

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

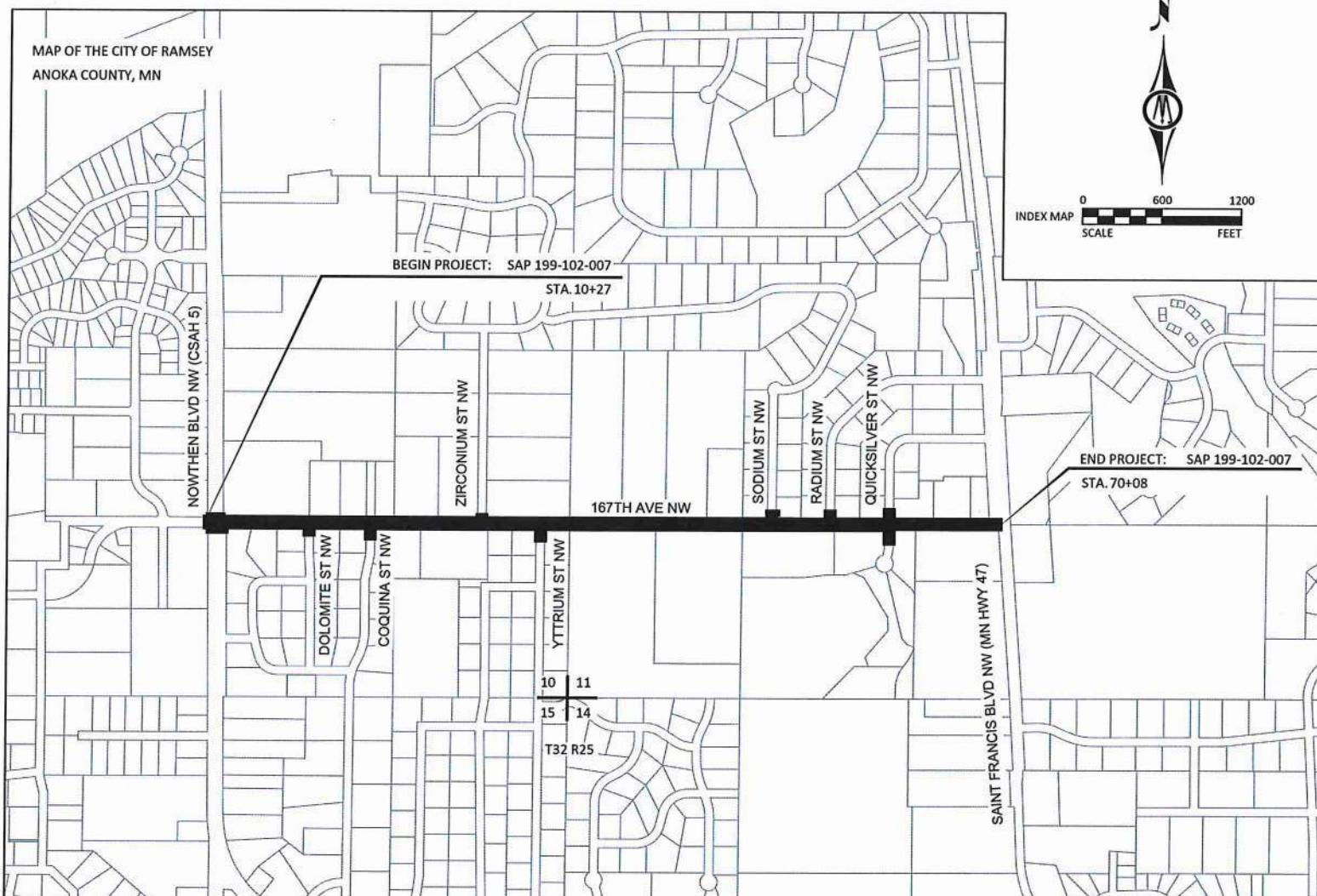
DESIGN DESIGNATION
STA. 10+26.30 TO STA. 70+11.03

FUNTIONAL CLASSIFICATION MINOR COLLECTOR
R-VALUE 30
ZN-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
HCADT (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

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



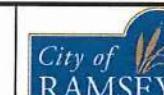
PROJECT LOCATION
CITY: RAMSEY
COUNTY: ANOKA
DISTRICT: METRO

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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."



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



DESIGNED BY ZFL NO. ISSUED FOR DATE

DRAWN BY CN

CHECKED BY KPK

CONTRACTOR: _____

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
Date _____

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

1
OF
57

EXISTING TOPOGRAPHIC SYMBOLS

■ ACCESS GRATE	◎ REGULATION STATION GAS
AC 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
● HANDBOLES	● 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	
● MANHOLE-COMMUNICATION	
● MANHOLE-ELECTRIC	
● MANHOLE-GAS	
● MANHOLE-HEAT	
● MANHOLE-SANITARY SEWER	
● MANHOLE-STORM SEWER	
● MANHOLE-UTILITY	
● MANHOLE-WATER	
● METER	
● ORDER MICROPHONE	
● PARKING METER	
● PAVEMENT MARKING	
● PEDESTAL-COMMUNICATION	
● PEDESTAL-ELECTRIC	
● PEDESTRIAN PUSH BUTTON	
● PICNIC TABLE	
● POLE-UTILITY	
● POLE-BRACE	
● POST	
● RAILROAD SIGNAL POLE	

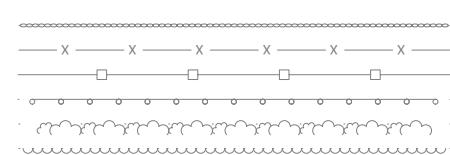
PROPOSED TOPOGRAPHIC SYMBOLS

● 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

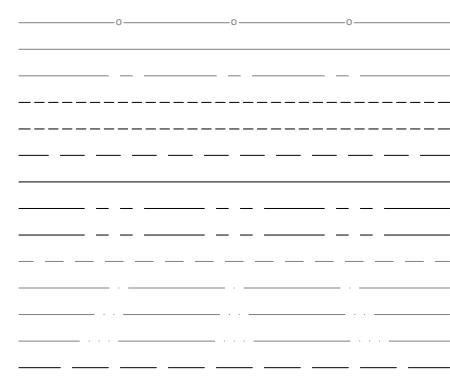
⊕ BENCHMARK LOCATION	● CAST IRON MONUMENT
◊ CONTROL POINT	■ STONE MONUMENT
● MONUMENT FOUND	

EXISTING TOPOGRAPHIC LINES



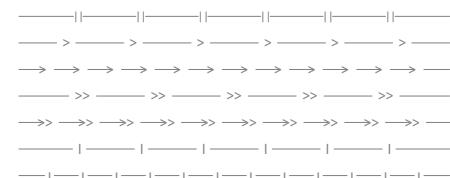
RETAINING WALL
FENCE
FENCE-DECORATIVE
GUARD RAIL
TREE LINE
BUSH LINE

SURVEY LINES



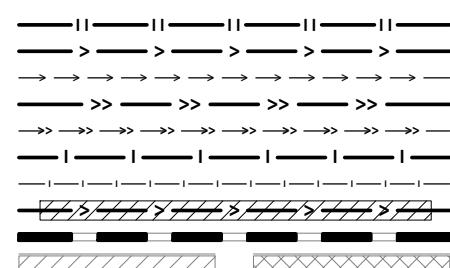
CONTROLLED ACCESS
BOUNDARY
CENTERLINE
EXISTING EASEMENT LINE
PROPOSED EASEMENT LINE
EXISTING LOT LINE
PROPOSED LOT LINE
EXISTING RIGHT-OF-WAY
PROPOSED RIGHT-OF-WAY
SETBACK LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
TEMPORARY EASEMENT

EXISTING UTILITY LINES



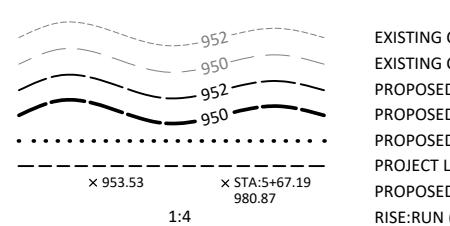
FORCEMAIN
SANITARY SEWER
SANITARY SERVICE
STORM SEWER
STORM SEWER DRAIN TILE
WATERMAIN
WATER SERVICE

PROPOSED UTILITY LINES



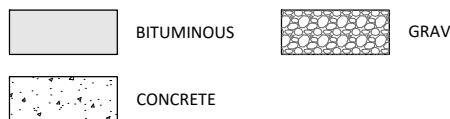
FORCEMAIN
SANITARY SEWER
SANITARY SERVICE
STORM SEWER
STORM SEWER DRAIN TILE
WATERMAIN
WATER SERVICE
PIPE CASING
TRENCHLESS PIPE (PLAN VIEW)
TRENCHLESS PIPE (PROFILE VIEW)

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



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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	M GAL	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.

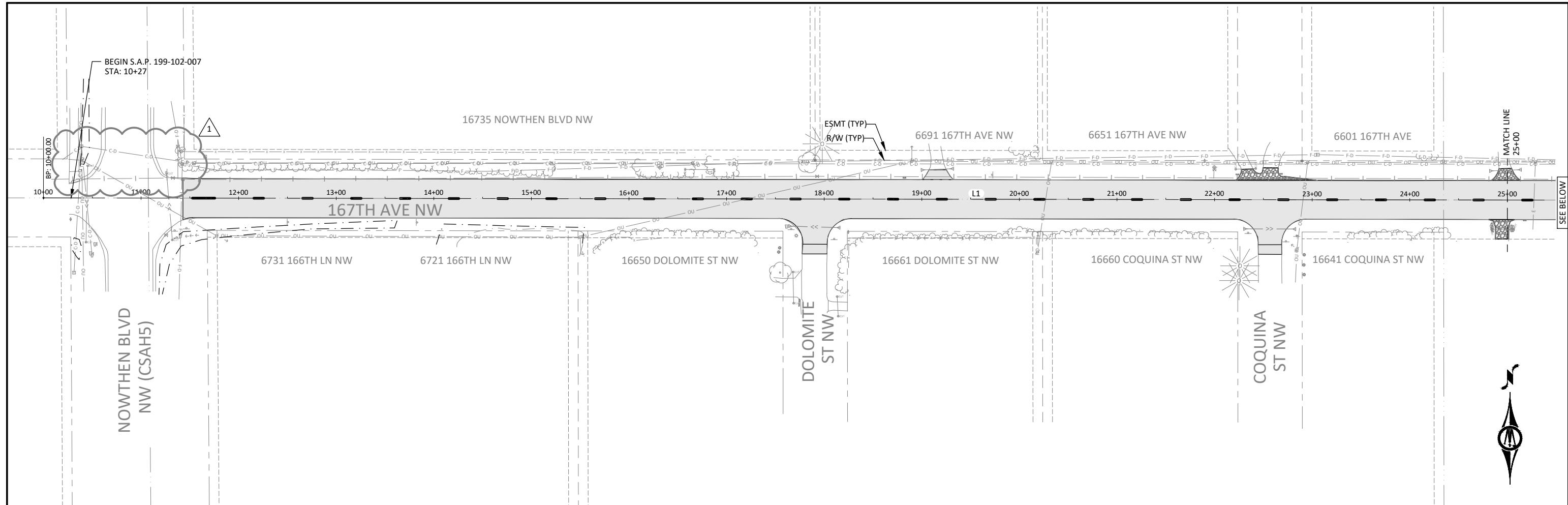
BASIS FOR ESTIMATED QUANTITIES

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

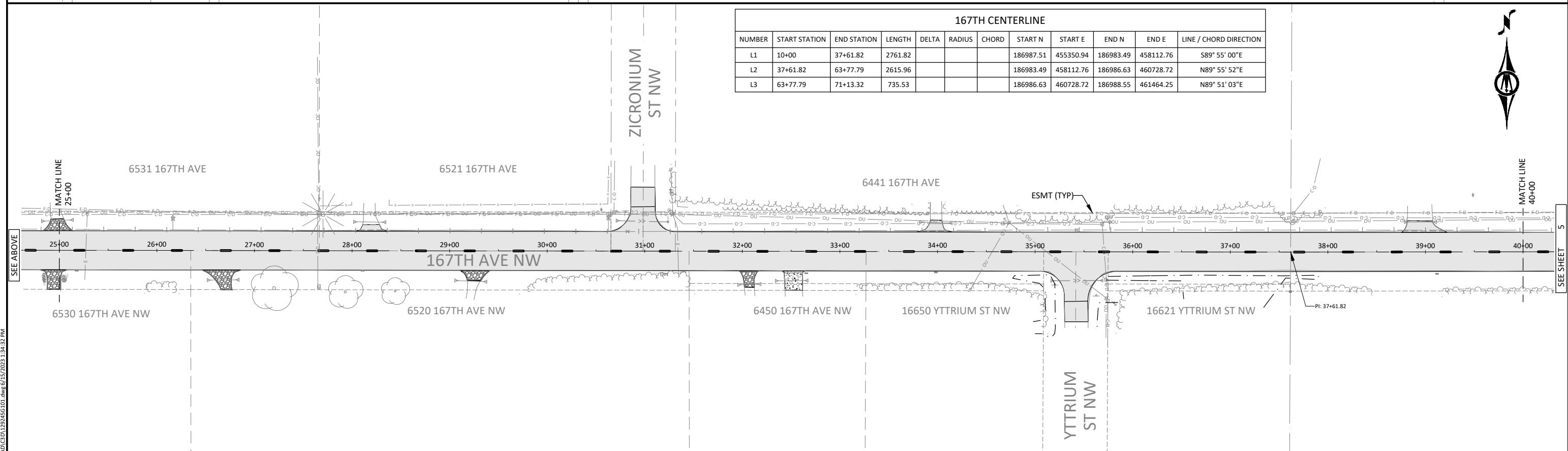
STANDARD PLATES

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



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



0 50 100
HORZ FEET
SCALE

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. 563444 DATE 5/31/2023



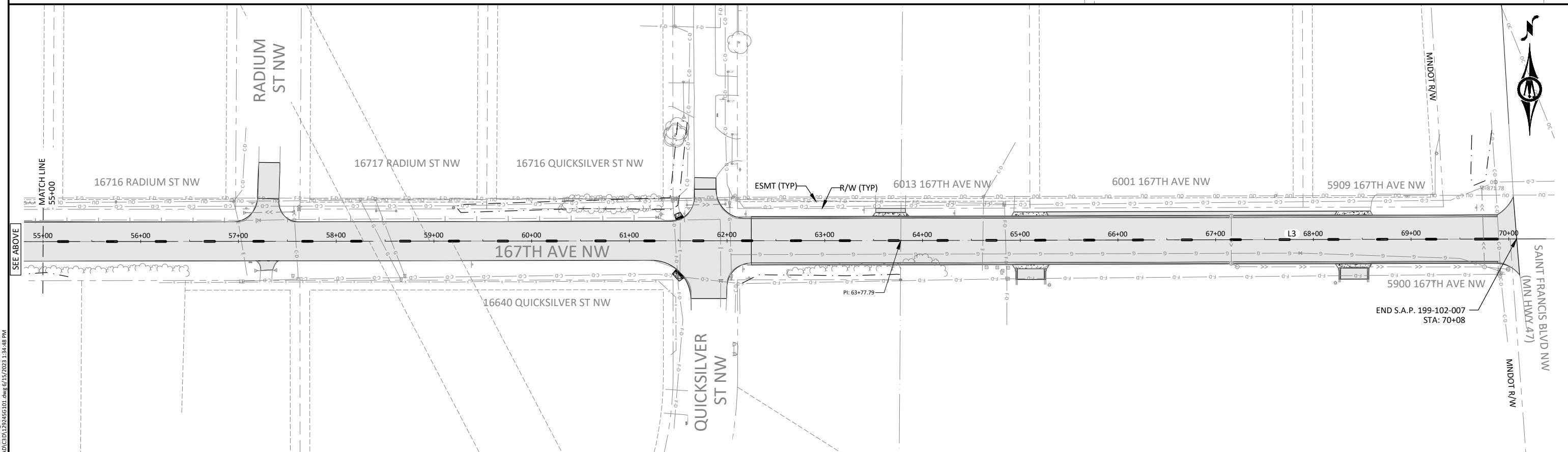
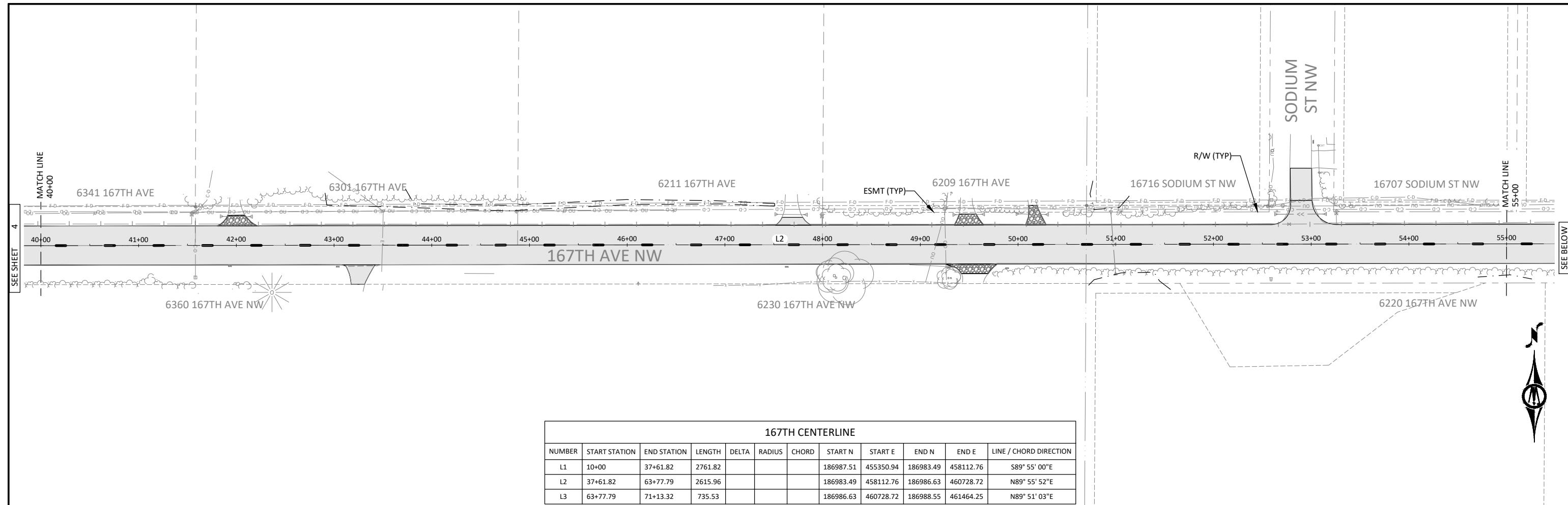
7533 SUNWOOD DR NW, SUITE 206
RAMSEY, MINNESOTA 55303
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
www.bolton-menk.com



DESIGNED NO. ISSUED FOR DATE
ZFL 1 ADD 1 6/15/2023
DRAWN CN
CHECKED KPK
CLIENT PROJ. NO. 23-04

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

SHEET
4
OF
57

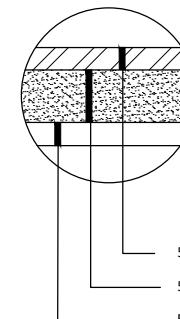
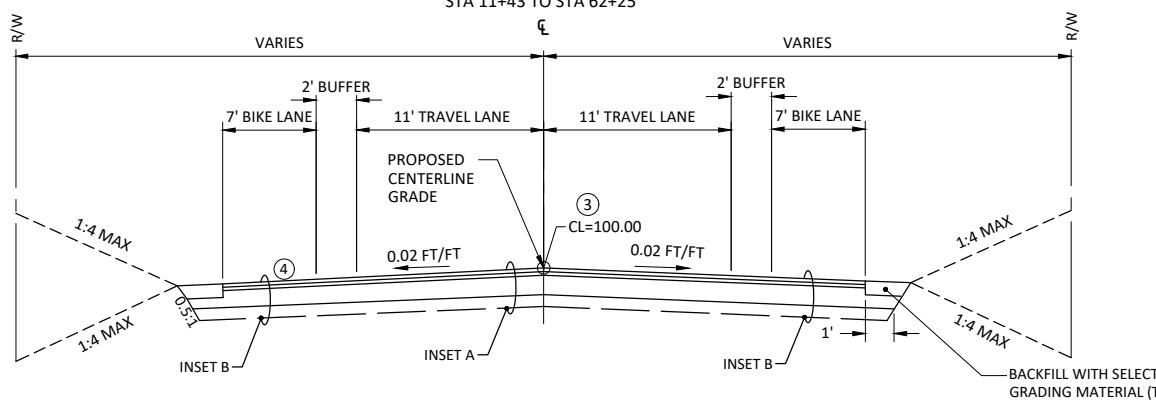


S.A.P. 199-102-007 TYPICAL SECTION

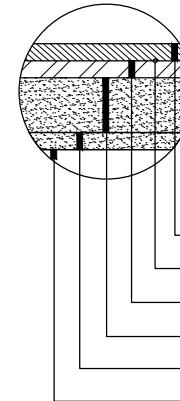
167 AVE STREET NW

NOT TO SCALE

STA 11+43 TO STA 62+25



EXISTING PAVEMENT SECTION
BASED ON GEOTECHNICAL REPORT



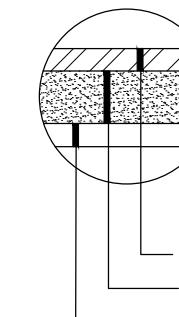
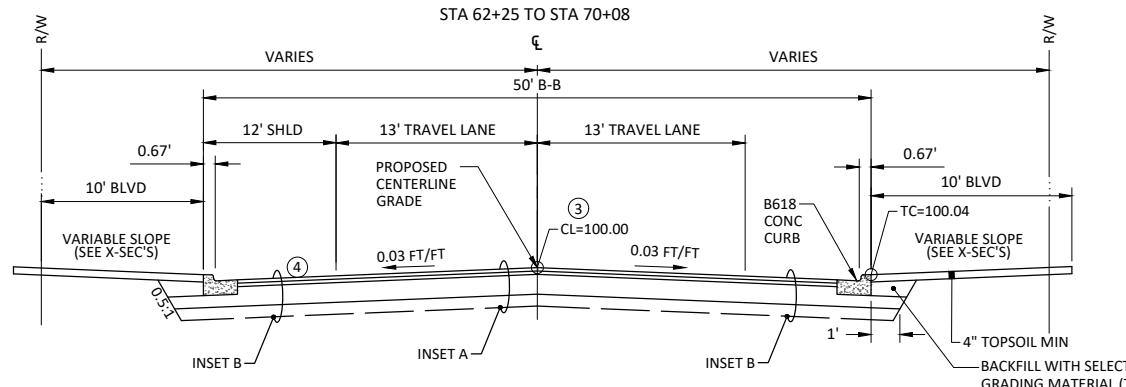
INSET A - BITUMINOUS ROADWAY
NOT TO SCALE

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

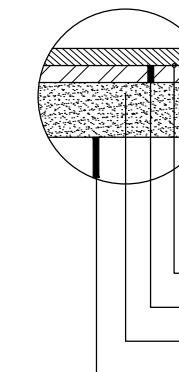
167TH AVE STREET NW

NOT TO SCALE

STA 62+25 TO STA 70+08



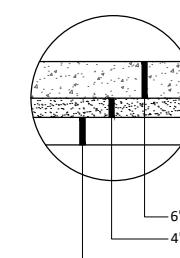
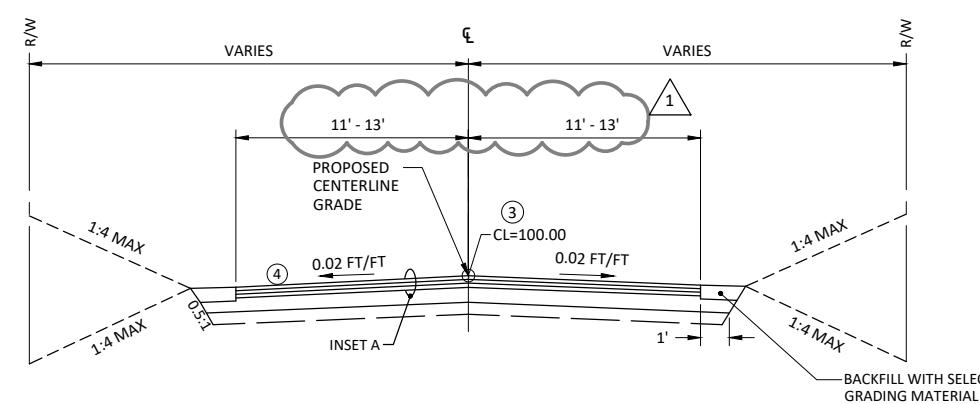
BITUMINOUS DRIVEWAY
NOT TO SCALE



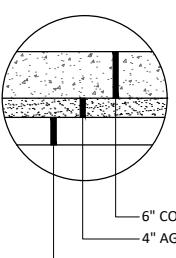
INSET B - BIKE LANE/SHOULDER PAVEMENT AREA
NOT TO SCALE

TYPICAL SECTION
INTERSECTING STREETS

NOT TO SCALE



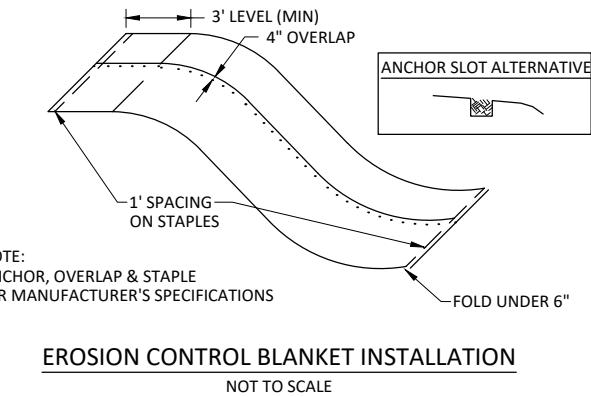
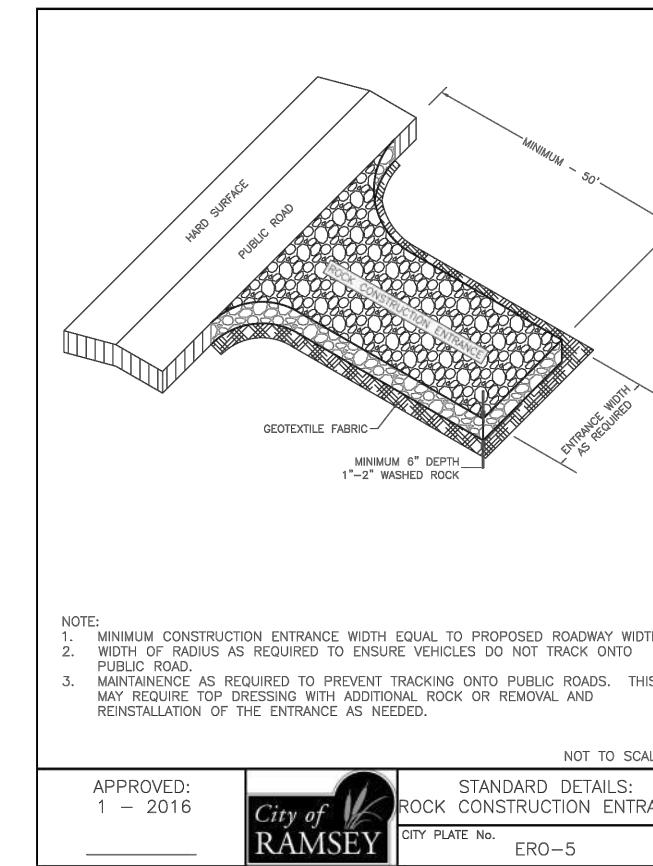
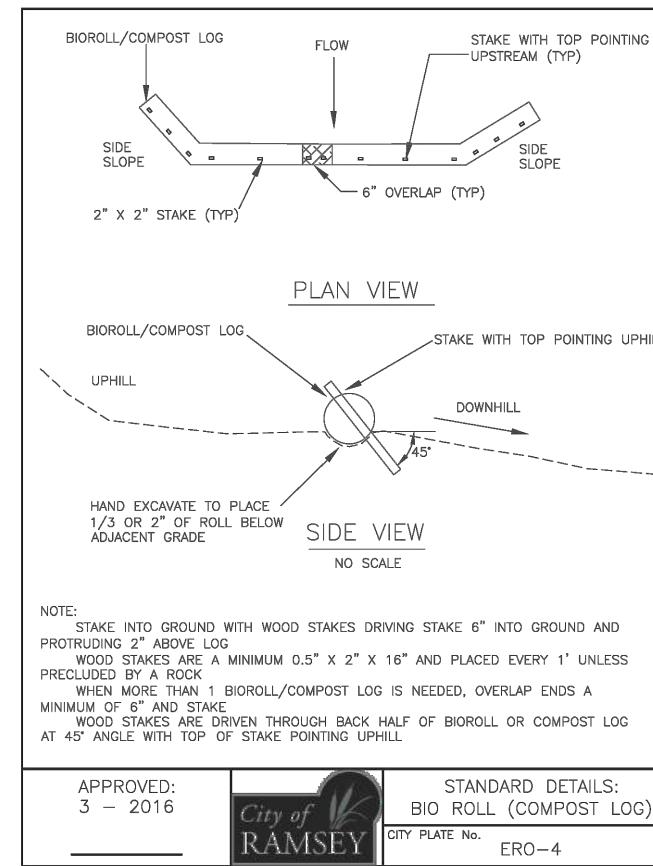
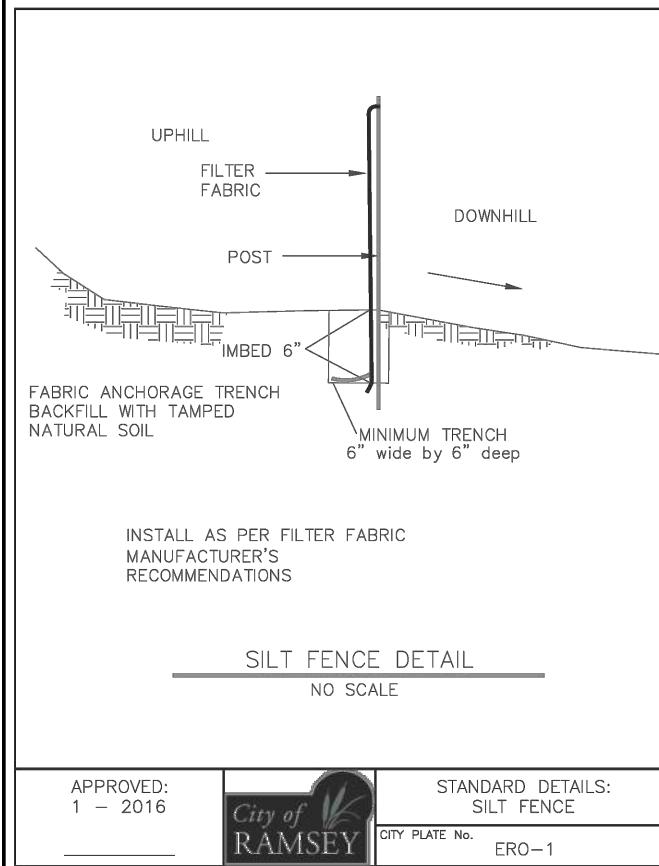
PEDESTRIAN RAMP
NOT TO SCALE



CONCRETE DRIVEWAY
NOT TO SCALE

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 COMPAKTED, IN PLACE, RECLAIM MATERIAL



EROSION CONTROL BLANKET INSTALLATION
NOT TO SCALE

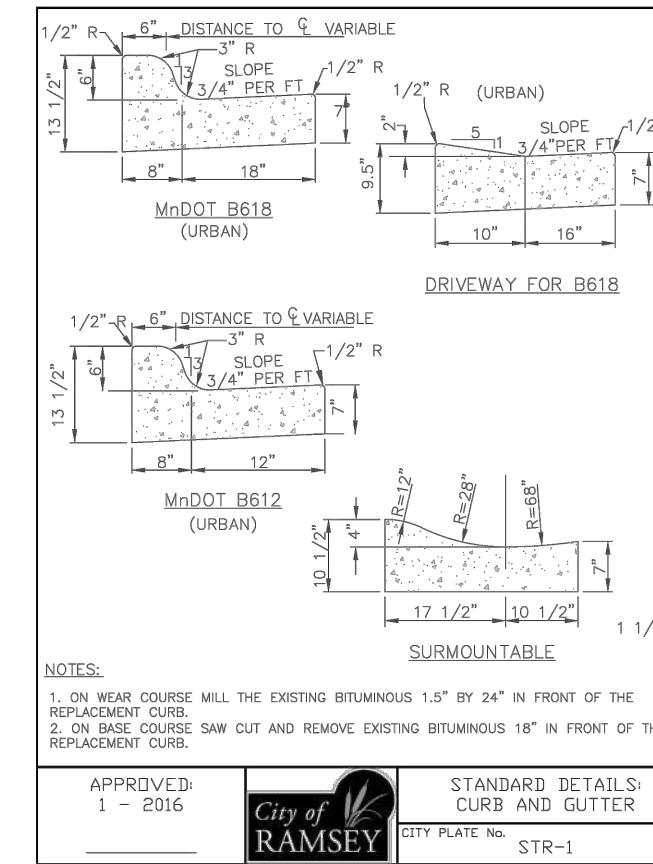
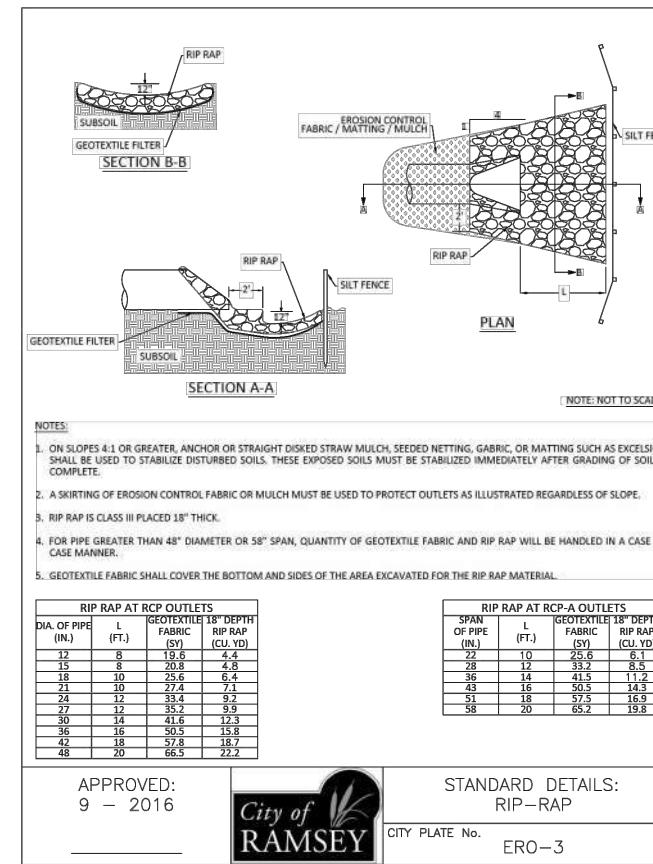
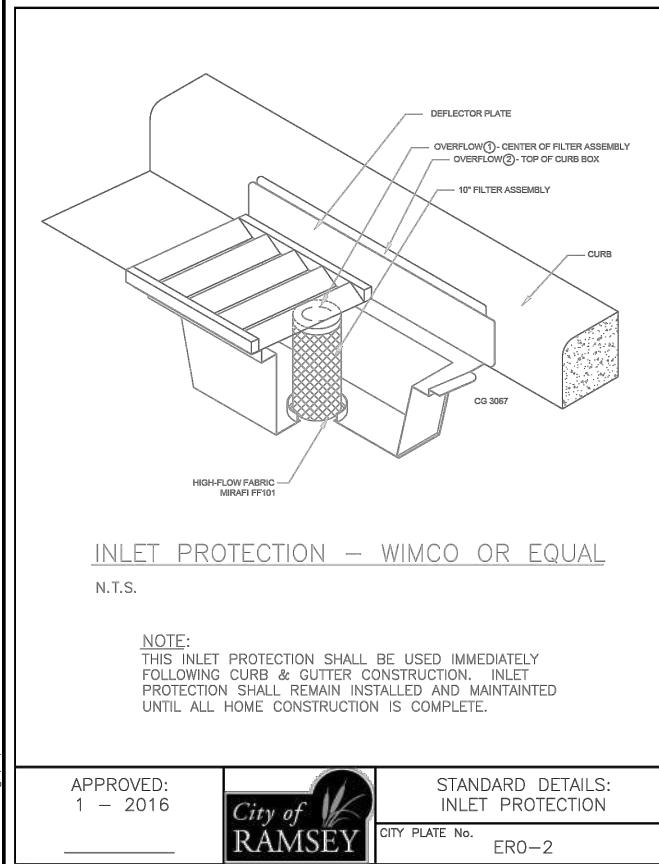


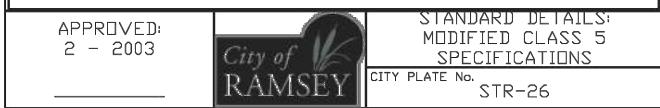
TABLE A MODIFIED CLASS 5 SPECIFICATIONS

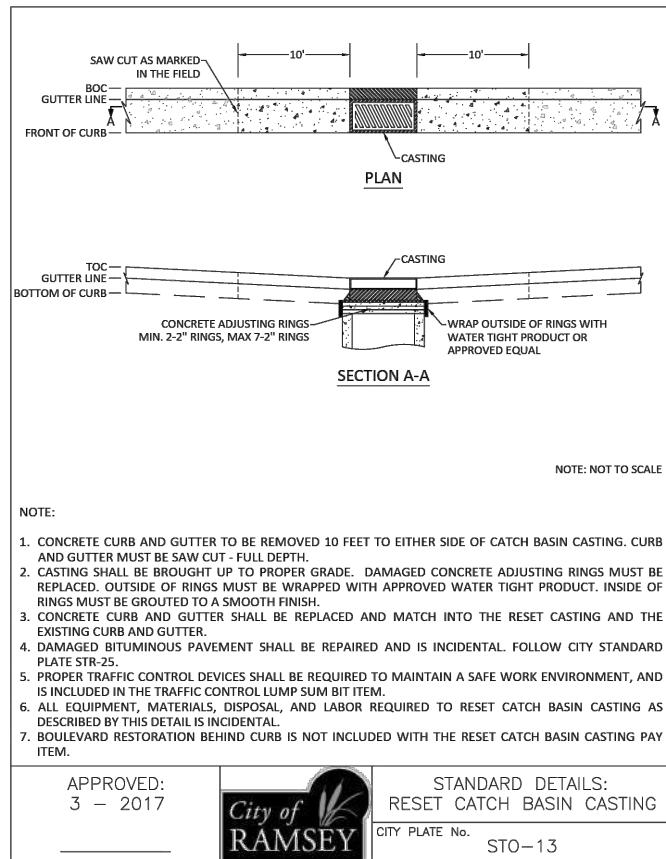
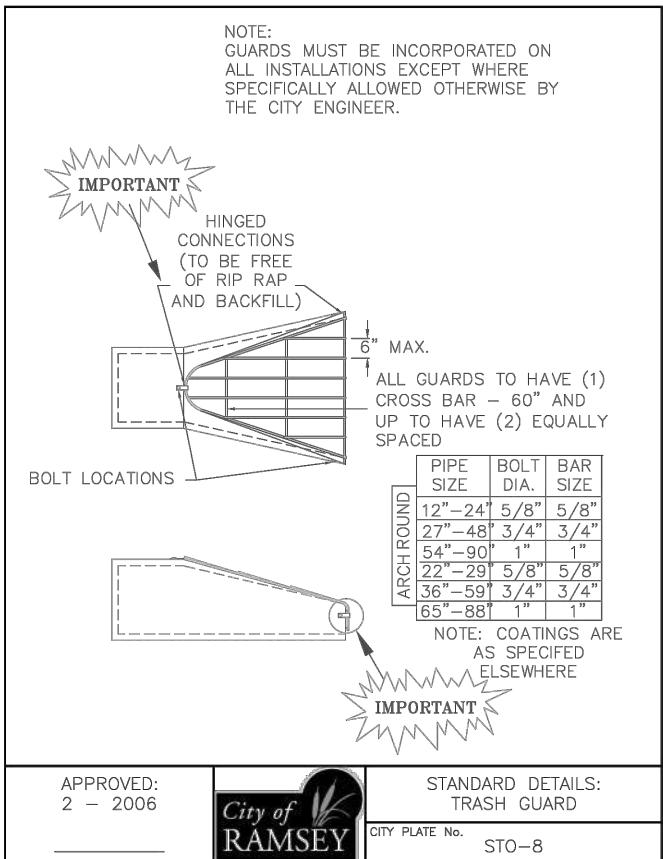
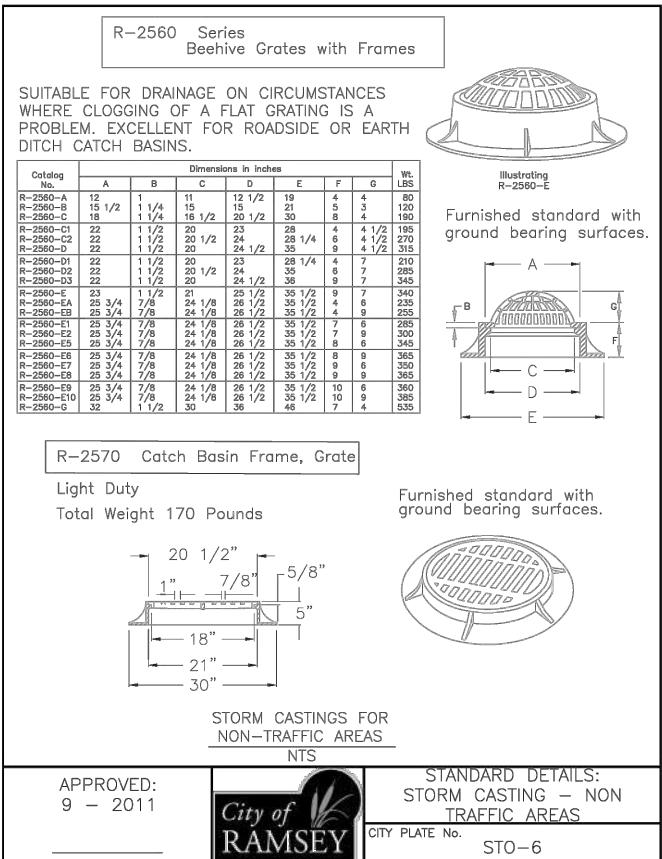
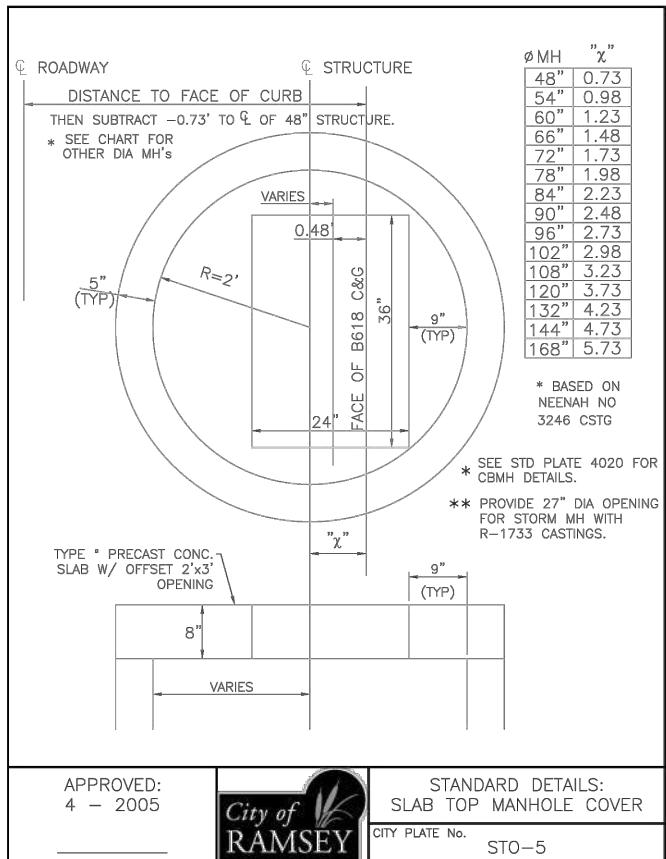
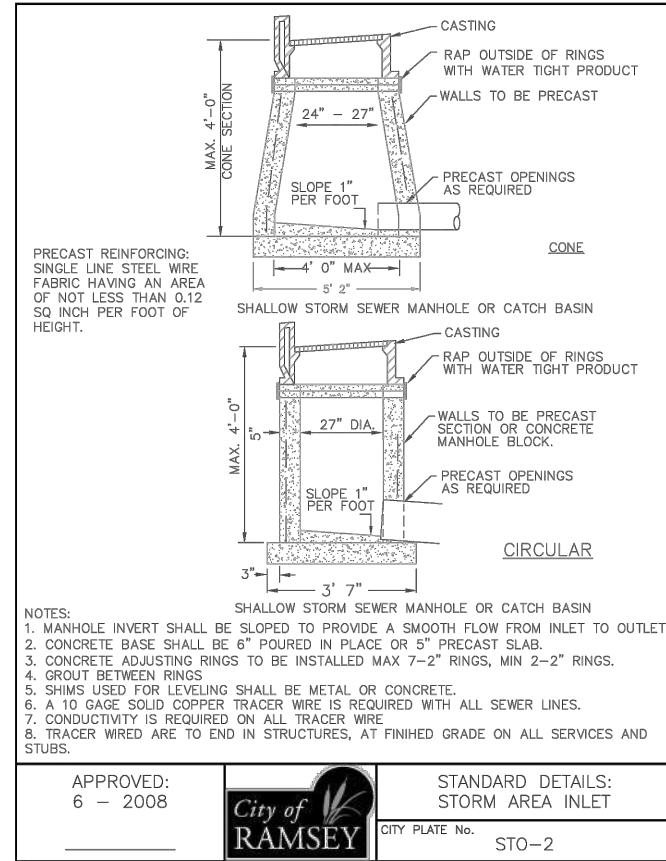
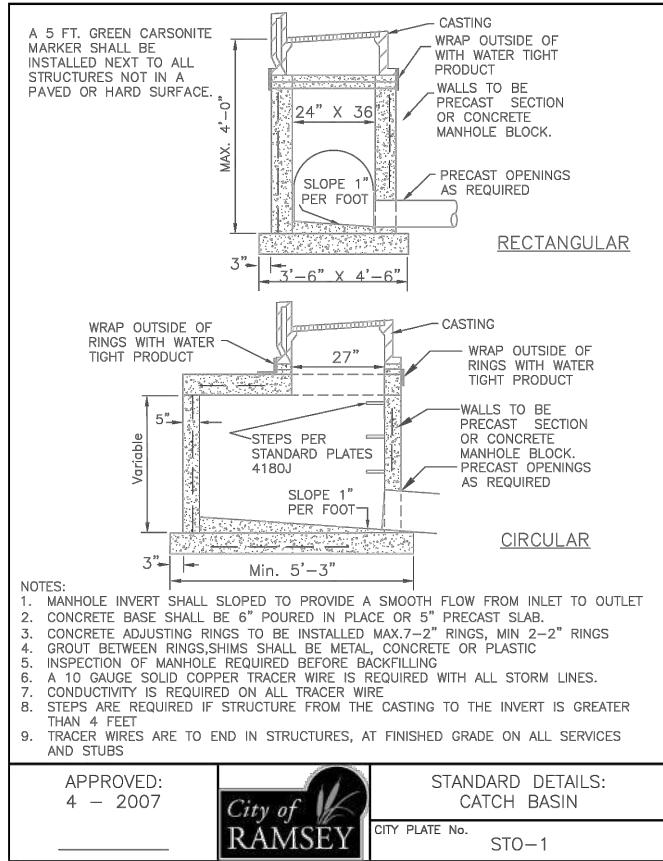
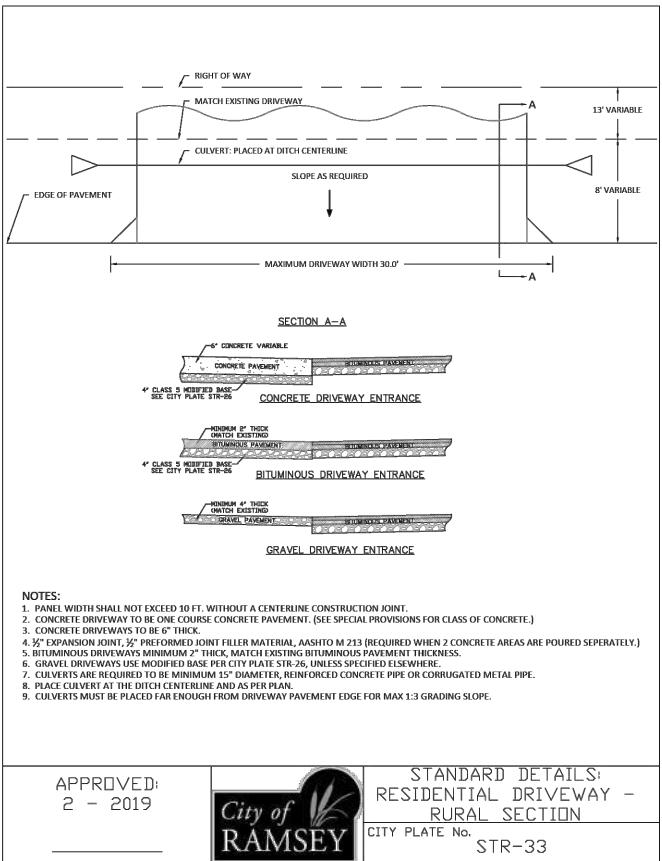
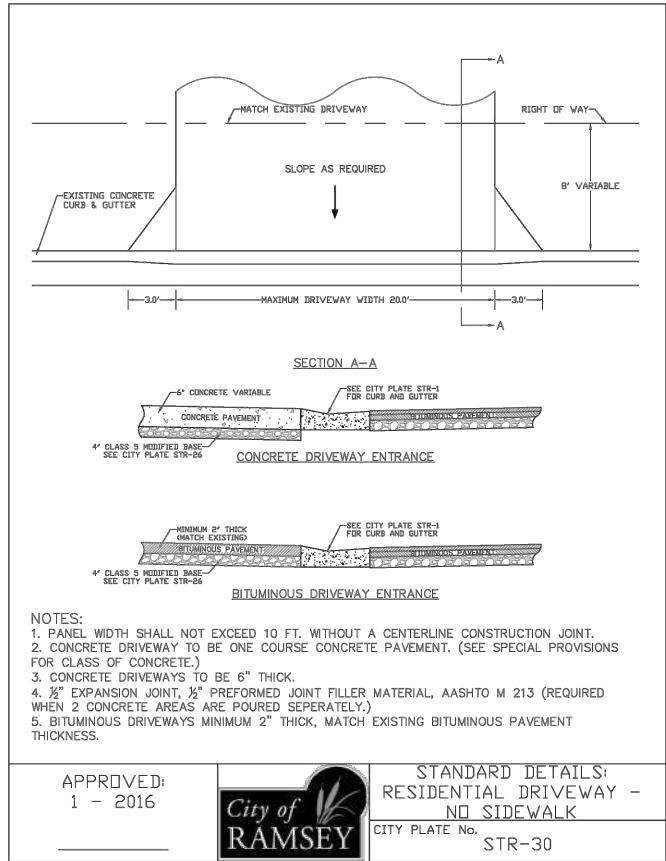
% PASSING

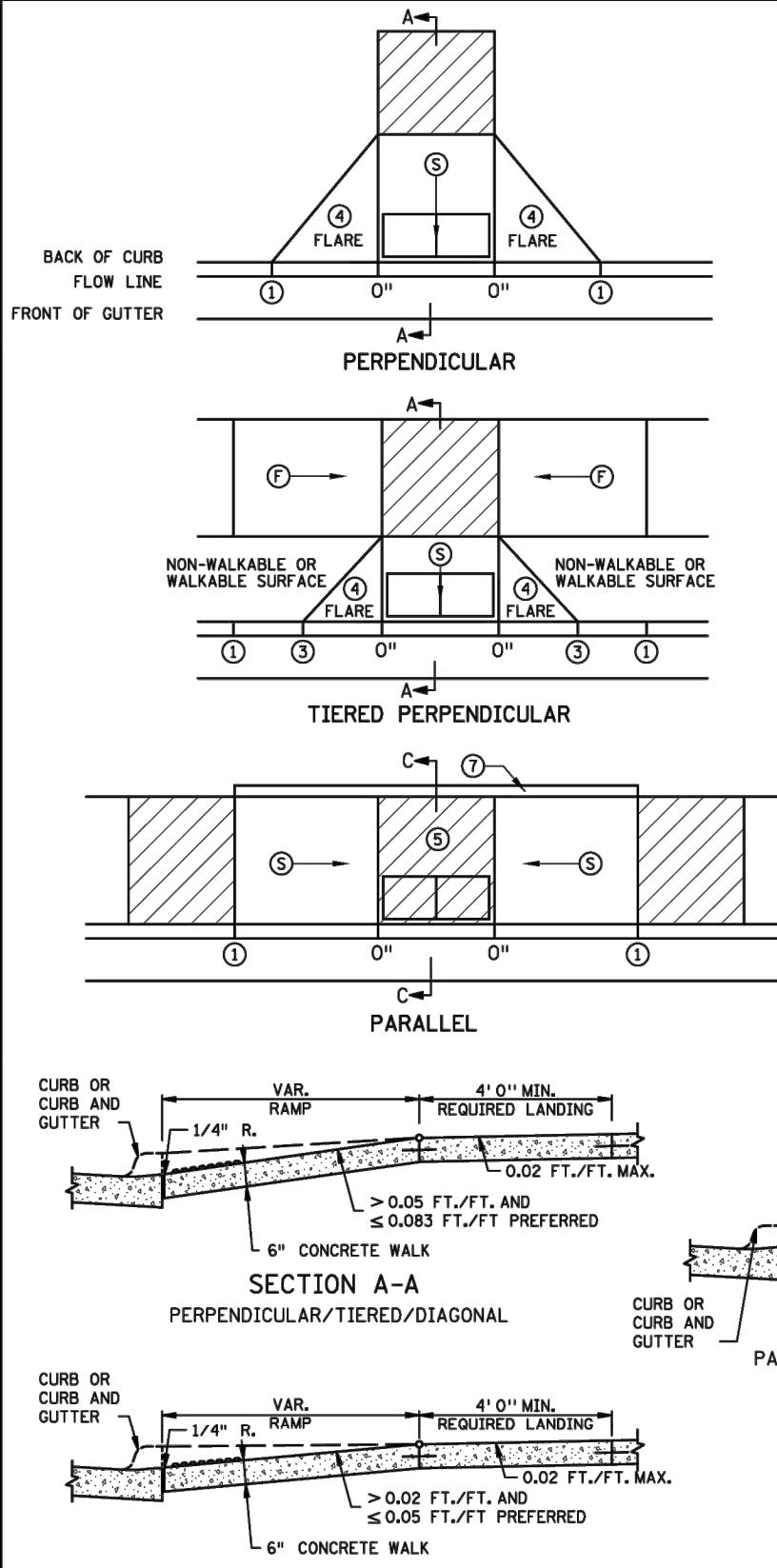
1"	100
3/4"	90 - 100
3/8"	50 - 80
No.4	35 - 70
No.10	20 - 60
No.40	10 - 35
No.200	5 - 10

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.







