

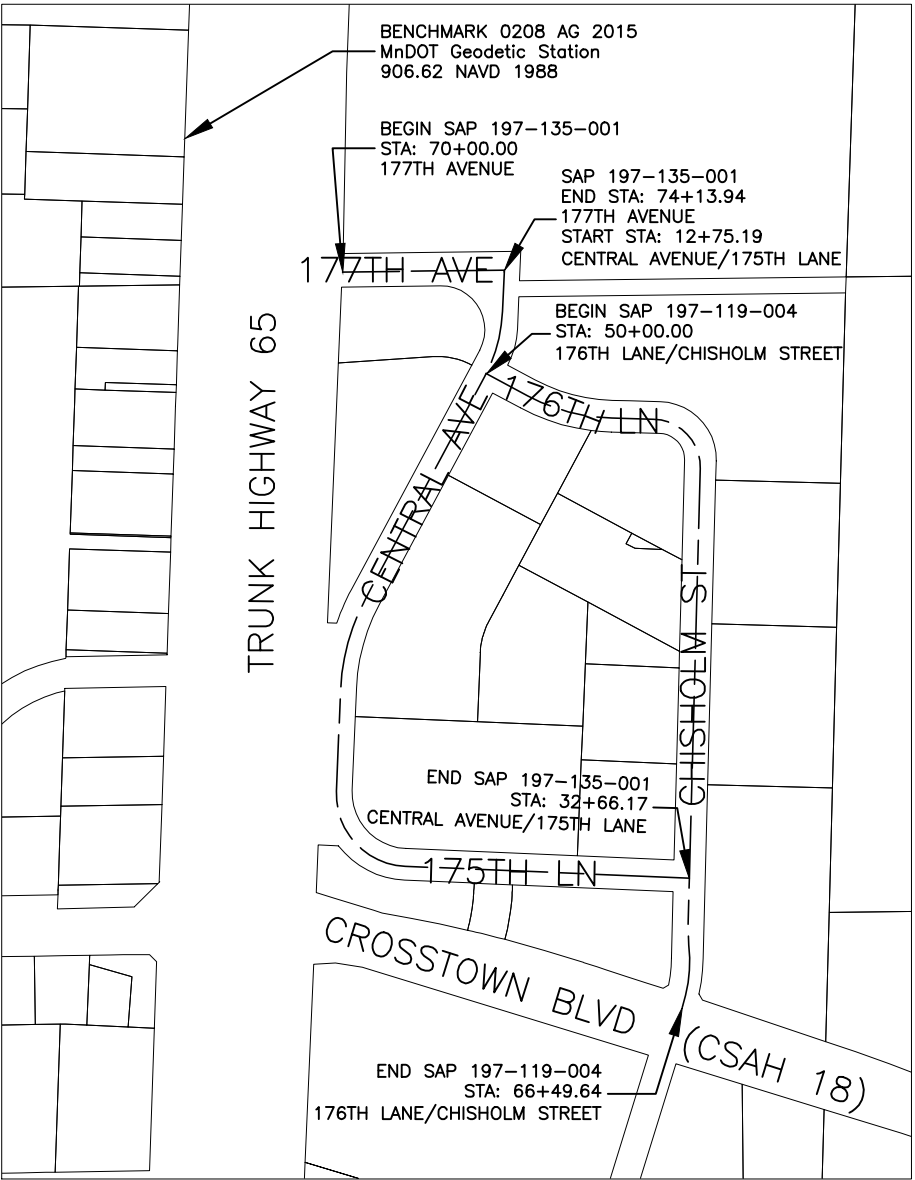
MINNESOTA DEPARTMENT OF TRANSPORTATION

City of Ham Lake, Minnesota

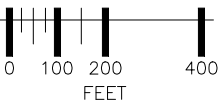
CONSTRUCTION PLANS FOR GRADING, RECLAIM, AGGREGATE BASE, PLANT MIXED BITUMINOUS SURFACE, STORM DRAINS AND CONCRETE CURB

CHISHOLM ST. FROM CROSSTOWN BOULEVARD TO 176TH LANE
175TH LANE FROM CENTRAL AVENUE TO CHISHOLM STREET
176TH LANE FROM CENTRAL AVENUE TO CHISHOLM STREET
177TH AVENUE FROM TH 65 TO CENTRAL AVENUE
CENTRAL AVENUE FROM 175TH LANE TO 177TH AVENUE

HAM LAKE PROJECT NO. 2205
STATE AID PROJ. NO. 197-119-004 AND 197-135-001



PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY



VARIANCE NOTE

THIS PROJECT HAS BEEN GRANTED A VARIANCE FROM MINNESOTA RULE 8820.9936, DATED MARCH 23, 2023, SO AS TO PERMIT TWO (2) 20 MPH CURVES IN LIEU OF THE REQUIRED 30 MPH CURVES. THIS VARIANCE WAS APPROVED ON MARCH 23, 2023 BY THE MINNESOTA DOT, AND SIGNED BY KRISTINE ELWOOD, PE, STATE AID ENGINEER, ON APRIL 7, 2023.

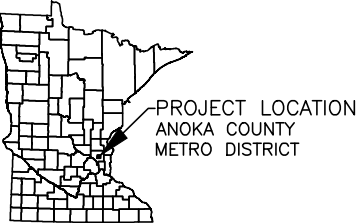
ADT (2026) 3,328 ADT (2046) 4,992
Design Speed 30 MPH
NO. OF TRAFFIC LANES 2 NO. OF PARKING LANES 0 .
FUNCTIONAL CLASSIFICATION COLLECTOR, LOW DENSITY
SOIL FACTOR 50% HCADT <150
TON DESIGN 9 TON
STOPPING SIGHT DISTANCE BASED ON:
HEIGHT OF EYE 3.5'
HEIGHT OF OBJECT 2.0'
Design Speed not achieved at:
STA.. 24+38 TO STA.. 26+74 . . 175TH LANE
STA.. 53+68 TO STA.. 55+25 . . CHISHOLM STREET

CHISHOLM STREET
54+46.60 TO 66+49.64
GROSS LENGTH 1,203.04 FEET 0.228 MILES
BRIDGES LENGTH 0 FEET 0 MILES
EXCEPTIONS LENGTH 0 FEET 0 MILES
NET LENGTH 1,203.04 FEET 0.228 MILES
176TH LANE
50+00.00 TO 54+46.60
GROSS LENGTH 446.60 FEET 0.085 MILES
BRIDGES LENGTH 0 FEET 0 MILES
EXCEPTIONS LENGTH 0 FEET 0 MILES
NET LENGTH 446.60 FEET 0.085 MILES
177TH AVENUE
70+00.00 TO 74+13.94
GROSS LENGTH 413.94 FEET 0.078 MILES
BRIDGES LENGTH 0 FEET 0 MILES
EXCEPTIONS LENGTH 0 FEET 0 MILES
NET LENGTH 413.94 FEET 0.078 MILES
CENTRAL AVENUE
12+75.19 TO 25+56.15
GROSS LENGTH 1,280.96 FEET 0.243 MILES
BRIDGES LENGTH 0 FEET 0 MILES
EXCEPTIONS LENGTH 0 FEET 0 MILES
NET LENGTH 1,280.96 FEET 0.243 MILES
175TH LANE
25+56.15 TO 32+66.17
GROSS LENGTH 710.02 FEET 0.134 MILES
BRIDGES LENGTH 0 FEET 0 MILES
EXCEPTIONS LENGTH 0 FEET 0 MILES
NET LENGTH 710.02 FEET 0.134 MILES

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 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

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.

STATE AID PROJ. NO.	CHARGE	IDENTIFIER
197-119-004		
197-135-001		



STATE FUNDS

GOVERNING SPECIFICATIONS

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION".

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	STATEMENT OF ESTIMATED QUNATITIES AND STANDARD PLATES
4-6	EARTHWORK SUMMARY AND TABULATIONS
7	UTILITY TABULATION
8	TYPICAL SECTION AND DETAILS
9-10	DETAILS
11-14	MNDOT STANDARD PLANS
15-19	INTERSECTION & DRIVEWAY DETAILS
20-22	TREE REMOVAL PLANS
23-25	REMOVAL PLANS
26-30	PLAN AND PROFILES
31-32	GRADING AND DRAINAGE PLANS
33-35	STORM DETAILS
36-38	STORMWATER POLLUTION PREVENTION PLAN
39-40	SIGNING AND STRIPING PLAN
41-52	CROSS SECTIONS

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

THIS PLAN CONTAINS 52 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

DATE: REG. NO. 48768

APPROVED DATE:
CITY ENGINEER - HAM LAKE

APPROVED DATE:
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

APPROVED DATE:
APPROVED FOR STATE AID FUNDING: FOR STATE AID ENGINEER

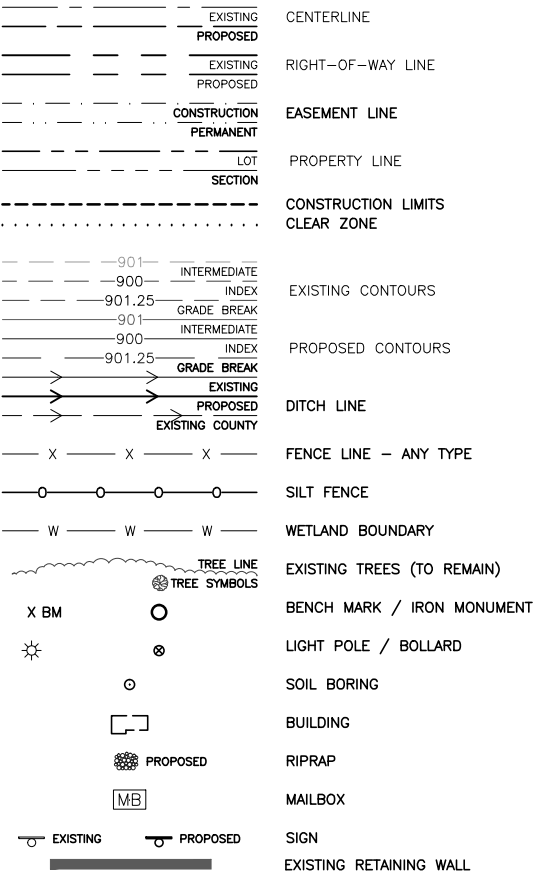
STATE AID PROJECT NO. 197-119-004 / 197-135-001

RFC ENGINEERING, INC.
Consulting Engineers

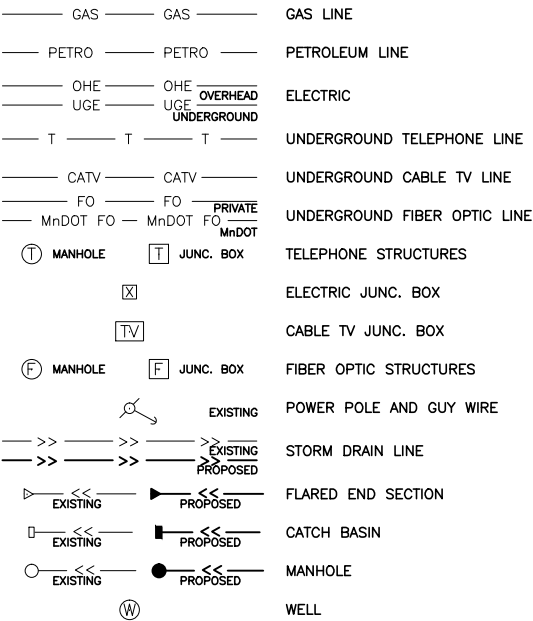
13635 Johnson Street NE Telephone 763-862-8000
Ham Lake, MN 55304 Fax 763-862-8042

JOB NO. 2205
FILE: 37-2-101 SHEET NO. 1 OF 52 SHEETS

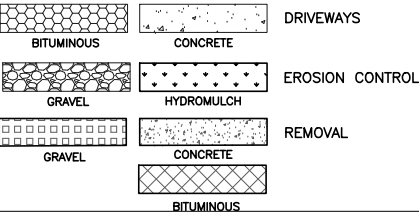
PLAN SYMBOLS



UTILITY SYMBOLS



HATCH LEGEND



STATEMENT OF ESTIMATED QUANTITIES											
TAB	SHEET	NOTES	ITEM NO.	ITEM	UNIT	ENTIRE PROJECT	S.A.P. 197–119–004		S.A.P. 197–135–001		NON PARTICIPATING
							ROADWAY	STORM SEWER	ROADWAY	STORM SEWER	
						ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES
			2021.501	MOBILIZATION	LUMP SUM	1	0.5		0.5		
AA	4,19–21	5	2101.502	CLEARING	EACH	12	12				
AA	4,19–21	5	2101.502	GRUBBING	EACH	12	12				
AA	4,19–21	5	2101.505	CLEARING (P)	ACRE	1.52	0.38		1.14		
AA	4,19–21	5	2101.505	GRUBBING (P)	ACRE	1.52	0.38		1.14		
AJ	4,22–24		2104.502	REMOVE DRAINAGE STRUCTURE	EACH	10	6		4		
AM	4,22–24	6	2104.502	REMOVE SIGN	EACH	26	14		12		
AL	4,22–24	6	2104.502	SALVAGE SIGN	EACH	1					1
AE	4,22–24	10	2104.502	SALVAGE MAIL BOX SUPPORT AND MAILBOX	EACH	1			1		
AH	4,22–24		2104.503	SAWING CONCRETE CURB (FULL DEPTH)	LIN FT	29	14		15		
AF	4,22–24	8	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)–DRIVEWAY	LIN FT	527	340		187		
AC	4,22–24	11	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	218	109		109		
AK	4,22–24		2104.503	REMOVE CONCRETE CULVERT	LIN FT	510	283		227		
AG	4,22–24		2104.503	REMOVE CURB AND GUTTER	LIN FT	272	152		120		
AD	4,22–24		2104.503	SALVAGE WOODEN FENCE	LIN FT	251					251
AI	4,22–24	8	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	1 668	1 056		612		
AN	4	4, 5	2106.507	EXCAVATION – COMMON (P)	CU YD	5 215	2 558		2 657		
AN	4		2106.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD	50	25		25		
AN	4	4, 5	2106.507	COMMON EMBANKMENT (CV) (P)	CU YD	3 159	1 768		1 391		
BA	5		2211.509	AGGREGATE BASE CLASS 5	TON	2 200	1 242		958		
BG	5	8	2211.604	AGGREGATE BASE (CV) CLASS 5 4.0" THICK–RESIDENTIAL DRIVEWAY	SQ YD	100			100		
BF	5	8	2211.604	AGGREGATE BASE (CV) CLASS 5 6.0" THICK–COMMERCIAL DRIVEWAY	SQ YD	1 680	1 081		599		
AB	4	11, 12	2215.504	FULL DEPTH RECLAMATION (P)	SQ YD	13 765	8 090		5 675		
BE	5		2221.509	SHOULDER BASE AGGREGATE CLASS 5	TON	226	226				
BJ	5	8, 9	2360.504	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C) 1.0" THICK–COMMERCIAL DRIVEWAY	SQ YD	1 145	748		397		
BH	5	8	2360.504	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C) 2.0" THICK–RESIDENTIAL DRIVEWAY	SQ YD	52			52		
BI	5	8, 9	2360.504	TYPE SP 12.5 WEARING COURSE MIXTURE (3,C) 2.0" THICK–COMMERCIAL DRIVEWAY	SQ YD	1 145	748		397		
BC	5	9	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)	TON	1 623	950		673		
BB	5	9	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (3,C)	TON	1 623	950		673		
	32–34	1, 5	2501.502	15" GS PIPE APRON	EACH	3		3			
	32–34	1, 5	2501.502	18" GS PIPE APRON	EACH	1				1	
	32–34	1, 5	2501.502	30" GS PIPE APRON	EACH	1		1			
	32–34	1, 5	2501.502	18" RC PIPE APRON	EACH	1		1			
	32–34	1, 5	2501.502	21" RC PIPE APRON	EACH	2				2	
	32–34	1, 5	2501.502	30" RC PIPE APRON	EACH	1				1	
	32–34	1, 5	2501.602	TRASH GUARD FOR 15" PIPE APRON	EACH	3		3			
	32–34	1, 5	2501.602	TRASH GUARD FOR 18" PIPE APRON	EACH	2		1		1	
	32–34	1, 5	2501.602	TRASH GUARD FOR 21" PIPE APRON	EACH	2				2	
	32–34	1, 5	2501.602	TRASH GUARD FOR 30" PIPE APRON	EACH	2		1		1	
	32–34	1, 5	2503.503	15" CP PIPE SEWER (SMOOTH)	LIN FT	249		77		172	
	32–34	1, 5	2503.503	18" CP PIPE SEWER (SMOOTH)	LIN FT	114				114	
	32–34	1, 5	2503.503	24" CP PIPE SEWER (SMOOTH)	LIN FT	125				125	
	32–34	1, 5	2503.503	30" CP PIPE SEWER (SMOOTH)	LIN FT	92		92			
	32–34	1, 5	2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	134		31		103	
	32–34	1, 5	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	616		345		271	
	32–34	1, 5	2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	155		78		77	
	32–34	1, 5	2503.503	21" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	87				87	
	32–34	1, 5	2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	149		44		105	
	32–34	1, 5	2503.503	30" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	57				57	
	32–34	1, 5	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	5		3		2	
	32–34	2, 5	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL–2X3	EACH	8		5		3	
	32–34	2, 5	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1–48"	EACH	3				3	
	32–34	2, 5	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2–60"	EACH	1		1			
	32–34	2, 5	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 3–72"	EACH	2		1		1	
	32–34	2, 5	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 4–80" SUMP	EACH	2				2	
	32–34	2, 5	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 5–72" SUMP	EACH	7		4		3	
	32–34	2, 5	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 6–48"–CLOSED	EACH	3		1		2	
	32–34	2, 5	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 7–48"–BEEHIVE	EACH	3		1		2	
	32–34		2506.602	INSTALL SAFL BAFFLE (60" X 36")	EACH	1				1	
	32–34		2506.602	INSTALL SAFL BAFFLE (72" X 36")	EACH	6		4		2	
BM	5	2	2511.504	GEOTEXTILE FILTER TYPE 4	SQ YD	200.5	105.3		95.2		
BL	5		2511.507	RANDOM RIPRAP CLASS III	CU YD	57.1	30.9		26.2		
BQ	5		2531.503	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT	809	487		322		
BD	5	8	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	7 079	3 860		3 219		
BN	5	8	2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	386	243		143		
BR	5	10	2540.602	INSTALL MAIL BOX SUPPORT WITH MAILBOX	EACH	1			1		
			2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.5		0.5		
BS	6,38–39	6	2564.518	SIGN PANELS TYPE C	SQ FT	307.4	194.5		112.9		

PLATE NO.	STANDARD PLATES – RFC ENGINEERING (IN THE PLANS)
RFC–356B	TRANSITION CURB: B424 TO B618
RFC–363A1	PRIVATE DRIVEWAY/FIELD ENTRANCE
RFC–366B1	TYPICAL STREET SECTION
RFC–366B1B	TYPICAL STREET SECTION – TURN LANE
RFC–366F12	TYPICAL STREET SECTION – NO CURB
RFC–370A1	COMMERCIAL DRIVEWAY
RFC–380A	CURB END
RFC–459C	RECTANGULAR CATCH BASIN
RFC–463A1	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–465C1	ROUND INLET FOR ROUND MANHOLE
RFC–466B	RCP TRASH GUARD
RFC–466C	CPP TRASH GUARD
RFC–654	STORM DRAIN BEDDING FOR RIGID AND FLEXIBLE PIPE *MNDOT DETAIL
RFC–856A	FORESLOPE
RFC–857	SILT FENCE AT FES

- 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 OR USED AS NON–STRCTURAL FILL.
 5. THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE CONSTRUCTION LIMITS.
 6. SIGNS INCLUDE POSTS.
 7. INSTALLATION AND MAINTENANCE ARE INCIDENTAL.
 8. QUANTITY SHOWN USED FOR DRIVEWAY CONSTRUCTION. SEE DETAIL RFC–363A1 AND RFC–370A1.
 9. BITUMINOUS MATERIAL FOR TACK COAT SHALL BE INCIDENTAL.
 10. REMOVE SUPPORTS AND SALVAGE MAIL BOXES. SALVAGE MAIL BOXES ARE INCIDENTAL.
 11. AVERAGE DEPTH OF EXISTING BITUMINOUS PAVEMENT IS 4"
 12. AVERAGE DEPTH OF EXISTING BASE MATERIAL IS 3"

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
TYPE I MULCH 2 TONS/ACRE

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
3133D	RIPRAP AT RCP OUTLETS
3134D	RIPRAP AT CSP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
7100H	CONCRETE CURB & GUTTER
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
9350D	MAILBOX SUPPORT SWING–AWAY (3 SHEETS)

PLATE NO.	STANDARD PLATES – NON RFC ENGINEERING (IN THE PLANS)
	SAFL BAFFLE DETAIL



800–252–1166
PLOT DATE: 3/17/2026 10:42

UTILITIES:

LUMEN (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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197–119–004 / 197–135–001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION

STATEMENT OF ESTIMATED QUANTITIES
AND STANDARD PLATES

DWG: 2205 QTY 1
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 2 OF 52
FILE: 37–2–102

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

STATEMENT OF ESTIMATED QUANTITIES											
TAB	SHEET	NOTES	ITEM NO.	ITEM	UNIT	ENTIRE PROJECT	S.A.P. 197-119-004		S.A.P. 197-135-001		NON PARTICIPATING
							ROADWAY	STORM SEWER	ROADWAY	STORM SEWER	
						ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES
	35-37	7	2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	0.5		0.5		
BX	6,35-37	7	2573.502	STORM DRAIN INLET PROTECTION	EACH	23	11		12		
BW	6,35-37	7	2573.502	CULVERT END CONTROLS	EACH	9	5		4		
BK	5,35-37	7	2573.503	SILT FENCE, TYPE MS	LIN FT	4 387	2 515		1 872		
	35-37	3	2575.605	TURF ESTABLISHMENT (25-131 SEEDING MIX)	ACRE	3.73	2.03		1.7		
BU	6,38-39		2582.503	4" SINGLE WHITE SOLID LINE PAINT	LIN FT	45			45		
BT	6,38-39		2582.503	12" WHITE SOLID LINE EPOXY PAINT (STOP BAR)	LIN FT	14	14				
BP	5,38-39		2582.503	4" DOUBLE YELLOW SOLID LINE PAINT	LIN FT	3 624	2 128		1 496		
BO	5,38-39		2582.618	PAVEMENT MARKING - PARKING LOT ARROW - YELLOW PAINT	SQ FT	48.8	24.4		24.4		
BV	6,38-39		2582.618	PAVEMENT MARKING - TURN ARROWS - WHITE PAINT	SQ FT	45.5			45.5		

PLATE NO.	STANDARD PLATES - RFC ENGINEERING (IN THE PLANS)
RFC-356B	TRANSITION CURB: B424 TO B618
RFC-363A1	PRIVATE DRIVEWAY/FIELD ENTRANCE
RFC-366B1	TYPICAL STREET SECTION
RFC-366B1B	TYPICAL STREET SECTION - TURN LANE
RFC-366F12	TYPICAL STREET SECTION - NO CURB
RFC-370A1	COMMERCIAL DRIVEWAY
RFC-380A	CURB END
RFC-459C	RECTANGULAR CATCH BASIN
RFC-463A1	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-465C1	ROUND INLET FOR ROUND MANHOLE
RFC-466B	RCP TRASH GUARD
RFC-466C	CPP TRASH GUARD
RFC-654	STORM DRAIN BEDDING FOR RIGID AND FLEXIBLE PIPE *MNDOT DETAIL
RFC-856A	FORESLOPE
RFC-857	SILT FENCE AT FES

- 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 OR USED AS NON-STRCTURAL FILL.
 5. THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE CONSTRUCTION LIMITS.
 6. SIGNS INCLUDE POSTS.
 7. INSTALLATION AND MAINTENANCE ARE INCIDENTAL.
 8. QUANTITY SHOWN USED FOR DRIVEWAY CONSTRUCTION. SEE DETAIL RFC-363A1 AND RFC-370A1.
 9. BITUMINOUS MATERIAL FOR TACK COAT SHALL BE INCIDENTAL.
 10. REMOVE SUPPORTS AND SALVAGE MAIL BOXES. SALVAGE MAIL BOXES ARE INCIDENTAL.
 11. AVERAGE DEPTH OF EXISTING BITUMINOUS PAVEMENT IS 4"
 12. AVERAGE DEPTH OF EXISTING BASE MATERIAL IS 3"

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
TYPE 1 MULCH	2 TONS/ACRE

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
3133D	RIPRAP AT RCP OUTLETS
3134D	RIPRAP AT CSP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
7100H	CONCRETE CURB & GUTTER
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
9350D	MAILBOX SUPPORT SWING-AWAY (3 SHEETS)

PLATE NO.	STANDARD PLATES - NON RFC ENGINEERING (IN THE PLANS)
	SAFL BAFFLE DETAIL



800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:42

UTILITIES: LUMEN (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 _____ REG. NO. _____

RFC ENGINEERING, INC.

Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION
STATEMENT OF ESTIMATED QUANTITIES
AND STANDARD PLATES

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

DWG: 2205 QTY 2
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 3 OF 52
FILE: 37-2-103

TREE REMOVAL					AA
STATION	LOCATION	CLEARING (ACRE)	GRUBBING (ACRE)	CLEARING (EACH)	GRUBBING (EACH)
12+36 TO 13+00	CENTRAL AVE. – LT	0.08	0.08		
13+32 TO 14+63	CENTRAL AVE. – LT	0.15	0.15		
14+02	CENTRAL AVE. – RT			1	1
14+37	CENTRAL AVE. – RT			1	1
23+45	CENTRAL AVE. – LT			1	1
23+67	CENTRAL AVE. – LT			1	1
26+67 TO 27+32	175TH LN. – RT			4	4
30+49 TO 32+31	175TH LN. – LT	0.10	0.10		
50+40 TO 52+06	176TH LN. – LT	0.16	0.16		
52+81 TO 54+47	176TH LN. – LT	0.14	0.14		
54+47 TO 55+52	CHISHOLM ST. – LT	0.04	0.04		
58+28 TO 61+65	CHISHOLM ST. – LT	0.25	0.25		
58+64 TO 63+52	CHISHOLM ST. – RT	0.26	0.26		
61+76 TO 66+30	CHISHOLM ST. – LT	0.17	0.17		
64+68 TO 66+41	CHISHOLM ST. – RT	0.11	0.11		
71+59 TO 73+44	177TH AVE. – LT	0.06	0.06		
72+09	177TH AVE. – RT			1	1
72+98	177TH AVE. – RT			1	1
73+33	177TH AVE. – RT			1	1
73+46	177TH AVE. – RT			1	1
TOTAL		1.52	1.52	12	12

SAWCUT BITUMINOUS DRIVEWAY		AF
STATION	LOCATION	LIN FT
14+75	CENTRAL AVE. – RT	32
15+50	CENTRAL AVE. – RT	28
17+00	CENTRAL AVE. – LT	31
17+50	CENTRAL AVE. – RT	22
23+25	CENTRAL AVE. – LT	36
28+00	175TH LN. – LT	36
28+75	175TH LN. – RT	45
30+00	175TH LN. – LT	47
30+75	175TH LN. – RT	27
51+50	176TH LN. – RT	34
55+65	CHISHOLM ST. – RT	29
56+42	CHISHOLM ST. – LT	29
57+25	CHISHOLM ST. – RT	47
58+22	CHISHOLM ST. – LT	20
64+50	CHISHOLM ST. – RT	28
72+50	177TH AVE. – RT	36
TOTAL		527

REMOVE CONCRETE CURB AND GUTTER		AG
STATION	LOCATION	LENGTH (LIN FT)
14+96	CENTRAL AVE. – RT	37
15+41	CENTRAL AVE. – RT	29
15+70	CENTRAL AVE. – RT	29
17+43	CENTRAL AVE. – RT	26
17+64	CENTRAL AVE. – RT	25
30+62	175TH LN. – RT	2
30+92	175TH LN. – RT	4
51+42	176TH LN. – RT	12
51+74	176TH LN. – RT	14
55+80	CHISHOLM ST. – RT	2
56+92	CHISHOLM ST. – RT	2
64+38	CHISHOLM ST. – RT	10
64+68	CHISHOLM ST. – RT	10
65+95 TO 66+47	CHISHOLM ST. – RT	70
TOTAL		272

SAWCUT CONCRETE CURB		AH
STATION	LOCATION	LIN FT
14+96	CENTRAL AVE. – RT	2
15+41	CENTRAL AVE. – RT	2
15+70	CENTRAL AVE. – RT	2
17+43	CENTRAL AVE. – RT	2
17+64	CENTRAL AVE. – RT	2
30+62	175TH LN. – RT	2
30+92	175TH LN. – RT	2
51+42	176TH LN. – RT	2
51+74	176TH LN. – RT	2
55+80	CHISHOLM ST. – RT	2
56+92	CHISHOLM ST. – RT	2
64+38	CHISHOLM ST. – RT	2
64+68	CHISHOLM ST. – RT	2
66+47	CHISHOLM ST. – RT	3
TOTAL		29

REMOVE BITUMINOUS DRIVEWAY		AI
STATION	LOCATION	SQ YD
14+75	CENTRAL AVE. – RT	91
15+50	CENTRAL AVE. – RT	62
17+00	CENTRAL AVE. – LT	120
17+50	CENTRAL AVE. – RT	64
23+25	CENTRAL AVE. – LT	112
28+00	175TH LN. – LT	93
28+75	175TH LN. – RT	163
30+00	175TH LN. – LT	182
30+75	175TH LN. – RT	87
51+50	176TH LN. – RT	108
55+65	CHISHOLM ST. – RT	76
56+42	CHISHOLM ST. – LT	52
57+25	CHISHOLM ST. – RT	206
58+22	CHISHOLM ST. – LT	56
64+50	CHISHOLM ST. – RT	114
72+50	177TH AVE. – RT	82
TOTAL		1,668

REMOVE DRAINAGE STRUCTURE		AJ
STATION	LOCATION	QUANTITY
13+92	CENTRAL AVE. – ROADWAY	2
20+16	CENTRAL AVE. – ROADWAY	2
26+24	175TH LN. – ROADWAY	2
51+19	176TH LN. – ROADWAY	1
51+45	176TH LN. – ROADWAY	1
53+66	176TH LN. – ROADWAY	2
TOTAL		10

REMOVE PIPES		AK
STATION	LOCATION	LIN FT
13+91	CENTRAL AVE. – RT	7
13+92	CENTRAL AVE. – ROADWAY	44
13+98	CENTRAL AVE. – LT	14
20+08	CENTRAL AVE. – LT	10
20+16	CENTRAL AVE. – ROADWAY	44
20+16	CENTRAL AVE. – RT	96
20+23	CENTRAL AVE. – LT	10
26+24	175TH LN. – ROADWAY	45
26+24	175TH LN. – RT	13
51+20	176TH LN. – ROADWAY	53
51+32	176TH LN. – RT	28
53+57	176TH LN. – LT	12
53+66	176TH LN. – ROADWAY	31
53+67	176TH LN. – RT	9
66+16	CHISHOLM ST. – ROADWAY	94
TOTAL		510

SALVAGE SIGN				AL
STATION	LOCATION	SIGN NO.	POST	PANEL LEGEND
72+77	177TH AVE. – RT	C-1	1	PRIVATE SIGN LIQUOR STORE
TOTAL			1	

EARTHWORK SUMMARY										AN			
EXCAVATION (CU YD)						EMBANKMENT (CU YD)							
TOPSOIL	2,151	CU YD (EV)	] 6,937 CU YD (EV) ①	TOPSOIL	2,151	CU YD (EV)/1.1 = 1,955	CU YD (CV)	— 3,159 CU YD (CV) ②	2,006	CU YD (CV)	TOPSOIL		
COMMON	3,064	CU YD (EV)			COMMON EX	1,499	CU YD (EV)/1.3 = 1,153			CU YD (CV)	1,153	CU YD (CV)	COMMON
BIT RECLAIM	1,722	CU YD (EV)			GRANULAR FILL		50			CU YD (CV)			
NOTES:													
① TOTAL EXCAVATION (EV) REQUIRED FOR PROJECT.													
② TOTAL EMBANKMENT (CV) REQUIRED FOR PROJECT.													

RECLAIM BITUMINOUS PAVEMENT		AB
STATION	LOCATION	SQ YD
13+38 TO 25+56	CENTRAL AVE. – ROADWAY	4,273
25+56 TO 32+66	175TH LN. – ROADWAY	2,400
50+00 TO 54+47	176TH LN. – ROADWAY	1,480
54+47 TO 66+49	CHISHOLM ST. – ROADWAY	4,195
70+00 TO 73+88	177TH AVE. – ROADWAY	1,417
TOTAL		13,765

SAWCUT BITUMINOUS PAVEMENT		AC
STATION	LOCATION	LIN FT
66+49	CHISHOLM ST. – ROADWAY	109
70+00	177TH AVE. – ROADWAY	109
TOTAL		218

SALVAGE WOODEN FENCE		AD
STATION	LOCATION	LIN FT
26+45 TO 27+54	175TH LN. – LT	111
28+25 TO 29+52	175TH LN. – LT	140
TOTAL		251

SALVAGE MAILBOX SUPPORT		AE
STATION	LOCATION	TYPE
61+46	CHISHOLM ST. – LT	SINGLE
TOTAL		1



800-252-1166 651-454-0002

UTILITIES: LUMEN (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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

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

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION
EARTHWORK SUMMARY AND TABULATIONS

DWG: 2205 TAB 1
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 4 OF 52
FILE: 37-2-104

SIGN PANELS TYPE C								BS
SIGN NO.	NOTE	TOTAL QTY.	POST	PANEL			CODE NO.	PANEL LEGEND
				SIZE (IN)	AREA (SQ. FT.)	TOTAL AREA (SQ. FT.)		
C-50		13	SINGLE	30 X 30	6	78	R1-1	STOP
C-51		2	SINGLE	24 X 30	5	10	R2-1	SPEED LIMIT 30 M.P.H
C-52		1	SINGLE	36 X 30	7.5	7.5	R3-8DA	LANE USE CONTROL: COMBINED THRU/LEFT TURN ARROW & RIGHT TURN ONLY
C-53		24	SINGLE	24 X 24	4	96	R8-3	NO PARKING
C-54		2	DOUBLE	48 X 60	20	40		TYPE 3 BARRICADE
C-55		2	SINGLE	30 X 30	6	12	W1-1R	TURN LEFT
C-56		2	SINGLE	30 X 30	6	12	W1-1L	TURN RIGHT
C-57		1	DOUBLE	48 X 24	8	8	W1-7	TWO-DIRECTION LARGE ARROW
C-58		1	DOUBLE	48 X 24	8	8	W1-8R	ONE-DIRECTION LARGE ARROW RIGHT
C-59		3	SINGLE	24 X 12	2	6	W4-4P	CROSS TRAFFIC DOES NOT STOP
C-60		2	SINGLE	36 X 12	3	6	W6-1R	ONE WAY
C-61		1	SINGLE	36 X 12	3	3	W6-1L	ONE WAY
C-62		4	SINGLE	18 X 18	2.25	9	W13-1P	20 M.P.H. ADVISORY SPEED
C-63		1	SINGLE	9 HIGH, 6 DIAMETER	3.9	3.9	X4-3	CYLINDER DELINEATOR
C-64	8	5	SINGLE	VARIES X 8			D3-1	STREET
C-65		1	DOUBLE	48 X 24	8	8	W1-8L	ONE-DIRECTION LARGE ARROW LEFT
TOTAL						307.4		

12” SOLID LINE WHITE-PAINT (STOP BAR)		BT
STATION	LOCATION	LIN. FT.
73+63	177TH AVE. - ROADWAY	14
TOTAL		14

4” SOLID SINGLE LINE WHITE-PAINT		BU
STATION	LOCATION	LIN. FT.
65+84 TO 66+32	CHISHOLM ST. - ROADWAY	45
TOTAL		45

CULVERT END CONTROL		BW
STATION	LOCATION	QUANTITY
13+89	CENTRAL AVE. - LT	1
14+23	CENTRAL AVE. - LT	1
20+16	CENTRAL AVE. - RT	1
24+66	CENTRAL AVE. - RT	1
26+75	175TH LN. - RT	1
53+65	176TH LN. - LT	1
64+89	CHISHOLM ST. - RT	1
66+07	CHISHOLM ST. - RT	1
66+25	CHISHOLM ST. - LT	1
TOTAL		9

STORM DRAIN INLET PROTECTION		BX
STATION	LOCATION	QUANTITY
13+80	CENTRAL AVE. - RT	1
14+23	CENTRAL AVE. - LT	1
14+23	CENTRAL AVE. - RT	1
19+80	CENTRAL AVE. - LT	1
19+80	CENTRAL AVE. - RT	1
24+66	CENTRAL AVE. - LT	1
24+66	CENTRAL AVE. - RT	1
26+75	175TH LN. - LT	1
26+75	175TH LN. - RT	1
30+50	175TH LN. - LT	1
32+19	175TH LN. - LT	1
50+47	176TH LN. - RT	1
54+25	176TH LN. - RT	1
54+97	CHISHOLM ST. - LT	1
54+97	CHISHOLM ST. - RT	1
57+72	CHISHOLM ST. - LT	1
57+72	CHISHOLM ST. - RT	1
58+18	CHISHOLM ST. - RT	1
63+94	CHISHOLM ST. - LT	1
64+03	CHISHOLM ST. - RT	1
66+11	CHISHOLM ST. - RT	1
66+33	CHISHOLM ST. - LT	1
66+47	CHISHOLM ST. - RT	1
TOTAL		23

WHITE PAVEMENT MARKINGS ROADWAY				BV
STATION	LOCATION	CODE	DESCRIPTION	AREA (SQ. FT.)
66+12	CHISHOLM ST. - ROADWAY	PMA-2R	RIGHT TURN ARROW	15.5
66+12	CHISHOLM ST. - ROADWAY	PMA-3L	COMBINED THROUGH & LEFT TURN ARROW	30
TOTAL				45.5

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. TACK COAT IS INCIDENTAL.
- 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 INSTALLED BY OTHERS. POST INSTALLED BY OTHERS IF STAND ALONE SIGN.



800-252-1166 651-454-0002

UTILITIES:

LUMEN	(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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION

EARTHWORK SUMMARY AND TABULATIONS

DWG:	2205 TAB 3
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	6 OF 52
FILE:	37-2-106

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

UTILITY COMPANIES – CA
GOPHER STATE ONE CALL FIELD UTILITY LOCATE REQUEST
CENTERPOINT ENERGY
COMCAST CABLE COMMUNICATIONS, INC.
CONNEXUS ENERGY
GREAT RIVER ENERGY
LUMEN
MINNESOTA DEPARTMENT OF TRANSPORTATION
ZAYO BANDWIDTH

GENERAL NOTES:

- STATIONING REFERENCES THE PROPOSED CENTERLINES FOR THE PROJECT.
- ALL REMOVALS AND RELOCATIONS, EXCEPT FOR MNDOT FACILITIES, ARE TO BE COMPLETED BY THE UTILITY OWNER.

