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Department of Energy

Ohio Field Office
Fernald Environmental Management Project
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JUL 29 2002

Mr. Gene Jablonowski, Remedial Project Manager
United States Environmental Protection Agency
Region V, SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

DOE-0612-02

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Jablonowski and Mr. Schneider:

SILOS 1 AND 2 WAREHOUSE, RAILROAD SPURS AND REMEDIATION BUILDING MAT FOUNDATION DESIGN PACKAGES

The purpose of this letter is to transmit a documentation package concerning near-term construction activities for the Silos 1 and 2 Project to the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA).

The following construction activities will take place as part of the Silos 1 and 2 Warehouse Package:

- Drainage improvements to control local storm water runoff in the vicinity of the warehouse and rail facilities
- Extension of utilities to the warehouse
- Construction of a nominal 10,000 square foot, pre-engineered, metal-sided warehouse

Construction is currently scheduled to be initiated by early August 2002.

The following activities will take place as part of the Silos 1 and 2 Rail Spur Package:

- Protection of underground utilities
- Extension of the Fernald Environmental Management Project (FEMP) rail infrastructure from the existing Track No. 12 to the Silos 1 and 2 Remediation Building

Recycled and Recyclable

Construction is currently scheduled to be initiated by early September 2002.

The following construction activities will take place as part of the Silos 1 and 2 Remediation Building Concrete Mat Foundation Package:

- Drainage improvements to control local stormwater runoff in the vicinity of the Silos 1 and 2 Remediation Building
- Extension of utilities to the Silos 1 and 2 Remediation Building
- Construction of the concrete mat foundation for the Silos 1 and 2 Remediation Building

Construction is currently scheduled to be initiated by the end of August 2002.

Area 7 Phase 1 soil excavation, which is currently in process, will be completed prior to the construction activity documented in the enclosed information package.

As has been discussed, design for the construction activities described in the enclosed packages will also be included in the draft Silos 1 and 2 Remedial Design (RD) Package, currently anticipated to be submitted to the USEPA and OEPA in October 2002. The Project intends to initiate the construction of these individual packages at risk in advance of receiving final approval of the RD Package. The Department of Energy (DOE) and Fluor Fernald, Inc. are confident that initiation of this construction work will not impact our ability to address the USEPA and OEPA comments or concerns from review of the Silos 1 and 2 RD Package.

If there are any questions, please contact Nina Akgűndűz at (513)648-3110.

Sincerely,

Johnny Reising

Johnny W. Reising
Fernald Remedial Action
Project Manger

FEMP: Hall

Enclosure: As Stated

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cc w/enclosure:
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SILOS 1 & 2 RAILROAD SPUR PACKAGE FLUOR FERNALD, INC. FERNALD, OHIO PROJECT NO.: 35H19603	SECTION NO.: 02200 SPECIFICATION FOR EARTHWORK

THIS TITLE SHEET IS THE FIRST PAGE OF THE SPECIFICATION AND A RECORD OF EACH ISSUE OR REVISION. THE PAGES REVISED AND THE DESCRIPTION OF THE REVISION SHOULD BE NOTED UNDER REMARKS.

FOR CONVEINENCE, THE NATURE OF THE REVISION IS BRIEFLY NOTED UNDER REMARKS.

NOTE: THIS SPECIFICATION WAS CREATED IN SPECSINTACT 3.

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Project No.: 35H19603
Project: Silos 1 & 2 Railroad Spur Package

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Project No.: 35H19603
Project: Silos 1 & 2 Railroad Spur Package

SECTION 02200

EARTHWORK

PART 1 GENERAL

1.1 SCOPE

This Section includes construction safety fence, excavation, dewatering, stockpiling, and compacted fill.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 698	(1998) Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3)
ASTM D 2487	(1998) Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2922	(2001) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(2001) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

FLUOR FERNALD, INC.

ATC, 2002	ATC Project No. 72.58679.0022 (Final Report) "Geotechnical Engineering Investigation, Fernald Environmental Management Project, Silos 1 & 2" (ATC, March 21, 2002). This report contains geotechnical data for the subsurface soils in the Remediation Building area.

OHIO DEPARTMENT OF TRANSPORTATION (ODOT)

ODOT 304	Aggregate

1.3 SUBMITTALS

Fluor Fernald, Inc., approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330, "SUBMITTAL PROCEDURES":

SD-06 Test Reports

Tests for moisture-density relation;

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Density and moisture tests;

Provide two copies of test results within 24 hours of conclusion of physical tests.

SD-07 Certificates

Procedures;

Procedure and location for disposal of unused satisfactory material. Proposed source of borrow material.

Qualifications of the commercial testing laboratory;

SD-11 Closeout Submittals

As-built drawings;

1.4 PROJECT CONDITIONS

1.4.1 Existing Utilities

There are existing utilities within the construction area. See "Project Conditions" under Section 02215.

1.4.2 Geotechnical Engineer

The Contractor shall employ a Geotechnical Engineer for observation and making recommendations during subgrade preparation, including location and excavation activities over underground utilities. The Geotechnical Engineer shall be a professional geotechnical engineer registered in the state of Ohio.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Fill Material

a. Fill material for compacted fill to the subgrade limits shown on the plans shall be excavated, on-site soil free of debris, foreign objects, large rock fragments, organics, and other deleterious materials. Visible rock particles shall be maximum dimension of 4 in. for 8-in. ±1-in. thick loose lifts and 2 in. for 4-in. ±1-in. thick loose lifts. Material for compacted fill shall conform to GC, SC, SM, CL, or CH according to the Unified Soil Classification System per ASTM D 2487.

b. If on-site soils are unsuitable for compacted fill, compacted aggregate shall be used as compacted fill material. Compacted aggregate shall be ODOT 304 aggregate material.

2.1.2 Gravel Cover

Material for gravel surfacing shall be ODOT 304.

2.1.3 Geotextile

Geotextiles used for separation between subgrade and gravel surface

material shall be Mirafi 500X or equal as a minimum.

2.1.4 Water

Construction water for moisture conditioning compacted fill shall be obtained from the on-site water source designated by Fluor Fernald, Inc.

2.1.5 Construction Fencing

Construction safety fence for activities shall be orange, high-density polyethylene, 4 ft high, opening size approximately 4 in. by 1 in., minimum tensile strength of 2000 lb per ft of width. Posts shall be T-shaped (T-post) or as approved by Fluor Fernald, Inc. Contractor shall furnish and install signs for construction safety fence in accordance with Part 8 of the Contract Documents.

2.2 EQUIPMENT

Furnish equipment to perform work specified in this Section.

Furnish hand compaction equipment, such as walk-behind pad foot compactors, hand tampers, or vibratory plate compactors, for compaction in areas inaccessible to large compaction equipment.

Furnish low ground pressure equipment for work over and around existing underground utilities.

PART 3 EXECUTION

3.1 GENERAL

Verify existing conditions prior to earthwork activities. Geotechnical data for the subsurface soils in the adjacent Remediation Building area can be found in the Final Report: "Geotechnical Engineering Investigation, Fernald Environmental Management Project, Silos 1 & 2" (ATC, 2002.)

Install surface-water management and erosion controls in accordance with Section 02270.

Dust control shall be in accordance with Part 6 of the Contract Document.

3.2 SITE PREPARATION

3.2.1 General

Install construction safety fence at construction limits as directed by Fluor Fernald, Inc. Signs and barricades around trenches, stockpiles, and excavated areas shall be as directed by Fluor Fernald, Inc.

Maintain and repair construction safety fence for the duration of the Contract. Fencing shall be maintained so as to minimize vertical sagging.

Install, maintain, and inspect surface-water management and erosion controls in accordance with Section 02270.

3.2.2 Existing Utilities

a. Locate existing manholes, drop inlet structures, monitoring wells, utilities, and other subsurface structures in the work area. Protect

structures and utilities during earthwork activities as indicated on the Drawings.

b. Utilities underneath new trackwork shall be located in accordance with Section 02215.

3.3 SURFACE-WATER MANAGEMENT AND EROSION CONTROL

Install surface-water management and erosion controls in and around work areas in accordance with Section 02270.

3.4 EXCAVATION

Excavate designated areas to the subgrade elevations or excavation limits shown on the Drawings.

Excavate material within the excavation limits, regardless of type, character, composition, and condition.

Following excavation of overlying soil, the subgrade soils shall be inspected by the Contractor's Geotechnical Engineer and shall be proofrolled. Any soft or loose soils identified by inspection and proofrolling shall be removed as directed. The over-excavation shall extend horizontally beyond the footprint of the structure or pavement by at least 3 ft.

Blasting, including use of explosives or explosive devices, shall not be permitted.

Minimize sloughing and caving of excavations. Over-excavate and fill areas of excavations that cave or slough with compacted fill in accordance with this Section.

Do not remove soil from the site or dispose of soil included in this Contract except as approved in writing by Fluor Fernald, Inc.

3.5 EXCAVATION DEWATERING

Anticipate seepage of groundwater into and accumulation of surface-water runoff in excavations. Manage groundwater and surface-water runoff in excavations in accordance with this Section, and Section 02270.

Collect water that accumulates in the excavation with a toe drain, or other suitable sump, and pump to locations as directed by Fluor Fernald, Inc. Provide sediment control around the temporary sump in accordance with Section 02270.

Prevent surface-water run-on from adjacent areas from entering the excavation in accordance with Section 02270.

3.6 STOCKPILING

The Contractor shall stockpile all excavated soils within on-site stockpile areas, as directed by Fluor Fernald, Inc.

Construct stockpiles no steeper than 3H:1V (horizontal:vertical), grade to drain, seal by tracking perpendicular to the slope contours with a bulldozer, and dress daily during periods when material is taken from or added to the stockpile.

Install surface-water management and erosion control measures at the stockpile areas in accordance with Section 02270.

3.7 SUBGRADE PREPARATION

3.7.1 General

Subgrade material shall be free of debris, foreign objects, organics, and other deleterious materials.

In the event saturated subgrade is encountered, localized sumps shall be constructed to facilitate removal of water. Manage removed water in accordance with this Section.

Manage surface-water run-on or runoff in accordance with Section 02270.

Perform subgrade proof rolling outside areas of existing utilities by driving a loaded dump truck with minimum loaded weight of 20 tons and minimum weight of 10 tons per axle or other pneumatic-tired vehicle back and forth across the area to be prepared to confirm the firmness of subgrade. Overlap the passes so that one set of tires on each pass runs between the two sets of tire tracks from the previous pass. Soils shall not exhibit pumping or develop ruts more than 2 in. deep. Rutting larger than 2 in. shall be scarified in accordance with this Section and regraded with compacted fill material to meet the proposed subgrade or top of contouring layer elevations.

Where compacted fill is to be placed, prepare the subgrade by scarifying to a depth of 2 in. prior to placement of fill materials.

In areas where unsuitable soils are encountered, remove and replace the soil to a minimum depth of 1 ft below the proposed subgrade elevation. Remove unsuitable subgrade to an additional depth if necessary to obtain a suitable soil surface for subsequent fill placement. Removal of unsuitable soils to additional depth shall be as approved by Fluor Fernald, Inc. Suitable soil surface exhibiting pumping or developing ruts more than 2 in. deep shall be removed to a minimum depth of 1 ft or dried in place by a method approved by Fluor Fernald, Inc. Fill areas from which subgrade has been removed with compacted fill in accordance with this Section. Compact the fill material to at least 98 percent Standard Proctor maximum dry unit weight as determined by ASTM D 698.

3.7.2 Underground Utilities

a. Locate utilities as described in Section 02215.

b. The Contractor's Geotechnical Engineer shall identify unsuitable subgrade soils over existing utilities and make recommendations for removal and replacement with aggregate fill.

3.8 Protection of Underground Utilities

Existing underground utilities shall be protected by concrete utility mat or concrete encasement as shown on the Drawings. A 6-in. compacted aggregate layer shall be installed under the concrete utility mat. This aggregate layer shall be compacted using a small, smooth-drum roller and as directed by the Contractor's Geotechnical Engineer.

3.9 COMPACTED FILL

Use fill material that meets the material requirements of this Section. Place the fill material to the limits and grades shown on the Construction Drawings.

Place fill material on surfaces that are free of debris, branches, vegetation, mud, ice, or other deleterious materials.

Place fill material in loose lifts with a thickness of 8 in. ±1 in. In areas where compaction is to be performed using hand-operated equipment, place the fill material in loose lifts with a thickness of 4 in. ±1 in.

Remove visible rock particles with a maximum dimension larger than 4 in. for 8-in. ±1-in.-thick loose lifts. For 4-in. ±1-in.-thick loose lifts, the maximum rock particle size shall be 2 in.

Compact fill material in each lift to at least 98 percent of its Standard Proctor maximum dry unit weight as determined by ASTM D 698. Compact the uppermost lift of compacted fill to a minimum 100 percent of the Standard Proctor maximum dry unit weight as determined by ASTM D 698. Compact fill at a moisture content within ±3 percentage points of the Standard Proctor optimum moisture content as determined by ASTM D 698.

If aggregate is used, compact aggregate to the same density as compacted fill. Adjust the moisture content of the aggregate as required to achieve compaction.

Rework compacted fill that does not meet the required compaction.

3.10 CONSTRUCTION QUALITY REQUIREMENTS

In-place density testing will be performed in accordance with ASTM D 2922. Nuclear density gauge will be calibrated in accordance with the manufacturer's requirements. Documentation of this calibration will be provided to Fluor Fernald, Inc. Register any nuclear or radiological sources brought on site with Fluor Fernald, Inc., prior to bringing the source on-site.

Perform in-place moisture tests in accordance with ASTM D 3017.

If in-place density and/or moisture tests indicate that work does not meet specified requirements, remove work and replace or recompact to specified requirements. If visual inspection indicates that work has not been performed as specified, correct work to comply with the requirements.

Perform soil classification in accordance with ASTM D 2487.

Frequency of Tests: Frequency of in-place density and moisture testing shall be whichever of the following requires the greatest number of tests:

a. Once each day when compacting fill material.

b. Once each compacted lift of fill material.

c. Once every 2,500 sq. ft. of compacted fill material.

