

DESIGN DESIGNATION  
STA. 10+26.30 TO STA. 70+11.03

FUNTIONAL CLASSIFICATION MINOR COLLECTOR

R-VALUE 30

ΣN-18 889,000

NO. & WIDTH OF TRAFFIC LANES 2 & 11 ft

NO. & WIDTH OF PARKING LANES N/A

ADT (PRESENT YEAR) 2023 2,390

ADT (PROJECTED YEAR) 2043 3,050

HCA DT (PROJECTED YEAR) 2043 9.23%

DESIGN SPEED 50 mph

DESIGN LOAD 10 ton

DESIGN SPEED NOT ACHIEVED AT:  
STA 68+75 TO 70+08 (STOP CONDITION)

DESIGN SPEED FOR ROADWAY BASED ON  
ON STOPPING SIGHT DISTANCE:  
HEIGHT OF EYE = 3.5 FT  
HEIGHT OF OBJECT = 2.0 FT

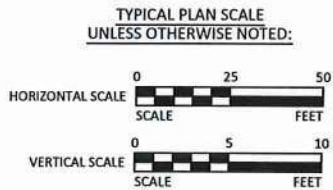
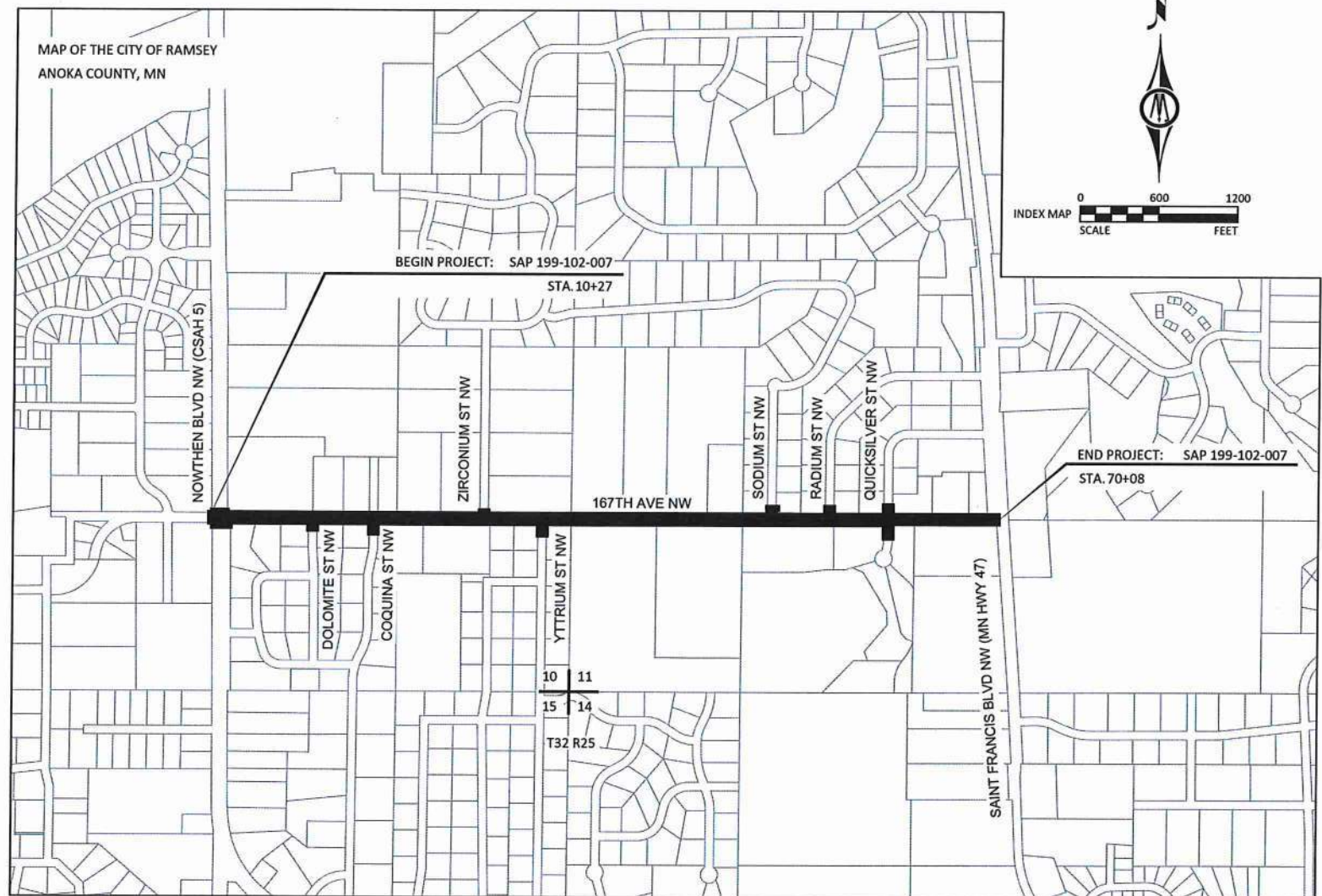
MINNESOTA DEPARTMENT OF TRANSPORTATION  
CITY OF RAMSEY  
167TH AVENUE RECONSTRUCTION  
CITY IMPROVEMENTS PROJECT #23-04

CONSTRUCTION PLAN FOR: ROADWAY RECLAMATION, AGGREGATE BASE, PLANT MIXED BITUMINOUS PAVEMENT, ADA IMPROVEMENTS AND STORM SEWER

SAP 199-102-007 LOCATED ON 167TH AVENUE FROM CSAH 5 (NOWTHEN BLVD NW) TO MN HWY 47 (ST. FRANCIS BLVD NW) (GEOGRAPHICAL DESCRIPTION)

(SAP 199-102-007)			
GROSS LENGTH	5981 FEET	1.13270 MILES	
BRIDGE LENGTH	NA FEET	NA MILES	
EXCEPTION LENGTH	NA FEET	NA MILES	
NET LENGTH	5981 FEET	1.13270 MILES	

LENGTH AND DESCRIPTION BASED UPON  
PROPOSED CENTERLINE



PROJECT LOCATION



CITY: RAMSEY  
COUNTY: ANOKA  
DISTRICT: METRO

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY  
QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL  
WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE  
38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION  
AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

BM=890.58  
DESCRIPTION  
STATION  
LOCATION

PROJECT DATUM: ANOKA COUNTY  
HORIZONTAL: NAD 83 (1996 ADJ)  
VERTICAL: NGVD 88

RECORD DRAWING  
INFORMATION  
OBSERVER:  
CONTRACTOR:  
DATE:



7533 SUNWOOD DR NW, SUITE 206  
RAMSEY, MINNESOTA 55303  
Phone: (763) 433-2851  
Email: Ramsey@bolton-menk.com  
www.bolton-menk.com



DESIGNED  
ZFL  
DRAWN  
CN  
CHECKED  
KPK  
CLIENT PROJ. NO.  
23-04

NO. ISSUED FOR DATE  
DATE

MINN. PROJ. NO. STATE FUNDS

--- GOVERNING SPECIFICATIONS ---  
THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION  
FOR CONSTRUCTION" AND SUPPLEMENTAL SPECIFICATIONS DATED SEPTEMBER 2022 SHALL GOVERN.  
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM AND BE INSTALLED IN  
ACCORDANCE WITH THE LATEST "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"  
(MN MUTCD) AND PART VI, THE LATEST "FIELD MANUAL" FOR TEMPORARY TRAFFIC CONTROL  
DEVICES.

SHEET NUMBER	SHEET TITLE
GENERAL	
1	TITLE SHEET
2	LEGEND
3	STATEMENT OF ESTIMATED QUANTITIES
4-5	ALIGNMENT TABULATION
CIVIL	
6	TYPICAL SECTIONS
7-8	CONSTRUCTION DETAILS
9-14	PEDESTRIAN CURB RAMP DETAILS
15-19	EXISTING CONDITIONS & REMOVALS
20-22	STORM WATER POLLUTION PREVENTION PLAN
23-27	EROSION CONTROL PLAN
28-37	STORM SEWER & STREET PLAN & PROFILE
38-40	INTERSECTION DETAILS
41-45	SIGNAGE AND STRIPING
46-57	CROSS SECTIONS

THIS PLAN SET CONTAINS 57 SHEETS.

Zachary Lingl, P.E.

Design Engineer: 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.

Date 5/31/2023 License Number 56344

Approved: City of Ramsey Engineer

Date 6/15/23

District State Aid Engineer:  
Reviewed for compliance with State Aid Rules/Policy

Approved for State Aid Funding: State Aid Engineer

CITY OF RAMSEY, MINNESOTA  
167TH AVENUE RECONSTRUCTION SAP 199-102-007  
STATE AID PROJECT NO. 199-102-007

SHEET  
1  
OF  
57























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EXISTING TOPOGRAPHIC SYMBOLS

	ACCESS GRATE		REGULATION STATION GAS
	AIR CONDITION UNIT		SATELLITE DISH
	ANTENNA		SIGN NON TRAFFIC
	AUTO SPRINKLER CONNECTION		SIGN TRAFFIC
	BARRICADE PERMANENT		SIGNAL CONTROL CABINET
	BASKETBALL POST		SOIL BORING
	BENCH		SIREN
	BIRD FEEDER		TELEPHONE BOOTH
	BOLLARD		TILE INLET
	BUSH		TILE OUTLET
	CATCH BASIN RECTANGULAR CASTING		TILE RISER
	CATCH BASIN CIRCULAR CASTING		TRANSFORMER-ELECTRIC
	CURB STOP		TREE-CONIFEROUS
	CLEAN OUT		TREE-DEAD
	CULVERT END		TREE-DECIDUOUS
	DRINKING FOUNTAIN		TREE STUMP
	DOWN SPOUT		TRAFFIC ARM BARRIER
	FILL PIPE		TRAFFIC SIGNAL
	FIRE HYDRANT		TRASH CAN
	FLAG POLE		UTILITY MARKER
	FLARED END / APRON		VALVE
	FUEL PUMP		VALVE POST INDICATOR
	GRILL		VALVE VAULT
	GUY WIRE ANCHOR		VAULT
	HANDHOLE		VENT PIPE
	HANDICAP SPACE		WATER SPIGOT
	IRRIGATION SPRINKLER HEAD		WELL
	IRRIGATION VALVE BOX		WETLAND DELINEATED MARKER
	LIFT STATION CONTROL PANEL		WETLAND
	LIFT STATION		WET WELL
	LIGHT ON POLE		YARD HYDRANT
	LIGHT-GROUND		
	MAILBOX		







PROPOSED TOPOGRAPHIC SYMBOLS

	CLEANOUT
	MANHOLE
	LIFT STATION
	STORM SEWER CIRCULAR CASTING
	STORM SEWER RECTANGULAR CASTING
	STORM SEWER FLARED END / APRON
	STORM SEWER OUTLET STRUCTURE
	STORM SEWER OVERFLOW STRUCTURE
	CURB BOX
	FIRE HYDRANT
	WATER VALVE
	WATER REDUCER
	WATER BEND
	WATER TEE
	WATER CROSS
	WATER SLEEVE
	WATER CAP / PLUG
	RIP RAP
	DRAINAGE FLOW
	TRAFFIC SIGNS




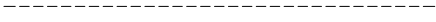


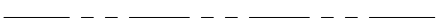







SURVEY SYMBOLS

	BENCHMARK LOCATION		CAST IRON MONUMENT
	CONTROL POINT		STONE MONUMENT
	MONUMENT FOUND		








EXISTING TOPOGRAPHIC LINES

	RETAINING WALL
	FENCE
	FENCE-DECORATIVE
	GUARD RAIL
	TREE LINE
	BUSH LINE


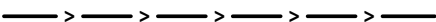




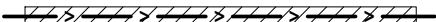
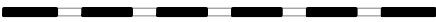


SURVEY LINES

	CONTROLLED ACCESS
	BOUNDARY
	CENTERLINE
	EXISTING EASEMENT LINE
	PROPOSED EASEMENT LINE
	EXISTING LOT LINE
	PROPOSED LOT LINE
	EXISTING RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY
	SETBACK LINE
	SECTION LINE
	QUARTER LINE
	SIXTEENTH LINE
	TEMPORARY EASEMENT






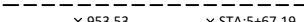
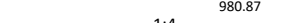

EXISTING UTILITY LINES

	FORCEMAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE


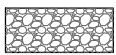

PROPOSED UTILITY LINES

	FORCEMAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE
	PIPE CASING
	TRENCHLESS PIPE (PLAN VIEW)
	TRENCHLESS PIPE (PROFILE VIEW)

GRADING INFORMATION

	EXISTING CONTOUR MINOR
	EXISTING CONTOUR MAJOR
	PROPOSED CONTOUR MINOR
	PROPOSED CONTOUR MAJOR
	PROPOSED GRADING LIMITS / SLOPE LIMITS
	PROJECT LIMITS
	PROPOSED SPOT ELEVATION
	RISE:RUN (SLOPE)








HATCH PATTERNS

	BITUMINOUS		GRAVEL
	CONCRETE		



EXISTING PRIVATE UTILITY LINES

NOTE:  
EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY 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"

	UNDERGROUND FIBER OPTIC
	UNDERGROUND ELECTRIC
	UNDERGROUND GAS
	UNDERGROUND COMMUNICATION
	OVERHEAD ELECTRIC
	OVERHEAD COMMUNICATION
	OVERHEAD UTILITY

UTILITIES IDENTIFIED WITH A QUALITY LEVEL :

LINE TYPES FOLLOW THE FORMAT: UTILITY TYPE - QUALITY LEVEL  
EXAMPLE:  G-A  G-A UNDERGROUND GAS, QUALITY LEVEL A  
UTILITY QUALITY LEVEL (A,B,C,D) DEFINITIONS CAN BE FOUND IN CI/ASCE 38-02.

UTILITY QUALITY LEVELS:

QUALITY LEVEL D: PROVIDES THE MOST BASIC LEVEL OF INFORMATION. IT INVOLVES COLLECTING DATA FROM EXISTING UTILITY RECORDS. RECORDS MAY INCLUDE AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICES MAPS, EXISTING GEOGRAPHIC INFORMATION SYSTEM DATABASES, CONSTRUCTION PLANS, ETC.

QUALITY LEVEL C: INVOLVES SURVEYING VISIBLE SUBSURFACE UTILITY STRUCTURES SUCH AS MANHOLES, HAND-HOLES, UTILITY VALVES AND METERS, FIRE HYDRANTS, PEDESTALS AND UTILITY MARKERS, AND THEN CORRELATING THE INFORMATION WITH EXISTING UTILITY RECORDS TO CREATE COMPOSITE DRAWINGS. INCLUDES QUALITY LEVEL D ACTIVITIES.

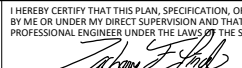
QUALITY LEVEL B: INVOLVES DESIGNATING THE HORIZONTAL POSITION OF SUBSURFACE UTILITIES THROUGH SURFACE DETECTION METHODS AND COLLECTING THE INFORMATION THROUGH A SURVEY METHOD. INCLUDES QUALITY LEVEL C AND D TASKS.

QUALITY LEVEL A: PROVIDES THE HIGHEST LEVEL OF ACCURACY. IT INVOLVES LOCATING OR POTHOLING UTILITIES AS WELL AS ACTIVITIES IN QUALITY LEVELS B, C, AND D. THE LOCATED FACILITY INFORMATION IS SURVEYED AND MAPPED AND THE DATA PROVIDES PRECISE PLAN AND PROFILE INFORMATION.

ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE	GRAV	GRAVEL	RSC	RIGID STEEL CONDUIT
ADJ	ADJUST	GU	GUTTER	RT	RIGHT
ALT	ALTERNATE	GV	GATE VALVE	SAN	SANITARY SEWER
B-B	BACK TO BACK	HDPE	HIGH DENSITY POLYETHYLENE	SCH	SCHEDULE
BIT	BITUMINOUS	HH	HANDHOLE	SERV	SERVICE
BLDG	BUILDING	HP	HIGH POINT	SHLD	SHOULDER
BMP	BEST MANAGEMENT PRACTICE	HWL	HIGH WATER LEVEL	STA	STATION
BR	BEGIN RADIUS	HYD	HYDRANT	STD	STANDARD
BV	BUTTERFLY VALVE	I	INVERT	STM	STORM SEWER
CB	CATCH BASIN	K	CURVE COEFFICIENT	TC	TOP OF CURB
C&G	CURB AND GUTTER	L	LENGTH	TE	TEMPORARY EASEMENT
CIP	CAST IRON PIPE	LO	LOWEST OPENING	TEMP	TEMPORARY
CIPP	CURED-IN-PLACE PIPE	LP	LOW POINT	TNH	TOP NUT HYDRANT
CL	CENTER LINE	LT	LEFT	TP	TOP OF PIPE
CL	CLASS	MAX	MAXIMUM	TYP	TYPICAL
CLVT	CULVERT	MH	MANHOLE	VCP	VITRIFIED CLAY PIPE
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	VERT	VERTICAL
C.O.	CHANGE ORDER	MR	MID RADIUS	VPC	VERTICAL POINT OF CURVE
COMM	COMMUNICATION	NIC	NOT IN CONTRACT	VPI	VERTICAL POINT OF INTERSECTION
CON	CONCRETE	NMC	NON-METALLIC CONDUIT	VPT	VERTICAL POINT OF TANGENT
CSP	CORRUGATED STEEL PIPE	NTS	NOT TO SCALE	WM	WATERMAIN
DIA	DIAMETER	NWL	NORMAL WATER LEVEL		
DIP	DUCTILE IRON PIPE	OHW	ORDINARY HIGH WATER LEVEL		
DWY	DRIVEWAY	PC	POINT OF CURVE	AC	ACRES
E	EXTERNAL CURVE DISTANCE	PCC	POINT OF COMPOUND CURVE	CF	CUBIC FEET
ELEC	ELECTRIC	PE	PERMANENT EASEMENT	CV	COMPACTED VOLUME
ELEV	ELEVATION	PED	PEDESTRIAN, PEDESTAL	CY	CUBIC YARD
EOF	EMERGENCY OVERFLOW	PERF	PERFORATED PIPE	EA	EACH
ER	END RADIUS	PERM	PERMANENT	EV	EXCAVATED VOLUME
ESMT	EASEMENT	PI	POINT OF INTERSECTION	LB	POUND
EX	EXISTING	PL	PROPERTY LINE	LF	LINEAR FEET
FES	FLARED END SECTION	PRC	POINT OF REVERSE CURVE	LS	LUMP SUM
F-F	FACE TO FACE	PT	POINT OF TANGENT	LV	LOOSE VOLUME
FF	FINISHED FLOOR	PVC	POLYVINYL CHLORIDE PIPE	SF	SQUARE FEET
F&I	FURNISH AND INSTALL	PVMT	PAVEMENT	SV	STOCKPILE VOLUME
FM	FORCEMAIN	R	RADIUS	SY	SQUARE YARD
FO	FIBER OPTIC	R/W	RIGHT-OF-WAY		
F.O.	FIELD ORDER	RCP	REINFORCED CONCRETE PIPE		
GRAN	GRANULAR	RET	RETAINING		

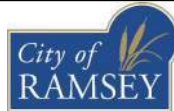
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

  
ZACHARY LINGL  
LIC. NO. 56344 DATE 5/31/2023



**BOLTON & MENK**

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RAMSEY, MINNESOTA 55303  
Phone: (763) 433-2851  
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www.bolton-menk.com



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ZFL			
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CLIENT PROJ. NO.			
23-04			

CITY OF RAMSEY, MINNESOTA

167TH AVENUE RECONSTRUCTION SAP 199-102-007

LEGEND

SHEET  
2  
OF  
57



STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	NOTES	MnDOT SPEC NO.	ITEM	UNIT	TOTAL	STATE AID PARTICIPATING 199-102-007	
						ROADWAY	STORM SEWER
1		2021.501	MOBILIZATION	LUMP SUM	1	0.94	0.06
2		2104.502	REMOVE DRAINAGE STRUCTURE	EACH	5	5	
3	(1)	2104.503	REMOVE PIPE CULVERTS	LIN FT	430	430	
4	(1)	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	415	415	
5		2104.503	REMOVE CURB AND GUTTER	LIN FT	1,575	1,575	
6		2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	38	38	
7		2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	885	885	
8		2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	550	550	
9		2104.504	REMOVE CONCRETE PAVEMENT	SQ YD	166	166	
10		2105.607	GRANULAR BORROW (CV)	CU YD	200	200	
11		2105.607	CHANNEL AND POND EXCAVATION	CU YD	413	413	
12	(2)	2106.507	EXCAVATION - COMMON (P) (EV)	CU YD	1,148	1,148	
13		2106.507	COMMON EMBANKMENT (P) (CV)	CU YD	230	230	
14		2106.507	EXCAVATION - SUBGRADE (EV)	CU YD	320	320	
15		2106.601	DEWATERING	LMUP SUM	1	1	
16		2106.607	HAUL AND STOCKPILE BITUMINOUS MATERIAL	CU YD	757	757	
17		2118.507	AGGREGATE SURFACING (CV) CLASS 5 (DRIVEWAYS)	CU YD	81	81	
18		2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	24	24	
19		2130.523	WATER	MGAL	900	900	
20		2211.507	AGGREGATE BASE (CV) CLASS 5 MODIFIED	CU YD	320	320	
21		2211.607	AGGREGATE BASE (CV) FROM STOCKPILE	CU YD	299	299	
22	(3) (4)	2215.504	FULL DEPTH RECLAMATION	SQ YD	9,965	9,965	
23		2215.504	STABILIZED FULL DEPTH RECLAMATION	SQ YD	18,250	18,250	
24	(5)	2215.509	BITUMINOUS MATERIAL FOR MIXTURE	TON	230	230	
25		2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)	TON	3,560	3,560	
26		2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,C)	TON	4,420	4,420	
27		2501.502	18" RC PIPE APRON	EACH	15	14	1
28		2501.502	24" RC PIPE APRON	EACH	2	2	
29		2502.604	4" INSULATION	SQ YD	4	4	
30		2503.503	15" RC PIPE SEWER CLASS V	LIN FT	75		75
31		2503.503	18" RC PIPE SEWER CLASS V	LIN FT	780	430	350
32		2503.503	24" RC PIPE SEWER CLASS III	LIN FT	66	66	
33		2504.602	ADJUST VALVE BOX	EACH	11	11	
34		2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL	EACH	1		1
35		2506.502	CONST DRAINAGE STRUCTURE DES 48-4020	EACH	3		3
36		2511.507	RANDOM RIPRAP CL III	CU YD	10		10
37		2521.518	6" CONCRETE WALK	SQ FT	308	308	
38		2531.503	CONCRETE CURB & GUTTER DES B618	LIN FT	1,580	1,580	
39		2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	120	120	
40		2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.94	0.06
41		2563.618	TRUNCATED DOMES	SQ FT	76	76	
42		2573.502	STORM DRAIN INLET PROTECTION	EACH	3	3	
43		2573.503	SILT FENCE, TYPE MS	LIN FT	3,785	3,785	
44		2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	300	300	
45		2574.507	COMMON TOPSOIL BORROW	CU YD	2,200	2,200	
46		2574.508	FERTILIZER TYPE 3	POUND	1,050	1,050	
47		2575.504	ROLLED EROSION PREVENTION CATEGORY 20	SQ YD	2,140	2,140	
48		2575.505	SEEDING	ACRE	4	4	
49		2575.508	SEEDING MIXTURE 25-141	POUND	170	170	
50		2575.508	SEEDING MIXTURE 25-151	POUND	130	130	
51		2575.508	SEEDING MIXTURE 33-261	POUND	30	30	
52		2575.508	HYDRAULIC BONDED FIBER MATRIX	POUND	11,760	11,760	
53		2582.503	4" BROKEN LINE MULTI COMP	LIN FT	1,168	1,168	
54		2582.503	4" SOLID LINE MULTI COMP	LIN FT	3,112	3,112	
55		2582.518	PAVEMENT MESSAGE MULTI COMP	SQ FT	400	400	

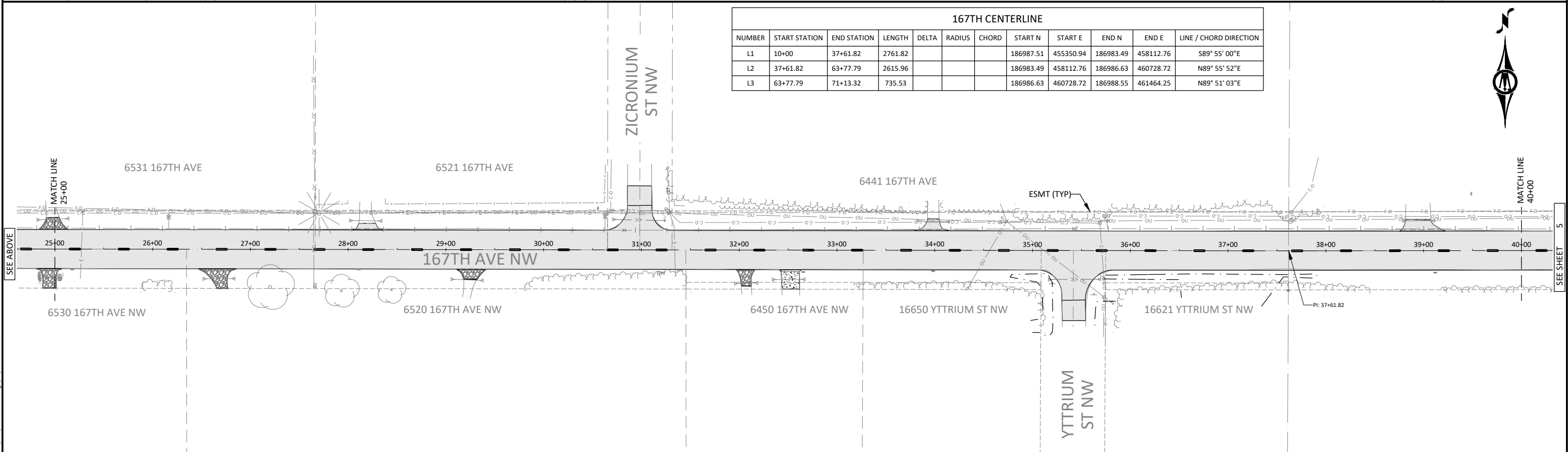
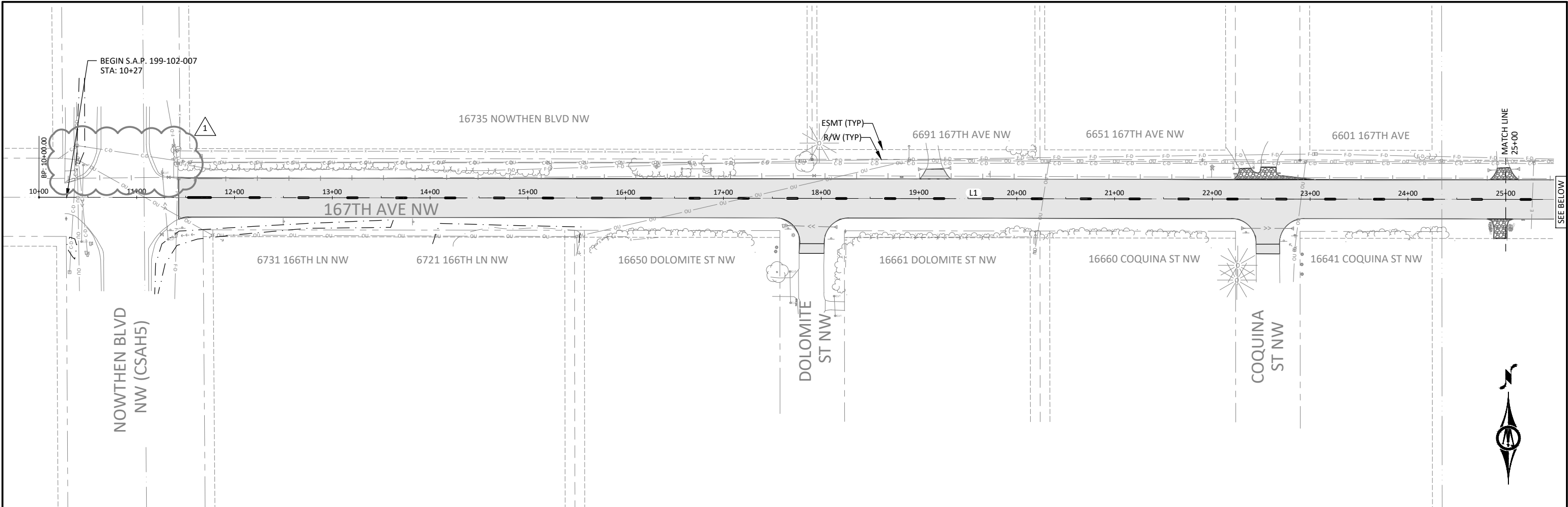
- (1) ITEM INCLUDES APRON LENGTH
- (2) INCLUDES TOPSOIL STRIPPING & STOCKPILING
- (3) AGGREGATE STOCKPILE LOCATION: PUBLIC WORKS, 14199 JASPER STREET NW
- (4) USABLE STOCKPILE LOCATION: 16600 ST. FRANCIS BLVD
- (5) QUANTITY BASED ON 4% ASPHALT CONTENT. SEE ENGINEERED EMULSION MIX DESIGN.

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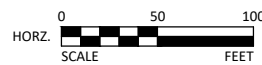
BASIS FOR ESTIMATED QUANTITIES	
BID ITEM	BASIS
TYPE SP WEARING COURSE MIX	115 LBS/SY-IN
BITUMINOUS MATERIAL FOR MIXTURE (5)	24.1 LB/SY
BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL/SY
AGGREGATE BASE CLASS 5	110 LBS/SY-IN
HYDRAULIC BONDED FIBER MATRIX	3500 LBS/ACRE
FERTILIZER TYPE 3	300 LBS/ACRE
SEED MIX 33-261	52 LBS/ACRE
SEED MIX 25-141	88 LBS/ACRE
SEED MIX 25-151	180 LBS/ACRE

STANDARD PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGN G & H
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN WITH OR WITHOUT TRAFFIC LOADS (2 SHEETS)
4022A	MANHOLE OR CATCH BASIN COVER - 3' x 2' OPENING - FOR USE WITH OR WITHOUT TRAFFIC LOADS
4026B	CONCRETE ENCASED ADJUSTING RINGS
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B & V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB & GUTTER)
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
8150C	INSTALLATION OF CULVERT MARKERS





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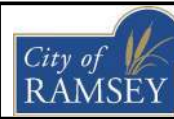


I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ZACHARY LINGL  
LIC. NO. 56344 DATE 5/31/2023



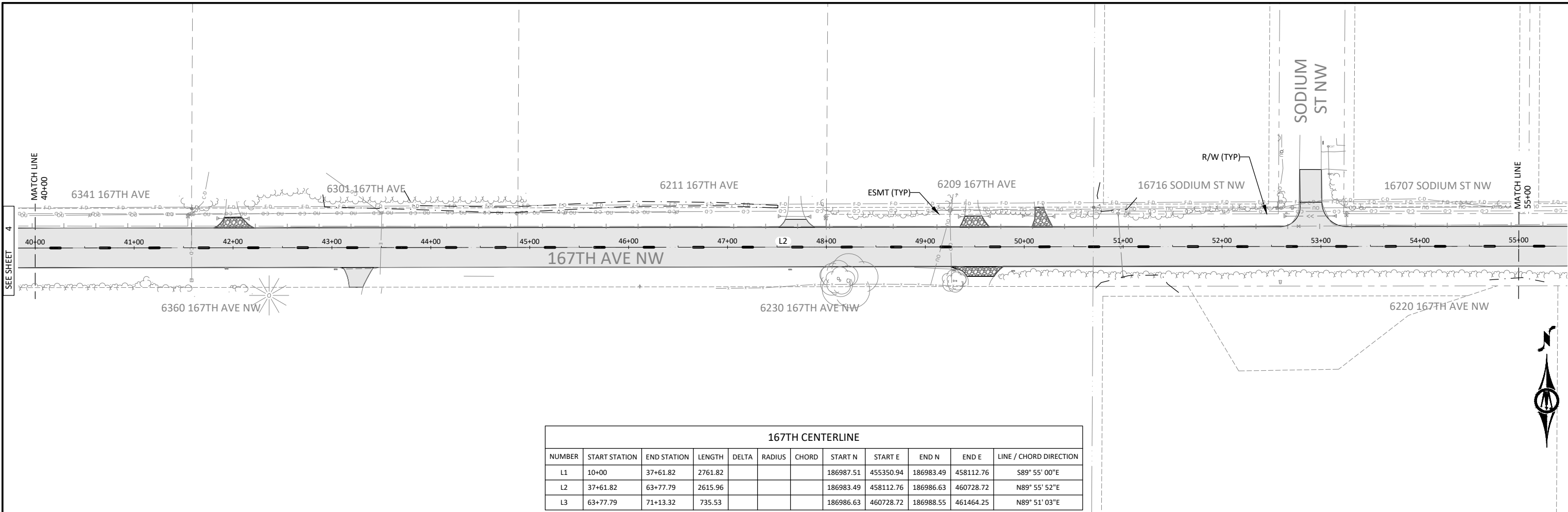
7533 SUNWOOD DR NW, SUITE 206  
RAMSEY, MINNESOTA 55303  
Phone: (763) 433-2851  
Email: Ramsey@bolton-menk.com  
www.bolton-menk.com



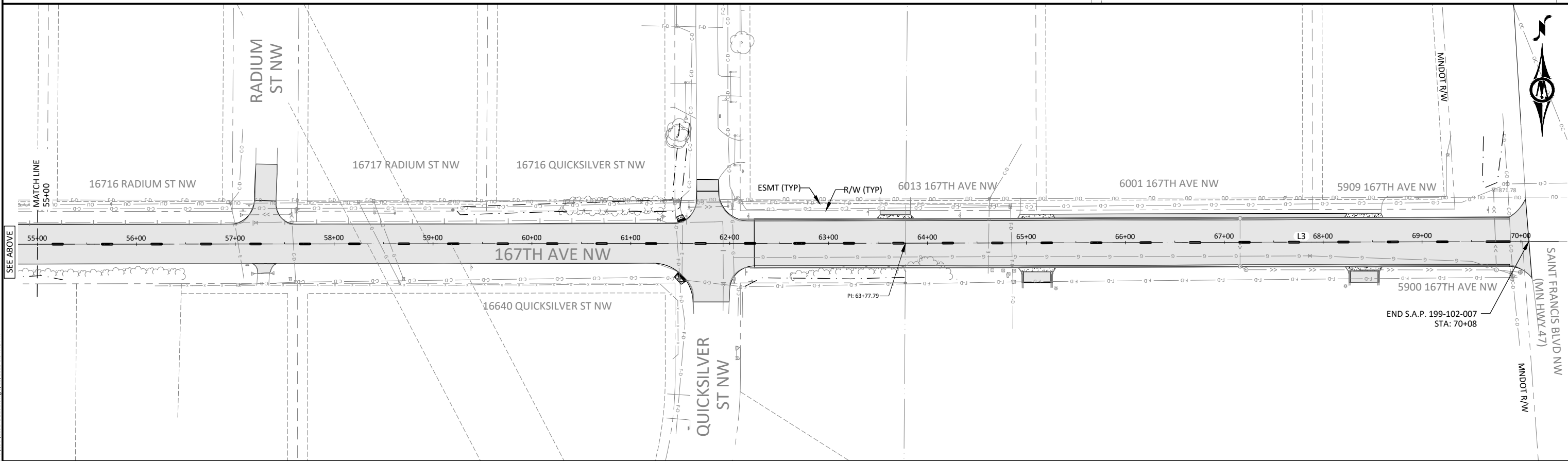
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CHECKED	KPK		
CLIENT PROJ. NO.	23-04		

CITY OF RAMSEY, MINNESOTA	SHEET 4
167TH AVENUE RECONSTRUCTION SAP 199-102-007	OF
ALIGNMENT TABULATION	57

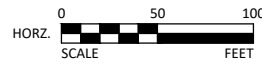




167TH CENTERLINE											
NUMBER	START STATION	END STATION	LENGTH	DELTA	RADIUS	CHORD	START N	START E	END N	END E	LINE / CHORD DIRECTION
L1	10+00	37+61.82	2761.82				186987.51	455350.94	186983.49	458112.76	S89° 55' 00"E
L2	37+61.82	63+77.79	2615.96				186983.49	458112.76	186986.63	460728.72	N89° 55' 52"E
L3	63+77.79	71+13.32	735.53				186986.63	460728.72	186988.55	461464.25	N89° 51' 03"E



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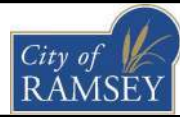


I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

*Zachary Ling*  
ZACHARY LING  
LIC. NO. 56344 DATE 5/31/2023



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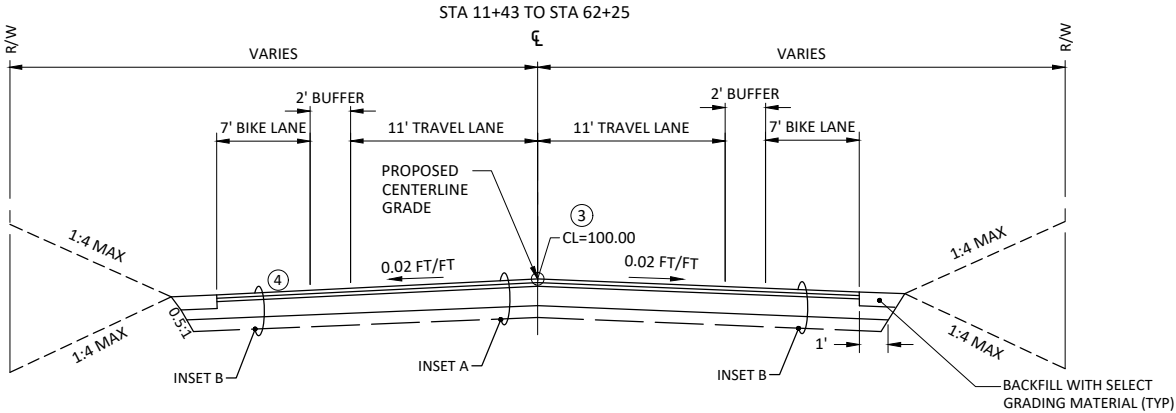
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CHECKED	KPK		
CLIENT PROJ. NO.	23-04		

CITY OF RAMSEY, MINNESOTA	SHEET 5 OF 57
167TH AVENUE RECONSTRUCTION SAP 199-102-007	
ALIGNMENT TABULATION	



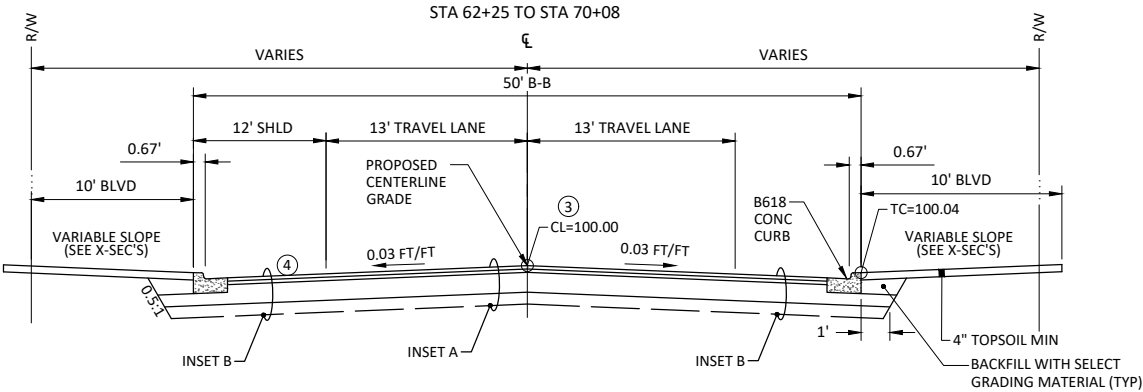
S.A.P. 199-102-007 TYPICAL SECTION

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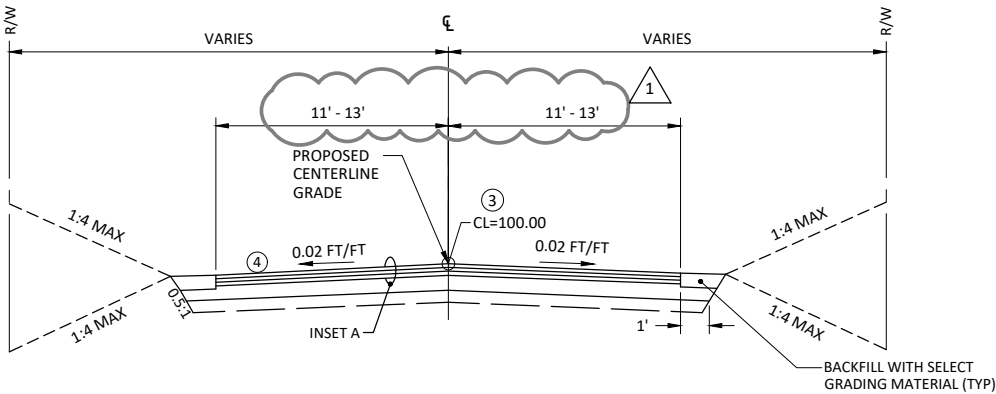


S.A.P. 199-102-007 TYPICAL SECTION

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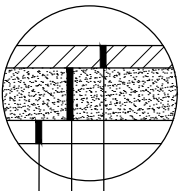


TYPICAL SECTION  
INTERSECTING STREETS  
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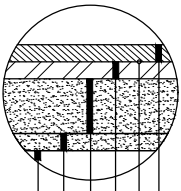
NOTES:

1. ANY VARIATIONS FROM THE TYPICAL SECTION DIMENSIONS ARE SHOWN ON THE PLAN DRAWINGS
2. PAVEMENT SLOPES AT INTERSECTION LOCATIONS MAY VARY FROM THOSE SHOWN ON THE TYPICAL SECTION
3. ELEVATIONS SHOWN ARE RELATIVE TO C/L AND DO NOT RELATE TO ACTUAL CONSTRUCTION GRADES
4. BITUMINOUS PAVEMENT SHALL BE INSTALLED ON COMPACTED, IN PLACE, RECLAIM MATERIAL



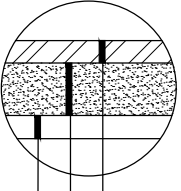
5.7" EXISTING BITUMINOUS (AVERAGE)  
5.25" EXISTING AGGREGATE BASE (AVERAGE)  
EXISTING SUBGRADE

EXISTING PAVEMENT SECTION  
BASED ON GEOTECHNICAL REPORT



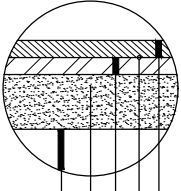
2" TYPE SP 9.5 WEARING COURSE (SPWEA340C) (2360)  
BITUMINOUS TACK COAT (2357) (INCIDENTAL)  
2.5" TYPE SP 12.5 NON WEARING COURSE (SPNWB330C) (2360)  
6" IN PLACE STABILIZED RECLAIM MATERIAL AGGREGATE  
2" IN PLACE RECLAIM MATERIAL AGGREGATE  
EXISTING SUBGRADE

INSET A - BITUMINOUS ROADWAY  
NOT TO SCALE



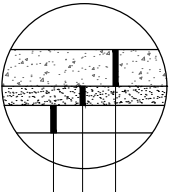
2" TYPE SP 9.5 WEARING COURSE (SPWEA340C) (2360) (MATCH EXISTING)  
4" AGGREGATE BASE CL 5, MOD (2211) (SEE STR-26)  
SUBGRADE PREPARATION (2112) (INCIDENTAL)

BITUMINOUS DRIVEWAY  
NOT TO SCALE



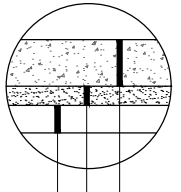
2" TYPE SP 9.5 WEARING COURSE (SPWEA340C) (2360)  
BITUMINOUS TACK COAT (2357) (INCIDENTAL)  
2.5" TYPE SP 12.5 NON WEARING COURSE (SPNWB330C) (2360)  
8" IN PLACE RECLAIM MATERIAL AGGREGATE  
EXISTING SUBGRADE

INSET B - BIKE LANE/SHOULDER PAVEMENT AREA  
NOT TO SCALE



6" CONCRETE WALK (2521)  
4" AGGREGATE BASE CL 5, MOD (2211) (SEE STR-26)  
SUBGRADE PREPARATION (2112) (INCIDENTAL)

PEDESTRIAN RAMP  
NOT TO SCALE



6" CONCRETE WALK (2521)  
4" AGGREGATE BASE CL 5, MOD (2211) (SEE STR-26)  
SUBGRADE PREPARATION (2112) (INCIDENTAL)

CONCRETE DRIVEWAY  
NOT TO SCALE



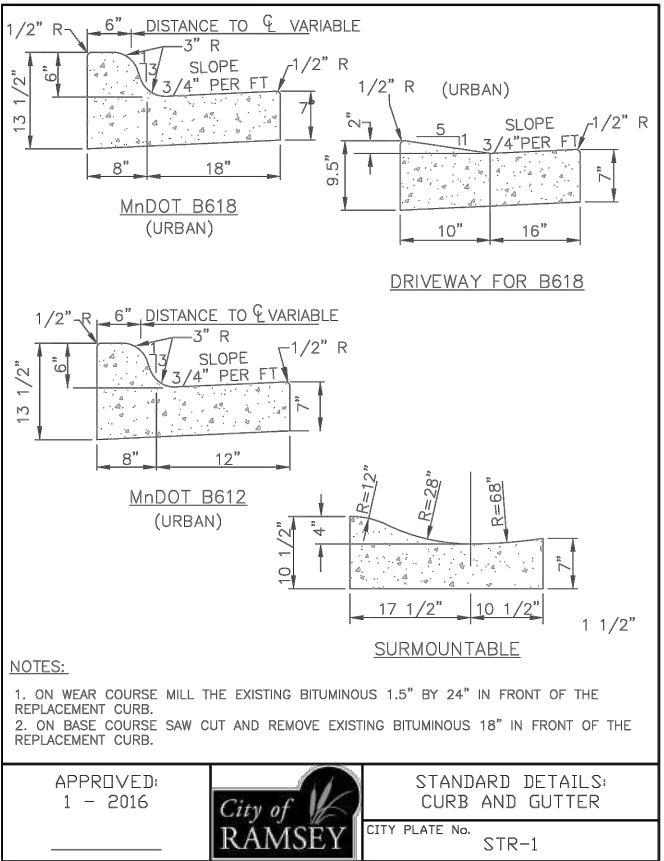
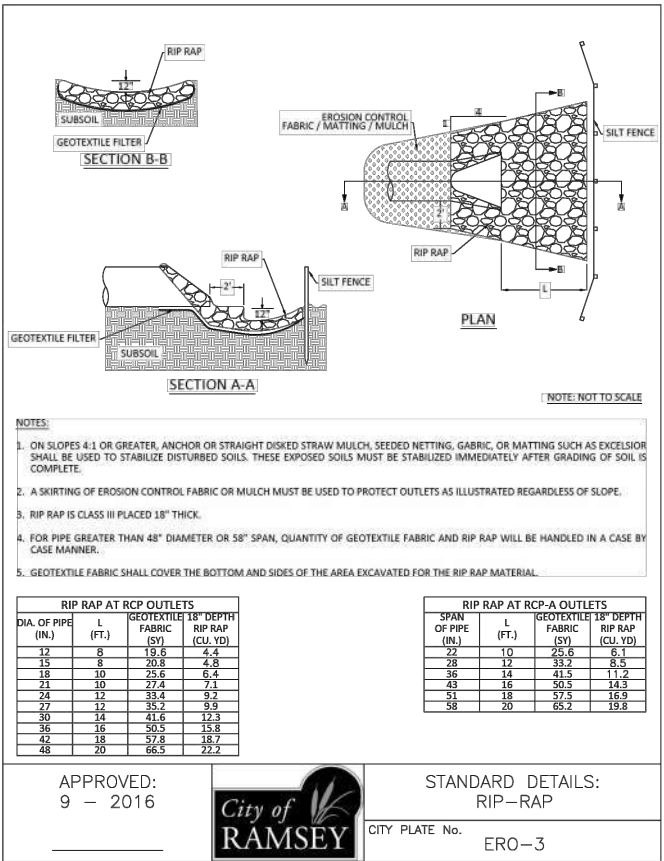
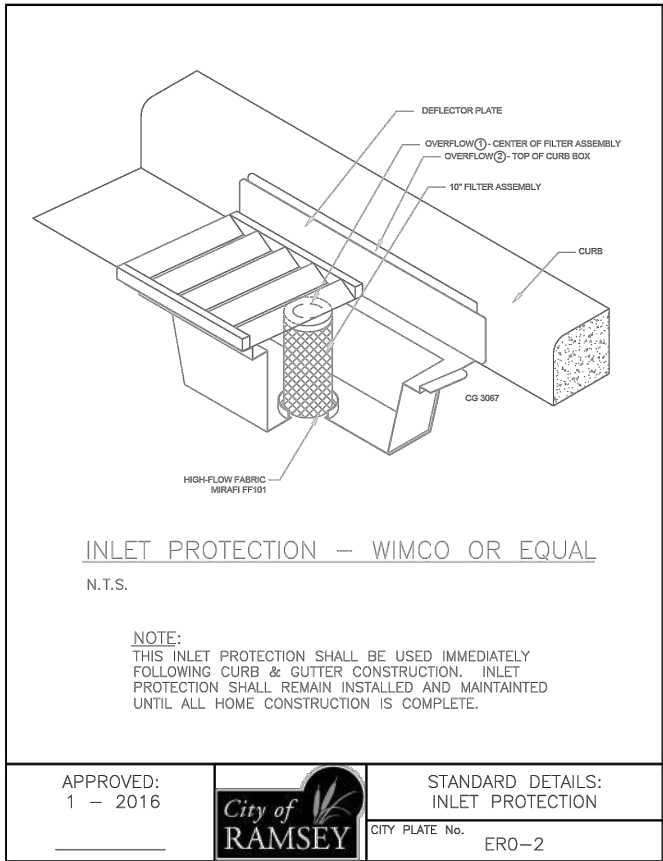
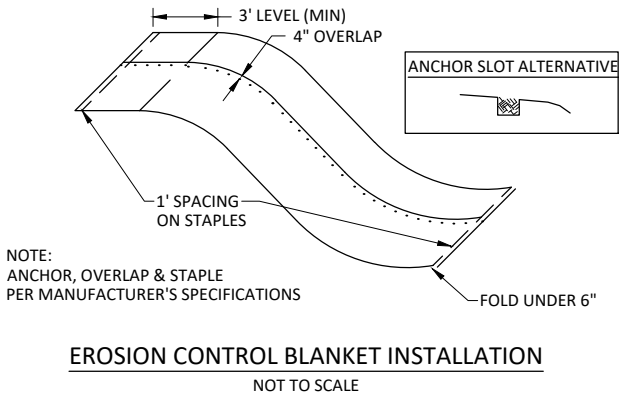
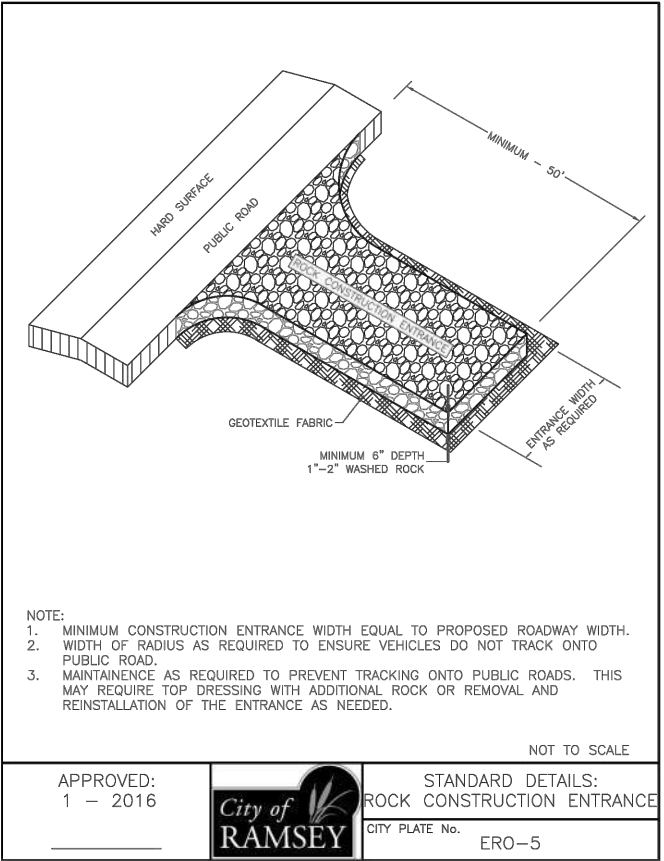
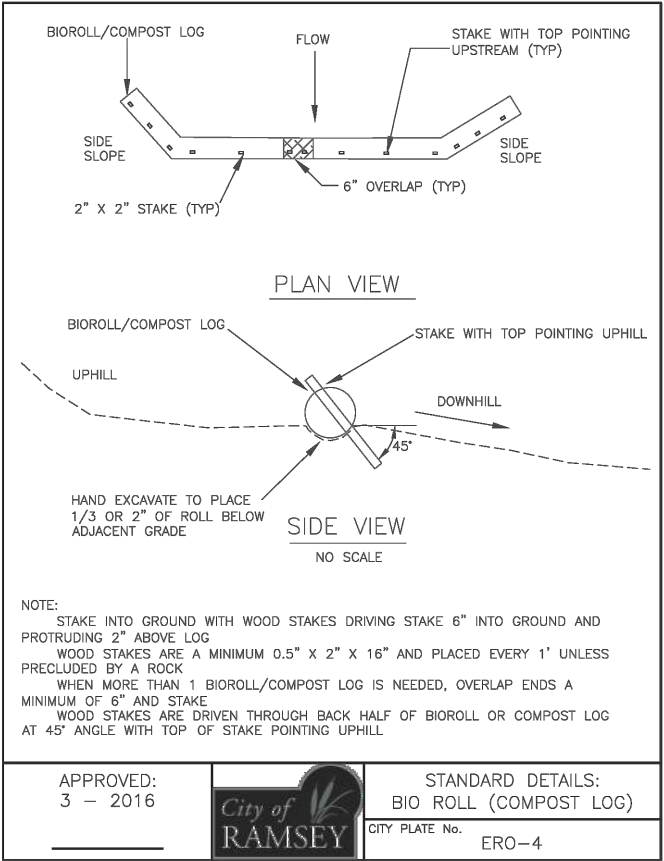
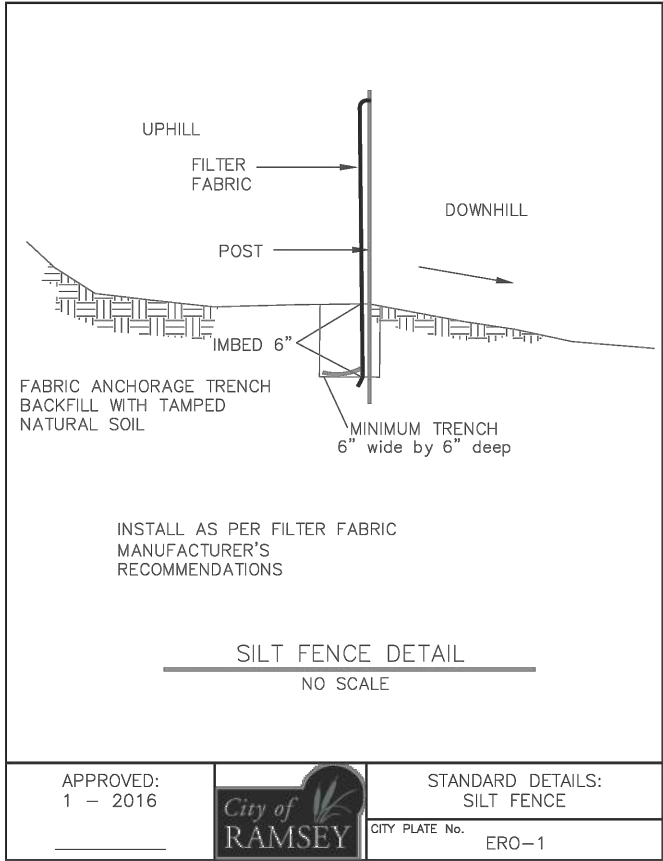


TABLE A MODIFIED CLASS 5 SPECIFICATIONS		
% PASSING		
1"	100	
3/4"	90 - 100	
3/8"	50 - 80	
No.4	35 - 70	
No.10	20 - 60	
No.40	10 - 35	
No.200	5 - 10	

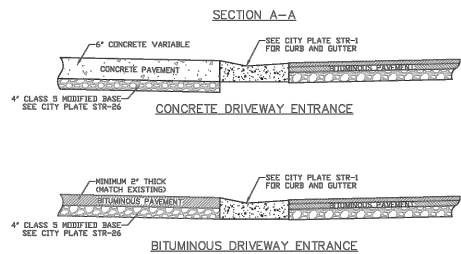
NOTES:  
1. THE AGGREGATE BASE CONSTRUCTION WILL BE ACCEPTED FOR PAYMENT  
IN ACCORDANCE WITH THE PROVISIONS IN TABLE A.  
2. IF THE AGGREGATE BASE FAILS TO MEET THE REQUIREMENTS OF TABLE  
A THE MATERIAL CAN BE CORRECTED IN PLACE OR REMOVED AND  
REPLACED WITH MATERIAL THAT MEET THE REQUIREMENTS OF TABLE A.  
3. IN THE EVENT THAT RECYCLED MATERIAL IS USE IT MUST MEET MNDOT  
REQUIREMENTS FOR RECYCLED BASE.