LUMEN				CE
ALIGNMENT	STATION	OFFSET	INPLACE ITEM	NOTES
CENTRAL AVENUE	13+38 TO 15+07	VARIES RT	BURIED FIBER OPTIC	ABANDON IN PLACE OR REMOVE
CENTRAL AVENUE	15+07	0’	BURIED FIBER OPTIC	ABANDON IN PLACE OR REMOVE
176TH LANE	50+18 TO 54+47	VARIES LT	BURIED FIBER OPTIC	ABANDON IN PLACE OR REMOVE
CHISHOLM STREET	54+47 TO 55+51	22’ LT	BURIED FIBER OPTIC	ABANDON IN PLACE OR REMOVE
CHISHOLM STREET	55+51 TO 56+14	36.5’ LT	BURIED FIBER OPTIC	ABANDON IN PLACE OR REMOVE
CHISHOLM STREET	56+14	0’	BURIED CABLE	ABANDON IN PLACE OR REMOVE
CHISHOLM STREET	56+14 TO 57+49	24’ LT	BURIED CABLE	ABANDON IN PLACE OR REMOVE
CHISHOLM STREET	57+49	0’	BURIED CABLE	ABANDON IN PLACE OR REMOVE
CHISHOLM STREET	57+49 TO 61+83	24’ LT	BURIED CABLE	ABANDON IN PLACE OR REMOVE
CHISHOLM STREET	61+83 TO 63+00	24’ LT	BURIED CABLE	ABANDON IN PLACE OR REMOVE
CHISHOLM STREET	63+00	0’	BURIED CABLE	ABANDON IN PLACE OR REMOVE
177TH AVENUE	70+74 TO 73+88	26’ RT	BURIED FIBER OPTIC	ABANDON IN PLACE OR REMOVE
177TH AVENUE	73+88	0’	BURIED FIBER OPTIC	LEAVE AS IS

CENTERPOINT ENERGY				CB
ALIGNMENT	STATION	OFFSET	INPLACE ITEM	NOTES
CENTRAL AVENUE	14+58 TO 16+44	15.5’ RT	BURIED GAS	
CENTRAL AVENUE	14+58	0’	BURIED GAS	
175TH LANE	25+22 TO 32+66	21’ RT	BURIED GAS	
176TH LANE	50+18 TO 54+47	23’ LT	BURIED GAS	
176TH LANE	51+02	0’	BURIED GAS	
CHISHOLM STREET	54+47 TO 66+48	23’ LT	BURIED GAS	
CHISHOLM STREET	57+66	0’	BURIED GAS	
CHISHOLM STREET	64+03	0’	BURIED GAS	

COMCAST				CF
ALIGNMENT	STATION	OFFSET	INPLACE ITEM	NOTES
175TH LANE	26+00 TO 32+66	18’ RT	BURIED FIBER OPTIC	RELOCATE
175TH LANE	29+50	0’	BURIED FIBER OPTIC	RELOCATE
175TH LANE	29+50 TO 32+01	22’ LT	BURIED FIBER OPTIC	RELOCATE
175TH LANE	32+01	0’	BURIED FIBER OPTIC	RELOCATE
CHISHOLM STREET	56+14 TO 64+00	24’ LT	BURIED FIBER OPTIC	RELOCATE
CHISHOLM STREET	64+00	0’	BURIED FIBER OPTIC	RELOCATE
CHISHOLM STREET	64+00 TO 66+30	24’ LT	BURIED FIBER OPTIC	RELOCATE

ZAYO BANDWIDTH				CC
ALIGNMENT	STATION	OFFSET	INPLACE ITEM	NOTES
CENTRAL AVENUE	21+04	0’	BURIED FIBER OPTIC	
CENTRAL AVENUE	21+05 TO 25+24	70’ RT	BURIED FIBER OPTIC	LEAVE AS IS
CHISHOLM STREET	66+40	46’ LT	BURIED FIBER OPTIC	
177TH AVENUE	70+74	0’	BURIED FIBER OPTIC	

GREAT RIVER ENERGY				CG
ALIGNMENT	STATION	OFFSET	INPLACE ITEM	NOTES
177TH AVENUE	70+00 TO 74+45	33’ RT	OVERHEAD ELECTRIC	LEAVE AS IS

MINNESOTA DOT				CD
ALIGNMENT	STATION	OFFSET	INPLACE ITEM	NOTES
CENTRAL AVENUE	21+05 TO 25+24	70’ RT	BURIED FIBER OPTIC	LEAVE AS IS
177TH AVENUE	70+74	0’	BURIED FIBER OPTIC	LEAVE AS IS

CONNEXUS ENERGY				CH
ALIGNMENT	STATION	OFFSET	INPLACE ITEM	NOTES
CENTRAL AVENUE	13+38 TO 15+87	VARIES RT	BURIED ELECTRIC	
CENTRAL AVENUE	15+23 TO 17+30	28’ RT	BURIED ELECTRIC	
CENTRAL AVENUE	16+56	0’	BURIED ELECTRIC	
CENTRAL AVENUE	20+89 TO 25+56	22’ RT	BURIED ELECTRIC	
175TH LANE	25+56 TO 32+33	26’ RT	BURIED ELECTRIC	
175TH LANE	30+60 TO 32+31	31’ LT	BURIED ELECTRIC	
175TH LANE	32+31	0’	BURIED ELECTRIC	
176TH LANE	50+31 TO 55+47	27’ RT	BURIED ELECTRIC	
CHISHOLM STREET	54+47 TO 57+48	35’ RT	BURIED ELECTRIC	
CHISHOLM STREET	55+89	0’	BURIED ELECTRIC	
CHISHOLM STREET	57+48	0’	BURIED ELECTRIC	
CHISHOLM STREET	61+88 TO 65+55	38’ LT	BURIED ELECTRIC	
CHISHOLM STREET	63+53 TO 64+86	33’ RT	BURIED ELECTRIC	
CHISHOLM STREET	64+08	0’	BURIED ELECTRIC	
CHISHOLM STREET	64+86	0’	BURIED ELECTRIC	
177TH AVENUE	71+88 TO 73+88	30’ RT	BURIED ELECTRIC	



UTILITIES: LUMEN (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 _____ REG. NO. _____

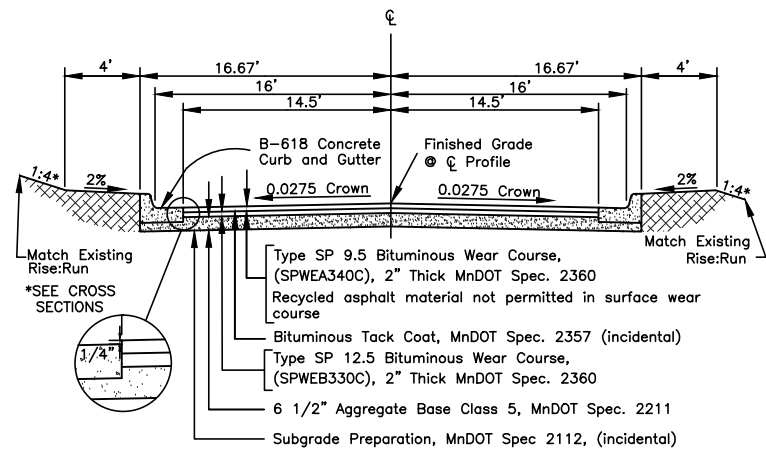
RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
UTILITY TABULATIONS

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

DWG: 2205 TAB 4
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 7 OF 52
FILE: 37-2-107

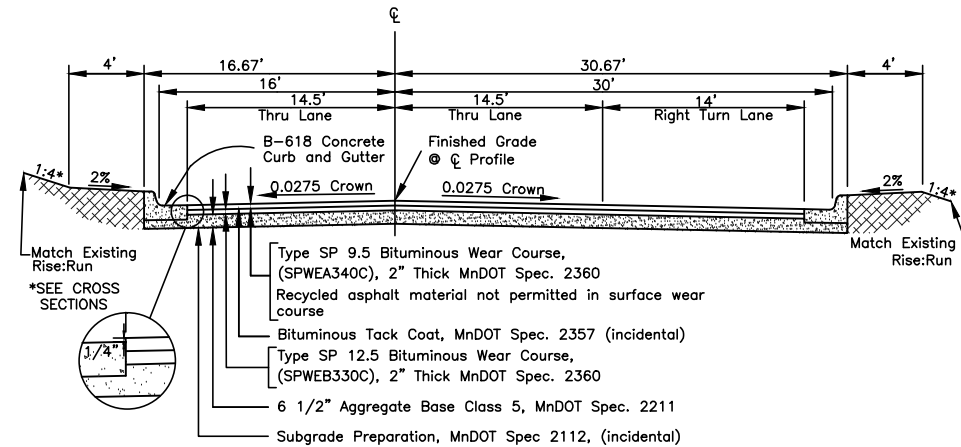


TYPICAL URBAN SECTION

TYPICAL STREET SECTION
COMMERCIAL 9-TON RFC-366B1

NOT TO SCALE

CENTRAL AVENUE/175TH LANE/176TH LANE/
CHISHOLM STREET STA 54+47 TO STA 65+00

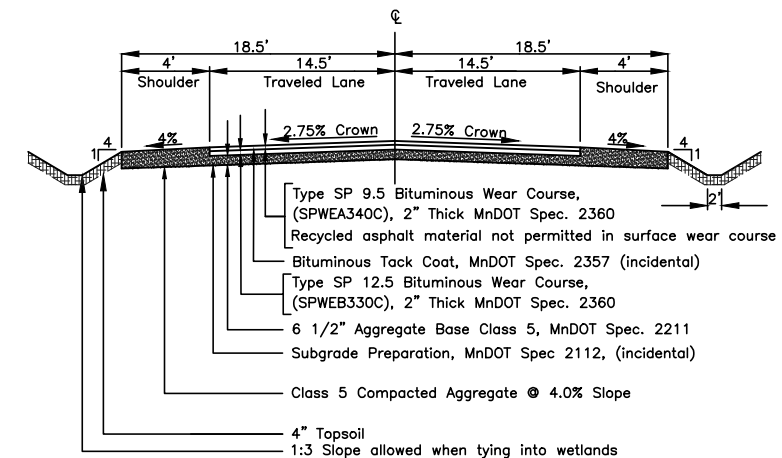


TYPICAL URBAN SECTION

TYPICAL STREET SECTION – TURN LANE
COMMERCIAL 9-TON RFC-366B1B

NOT TO SCALE

CHISHOLM STREET
STA 65+00 TO STA 66+49

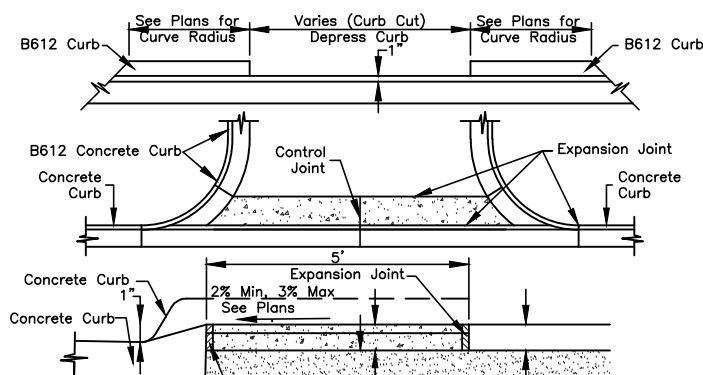


TYPICAL URBAN SECTION – NO CURB

TYPICAL STREET SECTION
COMMERCIAL 9-TON RFC-366F12

NOT TO SCALE

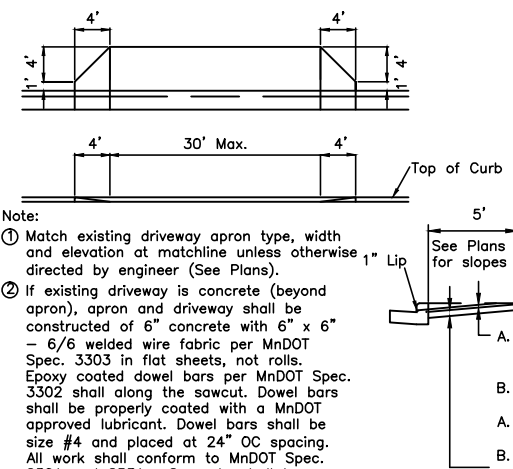
177TH AVENUE



- 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"x6"-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 #13, and placed at 24" OC spacing. All work shall conform to MnDOT Spec. 2301 and 2531. Concrete shall be per MnDOT Spec. 2461 for ready-mix with 3,900 PSI at 28 days, with air content of 5% to 7%. Coarse aggregate for concrete shall be per MnDOT Spec. 3137 with 1" max, Class A aggregate. Joint sealer shall be hot-poured, low modulus, mastic type per MnDOT Spec. 3725. Membrane curing compound shall be per MnDOT Spec. 3754 and 2301.3J.
 - If existing driveway is gravel, apron and driveway within R/W shall be constructed per bituminous driveways.
 - A. Type SP 9.5 Bituminous Wear Course (SPWEA340C), 1" Thick MnDOT Spec. 2360.
Type SP 12.5 Bituminous Wear Course (SPWEB330C), 2" Thick MnDOT Spec. 2360.
B. 6" Reinforced Concrete Slab, MnDOT Spec. 2301 and 2531.
6" Aggregate Base Class 5, MnDOT Spec. 2211.
 - Gravel driveways matching beyond R/W shall be 6" Class 5.
 - If existing driveway is bituminous, apron shall be constructed per concrete driveway and driveway behind apron shall be bituminous per note A. All bituminous work shall conform to MnDOT Specifications 2112, 2211, 2357 and 2360. Tack coat is to be applied between bituminous courses and between concrete and bituminous surfaces.
 - Driveways in cut sections to slope up from 1" curb lip to R/W at 2% min, 3% max then slope to matchline. Driveways in fill sections to slope up from 1" curb lip to R/W at min of 2% then slope to matchline. See Plan for slope.

COMMERCIAL DRIVEWAY DETAIL RFC-370A1

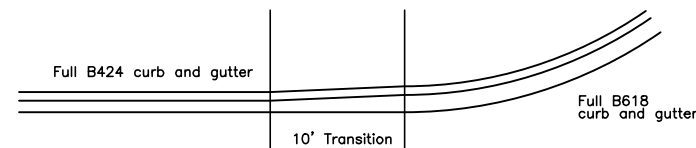
NOT TO SCALE



- Note:
- Match existing driveway apron type, width and elevation at matchline unless otherwise directed by engineer (See Plans).
 - If existing driveway is concrete (beyond apron), 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 per MnDOT Spec. 3302 shall along the sawcut. Dowel bars shall be properly coated with a MnDOT approved lubricant. Dowel bars shall be size #4 and placed at 24" OC spacing. All work shall conform to MnDOT Spec. 2301 and 2531. Concrete shall be ready-mix 4,000 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 2301.3J.
 - If existing driveway is gravel (beyond apron), 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 (beyond apron), 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.

PRIVATE DRIVEWAY/FIELD ENTRANCE RFC-363A1

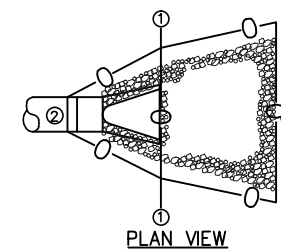
NOT TO SCALE



TRANSITION FOR B424 TO B618 CURB & GUTTER
AT CURB RETURNS

TRANSITION CURB: B424 TO B618 RFC-356B

NOT TO SCALE

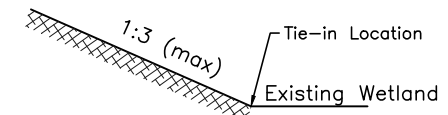


PLAN VIEW

- 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.

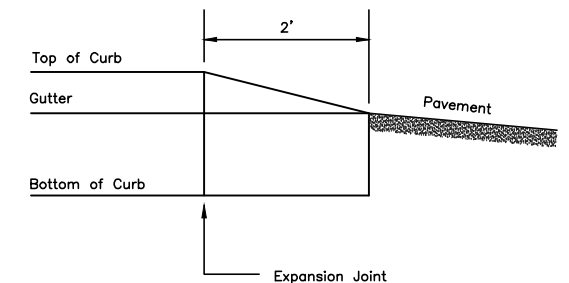
SILT FENCE AT FES RFC-857

NOT TO SCALE



FORESLOPE DETAIL RFC-856A

NOT TO SCALE



CURB END DETAIL RFC-380A

NOT TO SCALE



UTILITIES: LUMEN (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.

RFC ENGINEERING, INC.
Consulting Engineers

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

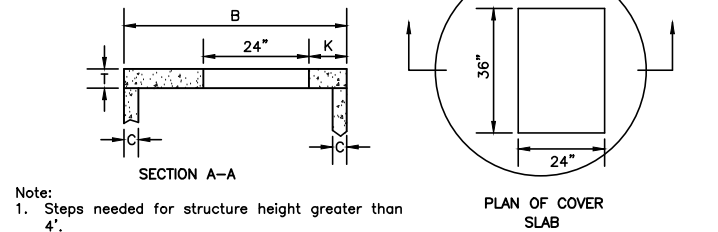
S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
TYPICAL SECTIONS AND DETAILS

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

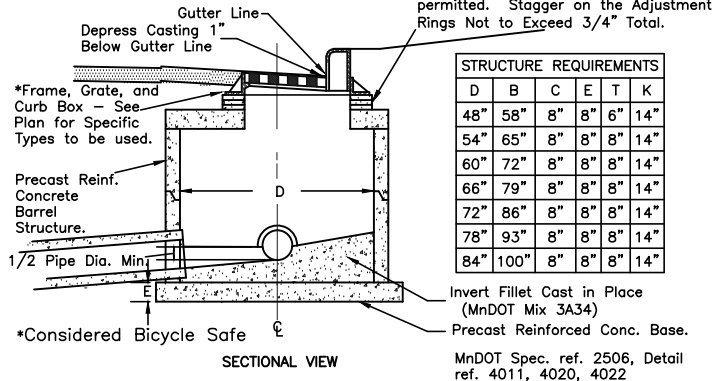
DWG: 2205 DTL 1
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 8 OF 52
FILE: 37-2-108

800-252-1166 651-454-0002

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



- 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.

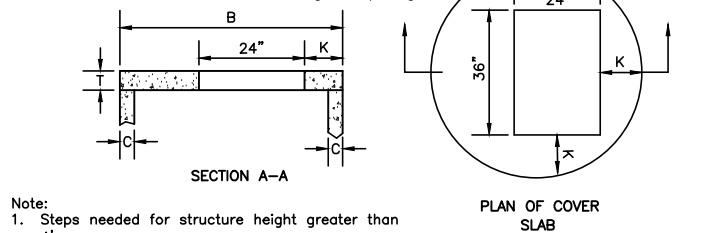


RECTANGULAR INLET FOR ROUND MANHOLE RFC-465A1

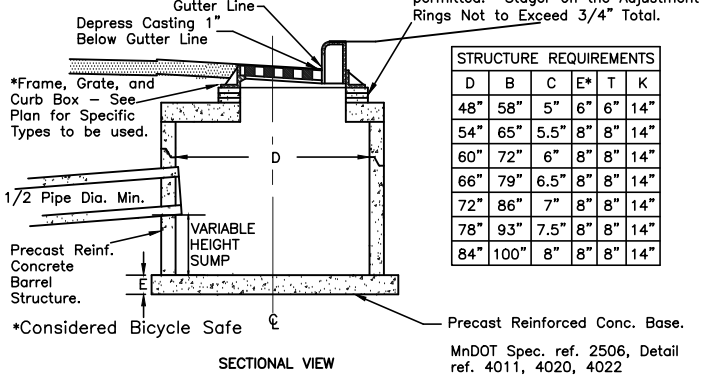
NOT TO SCALE

SPECIAL 1 = 48" Ø
SPECIAL 2 = 60" Ø
SPECIAL 3 = 72" Ø

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



- 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.

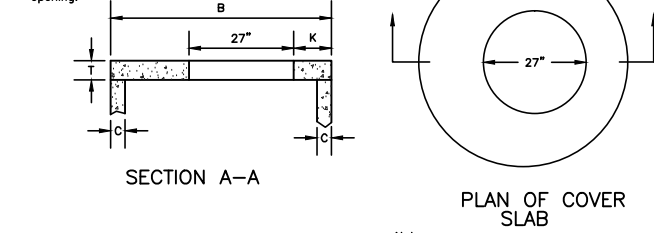


RECTANGULAR INLET FOR ROUND MANHOLE RFC-465A3

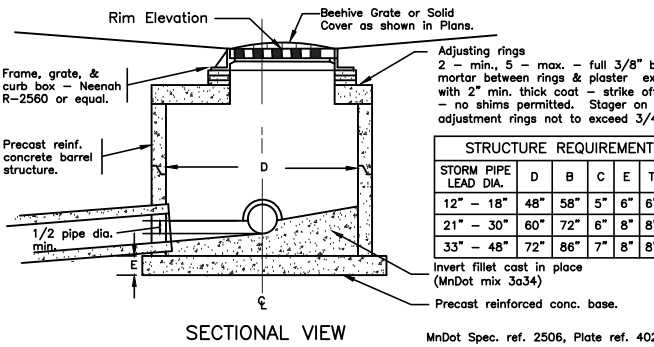
NOT TO SCALE

SPECIAL 4 = 60" Ø
SPECIAL 5 = 72" Ø

NOTE:
HS20 Roadway loading catch basin cover slab of
precast reinforced concrete with round
opening.



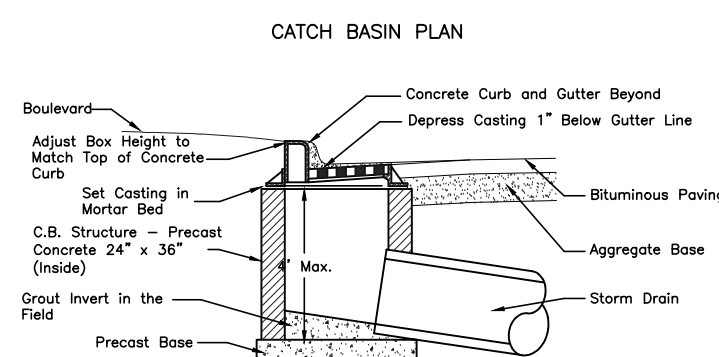
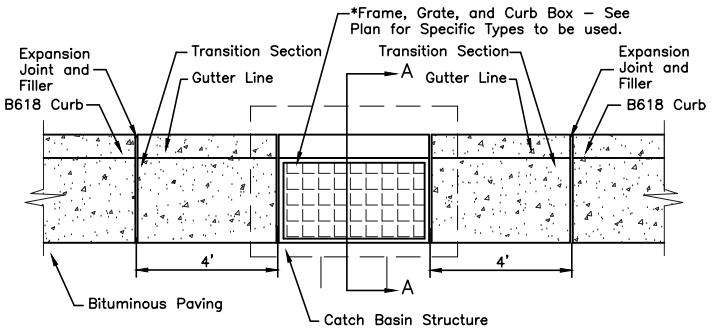
- Note:
- Steps needed for structure height greater than 4'.
 - Cover slab to rest on bed of mortar on full thickness of structure walls. Not to rest on pipe tongue or groove.



ROUND INLET FOR ROUND MANHOLE RFC-465C1

NOT TO SCALE

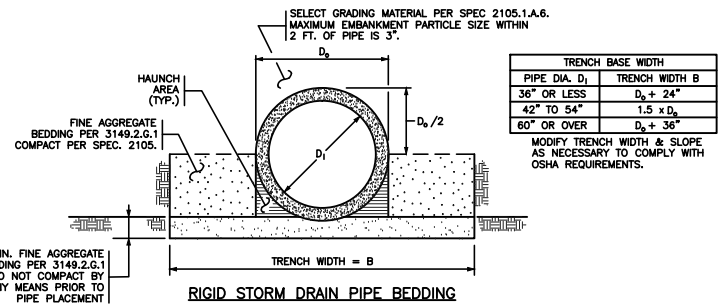
SPECIAL 7 = 48" Ø



RECTANGULAR CATCH BASIN RFC-459C

NOT TO SCALE

SPECIAL



CONSTRUCTION SEQUENCE

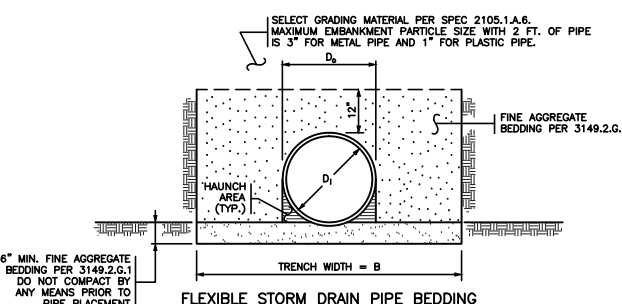
- LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE, DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
- FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
- FURNISH AND INSTALL PIPE TO GRADE.
- AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH 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.



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.

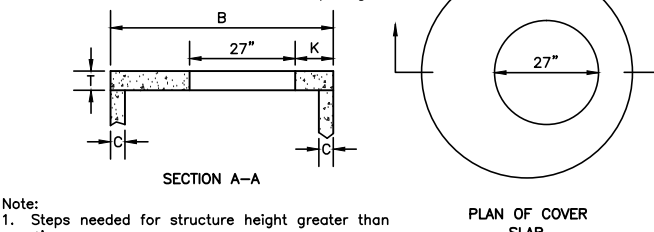
PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER.

PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501 OR 2503.

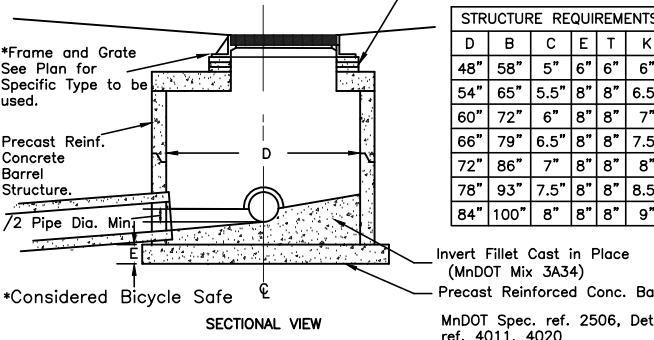
STORM DRAIN BEDDING FOR RIGID AND FLEXIBLE PIPE RFC-654

NOT TO SCALE

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



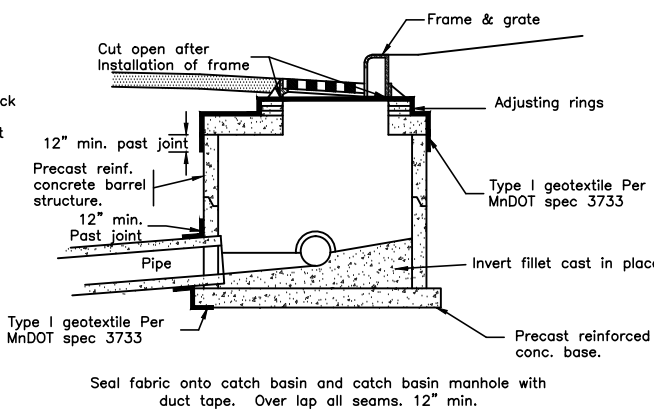
- Note:
- Steps needed for structure height greater than 4'.
 - Cover Slab to Rest on Bed of Mortar on Full Thickness of Structure Walls, not to Rest on Pipe Tongue or Groove.
 - Location of Structure as Shown in Plans.



ROUND MANHOLE RFC-465C

NOT TO SCALE

SPECIAL 6 = 48" Ø



FABRIC AROUND CATCH BASIN RFC-463A1

NOT TO SCALE



800-252-1166 651-454-0002

UTILITIES:

LUMEN (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, THAT I AM A
DULY REGISTERED PROFESSIONAL
ENGINEER UNDER THE LAWS OF THE
STATE OF MINNESOTA.

DATE

REG. NO.

RFC ENGINEERING, INC.
Consulting Engineers

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

DESIGN BY: LDZ

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION

DETAILS

DRAWN BY: LDZ

CHECKED BY: DAK

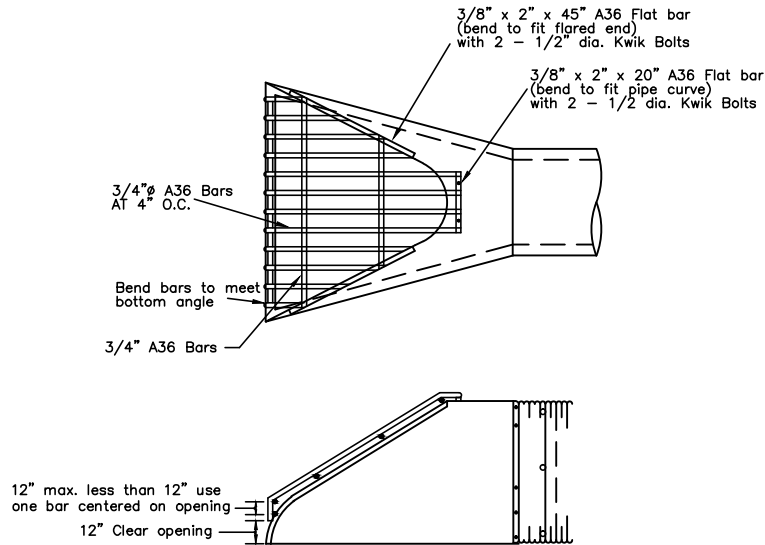
DWG: 2205 DTL 2

DATE: 03/17/26

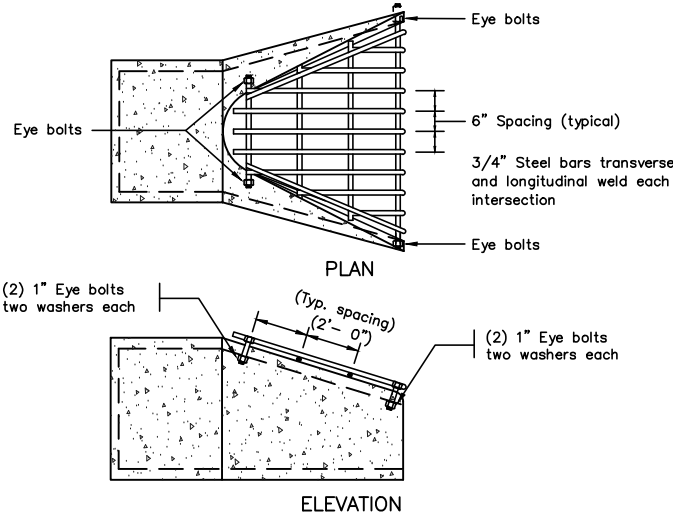
JOB NUMBER: 2205

SHEET: 9 OF 52

FILE: 37-2-109



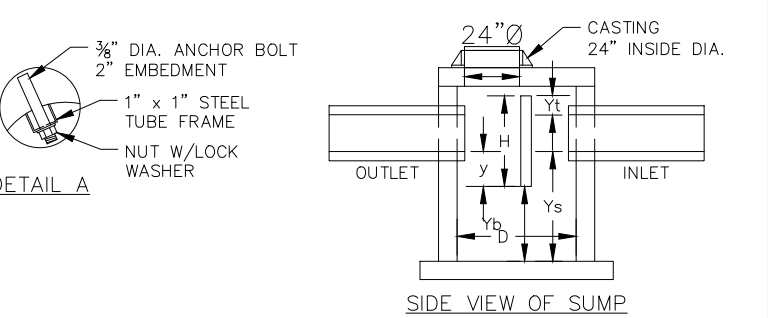
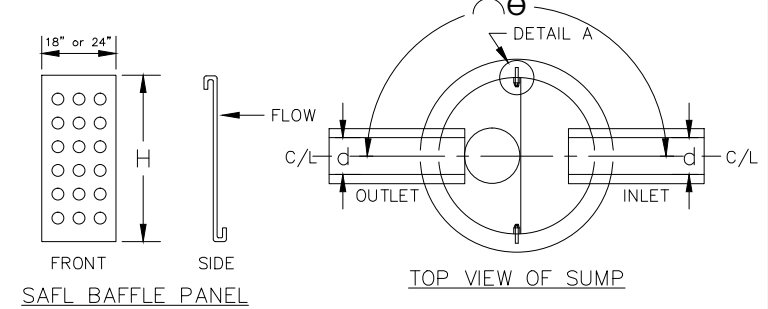
CPP TRASH GUARD RFC-466C
NOT TO SCALE



- 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 burs.

FOR PIPE DIAMETERS 30" AND SMALLER
RCP TRASH GUARD RFC-466B
NOT TO SCALE

NOTES:									
Rev C (07-24-2019)									
d (IN.)	H (IN.)	Θ (DEG.)		y (IN.)	Ys	Yb	Yt	D	
12	36	130	230	12					
15	36	130	230	12					
18	36	130	230	12					
21	46	140	220	12					
24	46	140	220	12					
27	46	140	220	12					
30	57	150	210	12					
36	57	150	210	12					
					MIN. 4 FT.	MIN. 3 FT.	0" to 6"	VARIES	

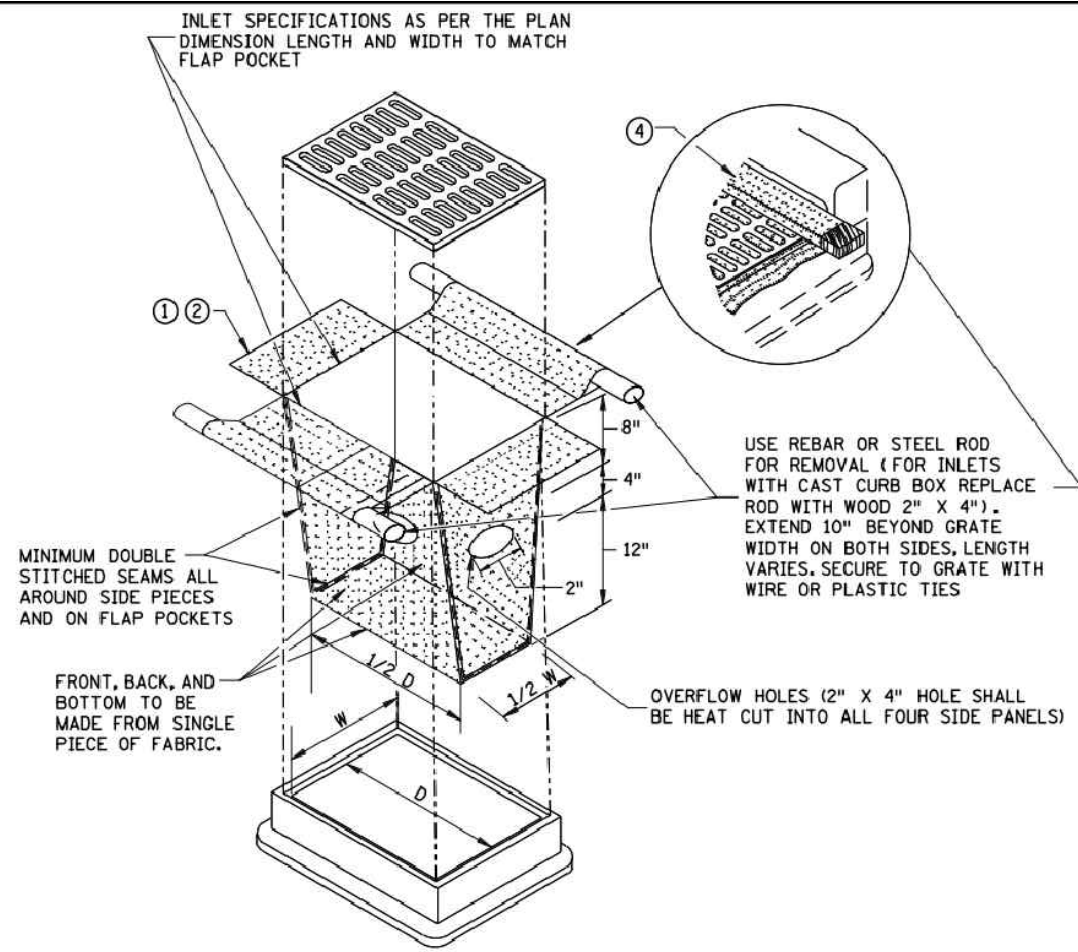


PATENT PROTECTED

This generic detail does not encompass the sizing, fit, and applicability of the SAFL Baffle for this specific project. It is the ultimate responsibility of the design engineer to assure that the design is in compliance with all applicable laws and regulations. The SAFL Baffle is a patented technology of Upstream Technologies, Inc. and the University of Minnesota. Neither Upstream Technologies nor the University of Minnesota approves plans, sizing, or system designs.

