MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF RAMSEY
ANOKA COUNTY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS
CITY IMPROVEMENT PROJECT #20-04

CONSTRUCTION PLAN FOR: GRADING, AGGREGATE BASE, PLANT MIXED BITUMINOUS PAVEMENT, CONCRETE CURB AND GUTTER, BITUMINOUS TRAIL, ADA IMPROVEMENTS, STORM SEWER, SANITARY SEWER, WATER MAIN, LANDSCAPING AND RELATED APPURTENANCES

S.A.P. 199-109-007 LOCATED ON PUMA STREET NW FROM 1,060' SOUTH OF ALPINE DRIVE NW TO ALPINE DRIVE NW

DESIGN DESIGNATION	PUMA STREET NW
STA 0+35.00 TO STA 14+37.00	
FUNTIONAL CLASSIFICATION	MINOR COLLECTOR
R-VALUE	25
ΣN-18	422,000
NO. & WIDTH OF TRAFFIC LANES	2 & 12 ft
NO. & WIDTH OF PARKING LANES	0
ADT (PRESENT YEAR) 2020	1,080
ADT (PROJECTED YEAR) 2040	3,780
HCADT (PROJECTED YEAR) 2040	6.09%
DESIGN SPEED	30 mph
DESIGN LOAD	10 ton
DESIGN SPEED FOR ROADWAY BASED ON:	
STOPPING SIGHT DISTANCE	
HEIGHT OF EYE = 3.5 FT	
HEIGHT OF OBJECT = 2.0 FT	

DESIGN DESIGNATION	OFF-ROAD TRAIL
STA 0+35.00 TO STA 14+37.00	
FUNTIONAL CLASSIFICATION	BIKE TRAIL
DESIGN SPEED	20 mph
DESIGN SPEED FOR ROADWAY BASED ON:	
STOPPING SIGHT DISTANCE	
HEIGHT OF EYE = 4.5 FT	
HEIGHT OF OBJECT = 0 FT	

PUMA STREET NW (S.A.P. 199-109-007)

GROSS LENGTH	1,402.0	FEET	0.266	MILES
BRIDGE LENGTH	NA	FEET	NA	MILES
EXCEPTION LENGTH	NA	FEET	NA	MILES
NET LENGTH	1,402.0	FEET	0.266	MILES

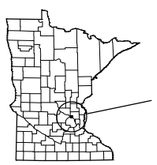
LENGTH AND DESCRIPTION BASED UPON PROPOSED PUMA STREET NW CENTERLINE

TYPICAL PLAN SCALE UNLESS OTHERWISE NOTED:

HORIZONTAL SCALE 0 25 50 SCALE FEET

VERTICAL SCALE 0 5 10 SCALE FEET

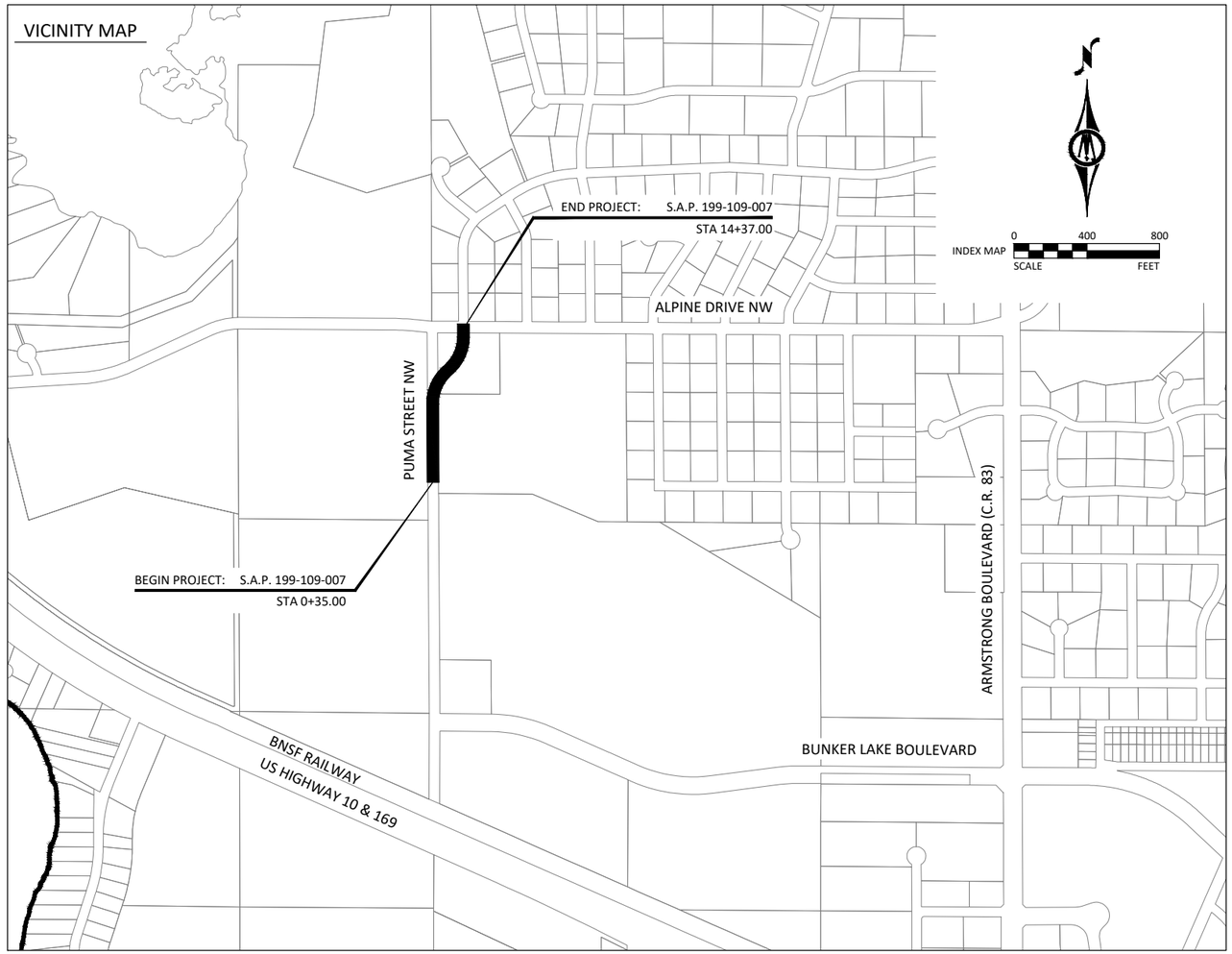
PROJECT LOCATION



CITY: RAMSEY
COUNTY: ANOKA
DISTRICT: METRO

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

VICINITY MAP



⌖ BM= 872.70
TOP NUT OF HYDRANT
STA: 3+17
ADJACENT TO EX LIFT STATION

PROJECT DATUM:
HORIZONTAL: ANOKA COUNTY COORDINATES (1996 ADJUSTMENT)
VERTICAL: NGVD 29

RECORD DRAWING INFORMATION
OBSERVER:
CONTRACTOR:
DATE:

MINN. PROJ. NO. STATE FUNDS

--- GOVERNING SPECIFICATIONS ---
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL" FOR TEMPORARY TRAFFIC CONTROL DEVICES.

THIS PLAN SET CONTAINS 33 SHEETS.

Kevin P. Kielb, 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 _____ License Number 23211

Approved: City of Ramsey Engineer _____ Date _____

District State Aid Engineer:
Review for compliance with State Aid Rules/Policy _____ Date _____

Approved for State Aid Funding: State Aid Engineer _____ Date _____

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

City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
STATE AID PROJECT NO. S.A.P. 199-109-007

SHEET 1 OF 33

EXISTING TOPOGRAPHIC SYMBOLS

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

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

- BENCH MARK LOCATION
- CONTROL POINT
- MONUMENT IRON FOUND
- CAST IRON MONUMENT

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

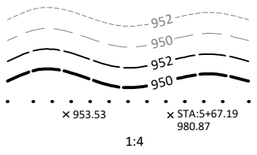
EXISTING UTILITY LINES

- 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

GRADING INFORMATION



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

HATCH PATTERNS

- BITUMINOUS
- CONCRETE
- GRAVEL

EXISTING PRIVATE UTILITY LINES

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

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

- F — UNDERGROUND FIBER OPTIC
- E — UNDERGROUND ELECTRIC
- G — UNDERGROUND GAS
- C — UNDERGROUND COMMUNICATION
- OE — OVERHEAD ELECTRIC
- OC — OVERHEAD COMMUNICATION
- OU — OVERHEAD UTILITY

UTILITIES IDENTIFIED WITH A QUALITY LEVEL :

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

UTILITY QUALITY LEVELS:

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

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

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

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

ABBREVIATIONS

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

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
REVIEW PLANS
KEVIN P. KIELB
LIC. NO. 23211 DATE 05/12/2020

