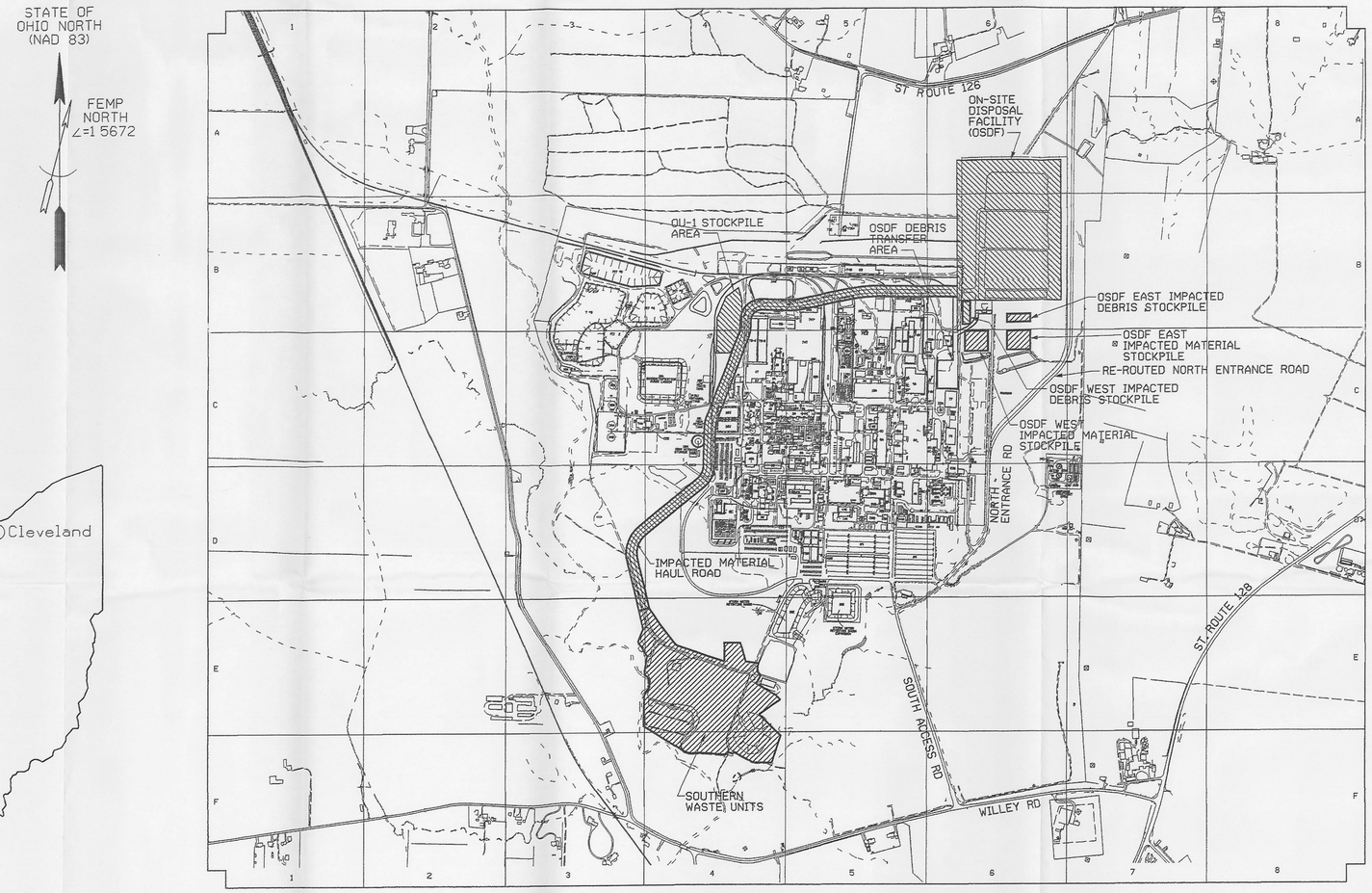
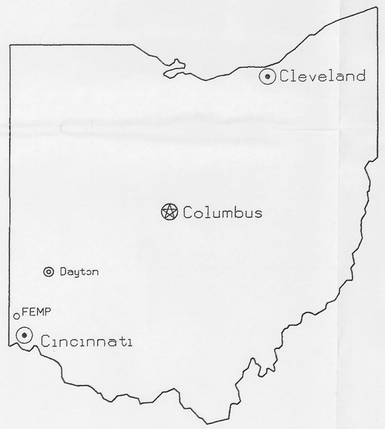
MAPS

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

AREA 2 PHASE I
SOUTHERN WASTE UNITS - REMEDIAL ACTION PROJECT
EXCAVATION PACKAGE

CONTRACT NO. FSC614
FDF PROJECT NO. 20402





PARSONS
The Ralph M Parsons Company * Parsons Main, Inc * Engineering-Science, Inc

ARCHITECTS - ENGINEERS
CINCINNATI, OHIO

NOTES

1152
2-205.6

RELATED DWG NO	DRAWING TITLE	SHEET NO
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003

000001

REV NO	ISSUE OR REVISION PURPOSE DESCRIPTION	A E	FERMCO	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97
		INITIALS AND DATE		

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
PROJECT TITLE SHEET

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D REED	12/17/96	F M PARTON JR	2/12/97	J FERN	2/12/97

PLANT/BLDG NO	FLOOR	SCALE	CLASS
		1 =600'	

SUBMITTED FOR APPROVAL	FERJCO CRU APPROVAL	FERMCO PROJECT NO
C Shroeder 11/14/97	N/A	20402
A E DATE	DATE	

DOE PROJECT NO	FEMP PROJECT NO	DRAWING INDEX CODE NO	SHEET NO	REV NO
	WBS 1111236 00-90701	92X-5900-X-00393	X0001	0

PREPARED UNDER PARSONS PROJECT ORDER NUMBER: SCEP/P0165

STATE OF OHIO FRANKLIN M PARTON JR 46 E 57614 REGISTERED PROFESSIONAL ENGINEER

600 0 600 1200
GRAPHIC SCALE 1 =600

INDEX OF DRAWINGS

INDEX CODE NO.	DRAWING NO.	SHEET NO.	REVISION NO.	DRAWING TITLE	REMARKS
	92X-5900-X-00393	X0001	0	PROJECT TITLE SHEET	
	92X-5900-X-00394	X0002	0	DRAWING INDEX	
	92X-5900-X-00395	X0003	0	LEGEND AND GENERAL NOTES	
	92X-5900-G-00396	G0001	0	CIVIL - STOCKPILE LOCATIONS & TRAFFIC ROUTES	
	92X-5900-G-00397	G0002	0	CIVIL - MASTER SITE PLAN	
	92X-5900-G-00349	G0003	0	CIVIL - BENCHMARKS AND BASELINE LOCATION PLAN	
	92X-5900-G-00398	G0004	0	CIVIL - EXISTING CONDITIONS AND MONITORING WELL IMPROVEMENTS PLAN	
	92X-5900-G-00286	G0005	0	CIVIL - EXCAVATION GRADING PLAN - 1	
	92X-5900-G-00369	G0006	0	CIVIL - EXCAVATION GRADING PLAN - ABOVE WAC MATERIAL	
	92X-5900-G-00413	G0007	0	CIVIL - EXCAVATION GRADING PLAN - 2	
	92X-5900-G-00285	G0008	0	CIVIL - EXCAVATION GRADING PLAN - LEAD CONTAMINATED SOIL	
	92X-5900-G-00333	G0009	0	CIVIL - EXCAVATION GRADING PLAN - 3	
	92X-5900-G-00287	G0010	0	CIVIL - BASELINE A CROSS SECTIONS - SHEET 1 OF 5	
	92X-5900-G-00288	G0011	0	CIVIL - BASELINE A CROSS SECTIONS - SHEET 2 OF 5	
	92X-5900-G-00289	G0012	0	CIVIL - BASELINE A CROSS SECTIONS - SHEET 3 OF 5	
	92X-5900-G-00298	G0013	0	CIVIL - BASELINE A CROSS SECTIONS - SHEET 4 OF 5	
	92X-5900-G-00299	G0014	0	CIVIL - BASELINE A CROSS SECTIONS - SHEET 5 OF 5	
	92X-5900-G-00300	G0015	0	CIVIL - BASELINE B CROSS SECTIONS - SHEET 1 OF 1	
	92X-5900-G-00301	G0016	0	CIVIL - BASELINE C CROSS SECTIONS - SHEET 1 OF 2	
	92X-5900-G-00302	G0017	0	CIVIL - BASELINE C CROSS SECTIONS - SHEET 2 OF 2	
	92X-5900-G-00403	G0018	0	CIVIL - DETAILS - SHEET 1 OF 1	
	92X-5900-G-00412	G0019	0	CIVIL - MATERIAL DOCUMENTATION PLAN	
	92X-5900-N-00401	N0001	0	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - SYMBOLS AND LEGEND	
	92X-5900-N-00402	N0002	0	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - WATER COLLECTION AND TRANSFER	

NOTES

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00393	PROJECT TITLE SHEET	X0001
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003

000002

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

STATE OF OHIO
FRANKLIN M. PARTON JR.
NO. E-57614
REGISTERED PROFESSIONAL ENGINEER

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

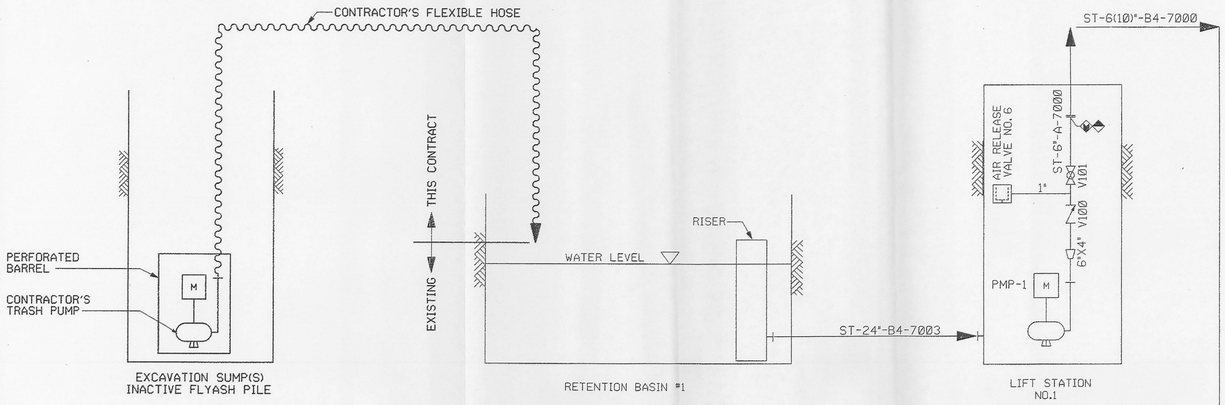
DRAWING TITLE
DRAWING INDEX

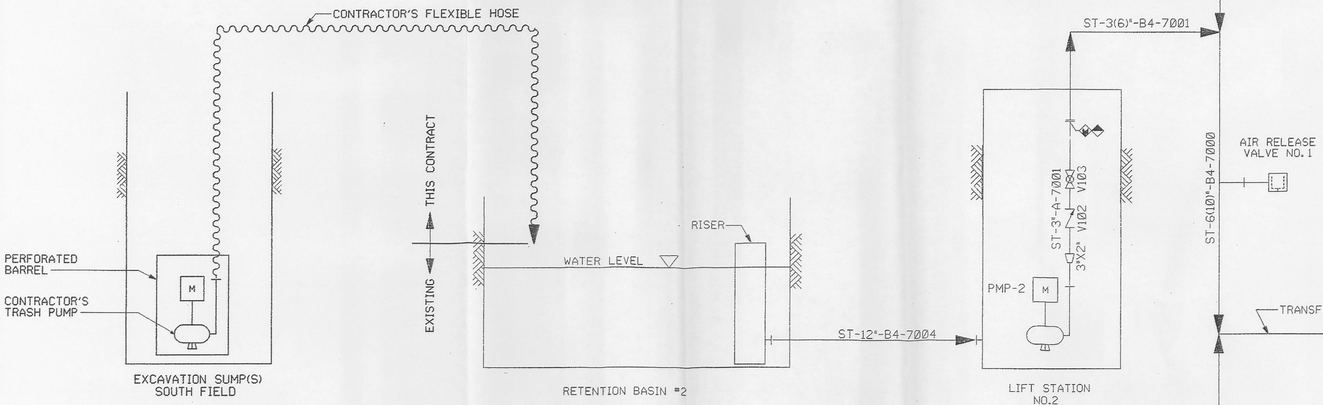
DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	12/17/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

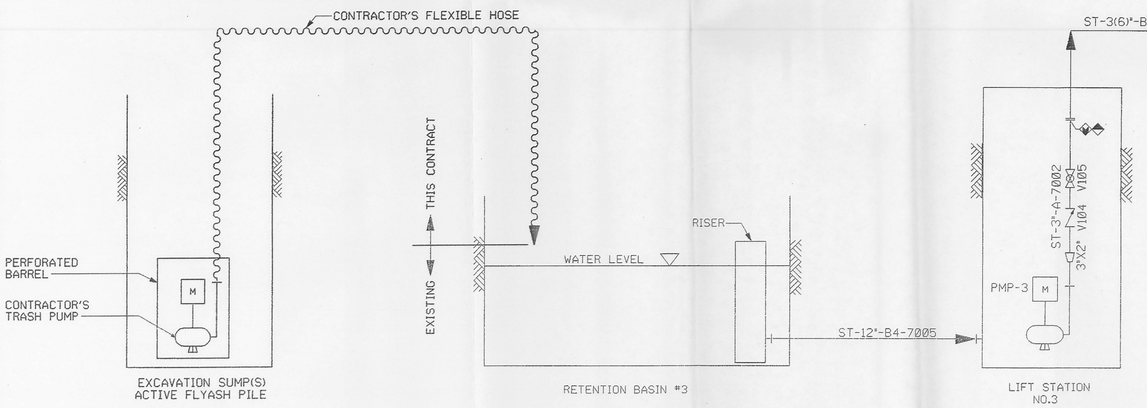
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/PO165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-X-00394	X0002	0







NOTES

1. MORE THAN THREE EXCAVATION SUMPS CAN BE OPERATING AT ONCE.

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-N-00401	SYMBOLS AND LEGEND	N0001

000003

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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CINCINNATI, OHIO

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
MECHANICAL PROCESS
PIPING AND INSTRUMENTATION DIAGRAM
WATER COLLECTION AND TRANSFER

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
L. N. HAGAMAN	12/17/96		11/14/97	S. GHANTOUS	02/18/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-N-00402	N0002	0

STATE OF OHIO
OSCAR W. CARLSON, JR. 60196
REGISTERED PROFESSIONAL ENGINEER
Oscar W. Carlson Jr. 11-14-97

PIPING VALVES

CONFIGURATIONS FOR VALVE TYPE

ANGLE STRAIGHT 3-WAY 4-WAY

VALVE TYPES (STRAIGHT CONFIG.)

- AIR RELEASE VALVE
- AIR AND VACUUM VALVE
- BACKPRESSURE REGULATOR
- BACKFLOW PREVENTER
- BALL
- BLOWDOWN
- BUTTERFLY/DAMPER
- CHECK, SWING TYPE
- CHECK, WAFER TYPE
- DELUGE
- DIAPHRAGM
- DIFFERENTIAL PRESSURE REGULATOR
- FLOAT
- FOOT
- GATE
- GLOBE
- HOSE
- KNIFE
- NEEDLE
- PINCH
- PRESSURE REGULATOR
- PLUG
- SAFETY RELIEF
- SLIDING GATE
- STOP CHECK
- VACUUM

PIPING SEGMENT BREAKS

- CONSTRUCTION REQUIREMENTS
- INSULATION REQUIREMENTS
- PIPING MATERIAL REQUIREMENTS
- UNDERGROUND ROUTING (SHADED AREA INDICATES DIRECTION OF UNDERGROUND)

PIPING FITTINGS

- BASKET STRAINER - SINGLE
- BASKET STRAINER - DUPLEX
- CAP
- CONCENTRIC REDUCER
- CONE STRAINER
- ECCENTRIC REDUCER
- EXPANSION FLANGE
- EXPANSION JOINT
- FILTER
- FLANGE
- FLEXIBLE HOSE
- HOSE CONNECTION
- HOSE QUICK COUPLING
- MECHANICAL COUPLING
- ORIFICE
- ORIFICE UNION
- PLUG
- REDUCING FLANGE
- STEAM TRAP
- SUMP STRAINER
- TEMPORARY STRAINER
- Y-STRAINER

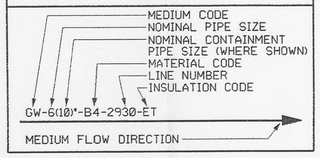
PIPING SYMBOLOGY

- PRIMARY PIPING
- SECONDARY PIPING
- EXISTING PIPING
- FLEXIBLE HOSE
- FUTURE PIPING
- TIE-IN POINT

EQUIPMENT SYMBOLS

- AGITATOR (MIXER)
- CENTRIFUGAL BLOWER
- (AREA NAME) DEFINED BOUNDRY
- HORIZONTAL CENTRIFUGAL PUMP
- (SYSTEM NAME) PACKAGED SYSTEM BOUNDRY
- SUBMERSIBLE TURBINE PUMP
- SUMP PUMP WITH MOTOR

PIPING LINE NUMBER FORMAT



ABBREVIATIONS

AC	AIR TO CLOSE
AG	AGITATOR
AO	AIR TO OPEN
ARV	AIR RELEASE VALVE
AVV	AIR AND VACUUM VALVE
AWWT	ADVANCED WASTEWATER TREATMENT
BLW	BLOWER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET/MINUTE
CO	CLEAN OUT
CU FT	CUBIC FEET
ECC	ECCENTRIC
EF	EXHAUST FAN
FC	FAIL CLOSED
FO	FAIL OPEN
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GRAVITY VENTILATOR
HDPE	HIGH DENSITY POLYETHYLENE
Ia	INSTRUMENT AIR
KW	KILOWATT
LB/HR	POUNDS PER HOUR
MATL	MATERIAL
MED	MEDIUM
MS	MIST ELIMINATOR
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
PIV	POST INDICATOR VALVE
PMP	PUMP
RED	REDUCER
RH	RELATIVE HUMIDITY
SCFM	STANDARD CUBIC FEET/MINUTE
SFES	SOUTH FIELD EXTRACTION SYSTEM
SWRB	STORMWATER RETENTION BASIN
TBD	TO BE DETERMINED
TF	TOP FLAT
TNK	TANK
TYP	TYPICAL
UH	UNIT HEATER
1	SOLENOID VALVE COMMON PORT
2	SOLENOID VALVE NORM. OPEN PORT
3	SOLENOID VALVE NORM. CLOSED PORT
ID	INJECTION DEMONSTRATION
SPO	SOUTH PLUME OPTIMIZATION

