CONSTRUCTION DRAWING INDEX

DRAWING NO.	REV.	DRAWING TITLE	SHEET NO.
99X-5500-X-00725	D	DRAWING INDEX	X-1
99X-5500-X-00639	F	LEGEND AND GENERAL NOTES	X-2
99X-5500-G-00640	D	MASTER PLAN	G-1
99X-5500-G-00726	D	LAYOUT PLAN	G-2
99X-5500-G-00727	D	TRAFFIC FLOW AND MATERIAL TRACKING PLAN	G-3
99X-5500-G-00728	D	EXCAVATION/DRAINAGE PLAN (SWL)	G-4
99X-5500-G-00729	C	CROSS SECTIONS (SWL)	G-5
99X-5500-G-00730	D	EXCAVATION/DRAINAGE PLAN (FTF)	G-6
99X-5500-G-00731	C	CROSS SECTIONS (FTF)	G-7
99X-5500-G-00732	C	PRECERTIFICATION CONFIGURATION	G-8
99X-5500-G-00733	C	ABOVE-WAC EXCAVATION DETAILS (SWL)	G-9
99X-5500-G-00741	A	SLOPE STABILITY EXCAVATION PLAN (SWL)	G-10
99X-5500-G-00738	F	CIVIL DETAILS (SHEET 1)	D-1
99X-5500-G-00740	C	UTILITY REMOVAL DETAIL BELOW DESIGN GRADE	D-2

UTILITY GRID REFERENCE DRAWING INDEX

DRAWING NO.	DRAWING TITLE
22X-5500-P-00659	MASTER GRID OF UNDERGROUND UTILITY PLAN
22B-5500-P-00681	GRID 22 UNDERGROUND UTILITIES
93X-5900-G-00301	EXISTING SITE AND UTILITY PLAN GRID 28
93X-5900-G-00302	EXISTING SITE AND UTILITY PLAN GRID 29
00X-5500-G-01846	MASTER FEMP GPS BENCHMARK LOCATION PLAN

TECHNICAL REFERENCE DRAWING INDEX

PROJECT	DRAWING NO.	REV.	DRAWING TITLE
FTF	73X-5500-A-00003	0	FOOTING LAYOUT FIRST AND SECOND FLOOR PLANS
FTF	73X-5500-A-00006	0	SECTIONS AND DETAILS
FTF	73X-5500-G-00001	3	PLOT PLAN
FTF	73X-5500-X-00002	1	ELEVATED TANK, GROUND TANK SECTION AND NEW FIRE LINE
SWL	21A-5500-G-00216	1	SANITARY LANDFILL PLAN
SWL	21A-5500-G-00217	0	SANITARY LANDFILL SECTIONS

GENERAL NOTES

1. DESIGN BASED ON CURRENT REVISION OF UTILITY GRID DRAWINGS AT CFC ISSUE DATE. REFER TO CURRENT UTILITY GRID DRAWINGS AT TIME OF EXCAVATION.

4441

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
D	ISSUED FOR AGENCY REVIEW	8/27/02	KLR	
C	ISSUED FOR DOE REVIEW	7/15/02	DRF	
B	ISSUED FOR 90% DESIGN REVIEW (SWL & FTF)	6/17/02	ATG	
A	ISSUED FOR 90% DESIGN REVIEW	6/3/02	CDD	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

PROJECT NAME
SOIL REMEDIATION

DRAWING TITLE
SWL AND FTF
DRAWING INDEX

000001

APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
KLR	20980	99X-5500-X-00725	X-1	D
RES PROJECT NO.	FILENAME 99XX00725.DGN			

SYMBOLS LEGEND

EXISTING		PROPOSED
●	MANHOLE	N/A
⊙	CATCH BASIN	○
— · — · —	ABOVE-GRADE WATERLINE	N/A
	ELECTRIC POLE	N/A
	LIGHT POLE	N/A
	ELECTRIC MANHOLE	N/A
	ELECTRIC MANHOLE WITH TELEPHONE MANHOLE	N/A
	GRAVEL ROADWAY	
	PAVED ROADWAY	N/A
	BUILDING SLAB/CONCRETE PAD/TRAILER	■
	CHAIN LINK FENCE	
	TRAFFIC GATE	
—o——o—	CONSTRUCTION SAFETY FENCE	——×——
—o— — —o—	ROPE CONSTRUCTION FENCE	—o— — —o—
N/A	SILT FENCE	
N/A	STRAW BALE	
N/A	LIMIT OF EXCAVATION OR WORK	— — — —
N/A	PROTECTED AREA	— · · — · ·
OR	BENCHMARK	N/A
	LIMIT OF ABOVE-WAC OR RCRA MATERIAL	N/A
	LIMIT OF ABOVE-WAC AND RCRA MATERIAL (CROSS SECTIONS ONLY)	N/A
	PIPE PLUG	
	AIR GAP FOR STORM SEWER	
- - - - - - - - - - - -	UNDERGROUND UTILITIES	————
N/A	HAUL ROAD	
N/A	WALKWAY	
— - -584— -	CONTOUR - MINOR	——584——
— — -585— —	CONTOUR - MAJOR	——585——
	CERTIFIED AREA BOUNDARY	——- - -——
N/A	DEWATERING CHANNEL OR LINE	
	AREA ISOLATION TRENCH	SEE PLANS

SYMBOLS LEGEND

EXISTING		PROPOSED
	POST INDICATOR VALVE	N/A
	OVERHEAD PIPE RACK PEDESTALS	N/A
	RAILROAD TIES	N/A
	RAILROAD	N/A
	HIGH LEACHABILITY AREA LIMIT	N/A
	MONITORING WELL	N/A
	HWMU BOUNDARY	N/A
●(T2)	SOIL BORING	N/A

ABBREVIATIONS

A44U

AIP - ABANDONED IN PLACE
BR - BRINE LINE
BSL - BIODENITRIFICATION SURGE LAGOON
CB - CATCH BASIN
CE - CONTAMINATED EFFLUENT LINES
CI - CAST IRON
CFM - CUBIC FEET PER MINUTE
CMP - CORRUGATED METAL PIPE
COC - CONSTITUENTS OF CONCERN
CN - STEAM & CONDENSATE LINES
DF - DEIONIZED FEEDLINES
D. I. - DUCTILE IRON
DW - DOMESTIC/POTABLE WATER LINES
EC - EDGE OF CONCRETE
EMH - ELECTRICAL MANHOLE
EP - EDGE OF PAVEMENT
EPLTS - ENHANCED PERMANENT LEACHATE TRANSMISSION SYSTEM
EL - ELECTRICAL LINES
ELEV - ELEVATION
FEMP - FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FG - FUEL GAS LINES
FRL - FINAL REMEDIATION LEVEL
FT - FILTRATE OR EFFLUENT LINES
FTF - FIRE TRAINING FACILITY
FQI - HIGH PRESSURE FIRE PROTECTION LINES
GMA - UNSATURATED SANDS AND GRAVELS OF THE GREAT MIAMI AQUIFER
GW - GROUND WATER LINES
HDPE - HIGH DENSITY POLYETHYLENE
HWMU - HAZARDOUS WASTE MANAGEMENT UNIT
IE - INVERT ELEVATION
LF - LINEAR FEET
LSP - LIME SLUDGE POND
MDC - MAIN DRAINAGE CORRIDOR
MDPE - MEDIUM DENSITY POLYETHYLENE
MH - MANHOLE
NAR - NITRIC ACID RECOVERY
NI - PIPE CLASSIFICATION
NES - NORTHEAST SUMP
OC - ON CENTER
OD - OUTSIDE DIAMETER
OMTA - OSDF MATERIAL TRANSFER AREA
OSDF - ON-SITE DISPOSAL FACILITY
PA - PLANT AIR LINES
PCE - TETRACHLOROETHENE
PIV - POST INDICATOR VALVE
PVC - POLYVINYL CHLORIDE
RAD - RADIUS
RCP - REINFORCED CONCRETE PIPE
RCRA - RESOURCE CONSERVATION AND RECOVERY ACT
RW - RAW WATER LINES
SA - INSTRUMENT AIR SUPPLY LINES
SD - SUBSURFACE DRAINS
SL - SUMP LIQUOR LINES
SMH - SANITARY MANHOLE
SMTA - SPECIAL MATERIAL TRANSFER AREA
SN - SANITARY SEWER LINES
SP - STOCKPILE / SOIL PILE
ST - STORM SEWER
SWL - SOLID WASTE LANDFILL
SWRB - STORMWATER RETENTION BASIN
TC-99 - TECHNETIUM-99
TOP - TOP OF PIPE
TYP - TYPICAL
TW - TREATED WATER LINES
UST - UNDERGROUND STORAGE TANK
VCP - VITRIFIED CLAY PIPE
VOC - VOLATILE ORGANIC COMPOUND(S)
VT - PIPE CLASSIFICATION
WAC - WASTE ACCEPTANCE CRITERIA
WR - WATER RETURN-COOLING LINES
WS - WATER SUPPLY-COOLING LINES
WWF - WELDED WIRE FABRIC
Y - PIPE CLASSIFICATION

GENERAL NOTES

1. EXISTING TOPOGRAPHY SHOWN ON DRAWINGS PROVIDED BY FLUOR FERNALD. THESE SOURCES INCLUDE EXISTING SITE DATA SOURCE ON-PLANT FILES) FEMP CADD GRID/UTILITY DRAWINGS.
2. HORIZONTAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NORTH AMERICAN DATUM 1983 (NAD 83).
3. VERTICAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).
4. SILT FENCES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO UPGRADIENT LAND DISTURBANCES IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
5. DESIGN CONTOURS AND GRADES SHOWN REPRESENT THE MINIMUM LIMITS OF EXCAVATION REQUIRED TO CAPTURE CONTAMINATION AND FOUNDATIONS WHILE MAINTAINING SAFE SLOPE REQUIREMENTS. MINIMAL CHANGES MAY BE PROPOSED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 TO INCORPORATE BREAKS IN CONTOURS, PONDING OF WATER, EQUIPMENT ACCESSIBILITY, ETC. THESE CHANGES SHALL NOT EXCEED 10% OF THE TOTAL DESIGN EXCAVATION QUANTITY.
6. GEOLOGICAL AND CROSS SECTION INFORMATION TAKEN FROM (FEMP) OU-2 RI, 1995, OU-2 FS, 1995, GEOTECHNICAL REPORTS, AND FEMP 3D CADD MODEL. ACTUAL GEOLOGICAL CONDITIONS AND DEPTHS SHOWN ON CROSS SECTIONS MAY VARY AND SHALL BE DETERMINED IN THE FIELD DURING EXCAVATION.
7. LOCATION AND DEPTH OF EXISTING UTILITIES AND FOUNDATION STRUCTURES ARE APPROXIMATE. IF UNIDENTIFIED UTILITIES ARE DISCOVERED, PROCEED AS DIRECTED BY THE CONSTRUCTION MANAGER.
8. DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
9. FIGURED DIMENSIONS AND/OR ELEVATIONS MARKED THUS (+/-) SHALL BE VERIFIED IN THE FIELD BEFORE START OF REMEDIATION.
10. MAINTAIN AND PROTECT UTILITIES OUTSIDE THE LIMIT OF EXCAVATION AND/OR LIMIT OF WORK.
11. PROVIDE TEMPORARY SHORING, BRACING, OR OTHER METHODS AS NECESSARY TO SAFELY SUPPORT EXCAVATION. PROTECTION SHALL BE IN ACCORDANCE WITH OSHA 29 CFR 1926, SUBPART P-EXCAVATIONS, LATEST EDITION.
12. OUTSIDE THE BOUNDARIES OF A COMPLETED UTILITY ISOLATION TRENCHED AREA, A PENETRATION PERMIT MUST BE OBTAINED BY THE CONSTRUCTION MANAGER FOR EXCAVATION OR PENETRATION INTO THE SOIL DEEPER THAN 6 INCHES.
13. TECHNICAL SPECIFICATIONS GOVERNING THIS PROJECT ARE THE LATEST REVISIONS OF SOIL EXCAVATION TECHNICAL SPECIFICATIONS (DOCUMENT NO. 20000-TS-0000) AND ON-SITE DISPOSAL FACILITY (OSDF) PHASE IV TECHNICAL SPECIFICATIONS (DOCUMENT NO. 20104-TS-0000).

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
F	ISSUED FOR AGENCY REVIEW (SWL & FTF)	8/21/02	KLR	
E	ISSUED FOR 30% DESIGN REVIEW (4B AND MDC)	8/7/02	DRF	
D	ISSUED FOR DOE REVIEW (SWL & FTF)	7/15/02	ATG	
C	ISSUED FOR A2PH IRDP AGENCY REVIEW	6/24/02	GDD	
B	ISSUED FOR 90% DESIGN REVIEW (SWL & FTF)	6/7/02	ATG	
A	ISSUED FOR 90% DESIGN REVIEW	6/3/02	GDD	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

PROJECT NAME
SOIL REMEDIATION

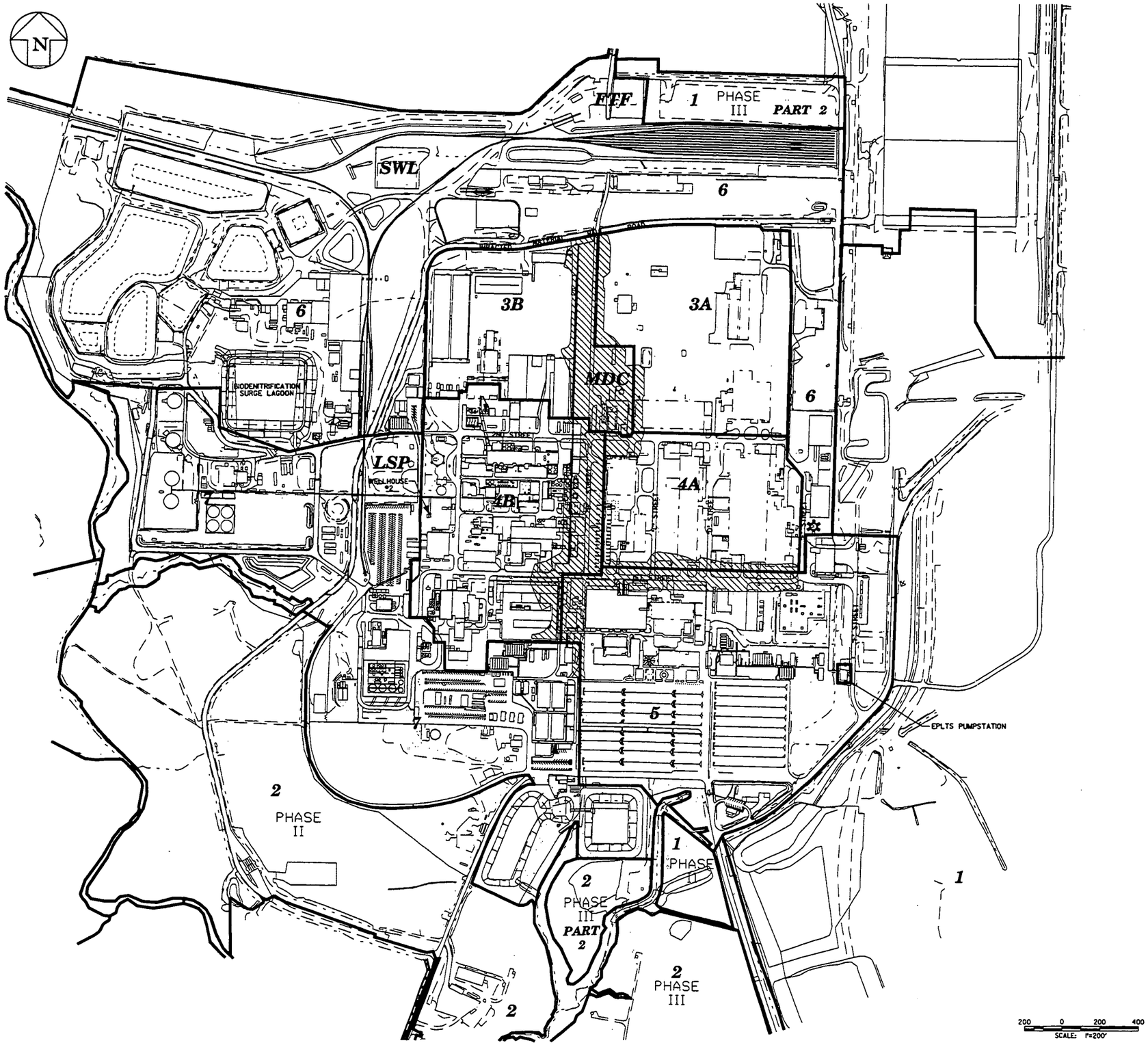
DRAWING TITLE
LEGEND AND GENERAL NOTES

000002

APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		DA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
KLR	20610	99X-5500-X-00639	X-2	F
RES PROJECT NO.	FILENAME 99XX00639.DGN			



GENERAL NOTES

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. FEATURES SHOWN OUTSIDE THE PROJECT AREA ARE FOR REFERENCE AND ORIENTATION ONLY.
3. MAINTAIN NEW AND EXISTING SURVEY MONUMENTS OUTSIDE THE LIMITS OF EXCAVATION FOR THE DURATION OF THE PROJECT.
4. OBTAIN NON-POTABLE WATER FROM WELLHOUSE #2.
5. REFER TO MASTER FEMP BENCHMARK LOCATION PLAN, DRAWING 93X-5500-G-01846 FOR EXISTING BENCHMARK LOCATIONS.

4441

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
D	ISSUED FOR AGENCY REVIEW (SWL & FTF)	8/27/02	KLR	
C	ISSUED FOR 30% DESIGN REVIEW (4B AND MDC)	8/7/02	DRF	
B	ISSUED FOR DOE REVIEW (SWL & FTF)	7/15/02	ATG	
A	ISSUED FOR 90% DESIGN REVIEW	6/3/02	GDD	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

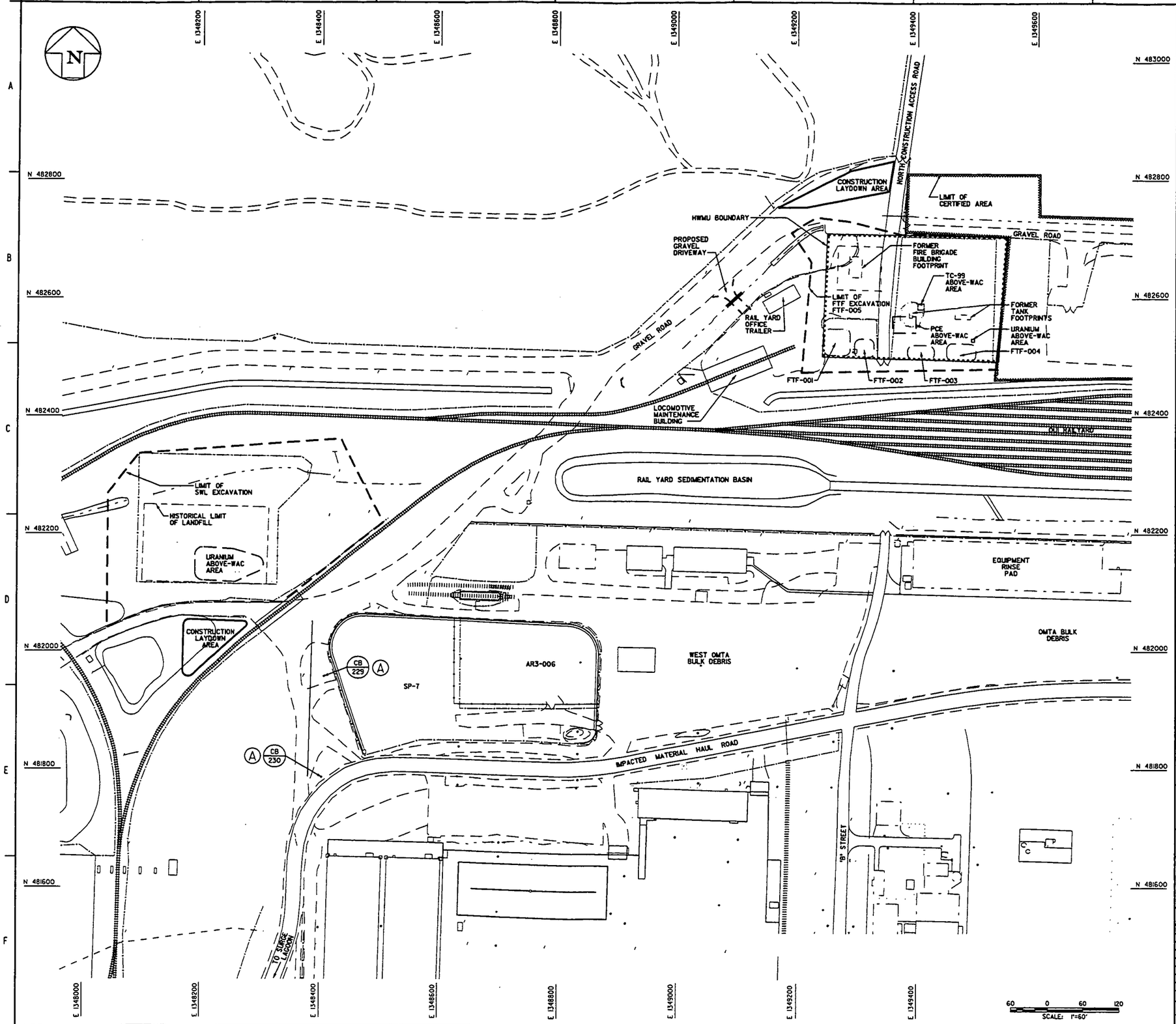
PROJECT NAME
SOIL REMEDIATION

DRAWING TITLE
MASTER PLAN 000003

APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE.	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
DRF	20610	99X-5500-G-00640	G-1	D
RES PROJECT NO.	FILENAME 99XG00640.DGN			



GENERAL NOTES

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. FIELD LOCATE SUPPORT FACILITIES IN COORDINATION WITH SURROUNDING FIELD ACTIVITIES.
3. REMOVE EXISTING FENCE WITHIN THE EXCAVATION LIMITS AFTER INSTALLATION OF PERIMETER CONSTRUCTION SAFETY FENCE.
4. SEE DRAWINGS 99X-5500-G-00730 AND 99X-5500-G-00733 FOR COORDINATES OF ABOVE-WAC AREAS.
5. EXCAVATION OF KNOWN ABOVE-WAC AREAS SHALL TAKE PRIORITY OVER GENERAL EXCAVATION. PERFORM ABOVE-WAC EXCAVATIONS IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
6. FIELD LOCATE SMTA AS NEEDED FOR EACH EXCAVATION AREA IN ACCORDANCE WITH SECTION 02205 AND DRAWING 99X-5500-G-00738.
7. SEE GRADING/DRAINAGE PLAN DRAWINGS 99X-5500-G-00728 AND 99X-5500-G-00730 FOR LIMIT OF EXCAVATION SHOWN HERE FOR REFERENCE ONLY.
8. VERIFY LOCATION AND PROTECT ENERGIZED UNDERGROUND UTILITIES.
9. HAUL WATER WITHIN THE FTF EXCAVATION TO THE BIODENITRIFICATION SURGE LAGOON IN ACCORDANCE WITH SPECIFICATION SECTION 02275.