Notify Fluor Fernald, Inc., of activities that will require testing/inspection a minimum of 24 hours prior to the start of such

activities.

3.11 TOLERANCES

Perform the earthwork construction to within ±0.1 ft of the grades indicated on the Drawings.

-- End of Section --

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SILOS 1 & 2 RAILROAD SPUR PACKAGE FLUOR FERNALD, INC. FERNALD, OHIO PROJECT NO.: 35H19603	SECTION NO.: 02215 SPECIFICATION FOR TRENCHING AND BACKFILLING

THIS TITLE SHEET IS THE FIRST PAGE OF THE SPECIFICATION AND A RECORD OF EACH ISSUE OR REVISION. THE PAGES REVISED AND THE DESCRIPTION OF THE REVISION SHOULD BE NOTED UNDER REMARKS.

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Project: Silos 1 & 2 Railroad Spur Package

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SECTION 02215

TRENCHING AND BACKFILLING

PART 1 GENERAL

1.1 SCOPE

This Section includes location of existing utilities and trenching and backfilling for the removal of a section of storm drain piping.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 698	(1998) Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3)

OHIO DEPARTMENT OF TRANSPORTATION (ODOT)

ODOT 304	Aggregate

OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)

29 *Code of Federal Regulations* (CFR) 1926	Latest version of Occupational Safety and Health Administration (OSHA) Construction Standards, Subpart P - Excavations

1.3 PROJECT CONDITIONS

1.3.1 Utilities

There are existing underground utilities within the construction area that are critical to plant operations. The Contractor shall assume that these utilities will be active during construction. The utilities involved are listed below and should be considered hazardous:

FQI	Firewater,
DW	Drinking Water,
SN	Sanitary Sewer Force Main,
CE	Contaminated Sewer and Leachate,
FG	Fuel Gas (Natural Gas),
FT	Filtrate,
ST	Storm Drain,

These utilities have been shown on the Drawings using the best available information. Prior to construction, Fluor Fernald, Inc., will determine the horizontal and vertical locations of these utilities. The Contractor shall employ excavation methods as required to ensure utilities are not disturbed.

1.4 SUBMITTALS

Fluor Fernald, Inc., approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330, "SUBMITTAL PROCEDURES":

SD-06 Test Reports

Trench backfill material tests;

Tests for moisture-density relation;

Density and moisture tests;

SD-07 Utility Excavation/Contingency Plan;

The Contractor shall submit a utility excavation/contingency plan for approval prior to construction. This plan will address excavation methods and equipment to be used when excavating near utilities. This plan shall also include emergency procedures to be implemented in case of an accedental breach of the utilities listed in paragraph 1.3.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Backfill

Backfill material shall be ODOT 304 aggregate material.

2.1.2 Water

Construction water for moisture conditioning of the trench backfill shall be obtained from on-site water source as directed by Fluor Fernald, Inc.

2.2 EQUIPMENT

Furnish equipment to perform the work specified in this section.

Furnish hand compaction equipment such as walk-behind pad-foot compactor, hand tamper, or vibratory plate compactors for compaction in areas inaccessible to large compaction equipment.

PART 3 EXECUTION

3.1 SITE PREPARATION

Verify that surface-water management and erosion control measures are in place in accordance with Section 02270.

Do not damage or disturb survey benchmarks, finished construction, and existing utilities and structures.

Dust control for trenching and backfilling shall be in accordance with Part 6 of the Contract document.

3.2 TRENCHING

Stockpile excess excavated material from trenching in the stockpile areas as directed by Fluor Fernald, Inc.

Trench support shall satisfy applicable local, state, and federal requirements, including requirements of 29 CFR 1926,OSHA Construction Standards, Subpart P - Excavations. Provide trench support materials on site before the start of trenching. Maintain the safety and stability of slopes and trenches and protect adjacent utilities and structures.

Protect and maintain the trench bottom. Remove rock fragments or raveled materials that collect on the trench bottom. Excavate any soft subgrade encountered at the trench bottom and backfill.

Continuously dewater trenches. Perform dewatering in accordance with Sections 02200 and 02270.

3.3 BACKFILLING

3.3.1 General

Do not backfill with frozen or saturated material.

Do not backfill over frozen, wet, or soft trench bottom or side slopes. Remove materials that are frozen, wet, or soft as specified in this section.

Do not disturb or damage piping underneath trench during backfilling.

3.3.2 Backfill

Place trench backfill material in nominal 8-in. ± 1-in.-thick loose lifts.

Compact trench backfill material in each lift to at least 95 percent of its Standard Proctor maximum dry unit weight and at a moisture content within ±3 percent of the optimum moisture content as determined by ASTM D 698. Perform required testing(moisture/density) once every 200 linear ft of trench backfill per lift.

-- End of Section --

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SILOS 1 & 2 RAILROAD SPUR PACKAGE FLUOR FERNALD, INC. FERNALD, OHIO PROJECT NO.: 35H19603	SECTION NO.: 02270 SPECIFICATION FOR SURFACE-WATER MANAGEMENT AND EROSION CONTROL

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SECTION 02270

SURFACE-WATER MANAGEMENT AND EROSION CONTROL

PART 1 GENERAL

1.1 SCOPE

This section includes materials and placement of silt fence, temporary inlet protection, and surface-water management and erosion control measures.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR)

ODNR	(1996) ODNR Rainwater and Land Development Standards

1.3 SUBMITTALS

Fluor Fernald, Inc., approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330, "SUBMITTAL PROCEDURES":

SD-03 Product Data

Manufacturer's data on silt fence;

SD-08 Manufacturer's Instructions

Manufacturer's installation and maintenance instructions;

PART 2 PRODUCTS

2.1 SILT FENCE

Furnish silt fence with either woven or nonwoven geotextile. Silt fence shall be:

a. Commercially manufactured for sediment control purposes.

b. Reinforcement backing shall be minimum 14-gauge steel wire and maximum mesh spacing of 6 in. or synthetic netting of equal strength. Reinforcement backing can be eliminated if post spacing is a maximum of 6 ft and the geotextile tensile strength is at least 200 lb.

c. Posts shall be either wood or steel with minimum length of 4 ft. Wood posts shall be at least 2 in. by 2 in. (nominal) of oak or similar hardwood. Steel posts shall be round or shaped as a "U," "T," or "C." Steel posts shall have a minimum weight of 1.33 lb per linear ft and shall have projections for fastening reinforcement to silt fence.

d. Wire staples shall be at least 9-gauge thickness with a minimum length of 1 in.

e. A preassembled silt fence meeting the material requirements may be used instead of a field-constructed silt fence.

2.2 INLET PROTECTION

Geotextile fabric and wire backing shall be the same as for silt fence.

2.3 OTHER MATERIALS

Materials for other surface-water management and erosion controls shall be in accordance with ODNR.

2.4 EQUIPMENT

Furnish equipment to perform work specified in this Section.

PART 3 EXECUTION

3.1 INSTALLATION

a. Install silt fence in accordance with Part 6 of the Contract Document.

b. Install inlet protection in accordance with plans and ODNR.

c. Install construction entrances in accordance with ODNR.

3.2 ADDITIONAL REQUIREMENTS

Prevent the runoff of polluting substances such as silt, clay, and contaminated soils from migrating into water supplies and surface waters.

Remove accumulated silt and debris from behind the face of the silt fence when the silt deposits reach approximately one half the height of the fence. Replace silt fence geotextile damaged during maintenance operations. Removed silt and debris shall be placed in locations approved by Fluor Fernald, Inc.

3.3 MAINTENANCE

Clean, maintain, repair, and replace surface-water management and erosion controls for the duration of the contract in accordance with the requirements specified in paragraph 3.4 of this Section.

Maintain erosion control measures and existing sedimentation basins in accordance with this Section.

3.4 INSPECTIONS

Inspect surface-water management and erosion control measures and sedimentation basins to evaluate their effectiveness and need for maintenance. Any required repairs to the surface-water management and erosion control measures and sedimentation basins shall be initiated upon discovery, but no later than 24 hours after discovery. Inspections shall occur, at a minimum, at the following frequencies:

a. Weekly

b. Daily after each rain event exceeding 0.5 in.

c. Daily during prolonged rainfall events.

3.5 RECORDS

Records of inspections shall be kept on file on site by Contractor and shall be available for inspection upon request. The records of inspection shall include the following:

a. Summary of the scope of the inspection.

b. Name of inspector.

c. Inspection date.

d. Inspection location.

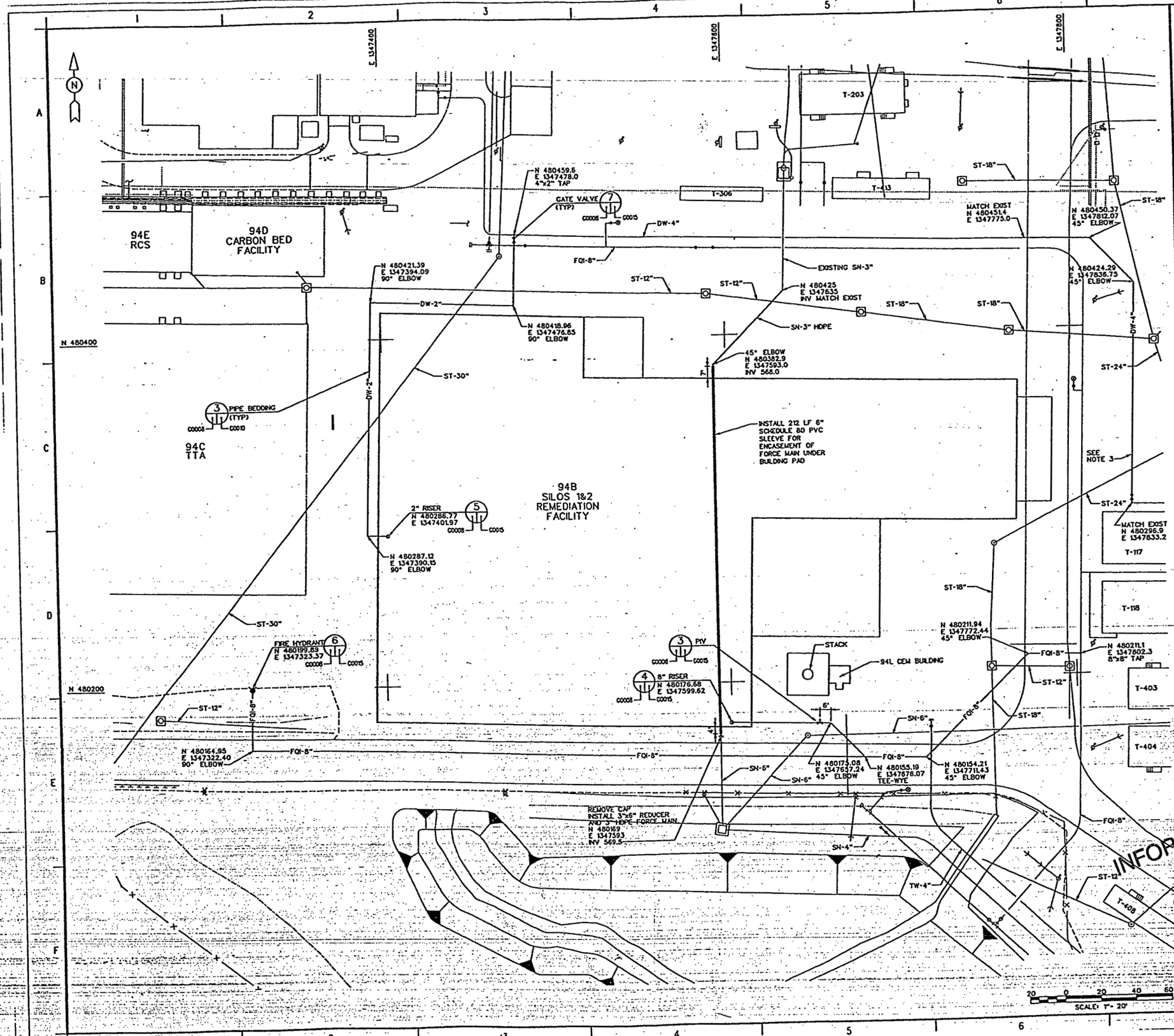
e. Purpose of the inspection (e.g., regular weekly, following a storm, etc.).

f. Observations relative to performance of the surface-water management and erosion control measures.

g. Any necessary corrective actions.

h. Corrective actions completed and their performance since the previous inspection.

-- End of Section --



NOTES:

1. FOR GENERAL NOTES, LEGEND, UTILITY DESIGNATIONS AND EXCAVATION NOTES, SEE SHEET G0012.
2. NEW FQI-8" FIRE WATER LINE SHALL BE A MINIMUM 3'-6" DEEP TO TOP OF PIPE BELOW EXISTING GRADE. ADJUST ELEVATION AS NECESSARY TO AVOID CONFLICTS WITH OTHER UTILITY LINES.
3. FOR ELEVATIONS OF NEW DW-4" DOMESTIC WATER LINE, SEE PROFI SHEET G0010.

4383

000023

[✓] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubm
[ ] C - Revise and Resubmit
Sig: Date: 20-JUN-(

REF DWG NO.	DRAWING TITLE

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY INITIALS AND
1	ISSUED FOR CONSTRUCTION/DCN 40750-JEG-012	06/07/02	
0	ISSUED FOR BID	05/07/02	FP,JR.

UNITED STATES
DEPARTMENT OF ENERG
FERNALD ENVIRONMENTAL MANAGEMENT PRO

THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY FOUNDATION MAT
UTILITY PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY
J.ASHWORTH	05/08/02	W.BARTON	05/08/02	F.PARTON,JR.

