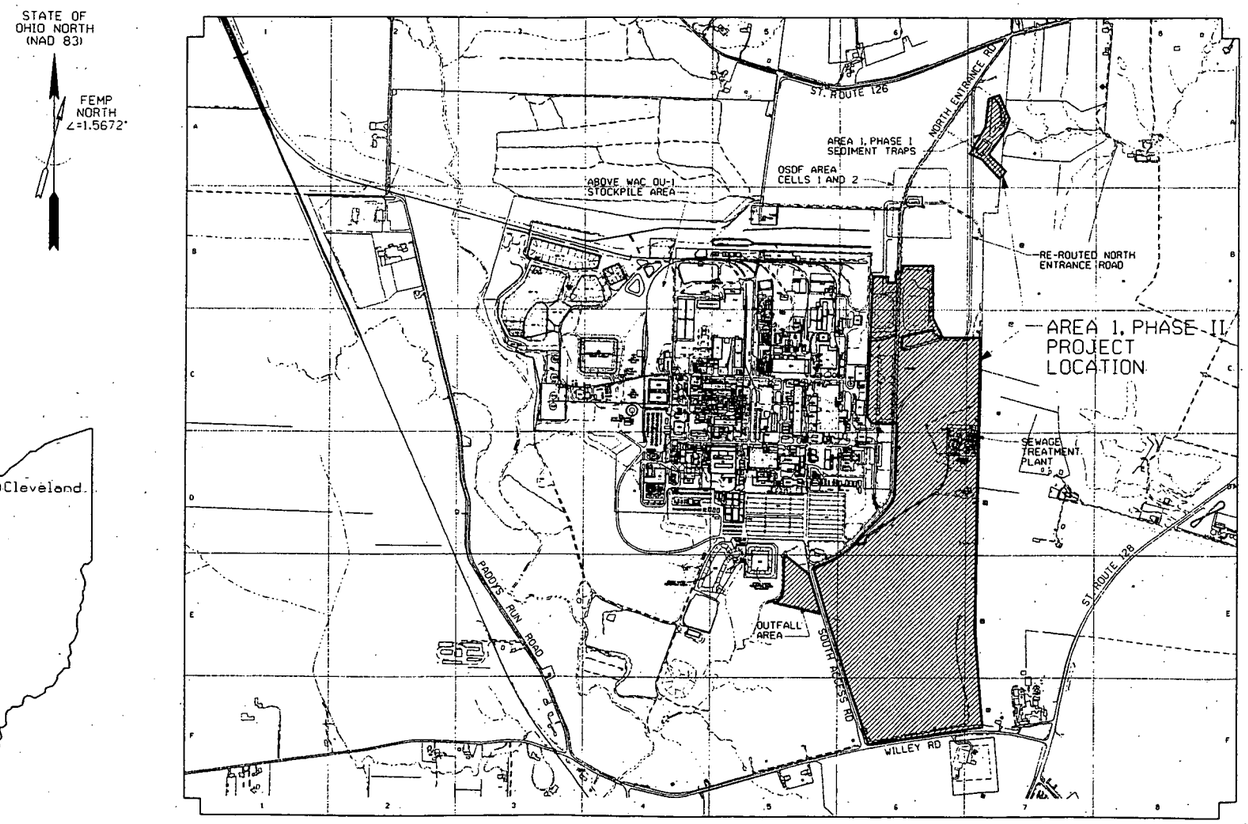
UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

REMEDIATION AREA 1, PHASE II
SITE PREPARATION AND REMEDIATION PACKAGE



600' 0' 600' 1200'
GRAPHIC SCALE: 1"=600'

PARSONS

The Ralph M. Parsons Company • Parsons Main, Inc. • Engineering-Science, Inc.

ARCHITECTS - ENGINEERS
CINCINNATI, OHIO

NOTES

1094
5-203.15

000001

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/19/97	CS 11/19/97	KG 11/19/97
D	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
C	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
B	ISSUED FOR 30% DESIGN	KG 8/1/97	CS 8/1/97	KG 8/1/97
A	ISSUED FOR 30% DESIGN REVEIW	KG 6/28/97	CS 6/28/97	KG 6/28/97

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
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
PROJECT TITLE SHEET

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/21/97	K. Gerard	11/19/97	K. Gerard	11/19/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=600'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/28/97	DATE	DATE 11/19/97

PO NUMBER	TOF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-9070.01	92X-5900-X-00415	X0001	E

INDEX OF DRAWINGS

INDEX CODE NO.	DRAWING NO.	SHEET NO.	REVISION NO.	DRAWING TITLE	REMARKS
	92X-5900-X-00415	X0001	E	PROJECT TITLE SHEET	
	92X-5900-X-00418	X0002	E	DRAWING INDEX	
	92X-5900-X-00420	X0003	E	LEGEND AND GENERAL NOTES	
	92X-5900-G-00421	G0001	E	CIVIL - EXISTING CONDITIONS PLAN	
	92X-5900-G-00428	G0002	E	CIVIL - MASTER SITE PLAN	
	92X-5900-G-00434	G0003	E	CIVIL - SITE PLAN - SEWAGE TREATMENT PLANT (EXISTING)	
	92X-5900-G-00435	G0004	E	CIVIL - SITE PLAN - DISSOLVED OXYGEN FACILITY	
	92X-5900-G-00436	G0005	E	CIVIL - SITE PLAN - TRAP RANGE	
	92X-5900-G-00433	G0006	E	CIVIL - SITE PLAN - TANK FARM	
	92X-5900-G-00463	G0007	D	CIVIL - EXCAVATION PLAN - SEWAGE TREATMENT PLANT	
	92X-5900-G-00456	G0008	C	CIVIL - INTERIM GRADING PLAN - SEWAGE TREATMENT PLANT AREA	
	92X-5900-G-00455	G0009	C	CIVIL - INTERIM GRADING PLAN - AREA 1 PHASE I SEDIMENT TRAPS	
	92X-5900-G-00457	G0010	C	CIVIL - TYPICAL CROSS SECTIONS	
	92X-5900-G-00459	G0011	C	CIVIL - TRAFFIC PLAN	
	92X-5900-G-00458	G0012	C	CIVIL - HAUL ROAD LAYOUT	
	92X-5900-G-00460	G0013	C	CIVIL - REMEDIATION GENERATED WATER TRANSFER LINE	
	92X-5900-G-00432	G0014	E	CIVIL - SEDIMENT BASIN PLAN	
	92X-5900-G-00461	G0015	C	CIVIL - SEDIMENT BASIN - SECTIONS AND DETAILS	
	92X-5900-G-00466	G0016	C	CIVIL - CONVEYANCE CHANNEL PLAN	
	92X-5900-G-00467	G0017	C	CIVIL - EROSION AND SEDIMENT CONTROL - NOTES AND DETAILS	
	92X-5900-G-00468	G0018	C	CIVIL - MATERIAL TRACKING PLAN	
	92X-5900-G-00469	G0019	C	CIVIL - DETAIL SHEET	
	92X-5900-G-00477	G0020	B	CIVIL - ACCESS CONTROL - SECTOR 1	
	92X-5900-G-00479	G0021	B	CIVIL - ACCESS CONTROL - SECTOR 2	
	92X-5900-G-00480	G0022	B	CIVIL - ACCESS CONTROL - SECTOR 3	
	92X-5900-G-00482	G0023	A	CIVIL - EQUIPMENT DECONTAMINATION FACILITY	
	92X-5900-G-00484	G0024	A	CIVIL - EXISTING SUBSURFACE FEATURES PLAN	
	92X-5900-G-00485	G0025	A	CIVIL - PLAN AND SUBSURFACE PROFILE - SEDIMENT BASIN	
	92X-5900-E-00472	E0001	C	ELECTRICAL - SINGLE LINE DIAGRAM	
	92X-5900-E-00471	E0002	C	ELECTRICAL - ELEMENTARY DIAGRAMS	
	92X-5900-E-00473	E0003	C	ELECTRICAL - POWER PLAN	
	92X-5900-E-00476	E0004	C	ELECTRICAL - INTERCONNECTION DIAGRAM	
	92X-5900-E-00478	E0005	B	ELECTRICAL - ELEVATIONS AND DETAILS - SHEET 1	
	92X-5900-N-00464	N0001	C	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - SYMBOLS AND LEGEND	
	92X-5900-N-00465	N0002	C	MECHANICAL PROCESS - PIPING AND INSTRUMENTATION DIAGRAM - WATER COLLECTION AND TRANSFER SYSTEM	
	92X-5900-P-00474	P0001	C	PIPING / PLANT DESIGN - PIPING PLAN - RECEIVING TANKS AND TRANSFER SYSTEM	
	92X-5900-P-00475	P0002	C	PIPING / PLANT DESIGN - PIPING SECTIONS AND DETAILS	

NOTES

1. DRAWING NUMBERS ARE FOR FILE REFERENCE, DRAWINGS ARE ORDERED BY SHEET NUMBER.

1094

000002

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00415	PROJECT TITLE SHEET	X0001
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/24/97	CS 11/24/97	KG 11/24/97
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A	ISSUED FOR 30% DESIGN REVIEW	KG 6/28/97	CS 6/28/97	KG 6/28/97

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CINCINNATI, OHIO

PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
DRAWING INDEX

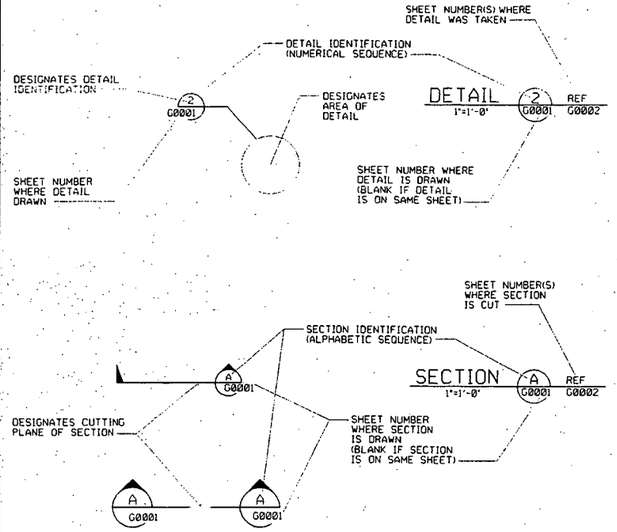
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
R.M. LINDGREN	04/21/97	K. Gerard	11/19/97	K. Gerard	11/19/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/28/97	DATE	DATE 11/19/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-X-00418	X0002	E

GENERAL LEGEND



UTILITY SYMBOLS

EXISTING		PROPOSED
ST	STORM SEWER	
FG	FUEL GAS	
DW	DRINKING WATER	
WT	WASTEWATER EFFLUENT	
E	ELECTRICAL	E
OE	OVERHEAD ELECTRICAL	OE
G	ELECTRIC GROUND	G
GW	GROUND WATER	
WW	WASTE WATER	
	TRANSFER LINE	TRANSFER LINE
SN	SANITARY SEWER	

SYMBOLS LEGEND

EXISTING		PROPOSED
	POST INDICATOR VALVE (PIV)	
	FIRE HYDRANT (FH)	
	MANHOLE (MH)	
OR	CATCH BASIN (CB)	
	POWER OR LIGHT POLE	
	ELECTRICAL MANHOLE	
	GATE VALVE	
1313	SOIL BORING	
11503	MONITORING WELL	
E	EXTRACTION WELL	
	SURFACE DRAINAGE FLOW	
	GRAVEL SURFACE	
	ASPHALTIC CONCRETE PAVING	
	CONCRETE PAD	
	BUILDING/TRAILER	
	CHAIN LINK FENCE	
	TREE LINE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	CENTERLINE DRAINAGE DITCH	
	RIVER/CREEK	
	TO BE REMOVED	
	SILT FENCE	S S
	ELECTRICAL TRANSFORMER	T
	TRANSMISSION TOWER	
	HEADWALL	
	BENCH-MARK	
XX XX	CONSTRUCTION/WIND BARRIER FENCE	XX XX
	SIGN	
	BOLLARD/GUARD POST	
PB	ELECTRICAL PULL BOX	
	BASELINE	
	PIPE BEND	OR
	PIPE TEE	
	REDUCER	
	FENCE GATE	
	APPROXIMATE ELEVATION OF GROUNDWATER	
	SECTOR BOUNDARY	
	100 YR FLOOD PLAIN	
	FEMP PROPERTY LINE	
	EASEMENT	

ABBREVIATIONS

AWWT	ADVANCED WASTEWATER TREATMENT
BSL	BIODENITRIFICATION SURGE LAGOON
CU	CERTIFICATION UNIT
DECON	DECONTAMINATION
EXIST	EXISTING
FDF	FLUOR DANIEL FERNALD
FEMP	FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FRL	FINAL REMEDIATION LEVEL
FS	FEASIBILITY STUDY
LCS	LEACHATE CONVEYANCE SYSTEM
MH	MANHOLE
OSDF	ON-SITE DISPOSAL FACILITY
OU-2	OPERABLE UNIT 2
RAD II	RADIOLOGICAL WORKER II
RI	REMEDIAL INVESTIGATION
SHT	SHEET
STP	SEWAGE TREATMENT PLANT
SWM	STORMWATER MANAGEMENT
SWRB	STORMWATER RETENTION BASIN
TYP	TYPICAL
WAC	WASTE ACCEPTANCE CRITERIA

GRADING SYMBOLS

EXISTING		PROPOSED
X 584.4	SPOT ELEVATION	X 584.4
584	CONTOUR - MINOR	584
585	CONTOUR - MAJOR	585
TOE	SLOPE INDICATOR	TOE

NOTES

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 WERE PROVIDED BY FDF; THESE SOURCES INCLUDE:

   EXISTING SITE DATA SOURCE (IN PLANT FILES)
   FEMP CADD GRID/UTILITY DRAWINGS
   FEMP CONTRACTOR PROJECT DESIGN DOCUMENTS

2. HORIZONTAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NORTH AMERICAN DATUM 1983 (NAD 83). SEE SHEET G0001 FOR PROJECT SURVEY CONTROL.
3. VERTICAL CONTROL SHOWN ON THE DRAWINGS IS BASED UPON NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29). SEE SHEET G0001 FOR PROJECT SURVEY CONTROL.
4. THE CONTAMINATE FINAL REMEDIATION LEVEL (FRL) EXCAVATION CONTOURS ARE FROM FDF MODELS. ACTUAL FRL LOCATIONS AND ELEVATIONS MAY DIFFER.
5. REFERENCES TO SECTIONS (SEE SECTION 02205) ARE TO THE CONTRACT TECHNICAL SPECIFICATION SECTIONS.
6. PLACE ODOT STANDARD STOP SIGNS AT ALL ACCESS POINTS TO EXISTING ROADS.

1094

000003

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00415	PROJECT TITLE SHEET	X0001
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-G-00421	EXISTING CONDITIONS PLAN	G0001

PRELIMINARY
NOT FOR CONSTRUCTION

REV NO	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL INITIALS	PM INITIALS	REVIEW BY DATE
E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/15/97	CS 11/19/97	KG 11/24/97
D	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
C	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
B	ISSUED FOR 30% DESIGN	KG 8/1/97	CS 8/1/97	KG 8/1/97
A	ISSUED FOR 30% DESIGN REVIEW	KG 6/20/97	CS 6/20/97	KG 6/20/97

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CINCINNATI, OHIO

PROJECT NAME
REMEDIATION AREA 1 - PHASE II

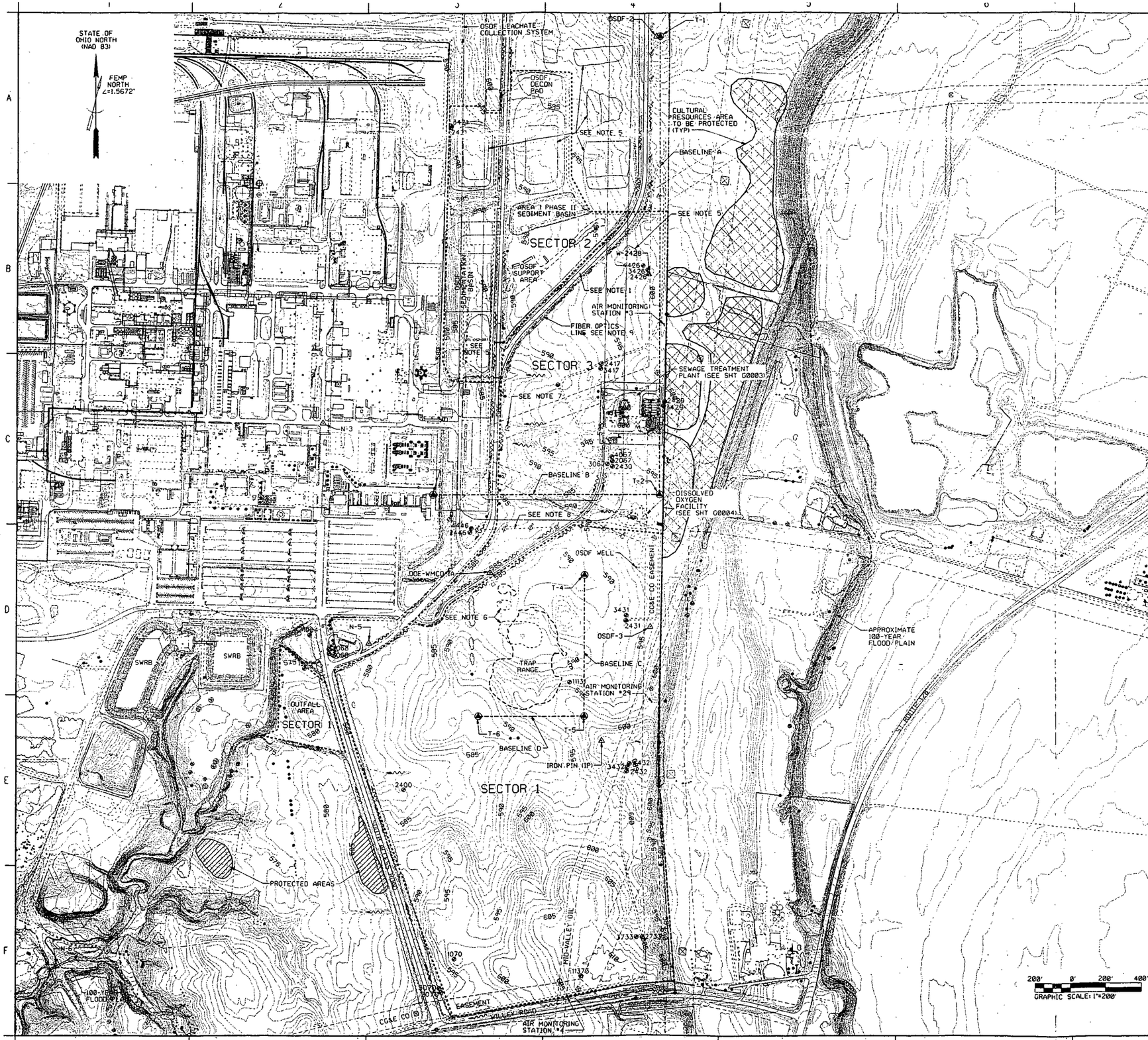
DRAWING TITLE
LEGEND AND GENERAL NOTES

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/22/97	K. Gerard	11/24/97	K. Gerard	11/24/97

PLANT/BLDG NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/20/97	DATE	DATE 11/24/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-X-00420	X0003	E



NOTES

1. PHASE I RE-ROUTED NORTH ENTRANCE ROAD SHOWN IS BASED ON CONSTRUCTION DRAWINGS.
2. ON SITE DISPOSAL FACILITY (OSDF) IMPROVEMENTS SHOWN ARE EITHER PROPOSED, UNDER CONSTRUCTION OR COMPLETED PER CONSTRUCTION DRAWINGS.
3. EXISTING BENCHMARK INFORMATION PROVIDED BY FDF.
4. ANY BENCHMARKS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY FDF AT THE CONTRACTOR'S EXPENSE.
5. TEMPORARY OSDF STOCKPILE TO BE REMOVED BY OTHERS.
6. APPROXIMATE LIMIT OF POTENTIALLY WET SOIL CONDITIONS.
7. TOWER TO BE REMOVED BY OTHERS.
8. OVERHEAD POWER LINES ARE PROPOSED AND ARE TO BE INSTALLED BY OTHERS PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.
9. FIBER OPTICS LINE TO BE LOCATED AND PROTECTED PRIOR TO CONSTRUCTION.
10. FOR UTILITIES SEE SHEETS G0003, G0004, AND G0024.
11. SEE SHEET G0009 FOR AREA I PHASE I SEDIMENT BASINS.

LEGEND

- △ EXISTING BENCHMARK
- ◆ PROPOSED BENCHMARK
- ----- BASELINE
- 1970 ● MONITORING WELL TO REMAIN

1094

BENCHMARK INFORMATION

BENCHMARK	NORTHING	EASTING	ELEVATION	REMARKS
T-1	482200.09	1351800.57	TBS	TBS
T-2	479600.09	1351800.57	TBS	TBS
T-3	479600.09	1350510.57	TBS	TBS
T-4	479144.51	1351371.71	TBS	TBS
T-5	478344.51	1351371.71	TBS	TBS
T-6	478344.51	1350771.71	TBS	TBS
N-1	476876.20	1351304.13	607.88	EXISTING
N-3	480007.25	1349886.42	579.44	EXISTING
N-5	478758.71	1350149.38	580.37	EXISTING
N-6	476928.55	1348372.38	551.99	EXISTING
IRON PIN (IP)	478205.58	1351472.81	603.32	EXISTING
DOE-WMCO-1A	479157.59	1350835.05	585.57	EXISTING
W-2428	480050.13	1351732.75	600.79	EXISTING
OSDF-2	482199.94	1351779.16	615.82	EXISTING
OSDF-3	478850.42	1351749.33	595.61	EXISTING

TBS TO BE SET WITH IRON PIN AND PLASTIC SURVEYORS CAP A MINIMUM OF 48" DEEP, BY CONTRACTOR.

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00434	SITE PLAN SEWAGE TREATMENT PLANT	G0003
92X-5900-G-00435	SITE PLAN DISSOLVED OXYGEN FACILITY	G0004
92X-5900-G-00455	INTERIM GRADING PLAN AREA I PHASE I SEDIMENT TRAPS	G0009
92X-5900-G-00484	EXISTING SUBSURFACE FEATURES PLAN	G0024

PRELIMINARY
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REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
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E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/19/97
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CINCINNATI, OHIO

PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
EXISTING CONDITIONS PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/22/97	K. Gerard	11/19/97	K. Gerard	11/19/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=200'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
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DATE 6/20/97	DATE	DATE 11/19/97

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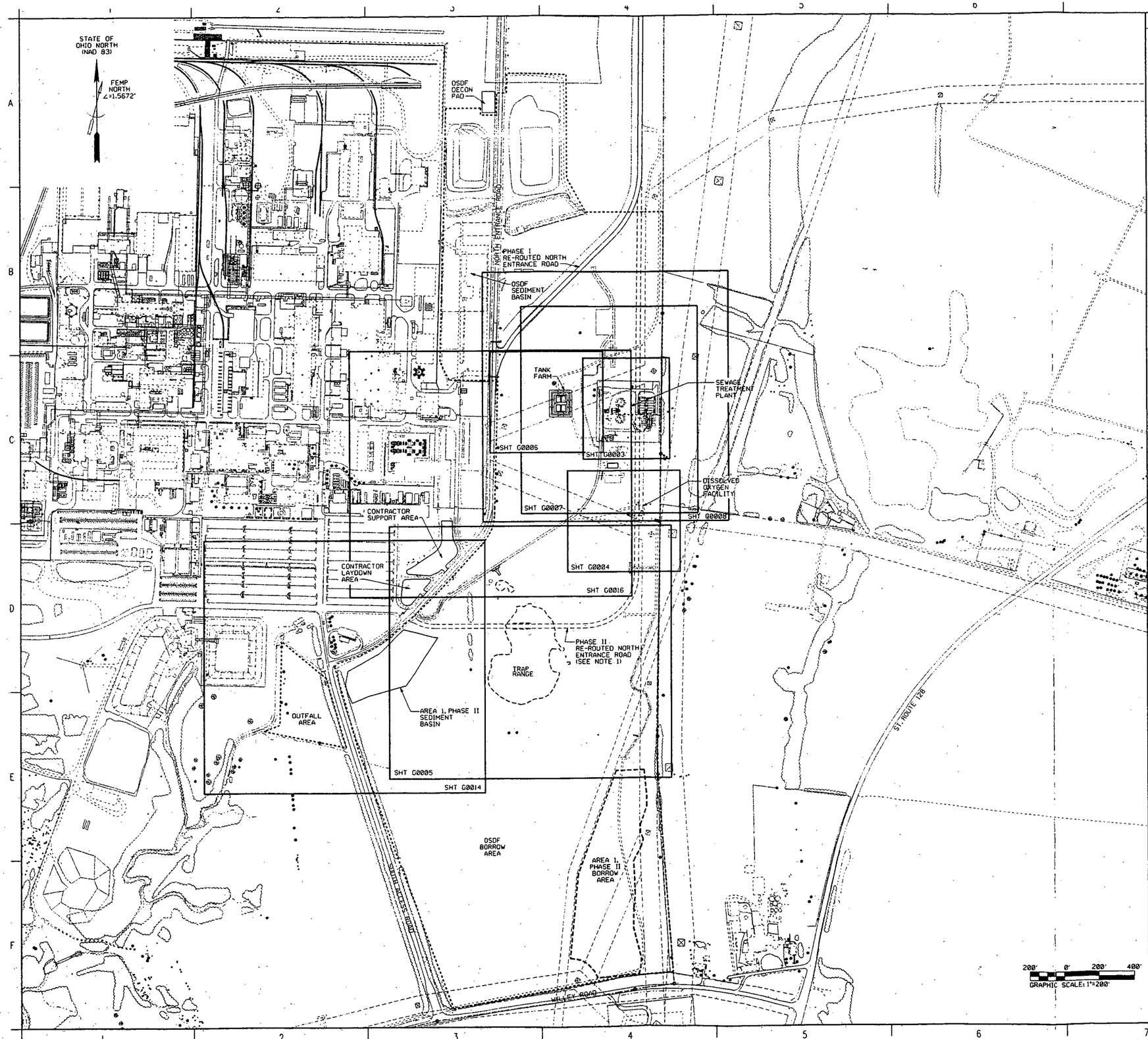
P0175	00-90701	92X-5900-G-00421	G0001	E

000001



NOTES

1. THE RE-ROUTED NORTH ENTRANCE ROAD PHASE II IS PROPOSED FOR CONSTRUCTION (BY OTHERS) AFTER AREA 1, PHASE II IS COMPLETE. IT IS SHOWN AS DESIGNED FOR INFORMATION ONLY.
2. OSDF WORK BY OTHERS.
3. SEE SHT X0001 FOR AREA 1, PHASE II SEDIMENT TRAP LOCATIONS, AND SHT G0009 FOR PLAN.

