

## Information for File #2014-00984-CLJ

**Applicant:** Michael Flaagan, Pennington County Highway Department  
**Corps Contact:** Craig L. Jarnot  
**Address:** 4111 Technology Drive, Suite 295, Bemidji MN, 56601  
**E-Mail:** Craig.L.Jarnot@usace.army.mil  
**Phone:** (218) 444-6381  
**Primary County :** Pennington  
**Sec/Township/Range:** NW corner of Sec. 6, T. 152N., R. 43W. to NW¼ corner of Sec 4, T. 152N., R. 43W.  
**Information Complete On:** May 20, 2014  
**Posting Expires On:** June 16, 2014  
**Authorization Type:** LOP-05-MN (A);  
RHA Section 10 LOP

This application is being reviewed in accordance with the practices for documenting Corps jurisdiction under Sections 9 & 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act (CWA) identified in Regulatory Guidance Letter 07-01. We have made a preliminary 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. The jurisdictional review determines the scope of the projects regulated impacts and compensatory mitigation requirements.

**PROJECT PURPOSE & NEED:** The purpose of the project is to reconstruct approximately 1.78 miles of Pennington County State Aid Highway (CSAH) 3 between Trunk Highway (TH) 32 and CSAH 17. Currently, CSAH 3 is a rural paved roadway with 12-foot lanes, 2-foot aggregate shoulders, and a deteriorated driving surface.

**PROJECT DESCRIPTION:** The applicant proposes to reconstruct this portion of CSAH 3 to minimum design standards for a roadway with a projected ADT of 2,240 vehicles per day. The reconstruction would include road surface reconstruction, shoulder widening, and roadside ditch grading. The project as proposed would create 12-foot wide driving lanes with 2-foot wide paved shoulders and 4-foot wide aggregate shoulders at a 40-60 mph design speed and roadway inslopes constructed at 4:1 (H:V). This design is consistent with State Aid 8820.9920 Minimum Design Standards; Rural and Suburban Undivided; New or Reconstruction Projects for this category of projected ADT and no deviations from the design standards are proposed. The project as proposed exceeds the minimum design standards established by State Rule. The applicant has indicated the wider shoulders are necessary due to the high volume of agricultural related traffic using the roadway. The applicant has indicated that no temporary storage of topsoil in wetlands would occur in the interest of minimizing impacts to wetlands.

**NAME, AREA AND TYPES OF WATERS (INCLUDING WETLANDS) SUBJECT TO LOSS:** Approximately 0.03 acres of shallow marsh (Type 3) wetland would be impacted as a result of placing fill material required for the road widening. A portion of this impact would be located below the Ordinary High Water Mark of the Red Lake River which is a Section 10 water under the Rivers and Harbors Act of 1899. Road widening activities would also impact approximately 3.40 acres of wetland located in roadside ditch.

**ALTERNATIVES CONSIDERED:** The no-build alternative would avoid all impacts to wetlands; however, the no-build alternative was dismissed as it would not meet the project purpose to improve road conditions and degraded culverts.

**COMPENSATORY MITIGATION:** The applicant has proposed compensatory mitigation for the 0.03 acres of impact to wetlands as a result widening the roadway through the Minnesota Board of Soil and Water Resources (BWSR) Road Replacement Program.

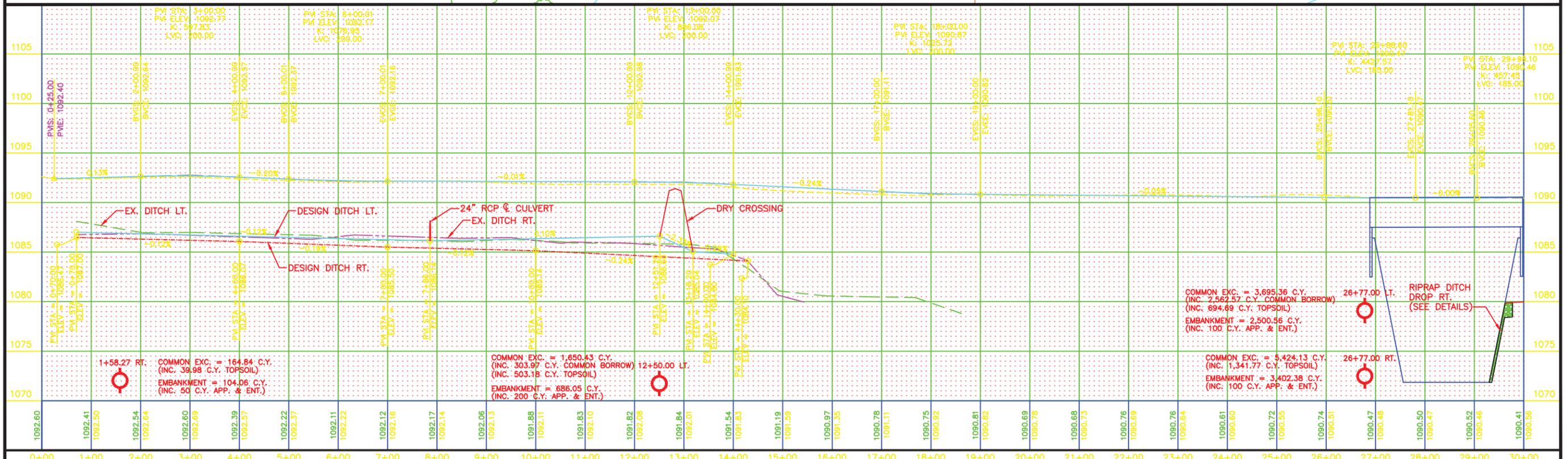
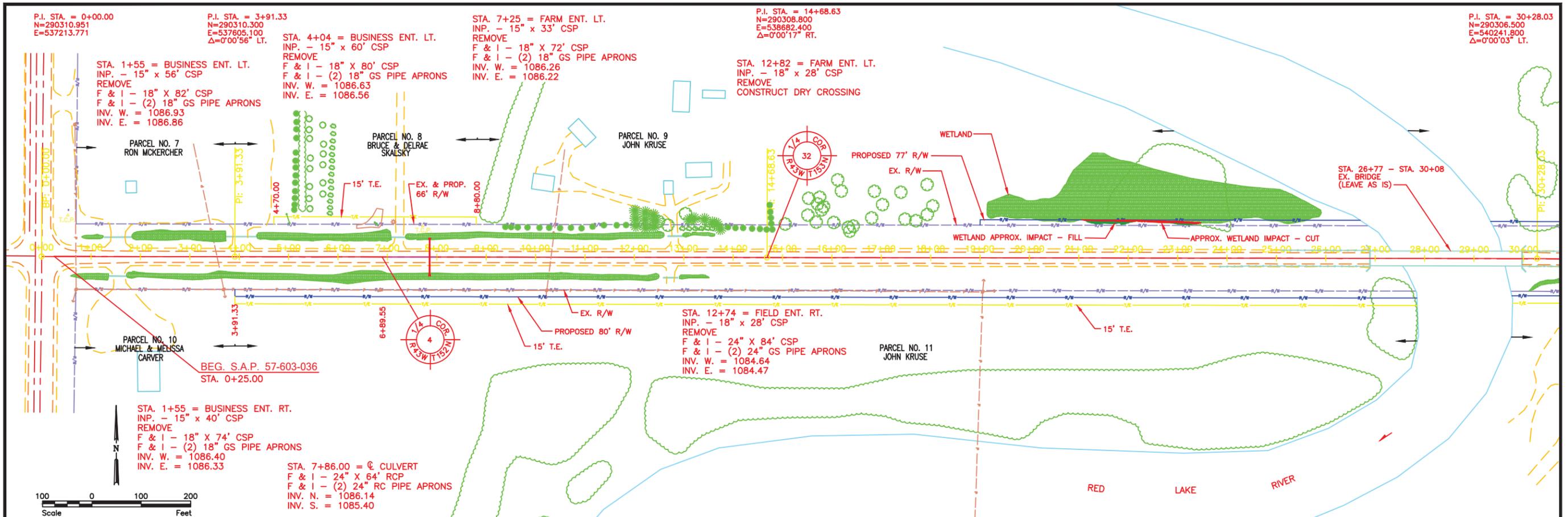
**Drawings:** 2014-00984-CLJ 1 of 28 through 28 of 28. See attached

# CSAH 3 Reconstruction Project (2014-00984-CLJ)

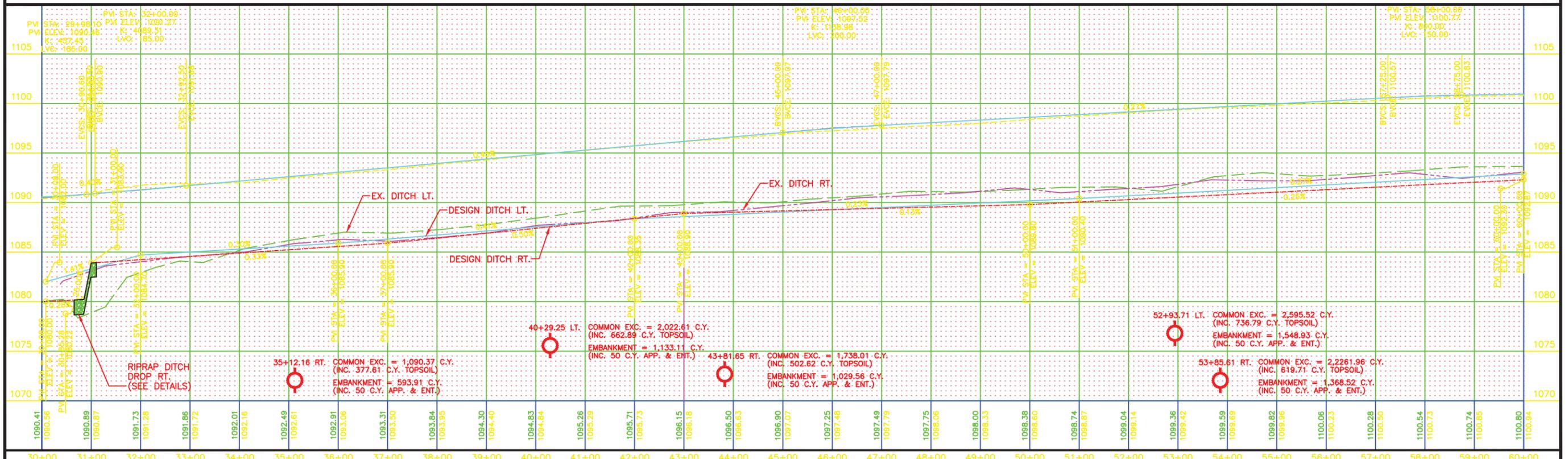
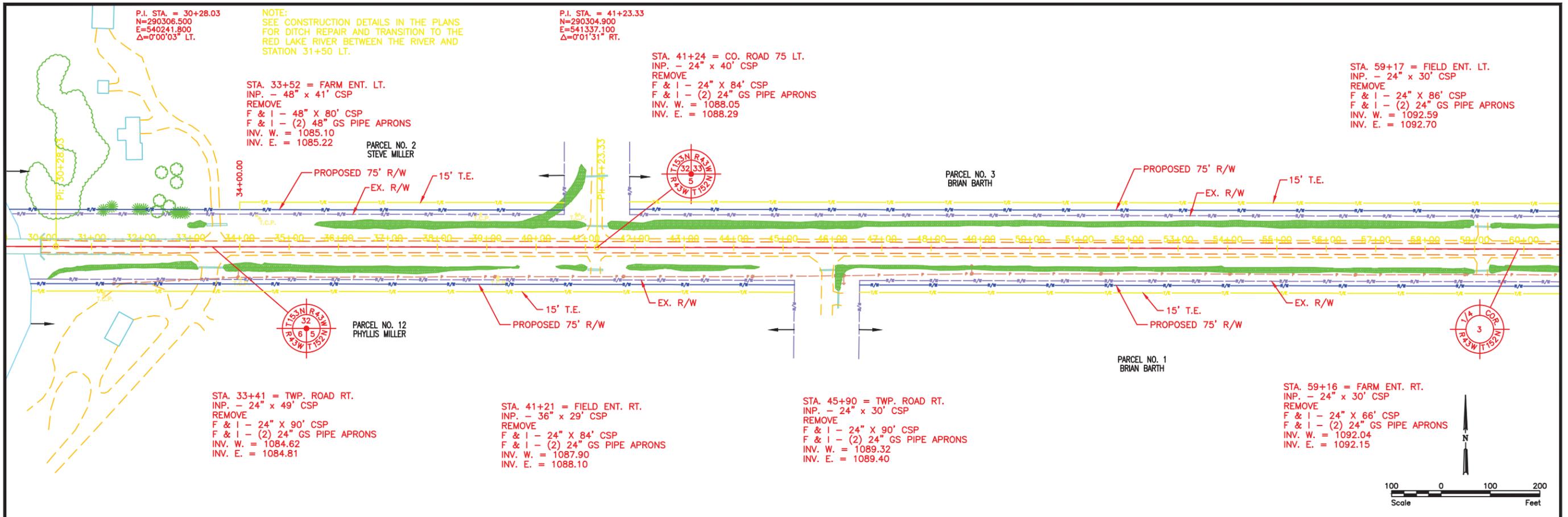


Project Location





No.		Revision		Date	By	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.		Houston Engineering Inc. License No. 41528		Thief River Falls P: 218.681.2951 F: 218.681.2987	Drawn by B.G.J.	Date 12-6-13	S.A.P. 057-603-036 S.P.	PLAN & PROFILE PROJECT NO. 3816-006	SHEET X of X
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No.	Revision	Date	By	Date
			Michael Flaagan	
			License No. 41528	

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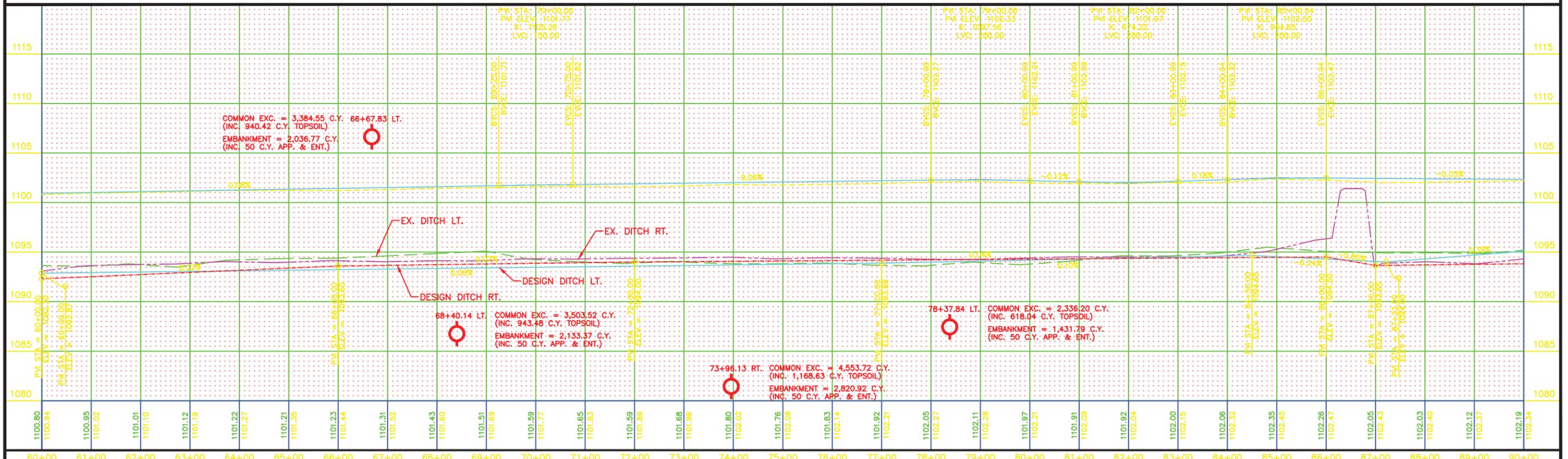
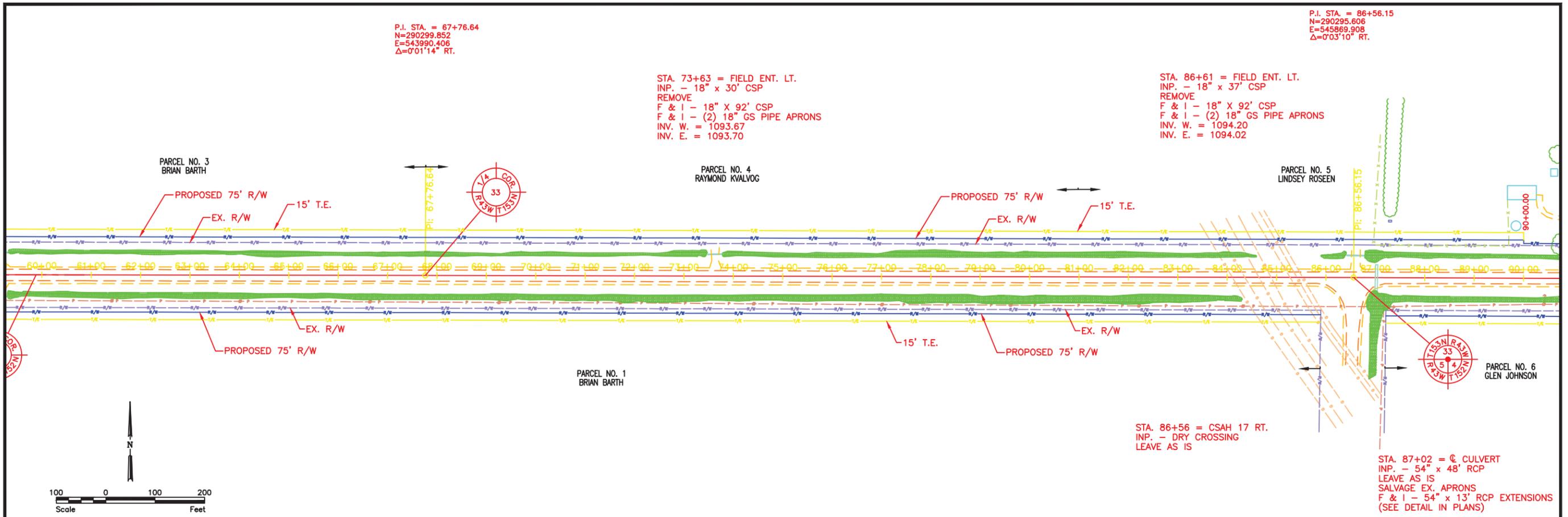
**Houston Engineering Inc.**  
Thief River Falls  
P: 218.681.2951  
F: 218.681.2987

Drawn by: BGY  
Checked by: AS SHOWN  
Date: 12-6-13  
Scale: AS SHOWN

S.A.P. 057-603-036  
S.P.

**PLAN & PROFILE**  
PROJECT NO. 3816-006

**SHEET**  
X of X



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						Houston Engineering Inc.	Checked by	Scale AS SHOWN	S.P.		

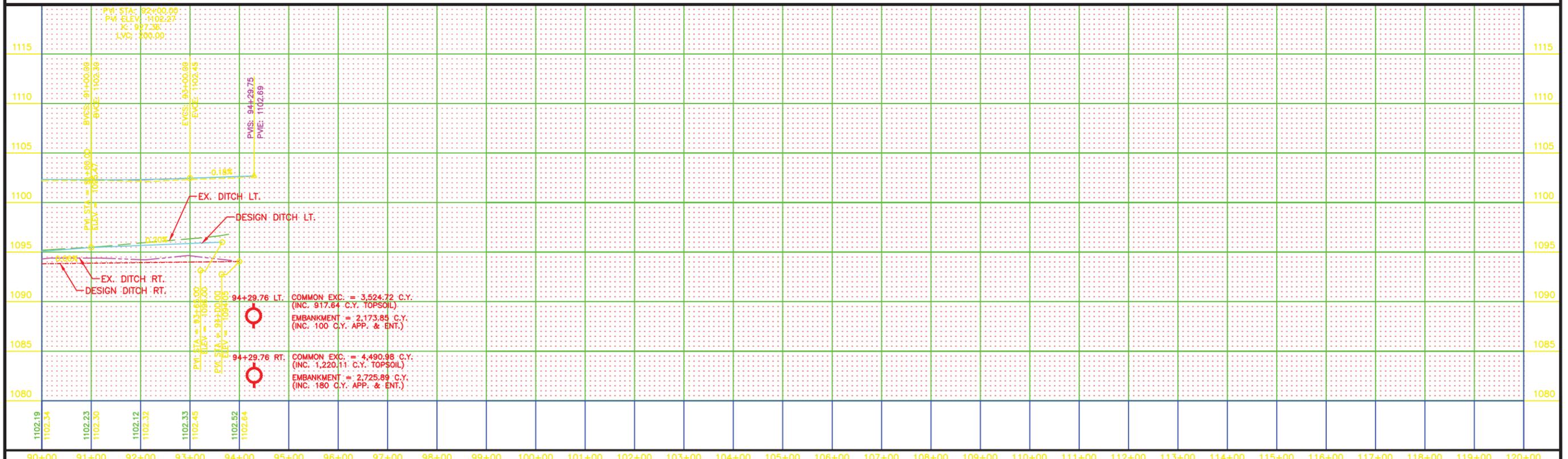
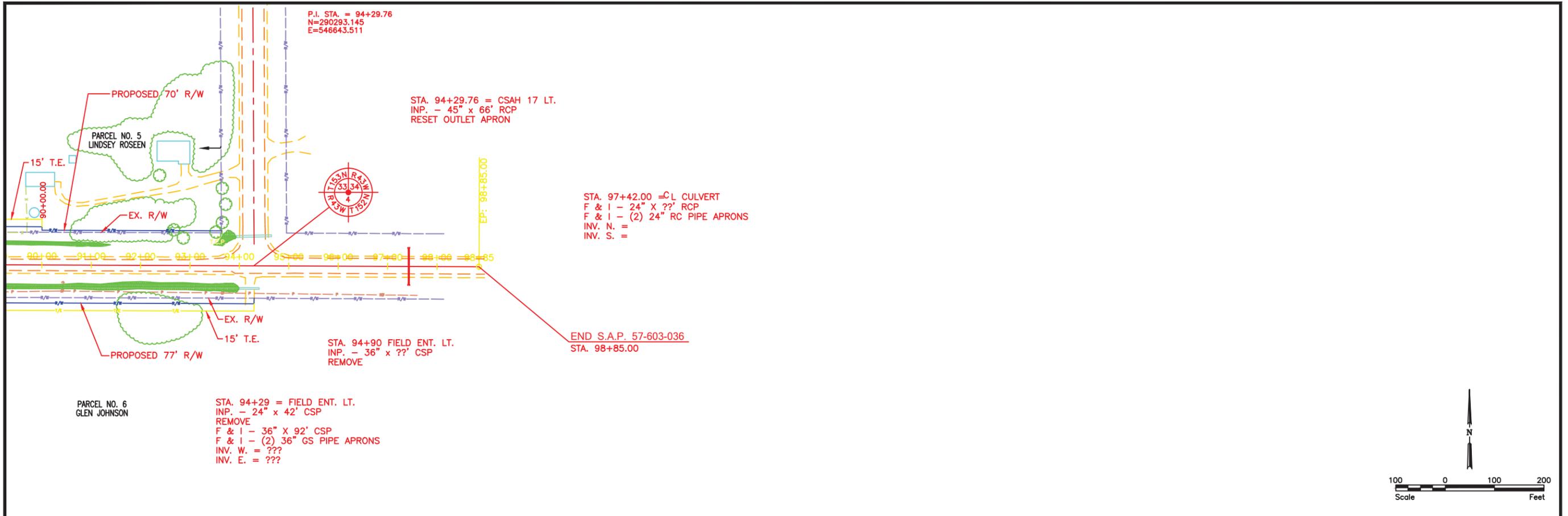
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Thief River Falls  
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BGJ  
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12-6-13  
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PLAN & PROFILE  
PROJECT NO. 3816-006  
SHEET  
X of X

