



North Dakota Department of Transportation

Thomas K. Sorel
Director

Doug Burgum
Governor

July 9, 2018

ADDENDUM 1 – JOB 8

TO: All prospective bidders on Project ROM-0300(134), Job No. 8 scheduled for the July 13, 2018 bid opening.

The following plans and request for proposal revision shall be made:

Plan Revisions:

See attached summary from Holly M. Beck, PLS, PE, Holly Beck Surveying & Engineering Inc. dated July 2, 2018 for an explanation.

Request for Proposal Revisions:

Remove and replace page 5 thru 8 of 10 of the Proposal pages located at the beginning of the Request for Proposal, with the enclosed pages revised 7/9/2018.

See attached summary from Holly Beck, PLS, PE, Holly Beck Surveying & Engineering Inc. dated July 2, 2018 for explanation of quantity changes.

This addendum is to be incorporated into the bidder's proposal for this project. AASHTOWare Project Bids files should be updated by downloading the addendum file from the Bid Express on-line bidding exchange at <http://www.bidx.com/> and load it into the AASHTOWare Project Bids program.

PHILLIP MURDOFF, P.E. – CONSTRUCTION SERVICES ENGINEER

80: jwj

Enclosure

July 2, 2018

ADDENDUM 1 – JOB 8

To: All prospective bidders on Project ROM-0300(134), PCN 21834
Ward and Mountrail Counties; Road Inslope Repair and Permanent Stabilization; Job 8,
scheduled for July 13, 2018 bid opening.

The following plan revisions shall be made:

Plan Revisions: ROM-0300(134), PCN 21834

Remove and replace the following sheets with the revised sheets dated 7/2/18:

1. Sec 4 Sheet 2: Removed site J1a.
2. Sec 4 Sheet 14: Removed site J1a.
3. Sec 6 Sheet 1: Removed 0.03 Acre of Wetland Mitigation credits from the Souris River basin. The total wetland credits needed are 0.92 Credits = \$53,380
4. Sec 6 Sheet 4: Removed site J1a from Ward County table.
5. Sec 8 Sheet 1:
 - Quantity revision for spec 203 code 0102 COMMON EXCAVATION-TYPE B decreased quantity from 3094 CY to 2920 CY.
 - Quantity revision for spec 203 code 0109 TOPSOIL decreased quantity from 4421 CY to 4319 CY.
 - Quantity revision for spec 203 code 0119 TOPSOIL-IMPORTED decreased quantity from 2217 CY to 2166 CY.
 - Quantity revision for spec 203 code 0140 BORROW EXCAVATION decreased quantity from 85668 CY to 85420 CY.
 - Quantity revision for spec 216 code 0100 WATER decreased quantity from 856 M GAL to 851 M GAL.
 - Quantity revision for spec 251 code 0200 SEEDING CLASS II decreased quantity from 8.5 ACRE to 8.31 ACRE.
 - Quantity revision for spec 251 code 2000 TEMPORARY COVER CROP decreased quantity from 8.5 ACRE to 8.31 ACRE.
 - Quantity revision for spec 253 code 0101 STRAW MULCH decreased quantity from 17.00 ACRE to 16.62 ACRE.
 - Quantity revision for 255 code 0202 TRM TYPE 2 decreased quantity from 12036 SY to 11549 SY.
 - Quantity revision for spec 260 code 0100 SILT FENCE UNSUPPORTED decreased quantity from 3665 LF to 3555 LF.
 - Quantity revision for 260 code 0101 REMOVE SILT FENCE UNSUPPORTED decreased quantity from 3665 LF to 3555 LF.

- Quantity revision for 261 code 0112 FIBER ROLLS 12IN decreased quantity from 36421 LF to 35881 LF.
 - Quantity revision for spec 261 code 0113 REMOVE FIBER ROLLS 12IN decreased quantity from 7917 LF to 7732 LF.
 - Quantity revision for spec 708 code 5810 CONCRETE EROSION CONTROL BLANKET decreased quantity from 23213 SY to 23046 SY.
 - Quantity revision for spec 709 code 0151 GEOSYNTHETIC MATERIAL TYPE R1 decreased quantity from 995 SY to 963 SY.
 - Quantity revision for spec 709 code 0155 GEOSYNTHETIC MATERIAL TYPE RR decreased quantity from 36975 SY to 36310 SY.
 - Quantity revision for spec 714 code 5035 PIPE CORR STEEL 0.64IN 24IN decreased quantity from 1128 LF to 1072 LF.
 - Quantity revision for spec 714 code 5820 END SECT CORR STEEL 0.64IN 24IN decreased quantity from 50 EA to 48 EA.
 - Quantity revision for spec 754 code 0805 OBJECT MARKERS- CULVERTS decreased quantity from 74 EA to 72 EA.
 - Quantity revision for spec 900 code 2002 WETLAND MITIGATION SITE 2 decreased quantity from 0.44 ACRE to 0.41 ACRE.
6. Sec 10 Sheet 1: Removed site J1a from the water list, Sign table, Top Soil & Topsoil-Imported Summary table, & the Earthwork summary table.
 7. Sec 11 Sheet 1: Removed the rounding error from table.
 8. Sec 11 Sheet 2: Removed the rounding error from table.
 9. Sec 11 Sheet 3: Removed the rounding error from table and removed quantities for site J1a.
 10. Sec 30 Sheet 9: Removed existing typical sections for site J1a.
 11. Sec 30 Sheet 19: Removed proposed typical section for site J1a.
 12. Sec 30 Sheet 20: Removed proposed typical section for site J1a.
 13. Sec 60 Sheet 15: Added field drive at Sta 45+60 RT for site K5Sg.
 14. Sec 60 Sheet 28: Removed sheet. Site J1a was removed from the project.
 15. Sec 75 Sheet 1: Removed wetland impact quantity for wetland 28a, 28b, 28c, and 29b. Added wetland acres for wetland 26a – 0.01 Acre.
 16. Sec 75 Sheet 2: Revised Wetland Impact Quantity Tables.
 17. Sec 75 Sheet 17: Removed site J1a and revised title block.
 18. Sec 76 Sheet 15: Removed site J1a & revised title block.
 19. Sec 77 Sheet 15: Removed site J1a & revised title block.
 20. Sec 81 Sheet 4: Removed J1aCON alignment from horizontal alignment table.
 21. Sec 200 Sheet 43: Added cross section for field drive at Sta 45+60 RT.
 22. Sec 200 Sheet 93-95: Removed sheets. Site J1a was removed from the project.

Sincerely;



HOLLY M. BECK, PLS, PE
 HOLLY BECK SURVEYING & ENGINEERING, INC
 3320 HAMILTON STREET, UNIT 3
 BISMARCK, ND 58503
 OFFICE: 701-223-3546

BID ITEMS

Project: ROM-0300(134) (PCN-21834)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$\$	000	\$\$\$\$\$	00
001	103	0100	CONTRACT BOND	L SUM	1.				
002	201	0330	CLEARING & GRUBBING	L SUM	1.				
003	202	0136	REMOVAL OF PAVEMENT	TON	210.				
004	202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	1,178.				
005	202	0312	REMOVE EXISTING FENCE	LF	1,823.				
006	202	0400	REMOVAL OF RIPRAP - LOOSE ROCK	CY	8,295.				
007	203	0102	COMMON EXCAVATION-TYPE B	CY	2,920.				
008	203	0109	TOPSOIL	CY	4,319.				
009	203	0119	TOPSOIL-IMPORTED	CY	2,166.				
010	203	0138	COMMON EXCAVATION-SUBCUT	CY	1,501.				
011	203	0140	BORROW-EXCAVATION	CY	85,420.				
012	216	0100	WATER	M GAL	851.				
013	251	0200	SEEDING CLASS II	ACRE	8.310				
014	251	2000	TEMPORARY COVER CROP	ACRE	8.310				
015	253	0101	STRAW MULCH	ACRE	16.620				
016	255	0101	ECB TYPE 1	SY	8,050.				

BID ITEMS

Project: ROM-0300(134) (PCN-21834)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
017	255	0202	TRM TYPE 2	SY	11,549.				
018	255	0305	ROLLED CONCRETE EROSION CONTROL BLANKET	SY	2,396.				
019	256	0200	RIPRAP GRADE II	CY	84.				
020	260	0100	SILT FENCE UNSUPPORTED	LF	3,555.				
021	260	0101	REMOVE SILT FENCE UNSUPPORTED	LF	3,555.				
022	261	0112	FIBER ROLLS 12IN	LF	35,881.				
023	261	0113	REMOVE FIBER ROLLS 12IN	LF	7,732.				
024	262	0100	FLOTATION SILT CURTAIN	LF	5,220.				
025	262	0101	REMOVE FLOTATION SILT CURTAIN	LF	5,220.				
026	302	0356	AGGREGATE SURFACE COURSE CL 13	TON	4,676.				
027	702	0100	MOBILIZATION	L SUM	1.				
028	704	0100	FLAGGING	MHR	500.				
029	704	1000	TRAFFIC CONTROL SIGNS	UNIT	4,050.				
030	704	1052	TYPE III BARRICADE	EA	10.				
031	704	1060	DELINEATOR DRUMS	EA	30.				
032	704	1065	TRAFFIC CONES	EA	60.				

BID ITEMS

Project: ROM-0300(134) (PCN-21834)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

