



**US Army Corps
of Engineers**
Philadelphia District

Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390
ATTN: CENAP-OP-R

Public Notice

Public Notice No.
CENAP-OP-R-2006-6103-39

Date
JAN 26 2007

Application No. File No.

In Reply Refer to:
REGULATORY BRANCH

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

The purpose of this notice is to solicit comments and recommendations from the public concerning issuance of a Department of the Army permit for the work described below.

APPLICANT: Texas Eastern Transmission, LP

AGENT: Mr. Michael L. Stoltzfus, P.W.S.
CH2MHill
25 New Chardon Street
Suite 300
Boston, Massachusetts 02114

WATERWAY: Schuylkill River

LOCATION: Between Exxon Junction and Sun Oil refinery properties, in the City of Philadelphia, Philadelphia County, Pennsylvania.

ACTIVITY: The applicant proposes to install approximately five thousand two hundred (5200) linear feet of sixteen (16) inch metal natural gas pipeline within wetlands and under the Schuylkill River. A maximum of one and one quarter (1.25) acres of vegetative wetlands would be temporarily impacted by the project. Impacts associated with the work within the construction right of way would include trenching for the installation of the pipeline, fill to allow for access by standard construction equipment, stockpiling of excavated material and storage of equipment. The pipeline would be placed a minimum of thirty (30) inches below the existing substrate. Approximately eight (8) inches of stone fill would be placed within the trench as bedding material for the pipeline. All wetland areas would be returned to pre-construction condition upon the completion of the installation of the pipeline within the wetlands.

The pipeline would be installed underneath the river using directional drilling equipment. The pipeline would travel approximately seven hundred thirty (730) linear feet underneath the waterway. All of the equipment for this portion of the operation would be staged in upland areas as shown on the attached drawings. The pipeline would be installed a minimum of twenty (20) feet below the authorized depth of the Federal navigation channel. Outside the areas of the

navigation channel, the pipeline would be installed a minimum of ten (10) feet below the existing substrate. All dredging mud generated during the installation would be disposed of at an approved disposal site. No dredging or filling, waterward of the high tide line, would be performed as a result of the project.

PURPOSE: The applicant's stated purpose is to replace an existing fourteen (14) inch gas line under the waterway to allow for the transportation of natural gas products.

A preliminary review of this application indicates that the proposed work would not affect listed species or their critical habitat pursuant to Section 7 of the Endangered Species Act as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

The decision whether to issue a permit will be based on an evaluation of the activity's probable impact including its cumulative impacts on the public interest. The decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the work must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the work will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs and welfare of the people. A Department of the Army permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the proposed work should be submitted, in writing, within 15 days to the District Engineer, U.S. Army Corps of Engineers, Philadelphia District, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390.

Review of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion therein are located within the permit area of the work.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act 1996 (Public Law 104-267), requires all Federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely effect Essential Fish Habitat (EFH). The proposed project lies outside the area designated as EFH. As such, no further action, with regard

to the Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act 1996 (Public Law 104-267) is required by this office.

In accordance with Section 307(c) of the Coastal Zone Management Act of 1972, applicants for Federal Licenses or Permits to conduct an activity affecting land or water uses in a State's coastal zone must provide certification that the activity complies with the State's Coastal Zone Management Program. The applicant has stated that the proposed activity complies with and will be conducted in a manner that is consistent with the approved State Coastal Zone Management (CZM) Program. No permit will be issued until the State has concurred with the applicant's certification or has waived its right to do so. Comments concerning the impact of the proposed and/or existing activity on the State's coastal zone should be sent to this office, with a copy to the State's Office of Coastal Zone Management.

In accordance with Section 401 of the Clean Water Act, a Water Quality Certificate is necessary from the State government in which the work is located. Any comments concerning the work described above which relate to Water Quality considerations should be sent to this office with a copy to the State.

The evaluation of the impact of the work described above on the public interest will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act.

Any person may request, in writing, to the District Engineer, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state in writing, with particularity, the reasons for holding a public hearing.

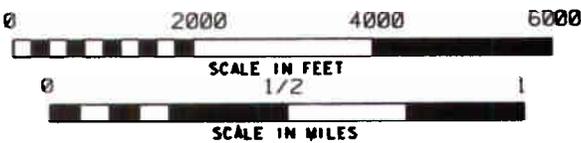
Additional information concerning this permit application may be obtained by calling Mr. Lawrence M. Slavitter at 215-656-6734 or writing this office at the above address.



Frank J. Cianfrani
Chief, Regulatory Branch



NOTE:
 BASE FROM 7.5' U.S.G.S. QUADRANGLE MAPS
 PHILADELPHIA COUNTY, PENNSYLVANIA.



NON-INTERNET
 PUBLIC
 PROPOSED
 WETLAND
 DETAIL

**2007 INTEGRITY MANAGEMENT PROJECT- 16" LINE 1A REROUTE - USACOE PERMIT DRAWING
 QUAD LOCATION MAP UPLAND /WETLAND DETAILS**

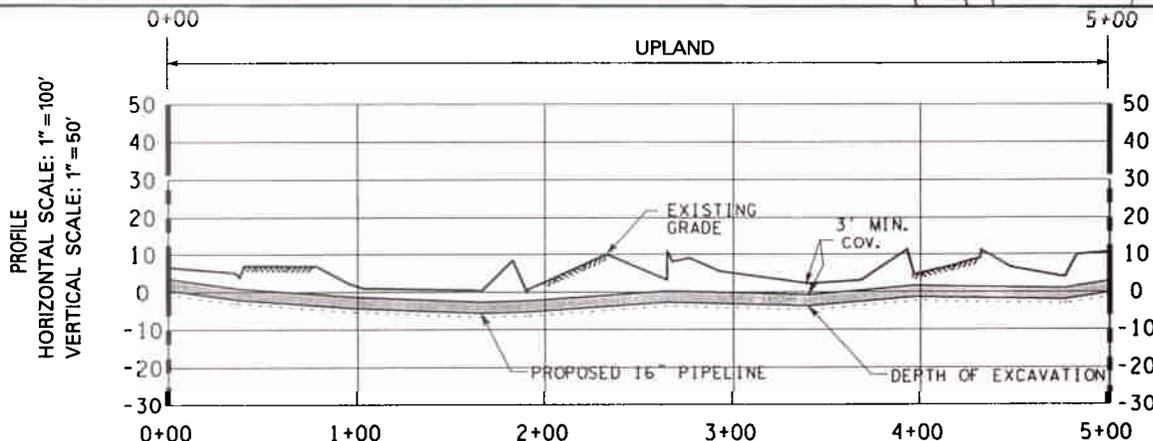
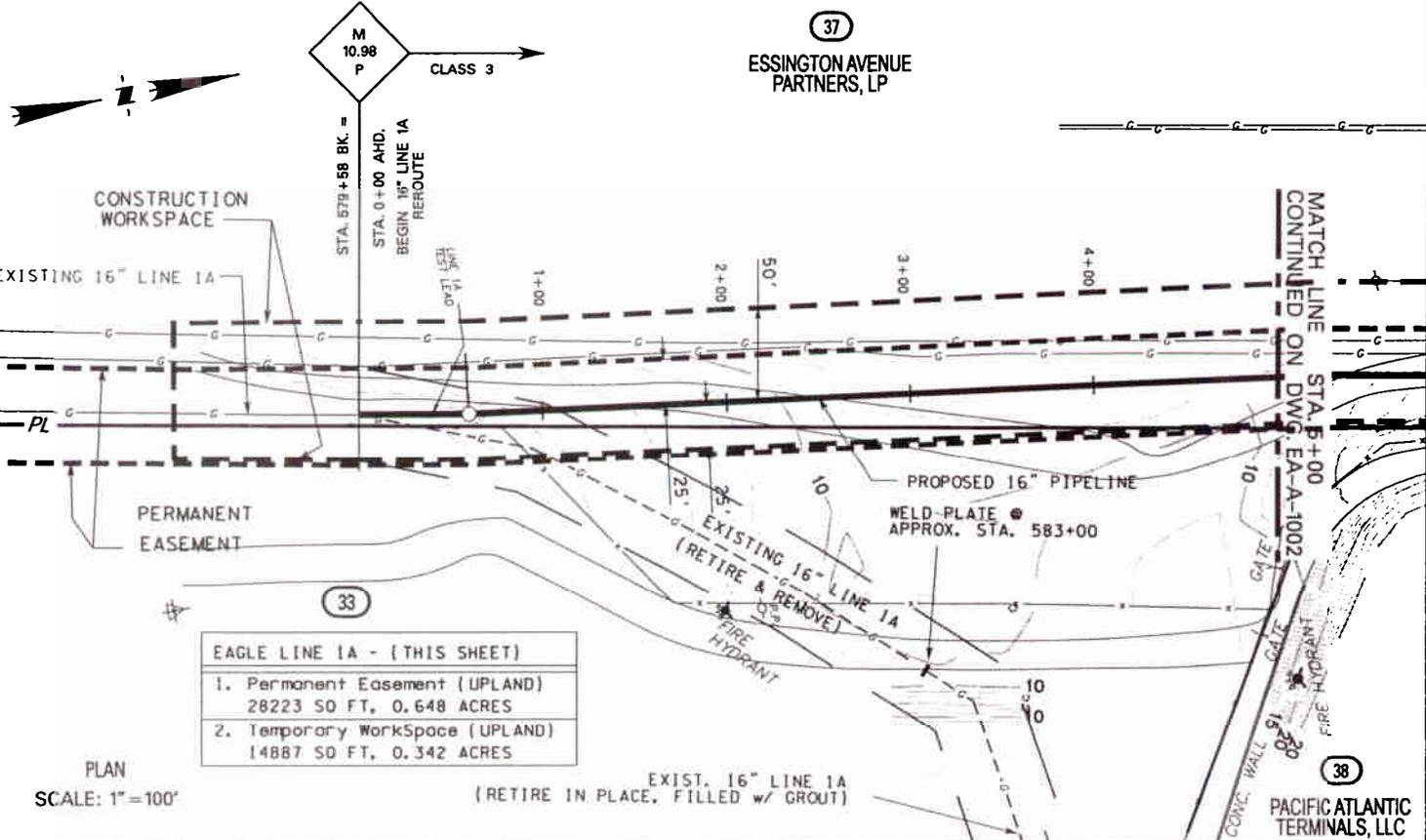
LOC. PHILADELPHIA COUNTY, PENNSYLVANIA		REV. A	
CKD. BY SAC	ENG.	DATE 01/01/2007	W.O. 07/01/0822 2007
DRN. BY GULF	SCALE 1"=200'	DWG. NO. EFA-A-1000	

SpectraEnergy

Texas Eastern Transmission, L.P.
 5400 Westchase Ct. Houston, TX 77056-6310 T13 / 627-5400

I.G. # EFA-A-1000.DWG 01/01/2007

ci:\work\11bb\google line 1a 014\et\0-0-10101.dwg



SITE SPECIFIC E&S

E&S FIGURES APPLICABLE TO ALL AREAS

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
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NOTES:

1. MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
2. WETLANDS DELINEATED BY CH2MHILL, 2006.
3. COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
4. REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
5. WETLAND DISTURBANCE 0 ACRES (MEASURE FOR THIS SHEET)
6. NO PALUSTRINE FORESTED WETLANDS (PFO) ARE PROPOSED TO BE DISTURBED.

NON-INTERNET PUBLIC
PROPOSED WETLAND DETAIL

2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACOE PERMIT DRAWING SITE SPECIFIC UPLAND /WETLAND DETAIL

LOC. PHILADELPHIA COUNTY, PENNSYLVANIA		REV. A	
CKD. BY SAC	ENG.	DATE 12-18-2006	W.O. 076114822 2007
DRN. BY GULF	SCALE 1"=100'	DWG. NO. EFA-A-1001	

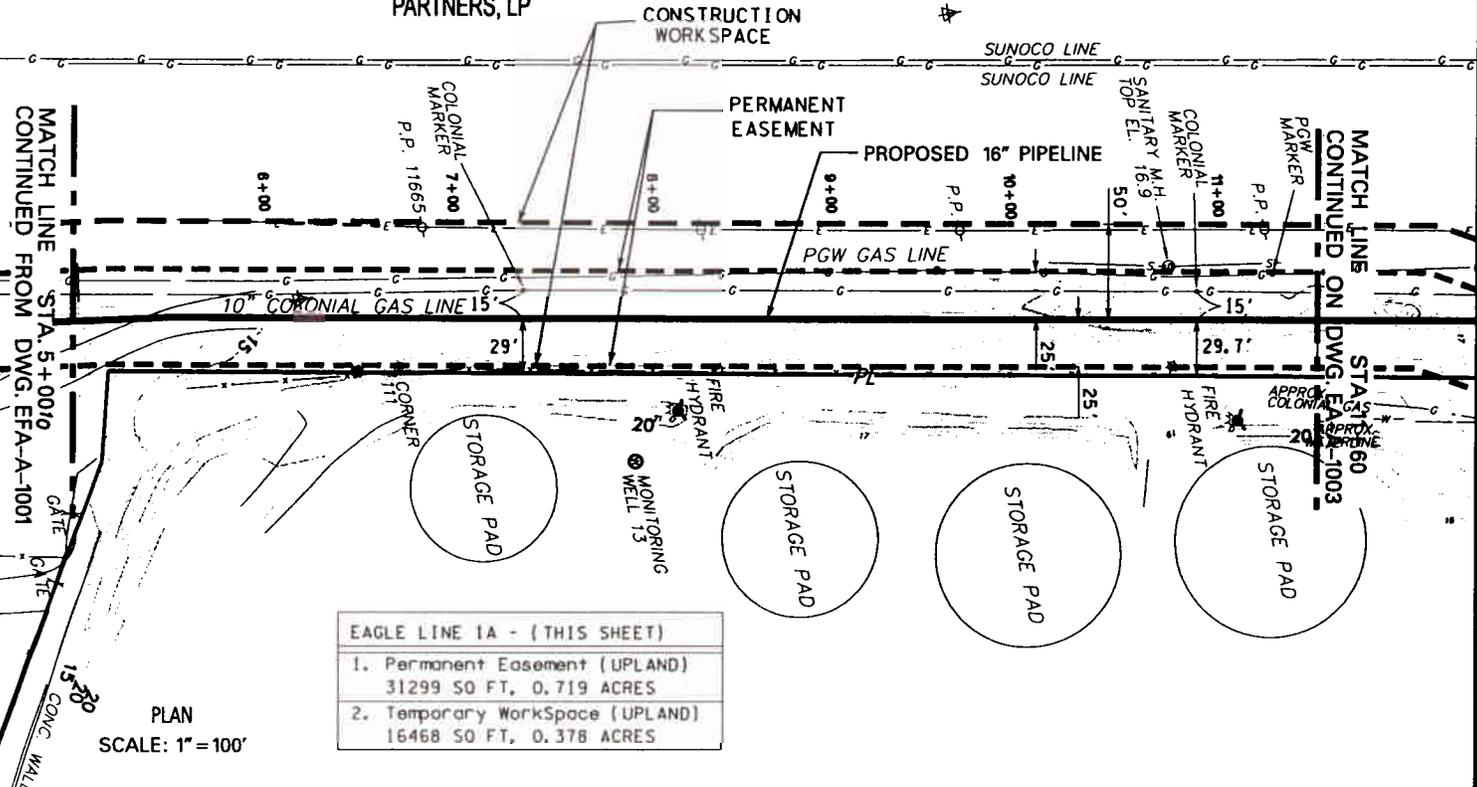
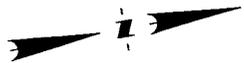


Texas Eastern Transmission, LP
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

11/11/2007 10:44:44 AM

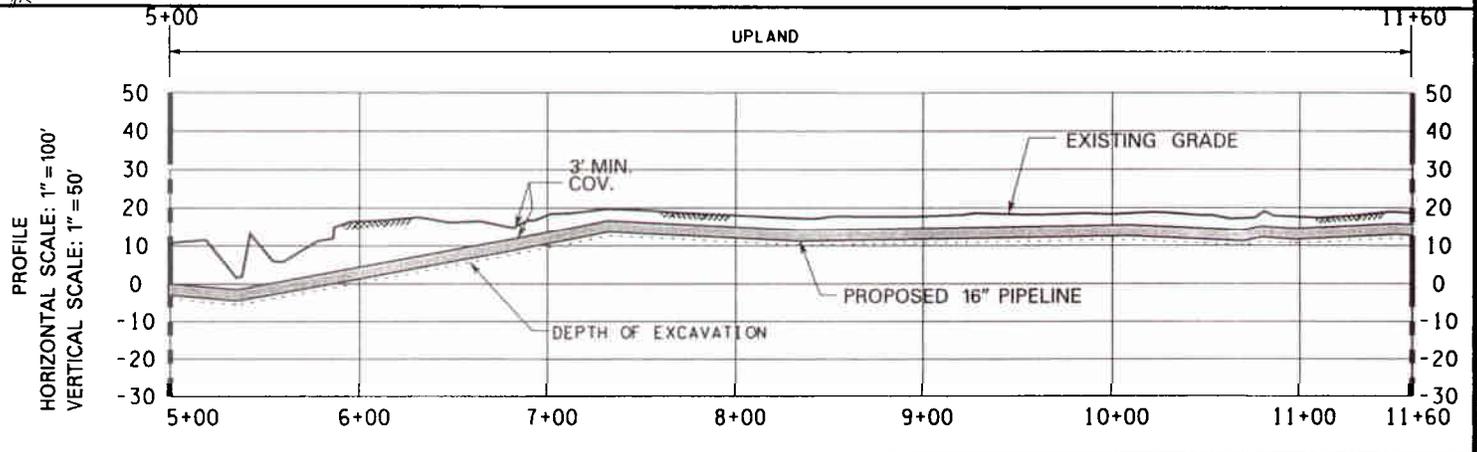
06/07/11/10

37
ESSINGTON AVENUE PARTNERS, LP



EAGLE LINE 1A - (THIS SHEET)	
1. Permanent Easement (UPLAND)	31299 SQ FT, 0.719 ACRES
2. Temporary WorkSpace (UPLAND)	16468 SQ FT, 0.378 ACRES

PLAN
 SCALE: 1" = 100'



SITE SPECIFIC E&S	
E&S FIGURES APPLICABLE TO ALL AREAS	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

NOTES:

1. MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
2. WETLANDS DELINEATED BY CH2MHILL, 2006.
3. COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
4. REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
5. WETLAND DISTURBANCE 0 ACRES (MEASURE FOR THIS SHEET)
6. NO PALUSTRINE FORESTED WETLANDS (PFO) ARE PROPOSED TO BE DISTURBED.

NON-INTERNET PUBLIC

PROPOSED WETLAND DETAIL

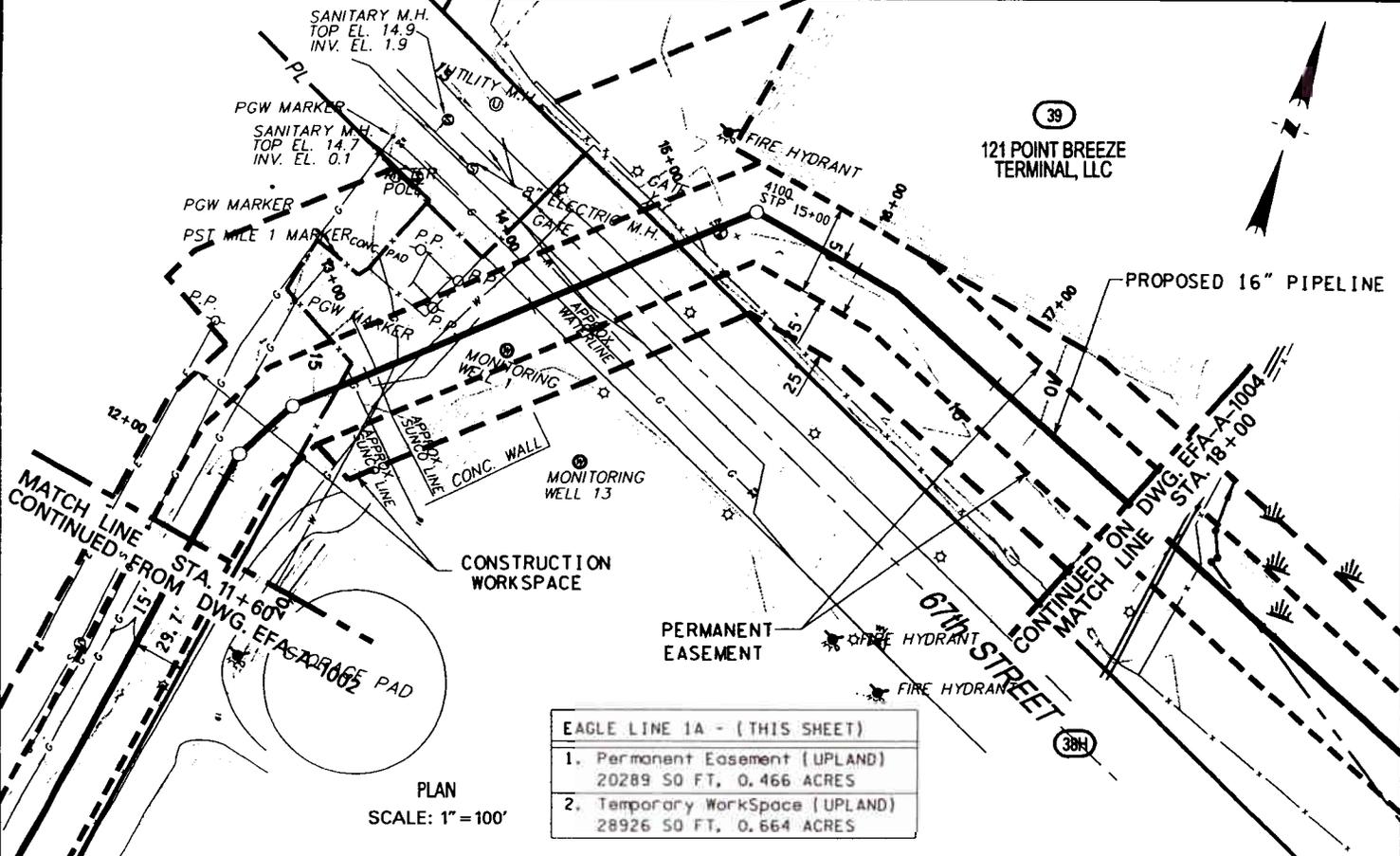
2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACOE PERMIT DRAWING
 SITE SPECIFIC UPLAND /WETLAND DETAIL



LOC. PHILADELPHIA COUNTY, PENNSYLVANIA		REV. A	
CKD. BY SAC	ENG.	DATE 12-18-2006	W.O. 076114822 2007
DRN. BY GULF	SCALE 1" = 100'	DWG. NO. EFA-A-1002	

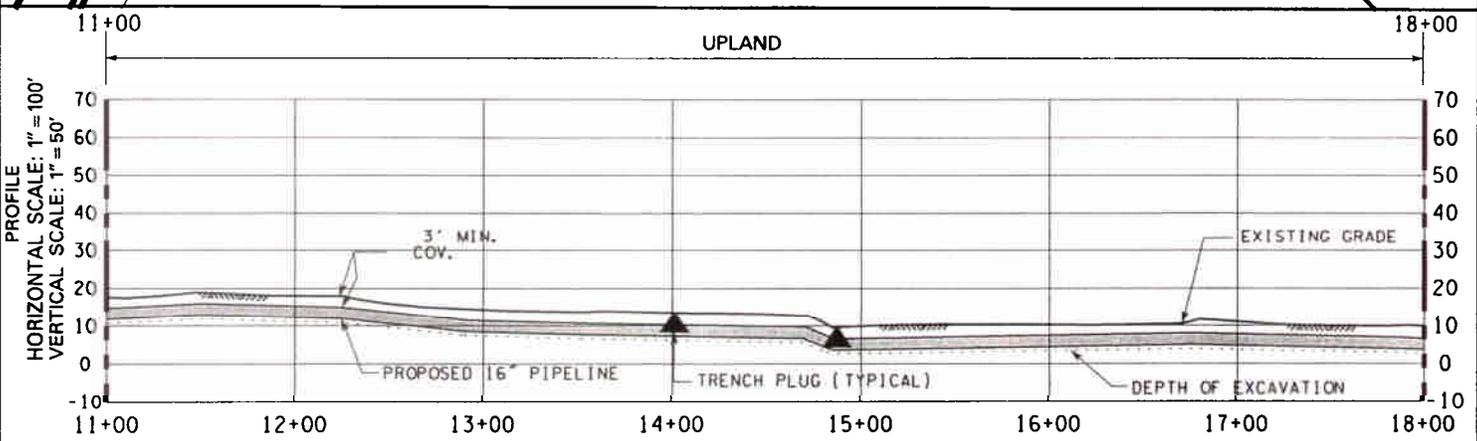
Texas Eastern Transmission, LP
 5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

c:\work\1285\eagle line 1a 014\ef-a-1003.dgn



EAGLE LINE 1A - (THIS SHEET)	
1.	Permanent Easement (UPLAND) 20289 SQ FT, 0.466 ACRES
2.	Temporary Workspace (UPLAND) 28926 SQ FT, 0.664 ACRES

PLAN
SCALE: 1" = 100'



SITE SPECIFIC E&S	[10] [25]	[6] [9] [14] [16] [17]
E&S FIGURES APPLICABLE TO ALL AREAS	[A] [B] [C] [D] [E] [F] [G] [H] [I] [1] [7] [8] [11] [13] [15] [18] [19] [22] [23]	

NOTES:

1. MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
2. WETLANDS DELINEATED BY CH2MHILL, 2006.
3. COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
4. REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
5. WETLAND DISTURBANCE 0 ACRES (MEASURE FOR THIS SHEET)
6. NO PALUSTRINE FORESTED WETLANDS (PFO) ARE PROPOSED TO BE DISTURBED.

