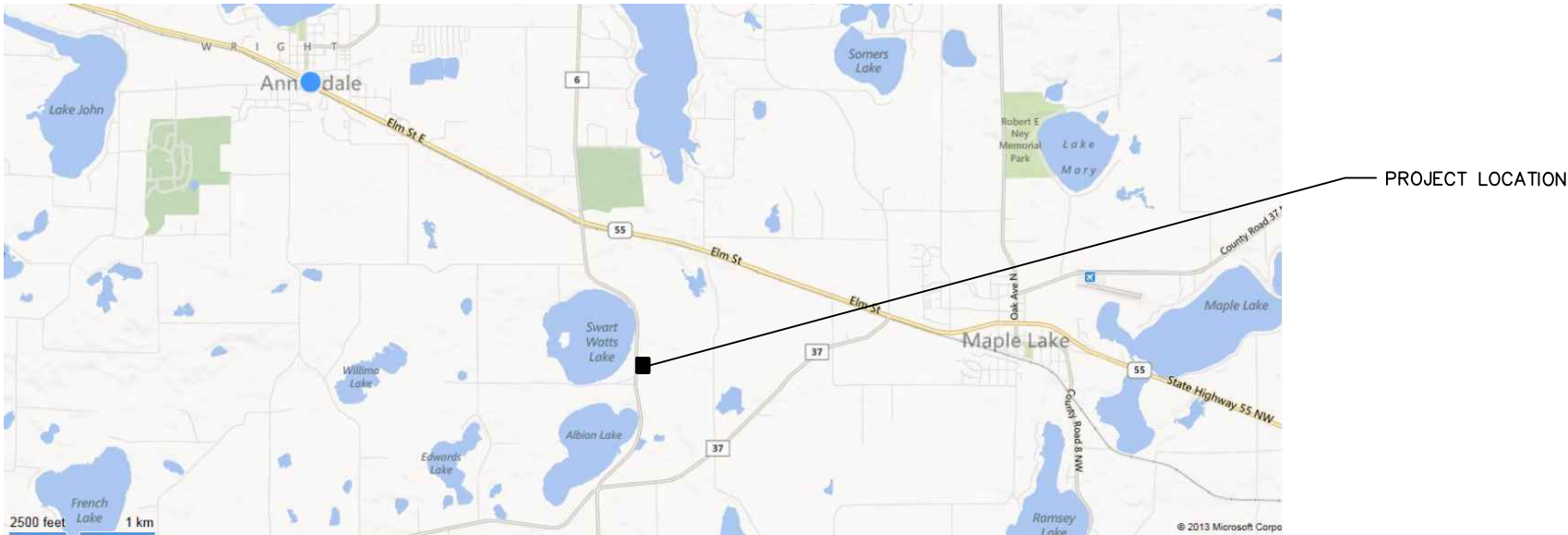


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CONTRACT DRAWINGS
EAST SWARTOUT STORMWATER IMPROVEMENTS
CLEARWATER RIVER WATERSHED DISTRICT
DECEMBER 2014



PROJECT LOCATION MAP

INDEX OF SHEETS

G-101	TITLE SHEET
C-101	EXISTING CONDITIONS & REMOVAL PLAN
C-201	SWPPP PLAN
C-202	EROSION & SEDIMENT CONTROL PLAN
C-301	GRADING PLAN
C-801	DETAILS
C-802	DETAILS
C-803	DETAILS



ENLARGED PROJECT LOCATION MAP

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG
GOPHER STATE ONE CALL
TWIN CITY AREA: 651-454-0002
TOLL FREE 1-800-252-1166

					SEAL		PRIME CONSULTANT		PROJECT TITLE		SHEET TITLE			
					I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		 Wenck Associates, Inc. Consulting Engineers 1800 PIONEER CREEK CENTER MAPLE PLAIN, MN 55359 763-479-4200 763-479-4242		EAST SWARTOUT STORMWATER IMPROVEMENTS		TITLE SHEET			
					PRINT NAME KEVIN B. MATTSON				CLEARWATER RIVER WATERSHED DISTRICT		DWN BY MJS	CHK'D RAK	APP'D KBM	
					SIGNATURE 						DWG DATE DEC 2014		SCALE AS SHOWN	
					DATE 12/10/14 LICENSE # 48386						PROJECT NO. 0002-205			SHEET NO. G-101
											</			



GENERAL NOTES

1. SALVAGE AND REINSTALL ALL SIGNS AS DIRECTED BY ENGINEER (INCIDENTAL).
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5. CONTRACTOR TO STRIP AND SALVAGE EXISTING TOPSOIL.
6. REVIEW ALL TREE REMOVALS WITH ENGINEER.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
1	FOR BID	MJS	KBM	12/10/14
0	FOR REVIEW	MJS		12/5/14

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PRINT NAME KEVIN B. MATTSO
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DATE 12/10/14 LICENSE # 48386