4441

KEYED NOTES

(A) DISCHARGE EXCAVATION DEWATERING LINES FROM SWL EXCAVATION INTO STORM SEWER SYSTEM AT CB 229, CB 230, OR AN ALTERNATE LOCATION APPROVED BY THE PROJECT ENGINEER. DISCHARGE WATER THROUGH STRAW BALES. SEE DRAWING 99X-5500-G-00739 FOR STRAW BALE STAKING SYSTEM. PROTECT DISCHARGE LINES ACROSS ROADWAYS.

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
D	ISSUED FOR AGENCY REVIEW	8/27/02	KLR	
C	ISSUED FOR DOE REVIEW	7/15/02	DRF	
B	ISSUED FOR 90% DESIGN REVIEW	6/7/02	ATG	
A	ISSUED FOR 30% DESIGN REVIEW	4/8/02	GDD	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

PROJECT NAME
SOIL REMEDIATION

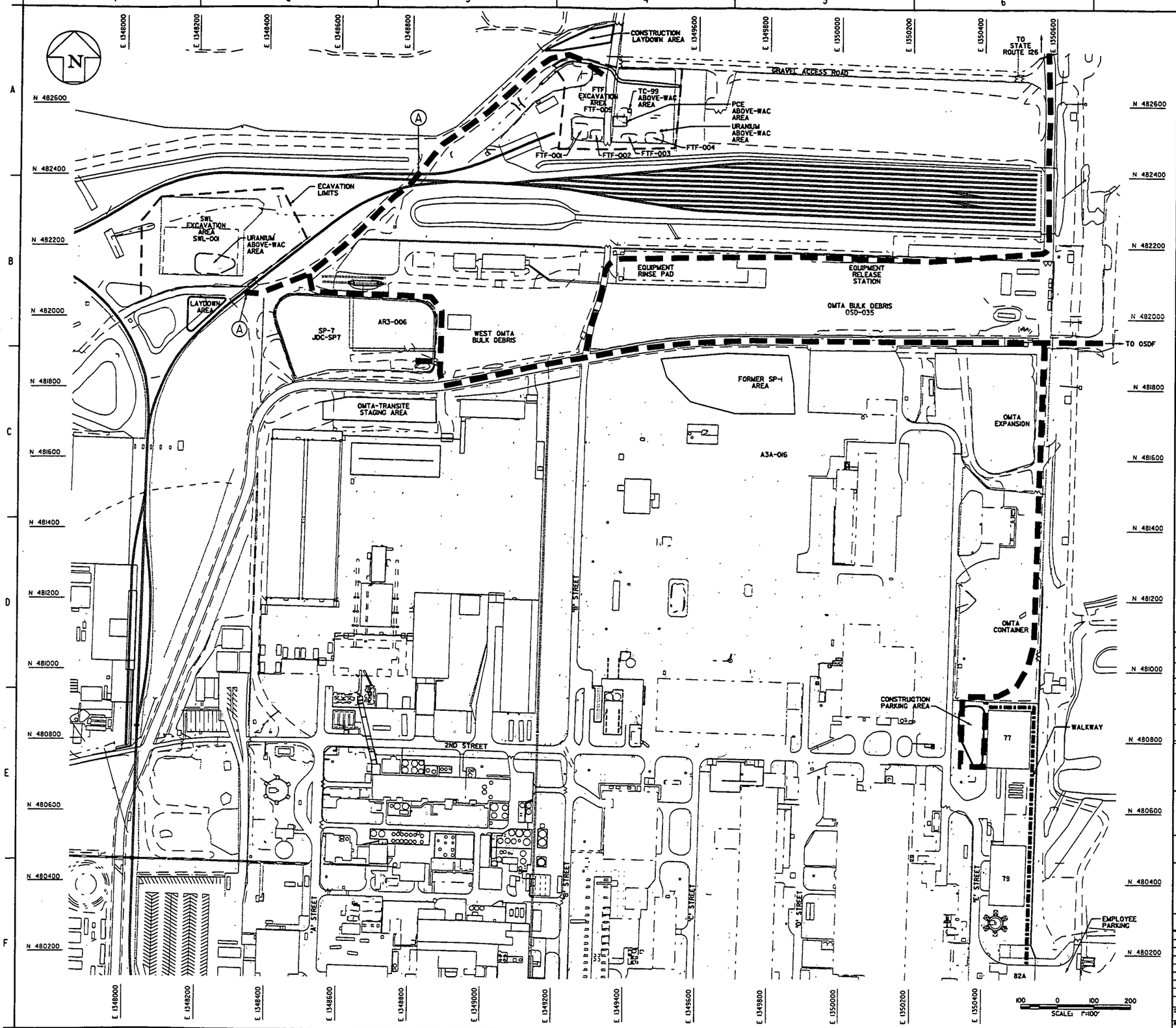
DRAWING TITLE
SWL AND FTF
LAYOUT PLAN

000004

APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO. 20810	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
RES PROJECT NO.	FILENAME 99X00072G.DGN	99X-5500-G-00726	G-2	D



GENERAL NOTES

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH OSDF SPECIFICATION SECTION 02150.
3. FIELD LOCATE SUPPORT FACILITIES AND SMTA AS NECESSARY.
4. DO NOT STAGE LOADED HAUL TRUCKS WITHIN 15 FT. FROM THE TOP OF DEEP EXCAVATION SLOPES. DO NOT STAGE GENERAL CONSTRUCTION EQUIPMENT WITHIN 10 FT. FROM TOP OF DEEP EXCAVATION SLOPES.

4441

KEYED NOTES

(A) VEHICLES SHALL CROSS RAILROAD TRACKS AT CONCRETE APRONS ONLY.

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
D	ISSUED FOR AGENCY REVIEW	8/27/02	KLR	
C	ISSUED FOR DOE REVIEW	7/15/02	DRF	
B	ISSUED FOR 90% DESIGN REVIEW	6/7/02	ATG	
A	ISSUED FOR 30% DESIGN REVIEW	4/11/02	GDD	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

PROJECT NAME
SOIL REMEDIATION

DRAWING TITLE
SWL AND FTF
TRAFFIC FLOW AND MATERIAL TRACKING PLAN

APPROVALS 000005

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

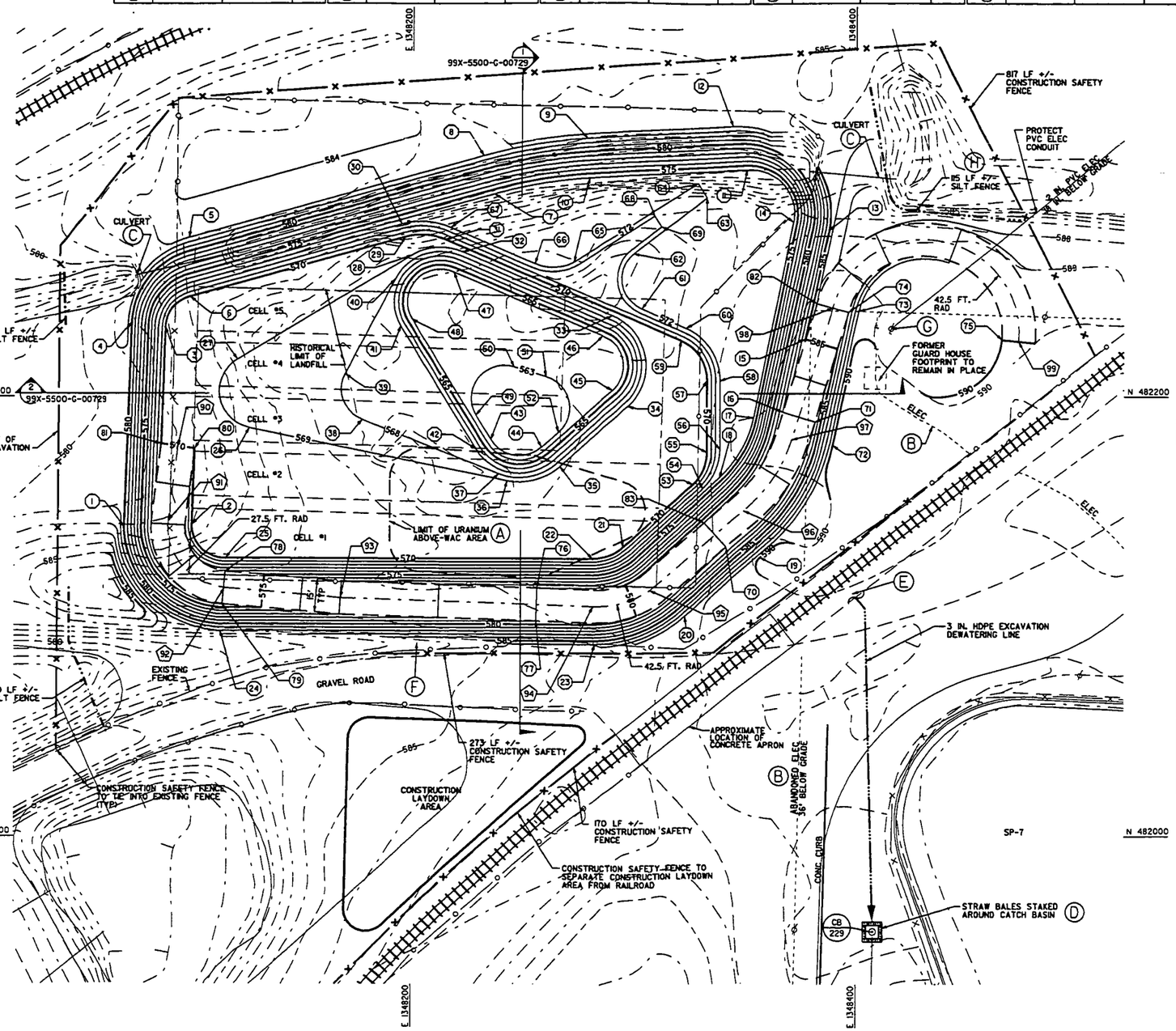
DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
RES PROJECT NO.	2080 FILENAME 99XG00727.DGN	99X-5500-G-00727	G-3	D

DESIGN GRADE CONTROL POINTS

PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.
1	482140.52	1348071.13	580.0	11	482303.50	1348350.79	574.0	21	482131.23	1348295.00	570.0	31	482271.51	1348215.08	570.0	41	482232.12	1348194.96	567.0	51	482209.07	1348260.49	563.0
2	482141.71	1348101.13	570.0	12	482323.18	1348344.53	584.0	22	482125.98	1348281.46	570.0	32	482265.92	1348222.90	569.0	42	482176.09	1348228.91	567.0	52	482183.67	1348266.09	563.0
3	482231.55	1348089.11	570.0	13	482275.89	1348387.66	585.0	23	482087.03	1348282.34	586.0	33	482236.76	1348289.90	569.0	43	482180.45	1348235.63	563.0	53	482159.79	1348326.20	570.0
4	482272.41	1348074.12	580.0	14	482279.65	1348371.55	574.0	24	482093.29	1348113.77	583.0	34	482195.35	1348296.75	569.0	44	482176.92	1348258.68	563.0	54	482157.85	1348330.74	573.0
5	482272.85	1348099.53	583.0	15	482226.19	1348377.00	585.0	25	482126.23	1348116.10	570.0	35	482168.04	1348266.76	569.0	45	482202.74	1348290.02	564.0	55	482174.54	1348332.69	570.0
6	482245.51	1348100.04	570.0	16	482192.91	1348366.79	583.0	26	482185.66	1348126.62	569.0	36	482161.57	1348243.11	569.0	46	482227.59	1348285.91	564.0	56	482175.92	1348338.69	573.0
7	482292.32	1348237.05	574.0	17	482190.13	1348353.83	574.0	27	482216.86	1348121.27	569.0	37	482164.80	1348239.31	568.0	47	482256.75	1348218.91	564.0	57	482207.20	1348332.69	570.0
8	482309.65	1348232.15	583.0	18	482162.97	1348338.55	574.0	28	482264.40	1348200.00	569.0	38	482189.39	1348177.72	568.0	48	482235.23	1348200.09	564.0	58	482207.20	1348338.69	573.0
9	482317.41	1348278.64	583.0	19	482126.48	1348356.87	590.0	29	482272.74	1348197.01	570.0	39	482210.24	1348169.98	568.0	49	482191.45	1348228.97	563.0	59	482225.54	1348320.67	570.0
10	482299.44	1348279.71	574.0	20	482099.75	1348322.74	588.0	30	482278.54	1348195.35	573.0	40	482253.61	1348192.51	568.0	50	482213.53	1348246.30	563.0	60	482231.04	1348323.07	573.0
																				61	482239.78	1348303.01	573.0
																				62	482265.38	1348299.82	573.0
																				63	482290.72	1348332.52	573.0
																				64	482297.16	1348328.36	573.0
																				65	482261.12	1348272.66	573.0
																				66	482260.54	1348255.31	573.0
																				67	482277.02	1348217.45	573.0
																				68	482282.12	1348308.80	572.0
																				69	482277.29	1348311.93	572.0
																				70	482131.25	1348341.68	581.0
																				71	482188.48	1348381.24	583.0
																				72	482177.83	1348389.37	590.0
																				73	482238.89	1348401.23	589.0
																				74	482238.41	1348396.51	586.0
																				75	482226.04	1348465.12	590.0
																				76	482112.54	1348256.78	579.0
																				77	482097.57	1348256.26	579.0
																				78	482120.23	1348115.98	574.0
																				79	482105.26	1348114.68	574.0
																				80	482176.21	1348102.24	570.0
																				81	482178.40	1348087.40	570.0
																				82	482242.41	1348382.01	586.0
																				83	482142.32	1348331.54	581.0

℄ BENCH CONTROL POINTS

PT NO.	NORTHING	EASTING	ELEV.
90	482177.30	1348094.81	570.0
91	482143.34	1348090.82	571.9
92	482112.73	1348115.75	574.0
93	482108.16	1348168.32	577.0
94	482104.20	1348281.61	579.6
95	482111.55	1348307.03	580.2
96	482147.82	1348349.55	581.4
97	482180.32	1348370.89	582.6
98	482240.41	1348389.26	586.0
99	482225.11	1348472.56	590.0



GENERAL NOTES

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. SEE THE LATEST REVISIONS OF FEMP SITE AND UTILITY GRID DRAWING 288-5500-P00681 (GRID 22) AND DRAWING 93X-5900-G-00301 (GRID 28) FOR EXISTING UNDERGROUND UTILITY INFORMATION.
3. DESIGN CONTOURS AND GRADES SHOWN REPRESENT THE MINIMUM LIMIT OF EXCAVATION REQUIRED TO CAPTURE CONTAMINATION, WHILE MAINTAINING SAFE SLOPES. MINIMAL CHANGES MAY BE PROPOSED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 TO ADDRESS BREAKS IN CONTOURS, PONDING OF WATER, EQUIPMENT ACCESSIBILITY, ETC.
4. INSTALL CONSTRUCTION SAFETY FENCE IN ACCORDANCE WITH THE DETAIL PRESENTED ON DRAWING 99X-5500-G-00738 IN THE APPROXIMATE LOCATION SHOWN. CONSTRUCTION SAFETY FENCE MARKS THE LIMITS OF EXCAVATION, UNLESS OTHERWISE NOTED.
5. REMOVE EXISTING FENCE WITHIN EXCAVATION LIMITS AFTER INSTALLATION OF PERIMETER CONSTRUCTION SAFETY FENCE.
6. FOLLOWING COMPLETION OF ABOVE-WAC EXCAVATION, PERFORM GENERAL IMPACTED MATERIAL EXCAVATION TO THE DESIGN GRADE SHOWN IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
7. DEBRIS REMOVED FROM THE ABOVE-WAC AREA SHALL BE CLEANED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 PRIOR TO DISPOSAL.
8. KEEP RAILROAD TRACKS CLEAR AT ALL TIMES, EXCEPT WHEN CROSSING.
9. VEHICLES SHALL CROSS RAILROAD TRACKS AT CONCRETE APRON ONLY.
10. DO NOT STAGE LOADED HAUL TRUCKS WITHIN 15 FT. FROM THE TOP OF EXCAVATIONS DEEPER THAN 15 FT. DO NOT STAGE GENERAL CONSTRUCTION EQUIPMENT WITHIN 10 FT. FROM TOP OF EXCAVATIONS DEEPER THAN 15 FT.
11. UNDERGROUND UTILITIES ENCOUNTERED DURING EXCAVATION TO THE DESIGN GRADE SHALL BE REMOVED IN ACCORDANCE WITH SPECIFICATION SECTION 02205. REMAINING UTILITIES BELOW THE DESIGN GRADE SHALL BE REMOVED USING TRENCHING METHODS IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
12. EXCAVATION SHOWN IS DRIVEN BY CONTAMINATION RATHER THAN STRUCTURE REMOVAL IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
13. MINIMUM INTERIOR DESIGN RADII ARE 15 FEET OR GREATER.
14. OBTAIN SLOPE STABILITY DRAWING SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OHIO PRIOR TO EXCAVATING DEEPER THAN ELEVATION 571 FT.

KEYED NOTES

- (A) EXCAVATE THE ABOVE-WAC AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02205 AND DRAWING 99X-5500-G-00733 PRIOR TO PERFORMING GENERAL EXCAVATION.
- (B) VERIFY UTILITY IS DE-ENERGIZED DURING PENETRATION PERMITTING.
- (C) PLUG CULVERT WITH CONCRETE IN ACCORDANCE WITH DETAIL ON DRAWING 99X-5500-G-00738.
- (D) DISCHARGE 3 IN. HDPE EXCAVATION DEWATERING LINE INTO STORM SEWER SYSTEM AT CB 229, CB 230, OR AN ALTERNATE LOCATION APPROVED BY THE PROJECT ENGINEER. DISCHARGE WATER THROUGH STRAW BALES. SEE DRAWING 99X-5500-G-00739 FOR STRAW BALE STAKING DETAIL. PROTECT DISCHARGE LINE ACROSS ROADWAYS.
- (E) ROUTE 3 IN. DEWATERING HOSE UNDER RAILROAD TRACKS NEAR EDGE OF CONCRETE APRON. TIE INTO 3 IN. HDPE DEWATERING LINE.
- (F) MAINTAIN DITCH BETWEEN EXCAVATION AND GRAVEL ROAD.
- (G) PROTECT 100 FT. LIGHT POLE.
- (H) SEE DRAWING 99X-5500-G-00738 FOR SILT FENCE DETAIL.

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
D	ISSUED FOR AGENCY REVIEW	8/27/02	KLR	
C	ISSUED FOR DOE REVIEW	7/15/02	DRF	
B	ISSUED FOR 90% DESIGN REVIEW	6/7/02	ATG	
A	ISSUED FOR 30% DESIGN REVIEW	4/11/02	GDD	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

PROJECT NAME
SOIL REMEDIATION

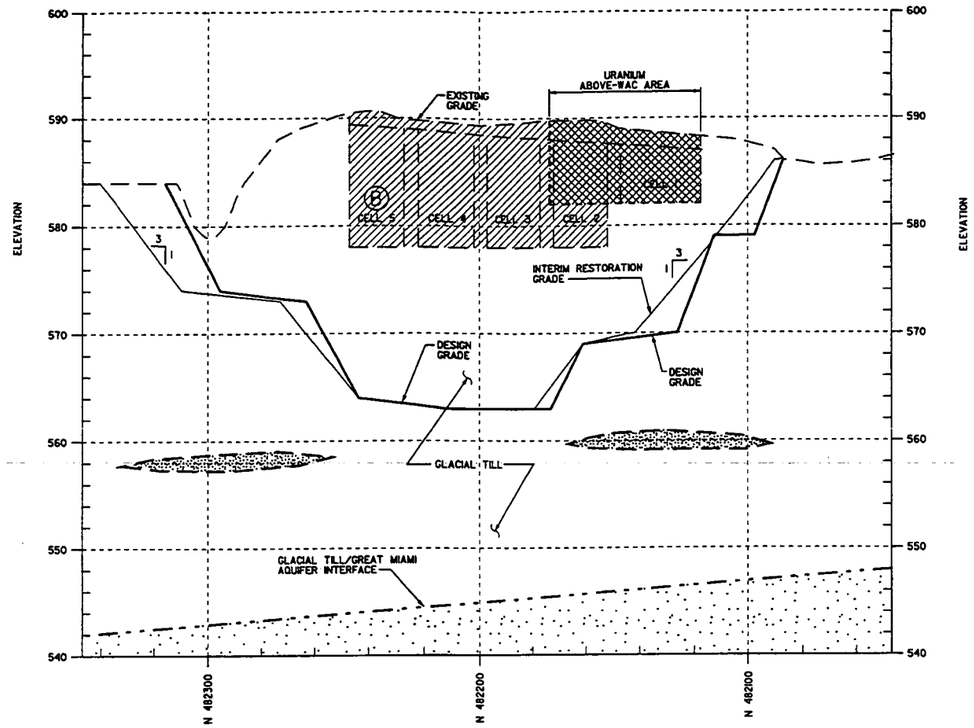
DRAWING TITLE
SWL AND FTF
EXCAVATION/DRAINAGE PLAN (SWL)

000006

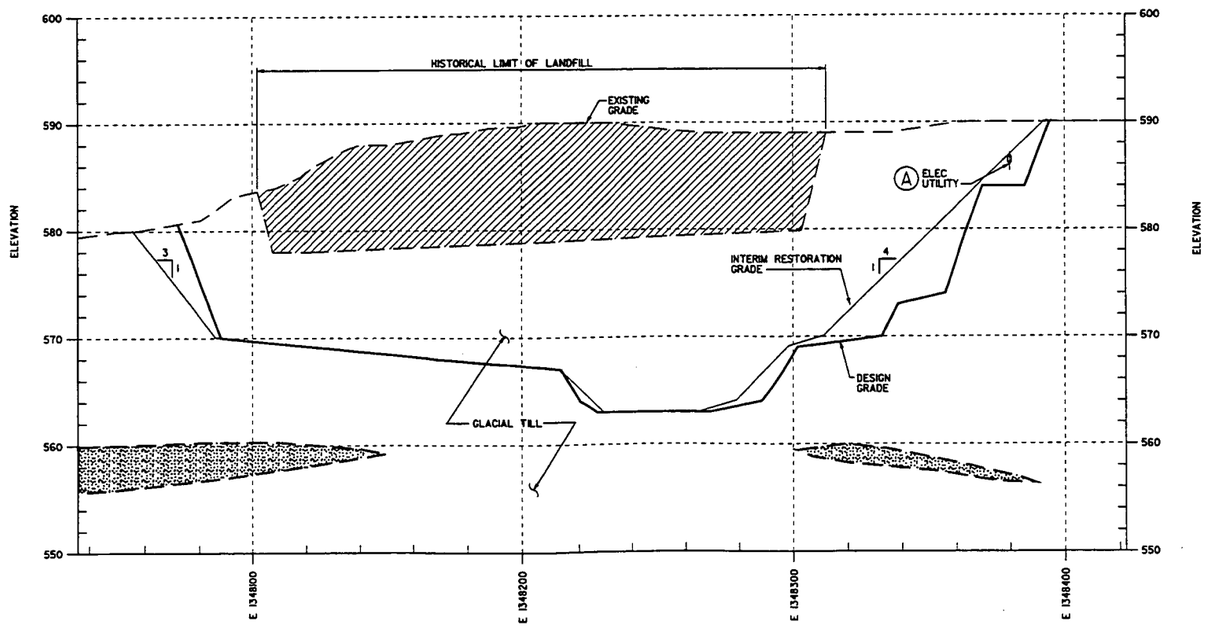
APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
RCS PROJECT NO.	2080 FILENAME 99XG00728.DGN	99X-5500-G-00728	G-4	D



SWL EXCAVATION (1) G00728
SCALE: 1"=20' HORIZ
1"=5' VERT



SWL EXCAVATION (2) G00728
SCALE: 1"=20' HORIZ
1"=5' VERT

20 0 20 40
HORIZ. SCALE: 1"=20'

5 0 5 10
VERT. SCALE: 1"=5'

GENERAL NOTES

4441

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. UNDERGROUND UTILITIES ENCOUNTERED DURING EXCAVATION TO THE DESIGN GRADE SHALL BE REMOVED IN ACCORDANCE WITH SPECIFICATION SECTION 02205. REMAINING UTILITIES BELOW THE DESIGN GRADE SHALL BE REMOVED USING TRENCHING METHODS IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
3. DESIGN CONTOURS AND GRADES SHOWN REPRESENT THE MINIMUM LIMIT OF EXCAVATION REQUIRED TO CAPTURE CONTAMINATION AND STRUCTURES, WHILE MAINTAINING SAFE SLOPES. MINIMAL CHANGES MAY BE PROPOSED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 TO INCORPORATE BREAKS IN CONTOURS, PONDING OF WATER, EQUIPMENT ACCESSIBILITY, ETC.
4. SEE DRAWINGS 21A-5500-G-00216 AND 21A-5500-G-00217 FOR SWL REFERENCE.
5. GEOLOGY TAKEN FROM OPERABLE UNIT 2 FEASIBILITY STUDY, MARCH 1995.

