



US Army Corps
of Engineers
St Paul District

APPLICANT: Aitkin County Highway
Department

Public Notice

ISSUED: January 15, 2014

EXPIRES: February 15, 2014

REFER TO: MVP-2012-00184-JTF

SECTION:404 - Clean Water Act

1. APPLICATION FOR PERMIT TO discharge dredged and fill material into 8.10 acres of wetlands adjacent to the Mississippi River for the purpose of road upgrades to County State-Aid Highway 10 from the junction with US Highway 169 to the junction with County State aid Highway 3.

2. SPECIFIC INFORMATION.

APPLICANT'S ADDRESS: Mr. Conrad Kragness
Aitkin County Highway Department
1211 Air Park Drive
Aitkin, Minnesota 56431

PROJECT LOCATION: The project site is located in Sec(s). 1 & 2, T. 48N., R. 26W.; Sec. 36, T. 49N., R. 26W.; Sec(s). 22, 27, 28, 31, 32, 33, T. 49N., R. 25W., Aitkin County, Minnesota. The approximate UTM coordinates begin at latitude 46.402749, longitude -93.3628.09 and end at latitude 46.423748, longitude -93.290428.

DESCRIPTION OF PROJECT: The Aitkin County Highway Department proposes to reconstruct approximately seven miles of County State-Aid Highway (CSAH) 10 from the junction with US Highway 169 to the junction with CSAH 3 in Palisade, Minnesota. Currently, CSAH 10 has a road condition that is severely deteriorating and with increasing daily traffic count it has caused increasingly hazardous driving conditions for the traveling public. This section of CSAH 10 is also part of the Great River Road system that extends from Lake Itasca to the Gulf of Mexico and there are only two sections of this system that remain unimproved. Since this section is one of the remaining unimproved portions of road, upgrades would bring this section of the Great River Road in compliance with federal requirements.

The road construction plan for the project consists of grading, shoulder widening, aggregate base, culvert replacement and bituminous surfacing. The majority of the construction work would generally stay within the existing footprint of the roadway. However, in the interest of public safety and to meet minimum design stands, the road would be realigned near the south end of the project. Due to the relatively flat terrain along the entire length of the corridor, the road design was developed using shallower ditches and reduced fills to lessen wetland impacts. Steeper inslopes would be used when deeper fill materials extend well beyond the recovery zone (27 feet from centerline) where feasible. Curb and gutter would be placed to minimize the encroachment on a cemetery and residential structures close to the roadway.

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Staging would most likely occur at or near a gravel pit on the north side of the road at Stations 220+00 to 225+00, which is considered the midpoint of the project. No staging would occur in wetlands.

QUANTITY, TYPE, AND AREA OF FILL: The proposed project would result in the discharge of dredged and fill material into 8.10 acres of wetlands. The affected resources include fresh (wet) meadow, sedge meadow, shallow marsh, shrub swamp and forested wetlands.

VEGETATION IN AFFECTED AREA: The project corridor is dominated by fresh meadow (Type 1/2), shallow marsh (Type 3), shrub swamp (Type 6), and wooded swamp (Type 7) wetlands.

The fresh meadow wetlands were hay fields dominated by reed canary grass. Fresh (wet) meadows are dominated by grasses, such as redtop grass and reed canary grass, and by forbs such as giant goldenrod, growing on saturated soils.

Inland fresh meadows are essentially closed wetland communities (nearly 100 percent vegetative cover) composed of perennial forb, grass and sedge mixtures growing on seasonally wet to saturated soils. Species present at the project site are sedge species and willow species.

Shallow marsh plant communities have soils that are saturated to inundated, by standing water up to 6 inches in depth, throughout most of the growing season. Plant species found in the shallow marsh wetlands along the project corridor include cattail, reed canary grass, and freshwater cord grass. A large majority of the project site was dominated by broad fruit burr reed and lake sedge.

Shrub swamps are wetland plant communities dominated by woody vegetation less than 20 feet in height and with a dbh of less than 6 inches. Dominant shrubs included gray willow, meadow willow and pussy willow.

Wooded swamps are forested wetlands dominated by mature conifers and/or lowland hardwoods. They are usually associated with ancient lake basins and retired riverine oxbows. Black ash and quaking aspen dominated the wooded swamps in the project area.

SOURCE OF FILL MATERIAL: Any off-site fill utilized for the project would come from an existing commercial source.

SURROUNDING LAND USE: The project site consists of woods, open space, farmland, and wetlands. The project also runs adjacent to the Mississippi River and is within the floodplain.

DESCRIPTION OF DREDGING OR EXCAVATION: Ditches would be constructed to accommodate drainage for the road. The average inslope of the ditches would be 4:1.

THE FOLLOWING POTENTIALLY TOXIC MATERIALS COULD BE USED AT THE PROJECT SITE: Fuel, hydraulic fluid, lubricants, coolant and other fluids commonly used by construction equipment would be expected to be present for construction of the project.

THE FOLLOWING PRECAUTIONS TO PROTECT WATER QUALITY HAVE BEEN DESCRIBED BY THE APPLICANT: The applicant would be required to prepare a Storm Water

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Pollution Prevention Plan, as this proposal would disturb greater than one acre of soil. An erosion control plan has also been created and would be implemented during construction.

MITIGATION: The applicant proposes to provide compensatory mitigation for wetland impacts through the debit of credits from the BWSR Road Replacement Program mitigation bank.

3. REPLIES/COMMENTS.

Interested parties are invited to submit to this office written facts, arguments, or objections within 30 days of the date of this notice. These statements should bear upon the suitability of the location and the adequacy of the project and should, if appropriate, suggest any changes believed to be desirable. Comments received may be forwarded to the applicant.

Replies may be addressed to Regulatory Branch, St. Paul District, Corps of Engineers, Highway 2, Suite 2, Two Harbors, Minnesota 55616.

Or, IF YOU HAVE QUESTIONS ABOUT THE PROJECT, call Josh Fitzpatrick at the Two Harbors office of the Corps, telephone number (651) 290 - 5694.

To receive Public Notices by e-mail, go to: http://mvp-extstp.mvp.usace.army.mil/list_server/ and add your information in the New Registration Box.

4. FEDERALLY-LISTED THREATENED OR ENDANGERED WILDLIFE OR PLANTS OR THEIR CRITICAL HABITAT.

None were identified by the applicant or are known to exist in the permit area. However, Aitkin County is within the known or historic range of the following Federally-listed threatened (T) species:

<u>Species</u>	<u>Habitat</u>
Canada Lynx (T)	Boreal Forest

This application is being coordinated with the U.S. Fish and Wildlife Service. Any comments it may have concerning Federally-listed threatened or endangered wildlife or plants or their critical habitat will be considered in our final assessment of the described work.

5. JURISDICTION.

This application is being reviewed in accordance with the practices for documenting Corps jurisdiction under Sections 9 & 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act identified in Regulatory Guidance Letter 08-02. We have made an initial determination that the aquatic resources that would be impacted by the proposed project are regulated by the Corps of Engineers under Section 404 of the Clean Water Act and/or Section(s) 9 & 10 of the Rivers and Harbors Act. The Corps will prepare an approved or preliminary jurisdictional determination prior to making a permit decision. Approved jurisdictional determinations are posted on the St. Paul District web page at <http://www.mvp.usace.army.mil/Missions/Regulatory.aspx>.

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THE APPLICANT HAS STATED THAT THE FOLLOWING STATE, COUNTY, AND/OR LOCAL PERMITS HAVE BEEN APPLIED FOR/ISSUED:

Minnesota Pollution Control Agency

NPDES Stormwater Permit (for construction): application to be submitted

Section 401 Water Quality Certification: not yet approved

Surveys

Minnesota Natural Heritage Information System Survey: completed

State Historic Preservation Office Survey: completed

6. STATE SECTION 401 WATER QUALITY CERTIFICATION.

Valid Section 404 permits cannot be issued for any activity unless state water quality certification for the activity is granted or waived pursuant to Section 401 of the Clean Water Act. The state Section 401 authority in Minnesota is the Minnesota Pollution Control Agency (MPCA). The St. Paul District has provided this public notice and a copy of the applicant's Section 404 permit application form to the MPCA. If MPCA needs any additional information in order for the Section 401 application to be considered complete by MPCA, the MPCA has indicated that it will request such information from the applicant. It is the permit applicant's responsibility to ensure that the MPCA has received a valid, complete application for state Section 401 certification and to obtain a final Section 401 action from the MPCA.

The MPCA has indicated that this public notice serves as its public notice of the application for Section 401 water quality certification under Minnesota Rules Part 7001. The MPCA has also indicated that the Section 401 process shall begin to commence upon the issuance date of this public notice unless the MPCA notifies both the St. Paul District and the permit applicant to the contrary, in writing, before the expiration date of this public notice.