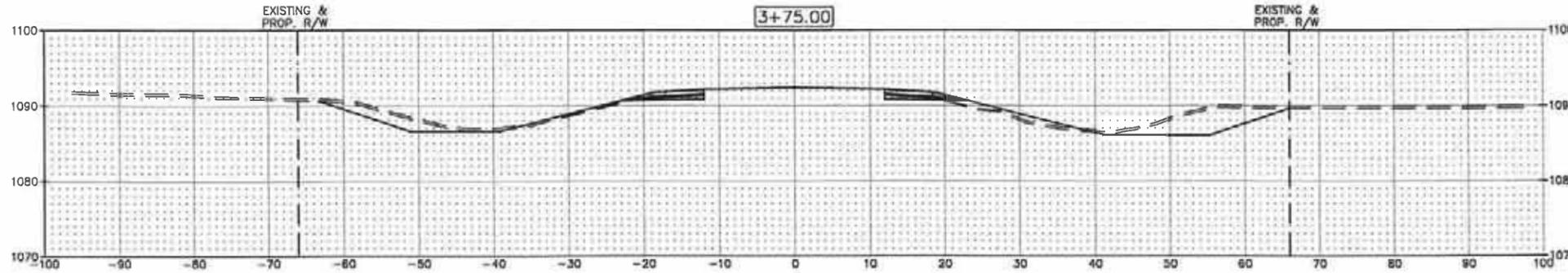


No.	Revision	Date	By	Michael Flaagan License No. 41528	Date	Thief River Falls P: 218.681.2951 F: 218.681.2987	Drawn by BGJ	Date 12-6-13	S.A.P. 057-603-036	PLAN & PROFILE	SHEET X of X
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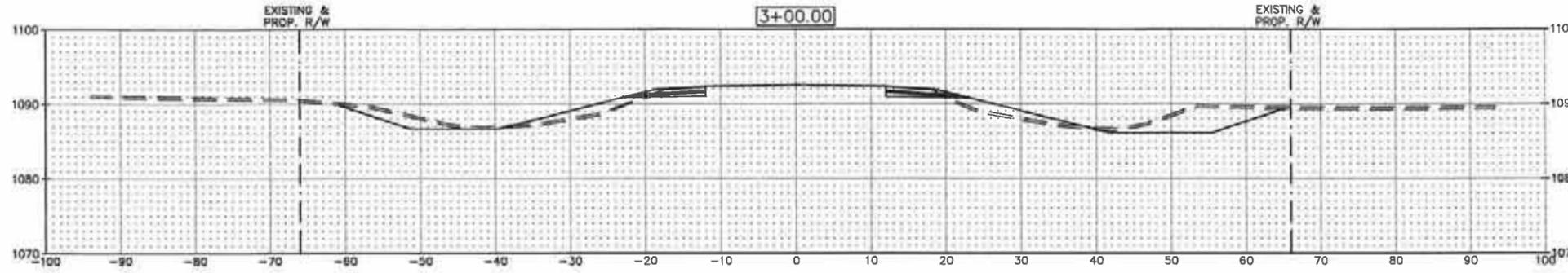
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EXC. RT. = 228.15 CY  
EMB. RT. = 54.05 CY



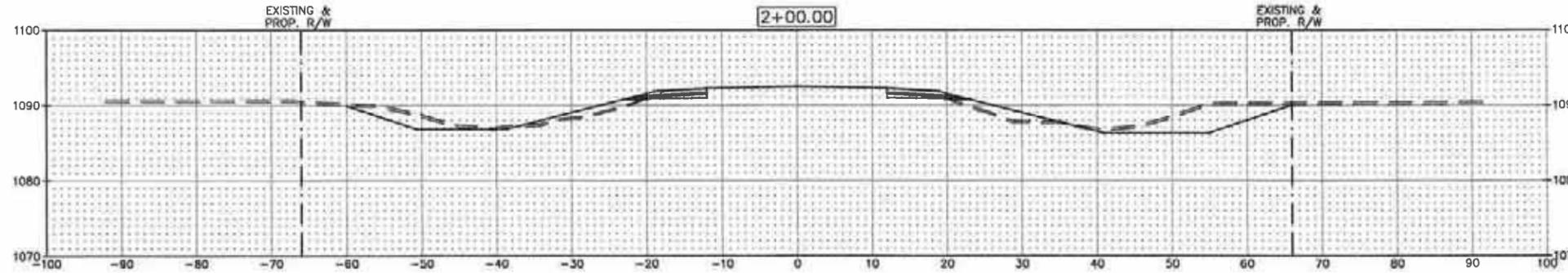
EXC. LT. = 68.10 CY  
EMB. LT. = 33.18 CY

EXC. RT. = 133.71 CY  
EMB. RT. = 46.13 CY



EXC. LT. = 84.65 CY  
EMB. LT. = 60.33 CY

EXC. RT. = 181.17 CY  
EMB. RT. = 67.28 CY



STA. 1+55 LT.  
BUS. ENT. = 50 C.Y.

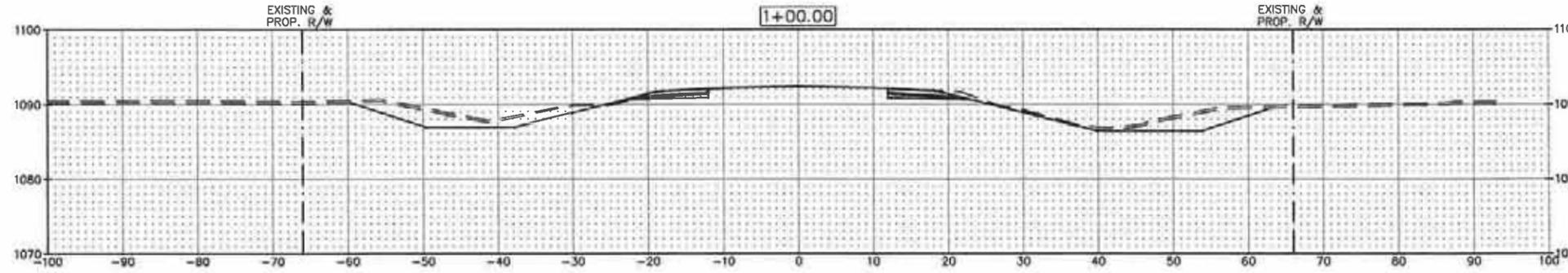
STA. 1+55 RT.  
BUS. ENT. = 50 C.Y.

1+39.09 LT. COMMON EXC. = 130.41 C.Y.  
(INC. 28.39 C.Y. TOPSOIL)  
EMBANKMENT = 85.01 C.Y.  
(INC. 50 C.Y. APP. & ENT.)

1+24.88 RT. COMMON EXC. = 111.50 C.Y.  
(INC. 25.57 C.Y. TOPSOIL)  
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(INC. 50 C.Y. APP. & ENT.)

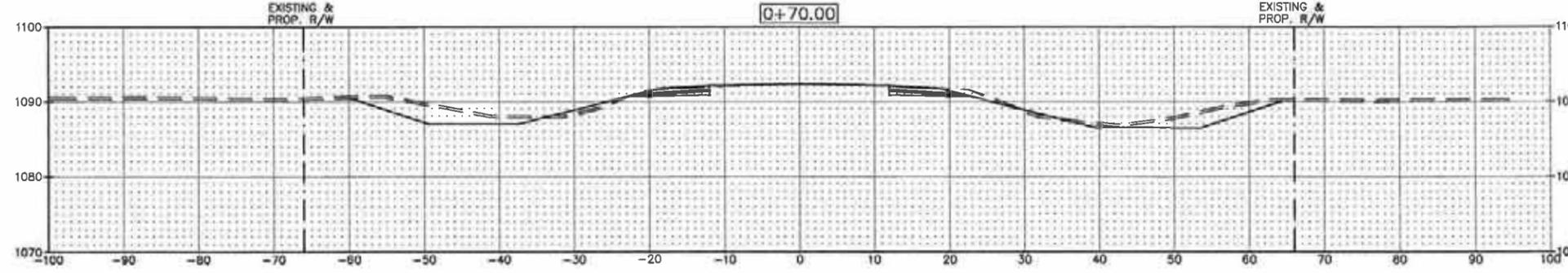
EXC. LT. = 133.19 CY  
EMB. LT. = 28.09 CY

EXC. RT. = 170.37 CY  
EMB. RT. = 29.78 CY



EXC. LT. = 49.96 CY  
EMB. LT. = 4.49 CY

EXC. RT. = 43.54 CY  
EMB. RT. = 1.76 CY



STA. 0+00 LT.  
JCT. T.H. 32 = 50 C.Y.

STA. 0+00 RT.  
JCT. T.H. 32 = 50 C.Y.

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No.	Revision	Date	By



Thief River Falls  
P: 218.681.2951  
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Drawn by BGI  
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Date 12-31-13  
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S.A.P. 57-603-036  
S.P.

CROSS SECTIONS  
PROJECT NO. 3816-006  
SHEET X of X

STA. 9+90 - 10+00  
 EXC. LT. = 3.21 CY  
 EMB. LT. = 29.36 CY

STA. 9+00 - 9+90  
 EXC. LT. = 55.13 CY  
 EMB. LT. = 110.63 CY

EXC. LT. = 91.72 CY  
 EMB. LT. = 87.31 CY

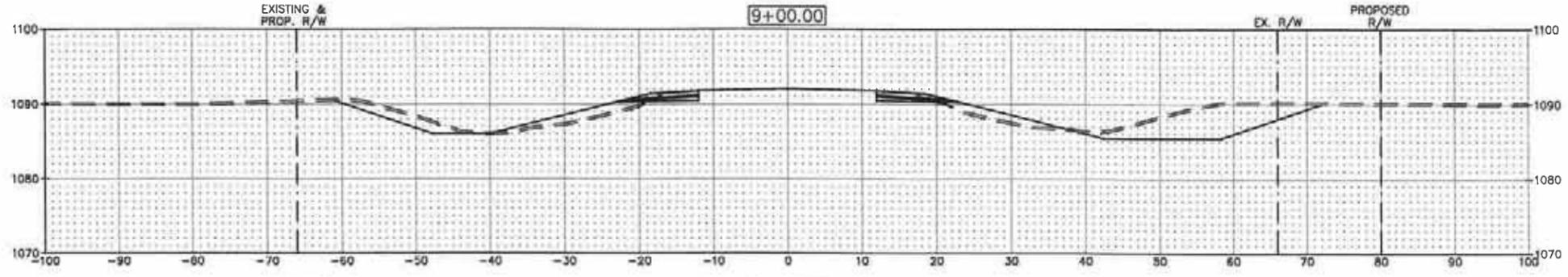
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EXC. LT. = 91.35 CY  
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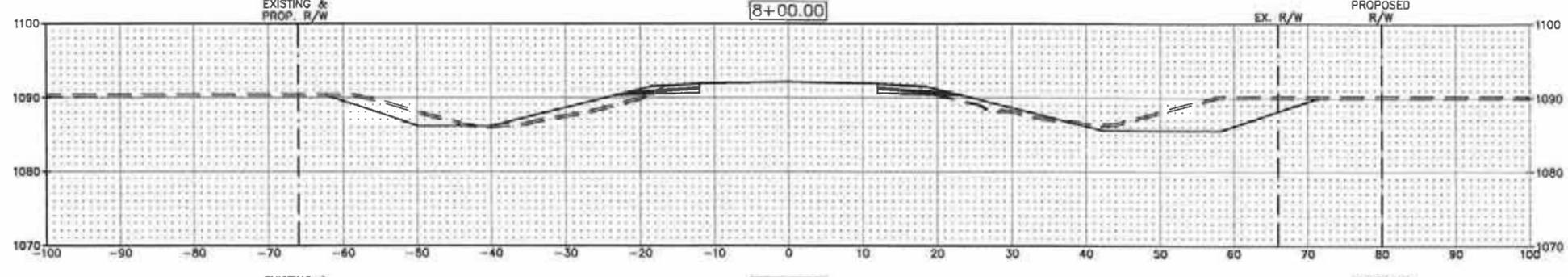
EXC. LT. = 79.26 CY  
 EMB. LT. = 54.78 CY

EXC. LT. = 92.59 CY  
 EMB. LT. = 50.59 CY

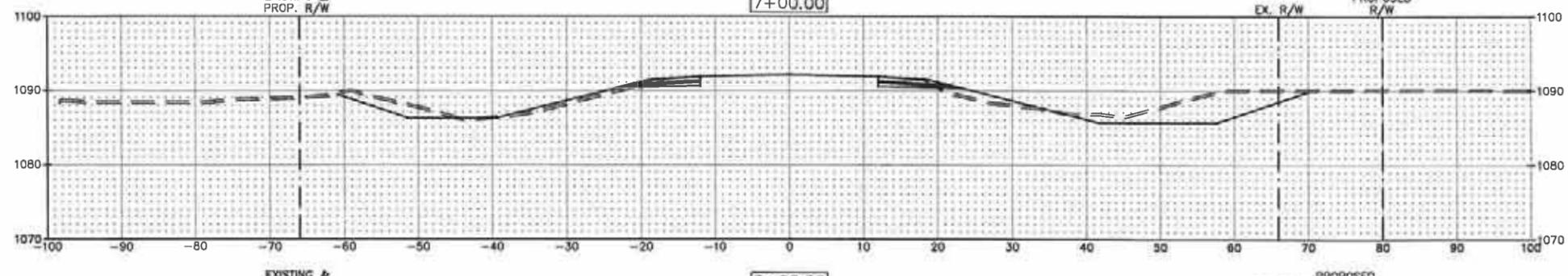
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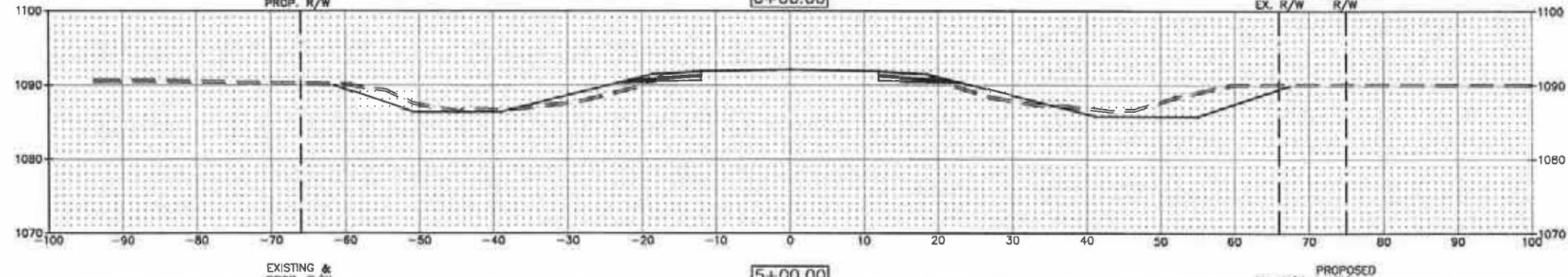
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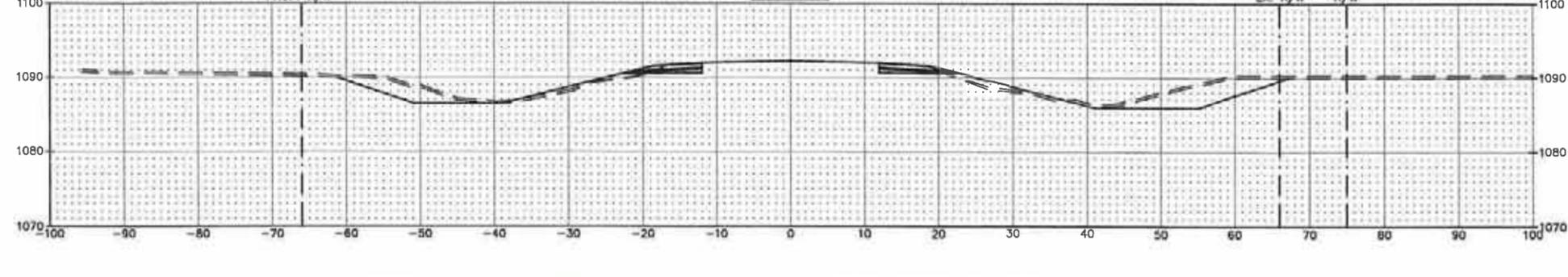
EXC. RT. = 288.89 CY  
 EMB. RT. = 54.78 CY



EXC. RT. = 260.54 CY  
 EMB. RT. = 46.63 CY



EXC. RT. = 219.57 CY  
 EMB. RT. = 45.87 CY



EXC. RT. = 188.65 CY  
 EMB. RT. = 41.69 CY

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No.	Revision	Date	By



Thief River Falls  
 P: 218.681.2951  
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Drawn by B.G.J.  
 Date 12-31-13  
 Checked by J.J.L.  
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S.A.P. 57-603-036  
 S.P.

CROSS SECTIONS  
 PROJECT NO. 3816-006  
 SHEET  
 X of X

COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 13.79 CY  
 EMB. LT. = 56.67 CY

STA. 13+50 - 13+60  
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 EXC. LT. = 3.60 CY  
 EMB. LT. = 31.20 CY

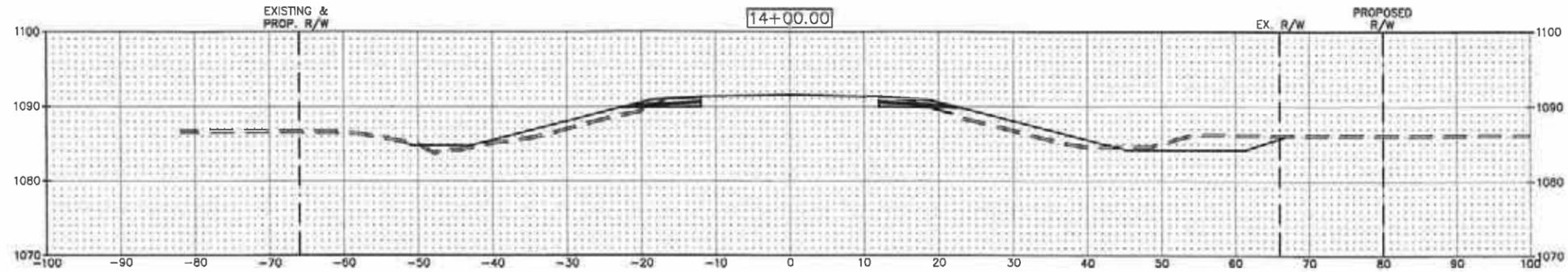
STA. 13+10 - 13+50  
 COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 13.36 CY  
 EMB. LT. = 176.21 CY

COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 37.14 CY  
 EMB. LT. = 527.57 CY

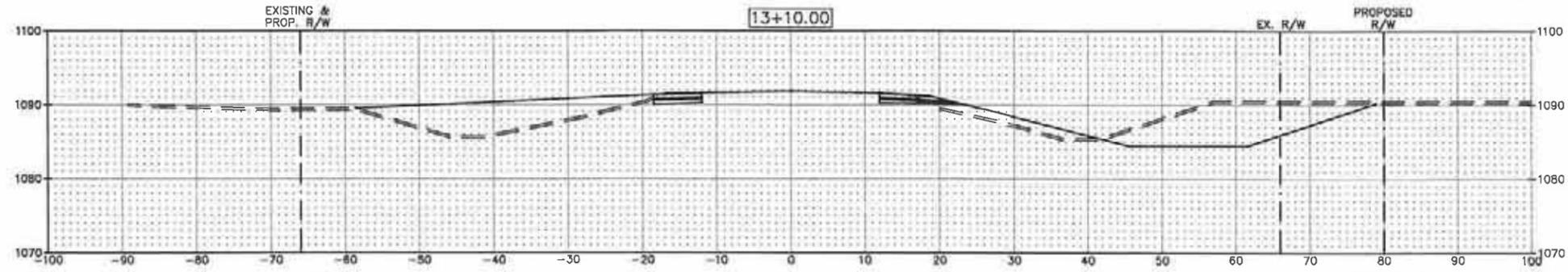
COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 30.04 CY  
 EMB. LT. = 502.76 CY

COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 28.37 CY  
 EMB. LT. = 453.46 CY

9+91.54 LT. COMMON EXC. = 1,191.67 C.Y.  
 (INC. 414.65 C.Y. TOPSOIL)  
 EMBANKMENT = 647.52 C.Y.  
 (INC. 150 C.Y. APP. & ENT.)

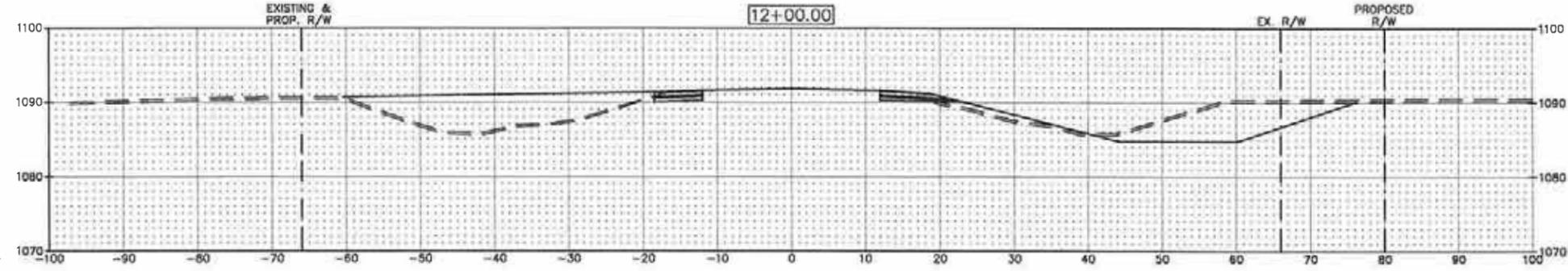


EXC. RT. = 68.00 CY  
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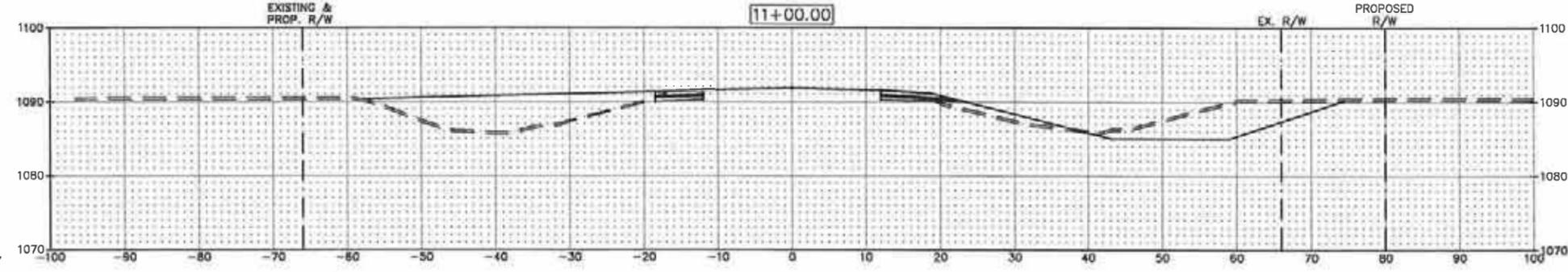


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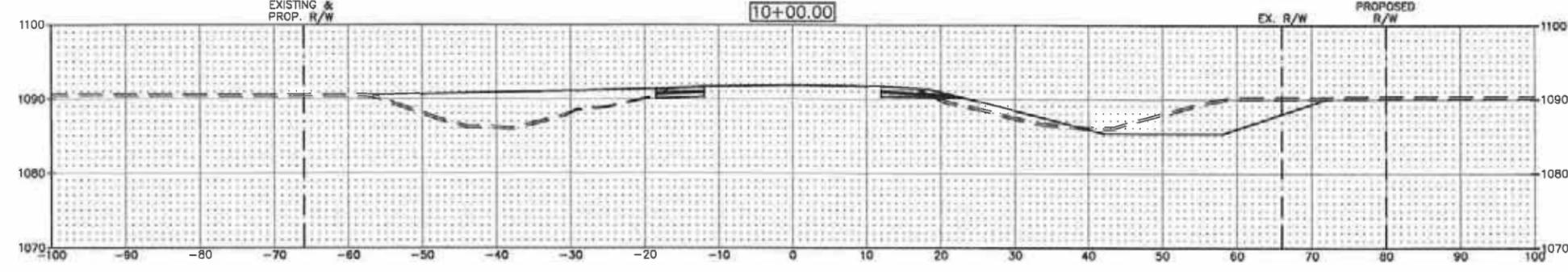
STA. 12+74 RT.  
 FIELD ENT. = 50 C.Y.



