



	GOVERNING SPECIFICATIONS
	THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
1	INDEX OF SHEETS
è	SHEET DESCRIPTION 1 TITLE SHEET
	2 ESTIMATED QUANTITIES 3-5 TABULATIONS 6-8 SWPPP 9-13 SEDIMENT AND EROSION CONTROL SHEETS 14 TYPICAL SECTIONS 15 RUMBLE STRIP DETAILS 16-24 BOX CULVERT SHEETS 25-27 TRAFFIC CONTROL 28 ALIGNMENT PLAN & TABULATION 29 PROFILE 30 INPLACE, TOPOGRAPHY, UTILITIES, & R/W PLAN 31 REMOVAL PLAN
٦	32 CONSTRUCTION PLAN XI-X7 CROSS SECTIONS
	THIS PLAN SET CONTAINS 39 SHEETS
RTERIAL	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENCED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOLA
	DATE: 07/16/2024 LICENSE NO: 26109
	RECOMMENDED FOR APPROVAL
	GRANT COULT ENGINEER
r	RECOMMENDED FOR APPROVAL Digitally signed by Nathan
- 41	Date: 2024.07.18 10:03:57 - 05'00' DISTRICT STATE AID ENGINEER DATE
AL	APPROVED
	Shiloh Wahl Digitally signed by Shiloh Wahl Date: 2024.07.18 12:39:22 -05'00'
	DISTRICT TRANSPORTATION ENGINEER DATE
ATION NT	I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THE PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
	PRINT NAME LICENSE #
	PRINT NAME LICENSE # SIGNATURE DATE:

	STATE	MENT	OF ES	TIMATED QUANTITIES SP 2608-31	(TH 55)	
TAB.	SHEET NO.	NOTE	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
			2021.501	MOBILIZATION	LUMP SUM	1
			0054 504			1
			2051.501	MAINI & RESTORATION OF HAUL ROADS	LUMP SUM	1
			2104,502	REMOVE CONCRETE APRON	EACH	4
A	3		2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	60
			2104.503	REMOVE CONCRETE CULVERTS	LIN FT	108
			2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	6471
E	3		2104.607	SALVAGE RANDOM RIPRAP	CU YD	781
С	3	(1) (P)	2106.507	EXCAVATION-COMMON	CU YD	1540
С	3	(P)	2106.507	EXCAVATION-SUBGRADE	CU YD	2780
С	3	(P)	2106.507	SELECT GRANULAR EMBANKMENT MOD 7% (CV)	CU YD	11875
С	3	(P)	2106.507	COMMON EMBANKMENT (CV)	CU YD	6070
			2106.601	DEWATERING	LUMP SUM	1
<u>ب</u>	Λ		0100			10495
ĸ.	4		2108.504	GEDTEXTILE FABRIC TYPE 7		10495
<u>г</u>	7		2108,504		JU TON	672
U	3		2118,509	AGGREGATE SURFACING CLASS I	TUN	012
D	3	(4)	2211 500		TON	5943
D	5	(47	2211.509	AGGREGATE DASE CLASS 5		5515
G	4		2232,603	MILLED SINUSOIDAL RUMBLE STRIPS-INTERMITTENT	LIN FT	3952
			22021000			
			2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C)	TON	2182
	16-22		2412,502	12X8 PRECAST CONCRETE BOX CULVERT END SECTION	EACH	4
	16-22		2412.503	12X8 PRECAST CONCRETE BOX CULVERT	LIN FT	152
С	3	(P)	2451.507	STRUCTURE EXCAVATION CLASS U	CU YD	2352
С	3	(P)	2451.507	GRANULAR BACKFILL (CV)	CU YD	3386
		(3)	2451.507	COARSE AGGREGATE BEDDING (CV)	CU YD	280
L	4		2511.507	RANDOM RIPRAP CLASS III	CU YD	103
В	3		2511.607	INSTALL RANDOM RIPRAP	CU YD	/81
			0567 601			1
		(5)	2564 502	INAFFIC CUNINUL	FACH	4
		,	2573 501	STARTI IZTED CONSTRUCTION FYIT	LUMP SUM	1
			2573.501	FROSTON CONTROL SUPERVISOR	LUMP SUM	1
F	4		2573.503	SILT FENCE, TYPE MS	LIN FT	989
F	4	(2)	2573.503	FLOTATION SILT CURTAIN TYPE STILL WATER	LIN FT	2397
F	4		2573.503	SEDIMENT CONTROL LOG TYPE WOOD CHIP	LIN FT	2598
Ι	4		2574.505	SOIL BED PREPARATION	ACRE	2.6
Ι	4	(6)	2574.508	FERTILIZER TYPE 4	POUND	314
Ι	4		2575.504	ROLLED EROSION PREVENTION CATEGORY 20	SQ YD	12634
Ι	4		2575.505	SEEDING	ACRE	2.6
Ι	4		2575.508	SEED MIXTURE 25-141	POUND	81
Ι	4		2575.508	SEED MIXTURE 35-241	POUND	47
			2575.523	RAPID STABILIZATION METHOD 3	M GALLON	16
Н	4		2582.503	4" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	1087
H	4		2582.503	4" BROKEN LINE MULTI COMP GR IN (WR)	LINFT	396
Н	4		2582,503	ь" SULID LINE MULIÍ COMP GR IN (WR)	LINFI	3322

## UTILITIES:

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ANY EXISTING UTILITY LOCATIONS AND DEPTHS RELEVANT TO THE REQUIRED CONSTRUCTION. EXCAVATION TO LOCATE EXISTING UNDERGROUND UTILITIES SHALL BE INCIDENTAL. THE CONTRACTOR SHALL NOTIFY OWNERS AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION. GOPHER STATE ONE CALL 1-800-252-1166.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".

UTILITIES

OTTER TAIL POWER

1-218-739-8831

## NO<u>tes:</u>

(P) DENOTES PLAN QUANTITY

(1) INCLUDES 146 CY FOR SHOULDER AGGREGATE REMOVAL

(2) ASSUMES 5' WATER DEPTH

(3) INCLUDES 164 CY FOR PLACEMENT UNDER RIPRAP

(4) THE CONTRACTOR MAY REUSE THE EXISTING BITUMINOUS AND AGGREGATE PER THE STANDARD SPECIFICATION IN LIEU OF AGGREGATE BASE CLASS 5

(5) TYPE X3-5

(6) ANALYSIS 23-0-30

	TABULATION INDEX							
TAB.	SHEET 1	NO.	TABULATION					
Α	3		SAWING BIT PAVEMENT (FULL DEPTH)					
В	3		INSTALL RIPRAP					
С	3		EARTHWORK TABULATION					
D	3		AGGREGATE BASE AND SURFACING					
Ε	3		SALVAGE RANDOM RIPRAP					
F	4		EROSION CONTROL					
G	4		RUMBLE STRIPES					
Н	4		PAVEMENT MARKING					
Ι	4		TURF ESTABLISHMENT					
J	5		ELECTRICAL UTILITIES					
K	4		GEOTEXTILE FABRIC					
L	4		RANDOM RIPRAP					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA DES: T.V. DR: M.A. CHK: J.K.





DATE

ESTIMATED QUANTITIES STATE PROJECT NO. 2608-31 (TH 55) SHEET NO. 2 OF 32 SHEETS

8/12/2024 PLOTTED/REVISED:

PATH

CHK: M.A.

STANDARD PLATES THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT						
PLATE NO.	DESCRIPTION					
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES					
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)					

### BASIS OF ESTIMATED QUANTITIES

SEED MIXTURE 35-241 APPLICATION RATE	= 36.5 LBS/ACRE
SEED MIXTURE 25-141 APPLICATION RATE	= 59 LBS/ACRE
FERTILIZER TYPE 4 APPLICATION RATE	= 120 LBS/ACRE
TYPE SP 12.5 WEARING COURSE MIX (3,C)	= 115 LBS PER SQ YD/INCH

			E	ARTHWORK	TABULATIO	N			c	INSTAL
		EXCAVATION EMBANKMENT								
Γ	COMMON	TOPSOIL	STRUCTURE CLASS U	SUBGRADE		TOPSOIL	2 CLAY CAP	GRANULAR BACKFILL	SELECT GRANULAR MOD 7%	
STATIONS	(EV)	(EV)	(EV)	(EV)	(CV)	(CV)	(CV)	(CV)	(CV)	STATIONS
TH 55 PROPOSED	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	TH 55 PROPOSE
53+80	0	0	0	0	0	0	0	0	0	53+80
54+00	5	10	0	29	31	13	0	0	0	54+00
55+00	16	55	0	144	217	69	0	0	0	55+00
56+00	2	65	0	144	441	84	0	0	0	56+00
57+00	0	75	0	134	760	98	0	0	0	57+00
58+00	0	91	0	142	0	120	0	0	1167	58+00
59+00	0	90	0	148	0	122	0	0	1222	59+00
60+00	0	85	0	160	0	122	0	0	1106	60+00
61+00	0	84	47	166	0	124	0	248	893	61+00
61+87.62	0	75	220	146	0	111	164	695	430	61+87.62
62+00	0	11	84	21	0	16	46	179	26	62+00
62+58.42	0	51	406	96	0	74	208	844	103	62+58.42
62+82.66	0	21	336	40	0	33	94	119	22	62+82.66
63+00	0	15	402	29	0	25	77	0	0	63+00
63+17.34	0	15	398	29	0	25	77	262	0	63+17.34
63+41.58	0	21	327	40	0	32	94	499	21	63+41.58
64+00	0	54	128	91	0	72	192	420	204	64+00
64+12.44	0	11	1	19	0	15	41	34	74	64+12.44
65+00	0	72	3	145	0	107	143	86	812	65+00
66+00	0	83	0	165	0	122	0	0	1121	66+00
67+00	0	84	0	163	0	123	0	0	1064	67+00
68+00	0	87	0	156	0	124	0	0	1098	68+00
69+00	0	91	0	147	0	125	0	0	1222	69+00
70+00	0	94	0	144	0	126	0	0	190	70+00
71+00	0	79	0	77	882	105	0	0	0	71+00
72+00	5	62	0	144	392	79	0	0	0	72+00
72+43	5	26	0	61	113	32	0	0	0	72+43
TOTAL	33	1507	2352	2780	2836	2098	1136	3386	11875	TOTAL

 $\oplus$  suitable grading material excavated from 'excavation-common' and 'structure u excavation' shall be used as common embankment in areas from sta. 53+00 - 57+00 and sta. 70+00 - 72+76 only. All other embankment shall be constructed with select granular embankment

2 1136 CLAY CAP FROM STA. 61+17 - 65+00 LT INCLUDED IN COMMON EMBANKMENT PAY ITEM.