1094

000005

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00415	PROJECT TITLE SHEET	X0001
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92X-5900-G-00463	EXCAVATION PLAN SEWAGE TREATMENT PLANT	G0007
92X-5900-G-00456	INTERIM GRADING PLAN SEWAGE TREATMENT PLANT AREA	G0008
92X-5900-G-00455	RECLAMATION PLAN AREA 1, PHASE I SEDIMENT TRAPS	G0009
92X-5900-G-00432	SEDIMENT BASIN PLAN	G0014
92X-5900-G-00466	CONVEYANCE CHANNEL PLAN	G0016

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REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
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PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
MASTER SITE PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/22/97	K. Gerard	11/19/97	K. Gerard	11/19/97
PLANT/BLDG. NO.		FLOOR		SCALE: 1"=200'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
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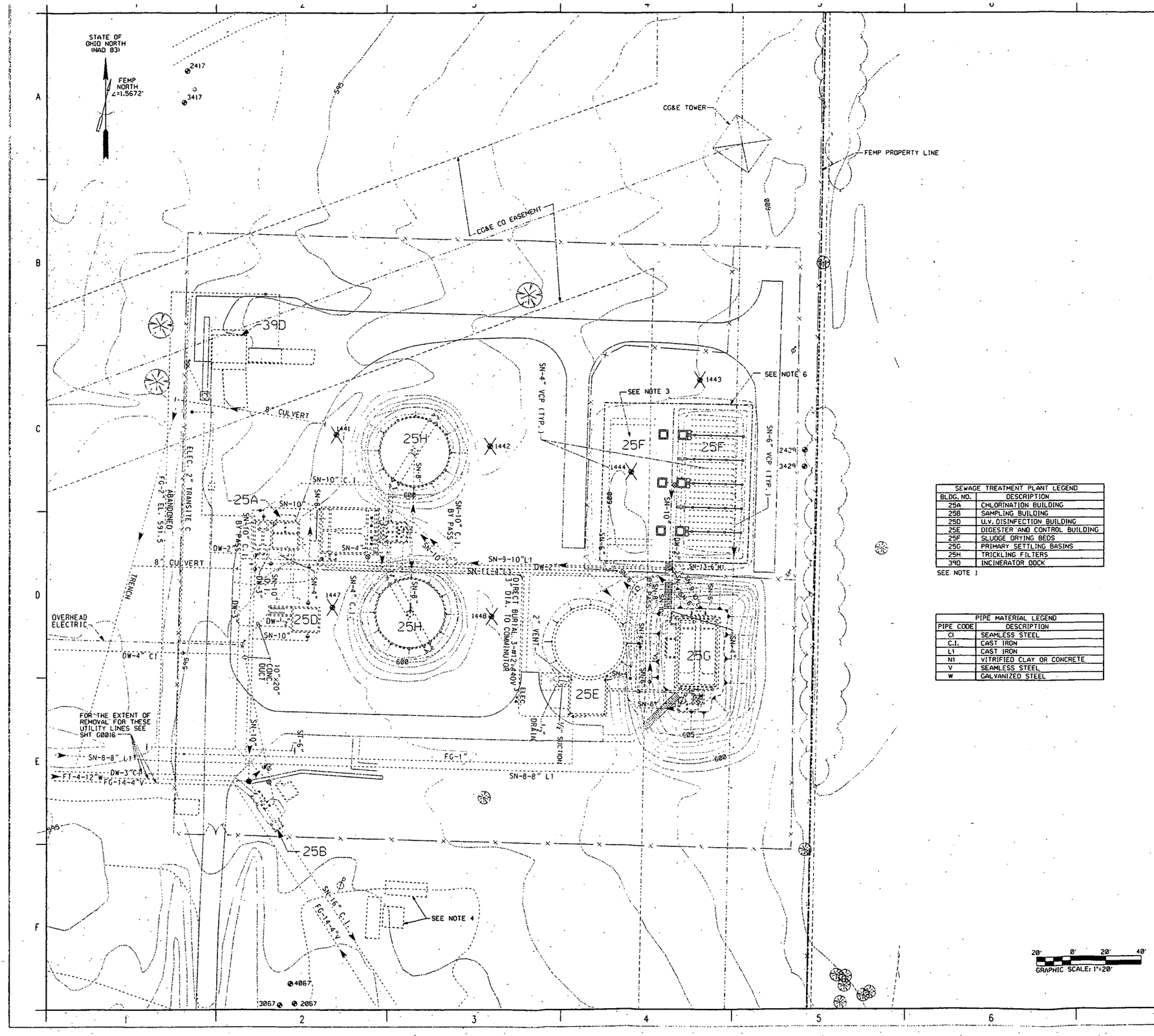
P0175	00-90701	92X-5900-G-00428	G0002	E



SEWAGE TREATMENT PLANT LEGEND	
BLDG. NO.	DESCRIPTION
25A	CHLORINATION BUILDING
25B	SAMPLING BUILDING
25D	U.V. DISINFECTION BUILDING
25E	DIGESTER AND CONTROL BUILDING
25F	SLUDGE DRYING BEDS
25G	PRIMARY SETTLING BASINS
25H	TRICKLING FILTERS
39D	INCINERATOR DOCK

SEE NOTE 1

PIPE MATERIAL LEGEND	
PIPE CODE	DESCRIPTION
CI	SEAMLESS STEEL
C.I.	CAST IRON
L1	CAST IRON
N1	VITRIFIED CLAY OR CONCRETE
V	SEAMLESS STEEL
W	GALVANIZED STEEL

NOTES

1. ALL ABOVE GRADE FEATURES ARE TO BE REMOVED BY OTHERS. REFER TO REFERENCE DRAWINGS FOR ADDITIONAL INFORMATION.
2. ALL AT GRADE AND BELOW GRADE FEATURES (FOUNDATIONS, UTILITIES, ETC.) TO BE REMOVED EXCEPT CG&E TOWER. SEE SHT G0007 AND SHT G0016.
3. WESTERN SLUDGE DRYING BED WAS NOT COMPLETED OR USED.
4. TEMPORARY FACILITIES AND TRAILERS IN THE AREA SOUTH OF THE STP FENCE WILL BE REMOVED BY OTHERS PRIOR TO THE START OF CONSTRUCTION.
5. SEE TECHNICAL REFERENCE DOCUMENT, CONSISTING OF DRAWINGS FOR ALL EXISTING FACILITIES, TO SEE DEPTH AND SIZE OF FOUNDATIONS, BELOW GRADE WALLS, UTILITIES ETC.
6. LIMITS OF HWMU NO. 41. SEE SPECIFICATION SECTION 02205.

1094

UTILITY LEGEND	
ST	STORM SEWER
FG	FUEL GAS
DW	DRINKING WATER
FT	FILTRATE OR EFFLUENT
E	ELECTRICAL
OE	OVERHEAD ELECTRICAL
G	ELECTRIC GROUND
GW	GROUND WATER
SN	SANITARY
WW	WASTE WATER

1442 — MONITORING WELL TO REMAIN

1442 — MONITORING WELL TO BE ABANDONED BY OTHERS

000006

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00463	EXCAVATION PLAN SEWAGE TREATMENT PLANT	G0007
92X-5900-G-00466	CONVEYANCE CHANNEL PLAN	G0016

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	IL	PM	REVIS BY
		INITIALS AND DATE		
E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
D	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/4/97	CS 11/4/97	KG 11/4/97
C	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
B	ISSUED FOR 30% DESIGN	KG 8/1/97	CS 8/1/97	KG 8/1/97
A	ISSUED FOR 30% DESIGN REVIEW	KG 6/20/97	CS 6/20/97	KG 6/20/97

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

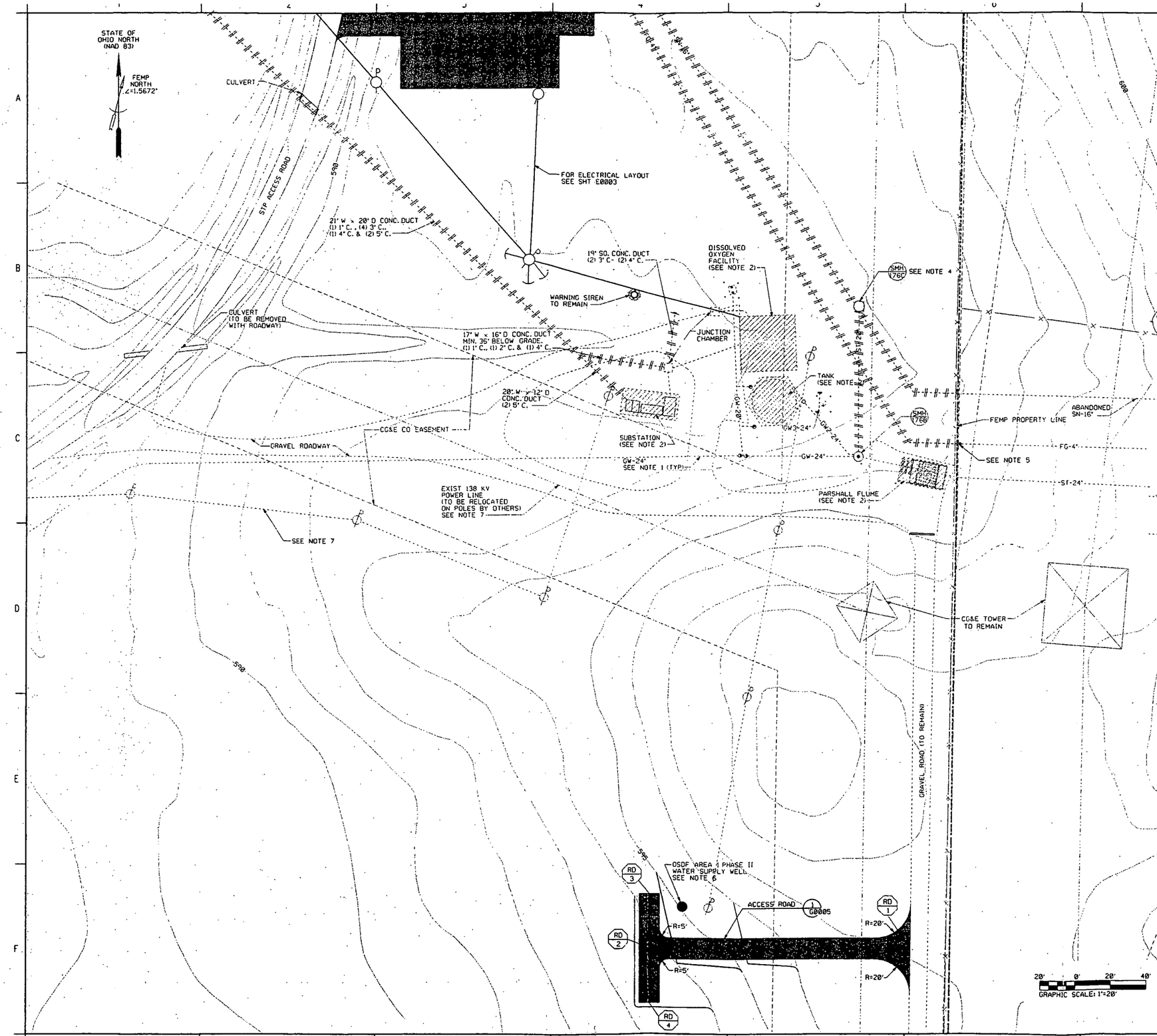
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
SITE PLAN
SEWAGE TREATMENT PLANT (EXISTING)

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/23/97	K. Gerard	11/14/97	K. Gerard	11/14/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=20'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/20/97	DATE	DATE 11/14/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00434	G0003	E



NOTES

1. EXCEPT FOR THE GROUNDWATER DISCHARGE LINES, ALL UNDERGROUND UTILITIES SHALL BE REMOVED UP TO THE FEMP PROPERTY LINE, UNLESS NOTED OTHERWISE.
2. ALL MANMADE FEATURES TO BE REMOVED, EXCEPT DISSOLVED OXYGEN FACILITY, TANK, SUBSTATION, PARSHALL FLUME, AND DRIVEWAYS, AND CG&E TOWERS.
3. FEMP TO INSTALL OVERHEAD POWER LINE TO SUBSTATION.
4. REMOVE SN-16" UP TO MH 176C. SEAL INLET AND THE ST-20" OUTLET WITH CONCRETE.
5. CG&E SHALL PURGE AND CAP THE FUEL GAS LINE (FG-4") AT THE PROPERTY LINE. CONTRACTOR TO REMOVE LINE TO CG&E CAP.
6. LOCATION IS APPROXIMATE AND SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO THE START OF WORK.
7. NEW OVERHEAD POWER LINES ARE PROPOSED AND ARE TO BE INSTALLED BY OTHERS PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT. LOCATION SHALL BE CONFIRMED BY CONTRACTOR PRIOR TO THE START OF WORK.

1094

UTILITY LEGEND

----- ST -----	STORM SEWER
----- FG -----	FUEL GAS
----- DW -----	DRINKING WATER
----- FT -----	FILTRATE OR EFFLUENT
----- E -----	ELECTRICAL
----- OE -----	OVERHEAD ELECTRICAL
----- G -----	ELECTRIC GROUND
----- GW -----	GROUND WATER
----- WW -----	WASTE WATER
----- SN -----	SANITARY
----- FO -----	FIRELINE
	TO REMAIN

000007

ROADWAY COORDINATES (RD)

POINT	NORTHING	EASTING	DESCRIPTION
1	479162.2	1351794.7	MEET EXIST GRAVEL
2	479162.2	1351647.3	INTERSECTION OF ROAD
3	479193.2	1351647.3	END OF ROAD
4	479131.2	1351647.3	END OF ROAD

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-E-00473	ELECTRICAL - POWER PLAN	E0003
92X-5900-G-00436	SITE PLAN TRAP RANGE	G0005

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TI	PM	REVD BY
		INITIALS AND DATE		
E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/24/97	CS 11/24/97	KG 11/24/97
D	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
C	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
B	ISSUED FOR 30% DESIGN	KG 8/1/97	CS 8/1/97	KG 8/1/97
A	ISSUED FOR 30% DESIGN REVIEW	KG 6/28/97	CS 6/28/97	KG 6/28/97

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
REMEDIATION AREA 1, PHASE II

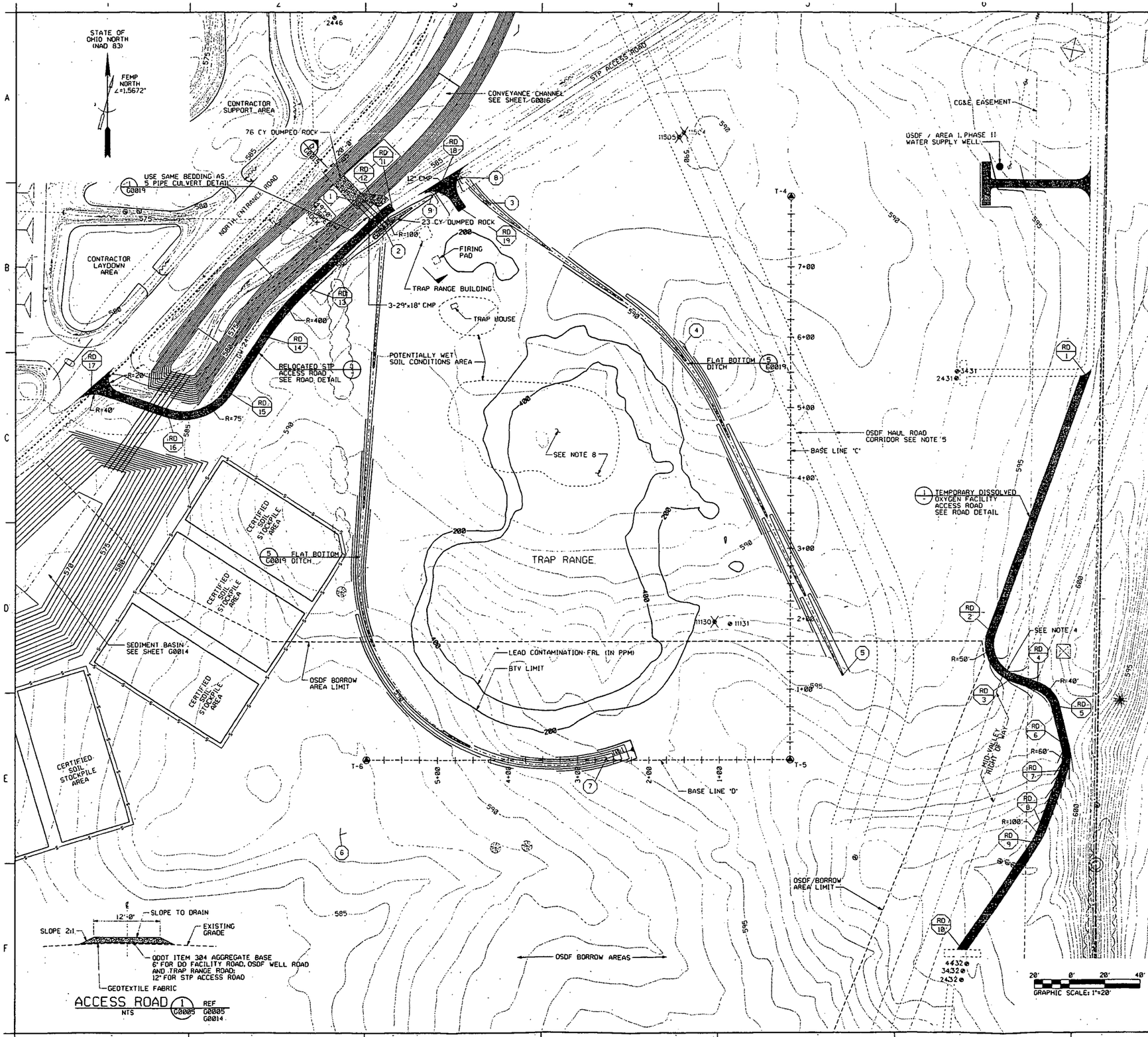
DRAWING TITLE
CIVIL
SITE PLAN
DISSOLVED OXYGEN FACILITY

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/23/97	K. Gerard	11/4/97	K. Gerard	11/24/97

PLANT/BLDG. NO. | FLOOR | SCALE 1"=20' | CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/28/97	DATE	DATE 11/21/97

PO NUMBER	FDF PROJECT NO	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00435	G0004	E



NOTES

1. TEMPORARY ACCESS TO TRAP RANGE WORK AREA TO BE FIELD LOCATED BY CONTRACTOR SIMILAR TO DETAIL 1 THIS SHEET. PROVIDE POSITIVE DRAINAGE.
2. CONTRACTOR TO USE TEMPORARY WHEEL WASH BEFORE EXITING WORK AREA. FOR HAUL ROAD SEE SHEET G0011.
3. REFER TO SPECIFICATION SECTION 02205 FOR SPECIFIC EXCAVATION AND MATERIAL HANDLING REQUIREMENTS.
4. NO EXCAVATION SHALL OCCUR IN THE MID-VALLEY OIL RIGHTS-OF-WAYS. MAINTAIN NON-EROSIVE POSITIVE DRAINAGE.
5. OSDF TO DESIGN AND CONSTRUCT HAUL ROAD TO INCLUDE DRAINAGE IMPROVEMENTS. ROUTE MAY BE RELOCATED AS NECESSARY.
6. LEAD CONTAMINATION AREA WITHIN 400 PPM CONTOUR TO BE STABILIZED IN-PLACE (SEE SECTION 02211) AND THEN EXCAVATED AND TRANSFERRED TO THE OSDF (SEE SECTION 02205).
7. LEAD CONTAMINATION AREA WITHIN 200-400 PPM CONTOURS TO BE EXCAVATED TO A DEPTH OF 6" AND THEN TRANSFERRED TO THE OSDF (SEE SECTION 02205).
8. GRADE POTENTIALLY WET SOIL CONDITION AREAS TO GRAVITY DRAIN BEFORE, DURING AND AFTER EXCAVATION.
9. CONTRACTOR TO FIELD LOCATE LEAD CONTAMINATION LIMITS BY SURVEY LINES LOCATED AT 50' INTERVALS FROM BASELINES. SCALE DISTANCES AND FIELD STAKE. SUBJECT TO CONSTRUCTION MANAGER APPROVAL.

BTV = BENCHMARK TOXICITY VALUE

ROADWAY COORDINATES (RD)

POINT	NORTHING	EASTING	DESCRIPTION
1	478891.2	1351788.4	MEET EXIST GRAVEL
2	478525.4	1351655.6	PC OF CURVE
3	478461.4	1351685.5	PT OF CURVE
4	478448.3	1351721.4	PC OF CURVE
5	478420.3	1351746.5	PT OF CURVE
6	478364.4	1351760.4	PC OF CURVE
7	478329.4	1351758.5	PT OF CURVE
8	478248.4	1351728.9	PC OF CURVE
9	478226.4	1351717.6	PT OF CURVE
10	478074.5	1351614.0	MEET EXIST GRAVEL
11	479130.3	1350806.9	MEET EXIST/PC OF CURVE
12	479118.6	1350792.0	PT OF CURVE
13	479015.7	1350683.9	PC OF CURVE
14	478946.4	1350625.9	PT OF CURVE
15	478867.2	1350573.6	PC OF CURVE
16	478837.5	1350487.0	PT OF CURVE
17	478874.2	1350378.1	MEET EXIST ROAD
18	479168.2	1350877.2	MEET EXIST ROAD
19	479126.6	1350905.0	END OF ROAD

CENTERLINE DITCH COORDINATES

POINT	NORTHING	EASTING	DESCRIPTION
1	479137.62	1350760.32	BEGIN PIPES
2	479101.60	1350795.00	END PIPES, BEGIN DITCHES
3	479135.43	1350937.42	PI 200' CURVE
4	478934.51	1351221.29	PI 400' CURVE
5	478464.23	1351446.33	END DITCH
6	478238.70	1350733.91	PI 275' CURVE
7	478347.33	1351111.93	END DITCH
8	479171.83	1350904.25	END OF PIPE
9	479145.37	1350861.83	END OF PIPE

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00459	TRAFFIC PLAN	G0011
92X-5900-G-00432	SEDIMENT BASIN	G0014
92X-5900-G-00461	SEDIMENT BASIN SECTIONS AND DETAILS	G0015
92X-5900-G-00466	CONVEYANCE CHANNEL PLAN	G0016
92X-5900-G-00469	DETAIL SHEET	G0019

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL INITIALS AND DATE	PM INITIALS AND DATE	REVD BY INITIALS AND DATE
E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
D	ISSUED FOR 90% FOF AND DOE DESIGN REVIEW	KG 11/4/97	CS 11/4/97	KG 11/4/97
C	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
B	ISSUED FOR 30% DESIGN	KG 8/1/97	CS 8/1/97	KG 8/1/97
A	ISSUED FOR 30% DESIGN REVIEW	KG 6/20/97	CS 6/20/97	KG 6/20/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

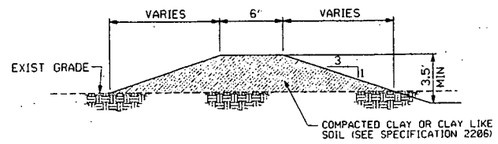
PROJECT NAME
REMEDIATION AREA 1 - PHASE II

DRAWING TITLE
CIVIL
SITE PLAN
TRAP RANGE

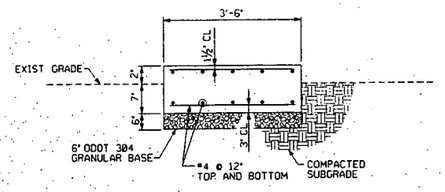
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/23/97	K. Gerard	11/14/97	K. Gerard	11/14/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=50'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/20/97	DATE	DATE 11/14/97

PO NUMBER	FOR PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00436	G0005	E

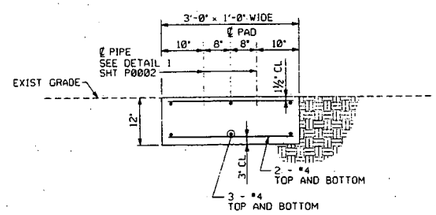


CONTAINMENT BERM SECTION (A)
NTS



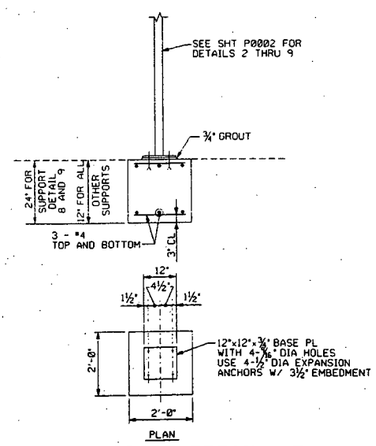
NOTES:
1. USE EXPANSION ANCHORS TO ANCHOR BASE PLATE TO FOUNDATION. SIZE PER VENDOR REQUIREMENT. ALLOW 6" EDGE DISTANCE FOR EXPANSION ANCHORS.

STRAINER PAD SECTION (C)
NTS

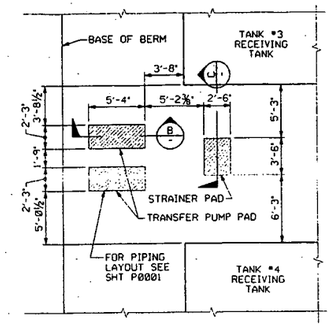


NOTES:
1. FOR LOCATION OF PIPE SUPPORT PAD SEE SHT P0001.

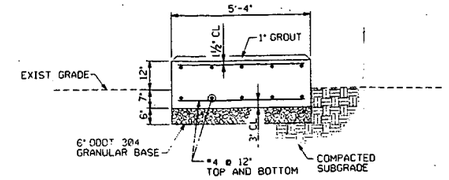
PIPE SUPPORT DETAIL (2) G0006 REF
NTS



PIPE SUPPORT DETAIL (3) G0006 REF
NTS

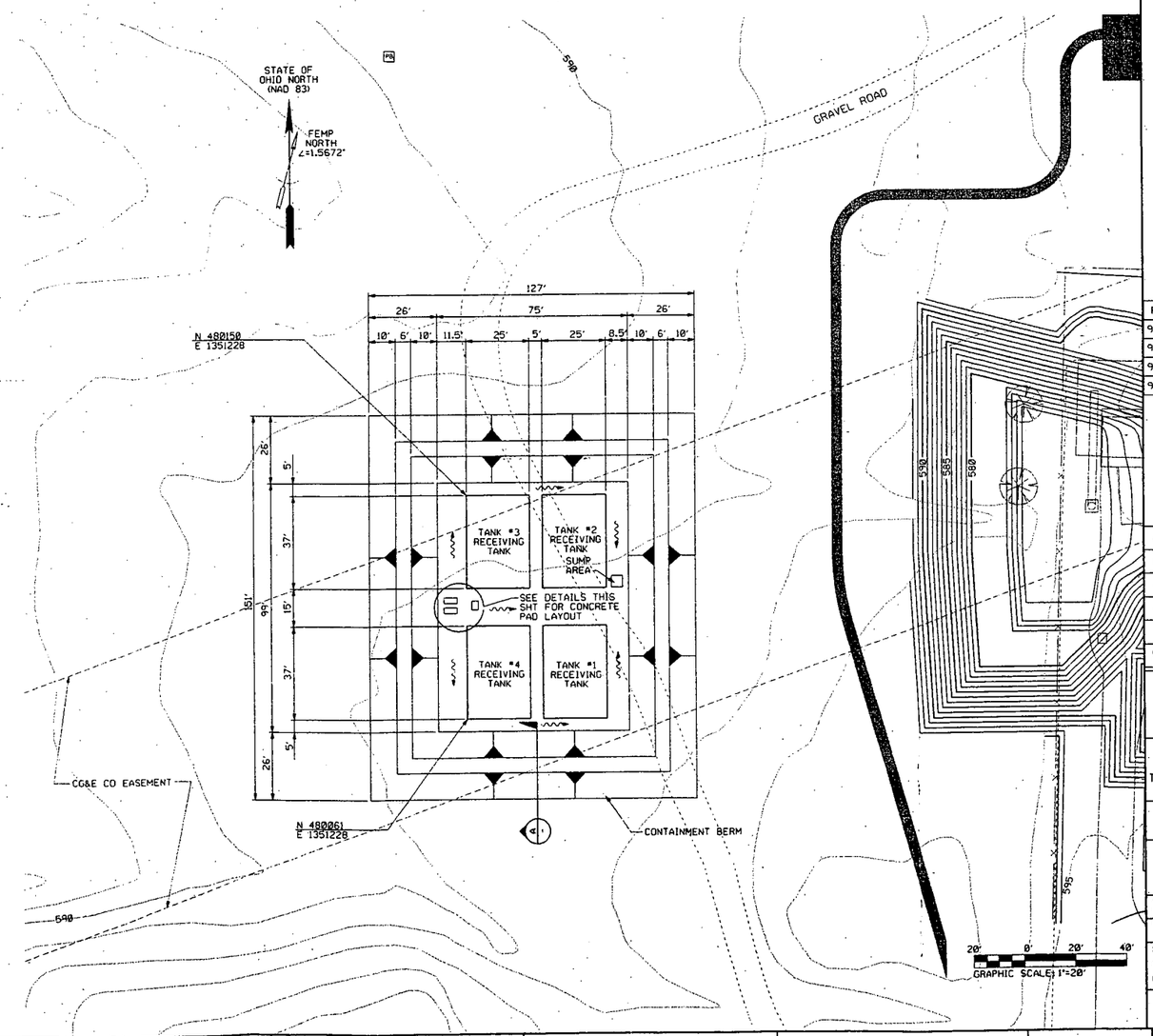


CONCRETE PAD LAYOUT (1)
NTS



NOTES:
1. USE EXPANSION ANCHORS TO ANCHOR BASE PLATE TO FOUNDATION. SIZE PER VENDOR REQUIREMENT. ALLOW 6" EDGE DISTANCE FOR EXPANSION ANCHORS.

TRANSFER PUMP PAD SECTION (B)
NTS



NOTES

1. CONTAINMENT BERM SHALL BE CONSTRUCTED WITH CLAY SOIL, COMPACTED TO 95% STANDARD PROCTOR.
2. CONCRETE SHALL BE ODOT ITEM 499, CLASS C (4,000 PSI @ 28 DAYS).
3. FOR REBAR SEE SPECIFICATION SECTION 02720.

