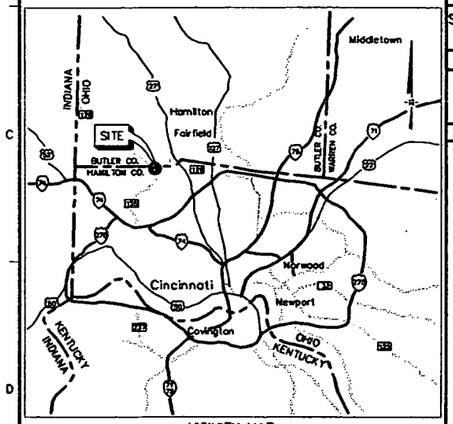
5319

UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT
ON-SITE DISPOSAL FACILITY-PHASE V

FLUOR FERNALD, INC. PROJECT NUMBER 20105
HAMILTON COUNTY AND BUTLER COUNTY, OHIO

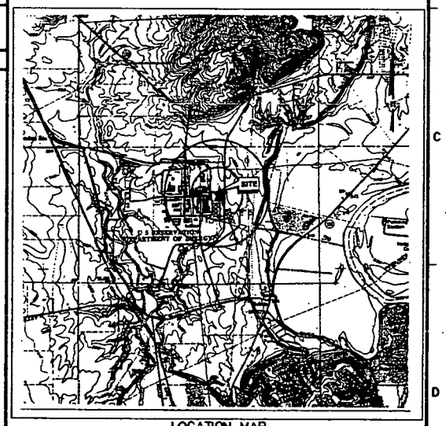


VICINITY MAP

6 3 0 6 12
SCALE IN MILES

CONSTRUCTION DRAWING INDEX

SHEET NO.	REVISION NO.	FEMP DRAWING NO.	TITLE
GENERAL			
X-1	1	90X-6000-X-00360	TITLE SHEET I
X-2	0	90X-6000-X-00361	TITLE SHEET II
X-3	1	90X-6000-X-00362	LEGEND AND SYMBOLS
CIVIL			
G-1	0	90X-6000-G-00363	SITE DEVELOPMENT PLAN I - CELL 6
G-2	1	90X-6000-G-00364	SITE DEVELOPMENT PLAN II - CELL 7
G-2A	0	90X-6000-G-00413	SITE DEVELOPMENT PLAN III - CELL 8
G-3	1	90X-6000-G-00365	SUBGRADE GRADING PLAN I - CELLS 3, 4, AND 5 LINER AND FINAL COVER SYSTEMS
G-4	0	90X-6000-G-00366	SUBGRADE GRADING PLAN II - CELL 6 LINER SYSTEM AND OSDF SEDIMENTATION BASIN NO. 2
G-5	1	90X-6000-G-00367	SUBGRADE GRADING PLAN III - CELL 8 LINER SYSTEM AND OSDF SEDIMENTATION BASIN NO. 2
G-6	1	90X-6000-G-00368	SUBGRADE GRADING PLAN IV - CELL 7 LINER SYSTEM
G-6A	0	90X-6000-G-00414	SUBGRADE GRADING PLAN V - CELL 8 LINER SYSTEM
G-7	1	90X-6000-G-00369	COMPACTED CLAY LINER GRADING PLAN I - CELLS 6 AND 7 LINER SYSTEM
G-7A	0	90X-6000-G-00415	COMPACTED CLAY LINER GRADING PLAN II - CELL 8 LINER SYSTEM
G-8	1	90X-6000-G-00370	CELL OUTLET GRADING PLANS I - CELLS 6, 7, AND 8 LINER SYSTEM
G-9	1	90X-6000-G-00371	CELL OUTLET GRADING PLANS II - CELLS 6, 7, AND 8 LINER SYSTEM
G-10	0	90X-6000-G-00372	FINAL COVER SYSTEM CONTOURING LAYER GRADING PLAN I - CELLS 3, 4, AND 5
G-11	1	90X-6000-G-00373	FINAL COVER SYSTEM CONTOURING LAYER GRADING PLAN II - CELLS 6, 7, AND 8
G-12	0	90X-6000-G-00374	FINAL COVER SYSTEM COMPACTED CLAY CAP GRADING PLAN I - CELLS 3, 4, AND 5
G-13	1	90X-6000-G-00375	FINAL COVER SYSTEM COMPACTED CLAY CAP GRADING PLAN II - CELLS 6 AND 7
G-13A	0	90X-6000-G-00416	FINAL COVER SYSTEM COMPACTED CLAY CAP GRADING PLAN III - CELL 8
G-14	0	90X-6000-G-00376	FINAL COVER SYSTEM GRADING PLAN I - CELLS 3, 4, AND 5
G-15	1	90X-6000-G-00377	FINAL COVER SYSTEM GRADING PLAN II - CELLS 6 AND 7
G-15A	0	90X-6000-G-00417	FINAL COVER SYSTEM GRADING PLAN III - CELL 8
G-16	1	90X-6000-G-00378	FINAL COVER SYSTEM STAGED CLOSURE GRADING PLANS - CELLS 7 AND 8
G-17	0	90X-6000-G-00379	IMPACTED MATERIAL HAUL ROAD GRADING PLAN AND DETAILS I
G-18	1	90X-6000-G-00380	IMPACTED MATERIAL HAUL ROAD GRADING PLAN AND DETAILS II
G-18A	0	90X-6000-G-00418	IMPACTED MATERIAL HAUL ROAD GRADING PLAN AND DETAILS III
G-19	0	90X-6000-G-00381	OSDF NORTH-SOUTH SECTIONS I
G-20	1	90X-6000-G-00382	OSDF NORTH-SOUTH SECTIONS II
G-20A	0	90X-6000-G-00419	OSDF NORTH-SOUTH SECTIONS III
CIVIL (CONTINUED)			
G-21	0	90X-6000-G-00383	OSDF WEST-EAST SECTIONS I
G-22	1	90X-6000-G-00384	OSDF WEST-EAST SECTIONS II
G-23	1	90X-6000-G-00385	OSDF WEST-EAST SECTIONS III
G-23A	0	90X-6000-G-00420	OSDF WEST-EAST SECTIONS IV
G-24	1	90X-6000-G-00386	CELL PERIMETER DETAILS I
G-25	1	90X-6000-G-00387	CELL PERIMETER DETAILS II
G-26	1	90X-6000-G-00388	CELL PERIMETER DETAILS III
G-27	1	90X-6000-G-00389	CELL PERIMETER DETAILS IV
G-28	1	90X-6000-G-00390	CELL PERIMETER DETAILS V
G-29	1	90X-6000-G-00391	LINER SYSTEM DETAILS I
G-30	1	90X-6000-G-00392	LINER SYSTEM DETAILS II
G-31	1	90X-6000-G-00393	LINER SYSTEM DETAILS III
G-32	1	90X-6000-G-00394	LINER SYSTEM DETAILS IV
G-33	1	90X-6000-G-00395	LINER SYSTEM DETAILS V
G-33A	0	90X-6000-G-00421	LINER SYSTEM DETAILS VI
G-34	1	90X-6000-G-00396	FINAL COVER SYSTEM DETAILS I
G-35	1	90X-6000-G-00397	FINAL COVER SYSTEM DETAILS II
G-36	1	90X-6000-G-00398	SURFACE-WATER MANAGEMENT SYSTEM DETAILS I
G-37	1	90X-6000-G-00399	SURFACE-WATER MANAGEMENT SYSTEM DETAILS II
G-38	1	90X-6000-G-00400	SURFACE-WATER MANAGEMENT SYSTEM DETAILS III
G-39	0	90X-6000-G-00401	SURFACE-WATER MANAGEMENT SYSTEM DETAILS IV
G-40	1	90X-6000-G-00402	SURFACE-WATER MANAGEMENT SYSTEM DETAILS V
G-41	1	90X-6000-G-00403	SURFACE-WATER MANAGEMENT SYSTEM DETAILS VI
G-42	1	90X-6000-G-00404	SURFACE-WATER MANAGEMENT SYSTEM DETAILS VII
G-43	1	90X-6000-G-00406	SURFACE-WATER MANAGEMENT SYSTEM DETAILS VIII
G-43A	0	90X-6000-G-00422	SURFACE-WATER MANAGEMENT SYSTEM DETAILS IX
G-43B	0	90X-6000-G-00423	SURFACE-WATER MANAGEMENT SYSTEM DETAILS X
G-44	1	90X-6000-G-00406	HORIZONTAL MONITORING WELL AND MISCELLANEOUS DETAILS
G-45	1	90X-6000-G-00407	IMPACTED MATERIAL PLACEMENT DETAILS I
G-46	1	90X-6000-G-00408	IMPACTED MATERIAL PLACEMENT DETAILS II
G-47	0	90X-6000-G-00409	CHAIN-LINK FENCE AND GATE DETAILS



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

2000 1000 0 2000 4000
SCALE IN FEET

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMG	VDR	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LMG	VDR	TEZ	DKP	RB
1A	03.10.08	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	LMG	VDR	TEZ	DKP	RB
0	02.09.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	VDR	LMG	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JWD	LMG	DGP	JFB
A	01.10.27	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	TMM	LMG	DGP	JFB

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: TITLE SHEET I

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

SIGNATURE
DATE
SEAL

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

PROJECT NO.:	20105
CONTRACT NO.:	03F06-99
FEMP DRAWING NO.:	90X-6000-X-00360
GEOSYNTEC PROJECT NO.:	GG3211-08.04
GEOSYNTEC DOCUMENT NO.:	F03-1501
SHEET NO.:	X-1
REVISION NO.:	1

FLUOR FERNALD, INC.

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

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

CERTIFIED-FOR-CONSTRUCTION

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REFERENCE DRAWING INDEX

SHEET NO.	REVISION NO.	FEMP DRAWING NO.	TITLE
REFERENCE			
FINAL DESIGN PACKAGE			
X-1	0	90X-6000-X-00001	TITLE SHEET
X-2	0	90X-6000-X-00002	LEGENDS AND SYMBOLS
X-7	0	90X-6000-X-00006	GEOTECHNICAL DATA POINT LOCATION PLAN
X-8	0	90X-6000-X-00007	GREAT MIAMI AQUIFER GROUND-WATER CONTOUR MAP
X-9	0	90X-6000-X-00008	PERCHED ZONE POTENTIOMETRIC SURFACE MAP
X-10	0	90X-6000-X-00009	BROWN TILL/GRAY TILL INTERFACE CONTOUR MAP
X-11	0	90X-6000-X-00010	GRAY TILL ISOPACH MAP
X-12	0	90X-6000-X-00011	SURFACE GEOLOGY MAP
X-13	0	90X-6000-X-00012	GEOLOGIC SECTION A-A
X-14	0	90X-6000-X-00013	GEOLOGIC SECTION B-B
X-15	0	90X-6000-X-00014	GEOLOGIC SECTION C-C AND D-D
ON-SITE DISPOSAL FACILITY – PHASE I			
X-1A	2	90X-6000-X-00070	TITLE SHEET
X-2B	0	90X-6000-X-00071	LEGEND AND SYMBOLS
G-2A	0	90X-6000-G-00072	SITE DEVELOPMENT PLAN
G-5A	1	90X-6000-G-00073	SUBGRADE GRADING PLAN I
G-5B	2	90X-6000-G-00074	SUBGRADE GRADING PLAN II
G-5C	0	90X-6000-G-00075	SUBGRADE GRADING PLAN III
G-41A	0	90X-6000-G-00069	SEDIMENTATION BASIN DETAILS
ON-SITE DISPOSAL FACILITY – PHASE II			
X-1B	0	90X-6000-X-00200	TITLE SHEET
X-2C	0	90X-6000-X-00201	LEGENDS AND SYMBOLS
G-2B	0	90X-6000-G-00202	SITE DEVELOPMENT PLAN I – BASE BID
G-5D	0	90X-6000-G-00204	SUBGRADE GRADING PLAN
G-20B	2	90X-6000-G-00212	CELL PERIMETER DETAILS I
G-30B	2	90X-6000-G-00220	STORM-WATER MANAGEMENT SYSTEM DETAILS
ENCHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM			
X-1	0	90X-6000-X-00239	TITLE SHEET
X-2	0	90X-6000-X-00240	LEGEND AND SYMBOLS
G-3	0	90X-6000-G-00281	LTS PIPE PLAN AND PROFILE STATIONS 0+00 TO 5+00
G-4	0	90X-6000-G-00282	LTS PIPE PLAN AND PROFILE STATIONS 5+00 TO 11+00
G-5	0	90X-6000-G-00283	LTS PIPE PLAN AND PROFILE STATIONS 11+00 TO 17+00
G-6	0	90X-6000-G-00284	LTS PIPE PLAN AND PROFILE STATIONS 17+00 TO 23+00
G-7	0	90X-6000-G-00285	LTS PIPE PLAN AND PROFILE STATIONS 23+00 TO 29+00
G-8	0	90X-6000-G-00286	LTS PIPE PLAN AND PROFILE STATIONS 29+00 TO 34+24.34
G-14	0	90X-6000-G-00251	VALVE HOUSE AND CONTROL VALVE HOUSE GENERAL LAYOUTS
G-20	0	90X-6000-G-00292	SURFACE-WATER MANAGEMENT SYSTEM DETAILS
E-1	0	90X-6000-E-00258	OVERHEAD POWER TRANSMISSION SYSTEM PLAN
M-3	0	90X-6000-M-00265	VALVE HOUSE MECHANICAL DETAILS II
ON-SITE DISPOSAL FACILITY – PHASE III			
X-1	1	90X-6000-X-00293	TITLE SHEET I
X-3	1	90X-6000-X-00295	LEGEND AND SYMBOLS
G-1	1	90X-6000-X-00296	SITE DEVELOPMENT PLAN
G-2	1	90X-6000-X-00297	SUBGRADE GRADING PLAN I
G-3	1	90X-6000-X-00298	SUBGRADE GRADING PLAN II
G-7	1	90X-6000-G-00302	FINAL COVER GRADING PLAN
G-11	1	90X-6000-G-00306	IMPACTED MATERIAL HAUL ROAD GRADING PLANS AND DETAILS
G-24	1	90X-6000-G-00319	SURFACE-WATER MANAGEMENT SYSTEM DETAILS II
G-25	1	90X-6000-G-00320	SURFACE-WATER MANAGEMENT SYSTEM DETAILS III
ON-SITE DISPOSAL FACILITY – PHASE IV			
X-1	0	90X-6000-X-00326	TITLE SHEET I
X-3	0	90X-6000-X-00328	LEGEND AND SYMBOLS
G-1	0	90X-6000-X-00329	SITE DEVELOPMENT PLAN I
G-2	0	90X-6000-G-00330	SITE DEVELOPMENT PLAN II
G-3	0	90X-6000-G-00331	SUBGRADE GRADING PLAN – CELL 4 LINER
G-4	0	90X-6000-G-00332	SUBGRADE GRADING PLAN – CELL 5 LINER
G-7	0	90X-6000-G-00335	CELL OUTLET GRADING PLANS II
G-11	0	90X-6000-G-00339	CELL PERIMETER SECTIONS I
G-12	0	90X-6000-G-00340	CELL PERIMETER SECTIONS II
G-17	0	90X-6000-G-00345	SURFACE-WATER MANAGEMENT SYSTEM DETAILS I
G-18	0	90X-6000-G-00346	SURFACE-WATER MANAGEMENT SYSTEM DETAILS II
G-19	0	90X-6000-G-00347	SURFACE-WATER MANAGEMENT SYSTEM DETAILS III
G-20	0	90X-6000-G-00348	SURFACE-WATER MANAGEMENT SYSTEM DETAILS IV

SHEET NO.	REVISION NO.	FEMP DRAWING NO.	TITLE
REFERENCE			
ON-SITE DISPOSAL FACILITY – PHASE IV (CONTINUED)			
G-21	0	90X-6000-G-00349	HORIZONTAL MONITORING WELL DETAILS – CELL 6
G-25	0	90X-6000-G-00353	SUBGRADE GRADING PLAN – CELL 2 CAP
G-26	0	90X-6000-G-00354	CONTOURING LAYER GRADING PLAN – CELL 2
G-27	0	90X-6000-G-00355	COMPACTED CLAY CAP GRADING PLAN – CELL 2
G-28	0	90X-6000-G-00356	FINAL COVER SYSTEM GRADING PLAN – CELL 2
G-30	0	90X-6000-G-00358	FINAL COVER SYSTEM DETAILS
–	0	90X-5500-G-00580	BORROW AREA – SUBAREA 3 EXCAVATION AND (INTERIM) RESTORATION PLAN
INTERIM LEACHATE COLLECTION SYSTEM			
–	1	90X-5500-G-00535	INTERIM LCS COVER SHEET
–	1	90X-5500-G-00537	INTERIM LCS PLAN AND PROFILE, SHEET 1 OF 3
–	1	90X-5500-G-00538	INTERIM LCS PLAN AND PROFILE, SHEET 2 OF 3
–	1	90X-5500-G-00539	INTERIM LCS PLAN AND PROFILE, SHEET 3 OF 3
LEACHATE CONVEYANCE SYSTEM			
–	2	92X-5900-G-00254	PLAN AND PROFILE, SHEET 1 OF 4
–	3	92X-5900-G-00261	PLAN AND PROFILE, SHEET 2 OF 4
–	3	92X-5900-G-00266	PLAN AND PROFILE, SHEET 3 OF 4
–	2	92X-5900-G-00262	PLAN AND PROFILE, SHEET 4 OF 4
EXISTING UTILITIES			
–	1	91X-5900-G-00232	CIVIL MASTER PLAN
–	–	SKG-04391	EXISTING UTILITIES – REFERENCE DRAWINGS – OVERALL PLAN
–	–	SKG-04392	EXISTING UTILITIES – REFERENCE DRAWINGS – SHEET 1 OF 6
–	–	SKG-04393	EXISTING UTILITIES – REFERENCE DRAWINGS – SHEET 2 OF 6
–	–	SKG-04394	EXISTING UTILITIES – REFERENCE DRAWINGS – SHEET 3 OF 6
–	–	SKG-04395	EXISTING UTILITIES – REFERENCE DRAWINGS – SHEET 4 OF 6
–	–	SKG-04396	EXISTING UTILITIES – REFERENCE DRAWINGS – SHEET 5 OF 6
–	–	SKG-04397	EXISTING UTILITIES – REFERENCE DRAWINGS – SHEET 6 OF 6
–	14	22X-5500-P-00659	MASTER GRID OF UNDERGROUND UTILITY PLANS
–	21	22C-5500-P-00661	GRID 2 – UNDERGROUND UTILITIES
–	26	22C-5500-P-00662	GRID 3 – UNDERGROUND UTILITIES
–	21	22C-5500-P-00663	GRID 4 – UNDERGROUND UTILITIES
–	22	22A-5500-P-00664	GRID 5 – UNDERGROUND UTILITIES
–	17	22F-5500-P-00665	GRID 6 – UNDERGROUND UTILITIES
–	20	22H-5500-P-00666	GRID 7 – UNDERGROUND UTILITIES
–	15	22H-5500-P-00667	GRID 8 – UNDERGROUND UTILITIES
–	11	22A-5500-P-00707	GRID 32 – UNDERGROUND UTILITIES
–	3	90X-5500-E-00522	ELECTRICAL POWER FOR OSDF
–	0	90X-5500-E-00542	ELECTRIC FOR OSDF AIR MONITORS
G0015	3	93X-5900-G-00288	CIVIL EXISTING SITE AND UTILITY PLAN – GRID 13
G0021	8	93X-5900-G-00294	CIVIL EXISTING SITE AND UTILITY PLAN – GRID 21
G0029	9	93X-5900-G-00302	CIVIL EXISTING SITE AND UTILITY PLAN – GRID 29
G0030	10	93X-5900-G-00303	CIVIL EXISTING SITE AND UTILITY PLAN – GRID 30
G0037	9	93X-5900-G-00310	CIVIL EXISTING SITE AND UTILITY PLAN – GRID 37
G0038	7	93X-5900-G-00311	CIVIL EXISTING SITE AND UTILITY PLAN – GRID 38
G0045	8	93X-5900-G-00318	CIVIL EXISTING SITE AND UTILITY PLAN – GRID 45
E0018	3	96X-5900-E-00356	13.2 kV ELECTRICAL MASTER PLOT
CONSTRUCTION LAYDOWN AREA			
–	1	90X-5500-G-00543	ON-SITE DISPOSAL FACILITY CONSTRUCTION LAYDOWN AREA ACCESS ROAD PLAN AND PROFILE SHEET 1 OF 2
–	1	90X-5500-G-00544	ON-SITE DISPOSAL FACILITY CONSTRUCTION LAYDOWN AREA ACCESS ROAD PLAN AND PROFILE SHEET 2 OF 2
–	0	90X-5500-G-00545	ON-SITE DISPOSAL FACILITY CONSTRUCTION LAYDOWN AREA ACCESS ROAD CROSS SECTIONS SHEET 1 OF 2
–	0	90X-5500-G-00546	ON-SITE DISPOSAL FACILITY CONSTRUCTION LAYDOWN AREA ACCESS ROAD CROSS SECTIONS SHEET 2 OF 2
–	0	90X-5500-G-00547	ON-SITE DISPOSAL FACILITY CONSTRUCTION LAYDOWN AREA PLAN AND PROFILE
MISCELLANEOUS			
–	7	75A-5500-G-00441	AREA 1 PHASE 1 SITE PLAN 3 OF 3
–	2	75X-5500-X-00450	AREA 1 PHASE 1 (EAST) DETAIL SHEET 1
–	3	00X-5500-G-01843	FEMP ON-SITE EASEMENTS AND RIGHT-OF-WAYS
–	0	90X-6000-G-00359	TOPOGRAPHY BASED ON 12 JANUARY 2000 FLYOVER

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	VDR	LMG	DGP	JTB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JMO	LMG	DGP	JTB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	TMM	LMG	DGP	JTB

SCALE AS SHOWN

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: TITLE SHEET II

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED

SIGNATURE

DATE

SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE ELAINE DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO:	20105
CONTRACT NO:	9SP5005028
FEMP DRAWING NO:	90X-6000-X-00361
GEOSYNTEC PROJECT NO:	001342-17.4
GEOSYNTEC DOCUMENT NO:	F01-0502
SHEET NO:	X-2
REVISION NO:	0

CERTIFIED-FOR-CONSTRUCTION

000002

5319

SYMBOLS LEGEND

EXISTING		NEW
	IMPACTED MATERIAL DISPOSAL LIMIT	
	BATTERY LIMIT	
	BORROW AREA LIMIT	
	FCP PROPERTY LINE	
	BUTLER COUNTY/HAMILTON COUNTY LINE	
	ADJACENT LANDOWNER PROPERTY LINE	
	FENCE	
	RAD FENCE	
	NON-POTABLE CONSTRUCTION WATER LINE	
	FENCE GATE	
	RAILROAD TRACK	
	PAVED ROAD, SIDEWALK OR PARKING LOT	
	UNPAVED ROAD, SIDEWALK OR PARKING LOT	
	CENTERLINE OR BASELINE	
	PERIMETER BERM BASELINE	
	SLOPE CREST OR TOE	
LTS	LTS PIPE	
ILTS	ILTS PIPE	
EPLTS	EPLTS PIPE	
E	UTILITY EASEMENT	
GW	24" STORMWATER FORCEMAIN	
UE	UNDERGROUND ELECTRIC	
	WATER TABLE OR PIEZOMETRIC SURFACE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	TREE LINE	
	PARKING LOT STRIPING	
1	CELL DESIGNATION	6
	TRAILER OR BUILDING	
	DRAINAGE FLOW DIRECTION	
	HEADWALL	
	SIGN	
	POST	
	SLOPE INDICATOR	CREST TOE
	TRANSMISSION TOWER	
	CATCH BASIN	
	MANHOLE	
	POWER POLE	
1059	TYPE 1 MONITORING WELL	
2421	TYPE 2 MONITORING WELL	
3421	TYPE 3 MONITORING WELL	
4064	TYPE 4 MONITORING WELL	
63289	TYPE 6 MONITORING WELL	
1710	GEOTECHNICAL BORING	
11438	CONE PENETROMETER TEST SOUNDING	
BM-10	BENCHMARK	
11546	LYSIMETER	
1159	MONITORING WELL	
11703	PIEZOMETER	
	VALVE HOUSE	
	LEACHATE TRANSMISSION SYSTEM PERMANENT LIFT STATION	
	CONSTRUCTION CONTROL POINT	
	DRAINAGE CHANNEL GRAVITY INLET STRUCTURE	
	CULVERT	
	PERMANENT VEGETATION	
	INTERIM VEGETATION	
	HORIZONTAL MONITORING WELL WITH COVER SLAB	

SYMBOLS LEGEND (CONTINUED)

SYMBOL	COMPONENT
	PRIMARY GEOMEMBRANE LINER
	SECONDARY GEOMEMBRANE LINER
	PRIMARY GEOSYNTHETIC CLAY LINER
	SECONDARY GEOSYNTHETIC CLAY LINER
	GEOTEXTILE FILTER
	GEOTEXTILE CUSHION
	SUPPLEMENTAL GEOTEXTILE CUSHION
	SUBGRADE
	COMPACTED CLAY LINER/PROTECTIVE CLAY LAYER
	LDS DRAINAGE LAYER
	LDS DRAINAGE CORRIDOR
	LCS DRAINAGE LAYER
	LCS DRAINAGE CORRIDOR
	PROTECTIVE LAYER (IMPACTED)
	PROTECTIVE LAYER (NON-IMPACTED GRANULAR)
	PROTECTIVE LAYER (NON-IMPACTED NON-GRANULAR)
	SELECT IMPACTED MATERIAL
	TRENCH BACKFILL
	PIPE EMBEDMENT FILL
	GEOMEMBRANE CAP
	GEOSYNTHETIC CLAY CAP
	COMPACTED CLAY CAP
	COVER DRAINAGE LAYER
	BIOINTRUSION BARRIER
	GRANULAR FILTER
	TOPSOIL
	CONTOURING LAYER
	BERM CREST
	OSDF MONITORING ACCESS
	RIPRAP
	EROSION MAT
	FINAL COVER SYSTEM
	IMPACTED MATERIAL PLACEMENT AREA
	LINER SYSTEM
	ACCESS CORRIDOR, ACCESS ROAD, ACCESS RAMP, MAINTENANCE ACCESS, OR HAUL ROAD
	FINAL COVER SYSTEM TEMPORARY TERMINATION AREA

DETAIL AND SECTION IDENTIFICATION LEGEND

SEQUENTIAL DETAIL NUMBER — 31 — SHEET ON WHICH ABOVE DETAIL IS PRESENTED G-15

SEQUENTIAL DETAIL NUMBER — 31 — SHEET ON WHICH ABOVE DETAIL IS REFERENCED G-22

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

EXAMPLE: DETAIL NUMBER 31, WHICH IS PRESENTED ON SHEET G-15, WAS REFERENCED ON SHEET G-22.

C — G-15 — SECTION LETTER — SHEET ON WHICH ABOVE SECTION IS PRESENTED

SECTION LETTER — C — SHEET ON WHICH ABOVE SECTION IS REFERENCED G-5

SECTION
CELL PERIMETER
SCALE: 1" = 2'
REF: REFERENCE

EXAMPLE: SECTION LETTER "C", WHICH IS PRESENTED ON SHEET G-15, WAS REFERENCED ON SHEET G-5.

ABBREVIATIONS

ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BAMP	BORROW AREA MANAGEMENT AND RESTORATION PLAN
BCY	BULK CUBIC YARDS
℄	BASELINE
BM	BENCH MARK
CFC	CERTIFIED-FOR-CONSTRUCTION
℄	CENTERLINE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CO.	COUNTY
CPT	CONE PENETROMETER TEST
CQA	CONSTRUCTION QUALITY ASSURANCE
CQC	CONSTRUCTION QUALITY CONTROL
CSA	CONSTRUCTION SITE ACCESS
CVH	CONTROL VALVE HOUSE
D	DEPTH
DECON	DECONTAMINATION
DIA.	DIAMETER
DOE	DEPARTMENT OF ENERGY
DOT	DEPARTMENT OF TRANSPORTATION
E	EASTING
EL	ELEVATION
EPA	ENVIRONMENTAL PROTECTION AGENCY
EPLTS	ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM
FCP	FERNALD CLOSURE PROJECT
FEMP	FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FF	FLUOR FERNALD
GIS	GRAVITY INLET STRUCTURE
HDPE	HIGH DENSITY POLYETHYLENE
H:V	HORIZONTAL TO VERTICAL LENGTH RATIO FOR A SLOPE
ID	INSIDE DIAMETER
ILTS	INTERIM LEACHATE TRANSMISSION SYSTEM
IMP	IMPACTED MATERIAL PLACEMENT
INC.	INCORPORATED
IP	IRON PIN
LCS	LEACHATE COLLECTION SYSTEM
LDS	LEAK DETECTION SYSTEM
LTS	LEACHATE TRANSMISSION SYSTEM
(MAX)	MAXIMUM
(MIN)	MINIMUM
N	NORTHING
NAD	NORTH AMERICAN DATUM
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NO.	NUMBER
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODOT	OHIO DEPARTMENT OF TRANSPORTATION
OMTA	OSDF MATERIAL TRANSFER AREA
OSDF	ON-SITE DISPOSAL FACILITY
PLS	PERMANENT LIFT STATION
RAD	RADIOLOGICAL
RCP	REINFORCED CONCRETE PIPE
REV.	REVISION
RLCS	REDUNDANT LEACHATE COLLECTION SYSTEM
STP	SEWAGE TREATMENT PLANT
SWMEC	SURFACE WATER MANAGEMENT AND EROSION CONTROL
(TYP)	TYPICAL
WAC	WASTE ACCEPTANCE CRITERIA
W.E.	WATER ELEVATION
VH	VALVE HOUSE
6"\10"	6"\10" NOMINAL PIPE SIZE (CARRIER\CONTAINMENT)

CONTOUR LEGEND

EXISTING		NEW
590	EXISTING GROUND ELEVATION (FEET)	
590	SUBGRADE ELEVATION (FEET)	590
590	COMPACTED CLAY LINER ELEVATION (FEET)	590
590	LEACHATE COLLECTION SYSTEM ELEVATION (FEET)	590
590	PROTECTIVE LAYER ELEVATION (FEET)	590
590	CONTOURING LAYER ELEVATION (FEET)	590
590	COMPACTED CLAY CAP ELEVATION (FEET)	590
590	FINISHED GRADE ELEVATION (FEET)	590
	IMPACTED MATERIAL ELEVATION (FEET)	1000

GENERAL NOTES

NOTES:

1. TOPOGRAPHY SHOWN ON CONSTRUCTION DRAWINGS IS BASED ON 12 JANUARY 2000 FLYOVER UNLESS OTHERWISE NOTED.
2. ELEVATIONS ARE IN FEET ABOVE SEA LEVEL DATUM. (NOTE: "SEA LEVEL DATUM" REFERS TO NATIONAL GEODETIC VERTICAL DATUM (NGVD))
3. GRID COORDINATE SYSTEM CORRESPONDS TO STATE PLANAR NORTH AMERICAN DATUM (NAD) 1983 OHIO SOUTH.
4. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY.
5. SURVEY COORDINATES AND DIMENSIONS SHALL BE USED FOR CONSTRUCTION. DRAWINGS SHALL NOT BE SCALED TO OBTAIN LOCATIONS AND DIMENSIONS
6. BATTERY LIMIT DEFINES LIMIT OF THIS WORK PACKAGE FOR OSDF AND SUPPORT FACILITIES AND LOCATION OF INTERFACES WITH OTHER WORK PACKAGES. PERFORM DUST CONTROL WITHIN BATTERY LIMIT AS SPECIFIED IN FLUOR FERNALD CONSTRUCTION WORK CONTROL TRAVELER PACKAGE DOCUMENTS .
7. THE TERM "IMPACTED MATERIAL" REFERS TO THAT MATERIAL MEETING OSDF WASTE ACCEPTANCE CRITERIA (WAC) DESTINED FOR OSDF DISPOSAL. "SELECT IMPACTED MATERIAL" LOCATIONS SHOWN ON THESE DRAWINGS SHALL CONSIST OF IMPACTED MATERIAL. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.03	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LWG	JJA	TLZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LWG	JJA	TLZ	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	LWG	JJA	TLZ	DKP	RB
0	02.04.29	CFC SUBMITTAL TO FF/DOE/EPA	TLZ	JWD	LWG	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TLZ	JWD	LWG	DGP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TLZ	TMM	LWG	DGP	JFB

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: LEGEND AND SYMBOLS

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

SIGNATURE

DATE

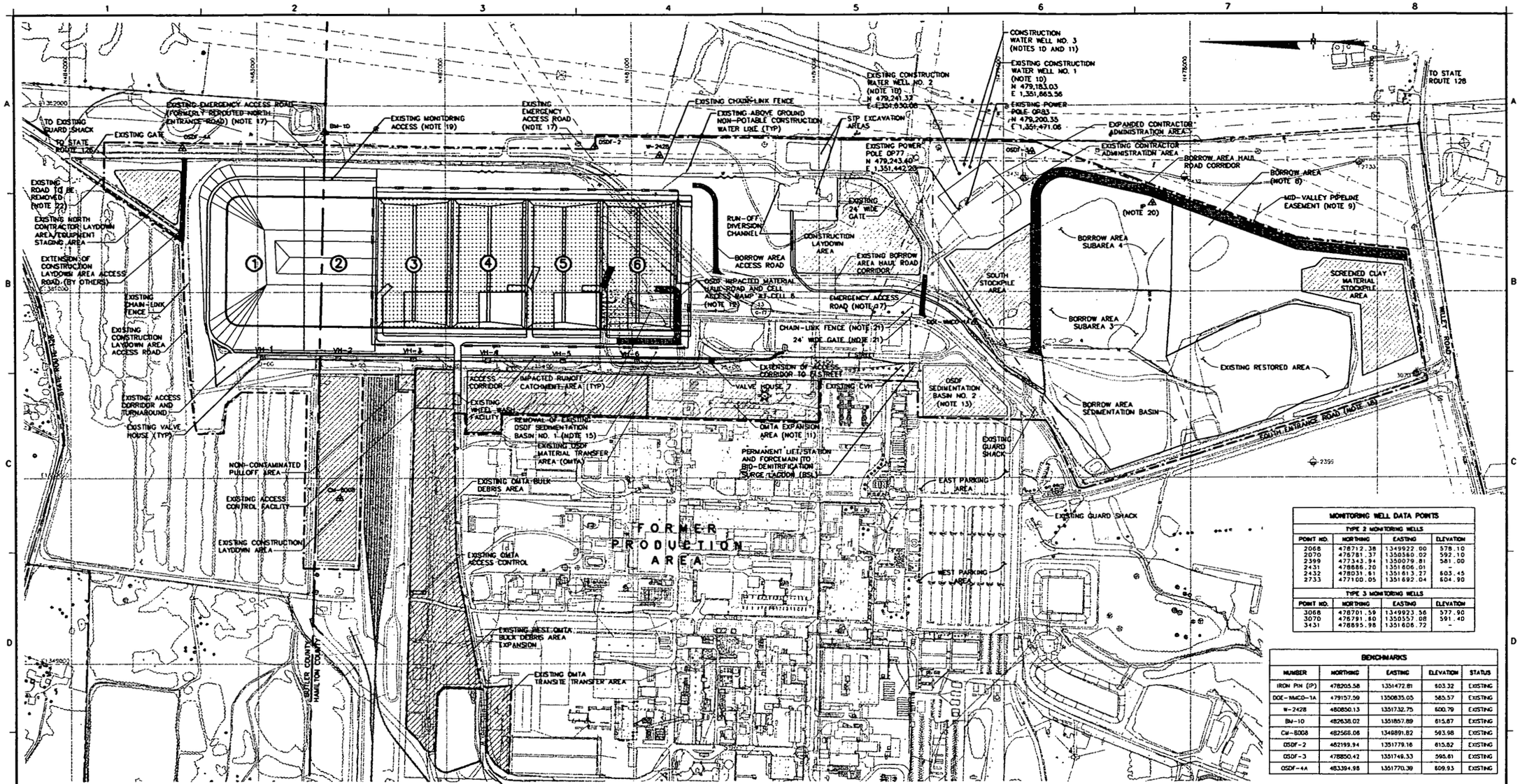
SEAL

GEOSYNTEC CONSULTANTS
1900 LAKE DRIVE, DRIVE
ATLANTA, GEORGIA 30332 USA

PROJECT NO:	20105
CONTRACT NO:	03T0699
FEMP DRAWING NO:	90X-0000-X-00382
GEOSYNTEC PROJECT NO:	GO3211-06.04
GEOSYNTEC DOCUMENT NO:	F03-1503
SHEET NO:	X-3
REVISION NO:	1

CERTIFIED-FOR-CONSTRUCTION

000003



MONITORING WELL DATA POINTS			
TYPE 2 MONITORING WELLS			
POINT NO.	NORTHING	EASTING	ELEVATION
2068	478712.38	1349922.00	578.10
2070	476781.37	1350560.02	592.10
2399	477343.94	1350079.81	581.00
2431	478686.20	1351606.01	-
2432	478031.61	1351613.27	603.45
2733	477100.05	1351692.04	604.90
TYPE 3 MONITORING WELLS			
POINT NO.	NORTHING	EASTING	ELEVATION
3068	478701.59	1349923.56	577.90
3070	476791.80	1350557.08	591.40
3431	478695.98	1351608.72	-

BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	STATUS
IRON PIN (IP)	478205.58	1351472.81	603.32	EXISTING
DOE-MACO-1A	479157.59	1350835.05	585.57	EXISTING
W-2428	480850.13	1351732.75	600.79	EXISTING
BM-10	482638.02	1351857.89	615.87	EXISTING
CM-8008	482568.08	1349891.82	593.98	EXISTING
OSDF-2	482199.94	1351779.16	615.62	EXISTING
OSDF-3	478850.42	1351749.33	595.61	EXISTING
OSDF-4A	483394.98	1351770.39	609.93	EXISTING

LEGEND

- BUTLER COUNTY/HAMILTON COUNTY LINE
- FEMP PROPERTY LINE
- BATTERY LIMIT
- IMPACTED MATERIAL DISPOSAL LIMIT
- BORROW AREA LIMIT
- FENCE
- RADIOLOGICAL CONTROL LIMIT/FENCE (NOTE 7)
- RLTS — EXISTING RLTS PIPE
- LTS — EXISTING LTS PIPE
- 15+00 — EXISTING EPLTS PIPE
- DRAINAGE FLOW DIRECTION
- OSDF-4A — BENCHMARK
- 2068 / 3068 — EXISTING MONITORING WELLS
- 2 — ON-SITE DISPOSAL FACILITY CELL DESIGNATION
- ACCESS CORRIDOR, ACCESS ROAD, ACCESS RAMP, OR HAUL ROAD
- IMPACTED MATERIAL PLACEMENT AREA CELLS 3, 4, 5, AND 6 (NOTE 6)
- CELL 6 LINER SYSTEM (NOTE 6)

NOTES:

1. PURPOSE OF THIS DRAWING IS TO CONCEPTUALLY ILLUSTRATE SITE DEVELOPMENT FOR OSDF-PHASE V WITH SUPPORT FACILITIES INCLUDING BUT NOT LIMITED TO HAUL ROADS, GUARD SHACKS, EQUIPMENT WASH FACILITY, CONTRACTOR ADMINISTRATION AREA, PARKING AREAS, CONSTRUCTION LAYDOWN AREA, ACCESS CONTROL FACILITY, RADIOLOGICAL CONTROL LIMIT/FENCE, STOCKPILE AREAS, AND SEDIMENTATION BASINS. SIZE AND LOCATION OF SUPPORT FACILITIES MAY VARY FROM THOSE SHOWN.
2. CONTRACTOR SHALL CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF OSDF IN ACCORDANCE WITH SPECIFICATION SECTIONS 02270 AND 13010.
3. CONTRACTOR SHALL SUBMIT EARTHWORK WORK PLAN IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
4. EXISTING CONTOURS ARE NOT SHOWN FOR CLARITY. EXISTING CONTOURS ARE SHOWN ON GRADING PLANS. ADDITIONAL EXISTING CONDITIONS ARE SHOWN ON REFERENCE DRAWINGS. EXISTING CONDITIONS SHALL BE VERIFIED IN ACCORDANCE WITH SPECIFICATION SECTION 02100.
5. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN DOWNGRADIENT CELL IS CONSTRUCTED AND OPERATIONAL.
6. STATEMENT OF WORK FOR OSDF-PHASE V CONSTRUCTION IS SPECIFIED IN PART 6 OF THE CONTRACT DOCUMENT.
7. RADIOLOGICAL CONTROL LIMIT/FENCE INDICATES LIMIT OF RADIOLOGICAL CONTROL FOR IMPACTED MATERIAL HAULING AND PLACEMENT. RAD FENCE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200
8. BORROW AREA MANAGEMENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13000.
9. CONTRACTOR SHALL LOCATE MID-VALLEY PIPELINE EASEMENT IN ACCORDANCE WITH SPECIFICATION SECTION 02100. CONTRACTOR SHALL NOT ENTER PIPELINE EASEMENT.
10. CONSTRUCTION WATER SHALL BE OBTAINED FROM EXISTING WELL HOUSES LOCATED WEST OF FORMER PRODUCTION AREA AT LOCATIONS N 480,784.4 AND E 1,348,403.7 AND N 481,454.8 AND E 1,350,478.4 AND CONSTRUCTION WATER WELLS SHOWN ON THIS DRAWING.
11. LOCATION AND DESIGN OF OMTA EXPANSION AREA AND CONSTRUCTION WATER WELL NO. 3 TO BE PROVIDED BY CONSTRUCTION MANAGER.
12. OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP AT CELL 6 GRADING PLANS ARE SHOWN ON DRAWING G-17.
13. OSDF SEDIMENTATION BASIN NO. 2 GRADING PLAN IS SHOWN ON DRAWING G-5.
14. REMOVAL LIMITS FOR NORTH ENTRANCE ROAD AND VALVE HOUSE ACCESS ROAD ARE SHOWN ON DRAWING G-4.
15. REMOVAL OF EXISTING OSDF SEDIMENTATION BASIN NO. 1 IS SHOWN ON DRAWING G-4.
16. GEOTECHNICAL DATA POINTS ARE SHOWN ON DRAWINGS G-4 AND G-6.
17. EMERGENCY ACCESS ROAD TO BE USED FOR EMERGENCY RESPONSE VEHICLES AND PICKUP TRUCK VEHICLES. THIS ROAD SHALL BE USED FOR DELIVERY OF CONSTRUCTION MATERIALS AND EQUIPMENT AS APPROVED BY CONSTRUCTION MANAGER.
18. SOUTH ENTRANCE ROAD SHALL NOT BE USED FOR DELIVERY OF CONSTRUCTION MATERIALS.
19. MONITORING ACCESS TO BE USED FOR MAINTENANCE, SEEDING, IRRIGATION, MONITORING, INSPECTION, FEMP OPERATIONS, AND EMERGENCY VEHICLES ONLY.
20. CONTRACTOR SHALL REMOVE EXISTING SURVEY BENCHMARK IP AND ESTABLISH NEW SURVEY BENCHMARK IP-2 AS DIRECTED BY CONSTRUCTION MANAGER.
21. DETAILS FOR FENCE AND GATE INSTALLATION ARE SHOWN ON DRAWING G-47.
22. ROAD PAVEMENT COURSES AND ASSOCIATED IMPACTED MATERIAL FOR EXISTING ROAD SHALL BE REMOVED WITHIN LIMITS SHOWN. REMOVAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200. CONTRACTOR SHALL PLACE REMOVED MATERIAL IN SOUTH STOCKPILE AREA OR ACTIVE CELL AS APPROVED BY CONSTRUCTION MANAGER.

CERTIFIED-FOR-CONSTRUCTION

REV NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMG	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	THM	LMG	DCP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	VDR	LMG	DCP	JFB

200 100 0 200 400
SCALE IN FEET

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: SITE DEVELOPMENT PLAN I - CELL 6

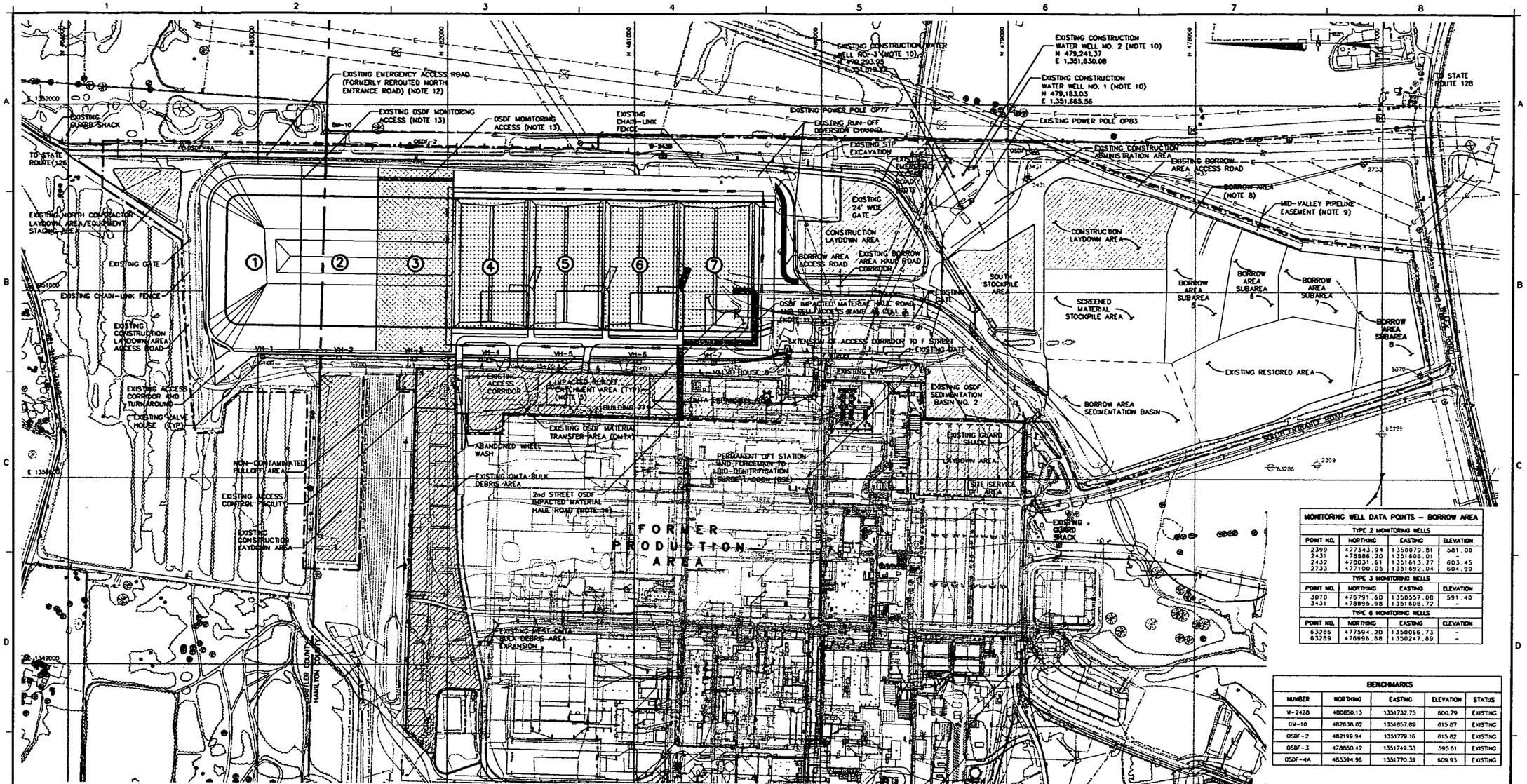
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1998 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30367 USA

PROJECT NO: 70105
CONTRACT NO: 95PS003078
FEMP DRAWING NO: 90X-8000-G-00363
GEOSYNTEC PROJECT NO: 001342-17.4
GEOSYNTEC DOCUMENT NO: F01-0001
SHEET NO: G-1
REVISION NO: 0

000004



MONITORING WELL DATA POINTS – BORROW AREA			
TYPE 2 MONITORING WELLS			
POINT NO.	NORTHING	EASTING	ELEVATION
2399	477343.94	1350079.81	581.00
2431	478886.20	1351606.01	-
2432	478031.61	1351613.27	603.45
2733	477100.05	1351692.04	604.90
TYPE 3 MONITORING WELLS			
POINT NO.	NORTHING	EASTING	ELEVATION
3070	476791.60	1350557.08	591.40
3431	478895.98	1351608.72	-
TYPE 6 MONITORING WELLS			
POINT NO.	NORTHING	EASTING	ELEVATION
63286	477594.20	1350066.73	-
63289	478998.88	1350247.89	-

BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	STATUS
W-2428	480850.13	1351732.75	600.79	EXISTING
BM-10	482638.02	1351857.89	615.87	EXISTING
OSDF-2	482199.94	1351779.16	615.82	EXISTING
OSDF-3	478850.42	1351749.33	595.61	EXISTING
OSDF-4A	483394.98	1351770.39	609.93	EXISTING

LEGEND

- BUTLER COUNTY/HAMILTON COUNTY LINE
- FCP PROPERTY LINE
- BATTERY LIMIT
- IMPACTED MATERIAL DISPOSAL LIMIT
- BORROW AREA LIMIT
- RADIOLOGICAL CONTROL LIMIT/FENCE (NOTE 8)
- FENCE
- RTS — EXISTING RTS PIPE
- LTS — EXISTING LTS PIPE
- 154+00 — EXISTING EPLTS PIPE
- DRAINAGE FLOW DIRECTION
- OSDF-4A — BENCHMARK
- 3070 — EXISTING MONITORING WELLS
- 2399, 63285
- ② — ON-SITE DISPOSAL FACILITY CELL DESIGNATION
- ACCESS CORRIDOR, ACCESS ROAD, ACCESS RAMP, OR HAUL ROAD
- CELL 3 FINAL COVER SYSTEM
- IMPACTED MATERIAL PLACEMENT AREA CELLS 4, 5, 6, AND 7
- CELL 7 LINER SYSTEM

NOTES:

1. PURPOSE OF THIS DRAWING IS TO CONCEPTUALLY ILLUSTRATE SITE DEVELOPMENT FOR OSDF-PHASE V WITH SUPPORT FACILITIES INCLUDING BUT NOT LIMITED TO HAUL ROADS, GUARD SHACKS, EQUIPMENT WASH FACILITY, CONTRACTOR ADMINISTRATION AREA, PARKING AREAS, CONSTRUCTION LAYDOWN AREA, ACCESS CONTROL FACILITY, RADIOLOGICAL CONTROL LIMIT/FENCE, STOCKPILE AREAS, AND SEDIMENTATION BASINS. SIZE AND LOCATION OF SUPPORT FACILITIES MAY VARY FROM THOSE SHOWN
2. CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF OSDF IN ACCORDANCE WITH SPECIFICATION SECTIONS 02270 AND 13010.
3. PREPARE EARTHWORK WORK PLAN IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
4. EXISTING CONTOURS ARE NOT SHOWN FOR CLARITY. EXISTING CONTOURS ARE SHOWN ON GRADING PLANS. ADDITIONAL EXISTING CONDITIONS ARE SHOWN ON REFERENCE DRAWINGS. EXISTING CONDITIONS SHALL BE VERIFIED IN ACCORDANCE WITH SPECIFICATION SECTION 02100.
5. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN DOWNGRADIENT CELL IS CONSTRUCTED AND OPERATIONAL.
6. RADIOLOGICAL CONTROL LIMIT/FENCE INDICATES LIMIT OF RADIOLOGICAL CONTROL FOR IMPACTED MATERIAL HAULING AND PLACEMENT. RAD FENCE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
7. GEOTECHNICAL DATA POINTS ARE SHOWN ON DRAWINGS G-4, G-6, AND G-6A.
8. BORROW AREA MANAGEMENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13000.
9. LOCATE MID-VALLEY PIPELINE EASEMENT IN ACCORDANCE WITH SPECIFICATION SECTION 02100. DO NOT ENTER PIPELINE EASEMENT.
10. CONSTRUCTION WATER SHALL BE OBTAINED FROM EXISTING WELL HOUSES LOCATED WEST OF FORMER PRODUCTION AREA AT LOCATIONS N 480,784.4 AND E 1,348,403.7 AND N 481,454.8 AND E 1,350,487.4 AND CONSTRUCTION WATER WELLS SHOWN ON THIS DRAWING.
11. OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP AT CELL 7 GRADING PLANS ARE SHOWN ON DRAWING G-18.
12. EMERGENCY ACCESS ROAD TO BE USED FOR EMERGENCY RESPONSE VEHICLES AND PICKUP TRUCK VEHICLES. THIS ROAD SHALL ONLY BE USED FOR DELIVERY OF CONSTRUCTION MATERIALS AND EQUIPMENT AS APPROVED BY CONSTRUCTION MANAGER.
13. OSDF MONITORING ACCESS TO BE USED FOR MAINTENANCE, SEEDING, IRRIGATION, MONITORING, INSPECTION, FEMP OPERATIONS, AND EMERGENCY VEHICLES ONLY.
14. SECOND STREET IMPACTED MATERIAL HAUL ROAD MAY BE ROUTED AROUND BUILDING 77 BASED ON DEMOLITION SCHEDULE. SECOND STREET IMPACTED MATERIAL HAUL ROAD TO BE OPERATIONAL BEFORE CONSTRUCTION OF CELL 4 FINAL COVER SYSTEM.

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMG	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LMG	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LMG	DKP	RB
0	03.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMG	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	THM	LMG	DGP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	VDR	LMG	DGP	JFB

200 100 0 200 400
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

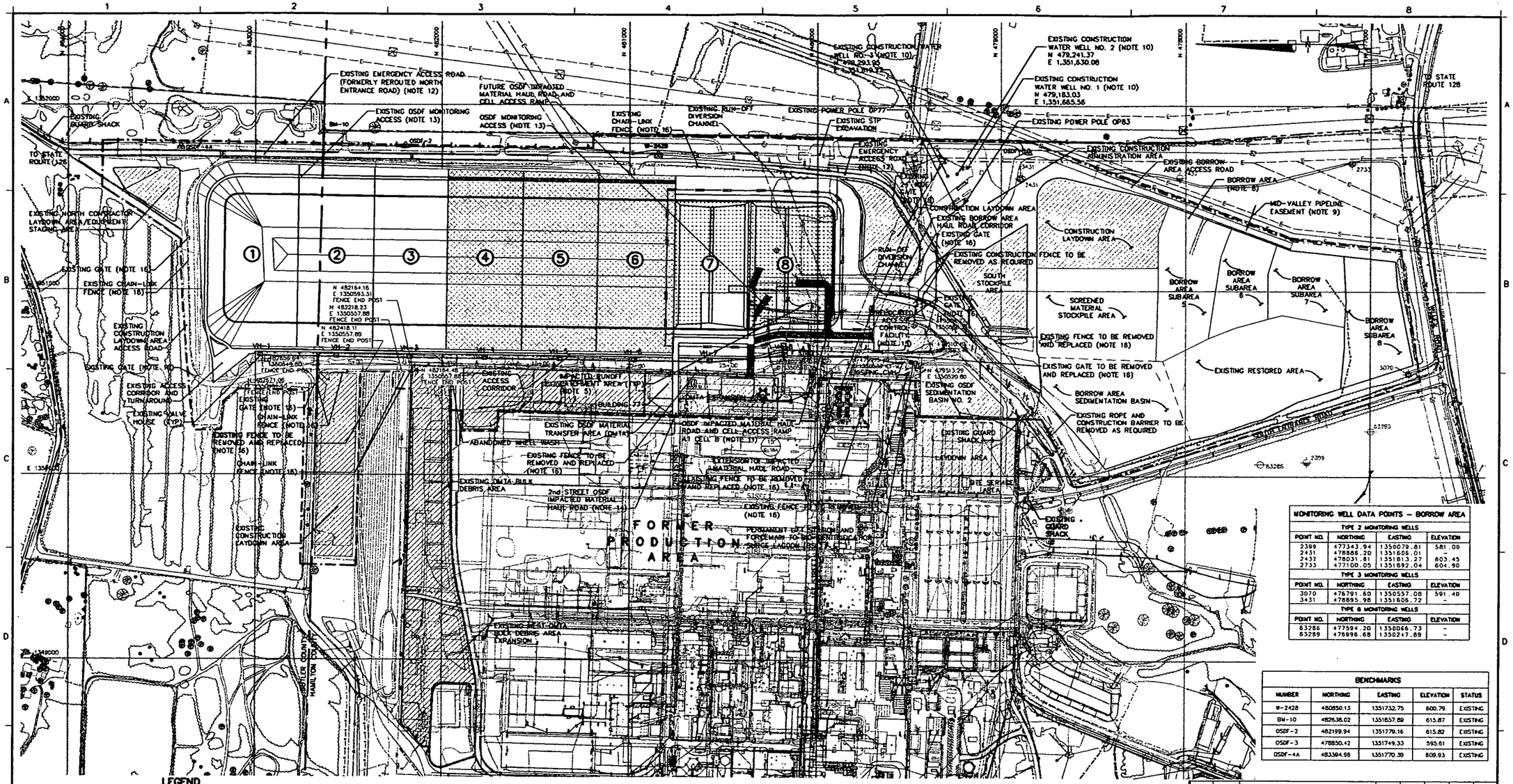
TITLE:
SITE DEVELOPMENT PLAN II – CELL 7

THIS DRAWING MAY NOT BE USED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED

GEOSYNTEC CONSULTANTS
1000 LAKE HARBIN DRIVE
ATLANTA, GEORGIA 30317 USA

PROJECT NO.:	20105
CONTRACT NO:	0.3.FT.06.99
FEMP DRAWING NO.:	90X-5000-G-00364
GEOSYNTEC PROJECT NO:	003211-06.04
GEOSYNTEC DOCUMENT NO:	F03-1002
SHEET NO.:	G-2
REVISION NO.:	1

000005



MONITORING WELL DATA POINTS – BORROW AREA			
TYPE 2 MONITORING WELLS			
POINT NO.	NORTHING	EASTING	ELEVATION
2399	477343.94	1350079.81	581.00
2431	478886.20	1351606.01	-
2432	478031.81	1351813.27	603.45
2733	477100.05	1351692.04	604.90
TYPE 3 MONITORING WELLS			
POINT NO.	NORTHING	EASTING	ELEVATION
3070	476791.60	1350557.08	591.40
3431	478895.98	1351606.72	-
TYPE 6 MONITORING WELLS			
POINT NO.	NORTHING	EASTING	ELEVATION
63286	477594.20	1350066.73	-
63289	476996.68	1350247.89	-

BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	STATUS
W-2428	480850.13	1351732.75	600.79	EXISTING
BM-10	482638.02	1351657.89	615.87	EXISTING
OSDF-2	482199.94	1351779.16	615.82	EXISTING
OSDF-3	478850.42	1351749.33	595.61	EXISTING
OSDF-4A	483384.98	1351770.39	609.93	EXISTING

LEGEND

- BUTLER COUNTY/HAMILTON COUNTY LINE
- FCP PROPERTY LINE
- BATTERY LIMIT
- IMPACTED MATERIAL DISPOSAL LIMIT
- BORROW AREA LIMIT
- RADIOLOGICAL CONTROL LIMIT/FENCE (NOTE 6)
- FENCE
- ILTS — EXISTING ILTS PIPE
- LTS — EXISTING LTS PIPE
- 15+00 — EXISTING EPLTS PIPE
- DRAINAGE FLOW DIRECTION
- OSDF-4A — BENCHMARK
- 3070, 2399, 63285 — EXISTING MONITORING WELLS
- 2 — ON-SITE DISPOSAL FACILITY CELL DESIGNATION
- ACCESS CORRIDOR, ACCESS ROAD, ACCESS RAMP, OR HAUL ROAD
- CELLS 4, 5, AND 6 FINAL COVER SYSTEM
- IMPACTED MATERIAL PLACEMENT AREA CELLS 7 AND 8
- CELL 8 LINER SYSTEM

NOTES:

1. PURPOSE OF THIS DRAWING IS TO CONCEPTUALLY ILLUSTRATE SITE DEVELOPMENT FOR OSDF PHASE V WITH SUPPORT FACILITIES INCLUDING BUT NOT LIMITED TO HAUL ROADS, GUARD SHACKS, EQUIPMENT WASH FACILITY, CONTRACTOR ADMINISTRATION AREA, PARKING AREAS, CONSTRUCTION LAYDOWN AREA, ACCESS CONTROL FACILITY, RADIOLOGICAL CONTROL LIMIT/FENCE, STOCKPILE AREAS, AND SEDIMENTATION BASINS. SIZE AND LOCATION OF SUPPORT FACILITIES MAY VARY FROM THOSE SHOWN.
2. CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF OSDF IN ACCORDANCE WITH SPECIFICATION SECTIONS 02270 AND 13010.
3. PREPARE EARTHWORK WORK PLAN IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
4. EXISTING CONTOURS ARE NOT SHOWN FOR CLARITY. EXISTING CONTOURS ARE SHOWN ON GRADING PLANS. ADDITIONAL EXISTING CONDITIONS ARE SHOWN ON REFERENCE DRAWINGS. EXISTING CONDITIONS SHALL BE VERIFIED IN ACCORDANCE WITH SPECIFICATION SECTION 02100.
5. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN DOWNGRADIENT CELL IS CONSTRUCTED AND OPERATIONAL.
6. RADIOLOGICAL CONTROL LIMIT/FENCE INDICATES LIMIT OF RADIOLOGICAL CONTROL FOR IMPACTED MATERIAL HAULING AND PLACEMENT. RAD FENCE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
7. GEOTECHNICAL DATA POINTS ARE SHOWN ON DRAWINGS G-4, G-6, AND G-6A.
8. BORROW AREA MANAGEMENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13000.
9. LOCATE MID-VALLEY PIPELINE EASEMENT IN ACCORDANCE WITH SPECIFICATION SECTION 02100. DO NOT ENTER PIPELINE EASEMENT.
10. CONSTRUCTION WATER SHALL BE OBTAINED FROM EXISTING WELL HOUSES LOCATED WEST OF FORMER PRODUCTION AREA AT LOCATIONS N 480,784.4 AND E 1,348,403.7 AND N 481,454.8 AND E 1,350,487.4 AND CONSTRUCTION WATER WELLS SHOWN ON THIS DRAWING.
11. OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP AT CELL 8 GRADING PLANS ARE SHOWN ON DRAWING G-18A.
12. EMERGENCY ACCESS ROAD TO BE USED FOR EMERGENCY RESPONSE VEHICLES AND PICKUP TRUCK VEHICLES. THIS ROAD SHALL ONLY BE USED FOR DELIVERY OF CONSTRUCTION MATERIALS AND EQUIPMENT AS APPROVED BY CONSTRUCTION MANAGER.
13. OSDF MONITORING ACCESS TO BE USED FOR MAINTENANCE, SEEDING, IRRIGATION, MONITORING, INSPECTION, FEMP OPERATIONS, AND EMERGENCY VEHICLES ONLY.
14. SECOND STREET IMPACTED MATERIAL HAUL ROAD MAY BE ROUTED AROUND BUILDING 77 BASED ON DEMOLITION SCHEDULE. CONSTRUCT SECOND STREET IMPACTED MATERIAL HAUL ROAD TO BE OPERATIONAL BEFORE CONSTRUCTION OF CELL 4 FINAL COVER SYSTEM.
15. CONSTRUCT RELOCATED ACCESS CONTROL FACILITY. FACILITY TO BE OPERATIONAL BEFORE CONSTRUCTION OF CELL 4 FINAL COVER SYSTEM. LOCATION AND DESIGN OF RELOCATED ACCESS CONTROL FACILITY TO BE PROVIDED BY CONSTRUCTION MANAGER.
16. DENOTES FINAL CONFIGURATION OF OSDF FENCE AND GATES. CHAIN-LINK FENCE AND GATES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02831.

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
D	04.01.22	CFC SUBMITTAL TO FF/DOE/EPA	TE2	AJA	LMG	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	TE2	AJA	LMG	DKP	RB
A	03.10.28	PRELIMINARY SUBMITTAL TO FF/DOE	TE2	AJA	LMG	DKP	RB

200 100 0 200 400
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

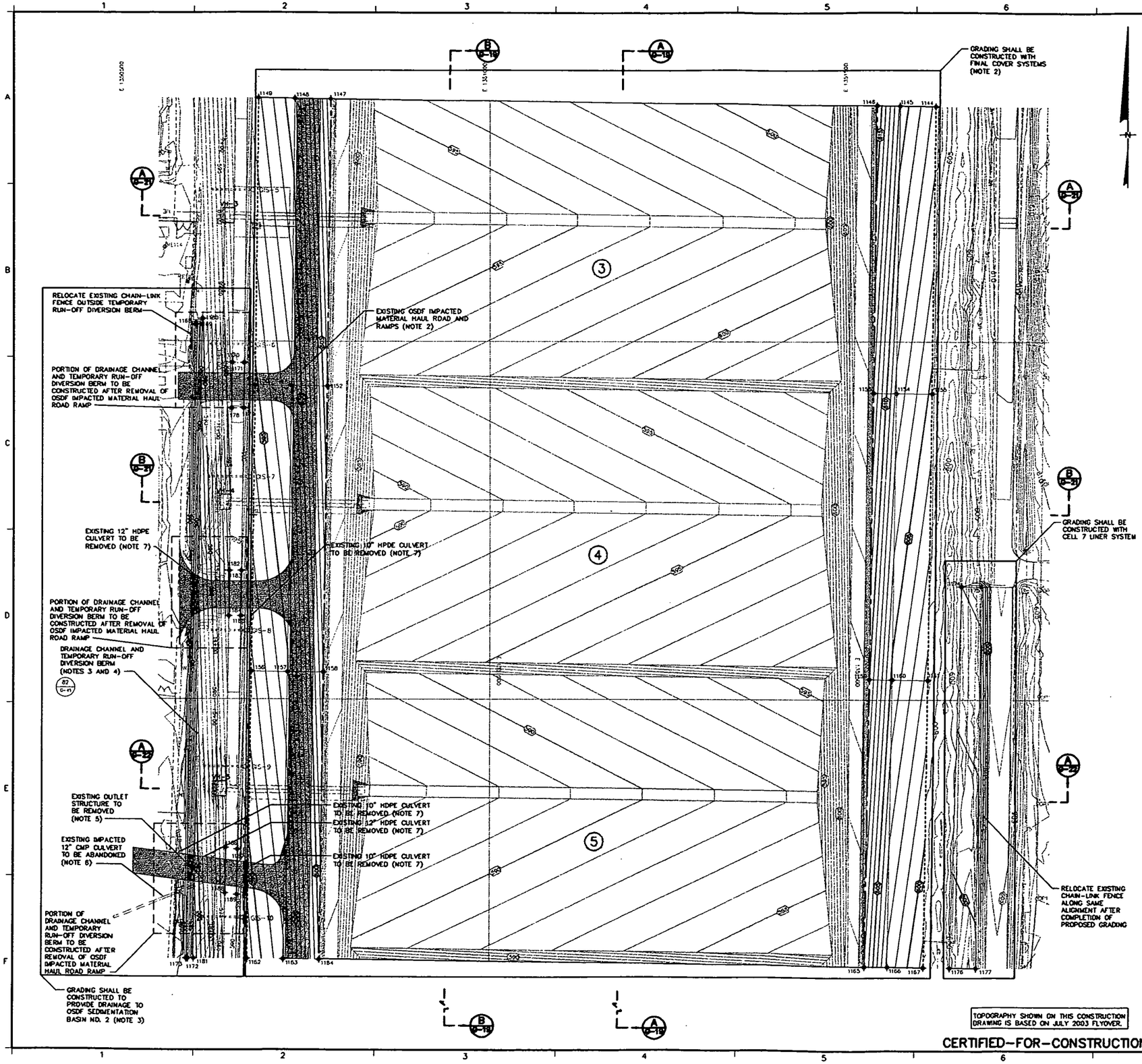
TITLE:
SITE DEVELOPMENT PLAN III – CELL 8

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED

SIGN HERE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO.:	20105
CONTRACT NO.:	03JT0699
FEMP DRAWING NO.:	90X-8000-G-00413
GEOSYNTEC PROJECT NO.:	GO3211-06.04
GEOSYNTEC DOCUMENT NO.:	F03-0007
SHEET NO.:	G-2A
REVISION NO.:	0



TOPOGRAPHY SHOWN ON THIS CONSTRUCTION DRAWING IS BASED ON JULY 2003 FLYOVER.