2024

61251

ED/REVISED:

1010

CADD/CIVI//2608-31

0840

5003

12221

FILENANE.

2 DATH (3) COARSE AGGREGATE BEDDING SHALL BE PLACED UNDER RIPRAP AT A RATE OF 0.11 CY/CY OF RIPRAP. SEE TYPICAL SECTIONS

SAWING BITUMI	NOUS	S PA	VE	MENT (FULL DEPTH)	Α
	LC	LOCATION		QUANTITY	
STATION TO STATIO	ĽТ	RT	CL	LIN FT	
53+00			Х	30	
72+76			Х	30	
TOTALS				60	

AGGREGATE BASE AND SURFACING						
STATION TO STATION	AGGREGATE BASE CLASS 5	AGGREGA SURFACIN CLASS	te Ig 1			
	TON	TON				
53+00 - 72+76	5943	672				
TOTALS	5943	672				

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V TRACEY VON BARGEN, LICENSE NUMBER 26109

WIDSETH ARCHTECTS • ENGINEERS • SCIENTISTS • SURVEYORS DATE

06/25/2024

STATION TO

58+24 -59+81 -

TOTA

RANDOM RIPRAP B						
RIPRAP (S	SALVAGED) 🔇	)				
LT	RT					
(CY) (4)	(CY) (	4)				
CU YD	CU YD					
0	0					
0	0					
0	0					
0	0					
0	0					
19	3					
39	10					
41	21					
41	29					
36	33					
5	6					
24	23					
45	65					
9	7					
22	18					
5	4					
31	26					
36	29					
35	30					
25	32					
9	23					
0	0					
0	0					
0	0					
0	0					
422	359					

SALVAGE RANDOM RIPRAP						
TO STATION	LOCATION		SALVAGE			
	LT	RT	CU YD			
+24 - 67+10	Х		<b>4</b> )512			
+81 - 66+45		Х	4 269			
TOTALS			781			

(4) INSTALL/SALVAGE RIPRAP ASSUMES DEPTH OF 1.5'

### EARTHWORK SUMMARY & TABULATIONS SHEET NO. 3 SP 2608-31 (TH 55) 0F 32 SHEETS

EROSION CONTROL F									
STATION TO STATION	LOCATION		LOCATION		LOCATION		SILT FENCE TYPE MS	FLOTATION SILT CURTAIN TYPE STILL WATER	SEDIMENT CONTROL LOGS TYPE WOOD CHIP
	LT	RT	LIN FT	LIN FT	LIN FT				
57+35 - 68+65	Х			1135					
58+96 - 69+20		Х		1030					
61+80 - 62+50	Х			116					
61+80 - 62+50		Х		116					
55+10 - 57+36	х		220						
55+08 - 58+81		Х	369						
68+82 - 71+02	х		220						
69+26 - 71+02		х	180						
53+00 - 62+00	х				598				
53+00 - 62+00		х			436				
62+30 - 72+76	х				752				
62+30 - 72+76		Х			812				
TOTALS			989	2397	2598				

RUMBLE STRIPS G								
STATION TO STATION	LOCAT	IAL TRIPS TENT						
	LT	RT	LIN F	T				
53+00 - 67+00	Х		1400					
53+00 - 67+00		Х	1400					
67+00 - 72+76	х		576					
67+00 - 72+76		Х	576					
TOTAL			3952					

PAVEMENT MARKING H									
STATION TO STATION	LT		RT	4" SOLID LINE YELLOW MULTI COMP(WR)	4" BROKEN LINE YELLOW MULTI COMP(WR)	6" SOLID LINE WHITE MULTI COMP(WR)			
TH 55				LIN FT	LIN FT	LIN FT			
53+00 - 59+23	Х			623					
53+00 - 59+23			х		125				
59+23 - 68+12		Х			178				
68+12 - 72+76	Х				93				
68+12 - 72+76			Х	464					
53+00 - 72+76	Х					1976			
53+00 - 72+76			Х			1976			
TOTAL				1087	396	3952			

est.dgn

6/25/2024

TURF ESTABLISHMENT I											
STATION TO STATION	ION LOCATION		LOCATION		SEEDING (25-141)	SEEDING (35-241)	SEED MIX 25-141	SEED MIX 35-241	SOIL BED PREPARATION	FERTILIZER TYPE 4	ROLLED EROSION PREVENTION CATEGORY 20
	LT	RT	ACRE	ACRE	POUND	POUND	ACRE	POUND	SQ YD		
TH 55											
53+00 - 72+76	х		0.66		39		0.66	80	3195		
53+00 - 72+76	х			0.64		24	0.64	77	3098		
53+00 - 72+76		Х	0.70		42		0.70	84	3388		
53+00 - 72+76		Х		0.61		23	0.61	73	2953		
TOTALS			1.36	1.25	81	47	2.61	314	12634		

RANDOM RIPRAP (	(BOX	EN	D LOCATION)	L	
STATION TO STATION	LOCA	TION	RIPRAP CL III 🕄		
	LT	RT	CU YD		
62+65.5 - 63+34.4	Х		42		
62+62.0 - 63+38.0		Х	61		
TOTALS			103		

Sŧ	T.V.	DR:	M.A.	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED
Kı	M.A.	CHK:	J.K.	PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

V 06/25/2024 TRACEY VON BARGEN, LICENSE NUMBER 26109



DATE

1 LENGTH DOES NOT INCLUDE GAPS

GEOTEXTILE FABRIC						
	GEOTEXTILE F	ABRIC TYPE	7			
	LT	RT				
STATIONS	SQ YD	SQ YD				
TH 55 PROPOSED						
53+80 - 72+43	5476	5019				
	GEOTEXTILE FABRIC TYPE 10					
53+80 - 72+43	4193	4445				

### TABULATIONS

	ELECTRIC UTILITIES										
STATION TO STATION	OFFSET TO OFFSET (FFET) I						UTTLITY OWNER	REMARK			
							LEAVE	ADJUST	RELOCATE		
53+22 TO 55+12	44.5	RT	TO	46.3	RT	OHP			Х	OTTER TAIL POWER COMPANY	
55+12 TO 57+12	46.3	RT	TO	50.2	RT	OHP			х	OTTER TAIL POWER COMPANY	
57+12 TO 60+25	50.2	RT	TO	30.5	RT	OHP			Х	OTTER TAIL POWER COMPANY	
60+25 TO 63+27	30.5	RT	TO	31.3	RT	OHP			х	OTTER TAIL POWER COMPANY	
63+27 TO 66+11	31.3	RT	TO	32.0	RT	OHP			х	OTTER TAIL POWER COMPANY	
66+11 TO 68+24	32.0	RT	TO	37.8	RT	OHP			х	OTTER TAIL POWER COMPANY	
68+24 TO 70+49	37.8	RT	TO	45.5	RT	OHP			Х	OTTER TAIL POWER COMPANY	

NOTE: UTILITIES WITHIN CONSTRUCTION AREA, ADJUSTMENT OR RELOCATION, IF NECESSARY, TO BE DONE BY OWNER

	UTILITIES ABBREVIATIONS	
ANC	POLE ANCHOR	
OHP	OVERHEAD POWER LINE	
POP	POWER POLE	

UTILITY OWNERS	
OTTER TAIL POWER COMPANY	,

DES: T.V. DR: M.A. I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED CHK: M.A. CHK; J.K. PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA



06/25/2024 DATE



SP 2608-31 (TH 55)

	J
S	

### UTILITY TABULATIONS

SHEET NO. 5 OF 32 SHEETS

# GRANT COUNTY HIGHWAY STORM WATER POLLUTION PREVENTION PLAN

PLOTTED/REVISED: 6/25/202-

1300432020 (E) Trinity Cem	1300432222 1300432222
1300432929 1/50 - 1300422828	
Wendell Wendell	
WT Proj 32 1300433232 1300433232	ect Location
Project Location 129013044 GRADE	· 129043033 E.