1094

000009

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-P-00474	PIPING - PIPING PLAN	P0001
92X-5900-P-00475	PIPING - SECTIONS AND DETAILS	P0002

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DRAWN BY	CHECKED BY	REVIEW BY
E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
D	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
C	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
B	ISSUED FOR 30% DESIGN	KG 8/1/97	CS 8/1/97	KG 8/1/97
A	ISSUED FOR 30% DESIGN REVIEW	KG 6/20/97	CS 6/20/97	KG 6/20/97

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

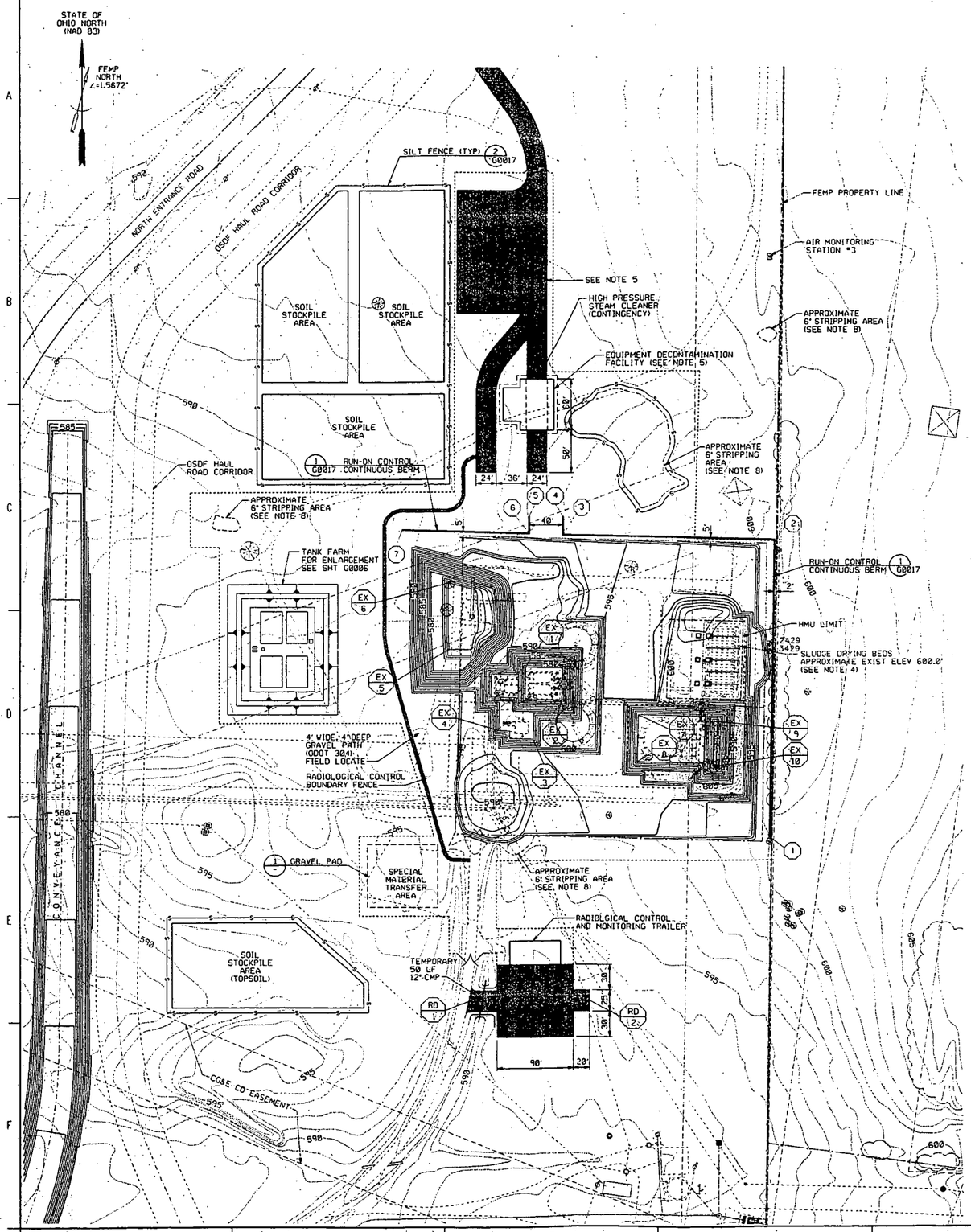
PROJECT NAME
REMEDIATION AREA 1, PHASE II

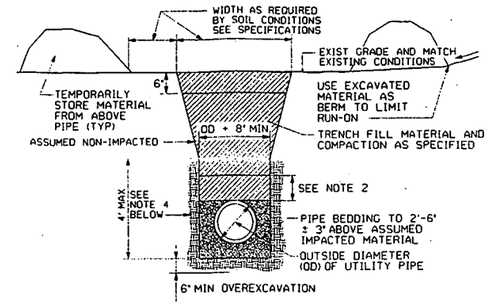
DRAWING TITLE
CIVIL
SITE PLAN
TANK FARM

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/23/97	K. Gerard	11/14/97	K. Gerard	11/14/97
PLANT/BLDG NO.		FLOOR		SCALE 1"=20'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/20/97	DATE	DATE 11/13/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00433	G0006	E



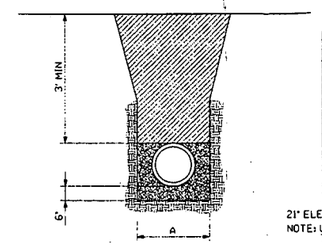


TYPICAL PIPE REMOVAL DETAIL

NTS

NOTES:

1. TOP 6' IS ASSUMED TO BE IMPACTED MATERIAL (SECTION 02205).
2. SEE SPECIFICATION SECTION 02205.
3. SEE SPECIFICATION SECTION 02205 FOR ADDITIONAL REQUIREMENTS AND MATERIAL DISPOSITION.
4. 6" MINIMUM OVEREXCAVATION ON SIDES.



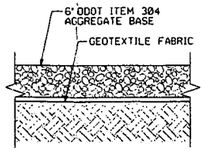
TYPICAL UTILITY CONDITION	
UTILITY	DIM. A
DW-3"	12"
FO-4"	12"
FG-4"	12"
SN-8"	18"
FT-12"	24"
SN-16"	24"
ST-20"	36"

21" ELEC DUCT (20" COVER OVER CONC.)

NOTE: UTILITIES SHOWN ABOVE ARE THOSE OUTSIDE OF STP AREA

TYPICAL UTILITY CONDITION DETAIL

NTS



DETAIL 1

NTS

50' 0' 50' 100'

GRAPHIC SCALE: 1"=50'

NOTES

1. EXCAVATION CONTOURS SHOWN ARE APPROXIMATE AND ARE BASED ON FDF MODELED DEPTH OF CONTAMINATION AND DEPTH OF FOUNDATIONS FROM AS-BUILT DRAWINGS.
2. UTILITY EXCAVATION CONTOURS ARE NOT SHOWN. SEE TYPICAL UTILITY EXCAVATION DETAIL AND SPECIFICATIONS.
3. SEE SHEET G0010 FOR TYPICAL SLOPE CONDITIONS, SOIL CONDITIONS, AND EXCAVATION REQUIREMENTS.
4. SOILS IN THE AREA SHOWN ARE LIKELY TO CONTAIN VOLATILE ORGANIC CHEMICALS AND WILL BE EXCAVATED FIRST DURING THE STP SEQUENCE OF EXCAVATION. SEE SECTION 2205.
5. EQUIPMENT DECONTAMINATION FACILITY SHALL BE OPERATED BY THE CONTRACTOR SO THAT ALL EQUIPMENT LEAVING THE WORK AREA CAN ACCESS CERTIFIED AREAS. SEE SPECIFICATION 02850. FOR EQUIPMENT DECONTAMINATION FACILITY SEE SHT G0023.
6. SEE SPECIFICATION 02100 FOR CONSTRUCTION AND RADIOLOGICAL CONTROL FENCE.
7. CONTRACTOR SHALL PROVIDE VEHICLE ACCESS TO TANK FARM FOR POTENTIAL TRANSFER OF WATER TO AWWTF.
8. CONTRACTOR TO SCALE AND FIELD STAKE LIMITS OF 6" STRIPPING USING BASELINE A, SUBJECT TO CONSTRUCTION MANAGER APPROVAL.

1094

ROADWAY COORDINATES (RD)			
POINT	NORTHING	EASTING	DESCRIPTION
1	479692.84	1351471.60	C/L ROAD
2	479692.85	1351614.92	C/L ROAD

CONTINUOUS BERM COORDINATES			
POINT	NORTHING	EASTING	DESCRIPTION
1	479884.6	1351824.8	BEGIN BERM
2	480233.7	1351830.4	CORNER
3	480240.3	1351583.4	CORNER
4	480261.9	1351583.4	END BERM
5	480262.4	1351543.4	BEGIN BERM
6	480241.9	1351543.4	CORNER
7	480246.3	1351395.2	END BERM

STP EXCAVATION COORDINATES (EX)			
POINT	NORTHING	EASTING	ELEVATION
1	480085.1	1351538.9	578.0
2	480045.8	1351581.7	578.0
3	480000.3	1351548.3	586.0
4	480010.4	1351507.3	586.0
5	480105.8	1351449.8	576.0
6	480183.9	1351448.5	576.0
7	480028.6	1351672.2	586.0
8	479973.3	1351670.8	586.0
9	480020.8	1351764.0	580.0
10	479967.5	1351762.5	580.0

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00433	SITE PLAN TANK FARM	G0006
92X-5900-G-00457	TYPICAL CROSS SECTIONS	G0010
92X-5900-G-00467	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	G0017
92X-5900-G-00482	EQUIPMENT DECONTAMINATION FACILTIY	G0023

PRELIMINARY

NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVIB BY
		INITIALS AND DATE		
D	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/19/97	CS 11/19/97	KG 11/19/97
C	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
B	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
A	ISSUED FOR 30% DESIGN	KG 8/1/97	CS 8/1/97	KG 8/1/97

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

REMEDIATION AREA 1, PHASE II

DRAWING TITLE

CIVIL
EXCAVATION PLAN
SEWAGE TREATMENT PLANT

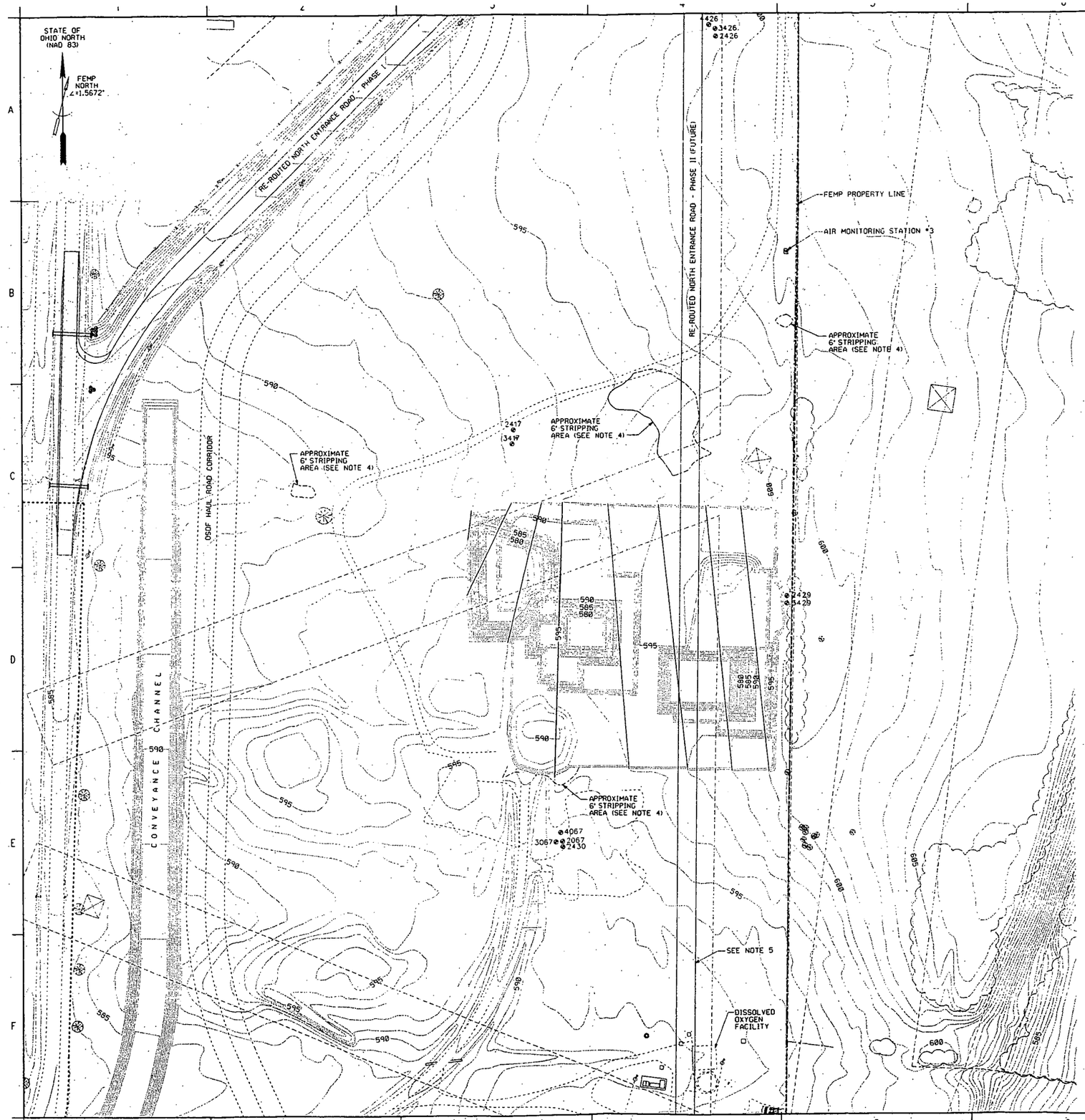
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	06/30/97	K. Gerard	11/19/97	K. Gerard	11/19/97

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

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/20/97	DATE	DATE 11/19/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00463	G0007	D

000010



NOTES

1. UPON CERTIFICATION, BACKFILL THE EXCAVATION. PROVIDE SUFFICIENT SLOPE TO DRAIN TO THE CONVEYANCE CHANNEL AT 1% SLOPE. DRAINAGE FROM STP AREA MAY USE CHANNEL DEVELOPED FOR UTILITY REMOVAL. BACKFILL WITHIN THE STP AREA WILL BE COMPACTED TO 95% STANDARD PROCTOR.
2. CONTOURS SHOWN FROM FDF CONTAMINATION DEPTH MODEL AND FOR FOUNDATION REMOVAL.
3. REROUTED NORTH ENTRANCE ROAD PHASE II IS SHOWN PER CFC DRAWINGS. BACKFILL WILL EXTEND TO SUBGRADE OR EXISTING GROUND SURFACE.
4. THE 6" STRIPPING AREA WILL ONLY REQUIRE GRADING.
5. THE ALIGNMENT OF RE-ROUTED NORTH ENTRANCE ROAD - PHASE II SOUTH OF THE STP IS SUBJECT TO ADJUSTMENT TO AVOID DISSOLVED OXYGEN FACILITY.

1094

000011

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00467	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	G0017

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

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
REMEDIATION AREA 1, PHASE II

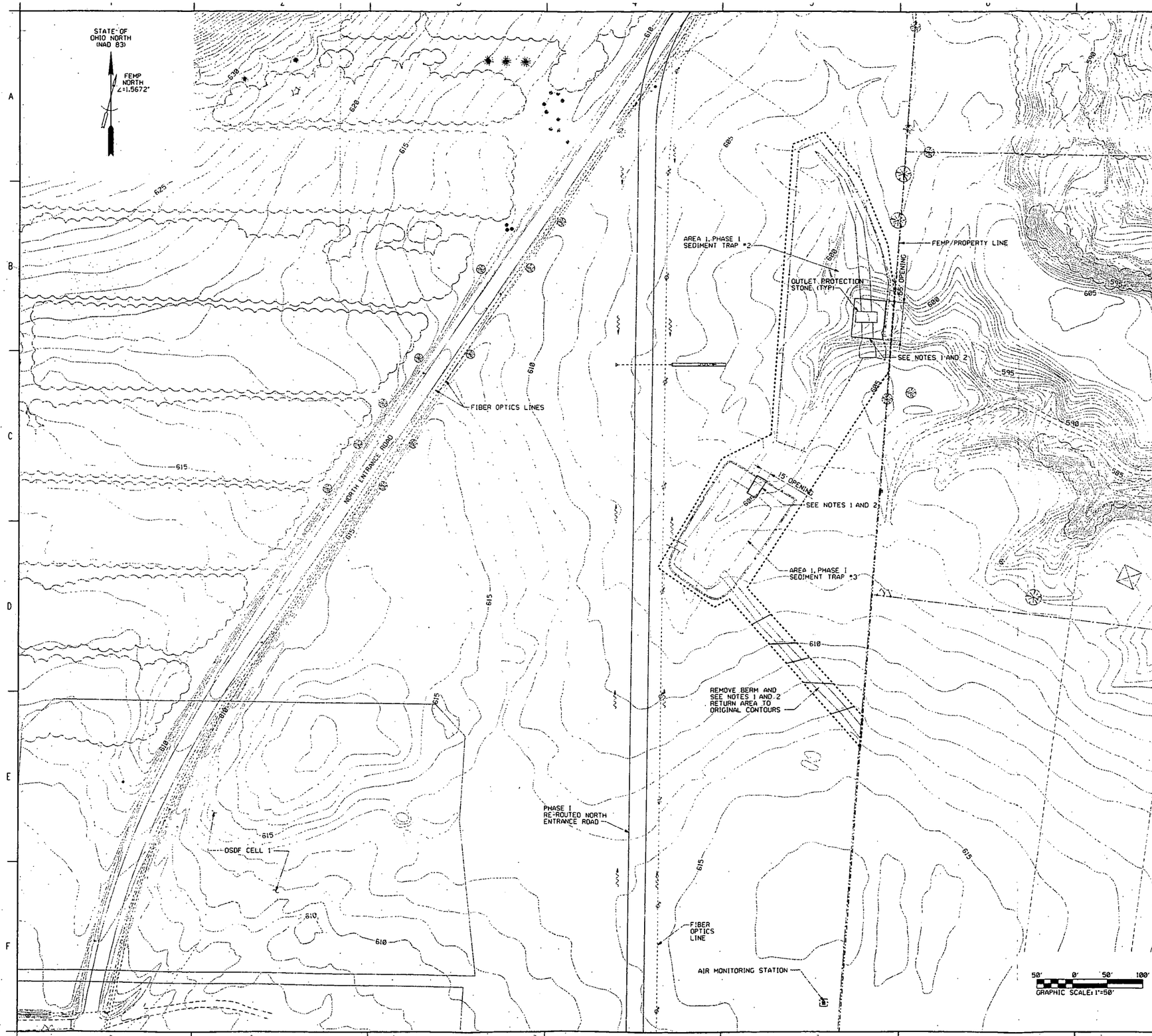
DRAWING TITLE
CIVIL
INTERIM GRADING PLAN
SEWAGE TREATMENT PLANT AREA

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/08/97	K. Gerard	11/14/97	K. Gerard	11/14/97

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

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/14/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00456	G0008	C



NOTES

1. SUBJECT TO CERTIFICATION, AREA 1, PHASE I SEDIMENT TRAPS SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AND STABILIZED WITH SEED AND MULCH. IF ANALYSIS INDICATES THE PRESENCE OF IMPACTED MATERIAL, A WORK PLAN WILL BE PREPARED BY THE CONSTRUCTION MANAGER FOR ACCESS, EXCAVATION, DECONTAMINATION, HAULING, AND STABILIZATION.
2. REGRADING REQUIREMENTS:

   REMOVE BERM AT THE LOW POINT WITH A MINIMUM OPENING AS SHOWN, WHICH MATCHES THE ORIGINAL GROUND LINE.

   REUSE OUTLET PROTECTION STONE AT OPENING. INSTALL STONE FLUSH WITH FLOWLINE/ORIGINAL GROUND.

   MAXIMUM SLOPE UP FROM OPENING IS 4H:1V.

   SOIL REMOVED FROM BERM TO BE SPREAD EVENLY WITHIN THE BASIN SUCH THAT NO SLOPE EXCEEDS 4H:1V. MAINTAIN POSITIVE, NON-EROSIVE DRAINAGE.

   REVEGETATE ACCORDING TO SECTION 02900.

1094

000012

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
B	ISSUED FOR 90% FOF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

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

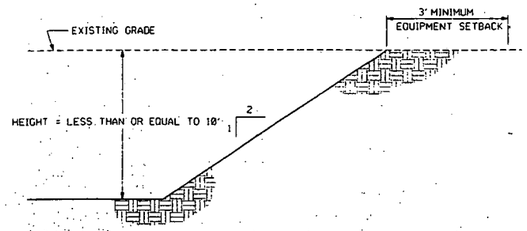
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
INTERIM GRADING PLAN
AREA 1, PHASE I SEDIMENT TRAPS

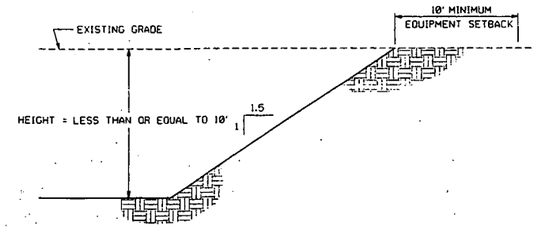
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/08/97	K. Gerard	11/14/97	K. Gerard	11/14/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=50'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/21/97

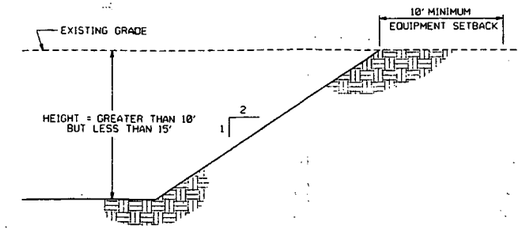
PO NUMBER	FOR PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00455	G0009	C



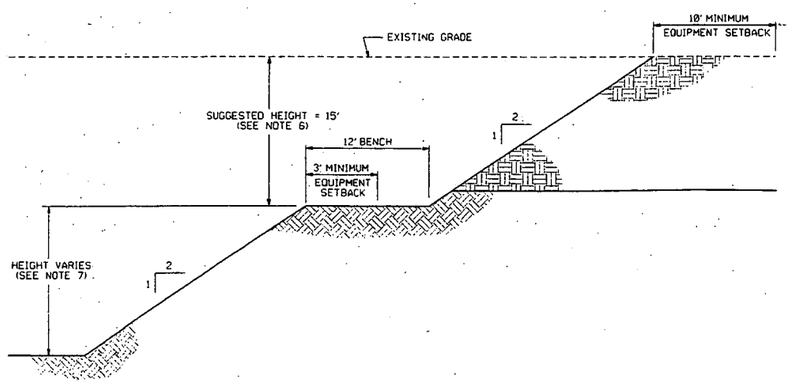
DETAIL 1 G0010 REF
TYPICAL SLOPE W/ 3' MIN EQUIPMENT SETBACK LESS THAN 10' DEEP
NTS



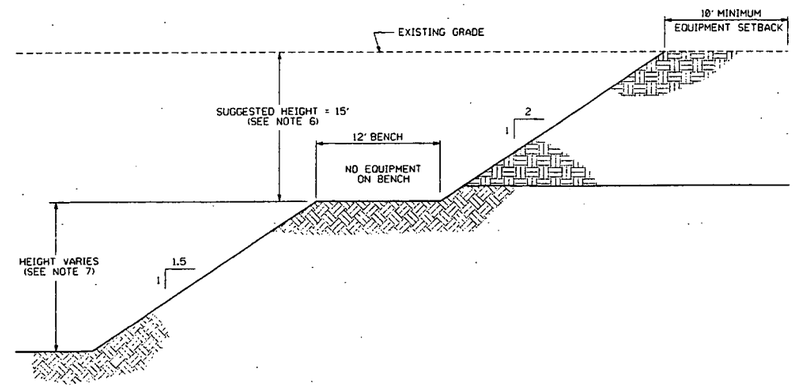
DETAIL 2 G0010 REF
TYPICAL SLOPE W/ 10' MIN EQUIPMENT SETBACK LESS THAN 10' DEEP
NTS



DETAIL 3 G0010 REF
TYPICAL SLOPE GREATER THAN 10' DEEP BUT LESS THAN OR EQUAL TO 15'
NTS



DETAIL 4 G0010 REF
TYPICAL SLOPE
EQUIPMENT ON BENCH
GREATER THAN 15' DEEP
NTS



DETAIL 5 G0010 REF
TYPICALSLOPE
NO EQUIPMENT ON BENCH
GREATER THAN 15' DEEP
NTS

NOTES

1. THE TYPICAL SLOPES SHOWN ARE BASED ON MAINTAINING STABLE SLOPES AT THE EDGE OF THE STP EXCAVATION SITE UPON COMPLETION OF EXCAVATION ACTIVITIES.
2. MAINTAIN EXCAVATION FREE OF STANDING WATER.

   IF LOCALIZED WET CUT CONDITIONS PRECLUDE CONSTRUCTION OF THESE SLOPES, THE CONTRACTOR SHALL EITHER LESSEN THE SLOPE ANGLE TO STABILIZE THE AFFECTED SLOPE , OR INSTALL A GROUNDWATER INTERCEPTION TRENCH TO INTERCEPT GROUNDWATER FLOW WITHIN THE WATER BEARING UNIT.
3. DURING EXCAVATION, STABLE TEMPORARY SLOPE ANGLES WILL VARY BASED ON CONDITIONS ENCOUNTERED. THE TABLE BELOW PROVIDES STABLE SLOPE ANGLES ALLOWED FOR CUT EXCAVATED SLOPES THAT ARE LEFT UNBRACED OR STEEPENED ABOVE ANGLES SHOWN ON THIS DRAWING FOR A DURATION OF LESS THAN 48 HOURS.

SLOPE HEIGHT	EQUIPMENT SETBACK	MAX ALLOWABLE SLOPE ANGLE
H ≤ 10'	3'	1.5H:1V
H ≤ 10'	10'	1H:1V
10' < H ≤ 15'	3'	2H:1V
10' < H ≤ 15'	10'	1.5H:1V

LOAD CONDITION ON BENCH	MAX SLOPE ANGLE BELOW BENCH	MAX SLOPE ANGLE ABOVE BENCH
EQUIPMENT ON	1.5H:1V	1H:1.5V
EQUIPMENT OFF	1H:1V	1H:1.5V

4. DURING CONSTRUCTION, IMPLEMENT SURFACE WATER CONTROLS TO MINIMIZE SOIL EROSION ON EXPOSED EXCAVATED SLOPES.
5. FOR SLOPES TO BE LEFT IN PLACE FOR EXTENDED PERIODS, USE CRUSTING AGENT OR OTHERWISE COVER THE SLOPE TO MINIMIZE SLOPE EROSION.
6. THE SUGGESTED HEIGHT OF THE UPPER SLOPE IS 15 FEET. THE MAXIMUM HEIGHT SHALL NOT EXCEED 20 FEET. EXCEPTIONS OF A 20 FOOT HEIGHT ARE ALLOWED TO PROVIDE FLEXIBILITY FOR EXCAVATION THROUGH SILT AND SAND LENSES AT THE BROWN/GRAY INTERFACE. THIS WILL ALLOW THE BENCH TO BE CONSTRUCTED IN THE GRAY TILL UNIT.
7. BASED ON PLANNED EXCAVATION DEPTHS, THE LOWER SLOPE IS NOT ANTICIPATED TO BE HIGHER THAN 10 FEET. THE HEIGHT SHOULD NOT EXCEED 15 FEET, WITHOUT FURTHER EVALUATION BY A GEOTECHNICAL ENGINEER.

LEGEND

BROWN SILTY CLAY TO LEAN CLAY (CL) WITH VARYING AMOUNTS OF SAND AND GRAVEL AND LIMESTONE ROCK SCATTERED THROUGHOUT. TYPICALLY MEDIUM STIFF TO VERY STIFF AND MOIST TO WET; LAYERS TO STRATUM OF CLAYEY SILT (ML) AND SILTY SAND (SM) CONTAINING PERCHED GROUNDWATER. AREAS OF FILL AT LOCATIONS OF DISMANTELED MAN-MADE STRUCTURES.

GRAY TILL, PREDOMINANTLY SANDY CLAY(CL) WITH SEAMS, LAYERS OR POCKETS OF SAND (SW), CLAYEY SAND (SC) AND SCATTERED GRAVEL. TYPICALLY STIFF TO LOCALLY HARD AND MOIST. SAND SEAMS, LAYERS , AND POCKETS ARE OFTEN WET.

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003

00001.3

PRELIMINARY
NOT FOR CONSTRUCTION

REV NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

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
REMEDIATION AREA 1 - PHASE II

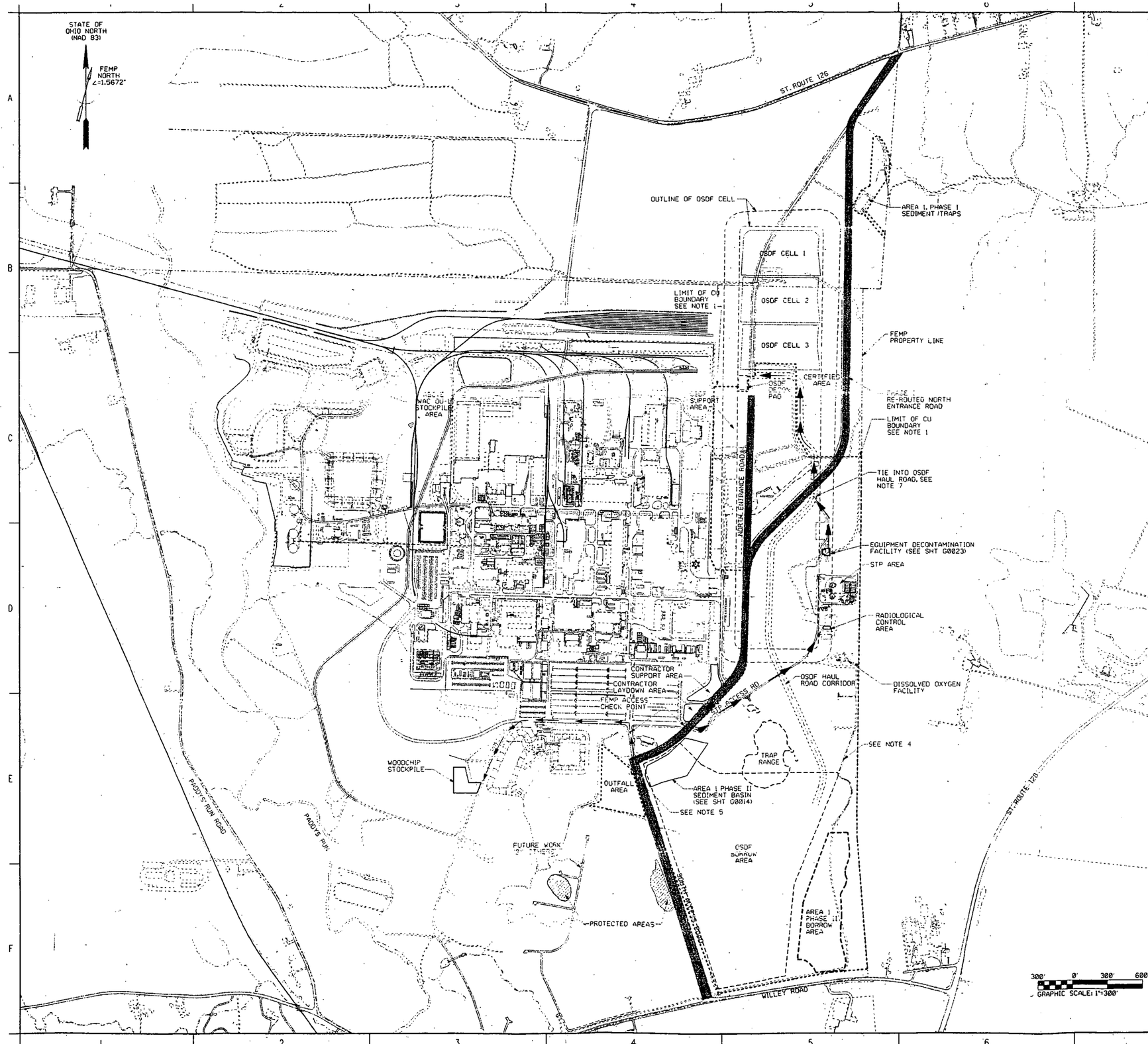
DRAWING TITLE
CIVIL
TYPICAL CROSS SECTIONS

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/08/97	K. Gerard	11/14/97	K. Gerard	11/14/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		AS SHOWN	

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/14/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00457	G0010	C



NOTES

1. VEHICLES SHALL NOT CROSS OVER THE CERTIFICATION UNIT (CU) BOUNDARY FROM THE WORK AREA EXCEPT WHERE SHOWN.
2. PHASE I RE-ROUTED NORTH ENTRANCE ROAD TO BE COMPLETED BY OTHERS PRIOR TO BEGINNING AREA 1, PHASE II REMEDIATION ACTIVITIES. NORTH ENTRANCE ROAD SHALL BE CLOSED DURING STP EXCAVATION AND HAULING TO THE OSDF.
3. CONSTRUCTION VEHICLES SHALL USE ROUTES SHOWN FOR INGRESS AND EGRESS. INTERNAL ROUTES AND TRAFFIC PATTERNS WITHIN PROJECT AREA TO BE DETERMINED BY CONTRACTOR.
4. NEW GRAVEL DRIVE TO BE CONSTRUCTED TO CONNECT EXISTING DRIVES. THIS WILL PROVIDE ACCESS TO THE D.O. FACILITY WHEN STP ACCESS ROAD IS CLOSED, SEE SHT G0005.
5. BY-PASS LANES REQUIRED DURING CONSTRUCTION. SEE SHT G0014.
6. CONTRACTOR SHALL SUBMIT A TRAFFIC PLAN, TO INCLUDE ALL TRAFFIC CONTROL DEVICES, TO THE CM FOR APPROVAL.
7. OSDF HAUL ROAD IS SCHEDULED TO BE BUILT BY OTHERS PRIOR TO STP EXCAVATION.
8. LEAD MATERIAL TO BE HAULED TO THE OSDF VIA STP ACCESS ROAD AND NORTH ENTRANCE ROAD USING CLEAN VEHICLES.
9. ODOT STANDARD SPEED LIMIT AND STOP SIGNS SHALL BE PLACED AS REQUIRED.