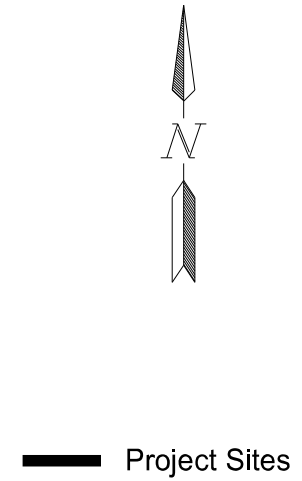
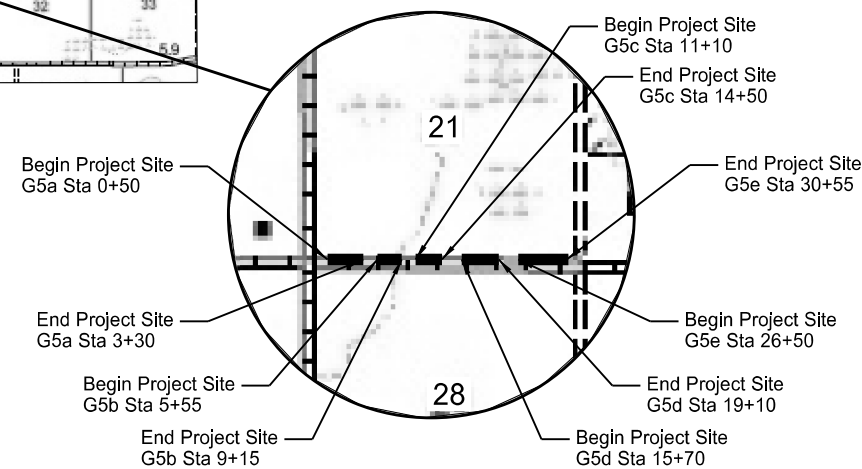
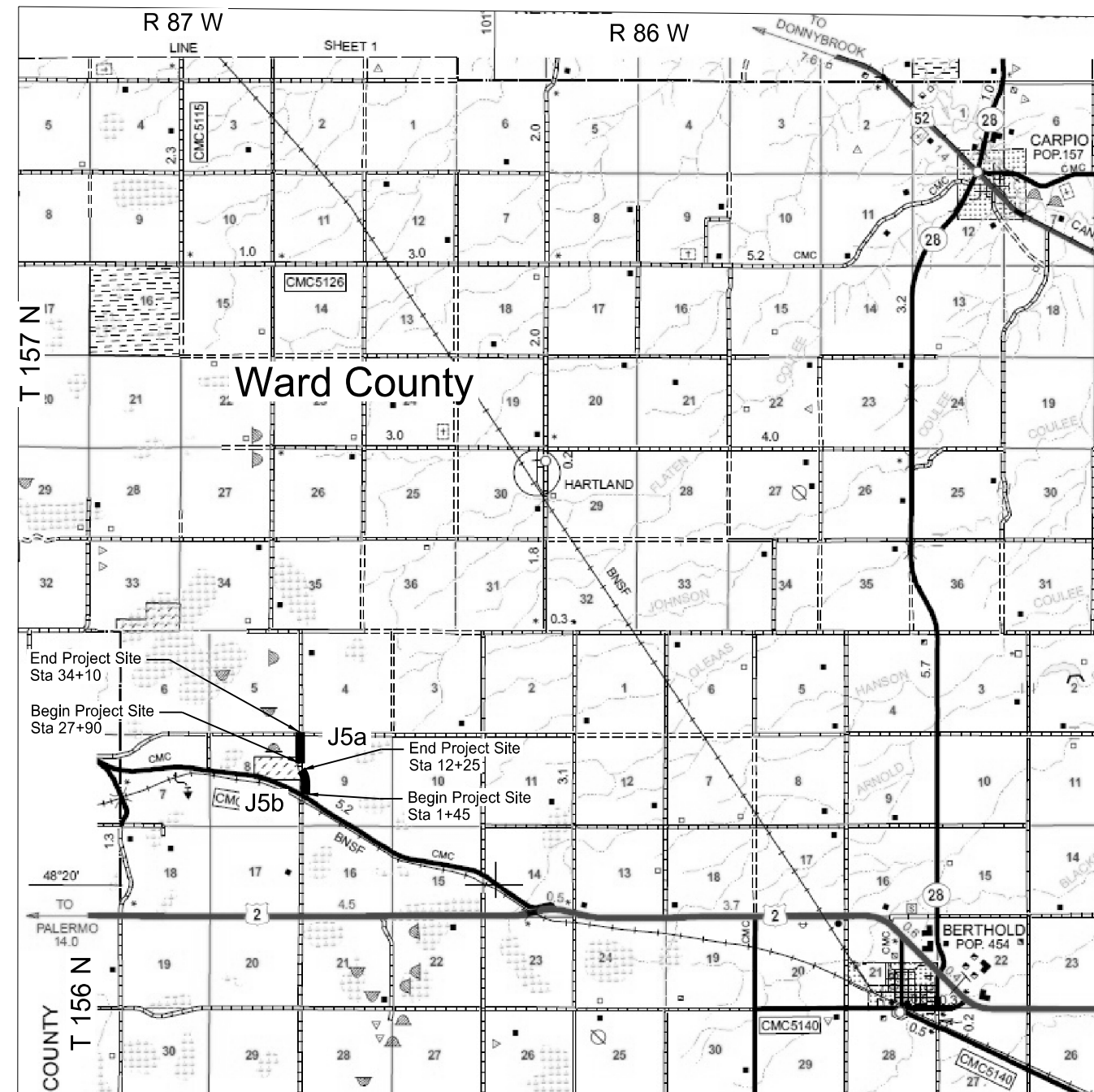
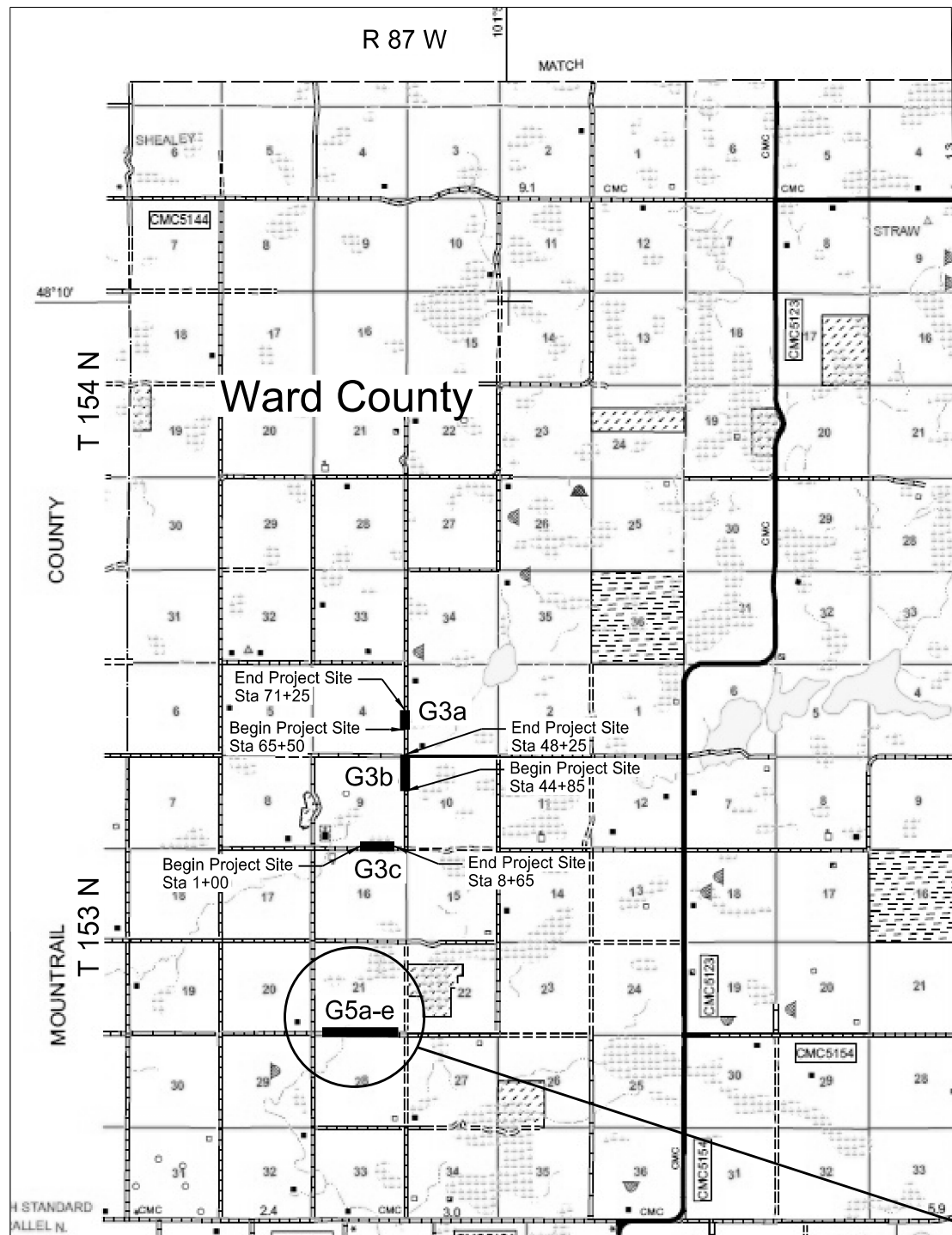
Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
033	704	1067	TUBULAR MARKERS	EA	60.				
034	704	1080	STACKABLE VERTICAL PANELS	EA	50.				
035	708	5810	CONCRETE EROSION CONTROL BLANKET	SY	23,046.				
036	709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	2,997.				
037	709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	963.				
038	709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	36,310.				
039	714	0615	PIPE CONC REINF 24IN CL III	LF	110.				
040	714	1005	PIPE CONC REINF 42IN CL III	LF	66.				
041	714	3020	END SECT-CONC REINF 24IN	EA	4.				
042	714	3040	END SECT-CONC REINF 42IN	EA	2.				
043	714	5015	PIPE CORR STEEL .064IN 18IN	LF	40.				
044	714	5035	PIPE CORR STEEL .064IN 24IN	LF	1,072.				
045	714	5040	PIPE CORR STEEL .064IN 30IN	LF	90.				
046	714	5045	PIPE CORR STEEL .064IN 36IN	LF	184.				
047	714	5810	END SECT CORR STEEL .064IN 18IN	EA	4.				
048	714	5820	END SECT CORR STEEL .064IN 24IN	EA	48.				

BID ITEMS

Project: ROM-0300(134) (PCN-21834)

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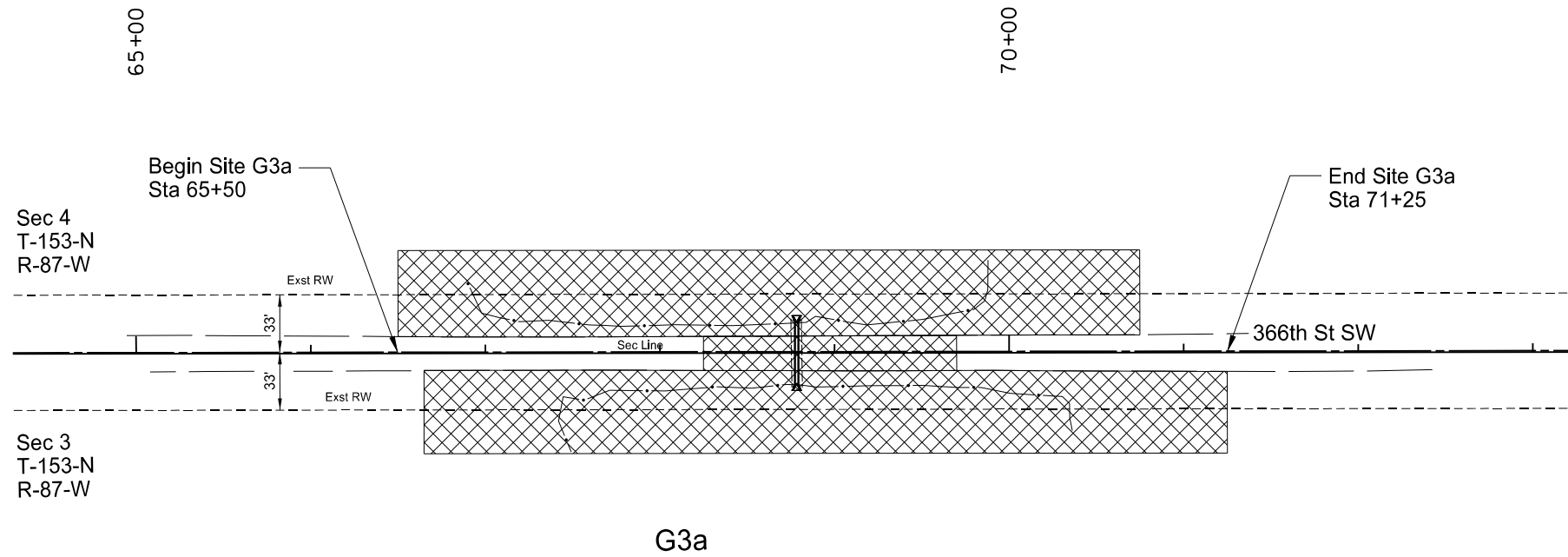
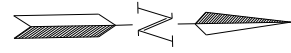
Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
049	714	5825	END SECT CORR STEEL .079IN 30IN	EA	6.				
050	714	5830	END SECT CORR STEEL .079IN 36IN	EA	8.				
051	752	0110	FENCE BARBED WIRE 3 STRAND-STEEL POST	LF	846.				
052	752	0905	TEMPORARY FENCE	LF	846.				
053	752	2996	CORNER ASSEMBLY-STEEL POST	EA	22.				
054	754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	13.100				
055	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	44.800				
056	754	0592	RESET SIGN PANEL	EA	9.				
057	754	0593	RESET SIGN SUPPORT	EA	9.				
058	754	0805	OBJECT MARKERS - CULVERTS	EA	72.				
059	900	2001	WETLAND MITIGATION SITE 1	ACRE	.510	50,000	00	25,500	00
060	900	2002	WETLAND MITIGATION SITE 2	ACRE	.410	68,000	00	27,880	00
			TOTAL SUM BID						



This document was originally issued and sealed by
 Holly M. Beck,
 Registration Number
 PE- 4934,
 on 7/2/18 and the original document is stored at the
 North Dakota Department
 of Transportation

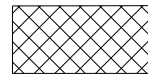
Scope of Work
 Ward County

Revised	7/2/18	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	ROM-0300(134)	4	14



G3a

Legend



Work Area

Note:

- 1). Work Consists of Inslope Repair, Concrete Erosion Control Blanket, Temporary Berms, Topsoil, Seed & Mulch on Both Sides.
- 2). Remove and Replace Culvert.

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Scope of Work

Sites G3a
 Inslope Erosion Repair
 Missile Access Road - G3
 Ward County

NOTES

Revised 7/2/18

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	ROM 0300(134)	6	1

100-P01 AGENCY COORDINATION: The Contractor must invite the following representatives to the Preconstruction meeting and provide the MAFB personnel 48 hours of advance notice before beginning work at each site.

Military Contact:
MAFB - Missile Engineering
Dan Lewis P.E.
445 Peacekeeper Place
Minot AFB, ND 58705
701.723.4834

Military Contact:
MAFB - Engineering Technician
Marlyn P. Matzke
Minot AFB, ND 58705
701.723.4866

Mountrail County:
Jana Hennessy - Mountrail County Engineer
P.O. Box 275
8103 61st Street NW
Stanley, ND, 58754
701.628.2390

Ward County:
Dana G. Larsen - Ward County Engineer
P.O Box 5005
Minot, ND, 58701
701.838.2810

100-P02 CONSTRUCTION EQUIPMENT: Storage of construction equipment or other materials is not allowed within USFWS Waterfowl Production Areas or USFWS grassland easement properties.

100-P03 OPEN WORK SITES: The contractor shall be only allowed to open a total of 5 sites at a time. The sites need to be consecutive and on the same roadway. A 30-day Special Use Permit will be issued for work in USFWS easements. Each repair site will be given 30 days to start to finish all construction work at each site. If 5 sites are open at the same time all 5 sites will be only given a total of 30 days to start and finish construction for all 5 sites.

100-P04 FENCE REMOVAL: The Contractor will remove existing fences and shall install temporary fence as noted in the plans.