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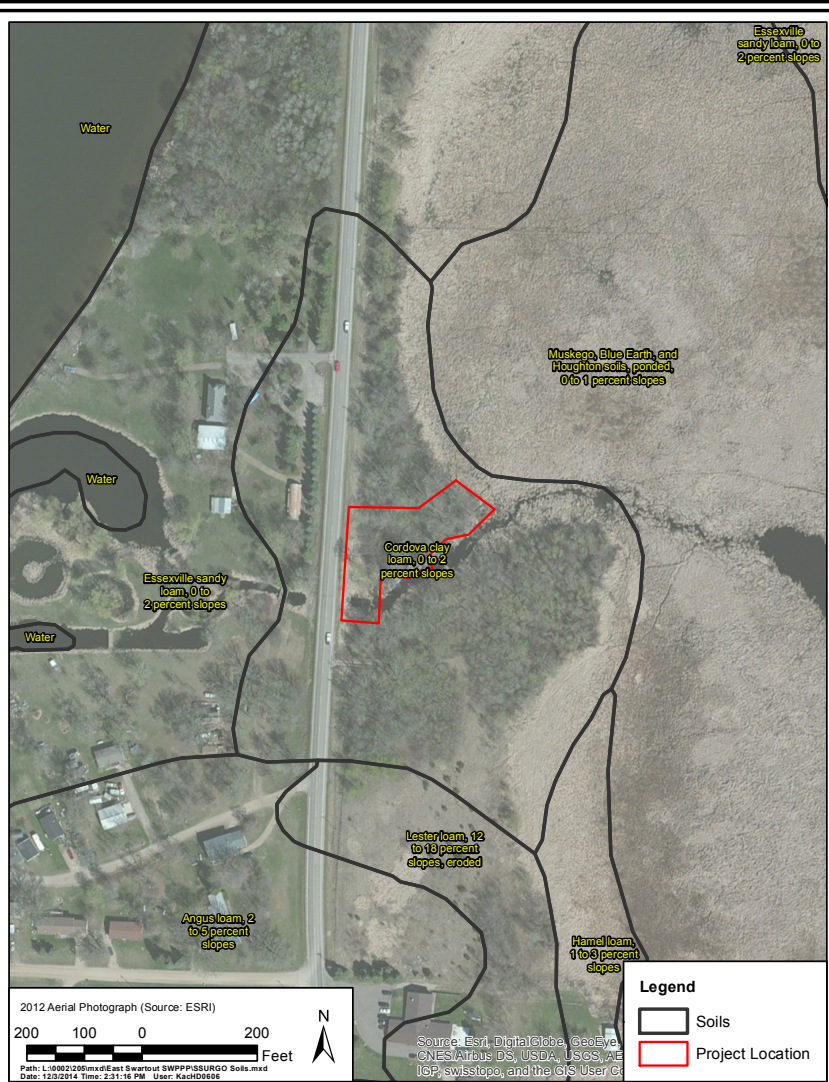
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PROJECT TITLE	EAST SWARTOUT STORMWATER IMPROVEMENTS
	CLEARWATER RIVER WATERSHED DISTRICT

SHEET TITLE EXISTING CONDITIONS & REMOVAL PLAN					
DWN BY	CHK'D	APP'D	DWG DATE	DEC 2014	
MJS	RAK	KBM	SCALE	AS SHOWN	
PROJECT NO.		SHEET NO.		REV NO.	
0002-205		C-101		1	



CLEARWATER RIVER WATERSHED DISTRICT
SSURGO Soils

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DEC 2014
Figure 3

Cumulative Impervious Surface
Existing impervious surface - 0.00 acres
Proposed impervious surface - 0.00 acres

Total Area Disturbed by Construction - 0.75 acres

Construction Dates: February 2015 - December 2015

Party Responsible for Long Term Operation and Maintenance of the Site - OWNER

Clearwater River Watershed District
75 Elm St E, Box 481
Annandale, MN 55301 320-274-3935

Party Responsible for Implementation of the SWPPP - CONTRACTOR (TBD)

CERTIFICATION
In accordance with Part III.A.2 of the General Permit Authorization to Discharge Stormwater Associated with Construction Activity under the NPDES, the preparer of this document was trained under the University of Minnesota Erosion and Sediment Control Certification Program. Mr. Louis Sigtermans' certification in Design of SWPPP is valid through May 31, 2017.

UNIVERSITY OF MINNESOTA
Louis H Sigtermans
Saint Paul, MN

Design of Construction SWPPP (May 31, 2017)

EROSION AND SEDIMENT CONTROL PRACTICES

Prior to any site disturbance the erosion prevention measures, including rock construction entrances and silt fence, will be installed at the site as shown on Sheets C-202.

All exposed soil areas within 7 days or as soon as possible must have temporary erosion protection (slash mulch, erosion control blanket, seed) or permanent cover year round.

CONTRACTOR shall implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion when practical.

The normal wetted perimeter of any temporary or permanent drainage ditch that drains water from a construction site, or diverts water around a site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge to any surface water. Stabilization must be completed within 24 hours of connecting to a surface water. Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours of connection to a surface water.

Sediment control practices must minimize sediment from entering surface waters, including curb and gutter systems and storm sewer inlets. The following measures will be taken as sediment control practices in order to minimize sediments from entering surface waters:

1. Installation of sediment control practices on all down gradient perimeters prior to land disturbing activities.
2. Minimize vehicle tracking by use of the rock construction entrances.
3. Street sweeping of tracked sediment when necessary.

Dewatering is anticipated for the excavation work of this project. Discharge filtration should be incorporated into the dewatering activities. Energy dissipation shall be provided at all discharge points to prevent scour.

Because the project is less than 5 acres, temporary sedimentation basins are not required.

Record Retention

The SWPPP, all changes to it, and inspection and maintenance records must be kept on-site during construction. The OWNER must retain a copy of the SWPPP along with the following records for three (3) years after submittal of the Notice of Termination.

1. Any other permits required for the project;
2. Records of all inspection and maintenance conducted during construction;
3. All permanent operations and maintenance agreements that have been implemented, including all right of way, contract, covenants and other binding requirements regarding perpetual maintenance; and
4. All required calculations for design of the temporary and permanent stormwater management systems.