APPROVED:  
2 - 2003

CITY OF RAMSEY

STANDARD DETAILS:  
MODIFIED CLASS 5  
SPECIFICATIONS

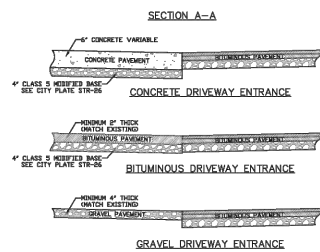
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APPROVED:  
1 - 2016



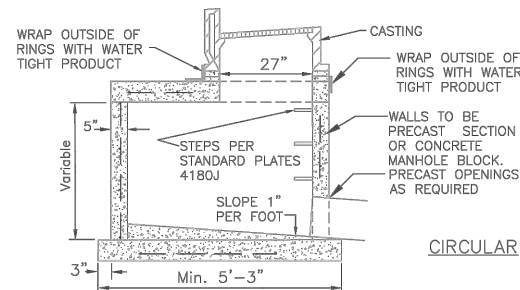
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APPROVED  
2 - 2019



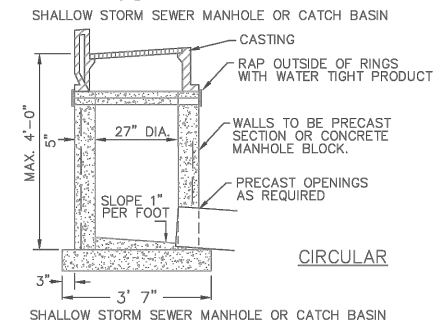
CITY PLATE No. STR-33



APPROVED:  
4 - 2007



CITY PLATE No. STO-1



APPROVED:  
6 - 2008



CITY PLATE No. STO-2



CITY PLATE No. ST0-5

APPROVED:  
9 - 2011



CITY PLATE No. STO-6

APPROVED:  
2 - 2006

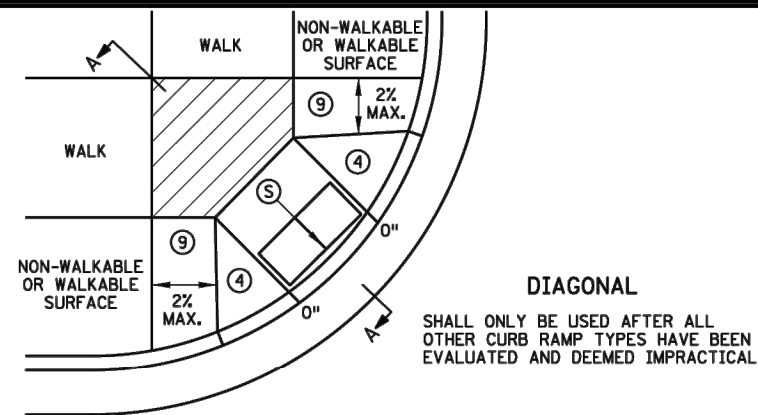
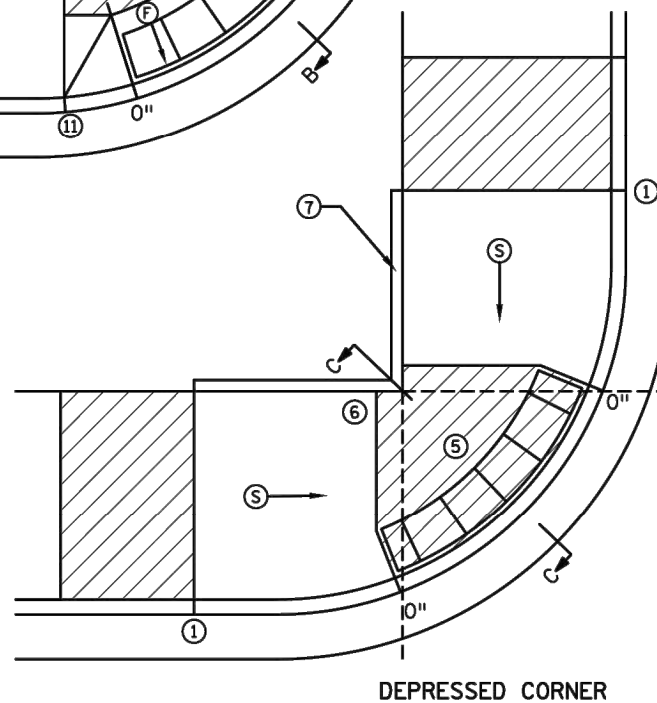
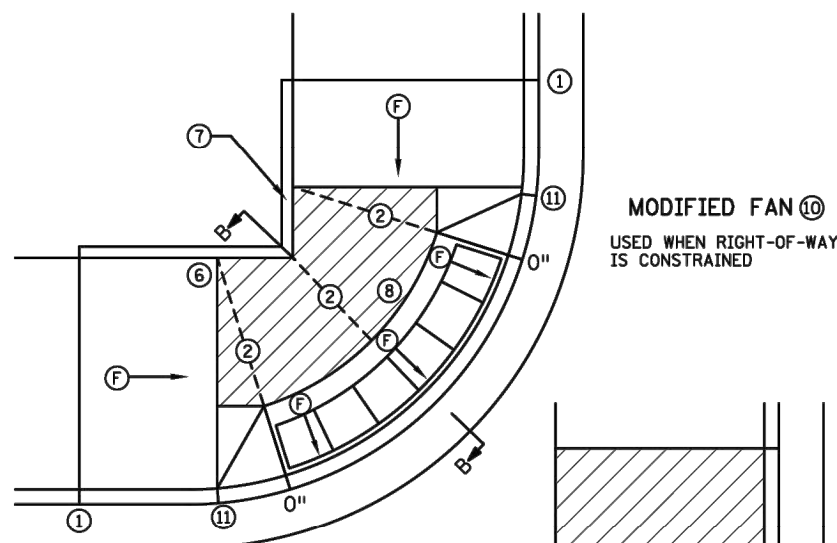
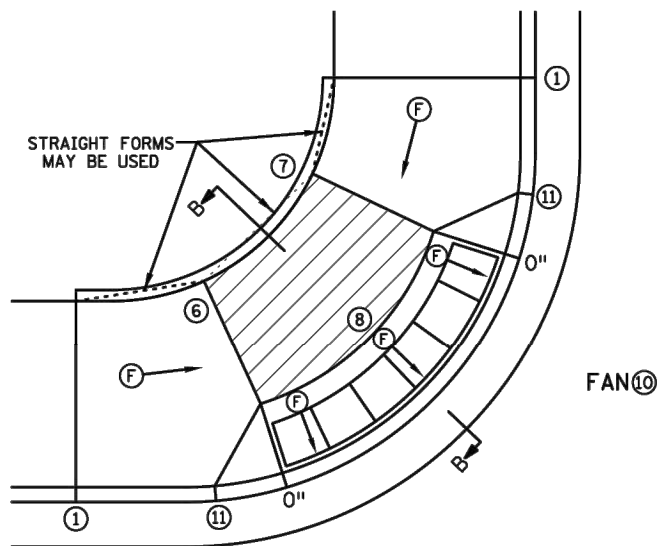
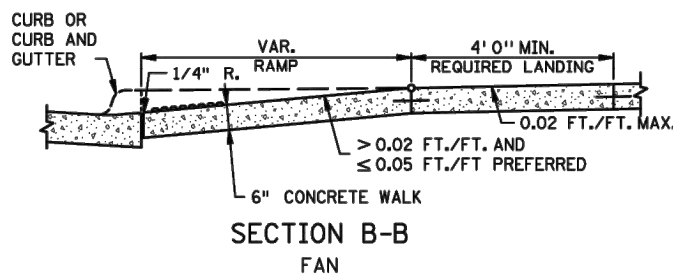
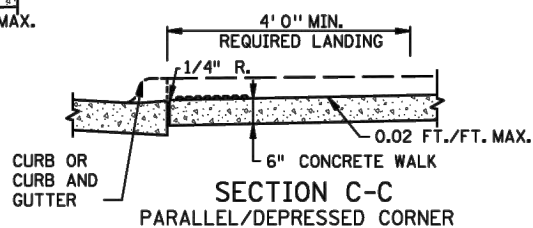
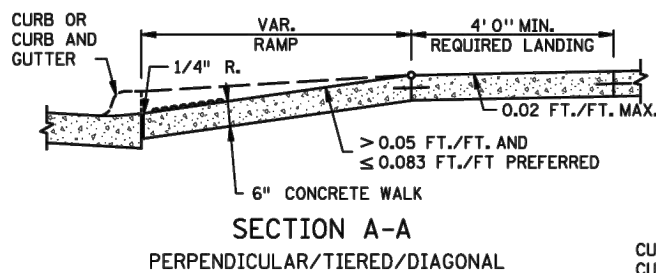
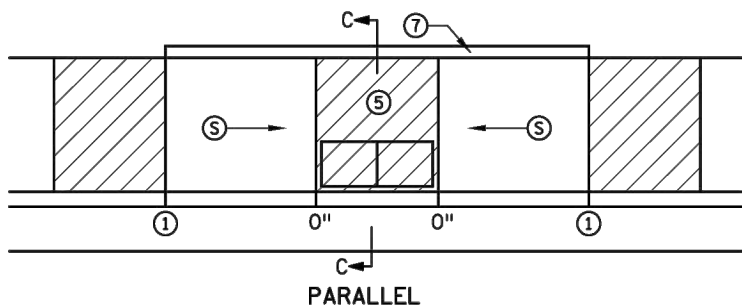
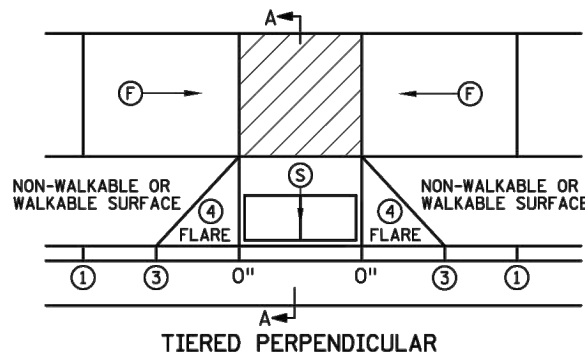
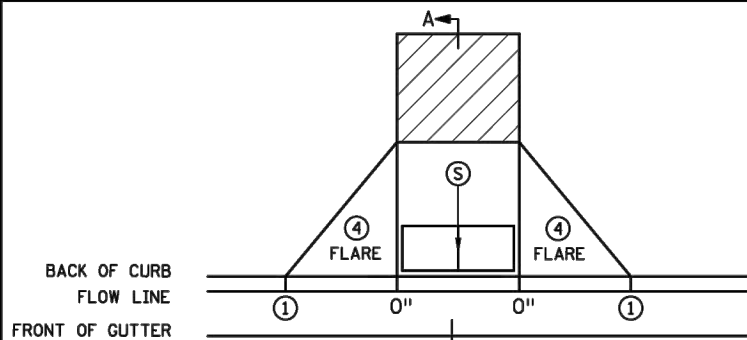


STO-8



STO-13





#### NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR, 1/4" DEEP. VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN 6) BELOW.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

- MATCH FULL HEIGHT CURB.
- 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- PAVE FULL WALK WIDTH.
- "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

#### LEGEND

- THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
- (S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
- X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

Jeffrey Perkins  
OPERATIONS DIVISION

**m**  
MINNESOTA  
DEPARTMENT  
OF  
TRANSPORTATION

STANDARD PLAN 5-297.250 1 OF 6

APPROVED: 11-04-2021  
REVISED:

STATE PROJ. NO.

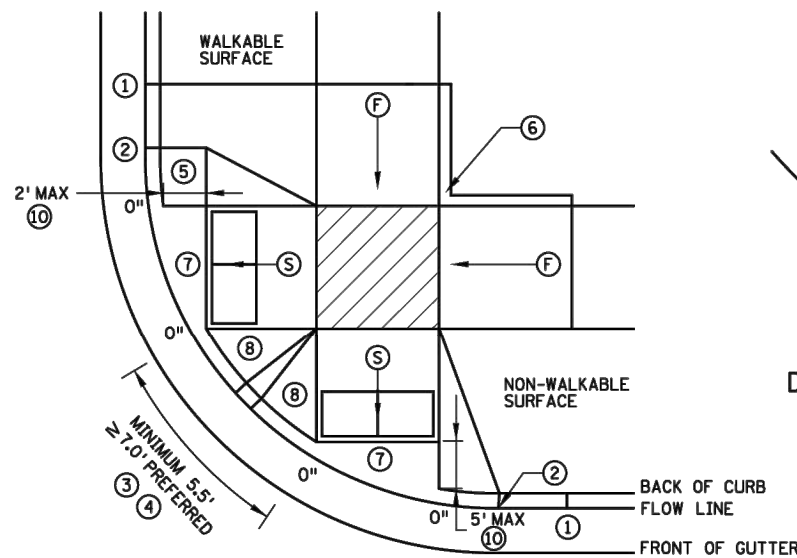
#### PEDESTRIAN CURB RAMP DETAILS

(TH ) SHEET NO. OF SHEETS

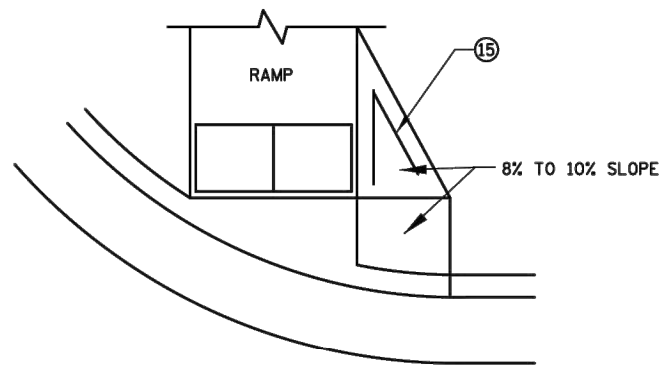
CITY OF RAMSEY, MINNESOTA  
167TH AVENUE RECONSTRUCTION SAP 199-102-007  
MNDOT PEDESTRIAN RAMP DETAILS

SHEET  
9  
OF  
57



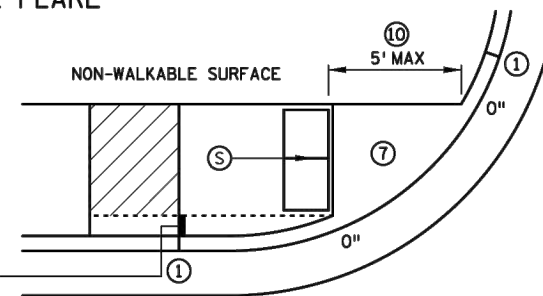


COMBINED DIRECTIONAL

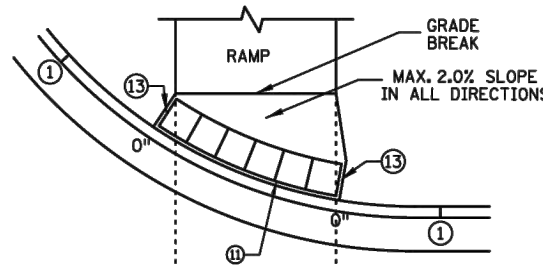


DIRECTIONAL RAMP WALKABLE FLARE

IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.

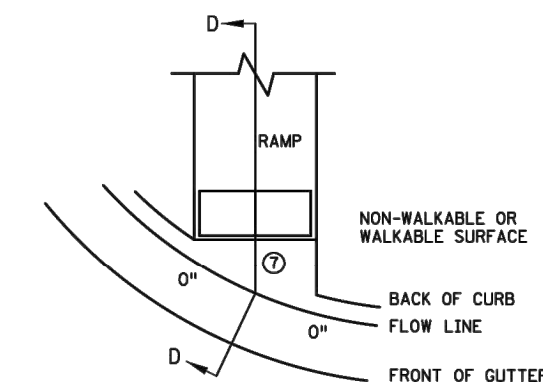


STANDARD ONE-WAY DIRECTIONAL ⑨

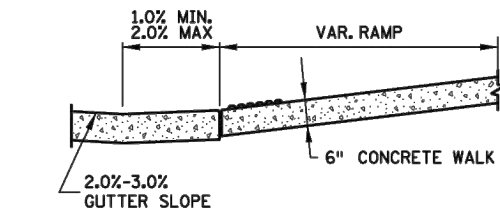


DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

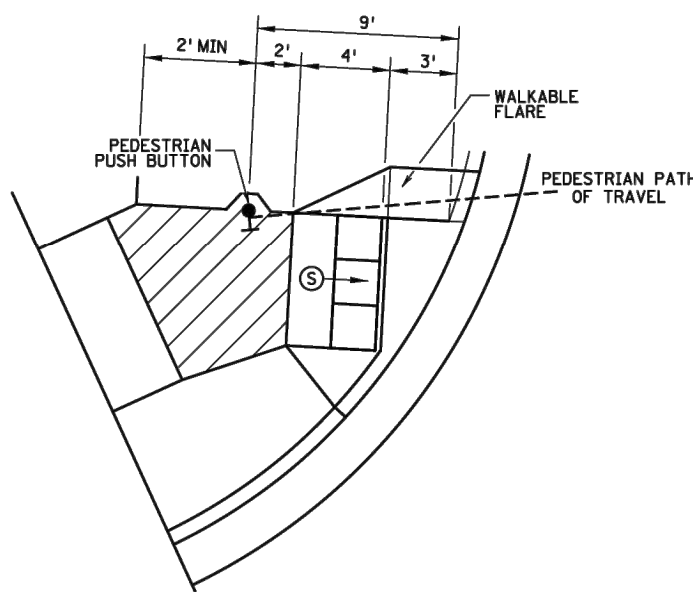
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB  
PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

- ① MATCH FULL CURB HEIGHT.
- ② 3" HIGH CURB WHEN USING A 3' LONG RAMP  
4" HIGH CURB WHEN USING A 4' LONG RAMP.
- ③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)  
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
- ④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
- ⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.
- ⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- ⑧ 8% TO 10% WALKABLE FLARE.
- ⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- ⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- ⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- ⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
- ⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
- ⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

- ⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- ⑥ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- ⑦ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
- X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

Jeffrey Perkins  
OPERATIONS DIVISION



STANDARD PLAN 5-297.250

2 OF 6

THOMAS TYRBUCKI  
STATE DESIGN ENGINEER

APPROVED: 11-04-2021  
REVISED:

STATE PROJ. NO.

PEDESTRIAN CURB RAMP DETAILS

(T.H.) SHEET NO. OF SHEETS

CITY OF RAMSEY, MINNESOTA

167TH AVENUE RECONSTRUCTION SAP 199-102-007

MNDOT PEDESTRIAN RAMP DETAILS

SHEET  
10  
OF  
57

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

ZACHARY LINGL  
LIC. NO. 56344 DATE 5/31/2023

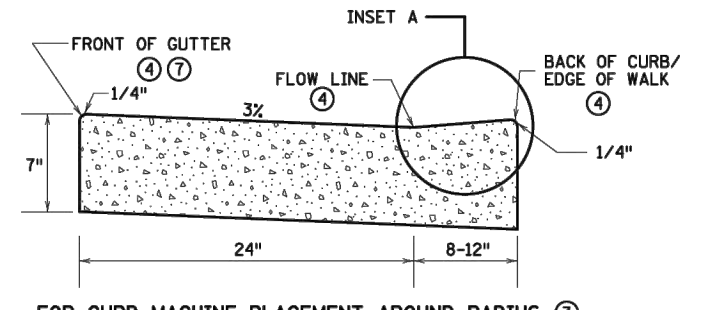
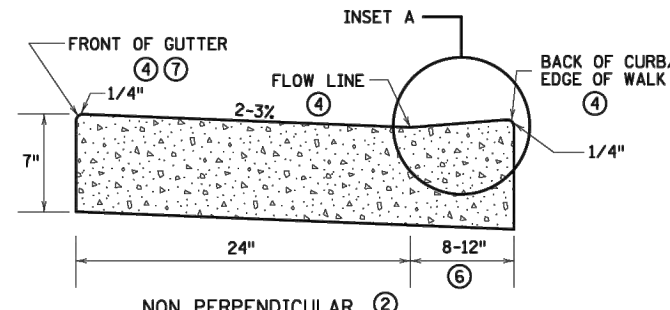
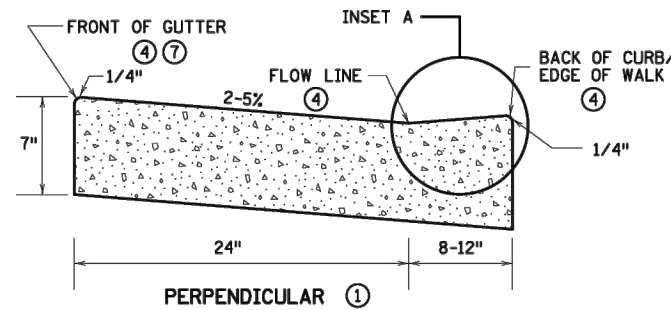
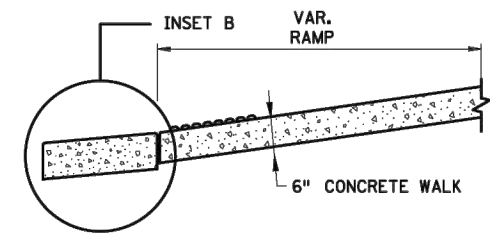


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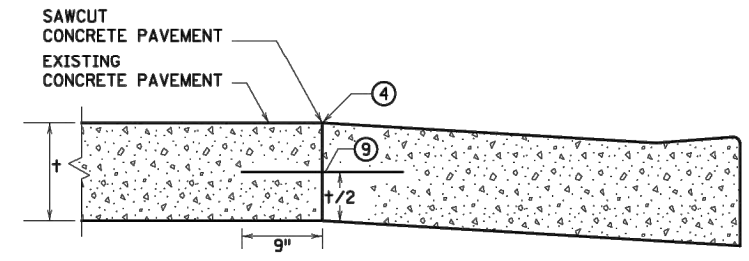
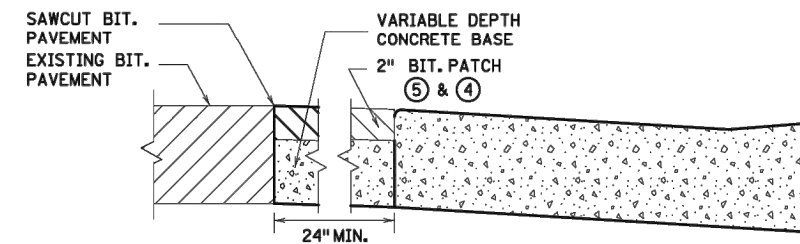
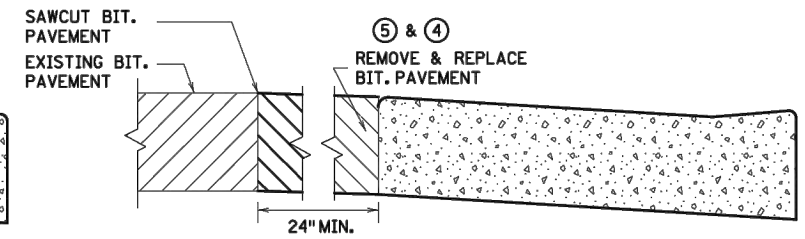
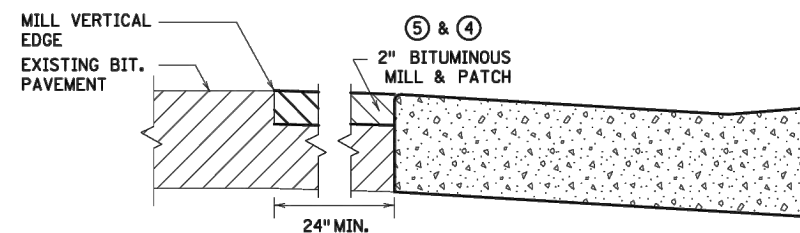
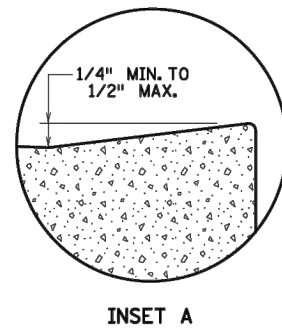
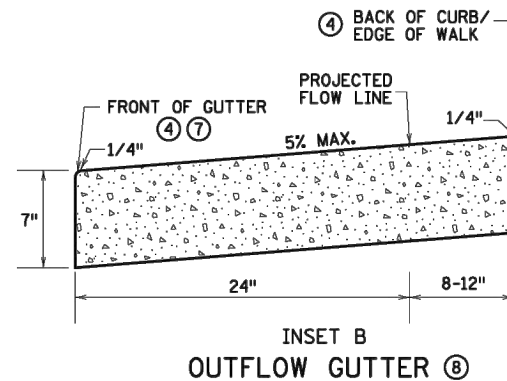


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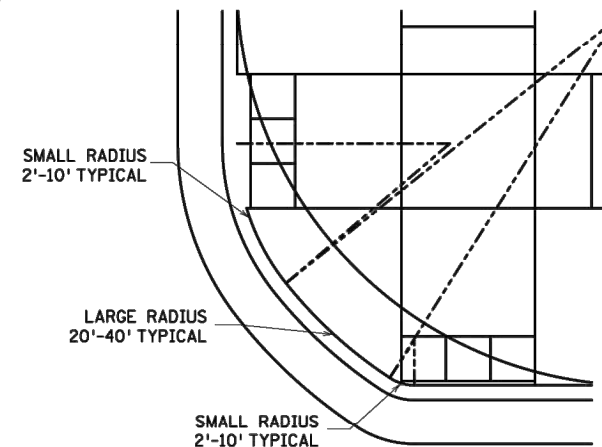
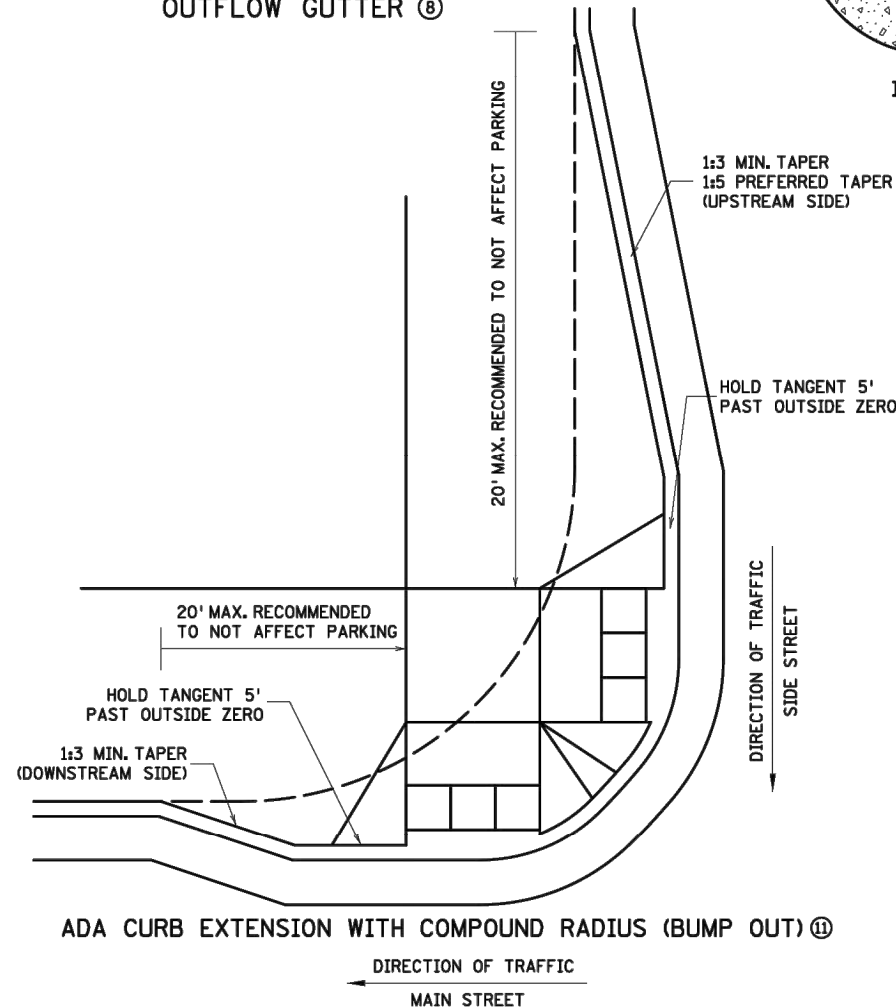


# PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



ONLY ALLOWED PER ENGINEER'S APPROVAL

## PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER FOR USE ON CURB RAMP RETROFITS



### COMBINED DIRECTIONAL (COMPOUND RADIUS)

#### NOTES:

- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM. NO PONDING SHALL BE PRESENT IN THE PAR.
- ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
- FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMP.
- FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
- BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
- THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
- ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
- VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
- TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
- SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
- DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
- HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
- CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

REVISION:
APPROVED: 11-04-2021
<i>Jeffrey Perkins</i>
JEFFREY PERKINS
OPERATIONS DIVISION



STANDARD PLAN 5-297.250	3 OF 6
APPROVED: 11-04-2021	REVIS:
STATE PROJ. NO.	

## PEDESTRIAN CURB RAMP DETAILS

(TH ) SHEET NO. OF SHEETS

CITY OF RAMSEY, MINNESOTA  
167TH AVENUE RECONSTRUCTION SAP 199-102-007  
MNDOT PEDESTRIAN RAMP DETAILS

SHEET  
11  
OF  
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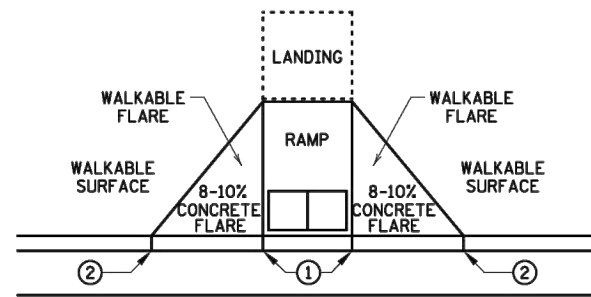
ZACHARY LINGL  
56344  
DATE 5/31/2023



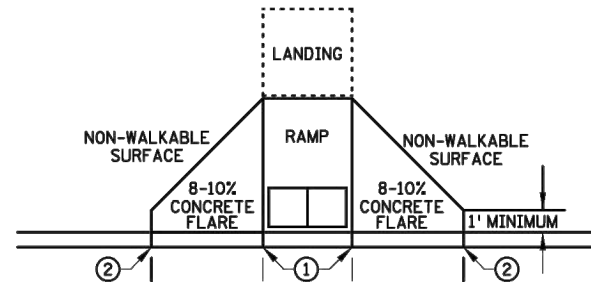
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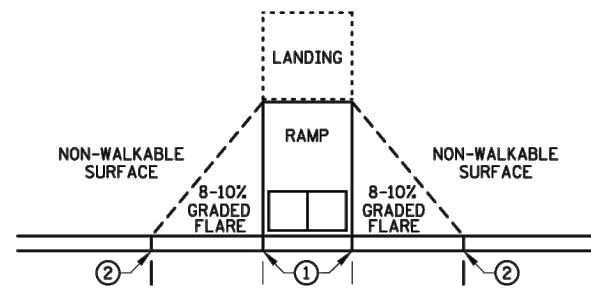
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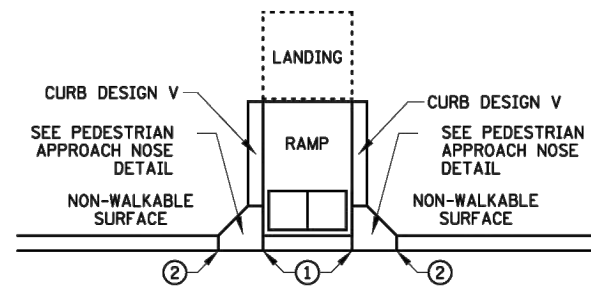
PAVED FLARES  
ADJACENT TO WALKABLE SURFACE



PAVED FLARES  
ADJACENT TO NON-WALKABLE SURFACE

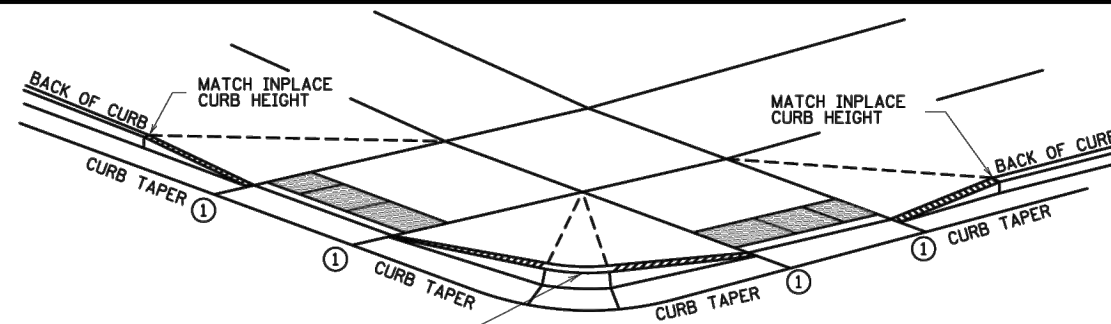


GRADED FLARES



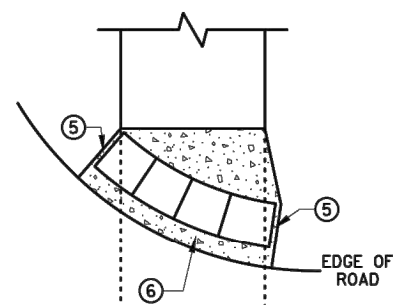
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

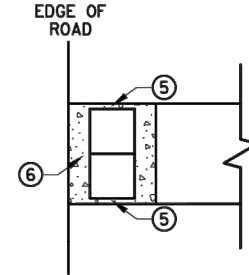


3" MINIMUM CURB HEIGHT, 4" PREFERRED  
(MEASURED AT FRONT FACE OF CURB)  
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH ⑦  
CURB AND GUTTER

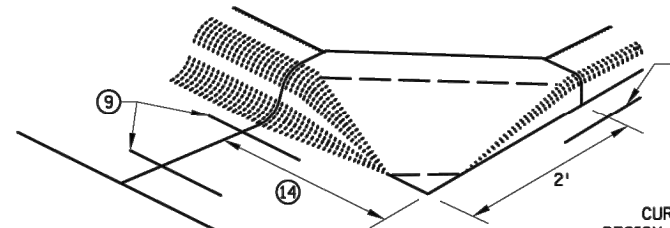


RADIAL DETECTABLE WARNING

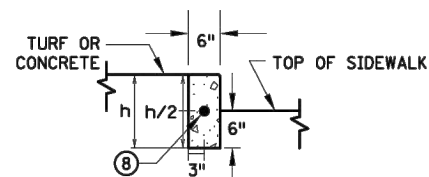


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

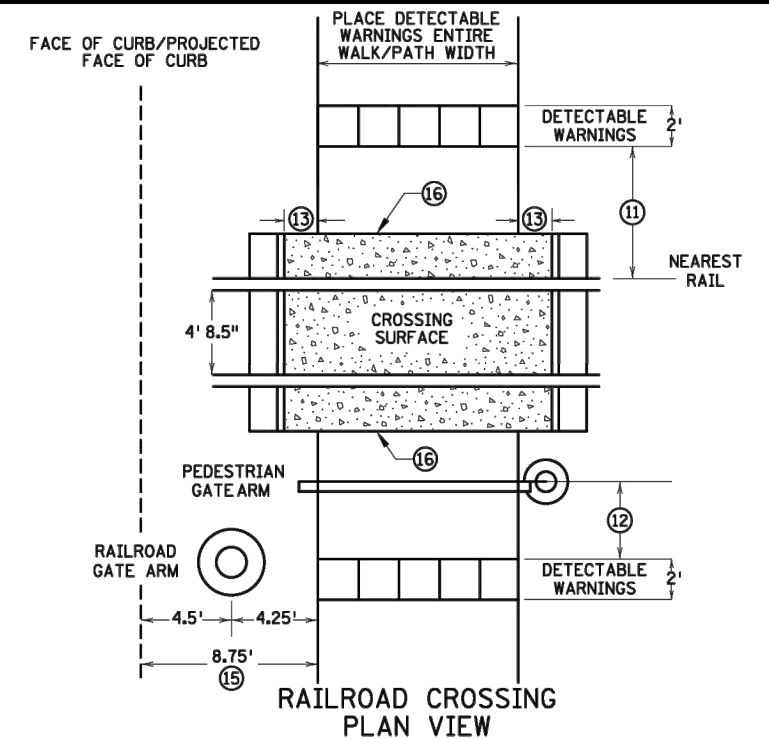


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH  
NOSE DETAIL  
(FOR RETURNED CURB  
SIDE TREATMENT)



#### NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.

② FULL CURB HEIGHT.

③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.

⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

REVISION:
APPROVED: 11-04-2021
<i>Jeffrey Perkins</i>
JEFFREY PERKINS
OPERATIONS DIVISION

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STANDARD PLAN 5-297.250

4 OF 6

APPROVED: 11-04-2021  
REVISOR:  
THOMAS TYRBYCKI  
STATE DESIGN ENGINEER

STATE PROJ. NO.

#### PEDESTRIAN CURB RAMP DETAILS

(TH ) SHEET NO. OF SHEETS

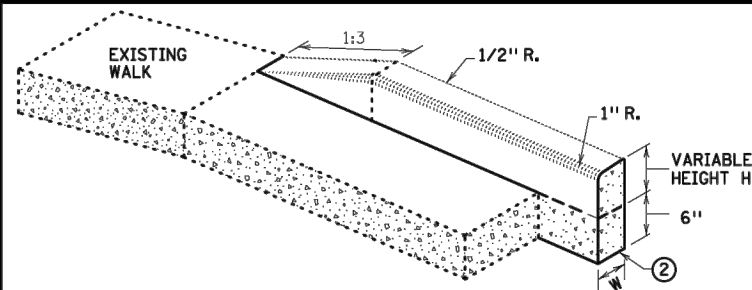
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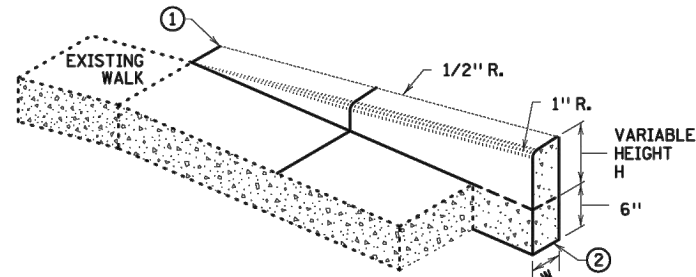
MNDOT PEDESTRIAN RAMP DETAILS

SHEET  
12  
OF  
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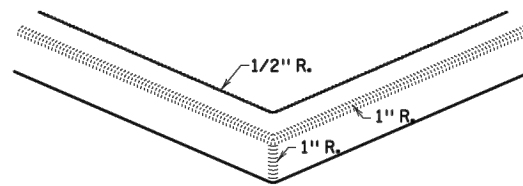




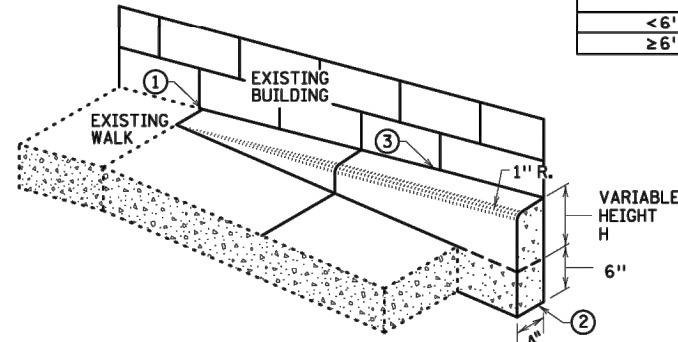
V CURB ADJACENT TO LANDSCAPE  
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE  
CURB OUTSIDE SIDEWALK LIMITS

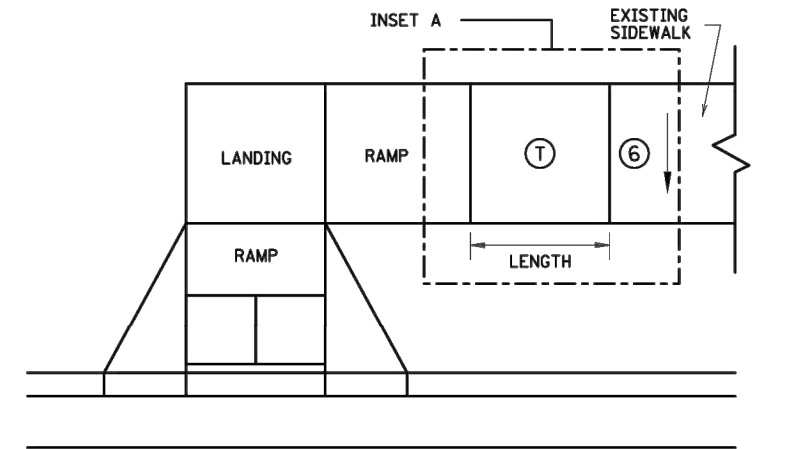


V CURB INTERSECTION

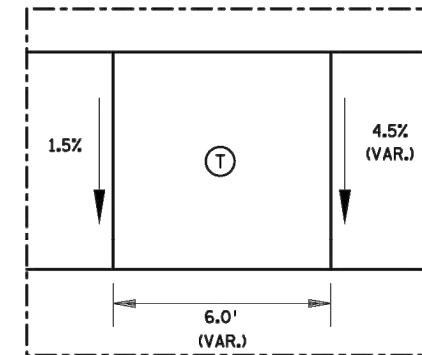


V CURB ADJACENT TO BUILDING  
OR BARRIER

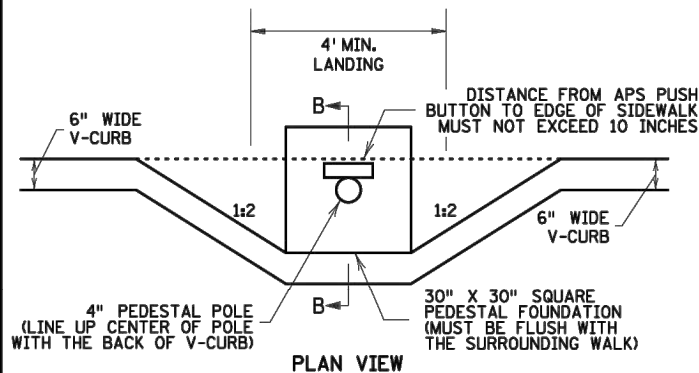
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



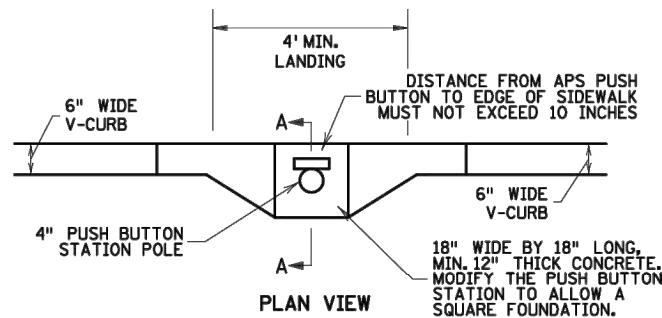
TRANSITION PANEL ④ ⑤



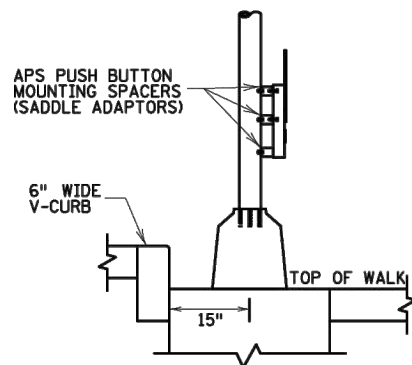
INSET A



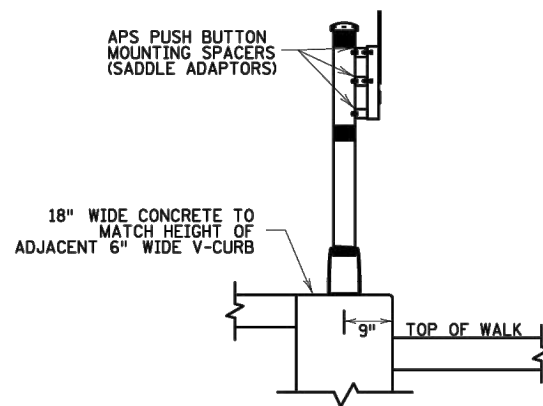
PLAN VIEW



PLAN VIEW



SECTION B-B  
SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A  
PUSH BUTTON STATION (V-CURB)

NOTES:

- A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.
- ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.
- V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- ⑤ TRANSITION PANEL(S) ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- ⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

- THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
- ⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- ④ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
- ① TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:
APPROVED: 11-04-2021
<i>Jeffrey Perkins</i>
JEFFREY PERKINS OPERATIONS DIVISION



STANDARD PLAN 5-297.250	5 OF 6
<i>Tom Styrbycki</i>	APPROVED: 11-04-2021
THOMAS STYRBYCKI STATE DESIGN ENGINEER	REVIS:
STATE PROJ. NO.	