The Contractor shall install temporary fence along the proposed right-of-way. The temporary fence shall meet the requirements of Standard Drawing D-752-1. The

temporary fence shall be installed with connections made to the existing fence prior to removal of fencing within the right-of-way. The temporary fence shall be installed up to a depth of two feet in the water to keep the livestock contained within the fenced in property. All costs associated with this work, including the installation, removal and disposal of the temporary fence shall be included in the price bid for "Temporary Fence".

100-P05 UTILITY COORDINATION: The guy wire at site K5Sg should be moved by others. If not moved by the time construction starts for this site, contact Mountrail-Williams Electric Company.

Chris Meiers
Mountrail-Williams Electric
PO Box 129
Stanley, ND 58784
701.628.2242

104-P01 WATER LEVEL: The Contractor should be aware that the water levels on the projects are expected to change. NDDOT reserves the right to change grades and any other aspect of the work that are affected by the changing water level. The contractor's unit bid prices for all bid items will be considered full compensation for that item regardless of the water elevation at the time of construction.

104-P02 WETLAND MITIGATION CREDITS: Prior to beginning any work on the project the contractor shall purchase exactly 0.95 acre of wetland mitigation credits from Ducks Unlimited to satisfy the Environmental Commitments shown in Section 75 of the plans. No work shall begin on the project until a Credit Sales Letter from Ducks Unlimited is submitted to and accepted by The Army Corps Engineers.

The wetland mitigation credits shall be purchased from the Missouri North Watershed mitigation site and the Souris River Watershed mitigation site. The details are:

Souris River	0.41 Credits @ \$68,000/credit =	\$ 27,880
Missouri North	0.51 Credits @ \$50,000/credit =	\$ 25,500
Total	0.92 Credits	\$ 53,380

The contact information to purchase the wetland mitigation credits from Ducks Unlimited is provided below:

Trenton Hieb
Biologist in Ecosystem Services - Mitigation
Ducks Unlimited (Great Plains Region)
2525 River Road
Bismarck, ND 58503
Phone: 701-355-3573

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ENVIRONMENTAL NOTES

Revised 7/2/18

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	ROM 0300(134)	6	4

ENVIRONMENTAL NOTES (EN): Mountrail and Ward County, North Dakota Department of Transportation, and the Federal Highway Administration have made environmental commitments to secure approval of this project. The following environmental notes are requirements to comply with these commitments:

EN-1: Temporary Wetland Impacts: Temporary impact areas within wetlands and or other waters are incorporated into the plans for this project. Remove all temporary fill placed and sedimentation in wetlands.

EN-2: NDPDES (North Dakota Pollutants Discharge Elimination System) permit to be obtained by the Contractor prior to construction. The owner will be Mountrail County and Ward County.

EN-3: The contractor will notify the Project Engineer immediately in the event a piping plover or whooping crane is identified within one mile of the project. The Project Engineer will cease all construction activities, establish at least a 0.5 mile avoidance area, and immediately coordinate with the USFWS, FHWA, and the NDDOT Environmental and Transportation Services Biologist. The contractor will not resume work within the avoidance area until the Project Engineer has confirmed with the agencies that work may proceed (either species have left the area or approved minimization measures have been implemented).

EN-4: All spills must be immediately reported to the ND Department of Health, Project Engineer and appropriate remedial actions performed.

EN-5: All temporary fill or other materials placed outside of road rights-of-way within USFWS properties (wetland easements, grassland easements and Waterfowl Protection Areas) must be restored to pre- work condition within 30 days from the start of projects. Temporary fill will only be placed in areas authorized through the Special Use Permit.

USFWS Special Use Permit Contact:
 Jonathan Beyer
 Wetland District Manager
 Audubon National Wildlife Refuge
 3275 11th St NW
 Coleharbor, ND 58531
 Phone: 701-442-5474 ext 116
 Email: jonathan_beyer@fws.gov

EN-6: Contractor(s) will contact USFWS before project work begins at each site and after project work is completed at each site. Once restoration work has been completed the contractor will notify USFWS and arrange for an inspection of the area which should be completed before equipment is demobilized. The follow is a list of the USFWS easements:

Mountrail County

Road	Site	USFWS Wetland Easement	USFWS Grassland Easement	Waterfowl Protection Area
G11	G11e	X		
J8	J8a	X		
J8	J8b	X		
J9	J9	X		
K5S	K5Sa	X		
K5S	K5Sb	X		
K5S	K5Sd	X		
K5S	K5Se	X		
K5S	K5Sf	X		
K5S	K5Sg	X	X	
K5S	K5Sh	X	X	
K5S	K5Si		X	X

Ward County

Road	Site	USFWS Wetland Easement	USFWS Grassland Easement	Waterfowl Protection Area
G5	G5a	X	X	
G5	G5b	X	X	
G5	G5c	X		
G5	G5d	X		
G5	G5e	X		
G3	G3a	X		
G3	G3b	X	X	
J5	J5a	X		
J5	J5b	X		X

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ESTIMATE OF QUANTITIES

Revised	7/2/18	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	ROM-0300(134)	8	1

SPEC	CODE	ITEM DESCRIPTION	UNIT	MOUNTRAIL COUNTY SUBTOTAL	WARD COUNTY SUBTOTAL	PROJECT TOTAL
103	0100	CONTRACT BOND	L SUM	0.5	0.5	1
201	0330	CLEARING & GRUBBING	L SUM	0.6	0.4	1
202	0136	REMOVAL OF PAVEMENT	TON	210	0	210
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	876	302	1178
202	0312	REMOVE EXISTING FENCE	LF	1823	0	1823
202	0400	REMOVAL OF RIPRAP - LOOSE ROCK	CY	6808	1487	8295
203	0102	COMMON EXCAVATION-TYPE B	CY	2920	0	2920
203	0109	TOPSOIL	CY	3268	1051	4319
203	0119	TOPSOIL-IMPORTED	CY	1639	527	2166
203	0138	COMMON EXCAVATION-SUBCUT	CY	1056	445	1501
203	0140	BORROW EXCAVATION	CY	73905	11515	85420
216	0100	WATER	M GAL	737	114	851
251	0200	SEEDING CLASS II	ACRE	6.15	2.16	8.31
251	2000	TEMPORARY COVER CROP	ACRE	6.15	2.16	8.31
253	0101	STRAW MULCH	ACRE	12.30	4.32	16.62
255	0101	ECB TYPE 1	SY	5476	2574	8050
255	0202	TRM TYPE 2	SY	6056	5493	11549
255	0305	ROLLED CONCRETE EROSION CONTROL BLANKET	SY	2396	0	2396
256	0200	RIPRAP GRADE II	CY	84	0	84
260	0100	SILT FENCE UNSUPPORTED	LF	2040	1515	3555
260	0101	REMOVE SILT FENCE UNSUPPORTED	LF	2040	1515	3555
261	0112	FIBER ROLLS 12IN	LF	25899	9982	35881
261	0113	REMOVE FIBER ROLLS 12IN	LF	4750	2982	7732
262	0100	FLOTATION SILT CURTAIN	LF	2610	2610	5220
262	0101	REMOVE FLOTATION SILT CURTAIN	LF	2610	2610	5220
302	0356	AGGREGATE SURFACE COURSE CL 13	TON	3684	992	4676
702	0100	MOBILIZATION	L SUM	0.8	0.2	1
704	0100	FLAGGING	MHR	250	250	500
704	1000	TRAFFIC CONTROL SIGNS	UNIT	2025	2025	4050
704	1052	TYPE III BARRICADE	EA	5	5	10
704	1060	DELINEATOR DRUMS	EA	15	15	30
704	1065	TRAFFIC CONES	EA	30	30	60
704	1067	TUBULAR MARKERS	EA	30	30	60
704	1080	STACKABLE VERTICAL PANELS	EA	25	25	50
708	5810	CONCRETE EROSION CONTROL BLANKET	SY	18886	4160	23046
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	2109	888	2997
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	709	254	963
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	26384	9926	36310
714	0615	PIPE CONC REINF 24IN CL III	LF	110	0	110
714	1005	PIPE CONC REINF 42IN CL III	LF	66	0	66
714	3020	END SECT-CONC REINF 24IN	EA	4	0	4
714	3040	END SECT-CONC REINF 42IN	EA	2	0	2
714	5015	PIPE CORR STEEL .064IN 18IN	LF	0	40	40
714	5035	PIPE CORR STEEL .064IN 24IN	LF	666	406	1072
714	5040	PIPE CORR STEEL .064IN 30IN	LF	90	0	90
714	5045	PIPE CORR STEEL .064IN 36IN	LF	184	0	184
714	5810	END SECT CORR STEEL .064IN 18IN	EA	0	4	4
714	5820	END SECT CORR STEEL .064IN 24IN	EA	28	20	48
714	5825	END SECT CORR STEEL .079IN 30IN	EA	6	0	6
714	5830	END SECT CORR STEEL .079IN 36IN	EA	8	0	8
752	0110	FENCE BARBED WIRE 3 STRAND-STEEL POST	LF	846	0	846
752	0905	TEMPORARY FENCE	LF	846	0	846
752	2996	CORNER ASSEMBLY-STEEL POST	EA	22	0	22
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	4.6	8.5	13.1
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	27.8	17.0	44.8
754	0592	RESET SIGN PANEL	EA	8	1	9
754	0593	RESET SIGN SUPPORT	EA	8	1	9
754	0805	OBJECT MARKERS - CULVERTS	EA	48	24	72
900	2001	WETLAND MITIGATION SITE 1	ACRE	0.23	0.28	0.51
900	2002	WETLAND MITIGATION SITE 2	ACRE	0.41	0	0.41

BASIS OF ESTIMATE

Revised 7/2/18

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	ROM-0300(134)	10	1

Water

25 MGal/Mile for Dust Palliative (Estimated for sites along same roadway within 1 mile of each other) = 100 MGal

10 Gal/CY for Borrow Embankment

Site G11a - e	4702 CY x 10 Gal/CY = 47
Site J8a & J8b	20445 CY x 10 Gal/CY = 204
Site J9	3166 CY x 10 Gal/CY = 32
Site K5Sa - i	45368 CY x 10 Gal/CY = 454
Site G5a - e	1918 CY x 10 Gal/CY = 19
Site G3a - c	4310 CY x 10 Gal/CY = 43
Site J5a & J5b	5246 CY x 10 Gal/CY = 52
Subtotal = 851 MGal	

Riprap Grade II

Riprap is estimated at 1.75 Tons per Cubic Yard

Topsoil & Topsoil-Imported Summary

Based on 4 inches depth in place, to be stripped, stockpiled onsite and replaced evenly across all disturbed areas.			Topsoil-Imported (2inch Depth)
Location	Quantity Removed (CY)	Quantity Replaced (CY)	Quantity (CY)
Site G11a-e	694	694	348
Site J8a & J8b	438	438	220
Site J9	80	80	40
Site K5Sa-i	2056	2056	1031
Site G5a-e	307	307	154
Site G3a-c	358	358	180
Site J5a & J5b	386	386	193
	Total	4319	2166

Signs

Location	Flat Sheet – Type XI (SF)	Object Markers - Culverts (EA)
Site G11a-e		20
Site J8a & J8b		4
Site J9		2
Site K5Sa-i	4.6	22
Site G5a-e		10
Site G3a-c	8.5	6
Site J5a & J5b		8
Total	13.1	72

Earthwork Summary

Location	Quantity Required Above Water (CY)	Quantity Required Below Water (CY)	Common Excavation – Type B (CY) Pay Item	Borrow Excavation (CY) Pay Item
	A ₁	A ₂	B	C = A ₁ + A ₂ - B
Site G11a-e	1122	3594		4716
Site J8a & J8b	4088	16358		20446
Site J9	768	2403		3171
Site K5Sa-i	10865	37627	2920	45572
Site G5a-e	504	1423		1927
Site G3a-c	1001	3327		4328
Site J5a & J5b	1392	3868		5260
Totals	19740	68600	2920	85420

Signs (REMOVE & RESET)

Location	Station (EA)	Reset Sign Panel (EA)	Reset Sign Support (EA)
Site G11b	111+95 RT	1	1
Site K5Se	111+62 RT	1	1
	113+34 RT	1	1
	115+46 RT	1	1
Site K5Sd	136+19 LT	1	1
	136+78 LT	1	1
	138+05 LT	1	1
Site K5Sb	160+64 LT	1	1
Site J5b	6+84 LT	1	1
Total		9	9

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EARTHWORK - AVERAGE END AREA

Revised	7/2/18	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	ROM-0300(134)	11	1

