CONSTRUCTION QUALITY ASSURANCE
FINAL REPORT
ON-SITE DISPOSAL FACILITY, PHASE I AND LEACHATE CONVEYANCE SYSTEM

REVISION 0
JANUARY 1998
VOLUME X

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

prepared by
GEOSYNTEC CONSULTANTS
1100 Lake Hearn Drive, NE, Suite 200
Atlanta, Georgia 30342

under
Fluor Daniel Fernald
Subcontract 95PS005028

OSDF Phase I

Signature indicates approved, approved as noted, or disapproved

DGB - DAN BODINE
DKP - DAVE PHILLIPS
KWC - KEN CARGILL
BDJ - BRIAN JACOBSON
RB - RUDY BONAPARTE
JB - JAY BEECH
DV - DENNIS VANDERLINDE
GM - GINA MARTIN

Title: Design Change Notices
Fernald On-Site Disposal Facility, Phase One Construction

DCN NO.	DCN Title	Date	Requestor	Approval	Design Office Discussion
1702-001	VOID	VOID	VOID	VOID	VOID
1702-002	Stockpile of Chipped Material	15-May-97	Heath	Bodine	
WC					
1702-003	Chain-Link Fence Modification	29-May-97	Jacobs	Bodine	
WC					
1702-004	Drainage Channel Gravity Inlet Structure	9-Jun-97	Bodine	Bodine	
WC					
1702-005	OSDF 480-Volt Power	17-Jun-97	Wehlitz	Kerl	
WC					
1702-006	Alternate Anti-Seep Collar	26-Jun-97	Bodine	Bodine	
WC					
1702-007	Submittal Requirements	26-Jun-97	Bodine	Bodine	
WC					
1702-008	VOID	VOID	VOID	VOID	
1702-009	Gravel Surfacing	26-Jun-97	Bodine	Bodine	
[illegible]-010	Anti-Seep Collar	27-Jun-97	Goetz	Bodine	
WC					
1702-011	Placement of Stone Over Geotextile	8-Jul-97	Brandstetter	Bodine	
WC					
1702-012	Principal Spillway Riprap	9-Jul-97	Bodine	Bodine	
WC					
1702-013	Coupling Band for Corrugated Metal Pipe	11-Jul-97	Bodine	Bodine	
WC					
1702-014	Geotextile Separator and Filter	11-Jul-97	Bodine	Bodine	
WC					
1702-015	Granular Drainage Material Modified 78's	13-Jul-97	Bodine	Bodine	
WC					
1702-016	Equipment Decontamination	15-Jul-97	Goetz	Bodine	
WC					
1702-017	Decon. Facility Pump and Check Valve	21-Jul-97	Bodine	Bodine	
WC					
1702-018	Soil Stabilization	17-Jul-97	Bodine	Bodine	
WC					
1702-019	Rock Fragment Size	21-Jul-97	Bodine	Bodine	DGB WITH KWC
WC					
1702-020	Fiberglass Sheet Overspray Siding on	29-Jul-97	Brandstetter	Bodine	DGB WITH BDJ
WC	Equipment Decontamination				
1702-021	Engineering Design Changes Incorporated	24-Jul-97	Heath	Bodine	DGB WITH KWC 30 July 1997
	in Amendments				
1702-022	Subgrade Preparation	8-Aug-97	Bodine	Bodine	DGB WITH RB 5 August 1997
WC					
1702-023	Clay Liner Placement	8-Aug-97	Bodine	Bodine	DGB WITH RB 5 August 1997
WC					

WC indicates the work complete DCN is included Page 1

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Title: Design Change Notices
Fernald On-Site Disposal Facility, Phase One Construction

DCN NO.	DCN Title	Date	Requestor	Approval	Design Office Discussion
1702-024	Riprap Protection Width	11-Aug-97	Bodine	Bodine	DGB WITH DKP
WC					
1702-025	Horizontal Well Screening	6-Aug-97	Beech	Bodine	DGB WITH JB AND KWC
1702-026	Subgrade Control Points - Cell One	21-Aug-97	Bonnett	Bodine	DGB WITH G. MARTIN
WC					
1702-027	Wood Cellulose Fiber Mulch	27-Aug-97	Bodine	Bodine	DGB WITH KWC 27 August 97
WC					
1702-028	Stabilizer Use During Mat. Placement	2-Sep-97	Goetz	Bodine	DGB WITH KWC 5 August 97
WC					
1702-029	Survey Grid Spacing	10-Sep-97	Bodine	Bodine	CLARIFICATION
WC					
1702-030	Liner Box Detail	15-Sep-97	Bodine	Bodine	DGB WITH DV
WC					
1702-031	Clay Liner Stabilization	16-Sep-97	Bodine	Bodine	DGB WITH JB
WC					
1702-032	Pipe Embedment Detail	17-Sep-97	Bodine	Bodine	DGB WITH KWC
2-033	Temporary HDPE Culverts	30-Sep-97	Bodine	Bodine	DGB WITH KWC
WC					
1702-034	Pressure Testing of Liner Penetration	29-Sep-97	Schairbaum	Bodine	DGB WITH BDJ & DV
WC	Boxes				
1702-035	Impacted Material Haul Road/Cell Access	6-Oct-97	Phillips	Bodine	DGB WITH KWC
WC					
1702-036	Liner Penetration Boxes	30-Nov-97	Bodine	Bodine	DGB with DV & BDJ
WC					
1702-037	LDS/LCS Anchor Trench Detail	13-Oct-97	Brandstetter	Bodine	DGB WITH DKP & JB
WC					
1702-038	Vacuum Testing Time Duration	5-Nov-97	Schairbaum	Bodine	
1702-039	Alternate Method for Seaming Nonwoven	6-Nov-97	Schairbaum	Bodine	
WC	Geotextiles				
1702-040	Vacuum Testing Time Duration	VOID	VOID	VOID	VOID
1702-041	GML Installer; Footage Installed	VOID	VOID	VOID	VOID
1702-042	Alternate Line Post Installation	17-Nov-97	Goetz	Beech	
WC					
1702-043	Cold Weather Placement of GML	30-Oct-97	Schairbaum	Beech	
WC					
-044	Preparation of Trial Seams of HDPE Liner	17-Nov-97	Schairbaum	Beech	
1702-045	Surface Ruts for Placement of GCL	29-Oct-97	Schairbaum	Bodine	
1702-046	Driving Rubber Tread ASV Positrac on GCL	31-Oct-97		Bodine	
WC					

Signature indicates approved, approved as noted, or disapproved

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Title: Design Change Notices
Fernald On-Site Disposal Facility, Phase One Construction

DCN NO.	DCN Title	Date	Requestor	Approval	Design Office Discussion
1702-047	Access Corridor Extension to Impacted Material Haul Road	2-Dec-97	Jacobs	Bodine	
1702-048	VOID	VOID	VOID	VOID	VOID
1702-049	Impacted Soil Stockpiles	9-Dec-97	Bodine	Bodine	

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 17 Dec 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Anchor Trench Geotextile Filter		(11)DCN NO.: 1702-050

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00079		0	
Drawing 90X-6000-G-00080		1	
DCN No. 1702-037			

ECDC CONTROLLED COPY NO. C011

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9) ☐ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Civil Review Only

The existing design, as indicated by the referenced drawings and DCN, show the Geotextile Filter (separation filter between the LCS and Protective Layers) anchored in the primary liner anchor trench. For the purpose of reducing the time the anchor trench needs to remain open and subjected to possible deterioration due to inclement weather, the Geotextile Filter need not be anchored in the trench. The Geotextile Filter shall be anchored overtop of the backfilled anchor trench extending to the back of the primary anchor trench. Extending the filter to far will require the over extension to be cut. The Placement of the wedge clay materials will complete the Geotextile Filter anchorage. The placement of the first lift of the wedge before impacted material placement is desired, but not necessary. Care shall be taken to insure that the Geotextile Filter does not move down the slope during impacted material placement. If this does occur, then a temporary anchorage or placement of the first lift of the wedge will be required.

(10)REQUESTOR: D. Bolton	COMPANY: GeoSyntec	DATE: 22 Dec 97	(12)FCE / PE: James C. Jenkins for Uday Kumthekar	DATE: 12/22/97

(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: David Bodine	DATE: 22 Dec 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: 2CCDB	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) James C. Jenkins for Uday Kumthekar			DATE: 12/22/97
PERFORMANCE GRADE: (17) 5			
(18)CONSTRUCTION CONCURRENCE:	DATE: 12-22-97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) J. C. Jenkins for Uday Kumthekar	DATE: 12/22/97
PURCHASE REQUISITION REQUIRED? ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 09 Dec 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Impacted Soil Stockpiles		(11)DCN NO.: 1702-049

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawings 90X-6000-G-00075, G-00078, G-00079 and G-00082		0	
Drawings 90X-6000-G-00077 and G-00081		2	
Drawing 90X-6000-G-00080		1	

EUDC CONTROLLED COPY NO. 011

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Civil Review Only

Soil from the east impacted material stockpile is to be used for the impacted portion of the protective layer in Cells 1 and 2 of the Phase 1 Project. Soil from the west impacted material stockpile will not be used for any portion of the Phase 1 Project. Revise the following drawing notes as follows:

Drawing G-00075, Rev. 0, Note 15: Replace the word "west" in the first sentence with the word "east". Remove the words "and west" and replace the word "stockpiles" with "stockpile" in the second sentence. Add the sentence " The west impacted material stockpile will not be used for Phase 1 Construction."

Drawing G-00077, Rev. 2, Note 3: Remove the third sentence.

Drawing G-00078, Rev. 0, Note 2: Remove the third sentence.

Drawing G-00079, Rev. 0, Note 2: Remove the third sentence.

Drawing G-00080, Rev. 1, Note 3: Change the word "west" to "east" in the last sentence.

Drawing G-00081, Rev. 2, Note 2: Change the word "west" to "east" in the last sentence.

Drawing G-00082, Rev. 0, Note 2: Change the word "west" to "east" in the last sentence.

(10)REQUESTOR: [signature] COMPANY: GeoSyntec DATE: 9 Dec 97

(12)FCE / PE [signature] DATE: 12/10/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☒YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

This change is being made to allow the placement and construction of the protective and select layers from a stockpile with better characterization data. This characterization provides better WAC attainment Assurance

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: [signature] DATE: 9 Dec 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 12/10/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: [signature] DATE: 12/10/97

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 04 Dec 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Impacted Soil Stockpiles		(11)DCN NO.: 1702-048

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00075, Sheet G-5C		0	

ECDC CONTROLLED
COPY NO C011

VOID

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

Soil from the east impacted material stockpile is being allowed to be used for the impacted portion of the protective layer in Cells 1 and 2.

Revise the first sentence of Note 15 to read as follows:
Soil from the east or west impacted soil stockpiles, as directed by the Construction Manager, shall be used to construct the impacted material portion of the protective layer in Cells 1 and 2.

(10)REQUESTOR: Ramil Bodiro	COMPANY: GeoSyntec	DATE: 4 Dec 97	(12)FCE / PE: DATE: 12/4/97

(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: Ramil Bodiro 4 Dec 97	DATE: (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY)	DATE: 12/5/97
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE:	DATE: 12/05/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 04 Dec 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Impacted Soil Stockpiles	(11)DCN NO.: 1702-048	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00075, Sheet G-5C		0	

VOID 263

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

Soil from the east impacted material stockpile is being allowed to be used for the impacted portion of the protective layer in Cells 1 and 2.

Revise the first sentence of Note 15 to read as follows:
Soil from the east or west impacted soil stockpiles, as directed by the Construction Manager, shall be used to construct the impacted material portion of the protective layer in Cells 1 and 2.

ECDC CONTROLLED COPY NO.

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(10)REQUESTOR: Ramil Bodiao	COMPANY: GeoSyntec	DATE: 4 Dec 97	(12)FCE / PE:	DATE: 12/4/97

(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: Ramil Bodiao	DATE: 4 Dec 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY)			DATE: 12/5/97
PERFORMANCE GRADE: (17) 5			
(18)CONSTRUCTION CONCURRENCE:	DATE: 12/05/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

1272

REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE.

(1)WP / WO NO.: 1702

(2)S/C NO.: FSC-597

(3)PG 1 OF 4

(5)DATE 12-02-97

(3)S/C TITLE: OSDF - PHASE I

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: ED MD CD OTHER

(4A)RCI/DCN TITLE: ACCESS CORRIDOR EXTENSION TO IMPACTED MATERIAL HAUL ROAD

(11)DCN NO.: 1702-047

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
9DX-6000-G-00199	SHEET G-14	A	
DCN No. 1702-035			

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

TEMPORARILY EXTEND ACCESS CORRIDOR SOUTH TO TIE INTO THE IMPACTED MATERIAL HAUL ROAD. GRADE WEST SIDE OF ROAD SO THAT EXISTING CULVERT REMAINS OPERATIONAL. INSTALL 10-INCH HDPE CULVERT TO DRAIN TO THE WEST AS SHOWN ON SKETCH 1702-SK-0 CONSTRUCT A 12-INCH HIGH GRAVEL SURFACE WATER DIVERSION BERM AS SHOWN ON SKETCH 1702-SK-001. COMPACT GRAVEL DIVERSION BERM WITH VIBRATING PLATE COMPACTOR. FINISH GRADE ELEVATIONS AND CULVERT ELEVATIONS SHALL BE FIELD ADJUSTED BASED ON EXISTING GRADES OF IMPACTED MATERIAL HAUL ROAD AND ACCESS CORRIDOR. FINAL AS BUILT TO BE PROVIDED TO CONSTRUCTION MANAGER.

(10)REQUESTOR: Maurent Richard Jacobs COMPANY: DATE: 12-02-97

(12)FCE / PE: DATE: 12/2/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☐ YES

(14)FOR DCN: ☐ APPROVED ☒ APPROVED AS NOTED ☐ DISAPPROVED

See Attached Comments

ECDC CONTROLLED COPY NO.

011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 5 Dec 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE (DCN ONLY) DATE: 12/8/97

PERFORMANCE GRADE: (17) 5

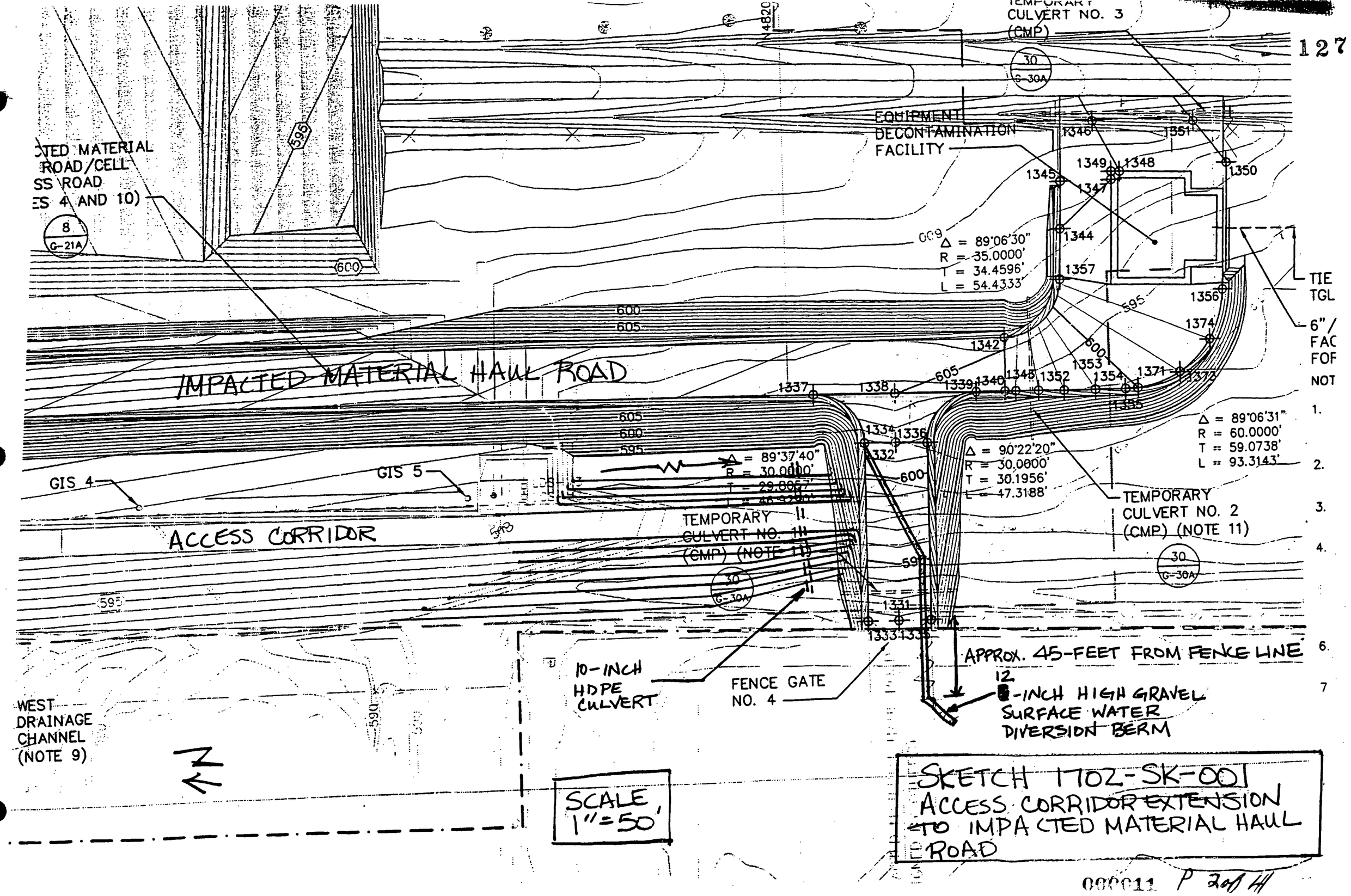
(18)CONSTRUCTION CONCURRENCE: DATE: 12/09/97

PURCHASE REQUISITION REQUIRED: ☐ YES ☒ NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FS-F-4258 (10/01/96)

ORIGINAL



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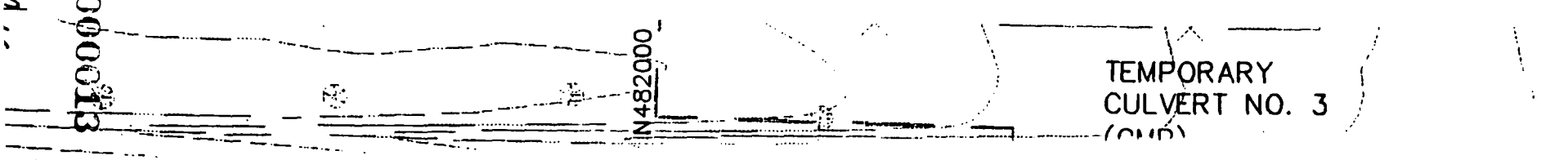
Drawing G-00199, Sheet G-14, Rev. A has been replaced by Rev. 0, attached and previously transmitted to FDF. FDF directed the contractor's surveyor to reduce specific grade elevations due to a potential shortage of fill. The reduced grade elevations, obtained from the surveyors control point listing, are marked on the attached drawing table. The contractor shall extend the access corridor south to tie into the impacted material haul road ramp. Contractor shall also install a 10-inch HDPE culvert, provided by FDF, beneath the access corridor north of the haul road. The HDPE culvert locations will be as directed by the Construction Manager. Grades shall be field adjusted, as necessary, to match the haul road ramp. The surface water diversion berm, shown on sketch 1702-SK-001, shall not be installed at the location shown. It shall be installed between control points 1337 and 1339. The access corridor extension, HDPE culvert and diversion berm are considered temporary.

5 6

IMPACTED MATERIAL HAUL ROAD CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
1331	481936.73	1350593.19	591.73	1436	482779.20	1350987.04	616.41
1332	481936.11	1350700.44	598.13 ~~602.13~~	1437	481787.84	1350728.76	599.02 ~~600.00~~
1333	481955.73	1350593.30	591.44	1438	482828.03	1351019.64	615.42
1334	481955.11	1350700.55	597.84 ~~601.84~~	1439	481762.25	1350737.73	598.69 ~~599.00~~
1335	481917.73	1350593.08	591.44	1440	481743.27	1350756.98	598.37 ~~598.00~~
1336	481917.12	1350699.70	597.88 ~~601.78~~	1441	482781.31	1350814.35	618.17
1337	481984.75	1350730.72	601.38 ~~605.38~~	1442	482764.65	1351032.52	613.86
1338	481935.94	1350730.12	600.80 ~~605.01~~	1443	482827.98	1351023.64	617.42
1339	481886.75	1350729.52	600.21 ~~604.64~~	1444	482774.92	1351023.00	618.49
1340	481868.57	1350729.30	599.99 ~~604.51~~	1445	482775.20	1350987.00	618.41
1341	482686.73	1350771.30	611.29	1446	482776.93	1350845.99	617.00
1342	481868.18	1350761.30	600.49 ~~605.15~~	1447	482765.20	1350986.87	613.41
1343	481861.57	1350729.21	599.91 ~~604.00~~	1448	482766.93	1350846.06	612.00
1344	481831.93	1350825.65	598.00	1449	482777.36	1350810.62	620.53
1345	481831.05	1350854.13	598.40	1450	482777.31	1350814.31	620.17
1346	481810.97	1350889.71	598.00	1451	482818.10	1350736.90	618.82
1347	481800.56	1350854.27	598.00	1452	482782.27	1350736.47	618.82
1348	481795.42	1350859.13	598.00	1453	482723.28	1350735.75	612.92
1349	481800.42	1350859.27	598.10	1454	482687.17	1350735.30	612.65
1350	481730.29	1350862.93	597.00	1455	482721.33	1350775.73	613.55
1351	481750.37	1350888.36	597.00	1456	482686.68	1350775.30	613.29
1418	481847.47	1350729.04	599.74 ~~603.00~~	1457	481959.73	1350593.30	593.44
1419	481831.87	1350728.85	599.55 ~~602.00~~	1458	481959.11	1350700.57	603.84
1420	481812.97	1350728.62	599.32 ~~601.00~~	1459	481984.79	1350726.72	607.38
1421	481795.12	1350728.40	599.11 ~~600.29~~	1460	481913.73	1350593.08	593.44
1422	481734.41	1350786.73	599.00	1461	481913.12	1350699.67	603.78
1423	481832.77	1350795.32	597.63	1462	481886.80	1350725.52	602.21 ~~606.64~~
1424	482687.12	1350739.30	610.65	1463	481868.62	1350725.30	601.99 ~~606.51~~
1425	482814.21	1350740.86	616.82	1464	481861.62	1350725.21	601.91 ~~606.00~~
1426	482782.22	1350740.47	616.82	1465	481847.52	1350725.04	601.94 ~~605.00~~
1427	482723.23	1350739.75	610.92	1466	481831.92	1350724.85	601.55 ~~604.00~~
1428	482812.92	1350846.43	614.36	1467	481813.02	1350724.62	601.32 ~~603.00~~
1429	482811.42	1350969.70	615.59	1468	481795.10	1350724.40	601.11 ~~602.29~~
1430	482828.42	1350987.65	615.42	1469	481787.34	1350724.79	601.02 ~~602.00~~
1431	482813.39	1350808.35	618.17	1470	481760.05	1350734.39	600.69 ~~601.00~~
1432	482778.81	1351019.04	616.41	1471	481739.83	1350754.95	600.37 ~~600.00~~
1433	482781.39	1350807.96	618.17	1472	481730.41	1350786.57	600.00
1434	482722.84	1350771.74	611.56	1473	481868.14	1350765.30	602.49 ~~607.15~~
1435	482780.93	1350846.03	615.00				



000013

1272

REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: 597	(5)Pg 1 OF 1	(6)DATE 10/31/97
(3)S/C TITLE: ON SITE DISPOSAL FACILITY PHASE I			(11)RCI NO.: 1702-015 R
(4) RESPONSIBLE DISCIPLINE: E☐ M☐ C☒ OTHER☐	(4A)RCI/DCN TITLE: DRIVING RUBBER TREAD ASV POSITRAC ON GCL		(11)DCN NO.: 1702-046

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
OSDF PH. I SPECIFICATION 02772			
3.05 B			

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☐ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

THE REFERENCE TECHNICAL SPECIFICATION SECTION STATES THAT NO EQUIPMENT SHALL DRIVE ON THE GCL. RCI 1702-010R WAIVED THIS RESTRICTION FOR LOW GROUND PRESSURE ALL TERRAIN VEHICLES (ATVS). THE RUBBER TREAD ASV POSITRAC HAS LOWER GROUND PRESSURE THAN THE ATVS.

ECDC CONTROLLED COPY NO 011

Civil Review 11/4/97

(10)REQUESTOR: COMPANY: DATE: 10/31/97

(12)FCE / PE DATE: 10/31/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☒ YES 11/4/97 (14)FOR DCN: ☐ APPROVED ☒ APPROVED AS NOTED ☐ DISAPPROVED

The ASV POSITRACK MD-70 may be used on the GCL subject to the same conditions noted and attached to RCI 1702-010R. IN Addition sharp turns by the ASV shall be prohibited and any damaged GCL shall be replaced by the contractor. The ASV is NOT to be used on top of the Geomembrane. 11/04/97

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 10/31/97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 11/18/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: 11/19/97 DATE:

PURCHASE REQUISITION REQUIRED: ☐ YES ☒ NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: 597	(5)Pg 1 OF 1	(6)DATE 10/31/97
(3)S/C TITLE: ON SITE DISPOSAL FACILITY PHASE I			(11)RCI NO.: 1702-015 R
(4) RESPONSIBLE DISCIPLINE: E☐ M☐ C☒ OTHER☐	(4A)RCI/DCN TITLE: DRIVING RUBBER TREAD ASV POSITRAC ON GCL		(11)DCN NO.: 1702-046

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
OSDF PH. I SPECIFICATION 02772			
3.05 B			

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☐ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

THE REFERENCE TECHNICAL SPECIFICATION SECTION STATES THAT NO EQUIPMENT SHALL DRIVE ON THE GCL. RCI 1702-010R WAIVED THIS RESTRICTION FOR LOW GROUND PRESSURE ALL TERRAIN VEHICLES (ATVS). THE RUBBER TREAD ASV POSITRAC HAS LOWER GROUND PRESSURE THAN THE ATV.

CONTROLLED COPY NO

RECEIVED NOV 26 1997 OCB

(10)REQUESTOR:	COMPANY:	DATE: 10/31/97	(12)FCE / PE	DATE: 10/31/97

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

The ASV POSITRACK MD-70 may be used on the GCL subject to the same conditions noted and attached to RCI 1702-010R. IN Addition sharp turns by the ASV shall be prohibited and any damaged GCL shall be replaced by the contractor. The ASV is NOT to be used on top of the Geomembrane.

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE: 10/31/97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 11/18/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE:	DATE: 11/18/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:

PURCHASE REQUISITION REQUIRED? ☐ YES ☒ NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WP / WO NO.:	(2) S/C NO.:	(5) Pg 1 O 2	(6) DATE
1702	597		10/29/97

S/C TITLE:	(11) RCI NO.:
On Site Disposal Facility Phase I	1702-013R

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN/TITLE:	(11) DCN NO.:
E [ ] M [ ] C [X] OTHER [ ]	Surface Ruts for Placement of GCL	1702-045

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02772-3.01.A.1	0	

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

Paragraph 3.01.A.1 of Technical Specification Section 02772 states that surface upon which the GCL is to be placed shall be relatively smooth, firm, and not contain ruts greater than ½-inch. Petro Environmental is requesting that this requirement be altered to allow ruts up to a maximum depth of 1+/- ½-inches.

RECEIVED NOV 28 1997 DCB

J. Richard Schairbaum

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
J. Richard Schairbaum	Petro Environmental Technologies, Inc.	10/29/97		10/29/97

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

See Page 2 for Response

ECDC CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Daniel Baldwin	10/29/97	

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEW ARE COMPLETE: (DCN ONLY) DATE: 11/18/97

PERFORMANCE GRADE: (17) 4

(18) CONSTRUCTION CONCURRENCE:	(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
11/18/97	

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

FS-F-4259 (10/01/96)

ORIGINAL

It is an industry standard to prepare a firm unyielding subgrade to permit installation of the geosynthetics over the subgrade without causing rutting or deformation under the weight of the installation equipment. The subgrade shall also be free of standing water and maintained in a clean smooth condition.

The project specification was written to comply with manufacturers recommendations. Ignoring or increasing the allowable rutting size to 1 1/2 inch is not good engineering practice and not a solution to excessive rutting. Additional drying time and use of equipment to deploy that will reduce the excessive rutting should be used. Reasonable interpretation of the specifications is being applied in the field.

Daniel Bodine

Daniel Bodine

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WP / WO NO.:	(2) S/C NO.:	(5) Pg 1 O 1	(6) DATE
1702	597		11/17/97

(3) S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: 1702-019R

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

(4A) RCI/DCN/TITLE: Preparation of Trial Seams of HDPE Liner

(11) DCN NO.: 1702-044

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02770-3.02.H	0	

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

Paragraph 3.02.H of Technical Specification Section 02770 states that prior to actual seaming of the HDPE liner, trial seams must be prepared that are at least 15-ft. long by 1-ft. wide (after seaming). Petro Environmental is requesting, on behalf of Environmental Design & Construction, Inc., that the 15-ft. length be reduced to 5-ft. in length.

ECDC CONTROLLED
COPY NO.
011

J. Richard Schairbaum

(10) REQUESTER: J. Richard Schairbaum COMPANY: Petro Environmental Technologies, Inc. DATE: 11/17/97

(12) FCE / PE: J. C. Jenkins DATE: 11/18/97

(13) RESPONSE FOR RCI, IS A DCN REQ'D [ ] NO [X] YES

(14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

A 15ft length is required to ensure the welder ~~heating~~ ~~element~~ goes through a full cycle of the heating element turning on, heating, shutting off, cooling of wedge, and turning on again. A shorter length can be used if ~~the~~ completion of the above cycle is demonstrated.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL: J.F. Beck DATE: 18 Nov 97

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

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEW ARE COMPLETE: (DCN ONLY) DATE: 11/19/97

PERFORMANCE GRADE: (17) 4

(18) CONSTRUCTION CONCURRENCE: 11/19/97

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

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WP / WO NO.: 1702	(2) S/C NO.: 597	(5) Pg 1 O 1	(6) DATE 11/17/97
S/C TITLE: On Site Disposal Facility Phase I		(11) RCI NO.: 1702-019R	
RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN/TITLE: Preparation ~~of~~ Trial Seams of HDPE Liner	(11) DCN NO.: 1702-044	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02770-3.02.H	0	

(9) [X] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Paragraph 3.02.H of Technical Specification Section 02770 states that prior to actual seaming of the HDPE liner, trial seams must be prepared that are at least 15-ft. long by 1-ft. wide (after seaming). Petro Environmental is requesting, on behalf of Environmental Design & Construction, Inc., that the 15-ft. length be reduced to 5-ft. in length.

ECDC CONTROLLED COPY NO.

RECEIVED NOV 26 1997

J. Richard Schairbaum

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
J. Richard Schairbaum	Petro Environmental Technologies, Inc.	11/17/97	J. C. Jenkins	11/18/97

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

A 15ft length is required to ensure the welder ~~heating~~ ~~element~~ goes through a full cycle of the heating element turning on, heating, shutting off, cooling of wedge, and turning on again. A shorter length can be used if ~~the~~ completion of the above cycle is demonstrated.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
J.F. Beck	18 Nov 97	

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

PERFORMANCE GRADE: (17) 4 11/19/97

(18) CONSTRUCTION CONCURRENCE 11/19/97

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

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WP / WO NO.:	(2) S/C NO.:	(5) Pg 1 O 1	(6) DATE
1702	597		10/30/97

(3) S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: 1702-014R

RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN/TITLE: Cold Weather Placement of Granular Drainage Material

(11) DCN NO.: 1702-043

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02714-3.05.C	0	

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

Paragraph 3.05.C of Technical Specification Section 02714 states that placement of granular drainage material may not occur at ambient temperatures below 40° F or above 104° F unless authorized in writing by the Construction Manager. Petro Environmental is requesting that this particular specification requirement be waived. The HDPE liner material was tested for Low Temperature Brittleness to a maximum temperature of -76° F (-60° C) and recorded passing results. This data was submitted in Supplier Submittal No. 056, Rev. 1; Document No. PET-064C, Rev. 1. Low temperatures of this extreme nature are not anticipated at any time during the placement of the granular drainage material upon the geosynthetics. Regarding the geotextile material, a 10-oz. cushion and/or a 16-oz. top supplemental cushion will be placed atop the HDPE geomembrane prior to placement of the granular drainage material. At no time will the equipment placing the stone operate directly on the geotextile material. Additionally, the equipment used during this aspect of the project shall consist of a low ground pressure machine, therefore, the ambient temperature of the underlying geosynthetics is not an essential factor to the placement of the granular drainage material.

ECDC CONTROLLED COPY NO 011

J. Richard Schairbaum

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
J. Richard Schairbaum	Petro Environmental Technologies, Inc.	10/30/97		10/30/97

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

at colder temperatures ~~other~~ conditions can exist, such as temporising at toe of slope, which prevent the ~~installation~~ placement of gravel. Gravel placement can ~~be made~~ proceed if ~~the~~ CQE personnel are present.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
J Beal	18 Nov 97	N/A

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

PERFORMANCE GRADE: (17) 4 11/19/97

CONSTRUCTION CONCURRENCE: 11/19/97

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

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

FS-F-4259 (10/01/96)

ORIGINAL

1272

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.:	(2) S/C NO.:	(5) Pg 1 O 1	(6) DATE
1702	597		10/30/97

S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: 1702-014R

RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN/TITLE: Cold Weather Placement of Granular Drainage Material

(11) DCN NO.: 1702-043

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02714-3.05.C	0	

(9) [X] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Paragraph 3.05.C of Technical Specification Section 02714 states that placement of granular drainage material may not occur at ambient temperatures below 40° F or above 104° F unless authorized in writing by the Construction Manager. Petro Environmental is requesting that this particular specification requirement be waived. The HDPE liner material was tested for Low Temperature Brittleness to a maximum temperature of -76° F (-60° C) and recorded passing results. This data was submitted in Supplier Submittal No. 056, Rev. 1; Document No. PET-064C, Rev. 1. Low temperatures of this extreme nature are not anticipated at any time during the placement of the granular drainage material upon the geosynthetics. Regarding the geotextile material, a 10-oz. cushion and/or a 16-oz. top supplemental cushion will be placed atop the HDPE geomembrane prior to placement of the granular drainage material. At no time will the equipment placing the stone operate directly on the geotextile material. Additionally, the equipment used during this aspect of the project shall consist of a low ground pressure machine, therefore, the ambient temperature of the underlying geosynthetics is not an essential factor to the placement of the granular drainage material.

DOC CONTROLLED COPY NO. 01

J. Richard Schairbaum

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
J. Richard Schairbaum	Petro Environmental Technologies, Inc.	10/30/97		10/30/97

(13) RESPONSE FOR RCI, IS A DCN REQ'D [ ] NO [X] YES

(14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

If colder temperatures ~~other~~ conditions can exist, such as trampolining at toe of slope, which prevent the ~~installation~~ placement of gravel. Gravel placement can ~~not~~ proceed if ~~the~~ CQE personnel are present.

RECEIVED NOV 26 1997 OCB

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
J Beck	18 Nov 97	

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

PERFORMANCE GRADE: (17) 4 11/19/97

CONSTRUCTION CONCURRENCE: 11/19/97

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

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 1	(6)DATE 11/17/97
(3)S/C TITLE: OSOF PHASE I CONSTRUCTION		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E☐ M☐ C☒ OTHER☐	(4A)RCI/DCN TITLE: ALTERNATE LINE POST INSTALLATION	(11)DCN NO.: 1702-042	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
90X-6000-S-00088, SHEET S-5A		0	

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

ADD NOTE TO DRAWING 90X-6000-S-00088, SHEET S-5A; THAT PERMITS DRIVING FENCE LINE POST(S) WHERE FENCE LINE CROSSES RIP-RAPPED AREA SUCH AS SEDIMENT BASIN EMERGENCY SPILLWAY.

ECDC CONTROLLED COPY NO

(10)REQUESTOR: DON GOETZ COMPANY: DATE: 11/17/97 (12)FCE / PE DATE: 11/17/97

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

CARE IS TO BE TAKEN FENCE POSTS ARE NOT DRIVEN IN AREAS WITH BURIED PIPES ~~CARE~~ OR CULVERTS ARE LOCATED. ALSO, DRIVEN POST ARE LESS STABLE THAN THOSE ~~WITH~~ SET WITH CONCRETE. NEED TO ENSURE DRIVEN POSTS ARE MAINTAINED

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 18 Nov 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N/A

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 11/19/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: DATE: 11/19/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐ YES ☒ NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 1	(6)DATE 11/17/97
(3)S/C TITLE: OSDF PHASE I CONSTRUCTION		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: ED MD CE OTHER	(4A)RCI/DCN TITLE: ALTERNATE LINE POST INSTALLATION	(11)DCN NO.: 1702-042	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
90X-6000-S-00088, SHEET S-5A		0	

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

ADD NOTE TO DRAWING 90X-6000-S-00088, SHEET S-5A; THAT PERMITS DRIVING FENCE LINE POST(S) WHERE FENCE LINE CROSSES RIP-RAPPED AREA SUCH AS SEDIMENT BASIN EMERGENCY SPILLWAY

DOC CONTROL COPY NO. 01

(10)REQUESTOR: DON GOETZ COMPANY: DATE: 11/17/97 (12)FCE / PE DATE: 11/17/97

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

CARE IS TO BE TAKEN FENCE POSTS ARE NOT DRIVEN IN AREAS WITH BURIED PIPES ~~CARE~~ OR CULVERTS ARE LOCATED. ALSO, DRIVEN POST ARE LESS STABLE THAN THOSE ~~WITH~~ SET WITH CONCRETE. NEED TO ENSURE DRIVEN POSTS ARE MAINTAINED

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: J V Beck DATE: 18 Nov 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 11/19/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: DATE: 11/19/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐ YES ☒ NO (19)

ES-F-4259 (10/01/96)

ORIGINAL

RECEIVED NOV 26 1997

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REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE -

(1)WP / WO NO.:	(2)S/C NO.:	(5)Pg OF	(6)DATE
1702	597	1 1	11/12/97

(3)S/C TITLE: ON SITE DISPOSAL FACILITY PHASE I

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E☐ M☐ C☒ OTHER☐

(4A)RCI/DCN TITLE: GML INSTALLER; FOOTAGE INSTALLED

(11)DCN NO.: 1702-041

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
PARA. 1.05.D.5 SPECIFICATION SECTION 02770;		0	

VOID

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☐ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Geomembrane installers requirement for 10,000,000 square feet of liner installation experience may be waived in the case of an experienced installer with a good reputation. The square feet requirement is a general guidline to ensure a qualified installer. JB.

VOID

CIVIL REVIEW

(10)REQUESTOR: COMPANY: FDF DATE: 11/12/97

(12)FCE / PE DATE: 11/12/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☐ YES

(14)FOR DCN: ☐ APPROVED ☒ APPROVED AS NOTED ☐ DISAPPROVED

M. Harris, Superintendent meets the 10,000,000 ft² Harris installer. The other installer personnel are experienced and qualified.

CDC CONTROLLED COPY NO. 011

RECEIVED NOV 26 1997 OCB

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 12 Nov 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 11/12/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: DATE:

PURCHASE REQUISITION REQUIRED: ☐ YES ☐ NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE 1272

(1) WP / WO NO.:	(2) S/C NO.:	(5) Pg 1 O 1	(6) DATE
1702	597		11/5/97

(3) S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: ~~1702-017R~~

RESPONSIBLE DISCIPLINE: E [ ] M [ ] C [X] OTHER [ ]

(4A) RCI/DCN/TITLE: Vacuum Testing Time Duration

(11) DCN NO.: 1702-~~038~~ 040 11/12/97

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02770-3.02.I.2	0	

(9) [X] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Paragraph 3.02.I.2 of Technical Specification Section 02770 states that non-destructive seam continuity testing with a vacuum box shall be conducted for a time period of not less than 20 seconds. Petro Environmental, on behalf of Ground Safe, is requesting that this time period be reduced to 15 seconds.

VOID

VOID

ECDC CONTROLLED COPY NO.

COPY 1

J. Richard Schairbaum

(10) REQUESTER: J. Richard Schairbaum COMPANY: Petro Environmental Technologies, Inc. DATE: 11/5/97

(12) FCE / PE: DATE: 11/12/97

(13) RESPONSE FOR RCI, IS A DCN REQ'D [ ] NO [X] YES

(14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

The request is approved. Change Specification Section 02770 Parts 3.02.I.2.b.vi and 3.02.I.2.b.vii from "20 seconds" to "15 seconds".

RECEIVED NOV 24 1997 CGB

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL: 11 Nov. 97 DATE:

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE

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

PERFORMANCE GRADE: (17) 4

CONSTRUCTION CONCURRENCE:

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

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

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE - 1272

(1) WP / WO NO.:	(2) S/C NO.:	(5) Pg 1 Of 8	(6) DATE
1702	597		11/6/97

(3) S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: 1702-018R

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

(4A) RCI/DCN/TITLE: Alternative Method for Seaming Nonwoven Geotextiles

(11) DCN NO.: 1702-039

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02714-3.02.A	0	

(9) [X] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Paragraph 3.02.A of Technical Specification Section 02714 states that the various types of geotextiles shall be continuously overlapped a minimum of 6-inches using a "single prayer" seam, and are to be sewed using Stitch Type 401. Petro Environmental is requesting a DCN to the sewing procedure to permit the use of a GT-200 Wedge Welder designed for all nonwoven geotextile materials of any weight. Attached is a letter from the geotextile manufacturer, TNS Advanced Products, stating that this type of welding procedure is an acceptable method for bonding the geotextile together. Additionally attached is documentation on the Wedge Welder, as provided by the manufacturer, Novaweld.

J. Richard Schairbaum

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
J. Richard Schairbaum	Petro Environmental Technologies, Inc.	11/5/97		11/12/97

(13) RESPONSE FOR RCI, IS A DCN REQ'D [ ] NO [ ] YES

(14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

See Page 2 for Response

ECDC CONTROLLED
COPY NO
011

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Daniel Bolton	11 Nov 97	N/A

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

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE: 12/12/97

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

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

FS-F-4259 (10/01/96)

ORIGINAL

000026

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE - 1272

(1) WP / WO NO.:	(2) S/C NO.:	(5) Pg 1 of 8	(6) DATE
1702	597		11/6/97

(3) S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: 1702-018R

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

(4A) RCI/DCN/TITLE: Alternative Method for Seaming Nonwoven Geotextiles

(11) DCN NO.: 1702-039

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02714-3.02.A	0	

(9) [X] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Paragraph 3.02.A of Technical Specification Section 02714 states that the various types of geotextiles shall be continuously overlapped a minimum of 6-inches using a "single prayer" seam, and are to be sewed using Stitch Type 401. Petro Environmental is requesting a DCN to the sewing procedure to permit the use of a GT-200 Wedge Welder designed for all nonwoven geotextile materials of any weight. Attached is a letter from the geotextile manufacturer, TNS Advanced Products, stating that this type of welding procedure is an acceptable method for bonding the geotextile together. Additionally attached is documentation on the Wedge Welder, as provided by the manufacturer, Novaweld.

DOC CONTROLLED
COPY NO
CCI

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
J. Richard Schairbaum	Petro Environmental Technologies, Inc.	11/5/97		11/12/97

(13) RESPONSE FOR RCI, IS A DCN REQ'D [ ] NO [ ] YES

(14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

See Page 2 for Response

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL: Daniel Bodnar 11 Nov 97 DATE:

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE

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

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE: 11/12/97

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

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FS-F-4259 (10/01/96)

ORIGINAL

RCI 1702-018R has been changed to DCN 1702-039 and is approved as noted below.

Add Part 3.02.D to Specification Section 02714.

D. When approved in writing by the Construction Manager and the geotextile manufacturer an alternate to sewing filter, cushion, and supplemental cushion nonwovern geotextiles is heat seaming using the Novaweld GT-200 Wedge Welder. Heat seaming shall be in accordance with equipment manufacturers requirements. If "burn out" occurs, the burned out area shall be covered with sufficient overlap as specified and seamed. For these repairs, a GT-100A hand held welder may be used. If in the opinion of the Construction Manager a large number of repairs is occurring the Construction Manager may direct the installer to return to sewing in accordance with specifications

1272

TNS MILLS/ENGINEERED SYNTHETIC PRODUCTS, INC.
5915 Hammersmith Road
Stone Mountain, GA 30087
Phone: 770/564-1857 Fax: 770/564-1818

November 4, 1997

Mr. Rick Schairbaum
Petro Environmental Inc.
Fernald, OH

Fax: 513/648-3407

Dear Rick:

This letter is in regard to the Fluor Daniel Fernald Site- OSDF Phase I project. Heat seaming geotextile utilizing the Novaweld device is an acceptable method for bonding TNS nonwoven geotextiles. TNS only recommends this method for nonwoven geotextiles utilized as protection for a geomembrane.

If you have any further questions, please feel free to contact me.

Sincerely,

Richard J. Franklin

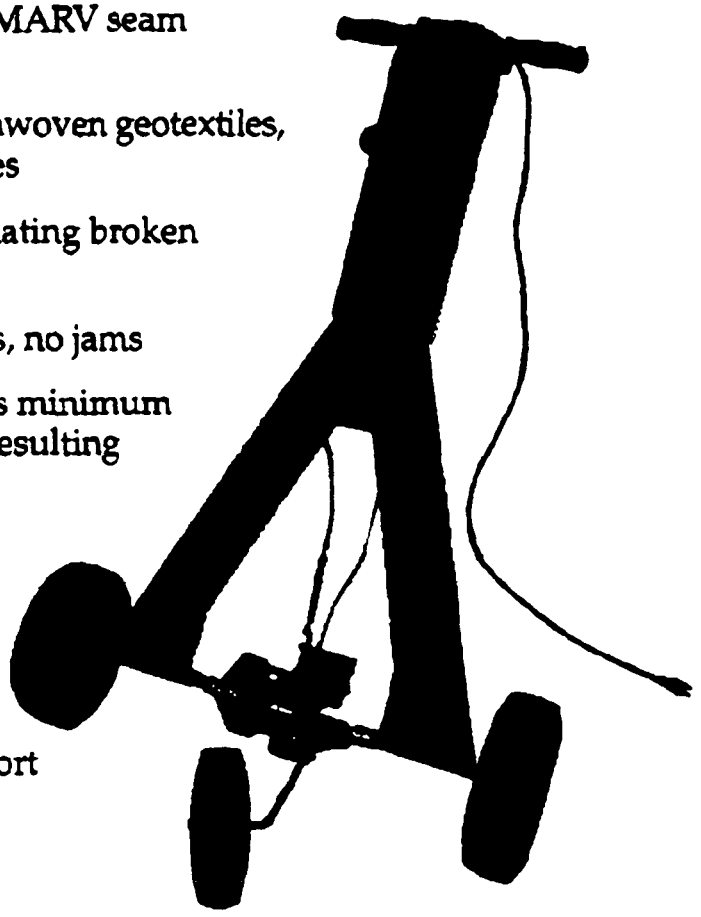
Richard J. Franklin
TNS/Engineered Synthetic Products, Inc.

RJF/kal

EXCLUSIVE BPR TECHNOLOGY BY NOVAWELD

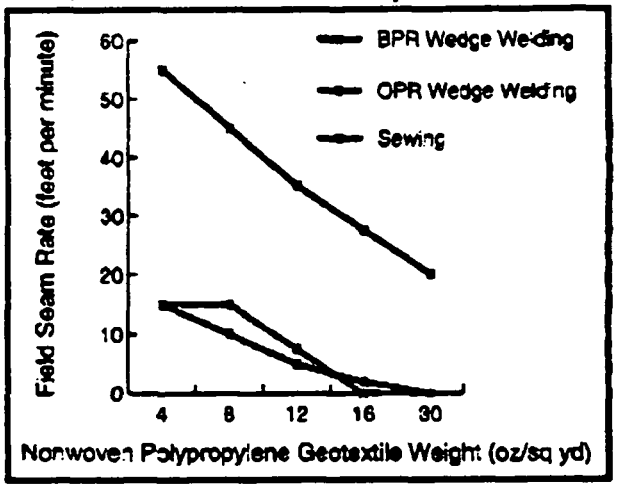
The GT-200 Wedge Welder

- Universal welder for *ALL* nonwoven geotextile materials of *ANY* weight
- *FAST*- over 30 feet per minute with 100% MARV seam strength (ASTM D4884-96)
- Capable of seam welding all weights of nonwoven geotextiles, T-joints, GCLs, geonets, and geocomposites
- Replaces sewing machines, thereby eliminating broken and lost needles
- *MAINTENANCE-FREE* - no moving parts, no jams
- BPR process with alignment wheel assures minimum overlap, weld speed, high seam strength resulting in installation savings of up to 300%
- Smart controls with current sensors provide *up to the second* cartridge heating status
- Easy to use, walk-behind
- Internet website access for customer support



Comparison of Field Seaming Rates

As published in Geotechnical Fabrics Report • Oct/Nov 1996



BPR Wedge Welding: Base Pressure Roller Technology

OPR Wedge Welding: Opposing Pressure Roller Technology

The GT-200 features an ergonomic design promoting ease of use, increased productivity, and reduced training time, job turnaround and overall job costs. No set-up costs or additional supplies are needed.

NOVAWELD

ORIGINATORS OF BPR WEDGE WELDING

Simple design No jams Maintenance-free

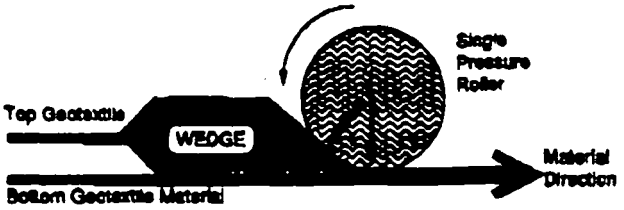


Figure 1: Base Pressure Roller Wedge Welding (BPR), Lippman Patented Technology

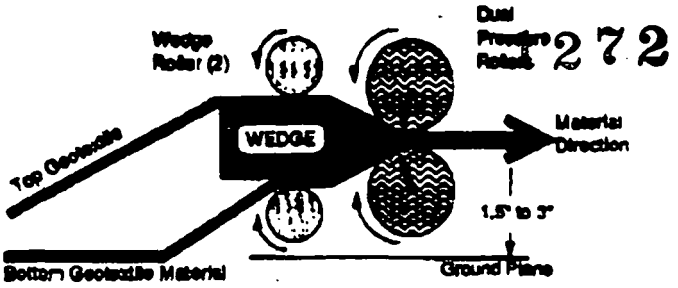


Figure 2: Opposing Pressure Roller Wedge Welding (OPR), Neidhart Patented Technology.

SPECIFICATIONS			
Product Dimensions: Height 48" (1.2m) Width 32" (0.8m) Length 17" (0.4m) Weight 35 lbs (16kg)	Shipping Dimensions: Length 52" (1.3m) Width 34" (0.9m) Depth 12" (0.3m) Weight 60 lbs (27kg)	Electrical Specifications: Power (factory configured): 110 VAC, 6 Amps, 660 Watts (max) 220 VAC, 3 Amps, 660 Watts (max) Watlow PID Temperature Controller	Mechanical Specifications: Wedge 2.25" (0.06m) Wedge material is a non-corrosive metal alloy

1 year warranty, extended warranty available

NOVAWELD PRODUCT LINE

GT-100A	Hand-held wedge welder, case, silcon roller, brush and users manual
GT-200	Semi-automatic wedge welder for geotextiles, users manual, instructional video, carrying case optional
GT-300	Automatic lightweight wedge welder, users manual, carrying case optional
GT-500	Automatic wedge/hot air welder, users manual, carrying case optional

GT-200 can be used to thermally fuse or seam weld polypropylene, polyester and other nonwoven geotextiles of four or more ounces per square yard.

The GT-200 complements the NOVAWELD family of wedge welding products for the installation of geosynthetic materials including the GT-100 hand-held wedge welder for geotextile and geomembrane materials, the GT-300 lightweight, automatic wedge welder and the GT-500 automatic wedge/hot air welder for geomembranes.

NOVAWELD

ORIGINATORS OF BPR WEDGE WELDING

NOVAWELD LLC
12150 Race Street, Unit L-104 Northglenn, CO 80241 USA
303-452-0872 Fax 303-452-2733
http://www.novaweld.com

Alternate seaming methods for nonwoven geotextiles

Revisions to ASTM D 4884 have expanded the methodologies available to engineers and installers by adding thermally bonded seaming methods.

By Glenn W. Lippman and
Ronald K. Frobel, P.E.

Historically, seaming or jointing methods for geotextiles have centered around various types of sewn jointing methods, such as the "prayer seam" or "J" stitch (Ingold and Miller, 1988). A thorough treatise on sewing techniques can be found in the paper "Basic Considerations Needed to Ensure Proper Geotextile Seaming" (Diaz, 1990).

Sewn seam technology and associated lightweight sewing machines were developed for the field jointing of geotextiles, especially for high-strength reinforcement applications in which 90 percent to 95 percent of the parent geotextile strength may be required at the seam area to transmit tensile strength across the geotextile. This is particularly important for high-strength wovens and technical nonwovens used in base reinforcement and walls. As geotextile wide width strengths increase to between 750 and 1,000 lb/in, however, sewn seams' strength efficiency drops, sometimes to less than 50 percent.

Many applications, especially in the protection and filtration functions for nonwoven geotextiles, do not require high tensile strength across the geotextile seam area. Also, overlaps of geocomposites, such as geomembrane and geonet composites and GCLs, may require only a tack weld to provide continuity or hold position during installation of cover materials.

Wedge welding technology also can provide relatively high tensile strength, if required, for nonwovens (Frobel and Lippman, 1995). Tests have shown that wedge welding can provide more consistent seaming than sewing on lightweight, medium-weight and heavyweight nonwoven geotextiles.

This paper discusses the predominant methods for field seaming of nonwoven geotextiles with primary purpose of providing a "specification required" overlap

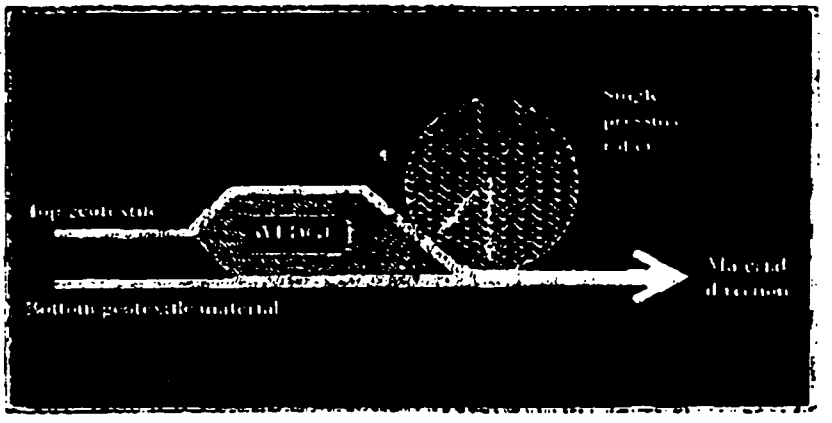


Figure 1. Base pressure roller (BPR) wedge welding technique.

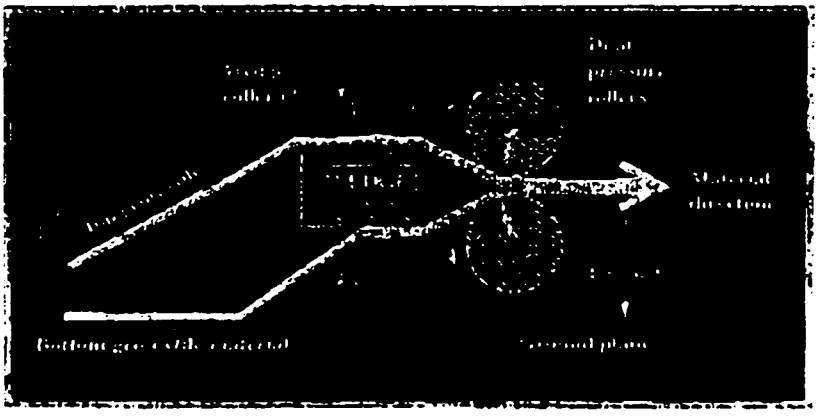


Figure 2. Opposing pressure roller (OPR) wedge welding technique.

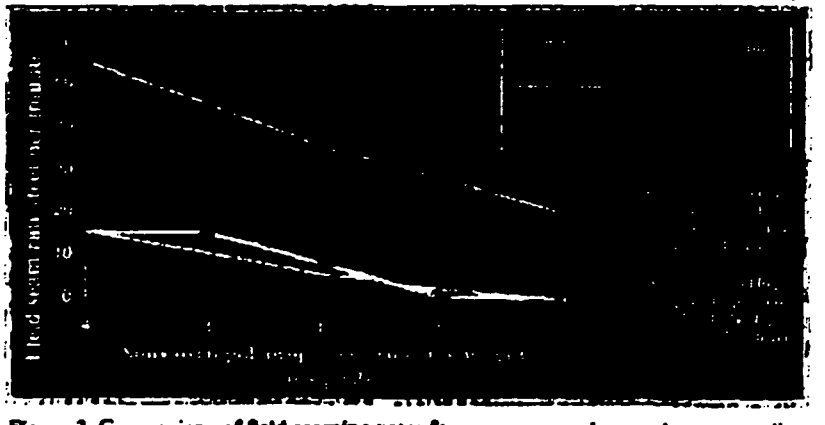


Figure 3. Comparison of field seaming rates for nonwoven polypropylene geotextiles.

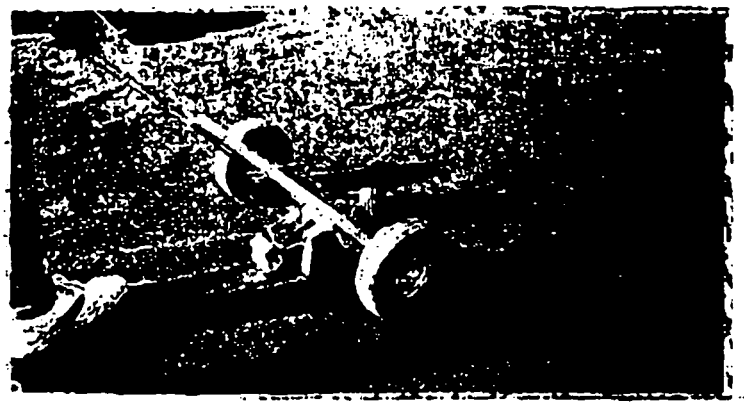


Photo 1. The walk-behind base pressure roller wedge welding technique.

Photo 2. The hand-held base pressure roller wedge welding technique.

joint or seam or a "tack" weld to hold the position of the geotextile or geocomposite during placement of adjacent materials and overburden soils. Any type of overlap weld will significantly reduce the waste of geotextile materials at overlaps, especially for heavier protection-function geotextiles and large area filtration/separation applications.

ASTM D 4884

ASTM Committee D-35 on Geosynthetics under subcommittee D35.01 has recently re-evaluated ASTM D 4884, "Test Method for the Seam Strength of Sewn Geotextiles." The revised test method expands the methodologies and requirements available to the engineer and geosynthetics field installer, adding thermally bonded seaming methods. As defined in the revised standard, a geotextile seam can be attained by either a sewn method or any method "made by the application of thermal energy" (ASTM, 1996).

The test specimen shape and size also was made simpler for thermally bonded methods. Thermal methods may include wedge welding, hot air, flame and other exothermic methods, including adhesives. As a way to further expand the various methods available to seam geotextiles, the D35.01 subcommittee is evaluating a proposed title change to "Test Method for the Seam Strength of Geotextiles."

Field seaming methodologies

Basically, five established processes can provide a nonwoven geotextile's seam. These processes include wedge welding, sewing, hot air, adhesive and torch or open flame. Since the use of adhesives and torch/open flame are application-specific, these processes are not compared in Table 1.

Many contractors have tried a variety of these processes with varying degrees of seam strength, quality and field reliability. The following sections will briefly describe the processes available.

Wedge welding

Although relatively unknown, two patented basic wedge welding technologies exist—the opposing pressure roller system (OPR) (Neidhart, 1979) and the base pressure roller system (BPR) (Lippman 1989, 1990, 1996). The Neidhart technology, developed initially for factory applications of welding plastic strips, was later modified for field applications. The Lippman technology was designed specifically for field conditions and later modified for factory applications.

Both technologies use a heated wedge and pressure rollers to provide a thermal fusion seam. The BPR technology (Figure 1) seals against a base of suspended tensioned geotextile material (over soft soil or uneven surfaces), compacted subsoil or an external seaming board. The

Photo 3. The self-propelled opposing roller pressure wedge welding technique.

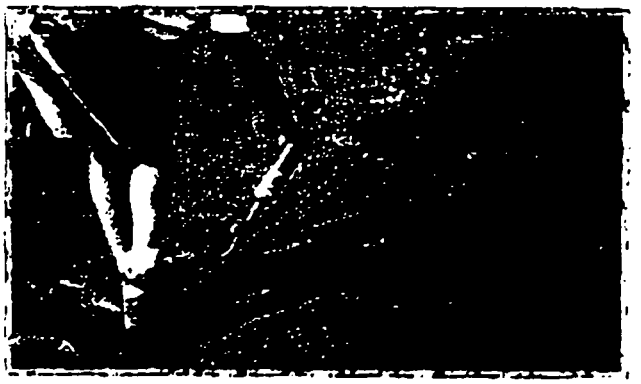


Photo 4. The propane flame bonding tack weld method.

Nonwoven polypropylene geotextiles	Hot air pressure roller (PR) wedge welding technology	Hot air pressure roller (PR) wedge welding technology	Sewing methods
Maximum field production rates			
4 oz/sq. yd	50-60 FPM[1]	15 FPM[1]	15 FPM[1]
8 oz/sq. yd	40-50 FPM[1]	15 FPM[1]	10 FPM[1]
12 oz/sq. yd	30-40 FPM[1]	5-10 FPM[1]	5 FPM[1]
16 oz/sq. yd	25-30 FPM[1]	N/A	2 FPM[1]
30 oz/sq. yd	15-25 FPM[1]	N/A	N/A
Maximum seam strength (% of MARV)			
4 oz/sq. yd	100%	100%	100%
8 oz/sq. yd	100%	100%	90%
12 oz/sq. yd	90 to 100%	90 to 100%	70%
16 oz/sq. yd	80 to 100%	N/A	40%
30 oz/sq. yd	70%	N/A	N/A
Field maintenance	Heater replacement	Heater replacement Motor, moving parts Keep mechanisms clean of dirt, melt, etc.	Re-threading Motor, moving parts Broken and lost needles
Overlap, minimum	2 inches	2 inches	9 inches
Overlap, maximum	No maximum	4-6 inches	No maximum
Geotextile material edge[5]	Even or uneven	Even only	Even or uneven
T-joints	Easy	Difficult	Medium
Maneuverability and ease of use	Easy to maneuver Operates from standup position, walk-behind, hand-held or self-propelled	Easy to maneuver Operates from ground position, self-propelled	Easy to maneuver, although clumsy; tractor mountable
Ease of use for maintenance	Easy	Moderate	Moderate
Range of materials			
Lightweight polypropylene, polyester and nylon nonwoven geotextiles	Yes	Yes	Yes
Medium weight: polypropylene and polyester	Yes	Marginal	Marginal
Heavyweight: Polypropylene and polyester	Yes	No	No
Geocomposite geotextile overlaps	Yes	Yes	Yes
Geotextile to geonet composite	Yes	No	Yes
GCL to GCL	Yes	No	No
Maximum geotextile weight	No maximum	12 ounce	16 ounce
Installation team	1 person	1 person	2 person
Manufacturers, distributors	Novaweld, Integrated Wedge Welding Solutions	Columbine, Concord, Reisenn, Pfaff, Sinclair Equipment	Union Special, Fabbean
Product availability, cost range	Walk-behind semi-automatic ($5,000) Hand-held ($2,000) 120 or 240 VAC	Variety of self-propelled units ($4,500 to $6,000) 120 or 240 VAC	Variety of manufactured field sewing equipment to ($,500 to $8000) 120 VAC

Note: Comparison data is based on observations of current field equipment without modifications.
Note: FPM = Feet per minute
Note: Seam rates can be faster than shown, although at reduced seam efficiencies
Note: Frobel and Lappman, 1995
Note: Uneven edge is defined as a match or excessive overlap due to irregularities and pushing.