PEDESTRIAN CURB RAMP DETAILS

(TH ) SHEET NO. OF SHEETS

CITY OF RAMSEY, MINNESOTA

167TH AVENUE RECONSTRUCTION SAP 199-102-007

MNDOT PEDESTRIAN RAMP DETAILS

SHEET  
13  
OF  
57

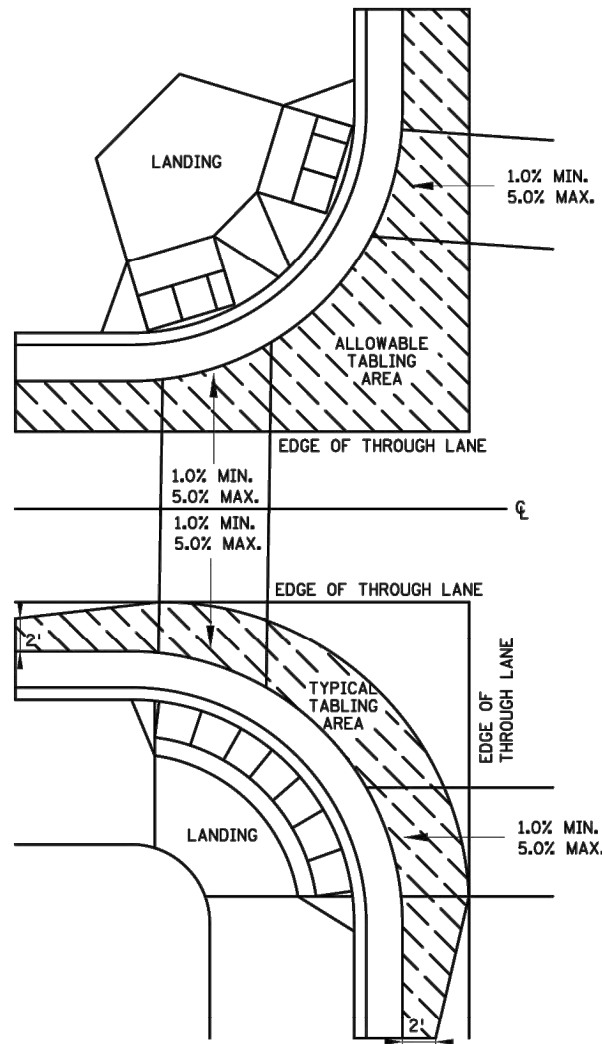


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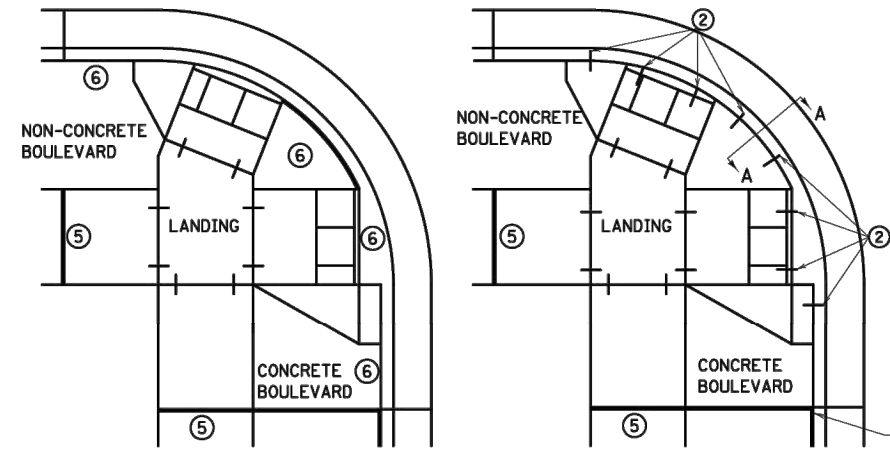


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<i>Zachary Lingl</i>
ZACHARY LINGL
UIC. NO. 56344
DATE 5/31/2023

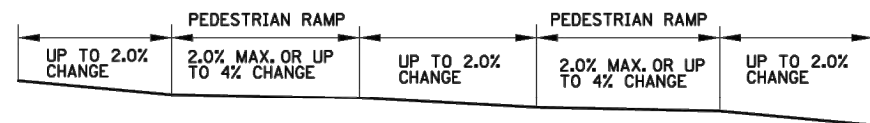


CURB LINE AND ROAD CROSSING ADJUSTMENTS

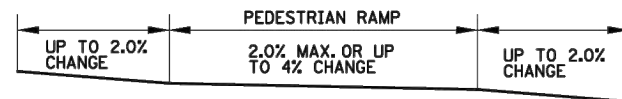


EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS

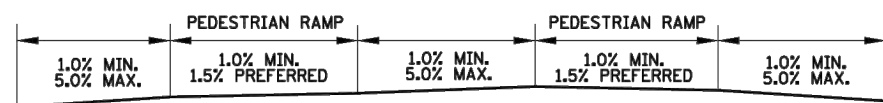
CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



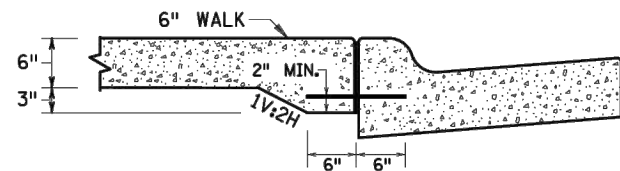
FLOW LINE PROFILE "TABLE" - FAN



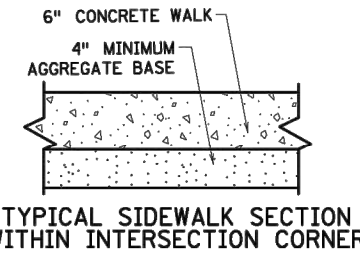
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



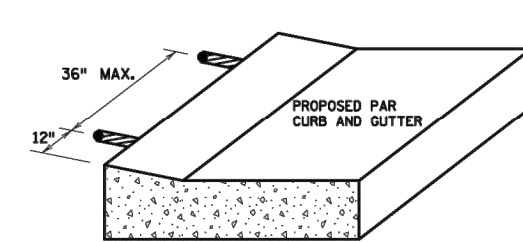
FLOW LINE PROFILE RAISE - FAN



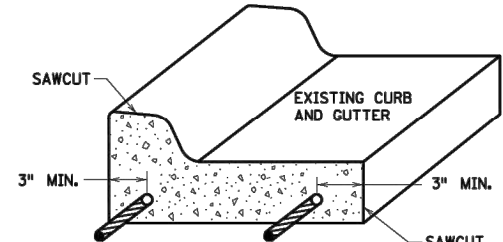
SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES



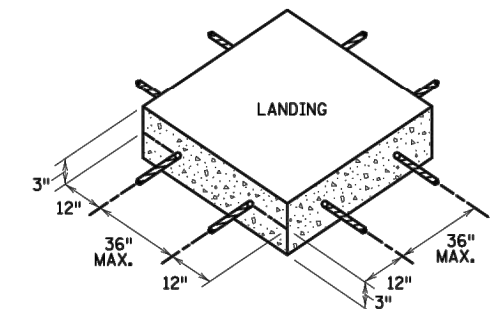
TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER



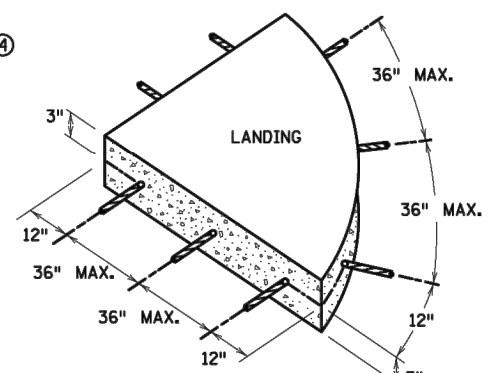
CURB RAMP REINFORCEMENT DETAILS ② ④



CURB AND GUTTER REINFORCEMENT ③



SEPARATE LANDING ① ② POUR REINFORCEMENT



GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
- 2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
- 3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
- 4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 3) 5.0% RECOMMENDED MAX. FLOW LINE
- 4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

- ① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- ② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.
- ③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.
- ④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.
- ⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.
- ⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

REVISION:

APPROVED: 11-04-2021

*Jeffrey Perkins*

JEFFREY PERKINS

OPERATIONS DIVISION

STANDARD PLAN 5-297.250 6 OF 6

MINNESOTA DEPARTMENT OF TRANSPORTATION

APPROVED: 11-04-2021

REVISOR:

STATE PROJ. NO.

(TH ) SHEET NO. OF SHEETS

PEDESTRIAN CURB RAMP DETAILS

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ZACHARY LINGL

56344

5/31/2023



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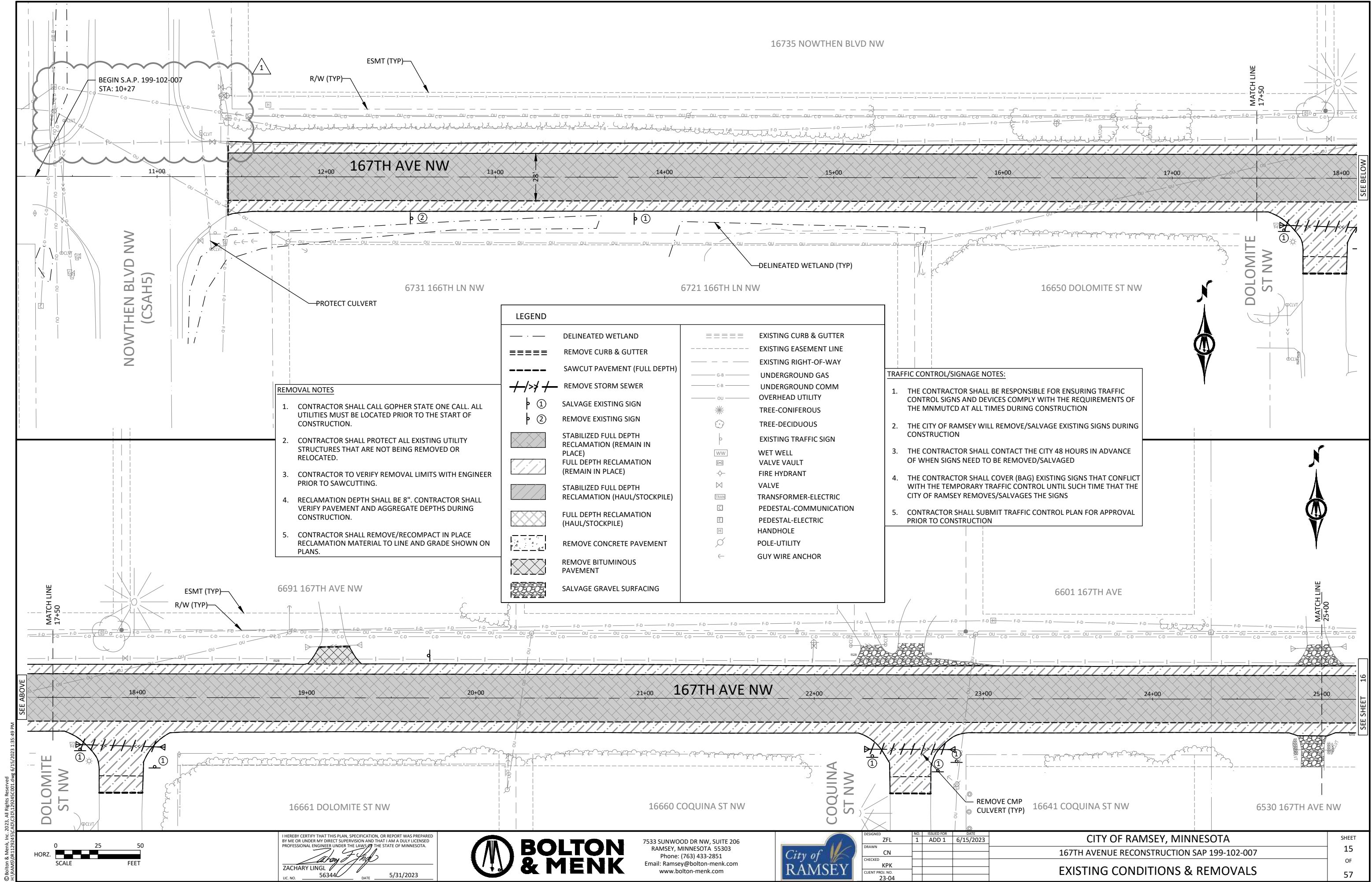
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167TH AVENUE RECONSTRUCTION SAP 199-102-007

MNDOT PEDESTRIAN RAMP DETAILS

SHEET 14 OF 57





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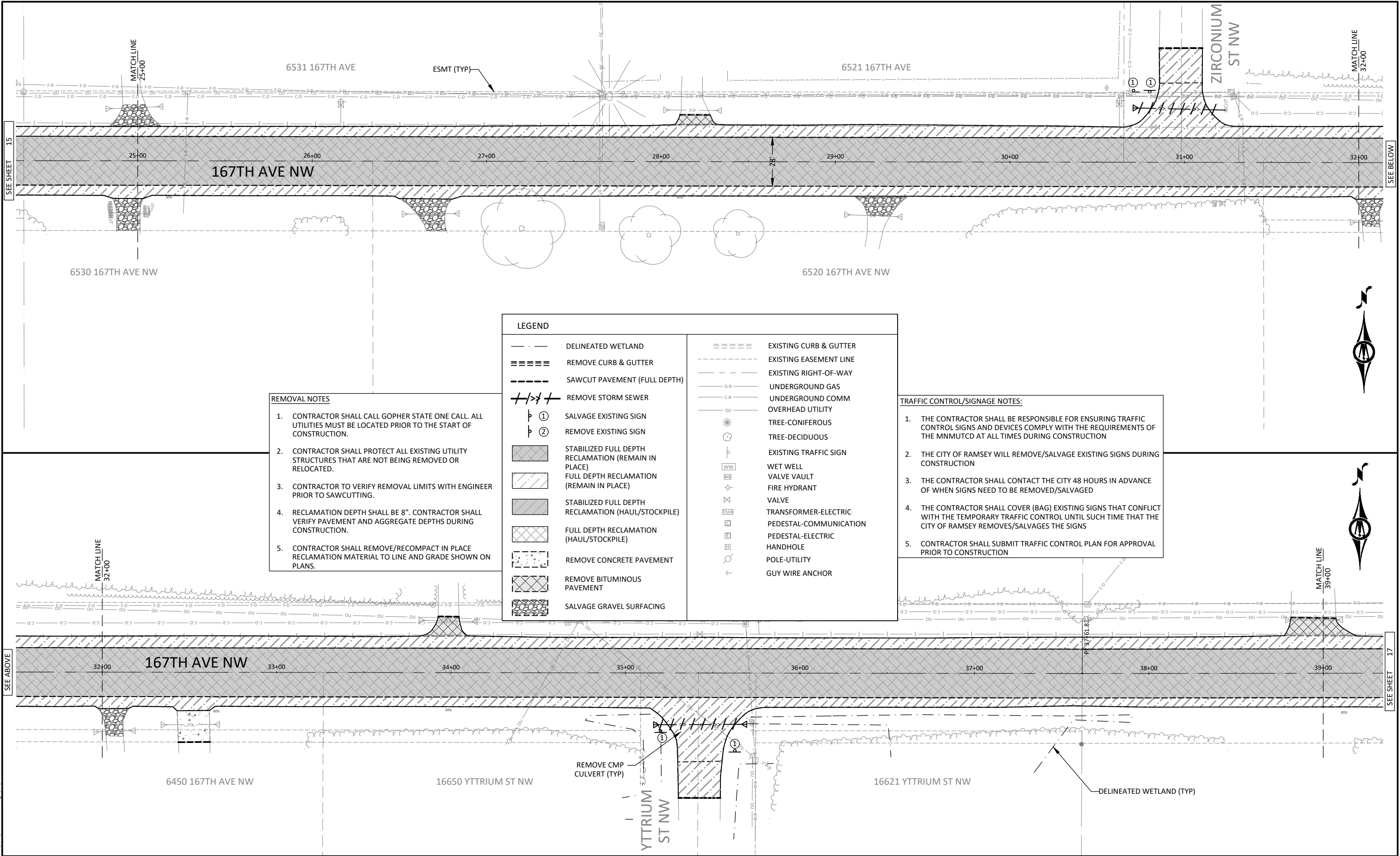


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167TH AVENUE RECONSTRUCTION SAP 199-102-007  
EXISTING CONDITIONS & REMOVALS

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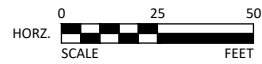


- REMOVAL NOTES**
1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
  2. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
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  4. RECLAMATION DEPTH SHALL BE 8". CONTRACTOR SHALL VERIFY PAVEMENT AND AGGREGATE DEPTHS DURING CONSTRUCTION.
  5. CONTRACTOR SHALL REMOVE/RECOMPACT IN PLACE RECLAMATION MATERIAL TO LINE AND GRADE SHOWN ON PLANS.

LEGEND	
	DELINEATED WETLAND
	REMOVE CURB & GUTTER
	SAWCUT PAVEMENT (FULL DEPTH)
	REMOVE STORM SEWER
	1 SALVAGE EXISTING SIGN
	2 REMOVE EXISTING SIGN
	STABILIZED FULL DEPTH RECLAMATION (REMAIN IN PLACE)
	FULL DEPTH RECLAMATION (REMAIN IN PLACE)
	STABILIZED FULL DEPTH RECLAMATION (HAUL/STOCKPILE)
	FULL DEPTH RECLAMATION (HAUL/STOCKPILE)
	REMOVE CONCRETE PAVEMENT
	REMOVE BITUMINOUS PAVEMENT
	SALVAGE GRAVEL SURFACING
	EXISTING CURB & GUTTER
	EXISTING EASEMENT LINE
	EXISTING RIGHT-OF-WAY
	UNDERGROUND GAS
	UNDERGROUND COMM
	OVERHEAD UTILITY
	TREE-CONIFEROUS
	TREE-DECIDUOUS
	EXISTING TRAFFIC SIGN
	WET WELL
	VALVE VAULT
	FIRE HYDRANT
	VALVE
	TRANSFORMER-ELECTRIC
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	HANDHOLE
	POLE-UTILITY
	GUY WIRE ANCHOR

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  5. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN FOR APPROVAL PRIOR TO CONSTRUCTION

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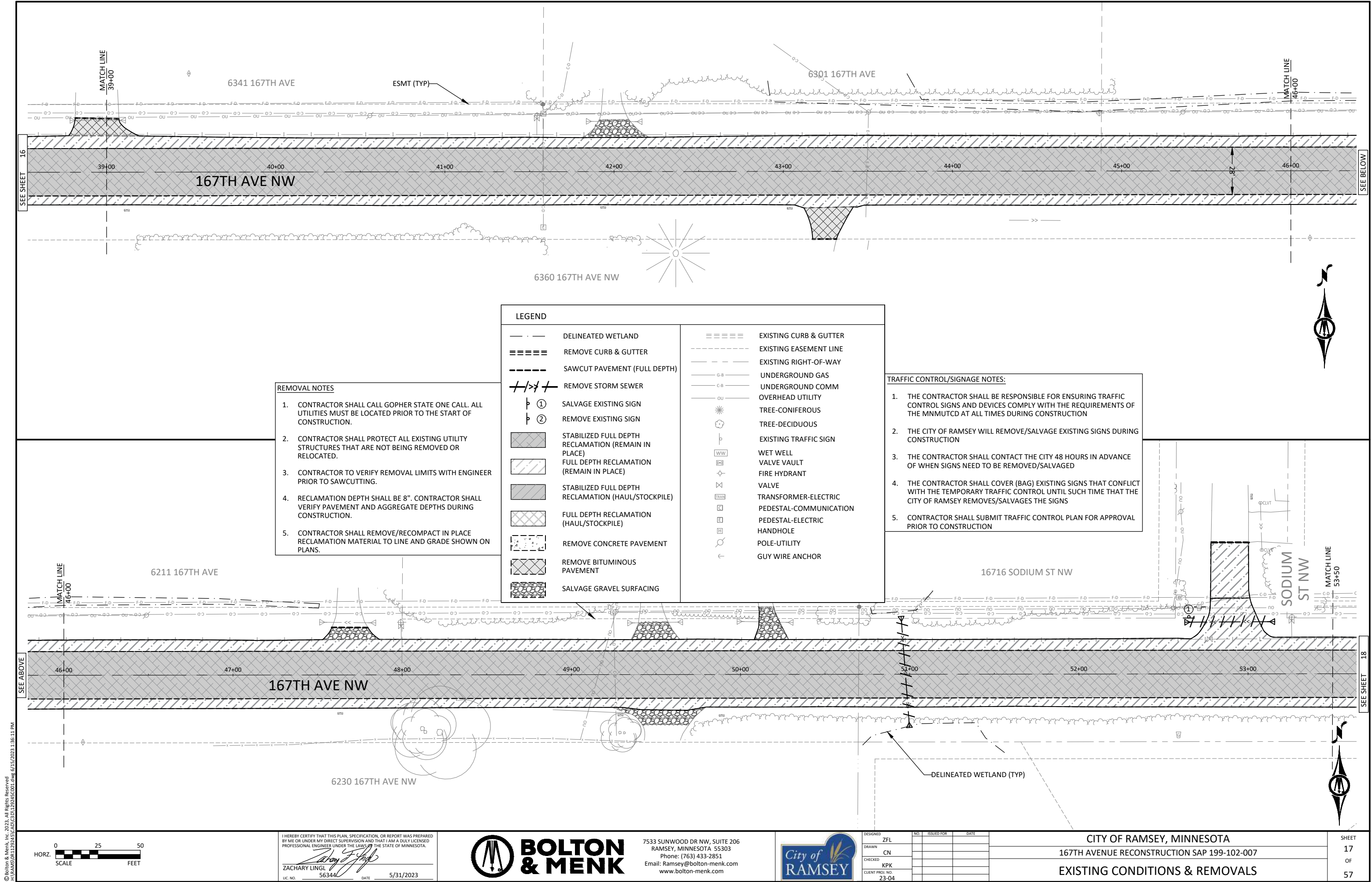


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167TH AVENUE RECONSTRUCTION SAP 199-102-007		
EXISTING CONDITIONS & REMOVALS		



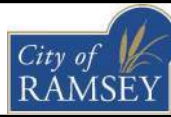
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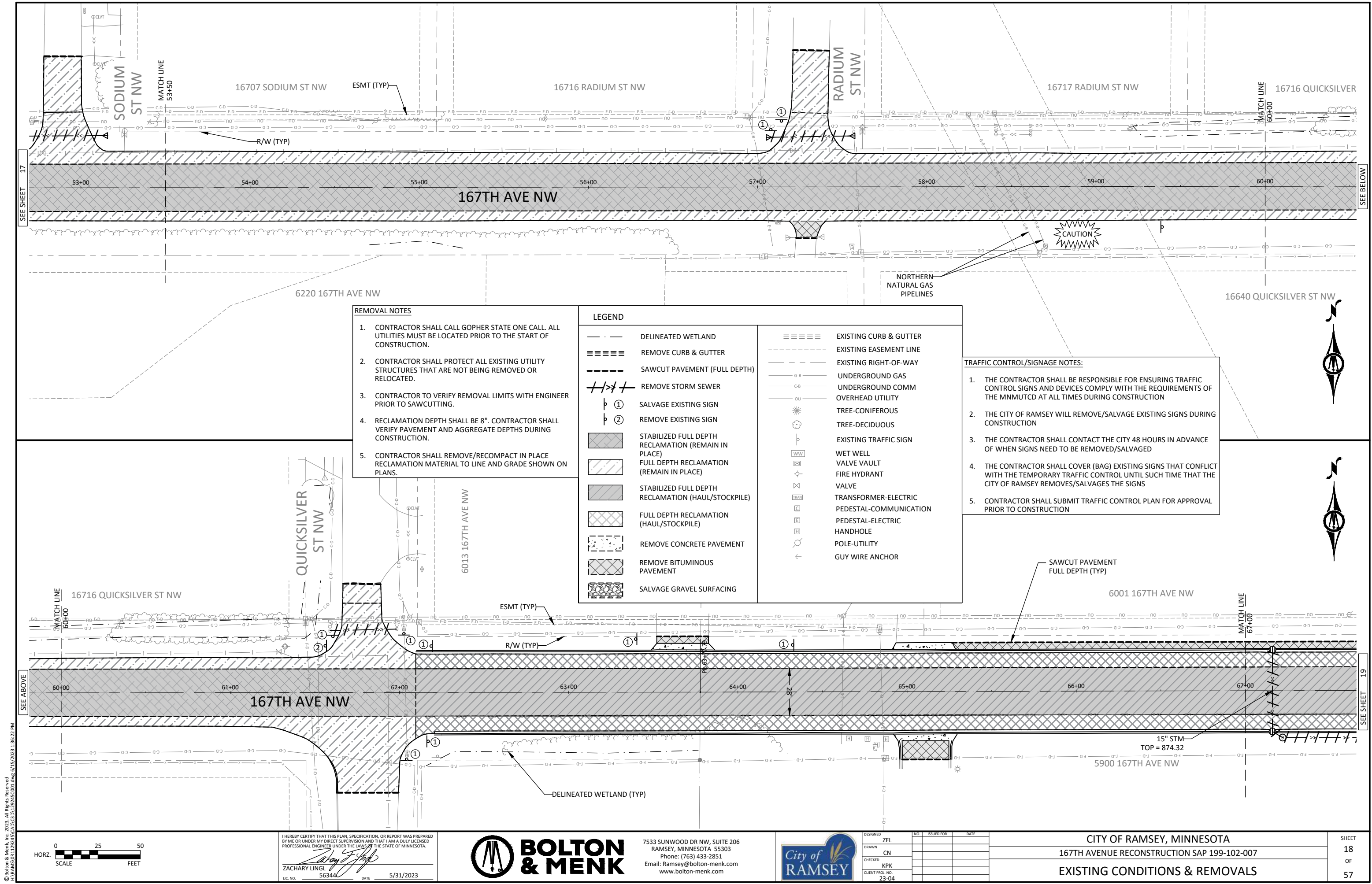
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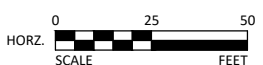
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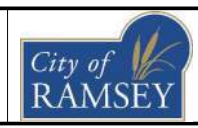


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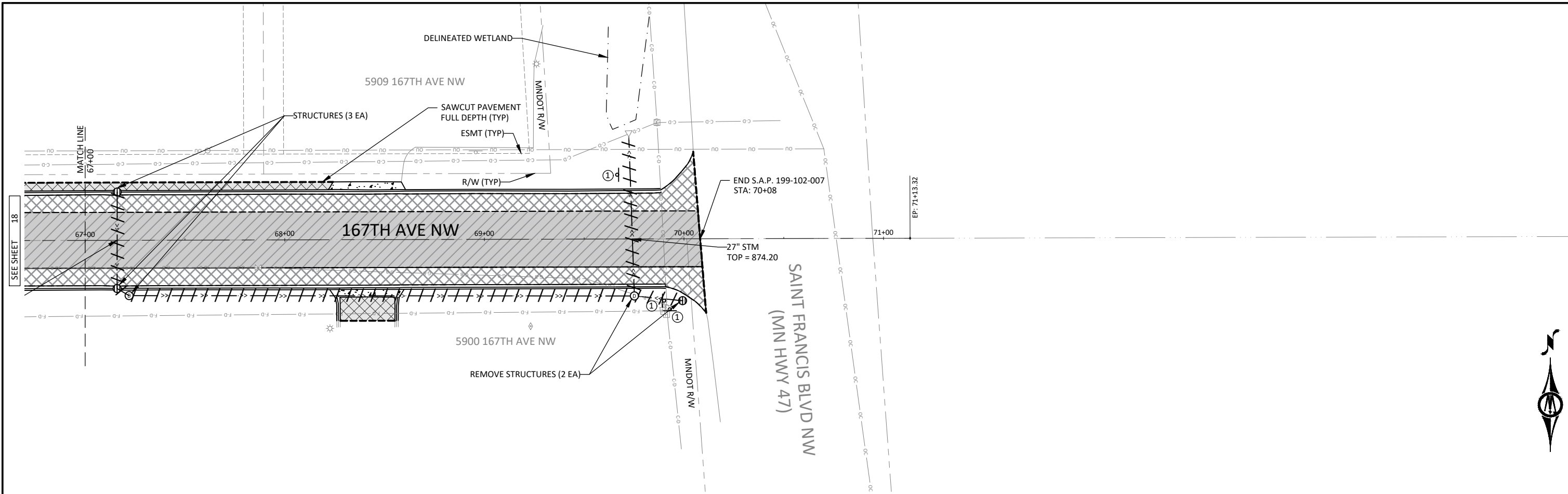


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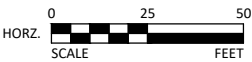
CITY OF RAMSEY, MINNESOTA		SHEET 18 OF 57
167TH AVENUE RECONSTRUCTION SAP 199-102-007		
EXISTING CONDITIONS & REMOVALS		



LEGEND	
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	REMOVE CURB & GUTTER
	SAWCUT PAVEMENT (FULL DEPTH)
	REMOVE STORM SEWER
	SALVAGE EXISTING SIGN
	REMOVE EXISTING SIGN
	STABILIZED FULL DEPTH RECLAMATION (REMAIN IN PLACE)
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	REMOVE BITUMINOUS PAVEMENT
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	EXISTING CURB & GUTTER
	EXISTING EASEMENT LINE
	EXISTING RIGHT-OF-WAY
	UNDERGROUND GAS
	UNDERGROUND COMM
	OVERHEAD UTILITY
	TREE-CONIFEROUS
	TREE-DECIDUOUS
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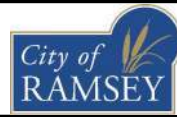


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EXISTING CONDITIONS & REMOVALS

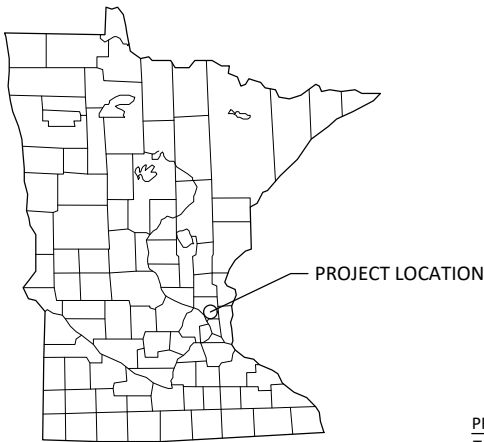
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57



STORMWATER  
POLLUTION PREVENTION  
PLAN (SWPPP)

167th AVE RECONSTRUCTION -2023

CITY OF RAMSEY  
ANOKA COUNTY, MINNESOTA



LEGEND

- 1-MILE BOUNDARY
- PROJECT BOUNDARY
- IMPAIRED, SPECIAL OR PROTECTED WATERS
- NATIONAL WETLANDS INVENTORY
- SOIL TYPE
- STEEP SLOPES (>33.3%)

PROJECT AREAS:

Total Project Size (disturbed area) =	12.3	ACRES
Existing area of impervious surface =	7.0	ACRES
Post construction area of impervious surface =	7.0	ACRES
Total new impervious surface area created =	0.0	ACRES

Planned Construction Start Date:	JULY 2023
Estimated Construction Completion Date:	NOV 2023

PERMANENT STORMWATER MANAGEMENT SYSTEM:

Type of storm water management used if more than 1 acre of new impervious surface is created:

X	Wet Sedimentation Basin
	Infiltration/Filtration
	Regional Pond
	Permanent Stormwater Management Not Required

PROJECT LOCATION:

COUNTY	TOWNSHIP	RANGE	SECTION	LATITUDE	LONGITUDE
ANOKA	T32N	R25W	10,11	45.2736°	-93.4325°

BMP SUMMARY	QUANTITY	UNIT
Storm Drain Inlet Protection	3	EACH
Silt Fence, Type MS	3,785	LIN FT
Sediment Control Log Type Wood Fiber	290	LIN FT
Seed Mixture 25-121	175	POUND
Seed Mixture 25-151	150	POUND
Hydraulic Bonded Fiber Matrix	11,760	POUND

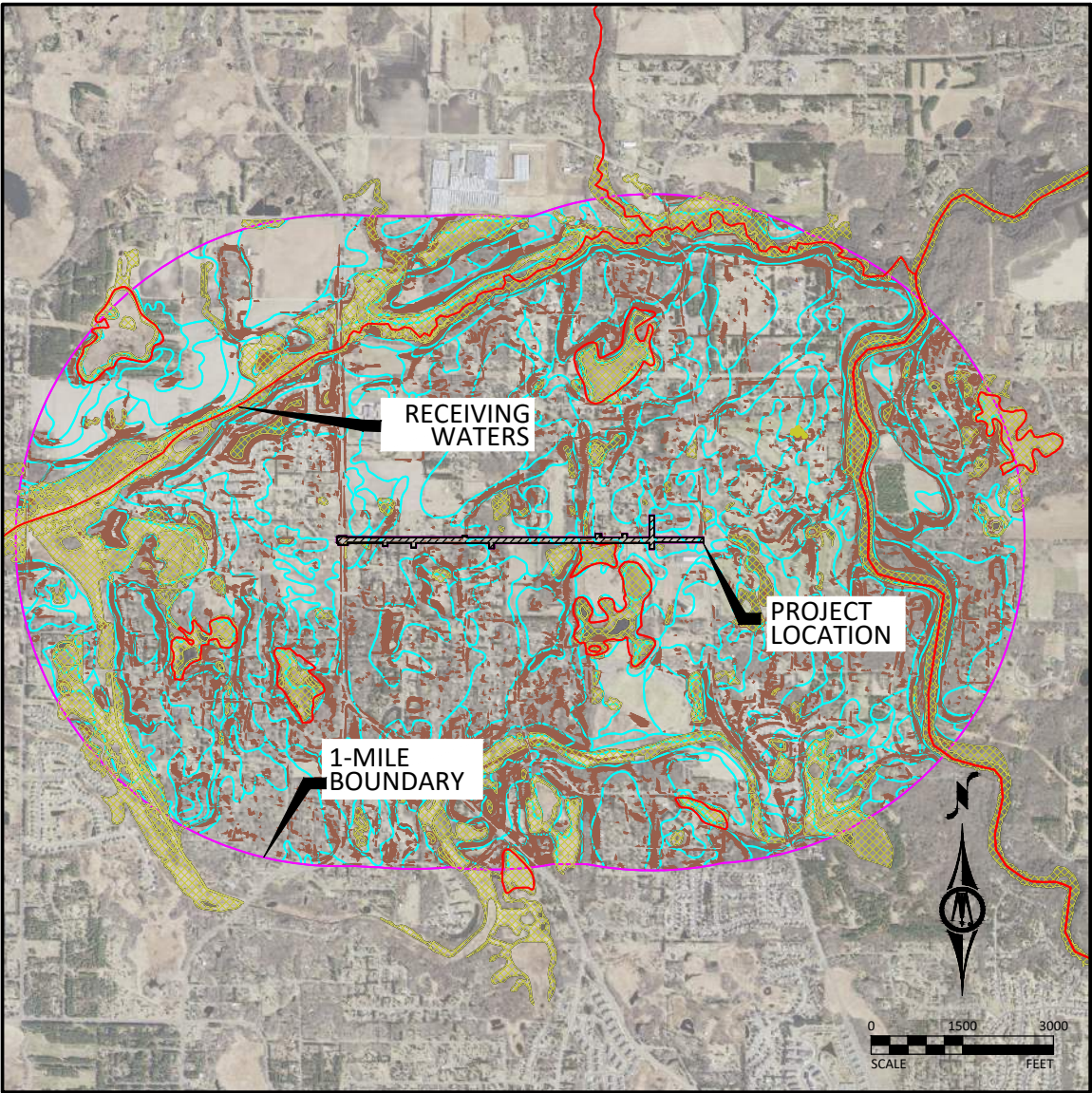
DESCRIPTION OF CONSTRUCTION ACTIVITIES AND STORMWATER MANAGEMENT:

Construction activities include: Roadway reclamation, aggregate base, plant mixed bituminous pavement, ADA improvements and storm sewer

Stormwater currently runs off road and infiltrates into ditching

After construction is complete stormwater will continue to run off road and infiltrates into ditching

This project includes the following stormwater management BMPs: Sediment Control Log, Silt Fence, Culvert/Curb Cut Protection, Rolled Erosion Prevention.



RECEIVING WATERS:  
Receiving waters, including surface water, wetlands, Public Waters, and stormwater ponds, within 1-mile of the project boundary are identified on the USGS 7.5 min quad map above. Receiving waters that are impaired, the impairment, and WLA are listed as follows. All specific BMPs relative to construction activities listed in the permit for special, prohibited, restricted, or impaired have been incorporated into this plan. All specific BMPs listed in approved TMDLs and those BMPs listed for construction related waste load allocations have also been incorporated.

NAME OF WATER BODY	TYPE (ditch, pond, wetland, lake, etc.)	Special, Prohibited, Restricted Water <sup>1</sup>	Flows to Impaired Water Within 1-Mile <sup>2</sup>	USEPA Approved Construction Related TMDL <sup>3</sup>
Trott Brook	River	Restricted	Yes	Benthic macroinvertebrates bioassessments; Dissolved oxygen; Fish bioassessments; Sulfate.
Rum	River	Restricted	Yes	Mercury in fish tissue.

<sup>1</sup> Special, prohibited, and restricted waters are listed in Section 23 of the MN Construction Stormwater General Permit (MNR100001).

<sup>2</sup> Identified as impaired under section 303 (d) of the federal Clean Water Act for phosphorus, turbidity, TSS, dissolved oxygen, and/or aquatic biota.

<sup>3</sup> Construction Related TMDLs include those related to: phosphorus, turbidity, TSS, dissolved oxygen, and/or aquatic biota.

IMPLEMENTATION SCHEDULE AND PHASING: The Contractor is required to provide an updated schedule and site management plan meeting the minimum requirements of Section 1717 of the Minnesota Standard Specifications for Construction.

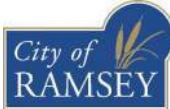
- 1) Submit SWPPP Updates to Engineer. Submittal shall include any requested changes to the SWPPP, including but not limited to: Trained Personnel, Locations for Stockpiles, Concrete Washout, Sanitation Facilities, Types and Locations of Erosion & Sediment Control. Failure to submit updates shall be considered acceptance of the SWPPP as designed with no changes.
- 2) Install perimeter sediment control, inlet protection, and construction exit.
- 3) Add additional temporary BMPs as necessary during construction based on inspection reports.
- 4) Ensure final stabilization measures are complete.
- 5) Provide digital copy of all Field SWPPP Documentation including Inspection Reports and SWPPP Revisions to the Owner.
- 6) Submit Notice of Termination (NOT) to MPCA. NOTE: The NOT must be submitted to MPCA before Final Stabilization is considered complete.

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

ZACHARY LINGL  
LIC. NO. 56344 DATE 5/31/2023



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23-04			

CITY OF RAMSEY, MINNESOTA  
167TH AVENUE RECONSTRUCTION SAP 199-102-007

SWPPP Plan

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OF  
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Information contained in this SWPPP narrative sheet summarizes requirements of the GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM PROGRAM - Permit No: MN R100001 (Permit) as they apply to this project. All provisions of the Permit including those not specifically cited herein shall apply to this project. The Contractor is responsible to be familiar with and comply with all conditions of the permit. The full text of the Permit is available at: <https://www.pca.state.mn.us/sites/default/files/wq-strm2-80a.pdf>

SWPPP AMENDMENTS AND SUBMITTALS

Contractor must prepare and submit to the Engineer a SWPPP amendment as necessary to include additional Best Management Practices (BMPs) to correct problems identified or address the following situations.

1. Contact information and training documentation for Construction SWPPP Manager and BMP Installer,

2. There is a change in construction method of phasing, operation, maintenance, weather or seasonal conditions not anticipated during the design of the SWPPP including but not limited to:

a. Types and/or Locations of BMPs

b. Material Storage and Spill Response

c. Fueling Plans

d. Locations for Stockpiles, Concrete Washout, and Sanitation Facilities and

e. Project Phasing

3. It is determined that the SWPPP is not achieving objectives of minimizing pollutants in stormwater discharges associated with construction activity, or

4. The SWPPP is not consistent with the terms and conditions of the permit.

The Contractor may implement SWPPP amendments immediately and is not required to wait for Engineer review of the submittal. The responsibility for completeness of SWPPP amendments and compliance with the Permit lies with the Contractor. Review, comment, or lack of comment by the Engineer on a SWPPP amendment shall not absolve the responsibilities of the Contractor in any way.

If a change order is issued for a design change the SWPPP amendment will be prepared by the Engineer and included in the change order.

In addition to SWPPP amendments, the Contractor shall submit to the Engineer Weekly Erosion and Sediment Control Schedule meeting the requirements of MnDOT 1717.

The Contractor shall keep copies of all SWPPP amendments, Weekly Erosion and Sediment Control Schedules, inspection logs, and maintenance logs with the field copy of the SWPPP. A PDF copy of these documents will be provided along with a copy of the final Field Copy of the SWPPP to the Engineer along with the signed Notice of Termination when final stabilization is complete.

EROSION PREVENTION PRACTICES

Stormwater conveyance channels shall be routed around unstabilized areas. Erosion controls and velocity dissipation devices shall be used at outlets within and along the length of any constructed conveyance channel.

The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200' of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Temporary or permanent ditches or swales used as sediment containment during construction do not need to be stabilized during temporary period of use and shall be stabilized within 24 hours after no longer used as sediment containment.

Mulch, hydromulch, tackifier, or similar practice shall not be used in any portion of the wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than 2 percent.

Energy dissipation shall be installed at all temporary or permanent pipe outlets within 24 hours of connection to a surface water or permanent stormwater treatment system.

The Contractor shall phase construction and use construction methods to the extent practical to minimize exposed soils. The project phasing shall be documented in the Weekly Erosion and Sediment Control Schedule.

SEDIMENT CONTROL PRACTICES

Down gradient BMPs including perimeter BMPs must be in place before up gradient land- disturbing activities begin and shall remain in place until final stabilization.

All BMPs that have been adjusted or removed to accommodate short-term activities shall be re-installed or replaced the earlier of the end of the work day or before the next precipitation event even if the activity is not complete.

Inlet BMPs may be removed for specific safety concerns. The BMPs shall be replaced as soon as the safety concern is resolved. The removal shall be documented in the SWPPP as a SWPPP amendment.

Temporary stockpiles must have sediment control BMPs. The Contractor shall prepare and submit to the Engineer a SWPPP amendment showing the location of temporary stockpiles and the BMPs for each stockpile. The SWPPP amendment must meet the minimum requirements of Section 9 of the Permit.

Soil compaction shall be minimized and topsoil shall be preserved, unless infeasible or if construction activities dictate soil compaction or topsoil stripping.

The use of polymers, flocculants, or other sedimentation treatment chemicals are not proposed as part of this SWPPP as designed by the Engineer. If methods or phasing of construction require the use of any of these chemicals, the Contractor shall prepare and submit to the Engineer a SWPPP amendment that meets the minimum requirements of Section 9 of the Permit.

TEMPORARY SEDIMENTATION BASINS

A temporary sedimentation basin has not been included in this SWPPP as designed by the Engineer. If a basin is later determined to be desirable or necessary the Contractor shall prepare and submit to the Engineer a SWPPP amendment. Temporary sedimentation basins shall meet or exceed the minimum requirements of Section 14 of the Permit and shall include a basin draining plan meeting or exceeding the minimum requirements of Section 10 of the Permit. Where the site discharges to Special and/or Impaired Waters the SWPPP amendment shall also meet or exceed the minimum requirements of Section 23 of the permit.

DEWATERING

A dewatering plan has not been included in this SWPPP as designed by the Engineer. If dewatering is required for this project, the Contractor shall prepare and submit to the Engineer a SWPPP amendment. All dewatering shall meet or exceed the minimum requirements of Section 10 of the Permit.

POLLUTION PREVENTION

Products and materials that have the potential to leach pollutants that are stored on the site must be stored in a manner designed to minimize contact with stormwater. Materials that are not a source of potential contamination to stormwater or that are designed for exposure to stormwater are not required to be covered.

Hazardous materials including but not limited to pesticides, fertilizer, petroleum products, curing compounds and toxic waste must be properly stored and protected from stormwater exposure as recommended by the manufacturer in an access restricted area.

Solid waste must be stored, collected and disposed of in compliance with Minnesota Administrative Rules Chapter 7035.

Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. CH 7041.

Exterior vehicle or equipment washing on the project site shall be limited to a defined area of the site. No engine degreasing is allowed on site. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

The Contractor shall prepare and submit a SWPPP amendment detailing the location and BMPs proposed for storage of materials, solid waste, portable toilets, and exterior vehicle or equipment washing on the site. The SWPPP amendment shall include a spill prevention and response plan that is appropriate for the materials proposed to be on the site. The SWPPP amendment shall meet or exceed the minimum requirements of Section 12 of the Permit.

INSPECTION & MAINTENANCE

A trained person shall routinely inspect the entire construction site at the time interval indicated on this sheet of the SWPPP during active construction and within 24-hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24-hours after a rainfall event, the next inspection must be conducted at the time interval indicated in the Receiving Waters Table found on the SITE PLAN AND INFORMATION SHEET of the SWPPP.

All inspections and maintenance conducted during construction must be recorded on the day it is completed and must be retained with the SWPPP. Inspection report forms are available in the Project Specifications. Inspection report forms other than those provided shall be approved by the engineer.

The Contractor may request a change in inspection schedule for the following conditions:

- a. Inspections of areas with permanent cover to be reduced to once per month,
- b. Inspections of areas that have permanent cover and have had no construction activity for 12 months to be suspended until construction resumes,
- c. Inspections of areas where construction is suspended due to frozen ground conditions, inspections to be suspended until the earlier of within 24 hours of runoff occurring, or upon resuming construction.

No change in inspection schedule shall occur until authorized by the Engineer.

Inspections must include:

1. All erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness.
2. Surface waters, including drainage ditches and conveyance systems for evidence of erosion and sediment deposition.
3. Construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles.
4. Infiltration areas to ensure that no sediment from ongoing construction activity is reaching the infiltration area and that equipment is not being driven across the infiltration area.

All non-functioning BMPs and those BMPs where sediment reaches one-half (1/2) of the depth of the BMP, or in the case of sediment basins one-half (1/2) of the storage volume, must be repaired, replaced, or supplemented by the end of the next business day after discovery, or as soon as field conditions allow.

Permittees must repair, replace or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow.

Any sediment that escapes the site must be removed and the area stabilized within 7 calendar days of discovery unless precluded by legal, regulatory, or physical access in which case the work shall be completed within 7 calendar days of authorization. Paved surfaces such as streets shall have any escaped or tracked sediment removed by the end of the day that it is discovered. Sediment release, other than paved surfaces that can be cleaned up with street sweeping shall be reported immediately upon discovery to the Engineer.

PUBLIC WATER RESTRICTIONS:

For public waters that have been promulgated "work in water restrictions" during fish spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must complete stabilization within 24-hours during the time period. MN DNR permits are not valid for work in waters that are designated as infested waters unless accompanied by an Infested Waters Permit or written notification has been obtained from MN DNR stating that such permit is not required. There is no exception for pre-existing permits. If a MN DNR Permit has been issued for the project and the water is later designated as infested, the Contractor shall halt all work covered by the MN DNR Permit until an Infested Waters Permit is obtained or that written notification is obtained stating that such permit is not required.

FINAL STABILIZATION

Final Stabilization is not complete until all the following requirements have been met:

1. Substantial Completion has been reached and no ground disturbing activities are anticipated.
2. Permanent cover has been installed with an established minimum uniform perennial vegetation density of 70 percent of its expected final growth. Vegetation is not required in areas where no vegetation is proposed by this project such as impervious surfaces or the base of a sand filter.

3. Accumulated sediment has been removed from all permanent stormwater treatment systems as necessary to ensure the system is operating as designed.
4. All sediment has been removed from conveyance systems
5. All temporary synthetic erosion prevention and sediment control BMPs have been removed. BMPs designated on the SWPPP to remain to decompose on-site may remain.
6. For residential construction only, permit coverage terminates on individual lots if the structures are finished and temporary erosion prevention and downgradient perimeter control is complete, the residence sells to the homeowner, and the permittee distributes the MPCA's "Homeowner Fact Sheet" to the homeowner.
7. For agricultural land only (e.g., pipelines across cropland), the disturbed land must be returned to its preconstruction agricultural use prior to submitting the NOT.