PIPING SPECIFICATIONS

FLOWING MEDIUM	MED. CODE	MATL. CODE
BACK WASH	BW	T
BLOWER AIR	BA	A
CHILLED WATER	CHS, CHR	A
CHLORINE	CL	B1
CONDENSATE	LC	W, T
CONDENSER WATER	CWS, CWR	A
COOLING WATER	WS, WR	A
DRAIN	DR	A, T
DRINKING WATER	DW	W, B4, C1
FILTRATE EFFLUENT	FT	A
FLOCCULANT	FL	A
FLUSH WATER	FW	T
FORCE MAIN	FM	M
GROUND WATER	GW	A, B, B4, M
INSTRUMENT AIR	IA	T
MELTER OFF-GAS	OG	T
NITRIC ACID	AN	T1
PERCHED GND WATER	PGW	B
PHOSPHORIC ACID	PAPH	T1
PLANT AIR	PA	W
POLISHED WATER	PW	A
PROCESS WATER	TW, TWX1	A, B4
PROCESS WASTEWATER	CE	A
RAW WATER	RW	A
RECYCLE WATER	RC	T, B2
SCRUBBER RECYCLE	RSL	T
SLURRY	SL	T
SODIUM CARBONATE	SC	A
SODIUM HYDROXIDE	NA	T
SODIUM SILICATE	SS	A
STORM WATER	ST	A, A7, B4
SULFURIC ACID	SB	T1
SUMP DISCHARGE	SU	T
THICKENER OVERFLOW	TO	T
VACUUM	V	A
VENTILATION AIR	VE	T, A
WASTE WATER	WW	T, B4

MATL. CODE	DESCRIPTION
A	A53 SEAMLESS CARBON STEEL
A7	CORRUGATED METAL PIPE
B	PVC
B1	PVDF
B2	PVDF, 100PSI
B3	CPVC
B4	HDPE
B5	CORRUGATED HDPE
C1	CLASS 150, COPPER TUBING
L	FIBERGLASS REINFORCED PLASTIC
M	DUCTILE IRON
T	304L, STAINLESS STEEL
T1	316L, STAINLESS STEEL
W	A53, GR. A, GALVANIZED STEEL

INSUL. CODE	DESCRIPTION
ET	ELECTRIC TRACED AND INSULATED
IC	ANTI-CONDENSATION INSULATION
ST	STEAM TRACED AND INSULATED

NOTES

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002

00000 4

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

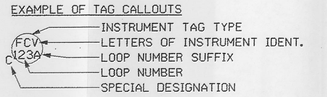
INSTRUMENT ACTUATOR LABELS

- BALL FLOAT
- CAPACITY SENSOR
- DIAPHRAGM
- DISPLACING FLOAT
- DUAL ACTION PISTON
- DUAL SOLENOID
- MANUAL
- MOTOR
- PILOT
- SINGLE ACTION PISTON
- SINGLE SOLENOID
- SINGLE SOLENOID WITH RESET

INSTRUMENT DEVICE TAG TYPES

- IN-LINE TAG WITH LEADER LINE
- LOCAL MOUNTED DEVICE
- FRONT OF PANEL MOUNTED DEVICE
- FRONT OF PANEL MOUNTED DEVICE AUXILLARY LOCATION
- REAR OF PANEL MOUNTED DEVICE
- REAR OF PANEL MOUNTED DEVICE AUXILLARY LOCATION
- SHARED DISPLAY COMPUTER CONTROL AND OPERATOR INTERFACE

EXAMPLE OF TAG CALLOUTS



MISC. INSTRUMENTATION SYMBOLS

- INTERLOCK
- DIAPHRAGM SEAL
- INSTRUMENT AIR SUPPLY

INSTRUMENT IN-LINE DEVICES

- AVERAGING PITOT
- FLOW NOZZLE
- FLUME
- MAGNETIC FLOW METER
- ORIFICE PLATE
- POSITIVE DISPLACEMENT
- PROPELLER
- STRAIGHTING VANE
- SILENCER
- THERMOWELL
- TRAP
- ULTRASONIC FLOW METER
- VARIABLE AREA FLOW METER
- VENTURI
- VORTEX SHEDDING FLOW METER
- WEIR

INSTRUMENT SIGNAL LINES

- CONNECT TO PROCESS
- MECHANICAL LINK
- ELECTRIC BINARY
- PNEUMATIC BINARY
- GUIDED ELECTROMAG OR SONIC
- SOFTWARE/DATA LINK
- CAPILLARY
- ELECTRIC
- PNEUMATIC
- HYDRAULIC
- UNGUIDED ELECTROMAG OR SONIC
- UNDEFINED

INSTRUMENT SPECIAL DESIGNATIONS

DESIGNATION	FUNCTION / ABBREVATION
C	CLOSED
DIF	DIFFERENTIAL
EX	EXISTING INSTRUMENTATION
H	HIGH
HH	HIGH HIGH
HL	HIGH LOW
HOA	HAND-OFF-AUTO
IA	IN-AUTO
I/I	CURRENT TO CURRENT
I/O	INPUT/OUTPUT
I/P	CURRENT TO PNEUMATIC TREANSDUCER
L	LOW
LL	LOW LOW
LOR	LOCAL-OFF-REMOTE
O	OPEN
OA	ON-OFF
OCA	OPEN-CLOSED-AUTO
R	RUNNING
Y	UNDETERMINED COMPUTING RELAY

LETTERS OF INSTRUMENT IDENTIFICATION

LETTER	1ST LETTER: MEASURED OR INITIATING VARIABLE	2ND LETTER: MODIFIER	3RD OR 4TH LETTER: READ OUT OR PASSIVE FUNCTION
A	ANALYSIS	ALARM	ALARM
B	BURNER FLAME	----	----
C	CAMERA	CONTROLLER	CLOSED
D	DENSITY	DIFFERENTIAL	----
E	VOLTAGE	ELEMENT	ELEMENT
F	FLOW RATE	RATIO (FRACTION)	----
G	GAGING (DIM)	VIEWING DEVICE	GLASS
H	HAND (MANUAL)	----	----
I	CURRENT (ELEC)	INDICATE	INDICATE
J	POWER	SCAN	----
K	TIME	----	----
L	LEVEL	LIGHT	LOW
M	MOIST. OR HUMIDITY	----	----
N	----	----	----
O	OBSERVATION	ORIFICE	OPEN
P	PRESSURE OR VACUUM	----	POINT (TEST)
Q	QUANTITY OR EVENT	TOTALIZER	----
R	RESTRICTIVE	RECORDER	RECORDER
S	SPEED OR FREQUENCY	SAFETY/SWITCH	SWITCH
T	TEMPERATURE	TRANSMITTER	TRANSMITTER
U	USER'S GUIDE	----	MULTIFUNCTION
V	VISCOSITY	----	VENT, VALVE
W	WEIGHT OR FORCE	WELL	----
X	UNCLASSIFIED	----	UNCLASSIFIED
Y	RELAY	RELAY	----
Z	POSITION	----	----

FUNCTION LABELS

SYMBOLS	DESCRIPTION
A+/B	AVERAGING
−	BIAS MINUS
+	BIAS PLUS
±	BIAS PLUS/MINUS
d/dt	DERIVATIVE
÷	DIVIDING
∫	INTERGAL
X	MULTIPLYING
K	PROPORTIONAL
X^n	RAISE TO POWER
REV	REVERSE ACTION
√	ROOT EXTRACT
Σ	SUMMING

STATE OF OHIO OSCAR W. CARLSON, JR. 62156 REGISTERED PROFESSIONAL ENGINEER

Oscar W. Carlson Jr. 11-14-97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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CINCINNATI, OHIO

PROJECT NAME
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SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
MECHANICAL PROCESS
PIPING AND INSTRUMENTATION DIAGRAM
SYMBOLS AND LEGEND

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
L. N. HAGAMAN	12/17/96	Oscar W. Carlson	11/14/97	S. GHANTOUS	02/18/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-N-00401	N0001	0

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

EXISTING WEST PUMP STATION

APPROXIMATE LIMITS OF EXPOSED GMA (TYP)

BASELINE A SEE SHT G0010 THRU G0014 FOR CROSS SECTIONS

NON-IMPACTED MATERIAL STOCKPILE #2

WOODCHIP STOCKPILE

SWRP

GRAVEL ROAD

MH

BASELINE B STA 0+00 = BASELINE A STA 10+00

15" CULVERT

TENSION SUPPORT STRUCTURE

SOUTH CONSTRUCTION ROAD

SUPPORT AREA

BASELINE B SEE SHT G0015 FOR CROSS SECTIONS

BASELINE C STA 30+00 = BASELINE B STA 3+20.97

BASELINE C SEE SHT G0016 AND G0017 FOR CROSS SECTIONS

EXISTING DUMPED ROCK FILL

1 FLAT BOTTOM DITCH G0018 (INTERCEPTOR DITCH #3)

D3 1 N 478063± E 1347617±

N 477998± E 1347621±

D3 2 N 477974± E 1347742±

N 477998± E 1347826±

D3 3 N 477909± E 1347806±

D3 4 N 477889± E 1347819±

D3 5 N 477785± E 1347860±

D3 6 N 477773± E 1347850±

N 477733± E 1347900±

N 478144± E 1347825±

N 477913± E 1347644±

N 477815± E 1347749±

N 477661± E 1347859±

N 477763± E 1348041±

N 477539± E 1348043±

N 477374± E 1348028±

N 477303± E 1347999±

N 477245± E 1347941±

N 477226± E 1347938±

APPROXIMATE LIMITS OF EXPOSED GMA (TYP)

LIMIT OF EXCAVATION-SOUTH FIELD TOE OF SLOPE

INTERCEPTOR DITCH #3 (SEE NOTE 1)

INTERCEPTOR DITCH #2

LIMITS OF EXCAVATION (TYP) TOP OF SLOPE

SOUTH FIELD IMPACTED MATERIAL STOCKPILE

SOUTH FIELD

LEAD CONTAMINATED SOIL CONTAINER TRANSFER AREA (SEE NOTE 4)

RESERVED

LAYDOWN AREA

RETENTION BASIN #1

APPROXIMATE AREA OF LEAD CONTAMINATED SOIL SEE SHT G0008

NON-IMPACTED MATERIAL STOCKPILE #1

RIPRAP STOCKPILE

TRANSFER LINE

LIMIT OF WORK (TYP)

LIMITS OF SOUTH FIELD EXCAVATION (TYP)

28" CULVERT

RETENTION BASIN #2

PADDYS RUN

GRAVEL ROAD

TREATMENT, TRANSFER AND DISCHARGE LINES

LIMITS OF AFP EXCAVATION (TYP)

APPROXIMATE LIMITS OF AFP EXCAVATION AT 575 ELEVATION

ACTIVE FLYASH PILE

APPROXIMATE LIMITS OF AFP EXCAVATION AT 570 ELEVATION

RETENTION BASIN #3

EXISTING DUMPED ROCK FILL

EXISTING CHANNEL PROTECTION

GRAPHIC SCALE: 1"=50'

NOTES

1. INTERCEPTOR DITCH #3 TO BE LINED WITH 60 MIL TEXTURED HDPE GEOMEMBRANE (SEE DETAIL, SHEET G0018). ELEVATION AND LOCATION OF INTERCEPTOR DITCH #3 TO BE FIELD ADJUSTED BY FDF.
2. SEE SHEET G0018 FOR INTERCEPTOR DITCH #3 DETAILS.
3. ACCESS RAMPS TO IMPACTED MATERIAL EXCAVATION ARE NOT SHOWN AND ARE TO BE FIELD DETERMINED BY THE CONTRACTOR.
4. PROVIDE 20' WIDE ACCESS ROAD TO THE LEAD CONTAMINATED SOIL CONTAINER TRANSFER AREA FROM THE EXISTING UNCONTROLLED ACCESS ROAD. PROVIDE 6-INCH MINIMUM THICKNESS CRUSHED ROCK BASE COURSE OVER THE ACCESS ROAD. PROVIDE AT A MINIMUM TWO 18-INCH DIAMETER, 14 GAGE CMP AT THE DITCH CROSSING.

INTERCEPTOR DITCH #3 (SEE NOTE 2)

DITCH NO.	POINT	NORTHING	EASTING	DESCRIPTION
D3	1	478045	1347631	BEGIN 2' FB DITCH @ 0.9% SLOPE, ELEV 550.2, WITH GEOMEMBRANE LINER
D3	2	477967	1347738	PI
D3	3	477899	1347798	PI
D3	4	477882	1347809	PI
D3	5	477785	1347848	PI
D3	6	477771	1347836	PI WITH EXISTING INTERCEPTOR DITCH #2

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00398	EXISTING CONDITIONS AND MONITORING WELL IMPROVMENTS PLAN	G0004
92X-5900-G-00285	EXCAVATION GRADING PLAN LEAD CONTAMINATED SOIL	G0008
92X-5900-G-00287	BASELINE A CROSS SECTIONS - SHEET 1 OF 5	G0010
92X-5900-G-00288	BASELINE A CROSS SECTIONS - SHEET 2 OF 5	G0011
92X-5900-G-00289	BASELINE A CROSS SECTIONS - SHEET 3 OF 5	G0012
92X-5900-G-00298	BASELINE A CROSS SECTIONS - SHEET 4 OF 5	G0013
92X-5900-G-00299	BASELINE A CROSS SECTIONS - SHEET 5 OF 5	G0014
92X-5900-G-00300	BASELINE B CROSS SECTIONS - SHEET 1 OF 1	G0015
92X-5900-G-00301	BASELINE C CROSS SECTIONS - SHEET 1 OF 2	G0016
92X-5900-G-00302	BASELINE C CROSS SECTIONS - SHEET 2 OF 2	G0017
92X-5900-G-00403	DETAILS - SHEET 1 OF 1	G0018

STATE OF OHIO — FRANKLIN, M. C. PARTON, JR. — NO. E-57614 — REGISTERED PROFESSIONAL ENGINEER — 11/14/97

000003

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
EXCAVATION GRADING PLAN - 2

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	02/28/96	F.M PARTON, JR.	2/12/97	J. FERN	2/26/97

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

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/PO165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00413	G0007	0

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

IMPACTED MATERIAL HAUL ROAD

EQUIPMENT WASH FACILITY

WOOD CHIP STOCKPILE

NON-IMPACTED MATERIAL STOCKPILE #2

SPECIAL MATERIAL TRANSFER AREA

ABOVE WAC EXCAVATION AREA

INACTIVE FLYASH PILE (IFP)

SOUTH FIELD IMPACTED MATERIAL STOCKPILE

LEAD CONTAMINATED SOIL CONTAINER TRANSFER AREA

SUPPORT AREA

RETENTION BASIN #1

NON-IMPACTED MATERIAL STOCKPILE #1

SOUTH FIELD (SF)

LEAD CONTAMINATED SOIL AREA

ACTIVE FLYASH PILE (AFP)

RETENTION BASIN #2

RETENTION BASIN #3

PADDYS RUN ROAD

PADDYS RUN

N 478200

N 477400

N 477000

E 1347400

E 1348200

E 1349000

100′ 0′ 100′ 200′

GRAPHIC SCALE: 1"=100′

NOTES

1. PERFORM MATERIAL DOCUMENTATION IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02212.
2. TRACK MATERIAL USING MATERIAL TRACKING LOCATION (MTL) SHOWN ON THIS DRAWING.
3. THE FOLLOWING TABLE DESIGNATES THE SOURCE AND DESTINATION OF THE EXISTING STOCKPILES:

DESTINATION	SOURCE
TO OSDF	OSDF EAST IMPACTED DEBRIS STOCKPILE
	OSDF WEST IMPACTED DEBRIS STOCKPILE
	OSDF EAST IMPACTED MATERIAL STOCKPILE
	OSDF WEST IMPACTED MATERIAL STOCKPILE
TO OU-1 STOCKPILE AREA	ABOVE WAC MATERIAL

LEGEND

GRID BOUNDARY

MATERIAL TRACKING LOCATION (MTL) BOUNDARY

REF DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003

STATE OF OHIO FRANKLIN M. PARTON JR. NO. E-57814 REGISTERED PROFESSIONAL ENGINEER

000006

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

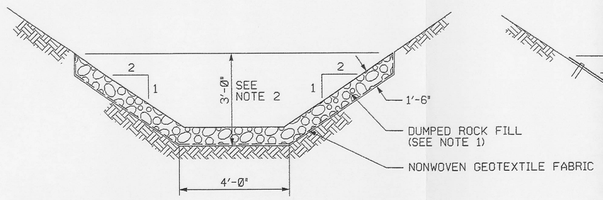
DRAWING TITLE
CIVIL
MATERIAL DOCUMENTATION PLAN

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
T. BROWN	02/11/97	F.M. PARTON, JR.	2/12/97	J. FERN	2/26/97

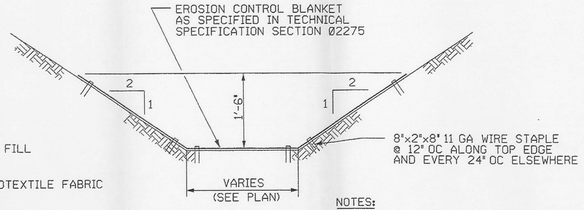
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		1"=100′	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/PO165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00412	G0019	Ø



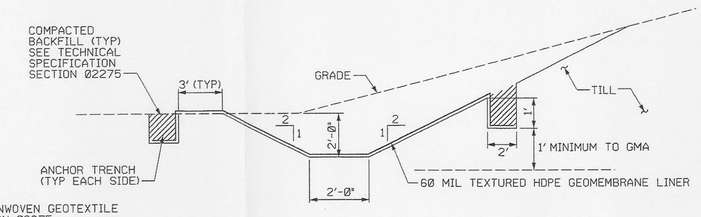
INTERCEPTOR DITCH #1
(DUMPED ROCK FILL TYPICAL DETAIL)



INTERCEPTOR DITCH #1

NOTES:

1. FOR DUMPED ROCK FILL (TYPE C) AND FOR NONWOVEN GEOTEXTILE FABRIC, SEE TECHNICAL SPECIFICATION SECTION 02275.
2. EXTEND DUMPED ROCK FILL TO TOP OF SLOPE WHEN DEPTH IS LESS THAN 5'.
3. FOR 60 MIL TEXTURED HDPE GEOMEMBRANE LINER, SEE TECHNICAL SPECIFICATION SECTION 02275.
4. FIELD SEAMING SHALL BE BY THE DUAL HOT WEDGE METHOD.