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

SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSU
TECH LEAD	TECH LEAD	TECH LEAD
DATE	DATE	DATE

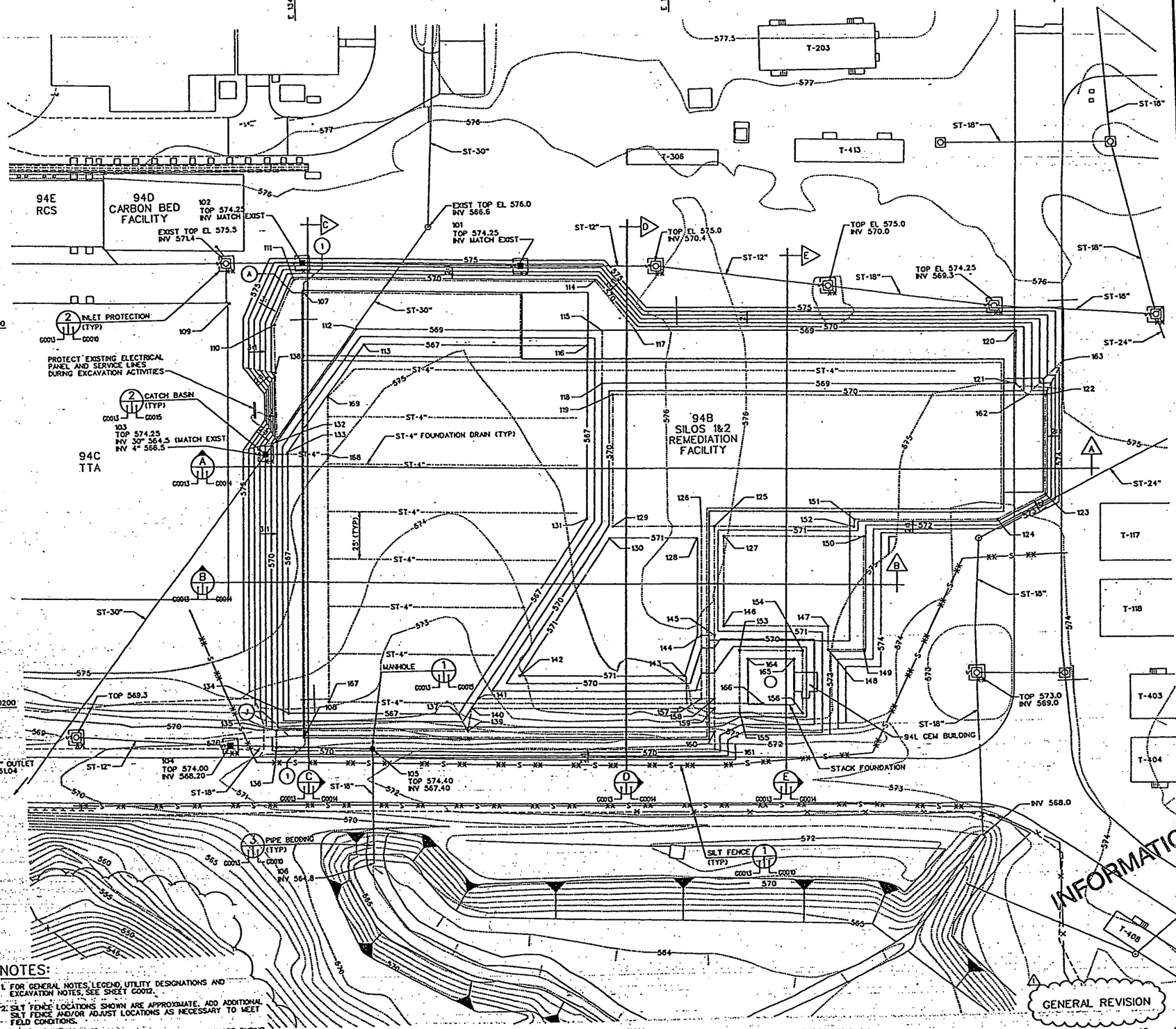
E.O. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET N
N/A	40750	94X-3900-G-01371	G00

AS PROJECT NO.	FILENAME
35H19603	94XC137LDCN

INFORMATION ONLY

DATE: 06/07/02 USER: JAshworth

4383



NOTES:

1. FOR GENERAL NOTES, LEGEND, UTILITY DESIGNATIONS AND EXCAVATION NOTES, SEE SHEET G0012.
2. SILT FENCE LOCATIONS SHOWN ARE APPROXIMATE. ADD ADDITIONAL SILT FENCE AND/OR ADJUST LOCATIONS AS NECESSARY TO MEET FIELD CONDITIONS.
3. PROTECT ALL EXISTING UTILITIES TO REMAIN FROM DAMAGE DURING EXCAVATION ACTIVITIES.
4. ALL SIDE SLOPES SHALL BE 4:1 UNLESS NOTED OTHERWISE.

COORDINATE LISTING

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
101	480426.1	1347517.7	--	CB
102	480429.7	1347400.0	--	CB
103	480379.7	1347377.1	--	CB
104	480177.0	1347353.2	--	CB
105	480173.1	1347430.8	--	CB
106	480112.8	1347429.8	--	END OF PIPE
107	480414.13	1347400.48	FFE 573.0	COLUMN A-1
108	480180.88	1347394.08	FFE 573.0	COLUMN H-1
109	480409.7	1347359.8	573.5	SPOT EL
110	480367.7	1347343.4	569.5	SPOT EL
111	480413.4	1347394.9	569.5	SPOT EL
112	480364.4	1347429.0	569.0	SPOT EL
113	480366.3	1347432.8	567.0	SPOT EL
114	480416.9	1347557.2	569.5	SPOT EL
115	480380.8	1347560.2	569.0	SPOT EL
116	480363.1	1347562.0	567.0	SPOT EL
117	480390.3	1347578.2	569.0	SPOT EL
118	480362.9	1347556.4	569.0	SPOT EL
119	480356.8	1347548.3	570.5	SPOT EL
120	480384.9	1347773.9	569.0	SPOT EL
121	480337.0	1347773.1	569.0	SPOT EL
122	480350.6	1347769.9	570.5	SPOT EL
123	480298.3	1347766.3	570.5	SPOT EL
124	480285.9	1347764.0	570.5	SPOT EL
125	480283.9	1347617.2	570.5	SPOT EL
126	480286.1	1347610.2	570.5	SPOT EL
127	480280.8	1347612.1	571.8	SPOT EL
128	480280.2	1347500.0	571.0	SPOT EL
129	480287.4	1347543.4	570.5	SPOT EL
130	480281.4	1347561.8	571.0	SPOT EL
131	480292.0	1347549.5	567.0	SPOT EL
132	480334.0	1347363.2	569.0	SPOT EL
133	480330.5	1347368.1	567.0	SPOT EL
134	480193.0	1347365.3	567.0	SPOT EL
135	480164.2	1347378.3	569.3	SPOT EL
136	480175.0	1347378.1	569.3	SPOT EL
137	480190.5	1347476.1	567.0	SPOT EL
138	480372.4	1347383.3	569.3	SPOT EL
139	480181.4	1347482.8	569.3	SPOT EL
140	480193.8	1347483.3	568.0	SPOT EL
141	480196.6	1347466.7	568.0	SPOT EL
142	480229.0	1347511.4	571.0	SPOT EL
143	480207.8	1347509.2	571.0	SPOT EL
144	480228.8	1347608.6	570.5	SPOT EL
145	480228.6	1347615.8	570.5	SPOT EL
146	480233.5	1347620.6	571.8	SPOT EL
147	480232.0	1347675.2	571.8	SPOT EL
148	480219.7	1347674.8	571.8	SPOT EL
149	480219.2	1347663.2	571.8	SPOT EL
150	480278.8	1347694.8	571.8	SPOT EL
151	480287.9	1347690.1	570.5	SPOT EL
152	480283.9	1347690.0	570.5	SPOT EL
153	480290.2	1347628.8	568.5	SPOT EL
154	480219.3	1347661.8	569.5	SPOT EL
155	480187.3	1347637.8	568.5	SPOT EL
156	480166.3	1347660.9	568.5	SPOT EL
157	480195.4	1347607.7	568.0	SPOT EL
158	480195.2	1347614.7	568.0	SPOT EL
159	480190.1	1347614.6	568.0	SPOT EL
160	480177.8	1347614.2	569.3	SPOT EL
161	480156.5	1347614.0	569.3	SPOT EL
162	480350.9	1347781.0	570.5	SPOT EL
163	480368.4	1347799.4	570.5	SPOT EL
164	480215.6	1347633.2	574.4	STACK FOUNDATI
165	480215.0	1347657.2	574.4	STACK FOUNDATI
166	480172.0	1347640.5	—	FOUNDATION DRA
167	480168.4	1347607.8	—	FOUNDATION DRA
168	480326.7	1347411.3	—	FOUNDATION DRA
169	480359.1	1347412.2	—	FOUNDATION DRA

REF DWG NO.	DRAWING TITLE

~~[ ] A - Conforms to the Subcontract Requirement~~
~~[ ] B - Minor Comment - Incorporate and Resubm~~
[ ] C - Revise and Resubmit
Sig: Date: 20-JUN-0

REV NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY / INITIALS APP.
1	ISSUED FOR CONSTRUCTION/DCN 40750-JEG-012	05/07/02	
0	ISSUED FOR BID	05/07/02	FF/JR

UNITED STATES
DEPARTMENT OF ENERG
FERNALD ENVIRONMENTAL MANAGEMENT PRO

THIS DRAWING PREPARED BY
JACOBS

000024

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY FOUNDATION MAT
GRADING, DRAINAGE AND EROSION CONTROL PLA

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY
J.ASHWORTH	05/08/02	W.BARTON	05/08/02	F.BARTON/R.

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

SUBMITTED FOR 30% ISSUE — TECH LEAD — DATE
SUBMITTED FOR 90% ISSUE — TECH LEAD — DATE
SUBMITTED FOR 90% ISSUE — TECH LEAD — DATE

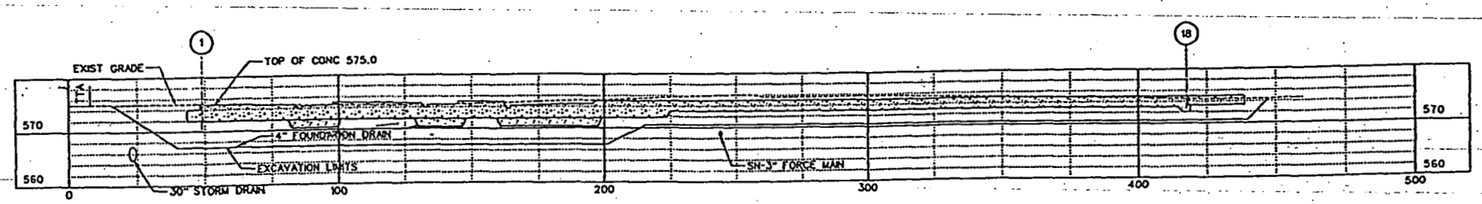
T.O. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.
N/A	40750	94X-3900-G-01376	G0C

JEG PROJECT NO. 35H19603 | FILENAME 94XG1376.DGN

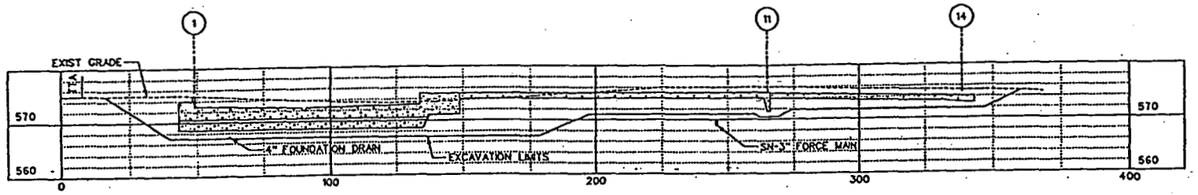
NOTES:

1. SEE STRUCTURAL DRAWINGS FOR FOUNDATION ELEVATIONS AND DIMENSIONS.

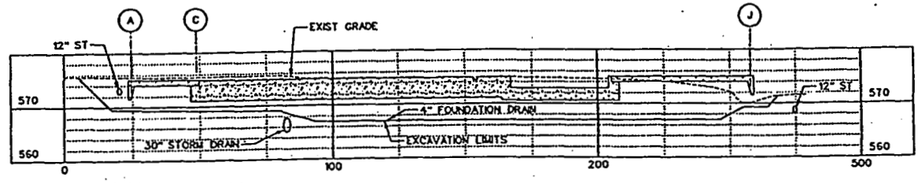
4383



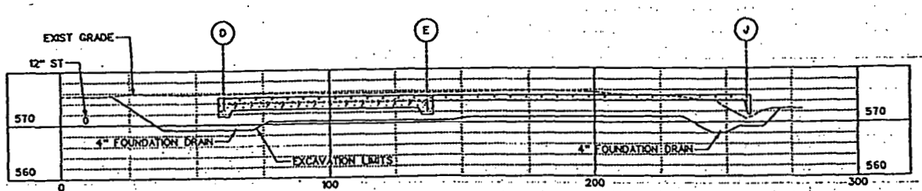
SECTION A
SCALE: 1"=20' HORIZONTAL, 1"=10' VERTICAL



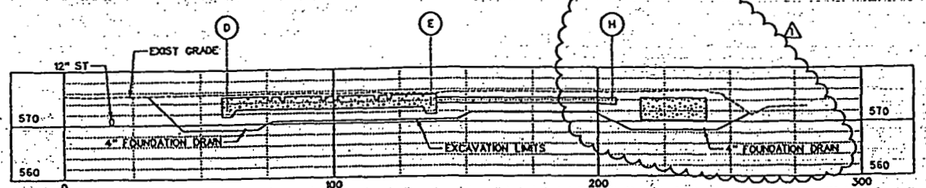
SECTION B
SCALE: 1"=20' HORIZONTAL, 1"=10' VERTICAL



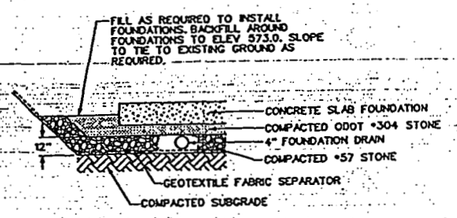
SECTION C
SCALE: 1"=20' HORIZONTAL, 1"=10' VERTICAL



SECTION D
SCALE: 1"=20' HORIZONTAL, 1"=10' VERTICAL



SECTION E
SCALE: 1"=20' HORIZONTAL, 1"=10' VERTICAL



TYPICAL SUBGRADE BACKFILL
NOT TO SCALE

INFORMATION ONLY

VERTICAL SCALE: 1"= 10'

HORIZONTAL SCALE: 1"= 20'

000025

[X] A - Conforms to the Subcontract Requiremen
[ ] B - Minor Comment - Incorporate and Resub
[ ] C - Revise and Resubmit

Date: 20-JUN-0

REF DWG NO.	DRAWING TITLE

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY / INITIALS AND D.
1	ISSUED FOR CONSTRUCTION/DCN 40750-JEG-012	06/07/02	
0	ISSUED FOR BID	05/07/02	FP, JR.

