

PLAN SYMBOLS

- EXISTING CENTERLINE
- - - PROPOSED CENTERLINE
- EXISTING RIGHT-OF-WAY LINE
- - - PROPOSED RIGHT-OF-WAY LINE
- CONSTRUCTION PERMANENT EASEMENT LINE
- LOT SECTION PROPERTY LINE
- CONSTRUCTION LIMITS CLEAR ZONE
- 901 INTERMEDIATE EXISTING CONTOURS
- 900 INDEX EXISTING CONTOURS
- 901.25 GRADE BREAK INTERMEDIATE EXISTING CONTOURS
- 901 INTERMEDIATE PROPOSED CONTOURS
- 900 INDEX PROPOSED CONTOURS
- 901.25 GRADE BREAK INTERMEDIATE PROPOSED CONTOURS
- EXISTING DITCH LINE
- PROPOSED DITCH LINE
- EXISTING COUNTY FENCE LINE - ANY TYPE
- SILT FENCE
- WETLAND BOUNDARY
- TREE LINE EXISTING TREES (TO REMAIN)
- TREE SYMBOLS
- X BM BENCH MARK / IRON MONUMENT
- LIGHT POLE / BOLLARD
- SOIL BORING
- BUILDING
- PROPOSED RIPRAP
- [MB] MAILBOX
- EXISTING / PROPOSED SIGN

UTILITY SYMBOLS

- GAS GAS LINE
- PETRO PETRO PETROLEUM LINE
- OHE OVERHEAD ELECTRIC
- UGE UNDERGROUND ELECTRIC
- T UNDERGROUND TELEPHONE LINE
- CATV UNDERGROUND CABLE TV LINE
- FO UNDERGROUND FIBER OPTIC LINE
- MnDOT FO PRIVATE MnDOT UNDERGROUND FIBER OPTIC LINE
- (T) MANHOLE (T) JUNC. BOX TELEPHONE STRUCTURES
- (X) ELECTRIC JUNC. BOX
- (TV) CABLE TV JUNC. BOX
- (F) MANHOLE (F) JUNC. BOX FIBER OPTIC STRUCTURES
- EXISTING POWER POLE AND GUY WIRE
- EXISTING / PROPOSED STORM DRAIN LINE
- EXISTING / PROPOSED FLARED END SECTION
- EXISTING / PROPOSED CATCH BASIN
- EXISTING / PROPOSED MANHOLE
- (W) WELL

HATCH LEGEND

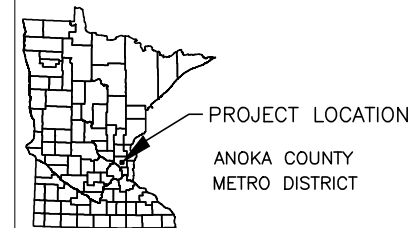
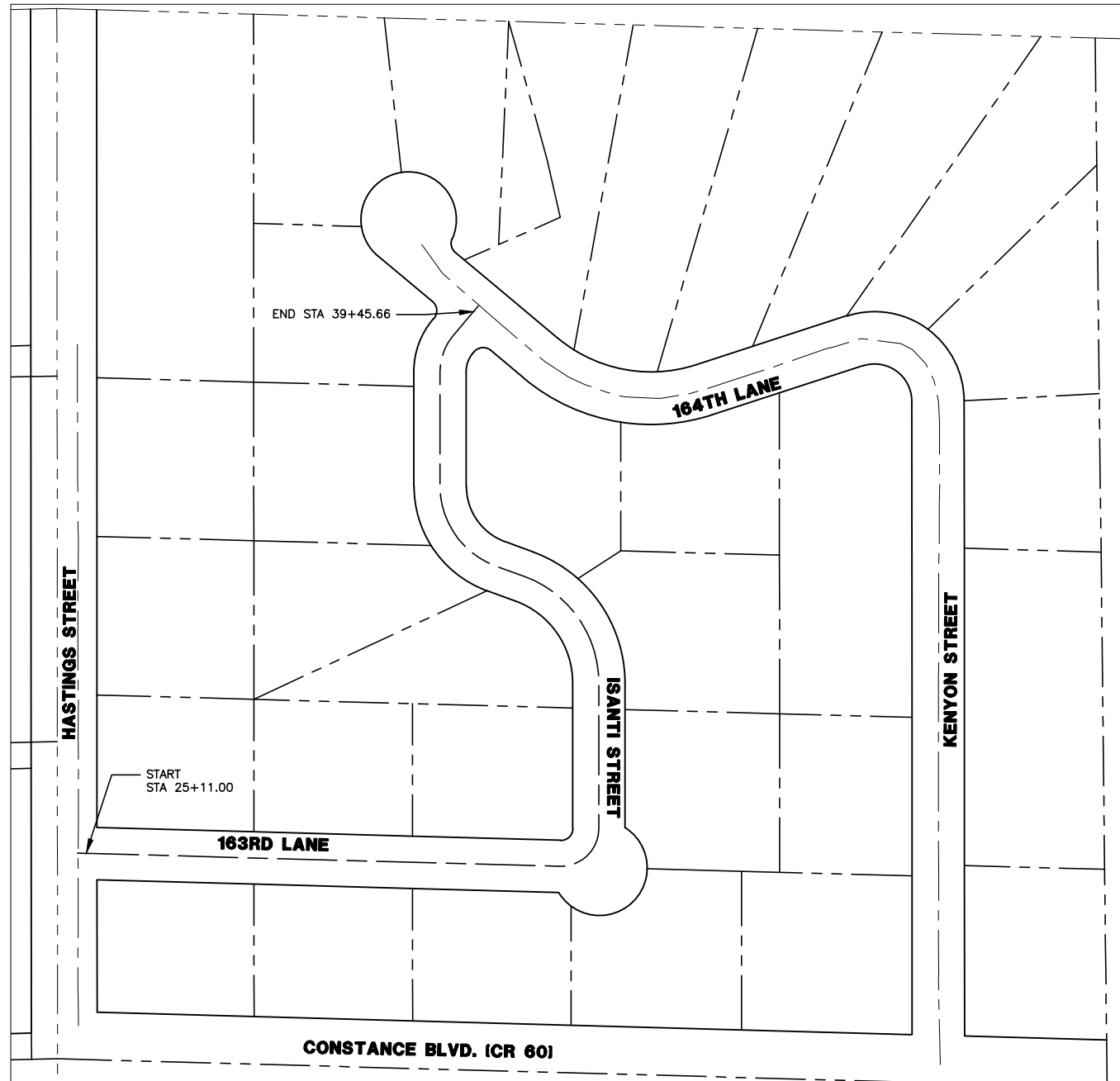
- BITUMINOUS
- CONCRETE
- EROSION CONTROL
- GRAVEL
- HYDROMULCH
- REMOVAL
- GRAVEL
- CONCRETE
- BITUMINOUS

MINNESOTA DEPARTMENT OF TRANSPORTATION

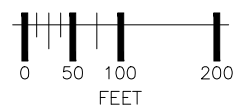
City of Ham Lake, Minnesota

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, PLANT MIXED BITUMINOUS SURFACE, STORM DRAINS, AND CONCRETE CURB

LOCATED ON 163RD LANE FROM HASTINGS STREET TO ISANTI STREET AND ISANTI STREET FROM 163RD LANE TO 164TH LANE.



PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY



ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MN MUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

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."

THE UTILITIES SHOWN ARE BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES BY CONSTRUCTION. ACTUAL DETERMINATIONS WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

GOVERNING SPECIFICATIONS

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

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE 2022 MnMUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

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18-19	STORMWATER POLLUTION PREVENTION PLAN
20-24	CROSS SECTIONS

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

THIS PLAN CONTAINS 24 SHEETS

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.

SIGNED: *David A. Krugler*
David A. Krugler
DATE: 04/03/24 REG. NO. 48768

APPROVED: *David A. Krugler*
CITY ENGINEER - HAM LAKE DATE: 04/03/24

**RFC ENGINEERING, INC.
Consulting Engineers**

13635 Johnson Street NE Telephone 763-862-8000
Ham Lake, MN 55304 Fax 763-862-8042

JOB NO. 2103 SHEET NO. 1 OF 24 SHEETS
FILE: 36-2-150

STATEMENT OF ESTIMATED QUANTITIES

TAB	SHEET	NOTES	ITEM NO.	ITEM	UNIT	ENTIRE PROJECT
						ESTIMATED QUANTITIES
			2021.501	MOBILIZATION	LUMP SUM	1
AG	3		2101.502	CLEARING	EACH	4
AG	3		2101.502	GRUBBING	EACH	5
AC	3		2104.502	REMOVE DRAINAGE STRUCTURE	EACH	2
AA	3	6	2104.502	REMOVE SIGN	EACH	2
AD	3		2104.502	SALVAGE MAILBOX AND SUPPORT	EACH	13
BA	4	11	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH) DRIVEWAY	LIN FT	47.2
BA	4	11	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH) DRIVEWAY	LIN FT	176.8
AE	3	8, 9	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	199
AB	3		2104.503	REMOVE METAL PIPE	LIN FT	51
AF	3		2104.503	SALVAGE CHAIN LINK FENCE	LIN FT	670
BA	4	11	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	42.7
BA	4	11	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	418
AI	3	4, 5	2106.507	EXCAVATION - COMMON	CU YD	1 466
AI	3	4, 5	2106.507	EXCAVATION - SUBGRADE	CU YD	3 231
AI	3	4, 5	2106.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD	3 002
AI	3	4, 5	2106.507	COMMON EMBANKMENT (CV)	CU YD	1 256
BK	4		2108.504	GEOTEXTILE FABRIC TYPE 5	SQ YD	4 381
AI	3		2211.509	AGGREGATE BASE CLASS 5	TON	100
BA	4	11	2211.604	AGGREGATE BASE (CV) CLASS 5 4.0" THICK-DRIVEWAY	SQ YD	703.3
AH	3	8, 9	2215.504	FULL DEPTH BITUMINOUS PAVEMENT RECLAMATION	SQ YD	4 440
BA	4	11	2360.504	TYPE SP 9.5 WEARING COURSE MIXTURE (2,C) 2.0" THICK-DRIVEWAY	SQ YD	703.3
BC	4	12	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2,C)	TON	329
BB	4	12	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)	TON	329
	16-17	1, 5	2501.502	24" GS PIPE APRON	EACH	1
	16-17	1, 5	2501.502	15" RC PIPE APRON	EACH	1
	16-17	1, 5	2501.602	TRASH GUARD FOR 15" CP PIPE APRON	EACH	1
	16-17	1, 5	2501.602	TRASH GUARD FOR 24" RC PIPE APRON	EACH	1
	16-17	1, 5	2503.503	24" CP PIPE SEWER (SMOOTH)	LIN FT	149
	16-17	1, 5	2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	275
	16-17	1, 5	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	464
	16-17	1, 5	2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	672
	16-17	1, 5	2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	275
	16-17	2, 5	2506.602	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL-2X3	EACH	10
	16-17	2, 5	2506.602	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1-48"	EACH	9
	16-17	2, 5	2506.602	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2-60"	EACH	1
	16-17	2, 5	2506.602	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 3-72" SUMP	EACH	2
	16-17	2, 5	2506.602	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 4-60"	EACH	1
	16-17	2, 5	2506.602	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 5-72" SUMP	EACH	1
BJ	4		2511.504	GEOTEXTILE FILTER TYPE 4	SQ YD	34.2
BI	4		2511.507	RANDOM RIPRAP CLASS III	CU YD	9.5
BD	4		2531.503	CONCRETE CURB AND GUTTER DESIGN D312 (MODIFIED)	LIN FT	2 929
BA	4	11	2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	41.1
BE	4		2540.602	INSTALL MAILBOX WITH SUPPORT	EACH	13
		9	2563.601	TRAFFIC CONTROL	LUMP SUM	1
	18-19	9	2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1
BF	4,18-19	9	2573.502	STORM DRAIN INLET PROTECTION	EACH	24
BH	4,18-19	9	2573.502	CULVERT END CONTROLS	EACH	2
BG	4,18-19	9	2573.503	SILT FENCE, TYPE MS	LIN FT	268
	4,18-19	3	2575.605	TURF ESTABLISHMENT (25-131 SEEDING MIX)	ACRE	1.1

NOTES:

1. SELECT GRANULAR BORROW, STRUCTURAL EXCAVATION, AND GRANULAR BACKFILL FOR STORM PIPES ARE INCIDENTAL.
2. FILTER FABRIC AND FABRIC WRAP FOR CATCH BASINS AND MANHOLES ARE INCIDENTAL.
3. ALL DISTURBED AREAS DETERMINED NOT TO BE PAVED, AGGREGATE SURFACE, CONCRETE SURFACE OR RIPRAPPED SHALL HAVE 4 INCHES OF TOPSOIL. FERTILIZER TYPE 2, MULCH MATERIAL, AND SEED MIXTURE NO. 25-131 PER MNDOT STANDARD SPECIFICATION 3876, APPLY TYPE 1 MULCH AT THE RATE OF 2 (TWO) TONS PER ACRE (TO ACHIEVE A 90% UNIFORM GROUND COVERAGE). SEED MIXTURE, WATER, TYPE 2 FERTILIZER, AND MULCH ARE INCIDENTAL. SOIL TESTING TO DETERMINE FERTILIZER MIXTURE RATIO AND RATE OF APPLICATION IS INCIDENTAL.
4. MATERIAL FOUND IN THE SUBCUTS THAT IS UNSUITABLE FOR FILL IN THE ROADBED SHALL BE REMOVED OFF-SITE.
5. THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE CONSTRUCTION LIMITS.
6. SIGNS INCLUDE POSTS.
7. INSTALLATION AND MAINTENANCE ARE INCIDENTAL.
8. AVERAGE DEPTH OF EXISTING BITUMINOUS PAVEMENT IS 4.5".
9. AVERAGE DEPTH OF EXISTING BASE MATERIAL IS 3.5".
10. INSTALLATION AND MAINTENANCE ARE INCIDENTAL.
11. QUANTITY SHOWN USED FOR DRIVEWAY CONSTRUCTION. SEE DETAIL RFC-363A3.
12. BITUMINOUS MATERIAL FOR TACK COAT SHALL BE INCIDENTAL.

SEED MIX 25-131: COMMERCIAL TURF
 MULCH TYPE 1
 PLANT APRIL 1ST - JUNE 1ST FOR SPRING PLANTING OR
 JULY 20TH - SEPTEMBER 20TH FOR FALL PLANTING

BASIS FOR ESTIMATED QUANTITIES

AGGREGATE BASE 105 LBS/S.Y./INCH
 BITUMINOUS MIXTURE 110 LBS/S.Y./INCH
 TACK COAT 0.05 GAL./S.Y.
 TYPE 1 MULCH 2 TONS/ACRE

PLATE NO.	STANDARD PLATES - RFC ENGINEERING (IN THE PLANS)
RFC-355A	D312M CONCRETE CURB AND GUTTER
RFC-363A3	PRIVATE DRIVEWAY/FIELD ENTRANCE
RFC-365C5	TYPICAL FLOATING ROAD SECTION - EXISTING ROAD CONSTRUCTION
RFC-366E17	TYPICAL STREET SECTION
RFC-380A	CURB END
RFC-459B	RECTANGULAR CATCH BASIN
RFC-463	FABRIC AROUND CATCH BASIN
RFC-465A1	RECTANGULAR INLET FOR ROUND MANHOLE
RFC-465A3	RECTANGULAR INLET FOR ROUND MANHOLE - VARIABLE SUMP
RFC-465C	ROUND MANHOLE
RFC-465C5	ROUND MANHOLE - VARIABLE SUMP
RFC-466B	RCP TRASH GUARD
RFC-466C	CPP TRASH GUARD
RFC-654	STORM DRAIN BEDDING FOR RIGID AND FLEXIBLE PIPE *MNDOT DETAIL
RFC-857	SILT FENCE AT FES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY

PLATE NO.	MnDOT STANDARD PLATES
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3129A	METAL APRON FOR CORRUGATED POLYETHYLENE PIPE
3134D	RIPRAP AT CSP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
7100H	CONCRETE CURB & GUTTER
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
9350C	MAILBOX SUPPORT SWING-AWAY TYPE (3 SHEETS)



UTILITIES: CENTURYLINK (763) 712-5017
 CENTERPOINT ENERGY (763) 323-2760
 COMCAST (952) 607-4078
 CONNEXUS ENERGY (763) 323-4268
 GREAT RIVERS ENERGY (763) 445-5984

DATE	REVISION HISTORY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Dore Hough
 DATE 04/03/24 REG. NO. 48768

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HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET
 STATEMENT OF ESTIMATED QUANTITIES
 AND STANDARD PLATES

DWG: 2103 QTY
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 2 OF 24
 FILE: 36-2-161

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

REMOVE SIGN PANELS TYPE C						AA
STATION	LOCATION	TYPE	SIGN NO.	POST	CODE NO.	PANEL LEGEND
31+40	163RD LN. - LT	REMOVE	C-20	SINGLE	D3-1	STREET
39+23	ISANTI ST. - RT	REMOVE	C-20	SINGLE	D3-1	STREET
TOTAL				2		

REMOVE PIPES				AB
STATION	LOCATION	TYPE	LENGTH (LIN FT)	
33+45	ISANTI ST. - ACROSS	CMP	30	
33+45	ISANTI ST. - RT	CMP	21	
TOTAL			51	

REMOVE STRUCTURE			AC
STATION	LOCATION	QUANTITY	
33+45	ISANTI ST. - ACROSS	2	
TOTAL		2	

SALVAGE MAILBOX SUPPORT			AD
STATION	LOCATION	TYPE	
22+69	163RD LN. - LT	DOUBLE	
28+02	163RD LN. - LT	DOUBLE	
29+31	163RD LN. - LT	SINGLE	
30+52	163RD LN. - LT	SINGLE	
31+99	ISANTI ST. - LT	DOUBLE	
34+43	ISANTI ST. - LT	DOUBLE	
36+33	ISANTI ST. - LT	SINGLE	
37+68	ISANTI ST. - LT	DOUBLE	
TOTAL			13

SAWCUT BITUMINOUS PAVEMENT			AE
STATION	LOCATION	LIN FT	
25+11	163RD LN. - ROADWAY	101	
39+46	ISANTI ST. - ROADWAY	98	
TOTAL		199	

SALVAGE CHAIN LINK FENCE			AF
STATION	LOCATION	LIN FT	
33+99 TO 34+44	ISANTI ST. - RT	59	
34+91 TO 37+00	ISANTI ST. - RT	208	
37+26 TO 39+31	ISANTI ST. - RT	201	
39+31 TO 49+23	164TH LN. - RT	202	
TOTAL		670	

TREE REMOVAL				AG
STATION	LOCATION	CLEARING (EACH)	GRUBBING (EACH)	
26+74	163RD LN. - LT	1	1	
31+19	163RD LN. - LT	0	1	
36+27	ISANTI ST. - RT	3	3	
TOTAL		4	5	

RECLAIM BITUMINOUS PAVEMENT			AH
STATION	LOCATION	SQ YD	
25+11 TO 31+50	145TH AVE. - ROADWAY	1,993	
31+50 TO 39+46	ISANTI ST. - ROADWAY	2,447	
TOTAL		4,440	

NOTES

- TOP OF GRADING SUBGRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
- BITUMINOUS AND CONCRETE DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFFSITE IN ACCORDANCE WITH MnDOT SPEC. 2104.3C3.
- COMPACTION OF ALL GRADING AND BASE ITEMS SHALL BE BY THE "QUALITY COMPACTION METHOD".
- USE TACK COAT BETWEEN ALL BITUMINOUS LAYERS AND BETWEEN BITUMINOUS AND CONCRETE CURB AND GUTTER.
- STRIP ALL TOPSOIL AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE TOPSOIL OR USE AS FILL OUTSIDE OF ROAD CORE.
- WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN THIS WORK SHALL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.
- STATIONING FOR LOCATION OF EXISTING AND NEW SIGNS IS APPROXIMATE.

EARTHWORK SUMMARY				AI
EXCAVATION (CU YD)		EMBANKMENT (CU YD)		
TOPSOIL	535 CU YD (EV)	TOPSOIL	535 CU YD (EV)/1.1 =	486 CU YD (CV)
COMMON	931 CU YD (EV)	COMMON EX	931 CU YD (EV)/1.3 =	716 CU YD (CV)
SUBGRADE	3,231 CU YD (EV)	GRANULAR FILL		3,002 CY YD (CV)
BIT RECLAIM	59 CU YD (EV)	WASTE	3,231 CU YD (EV)	
4,756 CU YD (EV) ①		4,258 CU YD (CV) ②		
		592 CU YD (CV) TOPSOIL		
		3,666 CU YD (CV) COMMON		
<p>NOTES:</p> <p>① TOTAL EXCAVATION (EV) REQUIRED FOR PROJECT.</p> <p>② TOTAL EMBANKMENT (CV) REQUIRED FOR PROJECT.</p>				



UTILITIES: CENTURYLINK (763) 712-5017
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DATE	REVISION HISTORY

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Dave Krueger

DATE 04/03/24 REG. NO. 48768

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HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET
 EARTHWORK SUMMARY AND TABULATIONS

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG:	2103 TAB 1
DATE:	03/28/24
JOB NUMBER:	2103
SHEET:	3 OF 24
FILE:	36-2-162

RESIDENTIAL DRIVEWAYS								BA
STATION	LOCATION	REMOVE (S.Y.)		SAWCUT (L.F.)		PLACE (S.Y.)		
		CONC	BIT	CONC	BIT	CONC	BIT	CL5
26+23	RT.		30.0		14.6		31.9	31.9
26+88	LT.	19.1		20.0		18.2		
27+83	LT.		21.5		14.5		22.2	22.2
27+90	RT.		22.3		16.0		24.2	24.2
29+60	RT.		27.5		10.9		29.6	29.6
30+72	LT.	23.6		27.2		22.9		
31+35	RT.		60.3		24.3		245.8	245.8
31+65	RT.		58.9		16.0		150.3	150.3
34+83	LT.		34.4		14.8		35.1	35.1
34+83	RT.		39.1		14.8		39.7	39.7
36+21	LT.		63.4		16.7		62.0	62.0
37+12	RT.		25.1		15.9		27.2	27.2
37+56	LT.		35.5		18.3		35.3	35.3
TOTAL		42.7	418.0	47.2	176.8	41.1	703.3	703.3

CONCRETE CURB & GUTTER DESIGN D312 MODIFIED			BD
STATION TO STATION	LOCATION		LIN FT
25+11 TO 31+50	163RD LN. - R		656
25+11 TO 31+50	163RD LN. - L		640
31+50 TO 39+46	ISANTI ST. - R		819
31+50 TO 39+46	ISANTI ST. - L		814
TOTAL			2,929

SILT FENCE			BG
STATION TO STATION	LOCATION		LIN. FT.
32+17 TO 34+00	ISANTI ST. - RT		193
33+00 TO 33+69	ISANTI ST. - RT		75
TOTAL			268

CULVERT END CONTROL			BH
STATION	LOCATION		QUANTITY
33+37	ISANTI ST. - RT		1
33+37	ISANTI ST. - LT		1
TOTAL			2

MAILBOX SUPPORT (SWING-AWAY TYPE)			BE
STATION	LOCATION		TYPE
22+69	163RD LN. - LT		DOUBLE
28+02	163RD LN. - LT		DOUBLE
29+31	163RD LN. - LT		SINGLE
30+52	163RD LN. - LT		SINGLE
31+99	ISANTI ST. - LT		DOUBLE
34+43	ISANTI ST. - LT		DOUBLE
36+33	ISANTI ST. - LT		SINGLE
37+68	ISANTI ST. - LT		DOUBLE
TOTAL			13

RIPRAP CLASS 3			BI
STATION	LOCATION		CU. YD.
33+37	ISANTI ST. - RT		9.5
TOTAL			9.5

TYPE SP 12.5 BITUMINOUS WEARING COURSE MIXTURE (SPWEB240C)				BB
STATION TO STATION	LOCATION	SQ. FT. (1.5 IN)		TON
25+11 TO 31+50	163RD LANE - ROADWAY	14,412.46		146
31+50 TO 39+46	ISANTI STREET - ROADWAY	18,150.43		183
TOTAL				329