OPR technology (**Figure 2**), in contrast, seals between two opposing rollers.

An advantage of sealing against the ground rather than between two opposing rollers is that the material, whether geotextile or geomembrane, remains flat (not raised) as it passes through the machine. The BPR design also permits welding on rough, uneven surfaces, whereas the OPR design requires a relatively smooth surface. OPR requires the upper and lower layers of geotextile material to be raised. The raising process will often create equipment jams, material stretching and accumulation of dirt and other particles inside the roller mechanism.

Both wedge welding technologies provide excellent seams and seam strength. Wedge welding field equipment ranges in price from $2,000 to $6,000. The photos illustrate the various wedge welding methods for nonwoven geotextiles. These include the walk-behind, BPR wedge welding technique (**Photo 1**), the hand-held BPR wedge welding technique (**Photo 2**) and the self-propelled OPR technique (**Photo 3**).

Sewing

Sewing geotextiles has been the original and traditional method of seaming woven and nonwoven geotextiles, using either the "prayer seam" or "J" stitch. Various manufactured field sewing machines have led the seaming industry. Sewing, however, presents inherent problems associated with lost or broken needles, rethreading delays and reduced production speeds, especially on technical nonwoven materials (**Figure 3**). Furthermore, as design engineers demand and the industry continues to produce heavier geotextiles, sewing methods to provide an adequate seam are significantly limited (Diaz, 1990).

Hot air and torch-applied open flame

Both hot-air and open-flame methods greatly depend on field installation personnel experience, skill level and ability to produce seams without damage or burn holes to the geotextile material. Hot-air and open-flame methods are adversely affected by wind, and because of their inherent processes, also are difficult to control seam width, quality, strength and a geotextile overlap pursuant to en-

g necring specifications. **Photo 4** illustrates a propane flame bonding tack weld method.

Adhesive or epoxy bonding

The high-strength woven geotextile industry is limited in its manufacture of high-strength fibers, due to the limiting value of sewn seams at overlaps of adjacent geotextiles for applications such as embankment construction over soft soils. Some interesting work has been carried out on high-strength polyester fabric in which the fabric overlaps were honded with an epoxy material resulting in 79 percent seam efficiency (Wayne, Carey and Koerner, 1990). These and other types of adhesives and bonding agents, including hot melt adhesives, are commercially available for temporary overlap bonding of lightweight nonwoven geotextiles

Summary

Fusion wedge welding is an attractive alternate seaming method for nonwoven geotextiles. As it does with geomembranes, fusion wedge welding allows use of automated, semi-automatic or hand-held methods that provide consistent seam results.

Current laboratory data and field testing have demonstrated excellent wedge-welding fusion welds on a variety of nonwoven types and fabric weights. Because of installers' familiarity with wedge welders and the equipment's availability, installation subcontractors generally do not need additional training to properly install and seam geotextiles using fusion wedge welders.

About the authors Glenn W. Lippman is general manager for Novaweld LLC, Northglenn, Colo., and is ASTM Subcommittee Task Group Chairman for D 4884 and D 4595. Ronald K. Frobel is chairman of ASTM D35.01, U.S. Team Leader for ISO on geotextiles, and principal of R.K. Frobel and Associates Geosynthetics Consulting Engineers, Lakewood, Colo.

References

Diaz, V. (1990) "Basic Considerations Needed to Ensure Proper Geotextile Seaming." The Seaming of Geosynthetics, Koerner, R.M., ed., Geotextile and Geomembrane International Journal, Elsevier Applied Science, London, U.K., Vol. 9, pp. 553–558.

Frobel, R.K. and Lippman, G.W. (1995) "Wedge Welding Geotextiles Can Save Money," *Geosynthetical Fabrics Report*, Vol. 13, No. 5, pp. 22–23.

Ingold, T.S. and Miller, K.S. (1988) Geotextiles Handbook, Thomas Telford, London

Lippman, G.W. (1990) U.S. Patent No. 4,894,112, "Method and Apparatus for Joining Overlapping Sheets of Thermally Sealable Material."

Lippman, G.W. and Lippman, G. (1989) U.S. Patent No. 4,872,941, "Automatic Welding Apparatus for Welding Thermoplastic Materials in Sheet Form."

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Neidhart, W., (1979) U.S. Patent No. 4,146,419, "Welding Device for Welding Plastic Strips."

Wayne, M.H., Carey, J.P. and Koerner, R.M. (1990), "Technical Note on Epoxy Bonding of Geotextiles," The Seaming of Geotextiles, Koerner, R.M., ed., Geotextiles and Geomembranes, Elsevier Science, Vol. 9, pp. 559–564

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Fast and efficient seam welding of geotextiles, geomembranes and other geosynthetic materials to meet your job specifications with increased profits and reduced installation costs.

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Geotextile field seams at 30 to 50 feet per minute ... without lost or broken needles

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Originators of Wedge Welding
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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.:	(2) S/C NO.:	(5) Pg 1 O 1	(6) DATE
1702	597		11/5/97

(3)S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: ~~1702-017R~~

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

(4A) RCI/DCN/TITLE: Vacuum Testing Time Duration

(11) DCN NO.: 1702-038

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Construction Documents	Section 02770-3.02.I.2	0	

(9) [X] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Paragraph 3.02.I.2 of Technical Specification Section 02770 states that non-destructive seam continuity testing with a vacuum box shall be conducted for a time period of not less than 20 seconds. Petro Environmental, on behalf of Ground Safe, is requesting that this time period be reduced to 15 seconds.

J. Richard Schairbaum

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
J. Richard Schairbaum	Petro Environmental Technologies, Inc.	11/5/97		

(13) RESPONSE FOR RCI, IS A DCN REQ'D [ ] NO [X] YES

(14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

The request is approved. Change Specification Section 02770 Parts 3.02.I.2.b.vi and 3.02.I.2.b.vii from "20 seconds" to "15 seconds".

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL: Daniel Bodine 11 Nov. 97 DATE:

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE

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

RFORMANCE GRADE: (17) _____

..8) CONSTRUCTION CONCURRENCE:

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

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

FS-F-4259 (10/01/96)

1272

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WP / WO NO.:	(2) S/C NO.:	(5) P 1 OF 5	(6) DATE
1702	597		10/13/97

C TITLE:	(11) RCI NO.:
On Site Disposal Facility Phase I	1702-009R

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [ ] M [ ] C [X] OTHER [ ]	LDS/LCS Anchor Trench Detail	1702-037

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Liner System Details	90X-6000-00080	1	None

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

Allow both the LDS and LCS liner system synthetics to be placed in a common anchor trench. The anchor trench would be constructed to the lines and grades as indicated for the LDS Anchor Trench originally designed. The proposed installation sequence is as follows:

1. Excavate common anchor trench to lines and grades required for ~~LDS~~ secondary liner
2. Place the ~~LDS~~ Synthetic materials in the anchor trench
3. ~~Place sandbags~~ in anchor trench to temporarily ballast ~~LDS~~ synthetics
4. Place LDS Drainage Layer (Stone)
5. ~~Remove sand bags from anchor trench~~ compact clay backfill in inside ½ of trench
6. Place ~~LCS~~ Synthetics in anchor trench
7. Backfill the common anchor trench as specified primary liner

(10) REQUESTOR:	COMPANY:	DATE:	(12) FCE / PE	DATE:
Steven C. Brandstetter	Petro Environmental Technologies, Inc.	10/13/97		10/14/97

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

The proposed installation sequence above is disapproved. See page 2 for Alternative Liner System Anchor Trench Detail and installation sequence.

ECDC CONTROLLED COPY NO. 011

ORIGINAL

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Daniel Boline	16 Oct. 97	N/A

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

PERFORMANCE GRADE: (17) 4 10/17/97

(CONSTRUCTION CONCURRENCE:	DATE:	(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	10/17/97		

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

FS-F-4259 (10/01/96)

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WP / WO NO.:	(2) S/C NO.:	(5) P 1 OF 5	(6) DATE
1702	597		10/13/97

S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: 1702-009R

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

(4A) RCI/DCN TITLE: LDS/LCS Anchor Trench Detail

(11) DCN NO.: 1702-037

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
OSDF, Phase I Liner System Details	90X-6000-00080	1	None

(9) [X] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Allow both the LDS and LCS liner system synthetics to be placed in a common anchor trench. The anchor trench would be constructed to the lines and grades as indicated for the LDS Anchor Trench originally designed. The proposed installation sequence is as follows:

1. Excavate common anchor trench to lines and grades required for ~~LDS~~ secondary liner
2. Place the ~~LDS~~ Synthetic materials in the anchor trench
3. ~~Place sandbags in anchor trench to temporarily ballast LDS synthetics~~
4. Place LDS Drainage Layer (Stone)
5. ~~Remove sand bags from anchor trench~~ compact clay backfill in inside ½ of trench
6. Place ~~LCS~~ Synthetics in anchor trench
7. Backfill the common anchor trench as specified

primary liner

(10) REQUESTOR:	COMPANY:	DATE:	(12) FCE / PE	DATE:
Steven C. Brandstetter	Petro Environmental Technologies, Inc.	10/13/97		10/14/97

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

The proposed installation sequence above is disapproved. See page 2 for Alternative Liner System Anchor Trench Detail and installation sequence.

ORIGINAL

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Daniel Boline	16 Oct. 97	

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

PERFORMANCE GRADE: (17) 4 10/17/97

(18) CONSTRUCTION CONCURRENCE:	DATE:	(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	10/17/97		

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

FS-F-4259 (10/01/96)

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000038

Shown below is an Alternative Anchor Trench Detail that may be used in installing the Primary and Secondary Liner System when using a single trench excavation option. The construction sequence shall protect the liner system from damage due to weather or construction conditions. The Construction Sequence shall include the following:

1. Excavate Minimum 6 ft. Wide Trench per Specification Section 02215.

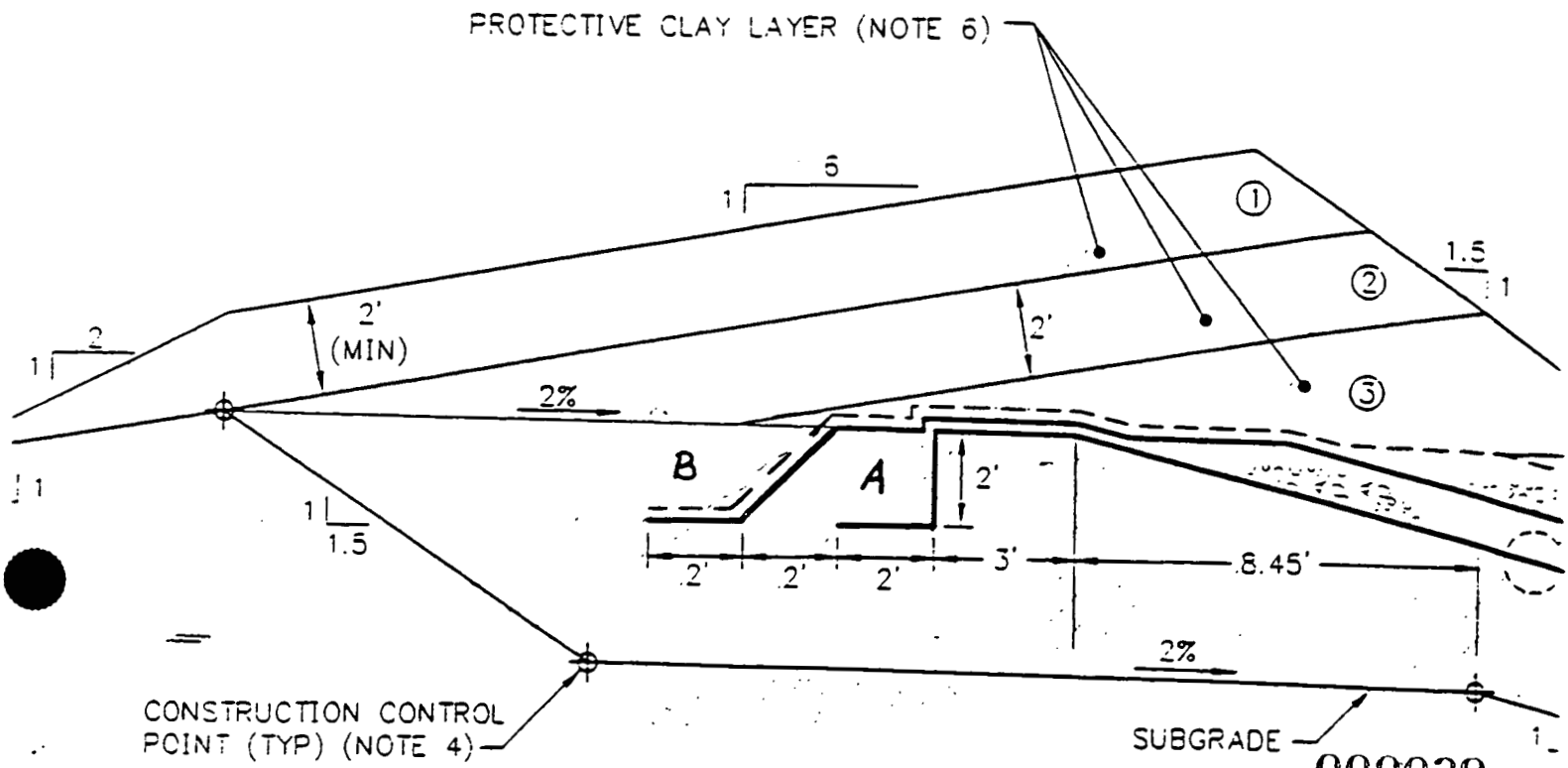
2. Remove Any Rock or Stones that may Damage Liner System in Preparation for Subgrade Inspection and Approval by Liner Installer.

3. Install Secondary Liner System per Requirements of Specification Sections 02714, 02770 and 02772. Backfill and Compact Clay Liner Material in Area Designated as "A" in the Detail Below per Specification Section 02215, Part 3.03.D Ending with a Prepared Subgrade Surface for the Primary Liner System.

4. Maintain Trench Dewatering and Backfill Density and Moisture Condition per Specification Section 02215, Parts 3.02 and 3.03.

5. Inspect, Repair if Required and Obtain Approval of Subgrade for Primary Liner System Immediately Prior to Installation. Install Liner System per Requirements of Specification Sections 02714, 02770 and 02772. Backfill Area Designated as "B" in the Detail below per Specification Section 022I5, Part 3.03.D.

ALTERNATIVE ANCHOR TRENCH DETAIL

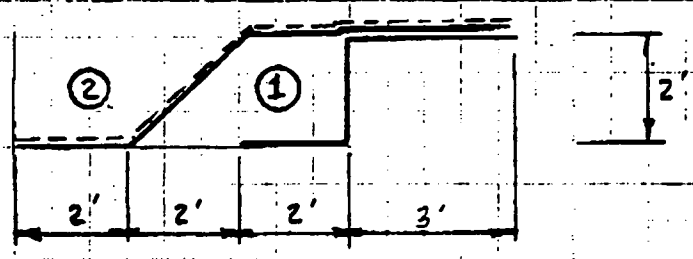


GeoSyntec Consultants

Written by: Dave Phillips Date: 97/10/16 (YY MM DD) Reviewed by: _____ Date: / / (YY MM DD)

Client: FDF Project: Fernald OSDF Ph I Project/Proposal No.: GQ 0166 Task No.: 3.0

Alternative Liner System
Anchor Trench Detail
(See Detail 10, Drawing G-00080 Rev 1)



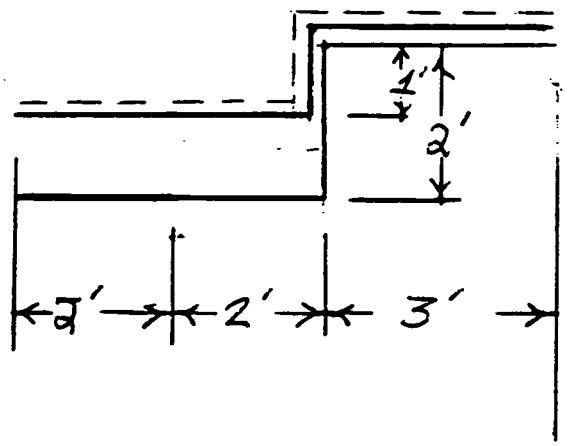
Construction Sequence

1. Excavate minimum 6' wide trench per specifications section 02215
2. Remove any rock or stones that may damage liner system in preparation for subgrade inspection and approval by liner installer.
3. Install secondary liner system per requirements of specifications sections 02714, 02770, and 02772. Backfill and compact clay liner material into the space designated as 1 on above sketch per specification section 02215 Part 3.03D.
4. Maintain trench dewatering and backfill density and moisture condition per specification section 02215 Parts 3.02 and 3.03.
5. Prepare subgrade (previous backfill) for primary liner system installation. Install primary liner system per requirements of specification sections 02714, 02770, and 02772 and backfill with clay liner material into the space designated as 2 on above sketch per specification section 02215 Part 3.03D.

Written by: Dan Bodine Date: 97/10/15 (YY/MM/DD) Reviewed by: _____ Date: __/__/__ (YY/MM/DD)

Client: FDF Project: Fernald Project/~~Proposal~~ No.: GQ0166 Task No.: 3.1

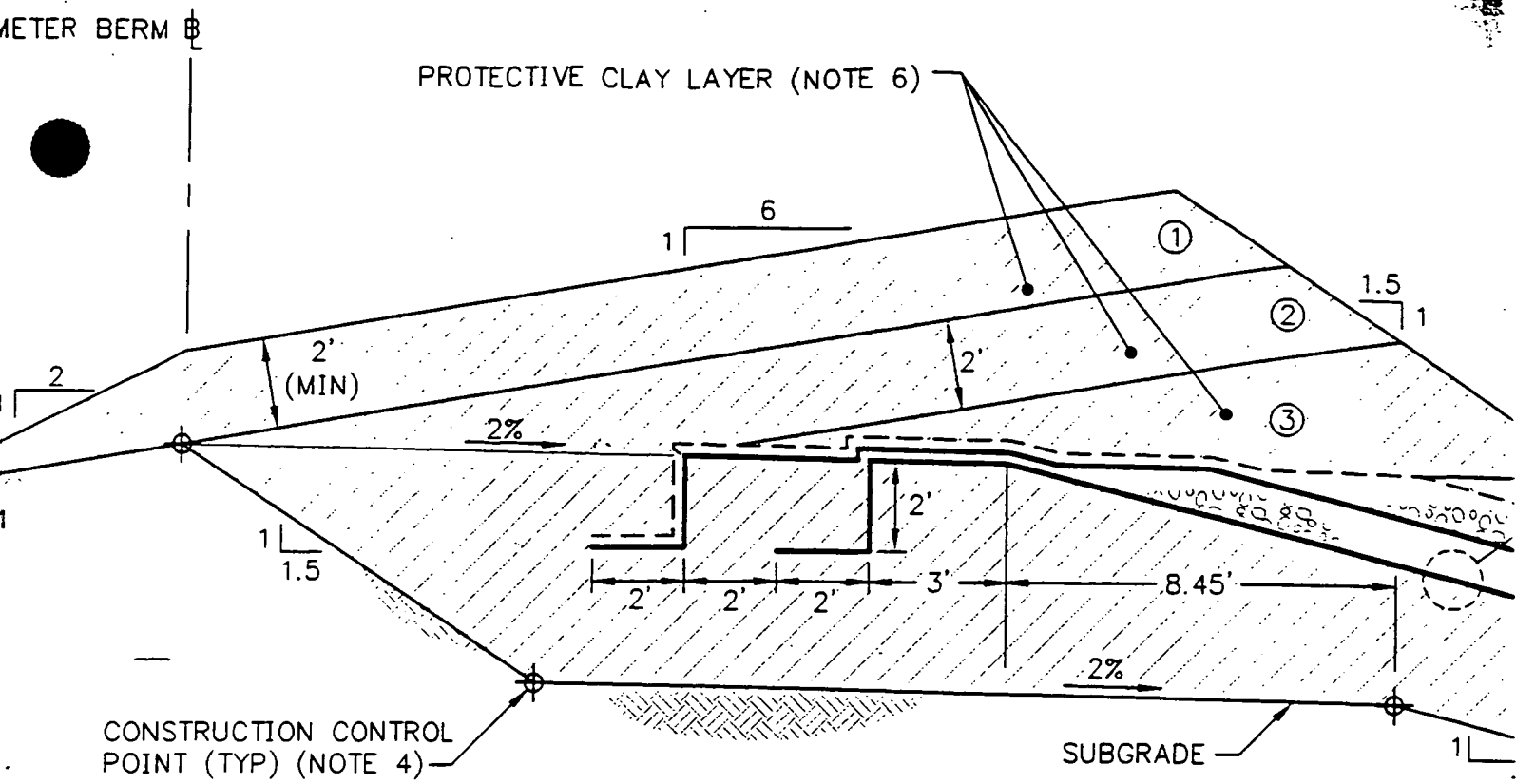
ALTERNATIVE LINER SYSTEM
ANCHOR TRENCH DETAIL
(SEE DETAIL 10 DRAWING G-00080 Rev 1)



per Requirements of Specification Sections 02714, 02770 and 02772:

Construction Sequence

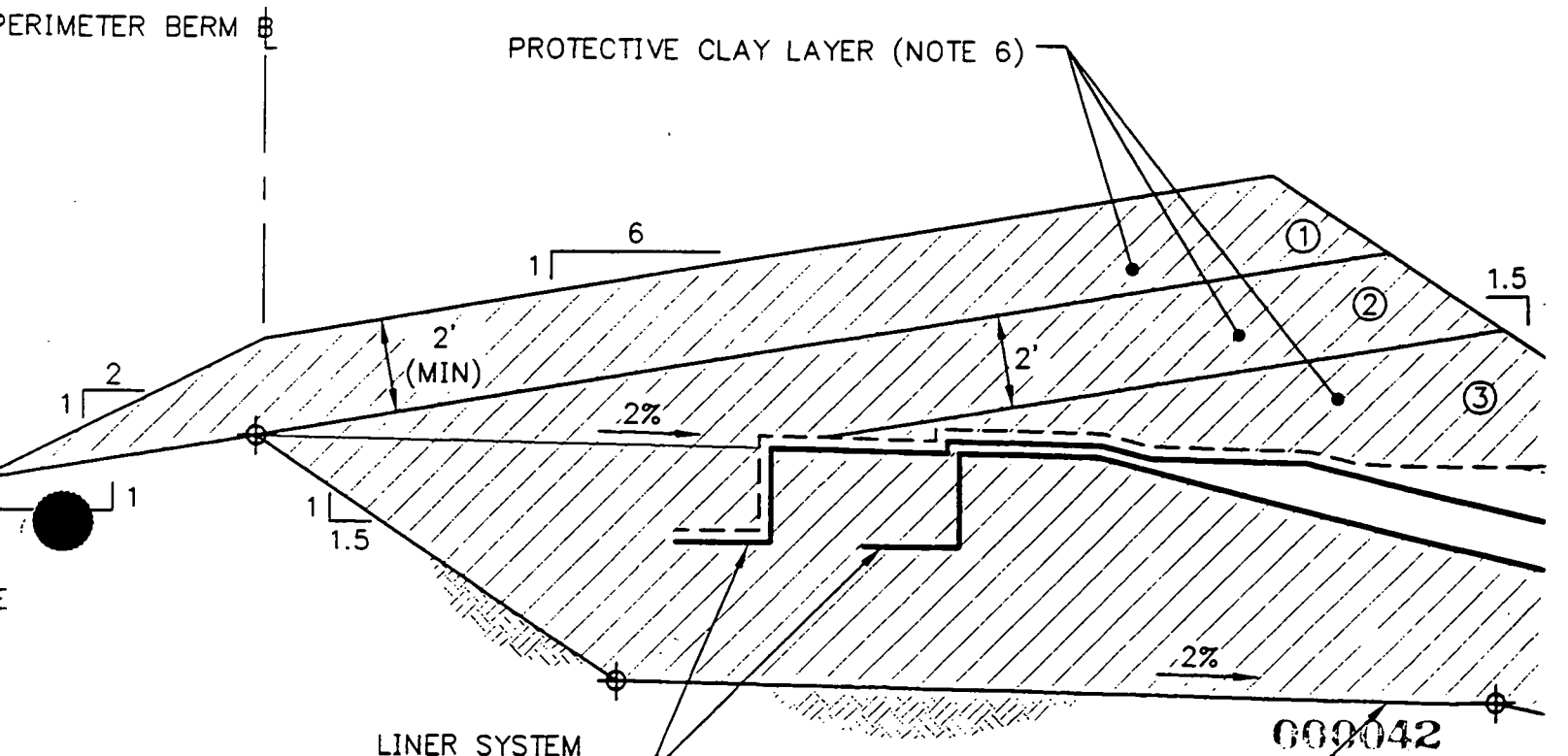
1. Excavate Minimum 4' wide Trench per Specification Section 02215
2. Remove any Rock or Stones That may Damage Liner System in Preparation for Subgrade Inspection and Approval by Liner Installer.
3. Install Secondary Liner System & Backfill and Compact 1 ft of Clay Liner Material per Specification Section 02215 Part 3.03.D
4. Maintain Trench Dewatering and Backfill Density and Moisture Condition per Specification 02215 Parts 3.02 and 3.03.
5. Prepare Subgrade (Previous Backfill) for Primary Liner System Installation, Install Primary Liner System & and Backfill with Clay Liner Material per Specification Section 02215 Part 3.03.D.



10
G-20A

DETAIL
LINER SYSTEM ANCHOR TRENCH

(NOTE 8)
SCALE: 1" = 4'
XREF: F96X4538



REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 30 Nov. 97

(3)S/C TITLE: OSDF Phase 1 Construction

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐

(4A)RCI/DCN TITLE: Liner Penetration Boxes

(11)DCN NO.: 1702-036

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00083, Sheet G-35A		0	
Spec. 20100-TS-0002 Section 13005	Parts 2.03 and 3.02	0	
DCN 1702-034 and Submittal No. 35R2	Shop Drawings, PET-04H (Sub.35R2)		

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

The Liner Penetration Box Designer (GeoSyntec) visted the fabrication shop as permitted by the specification. Discussion with the fabricator resulted in agreeing on some minor design changes that would improve field storage and installation of the boxes. These changes resulted in one air test pressure port being installed at the shop at the top center of each box and delaying, to the time of field installation, the drilling of four additional ports or holes that would be used to install the bentonite granules.

The design changes are as follows:

Spec. Section 13005, Part 2.03 D. shall be changed to read, "Furnish one 3/8-inch IPS NPT air pressure test port for each box."

Spec. Section 13005, Part 3.02 H. shall be changed to read, "Install 1.25-inch bentonite fill holes at locations shown on the Construction Drawings and fill chamber of each liner penetration box with bentonite granules. After bentonite filling is complete, seal each hole with HDPE extrudate placed with extrusion welding equipment as specified in Section 02770."

Drawing G-00083, Rev. 0, shall be changed as follows:

- Show location and identify 3/8-inch air pressure test port on each plan view.
- Re-label the 1.25-inch air pressure test port on each plan view to indicate a 1.25-inch bentonite fill hole.
- Correct the Type IV liner penetration box to show a 6.625 inch pipe at a centerline dimension of 0.28 ft. This was corrected on the shop drawings during submittal review.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
Daniel Bodine	GeoSyntec	30 Nov. 97		12/1/97

(13)RESPONSE: FOR RCI'S: DCN REQUIRED? ☐ NO ☐ YES

(14)FOR DCN: ☒ APPROVED ☐ APPROVED AS NOTED ☐ DISAPPROVED

USQD CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Bodine	30 Nov. 97	N/A

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 12/1/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	12/01/97		12/12/97

PURCHASE REQUISITION REQUIRED? ☐ YES ☒ NO (19)

FS-F-4259 (10/01/96)

DUPLICATE ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 30 Nov. 97

(3)S/C TITLE: OSDF Phase 1 Construction

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐

(4A)RCI/DCN TITLE: Liner Penetration Boxes

(11)DCN NO.: 1702-036

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00083, Sheet G-35A		0	ECDC CONTROLLED COPY NO.
Spec. 20100-TS-0002 Section 13005	Parts 2.03 and 3.02	0	011
DCN 1702-034 and Submittal No. 35R2	Shop Drawings, PET-04H (Sub.35R2)		

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

The Liner Penetration Box Designer (GeoSyntec) visted the fabrication shop as permitted by the specification. Discussion with the fabricator resulted in agreeing on some minor design changes that would improve field storage and installation of the boxes. These changes resulted in one air test pressure port being installed at the shop at the top center of each box and delaying, to the time of field installation, the drilling of four additional ports or holes that would be used to install the bentonite granules.

The design changes are as follows:

Spec. Section 13005, Part 2.03 D. shall be changed to read, "Furnish one 3/8-inch IPS NPT air pressure test port for each box."

Spec. Section 13005, Part 3.02 H. shall be changed to read, "Install 1.25-inch bentonite fill holes at locations shown on the Construction Drawings and fill chamber of each liner penetration box with bentonite granules. After bentonite filling is complete, seal each hole with HDPE extrudate placed with extrusion welding equipment as specified in Section 02770."

Drawing G-00083, Rev. 0, shall be changed as follows:

- Show location and identify 3/8-inch air pressure test port on each plan view.
- Re-label the 1.25-inch air pressure test port on each plan view to indicate a 1.25-inch bentonite fill hole.
- Correct the Type IV liner penetration box to show a 6.625 inch pipe at a centerline dimension of 0.28 ft. This was corrected on the shop drawings during submittal review.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
Daniel Boling	GeoSyntec	30 Nov. 97		12/1/97

(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:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Boling	30 Nov. 97	

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 12/1/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	12/01/97		

PURCHASE REQUISITION REQUIRED? ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

DUPLICATE ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1)WP / WO NO.: 1702 - 035	(2)S/C NO.: FSC 597	(5)Pg 1 OF 3	(6)DATE 6 Oct 97
(3)S/C TITLE: OSDF - Phase I Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☒ M ☐ C ☒ OTHER ☐	(4A)RCI/D CN TITLE: Impacted Material Haul Road/Cell Access Road	(11)DCN NO.: 1702-035	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Construction Drawing 90X-6000-G-00074	G-5B	2	
~~Construction Drawing 90X-6000-G-00190~~	~~G-14~~	~~A~~	
Specification Section 02200 Earthwork Part 2.01 & 3.08			

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER (9)☒DCN-JUSTIFICATION,EXISTING CONDITION REQUESTED/PROPOSED CHANGE

Change vertical and horizontal control of Impacted Material Haul Road/Cell Access Road to that shown on new Drawing G-14 (attached hereto), which shall be added to the Contract Documents.

Civil Review only

(10)REQUESTOR: David K. Oluly (12)FCE / PE: DATE: 10/23/97

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

See Page 2 for "Approved As Noted" Comments

ECDC CONTROLLED COPY NO 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 6 Oct 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N/A.

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/23/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: DATE: 10/28/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

S-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1)WP / WO NO.: 1702 - 035	(2)S/C NO.: FSC 597	(5)Pg 1 OF 3	(6)DATE 6 Oct 97
(3)S/C TITLE: OSDF - Phase I Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☒ M ☐ C ☒ OTHER ☐	(4A)RCI/D CN TITLE: Impacted Material Haul Road/Cell Access Road	(11)DCN NO.: 1702-035	

7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Construction Drawing 90X-6000-G-00074	G-5B	2	
~~Construction Drawing 90X-6000-G-00199~~ 10/24/97	~~G-14~~	~~A~~	
Specification Section 02200 Earthwork Part 2.01 + 3.08			

9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER (9)☒DCN-JUSTIFICATION,EXISTING CONDITION REQUESTED/PROPOSED CHANGE

Change vertical and horizontal control of Impacted Material Haul Road/Cell Access Road to that shown on new Drawing G-14 (attached hereto), which shall be added to the Contract Documents.

DOC CONTROLLED COPY NO. C011

Civil Review only

(10)REQUESTOR: David K. Oberly

(12)FCE / PE: DATE: 10/23/97

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

See Page 2 for "Approved As Noted" Comments

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 6 Oct 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/23/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: DATE: 10/24/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

Revise Note 10 as follows:

10. MATERIAL FROM EXISTING STOCKPILES MTL-OSD-003 AND MTL-0SD-009 OR UNSUITABLE MATERIAL FROM COMPACTED CLAY LINER PROCESSING MAY BE SUBSITUTED FOR COMPACTED FILL BELOW SUBBASE AGGREGATE ELEVATIONS IN THE IMPACTED MATERIAL HAUL ROAD/CELL ACCESS ROAD AND ACCESS CORRIDOR LOCATED OUTSIDE THE PERIMETER BERM BASELINE. IF THE UNSUITABLE MATERIAL FROM THE CLAY LINER PROCESSING, REFERRED TO AS SOIL/ROCK FILL, IS USED IT SHALL BE PLACED IN MAXIMUM 12-INCH THICK LOOSE LIFTS AND COMPACTED WITH MINIMUM EITHT (8) PASSES OF A CATERPILLER 815B COMPACTOR. ROCK SIZE GREATER THAN 12-INCHES SHALL BE REMOVED FROM THE FILL AND STOCKPILED FOR FUTURE USE IN NON-COMPACTED FILL AREAS AS DESIGNATED BY THE CONSTRUCTION MANAGER. ANY COMPACTED SOIL/ROCK FILL MATERIAL EXIBITING EXCESSIVE PUMPING DUE TO WET MATERIAL OR INSUFFICIENT COMPACTION SHALL BE DRIED AND RECOMPACTED OR REMOVED FROM THE FILL.

Daniel Bodine

Daniel Bodine
23 Oct. 97

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE.

1)WP / WO NO.: 1702 - 035	(2)S/C NO.: FSC 597	(5)Pg 1 OF 3	(6)DATE 6 Oct 97
3)S/C TITLE: OSDF - Phase I Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☒ M ☐ C ☒ OTHER ☐	(4A)RCI/D CN TITLE: Impacted Material Haul Road/Cell Access Road	(11)DCN NO.: 1702-035	

7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Construction Drawing 90X-6000-G-00074	G-5B	2	
~~Construction Drawing 90X-6000-G-00199~~ ~~TBS~~ 10/24/97	~~G-14~~	~~A~~	
Specification Section 02200 Earthwork Part 2.01 + 3.08			

9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER (9)☒DCN-JUSTIFICATION,EXISTING CONDITION REQUESTED/PROPOSED CHANGE

Change vertical and horizontal control of Impacted Material Haul Road/Cell Access Road to that shown on new Drawing G-14 (attached hereto), which shall be added to the Contract Documents.

ECDC CONTROLLED
COPY NO.
011

CIVIL REVIEW ONLY

(10)REQUESTOR: David K Chally | (12)FCE / PE | DATE: 10/23/97

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

See Page 2 for "Approved As Noted" Comments

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 6 Oct 97 | (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/23/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: DATE: 10/28/97 | (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

Revise Note 10 as follows:

10. MATERIAL FROM EXISTING STOCKPILES MTL-OSD-003 AND MTL-0SD-009 OR UNSUITABLE MATERIAL FROM COMPACTED CLAY LINER PROCESSING MAY BE SUBSITUTED FOR COMPACTED FILL BELOW SUBBASE AGGREGATE ELEVATIONS IN THE IMPACTED MATERIAL HAUL ROAD/CELL ACCESS ROAD AND ACCESS CORRIDOR LOCATED OUTSIDE THE PERIMETER BERM BASELINE. IF THE UNSUITABLE MATERIAL FROM THE CLAY LINER PROCESSING, REFERRED TO AS SOIL/ROCK FILL, IS USED IT SHALL BE PLACED IN MAXIMUM 12-INCH THICK LOOSE LIFTS AND COMPACTED WITH MINIMUM EITHT (8) PASSES OF A CATERPILLER 815B COMPACTOR. ROCK SIZE GREATER THAN 12-INCHES SHALL BE REMOVED FROM THE FILL AND STOCKPILED FOR FUTURE USE IN NON-COMPACTED FILL AREAS AS DESIGNATED BY THE CONSTRUCTION MANAGER. ANY COMPACTED SOIL/ROCK FILL MATERIAL EXIBITING EXCESSIVE PUMPING DUE TO WET MATERIAL OR INSUFFICIENT COMPACTION SHALL BE DRIED AND RECOMPACTED OR REMOVED FROM THE FILL.

Daniel Bodine

Daniel Bodine
23 Oct. 97

GEOSYNTEC CONSULTANTS

Fernald Field Office
7400 Willey Road
Fernald, Ohio 45030
Telephone: (513) 648-3418
Telefax: (513) 648-3415

FAX COVER SHEET

To: Dennis Vanderlind

Firm: GeoSyntec

Fax No.: 404-705-2000

From: Dan

Project No.: GQ 0166-3.1

Cover Page plus 2 page(s) following

Sent by: Dan Date: 24 Oct Time: 08 55

MESSAGE:

Fill Construction is proceeding. I told FDF & Contractor Surveyor that Coordinate numbering and some new coordinates would be added. PCN #035 had attached G-14 drawing as page 3 of PCN with Note 10 referring to revised note.

GIS & RCP being installed as designed. We expect RAIN today tomorrow Dan & Stanley

Corporate Office: (404) 705-9500
Atlanta, GA Office (404) 705-9500
Boca Raton, FL Office: (561) 995-0900
Huntington Beach, CA Office: (714) 843-6866
Columbia, MD Office: (410) 715-1400
Walnut Creek, CA Office: (510) 943-3034
Chicago, Ill Office (312) 658-0500
Austin (512) 451-4003
Materials Testing Laboratory: (407) 995-0900
Geomechanics and Environmental Laboratory: (404) 705-9500

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

1)WP / WO NO.: 1702 - 035	(2)S/C NO.: FSC 597	(5)Pg 1 OF 1	(6)DATE 6 Oct 97
3)S/C TITLE: OSDF - Phase I Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☒ M ☐ C ☒ OTHER ☐	(4A)RCI/D CN TITLE: Impacted Material Haul Road/Cell Access Road	(11)DCN NO.: 1702-035	

7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Construction Drawing 90X-6000-G-00074	G-5B	2	
~~Construction Drawing 90X-6000-G-00199~~	~~G-14~~	A	

9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER (9)☒DCN-JUSTIFICATION.EXISTING CONDITION REQUESTED/PROPOSED CHANGE

Change vertical and horizontal control of Impacted Material Haul Road/Cell Access Road to that shown on new Drawing G-14 (attached hereto), which shall be added to the Contract Documents.

(10)REQUESTOR: David K. Chally (12)FCE / PE DATE:

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

See Page 2 for "Approved As Noted" Comments

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine DATE: 23 Oct 97 6 Oct 97 (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: (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☐NO (19)

FS-F-4259 (10/01/96)

Revise Note 10 as follows:

10. MATERIAL FROM EXISTING STOCKPILES MTL-OSD-003 AND MTL-0SD-009 OR UNSUITABLE MATERIAL FROM COMPACTED CLAY LINER PROCESSING MAY BE SUBSITUTED FOR COMPACTED FILL BELOW SUBBASE AGGREGATE ELEVATIONS IN THE IMPACTED MATERIAL HAUL ROAD/CELL ACCESS ROAD AND ACCESS CORRIDOR LOCATED OUTSIDE THE PERIMETER BERM BASELINE. IF THE UNSUITABLE MATERIAL FROM THE CLAY LINER PROCESSING, REFERRED TO AS SOIL/ROCK FILL, IS USED IT SHALL BE PLACED IN MAXIMUM 12-INCH THICK LOOSE LIFTS AND COMPACTED WITH MINIMUM EITHT (8) PASSES OF A CATERPILLER 815B COMPACTOR. ROCK SIZE GREATER THAN 12-INCHES SHALL BE REMOVED FROM THE FILL AND STOCKPILED FOR FUTURE USE IN NON-COMPACTED FILL AREAS AS DESIGNATED BY THE CONSTRUCTION MANAGER. ANY COMPACTED SOIL/ROCK FILL MATERIAL EXIBITING EXCESSIVE PUMPING DUE TO WET MATERIAL OR INSUFFICIENT COMPACTION SHALL BE DRIED AND RECOMPACTED OR REMOVED FROM THE FILL.

Daniel Bodine

Daniel Bodine
23 Oct. 97

E, OR OTHER SHEETING APPROVED BY THE CONSTRUCTION MANAGER. CONTRACTOR
EIGHT TEMPORARY PLASTIC COVER WITH SANDBAGS, OR EQUIVALENT, TO PREVENT
FROM WIND.

CTOR SHALL GRADE WEST SIDE OF WEST DRAINAGE CHANNEL UPWARD AT A
O' TO 1-VERTICAL SLOPE FROM CHANNEL CENTERLINE UNTIL SLOPE DAYLIGHTS AT
UND.

SEE REVISED NOTE DCN 1702-035 PAGE 2

FROM EXISTING STOCKPILES MTL-OSD-003 AND MTL-OSD-009 OR UNSUITABLE
FROM COMPACTED CLAY LINER PROCESSING MAY BE SUBSTITUTED FOR COMPACTED FILL
UBBASE AGGREGATE ELEVATIONS IN THE IMPACTED MATERIAL HAUL ROAD/CELL ACCESS
CATED OUTSIDE THE PERIMETER BERM BASELINE.

RY CULVERTS SHALL BE INSTALLED TO LIMIT OF IMPACTED MATERIAL HAUL ROAD
MENTS AND AT A MINIMUM SLOPE OF 1 PERCENT.

E	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY

50 25 0 50 100

SCALE IN FEET

N ED STATES DEPARTMENT OF ENERGY
ALD ENVIRONMENTAL MANAGEMENT PROJECT

DEPARTMENT OF ENERGY · UNITED STATES OF AMERICA

R DANIEL NALD

FLUOR DANIEL FERNALD

SITE DISPOSAL FACILITY PHASE I CONSTRUCTION

PACTED MATERIAL HAUL ROAD GRADING PLAN

Y NOT BE ISSUED
TENDER OR
UNLESS SEALED.

TURE

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

FDF PROJECT NO.:	20100
FDF SUBCONTRACT NO.:	95PS005028
FDF DRAWING NO.:	90X-6000-G-00199
GEOSYNTEC PROJECT NO.:	GQ0166-03
GEOSYNTEC DOCUMENT NO.:	F97-A669
SHEET NO.:	G-14

DCN #035 Sheet 3

000053

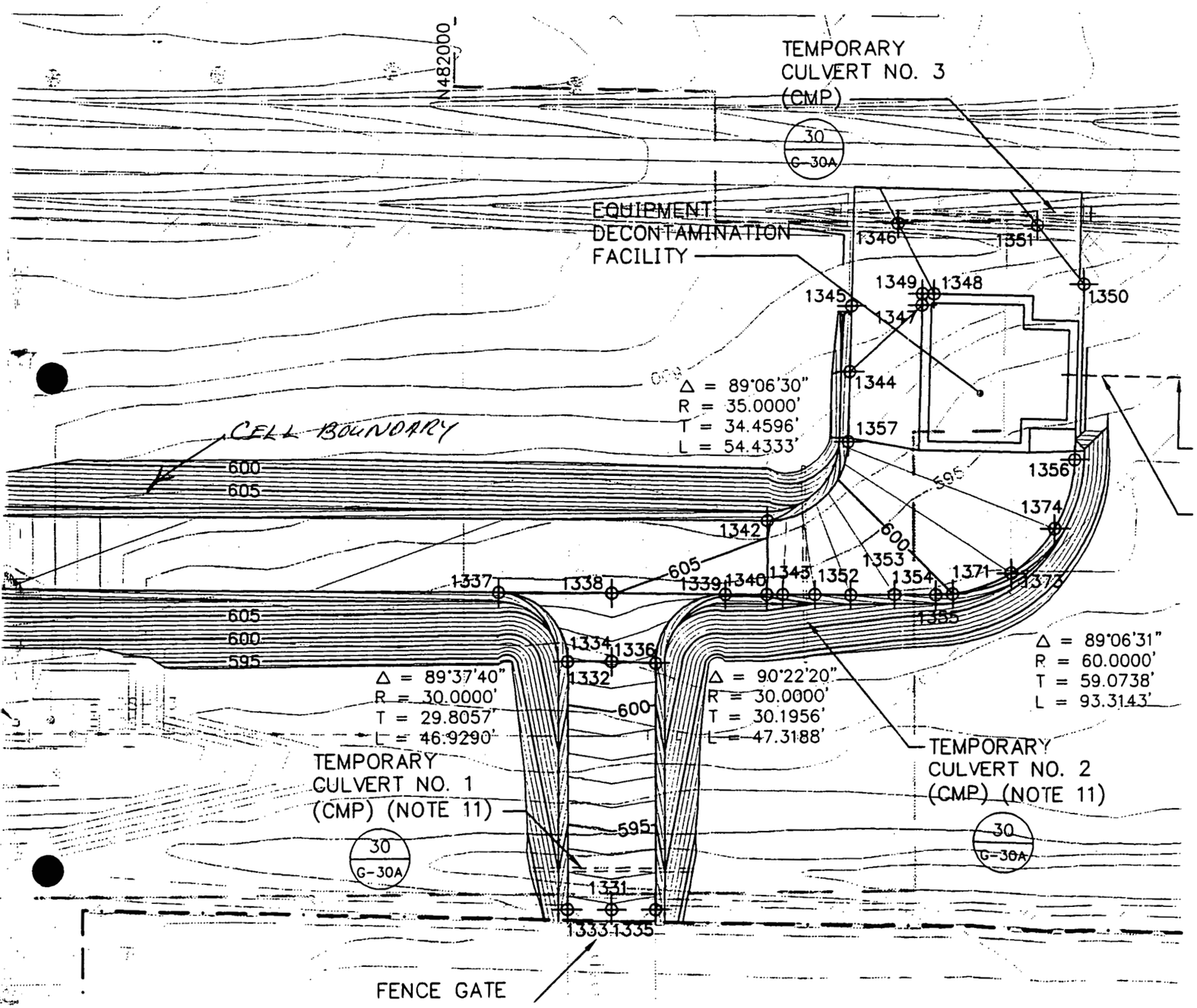
Revise Note 10 as follows:

10. MATERIAL FROM EXISTING STOCKPILES MTL-OSD-003 AND MTL-0SD-009 OR UNSUITABLE MATERIAL FROM COMPACTED CLAY LINER PROCESSING MAY BE SUBSITUTED FOR COMPACTED FILL BELOW SUBBASE AGGREGATE ELEVATIONS IN THE IMPACTED MATERIAL HAUL ROAD/CELL ACCESS ROAD AND ACCESS CORRIDOR LOCATED OUTSIDE THE PERIMETER BERM BASELINE. IF THE UNSUITABLE MATERIAL FROM THE CLAY LINER PROCESSING, REFERRED TO AS SOIL/ROCK FILL, IS USED IT SHALL BE PLACED IN MAXIMUM 12-INCH THICK LOOSE LIFTS AND COMPACTED WITH MINIMUM EITHT (8) PASSES OF A CATERPILLER 815B COMPACTOR. ROCK SIZE GREATER THAN 12-INCHES SHALL BE REMOVED FROM THE FILL AND STOCKPILED FOR FUTURE USE IN NON-COMPACTED FILL AREAS AS DESIGNATED BY THE CONSTRUCTION MANAGER. ANY COMPACTED SOIL/ROCK FILL MATERIAL EXIBITING EXCESSIVE PUMPING DUE TO WET MATERIAL OR INSUFFICIENT COMPACTION SHALL BE DRIED AND RECOMPACTED OR REMOVED FROM THE FILL.

Daniel Bodine

Daniel Bodine
23 Oct. 97

1362	482812.92	1350846.45	614.56
1363	482811.42	1350969.70	615.59
1364	482828.42	1350987.65	615.42
1365	482813.39	1350808.35	618.17
1366	482778.81	1351019.04	616.41
1367	482781.39	1350807.96	618.17
1368	482722.84	1350771.74	611.56
1369	482780.93	1350846.03	615.00
1370	482779.20	1350987.04	616.41
1371	481787.84	1350728.76	600.00
1372	482828.03	1351019.64	615.42
1373	481762.25	1350737.73	599.00
1374	481743.27	1350756.98	598.00
1375	482781.31	1350814.35	618.17



TIE TO EXISTING TGL SYSTEM

6"/10" DECON FACILITY FORCEMAIN

EXISTING LEACHATE TRANSMISSION SYSTEM AND HORIZONTAL MONITORING WELL WITH COVER SLAB

DRAINAGE CHANNEL GRAVITY INLET STRUC AND CULVERT (GIS)

DRAINAGE FLOW DIRECTION

5010 CONSTRUCTION CONTROL POINT

EXISTING TREES AND SHRUBS

ACCESS CORRIDOR OR REROUTED NORTH ENTRANCE ROAD

IMPACTED MATERIAL HAUL ROAD (NOTE 4)

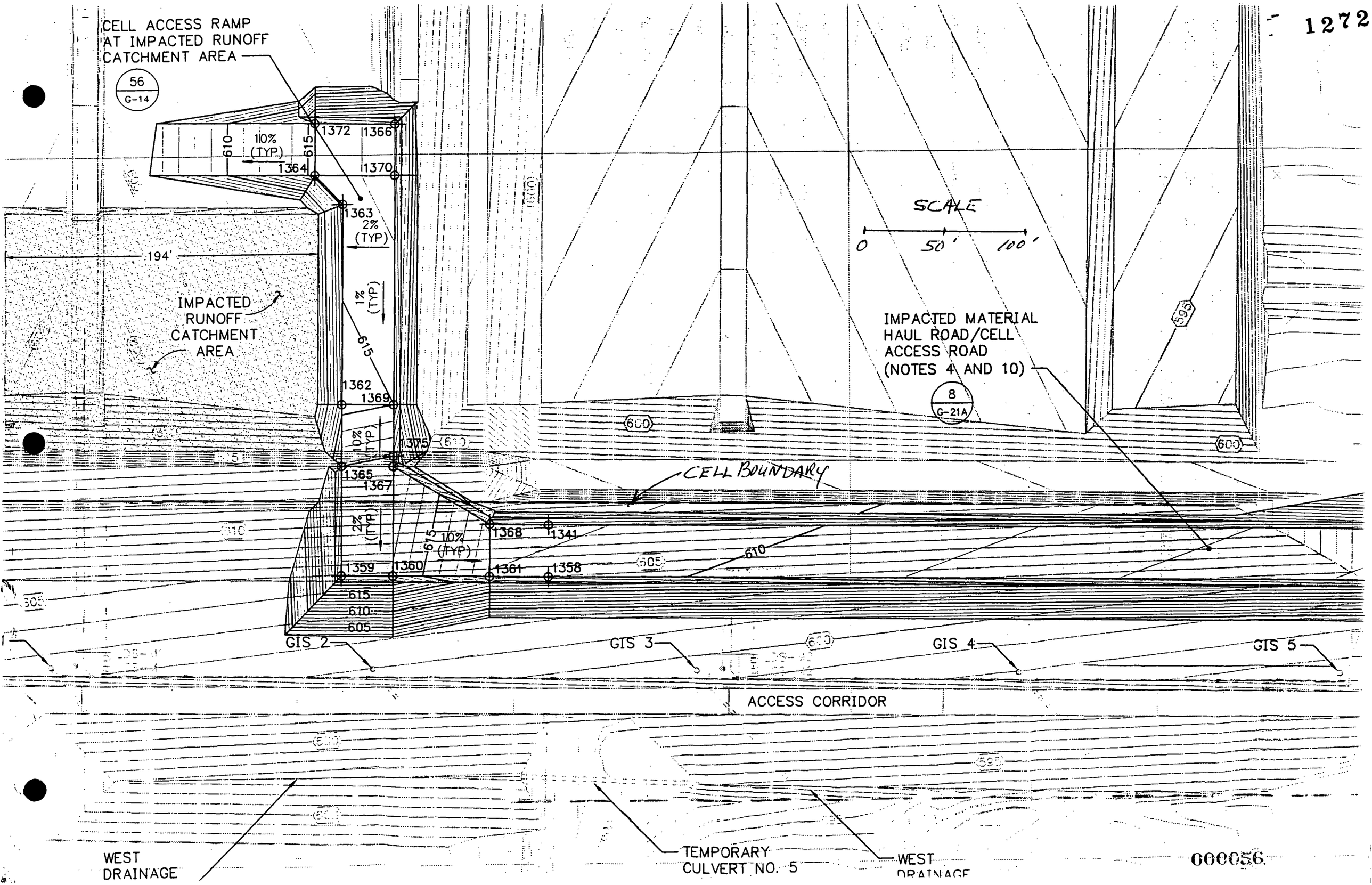
1 CELL DESIGNATION

RECEIVED
OCT 09 1997
0850

000055

NOTES:

1. TOPOGRAPHIC MAP BASED ON 1992 SITE FLYOVER AND SUPPLEMENTAL AS-BU OF EXISTING RAILYARD AND WEST OF THE CENTERLINE FOR THE WEST 25-YE CHANNEL.
2. ELEVATIONS ARE IN FEET ABOVE SEA LEVEL DATUM. (NOTE: "SEA LEVEL DA NATIONAL GEODETIC VERTICAL DATUM [NGVD].)
3. GRID COORDINATE SYSTEM CORRESPONDS TO STATE PLANAR NORTH AMERICA OHIO SOUTH.
4. CONTOURS WITHIN THE SHADED REGION ON THE IMPACTED MATERIAL HAUL F OF BASE AGGREGATE.
5. SUBGRADE ELEVATIONS CORRESPOND TO TOP OF PREPARED SUBGRADE, INCLU COMPACTED FILL CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROV G-5A, G-5B, AND G-5C.
6. DIMENSION SHOWN FOR IMPACTED RUNOFF CATCHMENT AREA IS MEASURED PERIMETER BERM BASELINE TO CREST OF GRANULAR PROTECTIVE LAYER.


CELL ACCESS RAMP AT IMPACTED RUNOFF CATCHMENT AREA
56
G-14
1372
1366
610
10% (TYP)
615
1364
1370
1363
2% (TYP)
194'
IMPACTED RUNOFF CATCHMENT AREA
1% (TYP)
615
1362
1369
10% (TYP)
1375
1365
1367
2% (TYP)
615
10% (TYP)
1368
1341
1359
1360
1361
1358
610
615
610
605
GIS 2
GIS 3
GIS 4
GIS 5
SCALE
0
50'
100'
IMPACTED MATERIAL HAUL ROAD/CELL ACCESS ROAD (NOTES 4 AND 10)
8
G-21A
CELL BOUNDARY
ACCESS CORRIDOR
WEST DRAINAGE
TEMPORARY CULVERT NO. 5
WEST DRAINAGE

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) P / WO NO.: 1702	(2) S/C NO.: 597	(5) P 1 OF 1	(6) DATE 9/29/97
(3) S/C TITLE: On Site Disposal Facility Phase I		(11) RCI NO.: ~~1702-005R~~ 063	
(4) RESPONSIBLE DISCIPLINE: E [X] M [ ] C [X] OTHER [ ]	(4A) RCI/DCN TITLE: Pressure Testing of Liner Penetration Boxes	(11) DCN NO.: 1702-034 063 10/01/97	

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Spec 20100-TS-0002 Technical Specifications Section 13005, Paragraph 2.05.B	GeoSyntec Document No. F9630253.SPE	0	None
Spec 20100-TS-0002 Section 13005 Part 2.06 & 3.02.H		0	
Drawing 90X-6000-G-00083	Sheet G-25A	0	

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

The referenced technical specification section requires that each completed liner penetration box be pressure tested at 15 psi prior to shipment. Plastek Werks, the fabricator of the penetration boxes, has provided documentation (see attached) requesting that the air pressure test be permitted to be conducted at a test pressure of 10.8 psi. We believe that this is a safer test pressure and will still demonstrate the integrity of all weldments on the liner penetration boxes. Please review and respond as appropriate.

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
J. Richard Schairbaum	Petro Environmental Technologies, Inc.	9/30/97	J. Richard Schairbaum 10/1/97	9/30/97

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

See Attached GeoSyntec Response.

ECDC CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL: Ramil Bolino DATE: 01Oct97	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE N/A
(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/1/97	
PERFORMANCE GRADE: (17) 4	
CONSTRUCTION CONCURRENCE: DATE: 10/06/97	(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97
PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO (A)	

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WP / WO NO.:	(2) S/C NO.:	(5) P 1 OF 7	(6) DATE
1702	597		9/29/97

S/C TITLE: On Site Disposal Facility Phase I

(11) RCI NO.: ~~1702-005R~~ 268

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

(4A) RCI/DCN TITLE: Pressure Testing of Liner Penetration Boxes

(11) DCN NO.: 1702-034 268 10/01

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Spec 20100-TS-0002 Technical Specifications Section 13005, Paragraph 2.05.B	GeoSyntec Document No. F9630253.SPE	0	None
Spec 20100-TS-0002 Section 13005 Part 2.06 & 3.02.H		0	
Drawing 90X-6000-6-00083	Sheet G-25A	0	

(9) [X] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [ ] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

The referenced technical specification section requires that each completed liner penetration box be pressure tested at 15 psi prior to shipment. Plastek Werks, the fabricator of the penetration boxes, has provided documentation (see attached) requesting that the air pressure test be permitted to be conducted at a test pressure of 10.8 psi. We believe that this is a safer test pressure and will still demonstrate the integrity of all weldments on the liner penetration boxes. Please review and respond as appropriate.

CDC CONTROLLED COPY NO.

(10) REQUESTER: J. Richard Schairbaum COMPANY: Petro Environmental Technologies, Inc. DATE: 9/30/97

(12) FCE / PE: J. Richard Schairbaum 10/1/97 DATE: 9/30/97

(13) RESPONSE FOR RCI, IS A DCN REQ'D [ ] NO [X] YES

(14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

See Attached GeoSyntec Response.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL: Ronald Bolino DATE: 01Oct97

(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/1/97

PERFORMANCE GRADE: (17) 4

CONSTRUCTION CONCURRENCE: DATE: 10/06/97

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

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

FS-F-4259 (10/01/96)

ORIGINAL

ENTERED

LINER PENETRATION BOXES
AIR TEST SUBMITTALS

Referencing the air test requirements for the liner penetration boxes, Plastek Werks, Inc. will perform air test procedures as outlined in D-3212-89, the "Standard Specification for Joints for Drained Sewer Plastic Pipes Using Flexible Elastomeric Seals." (See attached.)

While no flexible elastomeric seals are being used, ASTM D 3219-89 will demonstrate the integrity of all weldments on the liner penetration boxes. This is a safer test pressure method, and again the liner penetration boxes need to be tested more conservatively since they are not pipe and can not rely on hoop strength.

All internal test pressures will be 10.8 psi for the liner penetration boxes.

Designation: D 3212 - 89

Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals[1]

This standard is issued under the fixed designation D 3212; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers joints for plastic pipe systems intended for drain, and gravity sewerage pipe at internal or external pressures less than 25-ft head using flexible watertight elastomeric seals. This specification is intended to cover the test requirements, test methods, and acceptable materials. The test methods described for the joints are not intended to be routine quality control tests but to be reliability or performance requirements.

1.2 The following safety hazards caveat pertains only to the test method portion, paragraph 7.5, of this specification: *This standard does not purport to address the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 2122 Test Method of Determining Dimensions of Thermoplastic Pipe and Fittings[2]

F 477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe[2]

F 913 Specification for Thermoplastic Elastomeric Seals (Gaskets) for Joining Plastic Pipe[2]

3. Types

3.1 This specification covers two types of joints based on effecting watertightness through compression of an elastomeric seal or ring:

3.1.1 *Push-on Joint*—A joint in which an elastomeric ring gasket is compressed in the annular space between a bell end or socket and a spigot end of pipe.

3.1.2 *Mechanical Joint*—A joint made using mechanical means or devices to develop a pressure seal.

4. Materials

4.1 Material used for elastomeric seal in push-on joints shall meet the requirements of either Specification F 477 or F 913.

4.2 *Lubricant*, if required, shall be suitable for lubricating the parts of the joints in the assembly. The lubricant shall have no deteriorating effects on the gasket and pipe materials.

5. General Requirements

5.1 Joints shall not leak when subjected to the internal and external hydrostatic tests of Section 7 for a period of 10 min.

5.2 All surfaces of the joint upon or against which the gasket may bear shall be smooth and free of cracks or fractures and imperfections that could adversely affect the performance of the joint.

5.3 *Drawings*—The manufacturer shall furnish drawings of the joint and gasket if requested by the purchaser.

5.4 The gasket shall be the sole element depended upon to make the joint flexible and watertight. The gasket shall be a continuous elastomeric ring.

5.5 In mechanical joints the pipe spigot shall have a wall thickness sufficient to withstand, without deformation or collapse, the compressive force exerted when the fitting is tightened.

5.6 The joint design may provide for the axial deflection of a pipe joint by permitting one side of the outside perimeter of the joint to open wider than the compressed position without reducing its watertightness. Where greater deflections are required than provided by the joint design, suitable fittings must be provided.

5.7 The joint components shall be of such design that they will withstand the forces caused by the compression of the gasket when joined without cracking or fracturing when tested in accordance with the requirements of the pipe manufacturer.

6. Dimensions and Tolerances

6.1 Dimensions of the joint components shall be in accordance with the manufacturer's standard design dimensions and tolerances. Such dimensions shall be gaged at sufficiently frequent intervals to assure dimensional control and satisfactory joint assembly. The method for measuring these dimensions shall be in accordance with Test Method D 2122.

6.2 Gasket dimensions shall be in accordance with the manufacturer's standard design dimensions and tolerances. The gasket shall be of such size and shape as to provide an adequate compressive force against the spigot and socket after assembly, to effect a positive seal under all combinations of joint and gasket tolerances, when tested in accordance with Section 7.

7. Joint Qualification Requirements

7.1 Assemble a piece of pipe into a bell or fitting as shown

[1] This specification is under the jurisdiction of ASTM Committee F-17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.20 on Joining.

Current edition approved Feb. 24, 1989. Published May 1989. Originally published as D 3212 - 73 T. Last previous edition D 3212 - 86.

[2] *Annual Book of ASTM Standards*, Vol 08.04.