Pollution Prevention Measures

Solid Waste

Solid waste, including but not limited to, collected asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other waste must be disposed of properly and must comply with MPCA disposal requirements.

Hazardous Materials

Hazardous materials, including but not limited to oil, gasoline, paint and any hazardous substance must be properly stored including secondary containments, to prevent spills, leaks or other discharge. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with MPCA regulations.

Washing of Construction Vehicles

External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site.

Concrete Washout Area

Concrete washout is not anticipated for this project.

Inspections

The inspection log will be completed by the CONTRACTOR for the construction site. Inspections at the site will be completed as follows:

- Once every seven (7) days during active construction and,
- Within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.

The individual performing inspections must be trained as required by part IV.E of the Permit. CONTRACTOR to provide OWNER with proof of training. Inspections must include stabilized areas, erosion prevention and sediment control BMPs, and infiltration areas. Corrective actions must be identified and date of correction must be noted as identified in Section IV.E. of the Permit.

Final Stabilization

All areas disturbed by construction will receive seed and mulch or sod according to the plans and specifications and within the specified vegetative time schedule. Final stabilization will occur when the site has a uniform vegetative cover with a density of 70% over the entire disturbed area. All temporary synthetic erosion prevention and sediment control BMPs (such as silt fence) must be removed as part of the site final stabilization. All sediment must be cleaned out of conveyances and temporary sedimentation basins if applicable.

Notice of Termination (NOT) must be submitted within 30 days of final stabilization.

IMPAIRED WATERS, SPECIAL WATERS, AND WETLANDS

This Project is not located within 1 mile of a special water.

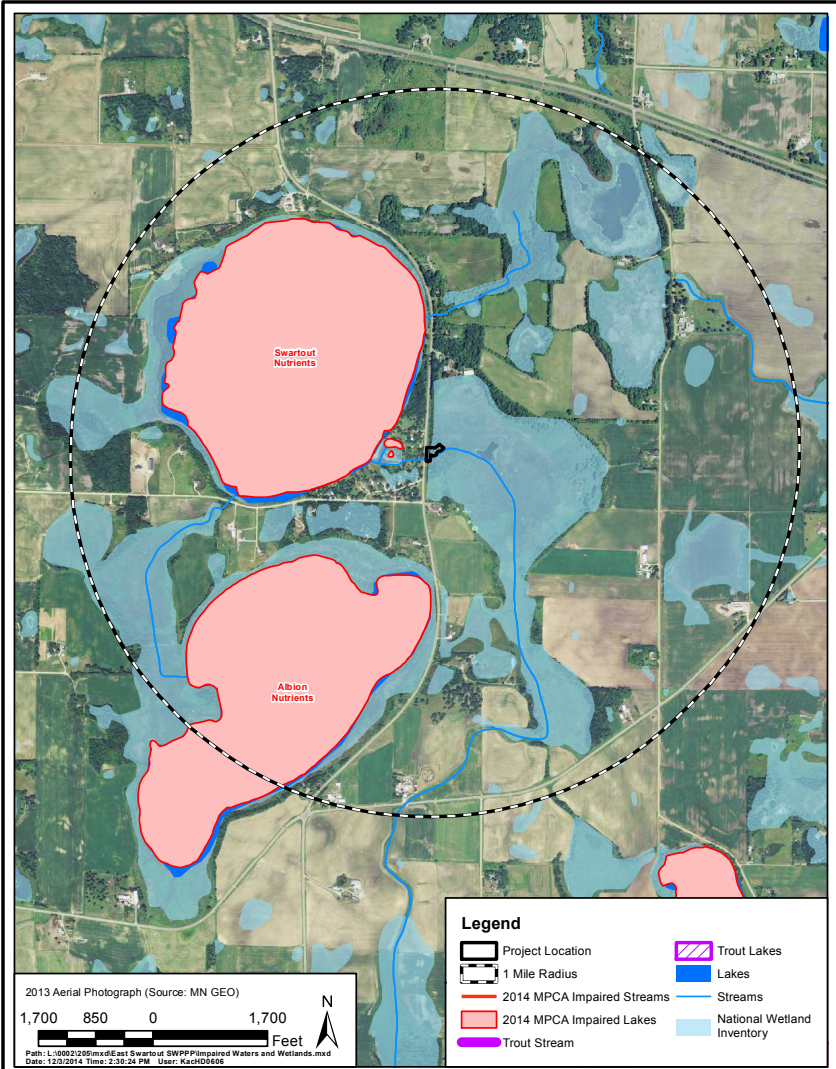
This Project is located within 1 mile of an impaired waters (Figure 4 this sheet):

Albion Lake impaired for Nutrients
Swartout Lake impaired for Nutrients

Because of the proximity of the project to an impaired water during construction:

1. All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased.
2. Temporary sediment basins are required to handle runoff for common drainage locations that serve an area with 5 or more acres disturbed at one time.

This Project will temporarily impact wetlands. A wetland delineation has been performed and wetland permits have been obtained.



