	2.22	2.30	2.55	1.22
Date Weighed Dry:	18 MAY	←							→	18 MAY
Time Weighed Dry:	0947	0935	0940	0931	0925	0917	0855	0857	0901	0908
C) Dry Weight (Lbs):	16.04	13.86	15.30	10.27	11.17	6.87	3.56	3.58	4.05	1.90
Specific Gravity C/(A-B):	2.49	2.50	2.43	2.64	2.47	2.59	2.64	2.78	2.70	2.79
Absorption [(A-C)/C] x 100	0.19	0.36	1.31	0.29	0.36	0.29	0.28	0.28	0.0	0.0

DAS

Average Specific Gravity: 2.53 Average Absorption: 0.44

Checked By: CJ

Sheet No. 1 of 1

000452

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Table 8 – 2 UMTRA Rock Quality Scoring Criteria

	Weighting factor			Score										
	Lime-stone	Sand-stone	Igneous	10	9	8	7	6	5	4	3	2	1	0
Specific gravity	12	6	9	2.75	2.70	2.65	2.60	2.55	2.50	2.45	2.40	2.35	2.30	<2.3
Absorption (%)	13	5	2	0.1	0.3	0.5	0.67	0.83	1.0	1.5	2.0	2.5	3.0	>3.0
Sodium sulfate (%)	4	3	11	1	3	5	6.7	8.3	10	12.5	15	20	25	>25
Abrasion (%)	1	8	1	1	3	5	6.7	8.3	10	12.5	15	20	25	>25
Schmidt hammer	11	13	3	70	65	60	54	47	40	32	24	16	8	<8
Tensile strength (psi)	6	4	10	1400	1200	1000	833	666	500	400	300	200	100	<100
Freeze-thaw (%)	7	2	13	0	0.25	0.5	1	2.5	5	7.5	10	15	20	>20

000453

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GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Collin Sukow	Site CQC Manager/GeoSyntec Consultants	NCR-20103-006	25 October 2001

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
		( ) YES (X) NO
Fluor Construction/OSDF Phase III	Construction Quality Control	8. REMOVED (Initial/Date): N/A

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

OSDF PHIII-SPEC-REV0 Section 02225 2.01.D.2. states: Clay liner and cap material shall have a plasticity index (ASTM D4318) of at least 10 percent, but less than 40 percent.

10. NONCONFORMANCE TYPE: Construction Nonconformance ( ) Material Deviation (X)

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

Sample LP01-45 taken from compacted clay liner and cap stockpile 01-7 had a plasticity index of 8%. A second sample, LP01-45A, was [illegible]ed from the same area as the original sample and had a plasticity index of 14%. The stockpile composite permeability was co[illegible]ed of LP01-45 and passed project specifications..

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Collin P. Sukow	16 April 2002

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework ( )

The composite permeability sample included material from the failing plasticity index sample LP01-45 and still passed permeability testing (3.1×10^{-8} cm/s). Further, a second sample from the same area of the stockpile passed the plasticity index test with 14%. Therefore, use as is.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

Kwasi Badu-Tweneboah, CQA Certifying Engineer, GeoSyntec

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
[illegible]	30 April 2002	16 April 2002

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

20. APPROVAL AUTHORITY SIGNATURE:	21. DATE:
Charles C. Van Ander	4/18/02

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

23. VERIFIER'S SIGNATURE:	24. DATE:
[illegible]	4/25/02
25. APPROVAL AUTHORITY SIGNATURE:	26. DATE CLOSED:
[illegible]	4/25/02

27. CONTINUATION FROM BLOCK ____:

GEOSYNTEC CONSULTANTS

FLUOR FERNALD 4556

ATTERBERG LIMITS TEST

(ASTM D 4318)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO. GQ1341 TASK NO.: 04.1

DESCRIPTION: Phase III DATE: 18 day Oct month 2001 year

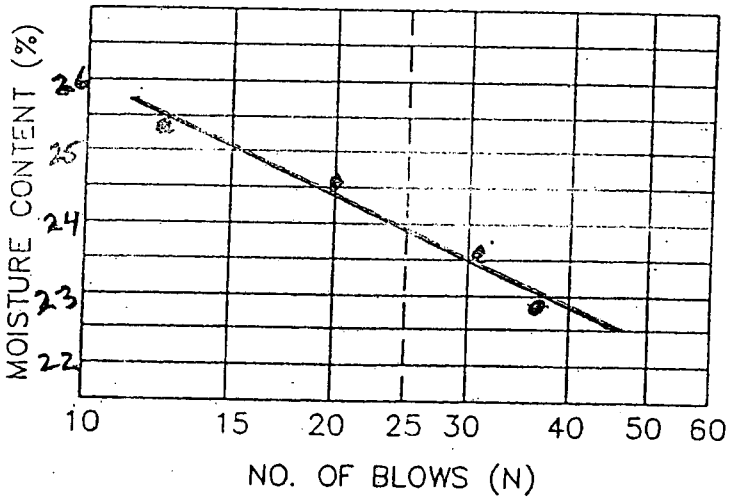
MATERIAL TYPE: Low Perm Clay MATERIAL SOURCE: Stockpile 01-7 SAMPLE NO.: 28-01-45

LIQUID LIMIT DETERMINATION

QA ID: DLE

	TARE NO.		1.1	3.1	1.6	2.6
A	WT. OF TARE	(grams)	28.79	28.38	28.86	28.54
B	WT. OF WET SOIL & TARE	(grams)	47.74	46.92	49.54	45.42
C	WT. OF DRY SOIL & TARE	(grams)	43.90	43.26	45.71	42.19
D	WT. OF WATER = B-C	(grams)	3.84	3.66	3.83	3.23
E	WT. OF DRY SOIL = C-A	(grams)	15.11	14.88	16.85	13.65
F	MOISTURE CONTENT = (D/E)X100	(%)	25.4	24.6	22.7	23.7
N	NUMBER OF BLOWS		13	20	36	31

DRYING TARE NO.



CURING TARE NO.

PLASTIC LIMIT DETERMINATION

QA ID: DLE

	TARE NO.		2.1	1.4		
	WT. OF TARE	(grams)	28.23	28.50		
	WT. OF WET SOIL & TARE	(grams)	36.13	37.73		
	WT. OF DRY SOIL & TARE	(grams)	35.12	36.55		
	WT. OF WATER = B-C	(grams)	1.01	1.18		
	WT. OF DRY SOIL = C-A	(grams)	6.89	8.05		
	MOISTURE CONTENT = (D/E)X100	(%)	14.7	14.7		

LIQUID LIMIT (LL) = 24 PLASTIC LIMIT (PL) = ~~14.7~~ 15 (TBC) PLASTICITY INDEX (PI) = ~~9.3~~ 9 (TBC)

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

4556

ATTERBERG LIMITS TEST

(ASTM D 4318)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: 6Q134 TASK NO.: 04.1

DESCRIPTION: Phase III DATE: 25 day Oct month 2001 year

MATERIAL TYPE: Low Perm Clay MATERIAL SOURCE: Stockpile 01-7 SAMPLE NO. LP-01-45 Rev

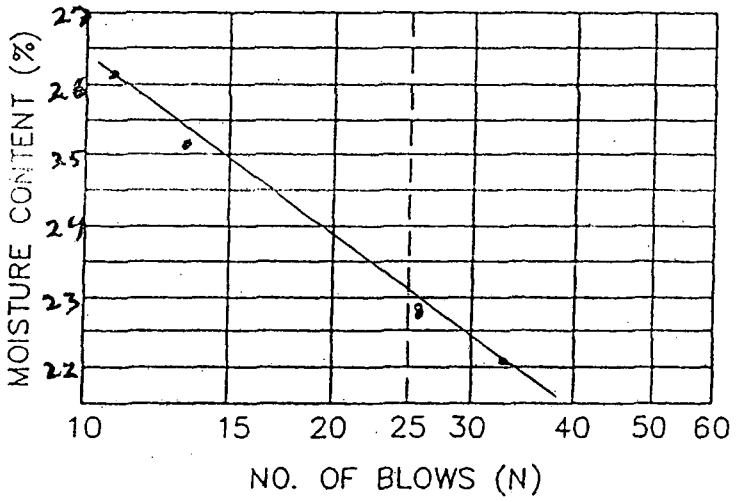
LIQUID LIMIT DETERMINATION

QA ID: DLE

	TARE NO.		2.5	1.9	3.1	2.3
A	WT. OF TARE	(grams)	28.42	28.53	28.38	31.19
B	WT. OF WET SOIL & TARE	(grams)	50.17	49.37	49.75	52.24
C	WT. OF DRY SOIL & TARE	(grams)	45.65	45.19	45.79	48.39
D	WT. OF WATER = B-C	(grams)	4.52	4.18	3.96	3.82
E	WT. OF DRY SOIL = C-A	(grams)	17.23	16.66	17.41	17.20
F	MOISTURE CONTENT = (D/E)X100	(%)	26.2	25.1	KS 22.7	22.2
N	NUMBER OF BLOWS		11	13	26	34

DRYING TARE NO.

CURING TARE NO.