CERTIFIED-FOR-CONSTRUCTION

LEGEND

- 600 — EXISTING GROUND ELEVATION (FEET)
- 600 — EXISTING SUBGRADE ELEVATION (FEET) (NOTE 1)
- 600 — SUBGRADE ELEVATION (FEET) (NOTES 1 AND 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- 11+00 — EXISTING ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM PIPE
- L15 — EXISTING INTERIM LEACHATE TRANSMISSION SYSTEM PIPE
- 1153 — CONSTRUCTION CONTROL POINT
- 4 — EXISTING CELL DESIGNATION
- BERM CREST

SUBGRADE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
1144	482327.33	1351619.11	607.69
1145	482327.84	1351569.03	610.70
1146	482328.33	1351537.40	615.97
1147	482337.57	1350780.79	608.94
1148	482338.17	1350731.85	600.79
1149	482338.78	1350681.76	597.78
1150	481938.68	1350676.87	594.78
1151	481938.12	1350726.98	597.79
1152	481937.56	1350775.90	605.94
1153	481928.37	1351532.52	612.97
1154	481927.89	1351584.14	607.71
1155	481927.37	1351614.23	604.69
1156	481538.84	1350671.98	591.78
1157	481538.23	1350722.07	594.79
1158	481537.64	1350771.01	602.94
1159	481528.38	1351527.63	609.97
1160	481527.99	1351559.25	604.70
1161	481527.36	1351609.34	601.69
1162	481138.36	1350667.09	588.78
1163	481137.73	1350717.17	591.78
1164	481137.11	1350766.11	599.94
1165	481128.32	1351522.74	606.96
1166	481127.93	1351554.36	601.69
1167	481127.31	1351604.45	598.69
1168	482023.13	1350594.14	593.85
1169	482023.11	1350596.14	593.85
1170	481970.11	1350645.49	596.46
1171	481989.91	1350661.99	598.46
1172	481138.40	1350585.32	587.21
1173	481138.40	1350583.32	587.21
1174	481658.14	1351656.04	602.00
1175	481657.83	1351683.43	602.27
1176	481126.86	1351641.57	599.34
1177	481126.40	1351678.14	599.71
1178	481906.47	1350644.71	595.88
1179	481906.68	1350681.22	595.98
1180	482030.89	1350604.23	589.91
1181	481138.40	1350593.32	583.22
1182	481679.09	1350641.93	594.27
1183	481679.09	1350658.44	594.28
1184	481615.87	1350641.16	593.80
1185	481615.87	1350657.66	593.80
1186	481292.71	1350637.21	591.38
1187	481290.65	1350853.69	591.38
1188	481229.40	1350636.44	590.90
1189	481227.33	1350652.91	590.89

NOTES:

1. SUBGRADE ELEVATIONS CORRESPOND TO TOP OF PREPARED SUBGRADE INCLUDING ANY FILL. SUBGRADE AND FILL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
2. RE-ESTABLISH SUBGRADE ELEVATIONS TO FINAL COVER SYSTEM CONSTRUCTION LIMITS SHOWN HEREON AND RELOCATE EXISTING CHAIN-LINK FENCE AFTER REMOVAL OF IMPACTED MATERIAL HAUL ROAD AND RAMP AND PRIOR TO FINAL COVER SYSTEM CONSTRUCTION.
3. CONSTRUCT DRAINAGE CHANNEL AND TEMPORARY RUN-OFF DIVERSION BERM TO PROVIDE POSITIVE DRAINAGE TO OSDF SEDIMENTATION BASIN NO. 2.
4. REMOVE EXISTING INTERIM LEACHATE TRANSMISSION SYSTEM PIPE AND TEMPORARY RUN-OFF DIVERSION BERM AFTER ADJACENT CELL CAPS ARE FULLY VEGETATED. PLACE COMPACTED FILL, AS NECESSARY, TO PROVIDE POSITIVE DRAINAGE TO FORMER PRODUCTION AREA AND AWAY FROM OSDF FACILITY.
5. REMOVE EXISTING OUTLET STRUCTURE AND RE-ESTABLISH DRAINAGE CHANNEL SLOPE AFTER CELL 5 FINAL COVER SYSTEM CONSTRUCTION. MATERIAL SHALL BE STOCKPILED AT LOCATION DESIGNATED BY CONSTRUCTION MANAGER.
6. ABANDON EXISTING IMPACTED CORRUGATED METAL PIPE CULVERT IN PLACE BY FILLING END OF CULVERT WITH GROUT FOR A MINIMUM LENGTH OF 4 FEET.
7. REMOVE EXISTING CULVERT AND STOCKPILE MATERIAL AT LOCATIONS DESIGNATED BY CONSTRUCTION MANAGER.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.04.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LWG	AJA	TEJ	DGP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LWG	AJA	TEJ	DGP	RB
1A	–	NOT ISSUED	–	–	–	–	–
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	LWG	AJA	TEJ	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	LWG	AJA	TEJ	DGP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	KRD	TMM	KRD	DGP	JFB

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

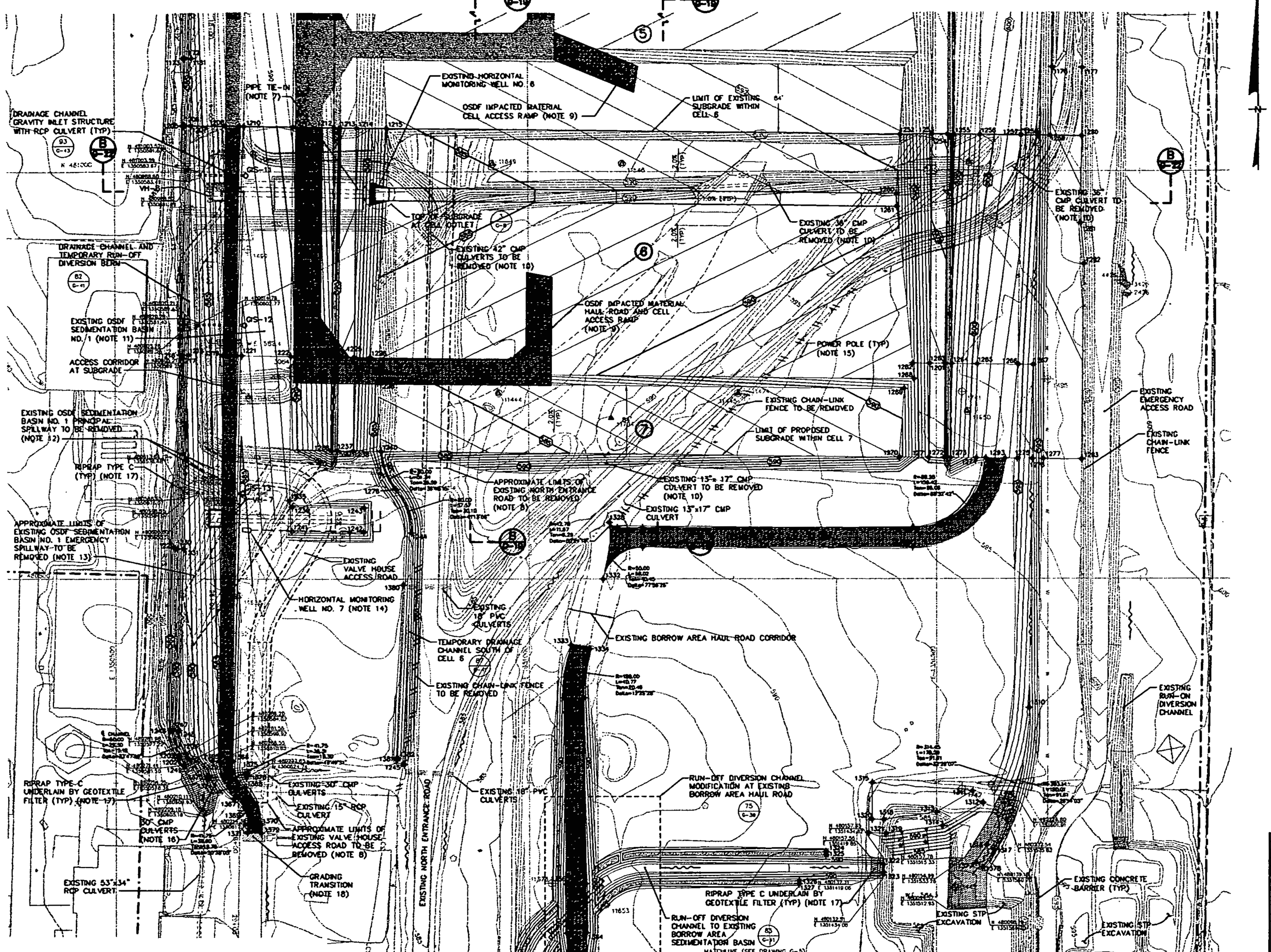
PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

TITLE:
SUBGRADE GRADING PLAN I – CELLS 3, 4, AND 5
LINER AND FINAL COVER SYSTEMS

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1900 W.T. HARRIS DRIVE
ATLANTA, GEORGIA 30267 USA

PROJECT NO.:	20105
CONTRACT NO.:	03970699
FEMP DRAWING NO.:	90X-6000-C-00365
GEOSYNTEC PROJECT NO.:	003711-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1003
SHEET NO.:	C-3
REVISION NO.:	1



SUBGRADE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
1172	481138.40	1350585.32	587.21	1268	480745.38	1351472.84	583.90
1173	481138.40	1350583.32	587.21	1269	480733.51	1351480.43	590.77
1176	481126.88	1351841.57	599.34	1270	480849.58	1351454.15	589.04
1177	481126.40	1351878.14	599.71	1271	480849.14	1351490.37	598.09
1181	481138.40	1350583.32	583.22	1272	480848.81	1351509.08	598.47
1201	480764.02	1351510.49	599.04	1273	480848.81	1351516.88	603.64
1202	480280.92	1350575.52	580.54	1274	480848.43	1351548.50	598.39
1203	480281.98	1350577.22	580.54	1275	480847.82	1351588.59	595.38
1204	480286.20	1350584.02	576.34	1276	480847.60	1351616.59	592.38
1205	481056.33	1350582.32	585.80	1277	480847.43	1351630.25	596.94
1206	481056.31	1350584.32	586.80	1278	480610.21	1350838.31	587.53
1207	481056.21	1350592.32	582.80	1280	481042.64	1351877.23	599.30
1208	481055.68	1350634.32	589.80	1281	480938.19	1351878.87	598.78
1209	481055.47	1350650.81	589.80	1282	480888.03	1351879.74	598.58
1210	481055.40	1350658.81	587.80	1283	480848.88	1351878.79	597.41
1211	481054.68	1350716.18	591.18	1292	480648.29	1351559.53	597.78
1212	481054.05	1350765.10	599.32	1293	480648.00	1351583.71	598.29
1213	481053.95	1350772.89	594.12	1296	480563.10	1351470.56	594.21
1214	481053.71	1350791.61	593.75	1297	480539.10	1351470.56	594.21
1215	481053.38	1350828.01	584.65	1310	480341.79	1351812.85	590.71
1216	480775.41	1350578.89	584.49	1311	480239.91	1351543.88	593.00
1217	480775.38	1350580.88	584.49	1312	480225.49	1351556.47	592.00
1218	480775.29	1350588.89	580.49	1313	480214.12	1351499.89	593.00
1219	480774.77	1350630.88	587.49	1314	480197.09	1351508.72	592.00
1220	480774.57	1350647.38	587.49	1315	480249.88	1351420.79	593.00
1221	480774.50	1350653.38	585.49	1316	480173.51	1351561.61	588.92
1222	480773.77	1350712.73	589.05	1317	480168.52	1351570.28	588.92
1223	480773.17	1350761.87	597.71	1318	480204.82	1351434.87	593.00
1224	480772.85	1350788.18	591.84	1319	480187.89	1351437.32	592.00
1225	480773.08	1350789.48	592.01	1320	480205.27	1351420.33	593.00
1226	480772.62	1350807.31	586.86	1321	480188.68	1351415.53	592.00
1227	480753.54	1350805.24	587.22	1322	480149.93	1351434.80	588.53
1228	480741.38	1350816.42	584.33	1323	480139.93	1351434.50	588.53
1229	480537.35	1350572.40	582.70	1324	480184.64	1351383.96	591.78
1230	480537.32	1350574.40	587.71	1325	480180.64	1351383.96	591.78
1231	480537.23	1350582.40	578.71	1326	480129.22	1351330.41	591.63
1235	480596.32	1350710.58	588.17	1327	480125.22	1351330.41	591.63
1236	480658.08	1350760.28	598.83	1328	480569.27	1351098.51	590.00
1237	480657.97	1350768.05	591.44	1329	480563.10	1351107.94	590.59
1238	480657.74	1350788.77	591.08	1330	480563.10	1351139.37	590.90
1239	480588.49	1350734.55	589.70	1331	480539.10	1351139.56	590.90
1240	480657.33	1350820.24	582.70	1332	480499.55	1351090.77	590.88
1241	480558.49	1350734.18	589.55	1333	480418.88	1351051.40	590.02
1242	480537.70	1350789.27	589.55	1334	480414.00	1351074.90	590.02
1243	480587.70	1350799.64	589.70	1335	480353.71	1351042.85	590.75
1244	480556.87	1350858.43	582.33	1336	480353.93	1351068.85	590.75
1245	480272.12	1350847.18	581.42	1356	480125.70	1351045.31	593.50
1246	480314.50	1350568.33	581.03	1357	480125.96	1351069.31	593.50
1247	480314.45	1350569.33	581.03	1363	480065.53	1351045.87	593.50
1248	480314.23	1350576.33	577.03	1364	480065.78	1351069.96	593.50
1249	480271.44	1350581.50	580.38	1365	480278.45	1350874.79	585.00
1250	480272.50	1350583.20	580.38	1366	480276.25	1350841.29	585.00
1252	481045.41	1351455.81	590.92	1367	480231.72	1350844.89	583.23
1253	481044.91	1351495.20	600.77	1368	480244.14	1350855.75	583.23
1254	481044.68	1351513.82	601.18	1369	480199.01	1350650.33	581.41
1255	481044.58	1351521.71	608.34	1370	480198.60	1350875.83	581.41
1256	481044.18	1351553.34	601.07	1371	480188.65	1350858.06	580.99
1257	481043.56	1351603.42	598.07	1372	480188.22	1350875.55	580.99
1258	481043.28	1351625.63	594.38	1373	480257.46	1350610.16	578.84
1259	481043.11	1351639.28	598.92	1374	480253.83	1350611.49	578.84
1260	480972.78	1351451.13	589.43	1375	480282.47	1350858.83	579.33
1261	480856.78	1351451.44	589.43	1376	480258.83	1350859.93	579.33
1262	480784.50	1351471.08	593.49	1377	480151.86	1351548.02	588.64
1263	480784.25	1351491.77	598.67	1378	480146.23	1351558.28	588.64
1264	480783.93	1351518.28	604.24	1379	480276.57	1350818.96	583.70
1265	480783.54	1351549.91	598.97	1380	480492.68	1350848.72	584.00
1266	480782.93	1351599.98	595.98	1381	480279.85	1350837.77	584.00
1267	480782.71	1351617.98	592.96	1382	480279.85	1350839.77	584.00

LEGEND

- 600 — EXISTING GROUND ELEVATION (FEET)
- 585 — SUBGRADE ELEVATION (FEET) (NOTE 1)
- 590 — FINISHED GRADE ELEVATION (FEET)
- FEMP PROPERTY LINE
- BATTERY LIMIT
- PERIMETER BERM BASELINE
- 22+00 — EXISTING ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM PIPE
- EXISTING INTERIM LEACHATE TRANSMISSION SYSTEM PIPE
- SLOPE TOE OR CREST
- EXISTING HORIZONTAL MONITORING WELL WITH COVER SLAB
- 3426, 11444, 1441, 1493, 4064, 11704, 2064, 1152 — EXISTING GEOTECHNICAL DATA POINTS (NOTE 4)
- (6) — CELL DESIGNATION
- 1250 — CONSTRUCTION CONTROL POINT
- ACCESS CORRIDOR, ACCESS ROAD, ACCESS RAMP, MAINTENANCE ACCESS, OR HAUL ROAD
- BERM CREST
- RIPRAP LIMIT
- GRADING TRANSITION (NOTE 18)
- DRAINAGE FLOW DIRECTION

GEOTECHNICAL DATA POINTS (NOTE 4)

CONE PENETRATION TESTS

POINT NO.	NORTHING	EASTING	ELEVATION
11444	480728.09	1350983.87	
11445	480728.10	1351256.03	
11834	481021.71	1350668.98	
11835	480724.26	1350862.01	
11838	480479.08	1350648.77	
11844	481010.60	1351540.88	
11846	481009.50	1351115.71	
11849	481009.87	1350957.20	
11850	480705.49	1351537.67	
11853	480100.79	1351094.32	

GEOTECHNICAL BORINGS

POINT NO.	NORTHING	EASTING	ELEVATION
1483	480244.41	1351570.88	
1485	480744.42	1351635.97	
1498	480804.41	1350655.88	
1499	480904.41	1350860.87	
1741	480729.42	1351530.87	
1742	480242.41	1351530.88	
11376	480126.49	1351027.07	
11474	480728.81	1351263.68	
11683	480721.77	1350863.00	

PIEZOMETERS

POINT NO.	NORTHING	EASTING	ELEVATION
11704	480697.66	1351101.05	

MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
1152	480440.42	1350635.60	

TYPE 1 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
1084	480748.20	1350724.01	
1441	480121.40	1351527.40	

TYPE 2 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
2064	480749.61	1350714.94	
2120	480216.32	1350654.03	
2426	480850.24	1351733.70	

TYPE 3 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
3084	480759.94	1350715.19	
3426	480860.32	1351733.15	

TYPE 4 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
4084	480759.64	1350724.59	
4426	480855.66	1351724.77	

NOTES:

1. CLEARING, GRUBBING, AND STRIPPING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110. SUBGRADE ELEVATIONS CORRESPOND TO TOP OF PREPARED SUBGRADE, INCLUDING ANY COMPACTED FILL. SUBGRADE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
2. ACTIVE VERTICAL MONITORING WELLS AND PIEZOMETERS WITHIN CONSTRUCTION AREA WILL BE ABANDONED BY OWNER PRIOR TO CONSTRUCTION IN THAT AREA.
3. CONTRACTOR SHALL LOCATE AND REMOVE EXISTING SUBDRAIN TILE SYSTEM WITHIN CONSTRUCTION AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02200. REFER TO REFERENCE DRAWINGS SKG-04391 THROUGH SKG-04397 FOR LOCATION OF SUBDRAIN TILE SYSTEM.
4. CONTRACTOR SHALL REMOVE GROUT USED TO BACKFILL GEOTECHNICAL DATA POINTS AND MONITORING WELLS LOCATED WITHIN PERIMETER BERM BASELINE TO A MINIMUM DEPTH OF 3 FEET BELOW SUBGRADE ELEVATIONS.
5. CONTRACTOR SHALL DEWATER EXCAVATIONS AND MANAGE COLLECTED WATER IN ACCORDANCE WITH SPECIFICATION SECTION 02200. GROUNDWATER LEVELS IN BROWN AND GRAY TILL LAYERS VARY DURING YEAR AND MAY BE HIGHER THAN THOSE SHOWN ON REFERENCE DRAWINGS. LEVELS MAY APPROACH GROUND SURFACE DURING PERIODS OF HEAVY PRECIPITATION.
6. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILITIES WITHIN CONSTRUCTION AREA AS SHOWN ON REFERENCE DRAWINGS SKG-04391 THROUGH SKG-04397. CONTRACTOR SHALL REMOVE UNDERGROUND UTILITIES IN CONSTRUCTION AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02200 AND AS APPROVED BY CONSTRUCTION MANAGER.
7. LDS, LCS, AND RLCS PIPES SHALL TIE INTO EXISTING PIPES. CONSTRUCTION CONTROL POINTS FOR PIPE TIE-INS ARE SHOWN ON DRAWING G-9.
8. ROAD PAVEMENT COURSES AND ASSOCIATED IMPACTED MATERIAL FOR EXISTING NORTH ENTRANCE ROAD AND EXISTING VALVE HOUSE ACCESS ROAD SHALL BE REMOVED WITHIN LIMITS SHOWN. REMOVAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200. CONTRACTOR SHALL PLACE REMOVED MATERIAL IN SOUTH STOCKPILE AREA OR ACTIVE CELL AS APPROVED BY CONSTRUCTION MANAGER.
9. OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP GRADING PLAN IS SHOWN ON DRAWING G-17.
10. CONTRACTOR SHALL REMOVE EXISTING CULVERTS AND STOCKPILE MATERIAL AT LOCATIONS APPROVED BY CONSTRUCTION MANAGER.
11. CONTRACTOR SHALL REMOVE SEDIMENT FROM EXISTING OSDF SEDIMENTATION BASIN NO. 1 AND EXCAVATE TO COMPETENT SUBGRADE (MINIMUM ELEVATION OF 579 OR LOWER) PRIOR TO BACKFILLING BASIN TO CREST OF EXISTING EMBANKMENT. CONTRACTOR SHALL STOCKPILE EXCAVATED SEDIMENT AT LOCATION APPROVED BY CONSTRUCTION MANAGER. CONTRACTOR SHALL SLOPE COMPACTED FILL FINISHED GRADE WITHIN BASIN TO DRAIN TO WEST AT A MINIMUM SLOPE OF 1 PERCENT.
12. CONTRACTOR SHALL REMOVE EXISTING OSDF SEDIMENTATION BASIN NO. 1 PRIMARY SPILLWAY AND STOCKPILE MATERIAL AT LOCATION APPROVED BY CONSTRUCTION MANGER.
13. CONTRACTOR SHALL REMOVE EXISTING OSDF SEDIMENTATION BASIN NO. 1 EMERGENCY SPILLWAY RIPRAP AND UNDERLYING GEOTEXTILE AND STOCKPILE MATERIAL AT LOCATION APPROVED BY CONSTRUCTION MANAGER.
14. HORIZONTAL MONITORING WELL FOR CELL 7 SHALL BE CONSTRUCTED MINIMUM ONE YEAR PRIOR TO CONSTRUCTION OF CELL 7. HORIZONTAL MONITORING WELL AND MISCELLANEOUS DETAILS ARE SHOWN ON DRAWING G-44.
15. CONTRACTOR SHALL REMOVE POWER POLES LOCATED WITHIN PROPOSED SUBGRADE AND BACKFILL HOLES IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
16. CONTRACTOR SHALL EXTEND EXISTING 30-INCH CMP CULVERTS TO OUTLET INVERTS AS SHOWN. ALUMINIZED CMP CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
17. CONTRACTOR SHALL PLACE RIPRAP WITHIN AREA SHOWN. RIPRAP THICKNESS SHALL BE 1.5 FEET. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION 02271. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
18. CONTRACTOR SHALL TRANSITION PROPOSED ACCESS CORRIDOR ELEVATIONS TO TIE-IN WITH EXISTING GROUND ELEVATIONS WITHIN AREA SHOWN.

CERTIFIED-FOR-CONSTRUCTION

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TEZ	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DCP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DCP	JFB

50 25 0 50 100
SCALE IN FEET

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

DEPARTMENT OF ENERGY · UNITED STATES OF AMERICA

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

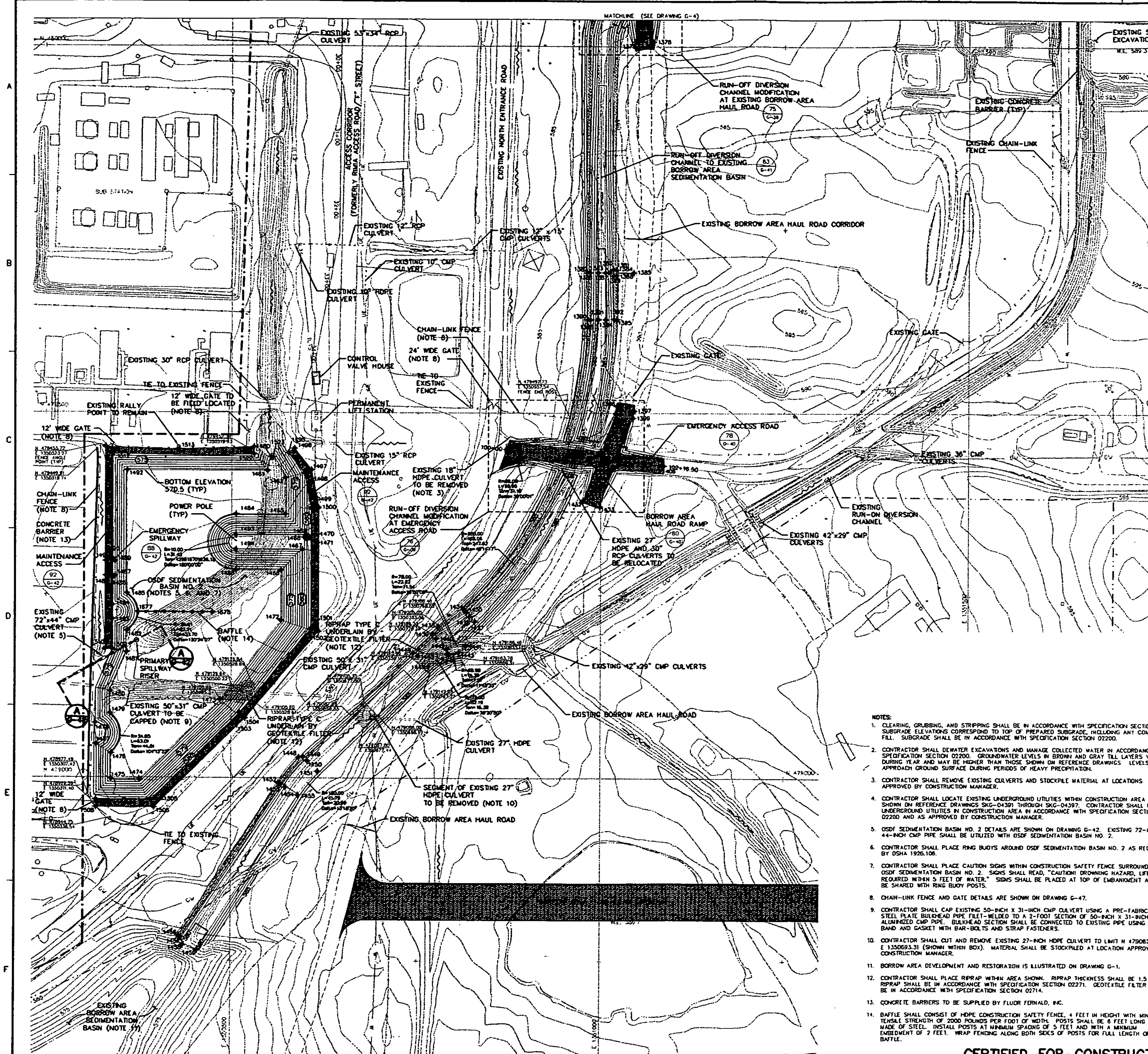
TITLE:
SUBGRADE GRADING PLAN II -
CELL 6 LINER SYSTEM AND
OSDF SEDIMENTATION BASIN NO. 2

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE ATLANTA, GEORGIA 30342 USA

PROJECT NO.: 20105
CONTRACT NO.: 95PS005028
FEMP DRAWING NO.: 90X-6000-G-00366
GEOSYNTEC PROJECT NO.: GQ1342-17.4
GEOSYNTEC DOCUMENT NO.: F01-0004
SHEET NO.: G-4
REVISION NO.: 0



SUBGRADE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
1375	480006.28	1351046.61	590.51	1463	479360.50	1350572.50	570.50
1376	480008.54	1351070.61	590.51	1464	479360.50	1350506.00	570.50
1380	479891.27	1351012.18	588.97	1465	479283.50	1350506.00	570.50
1381	479895.50	1351018.76	588.53	1466	479283.50	1350566.50	570.50
1382	479891.27	1350980.83	588.51	1467	479312.00	1350595.00	580.00
1383	479891.27	1350995.81	584.85	1468	479329.00	1350598.00	581.00
1384	479895.11	1351020.77	588.53	1469	479332.00	1350601.00	580.00
1385	479891.27	1351044.32	588.00	1470	479329.00	1350604.00	581.00
1386	479691.27	1350984.83	588.51	1471	479326.00	1350601.00	582.00
1387	479691.27	1351005.81	584.85	1472	479215.08	1350566.50	570.50
1388	479687.53	1351020.82	588.49	1473	479106.65	1350485.24	570.50
1389	479687.15	1351018.82	588.49	1474	478997.70	1350376.28	570.50
1390	479627.12	1350981.29	588.22	1475	478997.70	1350338.61	570.50
1391	479627.23	1350996.27	584.36	1476	479033.11	1350338.61	570.50
1392	479627.38	1351017.25	588.22	1477	479045.51	1350318.52	577.20
1393	479627.15	1350985.29	588.22	1478	479074.63	1350317.45	577.20
1394	479627.30	1351006.27	584.56	1479	479087.77	1350337.48	570.50
1395	479627.41	1351021.25	588.22	1480	479118.10	1350337.48	570.50
1396	479508.93	1351021.76	586.94	1481	479171.29	1350359.50	570.50
1397	479507.78	1351045.07	587.23	1482	479200.31	1350359.50	570.50
1398	479499.06	1351020.17	587.25	1483	479216.36	1350339.64	577.12
1399	479492.90	1351043.49	587.49	1484	479235.63	1350339.64	577.12
1406	479427.56	1351085.91	587.32	1485	479251.89	1350359.50	570.50
1407	479433.96	1351024.32	589.32	1486	479272.83	1350340.00	577.00
1408	479437.78	1350987.56	589.32	1487	479275.83	1350343.00	578.00
1409	479439.11	1350974.77	590.07	1488	479275.63	1350331.25	578.00
1414	479441.24	1350954.37	590.07	1489	479295.63	1350343.00	578.00
1416	479449.95	1350870.57	585.16	1490	479298.63	1350340.00	577.00
1432	479379.80	1350975.70	586.81	1491	479295.63	1350330.89	578.00
1433	479371.40	1350998.18	587.09	1492	479420.17	1350359.50	570.50
1434	479229.74	1350813.24	585.01	1493	479332.00	1350506.00	580.00
1435	479228.82	1350815.77	585.01	1494	479312.00	1350508.00	580.00
1436	479220.77	1350820.51	582.52	1495	479444.27	1350576.50	-
1437	479213.59	1350827.48	582.52	1496	479450.60	1350584.61	-
1438	479206.43	1350778.20	584.83	1497	479421.42	1350607.39	-
1439	479196.33	1350770.25	584.77	1498	479417.19	1350598.00	-
1440	479190.47	1350774.98	582.28	1499	479368.64	1350607.00	-
1441	479179.99	1350814.95	582.39	1500	479369.55	1350617.00	-
1442	479178.12	1350788.91	582.28	1501	479203.75	1350607.00	-
1443	479171.54	1350805.58	582.33	1502	479200.15	1350617.00	-
1444	479170.80	1350743.77	584.61	1503	479088.27	1350511.41	-
1445	479188.49	1350750.30	582.12	1504	479081.53	1350518.81	-
1446	479168.51	1350791.39	582.28	1505	478989.20	1350392.34	-
1447	479152.15	1350764.23	582.12	1506	478959.20	1350396.48	-
1448	479028.19	1350591.51	583.68	1507	478969.20	1350318.50	-
1449	479028.33	1350597.33	583.69	1508	478959.20	1350318.50	-
1450	479022.85	1350602.56	581.19	1509	479175.17	1350340.00	-
1451	479008.61	1350616.50	581.19	1510	479175.17	1350330.00	-
1452	478893.22	1350563.59	583.49	1511	479452.72	1350330.00	-
1453	478891.07	1350566.97	583.49	1512	479442.72	1350340.00	-
1454	478987.03	1350573.27	581.00	1513	479449.43	1350429.00	-
1455	478976.28	1350590.15	580.99	1521	479452.72	1350530.01	-
1456	478784.18	1350430.30	582.36	1522	479442.72	1350530.01	-
1457	478787.03	1350433.68	582.38	1523	479438.93	1350555.36	570.50
1458	478771.59	1350435.91	579.85	1524	479446.98	1351000.74	588.98
1459	478764.87	1350455.22	579.87	1525	479444.40	1351025.40	588.87
1460	479438.93	1350553.38	570.50	1526	479426.64	1350983.18	588.98
1461	479420.17	1350548.55	570.50	1527	479424.08	1351017.82	588.89
1462	479410.17	1350572.50	570.50	1677	479226.01	1350374.39	570.50
				1678	479224.01	1350474.39	570.50

EMERGENCY ACCESS ROAD HORIZONTAL ALIGNMENT STATION AND CURVE REPORT

Project: 1342-174
Horizontal Alignment Station and Curve Report
Alignment: em-4 Desc:

Desc.	Station	Spiral/Curve Data		Northing	Easting
PI	100+00			479449.95	1350870.57
Length:		216.50	Course: S 84-03-47 E		
PI	102+16.50			479427.56	1351085.91

Tangent Data

				Northing	Easting
100+00				479449.95	1350870.57
102+16.50				479427.56	1351085.91
Length:	216.50	Course	S 84-03-47 E		

LEGEND

- 600 — EXISTING GROUND ELEVATION (FEET)
- 580 — SUBGRADE ELEVATION (FEET) (NOTE 1)
- 580 — FINISHED GRADE ELEVATION (FEET)
- BATTERY LIMIT
- BORROW AREA LIMIT
- 37+00 — EXISTING ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM PIPE
- ILTS — EXISTING INTERIM LEACHATE TRANSMISSION SYSTEM PIPE
- LTS — EXISTING LEACHATE TRANSMISSION SYSTEM PIPE
- UE — EXISTING UNDERGROUND ELECTRIC
- GW — EXISTING 24" STORMWATER FORCEMAIN
- SLOPE TOE OR CREST
- DRAINAGE FLOW DIRECTION
- 1444 — CONSTRUCTION CONTROL POINT
- BERM CREST
- ACCESS CORRIDOR, ACCESS ROAD, ACCESS RAMP, MAINTENANCE ACCESS, OR HAUL ROAD
- RIPRAP LIMIT

NOTES:

1. CLEARING, GRUBBING, AND STRIPPING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110. SUBGRADE ELEVATIONS CORRESPOND TO TOP OF PREPARED SUBGRADE, INCLUDING ANY COMPACTED FILL. SUBGRADE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
2. CONTRACTOR SHALL DEWATER EXCAVATIONS AND MANAGE COLLECTED WATER IN ACCORDANCE WITH SPECIFICATION SECTION 02200. GROUNDWATER LEVELS IN BROWN AND GRAY TILL LAYERS VARY DURING YEAR AND MAY BE HIGHER THAN THOSE SHOWN ON REFERENCE DRAWINGS. LEVELS MAY APPROACH GROUND SURFACE DURING PERIODS OF HEAVY PRECIPITATION.
3. CONTRACTOR SHALL REMOVE EXISTING CULVERTS AND STOCKPILE MATERIAL AT LOCATIONS APPROVED BY CONSTRUCTION MANAGER.
4. CONTRACTOR SHALL LOCATE EXISTING UNDERGROUND UTILITIES WITHIN CONSTRUCTION AREA AS SHOWN ON REFERENCE DRAWINGS SKG-04391 THROUGH SKG-04397. CONTRACTOR SHALL REMOVE UNDERGROUND UTILITIES IN CONSTRUCTION AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02200 AND AS APPROVED BY CONSTRUCTION MANAGER.
5. OSDF SEDIMENTATION BASIN NO. 2 DETAILS ARE SHOWN ON DRAWING G-42. EXISTING 72-INCH X 44-INCH CMP PIPE SHALL BE UTILIZED WITH OSDF SEDIMENTATION BASIN NO. 2.
6. CONTRACTOR SHALL PLACE RING BUOYS AROUND OSDF SEDIMENTATION BASIN NO. 2 AS REQUIRED BY OSHA 1926.106.
7. CONTRACTOR SHALL PLACE CAUTION SIGNS WITHIN CONSTRUCTION SAFETY FENCE SURROUNDING OSDF SEDIMENTATION BASIN NO. 2. SIGNS SHALL READ, "CAUTION! DROWNING HAZARD, LIFE VEST REQUIRED WITHIN 5 FEET OF WATER." SIGNS SHALL BE PLACED AT TOP OF EMBANKMENT AND MAY BE SHARED WITH RING BUOY POSTS.
8. CHAIN-LINK FENCE AND GATE DETAILS ARE SHOWN ON DRAWING G-47.
9. CONTRACTOR SHALL CAP EXISTING 50-INCH X 31-INCH CMP CULVERT USING A PRE-FABRICATED STEEL PLATE BULKHEAD PIPE FILET-WELDED TO A 2-FOOT SECTION OF 50-INCH X 31-INCH ALUMINIZED CMP PIPE. BULKHEAD SECTION SHALL BE CONNECTED TO EXISTING PIPE USING A FLAT BAND AND GASKET WITH BAR-BOLTS AND STRAP FASTENERS.
10. CONTRACTOR SHALL CUT AND REMOVE EXISTING 27-INCH HDPE CULVERT TO LIMIT N 479082.35 AND E 1350693.31 (SHOWN WITHIN BOX). MATERIAL SHALL BE STOCKPILED AT LOCATION APPROVED BY CONSTRUCTION MANAGER.
11. BORROW AREA DEVELOPMENT AND RESTORATION IS ILLUSTRATED ON DRAWING G-1.
12. CONTRACTOR SHALL PLACE RIPRAP WITHIN AREA SHOWN. RIPRAP THICKNESS SHALL BE 1.5 FEET. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
13. CONCRETE BARRIERS TO BE SUPPLIED BY FLUOR FERNALD, INC.
14. BAFFLE SHALL CONSIST OF HDPE CONSTRUCTION SAFETY FENCE, 4 FEET IN HEIGHT WITH MINIMUM TENSILE STRENGTH OF 2000 POUNDS PER FOOT OF WIDTH. POSTS SHALL BE 6 FEET LONG AND MADE OF STEEL. INSTALL POSTS AT MINIMUM SPACING OF 5 FEET AND WITH A MINIMUM EMBEDMENT OF 2 FEET. WRAP FENCING ALONG BOTH SIDES OF POSTS FOR FULL LENGTH OF BAFFLE.

CERTIFIED-FOR-CONSTRUCTION

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	02.10.30	RESPONSE TO OEPA COMMENTS	DCP	JJA	CDC	DKP	JFB
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TEZ	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DCP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	JJA	LMG	DCP	JFB

50 25 0 50 100
SCALE IN FEET

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
SUBGRADE GRADING PLAN III - CELL 6 LINER SYSTEM AND OSDF SEDIMENTATION BASIN NO. 2

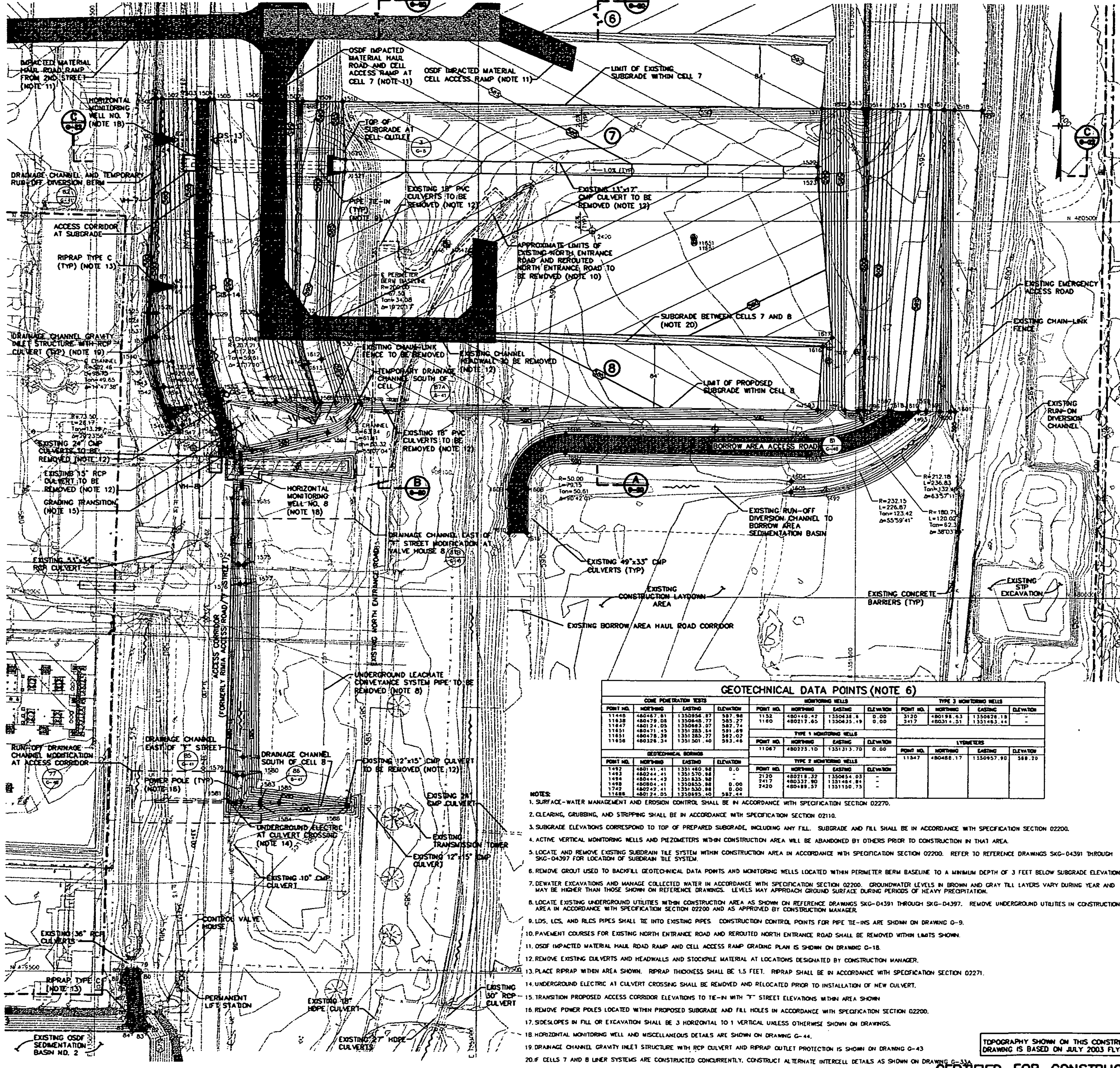
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED

SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE ATLANTA, GEORGIA 30342 USA

PROJECT NO.:	20105
CONTRACT NO.:	95PS005028
FEMP DRAWING NO.:	90X-6000-G-00367
GEOSYNTEC PROJECT NO.:	G01342-17.4
GEOSYNTEC DOCUMENT NO.:	F02-1005
SHEET NO.:	G-5
REVISION NO.:	1

5319



SUBGRADE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
1500	480880.47	1350575.75	583.63	1554	480239.22	1350682.88	585.10
1501	480860.41	1350577.75	583.63	1560	480224.11	1350657.11	582.81
1502	480860.19	1350585.75	579.63	1561	480229.32	1350672.77	582.81
1503	480859.85	1350829.47	586.92	1564	480198.38	1350660.93	580.55
1504	480859.45	1350845.87	586.92	1565	480197.89	1350677.43	580.55
1505	480859.38	1350851.97	584.92	1568	480191.35	1350880.77	580.00
1506	480858.86	1350711.32	588.48	1569	480190.85	1350677.21	580.00
1507	480858.06	1350760.28	596.63	1574	480040.64	1350684.78	577.25
1508	480857.87	1350768.05	591.44	1575	480040.87	1350691.76	577.67
1509	480857.74	1350788.77	591.06	1576	480015.58	1350688.56	577.12
1510	480857.33	1350820.24	582.70	1577	480015.80	1350693.57	577.54
1511	480849.58	1351434.15	589.04	1578	479785.48	1350690.97	578.40
1512	480849.14	1351490.37	598.09	1579	479780.87	1350683.69	578.00
1513	480848.91	1351500.08	598.47	1580	479780.74	1350690.69	578.00
1514	480848.81	1351516.88	603.66	1581	479724.00	1350681.96	576.00
1515	480848.43	1351548.50	598.39	1582	479727.71	1350689.12	578.00
1516	480847.82	1351598.59	595.38	1583	479726.22	1350713.47	578.00
1517	480847.80	1351618.59	592.38	1584	479722.72	1350713.28	578.00
1518	480847.43	1351630.25	596.94	1585	479725.20	1350738.38	576.67
1519	480847.14	1351686.00	597.30	1586	479721.57	1350827.48	578.85
1520	480580.40	1350823.73	581.20	1587	480258.38	1350731.94	588.54
1521	480584.41	1350823.23	581.20	1588	480257.74	1350783.79	594.81
1522	480572.77	1351448.41	587.45	1589	480257.64	1350792.00	588.40
1523	480556.76	1351448.55	587.45	1590	480257.40	1350811.61	589.00
1524	480375.83	1350568.00	581.49	1591	480217.65	1350800.70	580.09
1525	480375.59	1350570.00	581.49	1592	480257.00	1350844.75	580.99
1526	480375.43	1350578.00	577.49	1593	480249.61	1351449.26	587.04
1527	480374.78	1350625.89	585.49	1594	480249.17	1351485.48	596.08
1528	480374.58	1350642.49	585.49	1595	480248.94	1351504.20	596.47
1529	480374.50	1350648.49	583.49	1596	480248.84	1351511.99	601.68
1530	480373.78	1350707.84	587.05	1597	480248.48	1351543.81	598.39
1531	480373.18	1350756.78	595.21	1598	480247.85	1351593.70	593.38
1532	480373.11	1350764.57	590.01	1599	480247.83	1351611.70	580.38
1533	480372.95	1350783.28	589.64	1800	480247.46	1351625.36	594.94
1534	480353.57	1350800.35	585.22	1801	480247.39	1351631.39	595.00
1535	480341.38	1350814.47	582.36	1802	480212.55	1351434.89	595.80
1536	480342.84	1350568.52	581.33	1803	480188.55	1351434.60	595.60
1537	480342.85	1350570.51	581.33	1804	480154.29	1351414.79	590.00
1538	480343.41	1350578.50	577.33	1805	480140.48	1351414.20	590.00
1539	480309.82	1350571.84	581.17	1806	480216.45	1351115.88	594.12
1540	480310.10	1350573.82	581.17	1807	480192.45	1351115.58	594.12
1541	480311.24	1350581.74	577.17	1808	480142.45	1351064.87	593.59
1542	480274.81	1350578.48	580.99	1809	480142.45	1351040.97	593.59
1543	480275.34	1350580.41	580.99	1810	480084.52	1351040.97	593.31
1544	480277.48	1350588.13	576.99	1811	480084.52	1351064.97	593.31
1545	480224.82	1350595.48	581.00	1812	480315.22	1350792.39	589.30
1546	480225.26	1350597.36	581.00	1813	480309.29	1350774.64	589.68
1547	480220.24	1350607.50	577.00	1814	480306.82	1350767.25	594.87
1548	480227.12	1350611.92	577.00	1815	480291.18	1350720.87	588.72
1549	480237.92	1350601.32	577.00	1816	480333.54	1351455.54	588.77
1550	480265.69	1350643.09	585.15	1817	480345.41	1351467.98	591.90
1551	480270.88	1350658.76	585.15	1818	480248.41	1351547.37	596.18
1552	480272.71	1350664.64	583.15	1819	480247.97	1351583.45	594.00
1553	480253.95	1350847.05	585.10	1788	480193.53	1350701.78	578.59

RIPRAP LIMITS CONTROL POINTS

POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING
60	480613.64	1350576.48	71	480403.58	1350570.76	82	479427.81	1350572.48
61	480613.55	1350584.48	72	480248.58	1350589.47	83	479420.17	1350566.54
62	480608.10	1350600.24	73	480251.01	1350598.60	84	479420.17	1350548.55
63	480603.60	1350600.19	74	480252.59	1350617.44	85	479429.17	1350541.57
64	480598.55	1350584.07	75	480248.33	1350618.88	86	479440.43	1350543.06
65	480598.65	1350576.07	76	480238.75	1350601.23	87	479470.23	1350542.44
66	480418.53	1350571.17	77	480234.37	1350594.27	88	479482.22	1350541.78
67	480418.52	1350579.17	78	479503.18	1350542.00	89	479485.85	1350534.32
68	480413.03	1350600.12	79	479503.74	1350555.65	90	479496.66	1350535.48
69	480408.53	1350600.08	80	479499.14	1350580.07			
70	480403.53	1350578.76	81	479440.43	1350584.95			

LEGEND

Symbol	Description
590	EXISTING GROUND ELEVATION (FEET)
585	SUBGRADE ELEVATION (FEET) (NOTE 3)
585	FINISHED GRADE ELEVATION (FEET)
	FCP PROPERTY LINE
	BATTERY LIMIT
	PERIMETER BERM BASELINE
22+00	EXISTING ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM (EPLTS) PIPE
ILTS	EXISTING INTERIM LEACHATE TRANSMISSION SYSTEM (ILTS) PIPE
UE	EXISTING UNDERGROUND ELECTRIC (NOTE 14)
	SLOPE TOE OR CREST
	EXISTING HORIZONTAL MONITORING WELL WITH COVER SLAB
3417, 11651, 11067, 1494, 11703, 11547, 2417, 1152	EXISTING GEOTECHNICAL DATA POINTS (NOTE 6)
7	CELL DESIGNATION
1565	CONSTRUCTION CONTROL POINT
	ACCESS CORRIDOR, ACCESS ROAD, ACCESS RAMP, MAINTENANCE ACCESS, OR HAUL ROAD
	BERM CREST
	RIPRAP LIMIT
	DRAINAGE FLOW DIRECTION

GEOTECHNICAL DATA POINTS (NOTE 6)

CONE PENETRATION TESTS

POINT NO.	NORTHING	EASTING	ELEVATION
11448	480467.81	1350956.87	587.98
11638	480479.08	1350848.77	585.27
11647	480124.05	1350663.07	587.74
11651	480471.45	1351285.54	591.69
11651	480478.39	1351285.27	582.02
11656	480328.34	1351501.40	593.46

GEOTECHNICAL BORINGS

POINT NO.	NORTHING	EASTING	ELEVATION
1492	480141.41	1351460.98	0.0
1493	480244.41	1351570.98	-
1494	480444.42	1351835.98	-
1498	480804.41	1350855.98	0.00
1742	480242.41	1351530.98	0.00
11686	480124.05	1350895.40	587.44

MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
1152	480440.42	1350638.6	0.00
1160	480217.65	1350635.49	0.00

TYPE 1 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
11067	480225.10	1351313.70	0.00

TYPE 2 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
2120	480218.32	1350854.03	-
2417	480332.90	1351484.84	-
2420	480488.57	1351150.73	-

TYPE 3 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
3120	480198.63	1350828.18	-
3417	480314.51	1351463.44	-

LYSIMETERS

POINT NO.	NORTHING	EASTING	ELEVATION
11547	480488.17	1350957.90	588.20

NOTES:

1. SURFACE-WATER MANAGEMENT AND EROSION CONTROL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
2. CLEARING, GRUBBING, AND STRIPPING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110.
3. SUBGRADE ELEVATIONS CORRESPOND TO TOP OF PREPARED SUBGRADE, INCLUDING ANY FILL. SUBGRADE AND FILL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
4. ACTIVE VERTICAL MONITORING WELLS AND PIEZOMETERS WITHIN CONSTRUCTION AREA WILL BE ABANDONED BY OTHERS PRIOR TO CONSTRUCTION IN THAT AREA.
5. LOCATE AND REMOVE EXISTING SUBDRAIN TILE SYSTEM WITHIN CONSTRUCTION AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02200. REFER TO REFERENCE DRAWINGS SKG-04391 THROUGH SKG-04397 FOR LOCATION OF SUBDRAIN TILE SYSTEM.
6. REMOVE GROUT USED TO BACKFILL GEOTECHNICAL DATA POINTS AND MONITORING WELLS LOCATED WITHIN PERIMETER BERM BASELINE TO A MINIMUM DEPTH OF 3 FEET BELOW SUBGRADE ELEVATIONS.
7. DEWATER EXCAVATIONS AND MANAGE COLLECTED WATER IN ACCORDANCE WITH SPECIFICATION SECTION 02200. GROUNDWATER LEVELS IN BROWN AND GRAY TILL LAYERS VARY DURING YEAR AND MAY BE HIGHER THAN THOSE SHOWN ON REFERENCE DRAWINGS. LEVELS MAY APPROACH GROUND SURFACE DURING PERIODS OF HEAVY PRECIPITATION.
8. LOCATE EXISTING UNDERGROUND UTILITIES WITHIN CONSTRUCTION AREA AS SHOWN ON REFERENCE DRAWINGS SKG-04391 THROUGH SKG-04397. REMOVE UNDERGROUND UTILITIES IN CONSTRUCTION AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02200 AND AS APPROVED BY CONSTRUCTION MANAGER.
9. LDS, LCS, AND RLCS PIPES SHALL TIE INTO EXISTING PIPES. CONSTRUCTION CONTROL POINTS FOR PIPE TIE-INS ARE SHOWN ON DRAWING G-9.
10. PAVEMENT COURSES FOR EXISTING NORTH ENTRANCE ROAD AND REROUTED NORTH ENTRANCE ROAD SHALL BE REMOVED WITHIN LIMITS SHOWN.
11. OSDF IMPACTED MATERIAL HAUL ROAD RAMP AND CELL ACCESS RAMP GRADING PLAN IS SHOWN ON DRAWING G-18.
12. REMOVE EXISTING CULVERTS AND HEADWALLS AND STOCKPILE MATERIAL AT LOCATIONS DESIGNATED BY CONSTRUCTION MANAGER.
13. PLACE RIPRAP WITHIN AREA SHOWN. RIPRAP THICKNESS SHALL BE 1.5 FEET. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
14. UNDERGROUND ELECTRIC AT CULVERT CROSSING SHALL BE REMOVED AND RELOCATED PRIOR TO INSTALLATION OF NEW CULVERT.
15. TRANSITION PROPOSED ACCESS CORRIDOR ELEVATIONS TO TIE-IN WITH "F" STREET ELEVATIONS WITHIN AREA SHOWN
16. REMOVE POWER POLES LOCATED WITHIN PROPOSED SUBGRADE AND FILL HOLES IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
17. SIDESLOPES IN FILL OR EXCAVATION SHALL BE 3 HORIZONTAL TO 1 VERTICAL UNLESS OTHERWISE SHOWN ON DRAWINGS.
18. HORIZONTAL MONITORING WELL AND MISCELLANEOUS DETAILS ARE SHOWN ON DRAWING G-44.
19. DRAINAGE CHANNEL GRAVITY INLET STRUCTURE WITH RCP CULVERT AND RIPRAP OUTLET PROTECTION IS SHOWN ON DRAWING G-43
20. IF CELLS 7 AND 8 LINER SYSTEMS ARE CONSTRUCTED CONCURRENTLY, CONSTRUCT ALTERNATE INTERCELL DETAILS AS SHOWN ON DRAWING G-33A.

TOPOGRAPHY SHOWN ON THIS CONSTRUCTION DRAWING IS BASED ON JULY 2003 FLYOVER.

CERTIFIED-FOR-CONSTRUCTION

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DKP	RB
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TEZ	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DCP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	JJA	LMG	DCP	JFB

50 25 0 50 100

SCALE IN FEET

OWNER/FACILITY:

UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:

FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: SUBGRADE GRADING PLAN IV - CELL 7 LINER SYSTEM

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

SIGNATURE

DATE

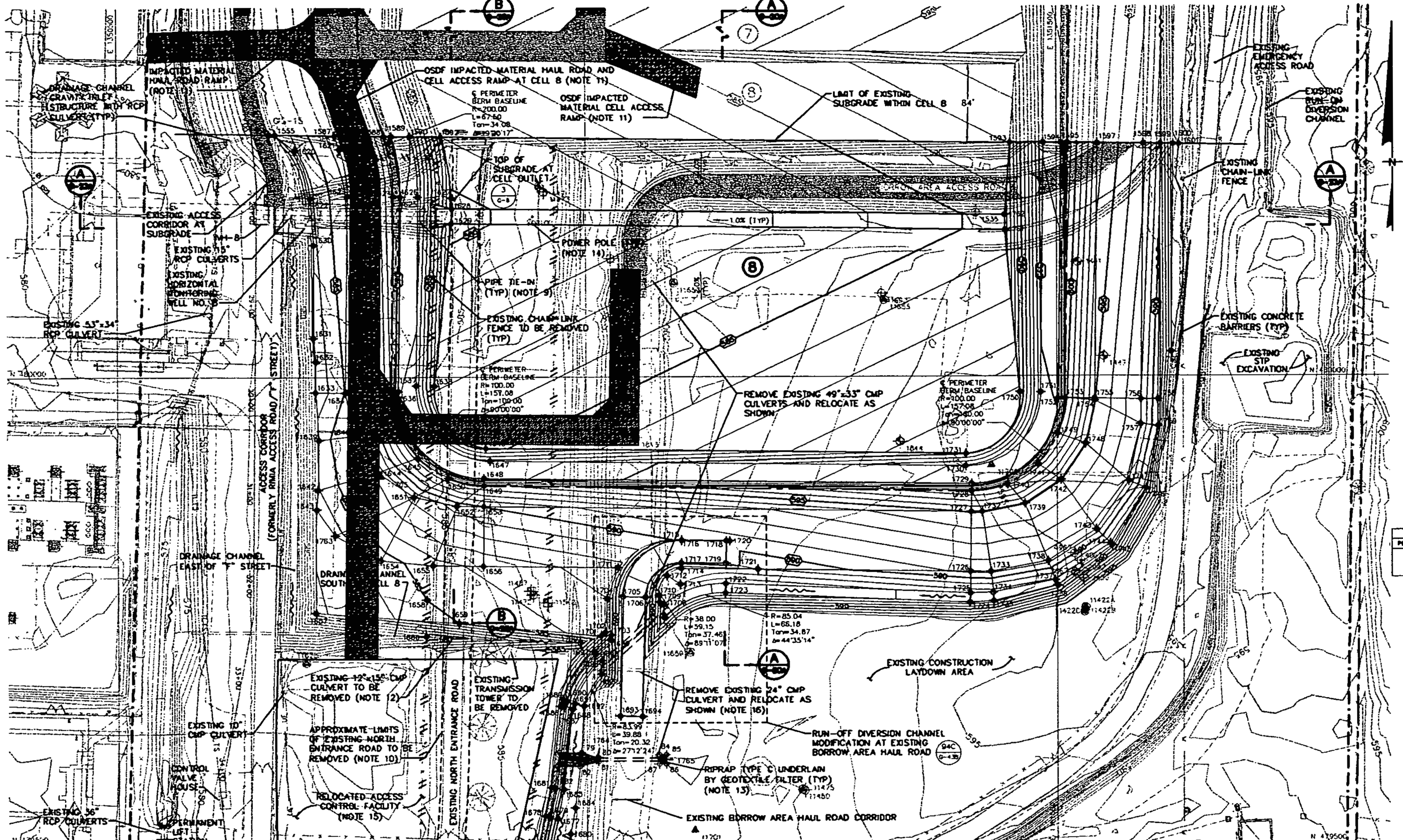
SEAL

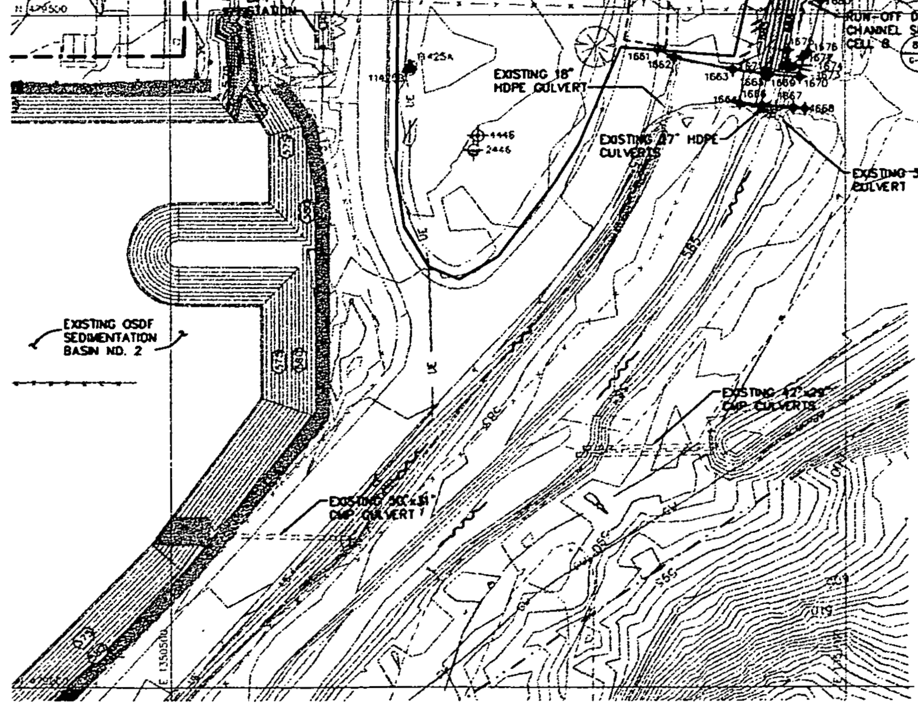
GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE ATLANTA, GEORGIA 30342 USA

PROJECT NO:	20105
CONTRACT NO:	03FF0699
FEMP DRAWING NO:	90X-8000-C-00368
GEOSYNTEC PROJECT NO:	GO3211-08.04
GEOSYNTEC DOCUMENT NO:	F03-1006
SHEET NO:	G-6
REVISION NO:	1

000010

5319





SUBGRADE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
1554	480259.22	1350862.88	585.10	1685	479585.90	1350994.13	584.63
1555	480259.15	1350869.04	583.09	1686	479648.52	1350971.58	587.70
1587	480258.38	1350731.94	586.54	1687	479645.56	1350975.50	587.70
1588	480257.74	1350783.78	594.81	1688	479643.28	1350984.89	584.50
1589	480257.64	1350792.00	589.40	1689	479653.93	1350974.40	588.28
1590	480257.40	1350811.61	589.00	1690	479652.84	1350978.20	588.28
1592	480257.00	1350844.75	580.99	1691	479649.81	1350987.30	585.07
1593	480249.61	1351449.28	587.04	1692	479646.83	1350996.81	585.07
1594	480249.17	1351485.48	596.09	1693	479635.85	1351035.87	592.00
1595	480248.94	1351504.20	596.47	1694	479635.21	1351059.86	592.00
1596	480248.84	1351511.99	601.86	1695	478681.25	1351016.30	585.27
1597	480248.43	1351543.81	596.39	1696	479702.83	1351010.20	588.52
1598	480247.85	1351593.70	593.38	1697	479705.80	1351007.51	588.52
1599	480247.63	1351611.70	590.38	1698	479695.53	1351011.84	585.32
1600	480247.46	1351625.38	594.94	1699	479717.73	1351028.84	588.63
1601	480247.39	1351631.39	595.00	1700	479714.81	1350993.09	583.00
1620	480242.24	1350889.59	583.82	1701	479722.27	1351015.84	588.35
1621	480244.11	1350736.75	586.47	1702	479726.14	1351020.43	586.45
1622	480181.44	1350706.39	583.82	1703	479723.24	1351028.87	588.84
1623	480183.66	1350744.77	586.13	1704	479762.34	1351027.55	587.00
1624	480183.08	1350793.71	594.28	1705	479764.18	1351039.27	592.56
1625	480192.99	1350801.50	589.09	1706	479783.58	1351063.26	592.56
1626	480192.81	1350820.22	588.71	1707	479742.22	1351083.01	585.70
1627	480191.66	1350855.83	579.81	1708	479755.85	1351083.38	585.75
1628	480178.97	1350856.38	579.58	1709	479758.61	1351078.27	587.49
1629	480183.98	1350855.88	579.58	1710	479765.68	1351077.79	587.60
1630	480141.32	1350709.29	583.78	1711	479795.38	1351033.96	587.61
1631	480041.65	1350708.66	583.31	1712	479787.00	1351086.14	588.00
1632	480016.59	1350710.98	583.34	1713	479777.44	1351100.42	588.00
1633	479983.51	1350710.58	583.18	1714	479794.55	1351101.84	588.27
1634	479985.11	1350742.20	585.07	1715	479825.09	1351101.99	590.09
1635	479984.83	1350791.18	593.24	1716	479824.55	1351107.00	590.27
1636	479984.73	1350798.96	588.05	1717	479800.55	1351101.71	590.27
1637	479980.70	1350817.75	587.70	1718	479823.98	1351148.59	590.72
1638	479980.25	1350837.01	582.89	1719	479798.98	1351148.30	590.72
1639	479932.31	1350714.28	584.41	1720	479823.94	1351157.11	590.55
1640	479937.08	1350750.77	586.19	1721	479793.57	1351181.69	589.05
1641	479946.47	1350798.32	593.38	1722	479778.08	1351148.30	588.07
1642	479878.82	1350713.18	583.90	1723	479768.09	1351147.89	588.07
1643	479857.98	1350711.85	583.38	1724	479757.55	1351405.89	587.38
1644	479897.84	1350776.30	587.25	1725	479767.54	1351406.10	587.36
1645	479913.78	1350819.81	593.49	1726	479790.83	1351408.38	591.25
1646	479923.73	1350892.29	584.78	1727	479854.97	1351407.17	595.10
1647	479910.05	1350896.45	588.22	1728	479877.29	1351407.44	598.81
1648	479891.41	1350890.03	588.53	1729	479885.08	1351407.54	593.82
1649	479883.61	1350889.94	593.73	1730	479903.87	1351401.57	593.18
1650	479881.71	1350851.79	593.61	1731	479917.13	1351401.73	589.87
1651	479871.35	1350814.91	588.30	1732	479854.83	1351418.79	595.06
1652	479881.65	1350860.72	589.38	1733	479790.58	1351428.10	591.26
1653	479881.30	1350889.88	590.01	1734	479787.87	1351430.08	587.48
1654	479803.42	1350778.92	584.49	1735	479758.95	1351431.00	587.48
1655	479787.81	1350834.98	585.82	1736	479775.90	1351500.00	587.83
1656	479787.15	1350888.92	586.19	1737	479781.47	1351487.68	587.83
1657	479747.12	1350710.61	582.83	1738	479802.00	1351489.47	591.45
1658	479780.98	1350828.32	585.00	1739	479883.42	1351484.81	595.05
1659	479735.95	1350863.05	585.00	1740	479884.46	1351445.78	599.18
1660	479721.57	1350827.48	578.85	1741	479905.73	1351478.49	599.58
1661	479473.61	1350860.10	584.84	1742	479888.96	1351504.05	595.05
1662	479487.95	1350872.58	585.00	1743	479836.05	1351541.79	591.63
1663	479458.71	1350916.83	585.38	1744	479870.96	1351556.51	588.19
1664	479433.95	1350921.85	588.00	1745	479818.84	1351558.64	588.19
1665	479455.08	1350842.02	587.20	1746	479879.62	1351585.54	588.54
1666	479431.73	1350938.41	587.29	1747	479887.52	1351577.11	591.82
1667	479430.47	1350961.71	587.45	1748	479927.56	1351530.54	595.04
1668	479429.48	1350970.07	587.38	1749	479937.89	1351500.58	599.93
1669	479455.08	1350943.92	587.13	1750	479882.85	1351459.63	588.11
1670	479452.87	1350988.83	587.41	1751	479982.57	1351482.22	594.78
1671	479455.88	1350940.01	587.13	1752	479976.15	1351500.86	595.10
1672	479468.09	1350868.82	583.37	1753	479976.06	1351508.66	600.30
1673	479481.04	1350959.17	583.87	1754	479973.36	1351540.25	595.03
1674	479481.49	1350956.93	583.98	1755	479975.67	1351540.28	595.03
1675	479472.81	1350957.44	583.99	1756	479975.06	1351590.37	592.02
1676	479471.50	1350972.54	584.05	1757	479948.59	1351590.04	592.00
1677	479526.11	1350968.59	584.15	1758	479974.84	1351608.36	589.02
1678	479528.92	1350955.29	587.35	1759	479946.48	1351608.73	588.88
1679	479528.09	1350859.21	587.35	1760	480025.88	1351822.85	593.83
1680	479509.37	1350887.31	584.28	1761	480158.79	1351443.86	585.45
1681	479559.22	1350961.77	587.44	1762	480172.80	1351443.52	585.45
1682	479558.58	1350965.72	587.44	1763	479830.35	1350730.98	583.62
1683	479557.04	1350975.20	584.25	1764	479589.30	1351009.94	587.50
1684	479537.49	1350987.19	584.55	1765	479589.30	1351081.03	590.00

RIPRAP LIMITS CONTROL POINTS

POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING
78	479596.80	1350970.02	81	479587.05	1351012.94	84	479594.30	1351078.03
79	479596.80	1350994.18	82	479581.80	1350992.22	85	479594.30	1351085.03
80	479591.55	1351012.94	83	479581.80	1350968.33	86	479584.30	1351085.03
						87	479584.30	1351078.03

LEGEND

—— 590 ——	EXISTING GROUND ELEVATION (FEET)
—— 595 ——	SUBGRADE ELEVATION (FEET) (NOTE 3)
—— 585 ——	FINISHED GRADE ELEVATION (FEET)
	FCP PROPERTY LINE
	BATTERY LIMIT
	PERIMETER BERM BASELINE
—— 22+00 ——	EXISTING ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM (EPLTS) PIPE
—— LTS ——	EXISTING INTERIM LEACHATE TRANSMISSION SYSTEM (ILTS) PIPE
	SLOPE TOE OR CREST
	EXISTING HORIZONTAL MONITORING WELL WITH COVER SLAB
3087, 11447, 1441, 11472, 11703, 11487, 2430, 4446	EXISTING GEOTECHNICAL DATA POINTS (NOTE 6)
⑦	CELL DESIGNATION
1783	CONSTRUCTION CONTROL POINT
	ACCESS CORRIDOR, ACCESS ROAD, ACCESS RAMP, MAINTENANCE ACCESS, OR HAUL ROAD
	BERM CREST
	RIPRAP LIMIT
	DRAINAGE FLOW DIRECTION

GEOTECHNICAL DATA POINTS (NOTE 6)

CONE PENETRATION TESTS

POINT NO.	NORTHING	EASTING	ELEVATION
11422A	479752.08	1351530.33	592.58
11422B	479748.99	1351529.51	592.68
11422C	479747.38	1351529.1	592.59
11425A	479462.13	1350678.45	579.88
11425B	479459.09	1350677.94	580.09
11447	480204.13	1350950.15	585.44
11448	479771.42	1350939.75	585.14
11450	479557.13	1351228.35	591.71
11823	479693.33	1350700.81	582.38
11853	480100.29	1351084.32	588.47
11855	480081.79	1351315.18	592.07
11859	479704.51	1351111.23	587.72

GEOTECHNICAL BORINGS

POINT NO.	NORTHING	EASTING	ELEVATION
1535	480175.27	1351412.81	0
4967	479809.97	1351518.22	0
11376	480126.49	1351027.07	0
11472	479786.43	1350942.89	584.85
11473	480187.91	1350955.18	585.81
11475	479556.08	1351230.77	581.84
11693	480088.52	1351312.37	582.02

PIEZOMETERS

POINT NO.	NORTHING	EASTING	ELEVATION
11701	479513.45	1351115.51	588.36
11702	479904.61	1351428.92	594.56
11703	479893.07	1350780.18	584.12

TYPE 1 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
1441	480121.40	1351522.40	0.00
1447	480020.94	1351550.16	0.00
1843	479935.00	1351053.37	0.00
1844	479930.33	1351331.92	0.00

TYPE 2 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
2087	479790.41	1351527.88	-
2430	479783.18	1351528.30	-
2446	479399.70	1350724.34	-

TYPE 3 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
3087	479789.54	1351519.16	-

TYPE 4 MONITORING WELLS

POINT NO.	NORTHING	EASTING	ELEVATION
4087	479802.02	1351525.38	0.00
4448	479409.92	1350727.47	0.00

LYSIMETERS

POINT NO.	NORTHING	EASTING	ELEVATION
11487	479770.39	1350940.70	585.00
11548	479757.05	1350938.3	585.70

NOTES:

1. SURFACE-WATER MANAGEMENT AND EROSION CONTROL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
2. CLEARING, GRUBBING, AND STRIPPING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110.
3. SUBGRADE ELEVATIONS CORRESPOND TO TOP OF PREPARED SUBGRADE, INCLUDING ANY FILL. SUBGRADE AND FILL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
4. ACTIVE VERTICAL MONITORING WELLS AND PIEZOMETERS WITHIN CONSTRUCTION AREA WILL BE ABANDONED BY OTHERS PRIOR TO CONSTRUCTION IN THAT AREA.
5. LOCATE AND REMOVE EXISTING SUBDRAIN TILE SYSTEM WITHIN CONSTRUCTION AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02200. REFER TO REFERENCE DRAWINGS SKG-04391 THROUGH SKG-04397 FOR LOCATION OF SUBDRAIN TILE SYSTEM.
6. REMOVE GROUT USED TO BACKFILL GEOTECHNICAL DATA POINTS AND MONITORING WELLS LOCATED WITHIN PERIMETER BERM BASELINE TO A MINIMUM DEPTH OF 3 FEET BELOW SUBGRADE ELEVATIONS.
7. DEWATER EXCAVATIONS AND MANAGE COLLECTED WATER IN ACCORDANCE WITH SPECIFICATION SECTION 02200. GROUNDWATER LEVELS IN BROWN AND GRAY TILL LAYERS VARY DURING YEAR AND MAY BE HIGHER THAN THOSE SHOWN ON REFERENCE DRAWINGS. LEVELS MAY APPROACH GROUND SURFACE DURING PERIODS OF HEAVY PRECIPITATION.
8. LOCATE EXISTING UNDERGROUND UTILITIES WITHIN CONSTRUCTION AREA AS SHOWN ON REFERENCE DRAWINGS SKG-04391 THROUGH SKG-04397. REMOVE UNDERGROUND UTILITIES IN CONSTRUCTION AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02200 AND AS APPROVED BY CONSTRUCTION MANAGER.
9. LDS, LCS, AND RLCS PIPES SHALL TIE INTO EXISTING PIPES. CONSTRUCTION CONTROL POINTS FOR PIPE TIE-INS ARE SHOWN ON DRAWING G-9.
10. PAVEMENT COURSES AND ASSOCIATED IMPACTED MATERIAL FOR EXISTING NORTH ENTRANCE ROAD AND REROUTED NORTH ENTRANCE ROAD SHALL BE REMOVED WITHIN LIMITS SHOWN. REMOVAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200. PLACE REMOVED MATERIAL IN ACTIVE CELL AS APPROVED BY CONSTRUCTION MANAGER.
11. OSDF IMPACTED MATERIAL HAUL ROAD RAMP AND CELL ACCESS RAMP GRADING PLAN IS SHOWN ON DRAWING G-18A.
12. REMOVE EXISTING CULVERTS AND STOCKPILE MATERIAL AT LOCATIONS DESIGNATED BY CONSTRUCTION MANAGER.
13. PLACE RIPRAP WITHIN AREA SHOWN. RIPRAP THICKNESS SHALL BE 1.5 FEET. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
14. REMOVE POWER POLES LOCATED WITHIN PROPOSED SUBGRADE AND BACKFILL HOLES IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
15. RELOCATED ACCESS CONTROL FACILITY SHALL BE OPERATIONAL BEFORE CONSTRUCTION OF CELL 4 FINAL COVER SYSTEM. LOCATION AND DESIGN OF RELOCATED ACCESS CONTROL FACILITY TO BE PROVIDED BY FLUOR FERNALD.
16. ALUMINIZED CMP CULVERT AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721. CONTROL POINTS SHOWN AT ENDS OF CULVERT CORRESPONDS TO INVERT ELEVATIONS. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
17. SIDESLOPES IN FILL OR EXCAVATION SHALL BE 3 HORIZONTAL TO 1 VERTICAL UNLESS OTHERWISE SHOWN ON DRAWINGS.

TOPOGRAPHY SHOWN ON THIS CONSTRUCTION DRAWING IS BASED ON JULY 2003 FLYOVER.