TOTAL AREA DISTURBED	4.39 ACRES
EXISTING PERVIOUS	2.85 ACRES
EXISTING IMPERVIOUS	1.54 ACRES
PROPOSED PERVIOUS	2.76 ACRES
PROPOSED IMPERVIOUS	1.63 ACRES

DES: T.V. DR: M.A. I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED CHK: M.A. CHK: J.K. PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA



 WIDSETH
 STORM

 ARCHITECTS - ENGINEERS - SCIENTISTS - SURVEYORS
 SP 2608-31 (TH 55)







# STORM WATER POLLUTION PREVENTION PLAN(TH 55)SHEET NO. 6OF 32SHEETS

	Applicant:	construction practices that minimize erosion. The location of areas not to be disturbed
	Grant County Highway Department Project Name	Examples of Temporary Erosion Control BMPs
	TH 55 Mustinka River Crossing	Poly Cover Stockpile or Slope     Construction Phasing
	<u>Application date:</u> To be Determined (TBD) and will be marked in this Stormwater Pollution Prevention plan	Sequence of construction: Phase i
2024	(SWPPP) narrative prior to the start of construction. <u>Nature of construction activity description</u> . The project will consist of replacement of bridge 26X03 and will consist of bituminous removal, road grading and base, bridge replacement, and bituminous paving.	1. Install stabilized construction exits     2. Prepare temporary parking and storage area     3. Construct the silt fences on the site     4. Install flotation silt curtain     5. Remove bituminous pavement     6. Stabilize disturbed soils and maintain stabilization
D: 6/25/	Aazdahl-Formdale-Balaton clay loams, 0 to 4 percent slopes Flom-Aazdahl-Quam complex, 0 to 4 percent slopes Hokans-Svea complex, 2 to 9 percent slopes	<ol> <li>Construct earthen coffer dam for box culvert construction</li> <li>Dewater box culvert construction area utilizing undisturbed road slopes as filtration for dewatering</li> <li>Complete installation of box culverts</li> <li>Remove earthen coffer dam</li> </ol>
EVISE	The project is anticipated to begin in May of 2024, with construction scheduled to be complete in August of 2024.	<u>Phase ii</u> 1. Salvage random riprap 2. Remove concrete culvert and aprops
ED/R	Total estimated area to be disturbed by the project is: 4.39 AC	3. Place embankment and base 4. Install random riprap
Ц	Name of person with Best Management Practices (BMP) experience who will oversee	5. Prepare site for paving 6. Pave site 7. Complete grading and permanent seeding and planting
Ъ	SWPPP implementation and coordinate with contractor:	8. When Permit termination conditions has been achieved, remove all termination and sediment control devices
	Person, organization, or entity responsible for long term maintenance of permanent	Phasing must be implemented to ensure that more area than can be effectively inspected and maintained in accordance with the MNR100001
	stormwater treatment system: Increase in impervious surface is less than 1 acre, therefore no permanent stormwater	permit is not disturbed. • Disc Anchored Straw Migneesta Department of Transportation (MaDOT) reference:
	Documentation of all trained individuals:	<ul> <li>Disc anchoring must be performed as necessary and/or according to the plan included in this SWPPP.</li> <li>Disk anchor Type 1, Type 3, or Type 8 mulches with a disk anchoring tool as</li> </ul>
	SWPPP preparer: Company: Widseth	required by the contract immediately after placement unless otherwise approved by the Engineer.
E.	Name: Danny Perrault Address: 610 Filmore St,	<ul> <li>Disk anchoring must be installed as per MinDOT spec. 2575.3.</li> <li>Rolled Erosion Control Products         The contractor must minimize the need for disturbance of participes of the project     </li> </ul>
õprddd,	City, State Zip: Alexandria MN 56308 Email: Danny.Perrault@widseth.com Phone: 320-335-5027	that have steep slopes (3:10 r steeper). For steep sloped areas that must be disturbed, the contractor must use techniques such as phasing, and stabilization
NS	Training organization/sponsor: University of Minnesota Training date(s): May 15, 2023	steeper than 3:1 must be protected by rolled erosion prevention products.
<u>:</u> -80	Instructor(s) name(s): John Chapman and Rebecca Foreman	Rolled erosion control products must be placed in the areas as shown on the plan included in this SWPPP.
CNIN26	Individual overseeing implementation, revision and/or amendment the SWPPP that are available for an onsite inspection within 72 hours upon request of MPCA: TBD and will be documented in this SWPPP narrative prior to start of construction.	<ul> <li>Rolled erosion control products must be Rolled Erosion Prevention Products, Turf Reinforcement Mats, or Winter Blankets, according to plan. Materials must meet the requirements of MnDOT spec. 3885.</li> <li>Relied except except sector activity of must be alread as an MnDOT according to the sector of the sector activity of the sector of the sector</li></ul>
ADD	Name:	<ul> <li>Wood Chips</li> <li>Wood Chips</li> <li>Vegetation</li> </ul>
400	City, State Zip: Email:	MnDOT reference: > Protect and preserve vegetation per the requirements of MnDOT spec.
3-108	Phone: Training organization/sponsor: Training date(s):	<ul> <li>2572.3</li> <li>Before work begins, permittees must delineate the location of areas not to be disturbed.</li> </ul>
N202	Training activity/content: Instructor(s) name(s):	Mulch     All disturbed soil areas must be temporarily mulched with Rapid Stabilization,
3534	Individual overseeing implementation, revision and/or amendment the <u>SWPPP</u> ; TBD and will be documented in this SWPPP narrative prior to start of construction.	Method 3, initiated immediately, when the area will not actively be worked for 7/14 days. 3884, Stabilized Fiber Matrix, placed at 330 lb. per 1000 gal. of slurry mix.
irtment-	Company: Name: Address: City: State Zin:	Seed mixture 22-111 placed at a rate of 10 lb. per 1,000 gal. of slurry mix. Type 3 Slow-Release Fertilizer 10-10-10 placed at a rate of 50 lb. per 1000 gal. of slurry mix.
y Depc	Email: Phone: Training organization/sponsor:	Apply mixture at a rate of 6000 gal per acre. MnDOT reference:
ghwa	Training date(s): Training activity/content:	<ul> <li>Wilder must be placed in the areas as shown on the plan included in this SWPPP.</li> <li>Mulch must be Temporary, Type 1, Type 3, Type 4, Type 5, Type 6, Type 7,</li> </ul>
ilH Alluc	Instructor(s) name(s):	Type 8, Type 9, Winter, or Hydraulic Mulch according to plan. Materials must meet the requirements of MnDOT spec. 3882 or MnDOT spec. 3884. Mulch must be applied as per MnDOT spec. 2575.3.
ant C	Company: Name: Address:	Temporary Sediment Control BMPs The General Contractor is responsible for the Sediment Control Practices contained in
J:\Gr	City, State Zip: Email:	the MNR100001 Permit, reference 9. Sediment Control Practices must be installed on all down gradient perimeters before any upgradient land disturbing activities begin. These
ü	Phone: Training organization/sponsor:	practices must remain in place until Permit Termination Conditions have been established in accordance with the MNR100001 Permit, reference 13.
NAM	Training date(s): Training activity/content:	Examples of Temporary Sediment Control BMPs <ul> <li>Floating Silt Curtain</li> <li>MDOT sufference:</li> </ul>
FILE	Instructor(s) name(s):	<ul> <li>Floatation silt curtain must be placed in the areas as shown on the plan included in this SWPPP.</li> </ul>
Н &	Erosion and sediment control BMP's must be installed as necessary to minimize erosion from disturbed surfaces and capture sediment onsite. All BMP's must conform to the UND4000410 surfaces in a capture sediment on site.	<ul> <li>Flotation silt curtain must be light duty or heavy duty and meet the requirements of MnDOT spec. 3887.</li> </ul>
PAT	MINR 100001 Permit, sections 7, 8 and 9. Temporary erosion control BMPs. The General Contractor is responsible for the Erosion Prevention Practices contained in the	<ul> <li>Flotation slit curtain must be installed as per MINDOT spec. 2573.3.</li> <li>Silt Fence MINDOT reference:</li> </ul>
	MNR100001Permit, section 8. The General Contractor must plan for and implement appropriate	<ul> <li>Silt fonce must be placed in the areas as shown on the plan included in this SWPPP.</li> </ul>
	construction phasing, vegetative buffer strips, horizontal slope grading and other	Silt fence must be preassembled, machine sliced, hand installed, super duty, or turbidity barrier type, according to plan. Materials must meet the requirements of MDDOT spec. 3886. Silt fence must be installed as per MDDOT spec. 2573.3
		Sediment Control Logs     MnDOT reference:
	DESI T.V. DRI M.A. I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED CHKI M.A. CHKI J.K. PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA	06/25/2024   WIDSETH