4 0094

LEGEND:

- SITE ACCESS
- HAUL ROUTE TO OSDF
- WOOD CHIP HAUL ROUTE

00001

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00436	SITE PLAN - TRAP RANGE	G0005
92X-5900-G-00432	SEDIMENT BASIN PLAN	G0014
92X-5900-G-00482	EQUIPMENT- DECONTAMINATION FACILITY	G0023

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	IL	PM	REVIEW BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/19/97	CS 11/19/97	KG 11/19/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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CINCINNATI, OHIO

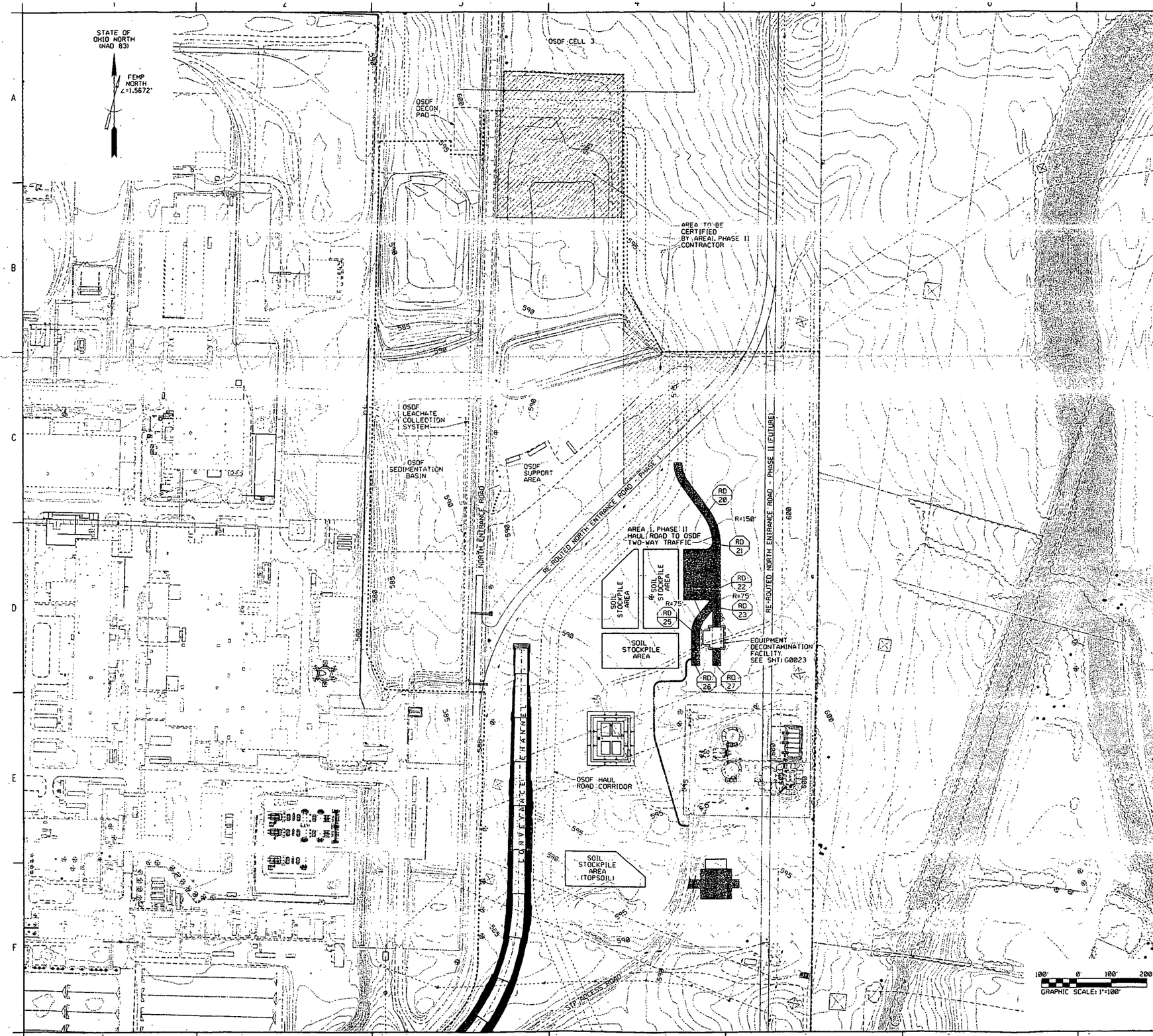
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
TRAFFIC PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/08/97	K. Gerard	11/19/97	K. Gerard	11/19/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=300'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/19/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00459	G0011	C



NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE AREA 1, PHASE II HAUL ROAD. SEE SPECIFICATION SECTION 02506.
2. SEE NOTE 7 ON SHT G0011 FOR THE OSDF HAUL ROAD INFORMATION.

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ROADWAY COORDINATES (RD)			
POINT	NORTHING	EASTING	DESCRIPTION
20	480745.4	1351524.7	PC OF CURVE
21	480657.8	1351553.0	PT OF CURVE
22	480530.0	1351553.0	PC OF CURVE
23	480481.8	1351535.5	PT OF CURVE
24	480452.0	1351510.5	PC OF CURVE
25	480403.9	1351493.0	PT OF CURVE
26	480313.3	1351493.0	END OF ROAD
27	480313.3	1351553.0	END OF ROAD

000015

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00459	TRAFFIC PLAN	G0011
92X-5900-G-00482	EQUIPMENT DECONTAMINATION FACILITY SHEET 1 OF 2	G0023

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/19/97	CS 11/19/97	KG 11/19/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
REMEDIATION AREA 1 - PHASE II

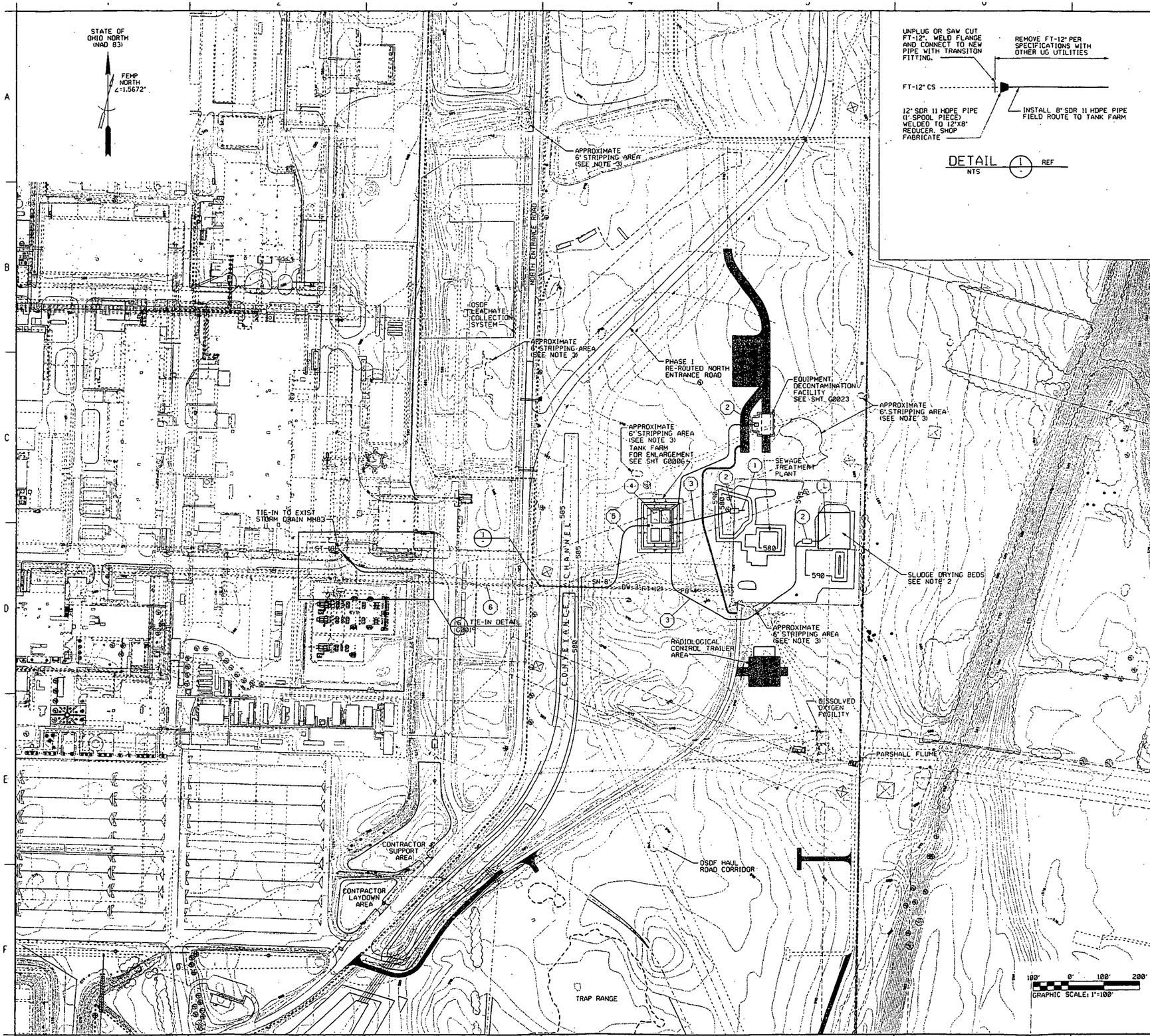
DRAWING TITLE
CIVIL
HAUL ROAD LAYOUT

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/08/97	K. Gerard	11/19/97	K. Gerard	11/19/97

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

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/19/97

PO NUMBER	FOR PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00458	G0012	C



NOTES

1. SOIL AND WATER UNDER AND NEAR THE SLUDGE DRYING BEDS MAY CONTAIN PCE. AREA TO BE EXCAVATED PRIOR TO OTHER SEWAGE TREATMENT PLANT AREAS.
2. THE NEW 8" HDPE LINE SHALL BE FIELD ROUTED TO THE TANK FARM. IT SHALL RUN UNDER THE CONVEYANCE CHANNEL AND THE OSDF HAUL ROAD AND BE INSTALLED PRIOR TO THEIR CONSTRUCTION. OTHERWISE, IT MAY RUN ON GRADE. COORDINATE WITH CONSTRUCTION MANAGER.
3. THE 6" STRIPPING AREA WILL NOT BE BACKFILLED.

1094

1. DEWATERING SUMP LOCATION (AS REQUIRED BY CONTRACTOR)
2. PORTABLE PUMP AND DISCHARGE HOSE (AS REQUIRED BY CONTRACTOR)
3. TEMPORARY DISCHARGE LINE TO RECEIVING TANKS (AS REQUIRED BY CONTRACTOR) FIELD ROUTE, RUN ON GRADE
4. RECEIVING TANKS (4) TOTAL
5. NEW 8" HDPE PIPE (SEE NOTE 4)
6. EXISTING FT-12" PIPE

000016

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00433	SITE PLAN - TANK FARM	G0006
92X-5900-G-00469	DETAIL SHEET	G0019
92X-5900-G-00482	EQUIPMENT DECONTAMINATION FACILITY SHEET 1 OF 2	G0023

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

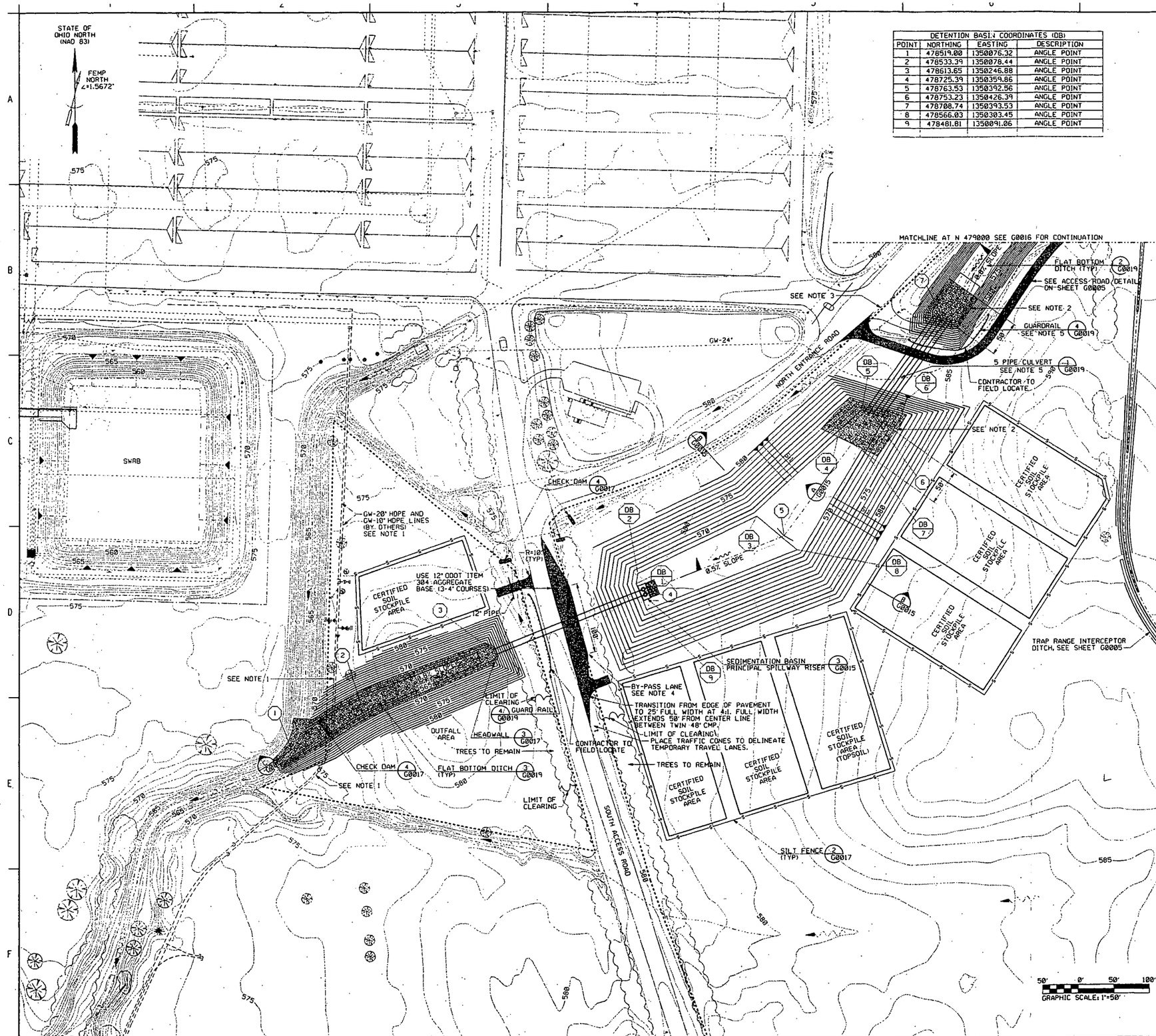
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
REMEDIATION GENERATED WATER TRANSFER LINE

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/08/97	K Gerard	11/4/97	K Gerard	11/04/97
PLANT/BLDG NO.		FLOOR		SCALE 1"=100'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K Gerard
DATE	DATE	DATE 11/4/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00460	G0013	C



DETENTION BASIN COORDINATES (DB)			
POINT	NORTHING	EASTING	DESCRIPTION
1	478519.00	1350076.32	ANGLE POINT
2	478533.39	1350078.44	ANGLE POINT
3	478613.65	1350246.88	ANGLE POINT
4	478725.39	1350359.86	ANGLE POINT
5	478763.53	1350392.56	ANGLE POINT
6	478753.23	1350426.39	ANGLE POINT
7	478708.74	1350393.53	ANGLE POINT
8	478566.03	1350303.45	ANGLE POINT
9	478481.81	1350091.06	ANGLE POINT

NOTES

1. THE CONSTRUCTION OF THE GW LINES WILL PRECEED THE OUTFALL CHANNEL CONSTRUCTION. THE LINES ARE TO BE CONSTRUCTED LOW ENOUGH TO AVOID ANY PROBLEMS DUE TO THE OUTFALL. CONTRACTOR TO CONFIRM PRIOR TO EXCAVATION.
2. ODOT ITEM 601.07 TYPE C DUMPED ROCK SHALL BE 18" DEEP, 50' LONG, AND THE WIDTH SHALL BE WIDE ENOUGH TO GO UP THE SIDE SLOPES TO 4' VERTICAL HEIGHT.
3. SAW CUT AND REMOVE STP ROAD PAVEMENT. BACKFILL WITH CLEAN TOPSOIL IN NON-CHANNEL AREAS.
4. USE JERSEY BARRICADES OR SIMILAR METHODS TO PROTECT MOTORISTS FROM EXCAVATED AREAS. CONTRACTOR TO PREPARE A TRAFFIC PLAN AND COORDINATE LANE CLOSURES WITH THE CONSTRUCTION MANAGER. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
5. THE CONTRACTOR SHALL LOCATE THE GW-24" LINE PRIOR TO ANY EXCAVATION FOR CULVERTS OR GUARDRAIL POSTS. NOTIFY THE CONSTRUCTION MANAGER OF ANY CONFLICTS.

1094

CENTERLINE DITCH COORDINATES			
POINT	NORTHING	EASTING	DESCRIPTION
1	478285.65	1349589.35	INTERSECT DITCHES
2	478346.82	1349687.76	PI 400' RADIUS
3	478423.61	1349876.40	BEGIN 48" PIPE
4	478507.27	1350087.43	48" RISERS
5	478565.89	1350285.74	ANGLE POINT IN BASIN
6	478756.18	1350407.91	BEGIN 36" PIPES
7	478894.32	1350507.00	END 36" PIPES

000017

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00436	SITE PLAN TRAP RANGE	G0005
92X-5900-G-00461	SEDIMENT BASIN SECTIONS AND DETAILS	G0015
92X-5900-G-00466	CONVEYANCE CHANNEL PLAN	G0016
92X-5900-G-00467	EROSION AND SEDIMANT CONTROL NOTES AND DETAILS	G0017
92X-5900-G-00469	DETAIL SHEET	G0019

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION			REVD BY
E	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
D	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
C	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
B	ISSUED FOR 30% DESIGN	KG 8/1/97	CS 8/1/97	KG 8/1/97
A	ISSUED FOR 30% DESIGN REVIEW	KG 6/20/97	CS 6/20/97	KG 6/20/97
		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

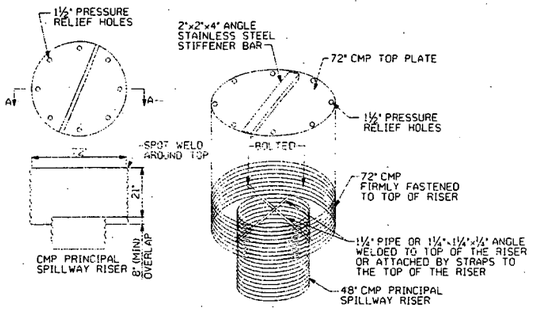
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
SEDIMENT BASIN PLAN

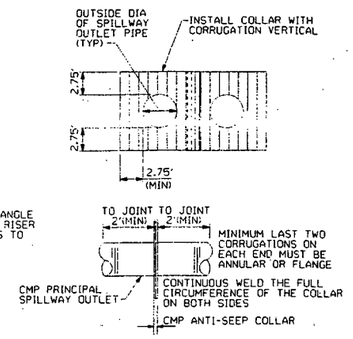
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	04/23/97	K. Gerard	11/17/97	K. Gerard	11/17/97
PLANT/BLDG. NO.		FUNCTION		SCALE 1"=50'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD K. GERARD	TECH LEAD N/A	TECH LEAD K. Gerard
DATE 6/20/97	DATE	DATE 11/17/97

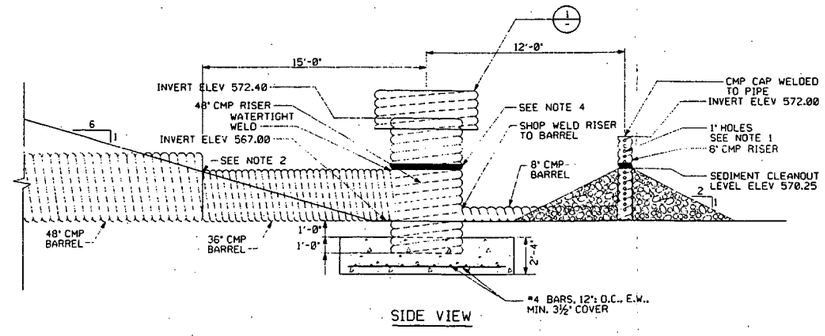
PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
PO175	00-90701	92X-5900-G-00432	G0014	E

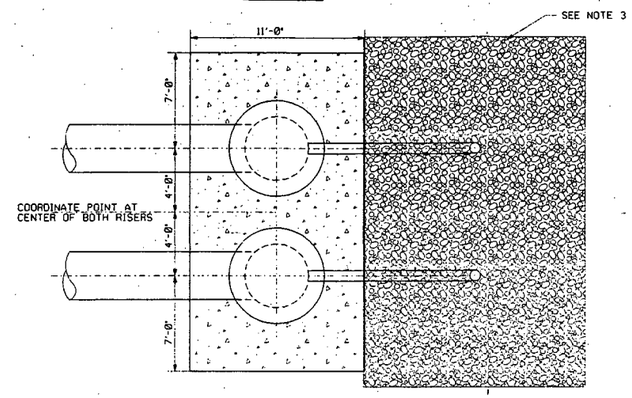


CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE DETAIL (1/-)
NTS



ANTI-SEEP COLLAR DETAIL (2/-)
NTS

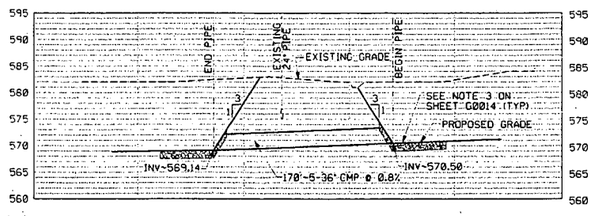




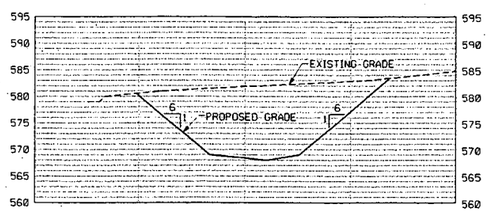
SEDIMENTATION BASIN PRINCIPAL SPILLWAY RISER DETAIL (3/G0015) REF G0014
NTS.

NOTES:

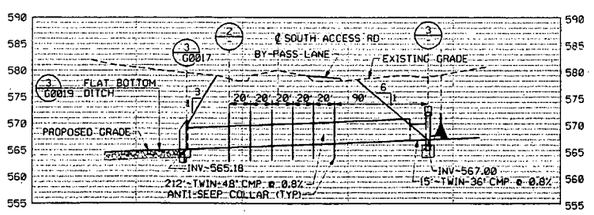
1. 4 ROWS OF 1" DIAMETER HOLES, 4" O.C., EQUALLY SPACED AROUND RISER.
2. STEEL PLATE WITH A CONTINUOUS WATERTIGHT WELD.
3. PLACE AGGREGATE STONE UP TO MAXIMUM SEDIMENT CLEAN-OUT ELEVATION. STONE SHALL BE NO.1 STONE WITH THE FRACTION SMALLER THAN 2" REMOVED. MATERIAL SHALL CONFORM TO ODOT ITEMS 601, 703.01 AND 703.04.
4. PAINT A ½" WIDE BAND AROUND THE 8" AND 48" RISERS AT THE CLEANOUT ELEVATION. BAND SHALL BE PAINTED FLUORESCENT ORANGE. CONTRACTOR SHALL REMOVE SEDIMENTS WHEN BUILD-UP REACHES THE BOTTOM OF PAINTED BAND.



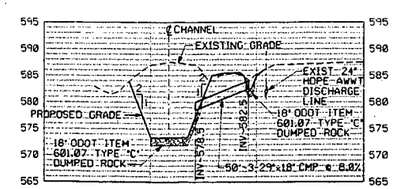
PROFILE (A/G0015) REF G0014



SECTION (B/G0015) REF G0014



PROFILE (C/G0015) REF G0014



SECTION (D/G0015) REF G0005

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

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

NOTES

1094

000018

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00432	SEDIMENT BASIN PLAN	G0014
92X-5900-G-00467	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	G0017
92X-5900-G-00469	DETAIL SHEET	G0019

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/19/97	CS 11/19/97	KG 11/19/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/4/97	CS 11/4/97	KG 11/4/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

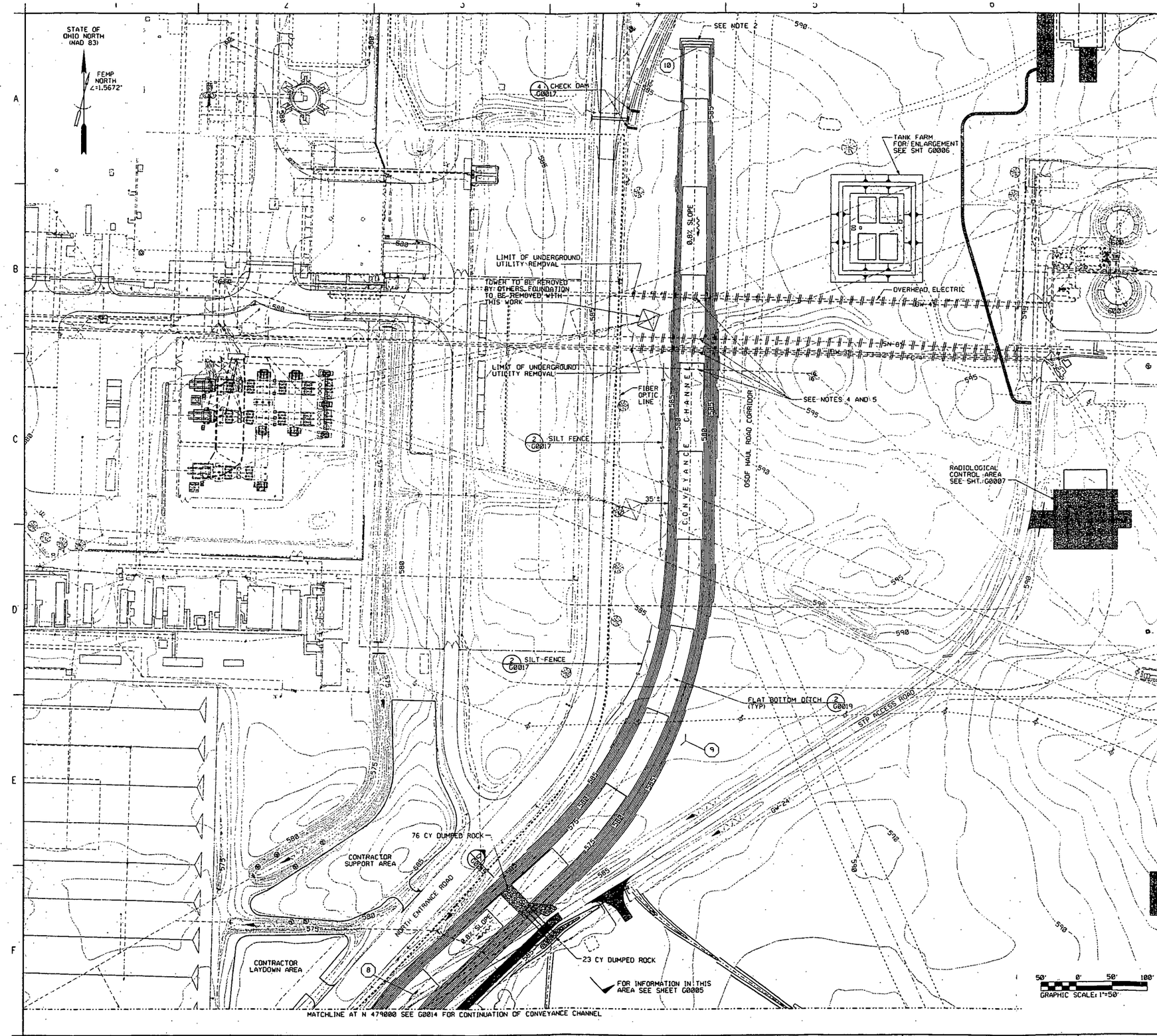
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
SEDIMENT BASIN
SECTIONS AND DETAILS

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/09/97	K. Gerard	11/19/97	K. Gerard	11/19/97
PLANT/BLDG. NO.		FLOOR		SCALE: AS SHOWN	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/19/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00461	G0015	C



NOTES

1. ALL EQUIPMENT AND UTILITIES ARE SCHEDULED TO BE DE-ENERGIZED PRIOR TO THE START OF WORK. CONTRACTOR SHALL VERIFY THIS PROCESS HAS BEEN ACCOMPLISHED ON SPECIFIC SYSTEMS BEFORE WORK BEGINS.
2. TRANSITION FROM DITCH END TO EXISTING GRADE AT 4:1 SLOPE.
3. PROTECT UTILITIES AND FEATURES THAT ARE TO REMAIN FROM DAMAGE. INFORM THE CONSTRUCTION MANAGER OF ANY DAMAGE AND REPAIR IT AT NO COST TO THE OWNER.
4. UTILITIES IN THE AREA OF THE CONVEYANCE CHANNEL AND OSDF HAUL ROAD CORRIDOR ARE TO BE REMOVED BEFORE EITHER ARE CONSTRUCTED. COORDINATE WITH THE CONSTRUCTION MANAGER.
5. FOR INSTALLATION OF REMEDIATION GENERATED WATER TRANSFER LINE SEE SHEET G0013.