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

City of RAMSEY

DESIGNED	NO.	ISSUED FOR	DATE
ZFL			
DRAWN			
ZFL			
CHECKED			
KPK			
CLIENT PROJ. NO.			
R12.121040			

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
LEGEND

SHEET 2 OF 33

199-109-007 STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	NOTES	MnDOT SPEC NO.	ITEM	UNIT	TOTAL	STATE AID PARTICIPATING 199-109-007		CITY OF RAMSEY (NON-PARTICIPATING)
						ROADWAY	STORM SEWER	ROADWAY
1		2021.501	MOBILIZATION	LUMP SUM	1	0.50	0.11	0.39
2		2102.503	PAVEMENT MARKING REMOVAL	LIN FT	1,050	1,050		
3		2104.502	SALVAGE SIGN	EACH	11	11		
4		2104.503	REMOVE CURB AND GUTTER	LIN FT	240	240		
5		2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	4,380	4,380		
6		2104.504	REMOVE CONCRETE WALK	SQ YD	16	16		
7	(1)	2105.507	COMMON EXCAVATION (P) (EV)	CU YD	3,700	3,700		
8		2105.507	SUBGRADE EXCAVATION (EV)	CU YD	125	125		
9		2105.609	GRANULAR BORROW	TON	190	190		
10		2105.601	DEWATERING	LUMP SUM	1			1
11		2211.509	AGGREGATE BASE CLASS 5 MODIFIED	TON	2,980	2,980		
12		2360.504	TYPE 9.5 WEARING COURSE MIX (3,B) (TRAIL)	TON	190	190		
13		2360.504	TYPE 9.5 WEARING COURSE MIX (3,B) (ROADWAY)	TON	605	605		
14		2360.504	TYPE 12.5 NON WEARING COURSE MIX (3,B) (ROADWAY)	TON	755	755		
15		2501.502	24" RC PIPE APRON	EACH	1		1	
16		2501.602	TRASH GUARD FOR 24" PIPE APRON	EACH	1		1	
17		2503.503	8" PVC PIPE SEWER SDR 26	LIN FT	650			650
18		2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	165		165	
19		2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	375		375	
20		2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	235		235	
21		2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS III	LIN FT	100		100	
22		2503.602	8" PIPE PLUG	EACH	2			2
23		2503.602	CONSTRUCT BULKHEAD	EACH	1			1
24		2503.602	CONNECT TO EXISTING SANITARY MANHOLE (CORE & BOOT)	EACH	1			1
25		2504.602	CONNECT TO EXISTING WATER MAIN	EACH	1			1
26		2504.602	ADJUST GATE VALVE & BOX	EACH	2			2
27		2504.602	6" GATE VALVE & BOX	EACH	2			2
28		2504.602	8" GATE VALVE & BOX	EACH	2			2
29		2504.602	16" GATE VALVE & BOX	EACH	1			1
30		2504.602	HYDRANT (8.5' BURY)	EACH	1			1
31		2504.602	HYDRANT (9.0' BURY)	EACH	1			1
32		2504.603	6" WATERMAIN DUCTILE IRON CL 53	LIN FT	40			40
33		2504.603	8" WATERMAIN DUCTILE IRON CL 52	LIN FT	90			90
34		2504.603	12" WATERMAIN DUCTILE IRON CL 52	LIN FT	65			65
35		2504.603	16" WATERMAIN DUCTILE IRON CL 52	LIN FT	1,050			1,050
36		2504.608	WATERMAIN FITTINGS	POUND	1,770			1,770
37		2506.502	CASTING ASSEMBLY (SANITARY)	EACH	2			2
38		2506.502	CASTING ASSEMBLY (STORM)	EACH	8		8	
39		2506.502	ADJUST FRAME AND RING CASTING	EACH	2	2		
40		2506.503	CONSTRUCT SANITARY SEWER MANHOLE	LIN FT	38			38
41	(2)	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	22		22	
42	(3)	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPEC 1	LIN FT	17		17	
43		2506.603	CONSTRUCT 8" INSIDE DROP	LIN FT	9			9
44		2511.507	RANDOM RIPRAP CL III	CU YD	10	10		
45		2521.518	6" CONCRETE WALK	SQ FT	800	800		
46		2531.503	CONCRETE CURB & GUTTER DES B618	LIN FT	2,410	2,410		
47		2531.604	7" CONCRETE VALLEY GUTTER	SQ YD	48	48		
48		2531.618	TRUNCATED DOMES	SQ FT	118	118		
49		2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.50	0.11	0.39
50		2563.61	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.50	0.11	0.39
51		2564.502	INSTALL SIGN	EACH	11	11		
52		2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	1		
53		2573.502	STORM DRAIN INLET PROTECTION	EACH	8	8		
54		2573.503	SILT FENCE, TYPE MS	LIN FT	1,600	1,600		
55		2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	550	550		
56		2574.507	FERTILIZER TYPE 3	POUND	750	750		
57		2575.505	SEEDING	ACRE	2.5	2.5		
58		2575.505	RAPID STABILIZATION METHOD 2	ACRE	0.5	0.5		
59		2575.508	SEEDING MIXTURE 25-121	POUND	230	230		
60		2575.508	HYDRAULIC BONDED FIBER MATRIX	POUND	8,750	8,750		
61		2582.503	4" SOLID LINE MULTI COMP	LIN FT	4,760	4,760		
62		2582.503	4" BROKEN LINE MULTI COMP	LIN FT	410	410		
63		2582.503	4" DBLE SOLID LINE MULTI COMP	LIN FT	360	360		
64		2582.503	24" SOLID LINE MULTI COMP	LIN FT	35	35		
65		2582.518	PAVT MSSG MULTI COMP	SQ FT	150	150		
66		2582.518	CROSSWALK MULTI COMP	SQ FT	300	300		

199-109-007 STATEMENT OF ESTIMATED QUANTITIES

NOTES:

(1) INCLUDES TOPSOIL STRIPPING & STOCKPILING

(2) DESIGN 48-4020 WITH A 4022 COVER

(3) 2' x 3' CATCH BASIN. SEE CONSTRUTION DETAILS

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
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
4026A	CONCRETE ENCASAED CONCRETE ADJUSTING RINGS
4108F	ADJUSTING RINGS FOR CATCH BASINS & MANHOLES
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER
8000J	CHANNELIZERS (3 SHEETS)

BASIS FOR ESTIMATED QUANTITIES	
BID ITEM	BASIS
TYPE SP WEARING & NON-WEARING COURSE MIX	115 LBS/SY-IN
BITUMINOUS 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 25-121	92 LBS/ACRE

EARTHWORK SUMMARY S.A.P. 199-109-007

NOTES	ITEMS	UNIT	PROJECT TOTAL	PUMA STREET NW	SITE GRADING AREA
	UNADJUSTED VOLUMES BASED ON CROSS SECTIONS				
1	TOPSOIL STRIPPING (EV)	CU YD	1380	1340	40
2	EXCAVATION (EV)	CU YD	2320	1910	410
3	EMBANKMENT MATERIAL REQUIRED (CV)	CU YD	1900	1850	50
4	TOPSOIL REQUIRED (CV)	CU YD	970	575	395
	EARTHWORK BALANCE				
	TOPSOIL BALANCE				
5,8	TOPSOIL REQUIRED (LV)	CU YD	1455	863	593
6	TOPSOIL GENERATED (LV)	CU YD	1518	1474	44
9	EXCESS TOPSOIL	CU YD	63	612	-549
	GRADING MATERIAL BALANCE				
6, 8	GRADING MATERIAL GENERATED (LV)	CU YD	2552	2101	451
7	EMBANKMENT MATERIAL REQUIRED (LV)	CU YD	2470	2405	65
9	EXCESS GRADING MATERIAL (LV)	CU YD	82	-304	386
	EARTHWORK QUANTITIES TO SEQ				
9	COMMON EXCAVATION	CU YD	3700	3250	450
12	SUBGRADE EXCAVATION	CU YD	125	125	
11,12	GRANULAR BORROW	TON	190	190	

NOTES

1 FROM CROSS SECTIONS, ASSUMES AN AVERAGE OF 7" OF TOPSOIL THICKNESS IN UNDEVELOPED GREEN AREAS.

2 EXCAVATION REQUIRED BELOW EXISTING BITUMINOUS PAVEMENT & TOPSOIL, FROM CROSS SECTIONS.

3 FILL VOLUMES FROM CROSS SECTIONS.

4 MINIMUM 4 INCHES OF TOPSOIL PLACED IN ALL SEEDED AREAS DISTURBED DURING CONSTRUCTION.

5 SHRINKAGE FACTOR OF 1.5 APPLIED FROM CV TO LV

6 SWELL FACTOR OF 1.1 APPLIED FROM EV TO LV

7 SHRINKAGE FACTOR OF 1.3 APPLIED FROM CV TO LV

8 CONTRACTOR TO SEPARATE TOPSOIL, GRANULAR MATERIAL AND SELECT GRADING MATERIAL. SELECT GRADING MATERIAL TO BE USED UNDER IMPERVIOUS SURFACE. GRANULAR MATERIAL TO BE USED IN BOULEVARD AREAS.

9 ONCE THE PROJET EARTHWORK IS BALANCED, ANY EXCESS MATERIAL SHALL BE PLACED ON SITE AS DIRECTED BY ENGINNER

10 TOPSOIL SALVAGED FROM SITE SHALL BE USED BEFORE ANY TOPSOIL BORROW HAULED TO THE SITE.

11 105 LBS/CU FT APPLIED FROM LV TO TON

12 ADDITIONAL QUANTITY TO BE USED AS DETERMINED BY THE ENGINEER

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REVIEW PLANS

KEVIN P. KIELB

LIC. NO. 23211 DATE 05/12/2020

BOLTON & MENK

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

City of RAMSEY

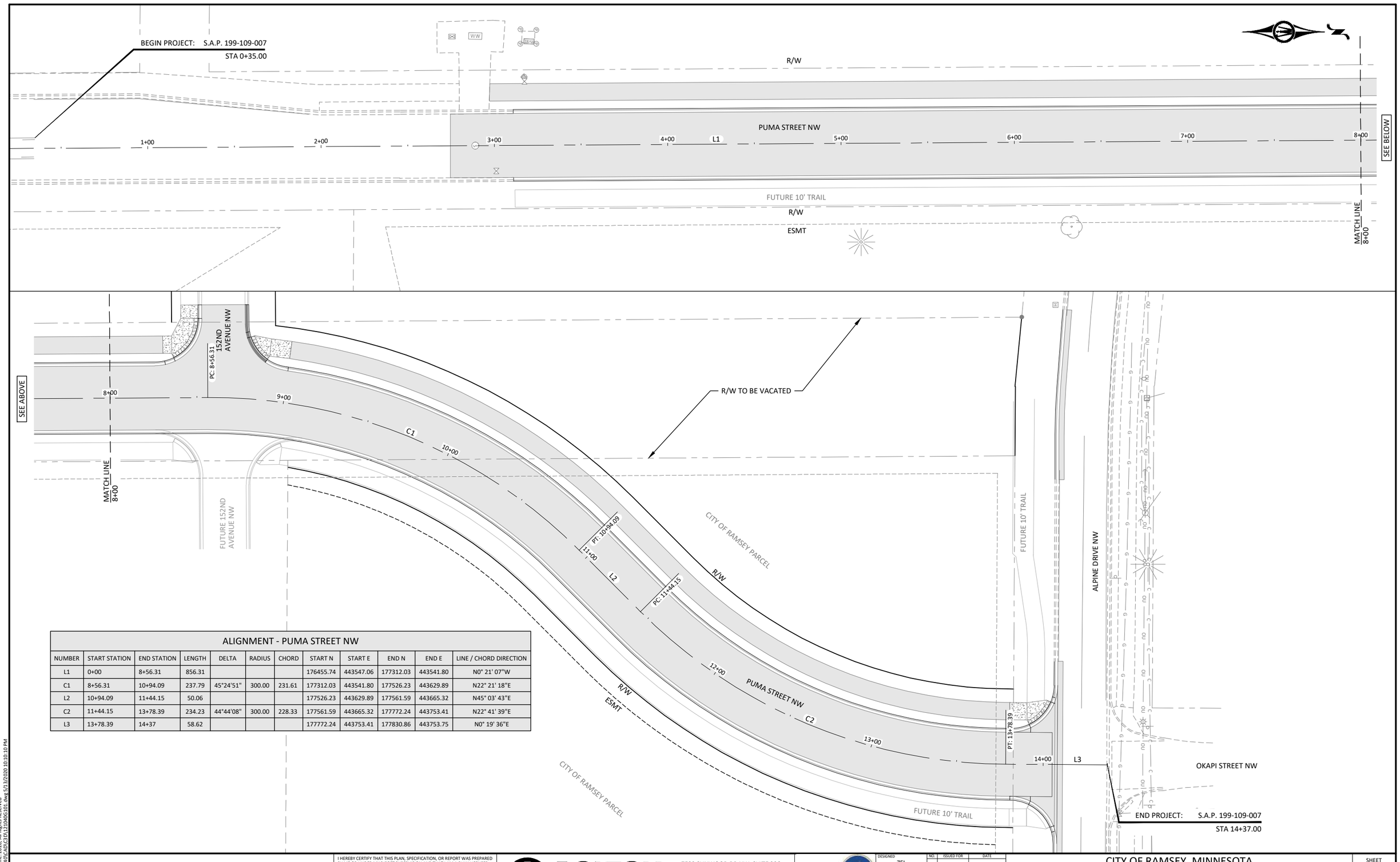
DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA

2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

STATEMENT OF ESTIMATED QUANTITIES



ALIGNMENT - PUMA STREET NW											
NUMBER	START STATION	END STATION	LENGTH	DELTA	RADIUS	CHORD	START N	START E	END N	END E	LINE / CHORD DIRECTION
L1	0+00	8+56.31	856.31				176455.74	443547.06	177312.03	443541.80	N0° 21' 07"W
C1	8+56.31	10+94.09	237.79	45°24'51"	300.00	231.61	177312.03	443541.80	177526.23	443629.89	N22° 21' 18"E
L2	10+94.09	11+44.15	50.06				177526.23	443629.89	177561.59	443665.32	N45° 03' 43"E
C2	11+44.15	13+78.39	234.23	44°44'08"	300.00	228.33	177561.59	443665.32	177772.24	443753.41	N22° 41' 39"E
L3	13+78.39	14+37	58.62				177772.24	443753.41	177830.86	443753.75	N0° 19' 36"E

0 25 50
SCALE FEET

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CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
ALIGNMENT TABULATION

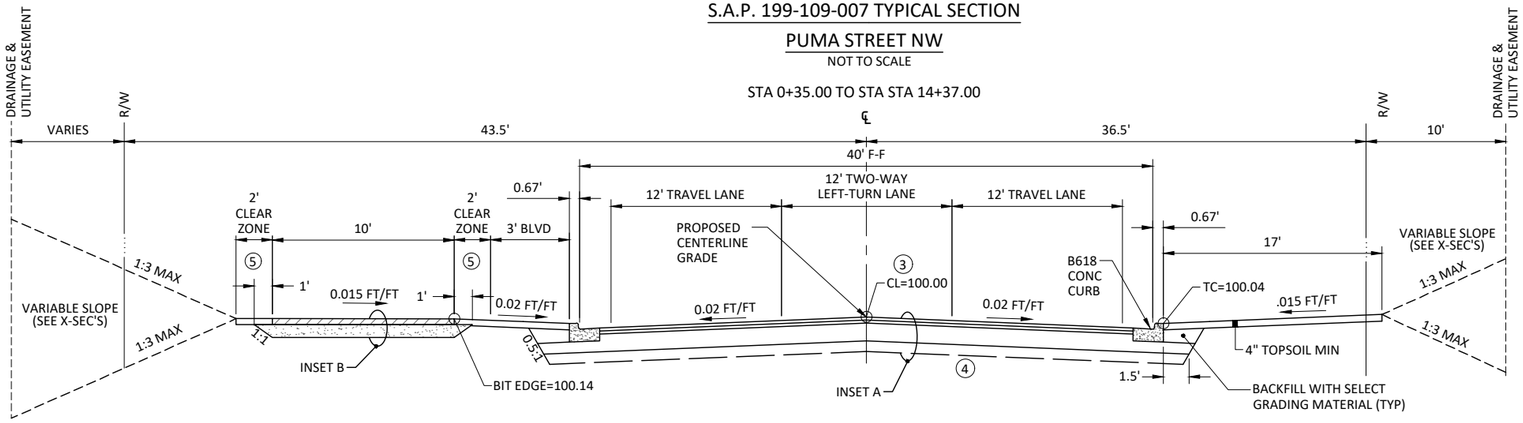
SHEET 4 OF 33

S.A.P. 199-109-007 TYPICAL SECTION

PUMA STREET NW

NOT TO SCALE

STA 0+35.00 TO STA STA 14+37.00



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. SUBGRADE SHALL BE TEST ROLLED PRIOR TO AGGREGATE BASE INSTALLATION AND CONFORM TO MnDOT SPEC 2111
5. TRAIL CLEAR ZONE 1:6 MAX, 0.02 FT/FT (TYP). NO TRAFFIC SIGNS SHALL BE INSTALLED WITHIN TRAIL CLEAR ZONE

TABLE A
MODIFIED CLASS 5 SPECIFICATIONS

% PASSING

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

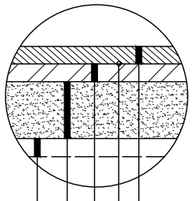
NOTES:
1. THE AGGREGATE BASE CONSTRUCTION WILL BE ACCEPTED FOR PAYMENT IN ACCORDANCE WITH THE PROVISIONS IN TABLE A.
2. IF THE AGGREGATE BASE FAILS TO MEET THE REQUIREMENTS OF TABLE A THE MATERIAL CAN BE CORRECTED IN PLACE OR REMOVED AND REPLACED WITH MATERIAL THAT MEET THE REQUIREMENTS OF TABLE A.
3.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

APPROVED:
2 – 2003

City of RAMSEY

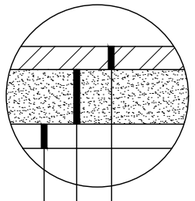
STANDARD DETAILS: MODIFIED CLASS 5 SPECIFICATIONS

CITY PLATE No. STR-26



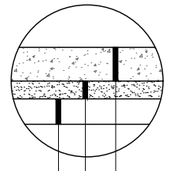
2" TYPE SP 9.5 WEARING COURSE (SPWEA340B) (2360)
BITUMINOUS TACK COAT (2357) (INCIDENTAL)
2.5" TYPE SP 12.5 NON WEARING COURSE (SPNWB330B) (2360)
8" AGGREGATE BASE CL 5, MOD (2211) (SEE STR-26)
12" SUBGRADE PREPARATION (SCARIFY & RE-COMPACT) (2112) (INCIDENTAL)

INSET A - BITUMINOUS ROADWAY
NOT TO SCALE



2.5" TYPE SP 9.5 WEARING COURSE (SPWEA340B) (2360)
4" AGGREGATE BASE CL 5, MOD (2211) (SEE STR-26)
SUBGRADE PREPARATION (2112) (INCIDENTAL)

INSET B - BITUMINOUS TRAIL
NOT TO SCALE



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

CONCRETE WALK / PEDESTRIAN RAMP
NOT TO SCALE

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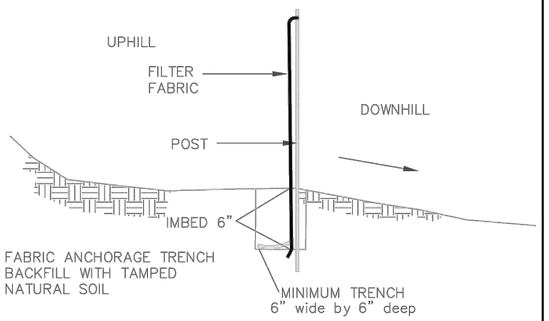
CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
TYPICAL SECTIONS

SHEET 5 OF 33

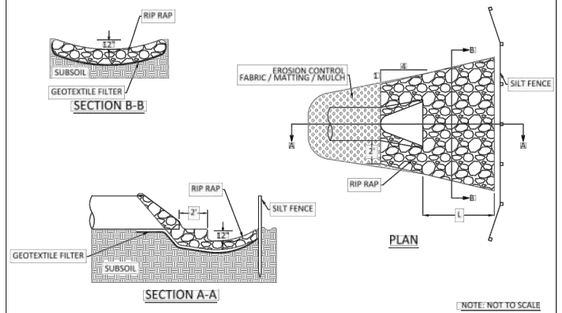


INSTALL AS PER FILTER FABRIC MANUFACTURER'S RECOMMENDATIONS

SILT FENCE DETAIL

NO SCALE

APPROVED: 1 – 2016	City of RAMSEY	STANDARD DETAILS: SILT FENCE
		CITY PLATE No. ERO–1



NOTE: NOT TO SCALE

NOTES:

1. ON SLOPES 4:1 OR GREATER, ANCHOR OR STRAIGHT DISKED STRAW MULCH, SEEDED NETTING, GABRIC, OR MATTING SUCH AS EXCELSIOR SHALL BE USED TO STABILIZE DISTURBED SOILS. THESE EXPOSED SOILS MUST BE STABILIZED IMMEDIATELY AFTER GRADING OF SOIL IS COMPLETE.
2. A SKIRTING OF EROSION CONTROL FABRIC OR MULCH MUST BE USED TO PROTECT OUTLETS AS ILLUSTRATED REGARDLESS OF SLOPE.
3. RIP RAP IS CLASS III PLACED 18" THICK.
4. FOR PIPE GREATER THAN 48" DIAMETER OR 58" SPAN, QUANTITY OF GEOTEXTILE FABRIC AND RIP RAP WILL BE HANDLED IN A CASE BY CASE MANNER.
5. GEOTEXTILE FABRIC SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIP RAP MATERIAL.