SITE	Station	Distance (FT)	Borrow Excavation											
			Fill-Not in Water (Includes Riprap Removal Void) (25% Additional Volume For Shrinkage)				Fill-In Water (Includes Berm & Riprap Removal Void) (50% Additional Volume For Shrinkage and Losses)							
			Area (FT²)	Volume (CY)	Adjusted Volume (1.25)	Accumulated Adjusted Volume (CY)	Area (FT²)	Volume (CY)	Adjusted Volume (1.5)	Accumulated Adjusted Volume (CY)				
G11e	11+50	0	0	0	0	0								
	12+00	50	4.6	4	5	5								
	12+55	55	13.1	18	23	28								
	12+75	20	7.6	8	10	38								
	15+00	225	0	32	40	78								
	15+50	50	3.6	3	4	82								
	16+00	50	4.2	7	9	91								
	16+46	46	9	11	14	105								
	17+00	54	12.30	21	26	131								
	17+50	50	4.10	15	19	150								
	18+00	50	0.00	4	5	155								
	20+50	250	0.00	0	0	155								
	21+00	50	0.70	1	1	156								
	21+57	57	16.10	18	23	179								
	22+00	43	0.90	14	18	197								
22+50	50	0.00	1	1	198									
G11d	80+00	0	0.00	0	0	198	0.00	0	0	0				
	81+00	100	5.20	10	13	211	24.70	46	69	69				
	82+00	100	8.80	26	33	244	59.00	155	233	302				
	83+00	100	11.20	37	46	290	94.50	284	426	728				
	84+00	100	11.50	42	53	343	56.20	279	419	1147				
	85+00	100	0.00	21	26	369	0.00	104	156	1303				
G11c	103+00	0	0.00	0	0	369	0.00	0	0	1303				
	104+00	100	12.10	22	28	397	65.00	120	180	1483				
	105+00	100	10.10	41	51	448	104.20	313	470	1953				
	105+25	25	10.50	10	13	461	106.60	98	147	2100				
	106+00	75	10.60	29	36	497	52.20	221	332	2432				
	107+00	100	0.00	20	25	522	0.00	97	146	2578				
G11b	111+50	0	0.00	0	0	522	0.00	0	0	2578				
	112+50	100	11.20	21	26	548	17.50	32	48	2626				
	113+50	100	8.10	36	45	593	36.00	99	149	2775				
	114+50	100	13.20	39	49	642	41.50	144	216	2991				
	115+50	100	14.50	51	64	706	36.00	144	216	3207				
	116+50	100	2.80	32	40	746	17.80	100	150	3357				
	117+50	100	1.50	8	10	756	16.50	64	96	3453				
118+50	100	0.00	3	4	760	0.00	31	47	3500					
G11a	164+50	0	0.00	0	0	760	0	0	0	3500				
	165+50	100	18.10	34	43	803	5	9	14	3514				
	166+50	100	20.90	72	90	893	7	22	33	3547				
	167+50	100	38.80	111	139	1032	5	22	33	3580				
	168+50	100	0.00	72	90	1122	0	9	14	3594				
J8b	1+50	0	0.00	0	0	1122	0.00	0	0	3594				
	2+00	50	6.70	6	8	1130	1.10	1	2	3596				
	2+50	50	4.90	11	14	1144	2.70	4	6	3602				
	3+50	100	5.70	20	25	1169	0.15	5	8	3610				
	4+00	50	0.00	5	6	1175	0.00	0	0	3610				
J8a	10+50	0	0.00	0	0	1175	0.00	0	0	3610				
	11+50	100	86.90	161	201	1376	180.90	335	503	4113				
	12+50	100	93.00	333	416	1792	363.00	1007	1511	5624				
	13+50	100	47.90	261	326	2118	318.70	1262	1893	7517				
	14+50	100	32.30	149	186	2304	295.80	1138	1707	9224				
	14+95	45	37.70	58	73	2377	279.20	479	719	9943				
	15+50	55	37.90	77	96	2473	297.40	587	881	10824				
	16+50	100	44.30	152	190	2663	316.80	1137	1706	12530				
	17+50	100	63.90	200	250	2913	289.10	1122	1683	14213				
	18+50	200	109.00	640	800	3713	203.70	1825	2738	16951				
19+50	200	109.00	807	1009	4722	203.70	1509	2264	19215					
20+50	100	101.70	390	488	5210	61.70	491	737	19952					

SITE	Station	Distance (FT)	Borrow Excavation											
			Fill-Not in Water (Includes Riprap Removal Void) (25% Additional Volume For Shrinkage)				Fill-In Water (Includes Berm & Riprap Removal Void) (50% Additional Volume For Shrinkage and Losses)							
			Area (FT²)	Volume (CY)	Adjusted Volume (1.25)	Accumulated Adjusted Volume (CY)	Area (FT²)	Volume (CY)	Adjusted Volume (1.5)	Accumulated Adjusted Volume (CY)				
J9	1+00	0	0.00	0	0	5210	0.00	0	0	19952				
	1+20	20	0.70	0	0	5210	0.00	0	0	19952				
	2+00	80	0.00	1	1	5211	0.00	0	0	19952				
	2+30	30	5.70	3	4	5215	0.00	0	0	19952				
	3+00	70	38.40	57	71	5286	68.20	88	132	20084				
	4+00	100	25.10	118	148	5434	110.70	331	497	20581				
	4+57	57	25.60	54	68	5502	93.50	216	324	20905				
	5+00	43	24.10	40	50	5552	97.00	152	228	21133				
	6+00	100	29.10	99	124	5676	105.50	375	563	21696				
	7+00	100	50.50	147	184	5860	65.70	317	476	22172				
	8+00	100	0.00	94	118	5978	0.00	122	183	22355				
	1+50	0	0.00	0	0	5978	0.00	0	0	22355				
K5SI	3+50	200	49.70	184	230	6208	54.70	203	305	22660				
	5+50	200	54.70	387	484	6692	123.00	658	987	23647				
	7+50	200	61.50	430	538	7230	158.60	1043	1565	25212				
	9+10	160	46.50	320	400	7630	172.30	980	1470	26682				
	9+50	40	50.20	72	90	7720	181.00	262	393	27075				
	11+50	200	57.30	398	498	8218	188.80	1370	2055	29130				
	13+50	200	41.30	365	456	8674	182.70	1376	2064	31194				
	15+50	200	34.30	280	350	9024	189.20	1377	2066	33260				
	17+50	200	33.60	251	314	9338	153.30	1269	1904	35164				
	19+50	200	36.60	260	325	9663	193.60	1285	1928	37092				
	21+50	200	41.60	290	363	10026	226.20	1555	2333	39425				
	23+50	200	39.20	299	374	10400	188.70	1537	2306	41731				
	25+50	200	29.60	255	319	10719	173.30	1341	2012	43743				
	27+50	200	25.10	203	254	10973	85.20	957	1436	45179				
	29+00	150	0.00	70	88	11061	0.00	237	356	45535				
K5Sh	30+00	0	0.00	0	0	11061	0.00	0	0	45535				
	31+00	100	23.60	44	55	11116	59.10	109	164	45699				
	31+25	25	33.20	26	33	11149	67.00	58	87	45786				
	32+00	75	35.30	95	119	11268	69.00	189	284	46070				
	33+00	100	26.00	114	143	11411	24.40	173	260	46330				
	34+00	100	0.00	48	60	11471	0.00	45	68	46398				

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EARTHWORK
 DATA TABLES

EARTHWORK - AVERAGE END AREA

SITE	Station	Distance (FT)	Borrow Excavation							
			Fill-Not in Water (Includes Riprap Removal Void) (25% Additional Volume For Shrinkage)				Fill-In Water (Includes Berm & Riprap Removal Void) (50% Additional Volume For Shrinkage and Losses)			
			Area (FT²)	Volume (CY)	Adjusted Volume (1.25)	Accumulated Adjusted Volume (CY)	Area (FT²)	Volume (CY)	Adjusted Volume (1.5)	Accumulated Adjusted Volume (CY)
K5Sg	40+00	0	0.00	0	0	11471	0.00	0	0	46398
	41+00	100	17.10	32	40	11511	25.80	48	72	46470
	41+27	27	21.00	19	24	11535	45.40	36	54	46524
	42+00	73	60.70	110	138	11673	79.50	169	254	46778
	43+00	100	64.90	233	291	11964	103.10	338	507	47285
	44+00	100	45.40	204	255	12219	45.40	275	413	47698
	45+00	100	48.50	174	218	12437	101.40	272	408	48106
	46+00	100	0.00	90	113	12550	0.00	188	282	48388
	47+00	100	0.00	0	0	12550	0.00	0	0	48388
	48+00	100	16.90	31	39	12589	84.60	157	236	48624
	48+40	40	0.00	13	16	12605	0.00	63	95	48719
	49+00	60	110.60	123	154	12759	116.70	130	195	48914
	49+96	96	272.10	680	850	13609	163.90	499	749	49663
	50+00	4	267.30	40	50	13659	156.90	24	36	49699
51+00	100	206.90	878	1098	14757	81.40	441	662	50361	
52+00	100	0.00	383	479	15236	0.00	151	227	50588	
K5Sf	91+75	0	0.00	0	0	15236	0.00	0	0	50588
	92+60	85	24.30	38	48	15284	0.00	0	0	50588
	93+50	90	16.60	68	85	15369	2.40	4	6	50594
	95+50	200	9.90	98	123	15492	21.00	87	131	50725
	96+06	56	8.40	19	24	15516	15.70	38	57	50782
	97+50	144	9.40	47	59	15575	3.30	51	77	50859
	99+50	200	11.50	77	96	15671	1.40	17	26	50885
	101+50	200	12.50	89	111	15782	23.10	91	137	51022
	102+23	73	49.30	84	105	15887	20.00	58	87	51109
	103+50	127	5.40	129	161	16048	3.10	54	81	51190
	104+50	100	32.50	70	88	16136	0.00	6	9	51199
	105+50	100	0.00	60	75	16211	0.00	0	0	51199
	111+50	0	0.00	0	0	16211	0.00	0	0	51199
	112+50	100	8.30	15	19	16230	55.50	103	155	51354
113+50	100	8.40	31	39	16269	78.30	248	372	51726	
114+50	100	13.90	41	51	16320	108.20	345	518	52244	
114+62	12	15.00	6	8	16328	112.40	49	74	52318	
115+50	88	2.00	28	35	16363	75.40	306	459	52777	
116+50	100	0.00	4	5	16368	0.00	140	210	52987	
135+50	0	0.00	0	0	16368	0.00	0	0	52987	
136+50	100	1.50	3	4	16372	55.80	103	155	53142	
137+25	75	12.50	19	24	16396	107.80	227	341	53483	
137+50	25	6.40	9	11	16407	104.80	98	147	53630	
138+50	100	0.00	12	15	16422	34.40	258	387	54017	
139+00	50	0.00	0	0	16422	0.00	32	48	54065	
157+00	0	0.00	0	0	16422	0.00	0	0	54065	
159+00	200	5.60	21	26	16448	112.40	416	624	54689	
160+95	195	16.60	80	100	16548	180.00	1056	1584	56273	
161+00	5	12.60	3	4	16552	170.60	32	48	56321	
163+00	200	8.70	79	99	16651	128.40	1107	1661	57982	
165+00	200	0.00	32	40	16691	22.00	557	836	58818	
167+00	200	0.00	0	0	16691	0.00	81	122	58940	
178+00	0	0.00	0	0	16691	0.00	0	0	58940	
179+00	100	6.30	12	15	16706	34.40	64	96	59036	
180+00	100	11.50	33	41	16747	76.10	205	308	59344	
181+00	100	15.00	49	61	16808	76.70	283	425	59769	
182+00	100	0.00	28	35	16843	0.00	142	213	59982	