REVISION: **11-04-2021**

APPROVED: **Jeffrey Perkins**
JEFFREY PERKINS
OPERATIONS DIVISION

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



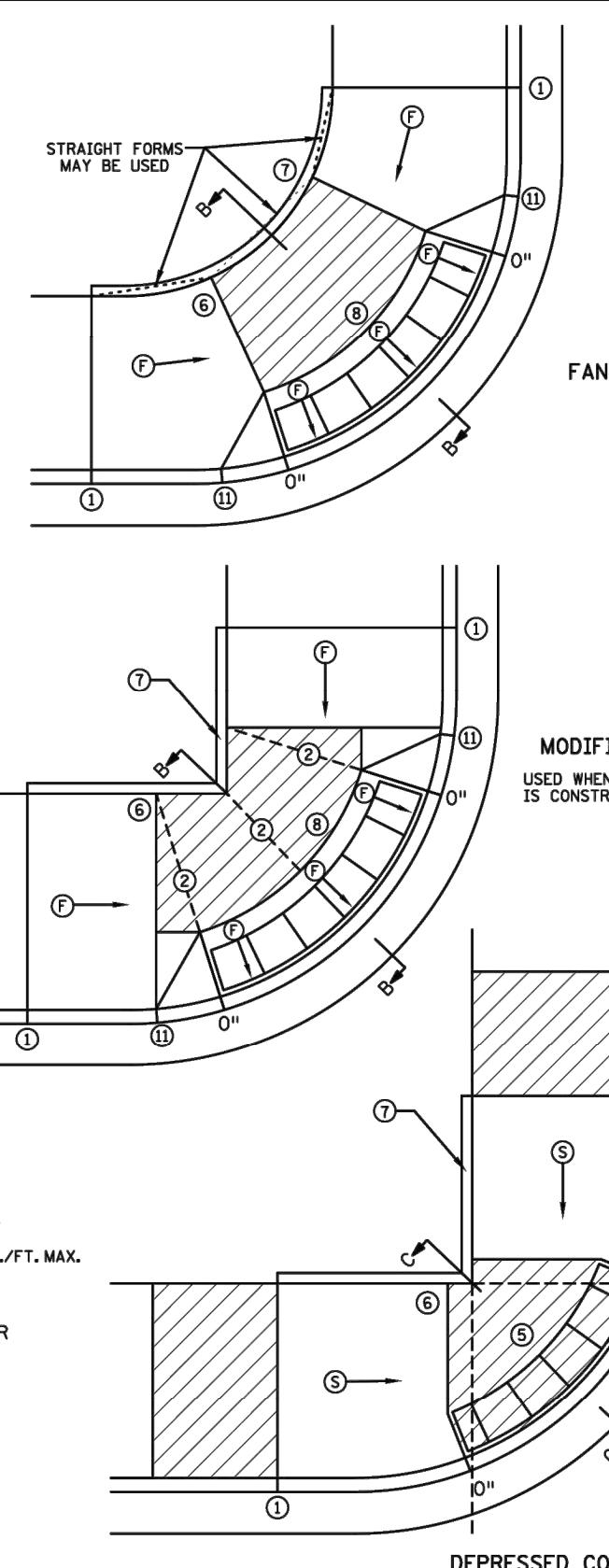
7533 SUNWOOD DR NW, SUITE 206
RAMSEY, MINNESOTA 55303
Phone: (763) 433-2851
Email: Ramsey@bolton-menk.com
www.bolton-menk.com



DESIGNED
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CLIENT PROJ. NO.

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CN
KPK
23-04

STANDARD PLAN 5-297.250 1 OF 6		
APPROVED: 11-04-2021 REVISED:		
STATE PROJ. NO. (TH) SHEET NO. OF SHEETS		
CITY OF RAMSEY, MINNESOTA 167TH AVENUE RECONSTRUCTION SAP 199-102-007		
MNDOT PEDESTRIAN RAMP DETAILS		



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.

① MATCH FULL HEIGHT CURB.
 ② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
 ③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
 ④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
 ⑤ 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.
 ⑥ 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).
 ⑦ 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.
 ⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
 ⑨ PAVE FULL WALK WIDTH.
 ⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
 ⑪ 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

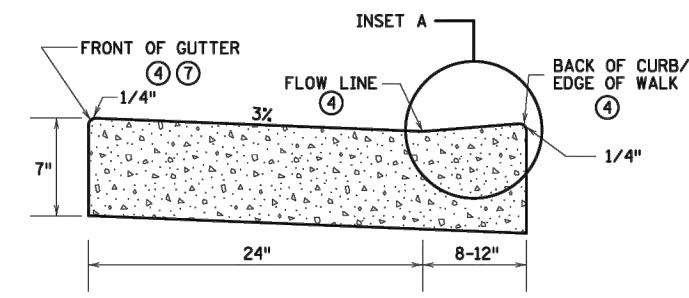
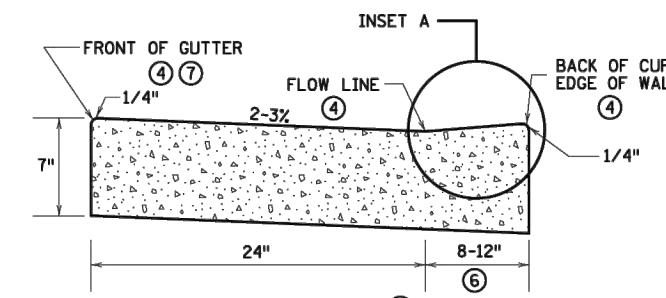
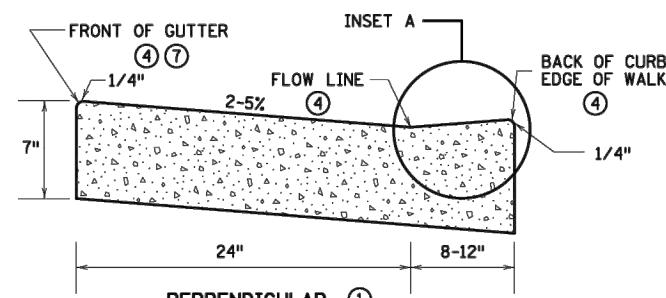
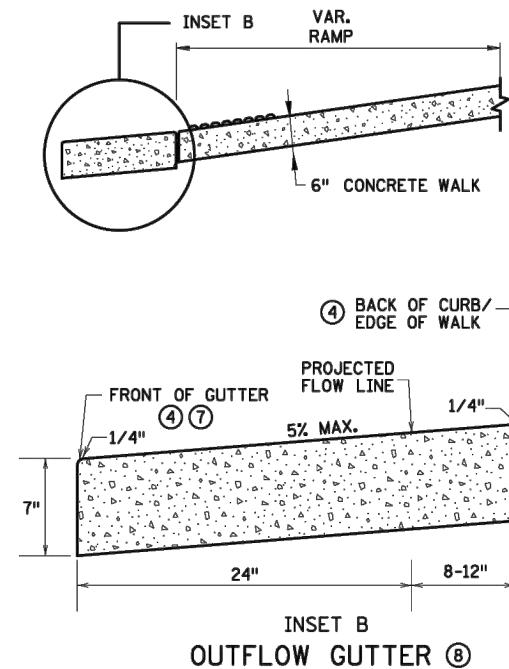
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT, IF SITE CONDITIONS WARRANT. LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(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%.

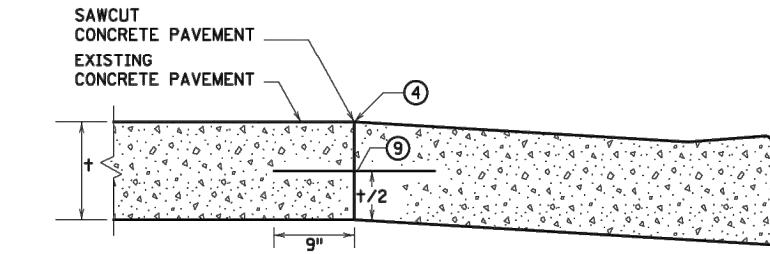
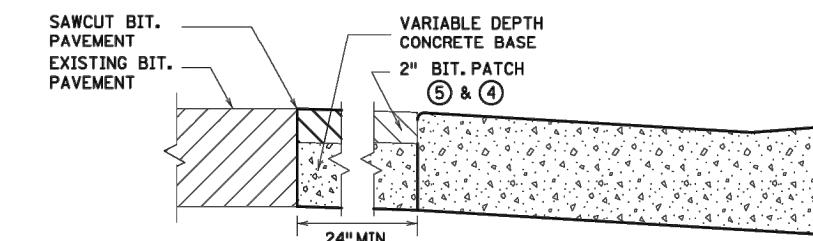
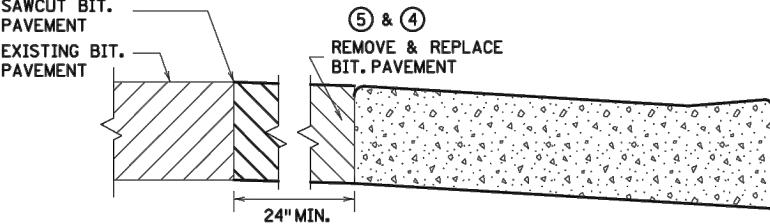
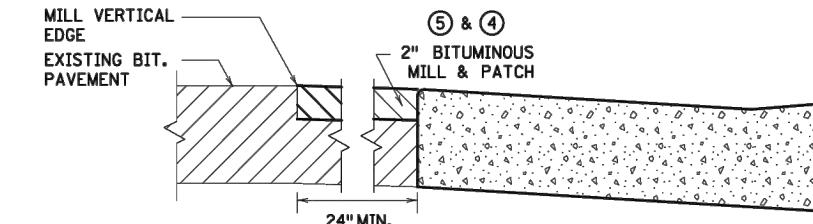
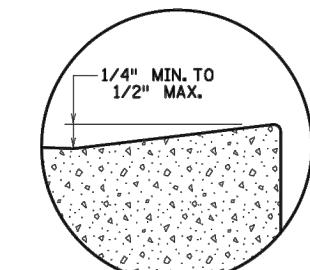
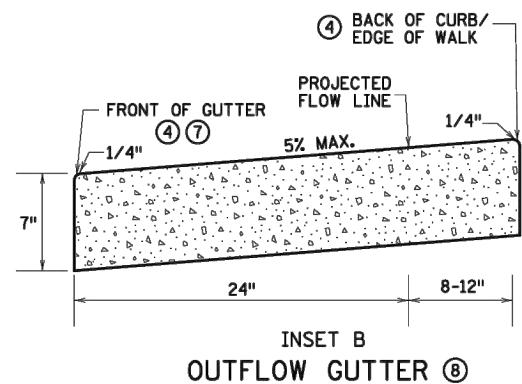
(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

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 PARs.

X" CURB HEIGHT

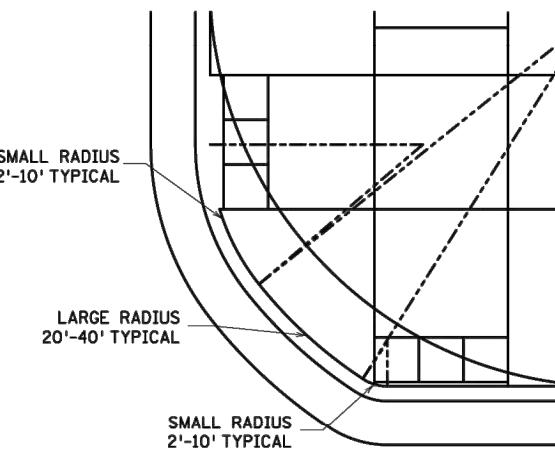
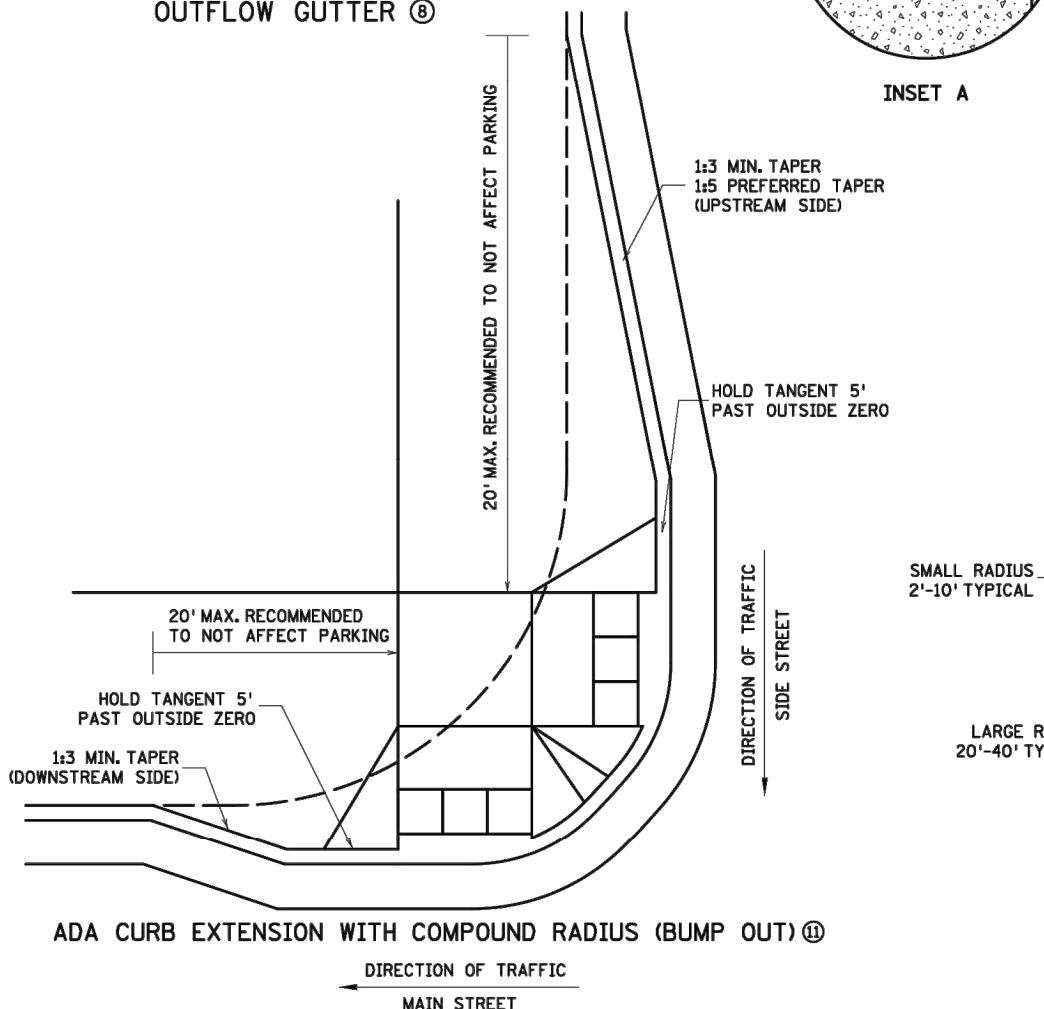


PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



ONLY ALLOWED PER ENGINEER'S APPROVAL

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



COMBINED DIRECTIONAL (10)
(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.
- ① 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 RAMPS.
- ② 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.
- ③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
- ④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
- ⑤ 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.
- ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
- ⑦ 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 OVERLAI.
- ⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
- ⑨ 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.
- ⑩ 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.
- ⑪ 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:	11-04-2021	
APPROVED:	Jeffrey Perkins	
OPERATIONS DIVISION		



STANDARD PLAN 5-297.250 3 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO.	(TH)	SHEET NO.	OF	SHEETS

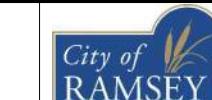
CITY OF RAMSEY, MINNESOTA

167TH AVENUE RECONSTRUCTION SAP 199-102-007

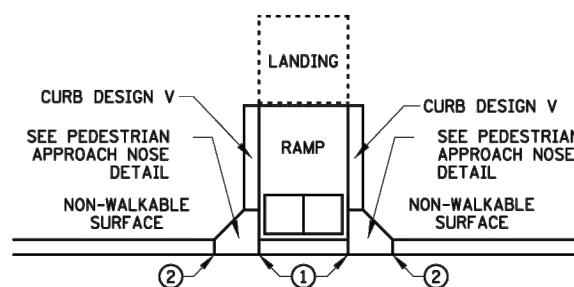
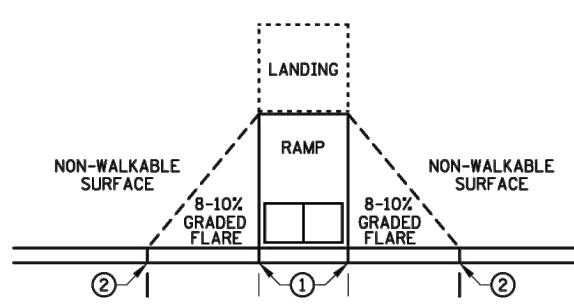
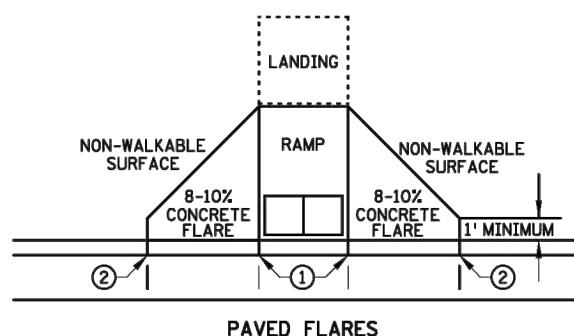
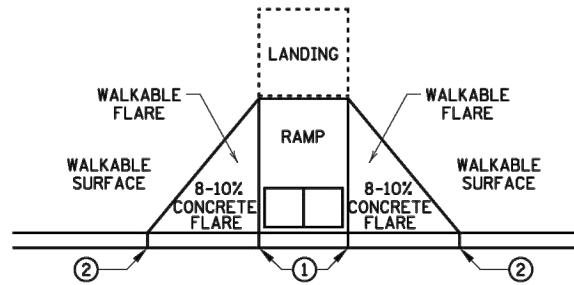
MNDOT PEDESTRIAN RAMP DETAILS



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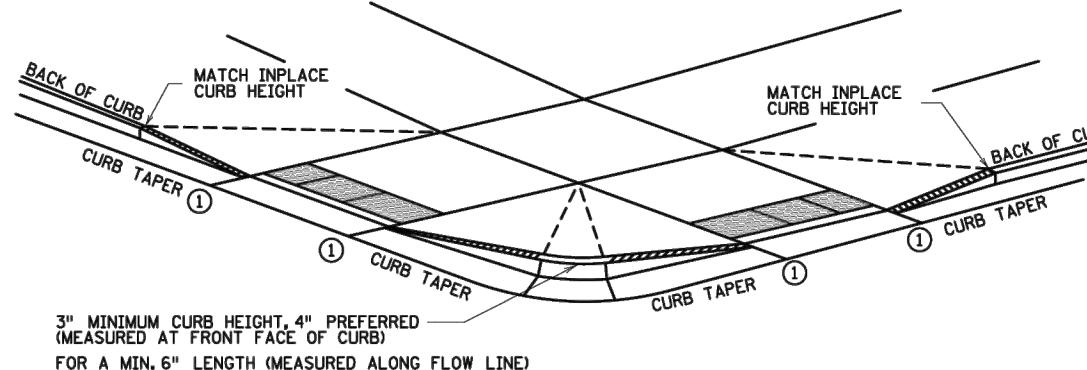


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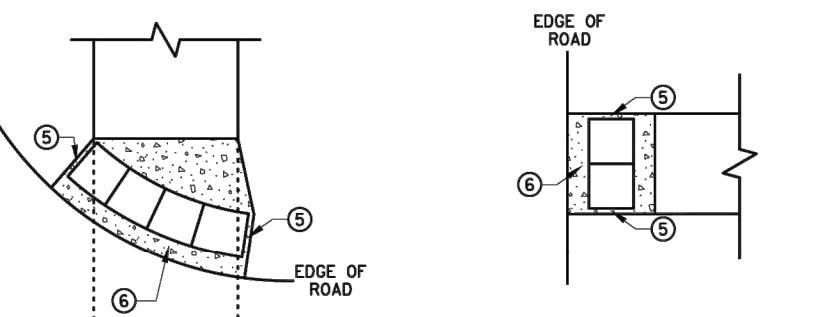


TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

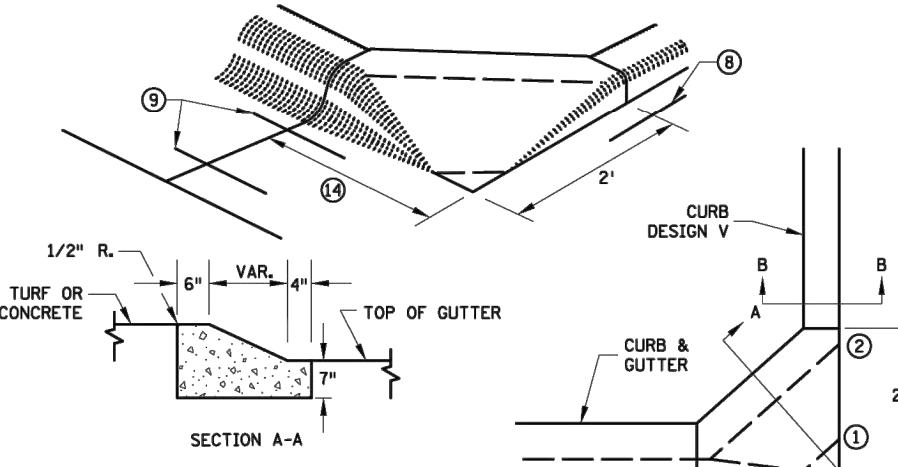
REVISION:	
APPROVED: 11-04-2021	<i>Jeffrey Perkins</i>
JEFFREY PERKINS OPERATIONS DIVISION	



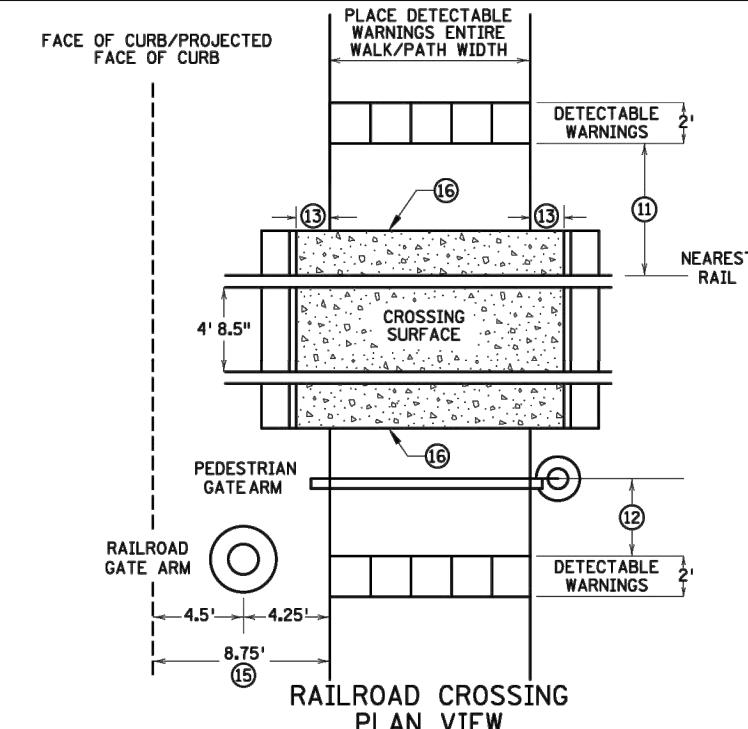
DETECTABLE EDGE WITH ⑦ CURB AND GUTTER



DETECTABLE EDGE WITHOUT CURB AND GUTTER



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 TRAVESED 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 MEDIANIS 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 MEDIANIS 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.



STANDARD PLAN 5-297.250	4 OF 6			
APPROVED: 11-04-2021				
REVISED:				
STATE PROJ. NO.	(TH)	SHEET NO.	OF	SHEETS

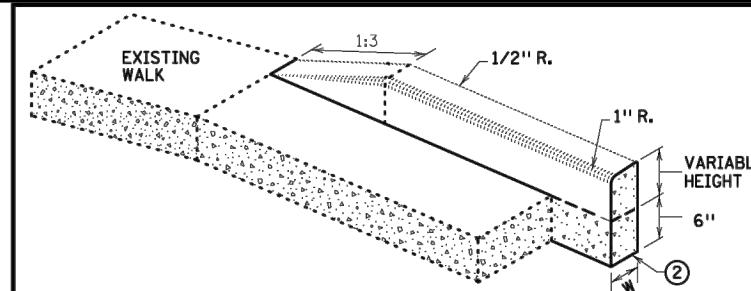
PEDESTRIAN CURB RAMP DETAILS

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

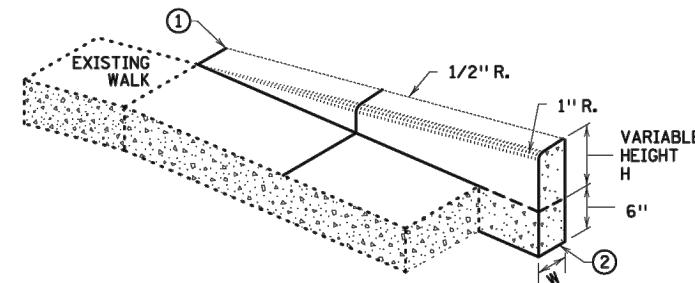


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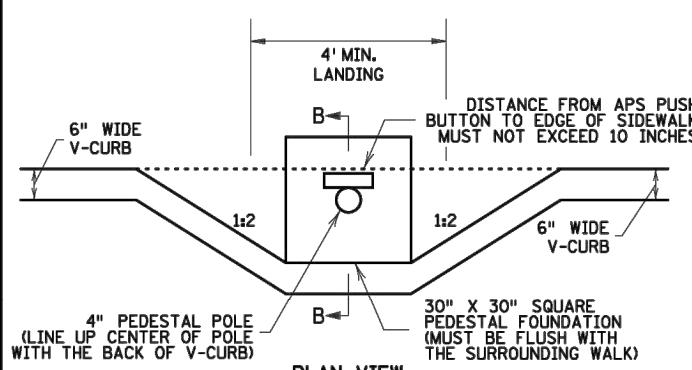
MNDOT PEDESTRIAN RAMP DETAILS



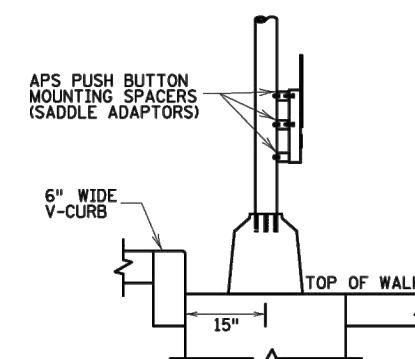
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

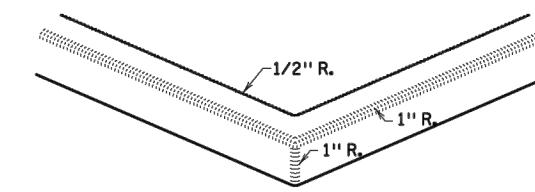


PLAN VIEW



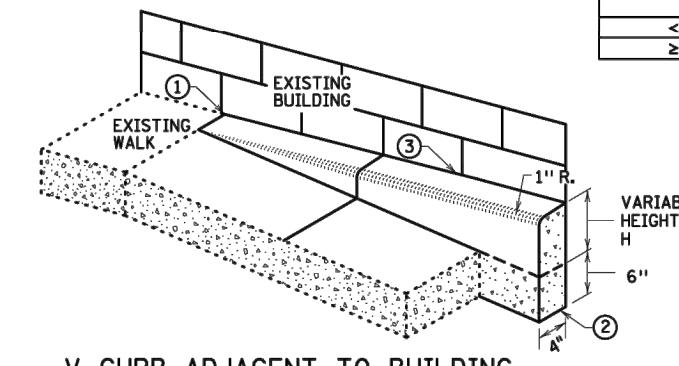
SECTION B-B
SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

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

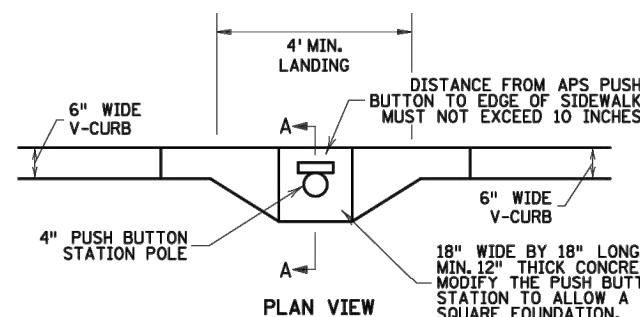


V CURB INTERSECTION

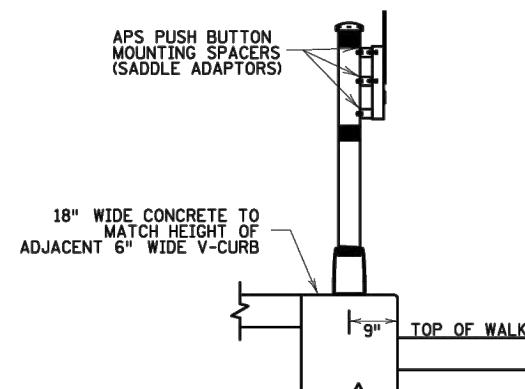
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



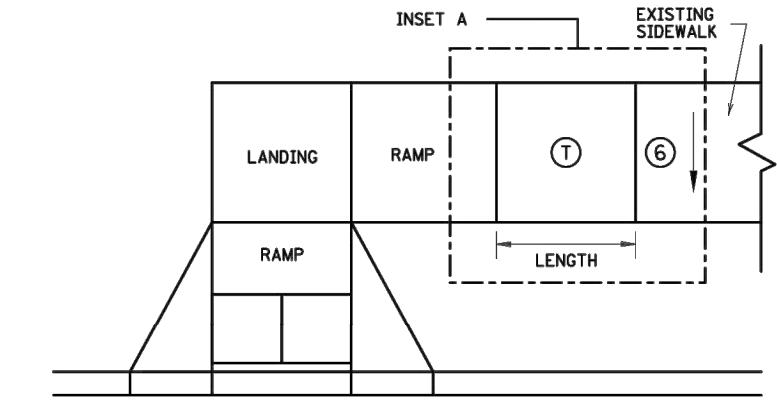
V CURB ADJACENT TO BUILDING
OR BARRIER



PLAN VIEW



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



TRANSITION PANEL ④ ⑤

INSET A

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 PANELS 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%.

⑥ 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.

⑦ 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.

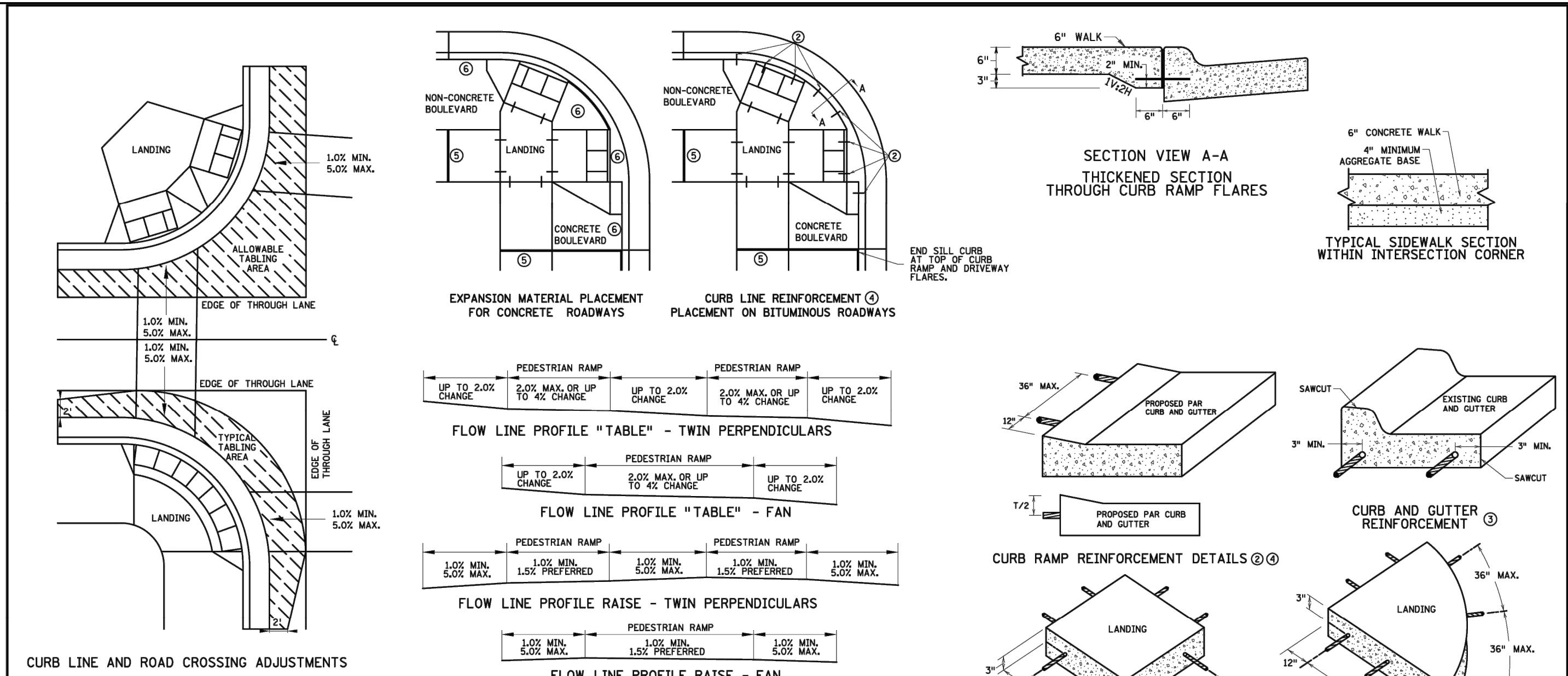


STANDARD PLAN 5-297.250 5 OF 6

APPROVED: 11-04-2021
REVISED: *Tom S.*

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

PEDESTRIAN CURB RAMP DETAILS



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

REVISION:

APPROVED: 11-04-2021

Jeffrey Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

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.

STANDARD PLAN 5-297.250 6 OF 6

APPROVED: 11-04-2021
REVISED:

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

PEDESTRIAN CURB RAMP DETAILS

CITY OF RAMSEY, MINNESOTA

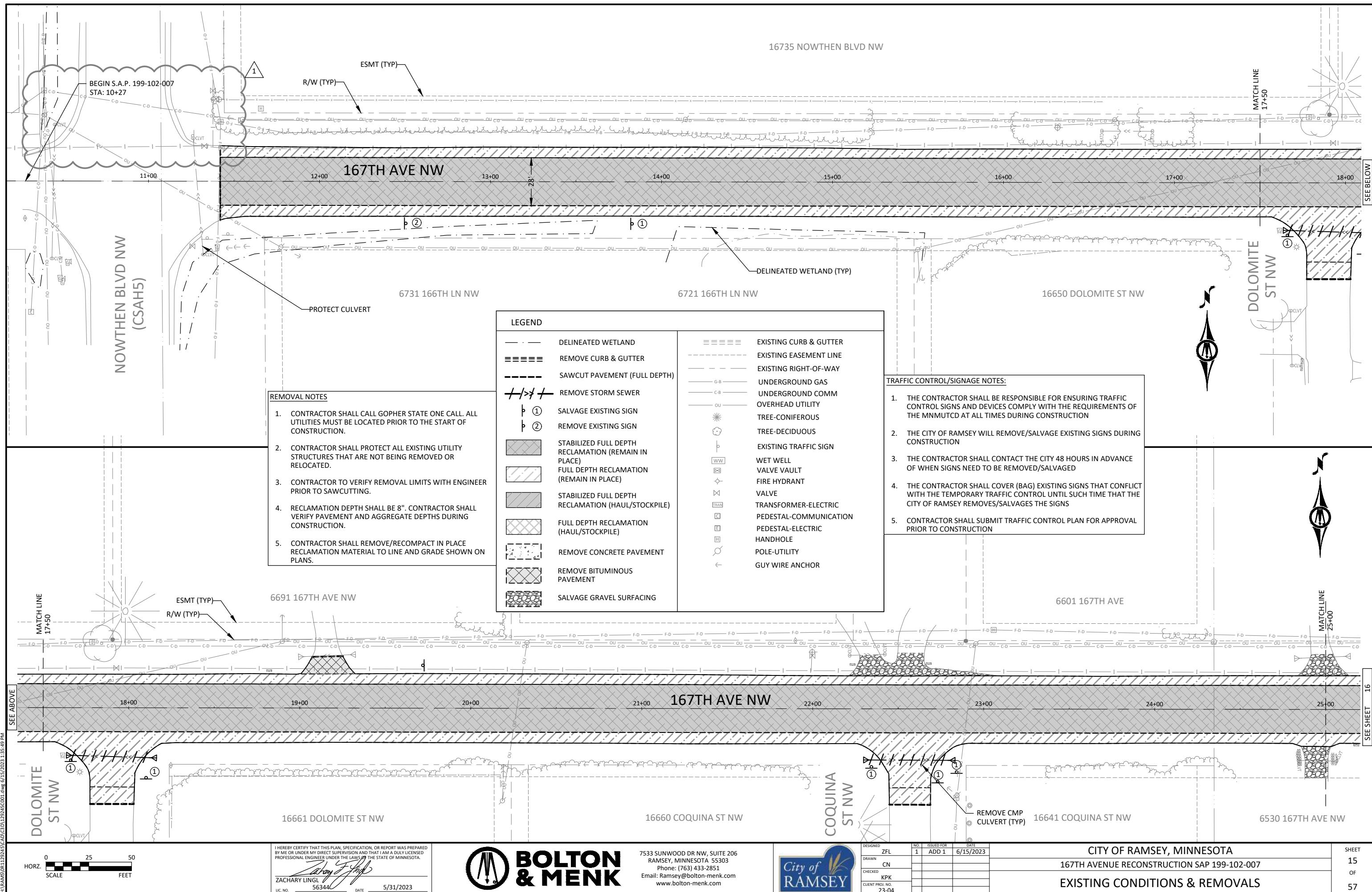
167TH AVENUE RECONSTRUCTION SAP 199-102-007

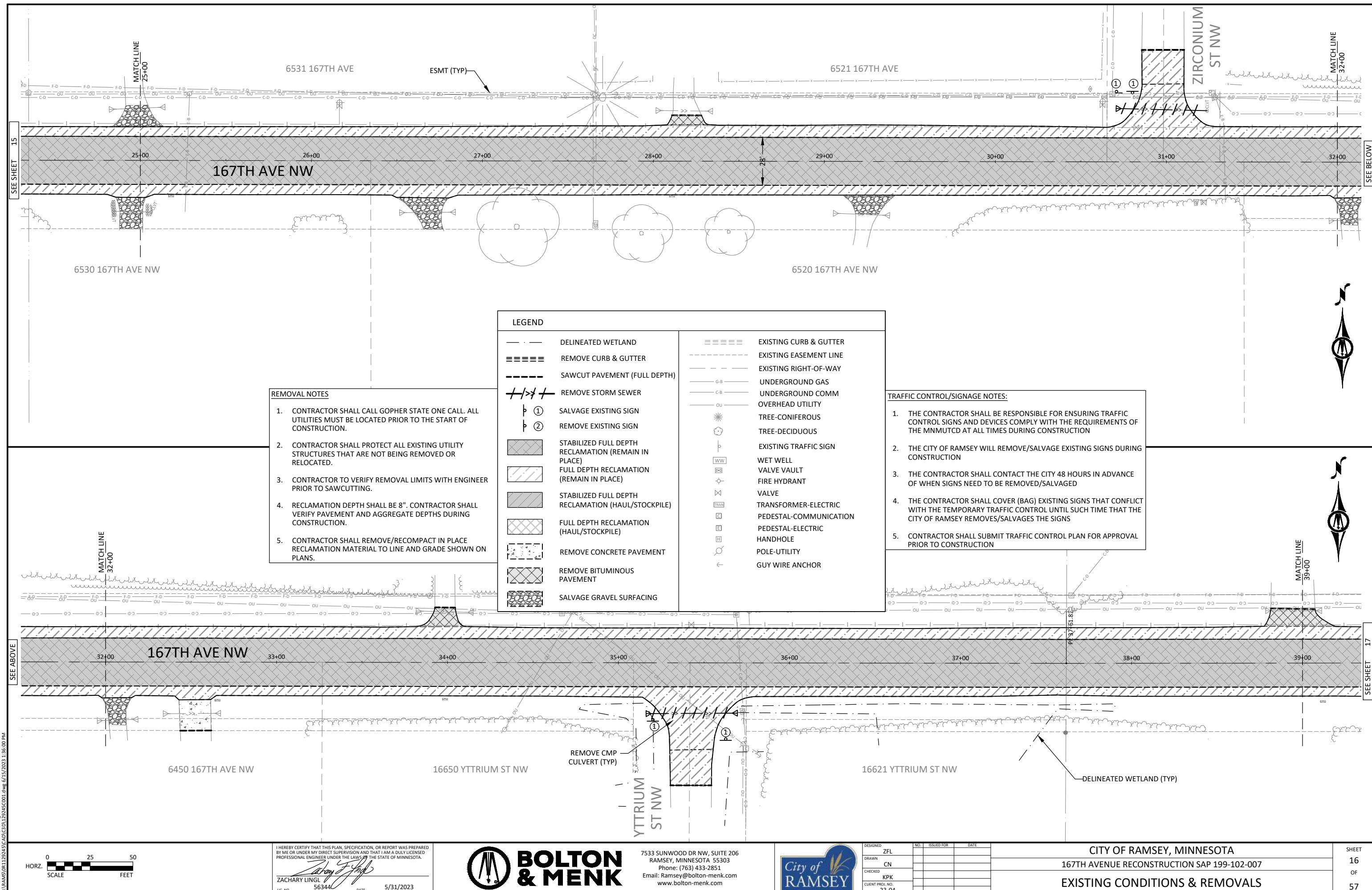
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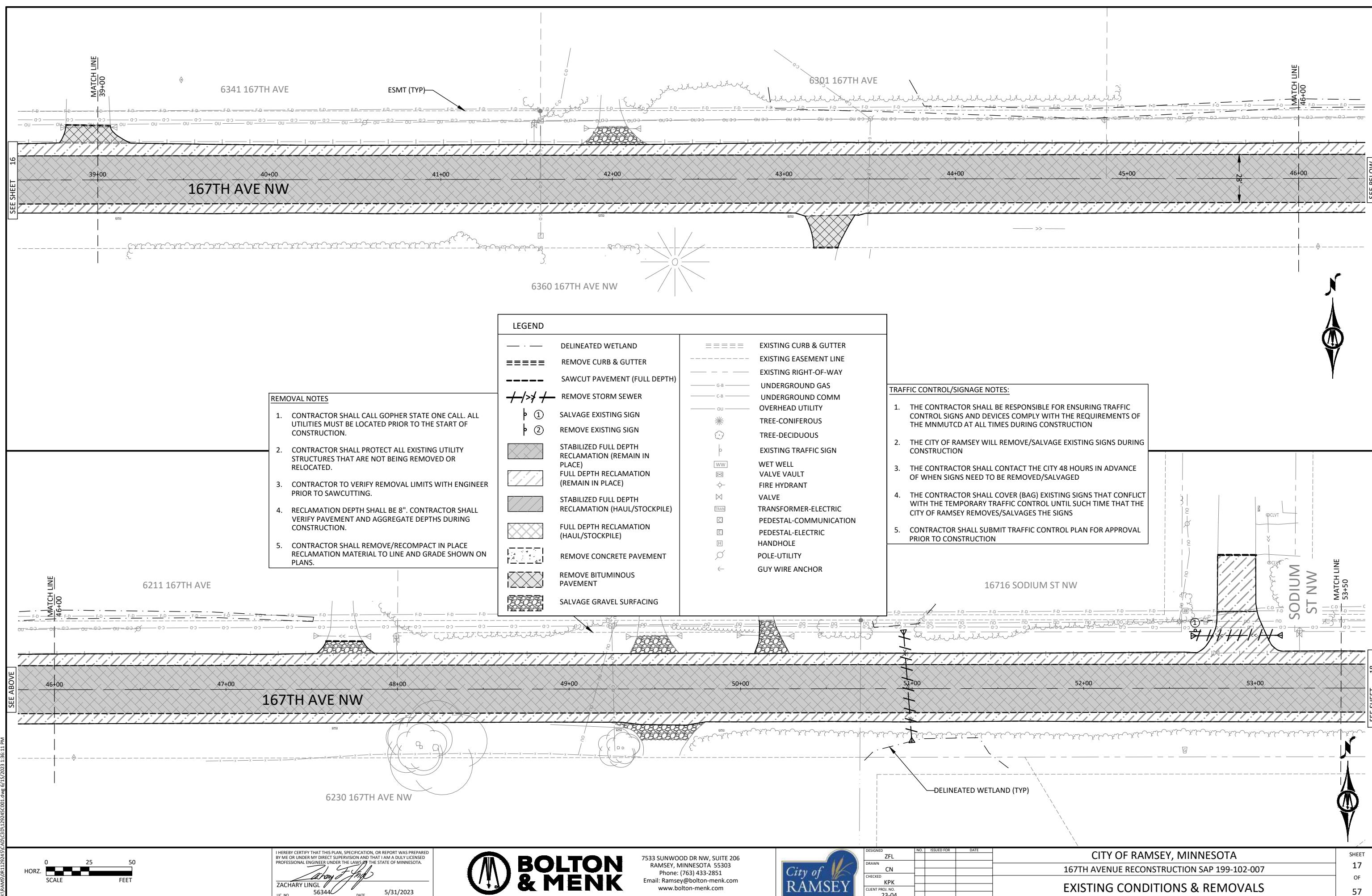