NON-INTERNET PUBLIC
PROPOSED WETLAND DETAIL

2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACOE PERMIT DRAWING
SITE SPECIFIC UPLAND /WETLAND DETAIL

LOC.	PHILADELPHIA COUNTY, PENNSYLVANIA		REV.	A	
CKD. BY	SAC	ENG.	DATE	12-18-2006	W.O. 076114822 2007
DRN. BY	GULF	SCALE	1" = 100'	DWG. NO.	EFA-A-1003

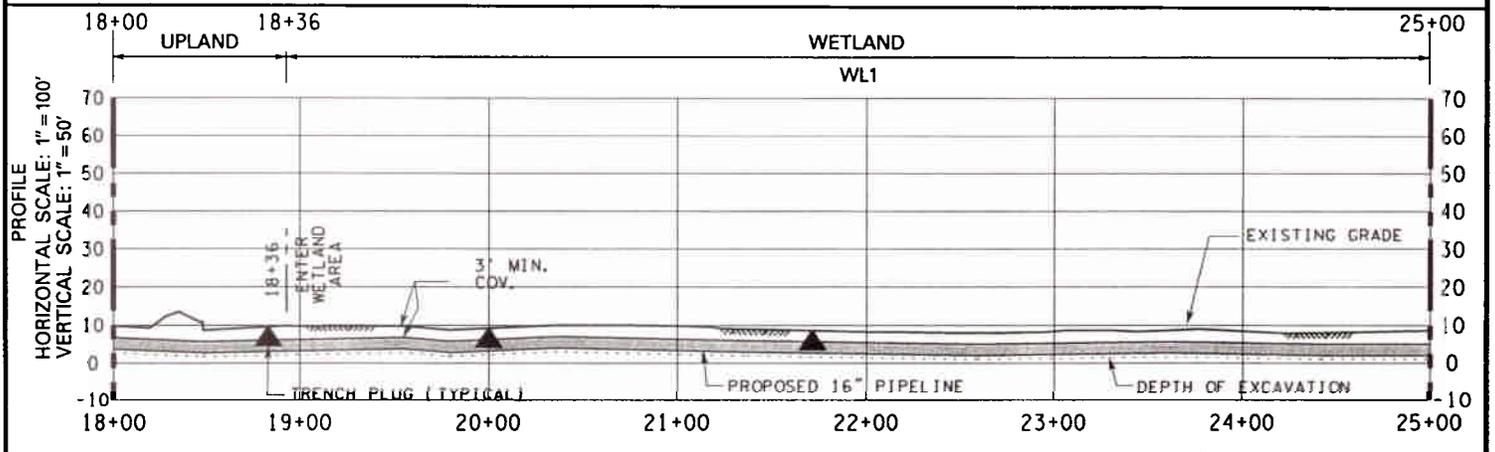
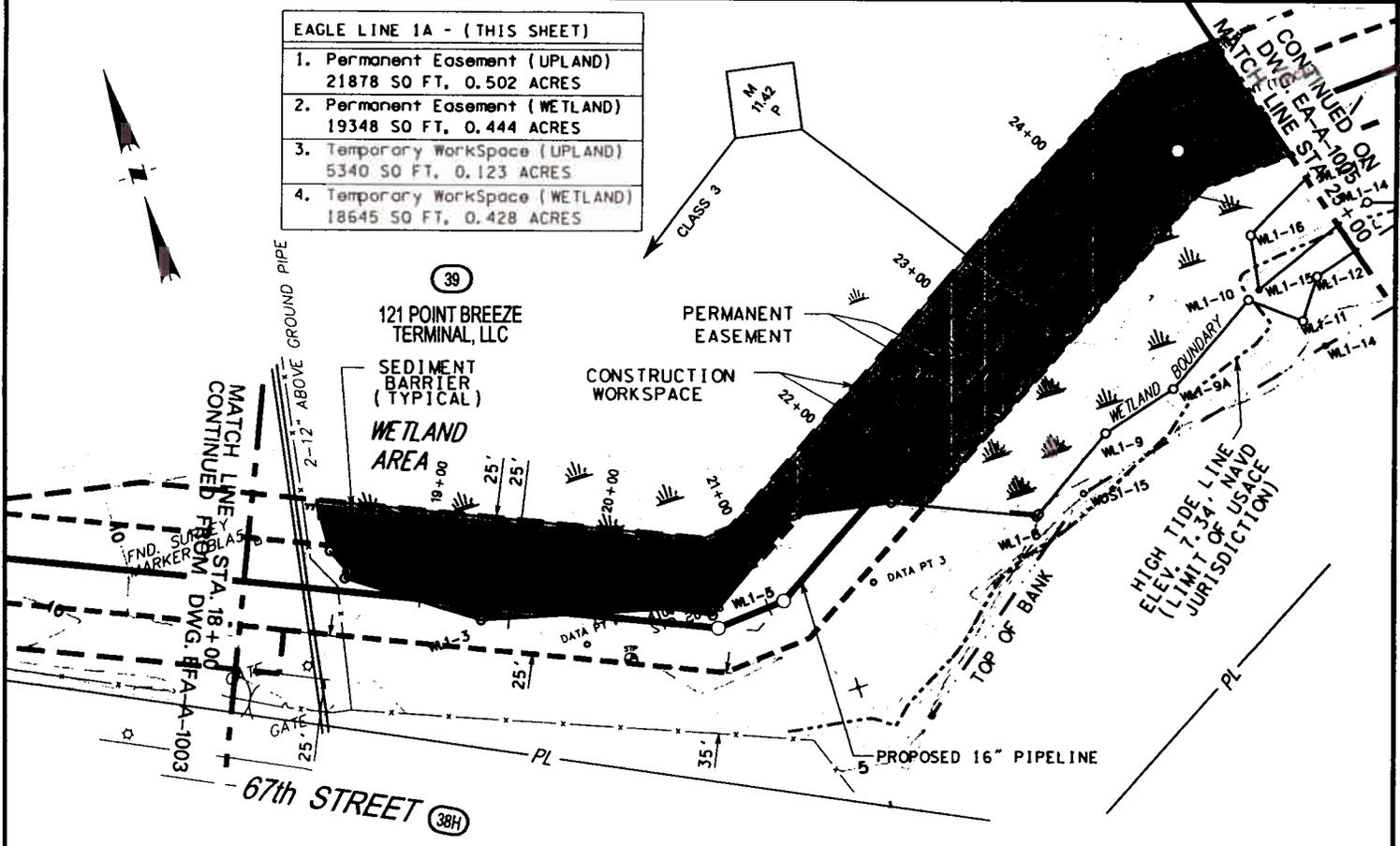


Texas Eastern Transmission, LP
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

I.U. 01/11/2007

c:\work\1285\eagle line 1a 014\eto-a-1004.dgn

EAGLE LINE 1A - (THIS SHEET)	
1. Permanent Easement (UPLAND)	21878 SQ FT, 0.502 ACRES
2. Permanent Easement (WETLAND)	19348 SQ FT, 0.444 ACRES
3. Temporary Workspace (UPLAND)	5340 SQ FT, 0.123 ACRES
4. Temporary Workspace (WETLAND)	18645 SQ FT, 0.428 ACRES



SITE SPECIFIC E&S	6 9 14 16 17
E&S FIGURES APPLICABLE TO ALL AREAS	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

NOTES:

- MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
- WETLANDS DELINEATED BY CH2MHILL, 2006.
- COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
- REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
- WETLAND DISTURBANCE FOR WL1 ; 0.828 ACRES (MEASURE FOR THIS SHEET)
- NO PALUSTRINE FORESTED WETLANDS (PFO) ARE PROPOSED TO BE DISTURBED.
- MEAN HIGH WATER ELEVATION AS REPORTED AT NOAA STATION ID 8545240 (USCG Station), DELAWARE RIVER, PHILADELPHIA, PENNSYLVANIA. HIGH TIDE ELEVATION IS HIGH TIDE OF RECORD FROM NOVEMBER 25, 1950.

NON-INTERNET PUBLIC
PROPOSED WETLAND DETAIL

2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACOE PERMIT DRAWING
SITE SPECIFIC UPLAND /WETLAND DETAIL

LOC. PHILADELPHIA COUNTY, PENNSYLVANIA	REV. A			
CKD. BY SAC	ENG.	DATE 12-18-2006	W.O. 076114822	2007
DRN. BY GULF	SCALE 1"=100'	DWG. NO. EFA-A-1004		



Texas Eastern Transmission, LP
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

01/11/2007

c:\work\1285\eagle line 1a 014\ef-a-1005.dgn

EAGLE LINE 1A - (THIS SHEET)	
1. Permanent Easement (UPLAND)	12503 SQ FT, 0.287 ACRES
2. Permanent Easement (WETLAND)	2277 SQ FT, 0.052 ACRES
3. Temporary WorkSpace (UPLAND)	2334 SQ FT, 0.054 ACRES
4. Temporary WorkSpace (WETLAND)	5184 SQ FT, 0.119 ACRES



39

121 POINT BREEZE TERMINAL, LLC

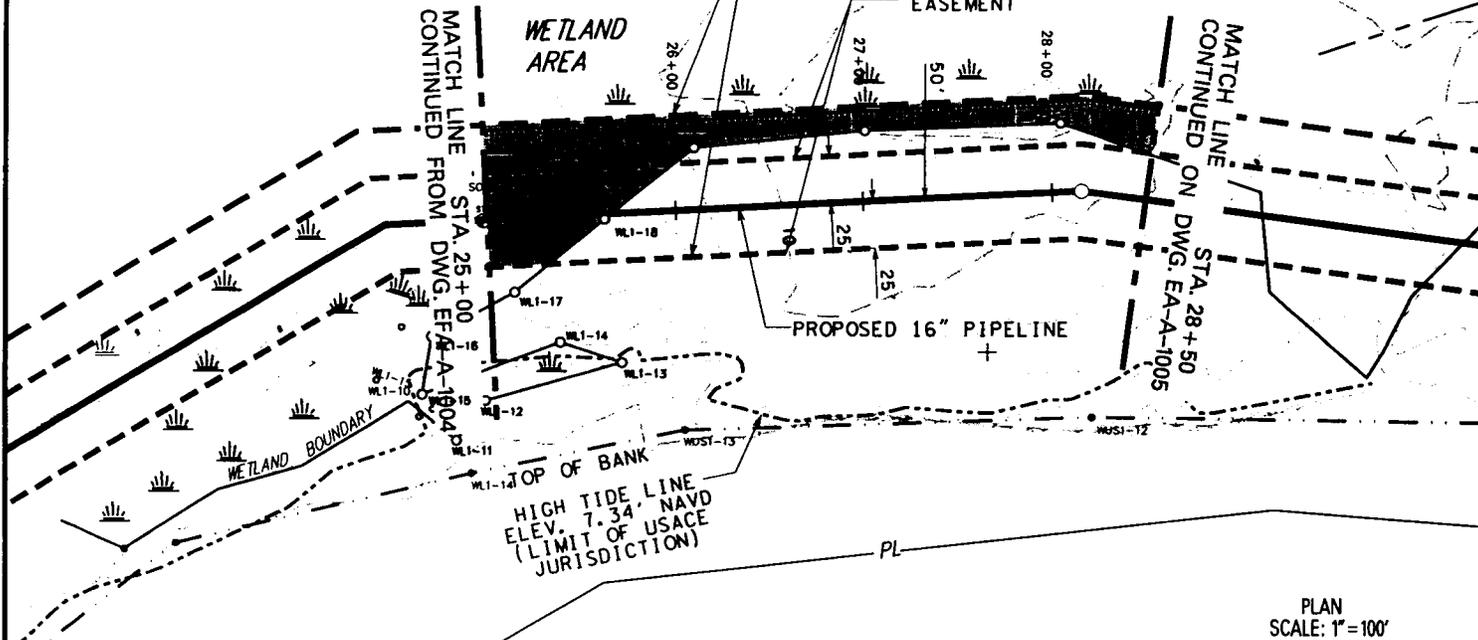
CONSTRUCTION WORKSPACE

PERMANENT EASEMENT

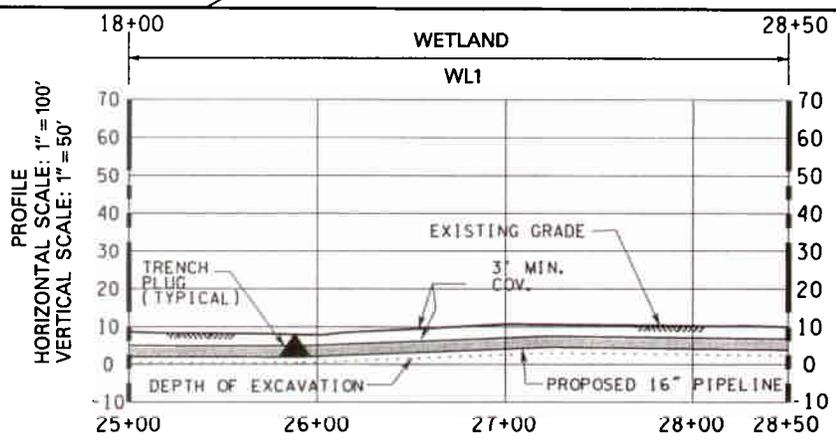
WETLAND AREA

MATCH LINE CONTINUED FROM DWG. EFA-A-1004

MATCH LINE CONTINUED ON DWG. EA-A-1005



PLAN SCALE: 1" = 100'



PROFILE SCALE: 1" = 100'
HORIZONTAL SCALE: 1" = 50'

SITE SPECIFIC E&S

6 9 14 16 17

E&S FIGURES APPLICABLE TO ALL AREAS

A B C D E F G H I J 1 7 8 11 13 15 18 19 22 23

NOTES:

1. MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
2. WETLANDS DELINEATED BY CH2MHILL, 2006.
3. COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
4. REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
5. WETLAND DISTURBANCE FOR W1 : 0.193 ACRES (MEASURE FOR THIS SHEET)
6. NO PALUSTRINE FORESTED WETLANDS (PFO) ARE PROPOSED TO BE DISTURBED.
7. MEAN HIGH WATER ELEVATION AS REPORTED AT NOAA STATION ID 8545240 (USCG Station), DELAWARE RIVER, PHILADELPHIA, PENNSYLVANIA, HIGH TIDE ELEVATION IS HIGH TIDE OF RECORD FROM NOVEMBER 25, 1950.

NON-INTERNET PUBLIC
PROPOSED WETLAND DETAIL

2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACOE PERMIT DRAWING SITE SPECIFIC UPLAND /WETLAND DETAIL

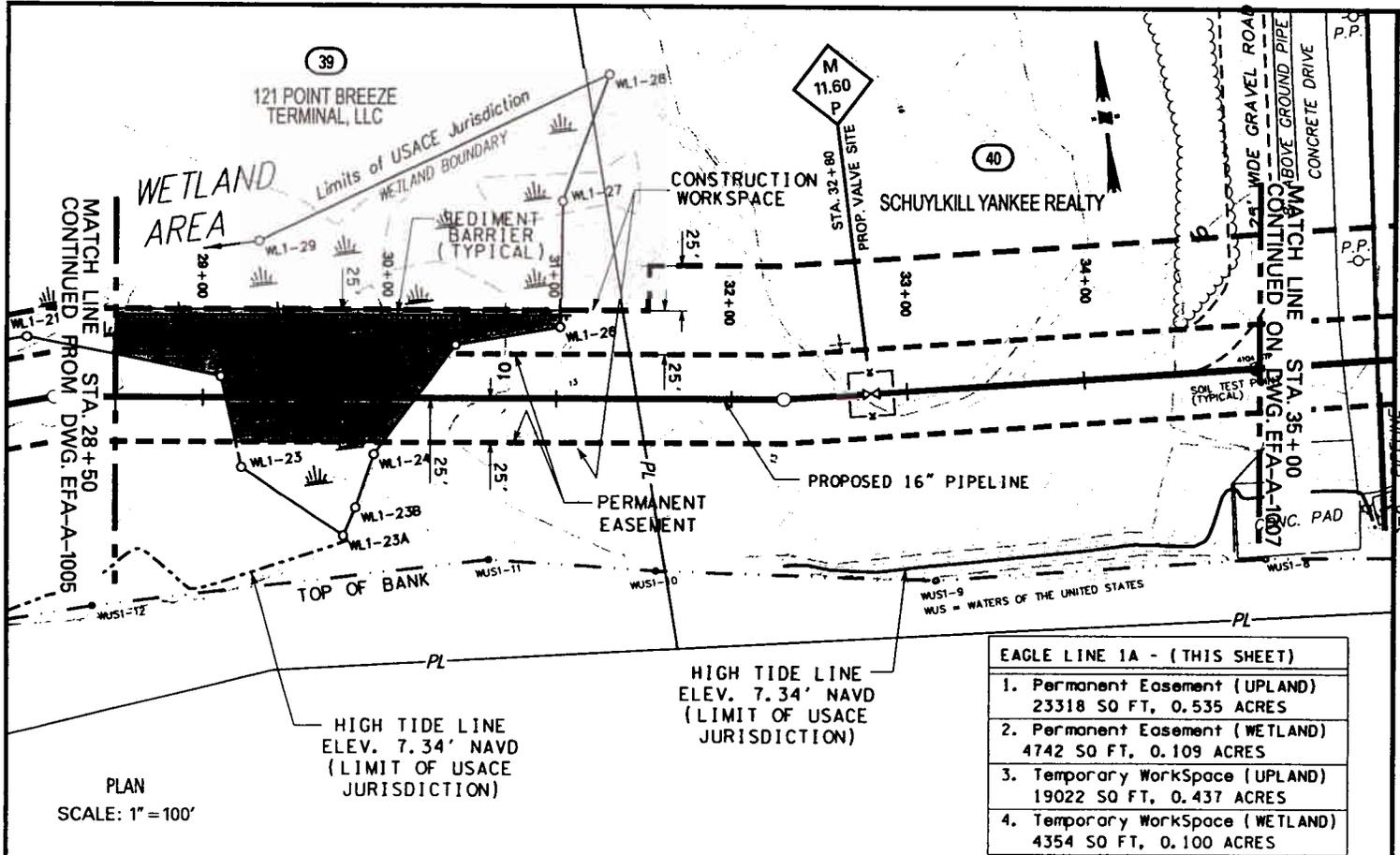
LOC. PHILADELPHIA COUNTY, PENNSYLVANIA		REV. A	
CKD. BY SAC	ENG.	DATE 12-18-2006	W.O. 076114822 2007
DRN. BY GULF	SCALE 1" = 100'	DWG. NO. EFA-A-1005	



Texas Eastern Transmission, LP
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

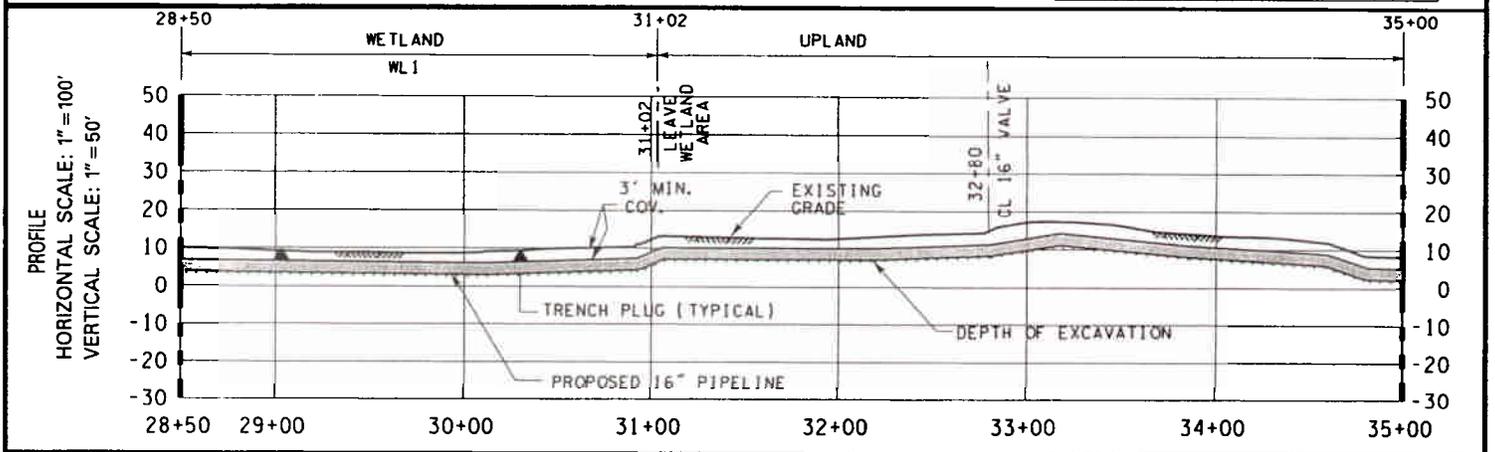
1.0, 01/11/2007

c:\work\12705\veagle line 1a 014\eta-a-1006.dgn



PLAN
SCALE: 1" = 100'

EAGLE LINE 1A - (THIS SHEET)	
1. Permanent Easement (UPLAND)	23318 SQ FT, 0.535 ACRES
2. Permanent Easement (WETLAND)	4742 SQ FT, 0.109 ACRES
3. Temporary WorkSpace (UPLAND)	19022 SQ FT, 0.437 ACRES
4. Temporary WorkSpace (WETLAND)	4354 SQ FT, 0.100 ACRES



SITE SPECIFIC E&S [6] [9] [14] [16] [17] [4] [5]
 E&S FIGURES APPLICABLE TO ALL AREAS [A] [B] [C] [D] [E] [F] [G] [H] [I] [J] [7] [8] [11] [13] [15] [18] [19] [22] [23]

NOTES:

1. MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
2. WETLANDS DELINEATED BY CH2MHILL, 2006.
3. COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
4. REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
5. WETLAND DISTURBANCE FOR WL1: 0.231 ACRES (MEASURE FOR THIS SHEET)
6. NO PALUSTRINE FORESTED WETLANDS (PFO) ARE PROPOSED TO BE DISTURBED.
7. MEAN HIGH WATER ELEVATION AS REPORTED AT NOAA STATION ID 8545240 (USCG Station), DELAWARE RIVER, PHILADELPHIA, PENNSYLVANIA, HIGH TIDE ELEVATION IS HIGH TIDE OF RECORD FROM NOVEMBER 25, 1950.