STORM DRAIN INLET PROTECTION			BF
STATION	LOCATION		QUANTITY
25+21	163RD LN. - LT		1
25+23	163RD LN. - RT		1
25+97	163RD LN. - BOTH		2
28+22	163RD LN. - BOTH		2
29+23	163RD LN. - BOTH		2
30+27	163RD LN. - BOTH		2
31+43	163RD LN. - BOTH		2
32+59	ISANTI ST. - BOTH		2
33+36	ISANTI ST. - LT		1
35+09	ISANTI ST. - BOTH		2
36+40	ISANTI ST. - BOTH		2
37+22	ISANTI ST. - LT		1
39+34	ISANTI ST. - BOTH		2
48+26	164TH LN. - BOTH		2
TOTAL			24

GEOTEXTILE FABRIC TYPE 4			BJ
STATION	LOCATION		SQ. YD.
33+37	ISANTI ST. - RT		34.2
TOTAL			34.2

TYPE SP 9.5 BITUMINOUS WEARING COURSE MIXTURE (SPWEA240C)				BC
STATION TO STATION	LOCATION	SQ. FT. (1.5 IN)		TON
25+11 TO 31+50	163RD LANE - ROADWAY	14,412.46		146
31+50 TO 39+46	ISANTI STREET - ROADWAY	18,150.43		183
TOTAL				329

GEOTEXTILE FABRIC TYPE 5			BK
STATION	LOCATION		SQ. YD.
25+11 TO 31+50	163RD LN.		3,072
31+50 TO 34+00	ISANTI ST.		1,108
TOTAL			4,181

NOTES:

- TOP OF GRADING SUBGRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
- BITUMINOUS AND CONCRETE DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFFSITE IN ACCORDANCE WITH MnDOT SPEC. 2104.3C3.
- COMPACTION OF ALL GRADING AND BASE ITEMS SHALL BE BY THE "QUALITY COMPACTION METHOD".
- USE TACK COAT BETWEEN ALL BITUMINOUS LAYERS AND BETWEEN BITUMINOUS AND CONCRETE CURB AND GUTTER.
- STRIP ALL TOPSOIL AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE TOPSOIL OR USE AS FILL OUTSIDE OF ROAD CORE.
- WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN THIS WORK SHALL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.
- STATIONING FOR LOCATION OF EXISTING AND NEW SIGNS IS APPROXIMATE.
- SIGN AND POST INSTALLED BY OTHERS



UTILITIES: CENTURYLINK (763) 712-5017
 CENTERPOINT ENERGY (763) 323-2760
 COMCAST (952) 607-4078
 CONNEXUS ENERGY (763) 323-4268
 GREAT RIVERS ENERGY (763) 445-5984

DATE	REVISION HISTORY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Dave Krueger
 DATE 04/03/24 REG. NO. 48768

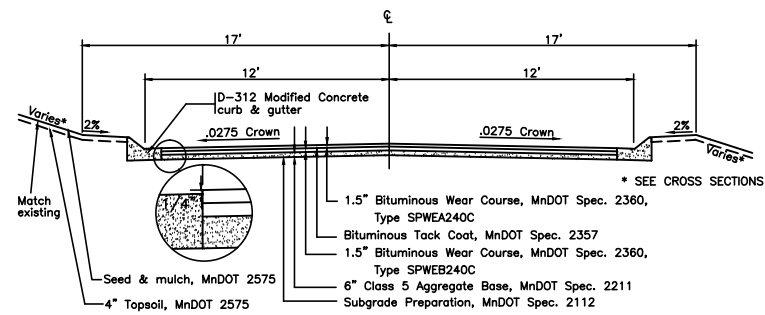
RFC ENGINEERING, INC.
 Consulting Engineers

13635 Johnson Street
 Ham Lake, MN 55304
 Telephone 763-862-8000
 Fax 763-862-8042

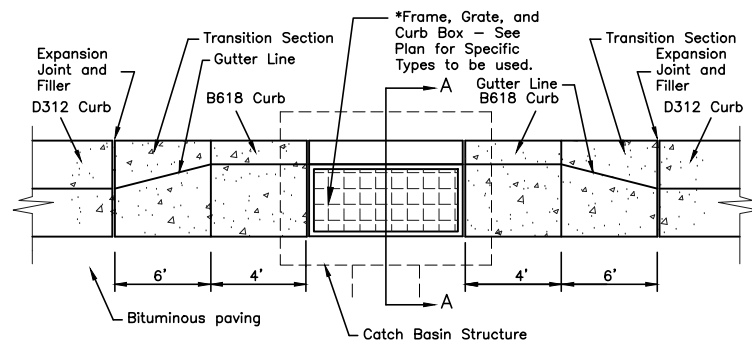
HAM LAKE IMPROVMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET
 EARTHWORK SUMMARY AND TABULATIONS

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

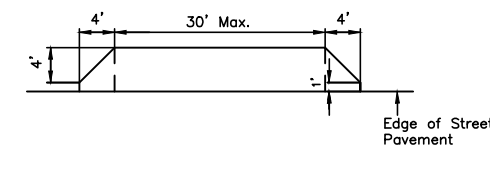
DWG: 2103 TAB 2
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 4 OF 24
 FILE: 36-2-163



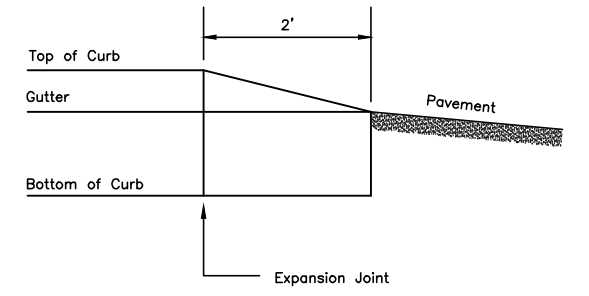
TYPICAL URBAN SECTION
TYPICAL STREET SECTIONS RFC-366E17
NOT TO SCALE



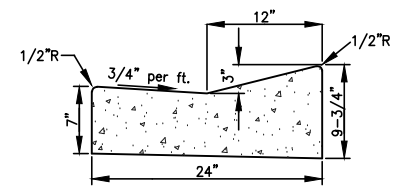
CATCH BASIN PLAN



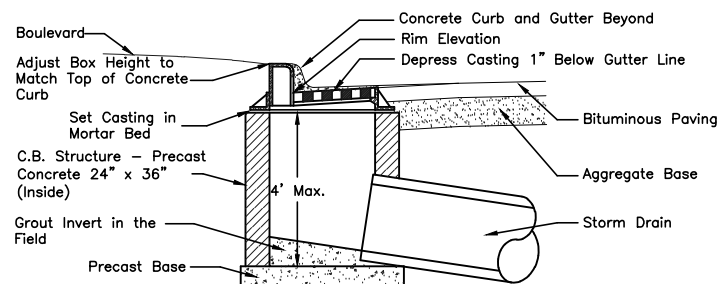
- Note:
- Match existing driveway width and elevation at matchline unless otherwise directed by engineer (See Plans).
 - If existing driveway is concrete, apron and driveway shall be constructed of 6" concrete with 6" x 6" - 6/6 welded wire fabric per MnDOT Spec. 3303 in flat sheets, not rolls. Epoxy coated dowel bars conforming to MnDOT Spec. 3302 shall be placed in the existing driveway pavement along the sawcut line. Dowel bars shall be properly coated with a MnDOT approved lubricant. Dowel bars shall be size #4 and placed at 24" OC. All work shall conform to MnDOT Spec. 2301 and 2531. Concrete shall be ready-mix 3,900 PSI at 28 days, with air content of 5% to 7%, coarse aggregate shall be 1" max. class A and per MnDOT Spec. 3137. Joint sealer shall be hot-poured, low modulus, mastic type per MnDOT Spec. 3725. Membrane curing compound shall be per MnDOT Specs. 3754 and 2301.3M.
 - If existing driveway is gravel, apron and driveway within R/W shall be constructed per existing bituminous driveways. Gravel driveways matching beyond R/W shall be 6" Class 5.
 - If existing driveway is bituminous, apron and driveway behind apron shall be bituminous per A. above. All bituminous work shall conform to MnDOT Specifications 2112, 2211, 2357 and 2360. Tack coat is to be applied between concrete and bituminous surfaces.
 - Driveways in fill sections to slope up from 1" curb lip to end of apron (5' from back of curb) at min of 2% then slope to matchline. See Plan for slope.



CURB END DETAIL RFC-380A
NOT TO SCALE

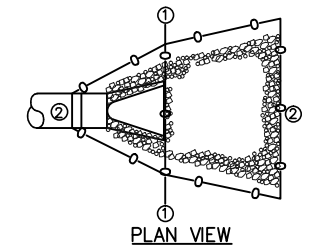


D312 MODIFIED CONCRETE CURB AND GUTTER RFC-355A
NOT TO SCALE



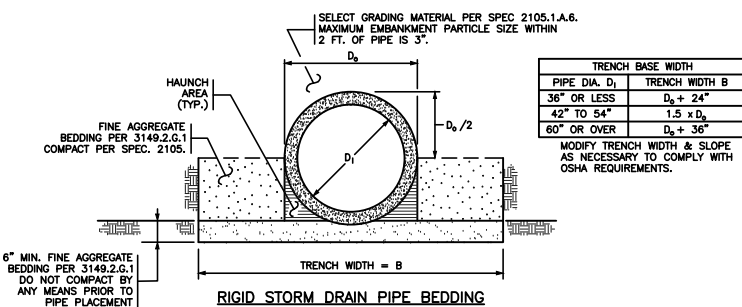
RECTANGULAR CATCH BASIN RFC-459B
NOT TO SCALE
SPECIAL

PRIVATE DRIVEWAY/FIELD ENTRANCE RFC-363A3
NOT TO SCALE



SILT FENCE AT FES RFC-857
NOT TO SCALE

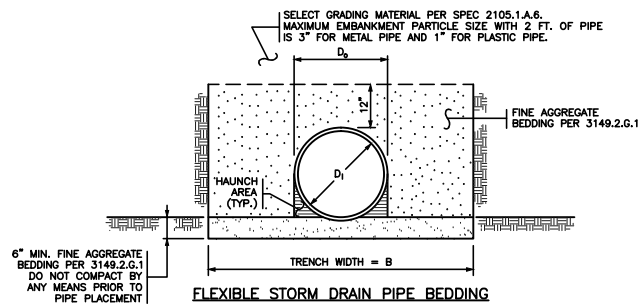
- SEQUENCING:
- Place silt fence along construction limits, the portion of silt fence in front of the pipe shall be removed during flared end section placement.
 - Once the flared end section is placed, silt fence shall be furnished and installed around the top of the flared end section and surrounding the riprap.
 - Any additional outlet protection shall be added as required.
 - Contractor may substitute silt fence for bio-roll or rock log to act as weir for flow into culvert.



- CONSTRUCTION SEQUENCE
- LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
 - FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
 - FURNISH AND INSTALL PIPE TO GRADE.
 - AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE HAUNCH UNDER THE PIPE) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR). COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF THE APPLICABLE MATERIAL TYPE ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
 - PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE MID-HEIGHT WHEN COMPACTED.
 - COMPLETE REMAINING BACKFILL.

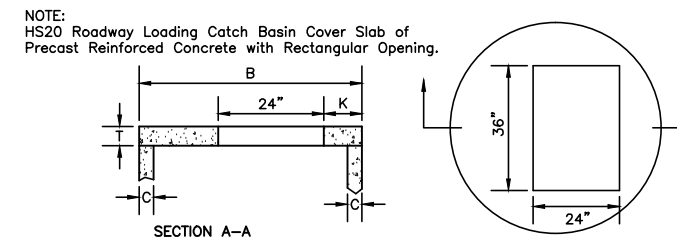
NOTES
EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER.
PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501 OR 2503.

STORM DRAIN BEDDING FOR RIGID AND FLEXIBLE PIPE RFC-654
NOT TO SCALE

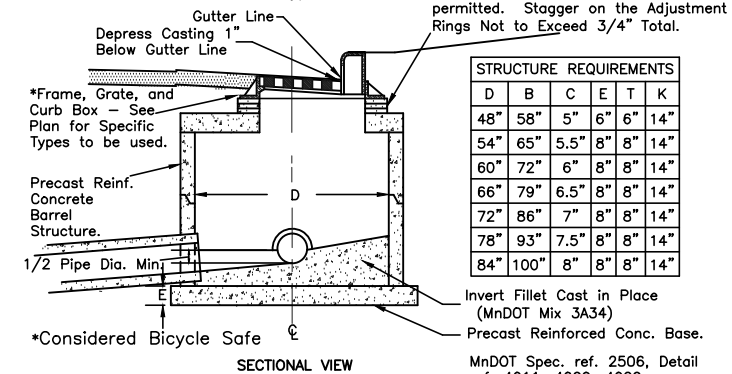


- CONSTRUCTION SEQUENCE
- LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
 - FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
 - FURNISH AND INSTALL PIPE TO GRADE.
 - AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE HAUNCH UNDER THE PIPE) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR). COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF THE APPLICABLE MATERIAL TYPE ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
 - PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE MID-HEIGHT WHEN COMPACTED.
 - COMPLETE REMAINING BACKFILL.

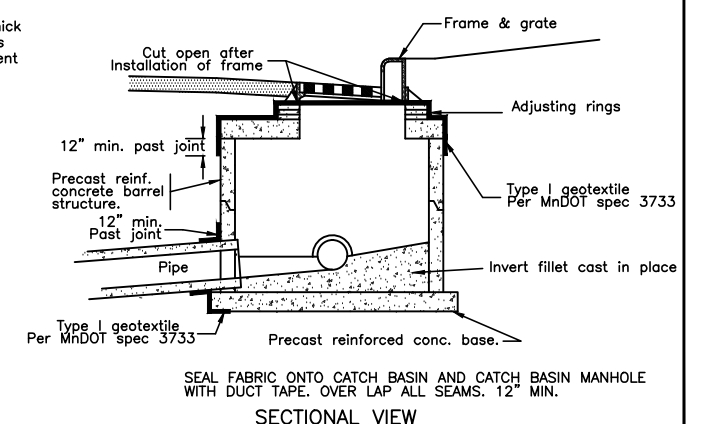
NOTES
EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER.
PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501 OR 2503.



- Note:
- Steps needed for structure height greater than 4'.
 - Cover Slab to Rest on Bed of Mortar on Full Thickness of Structure Walls, not to Rest on Pipe Tongue or Groove.
 - Location of Structure as Shown in Plans.
 - See Plan for Box and Grate Type.



RECTANGULAR INLET FOR ROUND MANHOLE RFC-465A1
NOT TO SCALE
SPECIAL 1 = 48" ø
SPECIAL 2 = 60" ø



FABRIC AROUND CATCH BASIN RFC-463
NOT TO SCALE



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COMCAST (952) 607-4078
CONNEXUS ENERGY (763) 323-4268
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DATE	REVISION HISTORY

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David Krueger
DATE 04/03/24 REG. NO. 48768

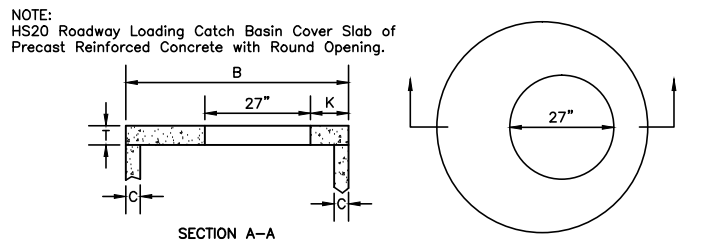
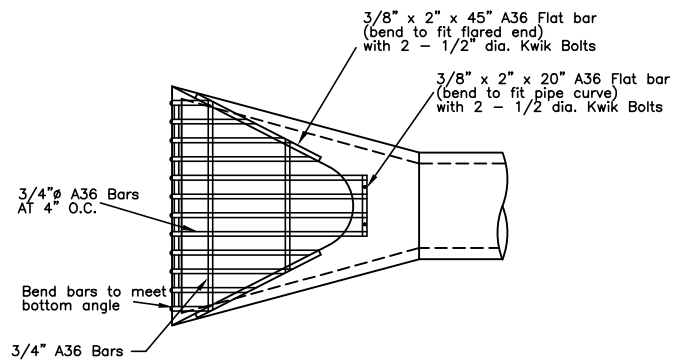
RFC ENGINEERING, INC.
Consulting Engineers

13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

HAM LAKE IMPROVEMENT PROJECT 2103
MEADOW PARK RECONSTRUCTION
163RD LANE AND ISANTI STREET
DETAILS

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

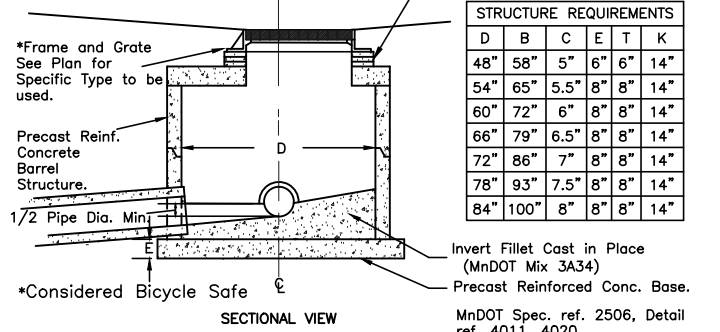
DWG: 2103 DETAIL 1
DATE: 03/28/24
JOB NUMBER: 2103
SHEET: 5 OF 24
FILE: 36-2-164



NOTE:
HS20 Roadway Loading Catch Basin Cover Slab of Precast Reinforced Concrete with Round Opening.

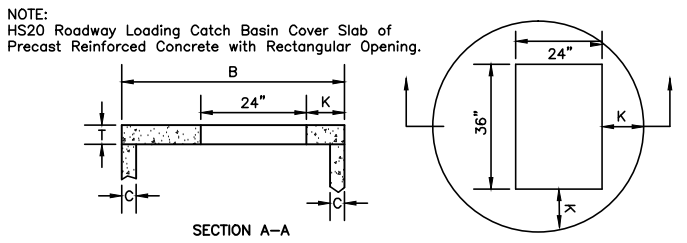
Note:
1. Steps needed for structure height greater than 4'.
2. Cover Slab to Rest on Bed of Mortar on Full Thickness of Structure Walls, not to Rest on Pipe Tongue or Groove.
3. Location of Structure as Shown in Plans.

Adjusting Rings, 2 Min., 3 Max., Full 3/8" Bed of Mortar Between Rings. Plaster Exterior Only with 2" Min. Thick Coat. Strike Off Interior. No shims permitted. Stagger on the Adjustment Rings Not to Exceed 3/4" Total.



STRUCTURE REQUIREMENTS					
D	B	C	E	T	K
48"	58"	5"	6"	6"	14"
54"	65"	5.5"	8"	8"	14"
60"	72"	6"	8"	8"	14"
66"	79"	6.5"	8"	8"	14"
72"	86"	7"	8"	8"	14"
78"	93"	7.5"	8"	8"	14"
84"	100"	8"	8"	8"	14"

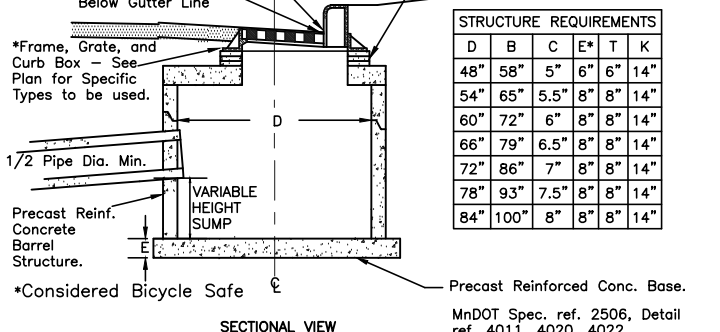
ROUND MANHOLE RFC-465C
NOT TO SCALE
SPECIAL 4 = 60" Ø



NOTE:
HS20 Roadway Loading Catch Basin Cover Slab of Precast Reinforced Concrete with Rectangular Opening.

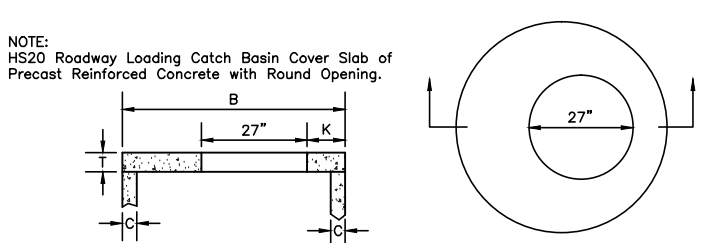
Note:
1. Steps needed for structure height greater than 4'.
2. Cover Slab to Rest on Bed of Mortar on Full Thickness of Structure Walls, not to Rest on Pipe Tongue or Groove.
3. Location of Structure as Shown in Plans.
4. See Plan for Box and Grate Type.

Adjusting Rings, 2 Min., 3 Max., Full 3/8" Bed of Mortar Between Rings. Plaster Exterior Only with 2" Min. Thick Coat. Strike Off Interior. No shims permitted. Stagger on the Adjustment Rings Not to Exceed 3/4" Total.



STRUCTURE REQUIREMENTS					
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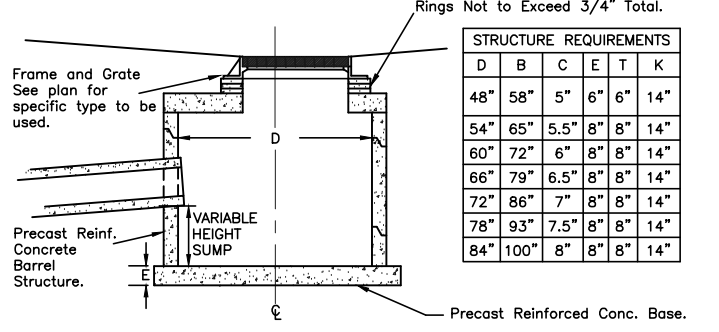
RECTANGULAR INLET FOR ROUND MANHOLE RFC-465A3
NOT TO SCALE
SPECIAL 3 = 72" Ø



NOTE:
HS20 Roadway Loading Catch Basin Cover Slab of Precast Reinforced Concrete with Round Opening.

Note:
1. Steps needed for structure height greater than 4'.
2. Cover Slab to Rest on Bed of Mortar on Full Thickness of Structure Walls, not to Rest on Pipe Tongue or Groove.
3. Location of Structure as Shown in Plans.

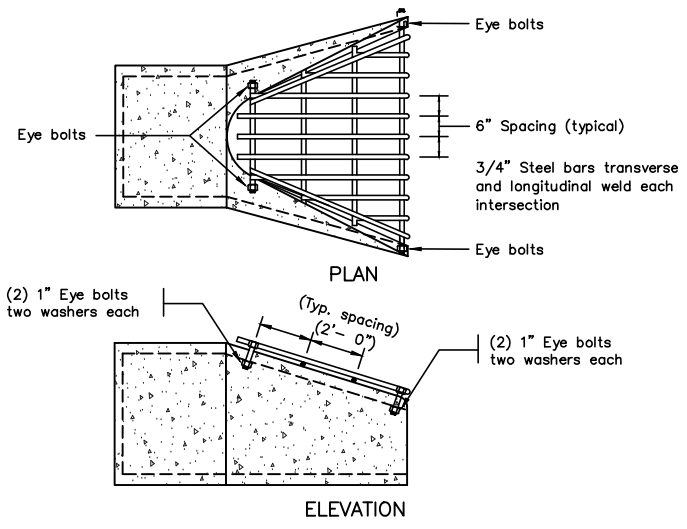
Adjusting Rings, 2 Min., 3 Max., Full 3/8" Bed of Mortar Between Rings. Plaster Exterior Only with 2" Min. Thick Coat. Strike Off Interior. No shims permitted. Stagger on the Adjustment Rings Not to Exceed 3/4" Total.