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJ

THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY FOUNDATION MAT
SECTIONS

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY
J.ASHWORTH	05/06/02	W.BARTON	05/06/02	F.PARTON_JR.

PLANT/BLDG. NO.	FLOOR	SCALE
N/A		1"=20'

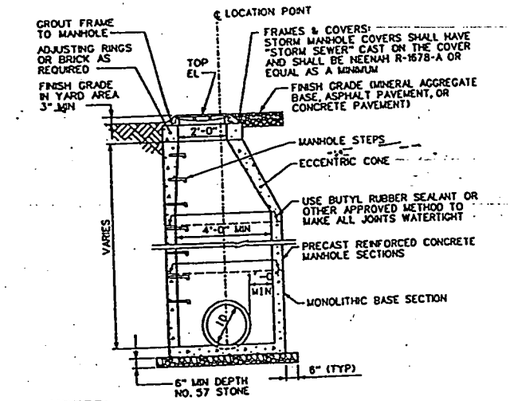
SUBMITTED FOR 30% ISSUE	SUBMITTED FOR 60% ISSUE	SUBMITTED FOR 90% ISSUE
TECH LEAD	TECH LEAD	TECH LEAD
DATE	DATE	DATE

E.A. NUMBER	PROJECT NO.	DRAWING PACE CODE NO.	SHEET NO.
N/A	40750	94X-3900-G-01377	G001

JEG PROJECT NO.	FILENAME
35H19603	94XG1377.DGN

DATE: 06/07/02 USER: JAshworth

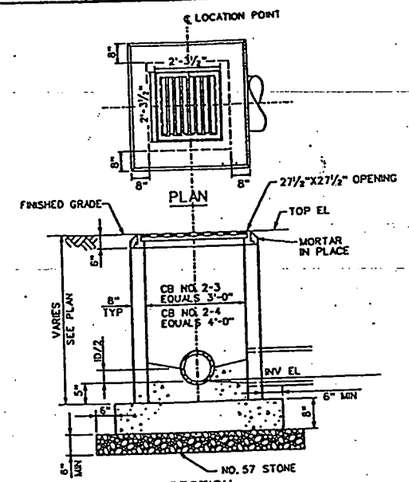
4383



NOTES:

1. ALL PRECAST RISERS, CONES, BASES, TOPS, AND STEPS SHALL CONFORM TO OHIO DEPARTMENT OF TRANSPORTATION STANDARDS.
2. GROUT ANNULAR SPACE BETWEEN WALL AND PIPE WITH NON-SHRINK MORTAR TO ENSURE WATERTIGHT SEAL.

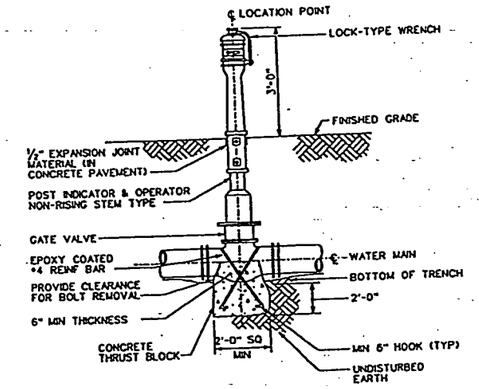
PRECAST CONCRETE MANHOLE (1) — G0013 — G0015
NOT TO SCALE



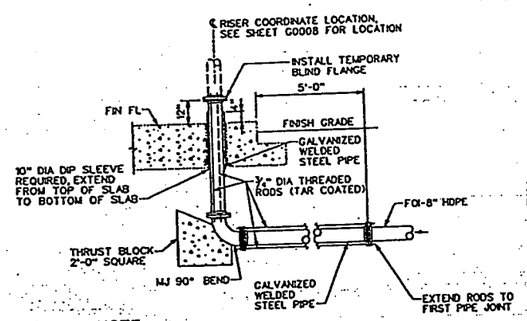
NOTES:

1. ALL PRECAST RISERS, BASES, TOPS, AND STEPS SHALL CONFORM TO OHIO DEPARTMENT OF TRANSPORTATION STANDARDS.
2. USE CB NO. 2-3 FOR 18" RCP AND CB NO. 2-4 FOR 24" RCP.
3. GROUT ANNULAR SPACE BETWEEN WALL AND PIPE WITH NON-SHRINK MORTAR TO ENSURE WATERTIGHT SEAL.

PRECAST CATCH BASIN (2) — G0013 — G0015
NOT TO SCALE



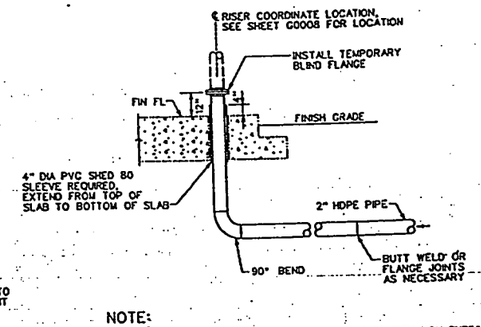
POST INDICATOR AND VALVE (3) — G0008 — G0015
NOT TO SCALE



NOTE:

GROUT ANNULAR SPACE BETWEEN SLEEVE AND PIPE WITH NON-SHRINK MORTAR TO ENSURE WATERTIGHT SEAL.

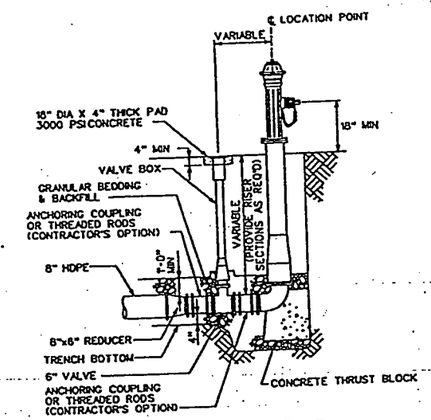
8" RISER (4) — G0008 — G0015
NOT TO SCALE



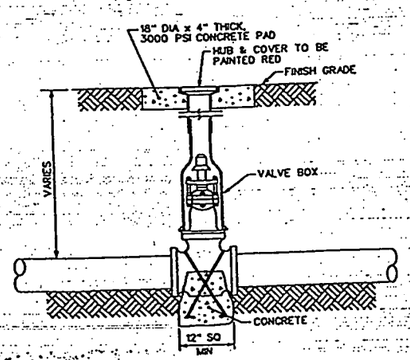
NOTE:

GROUT ANNULAR SPACE BETWEEN SLEEVE AND PIPE WITH NON-SHRINK MORTAR TO ENSURE WATERTIGHT SEAL.

2" RISER (5) — G0008 — G0015
NOT TO SCALE



FIRE HYDRANT (6) — G0008 — G0015
NOT TO SCALE



GATE VALVE (7) — G0008 — G0015
NOT TO SCALE

INFORMATION ONLY

000026

[X] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubmit
[ ] C - Revise and Resubmit
Sig: Date: 20-JUN-02

REF DWG NO.	DRAWING TITLE

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	INITIALS AND DATE
1	ISSUED FOR CONSTRUCTION/DCN 40750-JEC-012	06/07/02		
0	ISSUED FOR BID	05/07/02	FP, JR.	

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJ

THIS DRAWING PREPARED BY
JACOBS
135 Broadway Avenue, Suite 8 Cincinnati, Ohio 45202-1170
Tel: 513-651-4400
Fax: 513-651-4170

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY FOUNDATION MAT
DETAILS - 1

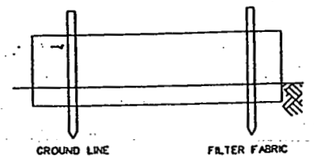
DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY
J.ASHWORTH	05/08/02	W. BARTON	05/08/02	F.P.ARTON, JR.

PLANT/BLDG NO. | FLOOR | SCALE: NONE

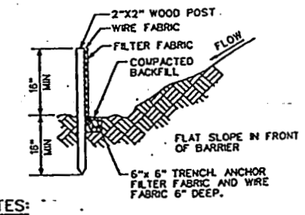
SUBMITTED FOR 30% ISSUE — TECH LEAD — DATE
SUBMITTED FOR 60% ISSUE — TECH LEAD — DATE
SUBMITTED FOR 90% ISSUE — TECH LEAD — DATE

L.O. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.
N/A	40750	94X-3900-G-01378	G001
JCE PROJECT NO. 35H19603	FILENAME 94XCI378.DGN		

4388



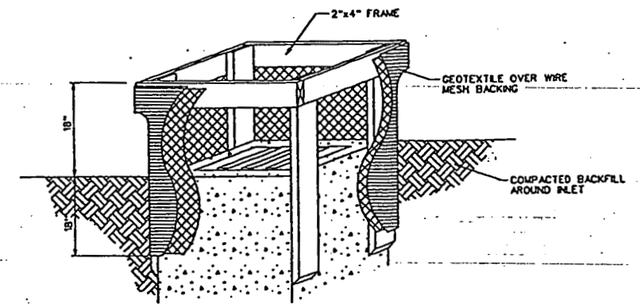
ELEVATION



NOTES:

1. PLACEMENT, CONSTRUCTION AND MAINTENANCE OF PERIMETER FILTER FABRIC FENCE AND TEMPORARY INLET PROTECTION FILTER FABRIC FENCE SHALL CONFORM TO OHIO DEPARTMENT OF NATURAL RESOURCES RAINWATER AND LAND DEVELOPMENT MANUAL, PAGES 118-123.
2. THE ENDS OF SILT FENCE SHALL BE CONSTRUCTED UPSLOPE TO PREVENT WATER PONDED BY THE FENCE FROM FLOWING AROUND THE ENDS.
3. SILT FENCE SHALL BE INSTALLED ALONG CONTOURS, TO THE EXTENT PRACTICAL.
4. SECTIONS OF SILT FENCE ARE TO BE JOINED BY WRAPPING THE ENDS OF THE GEOTEXTILE AROUND THE STAKES BEFORE DRIVING.

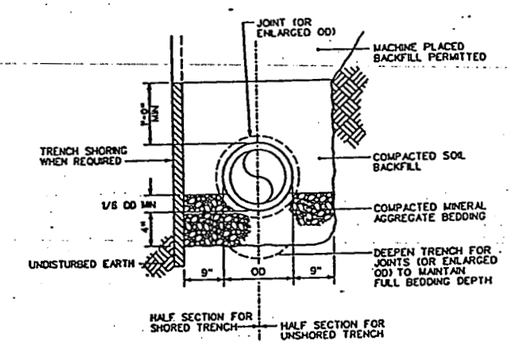
TEMPORARY SILT FENCE (1)
NOT TO SCALE
G0013 G0010



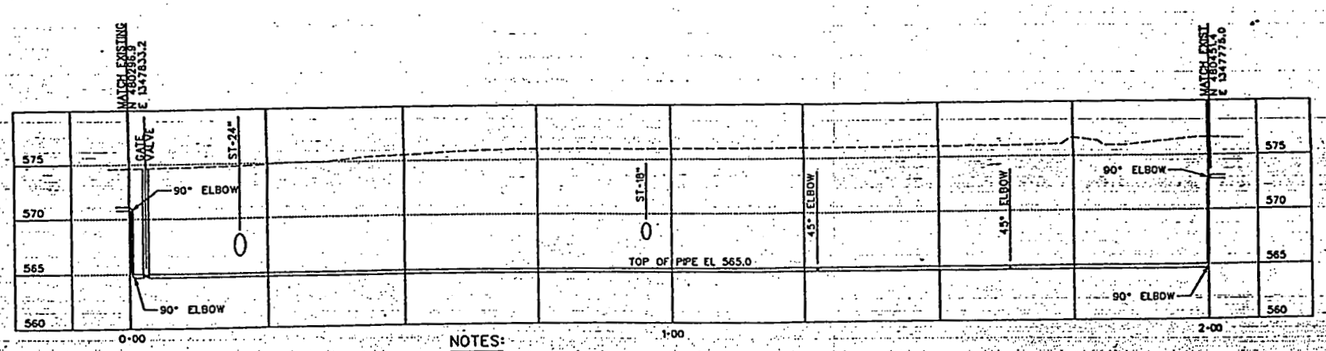
NOTES:

1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.
3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2"x4" CONSTRUCTION GRADE LUMBER. THE 2"x4" POSTS SHALL BE DRIVEN 18" INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2"x4" FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6" BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.
5. GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40 SLEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
6. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
7. A COMPACTED EARTH DIKE OR A CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION AND IF RUNOFF BYPASSING THE INLET WILL NOT FLOW TO A SETTLING POND. THE TOP OF EARTH DIKES SHALL BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME.

INLET PROTECTION (2)
NOT TO SCALE
G0013 G0010



PIPE BEDDING (3)
NOT TO SCALE
G0013 G0010



NOTES:

1. DW-4" DOMESTIC WATER LINE TO BE INSTALLED AT TOP OF PIPE ELEVATION 565.0 TO AVOID CONFLICTS WITH EXISTING AND FUTURE UTILITIES.
2. ELEVATION OF EXISTING DOMESTIC WATER LINE UNKNOWN. ASSUMED TO 3'-8" BELOW GRADE.