EXC. RT. = 475.02 CY  
 EMB. RT. = 89.04 CY



EXC. RT. = 350.65 CY  
 EMB. RT. = 62.83 CY



EXC. RT. = 304.87 CY  
 EMB. RT. = 68.31 CY

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Thief River Falls

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 BGJ

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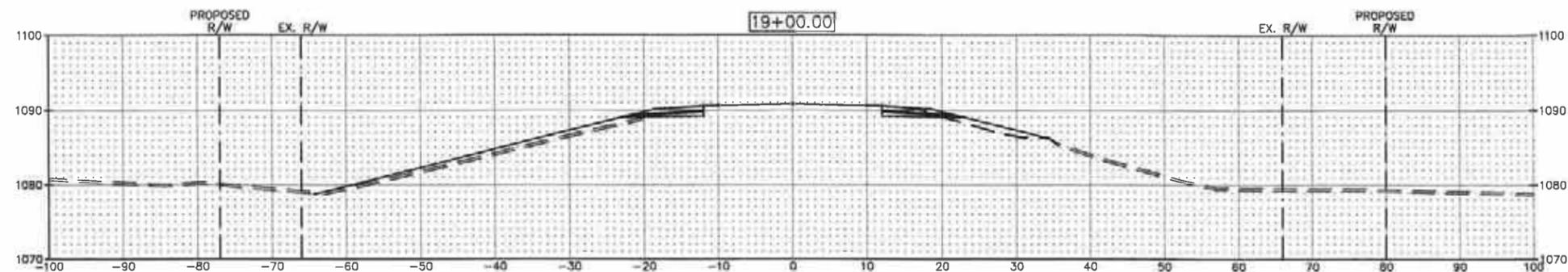
CROSS SECTIONS

PROJECT NO. 3816-006

SHEET

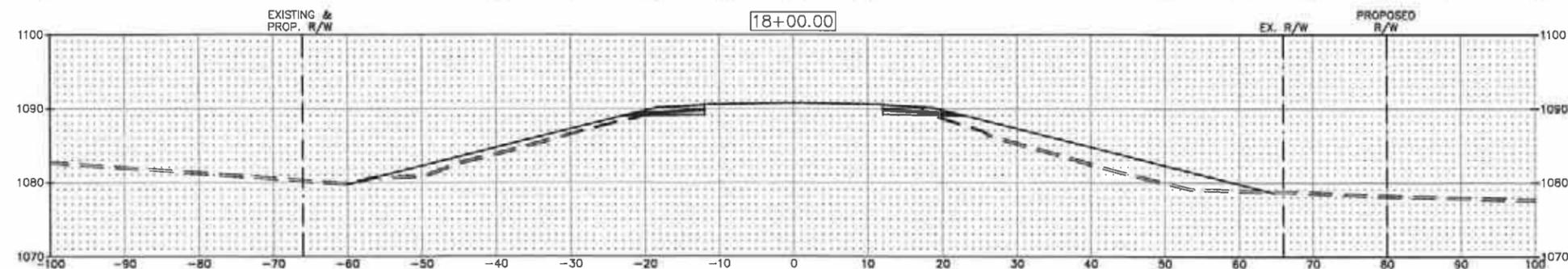
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No.	Revision	Date	By



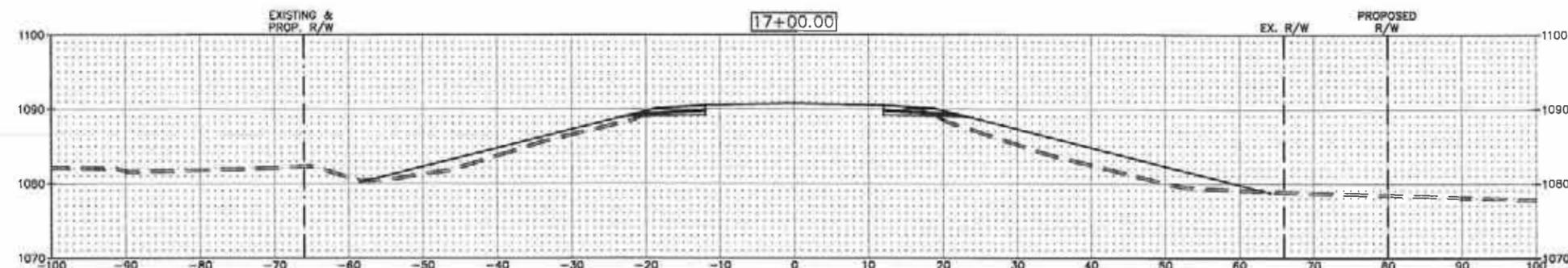
COMMON BORROW LT. = 200.00 CY  
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EXC. RT. = 24.56 CY  
 EMB. RT. = 234.26 CY



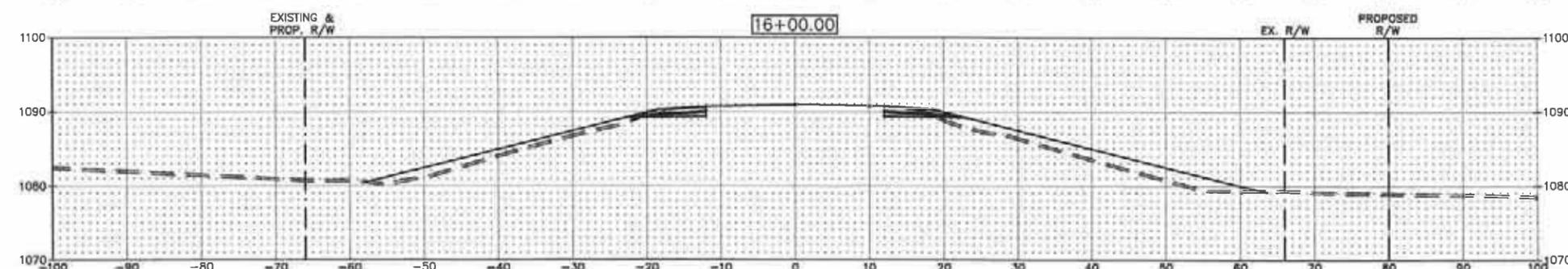
COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 33.07 CY  
 EMB. LT. = 132.80 CY

EXC. RT. = 23.11 CY  
 EMB. RT. = 326.52 CY



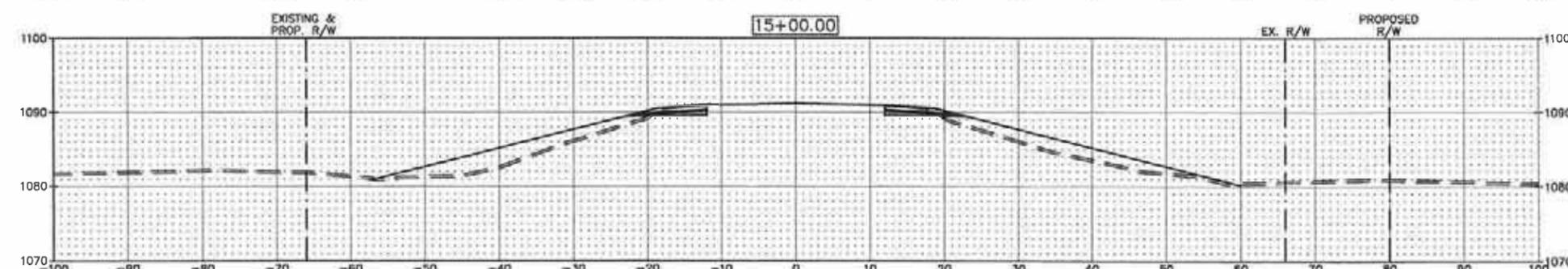
COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 32.19 CY  
 EMB. LT. = 138.39 CY

EXC. RT. = 22.17 CY  
 EMB. RT. = 281.44 CY



COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 28.19 CY  
 EMB. LT. = 193.11 CY

EXC. RT. = 23.20 CY  
 EMB. RT. = 223.31 CY



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No.	Revision	Date	By



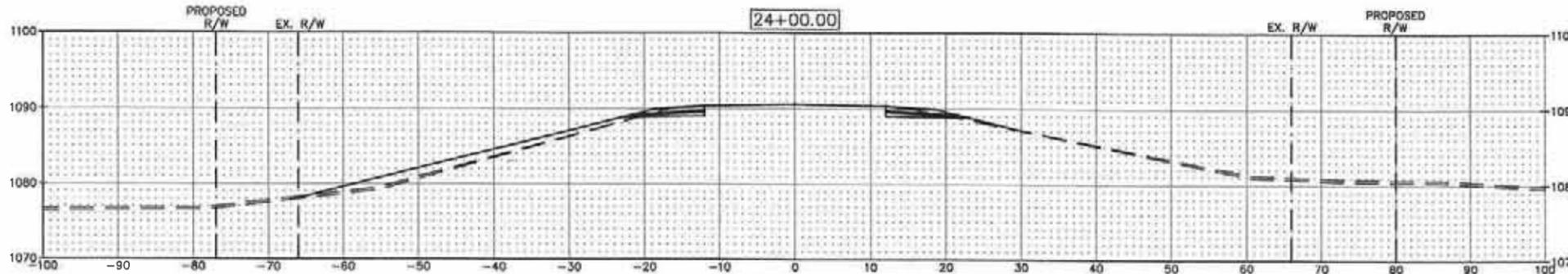
Thief River Falls  
 Drawn by BGI Date 12-31-13  
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S.A.P. 57-063-036  
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CROSS SECTIONS  
 PROJECT NO. 3816-006

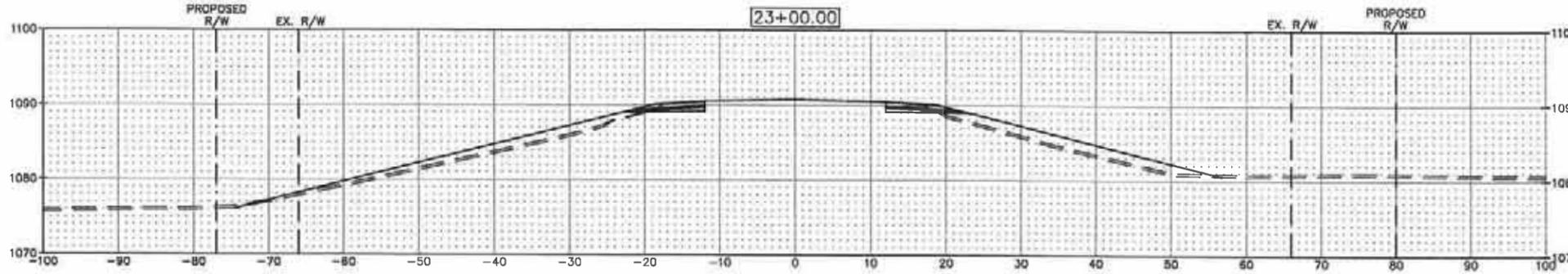
SHEET  
 X of X

COMMON BORROW LT. = 300.00 CY  
 EXC. LT. = 33.26 CY  
 EMB. LT. = 122.69 CY



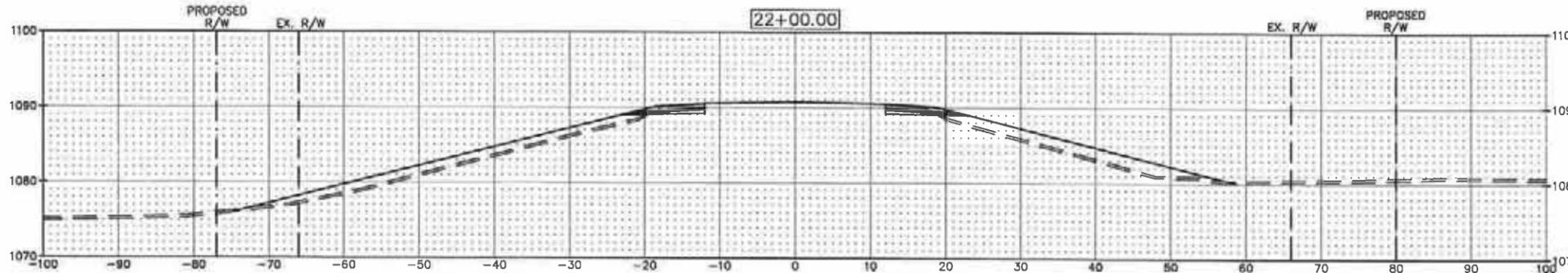
EXC. RT. = 27.81 CY  
 EMB. RT. = 25.30 CY

COMMON BORROW LT. = 300.00 CY  
 EXC. LT. = 29.54 CY  
 EMB. LT. = 176.74 CY



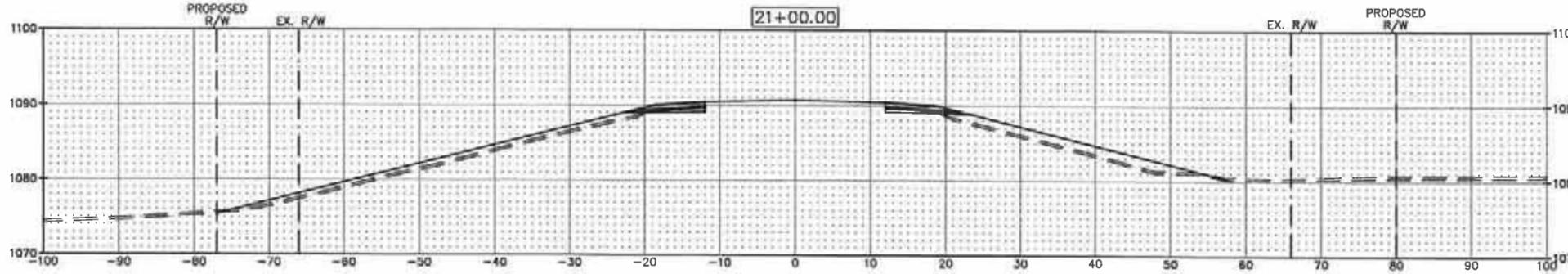
EXC. RT. = 24.89 CY  
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COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 28.09 CY  
 EMB. LT. = 214.56 CY



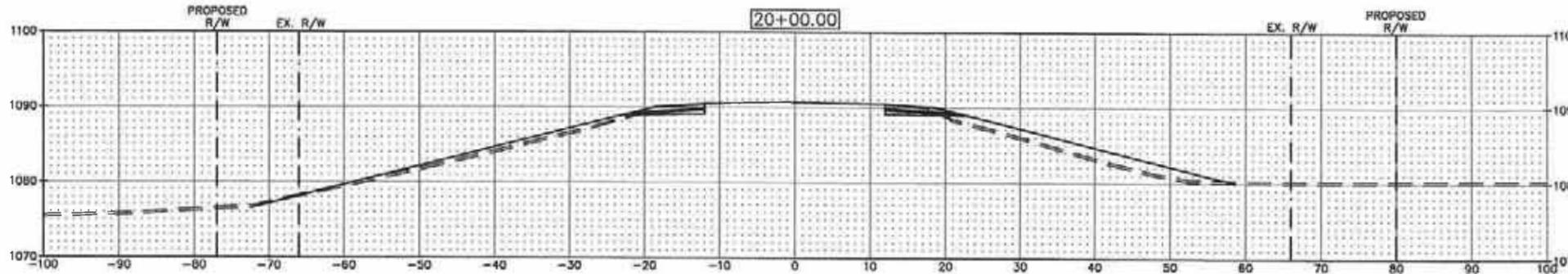
EXC. RT. = 22.94 CY  
 EMB. RT. = 199.63 CY

COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 29.13 CY  
 EMB. LT. = 209.13 CY



EXC. RT. = 23.81 CY  
 EMB. RT. = 190.56 CY

COMMON BORROW LT. = 200.00 CY  
 EXC. LT. = 31.15 CY  
 EMB. LT. = 137.63 CY



EXC. RT. = 24.89 CY  
 EMB. RT. = 181.48 CY

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No.	Revision	Date	By



Thief River Falls

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 JJJ

Date  
 12-31-13

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S.A.P. 57-603-036

S.P.

CROSS SECTIONS

PROJECT NO. 3816-006

SHEET

X of X

EXC. LT. = 65.80 CY  
 EMB. LT. = 134.63 CY

EXC. RT. = 46.15 CY  
 EMB. RT. = 141.68 CY

26+77.00 LT.  COMMON EXC. = 5,246.41 C.Y.  
 (INC. 3,920.00 C.Y. COMMON BORROW)  
 (INC. 826.85 C.Y. TOPSOIL)  
 EMBANKMENT = 3,682.39 C.Y.

26+77.00 RT.  COMMON EXC. = 4,955.85 C.Y.  
 (INC. 1,266.84 C.Y. TOPSOIL)  
 EMBANKMENT = 3,081.91 C.Y.  
 (INC. 100 C.Y. APP. & ENT.)

EXC. LT. = 0.00 CY  
 EMB. LT. = 0.00 CY

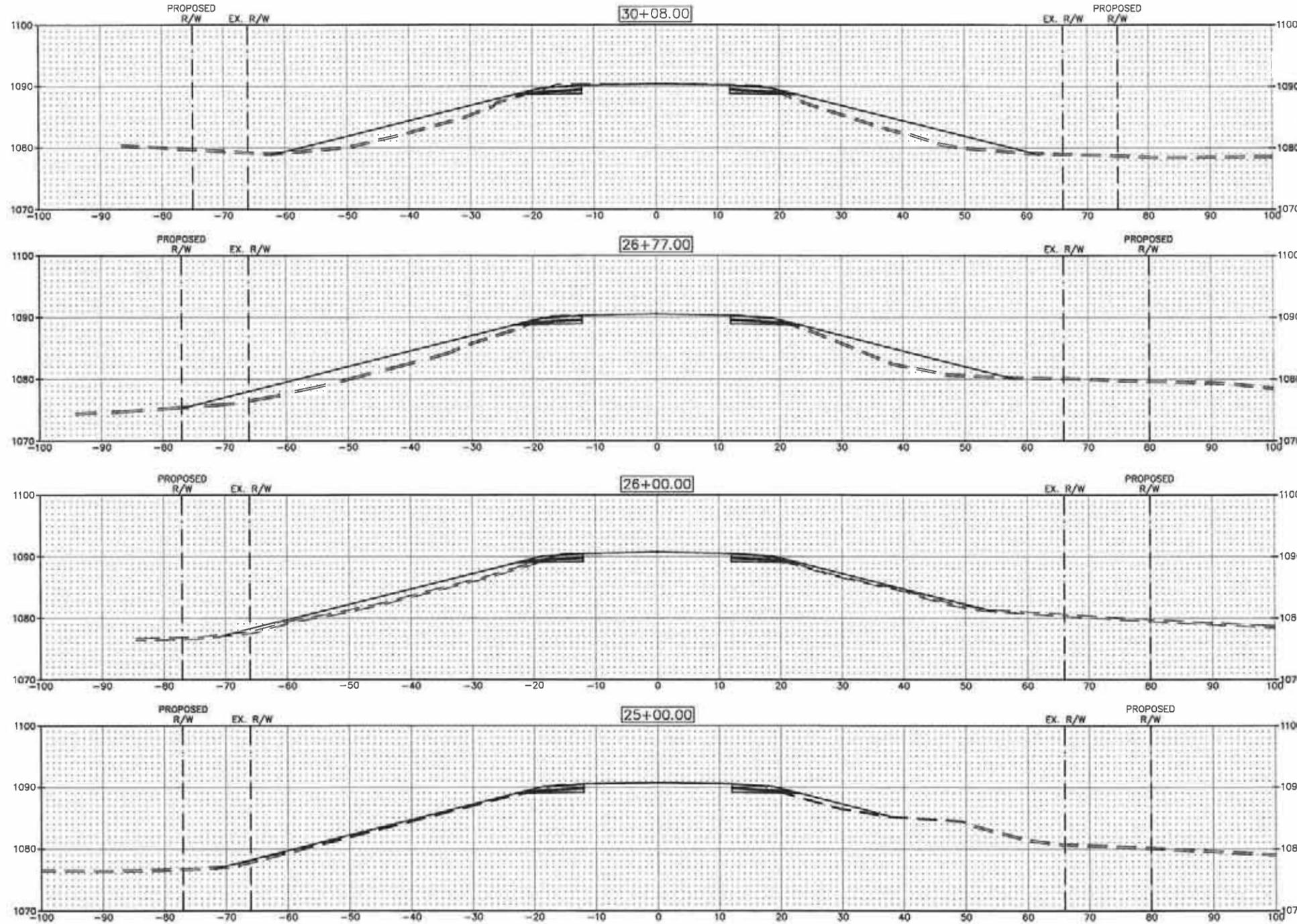
EXC. RT. = 0.00 CY  
 EMB. RT. = 0.00 CY

EXC. LT. = 4.12 CY  
 EMB. LT. = 30.17 CY

EXC. RT. = 9.59 CY  
 EMB. RT. = 21.64 CY

COMMON BORROW LT. = 320.00 CY  
 EXC. LT. = 31.06 CY  
 EMB. LT. = 138.69 CY

EXC. RT. = 29.48 CY  
 EMB. RT. = 57.02 CY



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S.P.