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72"	86"	7"	8"	8"	14"
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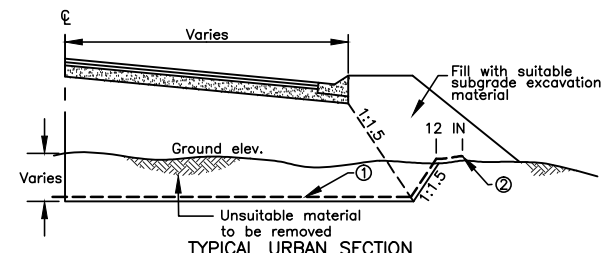
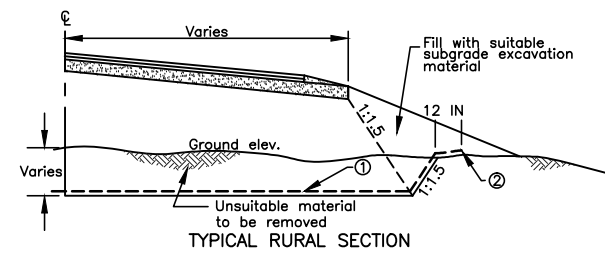
ROUND MANHOLE - VARIABLE SUMP RFC-465C5
NOT TO SCALE
SPECIAL 5 = 72" Ø

CPP TRASH GUARD RFC-466C
NOT TO SCALE



Note:
1.) Trash guard to be galvanized after fabrication
2.) The size of each trash guard will vary to fit the apron size.
3.) All bolts to be non-rusting stainless steel.
4.) Weld all bolts to prevent entry after final storm sewer cleaning.
5.) Round all steel bars such that ends are smooth and free of burrs.

RCP TRASH GUARD RFC-466B
NOT TO SCALE



1. Remove unsuitable material to a minimum of 4 feet below top of pavement and place the Geotextile Fabric and install select grading material or other approved material. No vehicle traffic is allowed directly on Geotextile Fabric.
2. Furnish and install Geotextile Fabric Type 5 to 12" past removal limits. Disturbance of existing terrain where Fabric is to be placed shall be minimized.

*SEE CROSS SECTIONS FOR REMOVAL DEPTHS

TYPICAL FLOATING ROAD SECTION EXISTING ROAD CONSTRUCTION RFC-365C5
NOT TO SCALE
STA 25+11 TO 34+00



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David Krough

DATE 04/03/24 REG. NO. 48768

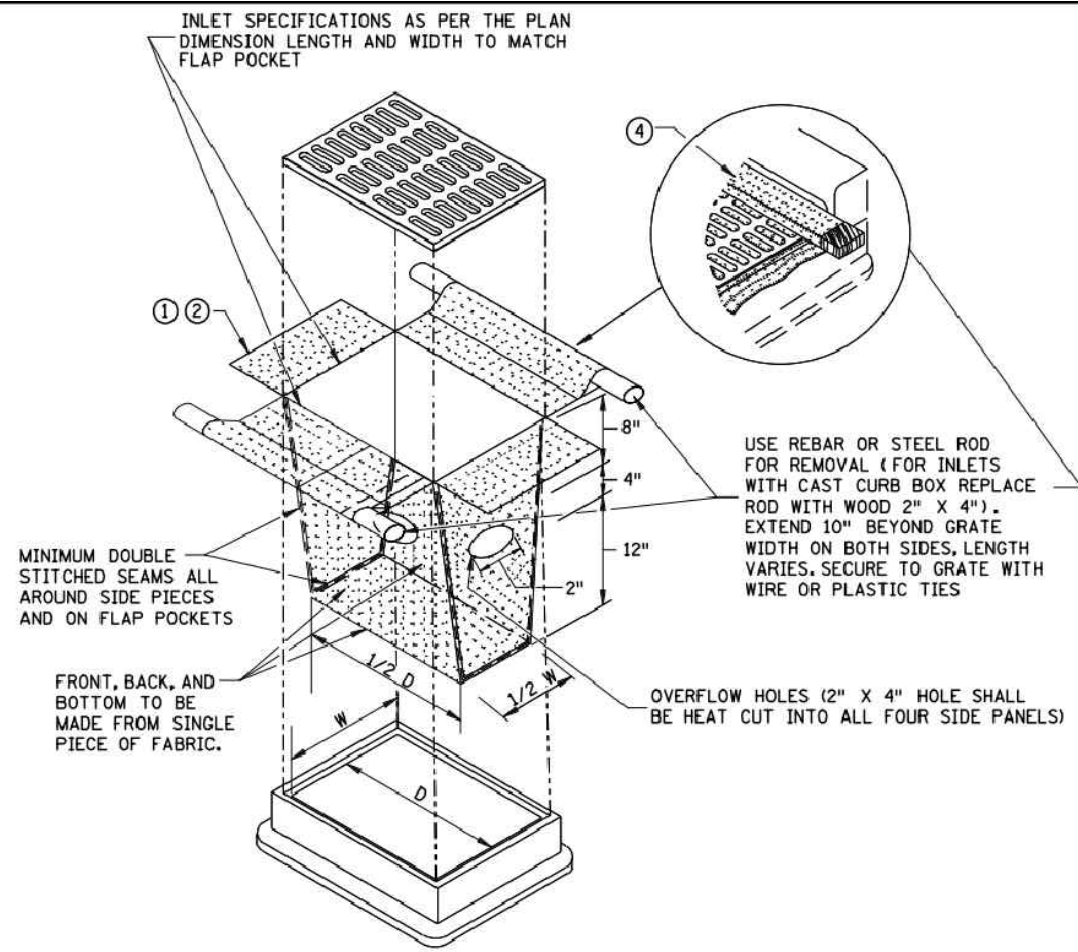
RFC ENGINEERING, INC.
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13635 Johnson Street
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Telephone 763-862-8000
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HAM LAKE IMPROVEMENT PROJECT 2103
MEADOW PARK RECONSTRUCTION
163RD LANE AND ISANTI STREET

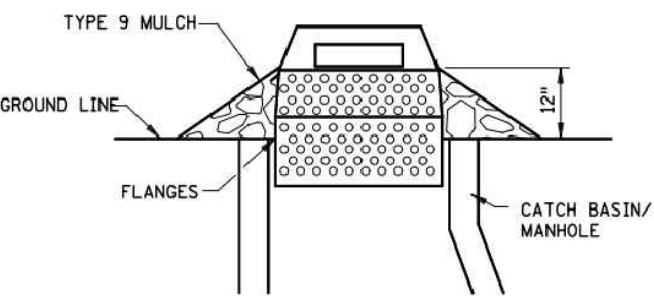
DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: 2103 DETAIL 2
DATE: 03/28/24
JOB NUMBER: 2103
SHEET: 6 OF 24
FILE: 36-2-165



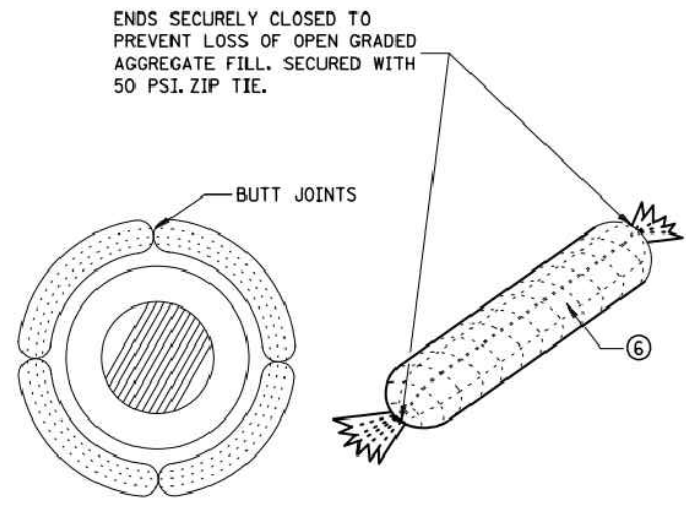
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)

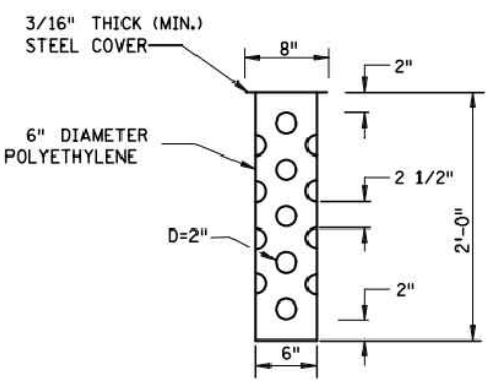


SEDIMENT CONTROL INLET HAT

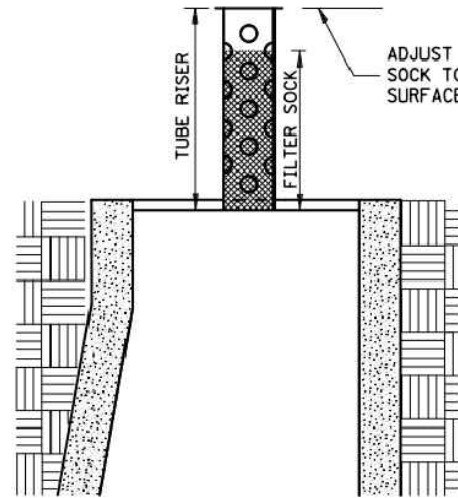
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



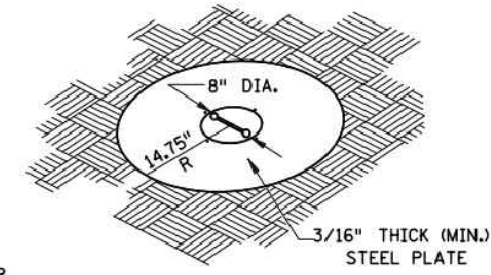
ROCK LOG/COMPOST LOG



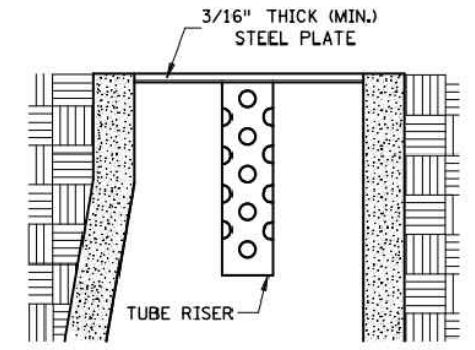
TUBE RISER



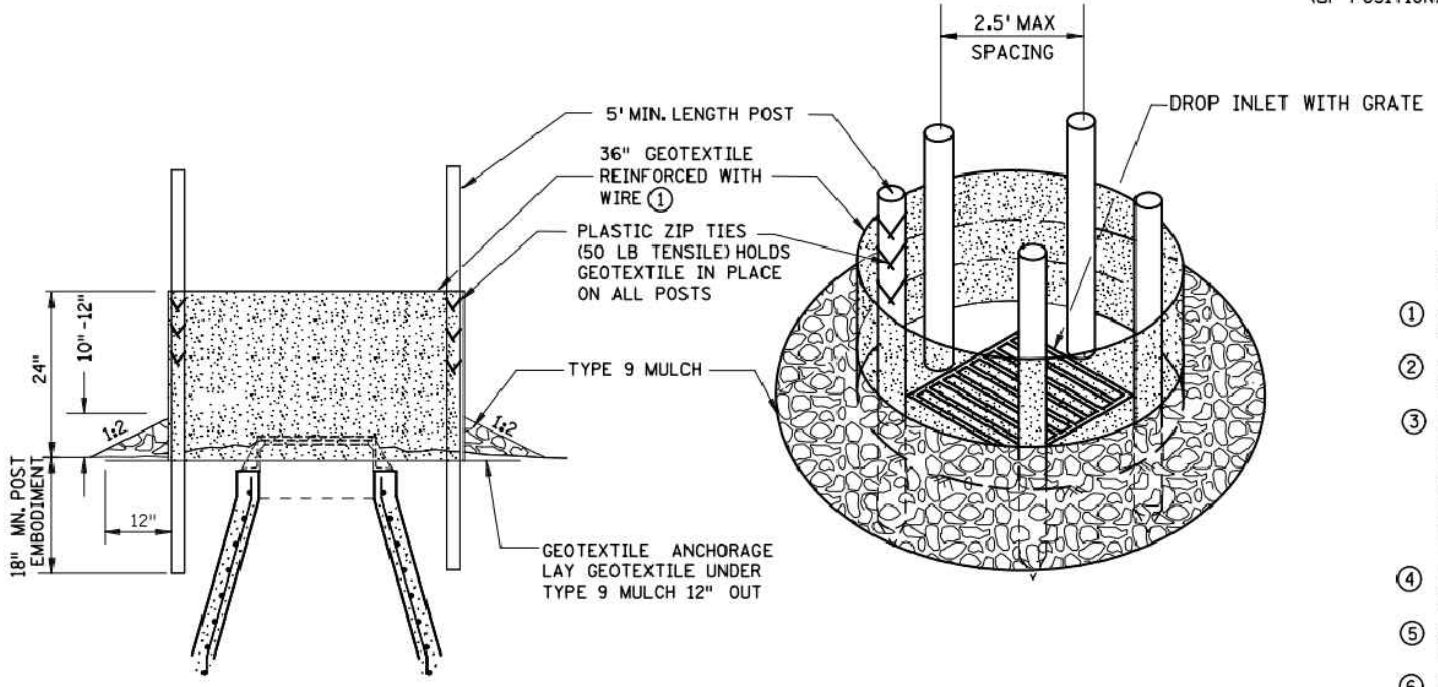
SECTION (UP POSITION)



PERSPECTIVE VIEW



SECTION (DOWN POSITION)



SILT FENCE RING AND ROCK FILTER BERM
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

POP-UP HEAD

NOTES:

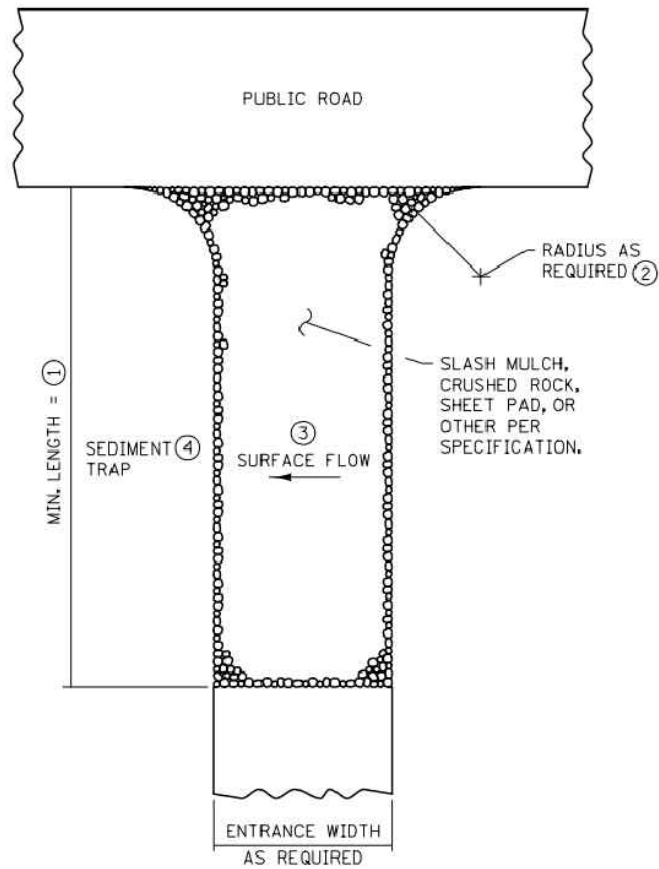
- SEE SPECS. 2573, 3137, & 3886.
- DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

REVISION:
APPROVED: 2-28-2017
[Signature]
CHIEF ENVIRONMENTAL OFFICER

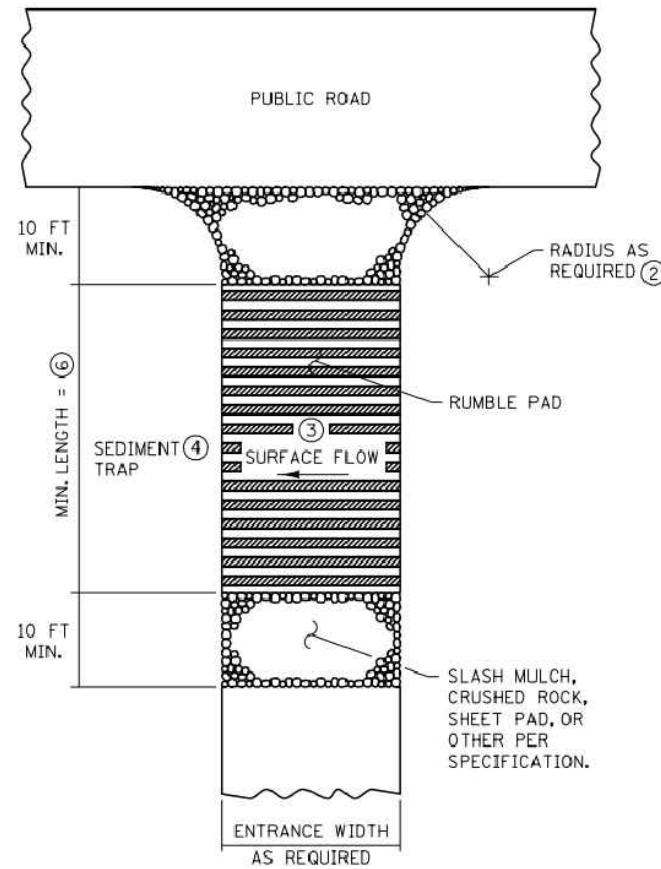
m
MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

STANDARD PLAN 5-297.405 4 OF 8
APPROVED: 2-28-2017
REVISED:
[Signature]
STATE DESIGN ENGINEER
STATE PROJ. NO.

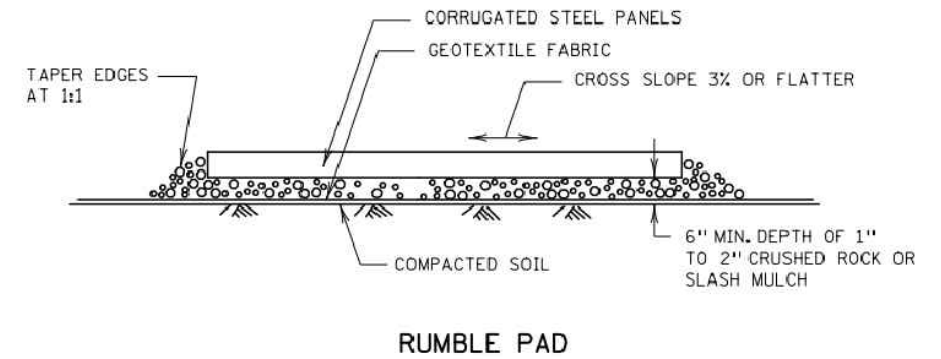
TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION
(T.H.) SHEET NO. 7 OF 24 SHEETS



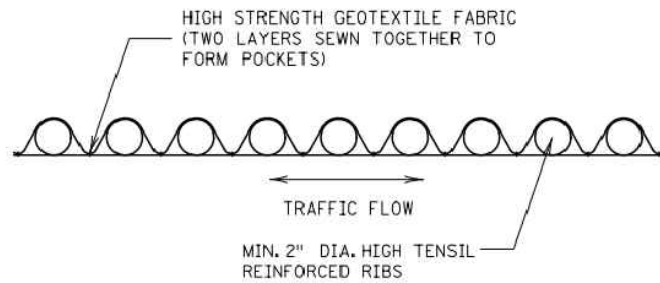
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT (5)(7)



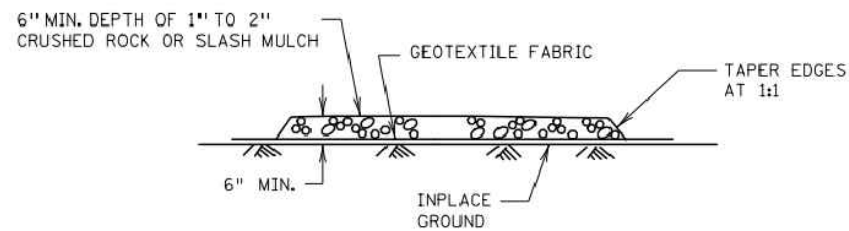
RUMBLE PAD CONSTRUCTION EXIT (5)(7)



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

- ① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.
- ② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.
- ③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.
- ④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.
- ⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.
- ⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.
- ⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

REVISION:
 APPROVED: 2-28-2017

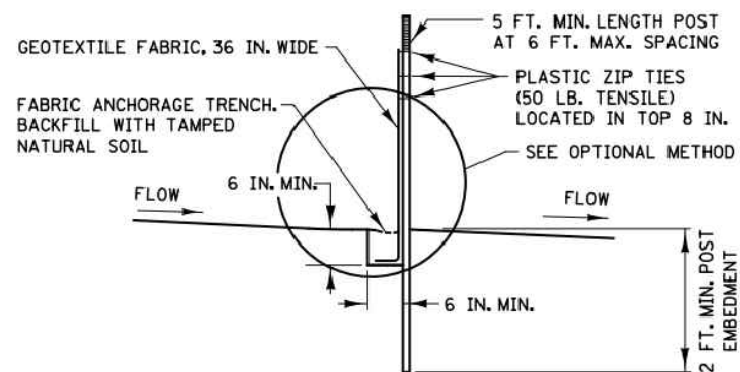
 CHIEF ENVIRONMENTAL OFFICER

m MINNESOTA
 DEPARTMENT OF TRANSPORTATION
 STANDARD PLAN 5-297.405 5 OF 8
 APPROVED: 2-28-2017
 REVISED:

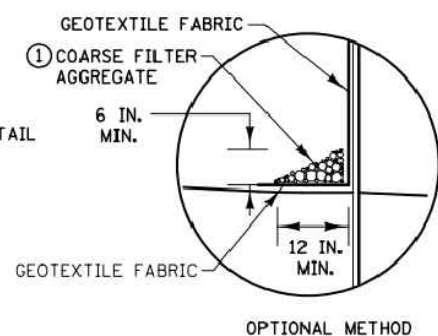
 STATE DESIGN ENGINEER
 STATE PROJ. NO.