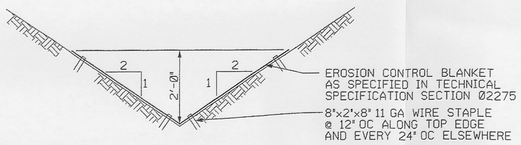


INTERCEPTOR DITCHES #2 AND #3

TYPICAL FLAT BOTTOM (FB) DITCH DETAIL

NTS

1 / G0018 — REF G0005, G0007

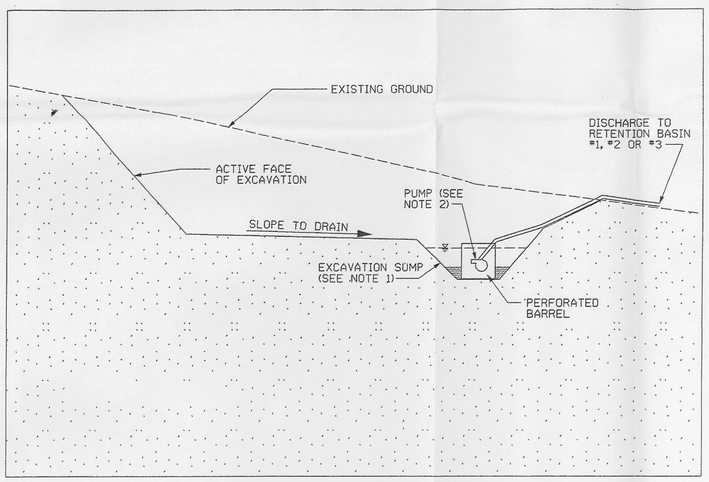


INTERCEPTOR DITCH #1

TYPICAL V-DITCH DETAIL

NTS

2 / G0018 — REF G0005

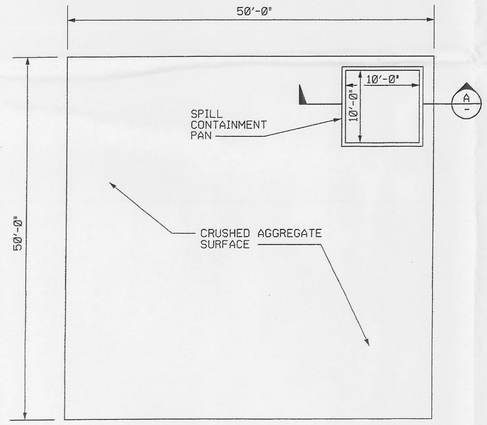


NOTES:

1. THE NUMBER AND SIZE OF EXCAVATION SUMPS REQUIRED, INCLUDING SIZE AND TYPE OF PUMPS, PERFORATED BARRELS, DISCHARGE HOSE, AND MATERIAL FOR PUMPS AND BARRELS SHALL BE DETERMINED BY THE CONTRACTOR.
2. SEE SHEET N0002, PIPING AND INSTRUMENTATION DIAGRAM, FOR ADDITIONAL PUMP AND DISCHARGE PIPING INFORMATION.

TYPICAL EXCAVATION SUMP

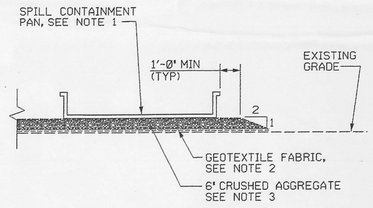
NTS G0011 THRU G0018



SPECIAL MATERIAL TRANSFER AREA DETAIL

NTS

3 / G0018 — REF G0005



NOTES:

1. SPILL CONTAINMENT PAN SHALL BE IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02205.
2. GEOTEXTILE FABRIC SHALL BE IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02275.
3. CRUSHED AGGREGATE SURFACE SHALL BE AGGREGATE BASE IN ACCORDANCE WITH TECHNICAL SPECIFICATION SECTION 02205.

SECTION

NTS

A / -

NOTES

REF DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00333	INTERIM RESTORATION PLAN	G0009
92X-5900-G-00287	BASELINE A CROSS SECTIONS - SHEET 1 OF 5	G0010
92X-5900-G-00288	BASELINE A CROSS SECTIONS - SHEET 2 OF 5	G0011
92X-5900-G-00289	BASELINE A CROSS SECTIONS - SHEET 3 OF 5	G0012
92X-5900-G-00298	BASELINE A CROSS SECTIONS - SHEET 4 OF 5	G0013
92X-5900-G-00299	BASELINE A CROSS SECTIONS - SHEET 5 OF 5	G0014
92X-5900-G-00300	BASELINE B CROSS SECTIONS - SHEET 1 OF 1	G0015
92X-5900-G-00301	BASELINE C CROSS SECTIONS - SHEET 1 OF 2	G0016
92X-5900-G-00302	BASELINE C CROSS SECTIONS - SHEET 2 OF 2	G0017

666007

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

PARSONS

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
DETAILS
SHEET 1 OF 1

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.REED	12/17/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97
PLANT/BLDG. NO.		FLOOR		SCALE: NONE	CLASS
SUBMITTED FOR APPROVAL: C. Schroeder 11/14/97 (A-E DATE)		FERMCO CRU APPROVAL: N/A (DATE)		FERMCO PROJECT NO.: 20402	

FRANKLIN M. PARTON, JR. NO. E-57614 REGISTERED PROFESSIONAL ENGINEER STATE OF OHIO

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00403	G0018	Ø

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

EQUIPMENT WASH FACILITY

IMPACTED MATERIAL HAUL ROAD

EXISTING CB

EQUIPMENT WASH DISCHARGE

WEST PUMP STATION

18" STORM SEWER LINE

TRENCH 1

APPROXIMATE LIMITS OF ABOVE WAC EXCAVATION AREA

INACTIVE FLYASH PILE (IFP)

APPROXIMATE LIMIT OF INACTIVE FLYASH PILE EXCAVATION

100 YEAR FLOOD PLAIN (APPROXIMATE EL 545)

RETENTION BASIN #1

SAND BAG BERM

RESERVED 21100 (1016)

RIPRAP STOCKPILE

TRANSFER LINE

DISCHARGE LINE

NON-IMPACTED MATERIAL STOCKPILE #1

TREATMENT LINE

APPROXIMATE LIMIT OF SOUTH FIELD EXCAVATION

TRENCH 2

TRENCH 3

TRENCH 4

TRENCH 8

TRENCH 5

TRENCH 6

TRENCH 7

TRENCH 10

TRENCH 9

SOUTH FIELD IMPACTED MATERIAL STOCKPILE

SOUTH FIELD (SF)

APPROXIMATE LIMIT OF LEAD CONTAMINATED SOIL AREA

100 YEAR FLOOD PLAIN (APPROXIMATE EL 545)

EXISTING EAST PUMP STATION

RETENTION BASIN #2

28" CULVERT

100 YEAR FLOOD PLAIN (APPROXIMATE ELEV 545)

PADDYS RUN

GRAVEL ROAD

RESERVED 31564

EXISTING GATE

100 YEAR FLOOD PLAIN (APPROXIMATE ELEV 544)

RESERVED 21192(1517)

RESERVED 31563

NON-IMPACTED MATERIAL STOCKPILE #2

TRENCH 11

SEE NOTE 3

EXISTING SPECIAL MATERIAL TRANSFER AREA

15" CULVERT

EXISTING GATE

YARD HYDRANT

WOODCHIP STOCKPILE

2 - EXISTING 1 1/2" PULL BOX CONDUITS FOR WELL FIELD PUMPS, SIGNAL WIRING, AND PUMP CONTROL APPROX 18" BELOW GRADE

TENSION SUPPORT STRUCTURE

SOUTH CONSTRUCTION ROAD

FIELD OFFICE FACILITY

SUPPORT AREA

RADIOLOGICAL CONTROL POINT FACILITY TRAILER

CONTRACTOR LAYDOWN AREA

AREAS RESERVED FOR SOUTH FIELD EXTRACTION PROJECT

RESERVED 31566

TRANSFER LINE, DISCHARGE LINE AND TREATMENT LINE

EXISTING 12-1" ELECT. CONDUITS MIN. 18" BELOW GRADE

APPROXIMATE LIMIT OF ACTIVE FLYASH PILE EXCAVATION

ACTIVE FLYASH PILE (AFP)

RETENTION BASIN #3

GRAPHIC SCALE: 1"=50'

N 478000

N 477000

NOTES

1. SEE FLYASH PILES AND SOUTH FIELD WASTE UNITS GEOTECHNICAL REPORT DATED APRIL 1996, REVISION Ø FOR SOIL BORING LOCATIONS AND INFORMATION.
2. REMOVE MONITORING WELL NUMBER 2945 TO 5' BELOW FINAL EXCAVATION GRADE. MONITORING WELL NUMBER 2945 INCLUDES TELESCOPING STAINLESS STEEL CASING UP TO 16-INCHES IN DIAMETER WITH CONCRETE FILL. RESTORE GRADE TO MATCH SURROUNDING AREA.
3. CONTRACTOR SHALL REQUEST FDF A MINIMUM OF 2-WORKING DAYS IN ADVANCE FOR FDF TO BREAK-UP EXISTING CONCRETE AROUND MONITORING WELLS. AFTER CONCRETE HAS BEEN BROKEN, CONTRACTOR TO HAND EXCAVATE CONCRETE AND SOIL WITHIN 5' OF MONITORING WELL. AFTER EXCAVATION HAS BEEN COMPLETED, REQUEST THE CONSTRUCTION MANAGER TO LOWER THE WELL CASINGS AND REPLACE CONCRETE AROUND WELLS.

LEGEND

G2-169	SOIL BORING
2048	MONITORING WELL TO BE PROTECTED
1970	MONITORING WELL PREVIOUSLY PLUGGED WITH CONCRETE OR BENTONITE GROUT AND ABANDONED
1463 1462 1461	INVESTIGATION TRENCH (BACKFILLED)
(E)	EXTRACTION WELL TO BE PROTECTED
2046 (E)	MONITORING WELL TO BE LOWERED TO CONFORM TO NEW GROUND SURFACE (SEE NOTE 3)
2945	MONITORING WELL TO BE REMOVED BY CONTRACTOR (SEE NOTE 2)

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003

FRANKLIN I. M. PARTON JR. NO. E-57614 REGISTERED PROFESSIONAL ENGINEER STATE OF OHIO

666008

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

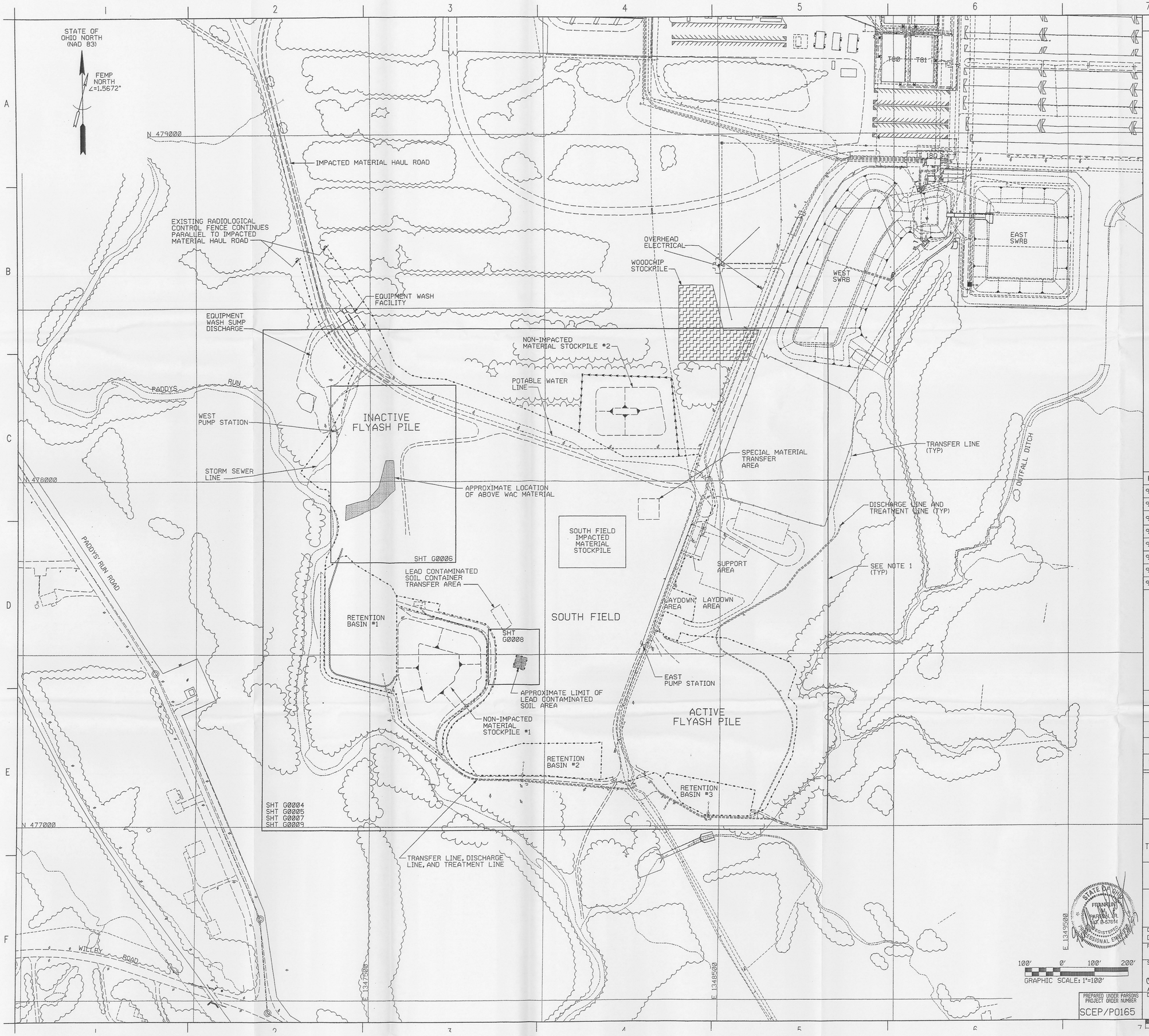
DRAWING TITLE
CIVIL
EXISTING CONDITIONS AND MONITORING WELL IMPROVEMENTS PLAN

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	12/17/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

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

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00398	G0004	Ø



NOTES

1. RECTANGULAR SHAPES INDICATE LIMITS OF THE CONSTRUCTION DRAWING SHEETS.
2. FOR LIMITS OF EXCAVATION, SEE SHEETS G0005, G0006, G0007, G0008 AND G0009.

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00393	DRAWING INDEX	X0002
92X-5900-X-00394	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00398	EXISTING CONDITIONS AND MONITORING WELL IMPROVEMENTS PLAN	G0004
92X-5900-G-00286	EXCAVATION GRADING PLAN - 1	G0005
92X-5900-G-00369	EXCAVATION GRADING PLAN ABOVE WAC MATERIAL	G0006
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007
92X-5900-G-00285	EXCAVATION GRADING PLAN LEAD CONTAMINATED SOIL	G0008
92X-5900-G-00333	EXCAVATION GRADING PLAN - 3	G0009

006009

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
MASTER SITE PLAN

STATE OF OHIO — FRANKLIN M. PARSON, JR. — REG. NO. E-57614 — REGISTERED PROFESSIONAL ENGINEER

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	12/17/96	F.M. PARTON, JR.	2/12/97	J. FERN	02/12/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=100'	CLASS
SUBMITTED FOR APPROVAL		FERMCO CRU APPROVAL		FERMCO PROJECT NO.	
C. Schroeder 11/14/97 A-E DATE		N/A DATE		20402	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00397	G0002	0

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

ST. ROUTE 126

OSDF CONSTRUCTION AREA. SEE OSDF, PHASE II CONSTRUCTION PACKAGE (SEE NOTE 6)

TYPE II CROSSING

OU-1 STOCKPILE UNLOADING AREA (TO BE FIELD COORDINATED WITH CONSTRUCTION MANAGER)

RAILROAD

SOLID WASTE LANDFILL

WASTE PITS

OU-1 STOCKPILE AREA

BIOSURGE LAGOON

LIME SLUDGE PONDS

TYPE I CROSSING

IMPACTED MATERIAL HAUL ROAD

OSDF CELL 1

OSDF CELL 2

OSDF CELL 3

RE-ROUTED NORTH ENTRANCE ROAD (SEE NOTE 1)

FEMP PROPERTY LINE

OSDF EQUIPMENT WASH FACILITY (SEE NOTE 2)

CERTIFIED CLEAN BORROW HAUL ROUTE

OSDF EAST IMPACTED MATERIAL DEBRIS STOCKPILE

OSDF EAST IMPACTED MATERIAL STOCKPILE

OSDF WEST IMPACTED MATERIAL DEBRIS STOCKPILE

TRAFFIC SIGNAL (TRAFFIC ACTUATORS TO BE LOCATED NORTH & SOUTH OF INTERSECTION ON THE BORROW HAUL ROAD)

TYPE III CROSSING

AREA 1, PHASE II IMPACTED MATERIAL HAUL ROUTE

OSDF WEST IMPACTED MATERIAL STOCKPILE

OSDF CONTRACTOR WORK AREA — SEE AREA 'A'

AREA 1, PHASE II EQUIPMENT WASH

OSDF DEBRIS TRANSFER AREA

OLD NORTH ENTRANCE RD

STP ACCESS ROAD

EAST PARKING LOT

SOUTH PARKING LOT

AWWT

EQUIPMENT WASH FACILITY

WOODCHIP STOCKPILE AREA

SWRB

SWRB

SEDIMENT BASIN

SITE ACCESS CONTROL POINT

SOUTHERN WASTE UNITS

SOUTH CONSTRUCTION ROAD

PADDYS RUN ROAD

PADDYS RUN

OSDF BORROW AREA

SOUTH ACCESS ROAD

RETENTION BASIN #1 (SEE NOTE 5)

IFP

SF

AFP

NON-IMPACTED MATERIAL STOCKPILE #2

SWU CONTRACTOR WORK AREA

SOUTH FIELD IMPACTED MATERIAL STOCKPILE

LEAD CONTAMINATED SOIL CONTAINER TRANSFER AREA

SEE NOTE 4

NON-IMPACTED MATERIAL STOCKPILE #1

RETENTION BASIN #2 (SEE NOTE 5)

ACCESS ROAD FROM WILLEY ROAD (BY OTHERS, SEE NOTE 4)

RETENTION BASIN #3 (SEE NOTE 5)

WILLEY ROAD

AREA "A"

NTS

1. OPTION HAUL ROUTE FOR POTENTIAL MATERIAL FROM SEWAGE TREATMENT PLANT (PERFORMED BY OTHERS).
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SPREADING AND COMPACTING MATERIAL IN OSDF IF OPTION IS EXERCISED.