CROSS SECTIONS

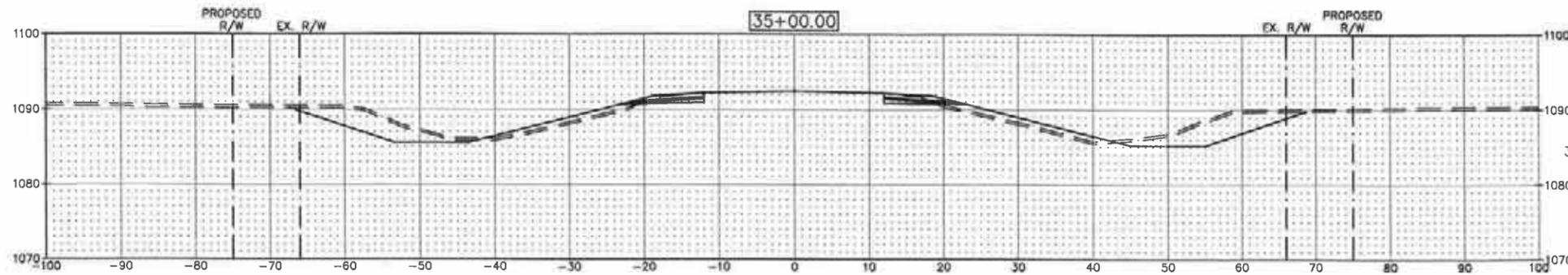
PROJECT NO. 3816-006

SHEET

X of X

EXC. LT. = 154.89 CY  
EMB. LT. = 64.28 CY

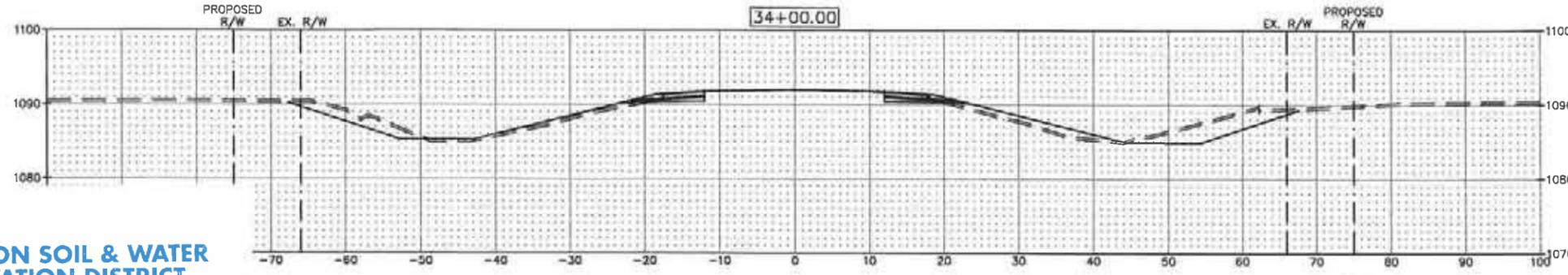
EXC. RT. = 185.46 CY  
EMB. RT. = 81.67 CY



34+56.45 RT  
COMMON EXC. = 913.20 C.Y.  
(INC. 334.90 C.Y. TOPSOIL)  
EMBANKMENT = 481.92 C.Y.  
(INC. 50 C.Y. APP. & ENT.)

EXC. LT. = 130.44 CY  
EMB. LT. = 59.98 CY

EXC. RT. = 166.65 CY  
EMB. RT. = 81.09 CY

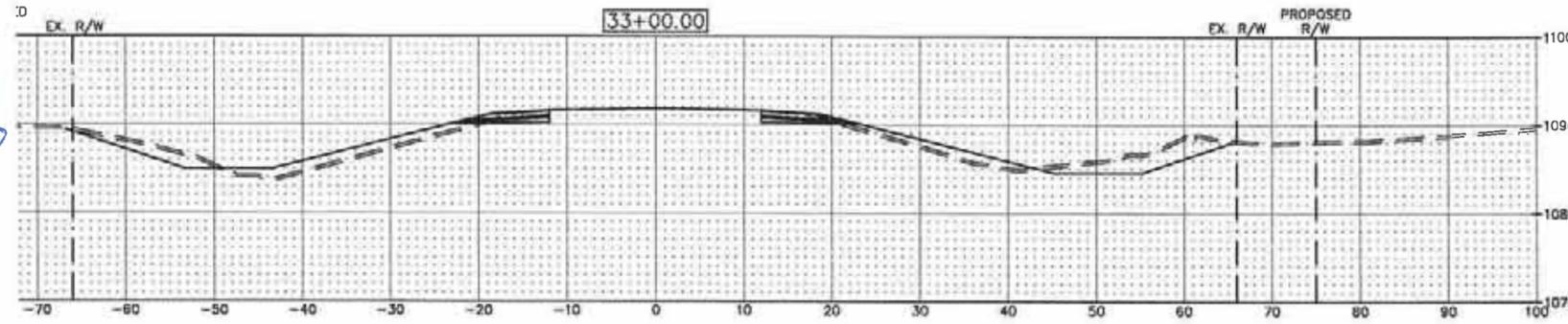


STA. 33+52 LT.  
FARM ENT. = 50 C.Y.

STA. 33+41 RT.  
TWP. ROAD = 50 C.Y.

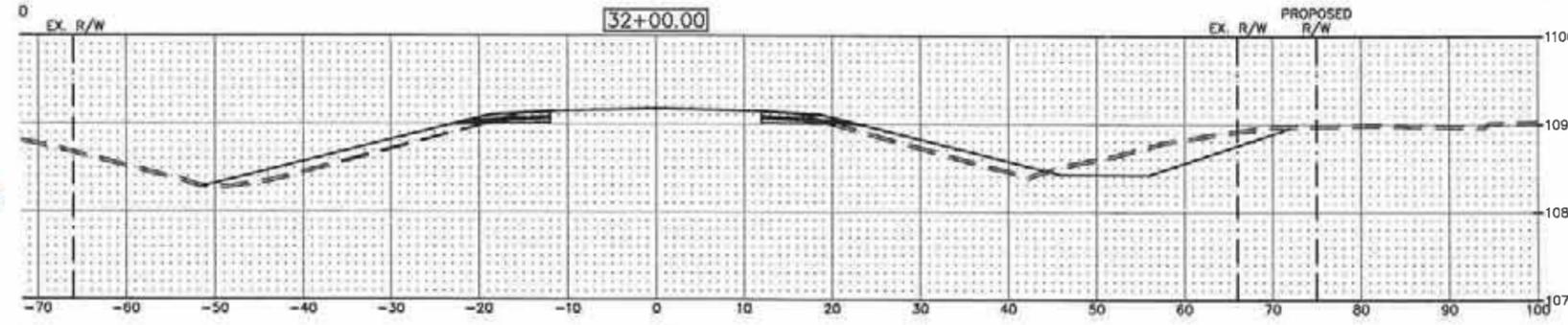


**PENNINGTON SOIL & WATER  
CONSERVATION DISTRICT**  
201 Sherwood Avenue South • Suite 3  
Thief River Falls, MN 56701-3407  
Phone: (218) 683-7075 • Fax: (218) 681-3259  
www.nwmnswcd.org/pennington

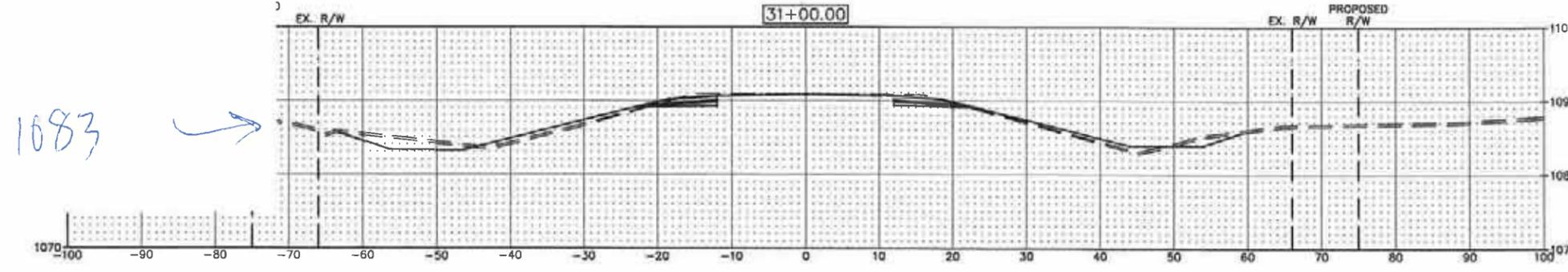


EXC. RT. = 142.93 CY  
EMB. RT. = 79.61 CY

1085 →  
raise bottom to 1084  
should get 8' bottom



EXC. RT. = 166.06 CY  
EMB. RT. = 87.94 CY



EXC. RT. = 129.09 CY  
EMB. RT. = 76.91 CY

H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CS&H 3\CAD\cross sections.dwg -XSECT7-3/4/2014 2:06 PM-(bjohnson)

No.	Revision	Date	By



Thief River Falls

P: 218.681.2951  
F: 218.681.2987

Drawn by  
BGJ  
Checked by  
JJL

Date  
12-31-13  
Scale  
AS SHOWN

S.A.P. 57-603-036

S.P.

CROSS SECTIONS

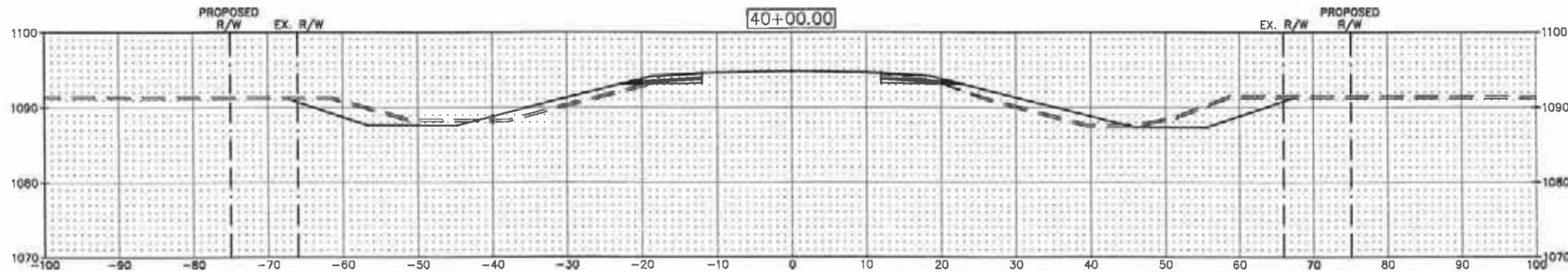
PROJECT NO. 3816-006

SHEET

X of X

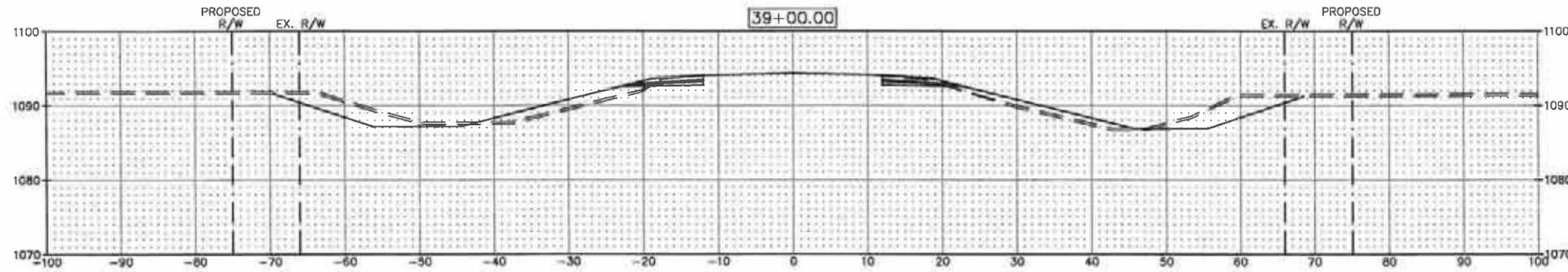
EXC. LT. = 132.44 CY  
 EMB. LT. = 67.69 CY

EXC. RT. = 108.60 CY  
 EMB. RT. = 82.83 CY



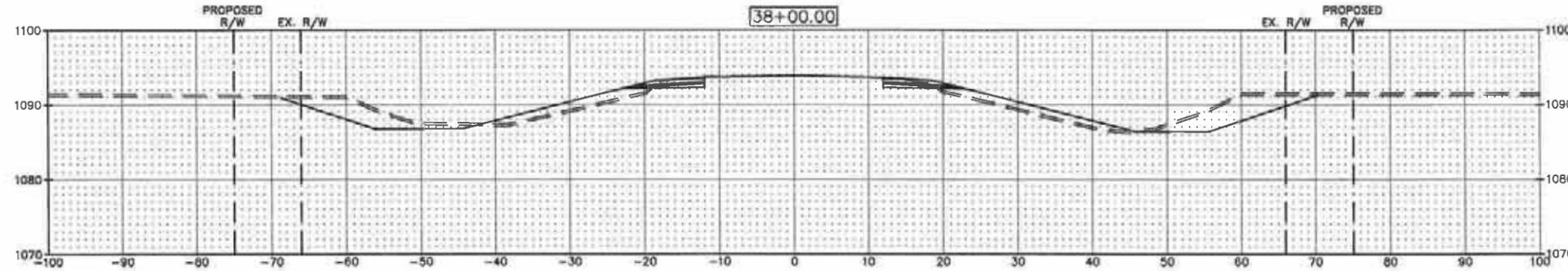
EXC. LT. = 126.41 CY  
 EMB. LT. = 97.48 CY

EXC. RT. = 140.59 CY  
 EMB. RT. = 98.52 CY



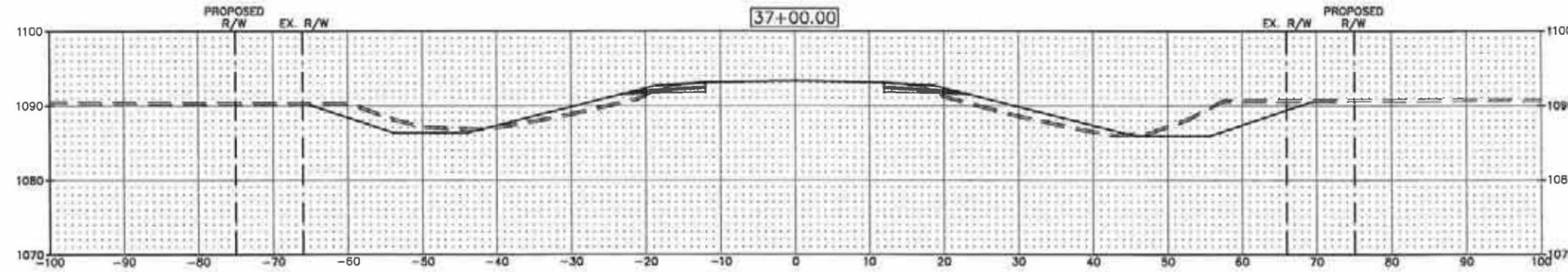
EXC. LT. = 142.35 CY  
 EMB. LT. = 104.44 CY

EXC. RT. = 158.24 CY  
 EMB. RT. = 95.76 CY



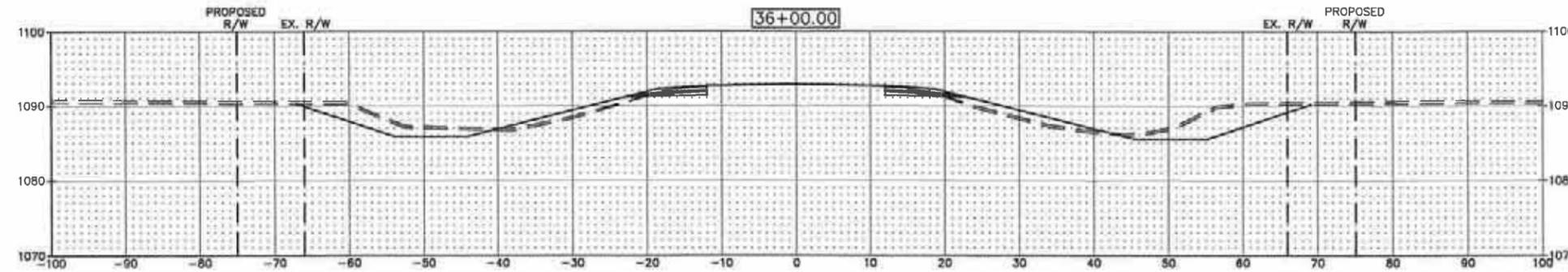
EXC. LT. = 130.48 CY  
 EMB. LT. = 89.37 CY

EXC. RT. = 180.85 CY  
 EMB. RT. = 106.37 CY



EXC. LT. = 125.98 CY  
 EMB. LT. = 70.26 CY

EXC. RT. = 187.81 CY  
 EMB. RT. = 95.61 CY



H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CSAH 3\CAD\Cross sections.dwg -SSECT8-3/4/2014 2:06 PM-(bjohnson)

No.	Revision	Date	By



Thief River Falls

P: 218.681.2951  
 F: 218.681.2987

Drawn by BGI  
 Checked by JJJ  
 Date 12-31-13  
 Scale AS SHOWN

S.A.P. 57-603-036

S.P.

CROSS SECTIONS

PROJECT NO. 3816-006

SHEET

X of X

EXC. LT. = 124.80 CY  
 EMB. LT. = 100.61 CY

EXC. LT. = 120.56 CY  
 EMB. LT. = 88.67 CY

EXC. LT. = 115.83 CY  
 EMB. LT. = 91.76 CY

EXC. LT. = 123.50 CY  
 EMB. LT. = 96.67 CY

EXC. LT. = 186.68 CY  
 EMB. LT. = 96.60 CY

STA. 41+24 LT.  
 CO. ROAD 75. = 50 C.Y.

EXC. RT. = 77.04 CY  
 EMB. RT. = 105.46 CY

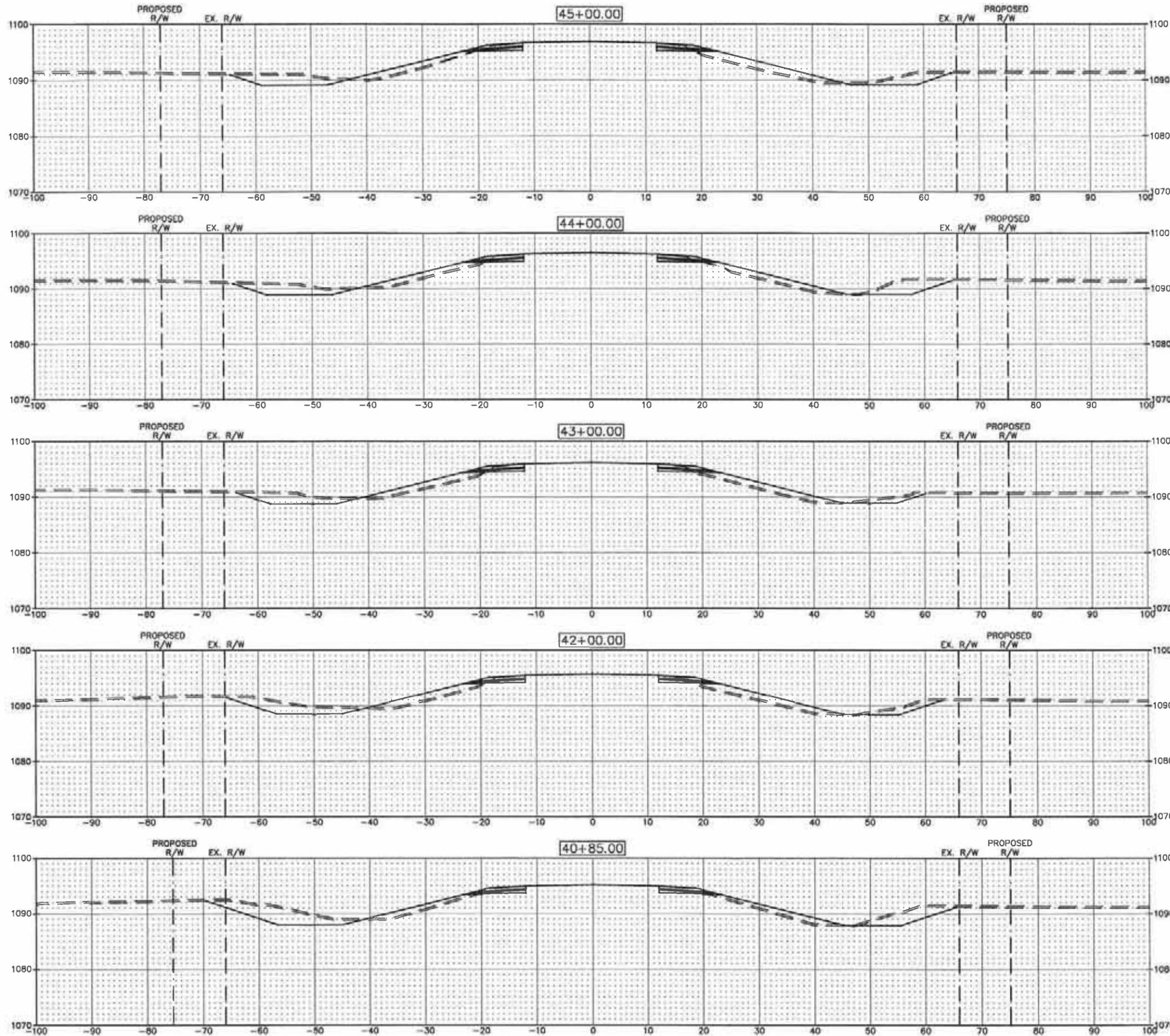
EXC. RT. = 94.35 CY  
 EMB. RT. = 111.48 CY

EXC. RT. = 75.63 CY  
 EMB. RT. = 104.67 CY

EXC. RT. = 51.15 CY  
 EMB. RT. = 114.24 CY

STA. 41+21 RT.  
 FIELD ENT. = 50 C.Y.

EXC. RT. = 99.77 CY  
 EMB. RT. = 116.02 CY



H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CSAH 3\CAD\cross sections.dwg -XSECT9-3/1/2014 2:06 PM - (bjjohnson)

No.	Revision	Date	By



Thief River Falls  
 P: 218.681.2951  
 F: 218.681.2987

Drawn by BGI Date 12-31-13  
 Checked by JLL Scale AS SHOWN  
 S.A.P. 57-603-036  
 S.P.

CROSS SECTIONS  
 PROJECT NO. 3816-006  
 SHEET X of X

EXC. LT. = 141.61 CY  
EMB. LT. = 134.96 CY

EXC. LT. = 130.52 CY  
EMB. LT. = 114.19 CY

EXC. LT. = 126.76 CY  
EMB. LT. = 98.94 CY

EXC. LT. = 132.93 CY  
EMB. LT. = 93.04 CY

46+95.99 LT. COMMON EXC. = 3,013.80 C.Y.  
(INC. 1,012.49 C.Y. TOPSOIL)  
EMBANKMENT = 1,667.76 C.Y.  
(INC. 100 C.Y. APP. & ENT.)