TEMPORARY SEDIMENT CONTROL
STABILIZED CONSTRUCTION EXIT

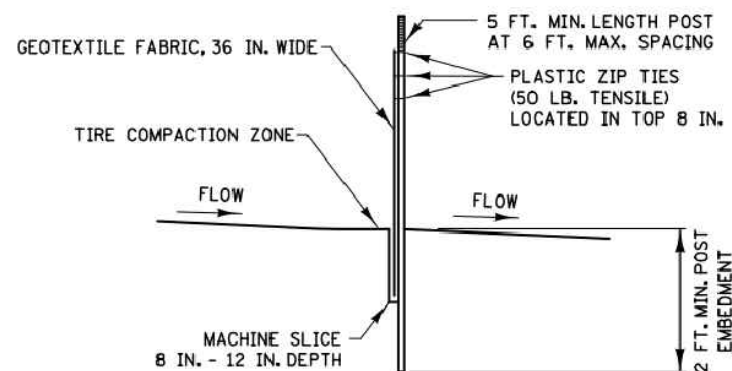
(T.H.) SHEET NO. 8 OF 24 SHEETS



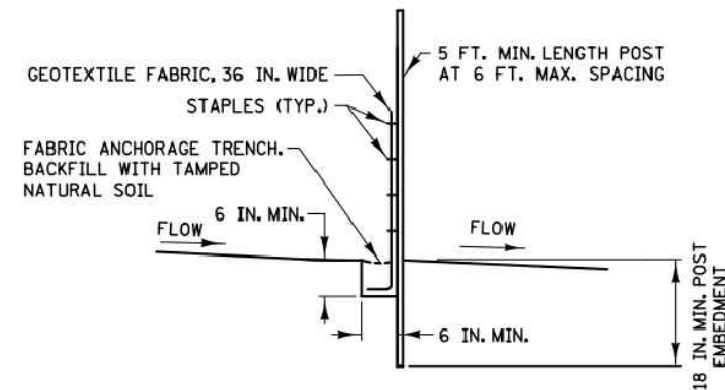
**SILTS FENCE TYPE HI ②
(HAND INSTALLED)**



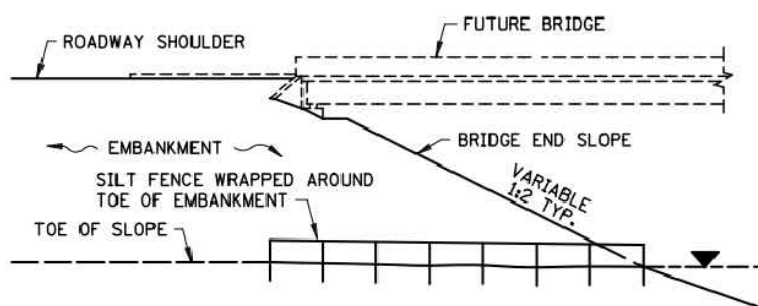
OPTIONAL METHOD



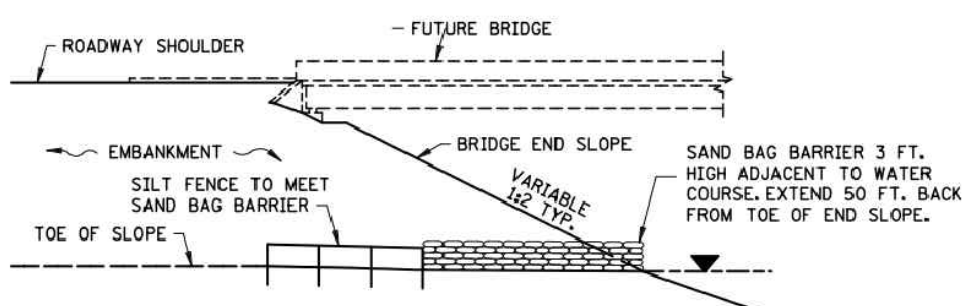
**SILTS FENCE TYPE MS ②
(MACHINE SLICED)**



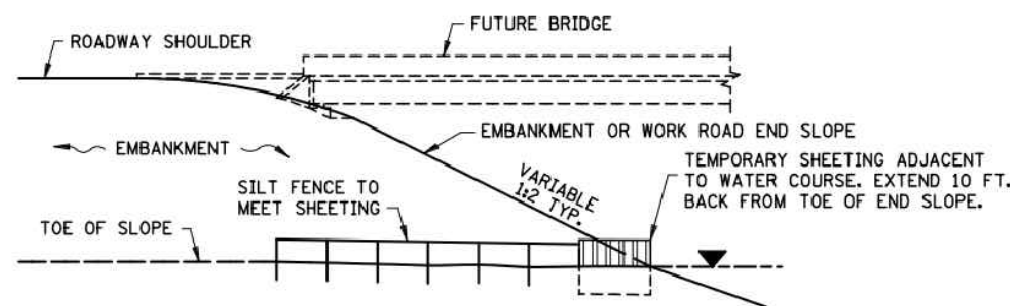
**SILTS FENCE TYPE PA ③
(PREASSEMBLED)**



SILTS FENCE ONLY ④

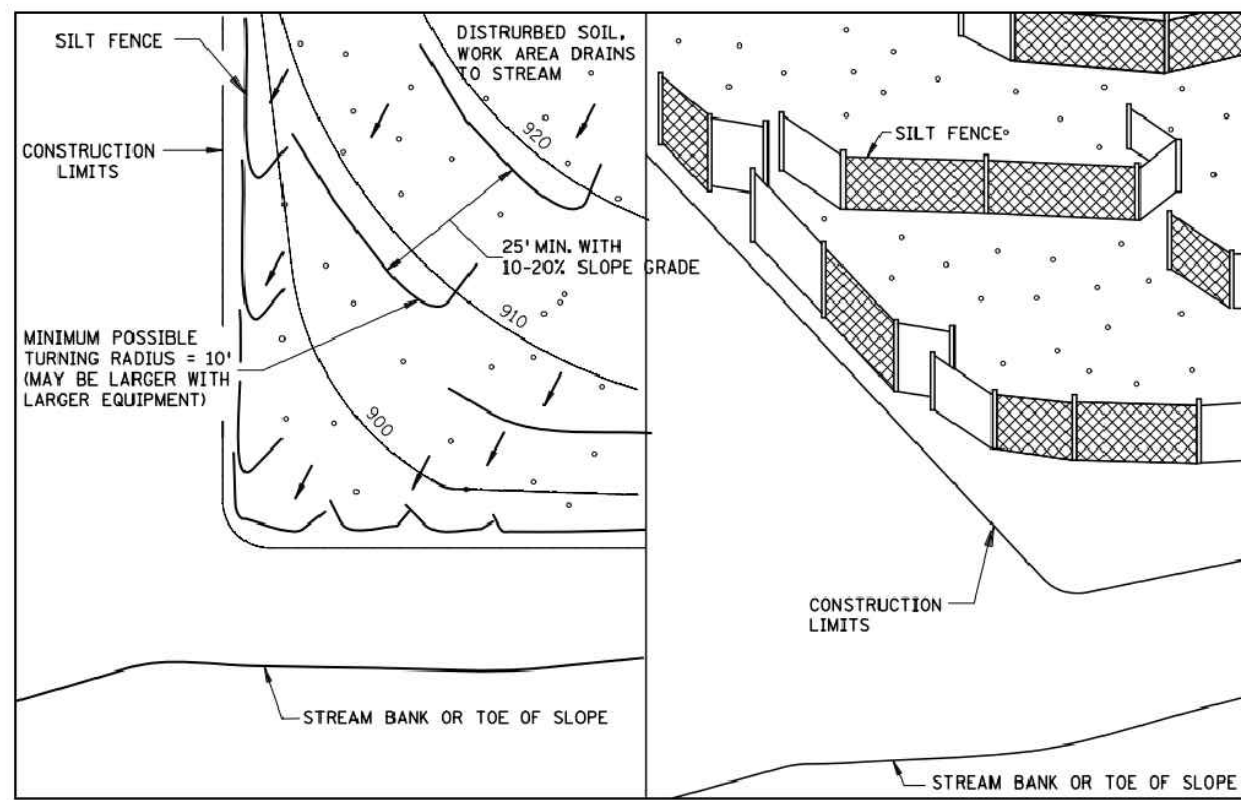


SILTS FENCE WITH SAND BAGS ⑤



SILTS FENCE WITH SHEETING ⑥

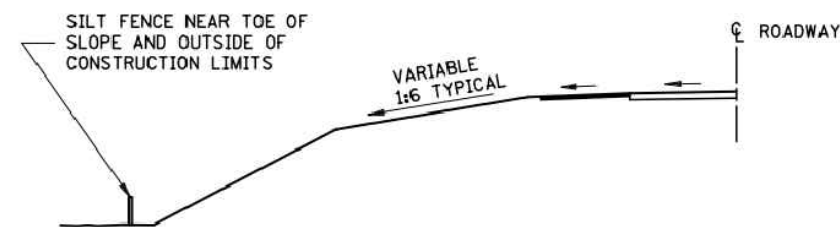
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

- SEE SPECS. 2573, 3149 & 3886.
- ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.
- ② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.
- ③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.
- ④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1/2 ACRE.
- ⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1 ACRE.
- ⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:
APPROVED: 2-28-2017
[Signature]
CHIEF ENVIRONMENTAL OFFICER

m
MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

STANDARD PLAN 5-297.405 6 OF 8

[Signature]
STATE DESIGN ENGINEER

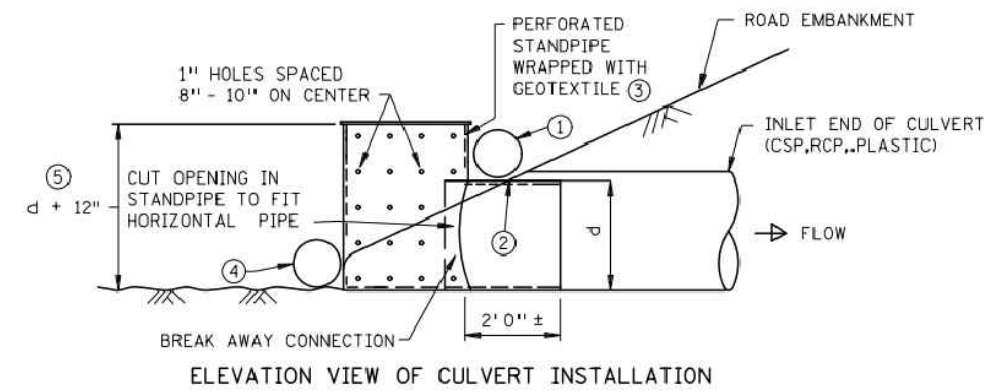
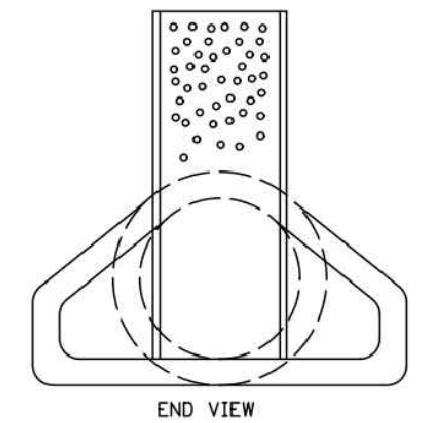
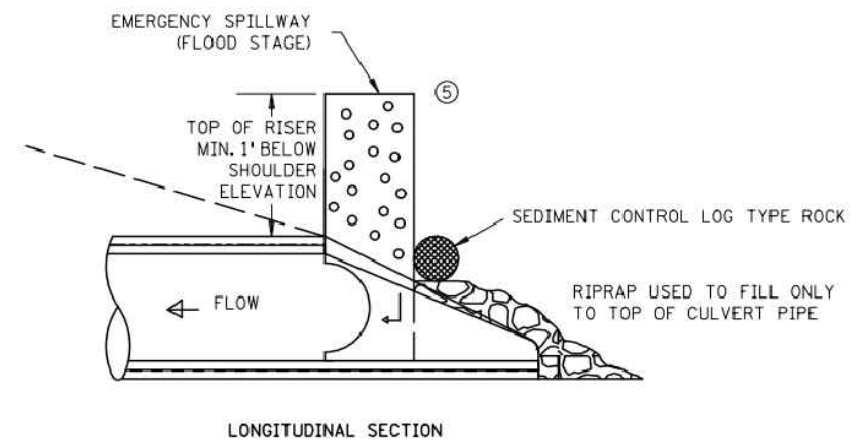
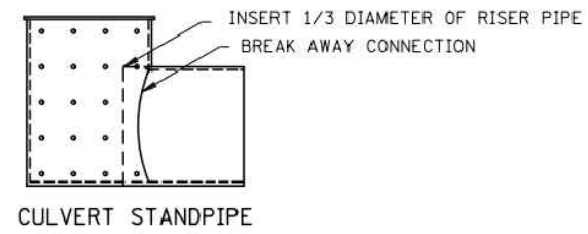
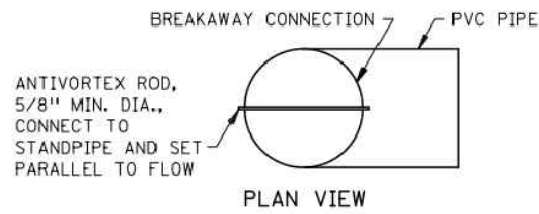
APPROVED: 2-28-2017
REVISED:

STATE PROJ. NO.

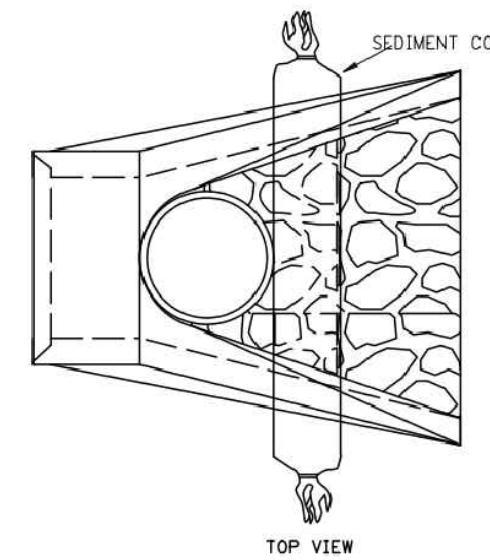
TEMPORARY SEDIMENT CONTROL

SILTS FENCE

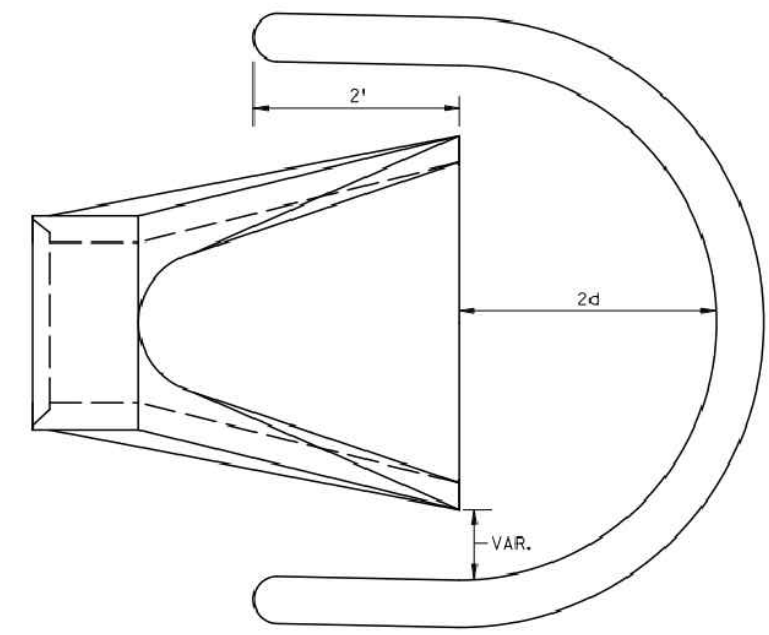
(T.H.) SHEET NO. 9 OF 24 SHEETS



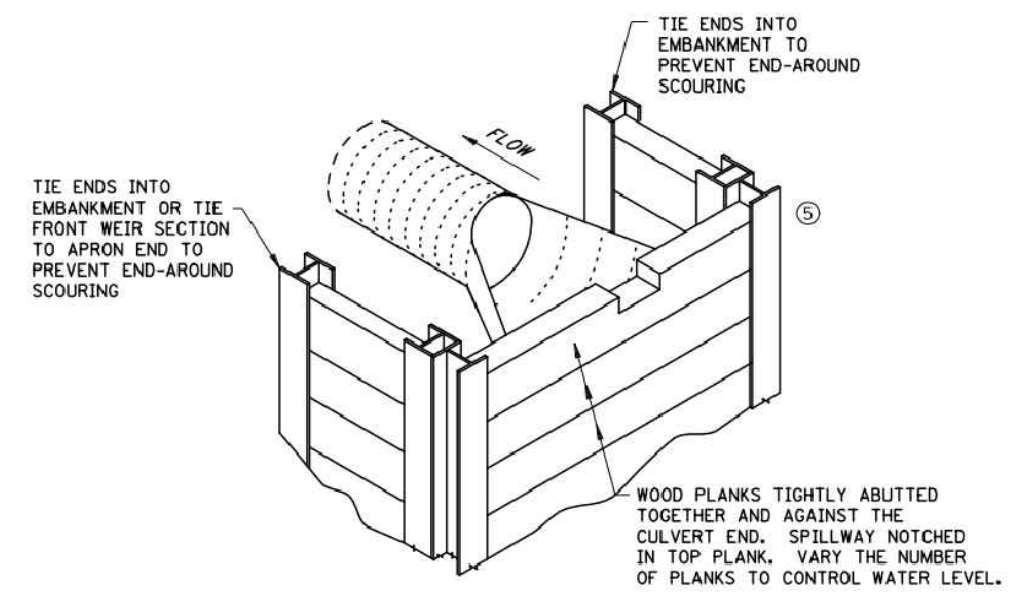
CULVERT STANDPIPE INSERT (D-RISER)
d = CULVERT SIZE: 12" - 36"



CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR
(COMPOST, WOOD CHIP, OR ROCK)
d = CULVERT SIZE: 12" - 36"



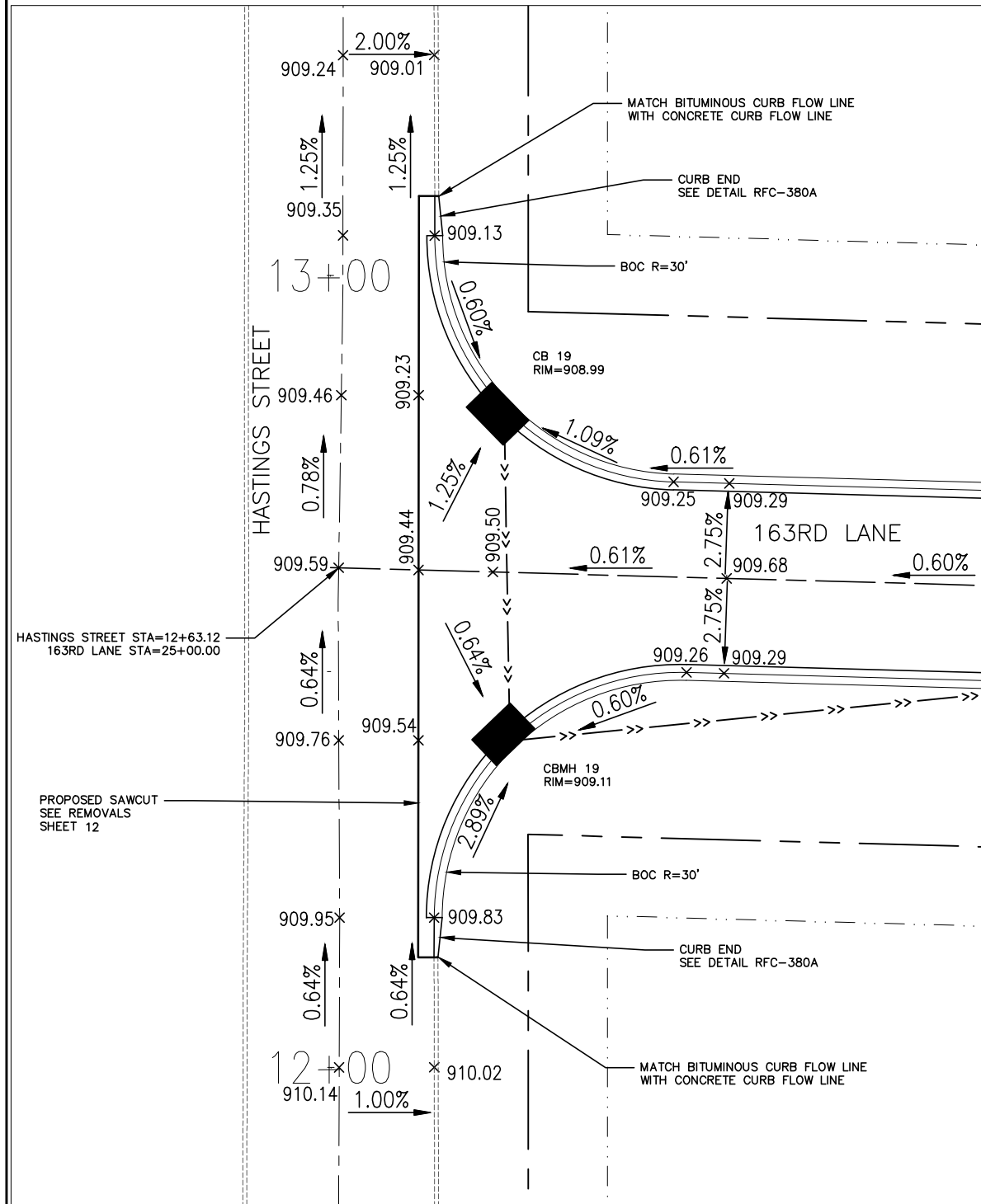
WOOD PLANK WEIR

- NOTES:
- SEE SPECS. 2573, 3891 & 3893.
 - FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.
 - MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.
 - ① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.
 - ② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.
 - ③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.
 - ④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.
 - ⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

REVISION:
APPROVED: 2-28-2017
[Signature]
CHIEF ENVIRONMENTAL OFFICER

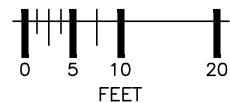
m MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.405 8 OF 8
APPROVED: 2-28-2017
REVISOR:
[Signature]
STATE DESIGN ENGINEER
STATE PROJ. NO.

TEMPORARY SEDIMENT CONTROL
CULVERT END CONTROLS
(T.H.) SHEET NO. 10 OF 24 SHEETS

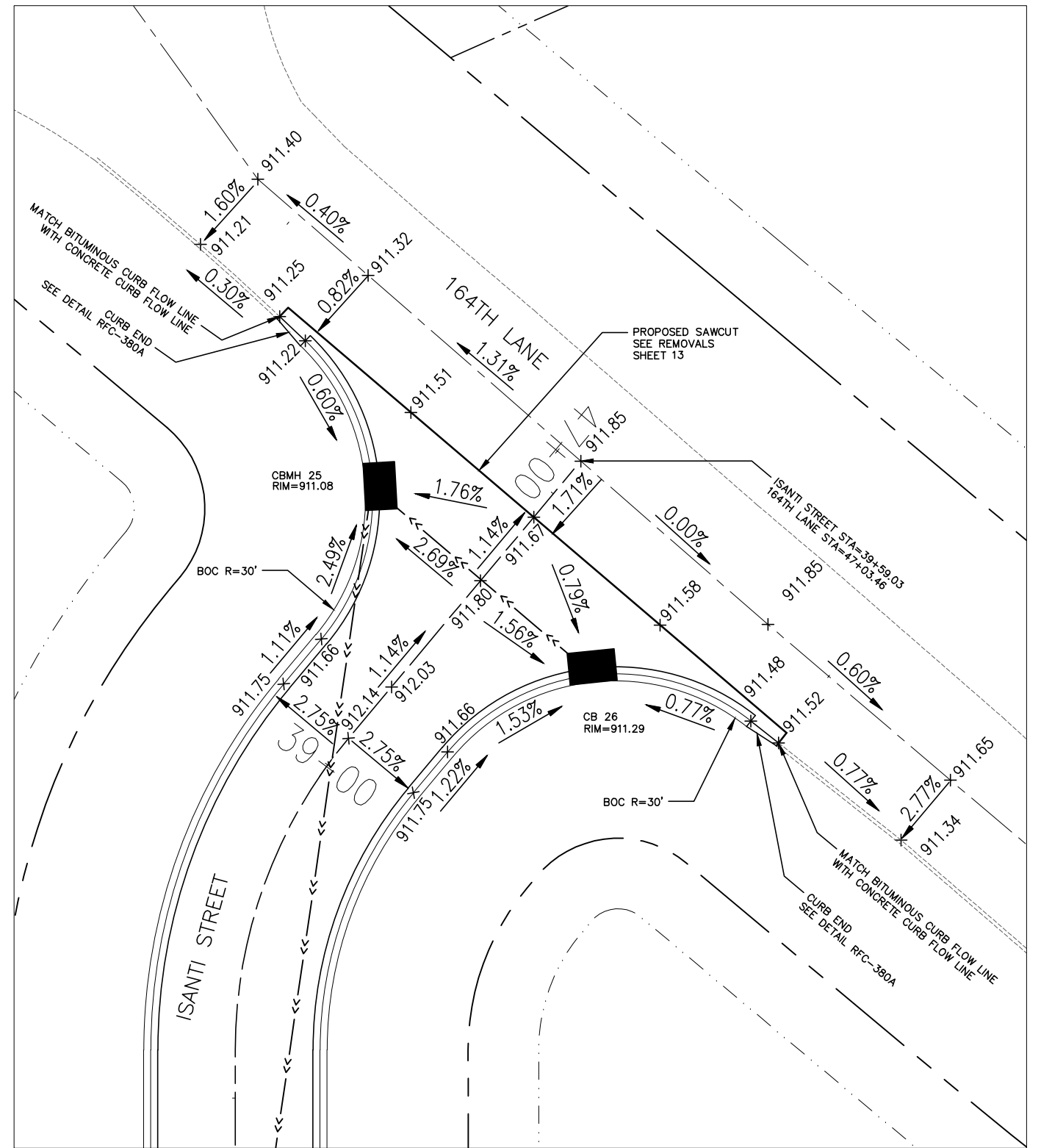


HASTINGS ST AND 163RD LANE

- NOTES:
1. ALL DISTURBED AREAS TO BE SEEDED, MULCHED AND FERTILIZED WITHIN 7 DAYS OF ROUGH GRADING. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
 2. ALL REMOVALS ARE TO BE DISPOSED OF LEGALLY.