SITE STABILIZATION COMPLETION:

Stabilization of exposed soils shall begin immediately and shall be completed after the construction activity has temporarily or permanently ceased no later than:	7 calendar days
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SITE INSPECTION INTERVAL:

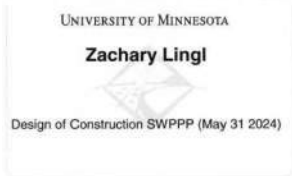
A trained person shall routinely inspect the entire construction site during active construction at an interval of no more than:	7 calendar days
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SPECIAL ENVIRONMENTAL CONSIDERATIONS AND PERMITS:

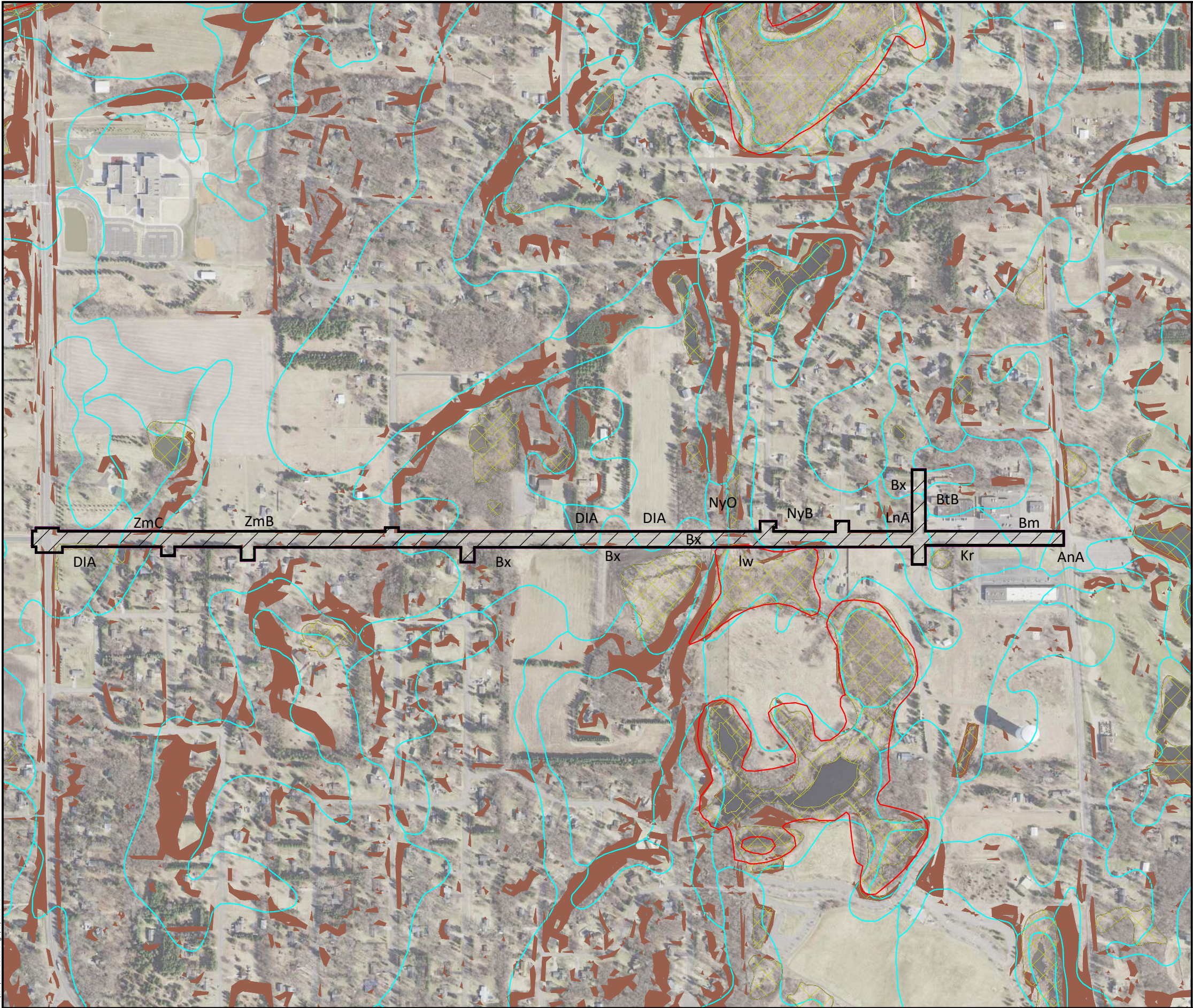
1)	Was an environmental review required for this project or any part of a common plan of development or sale that includes all or any portion of this project?	NO
2)	Does any portion of the site have the potential to affect threatened or endangered species or their critical habitat?	NO
3)	Does any portion of this site discharge to a Calcareous fen.	NO
4)	Will any portion of the site potentially affect properties listed on the National Register of Historic Places or a known or discovered archeological site?	NO
5)	Have any Karst features have been identified in the project vicinity?	NO
6)	Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO
7)	Has the MN DNR promulgated "work in water restrictions" for any Public Water this site discharges to during fish spawning?	NO

TYPE OF PERMIT	PERMITTING AGENCY	PERMIT STATUS AND CONDITIONS
Construction Stormwater NPDES	MPCA	

SWPPP DESIGNER TRAINING DOCUMENTATION:







LEGEND

PROJECT BOUNDARY

IMPAIRED, SPECIAL OR PROTECTED WATERS

NATIONAL WETLANDS INVENTORY

STEEP SLOPES (>33.3%)

SOIL TYPE

0300600

SCALEFEET

SOIL TYPE SUMMARY

Map Unit Symbol	Soil Name	Hyd. Soil Group	Erodibility
AnA	Anoka loamy fine sand, 0 to 2 percent slopes	A	NHEL
Bm	Blomford loamy fine sand	B/D	NHEL
BtB	Braham loamy fine sand, 2 to 6 percent slopes	A	NHEL
Bx	Brickton silt loam	C/D	NHEL
DIA	Dalbo silt loam, 1 to 5 percent slopes	C	NHEL
lw	Isanti fine sandy loam	A/D	NHEL
Kr	Kratka loamy fine sand	B/D	NHEL
LnA	Lino loamy fine sand, 0 to 4 percent slopes	A/D	NHEL
NyB	Nymore loamy sand, 2 to 6 percent slopes	A	NHEL
NyC	Nymore loamy sand, 6 to 12 percent slopes	A	NHEL
ZmB	Zimmerman fine sand, 2 to 6 percent slopes	A	NHEL
ZmC	Zimmerman fine sand, 6 to 12 percent slopes	A	NHEL

NHEL - Not Highly Erodible Land

PHEL - Potentially Highly Erodible Land

HEL - Highly Erodible Land

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ZACHARY LINGL

56344

DATE

5/31/2023

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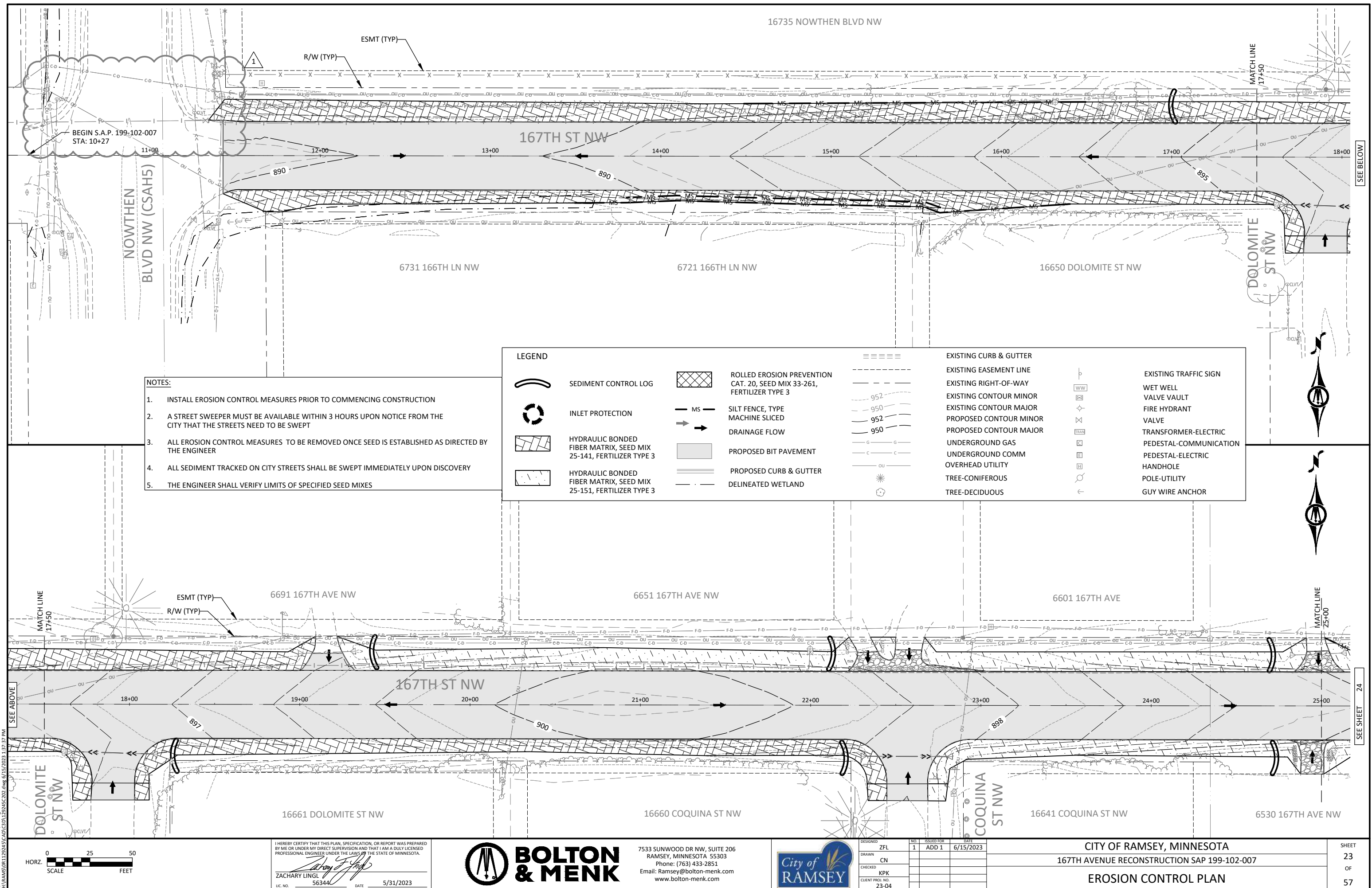
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City of  
RAMSEY

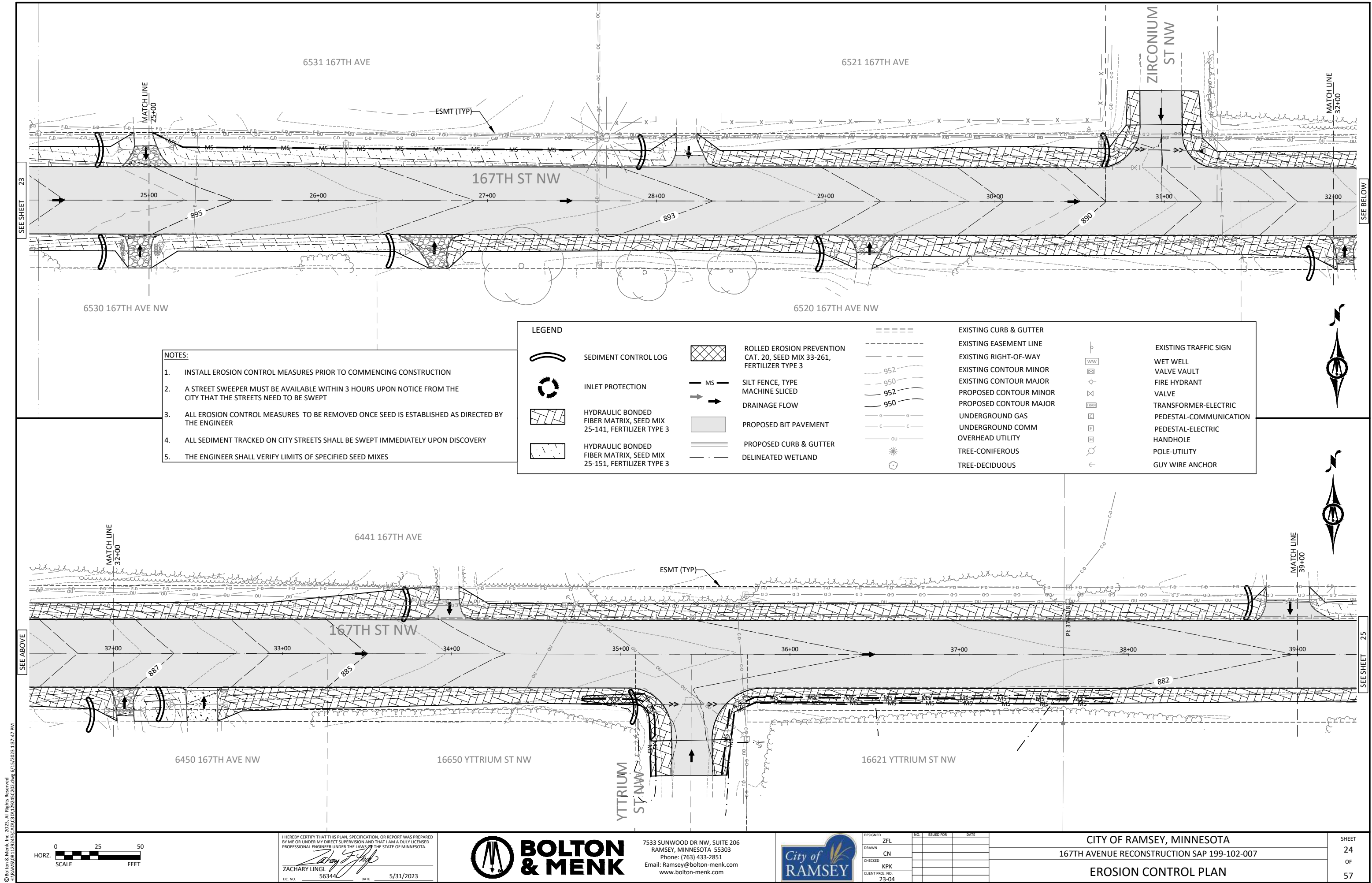
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CITY OF RAMSEY, MINNESOTA	SHEET 22 OF 57
167TH AVENUE RECONSTRUCTION SAP 199-102-007	
SWPPP Soils	

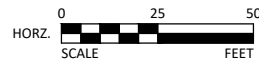








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ZACHARY LINGL  
LIC. NO. 56344 DATE 5/31/2023



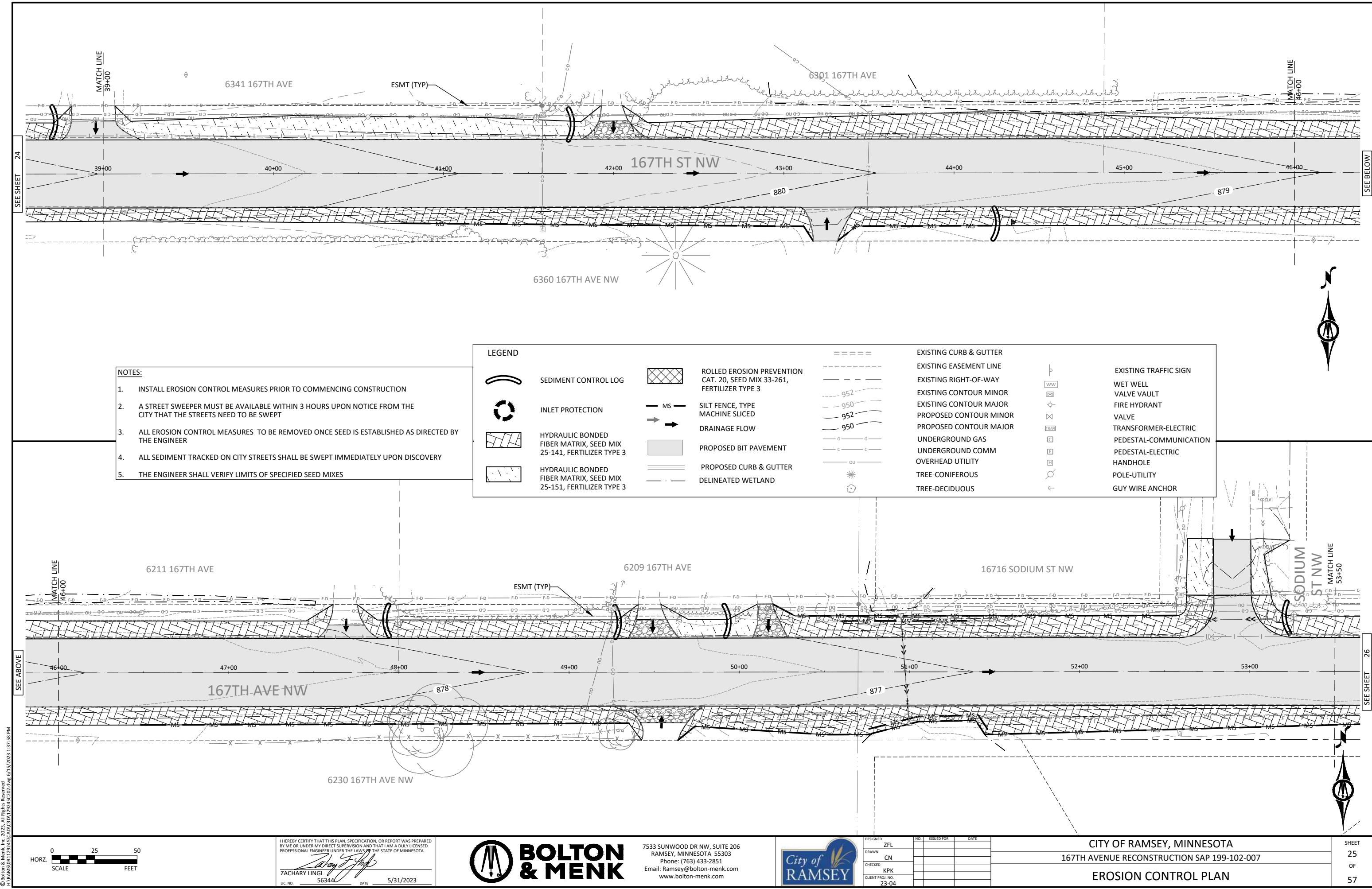
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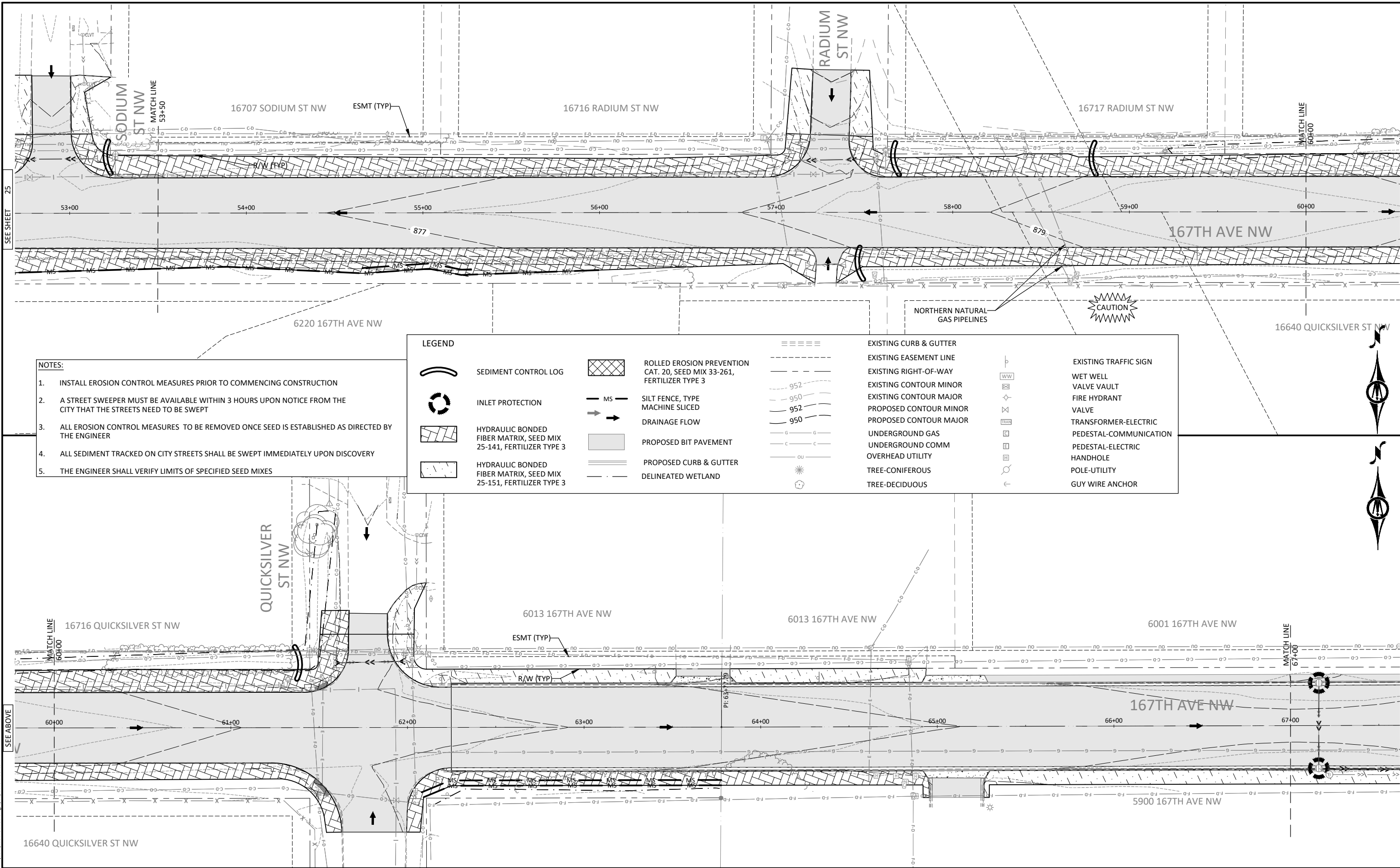
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CITY OF RAMSEY, MINNESOTA  
167TH AVENUE RECONSTRUCTION SAP 199-102-007  
EROSION CONTROL PLAN

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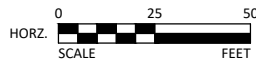


- NOTES:
1. INSTALL EROSION CONTROL MEASURES PRIOR TO COMMENCING CONSTRUCTION
  2. A STREET SWEEPER MUST BE AVAILABLE WITHIN 3 HOURS UPON NOTICE FROM THE CITY THAT THE STREETS NEED TO BE SWEEPED
  3. ALL EROSION CONTROL MEASURES TO BE REMOVED ONCE SEED IS ESTABLISHED AS DIRECTED BY THE ENGINEER
  4. ALL SEDIMENT TRACKED ON CITY STREETS SHALL BE SWEEPED IMMEDIATELY UPON DISCOVERY
  5. THE ENGINEER SHALL VERIFY LIMITS OF SPECIFIED SEED MIXES

**LEGEND**

	SEDIMENT CONTROL LOG		ROLLED EROSION PREVENTION CAT. 20, SEED MIX 33-261, FERTILIZER TYPE 3		EXISTING CURB & GUTTER		EXISTING TRAFFIC SIGN
	INLET PROTECTION		SILT FENCE, TYPE MACHINE SLICED		EXISTING EASEMENT LINE		WET WELL
	HYDRAULIC BONDED FIBER MATRIX, SEED MIX 25-141, FERTILIZER TYPE 3		DRAINAGE FLOW		EXISTING CONTOUR MINOR		VALVE VAULT
	HYDRAULIC BONDED FIBER MATRIX, SEED MIX 25-151, FERTILIZER TYPE 3		PROPOSED CURB & GUTTER		EXISTING CONTOUR MAJOR		FIRE HYDRANT
			PROPOSED BIT PAVEMENT		PROPOSED CONTOUR MINOR		TRANSFORMER-ELECTRIC
			DELINEATED WETLAND		PROPOSED CONTOUR MAJOR		PEDESTAL-COMMUNICATION
					UNDERGROUND GAS		PEDESTAL-ELECTRIC
					UNDERGROUND COMM		HANDHOLE
					OVERHEAD UTILITY		POLE-UTILITY
					TREE-CONIFEROUS		GUY WIRE ANCHOR
					TREE-DECIDUOUS		

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LIC. NO. 56344 DATE 5/31/2023



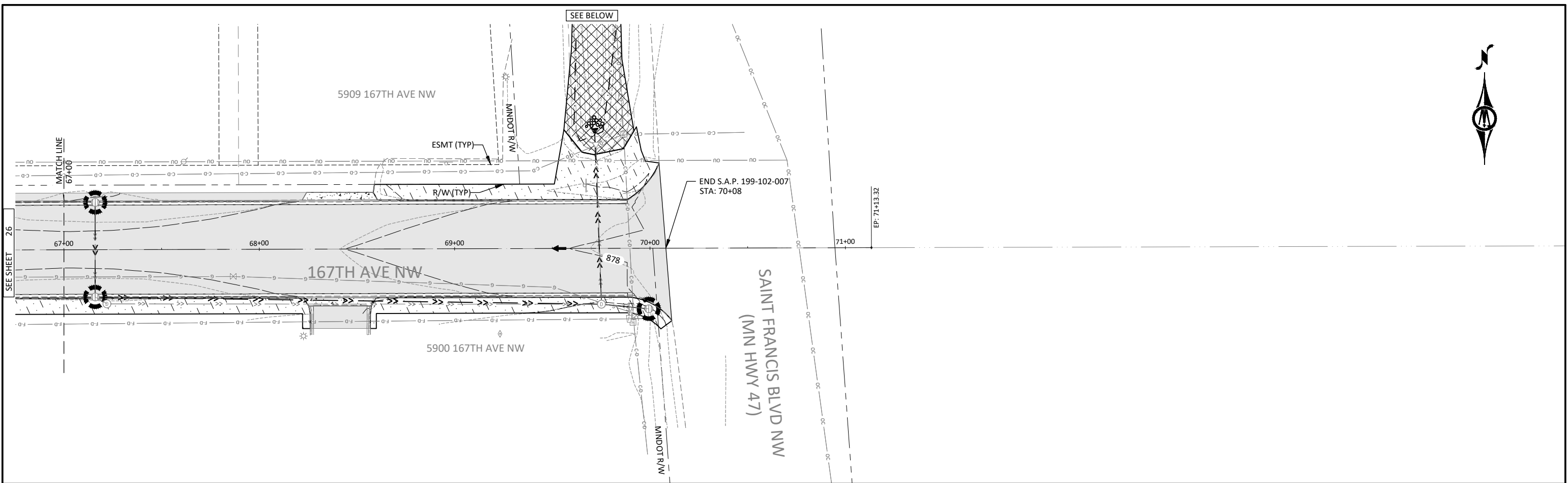
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CITY OF RAMSEY, MINNESOTA  
167TH AVENUE RECONSTRUCTION SAP 199-102-007  
EROSION CONTROL PLAN

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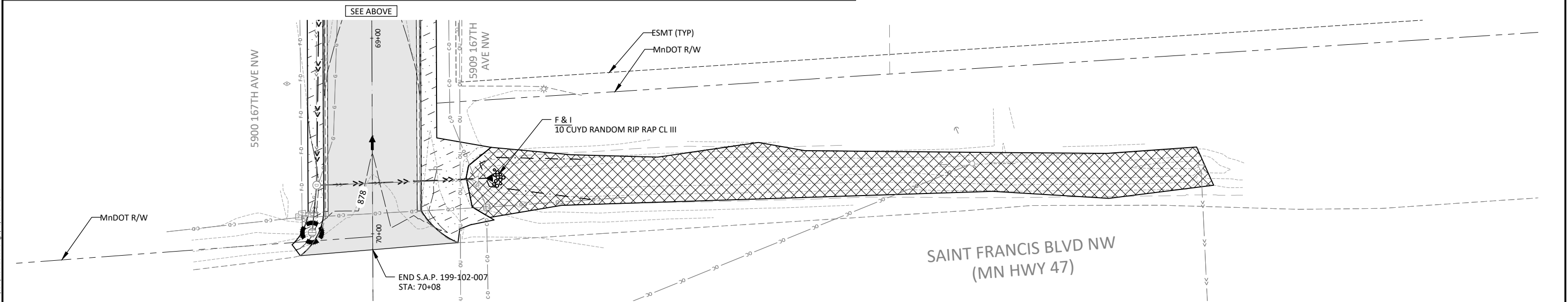


**LEGEND**

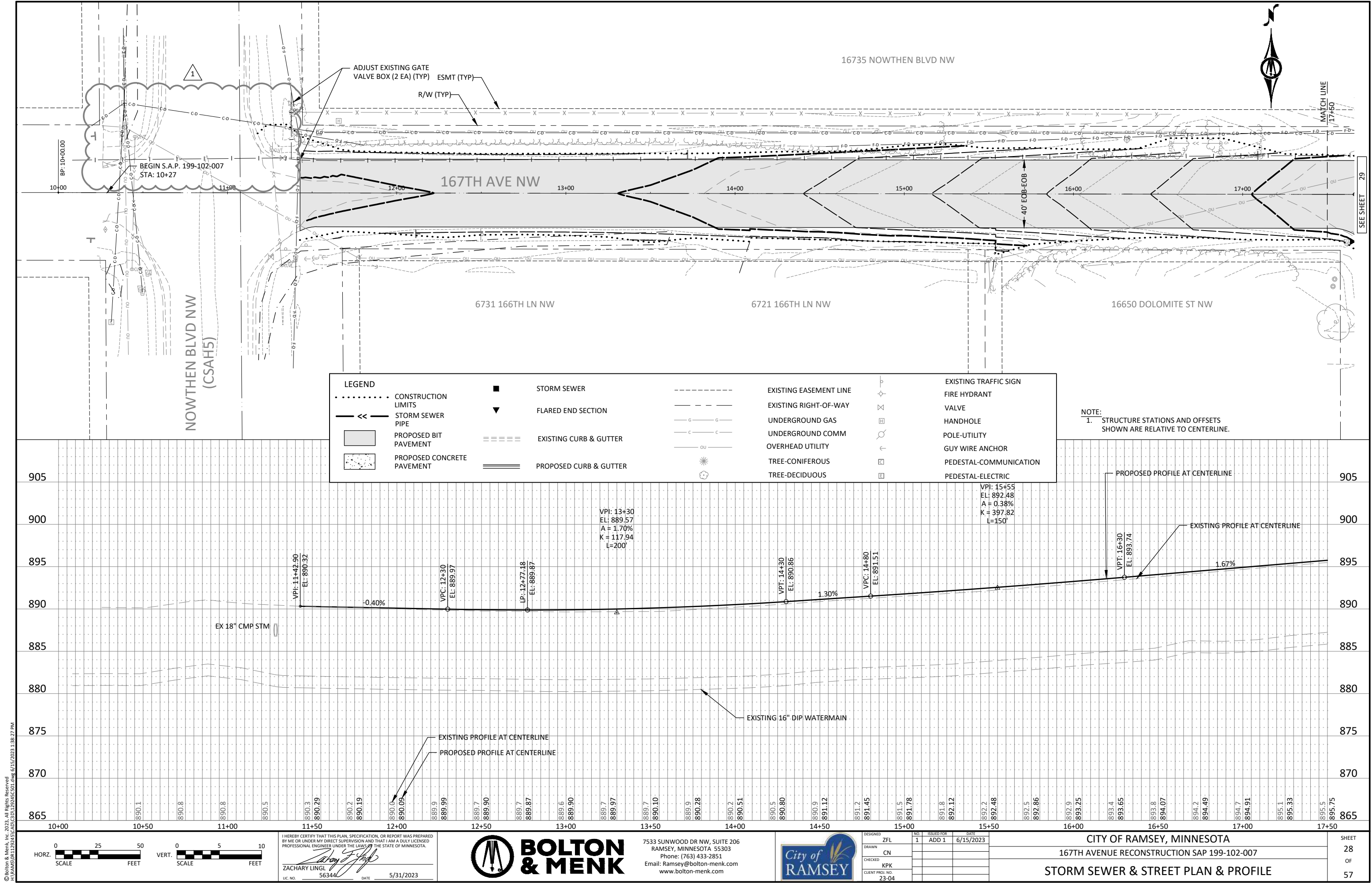
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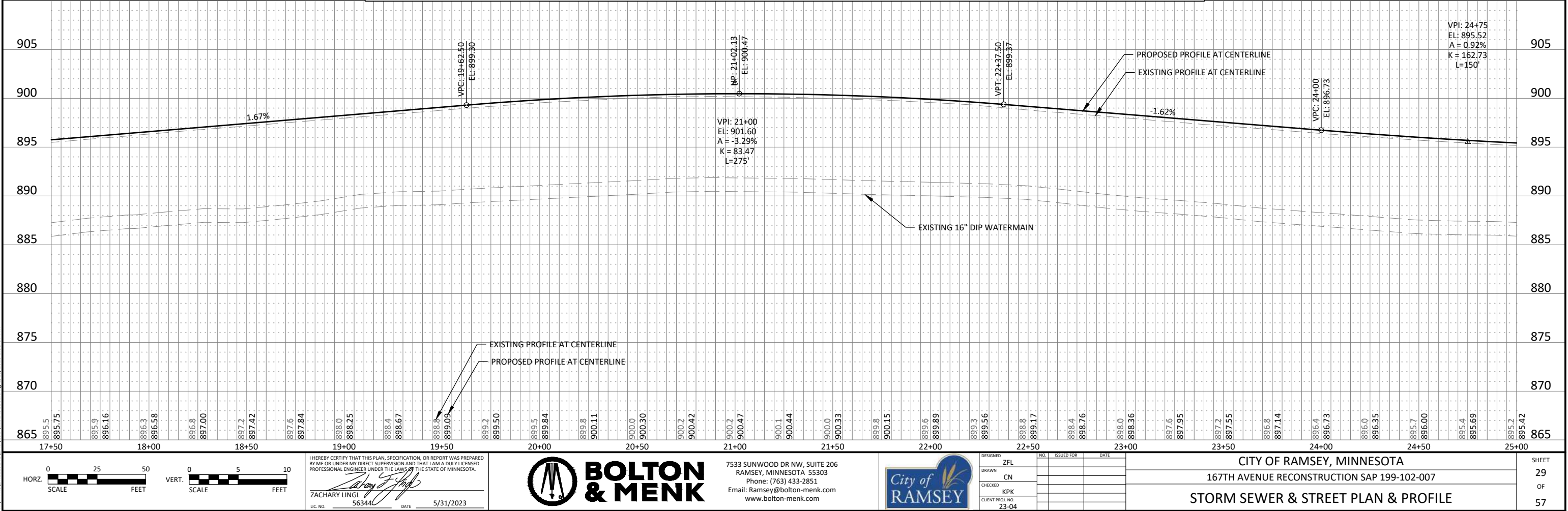
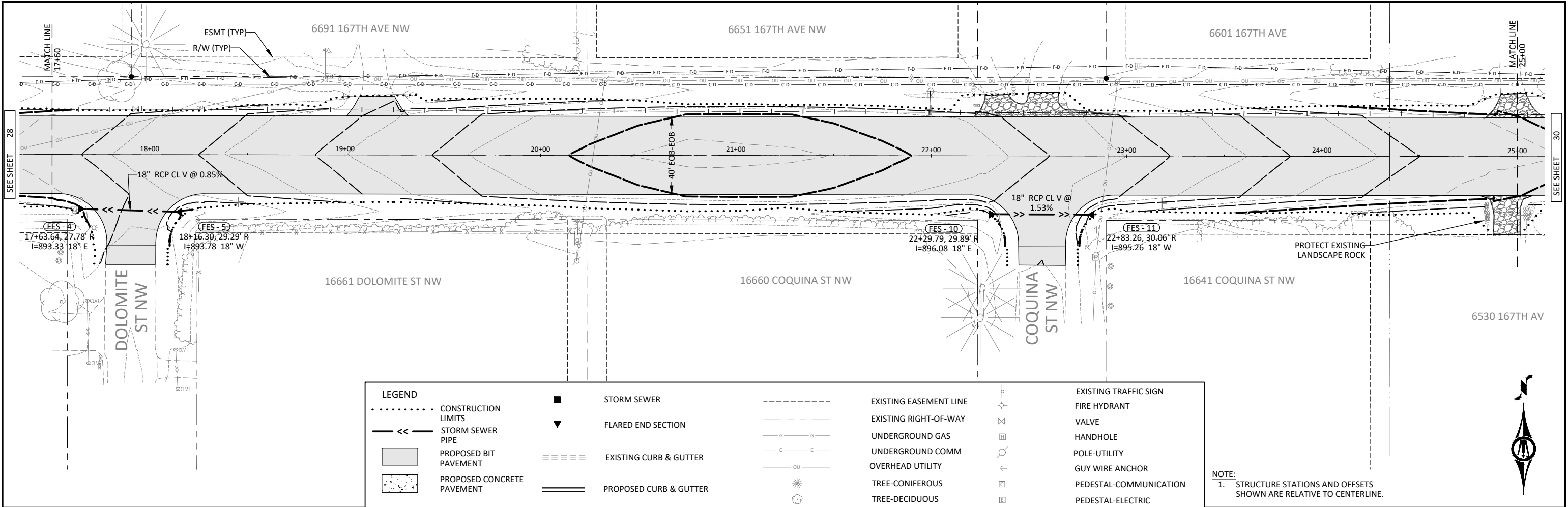
**NOTES:**

1. INSTALL EROSION CONTROL MEASURES PRIOR TO COMMENCING CONSTRUCTION
2. A STREET SWEEPER MUST BE AVAILABLE WITHIN 3 HOURS UPON NOTICE FROM THE CITY THAT THE STREETS NEED TO BE SWEEPED
3. ALL EROSION CONTROL MEASURES TO BE REMOVED ONCE SEED IS ESTABLISHED AS DIRECTED BY THE ENGINEER
4. ALL SEDIMENT TRACKED ON CITY STREETS SHALL BE SWEEPED IMMEDIATELY UPON DISCOVERY
5. THE ENGINEER SHALL VERIFY LIMITS OF SPECIFIED SEED MIXES

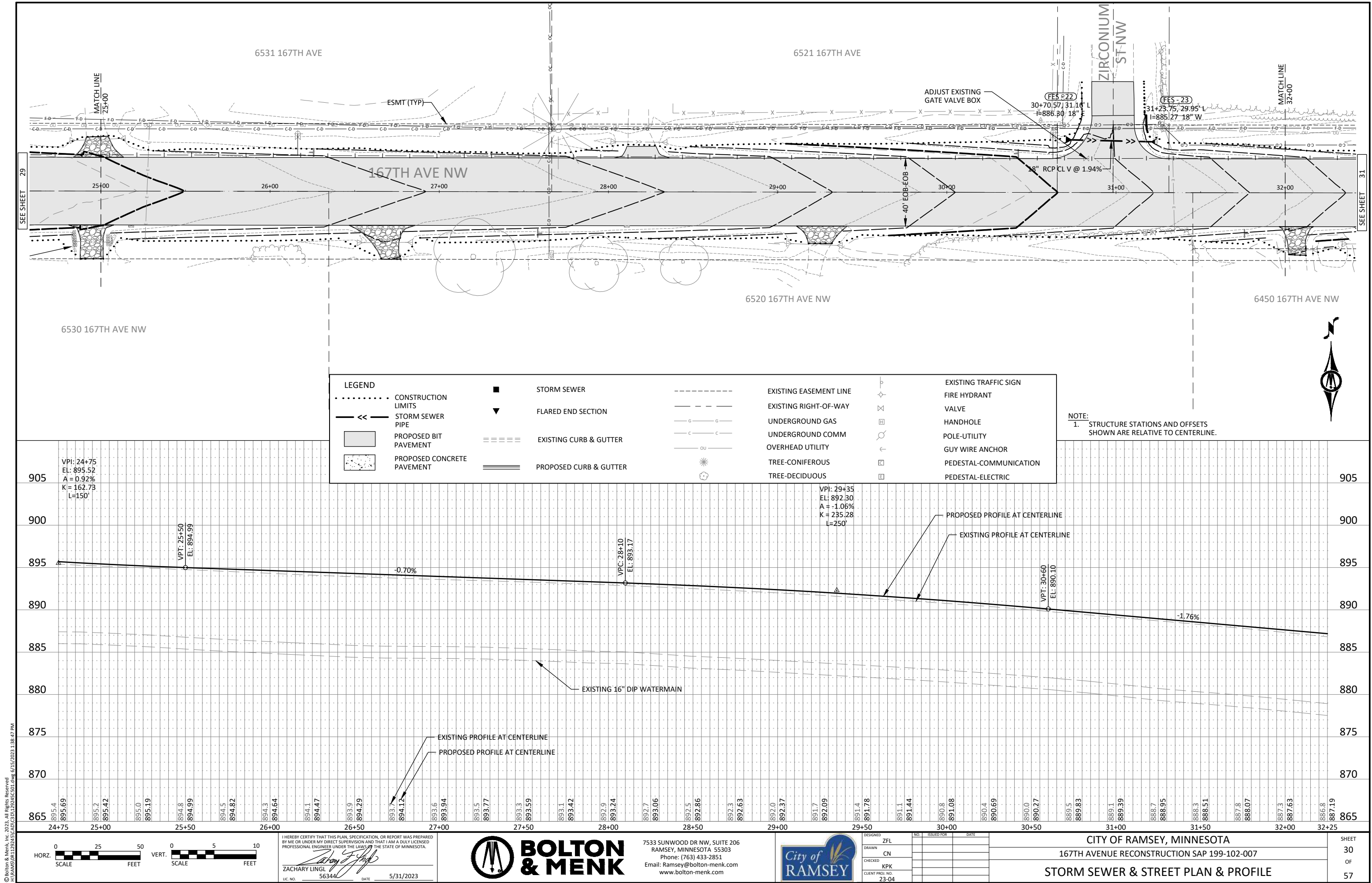


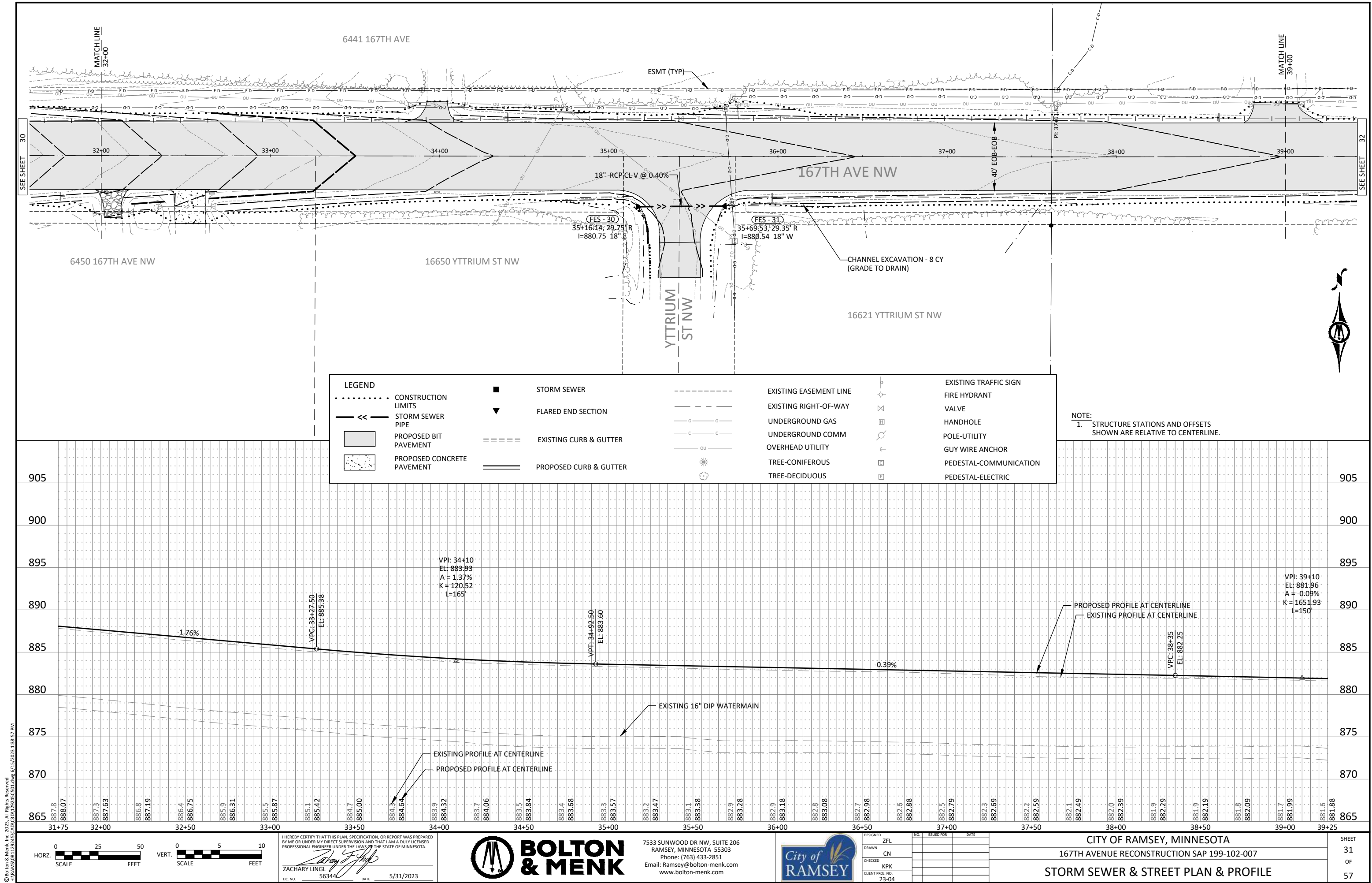




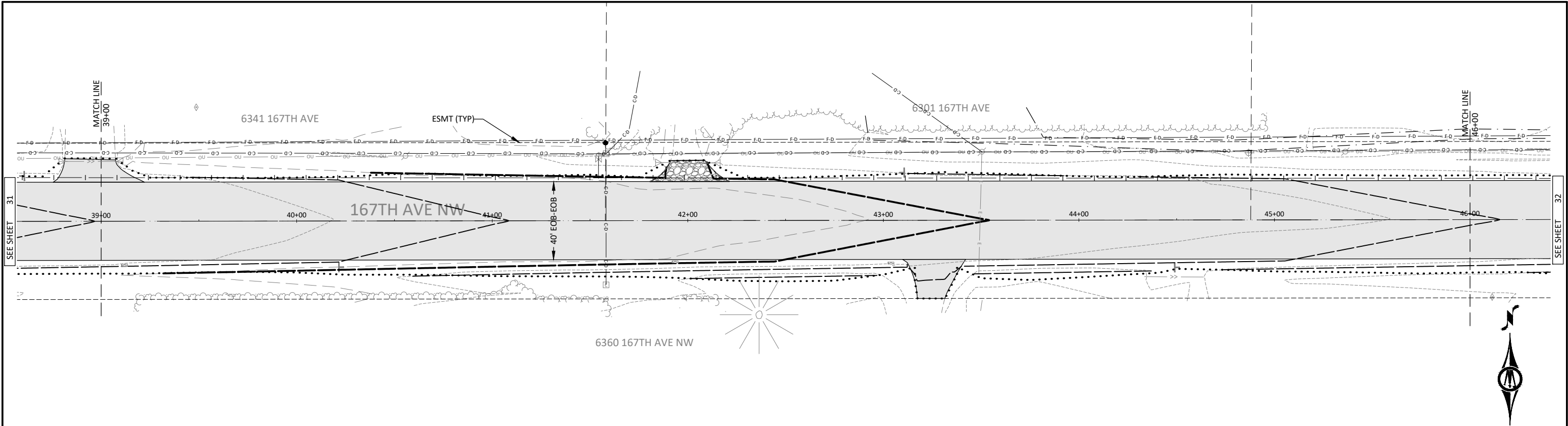












**LEGEND**

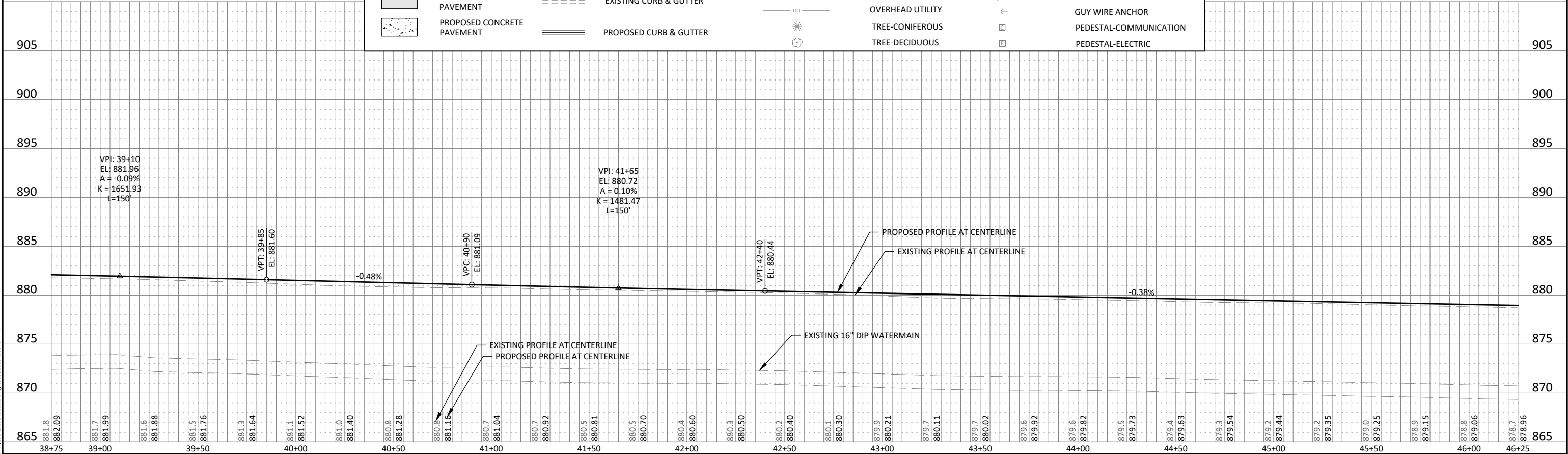
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- << — STORM SEWER PIPE
- PROPOSED BIT PAVEMENT
- PROPOSED CONCRETE PAVEMENT

- STORM SEWER
- ▼ FLARED END SECTION
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER

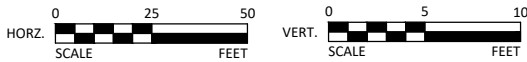
- EXISTING EASEMENT LINE
- EXISTING RIGHT-OF-WAY
- UNDERGROUND GAS
- UNDERGROUND COMM
- OVERHEAD UTILITY
- \* TREE-CONIFEROUS
- TREE-DECIDUOUS

- EXISTING TRAFFIC SIGN
- FIRE HYDRANT
- VALVE
- HANDHOLE
- POLE-UTILITY
- GUY WIRE ANCHOR
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC

NOTE:  
1. STRUCTURE STATIONS AND OFFSETS SHOWN ARE RELATIVE TO CENTERLINE.