GRAPHIC SCALE: 1"=300'

300' 0' 300' 600'

NOTES

1. VEHICLES ON THE REROUTED NORTH ENTRANCE ROAD SHALL BE LIMITED TO CARS/PICK-UP TRUCK TRAFFIC ONLY.
2. USE THE OSDF EQUIPMENT WASH FACILITY TO DECONTAMINATE EQUIPMENT.
3. USE IMPACTED MATERIAL HAUL ROAD TO HAUL IMPACTED MATERIAL FROM THE SWU AREA TO THE OU-1 STOCKPILE AREA AND THE OSDF.
4. CONTRACTOR SHALL NOT USE/TRAVERSE INDICATED ROAD WITH EQUIPMENT USED FOR IMPACTED MATERIAL EXCAVATION.
5. ACCESS FROM RETENTION BASINS NO. 1, 2 AND 3 TO IMPACTED MATERIAL HAUL ROAD SHALL BE CONSTRUCTED BY THE CONTRACTOR AS REQUIRED TO HAUL IMPACTED MATERIAL TO THE OSDF.
6. WHEEL WASH FACILITY AT THE OSDF SHALL BE AS SPECIFIED IN THE OSDF TECHNICAL SPECIFICATIONS.

- SITE ACCESS/SUPPORT AREA ACCESS
- IMPACTED MATERIAL HAUL ROAD
- CONSTRUCTION TRAFFIC
- CERTIFIED AREA/ NON-IMPACTED SOIL STOCKPILE
- CONTROLLED AREA
- CONTAMINATED AREA
- UNCONTROLLED AREA
- CLEAN ROAD
- LIMITS OF WORK AREA AND CONTRACTOR DUST CONTROL LIMITS

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003

006010

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
STOCKPILE LOCATIONS & TRAFFIC ROUTES

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	12/17/96	F.M. PARTON, JR.	2/12/97	J. FERN	02/12/97

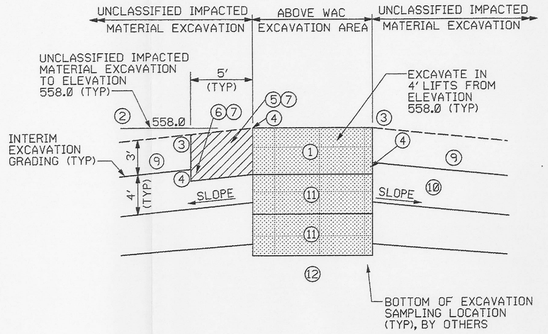
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		1"=300'	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schaeder 11/14/97 A-E DATE	N/A DATE	20402

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00396	G0001	Ø

ABOVE WAC MATERIAL EXCAVATION AREA PLAN

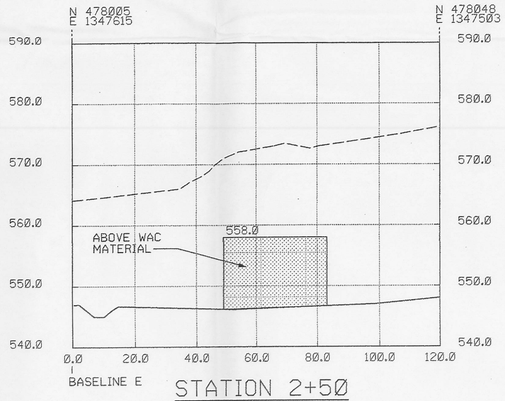
GRAPHIC SCALE: 1"=20'



1. EXCAVATE ABOVE WAC MATERIAL IN 4' LIFTS.
2. LOAD TRUCKS OUTSIDE OF ABOVE WAC MATERIAL AREA AS SPECIFIED IN TECHNICAL SPECIFICATION SECTION 02205.
3. SURVEY LIMITS AND ELEVATION OF EACH EXCAVATED LIFT IN ABOVE WAC MATERIAL EXCAVATION AREA.
4. FDF WILL MONITOR EXCAVATION ALONG THE SIDES OF THE ABOVE WAC EXCAVATION AREA AFTER EACH LIFT.
5. IF FDF MONITORING FINDS ABOVE WAC MATERIAL ALONG THE SIDES OF THE ABOVE WAC EXCAVATION AREA, EXTEND THE EXCAVATION LIMIT LATERALLY BY 5 FEET IN ALL DIRECTIONS OF THE ABOVE WAC MONITORING RESULTS.
6. FDF WILL MONITOR ALONG THE EXTENDED LIMITS OF EXCAVATION.
7. REPEAT STEPS (5) AND (6) IF MONITORING FINDS ABOVE WAC MATERIAL AT THE EXTENDED LIMIT.
8. MANAGE SUMP WITHIN THE ABOVE WAC AREA EXCAVATION TO COLLECT WATER AND PUMP TO THE NEAREST RETENTION BASIN. IF SUMP EXCAVATION PENETRATES THE GMA, LINE THE SUMP WITH A 60 MIL TEXTURED HDPE LINER TO PREVENT CONTAMINATION OF THE GMA.
9. EXCAVATE UNCLASSIFIED IMPACTED MATERIAL IN AN INITIAL 3 FOOT LIFT OUTSIDE ABOVE WAC MATERIAL EXCAVATION. SLOPE UNCLASSIFIED IMPACTED MATERIAL EXCAVATION AREA AWAY FROM THE ABOVE WAC AREA EXCAVATION.
10. EXCAVATE SUBSEQUENT UNCLASSIFIED IMPACTED MATERIAL IN 4 FOOT LIFTS OUTSIDE LIMITS OF ABOVE WAC MATERIAL EXCAVATION AREA.
11. CONTINUE STEPS (1) THROUGH (10) AS APPLICABLE.
12. SURVEY EXCAVATION LIMITS. FDF TO CONDUCT CONFIRMATION MONITORING AT BOTTOM OF WAC MATERIAL EXCAVATION.

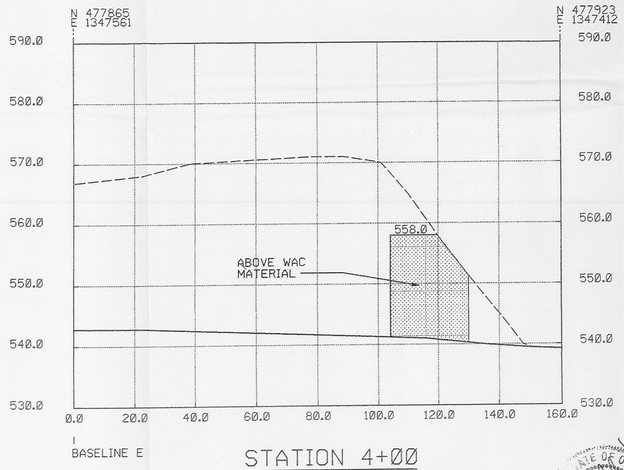
ABOVE WAC MATERIAL EXCAVATION APPROACH

NTS



STATION 2+50

SCALE: HOR 1"=20'
VER 1"=10'



STATION 4+00

SCALE: HOR 1"=20'
VER 1"=10'

VERTICAL GRAPHIC SCALE: 1"=10'

HORIZONTAL GRAPHIC SCALE: 1"=20'

NOTES

1. EXCAVATE ABOVE WAC MATERIAL AS SHOWN ON THIS DRAWING. FDF WILL VERIFY THE LIMITS OF ABOVE WAC MATERIAL IN THE FIELD.

NOTE:
THE ABOVE WAC EXCAVATION AREA CONFIGURATION SHOWN IS PRELIMINARY AND MAY BE MODIFIED BASED ON ADDITIONAL SAMPLING AND ANALYSIS.

LEGEND

- EXISTING GROUND
- EXCAVATION GRADE
- APPROXIMATE LIMITS OF ABOVE WAC MATERIAL TO BE EXCAVATED

LIMITS OF ABOVE WAC MATERIAL TO BE EXCAVATED (BZ)

POINT	NORTHING	EASTING
1	478060	1347568
2	478060	1347544
3	477984	1347524
4	477948	1347494
5	477932	1347431
6	477888	1347429
7	477928	1347522
8	477976	1347572

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003

000011

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
				INITIALS AND DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
EXCAVATION GRADING PLAN
ABOVE WAC MATERIAL

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	10/24/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS NOTED	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
	WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00369	G0006	0

PREPARED UNDER PARSONS PROJECT ORDER NUMBER: SCEP/P0165

STATE OF OHIO — FRANKLIN M. PARTON JR. — NO. E-57614 — REGISTERED PROFESSIONAL ENGINEER

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

BASELINE A

BASELINE A STA 18+00 = BASELINE E STA 0+00

BASELINE E

BASELINE B STA 0+00 = BASELINE A STA 10+00

BASELINE B

BASELINE C STA 30+00 = BASELINE B STA 3+20.97

BASELINE C

BASELINE D

STA 0+80.4

TENSION SUPPORT STRUCTURE

M-1 M-2 M-3 M-8

T-1 T-2 T-3 T-4 T-5 T-6 T-7

N 478000

E 1347500

50′ 0′ 50′ 100′

GRAPHIC SCALE: 1"=50′

NOTES

BENCHMARK INFORMATION

BENCHMARK	NORTHING	EASTING	ELEVATION	REMARKS
M-1	478238.04	1347705.25	573.848	A
M-2	478321.86	1348595.65	576.678	A
M-3	477948.93	1348451.10	577.413	A
M-8	477071.65	1348110.41	537.47	A
T-1	TBP	TBP	TBP	B
T-2	TBP	TBP	TBP	B
T-3	TBP	TBP	TBP	B
T-4	TBP	TBP	TBP	B
T-5	477453±	1347890±	TBD	TBS
T-6	477511±	1347906±	TBD	TBS
T-7	477791±	1347532±	TBD	TBS

A EXISTING CONCRETE MONUMENT WITH ALUMINUM PLATE.

B EXISTING MONUMENT TO BE SET BY SWU SITE PREPARATION CONTRACT - IRON PIN AND PLASTIC SURVEYORS CAP.

TBS TO BE SET WITH IRON PIN AND PLASTIC SURVEYORS CAP A MINIMUM OF 48' DEEP AT THE APPROXIMATE COORDINATE LOCATIONS SHOWN.

TBP TO BE PROVIDED BY FDF BEFORE START OF CONSTRUCTION (TO BE SET BY SWU SITE PREPARATION CONTRACT).

TBD TO BE DETERMINED IN FIELD UTILIZING EXISTING BENCHMARK ELEVATIONS.

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003

STATE OF OHIO — FRANKLIN M. PARTON JR. — NO. E-57614 — REGISTERED PROFESSIONAL ENGINEER

000012

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

PARSONS

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

PROJECT NAME

AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE

CIVIL
BENCHMARKS AND BASELINE LOCATION PLAN

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	10/10/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

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

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/PO165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00349	G0003	Ø

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

EQUIPMENT WASH FACILITY

WOODCHIP STOCKPILE

NON-IMPACTED MATERIAL STOCKPILE #2

BASELINE A, SEE SHT G0010 THRU G0014 FOR CROSS SECTIONS

EXISTING WEST PUMP STATION

LIMITS OF SOUTH FIELD EXCAVATION (TYP)

INTERCEPTOR DITCH #3

INTERCEPTOR DITCH #2

EXISTING CHANNEL PROTECTION

N 478000

15' CULVERT

BASELINE B STA 0+00 = BASELINE A STA 10+00

TENSION SUPPORT STRUCTURE

SOUTH FIELD IMPACTED MATERIAL STOCKPILE

BASELINE B, SEE SHT G0015 FOR CROSS SECTIONS

SUPPORT AREA

RESERVED

BASELINE C STA 30+00 = BASELINE B STA 3+20.97

SOUTH FIELD

BASELINE C SEE SHT G0016 AND G0017 FOR CROSS SECTIONS

RETENTION BASIN #1

LEAD CONTAMINATED SOIL CONTAINER TRANSFER AREA

SEE NOTE 1

NON-IMPACTED MATERIAL STOCKPILE #1

LIMITS OF AFP EXCAVATION (TYP)

ACTIVE FLYASH PILE

28" CULVERT

PADDY'S RUN

RETENTION BASIN #2

RETENTION BASIN #3

GRAPHIC SCALE: 1"=50'

NOTES

1. REMOVE, LOAD AND HAUL THE EXISTING FRENCH DRAIN AS UNCLASSIFIED IMPACTED MATERIAL. UNLOAD IN OSDF AS SPECIFIED IN TECHNICAL SPECIFICATION SECTION 02205.

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00398	EXISTING CONDITIONS AND MONITORING WELL IMPROVEMENTS PLAN	G0004
92X-5900-G-00287	BASELINE A CROSS SECTIONS - SHEET 1 OF 5	G0010
92X-5900-G-00288	BASELINE A CROSS SECTIONS - SHEET 2 OF 5	G0011
92X-5900-G-00289	BASELINE A CROSS SECTIONS - SHEET 3 OF 5	G0012
92X-5900-G-00298	BASELINE A CROSS SECTIONS - SHEET 4 OF 5	G0013
92X-5900-G-00299	BASELINE A CROSS SECTIONS - SHEET 5 OF 5	G0014
92X-5900-G-00300	BASELINE B CROSS SECTIONS - SHEET 1 OF 1	G0015
92X-5900-G-00301	BASELINE C CROSS SECTIONS - SHEET 1 OF 2	G0016
92X-5900-G-00302	BASELINE C CROSS SECTIONS - SHEET 2 OF 2	G0017
92X-5900-G-00403	DETAILS - SHEET 1 OF 1	G0018

STATE OF OHIO FRANKLIN M. PARTON JR. 57614 REGISTERED PROFESSIONAL ENGINEER 11/14/97

00013

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
			INITIALS AND DATE	
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

UNITED STATES DEPARTMENT OF ENERGY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

PARSONS

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

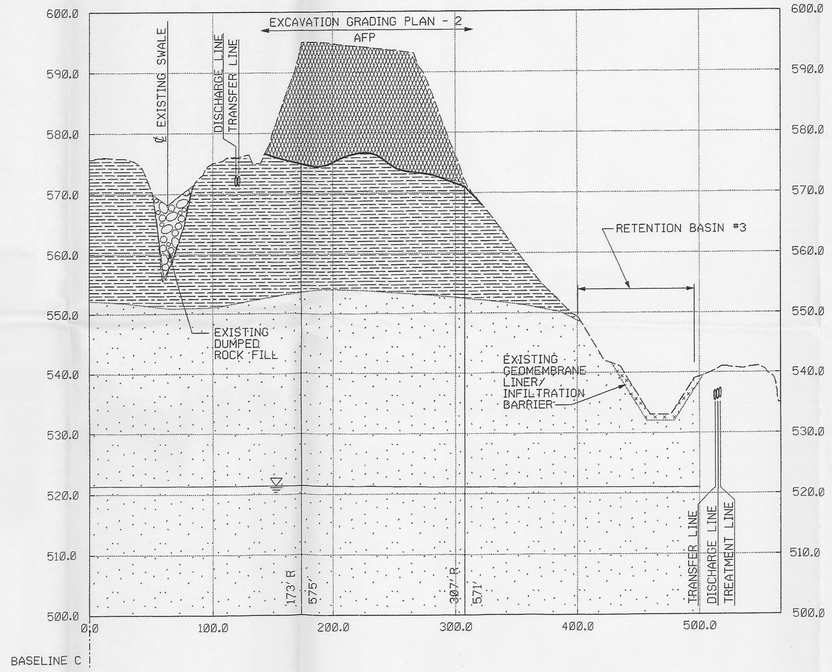
DRAWING TITLE
CIVIL
EXCAVATION GRADING PLAN - 3

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	02/28/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

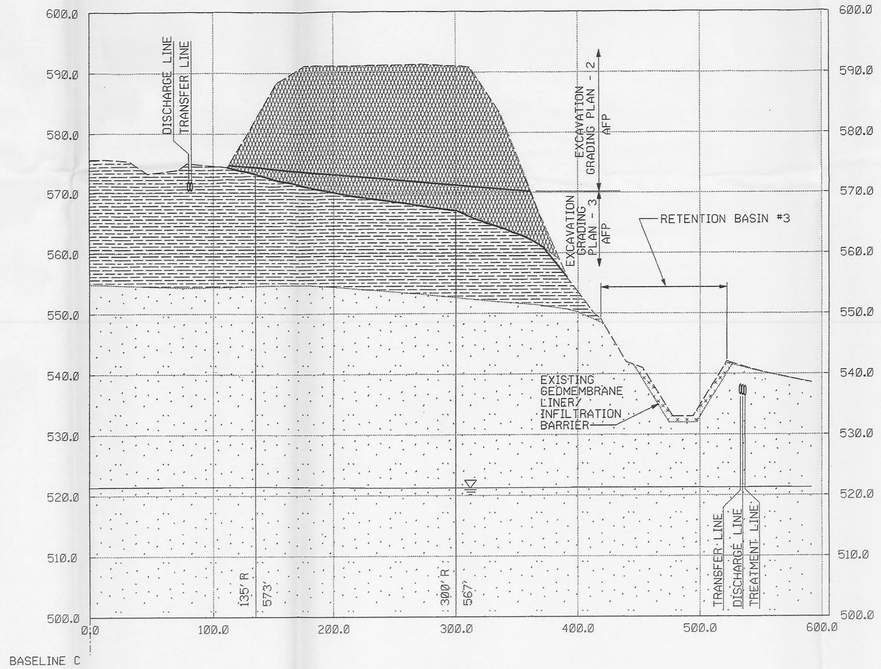
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		1"=50'	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00333	G0009	0



BASELINE C, STATION 34+00 REF G0007
SCALE: HOR 1"=50' VER 1"=10'



BASELINE C, STATION 33+00 REF G0007
SCALE: HOR 1"=50' VER 1"=10'

LEGEND:

- EXISTING GROUND
- EXCAVATION GRADE LINE
- WATER TABLE (AVERAGE)
- SAND/GRAVEL
- GLACIAL OVERBURDEN/TILL
- GREAT MIAMI AQUIFER
- FILL/DEBRIS
- ASH
- ABOVE WAC MATERIAL
- EXISTING GEOMEMBRANE LINER/ INFILTRATION BARRIER