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES BY	DR BY	CHK BY	RVW BY	APP. BY
D	04.01.22	CFC SUBMITTAL TO FF/DOE/EPA	LMG	AJA	TEZ	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	LMG	AJA	TEZ	DKP	RB
A	03.10.28	PRELIMINARY SUBMITTAL TO FF/DOE	LMG	AJA	TEZ	DKP	RB

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

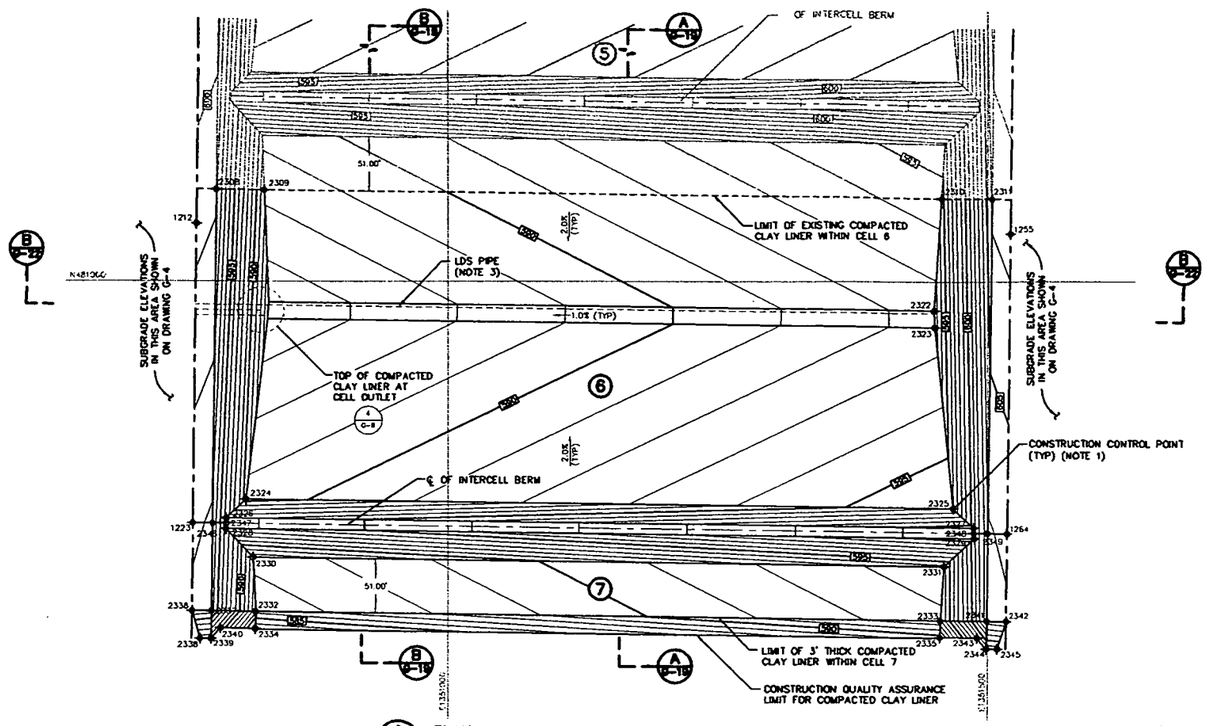
TITLE:
SUBGRADE GRADING PLAN V – CELL 8 LINER SYSTEM

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

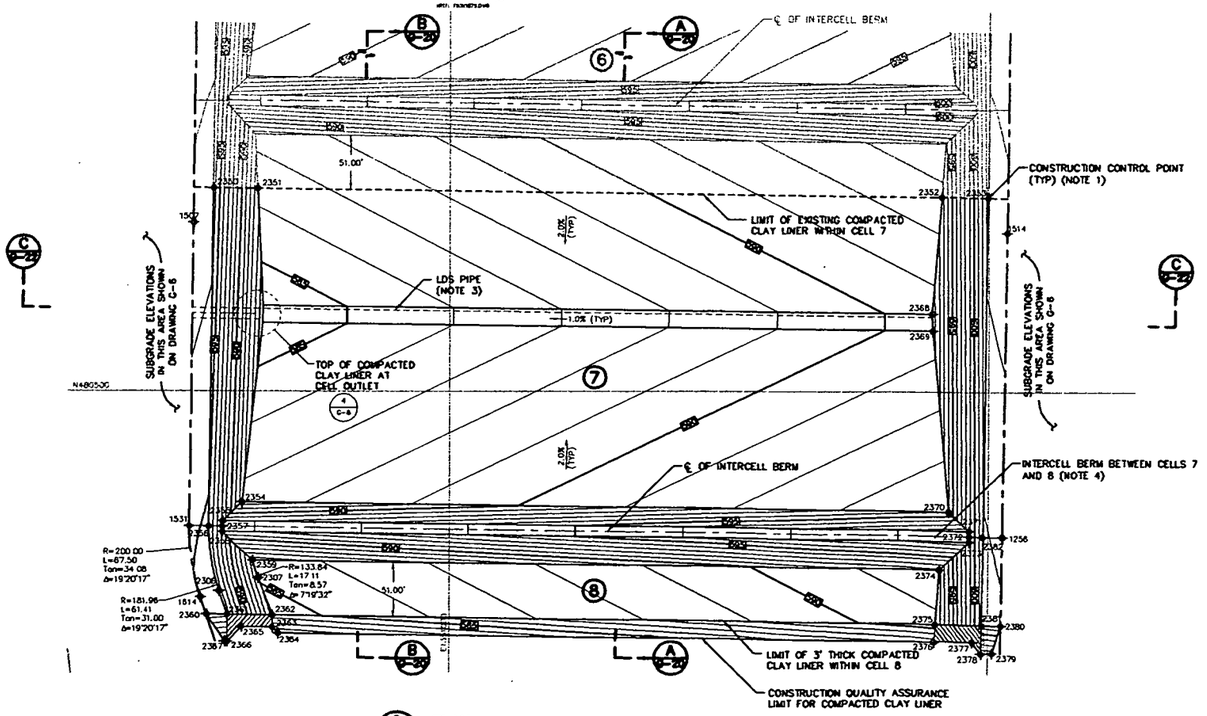
GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE ATLANTA, GEORGIA 30342 USA

PROJECT NO.: 20105
CONTRACT NO.: 03FF0699
FEMP DRAWING NO.: 90X-6000-G-00414
GEOSYNTEC PROJECT NO.: GO3211-06.04
GEOSYNTEC DOCUMENT NO.: F03-0013
SHEET NO.: G-6A
REVISION NO.: 0

000011



1 PLAN
COMPACTED CLAY LINER – CELL 6
SCALE: 1" = 50'



2 PLAN
COMPACTED CLAY LINER – CELL 7
SCALE: 1" = 50'

LEGEND

- EXISTING COMPACTED CLAY LINER ELEVATION (FEET) (NOTE 2)
- COMPACTED CLAY LINER ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE/LIMIT OF COMPACTED CLAY LINER
- 2308 CONSTRUCTION CONTROL POINT
- 6 CELL DESIGNATION

COMPACTED CLAY LINER CONSTRUCTION CONTROL POINTS

CELL 6				CELL 7			
POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
2308	481085.06	1350783.53	599.20	2306	480312.58	1350784.35	594.51
2309	481085.53	1350827.20	588.28	2307	480324.64	1350820.09	585.08
2310	481077.82	1351457.51	594.58	2350	480690.44	1350778.70	596.44
2311	481077.23	1351504.07	606.22	2351	480689.94	1350819.11	586.33
2322	480972.74	1351450.75	592.42	2352	480682.16	1351456.21	592.71
2323	480956.79	1351451.05	592.43	2353	480681.63	1351499.23	603.45
2324	480795.41	1350810.38	589.43	2354	480395.44	1350805.25	587.43
2325	480787.36	1351468.37	596.01	2355	480377.83	1350787.55	591.71
2326	480777.80	1350792.49	593.71	2356	480372.98	1350774.82	594.85
2327	480769.31	1351487.27	600.66	2357	480372.83	1350787.39	591.71
2328	480767.80	1350792.12	593.70	2358	480367.83	1350787.24	591.70
2329	480759.30	1351487.41	600.66	2359	480340.97	1350815.01	585.36
2330	480740.98	1350816.79	587.32	2360	480290.48	1350772.76	594.79
2331	480733.11	1351460.02	593.76	2361	480290.25	1350791.88	594.39
2332	480688.94	1350819.11	586.33	2362	480289.74	1350833.42	584.53
2333	480682.16	1351456.21	592.71	2363	480278.52	1350833.28	582.30
2334	480674.09	1350818.91	583.16	2364	480273.00	1350838.85	581.25
2335	480666.30	1351456.01	589.53	2365	480278.97	1350804.62	589.11
2336	480690.86	1350760.68	596.80	2366	480265.30	1350791.58	589.40
2337	480690.44	1350778.70	596.44	2367	480265.31	1350789.47	589.44
2338	480684.72	1350768.13	591.47	2368	480572.74	1351448.02	590.45
2339	480664.59	1350778.38	591.27	2369	480556.80	1351448.16	590.45
2340	480674.48	1350786.97	591.15	2370	480387.39	1351483.72	594.01
2341	480681.63	1351499.23	603.45	2371	480389.34	1351482.44	598.66
2342	480681.41	1351517.28	603.82	2372	480384.33	1351482.48	598.66
2343	480665.88	1351490.57	598.17	2373	480359.33	1351482.52	598.66
2344	480655.79	1351498.92	598.29	2374	480333.14	1351455.13	591.78
2345	480655.66	1351509.17	598.50	2375	480282.19	1351451.32	590.71
2346	480772.95	1350779.71	596.85	2376	480285.53	1351450.45	587.36
2347	480772.80	1350792.30	593.70	2377	480285.91	1351485.68	596.17
2348	480784.30	1351487.34	600.66	2378	480255.10	1351494.02	596.15
2349	480784.15	1351500.24	603.88	2379	480255.89	1351504.28	598.50
				2380	480281.44	1351512.30	601.82
				2381	480281.66	1351494.35	601.46
				2382	480364.18	1351495.35	601.88

SUBGRADE CONSTRUCTION CONTROL POINTS

CELL 6				CELL 7			
POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
1212	481054.05	1350765.10	599.32	1256	480363.96	1351513.40	602.24
1223	480773.17	1350761.67	597.21	1507	480658.06	1350760.26	596.63
1255	481044.58	1351521.71	605.34	1514	480648.81	1351516.88	603.66
1264	480763.93	1351518.28	604.24	1531	480373.18	1350756.78	595.21
				1614	480308.82	1350767.25	594.87

NOTES:

1. THIS DRAWING SHOWS GRADING AND CONSTRUCTION CONTROL POINTS FOR COMPACTED CLAY LINER FOR CELLS 6 AND 7 AND LINER SYSTEM TEMPORARY TERMINATIONS WITHIN CELLS 7 AND 8.
2. COMPACTED CLAY LINER ELEVATIONS CORRESPOND TO TOP OF COMPACTED CLAY LINER.
3. LDS PIPE CONSTRUCTION CONTROL POINTS ARE SHOWN ON DRAWINGS G-8 AND G-9.
4. IF CELLS 7 AND 8 LINER SYSTEMS ARE CONSTRUCTED CONCURRENTLY, CONSTRUCT ALTERNATE INTERCELL BERM DETAILS AS SHOWN ON DRAWING G-33A.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.04.22	CFC REVISION 1 SUBMITTAL TO FT/DOE/EPA	LMG	JJA	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FT/DOE	LMG	JJA	TEZ	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FT/DOE	LMG	JJA	TEZ	DKP	RB
0	02.01.29	CFC SUBMITTAL TO FT/DOE/EPA	TEZ	JWD	LMG	DOP	JTB
B	01.12.17	PRE-FINAL SUBMITTAL TO FT/DOE	TEZ	JWD	LMG	DOP	JTB
A	01.10.17	PRELIMINARY SUBMITTAL TO FT/DOE	TEZ	JWD	LMG	DOP	JTB

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

TITLE:
COMPACTED CLAY LINER GRADING PLAN I – CELLS 6 AND 7 LINER SYSTEM

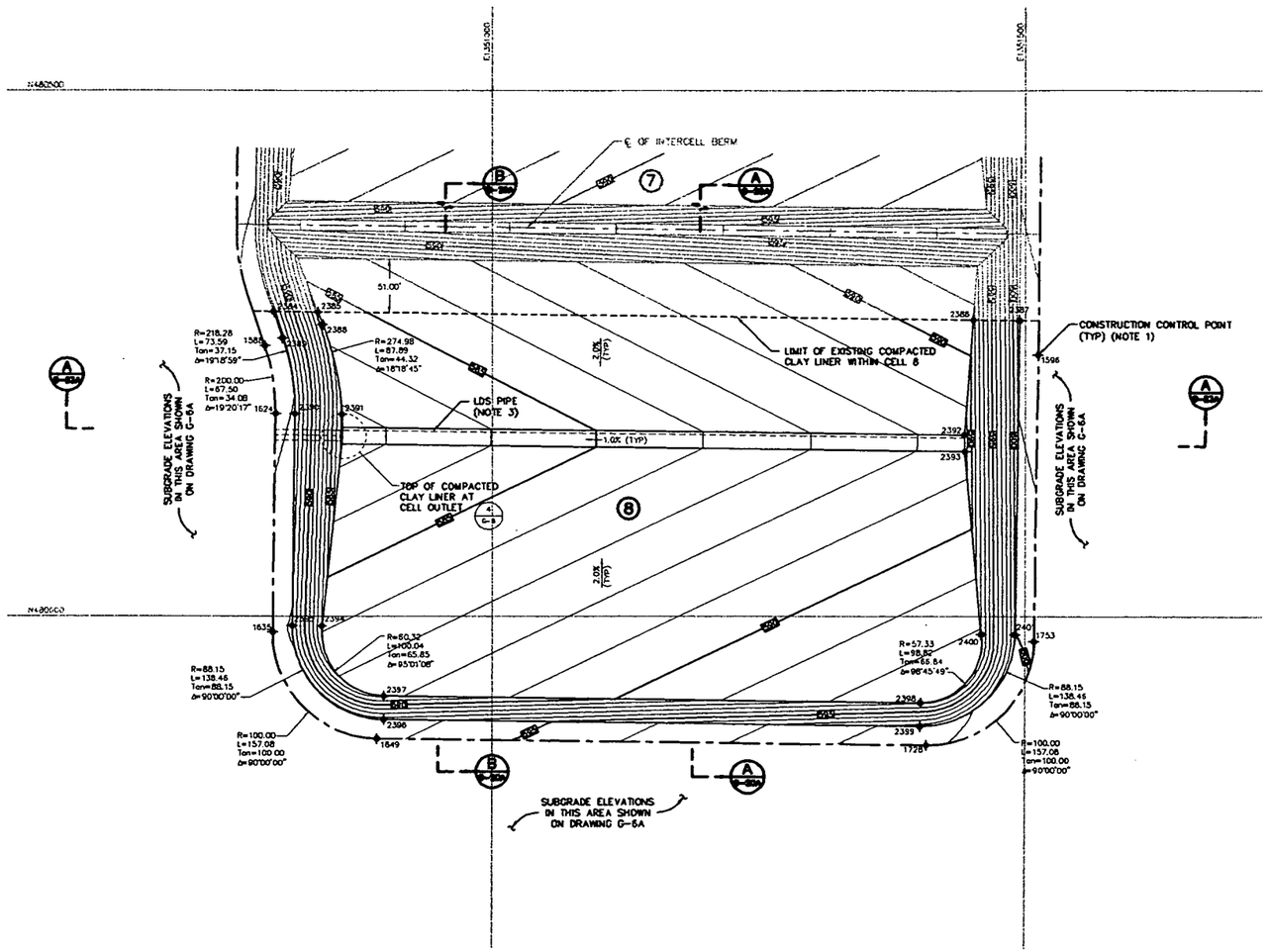
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1900 LAKE HARBIN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO:	20105
CONTRACT NO:	D3FT0699
FLMP DRAWING NO:	9XX-E000-G-00369
GEOSYNTEC PROJECT NO:	GG3211-06.04
GEOSYNTEC DOCUMENT NO:	F03-1008
SHEET NO:	G-7
REVISION NO:	1

CERTIFIED-FOR-CONSTRUCTION



2A PLAN
COMPACTED CLAY LINER – CELL 8
SCALE: 1" = 50'

LEGEND

- EXISTING COMPACTED CLAY LINER ELEVATION (FEET) (NOTE 2)
- COMPACTED CLAY LINER ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE/LIMIT OF COMPACTED CLAY LINER
- 2308 CONSTRUCTION CONTROL POINT
- 8 CELL DESIGNATION

COMPACTED CLAY LINER CONSTRUCTION CONTROL POINTS

CELL 8

POINT NO.	NORTHING	EASTING	ELEVATION
2384	480290.25	1350791.88	594.39
2385	480289.74	1350833.42	584.53
2386	480282.19	1351451.32	590.71
2387	480281.68	1351494.35	601.46
2388	480277.89	1350837.94	584.34
2389	480265.19	1350800.33	594.26
2390	480192.84	1350811.75	593.92
2391	480192.30	1350858.16	582.82
2392	480172.77	1351443.14	588.45
2393	480156.83	1351443.27	588.45
2394	479990.46	1350837.39	585.89
2395	479990.80	1350809.28	592.91
2396	479901.58	1350896.35	593.43
2397	479924.08	1350896.62	587.80
2398	479917.53	1351401.74	592.86
2399	479895.41	1351401.47	598.39
2400	479982.86	1351450.25	592.11
2401	479982.47	1351490.69	599.97

SUBGRADE CONSTRUCTION CONTROL POINTS

CELL 8

POINT NO.	NORTHING	EASTING	ELEVATION
1588	480257.74	1350783.79	594.61
1596	480248.84	1351511.99	601.68
1624	480193.06	1350793.71	594.28
1635	479984.83	1350791.16	593.24
1649	479883.61	1350889.94	593.73
1728	479877.29	1351407.44	598.81
1753	479976.06	1351508.66	600.30

NOTES:

1. THIS DRAWING SHOWS GRADING AND CONSTRUCTION CONTROL POINTS FOR COMPACTED CLAY LINER FOR CELL 8.
2. COMPACTED CLAY LINER ELEVATIONS CORRESPOND TO TOP OF COMPACTED CLAY LINER.
3. LDS PIPE CONSTRUCTION CONTROL POINTS ARE SHOWN ON DRAWINGS G-8 AND G-9.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
0	04.09.22	CFC SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TLZ	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	LMG	JJA	TLZ	DKP	RB
A	03.10.28	PRELIMINARY SUBMITTAL TO FF/DOE	LMG	JJA	TLZ	DKP	RB

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY: UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT: FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: COMPACTED CLAY LINER GRADING PLAN II – CELL 8 LINER SYSTEM

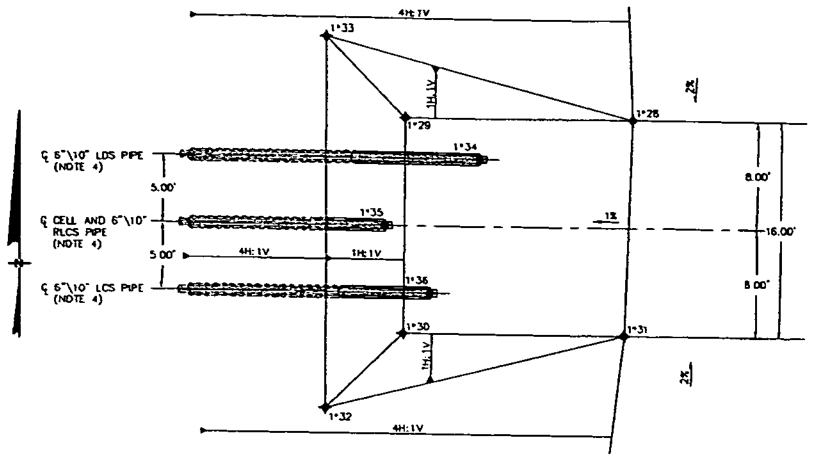
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED

SIGNATURE DATE SEAL

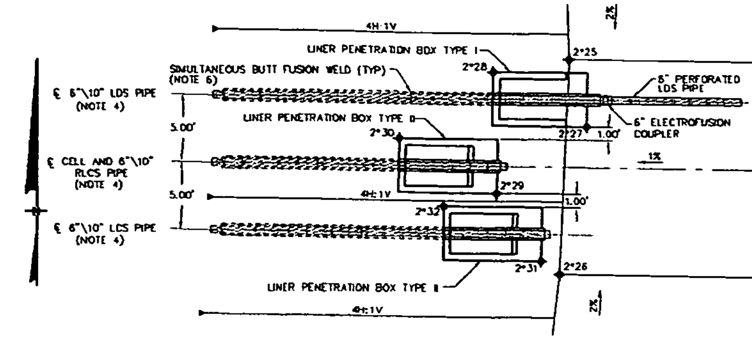
GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO: 20105
CONTRACT NO: 03FF0699
FEMP DRAWING NO: 90X-6000-G-00415
GEOSYNTEC PROJECT NO: GO3711-06.04
GEOSYNTEC DOCUMENT NO: F03-0015
SHEET NO: G-7A
REVISION NO: 0

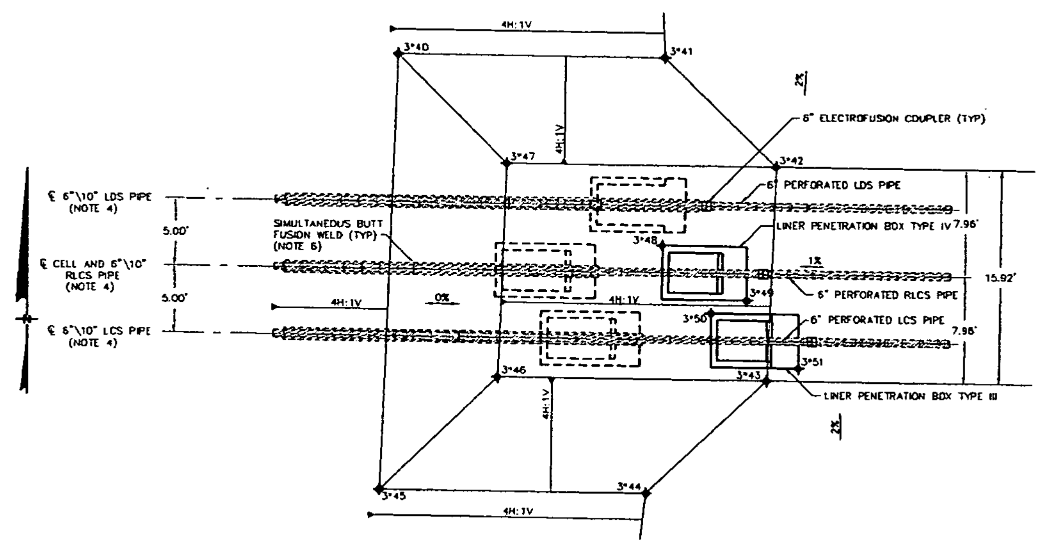
CERTIFIED-FOR-CONSTRUCTION



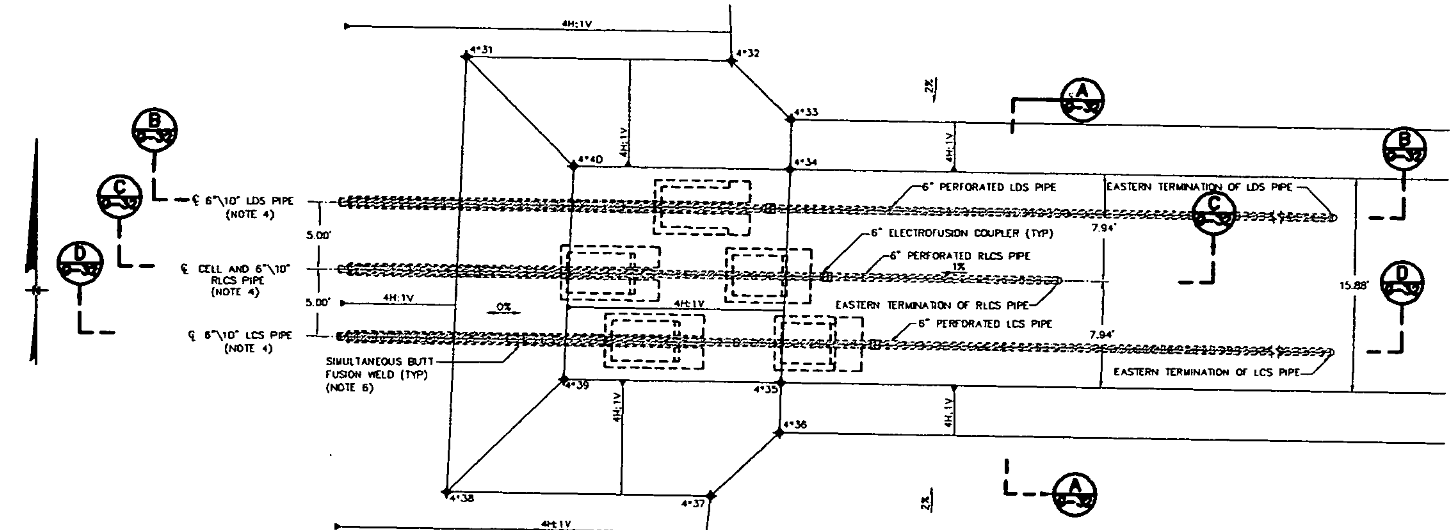
3 PLAN
TOP OF SUBGRADE AT CELL OUTLET
SCALE: 1" = 5'



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



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



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

CELL 6 CONSTRUCTION CONTROL POINTS

TOP OF SUBGRADE AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
1628	480980.35	1350830.62	583.22
1629	480980.55	1350813.89	583.06
1630	480964.55	1350813.89	583.06
1631	480964.35	1350829.96	583.22
1632	480958.98	1350808.04	588.64
1633	480986.54	1350808.10	588.92
1634	480977.48	1350819.33	586.11
1635	480972.57	1350812.17	588.04
1636	480967.53	1350815.60	587.08
TOP OF COMPACTED CLAY LINER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
2625	480980.31	1350830.97	586.23
2626	480984.38	1350830.32	588.22
2627	480975.32	1350832.30	586.20
2628	480979.41	1350825.35	587.54
2629	480970.41	1350825.41	587.85
2630	480974.50	1350818.20	589.47
2631	480965.36	1350828.83	588.69
2632	480969.45	1350821.62	588.51
TOP OF LDS DRAINAGE LAYER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
3640	480988.55	1350811.28	592.27
3641	480988.31	1350830.82	587.38
3642	480980.20	1350839.04	587.31
3643	480964.29	1350838.39	587.30
3644	480955.90	1350829.46	587.38
3645	480956.14	1350809.95	592.26
3646	480964.53	1350818.55	592.26
3647	480980.45	1350819.20	592.27
3648	480974.35	1350830.39	589.53
3649	480970.27	1350836.83	587.98
3650	480969.30	1350834.13	588.47
3651	480965.22	1350840.58	587.29
TOP OF LCS DRAINAGE LAYER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
4631	480988.53	1350811.39	593.27
4632	480988.29	1350830.92	588.39
4633	480983.93	1350835.34	588.34
4634	480980.23	1350835.29	589.27
4635	480964.36	1350834.64	589.27
4636	480960.65	1350834.59	588.34
4637	480955.92	1350829.55	588.39
4638	480956.15	1350810.06	593.26
4639	480964.55	1350818.65	593.26
4640	480980.43	1350819.30	593.27

CELL 7 CONSTRUCTION CONTROL POINTS

TOP OF SUBGRADE AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
1728	480580.40	1350823.73	581.20
1729	480580.60	1350807.08	581.04
1730	480564.61	1350806.88	581.04
1731	480564.41	1350823.23	581.20
1732	480558.99	1350801.19	586.67
1733	480586.55	1350801.34	586.85
1734	480577.54	1350812.50	584.11
1735	480572.62	1350805.57	586.04
1736	480567.58	1350808.87	585.08
TOP OF COMPACTED CLAY LINER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
2725	480580.37	1350824.09	584.21
2726	480564.43	1350823.59	584.20
2727	480575.38	1350825.47	584.20
2728	480579.46	1350818.52	585.54
2729	480570.46	1350818.81	585.65
2730	480574.55	1350811.60	587.47
2731	480565.42	1350822.10	584.69
2732	480569.51	1350814.89	586.51
TOP OF LDS DRAINAGE LAYER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
3740	480588.76	1350804.30	590.25
3741	480588.52	1350823.83	585.37
3742	480580.26	1350832.21	585.29
3743	480564.34	1350831.56	585.28
3744	480556.12	1350822.80	585.36
3745	480556.36	1350803.29	590.24
3746	480564.59	1350811.72	590.24
3747	480580.50	1350812.37	590.25
3748	480574.40	1350823.79	587.53
3749	480570.32	1350830.03	585.98
3750	480569.36	1350827.41	586.47
3751	480565.28	1350833.86	585.29
TOP OF LCS DRAINAGE LAYER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
4731	480588.74	1350804.42	591.25
4732	480588.50	1350823.95	586.37
4733	480583.99	1350828.53	586.32
4734	480580.28	1350828.48	587.25
4735	480564.41	1350827.83	587.25
4736	480560.71	1350827.79	586.32
4737	480556.14	1350822.92	586.36
4738	480556.37	1350803.42	591.24
4739	480564.61	1350811.84	591.24
4740	480580.48	1350812.49	591.25

CELL 8 CONSTRUCTION CONTROL POINTS

TOP OF SUBGRADE AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
1828	480179.97	1350856.36	579.58
1829	480180.17	1350839.71	579.41
1830	480164.18	1350839.51	579.41
1831	480163.98	1350855.86	579.58
1832	480158.56	1350833.82	585.04
1833	480186.12	1350833.97	585.22
1834	480177.11	1350845.13	582.49
1835	480172.19	1350838.20	584.42
1836	480167.15	1350841.50	583.48
TOP OF COMPACTED CLAY LINER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
2825	480179.94	1350856.72	582.58
2826	480164.00	1350856.22	582.58
2827	480174.95	1350858.10	582.58
2828	480179.03	1350851.15	583.92
2829	480170.03	1350851.44	584.03
2830	480174.12	1350844.23	585.85
2831	480164.99	1350854.73	583.07
2832	480169.08	1350847.52	584.89
TOP OF LDS DRAINAGE LAYER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
3840	480188.33	1350836.93	588.63
3841	480188.09	1350856.46	583.74
3842	480179.83	1350864.84	583.68
3843	480163.91	1350864.19	583.66
3844	480155.69	1350855.43	583.74
3845	480155.93	1350835.92	588.62
3846	480164.16	1350844.35	588.62
3847	480180.07	1350845.00	588.62
3848	480173.97	1350856.42	585.91
3849	480169.89	1350862.66	584.36
3850	480168.92	1350860.04	584.85
3851	480164.85	1350866.49	583.67
TOP OF LCS DRAINAGE LAYER AT CELL OUTLET			
POINT NO.	NORTHING	EASTING	ELEVATION
4831	480188.31	1350837.05	589.63
4832	480188.07	1350858.58	584.74
4833	480183.56	1350861.16	584.70
4834	480179.85	1350861.11	585.63
4835	480163.98	1350860.46	585.62
4836	480160.27	1350860.42	584.69
4837	480155.70	1350855.55	584.74
4838	480155.94	1350836.05	589.62
4839	480164.17	1350844.47	589.62
4840	480180.05	1350845.12	589.62

LEGEND

1*28 ✦ CONSTRUCTION CONTROL POINT (SEE NOTE 5)

NOTES:

1. LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
2. FOR LINER PENETRATION BOX DETAILS, SEE DRAWING G-33.
3. TRENCH FOR LDS, LCS, AND RLCS PIPES IS NOT SHOWN ON THIS DRAWING FOR CLARITY. TRENCHING AND BACKFILLING FOR LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTIONS 02215 AND 02225.
4. LDS, LCS, AND RLCS PIPES SHALL TIE INTO EXISTING PIPES. TIE-IN LOCATIONS ARE SHOWN IN CONSTRUCTION CONTROL POINT TABLE PRESENTED ON DRAWING G-9.
5. THE "*" SYMBOL REPRESENTS THE CELL IN WHICH THE APPROPRIATE CELL OUTLET CONTROL POINTS ARE LOCATED.
6. SIMULTANEOUS BUTT FUSION WELDS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13005.

CERTIFIED-FOR-CONSTRUCTION

REV NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	PBG	LMG	DKP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	TMM	LMG	DKP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

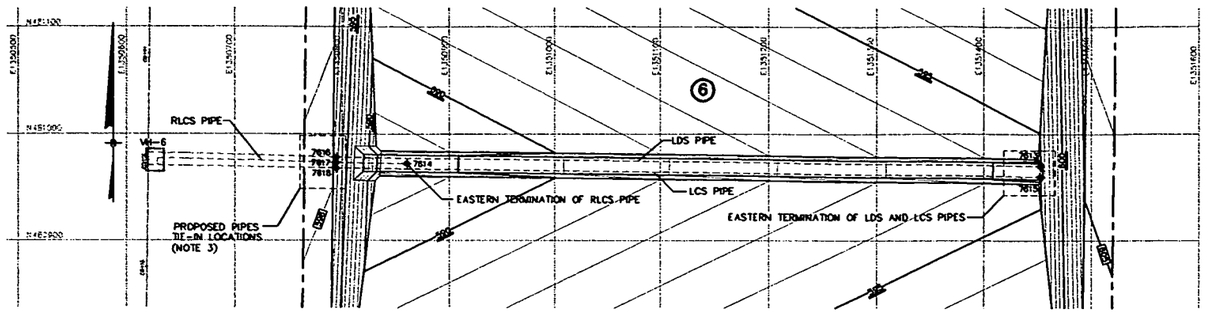
TITLE:
CELL OUTLET GRADING PLANS I –
CELLS 6, 7, AND 8 LINER SYSTEM

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

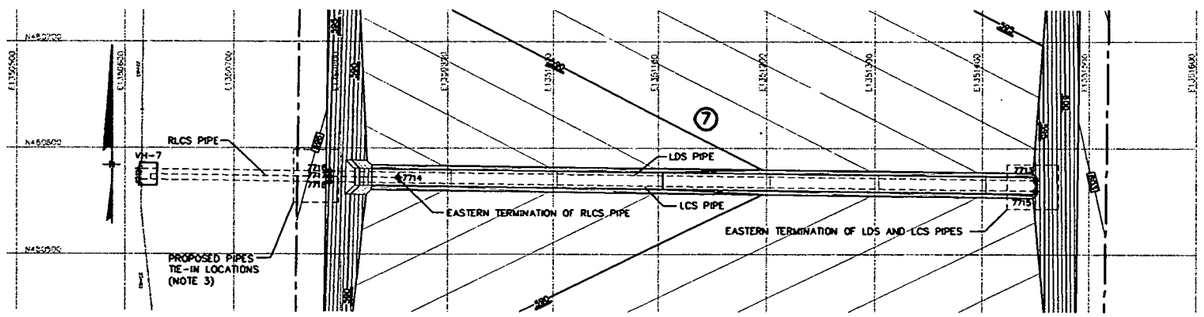
SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

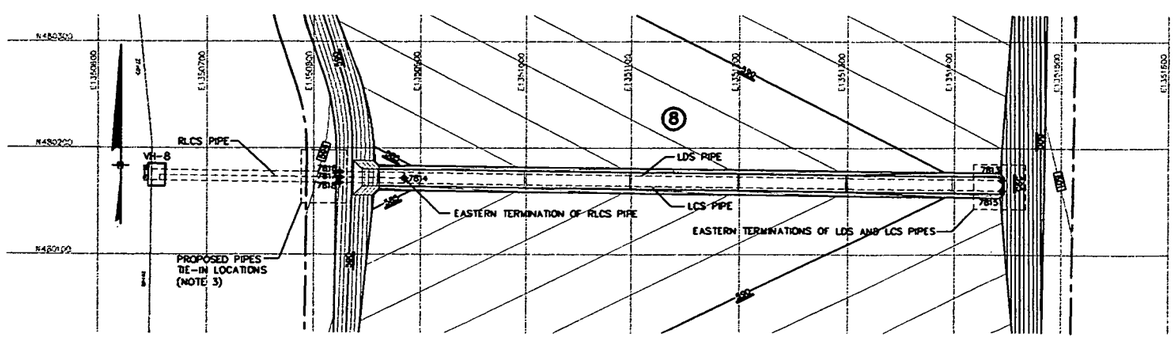
PROJECT NO.:	20105
CONTRACT NO.:	03FF0699
FEMP DRAWING NO.:	90X-6000-G-00370
GEOSYNTEC PROJECT NO.:	GO3211-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1009
SHEET NO.:	G-8
REVISION NO.:	1



7 PLAN
CONSTRUCTION CONTROL POINT LOCATIONS FOR CELL 6 LDS, LCS, AND RLCS PIPES
SCALE: 1" = 50'



8 PLAN
CONSTRUCTION CONTROL POINT LOCATIONS FOR CELL 7 LDS, LCS, AND RLCS PIPES
SCALE: 1" = 50'



8A PLAN
CONSTRUCTION CONTROL POINT LOCATIONS FOR CELL 8 LDS, LCS, AND RLCS PIPES
SCALE: 1" = 50'

EXISTING LDS, LCS, AND RLCS PIPES TIE-IN LOCATIONS (NOTE 3)

POINT NO.	NORTHING	EASTING	ELEVATION
CELL 6			
7616	480878.00	1330794.41	585.83
7617	480873.97	1330794.78	587.64
7618	480867.81	1330794.13	588.73
CELL 7			
7716	480577.87	1330789.52	583.83
7717	480572.82	1330789.38	585.64
7718	480567.87	1330789.26	584.73
CELL 8			
7816	480177.37	1330823.75	582.08
7817	480173.37	1330823.63	584.08
7818	480167.37	1330823.50	583.08
LDS, LCS, AND RLCS PIPES EASTERN TERMINATIONS			
CELL 6			
7813	480869.74	1331452.71	582.44
7814	480871.89	1330860.00	588.47
7815	480868.74	1331452.84	583.45
CELL 7			
7713	480569.75	1331450.02	580.44
7714	480572.04	1330853.23	586.47
7715	480568.75	1331449.95	581.45
CELL 8			
7813	480169.77	1331445.13	588.47
7814	480171.83	1330884.30	584.86
7815	480168.77	1331445.03	589.47

LEGEND

- 600 — COMPACTED CLAY LINER ELEVATION (FEET)
- 600 — LEACHATE COLLECTION SYSTEM ELEVATION (FEET)
- PERIMETER BERM BASELINE
- EXISTING EPLTS PIPE
- 7616 — CONSTRUCTION CONTROL POINT
- 6 — CELL DESIGNATION

NOTES:

1. LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
2. TRENCH FOR LDS, LCS, AND RLCS PIPES IS NOT SHOWN ON THIS DRAWING FOR CLARITY. TRENCHING AND BACKFILLING FOR LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTIONS 02215 AND 02225.
3. LDS, LCS, AND RLCS PIPES FOR CELLS 6, 7, AND 8 SHALL TIE INTO EXISTING PIPES. TIE-IN LOCATIONS FOR CELLS 6, 7, AND 8 ARE SHOWN IN CONSTRUCTION CONTROL POINT TABLE PRESENTED ON THIS DRAWING. TIE-IN CONSTRUCTION CONTROL POINTS REPRESENT OUTSIDE BOTTOM OF 10-INCH PIPE. REMOVE END CAPS OR OTHER TEMPORARY PROTECTION INSTALLED ON EXISTING PIPES PRIOR TO TIE-INS. AS-BUILT TIE-IN LOCATIONS MAY VARY SLIGHTLY FROM CONSTRUCTION CONTROL POINTS GIVEN ON THIS DRAWING.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DKP	RB
1A	-	NOT ISSUED	—	—	—	-	-
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JWO	LMG	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	TMM	LMG	DGP	JFB
A	-	NOT ISSUED	—	—	—	-	-

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

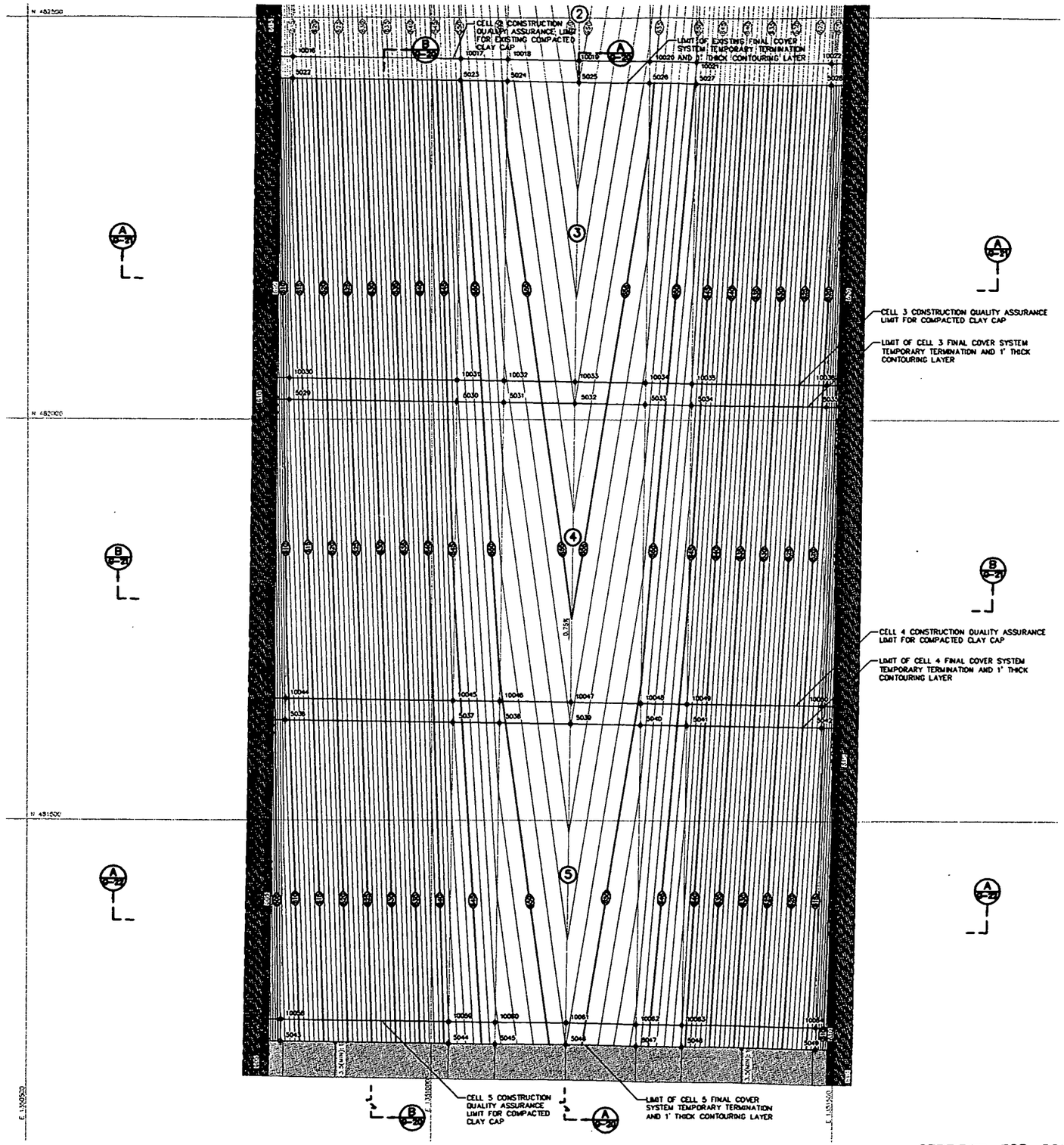
TITLE:
CELL OUTLET GRADING PLANS II -
CELLS 6, 7, AND 8 LINER SYSTEM

THIS DRAWING MAY NOT BE USED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

GEOSYNTEC CONSULTANTS
780 LAST MILE DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO.:	20105
CONTRACT NO.:	03T0699
FEMP DRAWING NO.:	901-E000-G-00371
GEOSYNTEC PROJECT NO.:	GG3211-08.04
GEOSYNTEC DOCUMENT NO.:	F03-1010
SHEET NO.:	G-9
REVISION NO.:	1

CERTIFIED-FOR-CONSTRUCTION



LEGEND

- EXISTING CONTOURING LAYER ELEVATION (FEET)
- EXISTING PROTECTIVE CLAY LAYER ELEVATION (FEET)
- CONTOURING LAYER ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- 5022 CONSTRUCTION CONTROL POINT
- (2) CELL DESIGNATION
- DRAINAGE FLOW DIRECTION (NOTE 4)
- CONTOURING LAYER AND IMPACTED MATERIAL INTERIM GRADE (NOTE 3)
- EXISTING PROTECTIVE CLAY LAYER GRADES

CONTOURING LAYER CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
5022	482424.24	1350826.92	615.09
5023	482421.69	1351035.45	649.84
5024	482420.98	1351093.28	655.62
5025	482419.91	1351181.24	660.02
5026	482418.83	1351269.20	655.62
5027	482418.13	1351327.03	649.84
5028	482418.09	1351493.38	622.11
5029	482024.27	1350822.03	612.08
5030	482021.72	1351030.56	646.84
5031	482021.01	1351088.39	652.62
5032	482019.94	1351176.35	657.02
5033	482018.86	1351264.31	652.62
5034	482018.16	1351322.14	646.84
5035	482016.12	1351488.51	619.11
5036	481624.30	1350817.15	609.08
5037	481621.75	1351025.67	643.84
5038	481621.04	1351083.50	649.62
5039	481619.97	1351171.46	654.02
5040	481618.89	1351259.43	649.62
5041	481618.19	1351317.25	643.84
5042	481616.15	1351483.62	616.11
5043	481224.33	1350812.26	606.08
5044	481221.78	1351020.79	640.84
5045	481221.07	1351078.61	646.62
5046	481220.00	1351166.57	651.02
5047	481218.92	1351254.54	646.62
5048	481218.22	1351312.38	640.84
5049	481216.18	1351478.73	613.11

CQA LIMIT FOR COMPACTED CLAY CAP CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
10016	482451.24	1350827.27	615.29
10017	482448.69	1351035.77	650.04
10018	482447.98	1351093.60	655.82
10019	482446.91	1351181.57	660.22
10020	482445.83	1351269.54	655.83
10021	482445.13	1351327.37	650.04
10022	482443.09	1351493.71	622.32
10030	482051.27	1350822.38	612.28
10031	482048.72	1351030.89	647.04
10032	482048.01	1351088.72	652.82
10033	482046.94	1351176.68	657.22
10034	482045.86	1351264.64	652.82
10035	482045.18	1351322.47	647.04
10036	482043.12	1351488.84	619.31
10044	481651.30	1350817.48	609.28
10045	481648.75	1351026.00	644.04
10046	481648.04	1351083.83	649.82
10047	481646.97	1351171.79	654.22
10048	481645.89	1351259.78	649.82
10049	481645.19	1351317.58	644.04
10050	481643.15	1351483.95	616.31
10058	481251.33	1350812.59	606.28
10059	481248.78	1351021.12	641.04
10060	481248.07	1351078.94	646.82
10061	481247.00	1351166.90	651.22
10062	481245.92	1351254.87	646.82
10063	481245.22	1351312.69	641.04
10064	481243.18	1351479.08	613.31

NOTES:

1. THIS DRAWING PRESENTS CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER, LIMIT OF FINAL COVER SYSTEM TEMPORARY TERMINATION, AND CQA LIMIT FOR COMPACTED CLAY CAP FOR CELLS 3, 4, AND 5.
2. CONTOURING LAYER AND PROTECTIVE CLAY LAYER ELEVATIONS CORRESPOND TO TOP OF CONTOURING LAYER AND TOP OF PROTECTIVE CLAY LAYER, RESPECTIVELY.
3. CONSTRUCT INTERIM GRADES TO MEET EXISTING IMPACTED MATERIAL GRADES.
4. RUNOFF FROM NON-IMPACTED CONTOURING LAYER SHALL BE DIVERTED TO DOWNGRADIENT IMPACTED RUNOFF CATCHMENT AREA UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED. DRAINAGE FLOW DIRECTION INDICATES LOCATION OF TEMPORARY DRAINAGE CHANNEL THAT SHALL BE USED TO DIVERT RUNOFF FROM CONTOURING LAYER TO IMPACTED RUNOFF CATCHMENT AREA. CONTRACTOR SHALL CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF OSDF IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS AND SPECIFICATION SECTION 02270.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JMO	KRD	DOP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JMO	KRD	DOP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	KRD	JMO	KRD	DOP	JFB

SCALE IN FEET: 50 25 0 50 100

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

CLIENT: FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: FINAL COVER SYSTEM CONTOURING LAYER GRADING PLAN I – CELLS 3, 4, AND 5

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED

Author SIGN

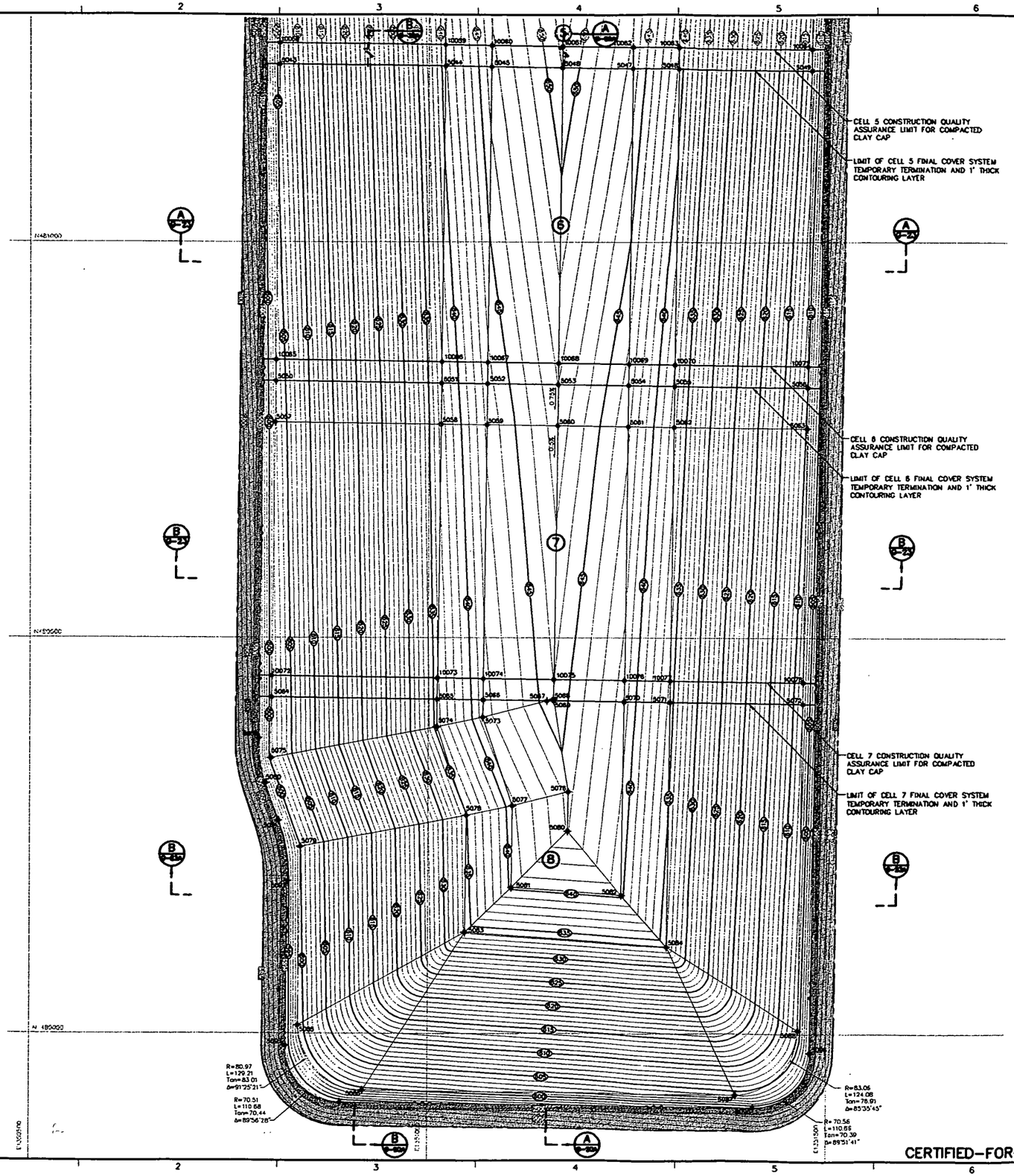
DATE

SEAL

GEOSYNTEC CONSULTANTS
1000 Lake Hearn Drive
ATLANTA, GEORGIA 30342 USA

PROJECT NO.: 20105
CONTRACT NO.: 95PS005078
FEMP DRAWING NO.: BOX-8000-G-00372
GEOSYNTEC PROJECT NO.: 001342-17.4
GEOSYNTEC DOCUMENT NO.: F01-0011
SHEET NO.: G-10
REVISION NO.: 0

CERTIFIED-FOR-CONSTRUCTION



LEGEND

- EXISTING CONTOURING LAYER ELEVATION (FEET)
- EXISTING PROTECTIVE CLAY LAYER ELEVATION (FEET)
- CONTOURING LAYER ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- 5043 — CONSTRUCTION CONTROL POINT
- 6 — CELL DESIGNATION
- DRAINAGE FLOW DIRECTION (NOTE 3)
- EXISTING PROTECTIVE CLAY LAYER GRADES

CONTOURING LAYER CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
5043	481224.33	1350812.26	606.08
5044	481221.78	1351020.79	640.84
5045	481221.07	1351078.61	646.62
5046	481220.00	1351166.57	651.02
5047	481218.92	1351254.54	646.62
5048	481218.22	1351312.36	640.84
5049	481216.18	1351478.73	613.31
5050	480824.36	1350807.38	603.09
5051	480821.81	1351015.90	637.84
5052	480821.10	1351073.72	643.62
5053	480820.03	1351161.69	648.02
5054	480818.95	1351249.65	643.62
5055	480818.25	1351307.47	637.84
5056	480816.21	1351473.83	610.31
5057	480772.62	1350806.73	602.70
5058	480770.07	1351015.26	637.45
5059	480769.37	1351073.09	643.23
5060	480768.29	1351161.05	647.63
5061	480767.22	1351249.02	643.23
5062	480766.51	1351306.84	637.45
5063	480764.48	1351473.20	609.72
5064	480424.39	1350802.49	600.96
5065	480421.84	1351011.01	635.71
5066	480421.13	1351068.83	641.49
5067	480420.16	1351148.68	645.49
5068	480422.29	1351156.82	643.90
5069	480420.05	1351157.18	645.87
5070	480418.98	1351244.76	641.49
5071	480418.28	1351302.59	635.71
5072	480416.24	1351468.94	607.98
5073	480399.17	1351088.57	641.38
5074	480387.02	1351010.58	635.54
5075	480347.58	1350801.56	600.57
5076	480305.38	1351175.28	644.33
5077	480287.31	1351106.29	640.79
5078	480275.16	1351048.31	634.95
5079	480235.72	1350839.32	599.99
5080	480255.72	1351174.67	644.08
5081	480184.44	1351105.04	640.28
5082	480174.72	1351241.78	640.27
5083	480127.72	1351046.51	634.21
5084	480109.49	1351298.81	634.17
5085	480010.23	1350836.57	598.86
5086	479928.35	1350918.63	599.49
5087	479922.64	1351386.22	604.09
5088	480004.51	1351463.91	605.92
5089	480372.82	1350786.30	595.51
5090	480316.25	1350795.23	595.17
5091	480258.86	1350811.21	594.92
5092	480192.70	1350823.23	594.58
5093	479984.47	1350820.69	593.54
5094	479913.14	1350890.30	594.03
5095	479906.81	1351407.80	599.11
5096	479976.42	1351479.13	600.60

CQA LIMIT FOR COMPACTED CLAY CAP CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
10058	481251.33	1350812.59	606.28
10059	481248.78	1351021.12	641.04
10060	481248.07	1351078.94	646.82
10061	481247.00	1351166.90	651.22
10062	481245.92	1351254.87	646.82
10063	481245.22	1351312.69	641.04
10064	481243.18	1351479.05	613.31
10065	480851.36	1350807.71	603.29
10066	480848.81	1351016.23	638.04
10067	480848.10	1351074.05	643.83
10068	480847.03	1351162.02	648.22
10069	480845.95	1351249.98	643.83
10070	480845.25	1351307.80	638.04
10071	480843.21	1351474.16	610.31
10072	480451.39	1350802.82	601.08
10073	480448.84	1351011.34	635.85
10074	480448.13	1351069.16	641.63
10075	480447.06	1351157.13	646.03
10076	480445.98	1351245.09	641.63
10077	480445.27	1351302.92	635.85
10078	480443.24	1351469.27	608.12

NOTES:

1. THIS DRAWING PRESENTS CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER, LIMIT OF FINAL COVER SYSTEM TEMPORARY TERMINATION, AND CQA LIMIT FOR COMPACTED CLAY CAP FOR CELLS 6, 7, AND 8.
2. PROTECTIVE CLAY LAYER AND CONTOURING LAYER ELEVATIONS CORRESPOND TO TOP OF PROTECTIVE CLAY LAYER AND CONTOURING LAYER, RESPECTIVELY. PROTECTIVE CLAY LAYER WILL BE CONSTRUCTED AS PART OF CELLS 6, 7, AND 8 UNER SYSTEM CONSTRUCTION.
3. RUNOFF FROM NON-IMPACTED CONTOURING LAYER SHALL BE DIVERTED TO DOWNGRADIENT IMPACTED RUNOFF CATCHMENT AREA UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED. DRAINAGE FLOW DIRECTION INDICATES LOCATION OF TEMPORARY DRAINAGE CHANNEL THAT SHALL BE USED TO DIVERT RUNOFF FROM CONTOURING LAYER TO IMPACTED RUNOFF CATCHMENT AREA. CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF OSDF IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS AND SPECIFICATION SECTION 02270. CELL 8 IMPACTED RUNOFF CATCHMENT AREA DURING STAGED CLOSURE SHOWN ON DRAWING G-16.
4. FINAL COVER SYSTEM FOR CELLS 7 AND 8 MAY BE CONSTRUCTED CONCURRENTLY WITHOUT CONSTRUCTION OF THE FINAL COVER SYSTEM TEMPORARY TERMINATION. CELLS 7 AND 8 FINAL COVER SYSTEM STAGED CLOSURE SEQUENCE IS SHOWN ON DRAWING G-16.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	AJA	KRD	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	AJA	KRD	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	TEZ	AJA	KRD	DKP	RB
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JWO	KRD	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JWO	KRD	DCP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	KRD	JWO	KRD	DCP	JFB

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

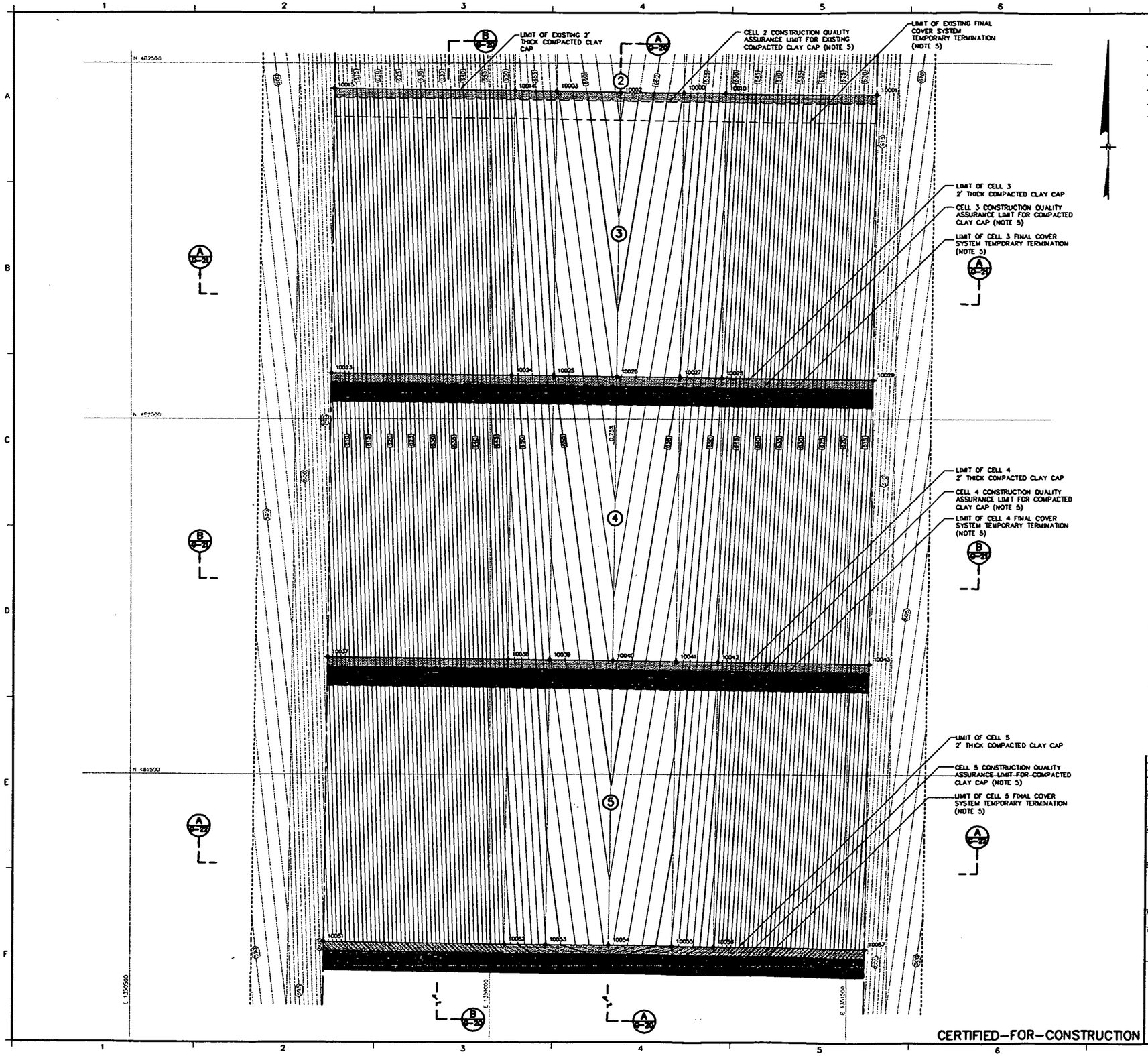
TITLE: FINAL COVER SYSTEM CONTOURING LAYER GRADING PLAN II – CELLS 6, 7, AND 8

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION, UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1900 CAST HILLS DRIVE
ATLANTA, GEORGIA 30329 USA

PROJECT NO.:	20105
CONTRACT NO.:	03T0699
FLMP DRAWING NO.:	90X-6000-G-00373
GEOSYNTEC PROJECT NO.:	003211-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1012
SHEET NO.:	G-11
REVISION NO.:	1

CERTIFIED-FOR-CONSTRUCTION



LEGEND

- 600 — EXISTING SUBGRADE LAYER ELEVATION (FEET)
- 620 — EXISTING COMPACTED CLAY CAP ELEVATION (FEET)
- 620 — COMPACTED CLAY CAP ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- 10016 — CONSTRUCTION CONTROL POINT
- 3 — CELL DESIGNATION
- PORTION OF FINAL COVER SYSTEM TEMPORARY TERMINATION AREA (NOTE 3)
- COMPACTED CLAY CAP TRANSITION AREA (NOTE 4)

COMPACTED CLAY CAP CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
10000	482458.38	1351269.84	657.91
10001	482455.09	1351538.95	618.92
10002	482459.46	1351181.72	662.32
10003	482460.53	1351093.61	657.91
10010	482457.67	1351327.78	652.12
10014	482461.24	1351035.65	652.12
10015	482464.34	1350787.33	609.89
10023	482064.37	1350777.45	608.89
10024	482061.27	1351030.76	649.12
10025	482060.56	1351088.72	654.91
10026	482059.49	1351176.83	658.32
10027	482058.41	1351264.95	654.91
10028	482057.70	1351322.90	649.12
10029	482055.12	1351534.07	613.92
10037	481664.40	1350772.56	603.89
10038	481661.30	1351025.87	648.12
10039	481660.59	1351083.83	651.91
10040	481659.52	1351171.95	658.32
10041	481658.44	1351260.06	651.91
10042	481657.73	1351318.01	648.12
10043	481655.15	1351529.18	610.92
10051	481264.43	1350767.67	600.89
10052	481261.33	1351020.98	643.12
10053	481260.62	1351078.94	648.91
10054	481259.55	1351167.06	653.32
10055	481258.47	1351255.17	648.91
10056	481257.76	1351313.13	643.12
10057	481255.18	1351524.29	607.92

NOTES:

1. THIS DRAWING PRESENTS CONSTRUCTION CONTROL POINTS FOR COMPACTED CLAY CAP FOR CELLS 3, 4, AND 5
2. COMPACTED CLAY CAP AND SUBGRADE LAYER ELEVATIONS CORRESPOND TO TOP OF COMPACTED CLAY CAP AND SUBGRADE LAYER, RESPECTIVELY.
3. SHADED AREA REPRESENTS A PORTION OF TEMPORARY TERMINATION OF FINAL COVER SYSTEM. TEMPORARY TERMINATION SHALL BE CONSTRUCTED ACCORDING TO DETAIL SHOWN ON DRAWING G-34.
4. CONSTRUCT TRANSITION FROM EXISTING FULL DEPTH SECTION OF COMPACTED CLAY CAP TO ADJACENT SECTION OF COMPACTED CLAY CAP IN ACCORDANCE WITH SPECIFICATION SECTION 02225.
5. CONSTRUCTION CONTROL POINTS FOR LIMIT OF FINAL COVER SYSTEM TEMPORARY TERMINATION AND CONSTRUCTION QUALITY ASSURANCE LIMIT FOR COMPACTED CLAY CAP FOR CELLS 2, 3, 4, AND 5 ARE PROVIDED ON DRAWING G-10.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	03.01..99	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JND	KRD	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JND	KRD	DGP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	KRD	TMM	KRD	DGP	JFB

50 25 0 50 100
SCALE IN FEET

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: FINAL COVER SYSTEM COMPACTED CLAY CAP GRADING PLAN I - CELLS 3, 4, AND 5

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

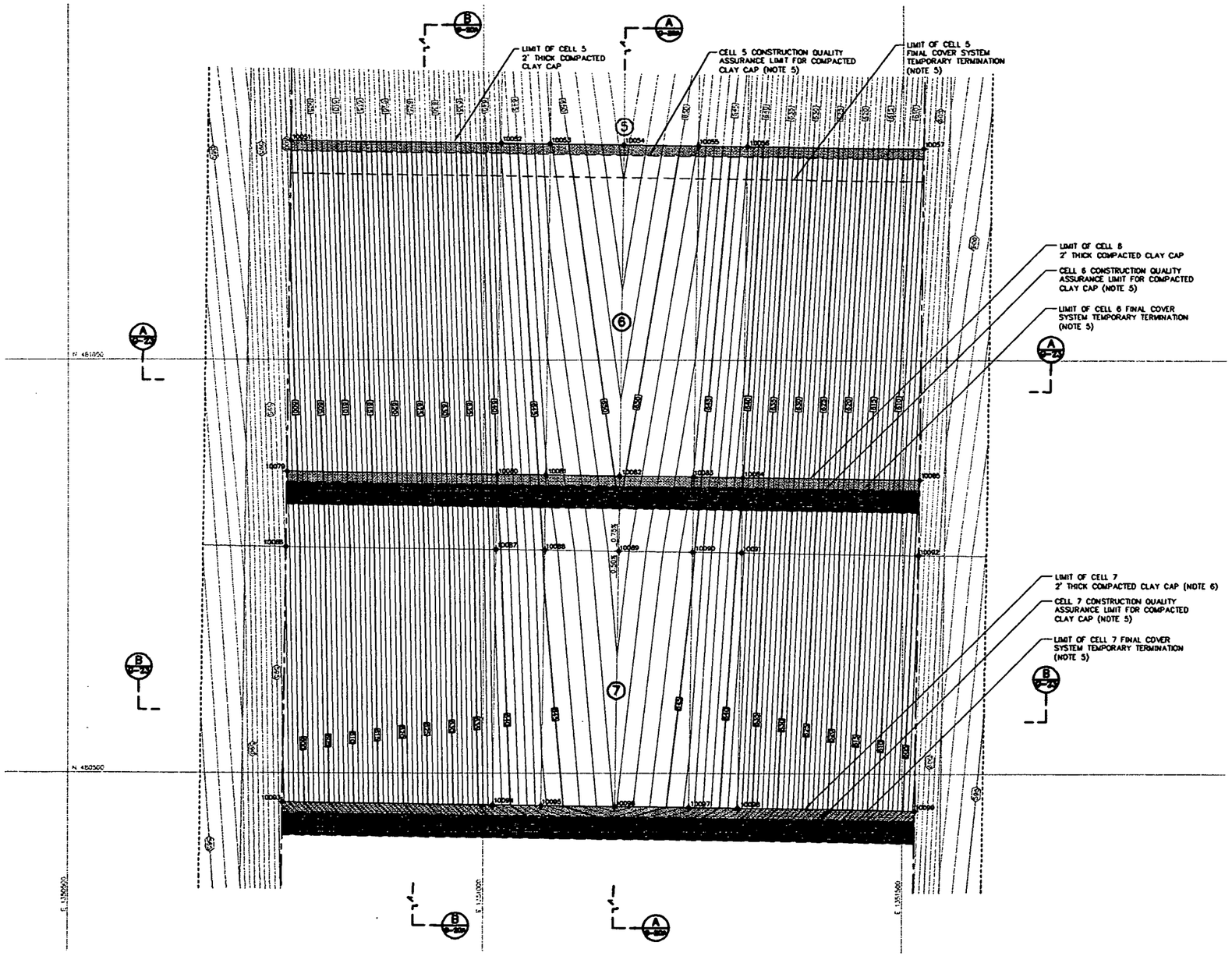
SIGN-DATE

SEAL

GEOSYNTEC CONSULTANTS
1000 ABERNATHY DRIVE
ATLANTA, GEORGIA 30328 USA

PROJECT NO.:	20105
CONTRACT NO.:	95PS005028
TEMP DRAWING NO.:	SDV-6000-D-00374
GEOSYNTEC PROJECT NO.:	GO1342-17.4
GEOSYNTEC DOCUMENT NO.:	F01-0014
SHEET NO.:	G-12
REVISION NO.:	0

CERTIFIED-FOR-CONSTRUCTION



LEGEND

- EXISTING SUBGRADE LAYER ELEVATION (FEET)
- EXISTING COMPACTED CLAY CAP ELEVATION (FEET)
- COMPACTED CLAY CAP ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- CONSTRUCTION CONTROL POINT
- CELL DESIGNATION
- PORTION OF FINAL COVER SYSTEM TEMPORARY TERMINATION AREA (NOTE 3)
- COMPACTED CLAY CAP TRANSITION AREA (NOTE 4)

COMPACTED CLAY CAP CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
10051	481264.43	1350767.67	600.89
10052	481261.33	1351020.99	843.12
10053	481260.62	1351078.94	848.91
10054	481259.55	1351167.06	853.32
10055	481258.47	1351255.17	848.91
10056	481257.76	1351313.13	843.12
10057	481255.18	1351524.29	807.92
10079	480864.46	1350762.78	597.89
10080	480861.36	1351016.10	840.12
10081	480860.65	1351074.06	845.91
10082	480859.58	1351162.17	850.32
10083	480858.50	1351250.28	845.91
10084	480857.79	1351308.24	840.12
10085	480855.21	1351519.40	804.92
10086	480773.17	1350761.67	597.21
10087	480770.08	1351014.98	839.43
10088	480769.37	1351072.94	845.23
10089	480768.29	1351161.05	849.63
10090	480767.22	1351249.17	845.23
10091	480766.51	1351307.12	839.43
10092	480763.93	1351518.28	804.24
10093	480464.49	1350757.89	595.87
10094	480461.39	1351011.21	837.89
10095	480460.68	1351069.17	843.69
10096	480459.61	1351157.28	848.09
10097	480458.53	1351245.39	843.69
10098	480457.82	1351303.35	837.89
10099	480455.24	1351514.51	802.69

NOTES:

1. THIS DRAWING PRESENTS CONSTRUCTION CONTROL POINTS FOR COMPACTED CLAY CAP FOR CELLS 6 AND 7.
2. COMPACTED CLAY CAP AND SUBGRADE LAYER ELEVATIONS CORRESPOND TO TOP OF COMPACTED CLAY CAP AND SUBGRADE LAYER, RESPECTIVELY.
3. SHADED AREA REPRESENTS A PORTION OF TEMPORARY TERMINATION OF FINAL COVER SYSTEM TO BE CONSTRUCTED ACCORDING TO DETAIL SHOWN ON DRAWING G-34.
4. CONSTRUCT TRANSITION FROM EXISTING FULL DEPTH SECTION OF COMPACTED CLAY CAP TO ADJACENT SECTION OF COMPACTED CLAY CAP IN ACCORDANCE WITH SPECIFICATION SECTION 02225.
5. CONSTRUCTION CONTROL POINTS FOR LIMIT OF FINAL COVER SYSTEM TEMPORARY TERMINATION AND CONSTRUCTION QUALITY ASSURANCE LIMIT FOR COMPACTED CLAY CAP FOR CELLS 5, 6, AND 7 ARE PROVIDED ON DRAWING G-11.
6. FINAL COVER SYSTEM FOR CELLS 7 AND 8 MAY BE CONSTRUCTED CONCURRENTLY WITHOUT CONSTRUCTION OF THE FINAL COVER SYSTEM TEMPORARY TERMINATION. CELL 8 FINAL COVER SYSTEM STAGED CLOSURE SEQUENCE IS SHOWN ON DRAWING G-18.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	KRD	DCP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	KRD	DCP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	KRD	DCP	RB
B	02.09.29	CFC SUBMITTAL TO FF/DOE/EPA	KPD	JWD	KRD	DCP	JTB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KPD	JWD	KRD	DCP	JTB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	KPD	JWD	KRD	DCP	JTB