TRACEY VON BARGEN, LICENSE NUMBER 26109



- > Sediment control logs must be placed in the areas as shown on the plan
- included in this SWPPP.
- Sediment control logs must be Type Straw, Wood Fiber, Coir, Wood Chip, Compost, Rock, or Wood Fiber and Blanket Systems and meet the requirements of MnDOT spec. 3897.
- Sediment control logs must be installed as per MnDOT spec. 2573.3.
- Filter Berms
  - Silt fence or windrowed topsoil will be used as the primary control. Sediment control logs will be used as secondary control along each side of roadway at all low points and areas of high velocity drainage to prevent sediment from draining off roadway.
  - MnDOT reference
  - > Filter berms must be placed in the areas as shown on the plan included in this SWPPP.
  - Filter berms must be Type 1, 2, 3, 4, or 5. Materials must meet the requirements of MnDOT spec. 3874.
  - > Filter berms must be installed as per MnDOT spec. 2573.3
- Bale Barriers
  - MnDOT reference:
  - Bale Barriers must be placed in the areas as shown on the plan included in this SWPPP
  - > Bale Barriers must be installed as per MnDOT spec. 2573.3.
- Rock Ditch Check
- Sediment Control Log Ditch Check
  Filter Bag Insert Inlet Protection
- Rock / Compost Log Inlet Protection Tube Riser Inlet Protection
- Pop-Up Head Inlet Protection
- Inlet Hat Inlet Protection
- Silt Fence Ring and Rock Filter Berm Inlet Protection
- Sandbag Barriers
- MnDOT reference:
  - > Sandbag barriers must be placed in the areas as shown on the plan included in this SWPPP.
  - Sandbag Barriers must be installed as per MnDOT spec. 2573.3.
- Slash Mulch, Crushed Rock, or Sheet Pad Construction Exit Rock construction exits must be placed at all locations construction vehicles will be exiting the project area. If the contractor chooses to access the site from locations other than where temporary rock construction exits are shown on the plan, additional construction exit controls must be placed at these locations as well. If sediment tracking is discovered on adjacent streets, the sediment must be removed with a street sweeper or other approved method within one calendar day of discovery. This must be done throughout the duration of the project. The sediment may be returned to the exposed areas of the site or disposed of offsite per MPCA requirements.
  - MnDOT reference:
  - > Construction exit controls must be placed in the areas as shown on the plan included in this SWPPP.
  - > Construction exit controls must be constructed with slash mulch, crushed rock, temporary paving, reinforced geotextile, sheet pads, floating road,
- timber pad, or rumble pad.
   Construction exit controls must be installed as per MnDOT spec. 2573.3. Rumble Pad Construction Exit
  Culvert End Controls
- - MnDOT reference:
  - > Culvert end controls must be placed in the areas as shown on the plan included in this SWPPP
- Culvert End Controls must be installed as per MnDOT spec. 2573.3.
   Culvert Standpipe Insert Inlet Protection
- Storm Drain Inlet Protection MnDOT reference:
  - > Storm drain inlet protection must be placed in the areas as shown on the plan
  - included in this SWPPP.
  - Storm Drain Inlet Protection must be installed as per MnDOT spec. 2573.3.
- Sediment Control Log Weir Culvert Inlet Protection Wood Plank Weir Culvert Inlet Protection
- Geotextile Fabric Culvert Inlet Protection
  - > Geotextile Fabric Culvert Inlet Protection must be placed in the areas as shown on the plan included in this SWPPP.
  - > Geotextile Fabric Culvert Inlet Protection must meet requirements of MnDOT spec. 3886.
  - Geotextile Fabric Culvert Inlet Protection
  - a). Culvert inlet protection must be provided at all culvert inlet locations immediately after construction of the culvert. See plan included in this SWPPP for culvert inlet locations.
  - b). Culvert inlet protection must consist of geotextile fabric wrapped around. and completely covering the inlet end section. The geotextile fabric must be the same fabric used in silt fence applications and meet the requirements of MNDOT Spec. 3886.
  - c). The culvert inlet protection must remain in place and adequately maintained until Permit Termination Conditions have been established.
  - d). Culvert inlet protection must be repaired or replaced if damaged during, or after, rain events, or if accumulated sediment reaches 1/2 of the
  - diameter of the culvert pipe. Repair or replacement of culvert inlet protection must be completed within 24 hours of discovery.
- Temporary Sediment Basins
- Contractor may construct temporary sedimentation basins in accordance with the MNR100001 Permit, reference 14. Temporary Diversion Ditch
  - Measures must be taken to ensure that "clean" runoff from off site is diverted around disturbed areas on site. Care should be taken that re-routing off site runoff does not result in flooding or other issues on adjacent properties.

### Permanent Erosion Cover Methods for all exposed soil areas:

- Concrete
- Bituminous
- Rip rap
- Perennial cover Permanent erosion control will be achieved with a density of 70% of the native background
- vegetation by using seed mixture 35-241 at a rate of 36.5 lbs/ac of Pure Live Seed, and seed
- mixture 25-141 at a rate of 59 lbs/ac of live seed, Type 4 fertilizer with a composition

### STORM WATER POLLUTION PREVENTION PLAN

SHEET NO. 7

OF 32

SHEETS

Stormwater Mitigation Measures proposed as part of environmental, endangered species, archaeological or other required local, state or federal reviews conducted by the project.

No local state or federal environmental, endangered species or archaeological reviews were conducted for this project that we are aware of

Discharges to any U.S. EPA approved TMDL for the pollutants/stressors described in the MNR100001 Permit, reference item 23.7.

The Mustinka River has an EPA-approved impairment for: dissolved oxygen; Escherichia coli (E. coli); fish bioassessments; turbidity. These impairments are considered to be construction related parameters and require the additional best management practices (BMPs) found in items 23.9 (stabilization of exposed soil areas initiated immediately and stabilized within 7 days and 23.10 (temporary sediment basin provided for common drainage locations that serve an area with five or more acres disturbed) will apply for this project. The proposed bridge is being built over the Mu stinka River. Permanent and temporary erosion and sediment control methods will be used to limit the amount of stormwater runoff to enter Mustinka River.

### Permanent Stormwater Treatment System:

No permanent stormwater treatment system is anticipated for this Project.

#### Procedures to Amend SWPPP:

General Contractor must amend the SWPPP as necessary to include additional requirements, such as additional or modified BMP's, designed to correct problems or address situations in accordance with the MNR100001 Permit, reference 6 of the NPDES Permit

### Amendments to the SWPPP 1 Date

****	×
5. Date:	
4. Date:	
3. Date:	
2. Date:	

Methods to Minimize Soil Compaction and to Preserve Topsoil: The General Contractor must avoid construction traffic and maintain the existing condition of pervious "green" areas.

### Stormwater Control Design:

There is no stormwater control planned for this project.

Chemical Treatment Systems to Enhance Sedimentation:

 Flocculants MnDOT reference

- Flocculants must be applied as specified on the plan included in this
- SWPPP
- > Liquid, Stock, or Granular Flocculant must be used and meet requirements of MnDOT spec. 3898.

TRACEY VON

BARGEN, LICENSE NUMBER 26109

> Flocculants must be installed as per MnDOT spec. 2573.3.

Impervious Surfaces pre- and post-construction:

Existing Impervious =	1.54 AC
Proposed Impervious Area =	<u>1.63 AC</u>
Increase of Total Impervious Surface Area=	0.09 AC

### Infeasibility Documentation Requirements:

If it is infeasible to maintain a 50-foot natural buffer to the surface water of the Mustinka River, redundant perimeter sediment control BMPs are included in the erosion control plan.

If work is conducted within the water of the Mustinka River, silt curtains will be placed surrounding the construction area

### Site Assessments for Groundwater or Soil Contamination:

No site assessments for groundwater or soil contamination are necessary

### Tabulated Quantities:

ltem	Estimated Qua
Silt Fence	989 LIN FT
Floating Silt Curtain	2397 LIN FT
Sediment Control Log	2598 LIN FT
Rolled Erosion Prevention Category 20	12634 SQ YD

### CONSTRUCTION ACTIVITY REQUIREMENTS:

 DES:
 T.V.
 DR:
 M.A.
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR

 UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED

 CHK:
 M.A.
 CHK:
 J.K.

 PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

**Erosion Prevention Measures** 

- Exposed soils (including stockpiles) must have erosion protection/cover initiated immediately and completed within 7 days per Section 23.
- For DNR Public Waters with "work in waters restrictions" during specified fish spawning time frames, stabilization must be completed for all exposed soil areas within 200 feet of the water's edge, and draining to the water, within 24 hours during the restriction period.
- The wetted perimeter of the last 200 linear feet of ditches must be stabilized within 24 hours of connecting to a surface water or property line.
- Temporary or permanent ditches or swales that are being used as a sediment containment system during construction must be stabilized within 24 hours after no longer being used as a sediment containment system.
- Pipe outlets must have energy dissipation within 24 hours of connecting to a surface water or permanent stormwater treatment system.
- Mulch, hydro mulch, tackifier, polyacrylamide, or similar erosion prevention practices cannot be used within the normal wetted perimeter of drainage ditches or swale sections with a continuous slope greater than 2%.

### Sediment Control Measures

- Sediment control practices must be established on downgradient perimeters and upgradient of any buffer zones.
  Sediment control practices must be established at the base of stockpiles on the
- downgradient perimeter.
- Stockpiles must be located outside of natural buffers or surface waters, including
- Stormwater conveyances (e.g., curb and gutter systems) unless there is a bypass.
   Inlet protection BMPs must be installed according to plan.
   Vehicle tracking BMPs must be established where vehicles are exiting the site to minimize
- street tracking. Sediment tracked onto a public street must be removed within 24 hours. Topsoil must be preserved unless infeasible.
- Soil compaction must be minimized.
- Discharges from BMPs must be directed to vegetated areas, unless infeasible.
   50-foot natural buffers must be preserved or (if maintaining buffer is infeasible) redundant sediment controls must be provided when a surface water is located within 50 feet of the project's earth disturbances and drains to the surface water.

### Dewatering and Basin Draining:

- If dewatering is required on the site, there must be a plan in place to prevent nuisance conditions, erosion, and inundation of wetlands
  - Dewatering related to the construction activity must comply with the MNR100001 Permit, reference 10. Dewatering discharge that may have turbid or sediment laden discharge must be discharged to a temporary or permanent sedimentation basin on the project site whenever possible and BMP's must be implemented to prevent water containing sediment or other pollutants from being discharged to surface waters or downstream properties
- \* If using filters with backwash water, backwash water must be hauled away for disposal, returned to the beginning of the treatment process, or incorporated into the site in a manner that does not erode into runoff.

### Inspection Requirements:

- The SWPPP must identify the trained person (as identified in item 21.2.b) who will conduct inspections
- Inspections must be performed once every 7 days.
   Inspections must be performed within 24 hours of a rain event greater than 0.5 inches in 24 hours.
- Inspection and Maintenance records should include:
- 1. Date and time of inspection.
- Name of person(s) conducting inspections.
   Accurate findings of inspections, including the specific location where corrective
- actions are needed 4. Corrective actions taken (including dates, times, and party completing maintenance
- activities)
- Date and amount of rainfall events greater than 0.5 inch in 24 hours.
   Rainfall amounts must be obtained by a properly maintained rain gauge installed
- onsite, or by a weather station that is within one mile or by a weather reporting svstem.
- 7. Requirements to observe any discharge that may be occurring during the inspection. Discharge should also be described and photographed.