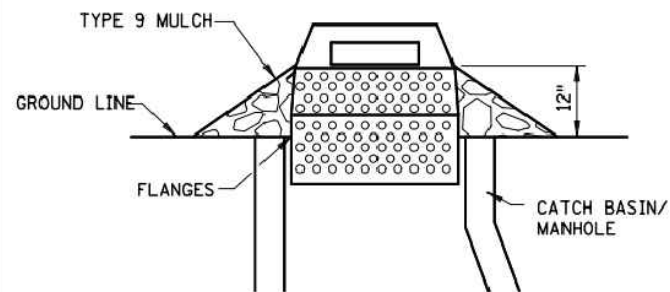
Patents: US #8663466B2 - US #8715507B2 - US #9506237B2 - CA #2742207

SAFL BAFFLE STANDARD
DETAIL
UPSTREAM TECHNOLOGIES INC.
600 COUNTY ROAD D WEST,
STE 14
NEW BRIGHTON, MN 55112
651.237.5123



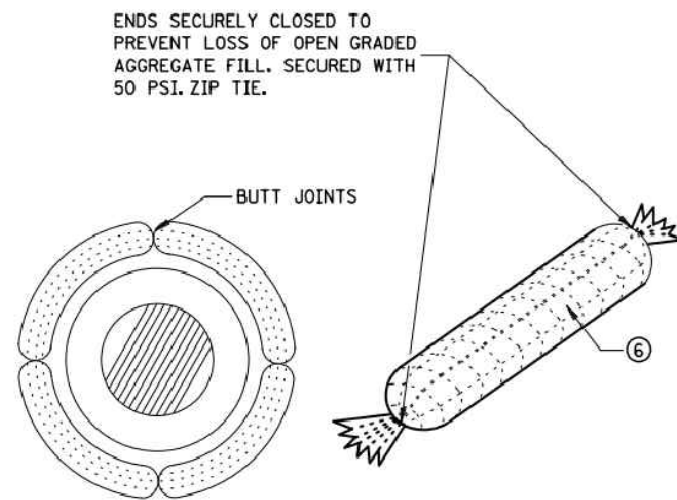
FILTER BAG INSERT ③

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

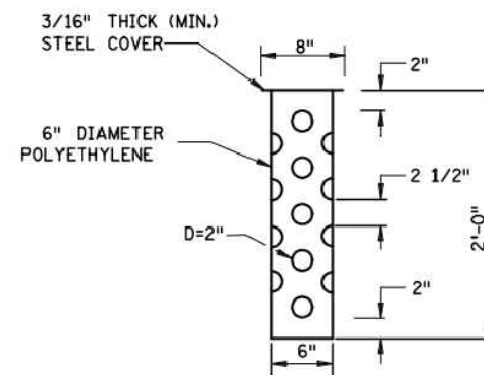


SEDIMENT CONTROL INLET HAT

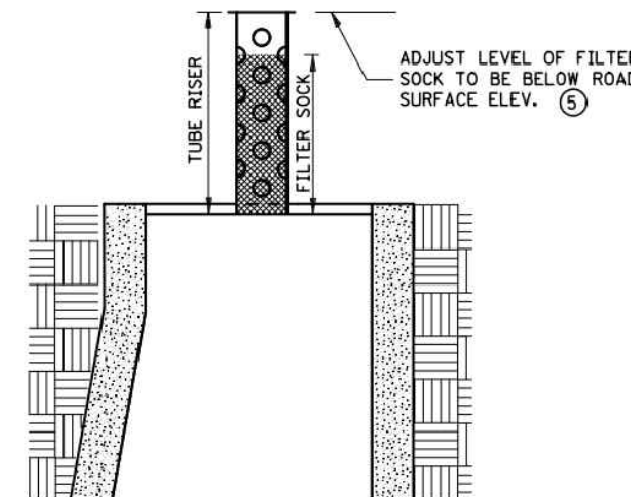
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



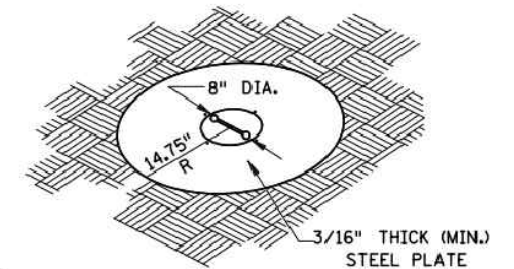
ROCK LOG/COMPOST LOG



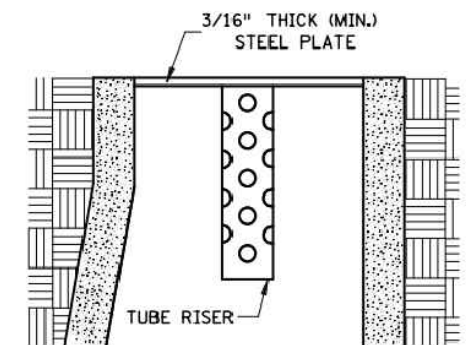
TUBE RISER



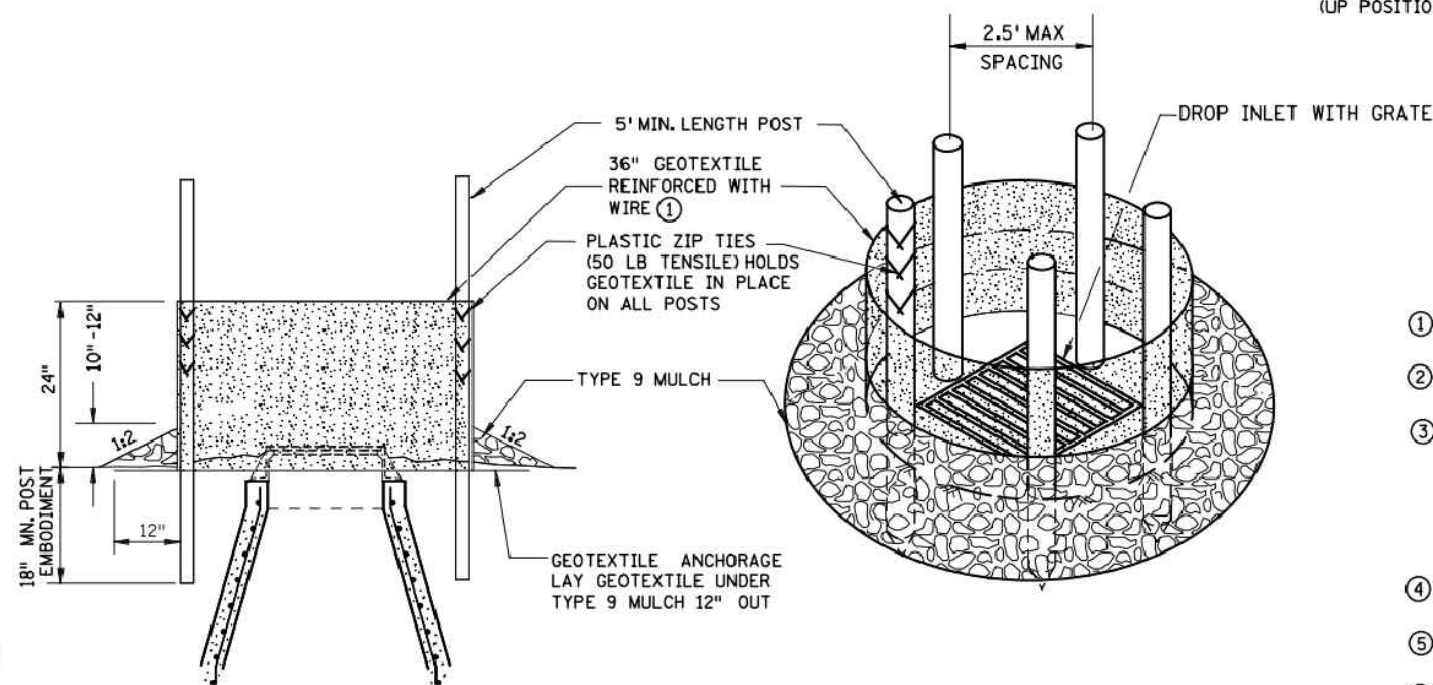
SECTION (UP POSITION)



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

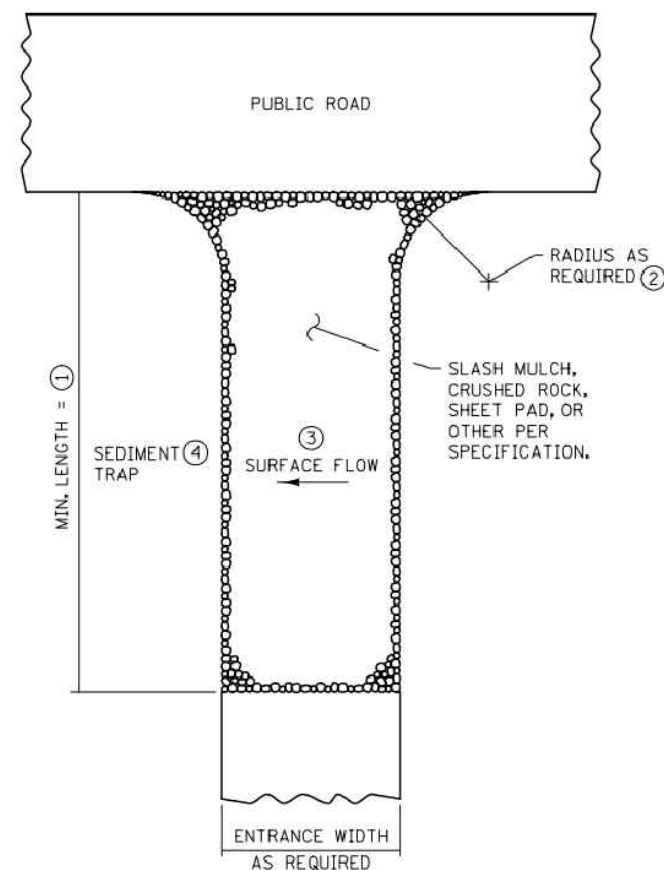
POP-UP HEAD

NOTES:

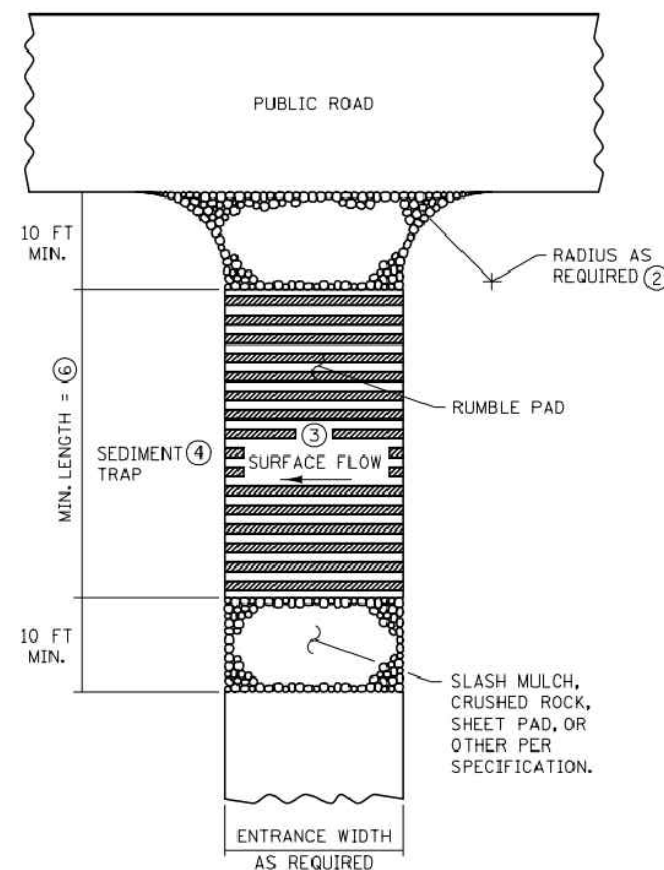
SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

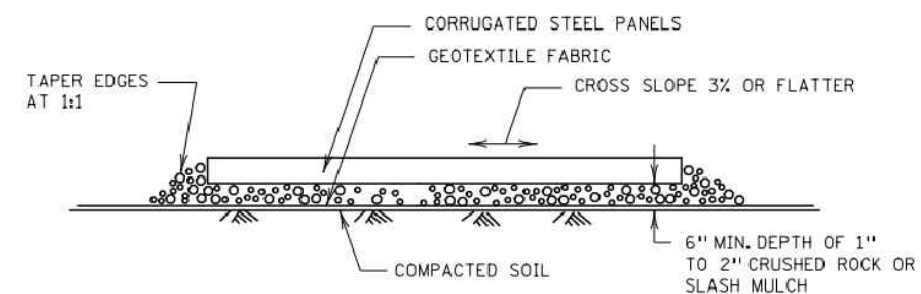
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG 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.



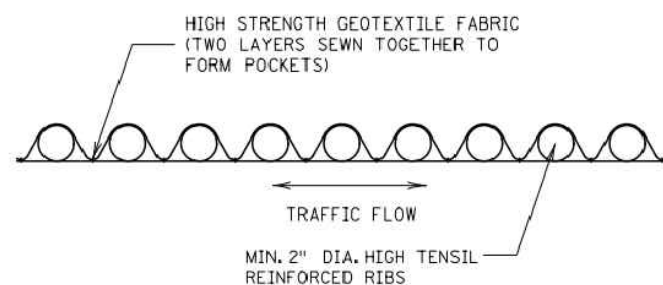
SLASH MULCH, CRUSHED ROCK, OR SHEET
PAD CONSTRUCTION EXIT ⑤⑦



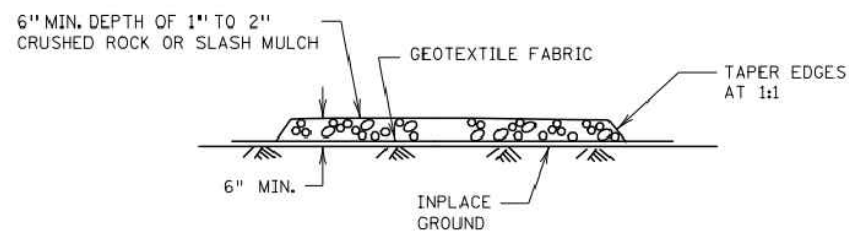
RUMBLE PAD
CONSTRUCTION EXIT ⑤⑦



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

[Signature]
CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405

5 OF 8

[Signature]
STATE DESIGN ENGINEER

APPROVED: 2-28-2017
REVISED:

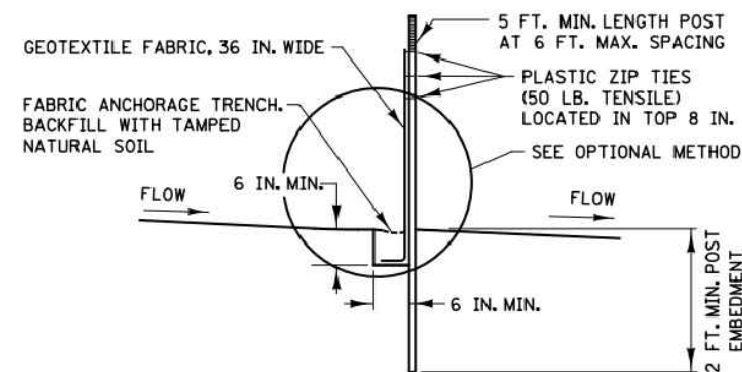
STATE PROJ. NO.

TEMPORARY SEDIMENT CONTROL

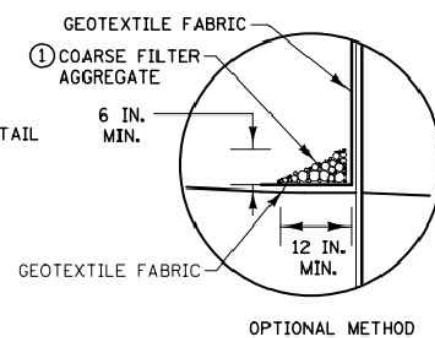
STABILIZED CONSTRUCTION EXIT

(T.H.)

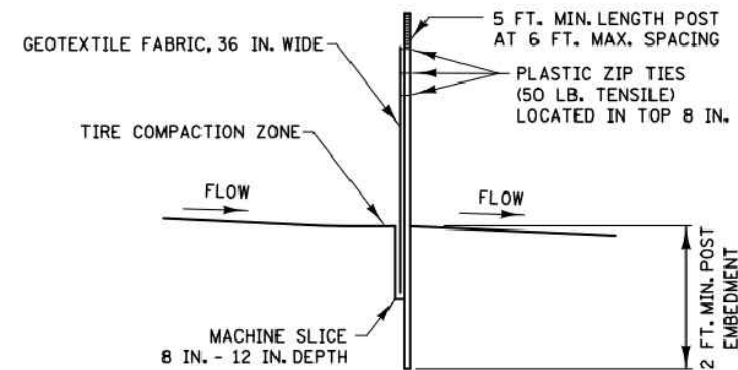
SHEET NO. 12 OF 52 SHEETS



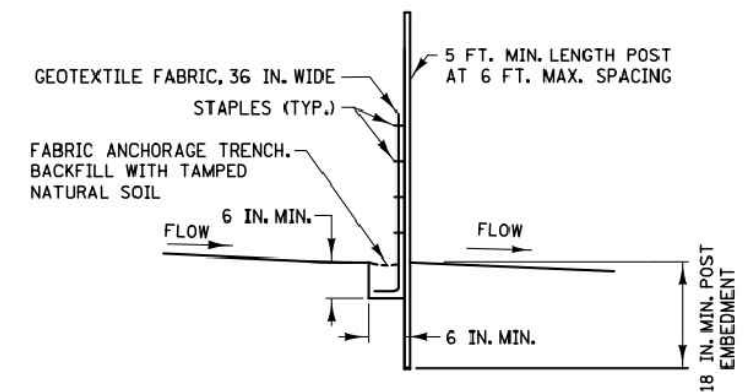
**SILT FENCE TYPE HI ②
(HAND INSTALLED)**



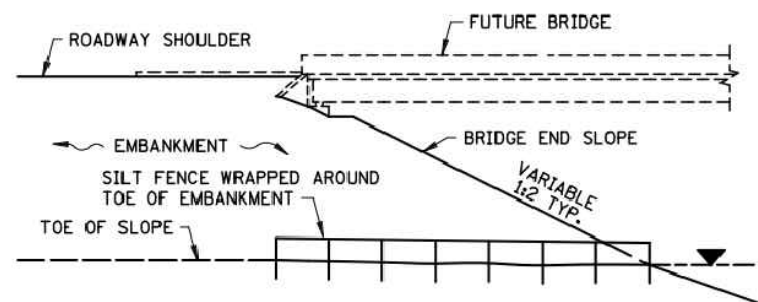
OPTIONAL METHOD



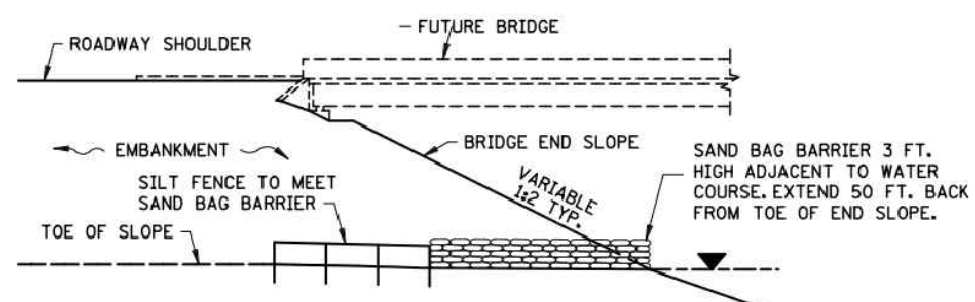
**SILT FENCE TYPE MS ②
(MACHINE SLICED)**



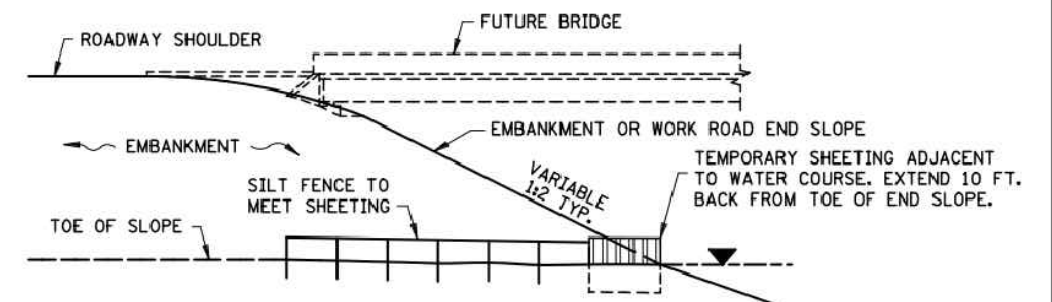
**SILT FENCE TYPE PA ③
(PREASSEMBLED)**



SILT FENCE ONLY ④

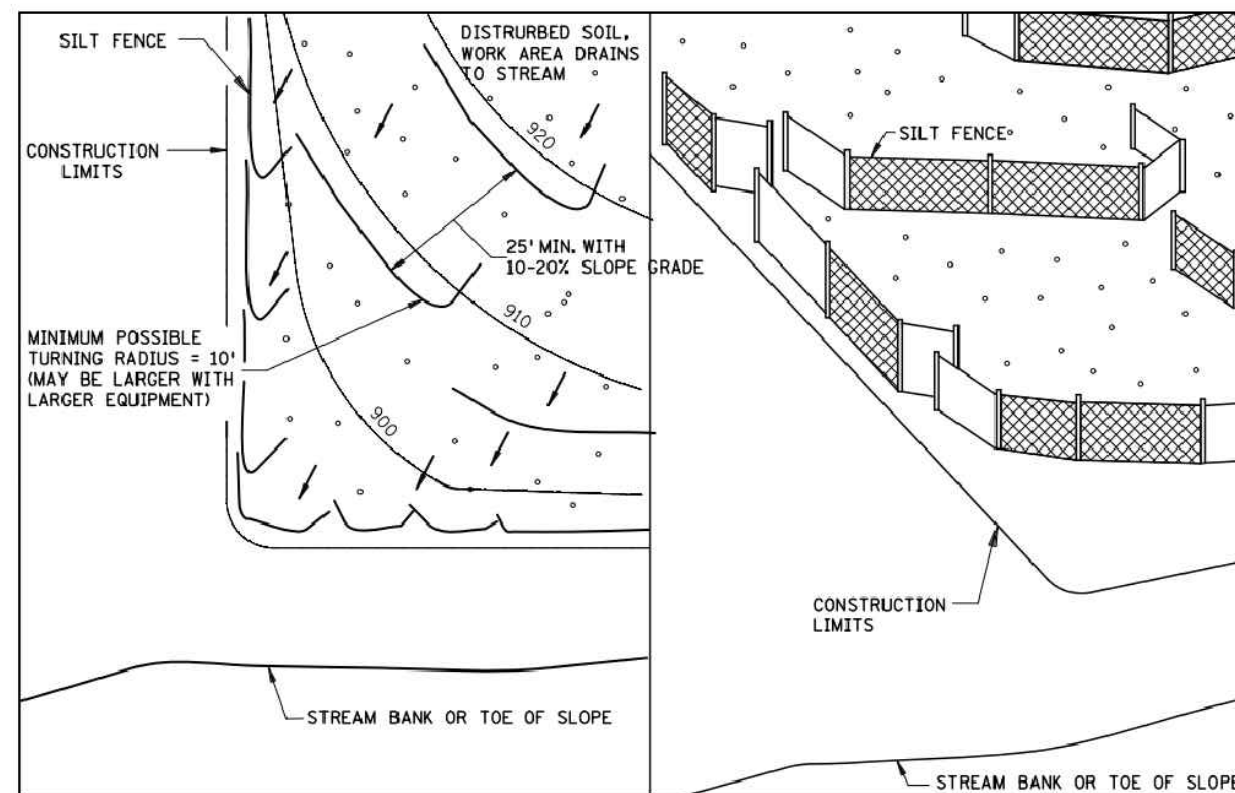


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



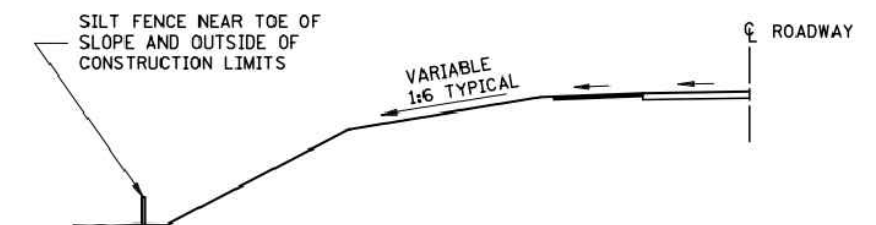
PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION

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.



LOCATION AT TOE OF ROADWAY EMBANKMENT

REVISION:
APPROVED: 2-28-2017
<i>[Signature]</i> CHIEF ENVIRONMENTAL OFFICER



STANDARD PLAN 5-297.405 6 OF 8

[Signature]
STATE DESIGN ENGINEER

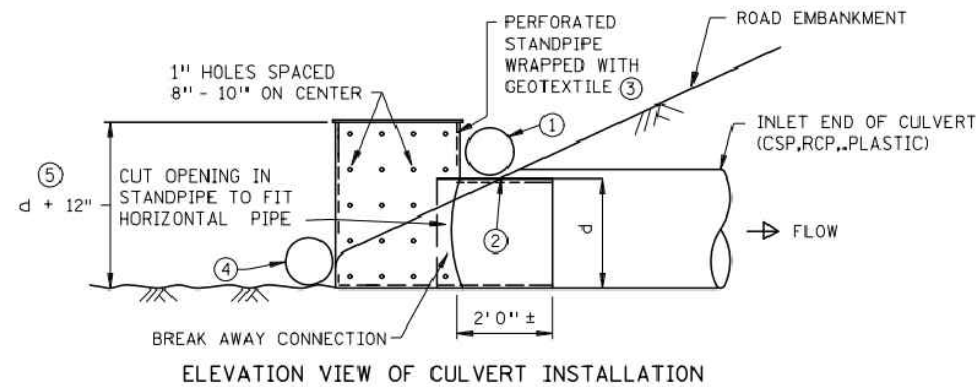
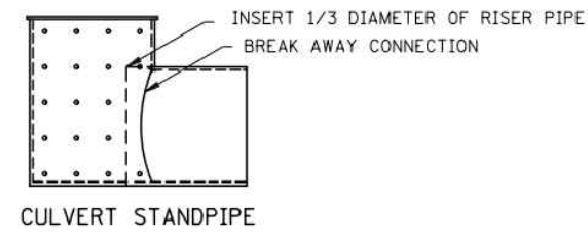
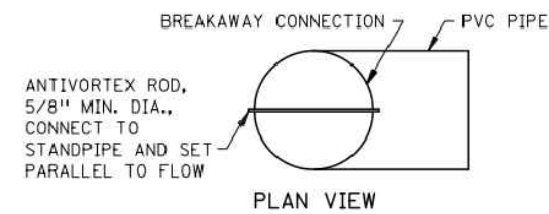
APPROVED: 2-28-2017
REVISED:

STATE PROJ. NO.

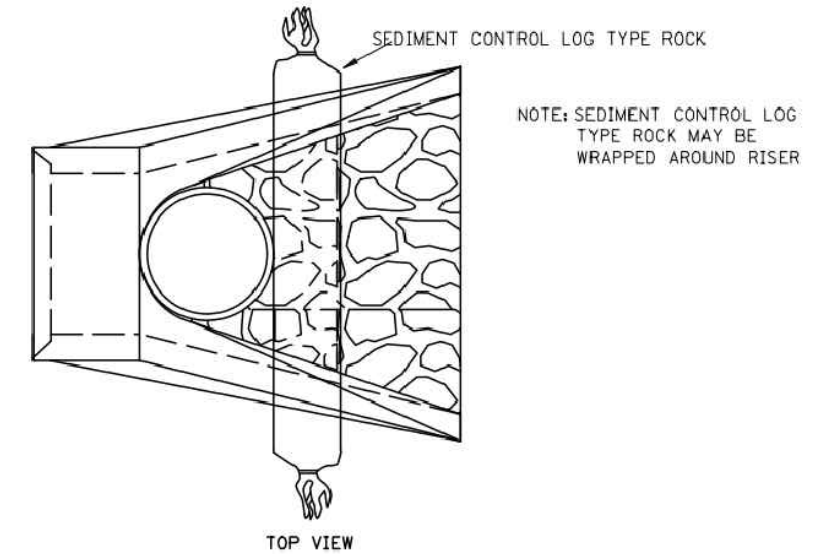
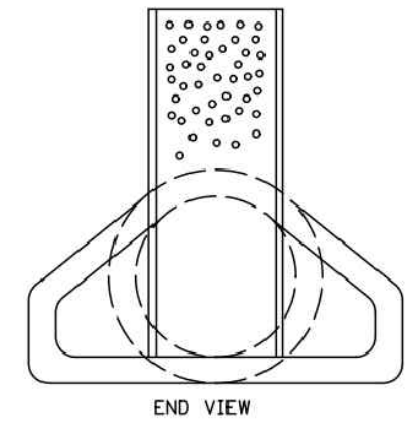
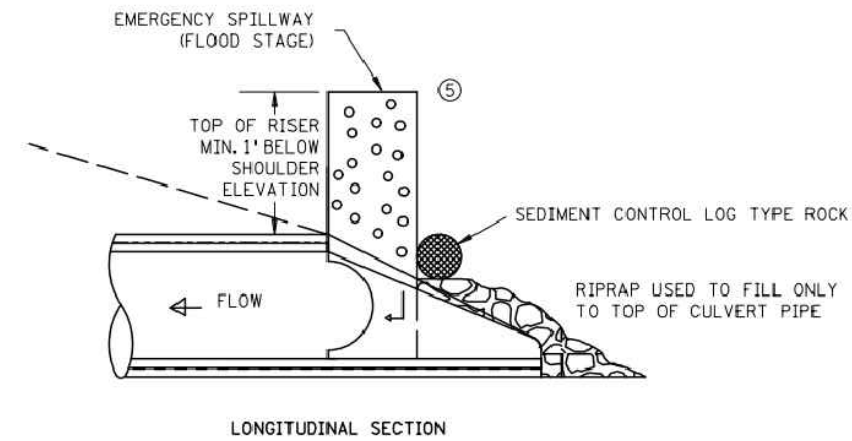
TEMPORARY SEDIMENT CONTROL

SILT FENCE

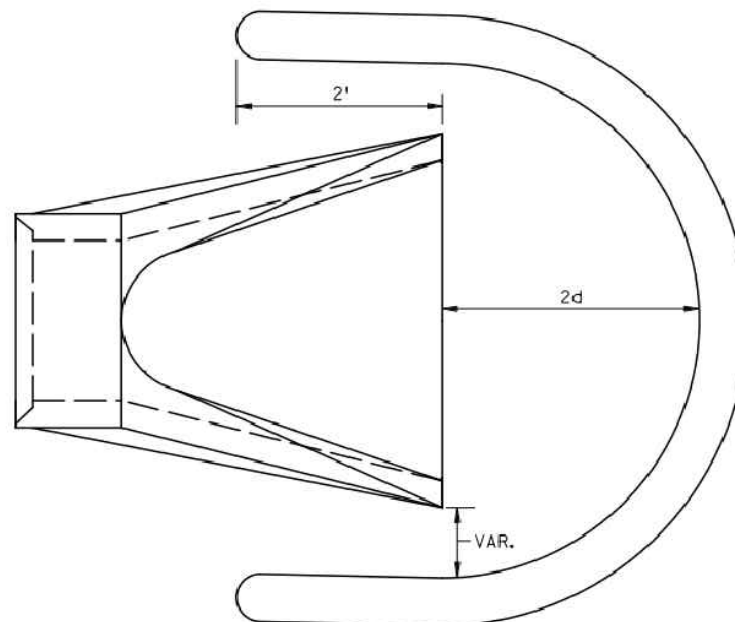
(T.H.) SHEET NO. 13 OF 52 SHEETS



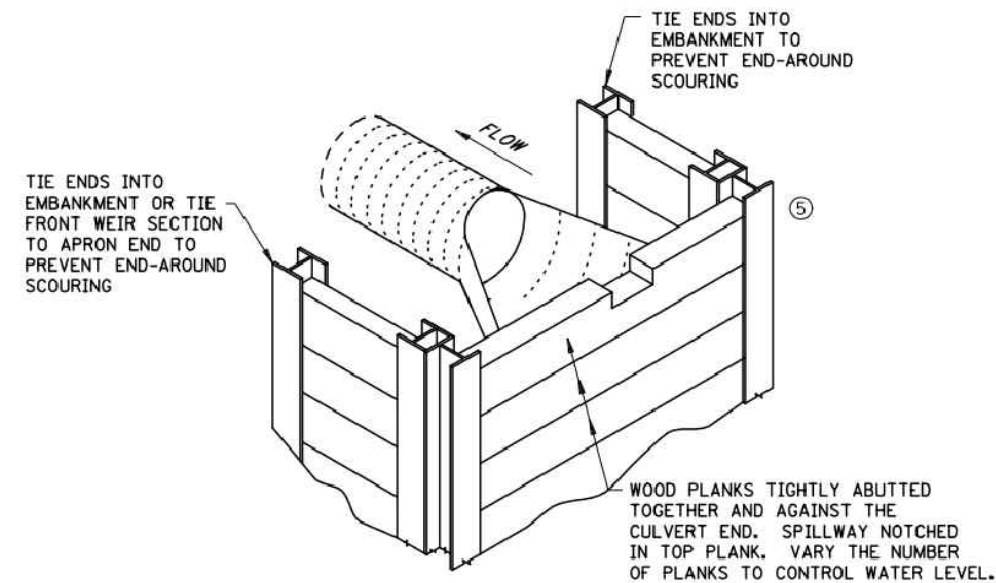
CULVERT STANDPIPE INSERT (D-RISER)
d = CULVERT SIZE: 12" - 36"



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

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

STANDARD PLAN 5-297.405

8 OF 8

STATE DESIGN ENGINEER

APPROVED: 2-28-2017

REVISED:

STATE PROJ. NO.

TEMPORARY SEDIMENT CONTROL

CULVERT END CONTROLS

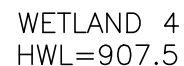
(T.H.)

SHEET NO. 14 OF 52 SHEETS

1. 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.
2. ALL REMOVALS TO BE DISPOSED OF LEGALLY.
3. SEE DETAIL COMMERCIAL DRIVEWAY RFC-370A1 FOR DRIVEWAY DETAILS.



NORTH BOUND TRUNK HIGHWAY 65



UTILITIES:	LUMEN	(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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

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

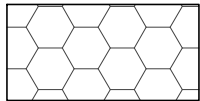
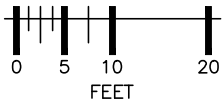
S.A.P. 197-119-004 / 197-135-001 HAM LAKE IMPROVEMENT PROJECT 2205 CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION INTERSECTION DETAILS

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

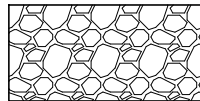
DWG:	2205 INT 1
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	15 OF 52
FILE:	37-2-115

NOTES:

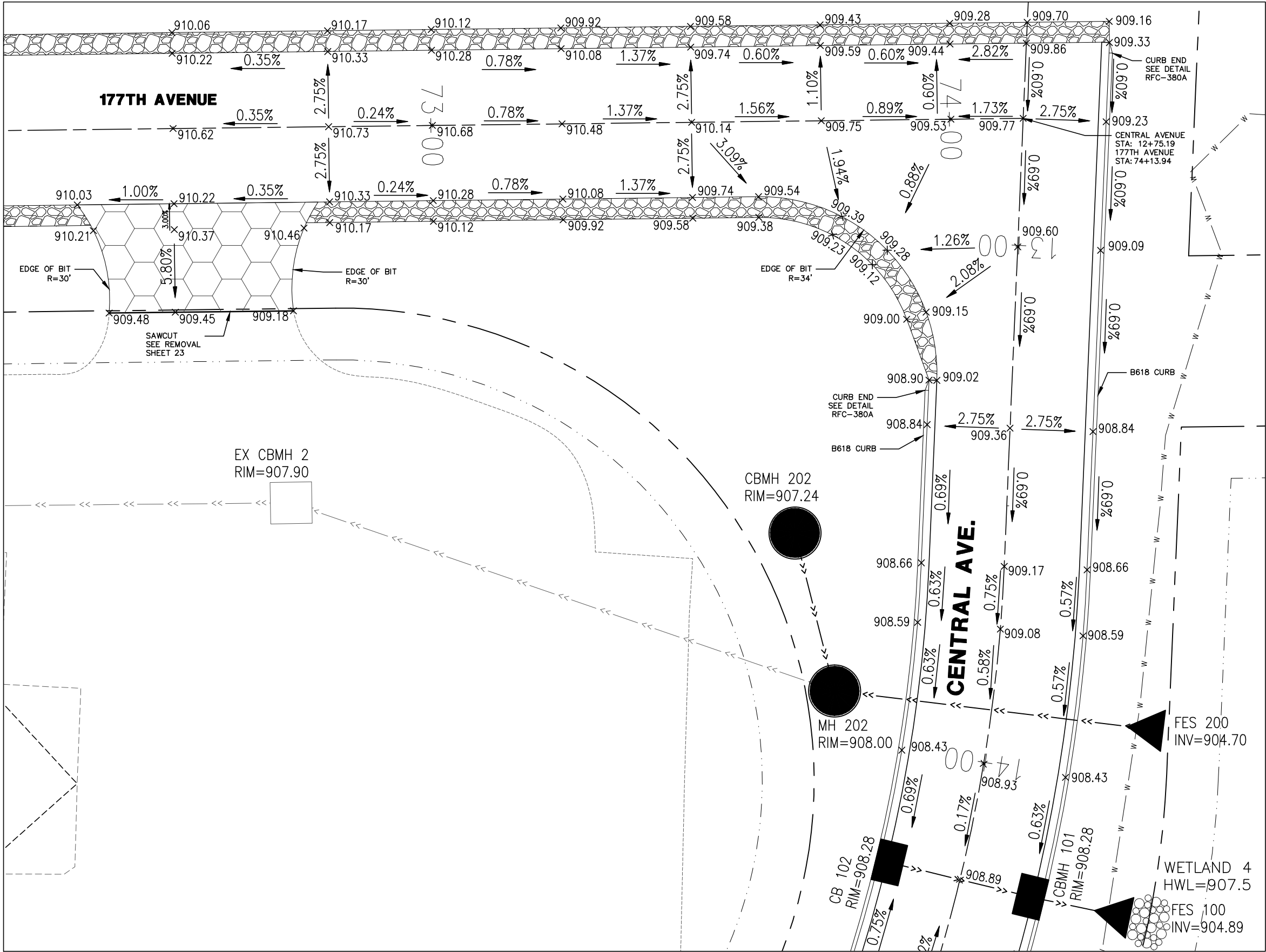
1. ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION, BUT IN NO CASE LONGER THAN 7 DAYS. IF THERE IS A SCHEDULED PAUSE OF WORK THAT WILL LAST 7 DAYS OR LONGER, ALL SOILS AND STOCKPILES ARE REQUIRED TO BE STABILIZED WITHIN THE FIRST 24 HOURS OF INACTIVITY.
2. ALL REMOVALS TO BE DISPOSED OF LEGALLY.
3. SEE DETAIL PRIVATE DRIVEWAY RFC-363A1 FOR DRIVEWAY DETAILS.



