Appendix A: Maps and Construction Typicals

Attachment A: Project Route Maps and Plans Provided under Separate Cover

On July 23, 2010, Ruby filed with FERC a set of revised 7.5-minute USGS topographic maps showing the most recent alignment for the proposed Ruby Pipeline Project.
NOTE:

1. THE REQUIRED SET BACK FOR ADDITIONAL WIDTH WORK SPACE IS 50 FEET FROM TOP OF BANK UNLESS APPROVED OTHERWISE BY THE APPROPRIATE AGENCIES.
2. A 10' VEGETATION BUFFER WILL BE MAINTAINED BETWEEN THE BANK AND TWS.
3. THE MINIMUM REQUIRED SETBACK FOR SPOIL PILE IS 10 FEET FROM THE TOP OF BANK.
4. EQUIPMENT BRIDGE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.
5. WEED-FREE STRAW BALES, SAND BAGS, DRIVABLE BERRMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY AT THE EDGE OF EQUIPMENT BRIDGE.
CROSS-SECTION OF PIPELINE CONSTRUCTION RIGHT-OF-WAY OPEN FLAT COUNTRY

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.

2. TOPSOIL IS TO BE STRIPPED OVER THE DITCH AND SPOIL SIDE EXCEPT AS NOTED BELOW.

3. TOPSOIL IS TO BE STRIPPED ACROSS THE ENTIRE RIGHT-OF-WAY WHEN GRADING IS REQUIRED, IN NOXIOUS WEED AREAS, AT LANDOWNER REQUEST AND/OR AS REQUIRED BY THE ENVIRONMENTAL INSPECTOR.

4. TOPSOIL IS TO BE SEGEDERATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.

5. IN ACCORDANCE WITH RUBY'S UPLAND CONTROL, REVEGETATION AND MAINTENANCE PLAN AND WITH LANDOWNER APPROVAL, A 25 FOOT WIDE AREA ADJACENT TO THE WORKING SIDE OF THE RIGHT-OF-WAY THAT IS TO REMAIN UNDISTURBED WILL BE UTILIZED FOR TEMPORARY SLASH AND TIMBER STORAGE. SNOW MAY ALSO BE PLACED IN THIS AREA.
CROSS-SECTION OF PIPELINE CONSTRUCTION
RIGHT-OF-WAY — WORKING SIDE
ADJACENT TO PIPELINE OR CABLE
(50’ C/L TO C/L)

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.

2. TOPSOIL IS TO BE STRIPPED OVER THE DITCH AND SPOIL SIDE EXCEPT AS NOTED BELOW.

3. TOPSOIL IS TO BE STRIPPED ACROSS THE ENTIRE RIGHT-OF-WAY WHEN GRADING IS REQUIRED, IN NOXIOUS WEED AREAS, AT LANDOWNER REQUEST AND/OR AS REQUIRED BY THE ENVIRONMENTAL INSPECTOR.

4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.

5. IN ACCORDANCE WITH RUBY’S UPLAND CONTROL, REVEGETATION AND MAINTENANCE PLAN AND WITH LANDOWNER APPROVAL, A 25 FOOT WIDE AREA ADJACENT TO THE WORKING SIDE OF THE RIGHT-OF-WAY THAT IS TO REMAIN UNDISTURBED WILL BE UTILIZED FOR TEMPORARY SLASH AND TIMBER STORAGE. SNOW MAY ALSO BE PLACED IN THIS AREA.
CROSS-SECTION OF PIPELINE CONSTRUCTION RIGHT-OF-WAY — SPOIL SIDE ADJACENT TO PIPELINE OR CABLE (50’ C/L TO C/L)