Any comments relative to MPCA's Section 401 Certification for the activity proposed in this public notice may be sent to:

Minnesota Pollution Control Agency, Resource Management and Assistance Division,
Attention: 401 Certification, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

7. HISTORICAL/ARCHAEOLOGICAL.

This public notice is being sent to the National Park Service and the State Archaeologist for their comments. The Corps will review information on known cultural resources and/or historic properties within and adjacent to the project area. The Corps will also consider the potential effects of the project on any properties that have yet to be identified. The results of this review and the Corps' determination of effect will be coordinated with the State Historic Preservation Officer independent of this public notice. Any adverse effects on historic properties will be resolved prior to the Corps authorization, or approval, of the work in connection with this project.

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A 2011 archeological reconnaissance survey did not reveal any archeological sites within the proposed project area. The State Historic Preservation Office (SHPO) concurred based on a review of the survey.

8. PUBLIC HEARING REQUESTS.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, in detail, the reasons for holding a public hearing. A request may be denied if substantive reasons for holding a hearing are not provided or if there is otherwise no valid interest to be served.

9. PUBLIC INTEREST REVIEW.

The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. Environmental and other documents will be available for review in the St. Paul District Office.

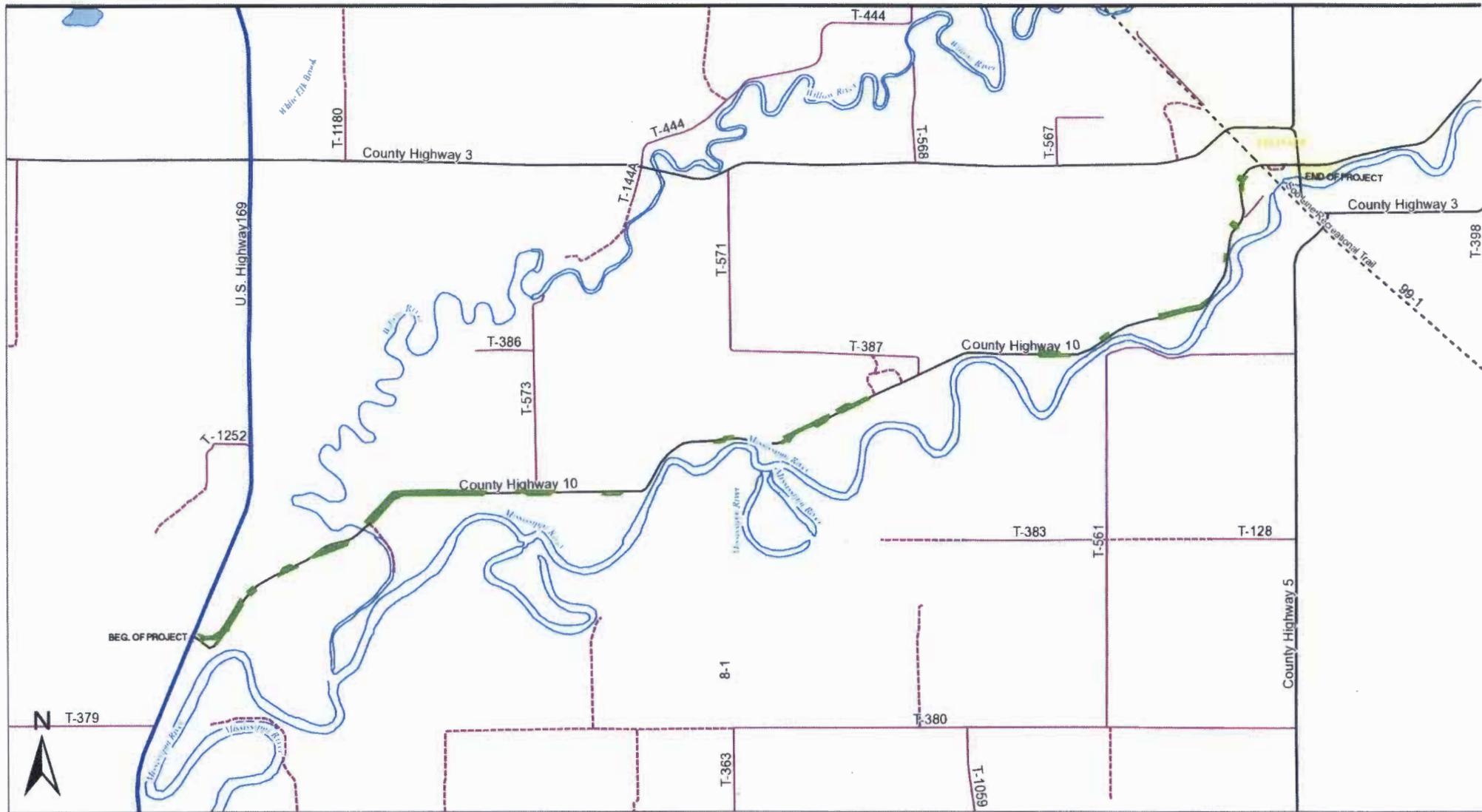
The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine 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.

Jeff Olson
Chief, Northwest Section

Enclosures

2012-00184-JTF Drawing 1 of 22 through 22 of 22

NOTICE TO EDITORS: This public notice is provided as background information and is not a request or contract for publication.



These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

Date: 1/14/2014

0 2,125 4,250 ft

Project No. SP 001-610-022

Wetland Locations on CSAH No. 10

WETLAND AREAS ARE DEPICTED WITH GREEN SHADING





SEH
 3636 VADNAS CENTER DR.
 ST. PAUL, MN 55110
 PHONE: (651) 490-2000
 FAX: (888) 606-8166
 TF: (800) 325-2055
 www.sehinc.com

Project: AITKI 125432
 Print Date: 8/21/2013

Map by: JBT
 Projection: Aitkin County (S)
 Source: MNDNR, SEH Inc., Aitkin Co.
 Background: MNDNR 2011

WETLAND DELINEATION RESULTS
 CSAH 10 Redevelopment
 Aitkin County, Minnesota

Figure
 6 - 1

This map is a digital recording of a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on the map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map is error free, and SEH does not represent that the GIS Data can be used for navigation, tracking, or any other purpose requiring exacting measurement of distance or direction or position or the depiction of geographic features. The user of the map acknowledges that SEH shall not be liable for any damages which arise out of the user's reliance on or use of data provided.




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 www.sehinc.com

Project: AITK 125432
 Print Date: 8/21/2013

Map by: Igt
 Projection: Aitkin County (6)
 Source: MNDNR, SEHinc, Aitkin Co.
 Background: MNDNR 2011

WETLAND DELINEATION RESULTS

CSAH 10 Redevelopment
 Aitkin County, Minnesota

Figure
 6 - 2

This map contains a legally recorded map that is a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigation, tracking, or any other purpose requiring existing measurements of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



SEH

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 PHONE: (612) 490-2000
 FAX: (612) 908-8166
 TF: (800) 325-2055
 www.sehinc.com

Project: AITKI 125432
 Print Date: 8/21/2013

Map by: spt
 Projection: Aitkin County (D)
 Sources: MNDNR, SE File, Aitkin Co.
 Background: MNDNR 2011