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007

600014

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

INITIALS AND DATE

STATE OF OHIO
FRANKLIN M. PARTON, JR.
NO. E-57614
REGISTERED PROFESSIONAL ENGINEER

10' 0' 10' 20'
GRAPHIC SCALE: 1"=10'
VERTICAL

50' 0' 50' 100'
GRAPHIC SCALE: 1"=50'
HORIZONTAL

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

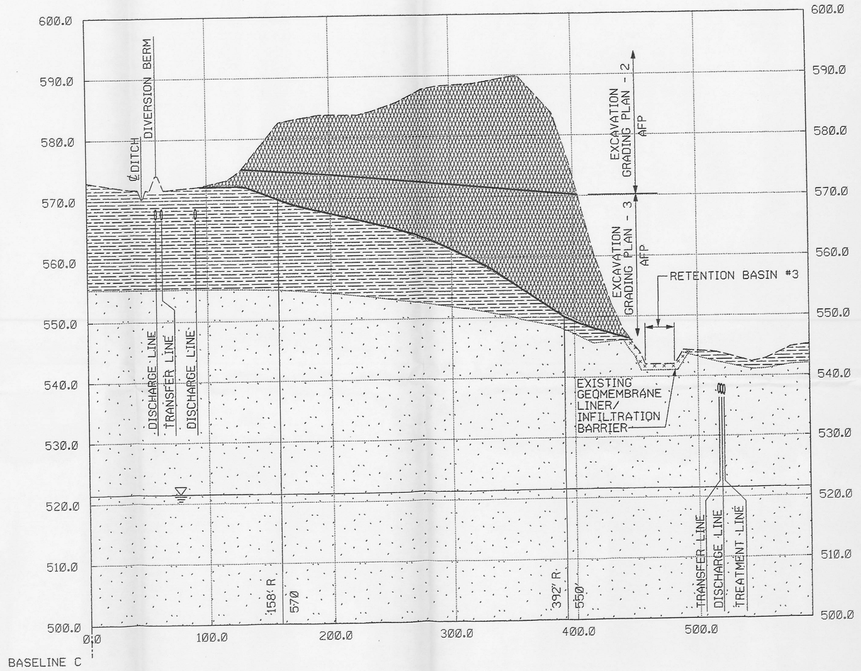
DRAWING TITLE
CIVIL
BASELINE C CROSS SECTIONS
SHEET 2 OF 2

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.R. FOX	03/08/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS SHOWN	

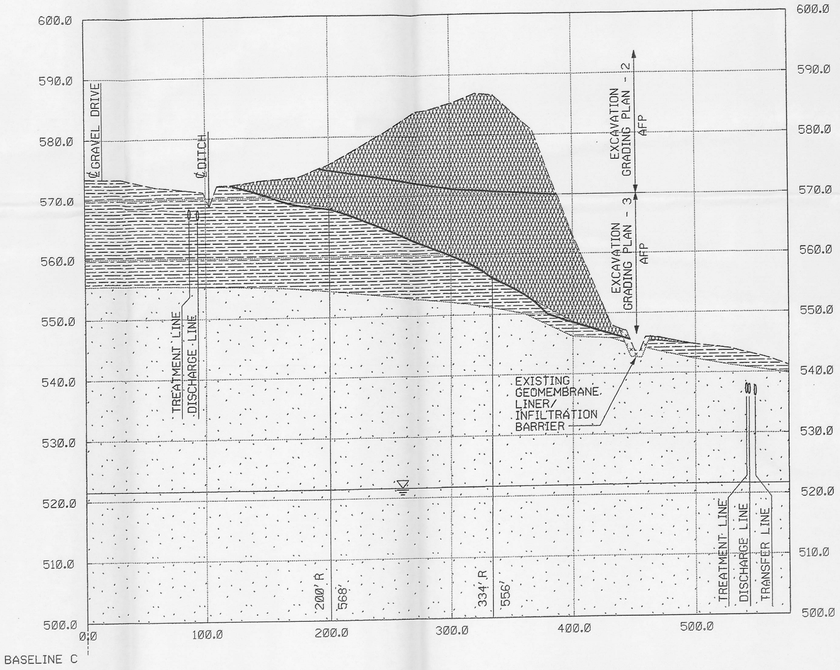
SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FENP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00302	G0017	0



BASELINE C, STATION 32+00 REF G0007

SCALE: HOR 1"=50'
VER 1"=10'



BASELINE C, STATION 31+00 REF G0007

SCALE: HOR 1"=50'
VER 1"=10'

LEGEND:

- EXISTING GROUND
- EXCAVATION GRADE LINE
- WATER TABLE (AVERAGE)
- SAND/GRAVEL
- GLACIAL OVERBURDEN/TILL
- GREAT MIAMI AQUIFER
- FILL/DEBRIS
- ASH
- ABOVE WAC MATERIAL
- EXISTING GEOMEMBRANE LINER/ INFILTRATION BARRIER

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-G-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007

000015

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
BASELINE C CROSS SECTIONS
SHEET 1 OF 2

STATE OF OHIO · FRANKLIN · F. M. PARTON, JR. · NO. E-57614 · REGISTERED PROFESSIONAL ENGINEER

10' 0' 10' 20'
GRAPHIC SCALE: 1"=10'
VERTICAL

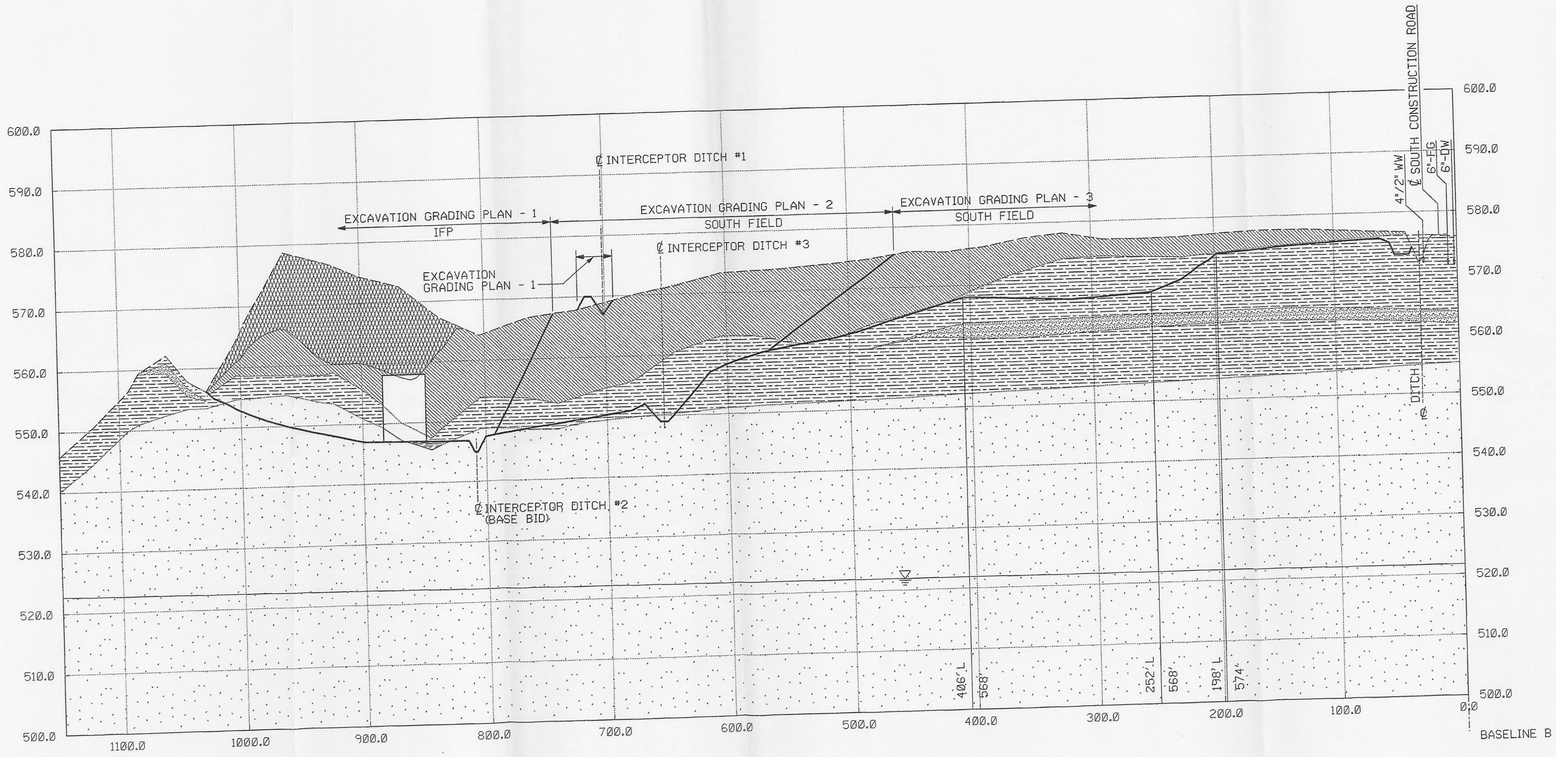
50' 0' 50' 100'
GRAPHIC SCALE: 1"=50'
HORIZONTAL

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.R. FOX	03/08/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

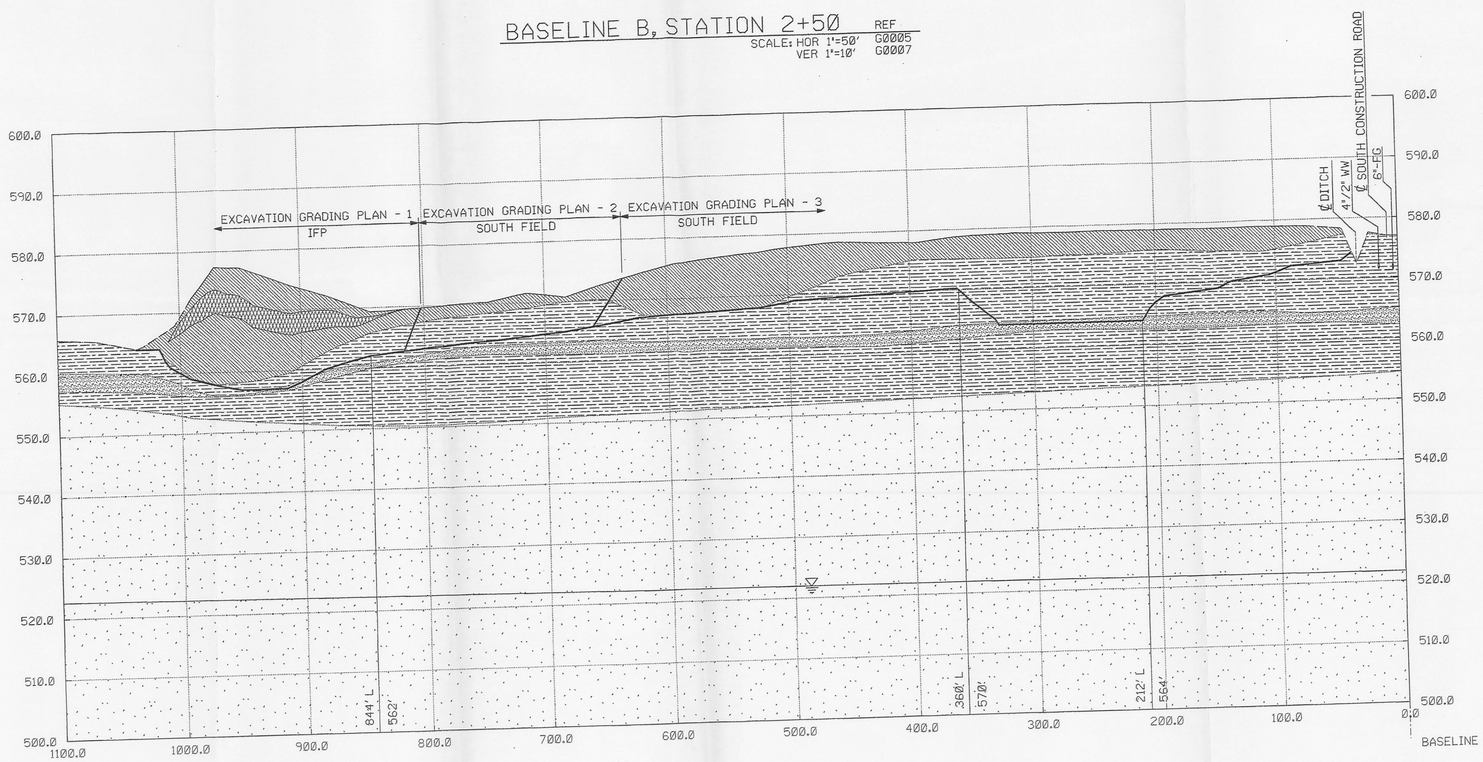
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS SHOWN	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/12/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00301	G0016	Ø



BASELINE B, STATION 2+50 REF
SCALE: HOR 1"=50' G0005
VER 1"=10' G0007



BASELINE B, STATION 1+00 REF
SCALE: HOR 1"=50' G0005
VER 1"=10' G0007

LEGEND:

- EXISTING GROUND
- EXCAVATION GRADE LINE
- WATER TABLE (AVERAGE)
- SAND/GRAVEL
- GLACIAL OVERBURDEN/TILL
- GREAT MIAMI AQUIFER
- FILL/DEBRIS
- ASH
- ABOVE WAC MATERIAL
- EXISTING GEOMEMBRANE LINER/ INFILTRATION BARRIER

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00286	EXCAVATION GRADING PLAN - 1	G0005
92X-5900-G-00369	EXCAVATION GRADING PLAN ABOVE WAC MATERIAL	G0006
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007

000016

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

INITIALS AND DATE

STATE OF OHIO
FRANKLIN M. PARTON, JR.
NO. E-57614
REGISTERED PROFESSIONAL ENGINEER

10' 0' 10' 20'
GRAPHIC SCALE: 1"=10'
VERTICAL

50' 0' 50' 100'
GRAPHIC SCALE: 1"=50'
HORIZONTAL

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

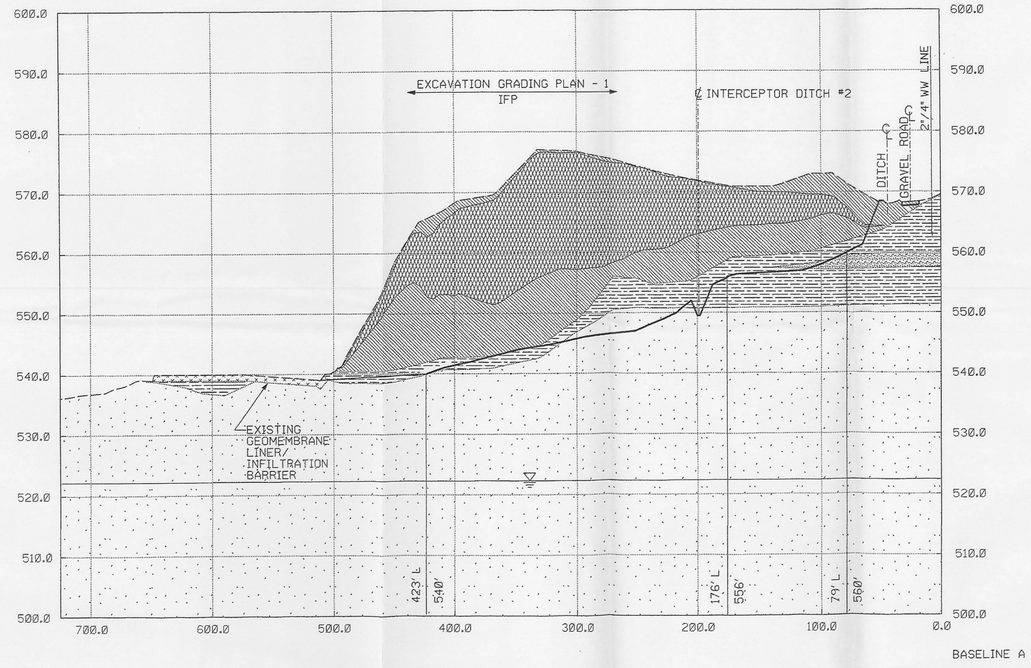
DRAWING TITLE
CIVIL
BASELINE B CROSS SECTIONS
SHEET 1 OF 1

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.R. FOX	03/08/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

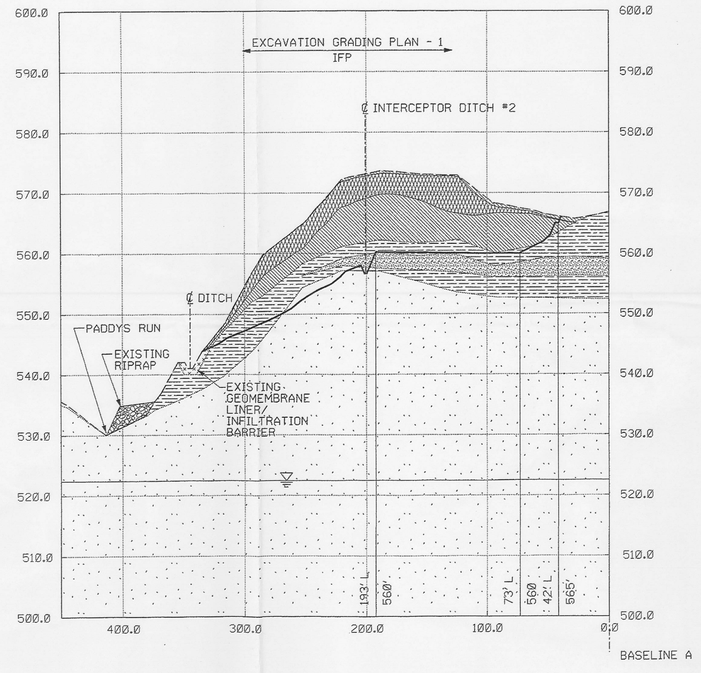
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS SHOWN	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00300	G0015	0



BASELINE A, STATION 19+00 REF G0005
SCALE: HOR 1"=50'
VER 1"=10'