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

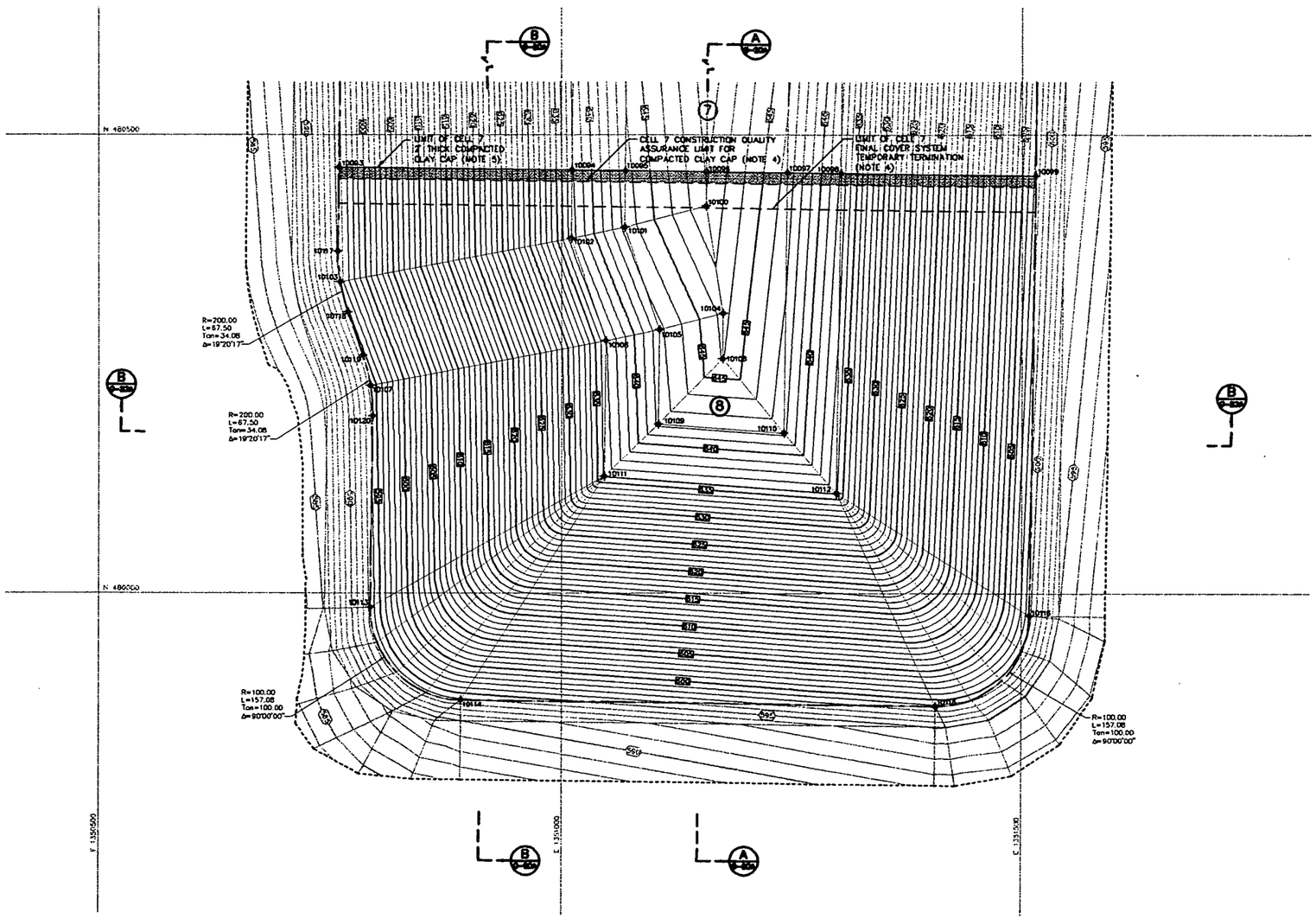
TITLE:
FINAL COVER SYSTEM COMPACTED CLAY CAP
GRADING PLAN II – CELLS 6 AND 7

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1255 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30319 USA

PROJECT NO.:	20105
CONTRACT NO.:	03FT0699
TEMP DRAWING NO.:	9DY-8000-G-00375
GEOSYNTEC PROJECT NO.:	GD3211-08.04
GEOSYNTEC DOCUMENT NO.:	FD3-1015
SHEET NO.:	G-13
REVISION NO.:	1

CERTIFIED-FOR-CONSTRUCTION



LEGEND

- 603 — EXISTING SUBGRADE LAYER ELEVATION (FEET)
- 605 — EXISTING COMPACTED CLAY CAP ELEVATION (FEET)
- 620 — COMPACTED CLAY CAP ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- 10083 — CONSTRUCTION CONTROL POINT
- 8 — CELL DESIGNATION
- COMPACTED CLAY CAP TRANSITION AREA (NOTE 3)

COMPACTED CLAY CAP CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
10093	480464.49	1350757.89	595.67
10094	480461.39	1351011.21	637.89
10095	480450.68	1351069.17	643.69
10096	480459.61	1351157.28	648.09
10097	480458.53	1351245.39	643.69
10098	480457.82	1351303.35	637.89
10099	480455.24	1351514.51	602.59
10100	480422.30	1351158.82	647.90
10101	480399.14	1351088.42	643.38
10102	480386.97	1351010.30	637.52
10103	480339.58	1350759.21	595.52
10104	480305.39	1351175.28	648.33
10105	480287.28	1351106.14	642.79
10106	480275.11	1351048.03	636.93
10107	480226.93	1350792.76	594.45
10108	480255.73	1351174.67	646.08
10109	480184.30	1351104.88	642.27
10110	480174.56	1351241.92	642.27
10111	480127.45	1351046.22	636.19
10112	480109.18	1351299.09	636.13
10113	479984.83	1350791.16	593.24
10114	479883.61	1350889.94	593.73
10115	479877.29	1351407.44	598.81
10116	479976.08	1351508.66	600.30
10117	480373.18	1350756.78	595.21
10118	480306.82	1350767.25	594.87
10119	480259.42	1350783.24	594.62
10120	480193.06	1350793.71	594.28

NOTES:

1. THIS DRAWING PRESENTS CONSTRUCTION CONTROL POINTS FOR COMPACTED CLAY CAP FOR CELL 8
2. COMPACTED CLAY CAP AND SUBGRADE LAYER ELEVATIONS CORRESPOND TO TOP OF COMPACTED CLAY CAP AND SUBGRADE LAYER, RESPECTIVELY.
3. CONSTRUCT TRANSITION FROM EXISTING FULL DEPTH SECTION OF COMPACTED CLAY CAP TO ADJACENT SECTION OF COMPACTED CLAY CAP IN ACCORDANCE WITH SPECIFICATION SECTION 02225.
4. CONSTRUCTION CONTROL POINTS FOR LIMIT OF FINAL COVER SYSTEM TEMPORARY TERMINATION AND CONSTRUCTION QUALITY ASSURANCE LIMIT FOR COMPACTED CLAY CAP FOR CELLS 7 AND 8 ARE PROVIDED ON DRAWING G-11.
5. FINAL COVER SYSTEM FOR CELLS 7 AND 8 MAY BE CONSTRUCTED CONCURRENTLY WITHOUT CONSTRUCTION OF THE FINAL COVER SYSTEM TEMPORARY TERMINATION. CELL 8 FINAL COVER SYSTEM STAGED CLOSURE SEQUENCE IS SHOWN ON DRAWING G-16.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	04.01.22	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	KRD	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JJA	KRD	DKP	RB
A	03.10.28	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	JJA	KRD	DKP	RB

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

TITLE:
FINAL COVER SYSTEM COMPACTED CLAY CAP
GRADING PLAN III – CELL 8

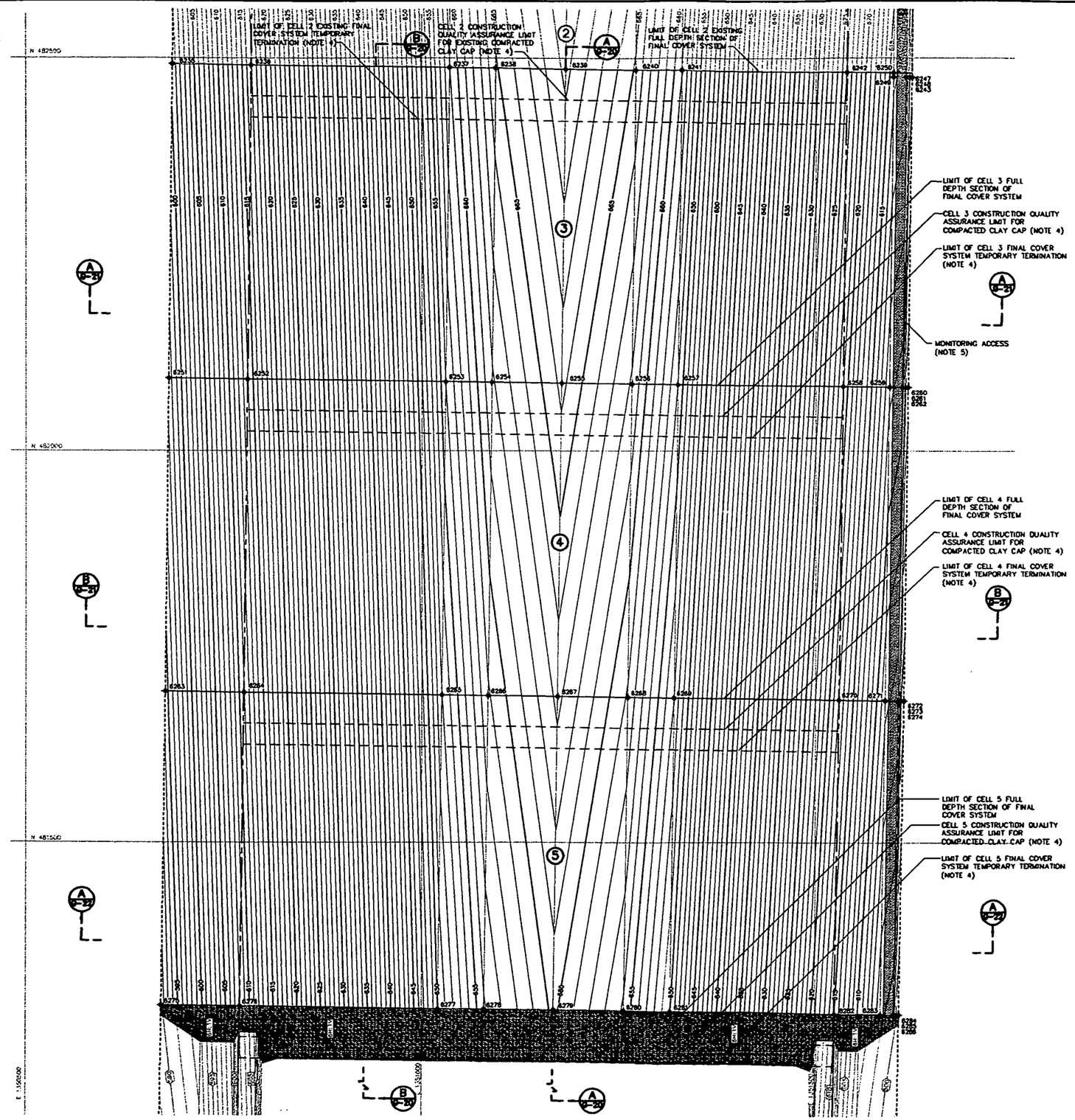
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO:	20105
CONTRACT NO:	03IT0699
FEMP DRAWING NO.:	901-8000-G-00418
GEOSYNTEC PROJECT NO:	GD3211-08.04
GEOSYNTEC DOCUMENT NO.:	F03-0059
SHEET NO.:	G-13A
REVISION NO.:	0

CERTIFIED-FOR-CONSTRUCTION



LEGEND

- 600 — EXISTING FINISHED GRADE ELEVATION (FEET)
- 600 — EXISTING SUBGRADE LAYER ELEVATION (FEET)
- 620 — EXISTING PROTECTIVE CLAY LAYER ELEVATION (FEET)
- 845 — FINISHED GRADE ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- 6280 — CONSTRUCTION CONTROL POINT
- 3 — CELL DESIGNATION
- FINAL COVER SYSTEM TEMPORARY TERMINATION AREA (NOTE 3)
- MONITORING ACCESS (NOTE 5)

FINAL COVER SYSTEM CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
6235	482497.22	1350683.64	600.43
6236	482491.01	1350782.86	616.94
6237	482487.97	1351035.10	659.01
6238	482487.21	1351093.43	664.85
6239	482486.12	1351182.05	669.28
6240	482485.04	1351270.67	664.85
6241	482484.33	1351329.00	659.01
6242	482481.76	1351539.28	623.55
6243	482475.28	1351620.97	610.30
6247	482475.37	1351613.88	613.54
6248	482475.32	1351617.68	610.87
6249	482475.56	1351597.69	614.18
6250	482481.04	1351597.76	614.22
6251	482092.25	1350678.75	597.43
6252	482091.03	1350777.77	613.94
6253	482087.95	1351030.21	658.01
6254	482087.24	1351088.54	661.85
6255	482086.15	1351177.16	666.28
6256	482085.07	1351265.78	661.85
6257	482084.36	1351324.11	658.01
6258	482081.79	1351534.39	620.96
6259	482081.07	1351592.88	611.22
6260	482080.88	1351608.86	610.58
6261	482080.83	1351612.88	607.91
6262	482080.79	1351616.10	607.34
6263	481692.28	1350673.86	594.43
6264	481691.07	1350772.88	610.94
6265	481687.98	1351025.32	653.01
6266	481687.27	1351083.65	658.85
6267	481686.18	1351172.27	663.28
6268	481685.10	1351260.89	658.85
6269	481684.39	1351319.22	653.01
6270	481681.82	1351529.50	617.96
6271	481681.10	1351587.99	608.22
6272	481680.91	1351603.97	607.58
6273	481680.86	1351607.97	604.91
6274	481680.82	1351611.21	604.34
6275	481292.31	1350668.97	591.43
6276	481291.09	1350768.00	607.94
6277	481288.01	1351020.43	650.01
6278	481287.30	1351078.76	655.85
6279	481286.21	1351167.38	660.28
6280	481285.13	1351256.00	655.85
6281	481284.42	1351314.34	650.01
6282	481281.85	1351524.62	614.95
6283	481281.13	1351583.10	605.22
6284	481280.94	1351599.08	604.58
6285	481280.89	1351603.08	601.91
6286	481280.85	1351606.33	601.34

NOTES:

1. THIS DRAWING PRESENTS CONSTRUCTION CONTROL POINTS FOR FINAL COVER SYSTEM FOR CELLS 3, 4, AND 5.
2. FINISHED GRADE ELEVATIONS EXCLUDING MONITORING ACCESS CORRESPOND TO TOP OF FINAL COVER SYSTEM TOPSOIL LAYER.
3. SHADED AREA REPRESENTS EXTENT OF TEMPORARY TERMINATION OF FINAL COVER SYSTEM. TEMPORARY TERMINATION SHALL BE CONSTRUCTED ACCORDING TO DETAIL SHOWN ON DRAWING G-34.
4. CONSTRUCTION CONTROL POINTS FOR LIMIT OF FINAL COVER SYSTEM TEMPORARY TERMINATION AND CONSTRUCTION QUALITY ASSURANCE LIMIT FOR COMPACTED CLAY CAP ARE PROVIDED ON DRAWING G-10.
5. MONITORING ACCESS DETAILS ARE SHOWN ON DRAWING G-37.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JWO	KRD	DOP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JWO	KRD	DOP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	KRD	JWO	KRD	DOP	JFB

50 25 0 50 100
SCALE IN FEET

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: FINAL COVER SYSTEM GRADING PLAN I – CELLS 3, 4, AND 5

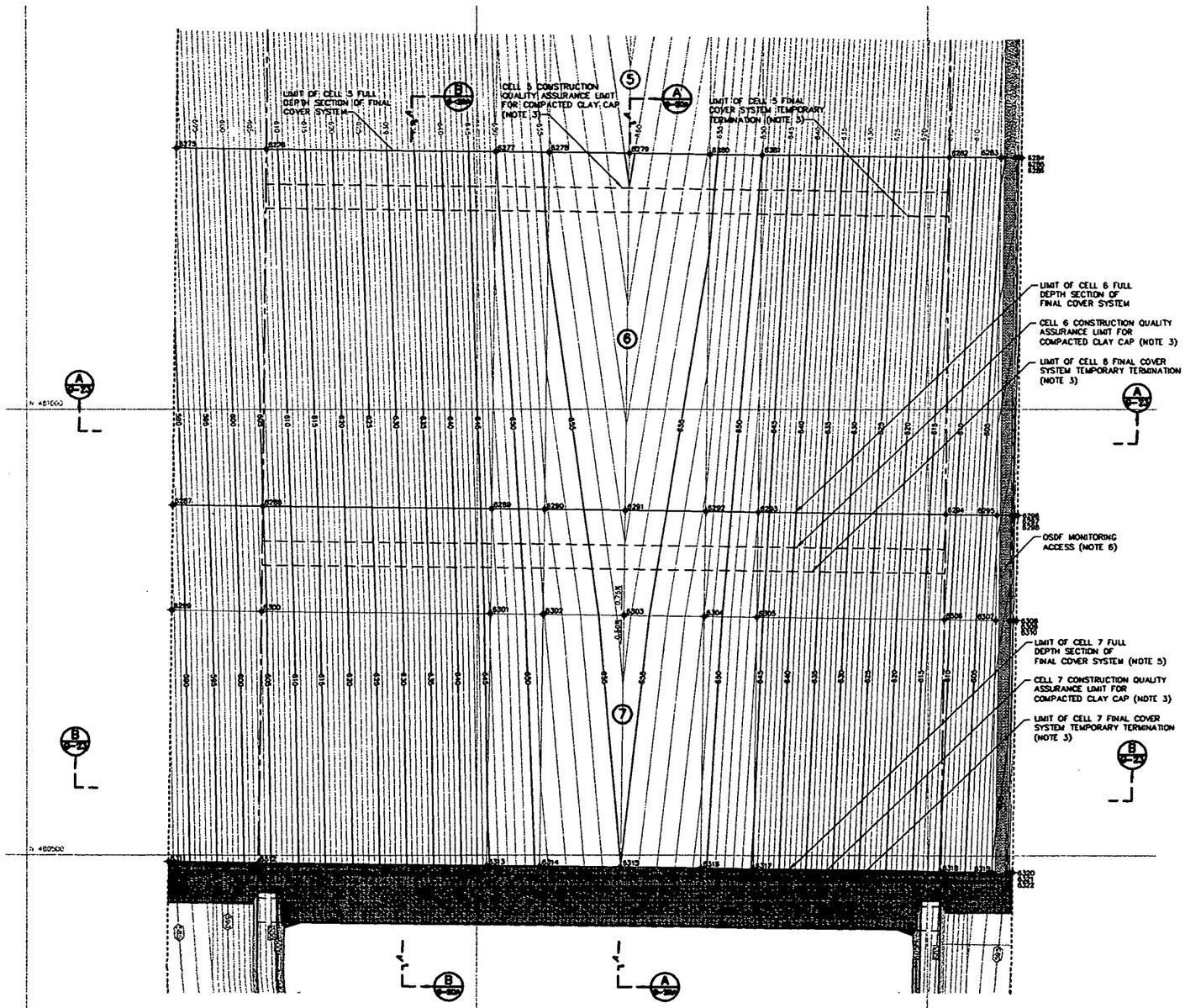
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1000 WEST HILLPINE DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO:	70105
CONTRACT NO:	95PS005028
FEMP DRAWING NO:	9001-6000-G-00376
GEOSYNTEC PROJECT NO:	001342-17.4
GEOSYNTEC DOCUMENT NO:	F01-0017
SHEET NO:	G-14
REVISION NO:	0

CERTIFIED-FOR-CONSTRUCTION



LEGEND

- 645 — EXISTING FINISHED GRADE ELEVATION (FEET)
- 640 — EXISTING SUBGRADE LAYER ELEVATION (FEET)
- 635 — EXISTING PROTECTIVE CLAY LAYER ELEVATION (FEET)
- 645 — FINISHED GRADE ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- 6299 — CONSTRUCTION CONTROL POINT
- 6 — CELL DESIGNATION
- FINAL COVER SYSTEM TEMPORARY TERMINATION AREA (NOTE 4)
- MONITORING ACCESS (NOTE 6)

N

FINAL COVER SYSTEM CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
6275	481292.31	1350868.97	591.43
6276	481291.09	1350768.00	607.94
6277	481288.01	1351070.43	650.01
6278	481287.30	1351078.76	655.85
6279	481286.21	1351167.38	660.28
6280	481285.13	1351256.00	655.85
6281	481284.42	1351314.34	650.01
6282	481281.85	1351524.61	614.96
6283	481281.13	1351583.10	605.22
6284	481280.94	1351599.08	604.58
6285	481280.89	1351603.08	601.91
6286	481280.85	1351606.33	601.34
6287	480892.34	1350664.08	588.43
6288	480891.13	1350763.11	604.94
6289	480888.04	1351015.54	647.01
6290	480887.33	1351073.87	652.85
6291	480886.24	1351162.50	657.28
6292	480885.16	1351251.12	652.85
6293	480884.45	1351309.45	647.01
6294	480881.88	1351519.73	611.96
6295	480881.16	1351578.21	602.22
6296	480880.97	1351594.19	601.58
6297	480880.92	1351598.19	598.91
6298	480880.88	1351601.44	598.35
6299	480774.38	1350662.64	587.49
6300	480773.17	1350761.67	604.05
6301	480770.09	1351014.10	646.32
6302	480769.38	1351072.43	651.88
6303	480768.29	1351161.05	656.44
6304	480767.21	1351249.67	651.96
6305	480766.50	1351308.01	646.13
6306	480763.93	1351518.28	611.08
6307	480763.21	1351576.77	601.33
6308	480763.02	1351592.75	600.69
6309	480762.97	1351596.75	598.03
6310	480762.93	1351600.00	597.46
6311	480492.37	1350659.18	586.14
6312	480491.15	1350758.22	602.64
6313	480488.07	1351010.85	644.72
6314	480487.36	1351068.99	650.55
6315	480486.27	1351157.61	654.98
6316	480485.19	1351246.23	650.55
6317	480484.48	1351304.58	644.72
6318	480481.91	1351514.84	609.67
6319	480481.19	1351573.32	599.92
6320	480481.00	1351589.30	599.28
6321	480480.95	1351593.30	598.62
6322	480480.91	1351596.55	598.05

NOTES:

1. THIS DRAWING PRESENTS CONSTRUCTION CONTROL POINTS FOR FINAL COVER SYSTEM FOR CELLS 6 AND 7.
2. FINISHED GRADE ELEVATIONS EXCLUDING MONITORING ACCESS CORRESPOND TO TOP OF FINAL COVER SYSTEM TOPSOIL LAYER.
3. CONSTRUCTION CONTROL POINTS FOR LIMIT OF FINAL COVER SYSTEM TEMPORARY TERMINATION AND CONSTRUCTION QUALITY ASSURANCE LIMIT FOR COMPACTED CLAY CAP ARE PROVIDED ON DRAWING G-11.
4. SHADED AREA REPRESENTS EXTENT OF TEMPORARY TERMINATION OF FINAL COVER SYSTEM. TEMPORARY TERMINATION SHALL BE CONSTRUCTED ACCORDING TO DETAIL SHOWN ON DRAWING G-34.
5. FINAL COVER SYSTEM FOR CELLS 7 AND 8 MAY BE CONSTRUCTED CONCURRENTLY WITHOUT CONSTRUCTION OF THE FINAL COVER SYSTEM TEMPORARY TERMINATION. CELL 8 FINAL COVER SYSTEM STAGED CLOSURE SEQUENCE IS SHOWN ON DRAWING G-16.
6. OSDF MONITORING ACCESS DETAILS ARE SHOWN ON DRAWINGS G-37 AND G-38

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	KRD	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	KRD	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	KRD	DKP	RB
0	02.09.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JNO	KRD	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JNO	KRD	DCP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	KRD	JNO	KRD	DCP	JFB

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
FINAL COVER SYSTEM GRADING PLAN II - CELLS 6 AND 7

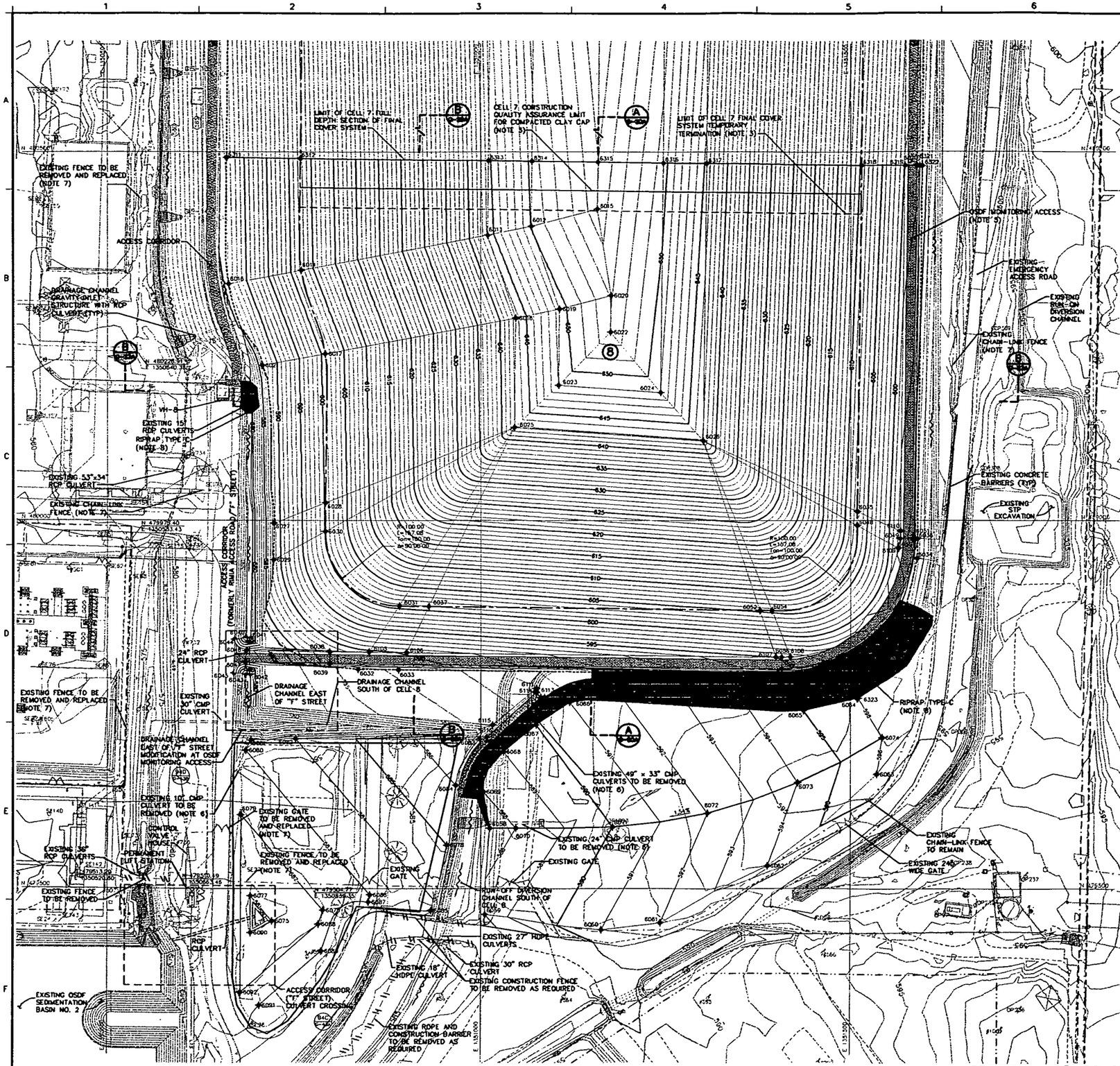
THIS DRAWING MAY NOT BE USED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1920 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30043 USA

PROJECT NO.:	20106
CONTRACT NO.:	03IT0599
FEMP DRAWING NO.:	907-5000-G-00377
GEOSYNTEC PROJECT NO.:	GO3211-08.04
GEOSYNTEC DOCUMENT NO.:	F03-1019
SHEET NO.:	G-15
REVISION NO.:	1

CERTIFIED-FOR-CONSTRUCTION



LEGEND

- 645 — EXISTING FINISHED GRADE ELEVATION (FEET)
- 645 — FINISHED GRADE ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- FCP PROPERTY LINE
- PERIMETER BERM BASELINE
- BORROW AREA LIMIT
- 5299 — CONSTRUCTION CONTROL POINT
- 8 — CELL DESIGNATION
- OSDF MONITORING ACCESS (NOTE 5)
- RIPRAP LIMIT
- BERM CREST
- DRAINAGE FLOW DIRECTION
- FENCE

FINAL COVER SYSTEM CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
6012	480399.05	1351067.91	650.11	6066	479753.03	1351119.49	591.00
6013	480386.80	1351009.42	644.21	6067	479722.28	1351073.94	590.00
6014	480339.58	1350739.21	602.36	6068	479685.55	1351030.17	589.00
6015	480422.35	1351138.83	654.66	6069	479631.43	1351003.46	588.00
6016	480321.21	1350661.86	585.07	6070	479581.91	1351047.15	588.00
6017	480226.65	1350791.28	600.82	6071	479583.39	1351177.13	590.00
6018	480271.94	1351047.15	643.62	6072	479602.73	1351305.56	592.00
6019	480287.19	1351105.63	649.52	6073	479643.94	1351428.73	594.00
6020	480305.44	1351175.28	653.09	6074	479705.30	1351543.22	596.00
6021	480210.58	1350706.64	588.66	6075	479456.06	1350719.98	581.00
6022	480255.78	1351174.62	652.84	6076	479470.54	1350788.15	582.00
6023	480183.82	1351104.37	649.00	6077	479490.32	1350890.91	581.00
6024	480174.01	1351242.42	649.00	6078	479559.31	1350954.19	585.00
6025	480126.61	1351045.33	642.88	6079	479600.39	1350677.99	582.00
6026	480108.20	1351299.96	642.84	6080	479687.62	1350584.44	583.00
6027	479998.05	1350722.54	588.68	6081	479701.34	1350691.41	583.20
6028	480024.00	1350791.64	600.28	6082	479703.57	1350751.36	584.00
6029	479946.31	1350721.94	588.42	6083	479702.65	1350998.40	587.06
6030	479984.91	1350791.17	600.08	6084	479640.29	1350965.95	586.00
6031	479883.61	1350889.94	600.57	6085	479470.14	1350932.65	583.79
6032	479797.81	1350834.98	585.62	6086	479491.44	1350850.86	583.00
6033	479797.15	1350888.92	584.19	6087	479481.64	1350848.90	583.00
6034	479948.59	1351590.04	593.39	6088	479451.72	1350781.97	582.00
6035	480012.32	1351509.10	607.32	6089	479415.14	1350785.79	583.00
6036	479975.06	1351590.37	593.52	6090	479440.15	1350690.76	581.00
6037	479883.13	1350929.74	600.98	6091	479341.97	1350702.50	583.00
6038	479821.50	1350797.08	589.12	6092	479359.71	1350677.24	582.00
6039	479805.51	1350796.89	588.48	6105	479820.86	1350849.73	589.83
6040	479840.34	1350684.59	577.85	6106	479820.25	1350899.88	590.16
6041	479839.86	1350691.58	578.17	6107	479814.15	1351398.56	595.04
6042	479790.98	1350691.03	577.93	6108	479814.49	1351416.45	595.33
6043	479791.35	1350684.04	577.63	6109	479962.56	1351564.65	597.72
6044	479838.27	1350670.23	582.82	6110	479985.65	1351567.27	597.44
6045	479792.28	1350669.02	582.73	6111	479771.58	1351074.42	587.65
6046	479822.87	1350685.04	583.52	6112	479759.26	1351085.87	587.58
6047	479806.88	1350684.20	582.85	6113	479759.39	1351080.23	588.94
6048	479993.28	1351508.87	607.23	6114	479766.06	1351074.19	588.94
6049	479975.34	1351567.14	597.39	6115	479722.25	1351015.77	586.34
6050	479975.15	1351583.12	595.75	6116	479705.60	1351007.51	588.52
6051	479975.10	1351587.12	594.09	6117	479698.03	1351013.56	589.52
6052	479877.66	1351377.27	605.36	6311	480492.37	1350559.19	586.14
6053	479790.83	1351406.38	591.25	6312	480491.15	1350758.22	602.64
6054	479877.46	1351393.04	605.52	6313	480488.07	1351010.65	644.72
6055	479790.56	1351428.10	591.46	6314	480487.38	1351068.99	650.55
6056	479814.05	1351406.67	595.12	6315	480486.27	1351157.61	654.98
6057	479798.06	1351406.47	594.48	6316	480485.19	1351246.23	650.55
6058	479581.91	1351011.85	588.00	6317	480484.48	1351304.56	644.72
6059	479464.78	1351005.82	588.00	6318	480481.91	1351514.84	609.67
6060	479444.18	1351161.44	591.00	6319	480481.19	1351573.32	599.92
6061	479453.48	1351241.32	592.00	6320	480481.00	1351589.30	599.28
6062	479530.82	1351387.35	594.00	6321	480480.95	1351593.30	598.82
6063	479655.78	1351536.30	598.00	6322	480480.91	1351596.55	596.05
6064	479758.19	1351508.58	595.77	6323	479758.57	1351510.24	596.00
6065	479741.70	1351438.39	595.00				

NOTES:

1. THIS DRAWING SHOWS CONSTRUCTION CONTROL POINTS FOR FINAL COVER SYSTEM FOR CELL 8, FINAL SURFACE-WATER FEATURES, AND FINAL FENCE CONFIGURATION.
2. FINISHED GRADE ELEVATIONS EXCLUDING OSDF MONITORING ACCESS CORRESPOND TO TOP OF FINAL COVER SYSTEM TOPSOIL LAYER.
3. CONSTRUCTION CONTROL POINTS FOR LIMIT OF FINAL COVER SYSTEM TEMPORARY TERMINATION AND CONSTRUCTION QUALITY ASSURANCE LIMIT FOR COMPACTED CLAY CAP FOR CELL 8 ARE PROVIDED ON DRAWING G-11.
4. FINAL COVER SYSTEM FOR CELLS 7 AND 8 MAY BE CONSTRUCTED CONCURRENTLY WITHOUT CONSTRUCTION OF THE FINAL COVER SYSTEM TEMPORARY TERMINATION. CELL 8 FINAL COVER SYSTEM STAGED CLOSURE SEQUENCE IS SHOWN ON DRAWING G-16.
5. OSDF MONITORING ACCESS DETAILS ARE SHOWN ON DRAWINGS G-37, G-38, AND G-43B. TRANSITION PROPOSED OSDF MONITORING ACCESS ELEVATIONS TO TIE-IN WITH EXISTING ACCESS CORRIDOR AT TIE-IN LOCATION SHOWN.
6. REMOVE EXISTING CULVERTS AND STOCKPILE MATERIAL AT LOCATIONS DESIGNATED BY CONSTRUCTION MANAGER.
7. DENOTES FINAL CONFIGURATION OF OSDF FENCE AND GATES. CHAIN-LINK FENCE AND GATES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02831.
8. PLACE RIPRAP WITHIN AREA SHOWN. RIPRAP THICKNESSS SHALL BE 1.5 FEET. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
D	04.04.22	CFC SUBMITTAL TO FF/DOE/EPA	LWG	AM	RZ	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	LWG	AM	RZ	DKP	RB
A	03.10.26	PRELIMINARY SUBMITTAL TO FF/DOE	RZ	AM	KRD	DKP	RB

SCALE IN FEET: 50 25 0 50 100

OWNER/FACILITY:

UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:

FLUOR FERNALD, INC.

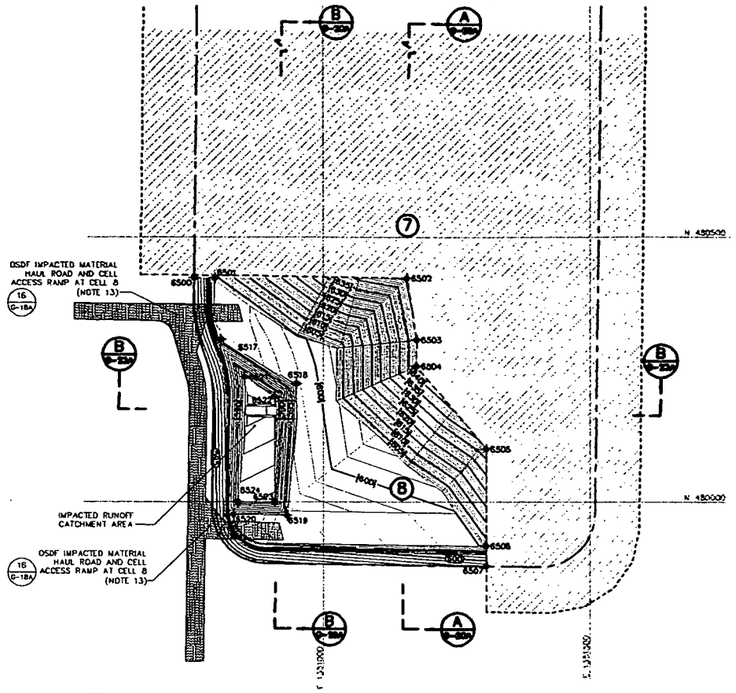
PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: FINAL COVER SYSTEM GRADING PLAN III - CELL 8

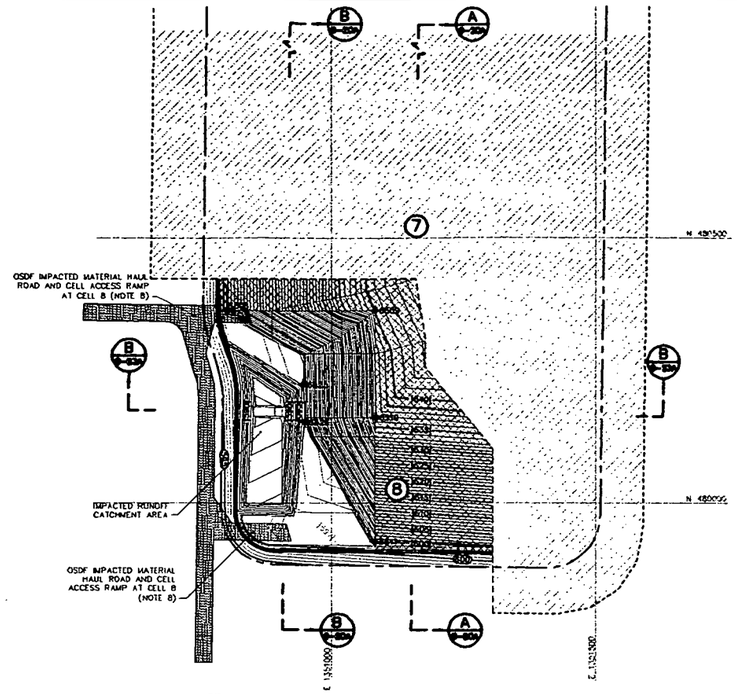
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30319 USA

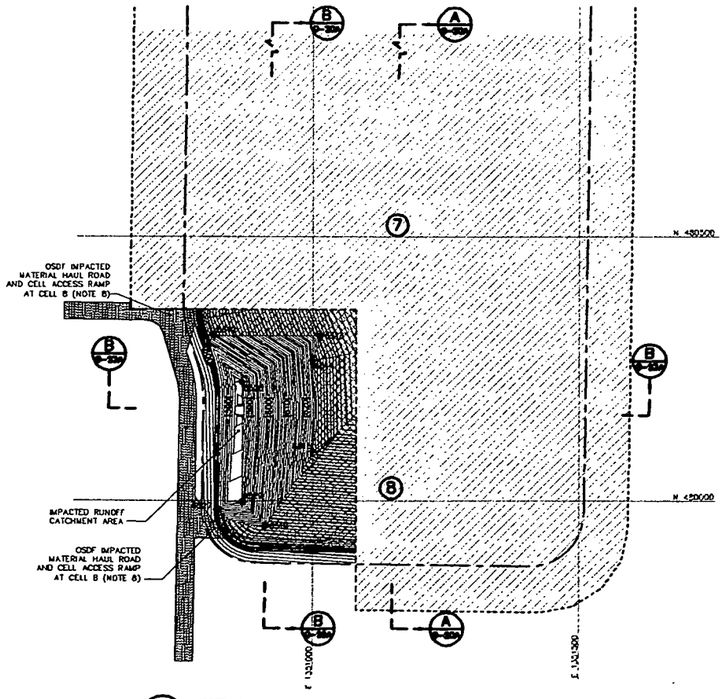
PROJECT NO.:	20105
CONTRACT NO.:	03FF0699
FLWP DRAWING NO.:	900-6000-G-00417
GEOSYNTEC PROJECT NO.:	GO3211-06.04
GEOSYNTEC DOCUMENT NO.:	FD3-0058
SHEET NO.:	G-15A
REVISION NO.:	0



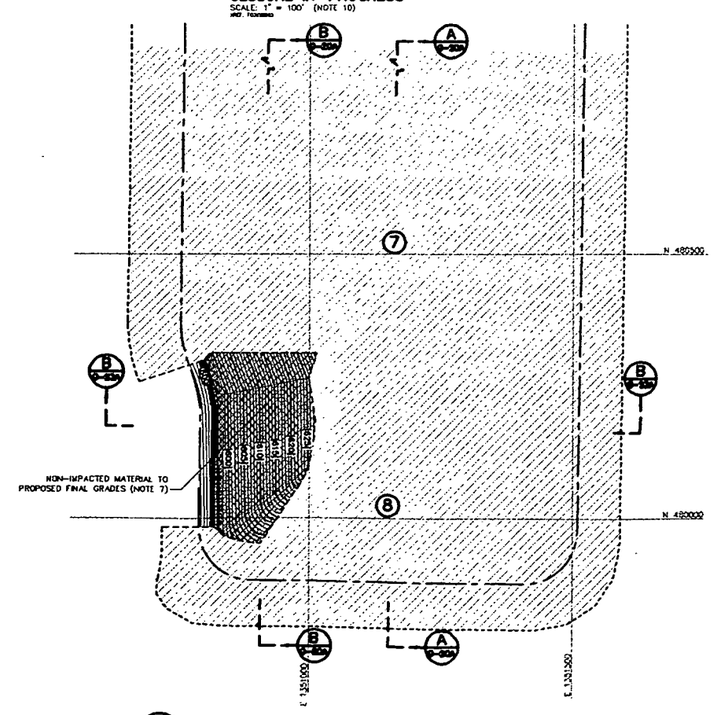
9 DETAIL
STAGE I – IMPACTED MATERIAL PLACEMENT/PARTIAL CLOSURE IN-PROGRESS
SCALE: 1" = 100' (NOTE 9)



10 DETAIL
STAGE II – IMPACTED MATERIAL PLACEMENT/PARTIAL CLOSURE IN-PROGRESS
SCALE: 1" = 100' (NOTE 10)



11 DETAIL
STAGE III – LIMITS OF FINAL IMPACTED MATERIAL PLACEMENT
(NOTE 6)
SCALE: 1" = 100' (NOTE 11)



12 DETAIL
STAGE IV – NON IMPACTED MATERIAL BUILDOUT TO FINAL GRADES
SCALE: 1" = 100'

LEGEND

- PROTECTIVE LAYER ELEVATION (FEET)
- IMPACTED MATERIAL ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- APPROXIMATE LIMIT OF FINAL COVER SYSTEM CONSTRUCTION
- CONSTRUCTION CONTROL POINT
- CELL DESIGNATION
- NON-IMPACTED RUNOFF AREA (NOTE 4)
- IMPACTED RUNOFF AREA (NOTES 5)
- OSDF IMPACTED MATERIAL HAUL ROAD AND ACCESS RAMP

FINAL COVER SYSTEM STAGED CLOSURE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
6500	480422.32	1350757.29	-
6501	480422.30	1350795.33	-
6502	480422.06	1351156.84	-
6503	480305.36	1351175.29	-
6504	480255.72	1351174.67	-
6505	480099.22	1351304.81	-
6506	479916.48	1351304.81	-
6507	479878.54	1351304.98	-
6508	480362.72	1350801.98	-
6509	480362.72	1351080.86	-
6510	480161.01	1351080.86	-
6511	479926.61	1351080.86	-
6512	480313.51	1350812.83	-
6513	480312.97	1351013.55	-
6514	480265.64	1350999.65	-
6515	480094.65	1350998.10	-
6516	479953.00	1350909.04	-
6517	480308.63	1350807.37	598.86
6518	480222.29	1350948.77	598.72
6519	479974.01	1350931.25	596.70
6520	479975.39	1350829.64	595.34
6521	480235.34	1350850.98	586.61
6522	480197.86	1350907.33	586.45
6523	479998.87	1350907.33	589.37
6524	479998.87	1350838.69	588.72
6525	480223.30	1350948.89	598.72
6526	480152.23	1350949.94	598.47
6527	479984.45	1350821.74	-
6528	480226.01	1350864.94	586.58
6529	479998.89	1350864.94	588.96

NOTES:

1. THIS DRAWING SHOWS STAGED CLOSURE SEQUENCE FOR FILLING OF CELL 8.
2. IMPACTED MATERIAL ELEVATIONS, EXCLUDING IMPACTED RUNOFF CATCHMENT AREA, REPRESENT TOP OF SELECT IMPACTED MATERIAL.
3. RUNOFF SHALL BE DIVERTED TO IMPACTED RUNOFF CATCHMENT AREA UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED. CONTRACTOR SHALL CONTAIN AND CONTROL WATER GENERATED DURING CLOSURE OF CELL 8 IN ACCORDANCE WITH SPECIFICATION SECTIONS 13010 AND 02270.
4. REPRESENTS AREA WHERE A MINIMUM OF 2 LIFTS OF COMPACTED CLAY CAP IS PLACED AND RUNOFF IS DIVERTED TO OSDF SURFACE-WATER MANAGEMENT SYSTEM.
5. REPRESENTS AREA DISCHARGING IMPACTED RUNOFF TO CELL 8 IMPACTED RUNOFF CATCHMENT AREA.
6. STAGE III REPRESENTS GRADES THAT PROVIDE FOR DISPOSAL OF ESTIMATED QUANTITIES OF IMPACTED MATERIAL. IMPACTED RUNOFF CATCHMENT AREA SHALL REMAIN OPEN UNTIL SUCH TIME THAT RUNOFF MAY BE CONSIDERED NON-IMPACTED.
7. STAGE IV GRADES TO BE ACHIEVED BY FILLING FROM STAGE III WITH NON-IMPACTED MATERIAL. NON IMPACTED MATERIAL CAPACITY IS APPROXIMATELY 16,500 CUBIC YARDS.
8. ACTUAL LOCATION OF OSDF IMPACTED MATERIAL HAUL ROADS AND CELL ACCESS RAMPS WILL BE DETERMINED AT THE TIME OF STAGED CLOSURE.
9. STAGE I REPRESENTS REMAINING IMPACTED MATERIAL CAPACITY OF APPROXIMATELY 100,000 CUBIC YARDS. STAGE I AREA CONTRIBUTING TO IMPACTED RUNOFF IS APPROXIMATELY 4.8 ACRES. STAGE I ESTIMATED VOLUME OF IMPACTED RUNOFF FOR 25-YEAR/24-HOUR STORM IS APPROXIMATELY 62,000 CUBIC FEET.
10. STAGE II REPRESENTS REMAINING IMPACTED MATERIAL CAPACITY OF APPROXIMATELY 30,000 CUBIC YARDS. STAGE II AREA CONTRIBUTING TO IMPACTED RUNOFF IS APPROXIMATELY 2.7 ACRES STAGE II ESTIMATED VOLUME OF IMPACTED RUNOFF FOR 25-YEAR/24-HOUR STORM IS APPROXIMATELY 35,000 CUBIC FEET.
11. STAGE III REPRESENTS THE FINAL IMPACTED MATERIAL CONFIGURATIONS WITH NO REMAINING CAPACITY FOR IMPACTED MATERIAL. STAGE III AREA CONTRIBUTING TO IMPACTED RUNOFF IS APPROXIMATELY 1.3 ACRES. STAGE III ESTIMATED VOLUME OF IMPACTED RUNOFF FOR 25-YEAR/24-HOUR STORM IS APPROXIMATELY 18,000 CUBIC FEET.
12. STAGE IV ELEVATIONS REPRESENT TOP OF NON-IMPACTED MATERIAL WHICH IS ALSO THE FOUNDATION FOR FINAL COVER SYSTEM CONTOURING LAYER.
13. OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP GRADING PLAN IS SHOWN ON DRAWING G-18A.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CTC REVISION 1 SUBMITTAL TO FF/DOE/EPA	KRD	JWD	KRD	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DKP	RB
0	02.01.29	CTC SUBMITTAL TO FF/DOE/EPA	KRD	JWD	KRD	DGP	JTB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DGP	JTB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DGP	JTB

100 50 0 100 200
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

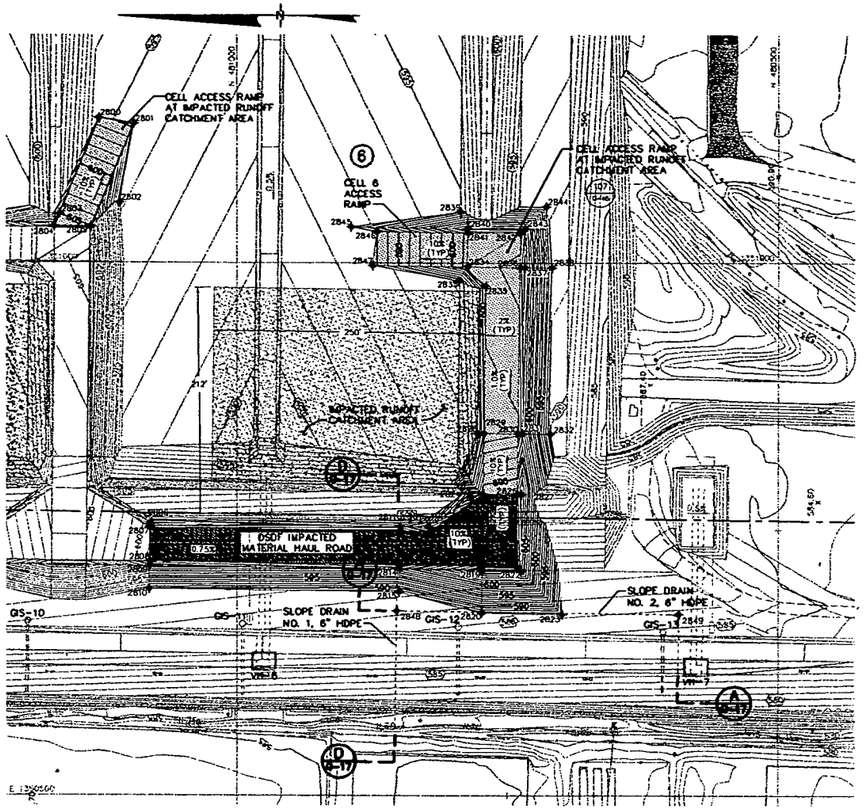
TITLE: FINAL COVER SYSTEM STAGED CLOSURE GRADING PLANS – CELLS 7 AND 8

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

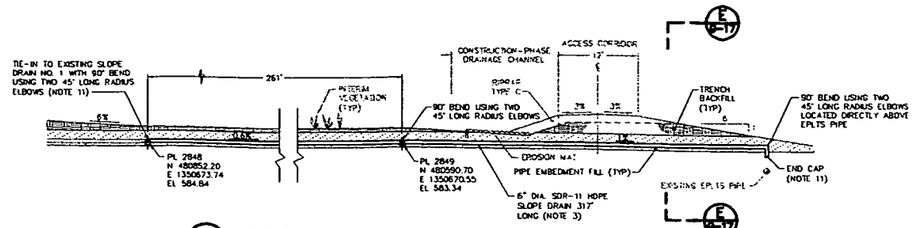
GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30319

PROJECT NO.:	20105
CONTRACT NO.:	03F0699
FLUOR DRAWING NO.:	9201-6000-C-00378
GEOSYNTEC PROJECT NO.:	00321-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1018
SHEET NO.:	G-16
REVISION NO.:	1

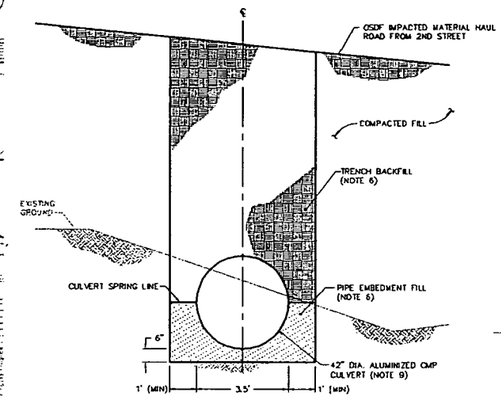
CERTIFIED-FOR-CONSTRUCTION



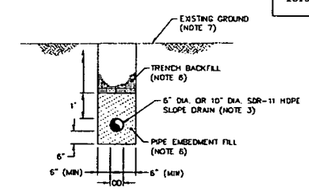
13 / G-1 PLAN
OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP AT CELL 6
SCALE: 1" = 50'



A / G-17 SECTION
CELL 6 OSDF IMPACTED MATERIAL HAUL ROAD SLOPE DRAIN NO. 2
SCALE: 1" = 5'



B / G-18 SECTION
CELL 7 OSDF IMPACTED MATERIAL HAUL ROAD 42-IN DIA. CMP CULVERT EMBEDMENT
SCALE: 1" = 2'



E / G-17 SECTION (TYP)
6-IN OR 10-IN HDPE SLOPE DRAIN EMBEDMENT
SCALE: N.T.S.

LEGEND

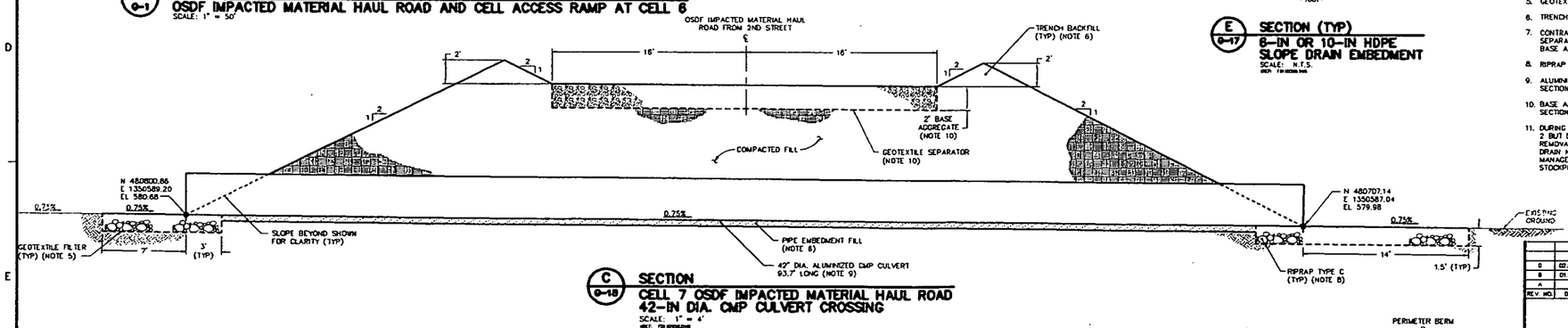
800	EXISTING GROUND ELEVATION (FEET)
800	FINISHED GRADE ELEVATION (FEET)
795	EXISTING SUBGRADE ELEVATION (FEET)
785	EXISTING COMPACTED CLAY LINER/PROTECTIVE CLAY LAYER ELEVATION (FEET)
785	EXISTING PROTECTIVE LAYER ELEVATION (FEET) (NOTE 2)
	PERIMETER BERM BASELINE
	EXISTING EPLTS PIPE
ILTS	EXISTING ILTS PIPE
2800	CONSTRUCTION CONTROL POINT
	OSDF IMPACTED MATERIAL HAUL ROAD (NOTE 1)
	CELL ACCESS RAMP
6	EXISTING CELL DESIGNATION

OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP CONSTRUCTION CONTROL POINTS

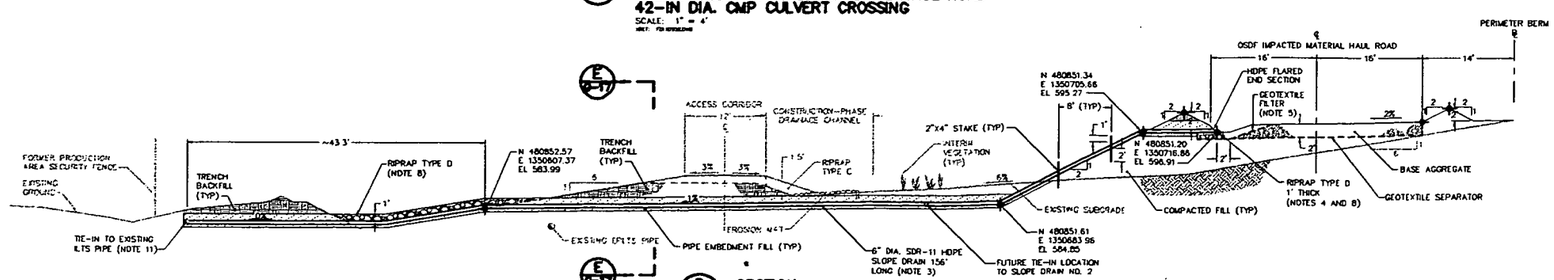
POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
2800	481128.90	1351135.62	595.31	2826	480740.28	1350783.01	605.86
2801	481096.64	1351129.98	594.61	2827	480736.28	1350782.96	607.86
2802	481109.85	1351056.35	594.10	2828	480777.59	1350840.19	597.18
2803	481185.59	1351045.90	605.00	2829	480771.58	1350840.12	600.18
2804	481170.37	1351034.21	605.00	2830	480739.59	1350839.73	600.82
2805	481135.97	1351033.79	605.00	2831	480735.59	1350839.68	602.82
2806	481080.54	1350755.67	601.35	2832	480709.78	1350839.36	589.93
2807	481081.70	1350751.68	599.25	2833	480794.78	1350983.42	594.13
2808	481082.09	1350719.69	598.61	2834	480786.89	1350996.32	601.40
2809	481082.14	1350715.69	600.61	2835	480769.89	1350978.38	601.57
2810	481082.40	1350694.41	589.97	2836	480737.68	1350995.72	602.38
2811	480849.21	1350752.84	599.50	2837	480733.68	1350995.67	604.38
2812	480849.26	1350748.84	597.50	2838	480707.89	1350995.35	591.49
2813	480849.65	1350716.85	596.86	2839	480792.96	1351047.90	594.78
2814	480849.70	1350712.85	598.86	2840	480786.49	1351032.32	603.40
2815	480849.96	1350691.73	588.31	2841	480786.50	1351028.32	601.40
2816	480822.57	1350752.52	602.16	2842	480737.29	1351027.71	601.40
2817	480821.31	1350748.50	600.29	2843	480733.24	1351031.67	603.28
2818	480773.10	1350715.91	604.51	2844	480713.23	1351052.74	592.18
2819	480773.15	1350711.91	606.51	2845	480894.29	1351033.63	592.62
2820	480773.64	1350672.13	586.61	2846	480870.50	1351029.34	593.00
2821	480741.10	1350715.52	604.51	2847	480874.23	1350997.39	592.67
2822	480737.15	1350711.47	606.43				
2823	480698.80	1350670.36	586.19				
2824	480783.46	1350780.35	606.85				
2825	480772.28	1350783.40	605.86				

NOTES:

1. CONTOURS WITHIN SHADED REGION ON OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP REPRESENT TOP OF BASE AGGREGATE. BASE AGGREGATE FOR CELL ACCESS RAMP SHALL BE 6 INCHES THICK AND UNDERLAIN BY GEOTEXTILE SEPARATOR. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
2. FOR PROTECTIVE LAYER, SEE NOTE 3 ON SHEET G-19.
3. HDPE SLOPE DRAIN SHALL BE SDR-11 AND IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
4. RIPRAP APRON SHALL BE CONSTRUCTED AT INLET OF 6-INCH HDPE SLOPE DRAIN. RIPRAP APRON SHALL BE 4 FEET WIDE AND CENTERED ON 6-INCH HDPE SLOPE DRAIN.
5. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
6. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
7. CONTRACTOR SHALL RE-ESTABLISH EXISTING GRADES, RIPRAP, VEGETATION, GEOTEXTILE SEPARATOR AND BASE AGGREGATE WITHIN AREA OF SLOPE DRAIN TRENCH EXCAVATION. BASE AGGREGATE THICKNESS SHALL BE 1 FOOT.
8. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
9. ALUMINIZED CMP CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
10. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
11. DURING CONSTRUCTION OF OSDF IMPACTED HAUL ROAD AT CELL 6, INSTALL SLOPE DRAIN NO. 2 BUT DO NOT CONNECT TO SLOPE DRAIN NO. 1 OR EPLTS PIPE. PRIOR TO CUTTING OR REMOVAL OF EXISTING ILTS PIPE SOUTH OF CELL 6, TIE-IN SLOPE DRAIN NO. 2 TO SLOPE DRAIN NO. 1 AND TO EXISTING EPLTS PIPE USING DETAILS TO BE PROVIDED BY CONSTRUCTION MANAGER. REMOVE SLOPE DRAIN NO. 1 SEGMENT LOCATED WEST OF TIE-IN LOCATION AND STOCKPILE MATERIAL AT LOCATIONS APPROVED BY CONSTRUCTION MANAGER.



C / G-18 SECTION
CELL 7 OSDF IMPACTED MATERIAL HAUL ROAD 42-IN DIA. CMP CULVERT CROSSING
SCALE: 1" = 4'



D / G-17 SECTION
CELL 6 OSDF IMPACTED MATERIAL HAUL ROAD SLOPE DRAIN NO. 1
SCALE: 1" = 8'

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	DGP	JAS	KRD	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	DGP	JAB	DGP	DGP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

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

CLIENT: **FLUOR FERNALD, INC.**

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: IMPACTED MATERIAL HAUL ROAD GRADING PLAN AND DETAILS I

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED

SIGNATURE

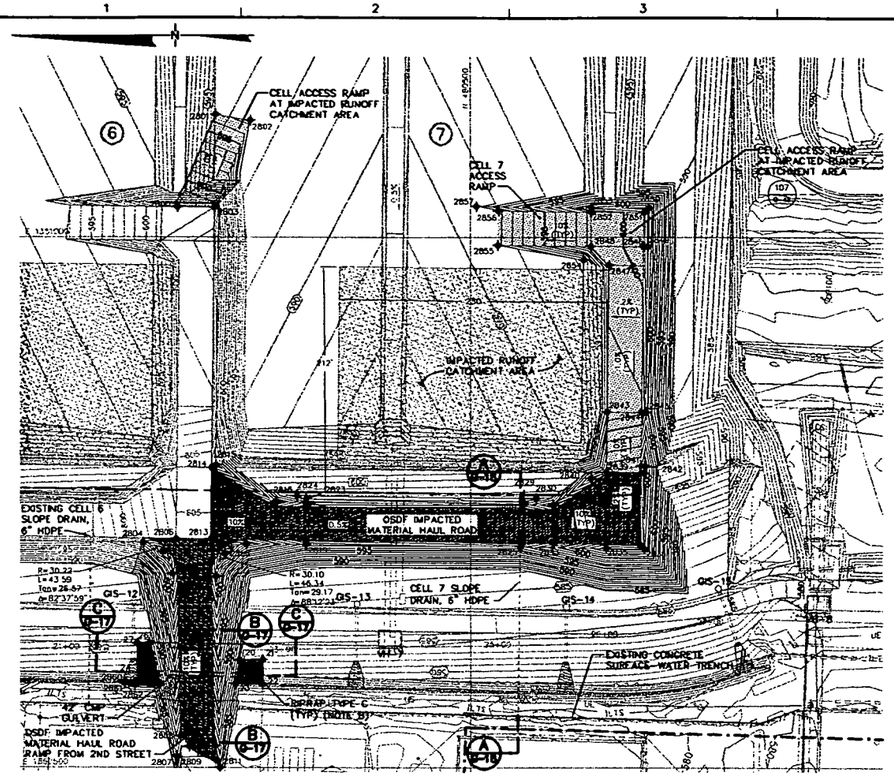
DATE

SEAL

GEOSYNTEC CONSULTANTS
1900 LAKE HEARN DRIVE ATLANTA, GEORGIA 30329 USA

PROJECT NO.:	20105
CONTRACT NO.:	95P5005028
FERNP DRAWING NO.:	00X-6000-C-00379
GEOSYNTEC PROJECT NO.:	001342-17.4
GEOSYNTEC DOCUMENT NO.:	F01-0053
SHEET NO.:	G-17
REVISION NO.:	0

CERTIFIED-FOR-CONSTRUCTION



PLAN (14, G-8)
OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP AT CELL 7
SCALE: 1" = 50'

OSDF IMPACTED MATERIAL HAUL ROAD AND ACCESS RAMP CONSTRUCTION CONTROL POINTS

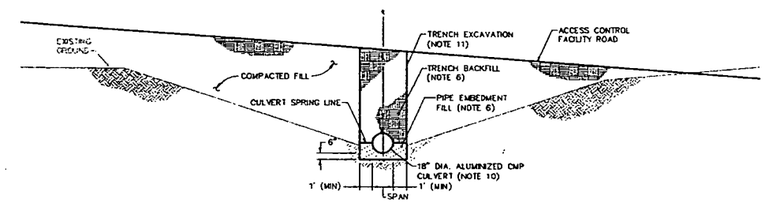
POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
2800	480771.73	1351028.14	601.40	2833	480421.67	1350711.62	597.65
2801	480736.15	1351115.04	593.27	2834	480393.13	1350711.02	603.51
2802	480703.89	1351109.40	592.58	2835	480373.18	1350707.02	604.51
2803	480737.29	1351027.71	601.40	2836	480337.18	1350706.58	604.51
2804	480803.48	1350712.28	603.49	2837	480341.13	1350710.63	602.51
2805	480776.36	1350682.98	603.33	2838	480340.31	1350778.12	603.88
2806	480773.11	1350715.91	604.51	2839	480372.31	1350778.51	603.88
2807	480772.96	1350510.23	588.08	2840	480387.18	1350772.83	604.40
2808	480768.99	1350529.79	588.00	2841	480340.23	1350784.52	603.88
2809	480761.09	1350519.98	585.00	2842	480336.23	1350784.47	605.88
2810	480736.78	1350520.50	585.00	2843	480371.61	1350835.23	598.18
2811	480732.32	1350500.09	584.95	2844	480339.82	1350834.84	598.82
2812	480736.32	1350680.43	602.99	2845	480335.82	1350834.79	600.82
2813	480741.10	1350715.52	604.51	2846	480337.71	1350990.83	600.38
2814	480740.28	1350783.01	605.88	2847	480369.92	1350973.49	599.57
2815	480736.25	1350785.22	607.64	2848	480386.92	1350991.43	599.40
2816	480680.57	1350750.78	601.14	2849	480333.71	1350990.78	602.38
2817	480681.73	1350746.80	599.25	2850	480333.27	1351026.78	602.38
2818	480707.79	1350711.11	603.17	2851	480337.32	1351022.83	600.38
2819	480652.87	1350710.44	597.68	2852	480386.53	1351023.43	599.40
2820	480652.82	1350714.44	595.69	2853	480386.48	1351027.43	601.40
2821	480652.70	1350748.44	596.33	2854	480393.78	1350978.33	592.14
2822	480652.65	1350750.44	598.34	2855	480474.26	1350992.50	590.67
2823	480652.47	1350753.63	598.74	2856	480473.87	1351024.50	590.67
2824	480661.04	1350758.45	598.73	2857	480494.44	1351028.75	590.80
2825	480453.39	1350708.00	596.69	2858	480727.74	1350702.10	606.51
2826	480451.36	1350711.98	594.68	2859	480785.34	1350703.70	606.51
2827	480450.97	1350743.98	595.32	2860	480820.27	1350581.43	584.83
2828	480450.93	1350747.98	597.32	2861	480820.43	1350579.44	584.84
2829	480450.89	1350751.16	595.73	2862	480811.27	1350578.16	585.34
2830	480438.75	1350753.73	595.61	2863	480811.11	1350580.16	585.34
2831	480422.60	1350747.63	600.29	2864	480789.02	1350577.58	585.34
2832	480421.34	1350743.61	598.29	2865	480789.47	1350579.57	585.34

RIPRAP LIMITS CONTROL POINTS

POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING
20	480714.53	1350601.76	24	480808.05	1350581.33
21	480692.78	1350602.13	25	480789.65	1350581.04
22	480693.31	1350578.85	26	480797.73	1350817.28
23	480718.49	1350579.39	27	480808.87	1350818.93

LEGEND

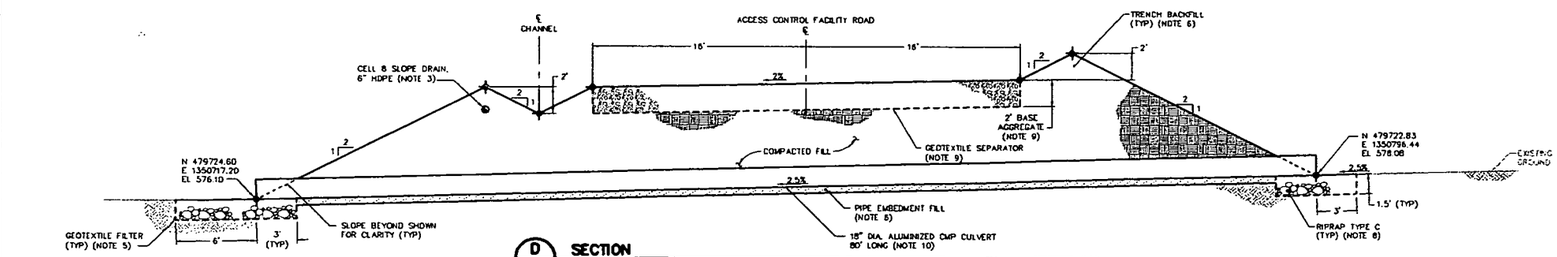
- 590 — EXISTING GROUND ELEVATION (FEET)
- 585 — FINISHED GRADE ELEVATION (FEET)
- 585 — EXISTING SUBGRADE ELEVATION (FEET)
- 600 — EXISTING COMPACTED CLAY LINER/PROTECTIVE CLAY LAYER ELEVATION (FEET)
- 595 — EXISTING PROTECTIVE LAYER ELEVATION (FEET) (NOTE 2)
- PERIMETER BERM BASELINE
- 12+00 — EXISTING EPLTS PIPE
- ILTS — EXISTING ILTS PIPE
- 2800 — CONSTRUCTION CONTROL POINT
- OSDF IMPACTED MATERIAL HAUL ROAD (NOTE 1)
- CELL ACCESS RAMP (NOTE 1)
- EXISTING CELL DESIGNATION



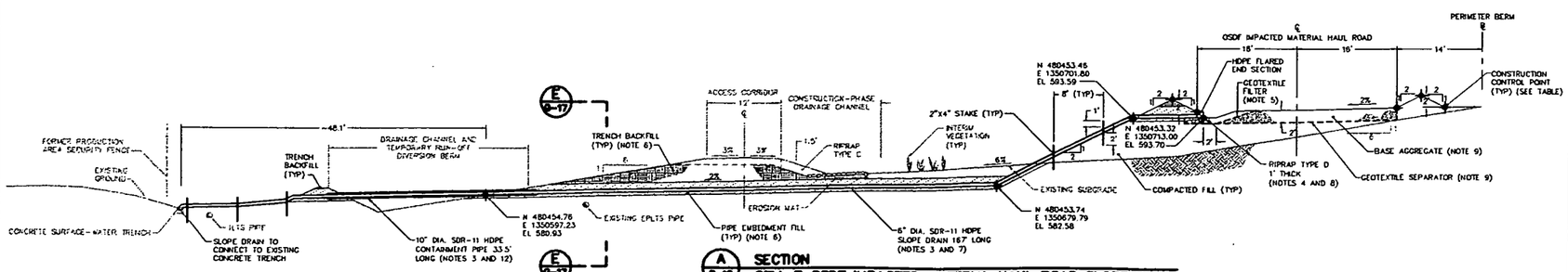
SECTION (E, G-18A)
ACCESS CONTROL FACILITY ROAD 18-IN DIA. CMP CULVERT EMBEDMENT
SCALE: 1" = 4'

NOTES:

1. CONTOURS WITHIN SHADED REGION ON OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP REPRESENT TOP OF BASE AGGREGATE. BASE AGGREGATE FOR CELL ACCESS RAMP SHALL BE 1-FOOT THICK AND UNDERLAIN BY GEOTEXTILE SEPARATOR. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
2. FOR PROTECTIVE LAYER, SEE NOTE 3 ON SHEET G-19.
3. HDPE SLOPE DRAIN AND CONTAINMENT PIPE SHALL BE SDR-11 AND IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
4. RIPRAP APRON SHALL BE CONSTRUCTED AT INLET OF 6-INCH HDPE SLOPE DRAIN. RIPRAP APRON SHALL BE 4 FEET WIDE AND CENTERED ON 6-INCH HDPE SLOPE DRAIN.
5. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
6. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
7. CONTRACTOR SHALL RE-ESTABLISH EXISTING GRADES, RIPRAP, VEGETATION, GEOTEXTILE SEPARATOR AND BASE AGGREGATE WITHIN AREA OF SLOPE DRAIN TRENCH EXCAVATION. BASE AGGREGATE THICKNESS SHALL BE 1 FOOT.
8. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
9. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
10. ALUMINIZED CMP CULVERT AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
11. TRENCH EXCAVATION IS SHOWN VERTICAL AS DESIGNED. SHORING AND/OR STABLE TRENCH SIDESLOPES SHALL BE MAINTAINED FOR SAFETY AND TO PROTECT ADJACENT UTILITIES AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION SECTION 02213.
12. PROTECT SLOPE DRAIN ACROSS DRAINAGE CHANNEL AND TEMPORARY DIVERSION BERM USING 10-INCH CONTAINMENT PIPE. FILL ENDS OF CONTAINMENT PIPE WITH GROUT FOR A MINIMUM OF 2 FEET.