WETLAND DELINEATION RESULTS

CSAH 10 Redevelopment
 Aitkin County, Minnesota

Figure
 6 - 3

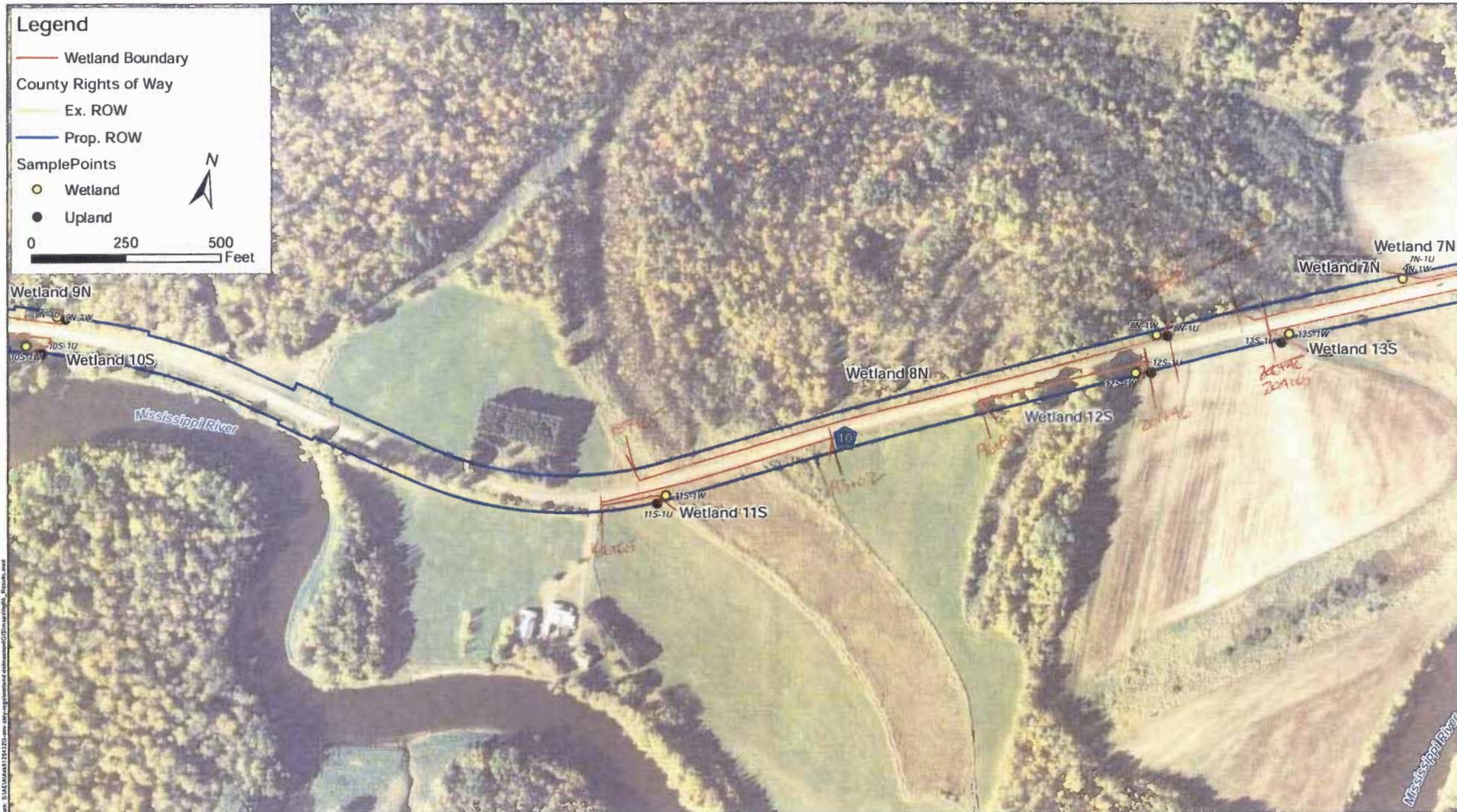
This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are an exact true, and SEH does not represent that the GIS Data can be used for management tracking, or any other purpose requiring creating measurements of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



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	<p>3536 VADNAIS CENTER DR. ST. PAUL, MN 55110 PHONE: (651) 430-0000 FAX: (888) 808-6166 TF: (800) 329-2065 www.sehinc.com</p>	<p>Project: AITKI 125432 Print Date: 8/21/2013</p> <p>Map by: jpn Projection: Aitkin County (N) Source: MNDNR, SEHinc, Aitkin Co. Background: MNDNR 2011</p>	<p>WETLAND DELINEATION RESULTS CSAH 10 Redevelopment Aitkin County, Minnesota</p>	<p>Figure 6 - 5</p>
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 ST. PAUL, MN 55110
 PHONE: (651) 490-2000
 FAX: (651) 908-9166
 TP: (800) 325-2055
 www.sehinc.com

Project: AITKI 125432
 Print Date: 8/21/2013

Map by: jpt
 Preparation: Aitkin County (9)
 Source: MGNR, 12/11/09; Aitkin Co.
 Background: MNOR 2011

WETLAND DELINEATION RESULTS
 CSAH 10 Redevelopment
 Aitkin County, Minnesota

Figure
 6 - 6

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 FAX: (888) 908-8166
 TF: (800) 325-2055
 www.sehinc.com

Project: AITKI 125432
 Print Date: 8/21/2013
 Map by: IRI
 Projection: Aitkin County (N)
 Source: MDCNR, SE Inc., Aitkin Co.
 Background: NAD83 2011

WETLAND DELINEATION RESULTS
 CSAH 10 Redevelopment
 Aitkin County, Minnesota

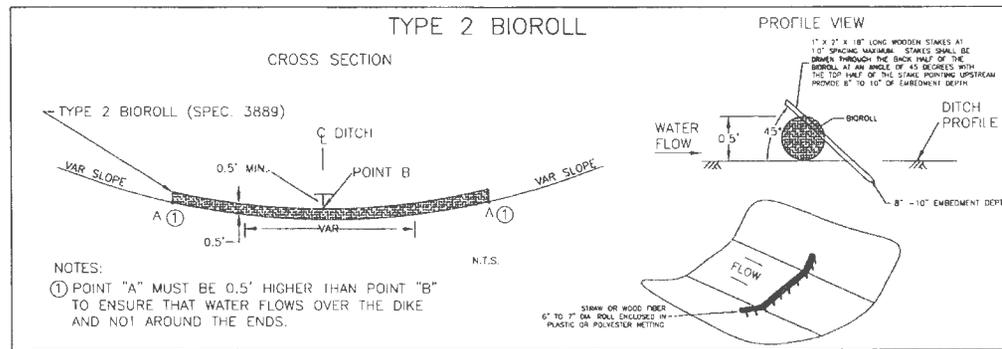
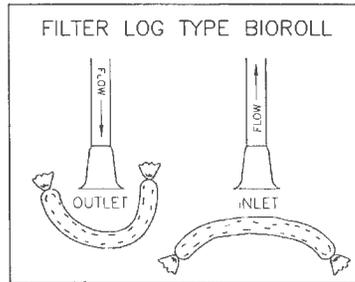
Figure
 6 - 11

This map is neither a legally recorded map nor a survey map and is not intended to be used as such. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring accurate measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damage which may result from the user's reliance on use of data provided.

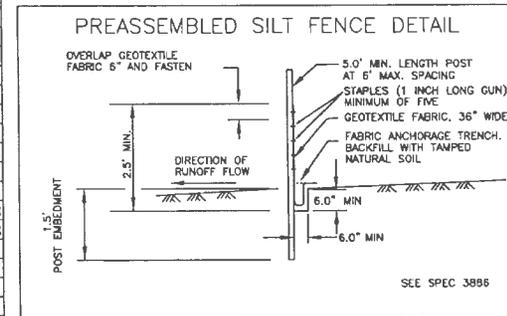
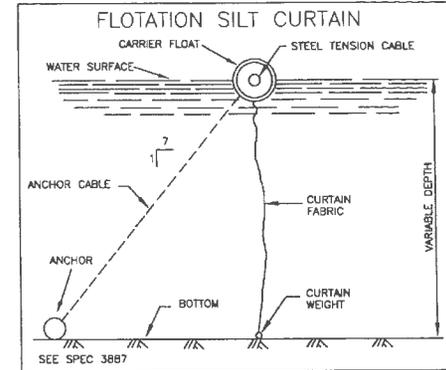
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S TEMPORARY DITCH CHECK TYPE 2			
STATION	SIDE	LIN. FT.	COMMENTS
0+63	RT	12	INLET PROTECT
10+50	RT	55	DITCH BLOCK
10+72	LT	12	INLET PROTECT
21+50	RT	25	DITCH BLOCK
21+50	LT	25	DITCH BLOCK
24+65	RT	25	DITCH BLOCK
24+65	LT	25	DITCH BLOCK
27+42	LT	12	INLET PROTECT
29+32	LT	12	INLET PROTECT
34+49	LT	12	INLET PROTECT
37+00	LT	12	DITCH BLOCK
65+42	RT	12	INLET PROTECT
100+52	LT	12	INLET PROTECT
111+94	LT	12	INLET PROTECT
115+60	LT	12	INLET PROTECT
117+00	RT,LT	24	DITCH BLOCKS
130+50	RT,LT	24	DITCH BLOCKS
131+53	LT	12	INLET PROTECT
140+00	RT,LT	24	DITCH BLOCKS
140+95	LT	12	INLET PROTECT
147+82	LT	12	INLET PROTECT
151+43	LT	12	INLET PROTECT
152+38	LT	12	INLET PROTECT
154+15	LT	12	INLET PROTECT
154+70	RT	12	DITCH BLOCK
167+97	LT	12	INLET PROTECT
170+79	LT	12	INLET PROTECT
178+54	LT	12	INLET PROTECT
183+70	LT	12	INLET PROTECT
189+77	LT	12	INLET PROTECT
213+00	LT	12	INLET PROTECT
217+50	RT,LT	24	DITCH BLOCKS
238+00	RT,LT	24	DITCH BLOCKS
239+26	LT	12	INLET PROTECT
244+00	LT	12	INLET PROTECT
264+50	RT,LT	24	DITCH BLOCKS
265+66	LT	12	INLET PROTECT
284+00	LT	12	DITCH CHECK
285+00	LT	12	INLET PROTECT
294+27	LT	24	INLET PROTECT
316+00	LT	12	INLET PROTECT
325+65	LT	12	INLET PROTECT
339+27	LT	12	INLET PROTECT
349+10	LT	12	INLET PROTECT
360+69	LT	12	INLET PROTECT
366+71	LT	12	INLET PROTECT
369+54	LT	12	INLET PROTECT
TOTAL		743	

S SILT CURTAIN			
BEG STA	END STA	SIDE	LIN. FT.
22+10	24+20	RT	250
22+30	24+30	LT	250
53+55	59+25	CL	120
59+95	60+50	CL	120
TOTAL			740