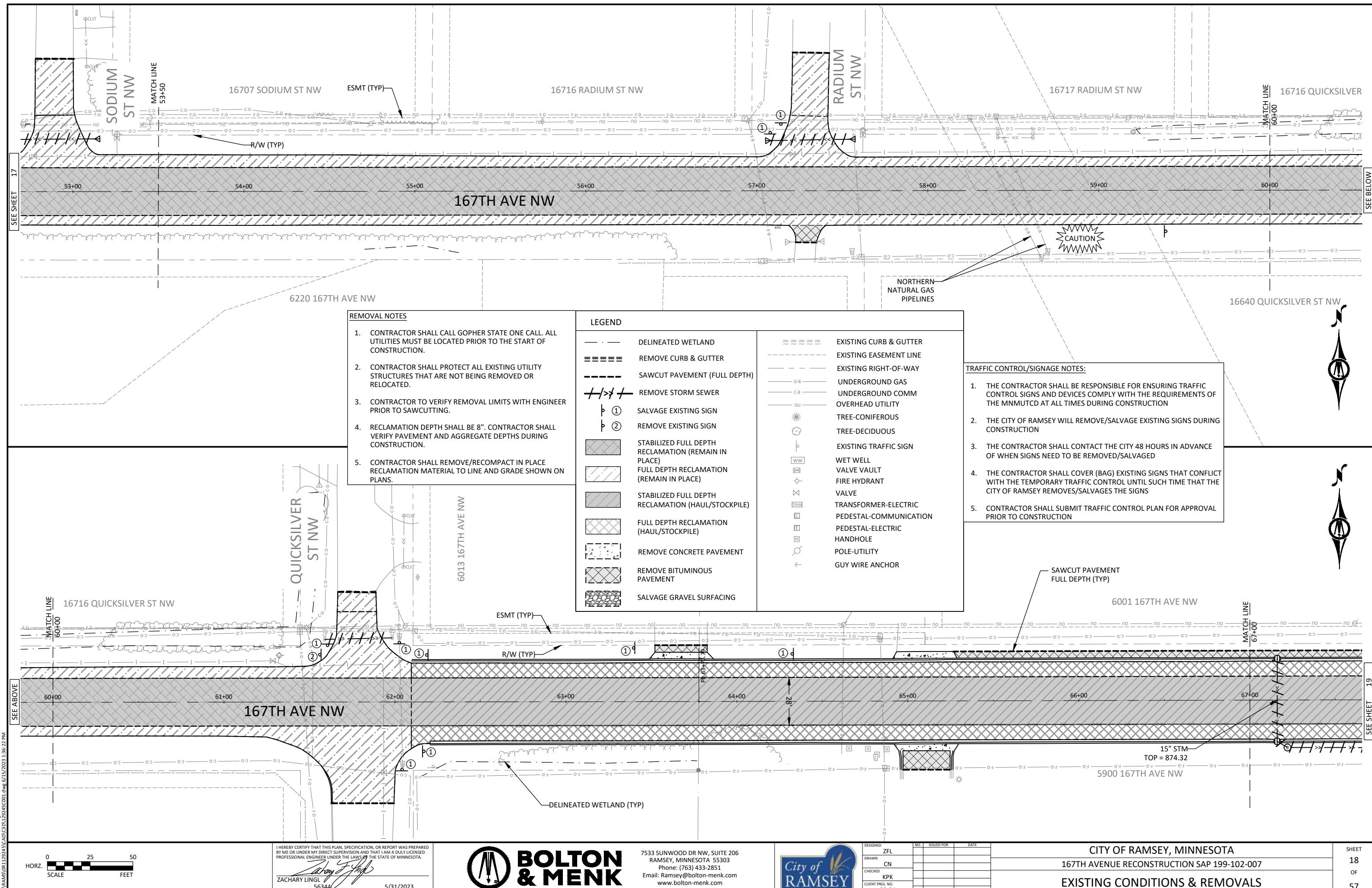
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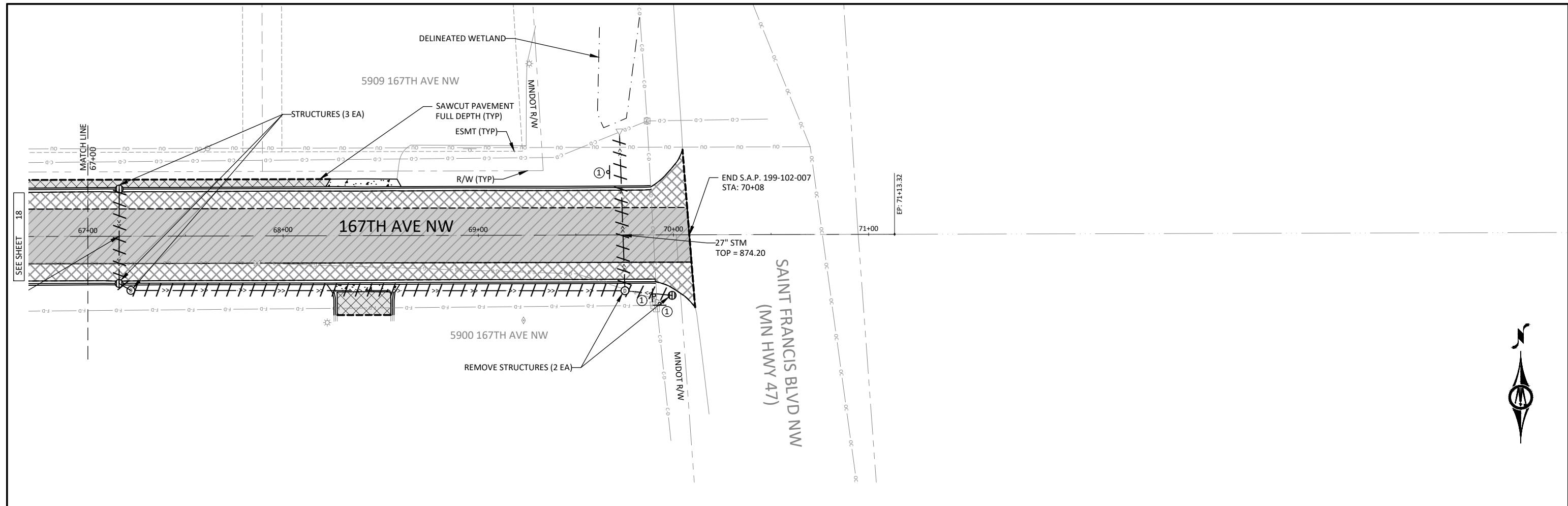
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CLIENT PROJ. NO.			
23-04			











LEGEND		TRAFFIC CONTROL/SIGNAGE NOTES:	
— · —	DELINEATED WETLAND	=====	EXISTING CURB & GUTTER
=====	REMOVE CURB & GUTTER	-----	EXISTING EASEMENT LINE
-----	SAWCUT PAVEMENT (FULL DEPTH)	— — —	EXISTING RIGHT-OF-WAY
—/—/—	REMOVE STORM SEWER	— G-B —	UNDERGROUND GAS
①	SALVAGE EXISTING SIGN	— C-B —	UNDERGROUND COMM
②	REMOVE EXISTING SIGN	— OU —	OVERHEAD UTILITY
██████	STABILIZED FULL DEPTH RECLAMATION (REMAIN IN PLACE)	•	TREE-CONIFEROUS
██████	FULL DEPTH RECLAMATION (REMAIN IN PLACE)	◐	TREE-DECIDUOUS
██████	STABILIZED FULL DEPTH RECLAMATION (HAUL/STOCKPILE)	◐	EXISTING TRAFFIC SIGN
██████	FULL DEPTH RECLAMATION (HAUL/STOCKPILE)	WW	WET WELL
██████	REMOVE CONCRETE PAVEMENT	▀	VALVE VAULT
██████	REMOVE BITUMINOUS PAVEMENT	△	FIRE HYDRANT
██████	SALVAGE GRAVEL SURFACING	■	VALVE
		TRAN	TRANSFORMER-ELECTRIC
		□	PEDESTAL-COMMUNICATION
		H	PEDESTAL-ELECTRIC
		○	HANDHOLE
		○	POLE-UTILITY
		←	GUY WIRE ANCHOR

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 RI00001 (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
--	-----------------

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
--	-----------------

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 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

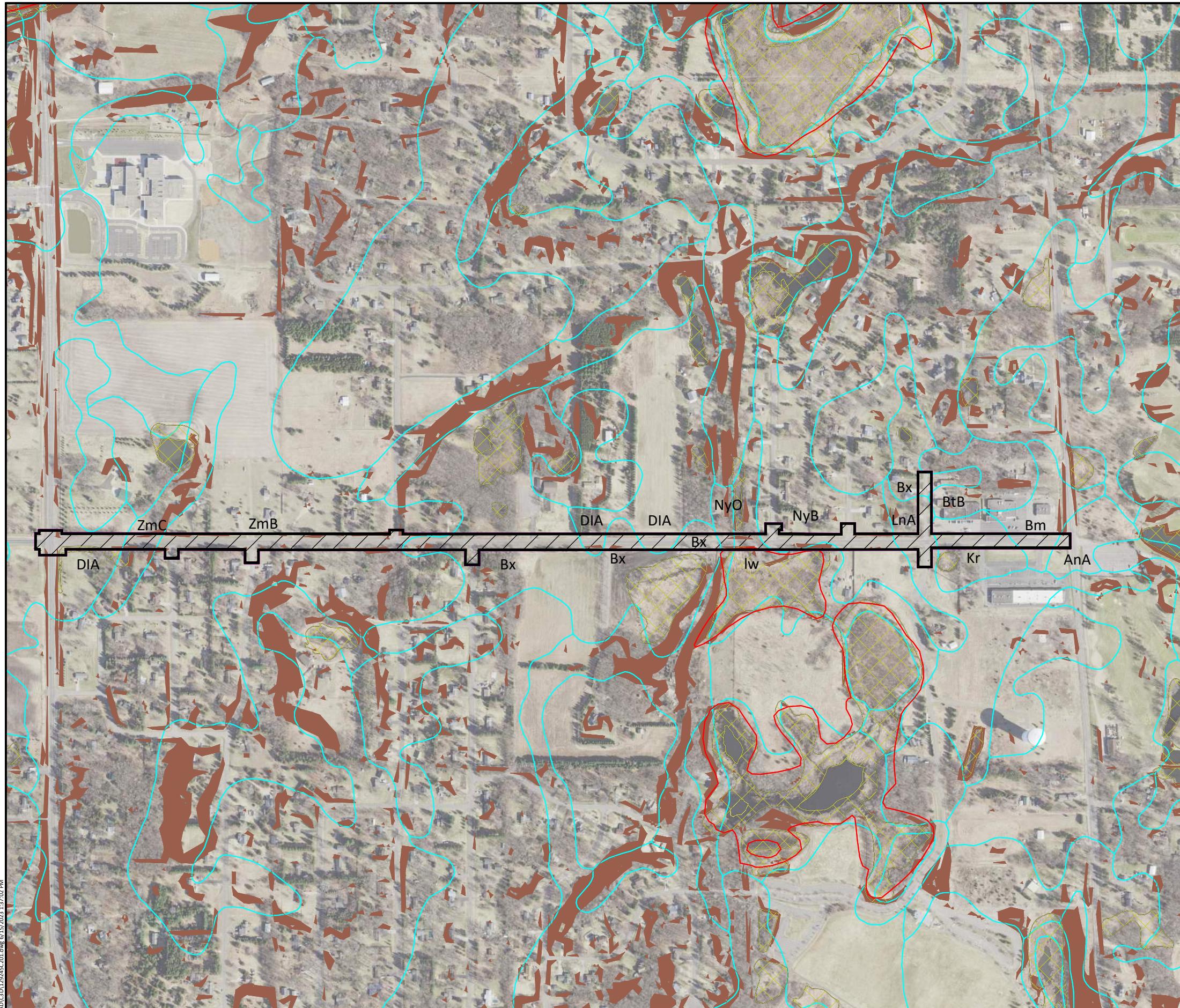
TYPE OF PERMIT	PERMITTING AGENCY	PERMIT STATUS AND CONDITIONS
Construction Stormwater NPDES	MPCA	

SWPPP DESIGNER TRAINING DOCUMENTATION:

UNIVERSITY OF MINNESOTA

Zachary Lingl

Design of Construction SWPPP (May 31 2024)



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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
Zachary Lingl
LIC. NO. 563444 DATE 5/31/2023



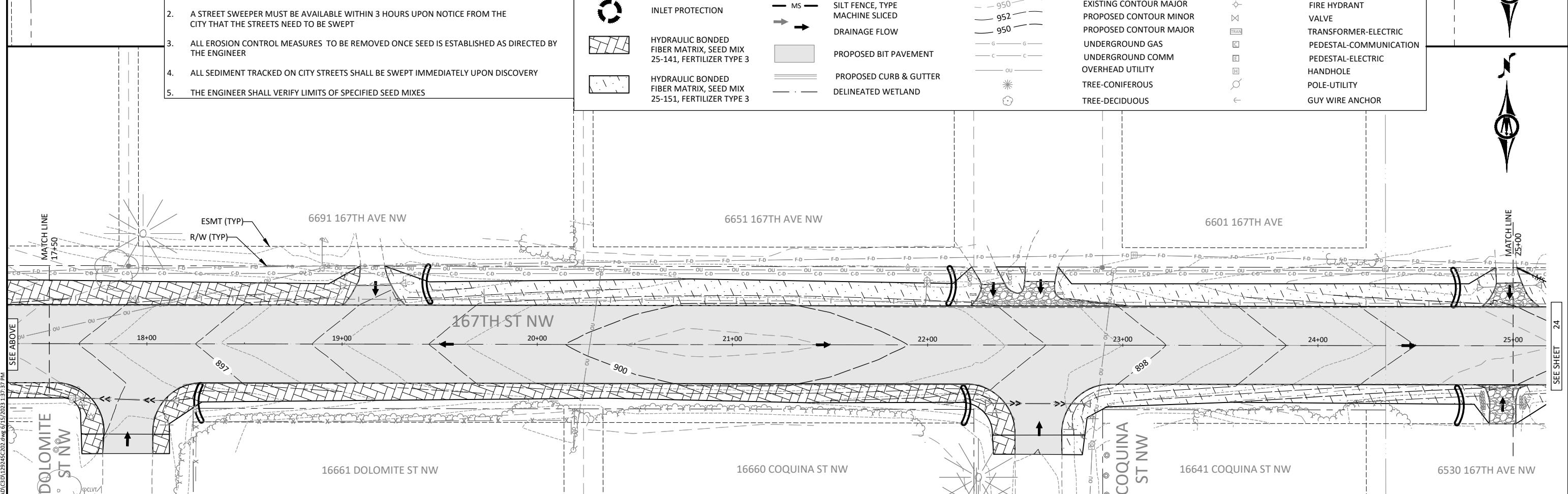
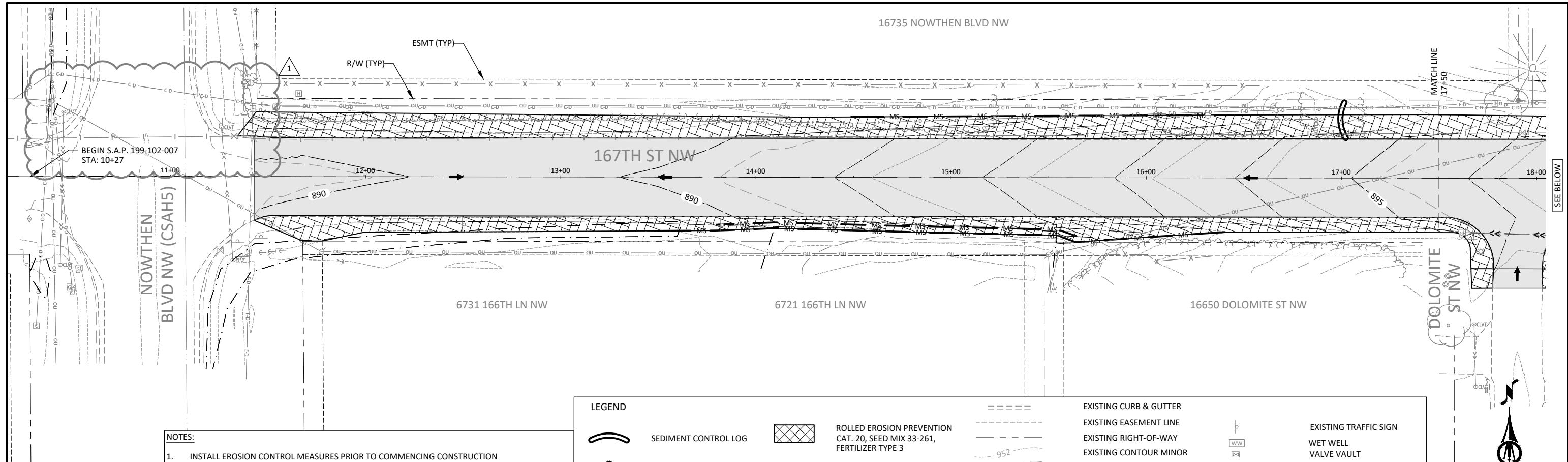
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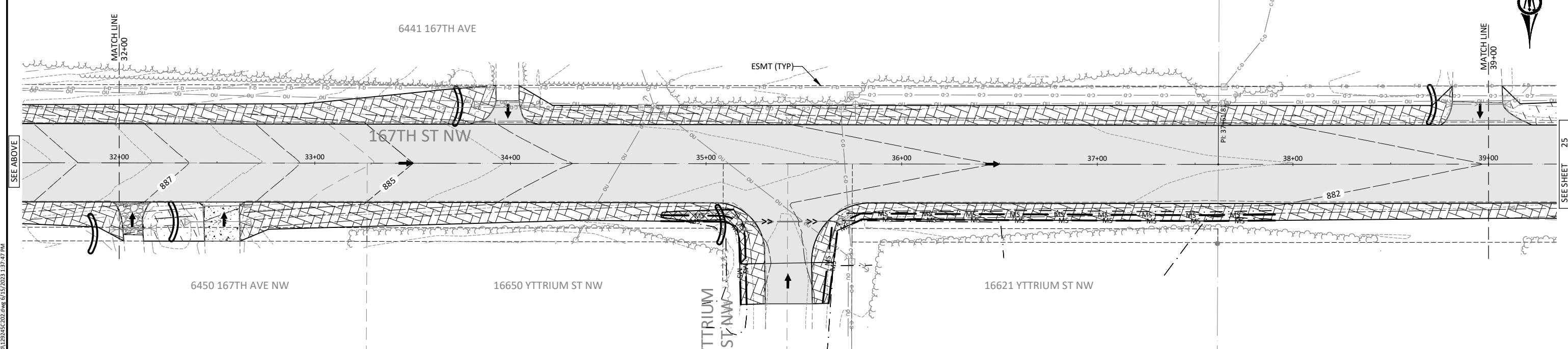
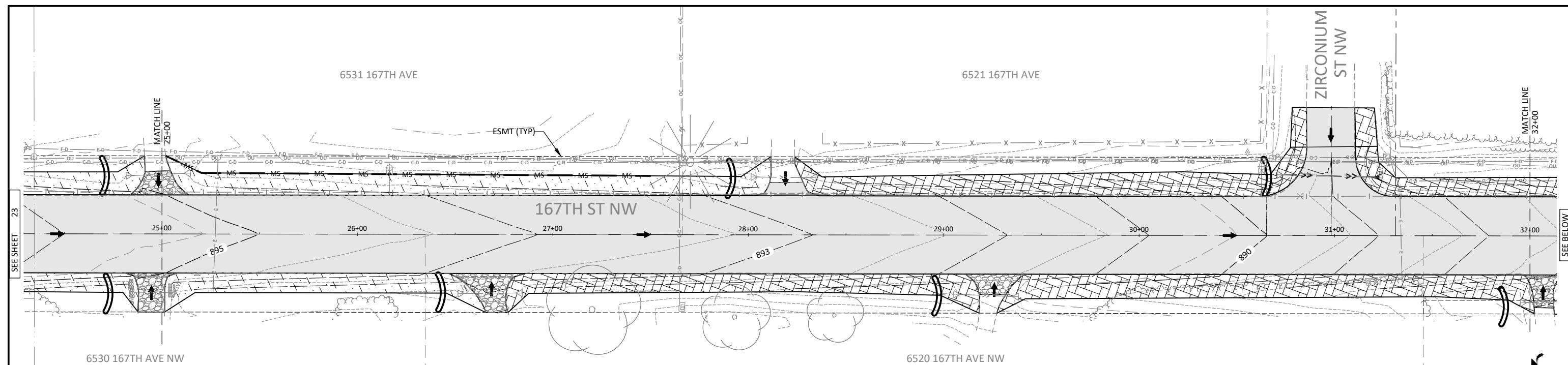


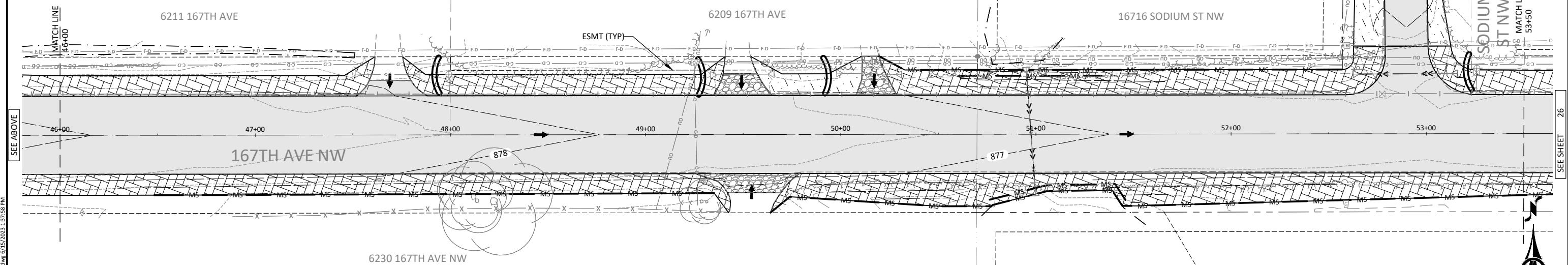
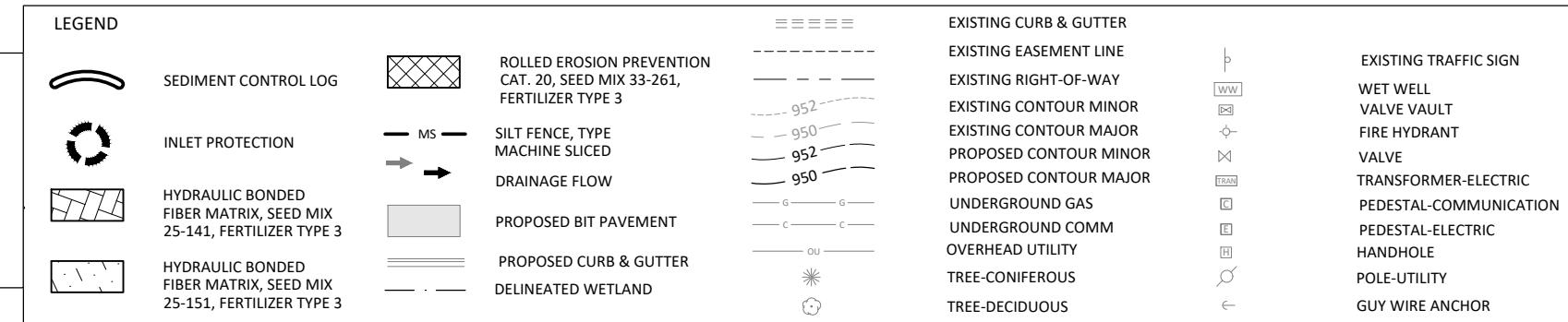
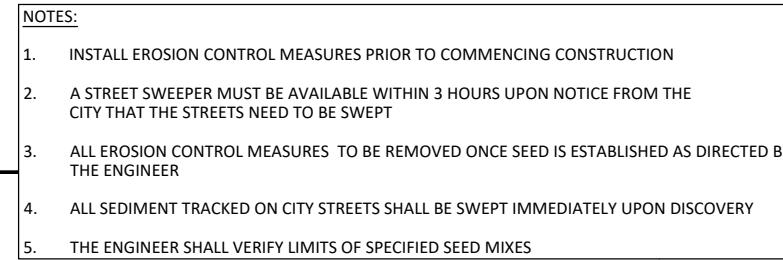
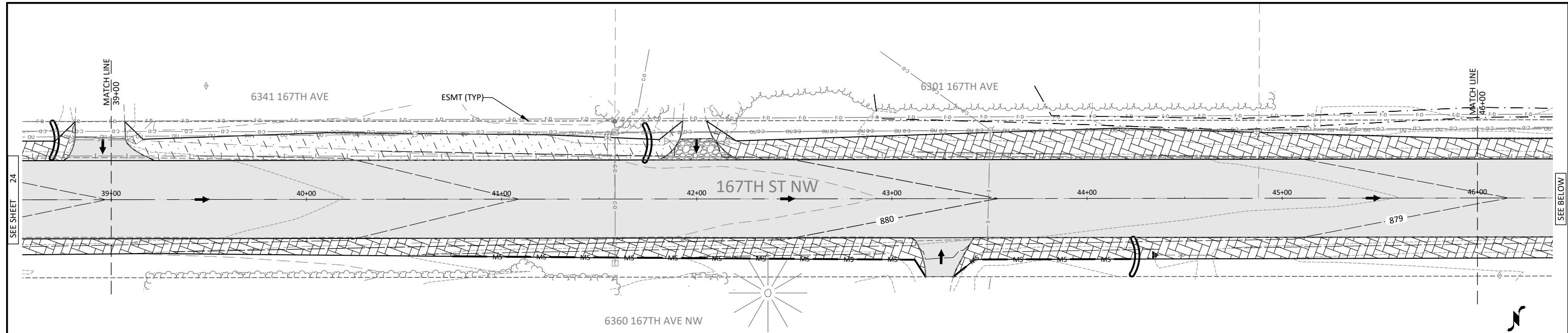
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167TH AVENUE RECONSTRUCTION SAP 199-102-007
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SHEET 22 OF 57





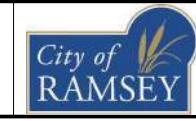


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Zachary F. Lingle
ZACHARY LINGLE
LIC. NO. 56344
DATE 5/31/2023

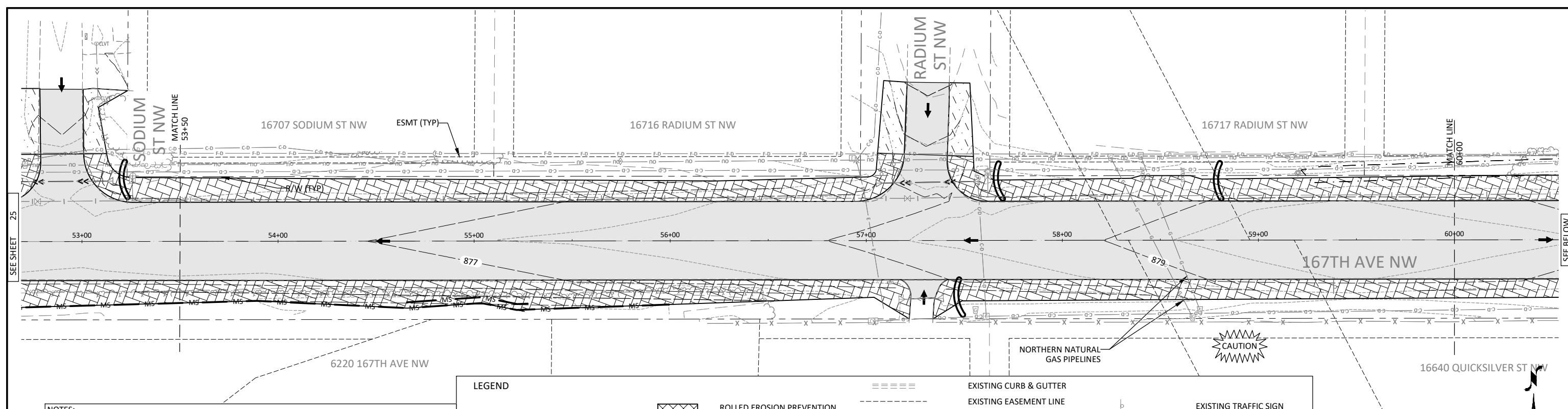


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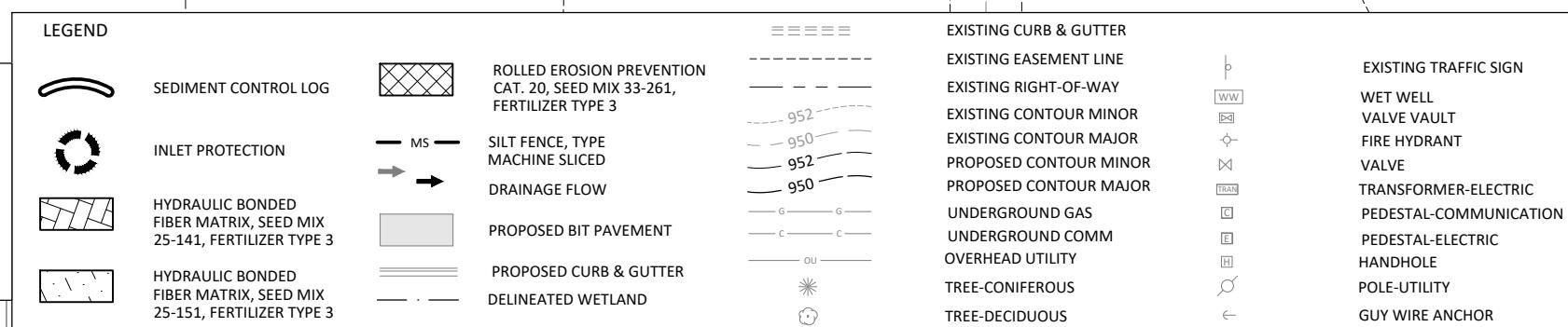
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CITY OF RAMSEY, MINNESOTA
167TH AVENUE RECONSTRUCTION SAP 199-102-007
EROSION CONTROL PLAN



NOTE

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 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



QUICKSILVER ST NW

LINE 16716 QUICKSILVER ST NW

6013 167TH AVE NW

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6001 167TH AVE NW

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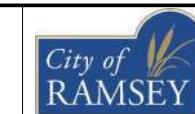
16640 QUICKSILVER ST NW

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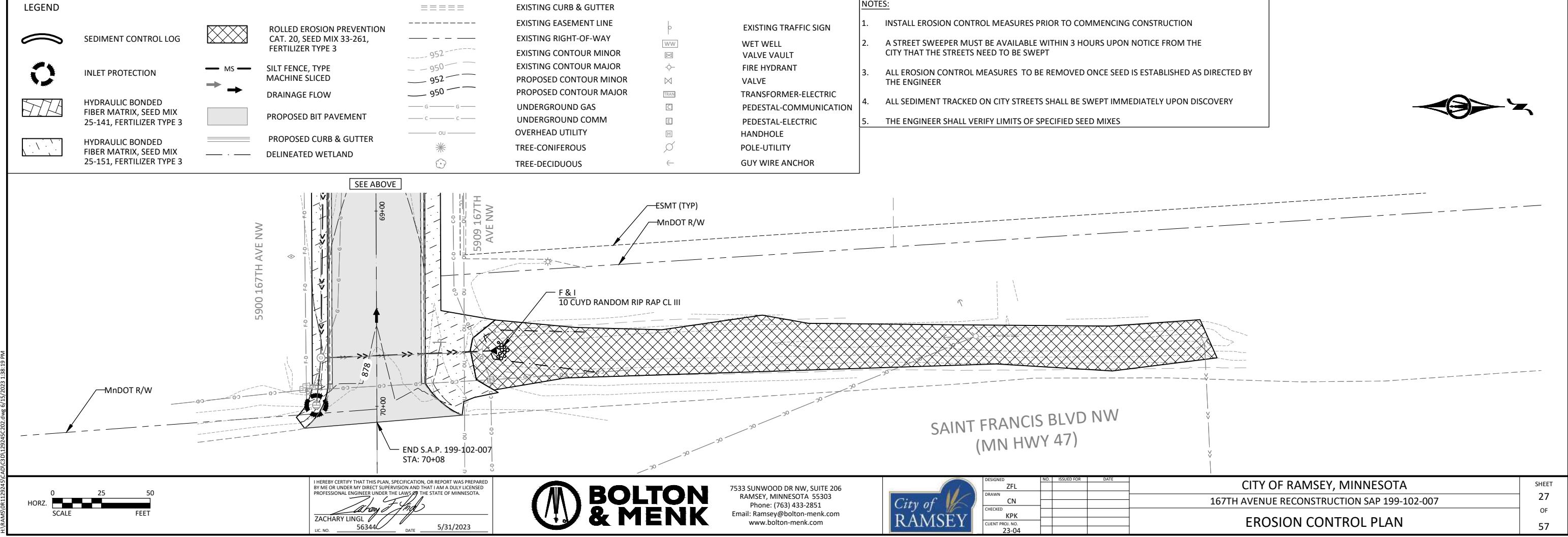
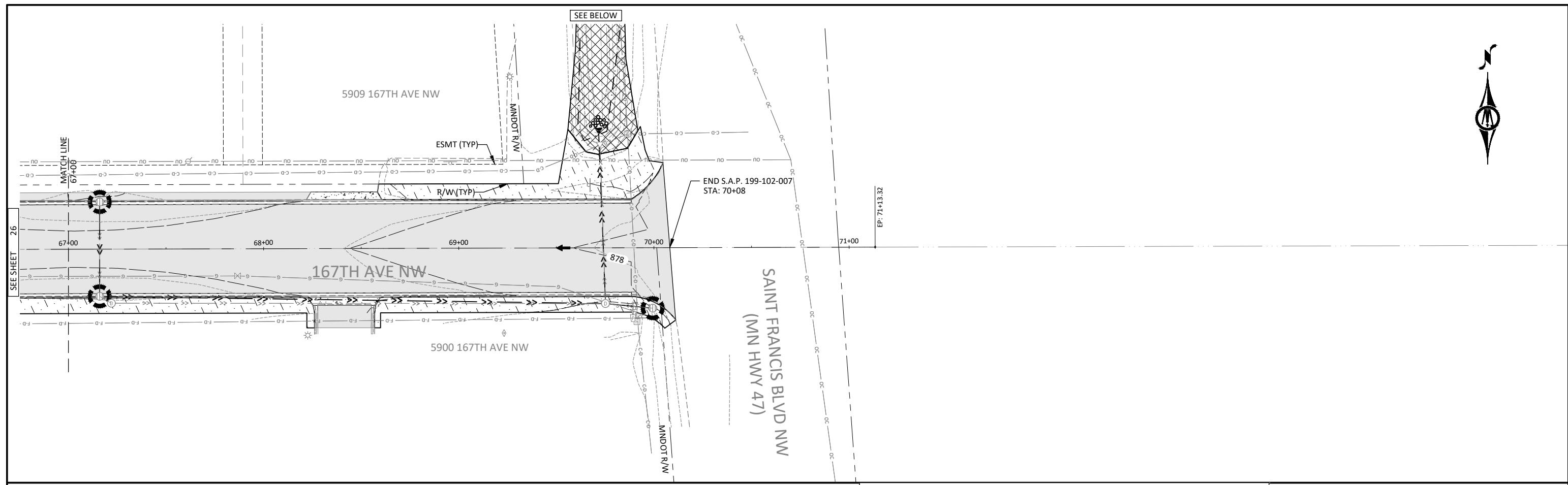


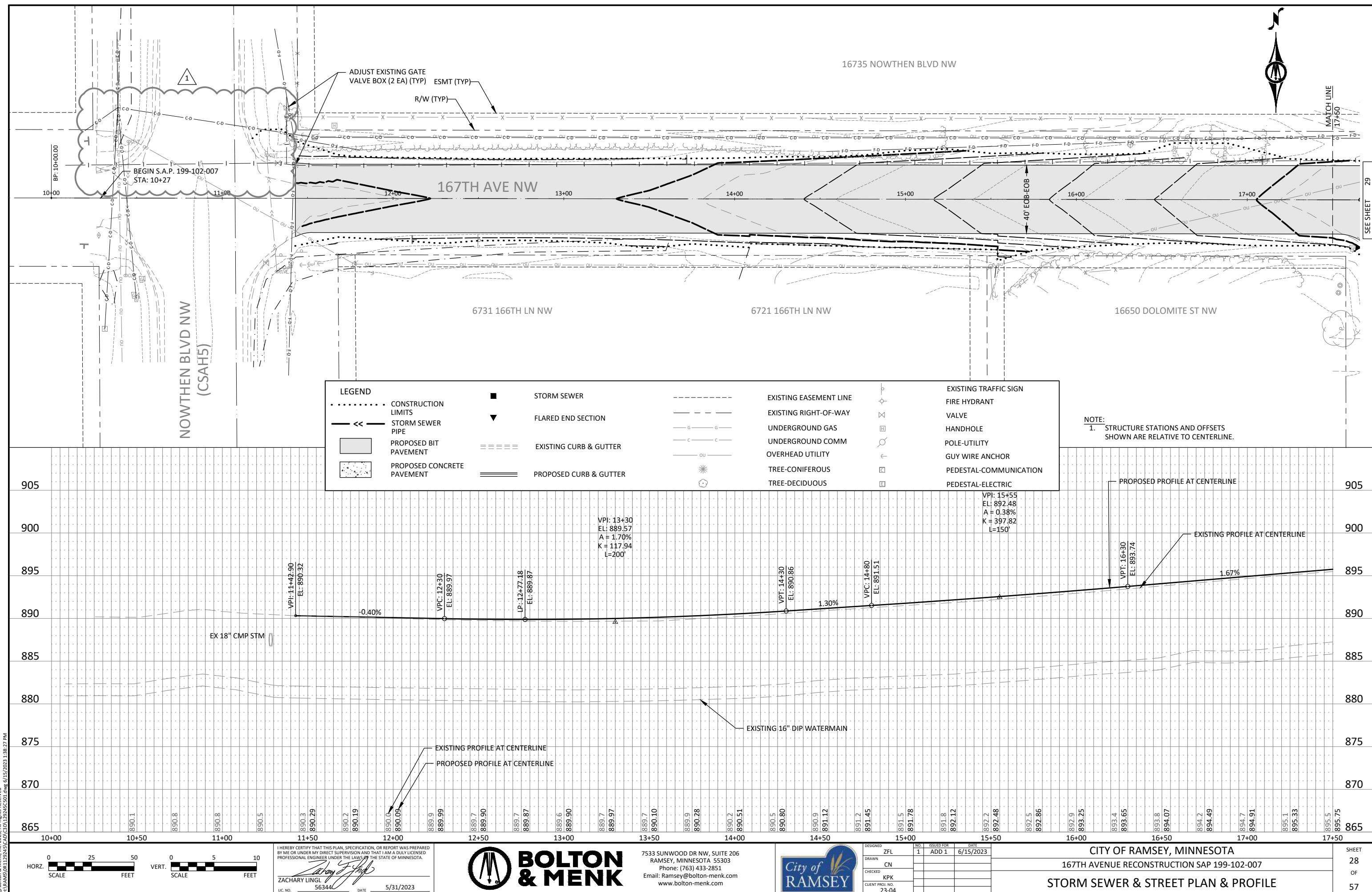
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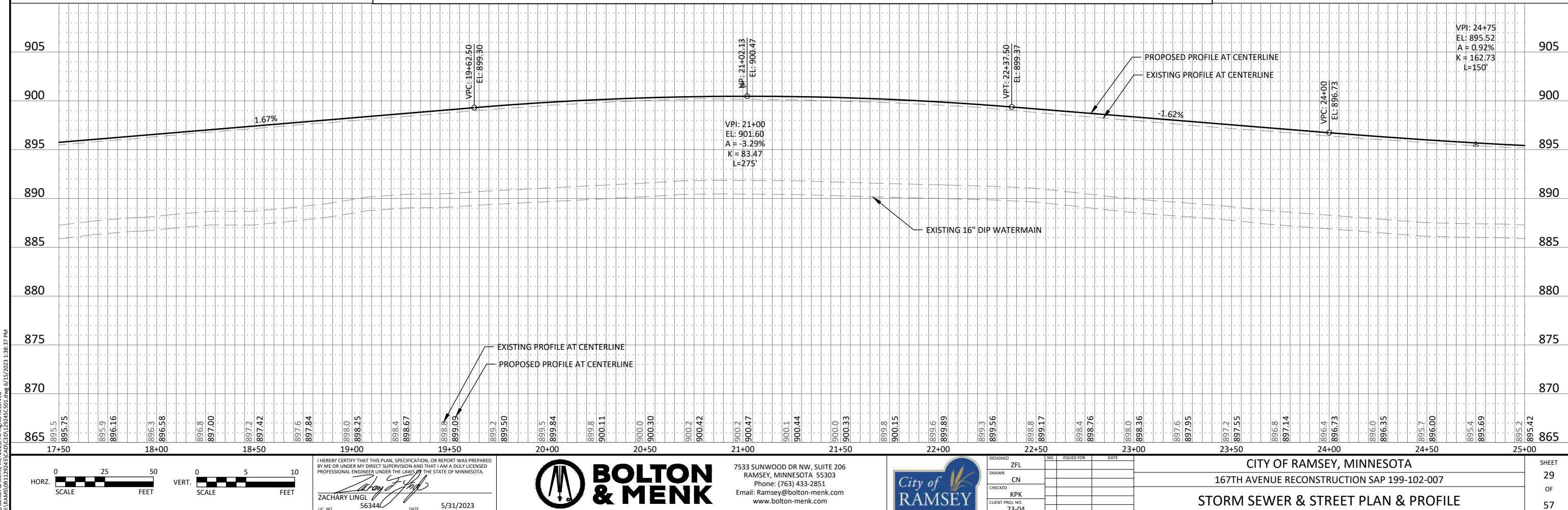
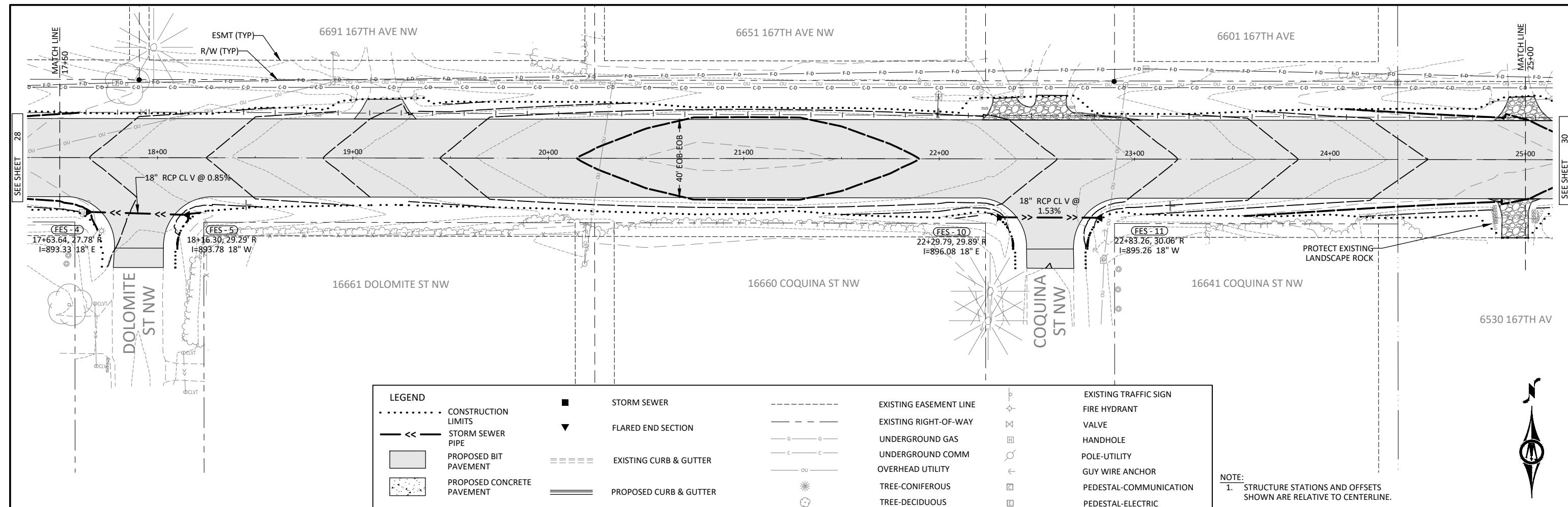