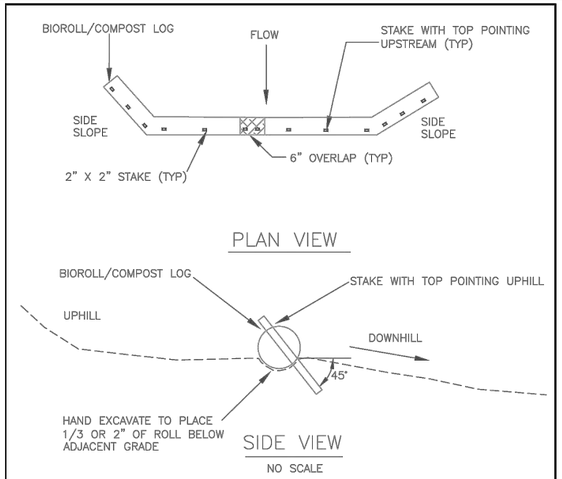
RIP RAP AT RCP OUTLETS

DIA. OF PIPE (IN.)	L (FT.)	GEOTEXTILE FABRIC (SY)	18" DEPTH RIP RAP (CU. YD)
12	8	19.6	4.4
15	8	20.8	4.8
18	10	25.6	6.4
21	10	27.4	7.1
24	12	33.4	9.2
27	12	35.2	9.9
30	14	41.6	12.3
36	16	50.5	15.8
42	18	57.8	18.7
48	20	66.5	22.2

RIP RAP AT RCP-A OUTLETS

SPAN OF PIPE (IN.)	L (FT.)	GEOTEXTILE FABRIC (SY)	18" DEPTH RIP RAP (CU. YD)
22	10	25.6	6.1
28	12	33.2	8.5
36	14	41.5	11.2
43	16	50.5	14.3
51	18	57.5	16.9
58	20	65.2	19.8

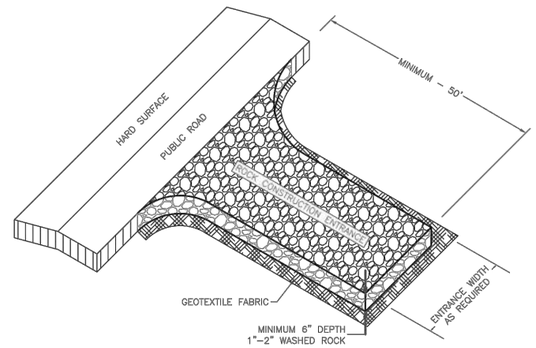
APPROVED: 9 – 2016	City of RAMSEY	STANDARD DETAILS: RIP–RAP
		CITY PLATE No. ERO–3



NO SCALE

NOTE:
STAKE INTO GROUND WITH WOOD STAKES DRIVING STAKE 6" INTO GROUND AND PROTRUDING 2" ABOVE LOG
WOOD STAKES ARE A MINIMUM 0.5" X 2" X 16" AND PLACED EVERY 1' UNLESS PRECLUDED BY A ROCK
WHEN MORE THAN 1 BIOROLL/COMPOST LOG IS NEEDED, OVERLAP ENDS A MINIMUM OF 6" AND STAKE
WOOD STAKES ARE DRIVEN THROUGH BACK HALF OF BIOROLL OR COMPOST LOG AT 45° ANGLE WITH TOP OF STAKE POINTING UPHILL

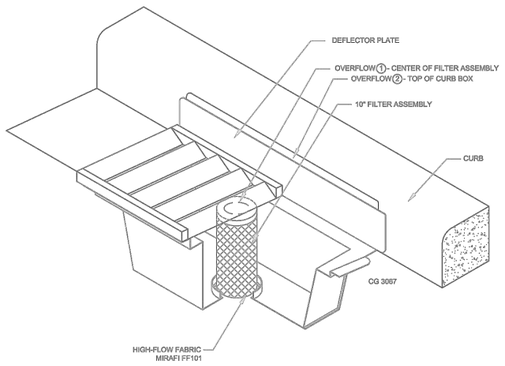
APPROVED: 3 – 2016	City of RAMSEY	STANDARD DETAILS: BIO ROLL (COMPOST LOG)
		CITY PLATE No. ERO–4



NOTE:
1. MINIMUM CONSTRUCTION ENTRANCE WIDTH EQUAL TO PROPOSED ROADWAY WIDTH.
2. WIDTH OF RADIUS AS REQUIRED TO ENSURE VEHICLES DO NOT TRACK ONTO PUBLIC ROAD.
3. MAINTAINENCE AS REQUIRED TO PREVENT TRACKING ONTO PUBLIC ROADS. THIS MAY REQUIRE TOP DRESSING WITH ADDITIONAL ROCK OR REMOVAL AND REINSTALLATION OF THE ENTRANCE AS NEEDED.

NOT TO SCALE

APPROVED: 1 – 2016	City of RAMSEY	STANDARD DETAILS: ROCK CONSTRUCTION ENTRANCE
		CITY PLATE No. ERO–5



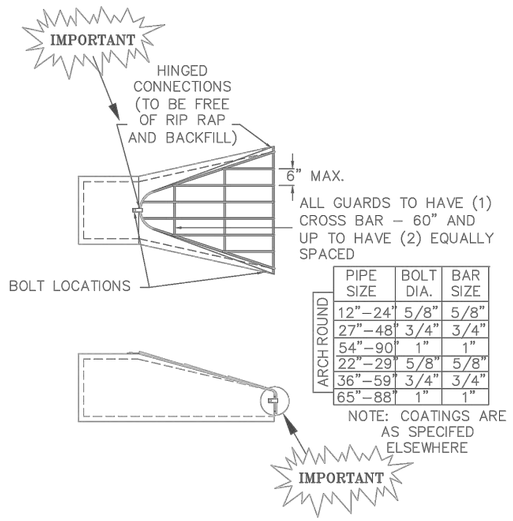
INLET PROTECTION – WIMCO OR EQUAL

N.T.S.

NOTE:
THIS INLET PROTECTION SHALL BE USED IMMEDIATELY FOLLOWING CURB & GUTTER CONSTRUCTION. INLET PROTECTION SHALL REMAIN INSTALLED AND MAINTAINTED UNTIL ALL HOME CONSTRUCTION IS COMPLETE.

APPROVED: 1 – 2016	City of RAMSEY	STANDARD DETAILS: INLET PROTECTION
		CITY PLATE No. ERO–2

NOTE:
GUARDS MUST BE INCORPORATED ON ALL INSTALLATIONS EXCEPT WHERE SPECIFICALLY ALLOWED OTHERWISE BY THE CITY ENGINEER.



	PIPE SIZE	BOLT DIA.	BAR SIZE
ARCH ROUND	12"–24"	5/8"	5/8"
	27"–48"	3/4"	3/4"
	54"–90"	1"	1"
	22"–29"	5/8"	5/8"
	36"–59"	3/4"	3/4"
	65"–88"	1"	1"

APPROVED: 2 – 2006	City of RAMSEY	STANDARD DETAILS: TRASH GUARD
		CITY PLATE No. STO–8

MNDOT 2016 SPEC

MNDOT 2016 SPEC TABLE 3877–1 COMMON TOPSOIL BORROW		
REQUIREMENT	RANGE	TEST METHOD
MATERIAL PASSING THE 3/4 IN [19MM]	100%	ASTM D 422
MATERIAL PASSING NO. 4 [4.75MM]	>85%	–
CLAY	5% – 35%	ASTM D 422
SILT	5% – 70%	ASTM D 422
SAND	10% – 75%	ASTM D 422
ORGANIC MATTER	3% – 15%	ASTM D 2974
pH	6.1–7.8	ASTM G 51

NOTE:
1. INSTALLATION OF 4" OF TOPSOIL MEETING MNDOT SPECIFICATION 3877A COMMON TOPSOIL BORROW, MAY BE REQUIRED ACROSS ALL DISTURBED AREAS.
2. A SOIL CERTIFICATION FROM A GEOTECHNICAL FIRM MUST BE PROVIDED VERIFYING THE TOPSOIL MEETS SPECIFICATION ALONG WITH LOAD TICKETS TO VERIFY THE SOURCE OF MATERIAL AND QUANTITY.
3. TOPSOIL MUST COME FROM A CITY APPROVED SOURCE.

APPROVED: 1 – 2016	City of RAMSEY	STANDARD DETAILS: TOPSOIL REQUIREMENTS
		CITY PLATE No. ERO–6

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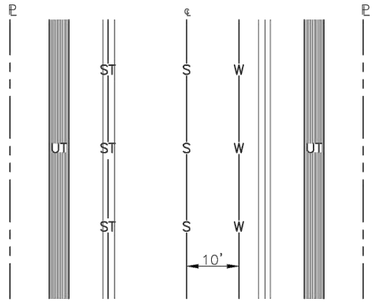
CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
CONSTRUCTION DETAILS

SHEET 6 OF 33

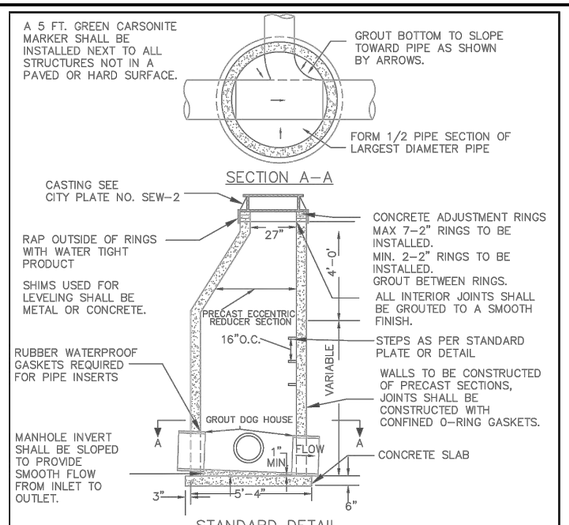


LEGEND
- S — SANITARY SEWER
- ST — STORM SEWER
- W — WATERMAIN
- UT — UTILITY TRENCH
- ℄ — PROPERTY LINE
- ℄ — CENTERLINE OF STREET

NOTES:
1. WATERMAIN SHALL BE LOCATED NORTH & EAST OF CENTERLINE
2. UTILITY TRENCH SHALL BE A COMMON BURY FOR ELECTRIC, GAS, COMMUNICATIONS & CABLE TV.
3. THE COMMON BURY TRENCH SHALL BE LOCATED IN THE CENTER OF THE BOULEVARD BETWEEN BACK OF CURB & PROPERTY LINE.
4. STORM SEWER SHALL BE LOCATED BENEATH THE CURB ON THE STREET SIDE OPPOSITE TO THE WATERMAIN.
5. SEE DETAILS FOR MINUMUM DEPTH LOCATIONS.