S SILT FENCE				
BEG STA	END STA	SIDE	LIN. FT.	COMMENTS
0+50	19+65	LT	1880	WETLAND
1+90	3+40	RT	150	WETLAND
31+75	37+90	RT	615	WETLAND
33+40	35+65	LT	325	WETLAND
44+50	53+85	RT	930	WETLAND
56+35	58+55	LT	245	WILLOW RIVER
57+00	59+10	RT	265	WILLOW RIVER
60+00	96+40	LT	3705	WETLAND
60+55	96+40	RT	3555	WETLAND
100+30	100+75	RT	45	OFF-SITE FLOW
105+80	111+60	LT	620	WETLAND
108+35	111+60	RT	355	WETLAND
111+95	116+00	RT	455	WETLAND
111+95	116+30	LT	475	WETLAND
130+20	135+90	RT	575	WETLAND
141+55	154+50	RT	1315	MISSISSIPPI RIVER
168+50	171+70	LT	320	WETLAND
168+65	182+35	RT	1360	MISSISSIPPI RIVER
183+50	183+80	RT	35	OFF-SITE FLOW
186+60	192+95	RT	645	WETLAND
187+40	201+20	LT	1380	WETLAND
196+35	201+20	RT	485	WETLAND
203+15	208+60	LT	545	WETLAND
204+40	216+00	RT	1160	WETLAND
237+30	258+00	RT	1985	MISSISSIPPI RIVER
264+25	273+15	RT	890	WETLAND
264+40	269+90	LT	555	WETLAND
276+65	295+20	RT	1865	MISSISSIPPI RIVER
284+50	286+50	LT	200	WETLAND
301+30	316+80	LT	1505	WETLAND
301+55	326+10	RT	2510	MISSISSIPPI RIVER
326+30	334+85	RT	855	MISSISSIPPI RIVER
328+65	331+00	LT	235	WETLAND
338+00	340+00	RT	200	OFF-SITE FLOW
338+35	340+00	LT	165	WETLAND
348+20	353+85	RT	540	WETLAND
351+65	353+65	LT	225	WETLAND
360+60	361+50	RT	90	OFF-SITE FLOW
369+30	369+75	RT	50	OFF-SITE FLOW
TOTAL			33310	



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENCED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 DATE: _____
 ENGINEER PRINTED NAME: JOHN WELLE (LIC NO 24340)

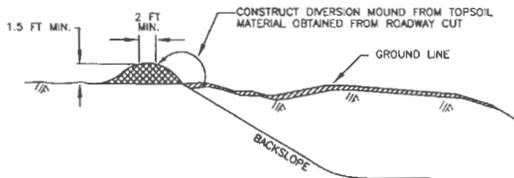
EROSION AND SEDIMENT CONTROL DETAILS

ATKIN COUNTY HIGHWAY DEPT.
 CSAH NO. 10
 SP 001-610-022

SHEET NO
 6
 SHEET 6 OF 22

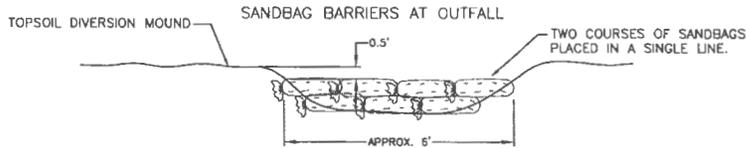
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TOPSOIL DIVERSION MOUND



NOTES:

1. TO BE CONSTRUCTED FROM BOP TO EOP LT AND RT (EXCLUDING APPROACHES).
2. THE BERM SHALL BE CONTINUOUS AND SHALL FOLLOW A SINGLE CONTOUR WHENEVER POSSIBLE.
3. EACH LOW POINT THAT DISCHARGES WILL REQUIRE AN OUTFALL TO BE CONSTRUCTED FROM SANDBAG BARRIERS.
4. RAPID STABILIZATION METHOD 2 WILL BE USED TO STABILIZE THE BERM AFTER CONSTRUCTION IF IT IS TO BE LEFT IN PLACE LONGER THAN 7 DAYS.
5. TOPSOIL DIVERSION MOUND INCIDENTAL TO COMMON EXCAVATION. SANDBAG BARRIERS PAID PER SQ FT. ESTIMATED 2 COURSES (1' HIGH).
6. LOCATIONS OF SANDBAG BARRIERS TO BE DETERMINED AFTER TOPSOIL DIVERSION MOUND IS CONSTRUCTED. 50 BARRIERS ESTIMATED.



T INLET PROTECTION	
STATION	SIDE
367+51	LT
367+51	CL
367+51	RT
TOTAL	3
INLET PROTECTION SHALL BE AS PER MNDOT STANDARD SHEET NO. 5-297.405 (4 OF 7) OR APPROVED EQUAL.	

T SEDIMENTATION CONTROL STRUCTURE	
STATION	SIDE
147+82	RT
151+43	RT
152+38	RT
154+15	RT
170+79	RT
178+54	RT
239+26	RT
244+00	RT
285+00	RT
294+27	RT
316+00	RT
325+65	RT
TOTAL	12

SEDIMENTATION CONTROL STRUCTURE

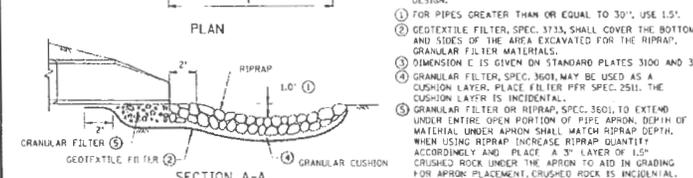
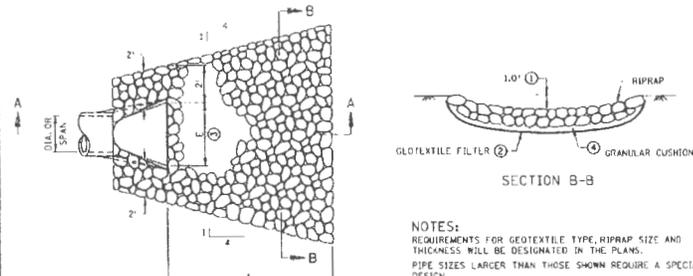
1. CONSTRUCT AS SHOWN BELOW IN STANDARD PLATE 31330, EXCEPT NOTE 1 DIMENSION TO BE 2' MINIMUM.
2. TO BE CONSTRUCTED AT THE SAME TIME AS CULVERT INSTALLATION.
3. ADDITIONAL RIPRAP REQUIRED TO PROTECT SLOPES TO BE PAID PER CU. YD.
4. SEDIMENT REMOVAL BID ITEM FOR CLEANING AND MAINTAINING SEDIMENTATION CONTROL STRUCTURES.

**TABLE OF QUANTITIES
RIPRAP AT RCP OUTLETS**

DIA. OF ROUND PIPE (IN.)	L (FT.)	CLASS II d ₅₀ = 6"			CLASS III d ₅₀ = 9"			CLASS IV d ₅₀ = 12"		
		GEO-TEXTILE FILTER UNDER APRON (SQ. YD.)	FILTER UNDER APRON (CU. YD.)	12" DEPTH RIPRAP (CU. YD.)	GEO-TEXTILE FILTER UNDER APRON (SQ. YD.)	FILTER UNDER APRON (CU. YD.)	18" DEPTH RIPRAP (CU. YD.)	GEO-TEXTILE FILTER UNDER APRON (SQ. YD.)	FILTER UNDER APRON (CU. YD.)	24" DEPTH RIPRAP (CU. YD.)
12	8	16.9	0.2	3.0	15.6	0.3	4.4	22.6	0.3	5.9
15	8	18.0	0.2	3.2	20.8	0.3	4.8	23.9	0.4	6.4
18	10	22.4	0.3	4.3	25.6	0.4	6.4	29.0	0.5	8.5
21	10	24.1	0.4	4.7	27.4	0.4	7.1	30.9	0.7	9.4
24	12	29.7	0.5	6.2	33.4	0.8	9.2	37.3	1.0	12.3
27	12	31.4	0.6	6.6	35.2	0.9	9.9	39.2	1.2	13.2
30	14	37.4	0.8	8.2	41.6	1.1	12.3	46.0	1.5	16.4
36	16	45.9	1.1	10.6	50.5	1.8	15.8	55.4	2.1	21.1
42	18	52.8	1.2	12.5	57.8	1.7	18.7	63.0	2.3	24.9
48	20	61.1	1.5	14.9	66.5	2.2	22.2	72.0	2.9	29.6