EXC. LT. = 132.00 CY  
EMB. LT. = 99.41 CY

EXC. RT. = 146.67 CY  
EMB. RT. = 119.28 CY

EXC. RT. = 142.54 CY  
EMB. RT. = 108.87 CY

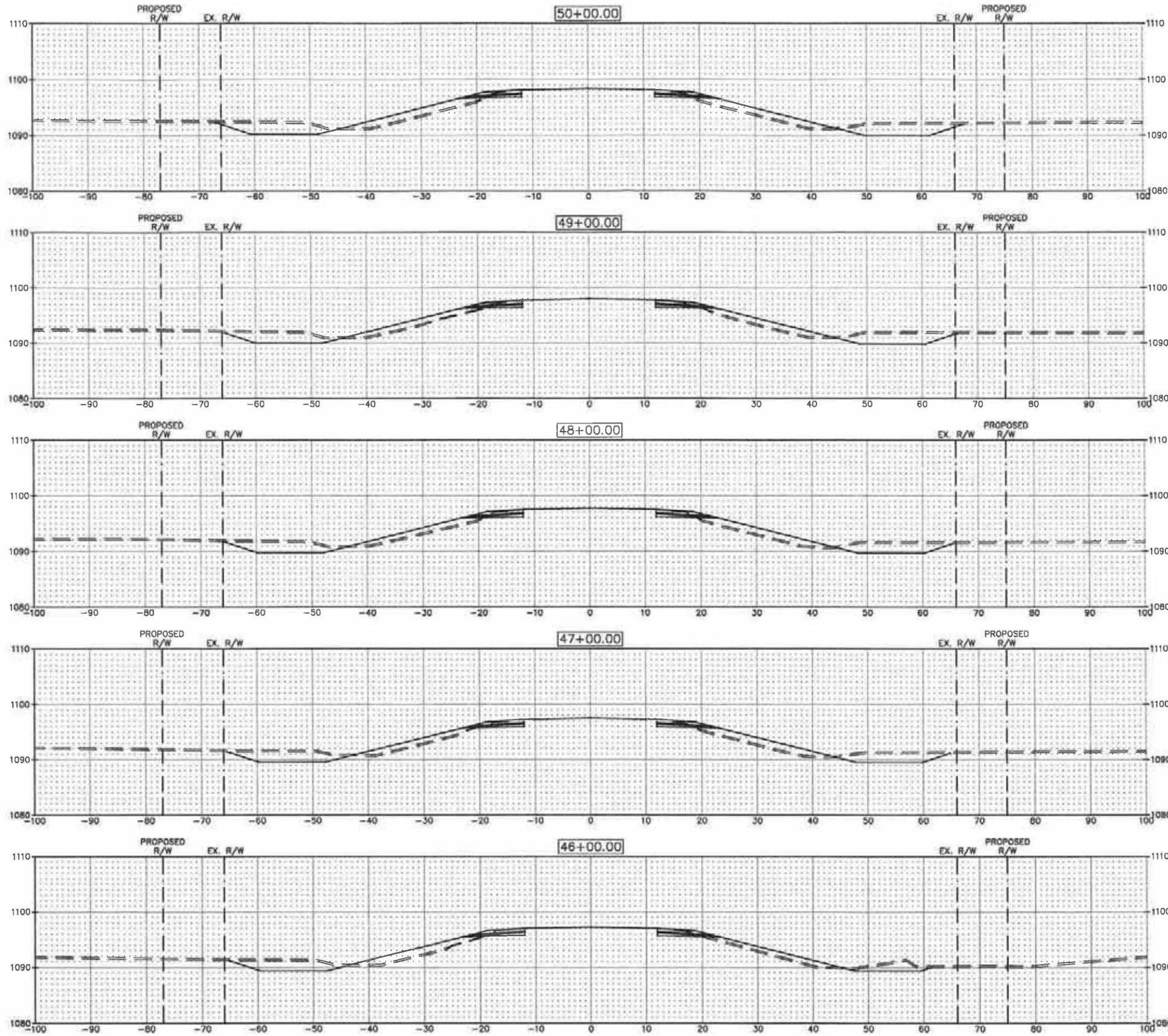
EXC. RT. = 135.81 CY  
EMB. RT. = 107.31 CY

EXC. RT. = 124.48 CY  
EMB. RT. = 116.41 CY

EXC. RT. = 93.59 CY  
EMB. RT. = 102.35 CY

45+40.23 RT. COMMON EXC. = 2,000.34 C.Y.  
(INC. 614.31 C.Y. TOPSOIL)  
EMBANKMENT = 1,155.02 C.Y.  
(INC. 50 C.Y. APP. & ENT.)

STA. 45+90 RT.  
TWP. ROAD = 50 C.Y.



H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CSAH 3\CAD\cross sections.dwg -XSECTION-3/4/2014 2:05 PM-(lgjohnson)

No.	Revision	Date	By



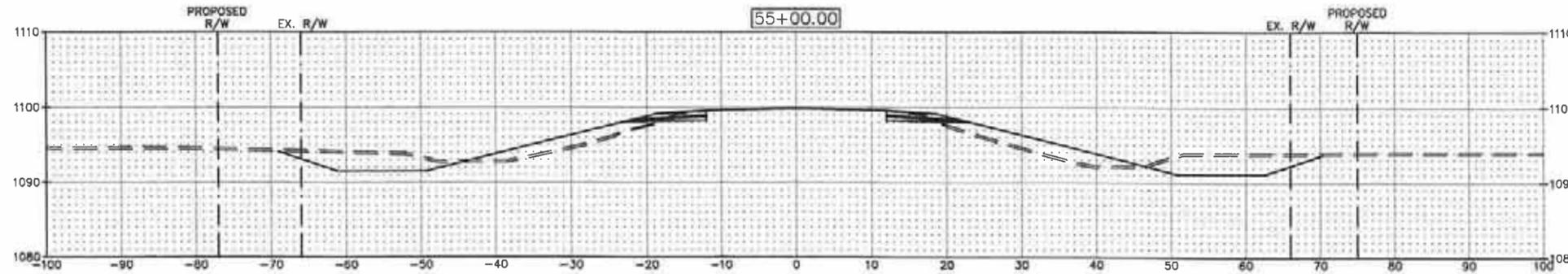
Thief River Falls  
 Drawn by BGI Date 12-31-13  
 Checked by JIL Scale AS SHOWN

S.A.P. 57-603-036  
 S.P.

CROSS SECTIONS  
 PROJECT NO. 3816-006 SHEET X of X

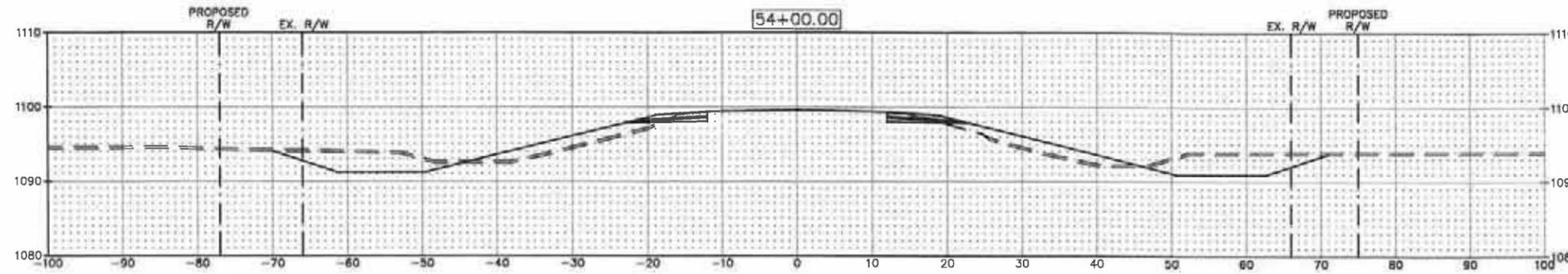
EXC. LT. = 148.20 CY  
 EMB. LT. = 148.56 CY

EXC. RT. = 185.56 CY  
 EMB. RT. = 165.33 CY



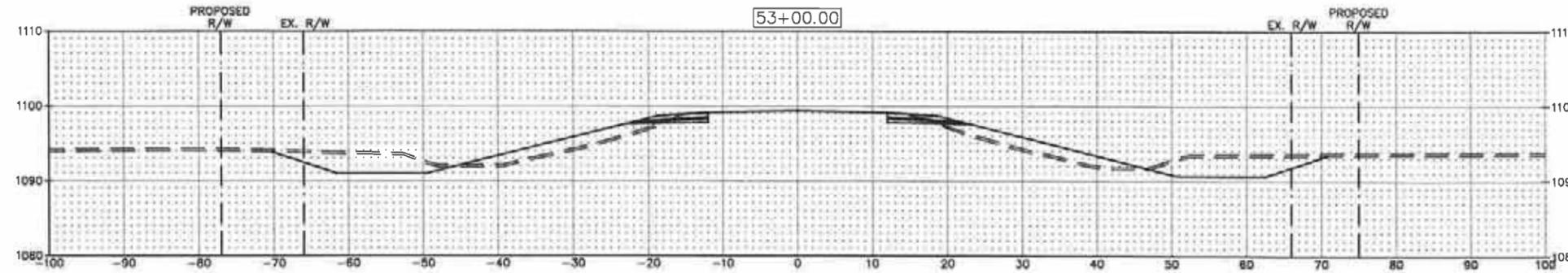
EXC. LT. = 168.11 CY  
 EMB. LT. = 135.35 CY

EXC. RT. = 191.98 CY  
 EMB. RT. = 144.81 CY



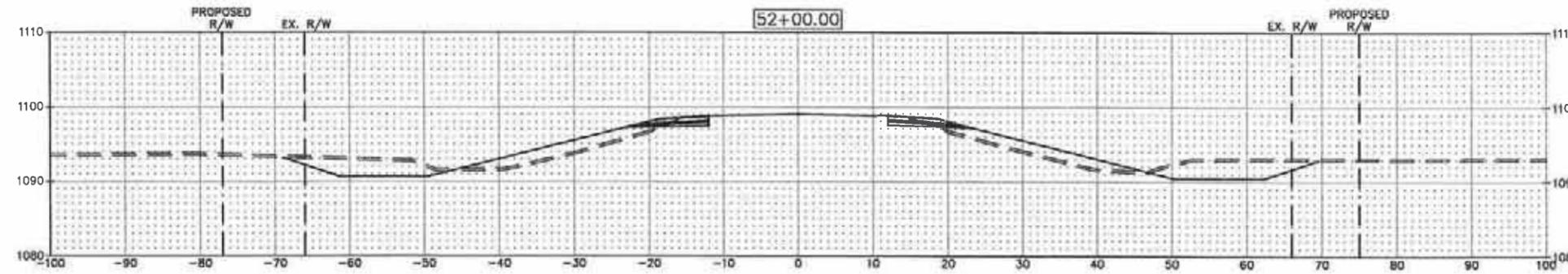
EXC. LT. = 173.85 CY  
 EMB. LT. = 141.39 CY

EXC. RT. = 193.59 CY  
 EMB. RT. = 138.09 CY



EXC. LT. = 158.50 CY  
 EMB. LT. = 148.74 CY

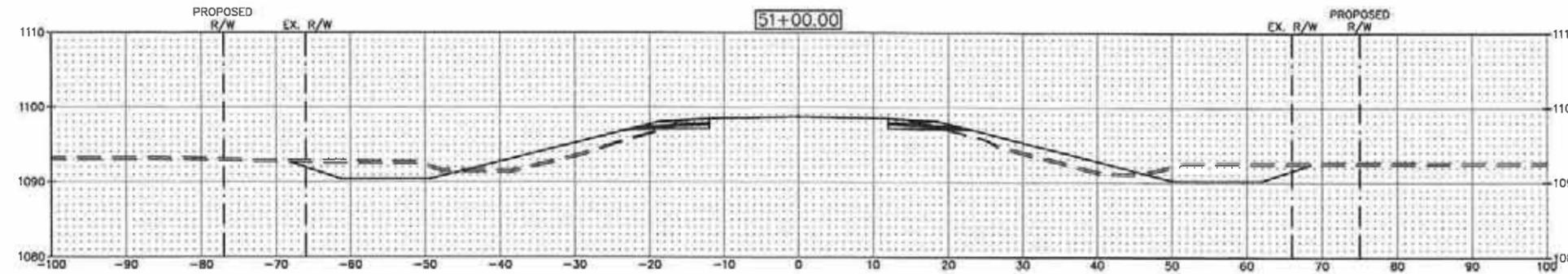
EXC. RT. = 176.63 CY  
 EMB. RT. = 144.98 CY



51+10.18 LT. COMMON EXC. = 786.74 C.Y.  
 (INC. 234.77 C.Y. TOPSOIL)  
 EMBANKMENT = 459.97 C.Y.

EXC. LT. = 145.93 CY  
 EMB. LT. = 145.91 CY

EXC. RT. = 156.06 CY  
 EMB. RT. = 131.52 CY



H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CS&M\3\CAD\cross sections.dwg -XSECT11-3/4/2014 2:07 PM - (bjjohnson)

No.	Revision	Date	By



Thief River Falls	Drawn by BGJ	Date 12-31-13	S.A.P. 57-603-036	CROSS SECTIONS	SHEET X of X
P: 218.681.2951 F: 218.681.2987	Checked by JJL	Scale AS SHOWN	S.P.		

EXC. LT. = 125.24 CY  
 EMB. LT. = 125.70 CY

STA. 59+17 LT.  
 FIELD ENT. = 50 C.Y.

EXC. LT. = 150.13 CY  
 EMB. LT. = 109.63 CY

EXC. LT. = 157.11 CY  
 EMB. LT. = 126.87 CY

EXC. LT. = 143.80 CY  
 EMB. LT. = 154.04 CY

EXC. LT. = 141.31 CY  
 EMB. LT. = 154.17 CY

EXC. RT. = 196.11 CY  
 EMB. RT. = 149.94 CY

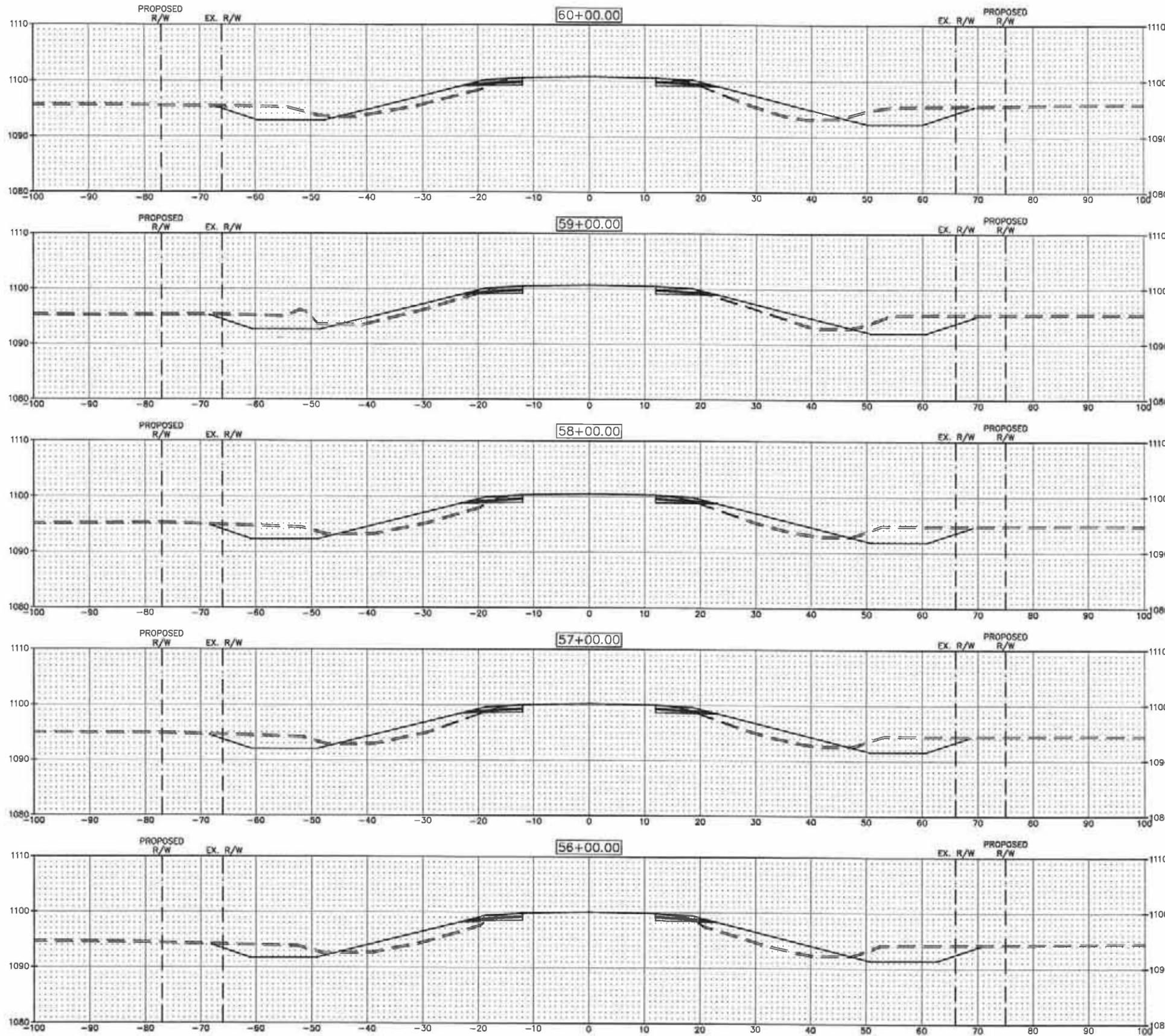
STA. 59+16 RT.  
 FIELD ENT. = 50 C.Y.

EXC. RT. = 196.20 CY  
 EMB. RT. = 130.11 CY

EXC. RT. = 186.81 CY  
 EMB. RT. = 123.41 CY

EXC. RT. = 170.22 CY  
 EMB. RT. = 146.41 CY

EXC. RT. = 175.46 CY  
 EMB. RT. = 159.67 CY



H:\Jobs by Number\3816 Permittion County Hwy\3816-006 CS\H 3\CAD\Cross sections.dwg -XSECT12-3/4/2014 2:07 PM -lbgjohnson

No.	Revision	Date	By



Thief River Falls

P: 218.681.2951  
 F: 218.681.2987

Drawn by  
 BGJ

Checked by  
 JLL

Date  
 12-31-13

Scale  
 AS SHOWN

S.A.P. 57-603-036

S.P.

CROSS SECTIONS

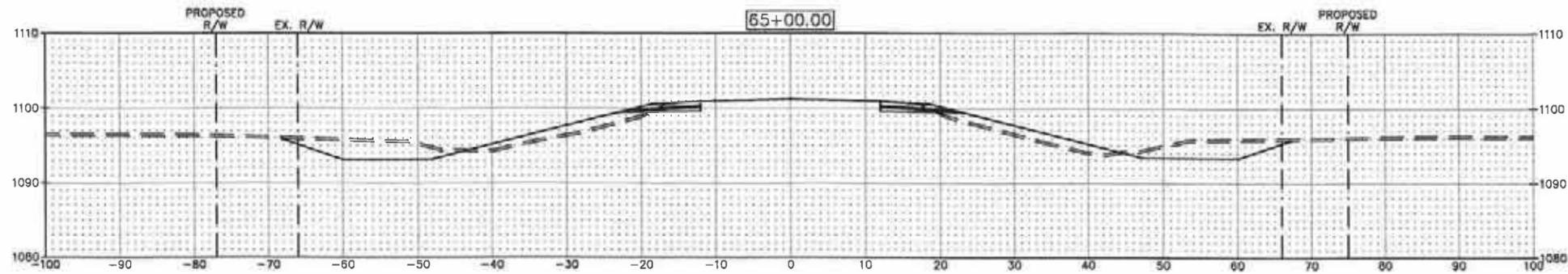
PROJECT NO. 3816-006

SHEET

X of X

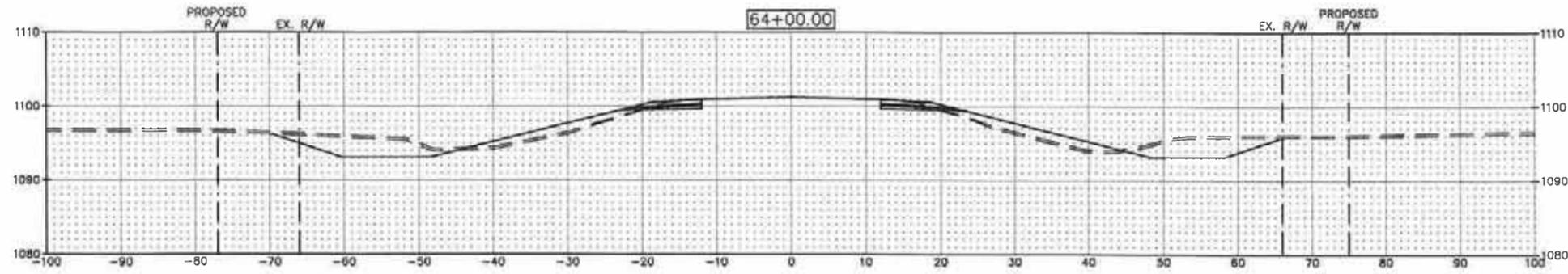
EXC. LT. = 169.37 CY  
 EMB. LT. = 103.44 CY

EXC. RT. = 136.65 CY  
 EMB. RT. = 103.96 CY



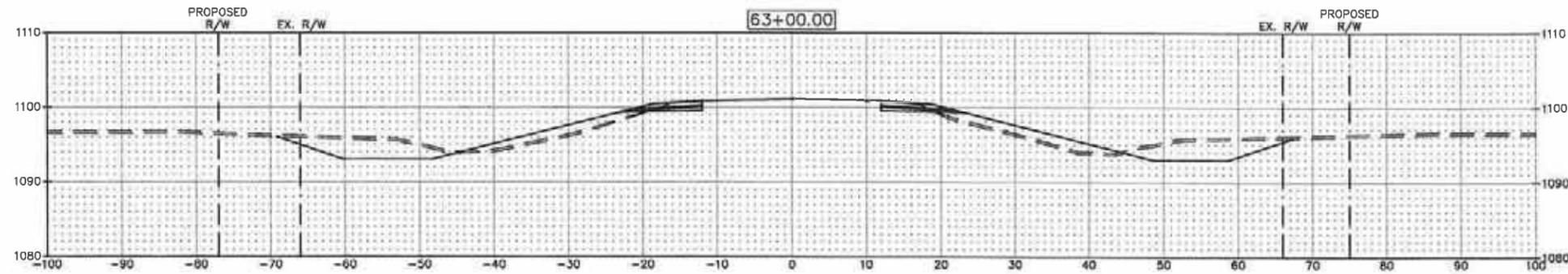
EXC. LT. = 170.11 CY  
 EMB. LT. = 101.78 CY

EXC. RT. = 151.59 CY  
 EMB. RT. = 110.89 CY



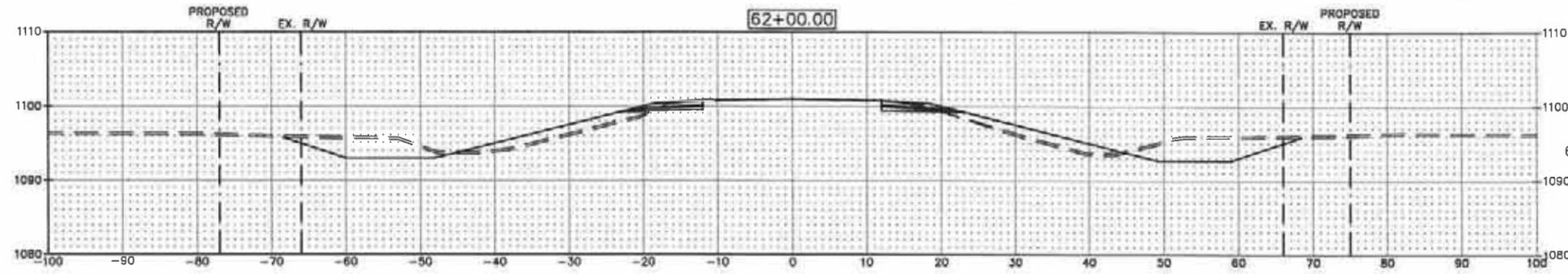
EXC. LT. = 174.93 CY  
 EMB. LT. = 100.24 CY

EXC. RT. = 164.28 CY  
 EMB. RT. = 114.56 CY



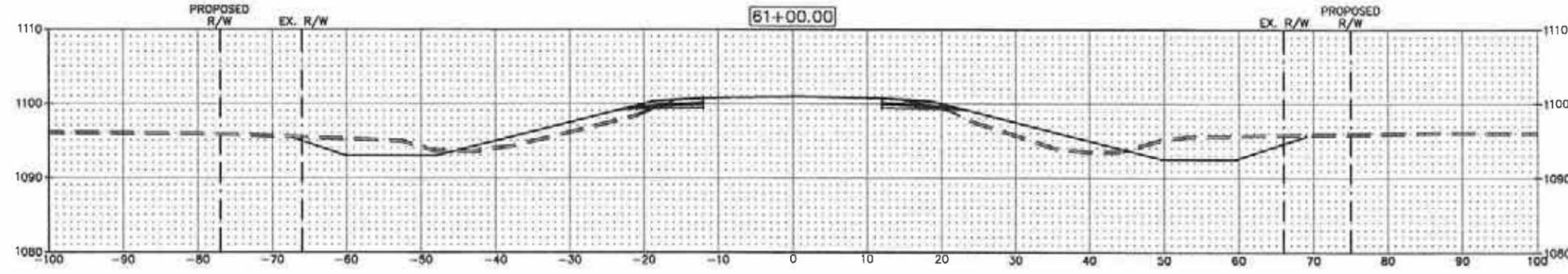
EXC. LT. = 166.43 CY  
 EMB. LT. = 114.43 CY

EXC. RT. = 182.15 CY  
 EMB. RT. = 115.57 CY



EXC. LT. = 140.69 CY  
 EMB. LT. = 122.57 CY

61+95.48 RT.  COMMON EXC. = 3,666.26 C.Y.  
 (INC. 962.64 C.Y. TOPSOIL)  
 EMBANKMENT = 2,253.01 C.Y.  
 (INC. 100 C.Y. APP. & ENT.)