DW-4" WATER LINE PROFILE
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'

HORIZONTAL SCALE: 1"= 10'
VERTICAL SCALE: 1"= 5'

000027

[X] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment, Incorporate and Resubmi
[ ] C - Revise and Resubmit
Sig: Date: 20-JUN-02

REF DWG NO.	DRAWING TITLE

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY INITIALS AND DA
1	ISSUED FOR CONSTRUCTION/DCN 40750-JEG-012	05/07/02	
0	ISSUED FOR BID	05/07/02	FP, JR.

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJ

THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY FOUNDATION MAT
DETAILS - 2

DRAWN BY	DATE	TECHNICAL LEAD	DATE	DESIGNED BY
J.ASHWORTH	05/08/02	W.BARTON	05/08/02	F.PARTON, JR.

FLOR/BLDG NO. | FLOOR | SCALE: AS SHOWN

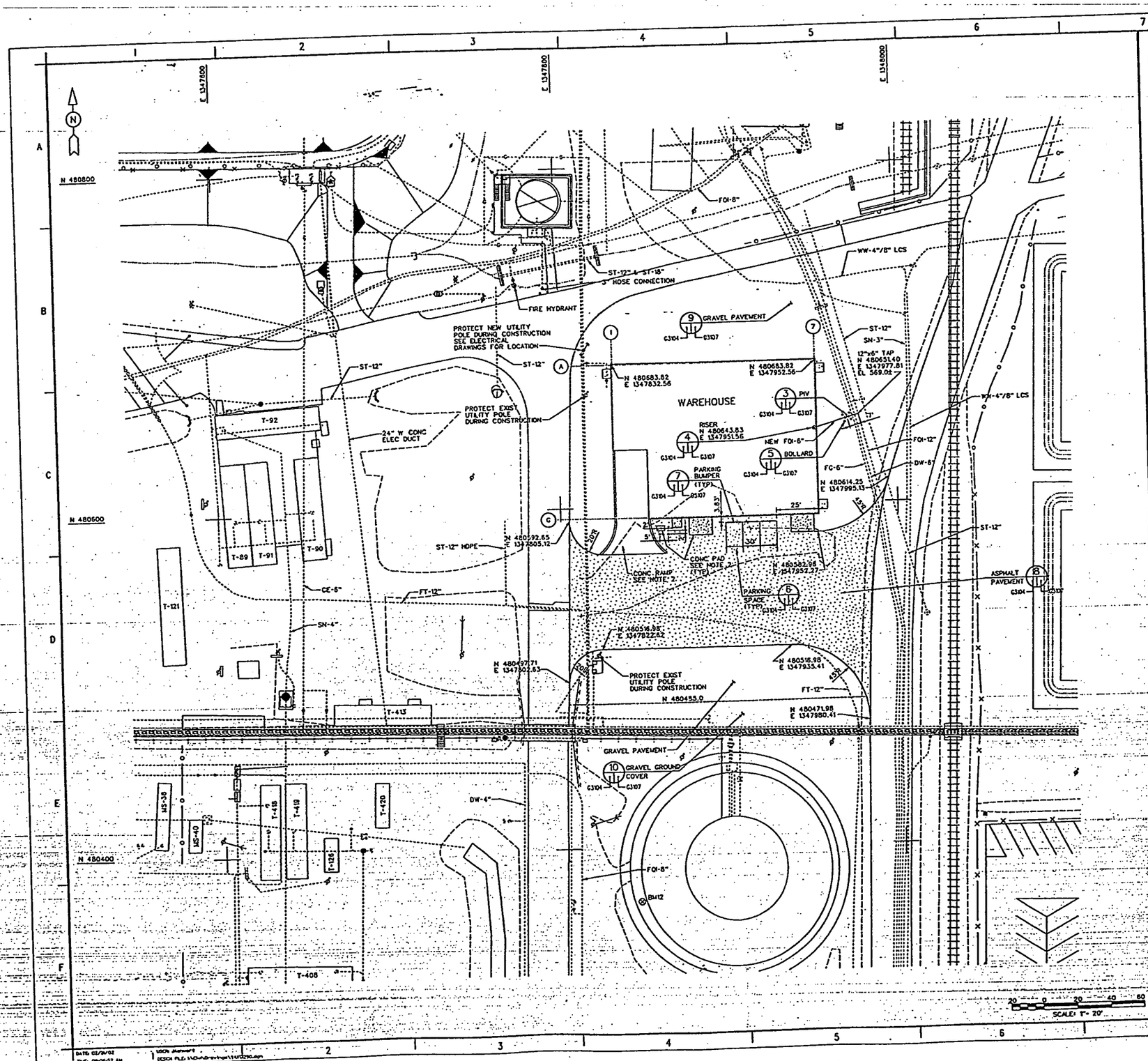
SUBMITTED FOR 30% ISSUE: TECH LEAD, DATE
SUBMITTED FOR 90% ISSUE: TECH LEAD, DATE
SUBMITTED FOR 100% ISSUE: TECH LEAD, DATE

I.D. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.
N/A	40750	94X-3900-G-01373	G001

AE PROJECT NO. 35H19603 | FILENAME 94XC1373.DGN

INFORMATION ONLY

DATE: 06/07/02 USER: JASHWORT



NOTES:

1. FOR GENERAL NOTES, LEGEND AND UTILITY DESIGNATIONS SEE SHEET 94X-3900-G-01148.
2. SEE STRUCTURAL DRAWINGS FOR CONCRETE PADS AND CONCRETE RAMP.

REF DWG NO.	DRAWING TITLE
G3101	WAREHOUSE SITE GENERAL NOTES AND LEGEND

[X] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubmit
[ ] C - Revise and Resubmit
Sig: Date: 10 APR 02

REV NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPVD BY
0	ISSUED FOR BID	02/05/02	LWR	[illegible]

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

INFOR

PREPARED BY JACOBS

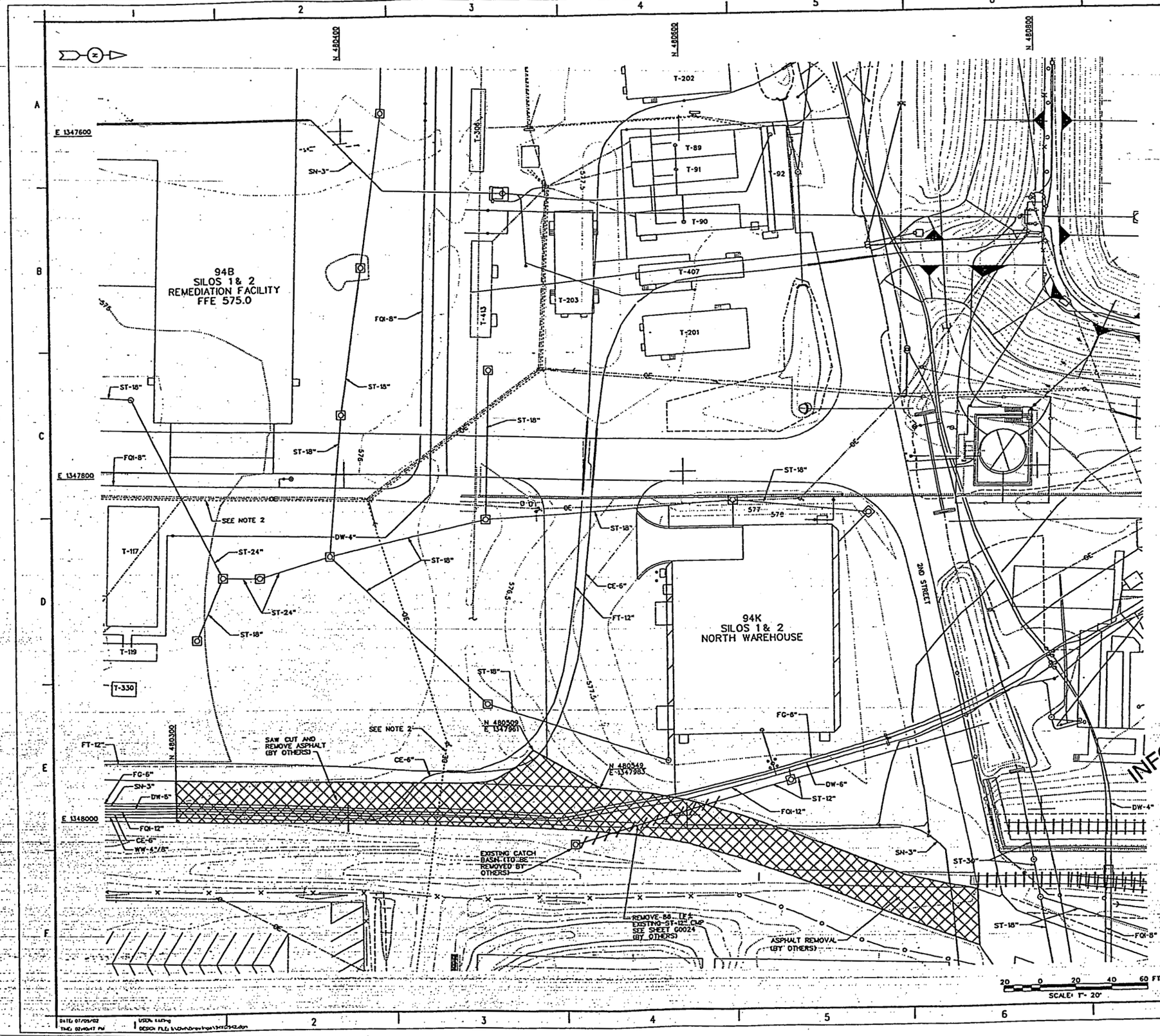
PROJECT NAME: SILOS 1 AND 2

DRAWING TITLE: CIVIL - WAREHOUSE SITE - SITE/PAVING PLAN

DRAWN BY	DATE 1/10/02	TECHNICAL LEAD LWR	DATE 2/21/02
CHECKED BY	DATE 4/5/02	PLANT BLDG. NO.	FLOOR
SCALE 1"=20'	CLASS U	SUBMITTED FOR 90% ISSUE	TECH LEAD / DATE
SUBMITTED FOR 30% ISSUE	TECH LEAD / DATE	SUBMITTED FOR 60% ISSUE	TECH LEAD / DATE
SUBMITTED FOR 100% ISSUE	TECH LEAD / DATE		

LS NUMBER N/A	PROJECT NO. 40750	DRAWING INDEX CODE NO. 94X-3900-G-01290	SHEET NO. G3104	REV. NO. 0
LS PROJECT NO. N39195603	FILENAME 94X3900G01.DGN			

000028



NOTES:

1. FOR GENERAL NOTES, LEGEND AND UTILITY DESIGNATIONS, SEE SHEET G0020.
2. EXISTING OVERHEAD LINES TO BE RELOCATED BY FLUOR FERNALD PRIOR TO CONSTRUCTION. CONTRACTOR TO VERIFY THAT A MINIMUM 30 FT. VERTICAL CLEARANCE IS AVAILABLE FROM TOP OF RAIL TO BOTTOM OF LOWEST WIRE.

4383

000029

[ ] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubmi
[ ] C - Revise and Resubmit
Sig:_____ Date:_____

REF DWG NO.	DRAWING TITLE

INFORMATION ONLY

ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	INITIALS AND DATE
0 ISSUED FOR BID	07/10/02		

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJEC

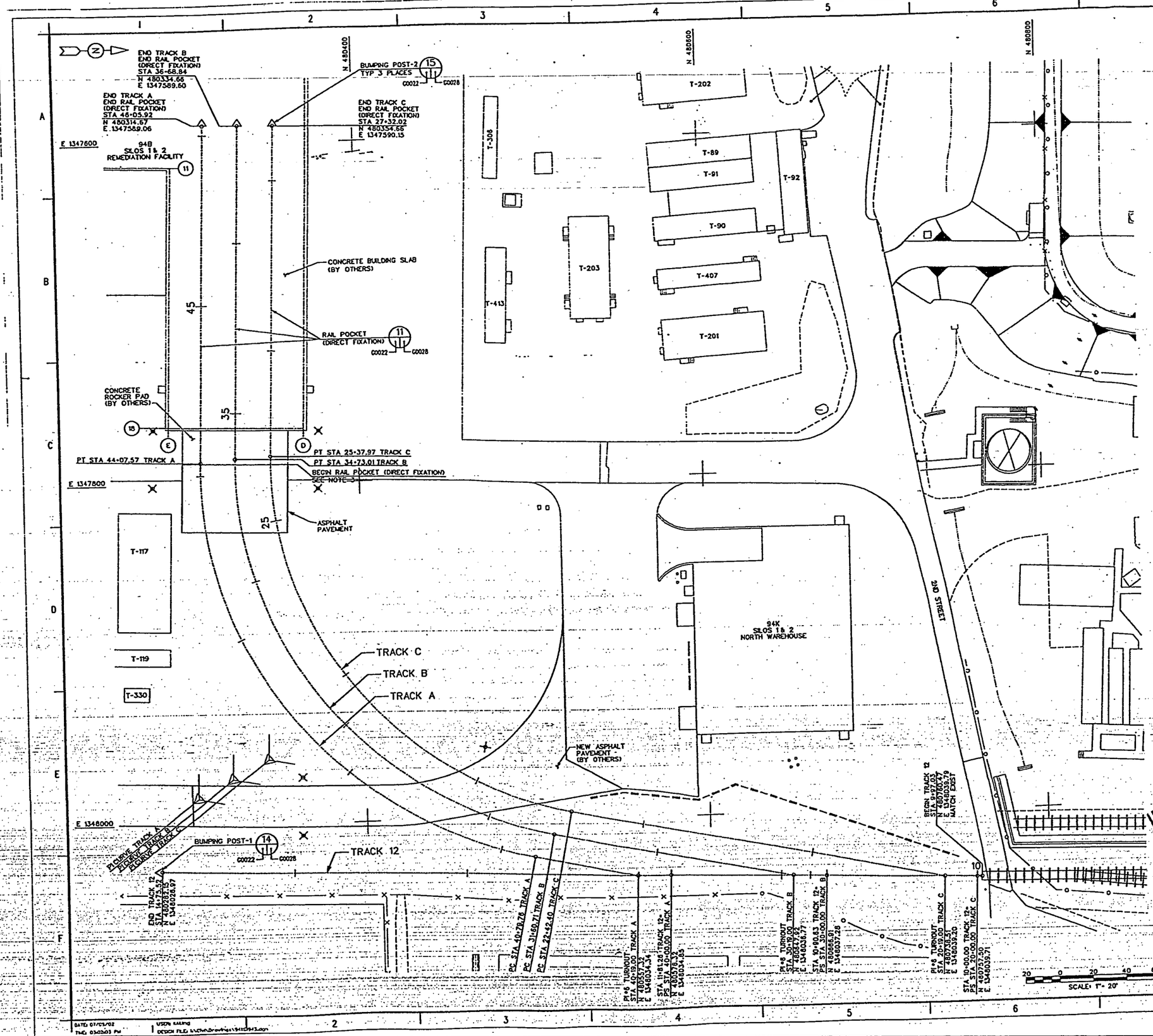
THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY RAILROAD DESIGN
DEMOLITION PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
R. GALA	7/9/02				7/
PLANT/BLDG. NO.		FLOOR		SCALE 1"=30'	CLR
SUBMITTED FOR 30% ISSUE		SUBMITTED FOR 60% ISSUE		SUBMITTED FOR 90% ISSUE	
TECH LEAD		TECH LEAD		TECH LEAD	
DATE		DATE		DATE	