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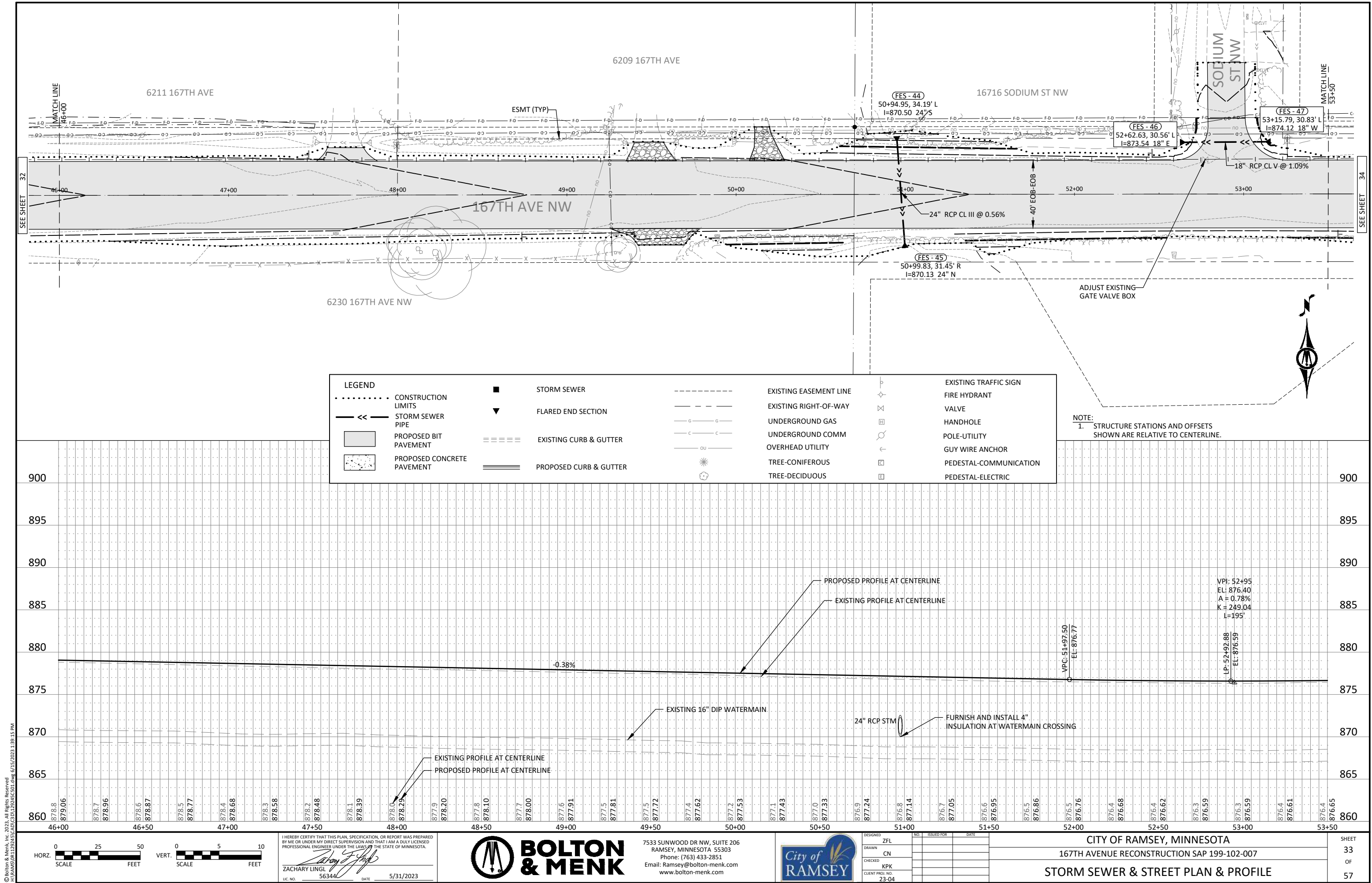


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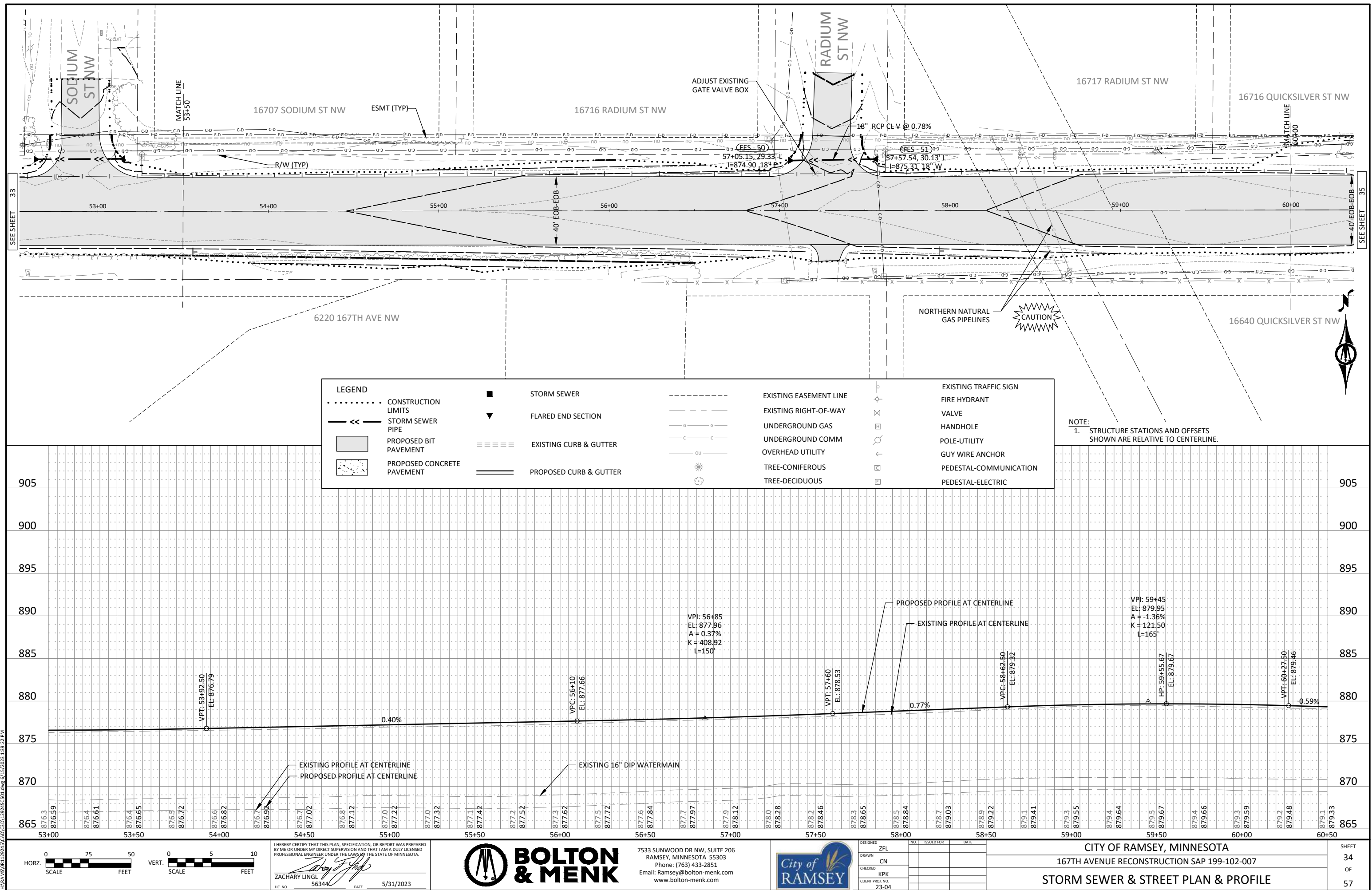


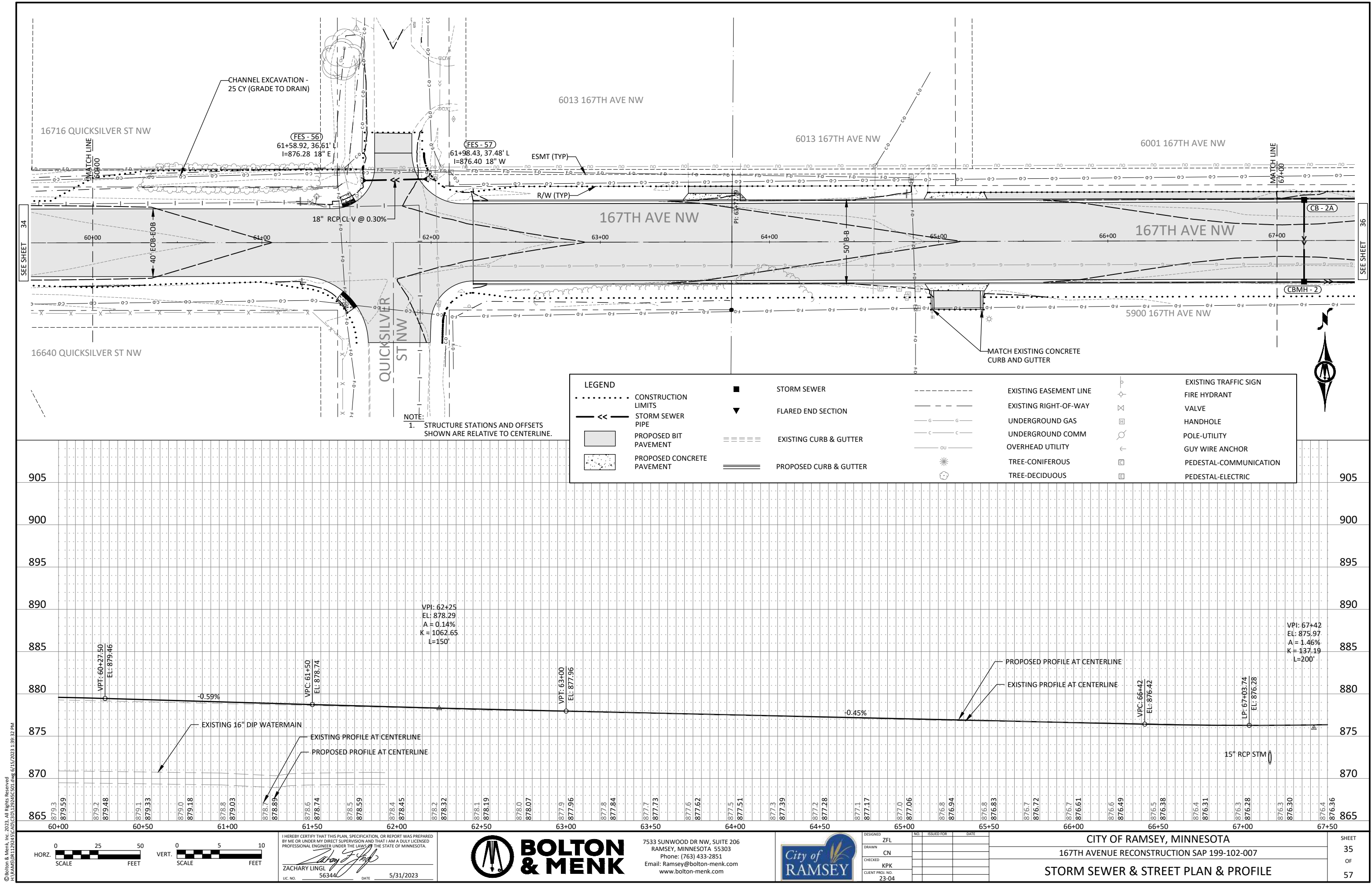
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CITY OF RAMSEY, MINNESOTA		SHEET
167TH AVENUE RECONSTRUCTION SAP 199-102-007		32
STORM SEWER & STREET PLAN & PROFILE		OF
		57

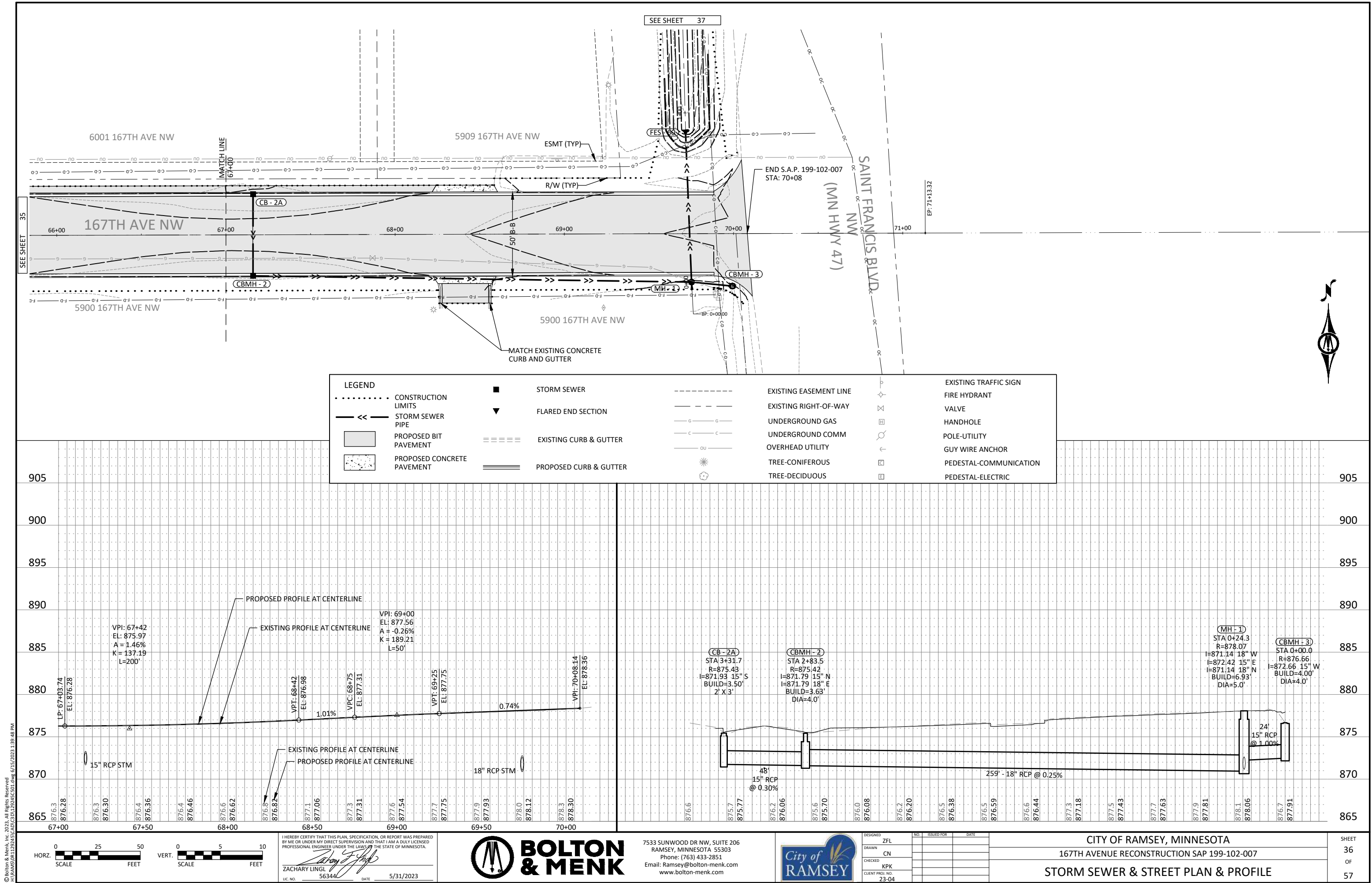


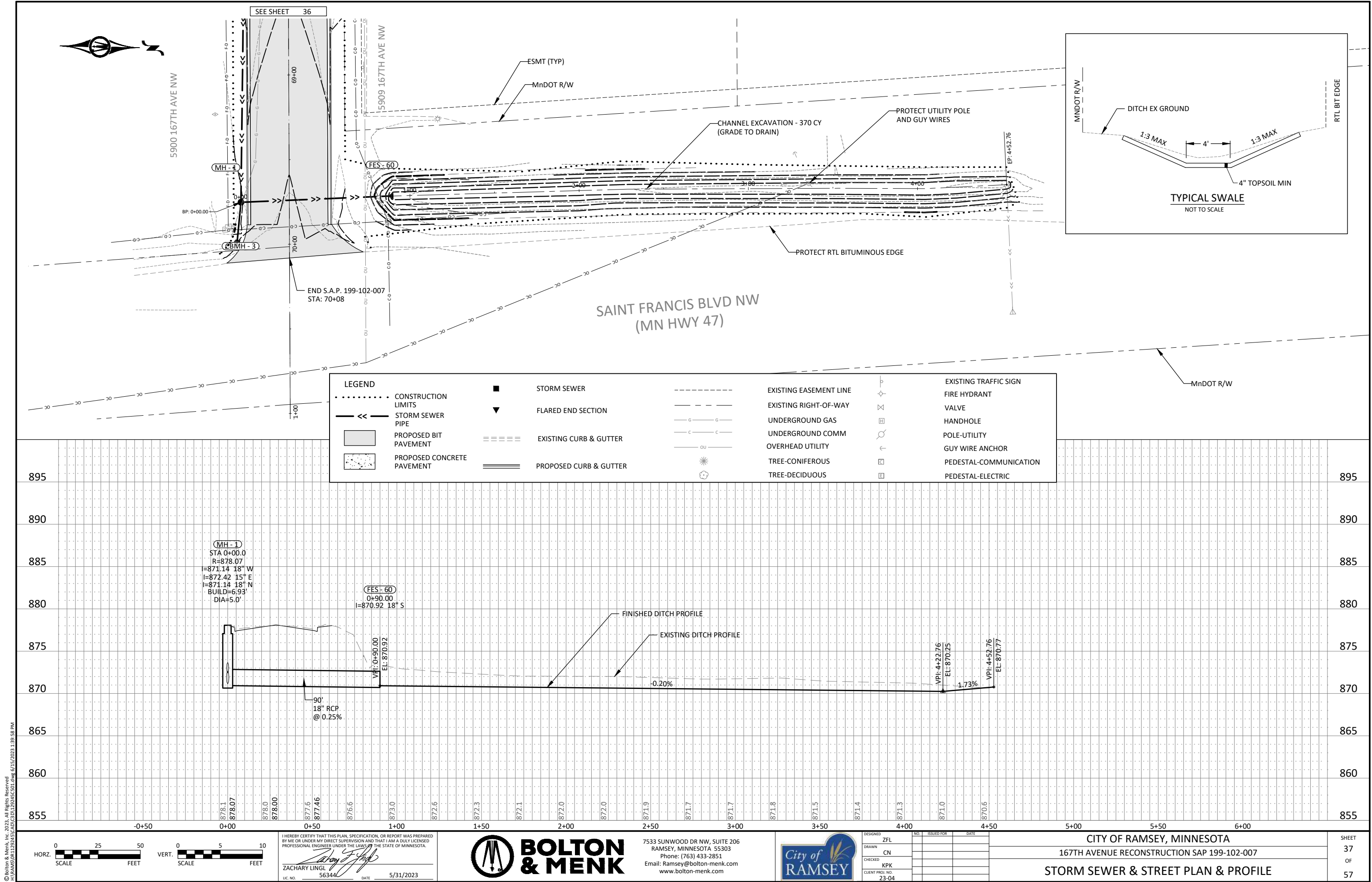




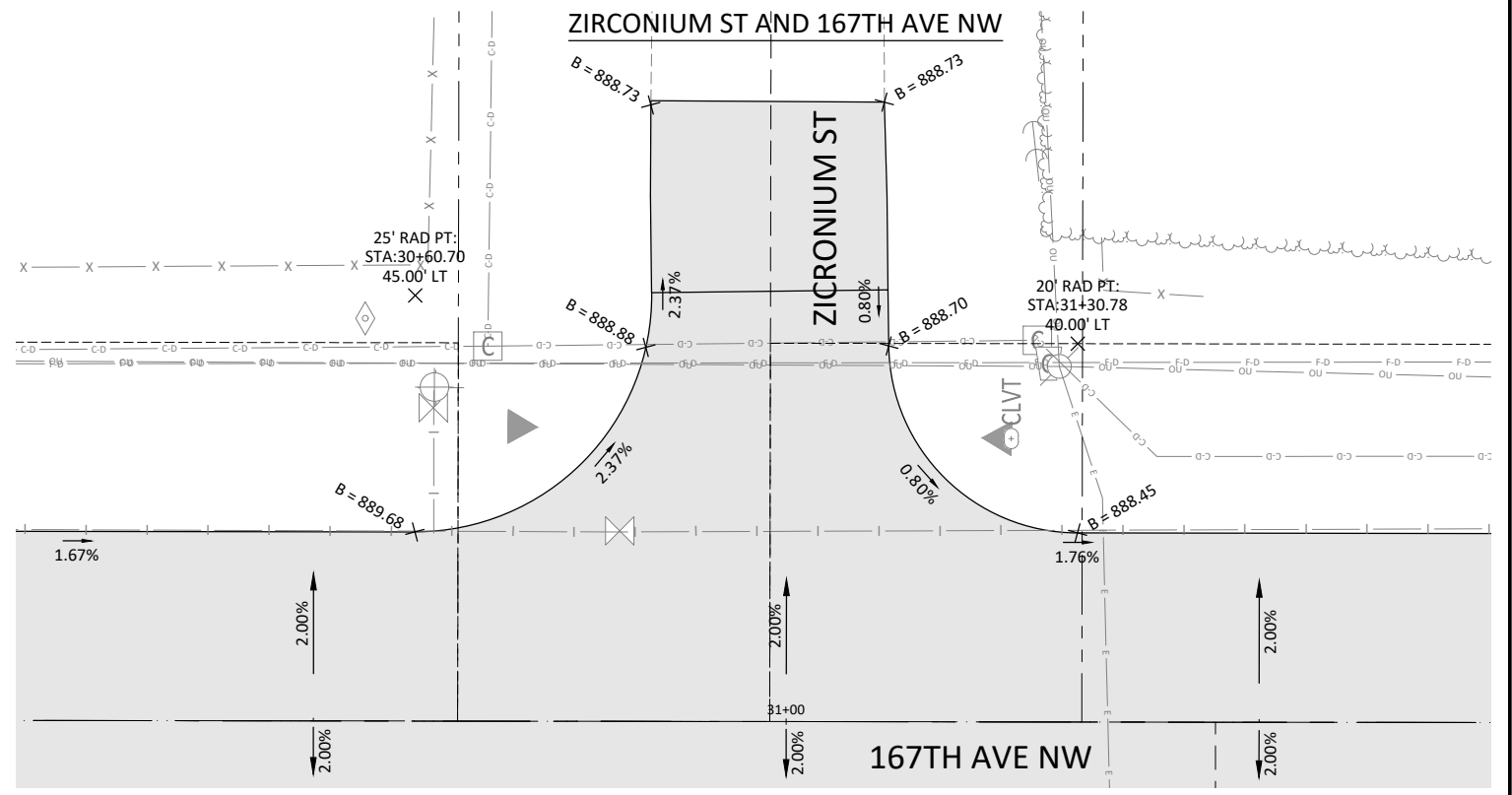
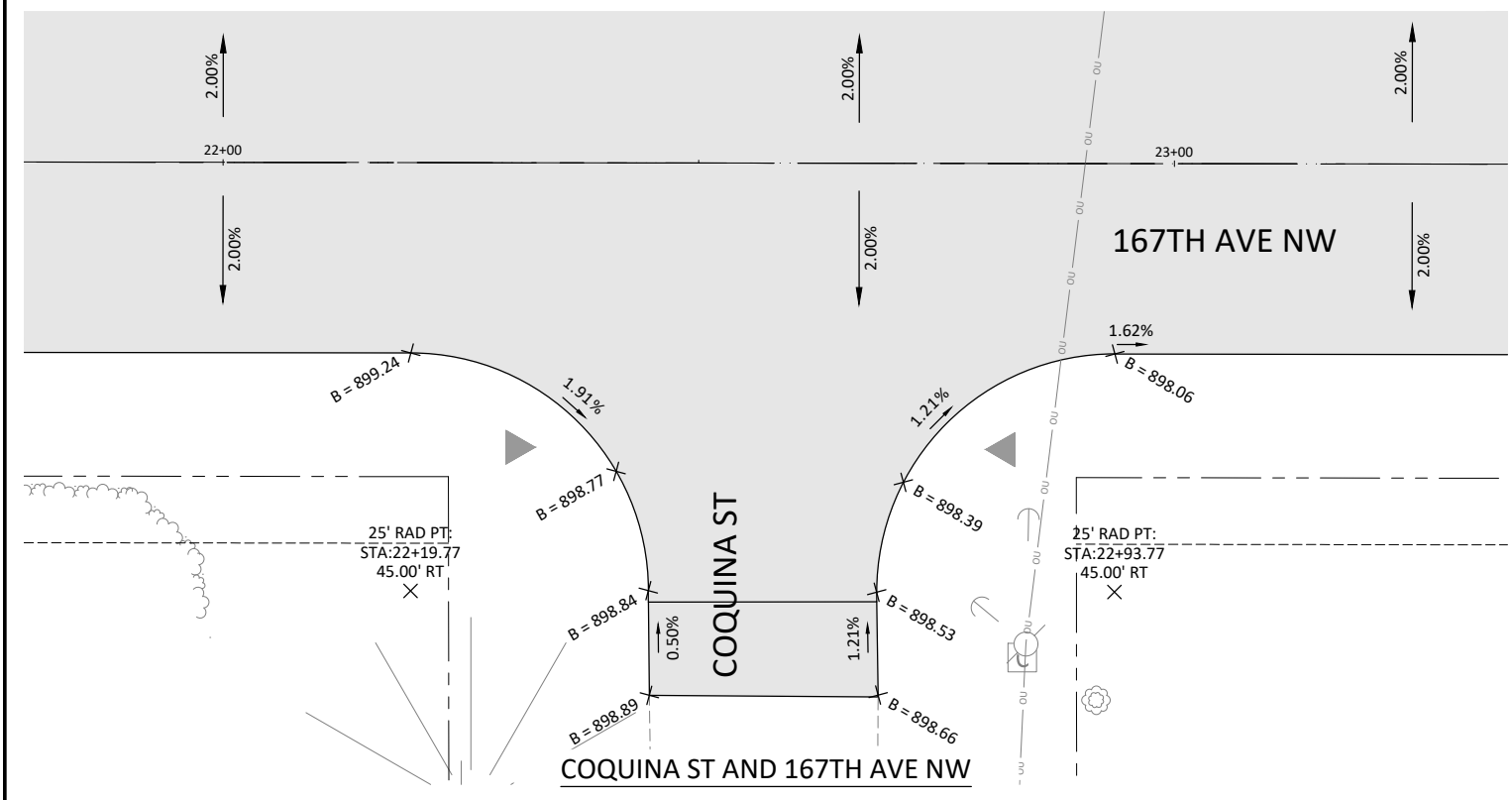
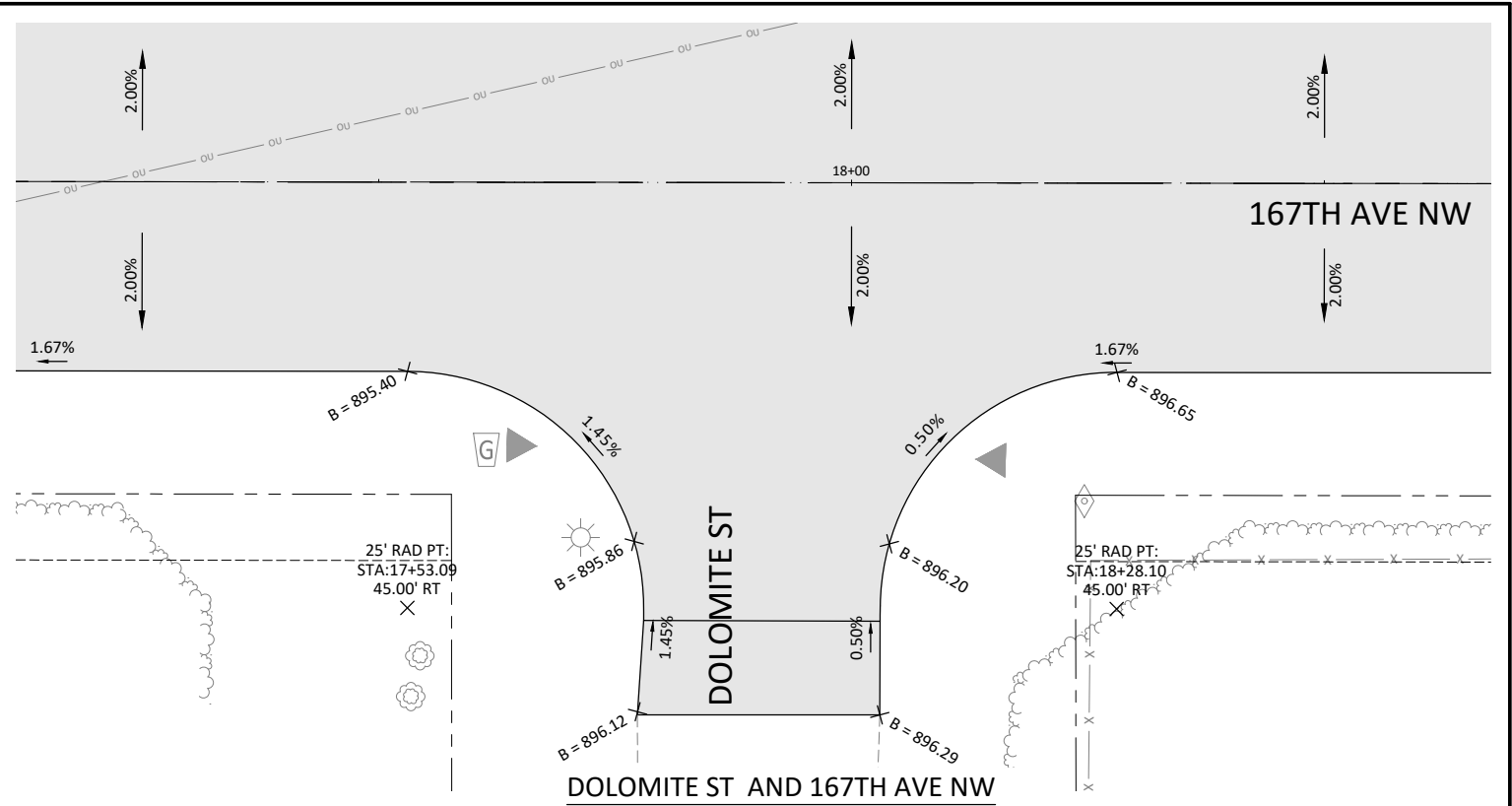
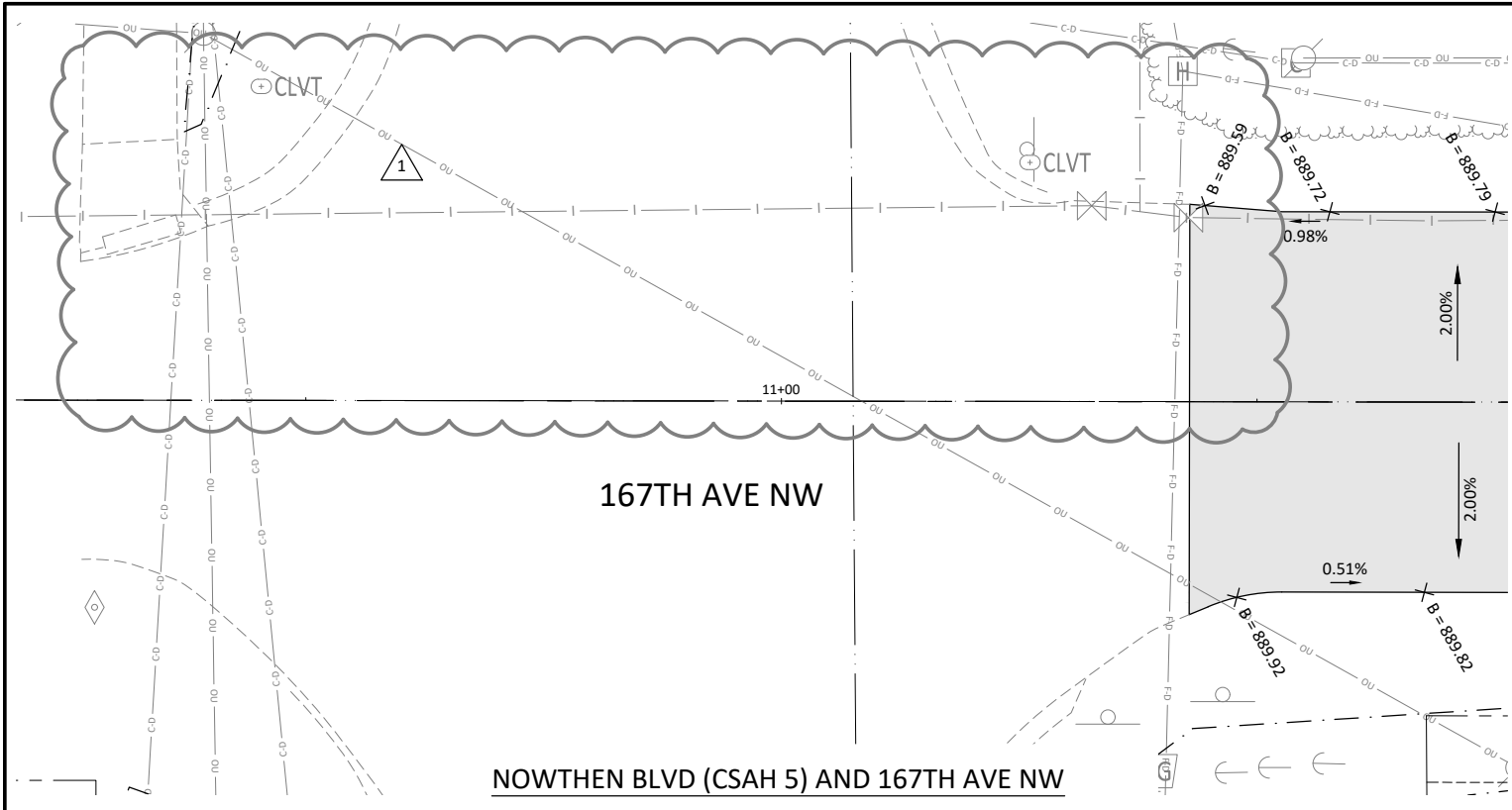




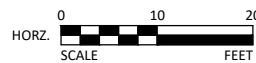








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LEGEND	
	PROPOSED CONCRETE
	PROPOSED BITUMINOUS
	PROPOSED GRAVEL SURFACING
	PROPOSED CURB & GUTTER
	PROPOSED GUTTER
	PROPOSED TOP OF CONCRETE
	PROPOSED TOP OF BITUMINOUS
	PROPOSED TOP OF GRAVEL
	PROPOSED TOP OF CURB & GUTTER

	TRUNCATED DOMES
	LANDING AREA - 4' X 4' MIN DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
	TRANSITION PANEL - REQUIRED ONLY IF CROSS SLOPE OF EXISTING WALK IS GREATER THAN 2%

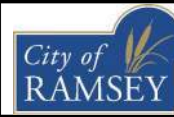
NOTES:	
1.	MATCH PROPOSED GUTTER WITH EXISTING GUTTER
2.	STREET RADII AND RADIUS POINTS ARE TO EDGE OF BITUMINOUS
3.	RAMPS AND LANDINGS SHALL BE 6" CONCRETE WALK

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LIC. NO. 56344 DATE 5/31/2023



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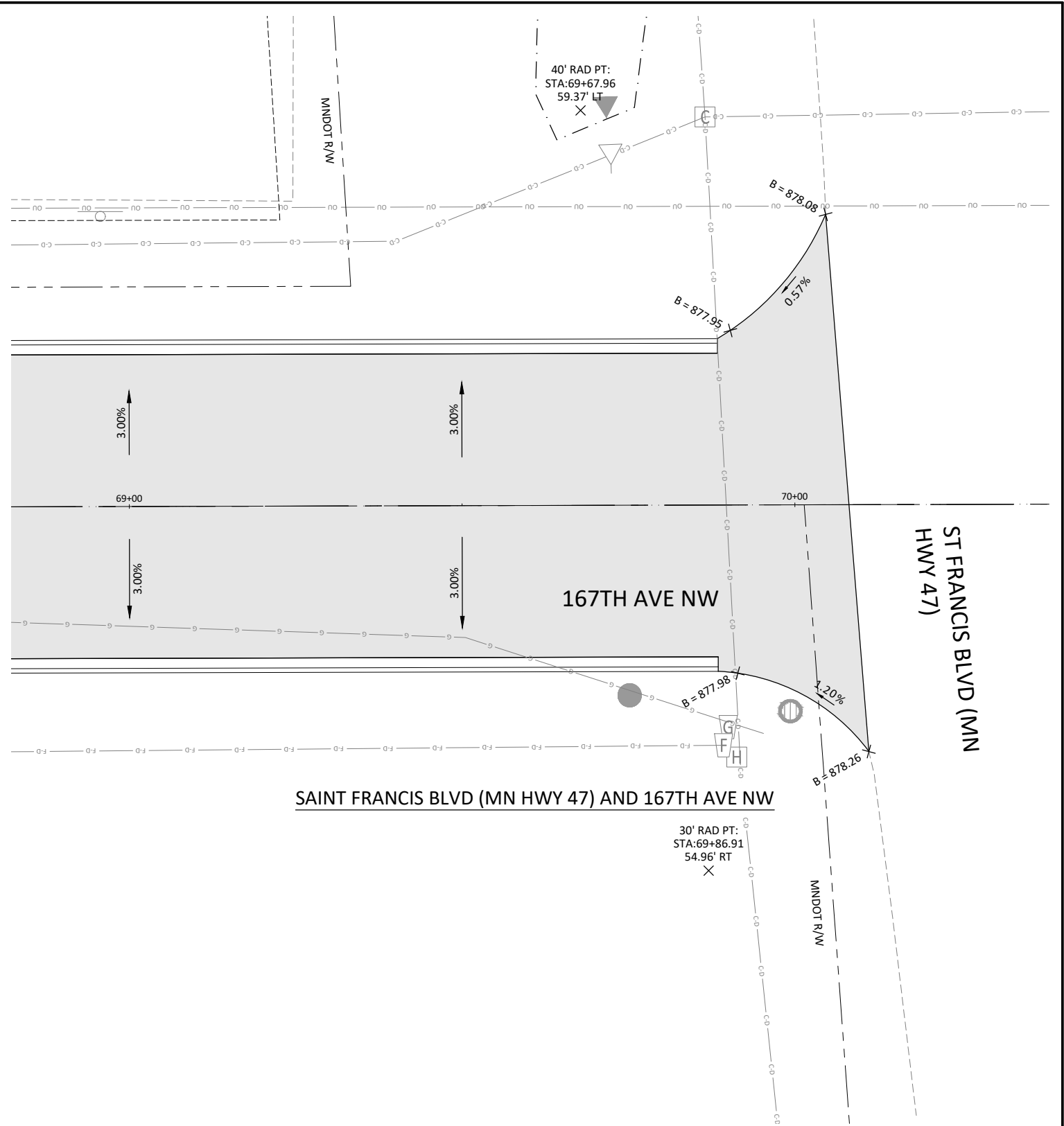
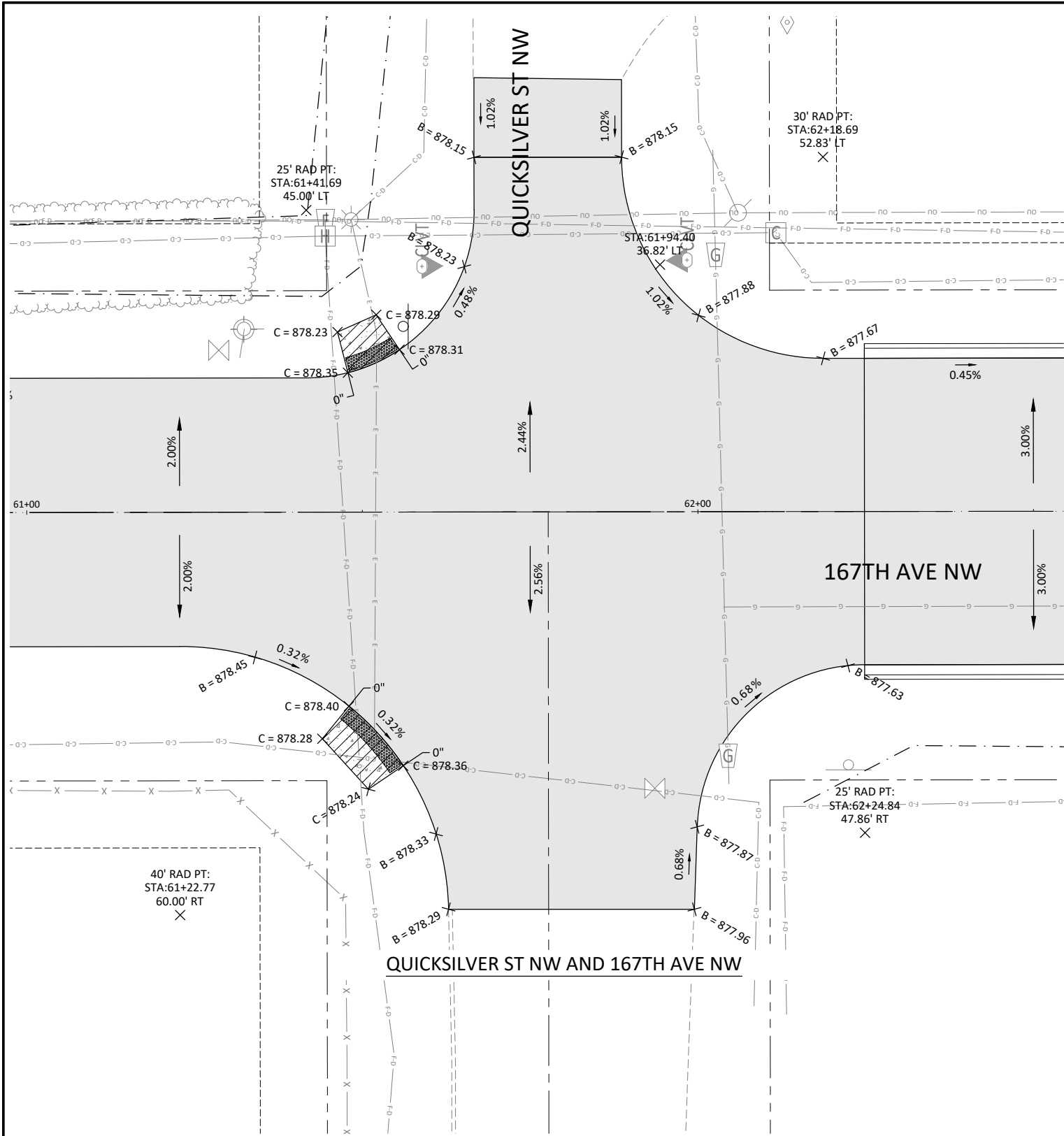
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CITY OF RAMSEY, MINNESOTA	
167TH AVENUE RECONSTRUCTION SAP 199-102-007	
INTERSECTION DETAILS	

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OF  
57







LEGEND

PROPOSED CONCRETE

PROPOSED BITUMINOUS

PROPOSED GRAVEL SURFACING

PROPOSED CURB & GUTTER

G=XXX.XX = PROPOSED GUTTER

C=XXX.XX = PROPOSED TOP OF CONCRETE

B=XXX.XX = PROPOSED TOP OF BITUMINOUS

G=XXX.XX = EXISTING GUTTER

C=XXX.XX = EXISTING TOP OF CONCRETE

B=XXX.XX = EXISTING TOP OF BITUMINOUS

2.0% SURFACE FLOW DIRECTION

TRUNCATED DOMES

LANDING AREA - 4' X 4' MIN DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

TRANSITION PANEL - REQUIRED ONLY IF CROSS SLOPE OF EXISTING WALK IS GREATER THAN 2%

NOTES:

- MATCH PROPOSED GUTTER WITH EXISTING GUTTER
- STREET RADII AND RADIUS POINTS ARE TO EDGE OF BITUMINOUS
- RAMPS AND LANDINGS SHALL BE 6" CONCRETE WALK



0 10 20  
HORIZ. SCALE FEET

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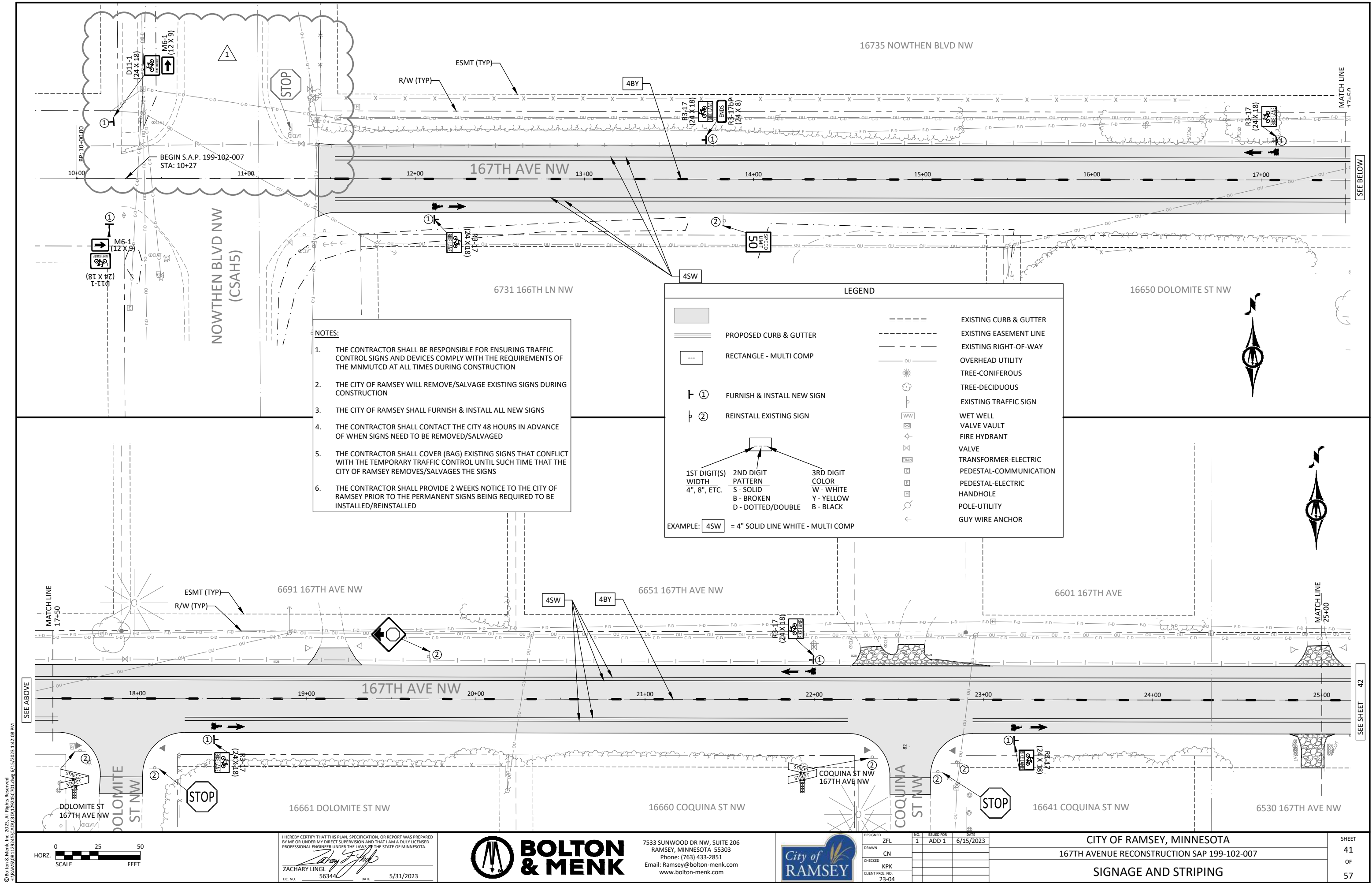


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167TH AVENUE RECONSTRUCTION SAP 199-102-007  
INTERSECTION DETAILS



LEGEND

	PROPOSED CURB & GUTTER		EXISTING CURB & GUTTER
	RECTANGLE - MULTI COMP		EXISTING EASEMENT LINE
	FURNISH & INSTALL NEW SIGN		EXISTING RIGHT-OF-WAY
	REINSTALL EXISTING SIGN		OVERHEAD UTILITY
	1ST DIGIT(S) WIDTH 4", 8", ETC.		TREE-CONIFEROUS
	2ND DIGIT PATTERN S - SOLID B - BROKEN D - DOTTED/DOUBLE		TREE-DECIDUOUS
	3RD DIGIT COLOR W - WHITE Y - YELLOW B - BLACK		EXISTING TRAFFIC SIGN
	EXAMPLE: 4SW = 4" SOLID LINE WHITE - MULTI COMP		WET WELL
			VALVE VAULT
			FIRE HYDRANT
			VALVE
			TRANSFORMER-ELECTRIC
			PEDESTAL-COMMUNICATION
			PEDESTAL-ELECTRIC
			HANDHOLE
			POLE-UTILITY
			GUY WIRE ANCHOR

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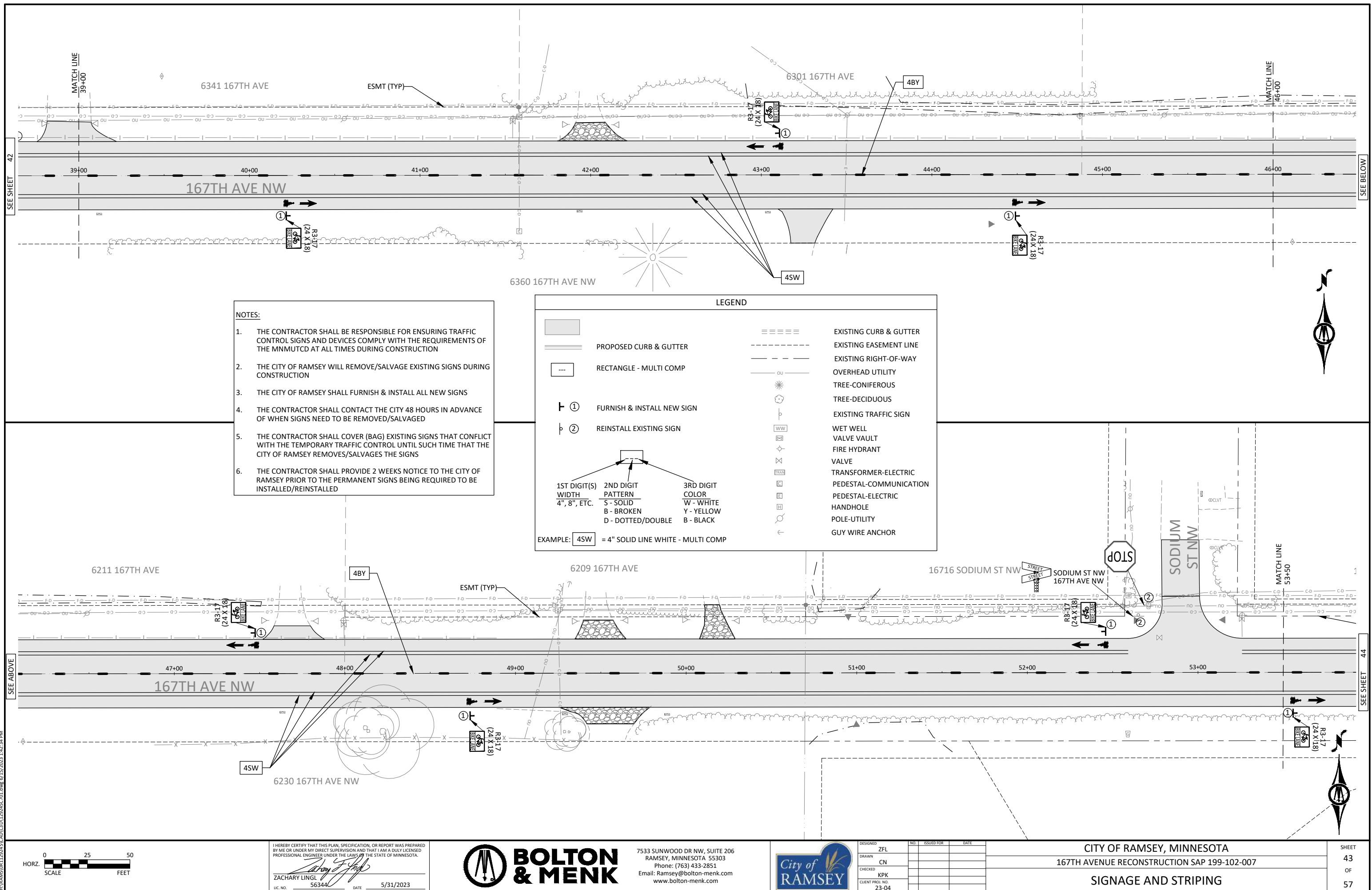
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167TH AVENUE RECONSTRUCTION SAP 199-102-007  
SIGNAGE AND STRIPING

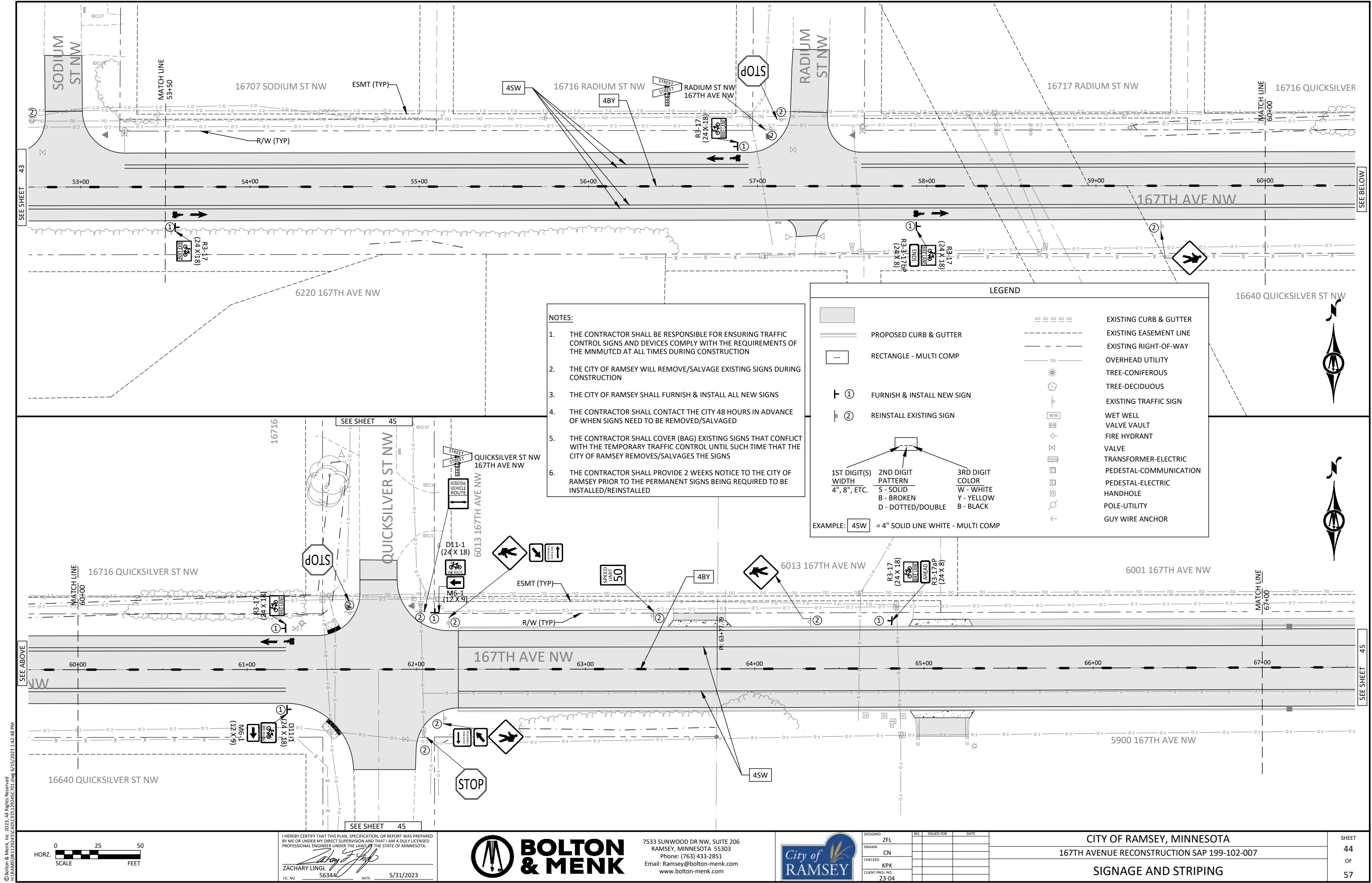
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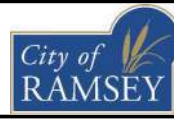