ALL DETAILS



ISANTI STREET AND 164TH LANE



UTILITIES: CENTURYLINK (763) 712-5017
 CENTERPOINT ENERGY (763) 323-2760
 COMCAST (952) 607-4078
 CONNEXUS ENERGY (763) 323-4268
 GREAT RIVERS ENERGY (763) 445-5984

DATE	REVISION HISTORY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Dave Roughton

DATE 04/03/24 REG. NO. 48768

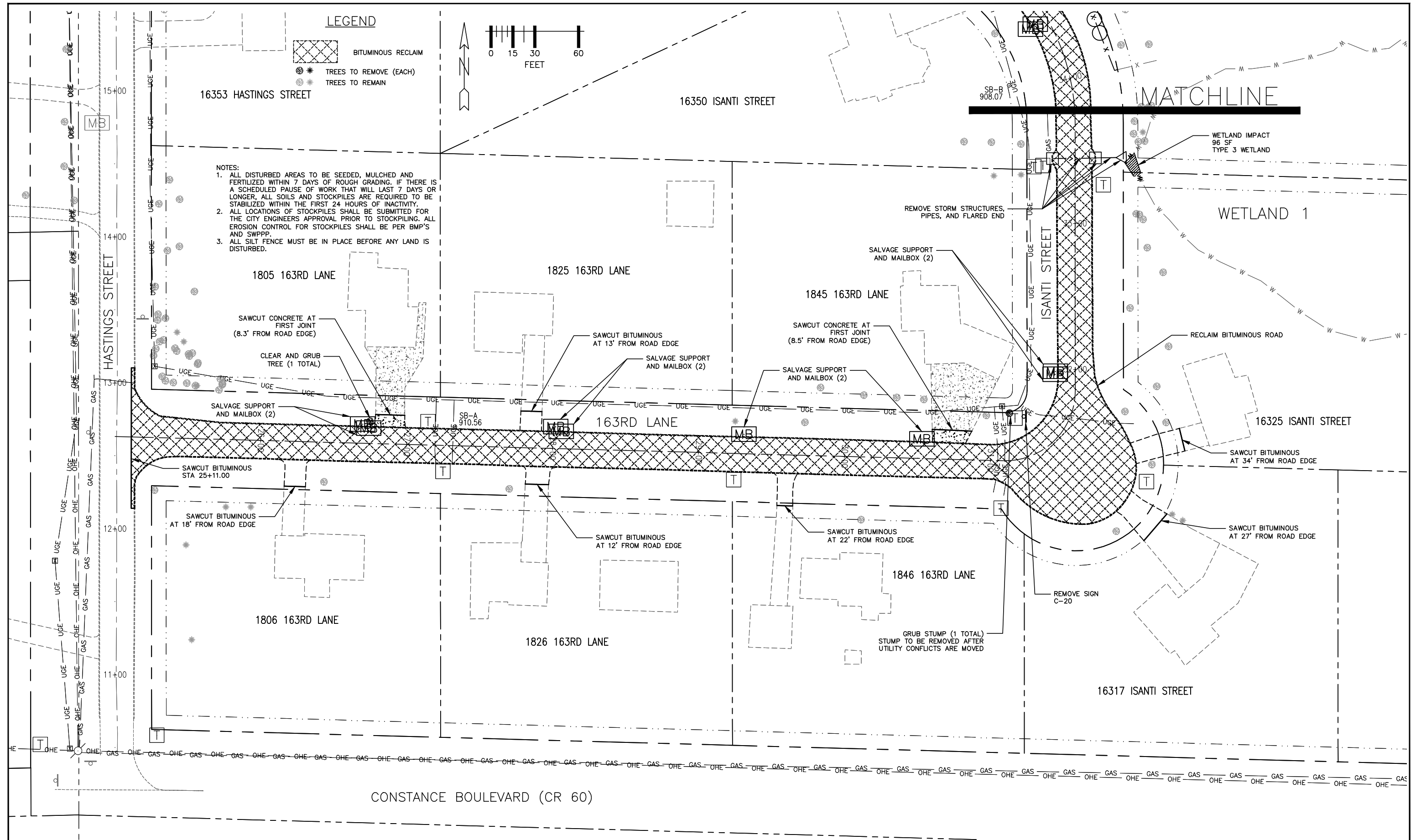
RFC ENGINEERING, INC.
 Consulting Engineers

13635 Johnson Street
 Ham Lake, MN 55304
 Telephone 763-862-8000
 Fax 763-862-8042

HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET
 INTERSECTION DETAILS

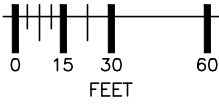
DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: 2103 INT 1
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 11 OF 24
 FILE: 36-2-170



LEGEND

- BITUMINOUS RECLAIM
- TREES TO REMOVE (EACH)
- TREES TO REMAIN



- NOTES:**
1. ALL DISTURBED AREAS TO BE SEEDED, MULCHED AND FERTILIZED WITHIN 7 DAYS OF ROUGH GRADING. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
 2. ALL LOCATIONS OF STOCKPILES SHALL BE SUBMITTED FOR THE CITY ENGINEERS APPROVAL PRIOR TO STOCKPILING. ALL EROSION CONTROL FOR STOCKPILES SHALL BE PER BMP'S AND SWPPP.
 3. ALL SILT FENCE MUST BE IN PLACE BEFORE ANY LAND IS DISTURBED.



UTILITIES: CENTURYLINK (763) 712-5017
 CENTERPOINT ENERGY (763) 323-2760
 COMCAST (952) 607-4078
 CONNEXUS ENERGY (763) 323-4268
 GREAT RIVERS ENERGY (763) 445-5984

DATE	REVISION HISTORY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Dave Krueger
 DATE 04/03/24 REG. NO. 48768

RFC ENGINEERING, INC.
 Consulting Engineers

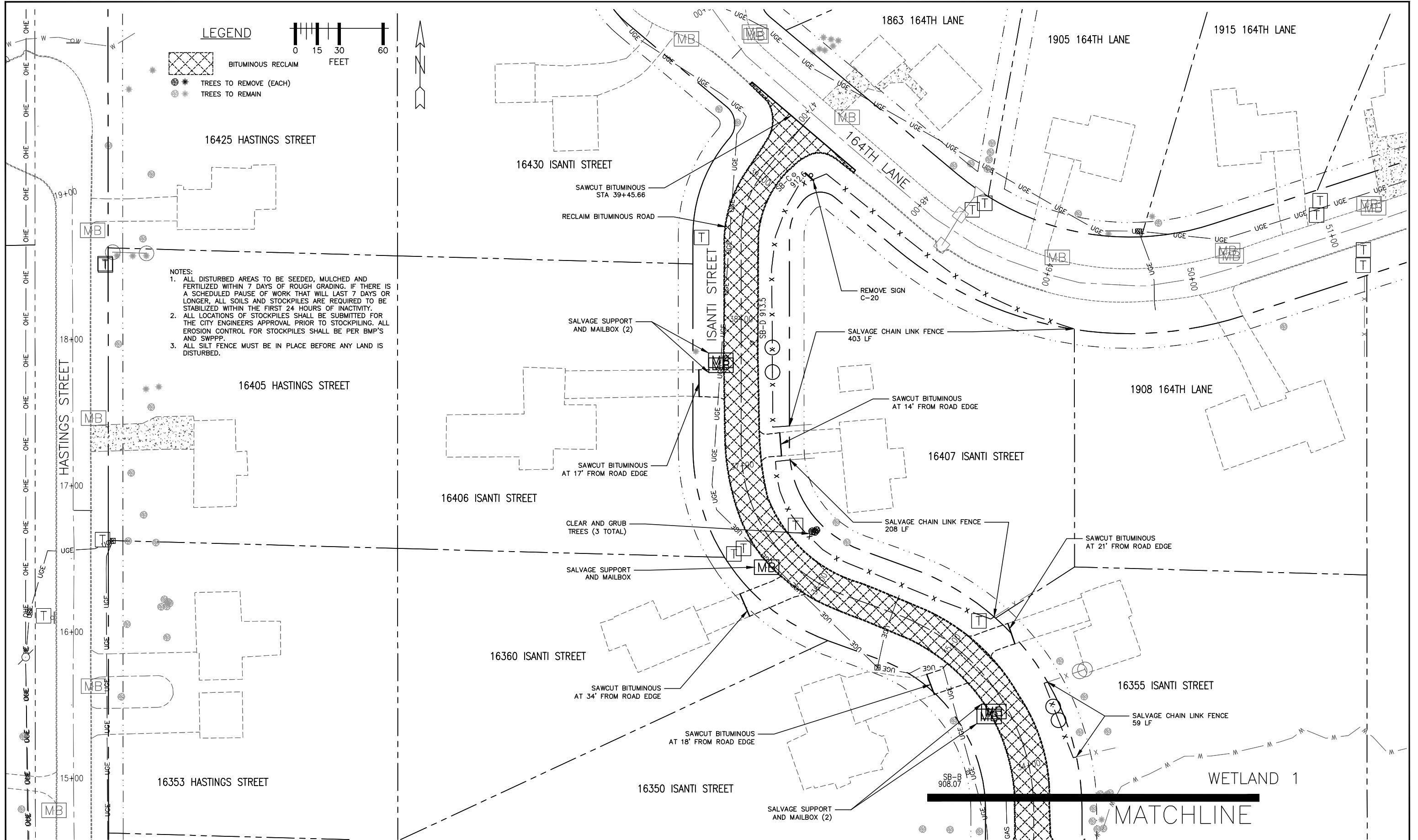
13635 Johnson Street
 Ham Lake, MN 55304
 Telephone 763-862-8000
 Fax 763-862-8042

HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET

REMOVAL PLAN
 163RD LANE

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: 2103 REMOVAL 1
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 12 OF 24
 FILE: 36-2-171



NOTES:
 1. ALL DISTURBED AREAS TO BE SEEDED, MULCHED AND FERTILIZED WITHIN 7 DAYS OF ROUGH GRADING. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
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800-252-1166 651-454-0002

UTILITIES:

CENTURYLINK	(763) 712-5017
CENTERPOINT ENERGY	(763) 323-2760
COMCAST	(952) 607-4078
CONNEXUS ENERGY	(763) 323-4268
GREAT RIVERS ENERGY	(763) 445-5984

DATE	REVISION HISTORY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Dave Krueger

DATE 04/03/24 REG. NO. 48768

RFC ENGINEERING, INC.
Consulting Engineers

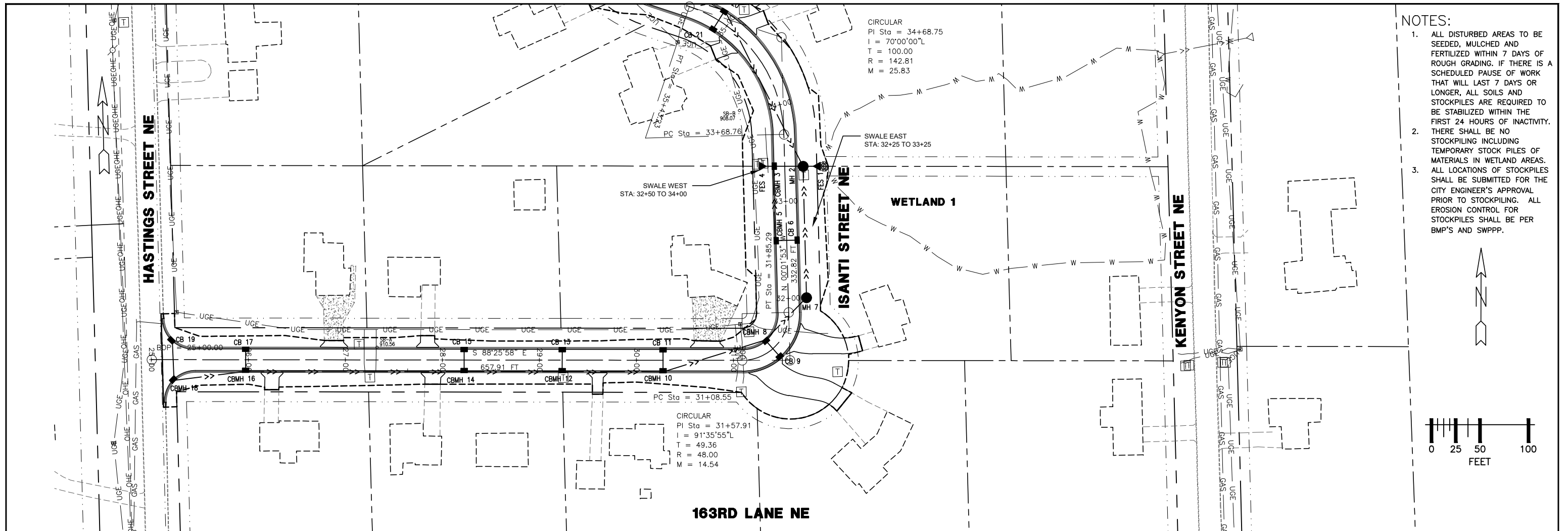
13635 Johnson Street
 Ham Lake, MN 55304
 Telephone 763-862-8000
 Fax 763-862-8042

HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET

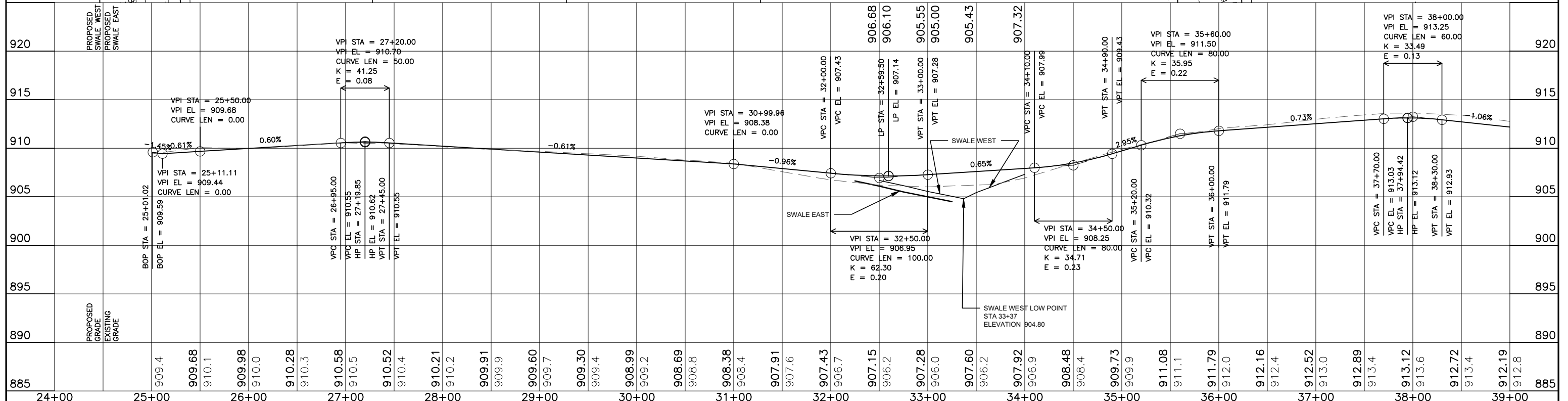
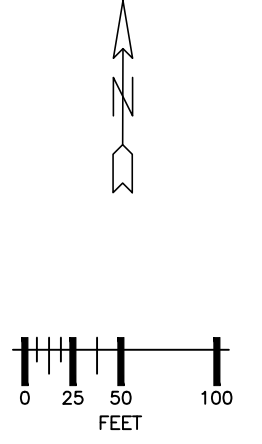
REMOVAL PLAN
 ISANTI STREET

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

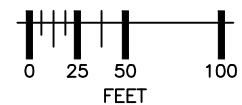
DWG: 2103 REMOVAL 2
DATE: 03/28/24
JOB NUMBER: 2103
SHEET: 13 OF 24
FILE: 36-2-172



- NOTES:**
1. ALL DISTURBED AREAS TO BE SEEDED, MULCHED AND FERTILIZED WITHIN 7 DAYS OF ROUGH GRADING. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
 2. THERE SHALL BE NO STOCKPILING INCLUDING TEMPORARY STOCK PILES OF MATERIALS IN WETLAND AREAS.
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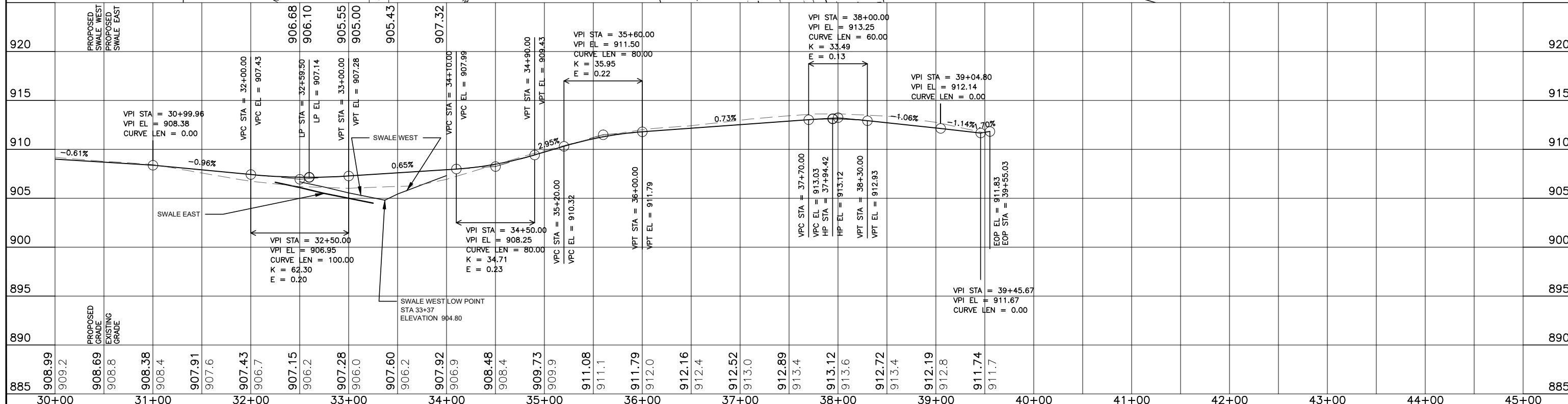
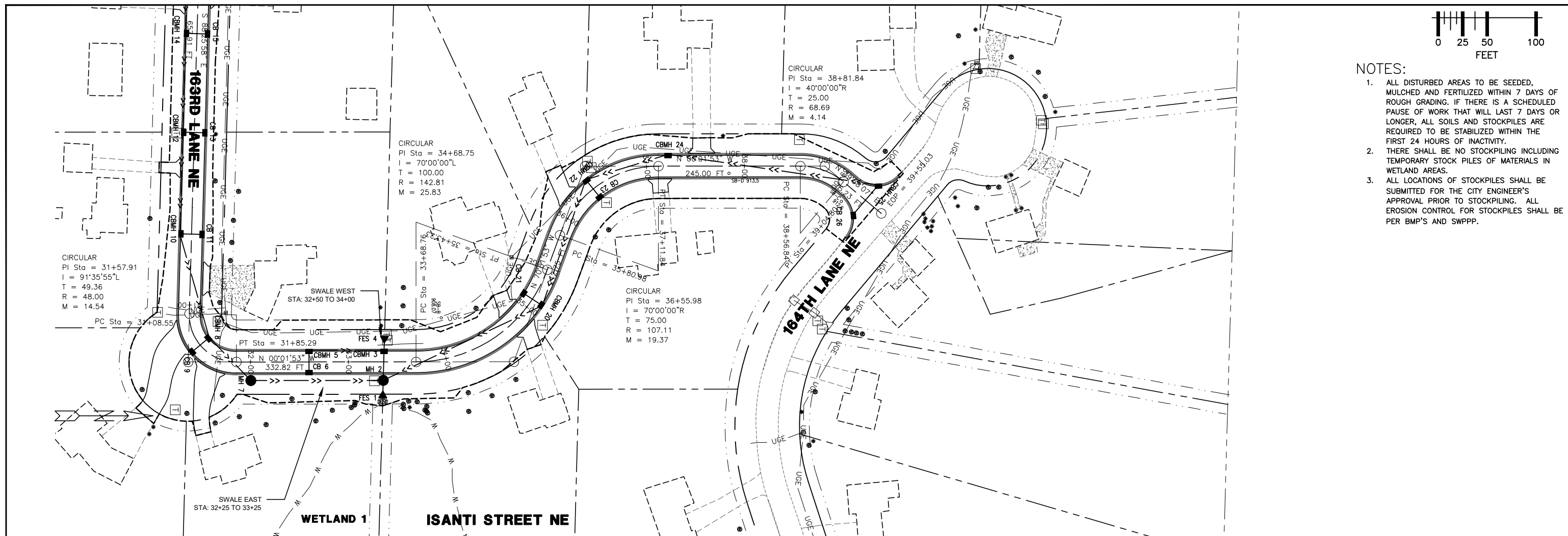


<p>800-252-1166 651-454-0002 PLOT DATE: 4/03/2024 11:17</p>	UTILITIES: CENTURYLINK (763) 712-5017 CENTERPOINT ENERGY (763) 323-2760 COMCAST (952) 607-4078 CONNEXUS ENERGY (763) 323-4268 GREAT RIVERS ENERGY (763) 445-5984	DATE: _____ REVISION HISTORY: _____ _____ _____ _____	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. DATE 04/03/24 REG. NO. 48768	RFC ENGINEERING, INC. Consulting Engineers	13635 Johnson Street Ham Lake, MN 55304 Telephone 763-862-8000 Fax 763-862-8042	HAM LAKE IMPROVEMENT PROJECT 2103 MEADOW PARK RECONSTRUCTION 163RD LANE AND ISANTI STREET PLAN AND PROFILE 163RD LANE	DWG: RCP01032 DATE: 03/28/24 JOB NUMBER: 2103 SHEET: 14 OF 24 FILE: 36-2-173
	DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK						

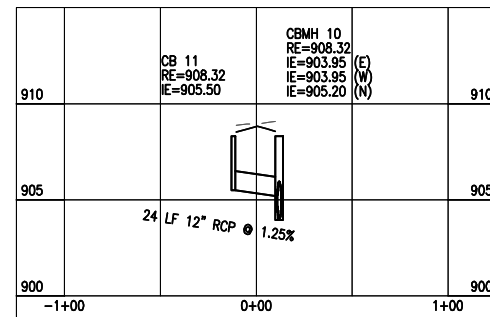
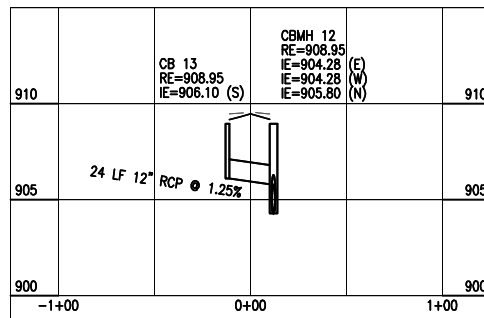
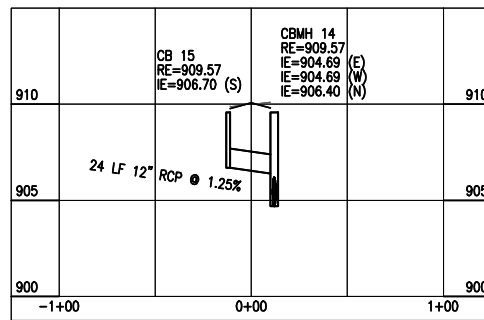
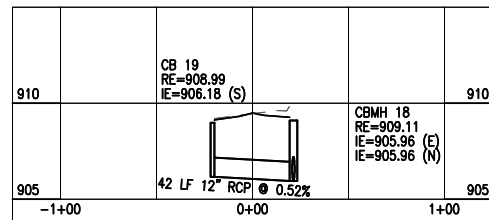
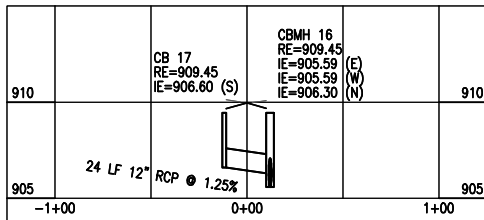
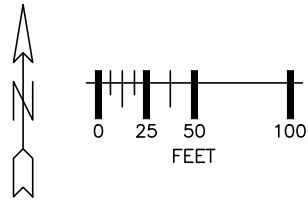
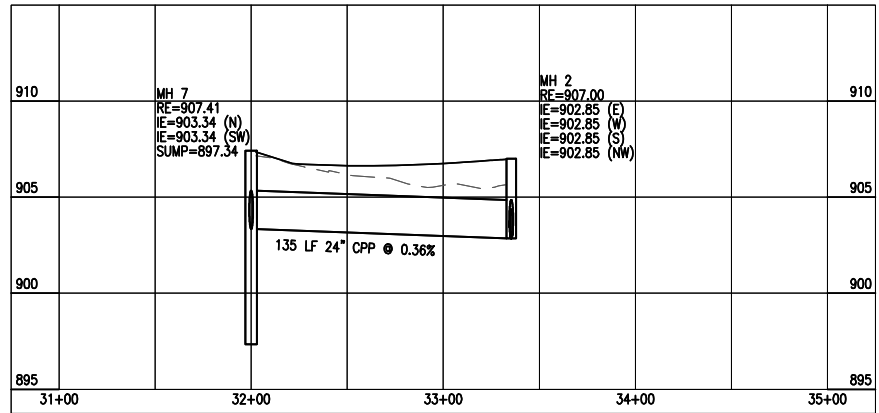
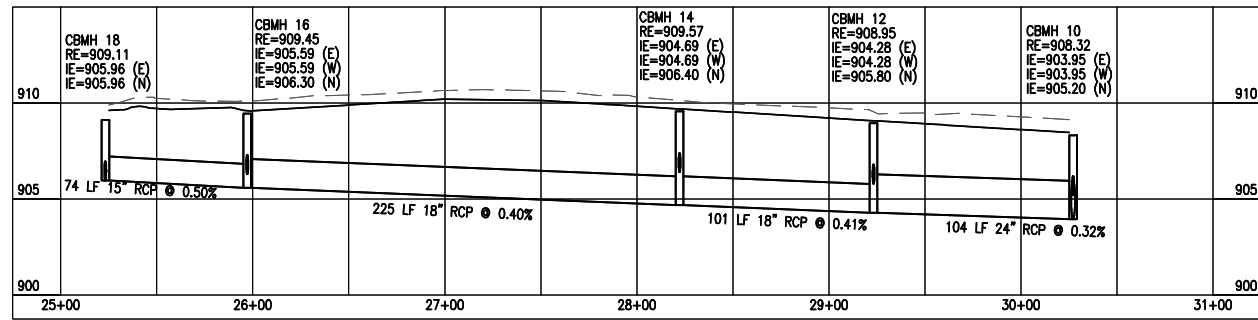
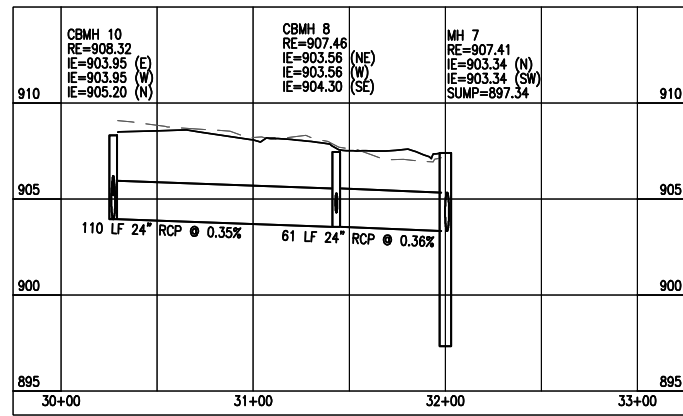
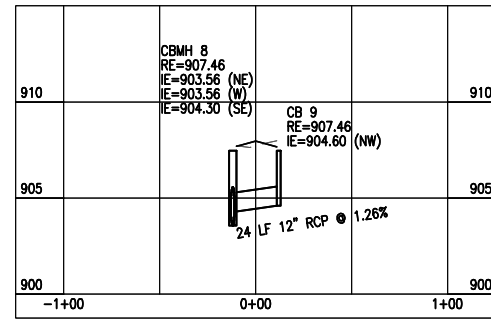