NON-INTERNET PUBLIC
 PROPOSED WETLAND DETAIL

2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACOE PERMIT DRAWING
 SITE SPECIFIC UPLAND /WETLAND DETAIL

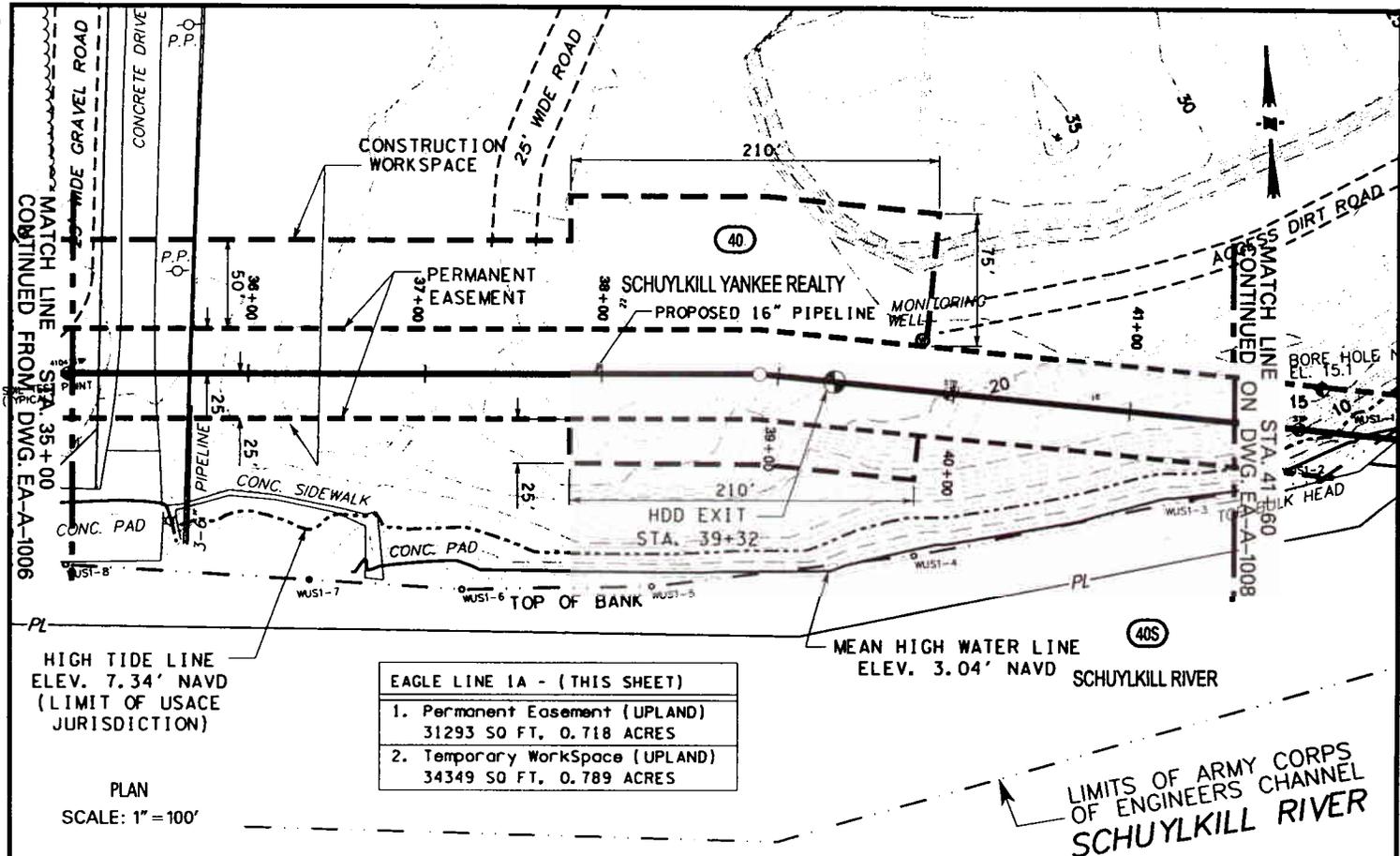
LOC. PHILADELPHIA COUNTY, PENNSYLVANIA		REV. A	
CKD. BY SAC	ENG.	DATE 12-18-2006	W.O. 076114822 2007
DRN. BY GULF	SCALE 1" = 100'	DWG. NO. EFA-A-1006	



Texas Eastern Transmission, LP
 5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

01/11/2007

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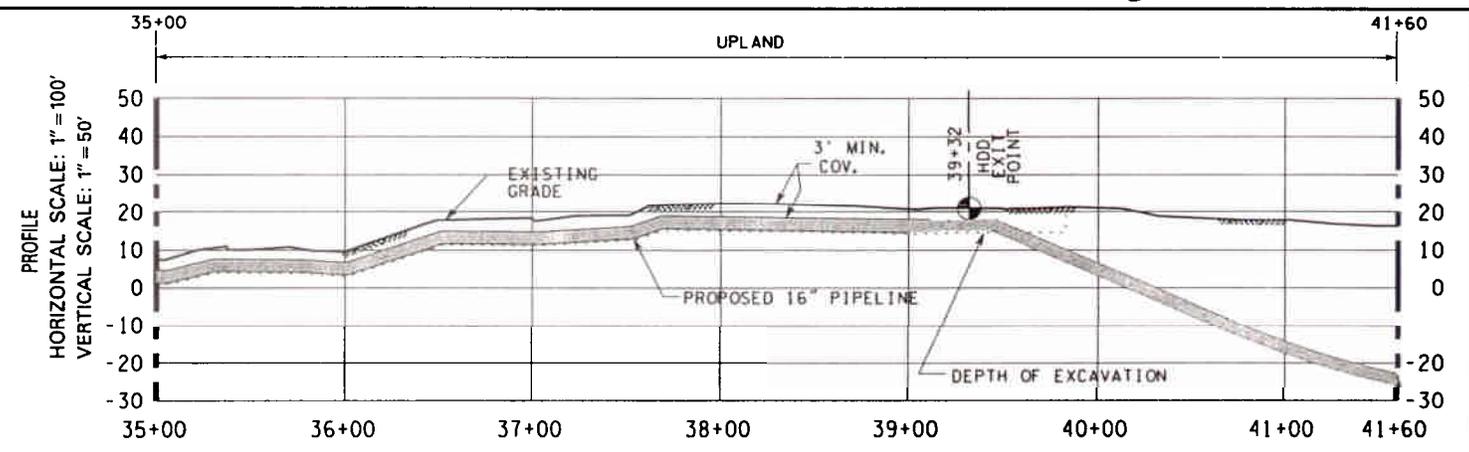
HIGH TIDE LINE
ELEV. 7.34' NAVD
(LIMIT OF USACE
JURISDICTION)

EAGLE LINE 1A - (THIS SHEET)	
1. Permanent Easement (UPLAND)	31293 SQ FT, 0.718 ACRES
2. Temporary WorkSpace (UPLAND)	34349 SQ FT, 0.789 ACRES

MEAN HIGH WATER LINE
ELEV. 3.04' NAVD
SCHUYLKILL RIVER

LIMITS OF ARMY CORPS
OF ENGINEERS CHANNEL
SCHUYLKILL RIVER

PLAN
SCALE: 1" = 100'



SITE SPECIFIC E&S 10 25

E&S FIGURES APPLICABLE TO ALL AREAS A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

NOTES:

1. MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
2. WETLANDS DELINEATED BY CH2MHILL, 2006.
3. COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
4. REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
5. WETLAND DISTURBANCE 0 ACRES (MEASURE FOR THIS SHEET).
6. NO PALUSTRINE FORESTED WETLANDS (PFO) ARE PROPOSED TO BE DISTURBED.
7. MEAN HIGH WATER ELEVATION AS REPORTED AT NOAA STATION ID 8545240 (USCG Station), DELAWARE RIVER, PHILADELPHIA, PENNSYLVANIA. HIGH TIDE ELEVATION IS HIGH TIDE OF RECORD FROM NOVEMBER 25, 1950.

NON-INTERNET
PUBLIC

PROPOSED
WETLAND
DETAIL

2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACO PERMIT DRAWING
SITE SPECIFIC UPLAND /WETLAND DETAIL

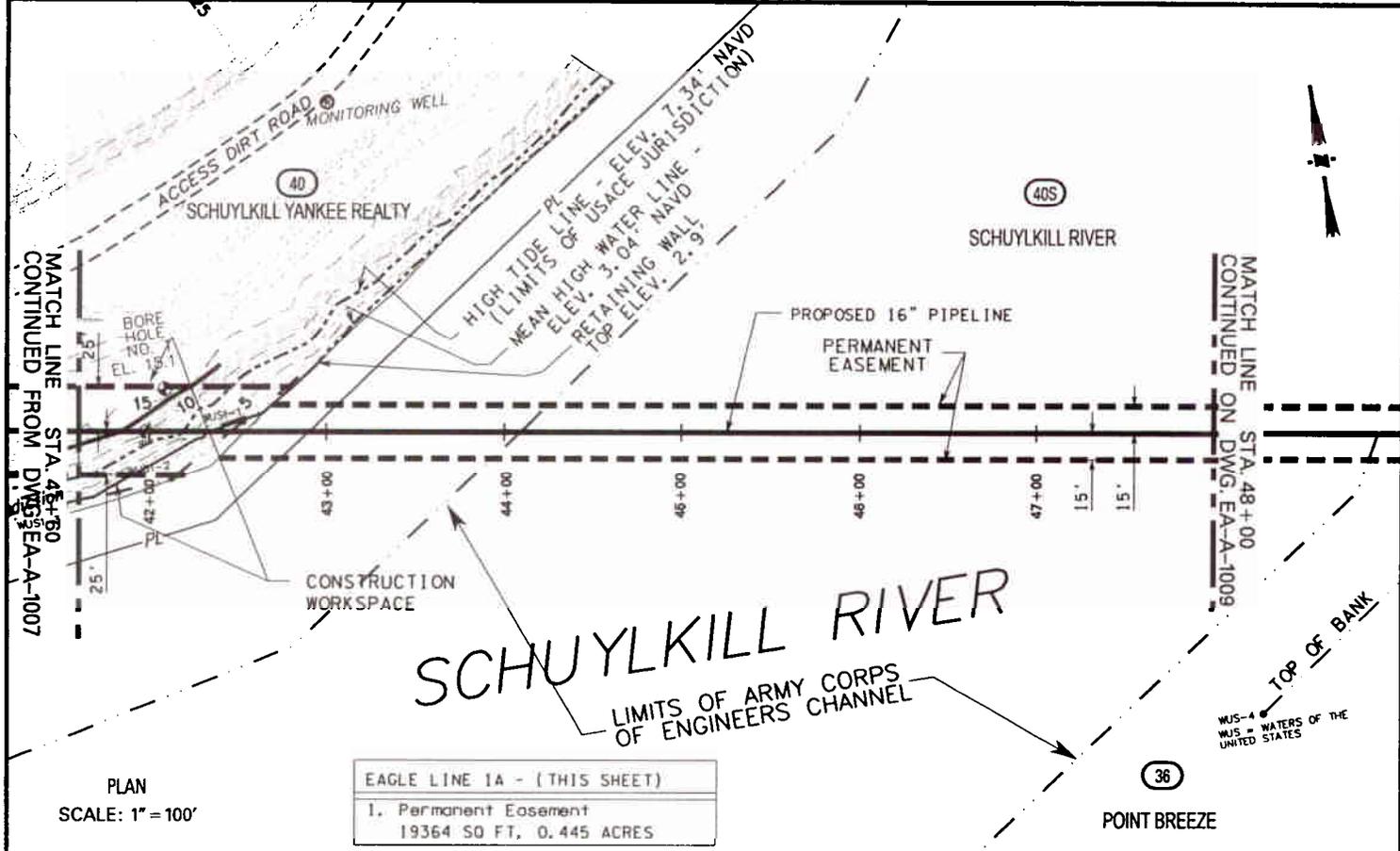
LOC.	PHILADELPHIA COUNTY, PENNSYLVANIA			REV.	A
CKD. BY	SAC	ENG.	DATE	12-18-2006	W.O. 076114822 2007
DRN. BY	GULF	SCALE	1" = 100'	DWG. NO.	EFA-A-1007



Texas Eastern Transmission, LP
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

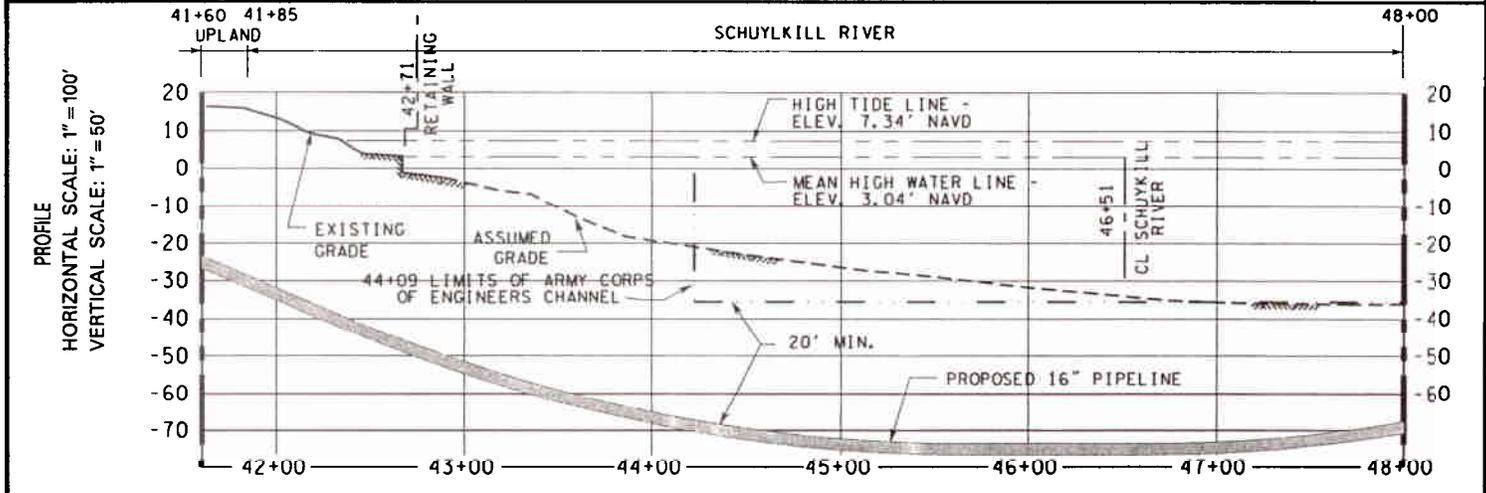
1. U. EFA-A-1007.DWG 01/11/2007

c:\work\121285\eeagle line 1a 0114\ef-a-1008.dgn



PLAN
SCALE: 1" = 100'

EAGLE LINE 1A - (THIS SHEET)
1. Permanent Easement
19364 SQ FT, 0.445 ACRES



PROFILE
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 50'

SITE SPECIFIC E&S

E&S FIGURES APPLICABLE TO ALL AREAS

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

NOTES:

1. MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
2. WETLANDS DELINEATED BY CH2MHILL, 2006.
3. COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
4. REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
5. WETLAND DISTURBANCE 0 ACRES (MEASURE FOR THIS SHEET).
6. NO PALUSTRINE FORESTED WETLANDS (PFO) ARE PROPOSED TO BE DISTURBED.
7. MEAN HIGH WATER ELEVATION AS REPORTED AT NOAA STATION ID 8545240 (USCG Station), DELAWARE RIVER, PHILADELPHIA, PENNSYLVANIA. HIGH TIDE ELEVATION IS HIGH TIDE OF RECORD FROM NOVEMBER 25, 1950.

NON-INTERNET PUBLIC
PROPOSED WETLAND DETAIL

2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACOE PERMIT DRAWING
SITE SPECIFIC UPLAND /WETLAND DETAIL

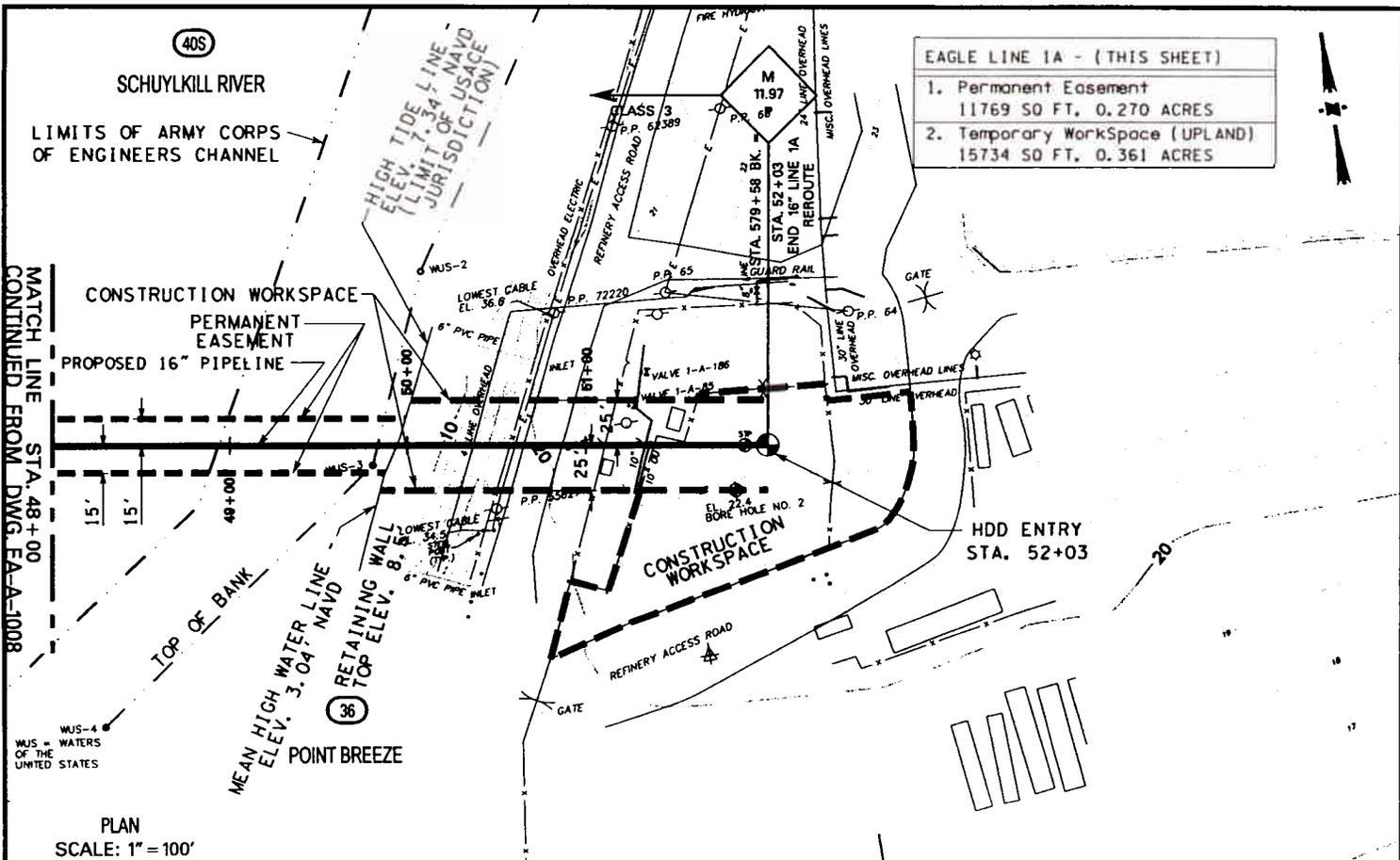
LOC. PHILADELPHIA COUNTY, PENNSYLVANIA		REV. A	
CKD. BY SAC	ENG.	DATE 12-18-2006	W.O. 076114822 2007
DRN. BY GULF	SCALE 1" = 100'	DWG. NO. EFA-A-1008	



Texas Eastern Transmission, LP
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

01/11/2007

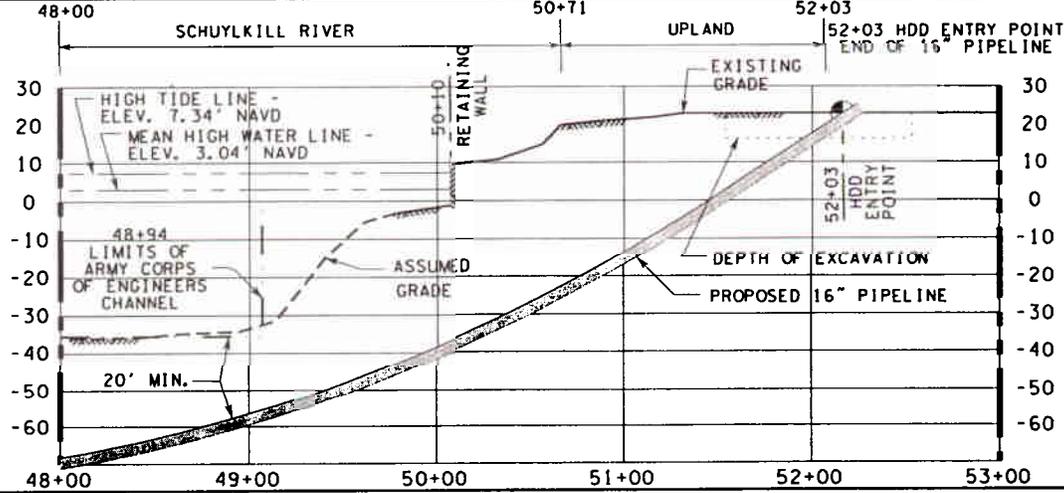
c:\work\1285\eele line 1a 014\efa-a-1009.dgn



EAGLE LINE 1A - (THIS SHEET)	
1. Permanent Easement	11769 SQ FT, 0.270 ACRES
2. Temporary WorkSpace (UPLAND)	15734 SQ FT, 0.361 ACRES

PLAN SCALE: 1" = 100'

PROFILE
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 50'



SITE SPECIFIC E&S

E&S FIGURES APPLICABLE TO ALL AREAS

A	B	C	D	E	F	G	H	I	1	7	8	11	13	15	18	19	22	23
---	---	---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

NOTES:

1. MAPPING PROJECTION: PA-SOUTH SP, NAD 1983 HORIZONTAL AND NAVD 1988 VERTICAL DATUM US FEET UNITS
2. WETLANDS DELINEATED BY CH2MHILL, 2006.
3. COMPILATION PERFORMED BY GULF INTERSTATE ENGINEERING, 2006.
4. REFER TO EAGLE'S SOIL EROSION AND SEDIMENT CONTROL GUIDELINES FOR MORE DETAILED ENVIRONMENTAL REQUIREMENTS.
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NON-INTERNET PUBLIC
PROPOSED WETLAND DETAIL

2007 INTEGRITY MANAGEMENT PROJECT - 16" LINE 1A REROUTE- USACOE PERMIT DRAWING SITE SPECIFIC UPLAND /WETLAND DETAIL



LOC. PHILADELPHIA COUNTY, PENNSYLVANIA		REV. A	
CKD. BY SAC	ENG.	DATE 12-18-2006	W.O. 076114822 2007
DRN. BY GULF	SCALE 1" = 100'	DWG. NO. EFA-A-1009	

Texas Eastern Transmission, LP
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400

1.0. + EFA-A-1009.DGN 01/11/2007

RESPONSIBILITIES OF THE ENVIRONMENTAL INSPECTOR

AT A MINIMUM, THE EI SHALL BE RESPONSIBLE FOR:

1. Ensuring compliance with the requirements of this Plan, the construction drawings, the environmental conditions of the FERC certificate (if applicable), proposed mitigation measures, other federal or state environmental permits and approvals, and environmental requirements in landowner easement agreements;
2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;
3. Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before clearing;
4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;
5. Identifying erosion/sediment control and soil stabilization needs in all areas;
6. Identifying locations for dewatering structures and interceptor dikes to ensure they will not direct water into known cultural resources sites or locations of sensitive resources;
7. Verifying that trench-dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland or waterbody. If such deposition is occurring, the dewatering activity shall be stopped. The design of the discharge shall be changed by the EI to prevent recurrence;
8. Ensuring that subsoil and topsoil are tested in agricultural areas to measure compaction and determine the need for corrective action;
9. Advising the Chief Inspector when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive rutting;
10. Ensuring restoration of contours and topsoil;
11. Verifying that the soils imported for agricultural or residential use have been certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner;
12. Determining the need for and ensuring that erosion controls are properly installed and maintained, daily if necessary, to prevent sediment flow into wetlands, waterbodies, sensitive areas, and onto roads;
13. Inspecting temporary erosion control measures at least:
 - a. On a daily basis in areas of active construction or equipment operation;
 - b. On a weekly basis in areas with no construction or equipment operation;
 - c. On a monthly basis upon the completion of earth disturbance activities (or while the construction on the right-of-way is halted for winter); and
 - d. Within 24 hours of each 0.5 inch of rainfall.
14. Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification;
15. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase;
16. Ensuring that the Contractor implements and complies with the Company's Spill Prevention Control and Countermeasure (SPCC) Plan; and
17. Keeping records of compliance with the environmental conditions of the FERC certificate (if applicable), proposed mitigation measures, and other Federal or state environmental permits during active construction and restoration.