SITE	Station	Distance (FT)	Borrow Excavation							
			Fill-Not in Water (Includes Riprap Removal Void) (25% Additional Volume For Shrinkage)				Fill-In Water (Includes Berm & Riprap Removal Void) (50% Additional Volume For Shrinkage and Losses)			
			Area (FT²)	Volume (CY)	Adjusted Volume (1.25)	Accumulated Adjusted Volume (CY)	Area (FT²)	Volume (CY)	Adjusted Volume (1.5)	Accumulated Adjusted Volume (CY)
G5a	0+50	0	0.00	0	0	16843	0.00	0	0	59982
	1+00	50	1.20	1	1	16844	0.00	0	0	59982
	1+50	50	12.80	13	16	16860	0.00	0	0	59982
	2+17	67	60.00	90	113	16973	8.30	10	15	59997
	2+50	33	25.90	52	65	17038	0.00	5	8	60005
	3+17	67	3.10	36	45	17083	0.00	0	0	60005
	3+28	11	0.00	1	1	17084	0.00	0	0	60005
	3+50	22	0.00	0	0	17084	0.00	0	0	60005
G5b	5+50	0	0.00	0	0	17084	0.00	0	0	60005
	6+00	50	0.30	0	0	17084	0.00	0	0	60005
	6+50	50	9.90	10	13	17097	12.30	11	17	60022
	7+50	100	9.40	36	45	17142	33.40	85	128	60150
	7+66	16	9.00	5	6	17148	32.30	19	29	60179
	8+50	84	11.70	32	40	17188	14.00	72	108	60287
	9+00	50	0.70	11	14	17202	0.00	13	20	60307
	9+15	15	0.00	0	0	17202	0.00	0	0	60307
G5c	11+00	0	0.00	0	0	17202	0.00	0	0	60307
	12+00	100	0.00	0	0	17202	0.00	0	0	60307
	13+00	100	0.00	0	0	17202	14.60	27	41	60348
	13+50	50	9.10	8	10	17212	20.50	33	50	60398
	14+40	90	0.00	15	19	17231	0.00	34	51	60449
	16+00	0	0.00	0	0	17231	0.00	0	0	60449
G5d	16+50	50	1.90	2	3	17234	39.50	37	56	60505
	17+00	50	4.60	6	8	17242	62.80	95	143	60648
	17+50	50	0.60	5	6	17248	39.50	95	143	60791
	18+50	100	0.00	1	1	17249	0.00	73	110	60901
	19+00	50	2.70	3	4	17253	0.00	0	0	60901
	19+10	10	2.40	1	1	17254	0.00	0	0	60901
	19+50	40	0.00	2	3	17257	0.00	0	0	60901
	26+00	0	0.00	0	0	17257	0.00	0	0	60901
G5e	26+50	50	1.50	2	3	17260	0.00	0	0	60901
	27+00	50	3.70	5	6	17266	0.00	0	0	60901
	27+50	50	1.70	5	6	17272	5.30	5	8	60909
	28+50	100	4.60	12	15	17287	52.20	106	159	61068
	29+50	100	8.30	24	30	17317	39.30	169	254	61322
	30+25	75	5.80	20	25	17342	0.00	55	83	61405
	30+50	25	0.60	3	4	17346	0.00	0	0	61405
	31+00	50	0.00	1	1	17347	0.00	0	0	61405

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EARTHWORK
DATA TABLES

EARTHWORK - AVERAGE END AREA

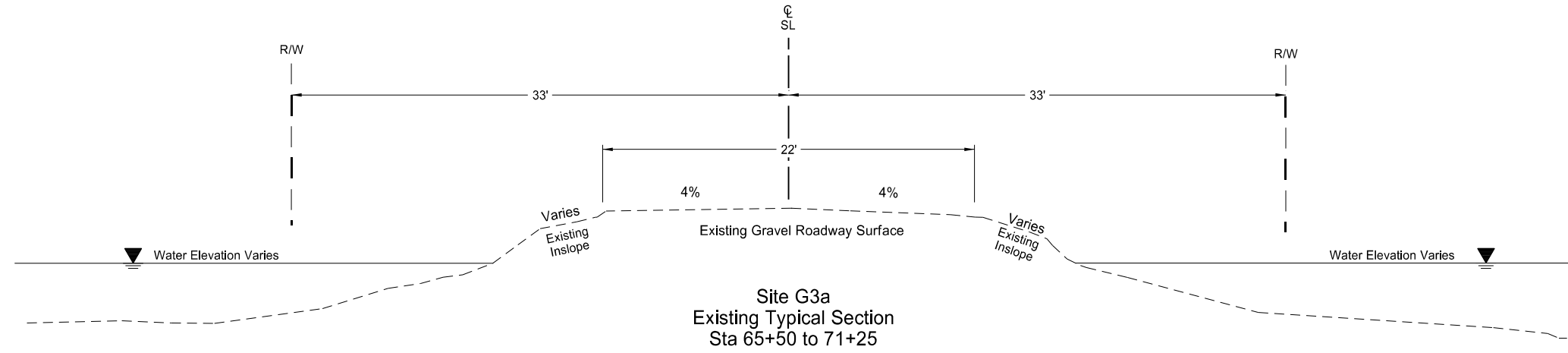
SITE	Station	Distance (FT)	Borrow Excavation							
			Fill-Not in Water (Includes Riprap Removal Void) (25% Additional Volume For Shrinkage)				Fill-In Water (Includes Berm & Riprap Removal Void) (50% Additional Volume For Shrinkage and Losses)			
			Area (FT²)	Volume (CY)	Adjusted Volume (1.25)	Accumulated Adjusted Volume (CY)	Area (FT²)	Volume (CY)	Adjusted Volume (1.5)	Accumulated Adjusted Volume (CY)
G3c	0+50	0	0.00	0	0	17347	0	0	0	61405
	1+00	50	1.87	2	3	17350	0	0	0	61405
	1+50	50	5.49	7	9	17359	0	0	0	61405
	2+50	100	20.60	48	60	17419	59	109	164	61569
	3+50	100	14.61	65	81	17500	49	200	300	61869
	4+50	100	22.40	69	86	17586	48	180	270	62139
	5+50	100	30.60	98	123	17709	77	231	347	62486
	6+05	55	34.90	67	84	17793	95	175	263	62749
	6+50	45	40.50	63	79	17872	94	158	237	62986
	7+50	100	10.50	94	118	17990	22	215	323	63309
8+00	0	0.00	0	0	17990	0	0	0	63309	
G3b	45+00	0	0.00	0	0	17990	0	0	0	63309
	45+80	80	9.90	15	19	18009	0	0	0	63309
	46+00	20	6.90	6	8	18017	0	0	0	63309
	47+00	100	13.50	38	48	18065	10	19	29	63338
	48+00	100	10.50	44	55	18120	0	19	29	63367
48+50	50	0.00	10	13	18133	0	0	0	63367	
G3a	66+50	0	0.00	0	0	18133	0	0	0	63367
	67+50	100	18.10	34	43	18176	64	119	179	63546
	68+50	100	16.40	64	80	18256	99	302	453	63999
	68+78	28	15.40	16	20	18276	91	99	149	64148
	69+50	72	10.30	34	43	18319	84	233	350	64498
	70+50	100	1.50	22	28	18347	0	156	234	64732
	71+00	50	0.00	1	1	18348	0	0	0	64732
J5a	27+90	0	0.00	0	0	18348	0	0	0	64732
	28+50	60	7.80	9	11	18359	0	0	0	64732
	29+50	100	8.30	30	38	18397	2	4	6	64738
	30+50	100	22.90	58	73	18470	26	52	78	64816
	31+50	100	26.60	92	115	18585	42	126	189	65005
	32+18	68	25.90	66	83	18668	31	92	138	65143
	32+50	32	26.00	31	39	18707	37	40	60	65203
	33+50	100	4.30	56	70	18777	0	69	104	65307
	34+10	60	0.00	5	6	18783	0	0	0	65307
	2+19	0	0.00	0	0	18783	0.00	0	0	65307
J5b	2+50	31	10.10	6	8	18791	29.20	17	26	65333
	2+89	39	26.60	27	34	18825	62.40	66	99	65432
	3+50	61	45.40	81	101	18926	79.30	160	240	65672
	4+50	100	19.90	121	151	19077	35.40	212	318	65990
	5+50	100	11.30	58	73	19150	55.70	169	254	66244
	6+13	63	14.50	30	38	19188	71.00	148	222	66466
	6+50	37	11.50	18	23	19211	66.50	94	141	66607
	7+50	100	30.70	78	98	19309	82.00	275	413	67020
	8+50	100	17.30	89	111	19420	79.70	299	449	67469
	9+50	100	25.20	79	99	19519	71.50	280	420	67889
	10+50	100	33.60	109	136	19655	89.20	298	447	68336
	10+81	31	29.40	36	45	19700	75.10	94	141	68477
	11+40	59	0.00	32	40	19740	0.00	82	123	68600
Site Totals					19740				68600	

SITE	Station	Distance (FT)	Common Excavation - Type B		
			Area (FT²)	Volume (CY)	Accumulated Volume (CY)
K5Sg	42+00	0	0.00	0	0
	43+00	100	28.70	53	53
	44+00	100	132.90	299	352
	45+00	100	204.11	624	976
	46+00	100	218.55	783	1759
	47+00	100	181.80	741	2500
	48+00	100	32.30	396	2896
	48+40	40	0.00	24	2920
Total				2920	

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EARTHWORK
DATA TABLES

Revised	7/2/18	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	ROM-0300(134)	30	9

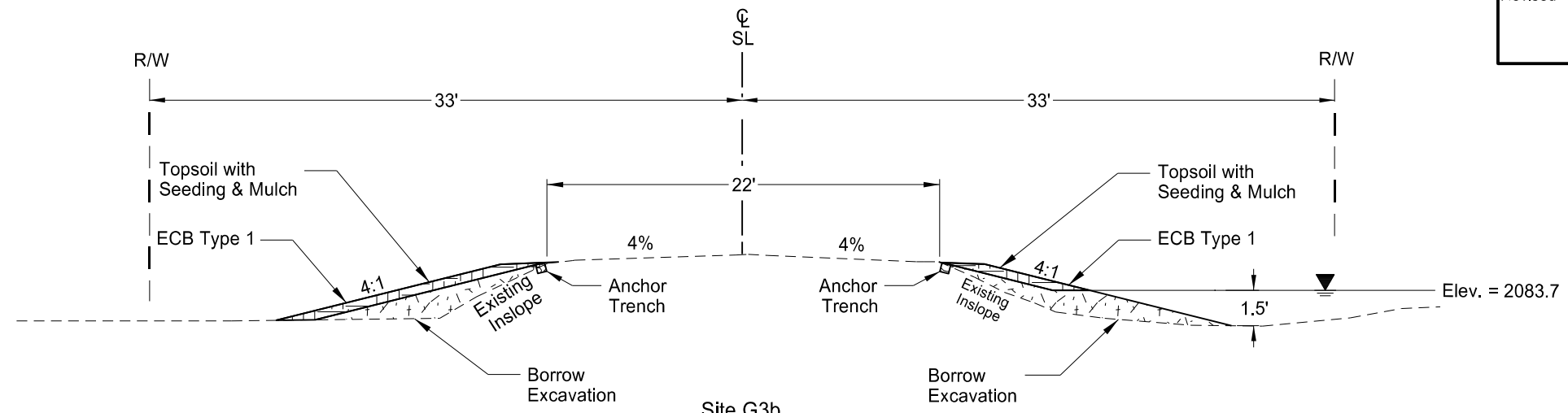


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Existing Typical Sections

 Inslope Erosion Repair
 Missile Access Roads
 Ward County

Revised	7/2/18	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	ROM-0300(134)	30	19



Notes:

For Berm Details See Berm Sequence Detail Section 20 Sheet 1.

The Temporary Berm will be Completely Removed at Final Stage of Construction.

Water levels will vary, those provided are as of 5/14/17.

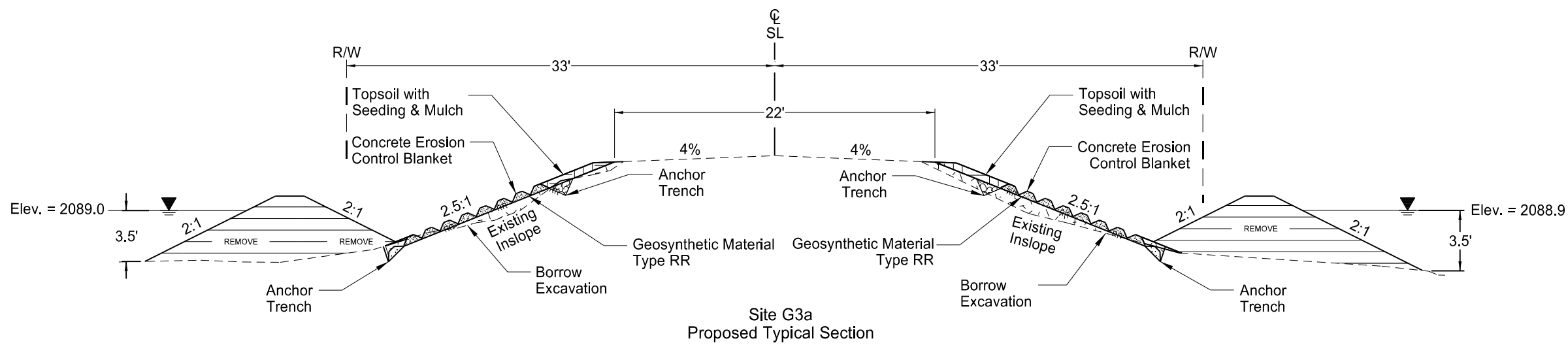
Left and right sides are independant of each other and represent the type of work to be done.

Concrete Erosion Control Blanket and Rolled Concrete Erosion Control Blanket Shall be installed 2' above and 2' below existing water level.