NOTES:

1. ALL DISTURBED AREAS TO BE SEEDED, MULCHED AND FERTILIZED WITHIN 7 DAYS OF ROUGH GRADING. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
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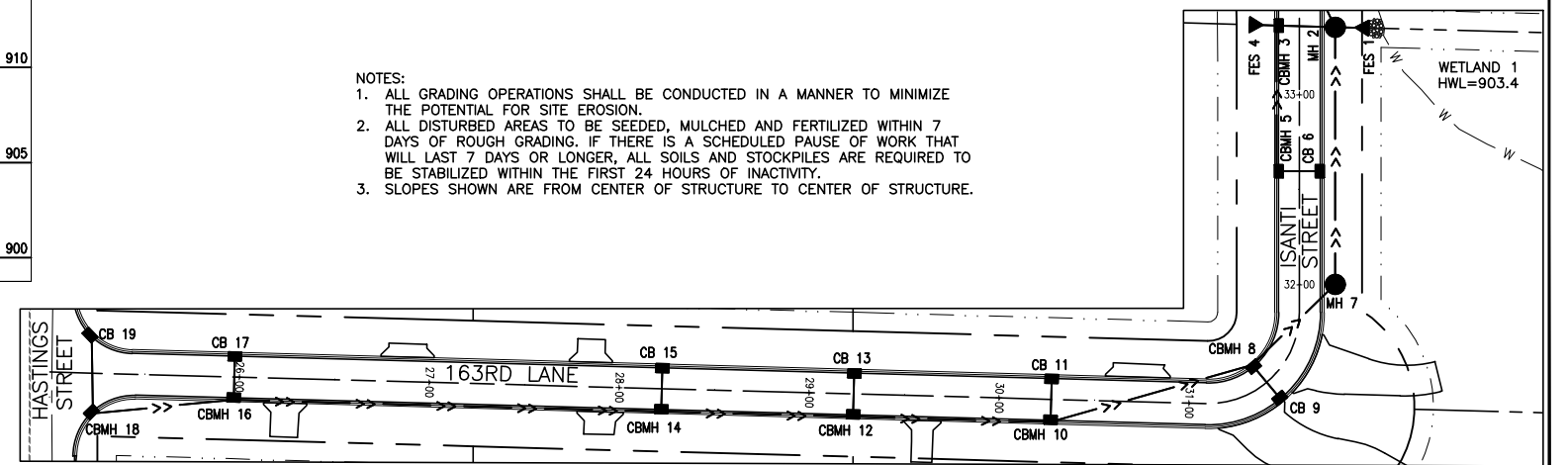
<p>800-252-1166 651-454-0002 PLOT DATE: 4/03/2024 11:17</p>	UTILITIES: CENTURYLINK (763) 712-5017 CENTERPOINT ENERGY (763) 323-2760 COMCAST (952) 607-4078 CONNEXUS ENERGY (763) 323-4268 GREAT RIVERS ENERGY (763) 445-5984	DATE: _____ REVISION HISTORY: _____ _____ _____	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. DATE: 04/03/24 REG. NO. 48768	RFC ENGINEERING, INC. Consulting Engineers	13635 Johnson Street Ham Lake, MN 55304 Telephone 763-862-8000 Fax 763-862-8042	HAM LAKE IMPROVEMENT PROJECT 2103 MEADOW PARK RECONSTRUCTION 163RD LANE AND ISANTI STREET PLAN AND PROFILE ISANTI STREET	DWG: RCP02032 DATE: 03/28/24 JOB NUMBER: 2103 SHEET: 15 OF 24 FILE: 36-2-174
	DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK						



STORM DRAIN

STRUCTURE	STATION	LOCATION	SIZE OF STRUCTURE	DESIGN	TOP OF CASTING OR INLET	INVERT	CASTING ASSEMBLY (NEENAH, E.J., DL)*	TYPE GRATE (NEENAH CASTINGS)	PIPE					TRASH GUARD EACH	APRON EACH	FLOWS TO	INLET	% GRADE
									12" R.C.P. LIN FT	15" R.C.P. LIN FT	18" R.C.P. LIN FT	24" R.C.P. LIN FT	24" C.P.P. LIN FT					
CB 19	25+21.3	LT.	2' x 3'	RFC-459B	908.99	906.18	R-3246	C							CBMH 18	905.96	0.52	
CBMH 18	25+23.2	RT.	48" ø	RFC-465A1	909.11	905.96	R-3246	C							CBMH 16	905.59	0.50	
CB 17	25+97.1	LT.	2' x 3'	RFC-459B	909.45	906.60	R-3246	L							CBMH 16	906.30	1.25	
CBMH 16	25+97.1	RT.	48" ø	RFC-465A1	909.45	905.59	R-3246	L							CBMH 14	904.69	0.40	
CB 15	28+22.2	LT.	2' x 3'	RFC-459B	909.57	906.70	R-3246	L							CBMH 14	906.40	1.25	
CBMH 14	28+22.2	RT.	48" ø	RFC-465A1	909.57	904.69	R-3246	L							CBMH 12	904.28	0.41	
CB 13	29+23.3	LT.	2' x 3'	RFC-459B	908.95	906.10	R-3246	L							CBMH 12	905.80	1.25	
CBMH 12	29+23.2	RT.	48" ø	RFC-465A1	908.95	904.28	R-3246	L							CBMH 10	903.95	0.32	
CB 11	30+27.2	LT.	2' x 3'	RFC-459B	908.32	905.50	R-3246	L							CBMH 10	905.20	1.25	
CBMH 10	30+27.2	RT.	48" ø	RFC-465A1	908.32	903.95	R-3246	L							CBMH 8	903.56	0.35	
CB 9	31+43.3	RT.	2' x 3'	RFC-459B	907.46	904.60	R-3501-TB	L							CBMH 8	904.30	1.26	
CBMH 8	31+43.3	LT.	48" ø	RFC-465A1	907.46	903.56	R-3246	L							MH 7	903.34	0.36	
MH 7	32+00	LT.	72" ø	RFC-465C5	907.41	903.34	R-1733	-							MH 2	902.85	0.36	
TOTAL									162	74	326	275	135					

- NOTES:
- ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION.
 - ALL DISTURBED AREAS TO BE SEED, MULCHED AND FERTILIZED WITHIN 7 DAYS OF ROUGH GRADING. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
 - SLOPES SHOWN ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.



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 CENTERPOINT ENERGY (763) 323-2760
 COMCAST (952) 607-4078
 CONNEXUS ENERGY (763) 323-4268
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DATE: REVISION HISTORY:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Dave Krueger
 DATE 04/03/24 REG. NO. 48768

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 Consulting Engineers

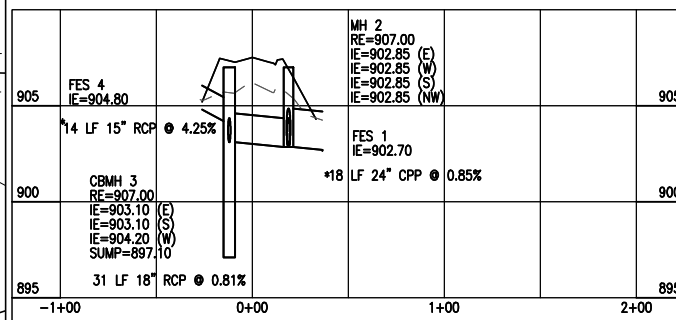
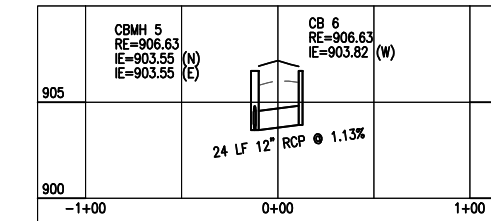
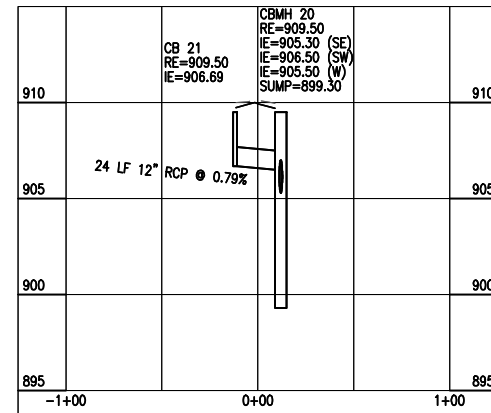
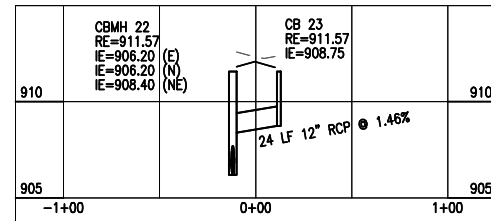
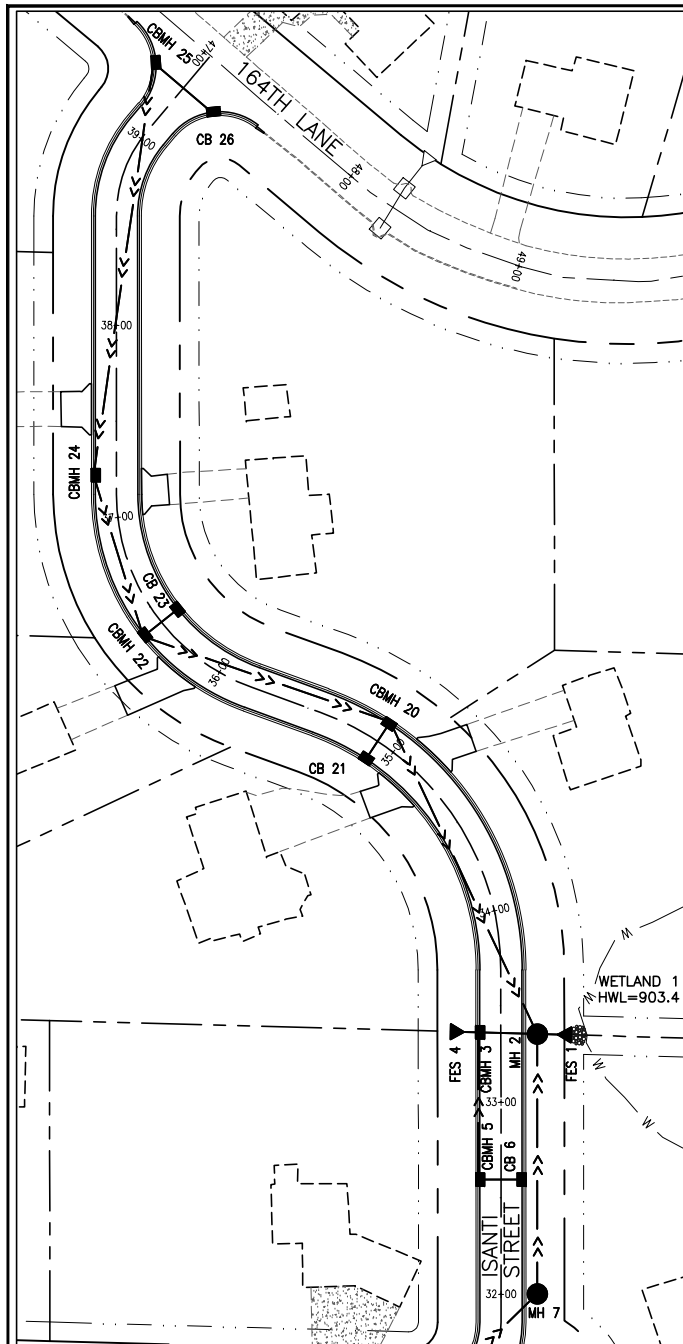
13635 Johnson Street
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 Fax 763-862-8042

HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET

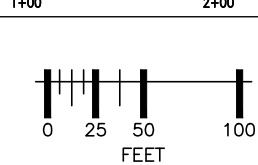
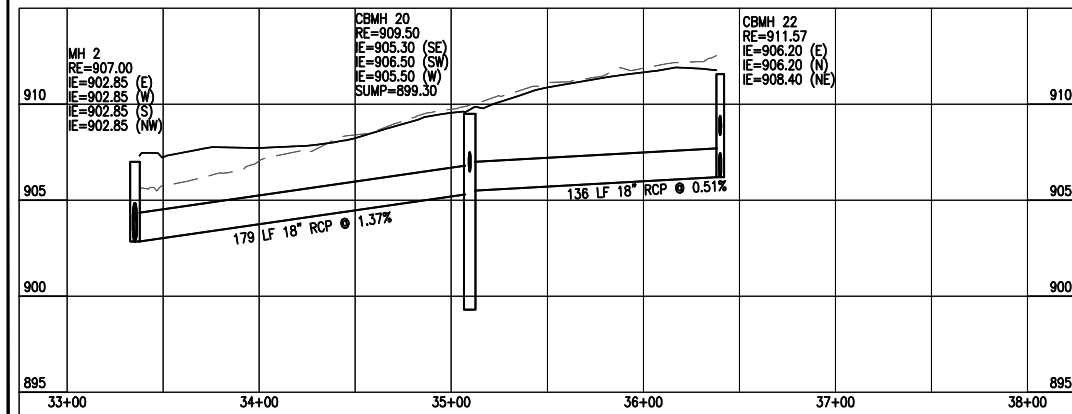
STORM DETAILS
 163RD LANE

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: 2103 STORM 1
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 16 OF 24
 FILE: 36-2-175

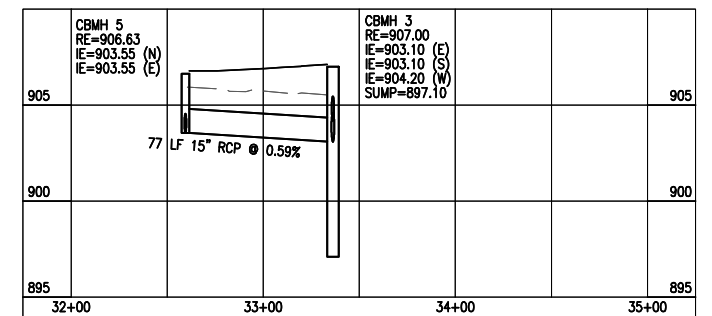
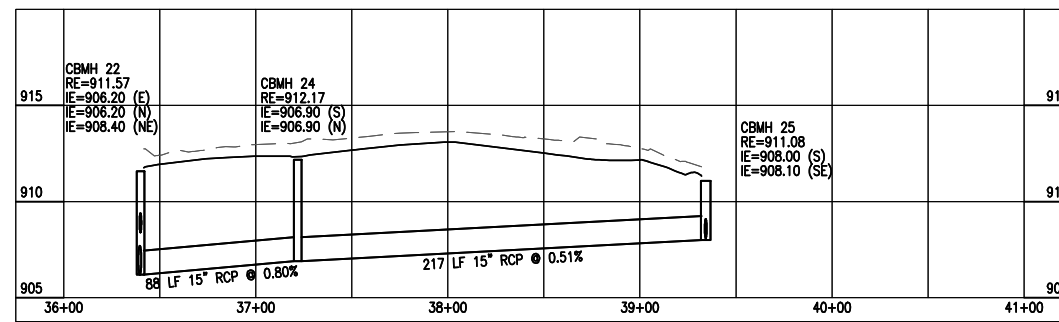
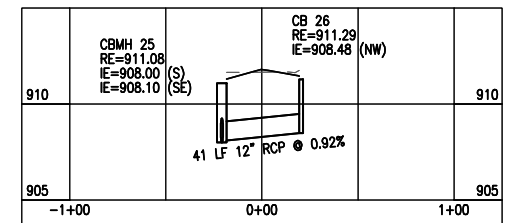


STORM DRAIN																		
STRUCTURE	STATION	LOCATION	SIZE OF STRUCTURE	DESIGN	TOP OF CASTING OR INLET	INVERT	CASTING ASSEMBLY (NEENAH, E.J., DL)*	TYPE GRATE (NEENAH CASTINGS)	12" R.C.P.	15" R.C.P.	18" R.C.P.	24" C.P.P.	PIPE APRON	TRASH GUARD	APRON	FLOWS TO	INLET	% GRADE
									LIN FT	LIN FT	LIN FT	LIN FT						
CB 26	39+33.9	RT.	2' x 3'	RFC-459B	911.29	908.48	R-3246	C	41							CBMH 25	908.10	0.92
CBMH 25	39+34.3	LT.	60" ø	RFC-465A1	911.08	908.00	R-3246	C		217						CBMH 24	906.90	0.51
CBMH 24	37+21.8	LT.	48" ø	RFC-465A1	912.17	906.90	R-3246	L		88						CBMH 22	906.20	0.80
CB 23	36+40	RT.	2' x 3'	RFC-459B	911.57	908.75	R-3246	L		24						CBMH 22	908.40	1.46
CBMH 22	36+40	LT.	48" ø	RFC-465A1	911.57	906.20	R-3246	L			136					CBMH 20	905.50	0.51
CB 21	35+09.6	LT.	2' x 3'	RFC-459B	909.5	906.69	R-3246	L		24						CBMH 20	906.50	0.79
CBMH 20	35+09.6	RT.	72" ø	RFC-465A3	909.5	905.30	R-3246	L			179					MH 2	902.85	1.37
CB 6	32+59.5	LT.	2' x 3'	RFC-459B	906.63	903.82	R-3246	C		24						CBMH 5	903.55	1.13
CBMH 5	32+59.5	LT.	48" ø	RFC-465A1	906.63	903.55	R-3246	C			77					CBMH 3	903.10	0.59
FES 4	33+36.6	LT.		FES		904.80	-	-					6.1	1	1	CBMH 3	904.20	4.25
CBMH 3	33+36.2	LT.	72" ø	RFC-465A3	907.00	903.10	R-3246	L			31					MH 2	902.85	0.81
MH 2	33+35.4	LT.	60" ø	RFC-465C	907.00	902.85	R-1733	-				14	3.4	1	1	FES 1	902.70	0.85
TOTAL									113	390	346	14	9.5	2	2			



- NOTES:
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 - ALL DISTURBED AREAS TO BE SEEDED, MULCHED AND FERTILIZED WITHIN 7 DAYS OF ROUGH GRADING. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
 - SLOPES SHOWN ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE

*PIPE LENGTHS IN PROFILE VIEW INCLUDE PIPE AND APRON



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Dave Krueger
 DATE 04/03/24 REG. NO. 48768

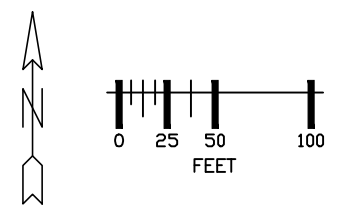
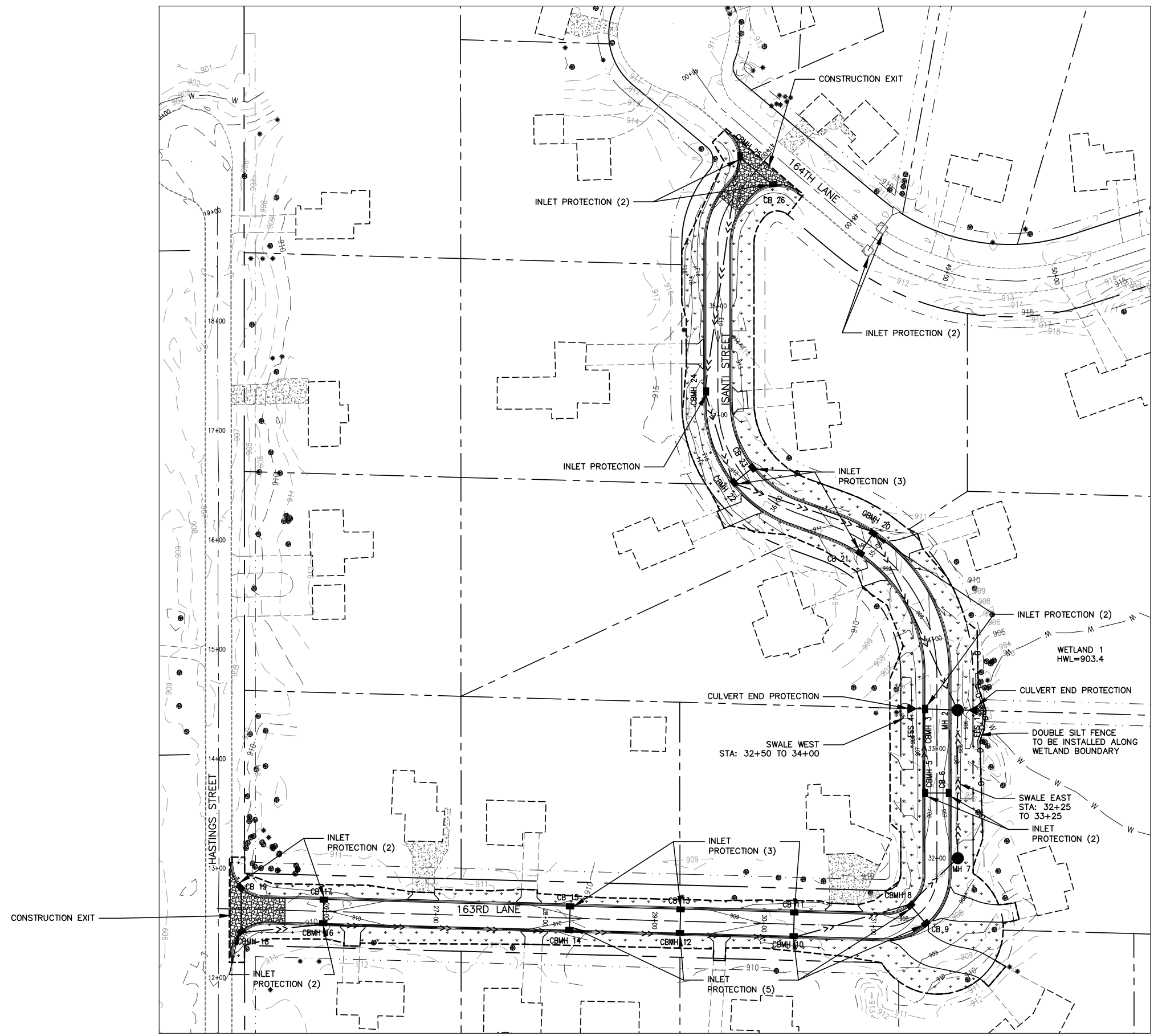
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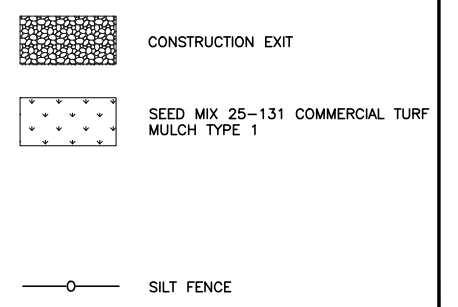
HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET
 STORM DETAILS
 ISANTI STREET

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: 2103 STORM 2
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 17 OF 24
 FILE: 36-2-176



- NOTES:**
1. ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION.
 2. ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION, BUT IN NO CASE LONGER THAN 7 DAYS. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
 3. SALVAGED TOPSOIL SHALL BE STOCKPILED IN PLACE TO MAINTAIN CONTINUITY OF PROPERTY OWNERS EXISTING TURF CONDITIONS. UPON APPROVAL OF ENGINEER, SOIL MAY BE STOCKPILED UPON REVIEW OF ALTERNATIVE PLAN PROVIDED BY CONTRACTOR.
 4. UNDER NO CONDITIONS SHALL MATERIAL BE STOCKPILED WITHIN WETLAND AREAS.