Dcn- 1702-034

000060P. 3 of 7

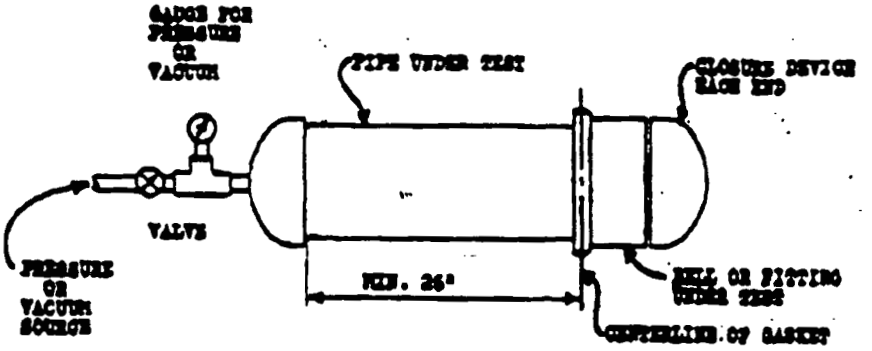


FIG. 1 Test Specimen

in Fig. 1. The openings may be sealed using either solvent cement: caps as shown, or mechanical sealing devices. The gasket shall be lubricated as recommended by the manufacturer. In the absence of other lubricants, water may be used.

7.2 Perform the pressure and vacuum tests as described in 7.5 on two properly joined pipes in straight alignment.

7.3 Deflect the joint to the maximum angle of axial misalignment recommended by the manufacturer. With the joint deflected, perform pressure and vacuum tests described in 7.5.

7.4 Using the test fixture shown in Fig. 2, commence measuring deflection when the load contacts the top of the pipe. Apply further load until the point of load application has moved downward 5 % of the pipe outside diameter. Hold this position and perform the tests described in 7.5.

NOTE 1—The 5 % deflection criterion, which is arbitrarily selected for testing convenience, should not be considered as a limitation with respect to in-use deflection.

7.5 *Test Methods:*

NOTE 2—It may be found easier to perform all the pressure tests, followed by the vacuum tests, rather than alternate them. As an option, the sequence of tests may be pressure, vacuum, pressure for each condition in 7.2, 7.3, and 7.4.

7.5.1 *Internal Pressure Test*—Fill the assembly with water. External restraints should be provided in the test equipment to prevent separation of the gasket joint under pressure. Apply a pressure of 74 kPa (10.8 psi) (gage) (25-ft head) for 10 min. Visible leaks in the gasket joint constitute a failure.

7.5.2 *Vacuum Test*—(to be conducted after pressure test has seated the gasket). Fill the assembly with air only. Apply a vacuum of 74 kPa (22 in. Hg). Close the valve and remove the vacuum line. Allow the assembly to stand for 10 min to check for leaks before testing. The internal pressure shall not change more than 3 kPa (1 in. Hg). Perform the test required, noting the internal pressure after the test condition is attained and again 10 min later. The internal pressure shall not change more than 17 kPa (5 in. Hg) during this second 10-min period.

8. Retest and Rejection

8.1 If the results of any test(s) do not meet the requirements of this specification, the test(s) may be conducted

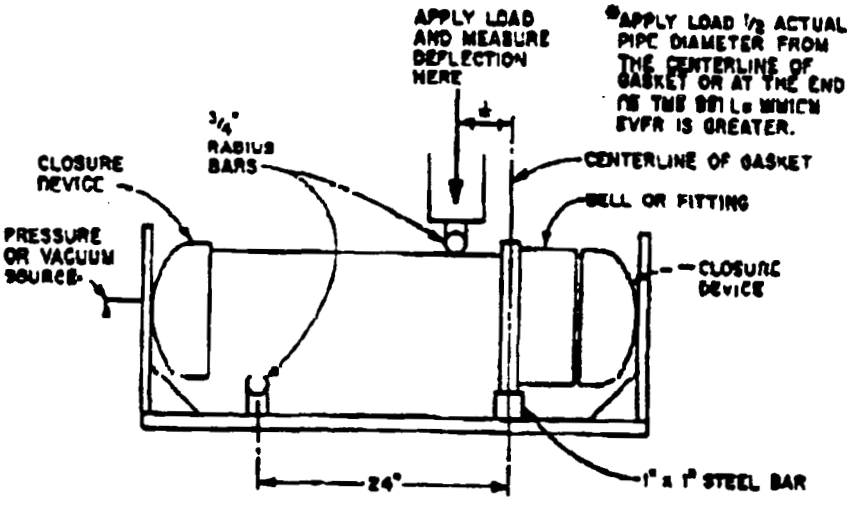


FIG. 2 Shear Deflection Test

again in accordance with an agreement between the purchaser and the seller. There shall be no agreement to lower the minimum requirement of the specification by such means as omitting tests that are a part of the specification, substituting or modifying a test method, or by changing the specification limits. In retesting, the product requirements of this specification shall be met, and the test methods designated in the specification shall be followed. If, upon retest, failure occurs, the quantity of product represented by the test(s) shall be rejected.

The American Society for Testing and Materials takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 1916 Race St., Philadelphia, PA 19103.

PLASTEK WERKS, INC.
2401 Franklin Blvd.
P.O. Box 5906
Gainesville, Georgia 30504
Phone (770) 287-3286
Fax (770) 287-3284

September 29, 1997

Mr. Dan Morrow
GROUND SAFE, INC.
2091 Clary Connector
Eastanollee, GA 30538

Dear Mr. Morrow:

For your review, please find enclosed our submittals for air tests on the liner penetration boxes.

Should you have any further questions or need additional information, please feel free to contact our office.

Sincerely,

Gary Hopkins/NOM

Gary Hopkins
Plastek Werks, Inc.

Enclosure

(13) Response to RCI 1702-005R

1 October 1997
DCN 1702-034

This RCI has been changed to a DCN. Documentation and justification has been provided that can be used in providing a specification change. Make the following changes to Section 13005 Parts 1.03.A.8 and 2.05.B.

Add Part 1.03.A.8	ASTM D3212-89.	Standard Specification for Joints for Drain and Sewer Plastic Pipe Using Flexible Elastomeric Seals.

Change the first three sentences of Part 2.05.B. to read as follows:

Pressure test each completed liner penetration box in general accordance with ASTM D 3212, except that the air pressure shall be maintained for 30 minutes. Perform the test prior to shipping and at an air pressure of 10.8 psi injected through the air pressure port. Monitor the air pressure and apply soapy solution to all welds to facilitate detection of leaks.

Please note that air pressure testing of the liner box chamber is also required by specifications and drawings. After approved air testing is completed the air chamber shall be filled with bentonite power or bentonite granules. The specification and drawing currently requires using a bentonite slurry. Revise Drawing G-00083 Rev. 0 and Specification Section 13005 Parts 2.06 and 3.02.H as follows:

Eliminate Part 2.06.B. Renumber remaining parts. For Part 3.02.H replace the word "slurry" with "powder or granules". Change Note 4 on Drawing G-00083 to read:
"Liner penetration boxes shall be tested in the field after installation. Air pressure test chamber shall be backfilled with bentonite powder or granules after air pressure testing and seaming of geomembrane to boxes is completed. Plug shall be sealed with HDPE extrudate after backfilling with bentonite."

Daniel Bodine

DCN. 1702-034

000063A P. 7 of 7

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 30 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Tempory HDPE Culverts	(11)DCN NO.: 1702-033	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00074, Sheet G-5B		2	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

As authorized by FDF the following design changes to Drawing G-00074 Rev. 2 have been made.

Delete the Temporary HDPE Culvert and Temporary Culvert No. 4 from the Phase 1 Project. Drainage within the cell, after the conclusion of the Phase 1 project, will be contained and handled, as necessary, by FDF.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
Ron Bolinger	GeoSyntec	30 Sept 97		10/1/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

ECDC CONTROLLED COPY NO 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Bolinto	30 Sept 97	N/A

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/1/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	10/06/97		12/02/97

PURCHASE REQUISITION REQUIRED: ☒YES ☐NO (19)

FS-F-4259 (10/01/96)

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 30 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Tempory HDPE Culverts		(11)DCN NO.: 1702-033

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00074, Sheet G-5B		2	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

As authorized by FDF the following design changes to Drawing G-00074 Rev. 2 have been made.

Delete the Temporary HDPE Culvert and Temporary Culvert No. 4 from the Phase 1 Project. Drainage within the cell, after the conclusion of the Phase 1 project, will be contained and handled, as necessary, by FDF.

CDC CONTROLLED COPY NO.

Coll

(10)REQUESTOR: Ron Bolinder	COMPANY: GeoSyntec	DATE: 30 Sept 97	(12)FCE / PE:	DATE: 10/1/97

(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: Ronald Bolinder DATE: 30 Sept 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 10/1/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: DATE: 10/06/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

ORIGINAL

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ENTERED

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 17 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Pipe Embedment Fill Detail	(11)DCN NO.: 1702-032	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00087, Sheet G-40A	Details 41 and42 and Sections A & B	0	
Drawing 90X-6000-G-00082, Sheet G-24A	Sections B, C and D	0	
SPECIFICATION 20100-TS-0002 SECTION 02215 DCCB 17Sept97	PART 3.03	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

A verbal request by the contractor to place 1 lift of pipe embedment material over the top of HDPE pipes was received. As authorized by FDF the following design changes to Drawing G-00087 have been made.

Change Section B and Details 41 and 42 to extend the pipe embedment fill to 7± 1 inch over the top of the solid pipe.

Change Section A and Detail 41 to show the soil-bentonite plug extending minimum 12 inches over the top of the pipe, but in any case at least 6 inches into the trench backfill.

As authorized by FDF the following design changes to Drawing G-00082 have been made.

Change Sections B, C, and D to extend the pipe embedment fill to 7± 1 inch over the top of the containment pipes where pipe embedment fill is provided.

As authorized by FDF the following design changes to Specification Section 02215 Part 3.03.B.4. have been made.

Add the following sentences at the end of Part 3.03.B.4."Continue placing embedment fill above the top of pipe to a depth of 7± 1 inch. Compact the embedment fill with a minimum of 4 passes of a vibratory plate compactor."

Change 5 pounds per square inch to 10 pounds per square inch in Part 3.03.A.4.

(10)REQUESTOR: [signature]	COMPANY: GeoSyntec	DATE: 17 Sept 97	(12)FCE / PE [signature] DATE: 9/17/97

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

ECDC CONTROLLED
COPY NO.
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RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: [signature]	DATE: 17 Sept 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N/A

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 9/17/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: [signature]	DATE: 09/17/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) [signature] DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

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ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 17 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Pipe Embedment Fill Detail		(11)DCN NO.: 1702-032

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00087, Sheet G-40A	Details 41 and42 and Sections A & B	0	
Drawing 90X-6000-G-00082, Sheet G-24A	Sections B, C and D	0	
SPECIFICATION 20100-TS-0002 SECTION 02215	PART 3.03	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

A verbal request by the contractor to place 1 lift of pipe embedment material over the top of HDPE pipes was received. As authorized by FDF the following design changes to Drawing G-00087 have been made.

Change Section B and Details 41 and 42 to extend the pipe embedment fill to 7± 1 inch over the top of the solid pipe.

Change Section A and Detail 41 to show the soil-bentonite plug extending minimum 12 inches over the top of the pipe, but in any case at least 6 inches into the trench backfill.

As authorized by FDF the following design changes to Drawing G-00082 have been made.

Change Sections B, C, and D to extend the pipe embedment fill to 7± 1 inch over the top of the containment pipes where pipe embedment fill is provided.

As authorized by FDF the following design changes to Specification Section 02215 Part 3.03.B.4. have been made.

Add the following sentences at the end of Part 3.03.B.4."Continue placing embedment fill above the top of pipe to a depth of 7± 1 inch. Compact the embedment fill with a minimum of 4 passes of a vibratory plate compactor."

Change 5 pounds per square inch to 10 pounds per square inch in Part 3.03.A.4.

(10)REQUESTOR: Daniel Bolen	COMPANY: GeoSyntec	DATE: 17 Sept 97	(12)FCE / PE:	DATE: 9/17/97

(13)RESPONSE: FOR RCI (IS A DCN REQ'D? ☐NO ☐YES (14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bolen	DATE: 17 Sept 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY)		DATE: 9/17/97
PERFORMANCE GRADE: (17) 5		
(18)CONSTRUCTION CONCURRENCE: 09/17/97	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)		

FS-F-4259 (10/01/96)

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 16 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Clay Liner Stabilization-Cell Slopes		(11)DCN NO.: 1702-031

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02225	Part 3.03.C, 3.03.I and 3.03.K	0	
DCN 1702-028			

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

Due to safety considerations and the general difficulty of using the soil stabilizer on cell slopes an alternate procedure for scarifying the subgrade and processing the clay liner soils may be used.

Change Part 3.03.C. by adding the following sentence after the existing second sentence.
"If the soil stabilizer cannot be used on cell slopes the subgrade shall be scarified using a disc, the tracking back and forth of a dozer, or a combination of both."

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Change Part 3.03.I. by adding the following sentence after the existing third sentence.
"If the soil stabilizer cannot be used on cell slopes the succeeding lift shall be scarified prior to placing the next lift using a disc, the tracking back and forth of a dozer, or a combination of both."

Change Part 3.03.K. by adding the following sentences at the end of the paragraph (as modified by DCN 1702-028).
"If the soil stabilizer cannot operate on cell slopes the processing and moisture conditioning of the clay soil shall occur at the base of the slope. After completion of this process and moisture conditioning in accordance with this Section, the clay liner material shall be placed on the slope using a dozer in loose lifts with a thickness of 7 to 8 inches."

(10)REQUESTOR: Daniel Bodine	COMPANY: GeoSyntec	DATE: 16 Sept 97	(12)FCE / PE: CDC	DATE: 9/16/97

(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: Daniel Bodine	DATE: 16 Sept 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N/A	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY)			DATE: 9/16/97
PERFORMANCE GRADE: (17) 4			
(18)CONSTRUCTION CONCURRENCE:	DATE: 09/16/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE: 10/02/97
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 16 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Clay Liner Stabilization-Cell Slopes		(11)DCN NO.: 1702-031

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02225	Part 3.03.C, 3.03.I and 3.03.K	0	
DCN 1702-028			

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

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"If the soil stabilizer cannot be used on cell slopes the subgrade shall be scarified using a disc, the tracking back and forth of a dozer, or a combination of both."

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(10)REQUESTOR: Daniel Bolens	COMPANY: GeoSyntec	DATE: 16 Sept 97	(12)FCE / PE: [signature] DATE: 9/16/97
(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES			(14)FOR DCN: ☒APPROVED ☐UNAPPROVED AS NOTED ☐DISAPPROVED

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RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bolens	DATE: 16 Sept 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: C 011	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature]			DATE: 9/16/97
PERFORMANCE GRADE: (17) 4			
(18)CONSTRUCTION CONCURRENCE: [signature]	DATE: 09/16/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 15 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Liner Box Detail-Type IV		(11)DCN NO.: 1702-030

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00083	Sheet 25A Detail 24	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

A dimensional error has been identified on Drawing G-00083, Detail 24. Change the following:

Front Elevation: Replace 0.45' with 0.28'
Right Elevation: Replace 10.75" with 6.625"

The Type IV Liner Penetration Box is intended to connect to the Nominal 6-inch Redundant LCS pipe and not the 10-inch pipe.

(10)REQUESTOR: David Bolino COMPANY: GeoSyntec DATE: 15 Sept 97 (12)FCE / PE DATE: 9/17/97

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

ECDC CONTROLLED
COPY NO.
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RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: David Bolino DATE: 15 Sept 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N/A

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

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: DATE: 09/17/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19) 09/17/97

FS-F-4259 (10/01/96)

ORIGINAL

1272

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 15 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Liner Box Detail-Type IV		(11)DCN NO.: 1702-030

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00083	Sheet 25A Detail 24	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

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Right Elevation: Replace 10.75" with 6.625"

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(10)REQUESTOR: David Bolino	COMPANY: GeoSyntec	DATE: 15 Sept 97	(12)FCE / PE: [signature] DATE: 9/17/97

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

CDC CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: David Bolino	DATE: 15 Sept 97	(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		
(18)CONSTRUCTION CONCURRENCE: [signature]	DATE: 09/17/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)		

FS-F-4259 (10/01/96)

ORIGINAL

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 10 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Survey Grid Spacing Clarification		(11)DCN NO.: 1702-029

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Spec. 20100-TS-0002, Section 02100 Part 3.05.B.2		0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

The reference Specification Section 02100 Part 3.05.B.2 requires clarification. Change B.2 to read as follows:

" on slopes greater than 10 percent, a square grid spaced not wider than 50 ft shall be used, but in any case, a line at the crest and toe of the slope shall be taken. If the slope distance is greater than 50 ft a midpoint slope survey point is required. "

The specification states that spacings identified are minimum required. Additional points may be reqired if field conditions warrent.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
Daniel Bodine	GeoSyntec	11 Sept 97		9/13/97

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

ECDC CONTROLLED
COPY NO
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RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine DATE: 11 Sept 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N/A
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 9/13/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: DATE: 09/13/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 10 Sept 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Survey Grid Spacing Clarification		(11)DCN NO.: 1702-029

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Spec. 20100-TS-0002, Section 02100 Part 3.05.B.2		0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

The reference Specification Section 02100 Part 3.05.B.2 requires clarification. Change B.2 to read as follows:

" on slopes greater than 10 percent, a square grid spaced not wider than 50 ft shall be used, but in any case, a line at the crest and toe of the slope shall be taken. If the slope distance is greater than 50 ft a midpoint slope survey point is required. "

The specification states that spacings identified are minimum required. Additional points may be reqired if field conditions warrent.

(10)REQUESTOR: [signature]	COMPANY: GeoSyntec	DATE: 11 Sept 97	(12)FCE / PE [signature] DATE: 9/13/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

CDC CONTROLLER
COPY NO
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: [signature]	DATE: 11 Sept 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature]		DATE: 9/13/97
PERFORMANCE GRADE: (17) 5		
(18)CONSTRUCTION CONCURRENCE: [signature]	DATE: 09/13/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)		

FS-F-4259 (10/01/96)

ORIGINAL

000073

RECEIVED
SEP 22 1997
063

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: 597	(5)Pg / OF /	(6)DATE 09-02-97
(3)S/C TITLE: OSDF PHASE I CONSTRUCTION			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: ED MD CIVIL OTHER	(4A)RCI/DCN TITLE: STABILIZER USE DURING MATERIAL PLACEMENT		(11)DCN NO.: 1702-028

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
SPECIFICATION 20100-TB-0002, SECTION 02225	PART 3.03	0	

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

CHANGE THE LAST SENTENCE OF PART 3.03.K, SECTION 02225, R.0 TO READ: A MINIMUM OF TWO PASSES OF THE SOIL STABILIZER SHALL BE REQUIRED WHEN UNSCREENED CLAY LINER MATERIAL IS PLACED. A MINIMUM ONE PASS OF THE STABILIZER SHALL BE REQUIRED ~~WHEN~~ Deleted 9/2/97 WHEN SCREENED CLAY LINER MATERIAL IS PLACED. THE SCREENING PROCESS IS TO REDUCE CLOD SIZE AND REMOVE UNSUITABLE ROCK PARTICLES.

CIVIL REVIEW ONLY (9/2/97)

(10)REQUESTOR: VON GOETZ COMPANY: FDF DATE: 09-02-97

(12)FCE / PE DATE: 9/2/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

ECDC CONTROLLED
COPY NO
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 2 Sep 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE 9/2/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: DATE: 09/02/97

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

CC-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: 597	(5)Pg / OF /	(6)DATE 09-02-97

(3)S/C TITLE: OSDF PHASE I CONSTRUCTION

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E☐ M☐ C☒ OTHER☐

(4A)RCI/DCN TITLE: STABILIZER USE DURING MATERIAL PLACEMENT

(11)DCN NO.: 1702-028

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
SPECIFICATION 20100-TS-0002, SECTION 02225	PART 3.03	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

CHANGE THE LAST SENTENCE OF PART 3.03.K, SECTION 02225, R.0 TO READ: A MINIMUM OF TWO PASSES OF THE SOIL STABILIZER SHALL BE REQUIRED WHEN UNSCREENED CLAY LINER MATERIAL IS PLACED. A MINIMUM ONE PASS OF THE STABILIZER SHALL BE REQUIRED ~~WHEN~~ DRG 09-2-97 WHEN SCREENED CLAY LINER MATERIAL IS PLACED. THE SCREENING PROCESS IS TO REDUCE CLOD SIZE AND REMOVE UNSUITABLE ROCK PARTICLES.

CIVIL REVIEW ONLY (9/2/97)

(10)REQUESTOR: DON GOETZ COMPANY: FDF DATE: 09-02-97

(12)FCE / PE DATE: 9/2/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

CDC CONTROLLED COPY NO 001

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bolling 2 Sep 97 DATE:

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE 9/2/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: 09/02/97 DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

S-F-4259 (10/01/96)

ORIGINAL

ENTERED

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 27 Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Wood Cellulose Fiber Mulch	(11)DCN NO.: 1702-027	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Spec. 20100-TS-0002, Section 02930, Part 2.01B.3		0	

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

Civil Review Only

A minor change in the requirements for wood cellulose fiber mulch is being made to permit use of other acceptable products available. Change the specification limit for Particle Length from 0.375 inch (maximum) to 0.775 inch (maximum).

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
Daniel Bolline	GeoSyntec	27 Aug 97		8/27/97

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

ECDC CONTROLLED
COPY NO
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Bolline	27 Aug 97	N/A

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/27/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	08/27/97		12/02/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 27 Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Wood Cellulose Fiber Mulch		(11)DCN NO.: 1702-027

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Spec. 20100-TS-0002, Section 02930, Part 2.01B.3		0	

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

Civil Review Only

A minor change in the requirements for wood cellulose fiber mulch is being made to permit use of other acceptable products available. Change the specification limit for Particle Length from 0.375 inch (maximum) to 0.775 inch (maximum).

(10)REQUESTOR: Daniel Boline	COMPANY: GeoSyntec	DATE: 27 Aug 97	(12)FCE / PE: [signature] DATE: 8/27/97

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

ECDC CONTROLLED
COPY NO.
C011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Boline	DATE: 27 Aug 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) PERFORMANCE GRADE: (17) 5 [signature]		DATE: 8/27/97
(18)CONSTRUCTION CONCURRENCE: [signature] PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	DATE: 08/27/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 4	(6)DATE 21 Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Subgrade Control Points-Cell One		(11)DCN NO.: 1702-026

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing No. 90X-6000-G-00073	Sheet G-5A	1	

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

Civil Review Only

Additional Subgrade Construction Control Points are attached for Cell One. Add the points to the Table on Drawing G-00073, Rev. 1. Additional curve data is also provided in this DCN. Points 1082, 1083, 1141 and 1142 on the Drawing Plan and Table have been eliminated and replaced with points 10006, 10003, 10010 and 10009, respectively.

(10)REQUESTOR: DJ Bonnett	COMPANY: GeoSyntec	DATE: 27 Aug 97	(12)FCE / PE: [signature] DATE: 8/27/97

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

ECDC CONTROLLED
COPY NO.
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine	DATE: 27 Aug 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N/A	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature]			DATE: 8/27/97
PERFORMANCE GRADE: (17) 5			
(18)CONSTRUCTION CONCURRENCE: [signature]	DATE: 08/27/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) [signature]	DATE: 12/02/97
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 4	(6)DATE 21 Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Subgrade Control Points-Cell One		(11)DCN NO.: 1702-026

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing No. 90X-6000-G-00073	Sheet G-5A	1	

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

Civil Review Only

Additional Subgrade Construction Control Points are attached for Cell One. Add the points to the Table on Drawing G-00073, Rev. 1. Additional curve data is also provided in this DCN. Points 1082, 1083, 1141 and 1142 on the Drawing Plan and Table have been eliminated and replaced with points 10006, 10003, 10010 and 10009, respectively.

(10)REQUESTOR: DJ Bonnett	COMPANY: GeoSyntec	DATE: 27 Aug 97	(12)FCE / PE: [signature] DATE: 8/27/97

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

ECDC CONTROLLED COPY NO.

C011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine DATE: 27 Aug 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature] DATE: 8/27/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: [signature] DATE: 08/27/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

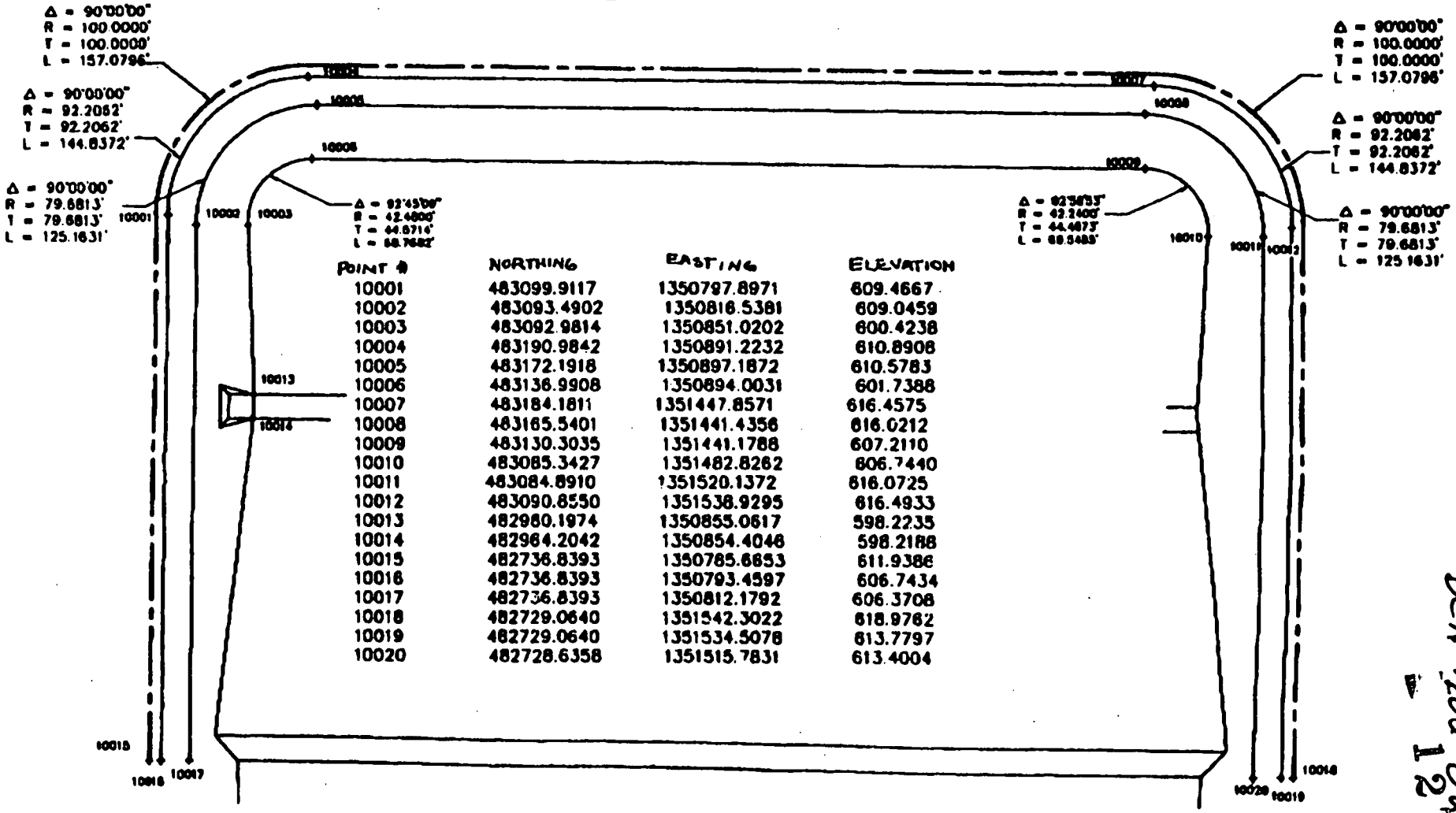
ORIGINAL

22 - AUG 97

FILE : M:\gacadd2\GQ0166-03\DWG\0166X008

N

CELL 1



POINT #	NORTHING	EASTING	ELEVATION
10001	483099.9117	1350797.8971	609.4667
10002	483093.4902	1350816.5381	609.0459
10003	483092.9814	1350851.0202	600.4238
10004	483190.9842	1350891.2232	610.8908
10005	483172.1918	1350897.1872	610.5783
10006	483136.9908	1350894.0031	601.7388
10007	483184.1811	1351447.8571	616.4575
10008	483165.5401	1351441.4356	616.0212
10009	483130.3035	1351441.1788	607.2110
10010	483085.3427	1351482.8262	606.7440
10011	483084.8910	1351520.1372	616.0725
10012	483090.8550	1351538.9295	616.4933
10013	482980.1974	1350855.0617	598.2235
10014	482964.2042	1350854.4046	598.2188
10015	482736.8393	1350785.6653	611.9386
10016	482736.8393	1350793.4597	606.7434
10017	482736.8393	1350812.1792	606.3708
10018	482729.0640	1351542.3022	618.9762
10019	482729.0640	1351534.5078	613.7797
10020	482728.6358	1351515.7831	613.4004

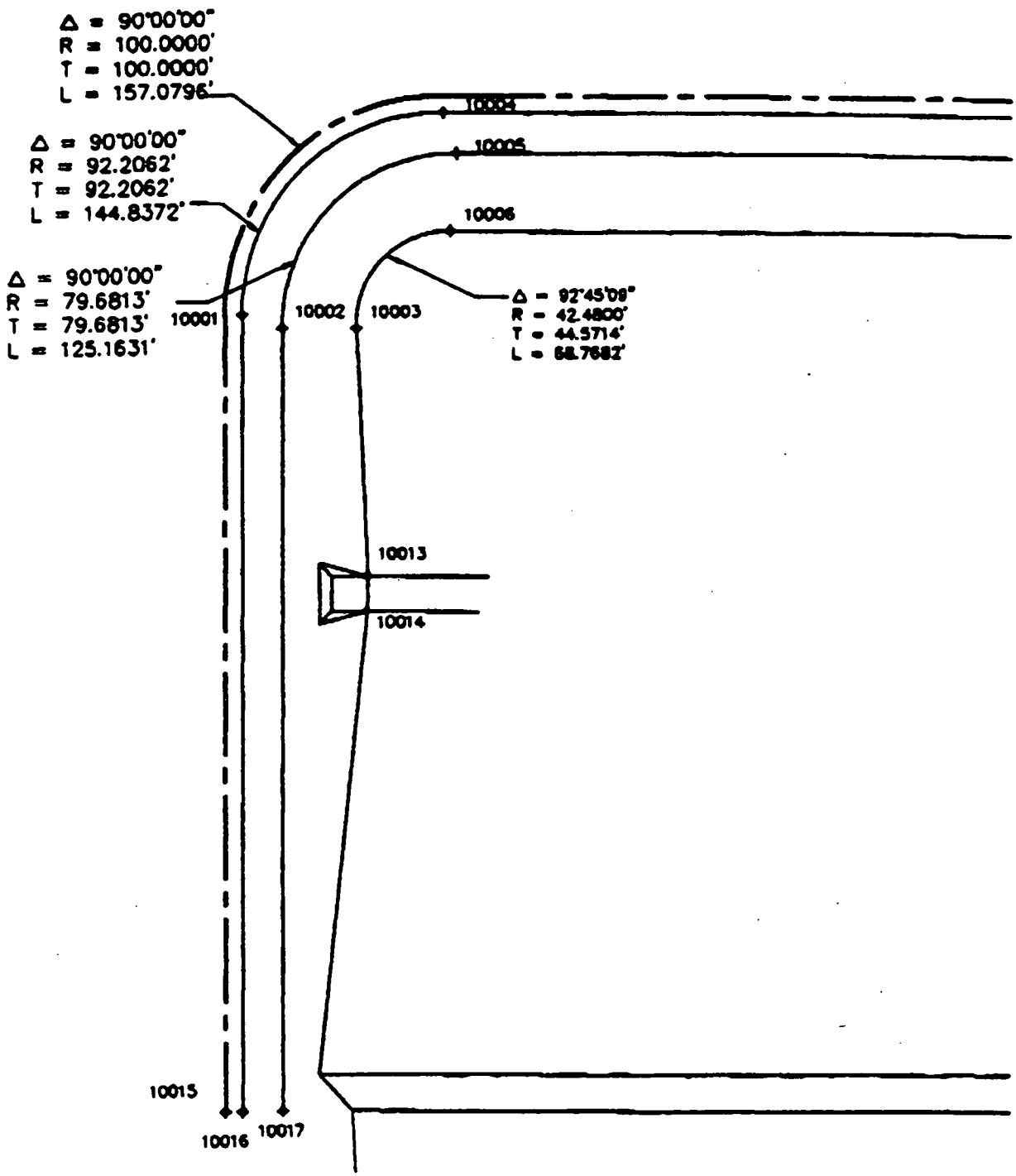
DCN 1702-02962
12

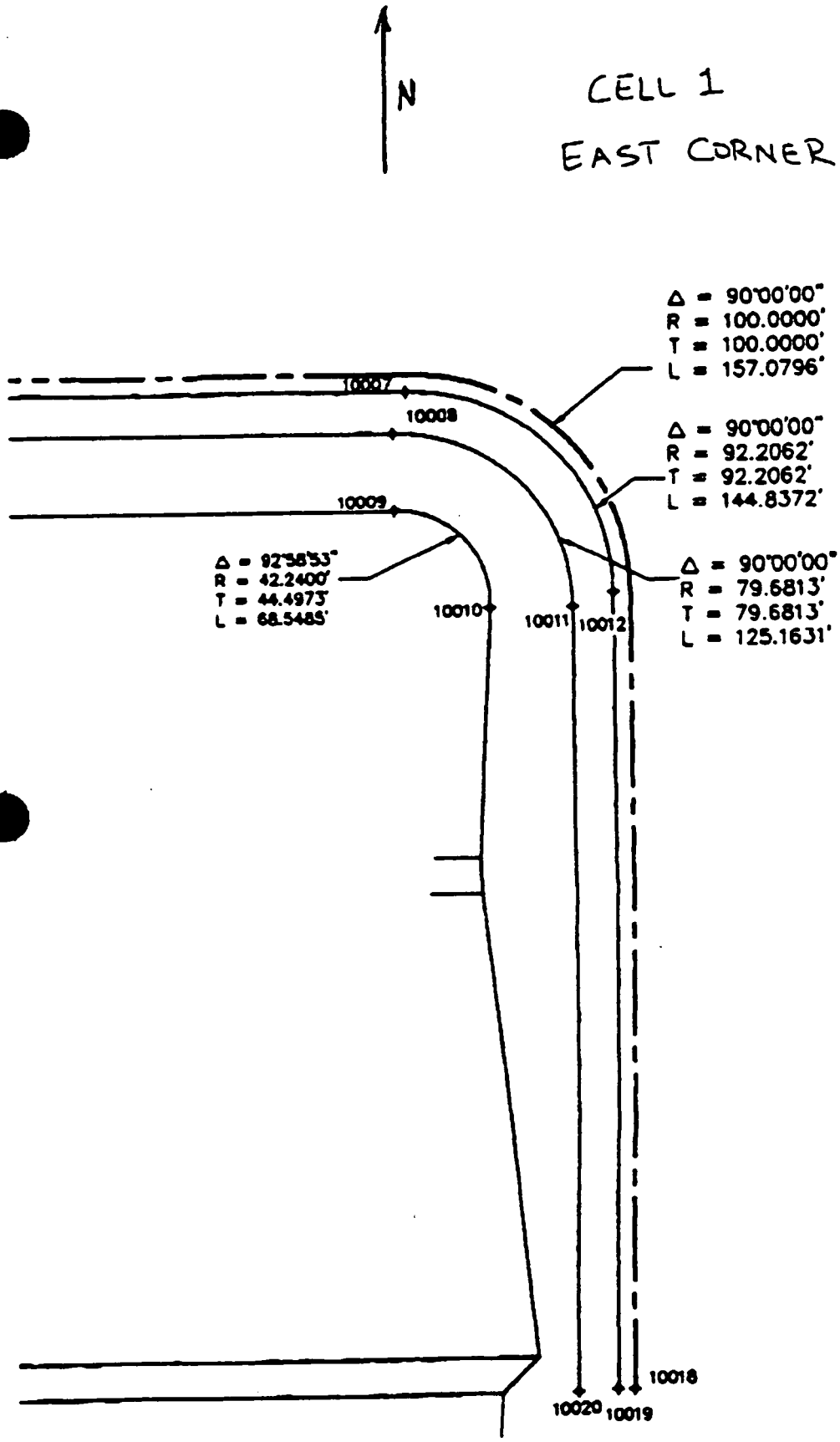
0000050

Page 3 of 4

CELL 1

WEST CORNER




N
CELL 1
EAST CORNER
Δ = 90°00'00"
R = 100.0000'
T = 100.0000'
L = 157.0796'
Δ = 90°00'00"
R = 92.2062'
T = 92.2062'
L = 144.8372'
Δ = 90°00'00"
R = 79.6813'
T = 79.6813'
L = 125.1631'
Δ = 92°38'53"
R = 42.2400'
T = 44.4973'
L = 68.5485'
10007
10008
10009
10010
10011
10012
10018
10019
10020

GEOSYNTEC CONSULTANTS

1100 Lake Hearn Drive NE, Suite 200
Atlanta, Georgia 30342-1523 USA
Telephone: (404) 705-9500
Telefax: (404) 705-2000

FAX COVER SHEET

To: David Bonnett / Jeph McMichen

Firm: GeoSyntec Consultants

Fax No.: Speed Dial 12

From: Gina Martin

Project No.: GQ0166-4.1

Cover Page Plus 1 pages following

Sent by: Gina Martin Date: 8/22/97 Time: 11:45 AM

MESSAGE:

David / Jeph,

Attached are the additional control points for cell 1 subgrade. If you have any questions or difficulties reading the numbers, please call either John Ash or myself.

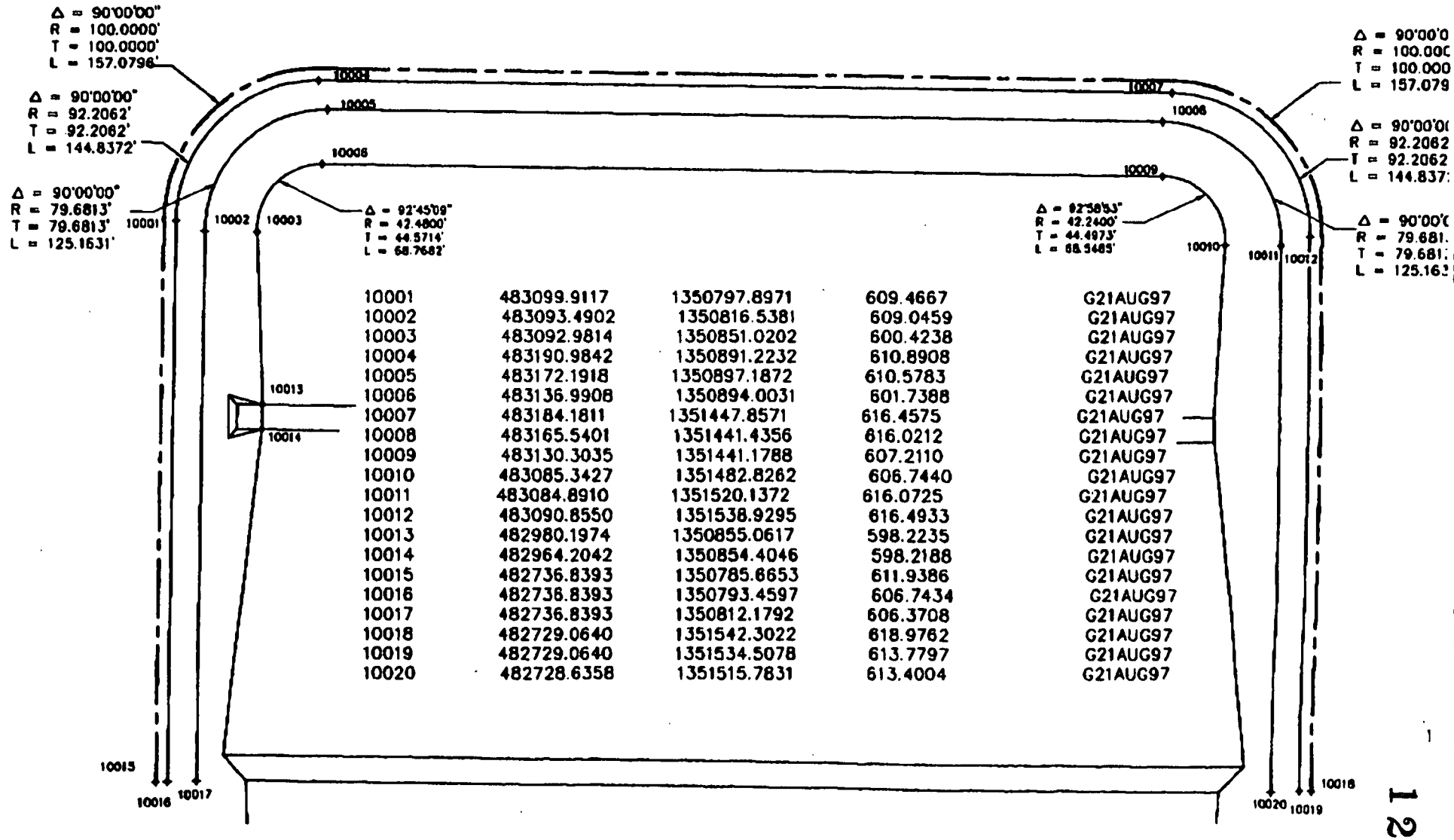
Thanks,

Gina Martin

Corporate Office: (407)995-0900
Boca Raton, FL Office: (407) 995-0900
Huntington Beach, CA Office: (714)843-6866
Columbia, MD Office: (410) 715-1400
Austin, TX Office: (512) 451-4003
Walnut Creek, CA Office: (510) 943-3034
Geomechanics and Environmental Laboratory: (404) 705-9500
Materials Testing Laboratory: (407) 995-0900
Chicago, IL Office: (312) 658-0500

22 - AUG 97

FILE : M: gacadd2 \ GQ0166 - 0.03 \ DWG \ 0166X008



10001	483099.9117	1350797.8971	609.4667	G21AUG97
10002	483093.4902	1350816.5381	609.0459	G21AUG97
10003	483092.9814	1350851.0202	600.4238	G21AUG97
10004	483190.9842	1350891.2232	610.8908	G21AUG97
10005	483172.1918	1350897.1872	610.5783	G21AUG97
10006	483136.9908	1350894.0031	601.7388	G21AUG97
10007	483184.1811	1351447.8571	616.4575	G21AUG97
10008	483165.5401	1351441.4356	616.0212	G21AUG97
10009	483130.3035	1351441.1788	607.2110	G21AUG97
10010	483085.3427	1351482.8262	606.7440	G21AUG97
10011	483084.8910	1351520.1372	616.0725	G21AUG97
10012	483090.8550	1351538.9295	616.4933	G21AUG97
10013	482980.1974	1350855.0617	598.2235	G21AUG97
10014	482964.2042	1350854.4046	598.2188	G21AUG97
10015	482736.8393	1350785.6653	611.9386	G21AUG97
10016	482736.8393	1350793.4597	606.7434	G21AUG97
10017	482736.8393	1350812.1792	606.3708	G21AUG97
10018	482729.0640	1351542.3022	618.9762	G21AUG97
10019	482729.0640	1351534.5078	613.7797	G21AUG97
10020	482728.6358	1351515.7831	613.4004	G21AUG97

000084 TOTAL P.02

12272

1272

GeoSyntec Consultants

1100 Lake Hearn Drive, N.E., Suite 200
Atlanta, Georgia 30342
Tel. (404) 705-9500 • Fax (404) 705-9400

FAX COVER SHEET

TO: DAN BODINE

FIRM: GeoSyntec

FAX NO: (513) 648-3415

FROM: BRIAN JACOBSON

PROJECT NO: GQ 0166

Cover Page Plus 2 pages following

Sent by: [illegible] Date: 17 July 1997 Time: 2:00

Message:

DAN,

Catalog pages for the fiber glass panels.

Corporate Office:
[illegible] N.W. 53rd Street, Suite 650
[illegible]a Raton, Florida 33487 • USA
[illegible]el. (407) 995-0900 • Fax (407) 995-0925

Regional Office
Atlanta, GA • Boca Raton, FL
Columbia, MD • Huntington, CA
Walnut Creek, CA • Brussels, Belgium

Laboratories:
Atlanta, GA
Boca Raton, FL
Huntington, CA

RETURN TO
BRIAN JACOBSON

McMASTER-CARR supply company

P.O. BOX 740100 • ATLANTA, GA 30374-0100

100

Serving industry since 1901

TELEPHONE

Sales Desk & Customer Service (404) 346-7000
All Other Departments (404) 349-9700

FAX

(404) 349-9091

PLANT LOCATION

Atlanta, Georgia, U.S.A.

MAIL ADDRESS

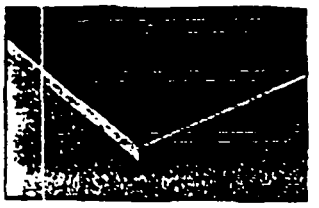
P.O. Box 740100
Atlanta, GA 30374-0100 U.S.A.

GP0-3 Fiber Glass Sheets, Angles, and Channels

- Flame Retardant
- High Arc Resistance
- UL Recognized
- Red Color

Fiber glass reinforced polyester (GP0-3) combines good electrical insulation with mechanical strength and durability. Crack resistant, plus easy to machine and punch. Flame retardant grade meeting NEMA specifications for GP0-3 is UL Recognized.

GP0-3 Fiber Glass Sheets



Sheet sizes 12" × 12", 12" × 24", and 24" × 36" are available. To order, specify No. and sheet size.

Thick.	36" × 72" No.	NET EACH	Other Size Sheets No.	NET/SQ. FT.	Thick.	36" × 72" No.	NET EACH	Other Size Sheets No.	NET/SQ. FT.
1/32"	8549K11	$27.67	8549K31	$1.46	1/16"	8549K15	$82.20	8549K35	$5.68
1/16"	8549K12	34.36	8549K32	2.88	1/4"	8549K16	112.92	8549K36	8.58
3/32"	8549K13	44.36	8549K33	3.65	3/8"	8549K17	143.33	8549K37	9.76
1/8"	8549K14	60.04	8549K34	4.83	1/2"	8549K18	176.08	8549K38	11.75

3/8"

GP0-3 Fiber Glass Angles and Channels

Excellent for applications requiring chemical resistance. Ideal for use as beams, columns, braces, and supports. All molded construction. Furnished lengths as listed.

ANGLES

Leg × Leg	Thick.	Lgth.	No.	NET EACH
2" × 2"	1/8"	80"	8522K41	$25.87
2" × 4 1/16"	1/8"	80"	8522K42	28.28
1 5/8" × 2 9/16"	3/16"	76"	8522K43	27.43
1 5/8" × 4"	3/16"	76"	8522K44	49.04
2" × 3 1/4"	3/16"	76"	8522K45	49.04
2" × 2"	1/4"	80"	8522K46	32.54
2 3/4" × 3"	1/4"	80"	8522K47	47.67

CHANNELS

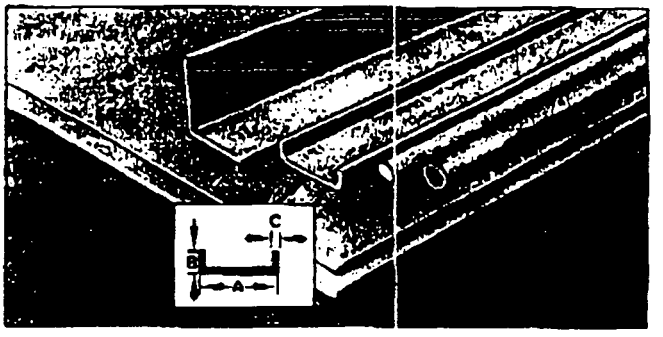
Width	Height	Thick.	Lgth.	No.	NET EACH
2 1/2"	1 7/32"	1/8"	57"	8523K51	$14.35
8 5/8"	2"	1/8"	80"	8523K52	47.69
3 9/16"	2 9/16"	3/16"	76"	8523K53	38.39
4 3/16"	2"	3/16"	76"	8523K54	43.41
4 1/4"	1 5/8"	3/16"	76"	8523K55	37.68
6 5/8"	1 5/8"	3/16"	82"	8523K56	59.26
6 1/2"	2 3/4"	1/4"	80"	8523K57	61.19

Fiber Glass Reinforced Structural Shapes

- Corrosion Resistant
- High Strength
- Nonconductive
- Lightweight
- Nonmagnetic
- Dimensionally Stable

Featuring a high strength-to-weight ratio, these shapes weigh 80% less than steel and 33% less than aluminum. They're made of fiber glass reinforced polyester and can be fabricated by most conventional methods. You can also join these shapes by bonding, bolting, and riveting.

Maintenance-free structural shapes are ideal for use as beams, columns, braces, trusses, platforms, railings, supports, base and floor plates, dividers, and fume ducts. Excellent for corrosive environments, electrical applications, textile manufacturing, water and sewage treatment, cleaning and cooling systems, plus more. The color is olive green except rods, which are white.



EQUAL LEG ANGLES

Leg × Leg × Thick.	5-Ft. Lengths No.	NET EACH	10-Ft. Lengths No.	NET EACH
1" × 1" × 1/8"	8542K51	$8.33	8542K21	$13.60
1 1/2" × 1 1/2" × 1/4"	8542K62	16.93	8542K52	29.17
2" × 2" × 1/4"	8542K55	19.58	8542K25	34.31
3" × 3" × 1/4"	8542K56	26.88	8542K26	47.60
3" × 3" × 3/8"	8542K63	42.10	8542K53	75.28
4" × 4" × 1/4"	8542K57	32.66	8542K27	58.47
4" × 4" × 1/8"	8542K58	49.13	8542K28	90.42
6" × 6" × 1/2"	8542K64	95.15	8542K54	173.26

SHALLOW CHANNELS

Dimensions A	B	C	5-Ft. Lengths No.	NET EACH	10-Ft. Lengths No.	NET EACH
2"	9/16"	1/8"	8529K61	$9.14	8529K21	$15.15
3"	7/8"	1/4"	8529K62	19.86	8529K22	34.46
4"	1 1/4"	1/4"	8529K63	24.25	8529K23	43.19
6"	1 5/8"	1/4"	8529K65	36.98	8529K25	66.24
8"	2 3/16"	3/8"	8529K66	69.13	8529K26	124.38

TUBES

OD	Wall Thick.	5-Ft. Lengths No.	NET EACH	10-Ft. Lengths No.	NET EACH
1"	1/8"	8535K71	$12.58	8535K21	$18.70
1 1/2"	1/8"	8535K72	18.20	8535K22	27.71
2"	1/4"	8535K73	37.75	8535K23	58.99

RODS

Diameter	5-Ft. Lengths No.	NET EACH	10-Ft. Lengths No.	NET EACH
1/8"	8543K27	$2.23	8543K31	$3.56
3/16"	8543K28	2.34	8543K33	3.74
1/4"	8543K59	2.34	8543K21	3.74
5/16"	8543K47	3.29	8543K35	5.26
3/8"	8543K49	4.04	8543K22	6.45
1/2"	8543K51	6.26	8543K23	10.11
5/8"	8543K53	9.56	8543K37	15.30
3/4"	8543K55	12.32	8543K25	18.95
1"	8543K57	21.45	8543K26	32.40

SHEETS

Thick.	48" × 48" No.	NET EACH	48" × 96" No.	NET EACH
1/8"	8537K33	$72.90	8537K13	$137.81
1/4"	8537K35	121.34	8537K15	238.85
3/8"	8537K37	202.58	8537K17	393.35
1/2"	8537K36	240.46	8537K16	469.10

Recycled High Density Polyethylene (HDPE) Boards

Wood-grain, weathered redwood color boards can be used outdoors and indoors as fencing, decking, flooring, sound and traffic barriers, and for other applications. They are not for use as structural members such as load bearing walls, deck framing, and floor joists. You can cut and drill the boards with standard woodworking tools. The boards are made from reprocessed HDPE from milk cartons and similar containers.

12-foot and 16-foot lengths are available in cedar and white colors. Please specify No. 8506K999, dimensions, length, and color when ordering.

SOLD IN 6-FT. LENGTHS

Thick.	Width	No.	NET EACH
1/2"	2 1/2"	8506K11	$5.87
1/2"	6"	8506K12	12.27
3/4"	2 5/8"	8506K13	8.53
3/4"	5 1/2"	8506K14	14.93
7/8"	2 1/8"	8506K17	7.87
1"	1 1/2"	8506K18	6.40
1 1/2"	3 1/2"	8506K19	18.67
1 1/2"	5 1/2"	8506K21	28.88

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 1	(6)DATE 6 AUG 97
(3)S/C TITLE: OSDF - Phase 2 CONSTRUCTION			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E☐ M☐ C☒ OTHER☐	(4A)RCI/DCN TITLE: HORIZONTAL WELL SCREENING		(11)DCN NO.: 1702-025

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
DRAWING 90X-6000-G-00087	DETAIL 43	0	
CDC CONTROLLED			
COPY NO.			

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

Detail 43 shows perforated pipe with drainage corridor gravel from the 90° elbow to the 6 inch molded tee, then to the pipe embedment. This section of pipe should be solid and in pipe embedment. Also at both the 90° elbow and butt tee, dry bentonite powder should be used to seal the drainage corridor gravel from the pipe embedment. (See Attached Detail). This change removes perforated pipe from areas not below the liner perforations.

(10)REQUESTOR: John Berretz	COMPANY: FDF	DATE: 6 AUG 97	(12)FCE / PE	DATE: 8/6/97

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

The 20 ft length of pipe (perforated) is located downgradient of the liner penetration boxes and the cell outlet area and should remain. Drawings already require a soil-bentonite plug at the westend of the perforated pipe and every 50 ft along the solid pipe.

*This design needs to be reworked for future cells.

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine	DATE: 12 Aug 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/26/97

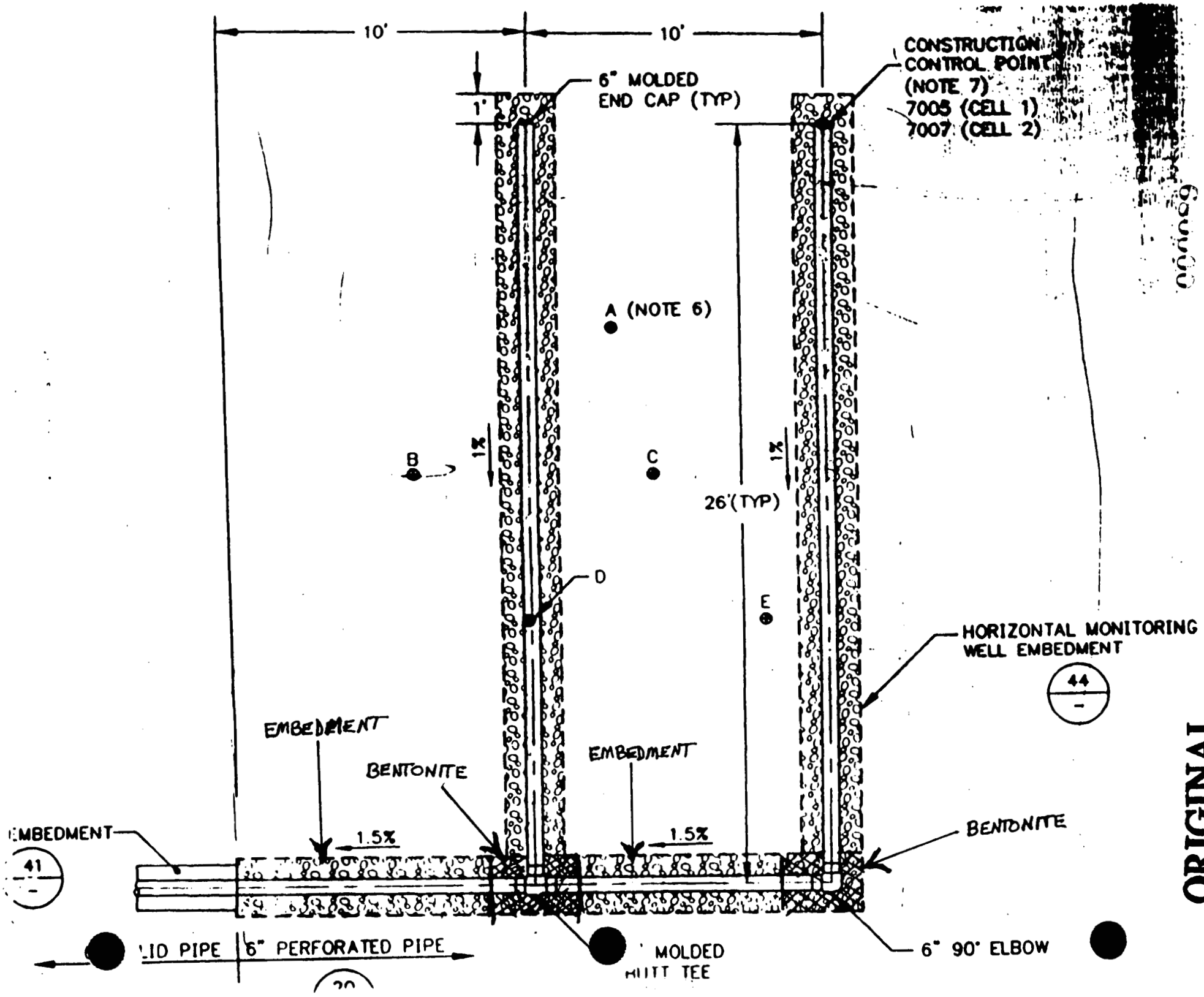
PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE:	DATE: 8/26/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) N/A	DATE: 08/26/97

PURCHASE REQUISITION REQUIRED: ☐ YES ☒ NO (19)

FS-F-4259 (10/01/96)

ORIGINAL


10'
10'
1'
6" MOLDED END CAP (TYP)
CONSTRUCTION CONTROL POINT (NOTE 7)
7005 (CELL 1)
7007 (CELL 2)
A (NOTE 6)
B
C
D
E
1%
1%
26'(TYP)
HORIZONTAL MONITORING WELL EMBEDMENT
44
EMBEDMENT
BENTONITE
EMBEDMENT
1.5%
1.5%
BENTONITE
EMBEDMENT
41
LID PIPE
6" PERFORATED PIPE
MOLDED
HUTT TEE
6" 90° ELBOW
20

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 11Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Riprap Protection Width		(11)DCN NO.: 1702-024

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00089	Sheet G-41A	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Civil Review Only

The width for the Riprap Type C Protection for the Sedimentation Basin Outlet (2-48-inch) Culverts was not identified on the drawings. Add the following beneath the words, Type C Ripap Outlet Protection, on Section B, Drawing G-00089, Sheet G-41A:

16' Wide Centered At Culvert Outlet Area

(10)REQUESTOR:	COMPANY:	(12)FCE / PE	DATE:
Daniel Bolline	GeoSyntec		8/11/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☒YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

ECDC CONTROLLED
COPY NO
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Bolline	11 Aug 97	N/A

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/11/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	08/14/97		12/03/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

S-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 11Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Riprap Protection Width	(11)DCN NO.: 1702-024	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00089	Sheet G-41A	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Civil Review Only

The width for the Riprap Type C Protection for the Sedimentation Basin Outlet (2-48-inch) Culverts was not identified on the drawings. Add the following beneath the words, Type C Ripap Outlet Protection, on Section B, Drawing G-00089, Sheet G-41A:

16' Wide Centered At Culvert Outlet Area

(10)REQUESTOR: Daniel Bodine	COMPANY: GeoSyntec	(12)FCE / PE	DATE: 8/11/97

(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: Daniel Bodine 11 Aug 97 DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/11/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: DATE: 08/11/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 8 Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Clay Liner Placement	(11)DCN NO.: 1702-023	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02225	Part 3.03.F.	0	
Petro Earthwork Plan, Submittal No. 11	PET-013	3	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

Change Specification, Section 02200, Part 3.03.F by replacing the first sentence and adding an additional new second sentance as follows:

In areas where compaction is to be performed using the Caterpillar 815B, or equivalent equipment, place the clay liner material in loose lifts with a thickness of 7 to 8 inches, except for the first lift over subgrade. The first lift over subgrade shall be nominal 10-inch loose thickness. "

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

The change in loose lift thickness for the initial lift over subgrade is consistent with procedures used in the Test Pad Program and is necessary to prevent excessive subgrade material from mixing with the initial lift during lift compaction with the Caterpillar 815B compactor.

(10)REQUESTOR: Ronil Bodino	COMPANY: GeoSyntec	(12)FCE / PE	DATE: 8/11/97
(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☒YES		(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED	

ECDC CONTROLLED
COPY NO.
011

RCI --DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Ronil Bodino	DATE: 8 Aug 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY)			DATE: 8/11/97
PERFORMANCE GRADE: (17) 4			
(18)CONSTRUCTION CONCURRENCE:	DATE: 8/11/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE: 12/02/97
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

S-F-4259 (10/01/96)

ORIGINAL

1272

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 8 Aug 97

(3)S/C TITLE: OSDF Phase 1 Construction

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐

(4A)RCI/DCN TITLE: Clay Liner Placement

(11)DCN NO.: 1702-023

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02225	Part 3.03.F.	0	
Petro Earthwork Plan, Submittal No. 11	PET-013	3	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

Change Specification, Section 02200, Part 3.03.F by replacing the first sentence and adding an additional new second sentance as follows:

" In areas where compaction is to be performed using the Caterpillar 815B, or equivalent equipment, place the clay liner material in loose lifts with a thickness of 7 to 8 inches, except for the first lift over subgrade. The first lift over subgrade shall be nominal 10-inch loose thickness. "

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

The change in loose lift thickness for the initial lift over subgrade is consistent with procedures used in the Test Pad Program and is necessary to prevent excessive subgrade material from mixing with the initial lift during lift compaction with the Caterpillar 815B compactor.

(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec

(12)FCE / PE: DATE: 8/11/97

(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: Daniel Bodine DATE: 8 Aug 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/11/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: DATE: 8/11/97

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 8 Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Subgrade Preparation	(11)DCN NO.: 1702-022	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02200	Part 3.07.B.	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Civil Review Only

Change Specification Section, Section 02200, Part 3.07.B by replacing the third sentence with "Except for roads and access corridors, soils shall not exhibit pumping or develop ruts of two inches or more in depth. Minor rutting, defined as less than 2-inches in depth, shall be graded, ~~and~~ scarified ~~of~~ and covered with suitable soil, as specified. "

RGB 8 Aug 97

(10)REQUESTOR: Daniel Boline	COMPANY: GeoSyntec	(12)FCE / PE	DATE: 8/8/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

ECDC CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Boline 8 Aug 97	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY)			DATE: 8/8/97
PERFORMANCE GRADE: (17) 5			
(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE: 12/02/97
~~PURCHASE REQUISITION REQUIRED~~ ☒YES ☐NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 8 Aug 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Subgrade Preparation		(11)DCN NO.: 1702-022

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02200	Part 3.07.B.	0	

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

Civil Review Only

Change Specification Section, Section 02200, Part 3.07.B by replacing the third sentence with "Except for roads and access corridors, soils shall not exhibit pumping or develop ruts of two inches or more in depth. Minor rutting, defined as less than 2-inches in depth, shall be graded, ~~and~~ scarified ~~or~~ and covered with suitable soil, as specified."