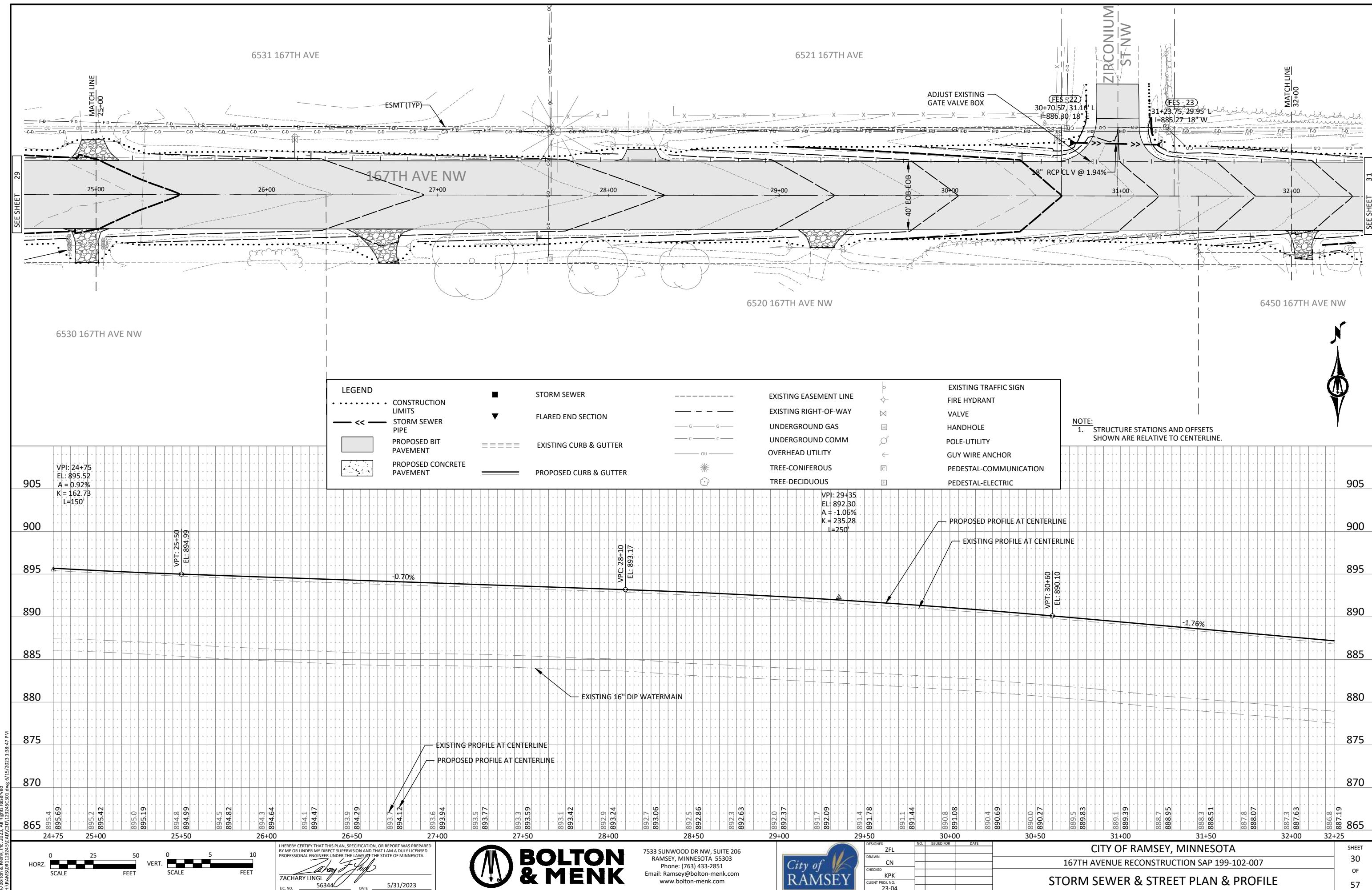
CITY OF RAMSEY, MINNESOTA
H AVENUE RECONSTRUCTION SAP 199-10
EROSION CONTROL PLAN

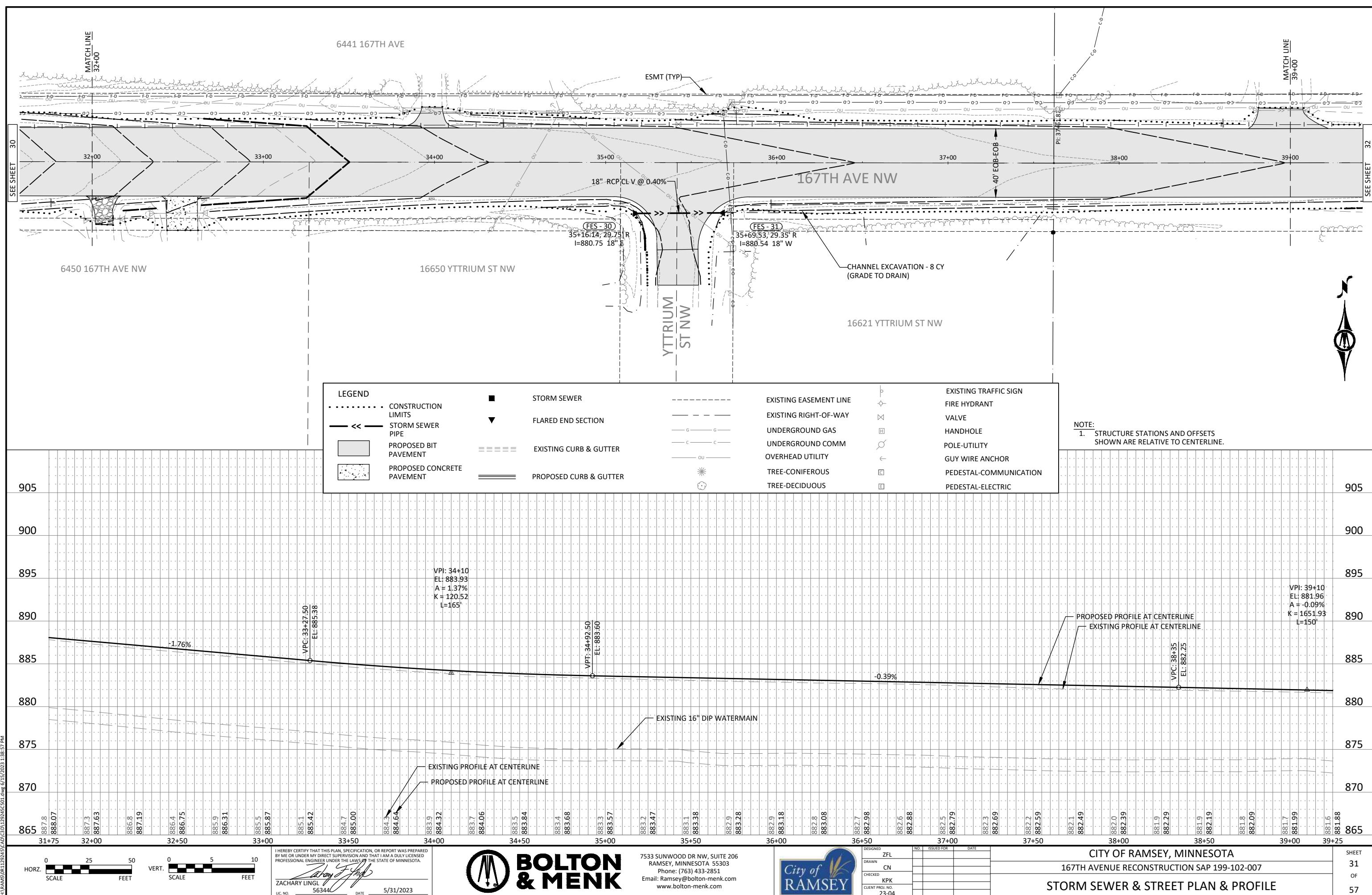
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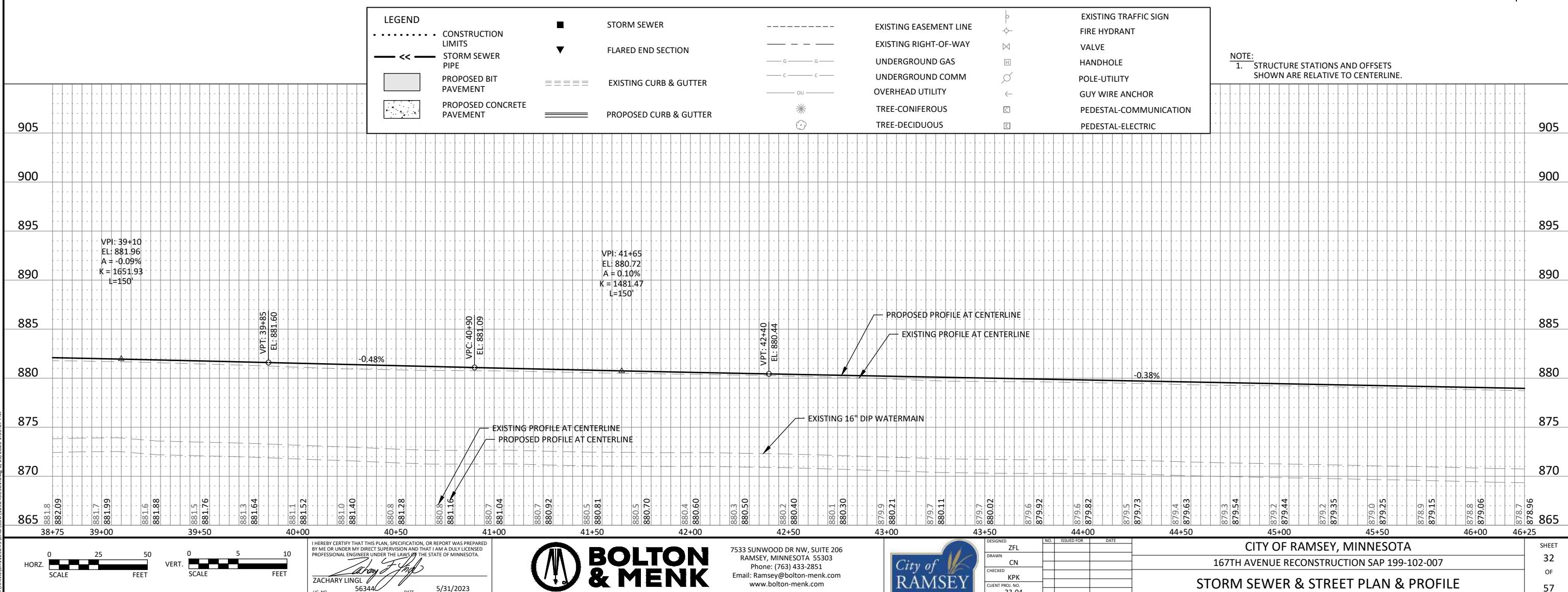
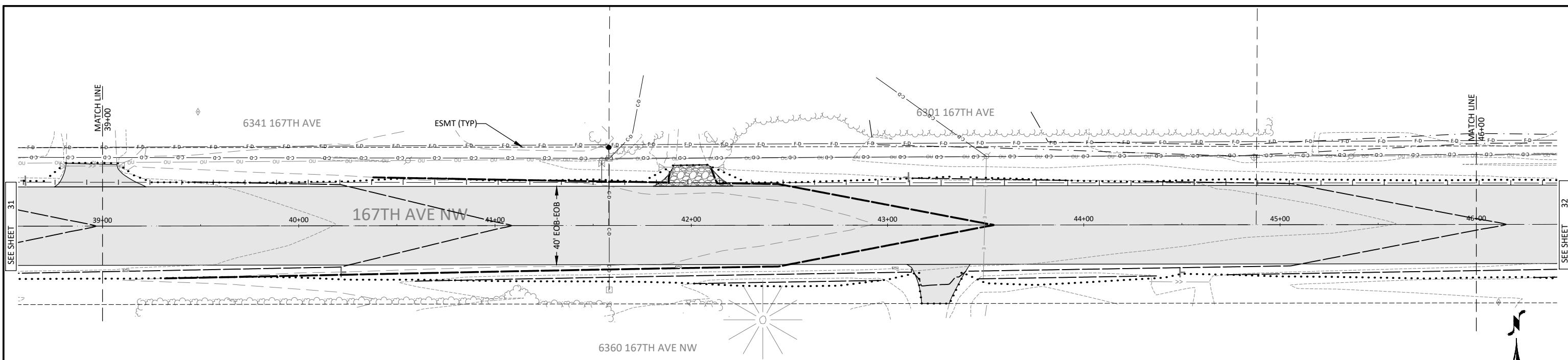


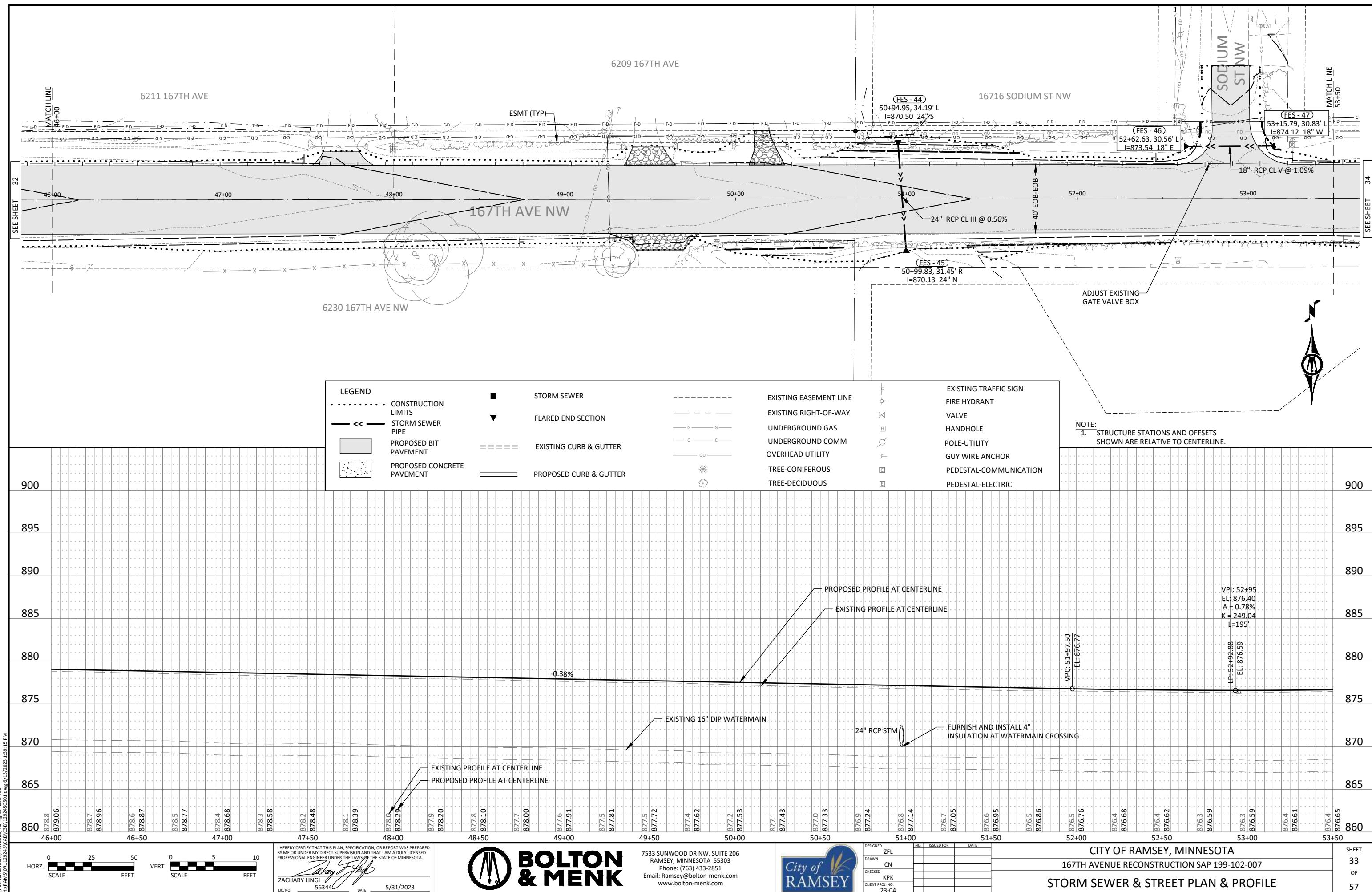


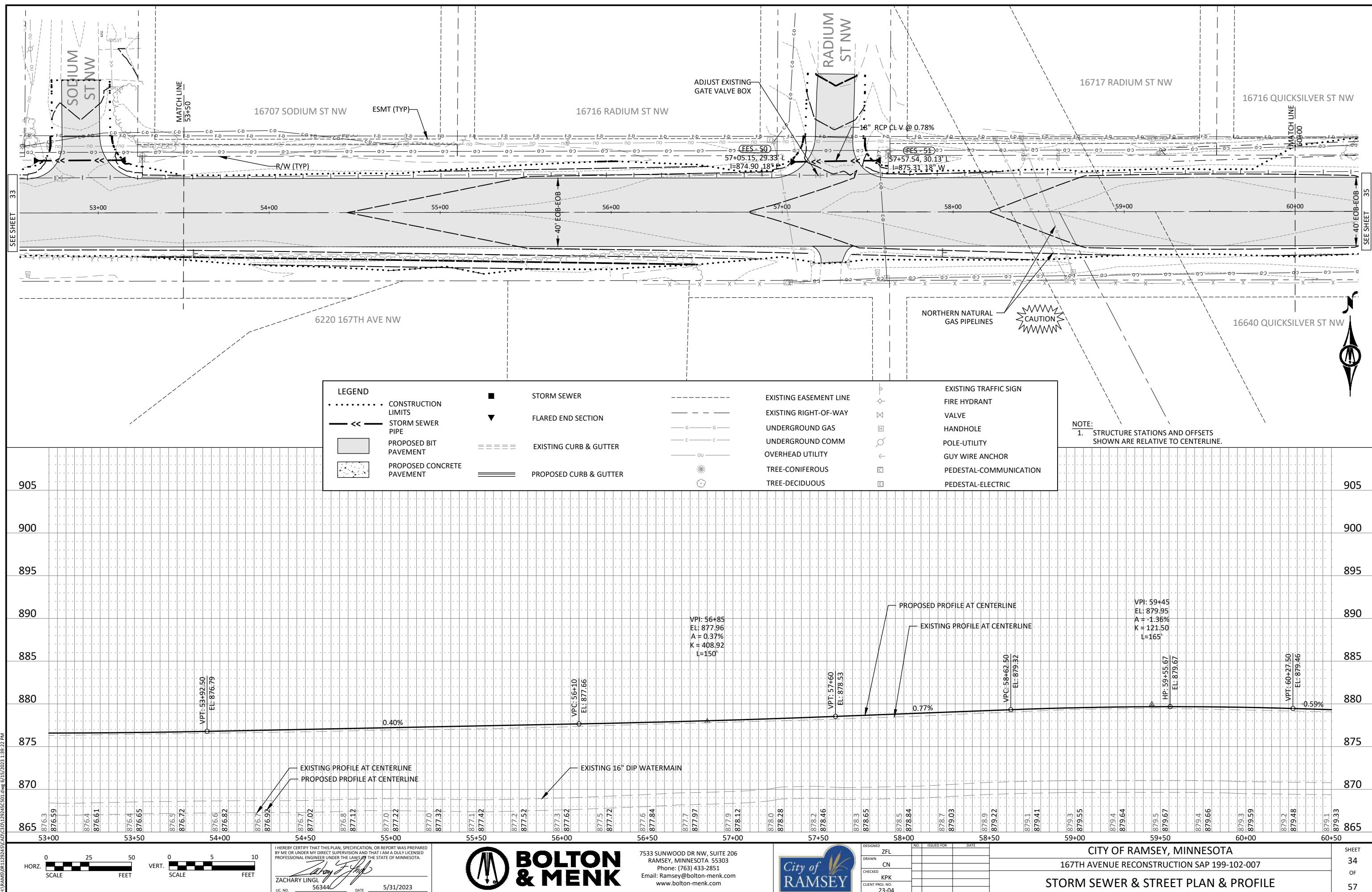


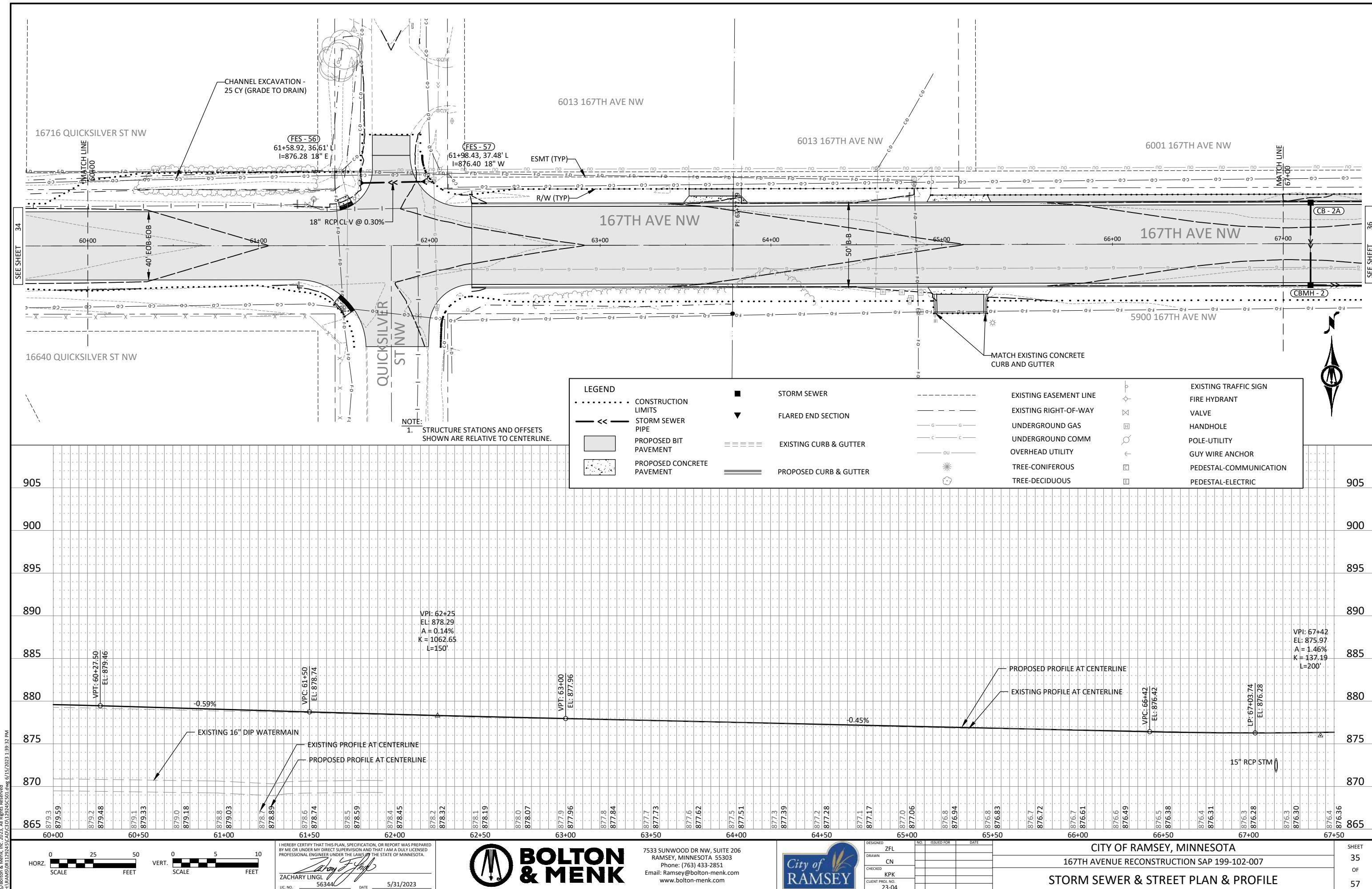


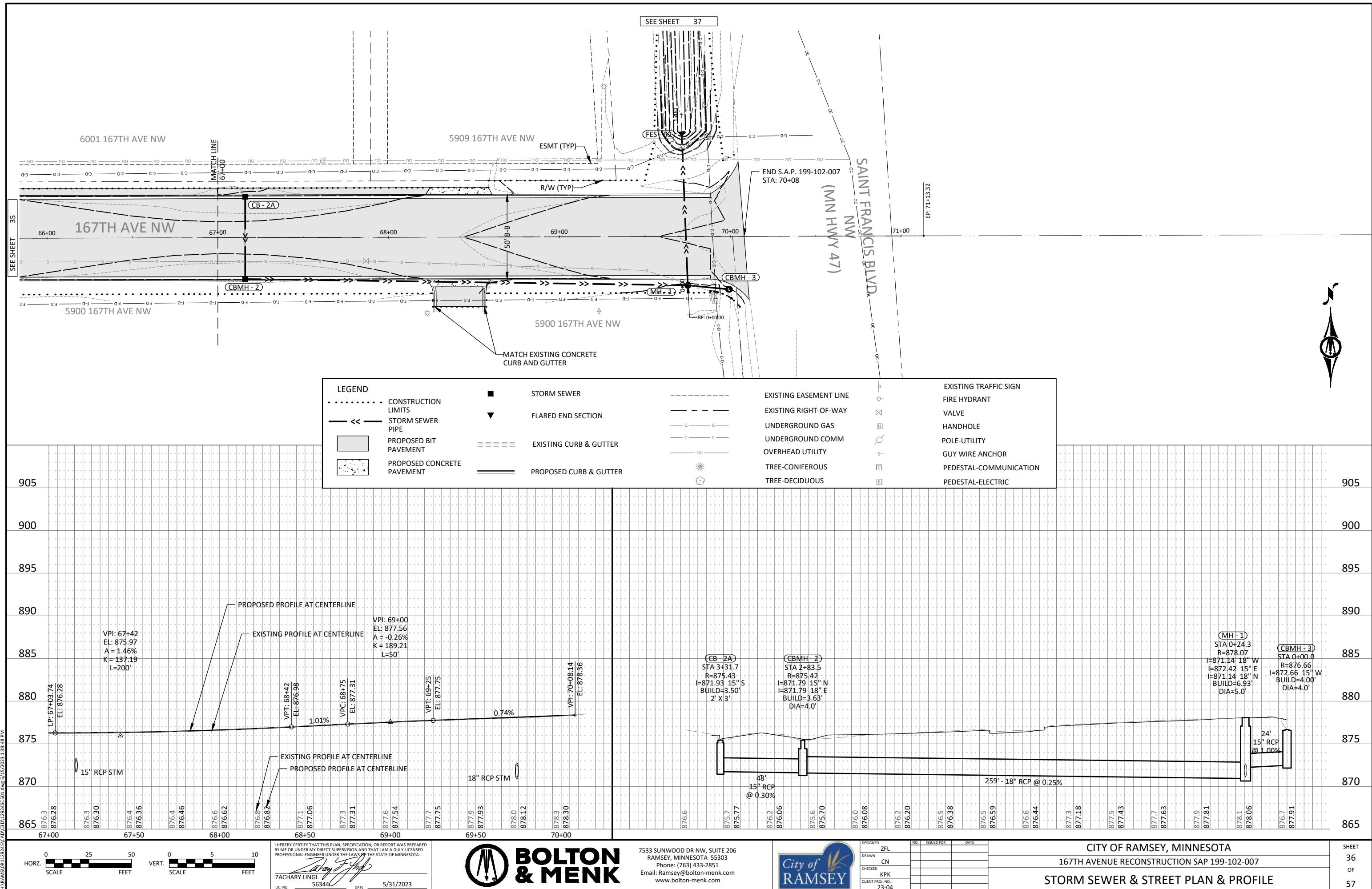


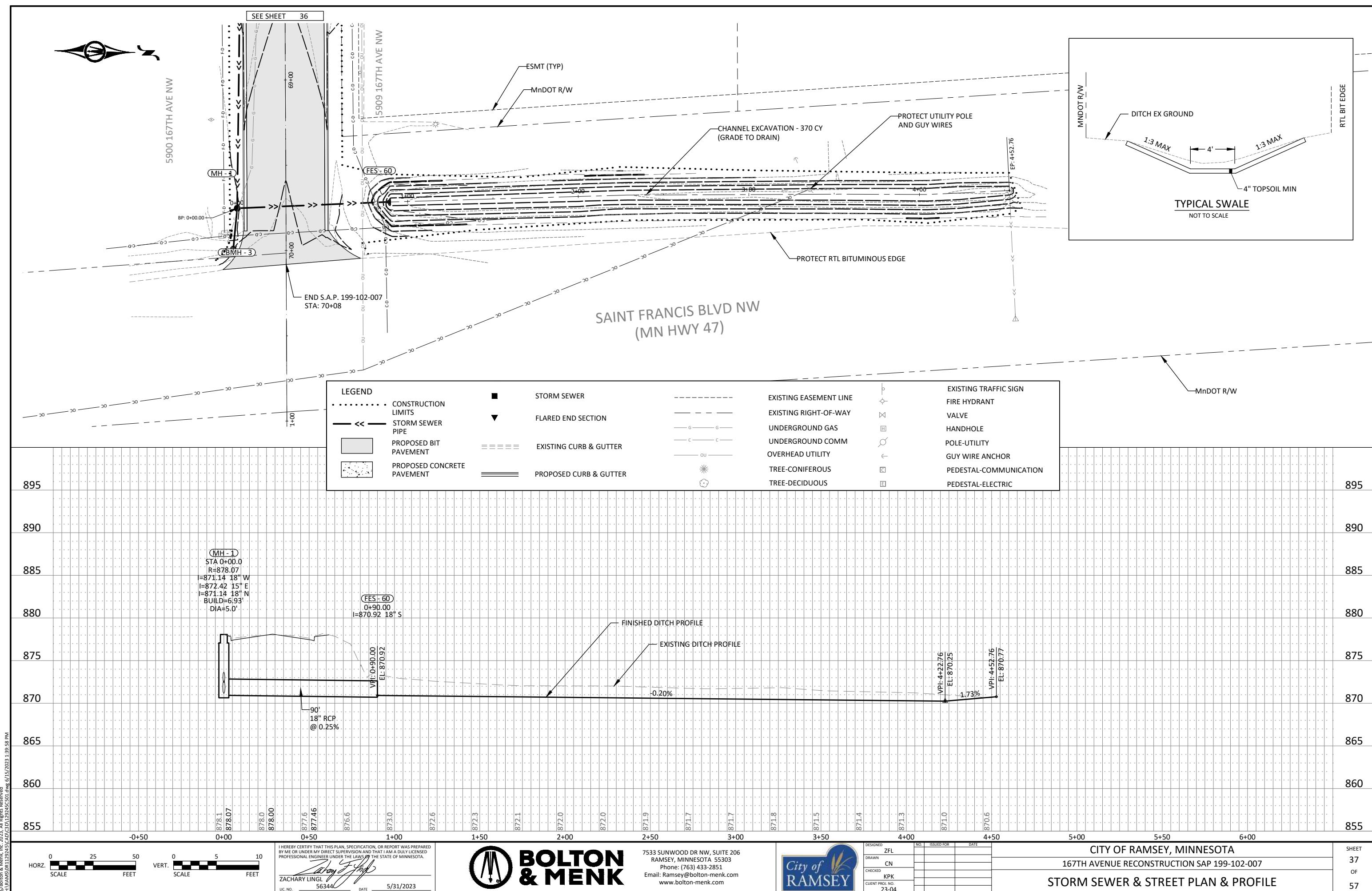


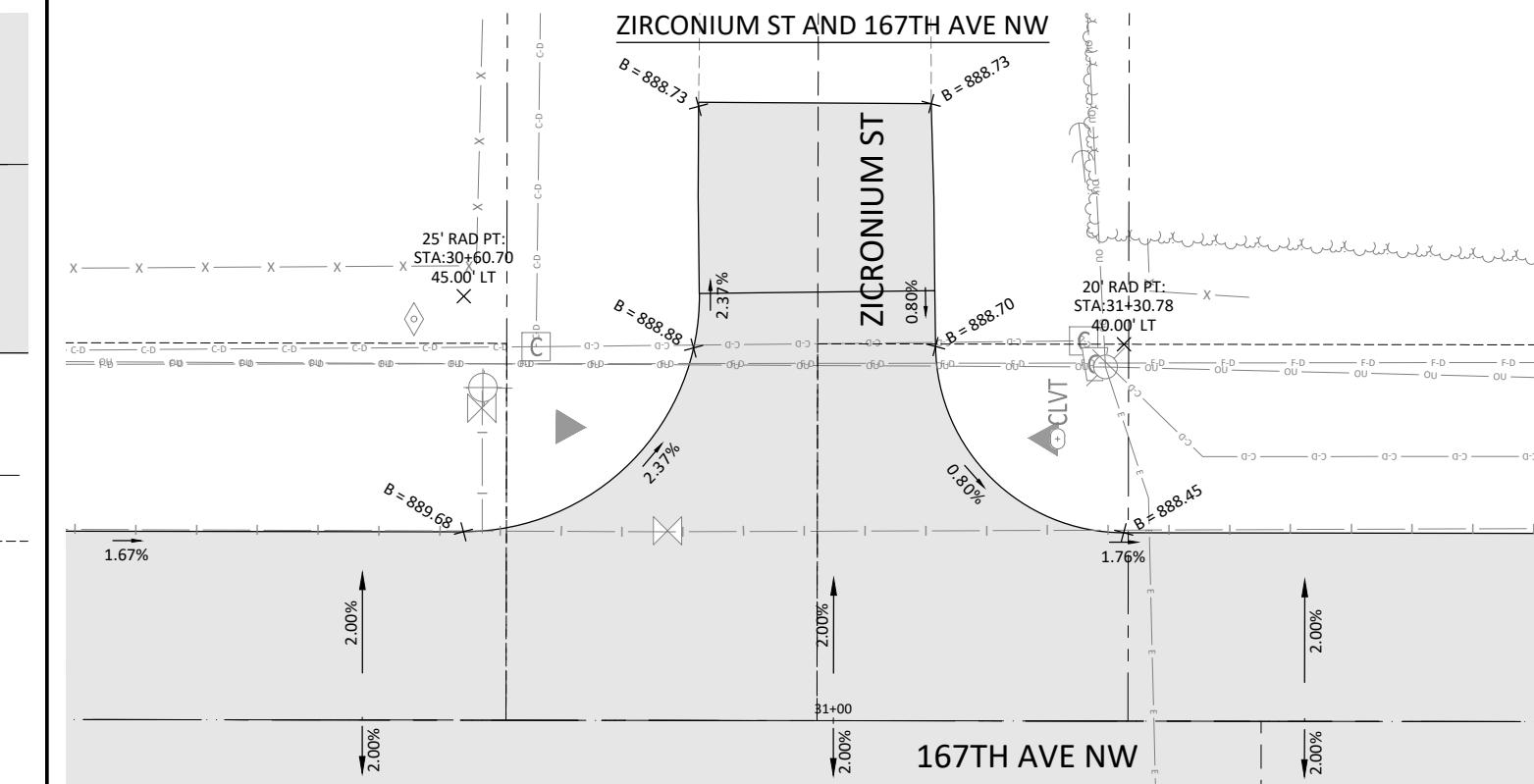
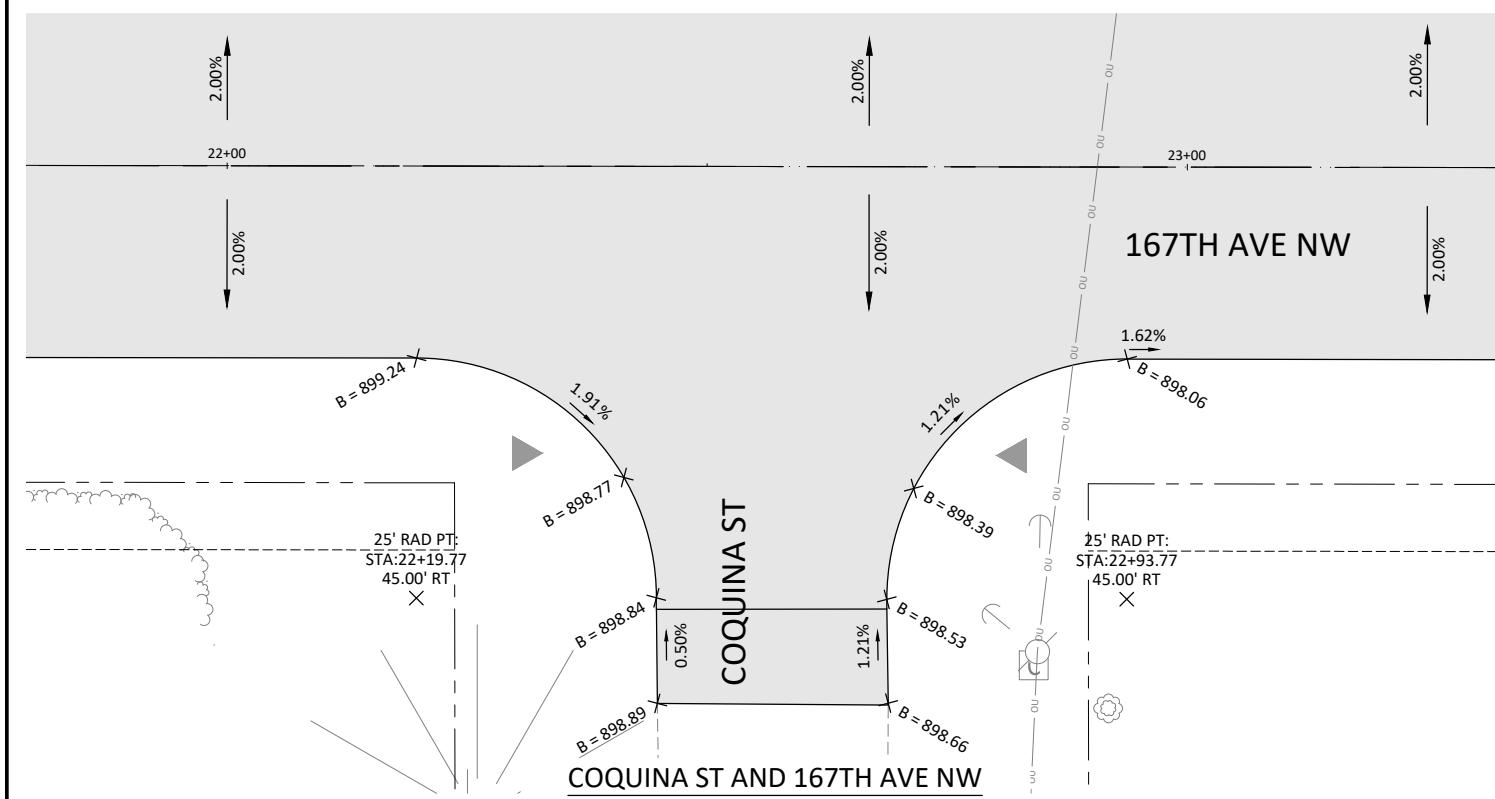
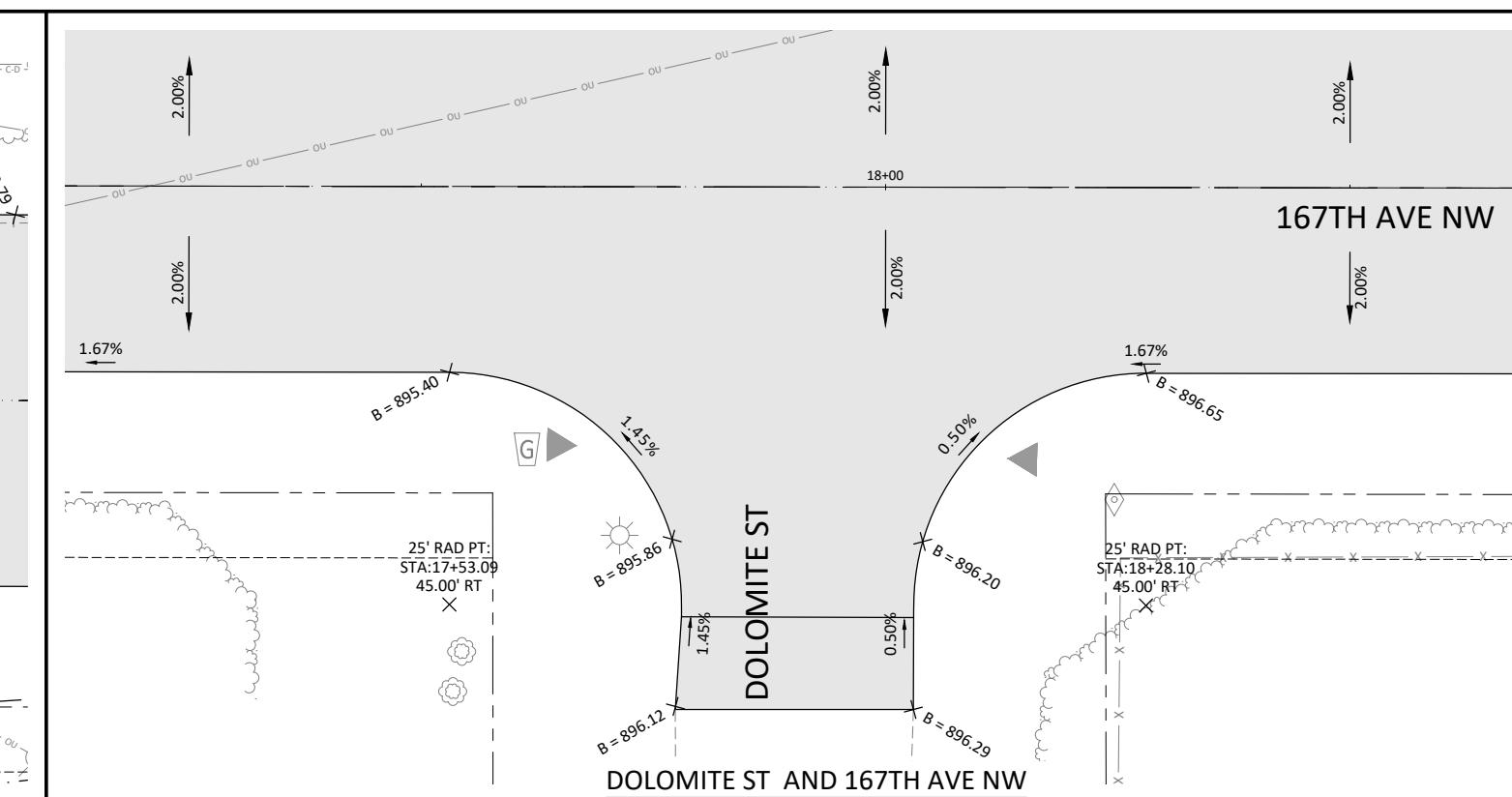
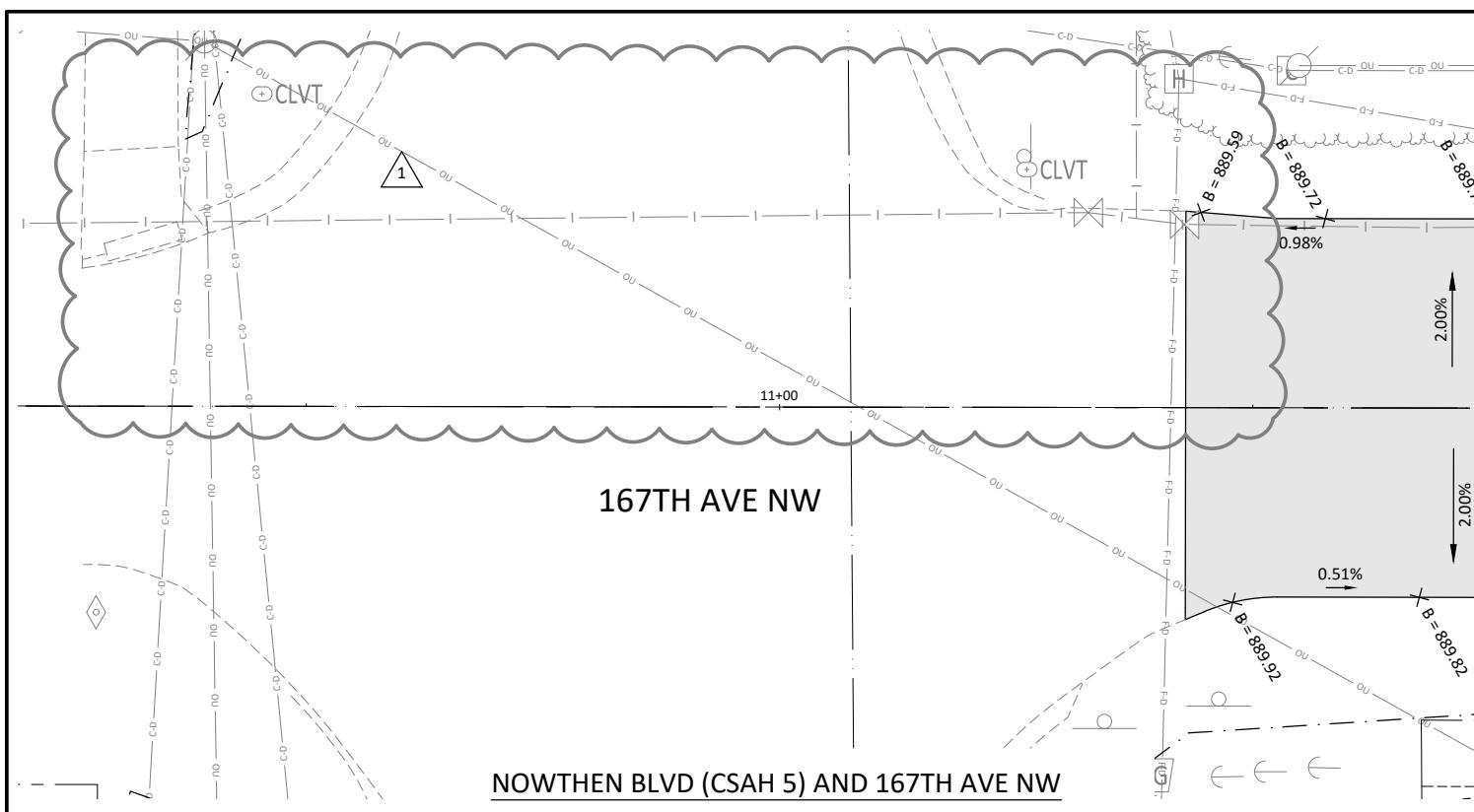












X G=XXX.XX = PROPOSED GUTTER
 X C=XXX.XX = PROPOSED TOP OF CONCRETE
 X B=XXX.XX = PROPOSED TOP OF BITUMINOUS
 X G=XXX.XX = EXISTING GUTTER
 X C=XXX.XX = EXISTING TOP OF CONCRETE
 X B=XXX.XX = EXISTING TOP OF BITUMINOUS
 2.0% SURFACE FLOW DIRECTION

TRUNCATED DOMES
 LANDING AREA - 4' X 4' MIN DIMENSIONS
 AND MAX 2.0% SLOPE IN ALL DIRECTIONS
 (S) 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%
 (T) 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%
 (P) 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

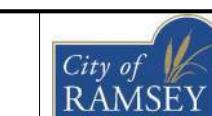


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 ZACHARY LINGL
 LIC. NO. 563444 DATE 5/31/2023