**TABLE OF QUANTITIES
RIPRAP AT RCP-A OUTLETS**

SPAN OF PIPE ARCH (IN.)	L (FT.)	CLASS II d ₅₀ = 6"			CLASS III d ₅₀ = 9"			CLASS IV d ₅₀ = 12"		
		GEO-TEXTILE FILTER UNDER APRON (SQ. YD.)	FILTER UNDER APRON (CU. YD.)	12" DEPTH RIPRAP (CU. YD.)	GEO-TEXTILE FILTER UNDER APRON (SQ. YD.)	FILTER UNDER APRON (CU. YD.)	18" DEPTH RIPRAP (CU. YD.)	GEO-TEXTILE FILTER UNDER APRON (SQ. YD.)	FILTER UNDER APRON (CU. YD.)	24" DEPTH RIPRAP (CU. YD.)
22	10	22.4	0.3	4.3	25.6	0.4	5.1	28.0	0.5	8.1
28	12	29.5	0.5	5.7	33.2	0.7	8.5	37.1	0.9	11.3
36	14	37.3	0.8	7.5	41.5	1.1	11.2	45.8	1.5	14.9
43	16	45.9	1.1	9.5	50.5	1.6	14.5	55.8	2.1	19.0
51	18	52.5	1.2	11.3	57.5	1.7	16.9	62.7	2.3	22.5
58	20	59.9	1.3	13.2	65.2	1.9	19.8	70.7	2.5	26.4



- NOTES:**
1. REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS WILL BE DESIGNATED IN THE PLANS.
 2. PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.
 3. FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5'.
 4. GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP.
 5. GRANULAR FILTER MATERIALS.
 6. DIMENSION C IS GIVEN ON STANDARD PLATES 3100 AND 3110.
 7. GRANULAR FILTER, SPEC. 3601, MAY BE USED AS A CUSHION LAYER. PLACE FILTER PER SPEC. 2531. THE CUSHION LAYER IS INCIDENTAL.
 8. GRANULAR FILTER OR RIPRAP, SPEC. 3601, TO EXTEND UNDER ENTIRE OPEN PORTION OF PIPE APRON. DEPTH OF MATERIAL UNDER APRON SHALL MATCH RIPRAP DEPTH. WHEN USING RIPRAP INCREASE RIPRAP QUANTITY ACCORDINGLY AND PLACE A 3" LAYER OF 1.5" CRUSHED ROCK UNDER THE APRON TO AID IN GRADING. FOR APRON PLACEMENT, CRUSHED ROCK IS INCIDENTAL.

APPROVED DECEMBER 9, 2013	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE 3100 3601 3733 2511	STANDARD PLATE NO. 3133D
RIPRAP AT RCP OUTLETS			

I HEREBY CERTIFY THAT THIS PLAN 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.
 DATE: _____
 ENGINEER PRINTED NAME: JOHN WELLE (LIC. NO. 24340)

EROSION AND SEDIMENT CONTROL DETAILS

AITKIN COUNTY HIGHWAY DEPT. CSAH NO. 10 SP 001 - 610-022

SHEET NO. 6
 SHEET 6 OF 42

U EROSION CONTROL BLANKET-CATEGORY 3					
BEG STA	END STA	SIDE	LOCATION	WIDTH (FT)	SQ. YD
28+50	29+75	RT	BACKSLOPE	15	208
140+80	143+50	RT	BACKSLOPE	15	450
143+50	145+50	LT	BACKSLOPE	15	333
143+50	154+50	RT	INSLOPE	15	1833
167+00	169+00	LT	DITCH BOTTOM	15	333
167+00	169+00	RT	DITCH BOTTOM	15	333
170+00	172+00	RT	DITCH BOTTOM	15	333
170+00	172+00	LT	DITCH BOTTOM	15	333
178+00	179+00	LT	DITCH BOTTOM	15	167
178+00	179+00	RT	DITCH BOTTOM	15	167
183+00	184+00	RT	DITCH BOTTOM	8	89
239+00	240+00	RT	DITCH BOTTOM	8	89
239+00	240+00	LT	DITCH BOTTOM	8	89
243+00	245+00	RT	DITCH BOTTOM	15	333
243+00	245+00	LT	DITCH BOTTOM	15	333
247+75	252+25	RT	INSLOPE	8	400
278+50	289+50	RT	INSLOPE	15	1833
293+80	294+80	LT	DITCH BOTTOM	15	167
293+80	294+80	RT	DITCH BOTTOM	15	167
315+00	318+00	RT	DITCH BOTTOM	15	500
338+00	340+00	LT	DITCH BOTTOM	8	178
338+00	340+00	RT	DITCH BOTTOM	8	178
RCP INLETS & OUTLETS	BOTH	VARIABLES	15 X 20		2067
CSP INLETS & OUTLETS	BOTH	VARIABLES	15 X 15		2700
TOTAL					13614

P RANDOM RIPRAP CLASS II			
STATION	SIDE	CU YD	DESCRIPTION
10+72	RT	2	RCP OUTLET
111+94	RT/LT	14	RCP INLET, OUTLET
143+50	RT	14	DITCH BOTTOM
229+50	LT	4	C & G END
230+00	RT	4	C & G END
239+26	RT/LT	42	DITCH SLOPES
244+00	RT/LT	28	DITCH SLOPES
248+00	RT	4	C & G END
252+00	RT	6	C & G END
265+66	RT	7	RCP OUTLET
285+00	RT	14	RCP OUTLET
294+27	RT/LT	28	DITCH BOTTOM, SLOPES
316+00	RT	14	RCP OUTLET
338+00	RT	14	C & G END
338+00	LT	14	C & G END
339+27	RT	7	RCP OUTLET
TOTAL		216	

V RAPID STABILIZATION METHOD 2			
BEG STA	END STA	SIDE	ACRES
0+30	26+40	LT	1.91
0+30	26+40	RT	1.92
27+42	27+42	RT/LT	0.02
29+00	29+00	RT/LT	0.02
29+32	29+32	RT/LT	0.02
30+00	39+60	RT	0.72
31+70	38+35	LT	0.48
42+85	59+00	RT	0.98
46+00	46+00	LT	0.01
54+10	54+10	LT	0.01
54+85	58+70	LT	0.27
60+00	98+25	LT	2.78
60+40	98+25	RT	2.44
99+20	99+20	LT	0.02
100+52	100+52	RT/LT	0.02
104+10	118+10	LT	1.13
106+90	117+80	RT	0.90
128+35	157+15	RT	2.24
129+75	129+75	LT	0.02
131+53	131+53	LT	0.01
138+65	156+25	LT	1.31
166+00	217+00	RT	3.89
167+00	217+00	LT	3.83
223+40	223+40	RT	0.02
224+50	224+50	LT	0.02
233+91	233+91	RT	0.02
237+40	246+00	LT	0.77
237+40	257+25	RT	1.68
252+87	252+87	LT	0.02
257+54	257+54	LT	0.02
263+75	270+80	LT	0.49
263+75	296+20	RT	2.44
278+00	278+00	LT	0.02
282+75	288+35	LT	0.47
292+00	296+00	LT	0.39
297+74	297+74	RT	0.02
300+45	341+25	RT	2.97
300+45	341+25	LT	3.06
342+26	342+26	RT	0.02
347+55	354+50	RT	0.50
348+00	354+50	LT	0.54
355+26	355+26	LT	0.02
358+14	358+14	RT	0.02
359+88	359+88	LT	0.02
360+69	360+69	RT/LT	0.02
363+08	363+08	LT	0.02
364+15	365+47	LT	0.02
365+58	365+58	LT	0.02
366+22	366+22	RT	0.02
366+60	366+87	LT	0.02
368+25	368+25	RT	0.02
369+54	369+54	RT/LT	0.02
TOTAL ACRES			38.59

EROSION CONTROL NOTES:

1. INLET PROTECTION FOR DROP STRUCTURES AND CULVERTS TO BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION. TEMPORARY DITCH CHECKS TO BE INSTALLED IMMEDIATELY AFTER ROUGH GRADING. NO SEPARATE MOBILIZATION PAYMENTS SHALL BE MADE. IT IS RECOMMENDED THE GRADING CONTRACTOR BIDS THESE ITEMS.
2. THE CONTRACTOR SHALL PROVIDE APPROPRIATE EROSION CONTROL DEVICES FOR STOCKPILE AREAS.
3. SILT FENCE SHALL FOLLOW, AS CLOSE AS POSSIBLE, TO A SINGLE CONTOUR LINE.