KEYED NOTES

(A) REPRESENTS KNOWN UTILITY AT APPROXIMATE INVERT ELEVATION. SEE UNDERGROUND UTILITY REFERENCE DRAWINGS FOR UTILITY LINE DESCRIPTION, LOCATION, AND SIZE.

(B) CELLS SHOWN REPRESENT APPROXIMATE LIMITS OF WASTE DISPOSAL WITHIN THE HISTORICAL LIMIT OF THE LANDFILL.

LEGEND

- UNSATURATED SAND AND GRAVEL OF THE GREAT MIAMI AQUIFER
- SAND/GRAVEL
- FILL/DEBRIS
- URANIUM ABOVE/WAC FILL/DEBRIS

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
C	ISSUED FOR AGENCY REVIEW	8/27/02	KLR	
B	ISSUED FOR DOE REVIEW	7/15/02	DRF	
A	ISSUED FOR 90% DESIGN REVIEW	6/7/02	ATG	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

PROJECT NAME
SOIL REMEDIATION

DRAWING TITLE
SWL AND FTF
CROSS SECTIONS (SWL)

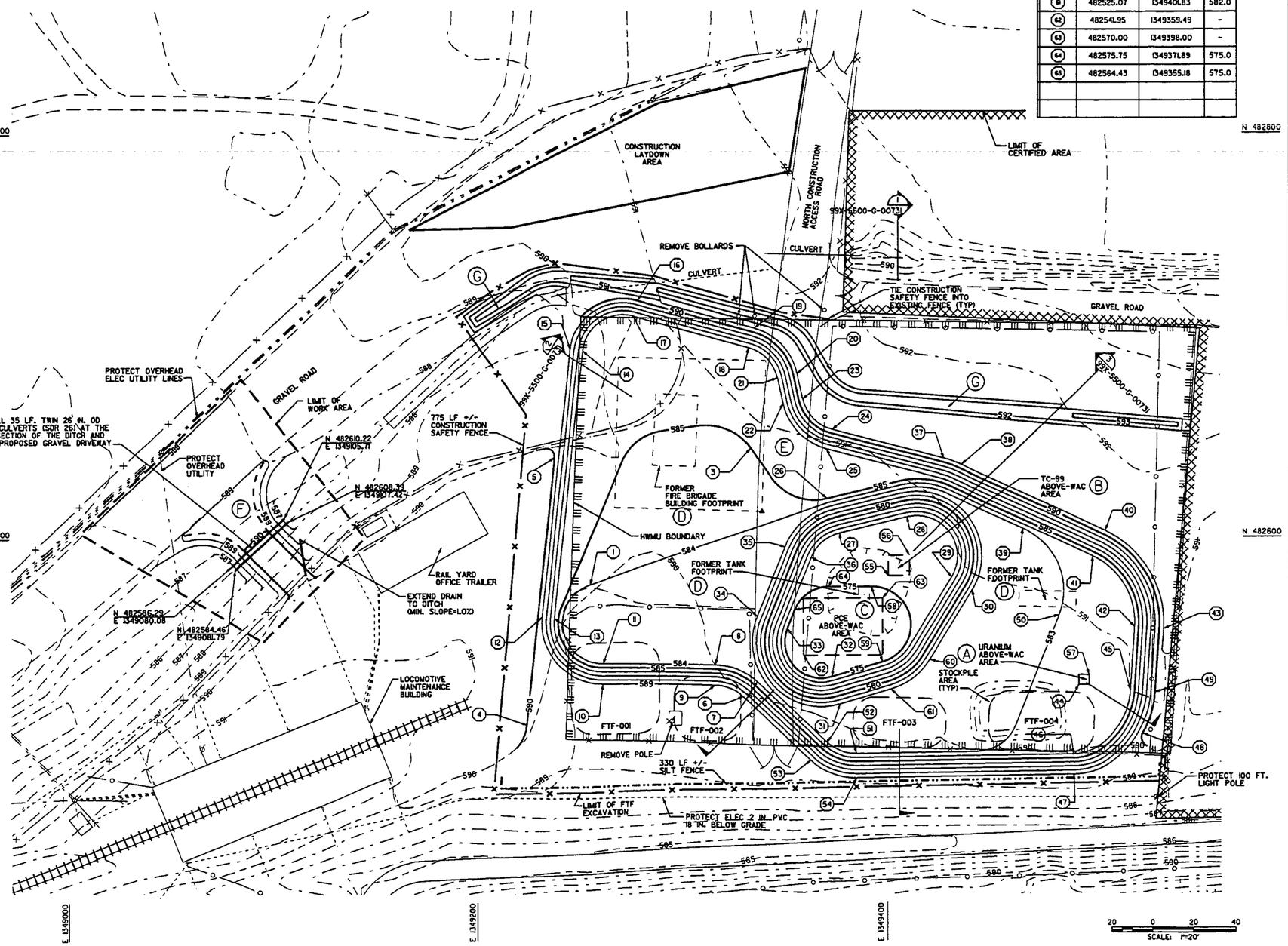
APPROVALS 000007

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
KLR	2080	99X-5500-G-00729	G-5	C
RES PROJECT NO.	FILENAME 99X00072 9.DGN			

DESIGN GRADE CONTROL POINTS

PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.
1	482577.07	1349255.14	584.0	11	482538.17	1349261.32	584.0	21	482679.14	1349346.87	586.0	31	482517.88	1349377.21	582.0	41	482590.53	1349499.23	584.0	51	482493.50	1349385.15	583.0
2	482637.22	1349270.65	585.0	12	482561.27	1349231.84	589.0	22	482666.64	1349349.55	586.0	32	482531.32	1349373.28	575.0	42	482555.55	1349519.63	584.0	52	482499.00	1349371.08	583.0
3	482644.49	1349333.68	585.0	13	482560.65	1349237.80	586.0	23	482668.74	1349359.33	591.0	33	482555.27	1349351.52	575.0	43	482554.55	1349533.67	591.0	53	482490.30	1349362.81	589.0
4	482508.07	1349224.28	590.0	14	482692.75	1349251.57	586.0	24	482653.62	1349373.72	591.0	34	482561.21	1349336.66	583.0	44	482527.07	1349492.25	-	54	482481.50	1349385.32	589.0
5	482640.00	1349238.03	590.0	15	482693.37	1349245.60	589.0	25	482643.96	1349371.14	586.0	35	482595.42	1349350.33	583.0	45	482524.22	1349517.46	584.0	55	482581.12	1349400.84	-
6	482521.68	1349329.78	589.0	16	482717.63	1349279.05	590.0	26	482619.33	1349371.28	585.0	36	482590.22	1349363.33	576.0	46	482493.02	1349489.58	584.0	56	482591.12	1349410.84	-
7	482528.93	1349336.67	584.0	17	482709.93	1349276.88	586.0	27	482602.24	1349377.19	576.0	37	482639.14	1349427.91	591.0	47	482483.03	1349489.73	589.0	57	482532.07	1349497.25	-
8	482537.18	1349316.54	584.0	18	482694.19	1349332.74	586.0	28	482610.14	1349409.76	576.0	38	482635.96	1349436.53	591.0	48	482503.16	1349523.45	590.0	58	482575.75	1349392.57	575.0
9	482527.18	1349316.36	589.0	19	482703.82	1349335.45	591.0	29	482580.28	1349431.55	576.0	39	482590.53	1349499.22	583.0	49	482523.39	1349529.50	590.0	59	482538.51	1349397.90	575.0
10	482528.17	1349261.14	589.0	20	482681.24	1349356.65	591.0	30	482574.03	1349441.79	582.0	40	482603.13	1349505.32	591.0	50	482561.46	1349482.97	583.0	60	482539.55	1349420.73	582.0
																				61	482525.07	1349401.83	582.0
																				62	482541.95	1349359.49	-
																				63	482570.00	1349398.00	-
																				64	482575.75	1349371.89	575.0
																				65	482564.43	1349355.18	575.0



GENERAL NOTES

1. SEE DRAWING 99X-5500-G-00639 FOR LEGEND AND GENERAL NOTES.
2. SEE THE LATEST REVISIONS OF FEMP SITE AND UTILITY GRID DRAWINGS 93X-5900-G-00301 (GRID 28) AND 93X-5900-G-00302 (GRID 29) FOR EXISTING UNDERGROUND UTILITY INFORMATION.
3. DESIGN CONTOURS AND GRADES SHOWN REPRESENT THE MINIMUM LIMIT OF EXCAVATION REQUIRED TO CAPTURE CONTAMINATION AND STRUCTURES, WHILE MAINTAINING SAFE SLOPES. MINIMAL CHANGES MAY BE PROPOSED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 TO INCORPORATE BREAKS IN CONTOURS, PONDING OF WATER, EQUIPMENT ACCESSIBILITY, ETC.
4. INSTALL CONSTRUCTION SAFETY FENCE IN ACCORDANCE WITH THE DETAIL PRESENTED ON DRAWING 99X-5500-G-00738 IN THE APPROXIMATE LOCATION SHOWN. CONSTRUCTION SAFETY FENCE MARKS THE LIMITS OF EXCAVATION UNLESS OTHERWISE NOTED.
5. REMOVE EXISTING FENCE WITHIN EXCAVATION LIMITS AFTER INSTALLATION OF PERIMETER CONSTRUCTION SAFETY FENCE.
6. FOLLOWING COMPLETION OF ABOVE-WAC EXCAVATION, PERFORM GENERAL IMPACTED MATERIAL EXCAVATION TO THE DESIGN GRADE SHOWN IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
7. EARTHWORK WITHIN OR AT THE LIMIT OF THE CERTIFIED AREA MUST BE WORKED FROM THE CERTIFIED AREA TOWARDS THE NON-CERTIFIED AREA TO PREVENT CONTAMINATION FROM ENTERING INTO THE CERTIFIED AREA.
8. VEHICLES OR PORTIONS OF VEHICLES WORKING IN THE CERTIFIED AREA MUST BE CLEANED OF VISIBLE SOIL PRIOR TO ENTRY.
9. REQUIRED FILL MATERIAL FOR DRIVEWAY AND BERM MUST BE FROM A CERTIFIED AREA THAT MEETS 82 mg/kg FRL FOR TOTAL-URANIUM.
10. DEBRIS REMOVED FROM THE ABOVE-WAC AREA SHALL BE CLEANED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 PRIOR TO DISPOSITION.
11. MINIMUM INTERIOR DESIGN GRADE RADII ARE 15 FEET OR GREATER UNLESS SHOWN OTHERWISE.
12. EXCAVATE STOCKPILES FTF-001, FTF-002, FTF-003 & FTF-004 INCLUDING ASSOCIATED COVER AND CONTAINMENT MATERIALS. PLUS A MINIMUM 6 INCHES DEPTH WITHIN STOCKPILE FOOTPRINTS. HAUL EXCAVATED STOCKPILE MATERIAL TO THE OSDF IN ACCORDANCE WITH SPECIFICATION SECTION 02205. EXCAVATE STOCKPILES FTF-003 & FTF-004 AS HWMU MATERIAL, IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
13. UNDERGROUND UTILITIES ENCOUNTERED DURING EXCAVATION TO THE DESIGN GRADE SHALL BE REMOVED IN ACCORDANCE WITH SPECIFICATION SECTION 02205. REMAINING UTILITIES BELOW THE DESIGN GRADE SHALL BE REMOVED USING TRENCHING METHODS IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
14. EXCAVATION SHOWN WITHIN THE LIMIT OF EXCAVATION IS DRIVEN BY CONTAMINATION RATHER THAN STRUCTURE REMOVAL, IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
15. HAUL WATER WITHIN THE FTF EXCAVATION TO THE BIODENITRIFICATION SURGE LAGOON IN ACCORDANCE WITH SPECIFICATION SECTION 02275.

KEYED NOTES

(A) EXCAVATE THE URANIUM ABOVE-WAC AREA WITHIN THE COORDINATES SHOWN TO ELEVATION 589.5 IN ACCORDANCE WITH SPECIFICATION SECTION 02205.

(B) EXCAVATE THE TC-99 ABOVE-WAC AREA WITHIN THE COORDINATES SHOWN TO ELEVATION 587.5 IN ACCORDANCE WITH SPECIFICATION SECTION 02205.

(C) EXCAVATE THE PCE ABOVE-WAC AREA WITHIN THE COORDINATES SHOWN FROM ELEVATION 581.0 FT. TO 575.5 FT. IN ACCORDANCE WITH SPECIFICATION SECTION 02205.

(D) REMOVE FOOTERS AND PIERS THAT REMAIN IN THESE AREAS. EXCAVATE AND DISPOSE OF MATERIAL REMOVED FROM THESE AREAS IN ACCORDANCE WITH SPECIFICATION SECTION 02205.

(E) REMOVE NORTH CONSTRUCTION ACCESS ROAD WITHIN THE LIMITS OF EXCAVATION. UNDERLYING SOIL SHALL BE SCANNED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 PRIOR TO EXCAVATING UNDERLYING SOIL.

(F) PRIOR TO ERECTING CONSTRUCTION SAFETY FENCE AROUND LIMIT OF EXCAVATION, CONSTRUCT GRAVEL DRIVEWAY IN ACCORDANCE WITH THE TYPICAL HAUL ROAD/MAINTENANCE ROAD/SMTA DETAIL ON DRAWING 99X-5500-G-00738.

(G) CONSTRUCT DIVERSION BERM AFTER COMPLETION OF FTF REMEDIAL EXCAVATION.

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
D	ISSUED FOR AGENCY REVIEW	8/21/02	KLR	
C	ISSUED FOR DOE REVIEW	7/15/02	DRF	
B	ISSUED FOR 90% DESIGN REVIEW	6/7/02	ATG	
A	ISSUED FOR 30% DESIGN REVIEW	4/11/02	GDD	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

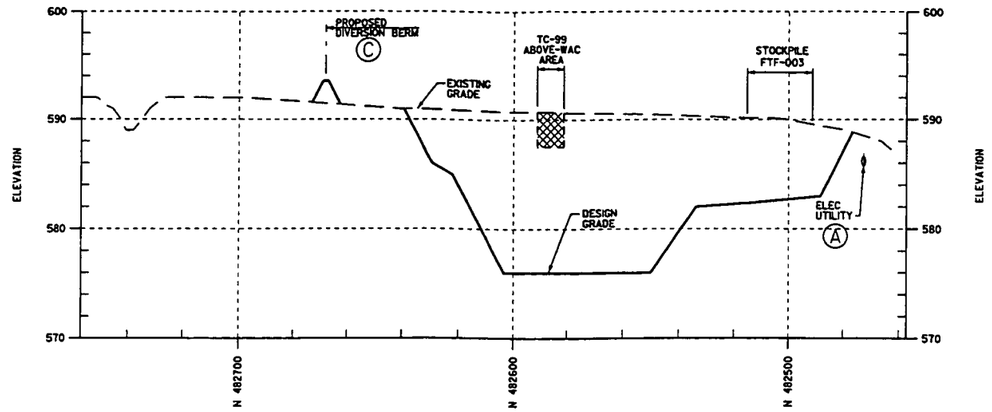
PROJECT NAME
SOIL REMEDIATION

DRAWING TITLE
SWL AND FTF
GRADING/DRAINAGE PLAN (FTF)
000008

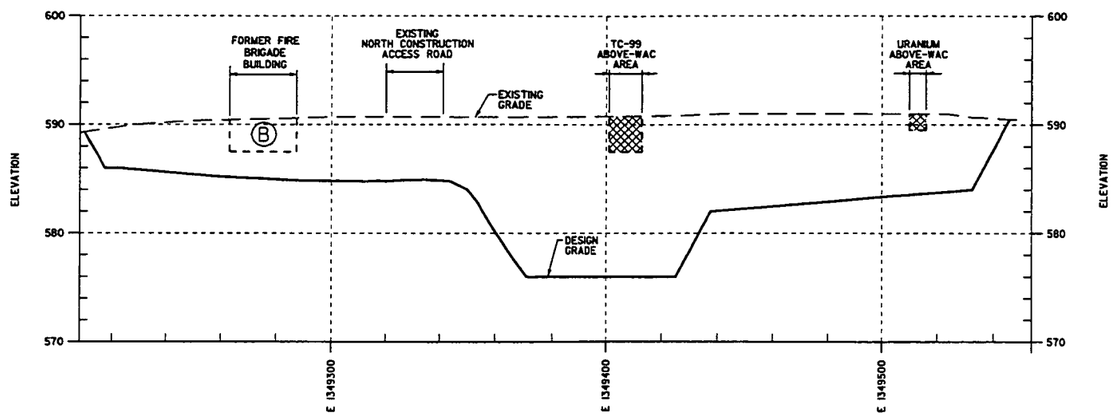
APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

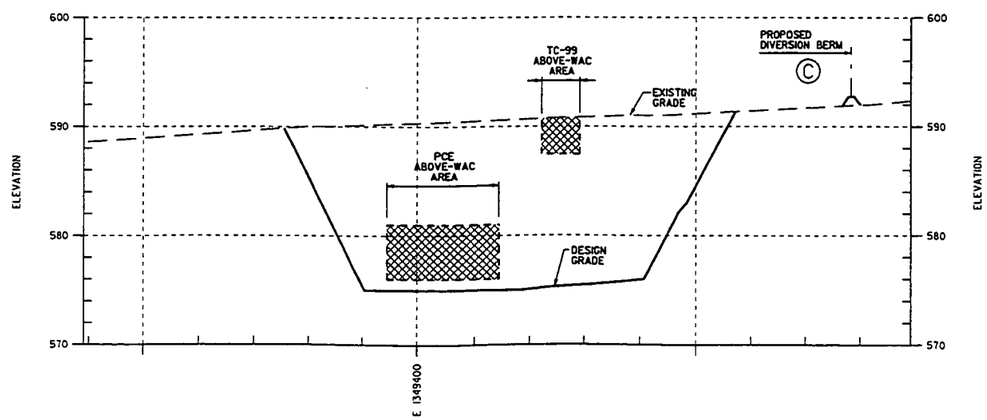
DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
RES PROJECT NO.	FILENAME 99XC00730.DGN	99X-5500-G-00730	G-6	D



FTF EXCAVATION 1 G00730
SCALE: 1"=20' HORIZ
1"=5' VERT



FTF EXCAVATION 2 G00730
SCALE: 1"=20' HORIZ
1"=5' VERT



FTF EXCAVATION 3 G00730
SCALE: 1"=20' HORIZ
1"=5' VERT

20 0 20 40
HORIZ. SCALE: 1"=20'

5 0 5 10
VERT. SCALE: 1"=5'

GENERAL NOTES

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. REMOVE UTILITIES EXPOSED BY EXCAVATION TO THE DESIGN GRADE.
3. DESIGN CONTOURS AND GRADES SHOWN REPRESENT THE MINIMUM LIMIT OF EXCAVATION REQUIRED TO CAPTURE CONTAMINATION AND STRUCTURES. WHILE MAINTAINING SAFE SLOPES. MINIMAL CHANGES MAY BE PROPOSED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 TO INCORPORATE BREAKS IN CONTOURS, PONDING OF WATER, EQUIPMENT ACCESSIBILITY, ETC.

4441

KEYED NOTES

(A) REPRESENTS KNOWN UTILITY AT APPROXIMATE INVERT ELEVATION TO BE PROTECTED. FOR UTILITY LINE DESCRIPTION, LOCATION AND SIZE, SEE UNDERGROUND UTILITY REFERENCE DRAWINGS.

(B) SEE DRAWINGS 73X-5500-G-00001, 73X-5500-A-00003, 73X-5500-A-00006, AND 73X-5500-X-00002 FOR PLOT PLAN AND FOUNDATION DETAILS.

(C) CONSTRUCT DIVERSION BERM AFTER COMPLETION OF FTF REMEDIAL EXCAVATION.