Off-ROW Disturbance

With certain exceptions, which are required in order to comply with FERC Plan and Procedures, all construction activities are restricted to within the limits identified on the construction drawings (exceptions include the installation of slope breakers, installation of energy-dissipating devices, installation of dewatering structures, and drain tile repair which are subject to applicable survey requirements). However, in the event that off-ROW disturbance occurs, the following measures will be implemented:

1. The EI will immediately report the occurrence to the Chief Inspector and ROW Agent;
2. The conditions that caused the disturbance will be evaluated by the Chief Inspector and the EI, and they will determine whether work at the location can proceed under those conditions; and
3. If deemed necessary by the Chief Inspector and EI, one or more of the following corrective actions will be taken: immediate restoration of the original contours, seeding and mulching of the disturbed area, and/or installation of erosion control devices. The Company's Project Manager will be notified as soon as practical.

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01/10/2007

I.G. FIG A.DGN

**EROSION AND SEDIMENTATION
CONTROL SPECIFICATIONS**

FIGURE A

DWG.

REV.

CONSTRUCTION SEQUENCE

Construction Sequence

Installation of the pipeline will typically proceed from one end of the construction spread to the other in an assembly line or "mainline" fashion. The spacing between the individual crews responsible for each interdependent activity is based on anticipated rate of progress. The activities listed below are normally performed in the following sequence:

- Survey and Flag the ROW;
- Clearing the ROW;
- Installing temporary sediment barriers, and temporary interceptor dikes in conjunction with:
- Grading the ROW;
- Removing existing pipe and rough backfill of trenchline (where applicable);
- Trenching/excavating the trench;
- Pipe stringing and bending;
- Welding and weld inspection;
- Trench dewatering;
- Lowering the pipe into the trench;
- Backfilling the trench;
- Hydrostatic testing of pipe; and
- ROW restoration and clean-up.

* All disturbed areas will be stabilized (mulched or mulched and seeded) within six days of final grade.

Large diameter steel pipelines with welded joints where the pipe joints are welded while the pipe is out of the trench usually require a fairly long length of open pipeline trench. The total time of earth exposure for this type of pipeline construction, including the access roadway parallel to the pipeline, should generally be limited to no more than 60 calendar days at any given point along the pipeline.

11/10/2007

I.C. FIG B.DGN

EROSION AND SEDIMENTATION
CONTROL SPECIFICATIONS

FIGURE B

DWG.

REV.

Clearing

Clearing operations will include the removal of vegetation within the construction ROW. Various clearing methods will be employed depending on tree size, contour of the land, and the ability of the ground to support clearing equipment. Vegetative clearing will either be accomplished by hand or by cutting equipment. The following procedures will be standard practice during clearing:

1. Prior to beginning the removal of vegetation, the limits of clearing will be established and identified in accordance with the construction drawings;
2. All construction activities and ground disturbance will be confined to within the ROW shown on the construction drawings;
3. Clearly mark and protect trees to be saved as per landowner requests or as otherwise required;
4. All brush and trees will be felled into the construction ROW to minimize damage to trees and structures adjacent to the ROW. Trees that inadvertently fall beyond the edge of the ROW will be immediately moved onto the ROW and disturbed areas will be immediately stabilized;
5. Trees will be chipped or cut into lengths identified by the landowner and then stacked at the edge of the ROW or removed;
6. Brush and limbs may be disposed of in one or more of the following ways depending on local restrictions, applicable permits, construction Line List stipulations, and landowner agreements:
 - a. Stockpiled along the edge of the ROW;
 - b. Chipped, spread across the ROW in upland areas, and plowed in; or
 - c. Hauled off site.
7. Existing surface drainage patterns will not be altered by the placement of timber or brush piles at the edge of the construction ROW.

Installing Temporary Sediment Barriers

Sediment barriers, which are temporary erosion controls intended to minimize the flow of sediment and to prevent the deposition of sediments into sensitive resources, shall be installed following vegetative clearing operations. They may be constructed of materials such as silt fence, staked straw bales, broad based dips across travel lanes, mulch barriers, or an approved equivalent material (Figures 7, 8, 8A, 12, 20 & 21).

Grading

The construction ROW will be graded as needed to provide a level workspace for safe operation of heavy equipment used in pipeline construction.

Topsoil Segregation

Topsoil segregation methods will be used in all residential areas and when the construction ROW is wider than 30 feet in annually cultivated or rotated agricultural lands, cultivated pastures, hayfields, and other areas at the landowner's request. Topsoil replacement (i.e. the importation of topsoil) may be used as an alternative to topsoil segregation if approved by the landowner and Chief Inspector.

Tree Stump Removal and Disposal

1. Remove tree stumps in upland areas along the entire width of the permanent ROW to allow adequate clearance for the safe operation of vehicles and equipment. Stumps within the temporary ROW will be removed or ground to a suitable depth that will allow the safe passage of equipment, as stipulated by the Chief Inspector or EI.
2. Dispose of stumps by one of the following methods, pending approval by the Chief Inspector and the landowner, and in accordance with regulatory requirements:
 - a. Buried at a Company-approved off-site location (except in wetlands and agricultural areas);
 - b. Chipped, spread across the ROW in upland areas, and plowed in; or
 - c. Ground to grade in wetlands, excess chips will be removed for proper disposal.

Rock Disposal

Rock (including blast rock) will be disposed of in one or more of the following ways:

1. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench may be buried in approved construction work areas, windrowed, or otherwise utilized as per landowner agreement.
2. Used as riprap for stream bank stabilization where allowed by an applicable regulatory agency or agencies.
3. Removed and disposed of at a Company approved, permitted site.

Installing Temporary Interceptor Dikes

Temporary interceptor dikes, which are temporary erosion control measures intended to reduce runoff velocity and divert water off the construction ROW, shall be installed following grading operations. The interceptor dikes are to be installed on all disturbed areas as necessary to avoid excessive erosion. Temporary interceptor dikes may be constructed of materials such as compacted soil, silt fence, staked straw bales, or sand bags.

01/10/2007

I.C. FIG C.DGN

**EROSION AND SEDIMENTATION
CONTROL SPECIFICATIONS**

FIGURE C

DWG.

REV.

Trenching

Trenching will be performed in a manner consistent with Figures 13, 14, and 16.

Temporary Trench Plugs

Temporary trench plugs are barriers within the ditch that segment the continuous open trench. They typically consist of compacted subsoil or sandbags (soft) placed across the ditch or composed of unexcavated portions of the ditch (hard). Along steep slopes, they serve to reduce erosion and sedimentation in the trench and minimize dewatering problems at the base of slopes where sensitive environments such as waterbodies and wetlands are frequently located. In addition, they provide access across the trench for wildlife and livestock.

Trench Dewatering

Trench dewatering may be periodically required along portions of the proposed pipeline prior to and/or subsequent to installation of the pipeline to remove collected water from the trench.

1. Trench dewatering will be conducted (on or off the construction ROW) in such a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any waterbody or wetland.
2. The intakes of the hoses used to withdraw the water from the trench will be elevated and screened to minimize pumping of deposited sediments.
3. Water may be discharged into areas where adequate vegetation is present adjacent to the construction ROW to function as a filter medium.
4. Where vegetation is absent or in the vicinity of waterbody/ wetland areas, water will be pumped into a filter bag (Figure 15) or through a dewatering structure (Figures 18 & 19). When using filter bags, secure the discharge hose to the bag with a clamp.

Pipe Installation

Stringing and Bending

Following trench excavation, pipe sections will be delivered to the construction site by truck or tracked vehicle, and strung out along the trench. Individual pipe sections will be placed on temporary supports or wooden skids and staggered to allow room for work on the exposed ends. Certain pipe sections will be bent, as necessary, to conform to changes in slope and direction of the trench.

Welding and Weld Inspection

Once the bending operation is complete, the pipe sections will be welded together on supports using approved welding procedures that comply with Company welding specifications. After welding, the welds will be inspected radiographically or ultrasonically to ensure their structural integrity.

Lowering-in

Lowering-in consists of placing the completed pipeline sections into the trench where a tie-in weld will be made. Lowering-in is usually accomplished with two or more sideboom tractors acting in unison and spaced so as not to buckle or otherwise damage the pipe. The pipeline will be lifted from the supports, swung out over the trench, and lowered directly into the trench. The equipment uses a "leap frogging" technique requiring sufficient area to safely move around other tractors within the construction ROW to gain an advanced position on the pipe.

Backfilling

Backfilling consists of covering the pipe with the earth removed from the trench or with other fill material hauled to the site when the existing trench spoil is not adequate for backfill. Backfilling will follow lowering-in of the pipeline as close as is practical.

In areas where the trench bottom is irregularly shaped due to consolidated rock or where the excavated spoil materials are unacceptable for backfilling around the pipe, padding material may be required to prevent damage to the pipe. This padding material will generally consist of sand or screened spoil materials from trench excavation.

1. Under no circumstances shall topsoil be used as padding material.
2. Excess rock, including blast rock, may be used to backfill the trench to the top of the existing bedrock profile in accordance with Company specifications in Figure C.
3. Any excess material will be spread within the ROW in upland areas and land contours will be roughed-in to match adjacent topography.
4. The trench may be backfilled with a crown over the pipe to compensate for compaction and settling. Openings will be left in the completed trench crown to restore pre-construction drainage patterns. Crowning shall not be used in wetland areas.
5. All areas will be seeded and mulched within 6 days of backfilling.

Permanent Trench Plugs

Permanent trench plugs are intended to slow subsurface water flow and erosion along the trench and around the pipe in sloping terrain. Permanent trench plugs will be constructed with sand bags or an equivalent as identified in the permit requirements. On severe slopes greater than 30 percent, "Sakrete" may be used at the discretion of the Chief Inspector (Figures 16 & 17).

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01/10/2007

I.G. FIG D.DGN	EROSION AND SEDIMENTATION CONTROL SPECIFICATIONS		FIGURE D	
			DWG.	REV.

Hydrostatic Testing

Once the pipeline is completed and before it is placed into service, it will be hydrostatically tested for structural integrity. Hydrostatic testing involves filling the pipeline with clean water and maintaining a test pressure in excess of normal operating pressures for a specified period of time (typically 8 hours). The testing procedure involves filling the pipeline with test water, performing the pressure test, and discharging the test water.

1. The EI shall notify appropriate state agencies (as identified in the Hydrostatic Test Package) of the intent to use specific test water sources at least 48 hours before testing activities (unless waived in writing).
2. Pumps used for hydrostatic testing within 100 feet of any waterbody or wetland shall be operated and refueled in accordance with the SPCC Plan.
3. Do not use state-designated exceptional value waters, waterbodies that provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and/or local permitting agencies grant written permission. Use only the water sources identified in the Clearance Package/Permit Book.
4. Screen the intake hose to prevent entrainment of fish and other aquatic life.
5. Maintain ambient, downstream flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.
6. Locate hydrostatic test manifolds outside wetlands and riparian areas to the greatest extent practical.
7. For an overland discharge of test water from a new pipeline, dewater into an energy dissipation device constructed of straw bales (Figures 18, 19).
8. For an overland discharge of test water from an existing pipeline, dewater into an energy dissipation device constructed of straw bales and absorbent booms (Figure 18). Discharge velocities cannot cause erosion. If required by the appropriate permitting agency, the test water may be discharged through an appropriate filtration system including frac tanks and/ or carbon filters.
9. Dewater only at the locations shown on the construction drawings or locations identified in the Hydrostatic Test Package.
10. Locate all dewatering structures in a well-vegetated and stabilized area, if practical, and attempt to maintain at least a 50-foot vegetated buffer from adjacent waterbody/wetland areas. If an adequate buffer is not available, sediment barriers or similar erosion control measures must be installed.
11. Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour to aquatic resources, suspension of sediments, flooding or excessive stream flow.
12. Do not discharge into state-designated high quality or exceptional value waters, wild trout streams waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and local permitting agencies grant written permission.
13. The EI shall sample and test the source water and discharge water in accordance with the permit requirements.

01/10/2007

I.G. FIG E.DGN

EROSION AND SEDIMENTATION CONTROL SPECIFICATIONS

FIGURE E

DWG.

REV.

ROW Restoration and Final Cleanup

Restoration of the ROW will begin after pipeline construction activities have been completed. Restoration measures include the re-establishment of final grades and drainage patterns as well as the installation of permanent erosion and sedimentation control devices to minimize post-construction erosion. Residential areas will be restored in accordance with the Erosion and Sedimentation Control Plan. Property shall be restored as close to its original condition unless otherwise specified by the landowner and approved by the appropriate Soil Conservation District.

1. The Contractor shall make every reasonable effort to complete final cleanup of an area (including final grading and installation of permanent erosion control structures) immediately. If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (temporary interceptor dikes and sediment barriers) until conditions allow completion of cleanup.
2. The disturbed ROW will be seeded within 6 working days of final grading, weather and soil conditions permitting.
3. If final cleanup and seeding cannot be completed and is delayed until the next recommended growing season, the winter stabilization measures in Figure G shall be followed.
4. Grade the ROW to pre-construction contours.
5. Spread segregated topsoil back across the graded ROW to its original profile.
6. Remove excess rock from at least the top 12 inches of soil to the extent practical in all related and permanent cropland, hayfields, pastures, residential areas, and other areas at the landowner's request. The size, density, and distribution of rock on the construction ROW should be similar to adjacent areas not disturbed by construction. The landowner may approve other provisions in writing.
7. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed, regularly inspected and maintained. When access is no longer required, the travel lane must be removed and the ROW restored.
8. Remove all construction debris (used filter bags, skids, trash, etc.) from the ROW. Grade or till the ROW to leave the soil in the proper condition for planting.

Permanent Erosion Control

Permanent Interceptor Dikes

Permanent interceptor dikes are intended to reduce runoff velocity, divert water off the construction ROW, and prevent sediment deposition into sensitive resources (Figure 12). Permanent interceptor dikes will be constructed of compacted soil. Sand bags or some functional equivalent may be used when directed by the EI.

Erosion Control Fabric

Erosion control fabric or matting will be installed on slopes greater than 30% as shown in Figure 23.

Revegetation and Seeding

Successful revegetation of soils disturbed by project-related activities is essential. Seeding will be conducted using the following requirements:

1. Fertilize and add soil pH modifiers in accordance with the recommendations in Figure 33. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as practical after application;
2. Seed all disturbed areas within 6 working days of final grading, weather and soil conditions permitting;
3. Prepare seedbed in disturbed areas to a depth of 3 to 4 inches to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed;
4. Seed disturbed areas in accordance with the seed mixes, rates, and dates in Figure 33, except in upland areas where landowners or a land management agency may request alternative seed mixes. Seeding is not required in actively cultivated croplands unless requested by the landowner.
5. Perform seeding of permanent vegetation within the recommended seeding dates as outlined in Figure 33. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in the Erosion and Sedimentation Control Specifications and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Mulch in accordance with Figure G. Lawns may be seeded on a schedule established with the landowner;
6. Base seeding rates on Pure Live Seed (PLS). Use seed within 12 months of seed testing;
7. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydroseeding);
8. Uniformly apply and cover seed in accordance with Figure 33. In the absence of any recommendations from the local soil conservation authorities, landowner, or land managing agency to the contrary. A seed drill equipped with a cultipacker is preferred for application, but broadcast or hydroseeding can be used at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or roller after seeding. In rocky soils, or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the EI.
9. Temporary erosion control features shall be maintained until a uniform 70% permanent revegetation has been successfully achieved. This includes areas where winter stabilization has been implemented.

11/10/2007

I.G. FIG F.DGN

EROSION AND SEDIMENTATION CONTROL SPECIFICATIONS

FIGURE F

DWG.

REV.

Mulch

Mulch is intended to stabilize the soil surface and shall consist of weed-free straw, wood fiber hydromulch, erosion control fabric, or some functional equivalent as approved by the EI and Chief Inspector. Hay shall not be used for mulch.

1. Mulch before seeding if construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.
2. Apply mulch on all slopes (except in actively cultivated cropland) concurrent with or immediately after seeding, where necessary, to stabilize the soil surface and to reduce wind and water erosion. Spread mulch uniformly over the ROW at a rate of 3 tons/acre of straw or equivalent.
3. Mulch with woodchips only under the following conditions with prior approval from the Chief Inspector or the EI:
 - a. Do not use more than 1 ton/acre; and
 - b. Add the equivalent of 11 lbs/acre available nitrogen (at least 50 % of which is slow release).
4. Ensure that mulch is anchored to minimize loss by wind and water. Anchoring may be achieved by wet soil conditions (when approved by the EI), mechanical means, or with liquid mulch binders.
5. When anchoring with liquid mulch binders, use rates recommended by the manufacturer. **DO NOT USE LIQUID MULCH BINDERS WITHIN 100 FEET OF WETLANDS AND WATERBODIES.**
6. Install and anchor erosion control fabric, such as jute thatching, or bonded fiber blankets, on waterbody banks at the time of final bank recontouring. Anchor the erosion control fabric with staples or other appropriate devices.

Winter Stabilization

In the event that the final phases of construction occur too late in the year for cleanup activities to adequately proceed, the following procedures will be implemented along the disturbed ROW at those locations until final restoration measures can be completed. The Company will file for review and written approval from the FERC, a winterization plan if construction continues into the winter season where conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring.

1. Install permanent interceptor dikes at specified intervals on all slopes, or as directed by the EI;
2. Install temporary sediment barriers adjacent to stream and wetland crossings, as well as other critical areas;
3. Seed and mulch the ROW and seed segregated topsoil piles in accordance with the Erosion and Sedimentation Control Plan; and
4. Remove flumes from waterbody crossings to reestablish natural stream flow.

Unauthorized Vehicle Access to ROW

Upon completion of construction, the Company will replace measures used by the landowner to control unauthorized vehicle access to the ROW. These measures may include:

1. Signs;
2. Fences with locking gates;
3. Slash and timber barriers, pipe barriers, or a line of boulders across the ROW; or
4. Conifers or other appropriate shrubs with a mature height of 4 feet or less across the ROW.

Disposal / Recycle

1. All construction waste materials will be recycled or disposed of in an appropriate manner at an approved permitted site or facility.
2. No burning of construction waste or debris (including brush, slash, or stumps) shall be permitted.

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I.C. FIG G.DGN

**EROSION AND SEDIMENTATION
CONTROL SPECIFICATIONS**

FIGURE G

DWG.

REV.

SPECIAL CONSTRUCTION METHODS:

The Company will utilize the following specialized construction procedures for agricultural areas, road crossings, and residential areas along the pipeline project. The project construction drawings, Line Lists, and Construction Contract will indicate the locations where specialized construction methods will be used.

Agricultural Areas

Drain Tiles

1. Attempt to locate existing drain tiles and irrigation systems.
2. Develop procedures for constructing through drain tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.
3. Engage qualified drain tile specialists, as needed, to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialist from the project area, if available.
4. Probe all drainage tile systems within the area of disturbance to check for damage.
5. Repair damaged drain tiles to their original condition. Filter-covered drain tiles may not be used unless the local soil conservation authorities and the landowner agrees in writing prior to construction.
6. Ensure that the depth of cover over the new pipeline is sufficient to avoid interference with drain tile systems (existing or proposed). For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).

Irrigation

1. Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.
2. Repair any damage to the systems as soon as practical.

Soil Compaction Mitigation

1. Test topsoil and subsoil for compaction at regular intervals in agricultural areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to identify approximate preconstruction conditions. Use penetrometers or other appropriate devices to conduct tests.
2. Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil. Alternatively, make arrangements with the landowner to plant and plow under a "green manure" crop, such as alfalfa, to decrease soil bulk density and improve soil structure. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.

Road Crossings

Unpaved private and public roads supporting minimal traffic volumes are usually crossed by boring or by means of an open cut, if this method is approved by the owner or appropriate road management agency. An open cut crossing may involve closing the road to all traffic and constructing an adequate detour around the crossing area, or excavating one-half of the road at a time allowing through traffic to be maintained.

The trench for an open cut crossing is excavated with a backhoe or similar equipment, all backfill is compacted, and the road resurfaced. All state, national, and interstate highways as well as all railroads must be crossed by boring unless the crossing permit allows an open cut crossing. Access roads shall be used in accordance with the Erosion and Sedimentation Control Plan.