BASIS FOR QUANTITIES:

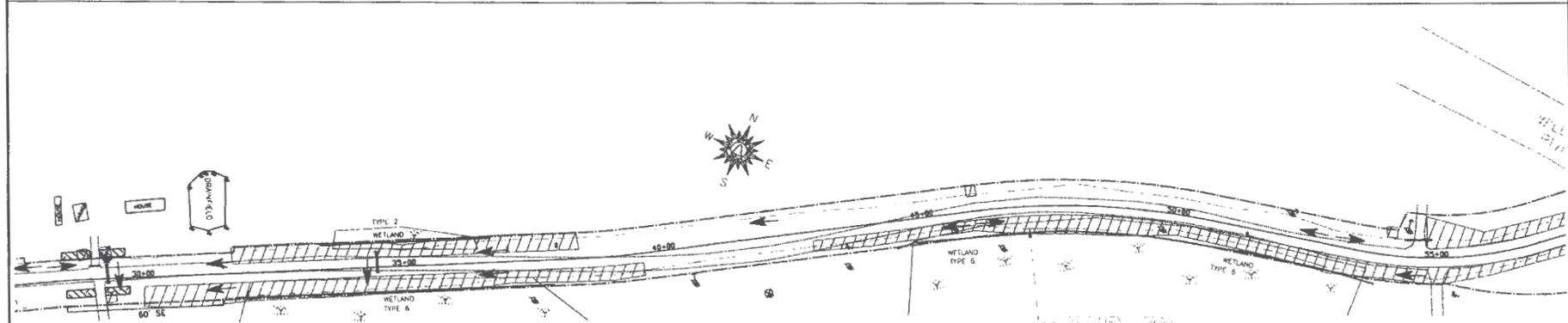
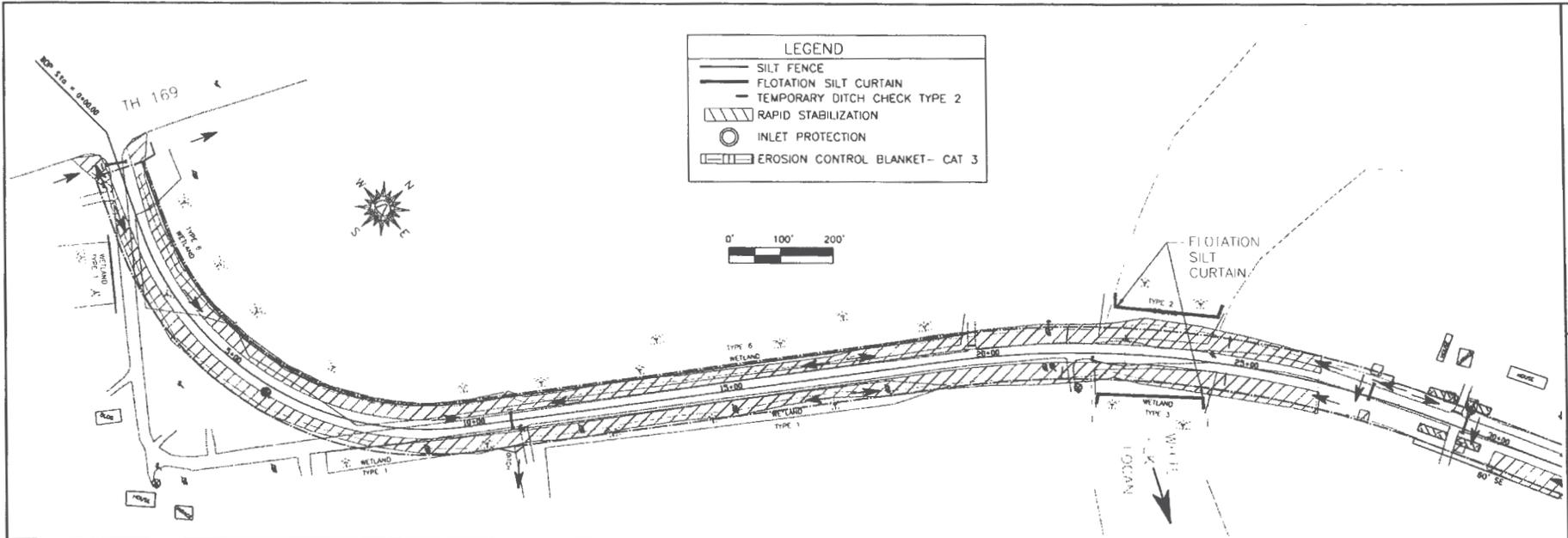
1. MULCH TYPE 4 TO BE USED FOR PERMANENT SEEDING. MULCH TYPE 4 CONSISTS OF TYPE 1 MULCH MATERIAL OVER-SPRAYED WITH TYPE 5 HYDRAULIC SOIL STABILIZER. PAID FOR AS TYPE 1 MULCH BY THE TON APPLIED AT A RATE OF 1.5 TONS PER ACRE AND HYDRAULIC SOIL STABILIZER TYPE 5 BY THE LB APPLIED AT A RATE OF 750 LBS PER ACRE.
2. SEED MIXTURE 250 @ 75 LBS/ACRE.
3. FERTILIZER TYPE 2 (PHOSPHORUS FREE) QUANTITY BASED ON AN APPLICATION RATE OF 112 LBS OF PLANT FOOD PER ACRE. (350 LBS OF 23-0-23 PER ACRE).
4. RAPID STABILIZATION METHOD 2 CONSISTS OF TYPE 1 MULCH MATERIAL OVER-SPRAYED WITH TYPE 5 HYDRAULIC SOIL STABILIZER AND IS PER ACRE. TYPE 1 MULCH APPLIED AT A RATE OF 1.5 TONS PER ACRE AND HYDRAULIC SOIL STABILIZER TYPE 5 APPLIED AT A RATE OF 750 LBS PER ACRE.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENCED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE: _____
ENGINEER
PRINTED NAME : JOHN WELLE (LIC NO 24340)

EROSION AND SEDIMENT CONTROL DETAILS

AITKIN COUNTY HIGHWAY DEPT.
CSAH NO. 10
SP 001-610-022

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LAND FEATURE CHANGES	
TOTAL PROJECT AREA DISTURBED	85 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA	24 ACRES
TOTAL EXISTING PERVIOUS SURFACE AREA	62 ACRES
TOTAL PROPOSED IMPERVIOUS SURFACE AREA	31 ACRES
TOTAL PROPOSED PERVIOUS SURFACE AREA	56 ACRES

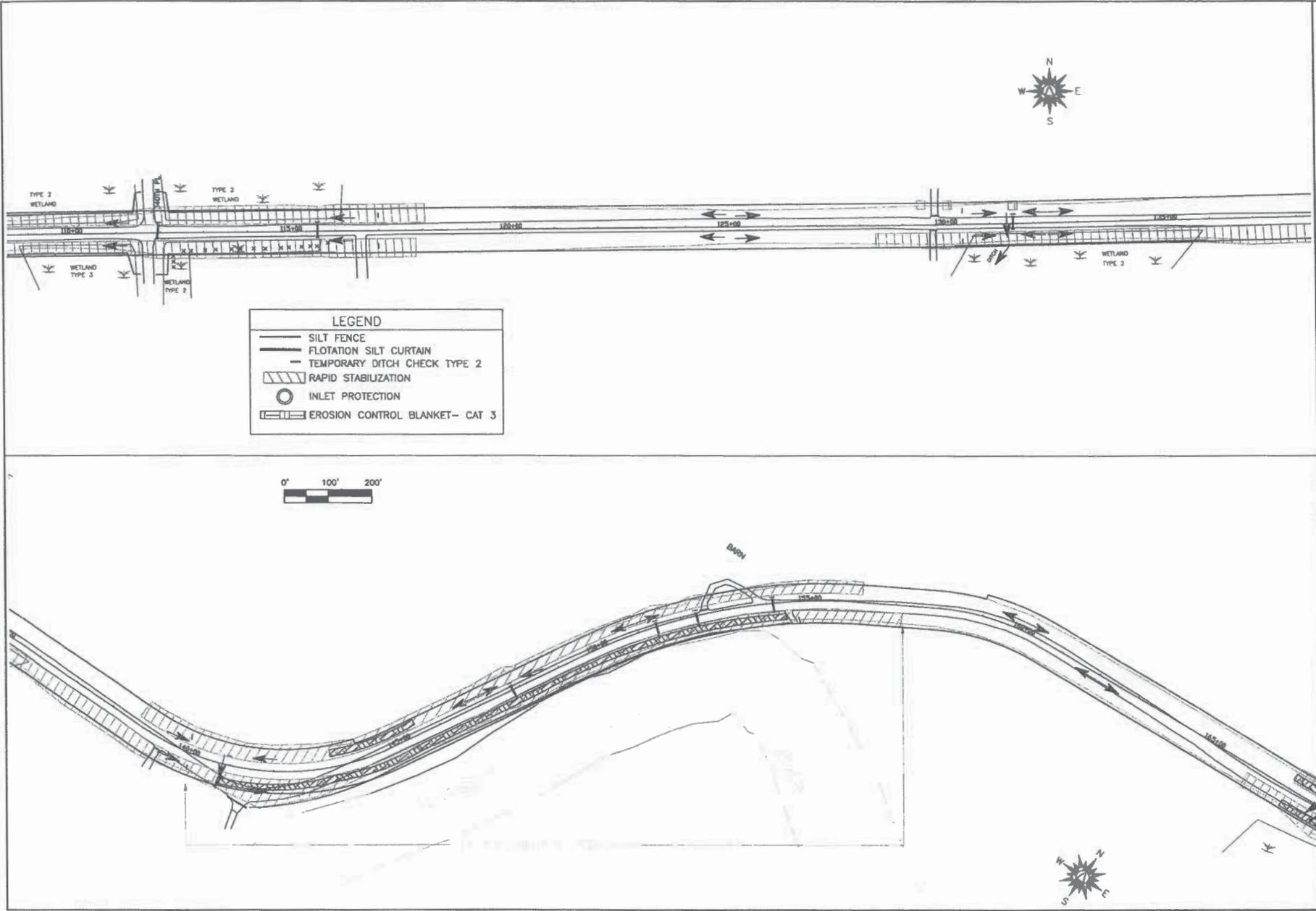
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 UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: _____ LIC. No. 24340
 DATE: _____