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.
2. TOPSOIL IS TO BE STRIPPED OVER THE DITCH AND SPOIL SIDE EXCEPT AS NOTED BELOW.
3. TOPSOIL IS TO BE STRIPPED ACROSS THE ENTIRE RIGHT-OF-WAY WHEN GRADING IS REQUIRED, IN NOXIOUS WEED AREAS, AT LANDOWNER REQUEST AND/OR AS REQUIRED BY THE ENVIRONMENTAL INSPECTOR.
4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.
5. IN ACCORDANCE WITH RUBY’S UPLAND CONTROL, REVEGETATION AND MAINTENANCE PLAN AND WITH LANDOWNER APPROVAL, A 25 FOOT WIDE AREA ADJACENT TO THE WORKING SIDE OF THE RIGHT-OF-WAY THAT IS TO REMAIN UNDISTURBED WILL BE UTILIZED FOR TEMPORARY SLASH AND TIMBER STORAGE. SNOW MAY ALSO BE PLACED IN THIS AREA.
CROSS-SECTION OF PIPELINE CONSTRUCTION RIGHT-OF-WAY

SPOIL SIDE – ADJACENT TO PIPELINE OR CABLE
WORKING SIDE – OVER EXISTING PIPELINE OR CABLE

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.

2. TOPSOIL IS TO BE STRIPPED OVER THE DITCH AND SPOIL SIDE EXCEPT AS NOTED BELOW.

3. TOPSOIL IS TO BE STRIPPED ACROSS THE ENTIRE RIGHT-OF-WAY WHEN GRADING IS REQUIRED, IN NOXIOUS WEED AREAS, AT LANDOWNER REQUEST AND/OR AS REQUIRED BY THE ENVIRONMENTAL INSPECTOR.

4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.

5. IN ACCORDANCE WITH RUBY'S UPLAND CONTROL, REVEGETATION AND MAINTENANCE PLAN AND WITH LANDOWNER APPROVAL, A 25 FOOT WIDE AREA ADJACENT TO THE WORKING SIDE OF THE RIGHT-OF-WAY THAT IS TO REMAIN UNDISTURBED WILL BE UTILIZED FOR TEMPORARY SLASH AND TIMBER STORAGE. SNOW MAY ALSO BE PLACED IN THIS AREA.

6. WHERE APPLICABLE, THE OFFSET FROM THE CONSTRUCTION RIGHT-OF-WAY TO AN ACTIVE FOREIGN PIPELINE OR CABLE WILL BE 50 FEET. DISTANCES MAY INCREASE OR DECREASE TO ACCOMODATE SITE SPECIFIC CONSTRUCTION OR ADJACENT PIPELINE/CABLE COMPANY REQUIREMENTS. CONSTRUCTION EASEMENT MAY SHIFT AS NECESSARY.

7. WORKING OVER OR ADJACENT TO EXISTING PIPELINE OR CABLE REQUIRES PIPELINE OR CABLE OPERATORS APPROVAL.
CROSS-SECTION OF PIPELINE CONSTRUCTION RIGHT-OF-WAY — SPOIL SIDE ADJACENT TO POWERLINE (65’-500’ C/L TO C/L)

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.

2. TOPSOIL IS TO BE STRIPPED OVER THE DITCH AND SPOIL SIDE EXCEPT AS NOTED BELOW.

3. TOPSOIL IS TO BE STRIPPED ACROSS THE ENTIRE RIGHT-OF-WAY WHEN GRADING IS REQUIRED, IN NOXIOUS WEED AREAS, AT LANDOWNER REQUEST AND/OR AS REQUIRED BY THE ENVIRONMENTAL INSPECTOR.

4. TOPSOIL IS TO BE SEREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.

5. IN ACCORDANCE WITH RUBY'S UPLAND CONTROL, REVEGETATION AND MAINTENANCE PLAN AND WITH LANDOWNER APPROVAL, A 25 FOOT WIDE AREA ADJACENT TO THE WORKING SIDE OF THE RIGHT-OF-WAY THAT IS TO REMAIN UNDISTURBED WILL BE UTILIZED FOR TEMPORARY SLASH AND TIMBER STORAGE. SNOW MAY ALSO BE PLACED IN THIS AREA.
CROSS-SECTION OF PIPELINE CONSTRUCTION
RIGHT-OF-WAY – SPOIL SIDE
ADJACENT TO ABANDONED CABLE
(0’–50’ C/L TO C/L)

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.