DGB 8 Aug 97

(10)REQUESTOR: Daniel Bodine	COMPANY: GeoSyntec	(12)FCE / PE — DATE: 8/8/97

(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: Daniel Bodine 8 Aug 97 — DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) — DATE: 8/8/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: — DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) — DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☐NO (19)	

FS-F-4259 (10/01/96)

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1)WP / WO NO.:	(2)S/C NO.:	(5)Pg OF	(8)DATE
1702	597	1 2	7/24/97

(3)S/C TITLE: OSDF PHASE I

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: ED MD CE OTHER

(4A)RCI/DCN TITLE: ENGINEERING DESIGN CHANGES INCORPORATED IN SUB CONTRACT AMENDMENTS

(11)DCN NO.: 1702 - 021

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
SEE ATTACHMENT A, pages 2 and 3			

(9)☐ RCI - INQUIRY ☐ USOD SCREENING BY PROJECT ENGINEER

(9)☐ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

THIS DCN INCORPORATES ENGINEERING DESIGN CHANGES IN SUBCONTRACT AMENDMENTS NO. 1 THROUGH 4 (COPIES ATTACHED) DURING THE BID PERIOD.

SEE ATTACHMENT A FOR THE LIST OF ENGINEERING DESIGN CHANGE ITEMS AND DCN JUSIFICATIONS. ITEM NUMBERS LISTED IN TABLE HAVE BEEN CIRCLED ON ATTACHED AMENDMENTS.

ECDC CONTROLLED COPY NO 1

(10)REQUESTOR: COMPANY: FDF DATE: Dan Goetz for Dan Bodine 7/24/97

(12)FCE / PE DATE: 7/24/97 8/4/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☒ YES

(14)FOR DCN: ☐ APPROVED ☒ APPROVED AS NOTED ☐ DISAPPROVED

Corrections to Attachment A are noted. Also Amendment 1, Item 6 should have page numbers corrected (Total of 4) and page 1 "Rev. 1" and date "November 7, 1996" added at bottom. Contract changes resulting from responses to questions, except Amendment 4 Question 92, or other changes to contract parts not specifically identified in Attachment A are not part of this DCN.

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 5 Aug 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/6/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: DATE: 08/05/97

PURCHASE REQUISITION REQUIRED: ☐ YES ☒ NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

FEF-4258 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1)WP / WO NO.:	(2)S/C NO.:	(5)Pg OF	(6)DATE
1702	597	1 of 2	7/24/97

(3)S/C TITLE: OSDF PHASE I

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E☐ M☐ C☒ OTHER☐

(4A)RCI/DCN TITLE: ENGINEERING DESIGN CHANGES INCORPORATED IN SUB CONTRACT AMENDMENTS

(11)DCN NO.: 1702 - 021

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
SEE ATTACHMENT A, pages 2 and 3			

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☐ DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

THIS DCN INCORPORATES ENGINEERING DESIGN CHANGES IN SUBCONTRACT AMENDMENTS NO. 1 THROUGH 4 (COPIES ATTACHED) DURING THE BID PERIOD.

SEE ATTACHMENT A FOR THE LIST OF ENGINEERING DESIGN CHANGE ITEMS AND DCN JUSIFICATIONS. ITEM NUMBERS LISTED IN TABLE HAVE BEEN CIRCLED ON ATTACHED AMENDMENTS.

(10)REQUESTOR: COMPANY: FDF DATE: 8/6/97
Don Goetz for Dan Boring

(12)FCE / PE DATE: 7/24/97 8/6/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☒ YES

(14)FOR DCN: ☐ APPROVED ☒ APPROVED AS NOTED ☐ DISAPPROVED

Corrections to Attachment A are noted. Also Amendment 1, ~~an~~ Item 6 should have page numbers corrected (Total of 4) and page 1 "Rev. 1" and date "November 7, 1996" added at bottom. Contract changes resulting from responses to questions, except Amendment 4 Question 12, or other changes to contract parts not specifically identified in Attachment A are not part of this DCN.

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 5 Aug 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/6/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: DATE: 8/6/97

~~PURCHASE REQUISITION REQUIRED:~~ ☐ YES ☒ NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FST-4250 (10/01/95)

000097

RECEIVED AUG 12 1997

ORIGINAL

CDC CONTROLLED COPY NO 011

Attachment A to DCN 1702-021
S/C no. 597
WP / WO No. 1702
Date 7/24/97

Amendment #	Item #	Documents Affected	Engineering Design Change Item	DCN Justification
1	6	List of drawings and specifications	Revise list of drawings and specifications	Change revision numbers on list.
1	7 RGB	Reference Dwg. 75A-~~5900~~ 5500 mc 8/11/97 -G-00439, Rev 0 Reference Dwg. 75A-~~5900~~ 5500 mc 8/11/97 -G-00440, Rev 1	Add Reference Drawings: Site Plan 1 of 3 Site Plan 2 of 3	Added reference drawings missing from CFC package
1	9 RGB	Sheet 1 G-2A, DWG, 90X-6000-G-00072 Rev. 0 Sheet 1 G-5C, DWG, 90X-6000-G-00075 Rev. 0 Sheet 1 G-~~09A~~ 34A DWG, 90X-6000-G-00082 Rev. 0 Specification 02100 All 90X-6000-Series	Grid Location Sed. Basin Fence and Grid Location Future Cell 2 Permanent Bench Marks & revise articles	Clarified notes on drawings
2	12 RGB	All Sheets ~~Drawing~~ G-5A, Rev. 0 DWG No. G-00073 ~~Drawing~~ G-5B, Rev. 0 G-00074 ~~Drawing~~ G-15A, Rev. 0 G-00077 ~~Drawing~~ G-22A, Rev. 0 G-00080 ~~Drawing~~ G-23A, Rev. 0 G-00081	Replace with Rev. 1 Replace with Rev. ~~1~~ 2 Rev. 1 was never released RGB Replace with Rev. ~~1~~ 2 Replace with Rev. 1 Replace with Rev. ~~1~~ 2	Added latest revisions to Bid Package
2	13	Specification 02770	Change Table 02770-1	Changed Specification in response to bidders' concerns raised during pre-bid meeting.
3	14 B	Specification 02772	Change Typographical Error	
4	4	Specification 02230	Road Subbase Specification	Clarified Specification of Subbase Materials
4	5	Specification 02770	Geomembrane Liner	Modified Tensile Yield Test requirements

1272

4	6	Specification 02772	Geosynthetic Clay Liner	Clarified Specifications
4	7	Specification 02772	Geosynthetic Clay Liner	Change to GCL Tensile Resistance Specification in response to bidders' concerns raised during pre-bid meeting.
4	8	Specification 02772	Geosynthetic Clay Liner	Change Frequency of Manufacturer's QC Testing in response to bidders' concerns raised during pre-bid meeting.
4	9	Specification 02772	Geosynthetic Clay Liner	Remove Geotextile Specifications
4	10 Q68	Sheet ~~Drawing~~ G5C DWG 90X-6000-G-00075 Rev. 0	Subgrade Grading Plan	Move Sedimentation Basin away from Controlled Area
4	Question 12	Sheet ~~Drawing~~ 15A DWG 90X-6000-G-00079 Rev. 2	Protective layer thickness	Correct mislabeled thickness.

660099

12772

AMENDMENT OF SOLICITATION/MODIFICATION OF SUBCONTRACT

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3.
ONE (1)	NOVEMBER 7, 1996	PAGE 1 OF 2

4. ISSUED BY Fernald Environmental Restoration Management Corporation
P.O. Box 538704
Cincinnati, OH 45253-8704

5. NAME AND ADDRESS OF SUBCONTRACTOR (Name, street, county, state, and zip code)	6. AMENDMENT OF SOLICITATION NO.	DATE
PROSPECTIVE OFFERORS	F97P272290	11/7/96
	7. MODIFICATION OF SUBCONTRACT NO.	DATE

8. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 10. The hour and date specified for receipt of Offers ☐ is extended ■ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods:

(a) By completing Items 5 and 11, and returning ONE (1) copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate [ ] letter [ ] telegram [ ] facsimile which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by [ ] telegram or [ ] letter or [ ] facsimile, provided each makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

9. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF SUBCONTRACTS/ORDERS. IT MODIFIES THE SUBCONTRACT/ORDER NO. AS DESCRIBED IN ITEM 10.

A. THIS UNILATERAL MODIFICATION IS ISSUED PURSUANT TO: (Specify authority). THE CHANGES SET FORTH IN ITEM 10 ARE MADE IN THE SUBCONTRACT IDENTIFIED IN ITEM 7.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES SET FORTH IN ITEM 10.

C. THIS BILATERAL MODIFICATION IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: CONTRACTOR ☐ is not. ☐ is required to sign this document and return copies to the issuing office.

10. DESCRIPTION OF AMENDMENT/MODIFICATION

REFER TO THE ATTACHED PAGES FOR COMPLETE DETAILS OF THE ADMENDMENT NO. 1

Except as provided herein, all terms and conditions of the document 6 or 7, remain unchanged and in full force and effect.

11A. NAME AND TITLE OF SIGNER (Type or print)		12A. Fernald Environmental Restoration Management Corp.	
		A. D. Sablosky Contract Administrator	
11B. SUBCONTRACTOR/OFFEROR (Signature of person authorized to sign)	11C. DATE SIGNED	12B. (Signature)	12C. DATE SIGNED 11/07/96

FSC 597

ON-SITE DISPOSAL FACILITY - PHASE I

Amendment Number 1

November 7, 1996

1. Reference Part 4 - Special Terms and Conditions for Construction - Attachment No. 1, Davis Bacon Wage Decision No 960034, Modification No. 7, and Replace in its entirety with Davis Bacon Wage Decision No. OH960034 Modification No 8, Dated October 18, 1996.

2. Reference Part 6 - Statement of Work, Rev. 0 dated October 21, 1996, replace in its entirety with the attached Rev. 1 dated November 7, 1996..

3. Reference Part 6 - Statement of Work - Exhibit A - Subcontract Schedule, Rev. 0 dated October 21, 1996, replace in its entirety with the attached Rev. 1 dated November 7, 1996.

4. Reference Part 6 - Statement of Work - Exhibit B - Pay Item Descriptions, Rev. B dated October 21, 1996, replace in its entirety with the attached Rev. 1 dated November 7, 1996.

5. Reference Part 6 - Statement of Work - Exhibit F - Construction Subcontractor Termination Checklist, omitted from original proposal package. Insert the attached.

6. Reference Part 7 - Technical Drawings & Specifications, Pages 1 of 4 through 4 of 4, Rev.0 dated October 21, 1996, replace in its entirety with Pages 1 of 4 through 4 of 4, Rev. 1 dated November 7, 1996.

7. Reference Part 7 - Technical Drawings & Specifications, Rev.0 dated October 21, 1996, section 3.0.A Reference Drawings. Add the attached drawings 75A-~~5900~~ 5500 mc 11/11/97-G-00439, Site Plan, 1 of 3, Rev. 0, and 75A-~~5900~~ 5500 mc 11/11/97-G-00440, Site Plan, 2 of 3, Rev. 1.

8. Reference Part 7 - Technical Drawings & Specifications, add the attached information (fly ash spec, ... drawings, etc.

9. Reference Part 7 - Technical Drawings & Specifications, Section 1.0 - Construction Drawings. The following are additions/deletions to be incorporated in the referenced drawings:

The following is a general summary of the changes on the revised drawings or sections that are part of this Amendment.

	Drawing #	Rev.	Description
1)	90X-6000-G-00072	0	Grid Location. B-5: Relocate "Construction Administration Area (Note 12)"Shadow from drawing 90X-6000-G-0072, Rev. 0, Grid Location B-5 to Grid Location C-5 (Approximately N-479,200; E-1, 350, 400). Add Note stating that Benchmarks OSDF-1, OSDF-2 and OSDF-3 shown on Benchmarks Table shall be installed by others.
2)	90X-6000-G-00075	0	Show utilization of existing fence along the west perimeter of OSDF Phase I Project. Move west boundary of "Sedimentation Basin" on drawing 90X-6000-G-00075, Rev. 0., grid location D-2, to the east 25' feet to permit usage of existing fence line.
3)	90X-6000-G-00075	0	Grid Location A-1. Delete Shadowed Coordinate N-482,000;
4)	90X-6000-G-00082	0	Change "Future Cell 3" to read "Future Cell" in the second sentence of Note 2.
5)	Section 02100 - Surveying		a. In article 1.01. A. 1; Delete 'and permanent benchmarks' b. Delete Article 3.04.

PART 7 - TECHNICAL
DRAWINGS AND SPECIFICATION

1.0 Construction Drawings 1
2.0 Specifications 2
  A. Technical Specifications 2
  B. Work Plans 3
  C. Construction Technical Specifications 3
3.0 Reference Information 3
  A. Reference Drawings 3
  B. Reference Work Plans 5

PART 7

TECHNICAL DRAWINGS AND SPECIFICATIONS
SUBCONTRACT NUMBER FSC 597
ON-SITE DISPOSAL FACILITY

1.0 CONSTRUCTION DRAWINGS

The following drawings show work to be performed on this Subcontract:

Title	Sheet No.	Rev. No.	FERMCO Drawing No.	
General				
Title Sheet	X 1A	0	90X-6000-X-00070	
Legend and Symbols	X 2B	0	90X-6000-X-00071	
Civil				
Site Development Plan	G-2A	0	90X-6000-G-00072	
Subgrade Grading Plan I	G-5A	1 ~~0~~	90X-6000-G-00073	Am #2
Subgrade Grading Plan II	G-5B	2 ~~0~~	90X-6000-G-00074	Am #2
Subgrade Grading Plan III	G-5C	0	90X-6000-G-00075	
Cell Outlet Grading Plans	G-9A	0	90X-6000-G-00076	
OSDF Sections	G-15A	2 ~~0~~	90X-6000-G-00077	Am #2
Cell Perimeter Details I	G-20A	0	90X-6000-G-00078	
Cell Perimeter Details II	G-21A	0	90X-6000-G-00079	
Liner System Details I	G-22A	1 ~~0~~	90X-6000-G-00080	Am #2
Liner System Details II	G-23A	2 ~~0~~	90X-6000-G-00081	Am #2
Liner System Details III	G-24A	0	90X-6000-G-00082	
Liner System Details IV	G-25A	0	90X-6000-G-00083	
Stormwater Management System Details I	G-30A	0	90X-6000-G-00084	
Stormwater Management System Details II	G-31A	0	90X-6000-G-00085	
Equipment Decontamination Facility Details I	G-37A	0	90X-6000-G-00086	
Equipment Decontamination Facility Details II	G-37B	0	90X-6000-G-00090	
Horizontal Monitoring Well Misc. Details	G-40A	0	90X-6000-G-00087	
Sedimentation Basin Details	G-41A	0	90X-6000-G-00089	
Structural				
Chain Link Fence	S-5A	0	90X-6000-S-00088	

2.0 SPECIFICATIONS

A. Technical Specifications

The following specifications specify work to be performed on this Subcontract:

DIVISION 2: SITE WORK

Section 02100	-	Surveying
Section 02110	-	Clearing, Grubbing, and Stripping
Section 02200	-	Earthwork
Section 02215	-	Trenching and Backfilling
Section 02225	-	Compacted clay Liner
Section 02230	-	Road Construction
Section 02240	-	Protective Layer
Section 02270	-	Erosion and Sediment Control
Section 02271	-	Riprap
Section 02605	-	High Density Polyethylene (HDPE) Manholes, Pipes, and Fittings
Section 02710	-	Granular Drainage Material
Section 02714	-	Geotextiles
Section 02721	-	Culverts
Section 02770	-	Geomembrane Liner
Section 02772	-	Geosynthetic Clay Liner
Section 02831	-	Chain-Link Fences and Gates
Section 02930	-	Vegetation

DIVISION 3: CONCRETE

Section 03100	-	Concrete

DIVISION 13: SPECIAL CONSTRUCTION

Section 13000	-	Equipment Decontamination Facility
Section 13005	-	Liner Penetration Boxes
Section 13010	-	Impacted Material Placement

4 RGB Aug 4, 1997

B. Work Plans

Surface-Water Management and Erosion Control Plan, Rev. G, October 1996 (DRAFT)

Impacted Material Placement Plan, Rev. G., October 1996 (DRAFT)

Systems Plan, Rev. G., October 1996 (DRAFT)

C. Construction Technical Specifications

The following are Construction Technical Specifications referenced in other subcontract sections.

Title	Date
Subcontract Submittal Requirements	10/21/96
Subcontractor Safe Work Plan Format Requirements	10/21/96
Subcontractor Fire Extinguisher Inspection	10/21/96
Subcontractor Ladder Inspection	10/21/96
Subcontractor Portable Structures	10/21/96

3.0 REFERENCE INFORMATION

The following is reference information showing data relative to this Subcontract for use by the subcontractor:

A. Reference Drawings

Title	Sheet No.	Rev. No.	FERMCO Drawing No.
Facility Plot Plan	X-3	G	90X-6000-X-00003
Site Plan	X-4	G	90X-6000-X-00004
Brown Till/Gray Till Interface Contour Map	X-10	G	90X-6000-X-00009
Gray Till Isopach Map	X-11	G	90X-6000-X-00010
Surface Geology Map	X-12	G	90X-6000-X-00011
Geologic Section A-A	X-13	G	90X-6000-X-00012

NOTE: THERE IS NO PAGE 5 ISSUED WITH AM-1 AND 4 DGB AUG 4, 1997

000106

AMENDMENT OF SOLICITATION/MODIFICATION OF SUBCONTRACT

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3.
TWO (2)	NOVEMBER 22, 1996	PAGE 1 OF 16

4. ISSUED BY: Fluor Daniel Fernald
P.O. Box 538704
Cincinnati, OH 45253-8704

5. NAME AND ADDRESS OF SUBCONTRACTOR (*Name, street, county, state, and zip code*)	6. AMENDMENT OF SOLICITATION NO.	DATE
PROSPECTIVE OFFERORS	F97P272290	11/22/96
	7. MODIFICATION OF SUBCONTRACT NO.	DATE

8. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 10. The hour and date specified for receipt of Offers ☒ is extended ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods:

(a) By completing Items 5 and 11, and returning ONE (1) copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate [ ] letter [ ] telegram [ ] facsimile which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made [ ] telegram or [ ] letter or [ ] facsimile, provided each makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

9. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF SUBCONTRACTS/ORDERS. IT MODIFIES THE SUBCONTRACT/ORDER NO. AS DESCRIBED IN ITEM 10.

A. THIS UNILATERAL MODIFICATION IS ISSUED PURSUANT TO: (*Specify authority*). THE CHANGES SET FORTH IN ITEM 10 ARE MADE IN THE SUBCONTRACT IDENTIFIED IN ITEM 7.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES SET FORTH IN ITEM 10.

C. THIS BILATERAL MODIFICATION IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (*Specify type of modification and authority*)

E. IMPORTANT: CONTRACTOR ☐ is not. ☐ is required to sign this document and return copies to the issuing office.

10. DESCRIPTION OF AMENDMENT/MODIFICATION

REFER TO THE ATTACHED PAGES FOR COMPLETE DETAILS OF THE ADMENDMENT NO. 2

Except as provided herein, all terms and conditions of the document 6 or 7, remain unchanged and in full force and effect.

11A. NAME AND TITLE OF SIGNER (*Type or print*)		12A. Fernald Environmental Restoration Management Corp.	
		A. D. Sablosky Contract Administrator	
11B. SUBCONTRACTOR/OFFEROR (*Signature of person authorized to sign*)	11C. DATE SIGNED	12B. (*Signature*)	12C. DATE SIGNED 11/22/96

FS-F-4002 (09/15/94)

SOLICITATION NO. F97P272290

SUBCONTRACT NO. FSC 597

ON SITE DISPOSAL FACILITY (OSDF) PHASE I

AMENDMENT NO. 2

November 22, 1996

1. Refer to Part 1, Offer Section, Section 1, Form FS-F-798, "Solicitation, Offer, and Award", Item 13, and delete reference to quantity of offers. Refer to Instruction to Offerors for instructions regarding quantity and organization of offers; change proposal due date to December 12, 1996.

2. Refer to Part 1, Offer Section, and add Form FS-F-4625, Agreement to Subcontract Terms and Conditions / General Provisions, dated 4/23/96.

3. Refer to Part 1, Offer Section, Section 2, Form FS-F-4107 M52B, Representations, Certifications, and Other Statements of Bidders / Offerors, dated 7/19/95 and:
   - Refer to Page 3 and delete Item 11, "Organization Conflict of Interest - Disclosure or Representation" in its entirety.
   - Refer to Page 4 and delete Item 12, "Walsh-Healey Public Contracts Act Representation in its entirety.

4. Refer to Part 1, Offer Section, Section 4, "Instructions to Offerors", dated October 24, 1996 and replace with "Instructions to Offerors," attached. Changes are highlighted.

5. Refer to Part 4, Special Terms and Conditions for Construction OSDF Phase 1, ERRATA Sheet dated October 24, 1996 and replace with Special Terms and Conditions for Construction OSDF Phase 1, ERRATA Sheet dated November 20, 1996.

6. Refer to Part 5, Project Labor Agreement, Section 4, FERMCO Memorandum No. M:ADM:(IR):94-0198 dated May 24, 1994 and include page 1 of 2 which was previously omitted.

7. Refer to Part 6, Statement of Work, Section 2.13 Contract Line Item 2, and replace with the following in its entirity:

"2.13 CONTRACT LINE ITEM 2

A. Contract Line Item 2 shall include cost for performing excavation, stockpile, haul and clay fill (herein after called additional excavation and clay fill) of an estimated not to exceed 5,000 in-place cubic yards (ICY) which is in addition to the scope of work specified or shown on the construction drawings. This cost shall be included in the base subcontract proposal price which will be listed as a per unit price pay

000108

SOLICITATION NO. F97P272290
SUBCONTRACT NO. FSC 597
ON SITE DISPOSAL FACILITY (OSDF) PHASE 1
AMENDMENT NO. 2

item on the Pay Item Descriptions. This excavation and clay fill shall be performed as directed by the Construction Manager.

B. Payment for this estimated not to exceed excavation and clay fill shall be based on the Unit Price set forth in the Solicitation, Offer and Award Form (FS-F-798). This unit price for estimated excavation and clay fill per in-place cubic yard includes but is not limited to labor, equipment, material, supervision, safety, quality control, submittals, taxes, insurance, bond, overhead and profit.

C. The Subcontractor shall include, as part of the monthly invoice, the in-place cubic yards (ICY) of the additional excavation and clay fill during that billing period established by field surveys. Copies of the field surveys shall be included with the invoice. The billing shall be against contract line item 2 in the Pay Item Schedule."

8. Refer to Part 6, Statement of Work, Section 2.14.H.1 add the following :

"Response time is limited to 30 minutes to the site and 30 minutes after leaving the site."

9. Refer to Part 6 , Statement of Work, Exhibit A - Construction Schedule, Rev. 1 dated November 7, 1996, replace in its entirety with Rev. 2, dated November 22, 1996.

10. Refer to Part 6, Statement of Work, Exhibit B - Pay Item Descriptions, Pay Item 7.0, Pay Item Heading "Cell 1 and intercell berm LINER". Delete the Detailed Pay Item Description in its entirety and replace with:

"Items under this Pay Item include the liner for Cell 1 and the liner for the intercell berm between Cell 1 & 2 including the tie-in of the various layers of Cell 1 and the intercell berm between Cell 1 & 2 to the limits shown on the Construction Drawings."

11. Refer to Part 6, Statement of Work, Exhibit E, Documentation Requirements Form, delete in its entirety and replace with Rev. 1, dated November 22, 1996.

12. Refer to Part 7, Technical Specifications & Drawings, Construction Drawings, and replace:

Title	Sheet	Rev.
Subgrade Grading Plan I	G-5A	Rev. 0
Subgrade Grading Plan II	G-5B	Rev. 0
OSDF Sections	G-15A	Rev. 0

Liner System Details I	G-22A	Rev. 0
Liner System Details II	G-23A	Rev. 0

With the following drawings:

Title	Sheet	Rev.
Subgrade Grading Plan I	G-5A	Rev. 1
Subgrade Grading Plan II	G-5B	Rev. 2
OSDF Sections	G-15A	Rev. 2
Liner System Details I	G-22A	Rev. 1
Liner System Details II	G-23A	Rev. 2

13. Refer to Part 7, Technical Specifications, Specification Section 02770, Table 02770-1, Mechanical Properties, Tensile Properties (each Direction):

1) Change the specified value for Force Per Unit Width at Yield to a minimum of 160 lb/in per ASTM D 638.

2) Change the specified value for Tensile Strength (force per unit width at break) to a minimum of 100 lb/in per ASTM D 638.

14. Refer to Part 7, Technical Drawings and Specifications, Section 2.0.C - Construction Technical Specifications:

Subcontractor Fire Extinguisher Inspection Procedure, Rev. 0, dated October 21, 1996, delete Attachments A and B in their entirety, replace with Attachments A and B, dated November 22, 1996;

Subcontractor Ladder Inspection, dated October 21, 1996, delete Attachments A and B in their entirety, replace with Attachments A and B, dated November 22, 1996;

Subcontractor Portable Structures, add Attachments 1 through 4 which are referenced in this Construction Technical Specification but were not included in the proposal package.

15. Refer to Part 8, Safety & Health and Training Requirements:

Table of Contents, Page 4, Section E - Attachments, change the description of Attachment 1 to read "Deleted";

Section 2.0 General Safety and Health Provisions, delete subparagraph 2.3 in its entirety;

000110

Item Descriptions in Exhibit B of Part 6, Statement of Work.

Response: The Pay Item Schedule referenced in Part 1, Instructions to Offers, 10.0 Price Proposal, B was not provided in the solicitation. The requirement is for the Offeror to generate a Pay Item Schedule similar to the Pay Item Descriptions in Exhibit B of Part 6, Statement of Work. A form is provided for the convenience of the Offeror with this Amendment No. 2.

7. Question: Reference Part 1, Instructions of Offerors, 10.0 Price Proposal, Items A.2 and B: Please verify that Contract Line Item 2, 5,000 cubic yards of excavation, is not included in the Pay Item Descriptions of Exhibit to Part 6, Scope of Work, and, therefore, is not to be included in the Pay Item Schedule to be generated by the Offeror.

Response: Refer to Amendment No. 1 dated November 7, 1996 for a revised Exhibit B and the description of Contract Line Item 2. The Pay Item Descriptions illustrate the minimum activities that must be included in a Pay Item Schedule and Pay Item Schedule Invoice. The Subcontractor may include items additional to those listed.

8. Question: Refer to Reference Part 6, Statement of Work 2.13 Contract Line Item 2: provides for additional payment for 5,000 cubic yards of additional excavation and fill on a unit price basis. However, the contract does not contain a variation in quantity clause. Therefore, it is arguable that amounts above 5,000 cubic yards could be subject to modification or a claim under this contract. The Special Conditions also limit the amount of overhead and profit that can be applied to modifications. Please clarify how payment for any required quantities above bid stated quantities will be made under the contract.

Response: Amendment 2, Part 6, Statement of Work, Paragraph 2.13 for clarification. Contract Line Item 2 is a per unit price for an <u>estimated</u> 5,000 cubic yards of excavation and backfill below the design subgrade. This estimated amount is a not to exceed amount; there is no representation that this amount or any amount of excavation and backfill below the design subgrade will be necessary, simply that it is anticipated. Hence, a variation in quantity clause would not be appropriate to this application. Amounts above 5,000 cubic yards would constitute a change order; an equitable adjustment for the changed work would be executed in accordance with the applicable General Provisions and Special Terms and Conditions.

9. Question: Reference Part 6, Statement of Work, 2.14 Dust Control: requires after hours dust suppression and appears to limit the amount payable to $50,000. Please clarify whether or not this $50,000 is, in fact, intended as a cap on the total amount payable or whether it will be modified upward in the event of greater than expected requirements for the activity. What exactly is the $50,000 dust suppression allowance intended to cover? What happens when the offeror over/underruns this amount?

Response: This dust suppression allowance is to cover the expense of bringing someone to the project site to suppress dust when unusual circumstance (IE. High wind and excessive dry heat) cause a previously secure soil surface to generate dust. In the event that after hours dust suppression exceeds $50,000 the contract will be modified in accordance with the applicable General Provisions and Special Terms and Conditions. Refer to Amendment 1, Part 6, Statement of Work, for a further explanation regarding what the dust suppression allowance is intended to cover.

10. Question: The solicitation contains option items which will be evaluated in determining the lowest total evaluated price. In this regard, the evaluation criteria indicate that either option 2 (a) or 2 (b) will be selected depending on which is the most "advantageous" to the government. The evaluation criteria do not indicate how this advantage will be determined by Fluor Daniel Fernald. It is likewise not clear whether all offerors who submit will be evaluated using the same combination of options 2 (a) or 2 (b). Please clarify whether or not all offerors will be evaluated based on the same selection of options 2 (a) or 2 (b), of whether or not different combinations of options will be applied to different contractors.

Response: All offerors will be evaluated based upon the same combination of either Option 2A or 2B.

11. Question: Reference Part 6, Statement of Work, Exhibit B, Pay Item Description, 4.01, Leachate Conveyance System: the operation and maintenance of the Leachate Conveyance System is required by Part 1, Instruction to Offerors, 10.0 B, to be priced for the contract period. Please clarify how the price should be presented; i.e., for the base contract period or should any extension be considered through potential options which extend the contract period.

Response: Refer to Amendment 2, Part 6, Statement of Work, for amended project schedule. All costs associated with schedule extension that is not part of the specific scope of work of Option 1 or Option 3 will be included in the proposed cost for Option 2a and Option 2b. Option 1 does not have any schedule extension related to it.

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Section E - Attachments, delete Attachment 1 in its entirety.

15. Refer to Part 9, Quality Assurance Requirements, Quality Requirements, Paragraph 2.3 on Page 2 of 5, and change Paragraph 2.3 to read:

"Describe the qualifications of the Subcontractor's Quality Inspector."

The following clarifications have been requested:

1. Question: Reference Part 1, Instruction to Offerors, 9.0 Technical Proposal, page 8 of 16, Section 2, Technical Approach and Schedule: Please clarify and expand upon the requested information/content of the offeror's technical approach.

   Response: The format to be utilized is for the Preliminary Safe Work Plan is included in the Subcontractor Safe Work Plan Format Requirements located in Part 7 (Volume II) of the Solicitation .

2. Question: Reference Part 1, Subcontracting Plan: A SB/D Subcontracting Plan is required for this contract, but no minimum SB/D requirement is identified. Please verify that no minimum goals are expected and that the SB/D Subcontracting Plan is not part of the award evaluation.

   Response: There are no specified minimum goals. Rather the Subcontracting Plan must reflect a reasonable and good faith effort to subcontract to small businesses, small disadvantaged business, and small women owned businesses. The Subcontracting Plan will be reviewed for sufficiency but will not be competitively evaluated. Failure to provide a sufficient Subcontract Plan may be grounds for a determination of non-responsiveness.

3. Question: Reference Part 1, Instructions to Offerors, 9.0 Technical Proposal, page 8 of 16, C. Project Team Roles and Responsibilities: requires offerors to "specify all significant lower tier subcontractors by name and address." Typically, agreements are not finalized with lower tier subcontractors until after project award. Further, this contractor often allows other qualified bidders an opportunity to bid portions of lower tier subcontractor work after project award. Will Fluor Daniel Fernald accept changes to our named lower tier subcontractors after project award?

   Response: See Amendment 2 Part 1, Instructions to Offerors; and, Part 4, Special

Terms and Conditions Errata Sheet for clarification.

4. Question: Reference Part 3, General Terms and Conditions, clause a.32, Indemnity: requires the subcontractor to broadly indemnify Fluor Daniel Fernald, FERMCO, and the government regardless of the comparative negligence of Fluor Daniel Fernald, FERMCO or government employees or others. This is an extremely one-sided indemnity. It is also noted that in accordance with the Statement of Work at page 2 of 18, the construction site for this activity will have a public road running through it, which will continue to remain open to traffic during a substantial portion of the construction period. This certainly increases the risk of accidents which could trigger this broad liability. Page 10 of 18 of the Statement of Work also states that Fluor Daniel Fernald will be responsible for all monitoring on the project. Given the fact that the subcontractor will not have complete control of the project, would Fluor Daniel Fernald consider negotiating an indemnity which would be fairer with the subcontractor?

Response: Fluor Daniel Fernald will not consider negotiating this clause.

5. Question: Reference Part 4, Special Terms of Conditions, SC-29, Performance of Work by the Subcontractor: requires subcontractor to perform 55 percent of the work at the site. Please clarify how this determination will be made. If the determination is made on a project revenue basis, how will the purchase of materials and rental of equipment be considered? If the subcontractor is directly overseeing the labor of others (i.e., often equipment suppliers can provide equipment operators), how will this be considered? If site activities are supervised and managed by the subcontractor, what would be the requirement for work to be considered performed by others?

Response: Performance of work by the Subcontractor will be calculated and tracked by on a total cost basis. Purchases of material and rental of equipment will be "credited" to that tier of Subcontractor which executes the direct purchase or rental. If operators are supplied with rented equipment, the Subcontractor will be "credited" that dollar amount only if the rental agreement is a unit price agreement for equipment and there is no scope of work included in the rental agreement. The Subcontract shall provide documentation of this relationship upon request.

6. Question: Reference Part 1, Instructions to Offerors, 10.0 Price Proposal, B: Please verify that Pay Item Schedule was not provided in the solicitation and that the Offeror must generate a Pay Item Schedule similar to the Pay

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12. Question: Fluor Daniel Fernald is not required to exercise any of the options until October 15, 1997, in accordance with the special condition clause added by an errata sheet. Please clarify whether or not the exercise of these options is dependent upon funding or what other future events.

Response: Fluor Daniel Fernald is not required to exercise any options. If Fluor Daniel Fernald executes any individual or group of options, it will do so on or before October 15, 1997. Exercise of options is at the sole discretion of Fluor Daniel Fernald and will be exercised only if it is in the best interests of the Department of Energy and Fluor Daniel Fernald, funding and other factors being considered.

13. Question: Will Fluor Daniel Fernald provide Offerors with quantity take-offs as determined by their Engineer?

Response: No.

14. Question: Reference Part 6, Statement of Work, 4.0 Interfaces and Restraints, 4.1: Please clarify the extent of escorting required for deliveries to the project work site.

Response: Drivers delivering materials to the work site will not be required to complete training as defined in Part 8 provided a trained subcontractor escort is maintained at all times. Drivers without proper training will not enter any Radiological controlled area.

Drivers exiting their vehicles will wear the following safety equipment:

- Safety glasses with rigid shields or goggles (safety glasses ANSI Z87.1 listed)
- Hard hat (only ANSI Z89.1 listed)
- Sturdy leather work boots
- Brightly colored safety vest
- Any additional PPE as required by escort

Escorts will brief drivers of any hazards around a delivery vehicle.

15. Question: Will alternate work schedules be permitted, i.e., four days of 10 hours a day, scheduled overtime, scheduled weekends, etc.?

Response: Refer to Part 6, Paragraph 7 for OSDF Project work hours. Alternate work schedules in excess of these hours will be considered if requested and at least four days in advance. Work after dark will not be permitted.

Scheduled overtime excluding split shifts will be permitted. Weekend work excluding Sundays will be permitted. Fluor Daniel Fernald reserves the right to back charge the Subcontractor for costs incurred to support schedule acceleration due to Subcontractor deficiency.

16. Question: Refer to section 02270-16 Table 02270-1 No. 2 of Mechanical Properties: tensile strength, has a "typo", the specified value listed is 300 lb/in. This is for smooth HDPE sheet, textured HDPE sheet is lower. NSC's value is 184 lb/in. Can this please be clarified.

Response: Refer to this Amendment 2 for revision to Table 02270-1.

17. Question: Reference drawing G37A - is the reference to creosote correct?

Response: Yes.

18. Question: Will the successful offeror be responsible to screen materials obtained from on-site sources to meet the material specifications?

Response: The subcontractor shall be responsible for selection of the method and removal of the oversized material larger than <u>two inches</u> in the construction of the compacted clay liner.

19. Question: Reference 13010-3. 3.01 A: Will radioactive material be encountered in on-site borrow areas?

Response: Work in the on-site borrow areas is not included in this contract. Fill and material for the compacted clay liner shall be obtained for the cell excavations included in this contract.

20. Question: Is the cost for the construction of the cell perimeter berm to be the entire berm even including that portion which abuts cell 2? If so, how do we build the berm without excavating cell 2? Or is some portion of the perimeter berm to be included with cell 2? If so, where on the drawings is this shown?

Response: Refer to Drawings G-5B, Rev. 2 and G-15A, Rev. 2, included in this Amendment No. 2 for construction boundaries.

21. Question: Please provide the offerers a cross section of the north entrance road.

000116 Response: Existing north entrance road cross section consists of 6 inches of asphaltic concrete pavement over 6 inches crushed rock base course.

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22. Question: Reference 02110-4, 3.05 B: refers to section 13010 for methods of disposal on site of clear and grub materials. Please clarify the final disposition of these materials.

Response: Final disposition of cleared material shall be in a separate stockpile in the Subcontractor's work area in accordance with the approved Subcontractor's Work Area Plan (Specification Section 02110, 3.03E). Final disposition of grubbed material shall be in the On-Site Disposal Facility (OSDF) by others.

23. Question: Reference 13010-5, 3.06 A: Who is the "CQC Consultant"?

Response: The CQC Consultant is GeoSyntec Consultants, Inc., who is under contract to Fluor Daniel Fernald to perform this function. Note that the Subcontractor shall maintain its own full time QA Representative.

24. Question: Is the material stockpiled in the IMPACTED material stockpiles (East and West) considered "select" material?

Response: Reference Drawing 90X-6000-9-00077, sheet No. 15A; select impacted material shall be obtained from the east and west impacted material stockpiles.

25. Question: Does the material in the East and West IMPACTED stockpile area meet gradations for Impacted granular or Impacted non granular? Define IMPACTED.

Response: These stockpiles are acceptable for use as the protective layer and select material layers included into OSDF - Phase I for the non-granular impacted material. However, material larger than the material specified in Specification Section 02240 shall be removed. Impacted Material shall be as defined in the Impacted Material Placement Plan located in Part 7 of the solicitation.

26. Question:
a. Where is the OSDF BORROW area for clay?
b. Section 02225-3 item 2;01E... when will Bentonite be used?

Response:
a. As specified in the Section 02225, material for the clay liner shall be obtained from the OSDF excavation.
b. The bentonite shall be used to fill perforations in the clay liner created by CQC testing.

27. Question: Cells 1 and 2 are cut and fill. Does the cut material meet the 3" - spec.?

Response: Material excavated from Cells 1 and 2 contains rock fragments larger than 3 inches. Rock fragment larger than 3 inches in fill material and larger than 2 inched for the compacted clay liner material shall be removed from the excavated material as specified in sections 02200 and 02225 respectively.

28. Question:
   a. Where will the clearing and grubbing material be disposed of after stockpiling?
   b. What drawing shows limits of clearing and grubbing?
   c. What are BATTERY limits?
   d. Section 02110-4.305B refers to section 13010. Where is this section?

Response:
   a. Disposition of clearing and grubbing material stockpile shall be by other subcontract.
   b. Clearing and grubbing limits shall be as noted on the construction Drawing 90X-6000-G-00073, sheet 9-5A.
   c. The battery limits are shown on the construction drawings defines the boundary of the entire OSDF project.
   d. Section 13010 is included in Volume II of the subcontract documents.

29. Question: Ref. drawing G-5A legend item 2 notes "subgrade elevation (feet)". Is the outside of the Cell berms, as shown on this drawing considered final grade?

Response: Elevations shown on the construction drawing G-5A are the subgrade elevation unless otherwise noted. Refer to Drawings G-20A and G-21A, Cell Perimeter Details I and Cell Perimeter Details II, respectively, which show the location of subgrade elevations and finished grade elevations beyond the limit of the perimeter berm.

30. Question: Ref. Drawing G-23A detail 15/6 shows Temporary Protection (4" wide ½" thick treated plywood sheets or equivalent) if its temporary, when does it get removed?

Response: These plywood sheets get removed by others during construction for the cell 2 liner.

31. Question: Ref. drawing G-5B are the elevation shown in the cells the bottom of clay?

Response: Yes.

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32. Question: Ref. drawing G-31A plan - Show Drainage Channel Gravity Inlet Structure & Culvert...Drawing G-15A B/G-5A and C/G-5B shows this by others?

Response: The gravity drainage inlet structures (GIS) and culverts shown on Drawing G-5A, G-5B, and G-31A are part of the surface-water management system and part of this subcontract. The leachate transmission system manholes shown south of each GIS shall be constructed by others. HDPE piping from OSDF - Phase I Subcontract shall be tied into piping at the leachate transmission system manholes as shown on the construction Drawing G-15A, Sections B and C.

33. Question: Page 1 of 4 PART 7 Technical Spec. drawing. and specs indicated Chain Link Fence as drawing G-5A...verses actual drawing number of S-5A (structural).

Response: This has been corrected in the Amendment No. 1.

34. Question: Please provide Electrical Specifications for work described in Part 6, Statement of Work :

- Section 2.2.B, *Extended Utilities*...Electrical Service
- Section 2.6.A, *Construction of the Equipment Decontamination facility, including*...Overhead Power.

Response: Refer to Drawings G-37A and G-37B for electrical scope of work related to Equipment Decontamination Facility.

35. Question: Drawing G-5A detail (B)/G-15a shows subgrade elevations but detail (B) on G-15a shows finished grade. Which is correct?

Response: Detail B on Drawing G-15A shows subgrade elevation and finished grade for the liner system, protective layer and select impacted material layer in cell 1 and the intercell berm between cell 1 and cell 2. Drawings G-5A and G-5B show subgrade elevations only. For clarity purposes finished grade elevations are not shown in Drawings G-5A and G-5B.

36. Question: G-15a shows B/L PERIMETER BERM at the HIGH POINT on the berm and sloping inward toward the cell but... Drawing 22-A details show B/L PERIMETER BERM at the LOW POINT of the berm and slopes away from the cell. Which is correct?

Response: The baseline of the perimeter berm is the high point of the berm sloping inward on the construction drawings G-15A and G-22A. For clarity the

protective clay liner is shown only on the construction drawing G-22A.

37. Question: Reference Part 9, Quality Assurance Requirements, paragraph 2.3. Subcontractor is required to have Quality Inspector certified by National Institute for Certification pf Engineering Technologies for installation inspection of Geosynthetic Materials. The Construction Quality Assurance Plan, also in Part 9, states on page 4-8 that the CQC Consultant organization shall provide a Field Monitor with the same certification. In lieu of the fact that Fluor Daniel Fernald will already have a certified CQA Inspector, can the requirement to the Subcontractor be waived?

Response: Refer to Amendment 2 for revision of paragraph 2.3.

38. Question: May the two (2) 48" culverts be installed prior to June 2? If so, must we allow 7 days after removing asphalt for RAD surveying prior to removing base course of road?

Response: No, the two (2) 48" culverts cannot be installed prior to June 2.

39. Question: Please define the radiologically controlled areas (RCA's).

Reponse: There are no radiologically controlled areas anticipated for this scope of work. Reference Part 6 Statement of Work, Section 4.9 for additional information.

40. Question: Is it the intent of the specification to obtain all the clay liner material from on-site? If so, will it be a change of conditions if the clay liner must be obtained from off-site or require processing?

Response: As specified in Section 02225, material for clay liner shall be obtained from the OSDF excavation. Processing of clay shall be done in accordance with Section 02225.

41. Question: Must the material excavated from Cell 1 be stockpiled in the contractor's work area? Can it be stockpiled at future cell areas (cells 2 or 3)? Same for the Cleared & Grubbed chippings.

Response: The material excavated from Cell 1 must be stockpiled in the subcontractor's work area. It cannot be stockpiled at future cell areas. Same for the Cleared & Grubbed chippings. Refer to Drawings G-5B amd G-5C.

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42. Question: Where should the material excavated from Cell 2 be stockpiled?

Response: Refer to Drawings G-5B amd G-5C.

43. Question: Define the limits of the drain tile removal (i.e. Cell 1, Cell 2, whole facility?)

Response: Limits of the drain tile removal are the same as the physical limits for the base contract and for option 1 respectively.

44. Question: Are the other underground utilities shown on sheets SKG04394 #1-#6 part of the drain tile removal?

Reponse: Yes.

45. Question: Is the Cell 2 drain tile removal part of base contract or Cell 2 option?

Response: Drain tile removal within the excavation limits of the base scope of work is part of the base contract. Drain tile remove within the excavation limits of option 1 scope of work is part of option 1.

46. Question: Is it the intent of the specification to mix bentonite with on site soils to obtain 10^{-7} permeability if necessary?

Response: No.

47. Question: May the CQC Consultant begin conformance testing on clay liner prior to excavation and stockpiling?

Response: The CQC Consultant will begin conformance testing on clay liner simultaneous with these activities.

48. Question: Is the construction of Sediment Basin 1A part of this contract?

Reponse: Construction of the Sediment Basin east of the North Entrance Road for Area 1A is <u>not</u> part of this subcontract.

49. Question: Can the Existing North Entrance Road be used for hauling?

Response: Access and traffic control must be maintained as outlined in Part 6, SOW, Section 2.3B. Existing North Entrance Road be used for hauling construction material only; it cannot be used for impacted material.

50. Question: Define the limits of fence removal.

Response: As shown on Drawing G-5A, G-5B, and G-5C.

51. Question: Shall the decon facility be manned by subcontractor full time? Will anyone other than subcontractor be using decon facility?

Response: Only the subcontractor be using decontamination facility until turn over to Fluor Daniel Fernald.

52. Question: What is the proposed haul route for the impacted material stockpile to the landfill cell? What are the decon and RAD survey requirements?

Response: The haul route from the impacted material stockpile to the cell will be proposed by the subcontractor as part of the requirements of Technical Specification Section 13010 - Impacted Material Placement. There are no radiological decontamination requirements because material from the stockpile be below minimum levels for radiological contamination. Dust suppression and road cleaning from hauling operations will still be required.

53. Question: Is it the subcontractor's responsibility to remove the silt from the sediment basin/ditches prior to completion of project? If so, where shall the silt be placed?

Response: the subcontractor shall maintain the sediment basins and ditches in accordance with the Surface Water Management and Erosion Control Plan located in Part 7 of this solicitation. Any silt that is removed will be placed in the impacted material stockpile.

54. Question: Would it be acceptable to submit with our proposal a summary and table of contents for Subcontractor's Corporate Health & Safety Plan instead of the entire document?

Response: The solicitation requirement is to submit the information requested in Part 8, Environmental Health and Safety, and Training Requirements, Section B, Requirements for the Subcontractor's Safety and Health (S&H) Program, Paragraphs 1.2. 1.3, 1.4, 1.5, and 1.7 of this solicitation. Refer to Instructions to Offerors.

AMENDMENT OF SOLICITATION/MODIFICATION OF SUBCONTRACT

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3.
THREE (3)	NOVEMBER 27, 1996	PAGE 1 OF 6

4. ISSUED BY: Fluor Daniel Fernald
P.O. Box 538704
Cincinnati, OH 45253-8704

5. NAME AND ADDRESS OF SUBCONTRACTOR (*Name, street, county, state, and zip code*)	6. AMENDMENT OF SOLICITATION NO.	DATE
PROSPECTIVE OFFERORS	F97P272290	11/27/96
	7. MODIFICATION OF SUBCONTRACT NO.	DATE

8. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 10. The hour and date specified for receipt of Offers ☐ is extended ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods:

(a) By completing Items 5 and 11, and returning ONE (1) copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate [ ] letter [ ] telegram [ ] facsimile which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made [ ] telegram or [ ] letter or [ ] facsimile, provided each makes reference to the solicitation and this amendment, and is received prior to the opening hour date specified.

9. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF SUBCONTRACTS/ORDERS. IT MODIFIES THE SUBCONTRACT/ORDER NO. AS DESCRIBED IN ITEM 10.

A. THIS UNILATERAL MODIFICATION IS ISSUED PURSUANT TO: (*Specify authority*). THE CHANGES SET FORTH IN ITEM 10 ARE MADE IN THE SUBCONTRACT IDENTIFIED IN ITEM 7.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES SET FORTH IN ITEM 10.

C. THIS BILATERAL MODIFICATION IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (*Specify type of modification and authority*)

E. IMPORTANT: CONTRACTOR ☐ is not. ☐ is required to sign this document and return _____ copies to the issuing office.

10. DESCRIPTION OF AMENDMENT/MODIFICATION

REFER TO THE ATTACHED PAGES FOR COMPLETE DETAILS OF THE ADMENDMENT NO. 3

Except as provided herein, all terms and conditions of the document 6 or 7, remain unchanged and in full force and effect.

11A. NAME AND TITLE OF SIGNER (*Type or print*)		12A. FLUOR DANIEL FERNALD A. D. Sablosky Contract Administrator	
11B. SUBCONTRACTOR/OFFEROR (*Signature of person authorized to sign*)	11C. DATE SIGNED	12B. (*Signature*)	12C. DATE SIGNED 11/27/96

FS-F-4002 (09/15/94)

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SUBCONTRACT NO. FSC 597

ON SITE DISPOSAL FACILITY (OSDF) PHASE I

AMENDMENT NO. 3

November 27, 1996

1. Refer to Part 1,"Instructions to Offerors", Section 3.0, Proposal Submittal, and:

   Change "December 6, 1996" to read "December 12, 1996"

   This change is to insure that proposal due date in "Instructions to Offerors" is the same as established in Amendment 2 on the Form FS-F-798, "Solicitation, Offer, and Award" Form.

THE FOLLOWING QUESTIONS HAVE BEEN ASKED

1. Question: Is it the subcontractor's responsibility to strip wooded area topsoil only, all other topsoil to be stripped by others?

   Response: 6 inch top soil within the limit of Area 1A as shown on Reference Drawings 75X-5500-G-00235, 00439, 00440, and 00441 will be stripped by others. Top soil outside the limits of Area 1A shall be stripped and stock piled by the OSDF Phase I Subcontractor as specified in Specification Section 02110.

2. Question: What do the four (4) solid diagonal lines on Sheet G-24A, Detail A, two (2) feet from the supplemental geotextile limits @ the LCS and LDS layer and corridor transitions represent?

   Response: The four (4) solid diagonal lines on Sheet G-24A, Detail A, are the limits of the LDS and LCS drainage corridor materials.

3. Question: May subcontractor use a simultaneous butt fused dual containment HDPE pipe system instead of a staggered welded system?

   Response: Simultaneous butt fused dual containment HDPE pipe system shall not be acceptable. Subcontractor shall butt-fuse carrier pipe and containment pipe individually. Pipe joints do not have to be staggered.

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4. Question: Please clarify the Type, SDR and perforations (if any) for the HDPE temporary culverts.

   Response: HDPE pipe for temporary culvert shall be corrugated HDPE pipe, SPIROLITE 1000, Class 40 or approve equal.

5. Question: How far does the 6" perforated pipe go once it passes through the liner penetration box on the LCS and LDS line? Is it capped?

   Response: As shown on the construction Drawing 90X-6000-G-00082, sheet G-24A, the 6" perforated pipe begins at the first joint (shown as 6" electrofusion coupler - typical) inside the cell after passing through the pipe penetration box goes up to the beginning of the drainage corridor. All perforated pipes are capped at their end inside the cell.

6. Question: Is there a rain flap between Cell 1 and Cell 2?

   Response: Yes

7. Question: Do all subcontractor employees who work on site need to be U.S. citizens?

   Response: Yes.

8. Question: Will low ground pressure vehicles (i.e. no more than 4.5 psi) be allowed on the GCL?

   Response: No.

9. Question: What is the length and width of the impacted runoff catchment area?

   Response: As shown on the construction drawings G-15A and G-22A, minimum dimensions are 110 ft plus cell slope in the north-south direction and 250 ft in the east-west direction.

10. Question: Are Subcontractor personnel required to have the 30 hour OSHA Outreach Training? If yes, Plans State Training will be provided by Fluor Daniel Fernald. Is the expense covered by Fluor Daniel Fernald or the Subcontractor?

    Response: Refer to Part 8 - Safety & Health and Training Requirements, Section C, 1.11. The field supervision (positions as listed) for the prime

contractor or any lower tier subcontractors must complete this training. The training will be provided by Fluor Daniel Fernald at no cost to the subcontractor(s). Any expense for personnel attending the training is the responsibility of the subcontractor(s).

11. Question: When pipe penetration boxes are fabricated, should fabricator weld the 10" pipe stub into outlet, will this be done in the field?

Response: The 10 inch containment pipe at the pipe penetration box shall be shop fabricated and not welded in the field.

12. Question: Specifications require grinding (02770-9, 3.02E) 20 minutes prior to welding. This is fairly restrictive.

Response: Existing specifications are adequate, necessary and remain unchanged.

13. Question: RE: Table 02770-1, Environmental Stress Crack, ASTM D5397500 hrs is a ambitious. We recommend 300 hrs, even though we typically test for 200 hrs.

Response: SEE AMENDMENT No 4 for revisions to TABLE. ~~Existing specifications are adequate, necessary and remain unchanged~~.

14. Question: RE: GCL Specifications

A. Shear Testing Frequency - The frequency of 1/100,000 square feet is very excessive but it can be done. I would suggest this be indicated as single point analysis at one particular shear stress as otherwise we will need to perform three points every 100,000 square feet. If this is a cap testing would be best under the lower normal load of 5 psi and if a liner the higher normal load 45 psi, however, as indicated in Section 2.01 Products, part E.2.f - direct shear test duplicates - a load of 20 psi (middle of the road) may be desired.

Response: SEE Amendment No 4 for revisions to table ~~Existing specifications are adequate, necessary and remain unchanged.~~

B. Shear Testing Duplicates - Section 2.01 Products, part E.2.1 - direct shear test duplicates - there appears to be a typographical error as they indicate that duplicate tests should be performed at "20 points per square inch". I would interpret this to mean "20 pounds per

square inch" but this should be clarified. While obtaining a clarification, the residual issue could be investigated a little bit further as well.

Response: Specification section 02772, paragraph 2.01 E.f, should read "pounds per square inch" instead of "points per square inch".

C. Table 02772-1 Nonwoven Geotextile - The nonwoven geotextile of the Bentofix and likely any other needle punched GCL will not exhibit the mechanical properties specified. Prior to incorporation into the final GCL product, the nonwoven is a very loosely needled product with a grab tensile strength on the order of 20 lbs. The properties specified appear to be those of a production nonwoven geotextile - not a component of a needle punched GCL.

Response: It is not the intention of the specifications to limit GCL to only one type of geotextile. More information will be forthcoming in a later amendment.

15. Question: RE: Attachment 10, part 8 of Volume 1. Subcontract training and medical schedule locations. What training applies to GCL Installers.

Response: Attachment 10 of Part 8 - Safety & Health and Training Requirements lists the times and weekdays that various training is offered by Fluor Daniel Fernald. Proposers must refer to all sections of Part 8 including Section D - Project Specific Health & Safety Requirements Matrix to determine applicable training. Attachment 10 is for scheduling purposes after award.

16. Question: When will the temporary leachate line "by others" be completed?

Response: The temporary leachate line (from manhole 3 to the lift station) will be installed by June 30, 1997. The Leachate Conveyance System is anticipated to be operational between July 1, 1997 and July 31, 1997.

17. Question: In which pay item should the cost of the cell access road be included? What is the length of the cell access road and will it have to be removed at the completion of this project?

Response: The cost of the cell access road should be in Pay Item 3.03. The length of the cell access road is as determined by the subcontractor -

reference note 17 on drawing G-5B. The cell access road is to remain after the completion of this project.

18. Question: Is the cost of supplying and installing the supplemental geotextile over the protective layer to be included in the cost of options 2A and 2B?

Response: The supplemental geotextile is beneath the protective layer and is part of the base contract.

19. Question: Is the topsoil, as well as the trees, from the area to be cleared and grubbed to be disposed in the area labeled "Subcontractor Work Area? Will this topsoil be checked by radiation technicians in a similar manner to the topsoil in the Cell 1 and Cell 2 areas prior to this project? Will it be treated as "impacted soil"?

Response: The topsoil, as well as the trees, from the area to be cleared and grubbed are to be stockpiled (disposed of) in the area labeled "Subcontractor Work Area". The topsoil will be checked by Radiological Technicians prior to this project. This topsoil will not be treated as impacted material.

END OF AMENDMENT NO. 3

AMENDMENT OF SOLICITATION/MODIFICATION OF SUBCONTRACT

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3.
FOUR (4)	December 6, 1996	PAGE 1 OF 9

4. ISSUED BY: Fluor Daniel Fernald
P.O. Box 538704
Cincinnati, OH 45253-8704

5. NAME AND ADDRESS OF SUBCONTRACTOR (*Name, street, county, state, and zip code*)	6. AMENDMENT OF SOLICITATION NO.	DATE
PROSPECTIVE OFFERORS	F97P272290	10/24/96
	7. MODIFICATION OF SUBCONTRACT NO.	DATE

8. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☑ The above numbered solicitation is amended as set forth in Item 10. The hour and date specified for receipt of Offers ☒ ~~is extended~~ ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods:

(a) By completing Items 5 and 11, and returning ONE (1) copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate [ ] letter [ ] telegram [ ] facsimile which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made [ ] telegram or [ ] letter or [ ] facsimile, provided each makes reference to the solicitation and this amendment, and is received prior to the opening hour date specified.

9. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF SUBCONTRACTS/ORDERS. IT MODIFIES THE SUBCONTRACT/ORDER NO. AS DESCRIBED IN ITEM 10.

A. THIS UNILATERAL MODIFICATION IS ISSUED PURSUANT TO: (*Specify authority*). THE CHANGES SET FORTH IN ITEM 10 ARE MADE IN THE SUBCONTRACT IDENTIFIED IN ITEM 7.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES SET FORTH IN ITEM 10.

C. THIS BILATERAL MODIFICATION IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (*Specify type of modification and authority*)

E. IMPORTANT: CONTRACTOR ☐ is not. ☐ is required to sign this document and return _____ copies to the issuing office.

10. DESCRIPTION OF AMENDMENT/MODIFICATION

REFER TO THE ATTACHED PAGES FOR COMPLETE DETAILS OF THE AMENDMENT NO. 4

Except as provided herein, all terms and conditions of the document 6 or 7, remain unchanged and in full force and effect.

11A. NAME AND TITLE OF SIGNER (*Type or print*)		12A. FLUOR DANIEL FERNALD A. D. Sablosky Contract Administrator	
11B. SUBCONTRACTOR/OFFEROR (*Signature of person authorized to sign*)	11C. DATE SIGNED	12B. (*Signature*)	12C. DATE SIGNED 12/06/96

FS-F-4002 (09/15/94)

SOLICITATION NO. F97P272290

SUBCONTRACT NO. FSC 597

ON SITE DISPOSAL FACILITY (OSDF) PHASE I

AMENDMENT NO. 4

December 6, 1996

1. Refer to Part 1, Offer Section, Section 4, "Instructions to Offerors", Paragraph 17.0, Pre-Award Survey, and add the following:

"G. To be considered responsible, an offeror and its lower tier subcontractors must be able to demonstrate to the satisfaction of Fluor Daniel Fernald that it has a record of safe construction performance as demonstrated by a current workers compensation insurance experience modification rate (EMR) of less than or equal to 1.05; or the trend for the past three years is downward and none of the past three years had an EMR greater than 1.25; or for subcontractors that are too small, too new or self-insured, has an OSHA recordable incident rate of less than or equal to 12 injuries and illnesses per 200,000 man hours for the past calendar year. For lower tier subcontractors who are not known during the Pre-Award Survey, OSDF Subcontractor must be able to demonstrate after award of the OSDF Subcontract that its lower tier subcontractors meet the above safety criteria."

2. Refer to Part 6, "Statement of Work", Paragraph 4.9, and:

a. delete last sentence "This paragraph does not apply to the placement of selected impacted material ."

b. Add the following:

"Impacted material included in Options 2A and 2B shall be soil from the impacted material stockpiles and/or flyash from the active flyash pile. It is not anticipated that the handling and placement of the impacted material will require training beyond the requirements specified in Part 8, 'Environmental Health and Safety, and Training Requirements'."

3. Refer to Part 6, "Statement of Work", and add Paragraph 4.11 as follows:

"4.11 A temporary access road will be constructed by others from the existing North Entrance Road to the east boundary of the FEMP Process Area. The purpose of the road will be to allow site access for other subcontractors to the FEMP Process Area. The temporary access road will be completed by April 30, 1997. This road will be located just north of the Sedimentation Basin that is part of the scope of work for the OSDF Phase I Subcontract. The following is provided for the coordination purposes of the OSDF Phase I Subcontractor.

Reference Attachment 1 (Partial Plan, Construction Drawing 90X-6000-G-0075, Sheet No. G-5C) to Amendment No. 4. The temporary access road will

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be isolated from the OSDF Subcontractor's Work Area by fencing along the north and south edges of the road. This fencing shall be installed and maintained by others. Cleaning and dust control of the temporary access road will be by others.

Installation and maintenance of temporary fencing, gates, or signage along the existing North Entrance Road as required for construction shall be the responsibility of the OSDF Phase I Subcontractor. North and south bound traffic on the existing North Entrance Road will have the right of way. The requirements in Part 6 - Statement of Work pertaining to Existing North Entrance Road access, crossing existing roads that are in use, traffic control, and vehicular traffic on existing roads apply."

4. Refer to Volume II, Part 7, "Technical Specification and Drawings", Specification Section 02230, "Road Construction", Paragraph 2.01.B. and change to read:

"B. Furnish subbase material and base material consisting of crushed rock or angular soil free of organic matter or other deleterious materials, which meets the requirements of Item 304.02 and 703.04 of the Ohio DOT Specifications."

5. Refer to Volume II, Part 7, "Technical Specification and Drawings", Specification Section 02770, "Geomembrane Liner", Table 02770-1 and change Note 2 to read:

"2. Time-to-failure at a tensile stress of 30 percent of the tensile yield strength."

Note: This changes a response included in Amendment No. 3.

6. Refer to Volume II, Part 7, "Technical Specification and Drawings", Specification Section 02772, "Geosynthetic Clay Liner", Paragraph 1.04 A.3, and insert the following subparagraphs:

"4. Manufacturer's requirements for any geotextile component of the geosynthetic clay liner. At a minimum, mass per unit area, grab strength, and grab elongation are to be required.

5. Certification that manufacturer's requirements for geotextile components are met."

Renumber existing subparagraphs "4." and "5." to be "6." and "7." respectively.

Note: This changes a response included in Amendment No. 3.

7. Refer to Volume II, Part 7, "Technical Specification and Drawings", Specification

Section 02772, "Geosynthetic Clay Liner", Paragraph 2.01, "Geosythetic Clay Liner D.", and:

- change subparagraph 6. to read:

"6. Geotextile backings are woven and nonwoven materials, manufactured with polypropylene or polyester material, and conforming to the manufacturer's requirements."

- Delete subparagraph "8."

- Renumber existing subparagraph "9." to "8.".

Note: This changes a response included in Amendment No. 3.

8. Refer to Volume II, Part 7, "Technical Specification and Drawings", Specification Section 02772, "Geosynthetic Clay Liner", Paragraph 2.02, Manufacturing Quality Control". Change subparagraph B to read:

"B. Perform manufacturing quality control test to demonstrate that geosynthetic clay liner properties conform to the stated requirements. Note, the hydraulic conductivity and direct shear may be performed by either the subcontractor or the manufacturer.