1094

CENTERLINE DITCH COORDINATES			
POINT	NORTHING	EASTING	DESCRIPTION
8	479020.88	1350597.79	PI 400' RADIUS
9	479379.62	1350985.33	PI 800' RADIUS
10	480361.63	1350999.79	END DITCH

000019

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00433	SITE PLAN - TANK FARM	G0006
92X-5900-G-00463	EXCAVATION PLAN - SEWAGE TREATMENT PLANT	G0007
92X-5900-G-00460	REMEDIATION GENERATED WATER TRANSFER LINE	G0013
92X-5900-G-00432	SEDIMENT BASIN PLAN	G0014
92X-5900-G-00467	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	G0017
92X-5900-G-00469	DETAIL SHEET	G0019

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

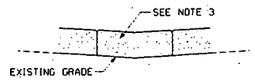
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
CONVEYANCE CHANNEL PLAN

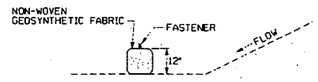
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
O.R. FOX	09/30/97	K. Grand	11/14/97	K. Grand	11/14/97
PLANT/BLDG. NO.		FEDOR		SCALE 1"=50'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Grand
DATE	DATE	DATE 11/14/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00466	G0016	C



FRONT VIEW



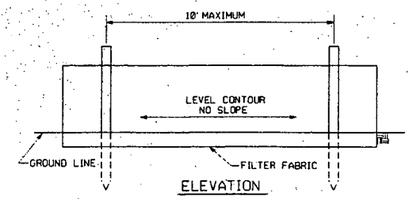
SIDE VIEW

NOTES:

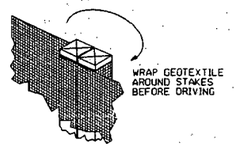
1. LENGTH OF INDIVIDUAL SURFACE WATER CONTROL BERM MAY VARY AS REQUIRED FOR HANDLING.
2. WHERE TWO ENDS OF SURFACE WATER CONTROL BERM MEET OVERLAP 1 FOOT MINIMUM.
3. USE CLEAN FILL DIRT.

RUN-ON CONTROL CONTINUOUS BERM DETAIL (1 / G0017) REF G0007

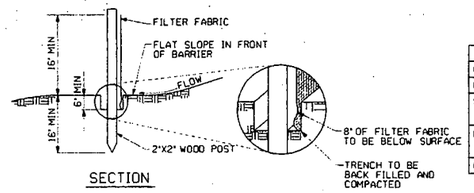
NTS



ELEVATION



JOINING SILT FENCE SECTIONS

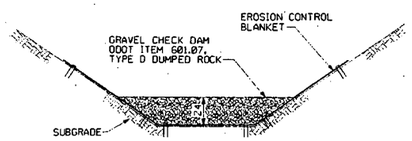


SECTION

FABRIC PROPERTIES	VALUES	TEST
GRAB TENSILE STRENGTH	90 LB MIN	ASTM D 1682
MULLEN BURST STRENGTH	190 PSI MIN	ASTM D 3786
SLURRY FLOW RATE	0.3 GAL/MIN PER SF MAX	
EQUIVALENT OPENING SIZE	40 - 80	US STD SIEVE CW-02215
UV RADIATION STABILITY	70% MIN	ASTM D 4355

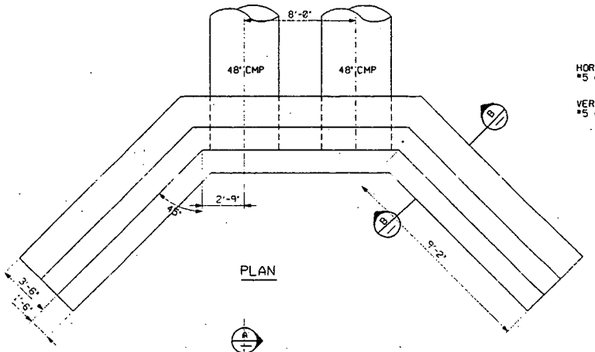
SILT FENCE DETAIL (2 / G0017) REF G0007 G0008 G0014

NTS

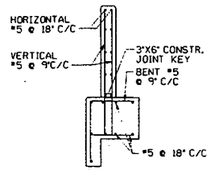


CHECK DAM DETAIL (4 / G0017) REF G0014

NTS

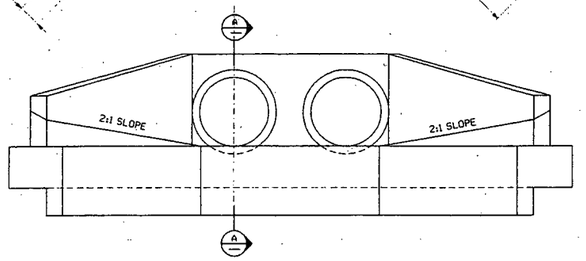


PLAN



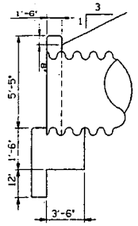
SECTION (B / —)

NTS



ELEVATION (A / —)

NTS



SECTION (A / —)

NTS

HEADWALL DETAIL (3 / G0017) REF G0014

NTS

NOTES:

1. CONCRETE SHALL CONFORM TO ODOT ITEM 499. CLASS C (4000psi) AND ITEM 511.
2. REINFORCING STEEL SHALL CONFORM TO ODOT ITEM 509.
3. CHAMFER ALL EXPOSED CORNERS 3/4-INCH.
4. IF BEARING CAPACITY IS FOUND TO BE LESS THAN 2600 POUNDS PER SQUARE FOOT, INCREASE WIDTH OF FOOTING.

NOTES

1. UNLESS OTHERWISE NOTED, ALL MATERIALS SHALL CONFORM TO ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS, DATED JANUARY 1997.

1094

000020

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00463	EXCAVATION PLAN SEWAGE TREATMENT PLANT	G0007
92X-5900-G-00456	INTERIM GRADING PLAN SEWAGE TREATMENT PLANT AREA	G0008
92X-5900-G-00432	SEDIMENT BASIN PLAN	G0014

PRELIMINARY

NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 01/19/97	CS 01/19/97	KG 01/19/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

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

REMEDIATION AREA 1, PHASE II

DRAWING TITLE

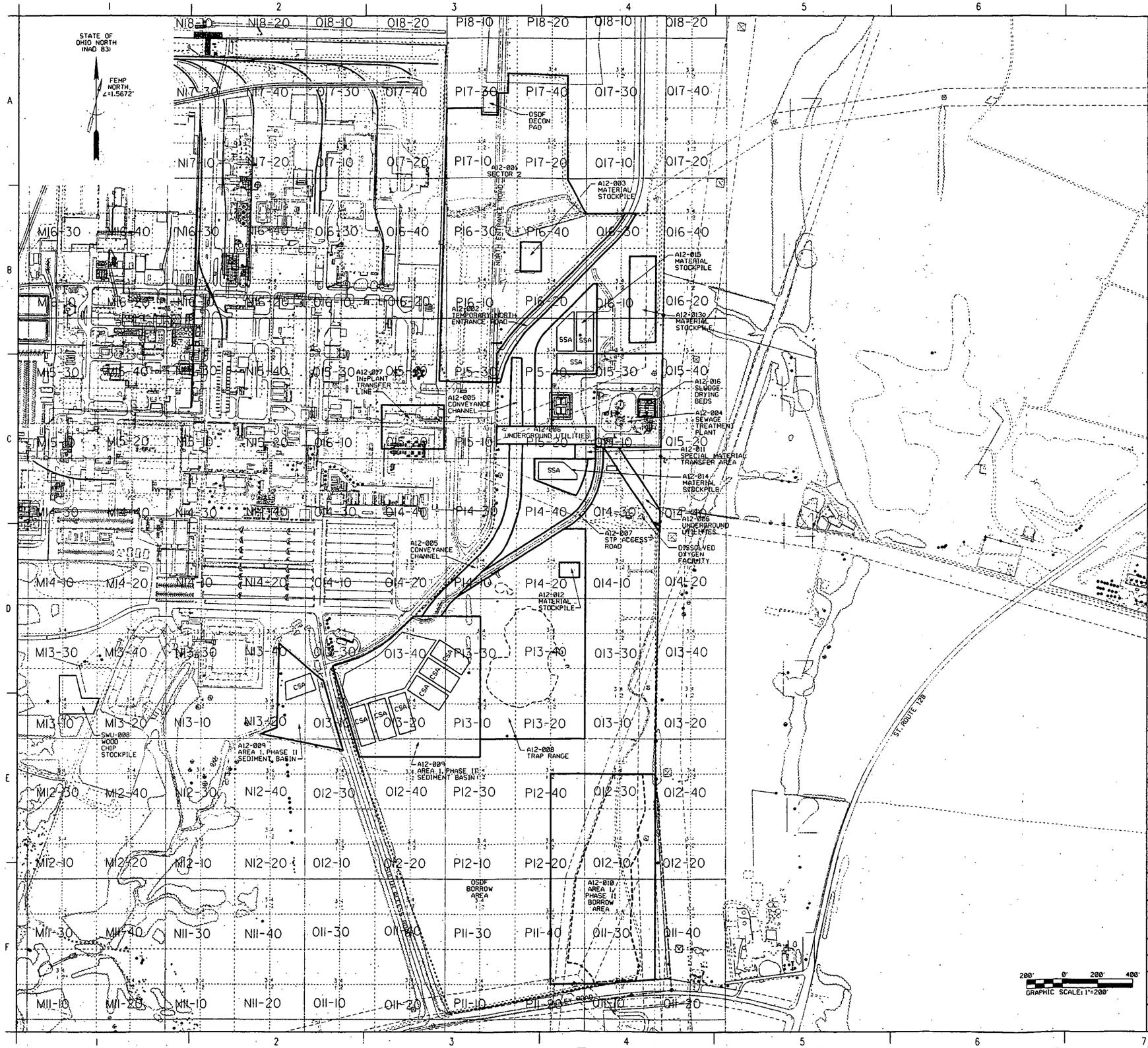
CIVIL
EROSION AND SEDIMENT CONTROL
NOTES AND DETAILS

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/09/97	K. Gaeml	11/14/97	K. Gaeml	11/14/97

PLANT/BLDG. NO. | FLOOR | SCALE: NONE | CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gaeml
DATE	DATE	DATE 11/14/97

PO NUMBER	FOR PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
PO175	00-90701	92X-5900-G-00467	G0017	C



NOTES

1. SEE SHT X0001 FOR ABOVE WAC OU-1 STOCKPILE AREA.

1094

LEGEND

SSA	SOIL STOCKPILE AREA
CSA	CERTIFIED SOIL STOCKPILE
A12-00X	MATERIAL TRACKING LOCATION ID NUMBER

000021

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00415	PROJECT TITLE SHEET	X0001
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00455	AREA 1 PHASE 1 SEDIMENT BASINS INTERIM GRADING PLAN	G0009

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		KG 11/19/97	CS 11/19/97	KG 11/19/97
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97
A	ISSUED FOR INTERIM DESIGN REVIEW	INITIALS AND DATE		

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CINCINNATI, OHIO

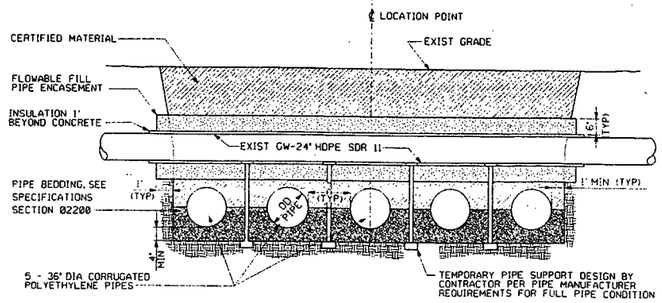
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
MATERIAL TRACKING PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/11/97	K. Gerard	11/19/97	K. Gerard	11/19/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=200'	CLASS

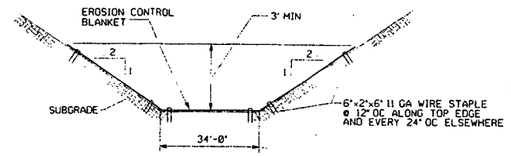
SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/19/97

PO NUMBER	TOP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00468	G0018	C



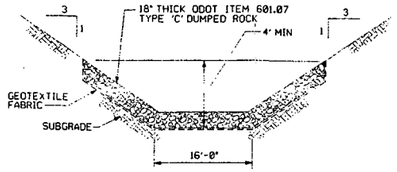
5 PIPE CULVERT DETAIL (1 / G0019) REF G0014

NTS



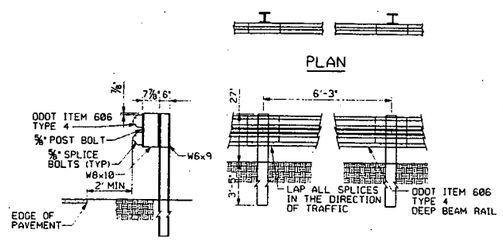
TYPICAL FLAT BOTTOM DITCH (FB) DETAIL (2 / G0019) REF G0014 G0016

NTS



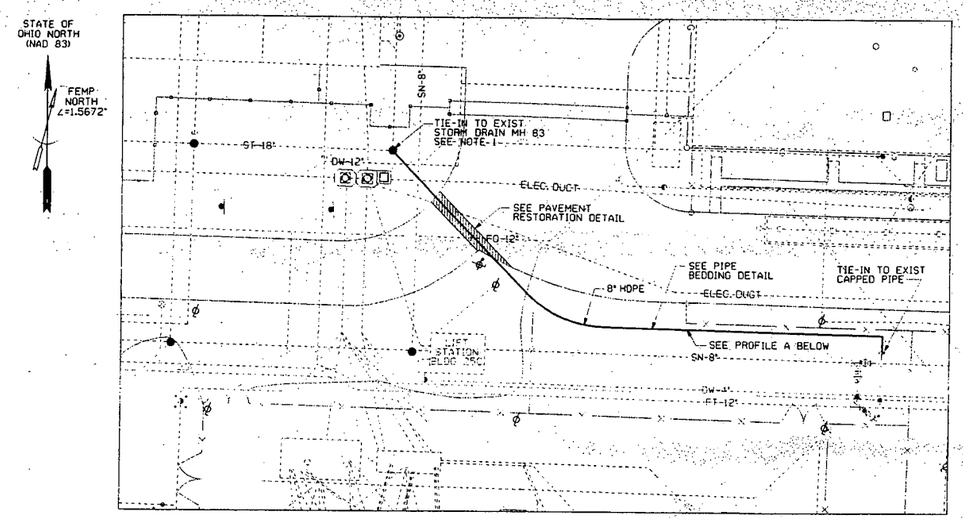
TYPICAL FLAT BOTTOM DITCH (FB) DETAIL (3 / G0019) REF G0014 G0015

NTS



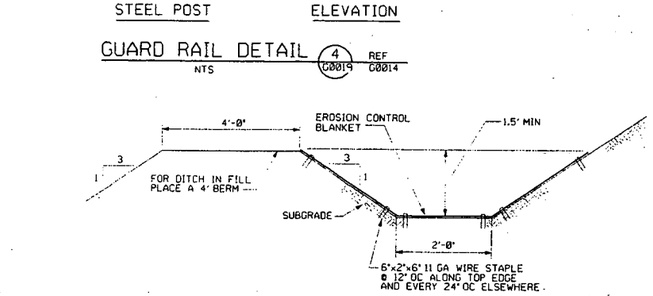
GUARD RAIL DETAIL (4 / G0019) REF G0014

NTS



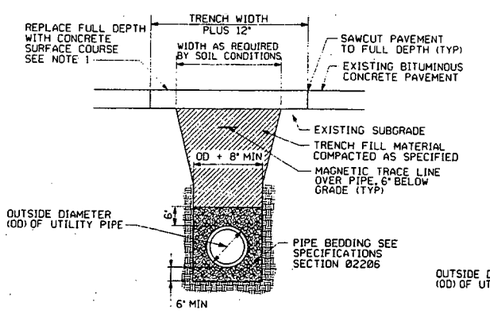
TIE-IN DETAIL (6 / G0019) REF G0013

SCALE: 1"=20'
SEE PROFILE BELOW



TYPICAL FLAT BOTTOM DITCH (FB) DETAIL (5 / G0019) REF G0005

NTS

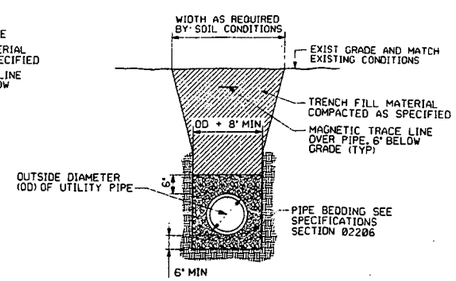


NOTES:

1. MATERIAL AND CONSTRUCTION OF THE CONCRETE PAVING SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 499 OF THE ODOT STANDARD SPECIFICATIONS.

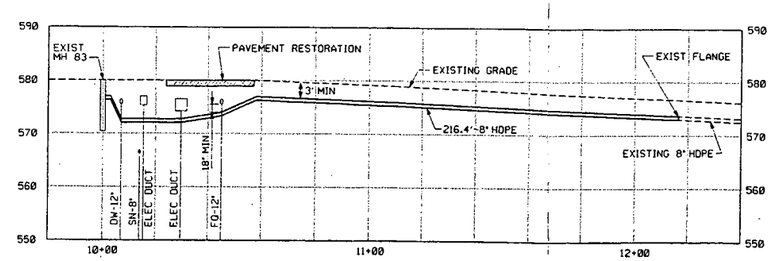
TYPICAL PAVEMENT RESTORATION DETAIL

NTS



TYPICAL PIPE BEDDING DETAIL

NTS



PROFILE (A / G0019) REF

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

GRAPHIC SCALE: 1"=10' VERTICAL

GRAPHIC SCALE: 1"=20' HORIZONTAL

NOTES

1. MANHOLE TIE-IN:

   DRILL OPENING WITH A DIAMOND CORE OR EQUIVALENT TYPE DRILL DESIGNED FOR THIS PURPOSE.

   OPENING SHALL BE SIZED TO FIT THE PIPE AND CONNECTOR ASSEMBLY.

   CONNECTOR ASSEMBLY SHALL BE FABRICATED AT THE RECOMMENDATION OF THE PIPE MANUFACTURER. THEY SHALL BE FABRICATED TO PROVIDE A WATER TIGHT CONNECTION.

   ONCE IN PLACE, ENCASE WITH 4-INCH CONCRETE ENCASEMENT. ODOT ITEM 499, CLASS C, 3,000psi AT THE CONNECTION POINT OUTSIDE THE MANHOLE. POINT UP THE INSIDE CONNECTION WITH MORTAR.

F 1094

000022

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00436	SITE PLAN TRAP RANGE	G0005
92X-5900-G-00460	TRANSFER LINE	G0013
92X-5900-G-00432	SEDIMENT BASIN PLAN	G0014
92X-5900-G-00461	SEDIMENT BASIN SECTIONS AND DETAILS	G0015
92X-5900-G-00466	CONVEYANCE CHANNEL PLAN	G0016

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	IL	PM	REVIS BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/19/97	CS 11/19/97	KG 11/19/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	KG 10/13/97	CS 10/13/97	KG 10/13/97

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

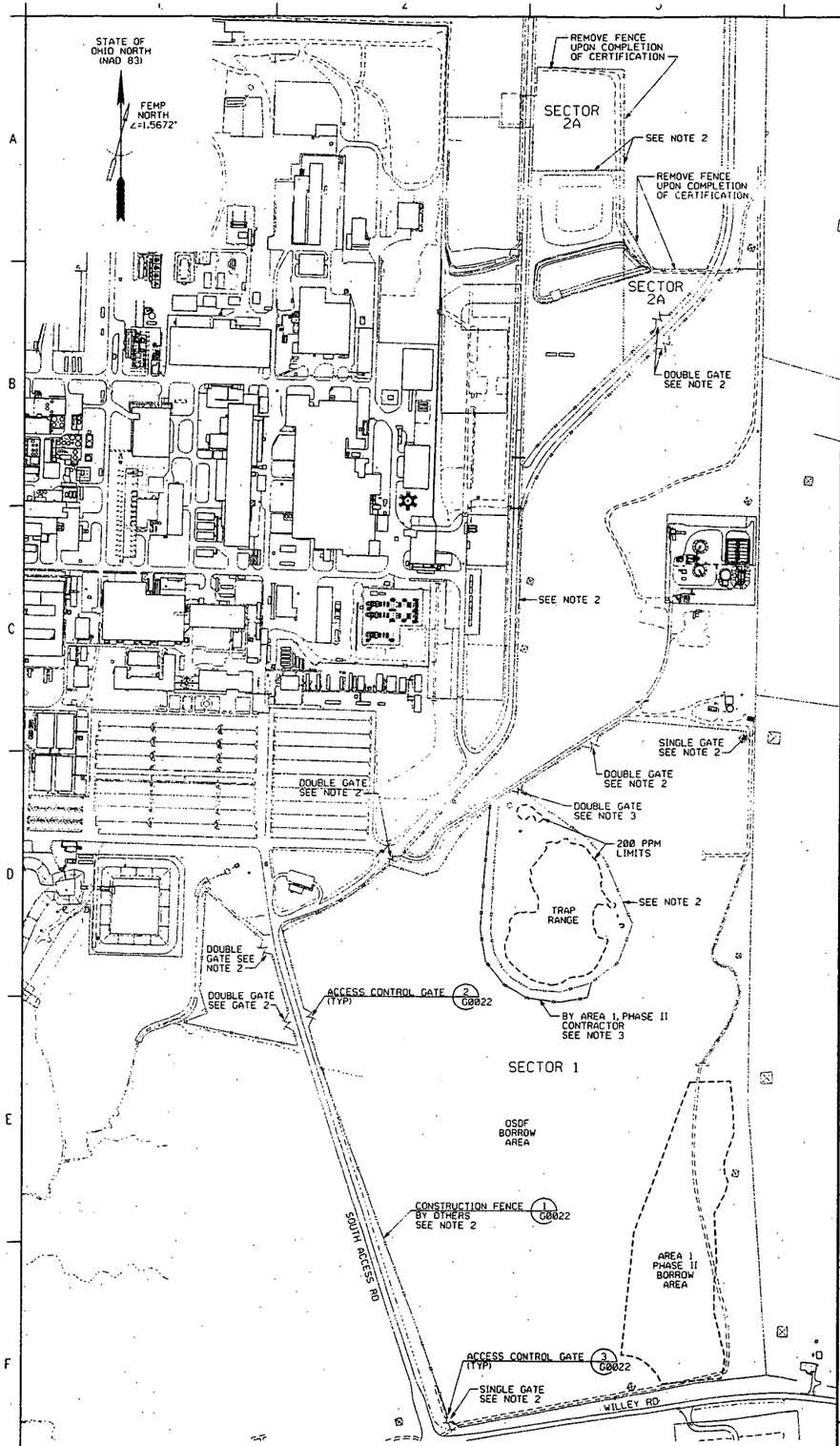
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
DETAIL SHEET

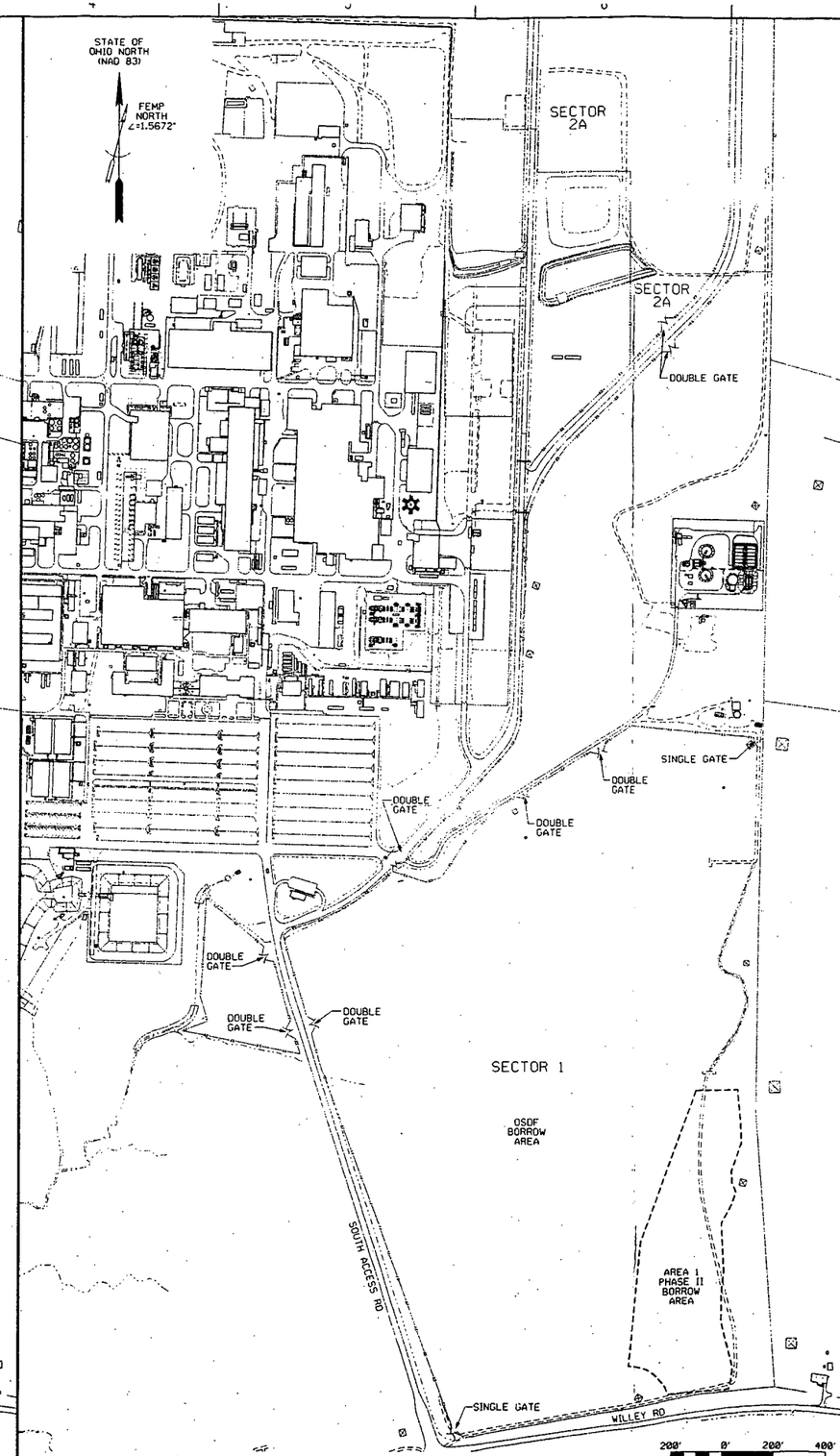
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	09/09/97	K. Grewal	11/19/97	K. Grewal	11/19/97
PLANT/BLDG. NO.		FLOOR		SCALE: NONE	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Grewal
DATE	DATE	DATE 11/19/97

PO NUMBER	FOP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00469	G0019	C



SECTOR 1 - INITIAL



SECTOR 1 - COMPLETE

NOTES

1. FENCE IN SECTOR 2A TO BE YELLOW ROPE.
2. INITIAL CONTROL FENCE AND GATES BY OTHERS.
3. INSTALL CONTROL FENCE AND GATES AT TRAP RANGE PRIOR TO THE START OF LEAD EXCAVATION.
4. PLACE CERTIFIED AREA SIGNS AS DIRECTED BY THE CONSTRUCTION MANAGER.