SECTION (D, G-18A)
ACCESS CONTROL FACILITY ROAD 18-IN DIA. CMP CULVERT CROSSING
SCALE: 1" = 4'



SECTION (A, G-18)
CELL 7 OSDF IMPACTED MATERIAL HAUL ROAD SLOPE DRAIN
SCALE: 1" = 8'

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LWG	JJA	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LWG	JJA	TEZ	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.09.79	CFC SUBMITTAL TO FF/DOE/EPA	DGP	JAS	KRD	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	DGP	JAB	KRD	DGP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE IN FEET (50 25 0 50 100)

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

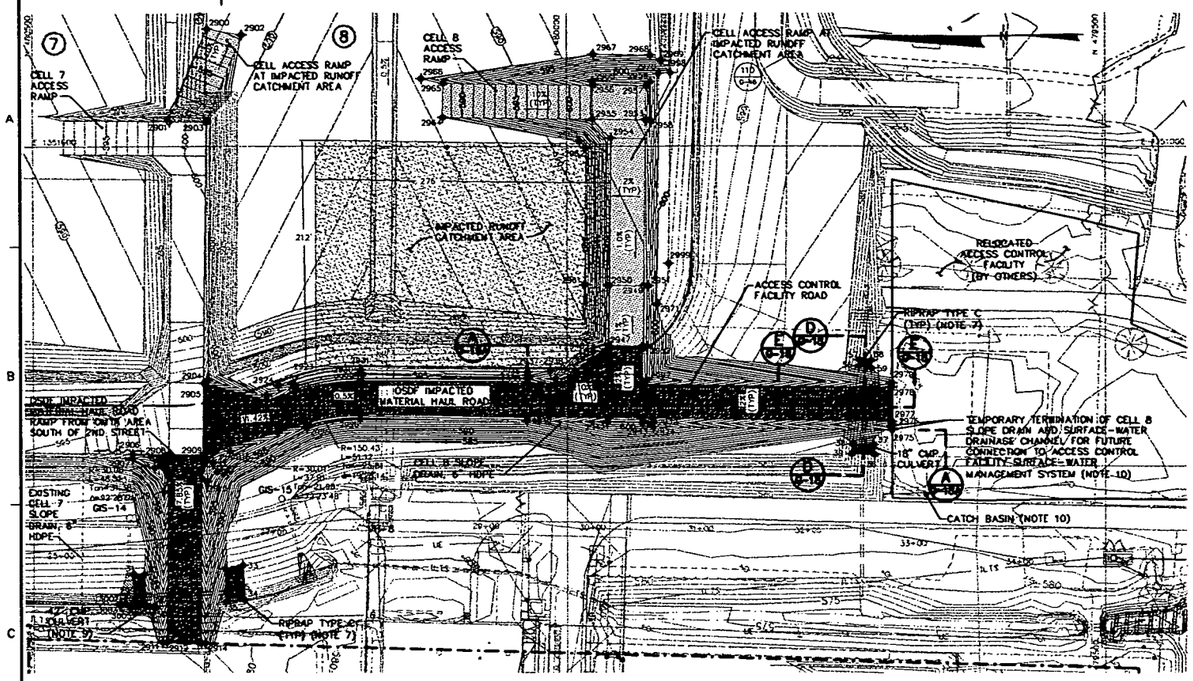
PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

TITLE:
IMPACTED MATERIAL HAUL ROAD
GRADING PLAN AND DETAILS II

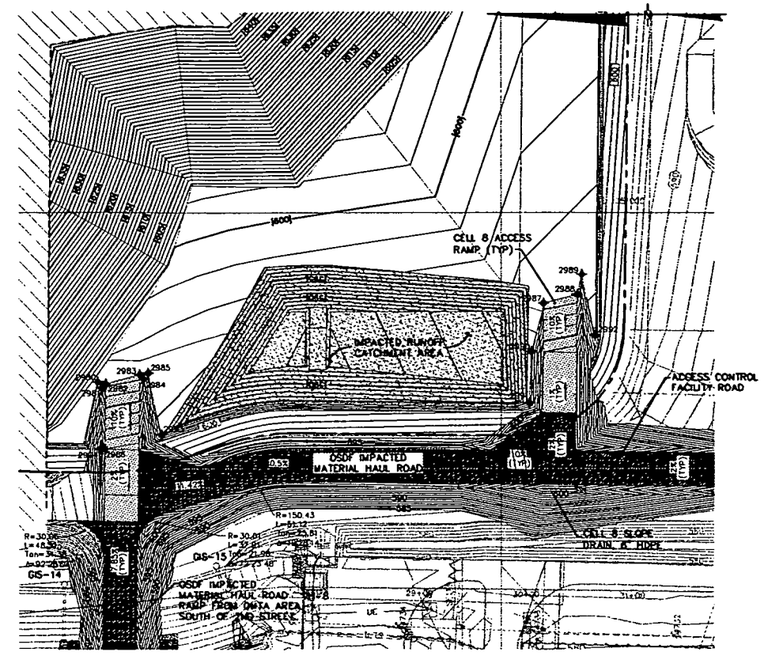
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION, UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

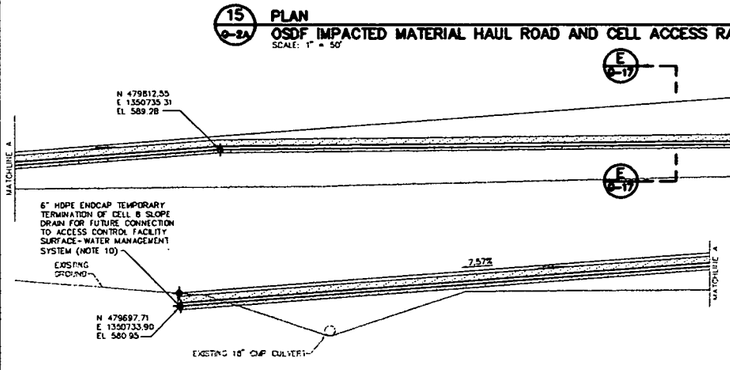
PROJECT NO.:	70105
CONTRACT NO.:	03JT0699
FEMP DRAWING NO.:	90X-6000-G-00360
GEOSYNTEC PROJECT NO.:	003211-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1054
SHEET NO.:	G-18
REVISION NO.:	1



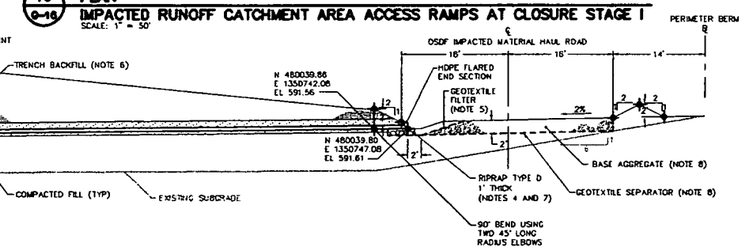
15 (0-2A) PLAN
OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP AT CELL 8
SCALE: 1" = 50'



16 (0-1B) PLAN
IMPACTED RUNOFF CATCHMENT AREA ACCESS RAMPS AT CLOSURE STAGE I
SCALE: 1" = 50'



A (0-18A) SECTION
CELL 8 OSDF IMPACTED MATERIAL HAUL ROAD SLOPE DRAIN
SCALE: 1" = 8'



E (0-17)

LEGEND

600	EXISTING GROUND ELEVATION (FEET)
600	FINISHED GRADE ELEVATION (FEET)
585	EXISTING SUBGRADE ELEVATION (FEET)
595	EXISTING COMPACTED CLAY LINER/PROTECTIVE CLAY LAYER ELEVATION (FEET)
590	EXISTING PROTECTIVE LAYER ELEVATION (FEET) (NOTE 2)
605	IMPACTED MATERIAL ELEVATION (FEET)
	PERIMETER BERM BASELINE
12+00	EXISTING EPLTS PIPE
ILTS	EXISTING ILTS PIPE
2900	CONSTRUCTION CONTROL POINT
	OSDF IMPACTED MATERIAL HAUL ROAD (NOTE 1)
	CELL ACCESS RAMP (NOTE 1)
	NON-IMPACTED RUN-OFF AREA
8	EXISTING CELL DESIGNATION

NOTES:

1. CONTOURS WITHIN SHADED REGION ON OSDF IMPACTED MATERIAL HAUL ROAD AND CELL ACCESS RAMP REPRESENT TOP OF BASE AGGREGATE. BASE AGGREGATE FOR CELL ACCESS RAMP SHALL BE 1-FOOT THICK AND UNDERLAIN BY GEOTEXTILE SEPARATOR. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
2. FOR PROTECTIVE LAYER, SEE NOTE 3 ON SHEET G-19.
3. HDPE SLOPE DRAIN SHALL BE SDR-11 AND IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
4. RIPRAP APRON SHALL BE CONSTRUCTED AT INLET OF 6-INCH HDPE SLOPE DRAIN. RIPRAP APRON SHALL BE 4 FEET WIDE AND CENTERED ON 6-INCH HDPE SLOPE DRAIN.
5. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
6. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
7. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
8. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
9. ALUMINIZED CMP CULVERT AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721. CONTROL POINTS SHOWN AT ENDS OF CULVERT CORRESPOND TO INVERT ELEVATIONS. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215. DETAILS FOR PIPE EMBEDMENT AND CULVERT CROSSING ARE SIMILAR TO SECTIONS B AND C SHOWN ON DRAWING G-17.
10. CATCH BASIN WILL BE USED AS A DISCHARGE POINT FOR IMPACTED SURFACE-WATER FROM ACCESS CONTROL FACILITY. ACCESS CONTROL FACILITY WILL BE GRADED TO PROVIDE POSITIVE DRAINAGE TO CATCH BASIN. CELL 8 SLOPE DRAIN AND SURFACE-WATER DRAINAGE CHANNEL FROM ACCESS ROAD SHALL DRAIN TO CATCH BASIN. APPROPRIATE SEDIMENT CONTROLS SHALL BE PROVIDED PRIOR TO DISCHARGE TO LEACHATE TRANSMISSION SYSTEM. SURFACE-WATER MANAGEMENT AND EROSION CONTROLS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270. CONNECTION TO LEACHATE TRANSMISSION SYSTEM SHALL BE DETERMINED AT A FUTURE DATE.

RIPRAP LIMITS CONTROL POINTS

POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING
28	480405.40	1350370.81	33	480303.90	1350606.54	38	479734.44	1350720.39
29	480395.38	1350370.54	34	480302.99	1350574.93	39	479735.31	1350711.41
30	480398.11	1350398.62	35	480319.92	1350572.55	56	479726.85	1350793.58
31	480406.30	1350399.56	36	479713.61	1350710.93	57	479726.26	1350789.34
32	480370.81	1350603.45	37	479714.77	1350719.85	58	479757.17	1350788.31
						59	479756.91	1350791.51

OSDF IMPACTED MATERIAL HAUL ROAD AND ACCESS RAMP CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	POINT NO.	NORTHING	EASTING	ELEVATION
2900	480338.18	1351110.15	591.27	2954	479958.73	1351007.61	602.35
2901	480371.76	1351023.25	599.70	2955	479975.73	1351025.54	602.18
2902	480303.92	1351104.51	590.58	2956	479975.34	1351057.54	602.18
2903	480337.32	1351022.83	600.38	2957	479976.12	1351058.93	603.17
2904	480338.27	1350781.18	605.50	2958	479972.51	1351024.89	605.17
2905	480340.31	1350778.12	603.88	2959	479922.07	1351060.89	605.17
2906	480407.13	1350711.44	599.11	2960	479975.29	1351061.54	604.18
2907	480407.18	1350707.44	601.11	2961	479983.89	1350869.62	589.33
2908	480373.13	1350711.02	602.51	2962	479982.12	1350998.36	590.62
2909	480341.13	1350710.83	602.51	2963	479988.33	1351004.91	590.55
2910	480377.56	1350675.70	600.00	2964	480113.36	1351027.25	588.22
2911	480379.29	1350534.42	582.00	2965	480114.85	1351059.24	588.23
2912	480375.29	1350534.37	580.00	2966	480135.42	1351083.49	588.17
2913	480343.30	1350533.50	580.00	2967	479974.98	1351086.65	591.62
2914	480339.30	1350533.45	582.00	2968	479921.95	1351085.85	592.68
2915	480337.44	1350885.70	601.34	2969	479911.88	1351080.76	595.17
2916	480316.16	1350714.04	602.33	2970	479914.16	1351088.61	601.25
2917	480271.75	1350731.70	598.18	2971	479915.80	1350851.74	599.17
2918	480281.86	1350762.08	596.80	2972	479919.94	1350744.62	599.43
2919	480281.92	1350766.22	598.70	2973	479919.99	1350740.62	597.43
2920	480244.93	1350739.83	593.71	2974	479920.04	1350738.62	599.43
2921	480255.07	1350770.19	594.35	2975	479697.71	1350733.90	582.59
2922	480256.23	1350774.02	596.35	2976	479697.66	1350737.90	580.59
2923	480257.16	1350777.07	594.75	2977	479697.61	1350741.90	582.59
2924	480270.59	1350775.41	594.74	2978	479697.81	1350773.90	583.28
2925	480243.79	1350736.01	595.71	2979	479697.56	1350777.90	585.26
2926	480193.54	1350743.98	595.37	2980	480379.04	1350841.35	597.83
2927	480193.50	1350747.98	593.37	2981	480375.81	1350835.74	600.14
2928	480193.19	1350779.96	594.01	2982	480371.56	1350839.67	597.74
2929	480193.14	1350783.96	596.01	2983	480339.46	1350848.00	597.51
2930	480193.12	1350787.15	594.42	2984	480335.51	1350843.75	599.93
2931	480193.09	1350789.88	594.38	2985	480331.47	1350849.64	597.35
2932	480037.89	1350742.08	594.59	2986	480372.31	1350778.51	603.86
2933	480037.84	1350746.08	592.59	2987	479959.86	1350915.01	596.40
2934	480037.45	1350778.06	593.23	2988	479927.76	1350923.36	596.16
2935	480037.40	1350782.08	595.23	2989	479923.53	1350941.88	598.31
2936	480037.37	1350785.25	593.64	2990	479971.35	1350869.47	595.79
2937	480037.33	1350787.95	593.58	2991	479973.39	1350821.55	595.25
2938	480016.02	1350788.63	593.94	2992	479910.87	1350885.05	595.31
2939	480011.34	1350781.74	598.09	2993	480318.67	1350781.85	598.36
2940	480010.08	1350777.72	595.97	2994	480376.31	1350778.56	605.86
2941	479961.94	1350745.13	600.18	2995	480317.16	1350580.97	577.23
2942	479961.99	1350741.13	602.18	2996	480398.82	1350578.63	577.67
2943	479929.99	1350740.74	602.18	2997	479925.50	1350780.69	602.94
2944	479929.94	1350744.74	600.18	2998	479902.98	1351058.64	601.07
2945	479929.55	1350776.74	600.82	2999	479905.16	1350890.31	599.32
2946	479929.11	1350812.23	601.53	3000	480331.43	1350703.34	604.51
2947	479981.11	1350812.62	601.53	3001	480388.07	1350898.39	604.51
2948	479975.73	1350807.10	602.13	3002	480418.53	1350571.17	581.81
2949	479928.42	1350868.95	601.81	3003	480418.76	1350569.17	581.81
2950	479960.42	1350869.34	600.97	3004	480409.03	1350569.25	582.57
2951	479924.42	1350868.90	603.61	3005	480409.27	1350567.26	582.57
2952	479923.11	1350812.18	603.53	3006	480386.55	1350568.29	582.57
2953	479926.51	1351024.94	603.17	3007	480385.86	1350566.27	582.57

CERTIFIED-FOR-CONSTRUCTION

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	04.01.22	CFC SUBMITTAL TO FF/DOE/EPA	LMC	JJA	TTZ	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	LMC	JJA	TTZ	DKP	RB
A	-	NOT ISSUED	-	-	-	-	-

50 25 0 50 100
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
IMPACTED MATERIAL HAUL ROAD
GRADING PLAN AND DETAILS III

THIS DRAWING MAY NOT BE USED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED

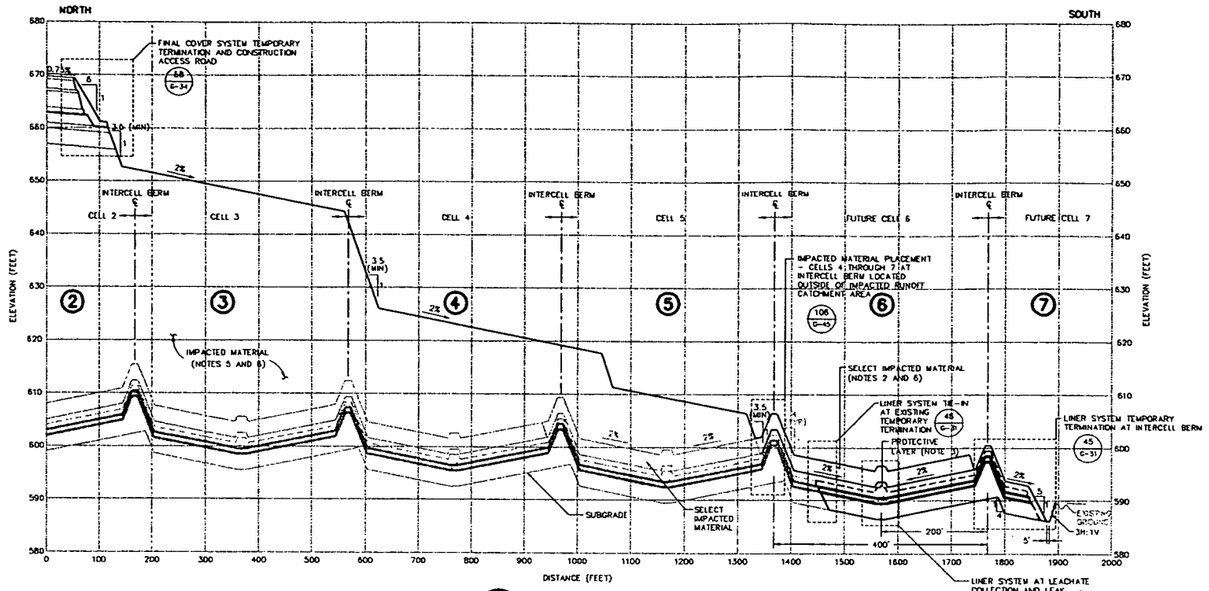
SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

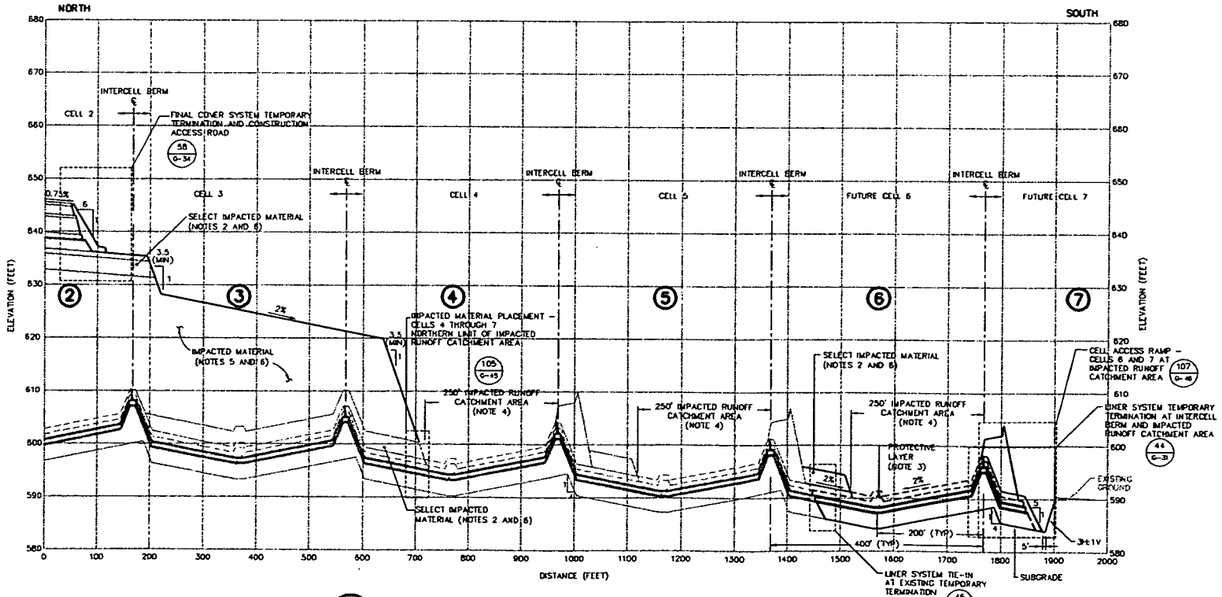
PROJECT NO:	20105
CONTRACT NO:	03F0599
FDMP DRAWING NO:	90X-6000-D-00418
GEOSYNTEC PROJECT NO:	GC3711-06.04
GEOSYNTEC DOCUMENT NO:	F03-0041
SHEET NO:	G-18A
REVISION NO:	0

000027

5319



A G-3 SECTION
NORTH-SOUTH CELL 6
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'
REF: FR9601298



B G-3 SECTION
NORTH-SOUTH CELL 6 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'
REF: FR9601298

NOTES:

1. SECTIONS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS
2. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
4. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
5. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V. INTERIM SLOPE CONFIGURATION SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCE AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS. EXISTING IMPACTED MATERIAL GRADES SHOWN ARE APPROXIMATE.
8. IMPACTED MATERIAL PLACEMENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JNO	KRD	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JNO	KRD	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: OSDF NORTH-SOUTH SECTIONS I

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED

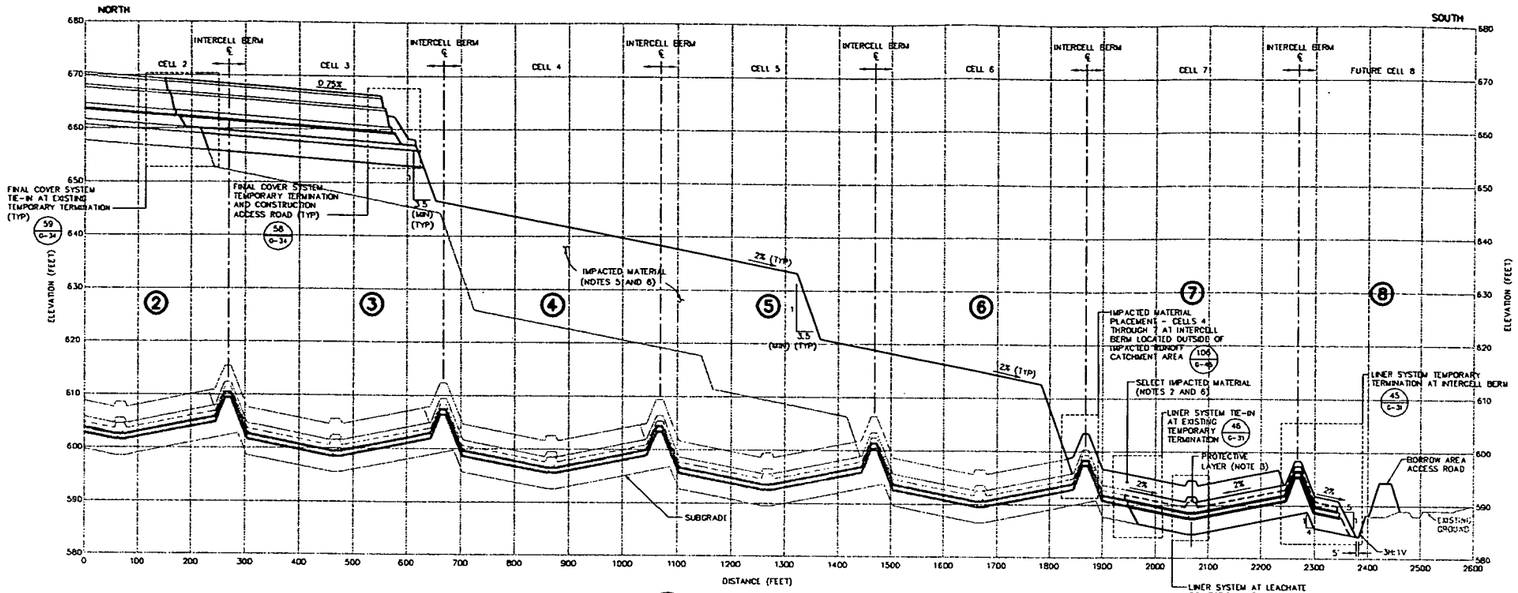
SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1100 LAST HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

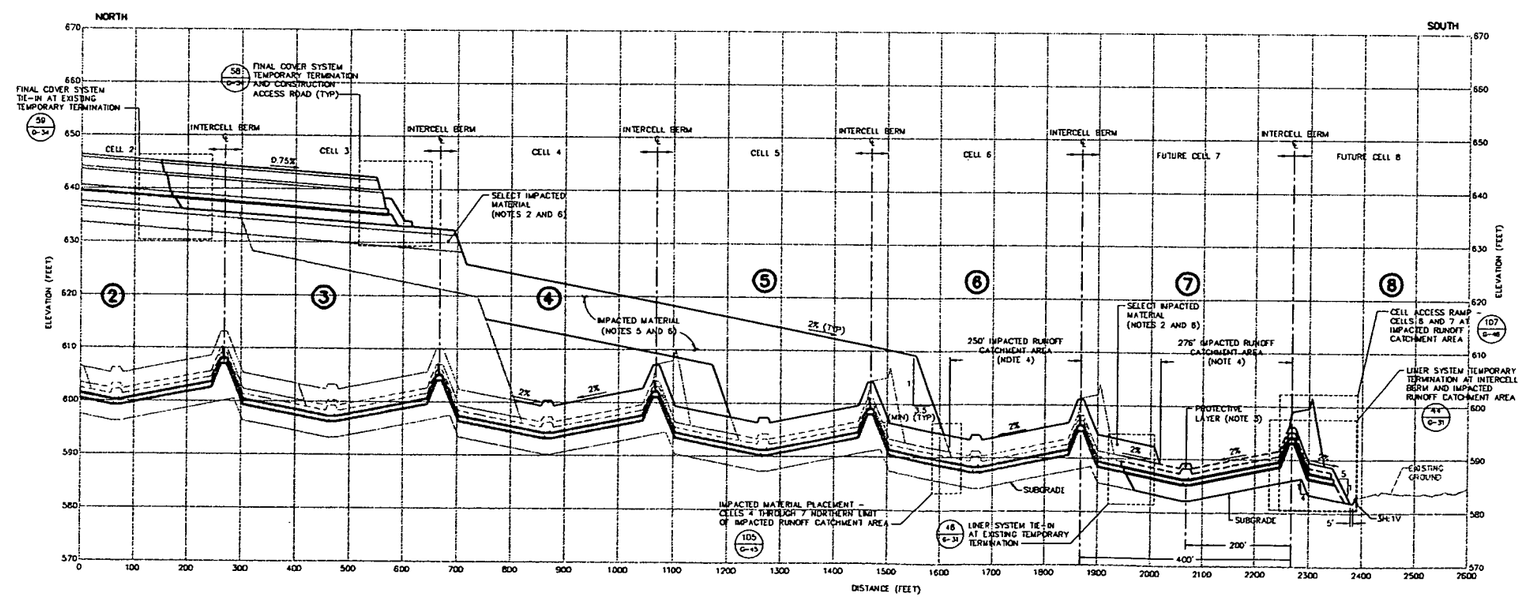
PROJECT NO:	20105
CONTRACT NO:	95P5005078
FEMP DRAWING NO:	901-6000-G-00381
GEOSYNTEC PROJECT NO:	GG1342-17.4
GEOSYNTEC DOCUMENT NO:	F01-0021
SHEET NO:	G-19
REVISION NO:	0

CERTIFIED-FOR-CONSTRUCTION

000028



A / G-6 SECTION
NORTH-SOUTH CELL 7
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'



B / G-6 SECTION
NORTH-SOUTH CELL 7 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'

NOTES:

1. SECTIONS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240 IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
4. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
5. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V. INTERIM SLOPE CONFIGURATION SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCE AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS. EXISTING IMPACTED MATERIAL GRADES SHOWN ARE APPROXIMATE.
6. IMPACTED MATERIAL PLACEMENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	KRD	JAS	KRD	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	KRD	JAS	KRD	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.99	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JND	KRD	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JND	KRD	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

100 50 0 100 200 HORIZONTAL SCALE IN FEET
10 5 0 10 20 VERTICAL SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: OSDF NORTH-SOUTH SECTIONS II

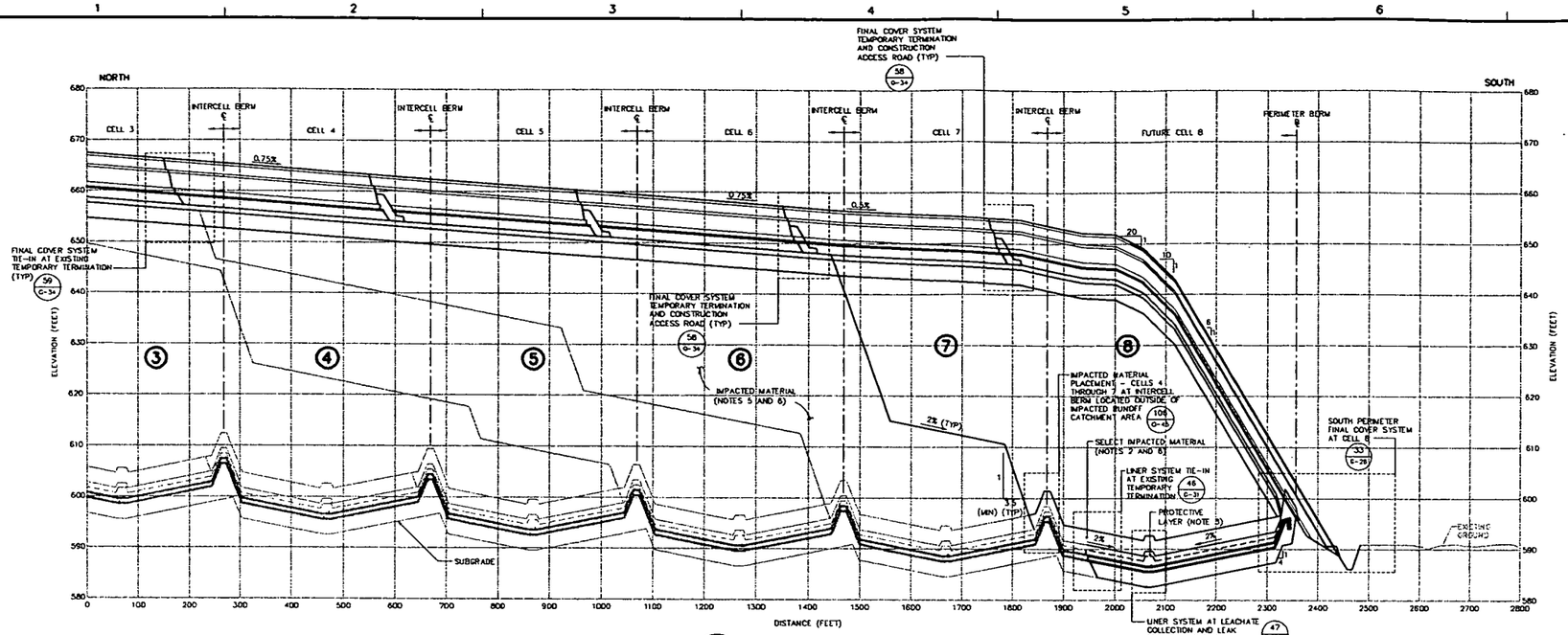
THIS DRAWING MAY NOT BE USED FOR PROJECT BIDDING OR CONSTRUCTION UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

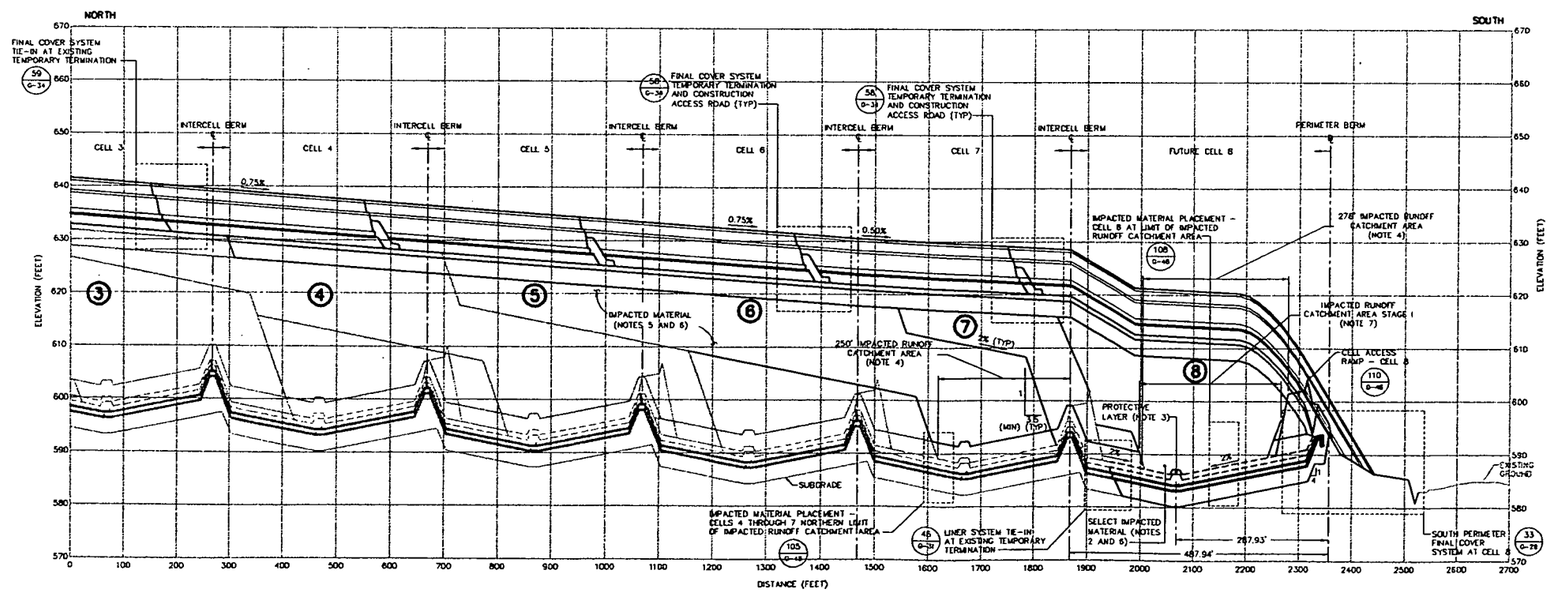
PROJECT NO:	20105
CONTRACT NO:	03T0699
FMP DRAWING NO:	80X-8000-C-00382
GEOSYNTEC PROJECT NO:	GO3211-06.04
GEOSYNTEC DOCUMENT NO:	F03-1022
SHEET NO:	G-20
REVISION NO:	1

CERTIFIED-FOR-CONSTRUCTION

5319



A SECTION
NORTH-SOUTH CELL 8
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'



B SECTION
NORTH-SOUTH CELL 8 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'

NOTES:

1. SECTIONS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
4. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
5. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V. INTERIM SLOPE CONFIGURATION SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCE AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS. EXISTING IMPACTED MATERIAL GRADES SHOWN ARE APPROXIMATE.
6. IMPACTED MATERIAL PLACEMENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
7. DEVELOP AND MAINTAIN CELL 8 IMPACTED RUNOFF CATCHMENT AREA AS SHOWN ON DRAWINGS G-16 AND G-48 AND IN ACCORDANCE WITH SPECIFICATION SECTIONS 13010 AND 02270.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
C	04.01.22	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JAS	KRD	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JAS	KRD	DKP	RB
A	-	NOT ISSUED	-	-	-	-	-

100 50 0 100 200 HORIZONTAL SCALE IN FEET
10 5 0 10 20 VERTICAL SCALE IN FEET

OWNER/FACILITY: UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT: FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: OSDF NORTH-SOUTH SECTIONS III

THIS DRAWING MAY NOT BE USED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.

SIGN HERE
DATE

SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO:	20105
CONTRACT NO:	DJT06.99
TEMP DRAWING NO:	90X-8000-G-00419
GEOSYNTEC PROJECT NO:	GG3211-06.04
GEOSYNTEC DOCUMENT NO:	F03-0042
SHEET NO:	G-20A
REVISION NO:	0

CERTIFIED-FOR-CONSTRUCTION

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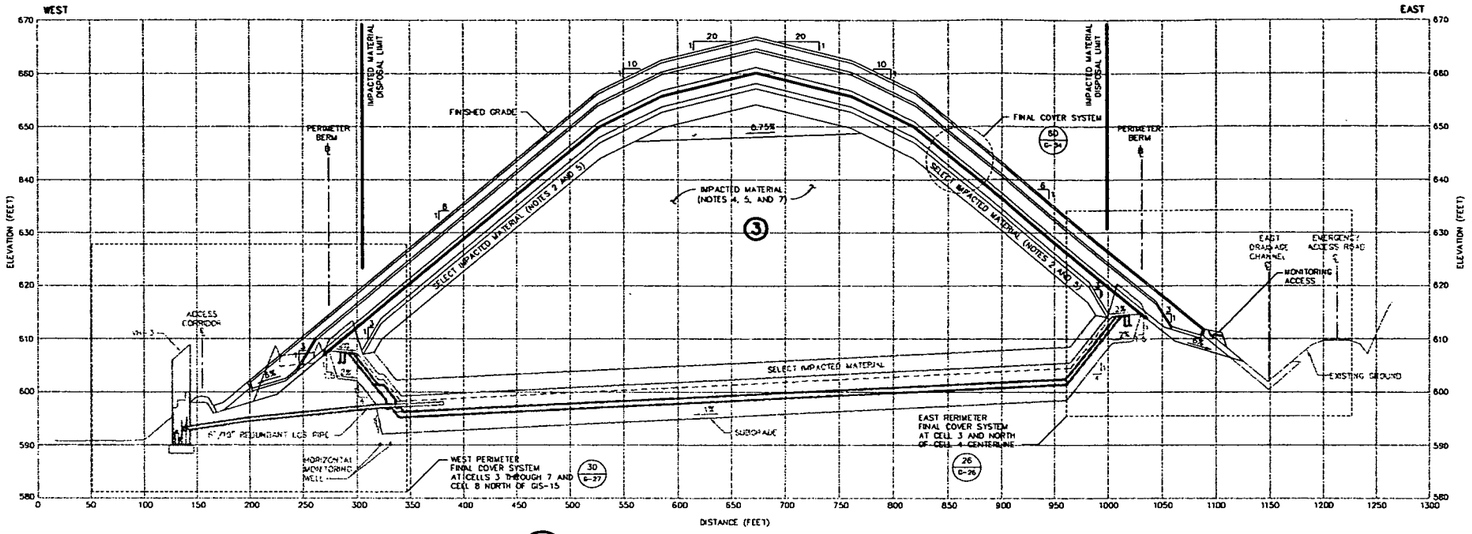
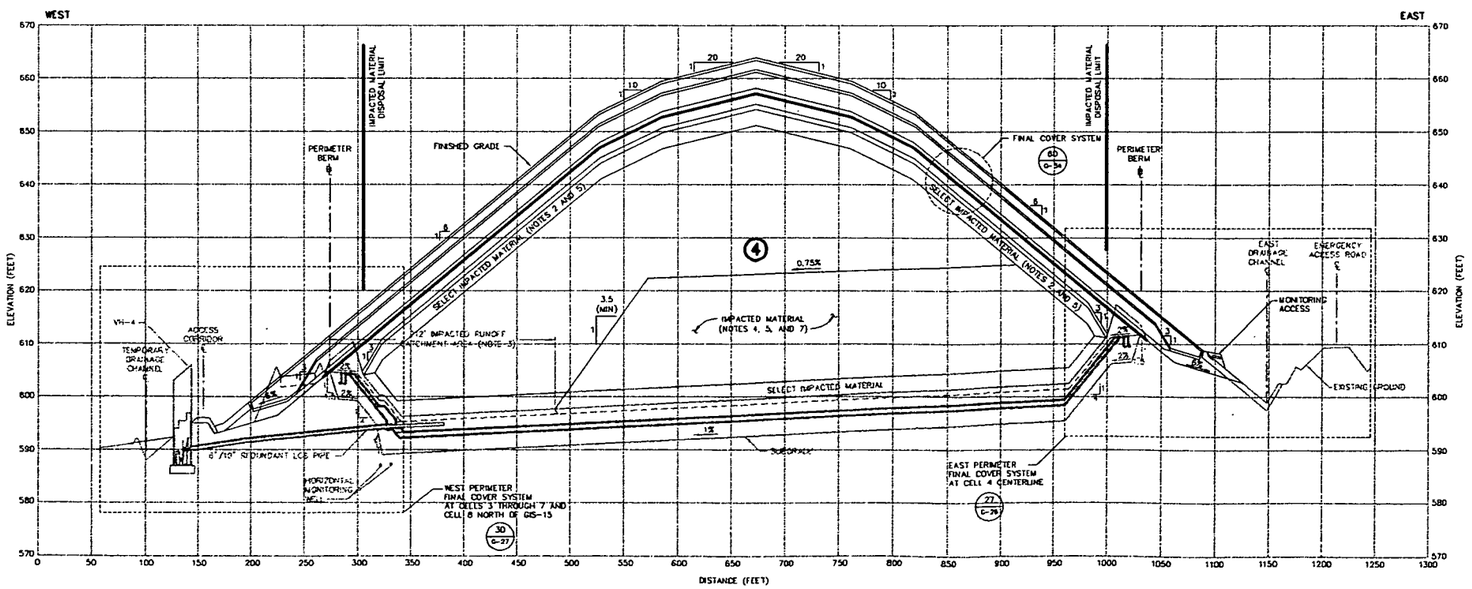


A / G-3 SECTION
WEST-EAST CELL 3 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



B / G-3 SECTION
WEST-EAST CELL 4 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

NOTES:

1. SECTIONS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL.
3. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN DOWNGRADIENT CELL IS CONSTRUCTED AND OPERATIONAL.
4. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V. INTERIM SLOPE CONFIGURATION SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCE AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS.
5. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
6. LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605 AND TERMINATE AT THE UPGRADIENT END WITH A 6-INCH MOLDED END CAP.
7. EXISTING IMPACTED MATERIAL GRADES SHOWN ARE APPROXIMATE.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	02.01.99	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JWD	KRD	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DGP	JFB
A	-	NOT ISSUED	-	-	-	-	-

HORIZONTAL SCALE IN FEET: 50 25 0 50 100
VERTICAL SCALE IN FEET: 10 5 0 10 20

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: OSDF WEST-EAST SECTIONS I

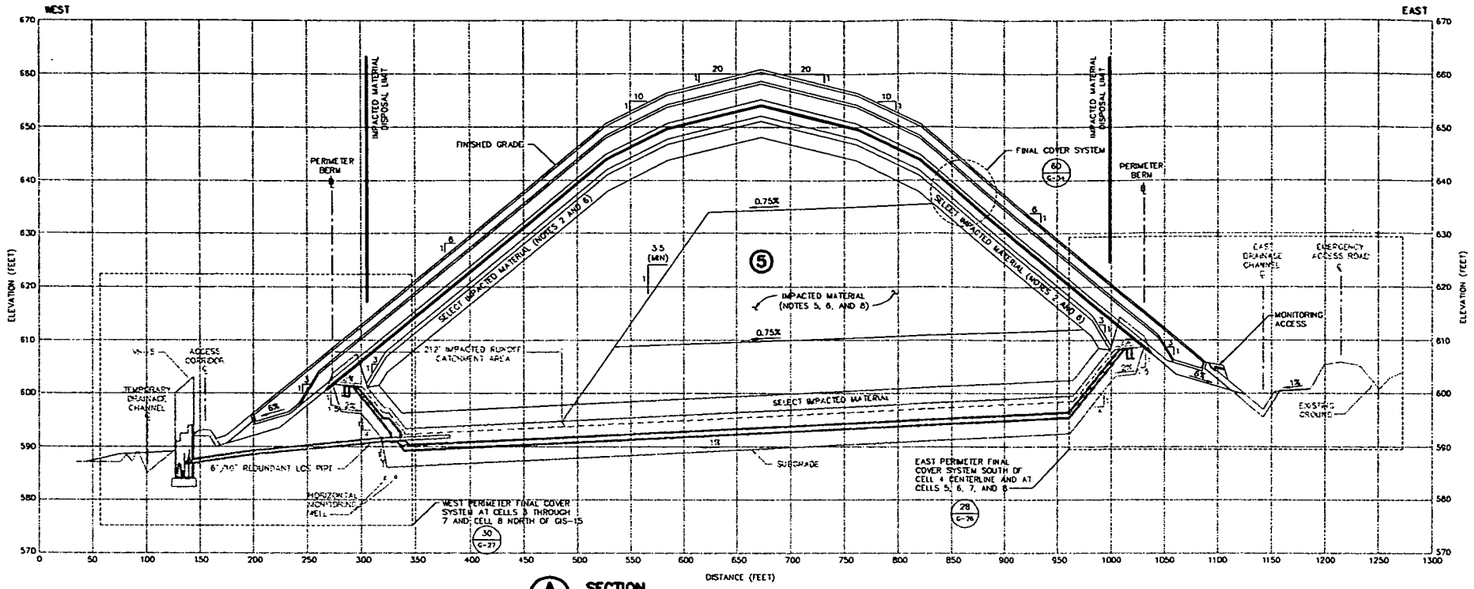
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1920 LAKE DRIVE, SUITE 200
ATLANTA, GEORGIA 30307 USA

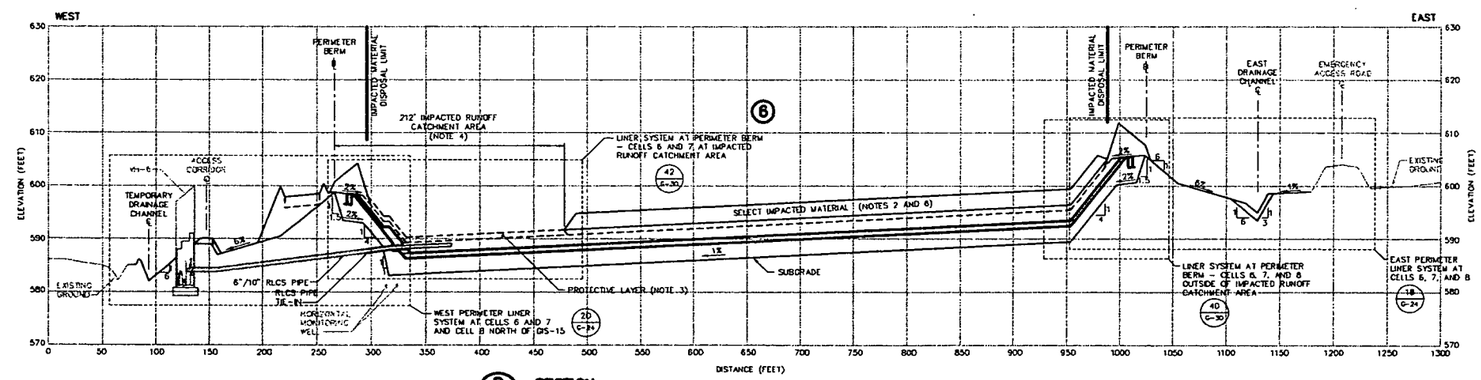
PROJECT NO.:	20105
CONTRACT NO.:	95PS005028
FLMP DRAWING NO.:	9DX-6000-C-00383
GEOSYNTEC PROJECT NO.:	GG1342-17.4
GEOSYNTEC DOCUMENT NO.:	F01-0023
SHEET NO.:	G-21
REVISION NO.:	0

CERTIFIED-FOR-CONSTRUCTION

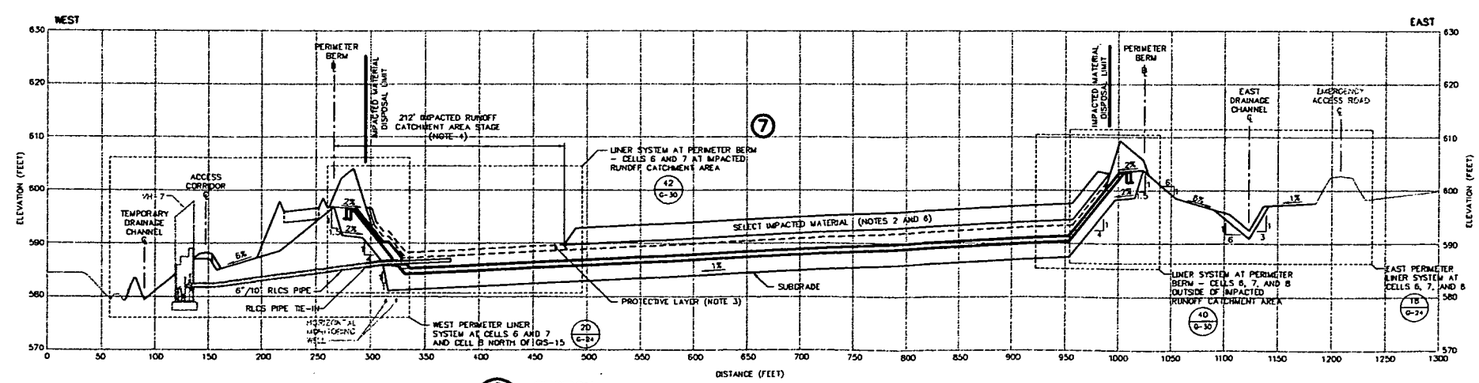
5319



A/G-3 SECTION
WEST-EAST CELL 5 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



B/G-4 SECTION
WEST-EAST CELL 6 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



C/G-6 SECTION
WEST-EAST CELL 7 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

NOTES:

1. SECTIONS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
4. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN DOWNGRADIENT CELL IS CONSTRUCTED AND OPERATIONAL.
5. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V. INTERIM SLOPE CONFIGURATION SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCE AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS.
6. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
7. LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605 AND TERMINATE AT THE UPGRADIENT END WITH A 6-INCH MOLDED END CAP.
8. EXISTING IMPACTED MATERIAL GRADES SHOWN ARE APPROXIMATE.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	KRD	JAS	KRD	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	KRD	JAS	KRD	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.79	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JWD	KRD	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DGP	JFB
A	-	NOT ISSUED	-	-	-	-	-

50 25 0 50 100 HORIZONTAL SCALE IN FEET
10 5 0 10 20 VERTICAL SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
OSDF WEST-EAST SECTIONS II

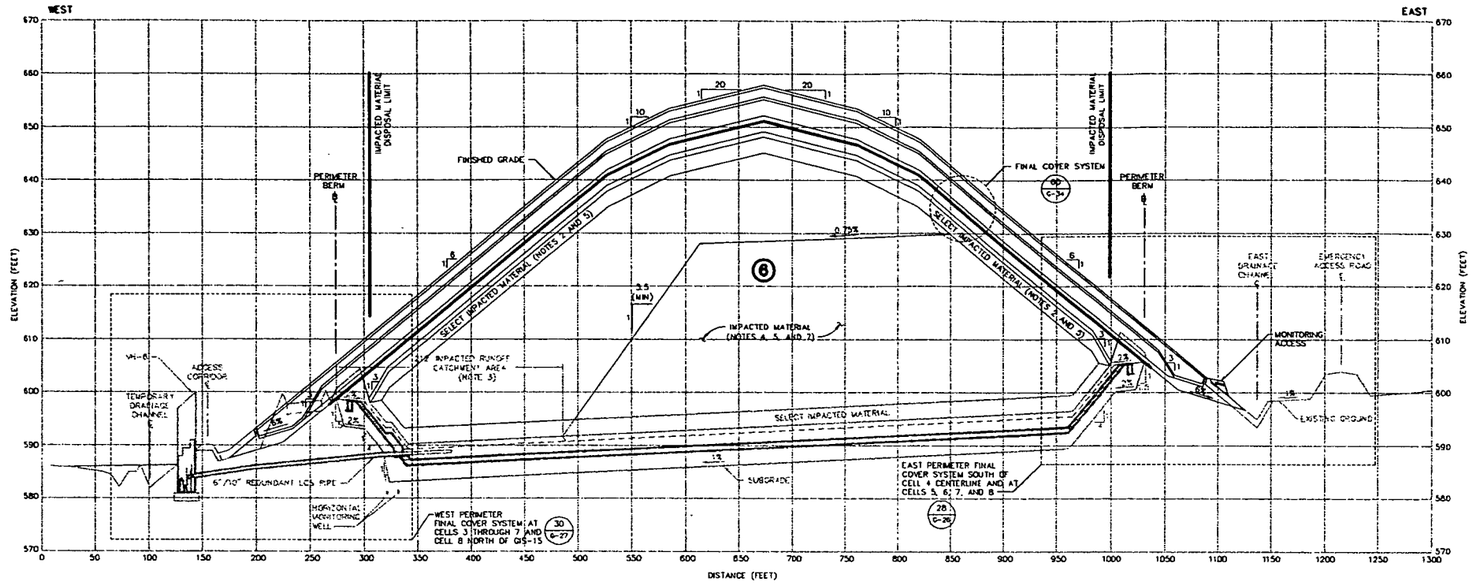
THIS DRAWING MAY NOT BE USED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

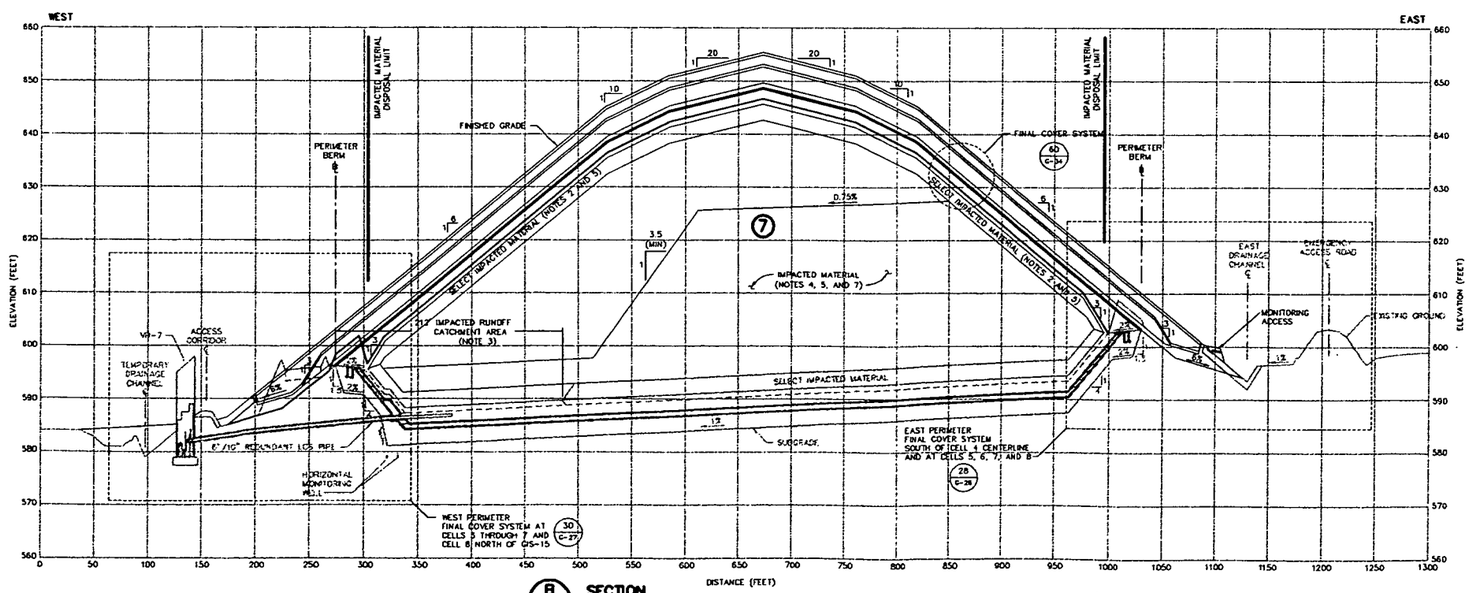
PROJECT NO.:	29105
CONTRACT NO.:	03T0699
FEMP DRAWING NO.:	90X-8000-C-00384
GEOSYNTEC PROJECT NO.:	GO3211-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1024
SHEET NO.:	G-22
REVISION NO.:	1

CERTIFIED-FOR-CONSTRUCTION

000032



A 0-11 SECTION
WEST-EAST CELL 6 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



B 0-11 SECTION
WEST-EAST CELL 7 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

NOTES:

1. SECTIONS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL.
3. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
4. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V. INTERIM SLOPE CONFIGURATION SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCE AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS.
5. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
6. LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605 AND TERMINATE AT THE UPGRADIENT END WITH A 6-INCH DIA MOLDED END CAP.
7. EXISTING IMPACTED MATERIAL GRADES SHOWN ARE APPROXIMATE.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APV. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	KRD	JAS	KRD	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	KRD	JAS	KRD	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.09.99	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JWO	KRD	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JWO	KRD	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

50 25 0 50 100 HORIZONTAL SCALE IN FEET

10 5 0 10 20 VERTICAL SCALE IN FEET

OWNER/FACILITY:

UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:

FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

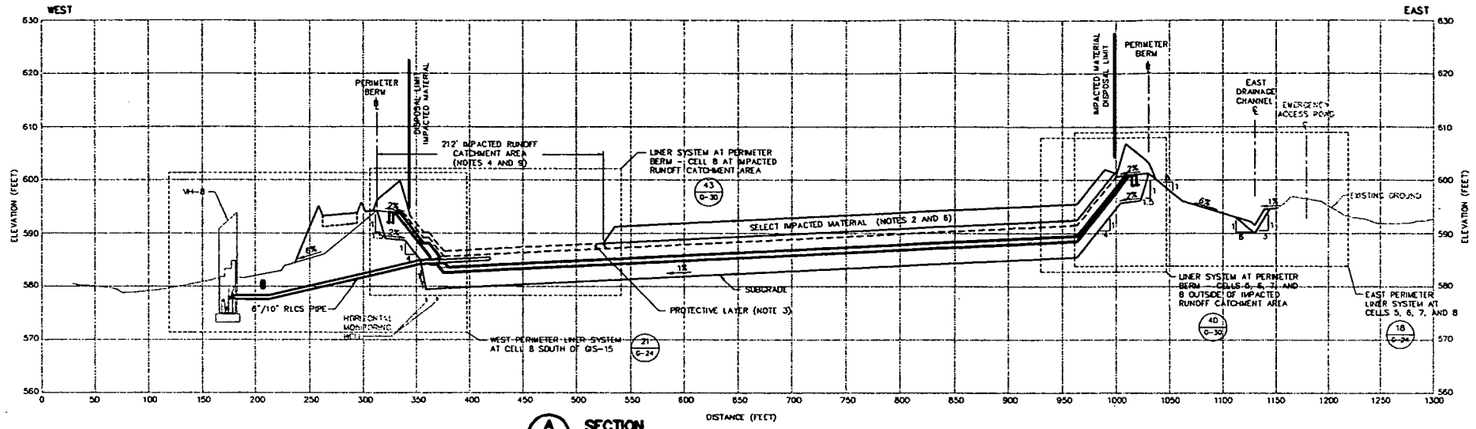
TITLE: OSDF WEST-EAST SECTIONS III

THIS DRAWING MAY NOT BE USED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

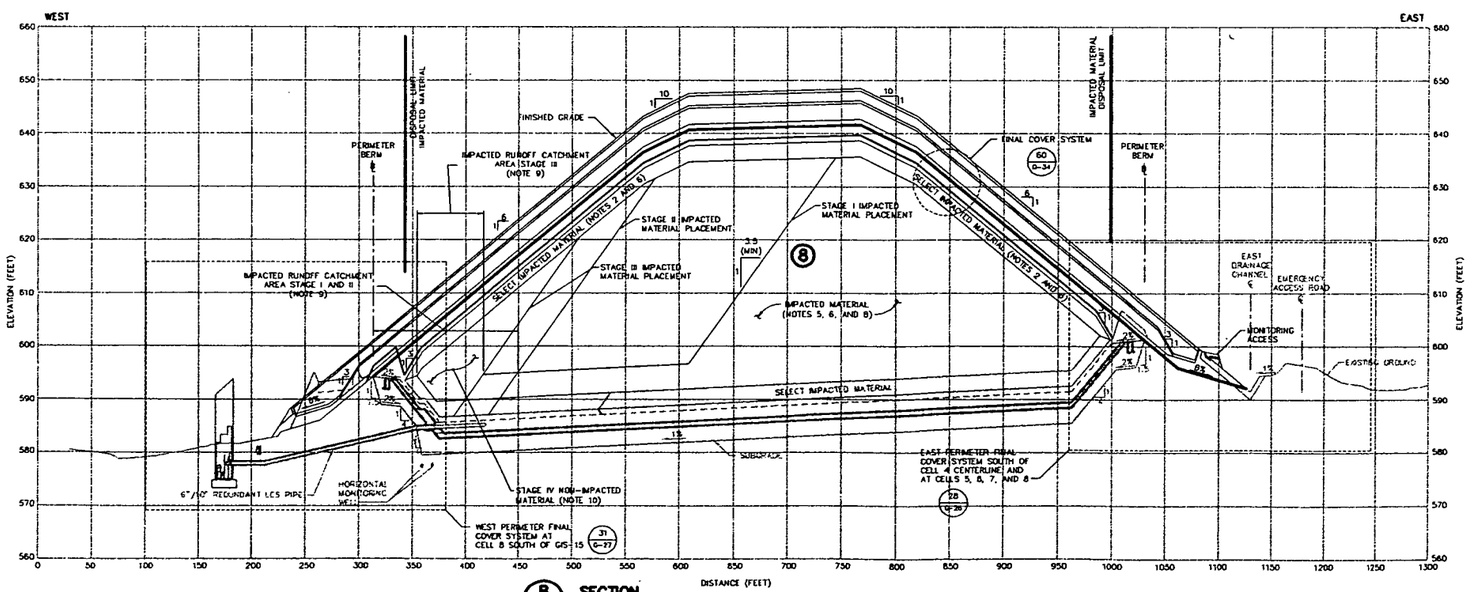
GEOSYNTEC CONSULTANTS
1000 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO.:	20105
CONTRACT NO.:	03-TD699
FEMP DRAWING NO.:	90X-6000-G-00385
GEOSYNTEC PROJECT NO.:	D03211-08.04
GEOSYNTEC DOCUMENT NO.:	F03-1025
SHEET NO.:	G-23
REVISION NO.:	1

CERTIFIED-FOR-CONSTRUCTION



A G-6A SECTION
WEST-EAST CELL 8 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



B G-15A SECTION
WEST-EAST CELL 8 AT IMPACTED RUNOFF CATCHMENT AREA
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

NOTES:

1. SECTIONS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
4. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
5. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V. INTERIM SLOPE CONFIGURATION SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY AND MAY VARY BASED ON SEQUENCE AND SCHEDULE FOR REMOVAL OF IMPACTED MATERIAL FROM OPERABLE UNITS.
6. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
7. LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605 AND TERMINATE AT THE UPGRADIENT END WITH A 6-INCH DIA MOLDED END CAP.
8. EXISTING IMPACTED MATERIAL GRADES SHOWN ARE APPROXIMATE.
9. DEVELOP AND MAINTAIN CELL 8 IMPACTED RUNOFF CATCHMENT AREA AS SHOWN ON DRAWINGS G-15 AND G-46 AND IN ACCORDANCE WITH SPECIFICATION SECTIONS 13010 AND 02270.
10. STAGE IV GRADES TO BE ACHIEVED BY FILLING FROM STAGE III WITH NON-IMPACTED MATERIAL. NON IMPACTED MATERIAL CAPACITY IS APPROXIMATELY 16,500 CUBIC YARDS.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	04.01.03	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JRO	KRD	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JRO	KRD	DKP	RB
A	-	NOT ISSUED	-	-	-	-	-

HORIZONTAL SCALE IN FEET: 50 25 0 50 100
VERTICAL SCALE IN FEET: 10 5 0 10 20

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

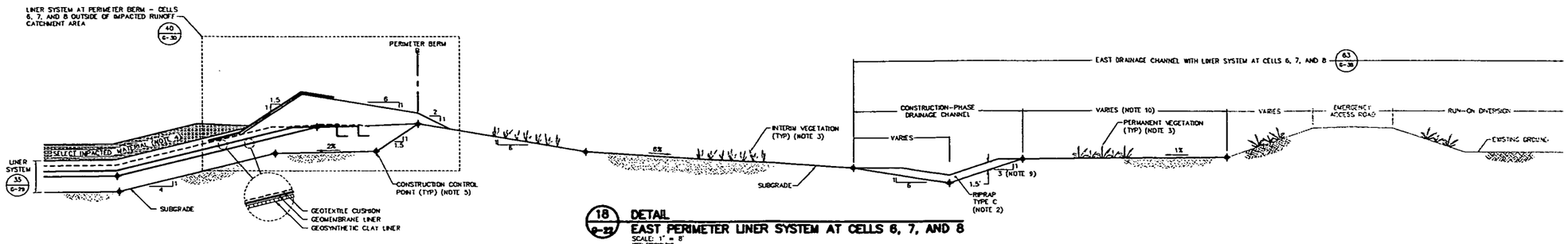
TITLE: OSDF WEST-EAST SECTIONS IV

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED

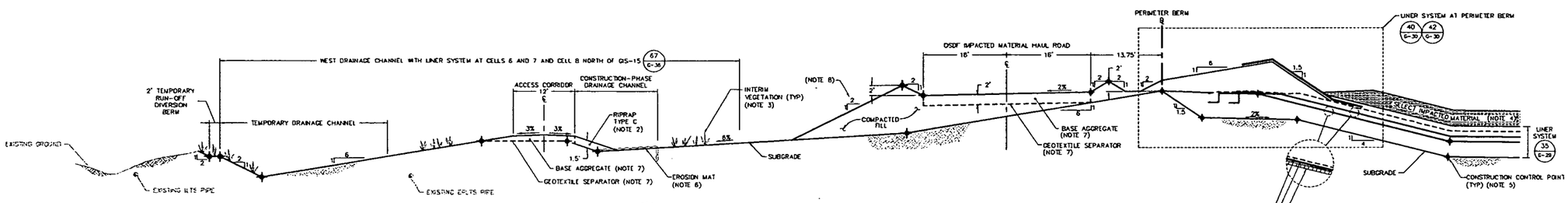
GEOSYNTEC CONSULTANTS
1900 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30317 USA

PROJECT NO.:	20105
CONTRACT NO.:	03FF0699
FEMP DRAWING NO.:	90X-8000-G-00420
GEOSYNTEC PROJECT NO.:	GG3711-06.04
GEOSYNTEC DOCUMENT NO.:	F03-0064
SHEET NO.:	G-23A
REVISION NO.:	0

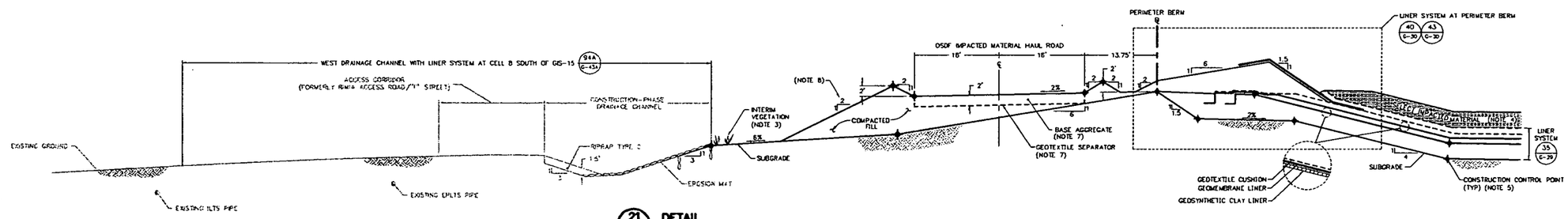
CERTIFIED-FOR-CONSTRUCTION



18 / G-22 DETAIL
EAST PERIMETER LINER SYSTEM AT CELLS 6, 7, AND 8
SCALE: 1" = 8'



20 / G-22 DETAIL
WEST PERIMETER LINER SYSTEM AT CELLS 6 AND 7 AND CELL 8 NORTH OF GIS-15
SCALE: 1" = 8'



21 / G-23A DETAIL
WEST PERIMETER LINER SYSTEM AT CELL 8 SOUTH OF GIS-15
SCALE: 1" = 8'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
4. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE THE PROTECTIVE LAYER AND BELOW THE CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL MAY BE REDUCED TO 2 FEET IF THE FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 13010.
5. CONSTRUCTION CONTROL POINTS FOR SUBGRADE, COMPACTED CLAY LINER, AND OSDF IMPACTED MATERIAL HAUL ROAD ARE PROVIDED ON DRAWINGS G-4, G-6, G-6A, G-7, G-7A, G-17, G-18, G-18A.
6. EROSION MAT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
7. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
8. CRUSTING AGENT SHALL BE APPLIED TO OSDF IMPACTED HAUL ROAD EMBANKMENT SIDE SLOPE AS REQUIRED TO MINIMIZE EROSION AND BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
9. EASTERN SLOPE OF CONSTRUCTION-PHASE DRAINAGE CHANNEL AT SOUTHEAST CORNER OF CELL 8 VARIES FROM 3H:1V TO 2H:1V AS SHOWN ON DRAWING G-6A.
10. WIDTH OF 1% SLOPE EAST OF CONSTRUCTION-PHASE DRAINAGE CHANNEL VARIES FROM 0 FEET ALONG SOUTHEAST CORNER OF CELL 8 TO FULL WIDTH EAST OF CELL 6.