PLASTIC LIMIT DETERMINATION

QA ID: DLE

TARE NO.		1.8	2.4		
WT. OF TARE	(grams)	28.78	27.37		
WT. OF WET SOIL & TARE	(grams)	37.28	37.44		
WT. OF DRY SOIL & TARE	(grams)	36.18	36.16		
WT. OF WATER = B-C	(grams)	1.10	1.28		
WT. OF DRY SOIL = C-A	(grams)	7.40	8.79		
MOISTURE CONTENT = (D/E)X100	(%)	14.9	14.6		

LIQUID LIMIT (LL) = 23.2 PLASTIC LIMIT (PL) = 14.8 PLASTICITY INDEX (PI) = 8.4

000457

GEOSYNTEC CONSULTANTS FILE NO. 2-13-ALT CHECKED BY: KS SHEET NO. 1 OF 1

ATTERBERG LIMITS

ASTM D 4318

4556

PROJECT NAME: GEOSYNTEC/FLUOR FERNALD/OH
PROJECT NUMBER: 013-3175
SAMPLE ID: LP01-45 - SAMPLE DEPTH: -
SAMPLE TYPE: Bag

SAMPLE PREPARATION

Wet or Dry: Dry

Minus #40 Sieve: Yes

PLASTIC LIMIT DETERMINATION

Number of Blows			
Weight of Wet Soil & Tare (gm)	21.72	22.81	21.80
Weight of Dry Soil & Tare (gm)	20.52	21.55	20.61
Weight of Tare (gm)	10.98	11.28	11.35
Weight of Water (gm)	1.20	1.26	1.19
Weight of Dry Soil (gm)	9.54	10.27	9.26
Water Content %	12.58	12.27	12.85

LIQUID LIMIT DETERMINATION

30	23	19	15
22.05	21.04	21.40	21.08
18.93	18.06	18.75	17.98
4.15	4.14	6.48	4.13
3.12	2.98	2.65	3.10
14.78	13.92	12.27	13.85
21.11	21.41	21.60	22.38

NATURAL MOISTURE

PLASTIC LIMIT (PL): 13

LIQUID LIMIT (LL): 21

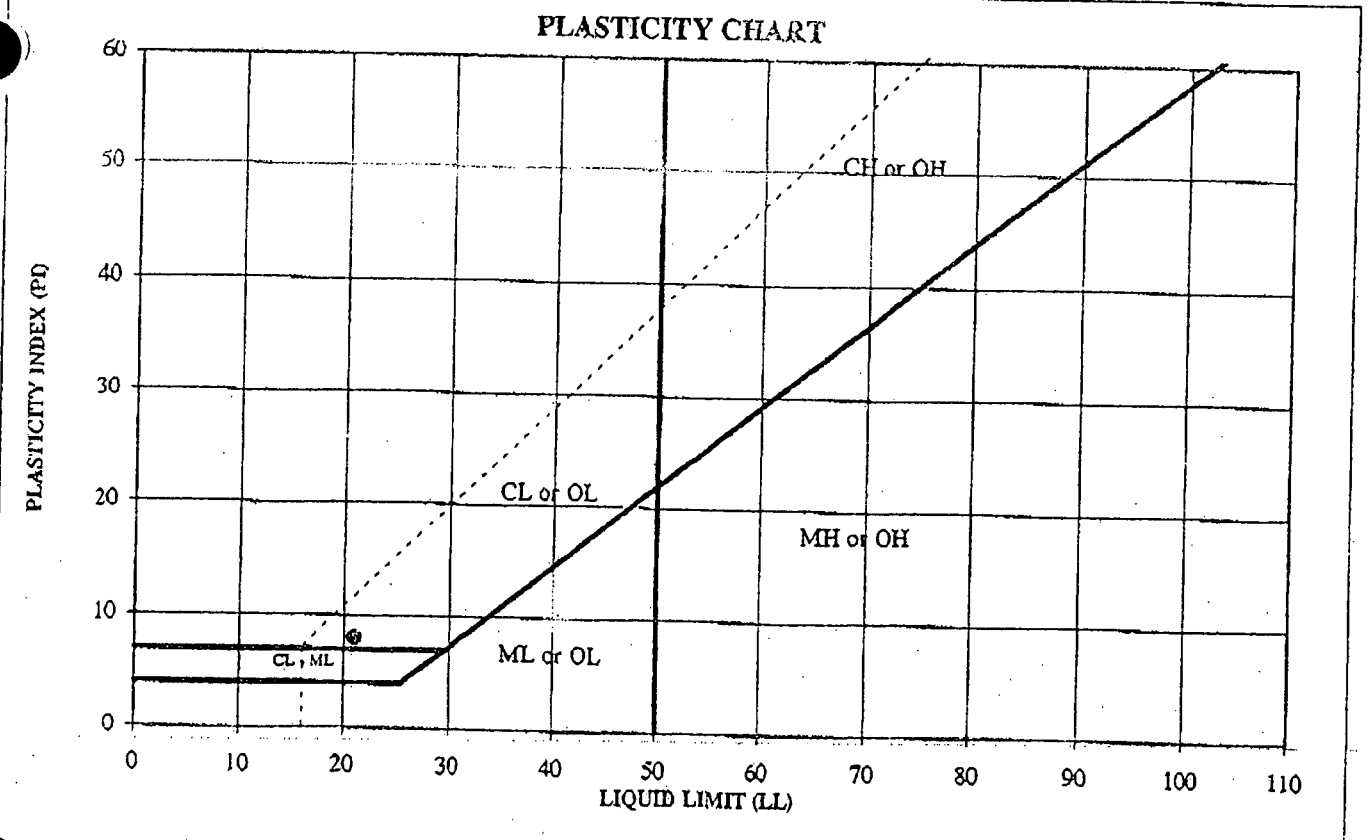
PLASTICITY INDEX (PI): 8

LIQUIDITY INDEX (LI):

NOTE:

DESCRIPTION: Dark Yellowish Brown, SILTY CLAY, and coarse to fine sand, little fine gravel.

USCS: CL



TECH
DATE 10/28/01
CHECK
REVIEW

000458

Golder Associates Inc.

GEOSYNTEC CONSULTANTS

FLUOR FERNALD 4556

ATTERBERG LIMITS TEST

(ASTM D 4318)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO. 60134 TASK NO.: 04.1

DESCRIPTION: Phase III DATE: ____ day 11/00 month 2001 year

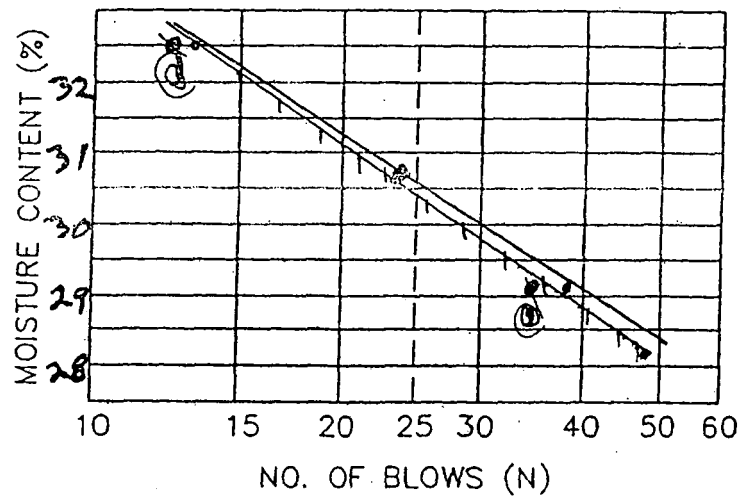
MATERIAL TYPE: Low Plasm Clay MATERIAL SOURCE: Stockpile 01-7 SAMPLE NO. LP-115-A

LIQUID LIMIT DETERMINATION

QA ID: DLE

	TARE NO.		1.6	3.1	1.3	
A	WT. OF TARE	(grams)	28.87	28.38	28.64	
B	WT. OF WET SOIL & TARE	(grams)	48.19	43.91	47.97	
C	WT. OF DRY SOIL & TARE	(grams)	43.45	40.26	43.61	
D	WT. OF WATER = B-C	(grams)	4.74	3.65	4.36	
E	WT. OF DRY SOIL = C-A	(grams)	14.58	11.88	14.97	
F	MOISTURE CONTENT = (D/E)X100	(%)	32.5	30.7	29.1	
N	NUMBER OF BLOWS		13	24	37	

DRYING TARE NO.



CURING TARE NO.

PLASTIC LIMIT DETERMINATION

QA ID: KS/DLE

	TARE NO.		2.5	1.9		
	WT. OF TARE	(grams)	28.43	28.55		
	WT. OF WET SOIL & TARE	(grams)	34.53	35.97		
	WT. OF DRY SOIL & TARE	(grams)	33.69	34.93		
	WT. OF WATER = B-C	(grams)	~~0.89~~ 0.84	1.04		
	WT. OF DRY SOIL = C-A	(grams)	~~5.26~~ 5.26	6.38		
	MOISTURE CONTENT = (D/E)X100	(%)	~~16.9~~ 16.0	16.3		

000459

LIQUID LIMIT (LL) = ~~30.7~~ 30. PLASTIC LIMIT (PL) = ~~16.6~~ 16 PLASTICITY INDEX (PI) = ~~13.8~~ 14

GEOSYNTEC CONSULTANTS FILE NO. 2-13-ALT CHECKED BY: ____ SHEET NO. 1 OF 1

W PUMP #335

FLEXIBLE WALL PERMEABILITY
ASTM D 5084
METHOD D, CONSTANT RATE OF FLOW

PROJECT TITLE	GEOSYNTEC/FLUOR FERNALD/OH	BOARD #	5
PROJECT NUMBER	013-3175	CELL #	5
SAMPLE ID	LP01-52 - - -	Flow Pump Speed	10
SAMPLE TYPE	Bag	Technician	FT

COMMENTS: Per client request, sample was remolded to approximately 118.0 pcf at a moisture content of 14.2%.