PROPOSED BITUMINOUS
DRIVEWAY



PROPOSED CLASS 5
SHOULDER



800-252-1166 651-454-0002

UTILITIES:
LUMEN (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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

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

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

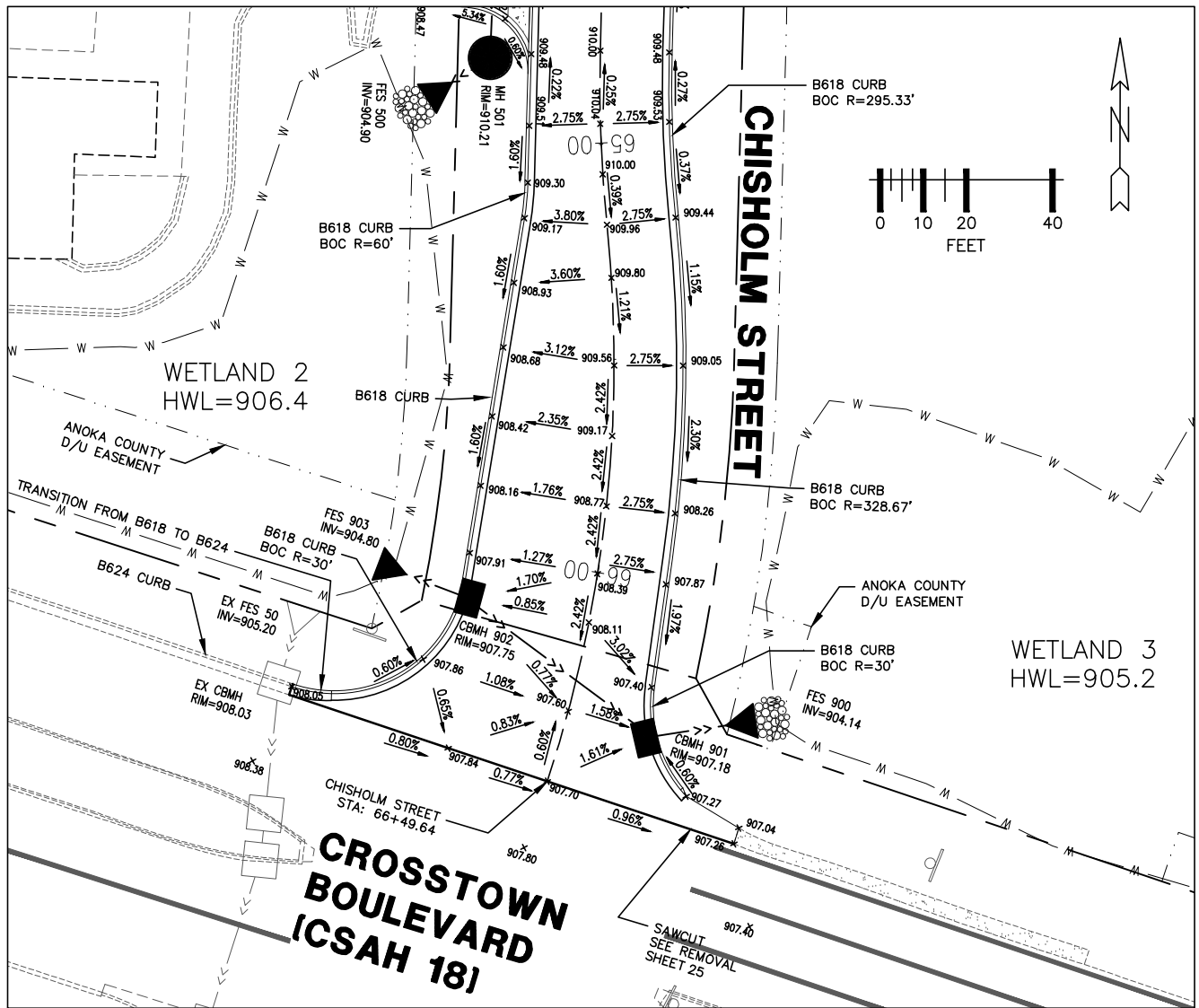
S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
INTERSECTION DETAILS

DWG: 2205 INT 2
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 16 OF 52
FILE: 37-2-116

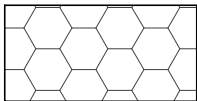
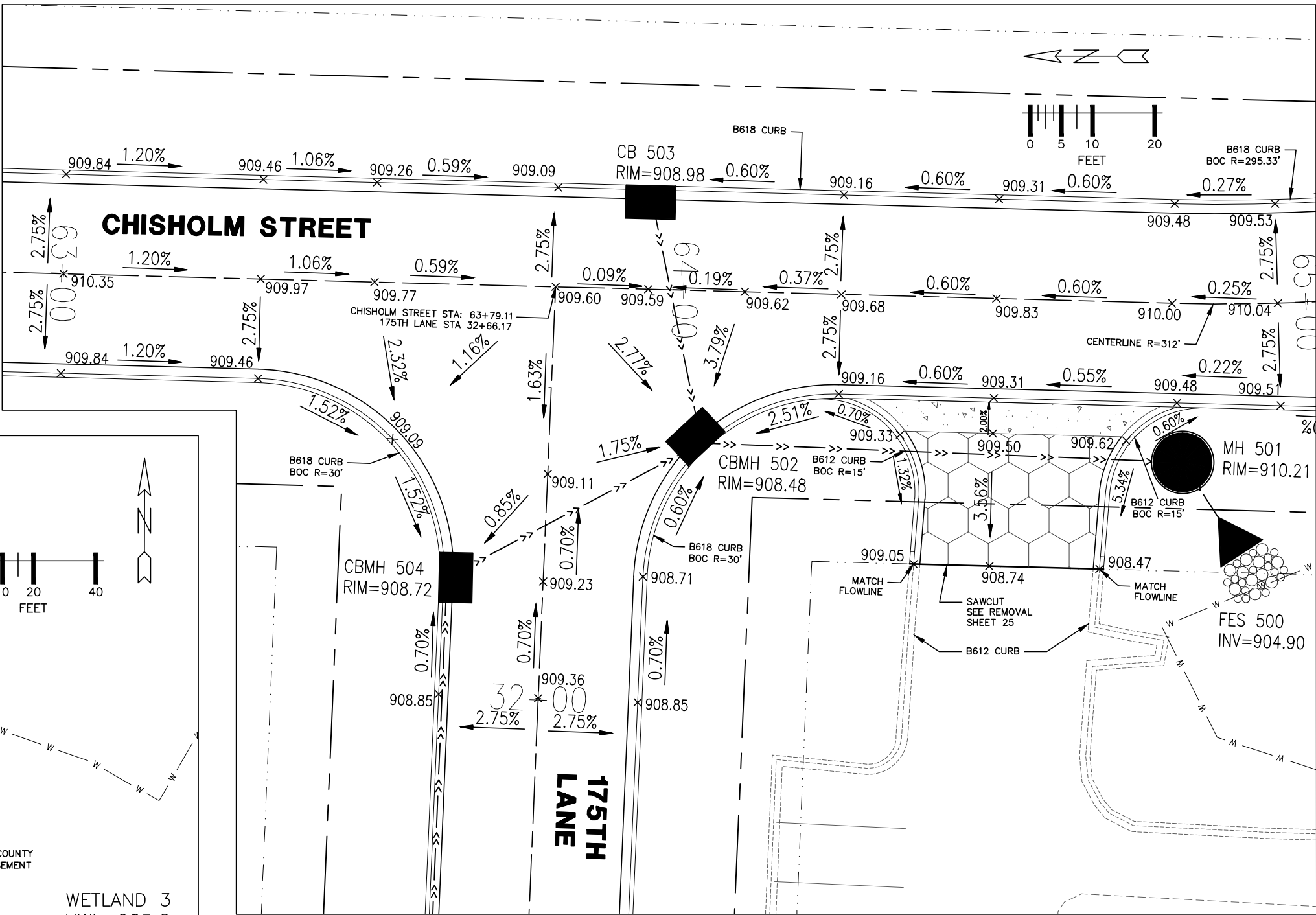
NOTES:

- 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.
- ALL REMOVALS TO BE DISPOSED OF LEGALLY.
- SEE DETAIL COMMERCIAL DRIVEWAY RFC-370A1 FOR DRIVEWAY DETAILS.

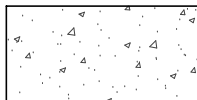
CROSTOWN BOULEVARD (CSAH 18) AND CHISHOLM STREET



CHISHOLM STREET AND 175TH LANE



PROPOSED BITUMINOUS
DRIVEWAY



PROPOSED CONCRETE



800-252-1166 651-454-0002

UTILITIES: LUMEN (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: _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
INTERSECTION DETAILS

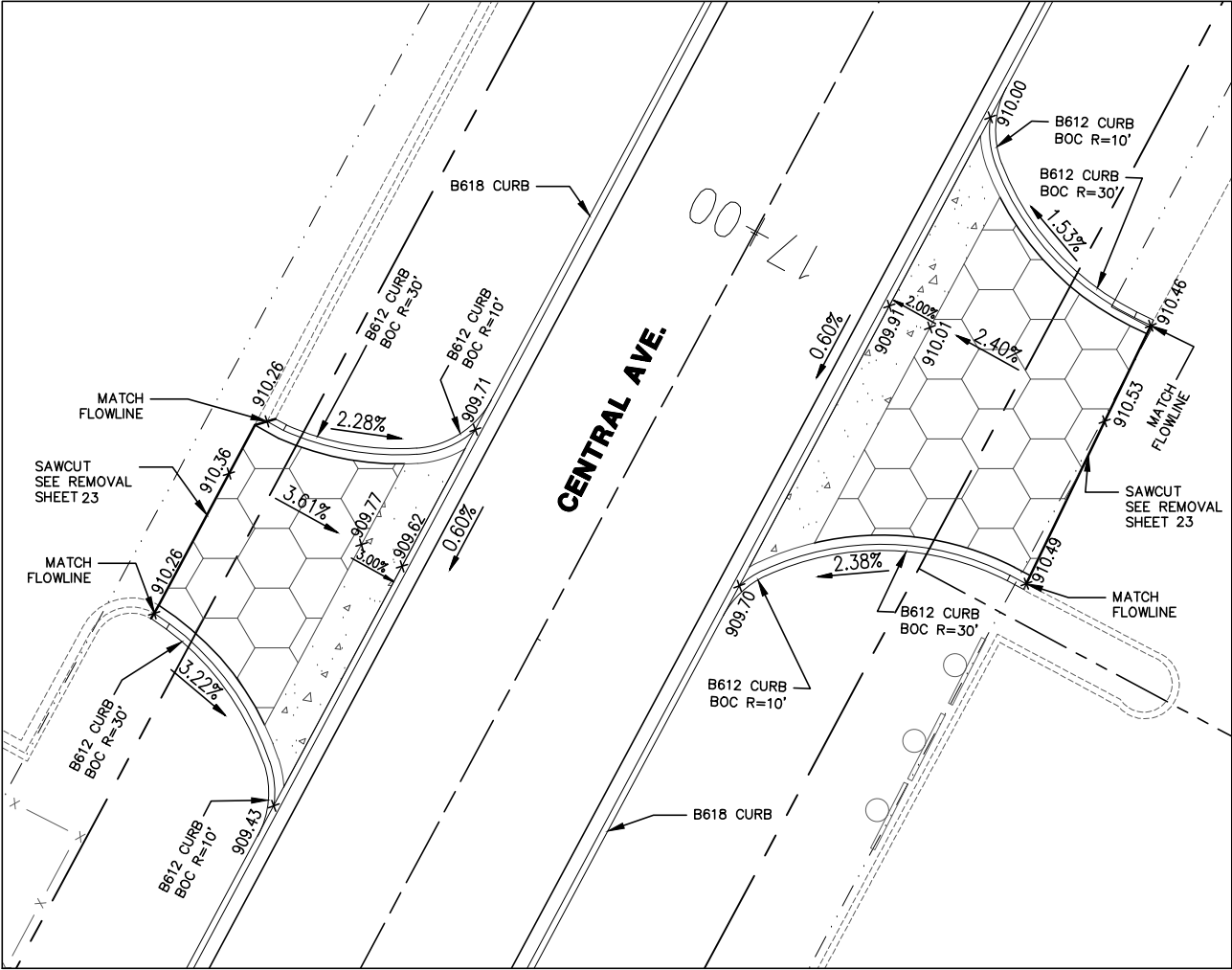
DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: 2205 INT 3
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 17 OF 52
FILE: 37-2-117

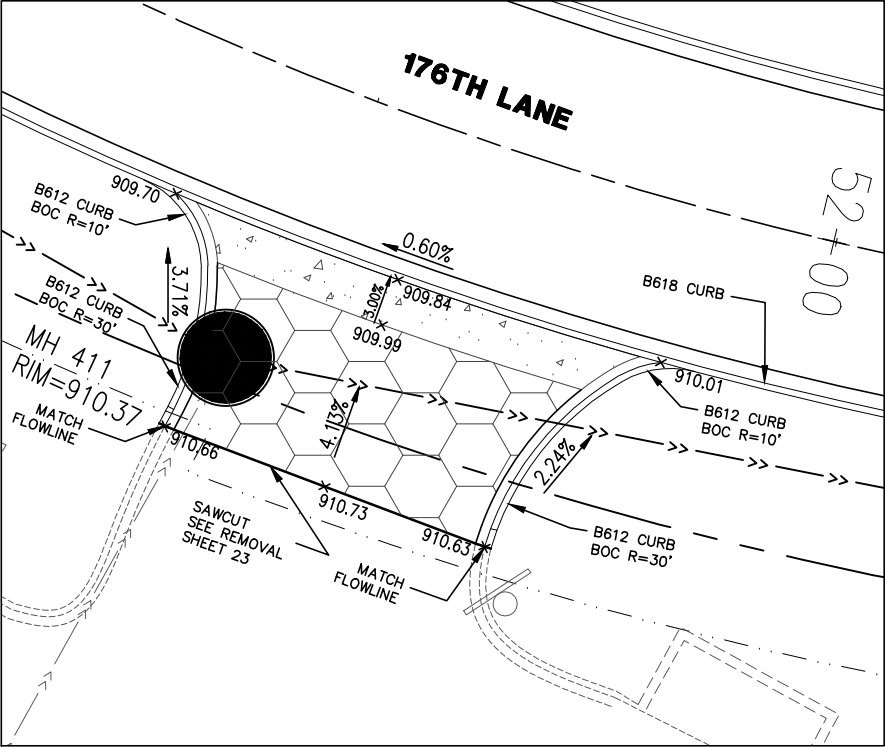
NOTES:

1. 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.
2. ALL REMOVALS TO BE DISPOSED OF LEGALLY.
3. SEE DETAIL COMMERCIAL DRIVEWAY RFC-370A1 FOR DRIVEWAY DETAILS.

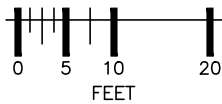
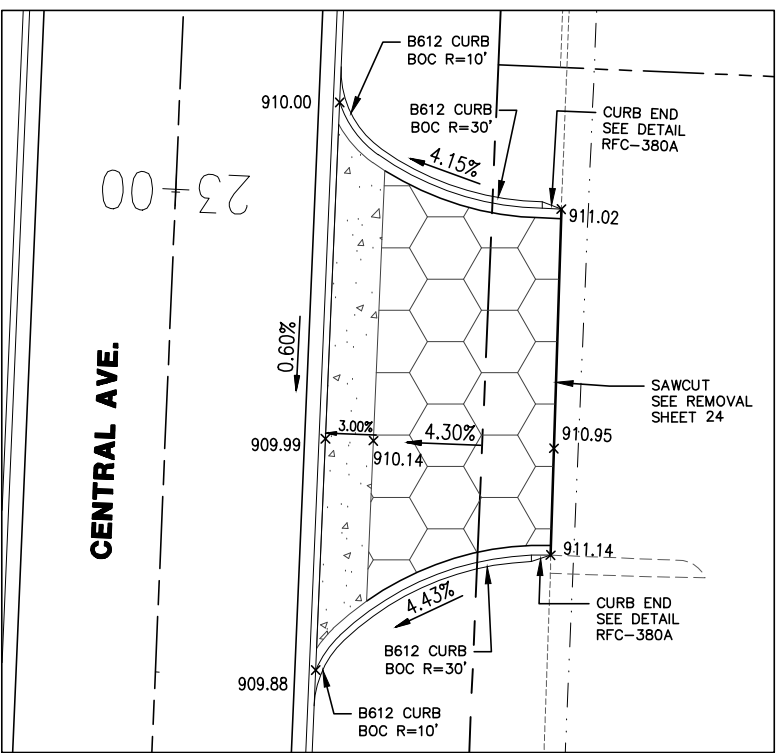
DRIVEWAYS CENTRAL AVENUE STA 17+00 & STA 17+50



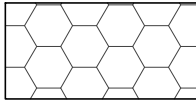
DRIVEWAY 176TH LANE STA 51+50



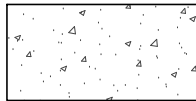
DRIVEWAY CENTRAL AVENUE STA 23+25



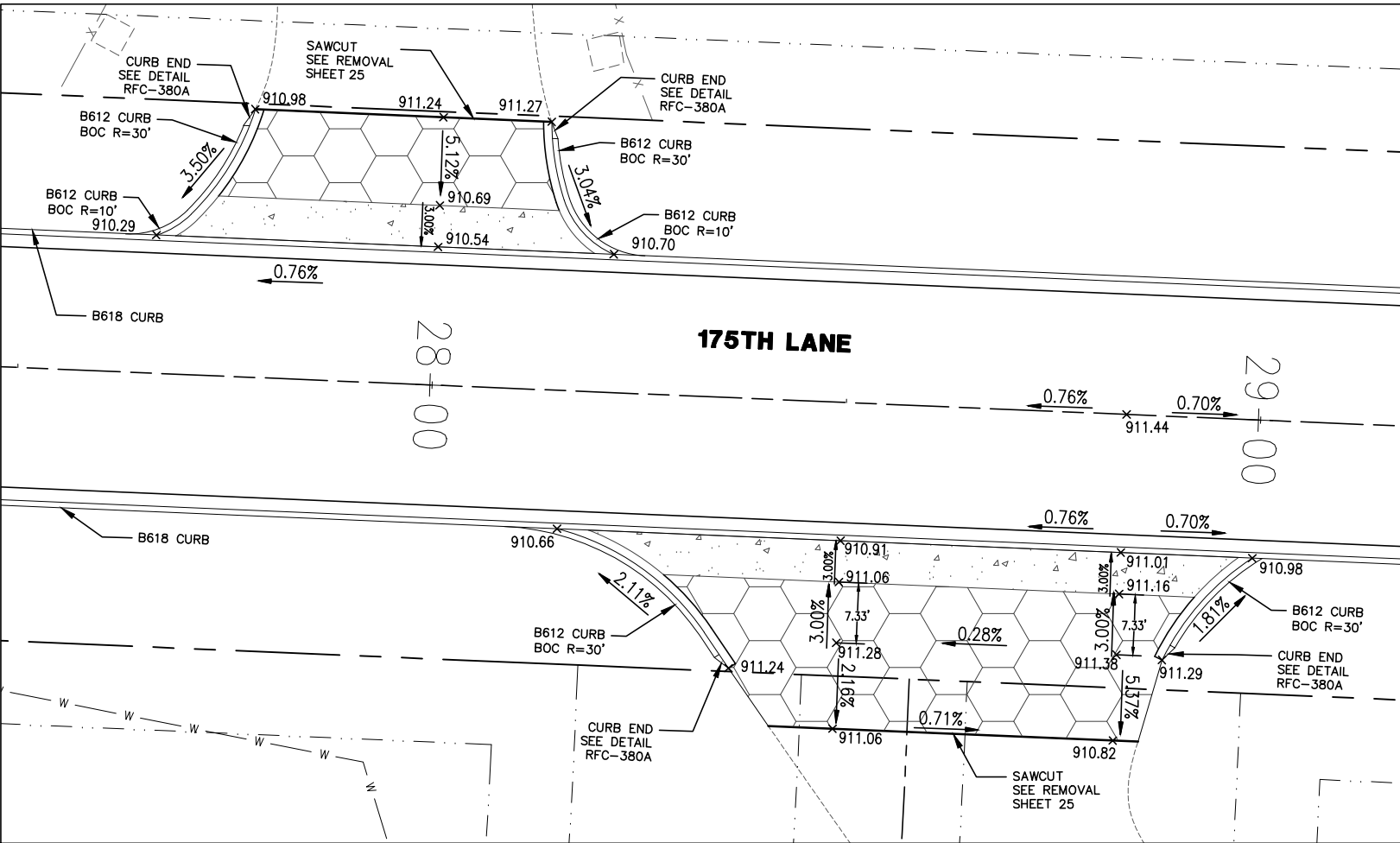
(ALL DETAILS)



PROPOSED BITUMINOUS DRIVEWAY



PROPOSED CONCRETE



DRIVEWAYS 175TH LANE STA 28+00 & STA 28+50



UTILITIES: LUMEN (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 REG. NO.

RFC ENGINEERING, INC.
Consulting Engineers

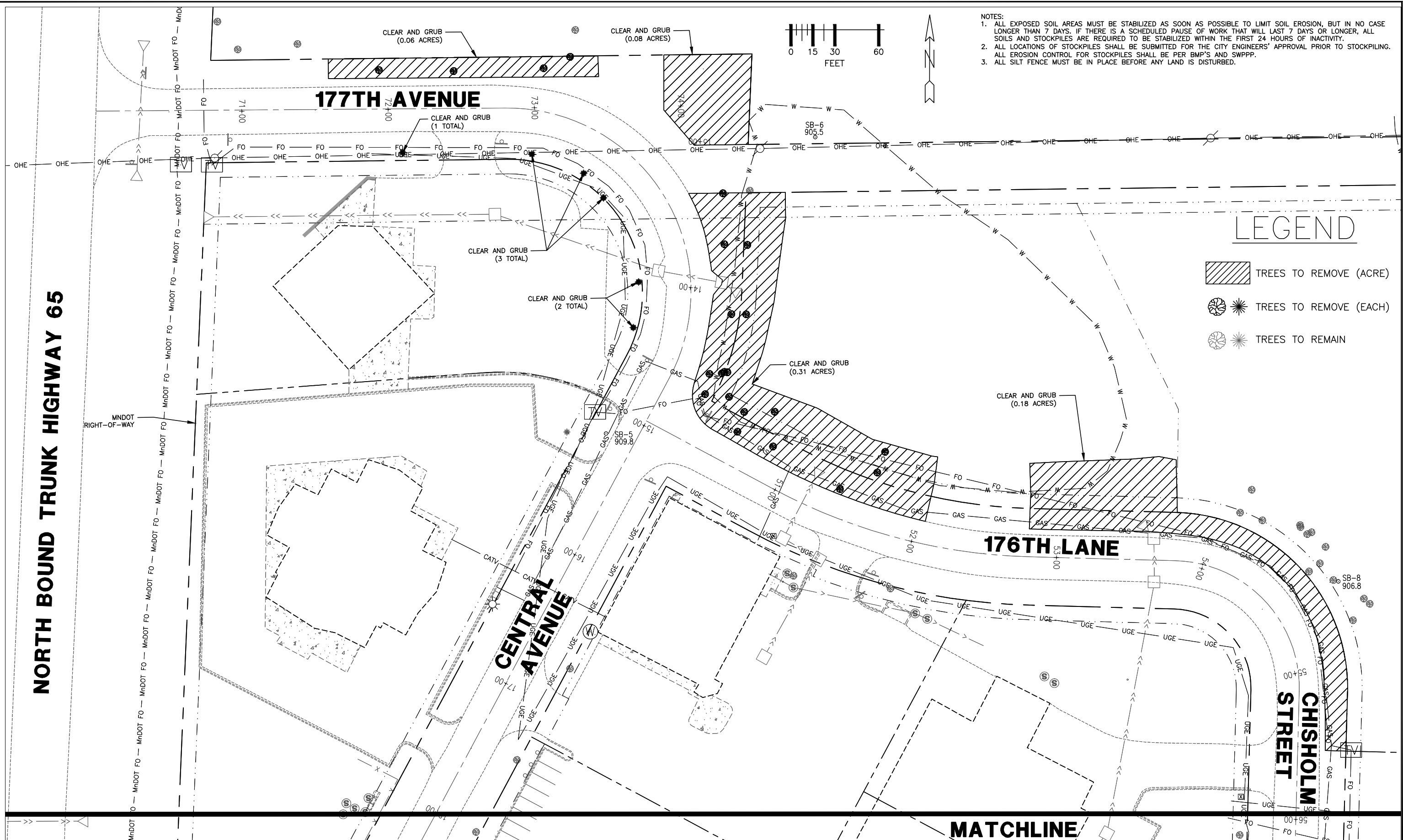
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
DRIVEWAY DETAILS

DWG: 2205 INT 4
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 18 OF 52
FILE: 37-2-118

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

NORTH BOUND TRUNK HIGHWAY 65



- NOTES:
1. 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.
 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.

LEGEND

- TREES TO REMOVE (ACRE)
- TREES TO REMOVE (EACH)
- TREES TO REMAIN



800-252-1166 651-454-0002

UTILITIES:

LUMEN	(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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

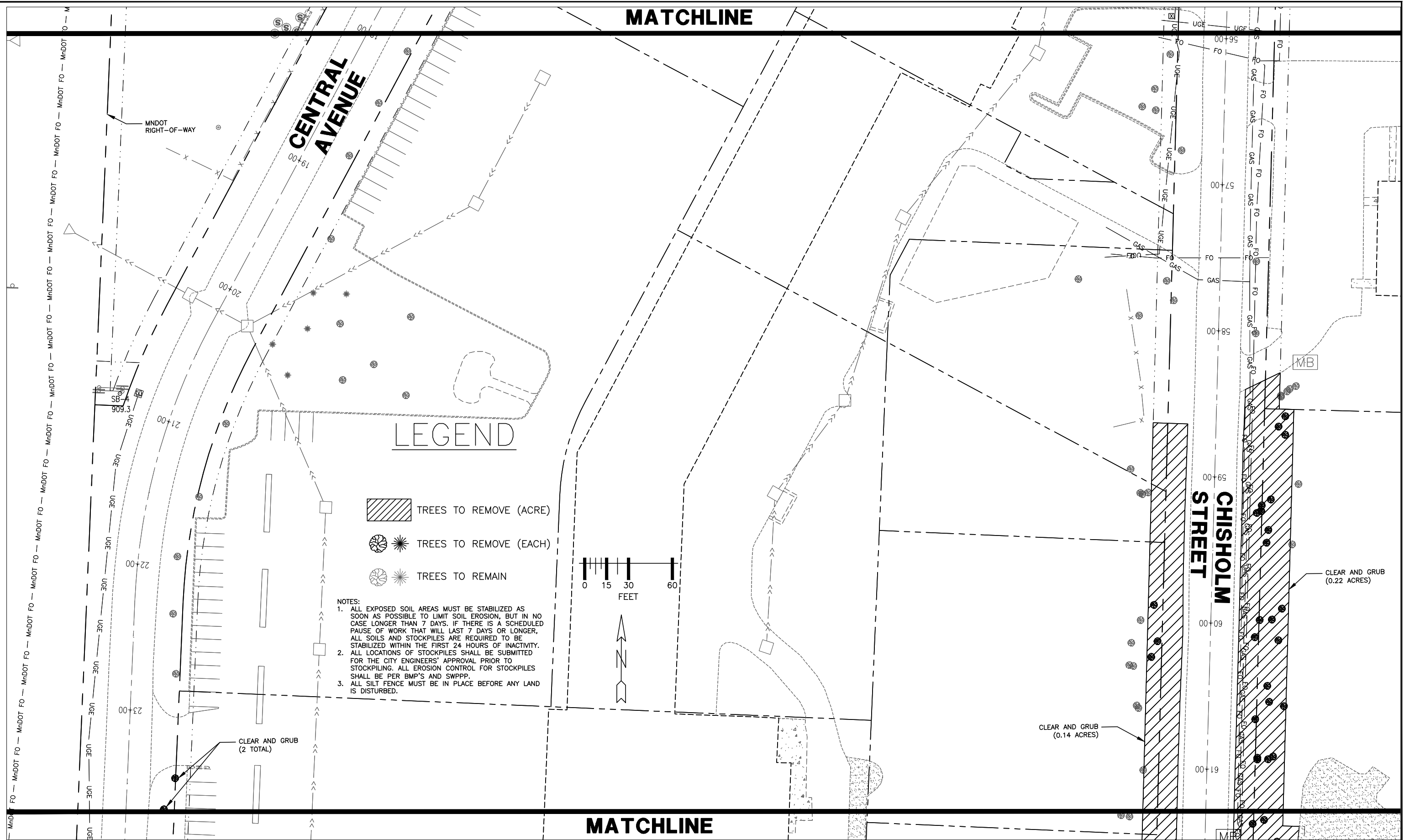
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION

TREE REMOVAL PLANS

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

DWG:2205 REMOVETREE1
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 20 OF 52
FILE: 37-2-120





800-252-1166 651-454-0002

UTILITIES:

LUMEN	(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

DATE _____ REG. NO. _____

FOR REVIEW PURPOSES ONLY

RFC ENGINEERING, INC.
Consulting Engineers

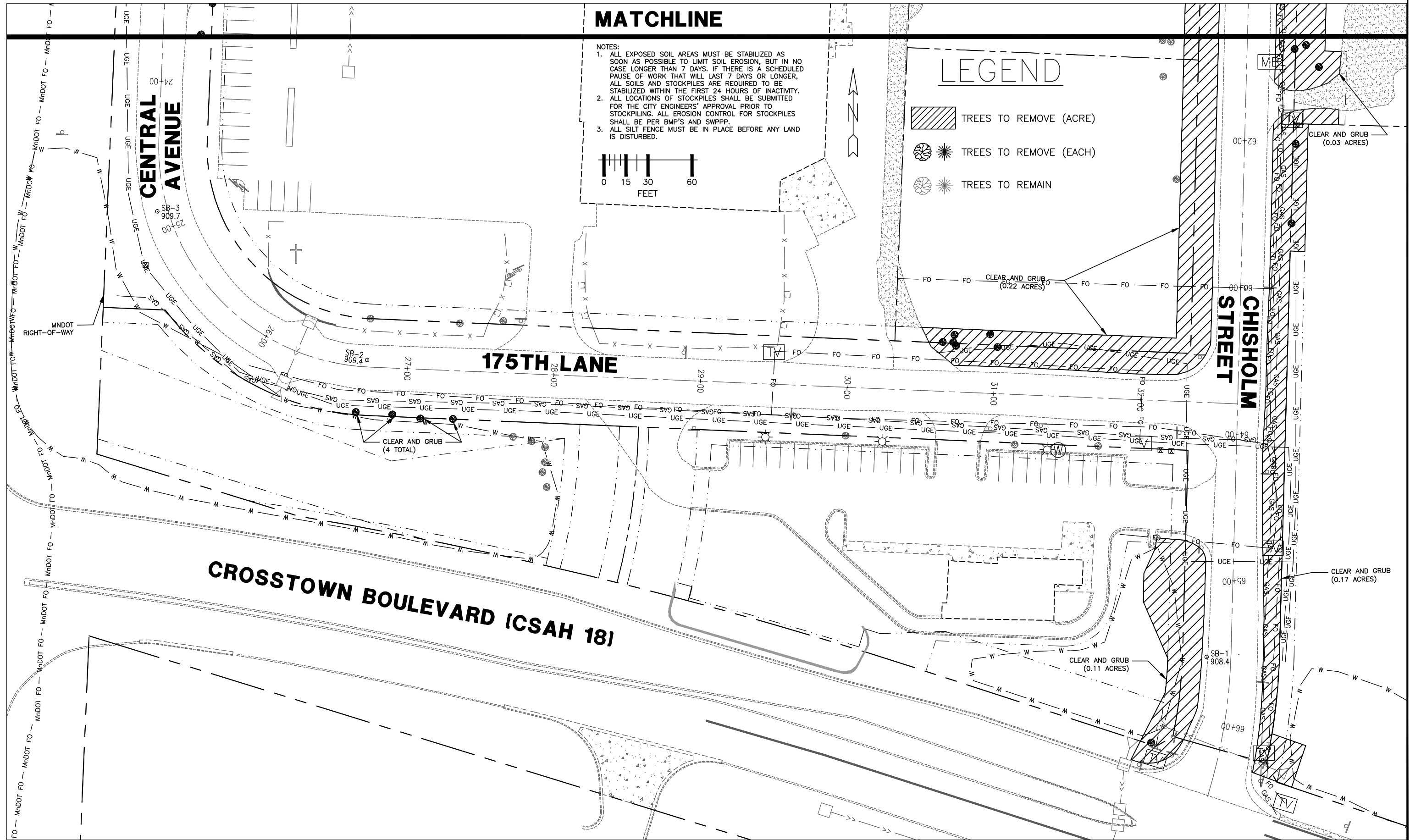
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION

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

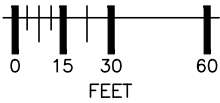
TREE REMOVAL PLANS

DWG2205 REMOVETREE2
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 21 OF 52
FILE: 37-2-121



MATCHLINE

- NOTES:
1. 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.
 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.



LEGEND

- TREES TO REMOVE (ACRE)
- TREES TO REMOVE (EACH)
- TREES TO REMAIN



800-252-1166 651-454-0002

UTILITIES:

LUMEN	(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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

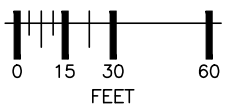
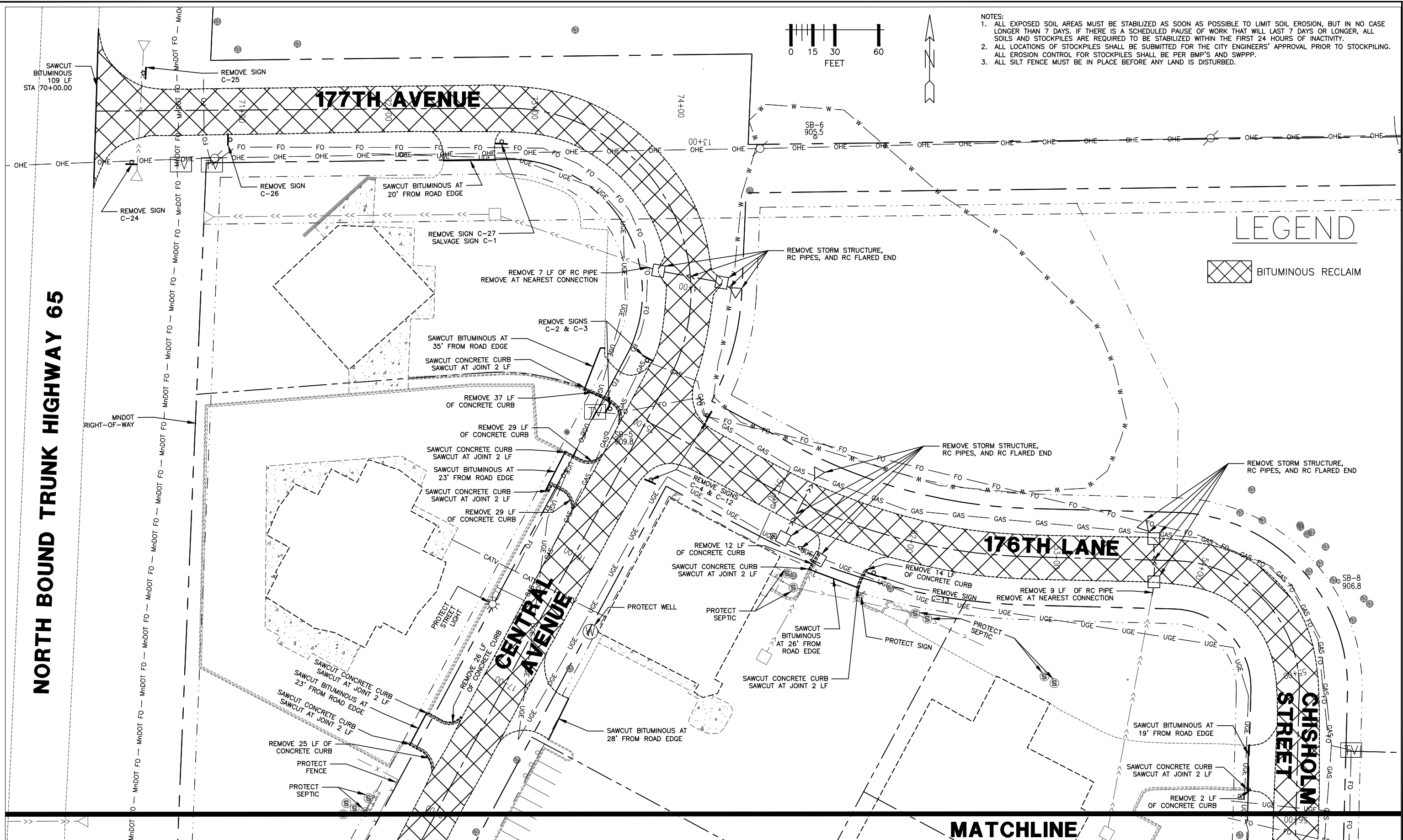
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION
TREE REMOVAL PLANS

DWG2205 REMOVETREE3
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 22 OF 52
FILE: 37-2-122

NORTH BOUND TRUNK HIGHWAY 65



- NOTES:
1. 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.
 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.