### Maintenance Requirements:

- All nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow.
- Perimeter control devices must be repaired, replaced, or supplemented when nonfunctional or sediment reaches one-half the height of the device.
- \* Temporary and permanent sediment basins must be drained, and sediment removed
- when the depth of sediment collected reaches one-half storage volume.
   All sediment deposits and deltas must be removed from surface waters (including drainage
- ways, catch basins, and other drainage systems) and the removal areas restabilized within seven days.
- Sediment on paved surfaces (e.g., sediment tracked from vehicles) must be removed within one calendar day of discovery.
  Permanent stormwater treatment BMPs must be inspected and maintained.
- Long term maintenance of the permanent storm water management system will be by the Responsibility of MNDOT.

### Pollution Prevention Management Measures:

DATE

 Proper storage, handling, and disposal of construction products, materials, and wastes is required.

Hazardous materials and toxic waste (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) must be stored in waterproof containers with secondary containment. Storage and disposal of hazardous waste must be in compliance with MPCA regulations. Runoff containing such material must be collected, removed from the site, treated, and disposed of at an approved solid waste or chemical disposal facility. Building products that have the potential to leach pollutants and pesticides, fertilizers, treatment chemicals and landscape materials must be under cover by plastic sheeting or temporary roofs to prevent discharge or protected by similar effective means to prevent contact with stormwater.

\* Address fueling and maintenance of equipment or vehicles and spill prevention and response

Spill cleanup materials must be available on site. Material must include but not limited to brooms, mops, rags, gloves, absorbent material, sand plastic and metal containers. Spills greater than 5 gallons that reach storm water conveyance systems connected to a Water of the State must be immediately reported to the MPCA State Duty Officer.





\* The permanent stormwater treatment system is constructed, meets all requirements, and is operating as designed.

The SWPPP and associated records must be stored and maintained by an employee or representative of the Owner for 3 years after the submission of the NOT. Responsibility for overseeing the records will be transferred to another employee or representative should the current personnel become uninvolved with the project or

Owner. These records must include the following: 1). The final SWPPP

construction Company: Name Address City, State Email Phone\_ Training of

### Instructor

Training da

Training a



Contacts

Agency MPCA

ACOE SWPPP Des

MPCA Duty

\* Limit exterior vehicle and equipment washing to a defined area of the site

External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained, and waste properly disposed of.

 Describe the containment for concrete and other washout wastes. Concrete washout site: all liquid and solid waste generated by concrete washout operations must be contained in a leak proof containment facility or impermeab liner. The liquid and solid wastes must not contact the ground, and there must not be runoff from the concrete washout operations or areas. Liquid and solid waste must be disposed of properly and in compliance with the MPCA regulations. A sign must be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.

Portable toilets must be positioned so that they are secure. Licensed sanitary waste management handlers must dispose of sanitary waste.

Permit Termination Conditions: Permanent uniform perennial vegetative cover must be established at minimum 70% density of its expected final growth

All temporary synthetic erosion prevention and sediment control BMPs must be removed, and the surrounding area must be restored to as designed.

Clean out sediment from conveyance systems and permanent stormwater treatment

Statistic return to design capacity).
 For residential sites, install temporary erosion protection and downgradient perimeter control and distribute the MPCA's Homeowner Fact Sheet.
 Submit a Notice of Termination (NOT) to the MPCA.

### Record Retention Requirements:

• Permittees must keep the SWPPP, including all changes to it, and inspections and

maintenance records at the site during normal working hours by permittees who have operational control of that portion of the site

- Any other stormwater related permits required for the project
   Records of all inspection and maintenance conducted during construction
- 4). All permanent operation and maintenance agreements that have been implemented, including all right-of-way, contracts, covenants and other binding requirements regarding perpetual maintenance
- 5). All required calculations for design of the temporary and permanent Stormwater Management Systems.

### ADDITIONAL CONTENT FOR MNDOT SWPPP NARRATIVES

### MnDOT 2573.3 CONSTRUCTION REQUIREMENTS:

PERMITTEES MUST COMPLY WITH MINNESOTA 2020 STANDARD SPECIFICATIONS STORM WATER MANAGEMENT CONSTRUCTION REQUIREMENTS 2573.3 A THRU P.

EROSION CONTROL SUPERVISOR: TBD and will be documented prior to start of

Zip	
ganization/sponsor	
ate(s)	
tivity/content	
s) name(s)	

CHAIN OF RESPONSIBILITY: TBD and will be documented prior to start of construction.

### SWPPP Table of Contents

on	Title	Location
Pervious vs Impervious	SWPPP Supplement	Sheet 6
low	Plan and Profile	Sheet 29
rface Water	SWPPP Supplement	Sheet 8
	Erosion Control Plan	NA
nation Conditions	SWPPP Supplement	Sheet 9
uctures	Plan and Profile	Sheet 16-18
oulations	NA	NA
rol Tabulations	SWPPP Supplement	Sheet 8
rol Sheets	Erosion Control Plan	Sheet 32
rol Details	Erosion control Details	Sheet 9-13
Tabulations	N/A	N/A
Plans	N/A	N/A
Details	N/A	N/A
ions	N/A	N/A
	N/A	N/A
onds	N/A	N/A

	1		
	Permit	Name	Phone Number
	NPDES	Matt King	218-846-8103
		-	
/	Zoning/Environmental	Greg Lillemon	218-685-8225
	WCA	Jared House	218-658-5395
	Area Hydrologist	Emily Siira	320-634-7345
	Groundwater	Joshua Prososki	218-671-7944
	Appropriations Hydrologist		
	404	Brainerd Office	651-290-5767
ign	NPDES	Widseth	320-335-5027
or	NPDES	TBD	TBD
Officer	NPDES	N/A	1-800-422-0798

### STORM WATER POLLUTION PREVENTION PLAN

SHEET NO. 8 OF 32 SHEETS





NAME: PLOT



SEDIMENT CONTROL LOG

1" X 2" X 24" LONG WOODEN STAKES. STAKES SHALL BE DRIVEN THROUGH THE BACK HALF OF THE SEDIMENT CONTROL LOG

AT AN ANGLE OF 45 DEGREES WITH THE

TOP OF THE STAKE POINTING UPSTREAM. (1)

FLOW

SHEET NO.11 OF 32 SHEETS

FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

**TEMPORARY SEDIMENT CONTROL** 

MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES. (4) INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

(2) PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

(1) SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1'FOR DITCH CHECKS OR 2'FOR OTHER

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

TYPE 1 (COMPOST), TYPE 2 (SLASH MULCH), OR TYPE 4 (TOPSOIL)

DITCH PROFILE 4' MIN.

- SEDIMENT CONTROL LOG

1" X 2" X 24" LONG WOODEN STAKES AS

FLOW

NEEDED. STAKES SHALL BE DRIVEN OVER THE SEDIMENT CONTROL LOG AT AN ANGLE

OF 45 DEGREES WITH THE TOP OF THE

STAKE POINTING UPSTREAM. (2)



PLOT\$NAME@\$\$ NAME: & FILF IPLOT PATH

> SHEET NO.12 OF 32 SHEETS

DITCH CHECK

TEMPORARY SEDIMENT CONTROL
VELOCITY 1.5 FT./SEC.
VELOCITY 4.5 FT./SEC.
/ELOCITY 12 FT./SEC.
THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DED.
6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE
CH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA: $HECKS (FT.) = Y = \frac{DITCH CHECK HEIGHT (FT.)}{2 CHANNEL SLOPE} X 100$
CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH
3886 & 3889.
N PRODUCT.
8" 4 DGE -

FILTER BERM TYPE 3 OR 5 (SHOWN)



# TYPICAL SECTION TH 55 TH 55 STA 53+00 TO STA 60+86 STA 65+14 TO STA 72+76





# SHEET NO. 15 OF 32 SHEETS



SP 2608-31 (TH 55)

**DESIGN DATA** DESIGNED IN ACCORDANCE WITH 2017 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. HL-93 LIVE LOAD BARREL INSIDE WIDTH = 12'-0" BARREL INSIDE HEIGHT = 8'-0" BARREL LENGTH = 76'-0" 2'-0" EST. MIN. FILL DEPTH  $(\widehat{A})$  = 2'-6" EST. MAX. FILL DEPTH  $\hat{B}$  = SKEW ANGLE = 0 DEG MATERIAL DESIGN PROPERTIES: PRECAST REINFORCED CONCRETE: f'c = 5 KSI CONCRETE fy = 65 KSI WELDED WIRE REINFORCEMENT  $f_y = 60$  KSI REINFORCEMENT BARS HL-93 LRFR BRIDGE OPERATING RATING FACTOR RF = 1.30 LIST OF SHEETS DESCRIPTION NO. 16 GENERAL PLAN AND ELEVATION 17 PLAN VIEW 18 EXCAVATION AND BACKFILL 19 PRECAST BARREL DETAILS 20 PRECAST END SECTION TYPE I DETAILS 21-22 PRECAST END SECTION TYPE III DETAILS 23 EMBANKMENT PROTECTION

### CONSTRUCTION NOTES:

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

24 BRIDGE SURVEY SHEET

ALL EXPOSED CONCRETE EDGES SHALL BE FORMED WITH A 1/2" OR 3/4" CHAMFER UNLESS OTHERWISE NOTED.

CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPEC. 2411 AND 2412, EXCEPT AS NOTED.

REFER TO REMAINDER OF GRADING PLAN FOR SUPERSTRUCTURE EXCAVATION AND BACKFILL. SPEC. 2451.

THE BAR SIZES SHOWN IN THIS PLAN ARE IN U.S. CUSTOMARY DESIGNATIONS.

REFER TO TITLE SHEET FOR THE SUBSURFACE UTILITY INFORMATION.