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
C	ISSUED FOR AGENCY REVIEW	8/27/02	KLR	
B	ISSUED FOR DOE REVIEW	7/15/02	DRF	
A	ISSUED FOR 90% DESIGN REVIEW	6/7/02	ATC	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

PROJECT NAME
SOIL REMEDIATION

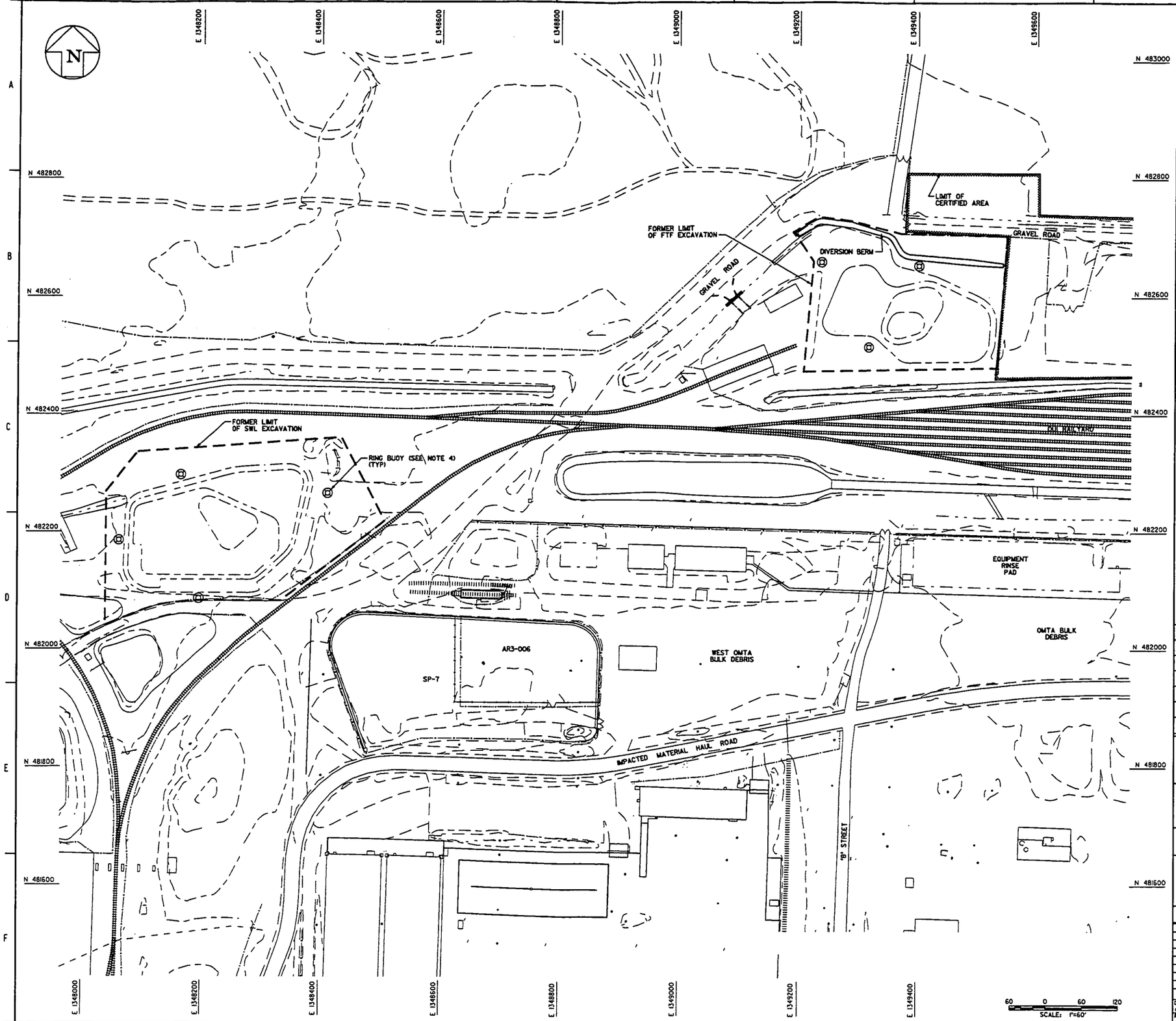
DRAWING TITLE
SWL AND FTF
CROSS SECTIONS (FTF)

000009

APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
KLR	20810	99X-5500-G-00731	G-7	C
RES PROJECT NO.	FILENAME 99XG0073.DGN			



GENERAL NOTES

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. CONSTRUCT DIVERSION BERM AROUND FINISHED EXCAVATIONS AS NECESSARY IN ACCORDANCE WITH SPECIFICATION SECTION 02206.
3. MAINTAIN CONSTRUCTION SAFETY FENCE AT FORMER LIMITS OF EXCAVATION FOR SWL AND FTF.
4. INSTALL RING BUOYS ON CONSTRUCTION SAFETY FENCE T-POSTS FOR EMERGENCY RESCUE OPERATIONS AT APPROXIMATE LOCATIONS SHOWN. SEE RING BUOY DETAIL ON DRAWING 99X-5500-G-00738.
5. THIS DRAWING DOES NOT ADDRESS CERTIFICATION BOUNDARIES OF REMEDIATED AREAS.

4441

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
C	ISSUE FOR AGENCY REVIEW	8/27/02	KLR	
B	ISSUE FOR DOE REVIEW	7/15/02	DRF	
A	ISSUE FOR 90% DESIGN REVIEW	6/7/02	ATG	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

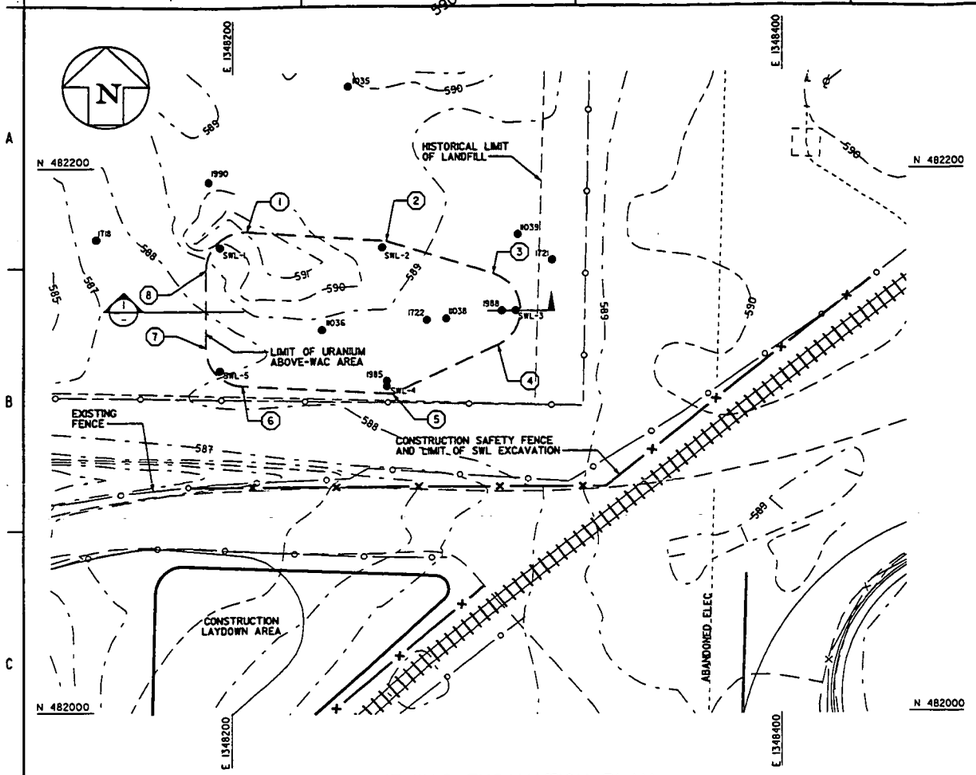
PROJECT NAME
SOIL REMEDIATION

DRAWING TITLE
SWL AND FTF
PRECERTIFICATION CONFIGURATION

APPROVALS 000010

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
KLR	20610	99X-5500-G-00732	G-8	C
RES PROJECT NO.	FILENAME 99XG00732.DGN			



ABOVE-WAC EXCAVATION PLAN

SCALE: 1"=20'

20 0 20 40

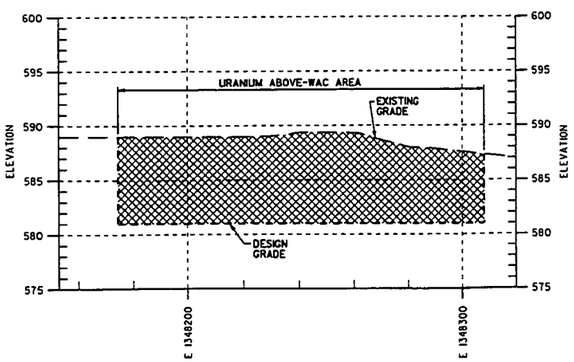
SCALE: 1"=20'

ABOVE-WAC AREA DESIGN GRADE CONTROL POINTS			
PT NO.	NORTHING	EASTING	ELEV.
1	482176.54	1348204.91	581.0
2	482173.03	1348205.29	581.0
3	482161.10	1348294.93	581.0
4	482134.99	1348296.76	581.0
5	482117.00	1348257.87	581.0
6	482120.06	1348203.53	581.0
7	482134.03	1348190.32	581.0
8	482162.58	1348190.31	581.0

GENERAL NOTES

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. EXCAVATE ABOVE-WAC AREAS IN ACCORDANCE WITH SPECIFICATION 02205. CONSTRUCTION MANAGER WILL VERIFY THE LIMITS OF ABOVE-WAC MATERIAL IN THE FIELD. SUPPLEMENTAL EXCAVATION MAY BE DIRECTED BY THE CONSTRUCTION MANAGER.
3. LOAD TRUCKS IN BUFFER ZONE OUTSIDE OF ABOVE-WAC AREA IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
4. MAINTAIN POSITIVE DRAINAGE WITHIN ABOVE-WAC EXCAVATIONS TO COLLECT WATER.
5. SURVEY FINAL EXCAVATION LIMITS. FLUOR FERNALD TO CONDUCT CONFIRMATION MONITORING AT BOTTOM OF ABOVE-WAC MATERIAL EXCAVATION IN ACCORDANCE WITH SPECIFICATION SECTION 02205.

4441



ABOVE-WAC EXCAVATION SECTION 1/-

SCALE: 1"=20' HORIZ
1"=5' VERT

20 0 20 40

HORIZ. SCALE: 1"=20'

5 0 5 10

VERT. SCALE: 1"=5'

1. REMOVE VISIBLE SOIL/GRAVEL FROM AT-GRADE DEBRIS LOCATED WITHIN THE ABOVE-WAC AREA PRIOR TO REMOVING THE DEBRIS FROM THE ABOVE-WAC AREA.
2. HAUL CLEAN DEBRIS TO THE OSDF. DISPOSE OF DEBRIS THAT IS NOT CLEANED WITH UNDERLYING SOIL IN ACCORDANCE WITH SPECIFICATION SECTION 02205.
3. EXCAVATE ABOVE-WAC AREA IN 3-FT +/- 1-FOOT LIFTS TO ELEVATION 581 WITHIN THE COORDINATES SHOWN, LEAVING VERTICAL SIDEWALLS.
4. HAUL EXCAVATED ABOVE-WAC MATERIAL TO SP-7. DO NOT TRACK EQUIPMENT THROUGH THE ADJACENT EXCAVATION AREA.
5. UPON COMPLETION OF EACH ABOVE-WAC EXCAVATION LIFT:
   - A. DECONTAMINATE THE EXCAVATOR BUCKET WITHIN THE EXCAVATION AREA AS DIRECTED BY THE CONSTRUCTION MANAGER.
   - B. EXCAVATE ABOVE-WAC AREA SIDE SLOPES TO 2 HORIZ TO 1 VERT AND TEMPORARILY STOCKPILE MATERIAL ADJACENT TO THE EXCAVATION.
   - C. THE CONSTRUCTION MANAGER ARRANGES FOR REAL-TIME MONITORING OF ABOVE-WAC AREA SIDE SLOPES AND FOOTPRINT.
   - D. THE CONSTRUCTION MANAGER DIRECTS DISPOSAL OF STOCKPILED SIDE SLOPE MATERIAL AS WELL AS FURTHER ABOVE-WAC EXCAVATION AS NECESSARY.
6. UPON REACHING THE DESIGN GRADE OF THE ABOVE-WAC EXCAVATION, DECONTAMINATE THE EXCAVATOR BUCKET WITHIN THE HAUL TRUCK BED AND REPEAT STEPS 5.B THROUGH 5.D.
7. IF FURTHER ABOVE-WAC EXCAVATION IS NECESSARY, REPEAT STEP 6.
8. DECONTAMINATE THE HAUL TRUCK BED IN SP-7.

ABOVE-WAC AREA EXCAVATION SEQUENCE AND REQUIREMENTS

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
C	ISSUED FOR AGENCY REVIEW	8/27/02	KLR	
B	ISSUED FOR DOE REVIEW	7/15/02	DRF	
A	ISSUED FOR 90% DESIGN REVIEW	6/7/02	ATG	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

PROJECT NAME
SOIL REMEDIATION

DRAWING TITLE
SWL AND FTF
ABOVE-WAC EXCAVATION DETAILS (SWL)

000011

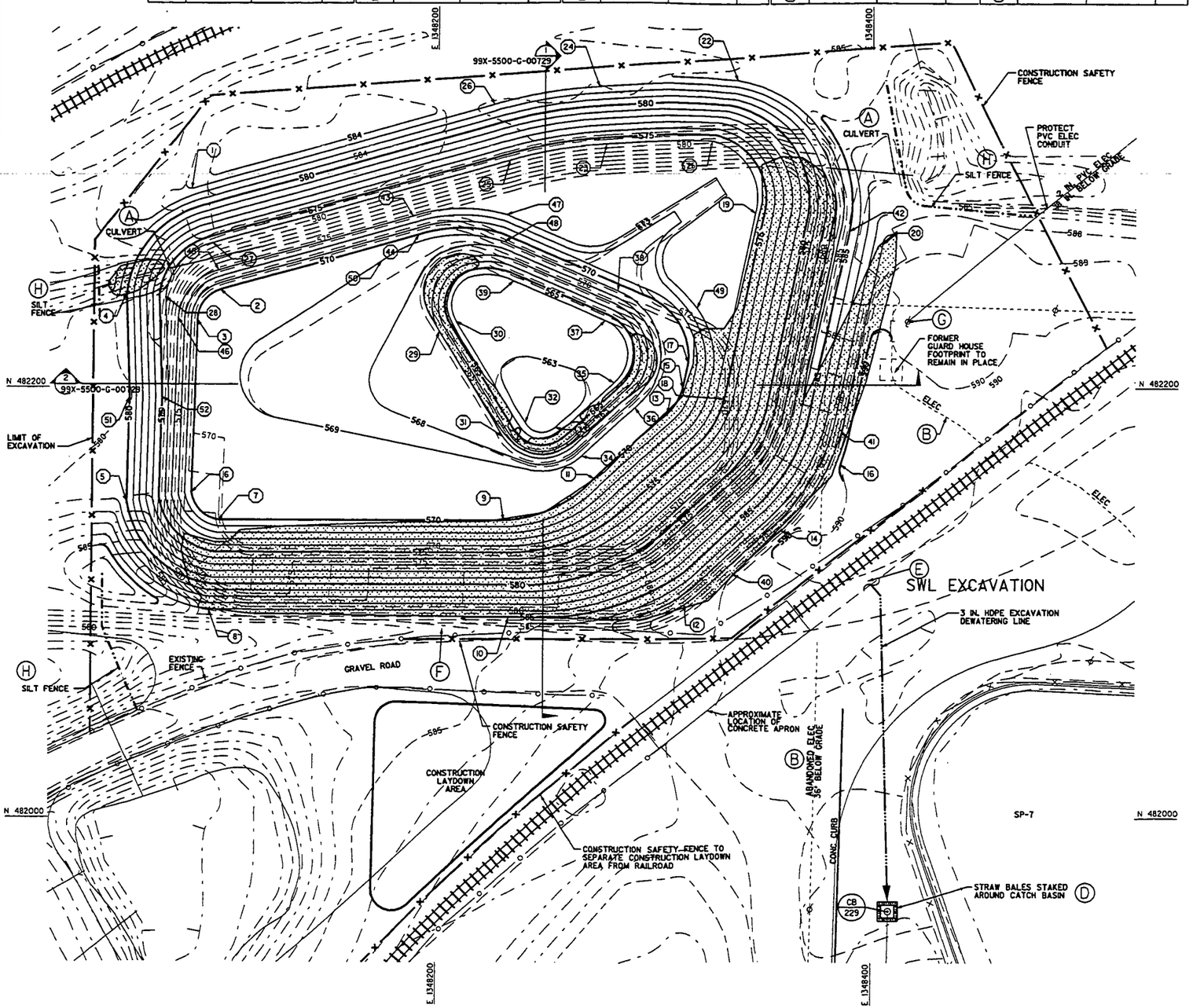
APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
KLR	20010	99X-5500-G-00733	G-9	C
RES PROJECT NO.	FILENAME 99XG00733.DGN			

DESIGN GRADE CONTROL POINTS

PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.	PT NO.	NORTHING	EASTING	ELEV.
1	482292.43	1348085.99	583.0	11	482157.67	1348272.79	570.0	21	482315.15	1348326.10	574.0	31	482177.13	1348230.62	567.0	41	482179.18	1348386.15	589.0	51	482195.36	1348057.91	580.0
2	482245.51	1348100.04	570.0	12	482098.86	1348313.92	588.0	22	482343.25	1348338.00	584.0	32	482183.56	1348240.76	563.0	42	482272.96	1348389.60	585.0	52	482195.33	1348072.93	575.0
3	482231.55	1348089.11	570.0	13	482187.85	1348305.92	570.0	23	482313.24	1348278.02	574.0	33	482181.36	1348254.64	563.0	43	482279.73	1348188.56	573.0				
4	482243.78	1348056.48	580.0	14	482133.36	1348358.90	589.0	24	482339.88	1348274.55	583.0	34	482168.04	1348266.76	569.0	44	482271.16	1348191.34	570.0				
5	482146.62	1348056.84	580.0	15	482199.70	1348312.97	570.0	25	482305.75	1348233.18	574.0	35	482202.13	1348281.92	564.0	45	482254.58	1348099.08	573.0				
6	482151.01	1348086.52	570.0	16	482164.21	1348385.84	590.0	26	482331.76	1348225.94	583.0	36	482190.58	1348291.49	569.0	46	482232.28	1348080.15	573.0				
7	482138.26	1348099.65	570.0	17	482211.54	1348315.45	570.0	27	482267.25	1348096.07	574.0	37	482231.15	1348277.72	564.0	47	482280.58	1348231.82	573.0				
8	482096.55	1348094.73	584.0	18	482194.76	1348332.32	575.0	28	482242.20	1348074.43	574.0	38	482244.94	1348283.63	569.0	48	482267.90	1348230.89	569.0				
9	482138.06	1348231.15	570.0	19	482281.57	1348346.45	574.0	29	482226.06	1348200.97	567.0	39	482249.68	1348235.17	564.0	49	482237.12	1348319.52	573.0				
10	482093.10	1348233.47	585.0	20	482266.97	1348404.76	589.0	30	482230.82	1348208.61	564.0	40	482112.87	1348336.35	589.0	50	482258.79	1348173.91	569.0				



GENERAL NOTES

1. SEE DRAWING 99X-5500-X-00639 FOR LEGEND AND GENERAL NOTES.
2. SEE THE LATEST REVISIONS OF FEMP SITE AND UTILITY GRID DRAWING 289-5500-P00681 (GRID 22) AND DRAWING 93X-5900-G-00301 (GRID 28) FOR EXISTING UNDERGROUND UTILITY INFORMATION.
3. DESIGN CONTOURS AND GRADES SHOWN REPRESENT THE INTERIM RESTORATION GRADING REQUIRED FOR LONG-TERM SLOPE STABILITY. MINIMAL CHANGES MAY BE PROPOSED IN ACCORDANCE WITH SPECIFICATION SECTION 02205 TO ADDRESS BREAKS IN CONTOURS, PONDING OF WATER, EQUIPMENT ACCESSIBILITY, ETC.
4. CONSTRUCTION SAFETY FENCE MARKS THE LIMITS OF EXCAVATION, UNLESS OTHERWISE NOTED.
5. KEEP RAILROAD TRACKS CLEAR AT ALL TIMES, EXCEPT WHEN CROSSING.
6. VEHICLES SHALL CROSS RAILROAD TRACKS AT CONCRETE APRON ONLY.
7. DO NOT STAGE LOADED HAUL TRUCKS WITHIN 15 FT. FROM THE TOP OF EXCAVATIONS DEEPER THAN 15 FT. DO NOT STAGE GENERAL CONSTRUCTION EQUIPMENT WITHIN 10 FT. FROM TOP OF EXCAVATIONS DEEPER THAN 15 FT.
8. COMPACTED FILL MUST BE PLACED IN HORIZONTAL LIFTS STARTING AT THE BOTTOM OF THE EXCAVATION AND WORKING UP THE EXCAVATION FACE, IN ACCORDANCE WITH SPECIFICATION SECTION 02206.
9. THIS DRAWING IS SUBJECT TO CHANGE BASED ON SLOPE STABILITY ANALYSIS.

4441

KEYED NOTES

(A) REMOVE CULVERTS AS IMPACTED MATERIAL FOR PLACEMENT IN THE OSDF IN ACCORDANCE WITH SPECIFICATION SECTION 02205.

(B) IF ADDITIONAL COMPACTED FILL MATERIAL IS REQUIRED, EXCAVATE ADDITITIONAL SOIL FROM THE NORTH FACE AT A SLOPE NO STEEPER THAN 3H:1V.

(C) PLACE EXCESS SOIL IN BOTTOM OF DEEP EXCAVATION AS COMPACTED FILL IN ACCORDANCE WITH SPECIFICATION SECTION 02206.

(D) DISCHARGE 3 IN. HDPE EXCAVATION DEWATERING LINE INTO STORM SEWER SYSTEM AT CB 229, CB 230, OR AN ALTERNATE LOCATION APPROVED BY THE PROJECT ENGINEER. DISCHARGE WATER THROUGH STRAW BALES. SEE DRAWING 99X-5500-G-00739 FOR STRAW BALE STAKING DETAIL. PROTECT DISCHARGE LINE ACROSS ROADWAYS.

(E) ROUTE 3 IN. DEWATERING HOSE UNDER RAILROAD TRACKS NEAR EDGE OF CONCRETE APRON. TIE INTO 3 IN. HDPE DEWATERING LINE.

(F) MAINTAIN DITCH BETWEEN EXCAVATION AND GRAVEL ROAD.

(G) PROTECT 100 FT. LIGHT POLE.

(H) MAINTAIN SILT FENCE (SEE DRAWING 99X-5500-G-00738 FOR SILT FENCE DETAIL.)

LEGEND

AREA OF COMPACTED FILL PLACEMENT

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
A	ISSUED FOR AGENCY REVIEW	8/23/02	KLR	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
FLUOR FERNALD, INC.