01/10/2007

I.G. FIG H.DGN	EROSION AND SEDIMENTATION CONTROL SPECIFICATIONS	FIGURE H	
		DWG.	REV.

Residential Areas

Construction Procedures

Specialized construction procedures will be utilized in areas of heavy residential or commercial/ industrial congestion where residences or business establishments lie greater than 25 feet but less than 50 feet from the edge of the construction ROW.

1. Install safety fence at the edge of the construction ROW for a distance of 100 feet on either side of the residence or business establishment.
2. Attempt to maintain a minimum distance of 25 feet between any residence/business establishment and the edge of the construction work area for a distance of 100 feet on either side of the residence/business establishment.
3. Attempt to leave mature trees and landscaping intact within the construction work area unless the trees and landscaping interfere with the installation techniques or present unsafe working conditions.

Construction Techniques

In addition to the previously identified specialized procedures, smaller "spreads" of labor and equipment, operating independent of the mainline work force, will utilize either the stove pipe or drag section pipeline construction techniques in those areas of congestion where a minimum distance of 25 feet cannot be maintained between the residence(or business establishment) and the edge of the construction work area. In no case shall the temporary work area be located within 10 feet of a residence unless the landowner agrees in writing, or the area is within the existing maintained ROW. The following techniques shall be utilized for a distance of 100 feet on either side of the residence or business establishment at the locations identified in the Construction Contract and/or Line List.

1. The stove pipe construction technique is a less efficient alternative to the mainline method of construction, typically used when the pipeline is to be installed in very close proximity to an existing structure or when an open trench would adversely impact a commercial/industrial establishment. The technique involves installing one joint of pipe at a time whereby the welding, weld inspection, and coating activities are all performed in the open trench. At the end of each day after the pipe is lowered-in, the trench is backfilled and/or covered with steel plates or timber mats. The length of excavation performed each day cannot exceed the amount of pipe installed.
2. The drag section construction technique, while less efficient than the mainline method, is normally preferred over the stove pipe alternative. This technique involves the trenching, installation, and backfill of a prefabricated length of pipe containing several segments all in one day. At the end of each day after the pipe is lowered-in, the trench is backfilled and/or covered with steel plates or timber mats. Use of the drag section technique will typically require adequate staging areas outside of the residential and/or commercial/industrial congestion for assembly of the prefabricated sections.

Cleanup and Restoration

1. Reseed all disturbed lawns with a seed mixture acceptable to landowner or comparable to the adjoining lawn.
2. Landowners shall be compensated for damages as specified in the damage provision within the controlling easement on each property.

EROSION AND SEDIMENTATION
CONTROL SPECIFICATIONS

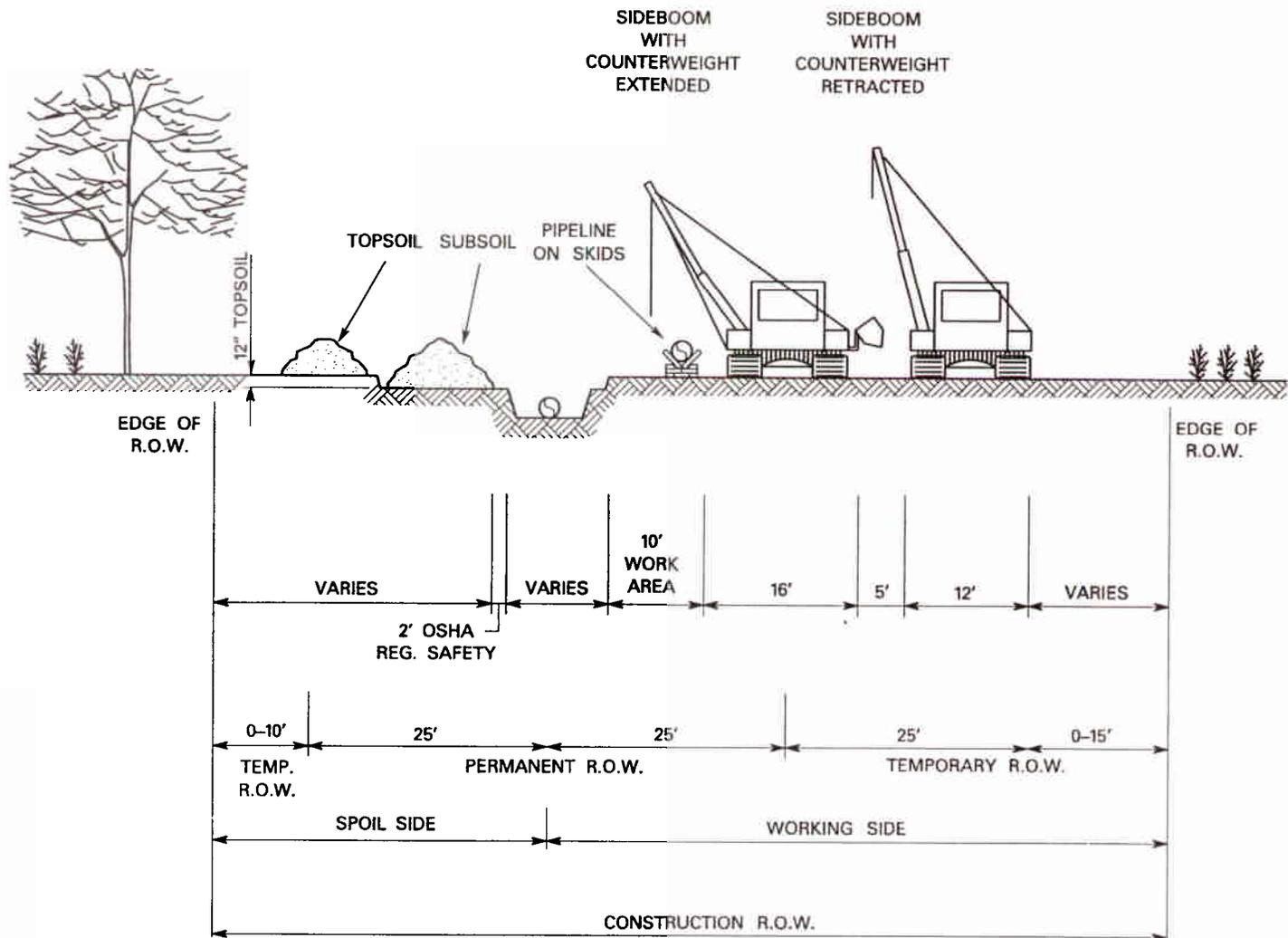
FIGURE I

DWG.

REV.

01/10/2007

I.G. FIG 1, DGN



PIPE DIAMETER	SPOIL SIDE (FT.)	WORKING SIDE (FT.)	CONSTRUCTION R.O.W. (FT.)
12" OR LESS	25	50	75
14" - 30"	35	50	85
36" - 42"	35	65	100
WETLANDS	25	50	75

NOTES:

- ALTHOUGH THE DIMENSIONS SHOWN ARE TYPICAL, SOME VARIATIONS MAY EXIST DUE TO SITE SPECIFIC CONDITIONS. UNLESS OTHERWISE INDICATED ON THE ALIGNMENT SHEETS, THE MAXIMUM WIDTH OF THE CONSTRUCTION RIGHT-OF-WAY SHALL BE AS SHOWN IN THE TABLE FOR THE APPROPRIATE PIPE DIAMETER.
- TOPSOIL AND SUBSOIL SHALL BE SEGREGATED WITHIN WETLAND, RESIDENTIAL, AGRICULTURAL, PASTURES, HAYFIELDS, AND OTHER AREAS AT LANDOWNER'S OR LAND MANAGING AGENCY'S REQUEST.

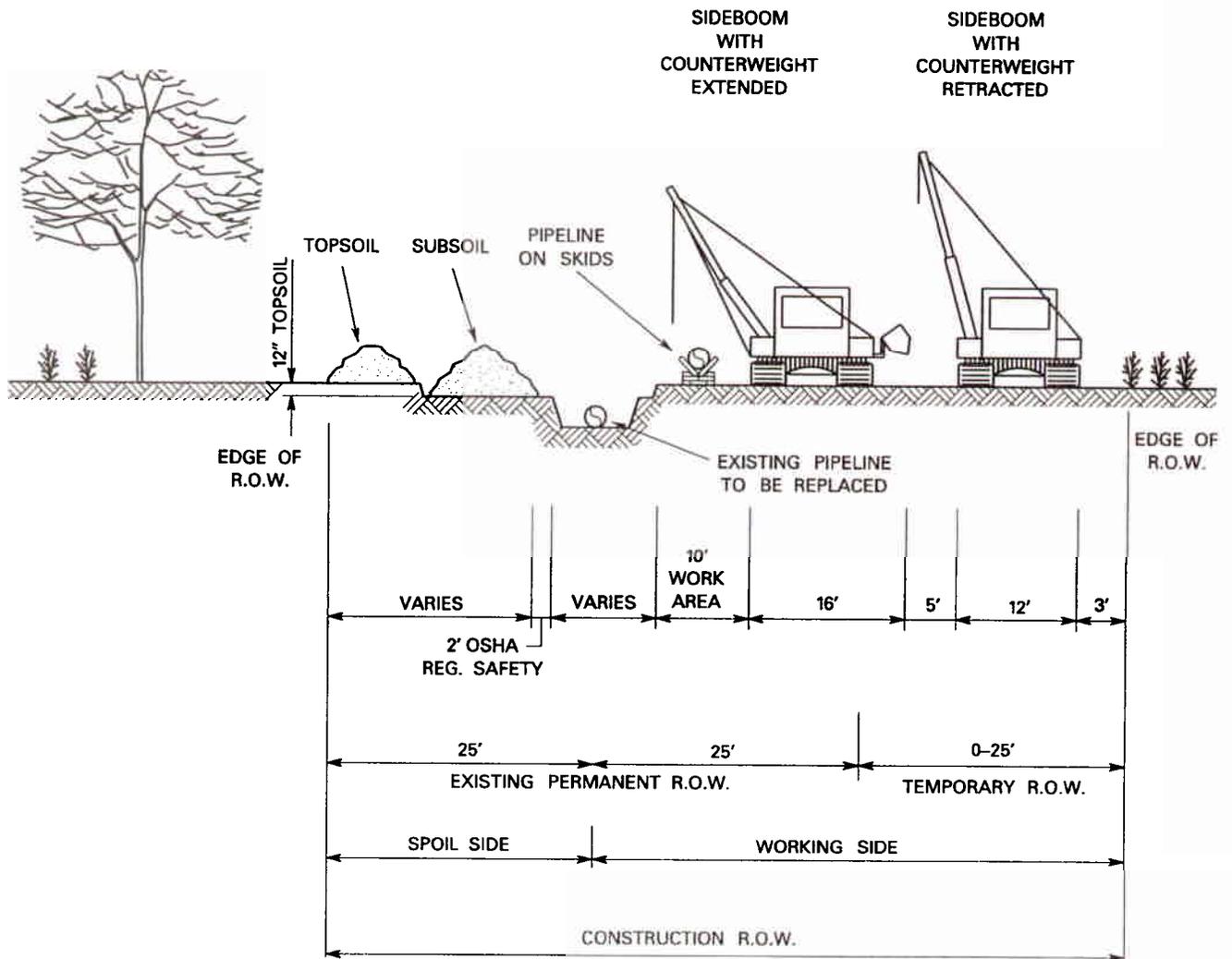
dwg/01/22/2003

I.C. ESE0001.DGN

TYPICAL CONSTRUCTION WIDTHS ACQUIRING
NEW PERMANENT RIGHT-OF-WAY

FIGURE #1

DWG. ES-0001 REV.



PIPE DIAMETER	SPOIL SIDE (FT.)	WORKING SIDE (FT.)	CONSTRUCTION R.O.W. (FT.)
12" OR LESS	25	25	50
14" - 30"	25	50	75
36" - 42"	25	50	75
WETLANDS	25	50	75

NOTES:

1. ALTHOUGH THE DIMENSIONS SHOWN ARE TYPICAL, SOME VARIATIONS MAY EXIST DUE TO SITE SPECIFIC CONDITIONS. UNLESS OTHERWISE INDICATED ON THE ALIGNMENT SHEETS, THE MAXIMUM WIDTH OF THE CONSTRUCTION RIGHT-OF-WAY SHALL BE AS SHOWN IN THE TABLE FOR THE APPROPRIATE PIPE DIAMETER.
2. TOPSOIL AND SUBSOIL SHALL BE SEGREGATED WITHIN WETLAND, RESIDENTIAL, AGRICULTURAL, PASTURES, HAYFIELDS, AND OTHER AREAS AT LANDOWNER'S OR LAND MANAGING AGENCY'S REQUEST.
3. IF THE WORKING SIDE MUST BE GREATER THAN THE VALUES SHOWN IN THE TABLE, COMPANY MUST REQUEST APPROVAL FROM THE F.E.R.C.

dwg/checked
01/22/2003

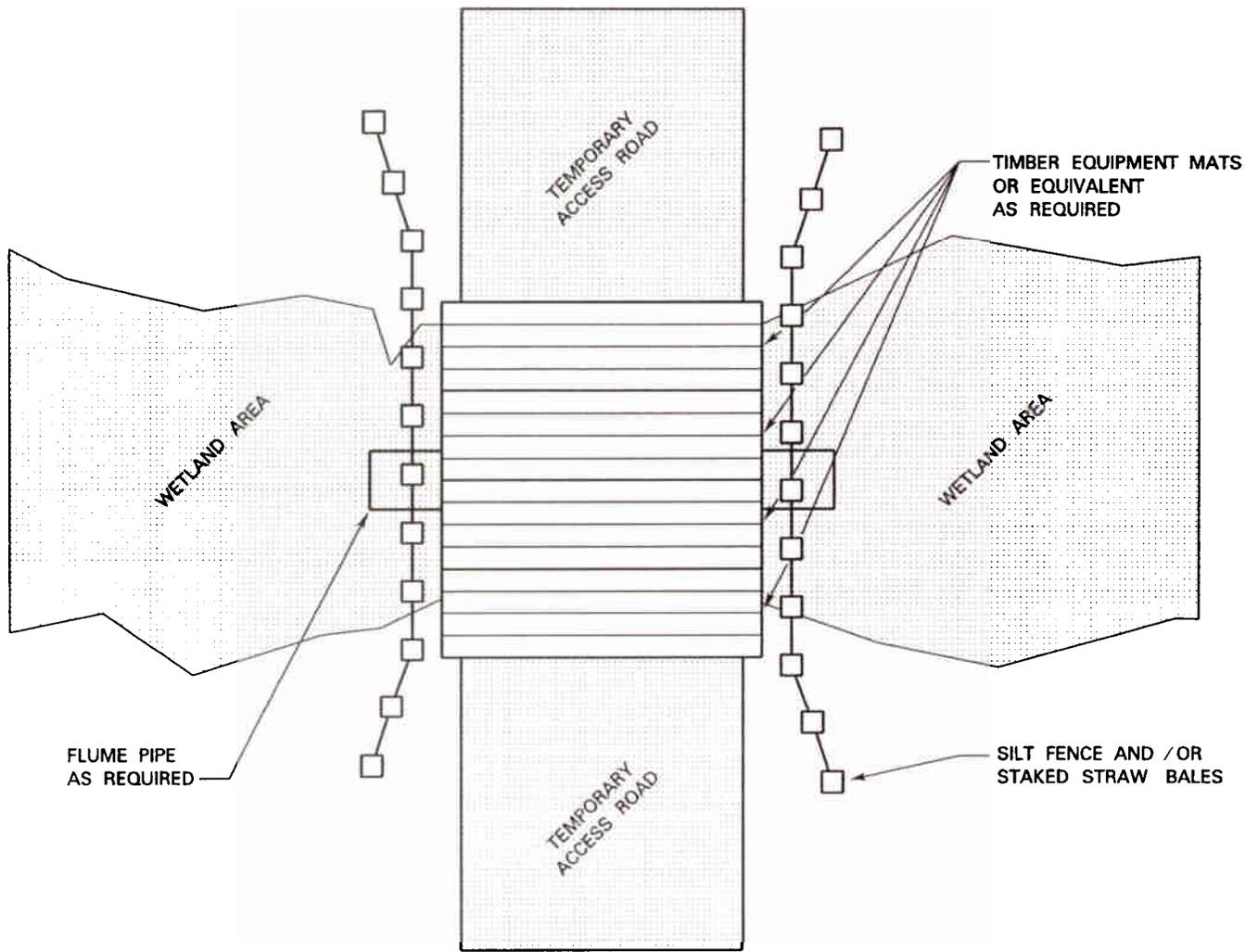
I.C. ESE0003.DGN

TYPICAL CONSTRUCTION WIDTHS NOT ACQUIRING
NEW PERMANENT RIGHT-OF-WAY
(SINGLE LINE SYSTEM)

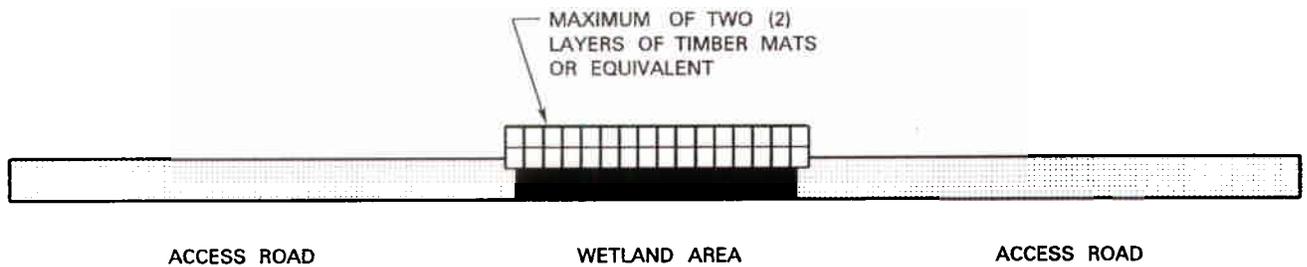
FIGURE #3

DWG. ES-0003

REV.



PLAN VIEW
N.T.S.



CROSS SECTION
N.T.S.

\$\$\$\$\$USERNAME\$\$\$\$\$
\$\$\$\$\$SYTIME\$\$\$\$\$

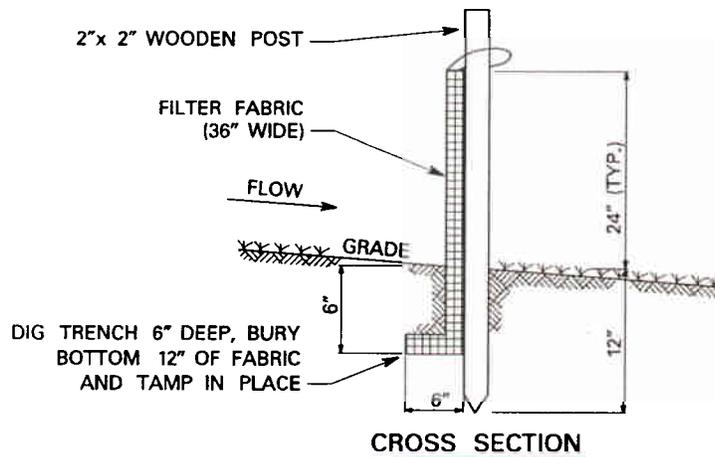
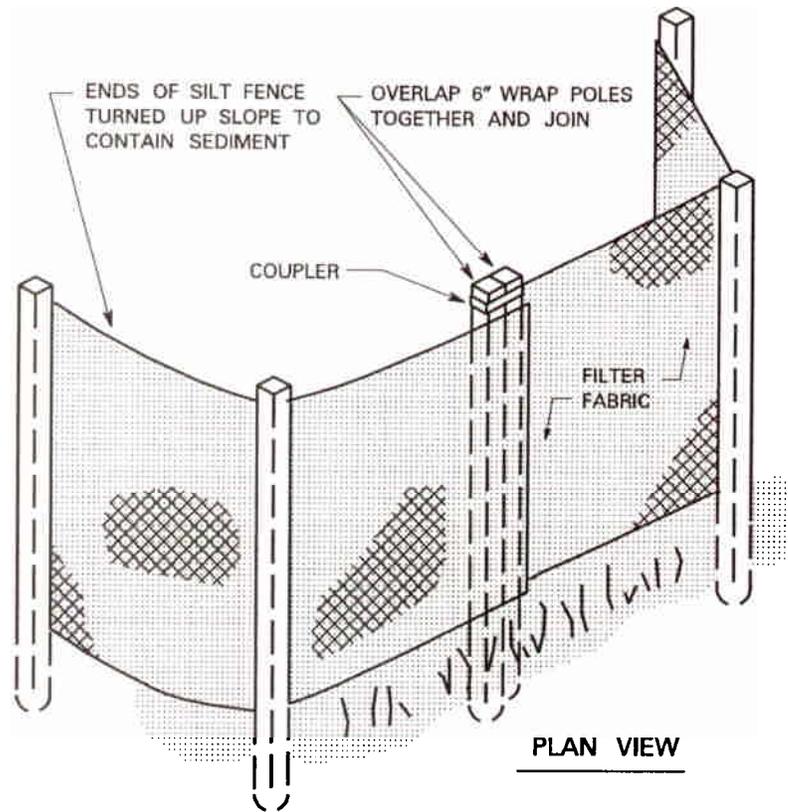
ESE0006.DGN
I.C.

TYPICAL TEMPORARY ACCESS ROAD
THROUGH WETLANDS

FIGURE #6

OWG. ES-0006

REV.



INSTALLATION REQUIREMENTS:

- WHEN USING SILT FENCE, PLACE IT:
 - ◆ BETWEEN DISTURBED AREAS AND DOWN-SLOPE ENVIRONMENTAL RESOURCE AREAS
 - ◆ AT THE BASE OF ALL SLOPES NEXT TO WETLANDS, WATERBODIES, AND ROAD CROSSINGS
 - ◆ AT THE INLET AND OUTLET OF OPEN DRAINAGE STRUCTURES
 - ◆ APPROXIMATELY 6 FEET BEYOND THE TOE OF THE SLOPE TO GIVE THE SEDIMENT ROOM TO COLLECT
- USE SANDBAGS OR BACKFILLING TO KEY IN THE BOTTOM OF THE FABRIC WHERE IT IS NOT FEASIBLE TO TRENCH IT IN (LEDGES, ROCKY SOIL, LARGE ROOTS, ETC.)