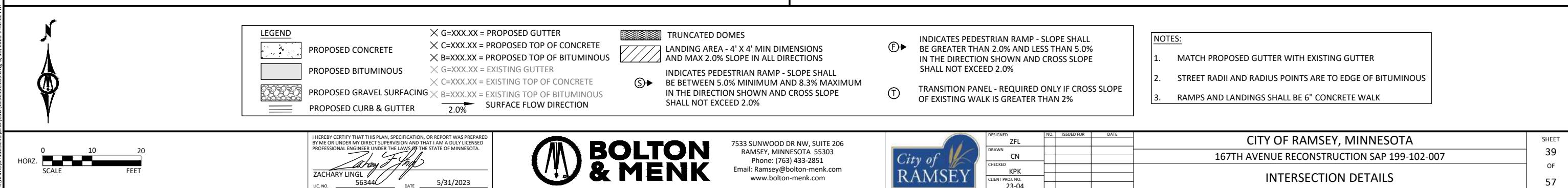
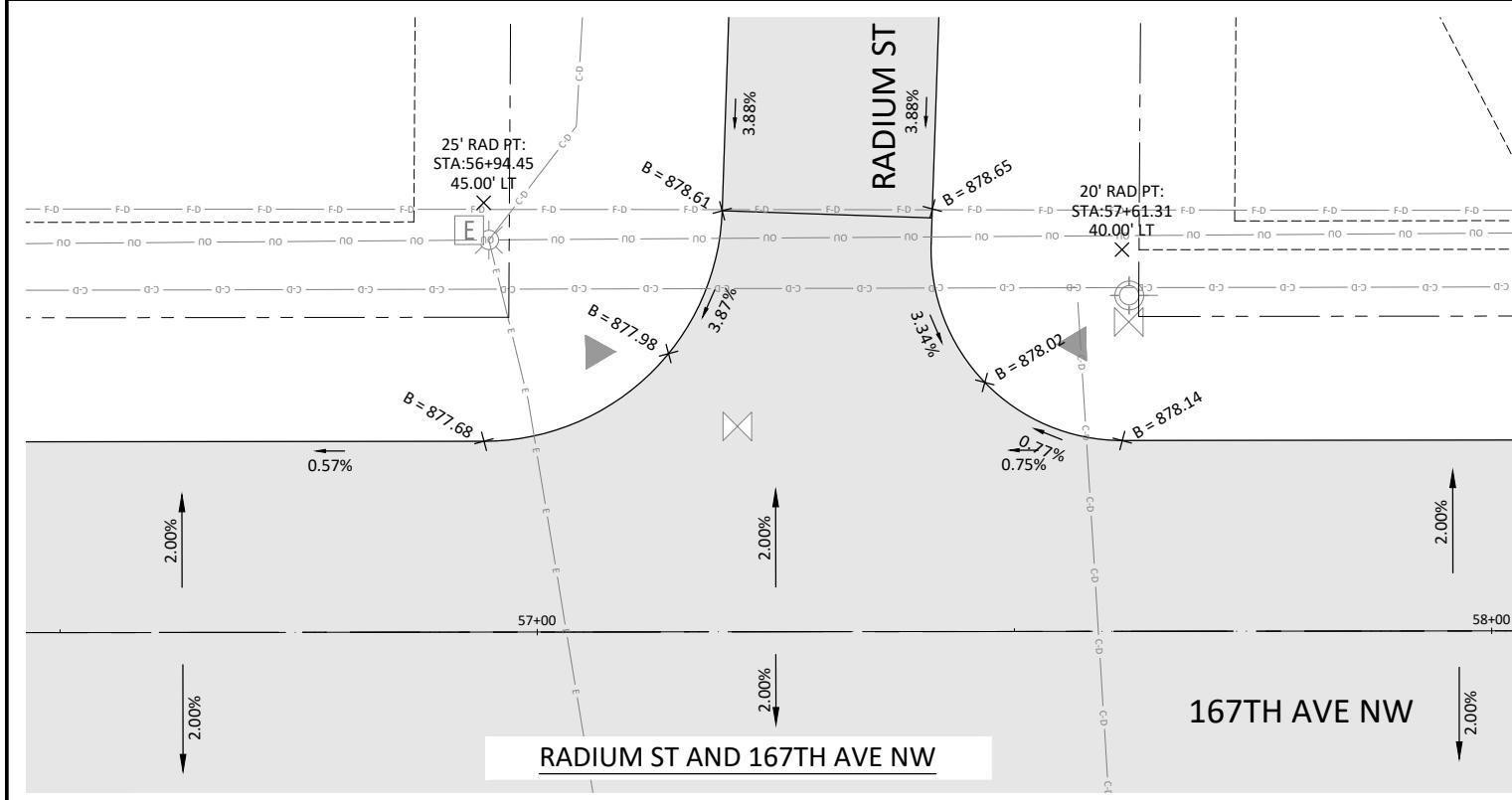
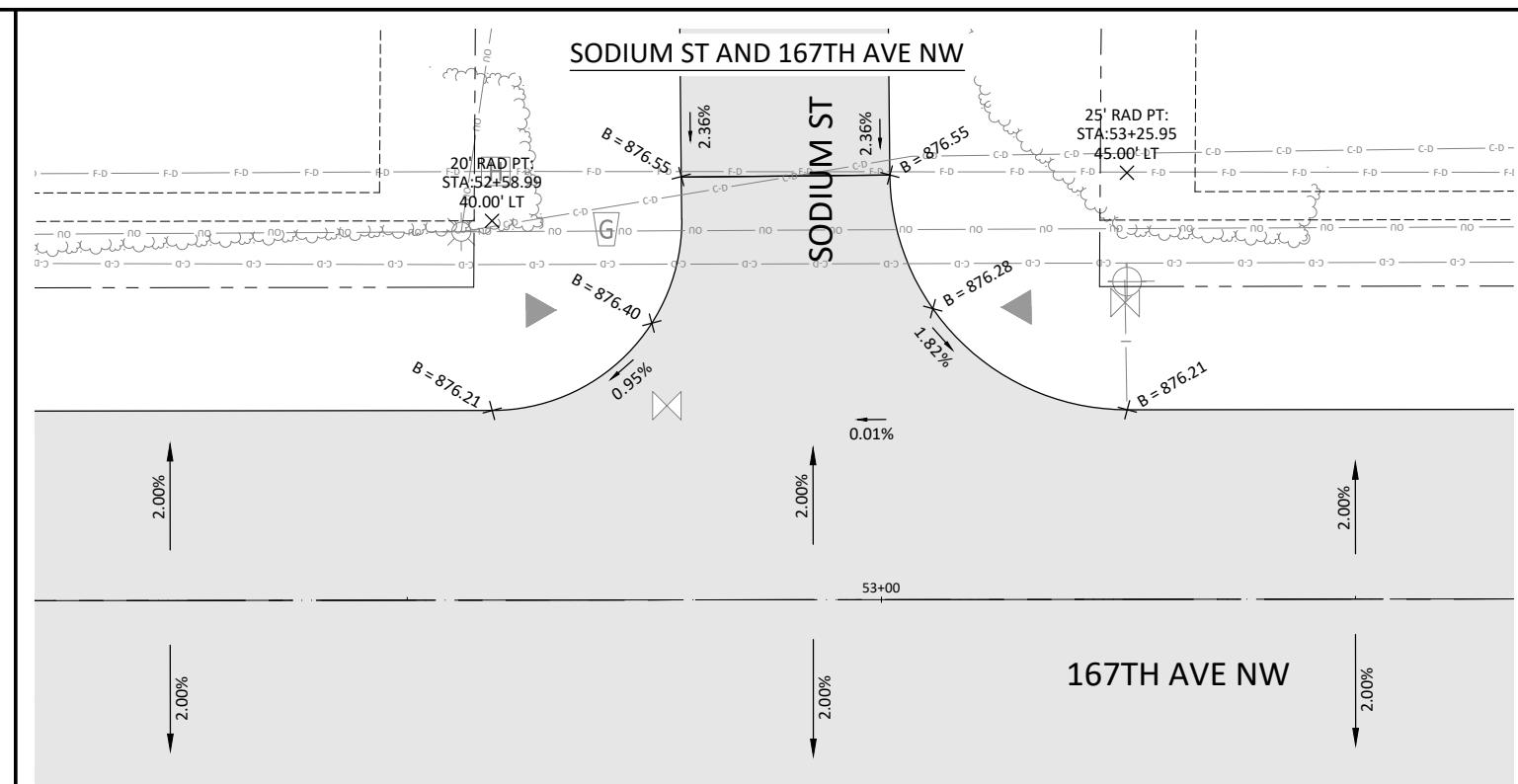
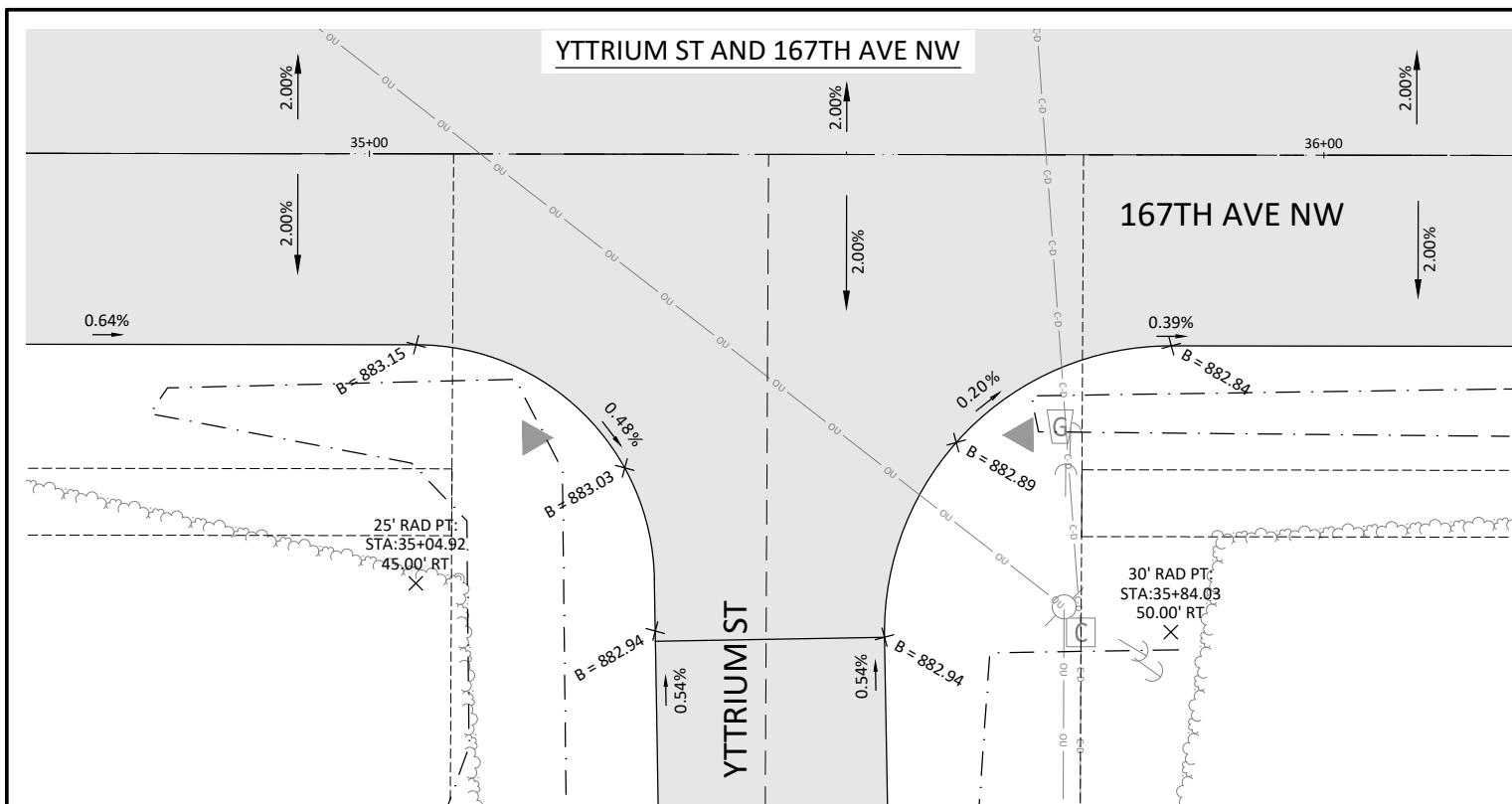


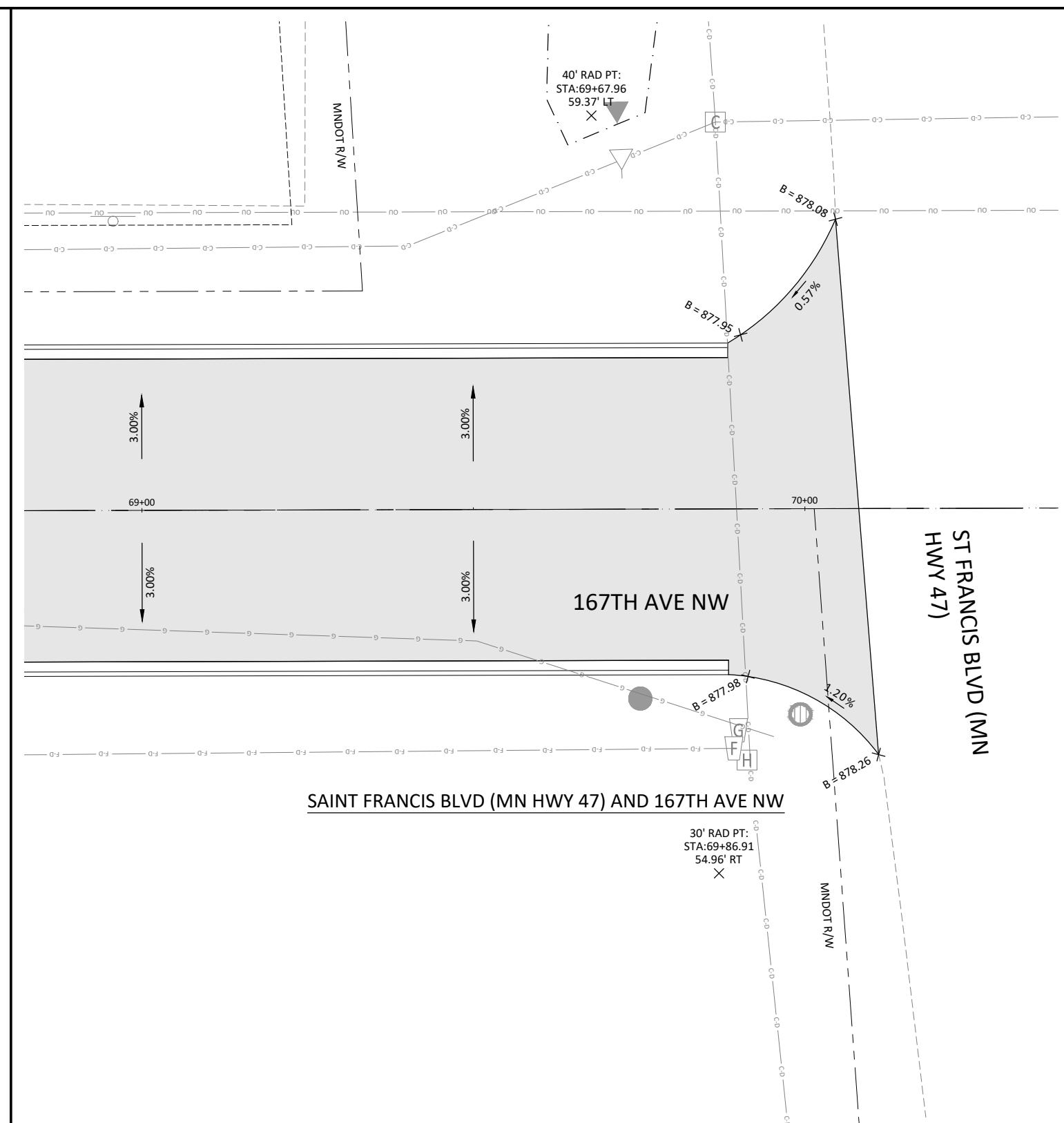
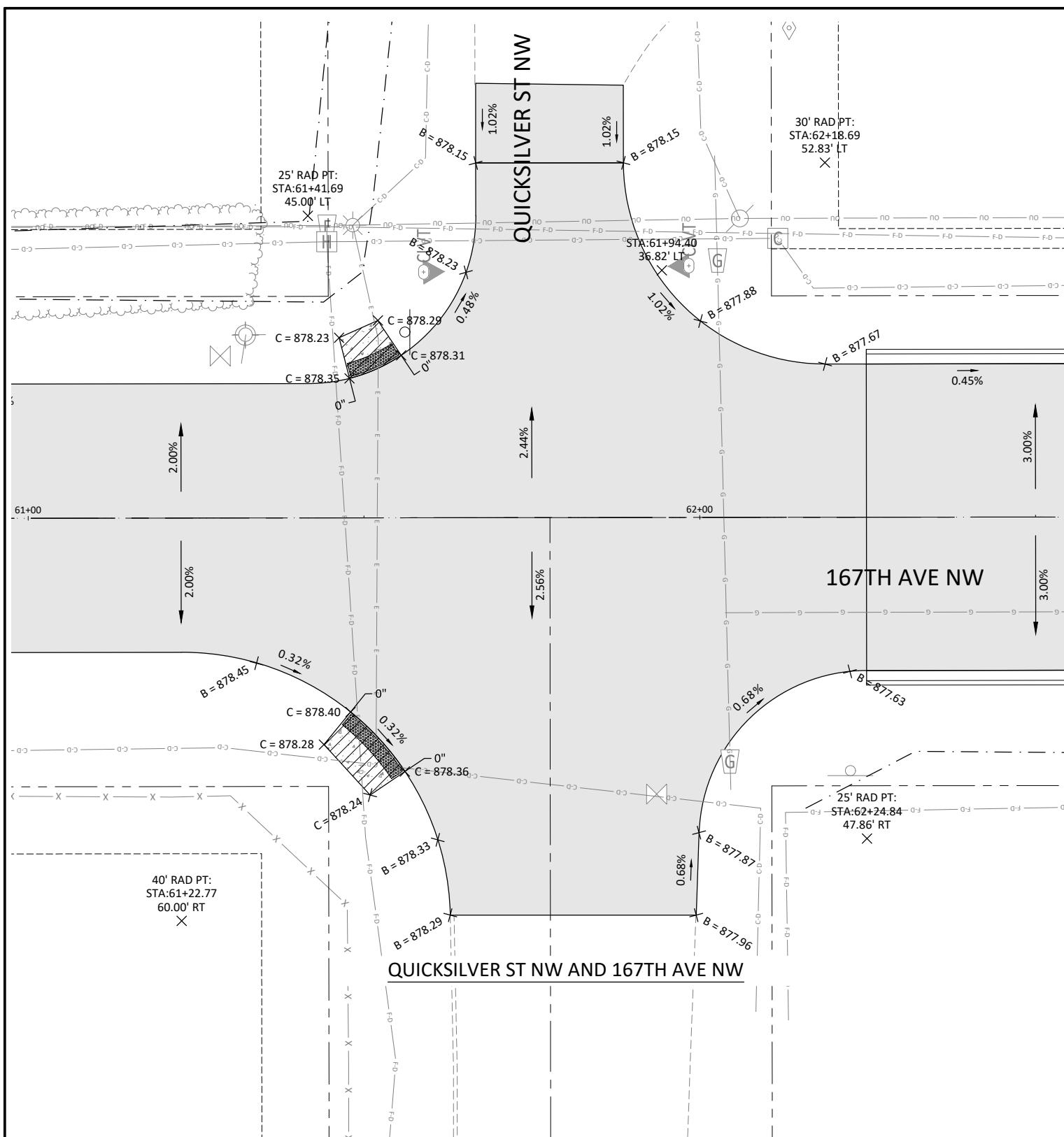
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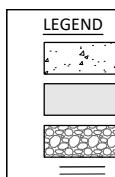
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CITY OF RAMSEY, MINNESOTA
 167TH AVENUE RECONSTRUCTION SAP 199-102-007
 INTERSECTION DETAILS





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- PROPOSED CONCRETE
- PROPOSED BITUMEN
- PROPOSED GRAVEL
- PROPOSED CURB & GUTTER

ETE
OUS
SURFACING GUTTER

X G=XXX.XX = PROPOSED GUTTER
X C=XXX.XX = PROPOSED TOP OF CONCRETE
X B=XXX.XX = PROPOSED TOP OF BITUMINOUS
X G=XXX.XX = EXISTING GUTTER
X C=XXX.XX = EXISTING TOP OF CONCRETE
X B=XXX.XX = EXISTING TOP OF BITUMINOUS
SURFACE FLOW DIRECTION
20%

S
X 4' MIN DIMENSIONS
YPE IN ALL DIRECTIONS
RIAN RAMP - SLOPE SHALL
MINIMUM AND 8.3% MAXIMUM
HOWN AND CROSS SLOPE
2.0%

- ⑤ 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%
- ⑥ TRANSITION PANEL - REQUIRED ONLY IF CROSS SECTION OF EXISTING WALK IS GREATER THAN 2%

NOTES:

1. M

2. S

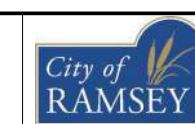
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- MATCH PROPOSED GUTTER WITH EXISTING GUTTER
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AMPS AND LANDINGS SHALL BE 6" CONCRETE WALK



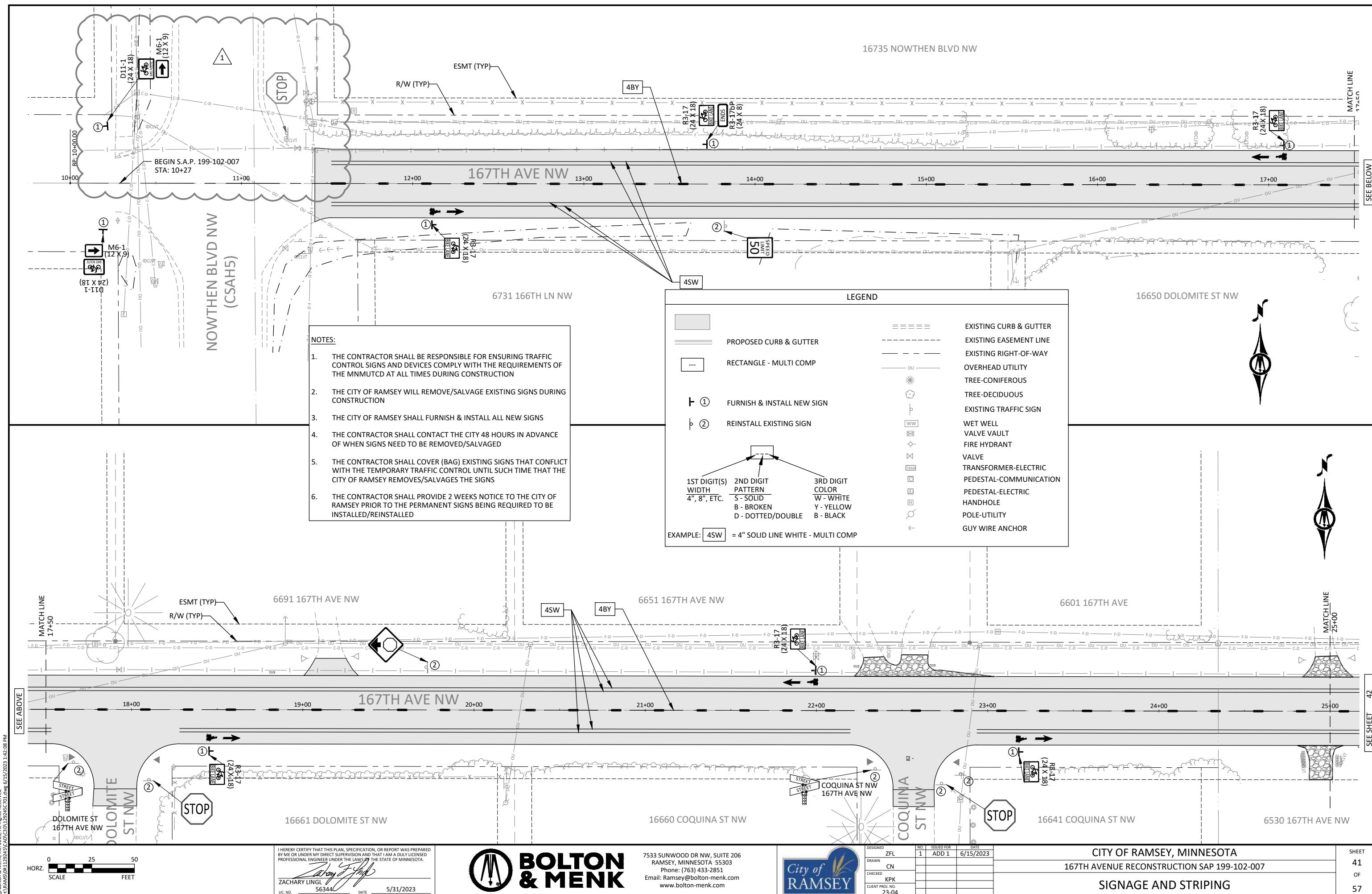
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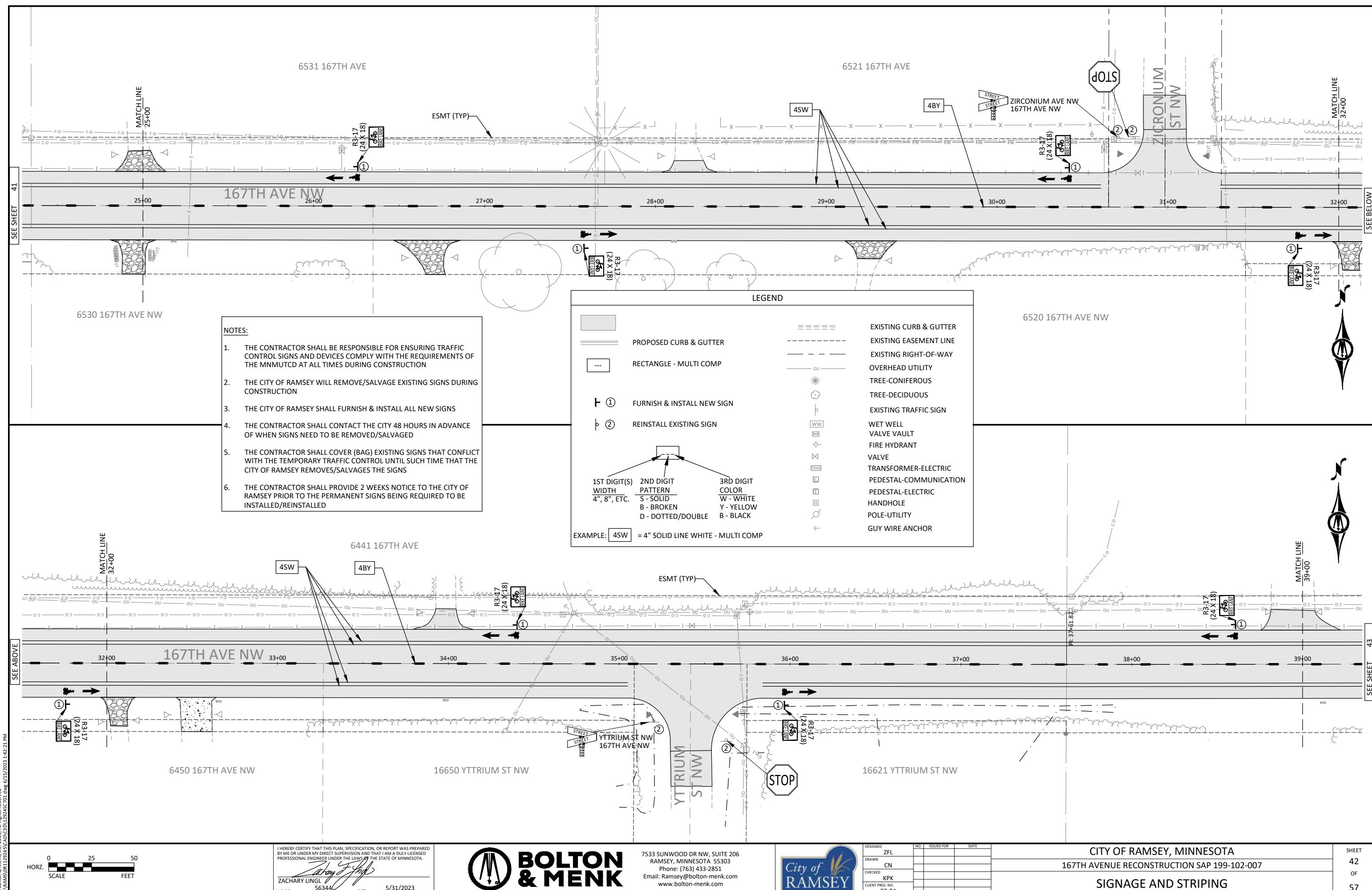
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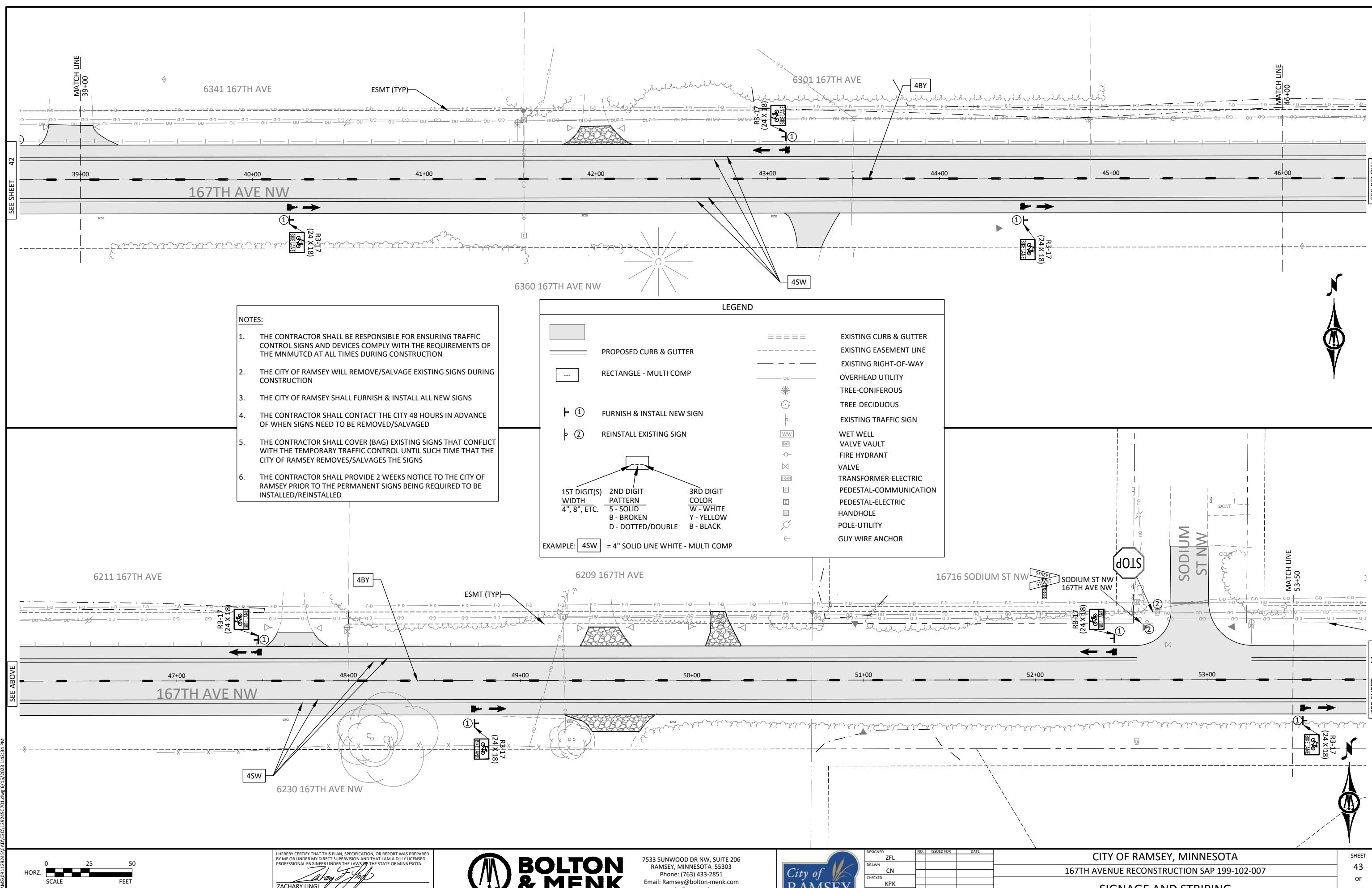


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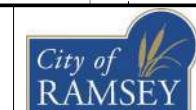
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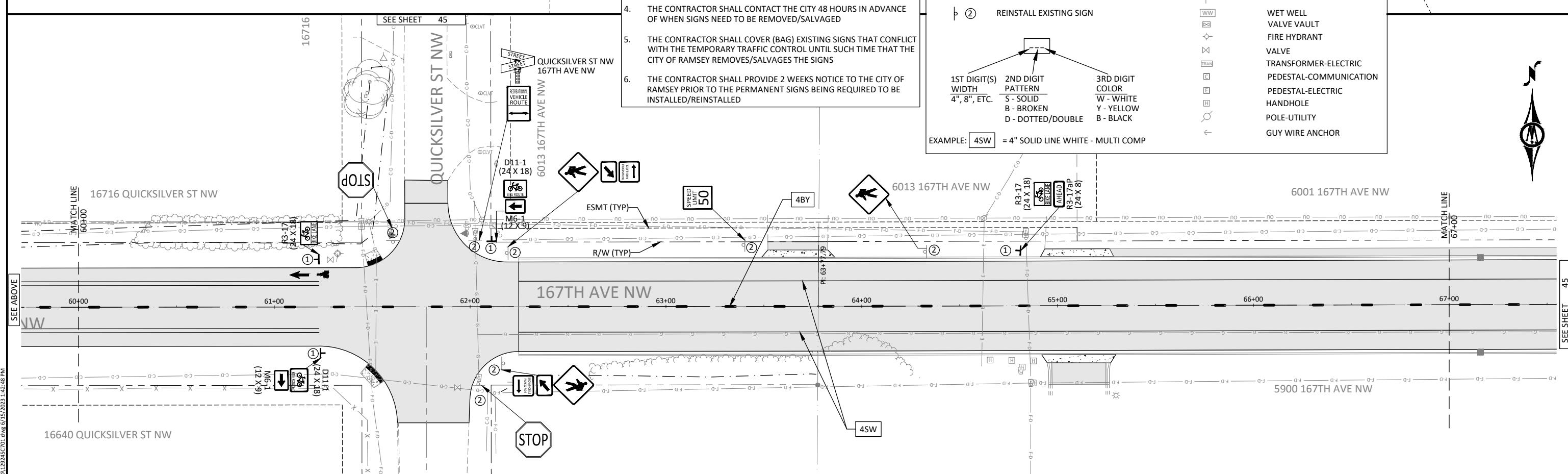
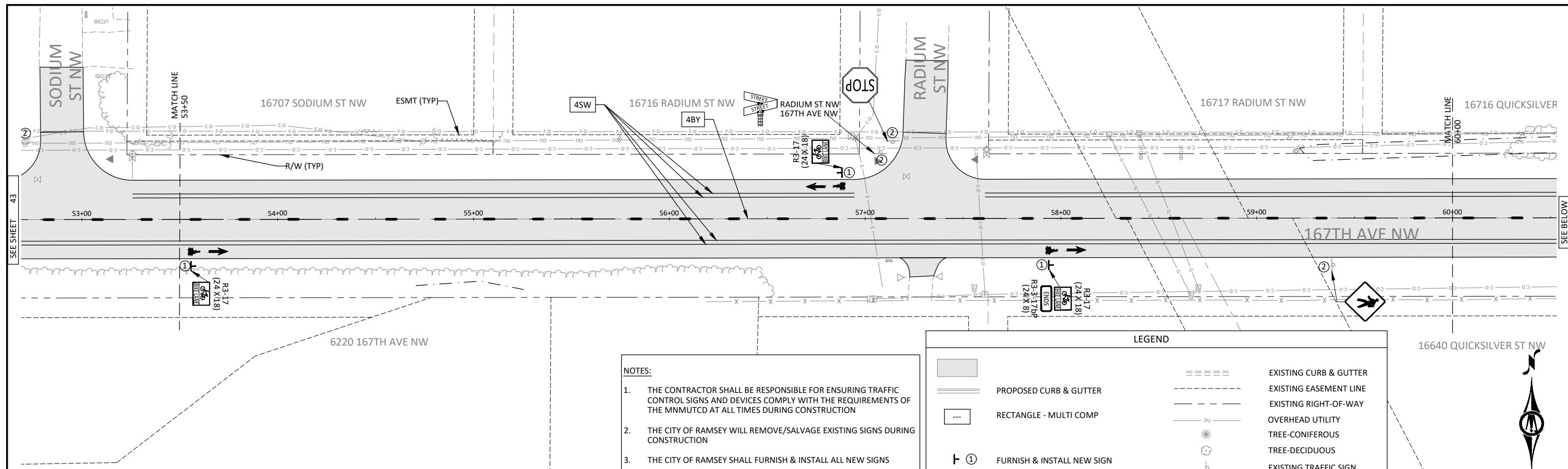


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167TH AVENUE RECONSTRUCTION SAP 199-102-007
SIGNAGE AND STRIPING



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ZACHARY LINGL
LIC. NO. 56344 DATE



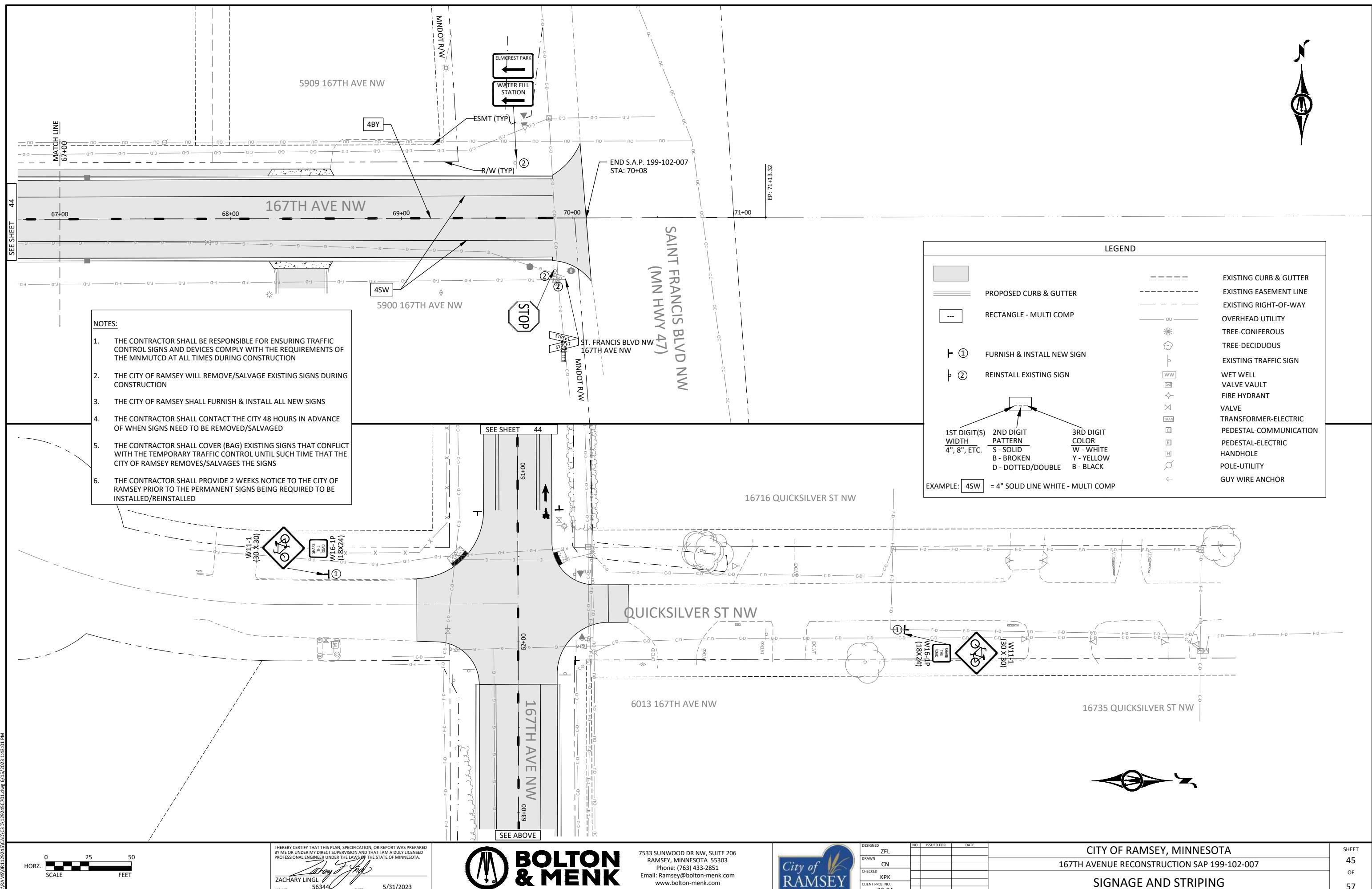
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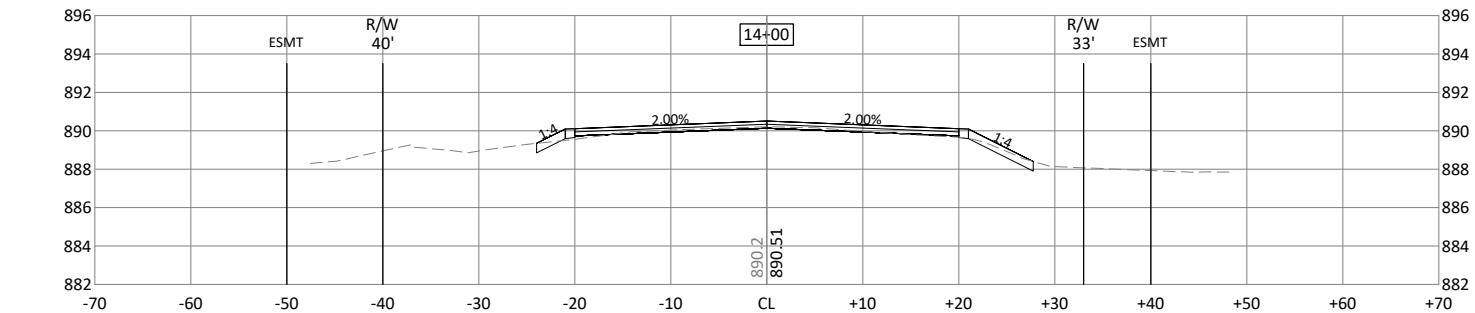
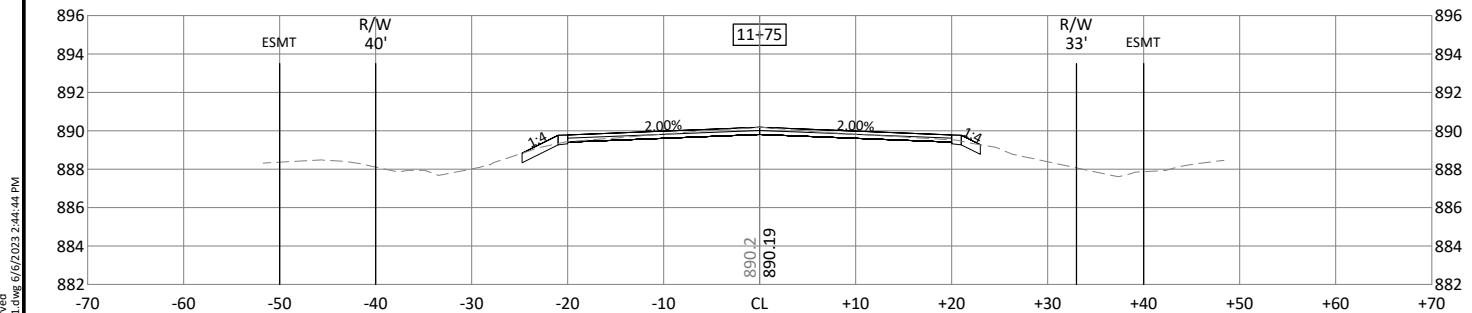
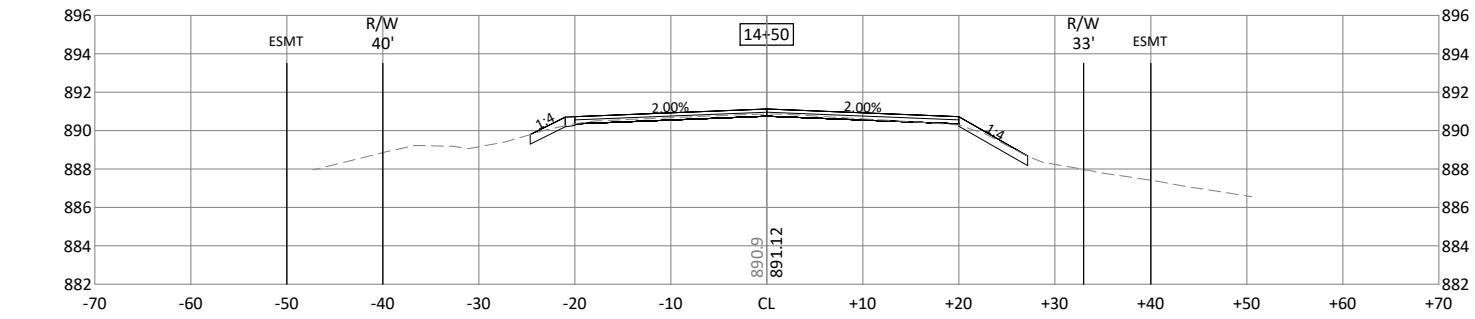
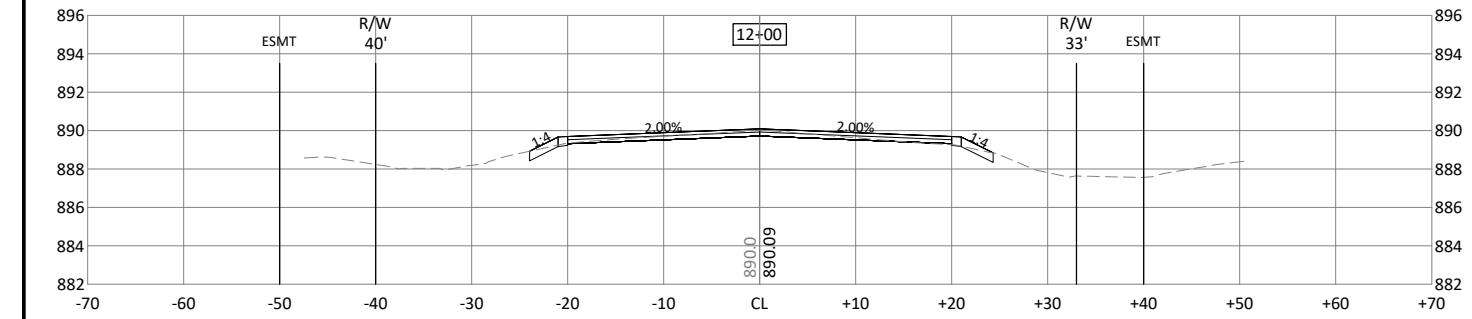
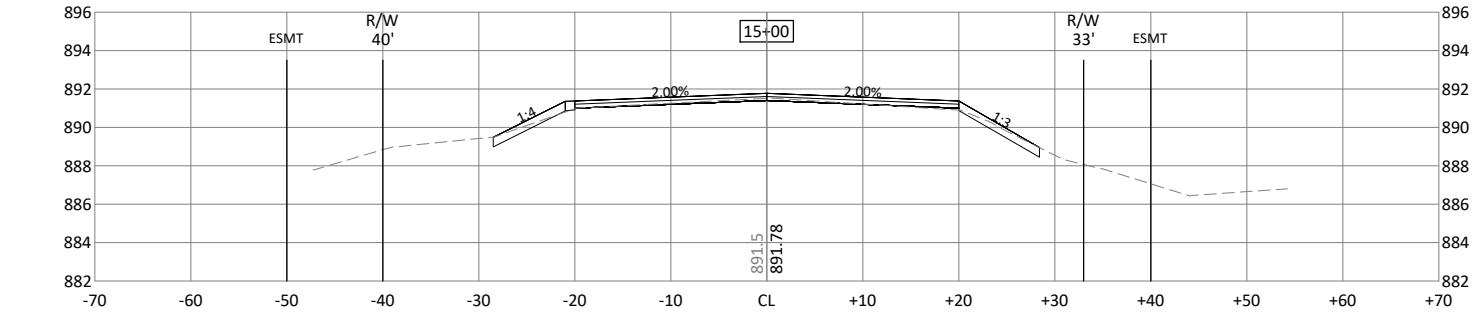
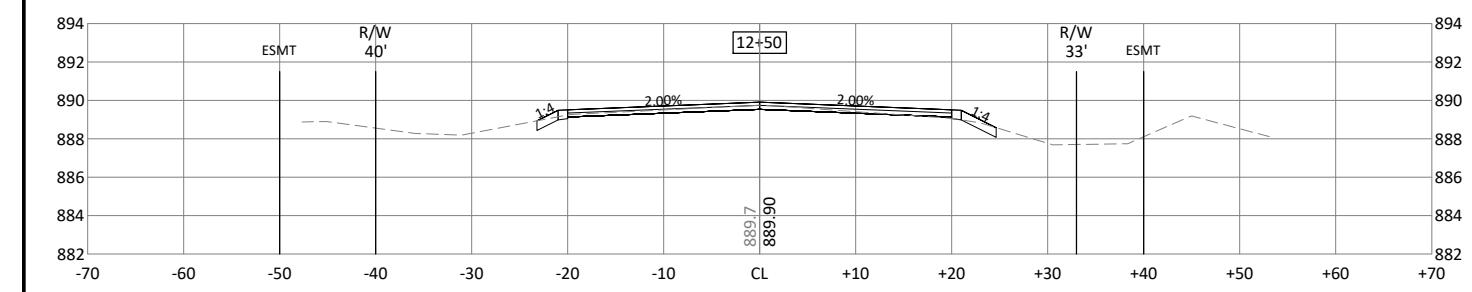
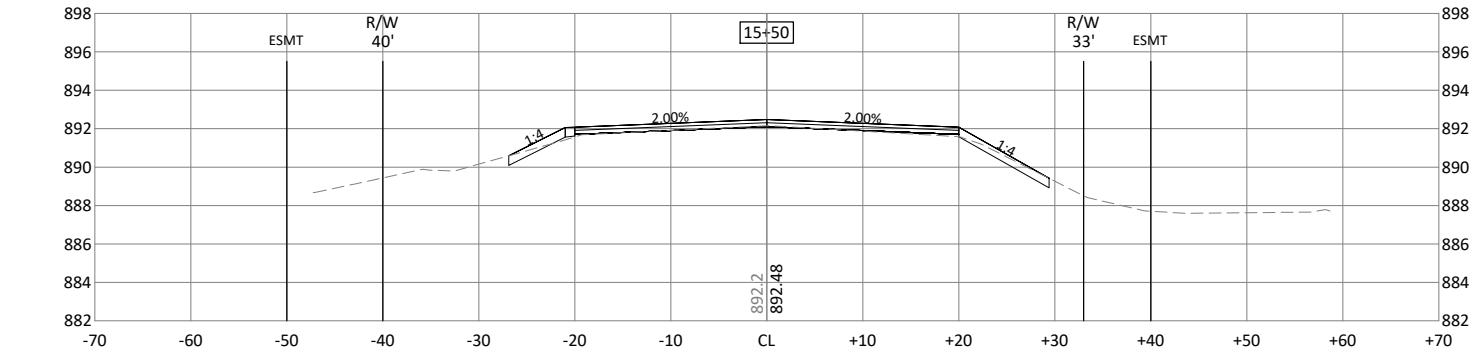
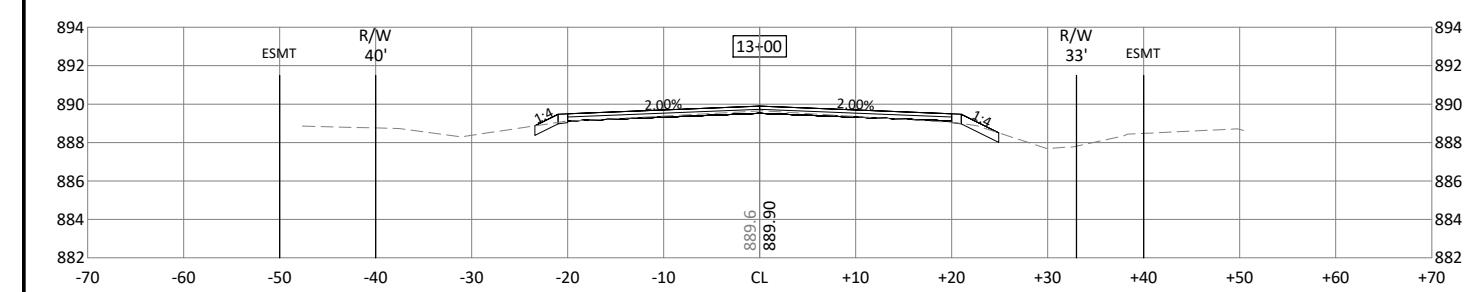
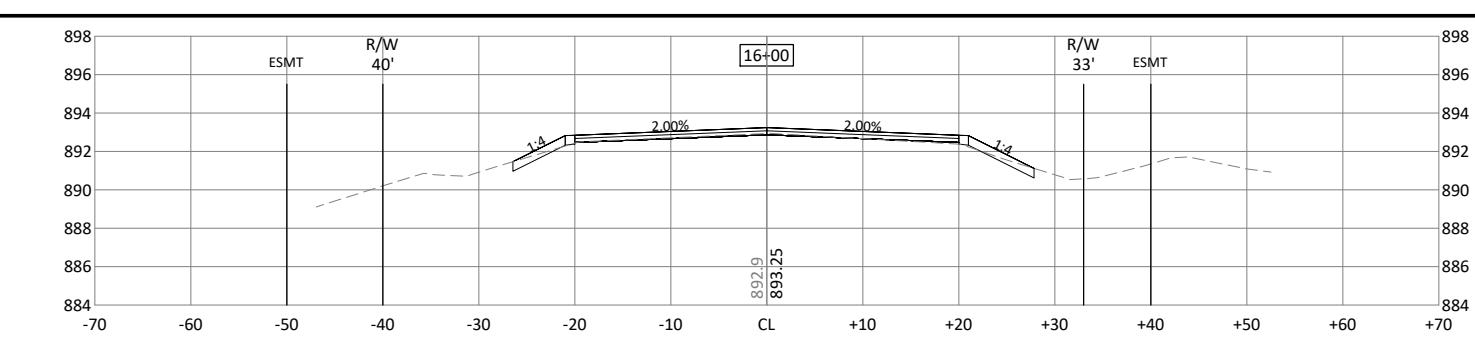
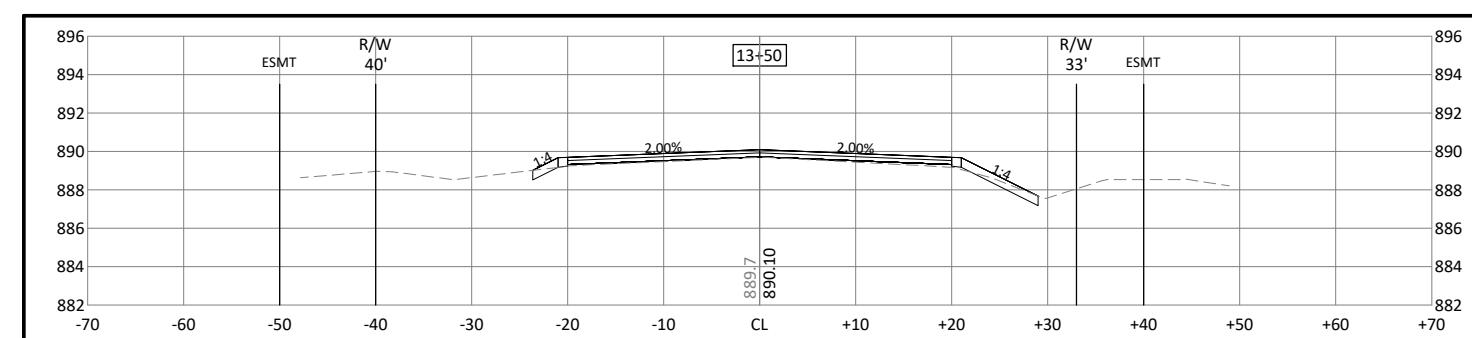
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RAMSEY