EROSION CONTROL PLAN

AITKIN COUNTY HIGHWAY DEPT.
 CSAH NO. 10
 SP 01-610-22

SHEET NO
 28
 SHEET 28 OF 98

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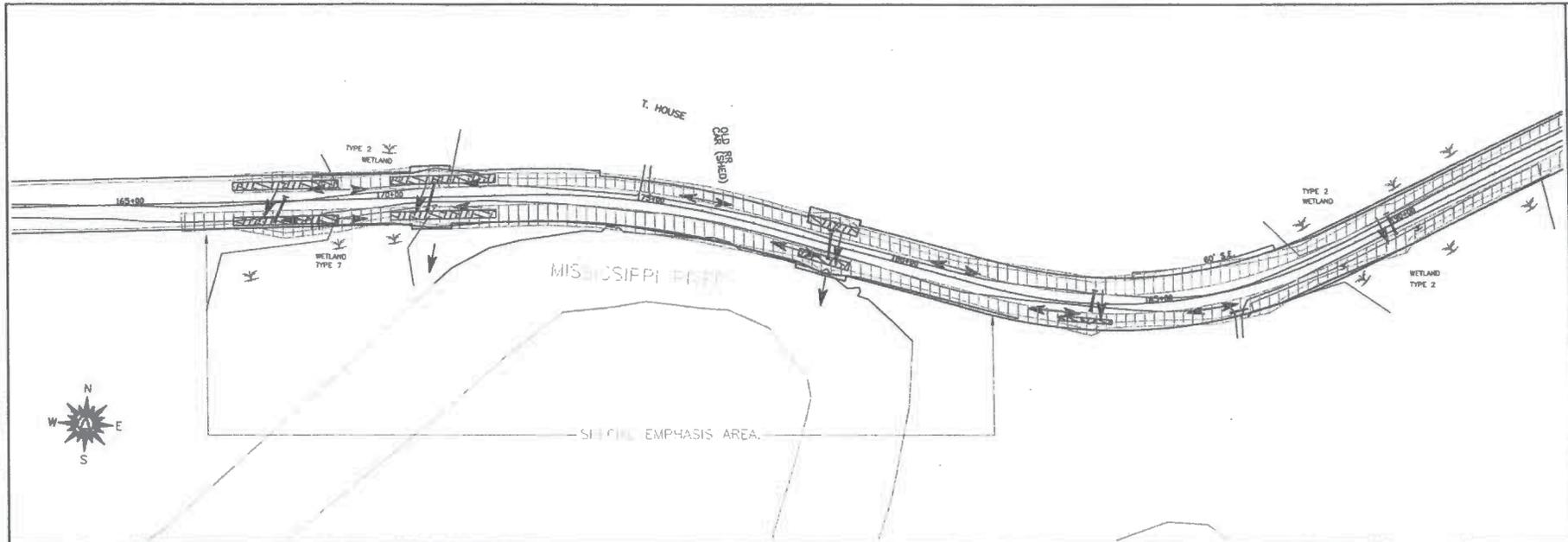
SIGNATURE: JOHN WELLE LIC. No. 24340
DATE:

EROSION CONTROL PLAN

AITKIN COUNTY HIGHWAY DEPT.
CSAH NO. 10
SP 01-610-22

SHEET NO.
28

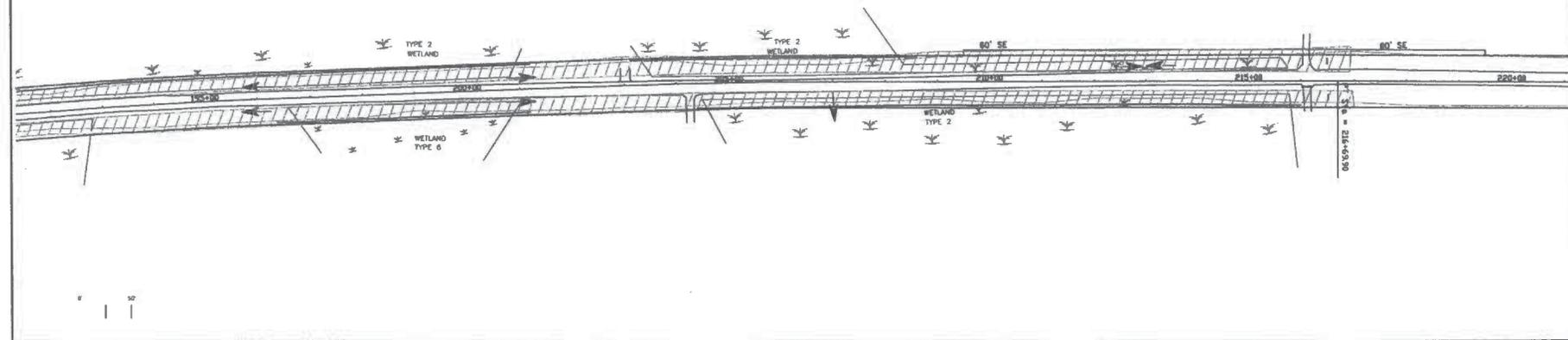
SHEET 28 OF 98



LEGEND	
	SILT FENCE
	FLOTATION SILT CURTAIN
	TEMPORARY DITCH CHECK TYPE 2
	RAPID STABILIZATION
	INLET PROTECTION
	EROSION CONTROL BLANKET- CAT 3



BARN



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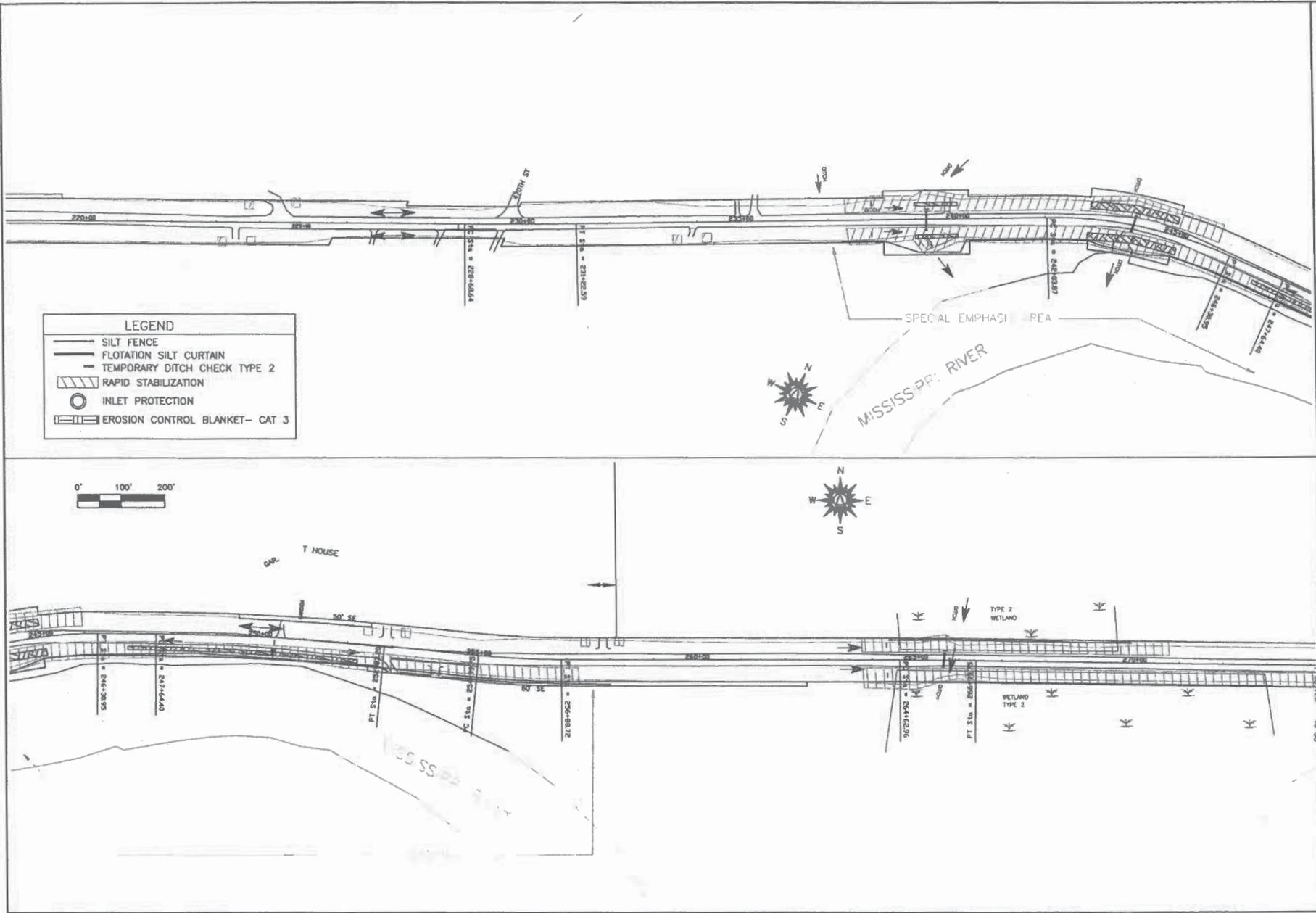
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CSAH NO. 10
SP 01-610-22