2. TOPSOIL IS TO BE STRIPPED OVER THE DITCH AND SPOIL SIDE EXCEPT AS NOTED BELOW.

3. TOPSOIL IS TO BE STRIPPED ACROSS THE ENTIRE RIGHT-OF-WAY WHEN GRADING IS REQUIRED, IN NOXIOUS WEED AREAS, AT LANDOWNER REQUEST AND/OR AS REQUIRED BY THE ENVIRONMENTAL INSPECTOR.

4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.

5. IN ACCORDANCE WITH RUBY’S UPLAND CONTROL, REVEGETATION AND MAINTENANCE PLAN AND WITH LANDOWNER APPROVAL, A 25 FOOT WIDE AREA ADJACENT TO THE WORKING SIDE OF THE RIGHT-OF-WAY THAT IS TO REMAIN UNDISTURBED WILL BE UTILIZED FOR TEMPORARY SLASH AND TIMBER STORAGE. SNOW MAY ALSO BE PLACED IN THIS AREA.

6. ABANDONED CABLE TO BE REMOVED FROM DITCHLINE.

7. CABLE ACCESS ROAD TO BE ELIMINATED FROM RIGHT-OF-WAY DURING RESTORATION WITH LANDOWNER APPROVAL.
CROSS-SECTION OF PIPELINE CONSTRUCTION
RIGHT-OF-WAY 195’ CONSTRUCTION WORK SPACE

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 195 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.

2. TOPSOIL IS TO BE STRIPPED OVER THE DITCH AND SPOIL SIDE EXCEPT AS NOTED BELOW.

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4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.

5. IN ACCORDANCE WITH RUBY’S UPLAND CONTROL, REVEGETATION AND MAINTENANCE PLAN AND WITH LANDOWNER APPROVAL, A 25 FOOT WIDE AREA ADJACENT TO THE WORKING SIDE OF THE RIGHT-OF-WAY THAT IS TO REMAIN UNDISTURBED WILL BE UTILIZED FOR TEMPORARY SLASH AND TIMBER STORAGE. SNOW MAY ALSO BE PLACED IN THIS AREA.
CROSS-SECTION OF PIPELINE CONSTRUCTION
RIGHT-OF-WAY
STEEP SLOPE/ROUGH CHOPPY TERRAIN

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.
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4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.
5. GRADE TO BE RESTORED AFTER CONSTRUCTION
CROSS-SECTION OF PIPELINE CONSTRUCTION
RIGHT-OF-WAY
SIDE CUT LEFT

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.

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4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.

5. GRADE TO BE RESTORED AFTER CONSTRUCTION
CROSS-SECTION OF PIPELINE CONSTRUCTION
RIGHT-OF-WAY
SIDE CUT RIGHT

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.

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4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.

5. GRADE TO BE RESTORED AFTER CONSTRUCTION
CROSS-SECTION OF PIPELINE CONSTRUCTION
RIGHT-OF-WAY
BANKS OF TYPICAL DRY WASH

NOTES:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 115 FEET WIDE. THE PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE. AS REQUIRED, ADDITIONAL TEMPORARY WORKSPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL, RIVER CROSSINGS, SIDESLOPES, WHERE FULL RIGHT-OF-WAY TOPSOIL STRIPPING IS CONDUCTED AND OTHER SPECIAL CIRCUMSTANCES.
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4. TOPSOIL IS TO BE SEGREGATED AND STOCKPILED ON THE OUTSIDE EDGE OF THE RIGHT-OF-WAY.
5. BANK OF DRY WASH TO BE RESTORED AFTER CONSTRUCTION
6. PIPE TO BE INSTALLED 5' TO 6' BELOW DRY WASH BOTTOM
1. INSTALL ON SLOPING TERRAIN, AS REQUIRED
(SEE ECP SECTION 4.0)

<table>
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<th>Required Spacing for Permanent Waterbars</th>
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<tr>
<td>Slope Percent</td>
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<tr>
<td>5 - 15</td>
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<td>16 - 30</td>
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2. MAINTAIN THROUGHOUT CONSTRUCTION AND REPAIR AT THE END OF EACH DAY.