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

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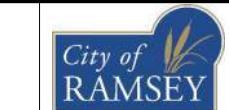




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ZACHARY LINGL
LIC. NO. 563444
DATE 5/31/2023

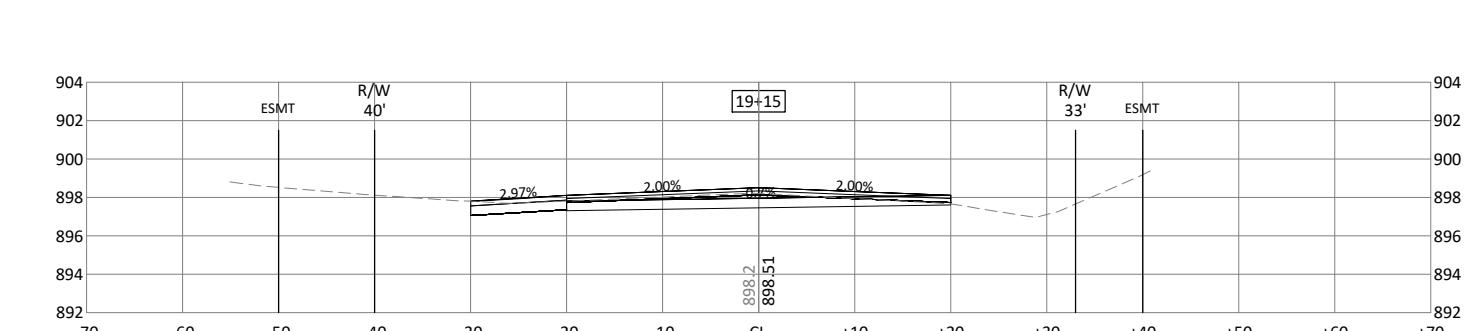
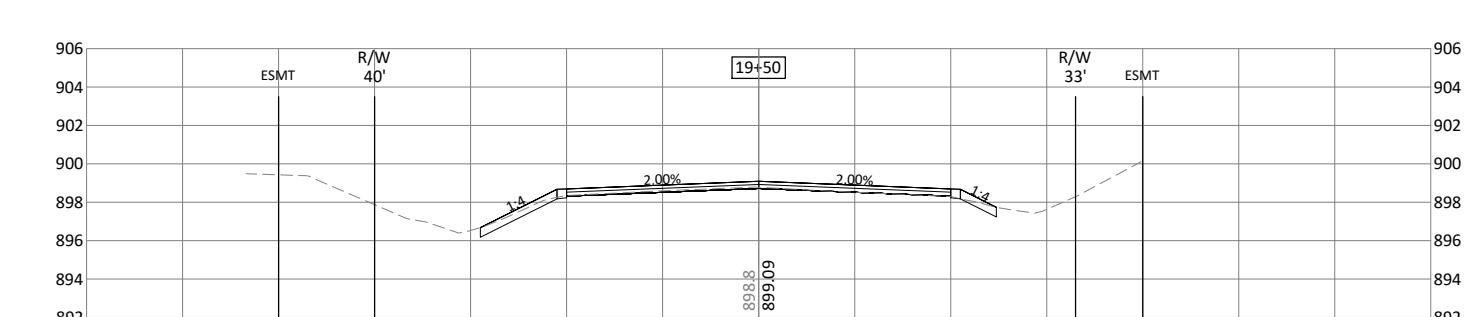
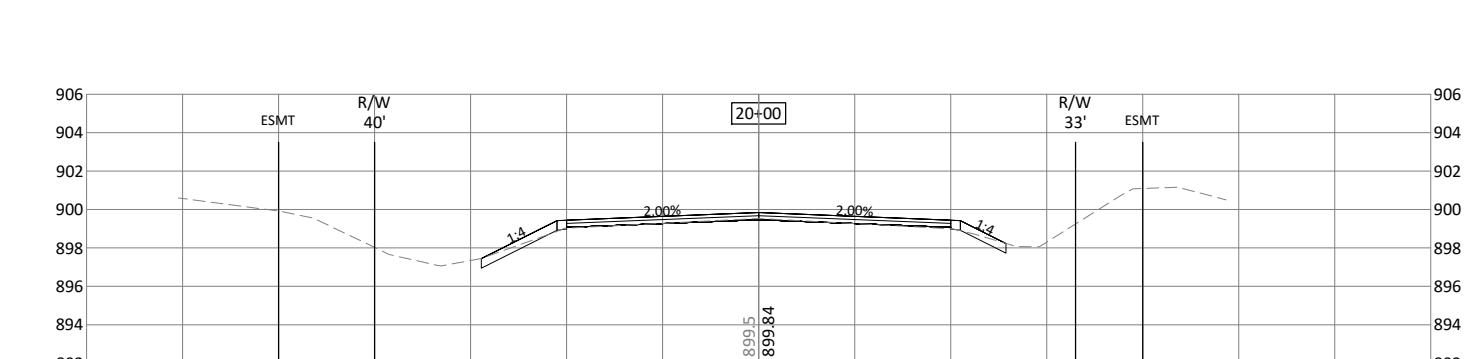
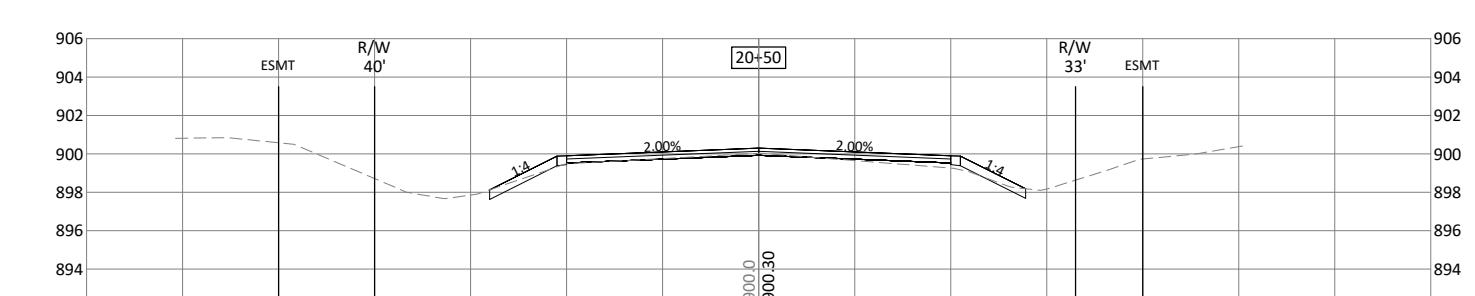
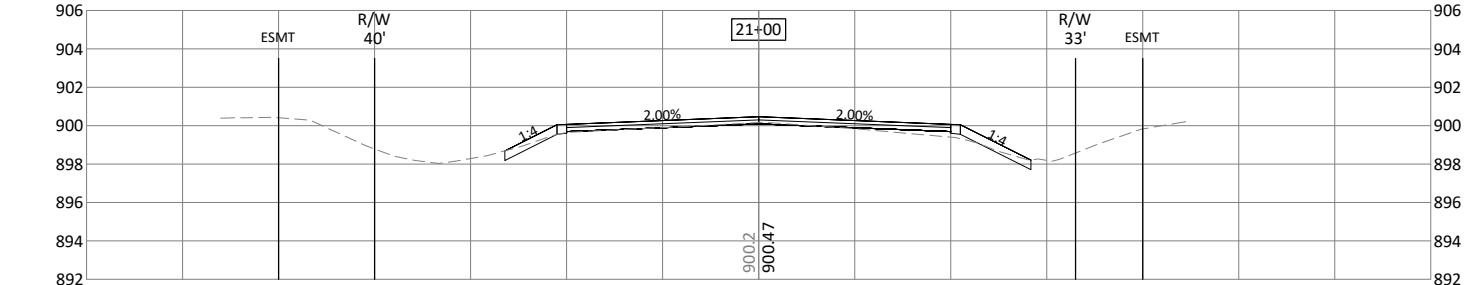
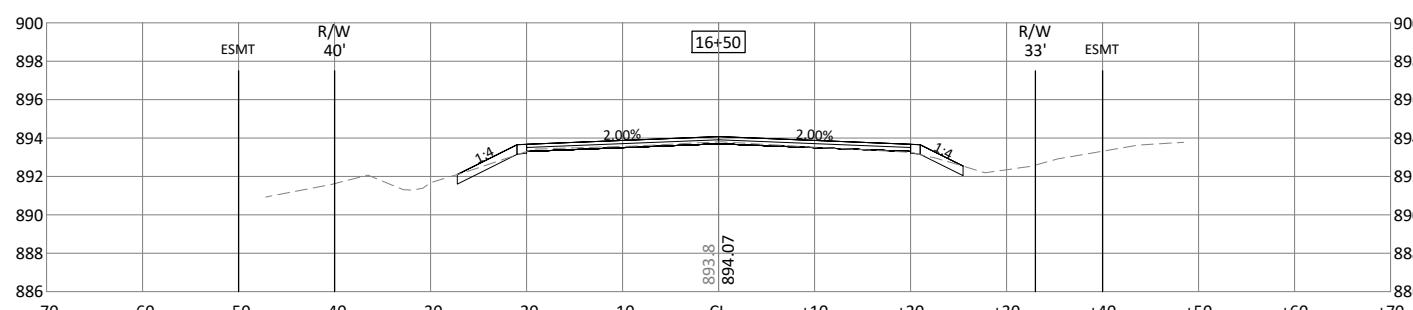
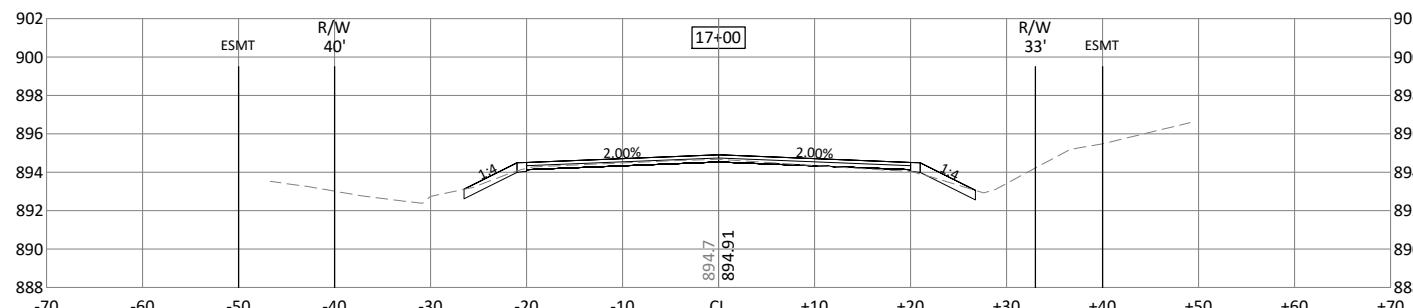
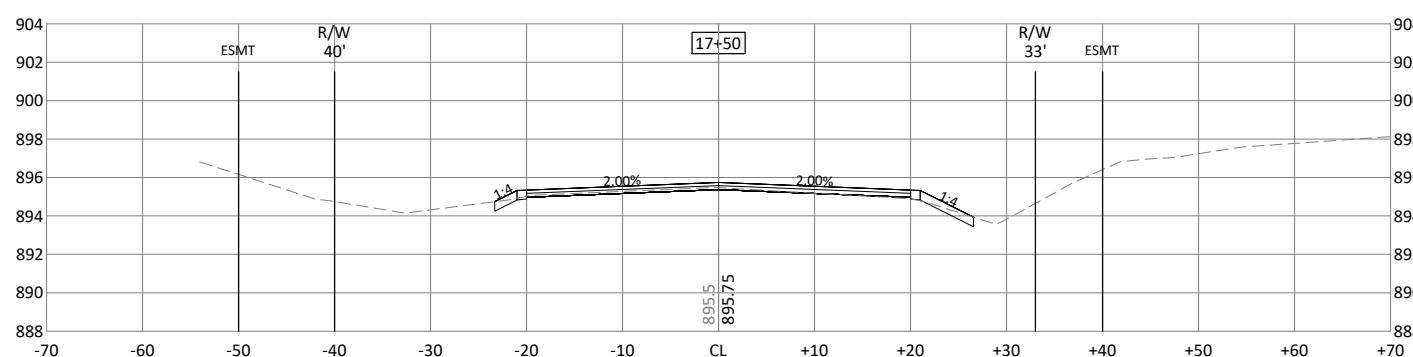
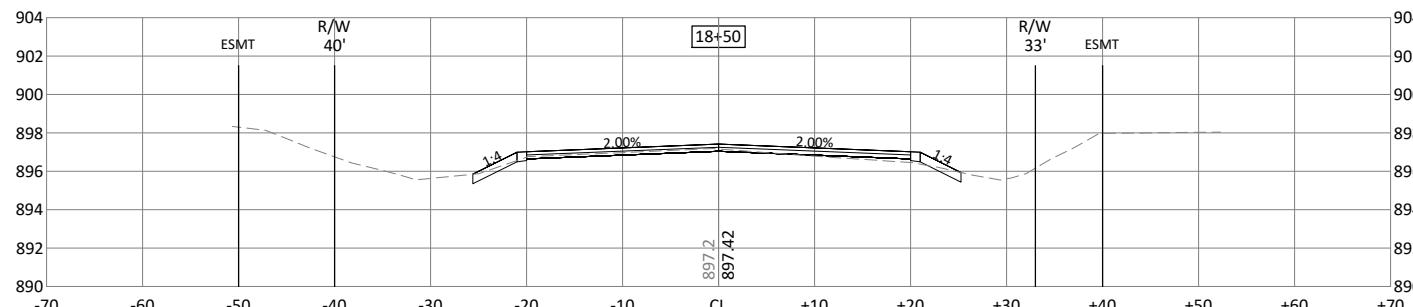
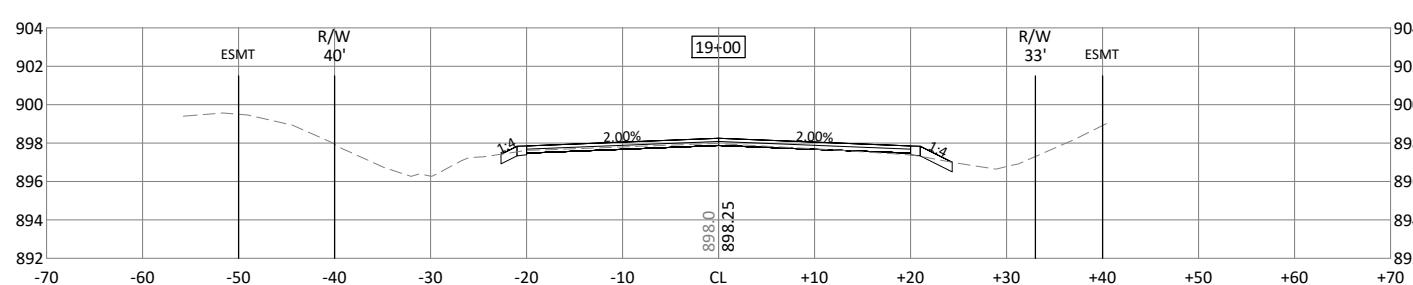


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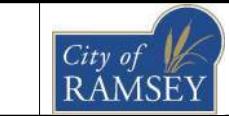
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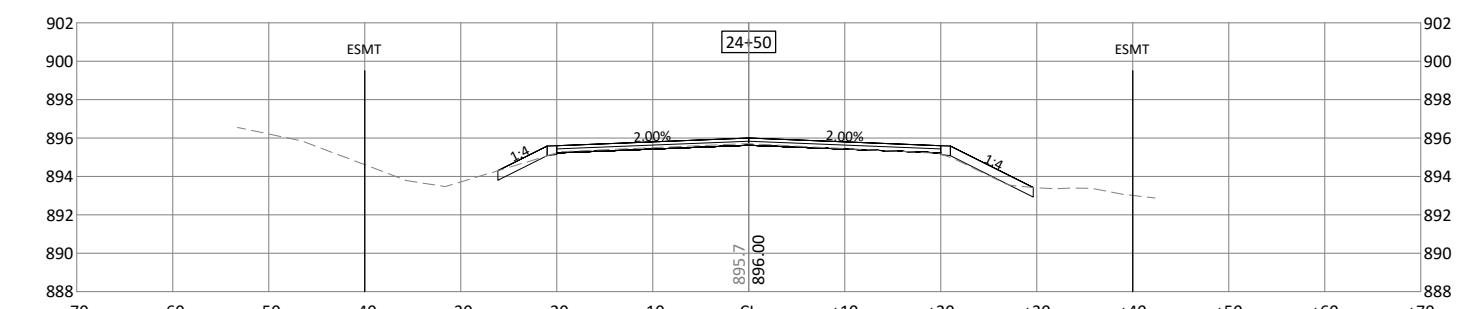
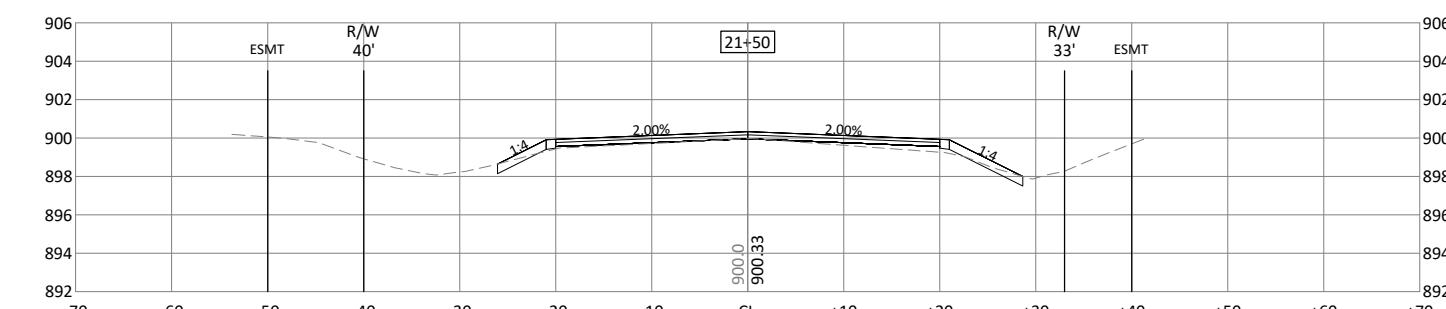
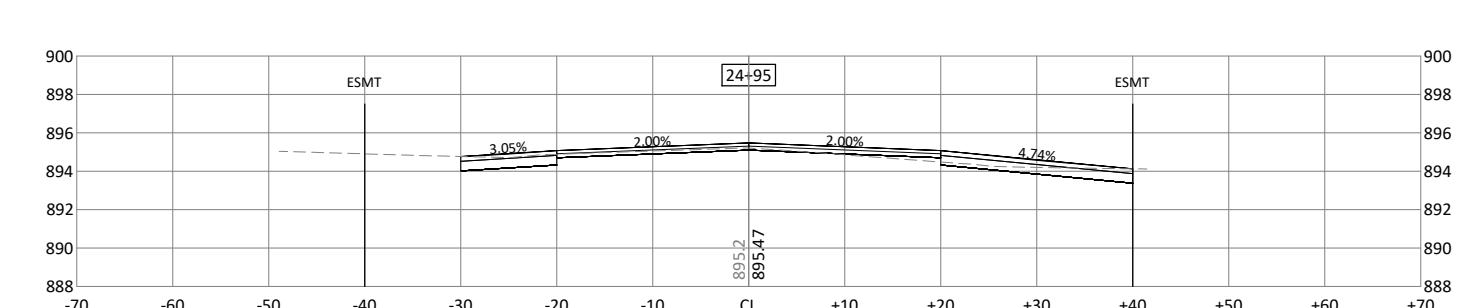
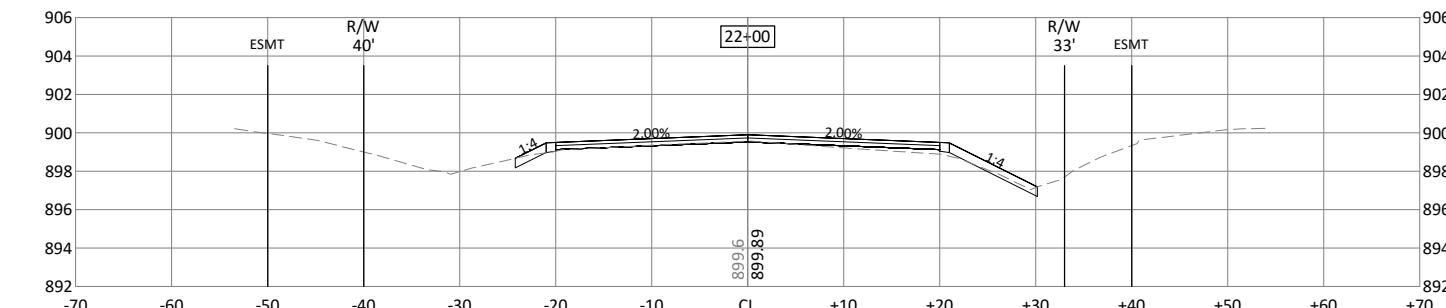
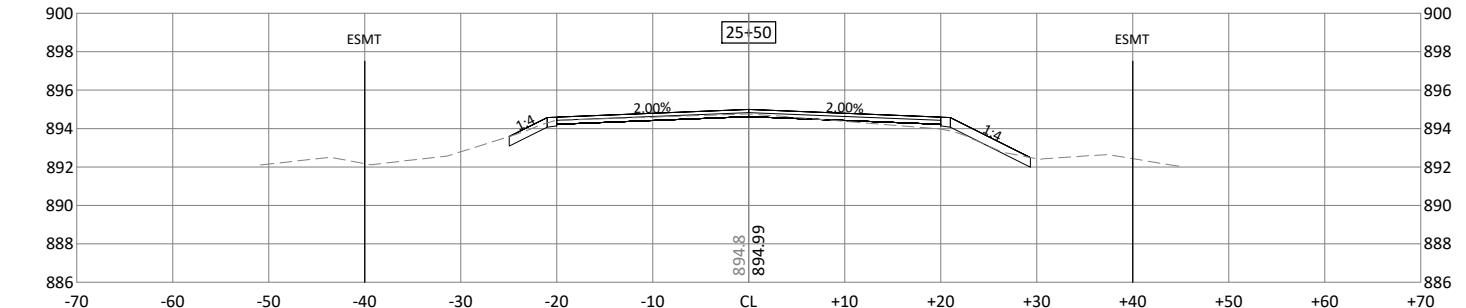
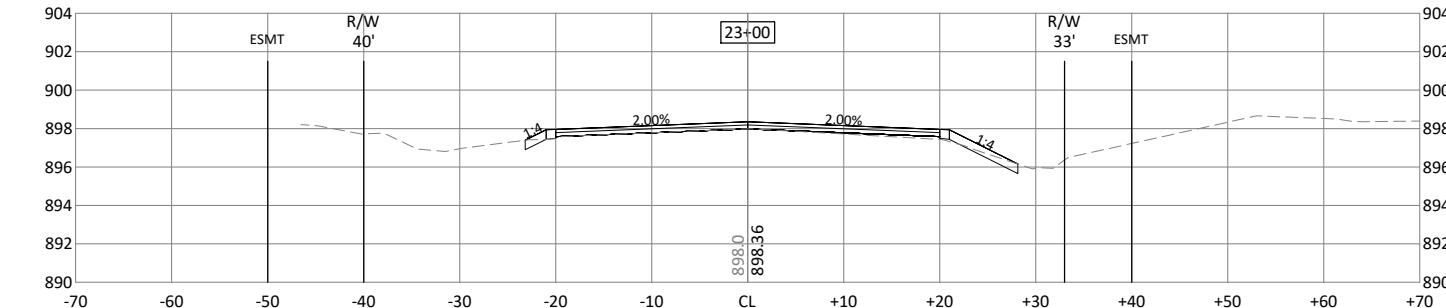
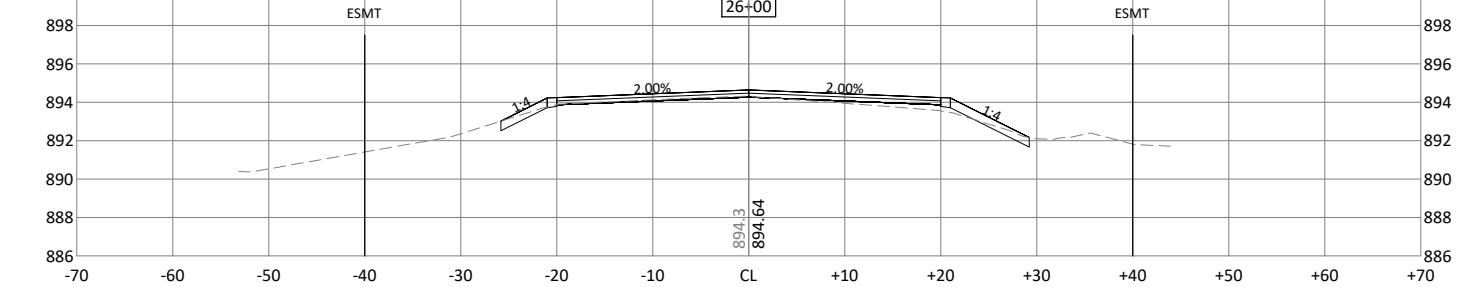
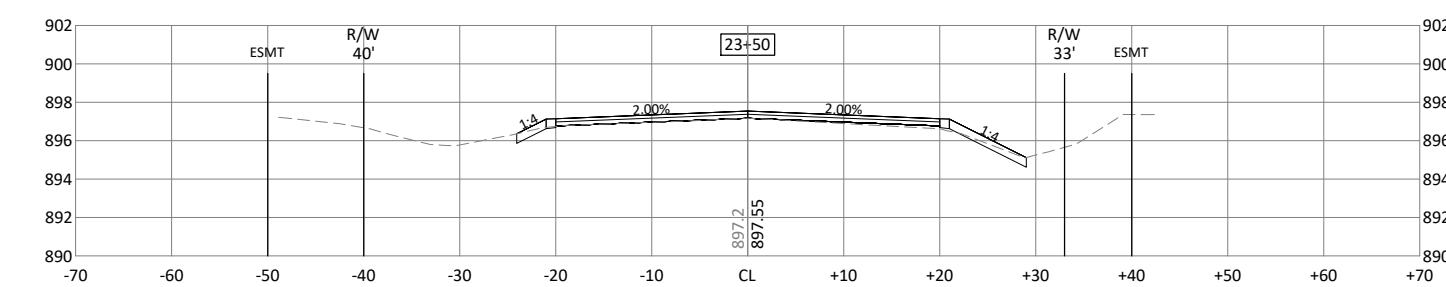
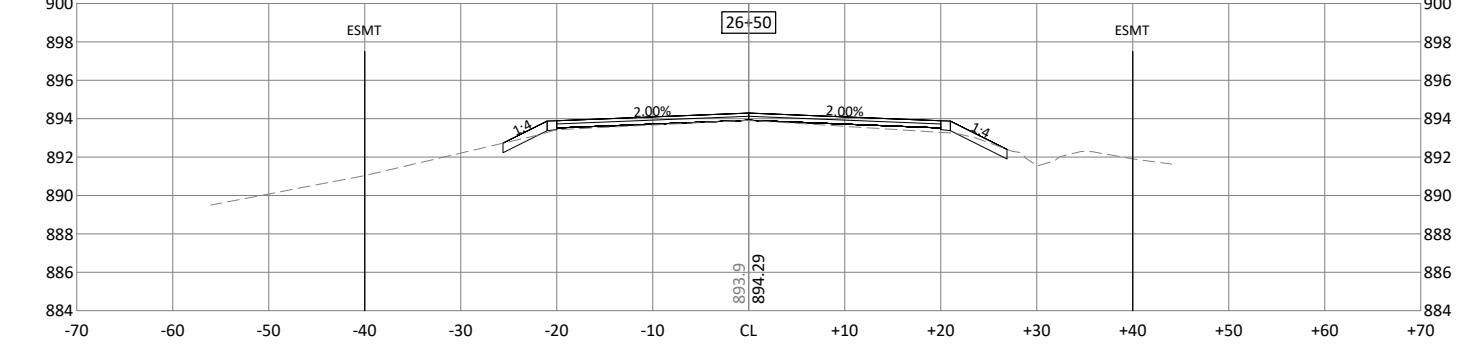
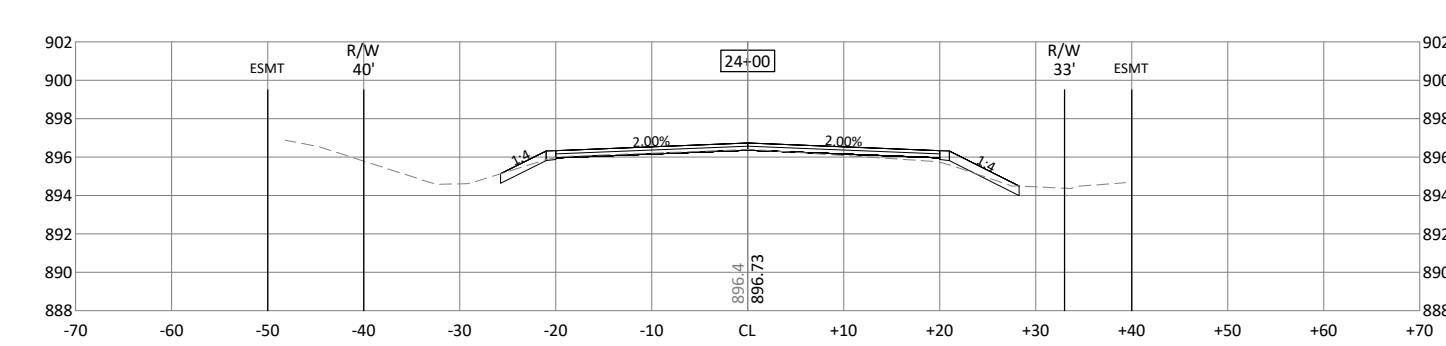
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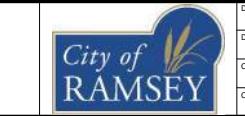
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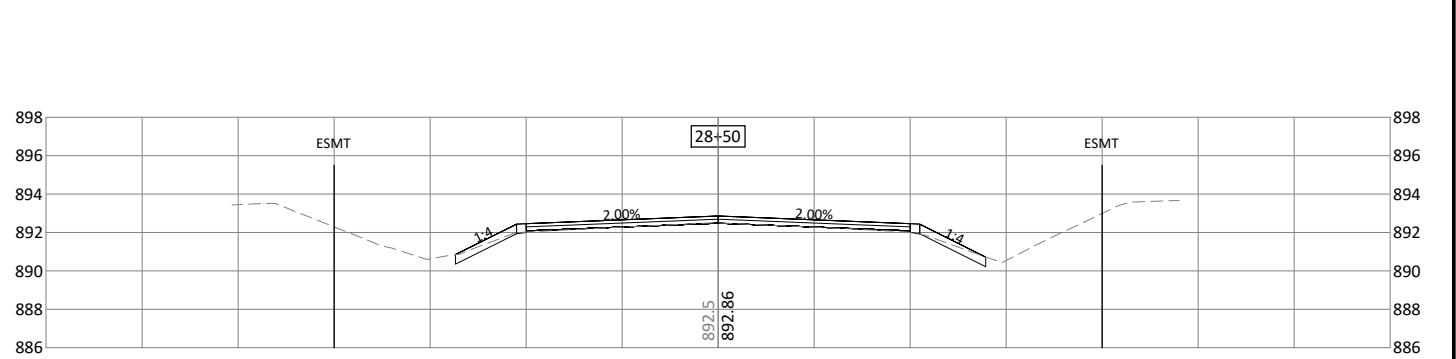
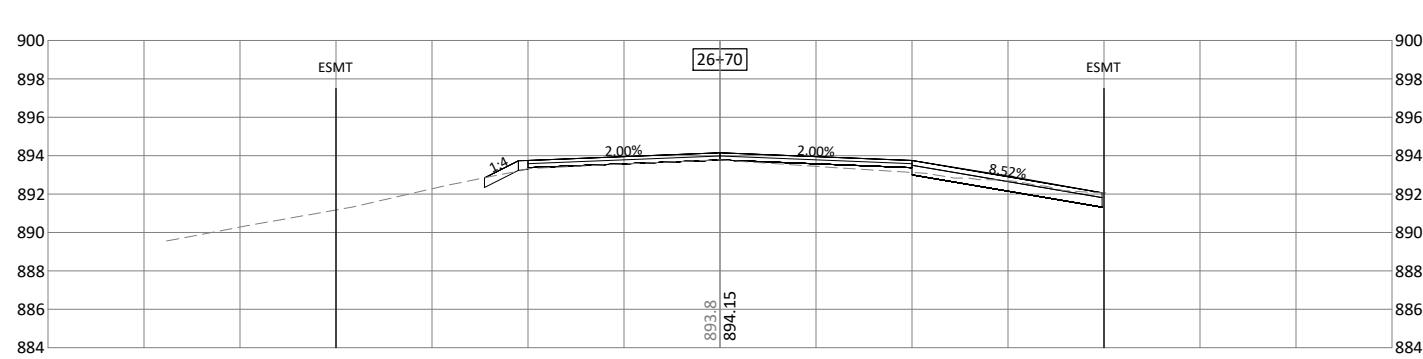
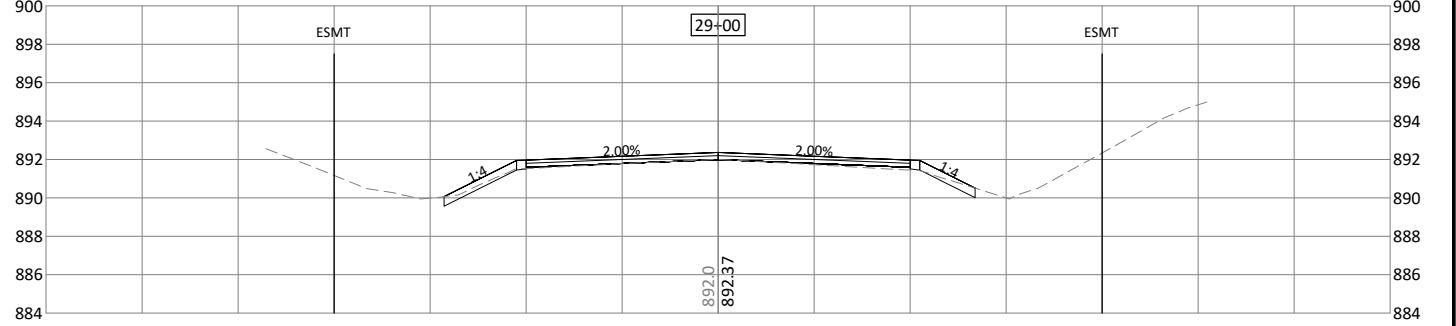
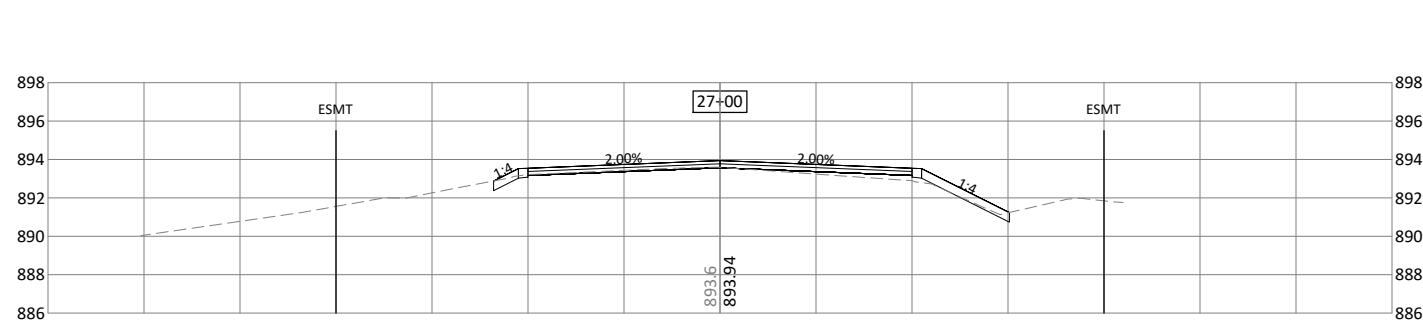
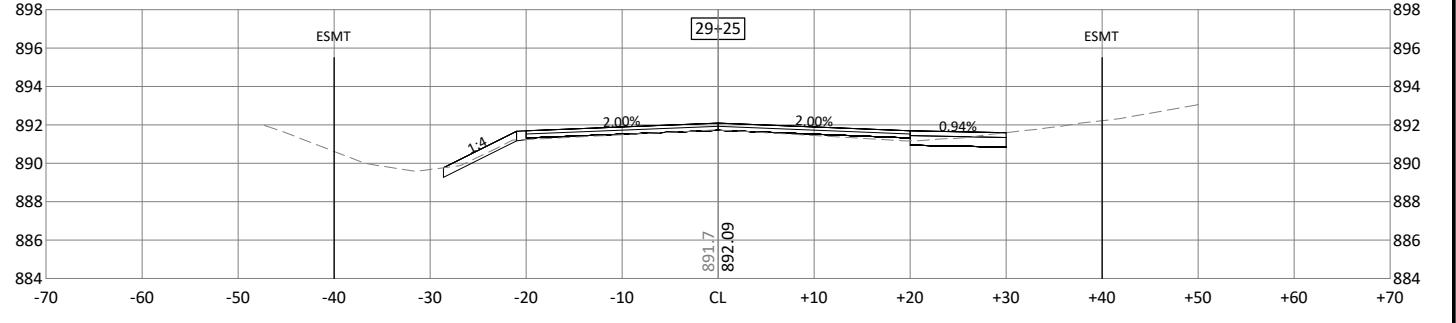
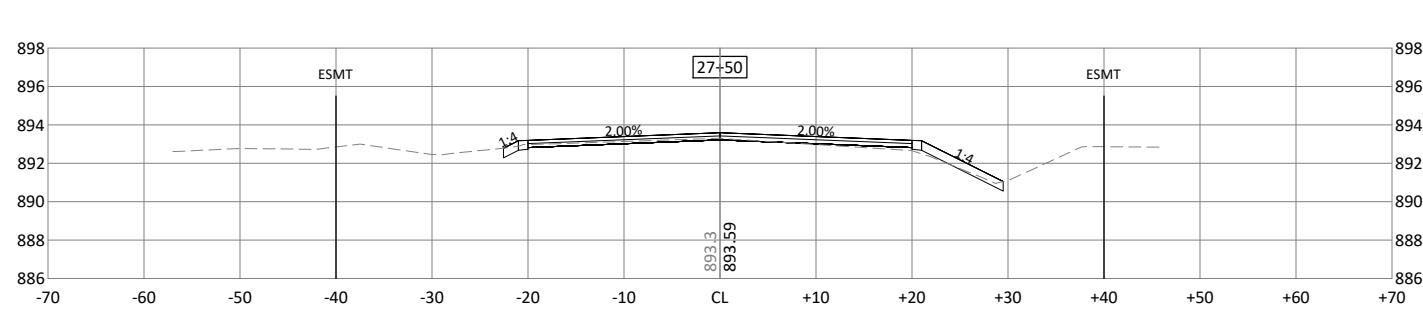
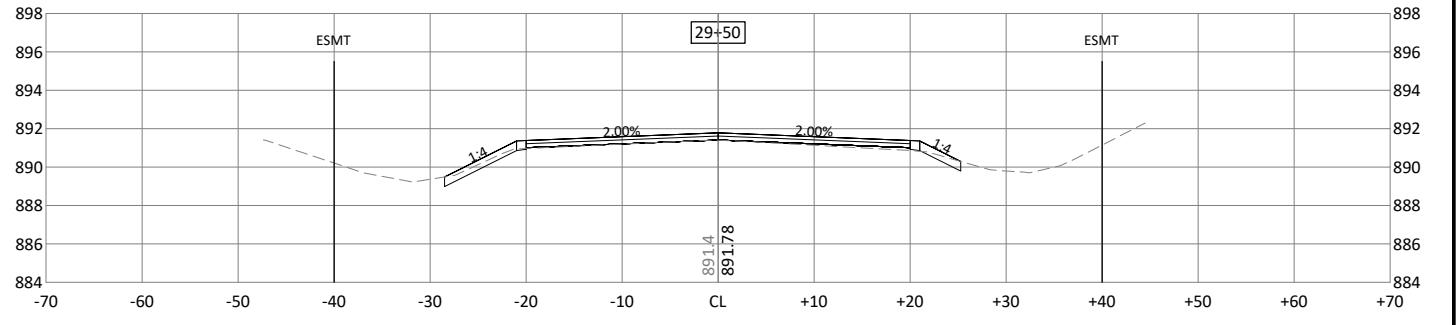
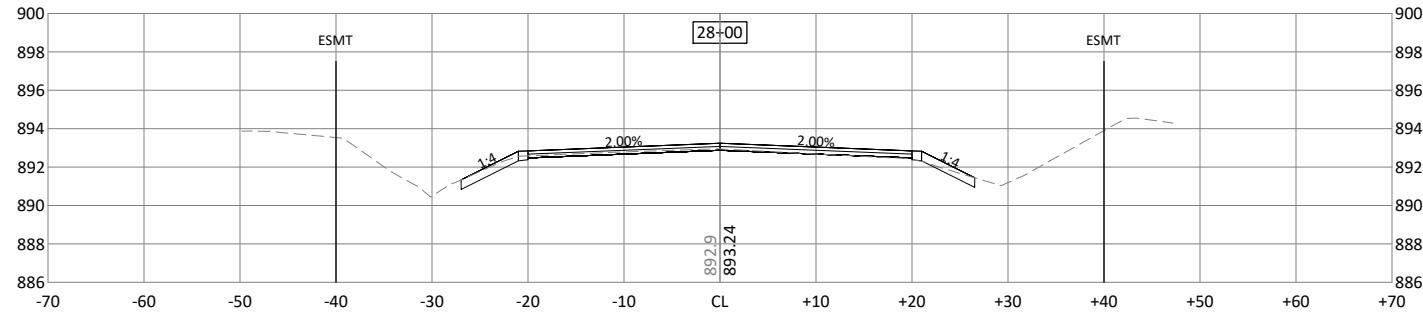
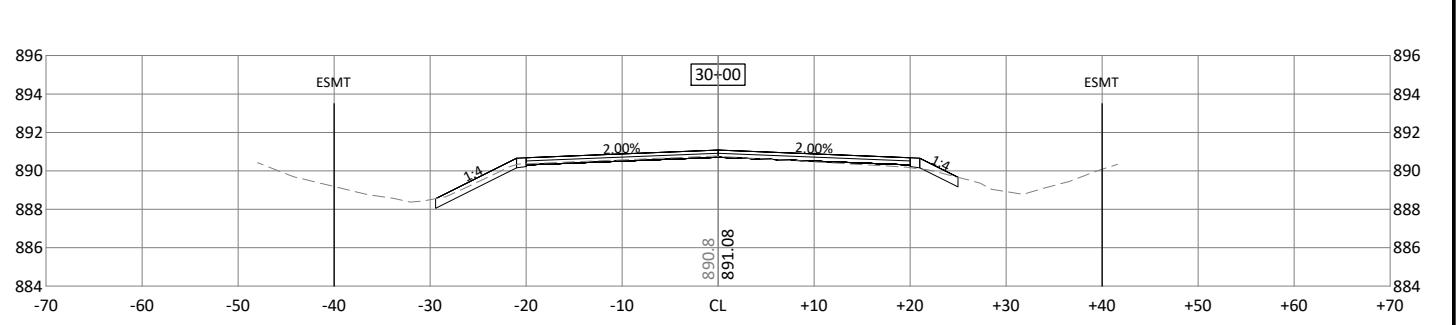
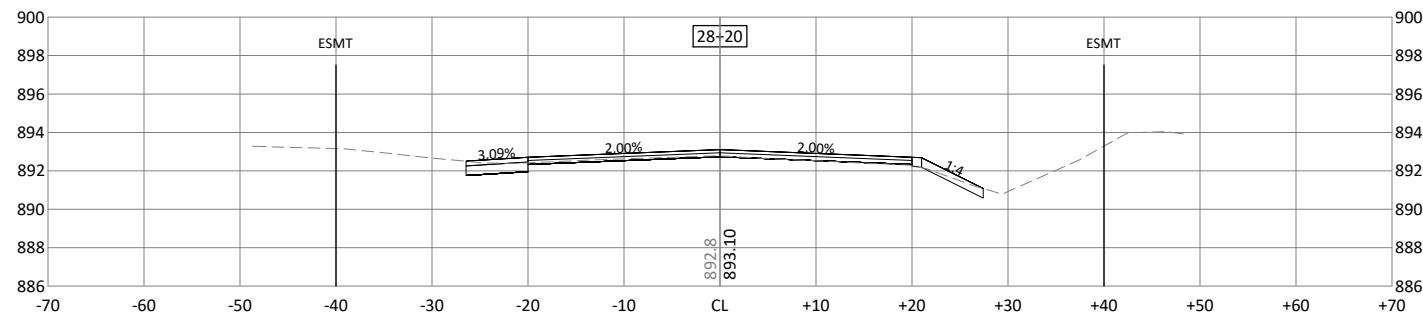
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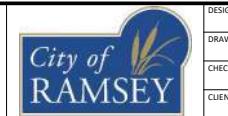
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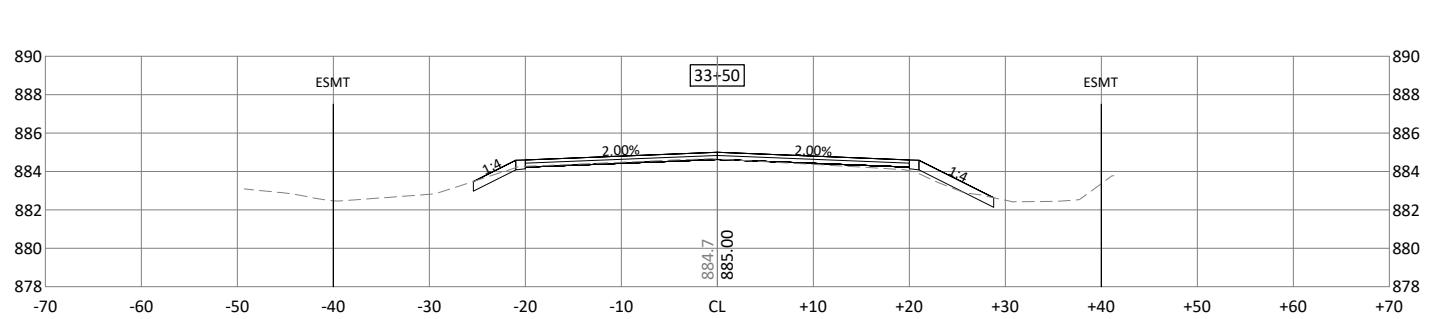
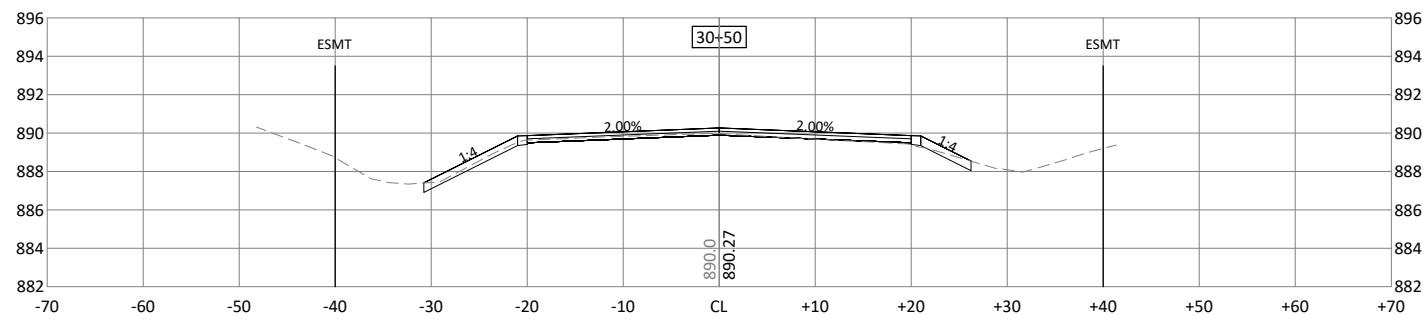
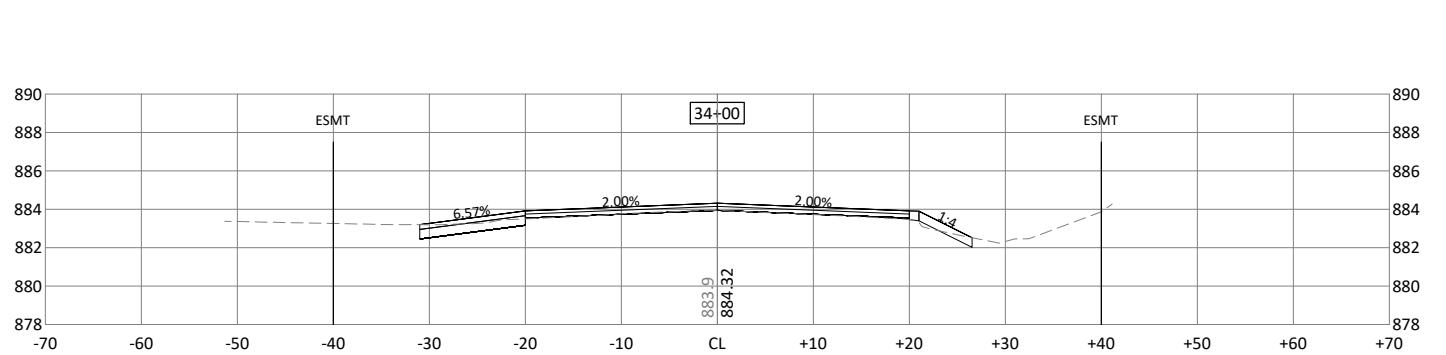
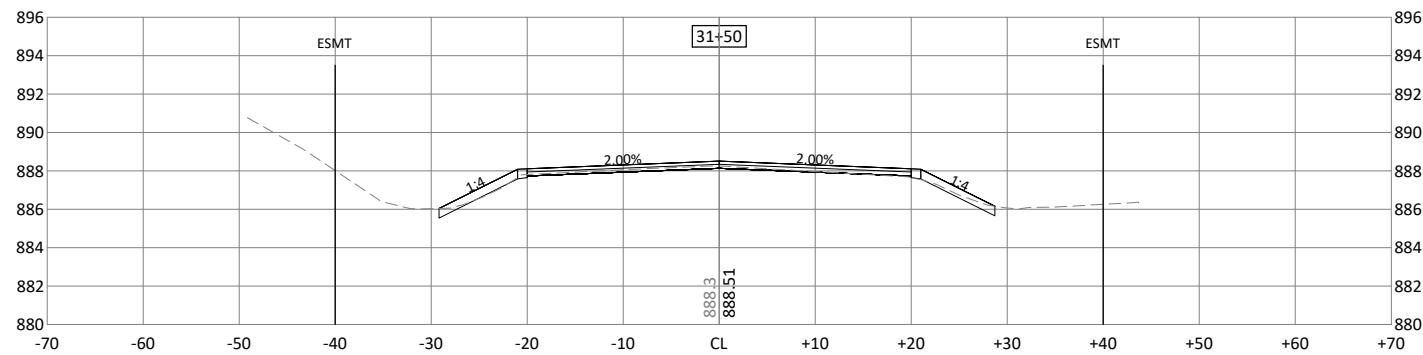
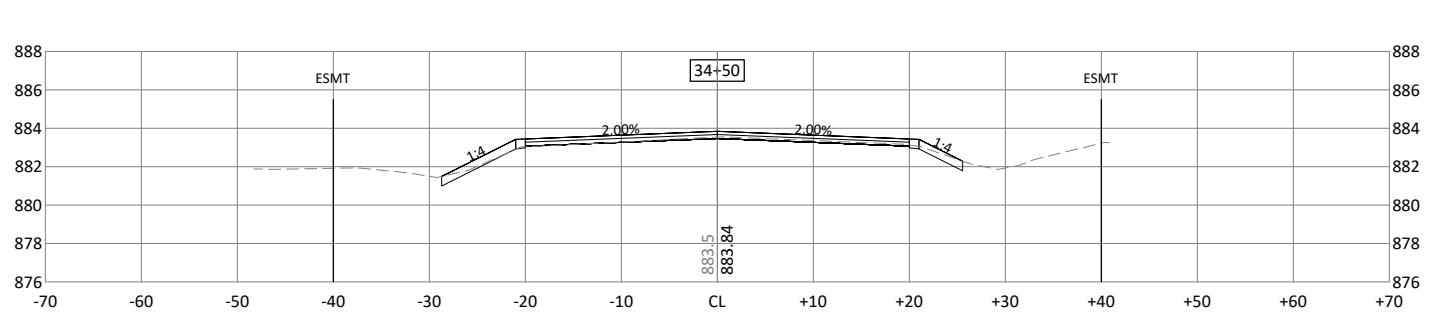
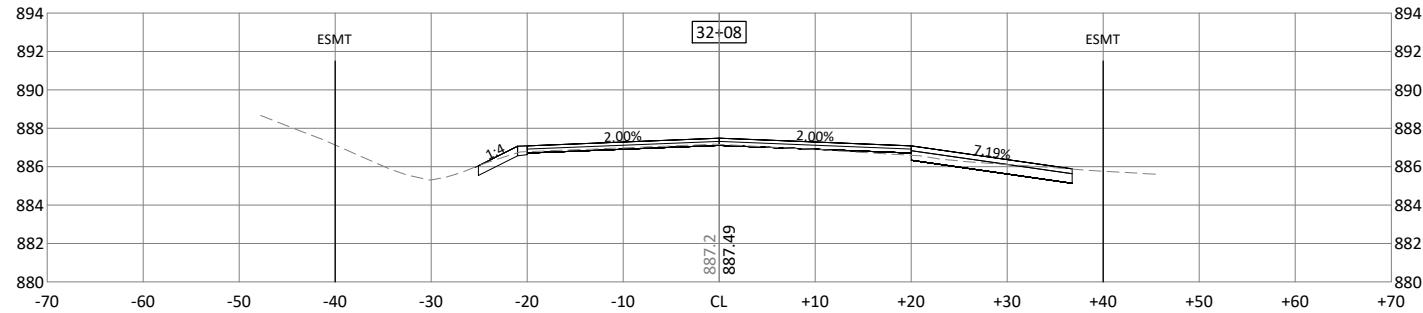
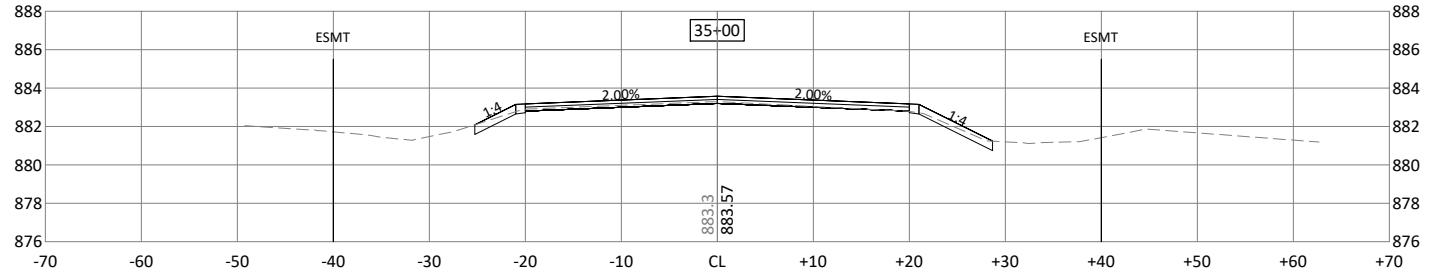
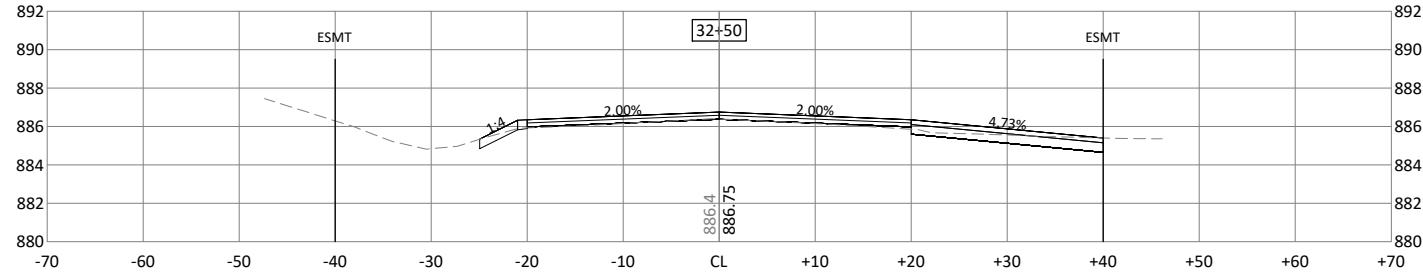
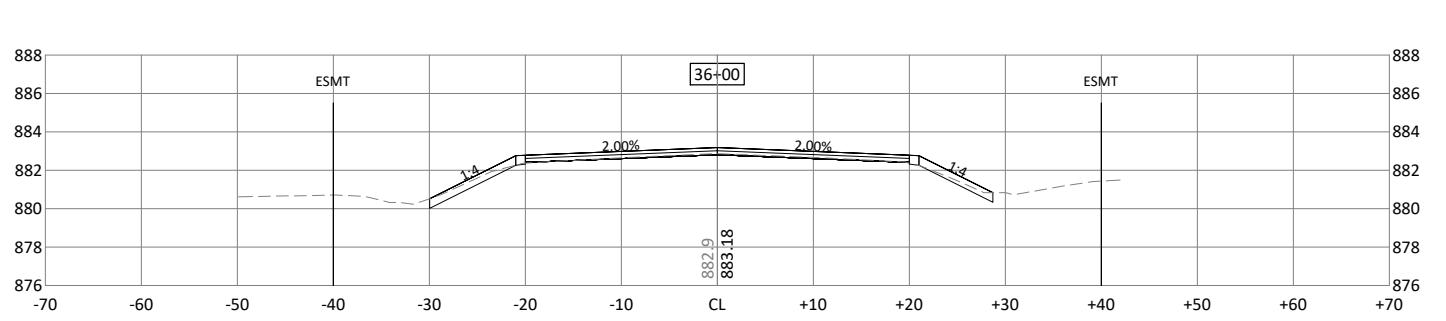
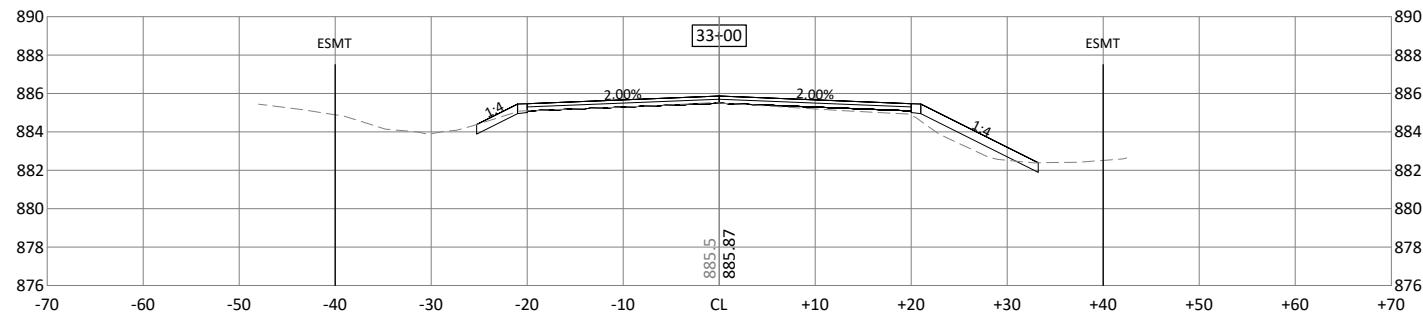