**Site G3b
Proposed Typical Section**

No ECB Type 1
Sta 46+00 to 46+45 LT
Sta 47+80 to 48+25 LT
ECB Type 1
Sta 46+45 to 47+80 LT

No ECB Type 1
Sta 44+85 to 45+10 RT
Sta 45+38 to 45+61 RT
ECB Type 1
Sta 45+10 to 45+38 RT
Sta 45+61 to 48+25 RT



**Site G3a
Proposed Typical Section**

No Concrete Erosion Control Blanket
Sta 66+50 to 66+95 LT
Sta 69+75 to 70+75 LT
Concrete Erosion Control Blanket
Sta 66+95 to 69+75 LT

No Concrete Erosion Control Blanket
Sta 66+65 to 67+40 RT
Sta 70+30 to 71+25 RT
Concrete Erosion Control Blanket
Sta 67+40 to 70+30 RT

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Proposed Typical Sections

Inslope Erosion Repair
Missile Access Roads
Ward County

Not to Scale

Revised	7/2/18	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	ROM-0300(134)	30	20

Notes:

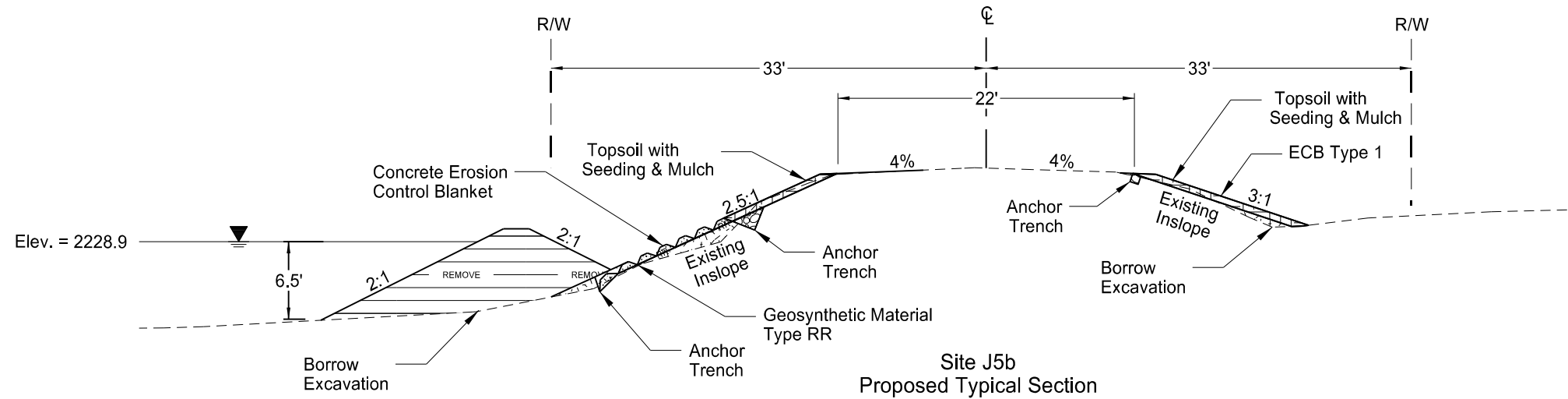
For Berm Details See Berm Sequence Detail Section 20 Sheet 1.

The Temporary Berm will be Completely Removed at Final Stage of Construction.

Water levels will vary, those provided are as of 5/14/17.

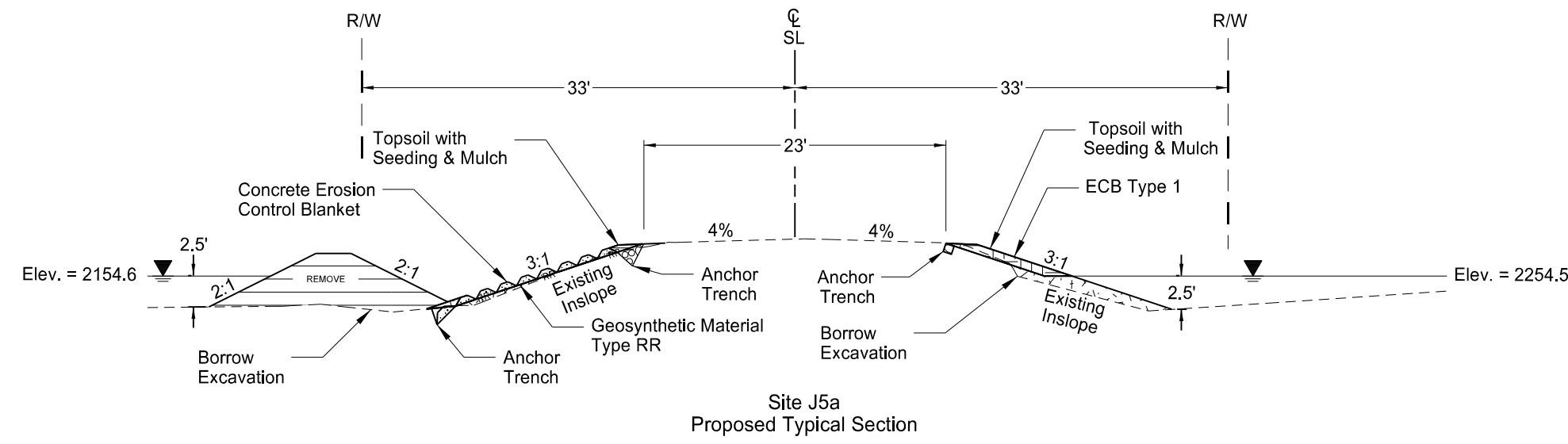
Left and right sides are independant of each other and represent the type of work to be done.

Concrete Erosion Control Blanket and Rolled Concrete Erosion Control Blanket Shall be installed 2' above and 2' below existing water level.



**Site J5b
Proposed Typical Section**

No Concrete Erosion Control Blanket Sta 1+45 to 2+35 LT Sta 11+35 to 12+25 LT Concrete Erosion Control Blanket Sta 2+35 to 11+35 LT	No ECB Type 1 Sta 5+45 to 6+00 RT Sta 6+30 to 6+95 RT ECB Type 1 Sta 2+80 to 3+00 RT Sta 6+00 to 6+30 RT Sta 10+65 to 10+95 RT
---	--



**Site J5a
Proposed Typical Section**

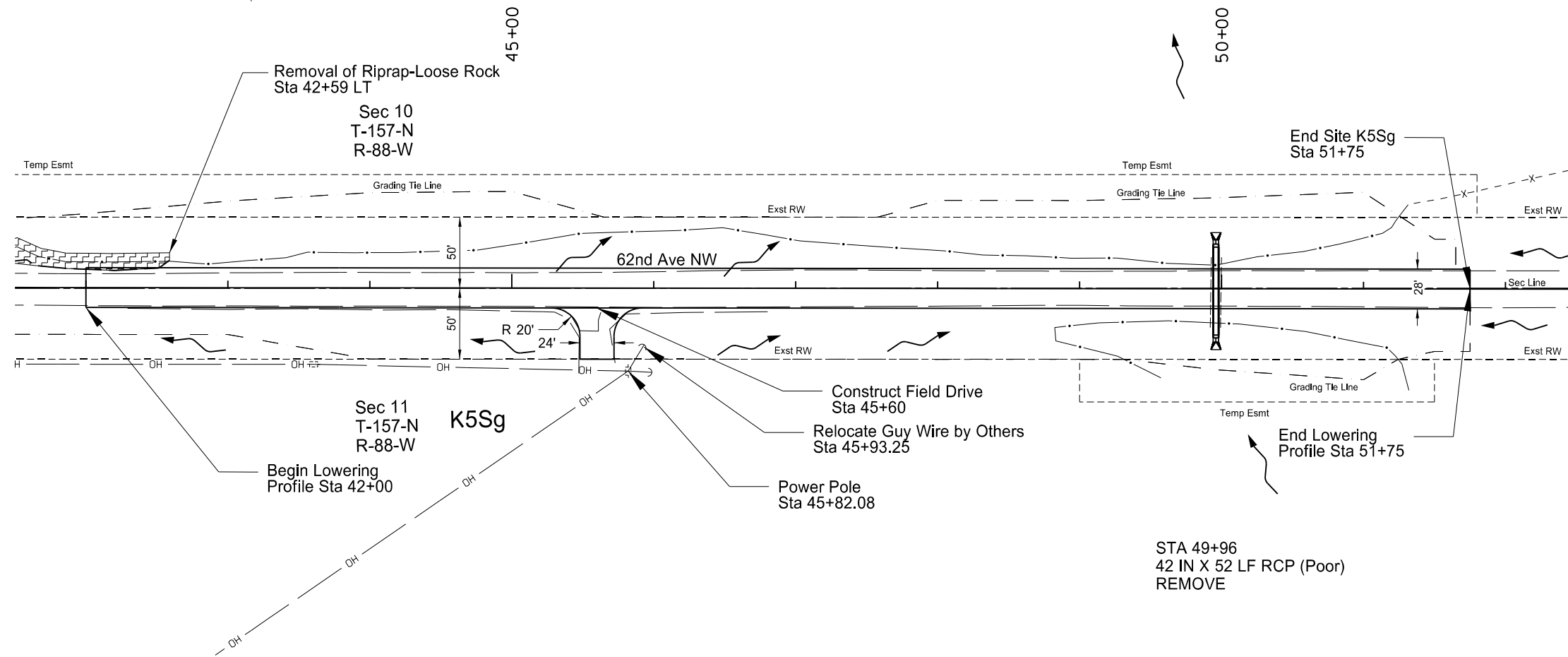
No Concrete Erosion Control Blanket Sta 27+90 to 29+50 LT Sta 33+35 to 33+80 LT Concrete Erosion Control Blanket Sta 29+50 to 33+35 LT	No ECB Type 1 Sta 29+75 to 31+00 RT Sta 33+45 to 34+10 RT ECB Type 1 Sta 31+00 to 33+45 RT
--	--

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Proposed Typical Sections

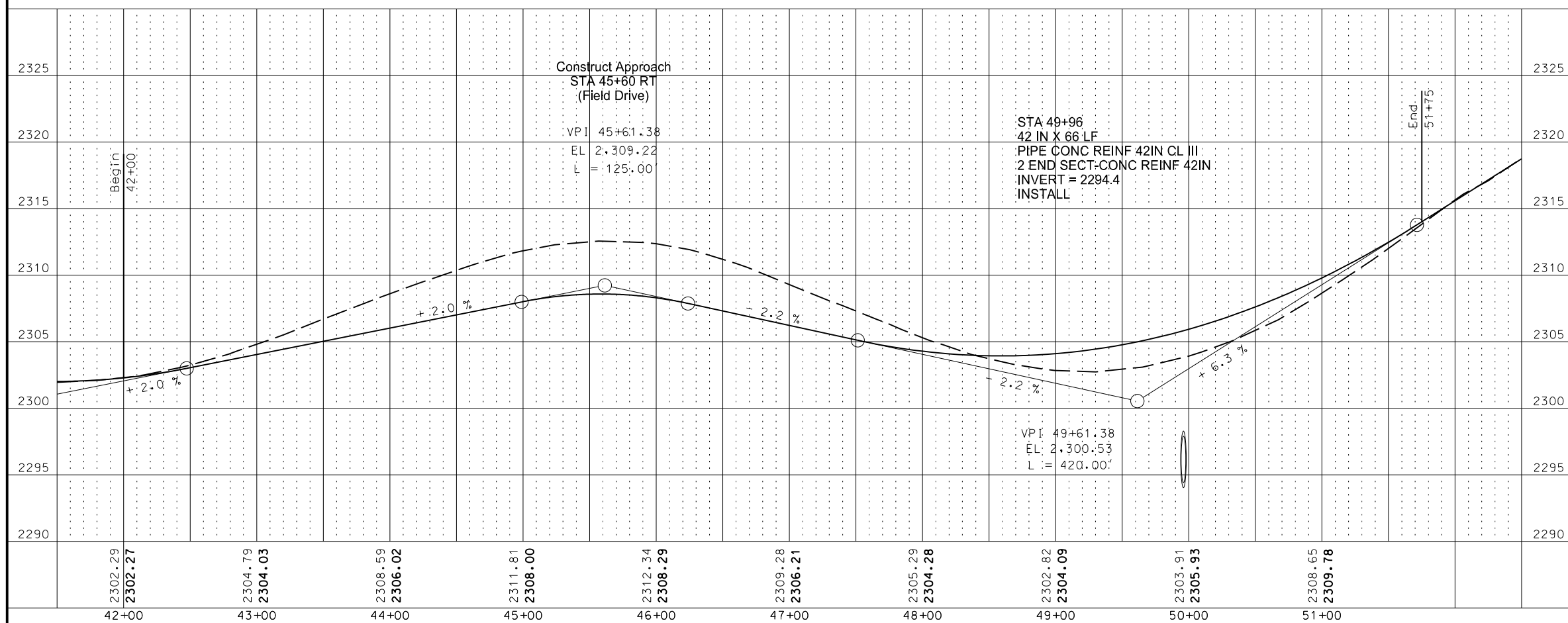
Inslope Erosion Repair
Missile Access Roads
Ward County