BRIDGE NO. 26X03 LOCATION: 1.2 MI. E. OF CSAH 11 ON TH 55 OVER MUSTINKA RIVER CONTROL POINT STA 63+00 DOUBLE 12' x 8' MNDOT STD. PRECAST CONCRETE CULVERT IDENTIFICATION NO. 513							
GENERAL PLAN AND ELEVATION							
SEC. 27/34 T 130 N R 43 W STONY BROOK TOWNSHIP GRANT COUNTY							
APPROVED Edward A . Satzen Digitally signed by Edward Lutgen Date: 2024.07.30 17:27:53							
STATE BRIDGE ENGINEER 05'00' DATE							
DES: T.V. DR: M.A.							
СНК: М.А. СНК: Ј.К.							
ENERAL PLAN AND ELEVATION							
SHEET NO.16 OF 32 SHEETS							





(3) PLASTIC SOIL CAP SHALL CONSIST OF 50% MIN. PASSING THE NO. 200 SIEVE AND 20% MIN. CLAY SIZE PARTICLES.

### NOTES:

WIDTH OF PLASTIC SOIL CAP: FOR PLASTIC SOIL EMBANKMENT - FULL WIDTH OF THE GRANULAR TREATMENT PLUS 2'ON EACH END. FOR GRANULAR SOIL EMBANKMENT - A MINIMUM OF ONE DIAMETER OR WIDTH OF STRUCTURE ON EITHER SIDE OF THE STRUCTURE.

THE TREATMENT IS NORMALLY REQUIRED ON THE INLET END.

THE THICKNESS OF THE PLASTIC SOILS CAP (B-C) IS 3' MINIMUM AND 6' MAXIMUM. FILL HEIGHTS LESS THAN 15'.

- NORMALLY EXTEND THE LINE THRU (A-C) TO GRADING P.I. HOWEVER, IF THIS RESULTS IN A THICKNESS (B-C) GREATER THAN 6', REDUCE B-C TO 6' OR LESS AND INTERSECTION THE FILL SLOPE RATHER THAN THE P.I..

FILL HEIGHTS GREATER THAN 15'.

- THE LINE THRU A-C NEED NOT INTERSECT THE GRADING P.I. INSTEAD INTERSECT THE FILL SLOPE AT A POINT NOT LESS THAN 5' ABOVE THE STRUCTURE MAINTAINING AT LEAST A MINIMUM THICKNESS (B-C) OF 3'.

EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.



					1							
DES:	т.v.	DR:	M.A.	CERTIFIED BY		LIC.NO	26109	DATE _	07/29/2024		BRID	GE 26X03
CHK:	M.A.	CHK:	J.K.	NAME:	TRACEY VON BARGEN					SP	2608-31	(TH 55)

# D3 BOX CULVERT EXCAVATION AND BACKFILL 7/30/20245)SHEET NO. 18 OF 32 SHEETS



BY ME OR UNDER MY DIRECT SUPERVISION AND THAT

I AM A DULY LICENSED PROFESSIONAL ENGINEER

UNDER THE LAWS OF THE STATE OF MINNESOTA

0

REV. NO.

DATE

ME 070 DISTRIBUTION SLAB IS NOT REQUIRED, INDICATE "NO" IN THIS BOX. \*\* FOR PEDESTRIAN CULVERT APPLICATIONS HIDE-AWAY OR RECESSED TIE CONNECTIONS ARE REQUIRED, SEE STANDARD PLATE 3145. IF REQUIRED, INDICATE "YES" IN THIS BOX. APPROVED: MARCH 24, 2011 Nancer Joubenberger STATE BRIDGE ENGINEER I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED

ΒY

**REVISION DESCRIPTION** 

NOT INCLUDING THE DESIGN LANE LOAD. BOXES WITH SPANS OF 16 FT. ARE DESIGNED FOR HL-93 LIVE LOADS INCLUDING THE DESIGN LANE LOAD.

S	SP	2608-31		(TH 55)	S	ГА	631
and -		07/29/2024	TITLE:	PREC	TZA	00	NCR
LICENSED PROFESSIONAL ENGINEER	IC.	DATE NO. 26109		BAR	REL	ĎĔ	TĂI
	LICENSED PROFESSIONAL ENGINEER	LICENSED FROFESSIONAL ENGINEER VON BARGEN LIC.	SP 2608-31 LICENSED FROFESSIONAL ENGINEER VON BARGEN LIC. NO. 26109	SP 2608-31 LICENSED FROFESSIONAL ENGINEER DATE VON BARGEN LIC. NO. 26109	SP 2608-31 (TH 55) LICENSED FROFESSIONAL ENGINEER VON BARGEN LIC. NO. 26109	SP 2608-31 (TH 55) ST LICENSED FROFESSIONAL ENGINEER VON BARGEN LIC. NO. 26109	SP 2608-31 (TH 55) STA LICENSED FROFESSIONAL ENGINEER DATE VON BARGEN LIC. NO. 26109

### CONSTRUCTION NOTES

CONSTRUCT CULVERTS IN ACCORDANCE WITH SPEC. 2412 EXCEPT AS NOTED.

REFER TO THE GENERAL PLAN AND ELEVATION SHEET FOR THE DISTANCE BETWEEN BARRELS OF ADJACENT BOXES AND TO STANDARD FIGURE 5-395.115 FOR MATERIAL REQUIREMENTS FOR FILL BETWEEN ADJACENT BOXES.

PROVIDE WELDED WIRE REINFORCEMENT, SHEAR REINFORCEMENT AND REINFORCEMENT BARS IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M259.

11/2" MIN. AND 2" MAX. CONCRETE COVER ON ALL REINFORCEMENT, INCLUDING SHEAR REINFORCEMENT, EXCEPT FOR TONGUE AND GROOVE DETAIL.

ANY OF THE FOLLOWING COMBINATIONS OF STEEL REINFORCEMENT MAY BE USED: (a) 1 OR 2 LAYERS OF WELDED WIRE REINFORCEMENT OR (b) 1 LAYER OF WELDED WIRE REINFORCEMENT AND 1 LAYER OF REINFORCEMENT BARS OR

C) I LAYER OF REINFORCEMENT BARS. DEVELOP REINFORCEMENT IN ACCORDANCE WITH AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS". IF BAR REINFORCEMENT IS SUBSTITUTED FOR WELDED WIRE REINFORCEMENT, INCREASE THE AREA OF REINFORCEMENT BY 8%, AND SUBMIT DESIGN CALCULATIONS VERIFYING COMPLIANCE WITH AASHTO 5.7.3.4. "CONTROL OF CRACKING BY DISTRIBUTION OF REINFORCEMENT".

MAXIMUM SIZE OF REINFORCEMENT BARS IS NO. 6. THE MAXIMUM WELDED WIRE REINFORCEMENT SIZE IS W23 PER LAYER (MAXIMUM OF 2 LAYERS).

SPACE CENTER TO CENTER OF TRANSVERSE WIRES NOT LESS THAN 2" NOR MORE THAN 4". SPACE CENTER TO CENTER OF LONGITUDINAL WIRES NOT MORE THAN 8".

WHEN USING AS1, AS7, AND AS8 REINFORCEMENT AS ONE CONTINUOUS CAGE WITH SPLICES OCCURRING IN THE CENTER OF THE TOP AND BOTTOM OF THE BOX SECTION, THE MIN. LAP LENGTH FOR THE AS7 AND AS8 IS 15".

WELDING IS NOT PERMITTED ON REINFORCEMENT BARS OR WELDED WIRE REINFORCEMENT, EXCEPT THAT THE ORIGINAL WELDING REQUIRED TO MANUFACTURE WIRE REINFORCEMENT IS ACCEPTABLE.

WHEN REINFORCEMENT IS CUT, PLACE ADDITIONAL REINFORCEMENT ON BOTH SIDES OF THE CUT MEMBER TO REPLACE OR EXCEED THE CUT STEEL.

USE CONCRETE MIX NO. 3W82 WITH NO CALCIUM CHLORIDE ALLOWED.

SHOP DRAWING APPROVAL IN ACCORDANCE WITH SPEC. 3238.2A IS NOT REQUIRED UNLESS OPENINGS OR ATTACHMENTS ARE PLACED ON A BARREL SEGMENT.

COMPACT THE FIRST 1.5' (LOOSE) OF FILL ABOVE THE BOX WITH LIGHT COMPACTION EQUIPMENT SUCH AS PLATE COMPACTORS OR WALK BEHIND ROLLERS.

TRANSVERSE REINFORCEMENT IS PARALLEL TO THE CULVERT SPAN LONGITUDINAL REINFORCEMENT IS PERPENDICULAR TO THE CULVERT SPAN.

(1) USE 1" DIAMETER CULVERT TIES. SEE STANDARD PLATE NO. 3145 FOR DETAILS.

(2) USE 12" VERTICAL, 12" HORIZONTAL HAUNCHES ON ALL BOX SIZES.

(3) PLACE LONGITUDINAL REINFORCEMENT DENOTED AS As6 IN ALL SLABS AND WALLS WITH A MINIMUM OF 0.06 SQ. IN./FT.

(4) ROADWAY OR SHOULDER FILL HEIGHTS OF LESS THAN 2'-O" REQUIRE A THICK DISTRIBUTION SLAB WITH CONCRETE MIX 3S52.

PLACE CAST-IN-PLACE DISTRIBUTION SLABS WITH 3" MIN. SELECT GRANULAR MATERIAL IN ACCORDANCE WITH SPEC. 3149.2B BETWEEN BARREL AND DISTRIBUTION SLAB.

PRECAST DISTRIBUTION SLABS MAY BE USED FOR FILL HEIGHTS OVER 1'-O". PROVIDE 6" MINIMUM SELECT GRANULAR MATERIAL IN ACCORDANCE WITH SPEC. 3149.2B BETWEEN BARREL AND SLAB.

EXTEND THE WIDTH OF THE DISTRIBUTION SLAB TO THE OUTSIDE EDGES OF THE ROADWAY SHOULDERS UNLESS DIRECTED BY THE ENGINEER.