Test	Procedure	Frequency
bentonite content	ASTM D 5261	1/40,000 ft^2
bentonite moisture content	ASTM D 4643	1/100,000 ft^2
bentonite free swell	ASTM D 5890	1/100,000 ft^2
grab strength	ASTM D 4632	1/40,000 ft^2
grab elongation	ASTM D 4632	1/40,000 ft^2
bentonite hydraulic conductivity	GRI-GCL2	1/100,000 ft^2
direct shear	ASTM D 5321	1/100,000 ft^2"

Note: This changes a response included in Amendment No. 3.

9. Refer to Volume II, Part 7, "Technical Specification and Drawings", Specification Section 02772, "Geosynthetic Clay Liner", Table 02772-1, "Required Geosynthetic Clay Liner Property Values", and:

- Delete the header "Woven Geotextile" and all property entries thereunder.

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- Delete the header "Nonwoven Geotextile" and all property entries thereunder.

- Change Note 2 to read: "Not used".

- **Note: This changes a response included in Amendment No. 3.**

10. Refer to Construction Drawing 90X-6000-G-0075, Sheet No. G-5C, Rev. 0, dated October 14, 1996 and incorporate the following changes which are required to accommodate the construction of the temporary access road:

    a. Move subgrade control points 1372, 1373, 1375, 1376, 1378, 1379, 1380, 1381 and 1382 by ten feet south.

    b. Change subgrade control point 1377 to N-481, 134; E-1350, 670.

11. Refer to Amendment No. 3, Question No .9, and change to read:

    "Question: What is the length and width of the impacted runoff catchment area?

    Response: As shown on Construction Drawings G-15A and G-22A, minimum dimensions are 110 ft plus cell slope in the east-west direction and 250 ft in the north-south direction."

THE FOLLOWING QUESTIONS HAVE BEEN ASKED

1. Question: Section A on Drawing G-15A shows an intercell berm between cells A and B. Where is this berm shown on Drawing G-5A?

   Response: Construction Drawing G-5A shows the **subgrade plan** for the liner and the intercell berm and intentionally does not show the intercell berm to add greater clarity to the subgrade plan. Construction Drawing G-15A shows the liner and intercell berm construction.

2. Question: What is the drain tile material and size?

   Response: Existing underground drain tiles are 10 inch clay pipes.

3. Question: May clearing and grubbing begin prior to Chain Link Fence and sediment basins being 100% complete?

   Response: Clearing and grubbing may begin prior to the completion of the chain link fence. Clearing and grubbing of the area west of the North Entrance Road may begin prior to completion of the sedimentation pond.

4. Question: D. <u>Table 02772-1 Nonwoven Geotextile</u> - The nonwoven geotextile of

needle punched GCL will not exhibit the mechanical properties specified. Prior to incorporation into the final GCL product, the nonwoven is a very loosely needled product with a grab tensile strength on the order of 20 lbs. The properties specified appear to be those of a production nonwoven geotextile - not a component of a needle punched GCL.

Response: See changes to Specification Section 02772 in this Amendment No. 4.

5. Question: Will areas of permanent vegetation require topsoil respreading?

Response: No.

6. Question: Subbase aggregate material is required at the Impacted Material Haul Road, Access Corridor, and Cell Access Road. Provide a specification for this material.

Response: Refer to changes in Specification Section 02230 Paragraph 2.1.B, in this Amendment No. 4.

7. Question: Provide the southerly limit (Grid Coordinate or dimension) for placement of the 2 foot Select Impacted Material layer.

Response: Refer to Construction Drawings G-15A and G-22A and revise as follows:

"Limits of the Select Impacted Material layer in OSDF Cell I shall be as follows:
A. North Slope- top of perimeter berm elevation
B. East Slope- top of perimeter berm elevation
C. West Slope- top of perimeter berm elevation except at the impacted runoff catchment area.
D. South slope- 5 feet north of the intersection of the 2% base slope and 4 to 1 intercell berm slope, except at the impacted runoff catchment area."

8. Question: Provide either grid coordinate or location for the tie-in to the potable water supply.

Response: Grid coordinate for potable water supply is as shown on Construction Drawing G-2A.

9. Question: Will the utility lines along the North Entrance Road be de-engerized or otherwise shut off by FDF prior to their abandonment?

Response: Yes, the utility lines along the North Entrance Road will be de-engerized or otherwise shut off by FDF prior to their abandonment.

SOLICITATION NO. F97P272290
SUBCONTRACT NO. FSC 597
ON SITE DISPOSAL FACILITY (OSDF) PHASE I
AMENDMENT NO. 4

10. Question: Will haul road speeds within the grading limits for scrapers / off-road trucks be limited to 10 MPH?

Response: Haul road speeds within the grading limits for scrapers / off-road trucks will be limited to 10 MPH.

11: Question: Referencing Option 2A, Pay Item Description 10.01, will the flyash be used as protective cover in the catchment area and on top of the intercell berm and beyond into Cell 2, i.e., the entire layer?

Response: Protective layer in the impacted runoff catchment area shall be granular material as specified in Section 02710. Limits of the impacted runoff catchment area shall ve as shown on the Construction Drawing G-22A and G-23A. Limits of the select impacted material layer are defined in question 90 above.

12. Question: Pay Item Descriptions 10.0 and 11.0 indicate a one foot "Protective layer" followed by a two foot protective layer of impacted material. A total of three feet in thickness.

Drawing 15A shows a one foot "Protective Layer" followed by a three foot layer of impacted material. A total of four feet in thickness. Please clarify.

Response: The Pay Item Description and Sections 2.11 and 2.12 of Part 6 are correct and control.

13. Question: SPR 12-9 and SPR 12-10 are reference in Part 8 of the solicitation. Please provide.

Response: SPR 12-9 and SPR 12-10 are included in this amendment.

14. Question: Would FDF supply a Pay Item Description with columns for placing price as a convenience to offerors in submitting a Pay Item Schedule.

Response: A Pay Item Description with columns for placing price is attached as a convenience to offerors in submitting a Pay Item Schedule.

15. Question: Drawing G-31A, Note 9 states in part: "Type D Rip Rap shall be placed to the North/South limits as shown in Detail 31 and to the East/ West limits shown in Section B." Please clarify the limits shown in Section B.

Response: Refer to construction drawing G-31A Note 9, Line 3: East - West limits of the riprap at the gravity inlet structure (GIS) shall be as shown on section A instead of section B. Riprap slope east of the gravity inlet

structure shall be 3 horizontal to 1 vertical. The south limit of riprap at the GIS shall be the limit of manhole cover slab grading. The north limit of riprap at GIS shall be 20 feet north of control point 8*07 and 8*08.

The construction phase drainage channel as shown in detail 28 shall begin from the control point 1162 (refer to construction drawing G-5A) and shall continue south to GIS 5 as shown on construction drawing G-5B.

Add the following notes for control points on drawing G-05A:

- Control Point No. 1302 - begin East drainage channel.
- Control Point No. 1303 - begin North drainage channel.
- Control Point No. 1186 - end North drainage channel and daylight at existing grade.
- Control Point No. 1193 - begin West drainage channel.

16. Question: Please clarify type of Rip Rap to be used.

Response: Riprap in this subcontract shall be Type D except in the sedimentation basins which shall use Type C riprap. Riprap shown on sheet G-30A shall be type D. Riprap shown on sheet G-41a shall be type C.

17. Question: Drawing G-5C and Sections A and B on Drawing G-41A detail the Sedimentation Basin Principal Spillway and Drainage Culverts. The extent of the Rip Rap (width) cannot be determined from the drawings. Please clarify.

Response: The riprap outlet protection at the Principal Spillway outlet shall be 9 feet wide at the pipe outlet and 23 feet wide at the southern end of the riprap apron. The length of the riprap apron shall be 35 feet as shown in Section A, Drawing G-41A.

18. Question: Exhibit A, Construction Schedule, Amendment No. 2, calls for Contract Duration of 265 calender days. Based upon a March 11, 1997 Notice to Proceed, the completion date would be December 1, 1997. Options would extend the completion date to December 31, 1997. However, the milestone for placement of impacted materials 2A and 2B would necessitate that these options were completed by December 15, 1997 and November 26, 1997 respectively. Please clarify.

Response: Fluor Daniel Fernald's planning schedule for the Base Contract duration (265 calendar days) includes a period of time for demobilization and contract closeout that does not involve field work. Based on demobilization and contract closeout, field work would complete in

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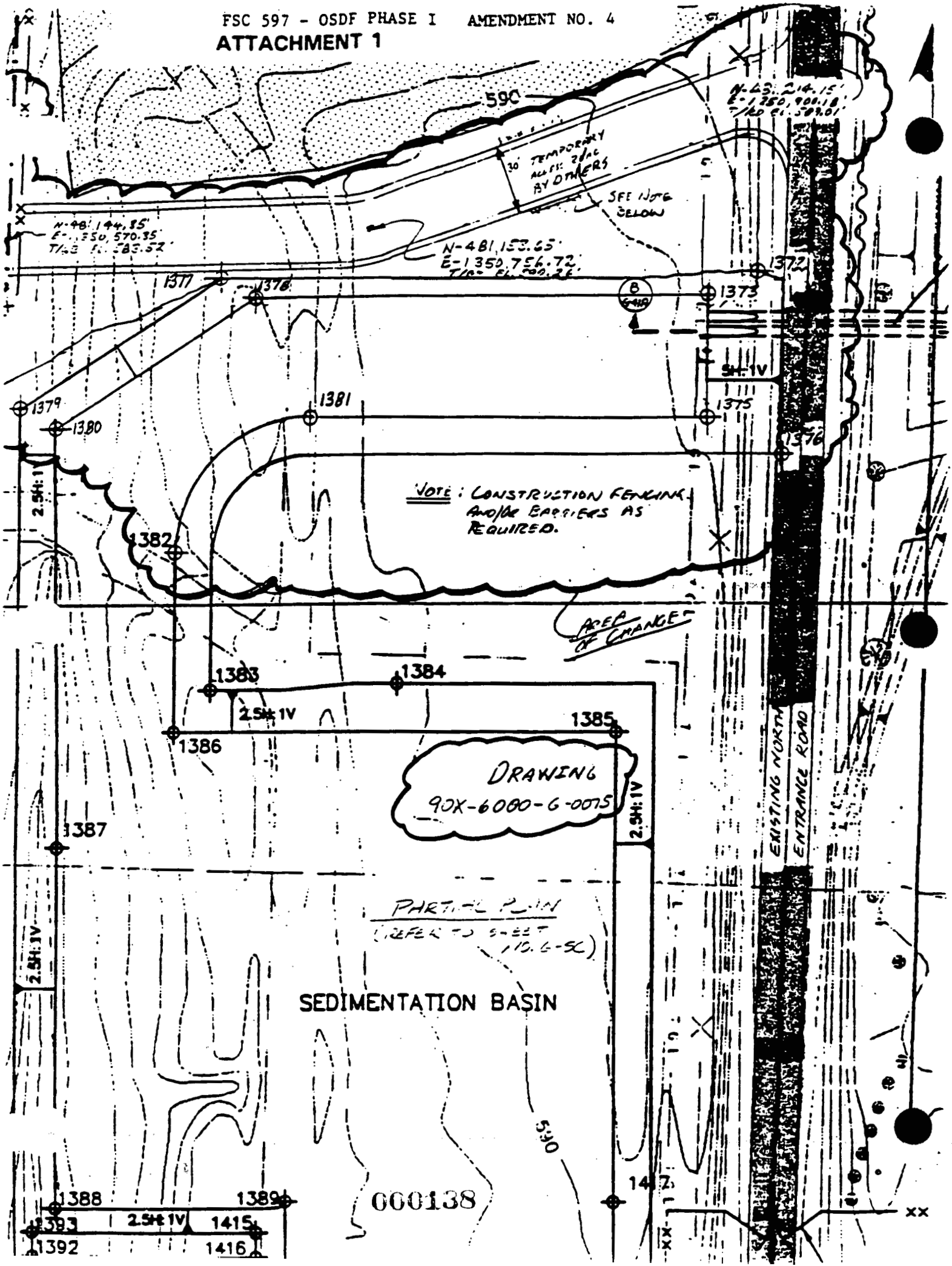
something less than 265 calendar days. Therefore, 265 calendar days from N.T.P. is correct and represents total Base Contract completion (without any options).

The milestones for Option 2A and 2B (61 and 42 calendar days after October 15, 1997 respectively) are activity completion milestones for those specific options, not contract completion milestones. The period of time after those completion milestones (the 295 calendar days from Notice to Proceed less the completion milestone dates) may also include time for demobilization and contract closeout that is not related to Option 2A or 2B field work.

Based on Fluor Daniel Fernald's planning schedules, the milestone completion of Option 2B could possibly have a date that would precede the Base Contract Completion date, depending upon the amount of time for demobilization and contract closeout that is included. The durations and completions milestones as issued in Amendment 2 are correct. It is the Offeror's responsibility to submit a schedule that satisfies the listed durations for contract or milestone completion.

END OF AMENDMENT NO. 4

ATTACHMENT 1



REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) F / WO NO.:	(2) S/C NO.:	(5) P 1 OF 1	(6) DATE
1702	597		7/29/97

(3) S/C TITLE:	(11) RCI NO.:
On Site Disposal Facility Phase I	—

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [ ] M [ ] C [X] OTHER [ ]	Fiberglass Sheet Overspray Siding on Equipment Decontamination Facility	1702-020

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Specification Section 13000, Para. 2.04 (A) and 3.01 (B) 20100-13000	GeoSyntec Doc. No. F96-3520	0	None
Drawing 90X-6000-G-00086 1068	Section B	0	

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

Referenced GeoSyntec document specifies the fiberglass sheet overspray siding to be 3/8" corrugated fiberglass sheets, 36" x 72". This exact specification cannot be purchased, therefore, we propose to purchase 26" x 144" corrugated fiberglass sheets. These sheets will be cut in half in order to meet the length requirement of 72". Specification 13000, Para. 3.01B shall be changed from reading "18 ± 2 inches on center" to "12 ± 2 inches on center." We believe the intent of the specification to be in limiting the overspray from the equipment being decontaminated, and we further believe this change will not in any way diminish the effectiveness of the overspray wall.

CIVIL REVIEW ONLY

RECEIVED AUG 1 8 1997 GeoSyntec

ECDC CONTROLLED COPY NO. 011

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
Steve Brandstetter	Petro Environmental Technologies, Inc.	7/29/97	[signature]	8/12/97
			[signature]	7/29/97

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

In addition to the specification change stated above Drawing No. 90X-6000-G-00086 Rev. 0 Section B shall have the size "(36" x 72")" removed from the enlarged detail identifing the 3/8" corrugated fiber glass sheets.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
[signature]	15 Aug 97	NA

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

PERFORMANCE GRADE: (17) 5 [signature] 8/19/97

CONSTRUCTION CONCURRENCE: [signature] 8/7/97

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: [signature] 12/02/97

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

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) P / WO NO.:	(2) S/C NO.:	(5) P 1 OF 1	(6) DATE
1702	597		7/29/97

(3) S/C TITLE:	(11) RCI NO.:
On Site Disposal Facility Phase I	—

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [ ] M [ ] C [X] OTHER [ ]	Fiberglass Sheet Overspray Siding on Equipment Decontamination Facility	1702-020

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Specification Section 13000, Para. 2.04 (A) and 3.01 (B) 20100-13000	GeoSyntec Doc. No. F96-3520	0	None
Drawing 90X-6000-G-00086 RGB	Section B	0	

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

Referenced GeoSyntec document specifies the fiberglass sheet overspray siding to be 3/8" corrugated fiberglass sheets, 36" x 72". This exact specification cannot be purchased, therefore, we propose to purchase 26" x 144" corrugated fiberglass sheets. These sheets will be cut in half in order to meet the length requirement of 72". Specification 13000, Para. 3.01B shall be changed from reading "18 ± 2 inches on center" to "12 ± 2 inches on center." We believe the intent of the specification to be in limiting the overspray from the equipment being decontaminated, and we further believe this change will not in any way diminish the effectiveness of the overspray wall.

CIVIL REVIEW ONLY

RECEIVED AUG 1 8 1997 GeoSyntec RGB

CDC CONTROLLED COPY NO. C011

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
Steve Brandstetter	Petro Environmental Technologies, Inc.	7/29/97	[signature]	8/14/97
			[signature]	7/29/97

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

In addition to the specification change stated above Drawing No. 90X-6000-G-00086 Rev. 0 Section B shall have the size "(36"x 72")" removed from the enlarged detail identifing the 3/8" corrugated fiber glass sheets.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Daniel Bates	15 Aug 97	

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

PERFORMANCE GRADE: (17) 5 [signature] 8/19/97

(18) CONSTRUCTION CONCURRENCE: [signature] 8/19/97

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

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FS-F-4259 (10/01/96)

C. The equipment decontamination facility sump pump casing, suction flange and discharge flange shall be carbon steel. The pump impeller shall be bronze.

D. The equipment decontamination facility sump pump shall function to a maximum operating temperature of 150°F.

E. The equipment decontamination facility sump pump shall be Multiquip, Inc. ST-2005T, or equal.

F. The equipment decontamination facility sump pump shall be equipped with a 50-ft long submersible cord.

G. Install the equipment decontamination facility sump pump, discharge valve, piping, and wiring in accordance with manufacturer's instructions and as detailed on the Construction Drawings.

2.02 EQUIPMENT DECONTAMINATION FACILITY VALVES

A. The equipment decontamination facility check valve shall be a 1½ inch flanged polyvinyl chloride (PVC) swing check valve with ethylene propylene diene (EPDM) seats rated at 30°F to 120°F, 150 psig mounted in the pump discharge piping at the connection to the dual contained piping.

B. The equipment decontamination facility gate valve shall be a 1 1/2-inch flanged PVC gate valve with EPDM seals, polypropylene plug, rated at 30°F to 120°F, 150 psig mounted in the pump discharge piping downstream of the check valve.

2.03 EQUIPMENT DECONTAMINATION FACILITY DISCHARGE PIPING

A. The equipment decontamination facility discharge piping shall be a 1½ inch leakproof Type 316 flexible stainless steel covered hose with liquid tight fittings to mate with flanged equipment as shown on the Construction Drawings.

2.04 EQUIPMENT DECONTAMINATION FACILITY WIND/OVERSPRAY SHIELD

A. Provide fiberglass reinforced polyester sheets as shown on the Construction Drawings. Provide watertight seal between joints. ← How?

B. Provide pressure-treated boards for use as wood nailers and support posts as shown on the Construction Drawings.

2.10 EQUIPMENT DECONTAMINATION FACILITY GRAVEL

A. Gravel used below the facility road bed and in the facility sump shall meet the material requirements for drainage corridor gravel in Section 02710.

2.11 FLANGE GASKETS

A. Furnish low torque type flange gaskets in accordance with ASTM F 477.

2.12 WATER LINE

A. Water line shall be minimum 2-inch diameter Schedule 40 PVC.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install mechanical materials included in this Section in compliance with the manufacturer's written installation instructions.

B. Attach wind/overspray shield to nailers at 18 ±2 inches on center.

C. Install geotextile cushion and sacrificial geotextile cushion in accordance with Section 02714. Construction quality requirements shall be in accordance with Section 02714.

D. Install geomembrane in accordance with Section 02770. Construction quality requirements shall be in accordance with Section 02770.

E. Excavate trench for water line to a minimum depth of 3 feet. Backfill trench with trench spoils and compact in lifts no greater than 12 inches with hand operated compactor.

3.02 TESTING AND STARTUP

A. Testing and startup of mechanical components shall be in accordance with manufacturer's written instructions.

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 21 July 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Rock Fragment Size		(11)DCN NO.: 1702-019

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02200	Parts2.01.B& 3.08.~~B~~ D	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

Change Specification Section, Section 02200, Part 2.01. B by replacing the second sentence with " Do not allow rock fragments larger than 5 inches for nominal 8 inch loose lifts and 3 inches for nominal 4 inch lifts. "

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Rewrite Specification Section, 02200, Part 3.08.D as follows:

Remove rock particles with a maximum dimension larger than 5 inches for loose lifts with a thickness of 8±1 inches. For loose lifts of 4±1 inches the maximum rock particle size shall be 3 inches, unless otherwise directed to be smaller by the Construction Manager

(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec	(12)FCE / PE DATE: 7/23/97 7/22/97
(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☒YES	(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

ECDC CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine 21 July 97 DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 7/23/97 7/22/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: 07/24/97 DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 21 July 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Rock Fragment Size	(11)DCN NO.: 1702-019	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02200	Parts2.01.B& 3.08.D.	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

Change Specification Section, Section 02200, Part 2.01. B by replacing the second sentence with " Do not allow rock fragments larger than 5 inches for nominal 8 inch loose lifts and 3 inches for nominal 4 inch lifts. "

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Rewrite Specification Section, 02200, Part 3.08.D as follows:

Remove rock particles with a maximum dimension larger than 5 inches for loose lifts with a thickness of 8±1 inches. For loose lifts of 4±1 inches the maximum rock particle size shall be 3 inches, unless otherwise directed to be smaller by the Construction Manager

(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec

(12)FCE / PE: 7/23/97 DATE: 7/22/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☒YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

CDC CONTROLLED
COPY NO. 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine 21 July 97 DATE:

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 7/23/97 7/22/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: 07/24/97 DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

FS-F-4259 (10/01/96)

JUL 29 1997
OCB

ORIGINAL

ENTERED

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WP / WO NO.:	(2) S/C NO.:	(5) P 1 OF 1	(6) DATE
1702	597		7/17/97

(3) S/C TITLE:	(11) RCI NO.:
On Site Disposal Facility Phase I	—

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [ ] M [ ] C [X] OTHER [ ]	Soil Stabilization	1702-018

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Specification Section 02225, Para. 2.02 (E)		0	None

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

Civil Review Only

Permit use of Hamm Raco 550 Soil Stabilizer with water spray bar attachment. The rotors for both the Raco 550 and 250 Models are the same specifications and dimensions. Attached are technical specifications for each model. The Raco 550 has more safety features and better tractive and processing watts that can improve the clay processing and rock picking operations.

ECDC CONTROLLED COPY NO 011

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
Dave Williams	Petro Environmental Technologies, Inc.	7/17/97	[signature]	7/24/97

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

Comments on Page 2

This equipment change affects parts of the earthwork plan including rock picking and compaction. An addendum to the earthwork plan must be prepared and approved by OEPA prior to use in clay processing.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Ranil Badar	25 July 97	N/A

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

PERFORMANCE GRADE: (17) 4 [signature] 7/28/97

(18) CONSTRUCTION CONCURRENCE: [signature] 07/29/97

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: [signature] 12/02/97

FS-F-4259 (10/01/96) ORIGINAL

1272

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE - 2 DGB

(1) WP / WO NO.:	(2) S/C NO.:	(5) P 1 OF 1	(6) DATE
1702	597		7/17/97

(3) TITLE:	(11) RCI NO.:
On Site Disposal Facility Phase I	—

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [ ] M [ ] C [X] OTHER [ ]	Soil Stabilization	1702-018

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Specification Section 02225, Para. 2.02 (E)		0	None

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

Civil Review Only

Permit use of Hamm Raco 550 Soil Stabilizer with water spray bar attachment. The rotors for both the Raco 550 and 250 Models are the same specifications and dimensions. Attached are technical specifications for each model. The Raco 550 has more safety features and better tractive and processing controls that can improve the clay processing and rock picking operations.

CDC CONTROLLED
COPY NO.
COII

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
Dave Williams	Petro Environmental Technologies, Inc.	7/17/97	[signature]	7/24/97

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

Comments on Page 2

This equipment change affects parts of the earthwork plan including rock picking and compaction. An addendum to the earthwork plan must be prepared and approved by OEPA prior to use in clay processing.

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Daniel Bodine	25 July 97	

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

PERFORMANCE GRADE: (17) 4 [signature] RE-Effective 7/28/97

(18) CONSTRUCTION CONCURRENCE: [signature] 07/29/97

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO

FS-F-4259 (10/01/96) ORIGINAL

JUL 28 1997 DGB

ENTERED

Review of the attached technical data indicates that the RACO Model 550 Soil Stabilizer is essentially a more powerful, 4 wheel drive, air conditioned stabilizer with a slight larger range of options, made by the same manufacturer. Therefore, the Model 550 is judged functionally equivalent to the RACO Model 250 Soil Stabilizer and in accordance with project specifications and design criteria.

Daniel Bodine, P.E., Resident Engineer

Daniel Bodine 25 July 97

HAMM COMPACTORS Inc.

July 11, 1997

Base Construction, Inc.
7500 Industrial Parkway
Plain City, Ohio 43064
Attn: Mr. Chris Anspaugh, V.P.

Re: RACO 550 and 250 Reclaimer rotor specification.

Dear Chris,

This will serve to inform you concerning the above subject.

The rotors for both the RACO 550 and 250 models are the same specifications and dimensions.

There is a difference in the prime movers such as horse power, weight and the propel systems.

I hope this helps with you request, should you have any questions please call.

Best regards,

Phillip W. Wise, V.P.
RACO Division
HAMM Compactors, Inc.

2611 East Pioneer Drive
Irving, Texas 75061
Tel. (214) 554-6690
Fax (214) 554-7211

HAMM

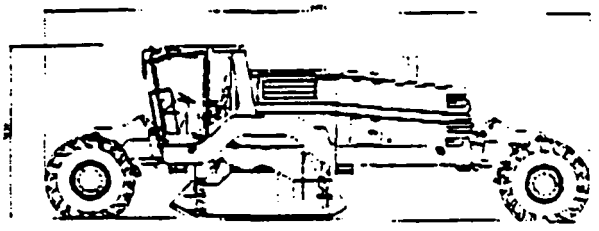
Technical data	RACO 550
Weights	
Operating weight with cab	55.125 lbs.
Dimensions	
Total length	386"
Total width	117"
Height with cab	125"
Turning radius inside	197"
Turning radius outside	359"
Engine	
MWM-Deutz Diesel, 4-stroke, water-cooled, 8 cylinders	Type TBD 516 V8 Turbo
Performance to ISO 3046/1	440 kW/600 HP at 2000 rpm
Air filter	FARR
Fuel tank	1.100 ltr
Drive	
Hydrostatic drive, infinitely variable, electrically controlled, 2 speed transmission, planetary shaft with lamel brakes and differential lock	
Speed	
low	0-1.9 mph
high	0-9.5 mph
Rotor	
Hydrostatic drive, electrically controlled, infinitely variable	

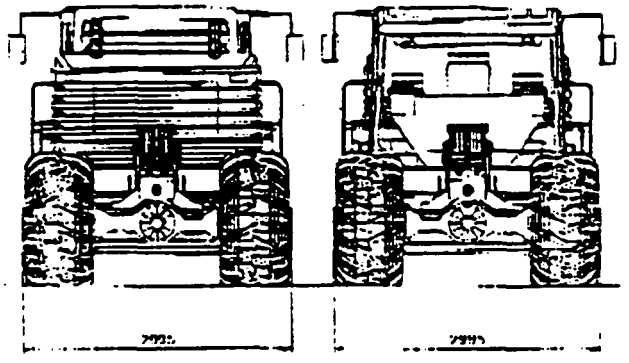
Rotor	universal		tubular
	Stabilisat.	Recycling	Recycling
Working width	92"	92"	92"
Working depth	20"	20"	18"
Diameter	59"	59"	54"
Number of spades	87	-	-
Number of teeth	-	174-261	242
Revolution rpm	100-200	100-200	100-200

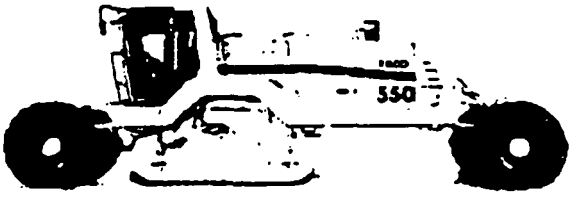
Steering	
4-wheel-drive with 3 steering modes controlled from the instrument panel.	
Brakes	
Service brake: hydrostatic and dynamic Parking brake: hydrostatic multiple disc brake in oil basin	
Tires	
Front/Rear	28LR26 TL
Electrical system	
Operating voltage 24 V, 2 batteries of 160 Ah each	
Standard equipment	
Comfortable cab. Airconditioning. Working lights at front and rear. Inside and outside mirror. ROPS. Universal rotor for stabilisation or recycling. Noice reduced engine hood. Double driving stand with suspended seat. Complete instrument panel. Emergency-stop button. Disconnectable rotor. 2 supplementary emergency stop buttons from each side of the frame. Back-up alarm. Rotor and mixer chamber made of abrasion proof special steel. Mixer door hydraulically adjustable. Rotor depth control. Automatic engine shut-off device. Inclined positionning of the rotor.	
Optional equipment	
Tubular rotor. Water and emulsion spray system with electronic control and digital display. Special paint	

Description:
Soil stabiliser / Asphaltrecycler

RACO 550







Technical data according to CECE
All specifications are subject to change without notice or obligation

RACO 550/0 95 E1

SOIL STABILIZER ASPHALTRECYCLER

RACO 550

Machine including optional equipment

High engine performance with optimum air filter cleaner

4-wheel drive and 4-wheel steering

Working possibility in both directions

Great maniability

Rotor doors hydraulically adjustable

Rotor revolution adjustable and infinitely variable

Operating depth max. 520 mm

High performance through an electronic regulation system

Rapidly exchangeable spades and point teeth

Conversion into recycler only by exchange of tools or by changing the rotor

Low repair costs

Rotor and mixer chamber made of abrasion proof special steel

Rotor drive by 2 hydrostatic motors, disconnectable

Cutting angle automatically adjustable independently of soil irregularity

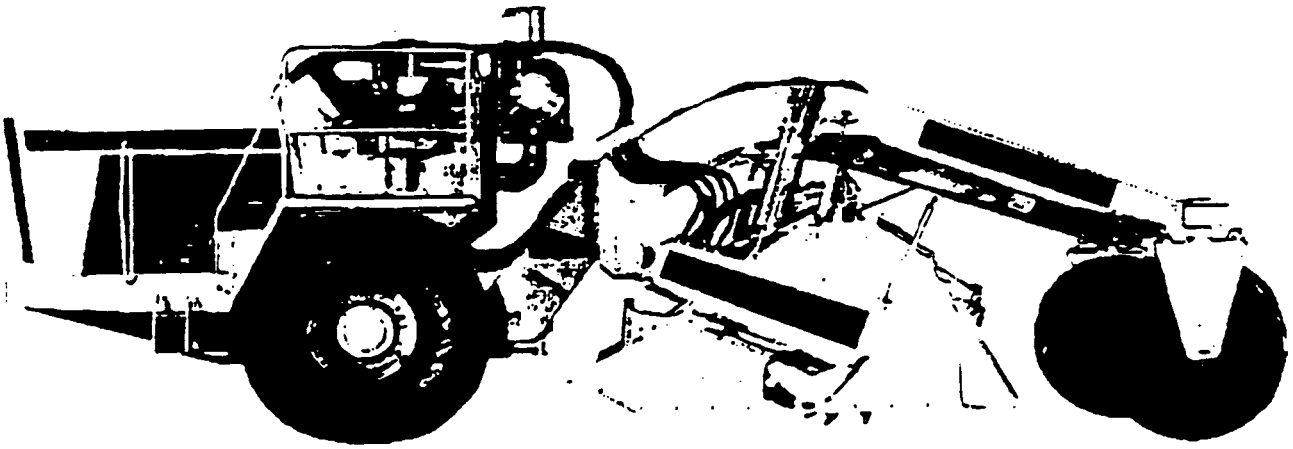
Adjustable cutting angle independent of machine position

Spring suspended double driving stand

HAMM

SOIL STABILIZER
ASPHALT RECYCLER

RACO 250



Machine including optional equipment

High engine performance with Farr heavy duty air filter

Rear wheel steering

Oscillating articulated frame

Rear tires with adjustable track

Rotor depth control

Rotor drive by 2 hydrostatic motors

Rotor and mixer chamber made of abrasion proof special steel

Mixer chamber rear door hydraulically adjustable

Infinitely variable rotor speed

Operating depth max. 20 inch (500 mm)

Easy and quick change of teeth and points

Low repair costs

Three braking systems

Conversion into asphalt recycler only by change of tools

HAMM

HAMM

Technical data — RACO 250

Weights

Operating weight with cab	42550 lbs	19300 kg
Operating weight without cab	41460 lbs	18800 kg

Dimensions

Total length	29'2"	8900 mm
Total width	9'10"	2990 mm
Height with cab	11'15"	3400 mm
	Articulated	All-wheel
Turning radius inside	22'11"	10'6"
Turning radius outside	32'10"	20'4"

Engine

MWM-Deutz Diesel, 4-stroke water-cooled, 8 cylinders	Type TBD 234 V8 Turbo
Performance to DIN 6271	339 kW/461 HP at 2000 rpm
Performance to SAE J 1349	354 kW/475 HP at 2000 rpm
Air filter	FARR
Fuel tank	211 gal

Drive

Hydrostatic drive, infinitely variable, electrically controlled, 2 speed transmission, planetary shaft with disc brakes and differential lock

Speed

		low		high
1st gear	mph	0-2.5	km/h	0-4.3
2nd gear	mph	0-6.2	km/h	0-11.8

Rotor

Hydrostatic drive, infinitely variable, electrically controled

		stabilization		recycling
Working width		94.5" (2400 mm)		94.5" (2400 mm)
Working depth		16.5" (420 mm)		16.5" (420 mm)
Diameter		53.2" (1350 mm)		53.2" (1350 mm)
Number of spade teeth		84		—
Number of point teeth		32		140
Revolutions, inf. variable	rpm	0-155		0-155

Steering

Articulated frame ±30°, oscillating angle ±15°
Hydrostatic servosteering and rear wheel steering

Brakes

Service brake: hydrostatic
Pedal brake: hydrostatic oil cooled disc brakes
Parking brake: mechanical disc brake

Tires

Front	750/65 R 26XM27TL
Rear	19.5 LR 24XM27

Electrical system

Operating voltage 24 V, 2 batteries of 180 Ah each

Standard equipment

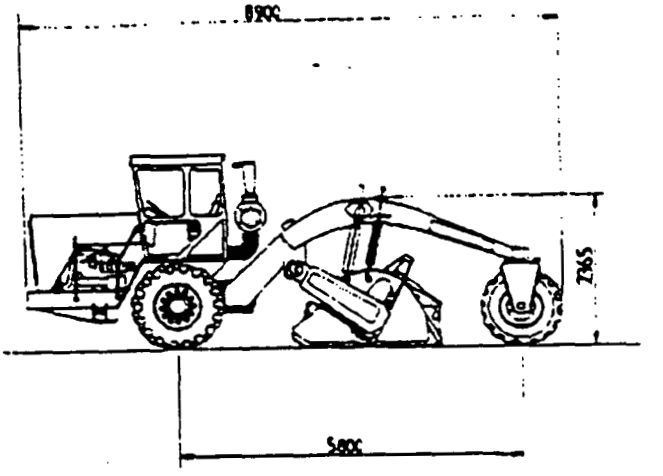
Rotor for stabilization or asphalt recycling. Operator's stand with hydraulically suspenced seat. Complete instrument panel including hour meter, emergency-stop button. Back-up alarm. Security switch for rotor stop. Rotor and mixer chamber made of abrasion proof special steel. Mixer chamber rear door hydraulically adjustable. Mechanical rotor depth control. Rapidly exchangeable teeth and points. Automatic engine shut-off device.

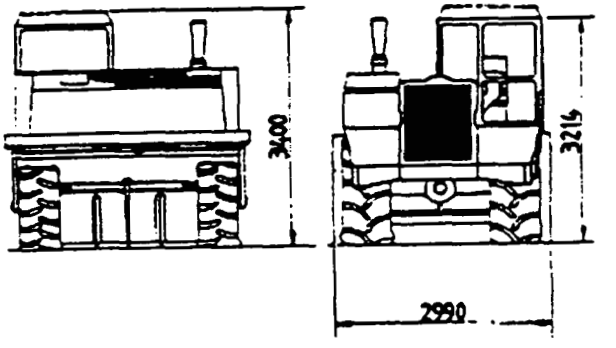
Optional equipment

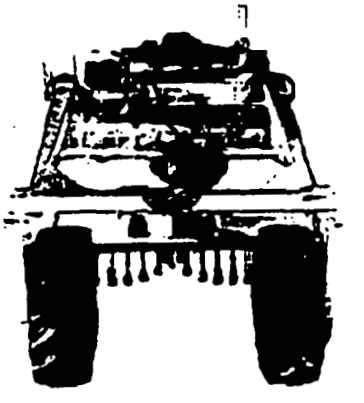
Comfortable cab, sound insulation, heating, airconditioning, inside and outside mirror. Rotor for working depth of 20 inch (500 mm). Different sizes of rotor width. Electrical Diesel filling. Electric rotor depth control with digital display. Working lights at front and rear. ROPS. Vandalism protection. Mixer chamber door front hydraulically adjustable. Water and emulsion spray system with electronic control and digital display. 4-wheel drive assistance. Special paint.

Description:
Soil stabilizer / Asphalt recycler

RACO 250







All specifications are subject to change without notice or obligation

HAMM Compactors U.S.A., Inc., 13770 Beta Drive, Dallas, Texas 75244, Tel.: 214-233-6891, Fax: 214-387-2114

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 21 July 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Decontaimination Facility Pump and Check Valve		(11)DCN NO.: 1702-017

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section13000	Parts 2.01 & 2.02.	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

The Decontamination Facility sump pump specified is Multiquip, Inc. Model ST-2005T, or equal. The pump proposed in Submittal No. 48 is Model ST-2005T. The proposed pump impeller is fabricated from hi-chrome iron and the pump housing, suction flange, and discharge flange from cast iron. These materials of construction are approved.

Change Specification Section 13000, Part 2.01.C to read "The equipment decontamination facility sump pump casing, suction flange and discharge flange shall be cast iron. The pump impeller shall be hi-chrome iron or stainless steel.

Change 150 psig to 100 psig in Specification Section 13000, Part 2.02.A for the PVC swing check valve

(10)REQUESTOR: David Bodnar	COMPANY: GeoSyntec	(12)FCE / PE	DATE: 8/29/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES

(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED

ECDC CONTROLLED COPY NO 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: David Bodnar 21 July 97	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) PERFORMANCE GRADE: (17) 5		DATE: 8/29/97
(18)CONSTRUCTION CONCURRENCE: 08/29/97	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 21 July 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Decontaimination Facility Pump and Check Valve		(11)DCN NO.: 1702-017

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section13000	Parts 2.01 & 2.02.	0	UNCONTROLLED COPY NO. C011

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

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(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec	(12)FCE / PE: [signature] DATE: 8/29/97
(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: Daniel Bodine DATE: 21 July 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature] DATE: 8/29/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: [signature] DATE: 08/29/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

RECEIVED SEP 03 1997 OCB

ENTERED

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 07/15/ 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Equipment Decontamination Facility		(11)DCN NO.: 1702-016

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
90X-6000-G-00086 Sheet G-37A	Detail 32 & Section B	0	
90X-6000-G-00074 Sheet G-5B		2	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only

External dimension shown on drawing 90X-6000-G-00086 is 60 ft east to west along the north side. control points 7011 to 7012 shows this dimension to be 61-ft 8-in. Please provide correct control points and /or dimensions.

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

(10)REQUESTOR: D. B. Goetz COMPANY: FDF DATE: 07/16/97

(12)FCE / PE DATE. 8/20/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES

The existing 60x40 portion of the decon facility is not oriented exactly north south. The control points 7011 and 7012 are correct.

ECDC CONTROLLED COPY NO 011

(14)FOR DCN: ☐APPROVED ☒APPROVED AS NOTED ☐DISAPPROVED

The temporary Gravity Line (WO 1700) has been moved 50-ft north per DCN 1700-047. This move will locate the tie-in point for the facility discharge piping (Control Point 7010) 50-ft closer to the facility. The bottom of pipe elevation at the tie-in point shall be approximately 589.0 ft. As-built the tie-in and record the as-built coordinates and elevation

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 15 Aug 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/20/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: DATE: 08/20/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 07/15/ 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Equipment Decontamination Facility	(11)DCN NO.: 1702-016	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
90X-6000-G-00086 Sheet G-37A	Detail 32 & Section B	0	
90X-6000-G-00074 Sheet G-5B		2	

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Civil Review Only

External dimension shown on drawing 90X-6000-G-00086 is 60 ft east to west along the north side. control points 7011 to 7012 shows this dimension to be 61-ft 8-in. Please provide correct control points and /or dimensions.

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

(10)REQUESTOR: D. B. GOETZ COMPANY: FDF DATE: 07/16/97

(12)FCE / PE DATE: 8/20/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES

The existing 60x40 portion of the decon facility is not oriented exactly north south. The control points 7011 and 7012 are correct.

ECDC CONTROLLED COPY NO 011

(14)FOR DCN: ☐APPROVED ☒APPROVED AS NOTED ☐DISAPPROVED

The temporary Gravity Line (WO 1700) has been moved 50-ft north per DCN 1700-047. This move will locate the tie-in point for the facility discharge piping (Control Point 7010) 50-ft closer to the facility. The bottom of pipe elevation at the tie-in point shall be approximately 589.0 ft. As-built the tie-in and record the as-built coordinates and elevation

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: DATE: 15 Aug 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/20/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: DATE: 08/20/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

-4259 (10/01/96)

ORIGINAL

ENTERED

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 13 July 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Granular Drainage Material-Modifed 78's		(11)DCN NO.: 1702-015

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02710	Part 2.01.B	0	

(9)☐RCI - INQUIRY ☐USQD SCREENING BY PROJECT ENGINEER

(9)☒DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Civil Review Only. The gradation requirements for the granular drainage material for the leachate collection system and leachate detection system drainage layers and the granular protective cover at the Impacted Runoff Catchment Area has been evaluated per Submittal No. 043 request and modified as follows:

Change the Total Percent Passing for the 1/2 in sieve to 85 to 100.

This minor change will not affect performance of the respective drainage layers.

(10)REQUESTOR: Daniel Bodine	COMPANY: GeoSyntec	(12)FCE / PE	DATE: 8/29/97
(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES		(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED	

ECDC CONTROLLED
COPY NO
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine	DATE: 13 July 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY)			DATE: 8/29/97
PERFORMANCE GRADE: (17) 4			
(18)CONSTRUCTION CONCURRENCE:	DATE: 08/29/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE: 17/02/97
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 13 July 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Granular Drainage Material-Modifed 78's		(11)DCN NO.: 1702-015

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02710	Part 2.01.B	0	DCC CONTROL COPY NO C011

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Civil Review Only. The gradation requirements for the granular drainage material for the leachate collection system and leachate detection system drainage layers and the granular protective cover at the Impacted Runoff Catchment Area has been evaluated per Submittal No. 043 request and modified as follows:

Change the Total Percent Passing for the 1/2 in sieve to 85 to 100.

This minor change will not affect performance of the respective drainage layers.

(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec	(12)FCE / PE: DATE: 8/29/97
(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: Daniel Bodine DATE: 13 July 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 8/29/97	
PERFORMANCE GRADE: (17) 4	
(18)CONSTRUCTION CONCURRENCE: DATE: 08/29/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

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RECEIVED SEP 08 1997

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 11 July 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Geotextile Separator and Filter	(11)DCN NO.: 1702-014	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02714	Part 3.02	0	

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

Civil Review Only. This DCN supersedes DCN 1702-008 which has been voided.

The specification, Part 3.02.C, requires the Geotextile Separator to be spot sewn. An alternate method of holding down the fabric is pinning the fabric with minimum 8-inch Tee Pins at spacing of 10-feet or less. This will be allowed for the Sedimentation Basin and the Access Corridor ONLY. Note that the Cell Access Road is not INCLUDED.

Add the following two sentences to Part 3.02.C . Pinning with minimum 8-inch Tee Pins is approved in-lieu of spot sewing for the Sedimentation Basin and Access Corridor ONLY. Pinning intervals shall not be greater than 10 feet in length."

The Geotextile Filter for the Sedimentation Basin ONLY may also be pinned with minimum 8-inch Tee Pins. If pins are used, the minimum overlap shall be 12-inches. Add sentence to Part 3.02.A as follows: " Exception to this is the Sedimentation Basin filter which may be spot sewn or pinned with minimum 8-inch Tee Pins at intervals not to exceed 10 feet and as necessary to ensure that a 12-inch overlap is maintained.

(10)REQUESTOR: [signature]	COMPANY: GeoSyntec	(12)FCE / PE [signature]	DATE: 7/12/97
(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES		(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED	

ECDC CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: [signature]	DATE: 11 July 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature]			DATE: 7/12/97
PERFORMANCE GRADE: (17) 5			
(18)CONSTRUCTION CONCURRENCE: [signature]	DATE: 07/16/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) [signature]	DATE: 12/02/97
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 11 July 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Geotextile Separator and Filter		(11)DCN NO.: 1702-014

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02714	Part 3.02	0	DCC CONTROLLED COPY NO. C011

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Civil Review Only. This DCN supersedes DCN 1702-008 which has been voided.

The specification, Part 3.02.C, requires the Geotextile Separator to be spot sewn. An alternate method of holding down the fabric is pinning the fabric with minimum 8-inch Tee Pins at spacing of 10-feet or less. This will be allowed for the Sedimentation Basin and the Access Corridor ONLY. Note that the Cell Access Road is not INCLUDED.

Add the following two sentences to Part 3.02.C . Pinning with minimum 8-inch Tee Pins is approved in-lieu of spot sewing for the Sedimentation Basin and Access Corridor ONLY. Pinning intervals shall not be greater than 10 feet in length."

The Geotextile Filter for the Sedimentation Basin ONLY may also be pinned with minimum 8-inch Tee Pins. If pins are used, the minimum overlap shall be 12-inches. Add sentence to Part 3.02.A as follows: " Exception to this is the Sedimentation Basin filter which may be spot sewn or pinned with minimum 8-inch Tee Pins at intervals not to exceed 10 feet and as necessary to ensure that a 12-inch overlap is maintained.

(10)REQUESTOR: Daniel Bodine	COMPANY: GeoSyntec	(12)FCE / PE: L A Kumstrehar	DATE: 7/12/97

(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: Daniel Bodine 11 July 97 DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) L A Kumstrehar DATE: 7/12/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: 07/16/97 DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 11 July 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Coupling Band For Corrugated Metal Pipe		(11)DCN NO.: 1702-013

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00089 Sheet DWG G-41A	Details 47 and 49	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only.

The corrugated metal pipe (CMP) supplied and delivered to the site by the contractor is produced from Hel- Cor Pipe which has helical corrugations.

The pipe ends have been re-rolled to accept standard 12-inch wide coupling bands. Drawing G-00089 Details 47 and 49 show 24-inch wide bands. Since all CMP on the project are part of temporary structures, the use of standard 12-inch wide coupling bands will be approved.

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Drawing changes will be as follows:

Detail 47 - Coupling band shown will be redrawn at 12-inches wide centered over the pipe joint

Detail 49 - Coupling band shown will be redrawn at 12-inches wide centered over the pipe joint. The stated 24-inches wide will be changed to 12-inches and the wording " with 9 Corrugations" will be removed..

(10)REQUESTOR: Daniel Bolins	COMPANY: GeoSyntec	(12)FCE / PE: L A Kunstreiter	DATE: 7/12/97
(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐NO ☐YES		(14)FOR DCN: ☒APPROVED ☐APPROVED AS NOTED ☐DISAPPROVED	

ECDC CONTROLLED COPY NO 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bolins	DATE: 11 July 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) L A Kunstreiter			DATE: 7/12/97
PERFORMANCE GRADE: (17) 5			
(18)CONSTRUCTION CONCURRENCE:	DATE: 07/16/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE: 12/02/97
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

ORIGINAL

ENTERED

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 11 July 97
(3)S/C TITLE: OSDF Phase 1 Construction			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Coupling Band For Corrugated Metal Pipe		(11)DCN NO.: 1702-013

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00089 Sheet G-41A	Details 47 and 49	0	DC CONTROL COPY NO. C011

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

Civil Review Only.

The corrugated metal pipe (CMP) supplied and delivered to the site by the contractor is produced from Hel- Cor Pipe which has helical corrugations.

The pipe ends have been re-rolled to accept standard 12-inch wide coupling bands. Drawing G-00089 Details 47 and 49 show 24-inch wide bands. Since all CMP on the project are part of temporary structures, the use of standard 12-inch wide coupling bands will be approved.

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Drawing changes will be as follows:

Detail 47 - Coupling band shown will be redrawn at 12-inches wide centered over the pipe joint

Detail 49 - Coupling band shown will be redrawn at 12-inches wide centered over the pipe joint. The stated 24-inches wide will be changed to 12-inches and the wording " with 9 Corrugations" will be removed..

(10)REQUESTOR: Daniel Bolond	COMPANY: GeoSyntec	(12)FCE / PE: L A Kunstreber PE	DATE: 7/11/97

(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: Daniel Bolond 11 July 97 DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) L A Kunstreber PE DATE: 7/11/97	
PERFORMANCE GRADE: (17) 5	
(18)CONSTRUCTION CONCURRENCE: 07/11/97 DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	

FS-F-4259 (10/01/96)

ORIGINAL

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 9 July 97

(3)S/C TITLE: OSDF Phase 1 Construction

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐

(4A)RCI/DCN TITLE: Principal Spillway Riprap

(11)DCN NO.: 1702-012

(7)DOCUMENT	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00089 Sheet G-41A	Section A	0	
Drawing G-41A Submittal No. 20	Section A	0	

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

The location of the Sedimentation Basin has been moved east . This move resulted in the Principal Spillway pipe discharge points being located farther from the existing ditch. Additional excavation, geotextile and Type C Riprap will be required for the completed spillway to extend to the ditch.

Drawing G-00089 Section A shall be revised by changing the 35 feet to 60 feet at the centerline between the two CMPs. The width of the riprap at the pipe discharge end and at the 60-foot point at the ditch shall be 15 feet and 23 feet, respectively.

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

This change is intended to extend the riprap to the existing ditch. West of the spillway centerline the length of the spillway will be less than 60 feet and east of the centerline the length will be greater than 60 feet.

As-built drawings shall document the extent of the spillway based on field surveys.

The geotextile shall extend beneath the sides and bottom of the riprap.

Drawing G-41A in Submittal No. 20 is a copy of Drawing G-00089.

(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec (12)FCE / PE: [signature] DATE: 7/10/97 7/12/97

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

ECDC CONTROLLED COPY NO. 011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine DATE: 9 July 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N/A

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature] DATE: 7/10/97 7/12/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: [signature] DATE: 07/10/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) [signature] DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC- 597	(5)Pg 1 OF 1	(6)DATE 9 July 97
(3)S/C TITLE: OSDF Phase 1 Construction		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Principal Spillway Riprap	(11)DCN NO.: 1702-012	

(7)DOCUMENT	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6000-G-00089 Sheet G-41A	Section A	0	DC CONTROLLED COPY NO
Drawing G-41A Submittal No. 20	Section A	0	C011

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

The location of the Sedimentation Basin has been moved east . This move resulted in the Principal Spillway pipe discharge points being located farther from the existing ditch. Additional excavation, Geotextile and Type C Riprap will be required for the completed spillway to extend to the ditch.

Drawing G-00089 Section A shall be revised by changing the 35 feet to 60 feet at the centerline between the two CMPs. The width of the riprap at the pipe discharge end and at the 60-foot point at the ditch shall be 15 feet and 23 feet, respectively.

This change is intended to extend the riprap to the existing ditch. West of the spillway centerline the length of the spillway will be less than 60 feet and east of the centerline the length will be greater than 60 feet.

As-built drawings shall document the extent of the spillway based on field surveys.

The geotextile shall extend beneath the sides and bottom of the riprap.

Drawing G-41A in Submittal No. 20 is a copy of Drawing G-00089.

(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec (12)FCE / PE: [signature] DATE: 7/10/97 7/14/97

(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: Daniel Bodine DATE: 9 July 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature] DATE: 7/10/97 7/14/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: [signature] DATE: 7/10/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) WO NO.:	(2) S/C NO.:	(5) P 1 OF 2	(6) DATE
1702	597		7/8/97

(3) S/C TITLE:	(11) RCI NO.:
On Site Disposal Facility Phase I	—

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [ ] M [ ] C [X] OTHER [ ]	Placement of Stone Over Geotextile	1702-011

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Specification Section 02714, Para. 3.05D and 3.05 F 11 July 97	~~(Attached)~~ 11 July 97	0	None

(9) [ ] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Referenced specification does not allow equipment to be driven directly on geotextile. We believe that the intent of the specification is to limit traffic and potential damage to the cell liner system. We propose that the specification be revised to allow the geotextile separator fabric, found under gravel roadways, to be placed and pinned. Gravel trucks would then "tailgate" spread the material over the fabric, an industry accepted standard practice. Trucks shall tailgate in a straight line to eliminate potential rutting caused by sharp turns. Rutting of subgrade should not be a concern, as the embankment has been placed and compacted in compliance with project specifications. No material shall be placed on wet subgrade, where excessive rutting would occur. Due to the thin lift of the gravel surface, we feel that (4") is the best way to provide for a quality finished product without damaging the geotextile.

Civil Review Only

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
Steve Brandstetter	Petro Environmental Technologies, Inc.	7/9/97		7/9/97

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

See Attached Page 2

ECDC CONTROLLED COPY NO 011

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Ranil Bodine	11 July 97	NA

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 7/12/97

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE: 07/14/97

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO

(21) WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

FS-F-4259 (10/01/96)

ORIGINAL

000165

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

DGB 11 July 97

(1) WP / WO NO.:	(2) S/C NO.:	(5) P 1 OF 2	(6) DATE
1702	597		7/8/97

C TITLE:	(11) RCI NO.:
On Site Disposal Facility Phase I	—

(4) RESPONSIBLE DISCIPLINE:	(4A) RCI/DCN TITLE:	(11) DCN NO.:
E [ ] M [ ] C [X] OTHER [ ]	Placement of Stone Over Geotextile	1702-011

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
Specification Section 02714, Para. 3.05D and 3.05.E DGB 11 July 97	~~(Attached)~~ DGB 11 July 97	0	None

(9) [ ] RCI - INQUIRY [ ] USQD SCREENING BY PROJECT ENGINEER

(9) [X] DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Referenced specification does not allow equipment to be driven directly on geotextile. We believe that the intent of the specification is to limit traffic and potential damage to the cell liner system. We propose that the specification be revised to allow the geotextile separator fabric, found under gravel roadways, to be placed and pinned. Gravel trucks would then "tailgate" spread the material over the fabric, an industry accepted standard practice. Trucks shall tailgate in a straight line to eliminate potential rutting caused by sharp turns. Rutting of subgrade should not be a concern, as the embankment has been placed and compacted in compliance with project specifications. No material shall be placed on wet subgrade, where excessive rutting would occur. Due to the thin lift of the gravel surface, we feel that (4") is the best way to provide for a quality finished product without damaging the geotextile.

Civil Review Only

(10) REQUESTER:	COMPANY:	DATE:	(12) FCE / PE	DATE:
Steve Brandstetter	Petro Environmental Technologies, Inc.	7/9/97	[signature]	7/9/97

(13) RESPONSE FOR RCI, IS A DCN REQ'D [ ] NO [X] YES

(14) FOR DCN: [ ] APPROVED [X] APPROVED AS NOTED [ ] DISAPPROVED

See Attached Page 2

DC CONTROL
COPY NO.
011

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE
Ranil Bodine	11 July 97	

(16) FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 7/12/97

PERFORMANCE GRADE: (17) 5

CONSTRUCTION CONCURRENCE: 07/14/97

PURCHASE REQUISITION REQUIRED: [ ] YES [X] NO

FS-F-4259 (10/01/96)

ORIGINAL

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DGB 000166

CHELLE

(13) RESPONSE

DCN No. 1702-014 approved the use of minimum 8-inch Tee Pins for use in placing Geotextile Separator fabric. The use of the "tailgate" spreading of stone over the Separator fabric for the Sedimentation Basin and Access Corridor (NOTE: Cell Access Road NOT INCLUDED) will be approved under the following conditions.

1. Subgrade/fill proofrolled or compacted as specified, graded and sealed such that rutting under truck traffic will not occur. QC to monitor full time.

2. Roll out Separator fabric, make taut and pin as necessary. QC to monitor full time.

3. Grade stone and perform minimum thickness measurements. Add additional stone if necessary.

Specification Section 02714 Part 3.05.E shall be revised by adding the following sentence.

Tailgate spreading over the geotextile of road stone may be used for the Sedimentation Basin gravel road and the Access Corridor under conditions approved in writing by the Construction Manager. Note that the Cell Access Road is NOT INCLUDED for this alternate placement procedure.

Daniel Bodino
11 July 97

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)P / WO NO.: 1702	(2)S/C NO.: FSC-597	(5)Pg 1 OF 1	(6)DATE 6/27/97
(3)S/C TITLE: GSDF PHASE I CONSTRUCTION		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: EO ☐ MO ☐ CO ☒ OTHER ☐	(4A)RCI/DCN TITLE: Anti-Seep Collar	(11)DCN NO.: 1702-010	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
DCN 1702-006		0	
DRAWING 90X-6000-G-00089			

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

NOTE: CIVIL REVIEW ONLY.

AS AN ALTERNATE TO USING O-RING GASKETS; PERMIT USE OF "MASTIC".

ECDC CONTROLLED COPY NO 011

(10)REQUESTOR: DON GOETZ COMPANY: FLUOR DANIEL FERNALD DATE: 6/27/97 (12)FCE / PE DATE: 6/30/97

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

Placement of Mastic must be thick and continuous to insure a tight seal when band is fully tighten. O-Ring Gaskets shall be used on end sections of pipe as recommended in the specifications and by the pipe manufacturer.

GeoSyntec

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bedford DATE: 27 Jun 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE 6/30/97

PERFORMANCE GRADE: (17) 5 6/30/90

(18)CONSTRUCTION CONCURRENCE: DATE: 07/01/97 (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐ YES ☒ NO (19)

4259 (10/01/96)

CLOSED

ORIGINAL

- 1262

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC-597	(5)Pg 1 OF 1	(6)DATE 6/27/97
(3)S/C TITLE: OSDF PHASE I CONSTRUCTION		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E☐ M☐ ☒ OTHER☐	(4A)RCI/DCN TITLE: Anti-Seep Collar	(11)DCN NO.: 1702-010	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
DCN 1702-006		0	
DRAWING 90X-6000-G-00089			

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER
NOTE: CIVIL REVIEW ONLY.

(9)☒ DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

AS AN ALTERNATE TO USING O-RING GASKETS, PERMIT USE OF "MASTIC".

UNCONTROLLED COPY NO. C011

6/30/97

(10)REQUESTOR: DON GOETZ COMPANY: FLUOR DANIEL FERNALD DATE: 6/27/97

(12)FCE / PE DATE: 6/30/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☐ YES

(14)FOR DCN: ☐ APPROVED ☒ APPROVED AS NOTED ☐ DISAPPROVED

Placement of Mastic must be thick and continuous to insure a tight seal when band is fully tighten. O-Ring Gaskets shall be used on end sections of pipe as recommended in the specifications and by the pipe manufacturer.

GeoSyntec

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bedford DATE: 27 June 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE 6/30/97

PERFORMANCE GRADE: (17) 5 6/30/97

(18)CONSTRUCTION CONCURRENCE: DATE: 07/01/97

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

~~PURCHASE REQUISITION REQUIRED: ☐ YES~~ ☒ NO (19)

S-F-4259 (10/01/96)

RECEIVED JUL 01 1997

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ORIGINAL

1272

THE BREWER COMPANY

1354 U.S. Hwy. 50
Milford, OH 45150

MSDS NO: 221.2
DATE: 08/13/93
Replaces: 221.1
Date: 01/01/92

MATERIAL SAFETY DATA SHEET

A. IDENTIFICATION AND EMERGENCY INFORMATION

Product Name: WET OR DRY PLASTIC ROOF CEMENT

Chemical Name: N/A **CAS Number:** N/A, a complex mixture.

Product Appearance and Odor: a black thick consistency asphalt roof cement with a slight petroleum hydrocarbon odor.

Emergency Telephone Number: 8:00AM - 5:00PM EST: (513) 576-6300 **MSDS Case No.:** 221.2

B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO.	ACGIH TLV	APPROXIMATE WT% CONCENTRATION
Petroleum Asphalt	8052-42-4	5mg/m³ (fume)*	less than 50%
Calcium Carbonate	1317-65-3	10mg/m³ (dust)**	less than 30%
Mineral Spirits	64742-88-7	100 ppm*	less than 25%
Cellulose	9004-34-6	10mg/m³ (dust)**	less than 10%
Magnesium Carbonate	546-93-0	not est'd	less than 5%
Asbestosine (Proprietary)	not est'd	not est'd	less than 2%

* 8 Hour TWA. ** As respirable dust.

Hazardous Materials Identification System: (HMIS RATING) Health-1 Flammability-2 Reactivity-0

Hazard Ranking: 0 Least 1 Slight 2 Moderate 3 High 4 Extreme

C. PRIMARY ROUTES OF ENTRY AND EMERGENCY FIRST AID PROCEDURES

Eye Contact: Mineral spirits, asphalt components, fibers and fillers can cause severe irritation, redness, tearing and blurred vision. Asbestosine additive may cause permanent damage. Flush with large amounts of water for at least 15 minutes. **GET MEDICAL ATTENTION.**

Skin: Mineral spirits and asphalt components - clean exposed skin with waterless hand cleaners. Prolonged or repeated contact can cause irritation, defatting, and dermatitis. Note: skin contact with clothing saturated in mineral spirits can cause second degree burns. Remove contaminated clothing, wipe excess material from skin, thoroughly wash exposed area with soap and water. If irritation or redness develops and persists, seek medical attention. Asbestosine additive may cause allergic skin reaction.

Inhalation: Mineral spirits - excessive inhalation of vapors can cause irritation of nose and throat, dizziness, weakness, fatigue, nausea, headache, possible unconsciousness and even asphyxiation. Remove individual to fresh air. If irritation persists, administer oxygen. If breathing has stopped, give artificial respiration. Keep person warm and quiet. **GET MEDICAL ATTENTION.**

Ingestion: Aspiration hazard. DO NOT INDUCE VOMITING - transport to hospital immediately. **GET MEDICAL ATTENTION IMMEDIATELY.** Asbestosine additive can cause burns of mouth and digestive tract.
Note to Physician - perform gastric lavage in accordance with procedures for ingestion of petroleum products.

D. FIRE AND EXPLOSION HAZARD INFORMATION

Flash Point: (Minimum) 100° F TCC (Mineral Spirits) **Autoignition Temperature:** Not determined.

National Fire Protection Association (NFPA) - Hazard Identification: Health-0 Flammability-2 Reactivity-0

Handling Precautions: Keep containers tightly closed. Keep containers cool, dry and away from sources of ignition. Use this product with adequate ventilation. Material is COMBUSTIBLE. Material requires electrical grounding during material transfer process. All electrical equipment in storage or handling areas should be installed per NFPA requirements.

Flammable or Explosive Limits: (Approximate percent by volume in air for Mineral Spirits) Lower (LEL) 0.9% Upper (UEL) 6.7%

Extinguishing Media and Fire Fighting Procedures: Foam, carbon dioxide, dry chemical, or water fog. Do not direct water on substance. Water and foam may cause frothing. Note: water directed into heavy oil may cause severe foaming and splatter as it vaporizes. Treat as a fuel oil fire. Water may be used to cool closed containers. In sustained fires, use self-contained breathing apparatus.

Decomposition Products Under Fire Conditions: Carbon monoxide and dioxide, oxides of nitrogen and sulphur, and hydrocarbons from combustion. Hydrogen sulfide gas (H_2S) may be generated (see Section E of this MSDS for more H_2S information) when and if the product is heated above 450°F or if the product incurs fire conditions.