Sample Data, Initial			
Height, inches	2.997	B-Value, f	0.96
Diameter, inches	2.790	Cell Pres.	85.0
Area, cm²	39.44	Bot. Pres.	80.0
Volume, cm³	300.25	Top Pres.	80.0
Mass, g	648.96	Tot. B.P.	80.0
Moisture Content, %	14.92	Head, max.	139.27
Dry Density, pcf	117.36	Head, min.	139.27
Spec. Gravity (assumed)	2.720	Max. Grad.	18.30
Volume Solids, cm³	207.61	Min. Grad.	18.30
Volume Voids, cm³	92.64		
Void Ratio	0.45		
Saturation, %	90.9%		

Sample Data, Final	
Height, inches	2.997
Diameter, inches	2.796
Area, cm²	39.61
Volume, cm³	301.54
Mass, g	653.92
Moisture Content, %	15.80
Dry Density, pcf	116.86
Volume Solids, cm³	207.61
Volume Voids, cm³	93.93
Void Ratio	0.45
Saturation, %	95.0%

WATER CONTENTS		Trimmings Initial	Sample Final
Wt Soil & Tare, i	g	648.96	705.28
Wt Soil & Tare, f	g	564.71	616.11
Wt Tare	g	0.00	51.67
Wt Moisture Lost	g	84.25	89.17
Wt Dry Soil	g	564.71	564.44
Water Content	%	14.92%	15.80%

Flow Pump Rate: 2.33E-05 cm³/sec

USCS: (CL)

DESCRIPTION: Dark Yellowish Brown, SILTY CLAY, some coarse to fine sand, trace fine gravel.

TIME FUNCTIONS, SECONDS								dP					
DATE	DAY	HOUR	MIN	TEMP (°C)	dt (min)	dt,acc (min)	dt (sec)	dt,acc (sec)	Reading (psi)	Head (cm)	Gradient	Permeability (cm/sec)	
10/26/2001	37190	9	5	21.1	0	0	0	0	1.98	139.27	18.30	3.1E-08	
10/26/2001	37190	9	10	21.1	5	5	300	300	1.98	139.27	18.30	3.1E-08	
10/26/2001	37190	9	15	21.1	5	10	300	600	1.98	139.27	18.30	3.1E-08	
10/26/2001	37190	9	20	21.1	5	15	300	900	1.98	139.27	18.30	3.1E-08	*
10/26/2001	37190	9	25	21.1	5	20	300	1200	1.98	139.27	18.30	3.1E-08	*
10/26/2001	37190	9	30	21.1	5	25	300	1500	1.98	139.27	18.30	3.1E-08	*
10/26/2001	37190	9	35	21.1	5	30	300	1800	1.98	139.27	18.30	3.1E-08	*

*TRANSCRIBED FROM ORIGINAL DATA SHEETS

PERMEABILITY REPORTED AS ** 3.1E-08 cm/sec **

DATE 10/26/01
CHECK
REVIEW

4556

000460

Golder Associates Inc.

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Collin Sukow	Site CQC Manager/GeoSyntec Consultants	NCR-20103-007	30 May 2002

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
GeoSyntec Consultants		( ) YES (X) NO
		8. REMOVED (Initial/Date): N/A

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

Specifications 02720.3.02.I: Trial Seams

"...Conduct trial seams on the same material to be installed and under similar field conditions as production seams. Conduct trial seaming at the beginning of each seaming period, and at least once every four hours, for each seaming apparatus used that day prior to seaming..."

10. NONCONFORMANCE TYPE: Construction Nonconformance (X) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

On 23 July 2001, 47 lineal feet of extrusion weld was completed with Machine No. 04 from 18:00 to 18:20. The trial weld was performed after lunch at 13:05. This means the production weld was performed at least five (5) hours after the trial weld. The machine was stopped and another trial weld was completed and tested. The machine continued welding until the end of the work day.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Collin P. Sukow	19 June 2002

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework ( )

The machine did surpass the specified four (4) hours between trial welds. However, the machine was stopped and another trial weld was performed and passed project specifications. Also, the suspect production weld passed non-destructive testing and electrical leak detection testing. Use as is.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

KWASI BADU-TWENEBOAH, PROJECT MANAGER, GEOSYNTEC

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
K Badu-Tweneboah	28 JUNE 2002	6/20/02

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (✓) Reject ( )
Comments ( )

20. APPROVAL AUTHORITY SIGNATURE: [signature]

21. DATE: 6/27/02

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

23. VERIFIER'S SIGNATURE:

24. DATE:

25. APPROVAL AUTHORITY SIGNATURE:

26. DATE CLOSED:

27. CONTINUATION FROM BLOCK _____:

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

TRIAL SEAM LOG - EXTRUSION

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO: ~~G00409~~ 621341 KS TASK NO.: 04.1

DESCRIPTION: Cell #1 Cap Construction YEAR: 2001

CONTRACTOR: Istre Co. TENSIOMETER DESCRIPTION: Columbine Accuralite

TRIAL SEAM NO.	DATE (day/mo)	TIME	MACHINE NO.	OPER ID	(1) MATERIAL DESCRIPTION	EXTRUSION PREHEAT (SET/C/F)	EXTRUSION BARREL (°C/F)	TEST RESULTS PEEL (ppi/psi)	TEST RESULTS SHEAR (ppi/psi)	PASS	FAIL	RE-TEST NO.	QA ID
1	10 July	1002	Ø3	JB	T/T	500	466	119/137	133/130	P	—	—	KS
2	10 July	1004	Ø3	JB	S/T	500	466	127/120	137/143	P	—	—	KS
3	11 July	1004	Ø3	JB	T/T	475	450	132/131	154/153	P	—	—	KS
4	11 July	1454	~~Ø6~~ Ø4	JB	T/T	475	450	127/132	135/141	P	—	—	KS
5	13 July	1440	Ø4	JB	T/T	450	450	121/120	138/131	P	—	—	KS
6	16 July	Ø740	Ø4	JB	T/T	450	450	104/107	153/157	P	—	—	KS
7	16 July	1320	Ø4	JB	T/T	450	450	127/128	136/125	P	—	—	KS
8	17 July	Ø740	Ø4	JB	T/T	450	450	123/114	144/146	P	—	—	KS
9	23 July	1305	Ø4	JB	T/T	450	450	104/102	122/121	P	—	—	KS
10	23 July	1845	Ø4	JB	T/T	450	450	109/108	122/126	P	—	—	KS
11	24 July	Ø805	Ø4	JB2	T/T	400	450	97/125	142/140	P	—	—	KS
12	24 July	1545	Ø4	JB2	T/T	400	450	101/104	122/120	P	—	—	KS
13	25 July	Ø817	Ø4	JB2	T/T	400	450	130/134	143/145	P	—	—	KS
14	25 July	1230	Ø4	JB2	T/T	400	450	104/120	135/132	P	—	—	KS
15	26 July	Ø835	Ø4	JB	T/T	450	450	110/107	155/154	P	—	—	KS
16	26 July	Ø840	Ø4	JB2	T/T	450	450	115/110	154/154	P	—	—	KS
17	27 July	Ø822	Ø4	JB2	T/T	450	450	132/117	160/161	P	—	—	KS
18	27 July	1332	Ø4	JB2	T/T	450	450	103/98	126/131	P	—	—	KS
19	30 July	Ø815	Ø4	JB2	T/T	450	450	106/112	145/149	P	—	—	KS
20	30 July	Ø845	Ø6	JB2	T/T	450	450	115/112	156/157	P	—	—	KS
21	30 July	1315	Ø4	JB	T/T	450	450	118/127	122/124	P	—	—	KS
22	30 July	1325	Ø6	JB2	T/T	450	450	122/122	128/141	P	—	—	KS
23	31 July	Ø910	Ø4	JB2	T/T	450	450	121/119	142/146	P	—	—	KS
24	Ø1 AUG	Ø745	Ø4	JB2	T/T	450	450	100/105	125/131	P	—	—	KS
25	Ø2 AUG	1300	Ø4	JB2	T/T	450	450	129/128	130/125	P	—	—	KS

000463

NOTE: (1) MATERIAL DESCRIPTION REFERS TO EITHER SMOOTH/SMOOTH (S/S); SMOOTH/TEXTURED (S/T); OR TEXTURED/TEXTURED (T/T).