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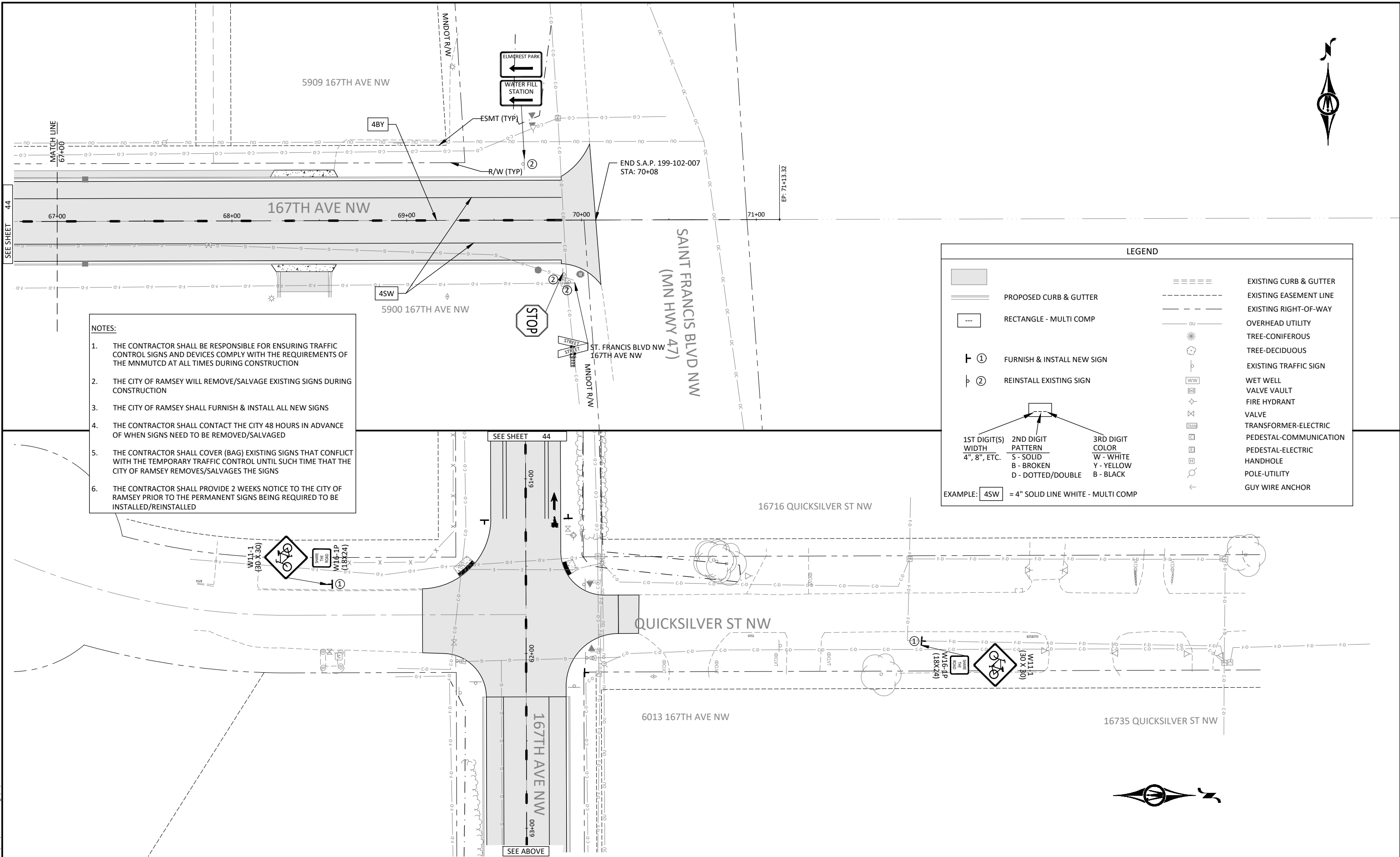


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SIGNAGE AND STRIPING

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NOTES:

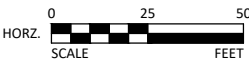
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING TRAFFIC CONTROL SIGNS AND DEVICES COMPLY WITH THE REQUIREMENTS OF THE MNMUTCD AT ALL TIMES DURING CONSTRUCTION
2. THE CITY OF RAMSEY WILL REMOVE/SALVAGE EXISTING SIGNS DURING CONSTRUCTION
3. THE CITY OF RAMSEY SHALL FURNISH & INSTALL ALL NEW SIGNS
4. THE CONTRACTOR SHALL CONTACT THE CITY 48 HOURS IN ADVANCE OF WHEN SIGNS NEED TO BE REMOVED/SALVAGED
5. THE CONTRACTOR SHALL COVER (BAG) EXISTING SIGNS THAT CONFLICT WITH THE TEMPORARY TRAFFIC CONTROL UNTIL SUCH TIME THAT THE CITY OF RAMSEY REMOVES/SALVAGES THE SIGNS
6. THE CONTRACTOR SHALL PROVIDE 2 WEEKS NOTICE TO THE CITY OF RAMSEY PRIOR TO THE PERMANENT SIGNS BEING REQUIRED TO BE INSTALLED/REINSTALLED

LEGEND

	PROPOSED CURB & GUTTER		EXISTING EASEMENT LINE
	EXISTING RIGHT-OF-WAY		OVERHEAD UTILITY
	RECTANGLE - MULTI COMP		TREE-CONIFEROUS
	FURNISH & INSTALL NEW SIGN		TREE-DECIDUOUS
	REINSTALL EXISTING SIGN		EXISTING TRAFFIC SIGN
			WET WELL
			VALVE VAULT
			FIRE HYDRANT
			VALVE
			TRANSFORMER-ELECTRIC
			PEDESTAL-COMMUNICATION
			PEDESTAL-ELECTRIC
			HANDHOLE
			POLE-UTILITY
			GUY WIRE ANCHOR

EXAMPLE: 4SW = 4" SOLID LINE WHITE - MULTI COMP

1ST DIGIT(S) WIDTH 4", 8", ETC.	2ND DIGIT PATTERN S - SOLID B - BROKEN D - DOTTED/DOUBLE	3RD DIGIT COLOR W - WHITE Y - YELLOW B - BLACK
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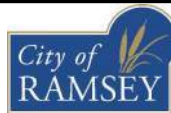


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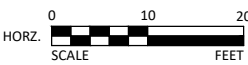
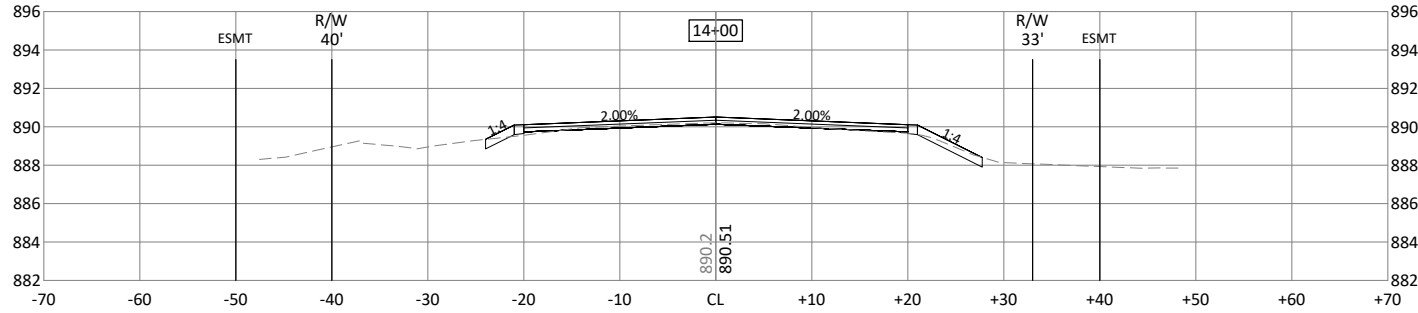
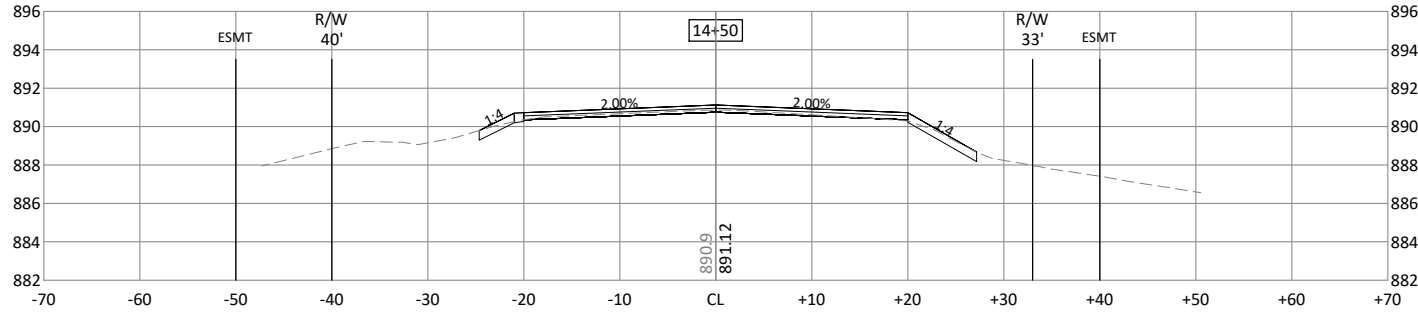
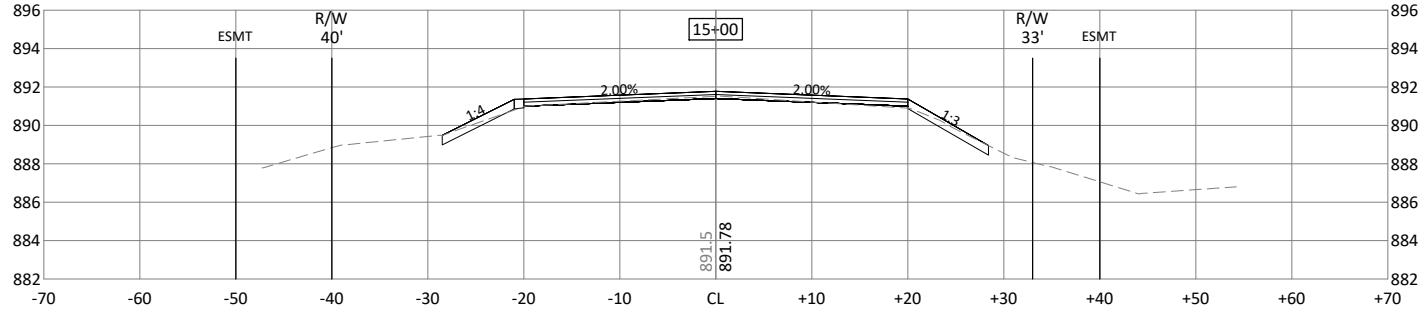
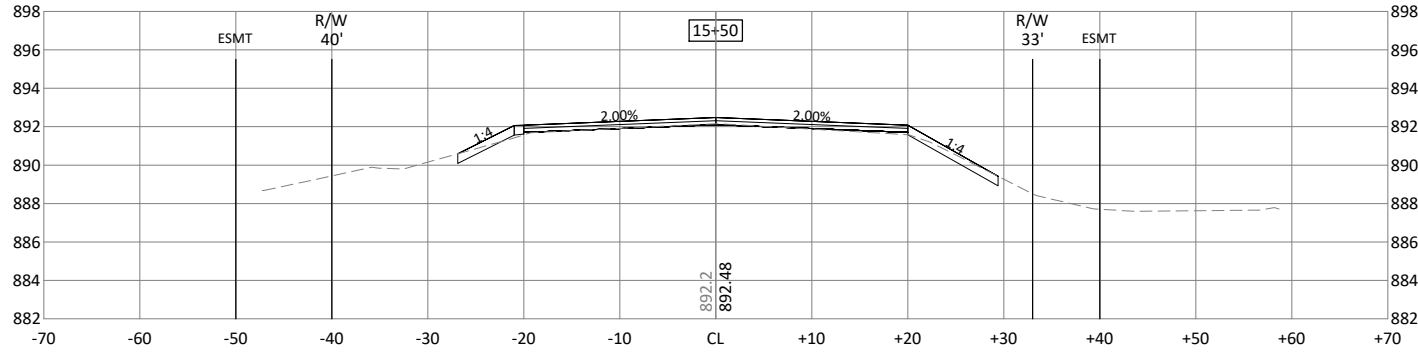
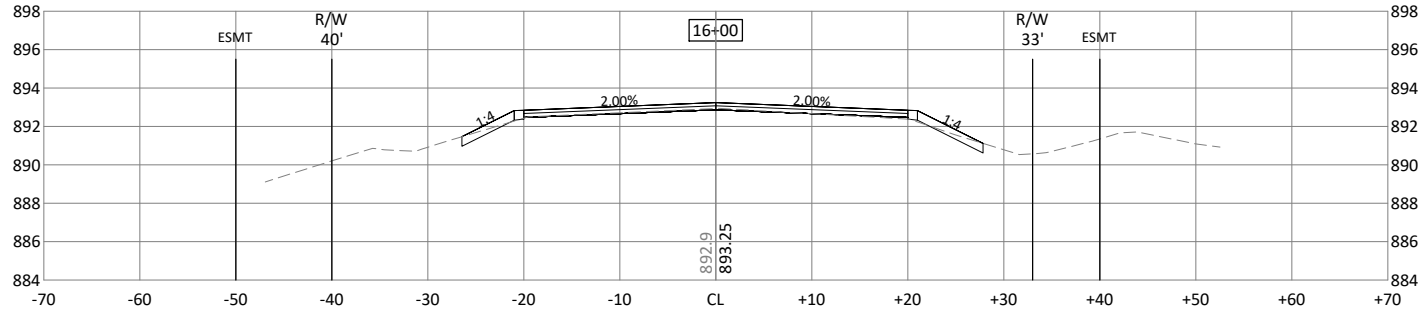
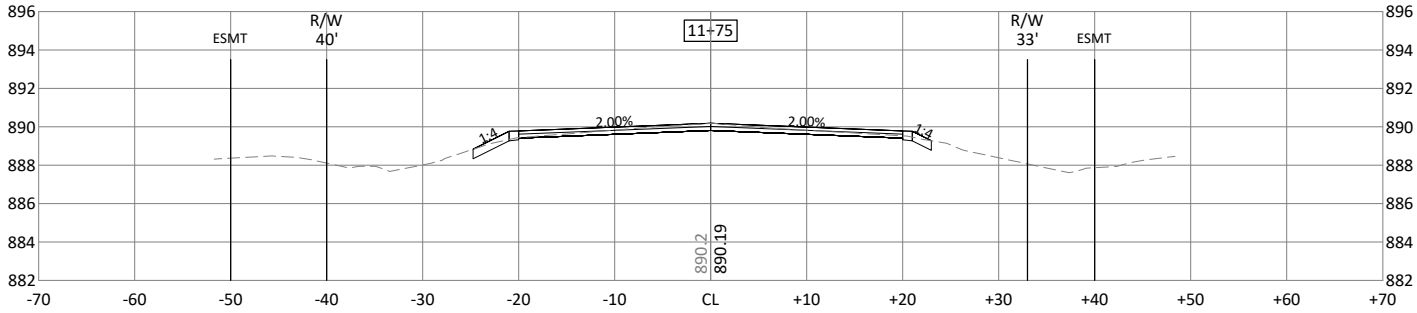
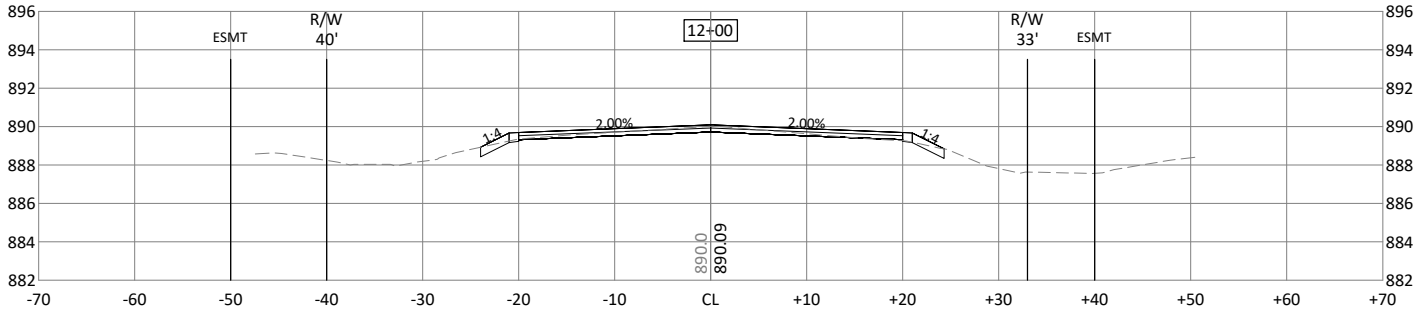
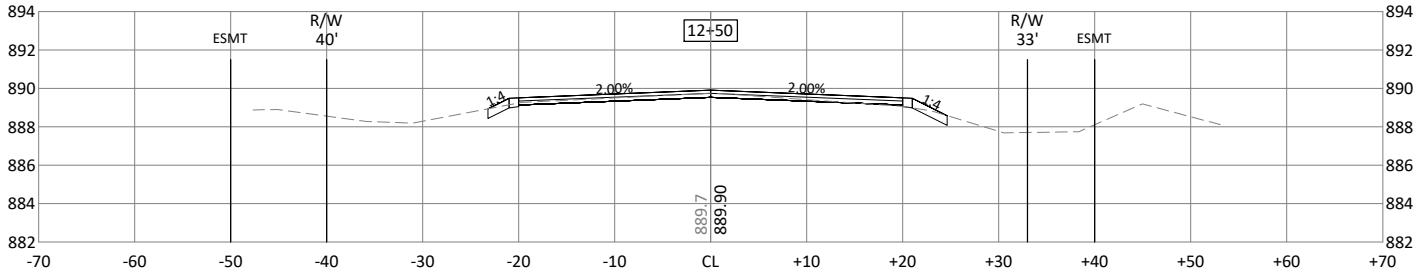
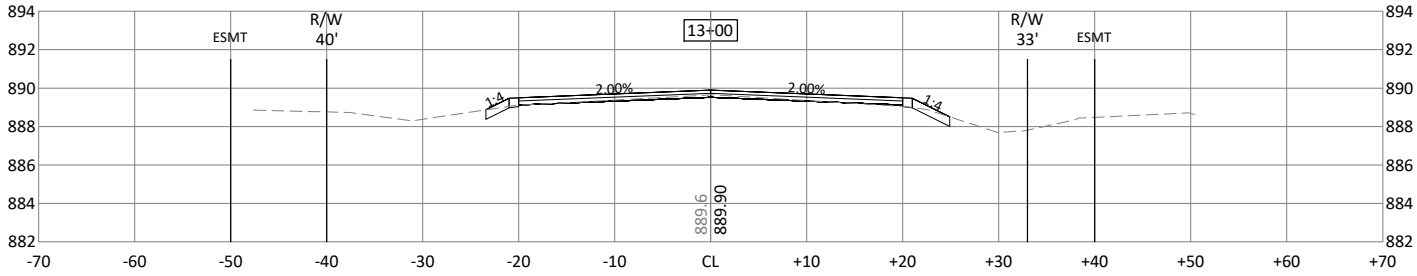
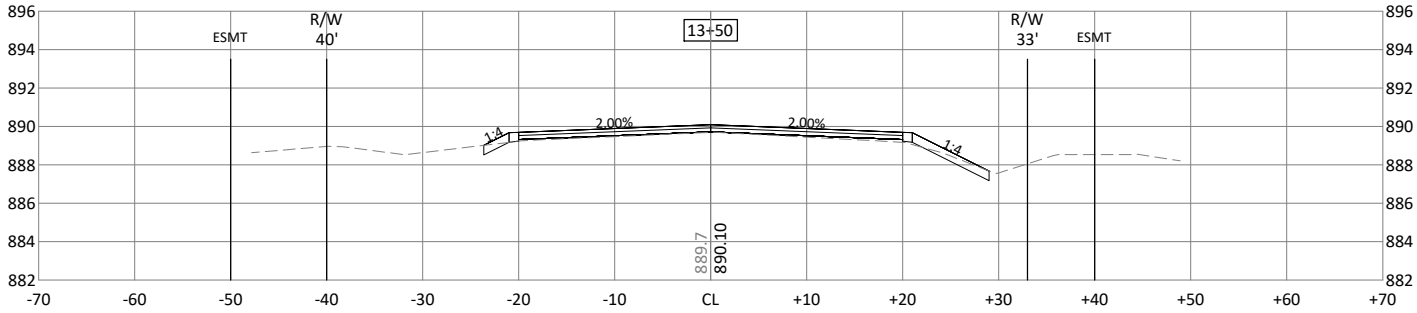
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SIGNAGE AND STRIPING

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OF  
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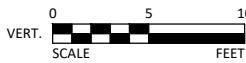
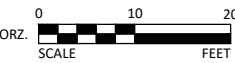
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CITY OF RAMSEY, MINNESOTA  
167TH AVENUE RECONSTRUCTION SAP 199-102-007

CROSS SECTIONS

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46  
OF  
57

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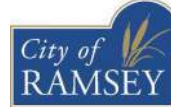


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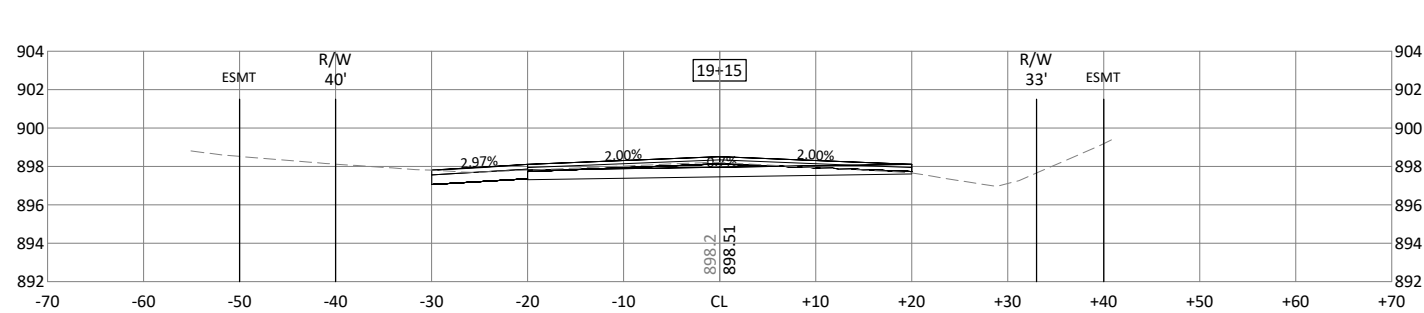
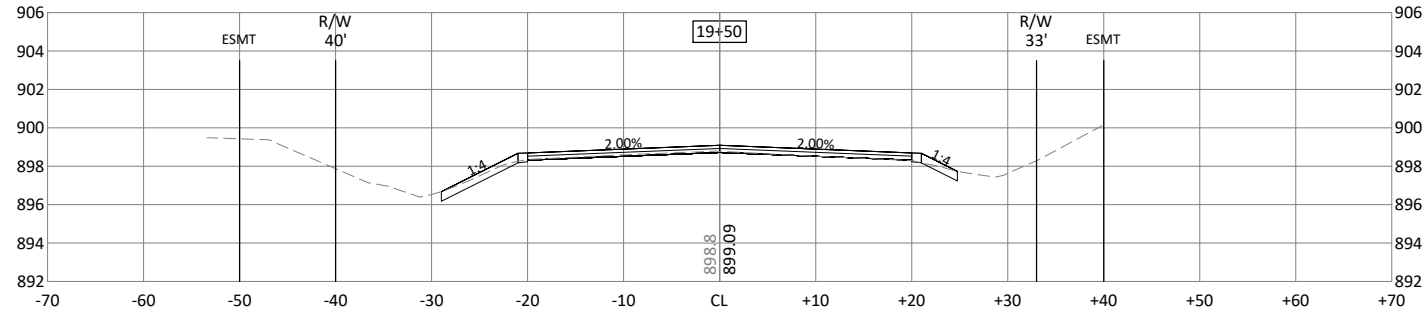
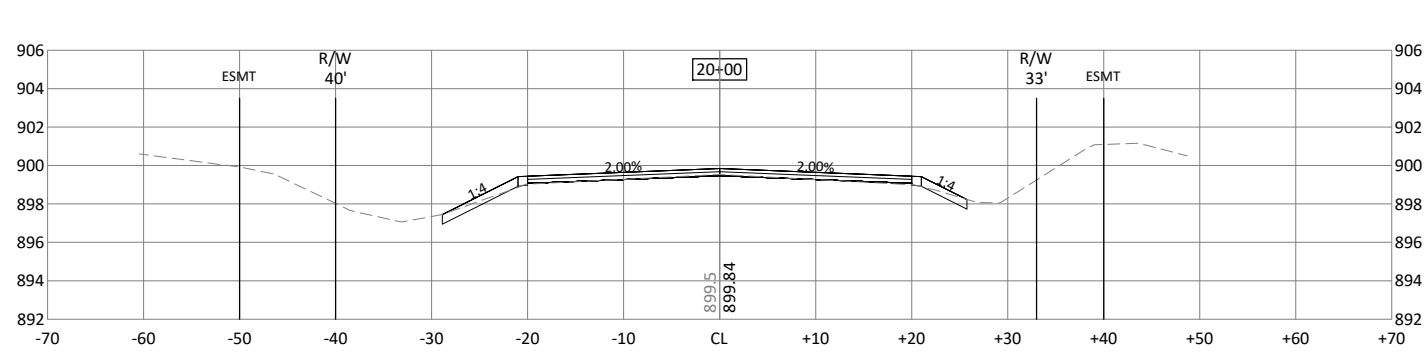
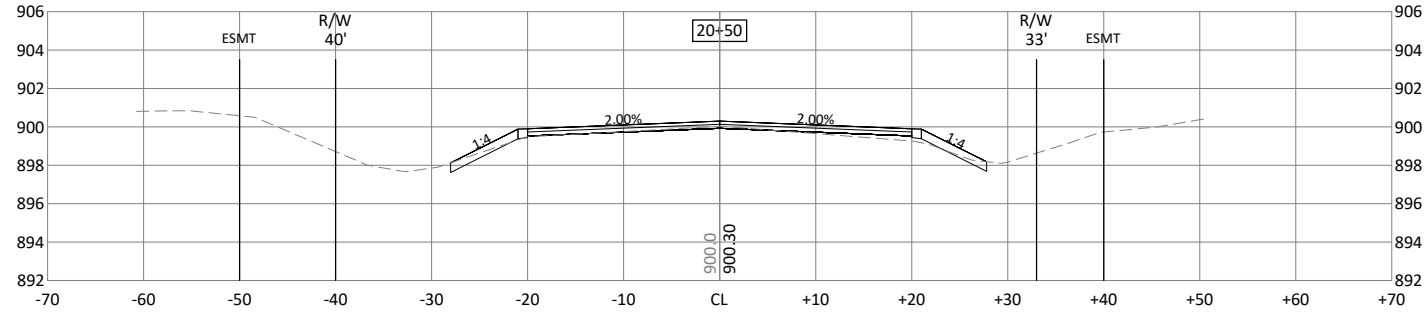
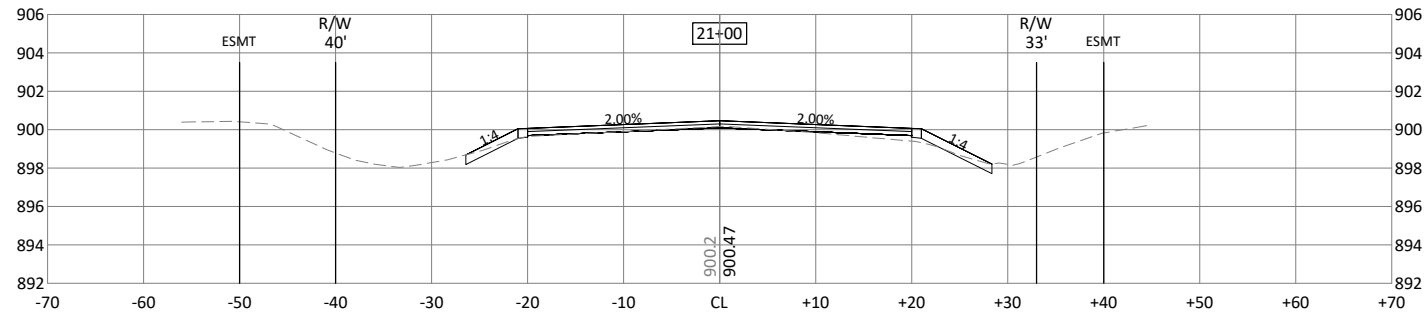
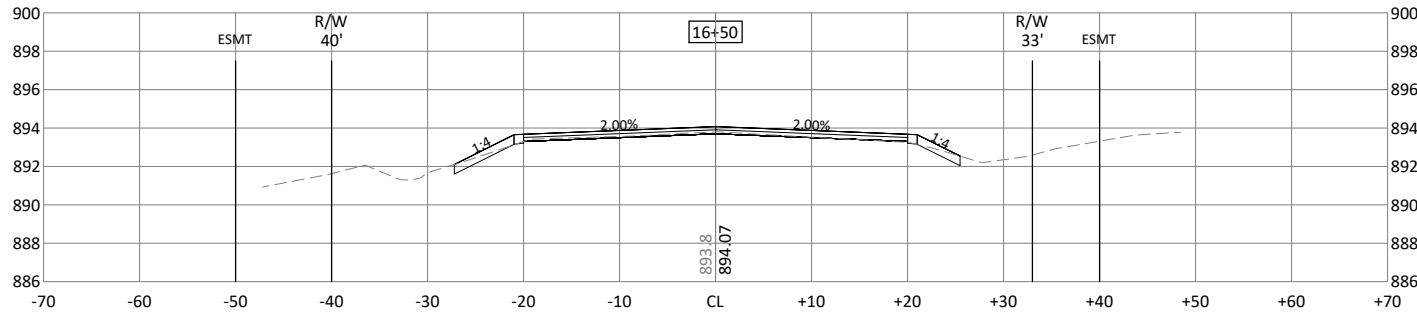
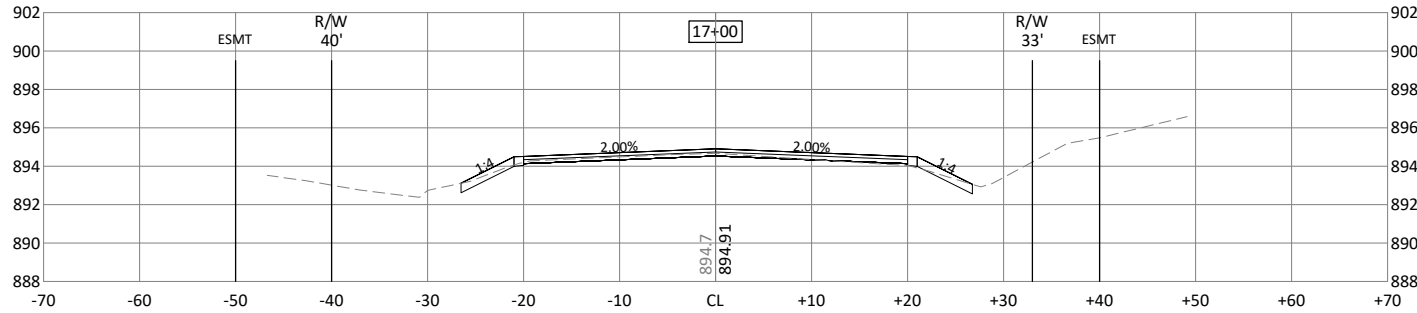
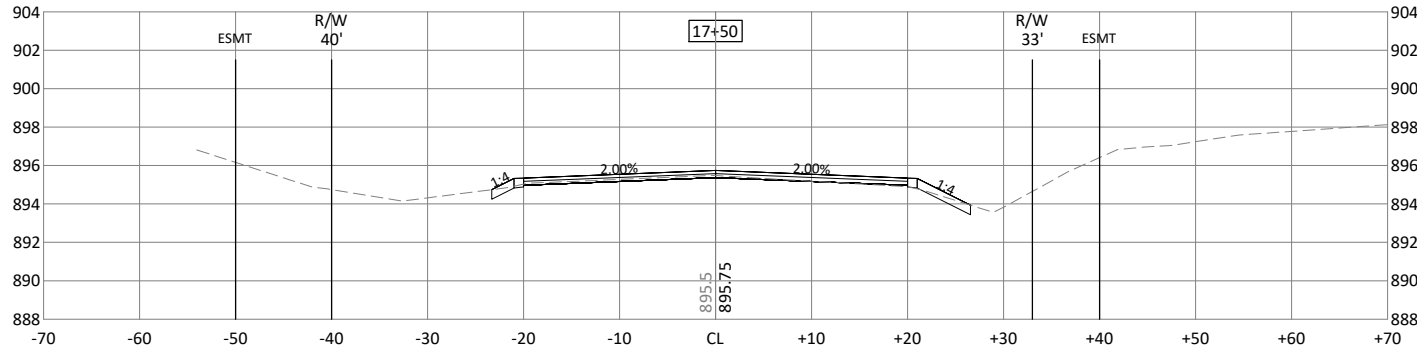
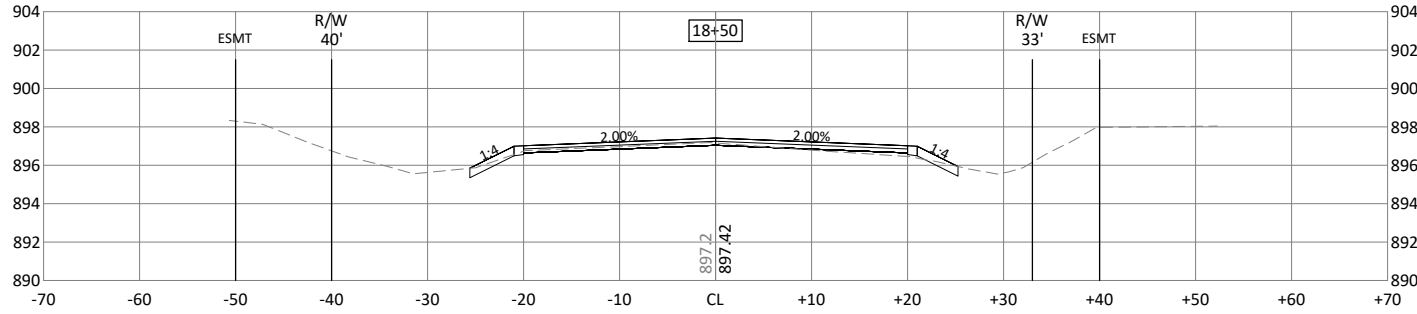
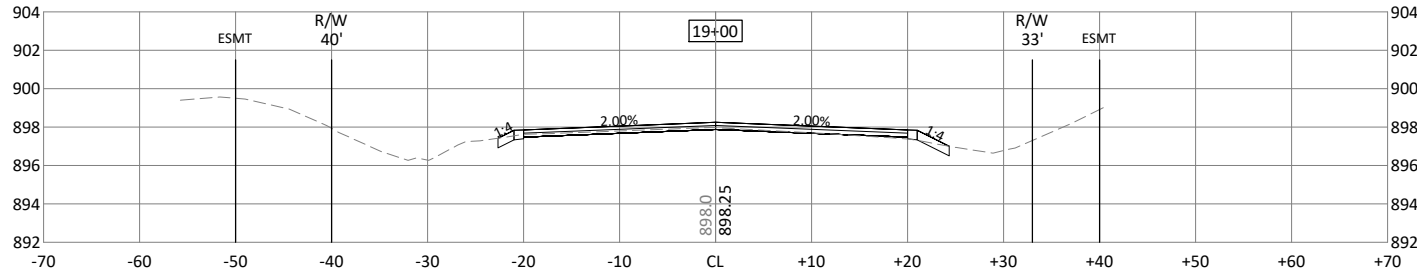