3. OUTLET INTO AREAS STABILIZED BY EXISTING VEGETATION OR INSTALL STAKED STRAW BALE/SILT FENCE.

4. CONTOUR TO ALLOW PASSAGE OF CONSTRUCTION EQUIPMENT.

5. MINIMUM 2% LATERAL SLOPE.

6. TEMPORARY WATER BARS/TERRACES MUST BE DESIGNED TO PREVENT WATER FROM ENTERING THE TRENCH. A SOFT/HARD PLUG MAY BE USED TO ALLOW A CONTINUOUS WATER BAR/TERRACE TO CROSS THE TRENCHLINE.
NOTES:

1. Silt fence must be left in place until vegetation has been established.

2. If paved roadway is used for vehicle access, install rock construction entrance (Figure 4–9).

3. Install permanent waterbars upslope of all roadway, railroad, waterbody, and wetland crossings, as required.

4. Install permanent trench breakers as required.

5. Filter fabric fence must be installed at existing level grade.

6. Sediment must be removed where accumulations reach 1/2" the above ground height of the fence.

*USE 2" X 2" WOOD OR EQUIVALENT STEEL STAKES.
CONSTRUCTION ROW

INSTALL ROCK CONSTRUCTION ENTRANCE AT ALL PAVED ROADWAYS, AS NEEDED.

WETLAND/ WATERBODY/ HIGHWAY/ RAILROAD

36" X 2" X 2" MIN. FENCE POSTS OR APPROVED EQUIVALENT DRIVEN 12-18" INTO GROUND AS SITE CONDITIONS ALLOW

NOTE
1. HAY/STRAW BALES TO BE EMBEDDED 2" MIN. INTO GROUND AS SITE CONDITIONS ALLOW.
2. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVEGROUND HEIGHT OF THE BARRIER.
3. HAY/STRAW BALES REMOVED FOR ACCESS PURPOSES DURING THE DAY MUST BE REINSTALLED AFTER THE CONSTRUCTION ACTIVITY HAS PASSED THROUGH OR BY THE END OF THE DAY.
NOTE

1. CONSTRUCT ON SLOPING TERRAIN AND ADJACENT TO ALL WATERBODIES AND WETLANDS, AS REQUIRED (SEE TABLE BELOW).
2. PRIOR TO LOWERING IN PIPE REMOVE ALL DECOMPOSABLE MATERIAL AND LARGE ROCKS.
3. BREAKERS MAY BE COMPOSED OF SANDBAGS OR OTHER APPROVED MATERIAL.
4. MINIMUM 12 INCHES COVER OVER SANDBAGS IN ALL CASES AND MUST BE A MINIMUM OF 2 SACKS WIDE.
5. TOPSOIL SHALL NOT BE USED TO FILL SACKS.

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<thead>
<tr>
<th>Slope Percent</th>
<th>FERC’s Spacing (Pl.)</th>
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<tbody>
<tr>
<td>5 - 15</td>
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Required Spacing for Trench Plugs
SIDE VIEW CROSS SECTION

EXISTING GRADE

PIPELINE

BOTTOM OF DITCH

SPRAYED FOAM BREAKER OR BENTONITE PLUG LOCATED AT EDGE OF WETLAND OR STREAM

END VIEW CROSS SECTION

FILL BACK TO ORIGINAL GRADE

RESTORED GRADE

FOAM BREAKER OR BENTONITE FILL

NOTE

1. CONSTRUCT BREAKERS ADJACENT TO ALL WATERBODIES AND WETLANDS, AS REQUIRED
2. PRIOR TO LOWERING IN PIPE REMOVE ALL DECOMPOSABLE MATERIAL AND LARGE ROCKS.
NOTE:
Install at intersection of public, paved roadway, and construction right-of-way. Rock Construction Entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on site for this purpose. At the end of each construction day, all sediment deposited on paved roadways shall be removed and returned to the construction site. Washing roadway is not permitted. Culverts or flume pipes must be installed under the rock entrance/exit to allow for water drainage, if required due to topographical conditions.
STAKE TO THE SLOPE WITH WOOD PEGS OR STAPLE PER MANUFACTURER'S SPECIFICATION

NOTE
PROVIDE MINIMUM OF 6" OF SOIL COVER OVER FIRST 12" OF EROSION CONTROL FABRIC AS SHOWN.