EXC. RT. = 194.65 CY  
 EMB. RT. = 127.35 CY

H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CSAH 3\CAD\Cross sections.dwg -XSECT:13-3/4/2014 2:07 PM-[bgjohnson]

No.	Revision	Date	By



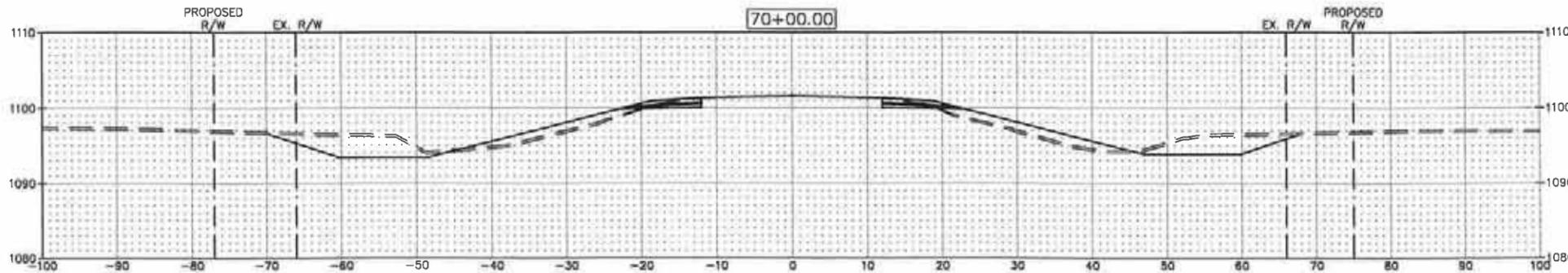
Thief River Falls  
 Drawn by BGI Date 12-31-13  
 Checked by JLL Scale AS SHOWN

S.A.P. 57-603-036  
 S.P.

CROSS SECTIONS  
 PROJECT NO. 3816-006 SHEET X of X

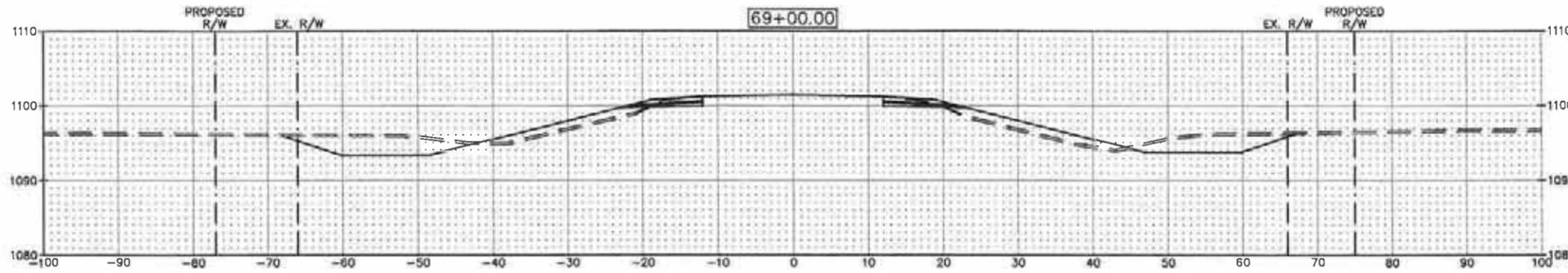
EXC. LT. = 176.93 CY  
EMB. LT. = 114.28 CY

EXC. RT. = 135.89 CY  
EMB. RT. = 118.09 CY



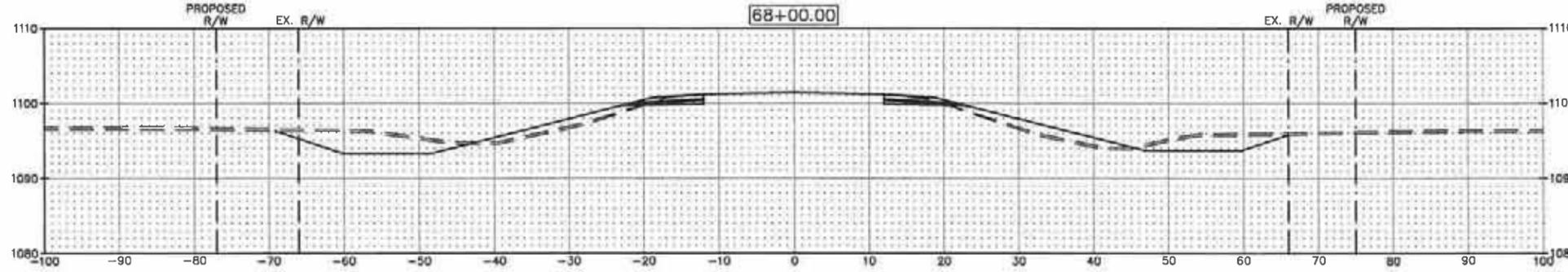
EXC. LT. = 176.00 CY  
EMB. LT. = 97.93 CY

EXC. RT. = 144.22 CY  
EMB. RT. = 112.94 CY



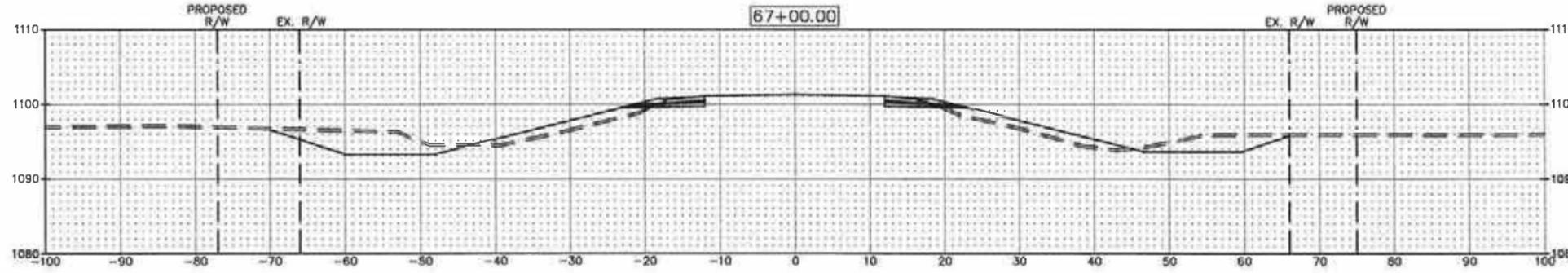
EXC. LT. = 184.72 CY  
EMB. LT. = 91.07 CY

EXC. RT. = 134.98 CY  
EMB. RT. = 107.09 CY



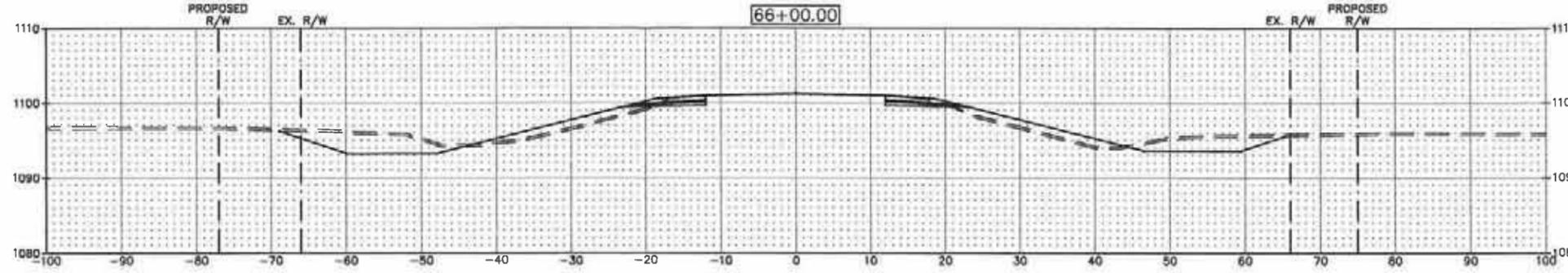
EXC. LT. = 191.94 CY  
EMB. LT. = 96.06 CY

EXC. RT. = 123.80 CY  
EMB. RT. = 106.98 CY



EXC. LT. = 184.69 CY  
EMB. LT. = 101.44 CY

EXC. RT. = 124.69 CY  
EMB. RT. = 102.28 CY



66+67.83 LT. COMMON EXC. = 3,384.55 C.Y.  
(INC. 940.42 C.Y. TOPSOIL)  
EMBANKMENT = 2,036.77 C.Y.  
(INC. 50 C.Y. APP. & ENT.)

H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CSAH 3\CAD\cross sections.dwg -XSECT14.3/4/2014 2:07 PM-(lgjohnson)

No.	Revision	Date	By



Thief River Falls

P: 218.681.2951  
F: 218.681.2987

Drawn by  
BGJ

Checked by  
JJL

Date  
12-31-13

Scale  
AS SHOWN

S.A.P. 57-603-036

S.P.

CROSS SECTIONS

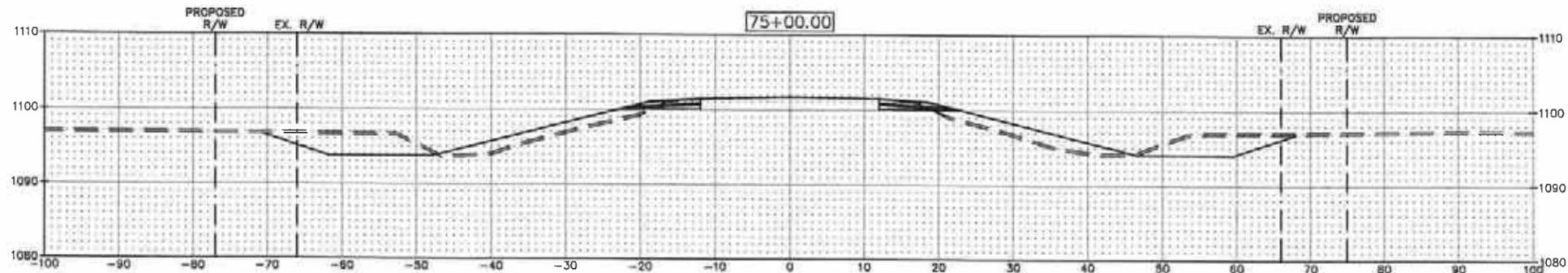
PROJECT NO. 3816-006

SHEET

X of X

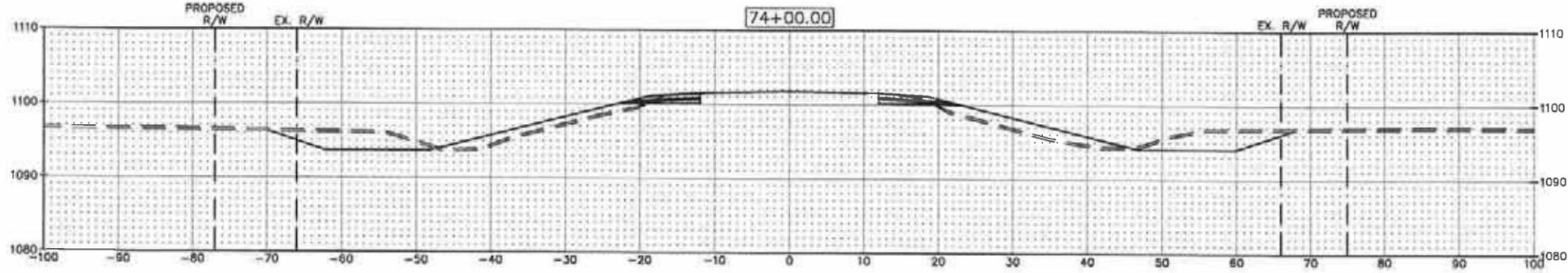
EXC. LT. = 182.37 CY  
EMB. LT. = 151.54 CY

EXC. RT. = 156.91 CY  
EMB. RT. = 140.31 CY



EXC. LT. = 171.54 CY  
EMB. LT. = 133.83 CY

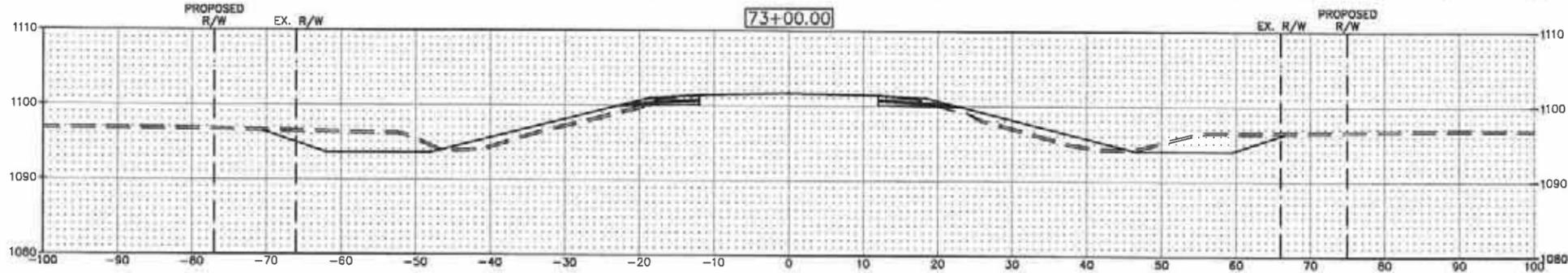
EXC. RT. = 152.85 CY  
EMB. RT. = 138.89 CY



STA. 73+63 LT.  
FIELD ENT. = 50 C.Y.

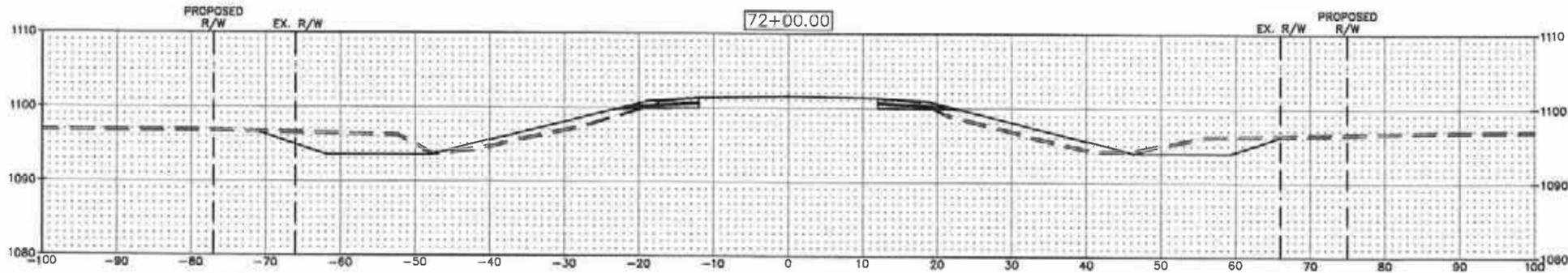
EXC. LT. = 168.37 CY  
EMB. LT. = 114.50 CY

EXC. RT. = 136.93 CY  
EMB. RT. = 68.69 CY



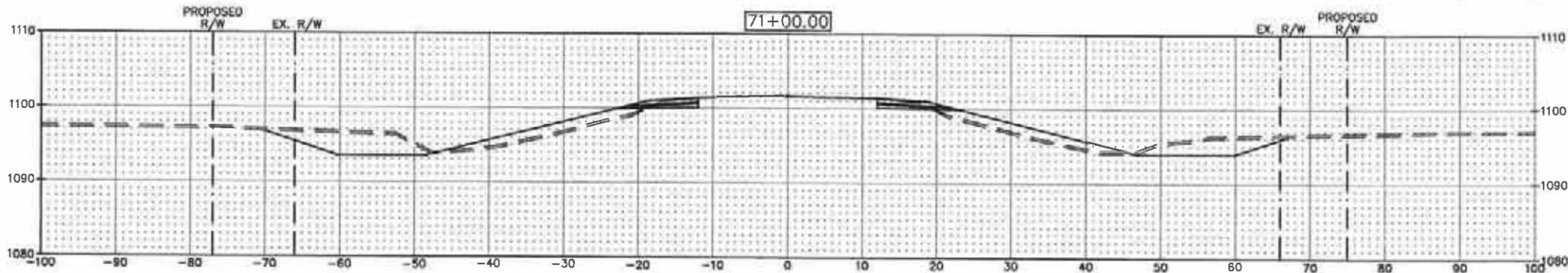
EXC. LT. = 181.13 CY  
EMB. LT. = 103.94 CY

EXC. RT. = 119.83 CY  
EMB. RT. = 109.72 CY



EXC. LT. = 182.28 CY  
EMB. LT. = 114.94 CY

EXC. RT. = 121.30 CY  
EMB. RT. = 117.89 CY



H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CSAH 3\CAD\cross sections.dwg -XSECT15-3/4/2014 2:08 PM (lgjohnson)

No.	Revision	Date	By



Thief River Falls  
 P: 218.681.2951  
 F: 218.681.2987

Drawn by B.G.J. Date 12-31-13  
 Checked by J.J.L. Scale AS SHOWN  
 S.A.P. 57-603-036  
 S.P.

CROSS SECTIONS  
 PROJECT NO. 3816-006  
 SHEET  
 X of X

EXC. LT. = 95.31 CY  
EMB. LT. = 150.44 CY

EXC. LT. = 105.22 CY  
EMB. LT. = 157.94 CY

EXC. LT. = 95.70 CY  
EMB. LT. = 153.96 CY

EXC. LT. = 106.96 CY  
EMB. LT. = 145.85 CY

EXC. LT. = 156.78 CY  
EMB. LT. = 152.94 CY

EXC. RT. = 133.02 CY  
EMB. RT. = 138.94 CY

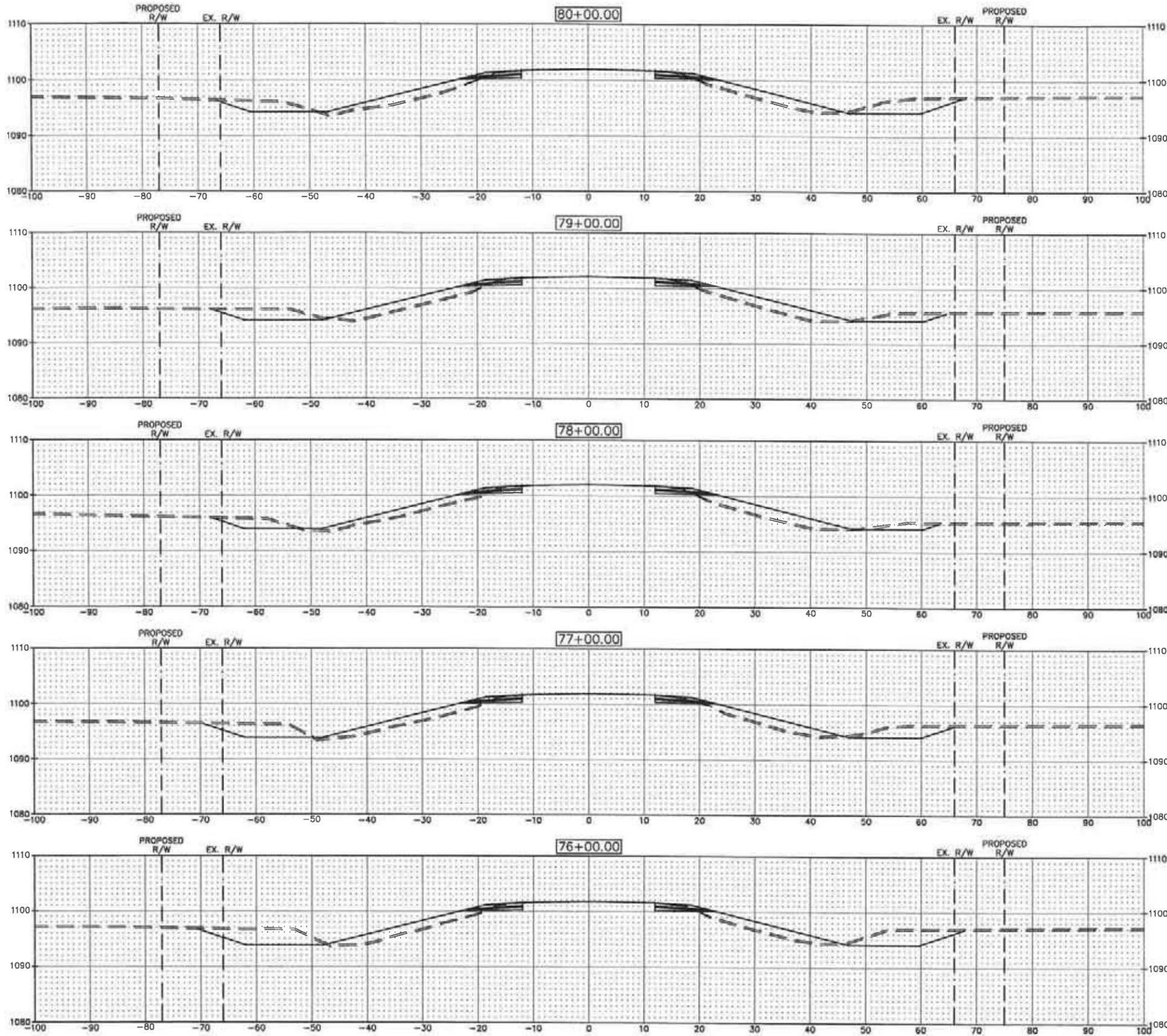
EXC. RT. = 104.33 CY  
EMB. RT. = 155.43 CY

EXC. RT. = 61.04 CY  
EMB. RT. = 169.87 CY

77+15.19 RT  COMMON EXC. = 2,992.50 C.Y.  
(INC. 853.68 C.Y. TOPSOIL)  
EMBANKMENT = 1,782.36 C.Y.