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	YEZ	JJA	LMC	DCP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	YEZ	JJA	LMC	DCP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	YEZ	JAS	LMC	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	YEZ	PBG	LMC	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
CELL PERIMETER DETAILS I

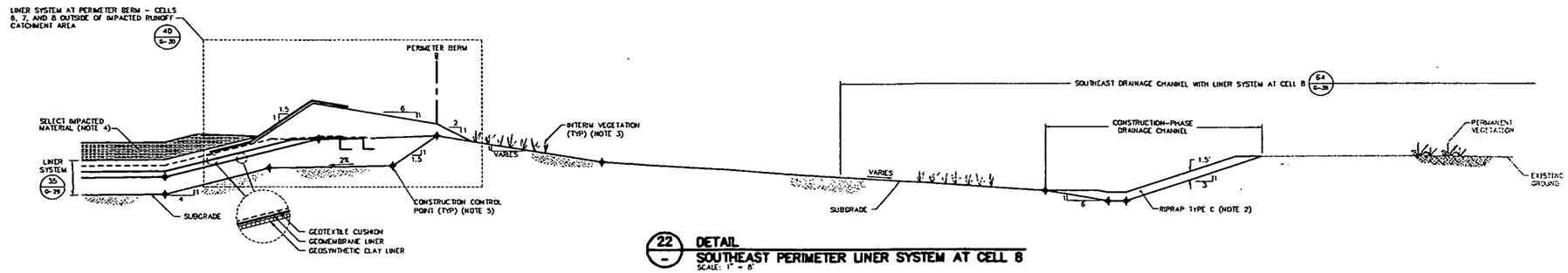
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED

SIGNATURE
DATE

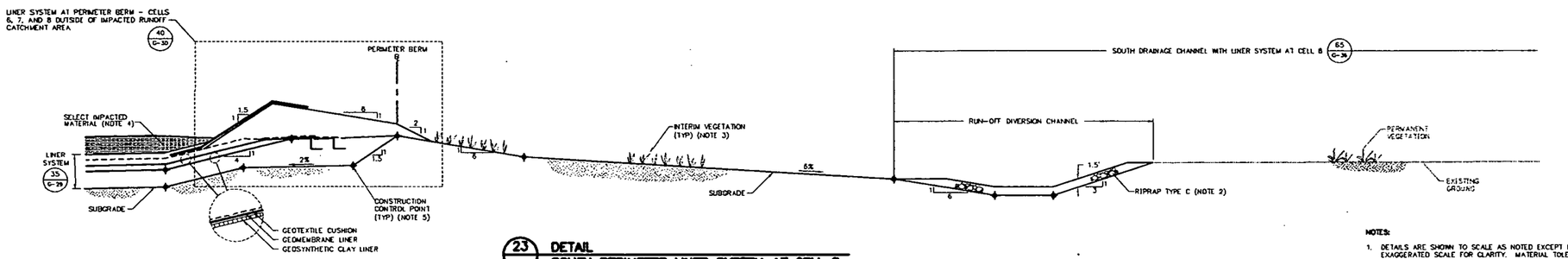
SEAL

GEOSYNTEC CONSULTANTS
1000 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO.: 20105
CONTRACT NO.: D3FT0609
FEMP DRAWING NO.: 90X-6000-C-00386
GEOSYNTEC PROJECT NO.: GG3711-06.04
GEOSYNTEC DOCUMENT NO.: F03-1026
SHEET NO.: G-24
REVISION NO.: 1



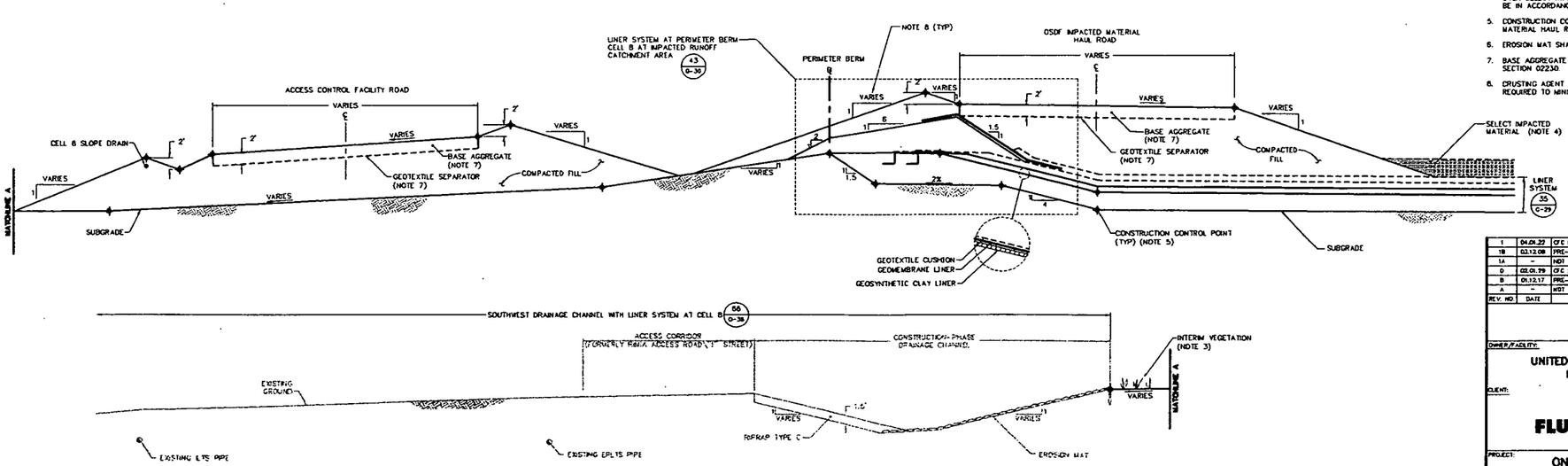
22 DETAIL
SOUTHEAST PERIMETER LINER SYSTEM AT CELL 8
SCALE: 1" = 8'



23 DETAIL
SOUTH PERIMETER LINER SYSTEM AT CELL 8
SCALE: 1" = 8'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
4. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE THE PROTECTIVE LAYER AND BELOW THE CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL MAY BE REDUCED TO 2 FEET IF THE FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 1.3010.
5. CONSTRUCTION CONTROL POINTS FOR SUBGRADE, COMPACTED CLAY LINER, AND OSDF IMPACTED MATERIAL HAUL ROAD ARE PROVIDED ON DRAWINGS G-6A, G-7A, AND G-18A.
6. EROSION MAT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
7. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
8. CRUSTING AGENT SHALL BE APPLIED TO OSDF IMPACTED HAUL ROAD EMBANKMENT SIDESLOPES AS REQUIRED TO MINIMIZE EROSION AND BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.



25 DETAIL
SOUTHWEST PERIMETER LINER SYSTEM AT CELL 8
SCALE: 1" = 8'

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.04.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMG	DCP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LMG	DCP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.99	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JAS	LMG	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	PBG	LMG	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:

UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:

FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: CELL PERIMETER DETAILS II

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED

SIGNATURE

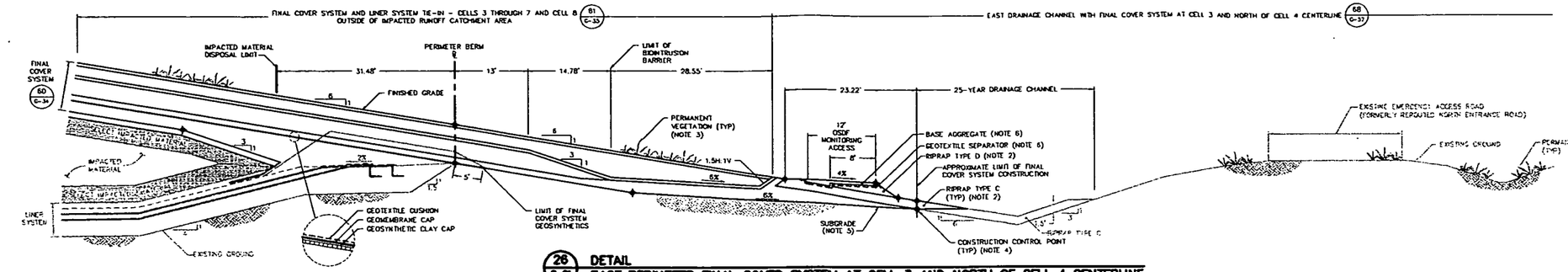
DATE

SEAL

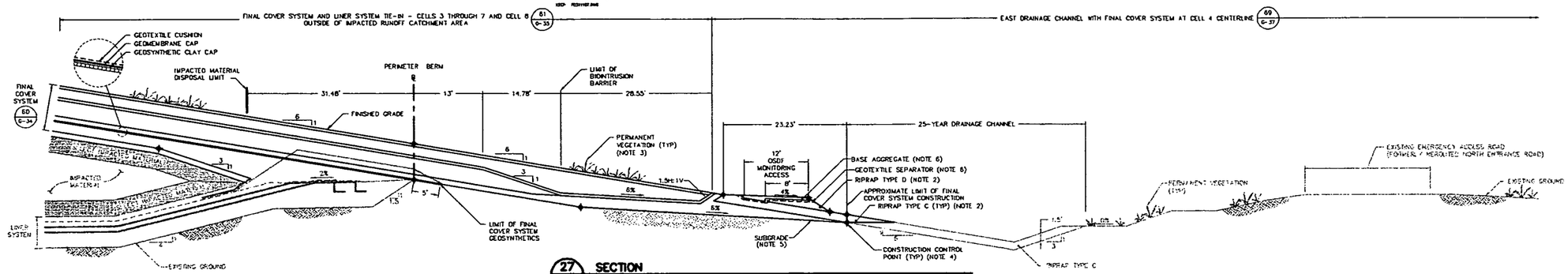
GEOSYNTEC CONSULTANTS
1100 LAST PEACHTREE DRIVE
ATLANTA, GEORGIA 30357 USA

PROJECT NO.:	20105
CONTRACT NO.:	03FF0699
FEMP DRAWING NO.:	901-0000-C-00387
GEOSYNTEC PROJECT NO.:	00321-08.04
GEOSYNTEC DOCUMENT NO.:	F03-1027
SHEET NO.:	G-25
REVISION NO.:	1

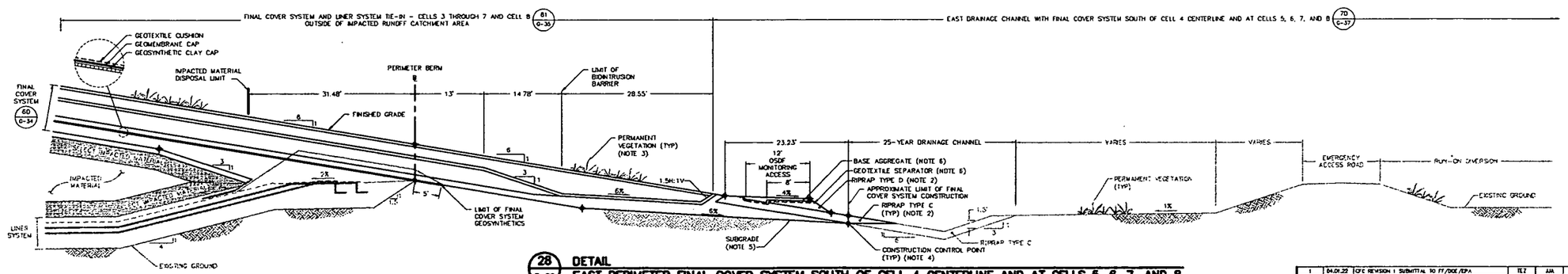
CERTIFIED-FOR-CONSTRUCTION



26 (G-23) DETAIL
EAST PERIMETER FINAL COVER SYSTEM AT CELL 3 AND NORTH OF CELL 4 CENTERLINE
SCALE: 1" = 8'



27 (G-21) SECTION
EAST PERIMETER FINAL COVER SYSTEM AT CELL 4 CENTERLINE
SCALE: 1" = 8'



28 (G-22) DETAIL
EAST PERIMETER FINAL COVER SYSTEM SOUTH OF CELL 4 CENTERLINE AND AT CELLS 5, 6, 7, AND 8
SCALE: 1" = 8'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
4. CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER, COMPACTED CLAY CAP, AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-10 THROUGH G-15A.
5. RE-ESTABLISH SUBGRADE ELEVATIONS OUTSIDE PERIMETER BERM BASELINE PRIOR TO FINAL COVER SYSTEM CONSTRUCTION. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWINGS G-3, G-4, G-8, AND G-8A.
6. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LHG	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LHG	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
D	02.04.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JMO	LHG	DOP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	PBG	LHG	DOP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
CELL PERIMETER DETAILS III

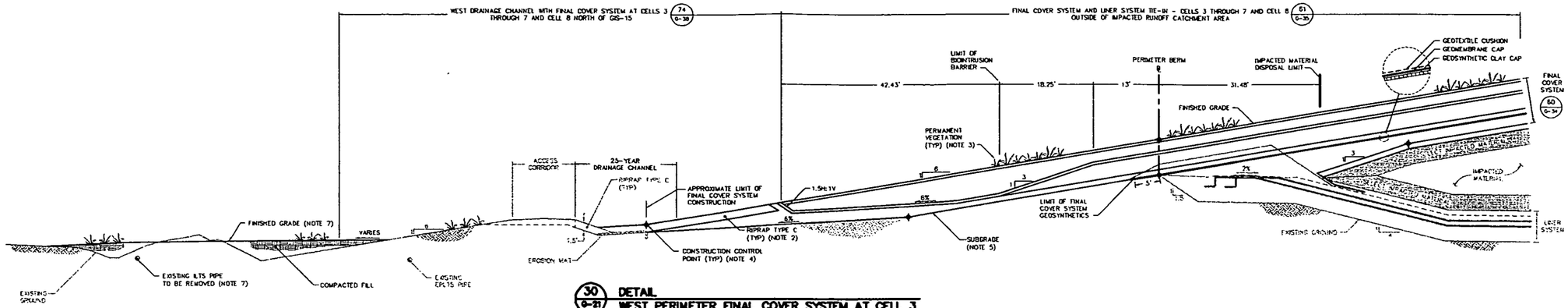
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

SIGNATURE
DATE

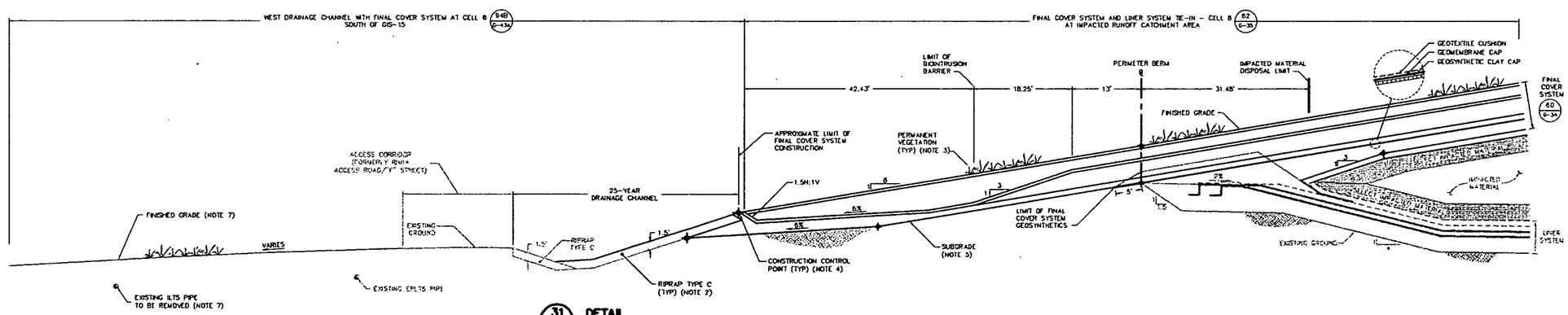
SEAL

GEOSYNTEC CONSULTANTS
1255 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30319 USA

PROJECT NO.:	20105
CONTRACT NO.:	03T0599
FEMP DRAWING NO.:	90X-8000-G-00368
GEOSYNTEC PROJECT NO.:	003211-06.04
GEOSYNTEC DOCUMENT NO.:	T03-1028
SHEET NO.:	G-26
REVISION NO.:	1



30 / G-21 DETAIL
WEST PERIMETER FINAL COVER SYSTEM AT CELL 3 THROUGH 7 AND CELL 8 NORTH OF GIS-15
SCALE: 1" = 8'



31 / G-23 DETAIL
WEST PERIMETER FINAL COVER SYSTEM AT CELL 8 SOUTH OF GIS-15
SCALE: 1" = 8'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
4. CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER, COMPACTED CLAY CAP, AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-10 THROUGH G-15A.
5. RE-ESTABLISH SUBGRADE ELEVATIONS OUTSIDE PERIMETER BERM BASELINE PRIOR TO FINAL COVER SYSTEM CONSTRUCTION. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWINGS G-3, G-4, G-6, AND G-6A.
6. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
7. REMOVE EXISTING INTERIM LEACHATE TRANSMISSION SYSTEM PIPE AND TEMPORARY RUN-OFF DIVERSION BERM AFTER ADJACENT CELL CAPS ARE FULLY VEGETATED. PLACE COMPACTED FILL, AS NECESSARY, TO PROVIDE POSITIVE DRAINAGE TO FORMER PRODUCTION AREA AND AWAY FROM OSDF FACILITY.

CERTIFIED-FOR-CONSTRUCTION

REV NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FT/DOE/EPA	TEZ	JJA	LWG	DCP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FT/DOE	TEZ	JJA	LWG	DCP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.29	CFC SUBMITTAL TO FT/DOE/EPA	TEZ	JAS	LWG	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FT/DOE	TEZ	PDG	LWG	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

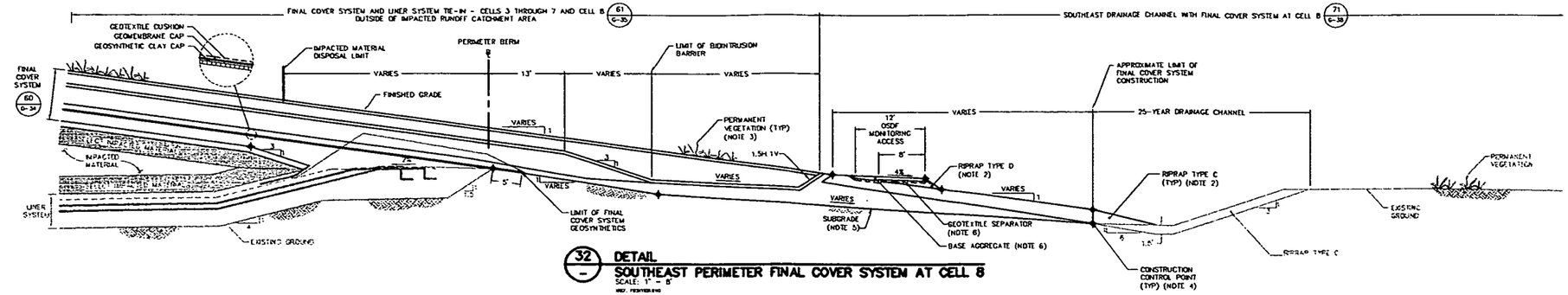
TITLE: CELL PERIMETER DETAILS IV

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED

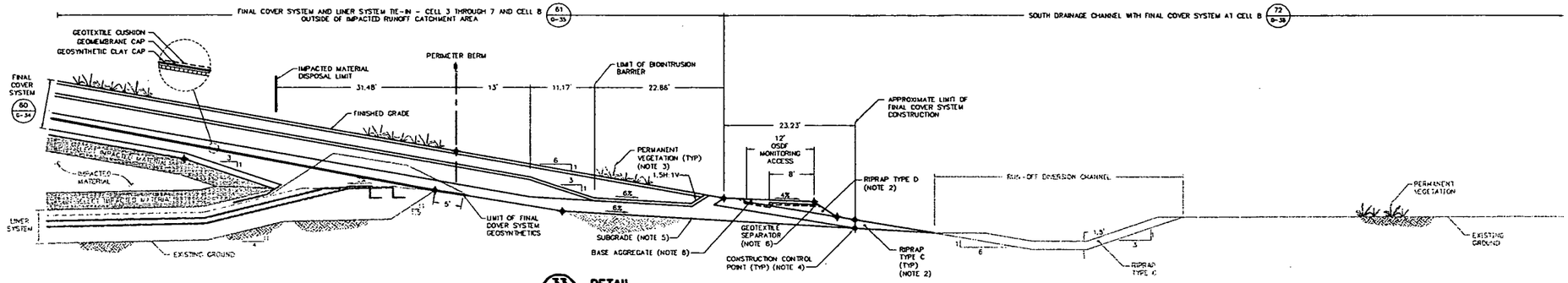
SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1000 LAKE HARBIN DRIVE
ATLANTA, GEORGIA 30342 USA

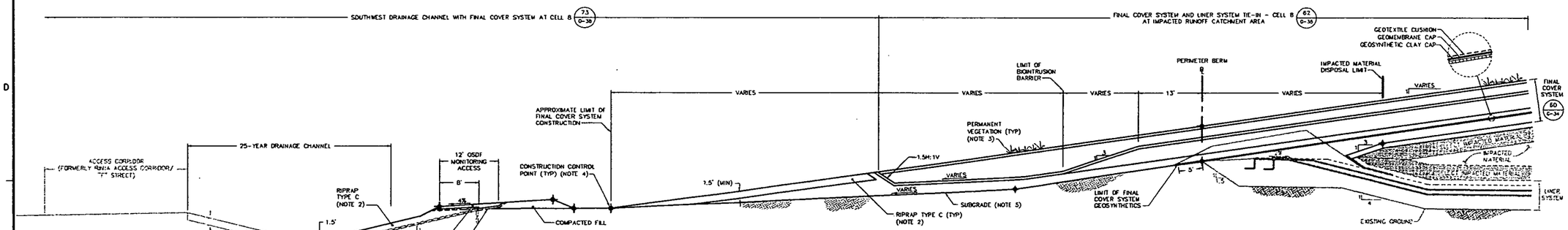
PROJECT NO: 20105
CONTRACT NO: 03T0699
TEMP DRAWING NO: 90X-6000-C-00389
GEOSYNTEC PROJECT NO: 003211-06.04
GEOSYNTEC DOCUMENT NO: F03-1029
SHEET NO: G-27
REVISION NO: 1



32 DETAIL
SOUTHEAST PERIMETER FINAL COVER SYSTEM AT CELL 8
SCALE: 1" = 8'



33 DETAIL
SOUTH PERIMETER FINAL COVER SYSTEM AT CELL 8
SCALE: 1" = 8'



34 DETAIL
SOUTHWEST PERIMETER FINAL COVER SYSTEM AT CELL 8
SCALE: 1" = 8'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930
4. CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER, COMPACTED CLAY CAP, AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-11, G-13A, AND G-15A.
5. RE-ESTABLISH SUBGRADE ELEVATIONS OUTSIDE PERIMETER BERM BASELINE PRIOR TO FINAL COVER SYSTEM CONSTRUCTION. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWING G-6A.
6. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMG	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LMG	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.09.99	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JWS	LMG	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	PBG	LMG	DGP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

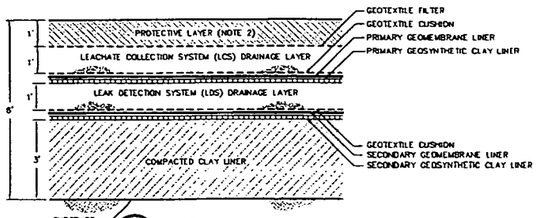
TITLE: CELL PERIMETER DETAILS V

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

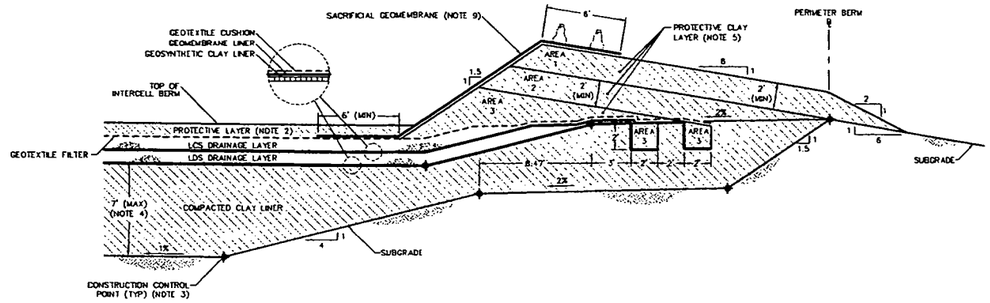
GEOSYNTEC CONSULTANTS
1900 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO.: 20105
CONTRACT NO.: 03JT0699
FEMP DRAWING NO.: 90X-5000-G-00390
GEOSYNTEC PROJECT NO.: 003211-06.04
GEOSYNTEC DOCUMENT NO.: F03-1030
SHEET NO.: G-28
REVISION NO.: 1

000039

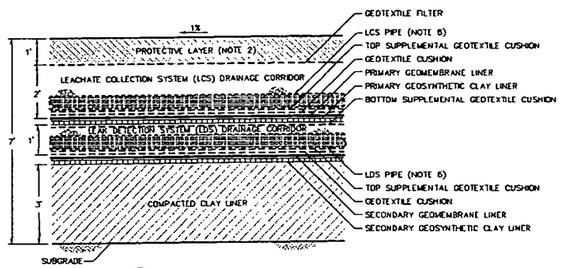


35 / 0-24 DETAIL
LINER SYSTEM
SCALE: 1" = 2'

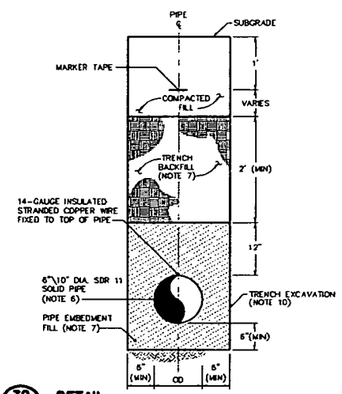


36 / - DETAIL
LINER SYSTEM AT INTERCELL BERM AND PERIMETER BERM INTERSECTION
SCALE: 1" = 4'

LINER SYSTEM COMPONENT SUMMARY		
GEOSYNTHETICS (NOTE 8)		
SYMBOL	COMPONENT	SPECIFICATION SECTION
	PRIMARY GEOMEMBRANE LINER	02770
	SECONDARY GEOMEMBRANE LINER	02770
	PRIMARY GEOSYNTHETIC CLAY LINER	02772
	SECONDARY GEOSYNTHETIC CLAY LINER	02772
	GEOTEXTILE FILTER	02714
	GEOTEXTILE CUSHION	02714
	SUPPLEMENTAL GEOTEXTILE CUSHION	02714
SOILS		
SYMBOL	COMPONENT	SPECIFICATION SECTION
	SUBGRADE	02200
	COMPACTED CLAY LINER/ PROTECTIVE CLAY LAYER	02225
	LDS DRAINAGE LAYER	02710
	LDS DRAINAGE CORRIDOR	02710
	LCS DRAINAGE LAYER	02710
	LCS DRAINAGE CORRIDOR	02710
	PROTECTIVE LAYER (IMPACTED)	13010
	PROTECTIVE LAYER (NON-IMPACTED GRANULAR)	02240
	PROTECTIVE LAYER (NON-IMPACTED NON-GRANULAR)	02240



37 / - DETAIL
LINER SYSTEM WITH LCS AND LDS PIPES
SCALE: 1" = 2'



39 / 0-32 DETAIL
LDS, LCS, OR RLCS PIPE EMBEDMENT
SCALE: 1" = 1'

NOTES:

1. DETAILS ARE SHOW TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCE SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
3. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS G-4, G-8, G-6A, G-7, AND G-7A.
4. THICKNESS OF COMPACTED CLAY LINER ALONG CENTERLINE OF INTERCELL BERM VARIES FROM A MINIMUM OF 3 FEET TO A MAXIMUM OF 7 FEET.
5. PROTECTIVE CLAY LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02225. EQUIPMENT USED ABOVE GEOMEMBRANE LINER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02770.
6. LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
7. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
8. GEOSYNTHETICS FOR LINER SYSTEM WILL BE SUPPLIED BY FLOUR FERNALD, INC. AS SPECIFIED IN CONSTRUCTION WORK CONTROL TRAVELER PACKAGE DOCUMENTS
9. SACRIFICIAL GEOMEMBRANE SHALL CONSIST OF HIGH DENSITY POLYETHYLENE APPROVED BY CONSTRUCTION MANAGER AND PROVIDED BY FLOUR FERNALD, INC. SECURE IN PLACE SACRIFICIAL GEOMEMBRANE WITH SANDBAGS TO PREVENT DAMAGE BY WIND.
10. TRENCH EXCAVATION SHOWN VERTICAL AS DESIGNED. SHORING AND/OR STABLE TRENCH SIDE SLOPES SHALL BE MAINTAINED FOR SAFETY AND TO PROTECT ADJACENT UTILITIES AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION SECTION 02215.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMG	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LMG	DKP	RB
1A	–	NOT ISSUED	–	–	–	–	–
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JWO	LMG	DKP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JWO	LMG	DKP	JFB
A	–	NOT ISSUED	–	–	–	–	–

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

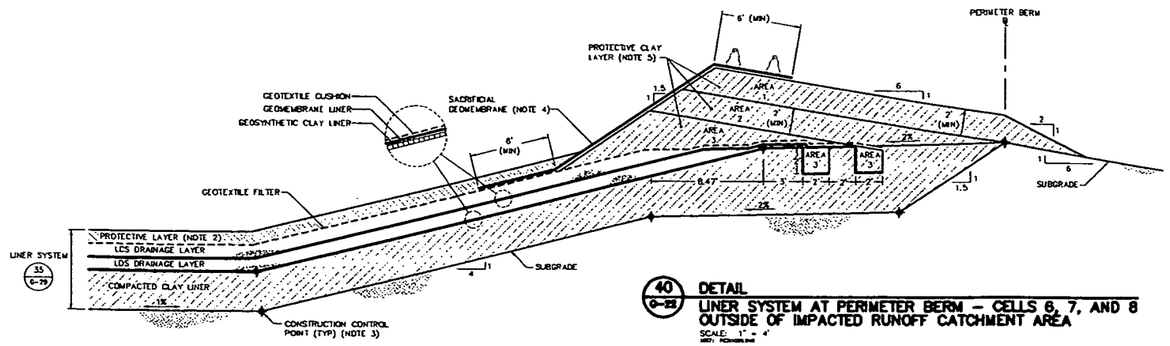
TITLE:
LINER SYSTEM DETAILS I

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT READY OF CONSTRUCTION, UNLESS SEALED.

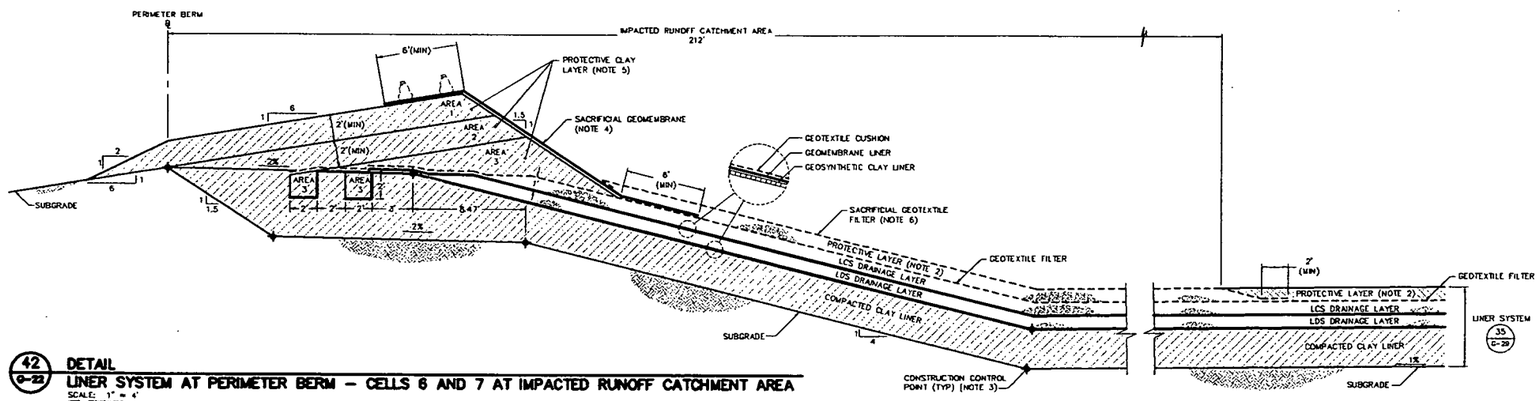
GEOSYNTEC CONSULTANTS
3400 PEACHTREE ROAD NE
ATLANTA, GEORGIA 30326 USA

PROJECT NO.:	20105
CONTRACT NO.:	03F10699
TEMP DRAWING NO.:	90X-6000-C-00391
GEOSYNTEC PROJECT NO.:	GG3711-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1031
SHEET NO.:	G-29
REVISION NO.:	1

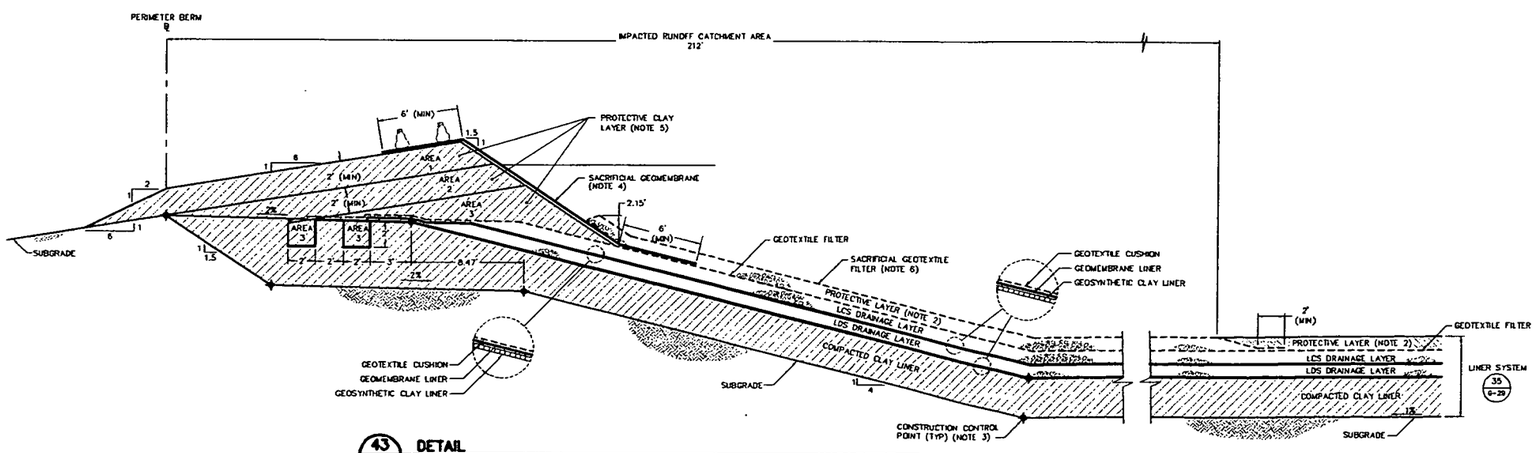
CERTIFIED-FOR-CONSTRUCTION



40 / G-22 DETAIL
LINER SYSTEM AT PERIMETER BERM – CELLS 6, 7, AND 8 OUTSIDE OF IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'
REF: FD3411-05.04



42 / G-22 DETAIL
LINER SYSTEM AT PERIMETER BERM – CELLS 6 AND 7 AT IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'
REF: FD3411-05.04



43 / G-23A DETAIL
LINER SYSTEM AT PERIMETER BERM – CELL 8 AT IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'
REF: FD3411-05.04

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
3. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS G-4, G-6, G-6A, G-7, G-7A.
4. SACRIFICIAL GEOMEMBRANE SHALL CONSIST OF HIGH DENSITY POLYETHYLENE, AS APPROVED BY CONSTRUCTION MANAGER AND PROVIDED BY FLUOR FERNALD, INC. SECURE IN-PLACE SACRIFICIAL GEOMEMBRANE WITH SANDBAGS TO PREVENT DAMAGE FROM WIND.
5. PROTECTIVE CLAY LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02225. EQUIPMENT USED ABOVE GEOMEMBRANE LINER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02770.
6. SACRIFICIAL GEOTEXTILE FILTER SHALL BE INSTALLED OVER GRANULAR PROTECTIVE LAYER WITHIN IMPACTED RUNOFF CATCHMENT AREA.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APR. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMC	DCP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LMC	DCP	RB
1A	–	NOT ISSUED	–	–	–	–	–
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JMO	KRD	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JMO	KRD	DCP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	JMO	LMC	DCP	JFB

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

TITLE:
LINER SYSTEM DETAILS II

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED

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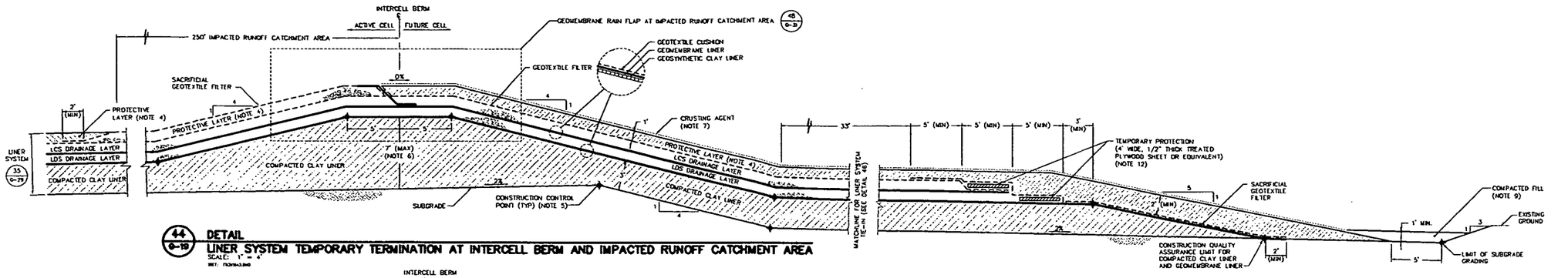
DATE
SEAL

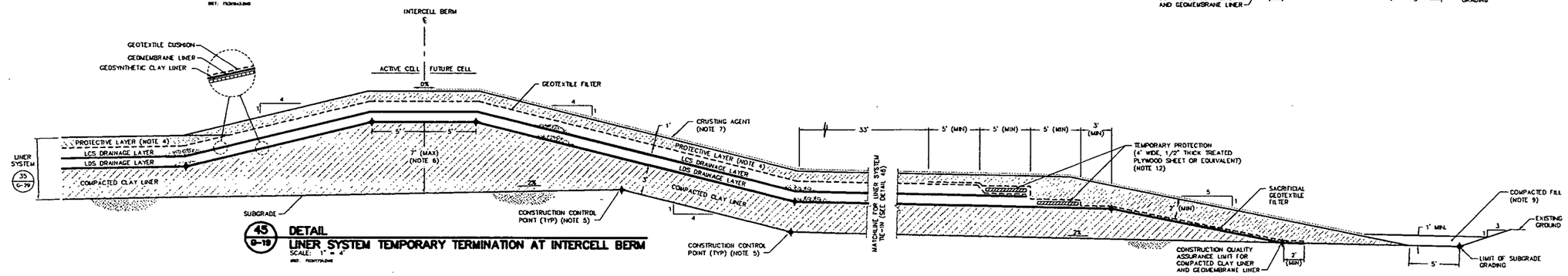
GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30317 USA

PROJECT NO:	20105
CONTRACT NO:	03FF0699
FEMP DRAWING NO:	90X-6000-G-00392
GEOSYNTEC PROJECT NO:	FD3211-05.04
GEOSYNTEC DOCUMENT NO:	FD3-1036
SHEET NO:	G-30
REVISION NO:	1

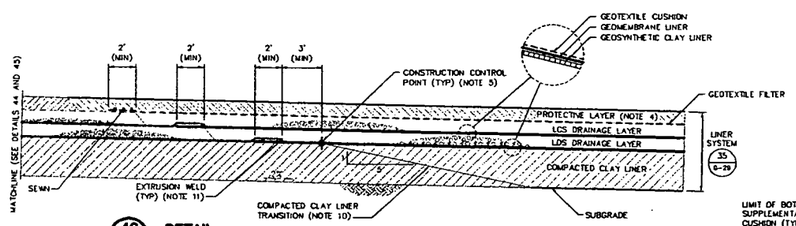
CERTIFIED-FOR-CONSTRUCTION



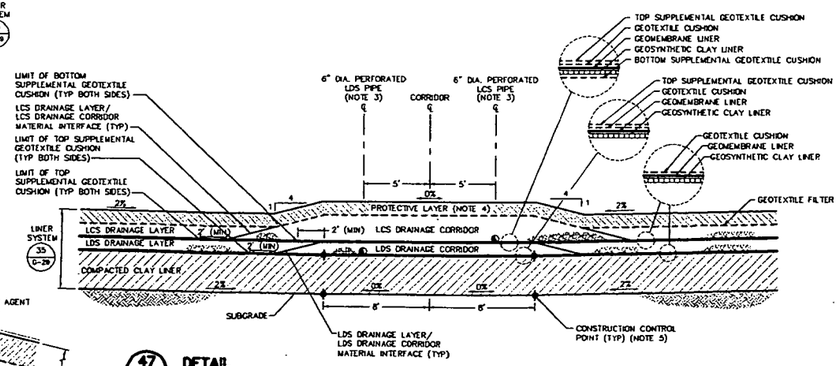
44 / 0-19 DETAIL
LINER SYSTEM TEMPORARY TERMINATION AT INTERCELL BERM AND IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'



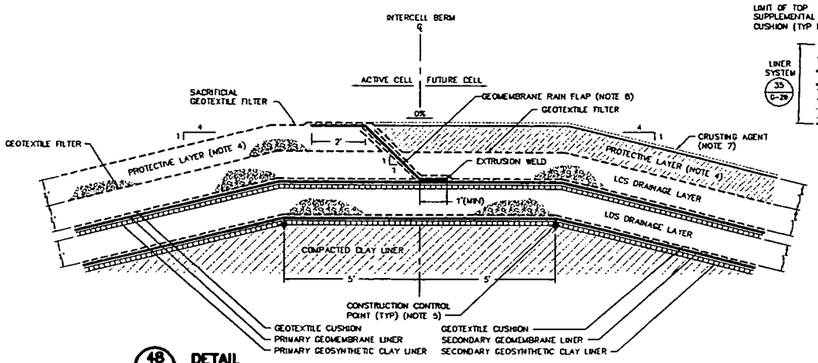
45 / 0-19 DETAIL
LINER SYSTEM TEMPORARY TERMINATION AT INTERCELL BERM
SCALE: 1" = 4'



46 / 0-19 DETAIL
LINER SYSTEM TIE-IN AT EXISTING TEMPORARY TERMINATION
SCALE: 1" = 4'



47 / 0-19 DETAIL
LINER SYSTEM AT LEACHATE COLLECTION AND LEAK DETECTION CORRIDOR
SCALE: 1" = 4'



48 / 0-31 DETAIL
GEOMEMBRANE RAIN FLAP AT IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 2'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. MATERIAL IN DRAINAGE LAYERS AND DRAINAGE CORRIDORS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02710.
3. LDS AND LCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605
4. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING ACTIVE CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
5. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS G-4, G-8, G-8A, G-7, AND G-7A.
6. THICKNESS OF COMPACTED CLAY LINER ALONG CENTERLINE OF INTERCELL BERM VARIES FROM A MINIMUM OF 3 FEET TO A MAXIMUM OF 7 FEET.
7. CRUSTING AGENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
8. RAIN FLAP SHALL BE CONTINUOUSLY EXTRUSION WELDED TO PRIMARY GEOMEMBRANE LINER ALONG INTERCELL BERM. FLAP SHALL TIE-IN TO GEOMEMBRANE AT CREST OF PERIMETER BERM AND EXTEND 212 FEET EAST FROM WEST PERIMETER BERM BASELINE.
9. PLACE COMPACTED FILL TO PROVIDE POSITIVE DRAINAGE TO TEMPORARY DRAINAGE CHANNEL.
10. TRANSITION FROM EXISTING FULL-DEPTH SECTION OF COMPACTED CLAY LINER TO ADJACENT SECTION OF COMPACTED CLAY LINER SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATION SECTION 02225.
11. REMOVE DAMAGED PORTION OF EXISTING GEOMEMBRANE LINER BY CUTTING PRIOR TO INSTALLATION OF NEW GEOMEMBRANE LINER.
12. EXTEND SECONDARY GEOMEMBRANE LINER ONLY BEYOND TEMPORARY PROTECTION. GEOSYNTHETIC CLAY LINER AND GEOTEXTILE CUSHION COMPONENTS DO NOT CONTINUE PAST THE TEMPORARY PROTECTION.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	VDR	LMG	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	VDR	LMG	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.28	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	VDR	LMG	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JMO	LMG	DGP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	JMO	LMG	DGP	JFB

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
LINER SYSTEM DETAILS III

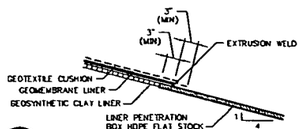
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED

SIGNATURE
DATE
SEAL

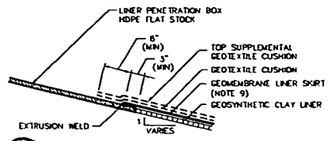
GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO:	20105
CONTRACT NO:	03F0699
FEMP DRAWING NO:	901-5000-G-00393
GEOSYNTEC PROJECT NO:	GG3211-06.04
GEOSYNTEC DOCUMENT NO:	FD3-1032
SHEET NO:	G-31
REVISION NO:	1

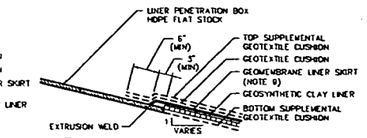
CERTIFIED-FOR-CONSTRUCTION



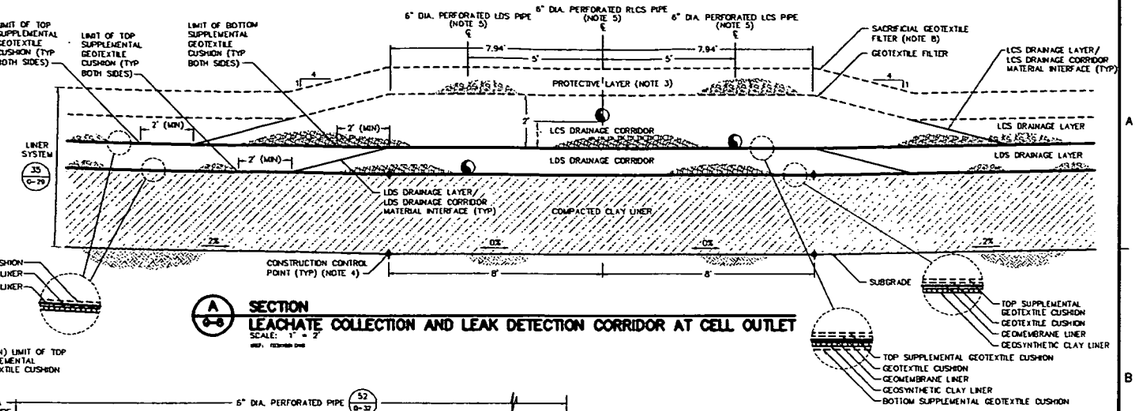
49 / G-32 DETAIL
LINER SYSTEM GEOSYNTHETICS TERMINATION TYPE I AT LINER PENETRATION
SCALE: 1" = 1'



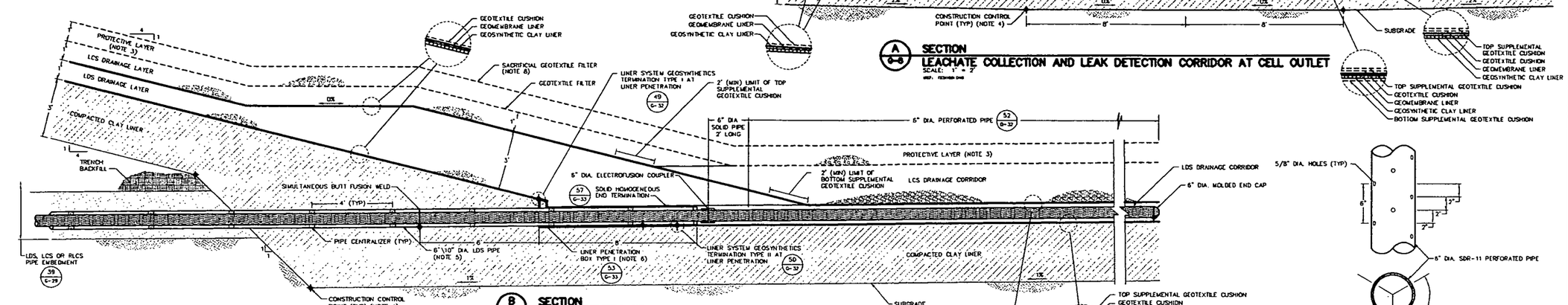
50 / G-32 DETAIL
LINER SYSTEM GEOSYNTHETICS TERMINATION TYPE II AT LINER PENETRATION
SCALE: 1" = 1'



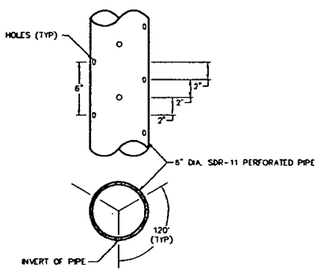
51 / G-32 DETAIL
LINER SYSTEM GEOSYNTHETICS TERMINATION TYPE III AT LINER PENETRATION
SCALE: 1" = 1'



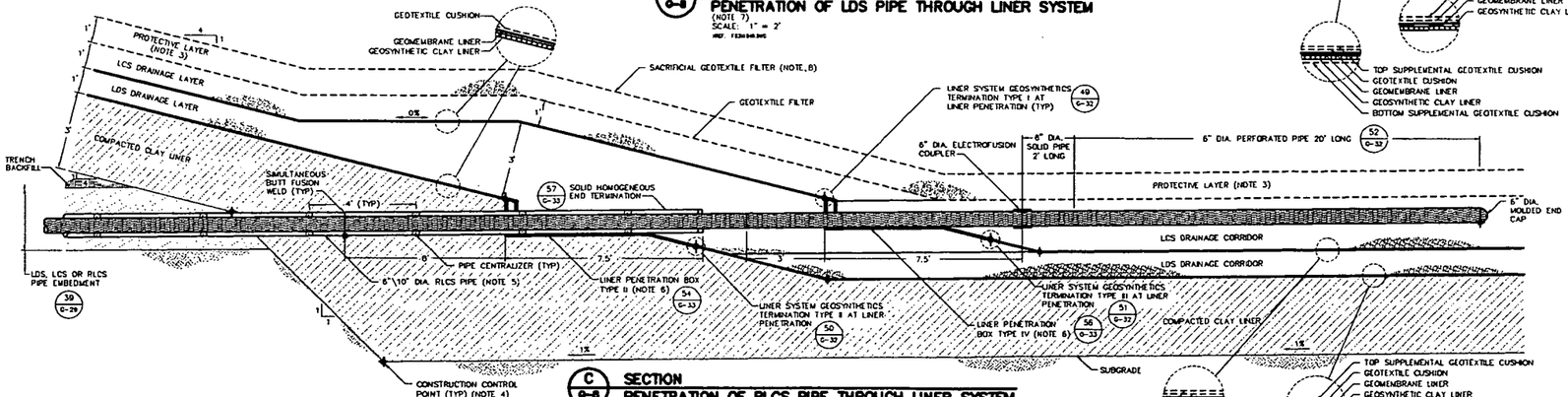
A / G-8 SECTION
LEACHATE COLLECTION AND LEAK DETECTION CORRIDOR AT CELL OUTLET
SCALE: 1" = 2'



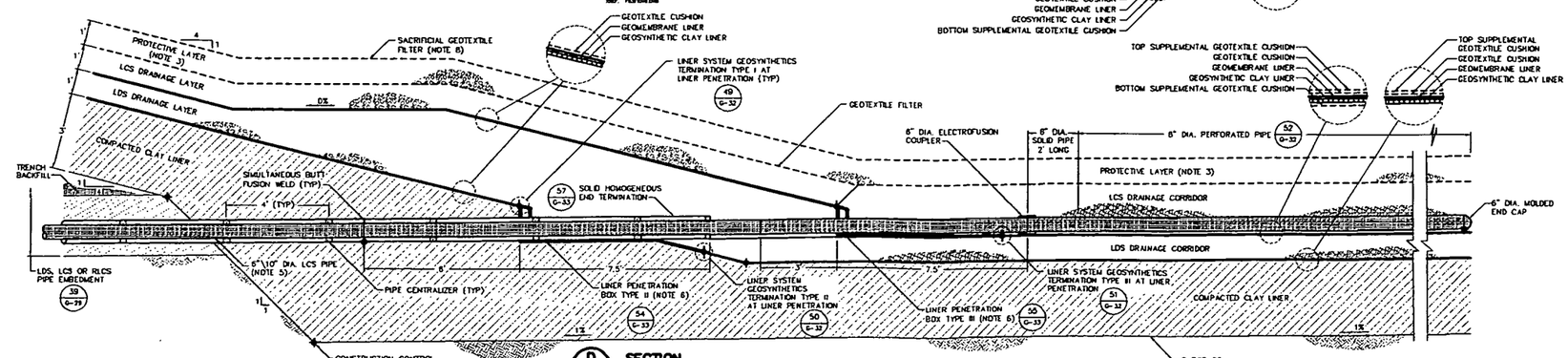
B / G-8 SECTION
PENETRATION OF LDS PIPE THROUGH LINER SYSTEM
(NOTE 7)
SCALE: 1" = 2'



52 / G-32 DETAIL
6-INCH PERFORATED PIPE
SCALE: 1" = 6"



C / G-8 SECTION
PENETRATION OF RLCS PIPE THROUGH LINER SYSTEM
(NOTE 7)
SCALE: 1" = 2'



D / G-8 SECTION
PENETRATION OF LCS PIPE THROUGH LINER SYSTEM
(NOTE 7)
SCALE: 1" = 2'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. MATERIAL IN DRAINAGE LAYERS AND DRAINAGE CORRIDORS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02710.
3. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
4. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS G-4, G-6, G-6A, G-7, AND G-7A. CONSTRUCTION CONTROL POINTS FOR LINER PENETRATION BOXES AND LDS, LCS, AND RLCS PIPES ARE PROVIDED ON DRAWINGS G-8 AND G-9.
5. LDS, LCS, AND RLCS PIPES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
6. LINER PENETRATION BOXES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13005. 6-INCH PIPE SEGMENTS AND SOLID HOMOGENEOUS END TERMINATIONS SHALL BE FACTORY WELDED TO LINER PENETRATION BOXES AND EXTEND BETWEEN SIMULTANEOUS BUTT FUSION WELDS AND ELECTROFUSION COUPLERS AS SHOWN. SOLID HOMOGENEOUS END TERMINATIONS AND PIPE CENTRALIZERS SHALL BE INSTALLED AS SHOWN AND IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
7. HORIZONTAL MONITORING WELL IS NOT SHOWN IN THIS SECTION FOR CLARITY.
8. SACRIFICIAL GEOTEXTILE FILTER SHALL BE INSTALLED OVER GRANULAR PROTECTIVE LAYER WITHIN IMPACTED RUNOFF CATCHMENT AREA.
9. GEOMEMBRANE LINER SKIRT SHALL BE FACTORY WELDED TO LINER PENETRATION BOX. GEOMEMBRANE LINER SKIRT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02770 AND WILL BE PROVIDED BY FLUOR FERNALD, INC. GEOMEMBRANE LINER SKIRT SHALL BE A MINIMUM 7 FEET WIDE BY 7 FEET LONG.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	VDR	LMG	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	VDR	LMG	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JMO	LMG	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JMO	LMG	DGP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	JMO	LMG	DGP	JFB

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

TITLE:
LINER SYSTEM DETAILS IV

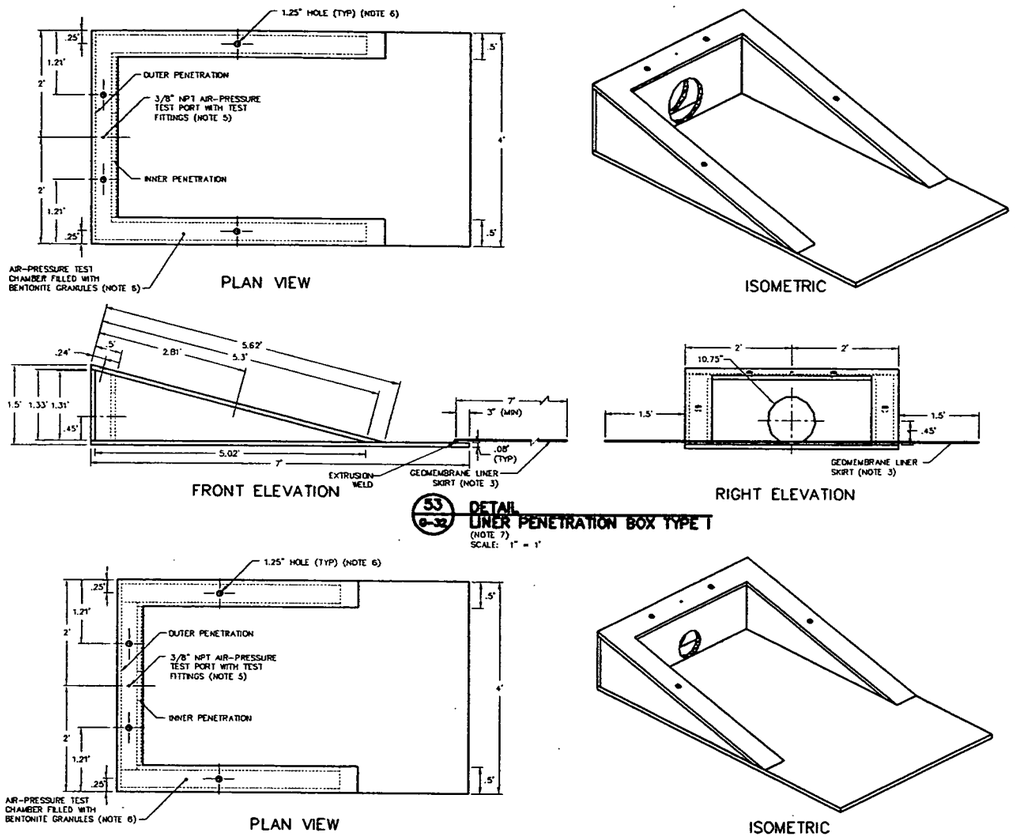
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED

SIGNATURE
DATE
SEAL

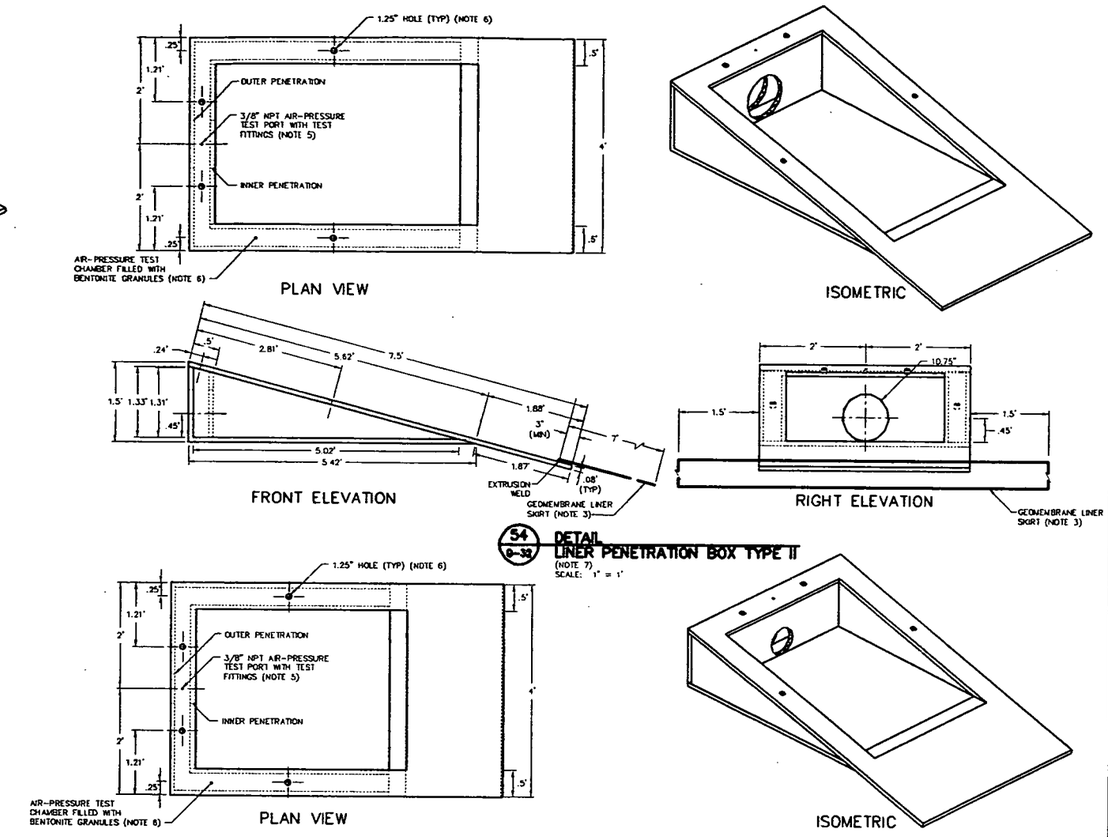
GEOSYNTEC CONSULTANTS
1900 LAKE PLACE DRIVE
ALPHARETTA, GEORGIA 30341 USA

PROJECT NO.:	20105
CONTRACT NO.:	03F10699
FLUOR DRAWING NO.:	001-6000-G-00394
GEOSYNTEC PROJECT NO.:	003211-06.04
GEOSYNTEC DOCUMENT NO.:	103-1033
SHEET NO.:	G-32
REVISION NO.:	1

CERTIFIED-FOR-CONSTRUCTION



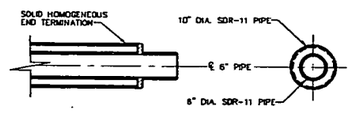
53 / 0-32 DETAIL
LINER PENETRATION BOX TYPE I
(NOTE 7)
SCALE: 1" = 1'



54 / 0-32 DETAIL
LINER PENETRATION BOX TYPE II
(NOTE 7)
SCALE: 1" = 1'

55 / 0-32 DETAIL
LINER PENETRATION BOX TYPE III
(NOTE 7)
SCALE: 1" = 1'

56 / 0-32 DETAIL
LINER PENETRATION BOX TYPE IV
(NOTE 7)
SCALE: 1" = 1'



57 / 0-32 DETAIL
SOLID HOMOGENEOUS END TERMINATION
SCALE: 1" = 1'

NOTES:

1. LINER PENETRATION BOXES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13005.
2. 6-INCH PIPE SEGMENTS AND SOLID HOMOGENEOUS END TERMINATIONS SHALL BE FACTORY WELDED TO LINER PENETRATION BOXES WITH LENGTHS SHOWN ON DRAWING C-32. PIPES ARE NOT SHOWN ON THIS DRAWING FOR CLARITY. SOLID HOMOGENEOUS END TERMINATIONS AND PIPE CENTRALIZERS SHALL BE INSTALLED AS SHOWN ON DRAWING C-32 AND IN ACCORDANCE WITH SPECIFICATION SECTION 02603.
3. GEOMEMBRANE LINER SKIRT SHALL BE FACTORY WELDED TO LINER PENETRATION BOX. GEOMEMBRANE LINER SKIRT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02770 AND WILL BE PROVIDED BY FLUOR FERNALD, INC. GEOMEMBRANE LINER SKIRT SHALL BE A MINIMUM 7 FEET WIDE BY 7 FEET LONG. THE EXTRUSION WELDS SHALL BE TESTED PRIOR TO DELIVERY.
4. LINER PENETRATION BOXES SHALL BE CONSTRUCTED USING 1-INCH THICK HDPE FLAT STOCK.
5. LINER PENETRATION BOXES AND ATTACHED CONTAINMENT PIPING SHALL BE AIR-PRESSURE TESTED IN FIELD AFTER INSTALLATION.
6. AIR-PRESSURE TEST CHAMBER SHALL BE BACKFILLED WITH BENTONITE GRANULES USING 1.25-INCH HOLES AFTER AIR-PRESSURE TESTING IS COMPLETED. EACH HOLE SHALL BE SEALED WITH HDPE EXTRUDATE AFTER BENTONITE FILLING IS COMPLETED.
7. GEOMEMBRANE LINER SKIRT IS NOT SHOWN ON PLAN AND ISOMETRIC VIEWS FOR CLARITY.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.32	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMC	JAC	TEZ	DCP	RB
1B	–	NOT ISSUED	–	–	–	–	–
1A	–	NOT ISSUED	–	–	–	–	–
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JMO	LMC	DCP	JTB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JMO	LMC	DCP	JTB
A	01.10.22	PRELIMINARY SUBMITTAL TO FF/DOE	TEZ	JMO	LMB	DCP	JTB

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: LINER SYSTEM DETAILS V

THIS DRAWING MAY NOT BE USED FOR PROJECT BIDDER OR CONSTRUCTION, UNLESS SEALED.

SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1100 LAKE PLAZA DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO.:	20105
CONTRACT NO.:	DE-AC05-92OR21972
TEMP DRAWING NO.:	90X-6000-G-00395
GEOSYNTEC PROJECT NO.:	003211-06.04
GEOSYNTEC DOCUMENT NO.:	FO3-1034
SHEET NO.:	G-33
REVISION NO.:	1

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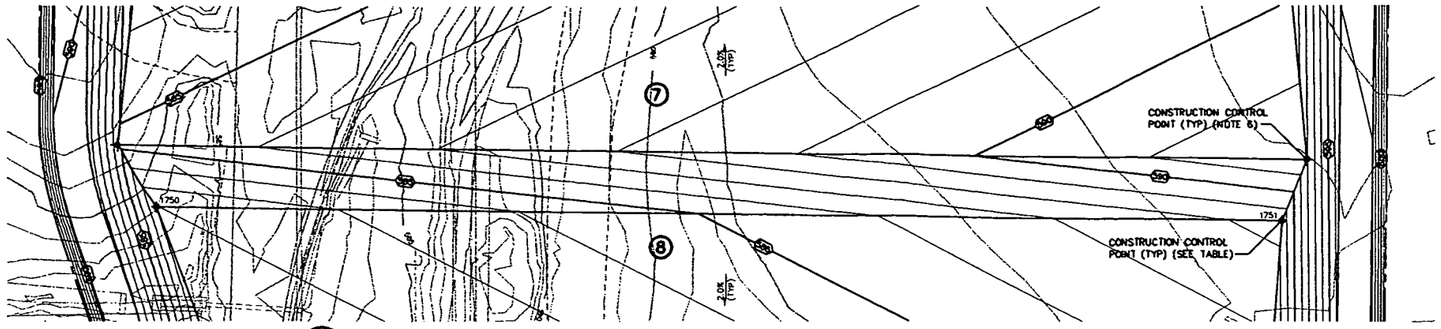
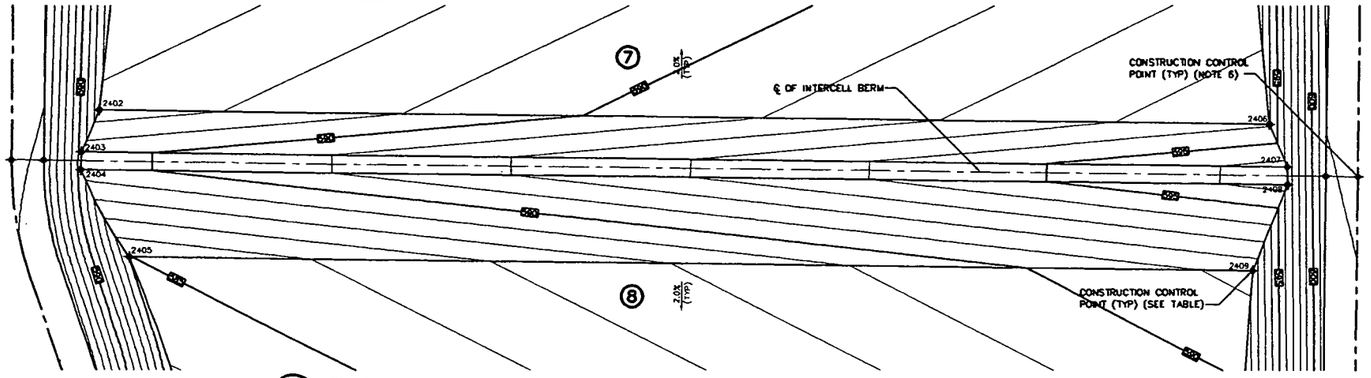
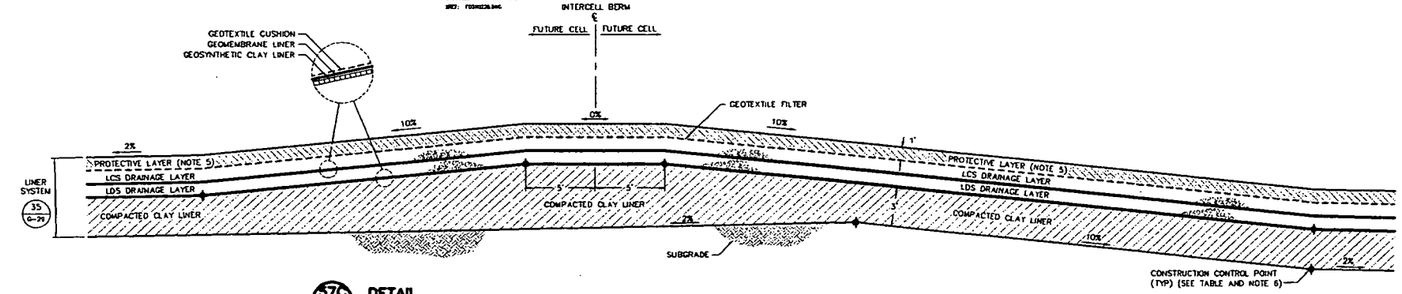


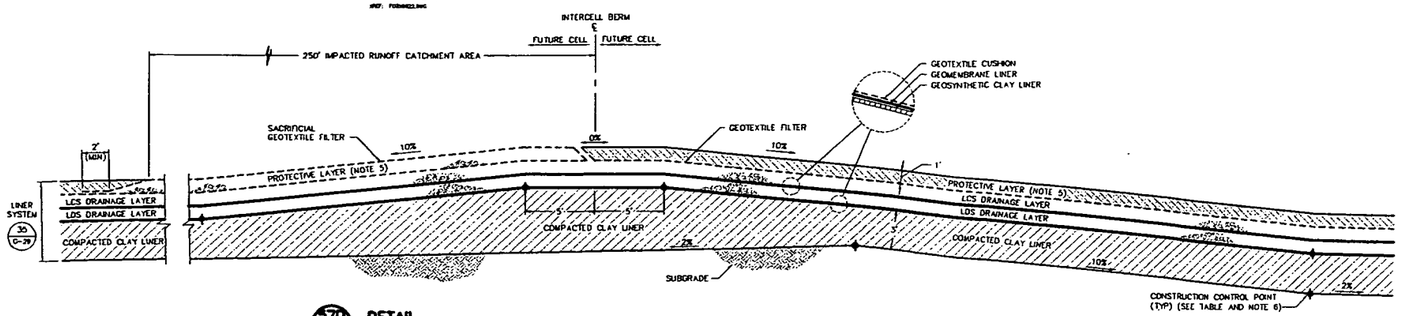
57A PLAN
SUBGRADE-ALTERNATE LINER SYSTEM AT INTERCELL BERM FOR CONCURRENT CONSTRUCTION OF CELLS 7 AND 8
SCALE: 1" = 30'



57B PLAN
COMPACTED CLAY LINER-ALTERNATE LINER SYSTEM AT INTERCELL BERM FOR CONCURRENT CONSTRUCTION OF CELLS 7 AND 8
SCALE: 1" = 30'



57C DETAIL
ALTERNATE LINER SYSTEM AT INTERCELL BERM FOR CONCURRENT CONSTRUCTION OF CELLS 7 AND 8
SCALE: 1" = 4'



57D DETAIL
ALTERNATE LINER SYSTEM AT INTERCELL BERM AND IMPACTED RUNOFF CATCHMENT AREA FOR CONCURRENT CONSTRUCTION OF CELLS 7 AND 8
SCALE: 1" = 4'

LEGEND

590	EXISTING GROUND ELEVATION (FEET)
590	SUBGRADE ELEVATION (FEET) (NOTE 1)
1750	COMPACTED CLAY LINER ELEVATION (FEET) (NOTE 2)
	PERIMETER BERM BASELINE/LIMIT OF COMPACTED CLAY LINER
1750	CONSTRUCTION CONTROL POINT
7	CELL DESIGNATION

SUBGRADE CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
1750	480318.75	1350831.93	581.98
1751	480311.03	1351453.88	588.30

COMPACTED CLAY LINER CONSTRUCTION CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION
2402	480401.56	1350805.91	587.31
2403	480377.73	1350785.95	589.61
2404	480387.73	1350785.74	589.61
2405	480318.45	1350827.43	584.98
2406	480393.52	1351483.15	593.88
2407	480369.45	1351473.18	598.38
2408	480359.44	1351473.42	598.38
2409	480310.73	1351453.45	591.29

NOTES:

1. CLEARING, GRUBBING, AND STRIPPING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02110. SUBGRADE ELEVATIONS CORRESPOND TO TOP OF PREPARED SUBGRADE, INCLUDING ANY COMPACTED FILL. SUBGRADE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
2. COMPACTED CLAY LINER ELEVATIONS CORRESPOND TO TOP OF COMPACTED CLAY LINER.
3. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
4. MATERIAL IN DRAINAGE LAYERS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02710.
5. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA AND IMPACTED MATERIAL IN REMAINING ACTIVE CELL AREAS EXCLUDING CELL AREA AT INTERCELL BERM TEMPORARY LINER SYSTEM TERMINATION. PROTECTIVE LAYER SHALL CONSIST OF NON-IMPACTED NON-GRANULAR MATERIAL IN ACTIVE AND FUTURE CELL AREAS OF TEMPORARY LINER SYSTEM TERMINATION. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240. IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
6. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND COMPACTED CLAY LINER ARE PROVIDED ON DRAWINGS G-6, G-6A, G-7, AND G-7A.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
0	04.01.22	CFC SUBMITTAL TO FF/DOE/EPA	LMG	AJA	TEZ	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	LMG	AJA	TEZ	DKP	RB
A	03.10.28	PRELIMINARY SUBMITTAL TO FF/DOE	LMG	AJA	TEZ	DKP	RB

30 15 0 30 60
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: LINER SYSTEM DETAILS VI

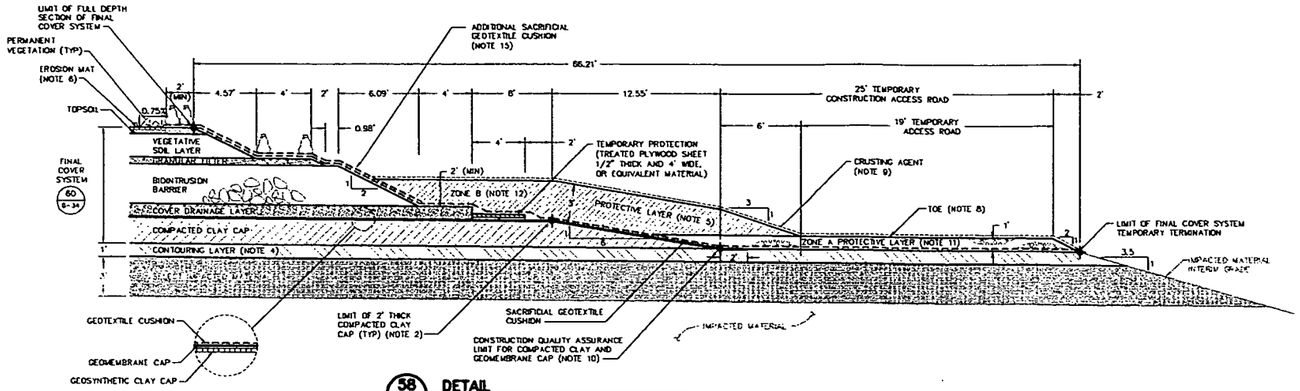
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDING OR CONSTRUCTION, UNLESS SEALED.