UTILITY LOCATIONS
N.T.S.

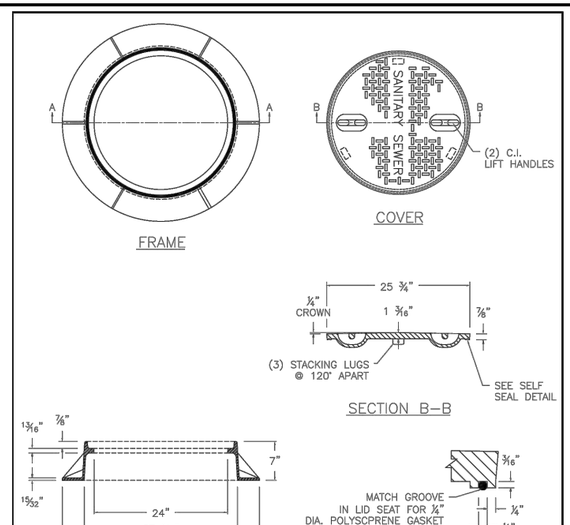
APPROVED: 7 - 1996	City of RAMSEY	STANDARD DETAILS: UTILITY LOCATIONS
		CITY PLATE No. UTL-1



STANDARD DETAIL

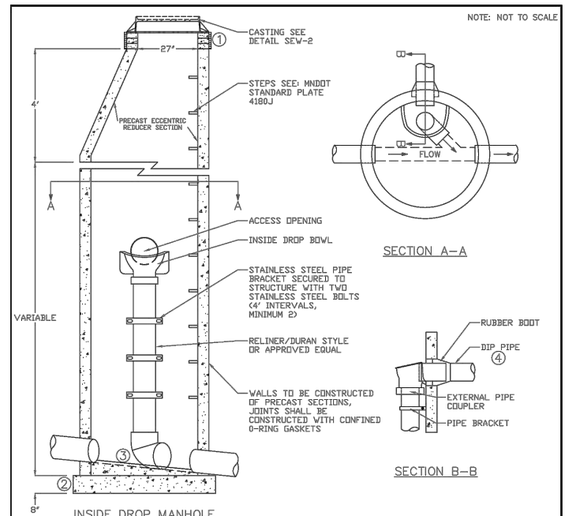
NOTES:
1. A 10 GAGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL SEWER LINES.
2. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE.
3. TRACER WIRES ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS.
4. 6" BASE FOR ALL MANHOLES LESS THAN 14 FT. OF DEPTH, INCREASE BASE THICKNESS 2" PER 6 FT. OF DEPTH BEYOND 14 FT.
5. 5" PRECAST BASE MAY BE USED FOR MANHOLES LESS THAN 14 FT. DEEP.
6. ALL INVERTS TO BE 0.10' ABOVE OUTLET,

APPROVED: 1 - 2016	City of RAMSEY	STANDARD DETAILS: SANITARY MANHOLE
		CITY PLATE No. SEW-1



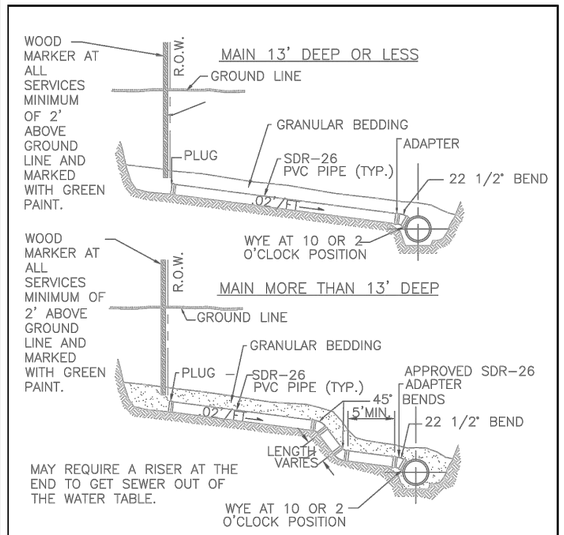
NOTE: NOT TO SCALE

APPROVED: 11 - 2015	City of RAMSEY	STANDARD DETAILS: WATER TIGHT CASTING
		CITY PLATE No. SEW-2



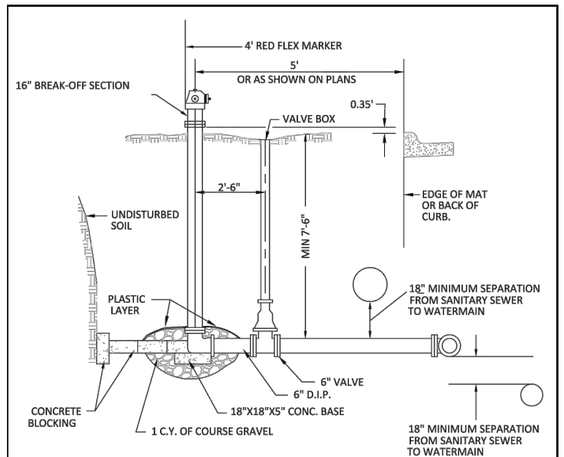
NOTES:
1. CONCRETE ADJUSTMENT RINGS, MIN 2 MAX 7 - 2" RINGS TO BE INSTALLED. ALL INTERIOR JOINTS SHALL BE GROUTED TO A SMOOTH FINISH. WRAP OUTSIDE OF RINGS WITH WATER TIGHT PRODUCT.
2. 8" BASE FOR AL MANHOLES LESS THAN 14 FT. DEEP. INCREASE BASE THICKNESS 2" PER 6 FT. OF DEPTH BEYOND 14 FT. & REINFORCEMENT WITH 6"X6" & 10"X10" MESH.
3. MANHOLE INVERT SHALL BE SLOPED TO PROVIDE SMOOTH FLOW INLET TO OUTLET. RUBBER WATERPROOF GASKETS REQUIRED FOR PIPE INSERTS.
4. DUCTILE IRON PIPE FROM TEE TO UNDISTURBED SOIL.
5. 10 GAGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL SEWER LINES.
6. CONDUCTIVITY IS REQUIRED ON ALL TRACE WIRE.
7. TRACER WIRES ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS.

APPROVED: 4 - 2016	City of RAMSEY	STANDARD DETAILS: INSIDE DROP MANHOLE
		CITY PLATE No. SEW-5



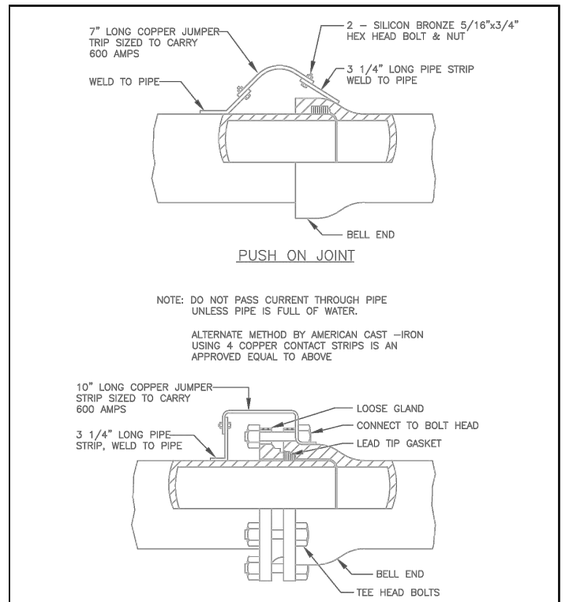
NOTES:
1. 10 GAGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL SEWER LINES
2. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE.
3. TRACER WIRE ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS.

APPROVED: 4 - 2016	City of RAMSEY	STANDARD DETAILS: SANITARY SEWER SERVICE
		CITY PLATE No. SEW-3

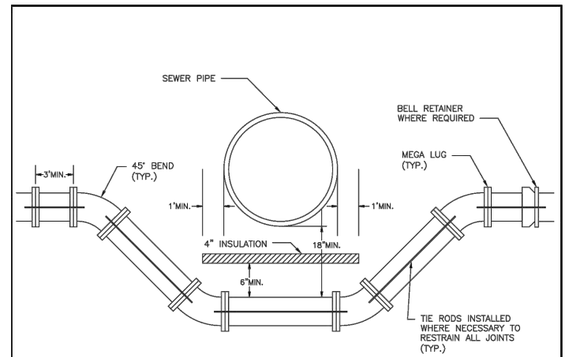


NOTES:
1. HYDRANT SHALL BE 5-1/4" WB67 WATEROUS PACER.
2. HYDRANTS TO BE ORDERED FOR 8'-0" BURY. IN AREAS OF EXTRA DEPTH ON THE WATERMAIN, HYDRANTS EXTENSIONS MAY BE REQUIRED.
3. HYDRANTS SHALL BE BLOCKED OR TIED TO THE TEE AT MAIN WITH 2-3/4" DIAMETER TIE RODS. ALL TIE RODS TO BE COAL TAR COATED AFTER INSTALLATION. RESTRAINED JOINT PIPE AND RETAINING GLANDS MAY BE USED.
4. TOP NUT OF HYDRANT 2.5' ABOVE TOP BACK OF CURB OR BITUMINOUS SURFACE.
5. HYDRANTS BURIED BELOW WATER TABLE, DRAIN HOLES NEED TO BE PLUGGED AND HYDRANT MARKED BY PAINTING 5" CAP YELLOW.
6. BRUSH PAINT ALL HYDRANTS AFTER INSTALLATION IS COMPLETE.

APPROVED: 6 - 2017	City of RAMSEY	STANDARD DETAILS: HYDRANT
		CITY PLATE No. WAT-1



APPROVED: 1 - 2016	City of RAMSEY	STANDARD DETAILS: JOINT CONNECTION
		CITY PLATE No. WAT-4



NOTE:
1. PROVIDE MEGA LUGS OR APPROVED EQUAL AT ALL JOINT'S ON BENDS AND AS SHOWN ON THIS STANDARD PLATE.
2. USE 2 - 3/4" DIAMETER TIE RODS. ALL TIE RODS TO BE COAL TAR COATED AFER INSTALLATION.
3. PROVIDE SAND CUSHION BETWEEN TOP OF WATERMAIN AND BOTTOM OF INSULATION, MIN. DIMENSIONS AS SHOWN ON THIS STANDARD PLATE.