E.O. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.
N/A	40750	94X-3900-G-01942	G0021
JEG PROJECT NO. 35H19603	FILENAME 94XG1942.DGN		



NOTES:

1. FOR GENERAL NOTES, LEGEND AND UTILITY DESIGNATIONS SEE SHEET G0020.
2. FOR CENTERLINE TOP OF RAIL ELEVATIONS, SEE PROFILES ON SHEETS G0025 AND G0026.
3. BEGIN RAIL POCKET (DIRECT FIXATION) FOR TRACKS A, B AND C AT LEADING EDGE OF CONCRETE ROCKER PAD.

4383

000030

CURVE DATA

TRACK A	TRACK B	TRACK C
PI-N 480303.84	PI-N 480324.16	PI-N 480344.47
E 1347984.78	E 1347973.47	E 1347962.16
R 233.31'	R 222.27'	R 210.36'
L 327.82'	L 312.31'	L 295.57'
Lc 325.27'	Lc 309.63'	Lc 292.74'
T 197.53'	T 188.18'	T 178.30'
Delta 80°30'17"	Delta 80°30'17"	Delta 80°30'17"
Dc 24°45'00"	Dc 26°00'00"	Dc 27°30'00"

REF DWG NO.	DRAWING TITLE

] A - Conforms to the Subcontract Requirements
] B - Minor Comment - Incorporate and Resubmi
] C - Revise and Resubmit
Sig:_____ Date:_____

REV. NO.	ISSUE OR REVISION PURPOSE DESCRIPTION	DATE	REV. BY	INITIALS AND DATE
0	ISSUED FOR BID	07/10/02		

INFORMATION ONLY

UNITED STATES
DEPARTMENT OF ENERGY
FEMP ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY RAILROAD DESIGN
TRACK PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
	7/9/02				7/9/02

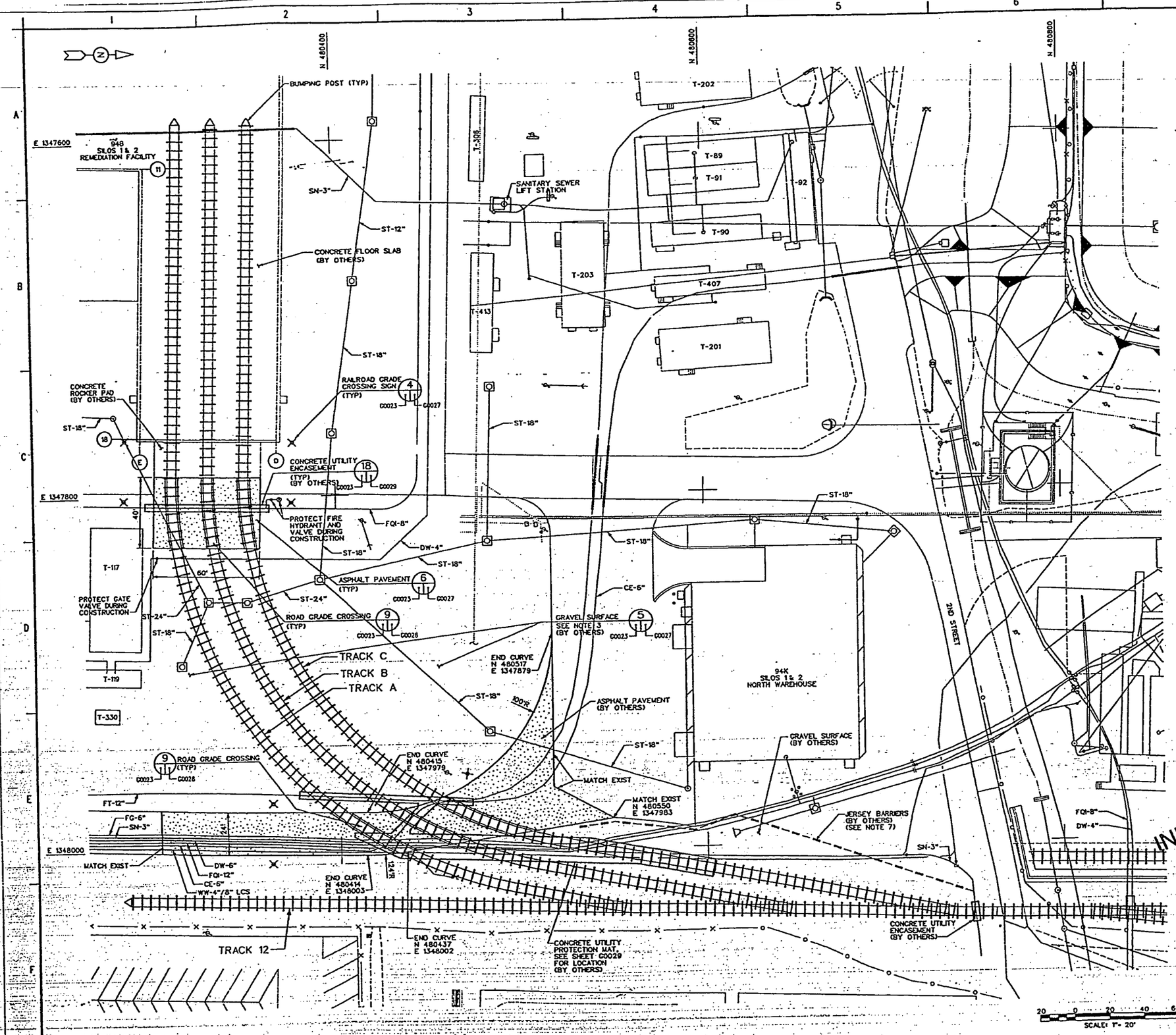
PLANT/BLDG. NO. | FLOOR | SCALE 1"=20' | CLASS U

SUBMITTED FOR 30% ISSUE — TECH LEAD — DATE
SUBMITTED FOR 60% ISSUE — TECH LEAD — DATE
SUBMITTED FOR 90% ISSUE — TECH LEAD — DATE

T.O. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV.
N/A	40750	94X-3900-G-01943	G0022	0

A/E PROJECT NO. 35H19603 | FILENAME 94XC943.DGN

DATE: 07/09/02 TIME: 03:02:03 PM | USER: KAUNG | DESIGN FILE: k:\chwdrawings\94xc943.dgn



NOTES:

1. FOR GENERAL NOTES, LEGEND AND UTILITY DESIGNATIONS SEE SHEET G0020.
2. FOR CENTERLINE TOP OF RAIL ELEVATIONS, SEE PROFILES ON SHEETS G0025 AND G0026.
3. ALL UNPAVED DISTURBED AREAS SHALL HAVE 4" GRAVEL SURFACE.
4. CONTRACTOR TO INSTALL TEMPORARY CONSTRUCTION FENCE AROUND PERIMETER OF CONSTRUCTION AREA (BY OTHERS).
5. CONTRACTOR SHALL INSTALL ITS OFFICE TRAILER IN THE VICINITY OF TRAILER T-404, AS DIRECTED BY FLUOR FERNALD, INC.
6. CONTRACTOR'S TEMPORARY NON-POTABLE WATER SOURCE IN VICINITY OF TRAILER T-404.
7. INSTALL JERSEY BARRIERS IN APPROXIMATE LOCATION SHOWN (BY OTHERS).

4383

000031

REF DWG NO.	DRAWING TITLE

[ ] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubml
[ ] C - Revise and Resubmit
Sig:_____ Date:_____

REV. NO.	ISSUE OR REVISION PURPOSE	DATE	REV. BY	APPR.
0	ISSUED FOR BID	07/10/02		

INITIALS AND DATE

INFORMATION ONLY

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY RAILROAD DESIGN
SITE/UTILITY PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
	7/9/02		7/9/02		7/9/02

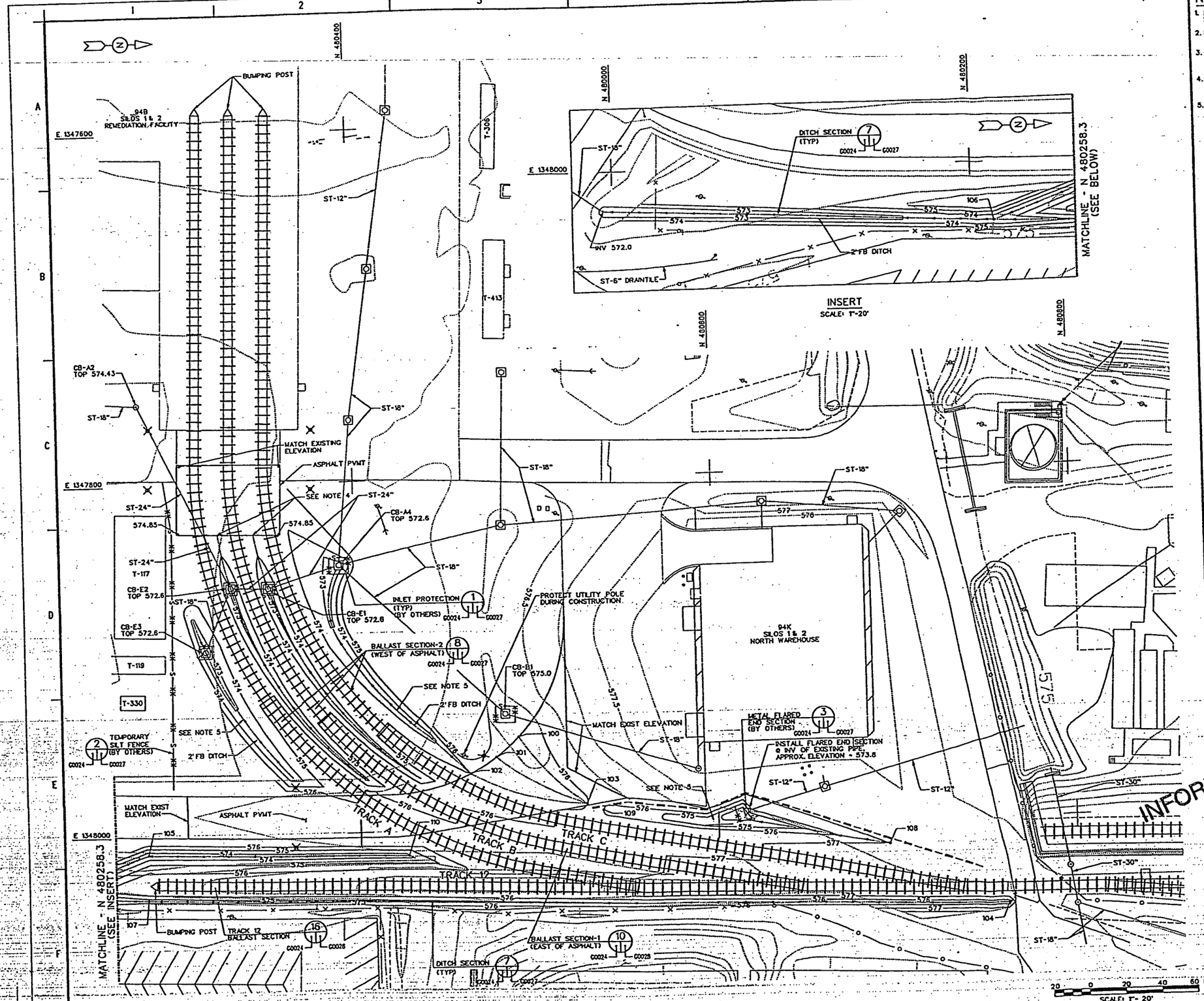
PLANT/BLDG. NO. | FLOOR | SCALE 1"=20' | CLASS U

SUBMITTED FOR 30% ISSUE — TECH LEAD — DATE
SUBMITTED FOR 60% ISSUE — TECH LEAD — DATE
SUBMITTED FOR 90% ISSUE — TECH LEAD — DATE

T.A. NUMBER	PROJECT NO.	DRAWING ROCE CODE NO.	SHEET NO.	REV. NO.
N/A	40750	94X-3900-G-01944	G0023	0

EX PROJECT NO. 33H19603 | FILENAME 94X01944.DGN

DATE: 07/09/02 TIME: 02:33:34 PM | USER: SMING | DESIGN FILE: b:\dgn\dr\dr01\94x0944.dgn



NOTES:

1. FOR GENERAL NOTES, LEGEND AND UTILITY DESIGNATIONS SEE SHEET G0020.
2. FOR CENTERLINE TOP OF RAIL ELEVATIONS, SEE PROFILES ON SHEETS G0025 AND G0026.
3. SILT FENCE LOCATIONS SHOWN ARE APPROXIMATE. ADD ADDITIONAL SILT FENCE OR ADJUST LOCATIONS AS NECESSARY TO MATCH FIELD CONDITIONS.
4. BETWEEN END OF ASPHALT PAVEMENT AND EXISTING CATCH BASINS TRANSITION BALLAST FROM SWALE AT CATCH BASINS TO MATCH GRADE AT EDGE OF ASPHALT.
5. FIELD LOCATE DRAINAGE DITCHES IN AREAS SHOWN TO PROVIDE POSITIVE DRAINAGE TO EXISTING STORM DRAIN STRUCTURES.