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SCALE: HOR 1"=50'
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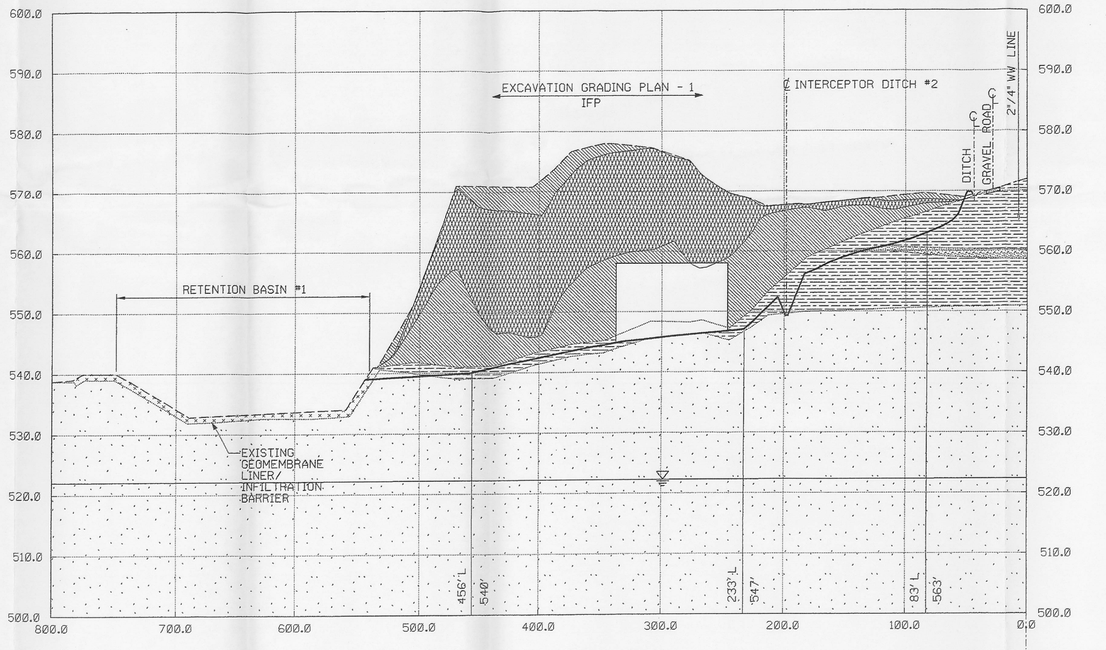


BASELINE A, STATION 18+50 REF G0005
SCALE: HOR 1"=50'
VER 1"=10'

LEGEND:

- EXISTING GROUND
- EXCAVATION GRADE LINE
- WATER TABLE (AVERAGE)
- SAND/GRAVEL
- GLACIAL OVERBURDEN/TILL
- GREAT MIAMI AQUIFER
- FILL/DEBRIS
- ASH
- ABOVE WAC MATERIAL
- EXISTING GEOMEMBRANE LINER/ INFILTRATION BARRIER

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00286	EXCAVATION GRADING PLAN - 1	G0005

000017

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS AND DATE	FERMCO INITIALS AND DATE	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

10' 0' 10' 20'
GRAPHIC SCALE: 1"=10'
VERTICAL

50' 0' 50' 100'
GRAPHIC SCALE: 1"=50'
HORIZONTAL

STATE OF OHIO
FRANKLIN M. PARTON, JR.
No. E-57614
REGISTERED PROFESSIONAL ENGINEER

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
BASELINE A CROSS SECTIONS
SHEET 5 OF 5

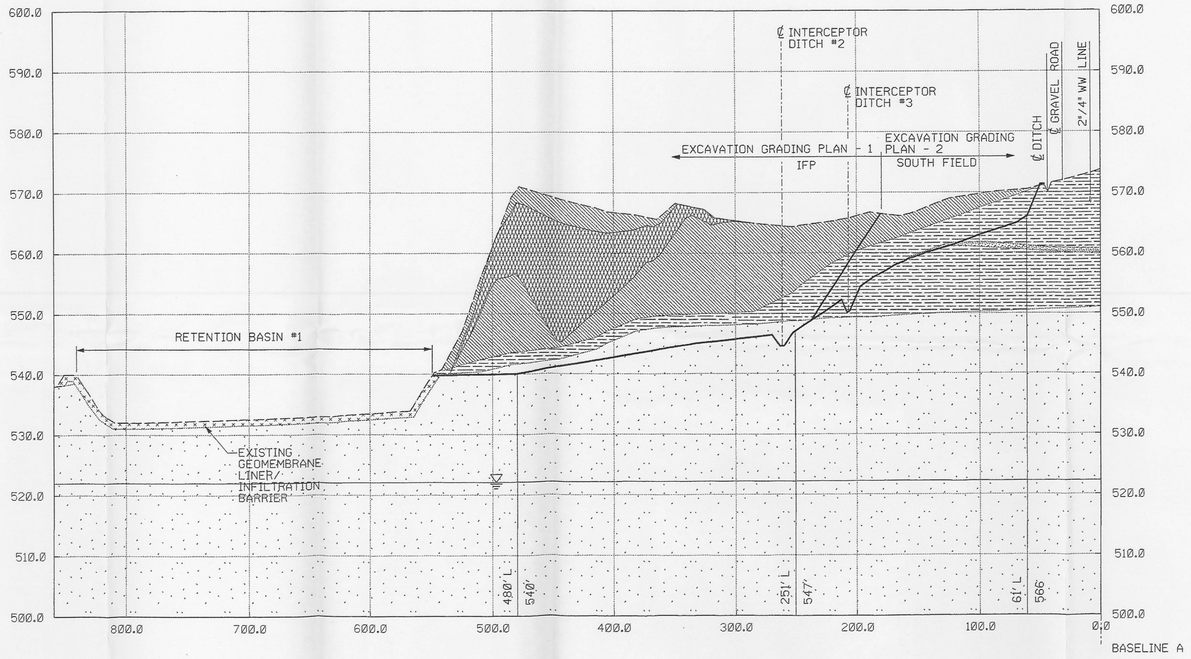
DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.R. FOX	03/08/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS SHOWN	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
	WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00299	G0014	0

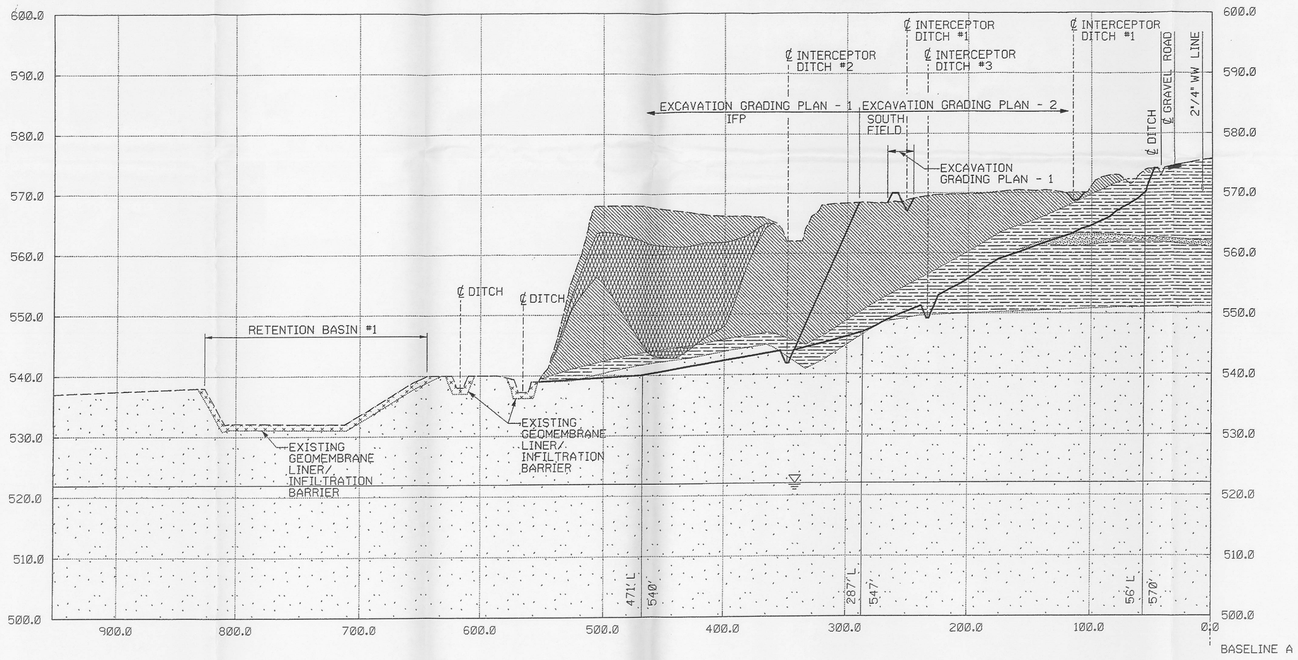
PREPARED UNDER PARSONS PROJECT ORDER NUMBER: SCEP/P0165



BASELINE A, STATION 18+ØØ

REF G0005 G0007

SCALE: HOR 1"=50'
VER 1"=10'



BASELINE A, STATION 17+ØØ

REF G0005 G0007

SCALE: HOR 1"=50'
VER 1"=10'

LEGEND:

- EXISTING GROUND
- EXCAVATION GRADE LINE
- WATER TABLE (AVERAGE)
- SAND/GRAVEL
- GLACIAL OVERBURDEN/TILL
- GREAT MIAMI AQUIFER
- FILL/DEBRIS
- ASH
- ABOVE WAC MATERIAL
- EXISTING GEOMEMBRANE LINER/ INFILTRATION BARRIER

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00286	EXCAVATION GRADING PLAN - 1	G0005
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007

000013

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

INITIALS AND DATE

STATE OF OHIO
FRANKLIN M. PARTON JR.
NO. E-87614
REGISTERED PROFESSIONAL ENGINEER

10' 0' 10' 20'
GRAPHIC SCALE: 1"=10'
VERTICAL

50' 0' 50' 100'
GRAPHIC SCALE: 1"=50'
HORIZONTAL

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

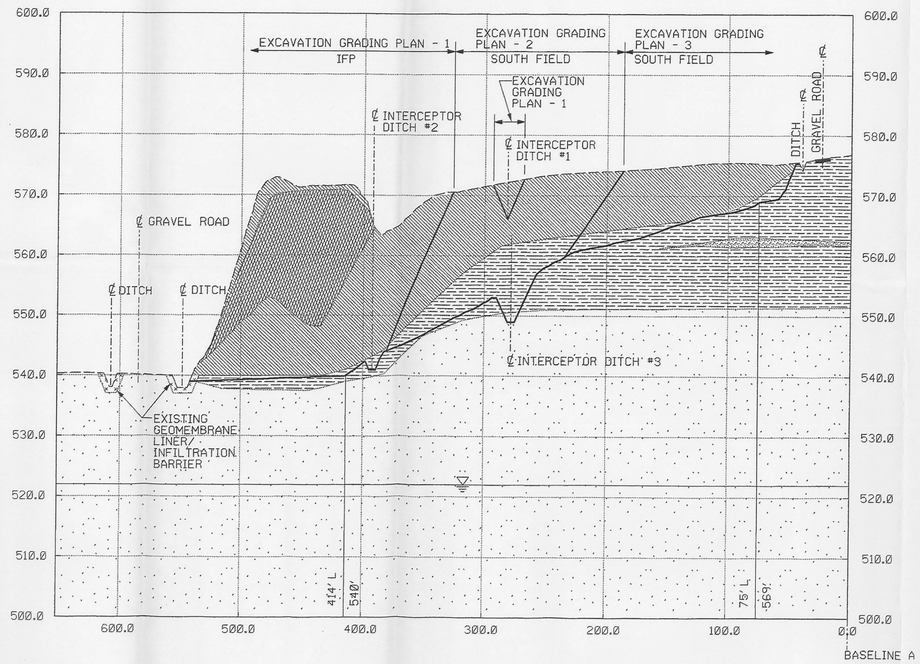
DRAWING TITLE
CIVIL
BASELINE A CROSS SECTIONS
SHEET 4 OF 5

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.R. FOX	03/08/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

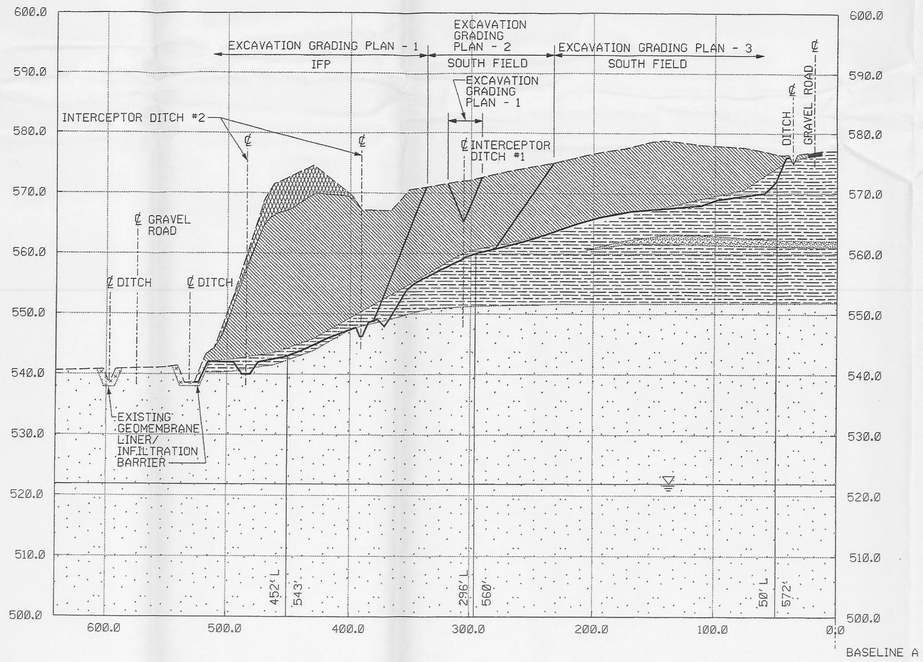
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS SHOWN	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00298	G0013	Ø



BASELINE A, STATION 16+00 REF
SCALE: HOR 1"=50' G0005
VER 1"=10' G0007



BASELINE A, STATION 15+00 REF
SCALE: HOR 1"=50' G0005
VER 1"=10' G0007

LEGEND:

- EXISTING GROUND
- EXCAVATION GRADE LINE
- WATER TABLE (AVERAGE)
- SAND/GRAVEL
- GLACIAL OVERBURDEN/TILL
- GREAT MIAMI AQUIFER
- FILL/DEBRIS
- ASH
- ABOVE WAC MATERIAL
- EXISTING GEOMEMBRANE LINER/ INFILTRATION BARRIER

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00286	EXCAVATION GRADING PLAN - 1	G0005
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007

006013

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS AND DATE	FERMCO INITIALS AND DATE	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

STATE OF OHIO
FRANKLIN M. PARTON JR.
E-87614
REGISTERED PROFESSIONAL ENGINEER

10' 0' 10' 20'
GRAPHIC SCALE: 1"=10'
VERTICAL

50' 0' 50' 100'
GRAPHIC SCALE: 1"=50'
HORIZONTAL

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

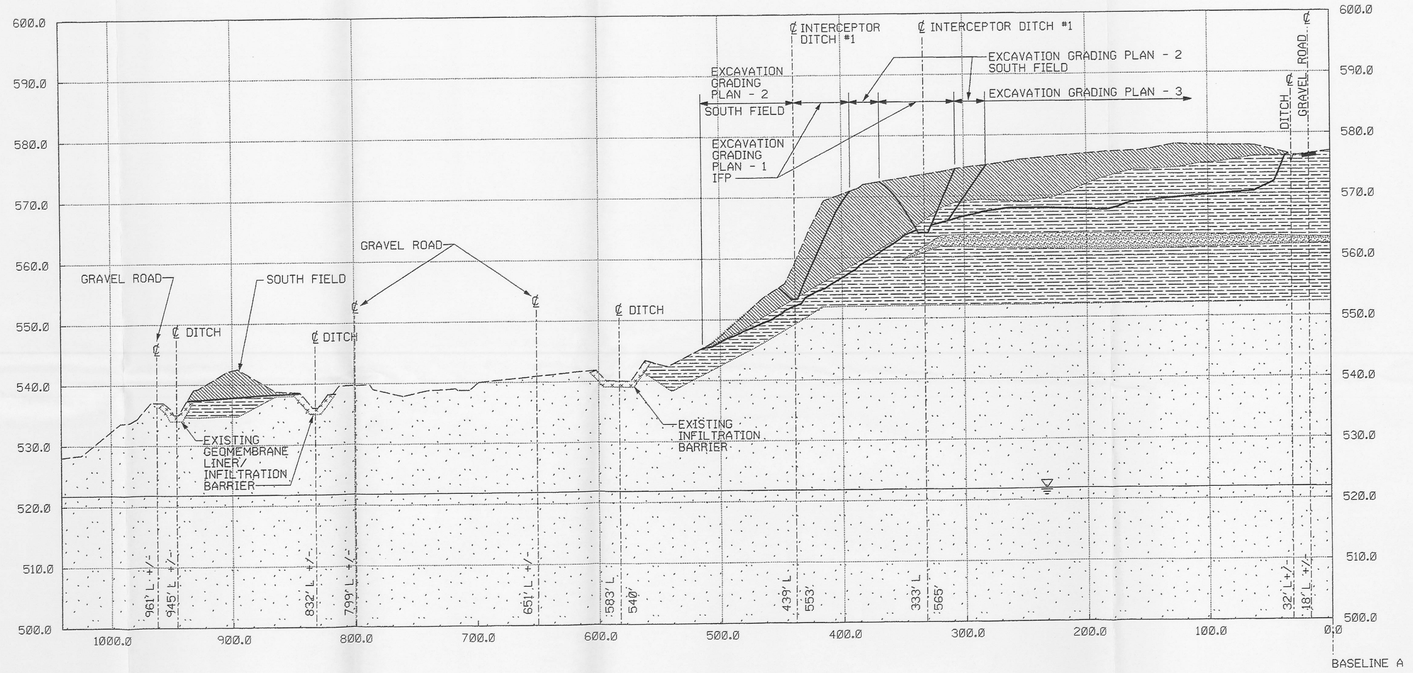
DRAWING TITLE
CIVIL
BASELINE A CROSS SECTIONS
SHEET 3 OF 5

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.R. FOX	03/08/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS SHOWN	