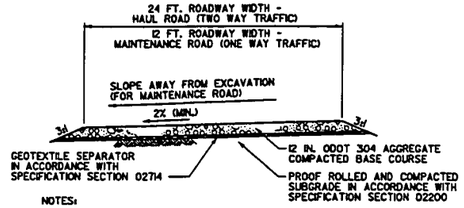
PROJECT NAME
SOIL REMEDIATION

DRAWING TITLE
SWL AND FTF
EXCAVATION SLOPE STABILITY PLAN (SWL)

APPROVALS 000012

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		OA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
RES PROJECT NO.	2080 FILENAME 99XG00714.DGN	99X-5500-G-00741	G-10	A

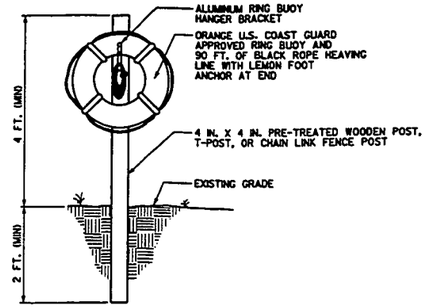


NOTES:

1. SEE SPECIFICATION SECTION 02230 FOR ROAD CONSTRUCTION.
2. SMTA DIMENSIONS AS DIRECTED BY THE CONSTRUCTION MANAGER.

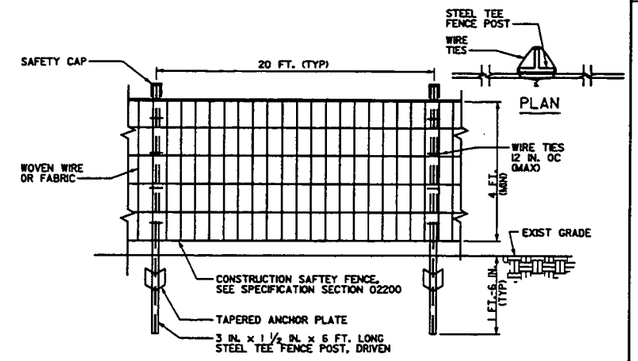
TYPICAL HAUL ROAD/ MAINTENANCE ROAD/SMTA DETAIL

NTS — 99X-5500-G-00730



RING BUOY STATION DETAIL

NTS — 99X-5500-G-00732

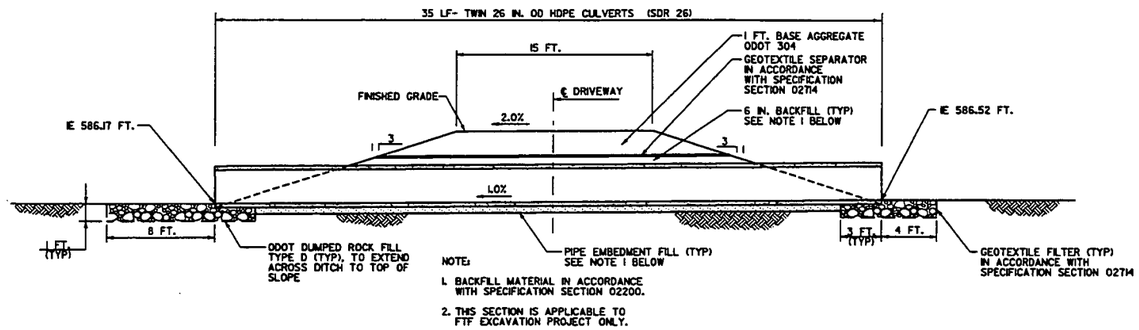


NOTE:

INSTALL SAFETY CAPS ON T-POSTS THAT ARE LESS THAN 4 FEET IN HEIGHT ABOVE-GRADE.

CONSTRUCTION SAFETY FENCE DETAIL

NTS — 99X-5500-G-00728 730

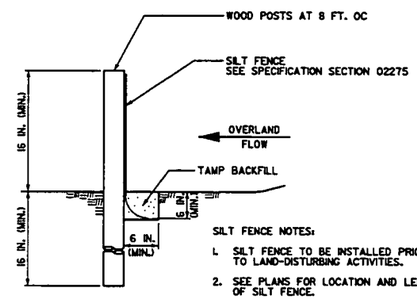


NOTE:

1. BACKFILL MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02200.
2. THIS SECTION IS APPLICABLE TO FTF EXCAVATION PROJECT ONLY.

SECTION
CULVERT AT LOCOMOTIVE MAINTENANCE BUILDING DRIVEWAY

NTS — 99X-5500-G-00730



SILT FENCE NOTES:

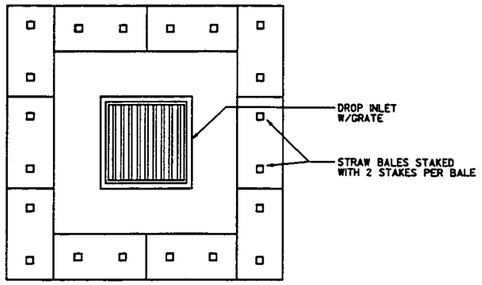
1. SILT FENCE TO BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES.
2. SEE PLANS FOR LOCATION AND LENGTH OF SILT FENCE.
3. WOOD POSTS SHALL BE 2 IN. X 2 IN. (MIN.) OF OAK OR SIMILAR HARDWOOD.
4. BACKFILL MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02200.

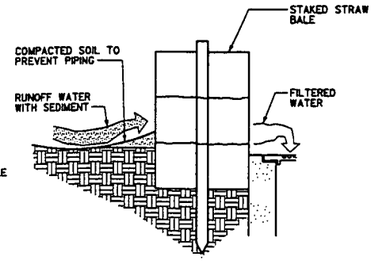
SILT FENCE DETAIL

NTS — 99X-5500-G-00728 730

NOTES:

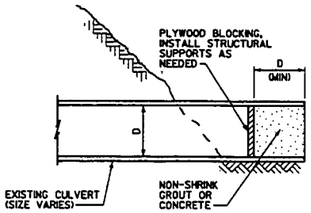
1. BALES SHALL BE WIRE-BOUND OR STRING-TIED.
2. PLACE BALES IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, TIGHTLY ABUTTED TO ONE ANOTHER. FILL GAPS BETWEEN BALES WITH STRAW.
3. ENTRENCH AND BACKFILL THE BALE BARRIER. EXCAVATE THE TRENCH TO A MINIMUM DEPTH OF 4 INCHES, TO THE BALE WIDTH AND THE LENGTH OF THE PROPOSED BARRIER. BACKFILL SOIL EXCAVATED FROM THE TRENCH AGAINST THE BARRIER TO CONFORM TO GROUND LEVEL ON THE DOWNHILL SIDE AND BUILT UP TO 4 INCHES AGAINST THE UPHILL SIDE OF THE BARRIER.
4. SECURELY ANCHOR EACH BALE USING AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. DRIVE THE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER. DRIVE STAKES OR REBARS DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.
5. INSPECT BALES WEEKLY AND REPAIR/REPLACE AS NEEDED.





STRAW BALE STAKING DETAIL

NTS — 99X-5500-G-00728



PLUG NOTES:

1. CLEAN CULVERT/STORM SEWER OF LOOSE MATERIAL PRIOR TO INSTALLING PLUG.
2. INSPECT STORM SEWER TO ENSURE STRUCTURAL SOUNDNESS PRIOR TO INSTALLING PLUG.

TYPICAL CULVERT/ EXPOSED STORM SEWER PLUG DETAIL

NTS — 99X-5500-G-00728

GENERAL NOTES

1. THIS DRAWING IS REFERENCED BY MULTIPLE EXCAVATION PROJECTS.

4441

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
F	ISSUED FOR AGENCY REVIEW (SWL & FTF)	8/27/02	KLR	
E	ISSUED FOR 30% DESIGN REVIEW (4B AND MDC)	8/7/02	KLR	
D	ISSUED FOR DOE REVIEW (SWL & FTF)	7/15/02	DRF	
C	ISSUED FOR A2PII IRDP AGENCY REVIEW	6/24/02	GDD	
B	ISSUED FOR 90% DESIGN REVIEW (SWL & FTF)	6/7/02	ATG	
A	ISSSUED FOR 90% DESIGN REVIEW	6/3/02	GDD	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

FLUOR FERNALD, INC.

PROJECT NAME: SOIL REMEDIATION

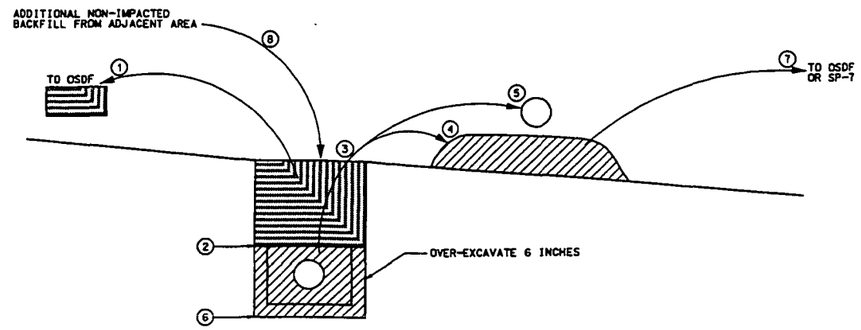
DRAWING TITLE: CIVIL DETAILS SHEET 1

000013

APPROVALS

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
KLR	2080	99X-5500-G-00738	D-1	F
RES. PROJECT NO.	FILENAME 99XG00738.DGN			



1. EXCAVATE PRECERTIFIED OVERBURDEN SOIL FROM ABOVE THE PIPE• BEDDING AND DISPOSITION IN THE OSDF.
2. PERFORM REAL-TIME MONITORING, AND/OR AT 50 FEET INTERVALS, PERFORM PHYSICAL SAMPLING OF THE PIPE BEDDING MATERIAL IN THE TRENCH.
3. EXCAVATE PIPE AND PIPE BEDDING, PLUS OVER-EXCAVATE 6 INCHES ADJACENT TO AND BELOW THE PIPE BEDDING TO ENSURE REMOVAL OF IMPACTED MATERIAL.
4. TEMPORARILY STOCKPILE PIPE BEDDING ADJACENT TO AND DOWN-GRADIENT OF THE UTILITY TRENCH.
5. THE CONSTRUCTION MANAGER VISUALLY INSPECTS PIPE DURING EXCAVATION. PIPE FREE OF VISIBLE PROCESS RESIDUE SHALL BE DISPOSITIONED IN THE OSDF IN ACCORDANCE WITH SECTION 02205. PIPING THAT IS DEFORMED, CLOSED OR OTHERWISE HINDERS VISUAL INSPECTION, OR CANNOT BE CLEANED OF VISIBLE PROCESS RESIDUE SHALL BE DISPOSITIONED IN SP-7 IN ACCORDANCE WITH SECTION 02205.
6. AS IN STEP 2, PERFORM REAL-TIME MONITORING, AND/OR AT 50 FEET INTERVALS, PERFORM PHYSICAL SAMPLING BELOW THE PIPE BEDDING WITHIN THE TRENCH.
7. AS DIRECTED BY THE CONSTRUCTION MANAGER, DISPOSITION PIPE BEDDING IN EITHER THE OSDF AS IMPACTED MATERIAL OR SP-7 AS ABOVE-WAC MATERIAL. OVER-EXCAVATE STOCKPILE FOOTPRINTS 6 INCHES TO ENSURE REMOVAL OF IMPACTED MATERIAL.
8. BACKFILL ADDITIONAL NON-IMPACTED SOIL FROM THE IMMEDIATE PRE-CERTIFIED AREA AND COMPACT IN ACCORDANCE WITH SECTION 02206 AS NEEDED TO MEET SURROUNDING GRADE.

NOTE:

L AS DIRECTED BY THE CONSTRUCTION MANAGER, PENDING MONITORING OF TRENCH BOTTOM, RE-EXCAVATE AT TRENCH LOCATIONS DESIGNATED BY THE CONSTRUCTION MANAGER TO REMOVE ADDITIONAL IMPACTED MATERIAL. THE CONSTRUCTION MANAGER CERTIFIES THE BACKFILLED TRENCH AND SURROUNDING AREA.

• THE TERM "PIPE" IS USED AS A GENERIC REFERENCE TO UNDERGROUND UTILITIES.

EXCAVATION OF UTILITIES BELOW THE DESIGN SURFACE

NTS

GENERAL NOTES

4441

PRELIMINARY

NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
C	ISSUED FOR AGENCY REVIEW (SWL & FTF)	8/27/02	KLR	
B	ISSUED FOR 30% DESIGN REVIEW (4B AND MDC)	8/7/02	KLR	
A	ISSUED FOR DOE REVIEW (SWL & FTF)	7/15/02	KLR	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

FLUOR FERNALD, INC.

PROJECT NAME

SOIL REMEDIATION

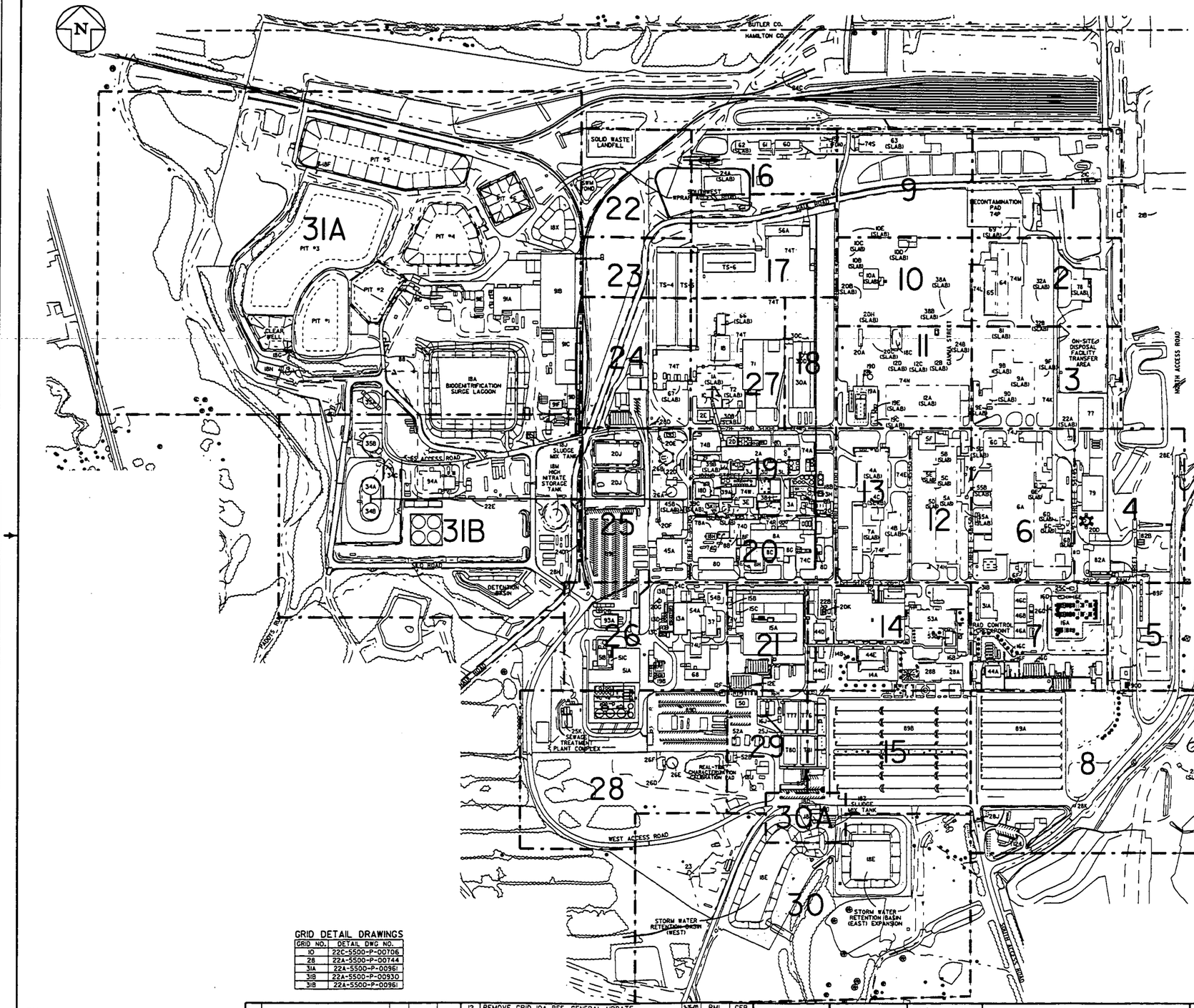
DRAWING TITLE

UTILITY REMOVAL DETAIL BELOW DESIGN GRADE

APPROVALS 000014

COGNIZANT ENG.		SAFETY ENG.	
CIVIL & STR.		MAINTENANCE	
ELECTRICAL		FIRE PROTECT.	
ENGINEER		WASTE MANAGE	
INSTRUMENT		SECURITY	
MECHANICAL		QA	
		CONSTRUCTION	
CHECKED			
APPROVED			

DRAWN BY	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
KLR	20280	99X-5500-G-00740	D-2	C
RES PROJECT NO.	FILENAME 99XG00740.DGN			



BALLOON LEGEND

- PIV — POST INDICATOR VALVE
- VLV — GATE VALVE
- SMH — SANITARY MANHOLE
- EMH — ELECTRICAL MANHOLE
- TMH — TELEPHONE MANHOLE
- CB — STORM SEWER CATCH BASIN
- MH — STORM SEWER OR ACCESS MANHOLE
- HFH — HIGH PRESSURE FIRE HYDRANT
- LFH — LOW PRESSURE FIRE HYDRANT

ABBREVIATION LEGEND

ST	STORM SEWERS
SD	SUB-SURFACE DRAINAGE
SN	SANITARY SEWERS
FOI	HIGH PRESSURE FIRE LINES
DW	LOW PRESSURE FIRE LINE/ POTABLE WATER
LS	LIVE STEAM
CN	STEAM CONDENSATE
WS	COOLING WATER SUPPLY
WR	COOLING WATER RETURN
CE	CONTAMINATED SEWER
FT	FILTRATE OR EFFLUENT
TW	TREATED WATER
DF	DEIONIZED FEED
PW	DEIONIZED WATER
BR	BRINE
RW	RAW WATER
VE	VENT LINES
SL	SUMP LIQUOR
FG	FUEL GAS
G	ELECTRIC GROUND
VCP	VIT. CLAY PIPE
RCP	REINF. CONC. PIPE
——	ACTIVE LINE
- - -	ABANDONED LINE
— —	PROPOSED LINE

GRID	DRAWING NUMBER
1	22C-5500-P-00660
2	22C-5500-P-00661
3	22C-5500-P-00662
4	22F-5500-P-00663
5	22A-5500-P-00664
6	22F-5500-P-00665
7	22H-5500-P-00666
8	22H-5500-P-00667
9	22C-5500-P-00668
10	22C-5500-P-00669
11	22C-5500-P-00670
12	22E-5500-P-00671
13	22E-5500-P-00672
14	22H-5500-P-00673
15	22H-5500-P-00674
16	22B-5500-P-00675
17	22B-5500-P-00676
18	22B-5500-P-00677
19	22D-5500-P-00678
20	22D-5500-P-00679
21	22C-5500-P-00680
22	22B-5500-P-00681
23	22B-5500-P-00682
24	22B-5500-P-00683
25	22D-5500-P-00684
26	22G-5500-P-00685
27	22B-5500-P-00686
28	22A-5500-P-00687
28	22A-5500-P-00744
29	22A-5500-P-00688
30	22A-5500-P-00689
30A	22A-5500-P-00785
31A	22A-5500-P-00804
31B	22A-5500-P-00805
32	22A-5500-P-00707

LEGEND

- POST INDICATOR VALVE (P.I.V.)
- FIRE HYDRANT (F.H.)
- MANHOLE (MH)
- CATCH BASIN (CB)
- LIGHT POLE
- PIPE SUPPORT
- ELECTRICAL MANHOLE
- TELEPHONE MANHOLE
- STREET WASHERS
- VALVE BOX
- MONITORING WELL

FUEL GAS (FG) NOTE:

THE ONLY ACTIVE FUEL GAS LINES ARE FROM NEW GAS METER AT WILLEY ROAD TO HIGHLINE (EAST OF BLDG. 51A), THEN TO NEW BOILER HOUSE (BLDG. 93A) AND TO WPRAP AREA.

FERNALD UNDERGROUND UTILITES

THIS COMPOSITE DRAWING CONTAINS INFORMATION TAKEN FROM ENGINEERING DRAWINGS FROM 1951 TO THE PRESENT WHICH ARE PRESENTLY ON FILE IN THE FERNALD SITE ENGINEERING DEPARTMENT. NOTE: UNDERGROUND UTILITIES WHICH ARE NOT OF RECORD IN THE FERNALD SITE ENGINEERING DEPARTMENT ARE NOT DISPLAYED IN THESE COMPOSITE DRAWINGS.

POST INDICATOR COLORS AT THE F.E.M.P.
(PER FRED BRAUN, UTILITY ENG. 5/18/95)

COLOR	SERVICE
WHITE	(DW) POTABLE WATER LOW PRESSURE FIRE HYDRANT
ORANGE/GREEN	HIGH PRESSURE FIRE HYDRANT
YELLOW	(TW) TREATED WATER PROCESS WATER
BLACK	(FT) EFFLUENT
GREEN	(DF) COOLING WATER SUPPLY
BLUE	(DR) COOLING WATER RETURN
PINK	(RW) RAW WATER
PINK/WHITE	UN-USED (RW) & (DW) CROSS CONNECTION
RED	PROPANE AREA SUMP PIT
PINK/GREEN	(RW) & FIRE PUMP HOUSE (25A)
GRAY	(FT) LIME SLURRY POND LINE
YELLOW/GREEN	(TW) TREATED WATER
WHITE/GREEN	(DW) FEED TO GROUNDWATER STORAGE TANK

FIRE HYDRANT COLORS AT THE F.E.M.P.

ORANGE	LOW PRESSURE HYDRANTS
ORANGE/GREEN	HIGH PRESSURE HYDRANTS

INTERIOR PIPING COLORS (PRELIMINARY)

BLUE	AIR
GREEN	WATER
RED	FIRE PROTECTION

000015

GRID DETAIL DRAWINGS

GRID NO.	DETAIL DWG NO.
10	22C-5500-P-00706
28	22A-5500-P-00744
31A	22A-5500-P-00961
31B	22A-5500-P-00930
31B	22A-5500-P-00961

PRELIMINARY INFORMATION ONLY
CADD SERVICES

CONTACT CADD SERVICES FOR PIPE SPECIFICATIONS OF OLD AND MOST OF THE NEW PIPING INSTALLATIONS.

NOTE:
1. THIS DRAWING ISSUED PERIODICALLY, FOR THE MOST RECENT VERSION OF THIS DRAWING, ACCESS THE FILENAME BELOW THE TITLE BLOCK.
2. COORDINATES SHOWN ON THIS DRAWING ARE TAKEN FROM EXISTING FEMP DRAWINGS AND ARE NOT VERIFIED TO BE "AS-BUILT". IT IS HIGHLY RECOMMENDED THAT A FIELD SURVEY BE PERFORMED PRIOR TO SITE DESIGN WORK.