Not to Scale



Spec	Code	Description	Quantity	Unit
202	0174	Removal of Pipe all Types and Sizes Sta 49+96	52	LF
			Total =	52 LF
202	0400	Removal of Riprap-Loose Rock	Quantity Totals are Included on the Previous Sheet	
302	0356	Aggregate Surface Course CL 13 Sta 42+00 to Sta 51+75	1286	TON
			Total =	1286 TON
709	0151	Geosynthetic Material Type R1 Sta 49+96	55	SY
			Total =	55 SY
714	1005	Pipe Conc Reinf 42IN CL III Sta 49+96	66	LF
			Total =	66 LF
714	3040	End Sect-Conc Reinf 42IN Sta 49+96	2	EA
			Total =	2 EA

STA 49+96
42 IN X 52 LF RCP (Poor)
REMOVE



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Plan and Profile Sheet

Site K5Sg
Inslope Erosion Repair
Missile Access Road - K5S
Mountrail County

Wetland Impact Table											
Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands	Wetland Impacts Acre(s)		USFWS Easement Impacts		Wetland Mitigation		
					Temp.	Perm.	Temp.	Perm.	Mitigation Required		
									EO 11990	USACE	USFWS
1a	Sec. 28, T153N, R87W	Riverine	Natural	YES	0.02	0	0.02	0	N	Y	Y
1b	Sec. 21, T153N, R87W	Riverine	Natural	YES	0.01	0	0.01	0	N	Y	Y
2a	Sec. 28, T153N, R87W	Basin	Natural	NO	0.11	0	0.11	0	N	N	Y
2b	Sec. 21, T153N, R87W	Basin	Natural	NO	0.12	0	0.12	0	N	N	Y
3	Sec. 28, T153N, R87W	Basin	Natural	NO	0.02	0	0.02	0	N	N	Y
4	Sec. 21, T153N, R87W	Basin	Natural	NO	0.04	0	0.04	0	N	N	Y
5	Sec. 28, T153N, R87W	Basin	Natural	NO	0.08	0	0.08	0	N	N	Y
6	Sec. 21, T153N, R87W	Basin	Natural	NO	0.15	0	0.15	0	N	N	Y
7	Sec. 28, T153N, R87W	Basin	Natural	NO	0.09	0	0.09	0	N	N	Y
8	Sec. 21, T153N, R87W	Basin	Natural	NO	0.17	0	0.17	0	N	N	Y
9a	Sec. 16, T153N, R87W	Basin	Natural	NO	0.30	0.14	0.30	0	Y	N	N
9b	Sec. 9, T153N, R87W	Basin	Natural	NO	0.32	0	0.32	0	N	N	N
9c	Sec. 16, T153N, R87W	Basin	Natural	NO	0	0	0	0	N	N	N
10	Sec. 9, T153N, R87W	Basin	Natural	NO	0	0	0	0	N	N	N
11	Sec. 10, T153N, R87W	Basin	Natural	NO	0.06	0	0.06	0	N	N	Y
12a	Sec. 4, T153N, R87W	Basin	Natural	NO	0.17	0.07	0.17	0	Y	N	N
12b	Sec. 3, T153N, R87W	Basin	Natural	NO	0.16	0.07	0.16	0	Y	N	Y
13a	Sec. 26, T155N, R89W	Basin	Natural	YES	0.16	0.02	0.16	0	Y	Y	Y
13b	Sec. 25, T155N, R89W	Basin	Natural	YES	0.28	0	0.28	0	N	Y	Y
14	Sec. 24, T155N, R89W	Basin	Natural	NO	0.16	0	0.16	0	N	N	N
15	Sec. 23, T155N, R89W	Basin	Natural	NO	0.29	0	0.29	0	N	N	N
16a	Sec. 25, T155N, R89W	Ditch	Artificial	NO	0	0.01	0	0	N	N	N
16b	Sec. 25, T155N, R89W	Basin	Natural	NO	0.04	0.05	0.04	0	Y	N	N
16c	Sec. 25, T155N, R89W	Ditch	Artificial	NO	0.02	0.01	0.02	0	N	N	N
16d	Sec. 25, T155N, R89W	Basin	Natural	NO	0.02	0.01	0.02	0	N	N	N
17a	Sec. 24, T155N, R89W	Basin	Natural	NO	0.16	0	0.16	0	N	N	N
17b	Sec. 24, T155N, R89W	Ditch	Artificial	NO	0.02	0	0.02	0	N	N	N
18a	Sec. 13, T155N, R89W	Basin	Natural	NO	0.30	0.12	0.30	0	Y	N	N
18b	Sec. 13, T155N, R89W	Ditch	Artificial	NO	0.06	0.01	0.06	0	N	N	N

Wetland Impact Table											
Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands	Wetland Impacts Acre(s)		USFWS Easement Impacts		Wetland Mitigation		
					Temp.	Perm.	Temp.	Perm.	Mitigation Required		
									EO 11990	USACE	USFWS
18c	Sec. 13, T155N, R89W	Basin	Natural	NO	0.02	0	0.02	0	N	N	N
19	Sec. 14, T155N, R89W	Basin	Natural	NO	0.09	0	0.09	0	N	N	N
20	Sec. 12, T155N, R89W	Basin	Natural	NO	0.02	0	0.02	0	N	N	N
21	Sec. 11, T155N, R89W	Basin	Natural	NO	0.02	0	0.02	0	N	N	N
22a	Sec. 35, T156N, R89W	Basin	Natural	NO	0.03	0	0.03	0	N	N	Y
22b	Sec. 36, T156N, R89W	Basin	Natural	NO	0.03	0	0.03	0	N	N	N
23b	Sec. 23, T156N, R89W	Ditch	Artificial	NO	0.04	0	0.04	0	N	N	N
26a	Sec. 9, T156N, R87W	Ditch	Artificial	NO	0.01	0	0.01	0	N	N	N
26c	Sec. 9, T156N, R87W	Ditch	Artificial	NO	0	0	0	0	N	N	N
26d	Sec. 9, T156N, R87W	Basin	Natural	NO	0.02	0	0.02	0	N	N	N
26e	Sec. 9, T156N, R87W	Slope	Natural	NO	0.02	0	0.02	0	N	N	Y
27a	Sec. 9, T156N, R87W	Basin	Natural	NO	0.15	0	0.15	0	N	N	N
27b	Sec. 10, T156N, R87W	Ditch	Artificial	NO	0.02	0	0.02	0	N	N	N
27c	Sec. 10, T156N, R87W	Basin	Natural	NO	0.09	0	0.09	0	N	N	Y
28a	Sec. 34, T157N, R87W	Fringe	Natural	NO	0	0	0	0	N	N	Y
28b	Sec. 34, T157N, R87W	Ditch	Artificial	NO	0	0	0	0	N	N	Y
28c	Sec. 34, T157N, R87W	Fringe	Natural	NO	0	0	0	0	Y	N	Y
29a	Sec. 35, T157N, R87W	Fringe	Natural	NO	0	0	0	0	N	N	N
29b	Sec. 35, T157N, R87W	Fringe	Natural	NO	0	0	0	0	N	N	N

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Wetland Tables
Inslope Erosion Repair
Missile Access Roads

Wetland Impact Table											
Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands	Wetland Impacts Acre(s)		USFWS Easement Impacts		Wetland Mitigation		
					Temp.	Perm.	Temp.	Perm.	Mitigation Required		
									EO 11990	USACE	USFWS
30a	Sec. 10, T157N, R88W	Fringe	Natural	NO	0.12	0	0.12	0	N	N	N
30c	Sec. 10, T157N, R88W	Ditch	Artificial	NO	0.03	0	0.03	0	N	N	N
30d	Sec. 10, T157N, R88W	Ditch	Artificial	NO	0.01	0	0.01	0	N	N	Y
30e	Sec. 10, T157N, R88W	Ditch	Artificial	NO	0.16	0	0.16	0	N	N	Y
31a	Sec. 11, T157N, R88W	Basin	Natural	NO	0.22	0	0.22	0	N	N	Y
31b	Sec. 11, T157N, R88W	Ditch	Artificial	NO	0	0	0	0	N	N	N
32a	Sec. 11, T157N, R88W	Basin	Natural	NO	0.09	0	0.09	0	N	N	N
32c	Sec. 11, T157N, R88W	Ditch	Artificial	NO	0.62	0	0.62	0	N	N	Y
32d	Sec. 11, T157N, R88W	Basin	Natural	NO	0.23	0.04	0.23	0	Y	N	Y
33a	Sec. 3, T157N, R88W	Ditch	Artificial	NO	0.04	0	0.04	0	N	N	N
33b	Sec. 3, T157N, R88W	Basin	Natural	NO	0.11	0	0.11	0	N	N	Y
33c	Sec. 2, T157N, R88W	Ditch	Artificial	NO	0.01	0.01	0.01	0	N	N	N
33d	Sec. 2, T157N, R88W	Fringe	Natural	NO	0.06	0	0.06	0	N	N	N
33e	Sec. 2, T157N, R88W	Ditch	Artificial	NO	0.01	0	0.01	0	N	N	N
33f	Sec. 2, T157N, R88W	Basin	Natural	NO	0.02	0	0.02	0	N	N	N
33g	Sec. 2, T157N, R88W	Ditch	Artificial	NO	0.01	0	0.01	0	N	N	N
33h	Sec. 2, T157N, R88W	Fringe	Natural	NO	0.05	0	0.05	0	N	N	Y
33i	Sec. 2, T157N, R88W	Ditch	Artificial	NO	0.01	0	0.01	0	N	N	N
33j	Sec. 3, T157N, R88W	Basin	Natural	NO	0.06	0	0.06	0	N	N	N
33k	Sec. 3, T157N, R88W	Ditch	Artificial	NO	0.06	0	0.06	0	N	N	N
33l	Sec. 3, T157N, R88W	Basin	Natural	NO	0.12	0	0.12	0	N	N	Y
34a	Sec. 35, T158N, R88W	Ditch	Artificial	NO	0.01	0	0.01	0	N	N	N
34b	Sec. 35, T158N, R88W	Basin	Natural	NO	0.13	0.11	0.0	0	Y	N	N
35	Sec. 35, T158N, R88W	Basin	Natural	NO	0.32	0.12	0.32	0	Y	N	Y
36	Sec. 34, T158N, R88W	Basin	Natural	NO	0.11	0	0.11	0	N	N	Y
37	Sec. 35, T158N, R88W	Basin	Natural	NO	0.18	0.06	0.18	0	Y	N	N
38	Sec. 26 & 35, T158N, R88W	Fringe	Natural	NO	0.51	0	0.51	0	N	N	N
39a	Sec. 34, T158N, R88W	Basin	Natural	NO	0.37	0	0.37	0	N	N	N
39b	Sec. 27, T158N, R88W	Basin	Natural	NO	0	0	0	0	N	N	N
40	Sec. 27, T158N, R88W	Basin	Natural	NO	0.25	0.07	0.25	0	Y	N	Y
41	Sec. 9, T153N, R87W	Basin	Natural	NO	0.06	0.0	0.06	0	N	N	Y
Totals					7.87	0.92	7.74	0			

Other Waters Impact Table											
Other Waters											Other Water Mitigation
Number	Location	Type	Size		Feature	USACE Jurisdictional ¹	Impacts to Other Waters				Mitigation Required EO 11990
			Acre(s)	Linear Feet			Acre(s) Temp Perm	Linear Feet		EO 11990	
								Temp	Perm		
23a	Sec. 23, T156N, R89W	Tributary	0.88	53.03	Natural	NO	0.80	0	34.72	0	N
24	Sec. 23 & 24, T156N, R89W	Tributary	0.78	58.64	Natural	NO	0.66	0	45.95	0	N
25a	Sec. 11, T156N, R89W	Lake/Pond	0.72	65.53	Natural	NO	0.32	0	28.10	0	N
25b	Sec. 12, T156N, R89W	Lake/Pond	0.58	52.34	Natural	NO	0.35	0	28.57	0	N
26b	Sec. 9, T156N, R87W	Lake/Pond	1.39	74.52	Natural	NO	0.61	0	31.08	0	N
30b	Sec. 10 & 13, T157N, R88W	Lake/Pond	3.51	60.77	Natural	NO	1.59	0	35.19	0	N
30f	Sec. 11 & 14, T157N, R88W	Lake/Pond	2.78	46.91	Natural	NO	1.69	0	36.88	0	N
32b	Sec. 10, T157N, R88W	Lake/Pond	1.40	66.69	Natural	NO	0.85	0.18	24.23	16.12	N
Totals			12.04	478.43			6.87	0.18	264.72	16.12	

¹ A wetland Jurisdictional Determination was issued by the USACE on 9/25/2017; NWO-2017-01369-BIS.