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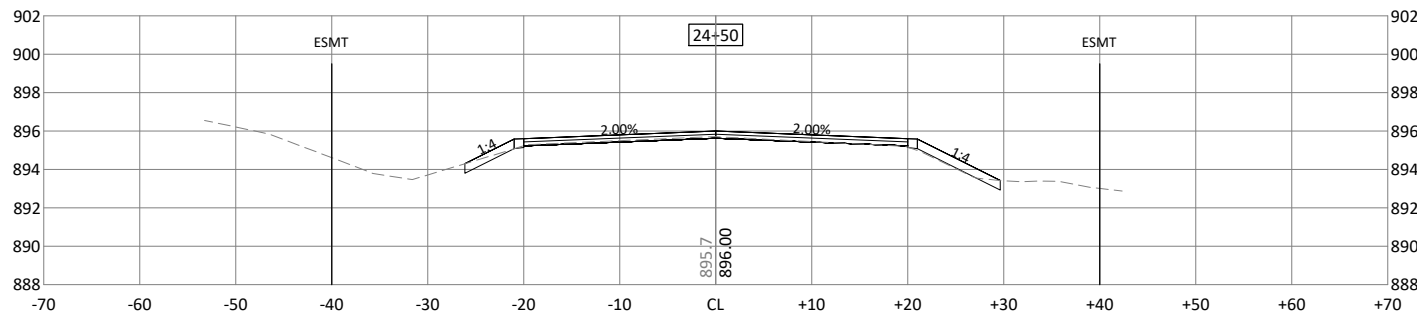
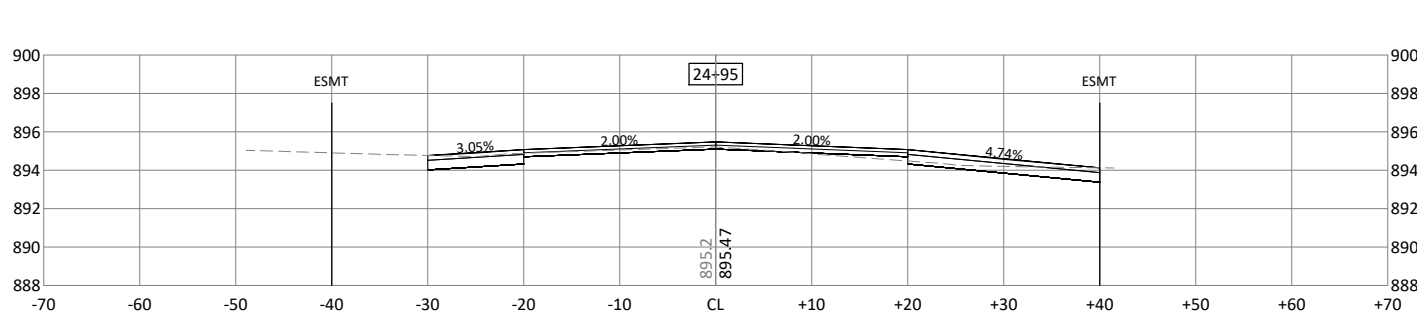
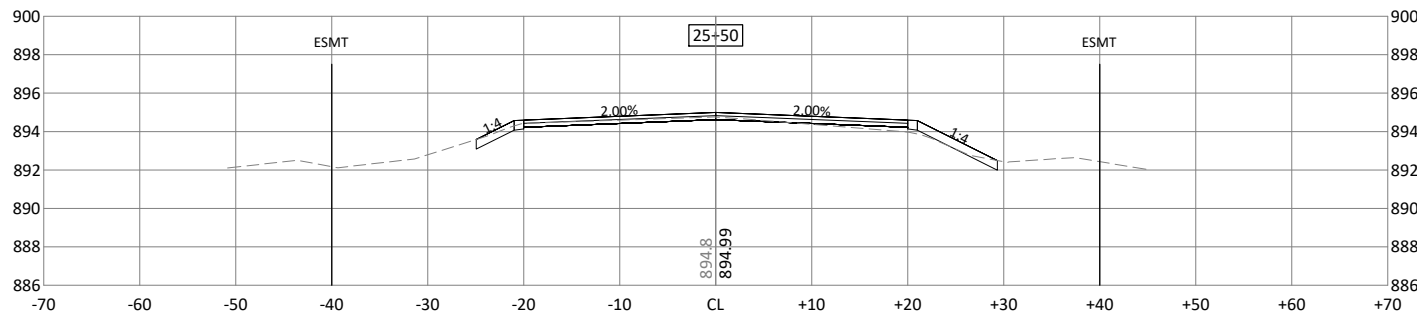
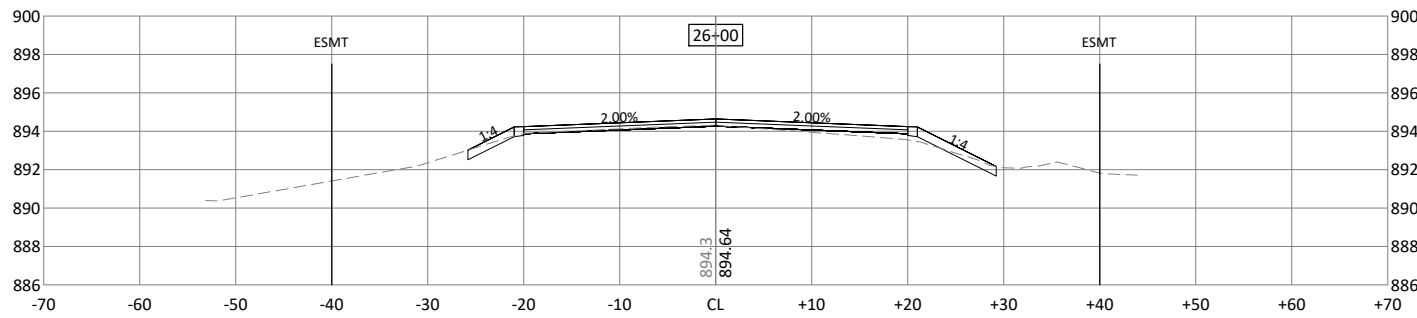
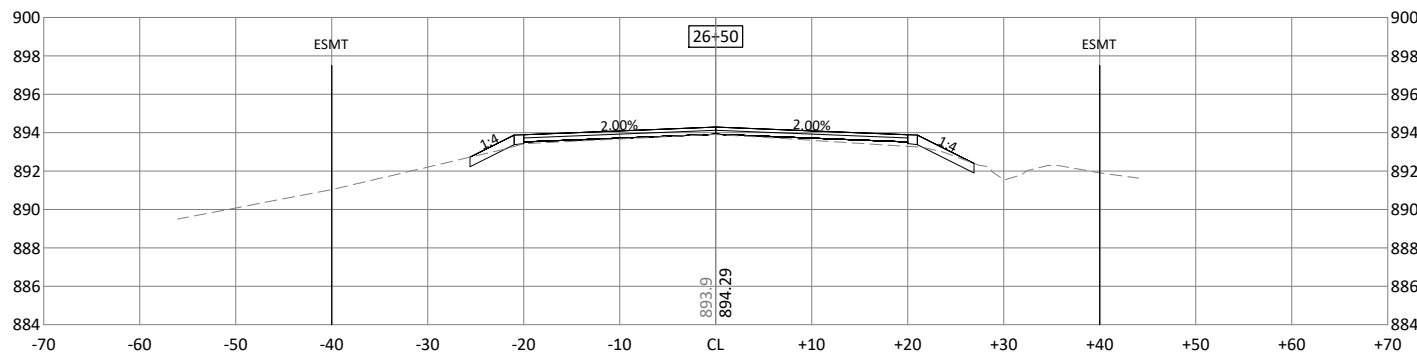
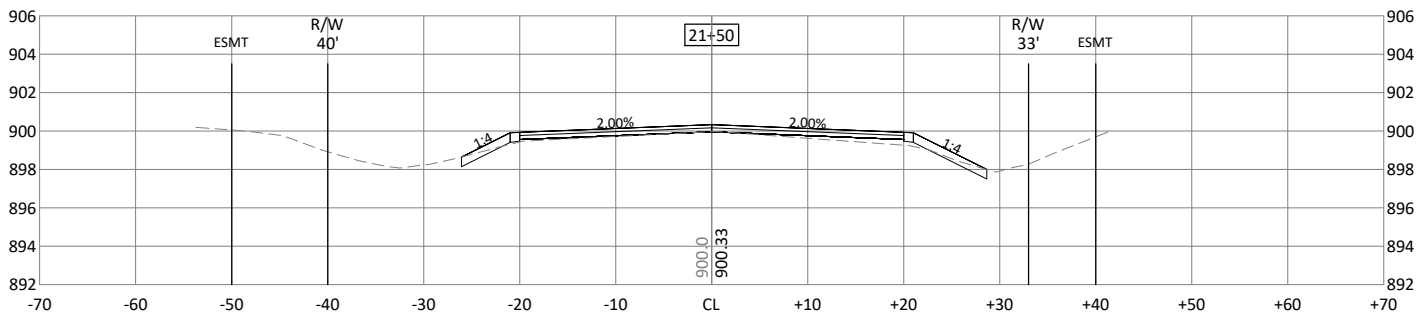
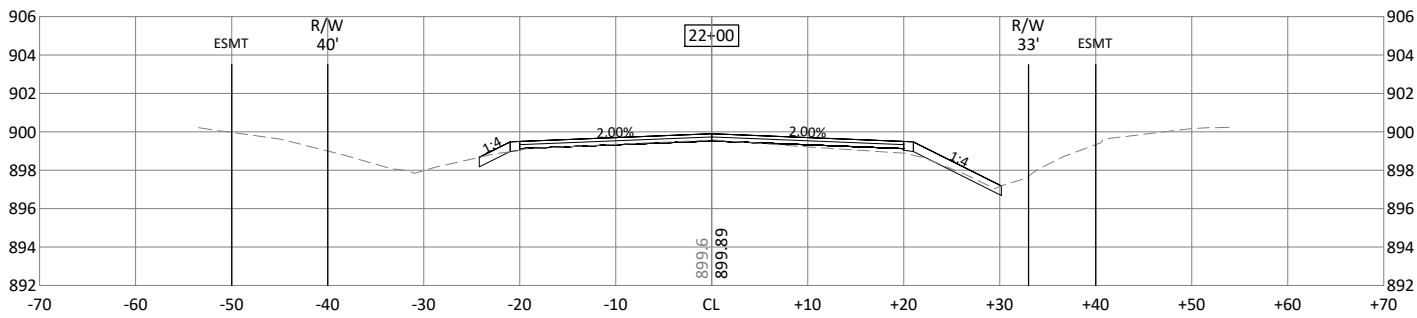
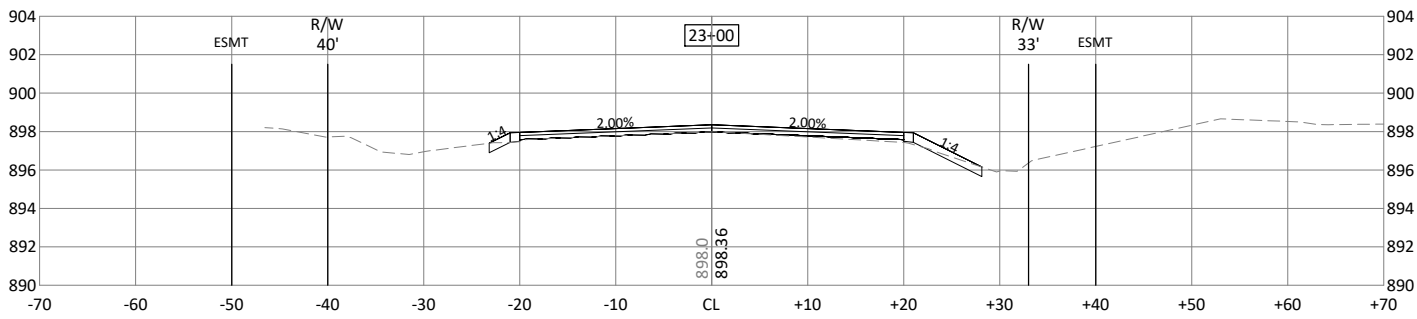
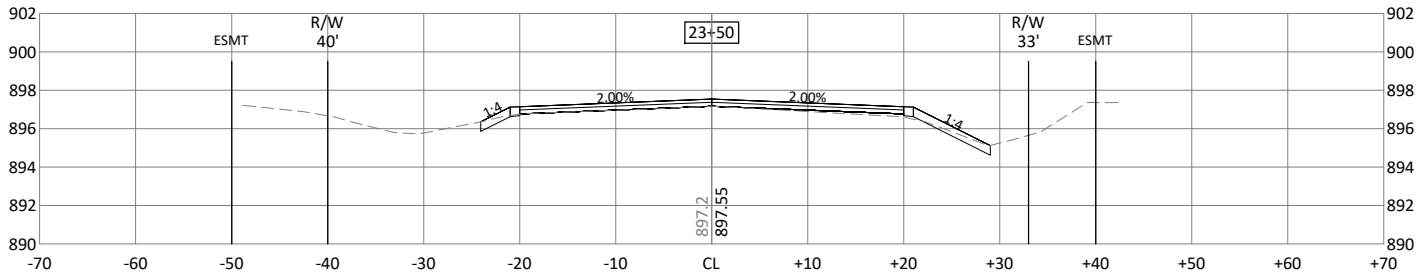
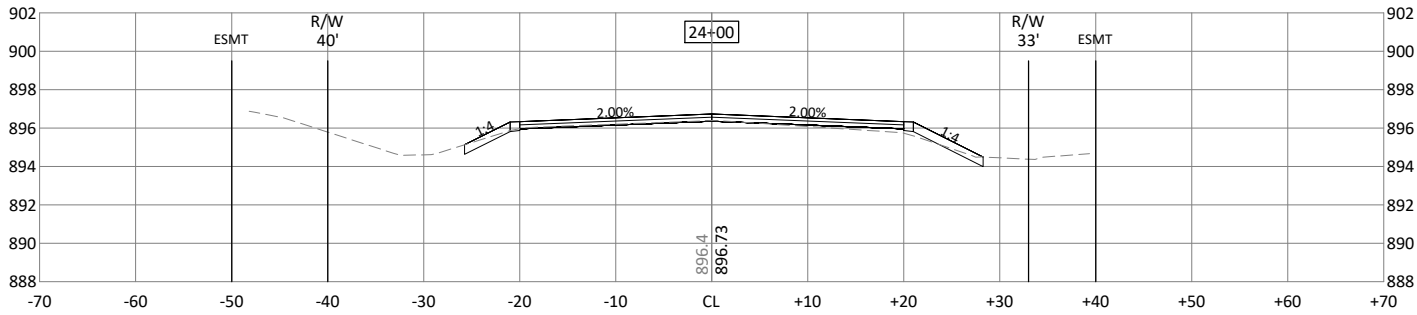
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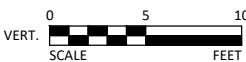
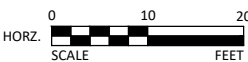
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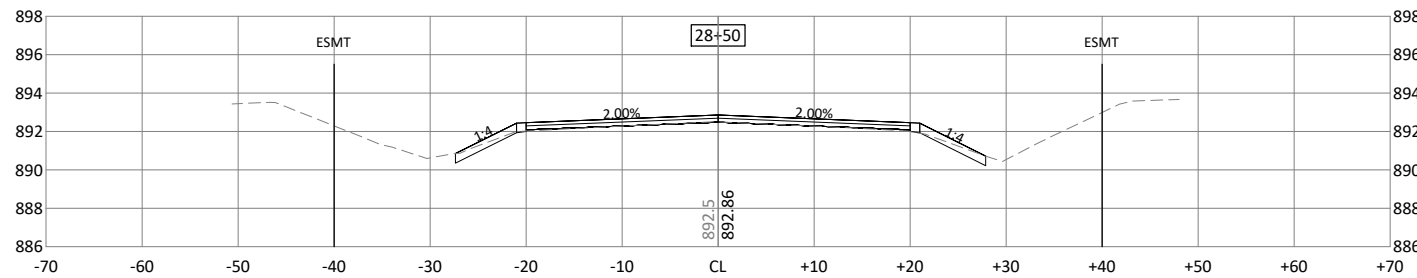
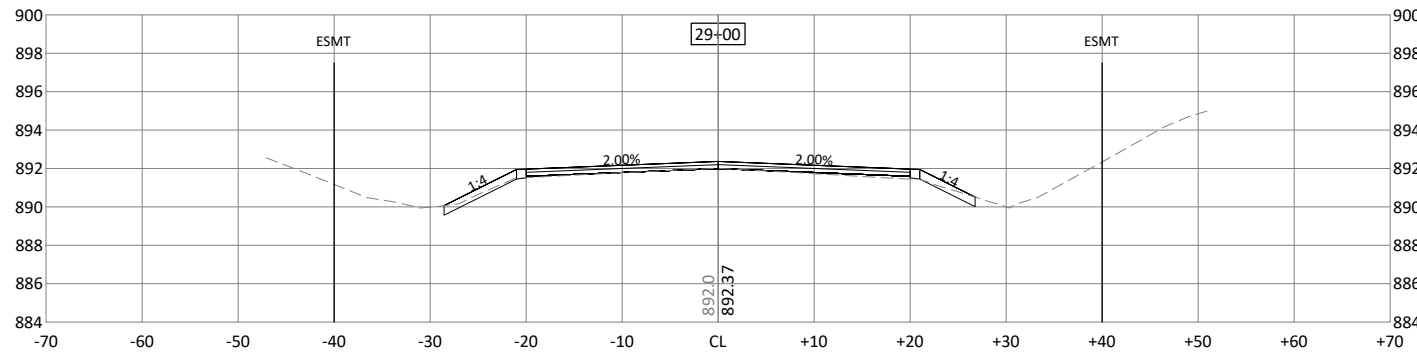
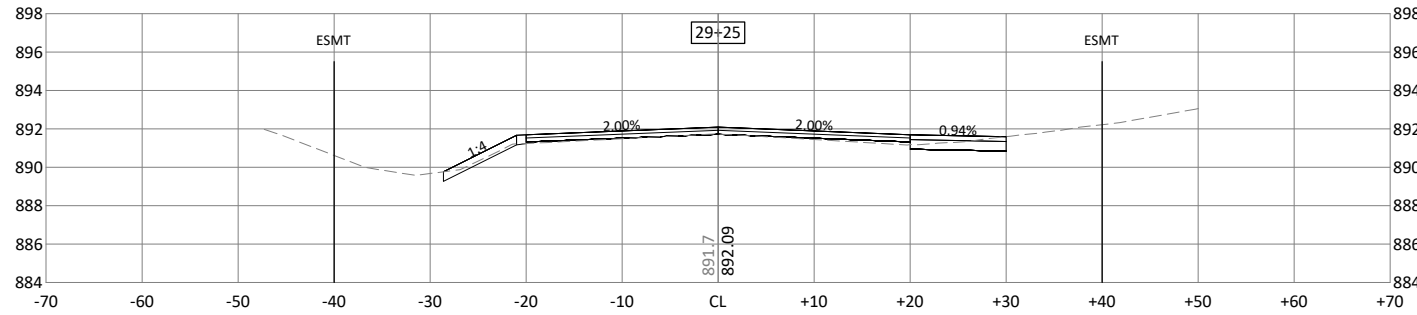
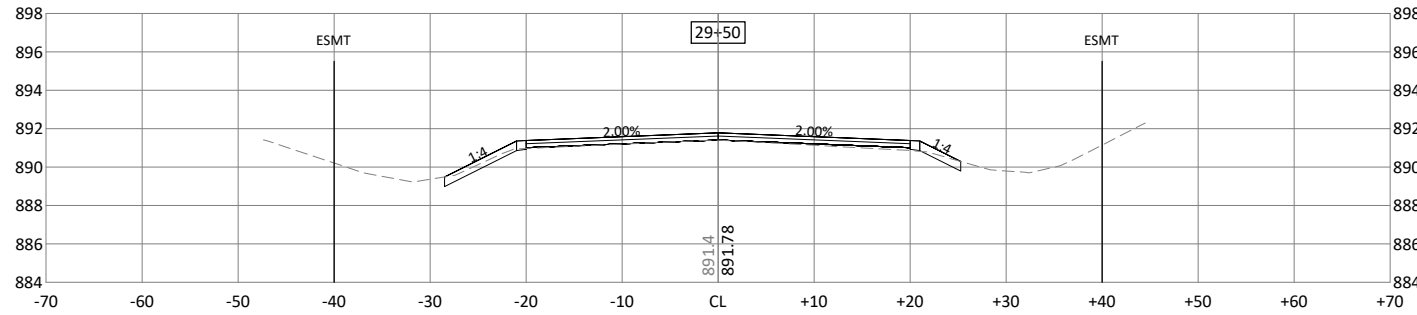
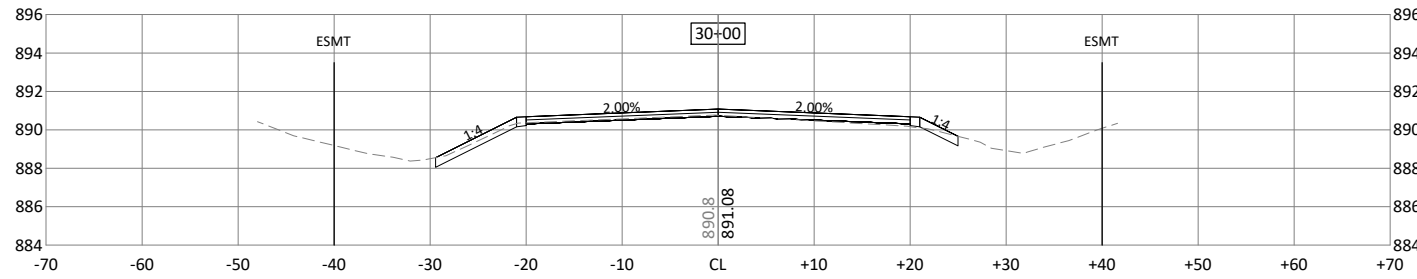
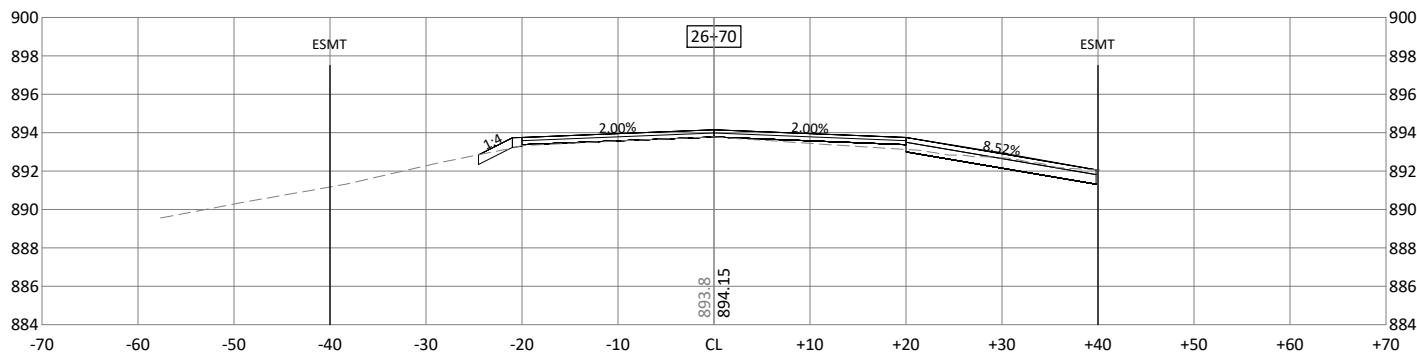
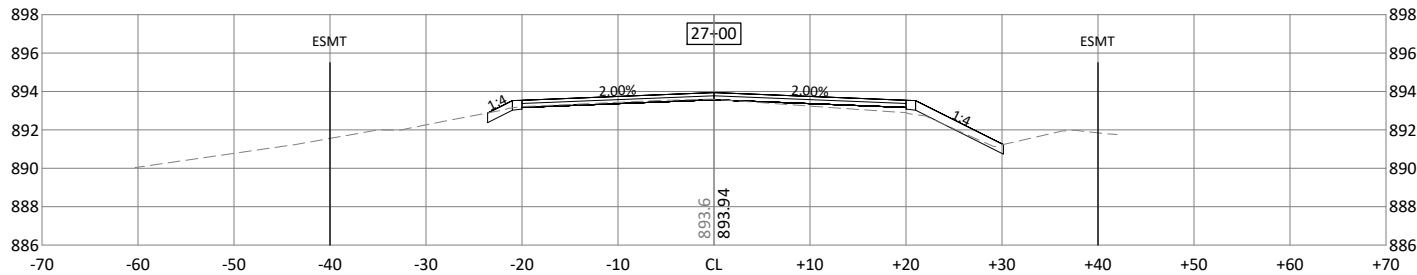
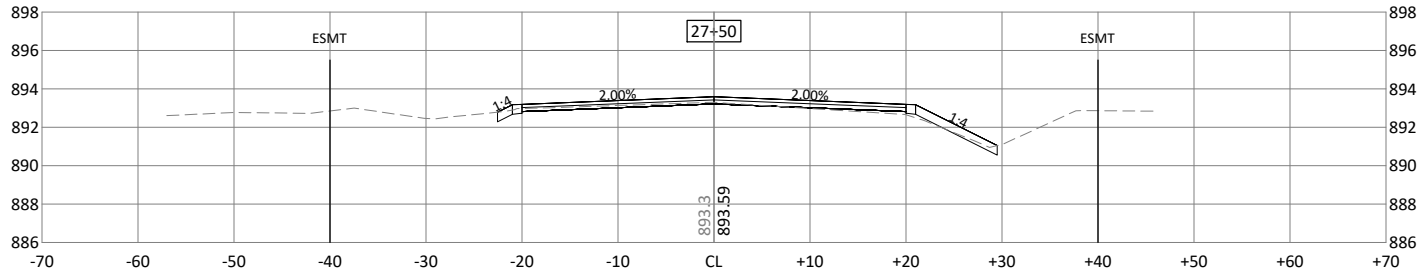
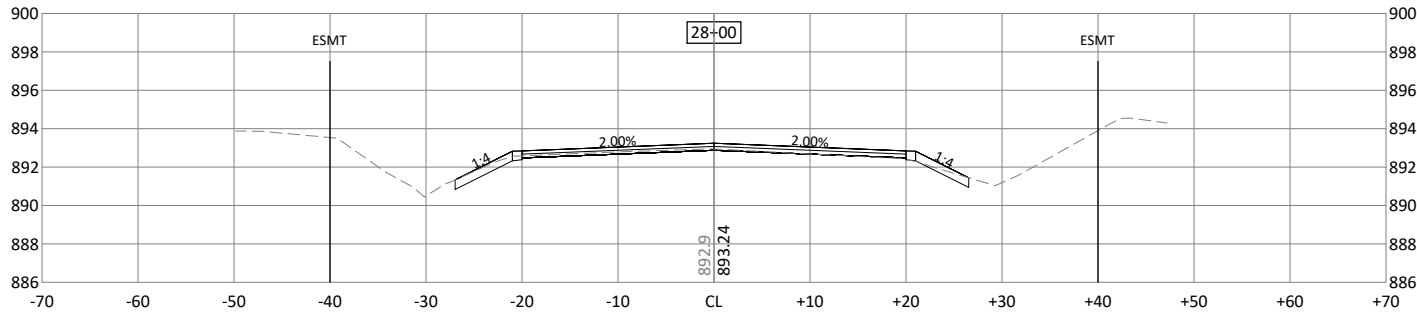
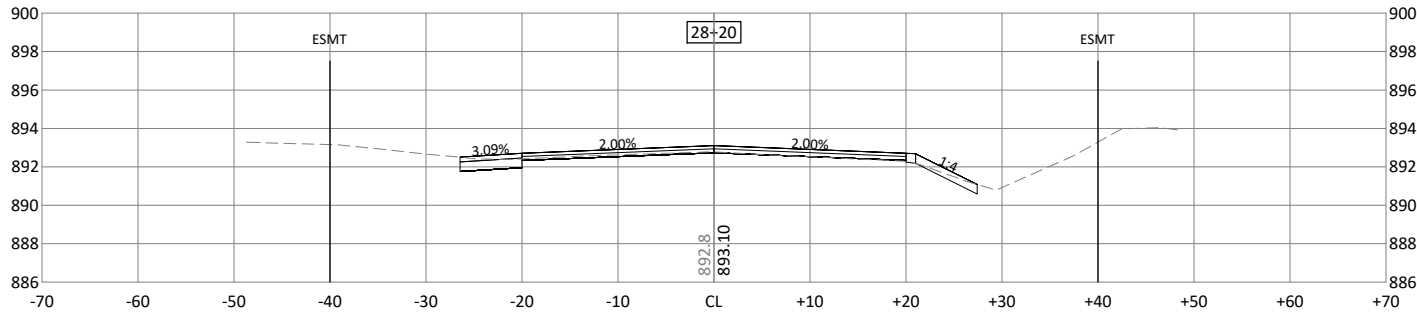
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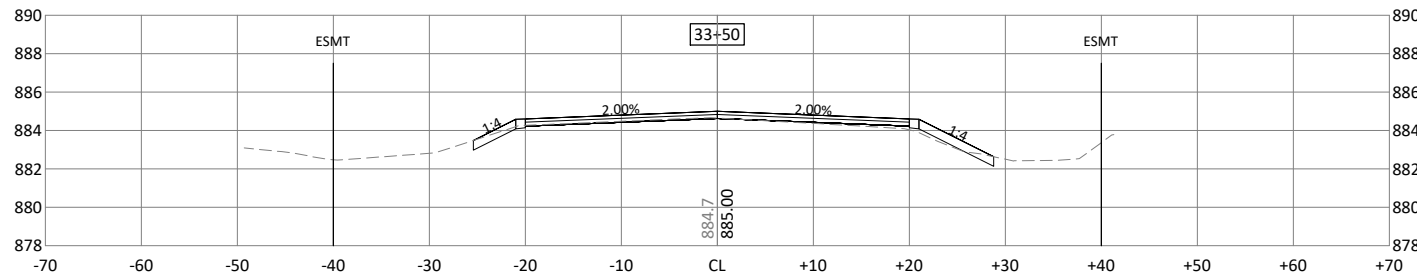
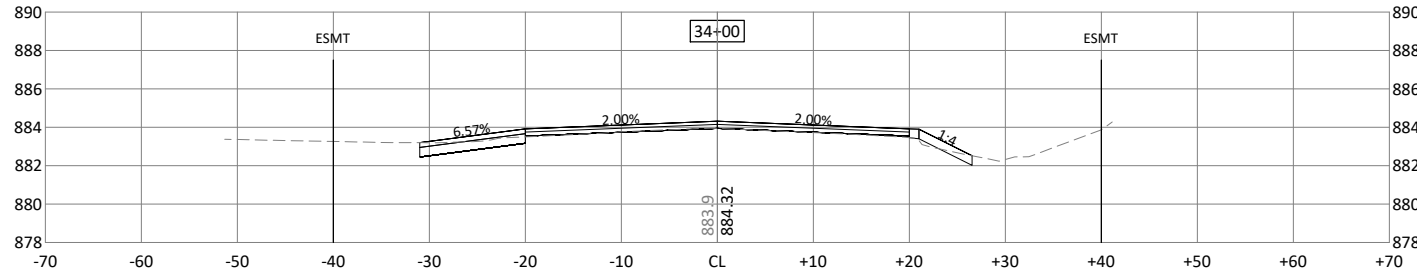
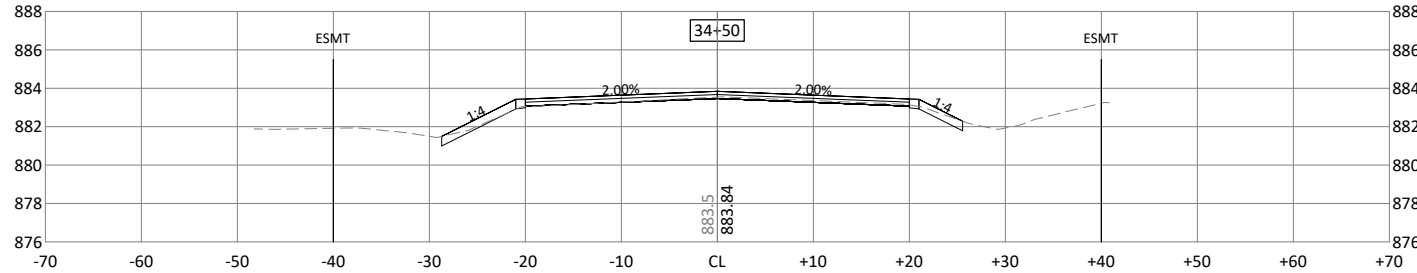
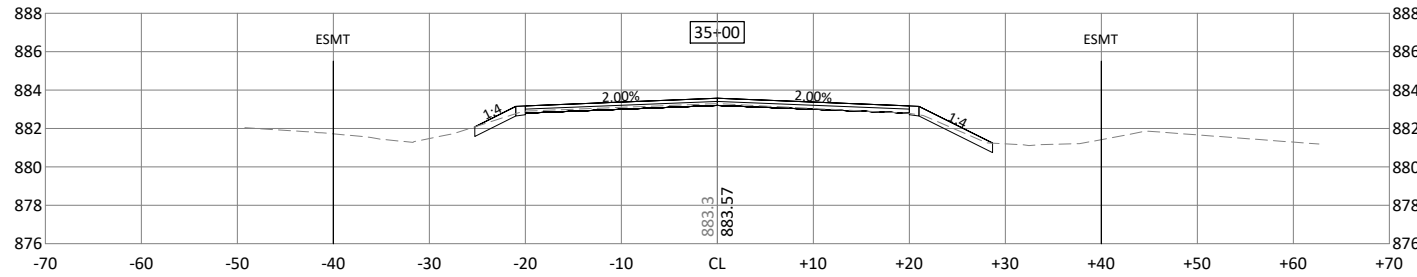
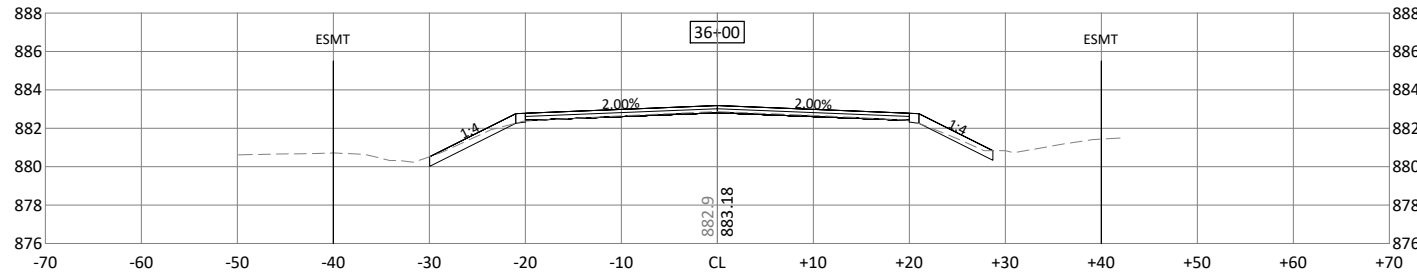
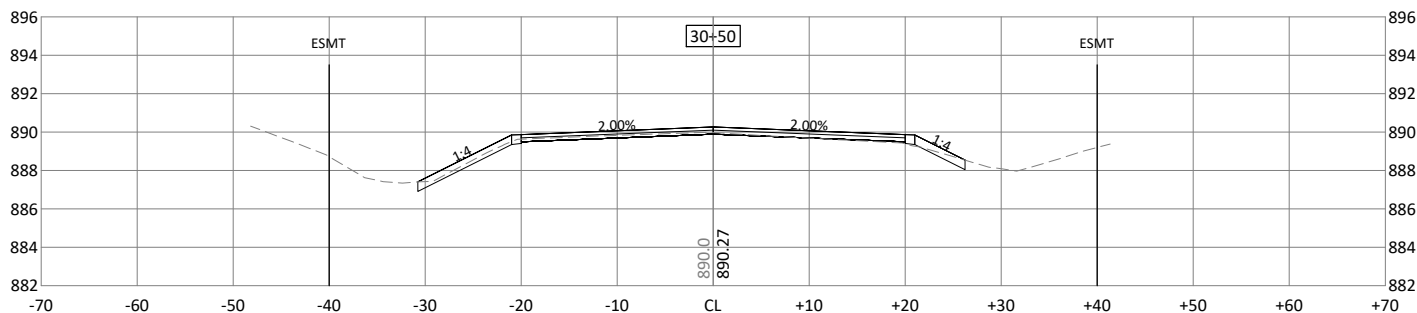
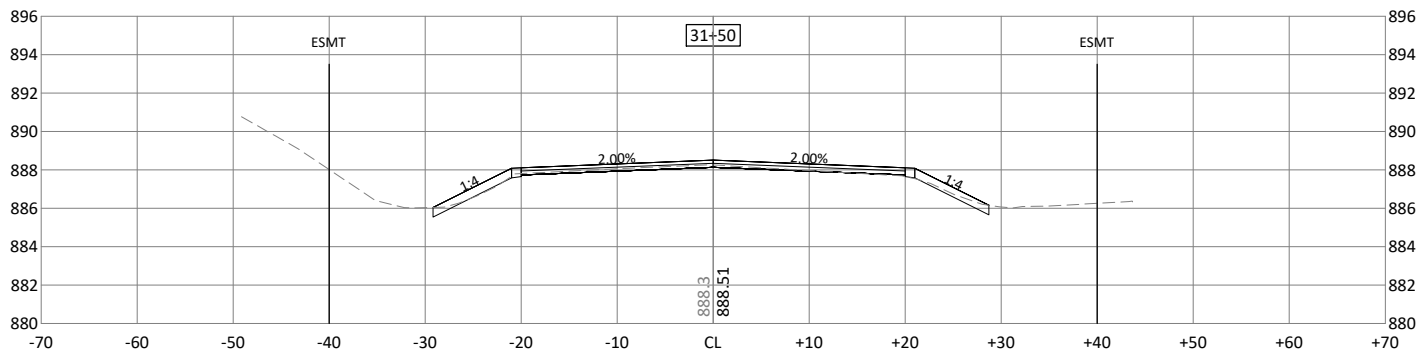
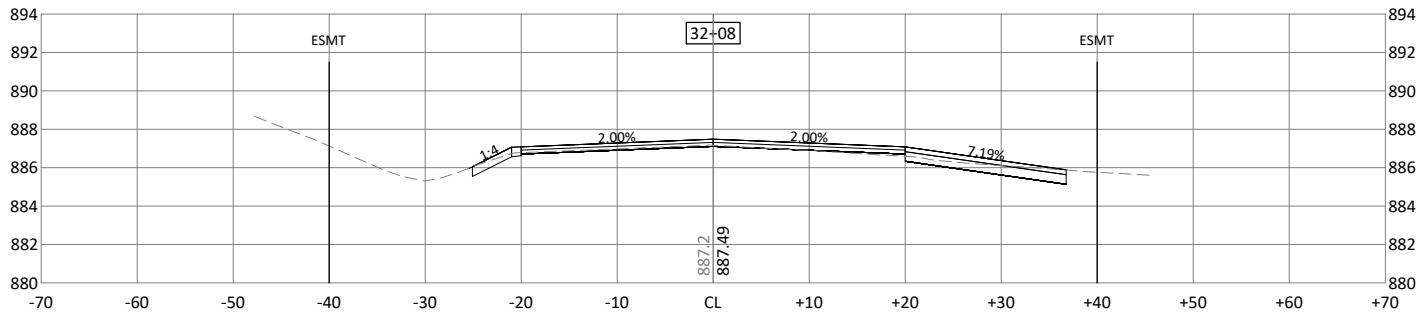
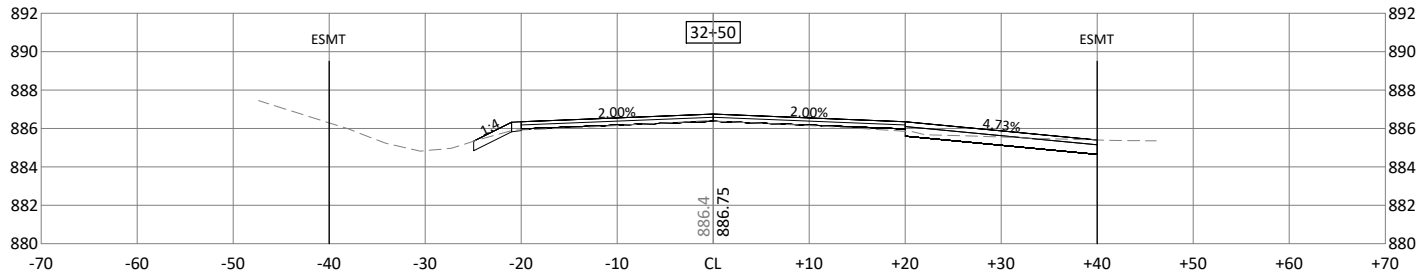
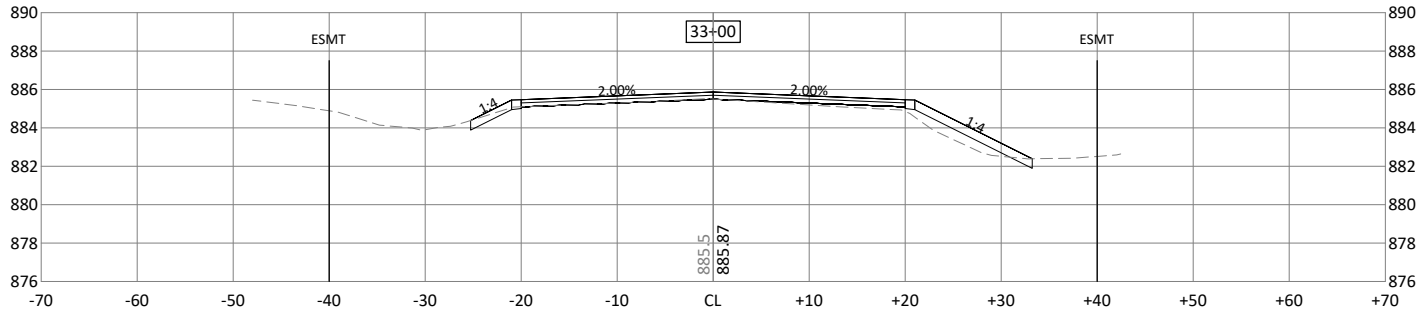
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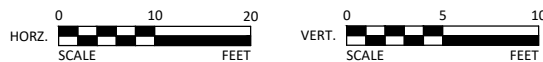
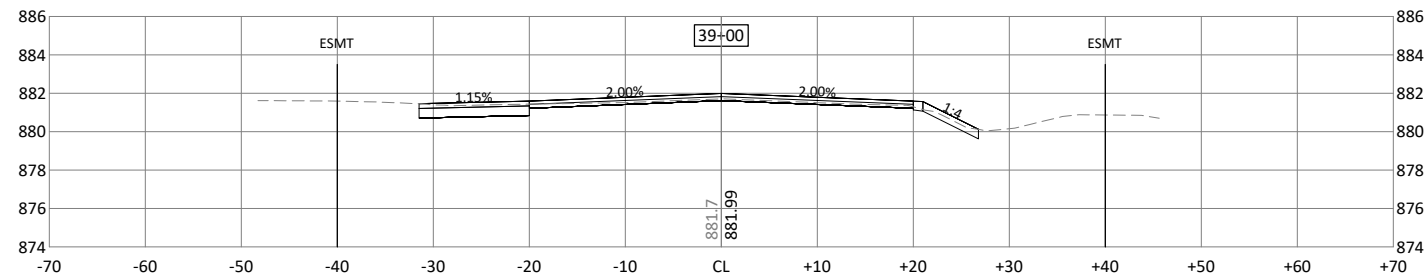
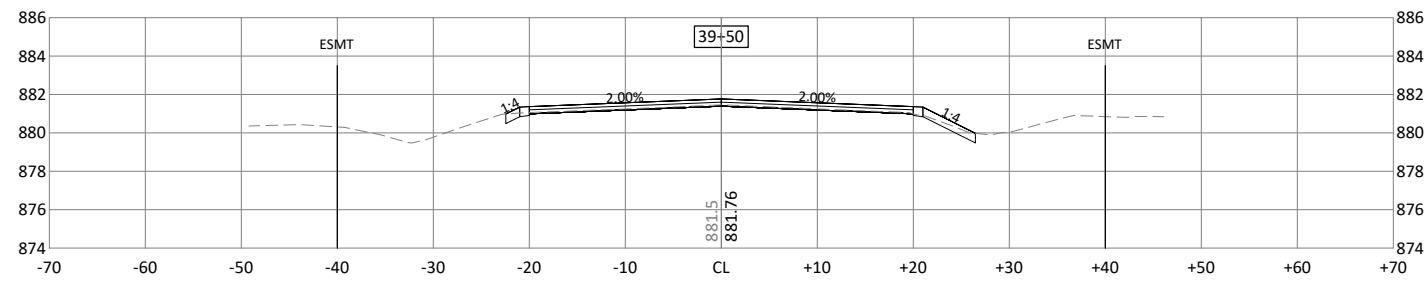
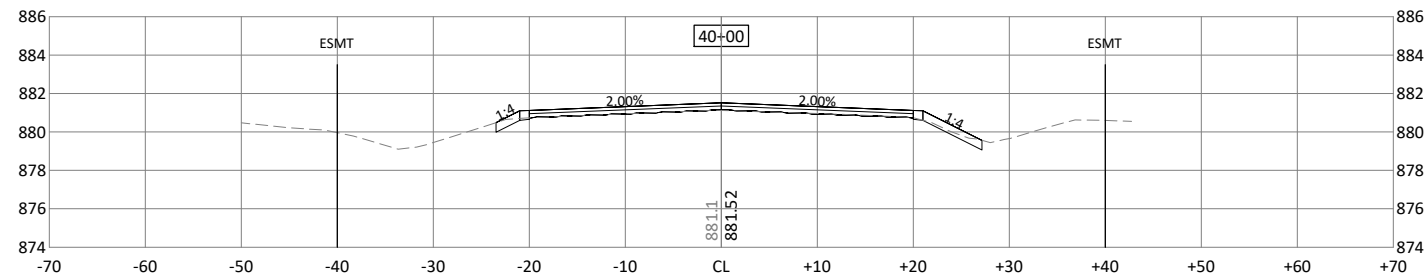
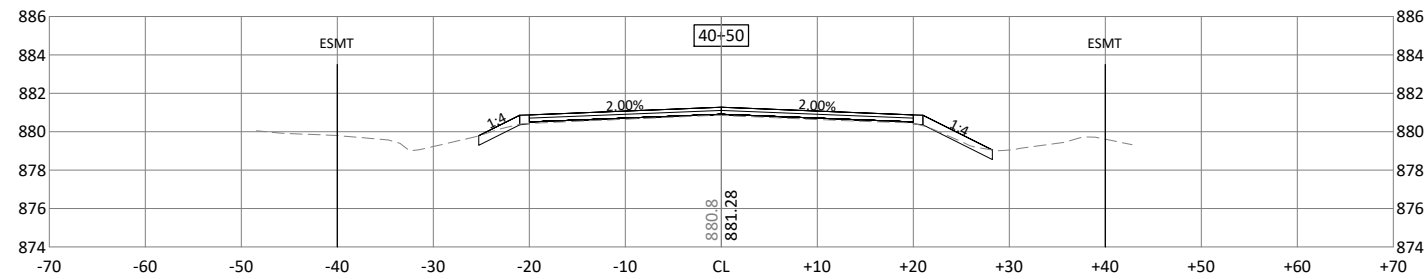
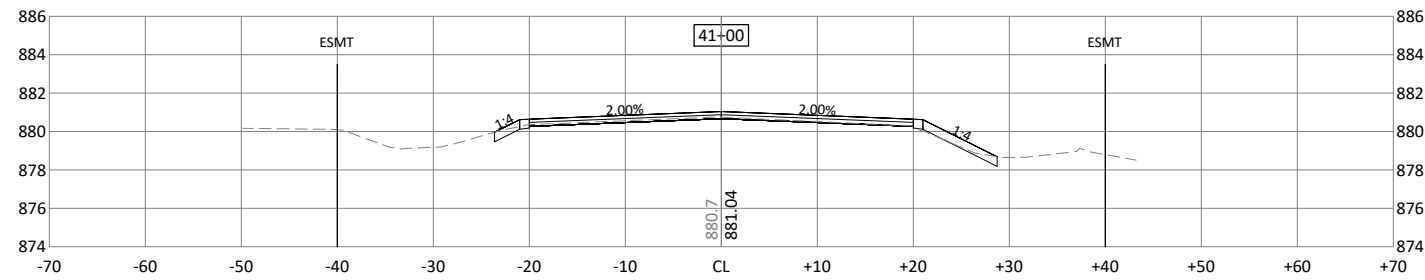
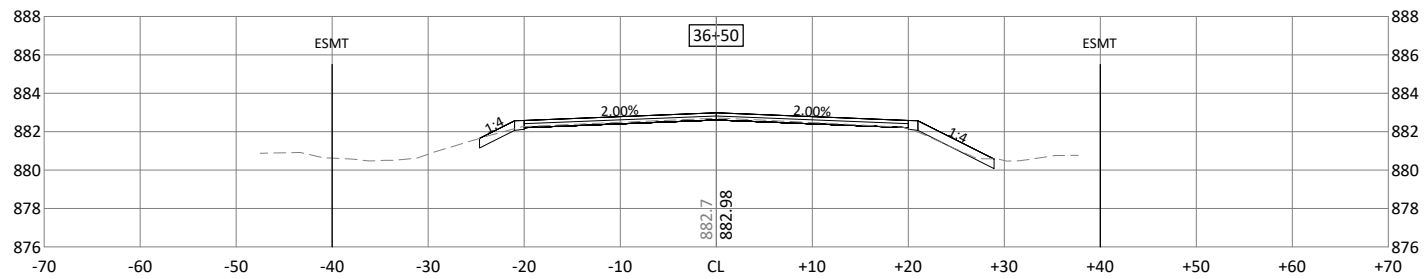
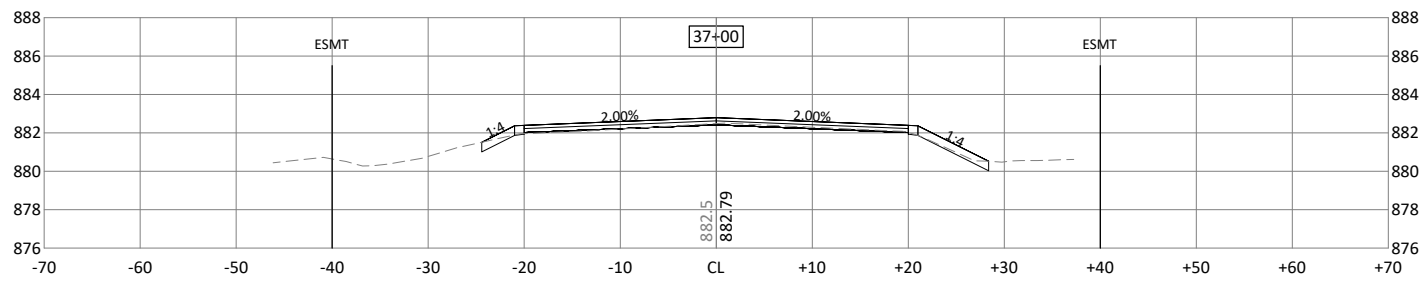
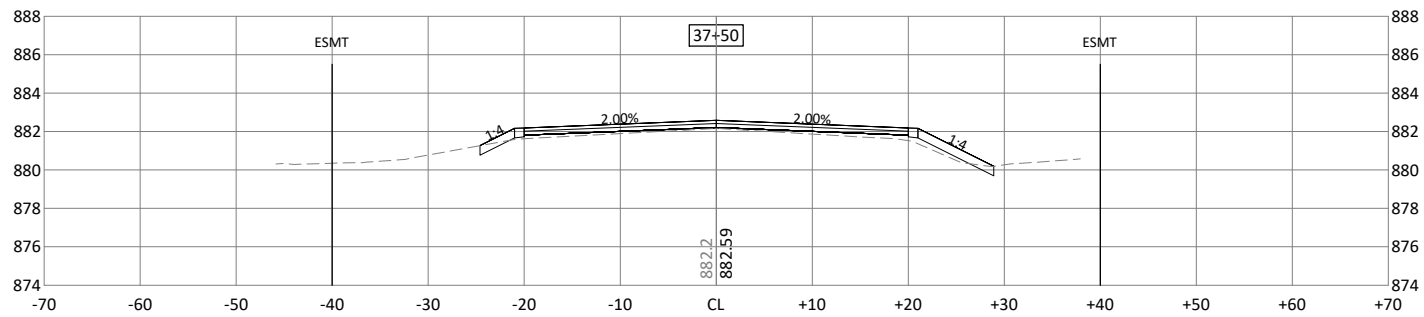
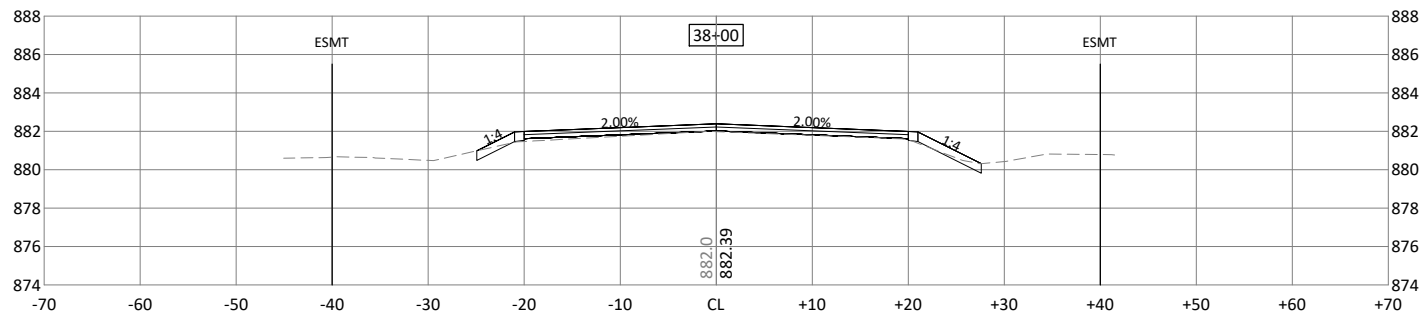
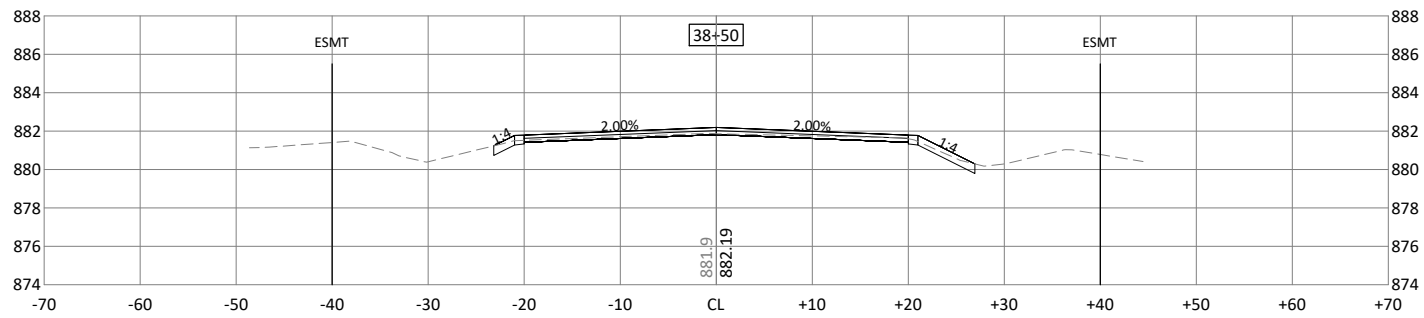
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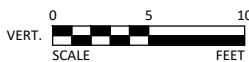
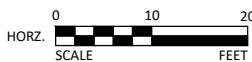
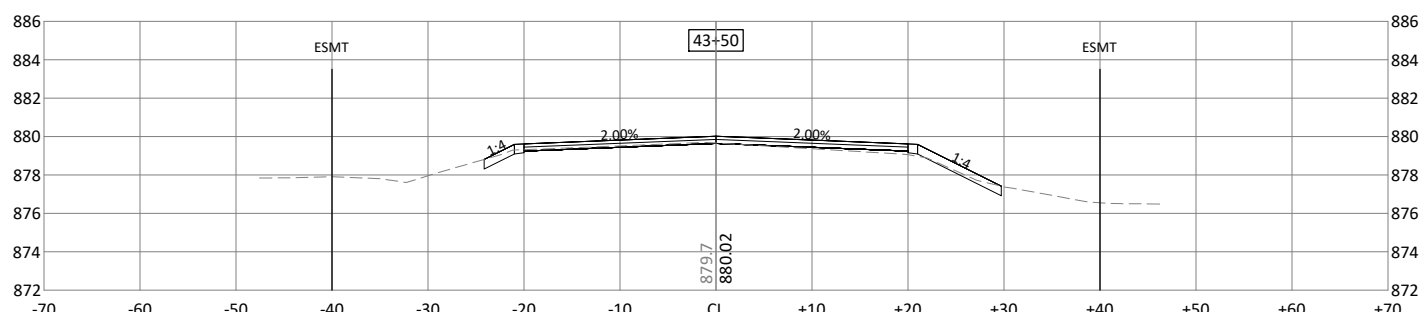
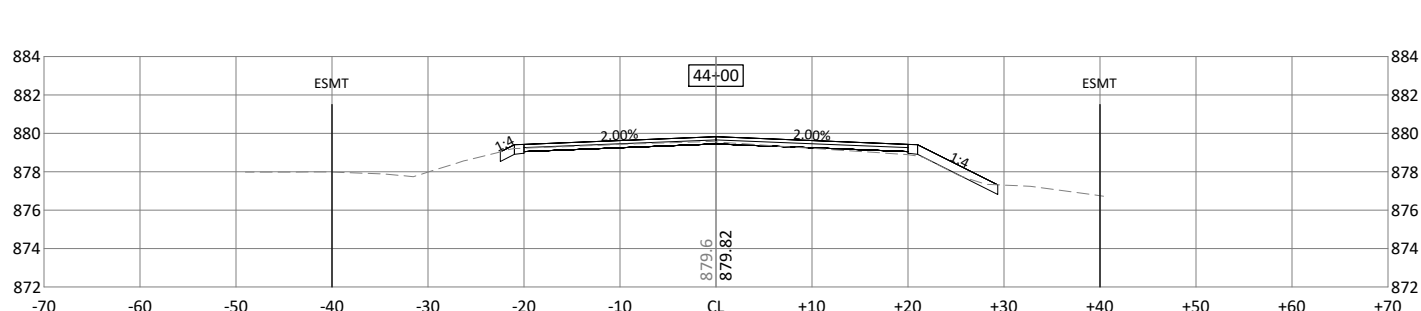
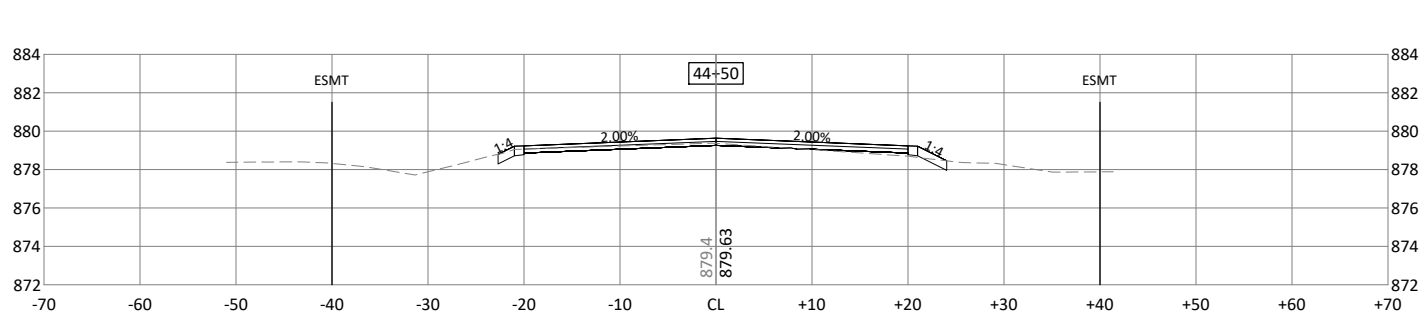
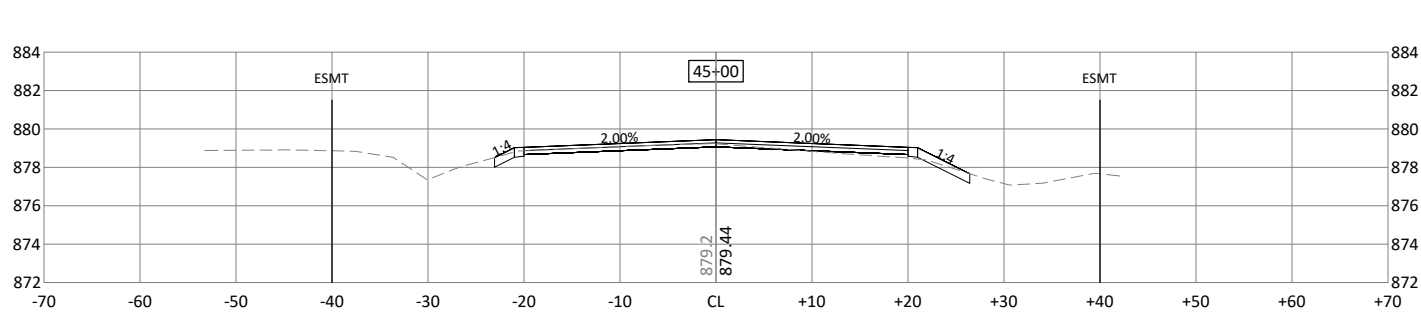
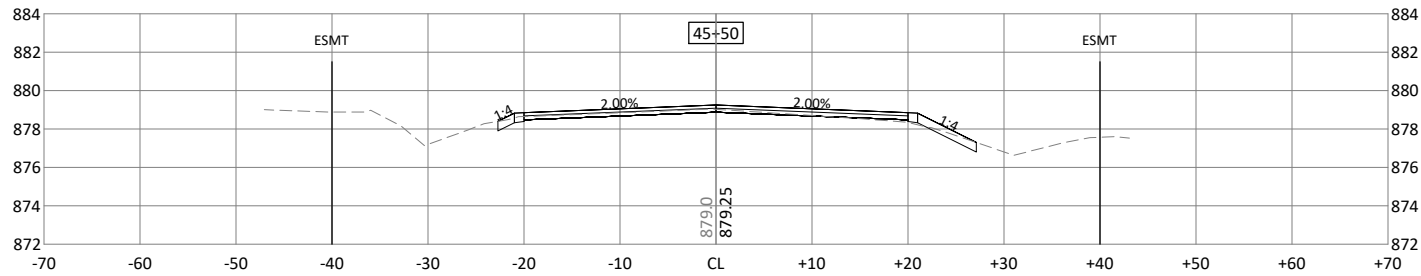
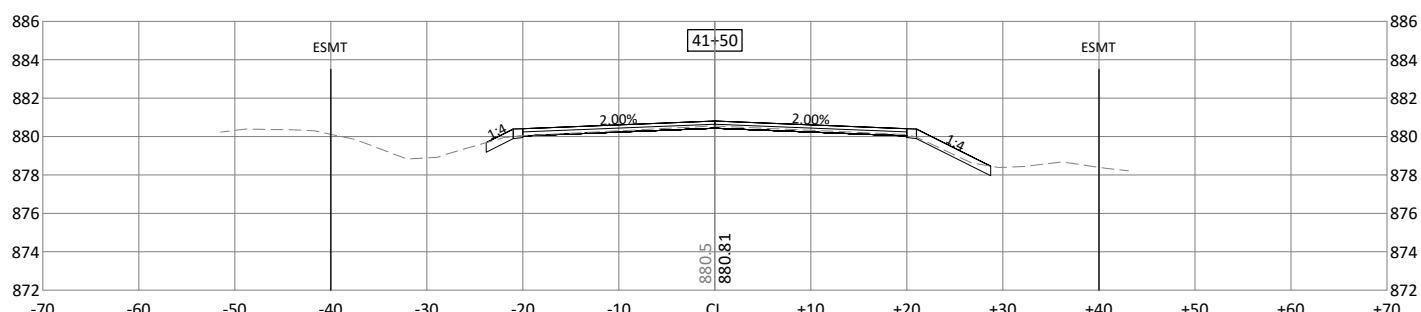
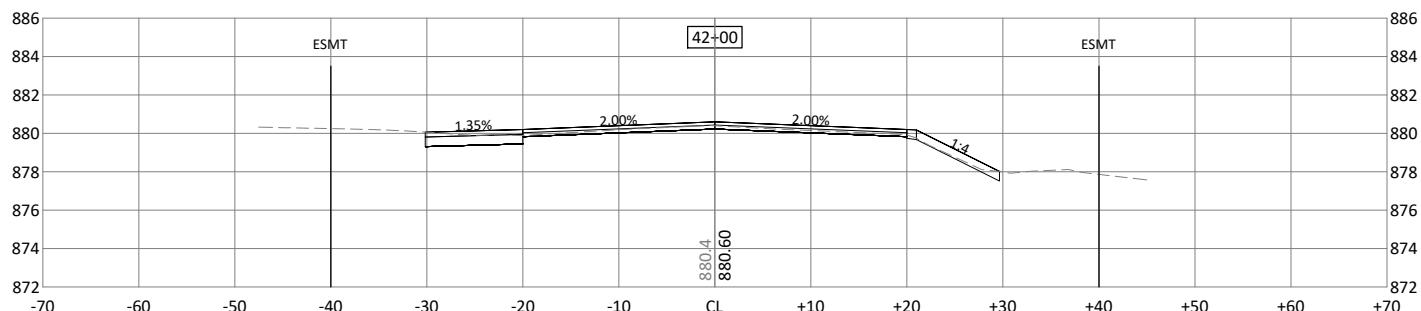
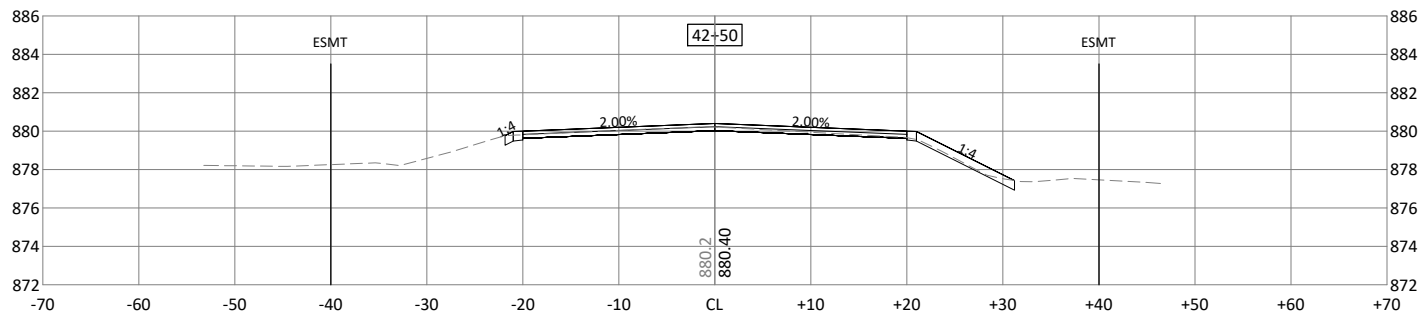
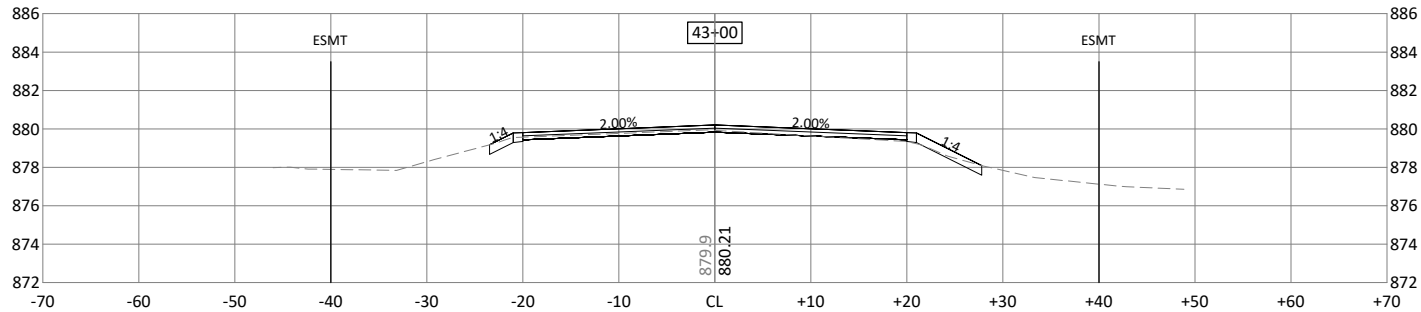
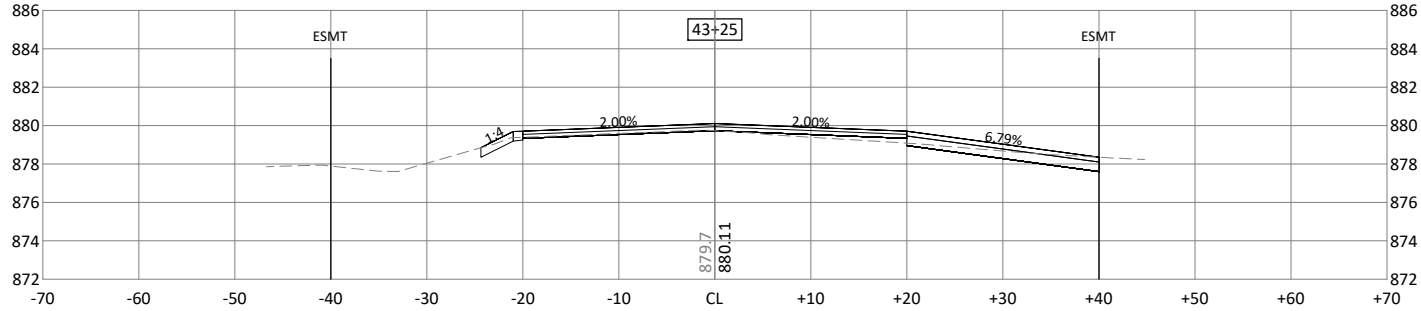
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ZACHARY LINGL  
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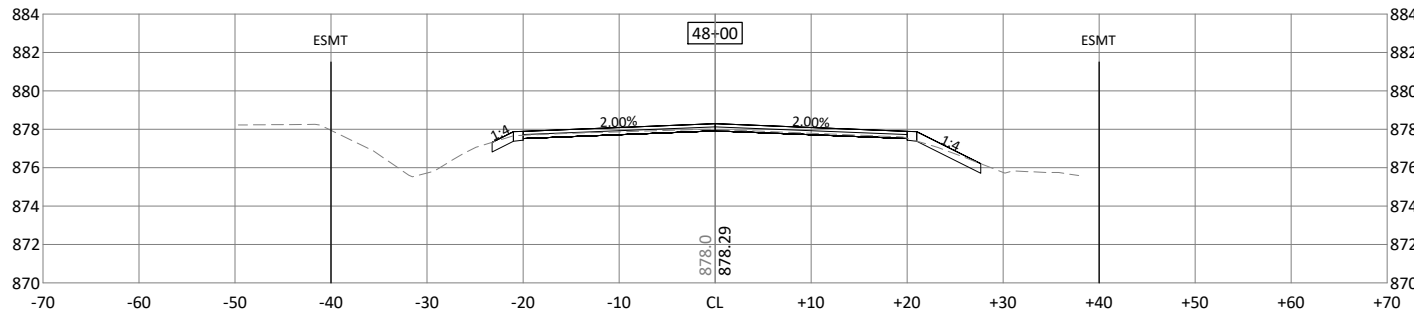
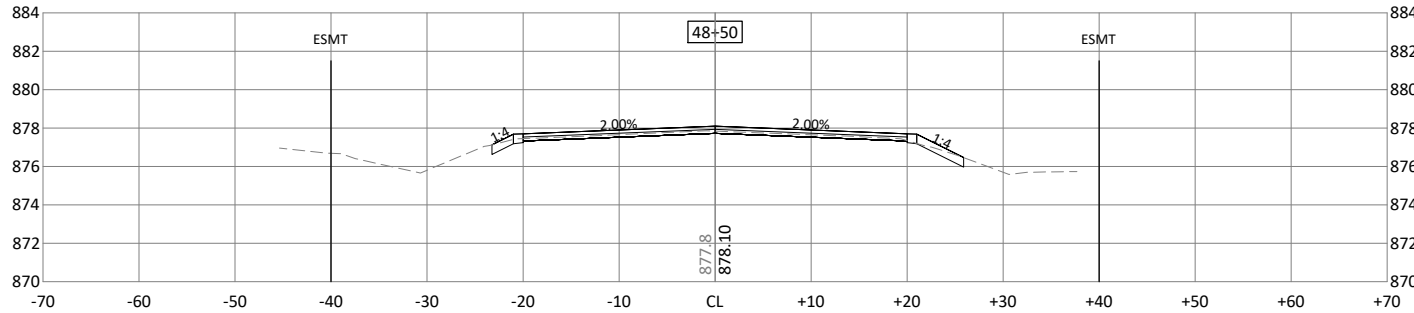
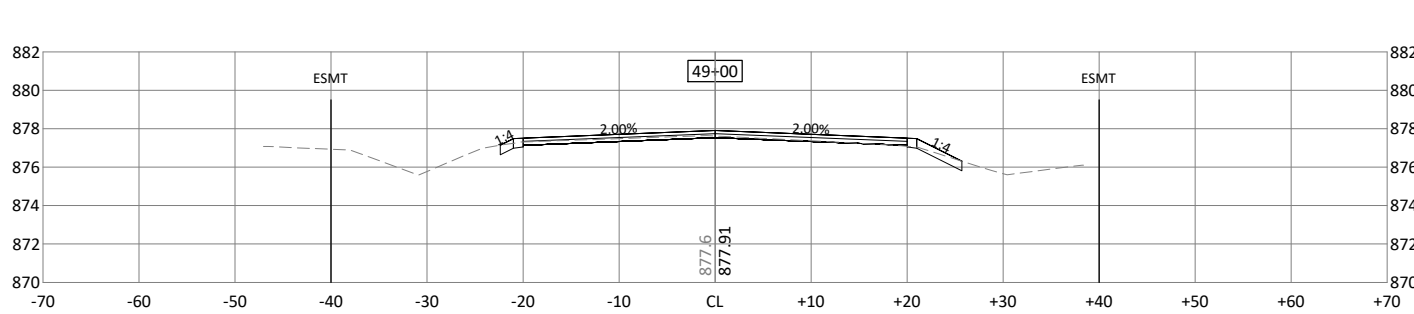
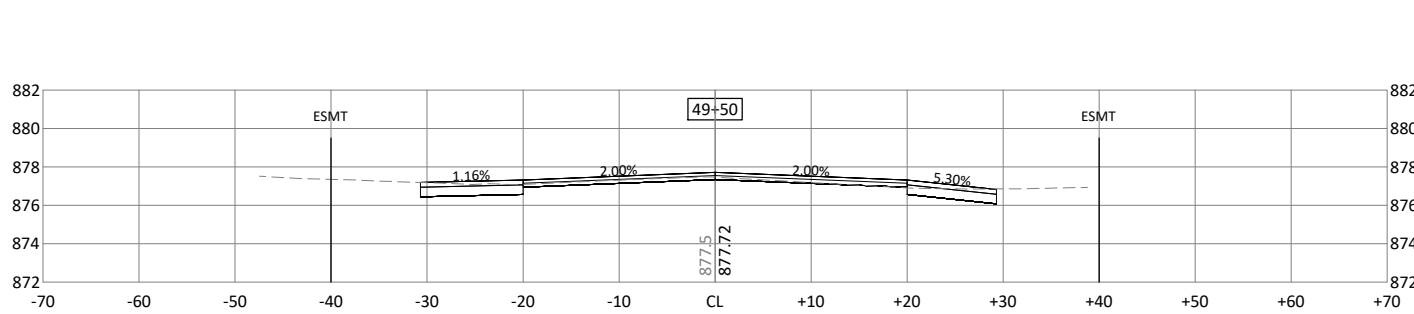
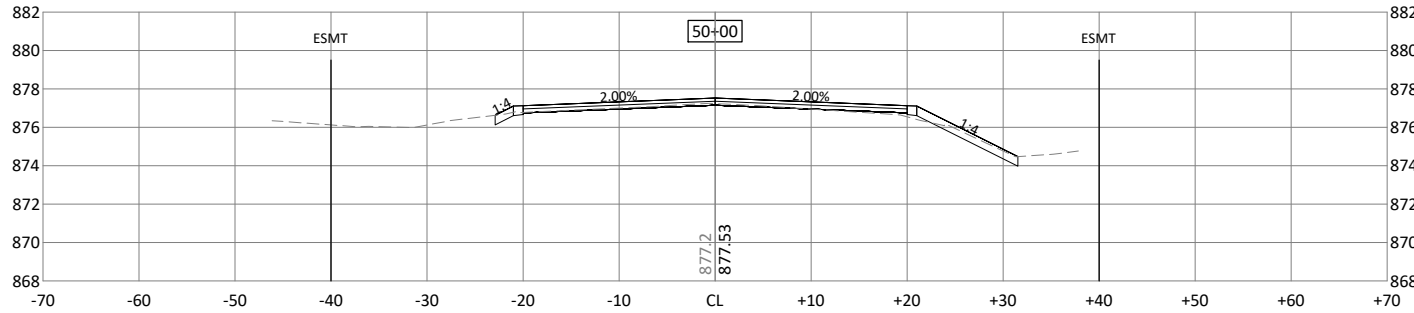
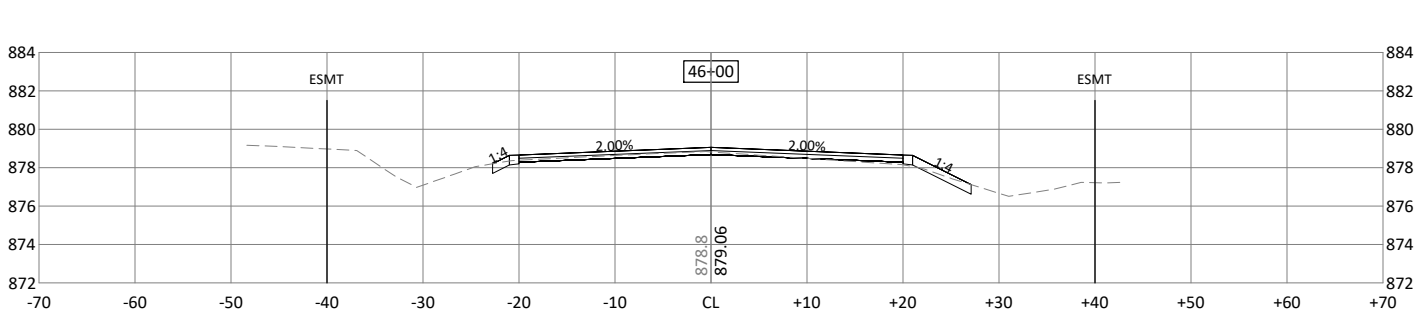
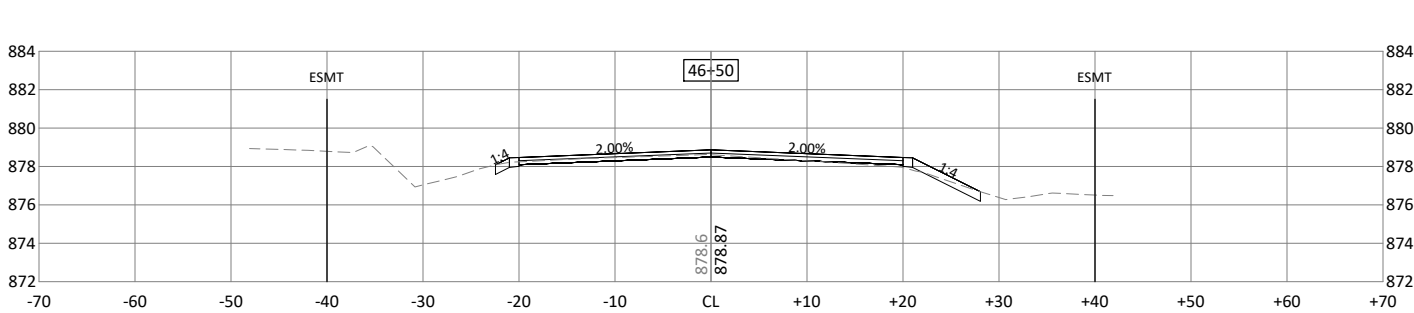
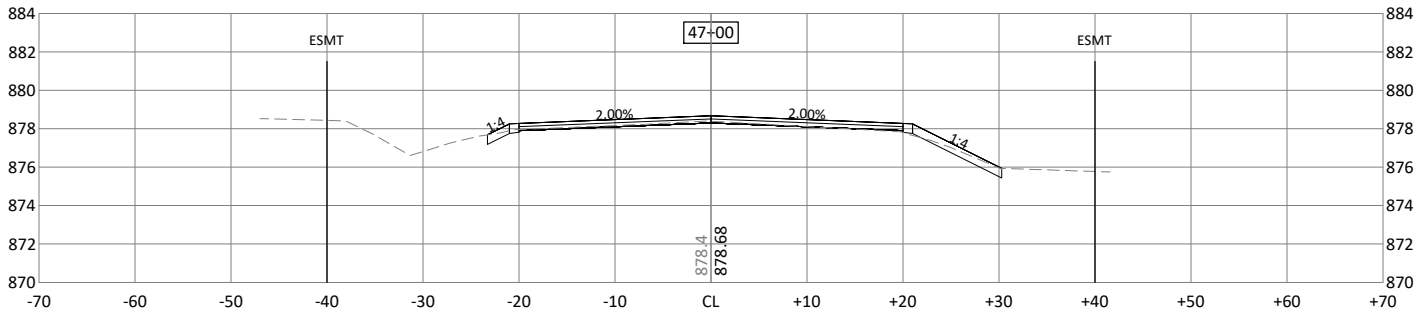
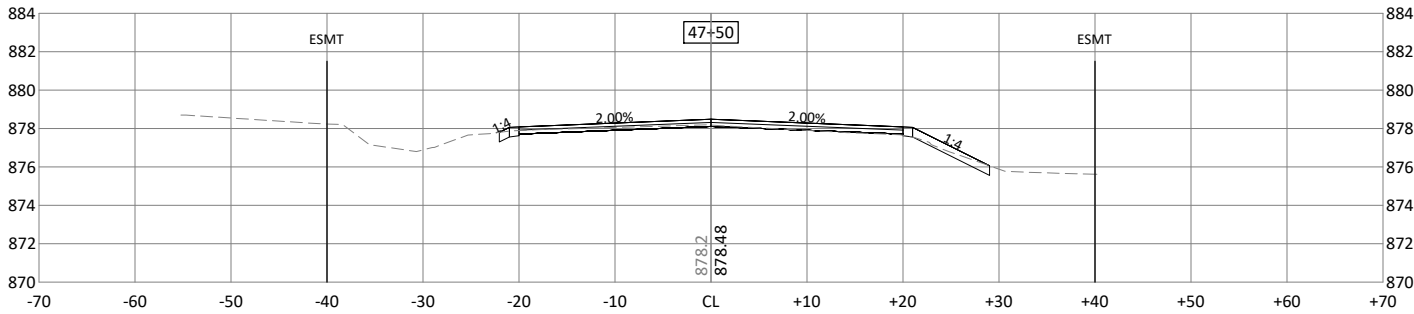
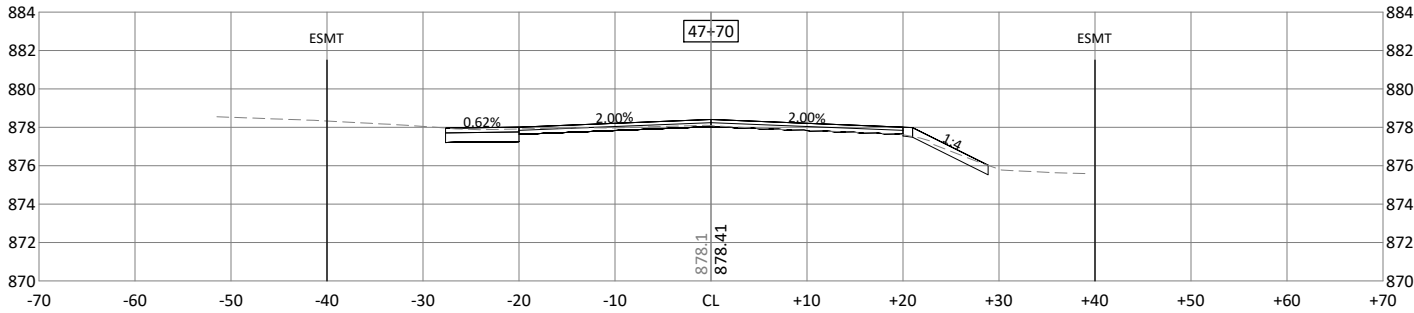
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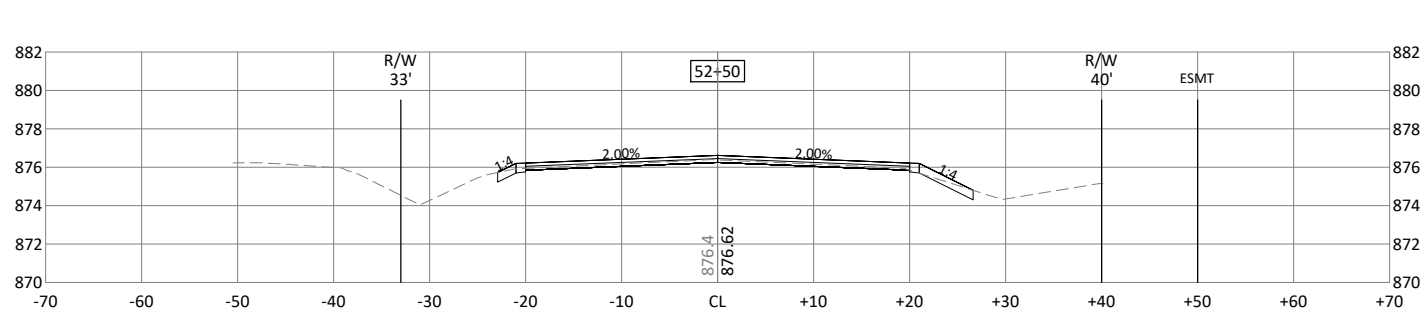
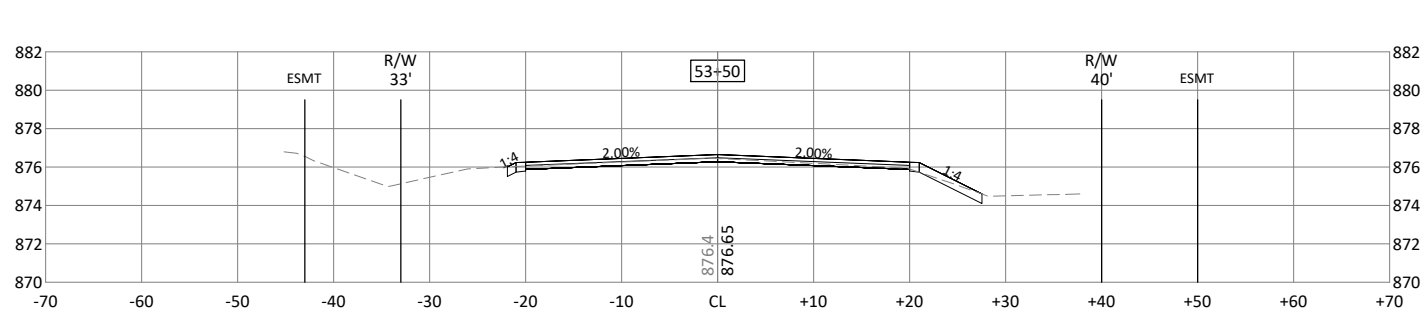
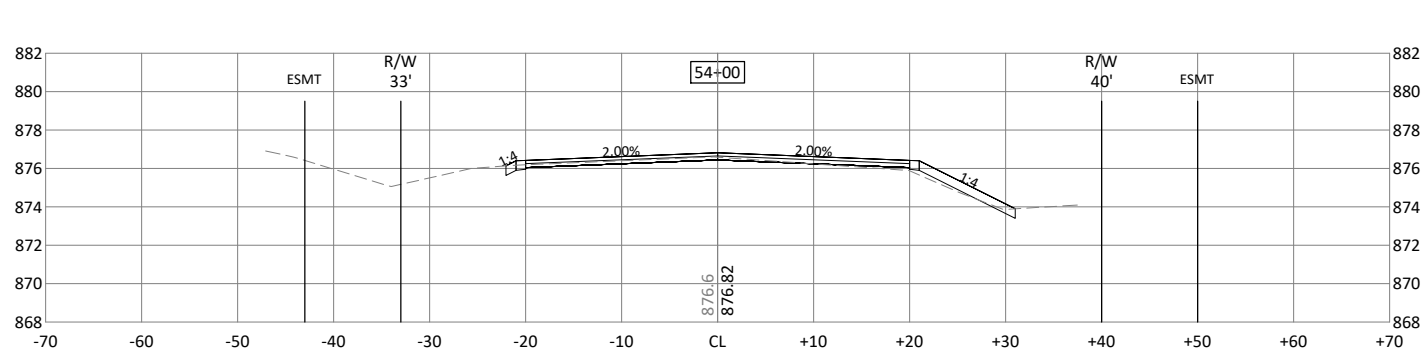
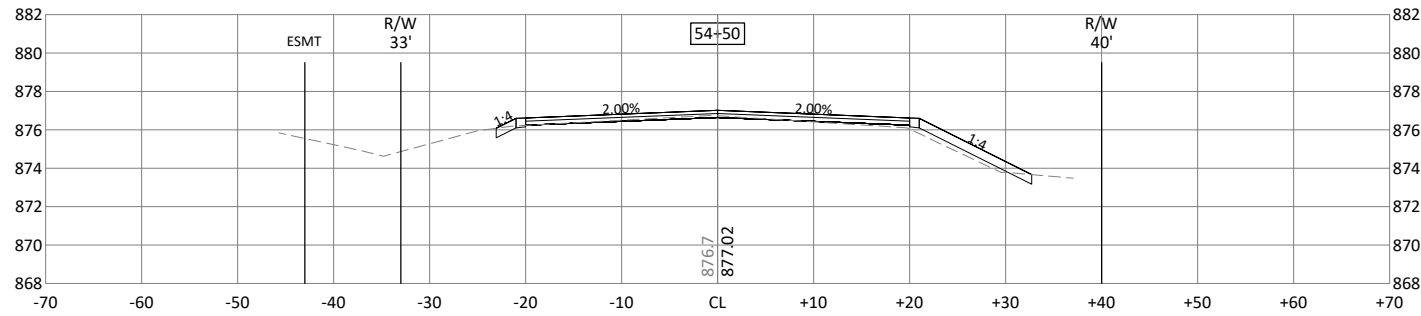
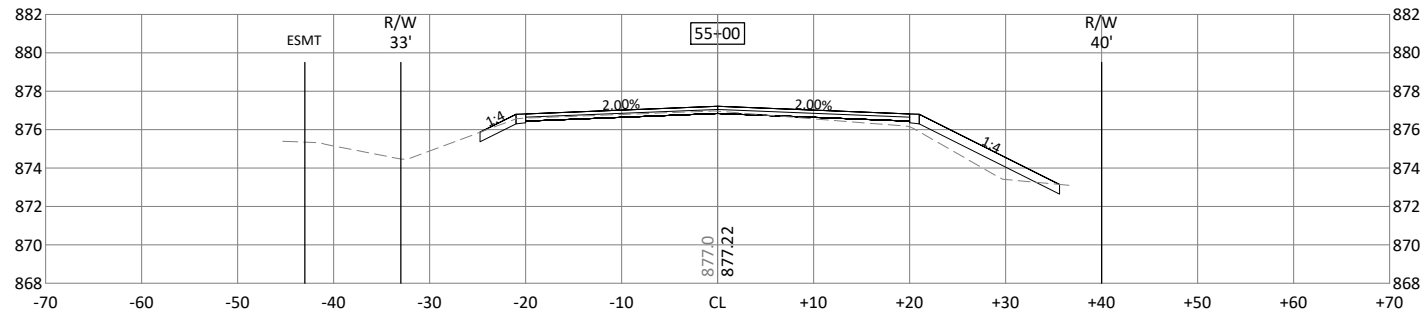
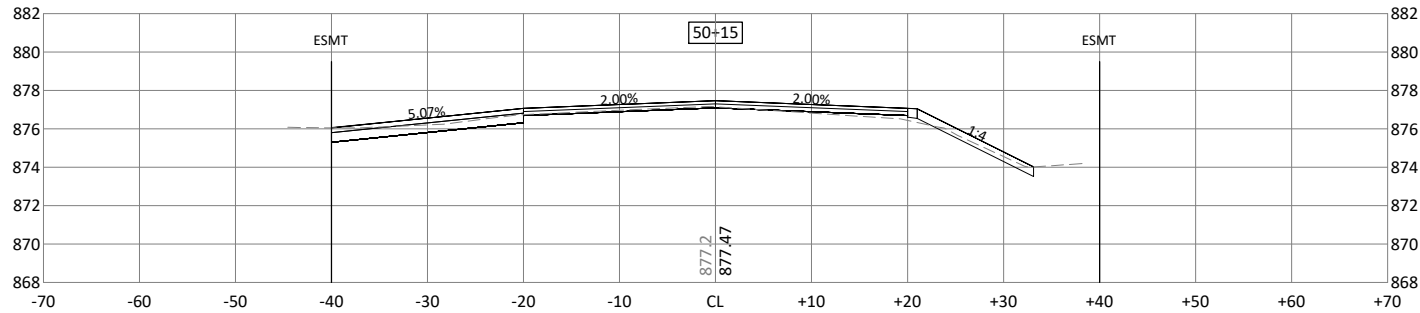
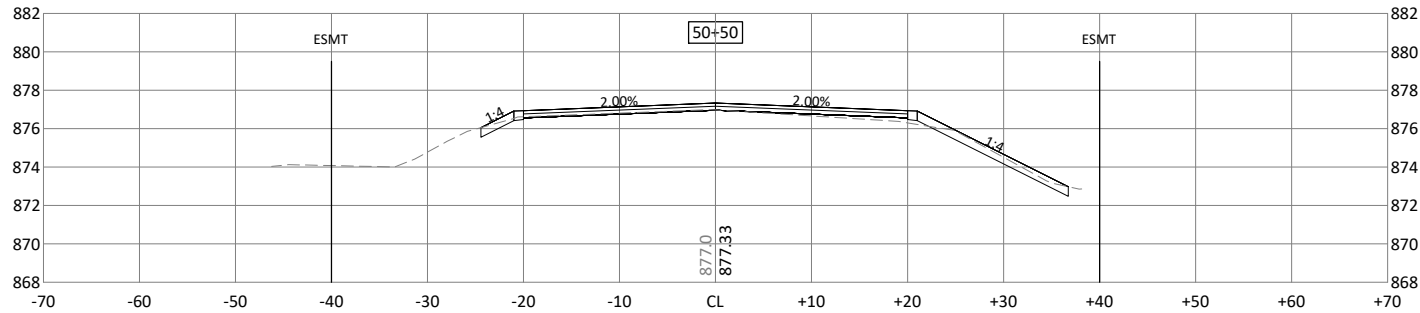
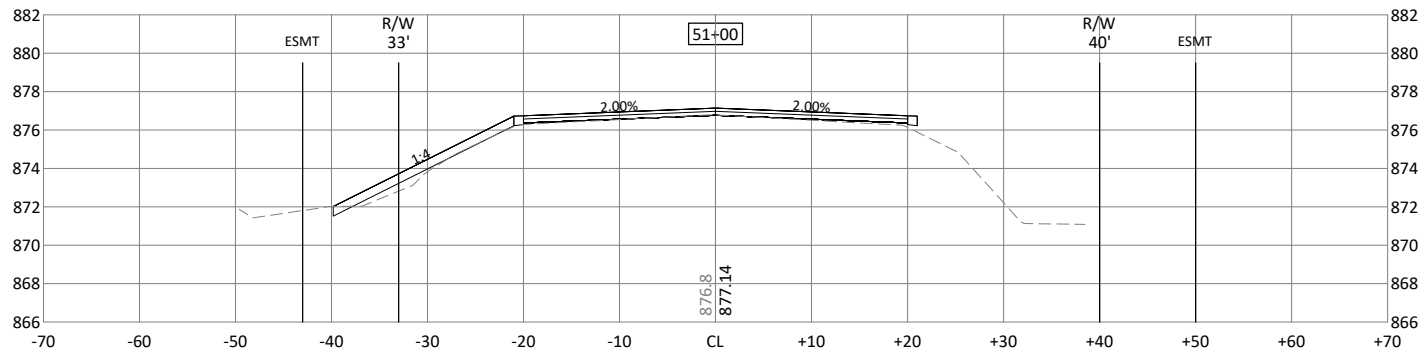
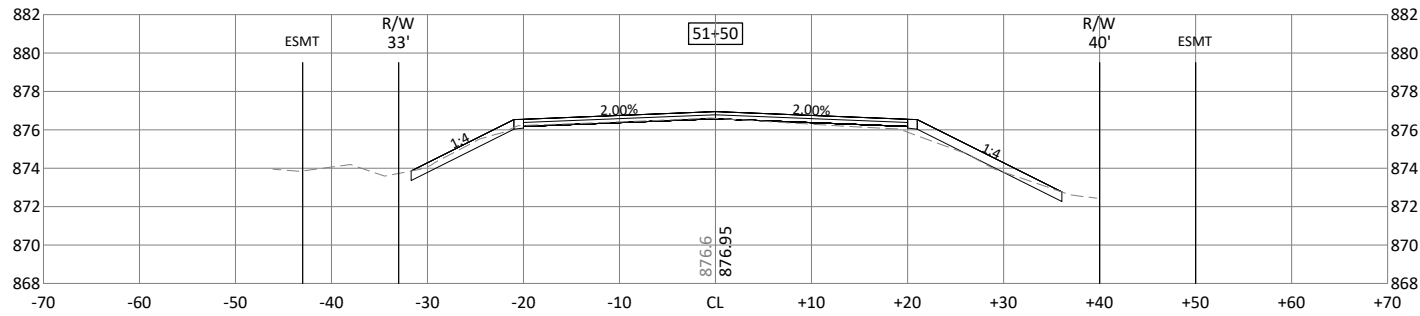
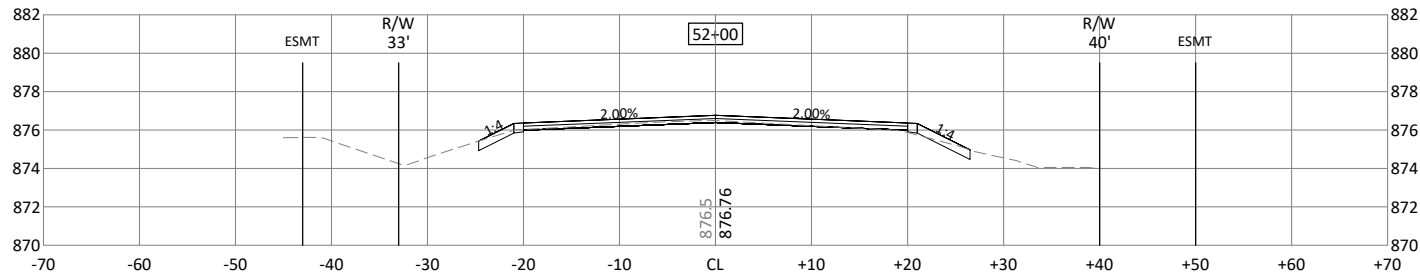
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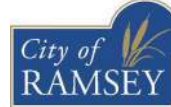
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ZACHARY LINGL  
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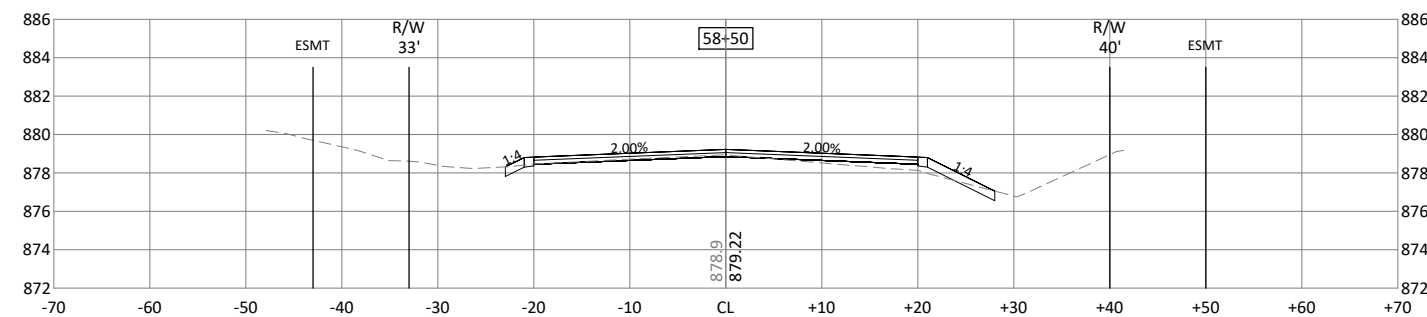
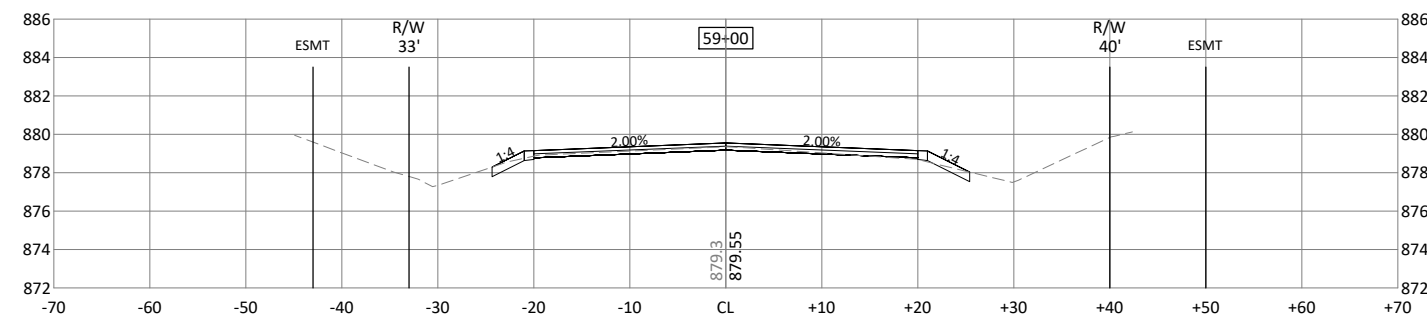
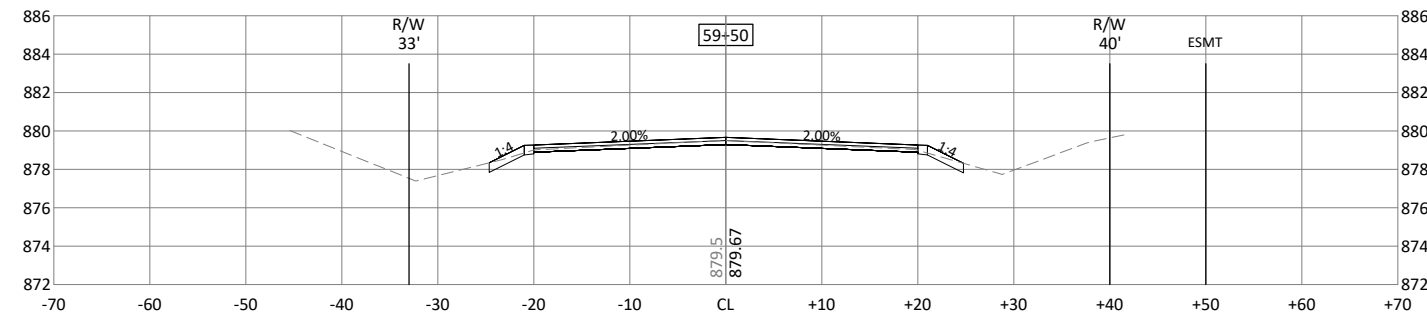
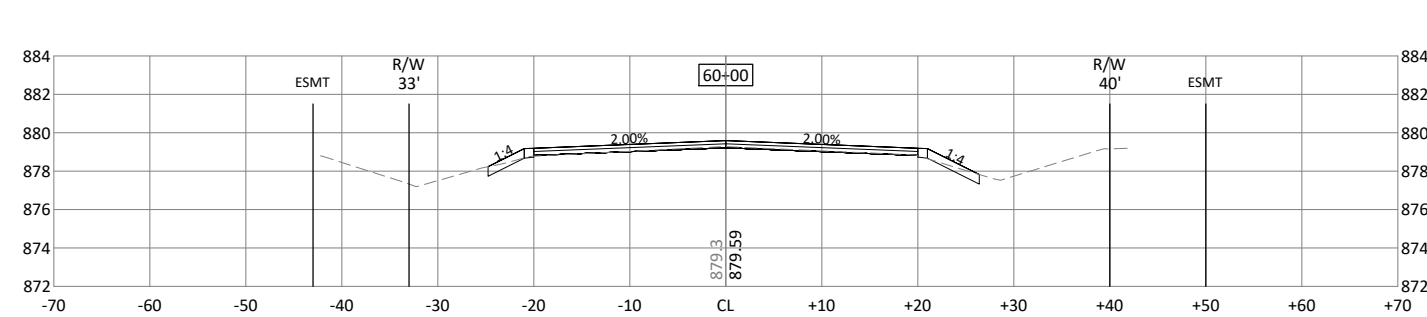
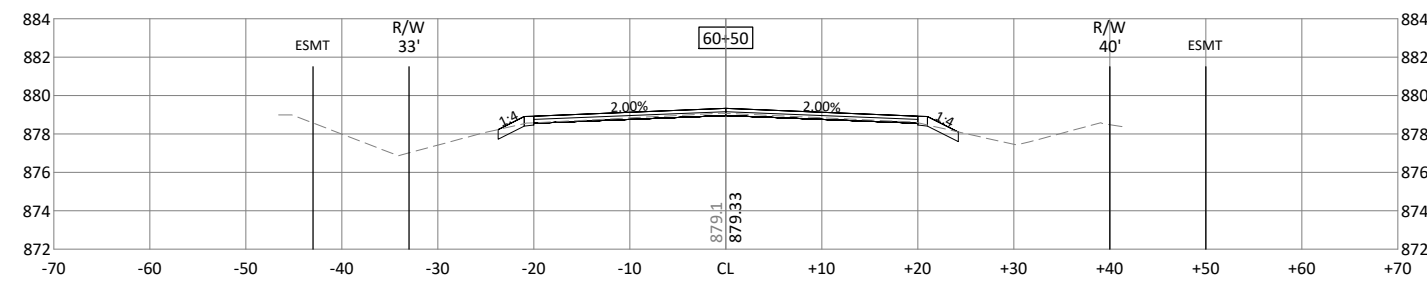