4383

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COORDINATE LISTING

POINT	NORTHING	EASTING	ELEV	DESCRIPTION
100	480490	1347947	575.3	LP EDGE OF PVMT
101	480477	1347959	575.9	HP EDGE OF PVMT
102	480463	1347968	575.3	LP EDGE OF PVMT
103	480528	1347986	576.0	SPOT EL
104	480761	1348049	575.4	BEGIN V-DITCH
105	480277	1348010	573.6	PI 2' FB DITCH
106	480213	1348033	573.3	INT 2' FB DITCH AND BEGIN 2' FB DITCH
107	480277	1348036	574.4	END V-DITCH
108	480695	1348013	577.0	BEGIN V-DITCH
109	480537	1347990	576.0	SPOT EL
110	480428	1348014	573.9	BEGIN 2' FB DITCH

REF DWG NO.	DRAWING TITLE
G3105	WAREHOUSE SITE-GRADING, DRAINAGE & EROSION CONTROL PLAN
G3106	WAREHOUSE SITE-STORM DRAIN PROFILES

[ ] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubmit
[ ] C - Revise and Resubmit
Sig:_____ Date:_____

REV.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	INITIALS AND DATE
0	ISSUED FOR BID	07/10/02		

INFORMATION ONLY

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
J.E. JACOBS

PROJECT NAME: SILOS 1 AND 2

DRAWING TITLE: CIVIL
REMEDIATION FACILITY RAILROAD DESIGN
GRADING, DRAINAGE & EROSION CONTROL PLAN

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
	7/14/02		7/14/02		7/14/02

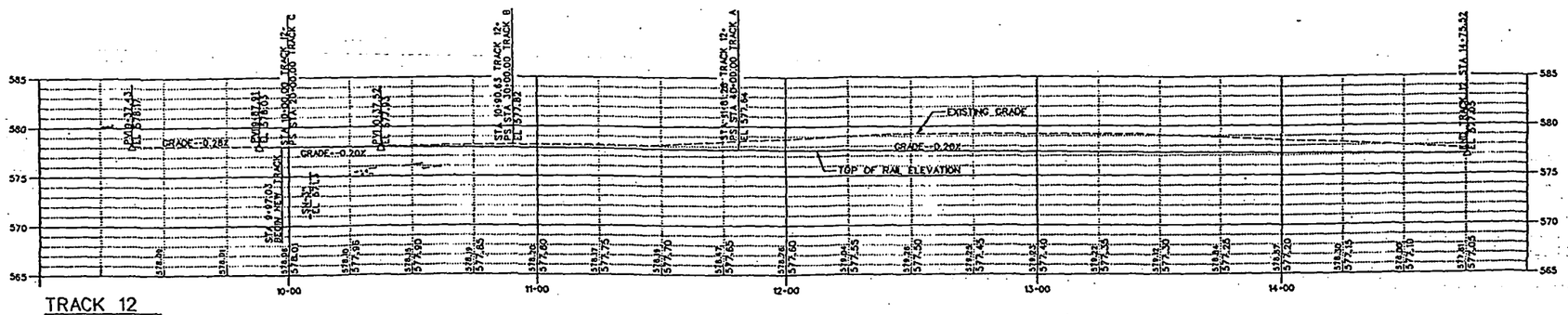
PLANT/BLDG. NO. | FLOOR | SCALE: 1"=20' | CLASS: U

SUBMITTED FOR 30% ISSUE: TECH LEAD ____ DATE ____
SUBMITTED FOR 60% ISSUE: TECH LEAD ____ DATE ____
SUBMITTED FOR 90% ISSUE: TECH LEAD ____ DATE ____

I.D. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV.
N/A	40750	94X-3900-G-01945	G0024	0

I.D. PROJECT NO. 35H19603 | FILENAME 94X01945.DGN

DATE: 07/09/02 TIME: 03:05:57 PM | USER: EASING | DESIGN FILE: E:\STUDIES\Silos\35H19603.dgn



NOTES:

1. FOR GENERAL NOTES, LEGEND AND UTILITY DESIGNATIONS SEE SHEET G0020.
2. FOR HORIZONTAL RAIL LOCATION, SEE SHEET G0022.
3. ELEVATIONS GIVEN TO TOP OF PIPE UNLESS NOTED OTHERWISE.

4389

000033

REF DWG NO.	DRAWING TITLE

[ ] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubmit
[ ] C - Revise and Resubmit
Sig: _____ Date: _____

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
0	ISSUED FOR BID	07/10/02		WT

INITIALS AND DATE

INFORMATION ONLY

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY RAILROAD DESIGN
PROFILES - 1

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
	7/1/02				7/9/02

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

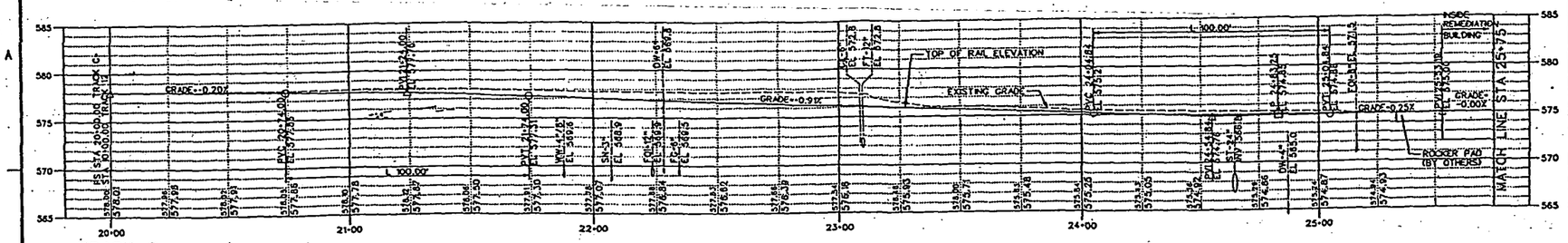
SUBMITTED FOR 30% ISSUE | SUBMITTED FOR 60% ISSUE | SUBMITTED FOR 90% ISSUE
TECH LEAD | TECH LEAD | TECH LEAD
DATE | DATE | DATE

L.O. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV. NO.
N/A	40750	94X-3900-G-01946	G0025	0

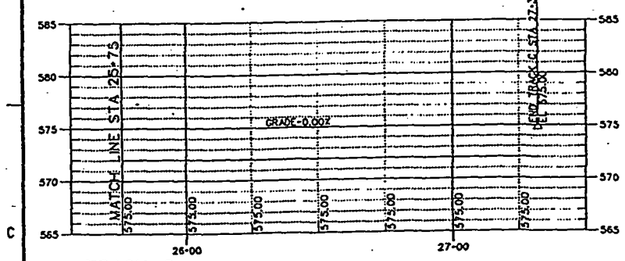
JEG PROJECT NO. 35N19603 | FILENAME 94XG1946.DGN

SCALE: 1"= 20' HORIZONTAL
SCALE: 1"= 5' VERTICAL

DATE: 07/09/02
TIME: 02:36:43 PM
USER: Eating
DESIGN FILE: $\Civil\Drawings\94XG1946.dgn



TRACK C
SCALE: 1"=20' HORIZONTAL
1"=5' VERTICAL



TRACK C
SCALE: 1"=20' HORIZONTAL
1"=5' VERTICAL

NOTES:

1. FOR GENERAL NOTES, LEGEND AND UTILITY DESIGNATIONS SEE SHEET G0020.
2. FOR HORIZONTAL RAIL LOCATION, SEE SHEET G0022.
3. ELEVATIONS GIVEN TO TOP OF PIPE UNLESS NOTED OTHERWISE.

4383

000034

REF DWG NO.	DRAWING TITLE

[ ] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubmi
[ ] C - Revise and Resubmit
Sig: Date:

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
0	ISSUED FOR BID	07/10/02		

INITIALS AND DATE

INFORMATION ONLY

UNITED STATES
DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY RAILROAD DESIGN
PROFILES - 2

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
	7/1/02				7/9/02

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

SUBMITTED FOR 30% ISSUE | SUBMITTED FOR 60% ISSUE | SUBMITTED FOR 90% ISSUE
TECH LEAD | TECH LEAD | TECH LEAD
DATE | DATE | DATE

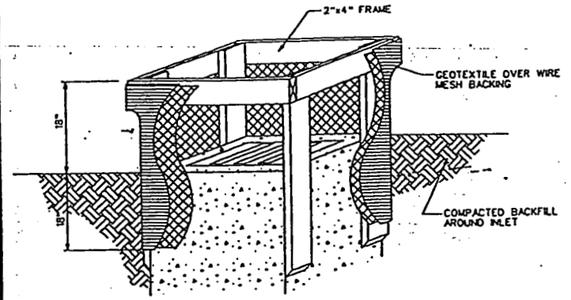
I.D. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV.
N/A	40750	94X-3900-G-01947	G0026	C

J.G. PROJECT NO. 35H19603 | FILENAME 94XG1947.DGN

SCALE: 1"= 20' HORIZONTAL
SCALE: 1"= 5' VERTICAL

DATE: 07/09/02 | USER: KAKING

4388

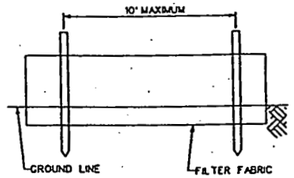


NOTES:

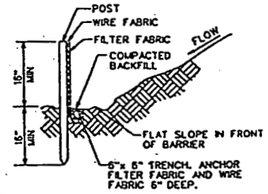
1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.
3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2"x4" CONSTRUCTION GRADE LUMBER. THE 2"x4" POSTS SHALL BE DRIVEN 18" INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2"x4" FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6" BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.
5. GEOTEXTILE SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILESHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
6. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.

INLET PROTECTION (1)

NOT TO SCALE
(BY OTHERS)
G0024 — G0027



ELEVATION

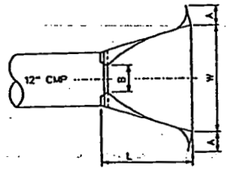


NOTES:

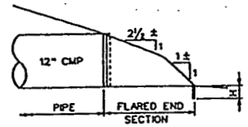
1. PLACEMENT, CONSTRUCTION AND MAINTENANCE OF PERIMETER FILTER FABRIC FENCE AND TEMPORARY INLET PROTECTION FILTER FABRIC FENCE SHALL CONFORM TO OHIO DEPARTMENT OF NATURAL RESOURCES RAINWATER AND LAND DEVELOPMENT MANUAL, PAGES 118-125.
2. THE ENDS OF SILT FENCE SHALL BE CONSTRUCTED UPSLOPE TO PREVENT WATER PONDED BY THE FENCE FROM FLOWING AROUND THE ENDS.
3. SILT FENCE SHALL BE INSTALLED ALONG CONTOURS, TO THE EXTENT PRACTICAL.

TEMPORARY SILT FENCE (2)

NOT TO SCALE
(BY OTHERS)
G0024 — G0027



PLAN



SIDE

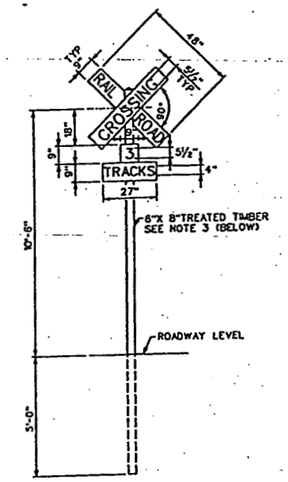
FLARED END SECTION DIMENSIONS					
PIPE SIZE	A ±1"	B (MAX)	H ±1"	L ±1½"	W ± 2"
12"	6"	6"	6"	21"	24"

NOTES:

1. THE CONNECTION BETWEEN METAL FLARED END SECTION AND CORRUGATED METAL PIPE WILL BE A DIMPLE BAND COLLAR FIELD BOLTED TO END SECTION. PIPE WILL BE INSERTED INTO THE BAND COLLAR TO MEET THE END SECTION. OTHER TYPE CONNECTION PERMISSIBLE IF RECOMMENDED BY MANUFACTURER AND APPROVED BY THE FLUOR FERNALD, INC..
2. CENTERLINE OF FLARED END SECTION MUST ALIGN WITH CENTERLINE OF PIPE.
3. DIMENSIONS SHOWN ARE APPROXIMATE AND MAY VARY BETWEEN MANUFACTURERS.

METAL FLARED END SECTION (3)

NOT TO SCALE
(BY OTHERS)
G0024 — G0027

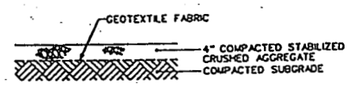


NOTES:

1. LOCATE SIGN AT SUCH POINTS AS WILL GIVE THE BEST VIEW BY PERSONS APPROACHING THE CROSSING.
2. SIGN SHALL BE BB-2 RAILROAD CROSSING (CROSSBUCK) SIGN (R15-1,2) IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST ED.
3. TREATED TIMBER SHALL BE BY THE PRESSURE PROCESS PER AMERICAN WOOD PRESERVERS' ASSOCIATION STANDARDS WITH A MIN. 0.4 PCF OF PRESERVATIVE RETENTION.