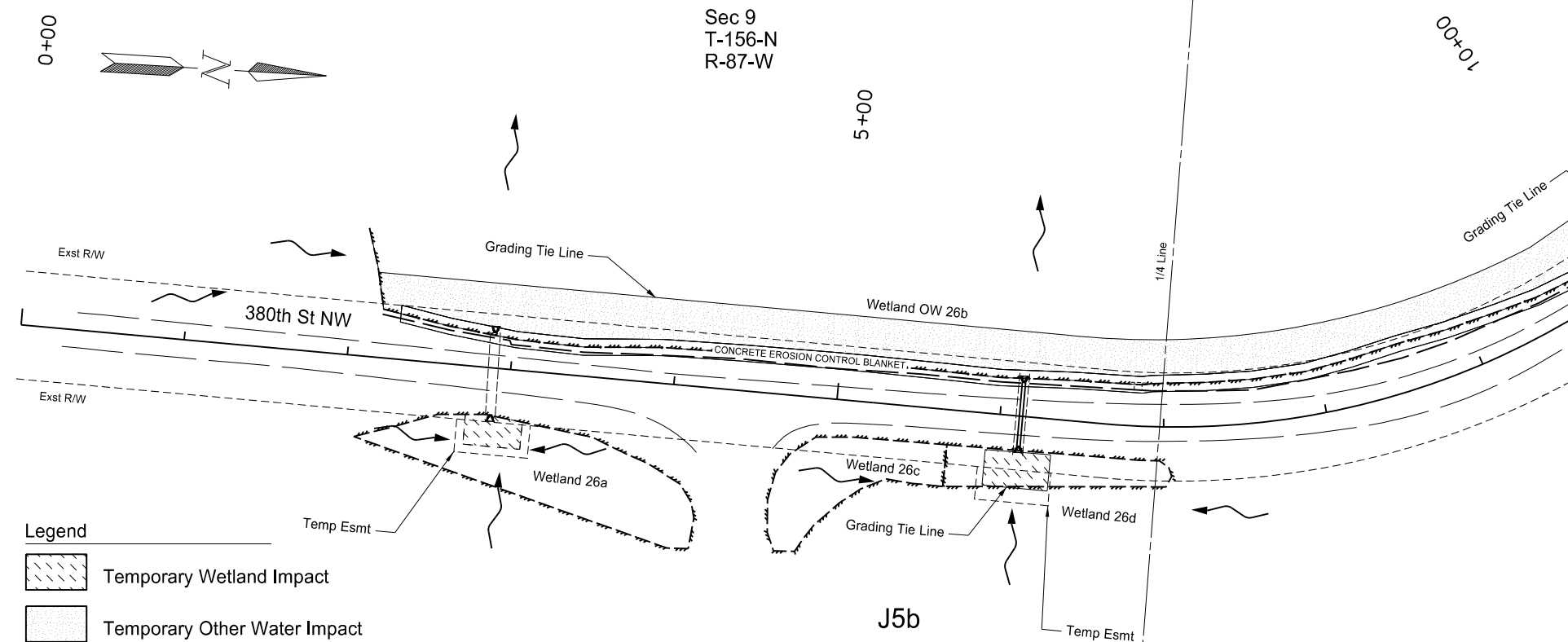
² All impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts greater than 0.10 acre to artificial/jurisdictional wetlands require mitigation.

³ All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by the USACE on a case by case), and temporary impacts do not require mitigation.

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Wetland Tables

Inslope Erosion Repair
Missile Access Roads





Wetland 26a Impacts	
Temporary Impact	= 0.01 ACRE
Permanent Impact	= 0.00 ACRE

Other Water 26b Impacts	
Temporary Impact	= 0.61 ACRE
Permanent Impact	= 0.00 ACRE

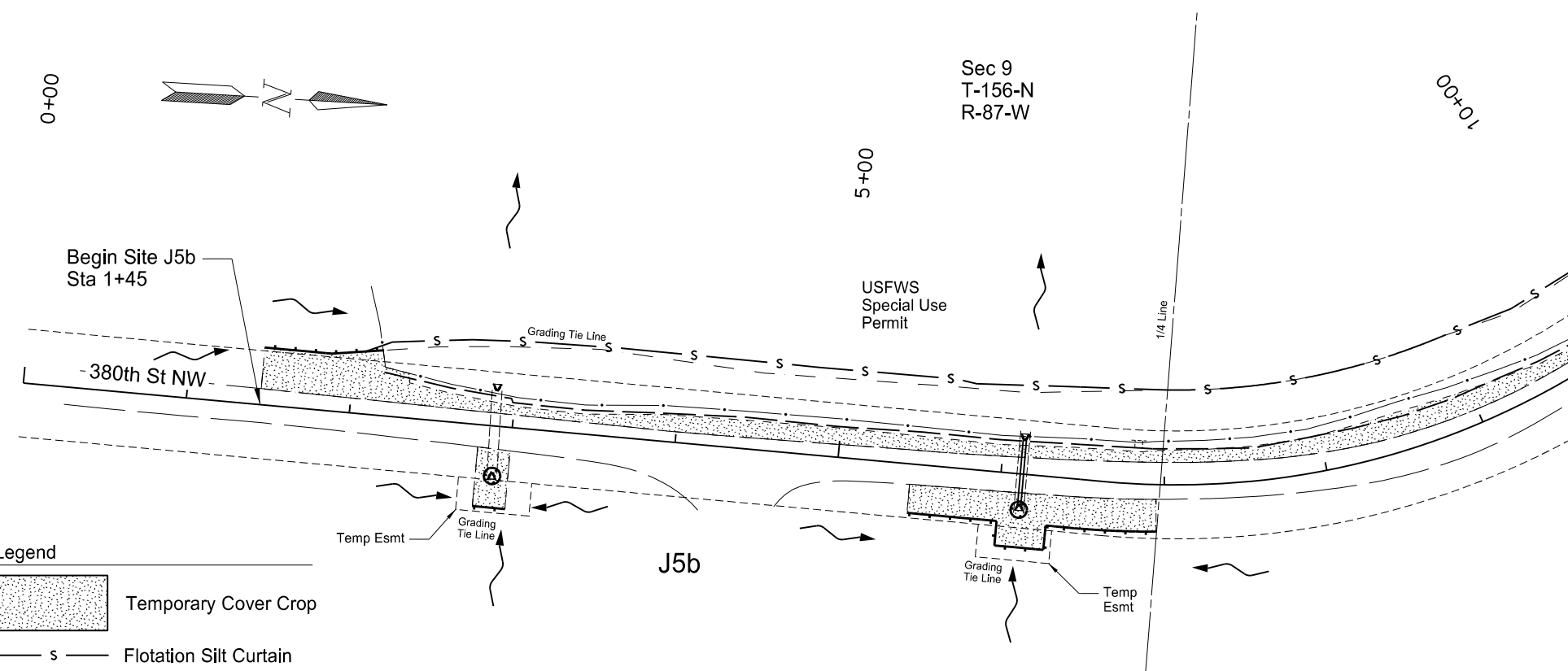
Wetland 26d Impacts	
Temporary Impact	= 0.02 ACRE
Permanent Impact	= 0.00 ACRE

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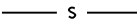

- Legend**
-  Temporary Wetland Impact
 -  Temporary Other Water Impact

Wetland Impacts

Site J5b
 Inslope Erosion Repair
 Missile Access Road - J5
 Ward County



Legend

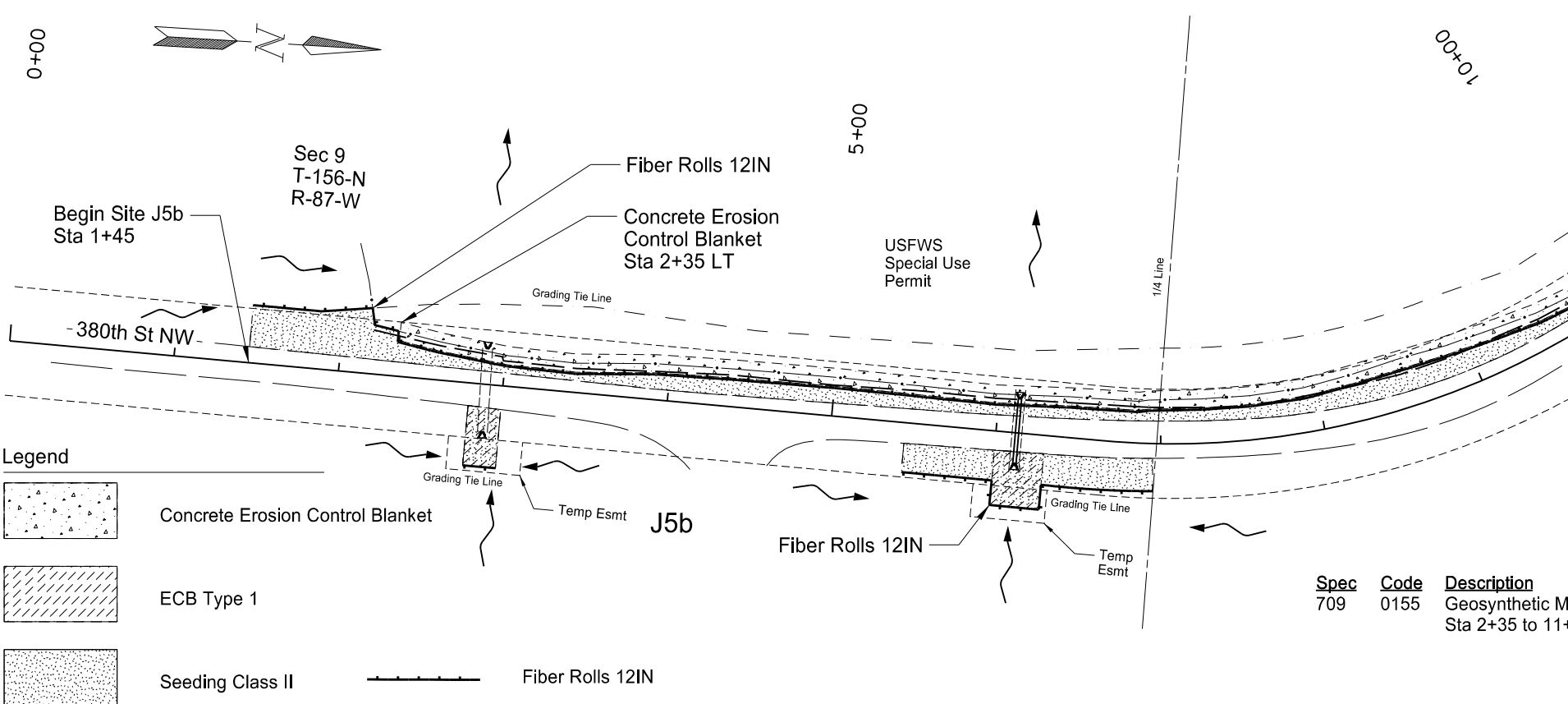
	Temporary Cover Crop
	Flotation Silt Curtain
	Fiber Rolls 12IN

Spec	Code	Description	Quantity	Unit
251	2000	Temporary Cover Crop Sta 1+45 to 12+25	0.45	ACRE
			Total =	0.45 ACRE
261	0112	Fiber Rolls 12IN Sta 1+45 to 12+25	610	LF
			Total =	610 LF
261	0113	Remove Fiber Rolls 12IN Sta 1+45 to 12+25	610	LF
			Total =	610 LF
262	0100	Flotation Silt Curtain Sta 1+45 to 12+25	935	LF
			Total =	935 LF
262	0101	Remove Flotation Silt Curtain Sta 1+45 to 12+25	935	LF
			Total =	935 LF

For quantity totals see Plan Note 262-P01 section 6 sheet 3 FLOTATION SILT CURTAIN

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Temporary Erosion Control
 Site G3a
 Inslope Erosion Repair
 Missile Access Road - G3
 Ward County



Spec	Code	Description	Quantity	Unit
203	0109	Topsoil		
		Sta 1+45 to 12+25	238	CY
		Total =	238	CY
251	0200	Seeding Class II		
		Sta 1+45 to 12+25	0.45	ACRE
		Total =	0.45	ACRE
253	0101	Straw Mulch		
		Sta 1+45 to 12+25	0.90	ACRE
		Total =	0.90	ACRE
255	0101	ECB Type 1		
		Sta 2+89 RT	91	SY
		Sta 6+00 to 6+30 RT	129	SY
		Sta 10+65 to 10+95 RT	129	SY
		Total =	349	SY
261	0112	Fiber Rolls 12IN		
		Sta 1+45 to 12+25	1475	LF
		Total =	1475	LF
708	5810	Concrete Erosion Blanket		
		Sta 2+35 to 11+35 LT	1500	SY
		Total =	1500	SY

Spec	Code	Description	Quantity	Unit
709	0155	Geosynthetic Material Type RR		
		Sta 2+35 to 11+35 LT	1600	SY
		Total =	1600	SY

This document was originally issued and sealed by Holly M. Beck, Registration Number PE- 4934, on 7/2/18 and the original document is stored at the North Dakota Department of Transportation.

Permanent Erosion Control
 Site J5b
 Inslope Erosion Repair
 Missile Access Road - J5
 Ward County