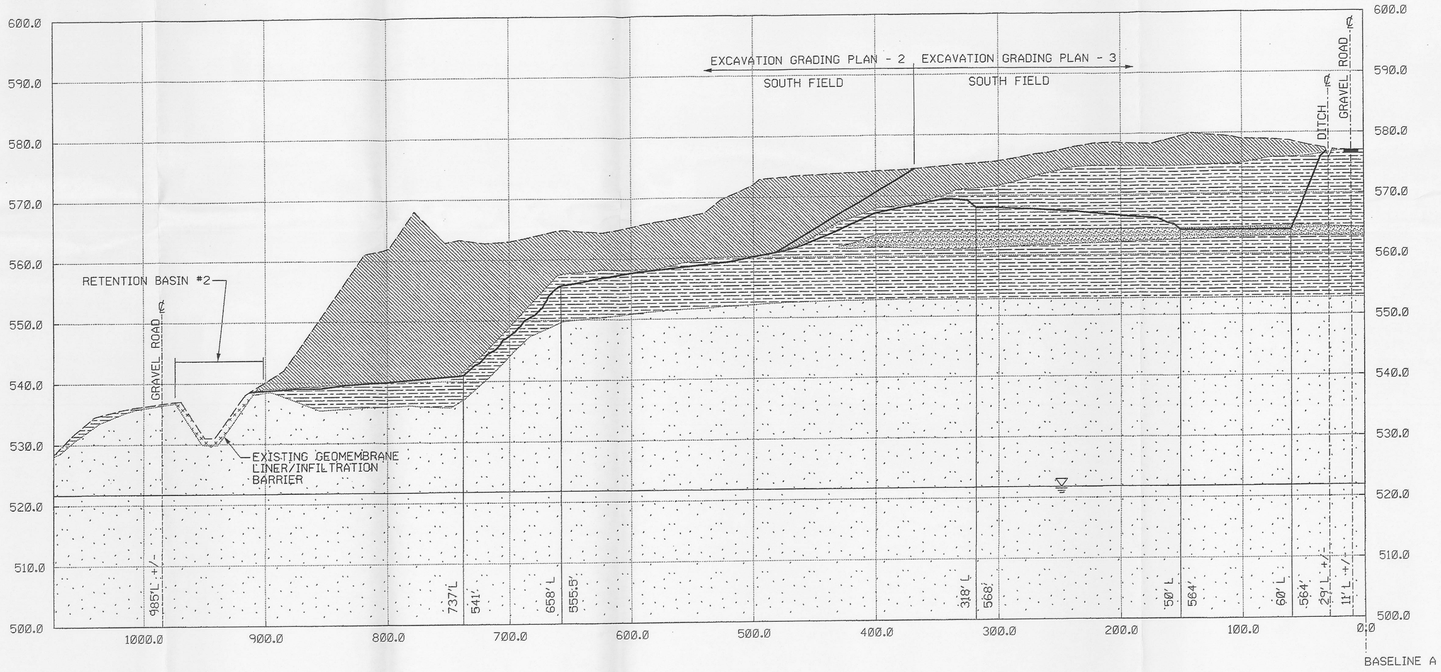
SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00289	G0012	Ø



BASELINE A, STATION 14+00 REF G0005 G0007

SCALE: HOR 1"=50' VER 1"=10'



BASELINE A, STATION 13+00 REF G0005 G0007

SCALE: HOR 1"=50' VER 1"=10'

LEGEND:

- EXISTING GROUND
- EXCAVATION GRADE LINE
- WATER TABLE (AVERAGE)
- SAND/GRAVEL
- GLACIAL OVERBURDEN/TILL
- GREAT MIAMI AQUIFER
- FILL/DEBRIS
- ASH
- ABOVE WAC MATERIAL
- EXISTING GEOMEMBRANE LINER/ INFILTRATION BARRIER

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00286	EXCAVATION GRADING PLAN - 1	G0005
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007
92X-5900-G-00371	ENLARGEMENT RETENTION BASIN #2 SITE PREPARATION PACKAGE	N/A

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS AND DATE	FERMCO INITIALS AND DATE	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

STATE OF OHIO FRANKLIN M. PARTON JR. NO. E-57614 REGISTERED PROFESSIONAL ENGINEER

10' 0' 10' 20'
GRAPHIC SCALE: 1"=10'
VERTICAL

50' 0' 50' 100'
GRAPHIC SCALE: 1"=50'
HORIZONTAL

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
BASELINE A CROSS SECTIONS
SHEET 2 OF 5

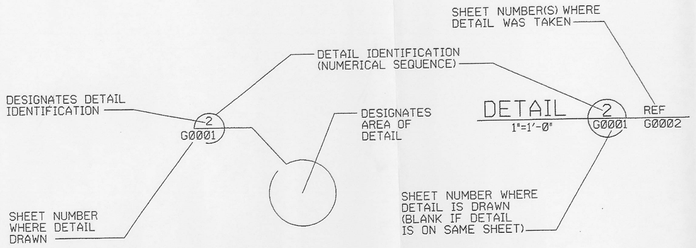
DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.R. FOX	03/18/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS NOTED	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00288	G0011	0

GENERAL LEGEND



GRADING SYMBOLS

EXISTING		PROPOSED
X 584.9	SPOT ELEVATION	X 589.4
584	CONTOUR - MINOR	584
585	CONTOUR - MAJOR	585
(TOE)	SLOPE INDICATOR	(TOE)

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AFP	ACTIVE FLYASH PILE
BSL	BIODENITRIFICATION SURGE LAGOON
CMP	CORRUGATED METAL PIPE
ELEV	ELEVATION
FDF	FLUOR DANIEL FERNALD
FEMP	FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FRL	FINAL REMEDIATION LEVEL
FS	FEASIBILITY STUDY
GMA	GREAT MIAMI AQUIFER
IFP	INACTIVE FLYASH PILE
ODOT	OHIO DEPARTMENT OF TRANSPORTATION
OSDF	ON-SITE DISPOSAL FACILITY
OU	OPERABLE UNIT
RAD II	RADIOLOGICAL WORKER II
RI	REMEDIAL INVESTIGATION
SHT	SHEET
SF	SOUTH FIELD
SP	STOCKPILE
SWM	STORMWATER MANAGEMENT
SWU	SOUTHERN WASTE UNITS (CONSISTING OF AFP, IFP, AND SF)
TYP	TYPICAL
WAC	WASTE ACCEPTANCE CRITERIA

GENERAL NOTES

1. EXISTING TOPOGRAPHY PREPARED BY PARSONS FROM DIGITAL MAPPING BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY PROVIDED BY WOOLPERT CONSULTANTS FLOWN ON APRIL 9, 1992. OTHER SOURCES OF EXISTING INFORMATION SHOWN ON DRAWINGS PROVIDED BY FDF; THESE SOURCES INCLUDE:

   EXISTING SITE DATA SOURCE (IN PLANT FILES)
   FEMP CADD GRID/UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS (INCLUDING A2PI SITE PREPARATION DESIGN DOCUMENTS)
   FEMP OU-2 REMEDIAL INVESTIGATION REPORT, AND FEASIBILITY STUDY REPORT, 1995
   IT SURVEY, 1994

2. HORIZONTAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NORTH AMERICAN DATUM 1983 (NAD 83). SEE SHEET G0003 FOR BENCHMARK AND BASELINE LOCATIONS.

3. VERTICAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29). SEE SHEET G0003 FOR BENCHMARK AND BASELINE LOCATIONS.

4. SITE PREPARATION DETAILS AND CONTOURS SHOWN IN THIS PACKAGE WERE BASED ON THE PREVIOUSLY PREPARED SITE PREPARATION DESIGN DRAWINGS. ACTUAL CONSTRUCTION MAY DIFFER FROM WHAT IS SHOWN IN THIS PACKAGE. FACILITIES IN THE SWU CONSTRUCTED DURING SITE PREPARATION INCLUDE BUT ARE NOT LIMITED TO DITCHES, RETENTION BASINS, UTILITIES, EQUIPMENT WASH FACILITY, AND SUPPORT AREA.

5. EXCAVATION/REMEDIATION CONTOURS ARE BASED ON 3-D MODELING AND ARE DERIVED FROM A COMBINATION OF BOTTOM OF FILL AND FRL SURFACES PROVIDED BY FDF.

6. GEOLOGICAL AND CROSS SECTION INFORMATION TAKEN FROM (FEMP) OU-2 RI, 1995, OU-2 FS, 1995, GEOTECHNICAL REPORTS, AND FEMP 3-D CADD MODEL. THE OU-2 RI, FS, AND GEOTECHNICAL REPORTS ARE AVAILABLE FROM FDF FOR REVIEW UPON REQUEST. ACTUAL GEOLOGICAL CONDITIONS AND DEPTHS SHOWN ON CROSS SECTIONS MAY VARY AND SHALL BE DETERMINED IN THE FIELD DURING CONSTRUCTION. FIELD ADJUST THE EXCAVATION DEPTHS AS REQUIRED TO REMOVE IMPACTED MATERIAL.

7. LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE. CONTRACTOR TO VERIFY UTILITIES PRIOR TO EXCAVATION. IF SIZE, MATERIAL, LOCATION, OR DEPTH ARE DIFFERENT OR IF UNKNOWN UNCHARTED UTILITIES ARE DISCOVERED, INFORM THE CONSTRUCTION MANAGER BEFORE PROCEEDING.

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 CONSTRUCTION.

10. RESTRICT ACTIVITIES TO THE IMMEDIATE PROJECT AREA DEFINED BY YELLOW AND ORANGE RADIOLOGICAL CONTROL AND CONSTRUCTION FENCE AND WITHIN THE "LIMITS OF WORK". AREAS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO FDF.

11. MAINTAIN AND PROTECT UTILITY MARKINGS.

12. 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.

SYMBOLS LEGEND

EXISTING		PROPOSED
	POST INDICATOR VALVE (PIV)	
	MANHOLE (MH)	
OR	CATCH BASIN (CB)	
	ELECTRIC POLE	
	ELECTRICAL MANHOLE	
	GATE VALVE	
1313	MONITORING WELL	
E	EXTRACTION WELL	
	SURFACE DRAINAGE FLOW	
	ROADWAY/ DRIVEWAY/PAD	
	BUILDING/TRAILER	
x x x	CHAIN LINK FENCE	
	TREE LINE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	CENTERLINE DRAINAGE DITCH	
	RIVER/CREEK	
	TO BE REMOVED	########
SB SB	SILTATION BERM	
S S	SILT FENCE	SF SF
	ELECTRICAL TRANSFORMER	
	TRANSMISSION TOWER	
	HEADWALL	
	CONTINUOUS BERM	
	BENCHMARK	
	YELLOW RADIOLOGICAL CONTROL FENCE	
	ORANGE CONSTRUCTION FENCE	
	SIGN	
	BOLLARD/GUARD POST	
PB	ELECTRICAL PULL BOX	
	ROAD CENTERLINE OR BASELINE	
	FENCE GATE	
	APPROXIMATE ELEVATION OF GROUNDWATER	
	LIMIT OF WORK	
	RIPRAP/DUMPED ROCK FILL	
	WOODCHIP STOCKPILE AREA	
	GEOMEMBRANE LINER	
	GEOMEMBRANE LINER/ INFILTRATION BARRIER	
	APPROXIMATE LIMIT OF ABOVE WAC MATERIAL	
	APPROXIMATE LIMIT OF LEAD CONTAMINATED SOIL AREA	
	DUST CONTROL LIMITS	

UTILITY SYMBOLS

EXISTING		PROPOSED
ST	STORM SEWER	ST
FG	FUEL GAS	
DW	DRINKING WATER	
FT	FILTRATE OR EFFLUENT	
E	UNDERGROUND ELECTRICAL	
OE	OVERHEAD ELECTRICAL	
G	ELECTRIC GROUND	
GW	GROUNDWATER	
WW	WASTE WATER	
TRANSFER LINE	TRANSFER LINE	

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00393	PROJECT TITLE SHEET	X0001
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-G-00396	TRAFFIC FLOW PLAN	G0001
92X-5900-G-00397	MASTER SITE PLAN	G0002
92X-5900-G-00349	BENCHMARKS AND BASELINE LOCATION PLAN	G0003

00624

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E	FERMCO	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
LEGEND AND GENERAL NOTES

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	12/17/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
	WBS 1.1.1.1.2.3.6 00-90701	92X-5900-X-00395	X0003	Ø

PREPARED UNDER PARSONS PROJECT ORDER NUMBER: SCEP/P0165

STATE OF OHIO — FRANKLIN — F. PARTON JR. — NO. E-57614 — REGISTERED PROFESSIONAL ENGINEER

STATE OF OHIO NORTH (NAD 83)

FEMP NORTH ∠=1.5672°

APPROXIMATE LIMITS OF EXPOSED GMA

EXISTING WEST PUMP STATION

INACTIVE FLYASH PILE

NON-IMPACTED MATERIAL STOCKPILE #2

BASELINE A SEE SHT G0010 THRU G0014 FOR CROSS SECTIONS

N 478187± E 1347685 ELEV 570.5±

N 478081 E 1347637 ELEV 566.8±

TRANSITION EXISTING SWALE INTO DITCH

BERM

INTERCEPTOR DITCH #1 (SEE NOTE 4)

V-DITCH 2 G0018

GRAVEL ROAD

APPROXIMATE AREA OF ABOVE WAC MATERIAL (SEE NOTE 6)

N 477940 E 1347684 ELEV 568.4±

LIMIT OF IFP EXCAVATION TOP OF SLOPE (TYP)

SPECIAL MATERIAL TRANSFER AREA

15" CMP

BASELINE B STA 0+00 = BASELINE A STA 10+00

TENSION SUPPORT STRUCTURE

SOUTH CONSTRUCTION ROAD

N 477858 E 1347477 ELEV 570.6±

N 477849 E 1347805 ELEV 571.4±

N 477803 E 1347867 ELEV 570.6±

SOUTH FIELD IMPACTED MATERIAL STOCKPILE

EXISTING CHANNEL PROTECTION

INTERCEPTOR DITCH #2 (SEE NOTE 5)

N 477747 E 1347934 ELEV 572.4±

FLAT BOTTOM DITCH 1 G0018 (TYP)

N 477756± E 1348392±

SUPPORT AREA

BASELINE B SEE SHT G0015 FOR CROSS SECTIONS

N 477714± E 1348462±

BASELINE C STA 30+00 = BASELINE B STA 3+20.97

N 477709± E 1348375±

RESERVED

SOUTH FIELD

N 477620± E 1348343±

LAYDOWN AREA

BASELINE C SEE SHT G0016 AND G0017 FOR CROSS SECTIONS

N 477566± E 1348323±

EXISTING EAST PUMP STATION

RESERVED

N 477599± E 1348400±

EXISTING DUMPED ROCK FILL

N 477557± E 1348340±

N 477542± E 1348380±

LEAD CONTAMINATED SOIL CONTAINER TRANSFER AREA

APPROXIMATE AREA FOR EXCAVATION OF LEAD CONTAMINATED SOIL

N 476654± E 1347619±

N 476630± E 1347619±

N 476630± E 1347664±

RETENTION BASIN #1

RESERVED

PADDYS RUN

TRANSFER LINE

RIPRAP STOCKPILE

NON-IMPACTED MATERIAL STOCKRILE #1

TREATMENT LINE DISCHARGE LINE

28" CULVERT

RETENTION BASIN #2

GRAVEL ROAD

N 477137± E 1347875±

RESERVED

N 477094± E 1347875±

N 477094± E 1347936±

N 477120± E 1348250±

RESERVED

RETENTION BASIN #3

N 477053± E 1348372±

N 477018± E 1348300±

ACTIVE FLYASH PILE

EXISTING DUMPED ROCK FILL

GRAPHIC SCALE: 1"=50'

PREPARED UNDER PARSONS PROJECT ORDER NUMBER SCEP/P0165

INTERCEPTOR DITCH #1 (SEE NOTE 2)				
DITCH NO.	POINT	NORTHING	EASTING	DESCRIPTION/COMMENT
D1	1	478097	1347759	BEGIN V-DITCH, 0.8% SLOPE, EL 568.2, WITH EROSION CONTROL BLANKET
D1	2	478065	1347721	PC, R = 75'
D1	3	477947	1347728	PT
D1	4	477826	1347900	BEGIN TRANSITION TO 4' FB DITCH
D1	5	477796	1347943	PC, R=60', END V-DITCH @ 0.8% SLOPE, BEGIN 4' FB DITCH WITH DUMPED ROCK FILL @ 5.5% SLOPE, ELEV 564.4
D1	6	477694	1347937	PT, ELEV 557.7, END 5.5% SLOPE BEGIN 20.0 % SLOPE
D1	7	477671	1347893	END 20.0% SLOPE, ELEV 547.7, BEGIN 16.3% SLOPE
D1	8	477647	1347850	PI, END 16.3% SLOPE, ELEV 539.8, BEGIN 2.3% SLOPE
D1	9	477639	1347793	END DITCH, ELEV 538.6, TRANSITION INTO EXISTING DITCH

NOTES

1. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE AS SPECIFIED IN TECHNICAL SPECIFICATION SECTION 02275.
2. SEE SHT G0018 FOR DITCH DETAILS.
3. RAMPS TO IMPACTED MATERIAL EXCAVATION ARE NOT SHOWN AND ARE TO BE FIELD DETERMINED BY THE CONTRACTOR.
4. CONSTRUCT INTERCEPTOR DITCH #1 PRIOR TO IFP EXCAVATION.
5. INTERCEPTOR DITCH #2 TO BE LINED WITH 60 MIL TEXTURED HDPE GEOMEMBRANE. SEE DETAIL NUMBER 1, SHEET G0018.
6. APPROXIMATE AREA OF ABOVE WAC MATERIAL DOES NOT REFLECT EXCAVATED CONTOURS.