MAINTENANCE REQUIREMENTS:

- INSPECT SILT FENCE:
 - ◆ DAILY IN AREAS OF ACTIVE CONSTRUCTION
 - ◆ WEEKLY IN AREAS WITH NO CONSTRUCTION
 - ◆ WITHIN 24 HOURS FOLLOWING EACH MAJOR STORM EVENT
- REPAIR OR REPLACE SILT FENCE AS NEEDED
- REMOVE ACCUMULATED SEDIMENTS TO AN UPLAND AREA AS NEEDED

\$\$\$USERNAME\$\$\$
\$\$\$SYTIME\$\$\$

I.G. ESE0007.01N

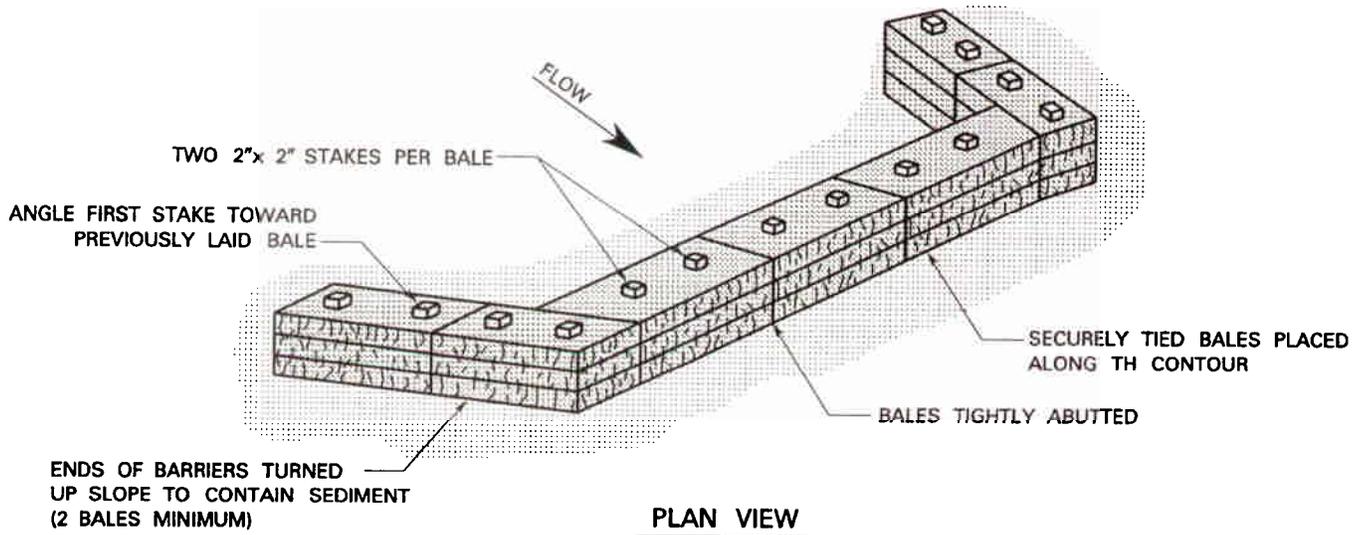
SILT FENCE INSTALLATION AND MAINTENANCE

FIGURE #7

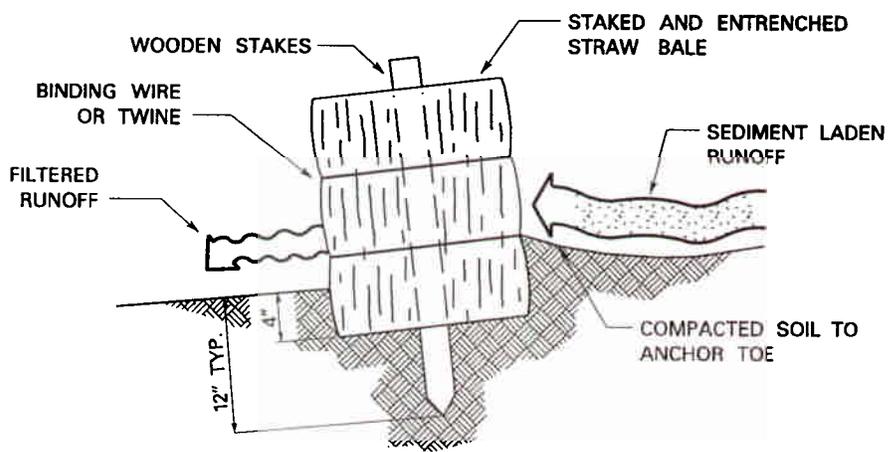
DWG.

ES-0007

REV.



PLAN VIEW



CROSS-SECTION

INSTALLATION REQUIREMENTS:

- WHEN USING STRAW BALES, PLACE THEM:
 - ◆ WITH THEIR ENDS TIGHTLY ABUTTING AND EMBEDDED IN THE SOIL A TYPICAL OF 4".
 - ◆ BETWEEN DISTURBED AREAS AND DOWN-SLOPE ENVIRONMENTAL RESOURCE AREAS.
 - ◆ AT THE BASE OF ALL SLOPES NEXT TO WETLANDS, WATERBODIES, AND ROAD CROSSINGS
 - ◆ AT THE INLET AND OUTLET OF OPEN DRAINAGE STRUCTURES.
 - ◆ APPROXIMATELY 6 FEET BEYOND THE TOE OF THE SLOPE TO GIVE THE SEDIMENT ROOM TO COLLECT.
- KEY IN THE BOTTOM OF THE BALE IN AREAS WHERE IT IS NOT FEASIBLE TO TRENCH IT IN (LEDGES, ROCKY SOIL, LARGE TREE ROOTS, ETC.), USE NATIVE SOIL AS BACKFILL UP-SLOPE OF THE BALE.
- IF USED IN CONJUNCTION WITH SILT FENCE, BALES ARE PLACED UPSLOPE OF THE SILT FENCE AND DO NOT NEED TO BE TRENCHED IN.

MAINTENANCE REQUIREMENTS:

- INSPECT BALES:
 - ◆ DAILY IN AREAS OF ACTIVE CONSTRUCTION.
 - ◆ WEEKLY IN AREAS WITH NO CONSTRUCTION.
 - ◆ WITHIN 24 HOURS FOLLOWING EACH MAJOR STORM EVENT.
- REPAIR OR REPLACE BALES AS NEEDED.
- REMOVE ACCUMULATED SEDIMENTS TO AN UPLAND AREA AS NEEDED.

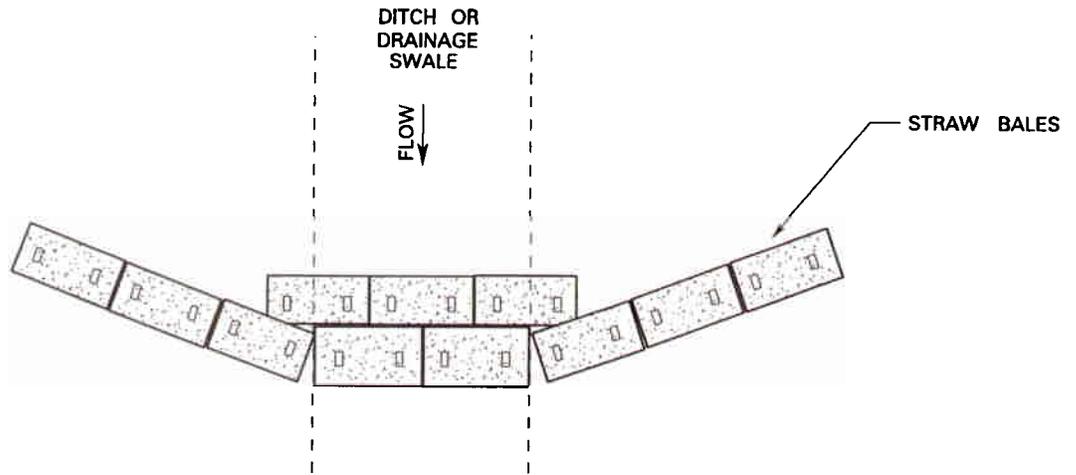
\$\$\$ USERNAME \$\$\$
\$\$\$ CTIME \$\$\$

I.G. ESE0008.DGN

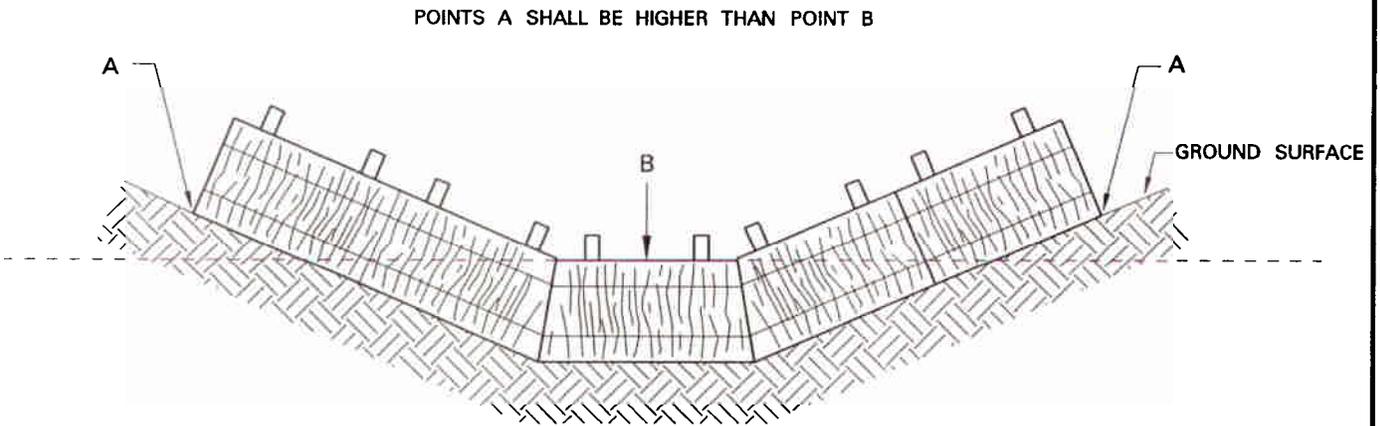
STRAW BALE INSTALLATION AND MAINTENANCE

FIGURE #8

DWG. **ES-0008** REV.



PLAN VIEW
N.T.S.



CROSS-SECTION
N.T.S.

\$\$\$ USERNAME \$\$\$
\$\$\$ SYSTEM \$\$\$

16.ESE0009.DGN

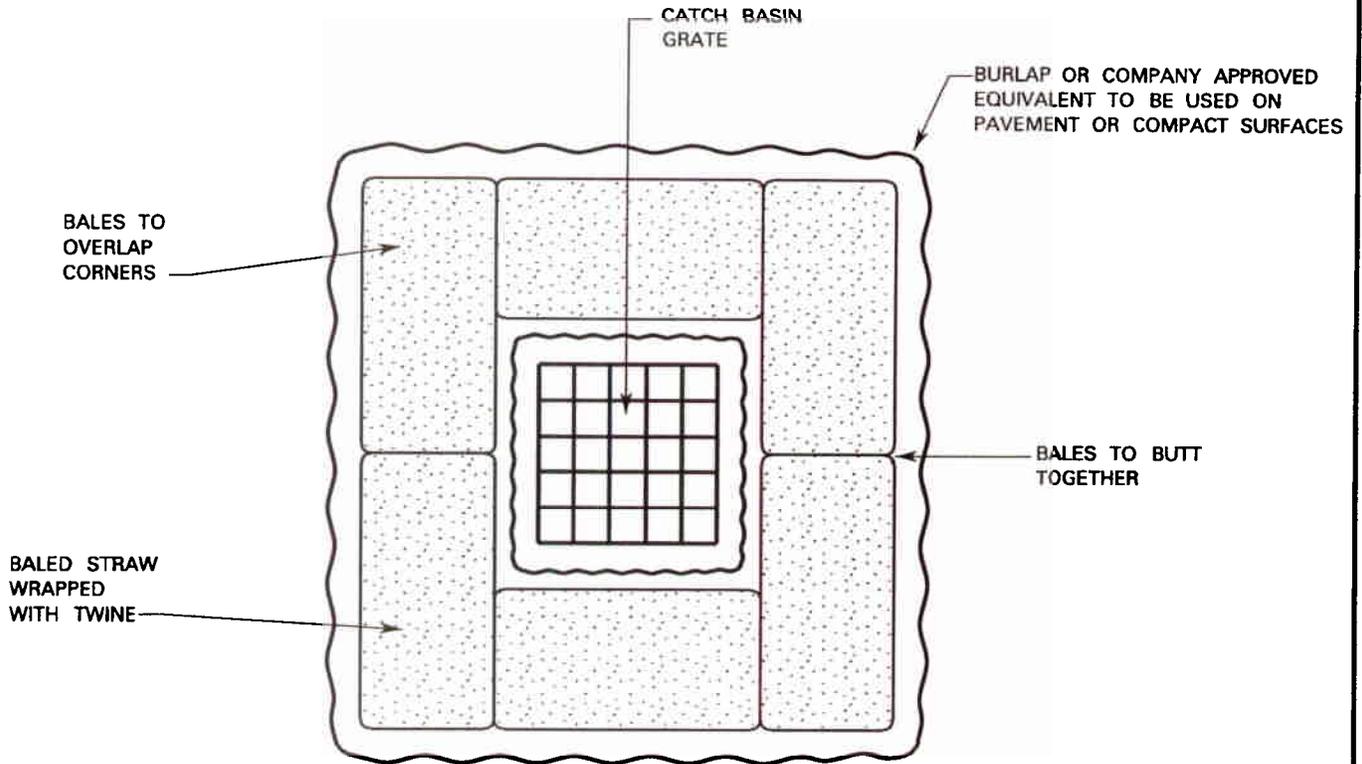
STRAW BALE INSTALLATION
FOR A CHECK DAM IN A
DRAINAGE WAY

FIGURE #9

DWG.

ES-0009

REV.



1. SURROUND STREET DRAINAGE STRUCTURE INLET WITH BALES PRIOR TO CONSTRUCTION AND MAINTAIN UNTIL CONSTRUCTION IS COMPLETED.
2. FOR BALES PLACED ON PAVEMENT (OR COMPACT SURFACES), PLACE BURLAP OR COMPANY APPROVED EQUIVALENT BETWEEN PAVEMENT AND BALE.
3. REMOVE ACCUMULATED SEDIMENT.

\$\$\$ \$ USERNAME \$\$\$
 \$\$\$ \$ SYTIME \$\$\$

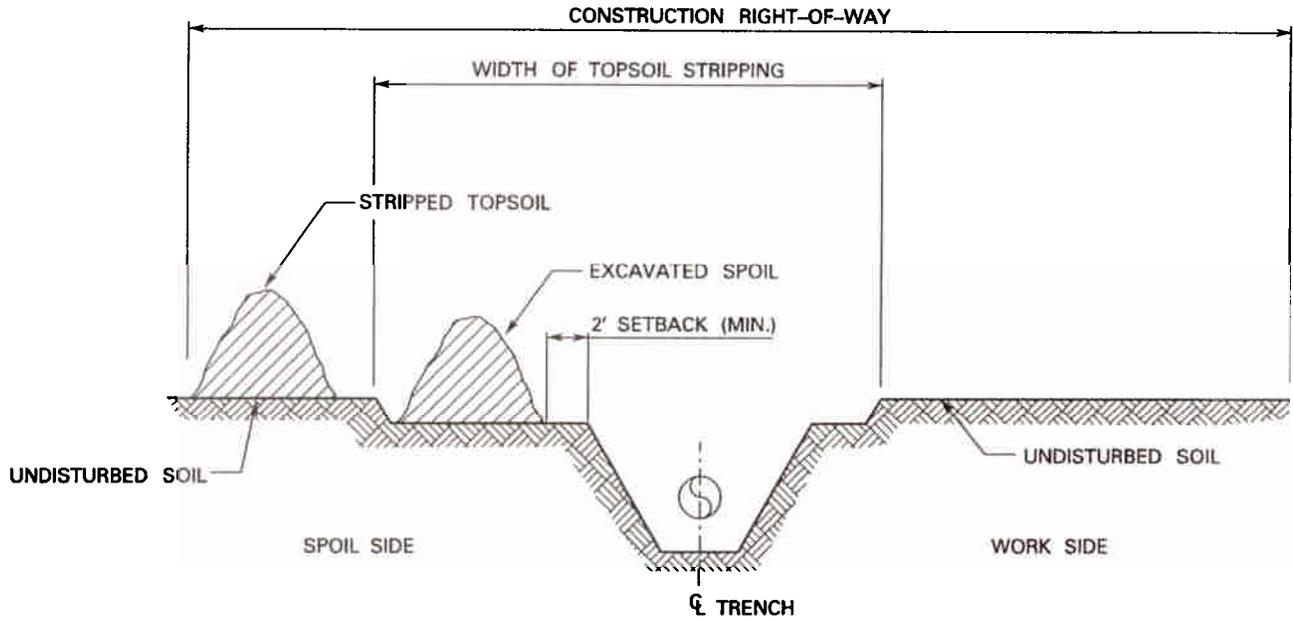
I.C. ESE0010.DGN

STORM DRAIN INLET PROTECTION

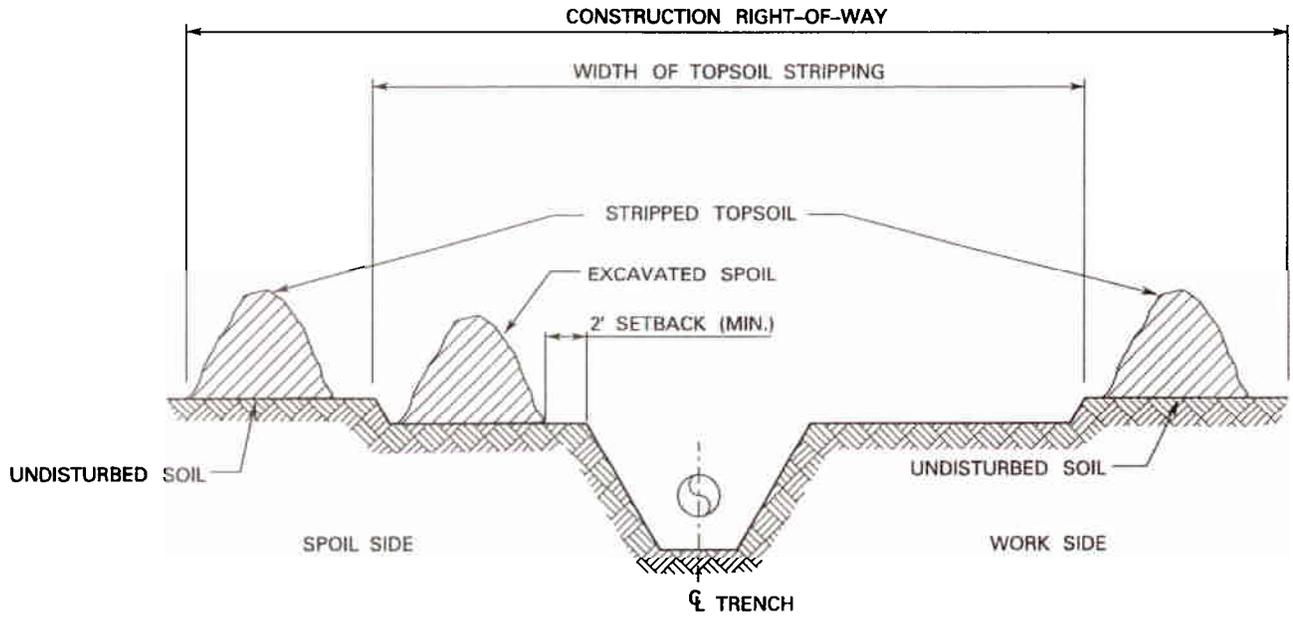
FIGURE #10

DWG. ES-0010

REV.



DITCH PLUS SPOILSIDE TOPSOIL SEGREGATION



FULL RIGHT-OF-WAY TOPSOIL STRIPPING

NOTES:

1. TOPSOIL MAY BE STORED IN LOCATIONS AS SHOWN ABOVE, OR AT OTHER COMPANY APPROVED LOCATIONS WITHIN THE CONSTRUCTION R.O.W.
2. LEAVE GAPS IN SPOIL PILES FOR WATER RUN-OFF.
3. R.O.W. MAY BE EXPANDED UP TO 25' IN NON WETLAND AREAS FOR FULL R.O.W. TOPSOIL SALVAGE.

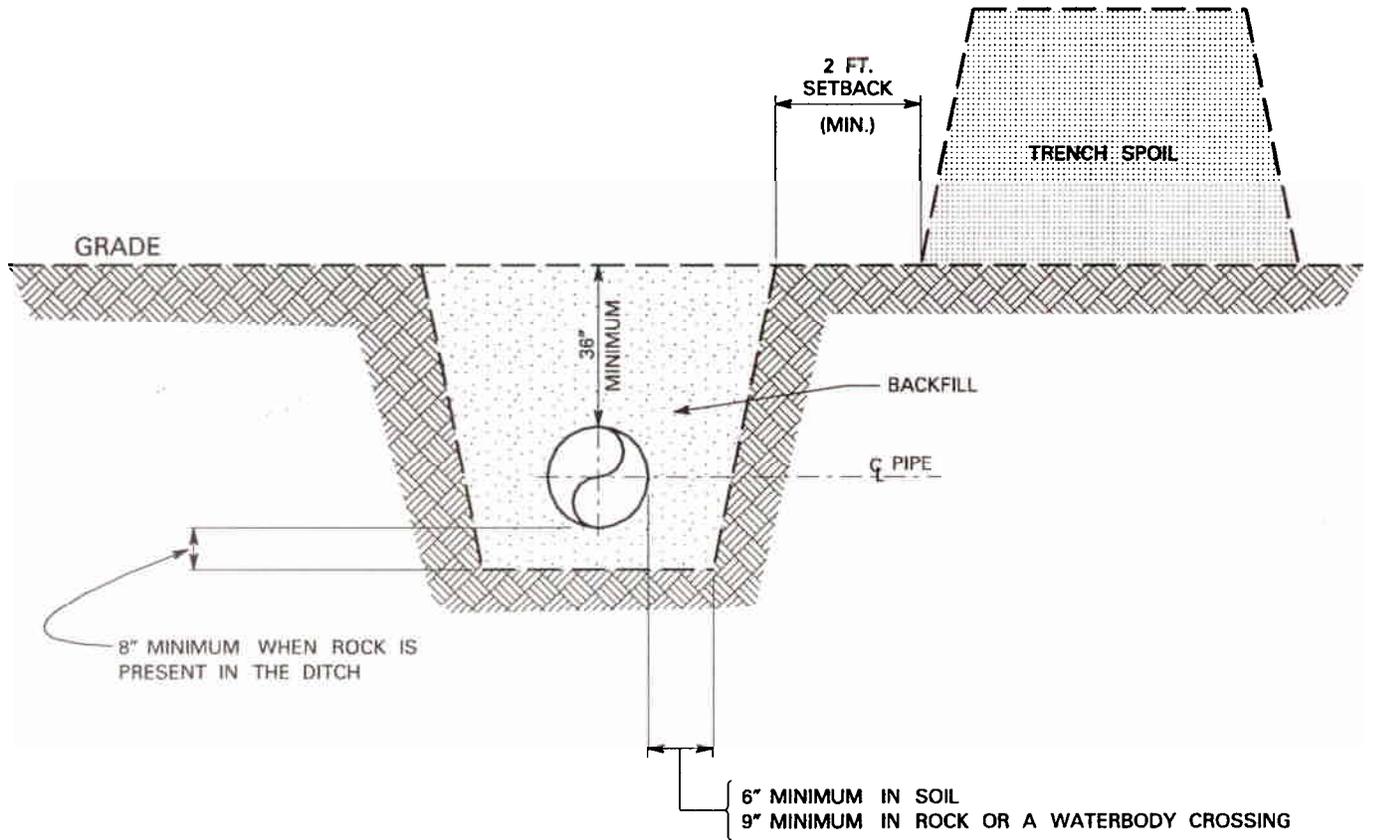
I.C. ESE0011.DGN 01/22/2003

R.O.W. TOPSOIL SEGREGATION TECHNIQUES

FIGURE #11

DWG. **ES-0011**

REV.