LEGEND

BITUMINOUS RECLAIM

MATCHLINE



800-252-1166 651-454-0002

UTILITIES:

LUMEN	(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 _____ REG. NO. _____

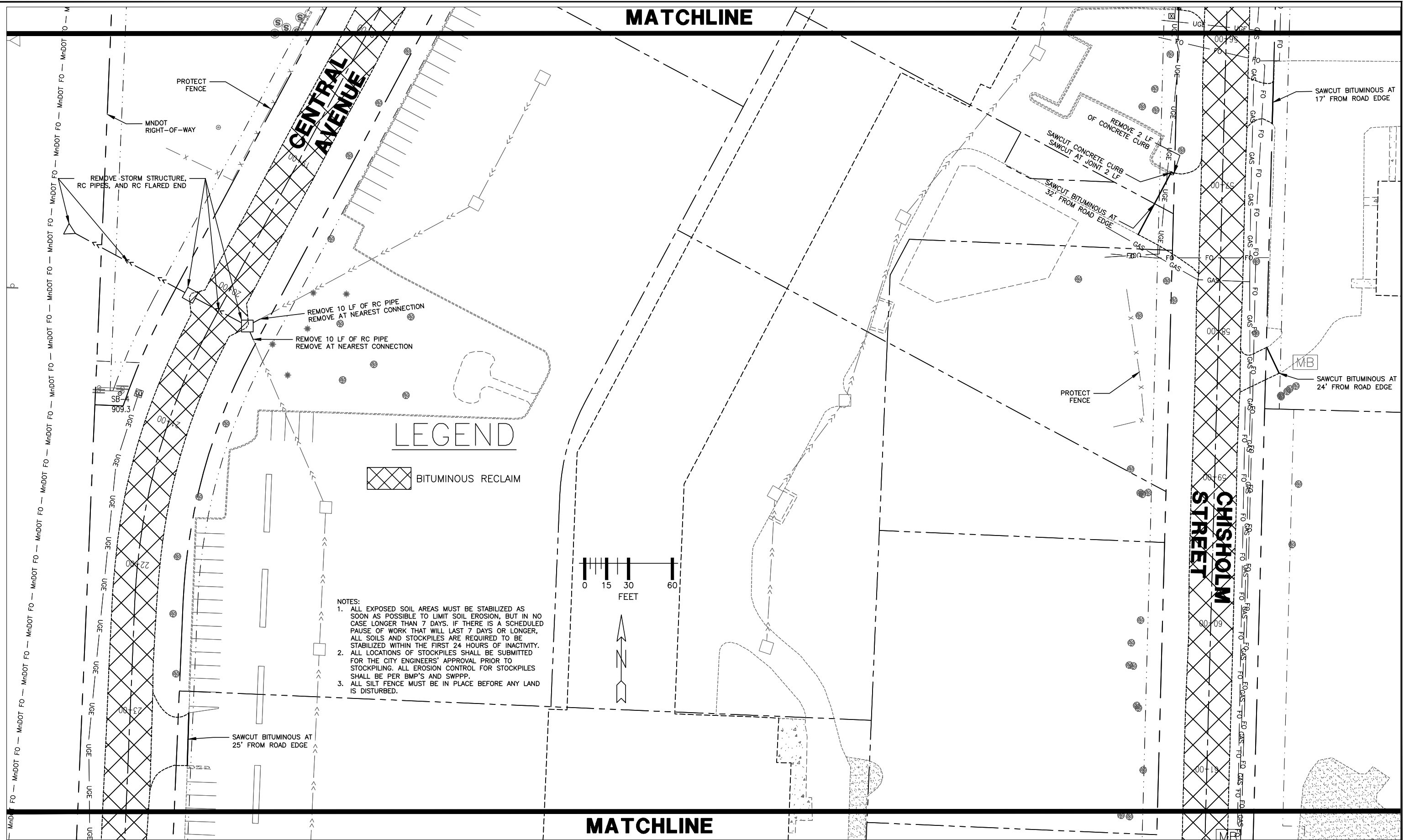
RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
REMOVAL PLANS

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

DWG: 2205 REMOVAL 1
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 23 OF 52
FILE: 37-2-123



800-252-1166 651-454-0002

UTILITIES:

LUMEN	(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 _____ REG. NO. _____

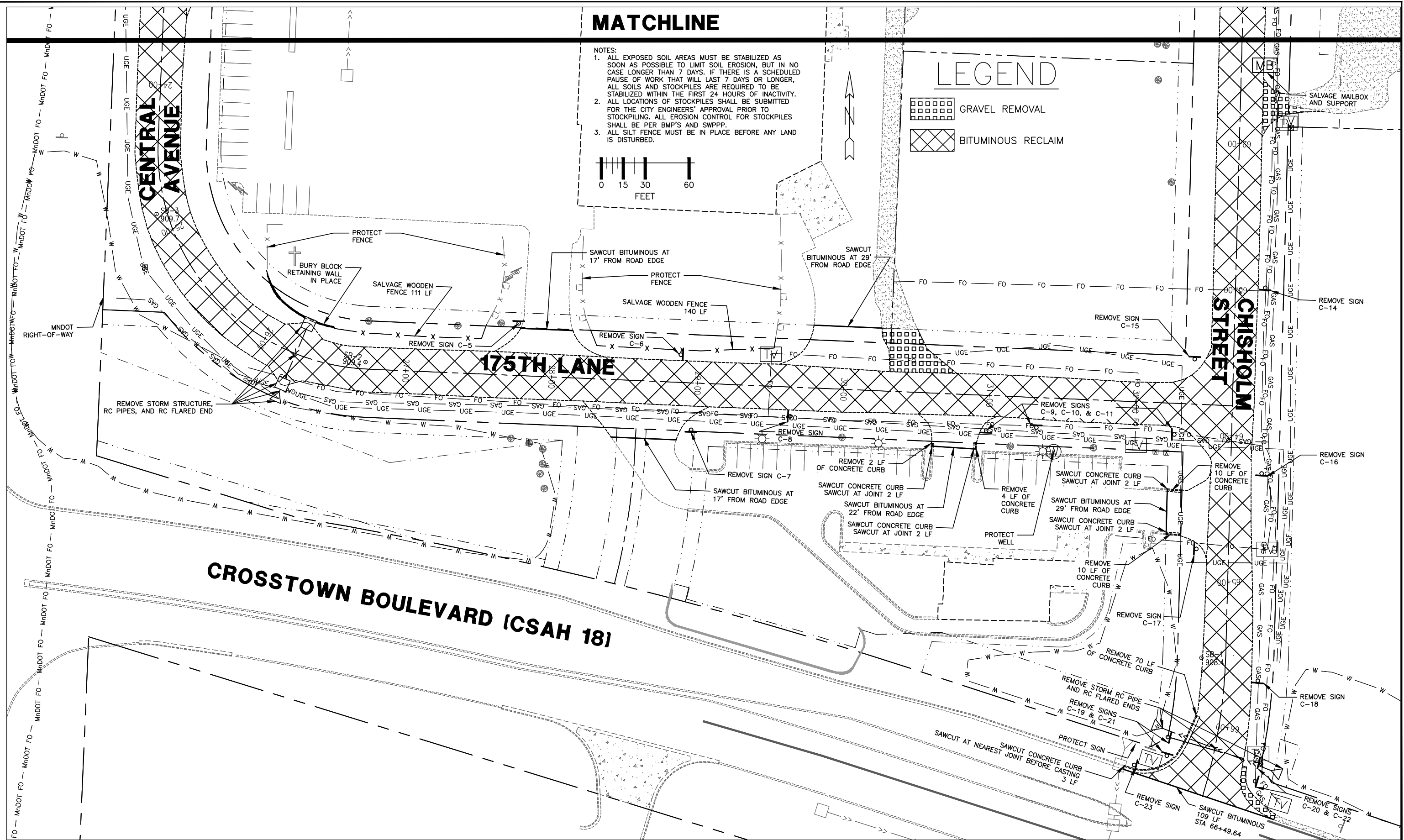
RFC ENGINEERING, INC.
Consulting Engineers

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

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
REMOVAL PLANS

DWG: 2205 REMOVAL 2
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 24 OF 52
FILE: 37-2-124



800-252-1166 651-454-0002

UTILITIES:
LUMEN (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 _____ REG. NO. _____

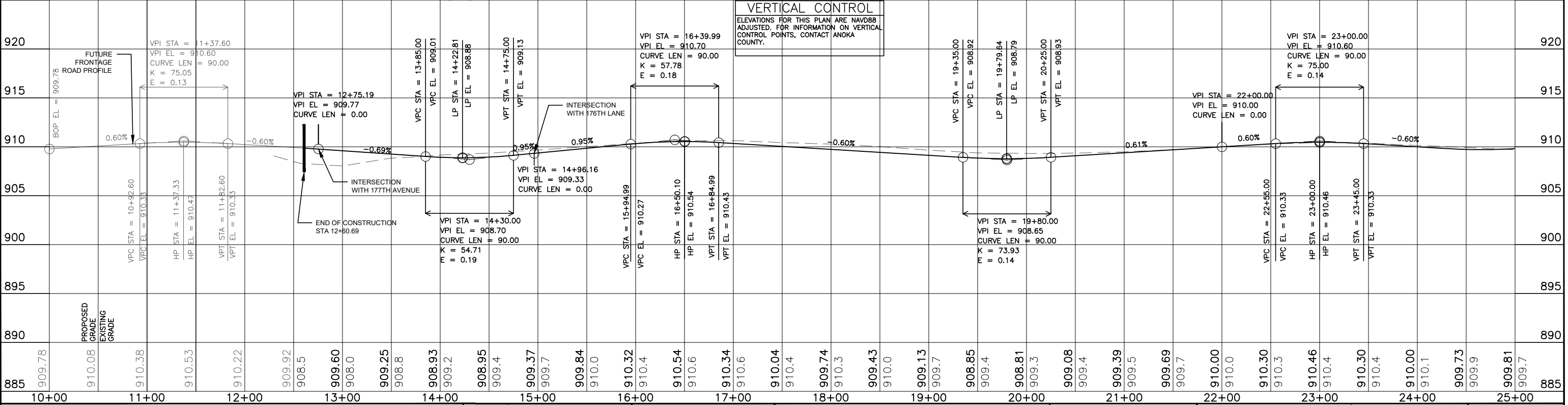
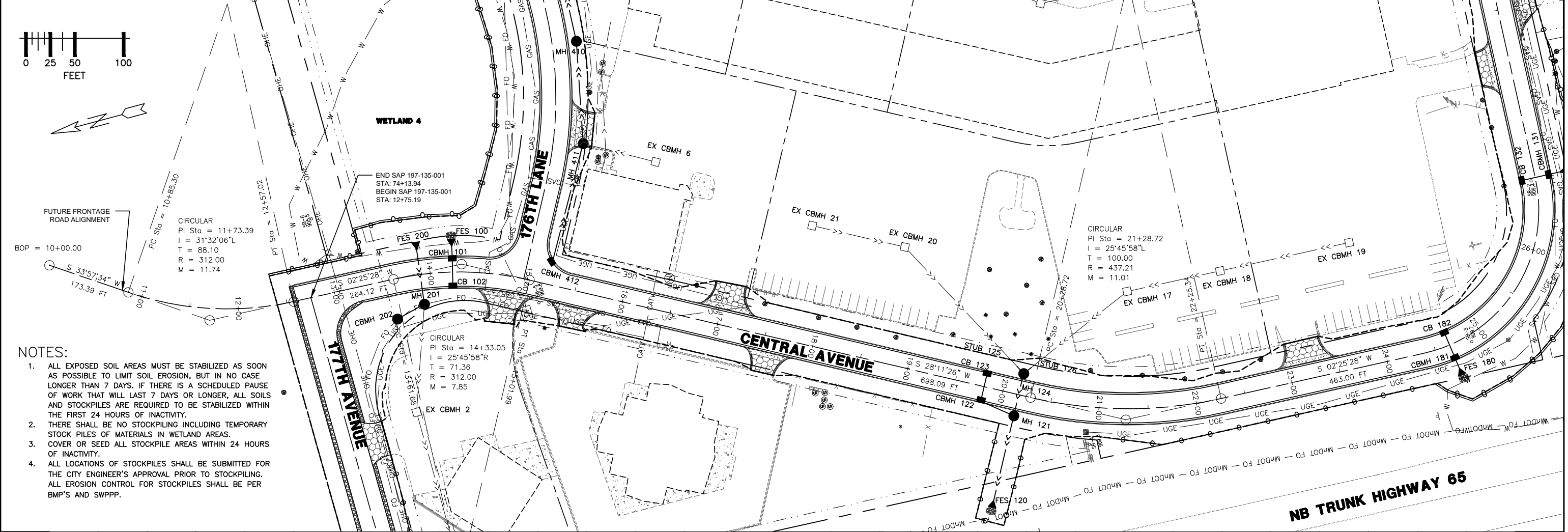
RFC ENGINEERING, INC.
Consulting Engineers

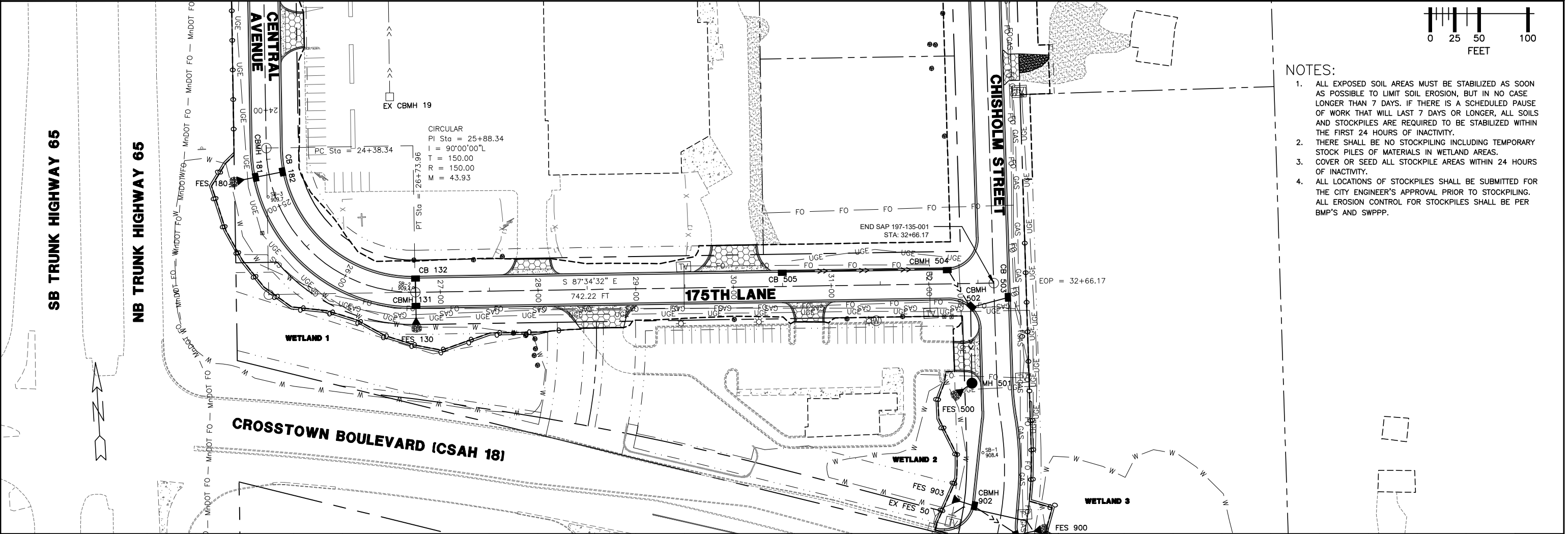
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION
REMOVAL PLANS

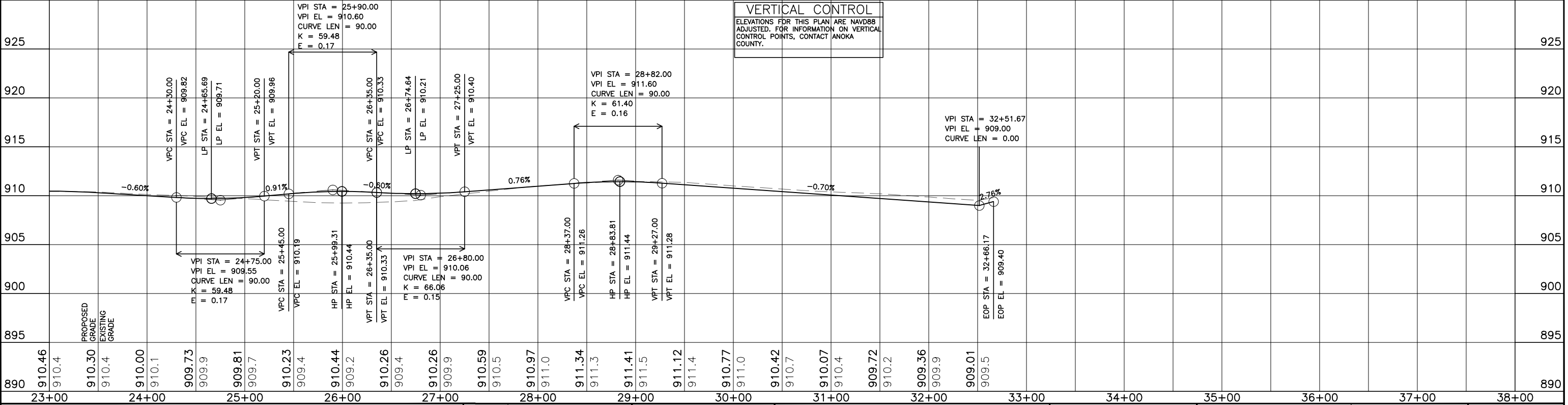
DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG: 2205 REMOVAL 3
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 25 OF 52
FILE: 37-2-125





- NOTES:
1. 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.
 2. THERE SHALL BE NO STOCKPILING INCLUDING TEMPORARY STOCK PILES OF MATERIALS IN WETLAND AREAS.
 3. COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.
 4. ALL LOCATIONS OF STOCKPILES SHALL BE SUBMITTED FOR THE CITY ENGINEER'S APPROVAL PRIOR TO STOCKPILING. ALL EROSION CONTROL FOR STOCKPILES SHALL BE PER BMP'S AND SWPPP.





800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:43

UTILITIES:

LUMEN	(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

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: _____ REG. NO. _____

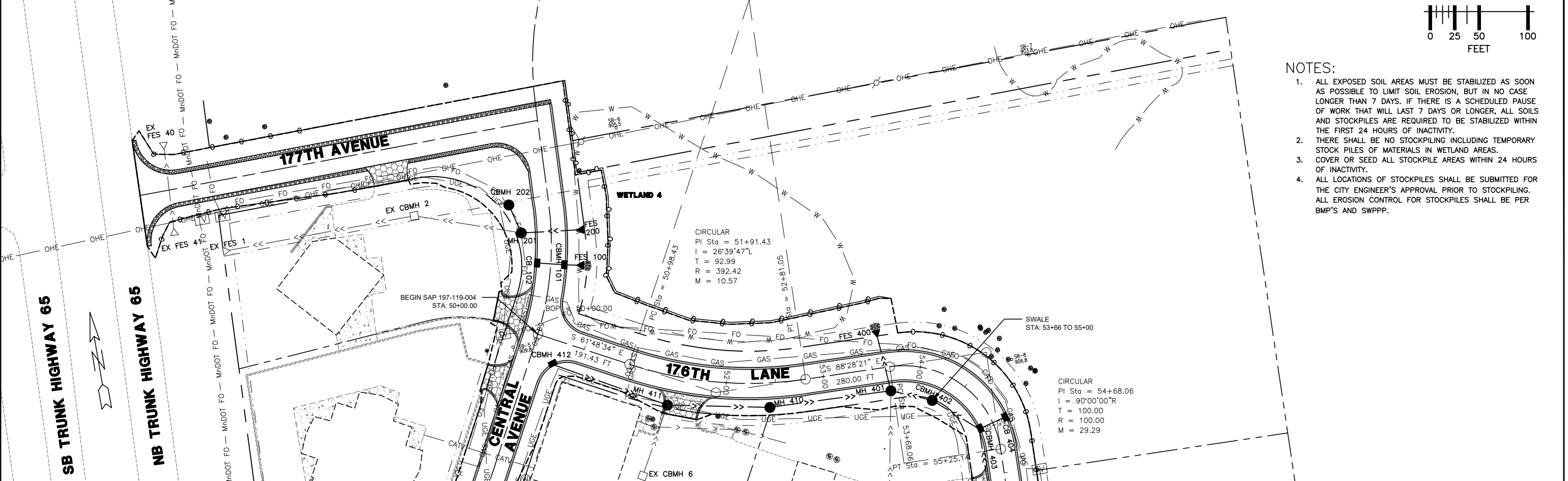
RFC ENGINEERING, INC.
Consulting Engineers

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

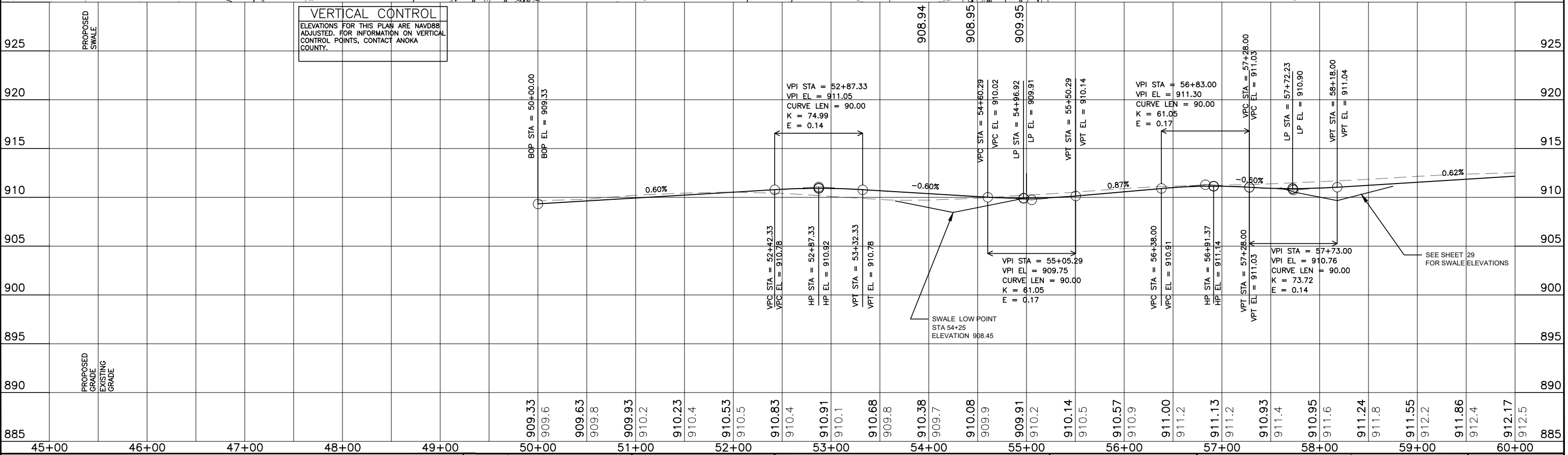
S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION

CENTRAL AVENUE/175TH LANE
PLAN AND PROFILE

DWG:	RCP02001
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	27 OF 52
FILE:	37-2-127



- NOTES:
- 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.
 - THERE SHALL BE NO STOCKPILING INCLUDING TEMPORARY STOCK PILES OF MATERIALS IN WETLAND AREAS.
 - COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.
 - ALL LOCATIONS OF STOCKPILES SHALL BE SUBMITTED FOR THE CITY ENGINEER'S APPROVAL PRIOR TO STOCKPILING. ALL EROSION CONTROL FOR STOCKPILES SHALL BE PER BMP'S AND SWPPP.



800-252-1166 651-454-0002

PLOT DATE: 3/17/2026 10:43

UTILITIES:

LUMEN (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

DATE: 3/17/2026 REG. NO. 1043

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.

RFC ENGINEERING, INC.

Consulting Engineers

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

DESIGN BY: LDZ

DRAWN BY: LDZ

CHECKED BY: DAK

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION

176TH LANE/CHISHOLM STREET
PLAN AND PROFILE

DWG: RCP01002

DATE: 03/17/26

JOB NUMBER: 2205

SHEET: 28 OF 52

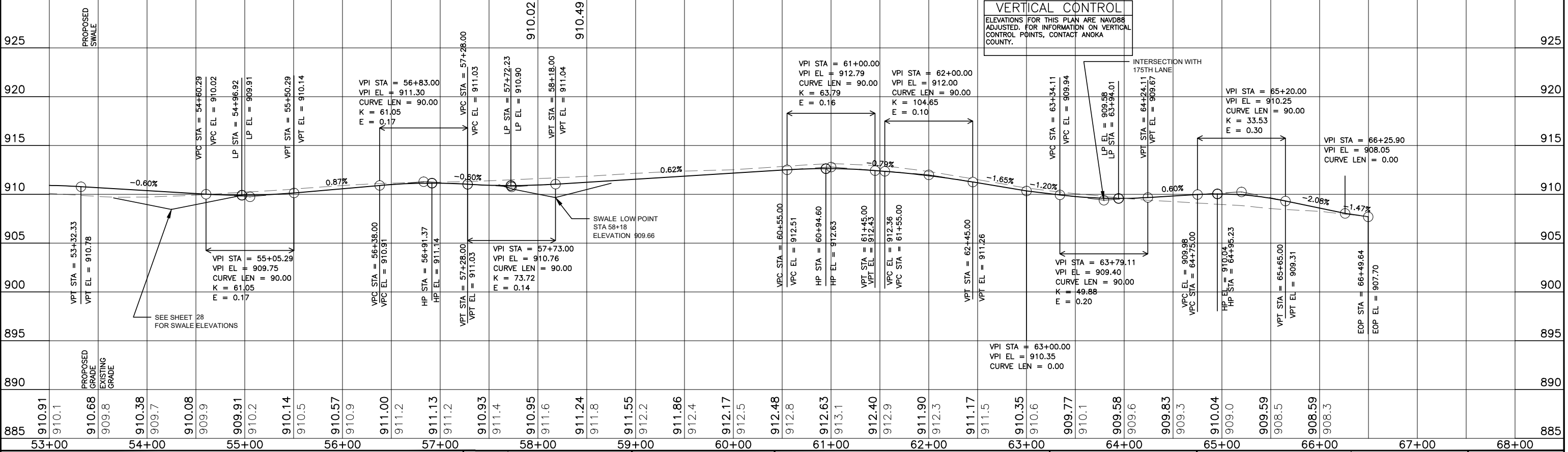
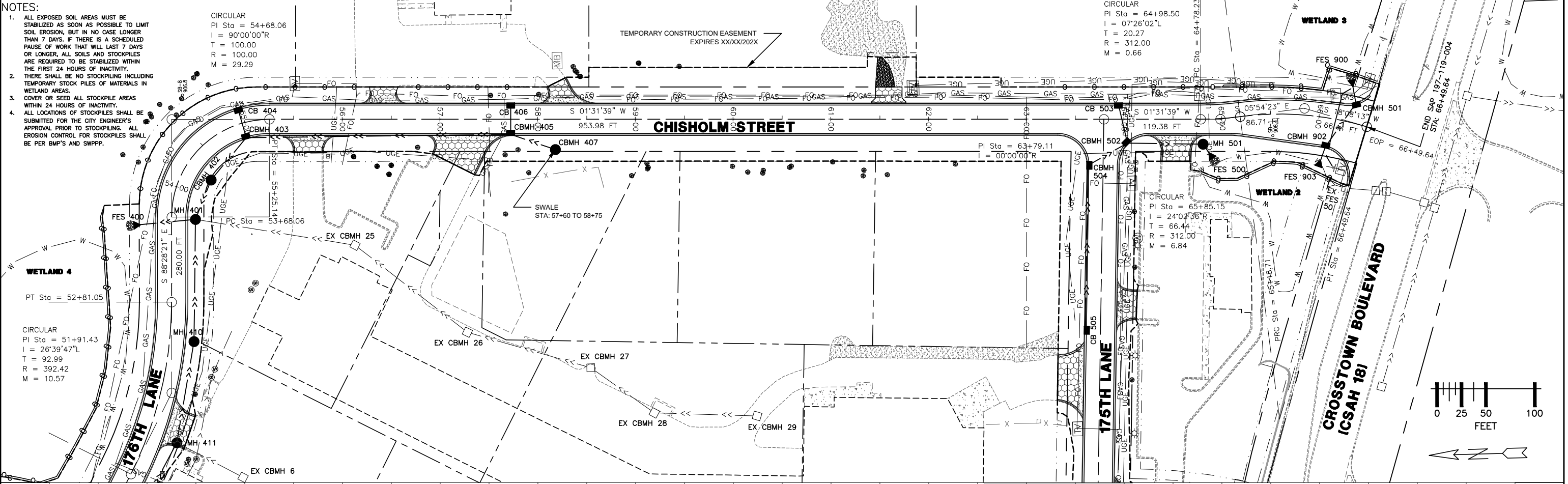
FILE: 37-2-128

- NOTES:
1. 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.
 2. THERE SHALL BE NO STOCKPILING INCLUDING TEMPORARY STOCK PILES OF MATERIALS IN WETLAND AREAS.
 3. COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.
 4. ALL LOCATIONS OF STOCKPILES SHALL BE SUBMITTED FOR THE CITY ENGINEER'S APPROVAL PRIOR TO STOCKPILING. ALL EROSION CONTROL FOR STOCKPILES SHALL BE PER BMP'S AND SWPPP.

CIRCULAR
PI Sta = 54+68.06
I = 90°00'00"R
T = 100.00
R = 100.00
M = 29.29

CIRCULAR
PI Sta = 64+98.50
I = 07°26'02" L
T = 20.27
R = 312.00
M = 0.66

CIRCULAR
PI Sta = 65+85.15
I = 24°02'36" R
T = 66.44
R = 312.00
M = 6.84



800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:43

UTILITIES:

LUMEN	(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: _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

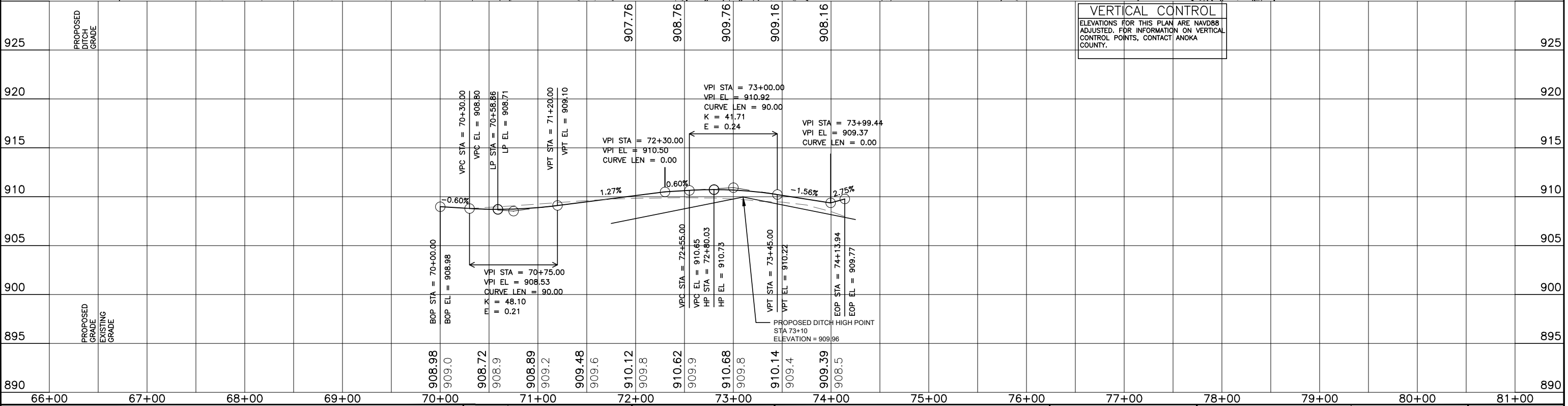
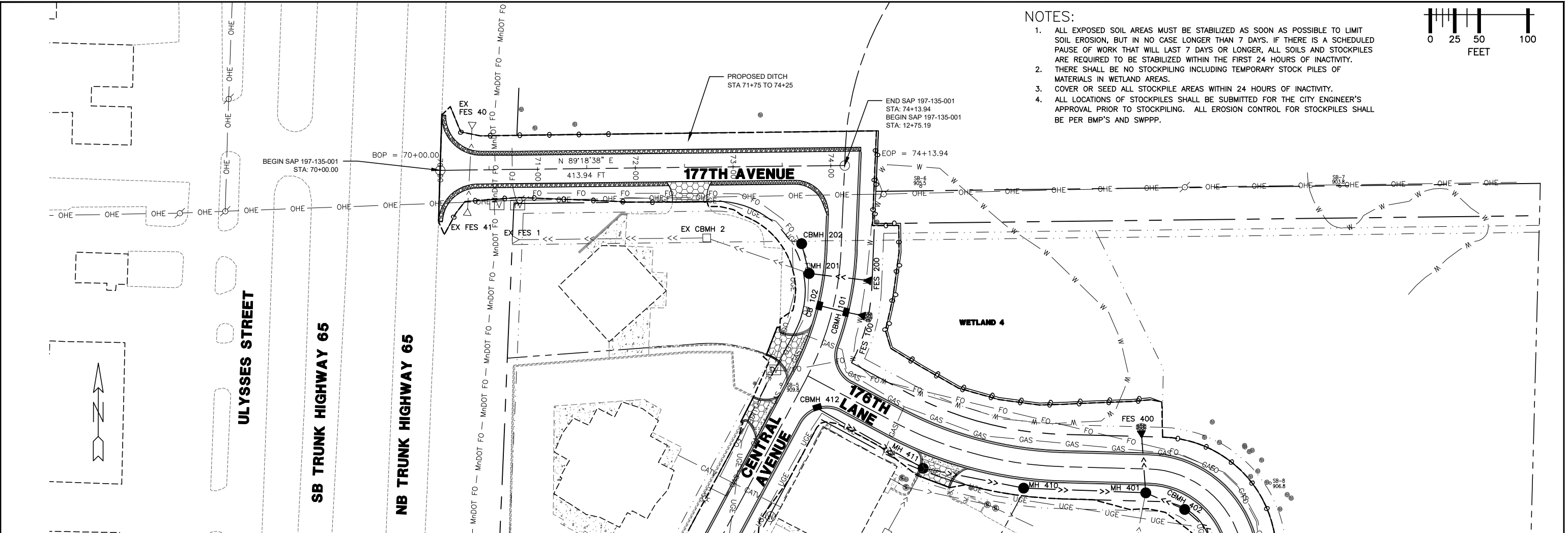
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION

176TH LANE/CHISHOLM STREET
PLAN AND PROFILE

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

DWG: RCP02002
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 29 OF 52
FILE: 37-2-129





800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:43

UTILITIES:

LUMEN	(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

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: _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

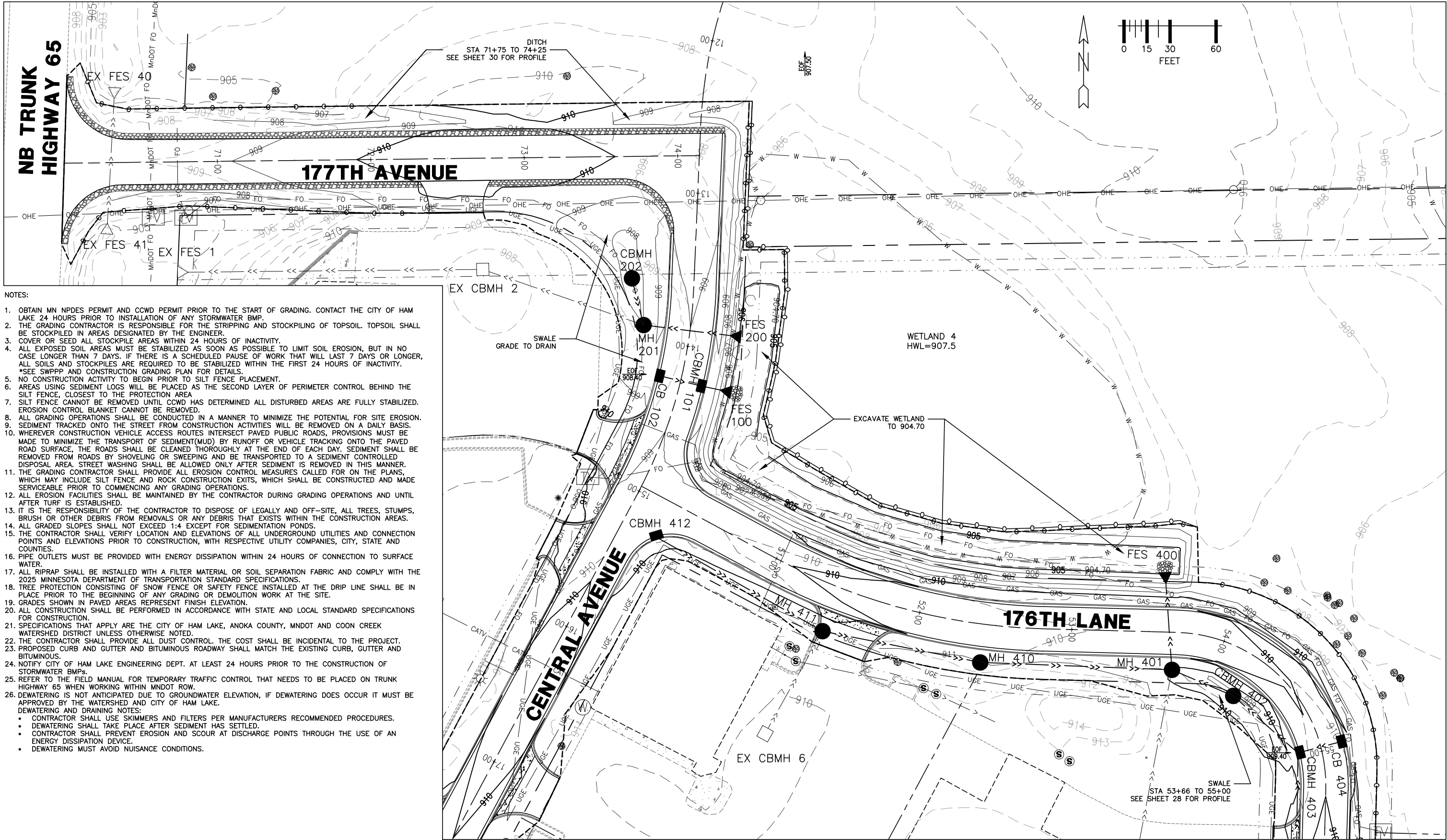
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION

177TH AVENUE
PLAN AND PROFILE

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

DWG: RCP01004
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 30 OF 52
FILE: 37-2-130



NOTES:

1. OBTAIN MN NPDES PERMIT AND CCWD PERMIT PRIOR TO THE START OF GRADING. CONTACT THE CITY OF HAM LAKE 24 HOURS PRIOR TO INSTALLATION OF ANY STORMWATER BMP.
 2. THE GRADING CONTRACTOR IS RESPONSIBLE FOR THE STRIPPING AND STOCKPILING OF TOPSOIL. TOPSOIL SHALL BE STOCKPILED IN AREAS DESIGNATED BY THE ENGINEER.
 3. COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.
 4. 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. *SEE SWPPP AND CONSTRUCTION GRADING PLAN FOR DETAILS.
 5. NO CONSTRUCTION ACTIVITY TO BEGIN PRIOR TO SILT FENCE PLACEMENT.
 6. AREAS USING SEDIMENT LOGS WILL BE PLACED AS THE SECOND LAYER OF PERIMETER CONTROL BEHIND THE SILT FENCE, CLOSEST TO THE PROTECTION AREA.
 7. SILT FENCE CANNOT BE REMOVED UNTIL CCWD HAS DETERMINED ALL DISTURBED AREAS ARE FULLY STABILIZED. EROSION CONTROL BLANKET CANNOT BE REMOVED.
 8. ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION. SEDIMENT TRACKED ONTO THE STREET FROM CONSTRUCTION ACTIVITIES WILL BE REMOVED ON A DAILY BASIS.
 9. SEDIMENT TRACKED ONTO THE STREET FROM CONSTRUCTION ACTIVITIES WILL BE REMOVED ON A DAILY BASIS.
 10. WHEREVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS MUST BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT(MUD) BY RUNOFF OR VEHICLE TRACKING ONTO THE PAVED ROAD SURFACE. THE ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A SEDIMENT CONTROLLED DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
 11. THE GRADING CONTRACTOR SHALL PROVIDE ALL EROSION CONTROL MEASURES CALLED FOR ON THE PLANS, WHICH MAY INCLUDE SILT FENCE AND ROCK CONSTRUCTION EXITS, WHICH SHALL BE CONSTRUCTED AND MADE SERVICEABLE PRIOR TO COMMENCING ANY GRADING OPERATIONS.
 12. ALL EROSION FACILITIES SHALL BE MAINTAINED BY THE CONTRACTOR DURING GRADING OPERATIONS AND UNTIL AFTER TURF IS ESTABLISHED.
 13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF LEGALLY AND OFF-SITE, ALL TREES, STUMPS, BRUSH OR OTHER DEBRIS FROM REMOVALS OR ANY DEBRIS THAT EXISTS WITHIN THE CONSTRUCTION AREAS.
 14. ALL GRADED SLOPES SHALL NOT EXCEED 1:4 EXCEPT FOR SEDIMENTATION PONDS.
 15. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATIONS OF ALL UNDERGROUND UTILITIES AND CONNECTION POINTS AND ELEVATIONS PRIOR TO CONSTRUCTION, WITH RESPECTIVE UTILITY COMPANIES, CITY, STATE AND COUNTIES.
 16. PIPE OUTLETS MUST BE PROVIDED WITH ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER.
 17. ALL RIPRAP SHALL BE INSTALLED WITH A FILTER MATERIAL OR SOIL SEPARATION FABRIC AND COMPLY WITH THE 2025 MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
 18. TREE PROTECTION CONSISTING OF SNOW FENCE OR SAFETY FENCE INSTALLED AT THE DRIP LINE SHALL BE IN PLACE PRIOR TO THE BEGINNING OF ANY GRADING OR DEMOLITION WORK AT THE SITE.
 19. GRADES SHOWN IN PAVED AREAS REPRESENT FINISH ELEVATION.
 20. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH STATE AND LOCAL STANDARD SPECIFICATIONS FOR CONSTRUCTION.
 21. SPECIFICATIONS THAT APPLY ARE THE CITY OF HAM LAKE, ANOKA COUNTY, MNDOT AND COON CREEK WATERSHED DISTRICT UNLESS OTHERWISE NOTED.
 22. THE CONTRACTOR SHALL PROVIDE ALL DUST CONTROL. THE COST SHALL BE INCIDENTAL TO THE PROJECT.
 23. PROPOSED CURB AND GUTTER AND BITUMINOUS ROADWAY SHALL MATCH THE EXISTING CURB, GUTTER AND BITUMINOUS.
 24. NOTIFY CITY OF HAM LAKE ENGINEERING DEPT. AT LEAST 24 HOURS PRIOR TO THE CONSTRUCTION OF STORMWATER BMPs.
 25. REFER TO THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL THAT NEEDS TO BE PLACED ON TRUNK HIGHWAY 65 WHEN WORKING WITHIN MNDOT ROW.
 26. DEWATERING IS NOT ANTICIPATED DUE TO GROUNDWATER ELEVATION, IF DEWATERING DOES OCCUR IT MUST BE APPROVED BY THE WATERSHED AND CITY OF HAM LAKE.
- DEWATERING AND DRAINING NOTES:
- CONTRACTOR SHALL USE SKIMMERS AND FILTERS PER MANUFACTURERS RECOMMENDED PROCEDURES.
 - DEWATERING SHALL TAKE PLACE AFTER SEDIMENT HAS SETTLED.
 - CONTRACTOR SHALL PREVENT EROSION AND SCOUR AT DISCHARGE POINTS THROUGH THE USE OF AN ENERGY DISSIPATION DEVICE.
 - DEWATERING MUST AVOID NUISANCE CONDITIONS.