INTERCEPTOR DITCH #2 (SEE NOTE 2)				
DITCH NO.	POINT	NORTHING	EASTING	DESCRIPTION/COMMENT
D2	1	478134	1347418	BEGIN 2' FB DITCH @ 13% SLOPE WITH GEOMEMBRANE LINER, ELEV 560.7
D2	2	478105	1347496	END 13% SLOPE, ELEV 549.8, BEGIN 0.5% SLOPE
D2	3	478070	1347590	PI, END 0.5% SLOPE, ELEV 549.5, BEGIN 7.7% SLOPE
D2	4	478014	1347605	END 7.7% SLOPE, ELEV 545.0, BEGIN 2% SLOPE
D2	5	477917	1347631	PI
D2	6	477882	1347667	END 2% SLOPE, ELEV 542.0, BEGIN 1.5% SLOPE
D2	7	477788	1347762	END 1.5% SLOPE, ELEV 540.0, BEGIN 0.5% SLOPE
D2	8	477773	1347776	PI
D2	9	477646	1347817	PI WITH INTERCEPTOR DITCH #1 (END DITCH)
D2	10	477728	1347889	PI, HIGH POINT 2' FB DITCH, VARIABLE SLOPE, ELEV 547.0
D2	11	477772	1347835	PI
D2	12	477787	1347785	PI
D2	13	477649	1347847	PI WITH INTERCEPTOR DITCH #1

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00398	EXISTING CONDITIONS AND MONITORING WELL IMPROVEMENTS PLAN	G0004
92X-5900-G-00287	BASELINE A CROSS SECTIONS - SHEET 1 OF 5	G0010
92X-5900-G-00288	BASELINE A CROSS SECTIONS - SHEET 2 OF 5	G0011
92X-5900-G-00289	BASELINE A CROSS SECTIONS - SHEET 3 OF 5	G0012
92X-5900-G-00298	BASELINE A CROSS SECTIONS - SHEET 4 OF 5	G0013
92X-5900-G-00299	BASELINE A CROSS SECTIONS - SHEET 5 OF 5	G0014
92X-5900-G-00300	BASELINE B CROSS SECTIONS - SHEET 1 OF 1	G0015
92X-5900-G-00301	BASELINE C CROSS SECTIONS - SHEET 1 OF 2	G0016
92X-5900-G-00302	BASELINE C CROSS SECTIONS - SHEET 2 OF 2	G0017
92X-5900-G-00403	DETAILS - SHEET 1 OF 1	G0018

STATE OF OHIO FRANK N. PARTON, JR. IND. E-57614 REGISTERED PROFESSIONAL ENGINEER

66062

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS AND DATE	FERMCO INITIALS AND DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A 11/14/97

UNITED STATES DEPARTMENT OF ENERGY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY

PARSONS

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

CINCINNATI, OHIO

PROJECT NAME

AREA 2 PHASE I

SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE

CIVIL

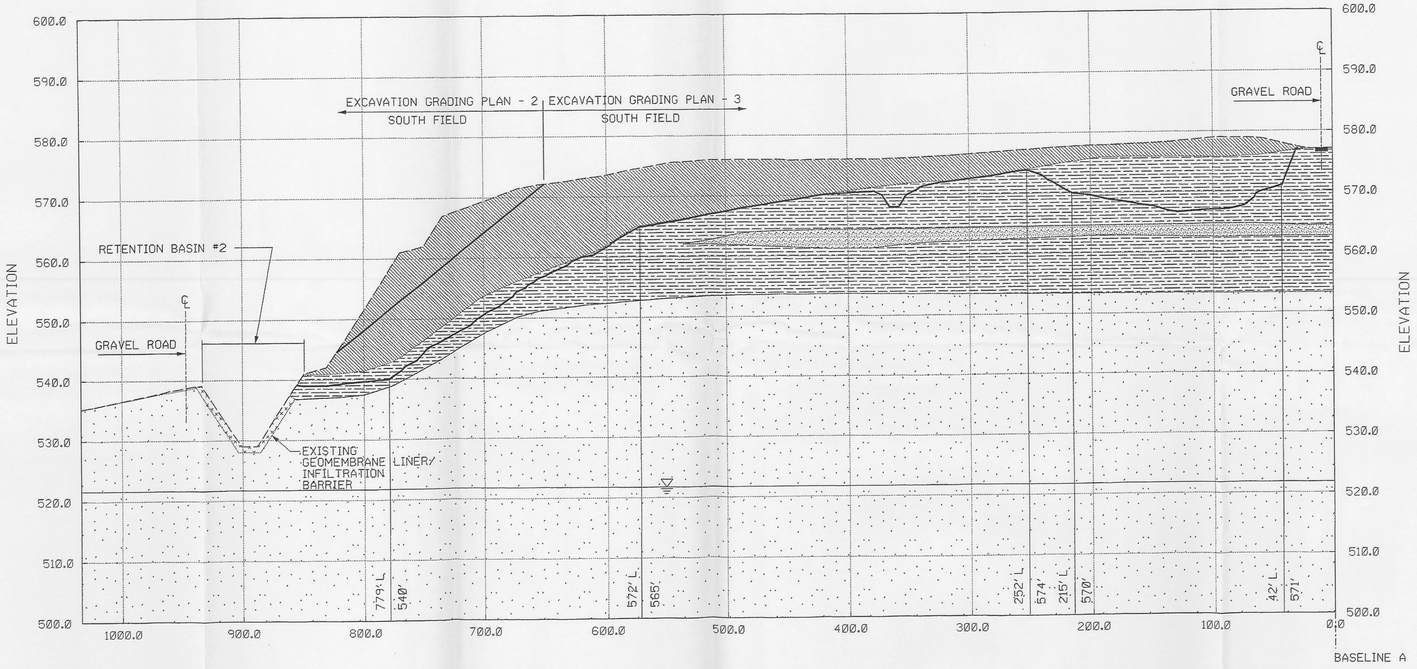
EXCAVATION GRADING PLAN - 1

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D. REED	02/28/98	F.M. PARTON, JR.	2/12/97	J. FERN	2/27/97

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

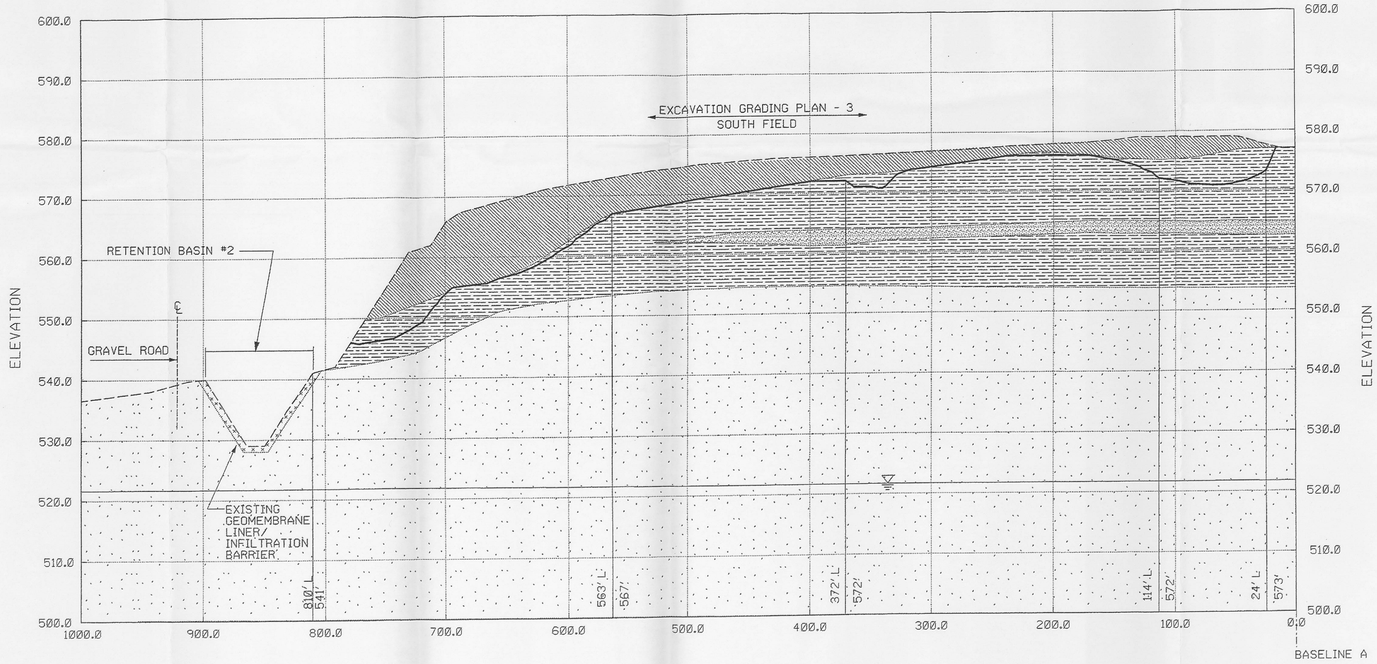
SUBMITTED FOR APPROVAL	FERMCO CRU APPROVAL	FERMCO PROJECT NO.
C. Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
	WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00286	G0005	Ø



BASELINE A, STATION 12+00 REF G0007

SCALE: HOR 1"=50'
VER 1"=10'



BASELINE A, STATION 11+00 REF G0007

SCALE: HOR 1"=50'
VER 1"=10'

LEGEND:

- EXISTING GROUND
- EXCAVATION GRADE LINE
- WATER TABLE (AVERAGE)
- SAND/GRAVEL
- GLACIAL OVERBURDEN/TILL
- GREAT MIAMI AQUIFER
- FILL/DEBRIS
- ASH
- ABOVE WAC MATERIAL
- EXISTING GEOMEMBRANE LINER/ INFILTRATION BARRIER

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007
92X-5900-G-00371	ENLARGEMENT RETENTION BASIN #2 SITE PREPARATION PACKAGE	N/A

00002

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
0	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

GRAPHIC SCALE: 1"=10' VERTICAL

GRAPHIC SCALE: 1"=50' HORIZONTAL

STATE OF OHIO FRANKLIN M. PARTON, JR. NO. E-57614 REGISTERED PROFESSIONAL ENGINEER

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

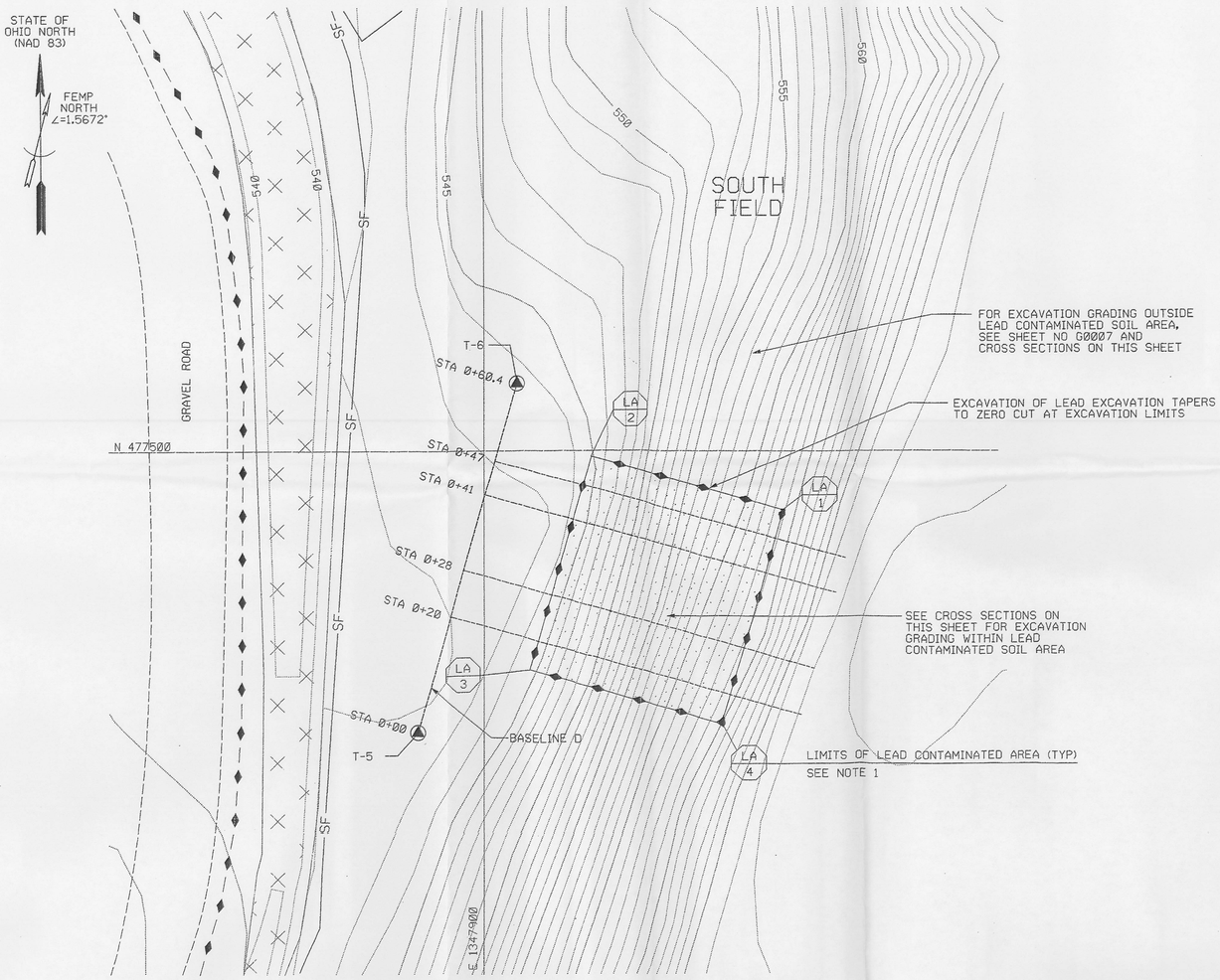
DRAWING TITLE
CIVIL
BASELINE A CROSS SECTIONS
SHEET 1 OF 5

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.R. FOX	03/08/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS SHOWN	

SUBMITTED FOR APPROVAL	FERMCO CRJ APPROVAL	FERMCO PROJECT NO.
C.Schroeder 11/14/97	N/A	20402
A-E DATE	DATE	

PREPARED UNDER PARSONS PROJECT ORDER NUMBER	DOE PROJECT NO.	FEMP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
SCEP/P0165		WBS 1.1.1.1.2.3.6 00-90701	92X-5900-G-00287	G0010	0



LEAD CONTAMINATED SOIL EXCAVATION AREA PLAN

10′ 0′ 10′ 20′
GRAPHIC SCALE: 1"=10′

① SURVEY AND STAKE LIMITS OF LEAD CONTAMINATED SOIL EXCAVATION AREA.

② EXCAVATE UNCLASSIFIED IMPACTED MATERIAL OVERBURDEN ABOVE LEAD CONTAMINATED SOIL AS SPECIFIED IN TECHNICAL SPECIFICATION SECTION 02205.

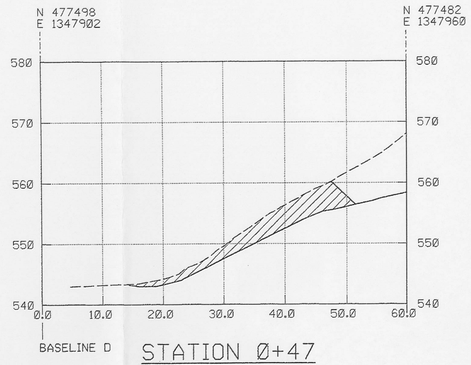
③ EXCAVATE LEAD CONTAMINATED SOIL TO LIMITS SHOWN ON THIS SHEET, AND AS SPECIFIED IN TECHNICAL SPECIFICATION SECTION 02205.

④ LEAD CONTAMINATED SOIL SHALL BE LOADED, HAULED AND PLACED IN THE DESIGNATED LEAD CONTAMINATED SOIL CONTAINER TRANSFER AREA AS SPECIFIED IN TECHNICAL SPECIFICATION SECTION 02205.

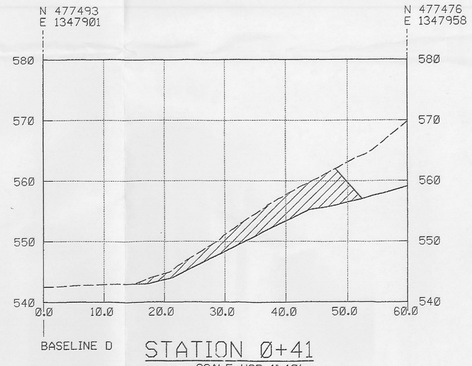
⑤ FDF TO PERFORM CONFIRMATORY SAMPLING.

⑥ PERFORM ADDITIONAL EXCAVATION AS DIRECTED BY THE CONSTRUCTION MANAGER'S CONFIRMATORY SAMPLING.

LEAD CONTAMINATED SOIL EXCAVATION APPROACH

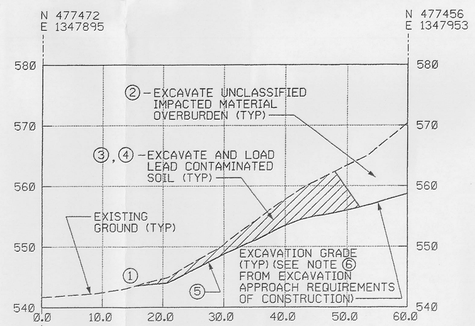


STATION Ø+47
SCALE: HOR 1"=10′
VER 1"=10′



STATION Ø+41
SCALE: HOR 1"=10′
VER 1"=10′

STATION Ø+28
SCALE: HOR 1"=10′
VER 1"=10′



STATION Ø+20
SCALE: HOR 1"=10′
VER 1"=10′

NOTES

1. EXCAVATION GRADING ON PLAN VIEW NOT SHOWN FOR CLARITY SEE CROSS-SECTIONS FOR DETAILS.
2. FOR BENCHMARK INFORMATION SEE SHEET G0003.

CROSS SECTION LEGEND:

EXISTING GROUND LINE

EXCAVATION GRADE LINE

APPROXIMATE LIMITS OF LEAD CONTAMINATED SOIL TO BE EXCAVATED

LIMITS OF LEAD CONTAMINATED SOIL AREA (LA)		
POINT	NORTHING	EASTING
1	477490	1347950
2	477499	1347918
3	477464	1347908
4	477455	1347940

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00394	DRAWING INDEX	X0002
92X-5900-X-00395	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00349	BENCHMARKS AND BASELINE LOCATION PLAN	G0003
92X-5900-G-00413	EXCAVATION GRADING PLAN - 2	G0007

000001

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	A-E INITIALS	FERMCO INITIALS	DATE
Ø	CERTIFIED FOR CONSTRUCTION	CS	N/A	11/14/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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CINCINNATI, OHIO

PROJECT NAME
AREA 2 PHASE I
SOUTHERN WASTE UNITS REMEDIAL ACTION PROJECT

DRAWING TITLE
CIVIL
EXCAVATION GRADING PLAN
LEAD CONTAMINATED SOIL

DRAWN BY	DATE	LEAD ENGINEER	DATE	CHECKED BY	DATE
D.REED	11/15/96	F.M. PARTON, JR.	2/12/97	J. FERN	2/12/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=10′	CLASS
SUBMITTED FOR APPROVAL A-E C.Schroeder 11/14/97 DATE		FERMCO CRU APPROVAL N/A DATE		20402	
DOE PROJECT NO.	FEMP PROJECT NO. WBS 1.1.1.1.2.3.6 00-90701	DRAWING INDEX CODE NO. 92X-5900-G-00285		SHEET NO. G0008	REV. NO. Ø

PREPARED UNDER PARSONS PROJECT ORDER NUMBER
SCEP/P0165

STATE OF OHIO FRANKLIN M. X. O. PARTON JR. NO. E-57614 REGISTERED PROFESSIONAL ENGINEER