Empty Container Warning: Dispose of in an environmentally safe manner and in accordance with governmental regulations. "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. For work on tanks, refer to OSHA regulation ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding or other contemplated operations.

This is "RCRA" regulated hazardous waste and must be disposed in a permitted facility. Containers are hazardous waste if not emptied completely (less than 1 inch of residue).

E. HEALTH AND HAZARD INFORMATION

Variability Among Individuals: Health studies have shown that individual sensitivities vary from person to person. As a precaution, exposure to vapors, liquids, mists, or fumes should be minimized.

Effects of Overexposure: (Signs and symptoms of exposure)

Primary Routes of Exposure: Inhalation, skin, and eye contact.

Health Hazards (including acute and chronic effects and symptoms of overexposure):

ACUTE: Inhalation: Upper respiratory tract (nose and throat) irritation. Possible central nervous system effects including headaches, dizziness, nausea and vomiting.

Skin Contact: Prolonged or repeated contact with the cold product may result in defatting and drying of the skin which may lead to irritation and dermatitis. Contact with the hot product will cause thermal burns. Skin contact with clothing saturated with mineral spirits can cause second degree burns.

Ingestion: May cause mouth, throat, and gastrointestinal tract irritation, nausea, vomiting and diarrhea. Aspiration of the mineral spirits portion of this product into the lungs can cause severe chemical pneumonitis which may be fatal.

CHRONIC: There are no studies to indicate that exposure to asphalt causes cancer or respiratory damage in man. However, this petroleum based product contains small amounts of polycyclic aromatic hydrocarbons which have been shown to cause cancer and respiratory damage in laboratory animals. Prolonged or repeated skin contact with this product may result in defatting and drying of the skin which may lead to irritation and dermatitis. In laboratory animal studies, prolonged and repeated inhalation exposures to hydrocarbon vapors similar to mineral spirits have resulted in kidney effects in male rats. The implications of these results for humans have not yet been determined.

Nature of Hazard and Toxicity Information:

IARC: In March, 1987, the International Agency for Research on Cancer (IARC) classified extracts of steam and air refined bitumens (such as cutback asphalts) as possibly carcinogenic to humans (Group 2B). This classification was based on a combined evaluation of published human and animal studies. IARC concluded that the human studies did not provide adequate evidence that extracts of steam and air-refined bitumens caused cancer in humans. No epidemiological study of workers exposed only to bitumens is available. The 2B classification was substantially based on experimental animal studies. Some bitumens (asphalts) diluted, dissolved or liquified in solvents (i.e. cutback asphalt) have produced skin cancer in laboratory animals at the sites of application. Based on skin-painting data in laboratory animals, IARC has concluded that there is sufficient evidence of carcinogenicity of these extracts. IARC regards it as prudent to treat a material for which there is sufficient evidence of carcinogenicity in animals as if it is carcinogenic in humans.

ACGIH, NTP, OSHA: No components listed as carcinogens.

Additional Information: This petroleum based product contains small amounts of polycyclic aromatic hydrocarbons which have been shown to cause cancer and respiratory damage in laboratory animals. Therefore, good, prudent industrial hygiene practices as outlined in this MSDS should be followed.

WARNING: Hydrogen sulfide (H_2S), an extremely flammable, colorless, highly toxic gas, is emitted from heated (above 450° F) asphalt and may accumulate in storage tanks and bulk transport compartments. Prolonged breathing (greater than 1 hour) of concentrations of H_2S around 50 ppm can produce eye and respiratory tract (mouth, nose and throat) irritation, and at high concentrations (around 1000 ppm) can result in rapid unconsciousness and death.

Since the sense of smell becomes rapidly insensitive to H_2S, its odor cannot be relied upon as an indicator of its concentration. Always use caution when working around closed bulk containers of asphalt. Use ventilation or work upwind from sources of fumes or vapors. Use supplied air respirators or self-contained breathing apparatus if the PEL or TLV for H_2S is exceeded.

Pre-existing Medical Conditions Which May be Aggravated by Exposure:

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with a history of chronic skin or respiratory disorders may be at increased risk for worsening their conditions from exposure to this product.

F. PHYSICAL DATA

The following are approximate or typical values and should not be used for precise design purposes.

Boiling Range: 300° F IBP for Mineral Spirits

Vapor Pressure: Approximately 2.9mm Hg for Mineral Spirits

Specific Gravity: Greater than 1.00 for product

Vapor Density: (air = 1) Approximately 4.9 for Mineral Spirits

Molecular Weight: N/A, complex mixture

Percent Volatile by Volume: Less than 30

pH: Not determined

Solubility in Water @ 1 ATM and 77°F: Negligible

Evaporation Rate: (Ethyl Ether = 1) Approximately 70 for Mineral Spirits

Viscosity: A thick cement consistency greater than 10,000 cps @ 77° F, trowelable consistency

G. REACTIVITY

Stability: ____ unstable X stable

Upon heating above 450° F, hydrogen sulfide gas (H_2S) may be generated. See Section E of this MSDS for more information on H_2S.

Hazardous Polymerization: ____ may occur X will not occur

Hazardous Decomposition Products: Carbon monoxide and dioxide, oxides of nitrogen and sulphur, hydrocarbons from combustion.

Incompatibility (Materials to Avoid): Avoid contact with strong oxidizing agents such as: liquid chlorine, concentrated oxygen, sodium or calcium hypochlorite.

Conditions to Avoid: Avoid all sources of ignition, including conditions that may generate static electricity. Avoid extreme temperatures. Avoid contact with strong oxidizers.

H. ENVIRONMENTAL INFORMATION

Steps to be taken if spilled or released:

- Shut off and eliminate all ignition sources.
- Keep people away.
- Recover free product; add sand, earth, or other suitable absorbents.
- Minimize skin contact and breathing vapors.
- Ventilate confined spaces; open all windows and doors.
- Keep product out of sewers and water courses by diking or impounding.
- Advise authorities if product has entered or may enter sewers, water courses or extensive land areas.
- ASSURE CONFORMITY WITH APPLICABLE GOVERNMENTAL REGULATIONS.
- Recovered material may be incinerated in approved facility.

EPA Hazardous Waste Number: D001 (Ignitible per 40 CFR 260.21).

Reportable Quantity (RQ), EPA Regulation 40 CFR 302 (CERCLA Section 102): Not established.

Threshold Planning Quantity (TPQ), EPA Regulation 40 CFR 355 (SARA Section 301-304): Not established.

Toxic Chemical Release Reporting, EPA Regulation 40 CFR 372; (SARA Section 313): None present in reportable quantities, less than 1%.

EPA Hazard Classification Code:

Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactive Hazard	Not Applicable
		XXX			

I. PROTECTION AND PRECAUTIONS

Ventilation: Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use explosion-proof equipment. No smoking or open lights.

Respiratory Protection: If under normal conditions of use, irritation occurs, or if the TLV is exceeded, use a NIOSH/MSHA approved air purifying respirator with organic vapor cartridges or canisters and a dust/mist prefilter. In situations where the concentration of H_2S exceeds the PEL or TLV, supplied air respirators or self-contained breathing apparatus are required. Always use respiratory protection in accordance with your company's respiratory protection program and OSHA regulations under 29 CFR 1910.134.

Protective Gloves: Use chemical resistant gloves, if needed, to avoid prolonged or repeated skin contact.

Eye Protection: Use safety glasses, splash goggles or face shield when eye contact may occur.

Other Protective Equipment: Use chemical resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

Work Practices/Engineering Controls: Keep containers closed when not in use. DO NOT STORE NEAR HEAT, SPARKS, FLAME OR STRONG OXIDANTS. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with NFPA standard for petroleum products.

Personal Hygiene: Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry clean before reuse. Remove contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before meals and smoking, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION AND OSHA LABEL INFORMATION

Transportation Incident Information: For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

DOT Identification Number: NA 1993

A REQUIRED LABEL INFORMATION: In compliance with hazard and right-to-know requirements, the following OSHA Hazard Warnings should be found on a label, bill of lading or invoice accompanying this product. CAUTION! COMBUSTIBLE! Note: Product label will contain additional non-OSHA information.

OTHER

nformation and recommendations contained herein are to the best of THE BREWER COMPANY'S knowledge and belief, accurate reliable as of the date issued. THE BREWER COMPANY does not warrant or guarantee their accuracy or reliability, and THE BREWER COMPANY shall not be liable for any loss or damage arising out of the use thereof.

he information and recommendations are offered for the users consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. It is also the users responsibility to make certain that it is relying upon the most recent, updated, information and recommendations available rom THE BREWER COMPANY.

he Environmental Information included under Section M hereof as well as the Hazardous Material Identification System (HMIS) nd National Fire Protection Association (NFPA) ratings have been included by THE BREWER COMPANY in order to provide dditional health and hazard classification information. The ratings recommended are based upon the criteria supplied by he developers of these rating systems, together with THE BREWER COMPANY'S interpretation of the available data.

or Other Product Information Contact:

THE BREWER COMPANY
1334 U.S. Hwy. 50
Milford, OH 45150

TELEPHONE: 614/279-8888 FAX: 614/279-7201

BREWER COTE QUALITY MAINTENANCE PRODUCTS

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 1	(6)DATE 26 June 97
(3)S/C TITLE: OSDF- PHASE I CONSTRUCTION			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: GRAVEL SURFACING		(11)DCN NO.: 1702-009

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6-6000-00089		0	

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

Civil Review Only

Revise Note 2 as follows:

2. Gravel Surfacing along the crest of the Sedimentation Basin Embankment shall be Ohio DOT Aggregate Base in accordance with Item 304.02, except slag shall not be used. AASHTO No. 57 Stone shall be used around the 8-inch Perforated CMP low-flow riser as orginally specified.

(10)REQUESTOR: Daniel Bodine	COMPANY: GeoSyntec	DATE: 26 June 97	(12)FCE / PE: [signature] DATE: 6/30/97

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

ECDC CONTROLLED
COPY NO
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine - GeoSyntec	DATE: 26 June 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature]		DATE: 6/30/97
PERFORMANCE GRADE: (17) 5		6/20/97
(18)CONSTRUCTION CONCURRENCE: [signature]	DATE: 07/01/97	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) [signature] DATE: 12/02/97
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)		

FS-F-4259 (10/01/96)

ORIGINAL

EXPIRED

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REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702
(2)S/C NO.: FSC 597
(5)Pg OF 1
(6)DATE: 26 June 97
(3)S/C TITLE: OSDF- PHASE I CONSTRUCTION
(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐
(4A)RCI/DCN TITLE: GRAVEL SURFACING
(11)DCN NO.: 1702-009

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing 90X-6-6000-00089		0	CDC CONTROLLED COPY NO.

(9)☐RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER
Civil Review Only

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Revise Note 2 as follows:

2. Gravel Surfacing along the crest of the Sedimentation Basin Embankment shall be Ohio DOT Aggregate Base in accordance with Item 304.02, except slag shall not be used. AASHTO No. 57 Stone shall be used around the 8-inch Perforated CMP low-flow riser as orginally specified.

(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec DATE: 26 June 97
(12)FCE / PE: DATE: 6/30/97
(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: Daniel Bodine-GeoSyntec 26 June 97 DATE:
(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 6/30/97
PERFORMANCE GRADE: (17) 5 DATE: 6/30/97
(18)CONSTRUCTION CONCURRENCE: DATE: 07/01/97
(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

RECEIVED JUL 01 1997 DGB

ENTERED

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 1	(6)DATE 26 June 97
(3)S/C TITLE: OSDF - PHASE I CONSTRUCTION		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Geotextile Separator	(11)DCN NO.: 1702-008	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Specification 20100-TS-0002 Section 02714	Part 3.02	0	DOC CONTROLLED COPY NO. C011

VOID

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

Civil Review Only

The specification, [illegible] requires the Geotextile separator to be spot sewn. An alternate method of holding down the fabric ~~with~~ is pinning the fabric with 18-inch Tee Pins at spacings of 10 ft or less. This will be allowed. Change Part 3.02.C to read "... spot sew or pin with 18-inch Tee Pins at intervals as necessary to ensure that the overlap is maintained. Intervals shall not be greater than 10 feet in length." -continued below-

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
Daniel Bodine	GenSyntec	26 June 97	[signature]	6/30/97

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

CONTINUED ITEM (9)

The Geotextile Filter for the Sedimentation Basin ONLY may also be pinned with 18-inch Tee Pins. If pins are used the minimum overlap shall be 12-inches. Add sentence to 3.02.A as follows: "Exception to this is the Sedimentation Basin Filter which may be spot sewn or pinned with 18-inch Tee Pins at intervals not to exceed 10 ft and as necessary to ensure that a 12-inch overlap is maintained.

GenSyntec

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Bodine	26 June 97	

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

PERFORMANCE GRADE: (17) 5 [signature] 6/30/97 6/30/97

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)	07/01/97		

FS-F-4259 (10/01/96)

VOID D. Bodine 11 July 97

ORIGINAL

Void [signature] July 12, 97

RECEIVED JUL 22 1997 C63

000176

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 1	(6)DATE 26 June 97
(3)S/C TITLE: OSDF- PHASE I CONSTRUCTION		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Submittal Requirements	(11)DCN NO.: 1702-007	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Spec. 20100-TS-0002 Section 02770	Part 1.05	0	

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

Part 1.05. A.2 and Part 1.05, A.5 Change "A list of 10 completed facilites..." to "A list of at least 10 completed facilities..."

This change will allow a list greater than 10 facilities to be submitted which was originally intended.

(10)REQUESTOR: Daniel Boline COMPANY: GeoSyntec DATE: 26 June 97 (12)FCE / PE [signature] DATE: 6/26/97

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

ECDC CONTROLLED
COPY NO.
011

GeoSyntec RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Boline DATE: 26 June 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: NA

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature] DATE: 6/26/97

PERFORMANCE GRADE: (17)

(18)CONSTRUCTION CONCURRENCE: [signature] DATE: (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) [signature] DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 1	(6)DATE 26 June 97
(3)S/C TITLE: OSDF- PHASE I CONSTRUCTION		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: Submittal Requirements	(11)DCN NO.: 1702-007	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Spec. 20100-TS-0002 Section 02770	Part 1.05	0	

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

Part 1.05. A.2 and Part 1.05, A.5 Change "A list of 10 completed facilites..." to "A list of at least 10 completed facilities..."

This change will allow a list greater than 10 facilities to be submitted which was originally intended.

(10)REQUESTOR: Daniel Bodine COMPANY: GeoSyntec DATE: 26 June 97 (12)FCE / PE [signature] DATE: 6/26/97

(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: GeoSyntec Daniel Bodine DATE: 26 June 97 (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature] DATE: 6/26/97

PERFORMANCE GRADE: (17)

(18)CONSTRUCTION CONCURRENCE: [signature] DATE: (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)

FS-F-4259 (10/01/96)

RECEIVED JUN 30 1997

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 2	(6)DATE 26 June 97
(3)S/C TITLE: OSDF- PHASE 1 CONSTRUCTION		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐	(4A)RCI/DCN TITLE: ALTERNATE ANTI-SEEP COLLAR	(11)DCN NO.: 1702-006	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
DRAWING ~~90X-G-6000-00089~~	Detail 50	0	
90X-6000-G-00089			
See DCN #1702-010 OGB 15 July 97			

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

Civil Review only

During the submittal review process an alternate anti-seep collar was reviewed and accepted for the sedimentation basin. The alternate allows the use a galvanized corrugated diaphragm (collar) fabricated in two ~~[illegible]~~ halfs (top and bottom) and banded with O-ring gaskets to ~~[illegible]~~ continuous sections of CMPs. Hugger type O-rings shall be used. Upper and lower halfs shall be sealed with sleeve gaskets. A continuous weld along the band on one side will be allowed. A vendor submittal detail is attached. All CMP requirements remain.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
Daniel Bodine	GeoSyntec	26 June 97		6/26/97

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

DOC CONTROLLED
COPY NO. C011

GEOSYNTEC RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine	DATE: 26 June 97	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:	
(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY)			DATE: 6/26/97
PERFORMANCE GRADE: (17) 5			
(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
PURCHASE REQUISITION REQUIRED: ☐YES ☒NO (19)			

FS-F-4259 (10/01/96)

RECEIVED JUL 01 1997 OGB

ORIGINAL

DCN No. 1702-001 272
Page 2 of 2

[illegible]

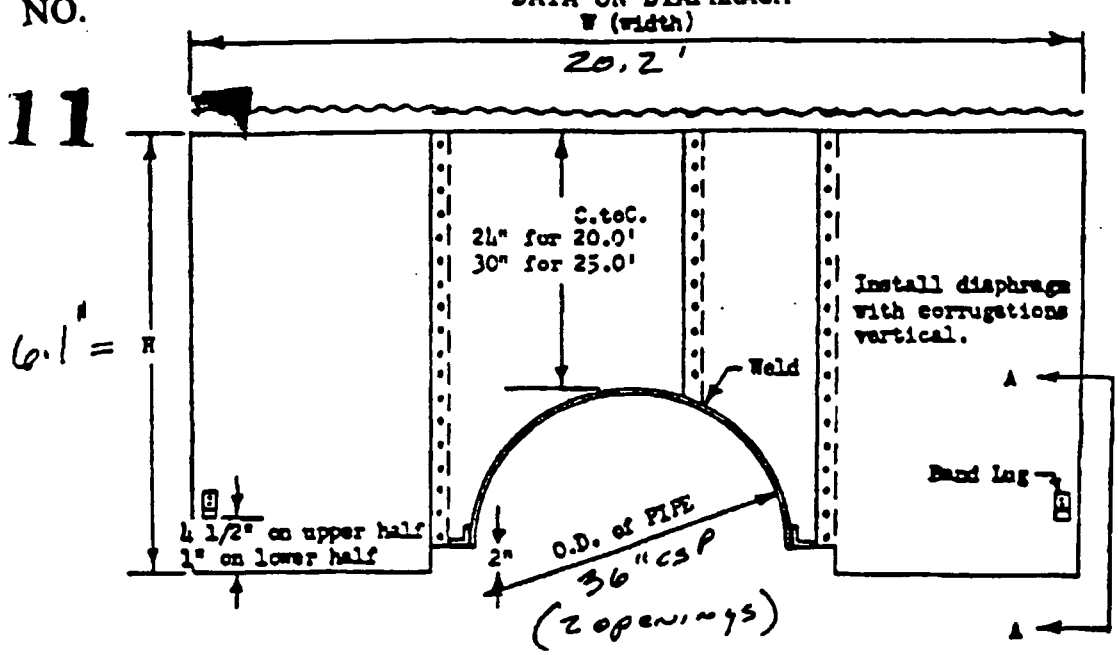
DIAPHRAGM

CONTECH CONSTRUCTION PRODUCTS, INC.

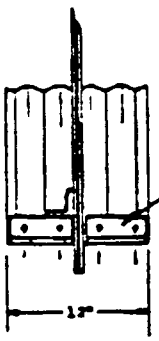
LIST PRICES

CONTROLLED COPY NO. 011

DATA ON DIAPHRAGM



ONE HALF DIAPHRAGM SHOWN, OTHER HALF SAME EXCEPT BAND LUG LOCATION



A - A

Standard Band Angles

An alternate method of connection is to eliminate the band angles, and sudstitute four 1/2" rods, with silo type lugs for connection.

SPECIFICATIONS

1. Corrugated Metal shall conform to current ASTM Specs:
   Aluminum B744
   Steel A444
2. Steel Diaphragms to be fully bituminous coated .05 inch thick.
3. Lap between two half sections should be caulked at time of installation.

Dia. (In.)	Gage	W (Width) In. c.c. spacing 20 Ft.	W (Width) In. c.c. spacing 25 Ft.	H (Height) c.c. spacing 20 Ft. Unstrutted	H (Height) c.c. spacing 20 Ft. Strutted	H (Height) c.c. spacing 25 Ft. Unstrutted	H (Height) c.c. spacing 25 Ft. Strutted
12	16	64	72	32 1/2		38 1/2	
15	16	64		34		40	
18	16	69 1/4	77 1/4	35 1/2		41 1/2	
21	16	72		37		43	
24	14	72		38 1/2		44 1/2	
30	14	82 1/2		41 1/2		47 1/2	
36	12	88	96	44 1/2		50 1/2	
42	12	93 1/4	101 1/4	47 1/2		53 1/2	
48	12	96		50 1/2	51 3/4	56 1/2	57 3/4
54	12	106 1/2		53 1/2	54 7/8	59 1/2	60 7/8
60	10	112	120	56 1/2	58	62 1/2	64
66	10	117 1/4		59 1/2	61 1/8	65 1/2	67 1/8
72	10	120		62 1/2	64 1/4	68 1/2	70 1/4
84	8	136	144	68 1/2	70 1/2	74 1/2	76 1/2

Dwg. No. 103195 Rev. 11/15/55

000180

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: 597	(5)Pg 1 OF 1	(6)DATE 6-17-97

(3)S/C TITLE: ON SITE DISPOSAL FACILITY

(11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E☒ M☐ C☒ OTHER☐

(4A)RCI/DCN TITLE: O.S.D.F. 480 VOLT POWER

(11)DCN NO.: 1702 - 005

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
480 VOLT FEED TO OSDF TRAILER	90X-5800-E-00506 90X-5920-E-01507	0 0	

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

1. SIX POWER POLES TO BE INSTALLED PER THE ABOVE DWGS.
2. POLES TO RUN SOUTH, THEN EAST, RATHER THAN AS SHOWN DUE TO INTERFERENCES NORTH, THEN EAST AS SHOWN.
3. ALL POLE HARDWARE, WIRE & CABLE, DISCONNECT SWITCHES AND TRANSFORMER TO REMAIN THE SAME.
4. PETRO ENVIRONMENTAL'S ELECTRICAL SUB. TO INSTALL
5. ALL COORDINATES CHANGED WILL BE RECORDED AND FORWARDED TO ENGINEERING.
6. POWER INSTALLATION TO BE COMPLETE BY 7-15-97
7. REFERENCE DCN # 1700-037 ATTACHED.

(10)REQUESTOR: [signature] COMPANY: F.D.F. DATE: 6-17-97

(12)FCE / PE: [signature] DATE: 6/18/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☐ YES

(14)FOR DCN: ☒ APPROVED ☐ APPROVED AS NOTED ☐ DISAPPROVED

ECDC CONTROLLED
COPY NO.
01

JIM KEAL MS-81-3 RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: [signature] DATE: 6-19-97

(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: 2CCD8

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) [signature] DATE: 7/1/97

PERFORMANCE GRADE: (17) 4

(18)CONSTRUCTION CONCURRENCE: [signature] DATE: 7-1-98

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) [signature] DATE: 12/02/97

PURCHASE REQUISITION REQUIRED: ☒ YES ☐ NO (19)

F-4259 (10/01/96)

ORIGINAL

ENTERED

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

(1) / WO NO.: 1702	(2)S/C NO.: 597	(5)Pg 1 OF 1	(6)DATE 6-17-97
S/C TITLE: ON SITE DISPOSAL FACILITY		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: E☒ M☐ C☒ OTHER☐	(4A)RCI/DCN TITLE: O.S.D.F. 480 VOLT POWER	(11)DCN NO.: 1702 - 005	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
480 VOLT FEED TO OSDF TRAILER	90X.5800-E-00506	0	
" " " " "	90X.5800-E-01507	0	

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒ DCN-JUSTIFICATION, EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

1. SIX POWER POLES TO BE INSTALLED PER THE ABOVE DWGS.
2. POLES TO RUN SOUTH, THEN EAST, RATHER THAN AS SHOWN DUE TO INTERFERENCES NORTH, THEN EAST AS SHOWN.
3. ALL POLE HARDWARE, WIRE & CABLE, DISCONNECT SWITCHES AND TRANSFORMER TO REMAIN THE SAME.
4. PETRO ENVIRONMENTAL'S ELECTRICAL SUB. TO INSTALL
5. ALL COORDINATES CHANGED WILL BE RECORDED AND FORWARDED TO ENGINEERING.
6. POWER INSTALLATION TO BE COMPLETE BY 7-15-97
7. REFERENCE DCN # 1700-037 ATTACHED.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
[signature]	F.D.F.	6-17-97	James C. Jenkins	6/18/97

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

CDC CONTROLLED
COPY NO.
C011

JIM KERL MS-81-3 RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
James E. Kerl	6-19-97	2CC08

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

PERFORMANCE GRADE: (17) James C. Jenkins 7/1/97

(18)CONSTRUCTION CONCURRENCE: [signature] 7-1-97 DATE (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☒ YES ☐ NO (19)

F-4259 (10/01/96)

REGISTERED JUL 01 1997 CCB

ORIGINAL

REQUEST FOR CLARIFICATION OF INFORMATION / DESIGN CHANGE NOTICE -

)WP / WO NO.: 1702	(2)S/C NO.: FSC 597	(5)Pg 1 OF 5	(6)DATE June 9, 1997

(3)S/C TITLE: OSDF-PHASE 1 CONSTRUCTION — (11)RCI NO.:

(4) RESPONSIBLE DISCIPLINE: E ☐ M ☐ C ☒ OTHER ☐

(4A)RCI/DCN TITLE: DRAINAGE CHANNEL GRAVITY INLET STRUCTURE

(11)DCN NO.: 1702-004

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Drawing No. 90X-6000-00085		0	

(9)☐RCI - INQUIRY ☐USQD SCREENING BY PROJECT ENGINEER

1. Change Construction Control Points on Drawing No. G-00085 Rev. 0 as follows:

Point Nos.	Change
8101 thru 8104	Change elev. 598.71 to 598.67 ft.
8201 thru 8204	Change elev. 597.37 to 597.33 ft.
8301 thru 8304	Change elev. 595.71 to 595.67 ft.
8401 thru 8404	Change elev. 594.37 to 594.33 ft.
8501 thru 8504	Change elev. 592.71 to 592.67 ft.

2. Change Concrete Construction Dimensions as follows:
A) Section C: Remove 8 " concrete fnd. dimension and add 12 " full bottom thickness dimension.
Change height from 7' 4 " to 7' 5 ½ " .
Change Vortex Cap width from 5' 10 " to 6' 0 " .
Remove 7 " thickness for cap inside key and remove key, ie thickness will be 8 " all the way across. The 1' 1" opening will be the same. During construction installtion the cap must be centered over the structure.

(9)☐DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

2. (Continued)
B) Section A: Add foundation thickness of 12 " .
Change height from 7' 4 " to 7' 5 ½ ".
Change width of vortex cap from 5' 10 " to 6' 0 " .

C)Section B: Add foundation thickness of 12 " .
Change 3' 6 " height to 3' 6 ½ " .
Change 4' 11 ½ " height to 5' 0 " .
Change 4 ½" height to 5 ½ " .
Change width of vortex cap from 5' 10 " to 6' 0 " .

Attached are copies of Drawing Sections A, B, C, and the Control Point Table with the above changes marked or identified.

CONTROLLED COPY NO 011

(10)REQUESTOR: Daniel Bodine	COMPANY: GeoSyntec	DATE: 9 June 97	(12)FCE / PE:	DATE: 6/10/97

(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: Daniel Bodine DATE: 9 June 97

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

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 6/10/97

PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE: DATE: 6-10-97

(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐YES ☐NO
(19)

FS-F-4259 (10/01/96)

ORIGINAL

DRAINAGE CHANNEL GRAVITY INLET STRUCTURE CONSTRUCTION CONTROL POINTS (NOTE 7)

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
8101	482996.85	1350685.80	598.71 .67	8306	482540.13	1350613.80	595.79
8102	482994.99	1350687.61	598.71	8307	482601.75	1350675.71	599.20
8103	482993.18	1350685.76	598.71	8308	482601.67	1350681.63	599.20
8104	482995.04	1350683.95	598.71	8309	482591.67	1350681.51	599.12
8105	482994.07	1350684.62	599.67	8310	482591.75	1350675.59	599.12
8106	482939.88	1350618.42	598.79	8401	482396.90	1350678.47	594.37 .33
8107	483001.72	1350680.60	602.20	8402	482395.04	1350680.28	594.37
8108	483001.64	1350686.52	602.20	8403	482393.23	1350678.42	594.37
8109	482991.64	1350686.40	602.12	8404	482395.08	1350676.61	594.37
8110	482991.72	1350680.48	602.12	8405	482394.11	1350677.29	595.33
8201	482796.87	1350683.36	597.37 .33	8406	482340.12	1350611.32	594.30
8202	482795.01	1350685.17	597.37	8407	482401.76	1350673.27	597.70
8203	482793.20	1350683.31	597.37	8408	482401.69	1350679.19	597.70
8204	482795.05	1350681.50	597.37	8409	482391.69	1350679.06	597.62
8205	482794.08	1350682.17	598.33	8410	482391.76	1350673.15	597.62
8206	482739.61	1350615.63	597.29	8501	482196.91	1350676.02	592.71 .67
8207	482801.73	1350678.16	600.70	8502	482195.05	1350677.84	592.71
8208	482801.66	1350684.07	600.70	8503	482193.24	1350675.98	592.71
8209	482791.66	1350683.95	600.62	8504	482195.10	1350674.17	592.71
8210	482791.73	1350678.04	600.62	8505	482194.38	1350675.15	593.67
8301	482596.88	1350680.91	595.71 .67	8506	482152.58	1350624.08	591.74
8302	482595.02	1350682.72	595.71	8507	482201.77	1350670.82	596.20
8303	482593.21	1350680.87	595.71	8508	482201.70	1350676.74	596.20
8304	482595.07	1350679.06	595.71	8509	482191.70	1350676.82	596.12
8305	482594.10	1350679.73	596.67	8510	482191.77	1350670.70	596.12

CONTROL POINT TABLE

Page 2 of 5 12 2 2
DCN No. 17102-004

000484

NOTES:

DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR THE GEOSYNTHETICS, WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN THE LIMITS GIVEN IN THE SPECIFICATIONS.

GRAVITY DRAINAGE INLET STRUCTURES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 03100.

REINFORCED CONCRETE PIPE CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.

TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.

ANTI-VORTEX SUPPORTS DO NOT APPEAR IN ALL SECTIONS. SEE PLAN ON THIS SHEET FOR LOCATIONS.

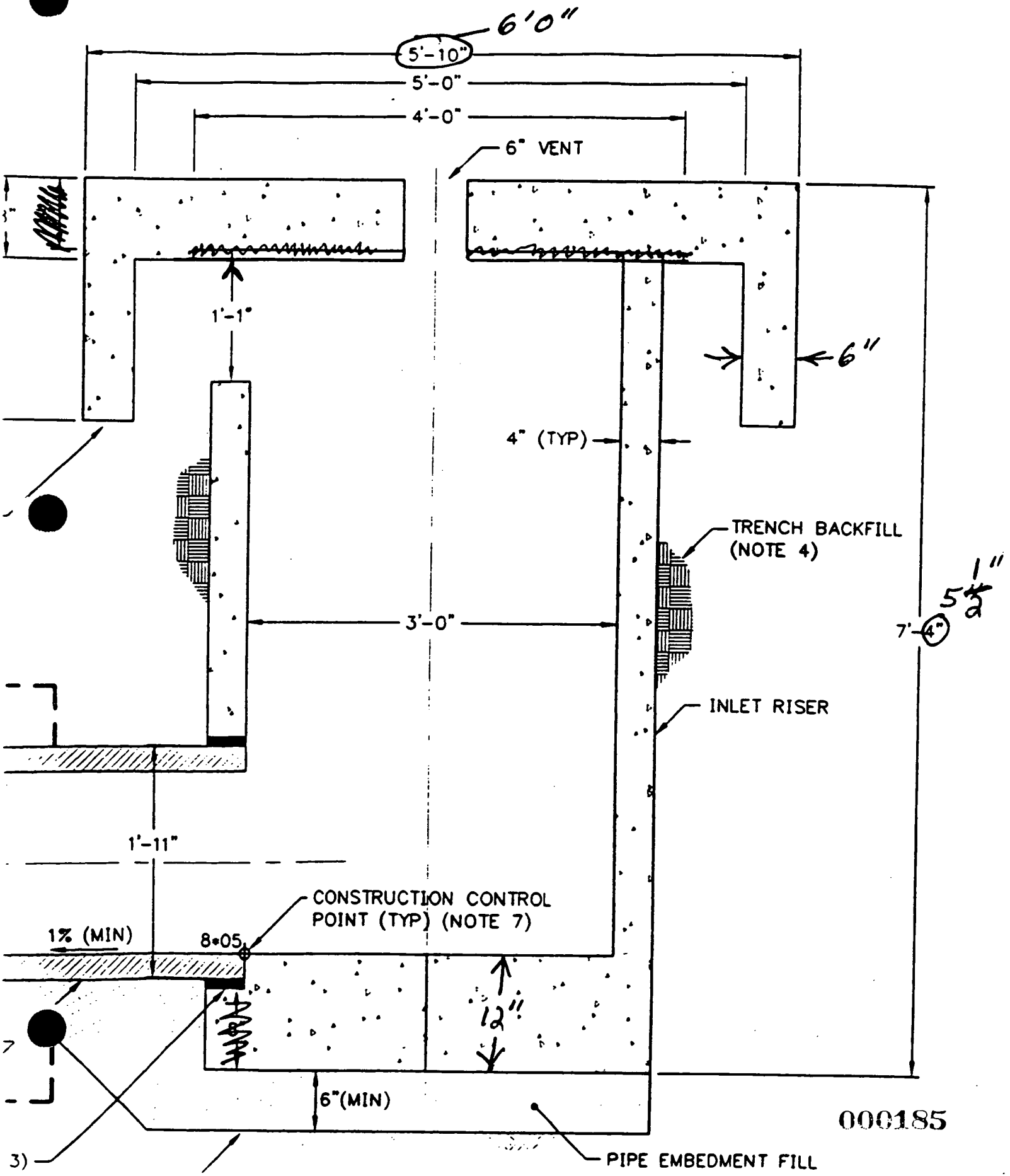
LCS AND LDS MANHOLES ARE NOT SHOWN IN THIS SECTION.

CONSTRUCTION CONTROL POINTS ASSOCIATED WITH DRAINAGE CHANNEL GRAVITY INLET STRUCTURES ARE PROVIDED ON THIS DRAWING. THE [illegible] REPRESENTS THE DRAINAGE [illegible]

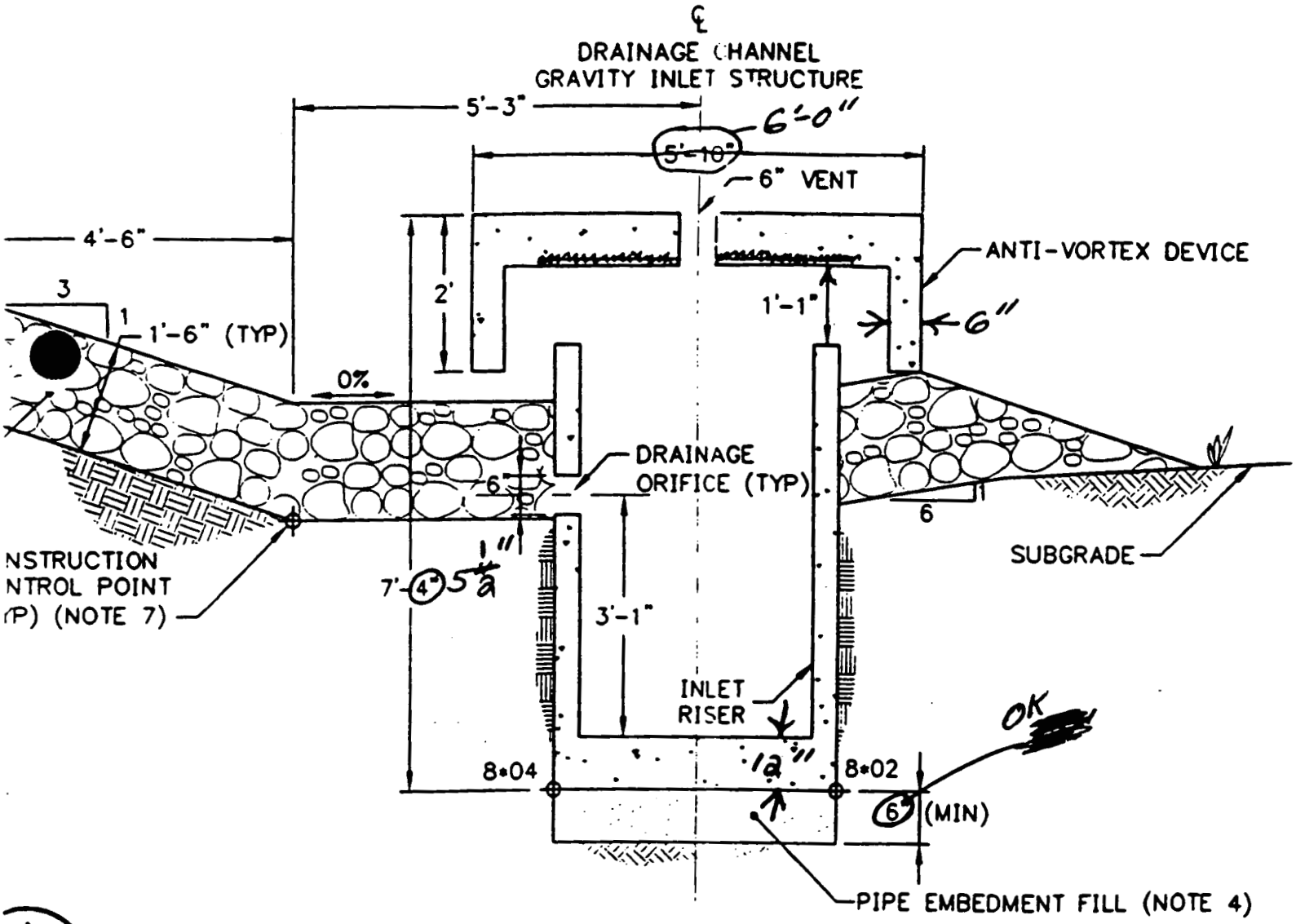
SECTION C

AND CULVERT

℄
DRAINAGE CHANNEL
GRAVITY INLET STRUCTURE

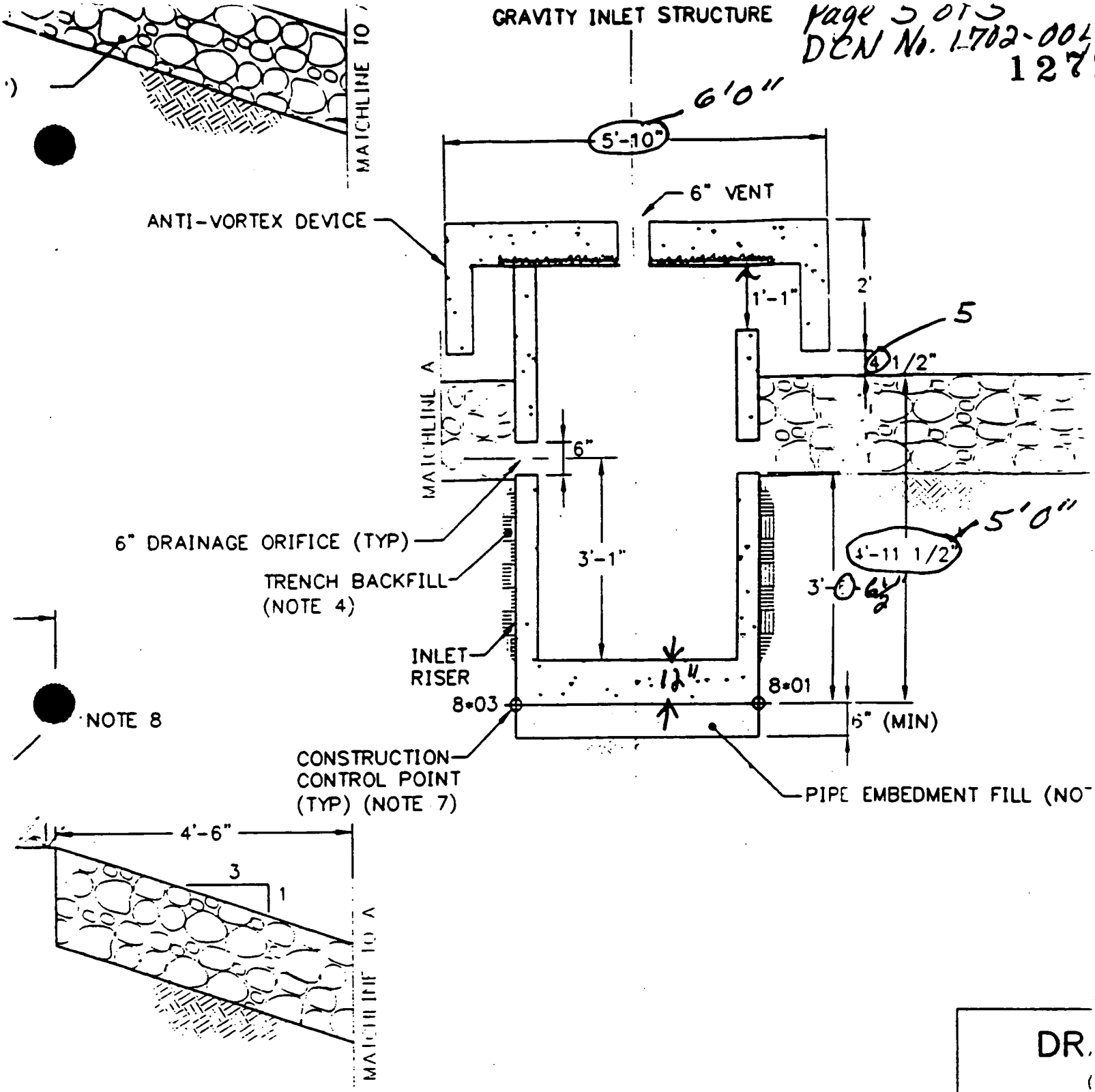


CHANNEL GRAVITY INLET STRUCTURE AND CULVERT



A SECTION
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE AND
(NOTE 1)
SCALE: 1" = 2'

SECTION A



DR.

POINT NO.
8101
8102
8103
8104
8105
8106
8107
8108
8109
8110
8201
8202
8203

JNEL GRAVITY INLET STRUCTURE AND CULVERT

SECTION B

GEOSYNTEC CONSULTANTS

Written by: Daniel Bodine Date: 97/06/09 (YY MM DD) Reviewed by: Date: / / (YY MM DD)

Client: FDF Project: OSDF Phase 1 Project/~~Proposal~~ No.: GQ-0166 Task No.: 3.1

Drainage Channel Gravity Inlet Structure Field Design Modifications

References: Drawing (1702 Contract - Petro) No. 90X-6000-G-00085 Rev. 0
Sheet No. G-31 A

1- Changes to Construction Control Points on Referenced Drawing resulting in lowering the concrete foundation elevation by 0.04 ft. The thickness of the concrete foundation will increase by 0.04 ft (0.48") resulting in NO CHANGE in the invert elevation control point.

The following construction control points change:

Point Nos.	New Elevation, ft.
8101 thru 8104	598.67
8201 thru 8204	597.33
8301 thru 8304	595.67
8401 thru 8404	594.33
8501 thru 8504	592.67

2- Changes to concrete structure dimensions as follows:

a) Section C on Referenced Drawing (G-0085)

1. Concrete foundation - Remove 8" dimension. Add 12" dimension full bottom thickness.
2. Height - Change 7'4" to 7' 5½"

GEOSYNTEC CONSULTANTS

Written by: Daniel Bodine Date: 97/06/09 (YY/MM/DD) Reviewed by: Date: / / (YY/MM/DD)

Client: FDF Project: OSDF Phase 1 Project/~~Proposal~~ No.: GQ0166 Task No.: 3.1

3. Vortex Concrete Cap
   - Change total width from 5'10" to 6'0"
   - Remove 7" thickness for cap inside key. Remove inside key, ie thickness will be 8" all the way decross
     The 1'1" opening will remain the same.
   - During construction installion the cap must be centered over the structure

b) Section A on Drawing G-00085 Rev. 0
   Make the same height and vortex cap dimension changes as mentioned above Foundation thickness shall be 12" as above. The thickness scale on this section was not shown correctly on Rev. 0.

c) Section B on Drawing G-00085 Rev. 0
   - Make the same vortex cap and foundation thickness changes as mentioned above.
   - Change the 4½" height to 5½".
   - Change the 4'11½" height to 5'0".
   - Change the 3'6" height to 3'6½".

Attached are copies of Sections A, B, C and the control point table with the above changes marked or identified.

These design changes have been discussed with the design home office on June 4th and June 9th 1997. (with Brian Jacobson)

Daniel Bodine 9 June 97

DRAINAGE CHANNEL GRAVITY INLET STRUCTURE CONSTRUCTION CONTROL POINTS (NOTE 7)

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
8101	482996.85	1350685.80	598.71	8306	482540.13	1350613.80	595.79
8102	482994.99	1350687.61	598.71	8307	482601.75	1350675.71	599.20
8103	482993.18	1350685.76	598.71	8308	482601.67	1350681.63	599.20
8104	482995.04	1350683.95	598.71	8309	482591.67	1350681.51	599.12
8105	482994.07	1350684.62	599.67	8310	482591.75	1350675.59	599.12
8106	482939.88	1350618.42	598.79	8401	482396.90	1350678.47	594.37
8107	483001.72	1350680.60	602.20	8402	482395.04	1350680.28	594.37
8108	483001.64	1350686.52	602.20	8403	482393.23	1350678.42	594.37
8109	482991.64	1350686.40	602.12	8404	482395.08	1350676.61	594.37
8110	482991.72	1350680.48	602.12	8405	482394.11	1350677.29	595.33
8201	482796.87	1350683.36	597.37	8406	482340.12	1350611.32	594.30
8202	482795.01	1350685.17	597.37	8407	482401.76	1350673.27	597.70
8203	482793.20	1350683.31	597.37	8408	482401.69	1350679.19	597.70
8204	482795.05	1350681.50	597.37	8409	482391.69	1350679.06	597.62
8205	482794.08	1350682.17	598.33	8410	482391.76	1350673.15	597.62
8206	482739.61	1350615.63	597.29	8501	482196.91	1350676.02	592.71
8207	482801.73	1350678.16	600.70	8502	482195.05	1350677.84	592.71
8208	482801.66	1350684.07	600.70	8503	482193.24	1350675.98	592.71
8209	482791.66	1350683.95	600.62	8504	482195.10	1350674.17	592.71
8210	482791.73	1350678.04	600.62	8505	482194.38	1350675.15	593.67
8301	482596.88	1350680.91	595.71	8506	482152.58	1350624.08	591.74
8302	482595.02	1350682.72	595.71	8507	482201.77	1350670.82	596.20
8303	482593.21	1350680.87	595.71	8508	482201.70	1350676.74	596.20
8304	482595.07	1350679.06	595.71	8509	482191.70	1350676.62	596.12
8305	482594.10	1350679.73	596.67	8510	482191.77	1350670.70	596.12

.67 .33 .33 .67 .67

CONTROL POINT TABLE

TES:

DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR THE GEOSYNTHETICS, WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN THE LIMITS GIVEN IN THE SPECIFICATIONS.

GRAVITY DRAINAGE INLET STRUCTURES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 03100.

REINFORCED CONCRETE PIPE CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.

TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.

ANTI-VORTEX SUPPORTS DO NOT APPEAR IN ALL SECTIONS. SEE PLAN ON THIS SHEET FOR LOCATIONS.

LCS AND LDS MANHOLES ARE NOT SHOWN IN THIS SECTION.

CONSTRUCTION CONTROL POINTS ASSOCIATED WITH DRAINAGE CHANNEL GRAVITY INLET STRUCTURES ARE PROVIDED ON THIS DRAWING. THE "." SYMBOL REPRESENTS THE DRAINAGE CHANNEL GRAVITY INLET

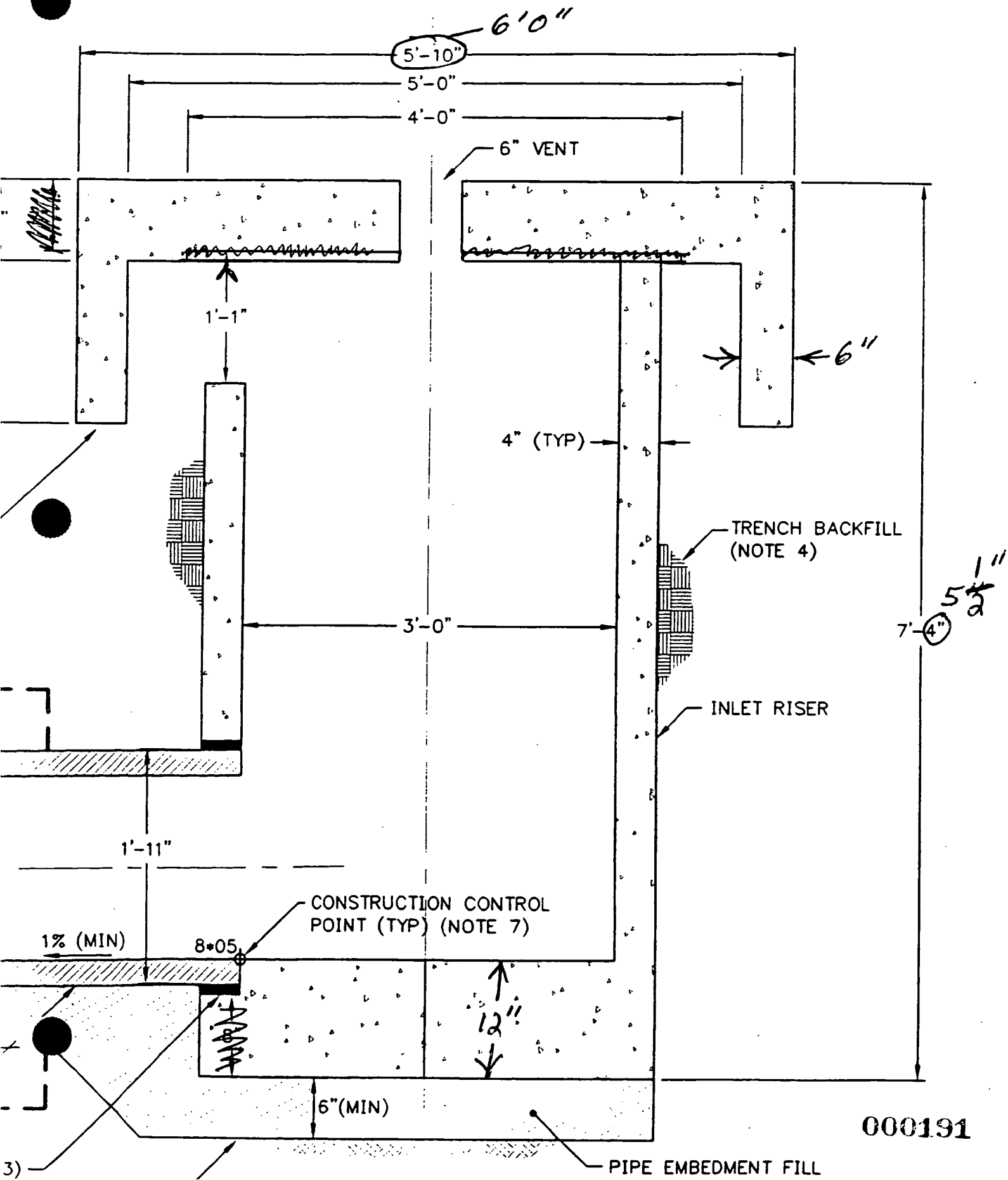
000190

1272

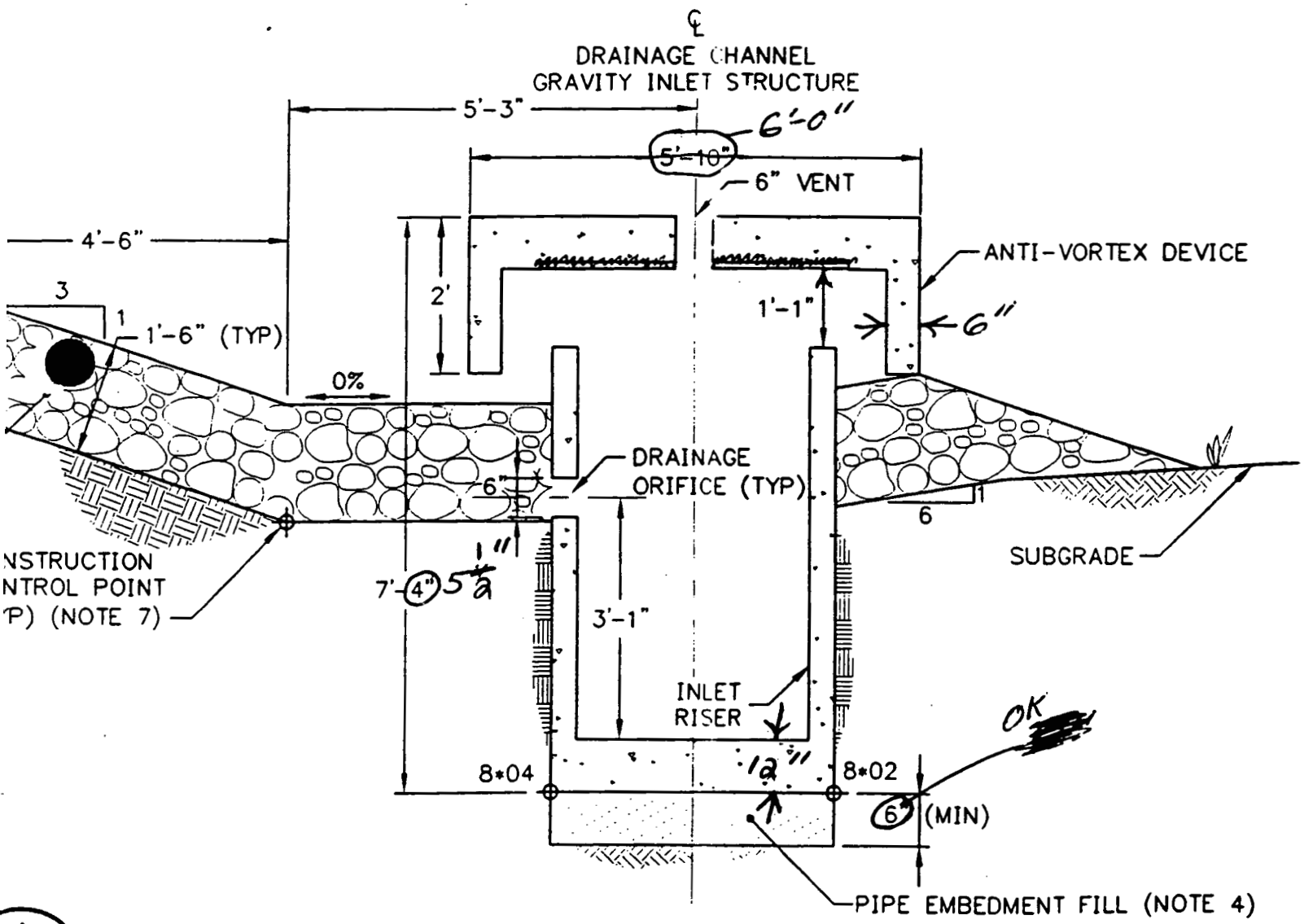
SECTION C

AND CULVERT

℄
DRAINAGE CHANNEL
GRAVITY INLET STRUCTURE



CHANNEL GRAVITY INLET STRUCTURE AND CULVERT



A

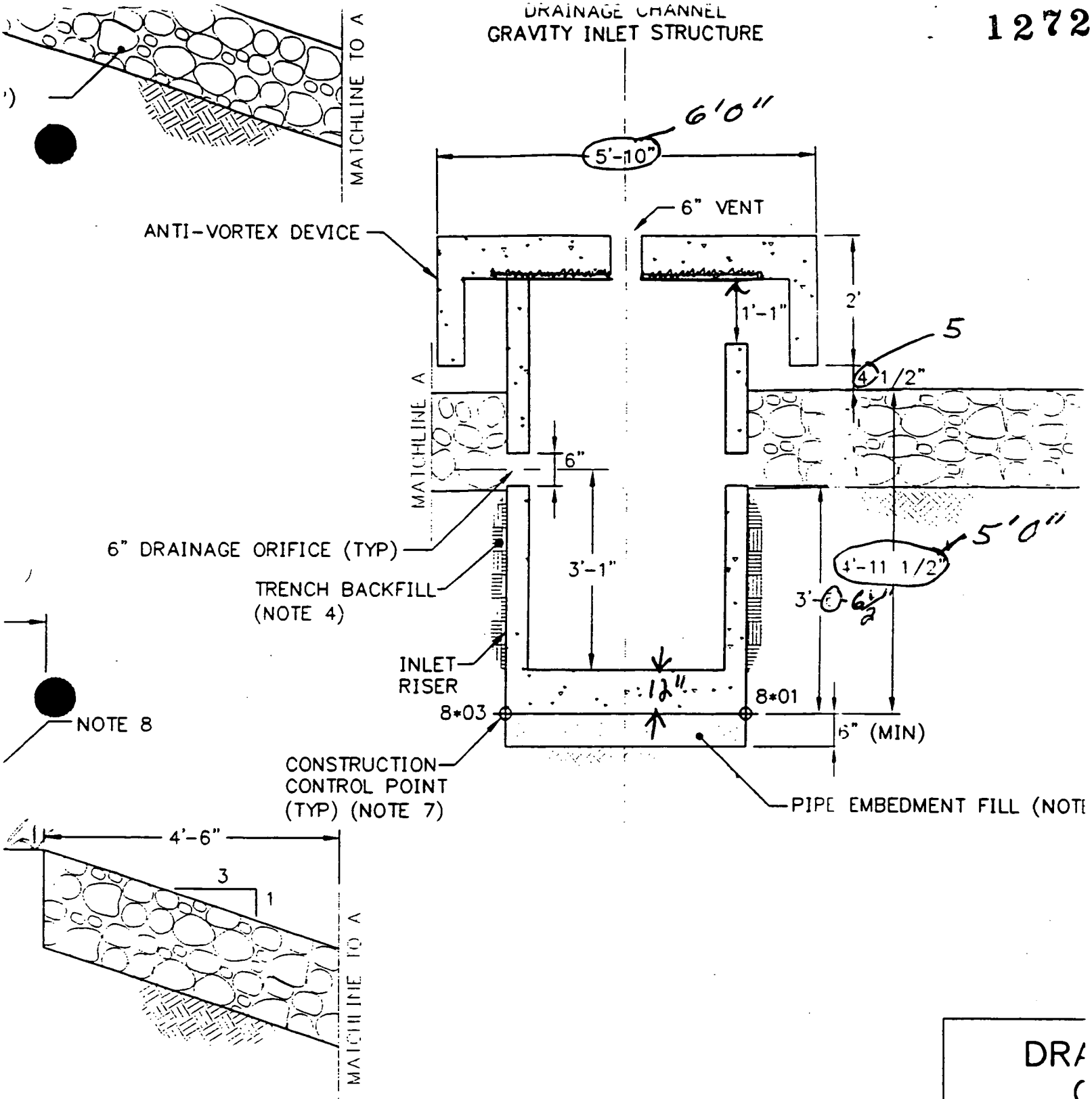
SECTION

DRAINAGE CHANNEL GRAVITY INLET STRUCTURE AND

(NOTE 1)
SCALE: 1" = 2'
XREF. F96X3562

SECTION A

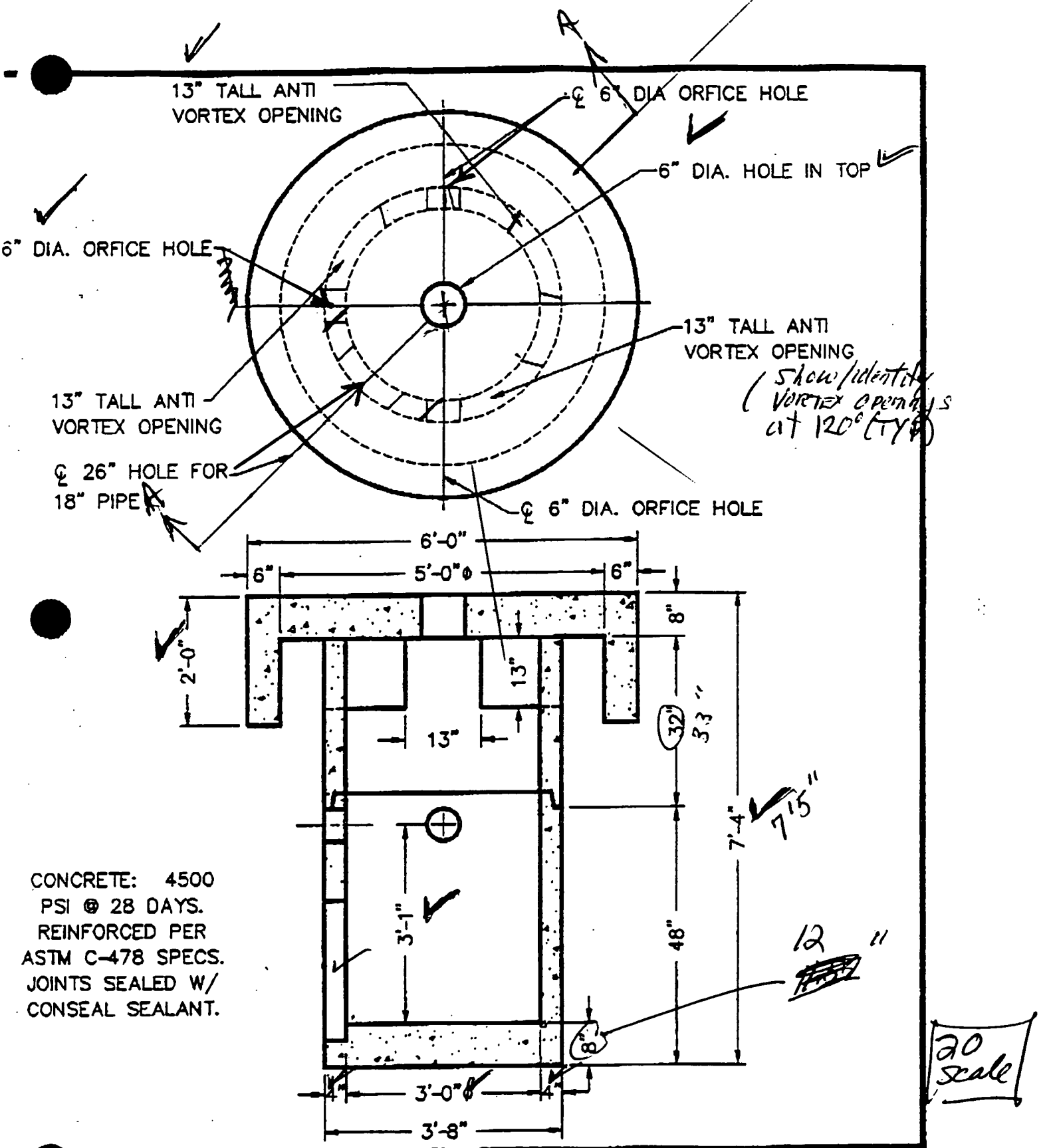
DRAINAGE CHANNEL
GRAVITY INLET STRUCTURE



DRA	
(	
POINT NO.	
8101	4
8102	4
8103	4
8104	4
8105	4
8106	4
8107	4
8108	4
8109	4
8110	4
8201	4
8202	4
8203	4

NEL GRAVITY INLET STRUCTURE AND CULVERT

SECTION B



CONCRETE: 4500 PSI @ 28 DAYS. REINFORCED PER ASTM C-478 SPECS. JOINTS SEALED W/ CONSEAL SEALANT.