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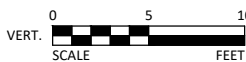
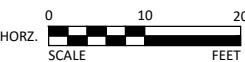
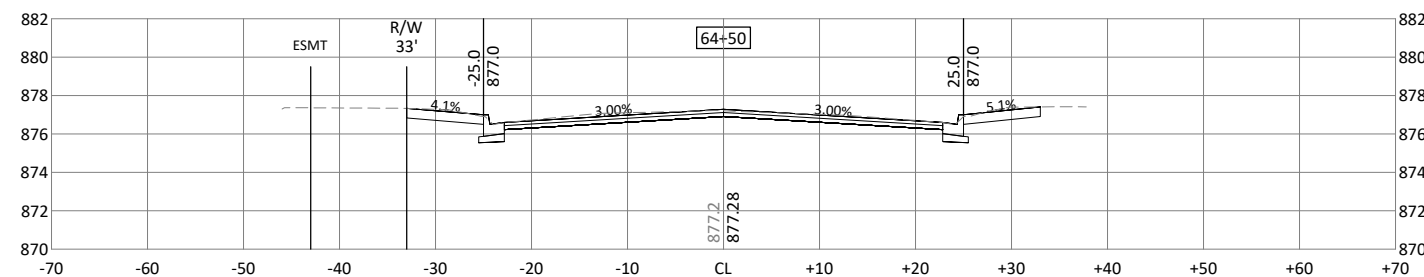
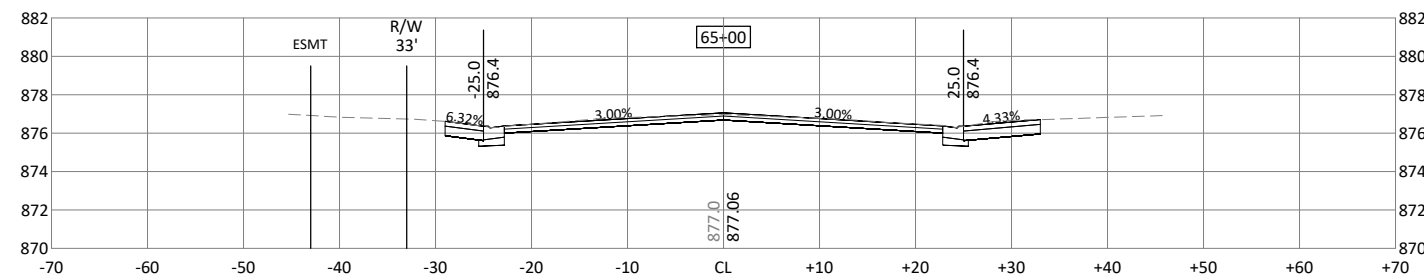
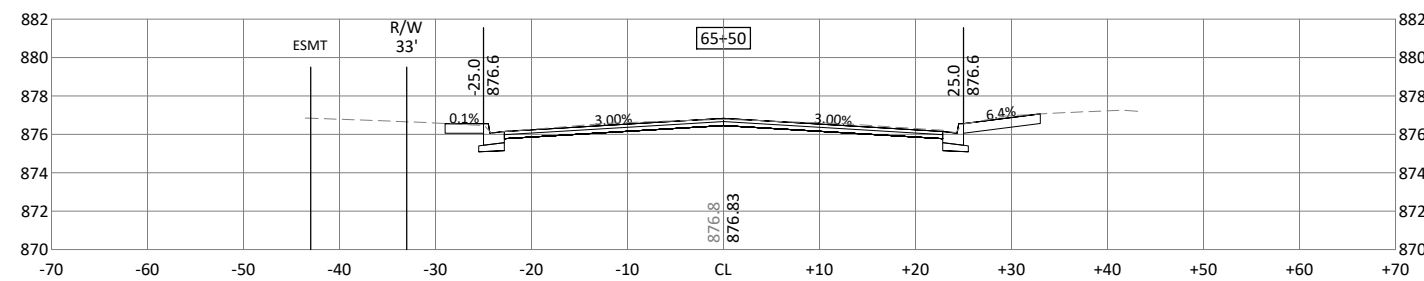
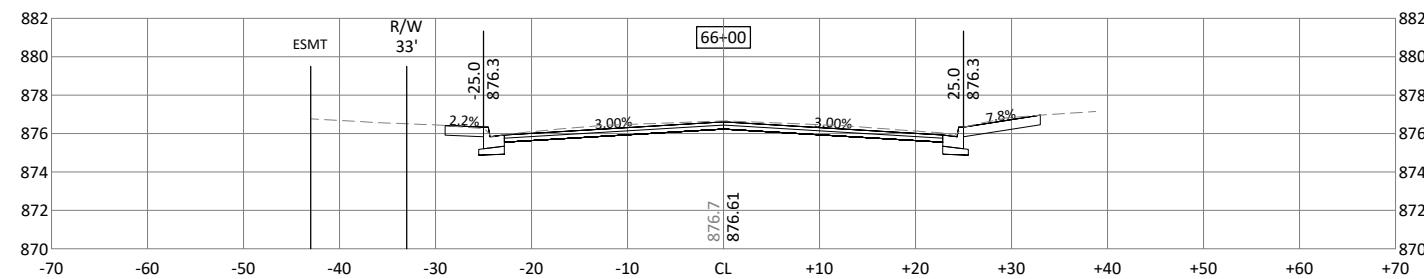
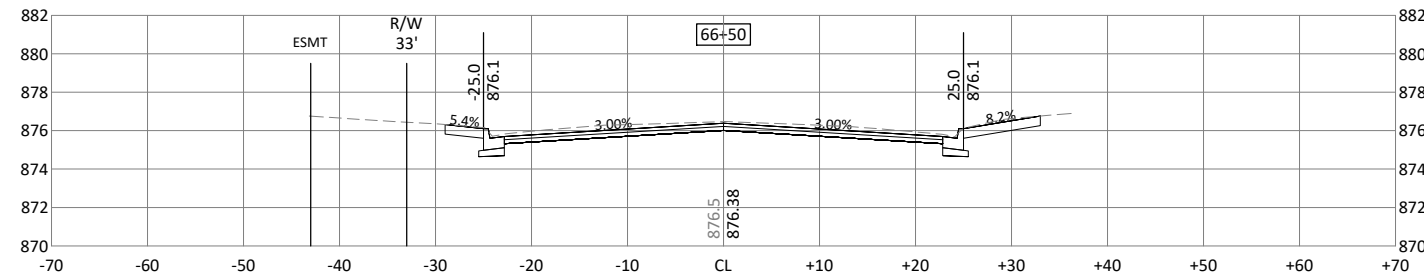
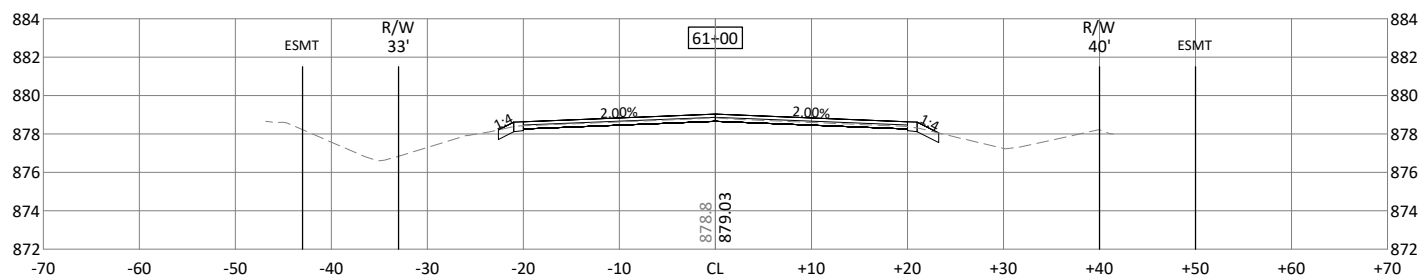
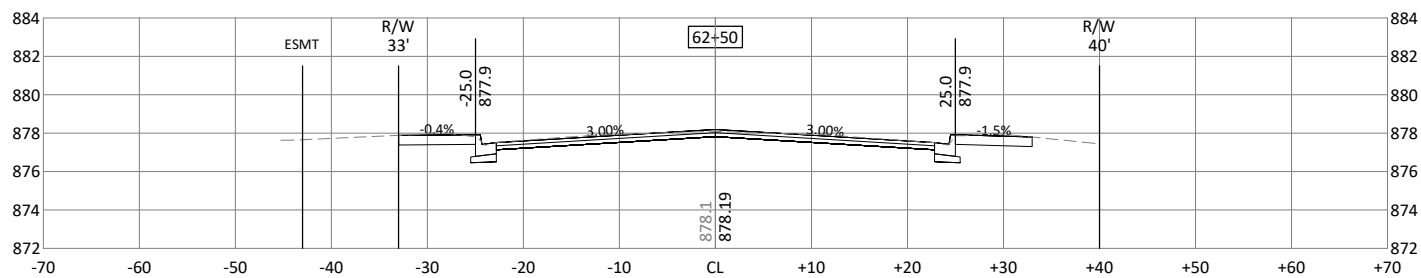
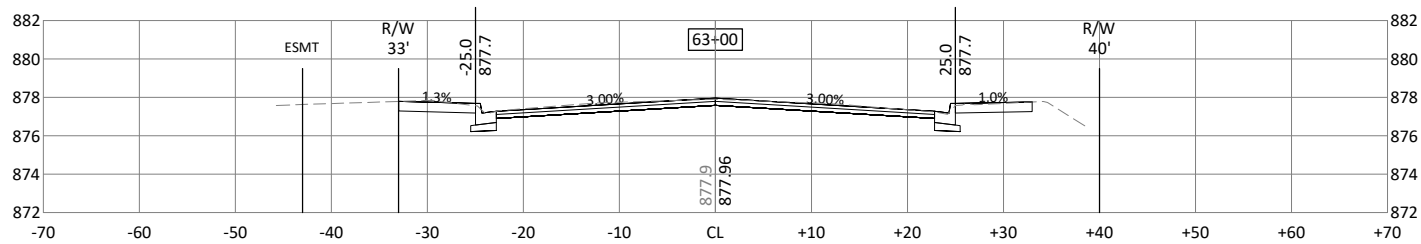
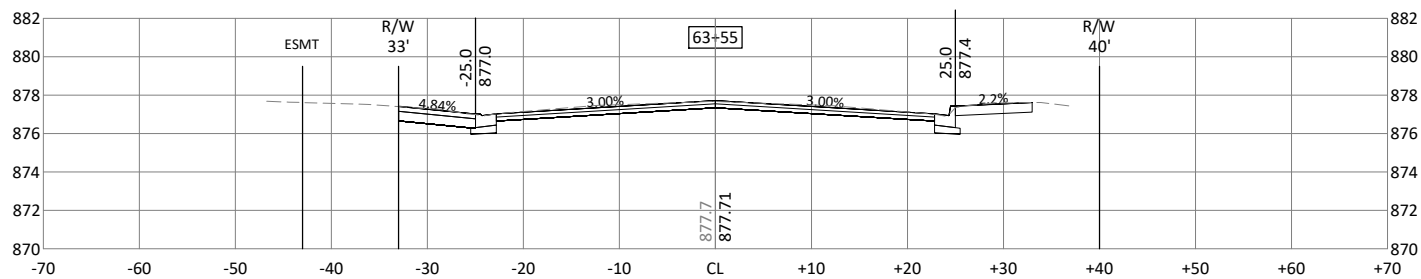
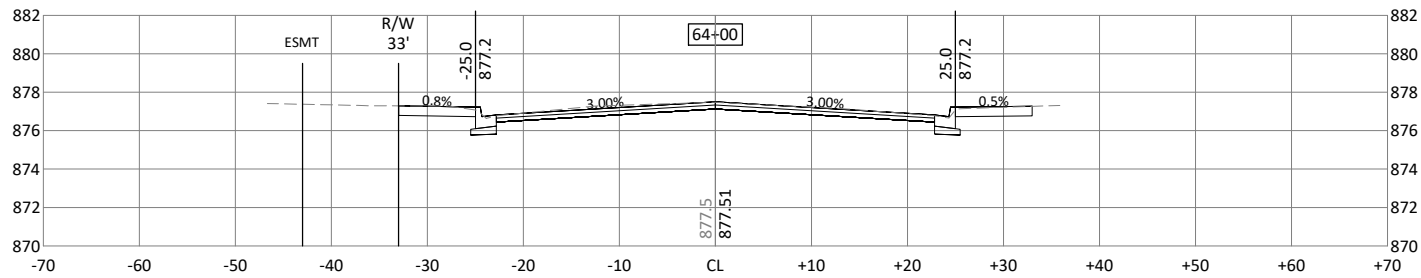
CROSS SECTIONS

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