EXC. RT. = 78.69 CY  
EMB. RT. = 153.52 CY

EXC. RT. = 132.02 CY  
EMB. RT. = 135.41 CY



H:\Jobs by Number\3816 Pennington County Hwy\3816-006 CS&M 3\CAD\Cross sections.dwg -XSECT16-3/4/2014 2:08 PM-lbjohnson

No.	Revision	Date	By



Thief River Falls  
P: 218.681.2951  
F: 218.681.2987

Drawn by BGI  
Checked by JLL

Date 12-31-13  
Scale AS SHOWN

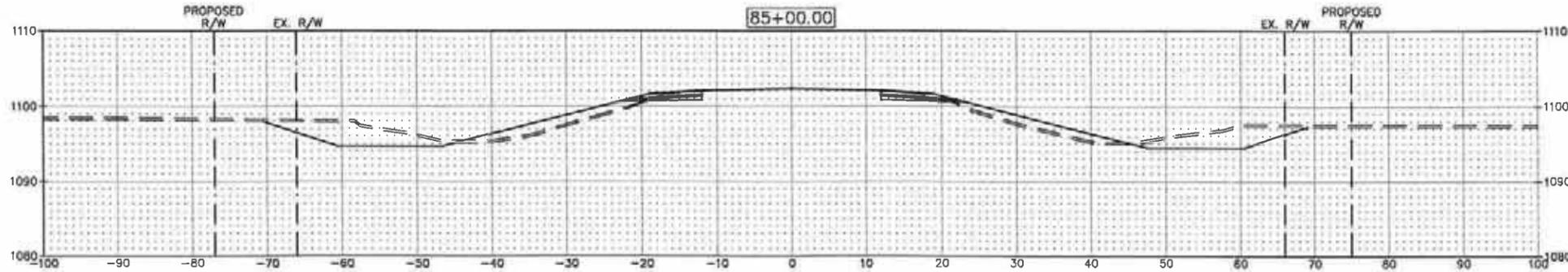
S.A.P. 57-603-036  
S.P.

CROSS SECTIONS  
PROJECT NO. 3816-006

SHEET  
X of X

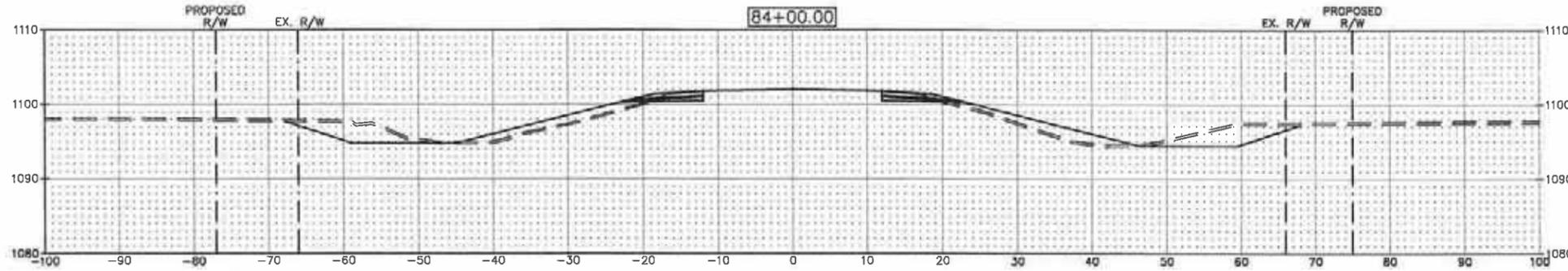
EXC. LT. = 149.04 CY  
EMB. LT. = 91.75 CY

EXC. RT. = 143.72 CY  
EMB. RT. = 42.79 CY



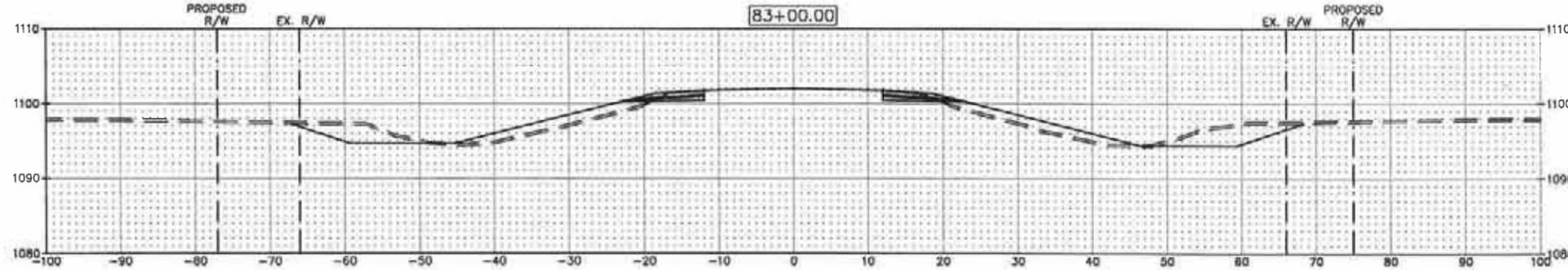
EXC. LT. = 149.37 CY  
EMB. LT. = 108.94 CY

EXC. RT. = 143.30 CY  
EMB. RT. = 104.48 CY



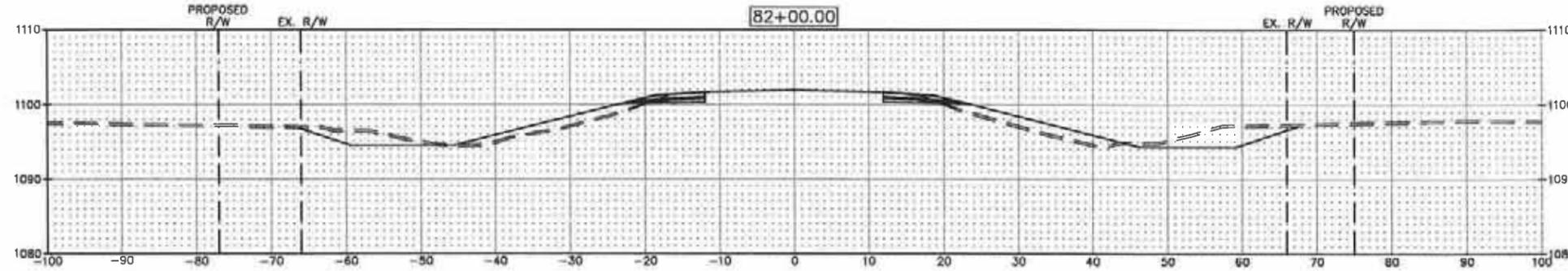
EXC. LT. = 112.59 CY  
EMB. LT. = 118.91 CY

EXC. RT. = 130.35 CY  
EMB. RT. = 114.74 CY



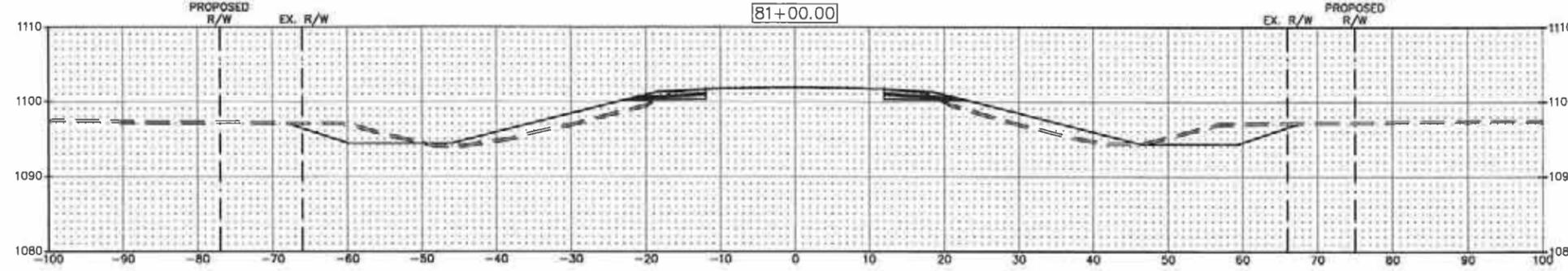
EXC. LT. = 98.09 CY  
EMB. LT. = 120.48 CY

EXC. RT. = 130.96 CY  
EMB. RT. = 118.81 CY



EXC. LT. = 91.57 CY  
EMB. LT. = 129.30 CY

EXC. RT. = 130.11 CY  
EMB. RT. = 127.22 CY



81+00.66 LT. COMMON EXC. = 3,096.51 C.Y.  
(INC. 861.25 C.Y. TOPSOIL)  
EMBANKMENT = 1,862.72 C.Y.  
(INC. 50 C.Y. APP. & ENT.)



H:\Jobs by Number\3816 Permington County Hwy\3816-006 CSAH 3\CAD\Cross sections.dwg -XSECT17-3/4/2014 2:08 PM - (lgjohnson)

No.	Revision	Date	By



Thief River Falls  
 Drawn by BGI Date 12-31-13  
 Checked by JJJ Scale AS SHOWN

S.A.P. 57-603-036  
 S.P.

CROSS SECTIONS  
 PROJECT NO. 3816-006  
 SHEET  
 X of X

EXC. LT. = 170.70 CY  
EMB. LT. = 111.69 CY

EXC. LT. = 155.44 CY  
EMB. LT. = 122.46 CY

EXC. LT. = 132.44 CY  
EMB. LT. = 130.35 CY

EXC. LT. = 123.56 CY  
EMB. LT. = 103.73 CY

STA. 86+61 LT.  
FIELD ENT. = 50 C.Y.

EXC. LT. = 270.46 CY  
EMB. LT. = 123.06 CY

EXC. RT. = 210.24 CY  
EMB. RT. = 85.11 CY

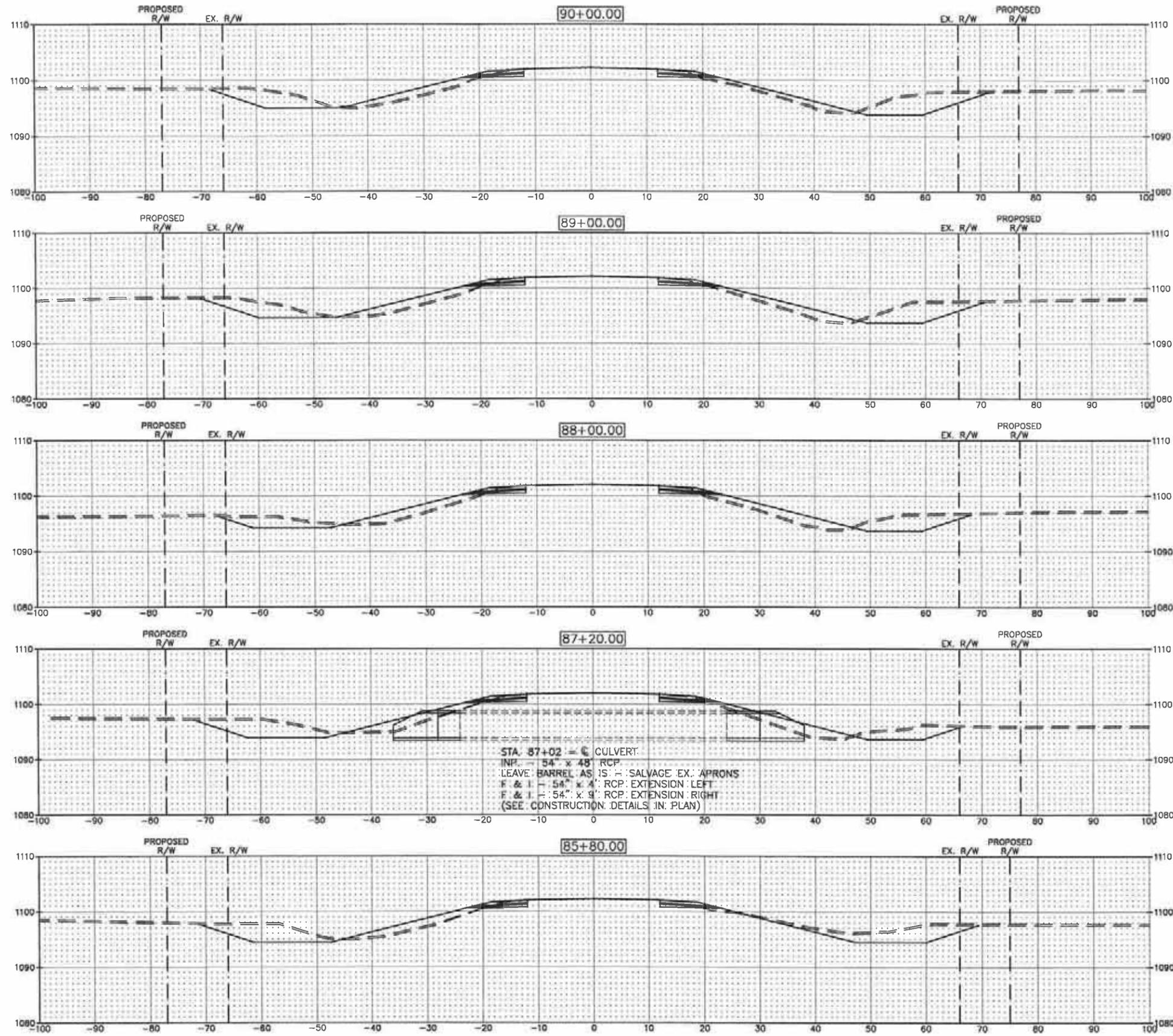
EXC. RT. = 201.00 CY  
EMB. RT. = 109.17 CY

EXC. RT. = 177.06 CY  
EMB. RT. = 132.24 CY

EXC. RT. = 114.55 CY  
EMB. RT. = 113.97 CY

STA. 86+56 RT.  
CSAH 17 = 100 C.Y.

EXC. RT. = 0.00 CY  
EMB. RT. = 107.26 CY



STA. 87+02 = C CULVERT:  
INF. = 54" x 48" RCP  
LEAVE BARREL AS IS - SALVAGE EX. APRONS  
F & I = 54" x 4" RCP: EXTENSION: LEFT  
F & I = 54" x 4" RCP: EXTENSION: RIGHT  
(SEE CONSTRUCTION DETAILS IN PLAN)

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No.	Revision	Date	By



Thief River Falls  
P: 218.681.2951  
F: 218.681.2987  
Drawn by: BGJ  
Checked by: JJJ  
Date: 12-31-13  
Scale: AS SHOWN

S.A.P. 57-603-036  
S.P.

CROSS SECTIONS  
PROJECT NO. 3816-006  
SHEET  
X of X

94+29.76 LT. COMMON EXC. = 2,611.94 C.Y.  
 (INC. 714.54 C.Y. TOPSOIL)  
 EMBANKMENT = 1,581.00 C.Y.  
 (INC. 100 C.Y. APP. & ENT.)

94+29.76 RT. COMMON EXC. = 3,406.65 C.Y.  
 (INC. 987.45 C.Y. TOPSOIL)  
 EMBANKMENT = 2,019.32 C.Y.  
 (INC. 130 C.Y. APP. & ENT.)

STA. 94+29 LT.  
 CSAH 17 = 50 C.Y.

STA. 94+22 RT.  
 FIELD ENT. = 80 C.Y.

EXC. LT. = 82.36 CY  
 EMB. LT. = 42.24 CY

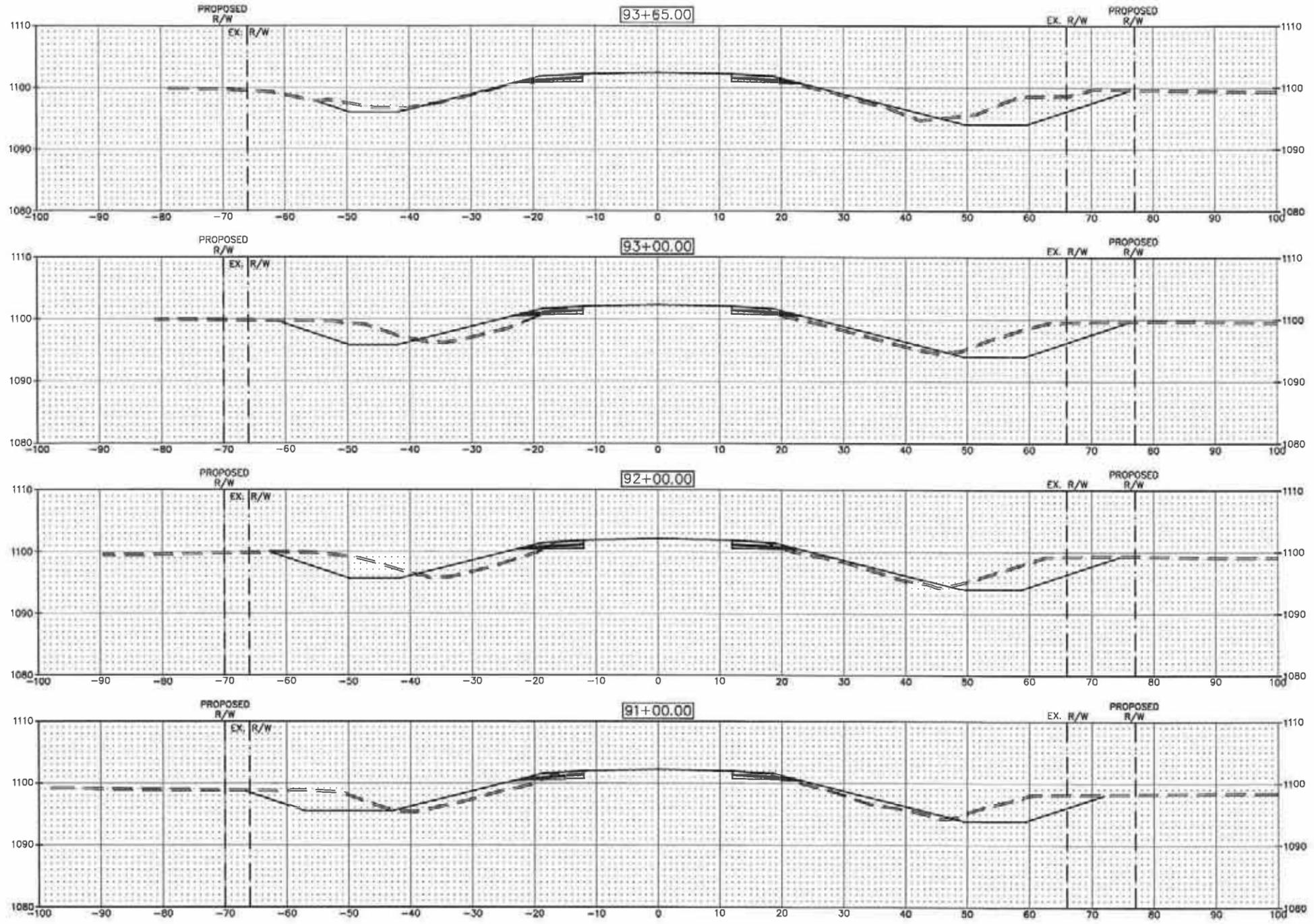
EXC. RT. = 180.15 CY  
 EMB. RT. = 45.03 CY

EXC. LT. = 181.59 CY  
 EMB. LT. = 114.93 CY

EXC. RT. = 263.61 CY  
 EMB. RT. = 73.37 CY

EXC. LT. = 180.78 CY  
 EMB. LT. = 113.94 CY

EXC. RT. = 229.04 CY  
 EMB. RT. = 70.69 CY



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No.	Revision	Date	By



Thief River Falls  
 Drawn by BGJ Date 12-31-13  
 Checked by JLL Scale AS SHOWN

S.A.P. 57-603-036  
 S.P.

CROSS SECTIONS  
 PROJECT NO. 3816-006  
 SHEET  
 X of X

STA. 1+55 LT.  
F & I - EROSION CONTROL BLANKET  
15" CSP INLET & OUTLET (7 & 9 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 7+25 LT.  
F & I - EROSION CONTROL BLANKET  
15" CSP INLET & OUTLET (7 & 9 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 12+82 LT.  
F & I - EROSION CONTROL BLANKET  
30" CSP INLET & OUTLET (19 & 19 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

RED LAKE RIVER - STA. 31+50 LT.  
ALL DISTURBED AREA TO RECEIVE RAPID  
STABILIZATION TYPE 4  
(1,243 SQ. YD. EST.)

STA. 4+04 LT.  
F & I - EROSION CONTROL BLANKET  
15" CSP INLET & OUTLET (7 & 9 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 13+50 - STA. 14+00 LT.  
F & I - EROSION CONTROL BLANKET DITCH LINER  
(103 SQ. YD. EST.)  
(SEE EROSION CONTROL DETAILS)

STA. 15+20 - RED LAKE RIVER LT.  
ALL DISTURBED AREA TO RECEIVE RAPID  
STABILIZATION TYPE 4  
(1,403 SQ. YD. EST.)

FLOATING SILT CURTAIN,  
TYPE WORK AREA  
(5' DEPTH)  
(225 LIN. FT. EST.)

STA. 14+00 - STA. 15+00 LT.  
ALL DISTURBED AREA TO RECEIVE  
EROSION CONTROL BLANKET CAT. 3  
(381 SQ. YD. EST.)

SILT FENCE, TYPE HEAVY DUTY  
(122 LIN. FT. EST.)

STA. 1+55 RT.  
F & I - EROSION CONTROL BLANKET  
15" CSP INLET & OUTLET (7 & 9 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 12+74 RT.  
F & I - EROSION CONTROL BLANKET  
18" CSP INLET & OUTLET (11 & 11 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 15+20 - RED LAKE RIVER RT.  
ALL DISTURBED AREA TO RECEIVE RAPID  
STABILIZATION TYPE 4  
(1,505 SQ. YD. EST.)

STA. 14+00 - STA. 15+00 RT.  
ALL DISTURBED AREA TO RECEIVE  
EROSION CONTROL BLANKET CAT. 3  
(396 SQ. YD. EST.)

RED LAKE RIVER - STA. 31+50 RT.  
ALL DISTURBED AREA TO RECEIVE RAPID  
STABILIZATION TYPE 4  
(1,102 SQ. YD. EST.)



RED LAKE RIVER - STA. 31+50 LT.  
ALL DISTURBED AREA TO RECEIVE RAPID  
STABILIZATION TYPE 4  
(1,243 SQ. YD. EST.)

STA. 33+72 - STA. 40+96 LT.  
F & I - EROSION CONTROL BLANKET DITCH LINER  
(1,756 SQ. YD. EST.)  
(SEE EROSION CONTROL DETAILS)

STA. 31+50 - STA. 33+32 LT.  
F & I - EROSION CONTROL BLANKET DITCH LINER  
(423 SQ. YD. EST.)  
(SEE EROSION CONTROL DETAILS)

STA. 41+24 LT.  
F & I - EROSION CONTROL BLANKET  
24" CSP INLET & OUTLET (13 & 15 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 59+17 LT.  
F & I - EROSION CONTROL BLANKET  
24" CSP INLET & OUTLET (13 & 15 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 33+52 LT.  
F & I - EROSION CONTROL BLANKET  
48" CSP INLET & OUTLET (45 & 41 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 33+41 RT.  
F & I - EROSION CONTROL BLANKET  
24" CSP INLET & OUTLET (13 & 15 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 45+90 RT.  
F & I - EROSION CONTROL BLANKET  
24" CSP INLET & OUTLET (13 & 15 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

FLOATING SILT CURTAIN,  
TYPE WORK AREA  
(5' DEPTH)  
(225 LIN. FT. EST.)