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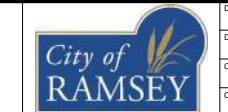
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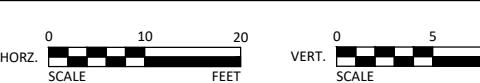
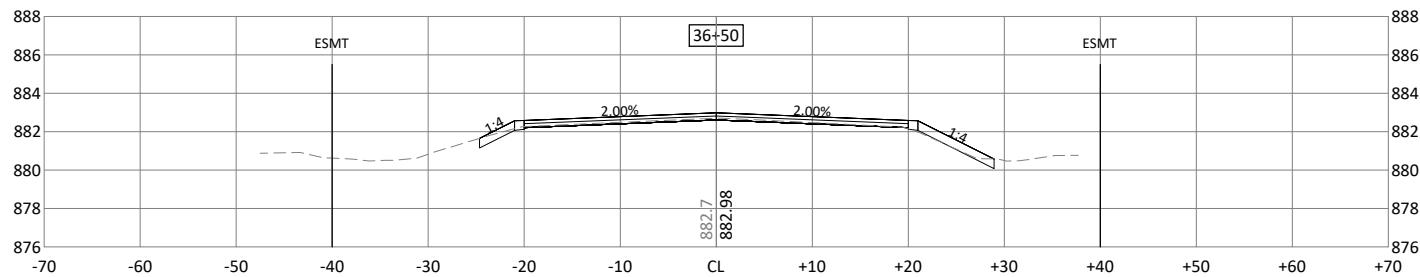
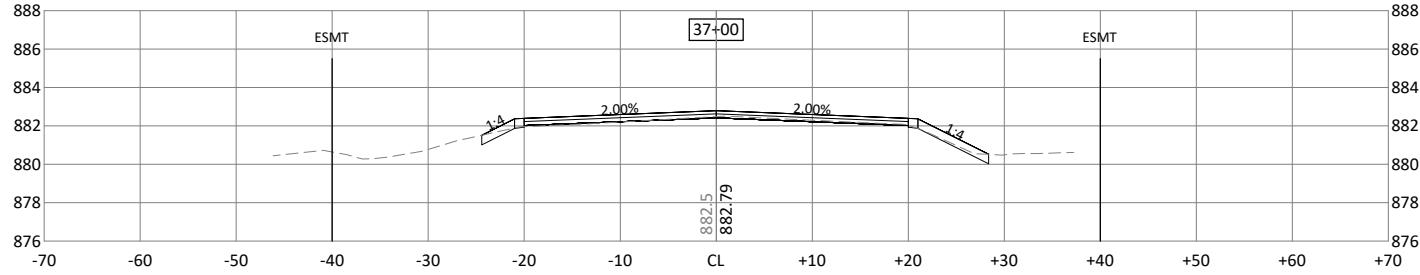
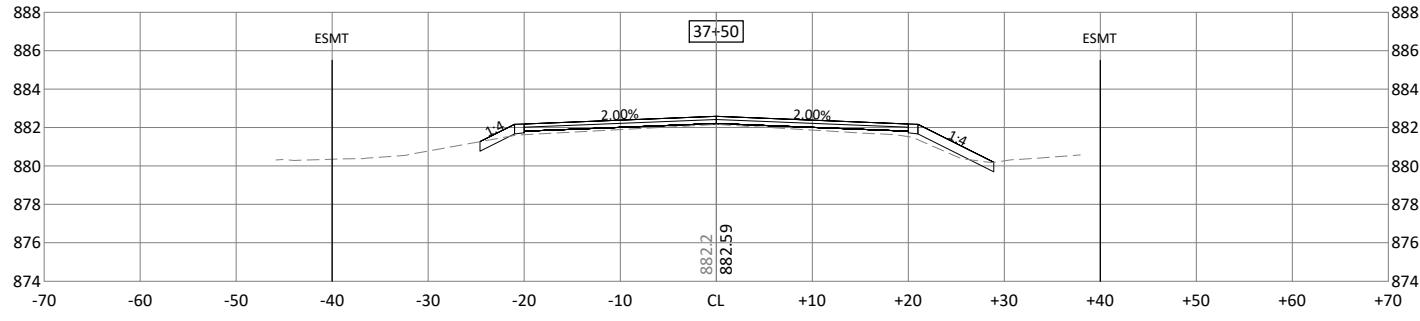
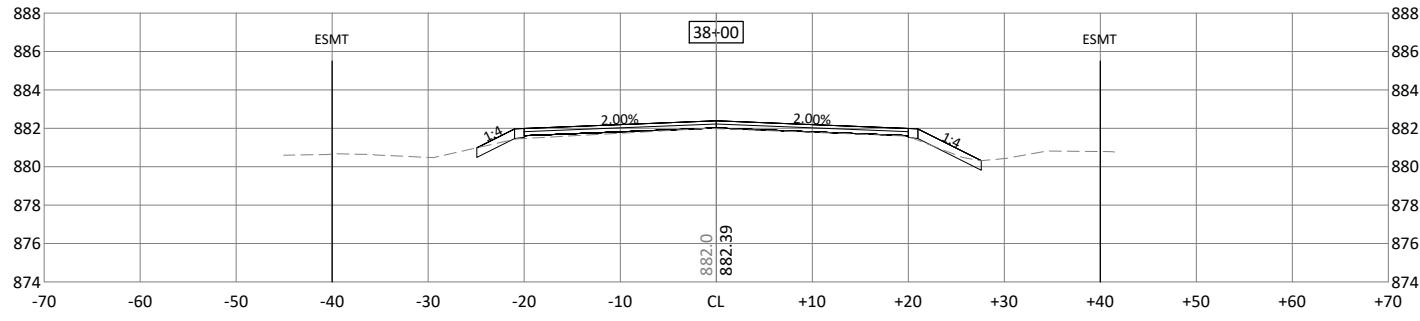
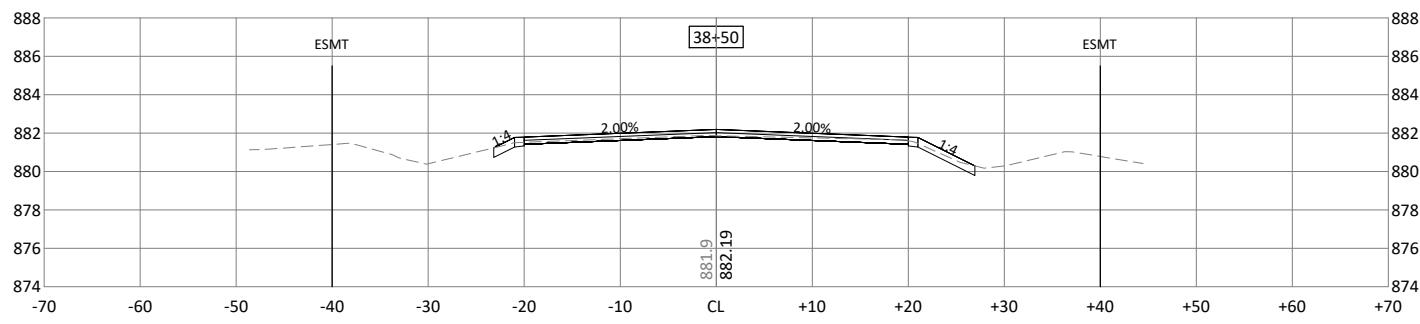
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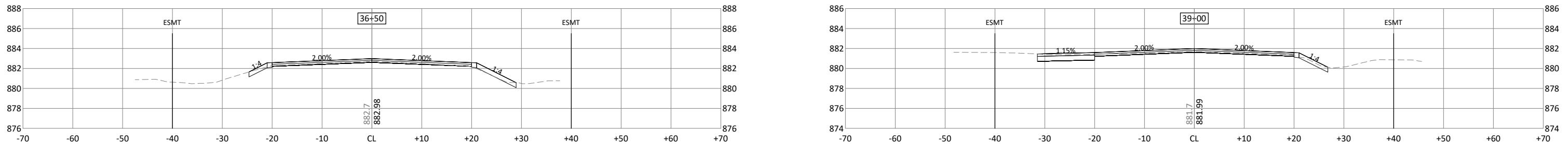
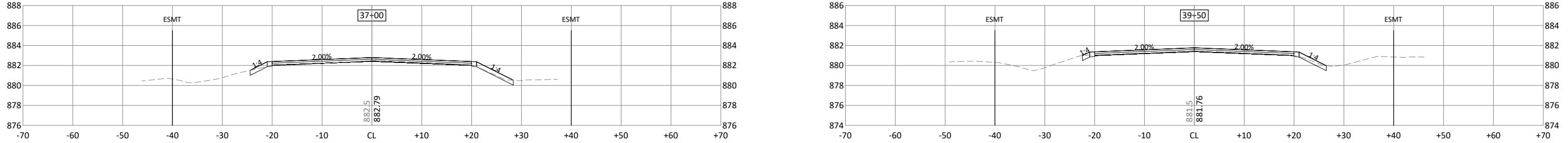
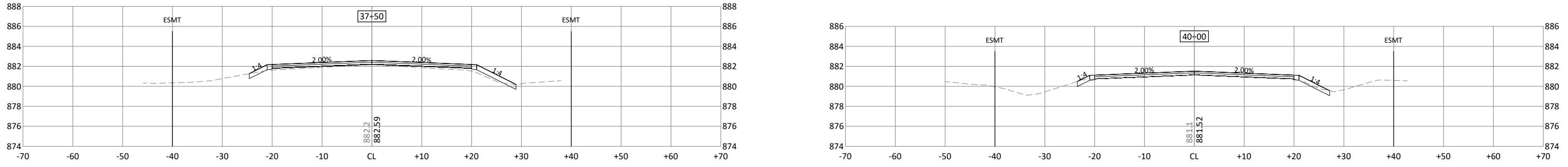
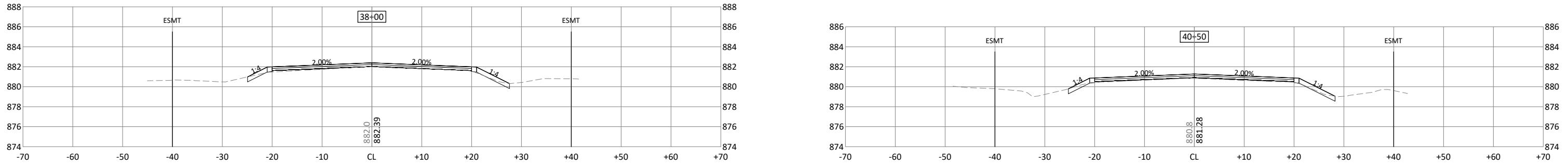
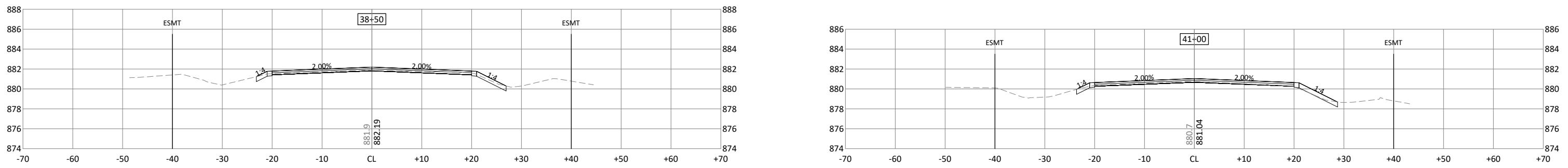


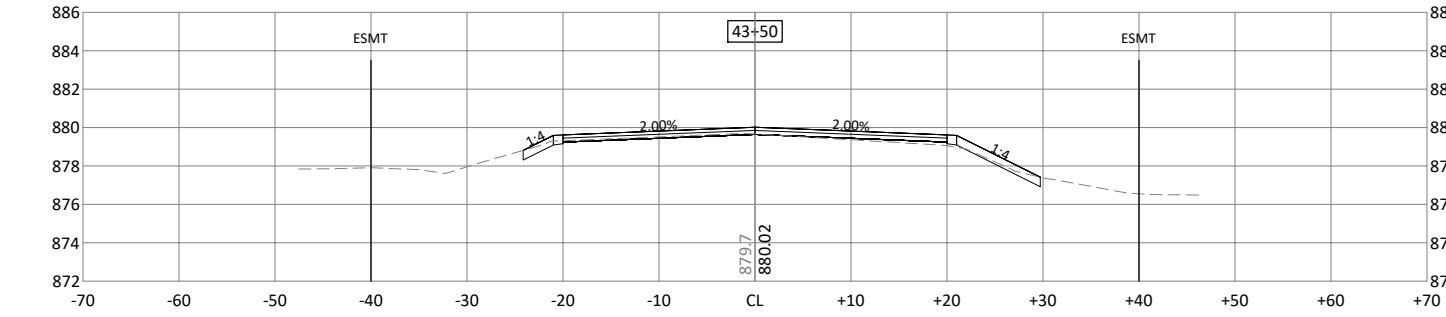
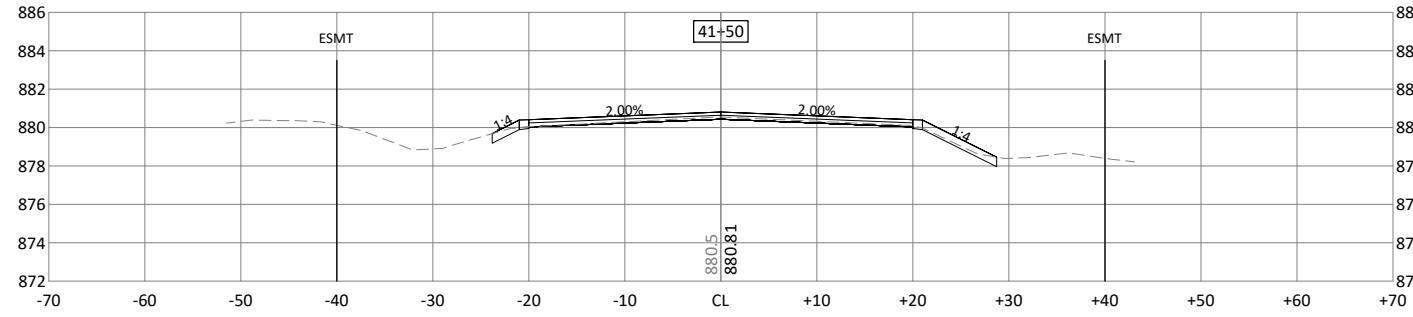
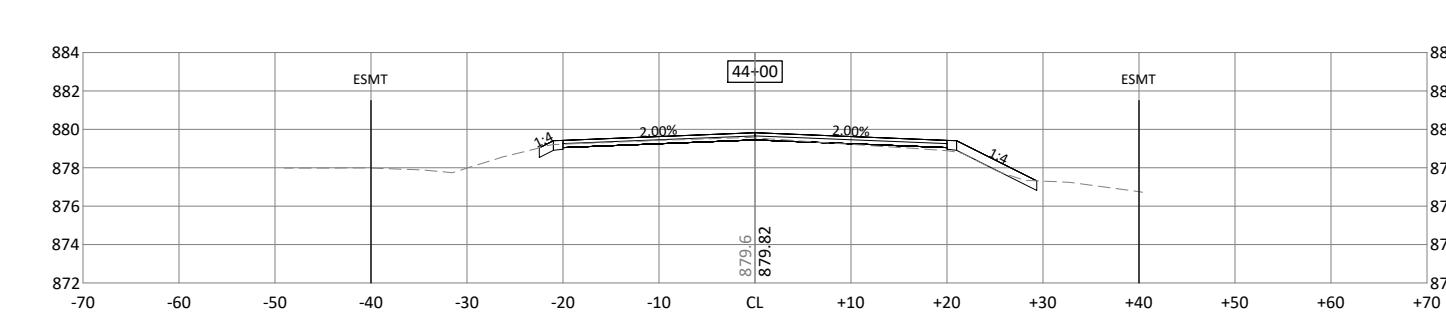
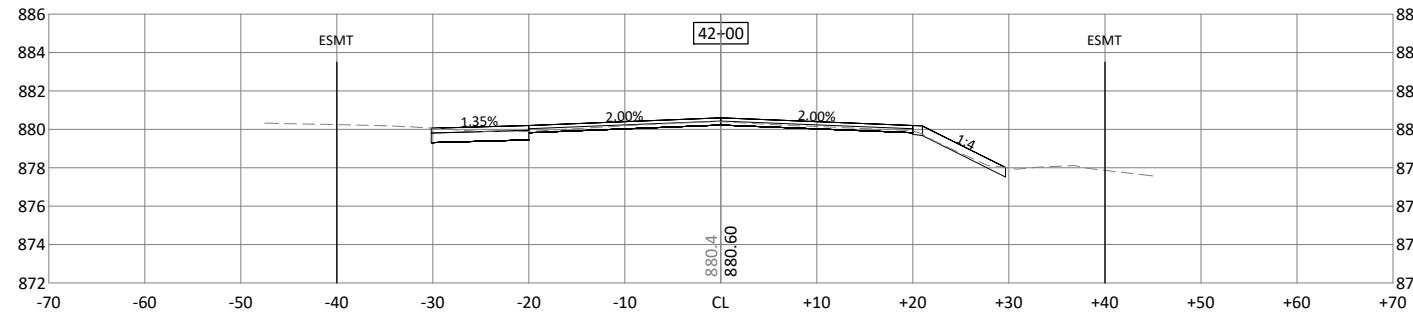
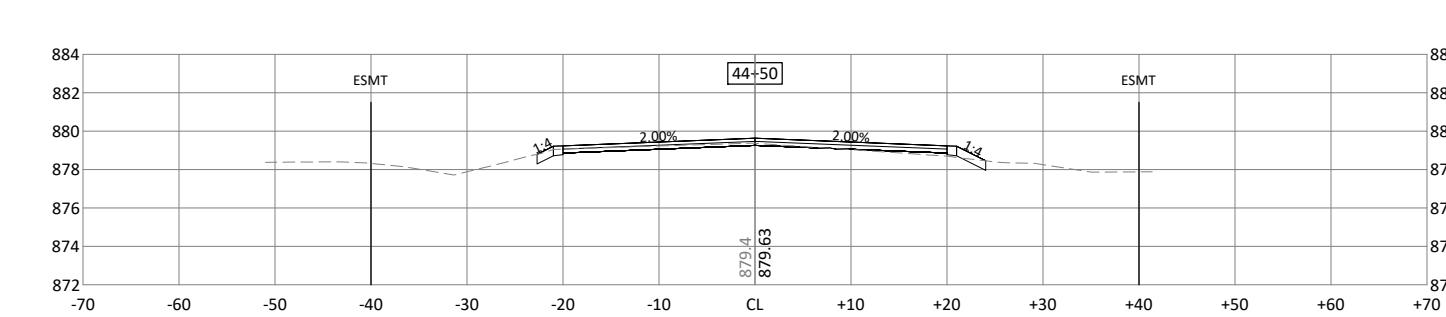
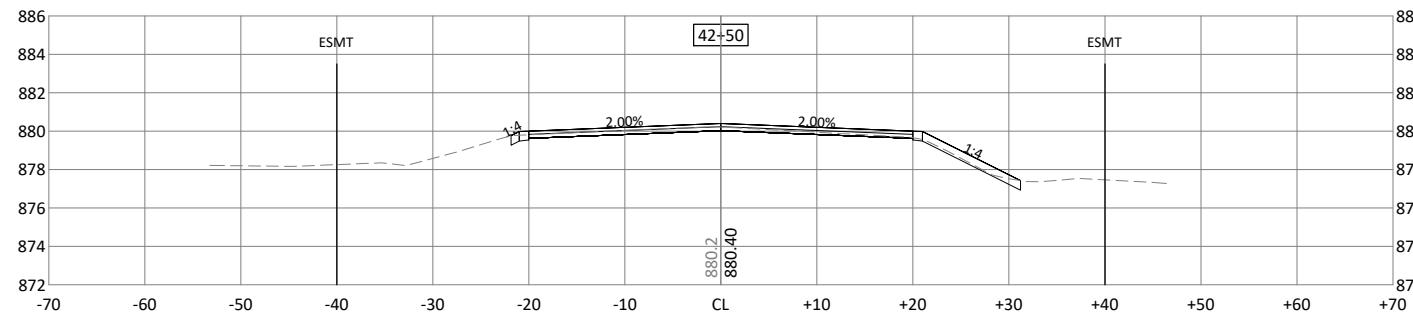
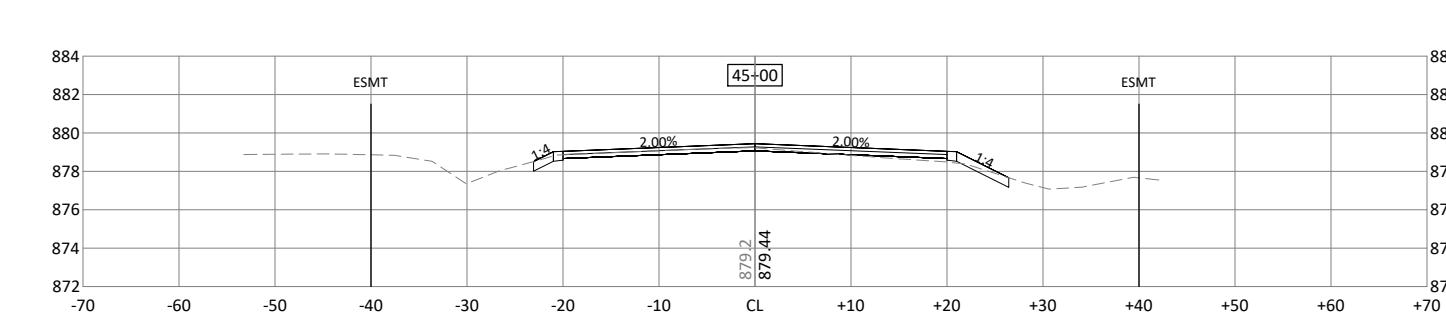
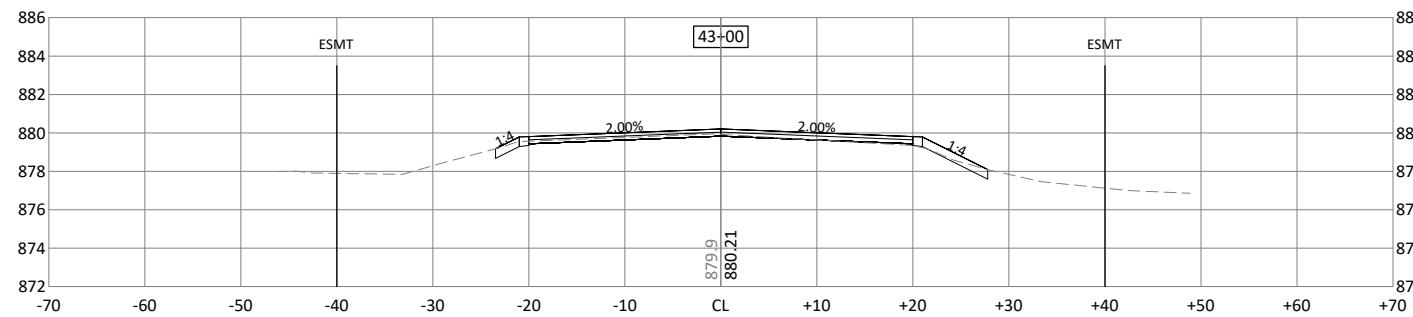
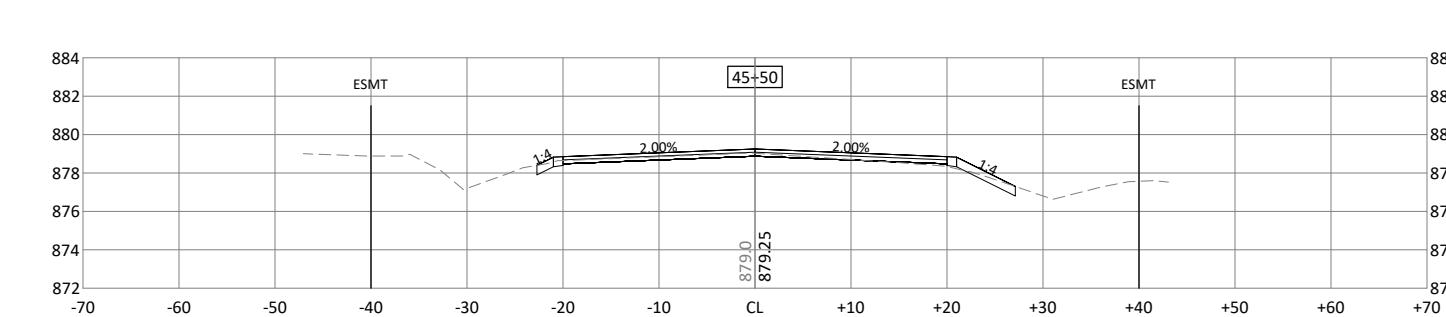
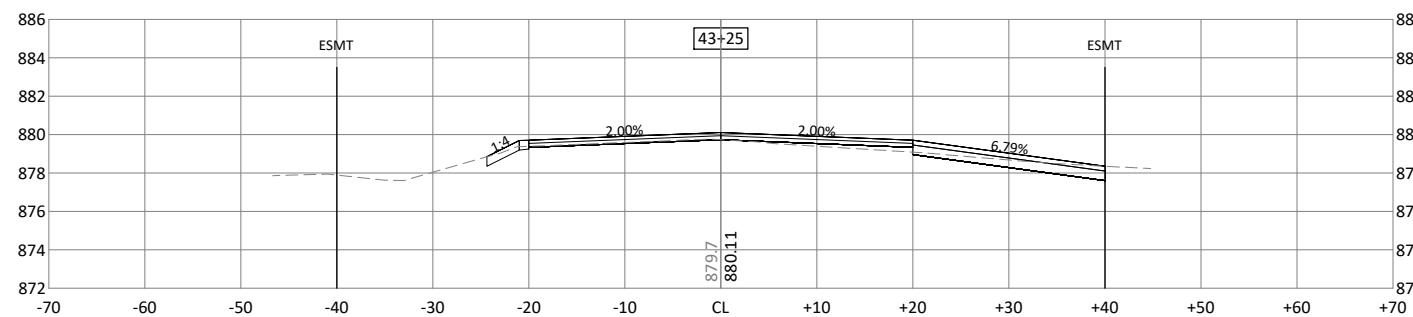
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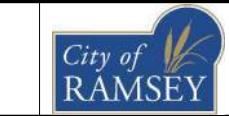
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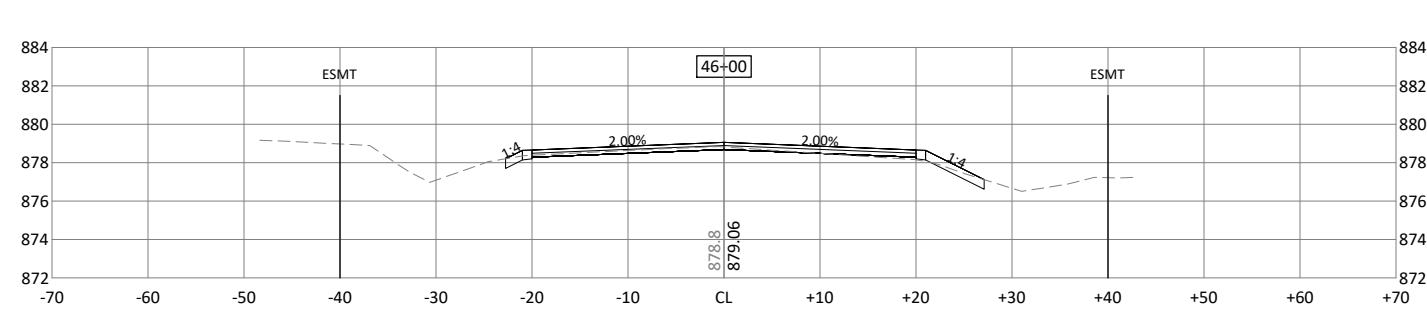
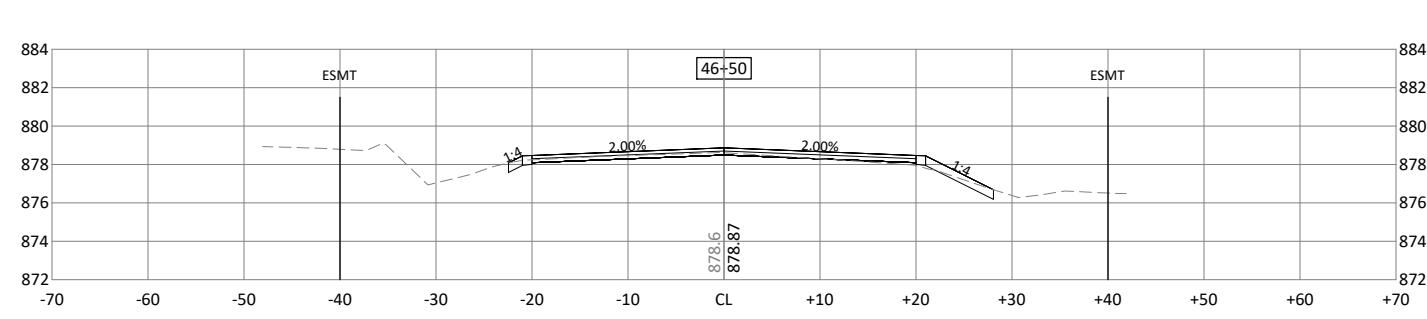
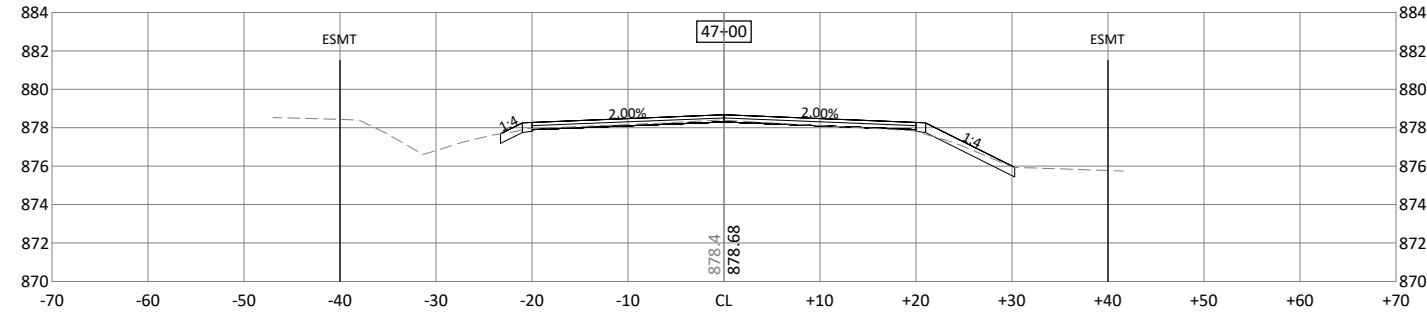
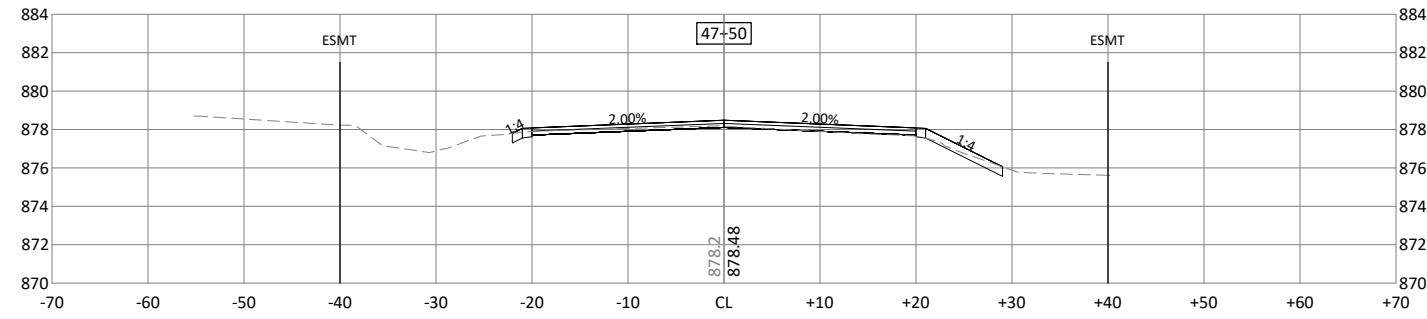
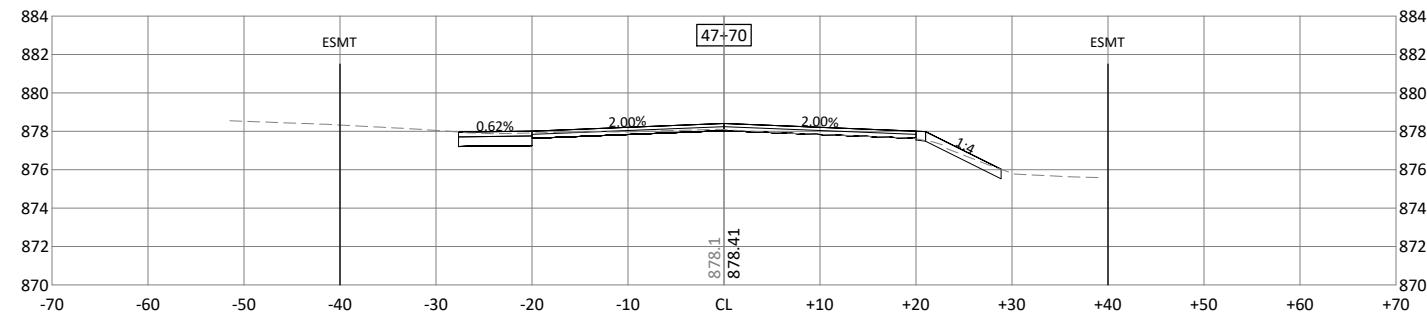