SLOPE SECTION
CROSS-SECTION OF PIPELINE CONSTRUCTION RIGHT-OF-WAY CROSSING WETLAND AREAS

NOTES:

1. WETLANDS CONSTRUCTION RIGHT-OF-WAY WILL BE LIMITED TO 75 FEET WIDE ACROSS ANY WETLANDS UNLESS INCREASED OR DECREASED BY SPECIFIC CONSTRUCTION REQUIREMENTS. PERMANENT RIGHT-OF-WAY WILL BE 50 FEET WIDE CENTERED ON PIPE.

2. THE 115 FOOT NORMAL CONSTRUCTION RIGHT-OF-WAY EXTENDS TO THE EDGE OF THE WETLAND BOUNDARY. ADDITIONAL WIDTH CONSTRUCTION RIGHT-OF-WAY IF SPECIFIED BEGINS AND ENDS 50 FEET FROM EACH SIDE OF THE WETLAND BOUNDARY.

3. STOCKPILE TOPSOIL ON OUTSIDE EDGE OF RIGHT-OF-WAY IF GRADING OF RIGHT-OF-WAY IS REQUIRED OR REQUIRED BY THE ENVIRONMENTAL INSPECTOR. SNOW MAY ALSO BE PLACED IN THIS AREA.

4. STOCKPILE TOPSOIL ON OUTSIDE EDGE OF RIGHT-OF-WAY IF GRADING OF RIGHT-OF-WAY IS REQUIRED OR WITH PERMISSION OF ENVIRONMENTAL INSPECTOR.
NOTES:

1. Re-seed according to specific requirements.

2. No fertilizer or lime shall be used.

3. Mulch at 2–3 Tons/Acre (Seeded areas only) Binding Agents shall not be used.

4. Install trench plugs & waterbar on both sides of wetland.

5. Straw may be used under ditch spoil as a "marker".

6. Any excess subsoil will be removed to an upland area.

WATER BARS AND/OR EROSION CONTROL AS APPROPRIATE

EROSION CONTROL DEVICES
(AS APPROPRIATE)

WETLAND ADDITIONAL WORK SPACE SETBACK

TOPSOIL MATERIAL

SUBSOIL MATERIAL

TIMBER MATS (NOT REQUIRED FOR DRY CROSSINGS)

TYPICAL
STANDARD WETLAND CONSTRUCTION
CROSS SECTION FOR EQUIPMENT CROSSING

12" MIN. SPACING
FLUME PIPE(S) MIN. SIZE 12" (SUBMERGED). IF MORE THAN ONE CULVERT IS USED, THE MIN. SPACING IS 12".
CLEAN STONE OR ROCK (INSTALL 1' MIN. OF FILL OVER CULVERT)

NOTE:

1. PORTABLE BRIDGES OR MATS MAY BE USED FOR EQUIPMENT CROSSING IF CONTOURS ALLOW.
2. THE REQUIRED SETBACK FOR ADDITIONAL WIDTH WORK SPACE IS 50 FEET FROM TOP OF BANK UNLESS APPROVED OTHERWISE BY THE APPROPRIATE AGENCIES.
3. THE MINIMUM REQUIRED SETBACK FOR SPOIL PILE IS 10 FEET FROM THE TOP OF BANK.
4. EQUIPMENT BRIDGE TO REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.
5. WEED-FREE STRAW BALES, SAND BAGS, DRIVABLE BERMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY AT THE EDGE OF EQUIPMENT BRIDGE.
6. A LAYER OF STRAW MAY BE USED AS A "MARKER" BETWEEN SPOIL AND WETLAND SOIL.
NOTE:

1. THE REQUIRED SET BACK FOR ADDITIONAL WIDTH WORK SPACE IS 50 FEET FROM THE TOP OF BANK UNLESS APPROVED OTHERWISE BY THE APPROPRIATE AGENCIES.
2. A 10' VEGETATION BUFFER WILL BE MAINTAINED BETWEEN THE BANK AND TWS.
3. THE MINIMUM REQUIRED SETBACK FOR SPOIL PILE IS 10 FEET FROM THE TOP OF BANK.
4. EQUIPMENT BRIDGE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.
5. WEEDE-FREE STRAW BALES, SAND BAGS, DRIVABLE BERM'S OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY AT THE EDGE OF EQUIPMENT BRIDGE.
NOTES:

1. SET UP PUMP AND HOSE AS SHOWN, OR USE OTHER PRACTICAL ALTERNATIVES. PUMP SHOULD HAVE TWICE THE PUMPING CAPACITY OF ANTICIPATED FLOW.
2. CONTRACTOR TO ENSURE A SUFFICIENT NUMBER OF ACTIVE AND BACKUP PUMPS TO MAINTAIN THE CAPACITY OF THE STREAM FLOW AT ALL TIMES DURING INSTALLATION.
3. ALL INTAKE HOSES WILL BE SCREENED.
4. DISMANTLE DOWNSTREAM DAM, THEN UPSTREAM DAM. KEEP PUMP RUNNING TO MAINTAIN STREAM FLOW.
5. THE REQUIRED SET BACK FOR ADDITIONAL WIDTH WORK SPACE IS 50 FEET FROM TOP OF BANK UNLESS APPROVED OTHERWISE BY THE APPROPRIATE AGENCIES.
6. A 10' VEGETATION BUFFER WILL BE MAINTAINED BETWEEN THE BANK AND TW.
7. THE MINIMUM REQUIRED SETBACK FOR SPOIL PILE IS 10 FEET FROM THE TOP OF BANK.
8. WEED-FREE STRAW BALES, SAND BAGS, DRIVABLE BERRMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY AT THE EDGE OF EQUIPMENT BRIDGE.
NOTES

1. THIS TYPE OF BRIDGE IS GENERALLY USED FOR MEDIUM-SIZED STREAM CROSSINGS.

2. THE NUMBER AND SIZE OF THE FLUME PIPES WILL BE DESIGNED TO HANDLE MAXIMUM EXPECTED FLOW OF STREAM AT TIME OF CONSTRUCTION. MIN. SIZE CULVERT WILL BE 12".

3. CLEAN, SILT-FREE ROCK TO BE USED ONLY. INSTALL 12" MIN. OF FILL OVER CULVERT.

4. BRIDGE TO REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.

5. SILT FENCE, WEED-FREE STRAW BALES, SANDBAGS, DRIVABLE BERMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY.

6. STRAW BALES WILL BE PLACED AT THE EDGE OF EQUIPMENT BRIDGE AT THE END OF THE WORK DAY TO PREVENT EROSION BUT WILL BE REMOVED DURING CONSTRUCTION ACTIVITY.
TIMBER MAT BRIDGE

NOTES

1. THIS TYPE OF BRIDGE IS GENERALLY USED FOR SMALL STREAM CROSSINGS LESS THAN 20 FEET IN WIDTH IN COMBINATION WITH A PROPER STREAM BANK CONFIGURATION.

2. BRIDGE WILL BE TEMPORARILY REMOVED IF HIGH WATER RENDERS IT UNSAFE FOR CROSSING.

3. BRIDGE TO REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.

4. SILT FENCE, WEED FREE STRAW BALES, SAND BAGS, DRIVABLE BERMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY.

5. A "SKIRT" FORMED OF SILT FENCE, GEOTEXTILE FABRIC OR EQUIVALENT SHALL BE PLACED ON THE SIDES AND BOTTOM OF THE BRIDGE TO TRAP SEDIMENT AS NECESSARY.