CLEARWATER RIVER WATERSHED DISTRICT
303(d) Impaired Waters and Wetlands Map

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DEC 2014
Figure 4

1	FOR BID	MJS	KBM	12/10/14
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REV	REVISION DESCRIPTION	DWN	APP	REV DATE

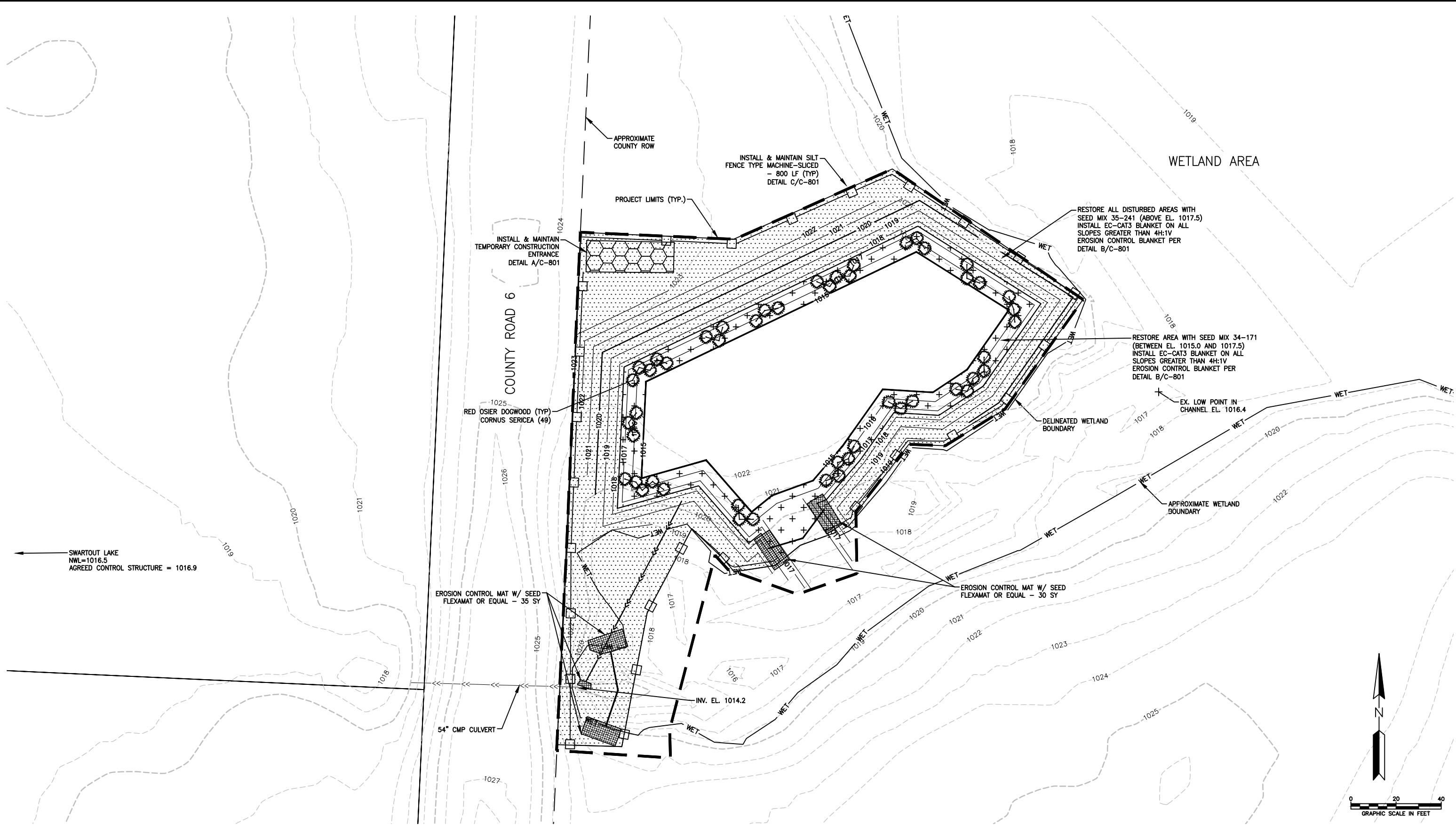
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PRINT NAME <u>KEVIN B. MATTSON</u>
SIGNATURE <u>[Signature]</u>
DATE <u>12/10/14</u> LICENSE # <u>48386</u>

PRIME CONSULTANT

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PROJECT TITLE EAST SWARTOUT STORMWATER IMPROVEMENTS
CLEARWATER RIVER WATERSHED DISTRICT