1094

000023

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00480	ACCESS CONTROL SECTOR 3	G0022

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVIS BY
		INITIALS AND DATE		
B	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/14/97	CS 11/14/97	KG 11/14/97
A	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

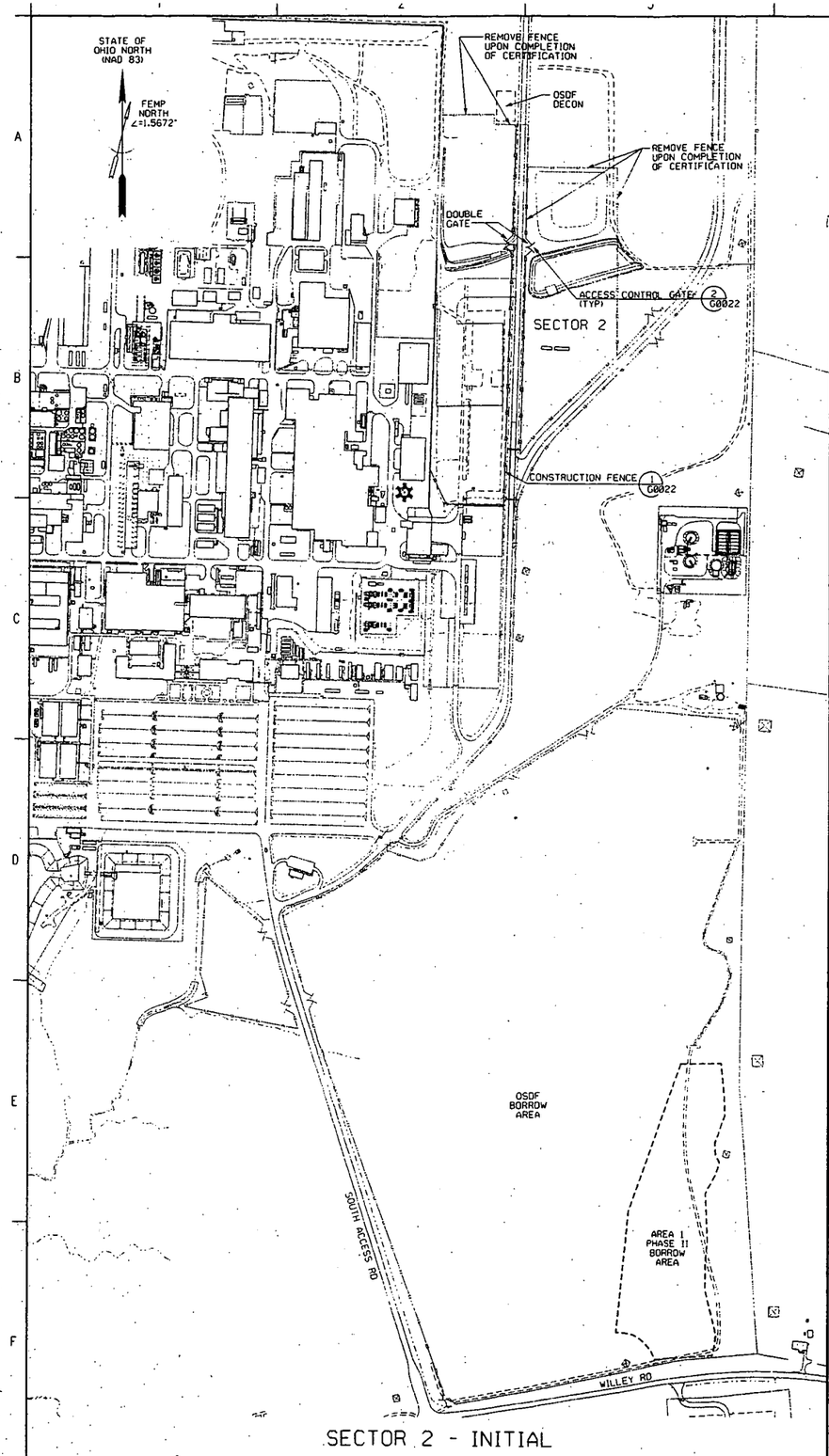
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
ACCESS CONTROL
SECTOR 1

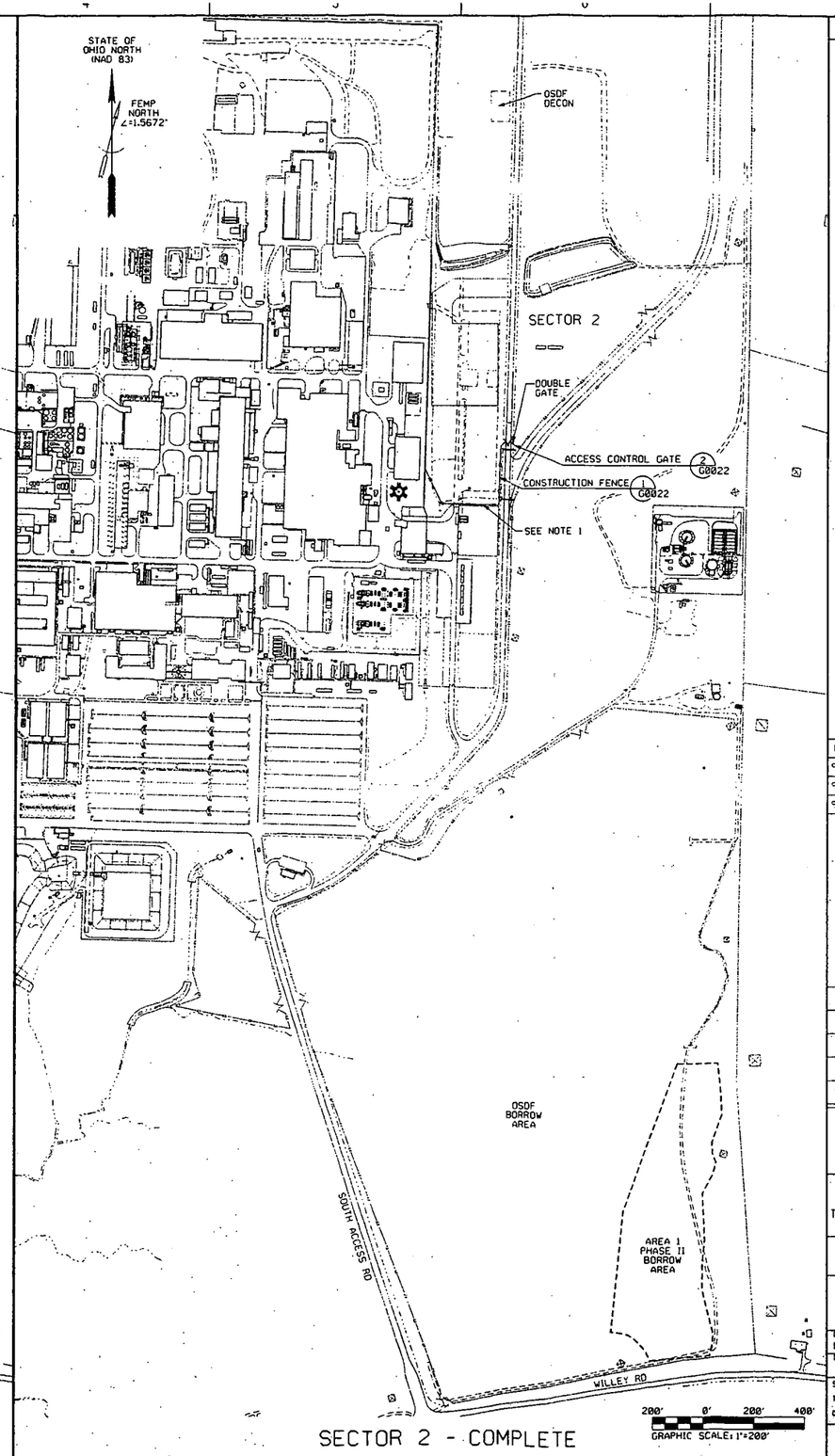
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	10/29/97	K. Gerard	11/4/97	K. Gerard	11/4/97
PLANT/BLDG NO.		FLOOR		SCALE 1"=200'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/4/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00477	G0020	B



SECTOR 2 - INITIAL



SECTOR 2 - COMPLETE

NOTES

1. PLACE CERTIFIED AREA SIGNS AS DIRECTED BY THE CONSTRUCTION MANAGER.

1094

000024

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00480	ACCESS CONTROL SECTOR 3	G0022

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
B	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
A	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
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CINCINNATI, OHIO

PROJECT NAME
REMEDIATION AREA 1, PHASE II

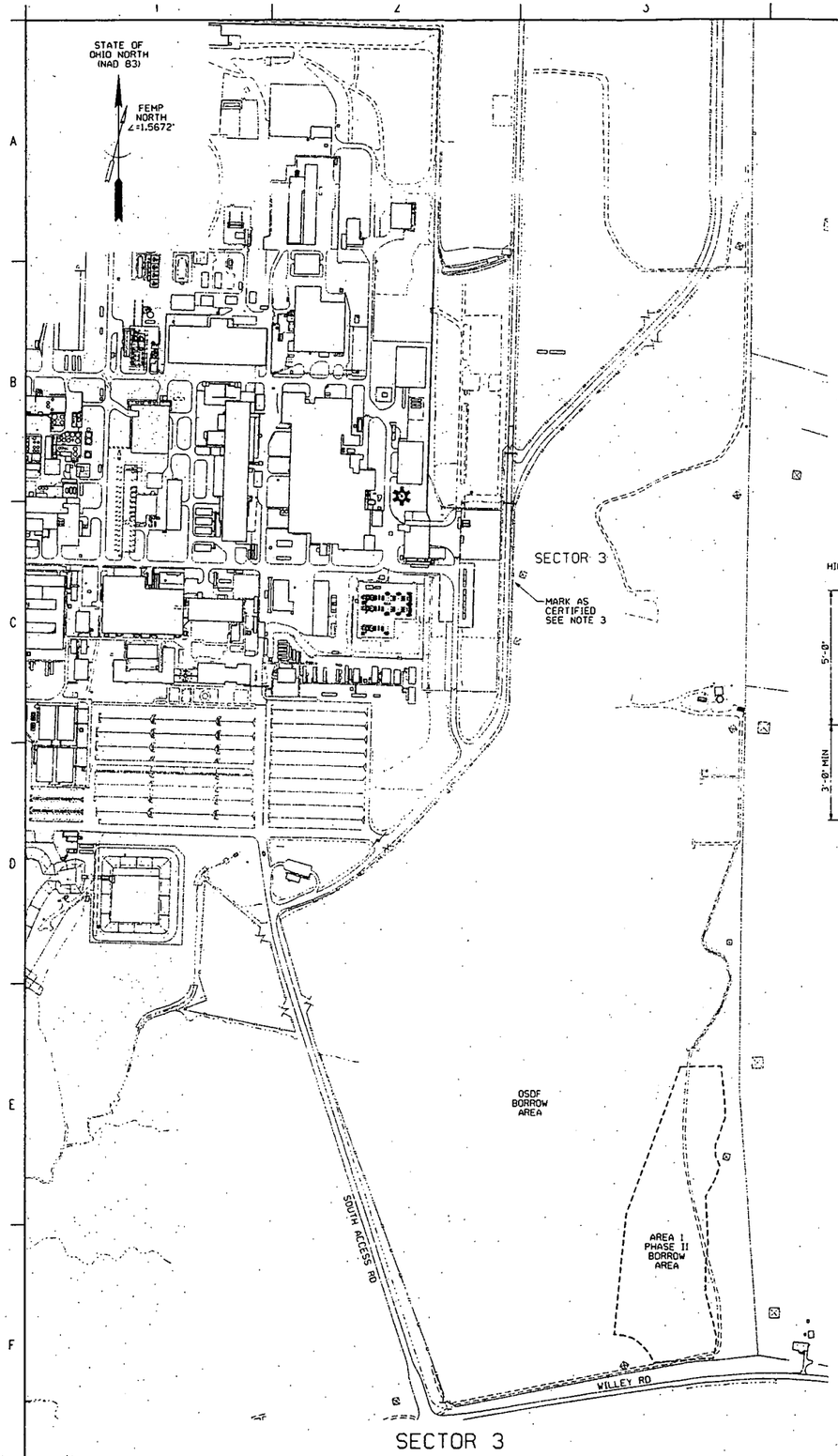
DRAWING TITLE
CIVIL
ACCESS CONTROL
SECTOR 2

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	10/29/97	K. Gerard	11/4/97	K. Gerard	11/4/97

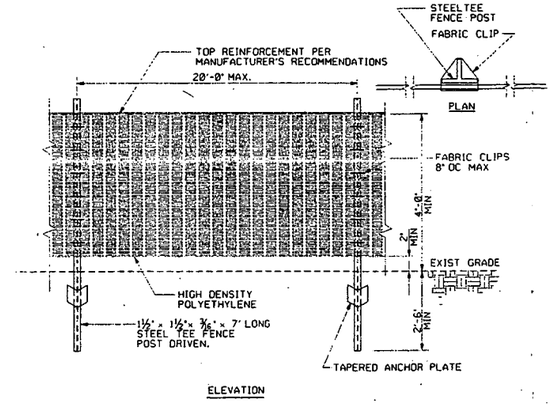
PLANT/BLDG. NO. | FLOOR | SCALE 1"=200' | CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/4/97

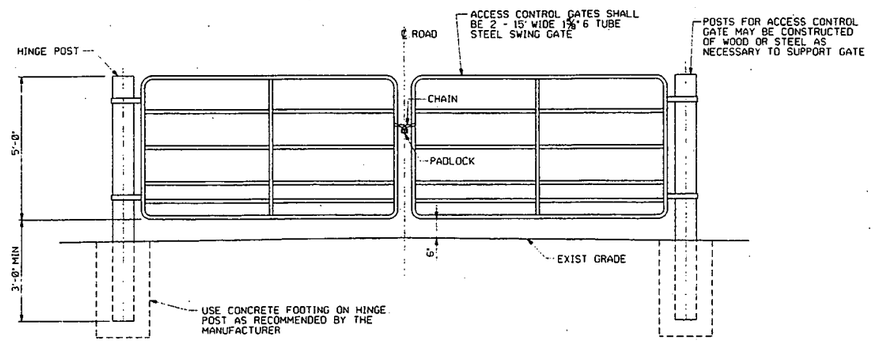
PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00479	G0021	B



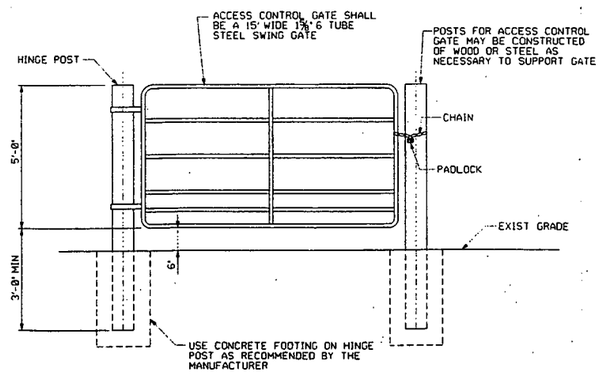
SECTOR 3



CONSTRUCTION FENCE DETAIL (1 / G0022) REF G0020 G0021
NTS



ACCESS CONTROL GATE DETAIL (2 / G0022) REF G0020 G0021
NTS



ACCESS CONTROL GATE DETAIL (3 / G0022) REF G0020 G0021
NTS

200' 0' 200' 400'
GRAPHIC SCALE: 1"=200'

NOTES

1. CONSTRUCTION FENCE WILL BE ORANGE IN NON-IMPACTED AREAS.
2. CONSTRUCTION FENCE WILL BE YELLOW IN IMPACTED/CONTROLLED AREAS.
3. PLACE CERTIFIED AREA SIGNS AS DIRECTED BY THE CONSTRUCTION MANAGER.
4. PRIOR TO THE INSTALLATION OF PADLOCKS, TURN OVER ALL DUPLICATE KEYS TO THE CONSTRUCTION MANAGER.

1094

000025

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00477	ACCESS CONTROL SECTOR 1	G0020
92X-5900-G-00479	ACCESS CONTROL SECTOR 2	G0021

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	INITIALS AND DATE		
B	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/24/97	CS 11/24/97	KG 11/24/97
A	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	KG 11/04/97	CS 11/04/97	KG 11/04/97
		TL	PM	REVD BY

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

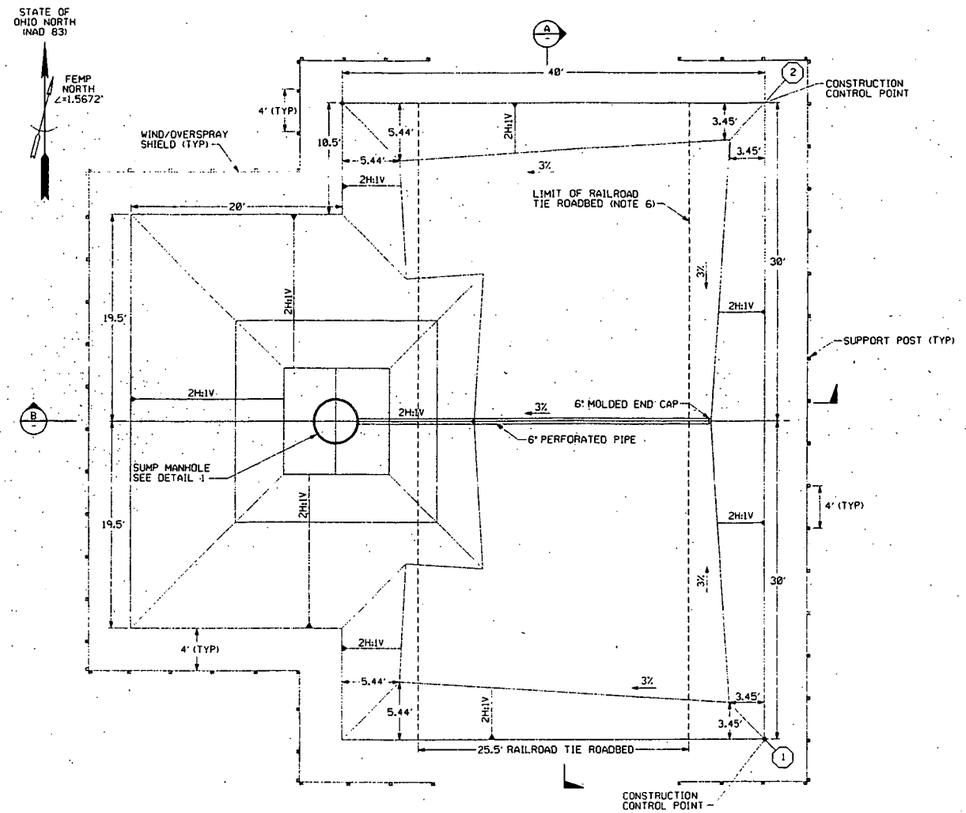
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
ACCESS CONTROL
SECTOR 3

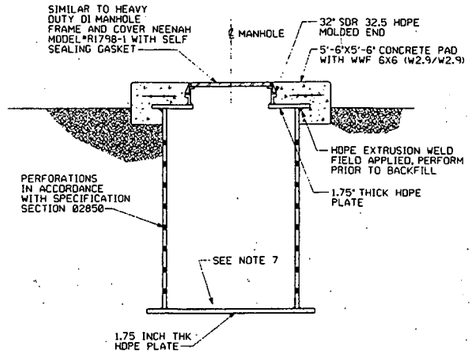
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	10/24/97	K. Gaumer	11/24/97	K. Gaumer	11/24/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=200'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gaumer
DATE	DATE	DATE 11/24/97

PO NUMBER	TDF PROJECT NO	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00480	G0022	B

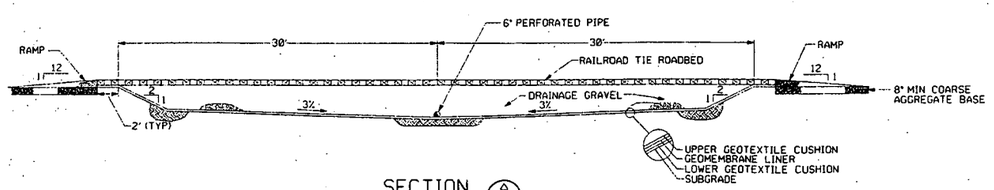


EQUIPMENT DECONTAMINATION FACILITY PLAN
SCALE: 1" = 5'

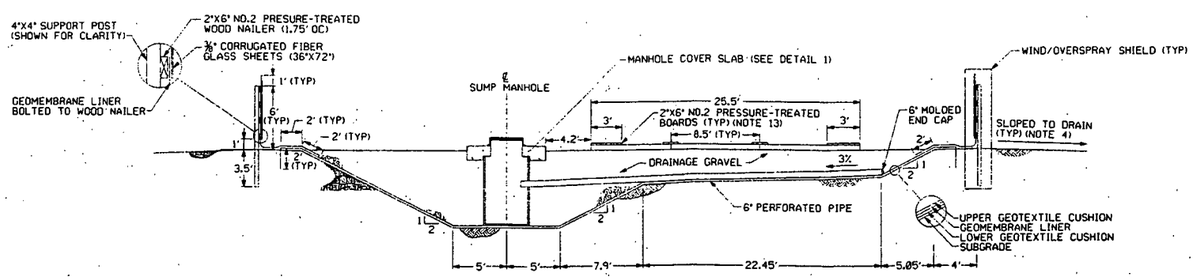


DETAIL 1
SUMP MANHOLE
NTS

EQUIPMENT DECONTAMINATION FACILITY COORDINATES			
POINT	NORTHING	EASTING	ELEVATION
1	480363.3	1351573.0	595.0
2	480423.3	1351573.0	595.0



SECTION A
SCALE: 1" = 5'



SECTION B
SCALE: 1" = 5'

NOTES

1. MANHOLE, PIPES, AND FITTINGS SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 02850.
2. DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT OF THE GEOSYNTHETICS WHICH ARE SHOWN TO AN EXAGGERATED SCALE FOR CLARITY. MATERIAL TOLERANCES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
3. CONTRACTOR SHALL SLOPE GROUND SURROUNDING EQUIPMENT DECONTAMINATION FACILITY TO PREVENT STORMWATER RUNON.
4. CONTRACTOR SHALL PERIODICALLY REMOVE SEDIMENT FROM THE EQUIPMENT DECONTAMINATION FACILITY MANHOLE TO MAINTAIN EFFICIENT OPERATIONS. THE SEDIMENT THAT IS REMOVED SHALL BE PLACED IN THE OSDF.
5. RAILROAD TIES SHALL BE 6"x8" TREATED TIES. RAILROAD TIE JOINTS SHALL BE STAGGERED IN ROADBED.
6. 2"X6" NO.2 PRESSURE TREATED BOARDS SHALL BE NAILED TO RAILROAD TIES USING 20d NAILS.
7. CONTRACTOR SHALL PROVIDE SUMP PUMP AND PIPELINE TO CONVEY WATER TO THE TANK FARM. SEE SPECIFICATION SECTION 02850.

1094

000026

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
A	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/19/97	CS 11/19/97	KG 11/19/97
		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

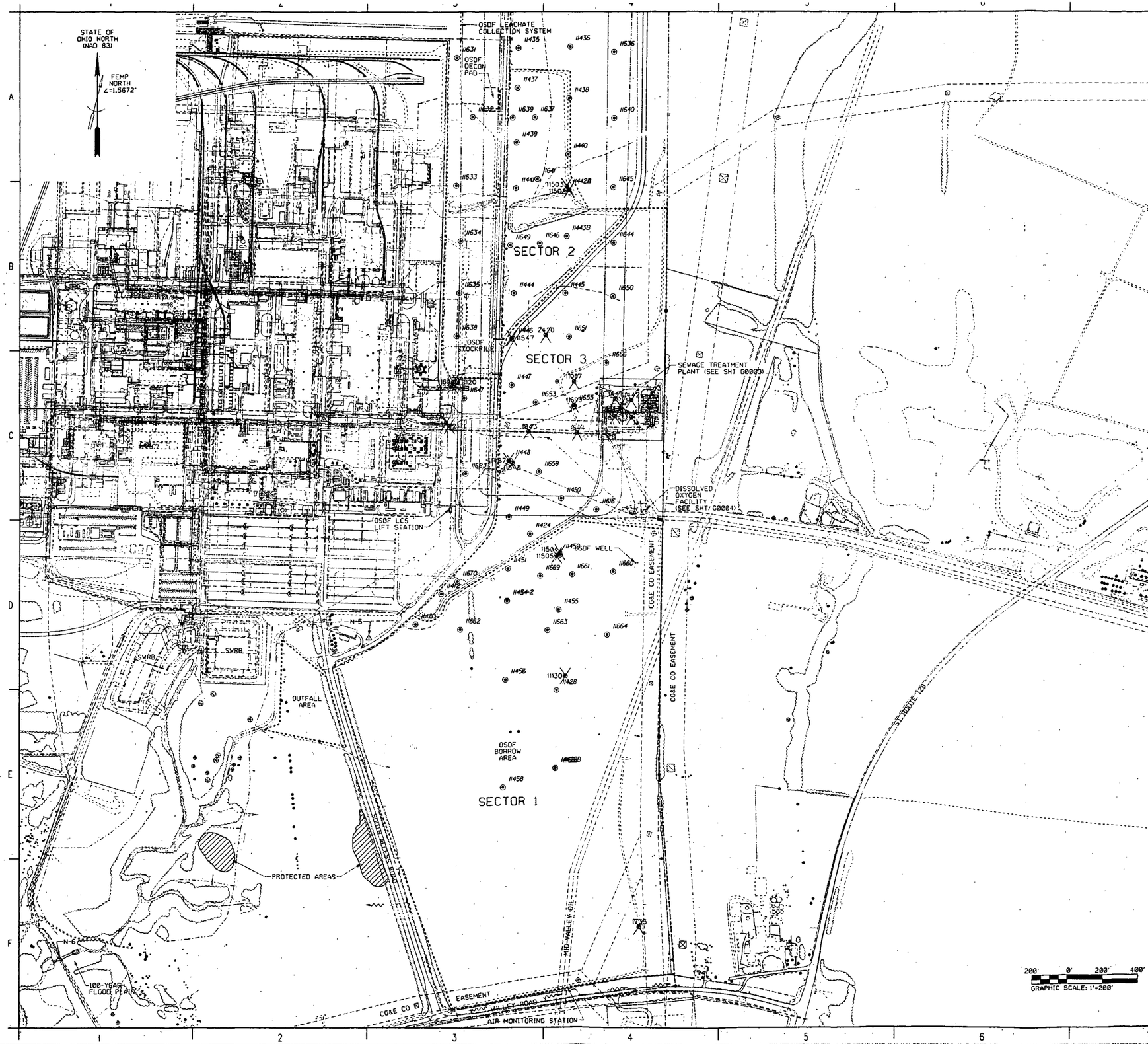
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
EQUIPMENT DECONTAMINATION FACILITY

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	11/13/97	K. Grund	11/19/97	K. Grund	11/19/97
PLANT/BLDG NO.		FLOOR		SCALE 1"=5'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Grund
DATE	DATE	DATE 11/19/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00482	G0023	A



NOTES

1094

LEGEND

11664 SOIL BORING

1970 MONITORING WELL TO BE ABANDONED BY OTHERS

000027

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00434	SITE PLAN SEWAGE TREATMENT PLANT	G0003
92X-5900-G-00435	SITE PLAN DISSOLVED OXYGEN FACILITY	G0004

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	INITIALS AND DATE
A	ISSUED FOR 90% EPA DESIGN REVIEW	RG 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

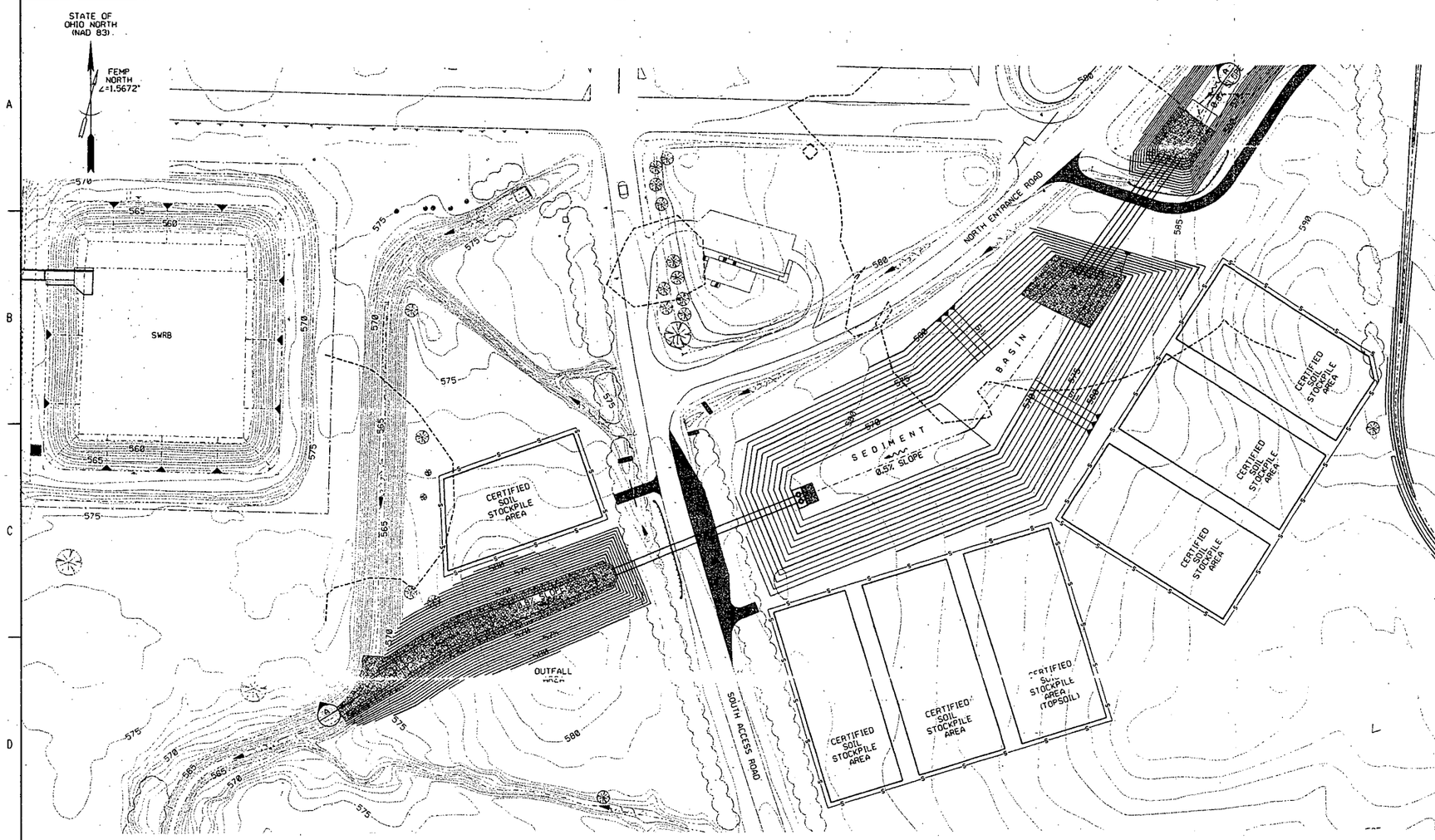
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
EXISTING SUBSURFACE FEATURES PLAN

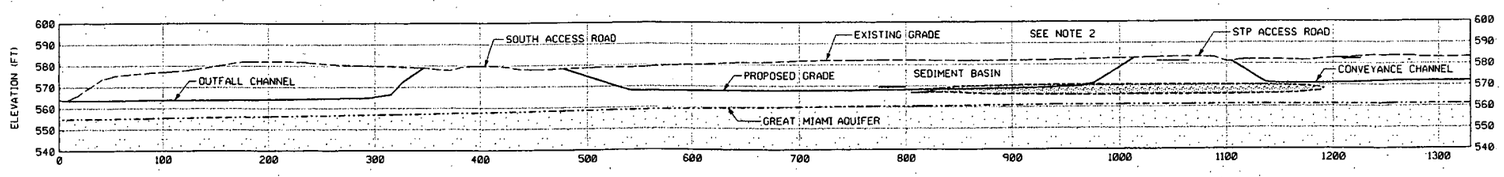
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.R. FOX	11/14/97	K. Gaeckel	11/14/97	K. Gaeckel	11/14/97
PLANT/BLDG NO.		FLOOR		SCALE 1"=200'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gaeckel
DATE	DATE	DATE 11/14/97

PO NUMBER	FSF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00484	G0024	A



PLAN VIEW
SCALE: 1"=50'



PROFILE (A)
SCALE: HOR 1"=50'
VER 1"=25'

HORIZONTAL SCALE: 1"=50'

VERTICAL SCALE: 1"=25'

NOTES

1. SUBSURFACE INFORMATION PROVIDED BY FDF.
2. SEE SPECIFICATION SECTION 02206 FOR EXCAVATION WHICH ENCOUNTERS COARSE GRAINED MATERIAL.
3. SEE SHEET G0014 FOR SEDIMENT BASIN PLAN AND SHEET G0016 FOR CONVEYANCE CHANNEL PLAN.