NOTE: SEE STANDARD PLATE WAT-5 FOR UTILITY INSULATION REQUIREMENTS.

APPROVED: 6 - 2015	City of RAMSEY	STANDARD DETAILS: WATERMAIN LOWERING
		CITY PLATE No. WAT-7

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.
REVIEW PLANS
KEVIN P. KIELB
LIC. NO. 23211 DATE 05/12/2020

BOLTON & MENK

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

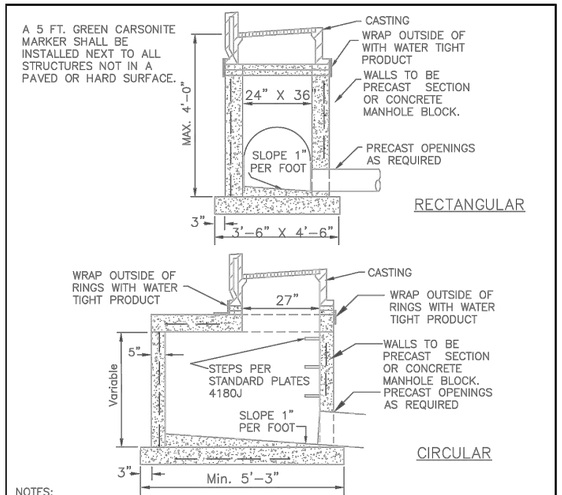
City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
CONSTRUCTION DETAILS

SHEET 7 OF 33



NOTES:
1. MANHOLE INVERT SHALL SLOPED TO PROVIDE A SMOOTH FLOW FROM INLET TO OUTLET
2. CONCRETE BASE SHALL BE 6" POURED IN PLACE OR 5" PRECAST SLAB.
3. CONCRETE ADJUSTING RINGS TO BE INSTALLED MAX.7-2" RINGS, MIN 2-2" RINGS
4. GROUT BETWEEN RINGS,SHIMS SHALL BE METAL, CONCRETE OR PLASTIC
5. INSPECTION OF MANHOLE REQUIRED BEFORE BACKFILLING
6. A 10 GAUGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL STORM LINES.
7. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE
8. STEPS ARE REQUIRED IF STRUCTURE FROM THE CASTING TO THE INVERT IS GREATER THAN 4 FEET
9. TRACER WIRES ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS

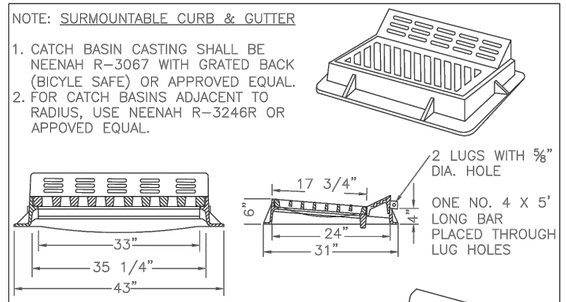
APPROVED: 4 – 2007

STANDARD DETAILS: CATCH BASIN

CITY PLATE No. STO–1

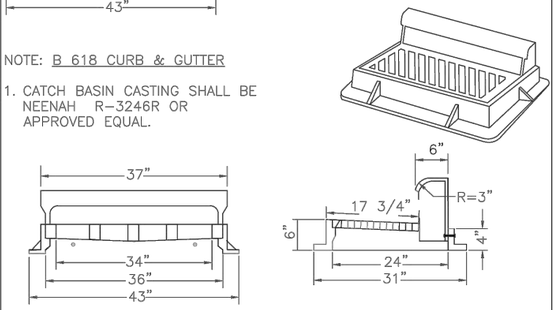
NOTE: SURMOUNTABLE CURB & GUTTER

1. CATCH BASIN CASTING SHALL BE NEENAH R–3067 WITH GRATED BACK (BICYLE SAFE) OR APPROVED EQUAL.
2. FOR CATCH BASINS ADJACENT TO RADIUS, USE NEENAH R–3246R OR APPOVED EQUAL.



NOTE: B 618 CURB & GUTTER

1. CATCH BASIN CASTING SHALL BE NEENAH R–3246R OR APPROVED EQUAL.

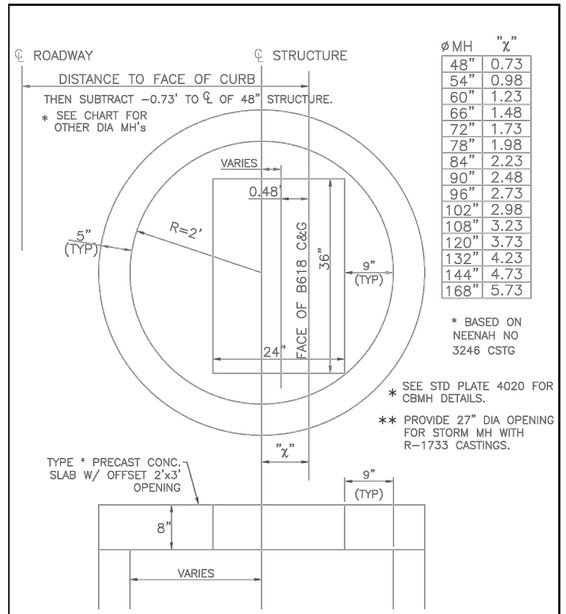


STANDARD CATCHBASIN CASTING

APPROVED: 7 – 2016

STANDARD DETAILS: STORMWATER CASTING

CITY PLATE No. STO–4



ø MH	"X"
48"	0.73
54"	0.98
60"	1.23
66"	1.48
72"	1.73
78"	1.98
84"	2.23
90"	2.48
96"	2.73
102"	2.98
108"	3.23
120"	3.73
132"	4.23
144"	4.73
168"	5.73

* BASED ON NEENAH NO 3246 CSTG

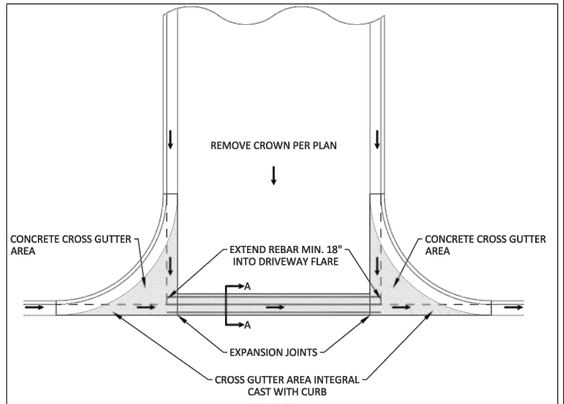
* SEE STD PLATE 4020 FOR CBMH DETAILS.

** PROVIDE 27" DIA OPENING FOR STORM MH WITH R–1733 CASTINGS.

APPROVED: 4 – 2005

STANDARD DETAILS: SLAB TOP MANHOLE COVER

CITY PLATE No. STO–5

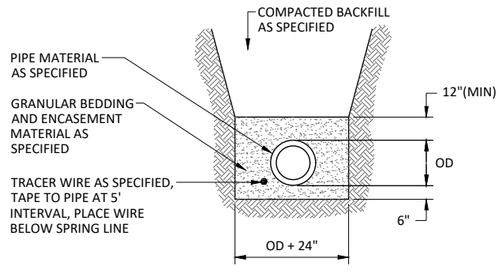


NOTES:
1. WITH REMOVAL OF EXISTING CURB AT A STREET, MILL BITUMINOUS TO A DEPTH OF 1.5" AND A WIDTH OF 18" IN EXISTING STREET.
2. TO BE USED WHENEVER CROSS DRAINAGE IS < 2%.
3. CONCRETE CURB AND GUTTER SHALL BE CAST INTEGRAL WITH CONCRETE CROSS GUTTER AREA.
4. CONCRETE CURB AND GUTTER SHALL BE PAID SEPARATELY FROM CONCRETE CROSS GUTTER AREA.

APPROVED: 3 – 2017

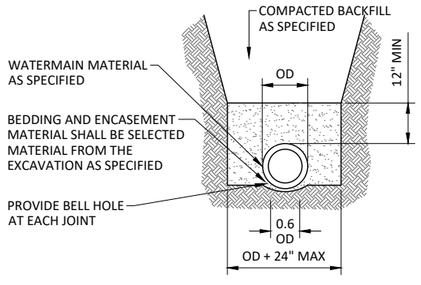
STANDARD DETAILS: CROSS GUTTER

CITY PLATE No. STR–2



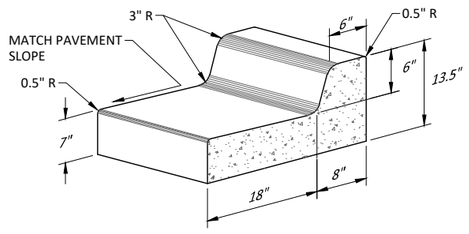
NON-RIGID SANITARY SEWER TRENCH

NOT TO SCALE



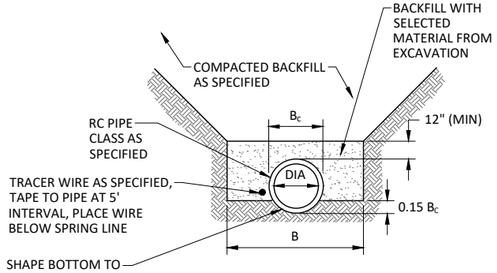
DIP WATERMAIN TRENCH

NOT TO SCALE



CONCRETE CURB & GUTTER
DESIGN B618, GUTTER OUT

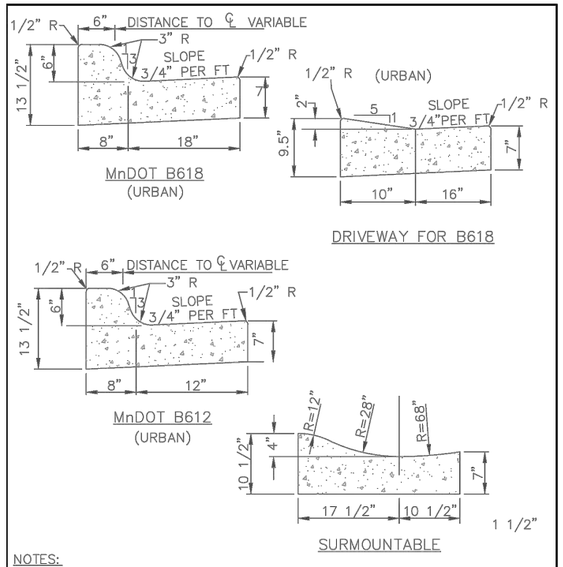
NOT TO SCALE



RC PIPE
CLASS "C" BEDDING

NOT TO SCALE

PIPE DIA	B
36" OR LESS	B_C + 24"
42" TO 54"	1.5 x B_C
60" OR OVER	B_C + 36"



NOTES:

1. ON WEAR COURSE MILL THE EXISTING BITUMINOUS 1.5" BY 24" IN FRONT OF THE REPLACEMENT CURB.
2. ON BASE COURSE SAW CUT AND REMOVE EXISTING BITUMINOUS 18" IN FRONT OF THE REPLACEMENT CURB.