EROSION CONTROL PLAN

SHEET NO. 28
SHEET 28 OF 98

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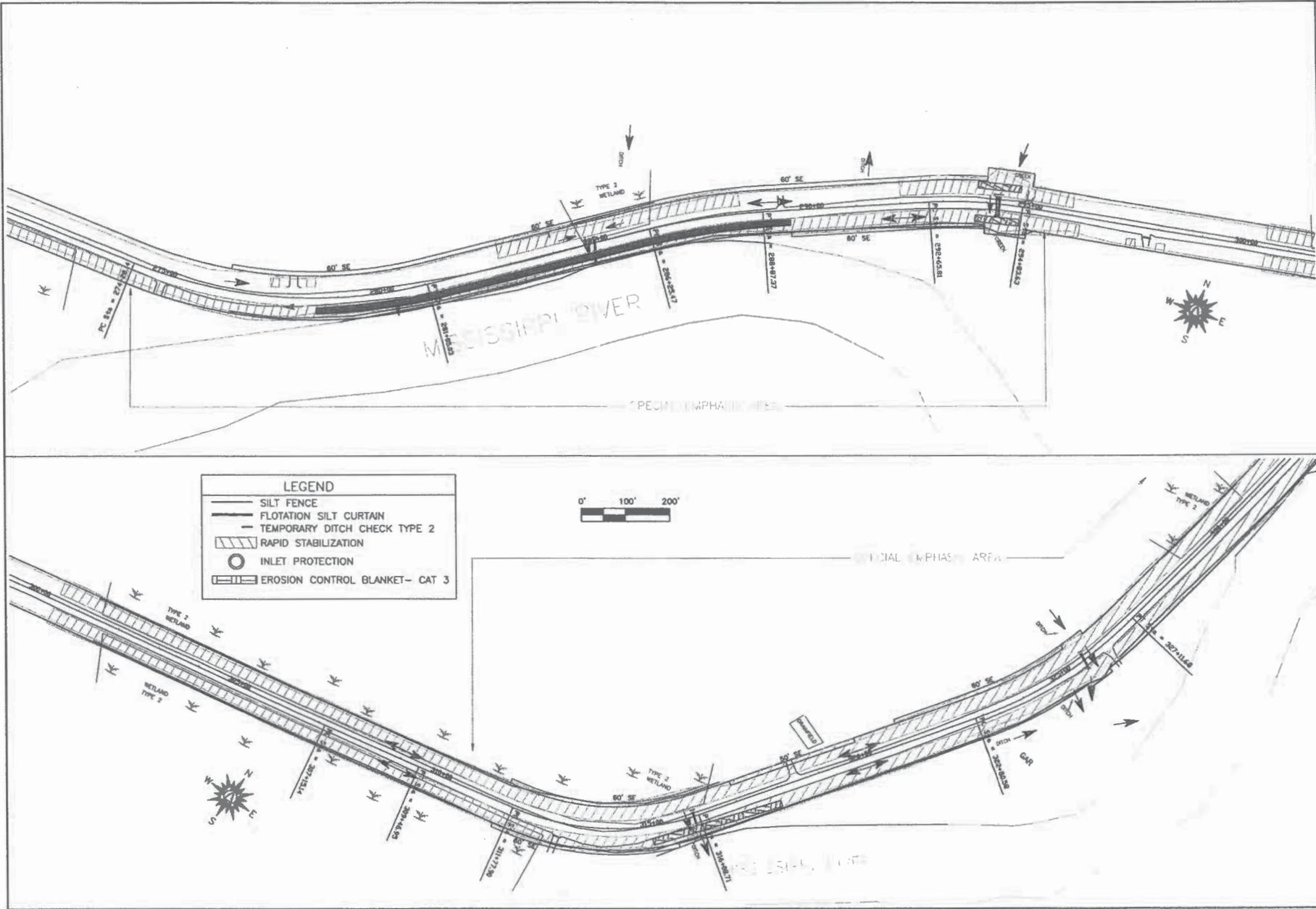
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SIGNATURE: JOHN WELLE LIC. No. 24340
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EROSION CONTROL PLAN

AITKIN COUNTY HIGHWAY DEPT.,
 CSAH NO. 10
 SP 01-610-22

SHEET NO.
 28
 SHEET 28 OF 98



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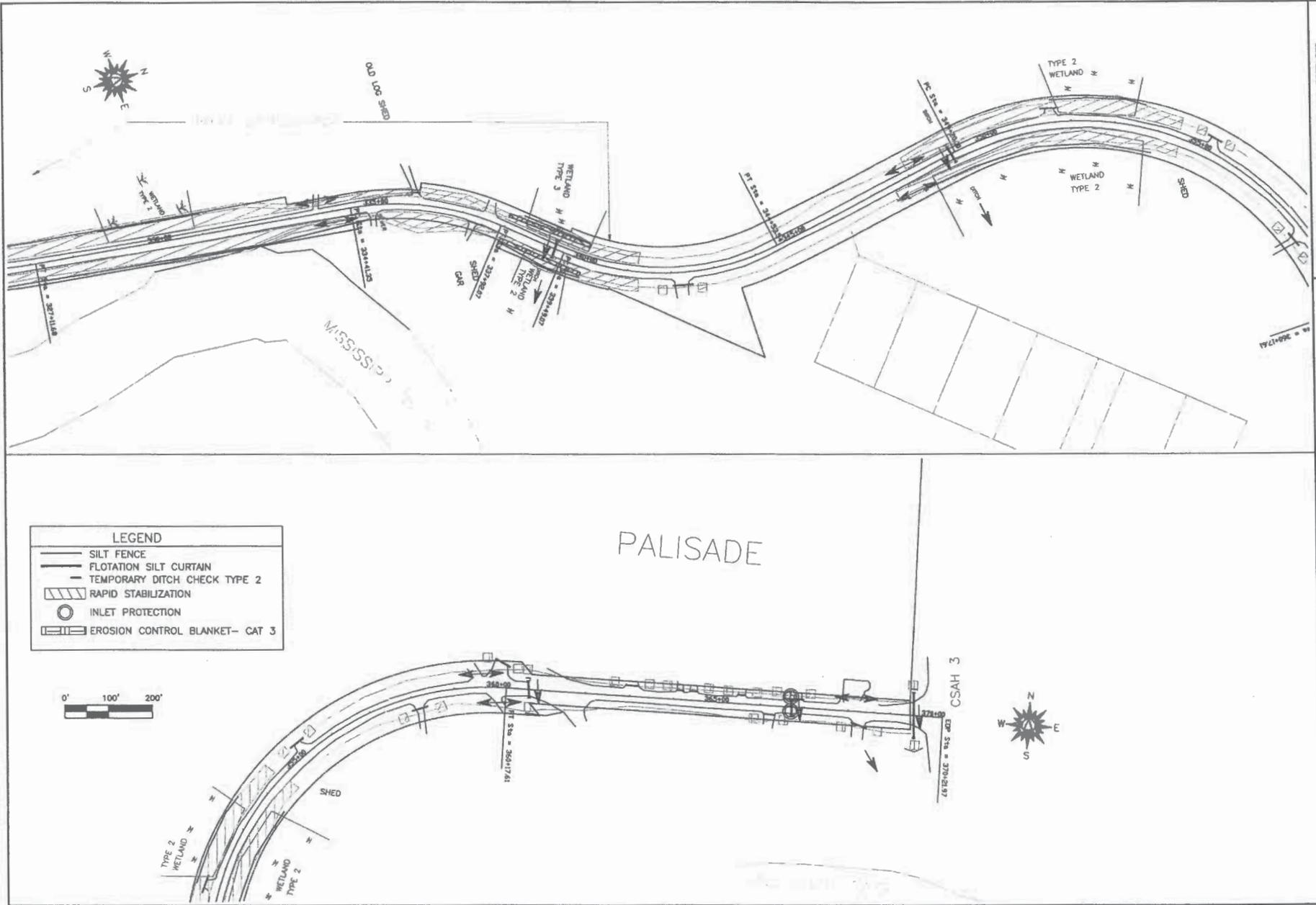
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CSAH NO. 10
SP 01-610-22

SHEET NO.
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SHEET 28 OF 98

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CSAH NO. 10
SP 01-610-22

SHEET NO.
28

SHEET 28 OF 98

EROSION CONTROL PLAN

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