GEOSYNTEC CONSULTANTS

FLUOR FERNALD

PRODUCTION SEAM SUMMARY LOG

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO.: 661341 TASK NO.: 04.1

DESCRIPTION: Cell #1 Cap Construction YEAR: 2001

PRIMARY: ☐ SECONDARY: ☐ OTHER: ☒ Cap CONTRACTOR: Istre

PRODUCTION SEAM				LOCATION					NONDESTRUCTIVE TEST						
DATE (day/mo)	TIME	MACHINE NO.	OPER ID	SEAM NO.	BEGIN	END	ACTUAL SEAM LENGTH (ft)	QA ID	LOCATION (ft)	AIR PRESSURE (± psi for 5 min.)	V-BOX (___sec.)	OPERATOR ID	PASS/ FAIL	RETEST DATE	QA ID
23July	1500	04	JB	P-18/R-65	95	117	22	KS	95-117	—	27July	TM	P —	—	KS
23July	1800	04	JB	P-4/R-73	357	391	34	KS	357-391	—	27July	TM	P —	—	KS
23July	1815	04	JB	P-3/R-73	404	391	13	KS	404-391	—	27July	TM	P —	—	KS
23July	1830	04	JI	P-27/R-73	404	391	13	KS	404-391	—	27July	TM	P —	—	KS
23July	1848	04	JI	P-3/R-73	404	432	28	KS	404-432	—	27July	TM	P —	—	KS
23July	1910	04	JB	P-2/R-73	432	450	18	KS	432-450	—	27July	TM	P —	—	KS
24July	0845	04	JB2	P-26/R-73	357	391	34	KS	357-391	—	27July	TM	P —	—	KS
24July	0910	04	JB2	P-27/R-73	404	432	28	KS	404-432	—	27July	TM	P —	—	KS
24July	0945	04	JB2	P-28/R-73	432	450	18	KS	432-450	—	27July	TM	P —	—	KS
24July	1515	04	JB2	P-1/P-30	354	335	19	KS	335-354	—	27July	TM	P —	—	KS
25July	0845	04	JB2	P-2/P-30	335	323	16	KS	335-323	—	27July	TM	P —	—	KS
KS ~~25July~~	~~0853~~	~~04~~	~~JB2~~	~~P-28/R-73~~	~~450~~	~~432~~	~~18~~	~~KS~~	~~450-432~~	—	~~27July~~	~~TM~~	~~P~~	—	~~KS~~
25July	0935	04	JB2	P-28/P-30	323	255	64	KS	323-255	—	27July	TM	P —	—	KS
				TOTAL (1)			~~325~~ KS 307								

NOTE: (1) SEAM LENGTH: THIS PAGE KS ~~325~~ 307 (ft) ACCUMULATED KS ~~[illegible]~~ 822 (ft)

N/A = NOT APPLICABLE

000464

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FLUOR FERNALD

Fluor Fernald, Inc.

NONCONFORMANCE REPORT FORM

ORIGINATOR/ASSESSOR

4556

1	Nonconformance Number/Revision	NCR No.: 51 Revision No. 0
2	Dates	Date Discovered: 17 May 2001 Date NCR Issued: 21May 2001
3	Type of Nonconformance	[X] FINDING [ ] CONCERN
4	Project/Activity @ Fac/Loc/Bldg.	OSDF Cell 1 Cap Construction
5	Hazard Category	Nuclear: [ ] 1 [ ] 2 [ ] 3 Radiological: [ ] Non-Nuclear: [ ] High Hazard [ ] Moderate Hazard [ ] Low Hazard Industrial: [ ] Standard Industrial Hazard [ ] Other Industrial Hazard Not Designated [X] Desktop review, document review, etc.
6	Assessment	[X] Internal JTT 5-21-01 [ ] External (OEPA, DOE) [X] Supplier/Vendor GeoSyntec Consultants, Inc. JTT 05-21-01
7	Assessment Type	[ ] Audit [X] Surveillance [ ] Inspection [ ] Other
8	Assessment Number	2008790
9	Responsible Division/Vendor	[ ] S&WP [ ] SC [ ] SP [ ] DP [ ] WGS [ ] SO&M [ ] ESH&Q [ ] OP 5/21/01 [X] Supplier/Vendor/Subcontractor [X] Other SDFP (Soil and Disposal Facility Project) JTT 05-21-01
10	Responsible Department/Vendor	GeoSyntec Consultants, Inc.
11	Responsible Team Leader/Coach/Vendor (Print Name)	David K. Phillips, GeoSyntec Consultants, Inc. (For Concerns, assign to Division Manager)
12	Functional Area (NA for Vendors) (choose any that apply) (Ref. RM-0016)	[ ] CM [ ] ED [ ] RD [ ] MS [ ] QA [ ] AC [ ] PM [ ] PI [ ] FM [ ] EP [ ] EW [ ] MT [ ] OP [ ] PT [ ] SE [ ] TR [ ] CT [ ] HR [ ] PC [ ] EM [ ] FP [ ] NS [ ] SH [ ] RP
	QA Criteria (choose one that applies Ref. RM-0012) Other Criteria (CONOPS, etc.) (not RM-0012 applicable)	[ ] 1 Program [ ] 2 Training [ ] 3 Quality Improvement [ ] 4 Document/Records [ ] 5 Work process [ ] 6 Design [ ] 7 Procurement [X] 8 Inspect/Test [ ] 9 Management Assessment [ ] 10 Independent Assessment [ ] Other
14	Requirement Description Cite the requirement (clearly, concisely, and completely) and its source, including document identification number, page and paragraph number. A copy of the document (or page of the document) in which the requirement appears may be attached or added to the NCR file. Use additional or separate sheets as necessary.	"Samples shall be taken across the entire width of the roll and shall not include the first 3 feet." (FEMP OSDF-CQAP, *Construction Quality Assurance Plan, On-Site Disposal Facility*, Rev. 0, May 1997, Section 9 "Geotextiles," Subsection 9.4, "Conformance Testing," Sub-subsection 9.4.1, "Sampling Procedures," page 9-3)
15	Nonconformance Description Describe the nonconformance. Include details such as supplier names, container numbers, purchase order, work order, or requisition numbers) and clearly describe the deviation from the written requirement. Use additional or separate sheets as necessary.	Contrary to the above requirement, the geotextile conformance samples taken by GeoSyntec for 2001 included the first 3 feet of the geotextile rolls.
16	Tagging Required / Number of Tags	[ ] Yes [X] No Number of Tags: N/A
17	Originator/Assessor	Name: James T. TURNER Signature: [signature] Date: 21 May 2001

TEAM LEADER'S/COACH'S REVIEW

18	Team Leader/Coach	Name: Michael W. GODBER Signature: [signature] Date: 21 MAY 2001
	Response Date From Resp. Organ.	REQUESTED RESPONSE DATE: 4 ~~10~~ June 2001 JTT 5-21-01 5/21/01 (Reply within 20 working days)

000466

FLUOR FERNALD **NONCONFORMANCE REPORT FORM**

4556

RESPONSIBLE ORGANIZATION'S CORRECTIVE ACTION RESPONSE

	Nonconformance Number/Revision	NCR No.: 51 Revision No. 0
	Root Cause Analysis Provide documentation as attachment. Use additional or separate sheets as necessary	[ ] YES [X] NO **Level 1 Cat.:** [ ] (human performance.) [ ] (equip.) [ ] (nat. phenom/sabotage [ ] (other) [ ] Supplier/Vendor/Subcontractor (root cause per their program) **Cause** _____
21	**Corrective Action (CA) Description and Disposition** Describe the actions necessary to correct the nonconformance. Corrective actions must be detailed and complete. They must be written in a clear, concise, and verifiable manner. The corrective action must also include actions to prevent recurrence. Use additional or separate sheets as necessary. (A disposition of Accept-as-is or Repair REQUIRES a written Technical Concurrence/Justification below)	Hardware: [X] Accept-as-is [ ] Repair [ ] Rework [ ] Reject Non-Hardware: [ ] Other _____ Attached Corrective Action Plan per QA-0019 [ ] Yes [X] NA The primary purpose for discarding the first 3 feet is to preclude taking samples that may have wear or damage from shipment that would inappropriately produce unsatisfactory test results on otherwise acceptable material. This material was sampled at the manufacturing facility prior to shipment, virtually eliminating the potential for wear or damage. Finally, the material was tested with satisfactory results. The first 3 feet of the roll is not inherently better than the rest of the roll, therefore the satisfactory results are appropriate and representative of their corresponding material.
22	**Technical Concurrence/Justification (mark NA if not applicable)**	Name: KWASI BADU-TWEBEAH Signature: [signature] Date: 5/21/01
23	**Was a Design Change Notice Required?**	[ ] Yes [X] No DCN # Date Issued
24	**Was a SBDR Performed?** **Was a USQD Performed?**	[ ] Yes [X] No SBDR # Date Issued [ ] Yes [X] No USQD # Date Issued
25	**Actions taken to Prevent Recurrence** Use additional or separate sheets as necessary.	GeoSyntec has informed personnel responsible for sampling for Fluor Fernald, Inc. that the first three feet of the sampled rolls must be discarded, even when sampled at the manufacturer's facility, until the CQA plan is modified accordingly.
26	**Proposed Completion Date For CA**	Date: 21 MAY 01
	Responsible Team Leader/Coach/Vendor	Name: for David K. PHILLIPS Signature: [signature] Date: 5/21/01

EVALUATION OF THE CORRECTIVE ACTION RESPONSE BY THE ORIGINATOR/ASSESSOR

28	**Response Acceptable?**	[X] Yes [ ] No
29	**Originator's/Assessor's**	Name: James T. TURNER Signature: [signature] Date: 21 May 2001

COMPLETION OF THE CORRECTIVE ACTIONS BY THE RESPONSIBLE ORGANIZATION

30	**Date Corrective Action Completed**	Date: 21 MAY 01
31	**Responsible Team Leader/Coach /Vendor**	Name: for David K. PHILLIPS Signature: [signature] Date: 5/21/01

VERIFICATION OF COMPLETED CORRECTIVE ACTIONS BY THE VERIFIER

32	**Verification Action** (Describe what objective evidence was examined to verify completion of this action and attach documentation to the NCR)	Reviewed Dave Phillips' E-mail of 18 May 2001 (see attached). Rationale for Accept-As-Is is reasonable, and action taken to prevent recurrence is sound.
33	**Verifier**	Name: James T. TURNER Signature: [signature] Date: 21 May 2001

CLOSURE BY THE VERIFIER'S TEAM LEADER/COACH

	Verifier's Team Leader/Coach (NCR Closed)	Name: MIKE GOOBER Signature: [signature] Date: 21 MAY 2001

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NCR 51
21 May 2001
p. 3 of 4

4556

From: Dave Phillips [DPhillips@Geosyntec.Com]
To: 'Turner, Jim'; Dave Phillips
Cc: Godber, Mike; Kwasi Badu-Tweneboah
Subject: RE: Conformance Testing Surveillance Request
Sent: Fri 05/18/2001 08:08

Jim,

Geomembrane sampled by Dave Phillips (GeoSyntec) at the Manufacturer's facility on 13 February 2001. First 3 feet of sample discarded.