RED LAKE RIVER - STA. 31+50 RT.  
ALL DISTURBED AREA TO RECEIVE RAPID  
STABILIZATION TYPE 4  
(1,102 SQ. YD. EST.)

STA. 31+50 - STA. 33+13 RT.  
F & I - EROSION CONTROL BLANKET DITCH LINER  
(379 SQ. YD. EST.)  
(SEE EROSION CONTROL DETAILS)

STA. 33+69 - STA. 41+01 RT.  
F & I - EROSION CONTROL BLANKET DITCH LINER  
(1,702 SQ. YD. EST.)  
(SEE EROSION CONTROL DETAILS)

STA. 41+21 RT.  
F & I - EROSION CONTROL BLANKET  
24" CSP INLET & OUTLET (13 & 15 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

STA. 59+16 RT.  
F & I - EROSION CONTROL BLANKET  
24" CSP INLET & OUTLET (13 & 15 SQ. YD)  
(INSTALLED PER STD. PLATE 9102D)

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Thief River Falls  
P: 218.681.2951  
F: 218.681.2987

Drawn by  
BGJ

Checked by

Date  
12-6-13

Scale  
AS SHOWN

S.A.P. 57-603-036

S.P.

EROSION CONTROL PLAN  
PROJECT NO. 3816-006

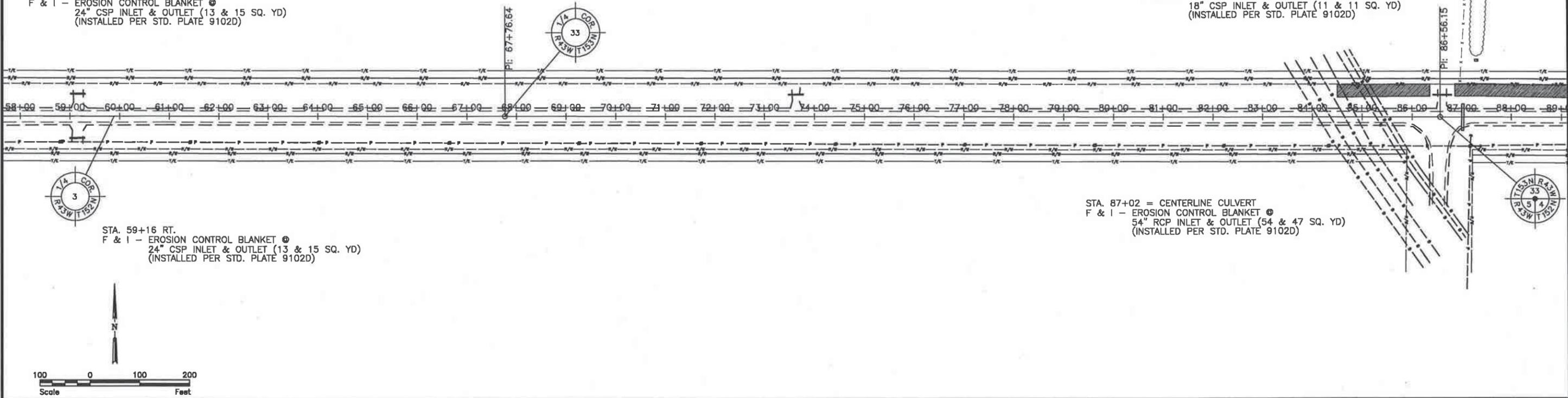
SHEET  
X of X

No.	Revision	Date	By

STA. 84+50 - STA. 86+30 LT.  
 F & I - EROSION CONTROL BLANKET DITCH LINER  
 (515 SQ. YD. EST.)  
 (SEE EROSION CONTROL DETAILS)

STA. 59+17 LT.  
 F & I - EROSION CONTROL BLANKET  
 24" CSP INLET & OUTLET (13 & 15 SQ. YD)  
 (INSTALLED PER STD. PLATE 9102D)

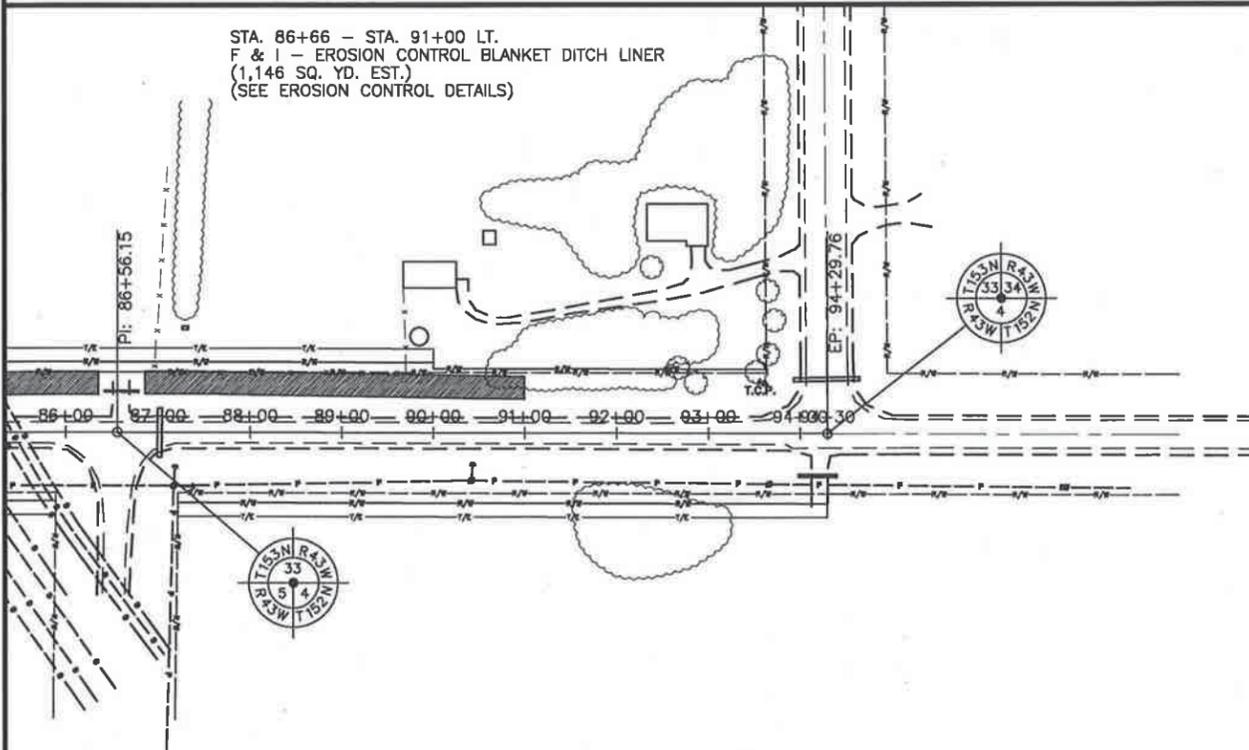
STA. 86+61 LT.  
 F & I - EROSION CONTROL BLANKET  
 18" CSP INLET & OUTLET (11 & 11 SQ. YD)  
 (INSTALLED PER STD. PLATE 9102D)



STA. 59+16 RT.  
 F & I - EROSION CONTROL BLANKET  
 24" CSP INLET & OUTLET (13 & 15 SQ. YD)  
 (INSTALLED PER STD. PLATE 9102D)

STA. 87+02 = CENTERLINE CULVERT  
 F & I - EROSION CONTROL BLANKET  
 54" RCP INLET & OUTLET (54 & 47 SQ. YD)  
 (INSTALLED PER STD. PLATE 9102D)

STA. 86+66 - STA. 91+00 LT.  
 F & I - EROSION CONTROL BLANKET DITCH LINER  
 (1,146 SQ. YD. EST.)  
 (SEE EROSION CONTROL DETAILS)



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No.	Revision	Date	By

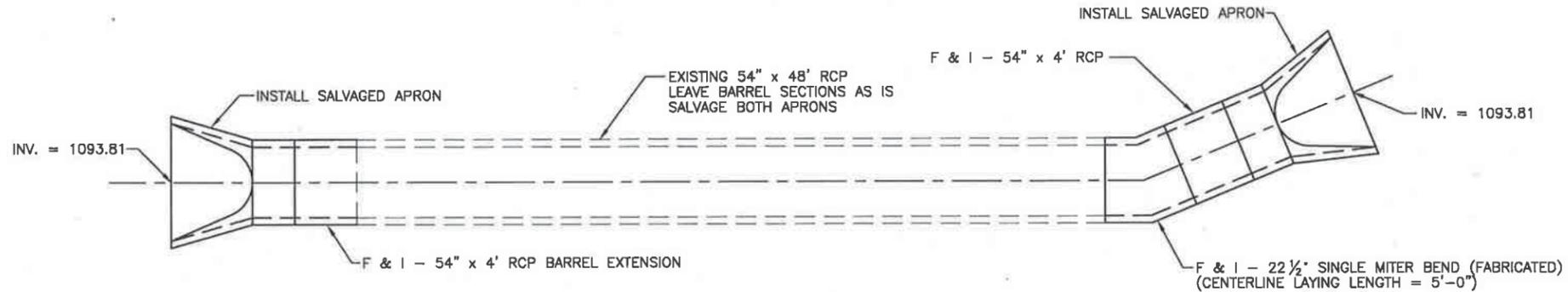


Thief River Falls	Drawn by BGJ	Date 12-6-13
P: 218.681.2951 F: 218.681.2987	Checked by	Scale AS SHOWN

S.A.P.	57-603-036
S.P.	

EROSION CONTROL PLAN  
 PROJECT NO. 3816-006

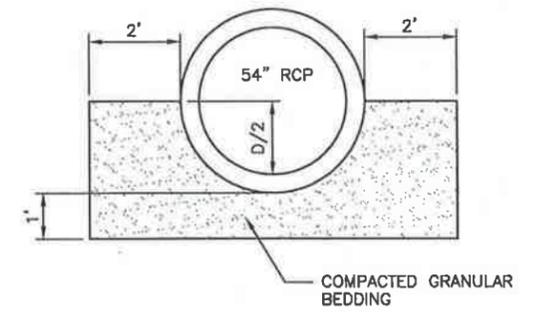
SHEET  
 X of X



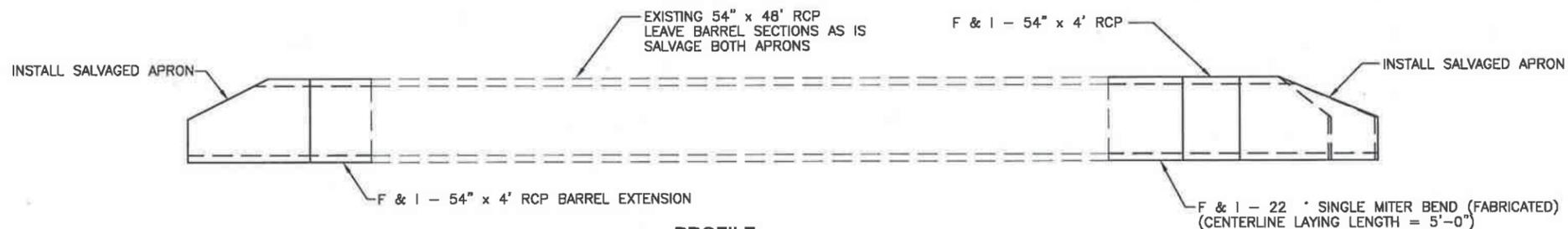
NORTH

PLAN

SOUTH



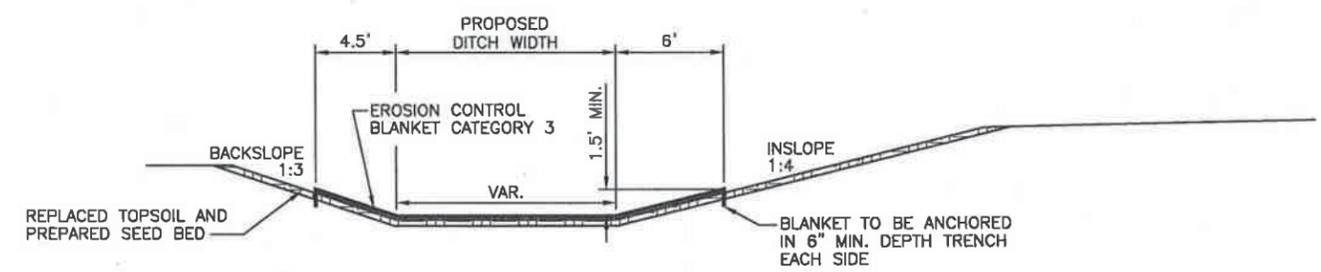
**GRANULAR BEDDING DETAIL FOR CENTERLINE CULVERTS**  
NOT TO SCALE



PROFILE

NOTE:  
SINGLE MITER BEND TO BE PAID UNDER THE BID ITEM FOR 54\"/>

**CENTERLINE CULVERT DETAIL - STA. 87+02**  
NOT TO SCALE



**EROSION CONTROL DETAIL - DITCH LINING**  
NOT TO SCALE

NOTES:  
ADJACENT STRIP EDGES SHALL OVERLAP AT LEAST 4 INCHES AND STRIP ENDS OVERLAPPED 7 INCHES. FINAL PAY QUANTITY WILL BE BASED ON ACTUAL AREA COVERED EXCLUDING ANY ADDITIONAL REQUIRED FOR OVERLAPS OR TRENCH ANCHORING.  
  
BLANKET TO BE STAPLED 3 FEET APART ALONG ENDS AND EDGES OF STRIPS. ADDITIONAL ROWS OF STAPLES SHALL BE PLACED PARALLEL TO THE EDGE SO THAT THE DISTANCE BETWEEN ADJACENT ROWS DOES NOT EXCEED 3 FEET. STAPLES SHALL BE PLACED 3 FEET APART WITHIN THESE ROWS.

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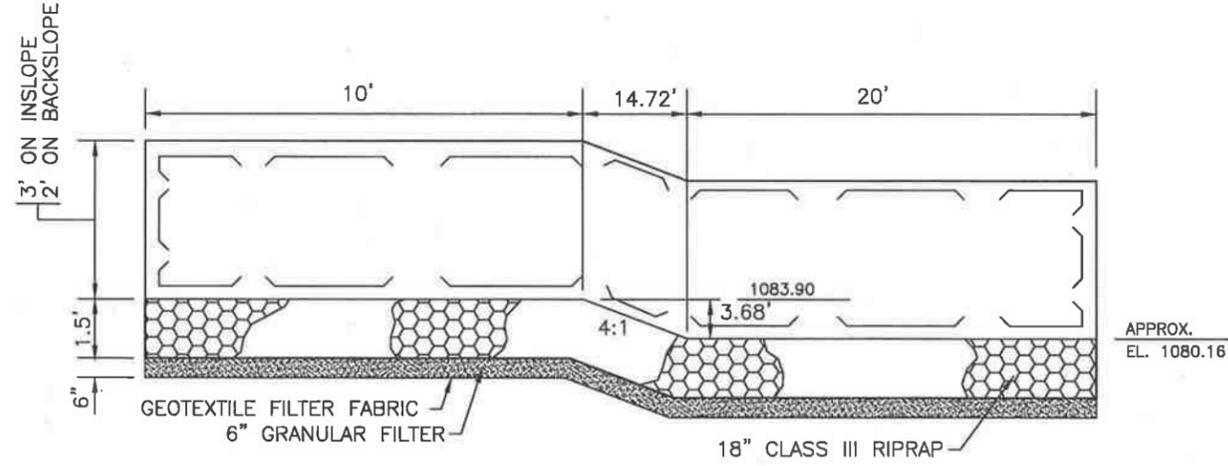
No.	Revision	Date	By



Thief River Falls	Drawn by BGJ	Date 12-6-13
P: 218.681.2951 F: 218.681.2987	Checked by	Scale AS SHOWN

S.A.P.	57-603-036
S.P.	

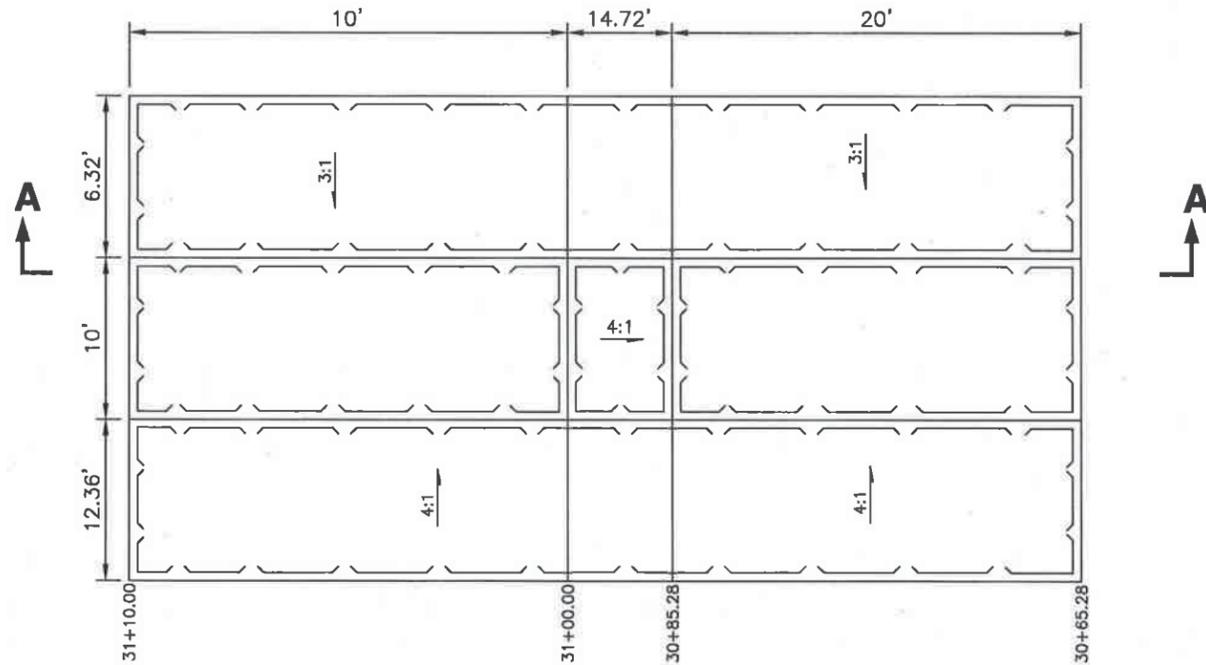
CONSTRUCTION DETAILS	SHEET
PROJECT NO. 3816-006	X of X



APPROX.  
EL. 1080.16

**ESTIMATED QUANTITIES**  
 CLASS III RIPRAP = 72 CY  
 GRANULAR FILTER = 24 CY  
 GEOTEXTILE FILTER = 175 SY

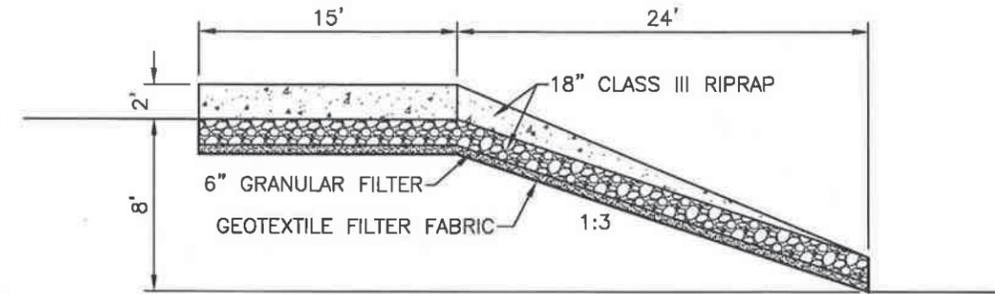
**SECTION A - A**



**PLAN**

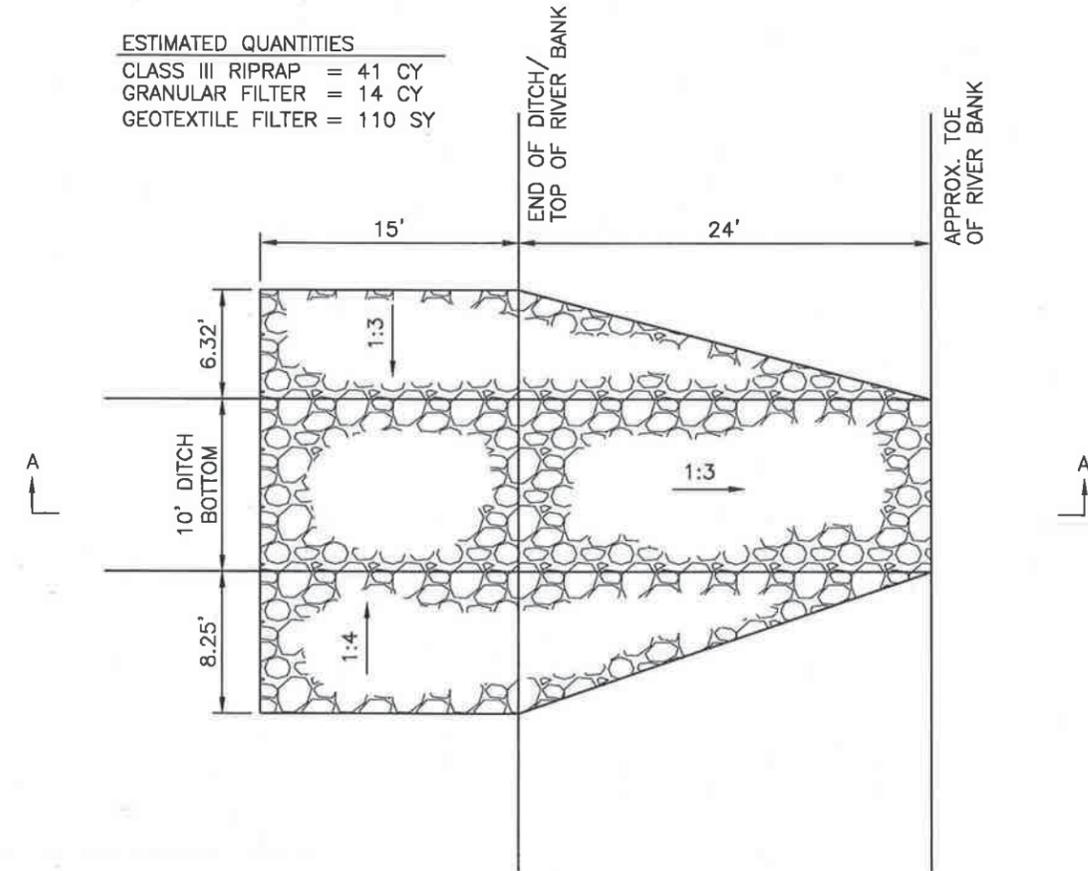
**RIPRAP DROP STRUCTURE  
@ STA. 31+00.00 RT.**

NOT TO SCALE



**SECTION A - A**

**ESTIMATED QUANTITIES**  
 CLASS III RIPRAP = 41 CY  
 GRANULAR FILTER = 14 CY  
 GEOTEXTILE FILTER = 110 SY



**PLAN**

**RIPRAP DROP STRUCTURE TO RIVER  
@ STA. 29+77.00 RT.**

NOT TO SCALE

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No.	Revision	Date	By		Thief River Falls	Drawn by BGJ	Date 12-6-13	S.A.P. 57-603-036	CONSTRUCTION DETAILS PROJECT NO. 3816-006	SHEET X of X
					P: 218.681.2951 F: 218.681.2987	Checked by	Scale AS SHOWN	S.P.		