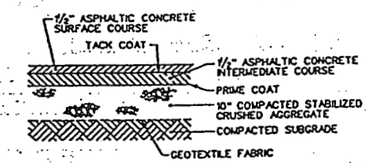
RAILROAD GRADE CROSSING SIGN (4)

NOT TO SCALE
G0023 — G0027



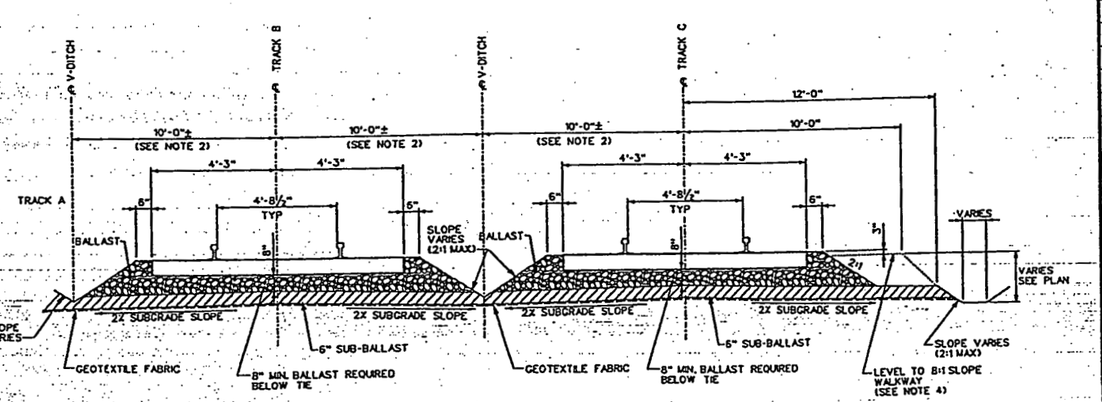
GRAVEL SURFACE (5)

NOT TO SCALE
(BY OTHERS)
G0023 — G0027



ASPHALT PAVEMENT (6)

NOT TO SCALE
G0023 — G0027

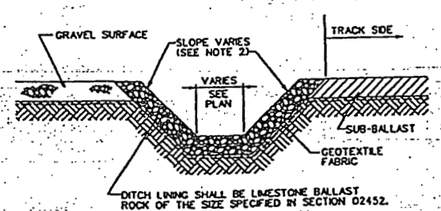


NOTES:

1. CROSS SECTION FOR TRACK A IS MIRROR IMAGE OF CROSS SECTION TRACK C.
2. ACTUAL DISTANCE TO CENTERLINE OF SWALE VARIES AS THE DISTANCES BETWEEN THE TRACKS VARIES.
3. THIS SECTION APPLIES TO THE RAILWAY BETWEEN THE NEWLY PAVED ACCESS ROAD AND THE CONCRETE ROCKER PAD ADJACENT TO THE SILO'S 1 AND 2 REMEDIATION FACILITY, SEE SHEET G0024.
4. WALKWAYS TO BE CONSTRUCTED OUTSIDE OF TRACK A AND TRACK C.

BALLAST SECTION-2 (8)

NOT TO SCALE
G0024 — G0027



NOTES:

1. DETAIL AND CONSTRUCTION OF DITCH LINING SHOWN APPLICABLE TO V-DITCH AND FLAT BOTTOM DITCH.
2. CONTRACTOR TO VARY SLOPE AS REQUIRED FOR GRADING. MAXIMUM PERMISSIBLE SLOPE IS 2H:1V.

DITCH SECTION (7)

NOT TO SCALE
G0024 — G0027

000035

REF DWG NO.	DRAWING TITLE

[ ] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubmit
[ ] C - Revise and Resubmit
Sig:_____ Date:_____

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	APPR.
0	ISSUED FOR BID	07/10/02		

INITIALS AND DATE

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

THIS DRAWING PREPARED BY
JACOBS

INFORMATION ONLY

PROJECT NAME
SILOS 1 AND 2

DRAWING TITLE
CIVIL
REMEDIATION FACILITY RAILROAD DESIGN
DETAILS - 1

DRAWN BY	DATE	TECHNICAL LEAD	DATE	CHECKED BY	DATE
					7/9/02
FLUOR/BSC NO. V		FLOOR		SCALE NONE	CLASS U
SUBMITTED FOR 30% ISSUE		SUBMITTED FOR 60% ISSUE		SUBMITTED FOR 90% ISSUE	
TECH LEAD		TECH LEAD		TECH LEAD	
DATE		DATE		DATE	

I.D. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.	REV.
N/A	40750	94X-3900-G-0194B	G0027	0

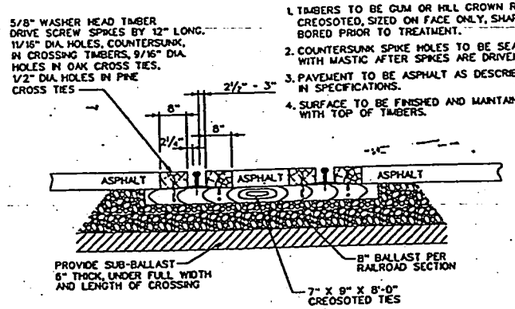
JE PROJECT NO.	FILENAME
35H19603	94X0194B.DGN

DATE: 07/09/02
TIME: 03:44 PM
USER: MARWIN
DESIGN FILE: k:\fernfrac\94x0194b.dgn

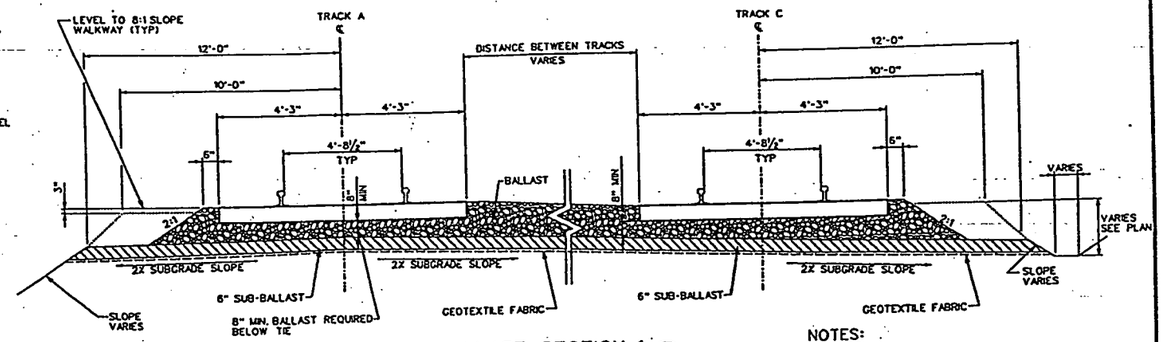
4383

NOTES:

1. TIMBERS TO BE GUM OR HILL CROWN RED OAK, CREOSOTED, SIZED ON FACE ONLY, SHAPED AND BORED PRIOR TO TREATMENT.
2. COUNTERSUNK SPIKE HOLES TO BE SEALED WITH MASTIC AFTER SPIKES ARE DRIVEN.
3. PAVEMENT TO BE ASPHALT AS DESCRIBED IN SPECIFICATIONS.
4. SURFACE TO BE FINISHED AND MAINTAINED LEVEL WITH TOP OF TIMBERS.



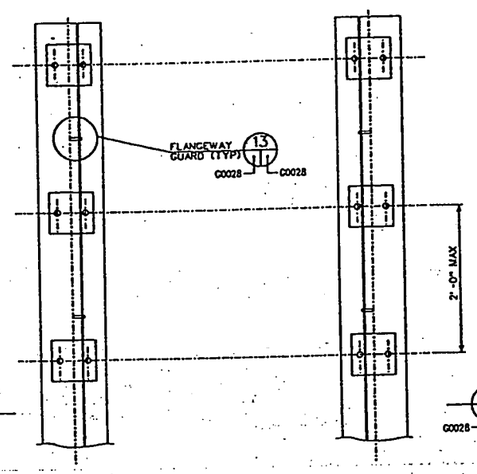
ROAD GRADE CROSSING (9) — G0023 — G0028
NOT TO SCALE



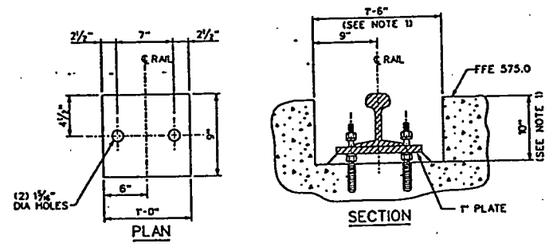
BALLAST SECTION-1 (10) — G0024 — G0028
NOT TO SCALE

NOTES:

1. TRACK B NOT SHOWN FOR CLARITY.
2. THIS SECTION APPLIES TO THE RAILWAY BETWEEN THE NEW PAVED ACCESS ROAD AND TRACK 12.



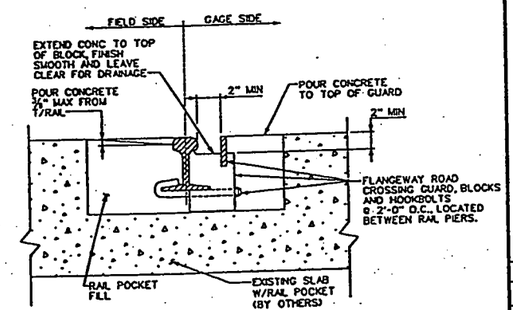
RAIL POCKET (DIRECT FIXATION) (11) — G0022 — G0028
NOT TO SCALE



NOTES:

1. REMEDIATION BUILDING SLAB AND RAIL POCKET BY OTHERS. VERIFY DIMENSIONS PRIOR TO INSTALLING RAIL.
2. FLANGEWAY GUARD AND GROUNDWIRE NOT SHOWN FOR CLARITY.

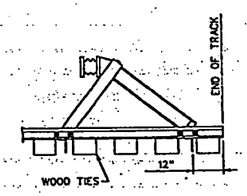
RAIL BASE PLATE (12) — G0028 — G0028
NOT TO SCALE



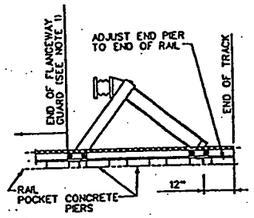
NOTE:

FLANGEWAY GUARD TO BE INSTALLED IN CONCRETE ROCKER PAD AND IN REMEDIATION BUILDING SLAB.

FLANGEWAY GUARD (13) — G0028 — G0028
NOT TO SCALE



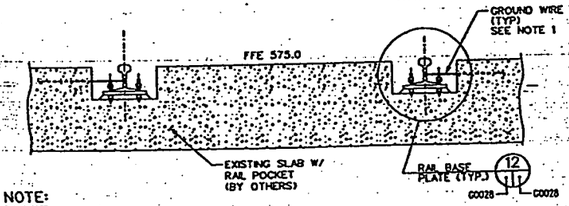
BUMPING POST-1 (14) — G0022 — G0028
NOT TO SCALE



NOTE:

1. END FLANGEWAY GUARD AND RAIL POCKET RECESS FILL AT BUMPER POST ATTACHMENT.

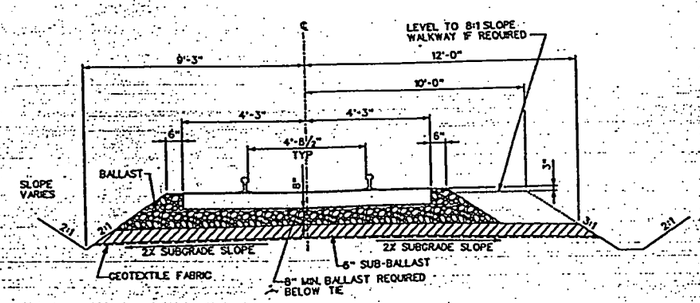
BUMPING POST-2 (15) — G0022 — G0028
NOT TO SCALE



NOTE:

1. ATTACH EXISTING GROUND WIRE TO WEB OF RAIL WITH CADWELD CONNECTION IN ACCORDANCE WITH SPECIFICATION SECTION 02452. SEE ELECTRICAL GROUND DRAWING E0102 IN FOUNDATION MAT PACKAGE FOR APPROXIMATE LOCATIONS OF GROUNDWIRES. FIELD TO DETERMINE BEST LOCATION OF CADWELD AND REMOVE EXCESS PIGTAIL WIRE AS APPROPRIATE.

SECTION (A) — G0028 — G0028
NOT TO SCALE



TRACK 12 BALLAST SECTION (16) — G0024 — G0028
NOT TO SCALE

INFORMATION ONLY

000036

REF DWG NO.	DRAWING TITLE
E0102	SILOS 1 & 2 REMEDIATION FACILITY GROUNDING SYSTEM 1ST FLOOR

[ ] A - Conforms to the Subcontract Requirements
[ ] B - Minor Comment - Incorporate and Resubmit
[ ] C - Revise and Resubmit

Sig: Date:

REV. NO.	ISSUE OR REVISION PURPOSE - DESCRIPTION	DATE	REV. BY	INITIALS AND DATE
0	ISSUED FOR BID.	07/03/02		

UNITED STATES DEPARTMENT OF ENERGY
FERNALD ENVIRONMENTAL MANAGEMENT PROJEC

THIS DRAWING PREPARED BY
JACOBS

PROJECT NAME: SILOS 1 AND 2

DRAWING TITLE: CIVIL REMEDIATION FACILITY RAILROAD DESIGN DETAILS - 2

DRAWN BY: DATE: 7/02 | TECHNICAL LEAD: DATE: 7/02 | CHECKED BY: DATE: 7/1
PLANNING NO.: | FLOOR: | SCALE: NONE | CLASS:
SUBMITTED FOR 30% ISSUE: TECH LEAD: DATE: | SUBMITTED FOR 90% ISSUE: TECH LEAD: DATE: | SUBMITTED FOR 100% ISSUE: TECH LEAD: DATE:

E.D. NUMBER	PROJECT NO.	DRAWING INDEX CODE NO.	SHEET NO.
N/A	40750	94X-3900-G-01949	G0028
JCE PROJECT NO. 35H19603	FILENAME 94X01949.DGN		

DATE: 07/03/02 TIME: 03:27:08 PM USER: JAMWORT DESIGN FILE: $:\CIVIL\Drawings\94X01949.dgn