SHEET TITLE SWPPP			
DWN BY MJS	CHK'D RAK	APP'D KBM	DWG DATE DEC 2014
PROJECT NO. 0002-205		SHEET NO. C-201	
		REV NO. 1	



EROSION CONTROL NOTES

1. ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
2. RESTORE ALL DISTURBED AREAS ABOVE ELEV. 1015.0 WITH 4" TOPSOIL AS SPECIFIED.
3. PERMANENT RESTORATION SHALL OCCUR AT THE EARLIEST POSSIBLE STAGE.
4. ALL QUANTITIES ARE APPROXIMATE AND MAY VARY TO ALLOW COMPLETION OF WORK.
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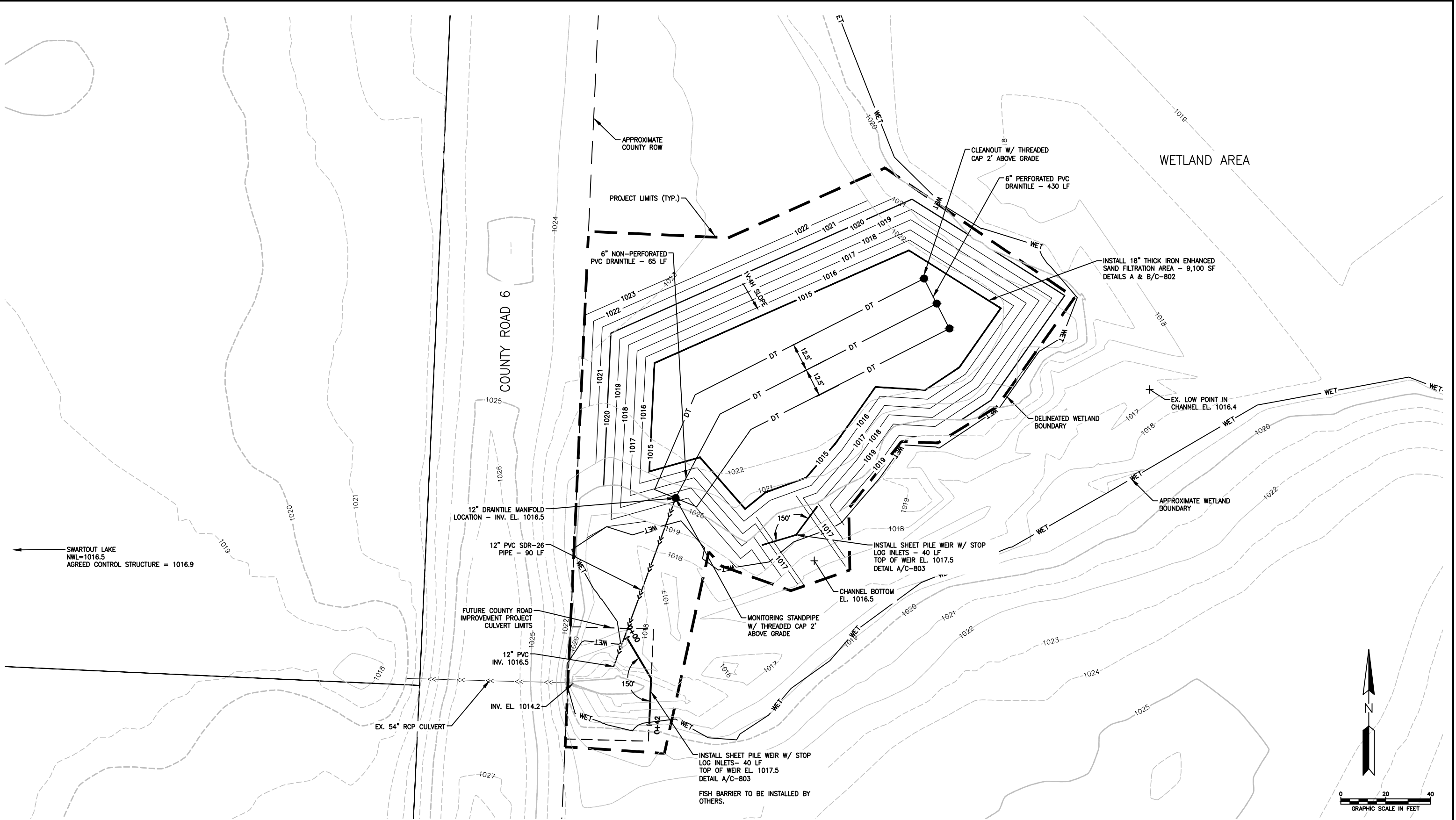
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PROJECT TITLE
EAST SWARTZOUT STORMWATER IMPROVEMENTS
CLEARWATER RIVER WATERSHED DISTRICT

SHEET TITLE			
EROSION & SEDIMENT CONTROL PLAN			
DWN BY MJS	CHK'D RAK	APP'D KBM	DWG DATE DEC 2014
PROJECT NO. 0002-205	SHEET NO. C-202	SCALE AS SHOWN	REV NO. 1

Plot Date & Time: 6 March 2015 2:23 PM
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GENERAL NOTES

1. SALVAGE AND REINSTALL ALL SIGNS AS DIRECTED BY ENGINEER (INCIDENTAL).
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PRINT NAME	KEVIN B. MATTONSON
SIGNATURE	
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LICENSE #	48386

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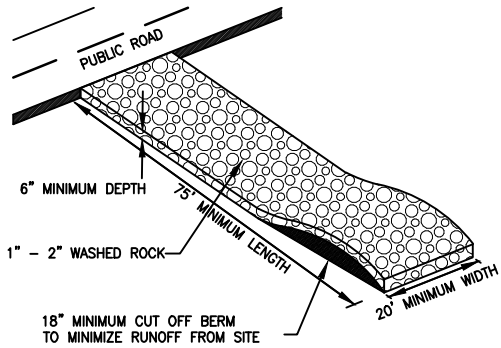
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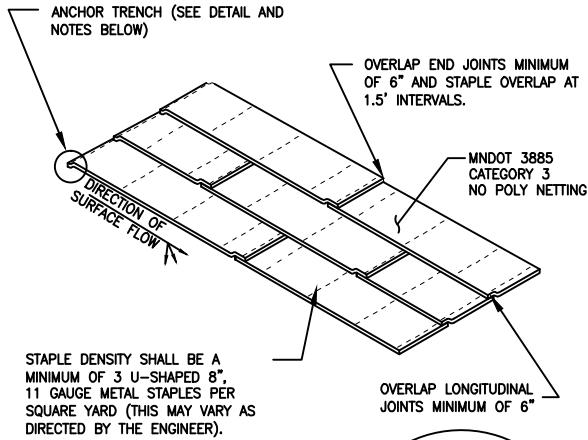
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MJS	RAK	KBM	SCALE	AS SHOWN
PROJECT NO.		SHEET NO.		REV NO.
0002-205		C-301R1		1