OPPER STATE ONE CALL
800-252-1166 651-454-0002

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 CENTERPOINT ENERGY (763) 323-2760
 COMCAST (952) 607-4078
 CONNEXUS ENERGY (763) 323-4268
 GREAT RIVERS ENERGY (763) 445-5984

DATE	REVISION HISTORY

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Dave Krueger
 DATE 04/03/24 REG. NO. 48768

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Consulting Engineers

13635 Johnson Street
 Ham Lake, MN 55304
 Telephone 763-862-8000
 Fax 763-862-8042

HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET
 STORMWATER POLLUTION PREVENTION PLAN

DWG: 2103 SWPPP 1
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 18 OF 24
 FILE: 36-2-177

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

CONSTRUCTION ACTIVITY INFORMATION:

MEADOW PARK NORTH OF CONSTANCE BOULEVARD ROAD RECONSTRUCTION, HAM LAKE, ANOKA COUNTY, MINNESOTA, 55304, 45.2527° LATITUDE NORTH, 93.2355° LONGITUDE WEST (BY ONLINE TOOL).

TOTAL PROJECT DISTURBED AREA IS 2.12 ACRES.

THIS IS A ROAD CONSTRUCTION PROJECT.

0.02 ACRES OF NEW IMPERVIOUS SURFACE.

0.04 ACRES OF NEW PERVIOUS SURFACE.

DRAINAGE IS TO REGIONAL PONDS AND WETLANDS LOCATED IN THE CENTER AND EAST OF THE PROJECT. THE CENTER POND DRAINS TO THE POND ON THE EASTERN PORTION OF THE DEVELOPMENT. THE EASTERN POND DRAINS INTO SURROUNDING WETLAND TO THE NORTH ALONG COUNTY DITCH 58-4 DITCH.

CONTACT INFORMATION:

OWNER: CITY OF HAM LAKE, OWNER CONTACT: DENISE WEBSTER CITY ADMINISTRATOR, DWEBSTER@CI.HAM-LAKE.MN.US, 763-434-9555, 15544 CENTRAL AVENUE, HAM LAKE, MN, 55304

ALTERNATE OWNER CONTACT: DAVID A KRUGLER, CITY ENGINEER, DKRUGLER@RFCENGINEERING.COM 763-862-8000. RFC ENGINEERING INC, 13635 JOHNSON STREET NE, HAM LAKE, MN 55304

CONTRACTOR: _____

ALTERNATE CONTRACTOR CONTACT:

PARTY RESPONSIBLE FOR OPERATION AND MAINTENANCE OF PERMANENT STORMWATER MANAGEMENT SYSTEM: CITY OF HAM LAKE PUBLIC WORKS, JOHN WITKOWSKI, 763-235-1662, 15544 CENTRAL AVENUE, HAM LAKE, MN, 55304

GENERAL CONSTRUCTION PROJECT INFORMATION:

THE PROJECT CONSISTS OF A STREET RECONSTRUCTION OF THE 163RD LANE AND ISANTI STREET IN THE MEADOW PARK DEVELOPMENT NORTH OF CONSTANCE BOULEVARD: WORK INCLUDES GRADING, AGGREGATE BASE, PLANT MIXED BITUMINOUS SURFACE, STORM DRAINS, AND CONCRETE CURB AND GUTTER.

THE SOILS ON THE SITE ARE PRIMARILY HYDROLOGIC SOIL GROUP TYPE B WITH NO INFILTRATION CAPACITY. THERE IS NO MUCK IN THE WETLANDS. THE GROUNDWATER IN THIS AREA IS HIGH.

GENERAL SITE INFORMATION:

ALL EROSION CONTROL MEASURES MUST BE PLACED PRIOR TO COMMENCEMENT OF LAND DISTURBING ACTIVITIES AND BE MAINTAINED UNTIL ALL DISTURBED AREAS ON THE SITE HAVE BEEN RESTORED.

CONSTRUCTION EXITS SHALL BE SURFACED WITH CRUSHED ROCK AND DESIGNATED PRIOR TO CONSTRUCTION (REFER TO DETAIL).

TRENCHES FOR STORM DRAIN PIPE AND STRUCTURES ARE TO BE BACKFILLED BY THE END OF THE WORK DAY.

NO STORMWATER MITIGATION MEASURES ARE REQUIRED AS THE RESULT OF AN ENVIRONMENTAL, ARCHAEOLOGICAL, OR OTHER REQUIRED LOCAL, STATE, OR FEDERAL REVIEW OF THE PROJECT.

THE PROJECT IS NOT LOCATED IN A KARST AREA.

THE PROJECT DOES NOT DISCHARGE TO A CALCAREOUS FEN LISTED IN MINN. R. 7050.0180, SUBP. 6B.

THE SITE DOES NOT DISCHARGE TO A WATER THAT IS LISTED AS IMPAIRED FOR PHOSPHORUS, TURBIDITY, DISSOLVED OXYGEN OR BIOTIC IMPAIRMENT.

THE SITE IS WITHIN 1-MILE OF A WATER THAT IS LISTED AS IMPAIRED. HAM LAKE IS IMPAIRED WITH NON-CONSTRUCTION Hg.

SELECTION OF A PERMANENT STORMWATER MANAGEMENT SYSTEM:

NEW IMPERVIOUS SURFACE CREATED BY THIS PROJECT IS 0.02 ACRES.

PER COON CREEK WATERSHED DISTRICT, ANOKA CONSERVATION DISTRICT, AND MINNESOTA BOARD OF WATER AND SOIL RESOURCES, THERE IS NO INFILTRATION ON SITE DUE TO THE HIGH GROUND WATER TABLE.

HYDROLOGIC REPORT (DRAINAGE CALCULATIONS) AND DRAINAGE MAPS (WITH DRAINAGE DIVIDES) PREPARED FOR THIS PROJECT ARE AVAILABLE IN THE CITY'S ENGINEERS OFFICE. STORM WATER RUNOFF FROM THE SITE DRAINS INTO REGIONAL PONDS AND WETLANDS AND THEN FLOW TO COUNTY DITCH 58-4 WHICH IS NORTH OF THE PROJECT. THE RUNOFF FROM THE SITE WILL BE CONVEYED VIA NEW ON SITE STORM DRAINS. THE LAST STORM DRAIN STRUCTURE JUST PRIOR TO DISCHARGE WILL BE EQUIPPED WITH A SUMP (GRIT CHAMBERS). GRIT CHAMBERS ARE BEING USED DUE TO THE HIGH GROUND WATER TABLE. THE SUMP (GRIT CHAMBERS) ARE SIZED PER COON CREEK WATERSHED DISTRICT REQUIREMENTS.

EROSION PREVENTION PRACTICES:

THERE ARE NO CONSTRUCTION PHASING, VEGETATIVE BUFFER STRIPS, LONG HORIZONTAL SLOPE GRADING FOR THE PROJECT. THERE ARE UNDISTURBED AREAS WITHIN THE PROJECT LIMITS.

ALL DISTURBED AREAS SHALL BE RESTORED WITH SOD, SEED, WOOD FIBER BLANKET, OR PAVED SURFACE WITHIN SEVEN (7) DAYS OF ROUGH GRADING.

ALL EXPOSED SOIL AREAS MUST HAVE TEMPORARY EROSION PROTECTION OR PERMANENT COVER WITHIN SEVEN (7) DAYS AFTER THE AREA IS NOT ACTIVELY BEING WORKED.

FERTILIZER: MnDOT SPECIFICATION 3881, TYPE 2 SEEDING: MnDOT SEED MIXTURE 25-131. HYDROMULCH: MnDOT SPECIFICATION 3884 TYPE 1 OR 3 WITH APPLICATION RATE PER MnDOT SPECIFICATION 2575.3H.

PROVIDE EROSION CONTROL FABRIC FOR ALL SLOPES STEEPER THAN 1:3.

THERE ARE NO DRAINAGE DITCHES CONSTRUCTED WITH THIS PROJECT.

SEDIMENT CONTROL PRACTICES:

THERE ARE NO DRAINAGE DITCHES OR SEDIMENT BASINS FOR THIS PROJECT.

THERE ARE NO SLOPES WITH A GRADE OF 1:3 OR STEEPER WITH A SLOPE LENGTH GREATER THAN 75 FEET.

THERE ARE NO DRAINAGE INFILTRATION BASINS FOR THIS PROJECT.

ALL SEDIMENT CONTROL DEVICES ARE TO BE IN PLACE PRIOR TO UPSTREAM LAND DISTURBING ACTIVITIES.

WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER, PIPE OUTLETS MUST CONTAIN RIPRAP, SEED AND PLACE EROSION CONTROL BLANKETS ON DISTURBED AREAS WITHIN 200 LINEAL FEET OF PIPE OUTLETS INCLUDING THE DOWN SLOPE TO THE PIPE OUTLET, SILT FENCING TO BE PLACED AROUND THE DISTURBED AREA AND SILT FENCE ROUTED ACROSS THE TOP OF THE OUTLET.

WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER, SEED AND PLACE EROSION CONTROL BLANKETS ON DISTURBED AREAS WITHIN 200 FEET OF PIPE INLET INCLUDING THE DOWN SLOPE TO THE PIPE INLET. SILT FENCING TO BE PLACED AROUND THE DISTURBED AREA, PLACE A SECOND SILT FENCE ROUTED ACROSS THE TOP OF THE INLET AND PLACE INLET PROTECTION. PIPE INLET PROTECTION SHALL BE PER BMPs SUCH AS SILT FENCE OR STRAW BALES STAKED AROUND THE APRON OPENING OR OTHER APPROVED EQUIVALENT.

WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER, SEED AND PLACE EROSION CONTROL BLANKETS ON DISTURBED AREAS WITHIN 200 FEET OF CATCH BASIN INLET. PLACE INLET PROTECTION IMMEDIATELY AFTER STRUCTURE IS BACKFILLED. CATCH BASIN INLET PROTECTION SHALL BE PER BMPs SUCH AS CLEAR ROCK AROUND STEEL PLATE OVER FABRIC OR OTHER APPROVED EQUIVALENT UNTIL THE CATCH BASIN CASTING IS PLACED. IMMEDIATELY AFTER THE CASTING IS PLACED, PROVIDE CATCH BASIN INLET PROTECTION PER BMPs SUCH AS FILTER BAG INSERT OR OTHER APPROVED EQUIVALENT. NO CAPTURED SEDIMENT SHOULD BE ALLOWED TO DROP INTO THE CATCH BASIN.

PROVIDE SILT FENCE DOWNSTREAM OF STOCKPILE AREAS. STOCKPILES ARE NOT TO BLOCK DRAINAGE CONVEYANCE SYSTEMS.

SEDIMENT TRACKED OFFSITE SHALL BE MINIMIZED AND SWEEPED ON A DAILY BASIS.

TEMPORARY SEDIMENTATION BASINS ARE NOT BEING USED TO REDUCE WETLAND IMPACTS, DUE TO THE HIGH GROUND WATER TABLE AND THE LACK OF RIGHT OF WAY.

DEWATERING AND BASIN DRAINING:

ALL DEWATERING IS TO DISCHARGE TO SEDIMENT SACKS, ROCK WEEPER, BIO ROLL AREA, ETC. TO PREVENT EROSION AND MINIMIZE SEDIMENT DISCHARGING FROM THE SITE. EXCESSIVE SEDIMENT-LADEN WATER WILL NOT BE PERMITTED TO DISCHARGE FROM THE SITE. DEWATERING PRACTICES ARE NOT TO CAUSE DOWNSTREAM NUISANCE CONDITIONS, EROSION, OR NON-PERMITTED WETLAND INUNDATION CAUSING ADVERSE IMPACTS. DISCHARGE FROM DEWATERING WILL BE TO WETLANDS. LARGE VOLUMES OF DEWATERING WILL REQUIRE DISCHARGE INTO SEDIMENT SACKS PRIOR TO DISCHARGING INTO THE WETLANDS.

ADDITIONAL BMPs FOR SPECIAL WATERS AND DISCHARGES TO WETLANDS:

THE PROJECT DOES DISCHARGE INTO OR WITHIN 1 MILE OF SPECIAL WATERS.

THERE ARE NO BUFFER ZONES OR UNDISTURBED AREA ZONES.

THE STORM DRAIN SYSTEM WAS SET UP TO DISTRIBUTE THE STORMWATER RUNOFF INTO THE PROJECT PONDS AND WETLANDS AS CLOSE TO EXISTING CONDITIONS AS POSSIBLE. THIS INCLUDED PROVIDING STORM DRAIN ON BOTH SIDES OF THE STREET IN ORDER TO ACHIEVE THIS. THE DRAINAGE IS PENDING APPROVAL BY COON CREEK WATERSHED DISTRICT.

THERE IS NO CONVERSION OF WETLANDS INTO STORMWATER PONDS.

INSPECTION AND MAINTENANCE:

THE CONTRACTOR SHALL PLACE A RAIN GAUGE ON THE PROJECT SITE AT A LOCATION APPROVED BY THE ENGINEER. RAINFALL DATA SHALL BE KEPT WITH THE SWPPP RECORDS.

THE CONTRACTOR MUST INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECTIONS AND MAINTENANCE TO BE RECORDED IN WRITING. THE SWPPP INSPECTION FOR THE CONSTRUCTION IS TO BE CONDUCTED BY _____ OF _____

INSPECTIONS FORMS ARE AVAILABLE AT: <https://tinyurl.com/2ARMT4KJ> SELECT THE APPROPRIATE INSPECTION FORM FROM THE LIST.

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT DEVICES, AS WELL AS ALL EROSION AND SEDIMENT CONTROL, FOR THE DURATION OF THE PROJECT.

THE CONTRACTOR WILL INVESTIGATE AND MUST COMPLY WITH THE FOLLOWING:

CONTRACTOR MUST INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs AND POLLUTION PREVENTION MANAGEMENT MEASURES TO ENSURE INTEGRITY AND EFFECTIVENESS. CONTRACTOR MUST REPAIR, REPLACE OR SUPPLEMENT ALL NONFUNCTIONAL BMPs WITH FUNCTIONAL BMPs BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY UNLESS ANOTHER TIME FRAME IS SPECIFIED BELOW. CONTRACTOR MAY TAKE ADDITIONAL TIME IF FIELD CONDITIONS PREVENT ACCESS TO THE AREA.

DURING EACH INSPECTION, CONTRACTOR MUST INSPECT SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS BUT NOT CURB AND GUTTER SYSTEMS, FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. CONTRACTOR MUST REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS AND RESTABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. CONTRACTOR MUST COMPLETE REMOVAL AND STABILIZATION WITHIN SEVEN (7) CALENDAR DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. CONTRACTOR MUST USE ALL REASONABLE EFFORTS TO OBTAIN ACCESS. IF PRECLUDED, REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN SEVEN (7) DAYS OF OBTAINING ACCESS. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND RECEIVING ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.

CONTRACTOR MUST INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS, STREETS AND CURB AND GUTTER SYSTEMS WITHIN AND ADJACENT TO THE PROJECT FOR SEDIMENTATION FROM EROSION OR TRACKED SEDIMENT FROM VEHICLES. CONTRACTOR MUST REMOVE SEDIMENT FROM ALL PAVED SURFACES WITHIN ONE (1) CALENDAR DAY OF DISCOVERY OR, IF APPLICABLE, WITHIN A SHORTER TIME TO AVOID A SAFETY HAZARD TO USERS OF PUBLIC STREETS.

REPAIR, REPLACE OR SUPPLEMENT ALL PERIMETER CONTROL DEVICES WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE DEVICE.

CONTRACTOR MUST DRAIN TEMPORARY AND PERMANENT SEDIMENTATION BASINS AND REMOVE THE SEDIMENT WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES TWO FEET OR 1/2 THE STORAGE VOLUME, WHICHEVER IS LESS, WITHIN 72-HOURS OF DISCOVERY.

POLLUTION PREVENTION MANAGEMENT MEASURES:

THE CONTRACTOR SHALL IMPLEMENT THE FOLLOWING POLLUTION PREVENTION MANAGEMENT MEASURES ON THE SITE:

SOLID WASTE: COLLECT SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS, AND OTHER WASTES MUST BE DISPOSED OF PROPERLY OFFSITE AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.

HAZARDOUS MATERIALS: OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.

EXTERNAL WASHING OF TRUCKS, INCLUDING CONCRETE DELIVERY TRUCKS, AND OTHER CONSTRUCTION VEHICLES MUST BE LIMITED TO A DEFINED AREA OF THE SITE. RUNOFF MUST BE CONTAINED AND WASTE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE. CONCRETE WASHOUT ON SITE MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER.

THE CITY IS RESPONSIBLE FOR LONG TERM MAINTENANCE OF THE STORM DRAIN INCLUDING THE SUMPS (GRIT CHAMBERS). THE GRIT CHAMBERS ARE TO BE INSPECTED YEARLY AND CLEANED OUT AS NECESSARY TO MAINTAIN FUNCTION.

THE CONTRACTOR IS RESPONSIBLE FOR MONITORING AIR POLLUTION AND ENSURING IT DOES NOT EXCEED LEVELS SET BY LOCAL, STATE, OR FEDERAL REGULATIONS. THIS INCLUDES DUST CREATED BY WORK BEING PERFORMED ON THE SITE. AIR POLLUTION AND DUST CONTROL CORRECTION ARE CONSIDERED INCIDENTAL TO THE UNIT BID PRICES FOR WHICH WORK IS BEING PERFORMED. ADDITIONAL DUST CONTROL MEASURES MAY BE REQUIRED BY THE ENGINEER.

NO SANITARY AND SEPTIC WASTE IS ON THE SITE.

FINAL STABILIZATION:

THE CONTRACTOR MUST ENSURE FINAL STABILIZATION OF THE SITE. FINAL STABILIZATION IS ACHIEVED WHEN ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL SOILS ARE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70 PERCENT OF THE PVIOUS SURFACE AREA, OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSION CONDITIONS.

ALL TEMPORARY EROSION PROTECTION, INCLUDING SILT FENCE, ARE TO BE REMOVED AFTER FINAL STABILIZATION OF THE SITE. RECORDS RETENTION: ALL REQUIREMENTS OF THE NPDES PERMIT AND THIS SWPPP SHALL REMAIN IN EFFECT UNTIL ALL LAND DISTURBING ACTIVITY HAS BEEN COMPLETED, ALL FINAL RESTORATION HAS BEEN COMPLETED AND THE NOTICE OF TERMINATION FORM HAS BEEN SUBMITTED TO THE MINNESOTA POLLUTION CONTROL AGENCY (MPCA).

REFER TO OTHER SHEETS OF THIS PLAN SET FOR DETAILED CONSTRUCTION INFORMATION. EXISTING AND PROPOSED GRADES FOR THE ROADWAY ARE SHOWN ON THE PLAN AND PROFILE SHEETS AND ON THE CROSS SECTION SHEETS.

THE CONTRACTOR SHALL MAINTAIN A COPY OF THE PLANS ONSITE AT ALL TIMES UNTIL THE PROJECT HAS BEEN ACCEPTED BY THE CITY. THE CONTRACTOR SHALL UPDATE THE SWPPP AS NECESSARY TO REFLECT CURRENT CONDITIONS ON THE SITE. CONTRACTOR IS TO PROVIDE THE ENGINEER A COPY OF THE REVISED SWPPP. THE REVISED SWPPP IS TO BE MAINTAINED WITH THE CONSTRUCTION SET OF PLANS.

THE CONSTRUCTION PLANS, INCLUDING THE SWPPP, AND THE SWPPP INSPECTION REPORTS ARE TO BE AVAILABLE TO THE ENGINEER AND TO THE MPCA AND COON CREEK WATERSHED DISTRICT INSPECTORS AT ALL TIMES.

THE CONTRACTOR IS TO PROVIDE THE ENGINEER A COPY OF THE SWPPP INSPECTION REPORTS WITHIN SEVEN (7) DAYS AFTER THE INSPECTION.

THE CONTRACTOR IS TO PROVIDE THE ENGINEER A COPY OF THE REVISED SWPPP WITHIN SEVEN (7) DAYS AFTER THE CONTRACTOR REVISES THE SWPPP.

ALL SWPPP INSPECTIONS AND ALL BMPs SHALL BE PLACED UNDER THE SUPERVISION OF A CONSTRUCTION INSTALLER CERTIFIED BY THE MPCA. THE CONSTRUCTION SITE SHALL BE MANAGED AND MAINTAINED BY A MPCA CERTIFIED CONSTRUCTION SITE MANAGEMENT.

THE CONTRACTOR SHALL PROVIDE THE CITY WITH A COPY OF CONSTRUCTION INSTALLER CERTIFICATION AND CONSTRUCTION SITE MANAGEMENT CERTIFICATION. A COPY OF THE CERTIFICATIONS, INCLUDING SWPPP DESIGNER, SHALL BE KEPT WITH THE SWPPP.

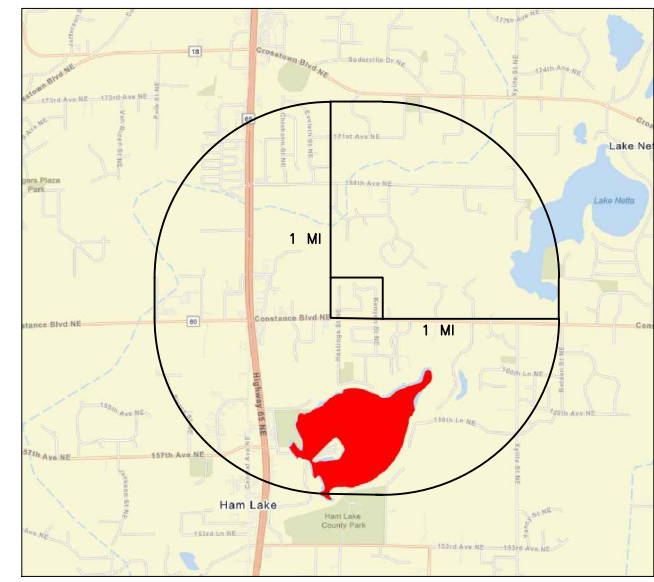
THE SWPPP, THE SWPPP INSPECTIONS REPORTS AND MAINTENANCE RECORDS SHALL BE KEPT FOR 3 YEARS.