Geotextile sampled by Ned Meekins (GeoSyntec) at the Manufacturers Facility on 16 March 2001. First 3 feet not discarded.

GCL sampled at the factory by Dave Phillips on 6 March and Ned Meekins on 8 March 2001. First 3 feet not discarded.

All samples taken were of the size required by the CQA Plan (i.e., 3 plus feet by full roll width).

Jim, I recommend a non-conformance be written, as appropriate, where the first 3 feet were not discarded. I also recommend that we accept "as is" for the following reasons:

1. The primary purpose for discarding the first three feet is to preclude taking samples that may have wear or damage from shipment that would inappropriately produce unsatisfactory test results on otherwise acceptable material.

2. Material was sampled at the Manufacturing Facility prior to shipment, thus the potential for wear or damage is very low.

3. Material was tested with satisfactory results, therefore, there is no reason to suspect that the material was in appropriately passed (i.e., the first 3 feet is not better than the remainder of the roll).

GeoSyntec has taken measures to inform personnel responsible for sampling that the first three feet from the sampled roll must be discarded, even when samples are taken at the Manufacturers facility, unless a future page change notice to the CQA plan provides other options.

Please advise if you need additional information.

Regards. Dave

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21 May 2001
p. 4 of 4

4556

-----Original Message-----
From: Turner, Jim [mailto:Jim.Turner@fernald.gov]
Sent: Thursday, May 17, 2001 12:57 PM
To: David K. Phillips P. E. (E-mail)
Cc: Godber, Mike
Subject: Conformance Testing Surveillance Request

Dave,

Mike Godber asked me to perform surveillances on the conformance testing of the geosynthetics. One of the requirements is that geotextile samples "be taken across the entire width of the roll and shall not include the first 3 feet." Could you please provide me with some documentation (a reply to this e-mail is sufficient) that indicates that the geotextile samples were cut this way? If you did not take the samples yourself, please confirm with the person who did that this requirement was met.

Thanks for your help,

Jim Turner
(513) 648-4941

Fluor Fernald, Inc.

NONCONFORMANCE REPORT FORM

ORIGINATOR/ASSESSOR

1	Nonconformance Number/Revision	NCR No.: 57 Revision No. 0 4556
	Dates	Date Discovered: 24 May 2001 Date NCR Issued: 30 May 2001
3	Type of Nonconformance	[X] FINDING [ ] CONCERN
4	Project/Activity @ Fac/Loc/Bldg.	On-Site Disposal Facility (OSDF) Cell 1 Cap Construction
5	Hazard Category	Nuclear: [ ] 1 [ ] 2 [ ] 3 Radiological: [ ] Non-Nuclear: [ ] High Hazard [ ] Moderate Hazard [ ] Low Hazard Industrial: [ ] Standard Industrial Hazard [ ] Other Industrial Hazard Not Designated [X] Desktop review, document review, etc.
6	Assessment	[ ] Internal [ ] External (OEPA, DOE) [X] Supplier/Vendor CETCO
7	Assessment Type	[ ] Audit [X] Surveillance [ ] Inspection [ ] Other
8	Assessment Number	2008790
9	Responsible Division/Vendor	[ ] S&WP [ ] SC [ ] SP [ ] DP [ ] WGS [ ] SO&M [ ] ESH&Q [ ] OP [X] Supplier/Vendor/Subcontractor [ ] Other
10	Responsible Department/Vendor	CETCO and GeoSyntec Consultants, Inc.
11	Responsible Team Leader/Coach/Vendor (Print Name)	Rick Holbrook (For Concerns, assign to Division Manager)
12	Functional Area (NA for Vendors) (choose any that apply) (Ref. RM-0016)	[ ] CM [ ] ED [ ] RD [ ] MS [ ] QA [ ] AC [ ] PM [ ] PI [ ] FM [ ] EP [ ] EW [ ] MT [ ] OP [ ] PT [ ] SE [ ] TR [ ] CT [ ] HR [ ] PC [ ] EM [ ] FP [ ] NS [ ] SH [ ] RP
13	QA Criteria (choose one that applies Ref. RM-0012) Other Criteria (CONOPS, etc.) (not RM-0012 applicable)	[ ] 1 Program [ ] 2 Training [ ] 3 Quality Improvement [ ] 4 Document/Records [X] 5 Work process [ ] 6 Design [ ] 7 Procurement [ ] 8 Inspect/Test [ ] 9 Management Assessment [ ] 10 Independent Assessment [ ] Other
	Requirement Description Cite the requirement (clearly, concisely, and completely) and its source, including document identification number, page and paragraph number. A copy of the document (or page of the document) in which the requirement appears may be attached or added to the NCR file. Use additional or separate sheets as necessary.	Conformance testing of the geosynthetic clay liner (GCL) and geosynthetic clay cap (GCC) materials . . . will be conducted to ensure compliance with both the Technical Specifications and the manufacturer's list of minimum average roll values. (OSDF Construction Quality Assurance (CQA) Plan, 20100-PL-006, Rev. 0, May 1997, p. 8-3, paragraph 8.4.2) The CQA Consultant will report peak and large-displacement shear strengths for each of the respective tests in terms of secant friction angles (equal to the inverse tangent of shear stress divided by normal stress). The geosynthetic clay liner shall meet or exceed the following shear strength envelopes: Normal Stress (psi) – 45; Peak Shear Strength Secant Angle (degrees) – 17. Large Displacement Shear Strength Secant Angle (degrees) – 6.5.(PHII Procurement Spec Rev 2, Section 02772P: Geosynthetic Clay Liner, page 02772P-6, paragraph 2.01.G.3.)
15	Nonconformance Description Describe the nonconformance. Include details such as supplier names, container numbers, purchase order, work order, or requisition numbers) and clearly describe the deviation from the written requirement. Use additional or separate sheets as necessary.	Contrary to the above requirements, the GCL peak shear strength secant angles for 45 psi normal stress for interface shear strength testing only yielded results of 13.1, 14.6, 12.2, and 14.9 degrees for samples GCL-01-01 through GCL 01-04 respectively. Additionally, the GCL large displacement shear strength secant angle for 45-psi normal stress for internal shear strength testing only yielded a result of 5.3 degrees for sample GCL-01-01.
16	Tagging Required / Number of Tags	[X] Yes [ ] No Number of Tags: 1 (for all material delivered to site)
17	Originator/Assessor	Name: James T. TURNER Signature: [signature] Date: 30 May 2001

TEAM LEADER'S/COACH'S REVIEW

18	Team Leader/Coach	Name: Michael W. GODBER Signature: [signature] Date: 30 MAY 2001
	Response Date From Resp. Organ.	REQUESTED RESPONSE DATE: July 02, 2001 (Reply within 20 working days)

FLUOR FERNALD

NONCONFORMANCE REPORT FORM

4556

RESPONSIBLE ORGANIZATION'S CORRECTIVE ACTION RESPONSE

	Nonconformance Number/Revision	NCR No.: 57 Revision No. 0
20	**Root Cause Analysis** Provide documentation as attachment. Use additional or separate sheets as necessary	[ ] YES [X] NO Level 1 Cat.: [ ] (human performance.) [ ] (equip.) [ ] (nat. phenom/sabotage [ ] (other) [ ] Supplier/Vendor/Subcontractor (root cause per their program) Cause _____
21	**Corrective Action (CA) Description and Disposition** Describe the actions necessary to correct the nonconformance. Corrective actions must be detailed and complete. They must be written in a clear, concise, and verifiable manner. The corrective action must also include actions to prevent recurrence. Use additional or separate sheets as necessary. (A disposition of Accept-as-is or Repair REQUIRES a written Technical Concurrence/Justification below)	Hardware: [X] Accept-as-is [ ] Repair [ ] Rework [ ] Reject Non-Hardware: [ ] Other _____ Attached Corrective Action Plan per QA-0019 [ ] Yes [X] NA NO CORRECTIVE ACTION REQUIRED - ACCEPT AS IS. RCI 20102-074 R AND GEO SYNTEC MEMORANDUM (ATTACHED) CONCLUDED THAT THESE GCC MATERIALS ARE ACCEPTABLE FOR CELL 1 FINAL COVER CONSTRUCTION K Bauchel KWASI BADU-TWENEBOAH (GEOSYNTEC) 6/5/01
22	**Technical Concurrence/Justification (mark NA if not applicable)**	Name: _____ Signature: _____ Date: _____
23	**Was a Design Change Notice Required?**	[ ] Yes [X] No DCN # Date Issued
24	**Was a SBDR Performed?** **Was a USQD Performed?**	[ ] Yes [X] No SBDR # Date Issued [ ] Yes [X] No USQD # Date Issued
25	**Actions taken to Prevent Recurrence** Use additional or separate sheets as necessary.	
26	**Proposed Completion Date For CA**	Date:
27	**Responsible Team Leader/Coach/Vendor**	Name: _____ Signature: _____ Date: _____