CROSS-SECTION VIEW OF TYPICAL TRENCH

NOTES:

1. ALL ORIGINAL CONTOURS WILL BE RE-ESTABLISHED UPON COMPLETION OF PIPE INSTALLATION. EXCEPT IN WETLANDS, A CROWN MAY BE LEFT TO ACCOUNT FOR DITCH SETTLING, AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
2. IN COLD WATER FISHERY STREAMS, THE TOP 12" OF THE TRENCH WILL BE BACKFILLED WITH CLEAN GRAVEL OR NATIVE COBBLES.

\$\$\$ USERNAME \$\$\$
 \$\$\$ SYSTEM \$\$\$
 \$\$\$

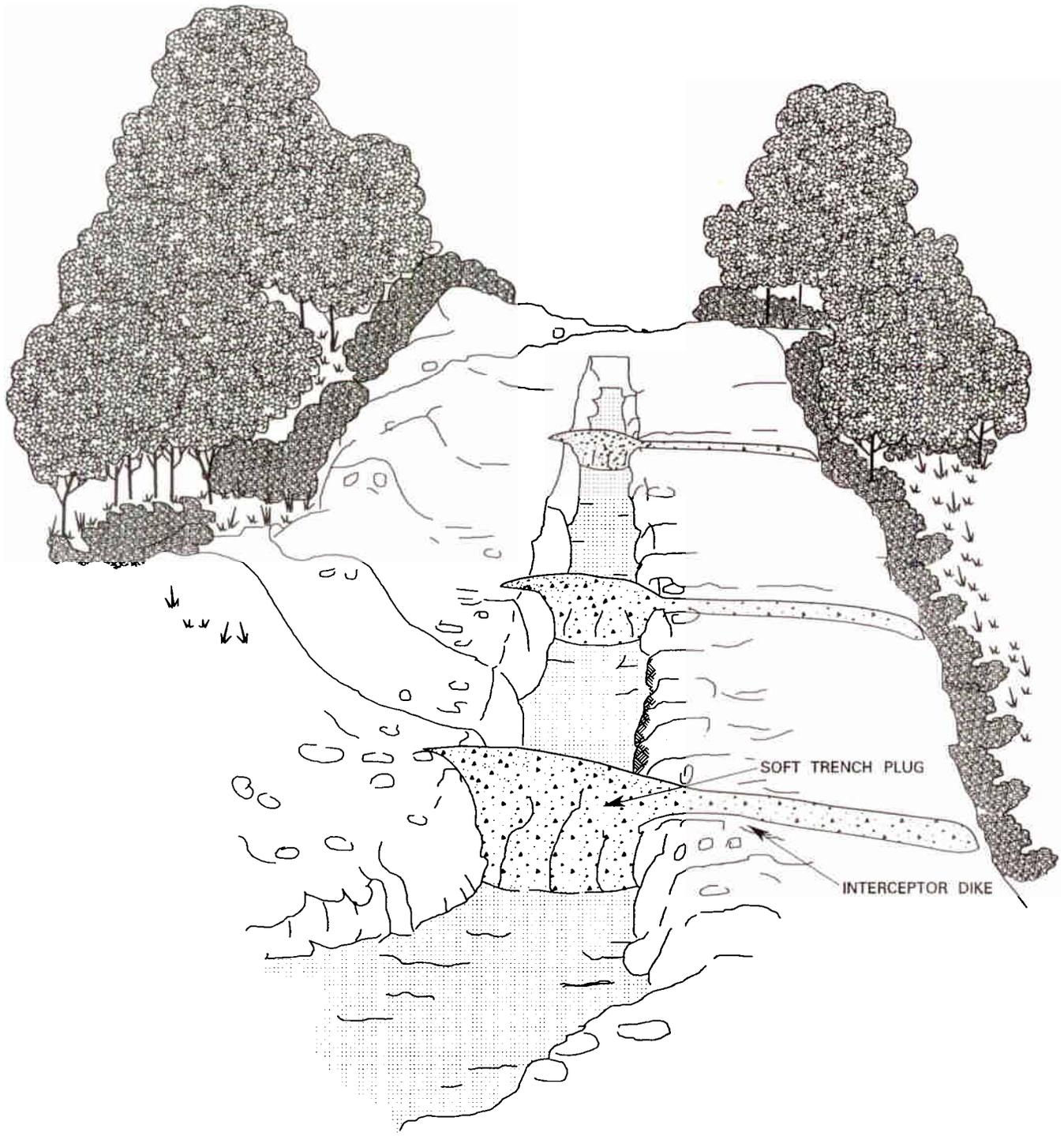
I.C. ESE0013.DGN

FIGURE #13

TYPICAL TRENCH DETAIL

DWG. ES-0013

REV.



NOTES:

1. TEMPORARY TRENCH PLUGS MAY BE USED IN CONJUNCTION WITH INTERCEPTOR DIKES TO PREVENT WATER FROM OVERFLOWING INTO SENSITIVE RESOURCE AREAS.
2. DIVERT TRENCH OVERFLOW TO A WELL-VEGETATED OFF-R.O.W. LOCATION OR INSTALL APPROPRIATE ENERGY DISSIPATING DEVICE.

11/22/2003

I.C. ESE0014.DGN

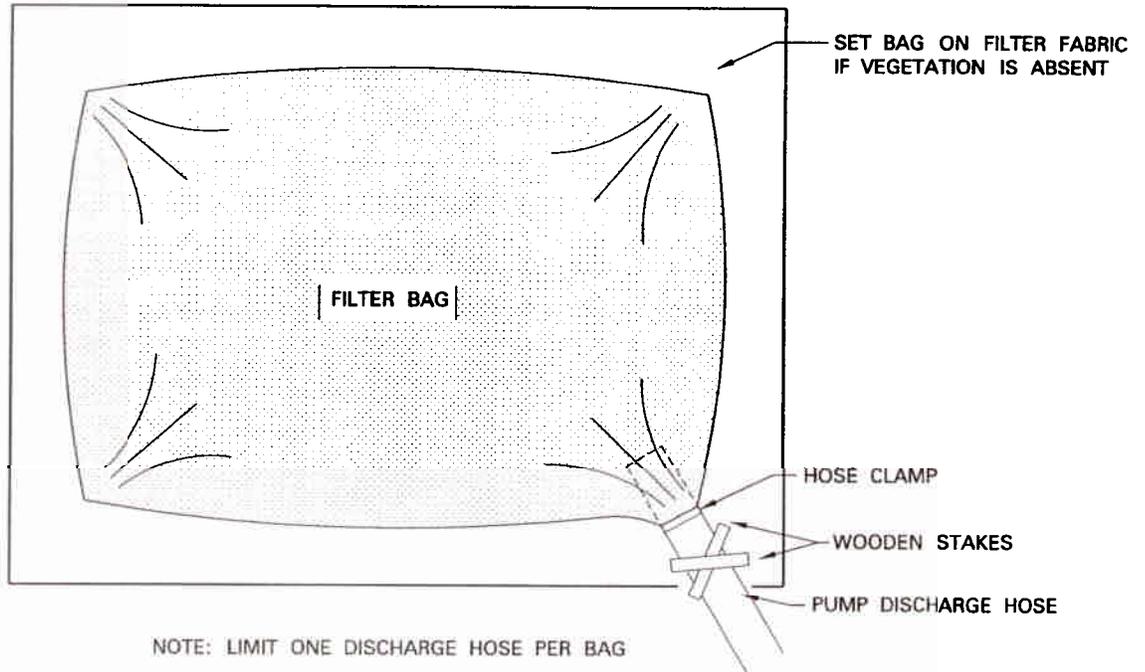
TEMPORARY TRENCH PLUGS

FIGURE #14

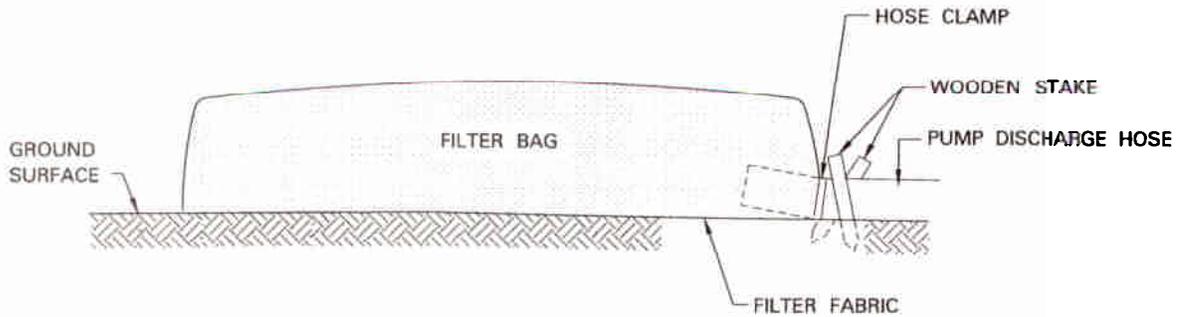
DWG.

ES-0014

REV.



PLAN VIEW



CROSS-SECTION

NOTES:

1. REMOVE DEWATERING STRUCTURE AS SOON AS POSSIBLE AFTER COMPLETION OF DEWATERING ACTIVITIES.

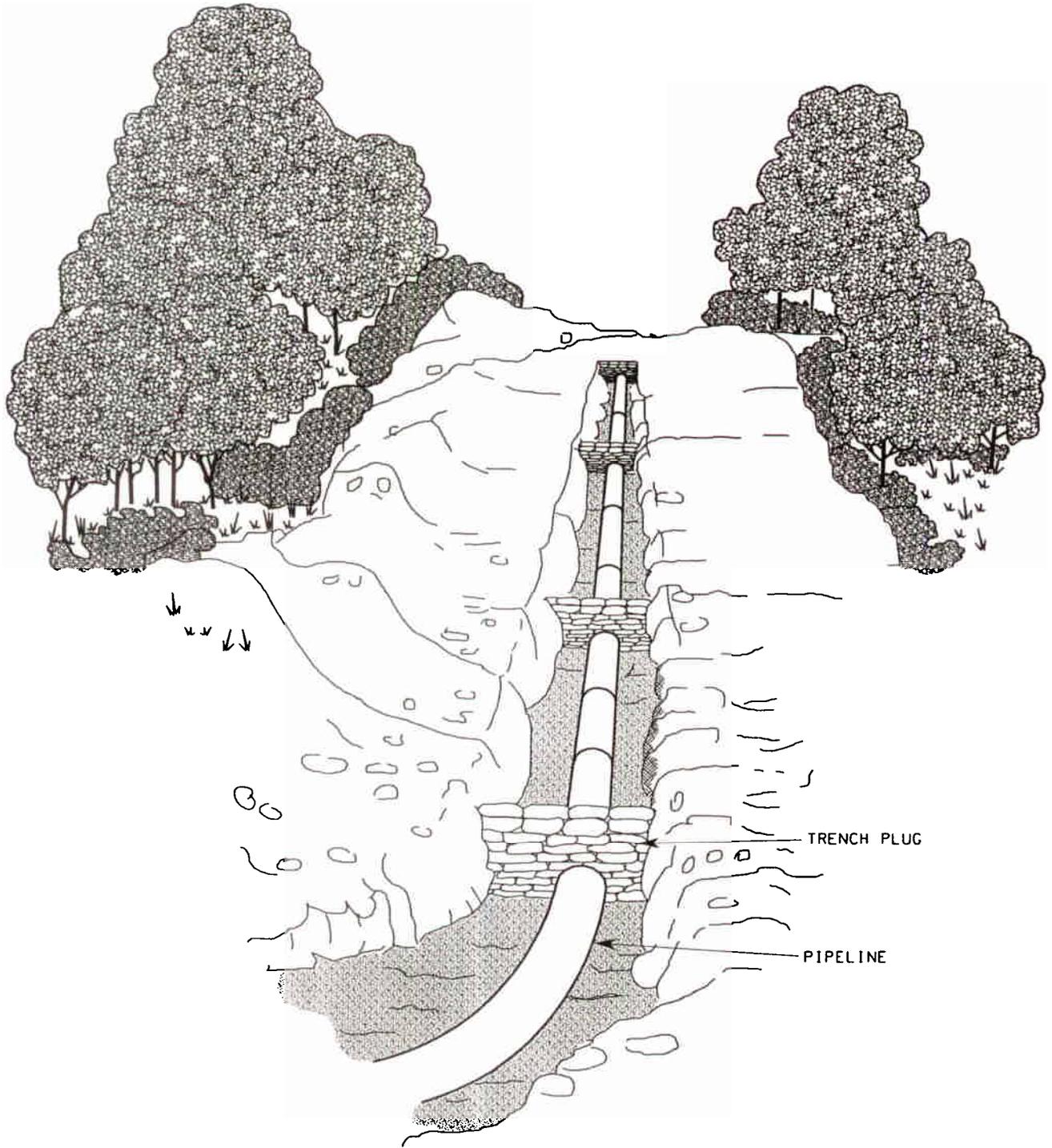
i.c. ESE0015. dgn

FILTER BAG

FIGURE #15

DWC. ES-0015

REV.



SLOPE (%)	SPACING (FT)
5-15	300
> 15-30	200
> 30	100

\$\$\$\$\$USERNAME\$\$\$\$\$
\$\$\$\$\$SYTIME\$\$\$\$\$

I.C. ESE0016.DGN

PERMANENT TRENCH PLUGS

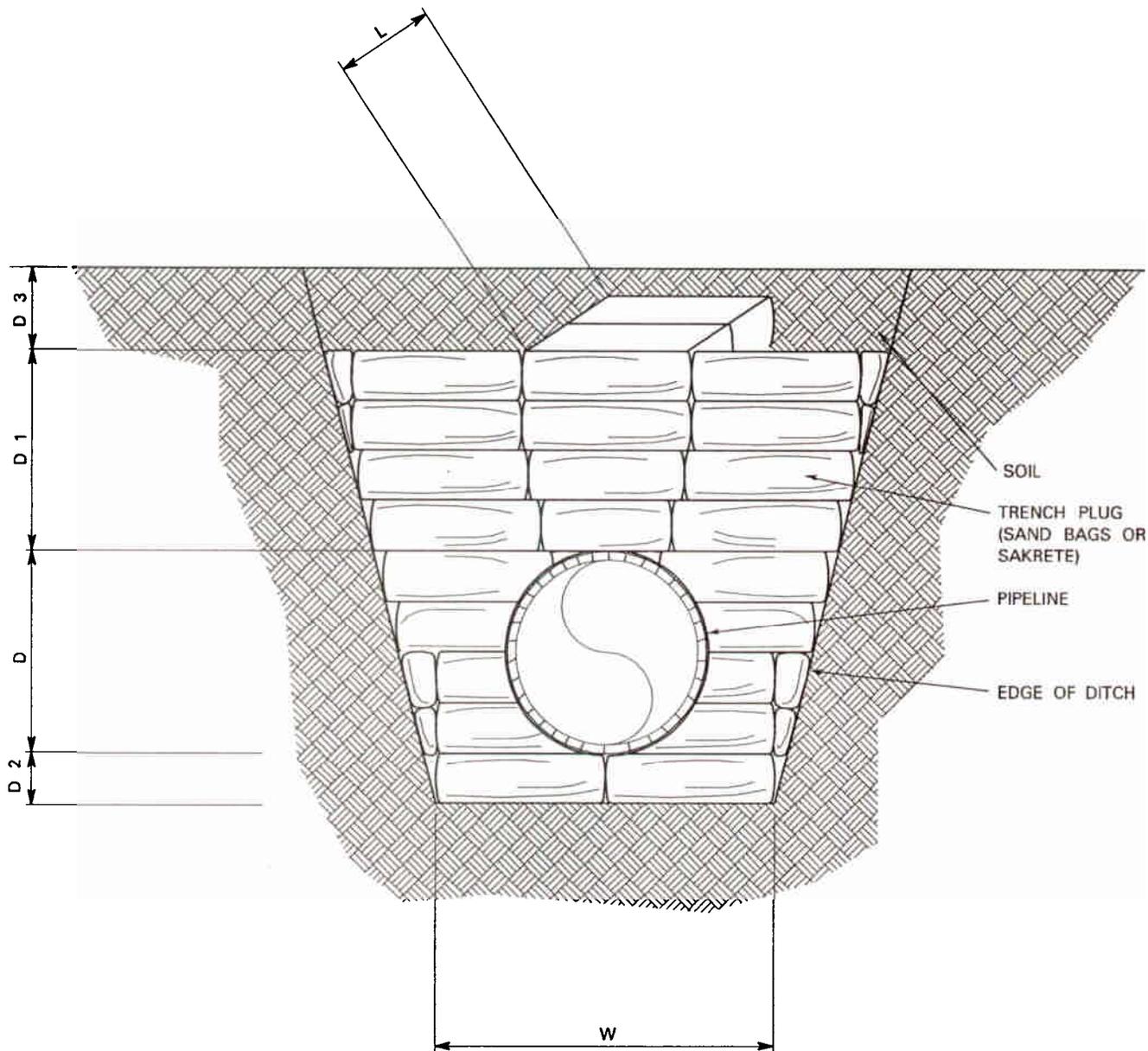
FIGURE #16

DWG. ES-0016

REV.

\$\$\$USERNAME\$\$\$
\$\$\$SYTIME\$\$\$

I.C. ESE0017.DGN



D = PIPE DIAMETER
D1 = APPROXIMATELY 24"
D2 = APPROXIMATELY 6" (8" MIN. IN ROCK)
D3 = APPROXIMATELY 12"
W = D + 2 to 4 FEET
L = APPROXIMATELY 18" - 24"
D1 + D3 = 36" MINIMUM

NOTE:

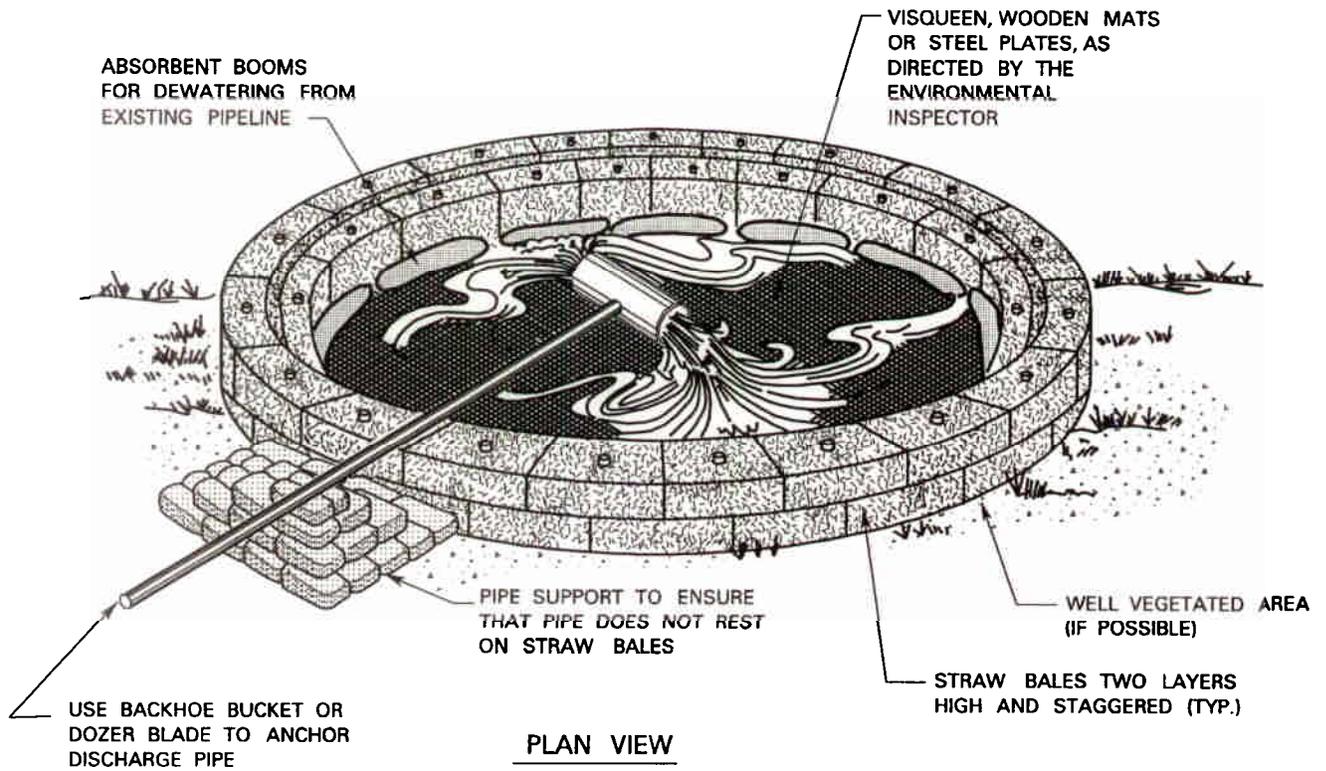
USE OF SAKRETE SHALL REQUIRE PRIOR COMPANY APPROVAL.

TRENCH PLUG DETAIL

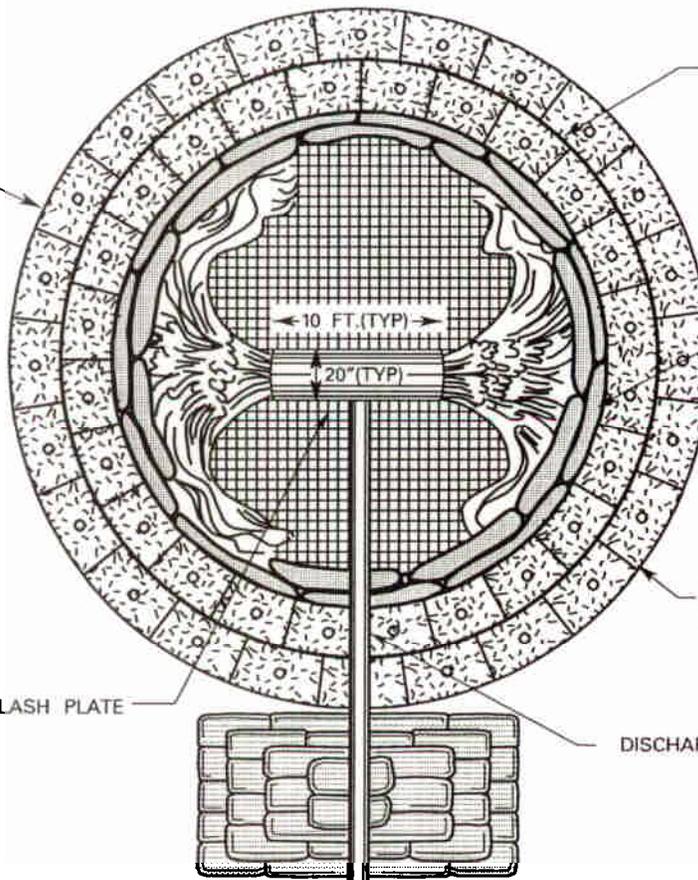
FIGURE #17

DWG. ES-0017

REV.