NO.	REVISIONS	DATE	DWN.	BY	APPD.
15	GENERAL UPDATE				
14	ADDED GRID DETAIL DRAWING INDEX	6/2/98	RML		GEP
13	REVISED PER MARK-UP	3/4/98	SJS		GEP

NO.	REVISIONS	DATE	DWN.	BY	APPD.	REF. DWG. NO.
12	REMOVE GRID 10A REF. GENERAL UPDATE	2-23-00	RML		GEP	
11	MODIFIED GRID 26 & GRID 31B OUTLINES. ADD GRID 10A	1-10-98	RML		GEP	
10	MODIFIED GRID 28 OUTLINE, ADDED DWG NO.,	1-2-98	RML		GEP	
	DELETED GRID 33					
9	UPDATED	1-4-97	GEP		GEP	
8	UPDATED	1-13-95	JSW		GEP	93X-5900-G-00273
7	UPDATED	2-4-95	GES		GEP	93X-5900-G-00272

NOTE:
FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

PERFORMANCE GRADE
1 2 3 4 5
BY: DATE:

APPROVALS

CIVIL & STR.			SAFETY ENG.
ELECTRICAL			MAINTENANCE
ENGINEER			Q.A.
INSTRUMENT			FIRE PROTECT.
MECHANICAL			WASTE MANAGE.
			SECURITY
			CRU
CHECKED			
APPROVED			

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
Fernald
Environmental Management Project
U.S. DEPARTMENT OF ENERGY

SITE MAP

MASTER GRID OF UNDERGROUND UTILITY PLANS

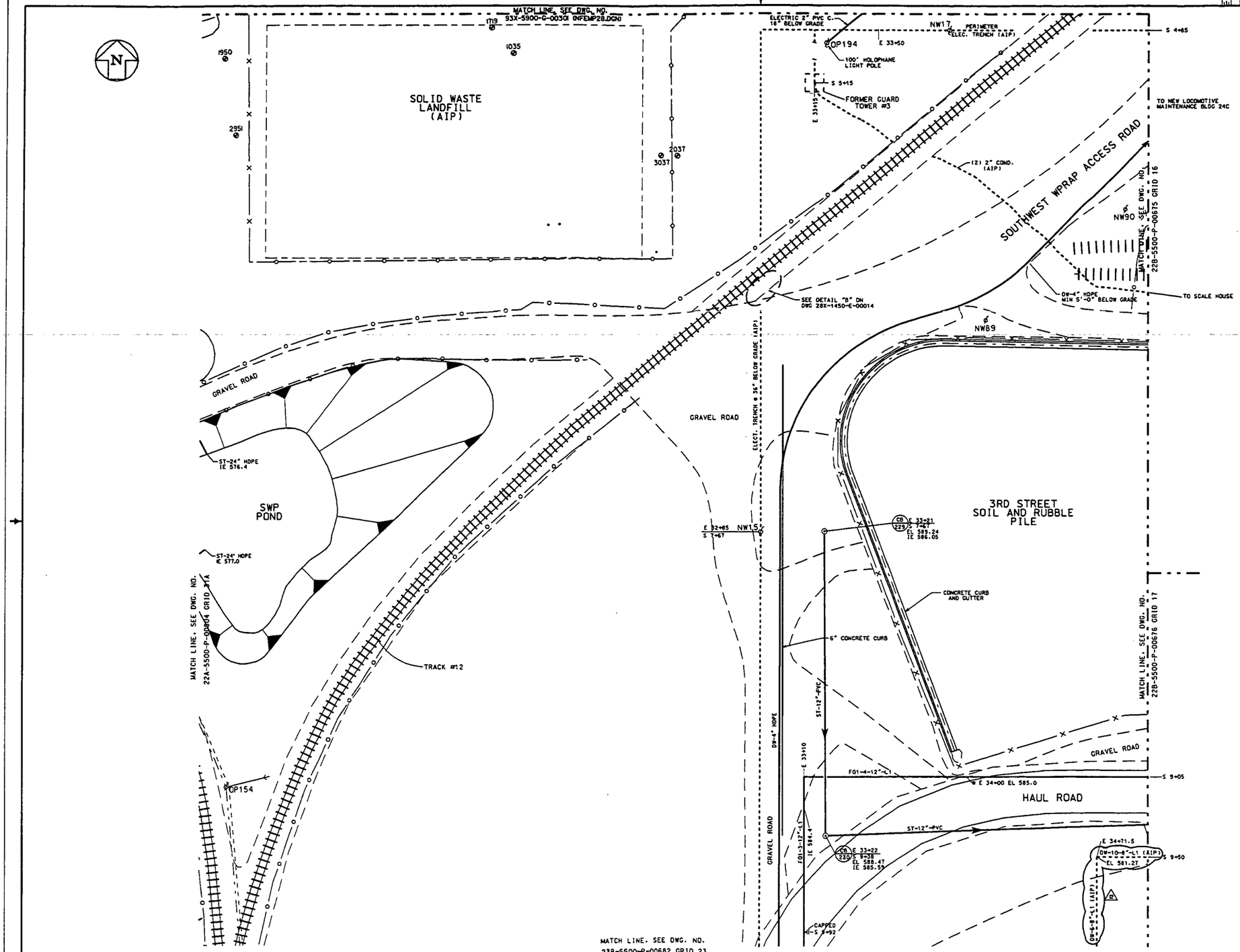
DATE 5/1/98
DRAWN G.E.S.

22X-5500-P-00659 | 15

FILE NAME: /UNDER/22XP0659.DGN

FORMAT REVISED 8/7/95

4441



000016

AS-BUILT EDM SURVEYS	
J. SCHWING	
5-10-99	WL-106.TXT
6-3-99	060399NA.TXT
J. McCORMACK	
11-20-99	RY-114.
11-23-99	RY-115.

NOTE:
1. THIS DRAWING ISSUED PERIODICALLY. FOR THE MOST RECENT VERSION OF THIS DRAWING, ACCESS THE FILENAME BELOW THE TITLE BLOCK.
2. COORDINATES SHOWN ON THIS DRAWING ARE TAKEN FROM EXISTING FEMP DRAWINGS AND ARE NOT VERIFIED TO BE 'AS-BUILT'. IT IS HIGHLY RECOMMENDED THAT A FIELD SURVEY BE PERFORMED PRIOR TO SITE DESIGN WORK.
3. FOR INFORMATION ON HAUL ROAD SEE PO158.

NO.	REVISIONS	DATE	DWN. BY	APPD.	NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
12	AP DW-D-8"LI PER UT-498, GENERAL UPDATE	1/1/02	RML	GEP	7	UPDATED RELOCATED FIRE HYDRANT 156 AND ADDED PROPOSED HAUL ROAD	3-1-97	GES	GEP	
11	GENERAL UPDATE	1/3/00	RML	GEP	6	UPDATED	12-2-96	JSW	GEP	
10	ELECT TRENCH A.I.P.	1/12/00	RML	GEP	5	UPDATED	12-5-96	JSW	GEP	
9	ADDED T32.330 DELETED OSDF	1/14/99	JSW/SJS	GEP	4	ADDED NOTE	11-20-96	GES	GEP	
	WAC TEXT, MONUMENT TEXT,				3	UPDATED	10-1-96	MET	GEP	
	ABANDONED (2) 2" COND. PER MARK-UP				2	UPDATED	9-1-96	GES	GEP	
8	UPDATED, ADDED DW-4"	7/23/98	SJS	GEP	1	UPDATED	1-1-93	RJW	GEP	22X-5500-P-00659

NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTION ± 1/16
DECIMAL .X ± .1
.XX ± 0.05
.XXX ± 0.010
.XXXX ± 0.0050
ANGLE ± 0°-30'
SCALES
X 1 in. = 1 in.
X 1/2 = 1 in.
X 1/4 = 1 in.
X 1/8 = 1 in.
FINAL RELEASE DATE

APPROVALS				
			SAFETY ENG.	
CIVIL & STR.			MAINTENANCE	
ELECTRICAL				
ENGINEER			O.A.	
INSTRUMENT				
MECHANICAL			FIRE PROTECT.	
			WASTE MANAGE	
CHECKED	GP		D.O.E.	
APPROVED	LE/RAL	6/23/00	SECURITY	

WESTINGHOUSE ENVIRONMENTAL MANAGEMENT CO. OF OHIO
FERNALD, OHIO
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY

N.W. CORNER/SITE — YARD AREA

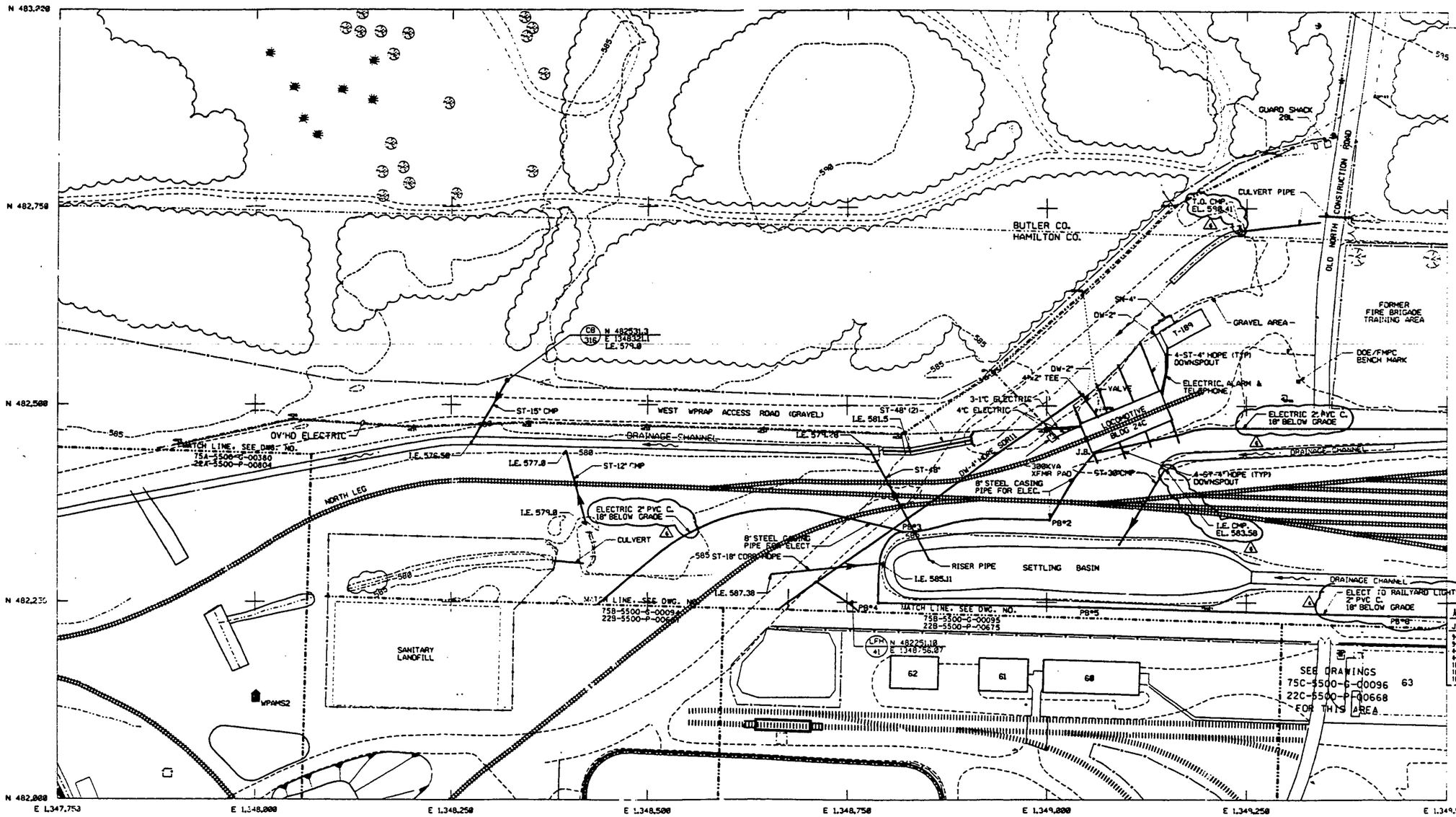
GRID 22
UNDERGROUND UTILITIES
SCALE 1"=20'

DATE 9/25/90
DRAWN S.J.S.

22B-5500-P-00681 | 12

FILE NAME: /UNDER/22BP0681.DGN

4441



UNCLASSIFIED ONLY

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

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LEGEND

	HYDRANT		UNKNOWN UTILITY	—X—	FENCE
	MANHOLE		VALVE BOX		RAILROAD
	CATCH BASIN		BUILDING		TREE LINE
	AIR MONITOR STATION (AMS)		HEADWALL		SHRUB LINE
2134	MONITORING WELL		SURVEY CONTROL POINT		GUARD RAIL
	TRANSMISSION TOWER		GATE		RETAINING WALL
	ELECTRICAL TRANSFORMER		GRID TICK		RIVER, STREAM
	POST INDICATOR VALVE		PROPANE TANK	580	MAJOR CONTOUR
	POWER POLE		SWAMP		MINOR CONTOUR
	LIGHT POLE	RIPRAP	RIPRAP AREA	580	MAJOR DEP CONTOUR
	SIGN	PILE	PILE OUTLINE		MINOR DEP CONTOUR
	POST	X 578.1	SPOT ELEVATION		PAVED ROADWAY
	DECIDUOUS TREE	WE X 567.7	WATER ELEVATION		UNPAVED ROADWAY
	CONIFEROUS TREE	L 575.8 R 575.8	ROOF STACK OR VENT		ABOVEGROUND PIPE
	SHRUB				FEMP BOUNDARY
				OE	OVERHEAD ELECTRIC

50 0 50 100 150
SCALE IN FEET
2 FOOT CONTOUR INTERVAL

DIGITAL MAPPING BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 04/09/92.

REF DWGs /RES3188/22XE0916.DGN

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	PROJ MGR	DOE
6	GENERAL UPDATE	RWF 6-21-98	RHL 12-28-98	
5	REVISED CONTOURS PER LANDAIR FLYOVER DATED 1/12/98	GEP 3-22-98	RHL 3-22-98	
4	INCORPORATED DCNs 1695-863, ADD SURVEY TABLE, GENERAL UPDATE	GEP 12-03-97	RHL 12-03-97	

INITIALS AND DATE

INDEX CODE: PLANT 75X | SYSTEM 5900 | G | SEQ. NO. 00240

CAD FILE NAME: NFEMP28.DGN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
PHOTOGRAMMETRIC MAPPING
OU3/P034

DRAWING TITLE
CIVIL
EXISTING SITE AND UTILITY PLAN
GRID 28

DRAWN BY	DATE	DESIGNER CHECKED BY	DATE	CHECKED BY	DATE
B. FUGATE/R. BELL	10-12-92	S. SLIJEPCEVIC	12-15-92	M. DONOHOO	10-26-92

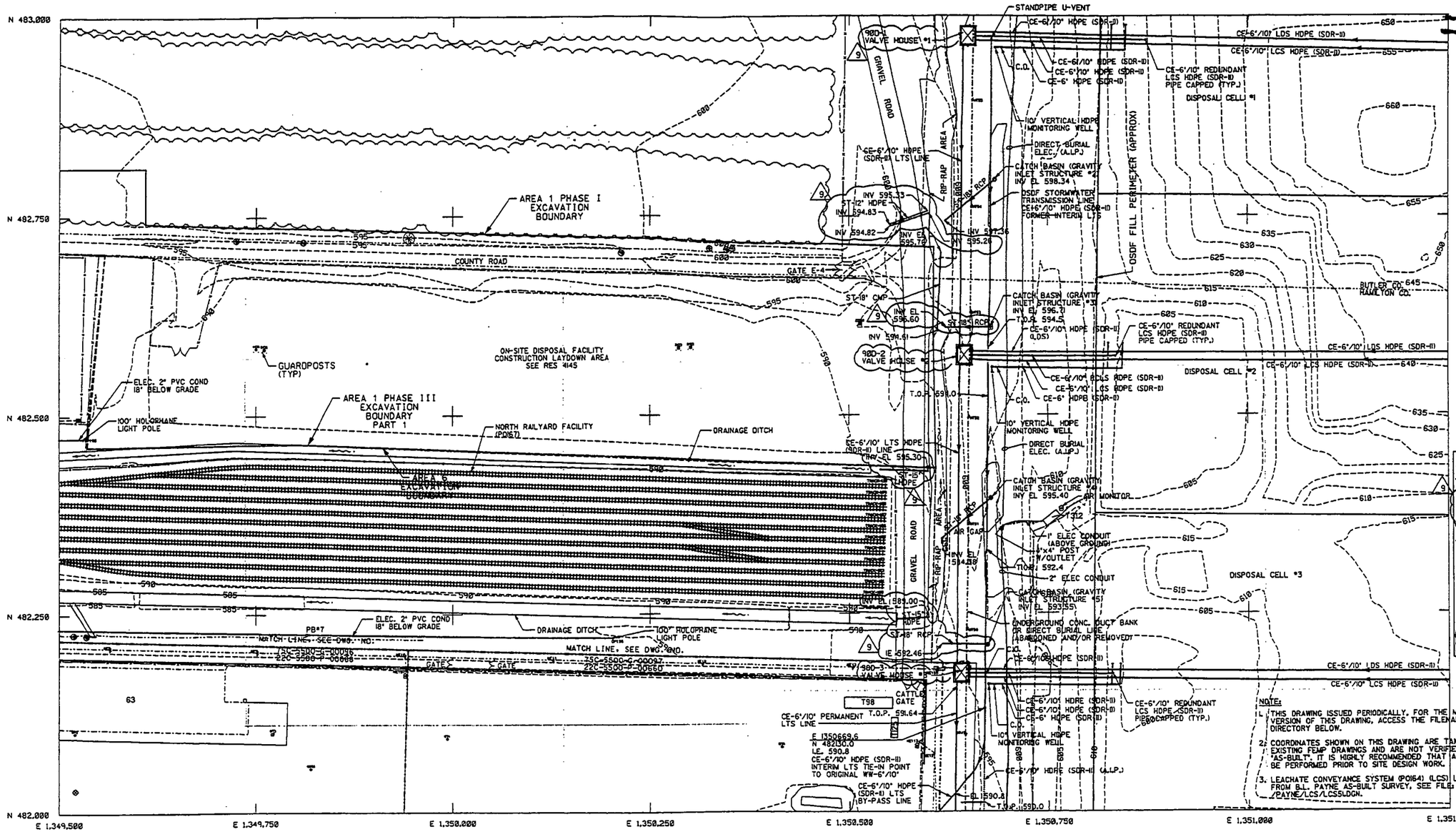
PLANT/BLDG. NO. | FLOOR | SCALE 1"=50' | CLASS

SUBMITTED FOR APPROVAL: SUKOMAL K. TALUKDER 12-18-92 | APPROVAL RECOMMENDED | DRAWING APPROVED

A-E DATE | OPERATING CONTRACTOR DATE | DOE DATE

DOE PROJECT NO. | OPER. CONTR. PROJ. NO. | DRAWING NO. WBS 1.1.1.1.3.1.1 00-90701 93X-5900-G-00301 | SHEET NO. G0028 | REV. NO. 6

000017



INFORMATION ONLY

AS-BUILT EDM SURVEYS

J. SCHWING

9-25-99	082599.TXT
11-14-00	1031004CCSSRD.TXT
12-12-00	1121100.TXT
3-14-01	1030601.TXT
4-24-01	1103100A.TXT
5-24-01	1083001.TXT

J. McCORMACK

4-6-99	LCS-100.
4-6-99	LCS-101.
5-11-99	LCS-109.
5-21-99	LCS-113.
5-26-99	LCS-116.
3-15-00	CELL-106.
5-23-00	LCS-127.
7-11-00	CELL-114.
8-24-00	LCS-136.
9-15-00	LCS-138.
10-12-00	LCS-141.
10-20-00	LCS-142.
4-16-01	LCS-155.TXT
4-30-01	LCS-157.
5-16-01	LCS-160.TXT
5-31-01	LCS-161.TXT

NOTE:

1. THIS DRAWING ISSUED PERIODICALLY. FOR THE MOST RECENT VERSION OF THIS DRAWING, ACCESS THE FILENAME IN THE DIRECTORY BELOW.
2. COORDINATES SHOWN ON THIS DRAWING ARE TAKEN FROM EXISTING FEMP DRAWINGS AND ARE NOT VERIFIED TO BE "AS-BUILT". IT IS HIGHLY RECOMMENDED THAT A FIELD SURVEY BE PERFORMED PRIOR TO SITE DESIGN WORK.
3. LEACHATE CONVEYANCE SYSTEM (PO164) (LCS) LINE IS FROM B.L. PAYNE AS-BUILT SURVEY, SEE FILE: /PAYNE/LCS/LCS5LDGN.

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		99	100	101	102	103	
			104	105	106	107	
			108	109	110	111	
			112	113	114	115	
			116	117	118	119	

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

LEGEND

	HYDRANT		UNKNOWN UTILITY	—X—	FENCE
	MANHOLE		VALVE BOX		RAILROAD
	CATCH BASIN		BUILDING		TREE LINE
	AIR MONITOR STATION (AMS)		HEADWALL		SHRUB LINE
2134	MONITORING WELL		SURVEY CONTROL POINT		GUARD RAIL
	TRANSMISSION TOWER		GATE		RETAINING WALL
	ELECTRICAL TRANSFORMER		GRID TICK		RIVER, STREAM
	POST INDICATOR VALVE		PROPANE TANK	580	MAJOR CONTOUR
	POWER POLE		SWAMP		MINOR CONTOUR
	LIGHT POLE	RIPRAP	RIPRAP AREA	580	MAJOR DEP CONTOUR
	SIGN	PILE	PILE OUTLINE		MINOR DEP CONTOUR
	POST	X 578.1	SPOT ELEVATION		PAVED ROADWAY
	DECIDUOUS TREE	W.E. X 567.7	WATER ELEVATION		UNPAVED ROADWAY
	CONIFEROUS TREE	575.8, 575.8	ROOF STACK OR VENT		ABOVEGROUND PIPE
	SHRUB				FEMP BOUNDARY
	DRAINAGE FLOW			OE	OVERHEAD ELECTRIC

50 0 50 100 150

SCALE IN FEET
1 FOOT CONTOUR INTERVAL

DIGITAL MAPPING BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 04/09/92.