REDESIGN THE DISTRIBUTION SLAB PER THE MODOT PAVEMENT DESIGN MANUAL IF IT IS USED AS PAVEMENT SURFACE.

PAYMENT FOR THE DISTRIBUTION SLAB AND SELECT GRANULAR MATERIAL BENEATH THE SLAB IS INCLUDED IN THE PRECAST CONCRETE BOX CULVERT PAY ITEM. (5) REFER TO SPEC, 2412 FOR SEALANT REQUIREMENTS.

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1	

3+00			FIG. 5-395.101(A)				
00575	DES:	T.V.	DR:	M.A.	APPROVED:		
CRETE	CHK:	M.A.	CHK:	J.K.	7/30/2024	BRIDGE NO.	
AILS	SHEET	N	). 19	OF 32	2 SHEETS	26X03	



2024 7/29/. VAME: ЕD

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### CONSTRUCTION NOTES

SEE STANDARD FIG. 5-395.101(A) AND FIG. 5-395.101(B) FOR ADDITIONAL DIMENSIONS AND CONSTRUCTION NOTES.

- USE CONCRETE MIX NO. 3W82 WITH NO CALCIUM CHLORIDE ALLOWED.
- ALL END SECTIONS REQUIRE CURB ON LINTEL BEAM.
- ON ALL END SECTIONS FOR WATERWAYS, USE DROPWALLS ON INLET AND OUTLET ENDS.

SEE STANDARD FIG. 5-395.115 FOR EMBANKMENT PROTECTION.

FINISH ALL EXPOSED EDGES OF CONCRETE WITH 1/2" OR 3/4" CHAMFER OR RADIUS UNLESS OTHERWISE NOTED.

MAXIMUM SIZE OF REINFORCEMENT BARS IS NO. 6, EXCEPT NO. 7 OR 8 BARS MAY BE USED FOR A+D ON SPANS GREATER THAN 14'. THE MAXIMUM WELDED WIRE REINFORCEMENT SIZE IS W23 PER LAYER (MAXIMUM OF 2 LAYERS).

- (1) WITH DOUBLE BOXES LOCATE DROPWALL JOINTS BETWEEN END SECTIONS. SEE STANDARD FIG. 5-395.111 FOR ALTERNATE DROPWALLS. LIMITS OF EXCAVATION FOR DROPWALL ARE APPROXIMATELY THE SAME AS DROPWALL DIMENSIONS. DROPWALL CONCRETE MIX IS 3S52, OR 3Y82 IF PRECAST. FURNISHING AND INSTALLATION OF DROPWALL TO BE INCLUDED IN PRICE BID FOR END SECTIONS. DROPWALL NOT REQUIRED FOR NON-WATERWAY USE.
- (2) CHECK LOCATION TO DETERMINE WHETHER A TONGUE OR A GROOVE IS USED.
- 3 fill hole with grout. Grout consists of 1 part cement and 2 parts sand. Use type 1a air entrained portland cement. GROUT MIX MAXIMUM SLUMP IS 4".
- (4) 3'-6" MIN. TONGUE AND 3'-7" MIN. GROOVE FOR CULVERTS WITH 6'-0" SPANS. 5'-0" MIN. TONGUE AND 5'-1" MIN. GROOVE FOR CULVERTS WITH SPANS GREATER THAN 6'-0". CENTER TONGUE AND GROOVE ON ♀ OF EACH APRON JOINT. TONGUE AND GROOVE JOINT ON ALL THREE SIDES OF APRON IS PERMISSIBLE.
- (5) WELDED WIRE REINFORCEMENT OF EQUAL AREA MAY BE SUBSTITUTED FOR REBAR.
- (6) APRON TOP AND BOTTOM SLAB THICKNESS MAY BE 8" FOR CULVERTS WITH 6'SPANS ONLY. BOTTOM SLAB THICKNESS MAY BE INCREASED UP TO 2" MAX. PROVIDED CONCRETE COVER IS 11/2" MIN., 2" MAX.
- (7) 10" MINIMUM TOP SLAB FOR 14' AND 16' SPANS.
- (8) PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO THE CULVERT SPAN WITH A MINIMUM OF 0.06 SQUARE INCHES PER PERIPHERAL FOOT ON ALL FACES OF THE BARREL



(9) REFER TO SPEC, 2412 FOR SEALANT REQUIREMENTS. ₭ THIS PROJECT

A	<b>.++, A+</b>	Ь
REIN	FORCE	MENT
SPAN	Att	Atb
(FT.)	(IN2/FT.)	(IN 2/FT.)
6	0.27	0.44
8	0.47	0.60
10	0.62	0.74
12	0.88	1.06
14	1.20	1.58
16	1.52	2.09

NO. 4 BENT BAR

AI REINFOF	ot RCEMENT
SPAN (FT.)	Abt (IN²/FT.)
6-10	0.20
12	0.30
14	0.39
16	0.39

MENSION	<b>IS 8</b>	Ah	REINFOR	CEM	ENT				
63	SECT	ION 3	ы	SECT	ION 4	<b>b</b> 5	SECT	ION 5	<b>b6</b>
115	Z	Ah	114	ZZ	Ah	TI5	ZZZ	Ah	
(1'-9" )									
1'-9"									
1'-9"									
1'-9" (3'-9" )	(4')	(0.192)	(1'-9" )						
3'-9"	4'	0.192	1'-9"						
4'-9"	6'	0.192	1'-9"						
5'-9"	8' (4')	0.192	1'-9" (3'-9" )	(4')	(0.192)	(1'-9" )			
6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"			
7'-9"	6'	0.20	4'-9"	6'	0.192	1'-9"			
8'-9"	6'	0.28	5'-9"	8' (4')	0.192	1'-9" (3'-9" )	(4')	(0.192)	(1'-9")
9'-9"	6'	0.40	6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"
OOT OF LE	NGTH (	IN <sup>2</sup> /FT	.)						

3+00				F	IG. 5-395.1	.02
ND SECTION	DES: CHK:	T.V. M.A.	DR: CHK:	M.A. J.K.	APPROVED: 7/30/2024	BRIDGE NO.
7 <sup>1</sup> /2*	SHEET	NC	. 20	OF 3	2 SHEETS	26X03



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### CONSTRUCTION NOTES

SEE STANDARD FIG. 5-395.101(A) AND FIG. 5-395.101(B) FOR ADDITIONAL DIMENSIONS AND CONSTRUCTION NOTES.

USE CONCRETE MIX NO. 3W82 WITH NO CALCIUM CHLORIDE ALLOWED.

ON ALL END SECTIONS FOR WATERWAYS, USE DROPWALLS ON INLET AND OUTLET ENDS.

SEE STANDARD FIG. 5-395.115 FOR EMBANKMENT PROTECTION.

FINISH ALL EXPOSED EDGES OF CONCRETE WITH 1/2" OR 3/4" CHAMFER OR RADIUS UNLESS OTHERWISE NOTED.

- (1) WITH DOUBLE BOXES LOCATE DROPWALL JOINTS BETWEEN END SECTIONS. SEE STANDARD FIG. 5-395.111 FOR ALTERNATE DROPWALLS. LIMITS OF EXCAVATION FOR DROPWALL ARE APPROXIMATELY THE SAME AS DROPWALL DIMENSIONS. DROPWALL CONCRETE MIX IS 3S52, OR 3Y82 IF PRECAST. FURNISHING AND INSTALLATION OF DROPWALL TO BE INCLUDED IN PRICE BID FOR END SECTIONS. DROPWALL NOT REQUIRED FOR NON-WATERWAY USE.
- (2) CHECK LOCATION TO DETERMINE WHETHER A TONGUE OR A GROOVE IS USED.
- (3) SEE STANDARD FIG. 5-395.104 (2 OF 2) FOR LINTEL BEAM DETAILS.
- (4) FILL HOLE WITH GROUT. GROUT CONSISTS OF 1 PART CEMENT AND 2 PARTS SAND. USE TYPE 1A AIR ENTRAINED PORTLAND CEMENT. GROUT MIX MAXIMUM SLUMP IS 4".
- (5) 2" DIAMETER HOLE, 6" DEEP IN TOP OF THE SECTION WALL.
- (6) 3'-6" MIN. TONGUE AND 3'-7" MIN. GROOVE FOR CULVERTS WITH 6'-0" SPANS. 5'-0" MIN. TONGUE AND 5'-1" MIN. GROOVE FOR CULVERTS WITH SPANS GREATER THAN 6'-O". CENTER TONGUE AND GROOVE ON € OF EACH APRON JOINT. TONGUE AND GROOVE JOINT ON ALL THREE SIDES OF APRON IS PERMISSIBLE.
- (7) WELDED WIRE REINFORCEMENT OF EQUAL AREA MAY BE SUBSTITUTED FOR REBAR.
- (8) APRON TOP AND BOTTOM SLAB THICKNESS MAY BE 8" FOR CULVERTS WITH 6'SPANS ONLY. BOTTOM SLAB THICKNESS MAY BE INCREASED UP TO 2" MAX. PROVIDED CONCRETE COVER IS 11/2" MIN., 2" MAX.
- (9) PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO THE CULVERT SPAN WITH A MINIMUM OF 0.06 SQUARE INCHES PER PERIPHERAL FOOT ON ALL FACES OF THE BARREL.
- (1) REFER TO SPEC, 2412 FOR SEALANT REQUIREMENTS.

LAYER OF	WELDED	WIRE	REIN	FORC	EMEN		
			÷	÷	ò	-	÷

LAYER OF WELDED WIRE REINFORCEMENT -1

### REINFORCEMENT LAYER DETAIL

DROPWALL (CAST-IN-PLACE OR PRECAST)

WHEN MORE THAN ONE LAYER OF WELDED WIRE REINFORCEMENT IS USED TO OBTAIN THE REQUIRED REINFORCEMENT AREAS, PLACE THE WIRES OF THE WELDED WIRE REINFORCEMENT AS SHOWN.