EVALUATION OF THE CORRECTIVE ACTION RESPONSE BY THE ORIGINATOR/ASSESSOR

28	**Response Acceptable?**	[ ] Yes [ ] No
29	**Originator's/Assessor's**	Name: _____ Signature: _____ Date: _____

COMPLETION OF THE CORRECTIVE ACTIONS BY THE RESPONSIBLE ORGANIZATION

30	**Date Corrective Action Completed**	Date:
31	**Responsible Team Leader/Coach /Vendor**	Name: _____ Signature: _____ Date: _____

VERIFICATION OF COMPLETED CORRECTIVE ACTIONS BY THE VERIFIER

32	**Verification Action** (Describe what objective evidence was examined to verify completion of this action and attach documentation to the NCR)	
33	**Verifier**	Name: _____ Signature: _____ Date: _____

CLOSURE BY THE VERIFIER'S TEAM LEADER/COACH

34	**Verifier's Team Leader/Coach (NCR Closed)**	Name: _____ Signature: _____ Date: _____

NONCONFORMANCE REPORT FORM

4556

ORIGINATOR/ASSESSOR		
1	Nonconformance Number/Revision	NCR No.: 238 Revision No. 0
2	Dates	Date Discovered: Dec.6,2001 Date NCR Issued: Dec.20,2001
3	Type of Nonconformance	[x] FINDING [ ] CONCERN
4	Project Number Project/Activity @ Fac/Loc/Bldg.	20103 OSDF PHASE III, FINAL COVER, CELL 1, VEGETATION APPLICATION
5	Hazard Category	Nuclear: [ ] 1 [ ] 2 [ ] 3 Radiological: [ ] Non-Nuclear: [ ] High Hazard [ ] Moderate Hazard [ ] Low Hazard Industrial: [X] Standard Industrial Hazard [ ] Other Industrial Hazard Not Designated [ ] Desktop review, document review, etc.
6	Assessment	[X] Internal (Site) [ ] External (OEPA, DOE) [ ] Supplier/Vendor_____
7	Assessment Type	[ ] Audit [ ] Surveillance [ ] Inspection [ ] Self Assessment [X]Other Verification by visual walk through of area and verification by Spec.
8	Assessment Number	NONE
9	Responsible Program/Project Division/Vendor	[ ] WPRAP [ ] D&DP [X] S&DFP [ ] M&IS [ ] WGS [ ] ARP [ ] ESH&Q [ ] SP [ ] CPM [ ] NMD [ ] OP [ ] ADM [ ]Supplier/Vendor/Subcontractor [ ] Other
10	Responsible Department/Vendor	OSDF / IT Corporation
11	Responsible Manager/Supervisor/Vendor (Print Name)	(For Concerns, assign to Project/Program Director Bill Zebick / IT Corporation
12	Functional Area (NA for Vendors) (choose any that apply) (Ref. RM-0016)	[ ] CM [ ] ED [ ] RD [ ] MS [ ] QA [ ] AC [ ] PM [ ] PI [ ] FM [ ] EP [ ] EW [ ] MT [ ] OP [ ] PT [ ] SE [ ] TR [x] CT [ ] HR [ ] PC [ ] EM [ ] FP [ ] NS [ ] SH [ ] RP
13	QA Criteria (choose one that applies Ref. RM-0012) Other Criteria (CONOPS, etc.) (not RM-0012 applicable)	[ ] 1 Program [ ] 2 Training [ ] 3 Quality Improvement [ ] 4 Document/Records [x] 5 Work process [ ] 6 Design [ ] 7 Procurement [ ] 8 Inspect/Test [ ] 9 Management Assessment [ ] 10 Independent Assessment [ ] Other
14	Requirement Description Cite the requirement (clearly, concisely, and completely) and its source, including document identification number, page and paragraph number. A copy of the document (or page of the document) in which the requirement appears may be attached or added to the NCR file. Use additional or separate sheets as necessary.	Spec. Section 02930, Vegetation Part 3.03.D.2.G was revised Per DCN 20103-039 to read as follows: i. For areas receiving seed mix for Cell Final Cover Permanent vegetation (Table 02930-1C) Roll seeded area with a 200 to 600 pound drum roller after seeding, apply sprayed mulch @ 1500 lbs. Per acre minimum and 100 percent continous coverage. Mix mulch with water at a ratio of 50 lbs. Of mulch per 100 gallons of water.
15	Nonconformance Description Describe the nonconformance. Include details such as supplier names, container numbers, purchase order, work order, or requisition numbers) and clearly describe the deviation from the written requirement. Use additional or separate sheets as necessary.	Seed was broadcast on Dec. 5, 2001. There has been no mulch placed to cover the seed, Per DCN 20103-039.
16	Tagging Required / Number of Tags	[ ] Yes [x] No Number of Tags:
17	Originator/Assessor	Name: Muriel Vigus Signature: Muriel Vigus Date: Dec. 20, 2001
MANAGER/SUPERVISOR'S REVIEW		
18	Manager/Supervisor (Trained/Briefed on QA-0001)	Name: Mike Godber Signature: Mike Godber Date: Dec. 20, 2001
	Response Date From Responsible Organization	REQUESTED RESPONSE DATE: January 22, 2002 (Reply within 20 working days)

NONCONFORMANCE REPORT FORM

4556

	RESPONSIBLE ORGANIZATION'S CORRECTIVE ACTION RESPONSE	
	Nonconformance Number/Revision	NCR No.: 238 Revision No. 0
	Root Cause Analysis Provide documentation as attachment. Use additional or separate sheets as necessary	[ ] YES [X] NO Level 1 Cat.: [ ] (human performance.) [ ] (equip.) [ ] (natural phenom/sabotage [ ] (other) [ ] Supplier/Vendor/Subcontractor (root cause per their program) List Cause:
21	**Corrective Action (CA) Description and Disposition** Describe the actions necessary to correct the nonconformance. Corrective actions must be detailed and complete. They must be written in a clear, concise, and verifiable manner. The corrective action must also include actions to prevent recurrence. Use additional or separate sheets as necessary. (A disposition of Accept-as-is or Repair REQUIRES a written Technical Concurrence/Justification below)	A) Hardware NCR: → [X] Accept-as-is [ ] Repair [ ] Rework [ ] Reject B) Non-Hardware NCR: → [ ] Other: See Attached Corrective Action Plan [X] Yes [ ] NA SEE ATTACHED CORRECTIVE ACTION.
22	**Technical Concurrence/Justification (mark NA if not applicable)**	Name: Sam Wolinsky Signature: [signature] Date: 1/21/02
23	**Was a Design Change Notice Required?**	[x] Yes [ ] No DCN #20103-039 Date Issued Dec.12, 2001
24	**Was a SBDR Performed?** **Was a USQD Performed?**	[ ] Yes [x] No SBDR # Date Issued [ ] Yes [x] No USQD # Date Issued
25	**Actions taken to Prevent Recurrence** Use additional or separate sheets as necessary.	SEE ATTACHED ACTIONS TAKEN TO PREVENT REOCCURENCE.
26	**Proposed Completion Date For CA**	Date: 1/22/02
	Responsible Manager/Supervisor/Vendor	Name: Bill Zebick Signature: Bill Zebick Date: 1/22/02
	EVALUATION OF THE CORRECTIVE ACTION RESPONSE BY THE ORIGINATOR/ASSESSOR	
28	**Response Acceptable?**	[X] Yes [ ] No
29	**Originator's/Assessor's**	Name: Muriel Vigus Signature: [signature] Date: 1/22/02
	COMPLETION OF THE CORRECTIVE ACTIONS BY THE RESPONSIBLE ORGANIZATION	
30	**Date Corrective Action Completed**	Date: 1/22/02
31	**Responsible Manager/Supervisor/Vendor**	Name: Bill Zebick Signature: Bill Zebick Date: 1/22/02
	VERIFICATION OF COMPLETED CORRECTIVE ACTIONS BY THE VERIFIER	
32	**Verification Action** (Describe what objective evidence was examined to verify completion of this action and attach documentation to the NCR)	THE CORRECTIVE ACTION WAS FOUND TO BE ACCEPTABLE.
33	**Verifier**	Name: Muriel Vigus Signature: [signature] Date: 1/22/02
	CLOSURE BY THE VERIFIER'S MANAGER/SUPERVISOR	
34	**Verifier's Manager/Supervisor (NCR Closed)**	Name: Mike Godber Signature: [signature] Date: 1/22/02

NCR No. 238

Item #21 Corrective Action:

The area of Cell 1 will be inspected two weeks into the spring growing season for areas not meeting coverage specifications established in Spec. Section 02930, Vegetation. Areas not meeting specifications due to lack of mulch cover will be re-seeded to meet the specifications.

Justification:

The inclusion of rolling and spray mulch application was incorporated into DCN 20103-039 as an added protection to stabilize seed if the broadcast method was used in place of the seed drill. The rolling and mulching steps were designed to help further minimize seed loss during rain events. The use of the Seed Drill was not feasible on the eastern half of Cell 1 due to rain events and the seed was applied using the broadcast method. After application of seed using the broadcast method, additional rains occurred. The rains made the Cell 1 cap inaccessible to the hydroseeder for application of the spray mulch and even to the roller. The rains, however, resulted in only minimal seed loss. Due to the lack of seed loss and the anticipation of inclement weather, , the decision was made to apply erosion matting without rolling or mulching the seed. Further delay in the application of the erosion matting may have jeopardized the ability to get seeded areas covered prior to the onset of winter weather. The rolling and mulching of seeded areas would have added an additional layer of protection for the seed, but was determined not to be necessary after observation of seeded areas following significant rain events.