SIGNATURE
DATE
SEAL

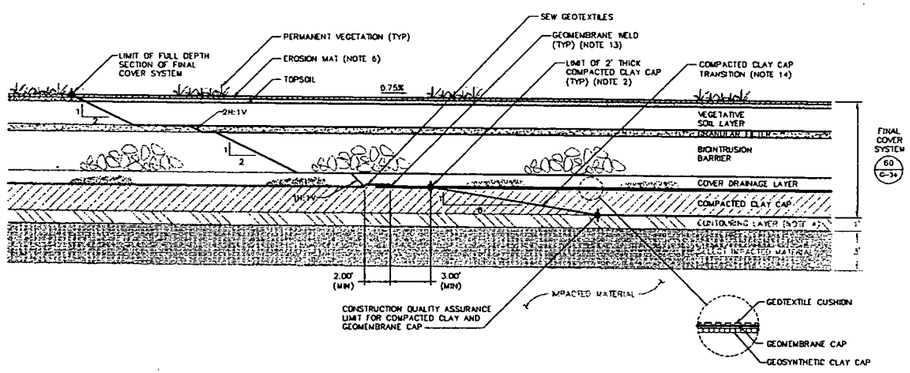
GEOSYNTEC CONSULTANTS
1900 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30319 USA

PROJECT NO: 20105
CONTRACT NO: 03TF0699
FEMP DRAWING NO: 90X-0000-G-00421
GEOSYNTEC PROJECT NO: GG3211-06.04
GEOSYNTEC DOCUMENT NO: F03-0048
SHEET NO: G-33A
REVISION NO: 0

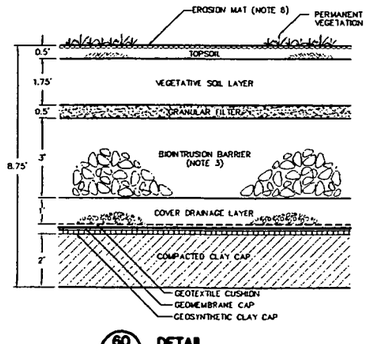
CERTIFIED-FOR-CONSTRUCTION



58 / G-19 DETAIL
FINAL COVER SYSTEM TEMPORARY TERMINATION AND CONSTRUCTION ACCESS ROAD
SCALE: 1" = 4'



59 / G-20 DETAIL
FINAL COVER SYSTEM TIE-IN AT EXISTING TEMPORARY TERMINATION
SCALE: 1" = 4'



60 / G-21 DETAIL
FINAL COVER SYSTEM
SCALE: 1" = 7'

FINAL COVER SYSTEM COMPONENT SUMMARY

SYMBOL	COMPONENT	SPECIFICATION SECTION
GEOSYNTHETICS (NOTE 7)		
	GEOMEMBRANE CAP	02770
	GEOSYNTHETIC CLAY CAP	02772
	GEOTEXTILE CUSHION	02714
SOILS		
	COMPACTED CLAY CAP	02225
	COVER DRAINAGE LAYER	02710
	BIOINTRUSION BARRIER	02280
	GRANULAR FILTER	02712
	VEGETATIVE SOIL LAYER	02250
	TOPSOIL	02920
	PROTECTIVE LAYER (NON-IMPACTED NON-GRANULAR)	02240
	CONTOURING LAYER (NON-IMPACTED)	02240
VEGETATION		
	PERMANENT VEGETATION	02930

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER, COMPACTED CLAY CAP, AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-10 THROUGH G-15, G-13A, AND G-15A.
3. CHOKE STONE LAYER SHALL BE PLACED INTO TOP OF BIOINTRUSION BARRIER IN ACCORDANCE WITH SPECIFICATION SECTION 02280.
4. CONTOURING LAYER SHALL CONSIST OF NON-IMPACTED MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02240. RUNOFF FROM NON-IMPACTED CONTOURING LAYER SHALL BE DIVERTED TO IMPACTED RUNOFF CATCHMENT AREA UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED. CONTRACTOR SHALL CONTAIN AND CONTROL WATER GENERATED DURING CONSTRUCTION AND FILLING OF OSDF IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
5. ZONE B PROTECTIVE LAYER IN FINAL COVER SYSTEM TEMPORARY TERMINATION SHALL BE NON-IMPACTED MATERIAL. NON-IMPACTED PROTECTIVE LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240.
6. EROSION MAT SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 02270. EROSION MAT WITH A 100% COIR YARN CONTENT SHALL BE USED AT TWO LOCATIONS, TO LIMITS INDICATED ON DETAIL 61, DRAWING G-35, AND AT THE 10H:1V TO 6H:1V FINAL COVER SYSTEM SLOPE TRANSITION. TWO 6-FOOT WIDTHS OF COIR EROSION MAT SHALL BE USED AT EACH LOCATION WITH A 1.5 FOOT OVERLAP ON EACH SIDE OF THE 10H:1V TO 6H:1V TRANSITION.
7. GEOSYNTHETICS FOR THE COVER SYSTEM WILL BE SUPPLIED BY FLUOR FERNALD, INC. AS SPECIFIED IN CONSTRUCTION WORK CONTROL TRAVELER PACKAGE DOCUMENTS.
8. INSTALL SILT FENCE 10 FEET (MEASURED HORIZONTALLY) UPSLOPE FROM TOE OF 6H:1V SLOPE AT FINAL COVER SYSTEM TEMPORARY TERMINATION. SILT FENCE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
9. CRUSTING AGENT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
10. EXTEND GEOMEMBRANE CAP ONLY BEYOND TEMPORARY PROTECTION. CCL AND GEOTEXTILE CUSHION COMPONENTS DO NOT CONTINUE PAST THE TEMPORARY PROTECTION.
11. ZONE A PROTECTIVE LAYER SHALL CONSIST OF BASE AGGREGATE IN ACCORDANCE WITH SPECIFICATION SECTION 02230 AND SHALL BE PLACED AFTER INSTALLATION OF COMPACTED CLAY CAP.
12. ZONE B PROTECTIVE LAYER SOIL SHALL BE PLACED AFTER COMPLETION OF UNDERLYING COMPONENTS OF FINAL COVER SYSTEM.
13. REMOVE DAMAGED PORTION OF EXISTING GEOMEMBRANE CAP BY CUTTING PRIOR TO INSTALLATION OF NEW GEOMEMBRANE CAP.
14. TRANSITION FROM EXISTING 2 FOOT THICK COMPACTED CLAY CAP TO ADJACENT SECTION OF COMPACTED CLAY CAP SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATION SECTION 02225.
15. EXPOSED PORTION OF SACRIFICIAL GEOTEXTILE CUSHION SHALL BE SECURED IN PLACE WITH SAND BAGS.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	KPD	VDR	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	KPD	VDR	TEZ	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	KPD	VDR	TEZ	DKP	RB
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KPD	JMO	KRD	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KPD	JMO	KRD	DCP	JFB
A	01 10 22	PRELIMINARY SUBMITTAL TO FF/DOE	KPD	JMO	KRD	DCP	JFB

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

TITLE:
FINAL COVER SYSTEM DETAILS I

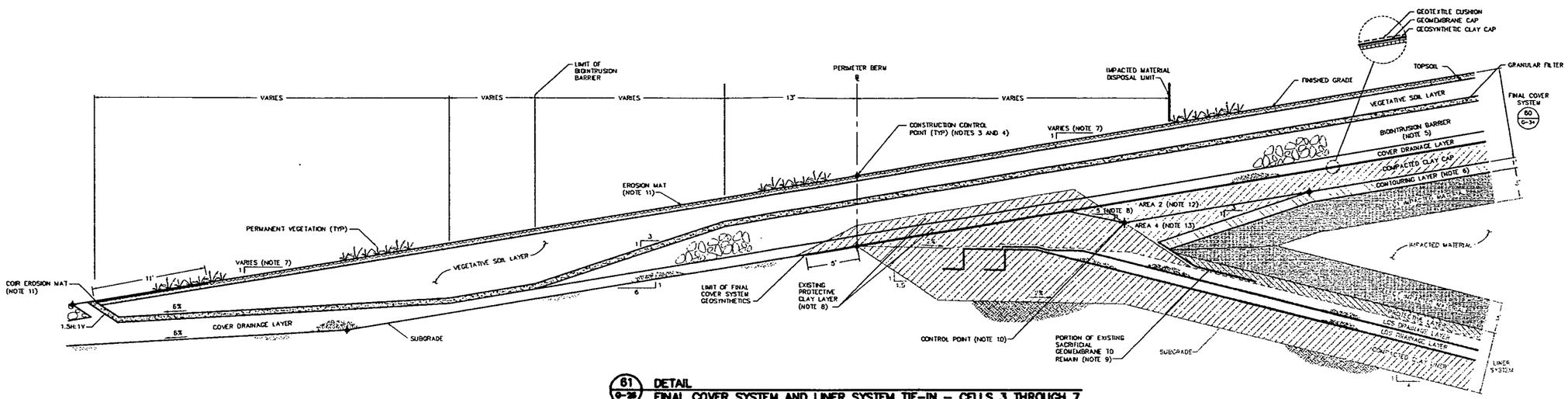
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SIGNED.

SIGNATURE
DATE
SEAL

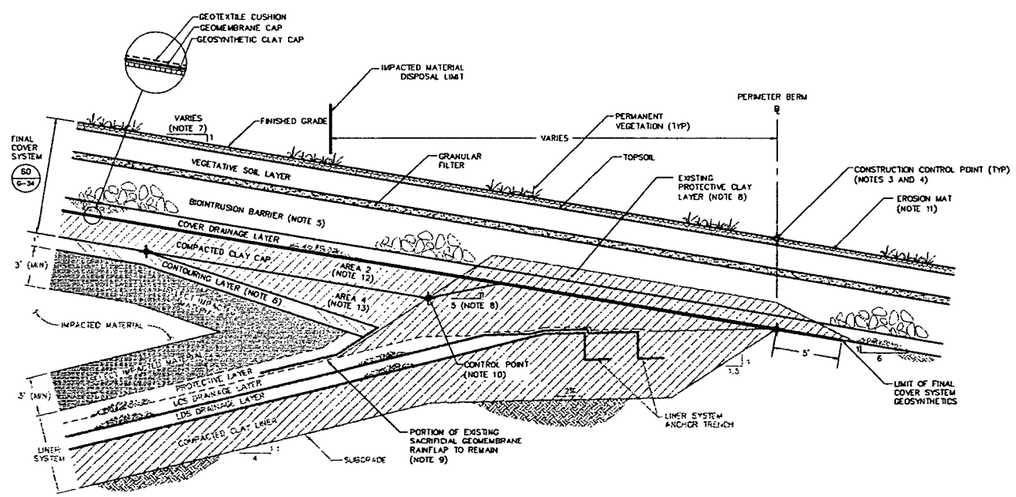
GEOSYNTEC CONSULTANTS
3900 KORI ROAD, NW
ATLANTA, GEORGIA 30327 USA

PROJECT NO.:	20105
CONTRACT NO.:	D3FD599
ITEMP DRAWING NO.:	90X-8000-G-00386
GEOSYNTEC PROJECT NO.:	GG3211-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1035
SHEET NO.:	G-34
REVISION NO.:	1

CERTIFIED-FOR-CONSTRUCTION



61 / G-26 DETAIL
FINAL COVER SYSTEM AND LINER SYSTEM TIE-IN – CELLS 3 THROUGH 7 AND CELL 8 OUTSIDE OF IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'



62 / G-27 DETAIL
FINAL COVER SYSTEM AND LINER SYSTEM TIE-IN – CELL 8 AT IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. CONSTRUCTION CONTROL POINTS FOR CONTOURING LAYER, COMPACTED CLAY CAP, AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-10 THROUGH G-15, G-13A, AND G-15A.
4. REESTABLISH SUBGRADE ELEVATIONS OUTSIDE PERIMETER BERM BASELINE PRIOR TO COMPLETION OF COMPACTED CLAY CAP. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWINGS G-3, G-4, G-6, AND G-6A.
5. CHOKE STONE LAYER SHALL BE PLACED INTO TOP OF BIOINTRUSION BARRIER IN ACCORDANCE WITH SPECIFICATION SECTION 02280.
6. CONTOURING LAYER SHALL CONSIST OF NON-IMPACTED MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02240. RUNOFF FROM NON-IMPACTED CONTOURING LAYER SHALL BE DIVERTED TO IMPACTED RUNOFF CATCHMENT AREA UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED. WATER GENERATED DURING CONSTRUCTION AND FILLING OF DSDF SHALL BE CONTAINED AND CONTROLLED IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
7. SLOPE OF LOWER PORTION OF FINAL COVER SYSTEM IS 6H:1V FOR EAST, WEST, AND SOUTH PERIMETERS OF DSDF.
8. EXISTING PROTECTIVE CLAY LAYER PLACED ABOVE FINAL COVER SYSTEM GRADES SHALL BE CUT BACK JUST PRIOR TO COMPLETION OF COMPACTED CLAY CAP. TRANSITION FROM PROTECTIVE CLAY LAYER TO COMPACTED CLAY CAP SHALL BE CUT BACK AT A 5H:1V SLOPE OR FLATTER IN ACCORDANCE WITH SPECIFICATION SECTION 02225.
9. EXPOSED PORTION OF EXISTING SACRIFICIAL GEOMEMBRANE SHALL BE REMOVED BY CUTTING PRIOR TO CONSTRUCTION OF COMPACTED CLAY CAP IN TEMPORARY DRAINAGE CHANNEL.
10. CONTROL POINT WILL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION SECTION 02100.
11. EROSION MAT SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 02270. EROSION MAT WITH A 100% COIR YARN CONTENT SHALL BE USED AT TWO LOCATIONS, TO LIMITS INDICATED ON DETAIL 61, DRAWING G-35, AND AT THE 10H:1V TO 6H:1V FINAL COVER SYSTEM SLOPE TRANSITION. TWO 6-FOOT WIDTHS OF COIR EROSION MAT SHALL BE USED AT EACH LOCATION WITH A 1.5' OVERLAP ON EACH SIDE OF THE 10H:1V TO 6H:1V TRANSITION.
12. AREA 2 OF COMPACTED CLAY CAP SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATION SECTION 02225.
13. AREA 4 MAY BE CONSTRUCTED OF COMPACTED CLAY CAP OR NON-IMPACTED CONTOURING LAYER MATERIALS AS APPROVED BY THE CONSTRUCTION MANAGER. COMPACTED CLAY CAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02225. NON-IMPACTED CONTOURING LAYER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02240.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FT/DOE/EPA	KRD	VDR	KRD	DKP	RB
1B	03.11.08	PRE-FINAL REVISION 1 SUBMITTAL TO FT/DOE	KRD	VDR	KRD	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FT/DOE	KRD	VDR	KRD	DKP	RB
0	02.01.29	CFC SUBMITTAL TO FT/DOE/EPA	KRD	JWO	KRD	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FT/DOE	KRD	JWO	KRD	DGP	JFB
A	–	NOT ISSUED	–	–	–	–	–

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: FINAL COVER SYSTEM DETAILS II

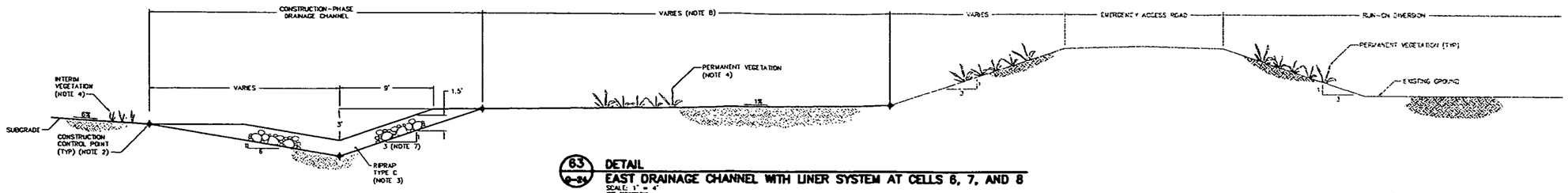
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

SIGNATURE
DATE
SEAL

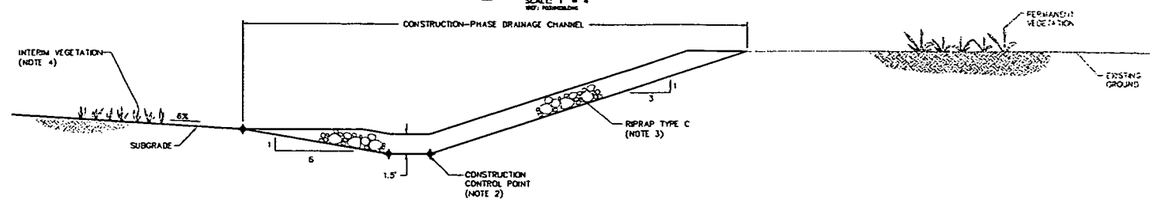
GEOSYNTEC CONSULTANTS
1900 LAKE PEARL DRIVE
ATLANTA, GEORGIA 30340 USA

PROJECT NO.:	20105
CONTRACT NO.:	03FD0699
FDAP DRAWING NO.:	901-5000-G-00397
GEOSYNTEC PROJECT NO.:	GG3211-05.04
GEOSYNTEC DOCUMENT NO.:	F03-1051
SHEET NO.:	G-35
REVISION NO.:	1

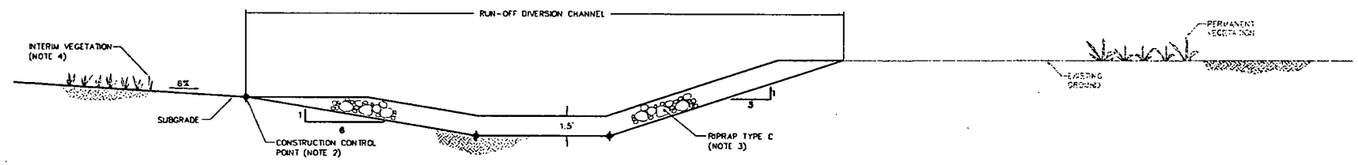
CERTIFIED-FOR-CONSTRUCTION



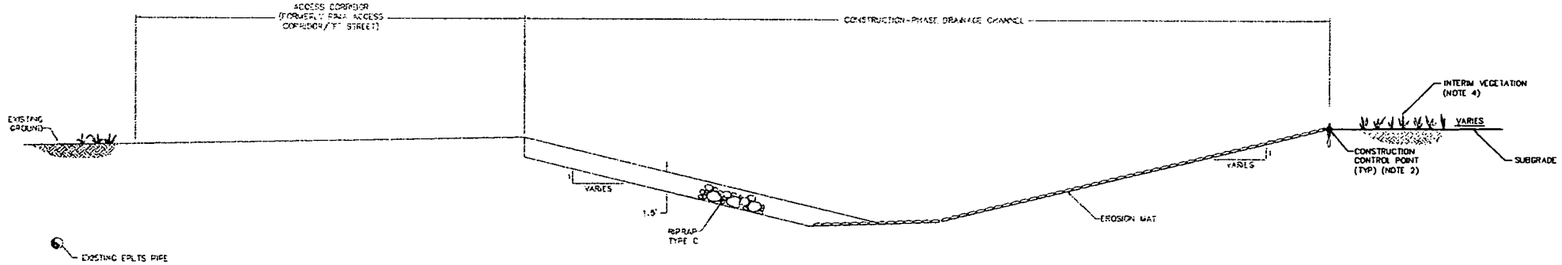
63 / G-34 DETAIL
EAST DRAINAGE CHANNEL WITH LINER SYSTEM AT CELLS 6, 7, AND 8
SCALE: 1" = 4'



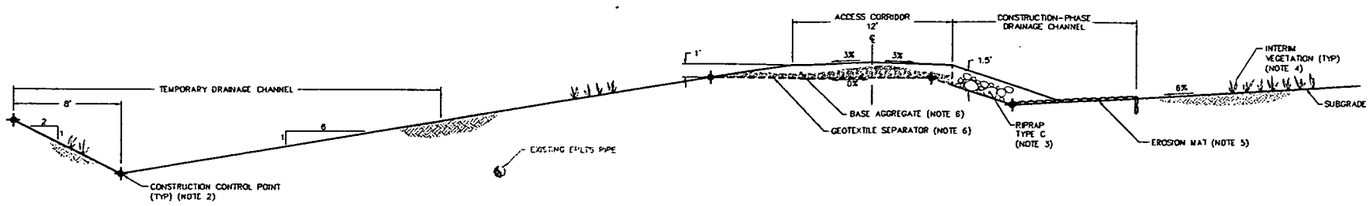
64 / G-25 DETAIL
SOUTHEAST DRAINAGE CHANNEL WITH LINER SYSTEM AT CELL 8
SCALE: 1" = 4'



65 / G-25 DETAIL
SOUTH DRAINAGE CHANNEL WITH LINER SYSTEM AT CELL 8
SCALE: 1" = 4'



66 / G-26 DETAIL
SOUTHWEST DRAINAGE CHANNEL WITH LINER SYSTEM AT CELL 8
SCALE: 1" = 4'



67 / G-26 DETAIL
WEST DRAINAGE CHANNEL WITH LINER SYSTEM AT CELLS 6 AND 7 AND CELL 8 NORTH OF GIS-15
SCALE: 1" = 4'

NOTES:

1. 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 LIMITS GIVEN IN THE SPECIFICATIONS.
2. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWINGS G-4, G-6, AND G-6A.
3. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
4. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
5. EROSION MAT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
6. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
7. EASTERN SLOPE OF CONSTRUCTION-PHASE DRAINAGE CHANNEL SHALL VARY AT SOUTHEAST CORNER OF CELL 8 BETWEEN 3H:1V TO 2H:1V AS SHOWN ON DRAWING G-8A.
8. WIDTH OF 1% SLOPE EAST OF CONSTRUCTION-PHASE DRAINAGE CHANNEL VARIES FROM 0 FEET ALONG SOUTHEAST CORNER OF CELL 8 TO FULL WIDTH EAST OF CELL 6.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LWG	DCP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LWG	DCP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JAS	LWG	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JWD	LWG	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: SURFACE-WATER MANAGEMENT SYSTEM DETAILS I

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION UNLESS SEALED.

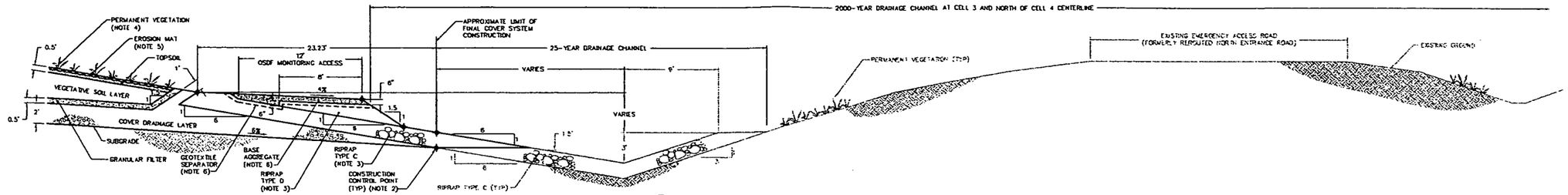
SIGNATURE
DATE

SEAL

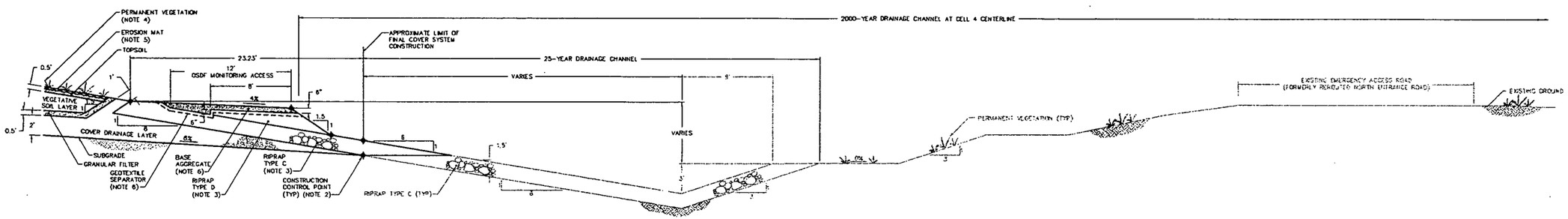
GEOSYNTEC CONSULTANTS
1000 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO.: 20105
CONTRACT NO.: 03FD699
TEMP DRAWING NO.: 907-5000-G-00398
GEOSYNTEC PROJECT NO.: 00321-06.04
GEOSYNTEC DOCUMENT NO.: F03-1037
SHEET NO.: G-36
REVISION NO.: 1

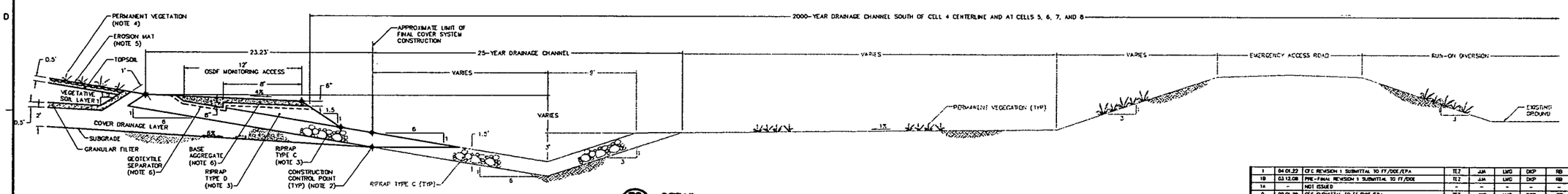
CERTIFIED-FOR-CONSTRUCTION



68 / G-28 DETAIL
EAST DRAINAGE CHANNEL WITH FINAL COVER SYSTEM AT CELL 3 AND NORTH OF CELL 4 CENTERLINE
SCALE: 1" = 4'



69 / G-28 DETAIL
EAST DRAINAGE CHANNEL WITH FINAL COVER SYSTEM AT CELL 4 CENTERLINE
SCALE: 1" = 4'



70 / G-28 DETAIL
EAST DRAINAGE CHANNEL WITH FINAL COVER SYSTEM SOUTH OF CELL 4 CENTERLINE AND AT CELLS 5, 6, 7, AND 8
SCALE: 1" = 4'

NOTES:

1. 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 LIMITS GIVEN IN THE SPECIFICATIONS.
2. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-3, G-4, G-8, G-8A, G-14, G-15, AND G-15A.
3. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
4. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
5. EROSION MAT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
6. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMG	DCP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LMG	DCP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JWD	LMG	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JWD	LMG	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: SURFACE-WATER MANAGEMENT SYSTEM DETAILS II

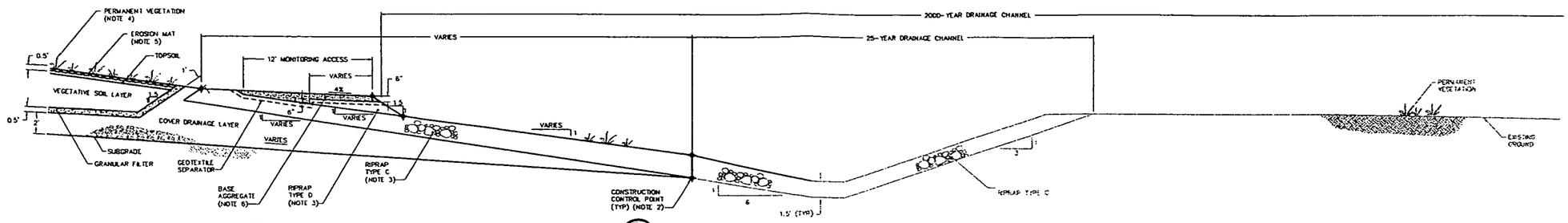
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION, UNLESS SEALED.

Signature
DATE
SEAL

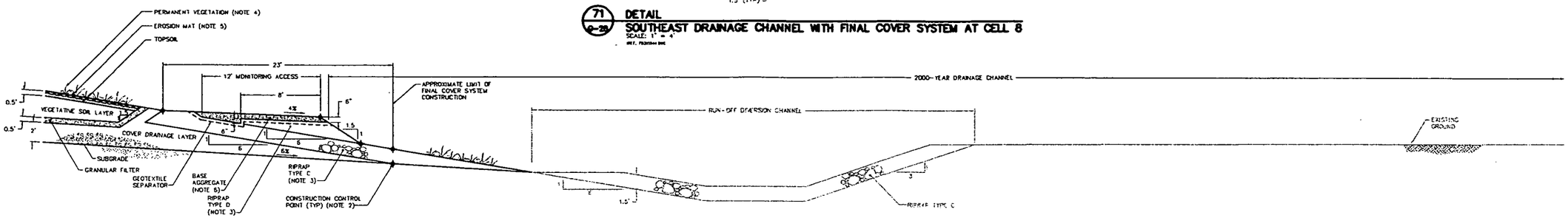
GEOSYNTEC CONSULTANTS
1900 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30043 USA

PROJECT NO.: 20105
CONTRACT NO.: 03TF0699
TEMP DRAWING NO.: 901-6000-G-00399
GEOSYNTEC PROJECT NO.: GO3211-08.04
GEOSYNTEC DOCUMENT NO.: F03-1038
SHEET NO.: G-37
REVISION NO.: 1

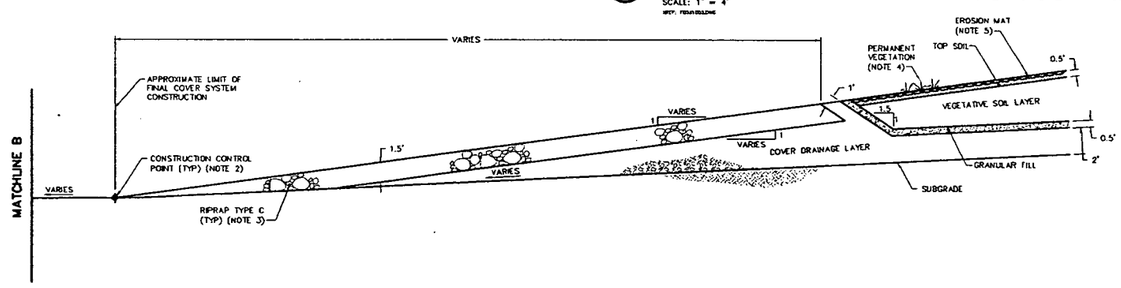
CERTIFIED-FOR-CONSTRUCTION

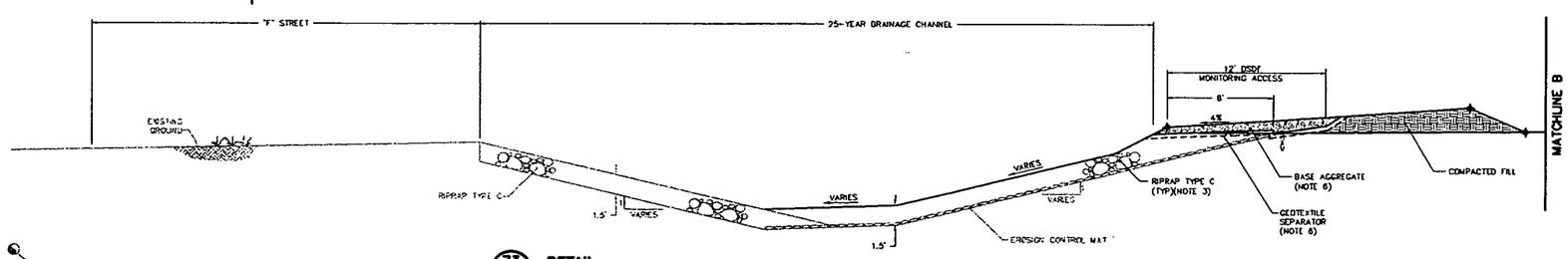


71 G-28 DETAIL
SOUTHEAST DRAINAGE CHANNEL WITH FINAL COVER SYSTEM AT CELL 8
SCALE: 1" = 4'

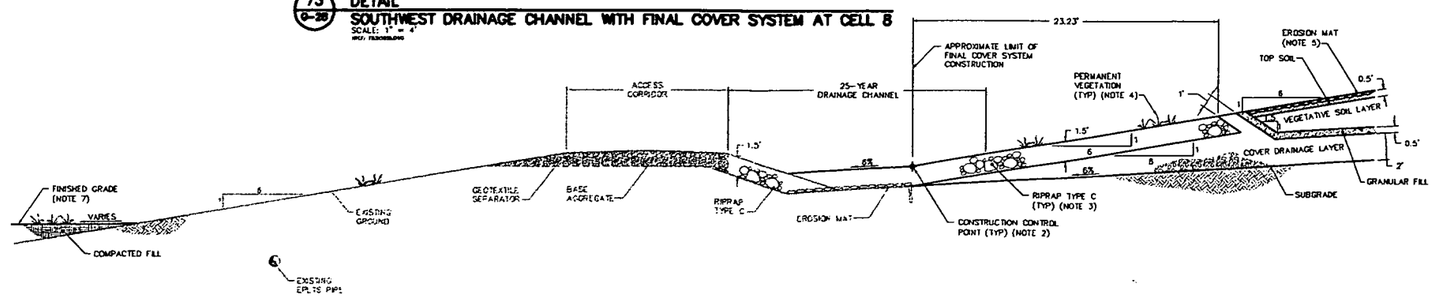


72 G-28 DETAIL
SOUTH DRAINAGE CHANNEL WITH FINAL COVER SYSTEM AT CELL 8
SCALE: 1" = 4'





73 G-28 DETAIL
SOUTHWEST DRAINAGE CHANNEL WITH FINAL COVER SYSTEM AT CELL 8
SCALE: 1" = 4'



74 G-27 DETAIL
WEST DRAINAGE CHANNEL WITH FINAL COVER SYSTEM AT CELLS 3 THROUGH 7 AND CELL 8 NORTH OF GIS-15
SCALE: 1" = 4'

CERTIFIED-FOR-CONSTRUCTION

NOTES:

1. 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 LIMITS GIVEN IN THE SPECIFICATIONS.
2. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-3, G-4, G-6, G-6A, G-14, G-15, AND G-15A.
3. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
4. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
5. EROSION MAT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
6. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
7. PLACE COMPACTED FILL, AS NECESSARY, TO PROVIDE POSITIVE DRAINAGE TO FORMER PRODUCTION AREA AND AWAY FROM OSDF FACILITY.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	TEZ	JJA	LMC	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	TEZ	JJA	LMC	DKP	RB
1A	-	NOT ISSUED	-	-	-	-	-
0	03.01.99	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	JWD	LMC	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	JWD	LMC	DCP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: SURFACE-WATER MANAGEMENT SYSTEM DETAILS III

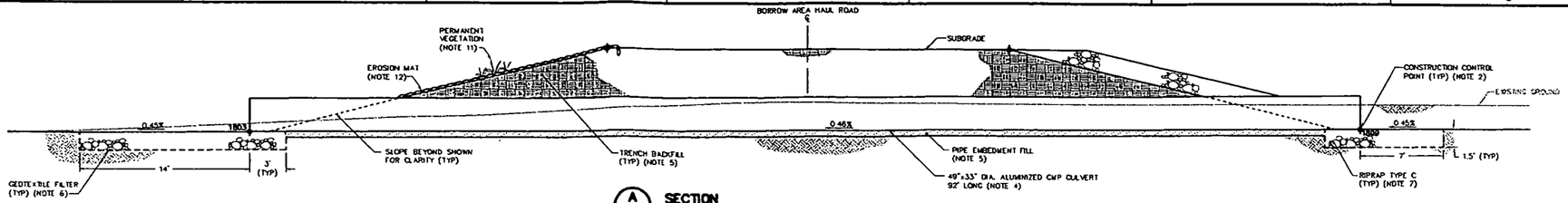
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT LEADER OR CONSTRUCTION UNLESS SEALED.

DATE | SEAL

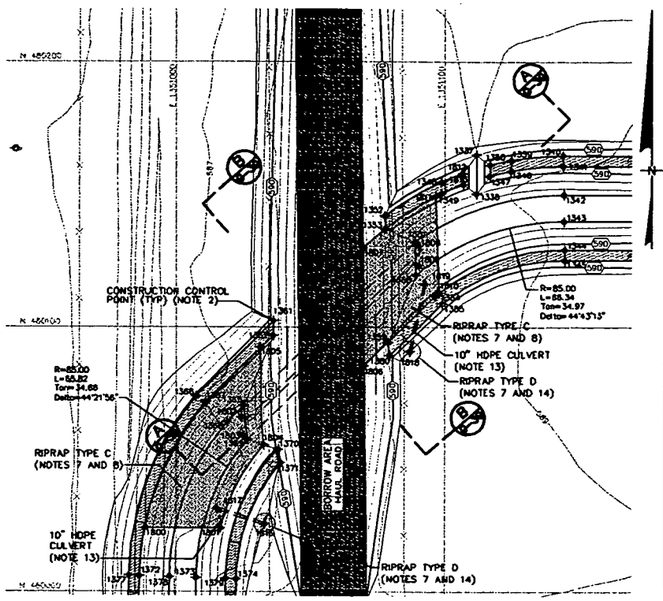
GeoSyntec Consultants
1100 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30319 USA

PROJECT NO:	20105
CONTRACT NO:	03F0699
TEMP DRAWING NO:	90X-6000-G-00400
GEOSYNTEC PROJECT NO:	G03211-06.04
GEOSYNTEC DOCUMENT NO:	F03-1039
SHEET NO:	G-38
REVISION NO:	1

000050

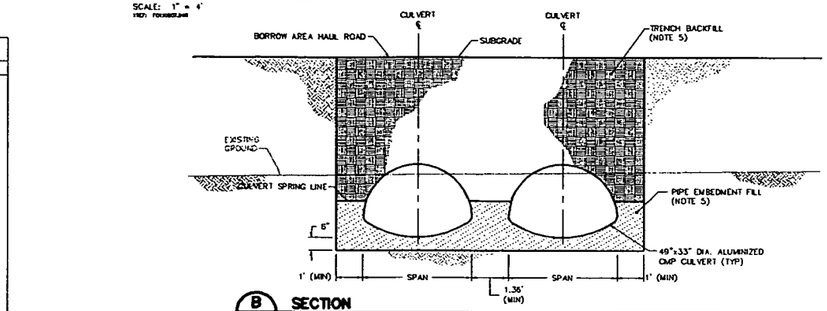


A 0-38 SECTION
BORROW AREA HAUL ROAD
49"x33" DIA. ALUMINIZED CMP CULVERT CROSSING
SCALE: 1" = 4'

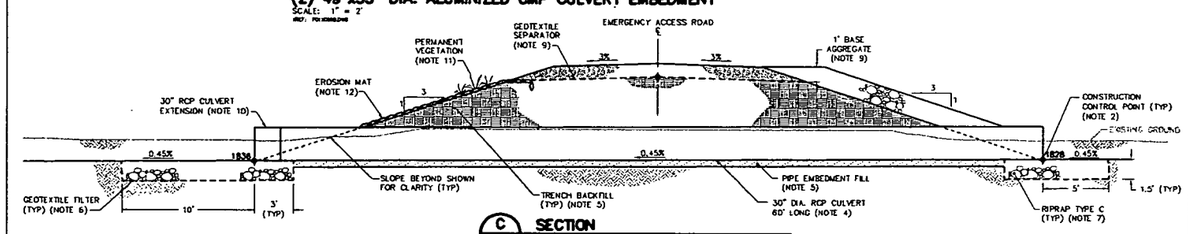


75 0-4 PLAN
RUN-OFF DIVERSION CHANNEL MODIFICATION AT EXISTING BORROW AREA HAUL ROAD
SCALE: 1" = 20'

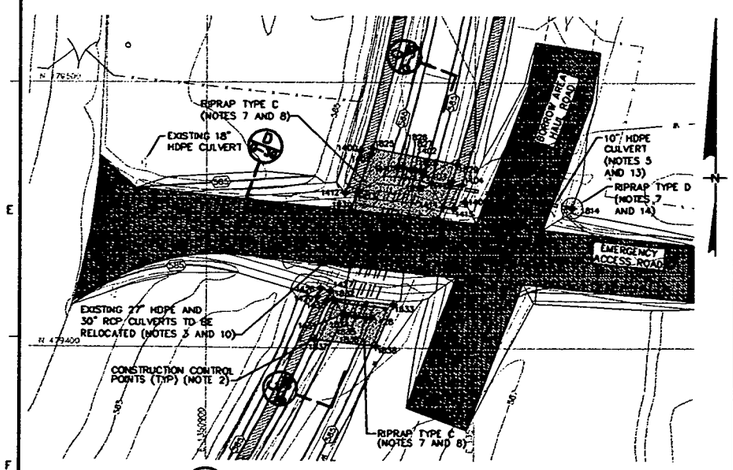
CONSTRUCTION CONTROL POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1337	480164.93	1351111.56	589.00
1338	480150.26	1351111.56	589.00
1339	480162.89	1351124.72	590.72
1340	480164.84	1351143.86	590.79
1341	480160.64	1351143.92	590.79
1342	480149.93	1351144.06	587.22
1343	480139.93	1351144.20	587.22
1344	480129.22	1351144.35	590.79
1345	480125.22	1351144.40	590.79
1346	480158.79	1351124.62	590.72
1347	480156.95	1351116.54	590.66
1348	480154.72	1351098.60	590.62
1349	480150.39	1351098.71	590.61
1350	480161.12	1351116.68	590.89
1351	480132.01	1351088.83	586.97
1352	480141.96	1351077.37	590.53
1353	480137.19	1351077.77	590.52
1354	480111.70	1351086.26	590.50
1355	480108.74	1351088.96	590.51
1358	480119.64	1351089.06	586.93
1359	480094.27	1351078.66	590.50
1360	480089.29	1351078.32	590.38
1361	480102.40	1351036.20	590.38
1362	480096.82	1351036.16	590.36
1365	480070.40	1351025.12	586.58
1366	480073.87	1351007.39	590.20
1367	480071.59	1351010.69	590.20
1368	480064.15	1351018.82	586.54
1369	480057.52	1351026.33	586.53
1370	480053.66	1351038.04	590.21
1371	480048.65	1351038.66	590.19
1372	480005.83	1350986.33	589.92
1373	480005.20	1351007.30	586.26
1374	480004.75	1351022.28	589.92
1377	480005.95	1350982.33	589.92
1378	480005.50	1350997.31	586.26
1379	480004.87	1351018.28	589.92
1800	480023.97	1350988.26	-
1801	480023.97	1351016.31	-
1802	480065.97	1351024.24	586.55
1803	480058.98	1351024.90	586.53
1804	480055.50	1351032.55	-
1805	480092.48	1351031.19	-
1806	480085.45	1351059.75	-
1807	480130.11	1351069.27	-
1808	480130.75	1361090.06	586.97
1809	480123.35	1351090.31	586.95
1810	480112.88	1351097.68	-
1811	480149.23	1351096.43	-
1812	480157.98	1351108.51	590.65
1813	480153.74	1351108.65	590.64
1816	480025.56	1351032.95	587.78
1817	480031.33	1351015.09	587.40
1818	480090.80	1351086.83	589.00
1819	480116.41	1351092.45	588.48



B 0-38 SECTION
BORROW AREA HAUL ROAD
(2) 49"x33" DIA. ALUMINIZED CMP CULVERT EMBEDMENT
SCALE: 1" = 2'

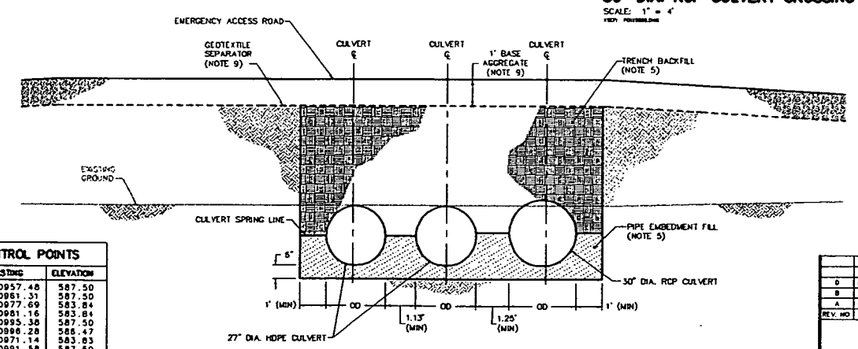


C 0-38 SECTION
EMERGENCY ACCESS ROAD
30" DIA. RCP CULVERT CROSSING
SCALE: 1" = 4'



76 0-8 PLAN
RUN-OFF DIVERSION CHANNEL MODIFICATION AT EMERGENCY ACCESS ROAD
SCALE: 1" = 20'

CONSTRUCTION CONTROL POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1400	479474.21	1350957.48	587.50
1401	479473.08	1350961.31	587.50
1402	479467.20	1350977.69	583.84
1403	479486.21	1350981.16	583.84
1404	479461.50	1350995.38	587.50
1405	479455.06	1350998.28	586.47
1410	479467.89	1350971.14	583.83
1411	479462.76	1350991.58	587.50
1412	479458.33	1350951.81	587.43
1413	479458.59	1350956.15	587.44
1414	479453.12	1350988.14	587.45
1415	479452.58	1350992.20	587.46
1426	479422.56	1350942.77	588.10
1427	479421.48	1350946.62	588.10
1428	479411.28	1350961.36	583.08
1429	479419.22	1350941.57	586.08
1430	479417.78	1350945.31	586.08
1431	479412.35	1350951.17	583.57
1814	479452.89	1351036.29	586.14
1815	479462.21	1350983.93	585.08
1825	479475.13	1350961.92	-
1826	479467.98	1350972.90	583.84
1827	479467.44	1350976.27	583.84
1828	479466.67	1350979.87	583.84
1829	479459.20	1350983.49	-
1830	479451.86	1350953.75	-
1831	479448.45	1350986.48	-
1832	479418.57	1350947.57	-
1833	479416.26	1350969.76	-
1834	479411.95	1350952.37	583.57
1835	479411.59	1350955.63	583.57
1836	479411.18	1350959.54	583.57
1837	479403.14	1350940.71	-
1838	479400.71	1350963.40	-



D 0-38 SECTION
EMERGENCY ACCESS ROAD
(2) 27" DIA. HDPE & 30" DIA. RCP CULVERT EMBEDMENT
SCALE: 1" = 2'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. CONSTRUCTION CONTROL POINTS FOR SUBGRADE, CULVERT INVERTS, AND RIPRAP LIMITS ARE PROVIDED IN THE TABLES PROVIDED ON THIS DRAWING AND ON DRAWINGS G-4 AND G-5
3. CONTRACTOR SHALL REMOVE EXISTING CULVERTS AND STOCKPILE MATERIAL AT LOCATIONS APPROVED BY CONSTRUCTION MANAGER.
4. ALUMINIZED CMP CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
5. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
6. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
7. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
8. CONTRACTOR SHALL PLACE RIPRAP TYPE C WITHIN AREA SHOWN.
9. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
10. EXISTING CULVERTS SHALL BE EXTENDED AS NECESSARY TO MEET REQUIRED LENGTHS.
11. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
12. EROSION MAT SHALL BE INSTALLED ON SLOPE LENGTHS OF 6' OR GREATER AND IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
13. HDPE CULVERTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
14. CONTRACTOR SHALL PLACE RIPRAP TO A DISTANCE OF 4 FEET FROM INLET OF 10-INCH HDPE CULVERT. RIPRAP THICKNESS SHALL BE 1 FOOT AND UNDERLAIN BY A GEOTEXTILE FILTER.

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
D	02.01.29	CFC SUBMITTAL TO FT/DOE/EPA	TEZ	JJA	LMG	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FT/DOE	TEZ	JJA	LMG	DGP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FT/DOE	TEZ	JJA	LMG	DGP	JFB

20 10 0 20 40
SCALE IN FEET

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

CLIENT:
FLUOR FERNALD, INC.

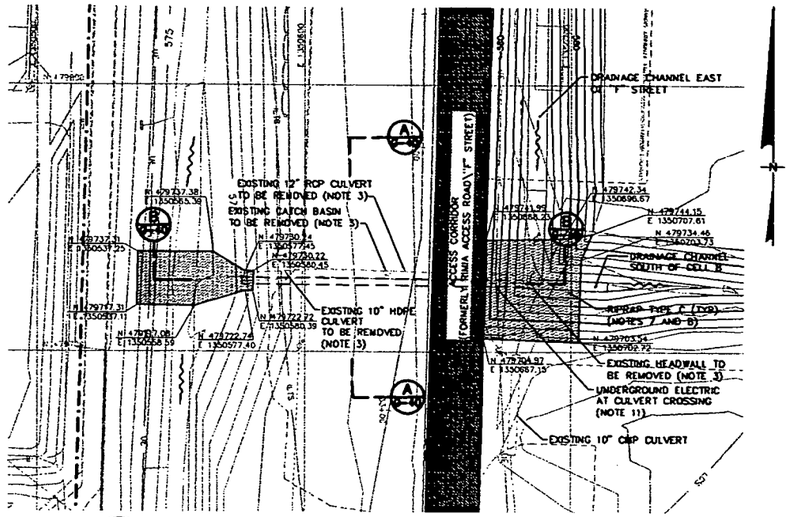
PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
SURFACE-WATER MANAGEMENT SYSTEM DETAILS IV

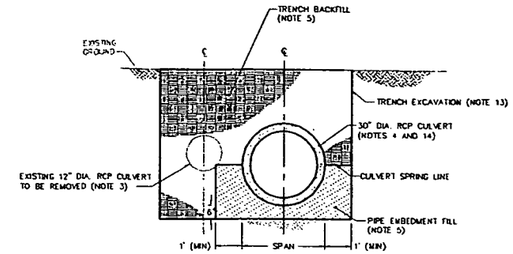
THIS DRAWING MAY NOT BE COPIED FOR PROJECT REVIEW OR CONSTRUCTION, UNLESS SIGNED.

GEOSYNTEC CONSULTANTS
1100 LAST MILE DRIVE
ATLANTA, GEORGIA 30342 USA

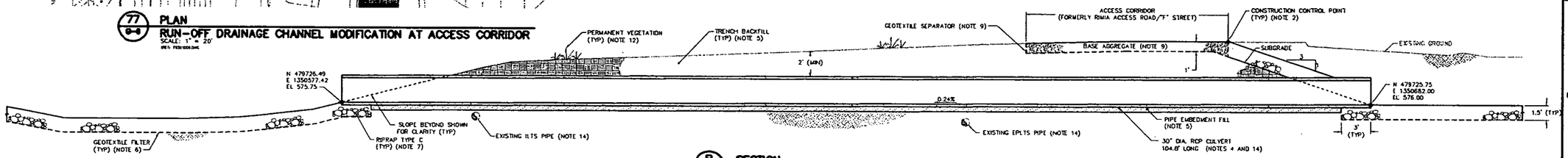
PROJECT NO.:	20105
CONTRACT NO.:	95PS005028
FEMP DRAWING NO.:	90X-6000-G-00401
GEOSYNTEC PROJECT NO.:	GG1342-17.4
GEOSYNTEC DOCUMENT NO.:	FD1-0711
SHEET NO.:	G-39
REVISION NO.:	0



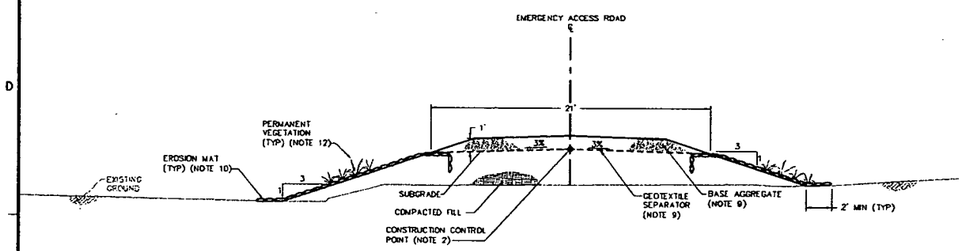
77 / G-8 PLAN
RUN-OFF DRAINAGE CHANNEL MODIFICATION AT ACCESS CORRIDOR
SCALE: 1" = 20'



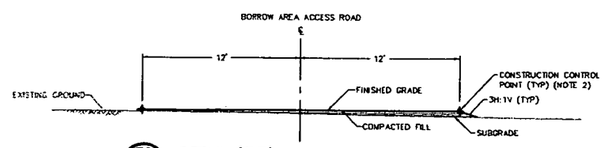
A / G-40 SECTION
RUN-OFF DRAINAGE CHANNEL MODIFICATION 30-IN DIA. RCP CULVERT EMBEDMENT
SCALE: 1" = 2'



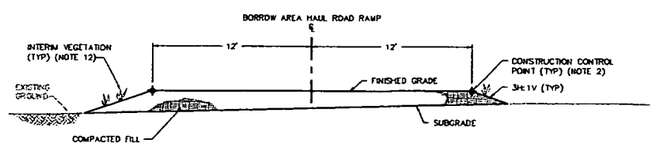
B / G-40 SECTION
RUN-OFF DRAINAGE CHANNEL MODIFICATION 30-IN DIA. RCP CULVERT CROSSING
SCALE: 1" = 4'



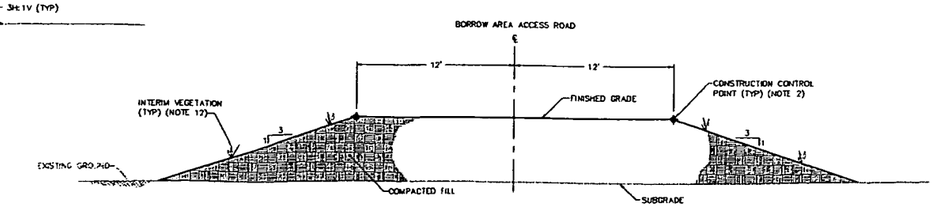
78 / G-8 DETAIL (TYP)
EMERGENCY ACCESS ROAD
SCALE: 1" = 4'



79 / G-4 DETAIL (TYP)
BORROW AREA ACCESS ROAD – CELL 6
SCALE: 1" = 4'



80 / G-8 DETAIL (TYP)
BORROW AREA HAUL ROAD RAMP
SCALE: 1" = 4'



81 / G-8 DETAIL (TYP)
BORROW AREA ACCESS ROAD – CELL 7
SCALE: 1" = 4'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWINGS G-4, G-5, G-6, AND G-6A.
3. REMOVE EXISTING CULVERTS, CATCH BASIN, AND HEADWALL AND STOCKPILE MATERIAL AT LOCATIONS DESIGNATED BY CONSTRUCTION MANAGER.
4. RCP CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
5. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
6. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
7. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
8. PLACE RIPRAP TYPE C WITHIN AREA SHOWN.
9. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
10. EROSION MAT SHALL BE INSTALLED ON SLOPE LENGTHS OF 8 FEET OR GREATER AND IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
11. UNDERGROUND ELECTRIC AT CULVERT CROSSING SHALL BE REMOVED AND RELOCATED PRIOR TO INSTALLATION OF NEW CULVERT.
12. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
13. TRENCH EXCAVATION IS SHOWN VERTICAL AS DESIGNED. SHORING AND/OR STABLE TRENCH SIDESLOPES SHALL BE MAINTAINED FOR SAFETY AND TO PROTECT ADJACENT UTILITIES AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
14. USE EXTREME CAUTION WHEN INSTALLING RCP CULVERTS NEAR LEACHATE PIPES. PIPE EMBEDMENT AND BACKFILL SHALL BE INSTALLED TO PROVIDE NECESSARY SUPPORT FOR CULVERTS TO AVOID DAMAGE TO LEACHATE PIPES.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMC	JJA	TEZ	DCP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LMC	JJA	TEZ	DCP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	LMC	JJA	TEZ	DCP	RB
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	LMC	JJA	TEZ	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	LMC	JJA	TEZ	DCP	JFB
A	–	NOT ISSUED	–	–	–	–	–

20 10 0 20 40
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY – PHASE V

TITLE:
SURFACE-WATER MANAGEMENT SYSTEM DETAILS V

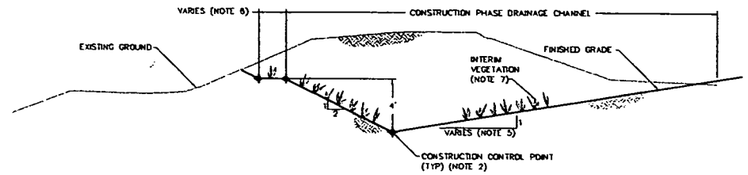
THIS DRAWING MAY NOT BE USED FOR PROJECT BIDDER OR CONSTRUCTION, UNLESS SEALED.

SIGN HERE
DATE
SEAL

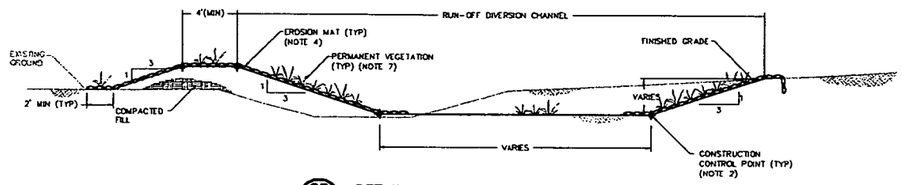
GEOSYNTEC CONSULTANTS
1100 LAKE HIGHER DRIVE
ATLANTA, GEORGIA 30342 USA

PROJECT NO.: 20105
CONTRACT NO.: 03FF0699
FLWP DRAWING NO.: 901-0000-G-00402
GEOSYNTEC PROJECT NO.: CO3211-06.04
GEOSYNTEC DOCUMENT NO.: F03-1712
SHEET NO.: G-40
REVISION NO.: 1

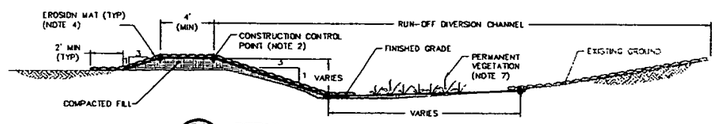
CERTIFIED-FOR-CONSTRUCTION



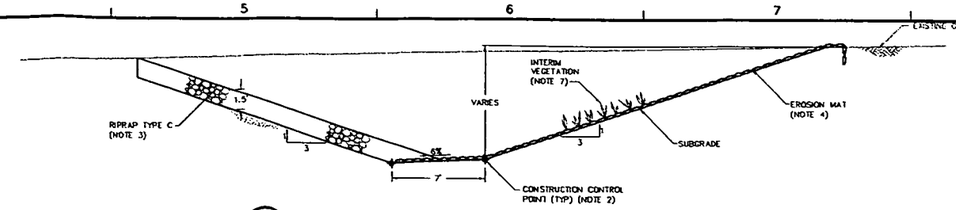
82 / G-3 DETAIL
DRAINAGE CHANNEL AND TEMPORARY RUN-OFF DIVERSION BERM
SCALE: 1" = 4'



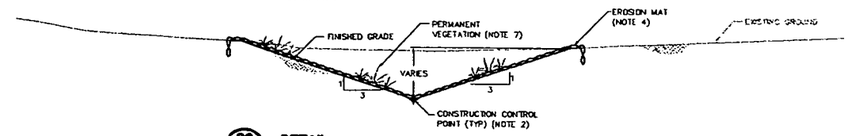
83 / G-4 DETAIL
RUN-OFF DIVERSION CHANNEL TO EXISTING BORROW AREA SEDIMENTATION BASIN
SCALE: 1" = 4'



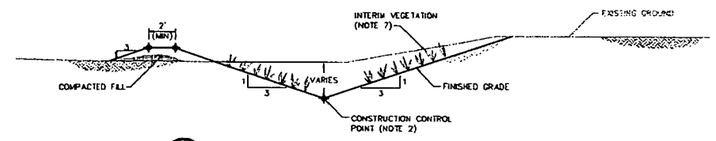
84 / G-6A DETAIL
RUN-OFF DIVERSION CHANNEL SOUTH OF CELL 8
SCALE: 1" = 4'



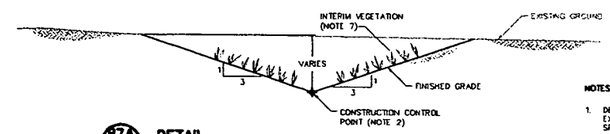
85 / G-6 DETAIL
DRAINAGE CHANNEL EAST OF "F" STREET
SCALE: 1" = 4'



86 / G-6 DETAIL
DRAINAGE CHANNEL SOUTH OF CELL 8
SCALE: 1" = 4'



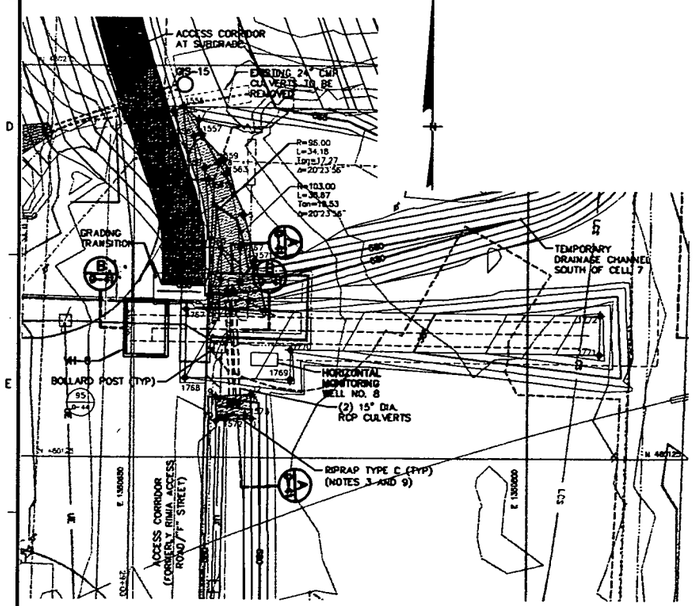
87 / G-4 DETAIL
TEMPORARY DRAINAGE CHANNEL SOUTH OF CELL 6
SCALE: 1" = 4'



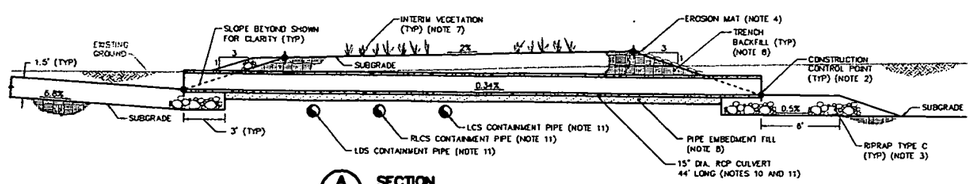
87A / G-6 DETAIL
TEMPORARY DRAINAGE CHANNEL SOUTH OF CELL 7
SCALE: 1" = 4'

SUBGRADE CONSTRUCTION CONTROL POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1555	480259.13	1350669.04	583.09
1556	480247.84	1350672.82	582.00
1557	480248.84	1350675.49	582.00
1558	480235.89	1350676.89	581.00
1559	480237.75	1350682.43	581.00
1562	480231.30	1350676.43	580.49
1563	480233.53	1350683.07	581.10
1566	480205.11	1350683.38	579.00
1567	480205.30	1350690.36	579.42
1570	480183.00	1350683.78	578.14
1571	480182.49	1350690.27	578.56
1572	480160.69	1350683.47	577.75
1573	480141.10	1350692.46	576.17
1767	480181.75	1350670.93	581.49
1768	480155.43	1350669.73	580.01
1769	480154.84	1350709.68	583.48
1770	480184.24	1350706.82	583.28
1771	480184.82	1350827.54	587.81
1772	480179.82	1350827.72	587.31
1773	480188.84	1350843.53	579.67
1774	480145.44	1350847.48	579.52
1775	480148.84	1350847.83	579.67
1776	480142.53	1350869.88	579.52

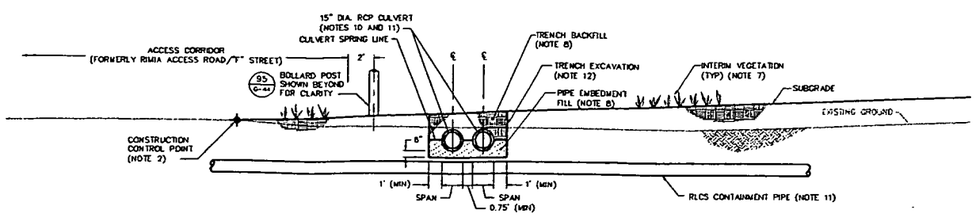
RIPRAP LIMIT CONTROL POINTS		
POINT NO.	NORTHING	EASTING
1	480257.81	1350664.81
2	480181.65	1350678.43
3	480181.38	1350700.10
4	480200.35	1350698.14
5	480217.84	1350681.17
6	480238.84	1350684.53
7	480254.04	1350674.74
8	480258.15	1350649.04
9	480148.18	1350681.44
10	480139.10	1350681.68
11	480139.87	1350684.98
12	480149.13	1350684.77



87B / G-6 PLAN
DRAINAGE CHANNEL EAST OF "F" STREET MODIFICATION AT VALVE HOUSE 8
SCALE: 1"=20'



A / G-4 SECTION
DRAINAGE CHANNEL EAST OF "F" STREET 15-IN DIA. RCP CULVERT CROSSING
SCALE: 1" = 4'



B / G-4 SECTION
DRAINAGE CHANNEL EAST OF "F" STREET (2) 15-IN DIA. RCP CULVERT EMBEDMENT

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWINGS G-3, G-4, G-5, G-6, AND G-6A AND ARE PROVIDED IN TABLE SHOWN ON THIS DRAWING. CONSTRUCTION CONTROL POINTS FOR CULVERT INVERTS AND RIPRAP LIMITS ARE PROVIDED IN TABLE SHOWN ON THIS DRAWING.
3. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
4. EROSION MAT SHALL BE INSTALLED ON SLOPE LENGTHS OF 6 FEET OR GREATER AS SHOWN AND IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
5. SLOPE OF CHANNEL SIDESLOPE IS 6H:1V FOR WEST PERIMETER OF DSDF AND TRANSITIONS FROM 6H:1V TO 3H:1V SOUTH OF CELL 8.
6. BERM WIDTH VARIES FROM 0 TO 2 FEET WHERE CHANNEL DEPTH REQUIRES BERM.
7. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
8. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
9. PLACE RIPRAP TYPE C WITHIN AREA SHOWN.
10. RCP CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721. RCP CULVERTS SHALL BE PLACED ON TOP OF RIPRAP 1.5 FEET ABOVE SUBGRADE AS SHOWN ON DRAWINGS.
11. USE EXTREME CAUTION WHEN INSTALLING RCP CULVERTS NEAR LEACHATE PIPES. PIPE EMBEDMENT AND BACKFILL SHALL BE PLACED TO PROVIDE NECESSARY SUPPORT FOR CULVERTS TO AVOID DAMAGE TO LEACHATE PIPES.
12. TRENCH EXCAVATION IS SHOWN VERTICAL AS DESIGNED. SHORING AND/OR STABLE TRENCH SIDESLOPES SHALL BE MAINTAINED FOR SAFETY AND TO PROTECT ADJACENT UTILITIES AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION SECTION 02215.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DKP	RB
1A	02.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DKP	RB
0	02.04.29	CFC SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TEZ	DKP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	LMG	JJA	TEZ	DKP	JFB
A	-	NOT ISSUED	-	-	-	-	-

20 10 0 20 40
SCALE IN FEET

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

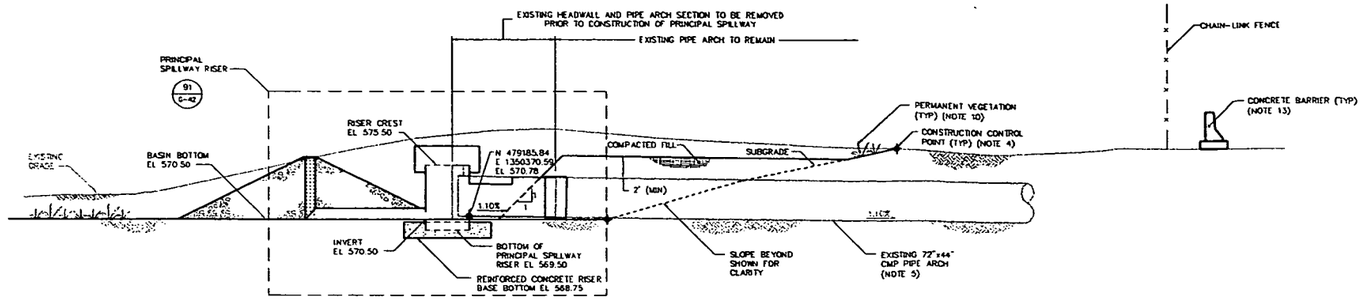
TITLE: SURFACE-WATER MANAGEMENT SYSTEM DETAILS VI

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT VENDOR OR CONSTRUCTION, UNLESS SEALED.