800-252-1166 651-454-0002

UTILITIES: LUMEN (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 REG. NO.

RFC ENGINEERING, INC.
Consulting Engineers

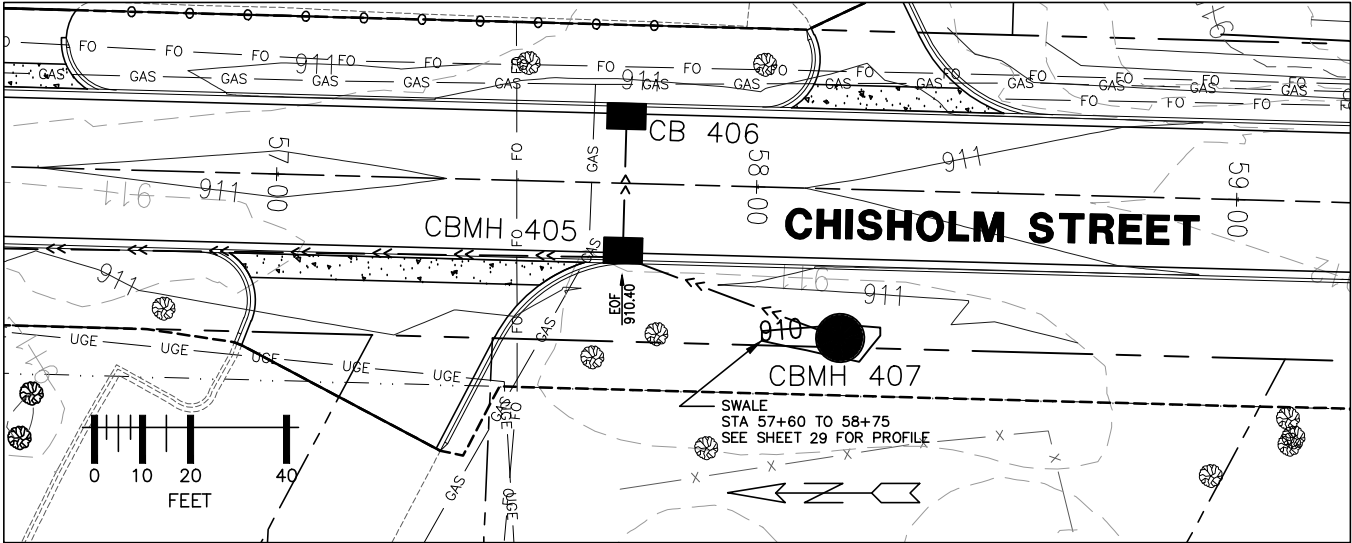
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

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

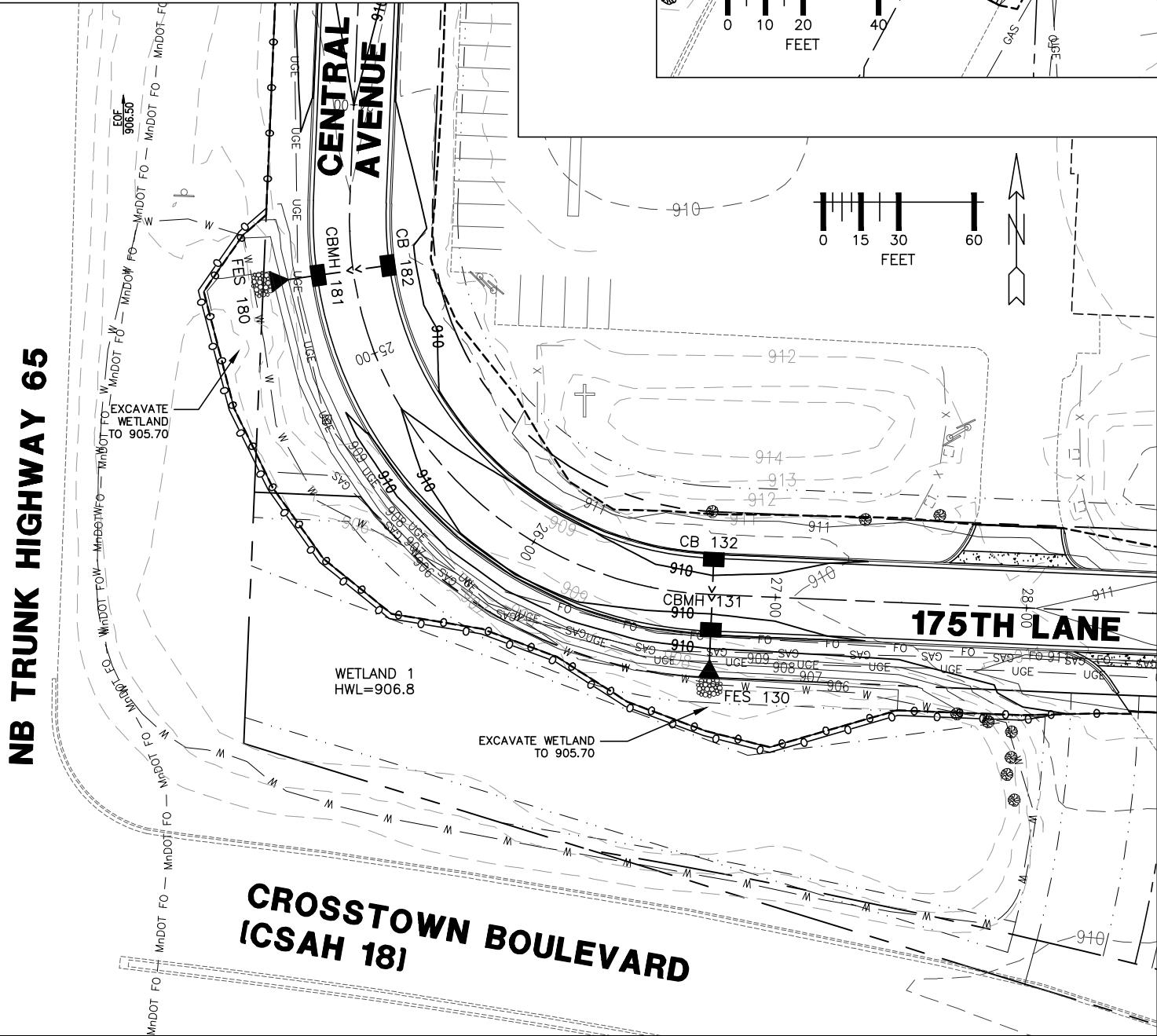
S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
GRADING AND DRAINAGE PLAN

DWG: 2205 GRADING 1
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 31 OF 52
FILE: 37-2-131

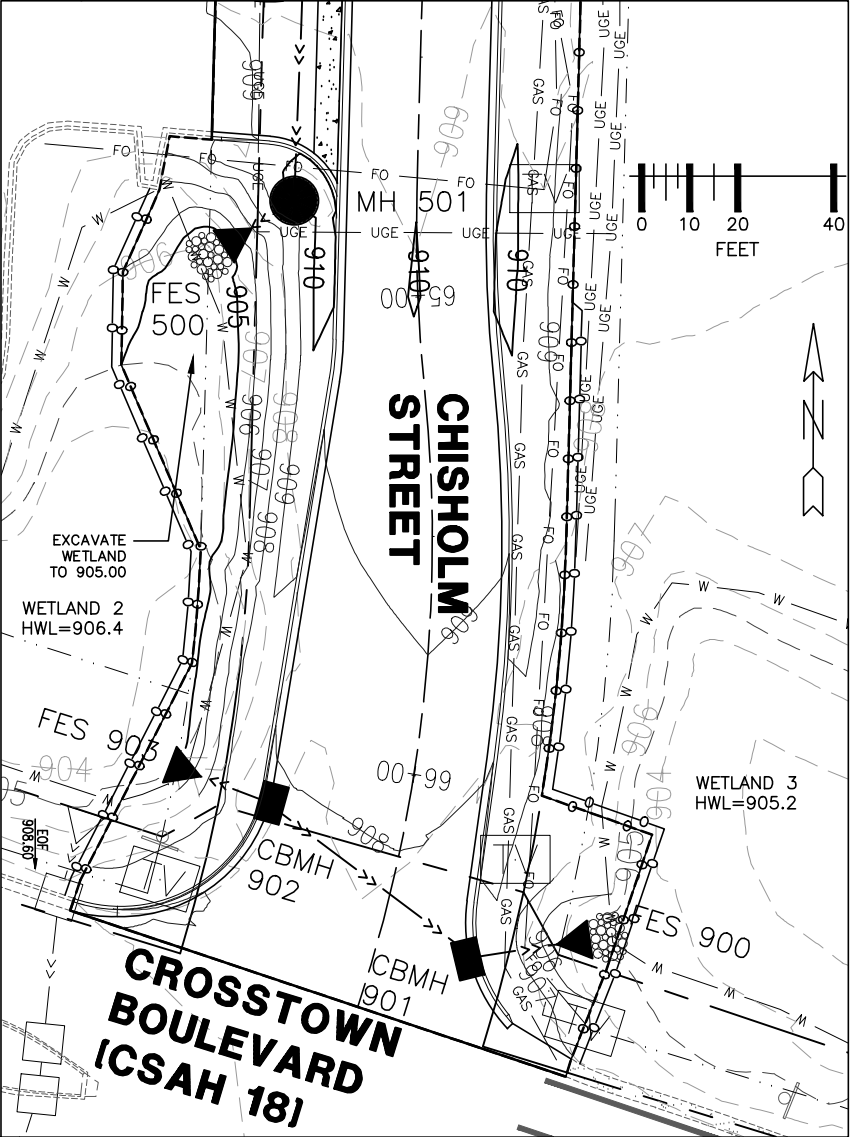
SWALE 57+60 TO 58+75



WETLAND 1



WETLAND 2



- NOTES:
1. OBTAIN MN NPDES PERMIT AND CCWD PERMIT PRIOR TO THE START OF GRADING. CONTACT THE CITY OF HAM LAKE 24 HOURS PRIOR TO INSTALLATION OF ANY STORMWATER BMP.
 2. THE GRADING CONTRACTOR IS RESPONSIBLE FOR THE STRIPPING AND STOCKPILING OF TOPSOIL. TOPSOIL SHALL BE STOCKPILED IN AREAS DESIGNATED BY THE ENGINEER. COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.
 3. 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.
 4. *SEE SWPPP AND CONSTRUCTION GRADING PLAN FOR DETAILS.
 5. NO CONSTRUCTION ACTIVITY TO BEGIN PRIOR TO SILT FENCE PLACEMENT.
 6. AREAS USING SEDIMENT LOGS WILL BE PLACED AS THE SECOND LAYER OF PERIMETER CONTROL BEHIND THE SILT FENCE, CLOSEST TO THE PROTECTION AREA.
 7. SILT FENCE CANNOT BE REMOVED UNTIL CCWD HAS DETERMINED ALL DISTURBED AREAS ARE FULLY STABILIZED. EROSION CONTROL BLANKET CANNOT BE REMOVED.
 8. ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION.
 9. SEDIMENT TRACKED ONTO THE STREET FROM CONSTRUCTION ACTIVITIES WILL BE REMOVED ON A DAILY BASIS.
 10. WHEREVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS MUST BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT(MUD) BY RUNOFF OR VEHICLE TRACKING ONTO THE PAVED ROAD SURFACE. THE ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A SEDIMENT CONTROLLED DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
 11. THE GRADING CONTRACTOR SHALL PROVIDE ALL EROSION CONTROL MEASURES CALLED FOR ON THE PLANS, WHICH MAY INCLUDE SILT FENCE AND ROCK CONSTRUCTION EXITS, WHICH SHALL BE CONSTRUCTED AND MADE SERVICEABLE PRIOR TO COMMENCING ANY GRADING OPERATIONS.
 12. ALL EROSION FACILITIES SHALL BE MAINTAINED BY THE CONTRACTOR DURING GRADING OPERATIONS AND UNTIL AFTER TURF IS ESTABLISHED.
 13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF LEGALLY AND OFF-SITE, ALL TREES, STUMPS, BRUSH OR OTHER DEBRIS FROM REMOVALS OR ANY DEBRIS THAT EXISTS WITHIN THE CONSTRUCTION AREAS.
 14. ALL GRADED SLOPES SHALL NOT EXCEED 1:4 EXCEPT FOR SEDIMENTATION PONDS.
 15. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATIONS OF ALL UNDERGROUND UTILITIES AND CONNECTION POINTS AND ELEVATIONS PRIOR TO CONSTRUCTION, WITH RESPECTIVE UTILITY COMPANIES, CITY, STATE AND COUNTIES.
 16. PIPE OUTLETS MUST BE PROVIDED WITH ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER.
 17. ALL RIPRAP SHALL BE INSTALLED WITH A FILTER MATERIAL OR SOIL SEPARATION FABRIC AND COMPLY WITH THE 2025 MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
 18. TREE PROTECTION CONSISTING OF SNOW FENCE OR SAFETY FENCE INSTALLED AT THE DRIP LINE SHALL BE IN PLACE PRIOR TO THE BEGINNING OF ANY GRADING OR DEMOLITION WORK AT THE SITE.
 19. GRADES SHOWN IN PAVED AREAS REPRESENT FINISH ELEVATION.
 20. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH STATE AND LOCAL STANDARD SPECIFICATIONS FOR CONSTRUCTION.
 21. SPECIFICATIONS THAT APPLY ARE THE CITY OF HAM LAKE, ANOKA COUNTY, MNDOT AND COON CREEK WATERSHED DISTRICT UNLESS OTHERWISE NOTED.
 22. THE CONTRACTOR SHALL PROVIDE ALL DUST CONTROL. THE COST SHALL BE INCIDENTAL TO THE PROJECT.
 23. PROPOSED CURB AND GUTTER AND BITUMINOUS ROADWAY SHALL MATCH THE EXISTING CURB, GUTTER AND BITUMINOUS.
 24. NOTIFY CITY OF HAM LAKE ENGINEERING DEPT. AT LEAST 24 HOURS PRIOR TO THE CONSTRUCTION OF STORMWATER BMPs.
 25. REFER TO THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL THAT NEEDS TO BE PLACED ON TRUNK HIGHWAY 65 WHEN WORKING WITHIN MNDOT ROW.
 26. DEWATERING IS NOT ANTICIPATED DUE TO GROUNDWATER ELEVATION, IF DEWATERING DOES OCCUR IT MUST BE APPROVED BY THE WATERSHED AND CITY OF HAM LAKE.
- DEWATERING AND DRAINING NOTES:
- CONTRACTOR SHALL USE SKIMMERS AND FILTERS PER MANUFACTURERS RECOMMENDED PROCEDURES.
 - DEWATERING SHALL TAKE PLACE AFTER SEDIMENT HAS SETTLED.
 - CONTRACTOR SHALL PREVENT EROSION AND SCOUR AT DISCHARGE POINTS THROUGH THE USE OF AN ENERGY DISSIPATION DEVICE.
 - DEWATERING MUST AVOID NUISANCE CONDITIONS.

NB TRUNK HIGHWAY 65

CROSSTOWN BOULEVARD
(CSAH 18)

CHISHOLM
STREET

CROSSTOWN
BOULEVARD
(CSAH 18)



800-252-1166 651-454-0002

UTILITIES: LUMEN (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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

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

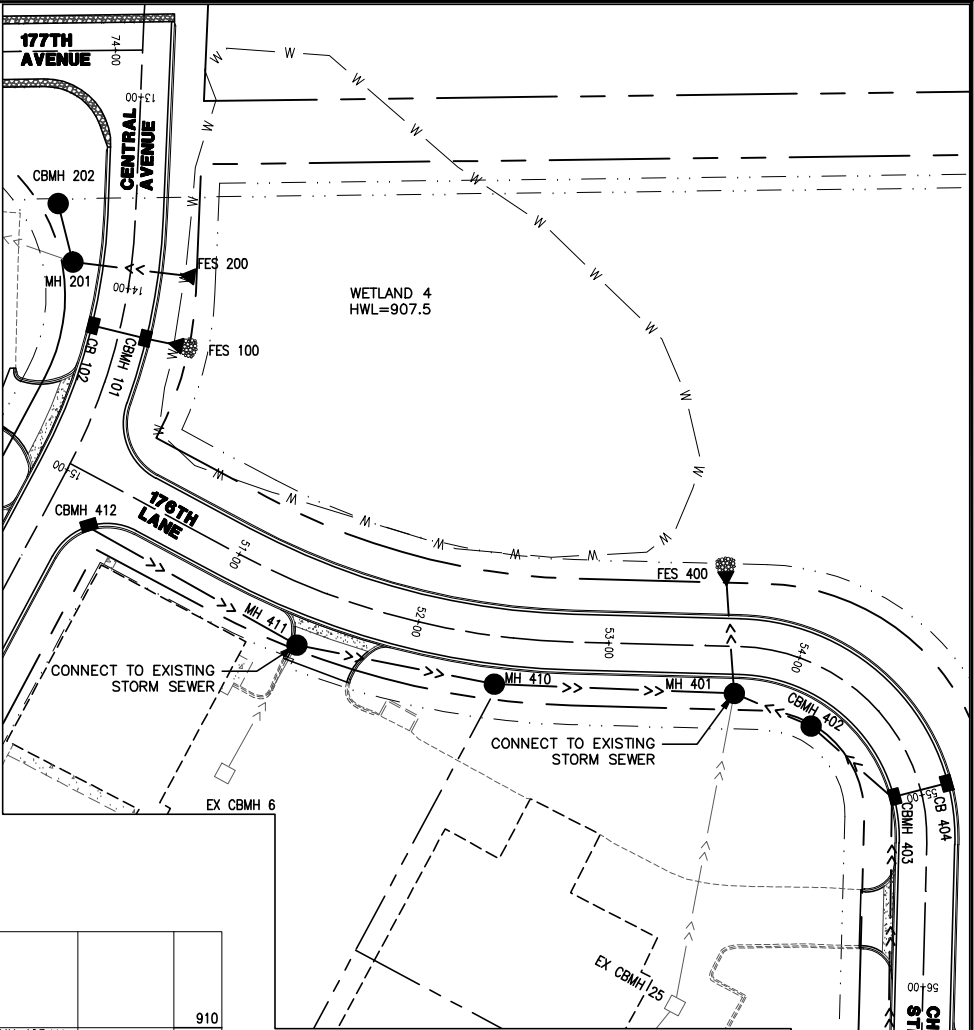
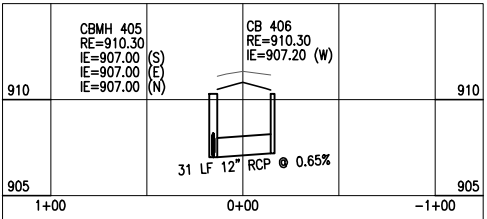
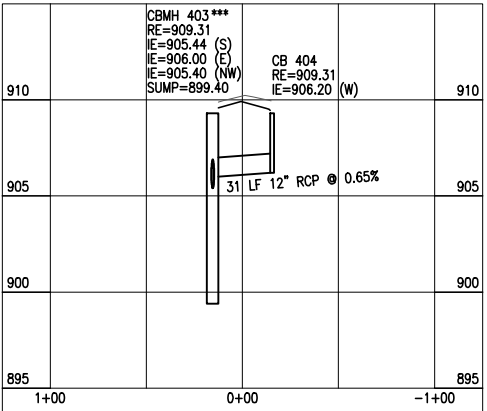
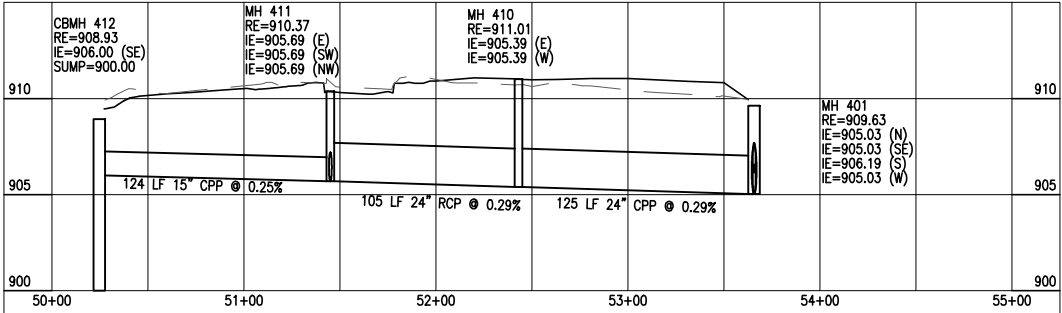
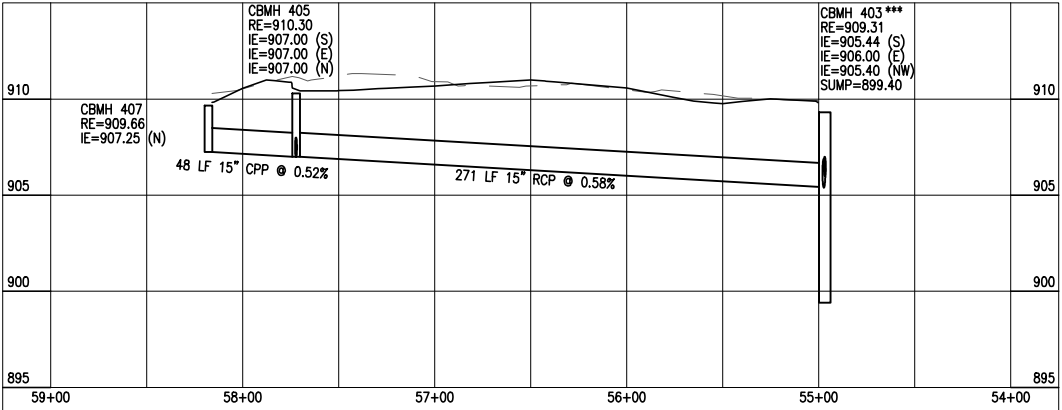
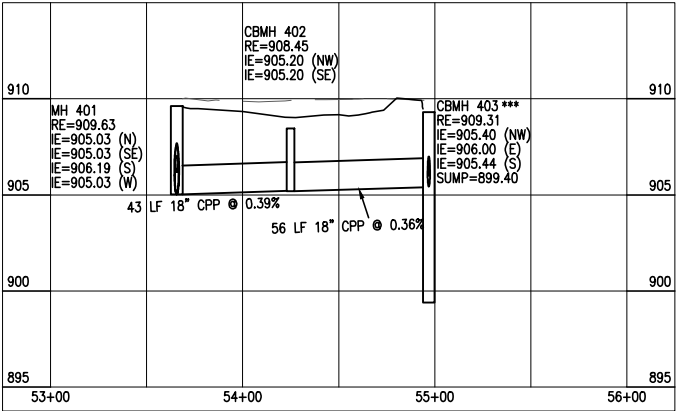
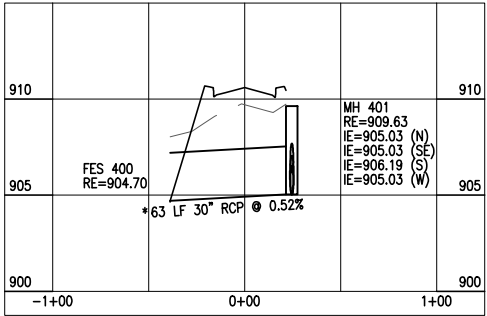
S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION
GRADING AND DRAINAGE PLAN

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

DWG: 2205 GRADING 2
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 32 OF 52
FILE: 37-2-132

STORM DRAIN																						
STRUCTURE	STATION	LOCATION	SIZE OF STRUCTURE	DESIGN	TOP OF CASTING OR INLET	INVERT	CASTING ASSEMBLY (NEENAH, EJ, DL)**	TYPE GRATE (NEENAH CASTINGS)	12" R.C.P. LIN FT	15" R.C.P. LIN FT	24" R.C.P. LIN FT	30" R.C.P. LIN FT	15" C.P.P. LIN FT	18" C.P.P. LIN FT	24" C.P.P. LIN FT	PIPE APRON LIN FT	TRASH GUARD EACH	APRON EACH	SAFL BAFFLE *** EACH	FLOWS TO	INLET	% GRADE
CBMH 412	50+24.7	RT.	72" ø	RFC-465A3	908.93	906.00	R-3067	C														
													124							MH 411	905.69	0.25
MH 411	51+45	RT.	48" ø	RFC-465A1	910.37	905.69	R-1733	-												MH 410	905.39	0.29
										105												
MH 410	52+43	RT.	48" ø	RFC-465A1	911.01	905.39	R-1733	-								125				MH 401	905.03	0.29
CBMH 407	58+17.9	RT.	48" ø	RFC-465C1	909.66	907.25	R-2577	C														
													48							CBMH 405	907.00	0.52
CB 406	57+72.2	LT.	2' x 3'	RFC-459C	910.30	907.20	R-3067	C												CBMH 405	907.00	0.65
									31													
CBMH 405	57+72.2	RT.	48" ø	RFC-465A1	910.30	907.00	R-3067	C												CBMH 403	905.44	0.58
										271												
CB 404	54+96.9	LT.	2' x 3'	RFC-459C	909.31	906.20	R-3067	C												CBMH 403	906.00	0.65
									31													
CBMH 403	54+96.9	RT.	72" ø	RFC-465A3	909.31	905.40	R-3067	C											1	CBMH 402	905.20	0.36
														56								
CBMH 402	54+24.9	RT.	48" ø	RFC-465C1	908.45	905.20	R-2577	C							43					MH 401	905.03	0.39
MH 401	53+65.7	RT.	72" ø	RFC-465A1	909.63	905.03	R-1733	-								6.2	1	1		FES 400	904.70	0.52
TOTAL									62	271	105	57	172	99	125							

- NOTES:
- 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.
 - THERE SHALL BE NO STOCKPILING INCLUDING TEMPORARY STOCK PILES OF MATERIALS IN WETLAND AREAS.
 - COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.
 - ALL SILT FENCE MUST BE IN PLACE BEFORE ANY LAND IS DISTURBED.
 - ALL REMOVALS TO BE DISPOSED OF LEGALLY.
 - * PIPE LENGTH INCLUDES APRON.
 - ** NEENAH FOUNDRY R-3067; EAST JORDAN IRON WORKS V-7030; D&L FOUNDRY I-1804.
 - ** NEENAH FOUNDRY R-1733; EAST JORDAN IRON WORKS V-1280; D&L FOUNDRY A-1028.
 - *** STRUCTURE RECEIVES SAFFLE BAFFLE.



800-252-1166 651-454-0002

UTILITIES: LUMEN (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 REG. NO.

RFC ENGINEERING, INC.
Consulting Engineers

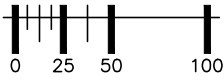
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

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

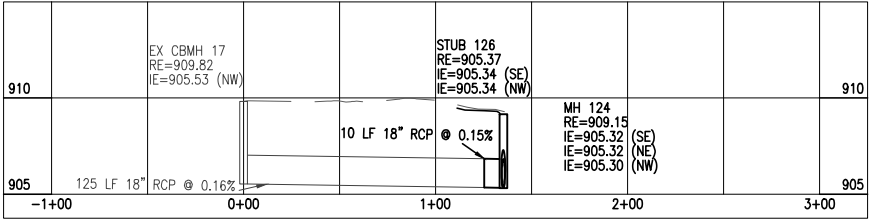
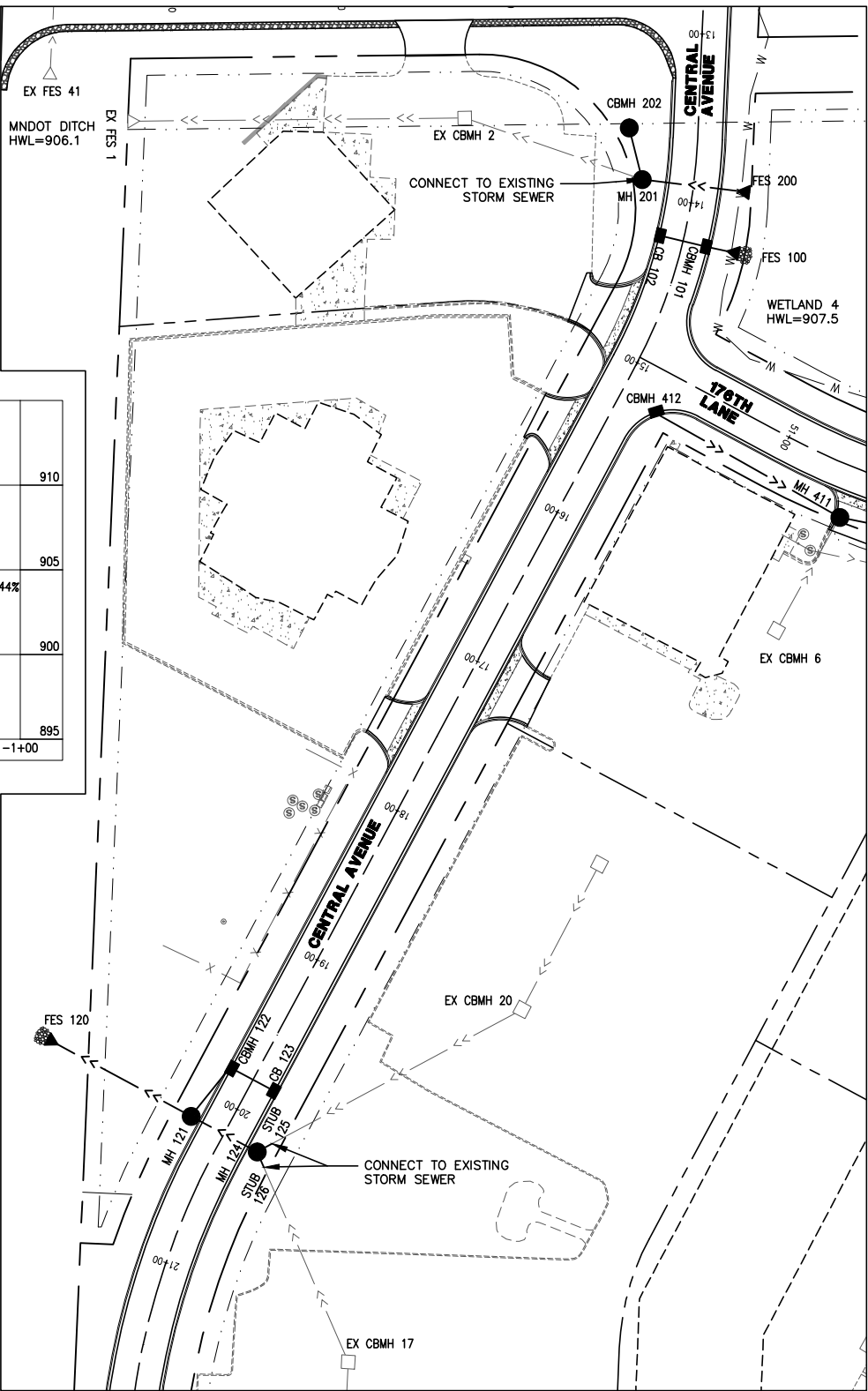
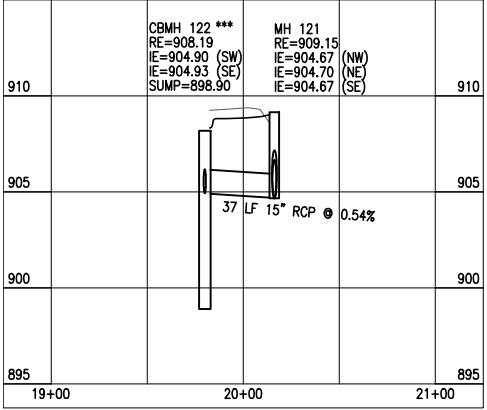
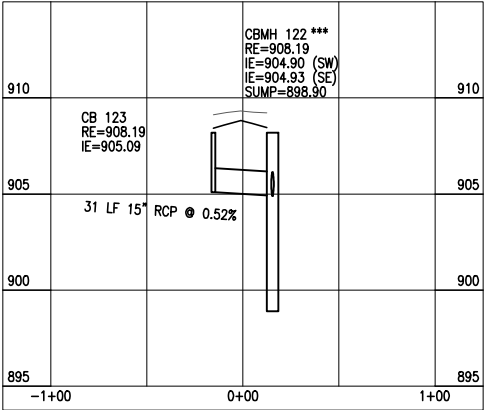
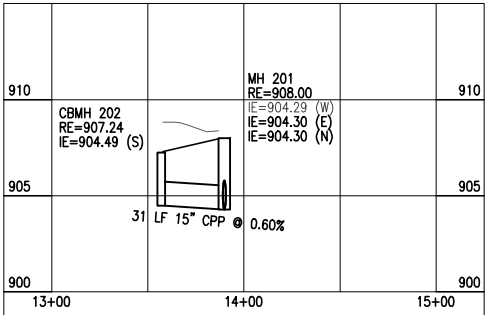
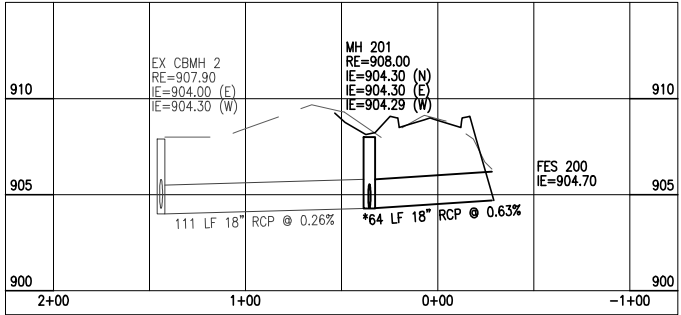
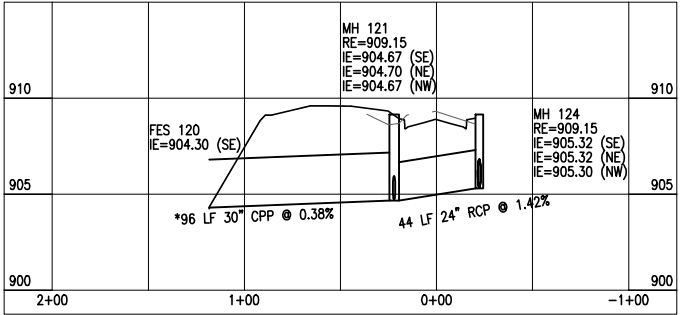
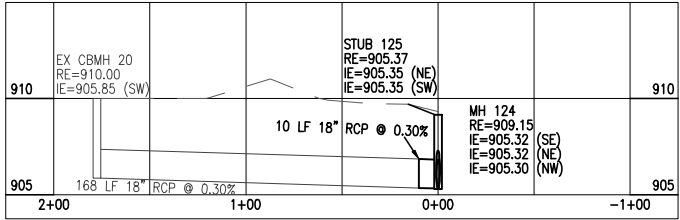
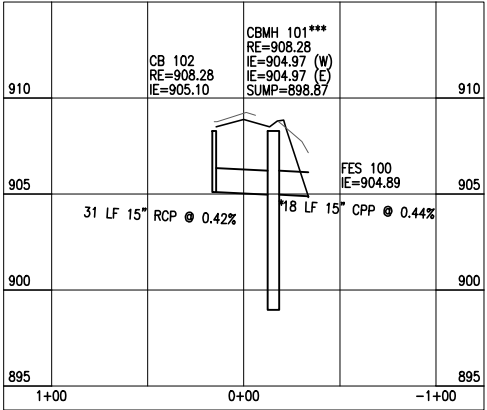
S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION
STORM DETAILS

DWG: 2205 STORM 1
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 33 OF 52
FILE: 37-2-133

STORM DRAIN																				
STRUCTURE	STATION	LOCATION	SIZE OF STRUCTURE	DESIGN	TOP OF CASTING OR INLET	INVERT	CASTING ASSEMBLY (NEENAH, EJ, DL)**	TYPE GRATE (NEENAH CASTINGS)	15"	18"	24"	15"	30"	PIPE	TRASH	APRON	SAFL	FLOWS TO	INLET	% GRADE
									R.C.P.	R.C.P.	R.C.P.	C.P.P.	C.P.P.	APRON	GUARD	BAFFLE ***	LIN FT			
FES 200	13+89.2	LT.		FES		904.70				58				6.1	1	1		MH 201	904.30	0.63
MH 201	13+89.9	RT.	72" ø	RFC-465A1	908.00	904.29	R-1733	—										EX CBMH 2	904.00	0.26
CBMH 202	13+79.7	RT.	48" ø	RFC-465C1	907.24	904.49	R-2577	C												
												31						MH 201	904.30	0.60
CB 102	14+22.8	RT.	2' x 3'	RFC-459C	908.28	905.1	R-3067	C												
									31									CBMH 101	904.97	0.42
CBMH 101	14+22.8	LT.	72" ø	RFC-465A3	908.28	904.97	R-3067	C												
												16		2.2	1	1	1	FES 100	904.89	0.44
STUB 126	20+22.5	LT.		FES	905.37	905.34														
										10								MH 124	905.32	0.16
STUB 125	20+08	LT.		FES	905.37	905.35														
										10								MH 124	905.32	0.30
MH 124	20+16.3	LT.	48" ø	RFC-465C	909.15	905.30	R-1733	—												
											44							MH 121	904.67	1.42
CB 123	19+80	LT.	2' x 3'	RFC-459C	908.19	905.09	R-3067	C												
									31									CBMH 122	904.93	0.52
CBMH 122	19+80	RT.	72" ø	RFC-465A3	908.19	904.90	R-3067	C												
									37								1	MH 121	904.70	0.54
MH 121	20+16.2	RT.	60" ø	RFC-465A1	909.15	904.67	R-1733	—												
													92	4.2	1	1		FES 120	904.30	0.38
TOTAL									99	78	44	47	92							



ALL DETAILS



NOTES:

- 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.
- THERE SHALL BE NO STOCKPILING INCLUDING TEMPORARY STOCK PILES OF MATERIALS IN WETLAND AREAS.
- COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.
- ALL SILT FENCE MUST BE IN PLACE BEFORE ANY LAND IS DISTURBED.
- ALL REMOVALS TO BE DISPOSED OF LEGALLY.
- * PIPE LENGTH INCLUDES APRON.
- ** NEENAH FOUNDRY R-3067; EAST JORDAN IRON WORKS V-7030; D&L FOUNDRY I-1804.
- ** NEENAH FOUNDRY R-1733; EAST JORDAN IRON WORKS V-1280; D&L FOUNDRY A-1028.
- *** STRUCTURE RECEIVES SAFFLE BAFFLE.



800-252-1166 651-454-0002

UTILITIES: LUMEN (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 REG. NO.