REFERENCE DRAWING NO.s
75X-5500-G-00453
90X-5000-G-00019
90X-6000-G-00021
90X-6000-G-00034
96X-5900-E-01001
90X-6000-M-00263
/RES4145/90XG0547.DGN

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	OPERATOR	DOE
9	AS-BUILT PER J. McCORMACK SURVEY LCS-155.TXT, MOVED MATCH LINE AT GRID 1 42 FEET WEST, GENERAL UPDATE		11/28/01	GES 11/28/01
8	ADD VALVE HOUSES, LCS PERMANENT LINE, GENERAL UPDATE		GEP 11/21/00	RML 11/21/00

INITIALS AND DATE

INDEX CODE				CAD FILE NAME
PLANT	AREA	G	SUB-NO	
75X	5900	G	00241	NFEMP29.DGN

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
PHOTOGRAMMETRIC MAPPING
OU3/PO34

DRAWING TITLE
CIVIL
EXISTING SITE AND UTILITY PLAN
GRID 29

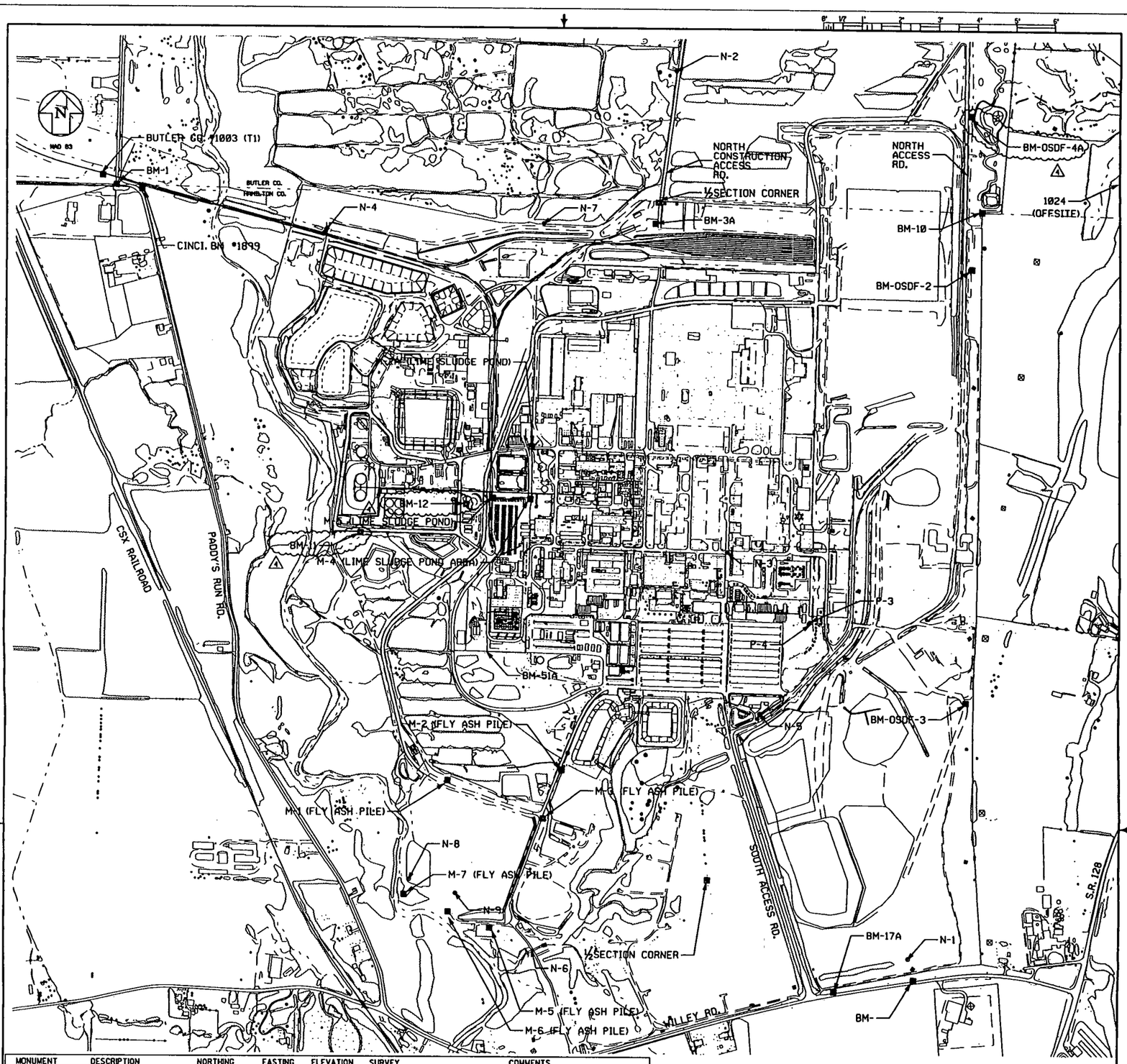
DRAWN BY	DATE	DESIGNED, CHECKED BY	DATE	CHECKED BY	DATE
B. FUGATE, BELL	10-12-92	S. SLUJEPCEVIC	12-15-92	M. DONOHOO	10-26-92

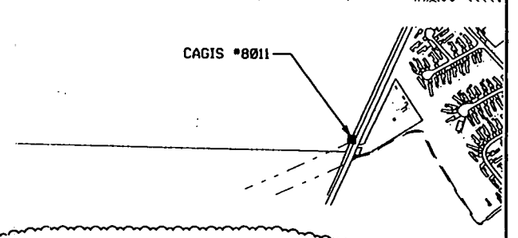
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		1"=50'	

SUBMITTED FOR APPROVAL	APPROVAL RECOMMENDED	DRAWING APPROVED
SUKONAL K. TALUKDER 12-18-92		
A-E DATE	OPERATING CONTRACTOR DATE	DOE DATE

DOE PROJECT NO.	OPER. CONTR. PROJ. NO.	DRAWING NO.	SHEET NO.	REV. NO.
	WBS 1.1.1.1.3.1.1 00-90701	93X-5900-G-00302	G0029	9

000018





MONUMENT	DESCRIPTION	NORTHING	EASTING	ELEVATION	SURVEY	COMMENTS
BM-1	(ESTAB.)SITE ORIGIN (0,0)	482813.982	1345109.041	579.83	WOOLPERT	COUNTY SECTION CORNER GPS LOCATED
M-1A	LIME SLUDGE POND					DESTROYED RAIL UPGRADE 1997
M-2A	LIME SLUDGE POND					
M-4A	LIME SLUDGE POND					DESTROYED/COVERED PER BLDG 45 PARKING LOT PROJ.
M-5A	LIME SLUDGE POND					
M-1	FLY ASH PILE	478237.93	1347105.20	573.62	WOOLPERT	GPS LOCATED
M-2	FLY ASH PILE	478322.05	1348595.78	576.67	WOOLPERT	GPS LOCATED
M-3	FLY ASH PILE	477948.929	1348451.099	577.41	WOOLPERT	GPS LOCATED
M-4	FLY ASH PILE					DESTROYED 10/94 PER FLY ASH PILE DRAIN. DITCH PROJ.
M-5	FLY ASH PILE	477100.59	1348036.39	537.83	WOOLPERT	GPS LOCATED
M-6	FLY ASH PILE	477226.90	1347710.31	538.66	WOOLPERT	GPS LOCATED
M-7	FLY ASH PILE	477360.67	1347365.20	537.75	WOOLPERT	GPS LOCATED
M-5A/M-8	FLY ASH PILE	477071.77	1348810.37	537.60	WOOLPERT	GPS LOCATED
M-1	SAN LANDFILL					DESTROYED RAIL UPGRADE 1997
M-2	SAN LANDFILL					DESTROYED RAIL UPGRADE 1997
M-3	SAN LANDFILL					DESTROYED RAIL UPGRADE 1997
N-1	ALUMINUM CAPPED PIN	476876.20	1351301.43	607.88	WOOLPERT	GPS LOCATED
N-2	ALUMINUM CAPPED PIN	483717.88	1349475.83	614.26	WOOLPERT	GPS LOCATED
N-3	ALUMINUM CAPPED PIN	480007.25	1349883.72	579.44	WOOLPERT	GPS LOCATED
N-4	ALUMINUM CAPPED PIN	482445.14	1346725.45	576.91	WOOLPERT	GPS LOCATED
N-5	ALUMINUM CAPPED PIN	478758.71	1350146.60	580.37	WOOLPERT	GPS LOCATED
N-6	ALUMINUM CAPPED PIN	476928.55	1348369.68	551.99	WOOLPERT	GPS LOCATED
N-7	ALUMINUM CAPPED PIN	482526.88	1348443.85	585.57	WOOLPERT	GPS LOCATED
N-8	ALUMINUM CAPPED PIN	477419.18	1347404.43	538.88	WOOLPERT	GPS LOCATED
N-9	ALUMINUM CAPPED PIN	477370.11	1347767.16	537.99	WOOLPERT	GPS LOCATED
P-1	U.S. AEC				WOOLPERT	DESTROYED PER T-42 PROJECT
P-2	U.S. AEC				WOOLPERT	DESTROYED PER HAUL ROAD 1997
P-3	U.S. AEC	479464.687	1350529.596	577.18	WOOLPERT	PRODUCTION AREA BOUNDARY (10' OFFSET) GPS LOCATED
P-4	U.S. AEC	479454.81	1350519.26	577.74	WOOLPERT	PRODUCTION AREA BOUNDARY (10' OFFSET) GPS LOCATED
BM 1003	BUTLER CO.	482887.97	1345001.20	579.93	WOOLPERT	BUTLER COUNTY WITNESS GPS LOCATED
BM 1024		482524.62	1357525.75	542.64	WOOLPERT	GPS LOCATED
BM 1899	CITY OF CINCINNATI	482781.79	1345309.62	579.06	WOOLPERT	CINCINNATI WATER DEPT BM GPS LOCATED
½ SECTION	HAMILTON COUNTY					DESTROYED 8/94 - BASE STONE INTACT
½ SECTION	HAMILTON COUNTY					CAGIS #3160
BM-1A	U.S. DOE/WMCO					DESTROYED BY STP DEMOLITION PROJECT
BM-2A	U.S. DOE/WMCO					CAGIS #3154, WOOLPERT #551 DESTROYED PER OSDF
BM-3A	U.S. DOE/WMCO	482531.64	1349314.19	589.53	WOOLPERT	GPS LOCATED
BM-10	U.S. AEC	482637.962	1351857.178	615.88	WOOLPERT	GPS LOCATED
BM-17A	U.S. DOE/WMCO				WOOLPERT	DAMAGED-BRASS PLATE MISSING/DESTROYED
BM-51-A1						TO BE RE-SURVEYED
BM-	U.S. DOE/WMCO					TO BE RE-SURVEYED
8011	HAMILTON COUNTY	475374.29	1352068.16	614.20	WOOLPERT	CAGIS #8011 GPS LOCATED
BM-OSDF-2	ON-SITE DISPOSAL FAC.	482199.937	1351779.165	615.82	B.L. PAYNE	GPS LOCATED
BM-OSDF-3	ON-SITE DISPOSAL FAC.	478850.416	1351749.328	595.61	B.L. PAYNE	GPS LOCATED
BM-OSDF-4	ON-SITE DISPOSAL FAC.					DESTROYED
BM-11	SILOS AREA	480149.12	1347018.47	569.02	T. BAUMANN	#9916, BRASS DISK LOCATED AT BASE OF SILOS CAMERA
BM-12	SILOS AREA	480368.83	1347842.41	577.76	T. BAUMANN	#9912, BRASS DISK ADJACENT TO HFH-171
BM-OSDF-4A	ON SITE DISPOSAL FAC.	483394.96	1351770.39	609.93	J. SCHWING	REPLACED BM-OSDF-4

LOCATION	FEMP	NAD27	NAD83	USGS
BUTTERFIELD NATIONAL MONUMENT	—	—	—	N 39° 18' 09.78" W 84° 42' 50.567"
BM-1	N 00+00 E 00+00	N 482,784.90 E 1,376,578.31	N 482,813.982 E 1,345,109.041	N 39° 18' 16.9" W 84° 42' 12.5"
CENTER PLANT 4A (CENTER OF FEMP)	S 21+35.38 E 43+72.89	—	N 480,559.36 E 1,349,421.62	N 39° 17' 55.1" W 84° 41' 14.1"
CENTER EAST WATER TOWER 20D	S 23+75.21 E 54+00.0	—	N 480,291.53 E 1,350,442.15	N 39° 17' 54" W 84° 41' 03"

NOTES:
1. COORDINATES LISTED ON THIS DRAWING ARE BASED ON N.A.D. 83 FOR HORIZONTAL CONTROL.
2. BENCHMARKS LOCATED ARE EITHER CONCRETE MONUMENTS W/ CHISELED CROSSES OR CONCRETE MONUMENTS WITH BRASS PLATES.

PRELIMINARY

4441

NO.	REVISIONS	DATE	DWN. BY	APPD.	REF. DWG. NO.
6	ADDED COORDINATE BLOCK	1/5/02	JSW		
5	REVISED BM-8&12 COORDINATES PER DCN-40315-065	5/5/01	JSW	GEP	
4	ADDED BM-8,12, OSDF-4A REMOVED BM-1A & BM-OSDF-4, INCORP. DCN:20102-084	1/8/98	JSW	GEP	00X-7000-G-00058

FORMAT REVISED 6/8/96 FORMSYALDGN

NOTE: FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY

CONFIGURATION MANAGEMENT DRAWING

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COGNIZANT ENGINEER DATE

APPROVALS			
CIVIL & STR.	J. SCHWING	1/3/96	SAFETY ENG.
ELECTRICAL			MAINTENANCE
ENGINEER			Q.A.
INSTRUMENT			FIRE PROTECT.
MECHANICAL			WASTE MANGE
			SECURITY
			CRU
CHECKED	GEP		
APPROVED	G.E. PAUL	1/3/96	

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
FERMCO
Fernald
Environmental Management Project
U.S. DEPARTMENT OF ENERGY

SITEWIDE
MASTER FEMP
GPS BENCHMARK LOCATION PLAN
NO SCALE

RES-2740
DATE JUNE 5, 1996
DRAWN JSW

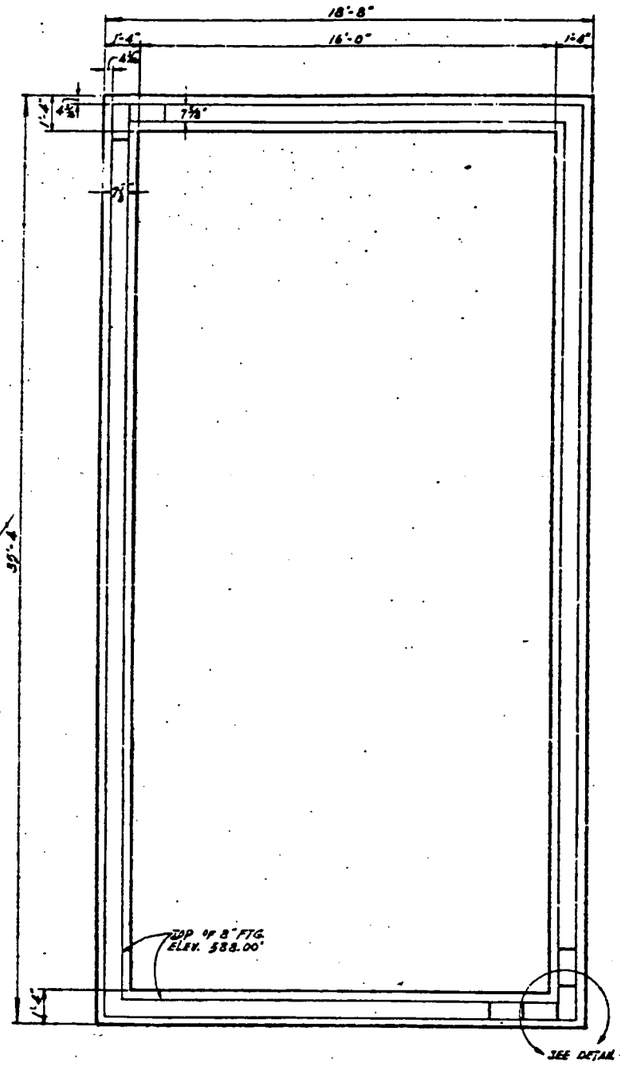
00X-5500-G-01846 | 6

FILE NAME: /res2740/00xgl846.dgn

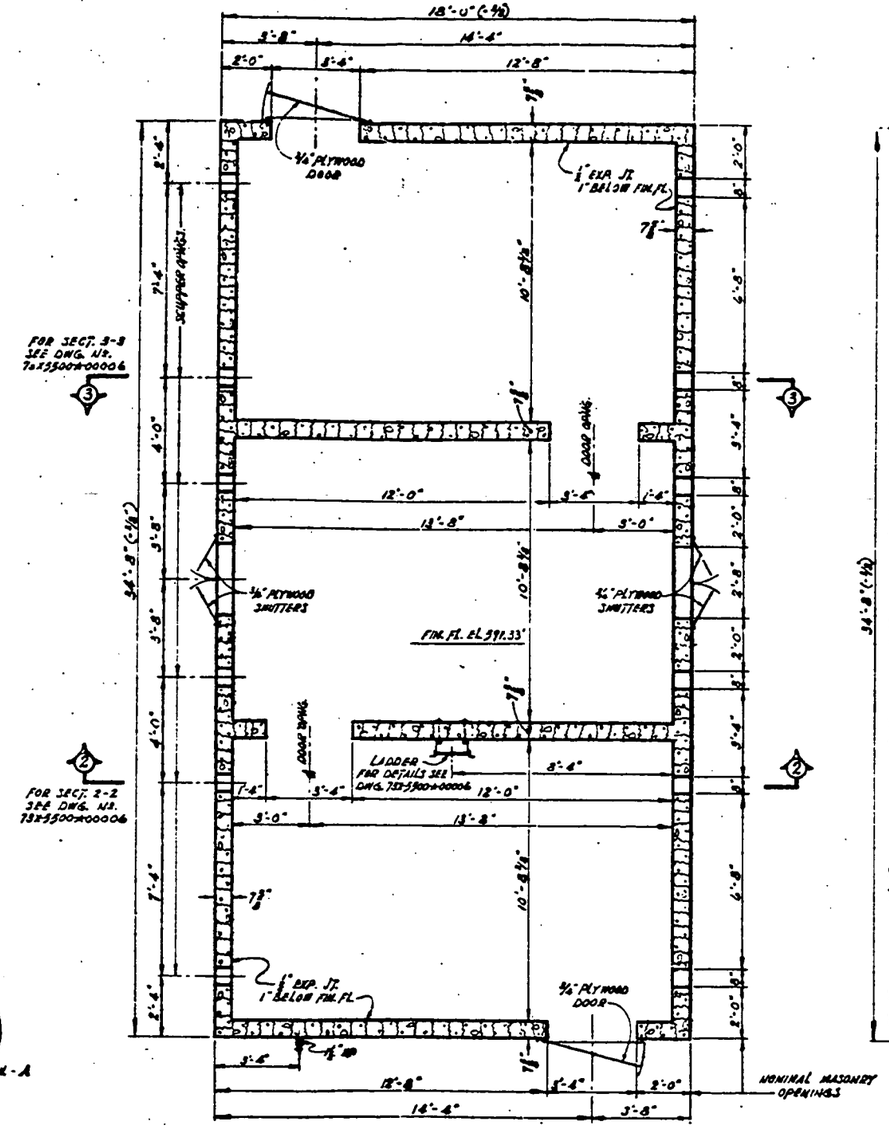
000019

4441.

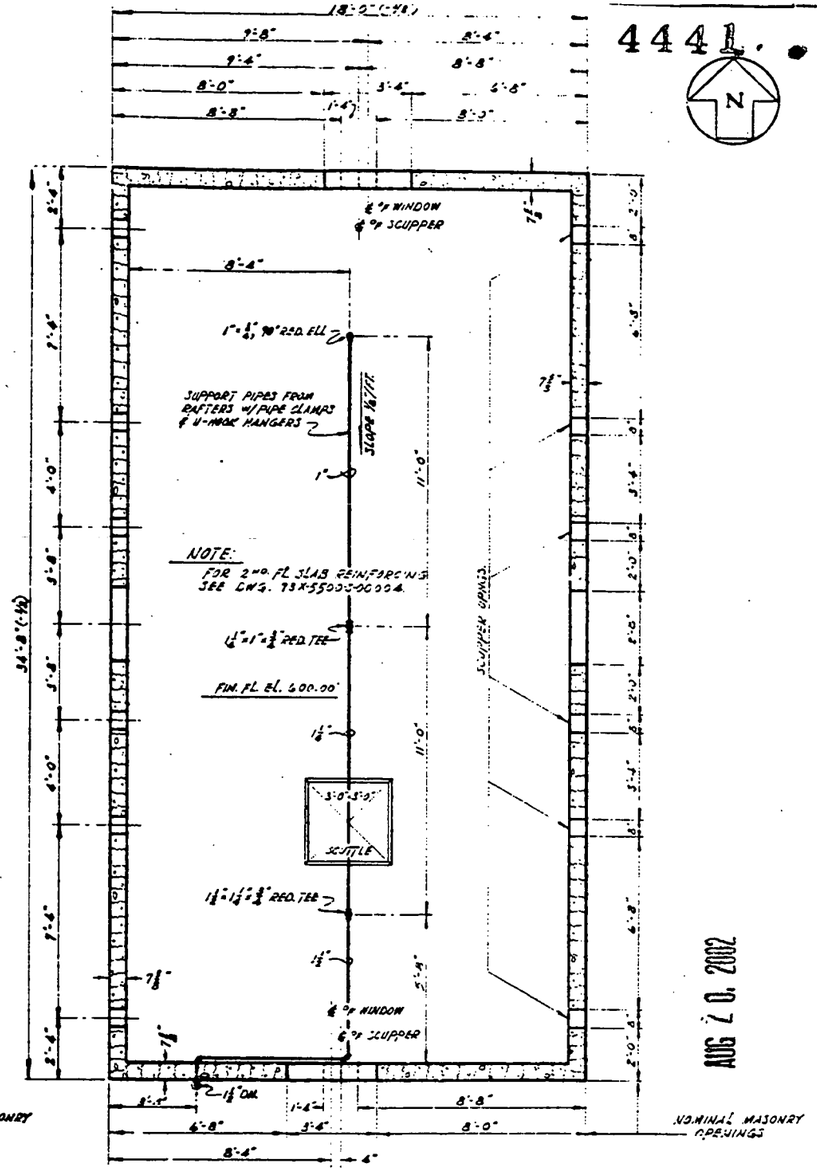
NO.	PRINTED	REV.
5	12-17-65	7/70



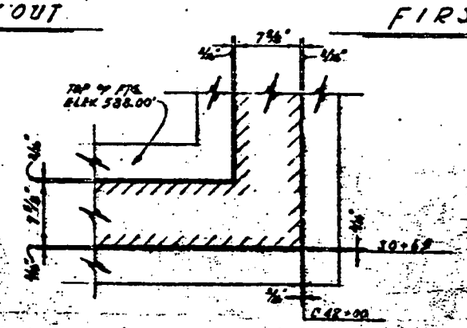
FOOTING LAYOUT



FIRST FLOOR PLAN



SECOND FLOOR PLAN



S. E. CORNER LOCATION - DETAIL "A"

Scale: 1/16" = 1'-0"

FOR INFORMATION ONLY
CADD SERVICES

REF. DWG. NO.	REF. DWG. TITLE	NO.	REVISIONS	DATE	BY

NATIONAL LEAD COMPANY OF OHIO
FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO