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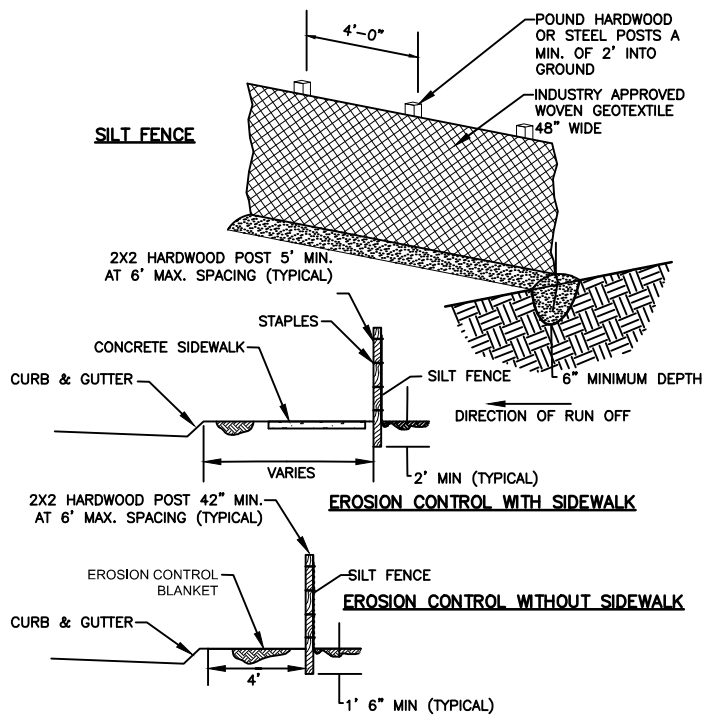
NOTE:
FILTER FABRIC SHALL BE PLACED UNDER ROCK
TO STOP MUD MIGRATION THROUGH ROCK.

A TEMPORARY CONSTRUCTION ENTRANCE DETAIL



ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT
5. BLANKET LENGTH SHALL NOT EXCEED 100'
WITHOUT AN ANCHOR TRENCH


B EROSION CONTROL BLANKET DETAIL



C SILT FENCE DETAIL

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
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0	FOR REVIEW	MJS	KBM	XX/XX/XX

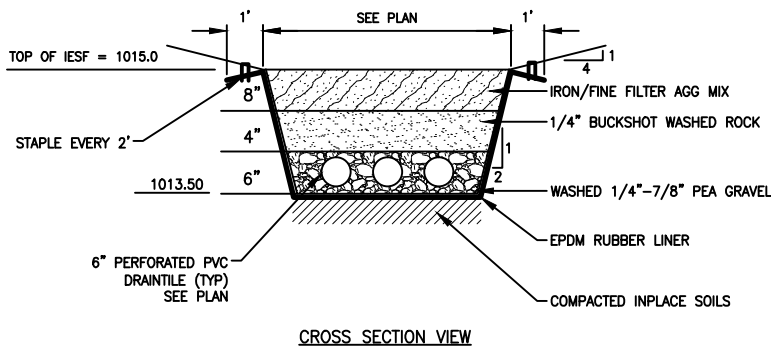
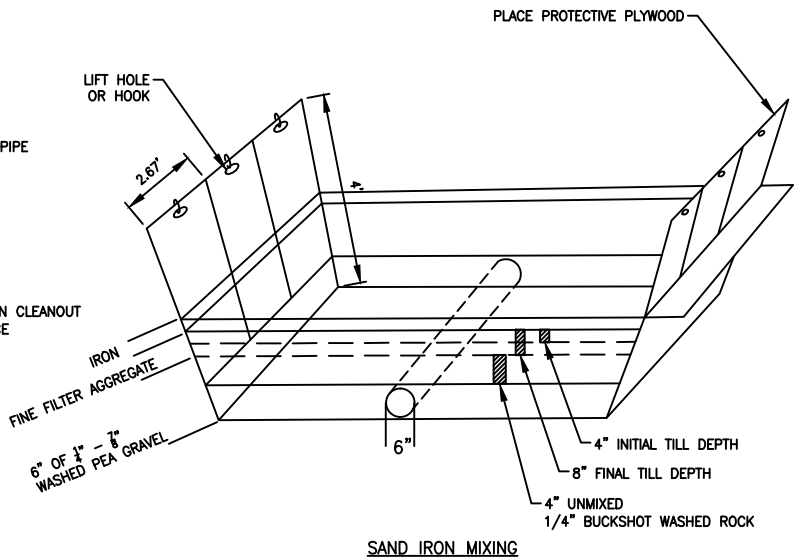
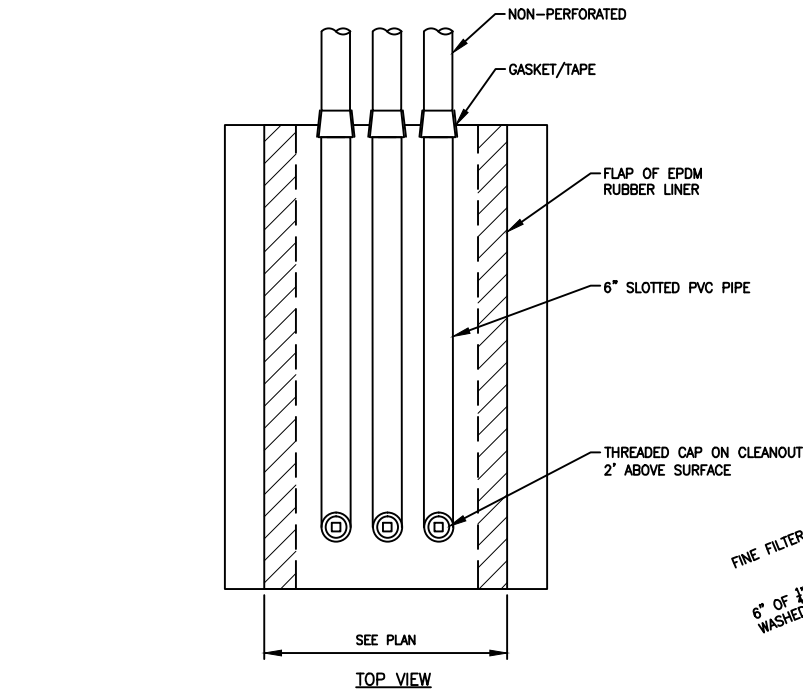
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PRINT NAME KEVIN B. MATTSON
SIGNATURE [Signature]
DATE 12/10/14 LICENSE # 48386