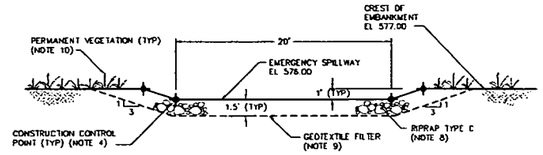
GEOSYNTEC CONSULTANTS
1900 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30043 USA

PROJECT NO: 20105
CONTRACT NO: 03T0699
FERNALD DRAWING NO: 9010-0000-G-00403
GEOSYNTEC PROJECT NO: GO3711-06.04
GEOSYNTEC DOCUMENT NO: F03-1713
SHEET NO.: G-41
REVISION NO.: 1

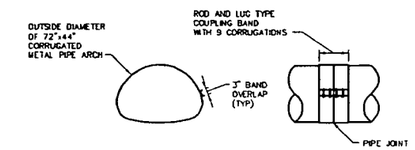
CERTIFIED-FOR-CONSTRUCTION



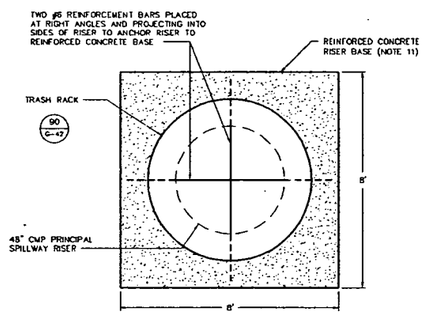
A / G-5 SECTION PRINCIPAL SPILLWAY
SCALE: 1" = 5'



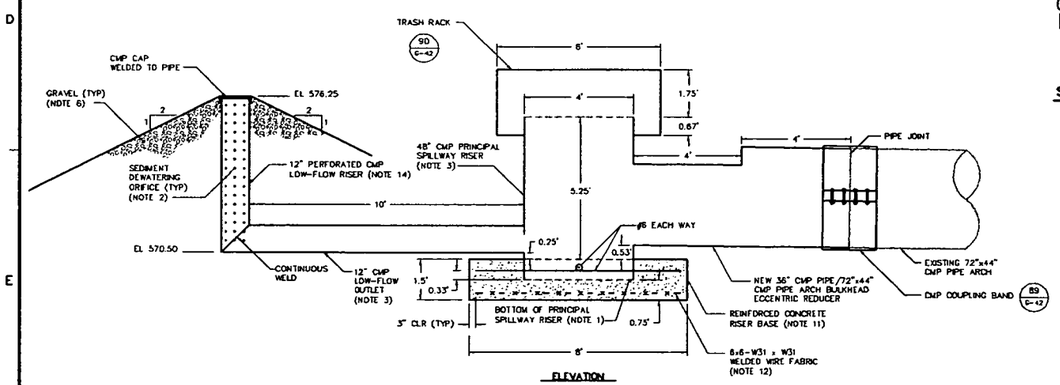
88 / G-6 DETAIL EMERGENCY SPILLWAY
SCALE: 1" = 5'



89 / G-42 DETAIL CMP COUPLING BAND
SCALE: NTS

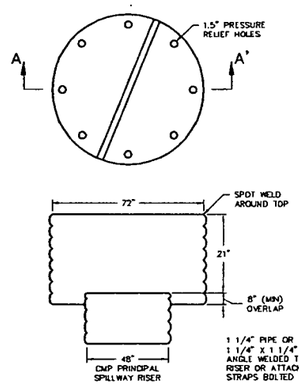


PLAN

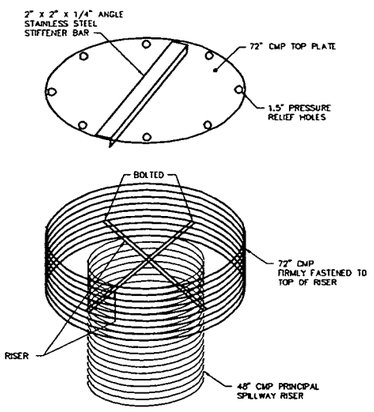


ELEVATION

91 / G-42 DETAIL PRINCIPAL SPILLWAY RISER
SCALE: 1" = 2'

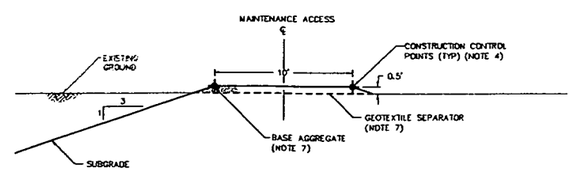


SECTION A-A'



ISOMETRIC VIEW

90 / G-42 DETAIL CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE
SCALE: NTS



92 / G-5 DETAIL MAINTENANCE ACCESS
SCALE: 1" = 4'

NOTES:

1. PRINCIPAL SPILLWAY RISER SHALL BE EMBEDDED 0.75 FEET IN REINFORCED CONCRETE RISER BASE.
2. SEDIMENT DEWATERING ORIFICES SHALL BE 1 INCH DIAMETER AND VERTICALLY SPACED AT 4 INCHES ON CENTER WITH 8 ORIFICES AT EACH LEVEL.
3. CULVERTS AND RISERS SHALL BE ALUMINIZED AND IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
4. CONSTRUCTION CONTROL POINTS FOR SUBGRADE AND MAINTENANCE ACCESS ALIGNMENT ARE PROVIDED ON DRAWING G-5.
5. CONTRACTOR SHALL FILL A MINIMUM OF 2 FEET ABOVE CROWN OF EXISTING CMP PIPE ARCH CULVERT. PLACEMENT AND COMPACTION OF FILL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
6. AASHTO NO. 57 STONE SHALL BE USED AROUND 12-INCH PERFORATED CMP LOW-FLOW RISER.
7. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
8. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
9. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
10. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
11. CONTRACTOR SHALL FURNISH CONCRETE MIX WITH SUFFICIENT AIR ENTRAINING ADMIXTURE TO PROVIDE 5% ± 1% AIR AT POINT OF DELIVERY IN ACCORDANCE WITH ASTM C231 AND A COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C39.
12. CONTRACTOR SHALL FURNISH REINFORCING WELDED STEEL WIRE FABRIC IN ACCORDANCE WITH ASTM A185.
13. CONCRETE BARRIERS SHALL BE SUPPLIED BY FLUOR FERNALD, INC.
14. CONTRACTOR SHALL WRAP LOW-LEVEL RISER WITH GALVANIZED WIRE MESH OVERLAIN BY TWO WRAPS OF GEOTEXTILE FILTER. GALVANIZED WIRE MESH SHALL HAVE 1/2 INCH SQUARE OPENINGS AND A 0.063 INCH WIRE DIAMETER.

REV NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	02.10.30	RESPONSE TO OEPA COMMENTS	DCP	JJA	CDC	DKP	JFB
0	02.01.29	CFC SUBMITTAL TO FT/DOE/EPA	LMG	JJA	TEZ	DCP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FT/DOE	LMG	RMM	TEZ	DCP	JFB
A	01.10.22	PRELIMINARY SUBMITTAL TO FT/DOE	LMG	RMM	TEZ	DCP	JFB

SCALE AS SHOWN

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT:
ON-SITE DISPOSAL FACILITY - PHASE V

TITLE:
SURFACE-WATER MANAGEMENT SYSTEM DETAILS VII

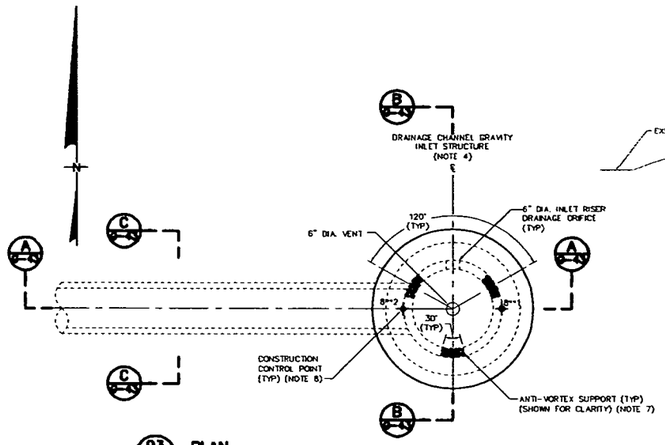
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION, UNLESS SEALED

GEOSYNTEC CONSULTANTS
1900 LAKE HARBIN DRIVE
ATLANTA, GEORGIA 30340 USA

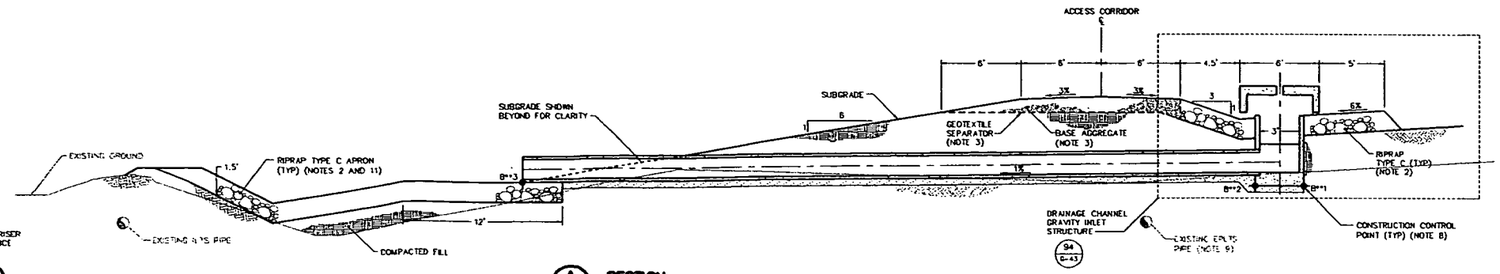
PROJECT NO: 20105
CONTRACT NO: 95P5005078
FLUOR DRAWING NO: 90X-8000-G-00404
GEOSYNTEC PROJECT NO: 001342-17.4
GEOSYNTEC DOCUMENT NO: F02-1040
SHEET NO: G-42
REVISION NO: 1

CERTIFIED-FOR-CONSTRUCTION

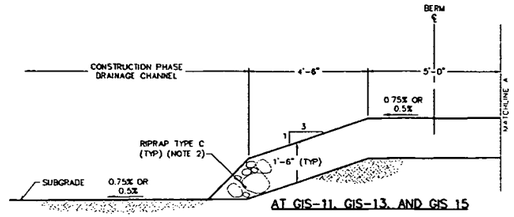
000054

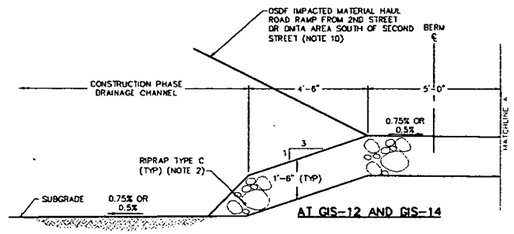


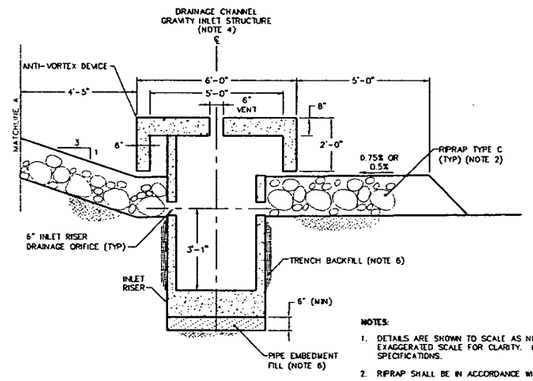
93/G-4 PLAN
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE WITH RCP CULVERT
SCALE: 1" = 2'



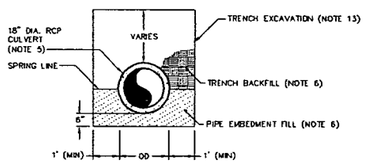
A/G-43 SECTION
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE WITH RCP CULVERT
SCALE: 1" = 4'



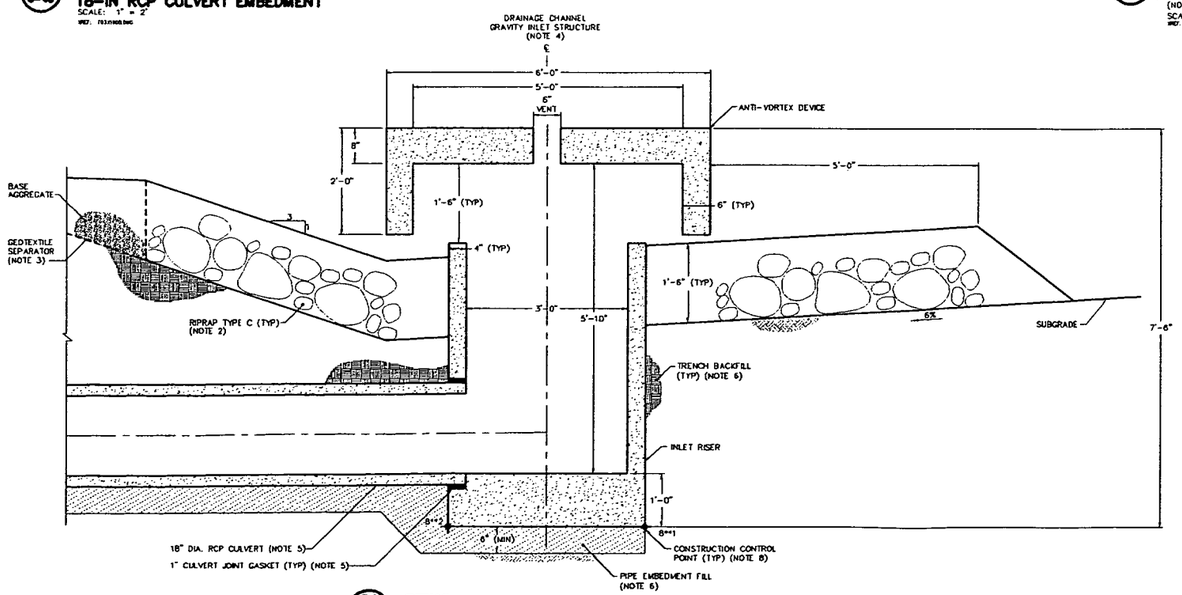




B/G-43 SECTION
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE
(NOTE 12)
SCALE: 1" = 2'



C/G-43 SECTION (TYP)
18-IN RCP CULVERT EMBEDMENT
SCALE: 1" = 2'



94/G-43 DETAIL
DRAINAGE CHANNEL GRAVITY INLET STRUCTURE
SCALE: 1" = 1'

DRAINAGE CHANNEL GRAVITY INLET STRUCTURE AND REINFORCED CONCRETE PIPE CONSTRUCTION CONTROL POINTS

GIS-11, GIS-12, GIS-13, GIS-14, AND GIS-15 (NOTE 8)

POINT NO.	NORTHING	EASTING	ELEVATION
B111	481005.20	1350661.01	583.64
B112	481005.29	1350657.34	583.84
B113	481005.88	1350602.09	583.88
B121	480811.84	1350658.86	582.27
B122	480811.88	1350654.99	582.27
B123	480812.58	1350599.74	582.51
B131	480605.18	1350656.13	581.14
B132	480605.23	1350652.47	581.14
B133	480605.90	1350597.21	581.38
B141	480410.16	1350653.78	580.11
B142	480410.21	1350650.10	580.11
B143	480410.88	1350594.83	580.41
B151	480258.30	1350671.06	579.82
B152	480287.13	1350667.58	579.82
B153	480249.48	1350615.26	579.86

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
4. DRAINAGE CHANNEL GRAVITY INLET STRUCTURE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
5. REINFORCED CONCRETE PIPE CULVERT AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
6. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
7. ANTI-VORTEX SUPPORTS DO NOT APPEAR IN ALL SECTIONS. SEE PLAN ON THIS SHEET FOR LOCATIONS.
8. CONSTRUCTION CONTROL POINTS ASSOCIATED WITH DRAINAGE CHANNEL GRAVITY INLET STRUCTURE AND REINFORCED CONCRETE PIPE ARE PROVIDED IN TABLE SHOWN ON THIS DRAWING. THE "**" SYMBOL REPRESENTS THE GRAVITY INLET STRUCTURE FOR WHICH THE APPROPRIATE CONTROL POINTS ARE PROVIDED.
9. EXISTING CONDITIONS SHOWN IN THIS SECTION CORRESPOND TO LOCATION OF GIS-14.
10. PRIOR TO CONSTRUCTION OF OSDF IMPACTED MATERIAL HAUL ROAD RAMPS, PLACE GEOTEXTILE SEPARATOR BETWEEN RIPRAP AND COMPACTED FILL.
11. LIMITS OF RIPRAP TYPE C APRON ARE PROVIDED ON DRAWINGS G-4 AND G-6.
12. DRAINAGE CHANNEL SLOPE AT GIS-11 AND GIS-12 IS 0.75%. DRAINAGE CHANNEL SLOPE AT GIS-13, GIS-14, AND GIS-15 IS 0.5%.
13. TRENCH EXCAVATION IS SHOWN VERTICAL AS DESIGNED. SHORING AND/OR STABLE TRENCH SIDESLOPES SHALL BE MAINTAINED FOR SAFETY AND TO PROTECT ADJACENT UTILITIES AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION SECTION 02215.

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMC	VDR	TEZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LMC	VDR	TEZ	DKP	RB
1A	–	NOT ISSUED	–	–	–	DKP	RB
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	LMC	VDR	TEZ	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	LMC	AMB	TEZ	DGP	JFB
A	–	NOT ISSUED	–	–	–	–	–

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: SURFACE-WATER MANAGEMENT SYSTEM DETAILS VIII

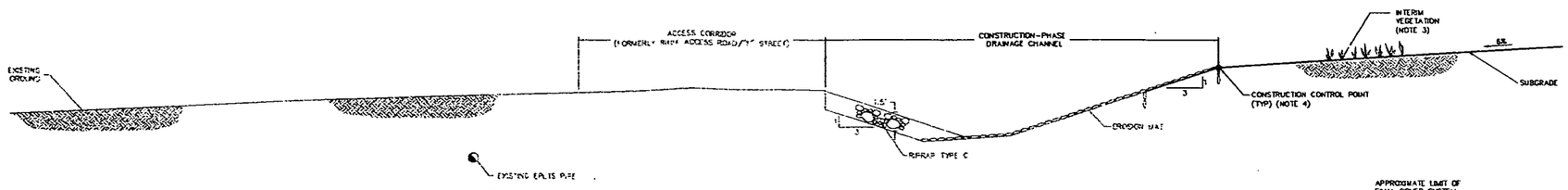
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

SIGNATURE
DATE
SEAL

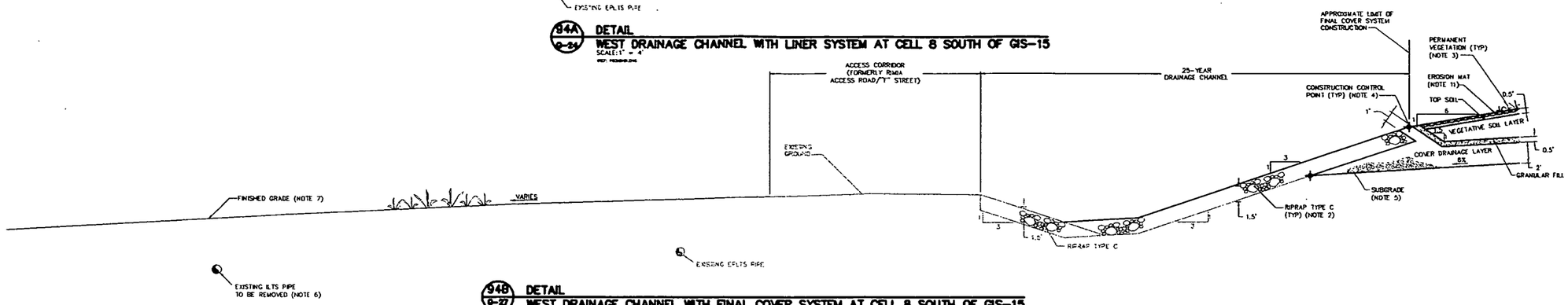
GEOSYNTEC CONSULTANTS
1000 CENTRE AVENUE, SUITE 1000
FT. WAYNE, INDIANA 46802 USA

PROJECT NO.:	20105
CONTRACT NO.:	03FD0699
FEMP DRAWING NO.:	90X-5000-G-00405
GEOSYNTEC PROJECT NO.:	GO3211-05.04
GEOSYNTEC DOCUMENT NO.:	F03-1045
SHEET NO.:	G-43
REVISION NO.:	1

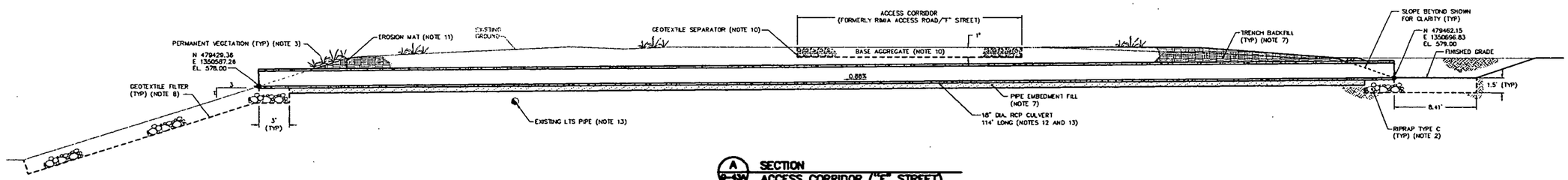
CERTIFIED-FOR-CONSTRUCTION



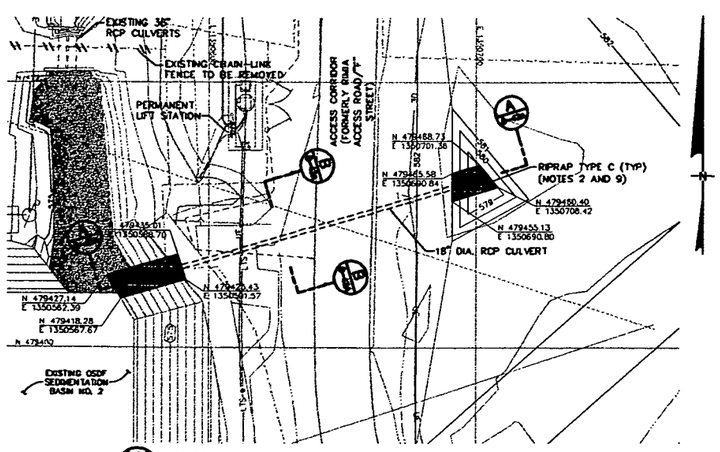
94A / G-24 DETAIL
WEST DRAINAGE CHANNEL WITH LINER SYSTEM AT CELL 8 SOUTH OF GIS-15
SCALE: 1" = 4'



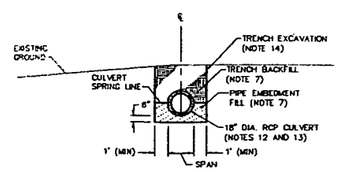
94B / G-27 DETAIL
WEST DRAINAGE CHANNEL WITH FINAL COVER SYSTEM AT CELL 8 SOUTH OF GIS-15
SCALE: 1" = 4'



A / G-43A SECTION
ACCESS CORRIDOR ("F" STREET) 18-IN DIA. RCP CULVERT CROSSING
SCALE: 1" = 4'



94C / G-15A PLAN
ACCESS CORRIDOR ("F" STREET) CULVERT CROSSING
SCALE: 1"=20'



B / G-43A SECTION
ACCESS CORRIDOR ("F" STREET) 18-IN DIA. RCP CULVERT EMBEDMENT
SCALE: 1" = 4'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
3. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
4. CONSTRUCTION CONTROL POINTS FOR SUBGRADE, CONTOURING LAYER, COMPACTED CLAY CAP, AND FINAL COVER SYSTEM ARE PROVIDED ON DRAWINGS G-6A, G-11, G-13A, AND G-15A.
5. CONTRACTOR SHALL RE-ESTABLISH SUBGRADE ELEVATIONS OUTSIDE PERIMETER BERM BASELINE PRIOR TO FINAL COVER SYSTEM CONSTRUCTION. CONSTRUCTION CONTROL POINTS FOR SUBGRADE ARE PROVIDED ON DRAWING G-6A.
6. CONTRACTOR SHALL REMOVE EXISTING INTERIM LEACHATE TRANSMISSION SYSTEM PIPE AFTER ADJACENT CELL CAPS ARE FULLY VEGETATED. CONTRACTOR SHALL PLACE COMPACTED FILL, AS NECESSARY, TO PROVIDE POSITIVE DRAINAGE TO FORMER PRODUCTION AREA AND AWAY FROM OSDF FACILITY.
7. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
8. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
9. PLACE RIPRAP TYPE C WITHIN AREA SHOWN.
10. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
11. EROSION MAT SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
12. RCP CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
13. USE EXTREME CAUTION WHEN INSTALLING RCP CULVERTS NEAR LEACHATE PIPES. PIPE EMBEDMENT AND BACKFILL SHALL BE PLACED TO PROVIDE NECESSARY SUPPORT FOR CULVERTS TO AVOID DAMAGE TO LEACHATE PIPES.
14. TRENCH EXCAVATION IS SHOWN VERTICAL AS DESIGNED. SHORING AND/OR STABLE TRENCH SIDESLOPES SHALL BE MAINTAINED FOR SAFETY AND TO PROTECT ADJACENT UTILITIES AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION SECTION 02215.

CERTIFIED-FOR-CONSTRUCTION

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
0	04.01.22	CFC SUBMITTAL TO FF/DOE/EPA	TEZ	VDR	LMG	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	TEZ	VDR	LMG	DKP	RB
A	-	NOT ISSUED	-	-	-	-	-

SCALE IN FEET: 20 10 0 20 40

OWNER/FACILITY: UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT: FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: SURFACE WATER MANAGEMENT SYSTEM DETAILS IX

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDING OR CONSTRUCTION UNLESS SEALED.

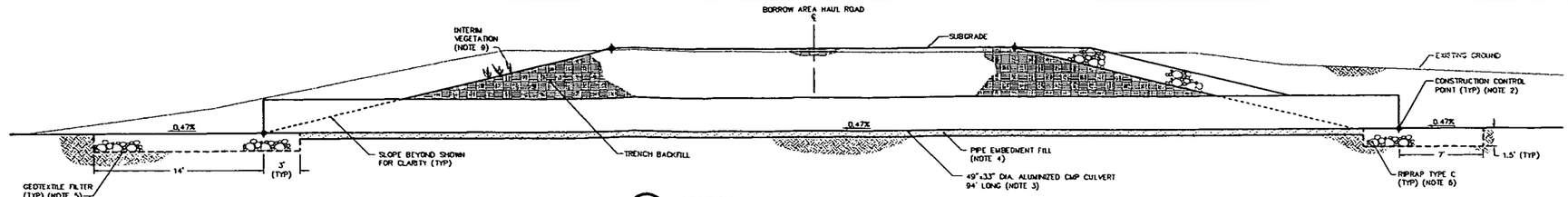
SIGNATURE

DATE

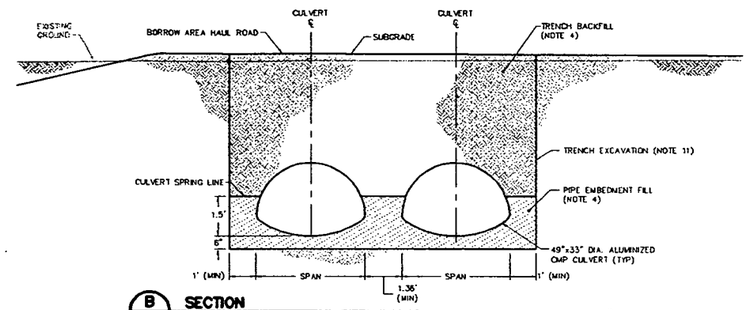
SEAL

GEOSYNTEC CONSULTANTS
1999 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30329 USA

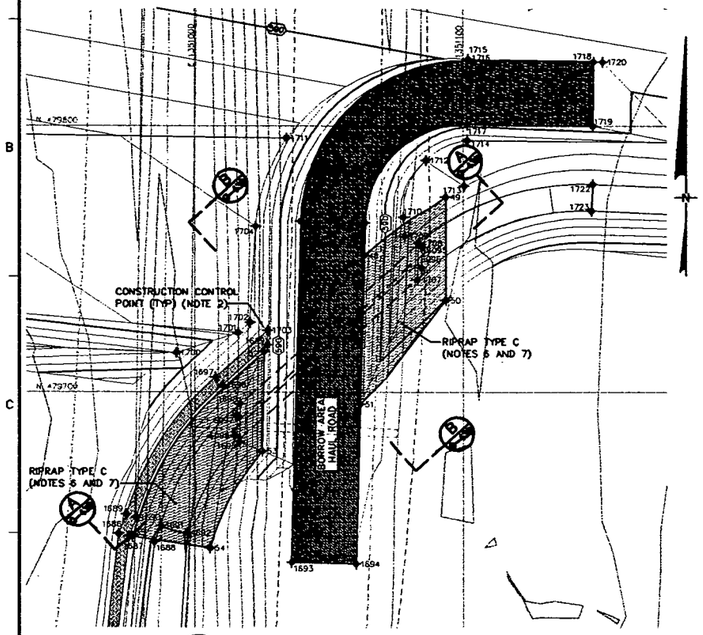
PROJECT NO:	20105
CONTRACT NO:	03FT0699
FEMP DRAWING NO:	90X-8000-G-00422
GEOSYNTEC PROJECT NO:	GO3211-06.04
GEOSYNTEC DOCUMENT NO:	T03-0065
SHEET NO:	G-43A
REVISION NO:	0



A (9-43B) SECTION
BORROW AREA HAUL ROAD
49"x33" DIA. ALUMINIZED CMP CULVERT CROSSING
SCALE: 1" = 4'

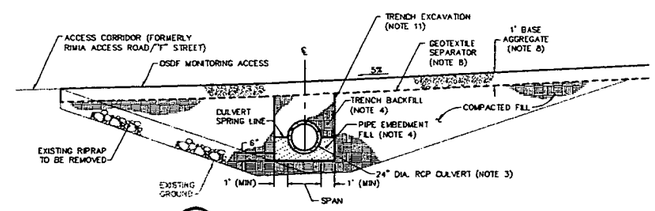


B (9-43B) SECTION
BORROW AREA HAUL ROAD
(2) 49"x33" DIA. ALUMINIZED CMP CULVERT EMBEDMENT
SCALE: 1" = 2'



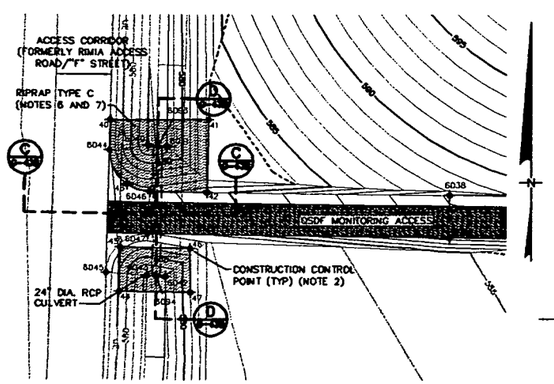
94C (9-6A) PLAN
RUN-OFF DIVERSION CHANNEL MODIFICATION AT EXISTING BORROW AREA HAUL ROAD
SCALE: 1" = 20'

CONSTRUCTION CONTROL POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1686	479646.52	1350971.58	587.70
1687	479645.58	1350975.50	587.70
1688	479643.28	1350984.89	584.50
1689	479653.93	1350974.40	588.26
1690	479652.66	1350978.20	588.26
1691	479649.81	1350987.30	585.07
1692	479648.83	1350996.91	585.07
1693	479635.85	1351035.87	592.00
1694	479635.21	1351059.86	592.00
1695	479681.25	1351016.30	585.27
1696	479702.63	1351010.20	588.52
1697	479705.60	1351007.51	588.52
1698	479695.53	1351016.64	585.32
1699	479717.73	1351026.84	588.83
1700	479714.81	1350993.09	583.00
1701	479722.27	1351015.84	586.35
1702	479726.14	1351020.43	586.45
1703	479723.24	1351026.97	588.84
1704	479762.34	1351022.55	587.00
1705	479764.19	1351039.27	592.56
1706	479763.56	1351063.26	592.56
1707	479742.22	1351083.01	585.70
1708	479755.95	1351083.38	585.75
1709	479758.81	1351078.27	587.49
1710	479765.68	1351077.79	587.60
1711	479795.38	1351033.96	587.83
1712	479787.00	1351086.14	588.00
1713	479777.44	1351100.42	588.00
1714	479794.55	1351101.64	588.27
1715	479825.09	1351101.99	590.09
1716	479824.55	1351102.00	590.27
1717	479800.55	1351101.71	590.27
1718	479823.98	1351148.59	590.72
1719	479799.98	1351148.30	590.72
1720	479823.94	1351152.11	590.55
1722	479778.08	1351148.30	586.07
1723	479768.09	1351147.89	586.07
6038	479821.50	1350797.08	589.12
6039	479805.51	1350796.89	588.48
6040	479840.34	1350684.59	577.85
6041	479839.80	1350691.58	578.17
6042	479790.98	1350691.03	577.93
6043	479791.35	1350684.04	577.63
6044	479838.27	1350670.23	582.82
6045	479792.28	1350659.02	582.73
6046	479822.87	1350685.04	583.52
6047	479806.88	1350684.20	582.85
6093	479839.74	1350688.02	578.03
6094	479791.17	1350687.53	577.78
6095	479754.21	1351084.74	585.75
6096	479746.68	1351084.54	585.75
6097	479691.08	1351015.13	585.30
6098	479683.57	1351014.95	585.30

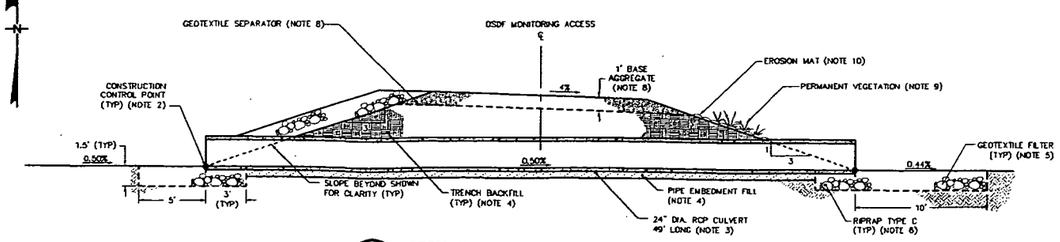


C (9-43B) SECTION
OSDF MONITORING ACCESS ROAD
24" DIA. RCP CULVERT EMBEDMENT
SCALE: 1" = 4'

RIPRAP LIMITS CONTROL POINTS		
POINT NO.	NORTHING	EASTING
40	479849.61	1350670.54
41	479849.94	1350707.04
42	479822.61	1350706.46
43	479825.58	1350676.86
44	479785.26	1350673.86
45	479802.00	1350674.25
46	479801.54	1350700.20
47	479784.96	1350700.26
48	479751.23	1351062.93
49	479773.30	1351093.55
50	479734.46	1351093.59
51	479695.41	1351061.46
52	479715.16	1351025.86
53	479677.80	1351024.92
54	479641.15	1351005.60
55	479645.44	1350976.64



94D (9-15A) PLAN
DRAINAGE CHANNEL EAST OF "F" STREET MODIFICATION AT OSDF MONITORING ACCESS ROAD
SCALE: 1" = 20'



D (9-43B) SECTION
OSDF MONITORING ACCESS ROAD
24" DIA. RCP CULVERT CROSSING
SCALE: 1" = 4'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE WITHIN LIMITS GIVEN IN SPECIFICATIONS.
2. CONSTRUCTION CONTROL POINTS FOR SUBGRADE, CULVERT INVERTS, AND RIPRAP LIMITS ARE PROVIDED IN THE TABLE SHOWN ON THIS DRAWING AND ON DRAWINGS G-6A AND G-15A.
3. ALUMINIZED CMP AND RCP CULVERTS AND JOINTS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02721.
4. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
5. GEOTEXTILE FILTER SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02714.
6. RIPRAP SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02271.
7. PLACE RIPRAP TYPE C WITHIN AREA SHOWN.
8. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.
9. VEGETATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02930.
10. EROSION MAT SHALL BE INSTALLED ON SLOPE LENGTHS OF 6' OR GREATER AND IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
11. TRENCH EXCAVATION IS SHOWN VERTICAL AS DESIGNED. SHORING AND/OR STABLE TRENCH SIDESLOPES SHALL BE MAINTAINED FRO SAFETY AND TO PROTECT ADJACENT UTILITIES AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION SECTION 02215.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
D	04.01.22	CFC SUBMITTAL TO FF/DOE/EPA	LMC	JJA	TEZ	DKP	RB
B	03.12.08	PRE-FINAL SUBMITTAL TO FF/DOE	LMC	JJA	TEZ	DKP	RB
A	03.10.28	PRELIMINARY SUBMITTAL TO FF/DOE	LMC	JJA	TEZ	DKP	RB

20 10 0 20 40
SCALE IN FEET

OWNER/FACILITY: UNITED STATES DEPARTMENT OF ENERGY FERNALD CLOSURE PROJECT

CLIENT: **FLUOR FERNALD, INC.**

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: SURFACE-WATER MANAGEMENT SYSTEM DETAILS X

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

SIGNATURE

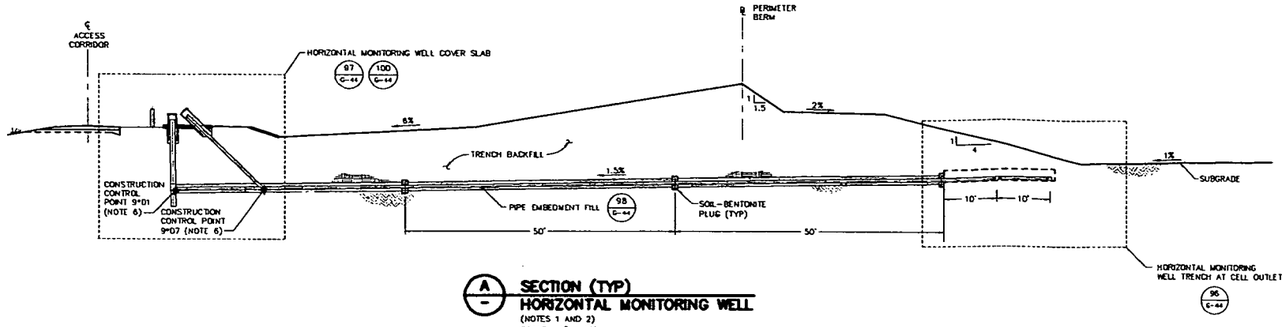
DATE

SEAL

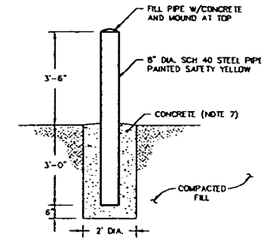
GEOSYNTEC CONSULTANTS
1900 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30329 USA

PROJECT NO.: 20105
CONTRACT NO.: 03F06699
FEMP DRAWING NO.: 90X-6000-G-00423
GEOSYNTEC PROJECT NO.: G03211-08.04
GEOSYNTEC DOCUMENT NO.: F03-0063
SHEET NO.: G-43B
REVISION NO.: 0

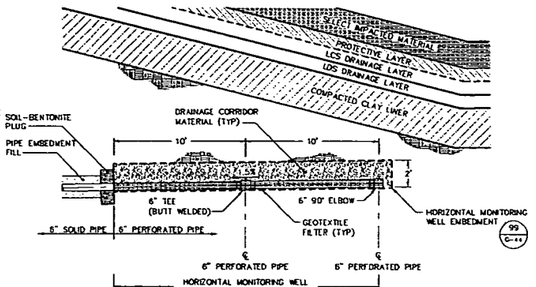
CERTIFIED-FOR-CONSTRUCTION



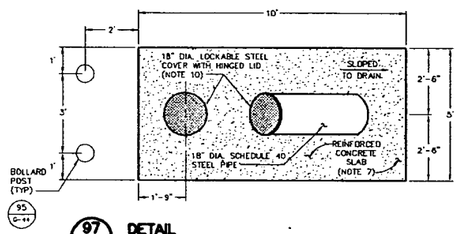
A – SECTION (TYP)
HORIZONTAL MONITORING WELL
(NOTES 1 AND 2)
SCALE: 1" = 10'



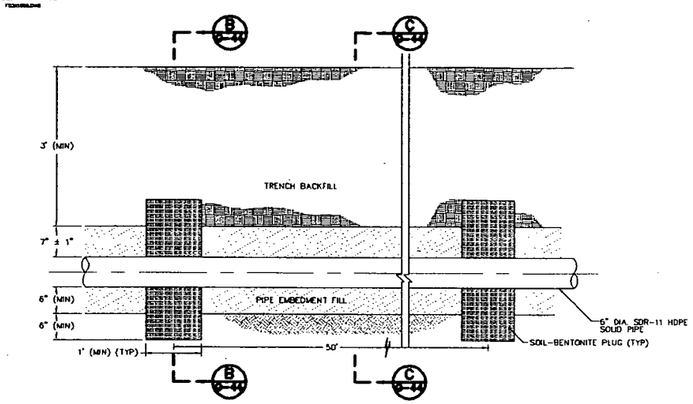
95 G-44 DETAIL
BOLLARD POST
SCALE: 1" = 2'



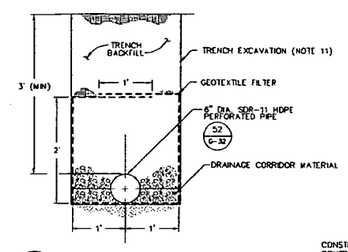
96 G-44 DETAIL
HORIZONTAL MONITORING WELL TRENCH AT CELL OUTLET
SCALE: 1" = 4'



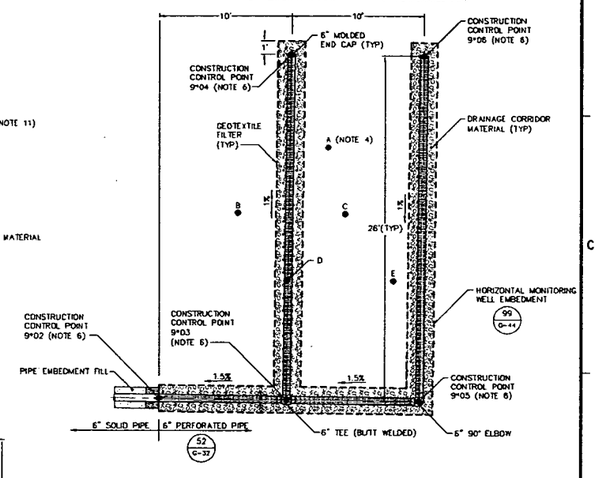
97 G-44 DETAIL
HORIZONTAL MONITORING WELL COVER SLAB
SCALE: 1" = 2'



98 G-44 DETAIL
PIPE EMBEDMENT
(NOTES 1, 2, AND 3)
SCALE: 1" = 1'



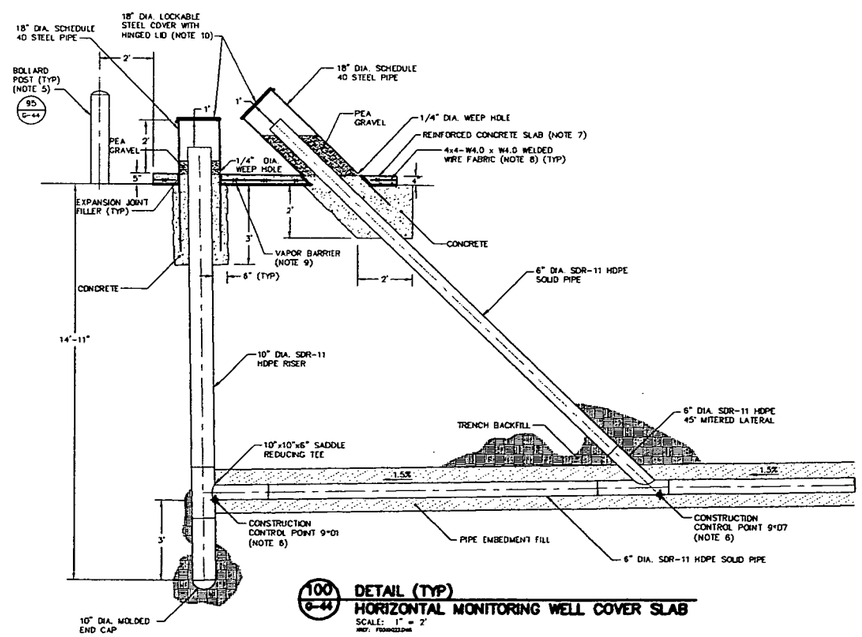
99 G-44 DETAIL
HORIZONTAL MONITORING WELL EMBEDMENT
(NOTES 1 AND 3)
SCALE: 1" = 1'



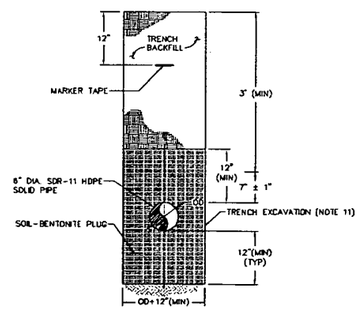
LOCATION OF OVERLYING FEATURE RELATIVE TO TRENCH

LEGEND:
- A — LDS PIPE SECONDARY LINER PENETRATION
- B — REDUNDANT LCS PIPE SECONDARY LINER PENETRATION
- C — REDUNDANT LCS PIPE PRIMARY LINER PENETRATION
- D — LCS PIPE SECONDARY LINER PENETRATION
- E — LCS PIPE PRIMARY LINER PENETRATION

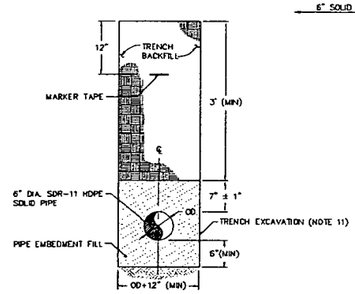
101 G-44 PLAN
HORIZONTAL MONITORING WELL TRENCH LAYOUT AT CELL OUTLET
SCALE: 1" = 4'



100 G-44 DETAIL (TYP)
HORIZONTAL MONITORING WELL COVER SLAB
SCALE: 1" = 2'



B G-44 SECTION
PIPE EMBEDMENT WITH SOIL-BENTONITE PLUG
(NOTES 1, 2, AND 3)
SCALE: 1" = 1'



C G-44 SECTION
PIPE EMBEDMENT
(NOTES 1 AND 3)
SCALE: 1" =

NOTES:

1. TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
2. SOIL-BENTONITE PLUG SHALL BE LOCATED 50 FEET ON CENTER AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02215.
3. PIPES AND FITTINGS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02605.
4. POINTS "A" THROUGH "E" ILLUSTRATE THE HORIZONTAL LOCATIONS OF LINER PENETRATIONS SITUATED ABOVE THE HORIZONTAL MONITORING WELL TRENCH AT THE CELL OUTLET.
5. BOLLARD POST SHOWN BEYOND FOR CLARITY.
6. CONSTRUCTION CONTROL POINTS ASSOCIATED WITH HORIZONTAL MONITORING WELLS ARE PROVIDED IN TABLE SHOWN ON THIS DRAWING. THE "*" SYMBOL REPRESENTS THE HORIZONTAL MONITORING WELL FOR WHICH THE APPROPRIATE CONTROL POINTS ARE PROVIDED.
7. CONCRETE MIX SHALL HAVE SUFFICIENT AIR ENTRAINING ADMIXTURE TO PROVIDE 5 ± 1% AIR AT POINT OF DELIVERY IN ACCORDANCE WITH ASTM C213 AND A COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C39.
8. REINFORCING WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH ASTM A185.
9. VAPOR BARRIER SHALL BE 8-MIL (MINIMUM THICKNESS) POLYETHYLENE SHEET.
10. HINGE FOR LOCKABLE STEEL COVER SHALL BE LOAD-RATED FOR 50 POUNDS OR GREATER. HINGE SHALL BE ATTACHED TO ENSURE HINGE FUNCTIONS AS DESIGNED BY MANUFACTURER.
11. TRENCH EXCAVATION IS SHOWN VERTICAL AS DESIGNED. SHORING AND/OR STABLE TRENCH SIDESLOPES SHALL BE MAINTAINED FOR SAFETY AND TO PROTECT ADJACENT UTILITIES AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION SECTION 02215.

HORIZONTAL MONITORING WELL CONSTRUCTION CONTROL POINTS

CELL NO.	POINT NO.	NORTHING	EASTING	BOTTOM OF PIPE ELEVATION
CELL 7	9701	480563.10	1350656.53	575.51
	9702	480561.38	1350796.81	577.61
	9703	480561.26	1350806.81	577.76
	9704	480587.26	1350807.13	578.02
	9705	480561.14	1350816.81	577.91
	9706	480587.14	1350817.13	578.17
	9707	480562.90	1350873.07	575.75
CELL 8	9801	480162.57	1350696.97	573.62
	9802	480180.98	1350829.44	575.61
	9803	480180.83	1350839.44	575.76
	9804	480186.83	1350839.76	578.02
	9805	480160.71	1350849.44	575.91
	9806	480188.71	1350849.76	578.17
	9807	480162.37	1350713.50	573.87

CERTIFIED-FOR-CONSTRUCTION

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	LMG	JJA	TLZ	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	LMG	JJA	TLZ	DKP	RB
1A	03.10.28	PRELIMINARY REVISION 1 SUBMITTAL TO FF/DOE	LMG	JJA	TLZ	DKP	RB
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JWD	KRD	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DGP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

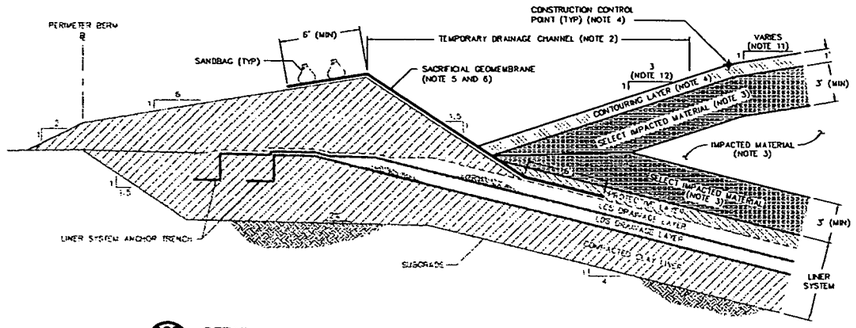
TITLE: HORIZONTAL MONITORING WELL AND MISCELLANEOUS DETAILS

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

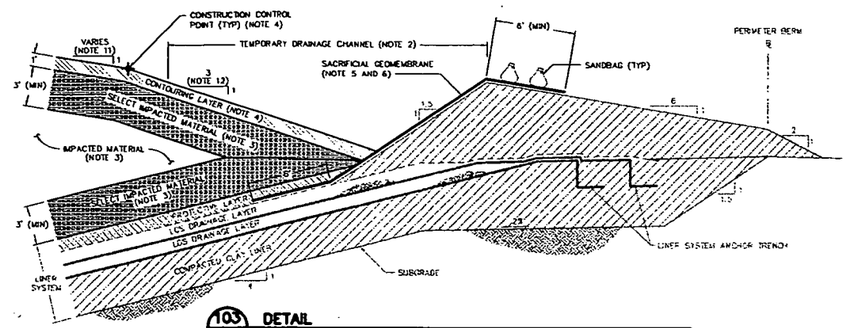
SIGNATURE
DATE
SEAL

GEOSYNTEC CONSULTANTS
1255 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30319 USA

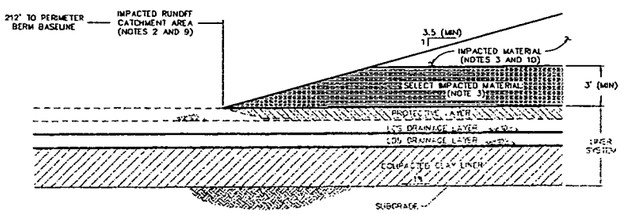
PROJECT NO.:	20105
CONTRACT NO.:	03FF0699
FEMP DRAWING NO.:	901-8000-G-00406
GEOSYNTEC PROJECT NO.:	D03711-08.04
GEOSYNTEC DOCUMENT NO.:	F03-1046
SHEET NO.:	G-44
REVISION NO.:	1



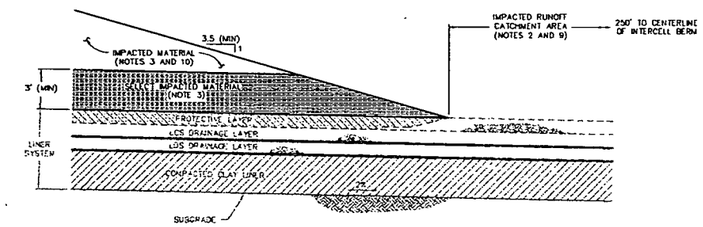
102 DETAIL
SOUTH AND WEST PERIMETER WITH IMPACTED MATERIAL PLACEMENT
(NOTES 7 AND 8)
SCALE: 1" = 4'



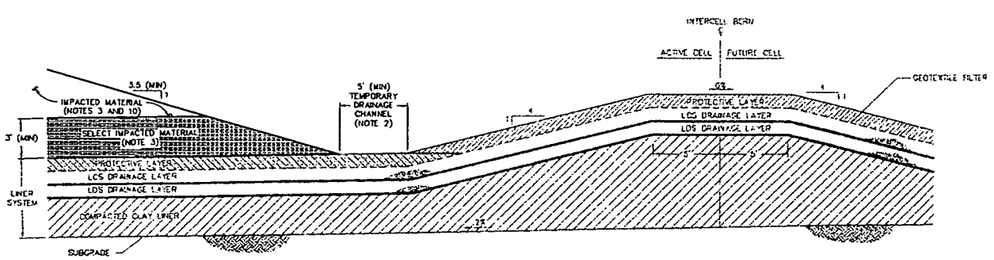
103 DETAIL
EAST PERIMETER WITH IMPACTED MATERIAL PLACEMENT
SCALE: 1" = 4'



104 DETAIL
IMPACTED MATERIAL PLACEMENT – CELLS 4 THROUGH 7 EASTERN LIMIT OF IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'



105 DETAIL
IMPACTED MATERIAL PLACEMENT – CELLS 4 THROUGH 7 NORTHERN LIMIT OF IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'



106 DETAIL
IMPACTED MATERIAL PLACEMENT – CELLS 4 THROUGH 7 AT INTERCELL BERM LOCATED OUTSIDE OF IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE AS SPECIFIED IN TECHNICAL SPECIFICATIONS.
2. PURPOSE OF THIS DRAWING IS TO ILLUSTRATE PLACEMENT OF SELECT IMPACTED MATERIAL, IMPACTED MATERIAL AND CONTOURING LAYER, INGRESS TO AND EGRESS FROM CELLS AND CONCURRENT CONTROL OF IMPACTED RUNOFF IN CELLS DURING FILLING. WATER GENERATED DURING CONSTRUCTION AND FILLING OF OSDF SHALL BE CONTAINED AND CONTROLLED IN ACCORDANCE WITH SPECIFICATION SECTION 02270. EROSION CONTROL MEASURES SHALL BE INSTALLED (E.G. STRAW BALES) CONSISTENT WITH THE IMPACTED MATERIAL PLACEMENT PLAN.
3. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
4. CONTOURING LAYER SHALL CONSIST OF NON-IMPACTED MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02240.
5. SACRIFICIAL GEOMEMBRANE SHALL BE USED TO CONTROL IMPACTED RUNOFF IN CELLS 4 THROUGH 8 DURING FILLING. EXPOSED SACRIFICIAL GEOMEMBRANE SHALL BE REMOVED BY CUTTING PRIOR TO CONSTRUCTION OF COMPACTED CLAY CAP IN TEMPORARY DRAINAGE CHANNEL.
6. SACRIFICIAL GEOMEMBRANE SHALL CONSIST OF HIGH DENSITY POLYETHYLENE, AS APPROVED BY CONSTRUCTION MANAGER AND PROVIDED BY FLUOR FERNALD, INC. SACRIFICIAL GEOMEMBRANE SHALL BE SECURED IN-PLACE WITH SANDBAGS TO PREVENT DAMAGE FROM WIND.
7. CELLS 4 THROUGH 8 PROTECTIVE LAYER CONSISTS OF NON-IMPACTED GRANULAR MATERIAL IN IMPACTED RUNOFF CATCHMENT AREA.
8. CELL 8 IMPACTED MATERIAL PLACEMENT AT IMPACTED RUNOFF CATCHMENT AREA IS ILLUSTRATED BY DETAIL 108 SHEET G-46.
9. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
10. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
11. SLOPE OF LOWER PORTION OF FINAL COVER SYSTEM IS 6H:1V FOR EAST, WEST, AND SOUTH PERIMETERS OF OSDF.
12. INSTALL SILT FENCE 10 FEET (MEASURED HORIZONTALLY) UPSLOPE OF 3H:1V SLOPE LIMIT. INSTALL ADDITIONAL SILT FENCES AT APPROXIMATELY 60 FEET INTERVALS FOR A TOTAL OF THREE SILT FENCES. SILT FENCES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.

CERTIFIED–FOR–CONSTRUCTION

REV. NO.	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.23	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	KRD	VDR	KRD	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	KRD	VDR	KRD	DKP	RB
1A	–	NOT ISSUED	–	–	–	–	–
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JWD	KRD	DOP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DOP	JFB
A	06.10.72	PRELIMINARY SUBMITTAL TO FF/DOE	KRD	JWD	KRD	DOP	JFB

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: IMPACTED MATERIAL PLACEMENT DETAILS I

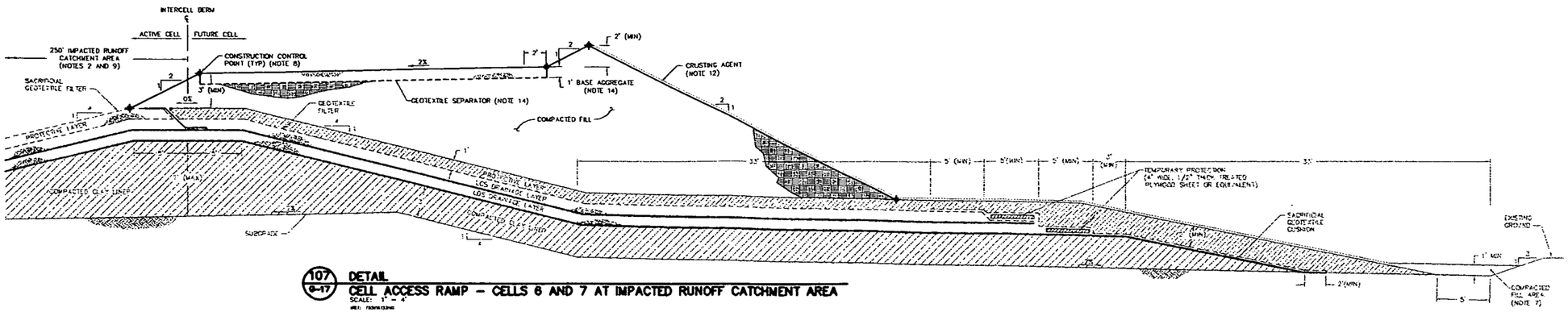
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT SCHEDULE CONSTRUCTION, UNLESS SEALED.

SIGNATURE
DATE
SEAL

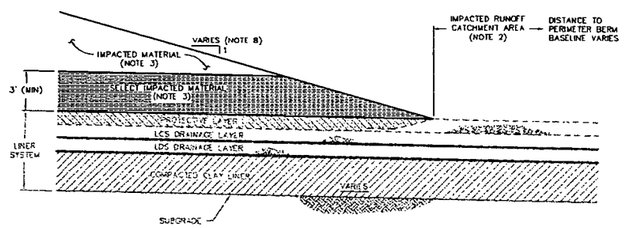
GeoSyntec Consultants
1900 Lake Hearn Drive
Atlanta, Georgia 30043 USA

PROJECT NO.:	20105
CONTRACT NO.:	03F10699
FEMP DRAWING NO.:	90X-6000-C-00407
GEOSYNTEC PROJECT NO.:	C03211-06.04
GEOSYNTEC DOCUMENT NO.:	F03-1047
SHEET NO.:	C-45
REVISION NO.:	1

000059



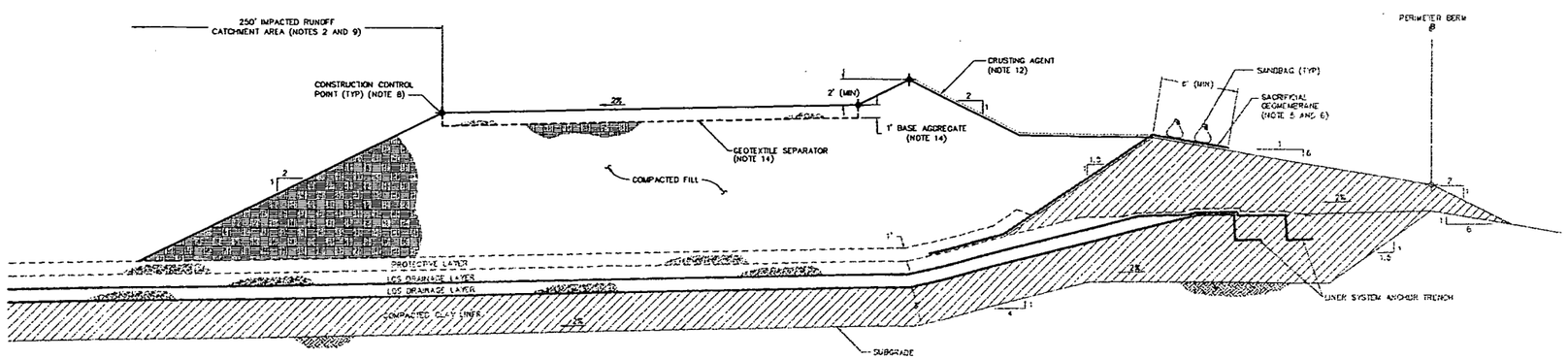
107 / G-17 DETAIL
CELL ACCESS RAMP – CELLS 6 AND 7 AT IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'



108 / G-20A DETAIL
IMPACTED MATERIAL PLACEMENT – CELL 8 AT LIMIT OF IMPACTED RUNOFF CATCHMENT AREA
SCALE: 1" = 4'

NOTES:

1. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR GEOSYNTHETICS WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE AS SPECIFIED IN TECHNICAL SPECIFICATIONS.
2. PURPOSE OF THIS DRAWING IS TO ILLUSTRATE PLACEMENT OF SELECT IMPACTED MATERIAL, IMPACTED MATERIAL AND CONTOURING LAYER, INGRESS TO AND EGRESS FROM CELLS AND CONCURRENT CONTROL OF IMPACTED RUNOFF IN CELLS DURING FILLING. WATER GENERATED DURING CONSTRUCTION AND FILLING OF OSDF SHALL BE CONTAINED AND CONTROLLED IN ACCORDANCE WITH SPECIFICATION SECTION 02270. EROSION CONTROL MEASURES SHALL BE INSTALLED (E.G. STRAW BALES) CONSISTENT WITH THE IMPACTED MATERIAL PLACEMENT PLAN.
3. A MINIMUM THICKNESS OF 3 FEET OF SELECT IMPACTED MATERIAL SHALL BE PLACED ABOVE PROTECTIVE LAYER AND BELOW CONTOURING LAYER. THICKNESS OF SELECT IMPACTED MATERIAL OVERLYING PROTECTIVE LAYER MAY BE REDUCED TO 2 FEET IF FIRST LIFT OF IMPACTED MATERIAL TO BE PLACED OVER SELECT IMPACTED MATERIAL IS CATEGORY 1 IMPACTED MATERIAL. IMPACTED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
4. CONTOURING LAYER SHALL CONSIST OF NON-IMPACTED MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02240.
5. SACRIFICIAL GEOMEMBRANE SHALL BE USED TO CONTROL IMPACTED RUNOFF IN CELLS 4 THROUGH 8 DURING FILLING. EXPOSED SACRIFICIAL GEOMEMBRANE SHALL BE REMOVED BY CUTTING PRIOR TO CONSTRUCTION OF COMPACTED CLAY CAP IN TEMPORARY DRAINAGE CHANNEL.
6. SACRIFICIAL GEOMEMBRANE SHALL CONSIST OF HIGH DENSITY POLYETHYLENE, AS APPROVED BY CONSTRUCTION MANAGER AND PROVIDED BY FLUOR FERNALD, INC. IN-PLACE SACRIFICIAL GEOMEMBRANE SHALL BE SECURED WITH SANDBAGS TO PREVENT DAMAGE FROM WIND.
7. PLACE COMPACTED FILL TO PROVIDE POSITIVE DRAINAGE TO TEMPORARY DRAINAGE CHANNEL.
8. CONSTRUCTION CONTROL POINTS FOR CELL ACCESS RAMP ARE PROVIDED ON DRAWINGS G-17, G-18, AND G18A.
9. IMPACTED RUNOFF CATCHMENT AREA IN ACTIVE CELL SHALL REMAIN OPEN UNTIL COMPACTION OF SECOND LIFT OF COMPACTED CLAY CAP IS COMPLETED IN ADJACENT UPGRADIENT CELL AND IMPACTED RUNOFF CATCHMENT AREA IN FUTURE CELL IS CONSTRUCTED AND OPERATIONAL.
10. IMPACTED MATERIAL INTERIM SLOPES SHALL BE NO STEEPER THAN 3.5H:1V IN ACCORDANCE WITH SPECIFICATION SECTION 13010.
11. SLOPE OF LOWER PORTION OF FINAL COVER SYSTEM IS 6H:1V FOR EAST AND WEST PERIMETERS OF OSDF.
12. CRUSTING AGENT SHALL BE APPLIED AT LINER SYSTEM TEMPORARY TERMINATION INCLUDING CELL ACCESS RAMP SIDE SLOPE AND BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
13. INSTALL SILT FENCE 10 FEET (MEASURED HORIZONTALLY) UPSLOPE OF 3H:1V SLOPE LIMIT. INSTALL ADDITIONAL SILT FENCES AT APPROXIMATELY 60 FEET INTERVALS FOR A TOTAL OF THREE SILT FENCES. SILT FENCES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02270.
14. BASE AGGREGATE AND GEOTEXTILE SEPARATOR SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02230.



109 / – DETAIL
CELL ACCESS RAMP – CELL 8
SCALE: 1" = 4'

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
1	04.01.22	CFC REVISION 1 SUBMITTAL TO FF/DOE/EPA	KRD	VDR	KRD	DKP	RB
1B	03.12.08	PRE-FINAL REVISION 1 SUBMITTAL TO FF/DOE	KRD	VDR	KRD	DKP	RB
1A	–	NOT ISSUED	–	–	–	–	–
0	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	KRD	JMO	KRD	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	KRD	JMO	KRD	DGP	JFB
A	–	NOT ISSUED	–	–	–	–	–

SCALE AS SHOWN

OWNER/FACILITY:
UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY – PHASE V

TITLE: IMPACTED MATERIAL PLACEMENT DETAILS II

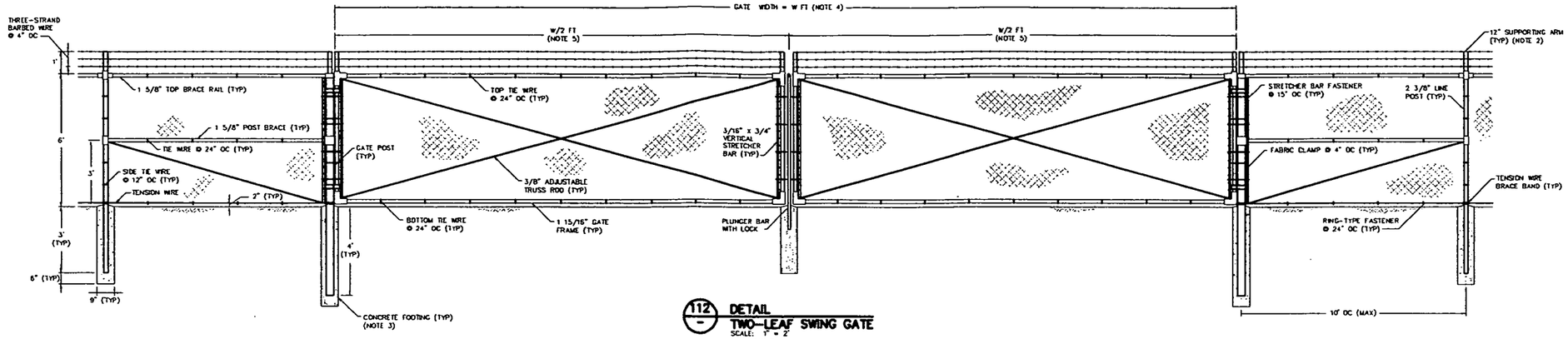
THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION, UNLESS SEALED

SIGNATURE
DATE
SEAL

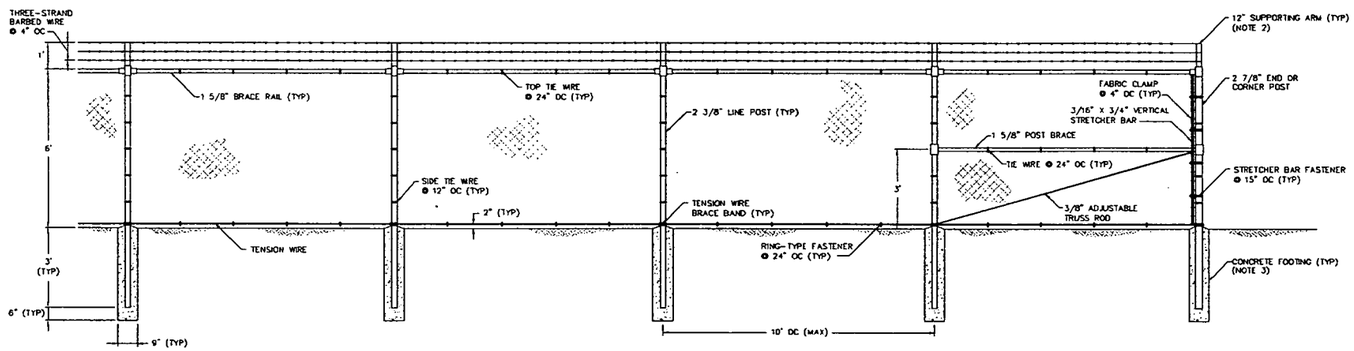
GEOSYNTEC CONSULTANTS
1100 LAKE HEARN DRIVE, ATLANTA, GEORGIA 30342 USA

PROJECT NO:	20105
CONTRACT NO:	03FD699
FEMP DRAWING NO:	90X-6000-G-00408
GEOSYNTEC PROJECT NO:	003211-06.04
GEOSYNTEC DOCUMENT NO:	F03-1050
SHEET NO:	G-46
REVISION NO:	1

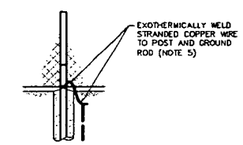
CERTIFIED-FOR-CONSTRUCTION



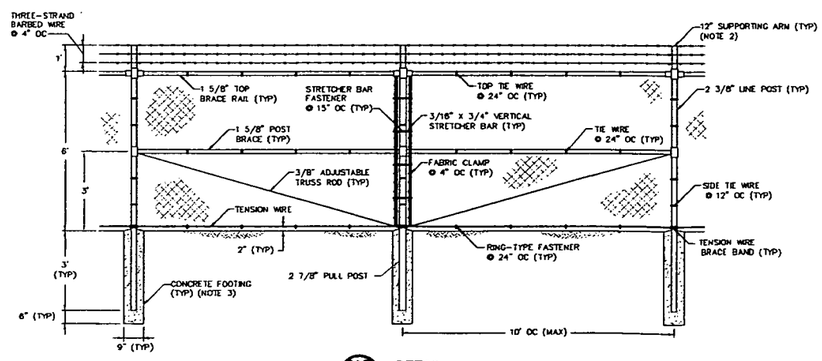
112 DETAIL
TWO-LEAF SWING GATE
SCALE: 1" = 2'



113 DETAIL
LINE POST CONNECTION TO END OR CORNER POST
SCALE: 1" = 2'



114 DETAIL
CHAIN-LINK FENCE GROUND
SCALE: NTS



115 DETAIL
PULL POST
SCALE: 1" = 2'

NOTES:

1. CHAIN-LINK FENCE AND GATES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02831.
2. SUPPORTING ARMS SHALL SLOPE TO OUTSIDE OF FENCED AREA AT 45 DEGREES FROM VERTICAL.
3. CONCRETE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02831. EXPOSED TOPS OF CONCRETE FOOTINGS SHALL HAVE A 1-INCH CROWN TO PROMOTE DRAINAGE.
4. SEE DRAWINGS G-1, G-3, AND G-5 FOR LOCATION OF CHAIN-LINK FENCE, GATES, AND GATE WIDTHS.
5. GROUNDING INTERVAL SHALL BE EVERY 400 FEET ALONG FENCE, ON BOTH SIDES OF GATES, AND ON BOTH SIDES OF ABOVE GROUND OR BELOW GROUND UTILITIES.

REV. NO	DATE	DESCRIPTION	DES. BY	DR. BY	CHK. BY	RVW. BY	APP. BY
D	02.01.29	CFC SUBMITTAL TO FF/DOE/EPA	LMG	JWO	TEZ	DGP	JFB
B	01.12.17	PRE-FINAL SUBMITTAL TO FF/DOE	LMG	JWO	TEZ	DGP	JFB
A	-	NOT ISSUED	-	-	-	-	-

SCALE AS SHOWN

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

CLIENT:
FLUOR FERNALD, INC.

PROJECT: ON-SITE DISPOSAL FACILITY - PHASE V

TITLE: CHAIN-LINK FENCE AND GATE DETAILS

THIS DRAWING MAY NOT BE ISSUED FOR PROJECT BIDDER OR CONSTRUCTION UNLESS SEALED.

GEOSYNTEC CONSULTANTS
1255 LAKE HEARN DRIVE
ATLANTA, GEORGIA 30317 USA

PROJECT NO.:	20105
CONTRACT NO.:	95P5005028
TEMP DRAWING NO.:	901-6000-G-00409
GEOSYNTEC PROJECT NO.:	GG1342-17.4
GEOSYNTEC DOCUMENT NO.:	F01-0048
SHEET NO.:	G-47
REVISION NO.:	0

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