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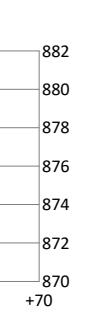
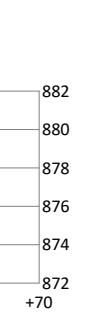
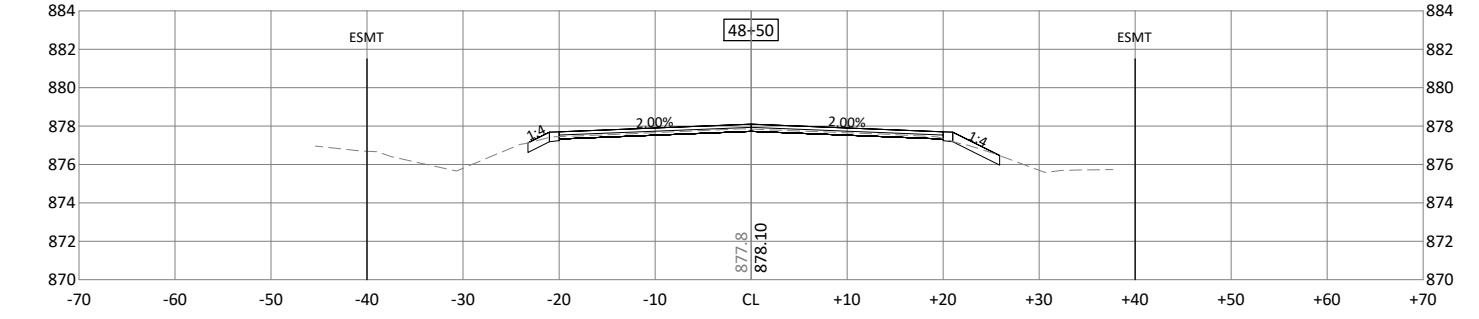
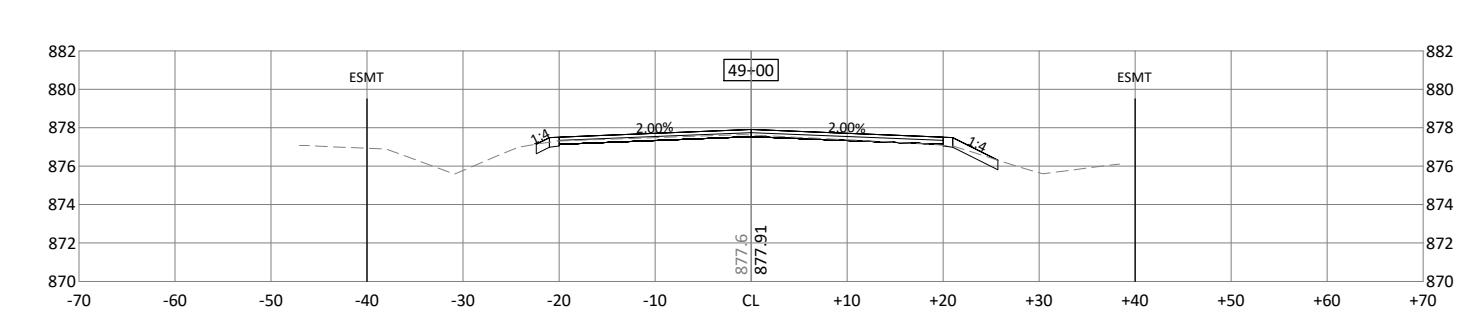
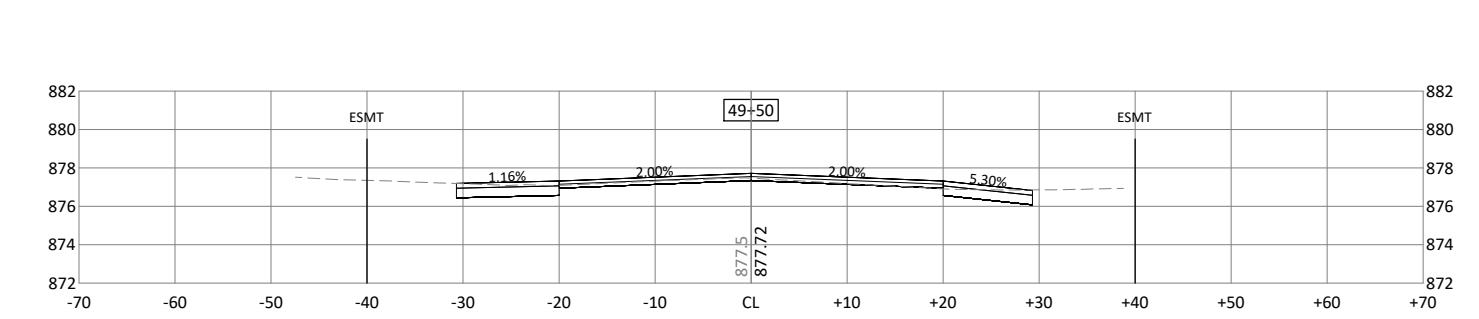
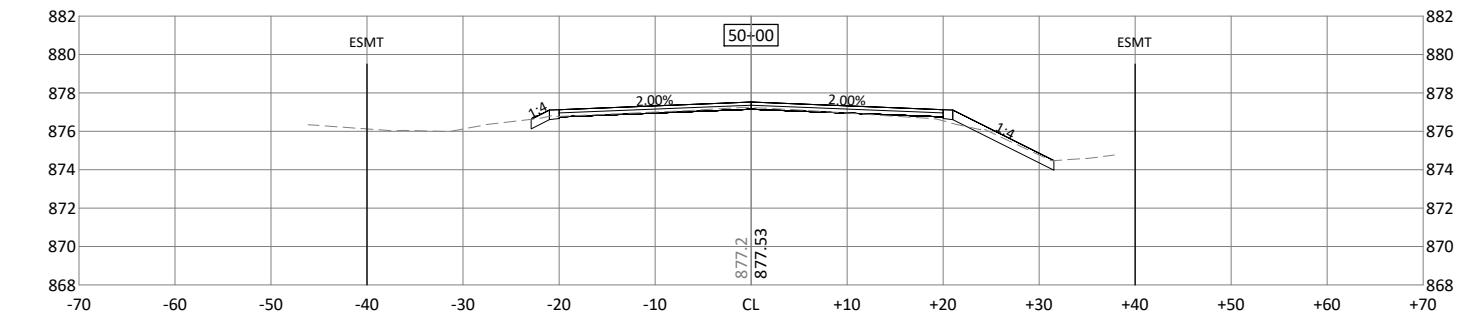


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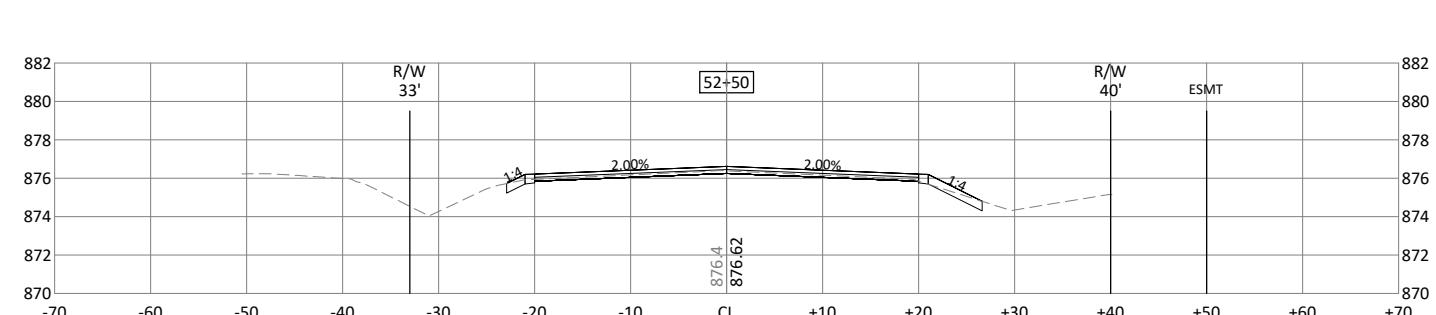
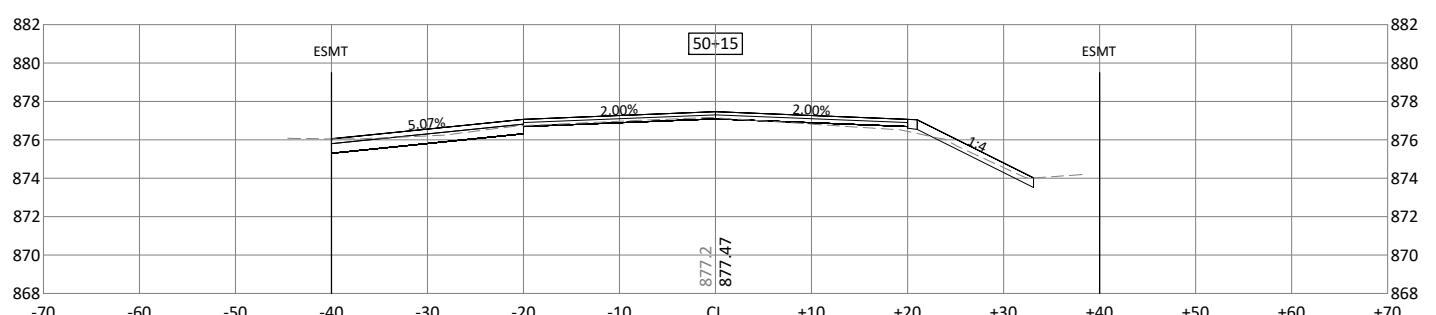
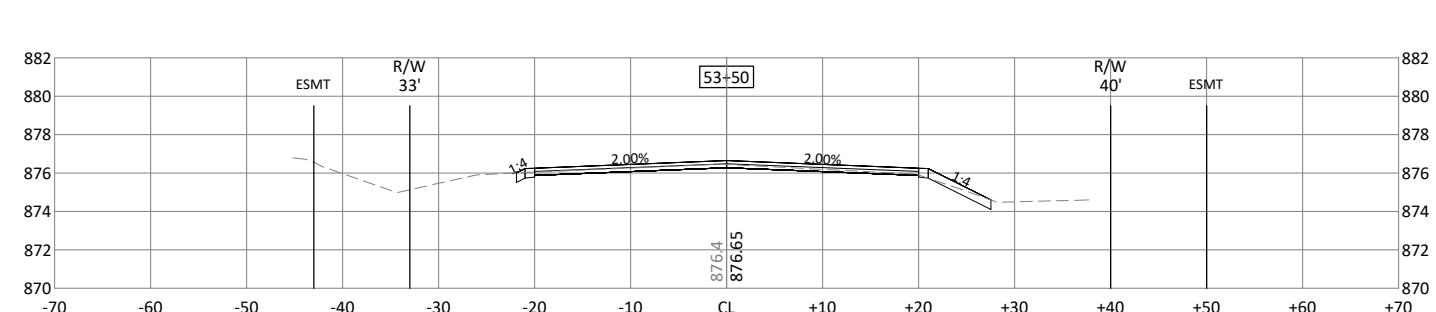
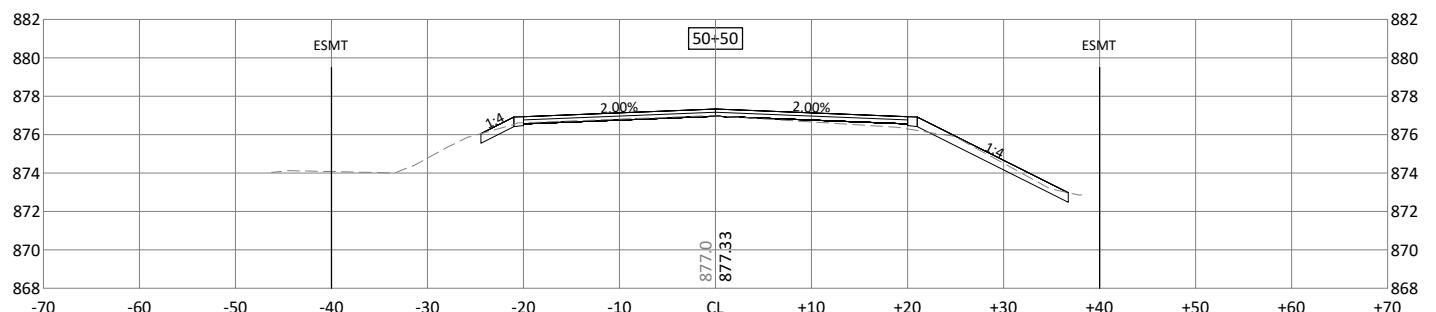
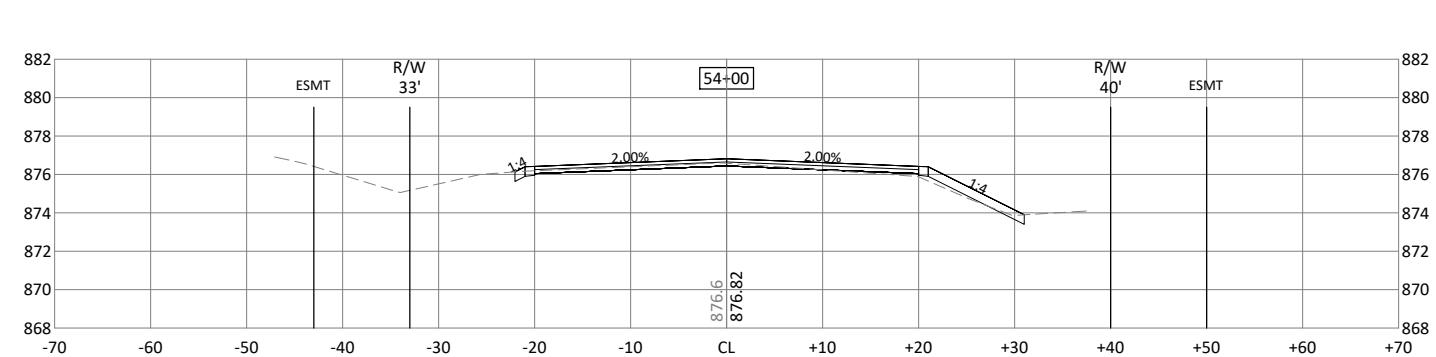
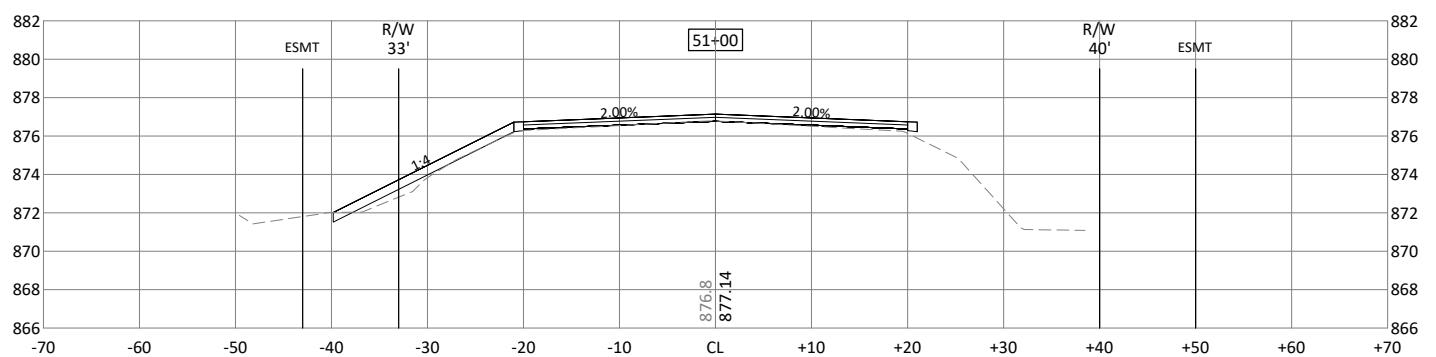
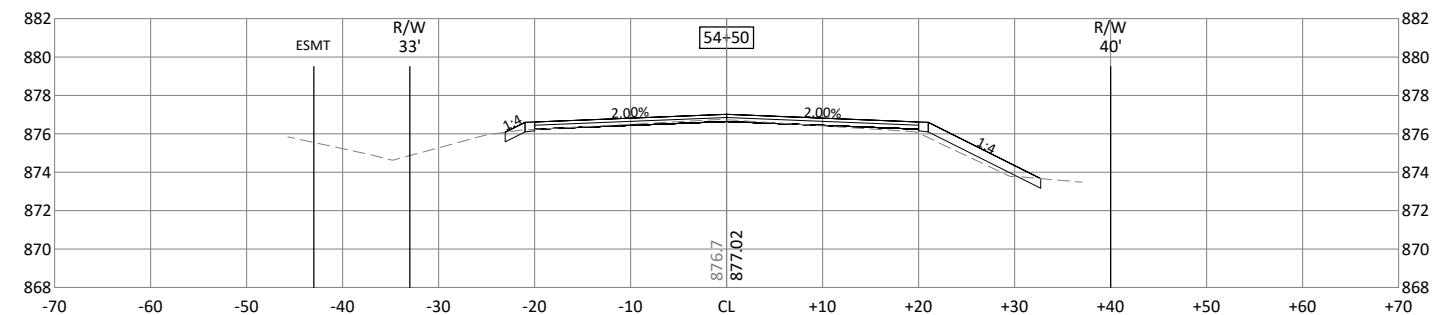
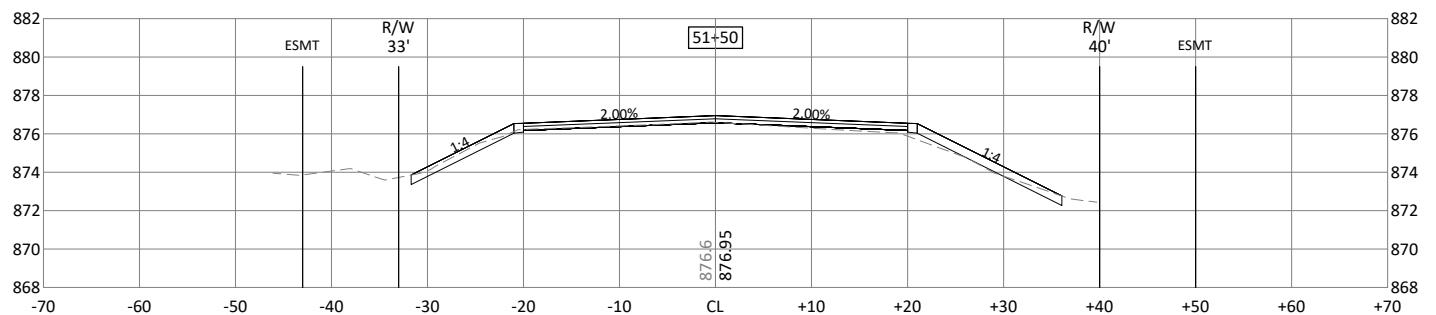
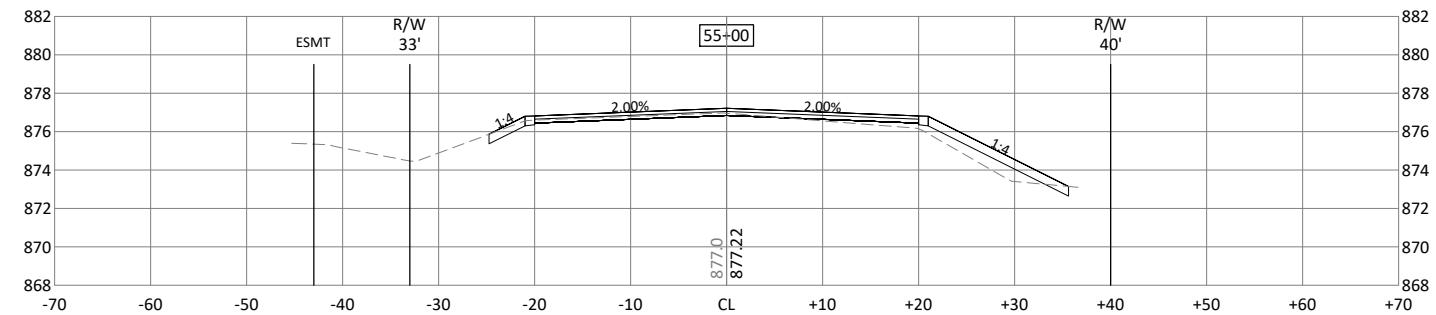
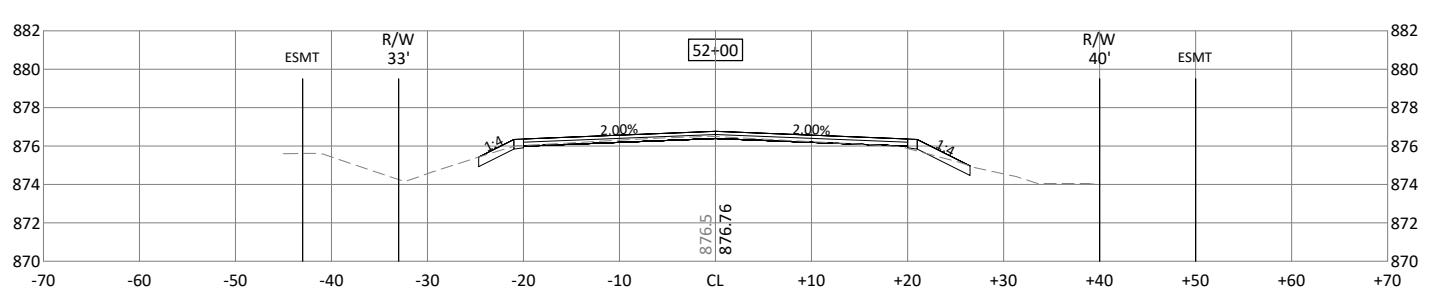


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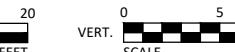


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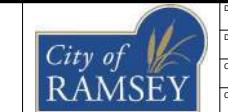
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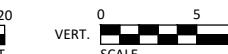
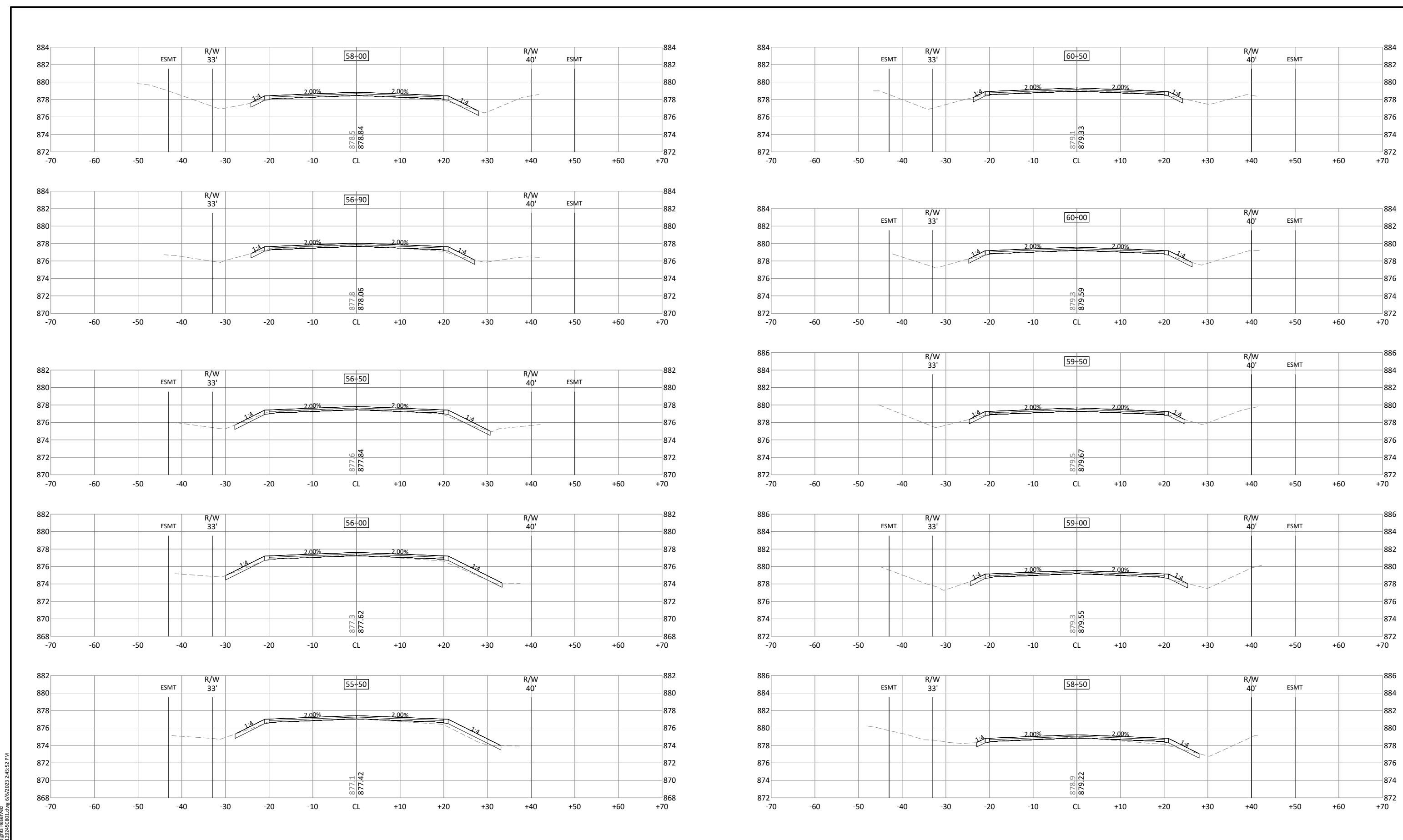
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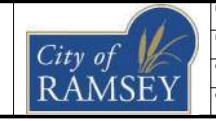
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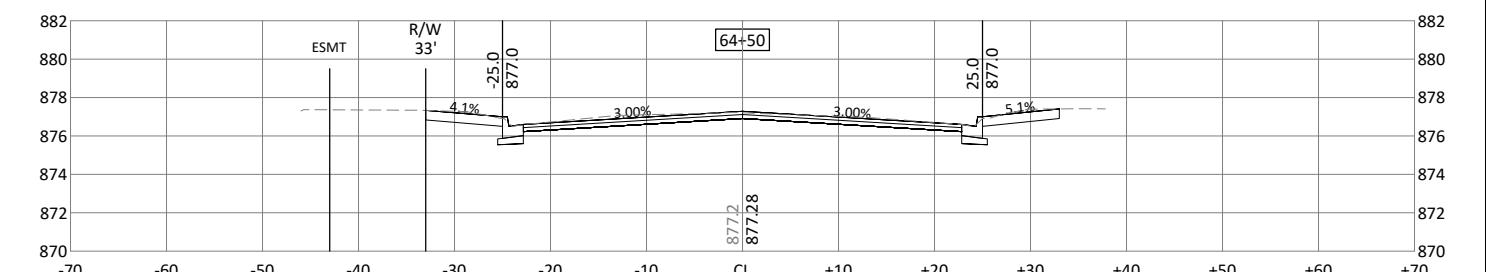
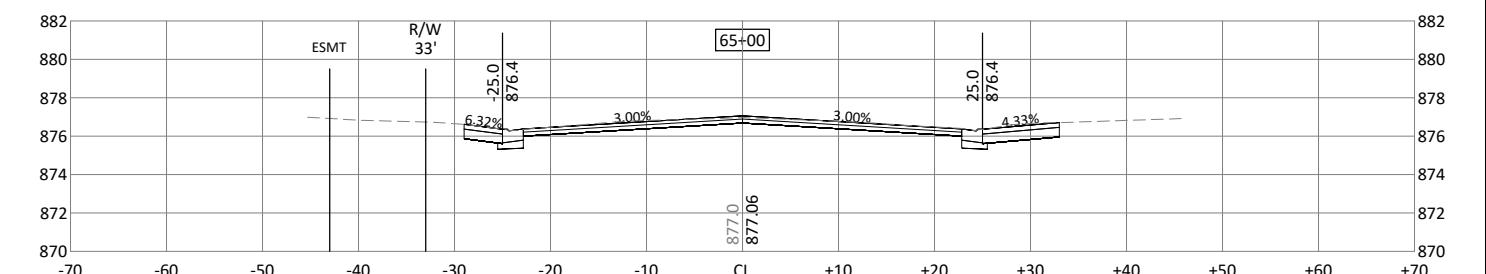
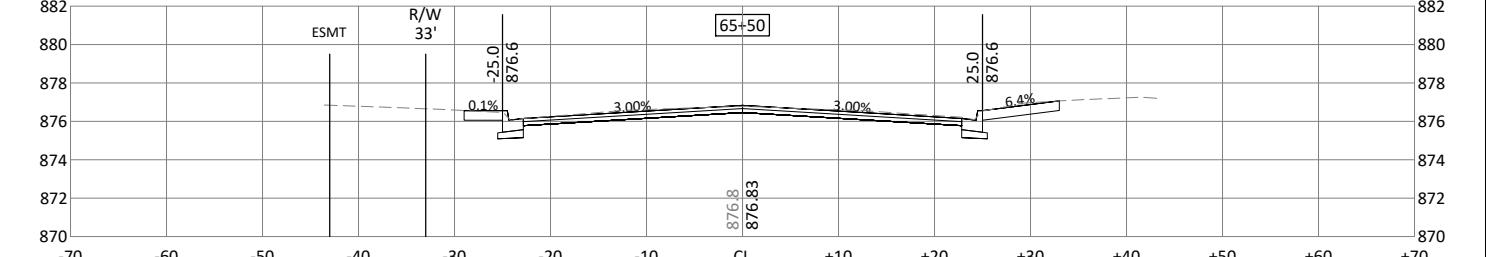
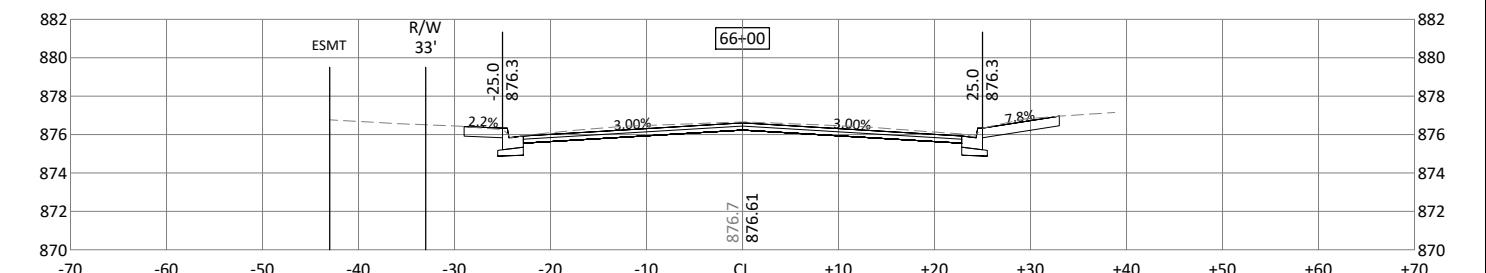
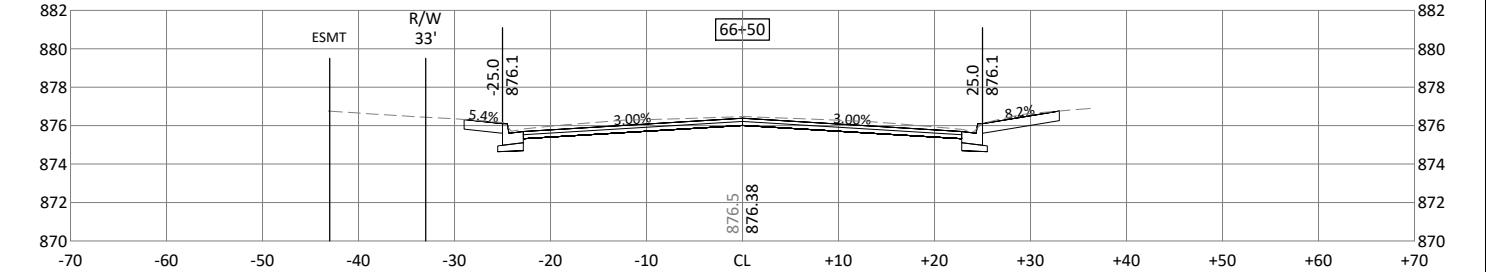
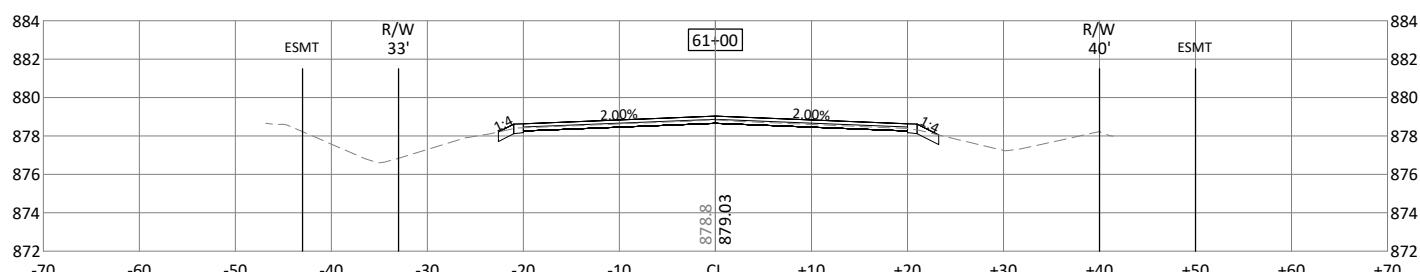
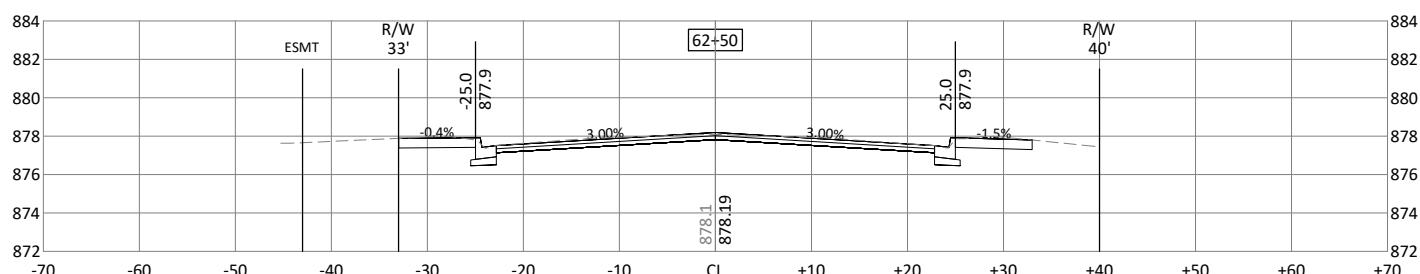
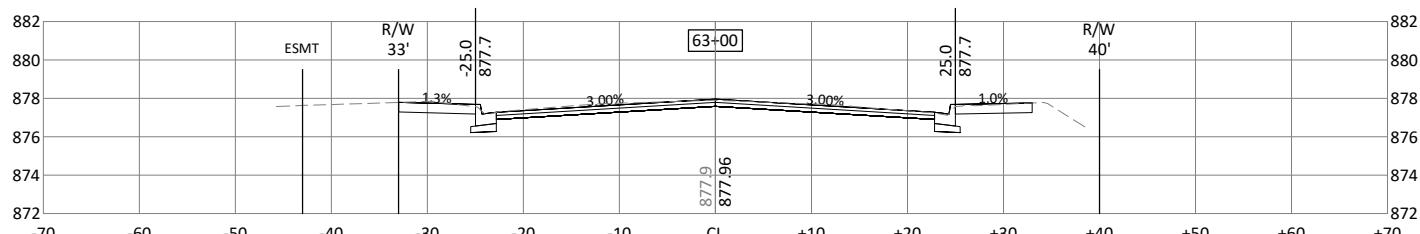
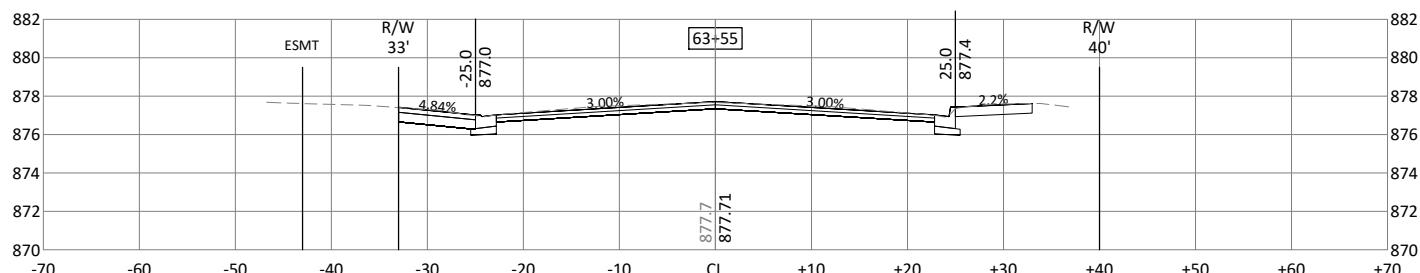
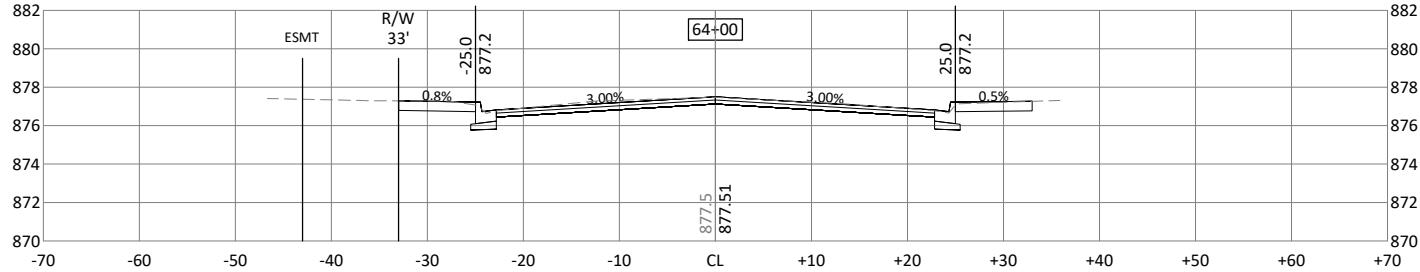


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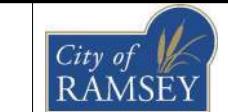
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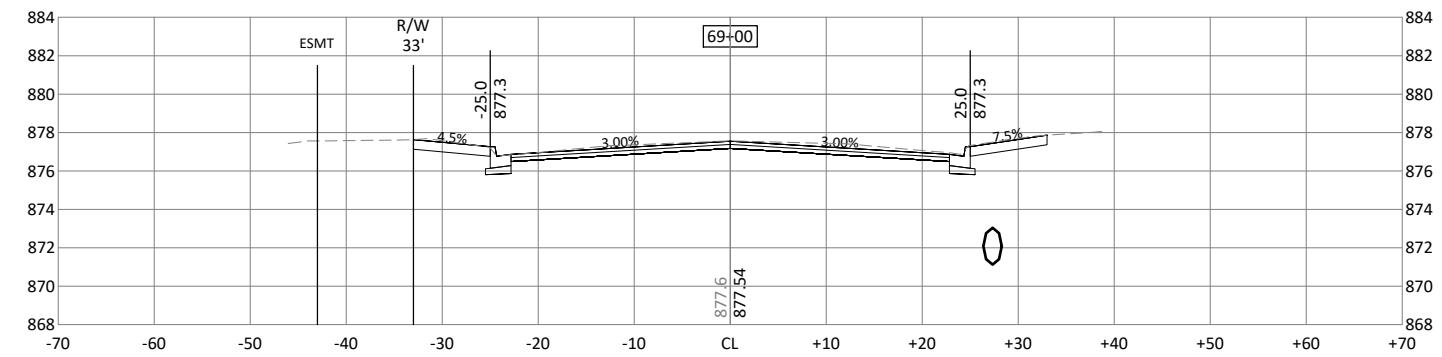
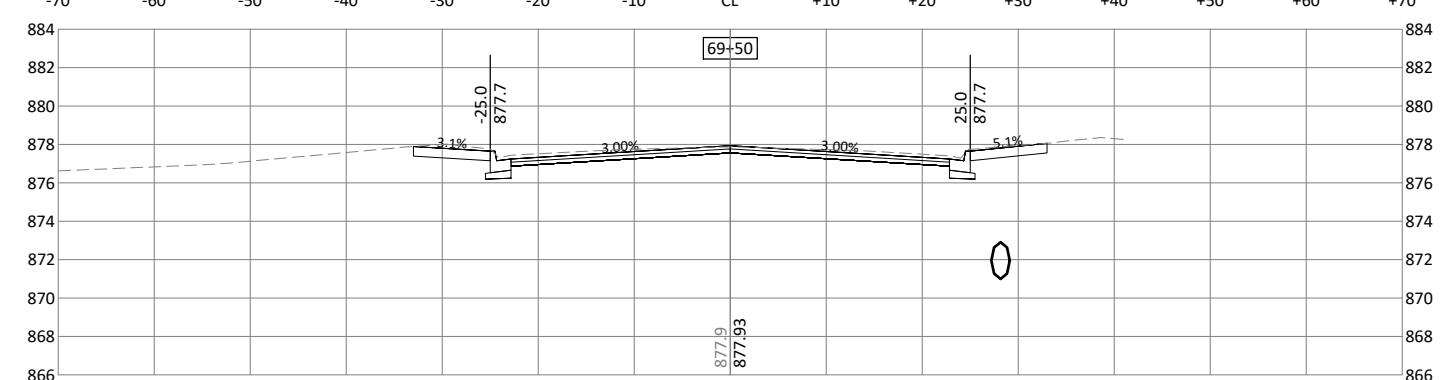
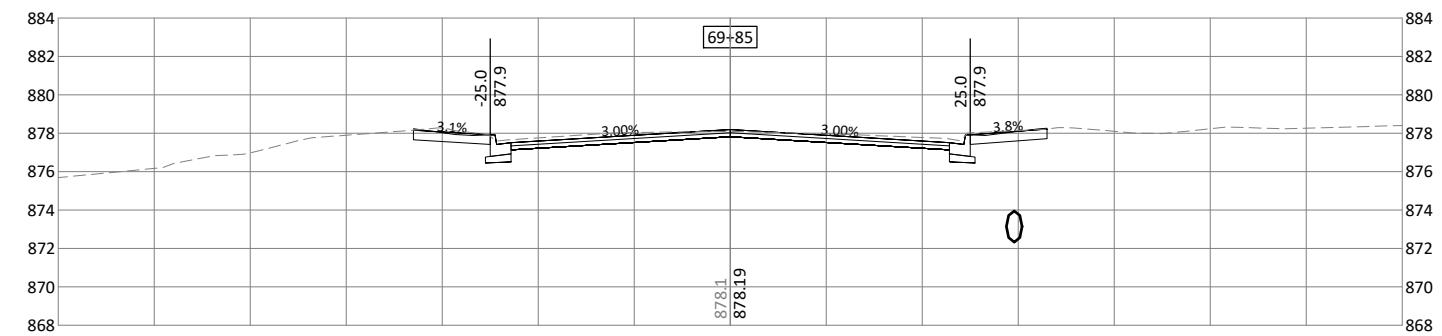
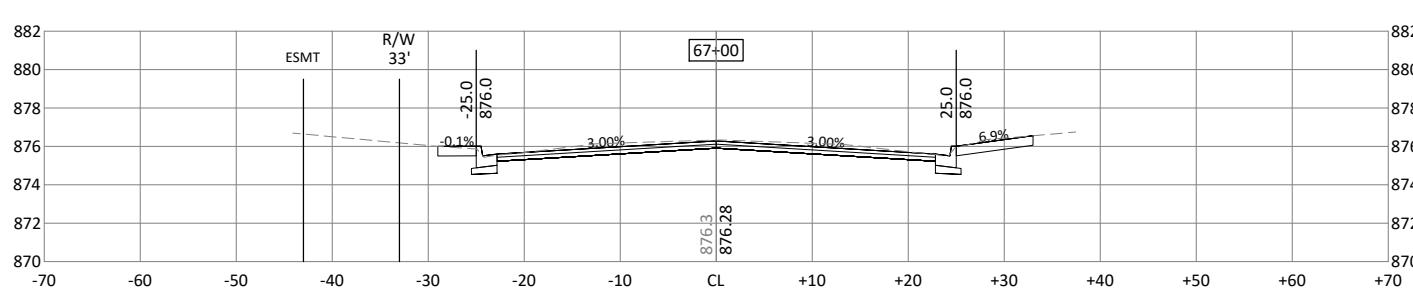
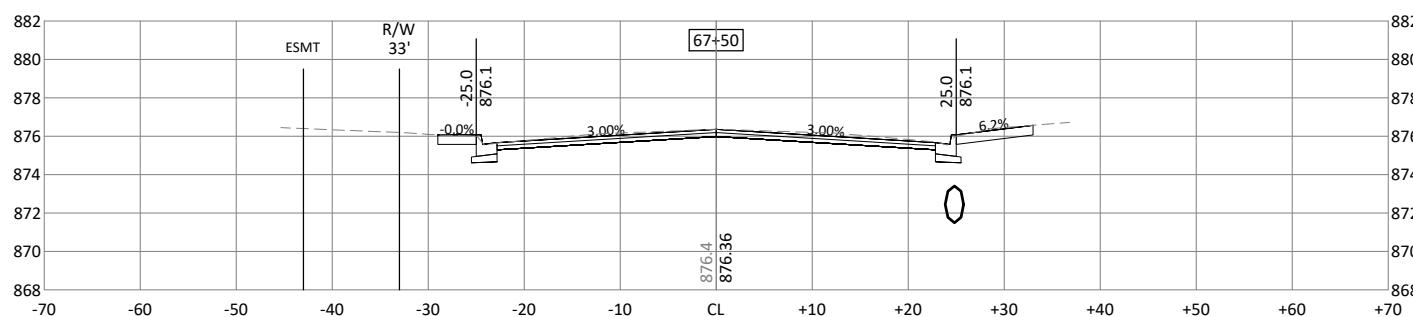
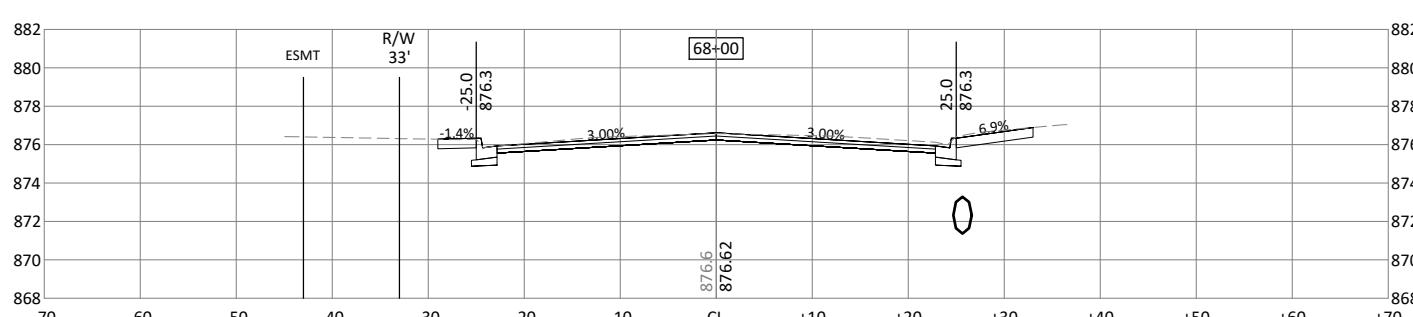
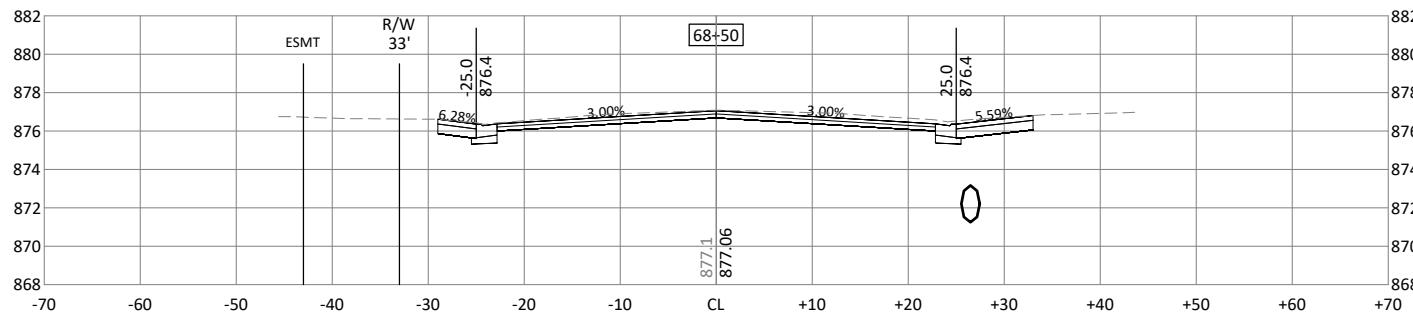
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