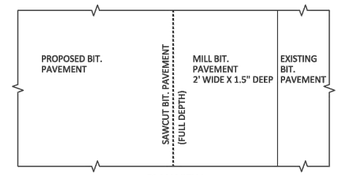
APPROVED: 1 – 2016

STANDARD DETAILS: CURB AND GUTTER

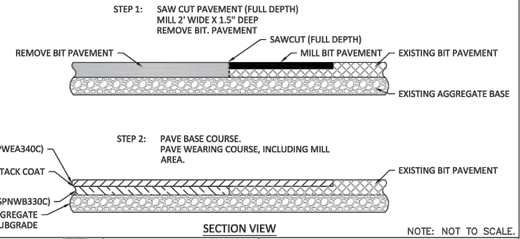
CITY PLATE No. STR–1

NOTES:

1. BITUMINOUS SHALL BE SAWCUT AND REMOVED
2. CLASS 5 AND BITUMINOUS COURSES SHALL BE MECHANICALLY COMPACTED.
3. SEE CITY PLATE STR–26 FOR MODIFIED CLASS 5 SPECIFICATIONS.



PLAN VIEW



SECTION VIEW

NOTE: NOT TO SCALE.

APPROVED: 3 – 2017

CITY PLATE No. STR–31

STANDARD DETAILS: STREET TIE–IN

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.

REVIEW PLANS

KEVIN P. KIELB

LIC. NO. 23211 DATE 05/12/2020

BOLTON & MENK
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DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

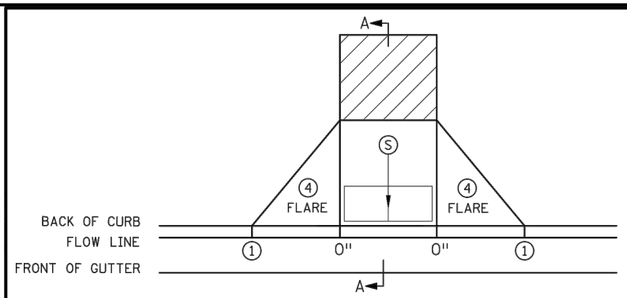
NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA

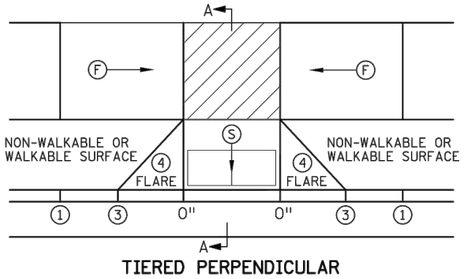
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

CONSTRUCTION DETAILS

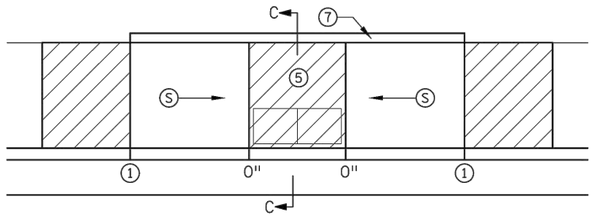
SHEET 8 OF 33



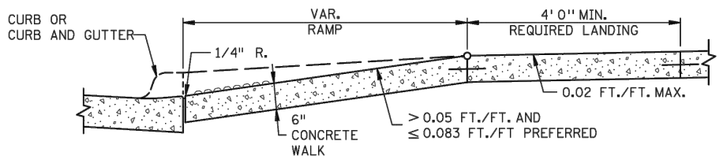
PERPENDICULAR



TIERED PERPENDICULAR

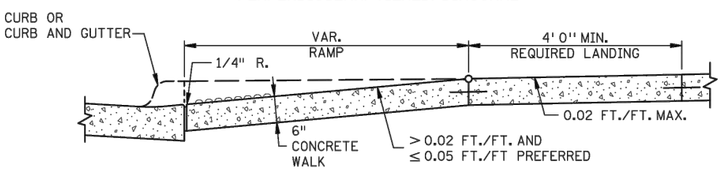


PARALLEL



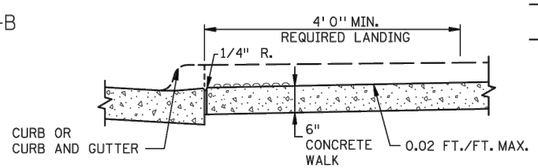
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



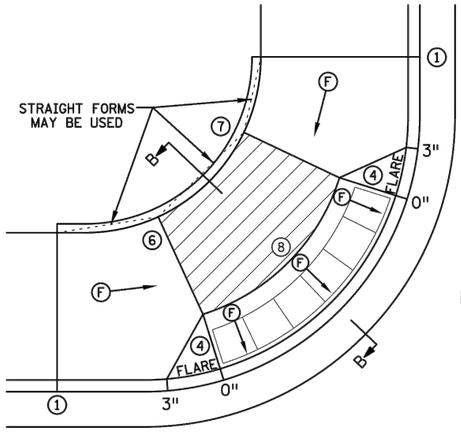
SECTION B-B

FAN

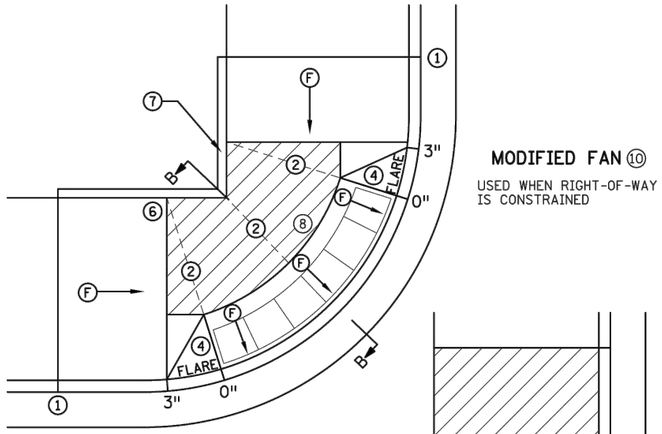


SECTION C-C

PARALLEL/DEPRESSED CORNER

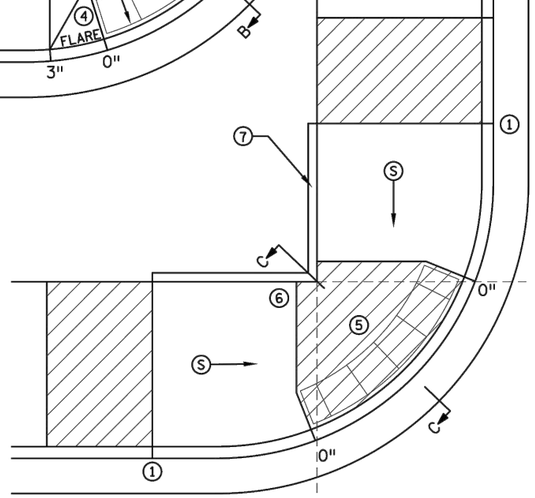


FAN (10)

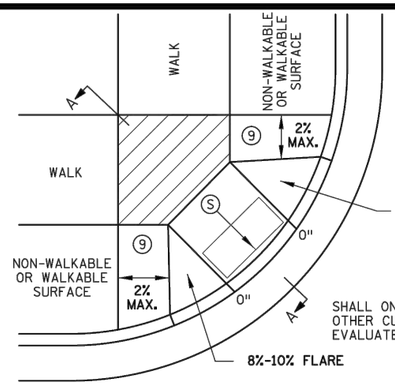


MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/TRAIL WIDTH. ARC LENGTH OF 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, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.
(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 SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
(8) A 7' MIN TOP RADIUS GRADE BREAK 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.

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

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 1-23-2017

REVISED:

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

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

City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA

2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

PEDESTRIAN CURB RAMP DETAILS

SHEET 9 OF 33

PLOTTED/REVISED: 4-APR-2018
PLOT NAME: s250_1_spn
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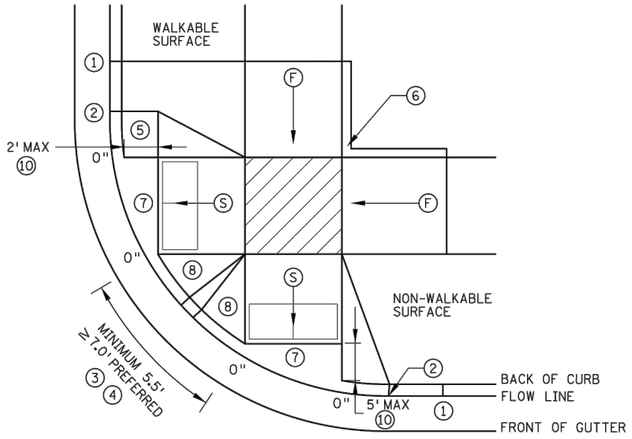
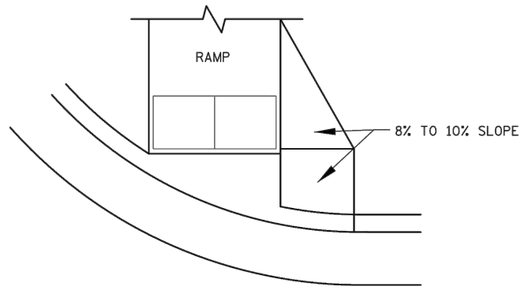