F 1094

LEGEND

- GROUND SURFACE (1992 FLYOVER)
- SEDIMENT BASIN/OUTFALL
- MODELED COARSE GRAINED MATERIAL
- TOP OF GREAT MIAMI AQUIFER
- COARSE GRAINED MATERIAL
- GREAT MIAMI AQUIFER

000028

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-X-00420	LEGEND AND GENERAL NOTES	X0003
92X-5900-G-00422	SEDIMENT BASIN PLAN	G0014
92X-5900-G-00466	CONVEYANCE CHANNEL PLAN	G0016

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
A	ISSUED FOR 90% EPA DESIGN REVIEW	KG 11/19/97	CS 11/19/97	KG 11/19/97

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

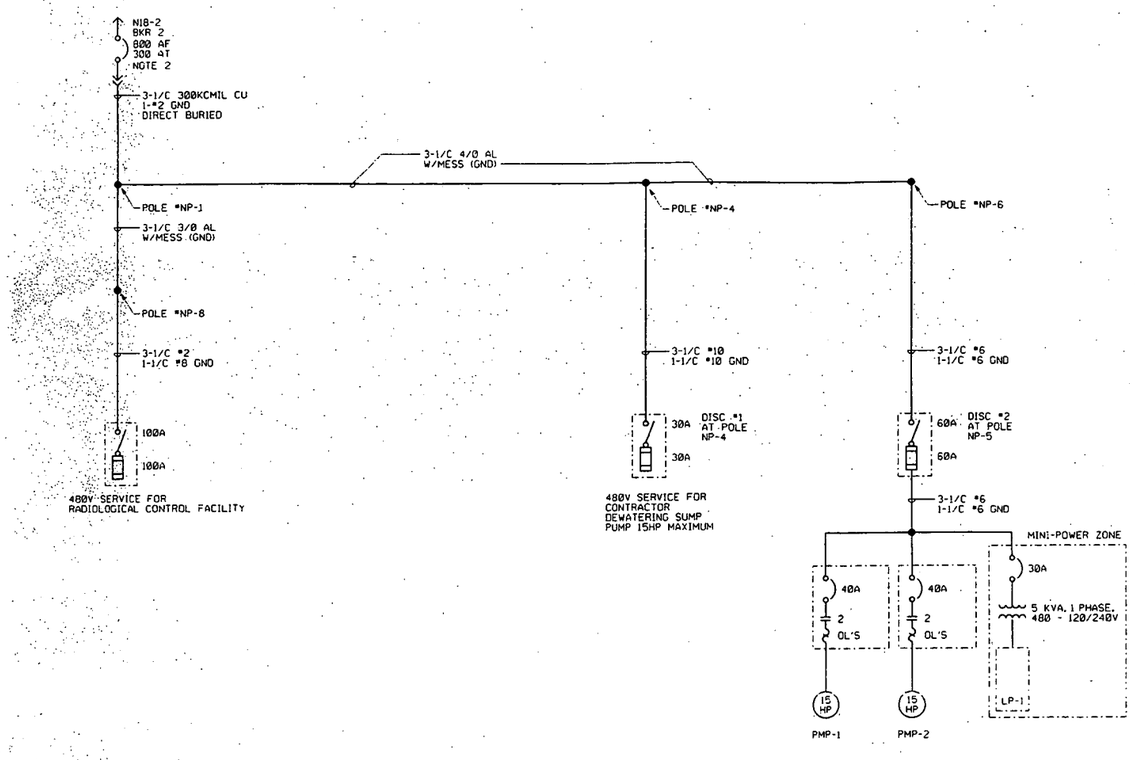
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
CIVIL
PLAN AND SUBSURFACE PROFILE
SEDIMENT BASIN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
R.M. LINDGREN	11/15/97	K. Gerard	11/19/97	K. Gerard	11/19/97
PLANT/BLDG. NO.		FLOOR		SCALE 1"=50'	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD K. Gerard
DATE	DATE	DATE 11/19/97

PO NUMBER	FSF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-G-00485	G0025	A



LIGHTING PANEL LP-1

VOLTAGE : 240/120V, 1 PHASE
MAIN BKR : 30 AMPS
MOUNTING : SURFACE

REMARKS : 1. * INDICATES 6MA GFCI CLASS A, ** INDICATES 30MA GFCI CLASS B

DIRECTORY	WATTS LOAD L1	WATTS LOAD L2	CKT NO	WIRE SIZE	BKR AMPS		BKR AMPS	WIRE SIZE	CKT NO	WATTS LOAD L1	WATTS LOAD L2	DIRECTORY
FIT010/FSL010	28		1	12	20	L1 L2 30 A MAIN	20	12	2	350		FV001
FV002		350	3	12	20		20	12	4		350	FV003
FV004	350		5	12	20		20	12	6	160		120V RECEPTACLE
SPARE			7		20		20		8			SPARE
SUB-TOTALS	378	350				NEUTRAL BUS				510	350	SUB-TOTALS
	L1	L2								L1	L2	

TOTAL WATTS L1 : 888 TOTAL WATTS L2 : 700 TOTAL WATTS : 1588

NOTES

1. FOR POWER PLAN, SEE DRAWING E0003.
2. PLACE BREAKER IN EXISTING CUBICAL ABOVE BREAKER FEEDING THE D.D. BUILDING MOTOR CONTROL CENTER.

T094

000029

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-E-00472	POWER PLAN	E0003

PRELIMINARY
NOT FOR CONSTRUCTION

REV NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PW	REVD BY
C	ISSUED FOR 90% EPA DESIGN REVIEW	TF 11/04/97	CS 11/06/97	JC 11/07/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	TF 11/04/97	CS 11/04/97	JC BY CS 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW		CS 10/13/97	

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
ELECTRICAL
SINGLE LINE DIAGRAM

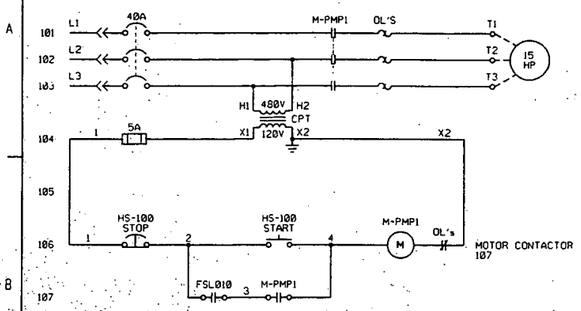
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
J. SAYATOVIC	09/29/97	T. FERRELL	11/04/97	J. L. COOPER	10/30/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

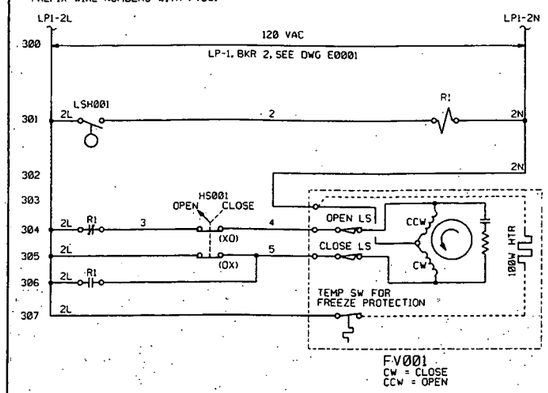
SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD J. Ferrell
DATE	DATE	DATE 11/19/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-E-00472	E0001	C

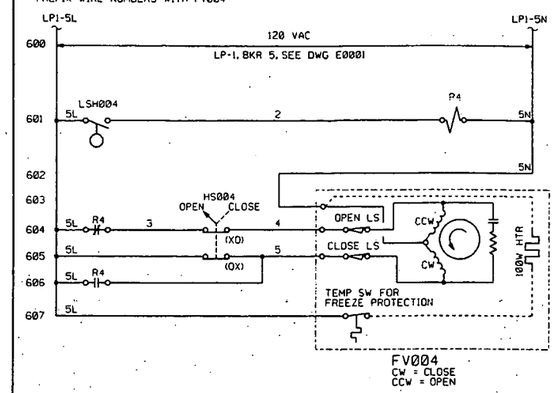
EQUIPMENT NAME : TRANSFER PUMP NO. 1 (PMP-1)
EQUIPMENT NO. : PMP-1
S/L SHT. NO. : E0001
PLAN SHT. NO. : E0003
PREFIX WIRE NUMBERS WITH PMP1-



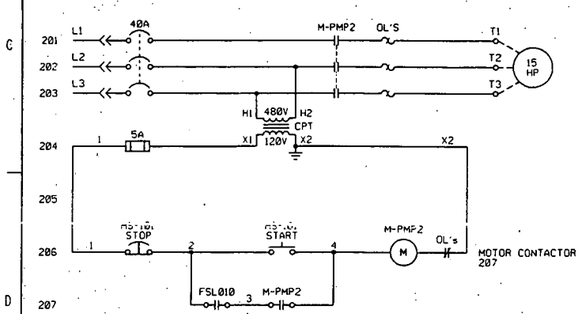
EQUIPMENT NAME : FLOW VALVE MOTOR ACTUATOR FV001
EQUIPMENT NO. : FV001
PLAN SHT. NO. : E0003
INTERCONNECTION DIAGRAM : E0004
PREFIX WIRE NUMBERS WITH FV001-



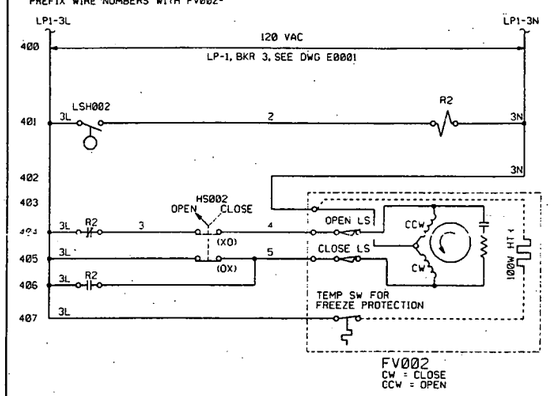
EQUIPMENT NAME : FLOW VALVE MOTOR ACTUATOR FV004
EQUIPMENT NO. : FV004
PLAN SHT. NO. : E0003
INTERCONNECTION DIAGRAM : E0004
PREFIX WIRE NUMBERS WITH FV004-



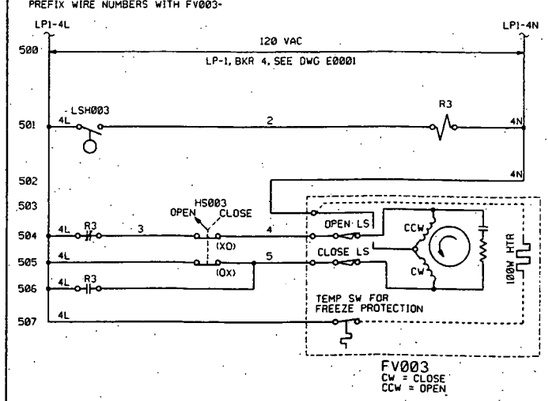
EQUIPMENT NAME : TRANSFER PUMP NO. 2 (PMP-2)
EQUIPMENT NO. : PMP-2
S/L SHT. NO. : E0001
PLAN SHT. NO. : E0003
PREFIX WIRE NUMBERS WITH PMP2-



EQUIPMENT NAME : FLOW VALVE MOTOR ACTUATOR FV002
EQUIPMENT NO. : FV002
PLAN SHT. NO. : E0003
INTERCONNECTION DIAGRAM : E0004
PREFIX WIRE NUMBERS WITH FV002-



EQUIPMENT NAME : FLOW VALVE MOTOR ACTUATOR FV003
EQUIPMENT NO. : FV003
PLAN SHT. NO. : E0003
INTERCONNECTION DIAGRAM : E0004
PREFIX WIRE NUMBERS WITH FV003-



NOTES

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000030

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-E-00472	SINGLE LINE DIAGRAM	E0001
92X-5900-E-00473	POWER PLAN	E0003
92X-5900-E-00476	INTERCONNECTION DIAGRAM	E0004

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	TF 8/19/97	CS 11/18/97	JC/C 11/19/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	TF 11/04/97	CS 11/04/97	JC BY CS 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW		CS 10/13/97	

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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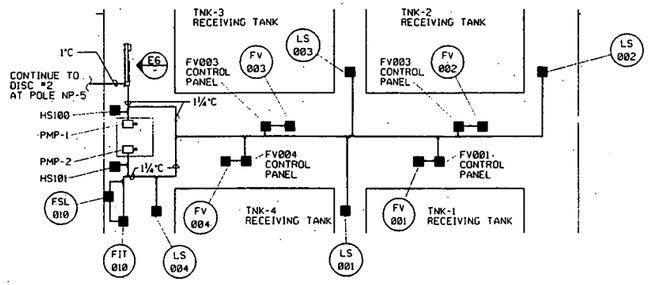
THE RALPH M. PARSONS CO. - PARSONS MAIN, INC. - ENGINEERING-SCIENCE, INC.
CINCINNATI, OHIO

PROJECT NAME
REMEDIATION AREA 1, PHASE II

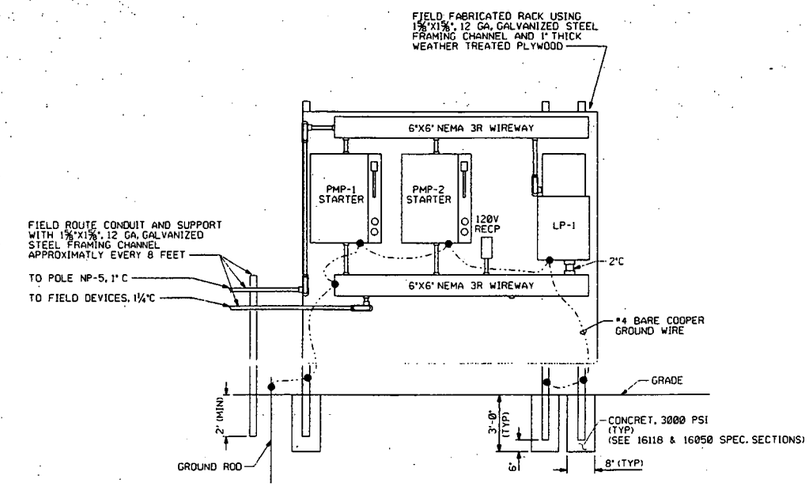
DRAWING TITLE
ELECTRICAL
ELEMENTARY DIAGRAMS

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
J. SAYATOVIC	09/29/97	T. FERRELL	11/04/97	J. L. COOPER	10/30/97
PLANT/BLDG. NO.		FLOOR		SCALE: NONE	CLASS
SUBMITTED FOR 30% ISSUE: TECH LEAD N/A, DATE		SUBMITTED FOR 60% ISSUE: TECH LEAD N/A, DATE		SUBMITTED FOR 90% ISSUE: TECH LEAD [signature], DATE 11/04/97	

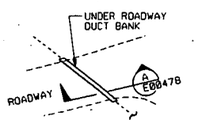
PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-E-00471	E0002	C



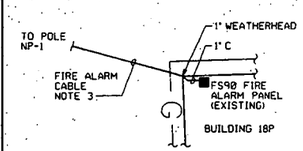
DETAIL 1
NTS



ELEVATION E6
NTS



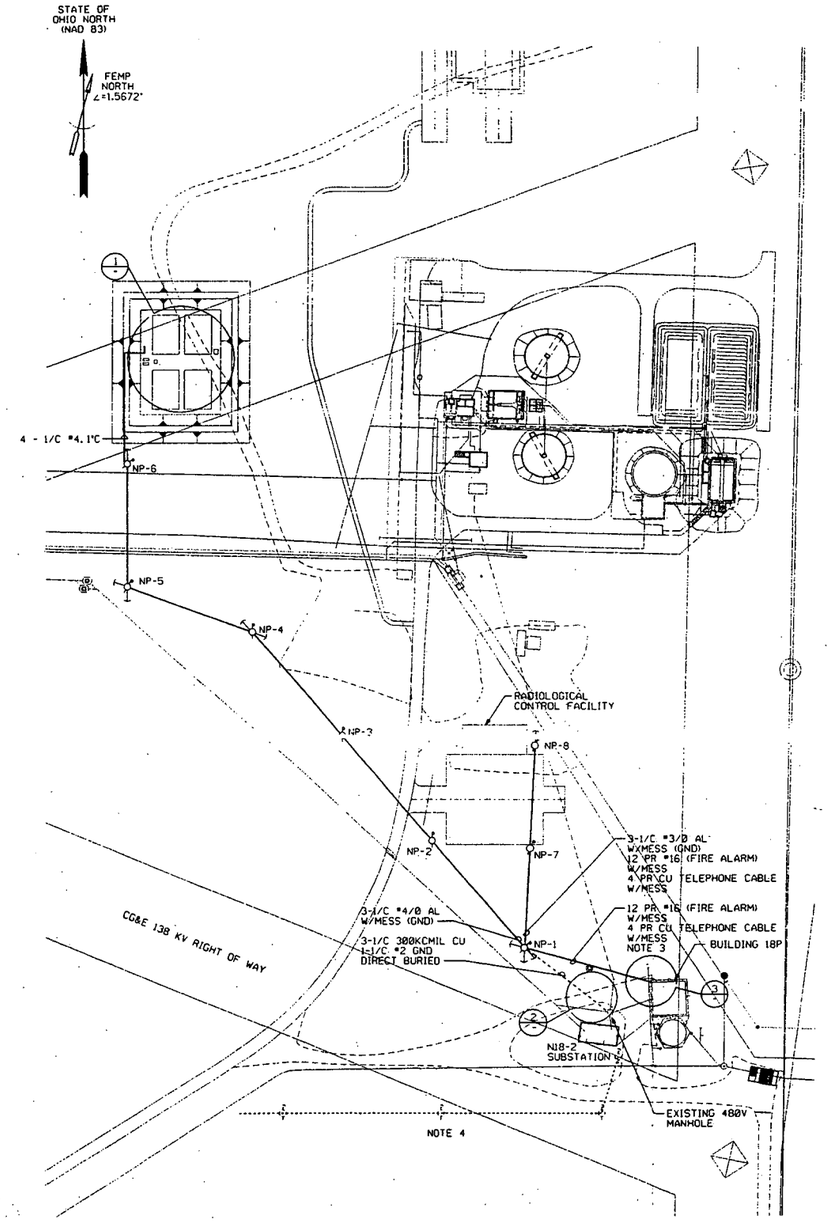
DETAIL 2 REF
NTS



DETAIL 3 REF
NTS

POWER POLE COORDINATES (NAD83)

POLE NO.	POLE HEIGHT	NORTH COORDINATES	EAST COORDINATES	ELEV. NO.	DWG. SHEET NO.	GUYS: BISECTOR TYPE	GUYS: DEADEND TYPE
NP-1	40	479553	351578	E1	E0005		X
NP-2	40	479654	351491	E2	E0005		
NP-3	40	479753	351406	E3	E0005		
NP-4	40	479851	351321	E3	E0005		X
NP-5	40	479844	351284	E6	E0005		X
NP-6	40	480010	351284	E4	E0005		X
NP-7	40	479647	351583	E2	E0005		
NP-8	40	479744	351587	E5	E0005		X



POWER PLAN

NOTES

1. ALL CONDUIT ¾" RIGID GALVANIZED UNLESS OTHERWISE NOTED.
2. CONDUCTOR CLEARANCES OVER ROADS AND OTHER GRADES SHALL BE A MINIMUM OF 23 FEET.
3. FIELD ROUTE FIRE ALARM AND TELEPHONE CABLE FROM FS90 IN BUILDING 18P TO RADIOLOGICAL CONTROL FACILITY, VIA NP-1, NP-6, AND NP-7, AT BUILDING 18P ROUTE BOTH FIRE ALARM AND TELEPHONE CABLES THRU A 1" WEATHERHEAD AND CONDUIT TO BUILDING 18P FS90 PANEL.
4. 13.2 KV ELECTRICAL LINE ON POLES APPROXIMATELY 175 FEET APART. MAY BE IN PLACE OR UNDER CONSTRUCTION DURING REMEDIATION AREA 1, PHASE II PROJECT EXECUTION.

1094

000031

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0001
92X-5900-E-00478	ELEVATIONS AND DETAILS	E0005

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
C	ISSUED FOR 90% EPA DESIGN REVIEW	TF 11/10/97	CS 11/10/97	MPK 11/10/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	TF 11/4/97	CS 11/4/97	JC BY CS 11/4/97
A	ISSUED FOR INTERIM DESIGN REVIEW		CS 10/13/97	

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
REMEDIATION AREA 1, PHASE II

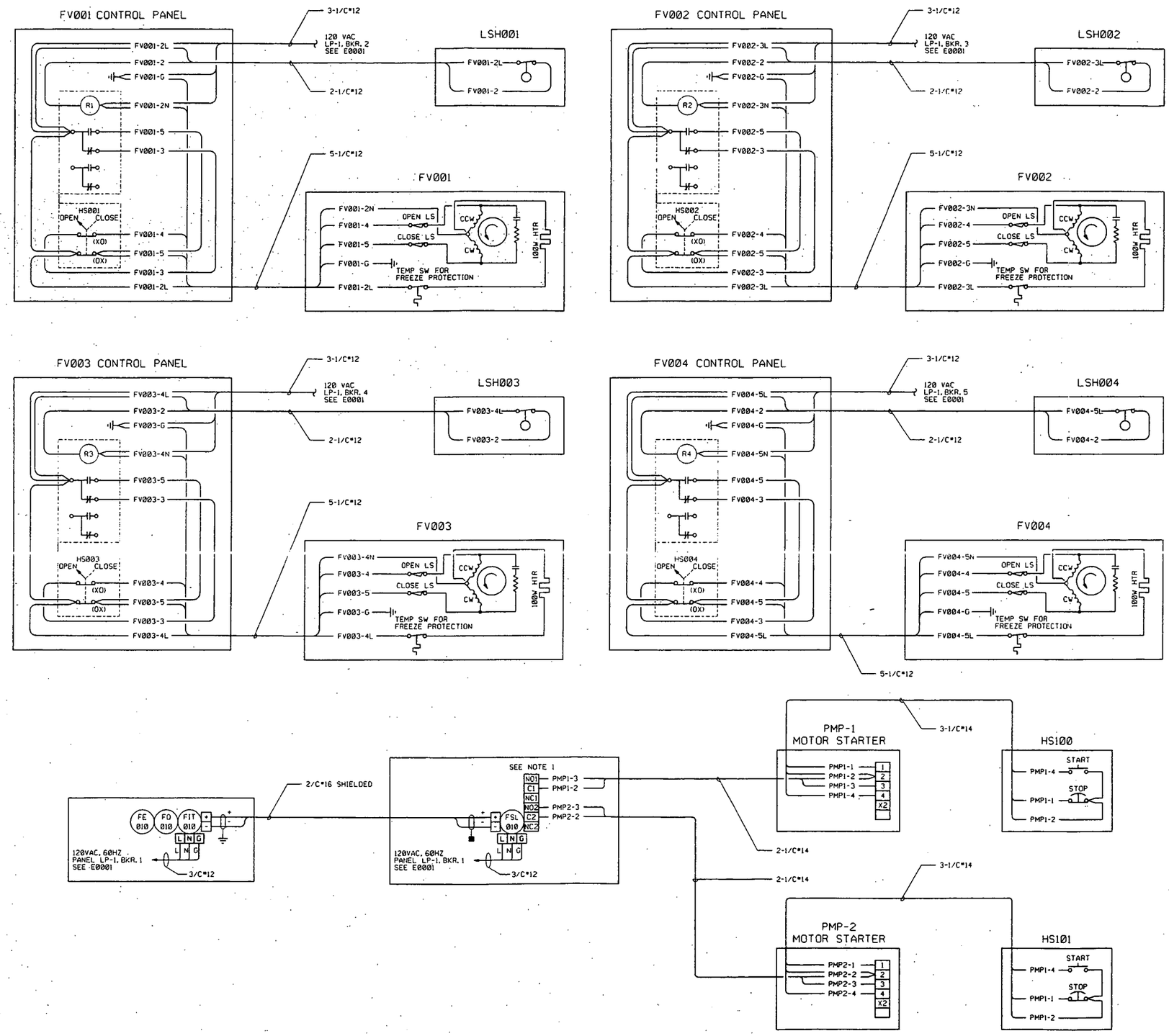
DRAWING TITLE
ELECTRICAL POWER PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
J. SAYATOVIC	10/03/97	T. FERRELL	11/4/97	J. L. COOPER	10/30/97

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

SUBMITTED FOR 30% ISSUE — TECH LEAD N/A — DATE
SUBMITTED FOR 60% ISSUE — TECH LEAD N/A — DATE
SUBMITTED FOR 90% ISSUE — TECH LEAD [signature] — DATE 11/10/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-E-00473	E0003	C



NOTES

1. CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDATION FOR DEVICES REQUIRED FOR CONNECTING RELAY CONTACTS TO AC INDUCTIVE LOADS.
2. FOR ELEMENTARY DIAGRAM, SEE DRAWING E0002.