3' DIA. GRAVITY INLET STRUCTURE
PETRO ENVIRONMENTAL / FERNALD PLANT)

Cloud

Cloud Concrete Products, Inc.

TELEPHONE NO.	DATE:	DRAWN BY:	DRAWING NO.:

REQUEST FOR CLARIFICATION OF INFORMATION/ DESIGN CHANGE NOTICE

(1) MP / WO NO.: 1702	(2) R/C NO.: FSC-597	(3) PG OF	(4) DATE: 5/29/97
(5) R/C TITLE: OSDF - PHASE I			(11) RCI NO.:
(6) RESPONSIBLE DISCIPLINE: ED MD CD OTHER:	(7) RCI/DCN TITLE: CHAIN LINK FENCE MODIFICATION		(11) DCN NO.: 1702-003

(7) DOCUMENTS AFFECTED	(7) DOCUMENT NOS.	(7) REV.	(8) OTHER
20100-TS-0002 REB SPEC. SECTION 02831 2.02 A		0	
DWG 90X-6000-G-00074 Sheet (G-5B) REB		2	
DWG-90X-6000-S-00088 Sheet (S-5A) REB			

(9) ☐ RCI - INQUIRY ☐ USCOD SCREENING BY PROJECT ENGINEER

(9) DCN-JUSTIFICATION/EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Substitute 7-ft high chain link fence fabric in lieu of 6-ft high chain link fence fabric between Point A (Pt A) and Point B (Pt B), as shown on attached Sketch-1 dated 5-29-97. Install line posts at Point A and Pt. B and along the length of the chain link fence, chain link fence fabric, 1-ft high 3-barbed wire strands, and other fence accessories as specified in technical specification Section 02831. Chain link fence outside the limits between Pt. A and Pt. B shall be as specified in Section 02831.
Substitution of 7-ft high chain link fence fabric required to meet the FEMP security fence requirements.

(10) REQUESTOR:	COMPANY:	DATE:	(12) PCE / PE	DATE:
MAUREEN ENDERLE	JACOBS	5/29/97	[signature]	5/29/97

(13) RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☒ YES (14) FOR DCN: ☒ APPROVED ☒ APPROVED AS NOTED ☐ DISAPPROVED REB

Document change on Drawing G-00074 (ie. relocate fence based on as-built coordinate locations) and add note on Drawing S-00088 as follows: "Between approximate coordinates N482,660, E1,350,560 and N482,165, E1,350,560 the chain-link fabric shall be 7-ft high and post braces 3.5-ft high."

CDC CONTROLLED COPY NO. 01

RCI - DCN ACCEPTANCE

(15) DESIGN ORGANIZATION APPROVAL:	DATE:	(20) CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Boeting	02 June 97	NA

(16) PDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 6/4/97

PERFORMANCE GRADE: (17) 5

(18) CONSTRUCTION CONCURRENCE:	DATE:	(21) WORK COMPLETED: (SIGNOFF BY PCE OR PE)	DATE:
[signature]	6-4-97	[signature]	13/02/97

PURCHASE REQUISITION REQUIRED: ☒ YES ☐ NO (19)

PCF-0308 (10/01/96)

ORIGINAL

REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE-

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC-597	(3)Rev OF	(4)DATE 5/29/97
(5)S/C TITLE: OSDF - PHASE I			(11)RCI NO.:
(6) RESPONSIBLE DISCIPLINE: ED MO CO OTHER	(10)RCI/DCN TITLE: CHAIN LINK FENCE MODIFICATION		(11)DCN NO.: 1702-003

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
20100-TS-0002 LGB SPEC. SECTION 02831 2.02A		0	
DWG 90X-6000-G-00074 sheet (G-5B) LGB		2	
DWG-90X-6000-S-00088 sheet (S-5A) LGB			

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

Substitute 7-ft high chain link fence fabric in lieu of 6-ft high chain link fence fabric between Point A (Pt A) and Point B (Pt B), as shown on attached Sketch-1 dated 5-29-97. Install line posts at Point A and Pt. B and along the length of the chain link fence, chain link fence fabric, 1-ft high 3-barbed wire strands, and other fence accessories as specified in technical specification Section 02831. Chain link fence outside the limits between Pt. A and Pt. B shall be as specified in Section 02831.
Substitution of 7-ft high chain link fence fabric required to meet the FEMP security fence requirements.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
MAUREEN ENDERLE	JACOBS	5/29/97	[signature]	5/29/97

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☒ YES (14)FOR DCN: ☒ APPROVED ☐ APPROVED AS NOTED ☐ DISAPPROVED LGB

Document change on Drawing G-00074 (ie. relocate fence based on as-built coordinate locations) and add note on Drawing S-00088 as follows: "Between approximate coordinates N482,660, E1,350,560 and N482,165, E1,350,560 the chain-link fabric shall be 7-ft high and post braces 3.5-ft high."

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Boeling	02 June 97	

(16)FDF PE ACCEPTANCE & VERIFICATION THAT ALL REQUIRED REVIEWS ARE COMPLETE: (DCN ONLY) DATE: 6/4/97

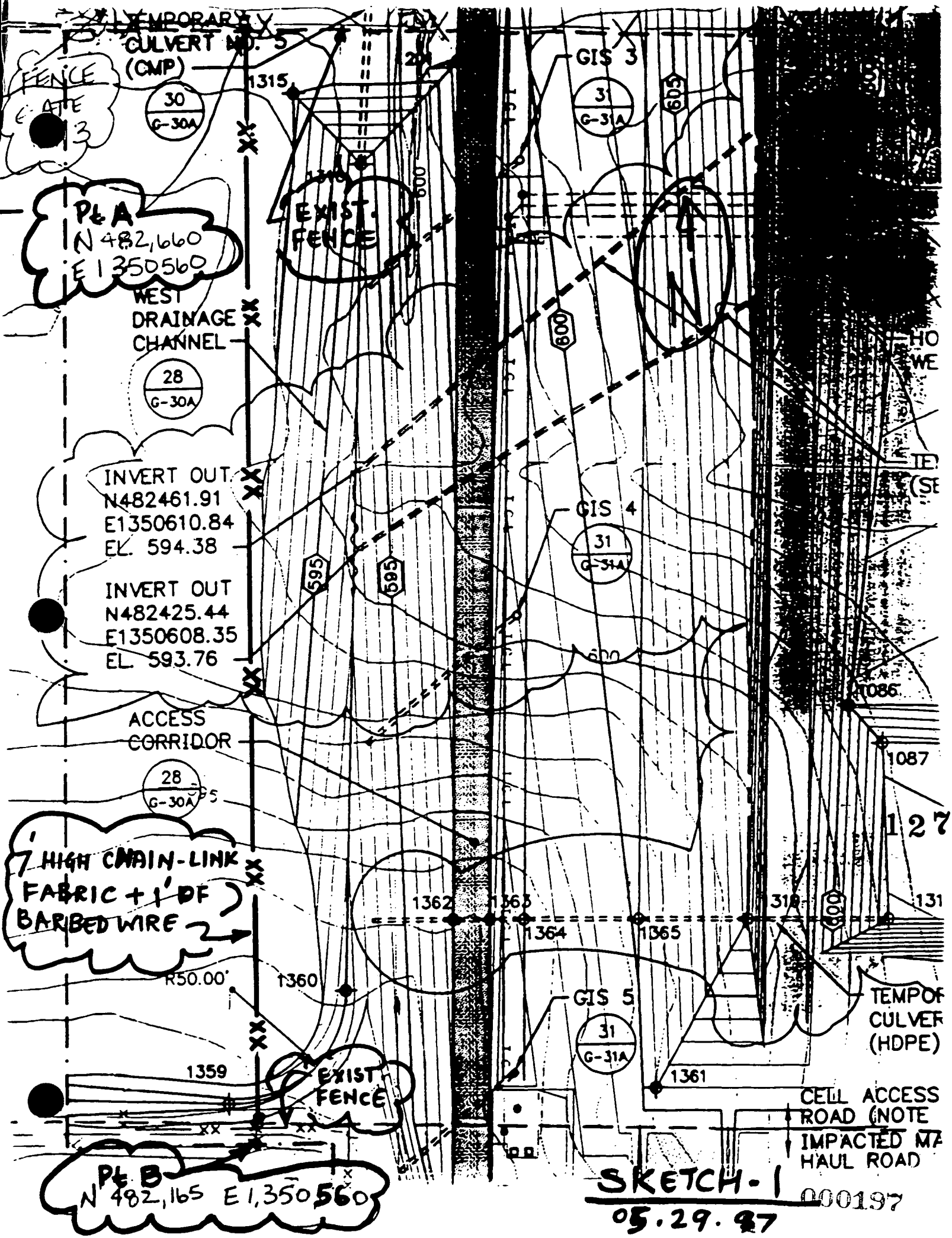
PERFORMANCE GRADE: (17) 5

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
[signature]	6-4-97		

PURCHASE REQUISITION REQUIRED: ☒ YES ☐ NO (19)

F8-F-0258 (10/01/96)

CDC
CONTROLLED
COPY
NO. C01 000196



SKETCH-1

05.29.97

000197

REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC-597	(5)Pg OF	(6)DATE 5/15/97
(3)S/C TITLE: OSDF - PHASE I			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: ED MD CD OTHER	(4A)RCI/DCN TITLE: Stockpile of Chipped Material		(11)DCN NO.: 1702-002

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Technical Specification Section ~~02210~~ 20100-02110	WSTS-0002 02110 DGB 5-15-97	0	

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Technical Specification 02110 ~~02210~~ DGB 5-15-97 requires that chipped material from clearing activities be stockpiled in the subcontractors work area. To minimize costs of hauling, stockpiling, and stockpile maintenance in the subcontractors work area, The design change follows: Revise Article 3.03.E Section 02110 DGB 5-15-97 ~~02210~~ of the Technical Specification to read:

"E. Spread chipped cleared materials from the pine woods in OSDF Phase I area into the pine woods outside of the OSDF Battery limit as directed by CM.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
R.E. Heath	FDF	5/15/97		

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☐ YES

(14)FOR DCN: ☒ APPROVED ☐ APPROVED AS NOTED ☐ DISAPPROVED

ECDC CONTROLLED
COPY NO
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Bodino	15 May 97	NA

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

PERFORMANCE GRADE: (17) 5 5/21/97 For R.E. HEATH

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	5-15-97		12/02/97

PURCHASE REQUISITION REQUIRED: ☒ YES ☐ NO (19)

FS-F-4268 (10/01/96)

ENTERED

ORIGINAL

REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE -

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC-597	(5)Pg OF	(6)DATE 5/15/97
(3)S/C TITLE: OSDF - PHASE I			(11)RCI NO.:
(4) RESPONSIBLE DISCIPLINE: ED MD CD OTHER D	(4A)RCI/DCN TITLE: Stockpile of Chipped Material		(11)DCN NO.: 1702-002

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
Techical Specification Section ~~02210~~ 20100-WGTS-0002 02110 DGB 5-15-97		0	

(9)☐ RCI - INQUIRY ☐ USQD SCREENING BY PROJECT ENGINEER

(9)☒ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

Technical Specification ~~02210~~ 02110 DGB 5-15-97 requires that chipped material from clearing activities be stockpiled in the subcontractors work area. To minimize costs of hauling, stockpiling, and stockpile maintenance in the subcontractors work area. The design change follows: Revise Article 3.03.E Section ~~02210~~ 02110 DGB 5-15-97 of the Technical Specification to read:

"E. Spread chipped cleared materials from the pine woods in OSDF Phase I area into the pine woods outside of the OSDF Battery limit as directed by C

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
R.E. Heath	FDF	5/15/97		

(13)RESPONSE: FOR RCI, IS A DCN REQ'D? ☐ NO ☐ YES

(14)FOR DCN: ☒ APPROVED ☐ APPROVED AS NOTED ☐ DISAPPROVED

CDC
CONTROLLED
COPY
NO
011

RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL:	DATE:	(20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE:
Daniel Bodino	15 May 97	

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

PERFORMANCE GRADE: (17) 5 5/7/97 FOR R.E. HEATH

(18)CONSTRUCTION CONCURRENCE:	DATE:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE)	DATE:
	5-15-97		

PURCHASE REQUISITION REQUIRED: ☒ YES ☐ NO (19)

FS-F-4268 (10/01/96)

ENTERED

ORIGINAL

RECEIVED 1997 DGB 000199

DCN No. 001

VOID Not Completed

by FDF (Same scope as DCN #002)

Verified by CDC RGB

REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE-

(1)WP / WO NO.: 1702	(2)S/C NO.: FSC-597	(3)PG OF	(4)DATE 5/14/97
(5)S/C TITLE: OSDF - PHASE I			(6)RCI NO.:
(7) RESPONSIBLE DISCIPLINE: EO MO CX OTHER:	(8)RCI/DCN TITLE: Relocation of Chipped Material		(9)DCN NO.: 001

(9)DOCUMENTS AFFECTED	(9)DOCUMENT NO.	(9)REV.	(9)OTHER
Earthwork Work Plan	PET-013		Figure 1 - Work Area Plan
Technical Specification 02210			

(5)☐ RCI - INQUIRY ☐ USCO SCREENING BY PROJECT ENGINEER (9)☐ DCN-JUSTIFICATION,EXISTING CONDITION & REQUESTED/PROPOSED CHANGE

At present, Technical Specification and the Subcontractor Work Area Plan indicate that stumps and material that has been cleared and chipped be stockpiled in the Subcontractor Work Area. The chipped material stockpile is located next to the Clean Soil Stockpile. The chipped material has potential to migrate into the Clean Soil Stockpile making the clean material unsuitable for use. In addition, if the stumps are not cleaned prior to stockpiling, mud and excess sediment could be introduced into the area. Therefore, it is proposed to direct the chipper so that the chipped material is blown into the northern pine plantation providing the wooded area with a mulch. The stumps can also be chipped and blown into the ~~pine~~ area or stockpiled beneath the pines.

(10)REQUESTOR:	COMPANY:	DATE:	(12)FCE / PE	DATE:
Maureen Enderle	Jacobs	5/14/97		

(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: DATE:	(16)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:	(21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:
PURCHASE REQUISITION REQUIRED: ☐ YES ☐ NO (19)	

REVISED 11/30/97

APPENDIX U:

NON-CONFORMANCE REPORTS (NCR)

Leachate Conveyance System
OSDF Phase I

Leachate Conveyance System

LEACHATE CONVEYANCE SYSTEM - NONCONFORMANCE REPORTS

NCR NUMBER	DATE	ORIGINATOR	ASSESSMENT ACTIVITY	NONCONFORMANCE
1700-001	7-Jul-97	H.E. Meekins	Conformance Testing	Improper Soil Classification
1700-002	10-Jul-97	Rob Peddicord	Construction Quality Control	Compaction of materials over dual containment pipe.
1700-003	7-Sep-97	Rob Peddicord	Construction Quality Control	lifts of pipe embedment fill were not wet to saturation, therefore the lifts were not flooded.
1700-004	7-Sep-97	Rob Peddicord	Construction Quality Control	Temporary cleanout was placed with the cleanout lateral facing in the opposite direction of the designed flow.
1700-005				
1700-006	28-Sep-97	Rob Peddicord	Construction Quality Control	The specified couplings were not used for electrofusion.
1700-007	23-Sep-97	Rob Peddicord	Construction Quality Control	Welding during precipitative conditions
1700-008	19-Sep-97	Randy Livingston	Construction Activity	In the process of electrofusing a coupling to the 8-inch pipe, a fault" was indicated by the processor 45 seconds prior to the completion of the 500 second cycle.
1700-009	2-Oct-97	Ned Meekins	CQC OnSite Lab Testing	Test results for the bulk sample obtained from stockpile of No. 304 aggregate base material for grain-size analysis failed to meet the requirements of specs.
1700-010	15-Oct-97	Rob Peddicord	Construction Q.C	Wise Construction pipefitters performed an extrusion weld on the ends of an electrofusion coupling that previously faulted twice. Recommend subject to hydrostatic pressure test as specified in DCN No. 33.

FIGURE 5

GeoSyntec Consultants

NONCONFORMANCE SUMMARY LOG

NCR Number	Date Discovered	Description	Date to Approval Authority	Date Proposed Corrective Action Approved	Date Proposed Correction Action Verified	Date Corrective Action Approved
1700-001	07 JULY 97	SOILS CLASSIFICATION CH	15 JULY 97	15 JULY 97	16 JULY 97	16 JULY 97
1700-002	10 JULY 97	BACKFILL PRIOR TO PRESSURE TEST	24 JULY 97	OPEN	02 SEPT. 97	02 SEPT 97
1700-003	07 SEPT 97	COMPACTION OF PGF	07 SEPT 97	10 SEPT 97	09 NA	10 SEPT 97
1700-004	10 SEPT 97	CLEANOUT INCORRECTLY INSTALLED	17 SEPT 97	18 SEPT 97	NA	NA
1700-005	16 SEPT 97	COMPACTION PGF NOT PERFORMED	17 SEPT 97	18/19 SEPT 97	17 DEC. 97	6 OCT 97
1700-006	22 SEPT 97	ELECTRO FUSION COUPLINGS PG 2406	25 SEPT 97	25 SEPT 97	29 SEPT 97	29 SEPT 97
1700-007	23 SEPT 97	WELDING DURING RAINS	25 SEPT 97	ON DATE OF PRESSURE TEST	16 OCT 97	27 SEPT 97
* 1700-008	19 SEPT 97	FAULT IN ELECTRO-FUSION	25 SEPT 97	REMOVE PRIOR TO SERVICE		27 SEPT 97
1700-009	25 SEPT 97	NO 304 AGGREGATE GRAIN SIZE	2 OCT 97	OPEN	6 OCT 97	6 OCT 97
1700-010	8 OCT 97	EXTRUSION TO ELECTRO FUSION COUPLING	15 OCT 97	16 OCT 97		24 NOV 97

* REFER 1700-010

FIGURE 1

1272

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
H.E. MEEKINS	SENIOR SOILS TECHNICIAN/ GEOSYNTEC	NCR 1700-001	07 JULY 1997

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
VILLAGE BUILDING SERVICES, INC./ LEACHATE CONVEYANCE SYSTEM	CONFORMANCE TESTING	( ) YES (✓) NO
		8. REMOVED (Initial/Date): 16 JULY 1997 J.F.

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

SPECIFICATION SECTION 02200 PART 2.01B "FILL MATERIAL SHALL BE GC, SC, SM, ML OR CL AS CLASSIFIED ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM (PER ASTM D 2487)"

10. NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

SOIL CLASSIFIED AS CH BASED ON GRAIN-SIZE DISTRIBUTION AND ATTERBERG LIMITS TEST DATA PROVIDED AND ATTACHED

12. ORIGINATOR'S SIGNATURE: H.E. Meekins

13. DATE PROVIDED TO RESPONSIBLE MANAGER: 08 JULY 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION:

ALTHOUGH THE MATERIAL CLASSIFIES AS A CH THE LIQUID LIMIT RESULT OF 50 INDICATES THAT THE MATERIAL IS NOT HIGHLY PLASTIC. ADDITIONALLY BASED ON PREVIOUS TEST DATA FROM THE SUPPLIER "WELCH SAND AND GRAVEL" AND TESTS CONDUCTED ON "ON-SITE" SOILS BEING USED AS BACKFILL THIS APPEARS TO BE AN ISOLATED CASE.

Use As-Is (✓) Reject ( ) Other ( )
Repair ( ) Rework ( )

DUE TO THE BORDERLINE CLASSIFICATION AND ISOLATED QUANTITY NO ADVERSE AFFECTS WOULD BE CREATED NOR DETERMINANT TO THE QUALITY OR PERFORMANCE OF THE LEACHATE CONVEYANCE SYSTEM.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J. McMichen	15 JULY 1997	15 JULY 1997

000206

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

20. APPROVAL AUTHORITY SIGNATURE: James C. Jenkins Daniel Becker

21. DATE: 7/16/97

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):
NA

23. VERIFIER'S SIGNATURE: J. Frisman

24. DATE: 7/16/97

25. APPROVAL AUTHORITY SIGNATURE: Bill Zebrak

26. DATE CLOSED: 7/16/97

27. CONTINUATION FROM BLOCK ____:

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

PARTICLE SIZE ANALYSIS MECHANICAL SIEVE METHOD (ASTM D 422)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO PROJECT NO: G00166 TASK NO.: 04·1

DESCRIPTION: LCS CONSTRUCTION DATE: 02 day JULY month 1997 year

MATERIAL TYPE: LCS BACKFILL SAMPLE NO.: LCS-11

SOIL SAMPLE SIZE TOTAL SAMPLE WT = 13,157·2 gms
>#4 SAMPLE WT = 5592·5 gms

APPROXIMATE MINIMUM WT. OF SAMPLE (PASSING NO. 10 SIEVE) (grams)	SAND	FINE GRAIN
	115	65

		BEFORE WASH	AFTER WASH
TARE NO.		15	15
WT. OF DRY SAMPLE PLUS TARE	(grams)	165·6	28·0
WT. OF TARE	(grams)	7·6	7·6
WT. OF DRY SAMPLE	(grams)	158·0	20·4

SIEVE ANALYSIS QA ID: PKO

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER		PROJECT SPECIFICATIONS
1½"	37·5	Ø	Ø	100		N/A
1"	25·0	40·3	0·3	99·7		
¾"	19·0	64·6	0·5	99·5		
½"	12·5	277·3	2·1	97·9		
⅜"	9·5	385·2	2·9	97·1		
4	4·75	576·2	4·4	95·6		
10	2·00	1·6	1·0	99·0	94·6	
20	0·850	2·5	1·6	98·4	94·1	
40	0·425	5·6	3·5	96·5	92·3	
60	0·250	9·8	6·2	93·8	89·7	
100	0·150	16·0	10·1	89·9	85·9	
200	0·075	20·4	12·9	87·1	83·3	

NOTE: SIEVE ANALYSIS PERFORMED ON INDIVIDUAL SAMPLES AND MATHEMATICALLY COMBINED.

Odf

%FINER = 100 − Σ% RETAINED

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

PARTICLE SIZE DISTRIBUTION AND SOIL CLASSIFICATION TEST RESULTS (ASTM D 422 & ASTM D 2487)

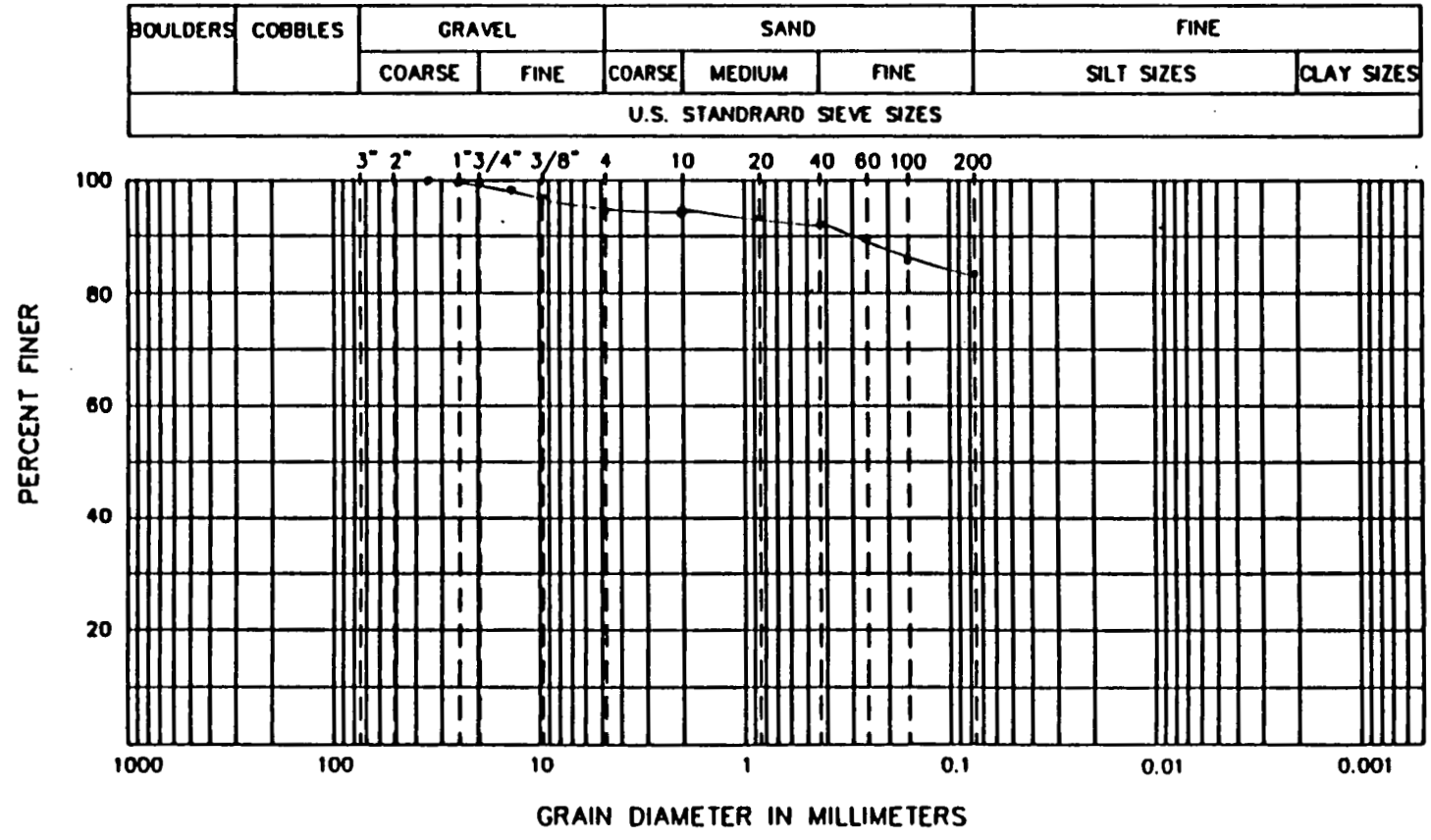
PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO — PROJECT NO.: GQ0166 TASK NO.: 04.1

DESCRIPTION: LCS CONSTRUCTION — DATE: 07 day JULY month 1997 year

MATERIAL TYPE: LCS BACKFILL — SAMPLE NO.: LCS-11 QA ID: PKO

CURVE COEFFICIENTS: (C_u) N/A (C_c) N/A



ATTERBERG LIMITS

(LL) 50

(PL) 19

(PI) 31

SIEVE RESULTS

SIEVE SIZE	% FINER
3-in.	
2-in.	
1 1/2-in.	100
1-in.	99.7
3/4-in.	99.5
1/2-in.	97.9
3/8-in.	97.1
NO. 4	95.6
NO. 10	94.6
NO. 20	94.1
NO. 40	92.3
NO. 60	89.7
NO. 100	85.9
NO. 200	83.3

HYDROMETER RESULTS

PARTICLE DIA.	% FINER
N/A	N/A

SOIL CLASSIFICATION (ASTM D 2487): DARK BROWN SILTY FAT CLAY (CH) w/some SAND.

GEOSYNTEC CONSULTANTS FILE NO. 2-16-PSD CHECKED BY: [illegible]

SHEET NO. 2 OF 2

002209

F 12722

GEOSYNTEC CONSULTANTS

FLUOR DANIEL FERNALD

ATTERBERG LIMITS TEST (ASTM D 4318)

PROJECT: ON-SITE DISPOSAL FACILITY (OSDF)

LOCATION: FERNALD, OHIO — PROJECT NO: G00166 — TASK NO.: 04·1

DESCRIPTION: LCS CONSTRUCTION — DATE: 02 day JULY month 1997 year

MATERIAL TYPE: LCS BACKFILL — SAMPLE NO.: LCS-11

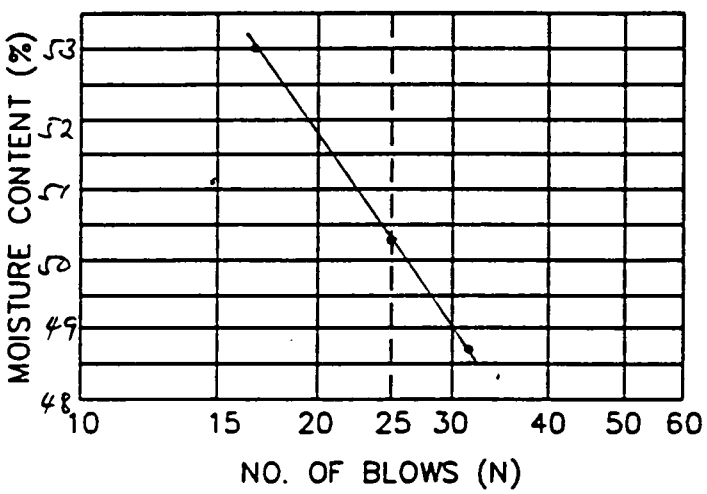
LIQUID LIMIT DETERMINATION

QA ID: PKO

	TARE NO.		1·6	1·7	1·8	
A	WT. OF TARE	(grams)	28·87	28·49	28·81	
B	WT. OF WET SOIL & TARE	(grams)	40.96	40.53	42·26	
C	WT. OF DRY SOIL & TARE	(grams)	37·00	36·50	37·60	
D	WT. OF WATER = B-C	(grams)	3·96	4·03	4·66	
E	WT. OF DRY SOIL = C-A	(grams)	8·13	8·01	8·79	
F	MOISTURE CONTENT = (D/E)X100	(%)	48·7	50·3	53·0	
N	NUMBER OF BLOWS		32	25	17	

DRYING TARE NO.

A



CURING TARE NO.

1-C

PLASTIC LIMIT DETERMINATION

QA ID: PKO

	TARE NO.		1·9	2·1		
A	WT. OF TARE	(grams)	28·56	28·24		
B	WT. OF WET SOIL & TARE	(grams)	38·27	39·91		
C	WT. OF DRY SOIL & TARE	(grams)	36·70	38·00		
D	WT. OF WATER = B-C	(grams)	1·57	1·91		
E	WT. OF DRY SOIL = C-A	(grams)	8·14	9·76		
F	MOISTURE CONTENT = (D/E)X100	(%)	19·3	19·6		

LIQUID LIMIT (LL) = 50 PLASTIC LIMIT (PL) = 19 PLASTICITY INDEX (PI) = 31

FIGURE 1

RECEIVED
SEP 02 1997

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Rob Peddicord	Technician / GeoSyntec	1700 - 002	10 July 1997

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
VBS & Wise Const. / LCS Construction	Construction Quality Control	( ) YES ( ) NO
		8. REMOVED (Initial/Date): NA

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):
DCN-033 - "AT pipe locations documented and approved in writing by the Construction Manager the subcontractor may, at his own risk, pressure test pipe after placing fill over the pipes. Locations of all joints, fittings, etc shall be documented before backfilling. The test procedure shall be as specified, except the test duration shall be minimum 8 hrs." The approval of pipe locations to be tested after backfilling should be evaluated on a case by case basis and where a definite need to delay testing has been established. Also: Refer to Section 02665-11 Part 3.07.C.2.a of the LCS Technical Specifications

10. NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):
LCS line - From CO#12 to MH #11, and approximately 40' south of MH #11, pipe embedment fill (PEF) as well as soil backfill was placed and compacted over the dual containment pipe system.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Rob Peddicord	14 July 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is ( ) Reject ( ) Other (X) See below Repair ( ) Rework ( )

Obtain written authorization from Construction Manager listing area or area(s) that are approved for pressure testing per DCN 1700-033. Refer to DCN.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):
Daniel Boling, Resident Engineer, GeoSyntec

RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
Daniel Boling	Open	24 July 1997

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( ) See attached memo giving authorization to hydro-test.

20. APPROVAL AUTHORITY SIGNATURE: James C Jackson

21. DATE: 9/02/97

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):
REFER ATTACHMENT

23. VERIFIER'S SIGNATURE: Michael W Moller

24. DATE: 9/2/97 9/2/97

25. APPROVAL AUTHORITY SIGNATURE: James C. Jackson

26. DATE CLOSED: 9/02/97

27. CONTINUATION FROM BLOCK ___:

G. Install flanged connections of HDPE pipe and fittings as shown on the Construction Drawings and as follows:
   1. Thermal butt-fuse HDPE flange connection (flange adapter) to HDPE pipe.
   2. Use Type 316 stainless steel lap joint flange. Outside diameter and drillings shall comply with American National Standards Institute (ANSI) B16.1.
   3. Use Type 316 stainless steel flange bolts, nuts and washers that meets the requirements of ANSI B16.1. Lubricate bolt threads prior to attaching nuts. Tighten bolts to a torque of 100 ±5 foot-pounds.

Hydro s
Te

H. Bolt HDPE flange adapter and stainless steel lap joint flanges at the ambient temperature of the surrounding soil to prevent relaxation of the flange bolts and loosening of the joint due to thermal contraction of the polyethylene. Draw bolts up evenly and in line. Retighten bolts 1 and 4 hours after initial tightening.

3.07 FIELD TESTING AND INSPECTION

A. Notify the CQC Consultant a minimum of 24 hours in advance of any manhole or pipe testing or pipe inspection.

B. HDPE Manhole Hydrostatic Testing:
   1. Provide testing apparatus, including pumps, hoses, gauges, taps, plugs, drains, temporary connections, and fittings to perform testing in accordance with this Section.
   2. Hydrostatically test each HDPE manhole and primary containment after final pipe connections have been completed and after backfilling. Hydrostatically test each HDPE manhole, each primary containment vessel of each LDS manhole, and the primary containment of the permanent lift station using the following method.
      a. Perform each test in the presence of the CQC Consultant and in accordance with the detailed procedure approved under this Section.
      b. Temporarily seal any holes or gaps.
      c. Fill the HDPE manhole to 6 inches below its top with clean water.
      d. Monitor the level of water for a 4-hour period.
      e. Identify any leaks, remove the water, and make repairs to the HDPE manhole or primary containment. A leak is defined as any water level drop over the test period except for an anticipated drop due to material relaxation and expansion. The anticipated drop must be demonstrated in the approved test procedure submitted by the Subcontractor in accordance with this Section.
      f. Retest the HDPE manhole or primary containment until a passing test is achieved.

1 hr test out of ground
3 hr test buried

Refer to DCN 1700-033

g. After completion of the test, remove temporary seals, pump the HDPE manhole or primary containment dry, and dispose of test water.

C. HDPE Pipe and Fittings Hydrostatic Testing:

Testing

1. Provide testing apparatus, including pumps, hoses, gauges, taps, plugs, drains, temporary connections, and fittings to perform testing in accordance with this Section.
2. HDPE pipe hydrostatic testing:
   a. Pressure test all installed HDPE solid wall, carrier, and containment pipe prior to placing fill over the pipes.
   b. Perform tests in the presence of the CQC Consultant and in accordance with the detailed test procedure submitted by the Subcontractor in accordance with this Section.
   c. Test HDPE solid wall and carrier pipe at ~~120~~ 50 psi internal pressure for gravity pipe systems and at ~~150~~ 95 psi internal pressure for force main system. Test pipes in accordance with ASME B31.9 §937.1 through §937.3.
   d. Test HDPE containment pipe at 15 psi internal pressure. Test containment pipe in accordance with ASME B31.9 §937.1 through §937.3.
   e. Test pipes at the required internal pressure for a minimum of one hour after the pressure in the pipe has stabilized. The test duration does not include the initial expansion phase after the pipe is first pressurized. The duration of the expansion phase shall be as recommended by the Manufacturer.
   f. Identify any leaks, remove the water, and make repairs to the pipe.
   g. Retest the pipe until acceptance criteria are achieved in accordance with the approved procedures for testing prior to placing backfill over the pipe.
   h. Test gauges shall be calibrated within one year of date of test. Calibration shall be traceable to national or industry standards where possible.
   i. Acceptance criteria for hydrostatic testing is zero leakage for the stabilized pressure for the minimum duration of the test.

3 hrs

~~15 50 - 8"~~
95 - 4"

D. Subcontractor may substitute air testing in lieu of hydrostatic testing if authorized in writing by the Construction Manager. Submit detailed work plan for review and approval by the Construction Manager.

E. HDPE Pipe Inspection
1. Inspect fusion joints for evidence of excess or insufficient bead size, contamination, offset, or any other evidence of inadequate joining. The surface of the HDPE pipe shall be clean at the time of inspection. Wipe or wash the HDPE pipe surface if surface contamination inhibits inspection.
2. Repair any pipe sections where greater than 4 percent pipe diameter deflection from vertical is observed.

REQUEST FOR CLARIFICATIONOF INFORMATION/ DESIGN CHANGE NOTICE -

RGB

(1)WP / WO NO.: 1700	(2)S/C NO.: FSC-589	(5)Pg 1 OF 12	(6)DATE 5/28/97
(3)S/C TITLE: LEACHATE CONVEYANCE SYSTEM		(11)RCI NO.:	
(4) RESPONSIBLE DISCIPLINE: EO MO CX OTHER O	(4A)RCI/DCN TITLE: PIPE HYDROSTATIC TESTING	(11)DCN NO.: 1700-033	

(7)DOCUMENTS AFFECTED	(7)DOCUMENT NOS.	(7)REV.	(8)OTHER
SPECIFICATIONS	SEC. 02605	0	
20110-TS-0001.			

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

- SEC. 02605, 3.07, ~~B~~ C.2 REQUIRES TESTING BEFORE BACKFILLING PIPE TRENCH.
- REQUEST LATITUDE TO PERFORM TESTING AFTER BACKFILLING IN AREAS DEEMED NECESSARY TO MEET SCHEDULED INSTALLATION DATES AND COORDINATION WITH OTHER PROJECTS IN COMMON CONSTRUCTION AREAS.
- ~~ALL OTHER ARTICLES OF 02605, 3.07 REMAIN UNCHANGED~~ RGB 30 May 97

(10)REQUESTOR: J.C. Jenkins COMPANY: DATE: 5/28/97 (12)FCE / PE J.C. Jenkins DATE: 5/28/97

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

See Page 2 of 2 for Response

(GEOSYNTEC) RCI - DCN ACCEPTANCE

(15)DESIGN ORGANIZATION APPROVAL: Daniel Bodine 30 May 97 DATE: (20)CHARGE NO. FOR CADD SERVICES TO INCORPORATE: N.A.

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

PERFORMANCE GRADE: (17)___

(18)CONSTRUCTION CONCURRENCE: DATE: (21)WORK COMPLETED: (SIGNOFF BY FCE OR PE) DATE:

PURCHASE REQUISITION REQUIRED: ☐ YES ☐ NO (19)

CF-4259 (10/01/96)

ORIGINAL

ENTERED

LEACHATE CONVEYANCE SYSTEM
Pipe Hydrostatic Testing

(13) RESPONSE

Technical Specification Section 2605 Part 3.07 shall be changed as follows:

Article C.2.a. Add sentences "At pipe locations documented and approved in writing by the Construction Manager the Subcontractor may, at his own risk, pressure test pipe after placing fill over the pipes. Locations of all joints, fittings, etc., shall be documented before backfilling. The test procedure shall be as specified, except the test duration shall be minimum 3 hours. "

Article C.2.c. Replace "120 psi " with " 50 psi " and " 130 psi internal pressure for " with " 95 psi internal pressure for the LCS ".
Add sentence " Test pressures for other pipe systems shall be in accordance with ASME B31.9 937.3.4 and as otherwise specified. "

All other Articles of Section 02605 Part 3.07 remain unchanged.

The approval of pipe locations to be tested after backfilling should be evaluated on a case by case basis and where a definite need to delay testing has been established. When properly prepared, the subcontractor can complete testing rather quickly and efficiently and even during weather conditions when backfilling may not be suitable.

Ronald Butler
30 May 97

FLUOR DANIEL FERNALD

INTEROFFICE MEMORANDUM

To:	Jim Jenkins, MS64	**Date:**	August 4, 1997
Location:	Fernald	**Reference:**	N/A
From:	Rick McGuire, MS64 RLM	**FD Fernald #:**	M:SWP(OSDF):97-0035
Location:	Fernald	**Client:**	DOE DE-AC24-92OR21972
Extension:	648-5347	**Subject:**	**LEACHATE CONVEYANCE SYSTEM - AUTHORIZATION TO BACKFILL LCS PIPING BEFORE TESTING**

c: File Record Storage Copy 106.4.34.3
Mike Godber, MS64
Bill Zebick, MS64
Dan Bodine (GeoSyntec), MS38
Mary Jo Cleveland (Village Building Services), MS44
EDC 20110-1700/OSDF File Station

DCN No. 1700-033 allows the subcontractor (Village Building Services), at their own risk, to pressure test pipe after placing fill over the pipes, at locations documented and approved, in writing, by the Construction Manager. This memorandum approves the placement of fill over the 4"/8" leachate conveyance system piping at the following locations:

- From approximately Sta. 7+40 shown on Drawing No. 92X-5900-G-00266, Rev. 1 to cleanout manhole COMH #11
- From cleanout manholes COMH #11 to COMH #12

This authorization is contingent upon conformance to the following requirements of DCN No. 1700-033:

- The test procedure shall be as specified in Specification Section 02605, Part 3.07, except that the test duration shall be minimum 3 hours.
- Locations of all joints, fittings, etc., shall be documented (on the contractor's as-built drawings) before backfilling.

If you have any question, please call me at Extension 5347.

RLM:rlm

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Rob Peddicord	Technician / GeoSyntec	1700-003	07 Sept 1997

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
FDF LCS Construction	Construction Q.C.	( ) YES (X) NO 8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

LCS Technical Specifications
Section 02215-3.03.C

10. NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

In the LCS trench, approximately from station 25+55 to station 24+75 of drawing 6-00058, the pipe embedment fill was placed in approximate 7" lifts under the pipe, around the pipe, and over the pipe. Each lift (3 total) was sprayed with water from a Dodge truck with attached water tank and water pump. Each lift was sprayed to fair saturation, but no standing water puddles were created at any point, which meant, obviously, that no lift was ever flooded and flushed. Nor was any other means of mechanical or manual form of compaction used on any of the lifts placed under, around, & over the 10" pipe.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Rob Peddicord	09 Sept 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is ( ) Reject ( ) Other (✓) Repair ( ) Rework ( )

THE ABOVE NOTED AREA DOES NOT COMPLY WITH SPECIFICATION 02215 SECTION 3.03 C 2. 3. 4. . IT IS UNDERSTOOD THAT SAFETY CONCERNS WERE (ARE) EXPRESSED DUE TO THE PROXIMITY AND DEPTH OF THE TRENCH IN RELATIONSHIP TO AN EXISTING SOILS STOCKPILE WEST OF AND ADJACENT TO THE SECTION OF TRENCH AS NOTED ABOVE. THEREFORE, IT IS REQUESTED THAT ENGINEERING ~~EVALUATE~~ 9/12/97 CONDUCT AN EVALUATION WITH RECOMMENDATIONS AS TO THE ACCEPTABILITY AND OR CORRECTIVE ACTION(S) REQUIRED.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	10 SEPTEMBER 1997	07 SEPTEMBER 1997

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19 EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

- ASSUME THE LCS LINE MEETS GRADE AS DESIGNED.
- SINCE EACH LIFT WAS "FAIRLY" SATURATED AND FLOODING IS AN APPROVED ODOT METHOD FOR CONDUIT BACKFILLING, THE INTEGRITY OF THE BEDDING IS HIGHLY FAVORABLE. IN ADDITION THIS PART OF THE TEMPORARY LINE WHICH HAS A RELATIVELY SHORT LIFE.
- THE REMAINING TRENCH BACKFILL SHALL BE PLACED AS SPECIFIED.
- SAFETY OF PERSONNEL TAKES PRESIDENCE.

20 APPROVAL AUTHORITY SIGNATURE: James C. Jenkins

21 DATE: 9/10/97

22 VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

23 VERIFIER'S SIGNATURE: N/A

24 DATE: NA

25 APPROVAL AUTHORITY SIGNATURE: James C. Jenkins

26 DATE CLOSED: 9/10/97

27 CONTINUATION FROM BLOCK ____:

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Rob Peddicord	Technician / GeoSyntec	1200-004	07 Sept 1997

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG: ( ) YES ( ) NO
VBS LCS Construction	Construction Q.C.	8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

LCS Transmission System Gravity Line and Manhole Details IV
DWG # 90X-6000-M-00066
Sheet # M-6B
- the cleanout lateral is to be facing upstream, in the opposite direction of the designed flow

10. NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

TEMPORARY CO# NA at approximate station 28+00 was placed with the cleanout lateral facing downstream, in the same direction as the designed flow.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Rob Peddicord	10 Sept 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework ( )

IF THE SECTION OF 6" (INCH) DIAMETER PIPE UPGRADIENT OF THIS CLEANOUT BECOMES CLOGGED IT CAN BE CLEANED (DISLODGED) FROM THE CLEANOUT LOCATED AT STATION 32+00. THE PIPE IN THIS AREA IS TEMPORARY AND IS NOT LIKELY TO BECOME CLOGGED DURING ITS SHORT PERIOD OF USE.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	18 SEPTEMBER 1997	17 SEPTEMBER 1997

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19 EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (✓) Reject ( )
Comments ( )

20 APPROVAL AUTHORITY SIGNATURE: Richard L McPhee / J. C. Jenkins 9/29/97

21 DATE: 9-27-97

22 VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):
NA

23 VERIFIER'S SIGNATURE: ~~NA~~ J. Fmnl

24 DATE: ~~NA~~ 29 SEPT. 1997

25 APPROVAL AUTHORITY SIGNATURE: Richard L. McPhee ~~NA~~

26 DATE CLOSED: ~~NA~~ 30 Sept. 1997

27 CONTINUATION FROM BLOCK ____:

FIGURE 1

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OCT 09 1997

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Rob Pettkord	Technician / GeoSyntec	1700-005	16 Sept 1997

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG: ( ) YES ( ) NO
Fluor Daniel Fernald specifically Rick McGuire	Construction Q.C.	8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

ICS Technical Specifications
Section 02215-3.03.C

10. NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

In the ICS trench, approximately between stations 31+00 to station 32+50 of drawing G-00059, the pipe embedment fill was placed over the ICS pipe in a lift approximately 8"-12" thick. This top lift was then sprayed to dampness, not saturated or flooded, with water from a water tank on the back of a flat bed truck. After this lift was sprayed, it was compacted with a hand tamp around the cleanout at station 32+00, but nowhere else. No other form of compaction was used on the material before it was backfilled over.

Further investigation into the matter revealed that Rick McGuire (FDF) authorized & initiated the action. Mr McGuire stated that he wanted to speed up the process before it rained. At the time of his comment, it was approximately 75°, the sun was shining, & no clouds were visible.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Rob Pettkord	17 Sept 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is ( ) Reject (X) AND Other ( ) Repair ( ) Rework (X)

ABOVE NOTED DOES NOT COMPLY WITH APPLICABLE PORTIONS OF THE SPECIFICATION AS DEFINED IN ITEM NING AND OR DCN 1700-058. THEREFORE THE AREA REQUIRES REWORK TO COMPLY WITH THE APPLICABLE DOCUMENTS.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	18/19 SEPTEMBER 1997	17 SEPTEMBER 1997

000221

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19. EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept ( ) Reject (X)
Comments (X)

See attached Continuation Sheet (1 Page)

20. APPROVAL AUTHORITY SIGNATURE: Richard L. McGuire, J. C. Jackman 10/7/97

21. DATE: 10/6/97

22. VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

23. VERIFIER'S SIGNATURE: J. Franklin

24. DATE: 17 DECEMBER 1997

25. APPROVAL AUTHORITY SIGNATURE: Richard L. McGuire, James C. Jackman

26. DATE CLOSED: 12/17/97

27. CONTINUATION FROM BLOCK 19:

SEE ATTACHED CONTINUATION SHEET.

000222

Response to NCR 1700-005 Dated 16 Sept. and FDF Construction Evaluation Comments

Apparently, the subcontractor's field personnel were unaware of FDF's instruction to follow DCN 1700-058, as verified by VBS's statements and the actions by VBS in the field. DCN 1700-058 requires a specific procedure for compacting by flooding and that procedure was not initiated by VBS or FDF at this location. The GeoSyntec Site Manager and Resident Engineer were notified of the field actions on the date of the occurrence and did not note any attempt to initiate a flooding procedure per the DCN. Density measurements were not performed, because the flooding procedure was not initiated and the pipe embedment fill was immediately covered with clay. VBS field supervisor stated that they were directed to do so by FDF and Rick McGuire confirmed the action when contacted from the field. The non-conformance was warranted.

Since FDF construction approved the construction area under question, FDF (Engineering, Management, QA etc.) should decide if they want to investigate the pipe embedment fill in-place density to determine, if, after confinement and placement and compaction of clay cover fill, the in-place density meets the requirements of the DCN. The minimum density requirement, determined per DCN 1700-058, is 108.1 lbs/ft3. If test pits are used a minimum of 3 test pits are recommended.

Jeph McMichen
Site QC Manager

Daniel Bodine
Resident Engineer

RESPONSE TO CONSTRUCTION NONCONFORMANCE REPORT NO. 1700-005

19. EVALUATION OF PROPOSED CORRECTIVE ACTION (CONTINUATION SHEET)

FDF disputes several of the items described in Section 11 (*Nonconformance*) of this Construction Nonconformance Report (1700-005). The subcontractor was instructed that he could follow the requirements of DCN No. 1700-058 and flood the pipe bedding material as called for on the DCN. This decision was not made to "speed up the process, before it rained" as stated in the nonconformance report, but was made because FDF Industrial Hygiene did not have enough working carbon monoxide (CO) monitors to support the use of a vibratory plate compactor in all the areas that the Subcontractor was working at the time.

DCN 1700-058 calls for the water levels in the trench to be visually verified by CQC personnel (GeoSyntec) and for the fill to be inspected and the dry density measured by the CQC personnel. The nonconformance report does state why this was not done, prior to placement of clay. The Subcontractor was not instructed by Construction Management to place clay material prior to inspection and testing as implied in the nonconformance report. The nonconformance report does not state whether any density measurements were performed to determine if the density requirements defined in Paragraph 8.h of the attachment to DCN No. 1700-058 were met. In the absence of such a test, Construction does not believe that a nonconformance is warranted.

Construction believes that the density of the bedding is at least as good as that required by DCN No. 1700-058. If the CQC Engineer must validate the density, it is recommended that test pits be excavated at random locations in the affected area.

27. **Continuation from Block 19:**

12/17/97

Subsequent to this NCR and initial responses by FDF and the CQC Consultant, GeoSyntec, pressure testing of the 6-inch gravity line near Sta. 31 + 55 was performed. A test plug became lodged in the pipe and required excavation for removal.

At the time of excavation, FDF Engineering and Construction personnel (J. Jenkins and R. McGuire) viewed the excavation and backfill and have concluded that it meets the intent of the specification and is satisfactory. The temporary gravity line in this area has been backfilled for approximately three months and there appears to be no evidence of ground subsidence or settlement. The 10-inch containment pipe and 6-inch carrier pipe have also passed pressure testing. The carrier pipe has been photographed and, again, there appears to be no evidence of settlement (see attached photographs). FDF therefore believes the pipe embedment is satisfactory, no additional work is necessary, and the temporary gravity line is "acceptable "as-is."

J. C. Jenkins 12/17/97
J. C. Jenkins - FDF Engineering

Richard L. McGuire 12/17/97
R. L. McGuire - FDF Construction

FIGURE 1

1272

GeoSyntec Consultants

Page 1 of 7

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Rob Reddicord	Technician / GeoSyntec	1700-006	28-09-97

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
FDF	Construction Q.C.	( ) YES (x) NO
		8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

LCS Technical Specifications, Section 02605-2.04.E and Section 02605-2.02.B

10. NONCONFORMANCE TYPE: Construction Nonconformance (X) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

On this date, in two locations, PE 2406 Electrofusion couplings were used rather than the specified PE 3408 electrofusion couplings. The first was on the north end of the "elbow" at the north end of the Lift Station, and the second was approximately 6' south of the LCS-01 tank on the 6" carrier line. Both couplings, actually, were on the 6" carrier line of the LCS

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Rob Reddicord	* 25 SEPTEMBER 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: 29/09/97 Q.A.

Use As-Is (✓) Reject ( ) Other ( )
Repair ( ) Rework ( )

* NOTE: MADE AWARE 23 SEPT. 97 ADVISED FDF OF Q.A. DEPARTMENT OF FORTHCOMMING NCR. PROCEEDED TO CONTACT MANUFACTURERS FOR COMMENT.

BASED ON THE DATA AND COMMENTS PROVIDED BY THE COUPLING MANUFACTURER A RECOMMENDATION OF USE-AS-IS HAS BEEN MADE. HOWEVER, FOR ~~THE~~ 29/09/97 Q.A. FUTURE COUPLINGS PE 3408 ARE TO BE USED.

REFER ATTACHMENTS.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J. McMichen	25 SEPTEMBER 1997	25 SEPTEMBER 1997

000226

Comments on Non-conformance 1700-006

Use of PE 2406 Electrofusion couplings raises two design questions relative to their acceptable use. One is compatibility with PE 3408 pipe and the second is design properties of the coupling. Coupling manufacturer, Central Plastics, has confirmed that their couplings are compatible with a whole range of polyethylene materials from a low end of the medium density (PE 2406) range to a high end of the high density (PE3408) range. See attached manufacturer literature obtained from their technical department.

The second concern is the hydrostatic design pressure rating. The PE 2406 standard ratings are less than those for PE 3408, the specified grade. However, the couplings are designed to have a safe operating pressure of atleast 125 psi and have been tested without failure at higher pressures and temperatures. The safe operating pressure is approximately twice the operating pressure for the SDR 26 pipe being used (64 psi) and 2 1/2 times the specified test pressure for the gravity pipe systems (DCN No. 1700-033). As always, the pipe and fitting is subject to a hydrostatic pressure test before acceptance. Attached is manufacturers documentation on safe operating pressure obtained from their installation procedures manual.

24 Sept 97

April 15, 1996

Memo To: Sales Department

From: Clay Hamilton
Technical Services Manager

Subject: Electrofusion: Fusing of Dissimilar PE Materials

Central's electrofusion fittings are all tested in accordance with ASTM F1055 Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing. Before any fitting is released for production to be used in the gas industry, it must first meet the minimum requirements of ASTM F1055 as well as our own internal specifications. In addition, all electrofusion fittings must be tested through the application temperature range established by Central Plastics (-10°F to 120°F) and for the whole range of polyethylene (PE) materials that are in use in the gas field. These materials range from Uponor Aldyl-A pipe, on the low end of the medium density (PE 2406) range to Phillips Driscopipe M-8000 pipe on the high end of the high density (PE 3408) range.

One of the strong points of electrofusion is its ability to join between dissimilar PE materials. For example, you can fuse high density pipe on one side of a coupling and medium density on the other side with the same results. This is why many gas utilities use electrofusion if they have several different PE pipe materials in their systems, especially for sidewall fusion applications.

Received by R. Bolin
on 23 Sept 97

Performance:

Central Electrofusion Fittings typically achieve the following performance test results.

Temperature	Internal Pressure	Hours to Failure
176°F (80°C)	130 PSI	1000 +
68°F (20°C)	275 PSI	2500 +

Saddle Impact: Falling Weight 10 lb. from 7 ft.

Safe Operating Temperature: −10°F to 120°F (−23°C to 49°C)

Safe Operating Pressure: 125 PSI

Compliance With Standards: Central Electrofusion Fittings meet the requirements of ASTM F1055.

Electrical Requirements and Cooling Times

Fitting	Fusion time in seconds	Clamped time in minutes	Total cooling time	KVA	Generator Breaker minimum	Extension cord size 25 ft.	Extension cord size 50 ft.
COUPLINGS:							
1/2 CTS	20	5	30	1.0	10	#12/3	#10/3
1/2 IPS	20	5	30	1.0	10	#12/3	#10/3
3/4 IPS	25	5	30	1.0	10	#12/3	#10/3
1 CTS	25	5	30	1.0	10	#12/3	10
1 IPS	40	5	30	1.0	10	#12/3	10
1 1/4 IPS	45	10	30	1.5	10	#12/3	#10/3
2 IPS	45	10	30	2.5	20	#10/3	# 8/3
3 IPS	90	10	30	2.5	20	#10/3	# 8/3
4 IPS	120	10	45	2.5	20	#10/3	# 8/3
6 IPS	500	15	1 hour	2.5	20	#10/3	# 8/3
REDUCERS:							
3/4 x 1/2 CTS	20	5	30	1.0	10	#12/3	#10/3
1 IPS x 1/2 CTS	25	5	30	1.0	10	#12/3	10
1 IPS x 1/2 IPS	30	5	30	1.0	10	#12/3	#10/3
1 IPS x 3/4 IPS	30	5	30	1.0	10	#12/3	#10/3
1 IPS x 1 CTS	30	5	30	1.0	10	#12/3	#10/3
TAPPING TEES:							
1 1/4 x 1	45	10	30	1.0	10	#12/3	#10/3
2 x 1	90	10	30	1.0	10	#12/3	#10/3
3 x 1	90	10	30	1.0	10	#12/3	#10/3
4 x 1	90	10	30	1.0	10	#12/3	#10/3
6 x 1	90	10	30	1.0	10	#12/3	#10/3
VOLTAGES:	90 Volt Minimum		150 Volt Maximum				
FREQUENCY:	45 to 75 Hertz						
INVERTERS:	Yes.						

WARNING: A.C. current only. D.C. current can result in damage to processor.

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Rob Peddicord	Technician / GeoSyntec	1700-007	23 Sept 1997

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
FDF & Wise Constr. LCS Construction	Construction Q.C.	( ) YES (X) NO 8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

LCS Technical Specifications

Section 02605-10, 3.06.B

3. Do not join HDPE pipe and fittings during any precipitation, in the presence of heavy fog or dew, or in areas of ponded water

10. NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

On this date, at approximately 1250, Wise Construction was advised of the specifications which prohibited any welding in precipitative conditions. At 1255, approximately, at MH#5 (6-00261) a welding operation was observed until 1330, at which time documentation of the event occurred. A tent, with a "roof" but no walls whatsoever, was in place and provided little to no protection.

(*) at 1330 walls were added to the tent which were still too light to prevent the wind from blowing into the tent. also, at no time have the specs. allowed tents of any kind. (cont)

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Rob Peddicord	24 Sept 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is ( ) Reject ( ) Other (X) Repair ( ) Rework ( )

MARK AFFECTED JOINTS AND MONITOR DURING HYDROSTATIC TESTING. JOINTS ARE TO BE EXPOSED FOR VIEWING DURING HYDROSTATIC TEST. RECOMMEND PRIOR TO INSTALLATION. 26/9/97 D.A.

WELDING IS NOT APPROVED OF DURING PERIODS OF PERCIPITATION AND IS NOT TO BE PERFORMED PRIOR TO RECEIPT OF APPROVED PROCEDURES VIA SUBMITTAL PROCESS WITH MANUFACTURERS RECOMMENDATIONS NOTED.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	AT TIME OF HYDROSTATIC TESTING	25 SEPTEMBER 1997

000230

FIGURE 1

GeoSyntec Consultants

Cont.

CONSTRUCTION NONCONFORMANCE REPORT

11. CONTINUATION OF NONCONFORMANCE NCR NUMBER 1700-007

It should further be noted that while the fusion welding process occurred under the tent, the pipe segments were still being stored outside in the rain. This resulted in the pipe having to be wiped down with a rag once it arrived inside the tent. Once this rag had been used a second time or more, it was potentially spreading moisture rather than absorbing it.

It should also be noted that it was necessary for personel to exit & enter the tent in order to move the pipe as necessary. This created the potential for water drippage from hard hats and/or rain gear.

This combination of conditions makes clear that welding in any precipitative conditions is inadvisable.

19. Evaluation of Proposed Corrective Action: (Comments - Cont'd.)

While FDF agrees that Spec. Section 02605-10 3.06.B states that HDPE pipe and fittings not be joined during any precipitation, we believe that the intent of this requirement is that no moisture is present in the zone of fusion during the fusion process. We believe that the shelter used in this instance provided adequate protection from any deleterious effects of the precipitation. Further, the HDPE pipe supplier, ISCO has affirmed that "...As long as there is no precipitation or water on the pipe at the fusion point, the pipe can be fused" (See attached ISCO letter from Scott Hoff to Mary Jo Cleveland of VBS) RLM 9/29/97

ORIGINATOR SIGNATURE: Rob Reddick

DATE: 23 Sept 1997

J.C.G. 9/29/97

000231

ISCO

Mary Jo Cleveland
Village Building Services
7311 Vine Street
Cincinnati, Ohio 45216

This letter addresses the ability to fuse Driscopipe during times of extreme humidity. As long as there is no precipitation or water on the pipe at the fusion point, the pipe can be fused. Please contact me at 871-9512 if you have any questions or comments. Thank you.

Scott Hoff
Regional Sales Manager

FIGURE 1

1272

ORIGINAL

GeoSyntec Consultants

25/09/97

CONSTRUCTION NONCONFORMANCE REPORT

1 ORIGINATOR:	2 TITLE/ORGANIZATION:	3 NCR NUMBER:	4 DATE DISCOVERED:
RANDY LIVINGSTON	TECHNICIAN / GEOSYNTEC	NCR 1700-008	19 SEPTEMBER 1997

5 RESPONSIBLE ORGANIZATION/PROJECT:	6 ASSESSMENT ACTIVITY:	7 HOLD TAG:
FDF- WISE CONSTRUCTION COMPANY	CONSTRUCTION ACTIVITY	( ) YES (X) NO
		8 REMOVED (Initial/Date):

9 REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

LCS TECHNICIAL SPECIFICATIONS, SECTION 02605 -2.04E
AND, SECTION 02605 -3.06F.

10 NONCONFORMANCE TYPE: Construction Nonconformance (X) Material Deviation ( )

11 NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

IN THE PROCESS OF ELECTROFUSING A COUPLING TO THE 8" HDPE CONTAINMENT PIPE ADJACENT TO THE SOUTH SIDE OF THE LIFT STATION A "FAULT" WAS INDICATED BY THE PROCESSOR 45 SECONDS PRIOR TO COMPLETION OF THE 500 SECOND CYCLE. FDF AND WISE REPRESENTATIVES WERE IMMEDIATELY ADVISED. LOCATION OF COUPLING (JOINT) TO BE CONFIRMED BY SURVEY.

12 ORIGINATOR'S SIGNATURE:	13 DATE PROVIDED TO RESPONSIBLE MANAGER:
for RANDY LIVINGSTON	19 SEPTEMBER 1997

14 RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is ( ) Reject (X) Other ( ) Repair ( ) Rework ( )

INITIALLY FDF QA REPRESENTATIVE WAS ADVISED AND WAS INFORMED THAT EFFORTS WOULD BE MADE TO VERIFY ACTION REQUIRED WITH MANUFACTURERS INPUT. ATTACHED ARE COPIES OF DATA PROVIDED. FAULT AT ANY POINT DURING THE ELECTROFUSION PROCEDURE INDICATES THE PROCESS HAS CEASED REQUIRING REMOVAL OF THE COUPLING AND REINSTALLATION.
FDF CONSTRUCTION MANAGER (LCS) HAS BEEN ADVISED OF THE REQUIREMENT.