Item # 25 Actions taken to Prevent Recurrence

Grasses will be sown on Cells using the seed-drill method in the future with the exception of areas not accessible to the seed-drill. If broadcast seeding is necessary on a Cell in the future, action will be taken to assure access is available for feasible application of mulch; or, that sufficient time and accessibility are available to roll the area at time of seeding prior to start-up of broadcast seeding in future.

NONCONFORMANCE REPORT FORM

4556

ORIGINATOR/ASSESSOR

1	Nonconformance Number/Revision	NCR No.: 239 Revision No. 0
2	Dates	Date Discovered: Dec.10,2001 Date NCR Issued: Dec.20,2001
3	Type of Nonconformance	[x] FINDING [ ] CONCERN
4	Project Number Project/Activity @ Fac/Loc/Bldg.	20103 OSDF PHASE III, FINAL COVER, CELL 1, EROSION CONTROL
5	Hazard Category	Nuclear: [ ] 1 [ ] 2 [ ] 3 Radiological: [ ] Non-Nuclear: [ ] High Hazard [ ] Moderate Hazard [ ] Low Hazard Industrial: [X] Standard Industrial Hazard [ ] Other Industrial Hazard Not Designated [ ] Desktop review, document review, etc.
6	Assessment	[X] Internal (Site) [ ] External (OEPA, DOE) [ ] Supplier/Vendor_____
7	Assessment Type	[ ] Audit [ ] Surveillance [ ] Inspection [ ] Self Assessment [X]Other Verification by visual walk through of area and verification by Spec.
8	Assessment Number	NONE
9	Responsible Program/Project Division/Vendor	[ ] WPRAP [ ] D&DP [X] S&DFP [ ] M&IS [ ] WGS [ ] ARP [ ] ESH&Q [ ] SP [ ] CPM [ ] NMD [ ] OP [ ] ADM [ ]Supplier/Vendor/Subcontractor [ ] Other
10	Responsible Department/Vendor	OSDF / IT Corporation
11	Responsible Manager/Supervisor/Vendor (Print Name)	(For Concerns, assign to Project/Program Director Bill Zebick / IT Corporation
12	Functional Area (NA for Vendors) (choose any that apply) (Ref. RM-0016)	[ ] CM [ ] ED [ ] RD [ ] MS [ ] QA [ ] AC [ ] PM [ ] PI [ ] FM [ ] EP [ ] EW [ ] MT [ ] OP [ ] PT [ ] SE [ ] TR [x] CT [ ] HR [ ] PC [ ] EM [ ] FP [ ] NS [ ] SH [ ] RP
13	QA Criteria (choose one that applies Ref. RM-0012) Other Criteria (CONOPS, etc.) (not RM-0012 applicable)	[ ] 1 Program [ ] 2 Training [ ] 3 Quality Improvement [ ] 4 Document/Records [x] 5 Work process [ ] 6 Design [ ] 7 Procurement [ ] 8 Inspect/Test [ ] 9 Management Assessment [ ] 10 Independent Assessment [ ] Other
14	Requirement Description Cite the requirement (clearly, concisely, and completely) and its source, including document identification number, page and paragraph number. A copy of the document (or page of the document) in which the requirement appears may be attached or added to the NCR file. Use additional or separate sheets as necessary.	Spec. Section 02270, Surface Water Erosion Control Part 3.01.B.1 and DCN 20103-038, were revised Per DCN 20103-039 to read as follows: Complete Installation of erosion mat Within 72 hours after seeding has been completed in a specific area unless earlier completion is necessary due to inclement weather.
15	Nonconformance Description Describe the nonconformance. Include details such as supplier names, container numbers, purchase order, work order, or requisition numbers) and clearly describe the deviation from the written requirement. Use additional or separate sheets as necessary.	Seed was broadcast on the East slope of Cell 1 and on the Eastern half of the North slope, starting Dec. 5, 2001. As of Dec. 10, 2001, all of the required erosion mat had not been installed. As of Dec. 18, 2001, the time requirement of 72 hrs. has been exceeded, and exposed to many days of inclement weather.
16	Tagging Required / Number of Tags	[ ] Yes [x] No Number of Tags:
17	Originator/Assessor	Name: Muriel Vigus Signature: Muriel Vigus Date: Dec. 20, 2001

MANAGER/SUPERVISOR'S REVIEW

18	Manager/Supervisor (Trained/Briefed on QA-0001)	Name: Mike Godber Signature: Michael W. Godber Date: Dec. 20, 2001
	Response Date From Responsible Organization	REQUESTED RESPONSE DATE: January 22, 2002 (Reply within 20 working days)

NONCONFORMANCE REPORT FORM

4556

RESPONSIBLE ORGANIZATION'S CORRECTIVE ACTION RESPONSE		
	Nonconformance Number/Revision	NCR No.: 239 Revision No. 0
	Root Cause Analysis Provide documentation as attachment. Use additional or separate sheets as necessary	[ ] YES Level 1 Cat.: [ ] (human performance.) [ ] (natural phenom/sabotage [X] NO [ ] (equip.) [ ] (other) [ ] Supplier/Vendor/Subcontractor (root cause per their program) List Cause:
21	Corrective Action (CA) Description and Disposition Describe the actions necessary to correct the nonconformance. Corrective actions must be detailed and complete. They must be written in a clear, concise, and verifiable manner. The corrective action must also include actions to prevent recurrence. Use additional or separate sheets as necessary. (A disposition of Accept-as-is or Repair REQUIRES a written Technical Concurrence/Justification below)	A) Hardware NCR: → [X] Accept-as-is [ ] Repair [ ] Rework [ ] Reject B) Non-Hardware NCR: → [ ] Other: See Attached Corrective Action Plan [X] Yes [ ] NA SEE ATTACHED CORRECTIVE ACTION:
22	Technical Concurrence/Justification (mark NA if not applicable)	Name: Sam Wolinsky Signature: [signature] Date: 1/21/02
23	Was a Design Change Notice Required?	[x] Yes [ ] No DCN #20103-039 Date Issued Dec.12, 2001
24	Was a SBDR Performed? Was a USQD Performed?	[ ] Yes [x] No SBDR # Date Issued [ ] Yes [x] No USQD # Date Issued
25	Actions taken to Prevent Recurrence Use additional or separate sheets as necessary.	SEE ATTACHED ACTIONS TO PREVENT REOCCURENCE.
	Proposed Completion Date For CA	Date: 1/22/02
	Responsible Manager/Supervisor/Vendor	Name: Bill Zebick Signature: Bill Zebick Date: 1/22/02
EVALUATION OF THE CORRECTIVE ACTION RESPONSE BY THE ORIGINATOR/ASSESSOR		
28	Response Acceptable?	[X] Yes [ ] No
29	Originator's/Assessor's	Name: Muriel Vigus Signature: [signature] Date: 1/22/02
COMPLETION OF THE CORRECTIVE ACTIONS BY THE RESPONSIBLE ORGANIZATION		
30	Date Corrective Action Completed	Date: 1/22/02
31	Responsible Manager/Supervisor/Vendor	Name: Bill Zebick Signature: Bill Zebick Date: 1/22/02
VERIFICATION OF COMPLETED CORRECTIVE ACTIONS BY THE VERIFIER		
32	Verification Action (Describe what objective evidence was examined to verify completion of this action and attach documentation to the NCR)	THE CORRECTIVE ACTION WAS FOUND TO BE ACCEPTABLE.
33	Verifier	Name: Muriel Vigus Signature: [signature] Date: 1/22/02
CLOSURE BY THE VERIFIER'S MANAGER/SUPERVISOR		
	Verifier's Manager/Supervisor (NCR Closed)	Name: Mike Godber Signature: [signature] Date: 1/22/02

000476

NCR No. 239

Item #21 Corrective Action:

The area of Cell 1 will be inspected two weeks into the spring growing season for areas not meeting coverage specifications established in Spec. Section 02930, Vegetation. Areas not meeting specifications due to failure to apply jute cover will be re-seeded to meet the cover specifications.

Justification:

The time requirement for the installation of erosion matting after seeding is designed to minimize the risk of seed loss during rain events. The eastern half of Cell 1 was seeded using the broadcast method and erosion matting was not applied within the 72 hour specified time frame. Seeded areas were observed during rain events and minimal seed loss resulted.

Item #25 Actions Taken to Prevent Recurrence

Action will be taken prior to seeding in the future to assure that sufficient labor force is available to place and secure jute matting within the 72-hour time frame.