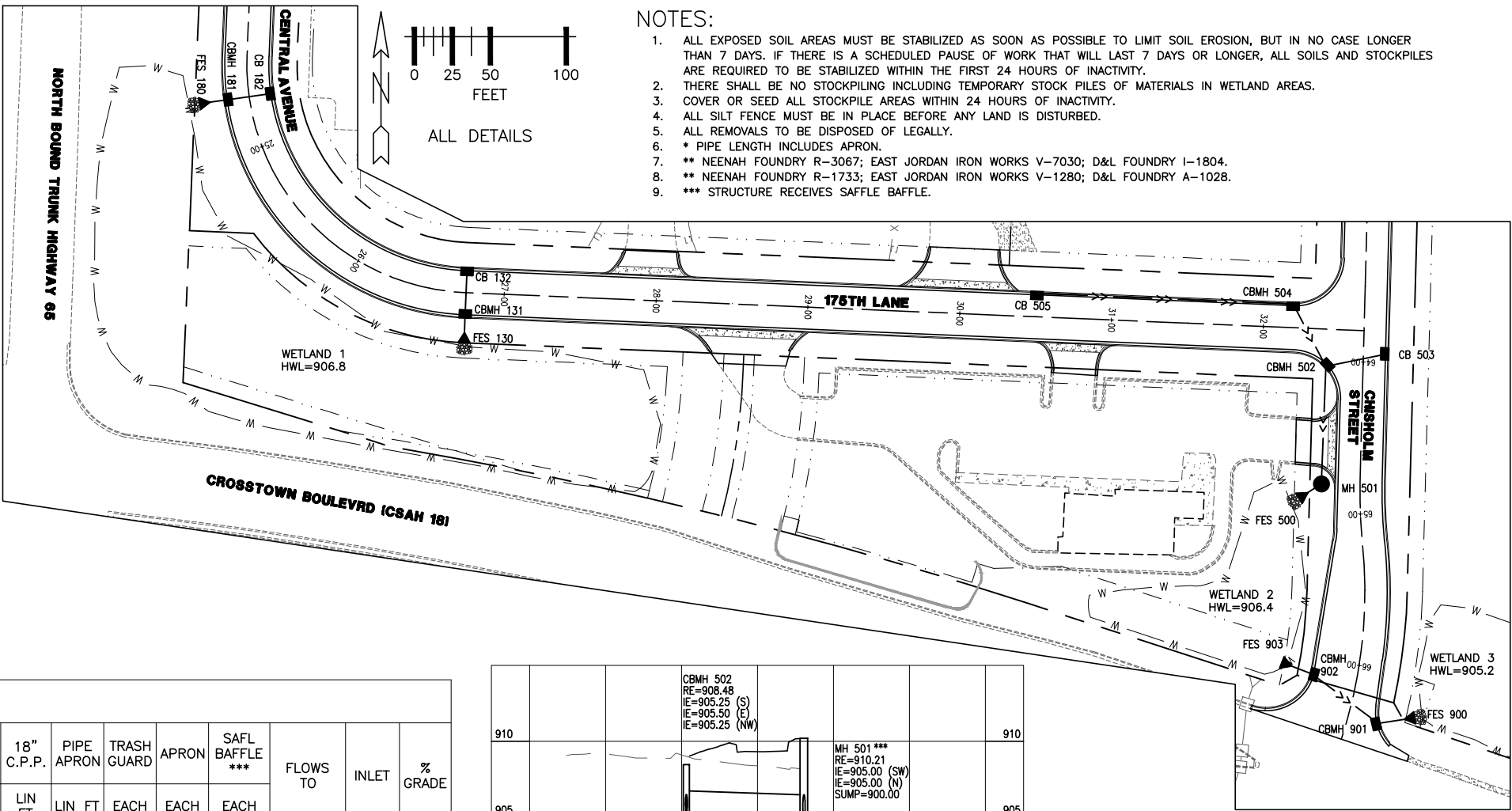
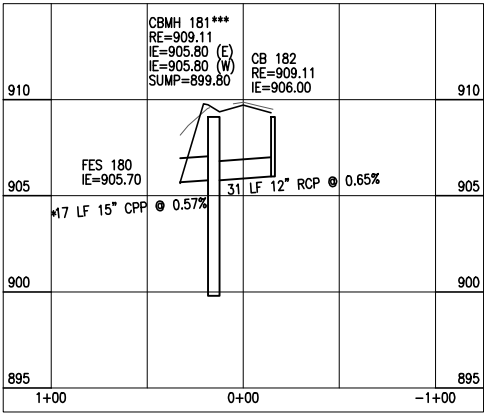
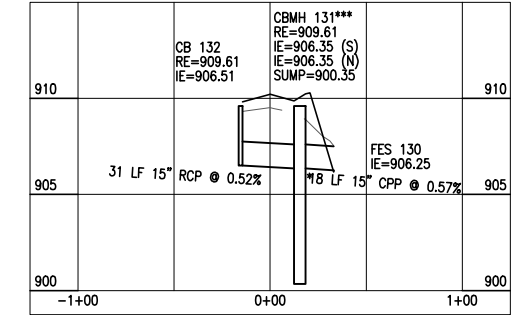
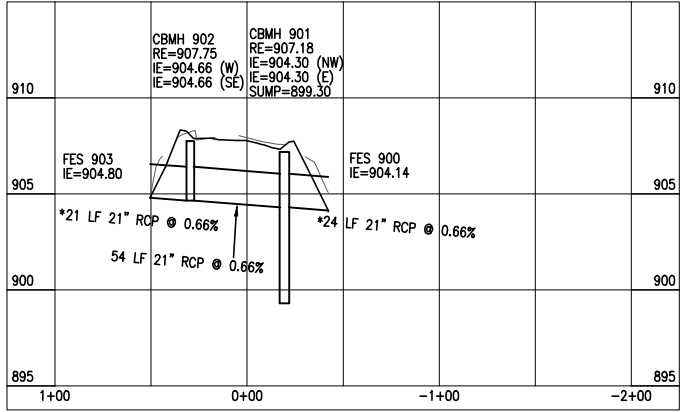
RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
STORM DETAILS

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

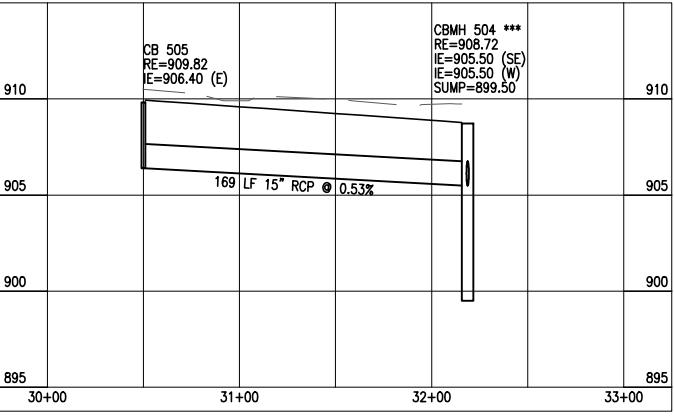
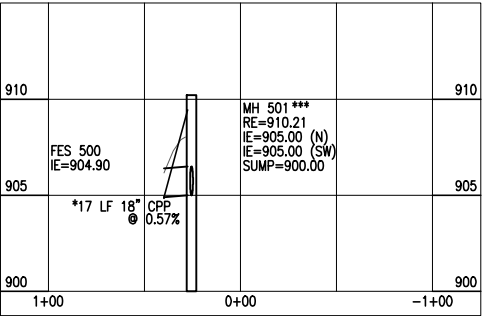
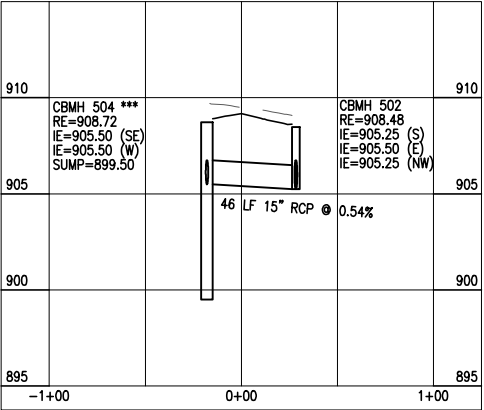
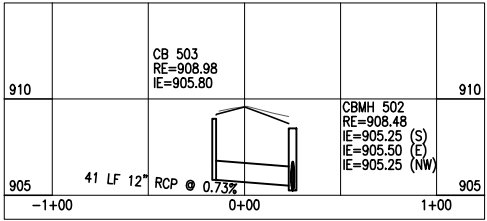
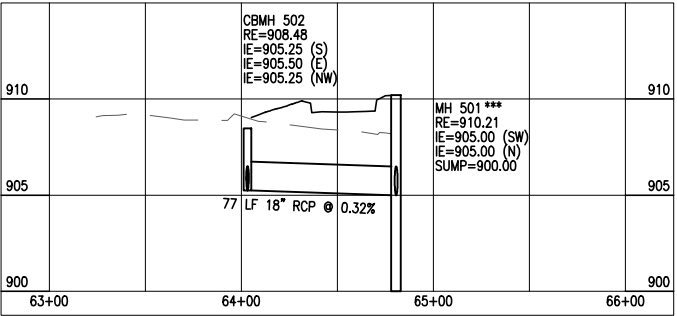
DWG: 2205 STORM 2
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 34 OF 52
FILE: 37-2-134



- NOTES:
1. 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.
 2. THERE SHALL BE NO STOCKPILING INCLUDING TEMPORARY STOCK PILES OF MATERIALS IN WETLAND AREAS. COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.
 3. ALL SILT FENCE MUST BE IN PLACE BEFORE ANY LAND IS DISTURBED.
 4. ALL REMOVALS TO BE DISPOSED OF LEGALLY.
 5. * PIPE LENGTH INCLUDES APRON.
 6. ** NEENAH FOUNDRY R-3067; EAST JORDAN IRON WORKS V-7030; D&L FOUNDRY I-1804.
 7. ** NEENAH FOUNDRY R-1733; EAST JORDAN IRON WORKS V-1280; D&L FOUNDRY A-1028.
 8. *** STRUCTURE RECEIVES SAFFLE BAFFLE.

STORM DRAIN

STRUCTURE	STATION	LOCATION	SIZE OF STRUCTURE	DESIGN	TOP OF CASTING OR INLET	INVERT	CASTING ASSEMBLY (NEENAH, EJ, DL)**	TYPE GRATE (NEENAH CASTINGS)	12" R.C.P.	15" R.C.P.	18" R.C.P.	21" R.C.P.	15" C.P.P.	18" C.P.P.	PIPE APRON	TRASH GUARD	APRON	SAFL BAFFLE ***	FLOWS TO	INLET	% GRADE
									LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	FT	EACH	EACH	EACH			
CB 182	24+65.7	LT.	2' x 3'	RFC-459C	909.11	906	R-3067	C													
									31										CBMH 181	905.80	0.65
CBMH 181	24+65.7	RT.	72" ø	RFC-465A3	909.11	905.8	R-3067	C													
													15		2.2	1	1	1	FES 180	905.70	0.57
CB 132	26+74.6	LT.	2' x 3'	RFC-459C	909.61	906.51	R-3067	C													
										31									CBMH 131	906.35	0.52
CBMH 131	26+74.6	RT.	72" ø	RFC-465A3	909.61	906.35	R-3067	C													
													15		2.2	1	1	1	FES 130	906.25	0.57
CB 505	30+50	LT.	2' x 3'	RFC-459C	909.82	906.40	R-3067	L													
										169									CBMH 504	905.50	0.53
CBMH 504	32+18.8	LT.	72" ø	RFC-465A3	908.72	905.50	R-3067	C													
										46								1	CBMH 502	905.25	0.54
CB 503	63+94	LT.	2' x 3'	RFC-459C	908.98	905.80	R-3067	C													
									41										CBMH 502	905.50	0.73
CBMH 502	64+03.2	RT.	48" ø	RFC-465A1	908.48	905.25	R-3067	C													
											77								MH 501	905.00	0.32
MH 501	64+80.4	RT.	60" ø	RFC-465A3	910.21	905	R-1733	—													
														15	2.6	1	1	1	FES 500	904.90	0.57
FES 903	66+06.8	RT.		FES		904.8															
												15			6.1	1	1		CBMH 902	904.66	0.66
CBMH 902	66+11.2	RT.	48" ø	RFC-465A1	907.75	904.66	R-3067	C													
												54							CBMH 901	904.30	0.66
CBMH 901	66+33.3	LT.	60" ø	RFC-465A3	907.18	904.3	R-3067	C													
												18			6.1	1	1		FES 900	904.14	0.66
TOTAL									72	246	77	87	30	15							



800-252-1166 651-454-0002

UTILITIES:
LUMEN (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 REG. NO.

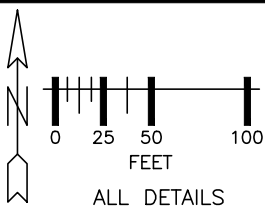
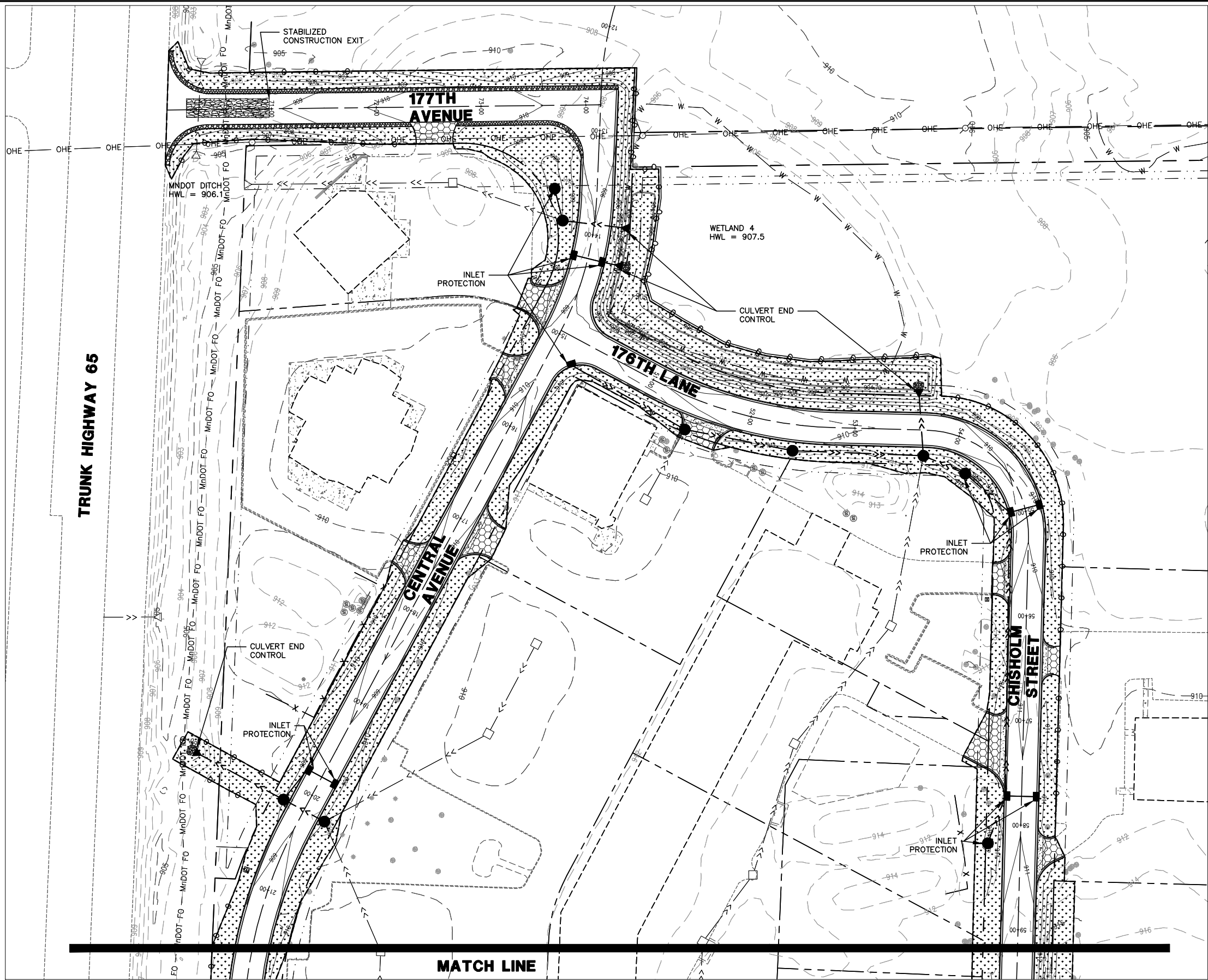
RFC ENGINEERING, INC.
Consulting Engineers

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

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION
STORM DETAILS

DWG: 2205 STORM 3
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 35 OF 52
FILE: 37-2-135



ALL DETAILS

LEGEND

- RIPRAP, CLASS III WITH FABRIC
- 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
- SILT FENCE
- STABILIZED CONSTRUCTION EXIT

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 ALTERNATE PLAN PROVIDED BY THE CONTRACTOR.
4. COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.



800-252-1166 651-454-0002

UTILITIES: LUMEN (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 _____ REG. NO. _____

FOR REVIEW
PURPOSES ONLY

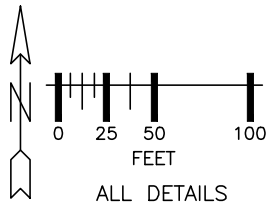
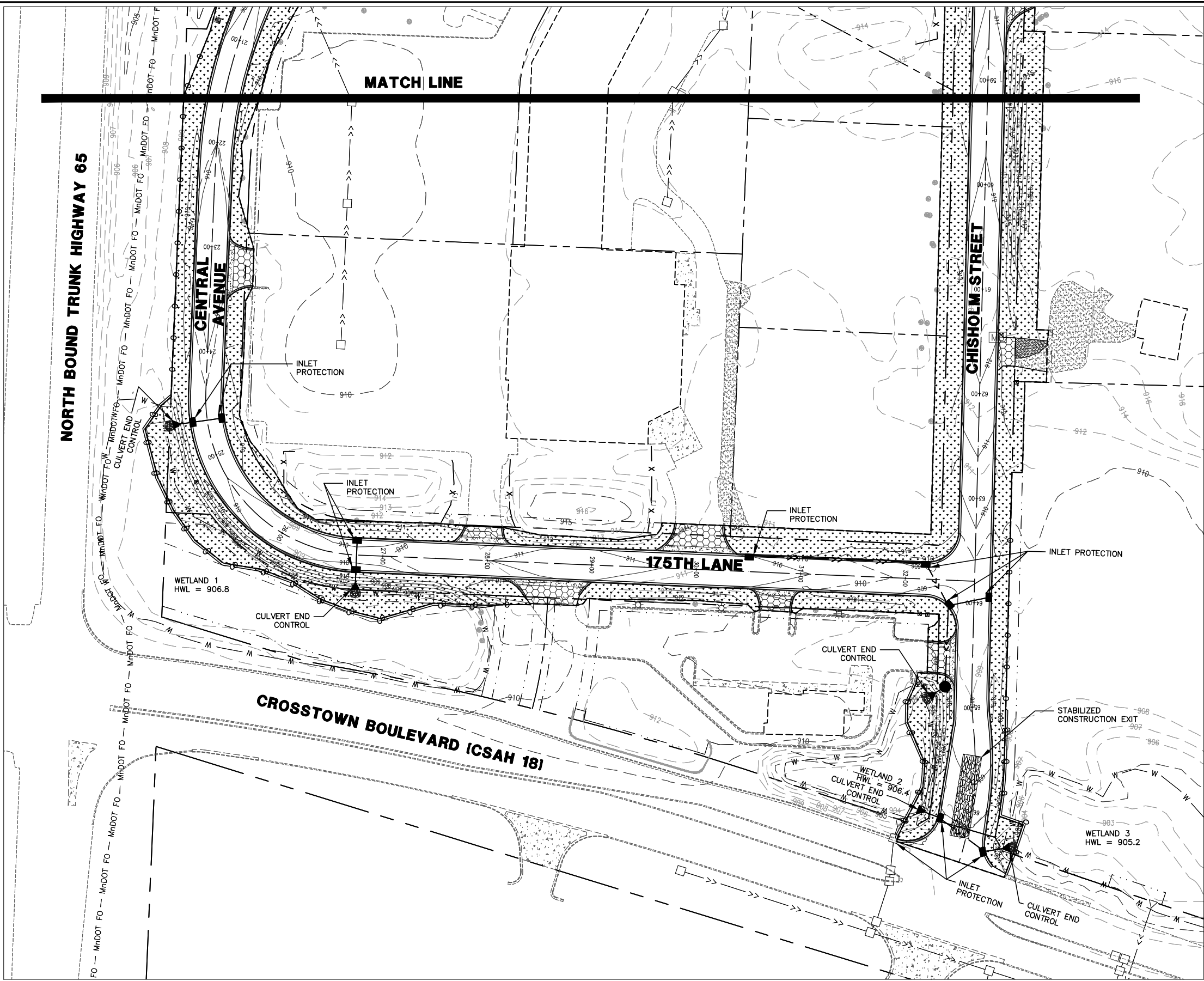
RFC ENGINEERING, INC.
Consulting Engineers

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

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
STORMWATER POLLUTION PREVENTION PLAN

DWG:	2205 SWPPP 1
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	36 OF 52
FILE:	37-2-136



ALL DETAILS

LEGEND

- RIPRAP, CLASS III WITH FABRIC
- SEED MIX 25-151: COMMERCIAL TURF
MULCH TYPE 1
PLANT APRIL 1ST - JUNE 1ST FOR SPRING PLANTING OR
JULY 20TH - SEPTEMBER 20TH FOR FALL PLANTING
- SILT FENCE
- STABILIZED CONSTRUCTION EXIT

- 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 ALTERNATE PLAN PROVIDED BY THE CONTRACTOR.
 4. COVER OR SEED ALL STOCKPILE AREAS WITHIN 24 HOURS OF INACTIVITY.



800-252-1166 651-454-0002

UTILITIES: LUMEN (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 REG. NO.

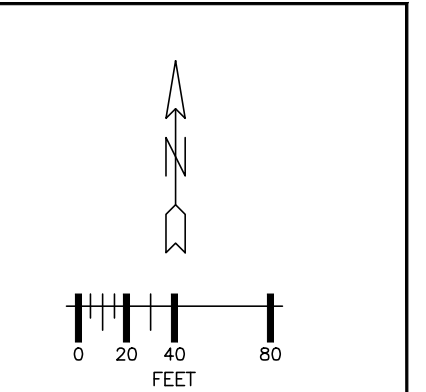
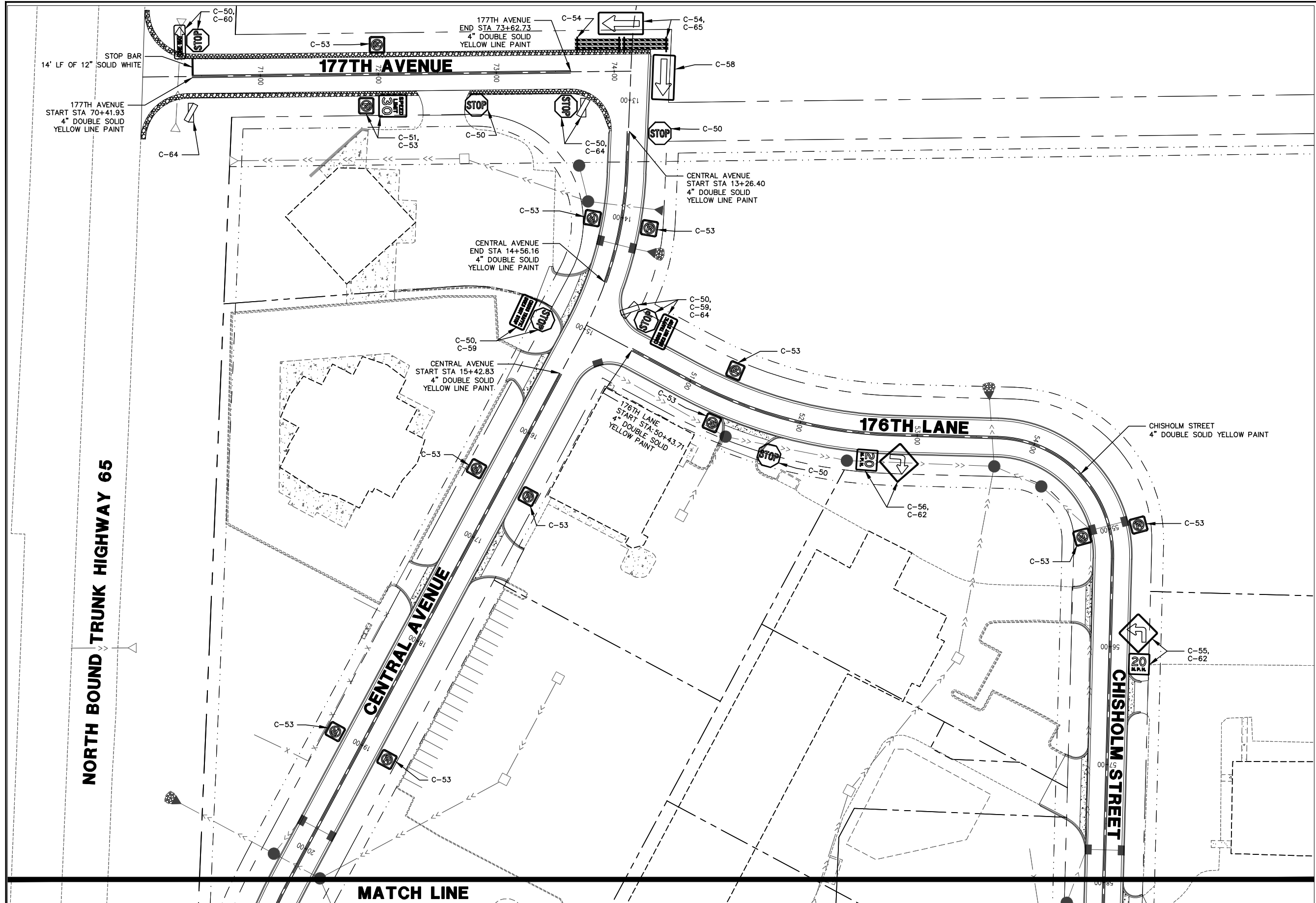
RFC ENGINEERING, INC.
Consulting Engineers

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

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION
STORMWATER POLLUTION PREVENTION PLAN

DWG: 2205 SWPPP 2
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 37 OF 52
FILE: 37-2-137



NOTES:

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



800-252-1166 651-454-0002

UTILITIES:

LUMEN	(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: _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

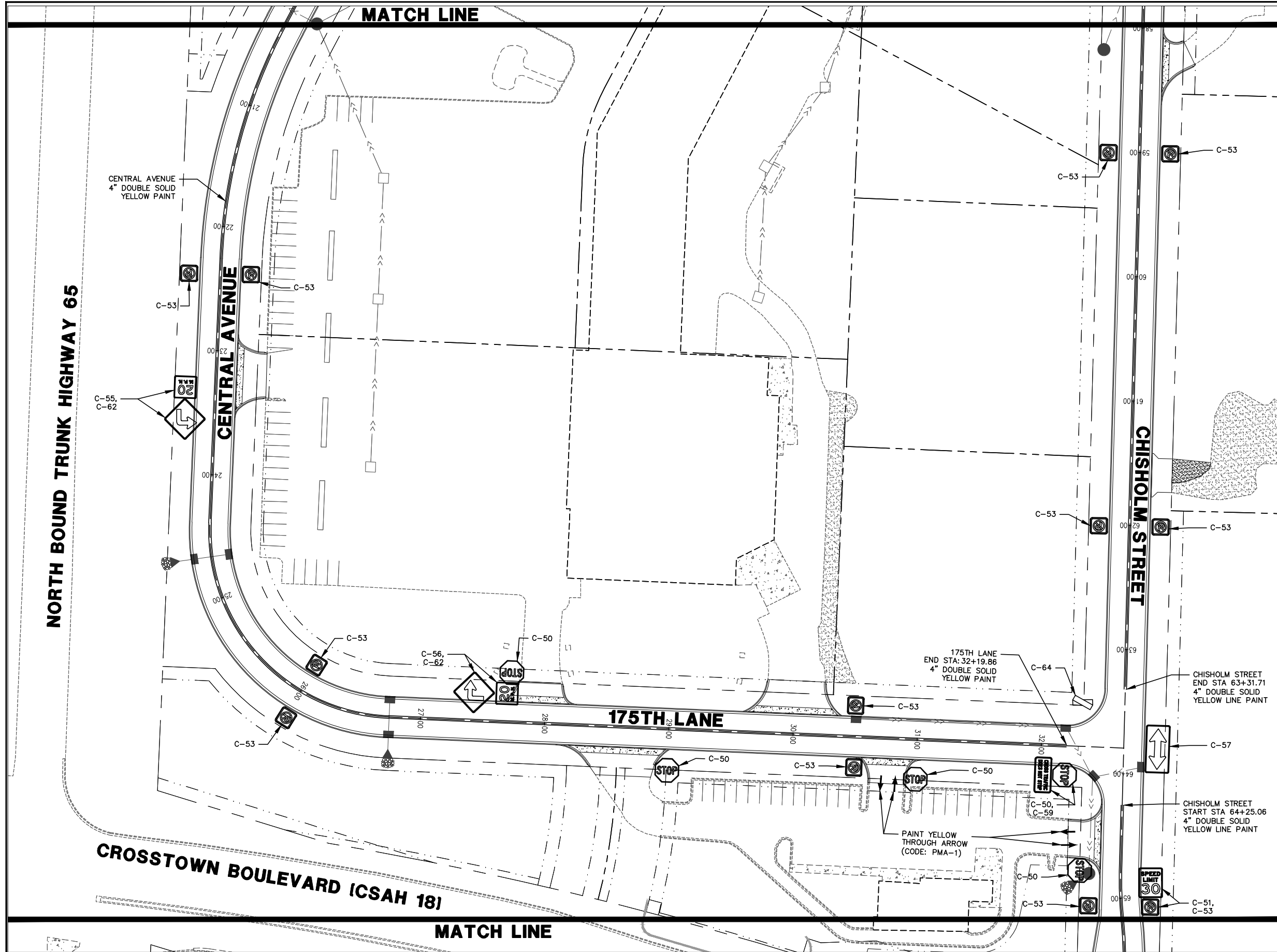
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION

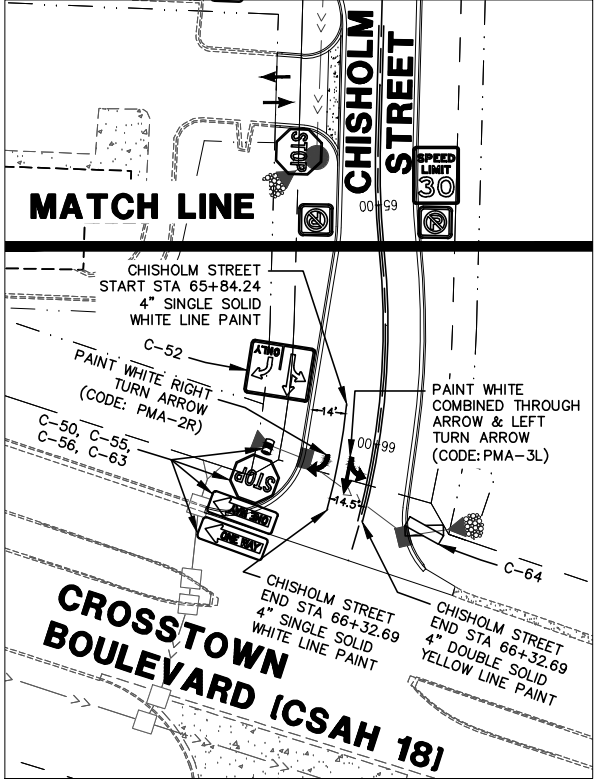
SIGNING AND STRIPING PLAN

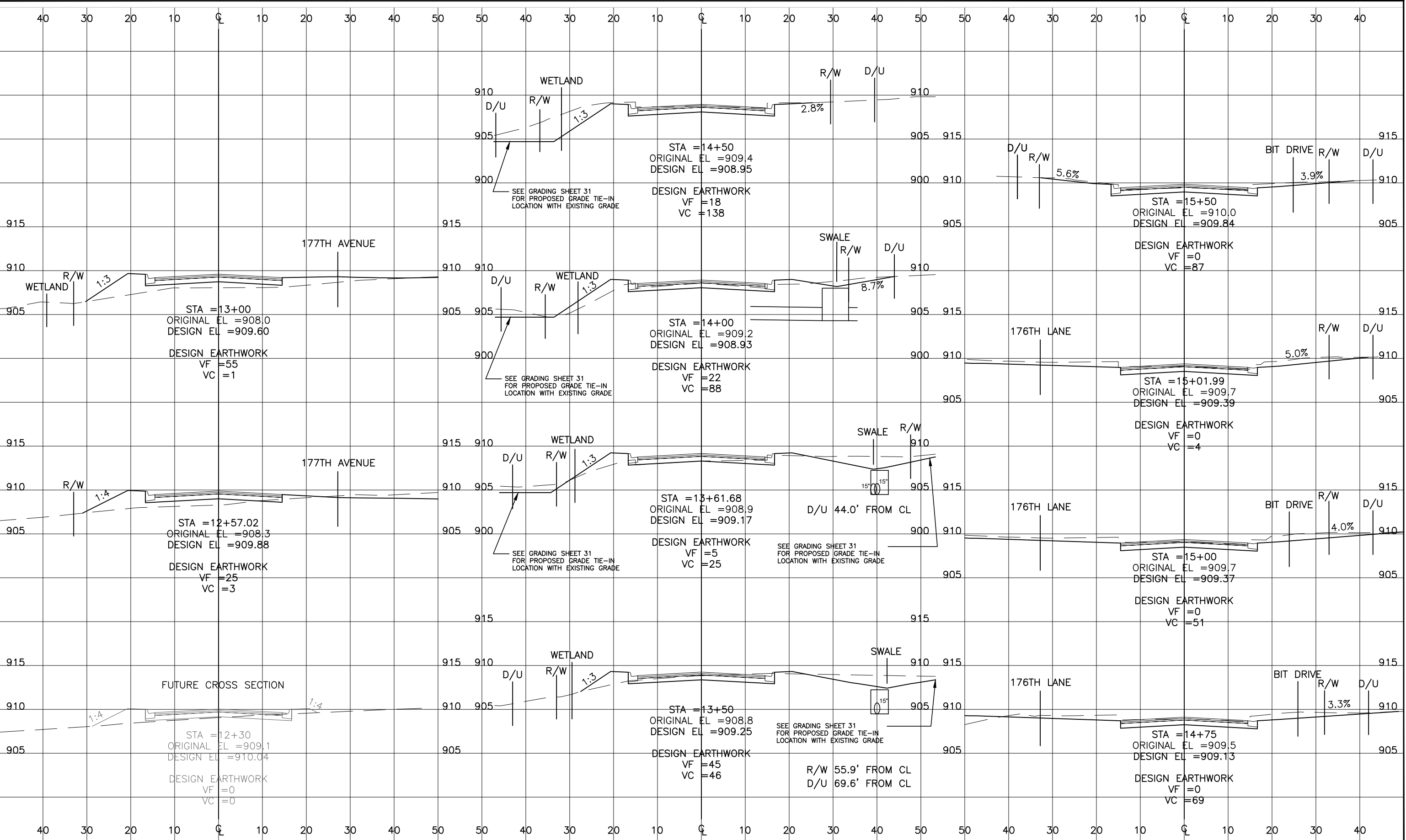
DESIGN BY: LDZ DRAWN BY: LDZ CHECKED BY: DAK

DWG:	2205 SIGN1
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	39 OF 52
FILE:	37-2-139



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







800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:44

UTILITIES:

LUMEN	(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: _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

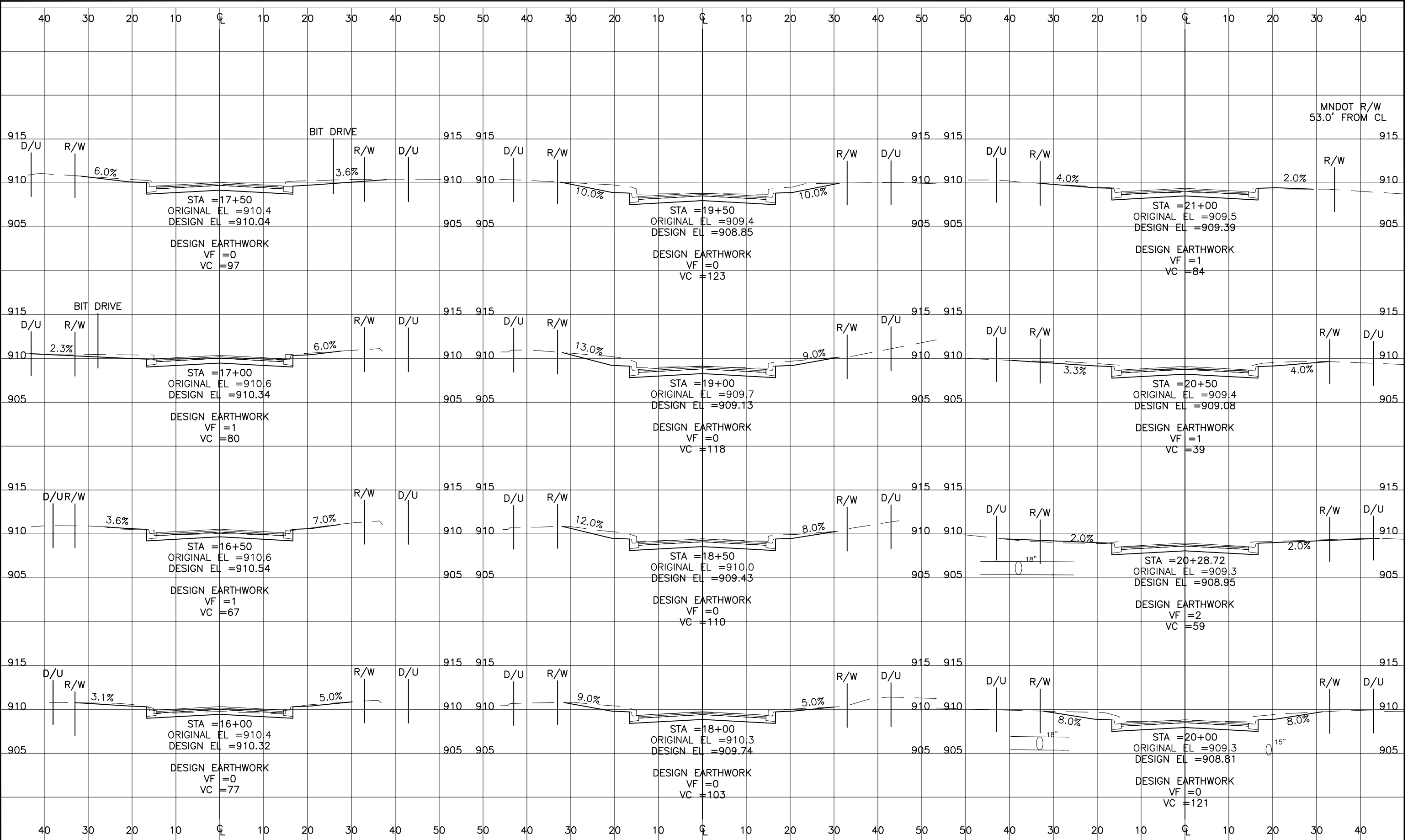
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION

CROSS SECTIONS

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

DWG: RC001001
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 41 OF 52
FILE: 37-2-141





800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:44

UTILITIES:

LUMEN	(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 _____ REG. NO. _____