6. INDIVIDUAL MATS SHALL BE ANCHORED AND BUTTED TIGHTLY TO MINIMIZE THE INTRODUCTION OF SEDIMENT TO THE WATERBODY.

7. STRAW BALES OR APPROPRIATE BARRIER WILL BE PLACED AT THE EDGE.
NOTES

1. THIS TYPE OF BRIDGE IS USED ON MEDIUM TO LARGE STREAMS WITH POTENTIAL FOR SIGNIFICANT FLOW.
2. THE NUMBER AND SIZE OF FLUME PIPES WILL BE DESIGNED TO HANDLE THE MAXIMUM EXPECTED FLOW OF THE STREAM AT TIME OF CONSTRUCTION. MIN. SIZE CULVERT WILL BE 12".
3. CLEAN, SILT-FREE ROCK TO BE USED ONLY. INSTALL 1" MIN. OF FILL OVER CULVERT.
4. BRIDGE TO REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.
5. SILT FENCE, WEED-FREE STRAW BALES, SANDBAGS, DRIVABLE BERMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY.
6. ROCK MUST EXTEND 10' FROM TOP OF BANK ON BOTH SIDES OF WATERWAY.
7. STRAW BALES WILL BE PLACED AT THE EDGE OF EQUIPMENT BRIDGE AT THE END OF THE WORK DAY TO PREVENT EROSION BUT WILL BE REMOVED DURING CONSTRUCTION ACTIVITY.
PORTABLE BRIDGE

NOTES

1. THIS TYPE OF BRIDGE IS GENERALLY USED ON WIDE, DEEP CROSSINGS.
2. BRIDGE IS ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY.
3. BRIDGE TO REMAIN IN PLACE UNTIL THE COMPLETION OF FINAL RESTORATION.
4. SILT FENCE, WEED-FREE STRAW BALES, SANDBAGS, DRIVABLE BERMS OR OTHER APPROPRIATE EROSION CONTROL MAY BE USED INTERCHANGEABLY.
5. STRAW BALES WILL BE PLACED AT THE EDGE OF EQUIPMENT BRIDGE AT THE END OF THE WORK DAY TO PREVENT EROSION BUT WILL BE REMOVED DURING CONSTRUCTION ACTIVITY.
1. Energy Dissipator to be anchored by Contractor.
2. Typical Energy Dissipator must be used in conjunction with filter (AS APPROPRIATE).
3. Must be located in an upland area.
4. Sediment must be removed when accumulations reach 1/2 the height of the filters.

NOTE

SECTION "A-A"

Scale: NONE

TYPICAL ENERGY DISSIPATOR

PLAN-18
SECTION A-A

ALL EQUIPMENT SHALL ARRIVE TO THE PROJECT CLEAN OR BE WASHED PRIOR TO MOBILIZATION TO THE ROW.

NOTES:

1. ALL EQUIPMENT AND VEHICLES SHALL BE REQUIRED TO BE WASHED AT WASH STATIONS AS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED IN THE NOXIOUS WEED MANAGEMENT PLAN. WASH STATIONS SHALL BE CONSTRUCTED BY THE CONTRACTOR. WASHINGS SHALL BE CARRIED OUT UNDER THE SUPERVISION AND TO THE SATISFACTION OF THE COMPANY REPRESENTATIVE.

2. TOP SOIL TO BE SEGREGATED AND STORED SEPARATELY.

3. WASH WATER USED FOR CLEANING SHALL NOT BE ALLOWED TO ENTER ANY WATERBODY, WETLAND, OR IRRIGATION CANAL/DITCH. ANY SOILS CONTAMINATED BY PETROLEUM-BASED OR OTHER UNDESIRABLE MATERIALS FROM WASH STATIONS SHALL BE REMOVED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS.

4. SIZE OF STATION TO BE ADEQUATE TO ACCOMMODATE MAXIMUM SIZE OF EQUIPMENT AND REQUIRED FOR WORK.

5. EQUIPMENT TO ENTER A "DIRTY END" AND EXIT A "CLEAN END".

6. STABLE DRAINAGE FROM SITE (IF NECESSARY) TO BE PROVIDED. DO NOT DISCHARGE TO A STREAM OR WETLAND.

7. DISPOSAL OF GRAVEL FILL (IF REQUIRED) AND FILTER FABRIC IS TO BE APPROVED BY ENVIRONMENTAL INSPECTOR.

8. WASH STATIONS ARE TO BE EQUIPPED WITH SKID PADS OR WASH RACKS TO PREVENT SOIL FROM BEING CARRIED ON TRACKS OR TIRES AS EQUIPMENT AND VEHICLES EXIT THE WASH STATION.
1. This type of bridge is generally used for access across railroad tracks.
2. Contractor will use digging mats for the crossing. These are normally 4' wide by 16' long and 8" to 10" thick.