NONCONFORMANCE REPORT FORM

4556

ORIGINATOR/ASSESSOR

1	Nonconformance Number/Revision	NCR No.: 240 Revision No. 0
2	Dates	Date Discovered: Dec.13, 2001 Date NCR Issued: Dec. 20, 2001
3	Type of Nonconformance	[x] FINDING [ ] CONCERN
4	Project Number Project/Activity @ Fac/Loc/Bldg.	20103 OSDF PHASE III, FINAL COVER, CELL 1 , VEGETATION
5	Hazard Category	Nuclear: [ ] 1 [ ] 2 [ ] 3 Radiological: [ ] Non-Nuclear: [ ] High Hazard [ ] Moderate Hazard [ ] Low Hazard Industrial: [X] Standard Industrial Hazard [ ] Other Industrial Hazard Not Designated [ ] Desktop review, document review, etc.
6	Assessment	[X] Internal (Site) [ ] External (OEPA, DOE) [ ] Supplier/Vendor_____
7	Assessment Type	[ ] Audit [ ] Surveillance [ ] Inspection [ ] Self Assessment [X]Other VERIFICATION BY VISUAL WALK THRU OF AREA AND VERIFICATION BY SPEC.
8	Assessment Number	NONE
9	Responsible Program/Project Division/Vendor	[ ] WPRAP [ ] D&DP [X] S&DFP [ ] M&IS [ ] WGS [ ] ARP [ ] ESH&Q [ ] SP [ ] CPM [ ] NMD [ ] OP [ ] ADM [ ]Supplier/Vendor/Subcontractor [ ] Other
10	Responsible Department/Vendor	OSDF / IT CORPORATION
11	Responsible Manager/Supervisor/Vendor (Print Name)	(For Concerns, assign to Project/Program Director Bill Zebick and IT Corporation
12	Functional Area (NA for Vendors) (choose any that apply) (Ref. RM-0016)	[ ] CM [ ] ED [ ] RD [ ] MS [ ] QA [ ] AC [ ] PM [ ] PI [ ] FM [ ] EP [ ] EW [ ] MT [ ] OP [ ] PT [ ] SE [ ] TR [x] CT [ ] HR [ ] PC [ ] EM [ ] FP [ ] NS [ ] SH [ ] RP
	QA Criteria (choose one that applies Ref. RM-0012) Other Criteria (CONOPS, etc.) (not RM-0012 applicable)	[ ] 1 Program [ ] 2 Training [ ] 3 Quality Improvement [ ] 4 Document/Records [x] 5 Work process [ ] 6 Design [ ] 7 Procurement [ ] 8 Inspect/Test [ ] 9 Management Assessment [ ] 10 Independent Assessment [ ] Other
14	Requirement Description Cite the requirement (clearly, concisely, and completely) and its source, including document identification number, page and paragraph number. A copy of the document (or page of the document) in which the requirement appears may be attached or added to the NCR file. Use additional or separate sheets as necessary.	Per Spec. Section 02930, Vegetation, Part 3.03.B and DCN 20103-007 were revised Per DCN 20103-039 to read as follows: "The Permanent Seeding" in wet and dry areas and the Cell Final Cover Shall be performed in the Spring Season between April 1 and June 15 and/or the Fall Season between Sept. 20 and Nov. 30, unless other wise approved by the Construction Manager.
15	Nonconformance Description Describe the nonconformance. Include details such as supplier names, container numbers, purchase order, work order, or requisition numbers) and clearly describe the deviation from the written requirement. Use additional or separate sheets as necessary.	1.The specified seeding period was exceeded before the DCN 20103-039 was finalized and approved. DCN date: Dec. 4, 2001. 2. A letter is required from the Construction Manager; there is no letter at this time.
16	Tagging Required / Number of Tags	[ ] Yes [x] No Number of Tags:
17	Originator/Assessor	Name: Muriel Vigus Signature: Muriel Vigus Date:Dec 20, 2001

MANAGER/SUPERVISOR'S REVIEW

18	Manager/Supervisor (Trained/Briefed on QA-0001)	Name: Mike Godber Signature: Mike Godber Date: Dec. 20, 2001
	Response Date From Responsible Organization	REQUESTED RESPONSE DATE: January 22, 2002 (Reply within 20 working days)

NONCONFORMANCE REPORT FORM

4556

RESPONSIBLE ORGANIZATION'S CORRECTIVE ACTION RESPONSE

	Nonconformance Number/Revision	NCR No.: 240 Revision No. 0
20	Root Cause Analysis Provide documentation as attachment. Use additional or separate sheets as necessary	[ ] YES [X] NO Level 1 Cat.: [ ] (human performance.) [ ] (equip.) [ ] (natural phenom/sabotage [ ] (other) [ ] Supplier/Vendor/Subcontractor (root cause per their program) List Cause:
21	Corrective Action (CA) Description and Disposition Describe the actions necessary to correct the nonconformance. Corrective actions must be detailed and complete. They must be written in a clear, concise, and verifiable manner. The corrective action must also include actions to prevent recurrence. Use additional or separate sheets as necessary. (A disposition of Accept-as-is or Repair REQUIRES a written Technical Concurrence/Justification below)	A) Hardware NCR: → [X] Accept-as-is [ ] Repair [ ] Rework [ ] Reject B) Non-Hardware NCR: → [ ] Other: See Attached Corrective Action Plan [X] Yes [ ] NA SEE ATTACHED CORRECTIVE ACTION:
22	Technical Concurrence/Justification (mark NA if not applicable)	Name: Sam Wolinsky Signature: Date: 1/21/02
23	Was a Design Change Notice Required?	[x] Yes [ ] No DCN #20103-039 Date Issued Dec. 12, 2001
24	Was a SBDR Performed? Was a USQD Performed?	[ ] Yes [x] No SBDR # Date Issued [ ] Yes [x] No USQD # Date Issued
25	Actions taken to Prevent Recurrence Use additional or separate sheets as necessary.	SEE ATTACHED ACTIONS TAKEN TO PREVENT REOCCURENCE.
26	Proposed Completion Date For CA	Date: 1/21/02
	Responsible Manager/Supervisor/Vendor	Name: Bill Zebick Signature: Bill Zebick Date: 1/21/02

EVALUATION OF THE CORRECTIVE ACTION RESPONSE BY THE ORIGINATOR/ASSESSOR

28	Response Acceptable?	[ ] Yes [ ] No
29	Originator's/Assessor's	Name: Muriel Vigus Signature: Muriel Vigus Date: 1/21/02

COMPLETION OF THE CORRECTIVE ACTIONS BY THE RESPONSIBLE ORGANIZATION

30	Date Corrective Action Completed	Date:
31	Responsible Manager/Supervisor/Vendor	Name: Bill Zebick Signature: Bill Zebick Date: 1/21/02

VERIFICATION OF COMPLETED CORRECTIVE ACTIONS BY THE VERIFIER

32	Verification Action (Describe what objective evidence was examined to verify completion of this action and attach documentation to the NCR)	THE CORRECTIVE ACTION WAS FOUND TO BE ACCEPTABLE.
33	Verifier	Name: Muriel Vigus Signature: Muriel Vigus Date: 1/21/02

CLOSURE BY THE VERIFIER'S MANAGER/SUPERVISOR

34	Verifier's Manager/Supervisor (NCR Closed)	Name: Mike Godber Signature: Michael Godber Date: 1/21/02

Woods, Eric 4556

From: Woods, Eric
Sent: Monday, November 26, 2001 10:09 AM
: Wolinsky, Sam
: Swiger, Harold
bject: INPUT FOR SEEDING DCN

DON GOETZ, OSDF CONSTRUCTION ENGINEER PROVIDED IT WITH VERBAL DIRECTION TO PROCEED BASED ON CONCURRENCE BY SAM WOLINSKY AND ERIC WOODS.

SAM WOLINSKY
PROJECT ENGINEER

Sam,

The following provides input for the vegetation spec DCN that we discussed this morning.

The completion date for fall seeding should be extended to December 21, 2001. The original completion date was established at November 30th as a planning guideline to identify the ideal window to allow for the completion of seeding prior inclement weather and frozen soil. Seeding can occur into December as long as weather and soil conditions permit.

The spec should also be revised to allow for the broadcasting of the permanent seed mix in limited areas that can not be seeded with the seed drill due to poor weather and/or soil conditions late in the fall seeding season. Any seed that is applied by broadcasting should also be lightly rolled either by hand or mechanical means (e.g., small tractor) to ensure proper seed/soil contact. The seed drill should still be recognized as the optimal method for the installation of the permanent seed. The change will allow areas on Cell 1 that are waiting for the installation of conduit and wiring for the Technology Demonstration Monitors to be seeded even if soil is to wet to operate the seed drill effectively.

D. requested earlier this morning that we try to get relief from the quirement to cover seeded areas with erosion matting within 48 hours seeding. I do not have that exact language in front of me, but I would propose that we change the language to identify the 48 hour window as a target, but not a requirement. Changing the requirement to a target will eliminate the potential for delays in seeding prior to weekends or the anticipation of inclement weather. Seeding will be carried out whenever weather and soil conditions permit to prioritize the completion of seeding on Cell 1. Erosion matting will be applied as soon as practicable after seeding, within 48 hours if possible.

Call and we can discuss, the 48 hour change needs some help.

Thanks, Eric

000480

NCR No. 240

Item #21 Corrective Action:

Direction was given to IT the direction to proceed with seeding. Copy of that E-mail is attached to this response for closure of this NCR.

Justification:

The seeding windows provided in the seeding specification identify the ideal dates for seeding based on anticipated weather conditions. The seeding windows can be extended at the discretion of the Construction Manager if weather and soil conditions allow. As long as weather conditions allow and the ground is not frozen, the fall seeding window can be extended into December. Weather and soil conditions were acceptable in early December 2001 and seeding continued per the Construction Manager. The time requirement for the installation of erosion matting after seeding is designed to minimize the risk of seed loss during rain events. The eastern half of Cell 1 was seeded using the broadcast method and erosion matting was not applied within the 72 hour specified time frame. Seeded areas were observed during rain events and minimal seed loss resulted.

Item #25 Actions Taken to Prevent Recurrence

When seeding outside the date windows listed in the specifications, action will be taken in the future to assure that documentation is in hand prior to seeding.