30-35 FT. INSIDE DIA. (TYP.)
OR AS DIRECTED BY THE
ENVIRONMENTAL
INSPECTOR



TOP VIEW

DEWATERING STRUCTURE FOR
HYDROSTATIC TESTING

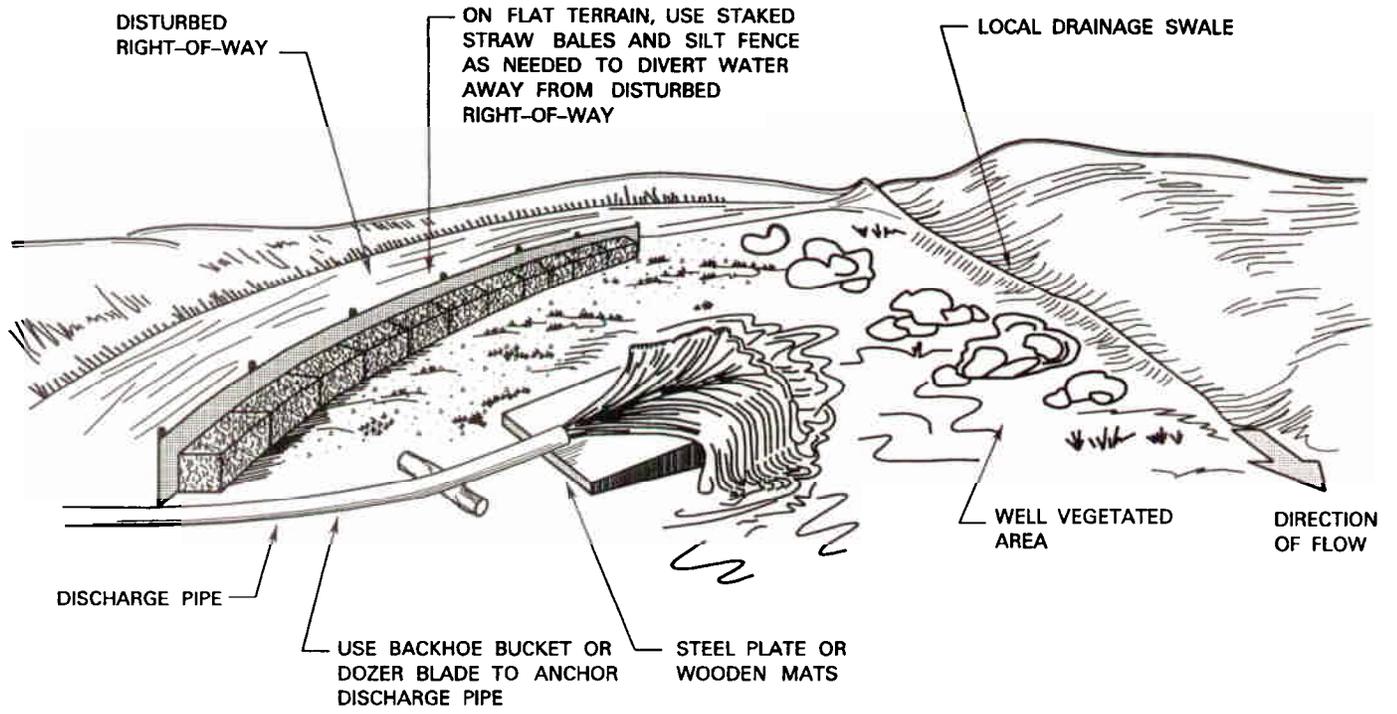
FIGURE #18

DWG. ES-0018

REV.

\$\$\$USERNAME\$\$\$
\$\$\$CUTTIME\$\$\$

I.C. ESE0018.DWG



NOTE:

1. THIS DEWATERING STRUCTURE CAN ONLY BE USED FOR SMALL DISCHARGES FROM NEW PIPELINES WHEN A HYDROSTATIC TEST PACKAGE HAS NOT BEEN ISSUED. IT IS SUBJECT TO APPROVAL BY THE ENVIRONMENTAL INSPECTOR.

\$\$\$ USERNAME \$\$\$
 \$\$\$ SYTIME \$\$\$

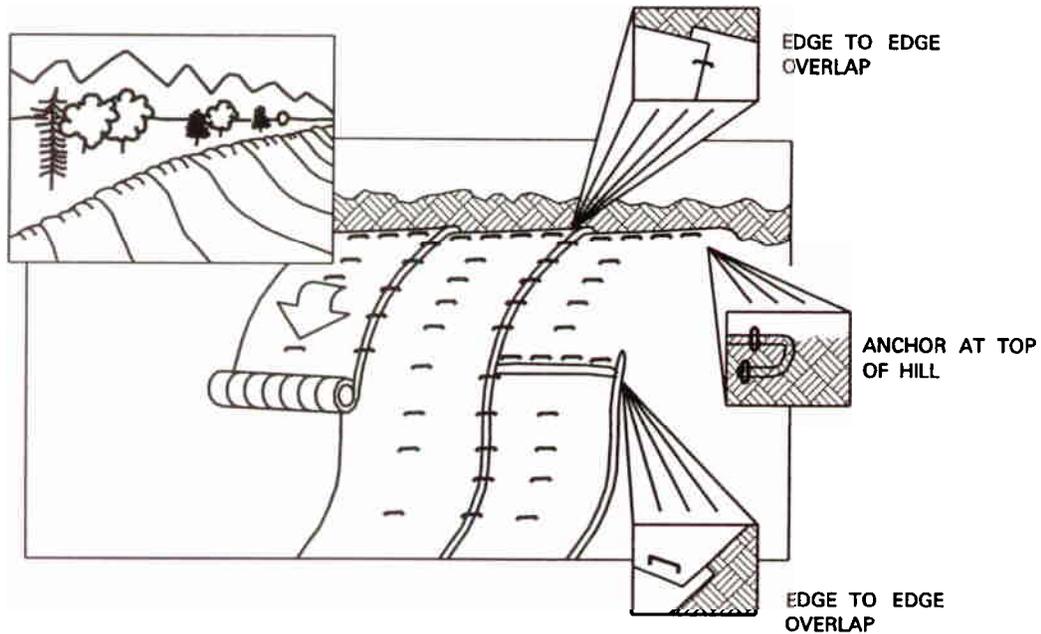
I.C. ESE0019.DGN

ALTERNATE
 DEWATERING STRUCTURE FOR
 HYDROSTATIC TESTING

FIGURE #19

DWG. ES-0019

REV.



NOTES:

1. EROSION CONTROL MATTING (BLANKETS) SHALL BE USED AT LOCATIONS IDENTIFIED IN THE PLAN AND/OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
2. EROSION CONTROL MATTING SHALL MEET THE REQUIREMENTS SPECIFIED IN THE PLAN AND/OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
3. STAPLES SHALL BE MADE OF 11 GAUGE WIRE, U-SHAPED WITH 6" LEGS AND A 1" CROWN. STAPLES SHALL BE DRIVEN INTO THE GROUND FOR THE FULL LENGTH OF THE STAPLE LEGS.
4. MATTING SHALL BE INSTALLED ACCORDING TO MANUFACTURER SPECIFICATIONS OR AS STATED BELOW:
 - EXTEND TOP OF BLANKET 3 FEET PAST THE UPPER EDGE OF THE SLOPE.
 - ANCHOR ("KEY") THE UPPER EDGE OF THE BLANKET INTO THE SLOPE USING A 6" DEEP TRENCH AND ROLL THE BLANKET DOWN THE HILL. DOUBLE STAPLE EVERY 12" BEFORE BACKFILLING AND COMPACTING TRENCH.
 - AVOID STRETCHING EROSION CONTROL MATTING (LOOSELY) DURING INSTALLATION.
 - BRING MAT ROLL BACK OVER THE TOP OF THE TRENCH AND CONTINUE TO ROLL DOWN SLOPE. STAPLE EVERY 12" WHERE MAT EXITS THE TRENCH AT THE TOP OF THE SLOPE.
 - WHEN BLANKETS ARE SPLICED DOWN-SLOPE TO ADJOINING MATS (SLOPE OR STREAM BANK MATS), THE UPPER BLANKET SHALL BE PLACED OVER THE LOWER MAT (SHINGLE STYLE) WITH APPROXIMATELY 6" OF OVERLAP. STAPLE THROUGH THE OVERLAPPED AREA EVERY 12".
 - OVERLAP ADJACENT BLANKETS 6". STAPLE EDGES OF BLANKETS AND CENTER EVERY 36".
5. IN LIVESTOCK AREAS WHERE EROSION CONTROL MATTING IS APPLIED TO THE SLOPES, FENCING WILL BE USED IF NECESSARY TO EXCLUDE LIVESTOCK, WITH PERMISSION OF THE LANDOWNER.
6. MONITOR WASHOUTS, STAPLE INTEGRITY OR MAT MOVEMENT. REPLACE OR REPAIR AS NECESSARY.

\$\$\$\$\$USERNAME\$\$\$\$\$
\$\$\$\$\$SYTIME\$\$\$\$\$

I.C. ESE0022.DGN

TYPICAL MATTING ON SLOPES

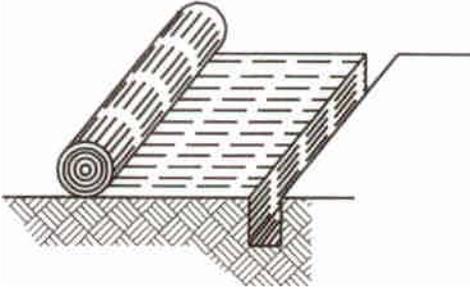
FIGURE #22

DWG.

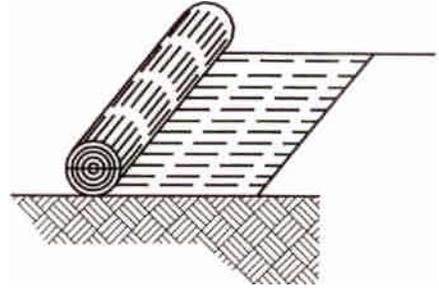
ES-0022

REV.

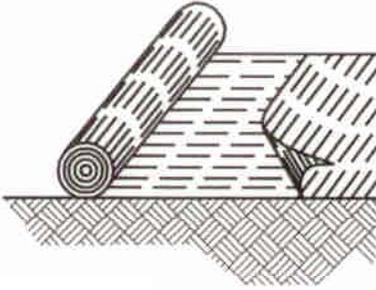
A. BURY THE TOP END OF THE JUTE STRIPS
IN A 6" TRENCH (TYPICAL)



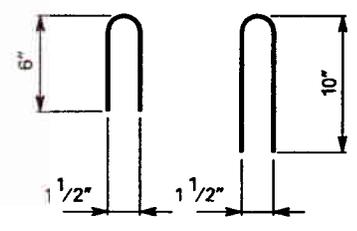
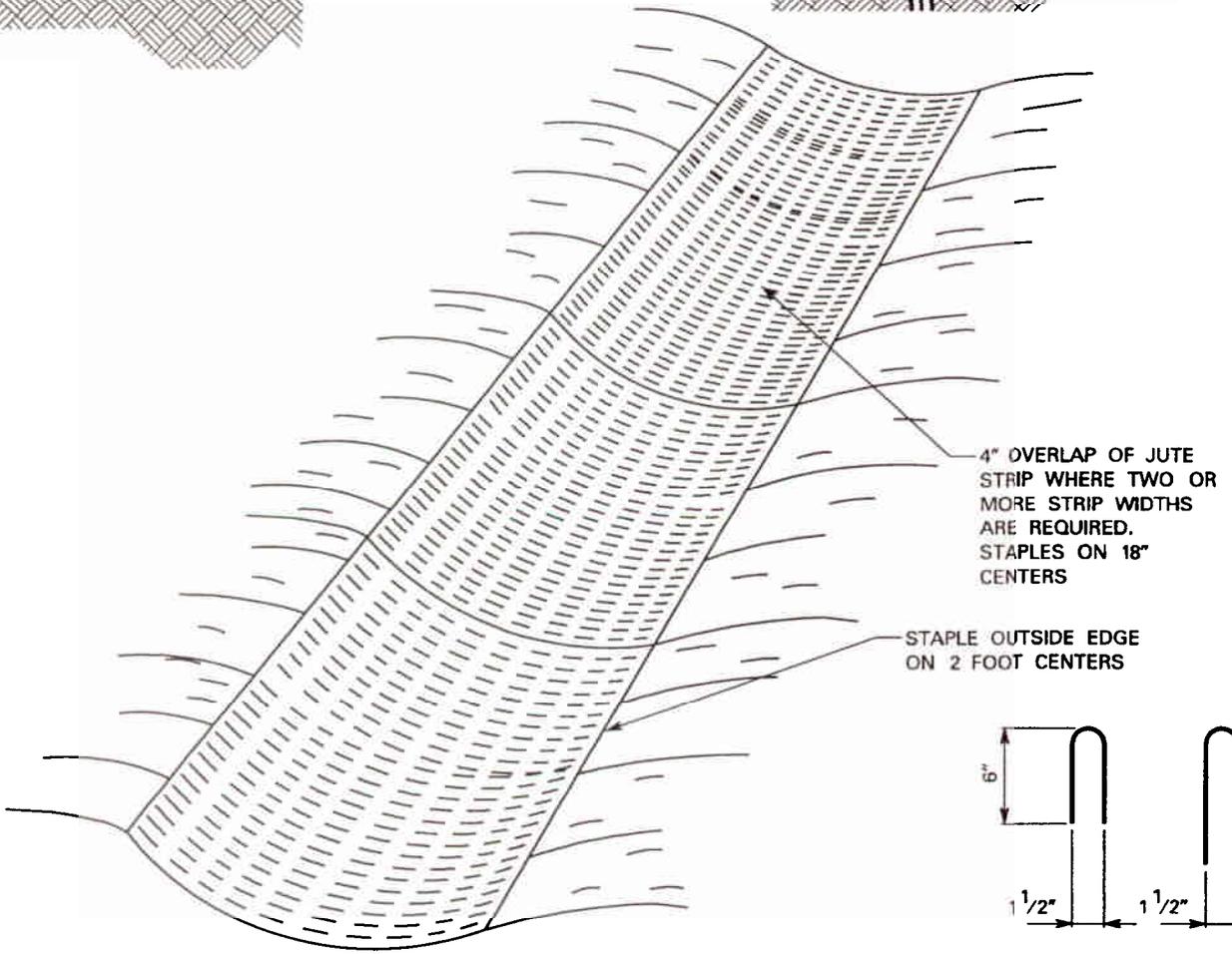
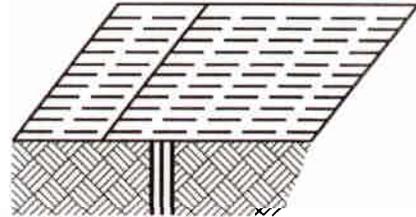
B. DOUBLE STAPLE EVERY 12" BEFORE
BACKFILLING AND COMPACTING.



C. BURY AND TAMP UPPER END OF LOWER
STRIP AS IN "A" AND "B". OVERLAP END
OF TOP STRIP 4" AND STAPLE.



D. WHERE FABRIC STOPS, FOLD, BURY,
AND TAMP JUTE STRIPS IN SLIT TRENCH.
PROVIDE DOUBLE ROW OF STAPLES



TYPICAL STAPLES
NO. 11 GAUGE WIRE

\$\$\$ USERNAME \$\$\$
\$\$\$ SYTIME \$\$\$

I.C. ESE0023. DCN

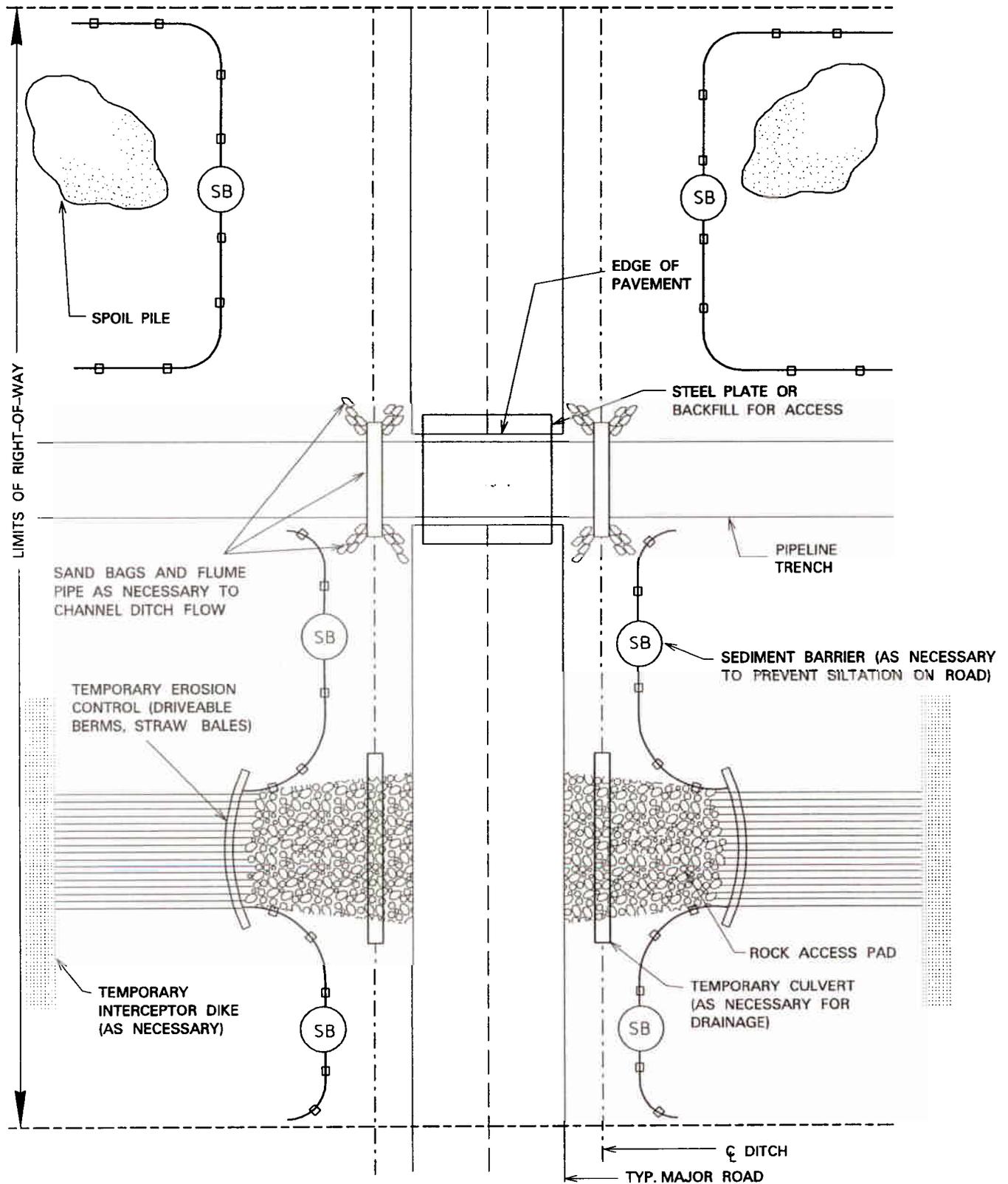
EROSION CONTROL FABRIC
INSTALLATION

FIGURE #23

OWG. ES-0023 REV.

\$\$\$\$\$USERNAME\$\$\$\$\$
\$\$\$\$\$SYTIME\$\$\$\$\$

I.C. ESE0025.DGN



(SB) TEMPORARY SEDIMENT BARRIER OF SILT FENCE AND /OR STRAW BALES

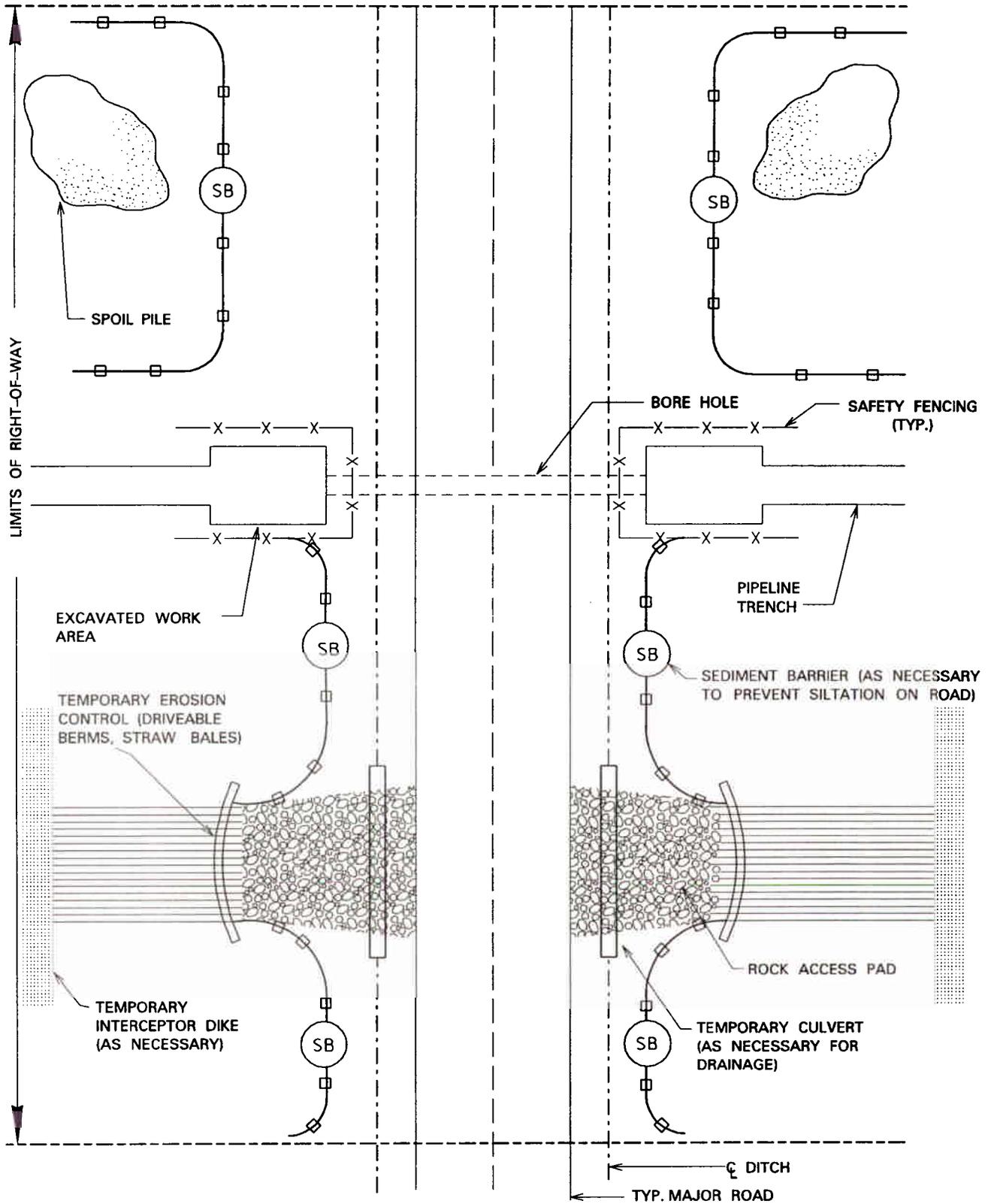
TYPICAL PAVED ROAD CROSSING
CONTROL MEASURES (OPEN CUT)

FIGURE #25

DWG.

ES-0025

REV.



\$\$\$ USERNAME \$\$\$
 \$\$\$ SYTIME \$\$\$

I.C. E5E0026. DGN

SB TEMPORARY SEDIMENT BARRIER OF SILT FENCE AND /OR STRAW BALES

TYPICAL PAVED ROAD CROSSING CONTROL MEASURES (BORED)

FIGURE #26

DWG.

ES-0026

REV.