U. S. ATOMIC ENERGY COMMISSION

FIRE BRIGADE TRAINING FACILITY
ARCHITECTURAL
FOOTING LAYOUT
FIRST & SECOND FLOOR PLANS

ENGINEERING DIVISION

APPROVALS

ARCH. & STR.		H. & S.	
MECHANICAL		PROD.	
ELECTRICAL		TECH.	
CHEMICAL		MAINT.	
ENGINEER			

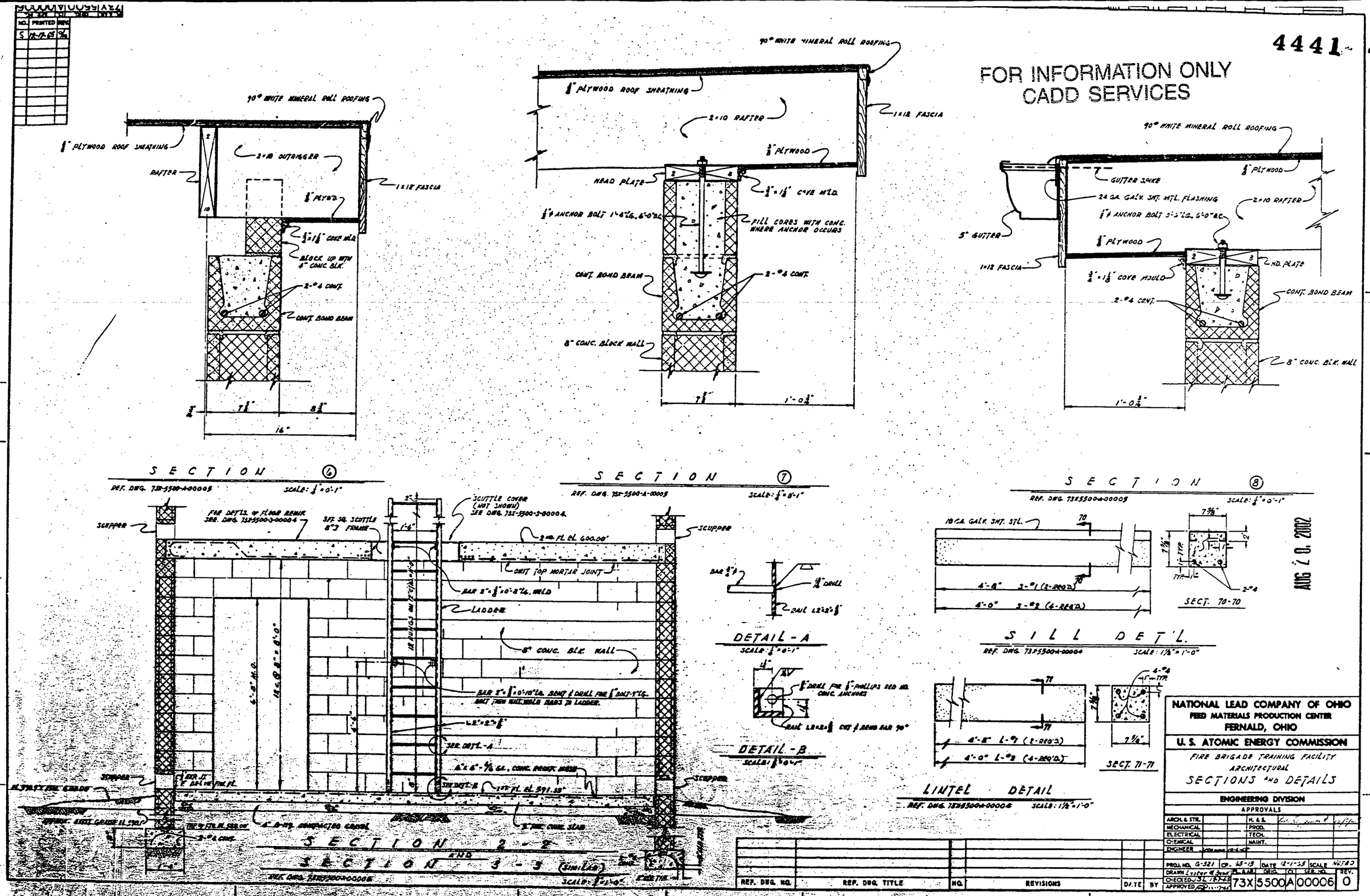
PROJ. NO. 5-221 | CP. 65-18 | DATE 9-21-65 | SCALE 1/16"=1'-0"
DRAWN | CHECKED | APPROVED

PL. & AR.	ORIG.	CL	SER. NO.	REV.
73X	3500	A	00003	0

AUG 2 0, 2002

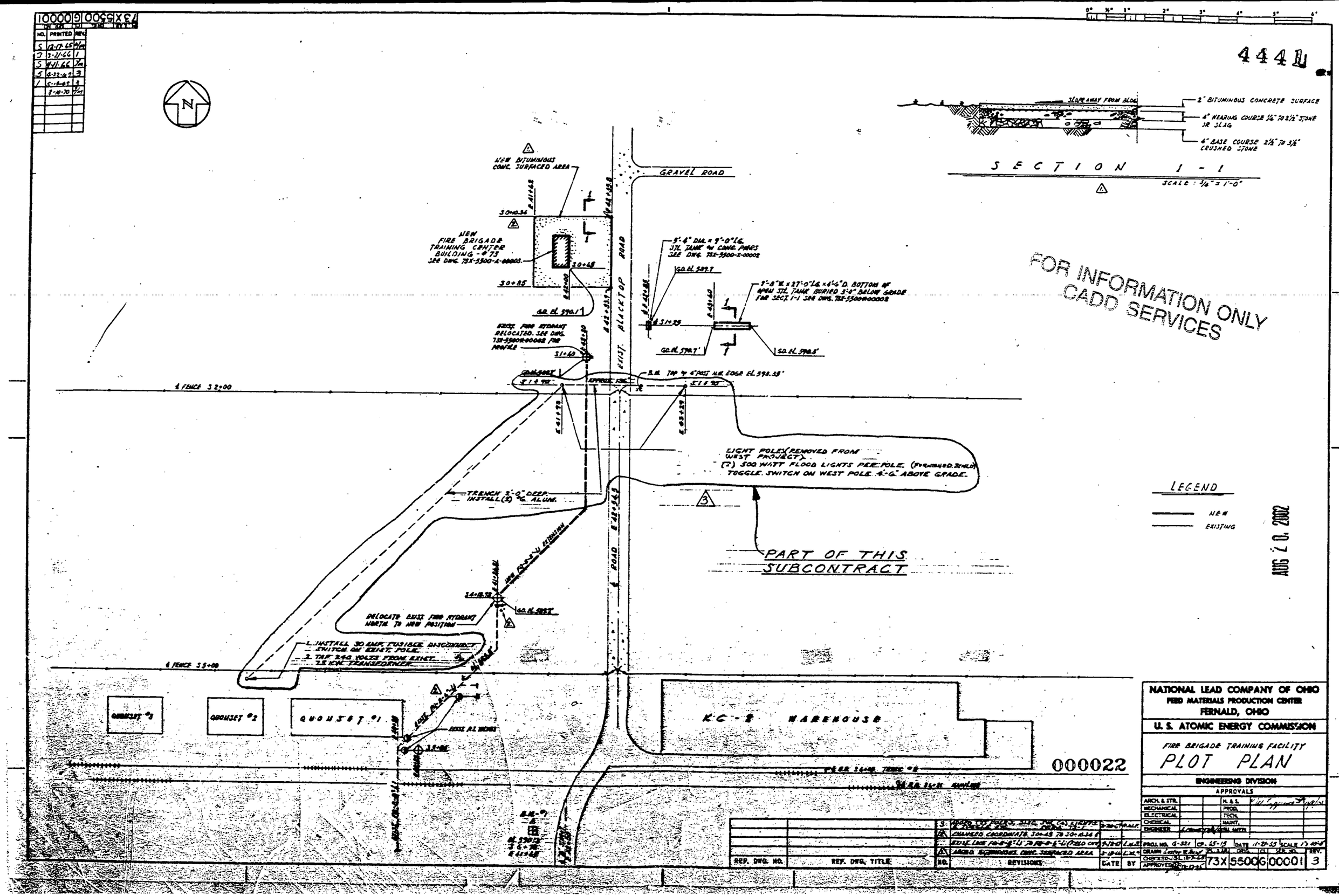
000020

FOR INFORMATION ONLY
CADD SERVICES



NO.	PRINTED	REV.
5	12-17-65	0/m
4	3-21-66	1
5	4-11-66	2/m
5	4-22-66	3
1	5-18-65	2
	8-10-70	3/m

444 L



NO.	PRINTED	REV.
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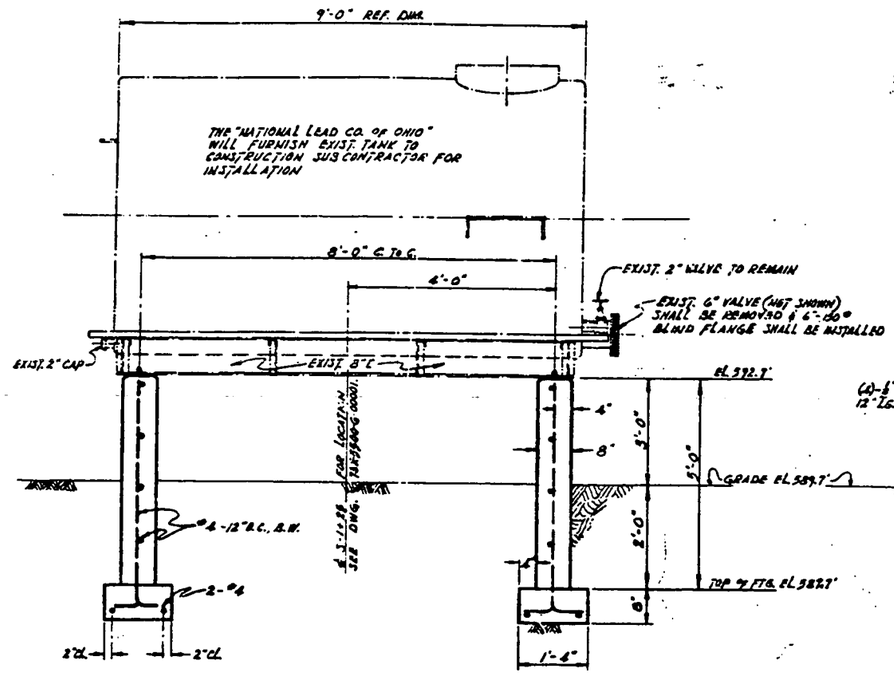
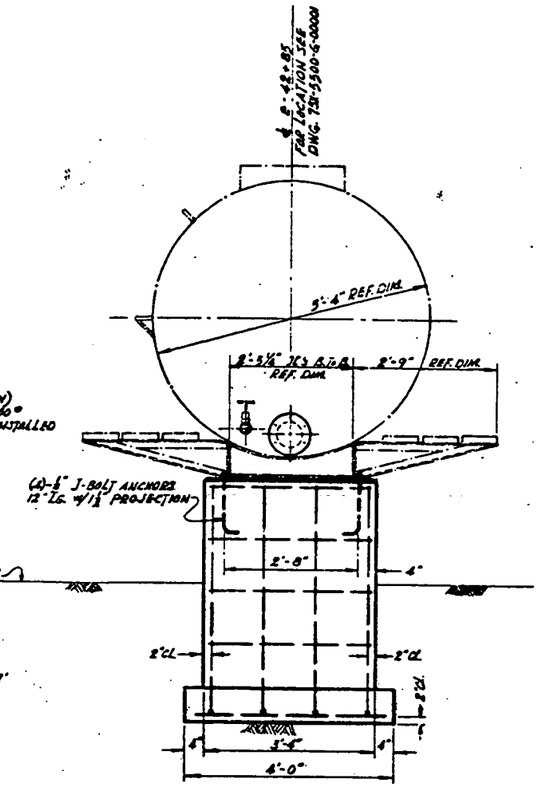
	8-11-70	1/4

4441



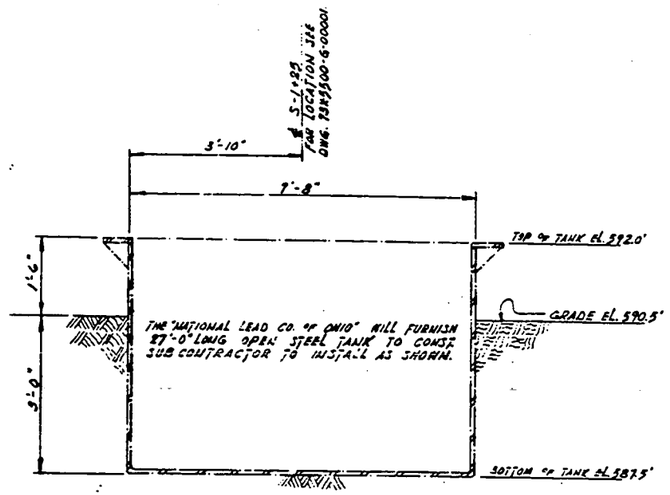
WEST ELEVATION

SCALE: 1/4"=1'-0"



SOUTH ELEVATION

REF. DWG. 73X-5500-G-00001



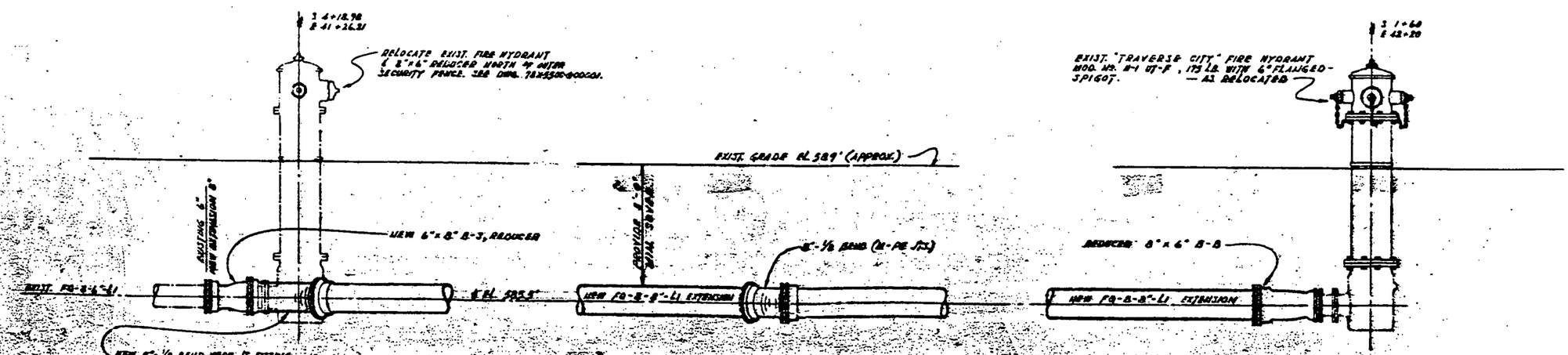
SECTION 1-1

REF. DWG. 73X-5500-G-00001 SCALE: 1/4"=1'-0"

FOR INFORMATION ONLY
CADD SERVICES

AUG 20 2002

LEGEND:
NEW
EXISTING



PROFILE OF NEW FIRE PROTECTION LINE EXTENSION

REF. DWG. 73X-5500-G-00001 (EXIST. ELEV.) SCALE: 1/8"=1'-0"

000023

REF. DWG. NO.	REF. DWG. TITLE

NO.	REVISIONS	DATE	BY
1	COMMISSIONED FIRE LINE TO AS BUILT	9-28-69	L.W.G.

NATIONAL LEAD COMPANY OF OHIO
FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO

U. S. ATOMIC ENERGY COMMISSION

FIRE BRIGADE TRAINING FACILITY
ELEVATED TANK, GROUND TANK SECTION & NEW FIRE LINE

ENGINEERING DIVISION
APPROVALS

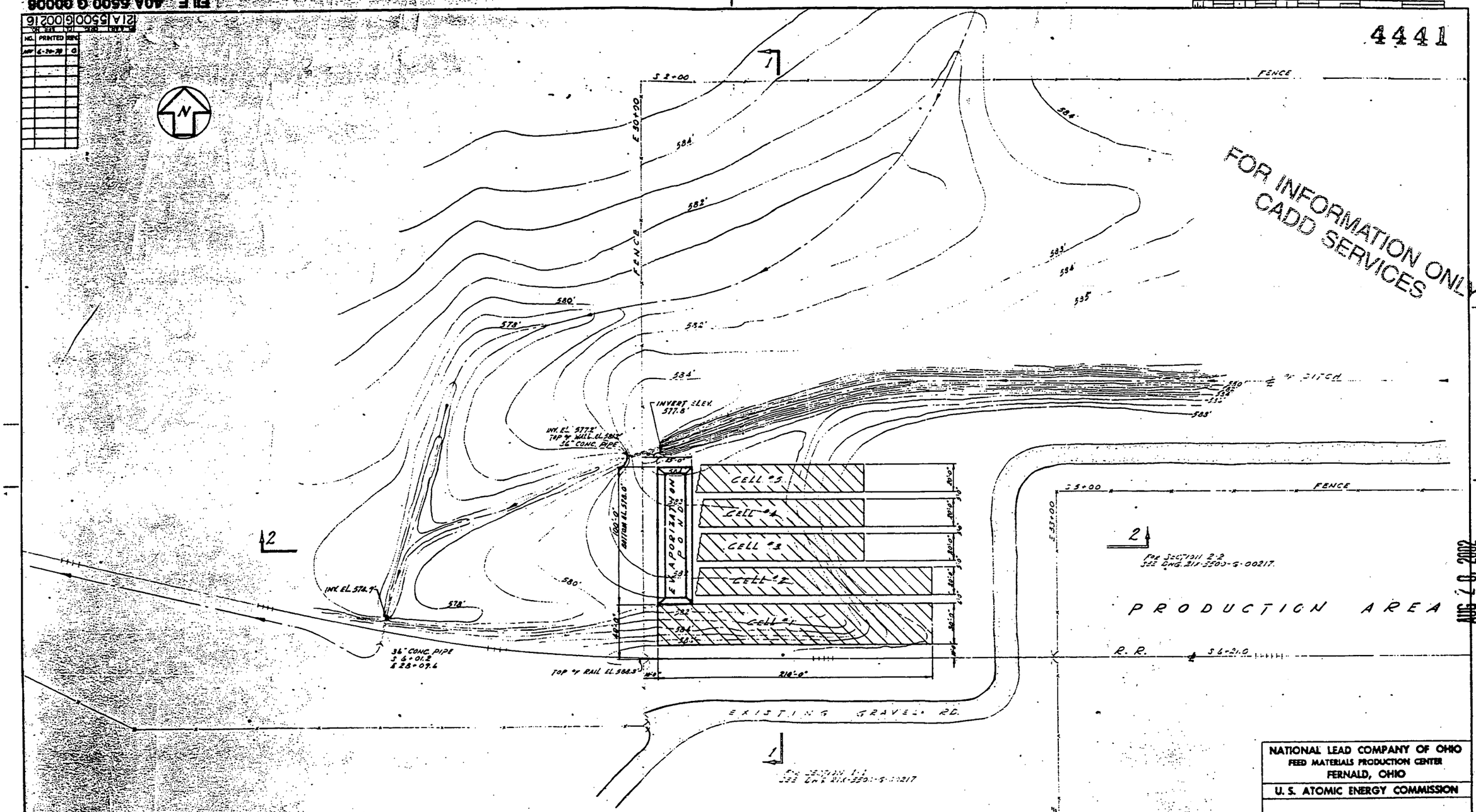
ARCH. & STR.		M. & E.	
MECHANICAL		PROD.	
ELECTRICAL		TECH.	
CHEMICAL		MAINT.	
ENGINEER			

PROJ. NO. G-321 | DR. L.S.-19 | DATE 11-25-69 | SCALE 1/4"=1'-0"
DRAWN Letter & Sons | CHECKED | APPROVED
73X 5500 X 00002 | REV. 1

FILE 40A 5500 G 00006

NO.	PRINTED	REV.
	6-20-78	0

4441



REF. DWG. NO.	REF. DWG. TITLE	NO.	REVISIONS	DATE	BY
21X-5500-G-00217	SANITARY LAND FILL - SECTIONS	1	DWG. NO. WAS 21X-5500-G-00216	5/8/86	R.G.H.

NATIONAL LEAD COMPANY OF OHIO
FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO

U. S. ATOMIC ENERGY COMMISSION

SANITARY LAND FILL
PLAN

ENGINEERING DIVISION

APPROVALS

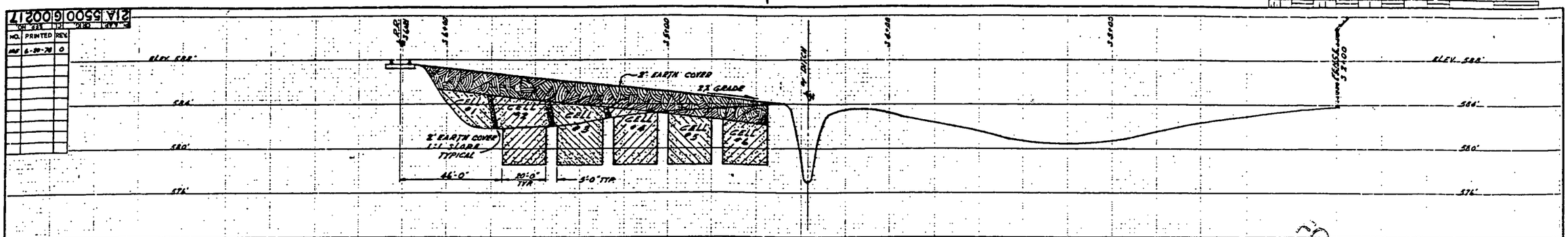
ARCH. & STR.		H. & S.	
MECHANICAL		PROD.	
ELECTRICAL		TECH.	
CHEMICAL		MAINT.	
ENGINEER		PROC.	

PROJ. NO. G-619 | CP. | DATE 5-28-76 | SCALE 1"=30'-0"
DRAWN | PL. & AR. | ORIG. | CL. | SER. NO. | REV.
CHECKED | 21A | 55CC | G | 00216 | 1
APPROVED

FILE 40A 5500 G 00006 0

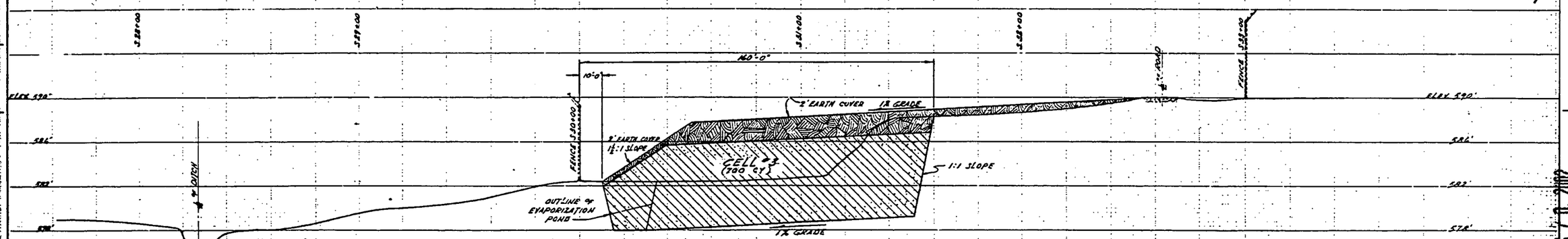
4441

NO.	PRINTED	REV.
INF	6-20-78	0



SECTION 1-1

SCALE: VERT. 1" = 4'-0"
HORIZ. 1" = 20'-0"



SECTION 2-2

SCALE: VERT. 1" = 4'-0"
HORIZ. 1" = 20'-0"

FOR INFORMATION ONLY
CADD SERVICES

AUG 7 0, 2002

000025

REDUCED DRAWING
DO NOT SCALE

NATIONAL LEAD COMPANY OF OHIO
FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO

U. S. ATOMIC ENERGY COMMISSION

SANITARY LAND FILL
SECTIONS

ENGINEERING DIVISION

APPROVALS

ARCH. & STR.		H. & S.	
MECHANICAL		PROD.	
ELECTRICAL		TECH.	
CHEMICAL		MAINT.	
ENGINEER		PROC.	

PROJ. NO. 6-619 CP. DATE 5-22-74 SCALE NOTED
DRAWN Lester M. Bunch
CHECKED
APPROVED

PL. & AR. 21A 5500 G 00217 REV. 0

REF. DWG. NO.	REF. DWG. TITLE	NO.	REVISIONS	DATE	BY
21A-5500-G-00216	SANITARY LAND FILL - PLAN	1	DWG. WAS 21X-5500-G-00217	7/8/86	R.G.H.