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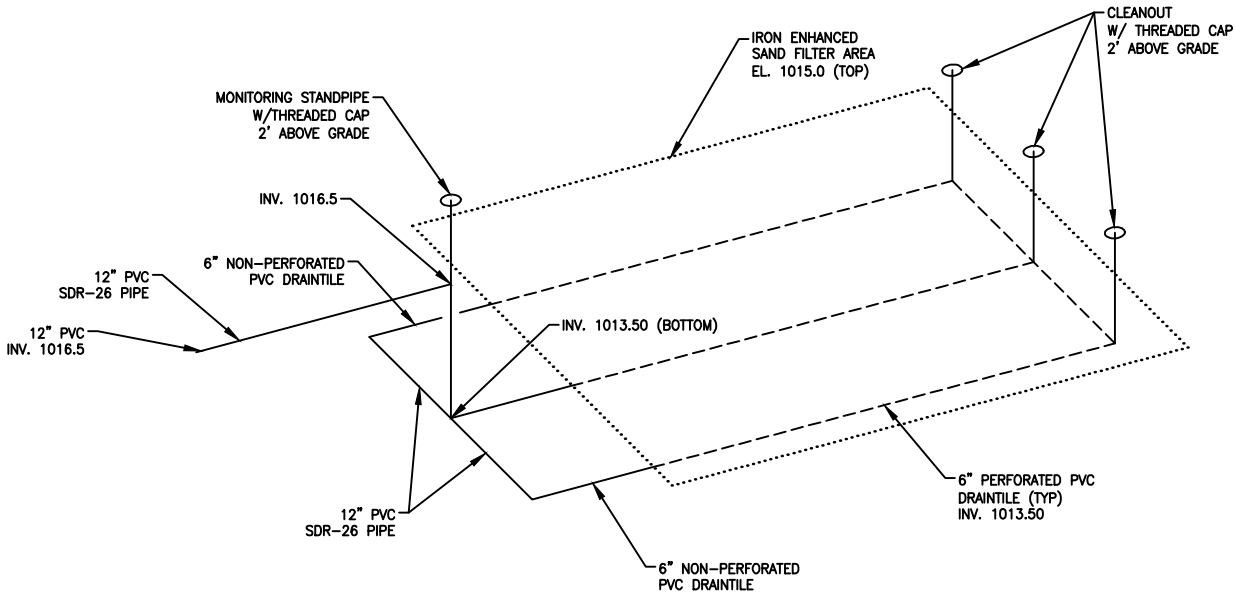
PROJECT TITLE
**EAST SWARTZOUT
STORMWATER IMPROVEMENTS**

**CLEARWATER RIVER
WATERSHED DISTRICT**

DETAILS			
DWN BY MJS	CHK'D RAK	APP'D KBM	DWG DATE DEC 2014
PROJECT NO. 0002-205		SHEET NO. C-801	
			REV NO. 1



- SUGGESTED CONSTRUCTION SEQUENCE**
1. DEWATER.
 2. EXCAVATE 1.5' DEEP FILTER AREA.
 3. COMPACT IN-PLACE SUBSOIL.
 4. ROLL OUT 45 MIL EPDM LINER.
 5. INSTALL 6" DIAMETER SLOTTED PVC PIPE AND CLEANOUTS.
 6. PLACE 1/4" - 7/8" WASHED PEA GRAVEL TO A DEPTH OF 6".
 7. PUT TEMPORARY PROTECTIVE PLYWOOD IN PLACE (OR OTHER METHOD APPROVED BY ENGINEER TO PREVENT PUNCTURE OF EPDM).
 8. PLACE 1/4" BUCKSHOT WASHED ROCK TO A DEPTH OF 4".
 9. PLACE IRON/FINE FILTER AGGREGATE MIX TO A DEPTH OF 8".
 10. PLACE 3.7 LBS/SF (PER 8" THICK SECTION) IRON FILINGS [ETI-CC-1004(-8+50) CONNELLY GPM, INC. OR APPROVED EQUAL] ON TOP OF FINE FILTER AGGREGATE.
 11. TILL IN IRON FILINGS TO 4" DEPTH USING SMALL GARDEN STYLE TILLER.
 12. HAND MIX SIDES NEAR 2.67' X 4' PROTECTIVE PLYWOOD.
 13. SET TILLER DEPTH TO 8" AND MIX AGAIN WITH SAME PROCESS.
 14. REMOVE PROTECTIVE PLYWOOD AND RAKE SURFACE FLAT.
 15. STAKE LINER DOWN EVERY TWO FEET.