ENSION	IS 8	Ah	REINFOR	CEM	ENT				
<b>b</b> 3	SECT	ION 3	ы	SECT	ION 4	<b>b</b> 5	SECT	ьс	
115	Z	Ah	114	ZZ	Ah	TID	ZZZ	Ah	по
(1'-9" )									
1'-9"									
1'-9"									
-9" (3'-9" )	(4')	(0.192)	(1'-9" )						
3'-9"	4'	0.192	1'-9"						
4'-9"	6'	0.192	1'-9"						
5'-9"	8' (4')	0.192	1'-9" (3'-9" )	(4')	(0.192)	(1'-9" )			
6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"			
7'-9"	6'	0.20	4'-9"	6'	0.192	1'-9"			
8'-9"	6'	0.28	5'-9"	8' (4')	0.192	1'-9" (3'-9" )	(4')	(0.192)	(1'-9" )
9'-9"	6'	0.40	6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"
FOOT OF L	ENGTH	I (IN <sup>2</sup> /I SPANS	-T.) OF 14'AND 1		Y.				

FIG. 5-395.104 (1 OF 2) APPROVED: T.V. M.A. DES: DR: BRIDGE NO. 7/30/2024 СНК: М.А. CHK: J.K. 26X03 SHEET NO. 21 OF 32 SHEETS



UNDER THE LAWS OF THE STATE OF MINNESOTA

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### CONSTRUCTION NOTES

SEE STANDARD FIG. 5-395.101(A) AND FIG. 5-395.101(B) FOR ADDITIONAL DIMENSIONS AND CONSTRUCTION NOTES.

ALL END SECTIONS REQUIRE CURB ON LINTEL BEAM.

GROUT CONSISTS OF 1 PART CEMENT AND 2 PARTS SAND. USE TYPE 1A AIR ENTRAINED PORTLAND CEMENT. GROUT MIX MAXIMUM SLUMP IS 4".

- (1) 3" DIA. HOLE THROUGH LINTEL BEAM AND 2" DIA. HOLE IN TOP OF WALL SECTION. PLACE NO. 8 DOWEL, 1'-O" LONG, IN HOLE AND FILL HOLE WITH GROUT.
- (2) CHECK THE LOCATION TO DETERMINE WHETHER A TONGUE OR A GROOVE IS USED. TONGUE AND GROOVE TO TERMINATE AT HAUNCH.
- (3) FOR SPANS UNDER 10'-0" USE NO. 8 BARS. FOR SPANS OF 10'-0" TO 12'-0" USE NO. 9 BARS. FOR 14'-0" AND 16'-0" SPAN, USE NO. 10 BARS.
- (4) ALTERNATE BAR BEND MAY BE USED FOR NO. 4 BENT BAR.

STA. 63+00					FIG.	. 5	5-395.104 (	2 OF 2)
ND SECTION	DES:	T.V.		DR:	M.A.		APPROVED:	
I TIPI F BARREI	CHK:	M.A.		CHK:	J.K.		7/30/2024	BRIDGE NO.
$7\frac{1}{2}$	SI	IEET	NC	. 22	? OF	3	2 SHEETS	26X03



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RIPRAP CLASS	RIPRAP CLASS	т	w	
X	III	1'-6"	3'-0"	
	IV	2'-0"	4'-0"	

00				F	IG. 5-395.	115
TEATION	DES:	T.V.	DR:	M.A.	APPROVED:	
TECTION	CHK:	M.A.	CHK:	J.K.	7/30/2024	BRIDGE NO.
VERTS	SHEET	NC	). 23	OF 32	2 SHEETS	26X03



### NOTES & GUIDELINES

GENERAL INFORMATION:

- 1. THE CONTRACTOR SHALL FURNISH, PLACE AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED. INPLACE SIGNING MUST ALSO BE MAINTAINED OR TEMPORARILY RELOCATED FOR CONSTRUCTION ACTIVITIES.
- 2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
- 3. ALL DISTANCES ARE APPROXIMATE. PLANS ARE NOT DRAWN TO SCALE.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD.
- 5. SIGN PLACEMENTS SHALL NOT OBSTRUCT EXISTING SIGNS.
- 6. THE ITEM ''TRAFFIC CONTROL'' COVERS ALL DEVICES SHOWN ON THE PLAN SHEETS AND OTHER SETUPS REQUIRED BY THE CONTRACTOR'S OPERATIONS.
- 7. ALL TRAFFIC CONTROL DEVICES, INCLUDING OVERHEAD SIGNS ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
- 8. WHEN SIGNS ARE PLACED, THEY SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE FIRST PARAGRAPH OF SECTION 2A-18 AND 2A-19 OF THE MMMUTCD.IF THIS IS NOT POSSIBLE, THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POSTS SHALL ALSO BE REMOVED.
- 9. ALL TEMPORARY RIGID ORANGE WARNING AND RIGID ORANGE GUIDE SIGNS SHALL BE FABRICATED WITH TYPE HP FLO (HIGH PERFORMANCE FLUORESCENT SIGN SHEETING FOR RIGID TEMPORARY OR PERMANENT SIGNS). ALL RIGID SIGNS PLACED, OTHER THAN THOSE WITH ORANGE BACKGROUNDS, ON A TEMPORARY BASIS SHALL BE FABRICATED WITH TYPE HP (HIGH PERFORMANCE SHEETING FOR RIGID PERMANENT SIGNS). INPLACE SIGNS THAT STILL APPLY DURING TEMPORARY OPERATIONS MAY REMAIN IN PLACE WITH NO CHANGE IN SIGN SHEETING REQUIRED.

BARRICADES MAY BE FABRICATED WITH EITHER ASTM TYPE VII. SIGN SHEETING FOR RIGID TEMPORARY SIGNS OR TYPE HP (HIGH PERFORMANCE SHEETING FOR RIGID PERMANENT SIGNS)

10. SIGN COVERS SHALL BE CONSTRUCTED OF ALUMINUM PANELS PLACED WITH NYLON WASHERS BETWEEN THE SIGN AND COVER. THEY SHALL CAUSE NO DAMAGE TO THE SIGN PANELS THEY COVER.

SPECIFIC NOTES:

- (11) mount on a single post extended from a driven ground post.
- (12) ALL BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. PLACE LEFT OR RIGHT BARRICADES APPROPRIATE TO TRAFFIC FLOW.
- (13) THE CONTRACTOR SHALL FURNISH SIX (6) ADDITIONAL TYPE III BARRICADES WITH THE APPROPRIATE LAMPS.
- (14) ALL CONFIRMATORY DETOUR ROUTE MARKERS SHALL HAVE CARDINAL DIRECTION PLAQUES. CONFIRMATORY DETOUR SIGNS TO BE PLACED AT 2 MILE INTERVALS THROUGHOUT THE DETOUR.
- (15) "500 FEET", ''1000 FEET'', ''1500 FEET'', AND ''2000 FEET''
- (16) modify to black lettering on orange background to modify inplace directional SIGN ARROWS.

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	NOTES	SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	NOTES	SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	NOTES
ROAD CLOSED AHEAD	W20-3	BLACK ON ORANGE	48''X48''		XXX FEET	W16-2P	BLACK ON ORANGE	36′′X24′′	(15)	JCT	M2-1A	WHITE ON BLUE	21''X15''	
DETOUR AHEAD	W20-2	BLACK ON ORANGE	48''X48''		Ŷ	M6-3A	WHITE ON BLUE	21''X15''	<u>(6</u>	DETOUR	M4-8	BLACK ON ORANGE	24''X12''	(1) (4)
ROAD CLOSED TO THRU TRAFFIC	R11-4	BLACK ON WHITE	60''X30''		STOP	R1-1	WHITE ON RED	48''X48''		END	M4-6	BLACK ON ORANGE	24''X12''	
	M4-10(L)	BLACK ON ORANGE	48′′X18′′			W3-1	RED, WHITE ON YELLOW	48''X48''		EAST	M3-2A	WHITE ON BLUE	24′′X12′′	(1) (14
	M4-10(R)	BLACK ON ORANGE	48′′X18′′		(ALL WAY)	R1-3P	WHITE ON RED	18''X6''		WEST	M3-4A	WHITE ON BLUE	24''X12''	(1) (4
<b>E</b> TMINNESOTA 55	M1-5M	WHITE AND GOLD ON BLUE	24''X24''	1114						-冲ָׂי	TYPE A	YELLOW		13
(J	M5-1AL	WHITE ON BLUE	21''X15''	(6)							TYPE III BARRICADE	WHITE & ORANGE	8'	1213
	M5-1AR	WHITE ON BLUE	21''X15''	16								·		
	M6-1A	WHITE ON	21''X15''	(16)										



## (WENDELL TO TH 59)

DESa T.V. DRa M.A. CHK: M.A. CHK: J.K.





BLUE



# TRAFFIC CONTROL













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AL CU REE	RVE DATA ST	LT	LS	×	Y	
				487,107.1790	201,035.1820	
				492,304.0995	200,992.6933	90° 28' 06.33"
00.00"	17,188.734'	219.217'	438.411'	492,523.3095	200,990.9011	PI
				492,444.6254	218,180.8527	
				492,742.4938	200,994.7000	89° 00' 25.40"
				492,742.4938	200,994.7000	
				492,742.4940	200,994.7000	

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SHEET NO. 28 OF 32 SHEETS



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12 X 8 BOX CUL	VERTS (2)			· · · · ·		
INLET ELÉVATIO	N 1099.67	<b>'</b> . <u>:</u>		· · · :		1100
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