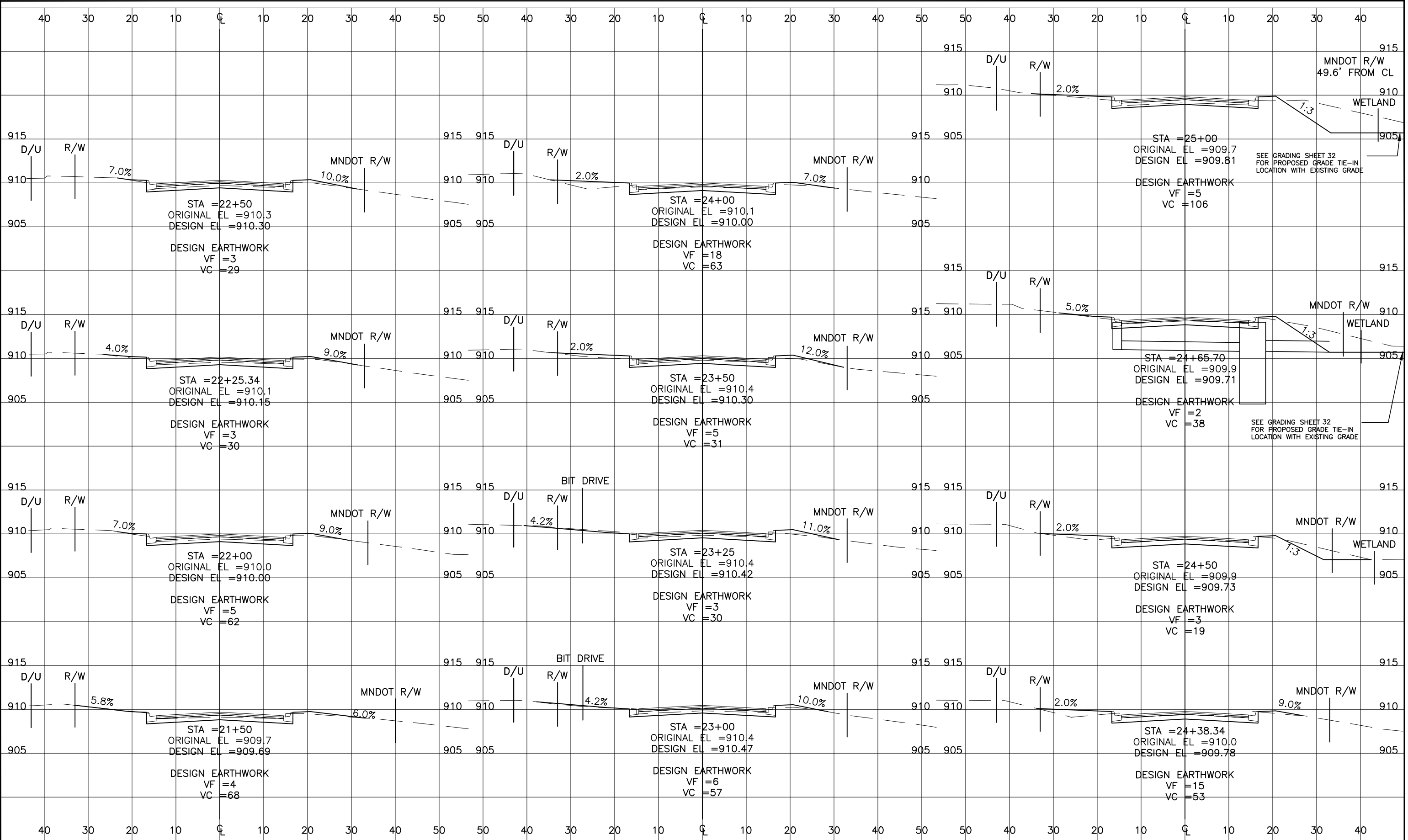
RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
CENTRAL AVENUE/175TH LANE
CROSS SECTIONS

DWG:	RC002001
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	42 OF 52
FILE:	37-2-142

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





800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:44

UTILITIES:

LUMEN	(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: _____ REG. NO. _____

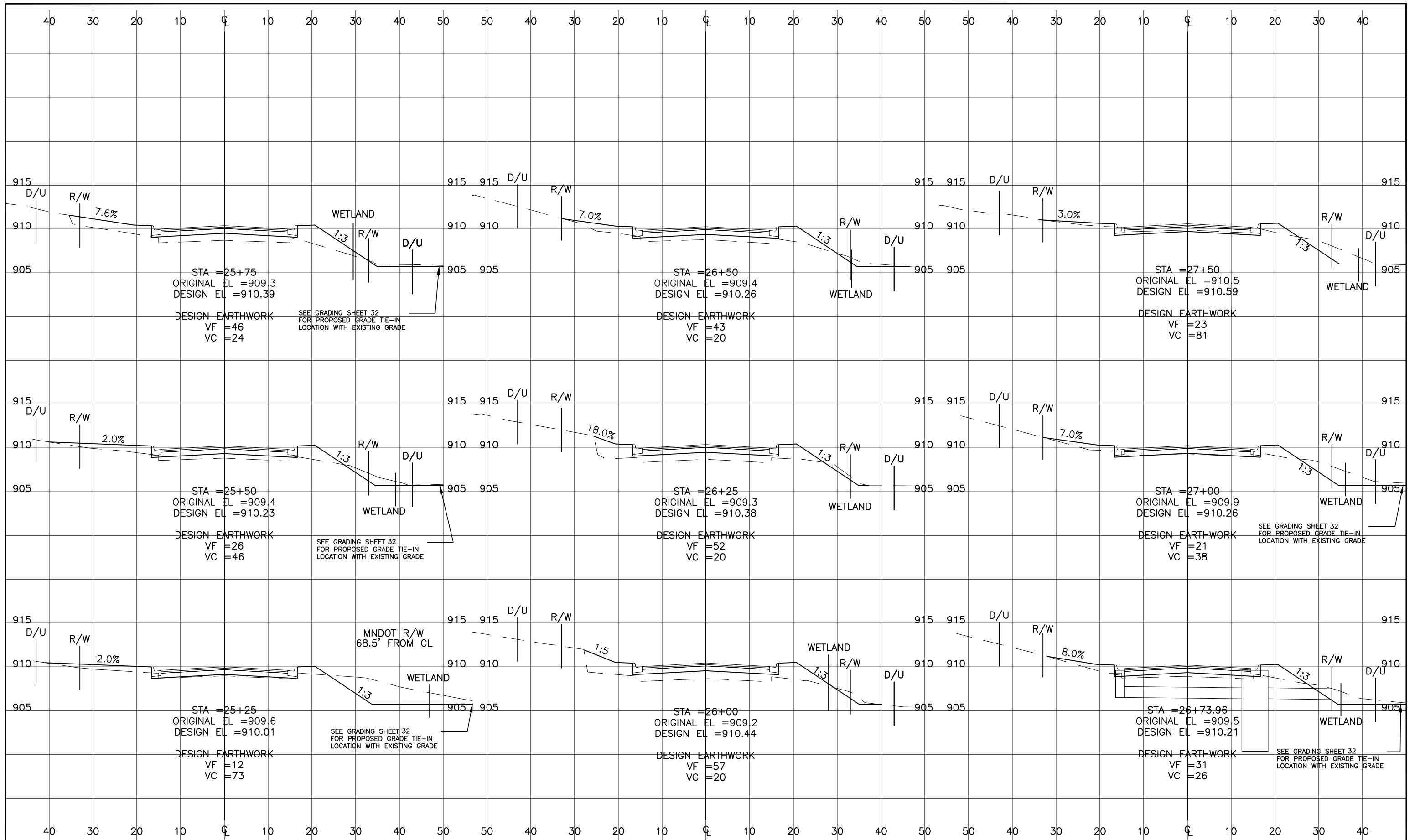
RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
CENTRAL AVENUE/175TH LANE
CROSS SECTIONS

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

DWG: RC003001
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 43 OF 52
FILE: 37-2-143



800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:44

UTILITIES:
LUMEN (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 _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

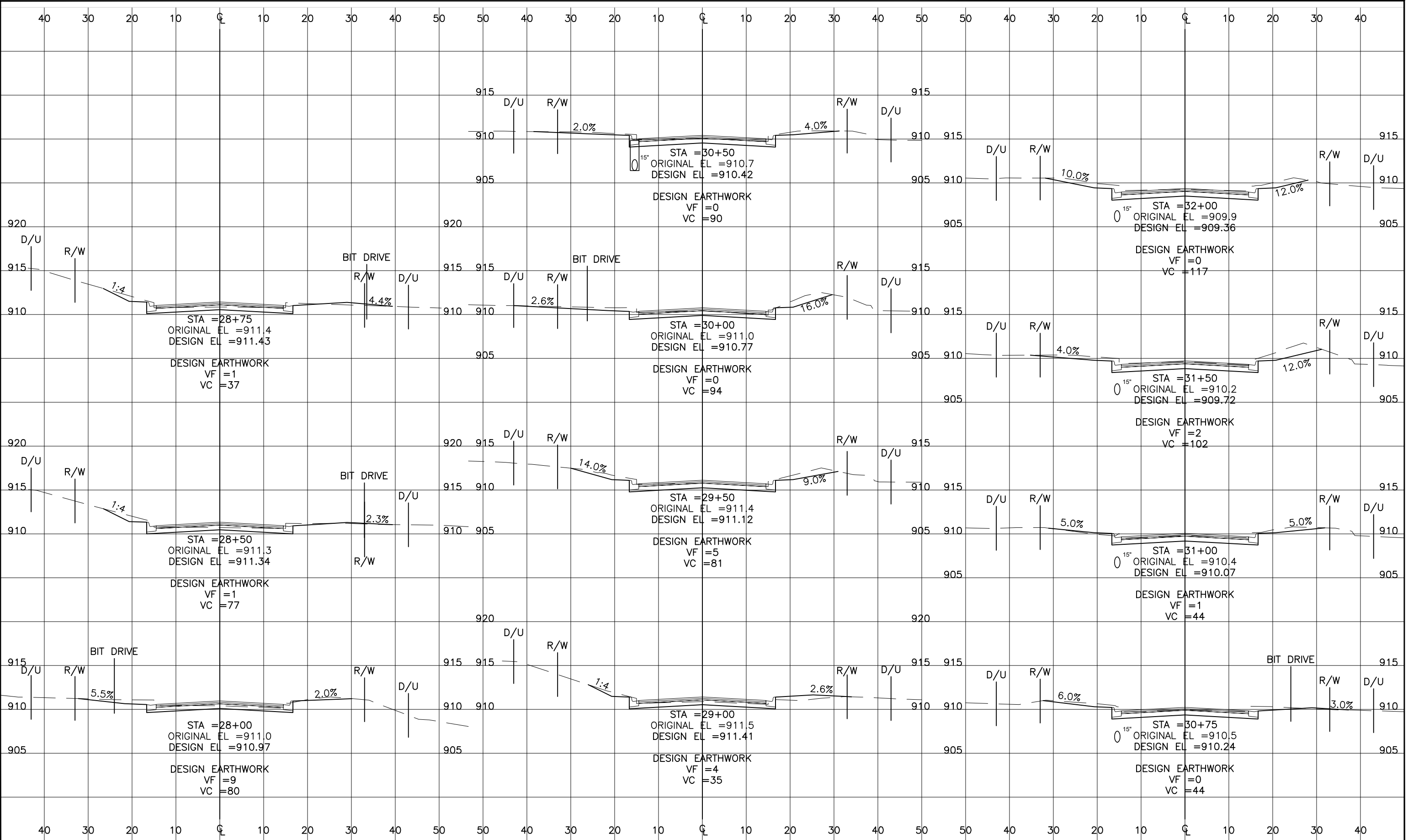
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

DESIGN BY: LDZ

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
CENTRAL AVENUE/175TH LANE
CROSS SECTIONS

DRAWN BY: LDZ
CHECKED BY: DAK

DWG: RC004001
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 44 OF 52
FILE: 37-2-144





800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:44

UTILITIES:

LUMEN	(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: _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

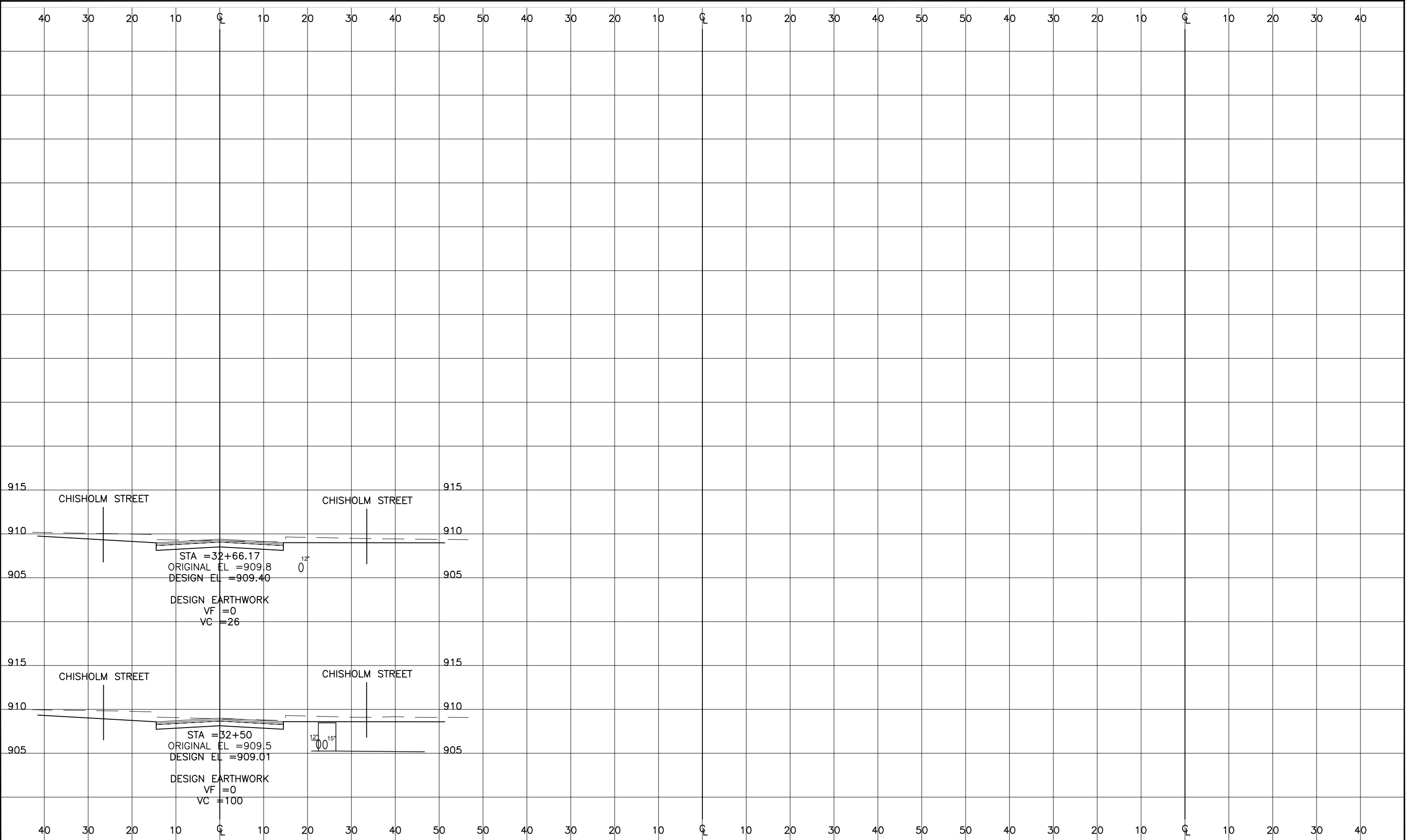
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION

CROSS SECTIONS

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

DWG:	RC005001
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	45 OF 52
FILE:	37-2-145





800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:44

UTILITIES:

LUMEN	(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 _____ REG. NO. _____

RFC ENGINEERING, INC.

Consulting Engineers

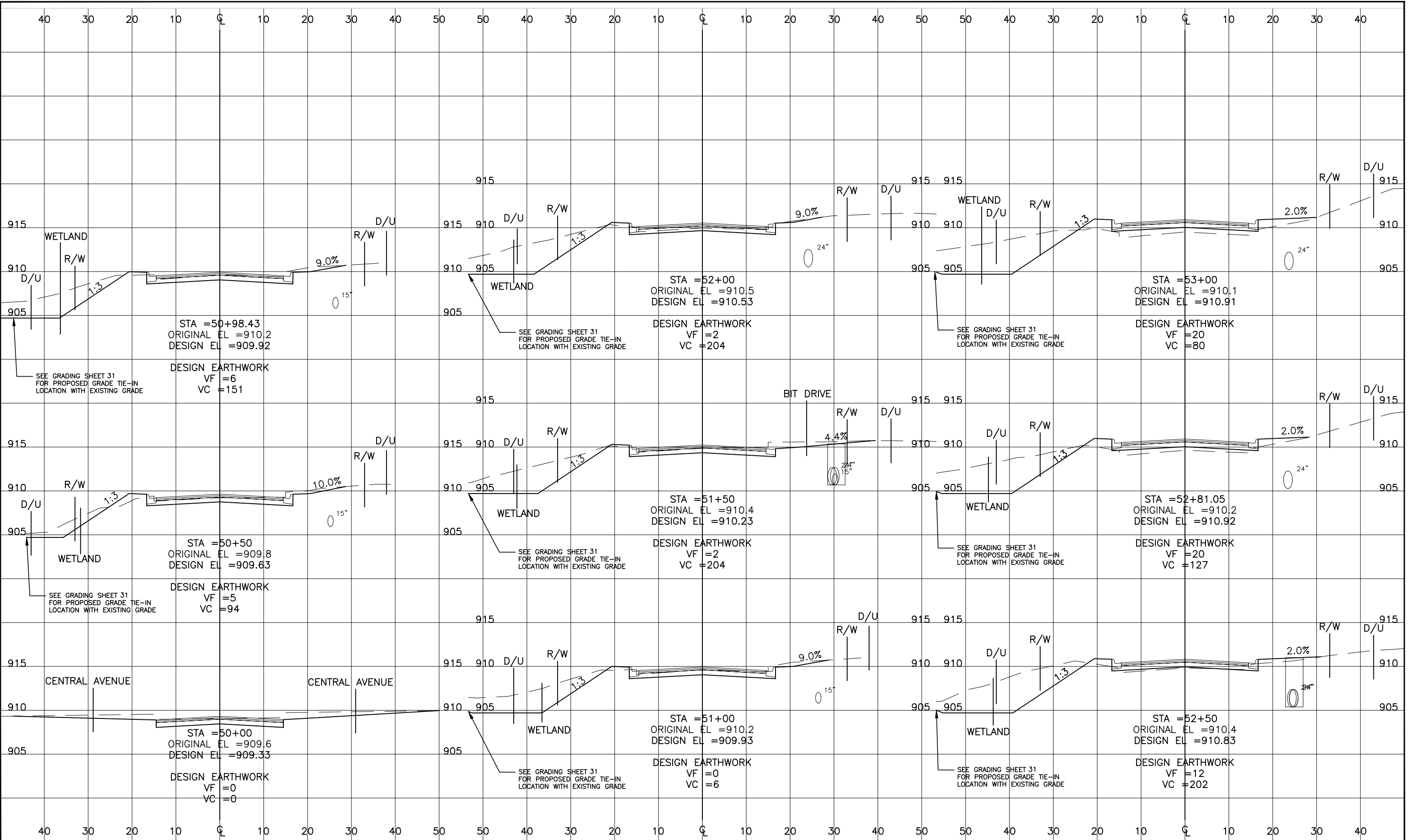
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

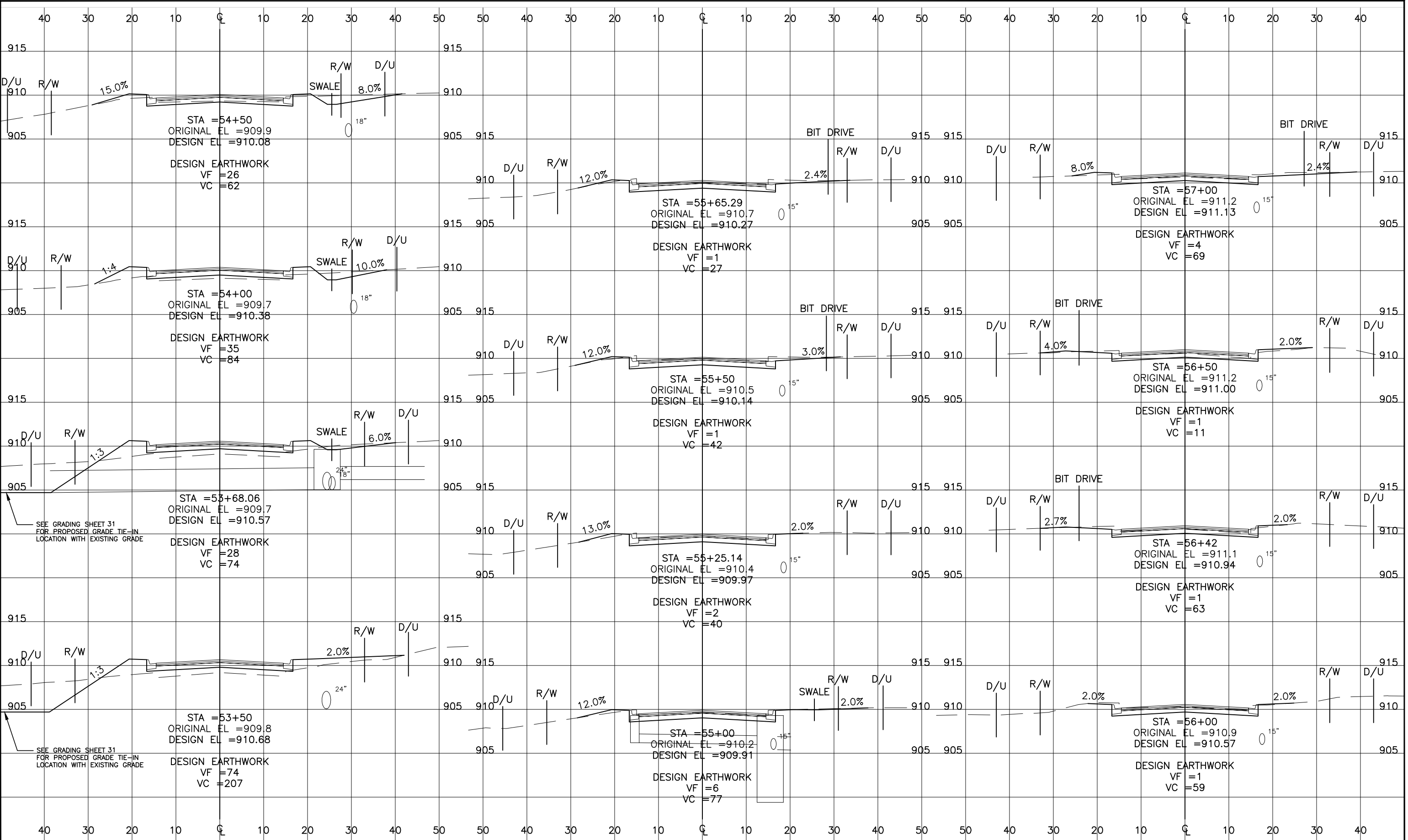
S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION

CENTRAL AVENUE/175TH LANE
CROSS SECTIONS

DWG:	RC006001
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	46 OF 52
FILE:	37-2-146

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







800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:44

UTILITIES:

LUMEN	(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.

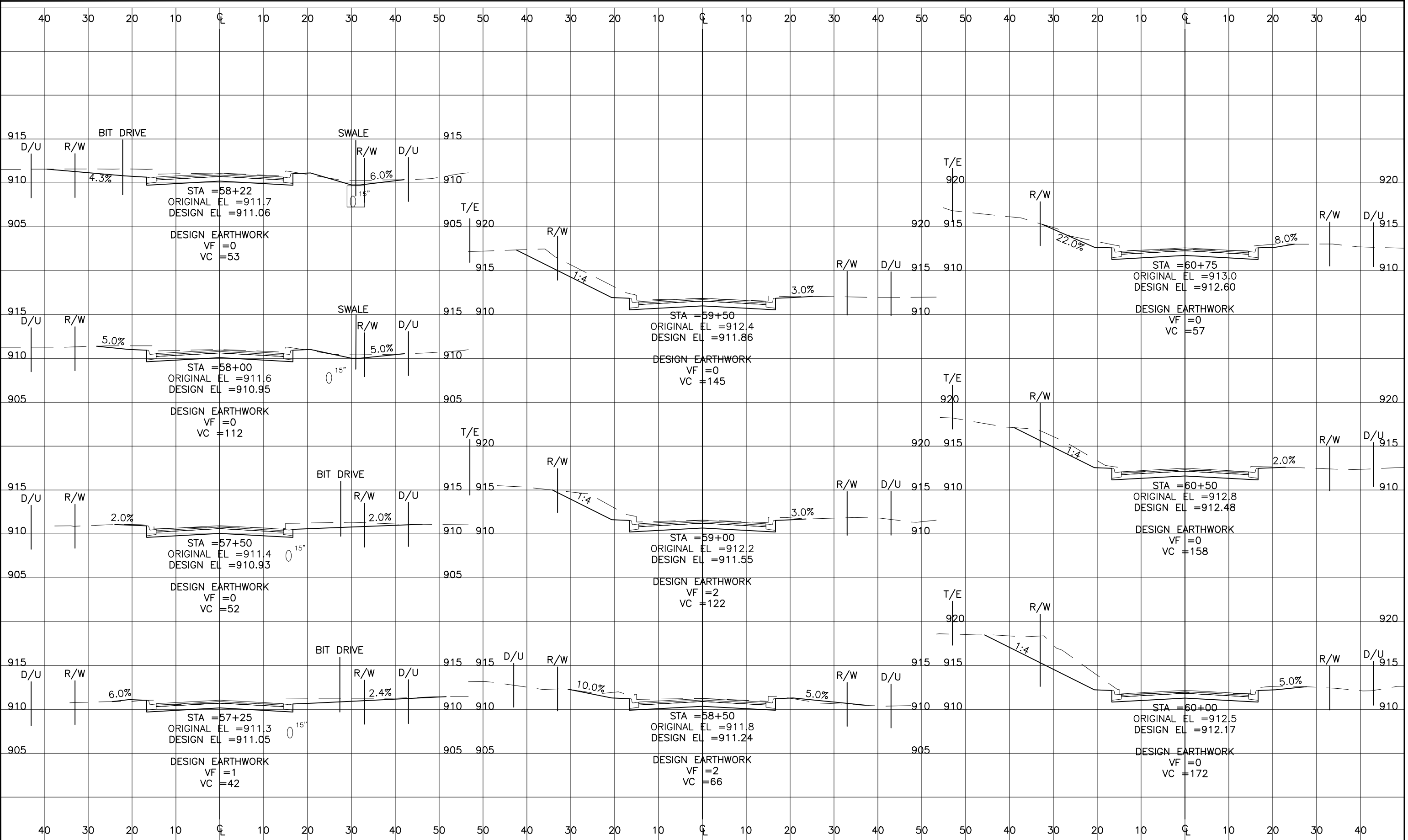
DATE _____ REG. NO. _____

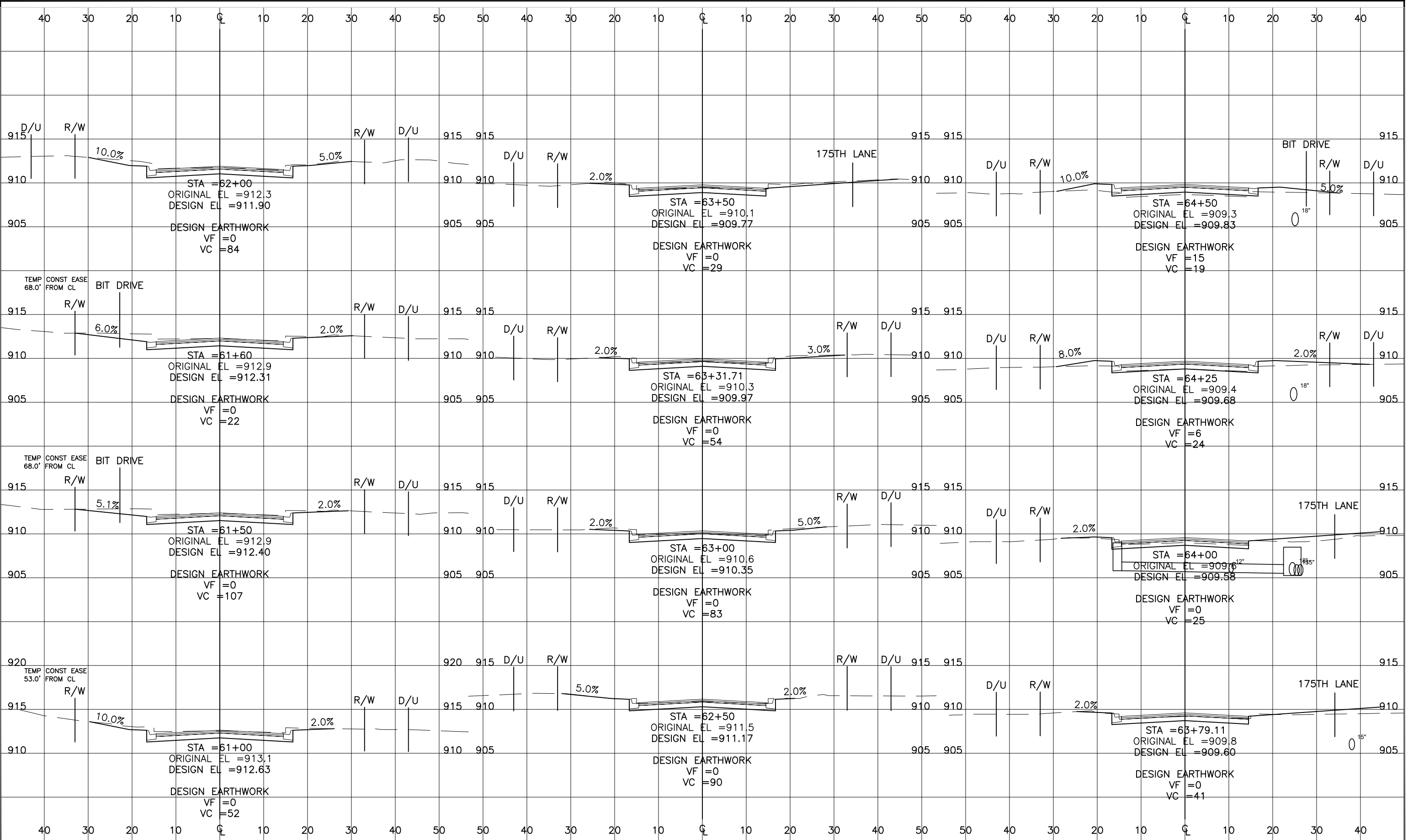
RFC ENGINEERING, INC.
Consulting Engineers

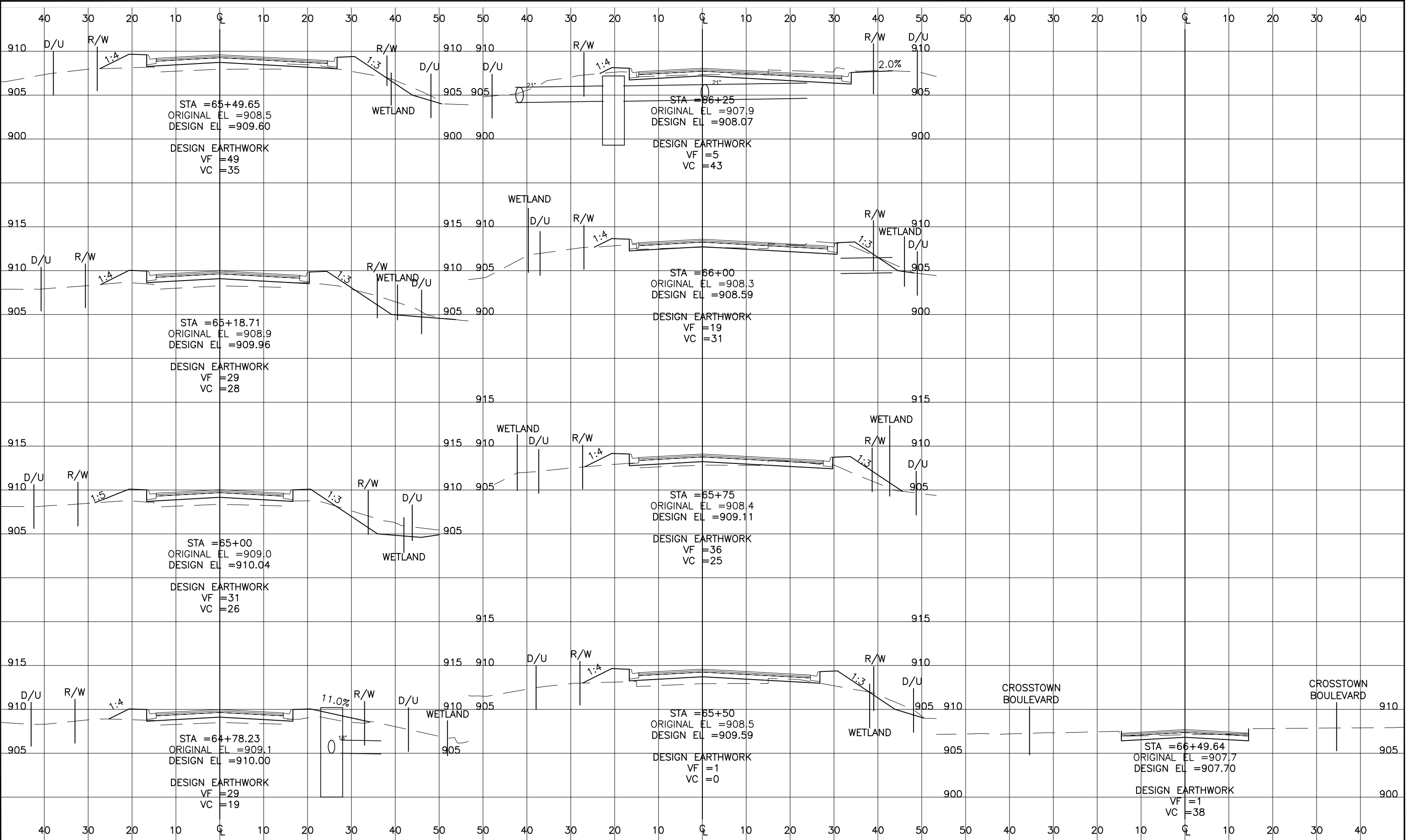
13635 Johnson Street
Ham Lake, MN 55304
Telephone 763-862-8000
Fax 763-862-8042

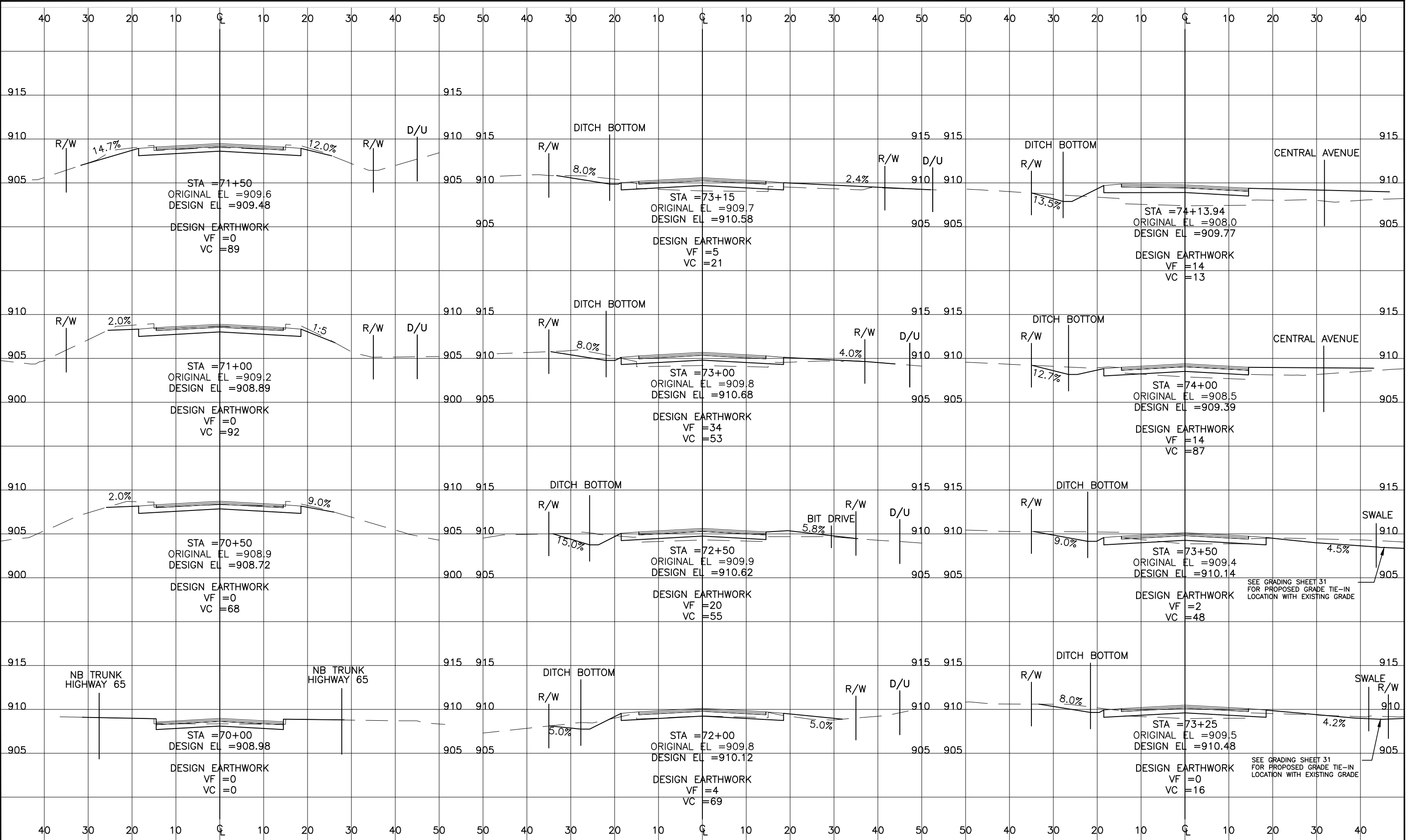
S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSTOWN SHOPPING CENTER STREET RECONSTRUCTION
176TH LANE/CHISHOLM STREET
CROSS SECTIONS

DWG:	RC002002
DATE:	03/17/26
JOB NUMBER:	2205
SHEET:	48 OF 52
FILE:	37-2-148











800-252-1166 651-454-0002
PLOT DATE: 3/17/2026 10:44

UTILITIES:

LUMEN	(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: _____ REG. NO. _____

RFC ENGINEERING, INC.
Consulting Engineers

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

S.A.P. 197-119-004 / 197-135-001
HAM LAKE IMPROVEMENT PROJECT 2205
CROSSTOWN SHOPPING CENTER STREET RECONSTRUCTION

177TH AVENUE
CROSS SECTIONS

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

DWG: RC001004
DATE: 03/17/26
JOB NUMBER: 2205
SHEET: 52 OF 52
FILE: 37-2-152