1094

LEGEND:

—— CONTRACTOR WIRING

SHIELD - CUT AND TAPED

000032

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-E-00471	ELEMENTARY DIAGRAM	E0002
92X-5900-E-00472	SINGLE LINE DIAGRAM	E0001

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	TF 11/10/97	CS 11/10/97	JCB 11/14/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	TF 11/04/97	CS 11/04/97	JC BY CS 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW		CS 10/13/97	

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

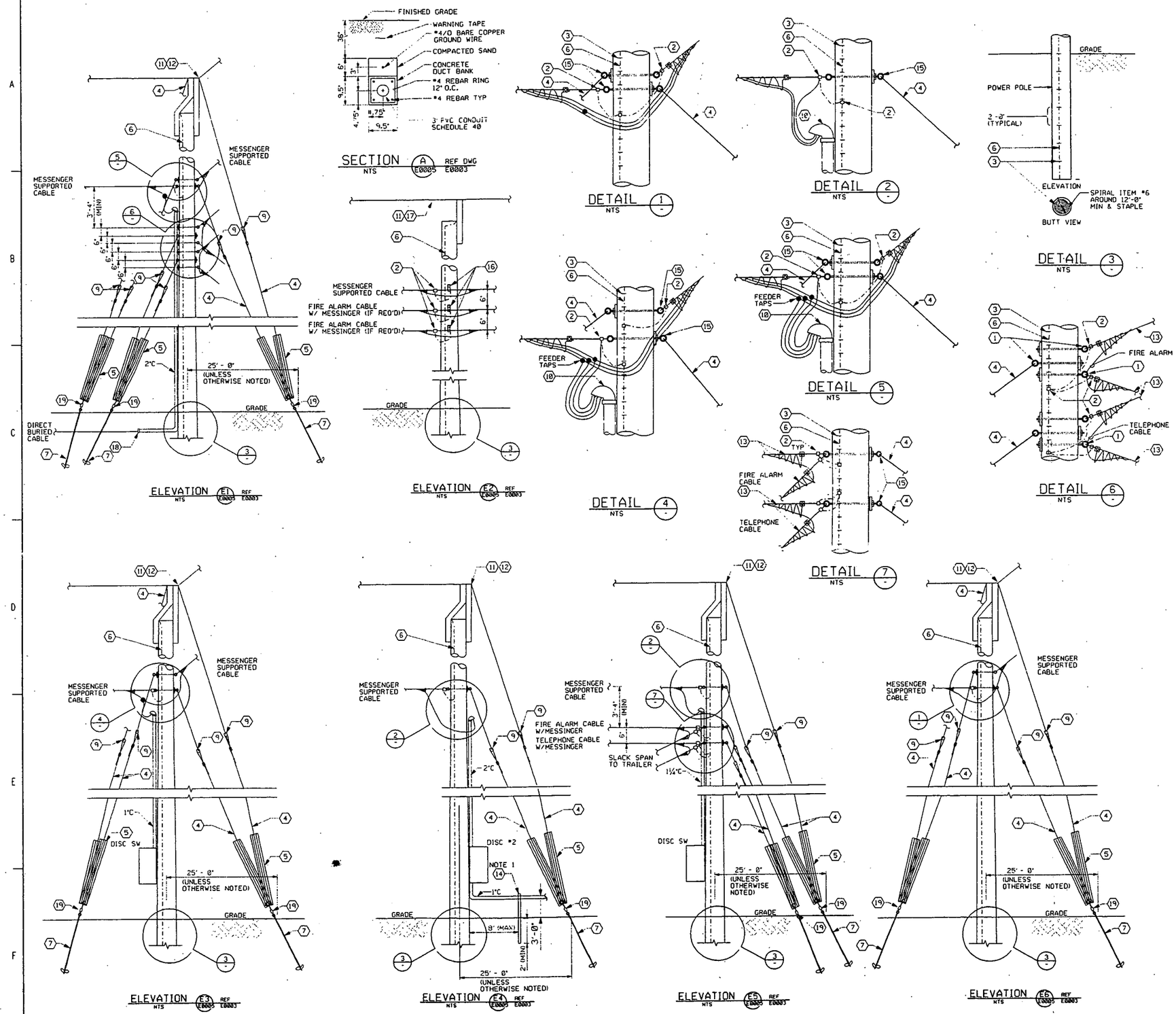
PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
ELECTRICAL
INTERCONNECTION DIAGRAM

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
K.S. STEVENS	10/10/97	T. FERRELL	11/04/97	J. L. COOPER	10/28/97
PLANT/BLDG. NO.		FLOOR		SCALE	CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD J. Ferrell
DATE	DATE	DATE 11/14/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-E-00476	E0004	C



NOTES

1. FIELD ROUTE CONDUIT AND SUPPORT WITH FRAMING CHANNEL APPROXIMATLY EVERY 8 FEET.

1094

POLE MATERIAL LIST

1. EYE BOLT, OVAL EYE TYPE, FOR DEAD-END, ⅝" DIA., WITH ONE SQUARE NUT, ADDITIONAL NUTS, WASHERS, AND LENGTH AS REQUIRED WITH APPROPRIATE THIMBLE AND CLAMPS.
2. GUY GRIP, FOR MESSENGER WIRE, PREFORMED WIRE TYPE AND GROUND CLAMP
3. STAPLE, COPPERCLAD, 1½" LONG.
4. ⅝" DIA. GALVANIZED STEEL STRUCTURAL ROPE WITH A MINIMUM BREAKING STRENGTH OF 15 TONS.
5. GUY WIRE MARKER, HALF ROUND, 2" WIDE, 84" LONG, W/ REQ'D HARDWARE, UV RESISTANT.
6. #4 AWG, BARE SOLID COPPER GROUND CONDUCTOR.
7. 12" DIA. HELICAL SCREW TYPE GUY ANCHOR WITH MINIMUM PULLOUT CAPACITY OF 23000 POUNDS.
8. ½" THREADED ROD WITH NUTS, LENGTH AS REQUIRED.
9. GUY STRAIN INSULATOR, ANSI CLASS 54-4, FOR ⅝" GUY WIRE.
10. WEATHER HEAD
11. GROUND WIRE CLAMP, USED TO ATTACH STATIC WIRE TO BAYONET
12. STATIC WIRE SUPPORT, CORNER BAYONET TYPE
13. ⅜" DIAMETER, 7 X 8 STRANDED CONSTRUCTION, GALNANIZED STEEL STRAND.
14. 1⅝"X 1⅝", 12 GA. GALVANIZED STEEL FRAMING CHANNEL WITH PIPE CLAMPS.
15. EYE BOLT, OVAL EYE TYPE, FOR DEAD-END, ⅝" DIA., WITH ONE THIMBLEYE NUT, ADDITIONAL NUTS, WASHERS, AND LENGTH AS REQUIRED WITH APPROPRIATE THIMBLE AND CLAMPS.
16. CLAMP, SUSPENSION, FOR ⅜" MESSINGER AND ⅝" BOLT, WASHER, AND NUTS AS REQUIRED.
17. STATIC WIRE SUPPORT, BAYONET TYPE
18. PLASTIC INSULATING BUSHING
19. CLAMP, PARALLEL GROOVE GUY, FOR ⅝" GUY WIRE

RELATED DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
[illegible]	[illegible]	[illegible]

000033

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	INITIALS AND DATE		
B	ISSUED FOR 90% EPA DESIGN REVIEW	JJK 11/10/97	CS 11/10/97	JCR 11/17/97
A	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	CS 11/4/97	TF 11/4/97	JC BY CS 11/4/97

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

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

PROJECT NAME
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
ELECTRICAL
ELEVATIONS AND DETAILS

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
J. SAYATOVIC	10/24/97	T. FERRELL	11/4/97	J. L. COOPER	10/30/97
PLANT/BLDG. NO.		FLOOR		SCALE: NONE	CLASS
SUBMITTED FOR 30% ISSUE: TECH LEAD N/A, DATE		SUBMITTED FOR 60% ISSUE: TECH LEAD N/A, DATE		SUBMITTED FOR 90% ISSUE: TECH LEAD [signature], DATE 11/17/97	

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	00-90701	92X-5900-E-00478	E0005	B

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

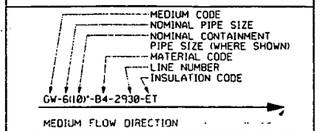
PIPING SYMBOLOGY

- 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 FACILITY
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
SCR	STRAINER
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
IO	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	A, 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

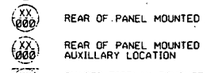
INSTRUMENT ACTUATOR LABELS

- 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	2ND LETTER	3RD OR 4TH LETTER
	MEASURED OR INITIATING VARIABLE	MODIFIER	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
	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
$\sqrt{}$	ROOT EXTRACT
Σ	SUMMING

NOTES

1094

000034

REF DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO	ISSUE OR REVISION PURPOSE - DESCRIPTION	IL	PM	REVD BY
C	ISSUED FOR 90% EPA DESIGN REVIEW	11/6/97	CS 11/10/97	11/10/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	SG 11/04/97	CS 11/04/97	OWC 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	SG 10/13/97	CS 10/13/97	OWC 10/13/97

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
REMEDIATION AREA 1, PHASE II

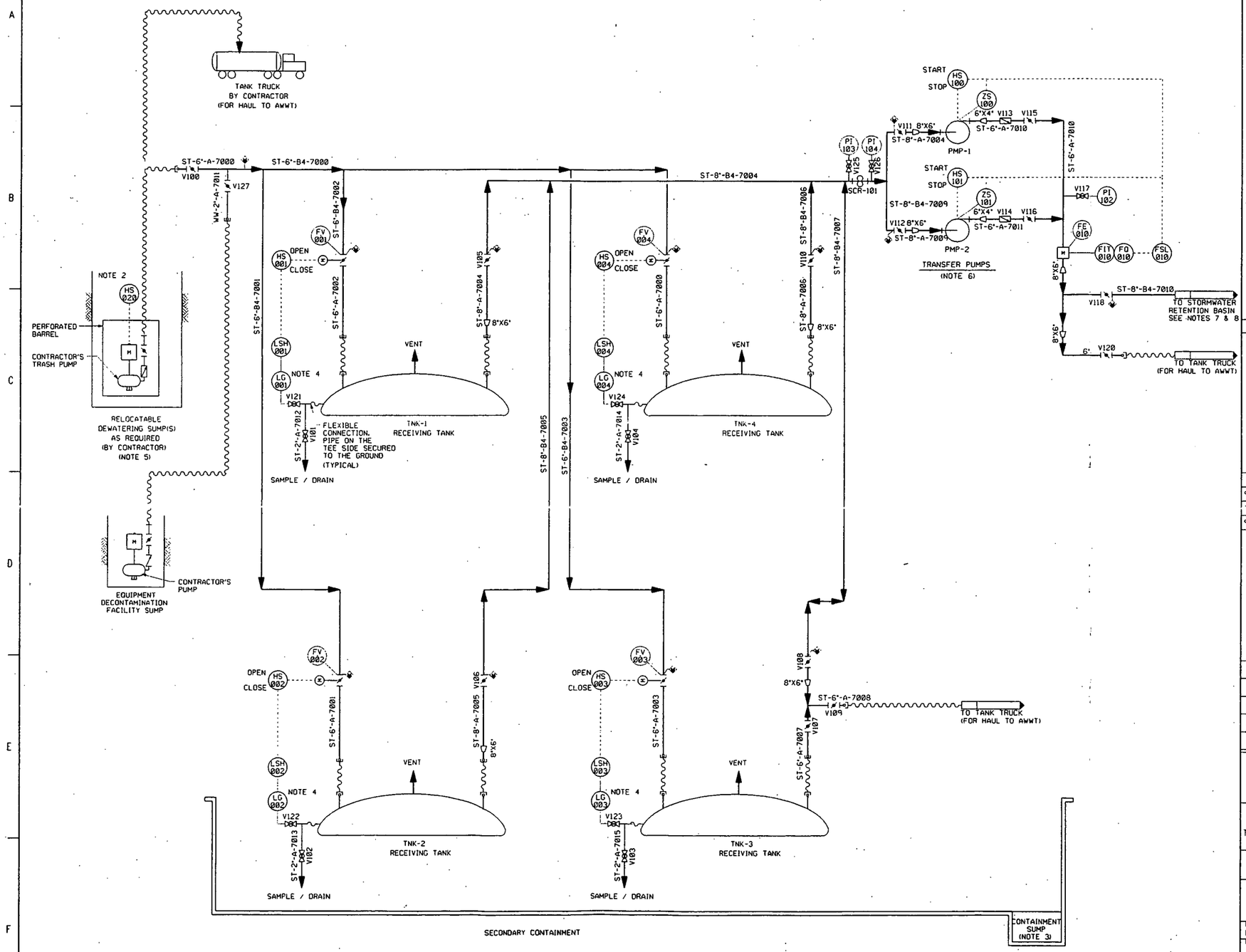
DRAWING TITLE
MECHANICAL PROCESS
PIPING AND INSTRUMENTATION DIAGRAM
SYMBOLS AND LEGEND

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.J.LEGASPI	10/3/97	[signature]	11/10/97	S. GHANTOUS	10/11/97

PLANT/BLDG. NO. | FLOOR | SCALE: NONE | CLASS

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD [signature]
DATE	DATE	DATE 11/10/97

PO NUMBER	TOP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	WBS 1.1.1.1.5 00-90701	92X-5900-N-00464	N0001	C



NOTES

1. PIPING SYSTEMS AND PUMPS MUST BE DRAINED DURING FREEZING WEATHER.
2. CONTRACTOR'S MOTOR CONTROLS.
3. CONTRACTOR SHALL DISPOSE OF WATER IN SUMP AS DIRECTED BY CONSTRUCTION MANAGER.
4. LEVEL GAUGE IS A FIELD FABRICATED SIGHT GLASS, LG-001 THRU LG-004 . REFER TO SPEC SECTION 13405, ATTACHMENT A, SHEET 5.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING PUMP FROM DEADHEADING WHEN TANK INLET VALVE CLOSES.
6. OPERATING RANGE SHALL BE KEPT ABOVE PUMP MINIMUM FLOW REQUIREMENTS.
7. WATER TO STORMWATER RETENTION BASIN (SWRB) VIA NEW AND EXISTING PIPES TO THE EXISTING STORM DRAIN SYSTEM. SEE SHEET G0013. WATER FROM SWRB IS PUMPED (BY OTHERS) TO AWWT.
8. IF THE SWRB IS IN OVERFLOW CONDITION, CONSTRUCTION MANAGER MAY DIRECT CONTRACTOR TO PUMP WATER TO THE SEDIMENT BASIN.

1094

LAST VALVE NUMBER	V127

000035

REF DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
[illegible]	[illegible] LEGENDS AND SYMBOLS	[illegible]
92X-5900-G-00460	CIVIL - REMEDIATION GENERATED WATER TRANSFER LINE	G0013

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	[illegible] 11/14/97	CS 11/14/97	OWC 11/14/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	SG 11/04/97	CS 11/04/97	OWC 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	SG 10/13/97	CS 10/13/97	OWC 10/13/97

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
REMEDIATION AREA 1, PHASE II

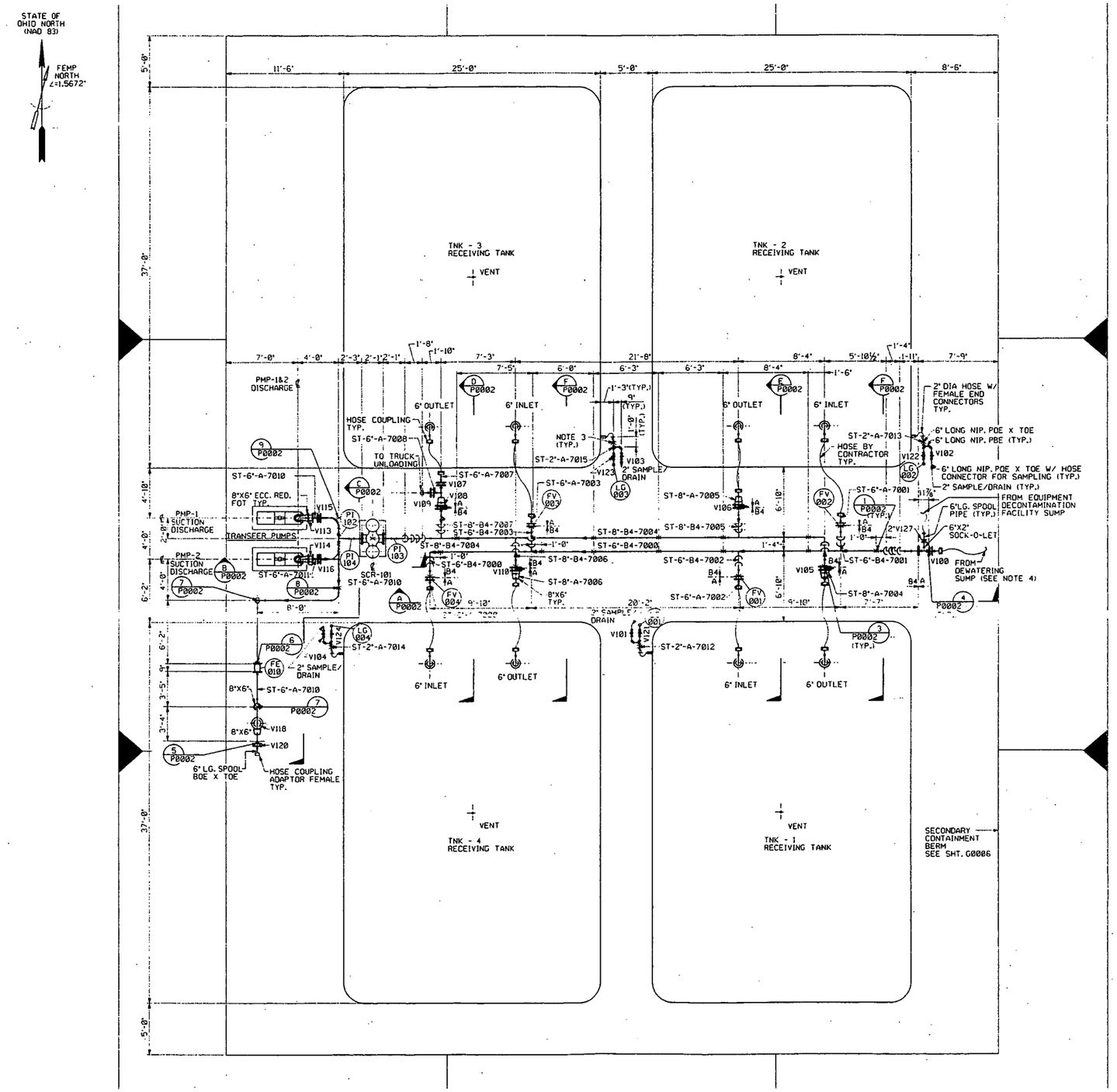
DRAWING TITLE
MECHANICAL PROCESS
PIPING AND INSTRUMENTATION DIAGRAM
WATER COLLECTION AND TRANSFER SYSTEM

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.L.LEGASPI	10/03/97	[illegible]	11/14/97	S. GRAMITOUS	10/11/97

PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		NONE	

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD [illegible]
DATE	DATE	DATE 11/14/97

PO NUMBER	TOP PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO
P0175	WBS 1.1.1.1.5 00-90701	92X-5900-N-00465	N0002	C



PLAN

NOTES

1. CONTRACTOR SHALL ADJUST PIPING HEADER AND BRANCH LOCATIONS AS REQUIRED TO SUIT CONNECTIONS ON ACTUAL TANKS AND EQUIPMENT PROVIDED.
2. ALL CARBON STEEL PIPING AND COMPONENTS SHALL BE PRIMED AND PAINTED.
3. SUPPORT BY CONTRACTOR.
4. CONTRACTOR SHALL PROVIDE ADDITIONAL CONNECTIONS AS NECESSARY FOR THE DEWATERING LINES.

1094

000036

REF DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
[illegible]	[illegible]	[illegible]
92X-5900-N-00465	P & ID - WATER COLLECTION AND TRANSFER SYSTEM	N0002
92X-5900-G-00433	CIVIL - SITE PLAN - TANK FARM	G0006
92X-5900-P-00475	PIPING SECTIONS AND DETAILS	P0002

PRELIMINARY
NOT FOR CONSTRUCTION

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
		INITIALS AND DATE		
C	ISSUED FOR 90% EPA DESIGN REVIEW	TWL 11/24/97	CS 11/24/97	OWC 11/24/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	SG 11/04/97	CS 11/04/97	OWC 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	SG 10/13/97	CS 10/13/97	OWC 10/13/97

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
REMEDIATION AREA 1, PHASE II

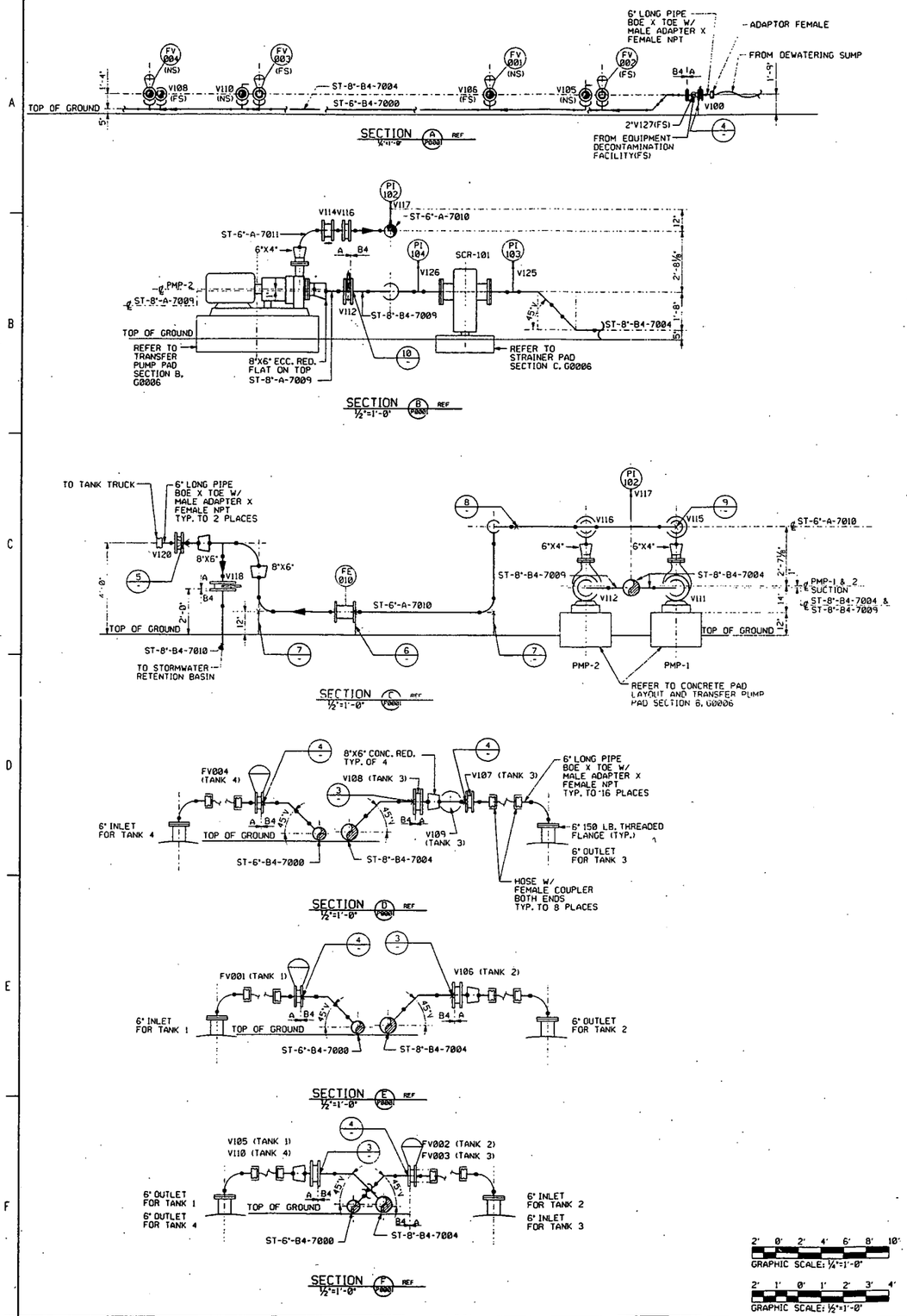
DRAWING TITLE
PIPING / PLANT DESIGN
PIPING PLAN
RECEIVING TANKS AND TRANSFER SYSTEM

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.J. LEGASPI	10-07-97	S. GHANTOUS	11/14/97	D.CARLSON	10/10/97

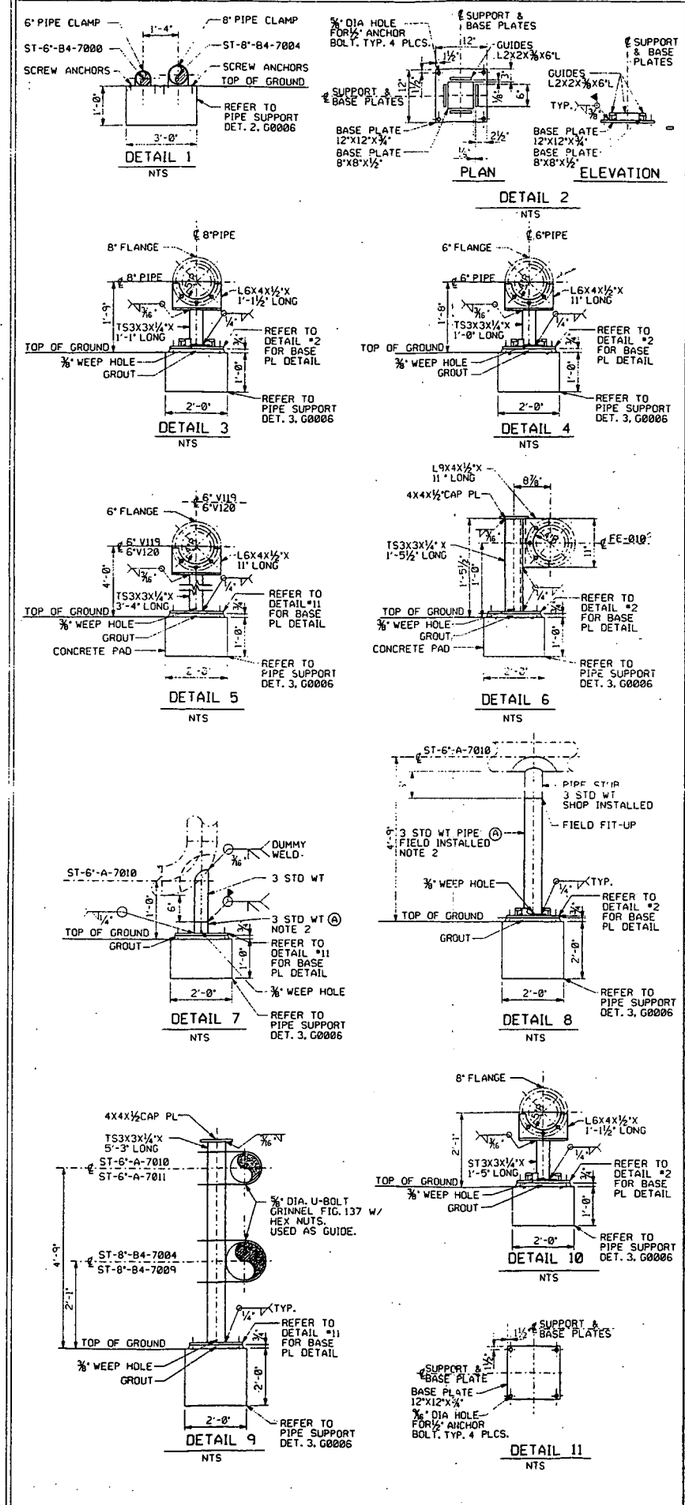
PLANT/BLDG. NO.	FLOOR	SCALE	CLASS
		1/4"=1'-0"	

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD N/A	TECH LEAD N/A	TECH LEAD [signature]
DATE	DATE	DATE 11/19/97

PO NUMBER	FDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	WBS 1.1.1.1.5 00-90701	92X-5900-P-00474	P0001	C



PIPE SUPPORT DETAILS



NOTES

1. ALL SUPPORT MATERIAL SHALL BE CARBON STEEL AND PAINTED.
2. FABRICATOR SHALL INCLUDE AN EXTRA 6" IN ITEM (A) FOR FIELD FIT-UP AT INSTALLED LOCATION.
3. USE HILTI 1/2"X3 1/2" MINIMUM EMBEDMENT ANCHOR BOLT OR APPROVED EQUAL FOR BASE PLATE.
4. ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION AND INSTALLATION OF EQUIPMENTS, PIPING, AND SUPPORTS.

1094

000037

REF DWG NO.	DRAWING TITLE	SHEET NO.
92X-5900-X-00418	DRAWING INDEX	X0002
92X-5900-N-00465	P & ID - WATER COLLECTION AND TRANSFER SYSTEM	N0002
92X-5900-P-00474	PIPING PLAN	P0001
92X-5900-G-00433	CIVIL - SITE PLAN - TANK FARM	G0006

PRELIMINARY
NOT FOR CONSTRUCTION

REV NO	ISSUE OR REVISION PURPOSE - DESCRIPTION	TL	PM	REVD BY
C	ISSUED FOR 90 % EPA DESIGN REVIEW	11/10/97	CS 11/10/97	11/10/97
B	ISSUED FOR 90% FDF AND DOE DESIGN REVIEW	SG 11/04/97	CS 11/04/97	OWC 11/04/97
A	ISSUED FOR INTERIM DESIGN REVIEW	SG 10/13/97	CS 10/13/97	OWC 10/13/97

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
REMEDIATION AREA 1, PHASE II

DRAWING TITLE
PIPING / PLANT DESIGN
PIPING SECTIONS AND DETAILS

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
D.J.LEGASPI	10-07-97	S. GHANTOUS	11/10/97	D. CARLSON	10/10/97

PLANT/BLDG NO. | FLOOR | SCALE: AS SHOWN | CLASS

SUBMITTED FOR 30% ISSUE: TECH LEAD n/a DATE
SUBMITTED FOR 60% ISSUE: TECH LEAD n/a DATE
SUBMITTED FOR 90% ISSUE: TECH LEAD DATE 11/10/97

PO NUMBER	TDF PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
P0175	WBS 1.1.1.1.5 00-90701	92X-5900-P-00475	P0002	C