DRAINAGE CALCULATIONS AND DRAINAGE MAPS WILL BE KEPT BY THE CITY FOR AT LEAST 3 YEARS.

SEQUENCE OF EROSION CONTROL

1. OBTAIN ALL NECESSARY PERMITS, INCLUDING NPDES GENERAL STORMWATER PERMIT.
2. CLEAR AND GRUB SITE.
3. PLACE ALL PERIMETER SEDIMENT CONTROL DEVICES AND ROCK CONSTRUCTION EXITS.
4. CONTACT CITY ENGINEER FOR APPROVAL OF SEDIMENT CONTROL DEVICES.
5. ROUGH IN GRADE.
6. PLACE TEMPORARY EROSION CONTROL DEVICES AS NECESSARY.
7. PLACE STORM DRAIN SYSTEM.
8. RE-ADJUST TEMPORARY EROSION CONTROL DEVICES AS NECESSARY. PLACE STORM DRAIN INLET PROTECTION AND OUTLET PROTECTION DEVICES AS NECESSARY.
9. PLACE SITE PAVEMENT.
10. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, OBTAIN APPROVAL OF CITY ENGINEER.
11. CONTRACTOR TO REMOVE ALL TEMPORARY EROSION CONTROL DEVICES AFTER ACCEPTANCE BY THE CITY.

TABULATION SUMMARY		
ITEM	UNIT	TOTAL
SILT FENCE	L.F.	268
FES/PIPE OUTLET PROTECTION	EACH	2
CATCH BASIN INLET PROTECTION	EACH	24
CLASS III RIPRAP W/ FABRIC	C.Y.	9.5
GEOTEXTILE FILTER FABRIC	S.Y.	34.2
HYDROMULCH TYPE 6	ACRE	1.1
TURF ESTABLISHMENT: SEED MIX 25-131	ACRE	1.1



UTILITIES:	CONTACT	PHONE
CENTURYLINK	(763) 712-5017	
CENTERPOINT ENERGY	(763) 323-2760	
COMCAST	(952) 607-4078	
CONNEXUS ENERGY	(763) 323-4268	
GREAT RIVERS ENERGY	(763) 445-5984	

DATE	REVISION HISTORY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
David Krugler
 DATE 04/03/24 REG. NO. 48768

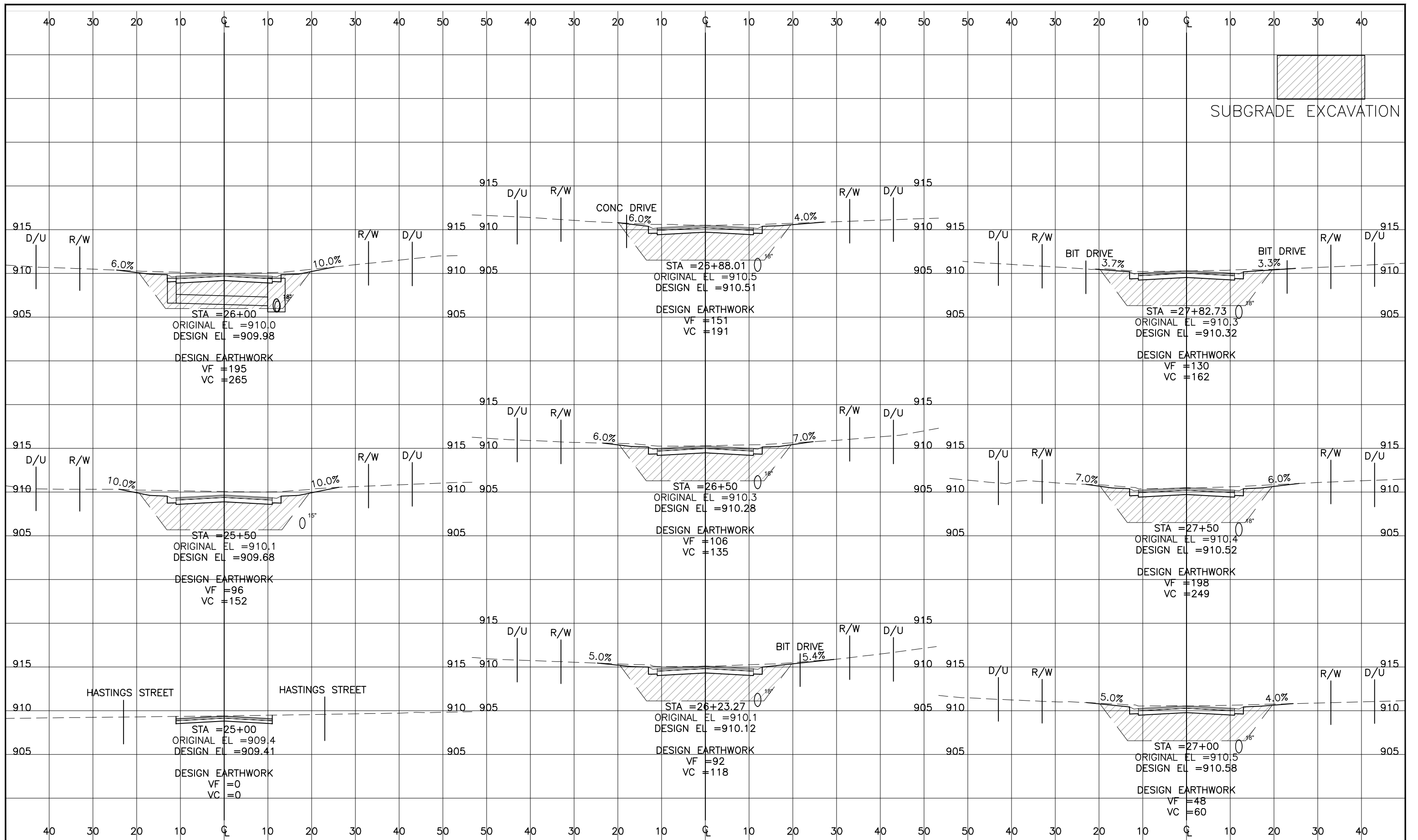
RFC ENGINEERING, INC.
Consulting Engineers

13635 Johnson Street
 Ham Lake, MN 55304
 Telephone 763-862-8000
 Fax 763-862-8042

HAM LAKE IMPROVMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET
 STORMWATER POLLUTION PREVENTION PLAN

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: 2103 SWPPP 2
DATE: 03/28/24
JOB NUMBER: 2103
SHEET: 19 OF 24
FILE: 36-2-178



SUBGRADE EXCAVATION

OPPER STATE
ONE CALL
800-252-1166 651-454-0002
PLOT DATE: 4/03/2024 11:17

UTILITIES: CENTURYLINK (763) 712-5017
CENTERPOINT ENERGY (763) 323-2760
COMCAST (952) 607-4078
CONNEXUS ENERGY (763) 323-4268
GREAT RIVERS ENERGY (763) 445-5984

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Dave Kuehler
DATE 04/03/24 REG. NO. 48768

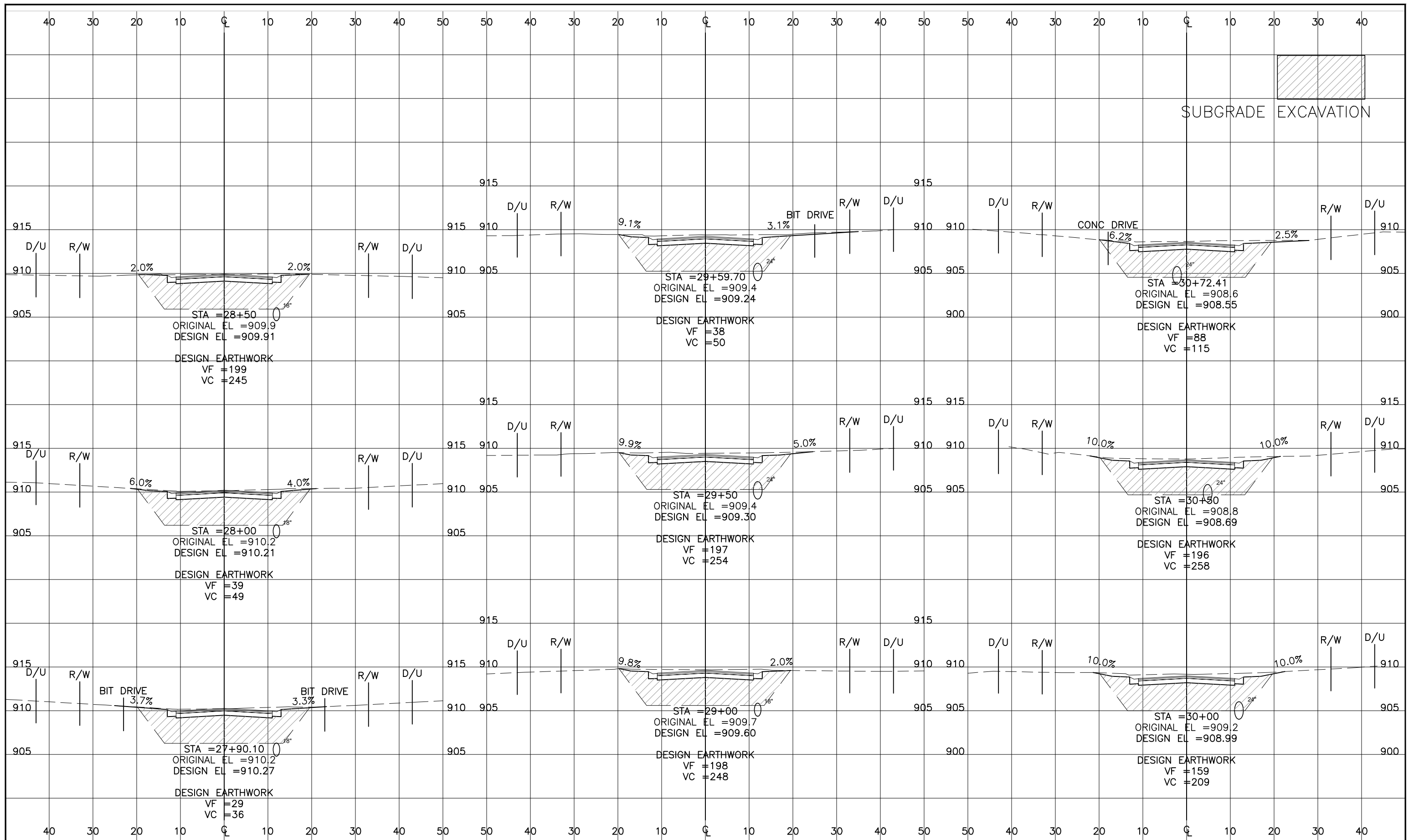
RFC ENGINEERING, INC.
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Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

HAM LAKE IMPROVEMENT PROJECT 2103
MEADOW PARK RECONSTRUCTION
163RD LANE AND ISANTI STREET
CROSS SECTIONS
163RD LANE

DWG:	RC001032
DATE:	03/28/24
JOB NUMBER:	2103
SHEET:	20 OF 24
FILE:	36-2-179

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK



800-252-1166 651-454-0002
 PLOT DATE: 4/03/2024 11:17

UTILITIES:

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CENTERPOINT ENERGY	(763) 323-2760
COMCAST	(952) 607-4078
CONNEXUS ENERGY	(763) 323-4268
GREAT RIVERS ENERGY	(763) 445-5984

DATE	REVISION HISTORY

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Dave Krueger

DATE: 04/03/24 REG. NO. 48768

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Consulting Engineers

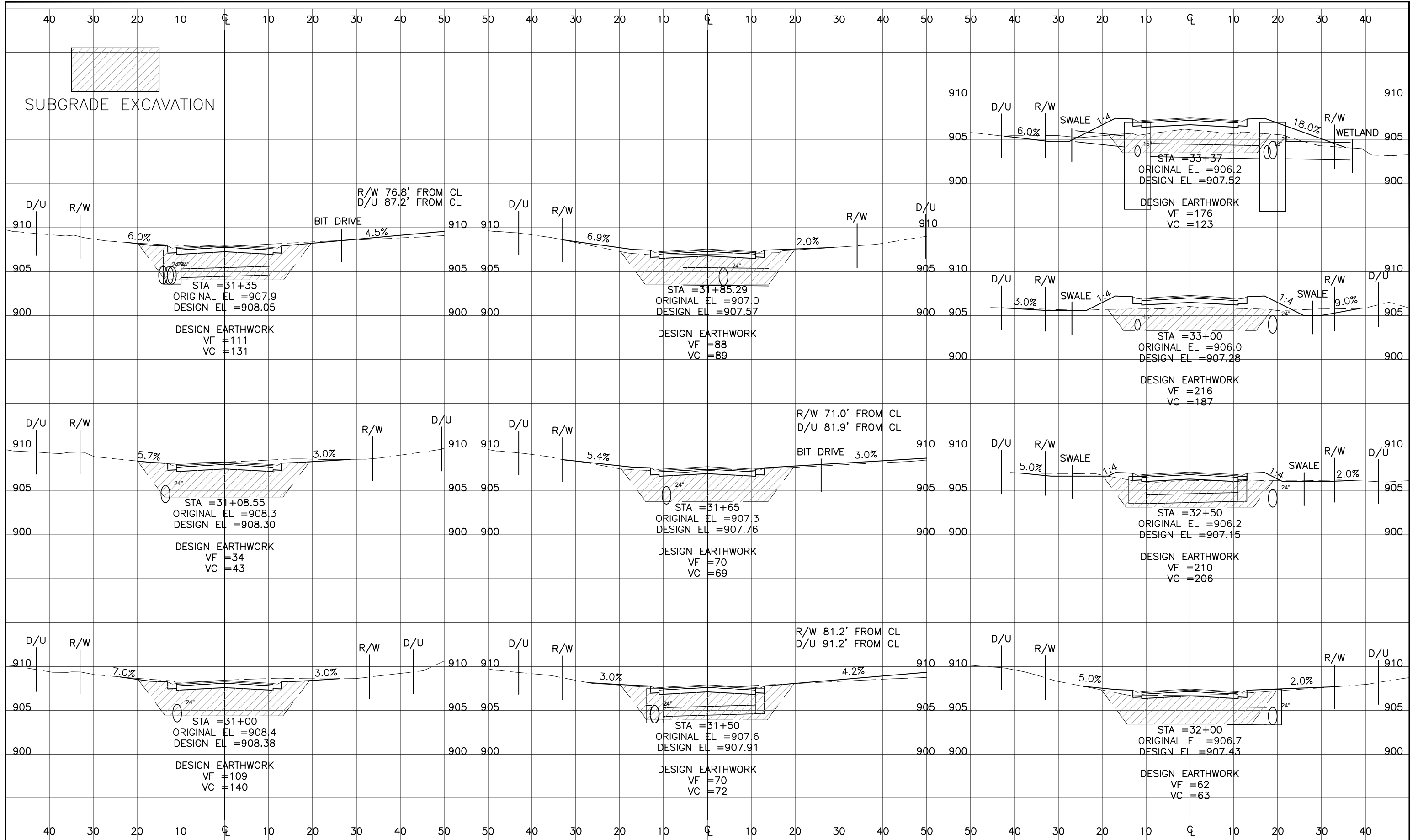
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HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET

CROSS SECTIONS
 163RD LANE/ISANTI STREET

DWG:	RC002032
DATE:	03/28/24
JOB NUMBER:	2103
SHEET:	21 OF 24
FILE:	36-2-180

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK



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 COMCAST (952) 607-4078
 CONNEXUS ENERGY (763) 323-4268
 GREAT RIVERS ENERGY (763) 445-5984

DATE	REVISION HISTORY

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Dave Krueger
 DATE: 04/03/24 REG. NO. 48768

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 Consulting Engineers

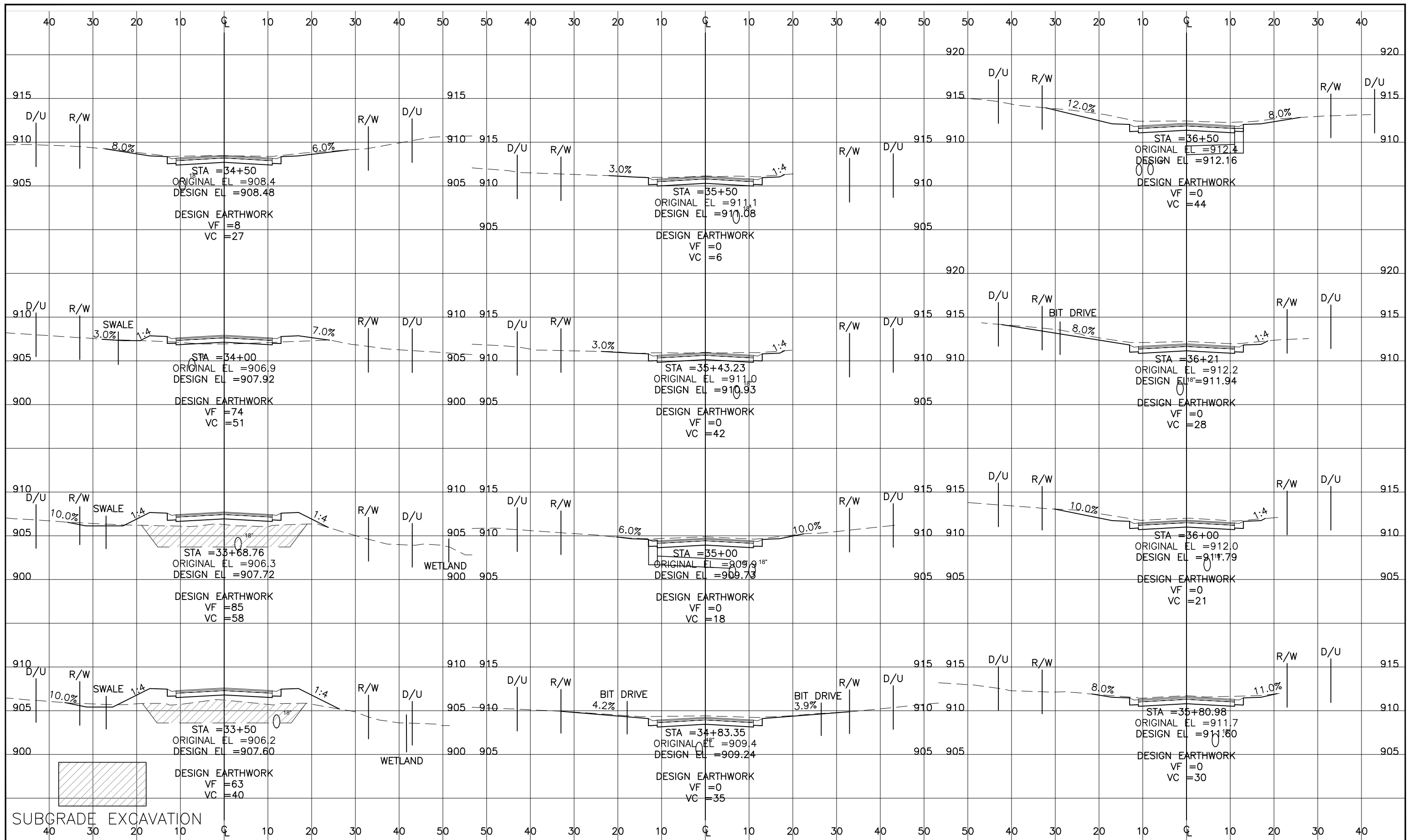
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 Fax 763-862-8042

HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET

CROSS SECTIONS
 ISANTI STREET

DWG: RC003032
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 22 OF 24
 FILE: 36-2-181

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK



SUBGRADE EXCAVATION

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 CONNEXUS ENERGY (763) 323-4268
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DATE	REVISION HISTORY

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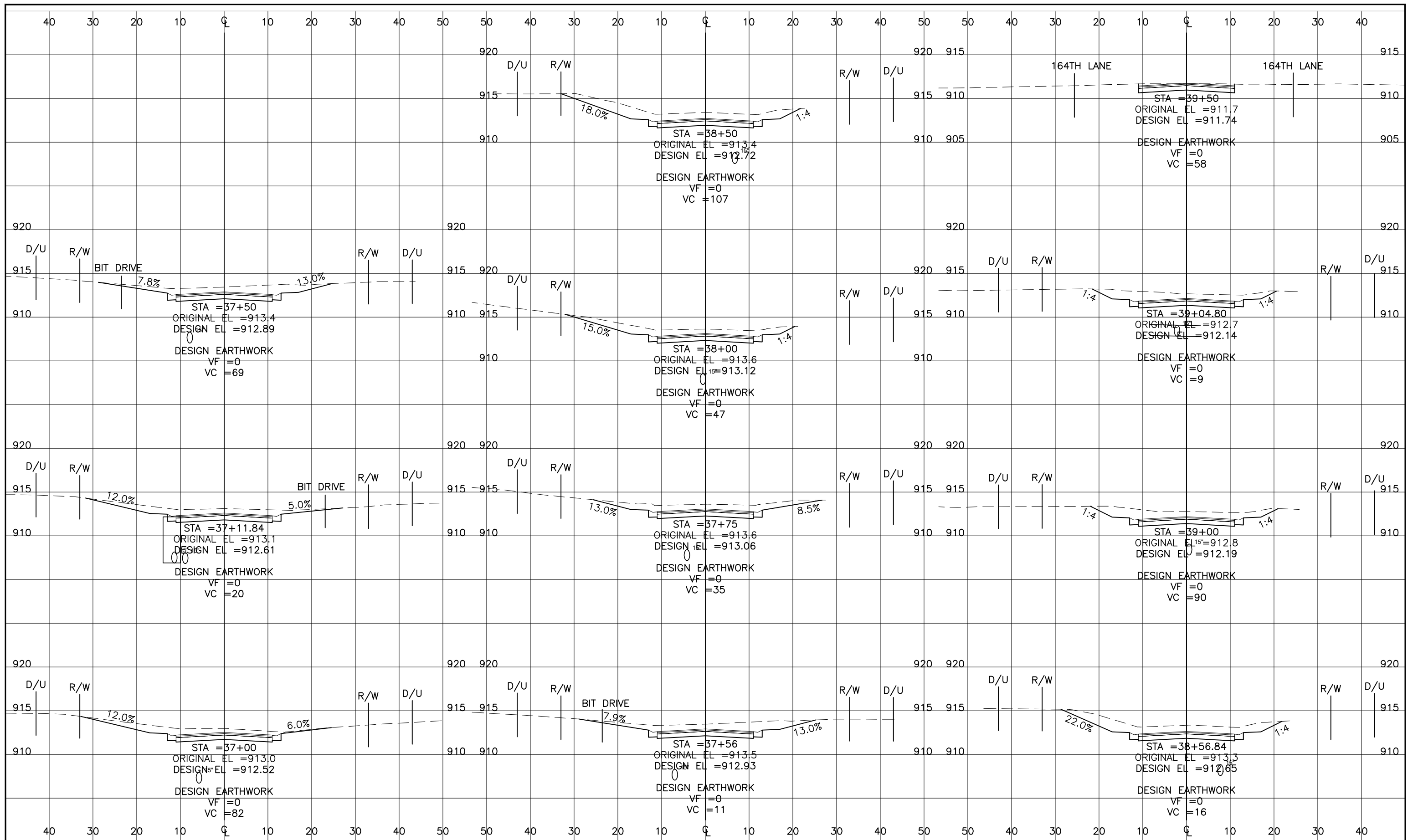
HAM LAKE IMPROVEMENT PROJECT 2103
 MEADOW PARK RECONSTRUCTION
 163RD LANE AND ISANTI STREET

CROSS SECTIONS
 ISANTI STREET

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: RC004032
 DATE: 03/28/24
 JOB NUMBER: 2103
 SHEET: 23 OF 24
 FILE: 36-2-182





800-252-1166 651-454-0002
PLOT DATE: 4/03/2024 11:18

UTILITIES: CENTURYLINK (763) 712-5017
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COMCAST (952) 607-4078
CONNEXUS ENERGY (763) 323-4268
GREAT RIVERS ENERGY (763) 445-5984

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HAM LAKE IMPROVEMENT PROJECT 2103
MEADOW PARK RECONSTRUCTION
163RD LANE AND ISANTI STREET

CROSS SECTIONS
ISANTI STREET

DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: RC005032
DATE: 03/28/24
JOB NUMBER: 2103
SHEET: 24 OF 24
FILE: 36-2-183