A IRON ENHANCED SAND FILTER (IESF) TYPICAL SECTION

B IRON ENHANCED SAND FILTER (IESF) DRAINTILE SCHEMATIC

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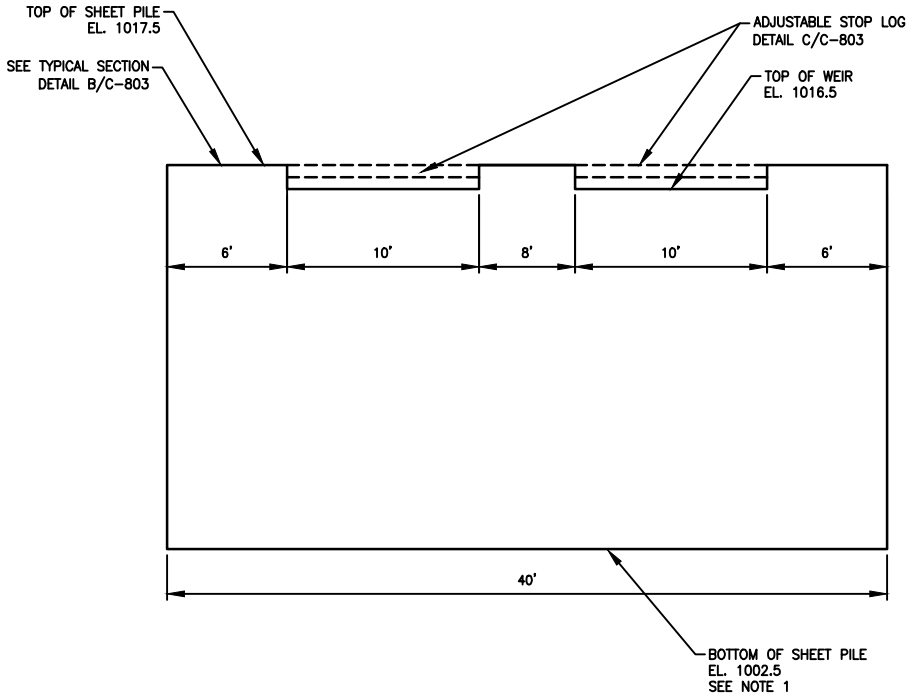

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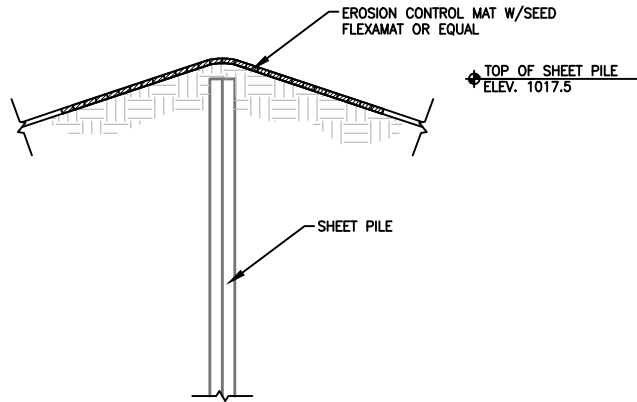
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PROJECT NO. 0002-205	SHEET NO. C-802	REV NO. 1		

Plot Date & Time: 23 December 2014:35 PM

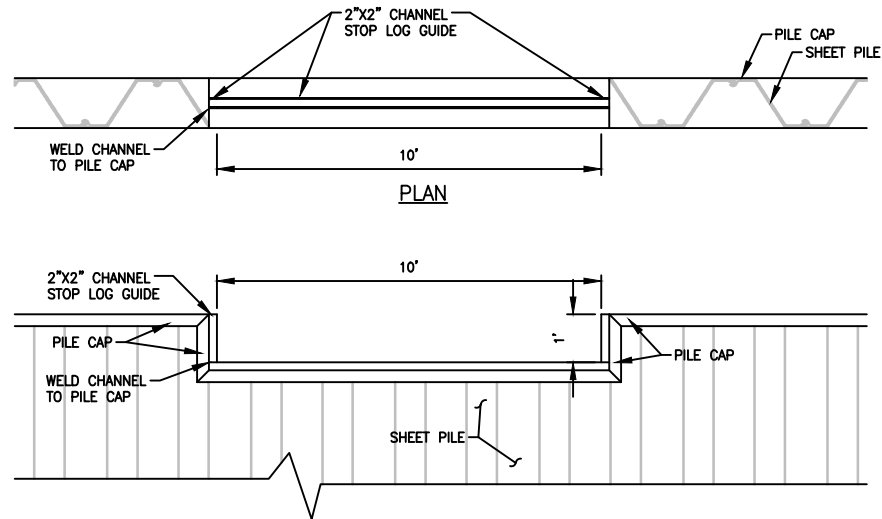


NOTES:
1. BOTTOM OF SHEET PILE SHALL BE 15 FEET BELOW PROPOSED GRADE OR TO REFUSAL, WHICHEVER COMES FIRST

A WEIR DETAILS



B SHEET PILE TYPICAL SECTION



NOTES:
1. PROVIDE ALUMINUM STOP LOGS TO ALLOW ADJUSTMENT OF WEIR HEIGHT.
2. EACH STOP LOG SHALL BE 6 INCHES TALL, WITH LOCKING MECHANISM TO PREVENT THEFT AND VANDALISM.

C ADJUSTABLE STOP LOG DETAIL

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**CLEARWATER RIVER
WATERSHED DISTRICT**

DETAILS			
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PROJECT NO. 0002-205	SHEET NO. C-803	SCALE AS SHOWN	REV NO. 1