REFER ATTACHMENTS

15 RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. MEMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC

16 RESPONSIBLE MANAGER'S SIGNATURE:	17 PROPOSED COMPLETION DATE:	18 DATE FORWARDED TO APPROVAL AUTHORITY:
	REMOVAL OF COUPLING AND REINSTALLATION TO BE SCHEDULED BY THE CONTRACTOR. COMPLETE PRIOR TO PLACING LCS IN SERVICE	25 SEPTEMBER 1997

000233

FIGURE 2

ORIGINAL

GeoSyntec Consultants

23/01/97 Z
Page 2 of ~~2~~ 5

CONSTRUCTION NONCONFORMANCE REPORT

EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ~~(X)~~ RLM 9/27/97
Comments (X)

Recommend removal of coupling where fault during electrofusion process occured and repair/rework by installing new coupling(s) for 4 7/8" leachate conveyance piping

APPROVAL AUTHORITY SIGNATURE:	DATE:
Richard L McGuire / J. C. Griffin 9/29/97	9-27-97

VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

Proposed corrective action was not completed because sufficient length of pipe to permit removing affected coupling does not exist. An alternate repair method consisting of performing an extrusion weld on each end of the coupling was proposed and is an acceptable repair. See NCR 1700-010 for final closure.

VERIFIER'S SIGNATURE:	DATE:
Daniel Bodine	21 Dec. 97
APPROVAL AUTHORITY SIGNATURE:	DATE CLOSED:
Richard L. McGuire	12/21/97

CONTINUATION FROM BLOCK ____:

ORIGINAL

CENTRAL PLASTICS COMPANY

FACSIMILE NO: (405) 273-5993

GROUP I, II, III

REF OUR FAX MSG NO _____

DATE: 9-24-97

TO: COMPANY NAME Geo SynTec

FACSIMILE NO (513) 648 3415

ATTENTION Dan Bodine

FROM: Jim Drain Central Plastics

TOTAL NUMBER OF PAGES 4 (INCLUDING THIS COVER LETTER)

If you have any further questions Please call
(405) 878-4971

SEP-24-97 07:48 From:CENTRAL PLASTICS 4058784835 T-043 P.01/04 Job-185

ORIGINAL

Electrofusion Tips Continued

recommended on the attached chart before subjecting the joint to bending, burying, pressure testing, or similar handling and back fill stress.

15. Regardless of the amount of time remaining in a fusion cycle, if the fitting fails and the processor instructs "cut out fitting," cut out coupling or disable tee.

COUPLING	FUSION TIME IN SECONDS	CLAMPED TIME IN MIN.	TOTAL COOLING TIME MIN.	EXTENSION CORD SIZE 25 FEET	EXTENSION CORD SIZE 50 FEET
1/2" CTS	20	5	20	12/3	10/3
3/4" IPS	25	5	20	12/3	10/3
1" IPS	40	5	30	12/3	10/3
1 1/4" IPS	45	10	30	12/3	10/3
2" IPS	45	10	30	12/3	8/3
3" IPS	90	10	30	12/3	8/3
4" IPS	200	10	45	12/3	8/3
6" IPS	300	15	60	12/3	8/3
8" IPS	500	15	60	12/3	8/3
TAPPING TEES					
1 1/4" X 1"	45	10	30	12/3	10/3
2" X 1"	90	10	30	12/3	10/3
3" X 1"	90	10	30	12/3	10/3
6" X 1"	90	10	30	12/3	10/3
REDUCERS					
3/4" IPS X 1/2" CTS	20	5	20	12/3	10/3
1" IPS X 3/4" IPS	25	5	20	12/3	10/3

Voltages - 90 Volt Minimum - 150 Volt Maximum
(Warning - AC Current only)

Oklahoma Natural Gas

REV (3-96)

ORIGINAL

Central Plastics Quick Reference Card
(Side 2)
Effective Date (4/25/96)

Fitting (assume IPS unless otherwise stated)	Fusion Time (Seconds)	Cooling Time in Clamped Position (minutes)	Total Cooling Time Before Pressure / Tap (minutes)	Total Cooling Time Before Rough Handling (minutes)
Tapping Tees:				
1 1/4" x 1"	45	10	20	30
1 1/2" x 1"	55	10	20	30
2" x 3/4"	90	10	20	30
2" x 1"	90	10	20	30
3" x 3/4"	90	10	20	30
3" x 1"	90	10	20	30
4" x 3/4"	90	10	20	30
4" x 1"	90	10	20	30
6" x 1"	90	10	20	30
8" x 1"	60	10	20	30
H V Tapping Tees:				
2" x 1 1/4"	120	10	25	30
2" x 2"	120	10	25	30
3" x 1 1/4"	120	10	25	30
3" x 2"	120	10	25	30
4" x 2"	120	10	25	30
6" x 2"	120	10	25	30
8" x 2"	100	10	25	30
Reducers:				
3/4" x 1/2" cts	20	5	15	30
1" x 1/2" cts	25	5	15	30
1" x 1/2"	30	5	15	30
1" x 3/4"	30	5	15	30
1" x 1" cts	30	5	15	30
1" x 1 1/4" cts	30	5	15	30
1" x 1 1/4"	45	10	20	30
Couplings:				
1/2" cts or IPS	20	5	15	30
3/4"	30	5	15	30
1" cts	25	5	15	30
1"	45	5	15	30
1 1/4"	45	10	20	30
1 1/2"	90	10	20	30
2"	45	10	20	30
3"	180	15	30	35
4"	200	20	40	45
6"	500	20	40	45
8"	500	20	40	45
10"	750	30	60	60
12"	900	30	60	60
Branch Saddles:				
2" x 2"	120	10	25	30
3" x 3"	120	10	25	30
4" x 2"	120	10	25	30
6" x 2"	120	10	25	30
8" x 2"	100	10	25	30
4" x 4"	50	10	20	30
6" x 4"	150	15	30	45

SEP-24-97 07:51 From:CENTRAL PLASTICS 4058784835 T-043 P.04/04 Job-185

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
NED MEEKINS	SR. SOIL TECH. GEOSYNTEC CONSULTANTS	1700-009	27 SEPT. 97

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
VILLAGE BUILDING SYSTEMS / OSDF LEACHATE CONVEYANCE SYSTEM	CONSTRUCTION QUALITY CONTROL ON-SITE LABORATORY TESTING	( ) YES (X) NO 8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

TECHNICAL SPECIFICATION SECTION 02230 (ROAD CONSTRUCTION) PART 2 (PRODUCTS) PARAGRAPH 2.01-B

"FURNISH BASE MATERIAL CONSISTING OF CRUSHED ROCK OR ANGULAR SOIL FREE OF ORGANIC MATTER OR OTHER DELETERIOUS MATERIALS, WHICH MEETS THE REQUIREMENTS OF ITEM 304.02 AND 703.04 OF THE OHIO DOT SPECIFICATIONS."

10. NONCONFORMANCE TYPE: Construction Nonconformance (X) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

ON-SITE LABORATORY TESTING OF BULK SAMPLE OBTAINED FROM ON SITE STOCKPILE OF NO. 304 AGGREGATE BASE MATERIAL FOR GRAIN SIZE ANALYSIS. TEST RESULTS FAILED TO MEET THE REQUIREMENTS OF SPECIFICATIONS REFERED TO IN ITEM 9 OF THIS FORM. A COPY OF THE LABORATORY WORK SHEET IS ATTACHED FOR INFORMATION.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
[signature]	29 Sept '97

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework ( )

The material is borderline by not complying to ODOT specifications with respect to Sieve Nos. 4, 30, and 3/4 in. diameter. However, material is generally coarser than specified and therefore should provide a suitable base material.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

D.J. Bonnett, on behalf of J.F. McMicken, QC Site Manager, GeoSyntec

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
DJ Bonnett	Open	2 October 1997

000238

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: G00166 TASK NO.: 04.1

DESCRIPTION: LCS CONSTRUCTION DATE: 27 day SEPT month 1997 year

MATERIAL TYPE: #304 AGG. BASE SAMPLE NO.: YRB-02.1

SOIL SAMPLE SIZE

APPROXIMATE MINIMUM WT. OF SAMPLE (PASSING NO. 10 SIEVE) (grams)	SAND	FINE GRAIN
	115	65

		BEFORE WASH	AFTER WASH
TARE NO.		K	
WT. OF DRY SAMPLE PLUS TARE	(grams)	1368.9	
WT. OF TARE	(grams)	9/29/97 ~~1267.4~~ 1015	
WT. OF DRY SAMPLE	(grams)	353.5	

SIEVE ANALYSIS

QA ID: JL

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	* PROJECT SPECIFICATIONS
1"	25.0	0	~~100.0~~ 100.0	100	70-100
3/4"	19.0	105.5	8.3	91.7 **	50-90
1/2"	12.5	409.1	32.3	67.7	
3/8"	9.5	601.6	~~475.1 267.4~~ 47.5	52.5	
4	4.75	956.8	75.5	24.5 **	30-60
8	2.36	1085.3	85.6	14.4	
16	1.18	1155.5	91.2	5.8	
30	0.60	1183.8	93.4	6.6 **	9-33
50	0.30	1198.3	94.5	5.5	
100	0.150	1209.4	95.4	4.6	
200	0.075	1224.3	96.6	3.4	0-13

* ODOT 304.02

** DOES NOT COMPLY WITH ODOT 304.02 REQUIREMENTS

%FINER = 100 - Σ% RETAINED

©GEO SYNTEC CONSULTANTS FILE NO. 2-14-PMS CHECKED BY: [illegible] SHEET NO. 1 OF 2

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: G00166 TASK NO.: 04.1

DESCRIPTION: LCS CONSTRUCTION — DATE: 26 day SEPT month 1997 year

MATERIAL TYPE: #304 AGG. BASE — SAMPLE NO.: VRB-02

SOIL SAMPLE SIZE

APPROXIMATE MINIMUM WT. OF SAMPLE (PASSING NO. 10 SIEVE) (grams)	SAND	FINE GRAIN
	115	65

		BEFORE WASH	AFTER WASH
TARE NO.		N	
WT. OF DRY SAMPLE PLUS TARE	(grams)	1716.6	
WT. OF TARE	(grams)	101.8	
WT. OF DRY SAMPLE	(grams)	1614.8	

SIEVE ANALYSIS

QA ID: JC

SIEVE NO.	DIAMETER (mm)	WT. RETAINED (grams)	% RETAINED	% FINER	* PROJECT SPECIFICATIONS
1"	25.0	0	0	100	70-100
3/4"	19.0	17.5	1.0	94.0 **	50-90
1/2"	12.5	574.2	35.6	64.4	
3/8"	9.5	755.5	48.6	51.4	
4	4.75	1216.0	75.3	24.7 **	30-60
8	2.36	1338.8	82.9	17.1	
16	1.18	1395.2	86.4	13.6	
30	0.60	1427.2	88.4	11.6	9-33
50	0.30	1441.5	89.2	10.8	
100	0.150	1443.4	89.4	10.6	
200	0.075	1445.1	89.5	10.5	0-13

*ODOT 304.02

** DOES NOT COMPLY WITH ODOT 304.02 REQUIREMENTS.
SAMPLE TO BE RERUN AS VRB-02.1

%FINER = 100 − Σ% RETAINED

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CHECKED BY: [illegible]

SHEET NO. 1 OF 2

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
ROB REDDIKOLD	Technician / GeoSyntec	1700 - 010	08 Oct 1997

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG. ( ) YES (✓) NO
Fluor Daniel Fernald, Wise Construction	Construction Q.C.	8. REMOVED (Initial/Date):

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

LCS Technical Specifications
Section 02605: HDPE Manholes, pipes, and fittings.

10. NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

On this date, at 0745 Wise Const. pipefitters performed an extrusion weld on the ends of an electrofusion coupling that had previously faulted twice on 07 oct 1997, as well as once before on an earlier date. On all three attempts, the electrofusion computer box, instructed the user to cut out the coupling. Wise, at FDF instruction, welded the ends of the coupling to the 8 inch containment pipe (of the 4"/8" dual containment pipe) as if it were a sleeve. This coupling had been placed on the south stub-out of the Permenant Lift Station manway. It was approximately 13.5 inches from the outside of the manway wall, and approximately 3 inches from the braces extending from the manway wall onto the stub-out. There was approximately 12 inches of space between the bottom side of the coupling and the top of the Lift Station tank. See the accompanying hand sketch for the attempted illustration of the situation.

12. ORIGINATOR'S SIGNATURE:	13. DATE PROVIDED TO RESPONSIBLE MANAGER:
Rob Reddikold	09 OCTOBER 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework ( )

RECOMMENDATION "USE AS-IS" SUBJECT TO HYDROSTATIC PRESSURE TEST AS SPECIFICED IN DCN NO.33.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	16 OCTOBER 1997	15 OCTOBER 1997

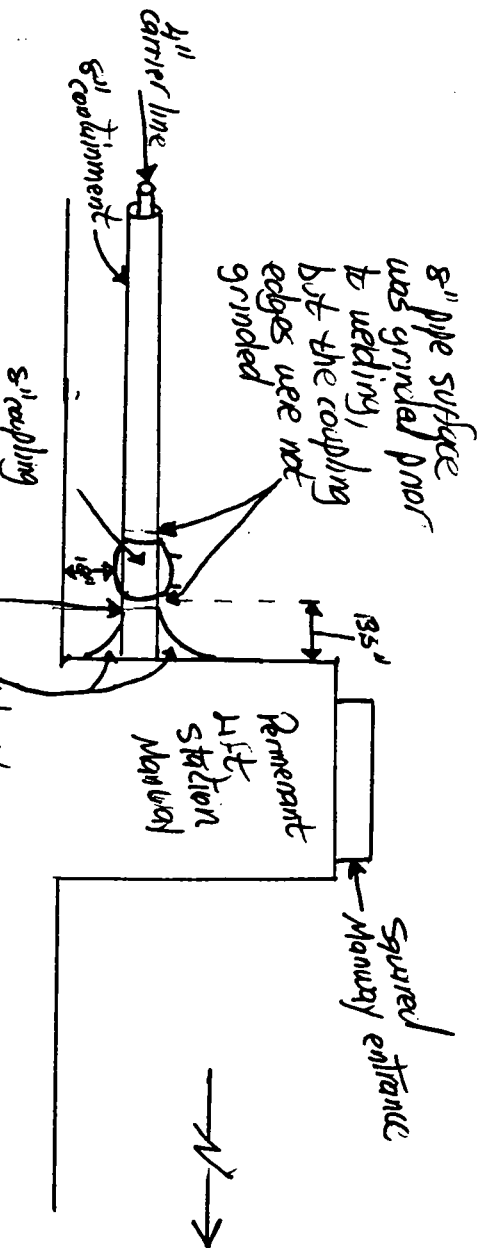
FIGURE 1

GeoSyntec Consultants

Cont.

CONSTRUCTION NONCONFORMANCE REPORT

11. CONTINUATION OF NONCONFORMANCE NCR NUMBER 1700-010



Extrusion gun was approx. 24 inches long.
- under the coupling was 12 inches of space.
- behind (north side) of the coupling was 13.5 inches of space.
- For this reason smooth, continuous, & seamless welds were impossible to make in these areas. Nor was the gun able to be held at a direct angle in these areas to ensure maximum contact of the extruded material with the pipe and the coupling. The gun had to be held in these areas in a fashion that resulted in it "shooting sideways" rather than straight ahead.

ORIGINATOR SIGNATURE: Rob Reddick

DATE:

000242

GeoSyntec Consultants

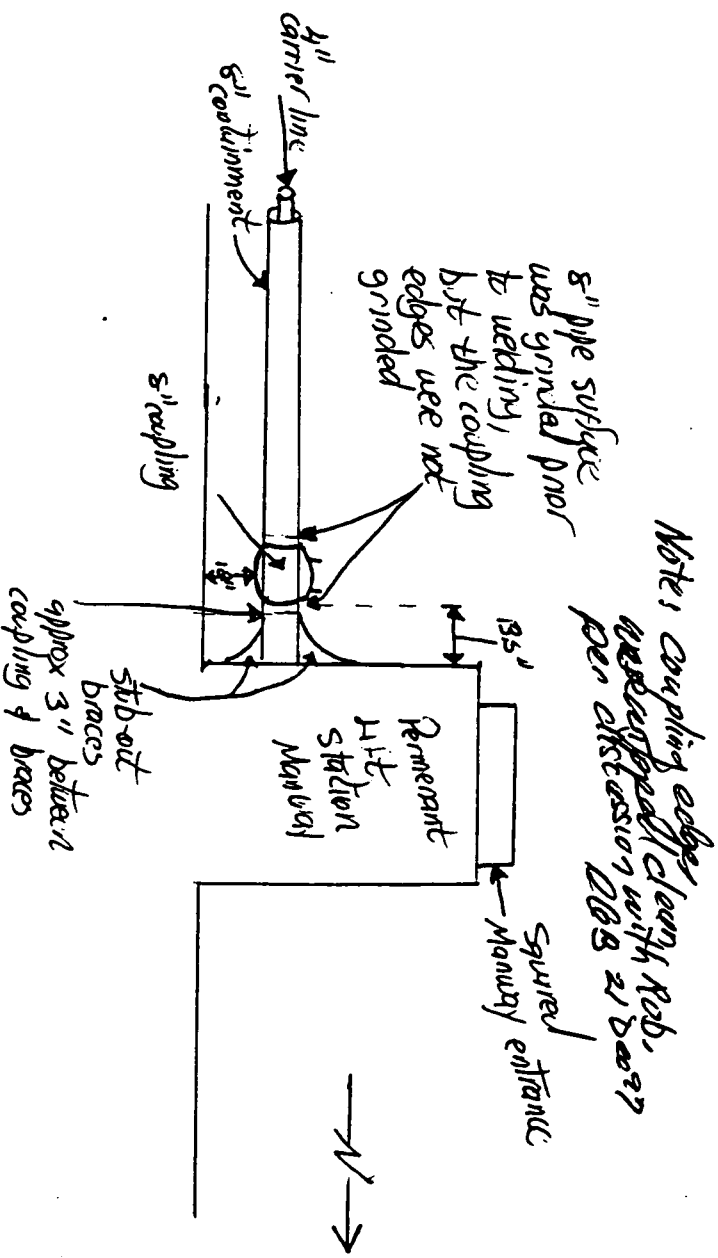
ORIGINAL

3 of 3

Cont.

CONSTRUCTION NONCONFORMANCE REPORT

" CONTINUATION OF NONCONFORMANCE NCR NUMBER 1700-010



(*) Extension gun was approx. 24 inches long.
- under the coupling was 12 inches of space.
- behind (north side) of the coupling was 13.5 inches of space.
- For this reason smooth, continuous, & seamless welds were impossible to make in these areas. Nor was the gun able to be held at a direct angle in these areas to ensure maximum contact of the extruded material with the pipe and the coupling. The gun had to be held in these areas in a fashion that resulted in it "shooting sideways" rather than straight ahead.

ORIGINATOR SIGNATURE: Rob Reddecott

DATE:

000243

FIGURE 1

GeoSyntec Consultants

ORIGINAL

CONSTRUCTION NONCONFORMANCE REPORT

ORIGINATOR:	TITLE/ORGANIZATION:	NCR NUMBER:	DATE DISCOVERED:
Rob Reddford	Technician / GeoSyntec	1700-010	08 Oct 1997

RESPONSIBLE ORGANIZATION/PROJECT:	ASSESSMENT ACTIVITY:	HOLD TAG. ( ) YES (✓) NO
Fluor Daniel Fernald, Wise Construction	Construction Q.C.	REMOVED (Initial/Date):

REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

LCS Technical Specifications
Section 02605: HDPE Manholes, pipes, and fittings.

NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

On this date, at 0745 Wise Constr. pipefitters performed an extrusion weld on the ends of electrofusion coupling that had previously failed twice on 07 Oct. 1997, as well as once before on an earlier date. On all three attempts, the electrofusion computer box, instructed the user to cut out the coupling. Wise at FDF instruction, welded the ends of the coupling to the 8 inch containment pipe (of the 4"/8" dual containment pipe) as if it were a sleeve. This coupling had been placed on the south stub-out of the Permanent Lift Station manway. It was approximately 13.5 inches from the outside of the manway wall, and approximately 3 inches from the braces extending from the manway wall onto the stub-out. There was approximately 12 inches of space between the bottom side of the coupling and the top of the Lift Station tank. See the accompanying hand sketch for the attempted illustration of the situation.

ORIGINATOR'S SIGNATURE:	DATE PROVIDED TO RESPONSIBLE MANAGER:
Rob Reddford	09 OCTOBER 1997

RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework ( )

RECOMMENDATION "USE AS-IS" SUBJECT TO HYDROSTATIC PRESSURE TEST AS SPECIFIED IN DCN No.33.

RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

RESPONSIBLE MANAGER'S SIGNATURE:	PROPOSED COMPLETION DATE:	DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	16 OCTOBER 1997	15 OCTOBER 1997

000244

Phase I

OSDF- PHASE ONE FIELD NONCONFORMANCE REPORTS

NCR NUMBER	DATE	ORIGINATOR	ASSESSMENT ACTIVITY	NONCONFORMANCE
1702-001	15-Jul-97	Brian Erisman	Earthwork: Compacted Fill	Rock Fragments > 3-inches were observed during fill operate.
1702-002	——	——	——	——
1702-003	18-Jul-97	Brian Erisman	Earthwork: Compacted Fill	Due to a change in material, further testing needed to be completed.
1702-004	25-Aug-97	Kirk Wills	CQC	Removing visible rock particles
1702-005	23-Aug-97	Brian Erisman	Earthwork: Compacted Fill	Rock in excess of 5-inches remained in fill material as fill placement continued.
1702-006	25-Aug-97	Bill Nagel	CQC	Compaction of area not yet approved for compaction.
1702-007	1-Oct-97	Kirk Wills	CQC	Clay liner material was placed prior to conformace testing being completed
1702-008	21-Oct-97	Ned Meekins	QC Laboratory Testing	A discrepancy in the grain-size test results between the quarry saple and on-site stockpile
1702-009	10-Nov-97	Rob Peddicord	Construction QC	Geosynthetic clay liner material was placed which was not approved by GeoSyntec
1702-010	29-Nov-97	Ned Meekins	Construction QC	6-inch containment pipe between LCS/LDS-01 manholes and liner penetration boxes for cell 1 was tested with incorrect psi air pressure.

FIGURE 5

GeoSyntec Consultants

NONCONFORMANCE SUMMARY LOG

NCR Number	Date Discovered	Description	Date to Approval Authority	Date Proposed Corrective Action Approved	Date Proposed Correction Action Verified	Date Corrective Action Approved
1702-001	15 JULY 97	ROCK > 3" IN FILL	18 JULY 97	21 JULY 97	NA	NA
* 1702-002	—	—	—	—	—	—
1702-003	18 JULY 97	PLACEMENT OF UNAPPROVED FILL	28 JULY 97	1 AUG 97	1 AUG 97	1 AUG 97
1702-004	31 JULY 97	ROCK > 3" IN CLAY LINER	25 AUG 97	26 AUG 97	2 SEPT 97	2 SEPT 97
1702-005	31 JULY 97	ROCK > 5" IN FILL	25 AUG 97	26 AUG 97	2 SEPT 97	2 SEPT 97
1702-006	25 AUG 97	ROCK > 3" IN CLAY LINER	27 AUG 97	28 AUG 97	2 SEPT 97	2 SEPT 97
1702-007	01 OCT. 97	PLACEMENT OF UNAPPROVED CLAY LINER	14 OCT 97	15 OCT 97	12 DEC 97	30 OCT 97
1702-008	21 OCT 97	NO. 78 AGG - GRADATION OUT OF SPEC & DCN	5 NOV 97	8 NOV 97	NA	NA
1702-009	12 NOV. 97	INSTILLATION OF UNAPPROVED GCL	12 NOV 97	13 NOV 97	3 DEC 97	3 DEC 97
1702-010	29 NOV. 97	HDPE PRESSURE TEST < 50 PSI	3 DEC 97	AT COMPLETION OF TESTS	15 DEC 97	15 DEC 97

* NCR NUMBER INADVERTANTLY NOT USED.

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BY:

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
BRIAN ERISMAN	ENG. TECH. GEOSYNTEC	1702-001 ~~1762-002~~ 7/18/97	15 JULY 1997
5. RESPONSIBLE ORGANIZATION/PROJECT: PETRO ENVIRONMENTAL TECHNOLOGIES U.S.D.F. - PHASE ONE	6. ASSESSMENT ACTIVITY: EARTHWORK, COMPACTED FILL	7. HOLD TAG: ( ) YES (X) NO	8. REMOVED (Initial/Date): NA

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]): AS PER SECTION 02200 PART 2.01 PARA. B. DO NOT ALLOW ROCK FRAGMENTS LARGER THAN 3 INCHES AS PART OF THE FILL MATERIAL

10. NONCONFORMANCE TYPE: Construction Nonconformance (X) Material Deviation ~~(X)~~ 7/18/97 J.F.M.

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required): DURING FILL OPERATIONS OF THE *NORTH PERIMETER BERM AND NORTH RUN-ON DIVERSION CHANNEL AND BERM, ROCK FRAGMENTS IN EXCESS OF 3" WERE OBSERVED TO HAVE REMAINED IN THE FILL MATERIAL AS PROCEEDING LIFTS OF FILL MATERIAL WERE PLACED.

*APPROXIMATE 50' SECTION EAST END OF ABOVE NOTED BERM. OBSERVED BY Q.C. DEPARTMENT GEOSYNTEC. J.F.M.

12. ORIGINATOR'S SIGNATURE: Brian Erisman

13. DATE PROVIDED TO RESPONSIBLE MANAGER: 18 JULY 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework (X)

SPECIFICATION 02200 PART 2.01 PARAGRAPH B. INDICATES ROCK IN EXCESS (LARGER) THAN THREE (3) INCHES TO BE REMOVED FROM FILL MATERIAL. VARIOUS METHODS MAY BE IMPLEMENTED IN THE REMOVAL MANUAL/MECHANICAL.

THE ABOVE NOTED ROCK THEREFORE MUST BE REMOVED FROM FILL AREAS. ~~EACH~~ 18/7/97 J.F.M.

IT SHOULD BE NOTED THAT THE AREA NOTED ABOVE IS LOCATED OUTSIDE OF CELL NO. ONE AND WITHIN A "STRUCTURAL FILL" NOT CLAY LINER AREA.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J. McMichen	21 JULY 1997	18 JULY 1997

000048

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19 EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

This non conformance has been addressed by DCN 1702-08 which modified the size limit on rock particles allowed in structural fill. Since this is structural fill the rock has no impact on the performance of the soil. The new maximum size for rocks in the soil is 5" in and 8 inch lift

20 APPROVAL AUTHORITY SIGNATURE:

21 DATE: 8/1/97

22 VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

NA The soil is in compliance with the modified specification

23 VERIFIER'S SIGNATURE: N/A

24 DATE: NA

25 APPROVAL AUTHORITY SIGNATURE:

26 DATE CLOSED: 8/1/97

27 CONTINUATION FROM BLOCK ____:

FDF ON-SITE DISPOSAL FACILITY (PHASE I) PROJECT
Subcontract No. FSC 597
Petro Environmental Technologies, Inc.

NONCONFORMANCE REPORT FORM
NOTICE OF NONCONFORMANCE

To: (Contractor/Subcontractor)

Petro Environmental Technologies, Inc.

Nonconformance Notice No.: 001

Date: July 21, 1997

Time: 5:00 PM

CONTRACTOR: Your attention is directed to the following occurrence of nonconformance:

Location & Feature of Work: Cell I - construction of perimeter berms

Description of Problem (Include contract specification/plan/drawing or FDF reference):

Paragraph: 02200-3.08.D: "Remove rock particles with a maximum dimension larger than 3-inches". During construction of the perimeter berms, rock particles larger than 3-inches are remaining within the fill material between successive lifts and are not being removed prior to compaction.

Probable Cause of Problem:

[illegible]re are simply too many rocks and not enough laborers and/or mechanical devices available to remove rocks [illegible]rger than 3-inches in diameter. Additionally, soil material is being placed faster than the laborers can remove the rocks and while they leave to empty the rocks collected, more soil is placed by articulating trucks and scrapers and the laborers simply can't get back quickly enough or remove the rocks fast enough. There is also no mechanical means to remove the rocks other than via the laborers, therefore, the rocks become buried in successive lifts.

How and When Problem Was Located (Include estimate of how long the problem has existed):

GeoSyntec issued Petro Environmental a Construction Nonconformance Report (CNR) on July 18, 1997, indicating the problem was initially discovered on July 15, 1997. In response to the CNR, Petro Environmental's QC Manager reviewed berm construction activities on July 21, 1997, and based upon an observation of the work being performed, it was deemed necessary to issue another Notice of Nonconformance to Petro Environmental.

Suggested Corrective Action:

It is recommended that mechanical means be employed to remove large rocks and/or additional laborers be utilized to remove the rocks. Simply placing more laborers in the field to remove rocks, will alone, not resolve the problem, in addition to posing a safety hazard while working around the heavy equipment. Therefore, employing mechanical means to resolve the problem will be necessary. Additionally, it may be necessary to suspend work on this phase of the construction until mechanical means sufficient to properly resolve the problem can be employed.

[illegible]gested Method to Prevent Future Similar Problems:

Once mechanical means and/or the use of additional laborers are employed, this should eliminate the problem.

PETRO environmental technologies

Contractor Action Taken:

The QC Manager has issued copies of this Notice of Nonconformance to the Project Manager, Steve Brandstetter, the General Superintendent, Dave Williams, in order to address the situation and to assist in arranging a successful solution to the problem.

FDF Rep/CQC Rep Comments:

Receipt Acknowledged: Date: 7/22/97 Time: 6:15 am

S C Brandstetter

Steven C. Brandstetter
Project Manager, Petro Environmental Tech. Inc.

J. Richard Schairbaum

J. Richard Schairbaum
Petro Environmental Technologies, Inc.

Construction Manager
Major Daniel Fernald

CQC Consultant Field Monitor
GeoSyntec, Inc.

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
Brian Erisman	Env. Tech. / GeoSyntec Consult.	1702-003	15 July '97

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
Petro Environmental Technologies O.S.D.F. - Phase One	Earthwork: Compacted Fill	( ) YES (X) NO
		8. REMOVED (Initial/Date): NA

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):
As per section 02200, part 3.09, C. If CQC consultants performance tests indicate that any portion of the compacted fill does not meet the requirements of this section, the contractor will rework the area untill it meets the requirements

10. NONCONFORMANCE TYPE: Construction Nonconformance (X) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):
During fill placement of the north berm for cell #1 a different fill material was used by P.E.T. The undersigned advised P.E.T. superintendant that a one point proctor and a full proctor tests series will need to be performed. In place nuclear density test indicated tenitive results but final results will require 24 hours to 48 hours to complete the ASTM D-698 proctor test. P.E.T. continued fill placement throught the day, and successive lifts were placed over the test locations. Upon completion of the proctor test, O.S.D.F.-07, it was determined that two tests performed on 16 July '97 had failed due to moisture content -.1 to .2 % low

12. ORIGINATOR'S SIGNATURE: Brian Erisman

13. DATE PROVIDED TO RESPONSIBLE MANAGER: 25 JULY 1997

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION:
As of 21 July 1997 a total of 115 nuclear density tests have been performed on "structural" fill soils. The total to date inclusive of the two referenced above fall well within the allowable degree of accuracy of the nuclear gauge density test.

Use As-Is (X) Reject ( ) Other ( )
Repair ( ) Rework ( )

Excavating the area in question to correct the -.1 and .2 percentage points are therefore not considered necessary and prudent.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):
J.F. McMichen, Quality Control Site Manager, GeoSyntec Consultants

RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	28 July 1997	28 July 1997

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19 EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

Since the nonconforming fill is not in a regulatory controlled specification clay liner, there is no need to correct a moisture condition so near the specified limit. The remainder of the fill is in the required moisture limits which yields a good quality berm. We must stress good communication

20 APPROVAL AUTHORITY SIGNATURE: [signature]

21 DATE: 8/1/97

22 VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

NA since deficiency is limited and within accuracy of testing instrument.

[signature]

23 VERIFIER'S SIGNATURE: [signature]

24 DATE: 8/1/97 / 8/1/97

25 APPROVAL AUTHORITY SIGNATURE: [signature]

26 DATE CLOSED: 8/1/97

27 CONTINUATION FROM BLOCK 19:

between the contractor and CQC consultant to assure that the soil requirements are known prior to placement.

FIGURE 1

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GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1 ORIGINATOR:	2 TITLE/ORGANIZATION:	3 NCR NUMBER:	4 DATE DISCOVERED:
KIRK WILLS	SENIOR ENGINEERING TECH W/ GEOSYNTEC CONSULTANTS	1702-004	MONDAY 25 AUG 97

5 RESPONSIBLE ORGANIZATION/PROJECT:	6 ASSESSMENT ACTIVITY:	7 HOLD TAG:
PETRO OSDF PHASE I CONSTRUCTION	CONSTRUCTION QUALITY CONTROL	( ) YES (X) NO 8 REMOVED (Initial/Date): AA

9 REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

SPECIFICATION NO. 02225 PART 3.01C
CONTINUOUSLY REMOVE VISIBLE ROCK PARTICLES WITH A MAXIMUM DIMENSION LARGER THAN 2 INCHES DURING CLAY LINER MATERIAL PLACEMENT, PROCESSING, AND COMPACTION.

10 NONCONFORMANCE TYPE: Construction Nonconformance (X) Material Deviation ( )

11 NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

- PERSONALLY REMOVE 61 OVERSIZED ROCK PARTICLES (I.E. > 2" MAX. DIMENSION) VISIBLE ON THE SURFACE OF THE FIRST LIFT OF CLAY LINER MATERIAL IN LANE NO. 1 WITHIN A 50' X 80' AREA DELINEATED BY CONTROL PT. #'S 401, 402, 510 AND 513. STACK ROCKS AND TAKE PICTURE. THIS SECTION OF THE SPECIFICATION WAS REVIEWED WITH PETRO AND FDF THIS MORNING. AREA OF FIRST LIFT DELINEATED BY CONTROL POINT NO.S 402, 407, 513 AND 523 WAS NOT CLEARED OF ALL VISIBLE OVERSIZED ROCK PARTICLES. R. TURNBUL (FDF) WAS NOTIFIED OF NON-CONFORMANCE.

12 ORIGINATOR'S SIGNATURE:	13 DATE PROVIDED TO RESPONSIBLE MANAGER:
Kirk Wills	25 AUGUST 1997 P.M.

14 RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION:

Use As-Is ( ) Reject ( ) Other ( )
Repair ( ) Rework (X)

REWORK THE AREA IE REMOVE ROCK AS PER SPECIFICATION NOTED IN ITEM NO.9 ADDITIONALLY REFER SPECIFICATION NO. 02225 PART 3.03 B. AND G.

15 RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16 RESPONSIBLE MANAGER'S SIGNATURE:	17 PROPOSED COMPLETION DATE:	18 DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	26 AUGUST 1997	25 AUGUST 1997

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

19 EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (✓) Reject ( )
Comments ( )

REWORK AREA BY SCARIFYING LIFT WITH THE SOIL STABILIZER AND HAND PICK ROCKS.

21 APPROVAL AUTHORITY SIGNATURE:

21 DATE: 9/2/97

22 VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

PETRO REWORKED THE AREA ON TUESDAY AUGUST 26 WITH THE RACO 250 SOIL STABILIZER. ROCKS WERE PICKED FROM THE CLAY ALONG WITH THE NEXT LIFT OF CLAY.

23 VERIFIER'S SIGNATURE:

24 DATE: 9/2/97 9/2/97

25 APPROVAL AUTHORITY SIGNATURE:

26 DATE CLOSED: 9/2/97

27 CONTINUATION FROM BLOCK ____:

000255

FIGURE 1

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SEP 02 1997

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1 ORIGINATOR:	2 TITLE/ORGANIZATION:	3 NCR NUMBER:	4 DATE DISCOVERED:
BRIAN ERISMAN	ENG. TECH / GEOSYNTEC	1702-005	23 AUG '97

5 RESPONSIBLE ORGANIZATION/PROJECT:	6 ASSESSMENT ACTIVITY:	7 HOLD TAG:
PETRO ENVIRONMENTAL TECHNOLOGIES O.S.D.F. - PHASE ONE	Earth work: Compacted Fill	( ) YES (X) NO 8 REMOVED (Initial/Date): N/A

9 REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]): As per section 02200 of the technical specifications, part 2.01-B: "Do not allow rock fragments larger than 3" as part of the fill material.
As described in D.C.N. #19 this was changed to allow up to 5" fragments as part of an 8" loose lift of fill material

10 NONCONFORMANCE TYPE: Construction Nonconformance (X) Material Deviation ( )

11 NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):
During fill operations for the west perimeter berm, approx 450' to 525' south of the cell #1-#2 inter cell berm, rock in excess of 5" was observed remaining in the fill material as fill placement continued. Depth of rock was approx -3' to -8' from (subgrade)* grade. A P.E.T foreman, then superintendent were notified of this problem, by GeoSyntec personnel. Rock size ranged from >5" up to 16".
25/8/97 JFM

12 ORIGINATOR'S SIGNATURE: Brian Erisman

13 DATE PROVIDED TO RESPONSIBLE MANAGER: 25 August 1997 P.M.

14 RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION:
Item 11 above was observed 23 Aug '97 25/8/97 JFM late P.M. work ceased for the ~~date~~ day. On 25 Aug '97 work resumed, contractor representatives again notified with placement continuing.
Material to be removed (soil) exposing and removing rock as noted in item No. 9 above

Use As-Is ( ) Reject ( ) Other ( )
Repair ( ) Rework (X)

*NOTE: No means of verifying subgrade available.

15 RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):
J.F. McMichen, Quality Control Site Manager, GeoSyntec Consultants

16 RESPONSIBLE MANAGER'S SIGNATURE:	17 PROPOSED COMPLETION DATE:	18 DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	26 August 1997	25 August 1997

000256

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept ☒ Reject ( )
Comments ( )

REWORK THE AREA IN QUESTION AND REMOVE UNACCEPTABLE ROCKS.

APPROVAL AUTHORITY SIGNATURE: [signature] DATE: 9/2/97

VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

GEOSYNTEC TECHNICIAN VERIFIED THE REWORK OF WEST BERM WHICH PETRO REMOVED PARTS OF THE BERM & PICKED OUT THE OVERSIZED ROCK.

VERIFIER'S SIGNATURE: Michael W. Sadler [signature] DATE: 8/27/97 9/2/97

APPROVAL AUTHORITY SIGNATURE: [signature] DATE CLOSED: 9/2/97

CONTINUATION FROM BLOCK ____:

FIGURE 1

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SEP 02 1997

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1. ORIGINATOR:	2. TITLE/ORGANIZATION:	3. NCR NUMBER:	4. DATE DISCOVERED:
BILL NAGEL	SET / GEOSYNTEC CONSULTANTS	1702-006	25 AUGUST 1997

5. RESPONSIBLE ORGANIZATION/PROJECT:	6. ASSESSMENT ACTIVITY:	7. HOLD TAG:
TETRO ENVIRONMENTAL / FDF-OSDF PHASE I CONSTRUCTION	CONSTRUCTION QUALITY CONTROL.	( ) YES (X) NO
		8. REMOVED (Initial/Date): NA

9. REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

PROJECT SPECIFICATIONS: SECTION 02225 PART 3.03 SUBPARTS G AND K.

10. NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11. NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

CONTRACTOR PERFORMED COMPACTION OF LIFT OF CLAY LINER MATERIAL LAYER AFTER (i) SCARCIFICATION/REWORK USING HAMM RACO 250 AND (ii) ONE ITERATION OF VISIBLE ROCK PICKING FROM THE SURFACE OF THE IN-PLACE MATERIAL, BUT PRIOR TO CQC/CONTRACTOR WALKING/MONITORING AND SUBSEQUENT APPROVAL OF THE LIFT REGARDING ADEQUATE/ACCEPTABLE REMOVAL OF VISIBLE STONES/ROCKS FROM THE MATERIAL. AREA INCLUDES LANE 1 (FULL LENGTH ~400FT BY ~40FT WIDE STRIP (FROM TOE OF N. BERM EXTENDING SOUTHWARD).

D. WILLIAMS (PETRO.) WAS IMMEDIATELY NOTIFIED AS CAT 815B COMPACTOR PERFORMED INITIAL PASS OF COMPACTIVE EFFORT ALONG THE TOE OF THE N. BERM AREA. DAVE INDICATED MISCOMMUNICATION WITH THE OPERATOR AND THAT A SINGLE PASS-WIDTH (STRIP) WOULD BE PERFORMED. GEOSYNTEC INDICATED THAT THE AREA WAS NOT YET "APPROVED" AND THAT ANY ADDITIONAL COMPACTION (OUTSIDE OF INITIAL PASS WIDTH OF ~15FT) [illegible]

12. ORIGINATOR'S SIGNATURE: [signature]

13. DATE PROVIDED TO RESPONSIBLE MANAGER: 26 AUGUST 1997 A.M.

14. RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION:

Use As-Is ( ) Reject ( ) Other ( )
Repair ( ) Rework (X)

SPECIFICATION 02225 3.03 B
"DO NOT PLACE COMPACTED CLAY LINER MATERIAL UNTIL THE CQC CONSULTANT COMPLETES EVALUATION OF THAT MATERIAL AND PERFORMANCE OF PREVIOUS WORK, INCLUDING EVALUATION OF SUBCONTRACTOR'S SURVEY RESULTS FOR PREVIOUS WORK."
REWORK, REMOVE ROCK AND REINSPECT.

NOTE: AREA WAS REWORKED IE ROCK REMOVED AS OBSERVED BY GEOSYNTEC CONSULTANTS. WORK PERFORMED 26 AUGUST 1997 P.M. HOURS.

15. RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16. RESPONSIBLE MANAGER'S SIGNATURE:	17. PROPOSED COMPLETION DATE:	18. DATE FORWARDED TO APPROVAL AUTHORITY:
[signature]	28 AUGUST 1997	27 AUGUST 1997

000258

GeoSyntec Consultants

Page 2 of 3
26/12/97

CONSTRUCTION NONCONFORMANCE REPORT

EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

REWORK AREA BY SCARIFYING LIFT WITH THE SOIL STABILIZER AND HAND PICK ROCKS

APPROVAL AUTHORITY SIGNATURE:	DATE:
	9/2/97

VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

PETRO REWORKED THE AREA ON THE SAME DAY THE PROBLEM WAS DISCOVERED. ROCKS WERE PICKED FROM THE CLAY AFTER STABILIZING.

VERIFIER'S SIGNATURE:	DATE:
Michael W. Toller	9/2/97 9/2/97
APPROVAL AUTHORITY SIGNATURE:	**DATE CLOSED:**
	9/2/97

CONTINUATION FROM BLOCK ____:

GEOSYNTEC CONSULTANTS

Written by: B NAGEL Date: 97 / 08 / 25 (YY MM DD) Reviewed by: J.E. MCMICHEN Date: 97 / 08 / 26 (YY MM DD)

Client: FDF Project: PHASE I CONST. CELL I Project/Proposal No.: GQ 0166 Task No.: 04.1

(i) → WOULD DEMONSTRATE NON CONFORMANCE BY THE CONTRACTOR AND GEOSYNTEC WOULD HAVE NO CHOICE EXCEPT TO ISSUE AN NCR SINCE THE INTENT OF THE PROJECT SPECIFICATIONS ARE NOT BEING MET. DAVE INDICATED THAT CORRECTIVE ACTION WOULD BE TAKEN YET THE COMPACTOR PROCEEDED TO COMPACT ADDITIONAL PASSES, ESTIMATED (BY PACING) TO BE AN APPROXIMATE 40 FT WIDTH BY NEARLY ENTIRE LENGTH OF LANE NO. 1 AS PREVIOUSLY DESCRIBED.

{SEVERAL ROCKS WERE OBSERVED TO BE PRESENT WITHIN THE IN-PLACE MATERIAL BEING COMPACTED}. AS PREVIOUSLY STATED, NO IMMEDIATE CORRECTIVE ACTION WAS IMPLEMENTED BY THE CONTRACTOR; COMPACTIVE EFFORT WAS EXPANDED OVER ADDITIONAL UNAPPROVED AREAS OF THE CLAY LINER MATERIAL LAYER.

BN

FIGURE 1

GeoSyntec Consultants

@ 10/8/97
~~Page 1 of 2~~
PAGE 1 OF 3

CONSTRUCTION NONCONFORMANCE REPORT

1 ORIGINATOR:	2 TITLE/ORGANIZATION:	3 NCR NUMBER:	4 DATE DISCOVERED:
KIRK WILLS	SENIOR ENGINEERING TECHNICIAN GEOSYNTEC CONSULTANTS	NCR 1702-0067 10/09/97	WEDNESDAY 01 OCT 97

5 RESPONSIBLE ORGANIZATION/PROJECT:	6 ASSESSMENT ACTIVITY:	7 HOLD TAG:
PETRO OSDF- PHASE I CONSTRUCTION	CONSTRUCTION QUALITY CONTROL	( ) YES (✓) NO 8 REMOVED (Initial/Date):

9 REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

SECTION 02225 PART 3.03B OF PROJECT SPECIFICATION

DO NOT PLACE COMPACTED CLAY LINER MATERIAL UNTIL THE CQC CONSULTANT COMPLETES EVALUATION OF THAT MATERIAL AND PERFORMANCE EVALUATION OF PREVIOUS WORK, INCLUDING EVALUATION OF SUBCONTRACTOR'S SURVEY RESULTS FOR PREVIOUS WORK.

10 NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11 NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

CONTRACTOR STARTED PLACING CLAY LINER MATERIAL ON WEDNESDAY 01 OCT 97 FOR WHICH CONFORMANCE TESTING IS NOT COMPLETE. CONTRACTOR AND FDF WERE NOTIFIED THAT THE CLAY LINER MATERIAL SAMPLES FROM STOCKPILE NO. 11 HAVE OUT-STANDING TESTS AND THEREFORE, THE MATERIAL IS NOT APPROVED. CLAY LINER STOCKPILE NO. 11 WAS STARTED ON FRIDAY 26 SEPT 97. THE FIRST CONFORMANCE SAMPLE (LP-263) WAS COLLECTED ON THIS DATE. ADDITIONAL CONFORMANCE SAMPLES WERE COLLECTED (1 PER 1,500 yd³) AS CLAY LINER MATERIAL WAS ADDED TO THE STOCKPILE. (LP-269 COLLECTED ON 29 SEPT 97, LP-297 COLLECTED ON 02 OCTOBER 97) CONT:

12 ORIGINATOR'S SIGNATURE:	13 DATE PROVIDED TO RESPONSIBLE MANAGER:
Kirk Wills	09 OCT 97

14 RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (✓) Reject ( ) Other ( ) Repair ( ) Rework ( )

AS NOTED ABOVE THE CONTRACTOR PROCEEDED WITH PLACEMENT OF CLAY LINER MATERIAL PRIOR TO EVALUATION. MATERIAL WAS PLACED AT "RISK". ALL PARTIES CONCERNED WERE IMMEDIATELY ADVISED OF THE NON-CONFORMANCE TO BE GENERATED. ALTHOUGH RESULTS OF TESTS CONDUCTED ON SAMPLES LP 263, LP 269 AND LP 297 MEET SPECIFICATION REQUIREMENTS AS CONFIRMED THIS 13 OCTOBER 1997 IT IS HIGHLY RECOMMENDED THAT THIS PROCEDURE NOT OCCUR IN THE FUTURE. ADDITIONALLY, ADDITIONAL LAB TESTING WAS REQUIRED TO CONFIRM MOISTURE-DENSITY RELATIONSHIPS TO FACILITATE DENSITY TEST RESULTS.

15 RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

RESPONSIBLE MANAGER'S SIGNATURE:	17 PROPOSED COMPLETION DATE:	18 DATE FORWARDED TO APPROVAL AUTHORITY:
J.F. McMichen	15 OCTOBER 1997	14 OCTOBER 1997

000261

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1 ORIGINATOR:	2 TITLE/ORGANIZATION:	3 NCR NUMBER:	4 DATE DISCOVERED:
NED MEEKINS	SET - GEOSYNTEC CONSULTANTS	1702-008	21 OCTOBER 1997

5 RESPONSIBLE ORGANIZATION/PROJECT:	6 ASSESSMENT ACTIVITY:	7 HOLD TAG:
OSDF PHASE I	CONSTRUCTION QC LABORATORY TESTING	( ) YES (X) NO
		8 REMOVED (Initial/Date):

9 REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

TECHNICAL SPECIFICATION SECTION 02710 PART 2.01-B
DCN 1702-15

10 NONCONFORMANCE TYPE: Construction Nonconformance ( ) Material Deviation (X)

11 NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

SIEVE ANALYSIS INDICATES THE MATERIAL TO BE TO COARSE ON THE 1/2" SIEVE. REFER TO ATTACHED LABORATORY FORMS.

12 ORIGINATOR'S SIGNATURE:	13 DATE PROVIDED TO RESPONSIBLE MANAGER:
N.E. Meekins	21 OCTOBER 1997

14 RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is (X) Reject ( ) Other ( ) Repair ( ) Rework ( )

Refer attached sheet

15 RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J. F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16 RESPONSIBLE MANAGER'S SIGNATURE:	17 PROPOSED COMPLETION DATE:	18 DATE FORWARDED TO APPROVAL AUTHORITY:
J. F. McMichen	8 NOVEMBER 1997	5 NOVEMBER 1997

000062

FIGURE 2

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):

23 VERIFIER'S SIGNATURE:	24 DATE:
25 APPROVAL AUTHORITY SIGNATURE:	26 DATE CLOSED:

27 CONTINUATION FROM BLOCK _____:

FIGURE 1

GeoSyntec Consultants

@ 10/8/97
~~PAGE 2 OF 2~~
Cont.
PAGE 2 OF 3

CONSTRUCTION NONCONFORMANCE REPORT

" CONTINUATION OF NONCONFORMANCE NCR NUMBER NCR 1702-007

- AS PER SECTION 02225 PART 2.01B OF THE PROJECT SPECIFICATIONS THE CONTRACTOR IS TO IDENTIFY SOURCES OF CLAY LINER MATERIALS AT LEAST 10 CALENDAR DAYS PRIOR TO USE FOR CONFORMANCE TESTING OF THE SOIL BY THE CQC CONSULTANT. THE UN-APPROVED CLAY LINER MATERIAL WAS PLACED (AT CONTRACTOR'S RISK) ON THE SOUTH SLOPE OF THE CELL I/II INTERCELL BERM L8-L15, WESTERN 150 ft OF CELL TOP 1'-2' NO. 1 FLOOR AND ON THE WEST PERIMETER BERM L1-? (BENCH AND SLOPE). PLACEMENT AREAS WILL CONTINUE TO EXPAND AS LONG AS CONTRACTOR USES THIS CLAY LINER MATERIAL BEFORE CONFORMANCE TESTING IS COMPLETE.

ORIGINATOR SIGNATURE: Kirk Willis

DATE: 08 OCT 97

000053

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments (K)

Agree with item 14

APPROVAL AUTHORITY SIGNATURE:

DATE: 10/30/97

VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

NA

VERIFIER'S SIGNATURE:

DATE: ~~10/30/97~~ 12/DEC/1997 JTM

APPROVAL AUTHORITY SIGNATURE:

DATE CLOSED: 10/30/97

CONTINUATION FROM BLOCK ____:

GeoSyntec Consultants

Cont.

CONSTRUCTION NONCONFORMANCE REPORT

14. CONTINUATION OF NCR No. 1702-008

RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION:

The above noted material, No. 78 aggregate, was supplied by Highland Stone. The material was specifically graded for the OSDF project as No. 78 is not commonly produced in the general area. Initially GeoSyntec obtained samples (GDM 06 through GDM 10) from stockpiles at the quarry site. Results of the grain-size distribution tests met specification and DCN requirements as did hydraulic conductivity and carbonate content. The material was again sampled from "on site" stockpiles. Results of grain-size distribution tests GDM 13 through GDM 18 excluding GDM 15 did not meet specification requirements. An additional hydraulic conductivity test, GDM 14, met specification requirements. The discrepancy in grain-size test results appears to be due to a combination of loading, transporting, off loading and stockpiling on site resulting in segregation of the material. It should also be noted that samples are only obtainable from the stockpile face. Based on the above findings no adverse affects are anticipated in the use of the material for its intended purpose.

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (X) Reject ( )
Comments ( )

The hydraulic conductivity of This drainage material exceeds The required value. Therefore Accept This material as-is.

APPROVAL AUTHORITY SIGNATURE:

DATE: 12/3/97

VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

NA

VERIFIER'S SIGNATURE: NA

DATE: NA

APPROVAL AUTHORITY SIGNATURE: NA

DATE CLOSED: NA

CONTINUATION FROM BLOCK ____

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

1 ORIGINATOR:	2 TITLE/ORGANIZATION:	3 NCR NUMBER:	4 DATE DISCOVERED:
Rob Peddicord	Technician / GeoSyntec	1702-009	10 NOV '97

5 RESPONSIBLE ORGANIZATION/PROJECT:	6 ASSESSMENT ACTIVITY:	HOLD TAG.
Petro Environmental	Construction Q.C.	( ) YES (X) NO
		8 REMOVED (Initial/Date):

7 REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

OSDF Technical Specifications Section 02772
Part 2.01, E.1

10 NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

11 NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

On Monday, 10 November 1997, Petro Environmental deployed 3 panels of Bentofix-NS GCL panels onto the subgrade of Cell-1 which had not been approved by GeoSyntec Consultants. The unapproved lot number, which had been provided in advance to Petro, was 97090502. Petro placed three panels, measuring approximately 71', 32', & 90' in length (approx 15' wide), which were of this lot number with their roll numbers being 037359, 037359, & 037357 respectively. A panel placement sketch was made showing the panel locations

12 ORIGINATOR'S SIGNATURE: Robert Peddicord

13 DATE PROVIDED TO RESPONSIBLE MANAGER: 10 NOVEMBER 1997 (0830 HRS)

14 RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is ( ) Reject ( ) Other (X) Repair ( ) Rework ( )

ON 11 NOVEMBER 1997 ROLL NO. 037357 (REFER ITEM 11) WAS REMOVED AND REPLACED WITH AN APPROVED ROLL (LOT NO. ROLL NO.) OF GCL.

REMOVE REMAINING NON-APPROVED GCL, LOT NO. 97090502 - ROLL NO. 037359 AND REPLACE WITH APPROVED GCL.

REPRESENTATIVES OF PETRO ENVIRONMENTAL AND FLUOR DANIEL FERNALD WERE PROVIDED COPIES OF GEOSYNTEC'S DRAWING INDICATING APPROXIMATE LOCATIONS AND DIMENSIONS OF ABOVE NOTED GCL, REFER ATTACHMENT

15 RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J. F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

16 RESPONSIBLE MANAGER'S SIGNATURE:	17 PROPOSED COMPLETION DATE:	18 DATE FORWARDED TO APPROVAL AUTHORITY:
J. McMichen	13 NOVEMBER 1997	12 NOVEMBER 1997

000267

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept (✓) Reject ( )
Comments ( )

The corrective action is appropriate and acceptable.

APPROVAL AUTHORITY SIGNATURE:

DATE: 12/3/97

VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):

ON 11 NOVEMBER, 1997 GCL Panel S-162 WAS REPLACED BY GCL Panel S-162R BY PETRO
ON 18 NOVEMBER, 1997 GCL PANELS 150 AND 151 WERE REPLACED BY GCL Panels S-253, S-254, S-255, AND S-256, BY PETRO
THE REPLACEMENT PANELS WERE ALL FROM LOT NO. 97081402 AND LOT NO. 97082012 WHICH ARE APPROVED FOR CONSTRUCTION LOTS.
THIS REPLACEMENT OF UNAPPROVED GCL BY APPROVED GCL SATISFIES THE INTENT OF THE PROJECT SPECIFICATIONS.

VERIFIER'S SIGNATURE:

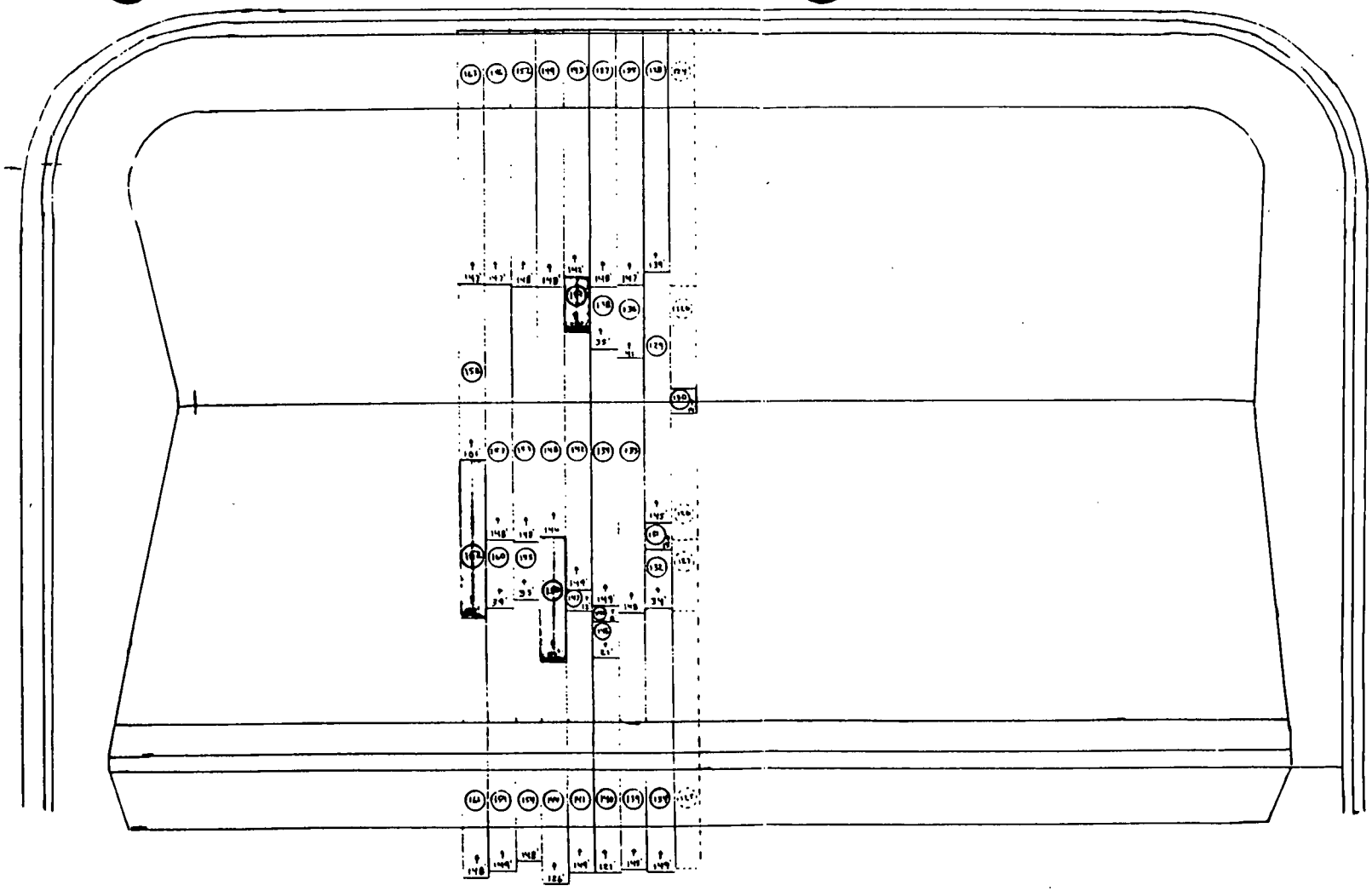
DATE: 03 DEC 1997

APPROVAL AUTHORITY SIGNATURE:

DATE CLOSED: 12/10/97

CONTINUATION FROM BLOCK ____:

000268



FERMILAB CSDF
Project 06C166
DATE: 10 NOV. 1990
Drawn by: SG.
Checked by: JFM

Phase I Cell I GCL Panel Placement

FIGURE 1

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

ORIGINATOR:	TITLE/ORGANIZATION:	NCR NUMBER:	DATE DISCOVERED:
NED MEEKINS	GEOSYNTEC CONSULTANTS	1702-010/1700	29 NOVEMBER 1997

RESPONSIBLE ORGANIZATION/PROJECT:	ASSESSMENT ACTIVITY:	HOLD TAG:
PETRO ENVIRONMENTAL TECHNOLOGIES/ PHASE I CONSTRUCTION AND VILLAGE BUILDING SERVICES/ LEACHATE CONVEYANCE SYSTEM	CONSTRUCTION QUALITY CONTROL	( ) YES (X) NO REMOVED (Initial/Date): N/A

REQUIREMENTS (Identify requirement from document [e.g., CQA plan, specification, drawing, etc.]):

TECHNICAL SPECIFICATION, PHASE I - SECTION 02605, PART 3.07 B.2 "TEST HDPE SOLID WALL AND CARRIER PIPE AT 120 psi INTERNAL PRESSURE...."

AND

TECHNICAL SPECIFICATION, LEACHATE CONVEYANCE SYSTEM - SECTION 02605, PART 3.07 C.2.C. " TEST HDPE SOLID WALL AND CARRIER PIPE AT 120 psi INTERNAL PRESSURE FOR GRAVITY PIPE SYSTEMS...."
DCN 1700-033, ARTICLE C.2.C. "REPLACE "120 psi" WITH "50 psi"..."

NONCONFORMANCE TYPE: Construction Nonconformance (✓) Material Deviation ( )

NONCONFORMANCE (Fully describe as it relates to requirements. Use supplemental sheets as required):

6" HDPE CONTAINMENT PIPE BETWEEN LCS/LDS-01 MANHOLES AND LINER PENETRATION BOXES (3) FOR CELL 1 WAS TESTED WITH 15 psi AIR PRESSURE.

ORIGINATOR'S SIGNATURE: [signature]

DATE PROVIDED TO RESPONSIBLE MANAGER: 02 DECEMBER 1997

RESPONSIBLE MANAGER'S PROPOSED CORRECTIVE ACTION: Use As-Is ( ) Reject ( ) Other (X) Repair ( ) Rework ( )

REQUEST FOR ENGINEERING EVALUATION.

RESPONSIBLE MANAGER (NAME, TITLE, ORGANIZATION):

J.F. McMICHEN, QUALITY CONTROL SITE MANAGER, GEOSYNTEC CONSULTANTS

RESPONSIBLE MANAGER'S SIGNATURE:	PROPOSED COMPLETION DATE:	DATE FORWARDED TO APPROVAL AUTHORITY:
[signature]	AT COMPLETION OF ALL APPLICABLE LINES.	03 DECEMBER 1997

~~000270~~
000271

FIGURE 2

GeoSyntec Consultants

CONSTRUCTION NONCONFORMANCE REPORT

EVALUATION OF PROPOSED CORRECTIVE ACTION: Accept ( ) Reject ( )
Comments ( ) Phase 1 piping had already been tested per spec, above ground prior to installation. Purpose of test to check couplings and ~~and fixed end seal not accurately tested.~~ any repair welds made by VBS (LCS contractor). Air test recommended by Engineer and 15 psi was the nominal pressure deemed safe under the field conditions present. Also, connected liner penetration boxes were designed and tested at 15 psi air. Recommend accept as is.

APPROVAL AUTHORITY SIGNATURE: Ramu Badmo
DATE: 15 Dec 97

VERIFICATION OF CORRECTIVE ACTION (Describe who, what, when, where):
NA

VERIFIER'S SIGNATURE: J. McMullen
DATE: 15 December 1997

APPROVAL AUTHORITY SIGNATURE: James C. Jenkins
DATE CLOSED: 15 DEC. 97

CONTINUATION FROM BLOCK ____:

~~000270~~

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