COMBINED DIRECTIONAL ⑨



DIRECTIONAL RAMP WALKABLE FLARE

NOTES:

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

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

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

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

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

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

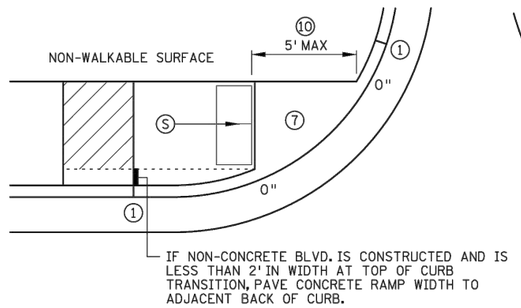
TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

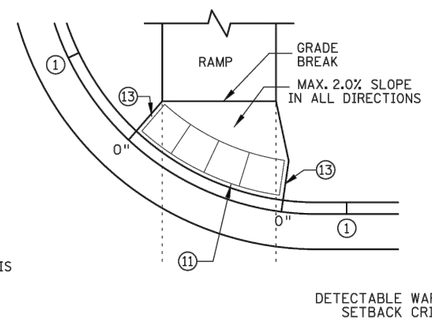
ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATH AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/PATH WIDTH. ARC LENGTH OF RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

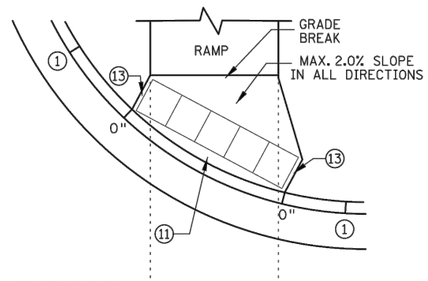
RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.



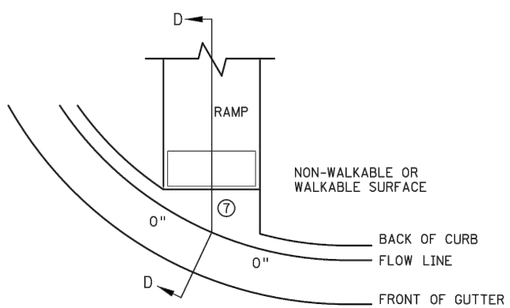
STANDARD ONE-WAY DIRECTIONAL ⑨



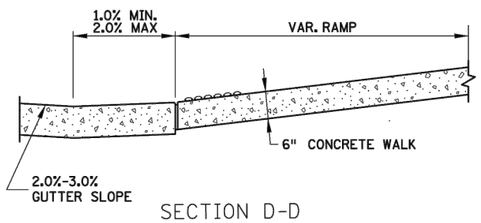
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



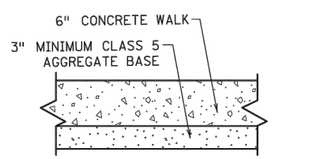
1. MATCH FULL CURB HEIGHT.
2. 3" HIGH CURB WHEN USING A 3' LONG RAMP
   4" HIGH CURB WHEN USING A 4' LONG RAMP.
3. 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
   4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
4. THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
5. WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHOULD BE USED. SEE THE DETAIL ON THIS SHEET.
6. GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
7. MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
8. 8% TO 10% WALKABLE FLARE.
9. PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
10. FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
11. RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
12. FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
13. THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
14. TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

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

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | 2 OF 6
APPROVED: 1-23-2017
REVISED:

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

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

City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
PEDESTRIAN CURB RAMP DETAILS

SHEET 10 OF 33

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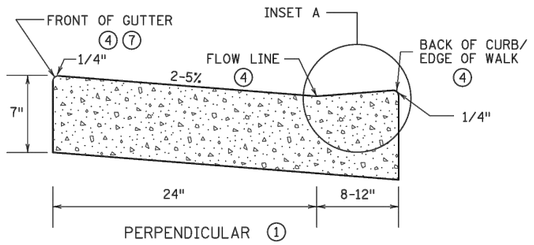
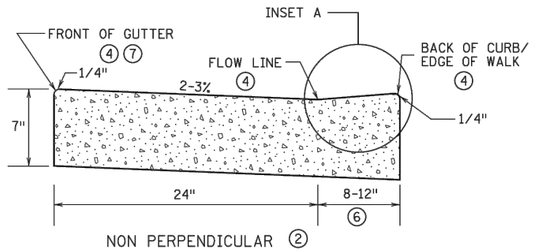
PLOTTED/REVISED: 4-APR-2018

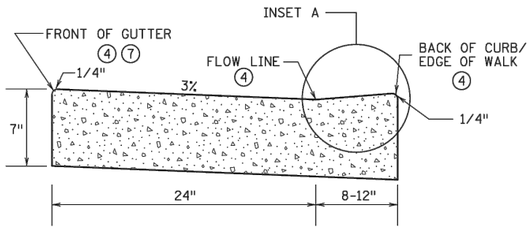


PERPENDICULAR ①

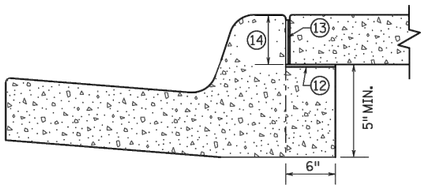


NON PERPENDICULAR ②

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

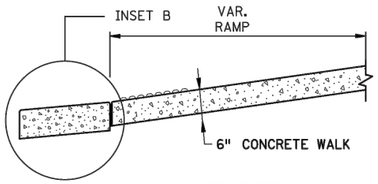


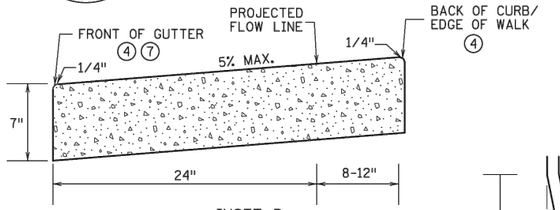
FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)



OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

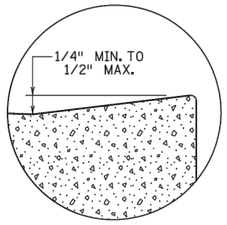
CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



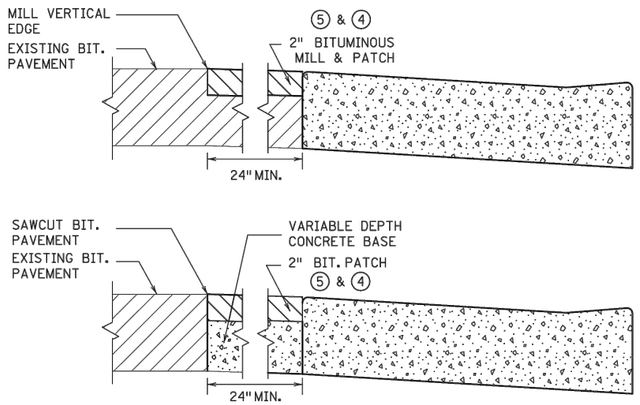


INSET B

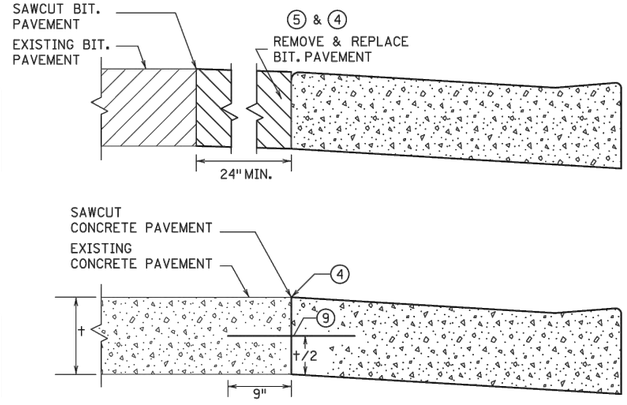
OUTFLOW GUTTER ⑧



INSET A

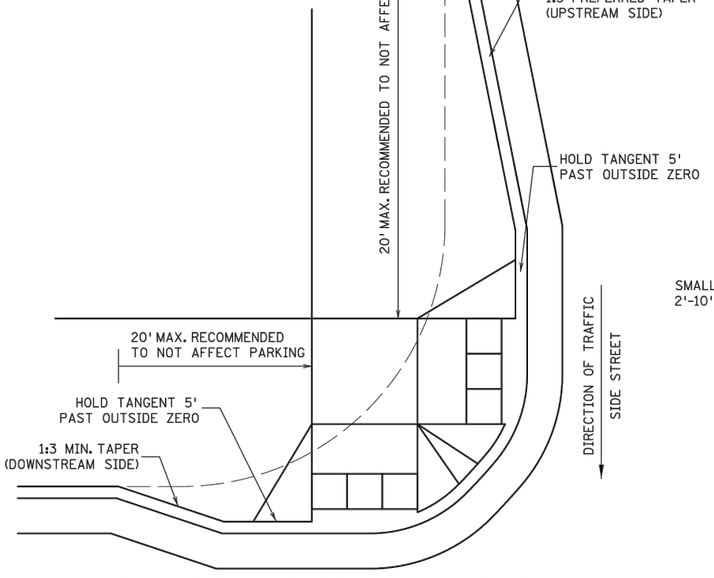


ONLY ALLOWED PER ENGINEER'S APPROVAL



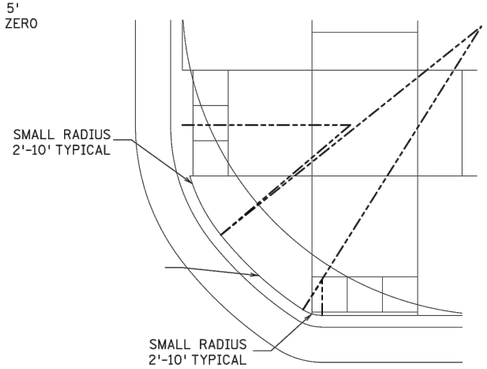
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪

DIRECTION OF TRAFFIC
MAIN STREET



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 OVERLAID.

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.

⑫ PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.

⑬ 1/2" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.

⑭ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 3 OF 6

APPROVED: 1-23-2017

REVISED:

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

BOLTON & MENK

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

City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
PEDESTRIAN CURB RAMP DETAILS

SHEET 11 OF 33

PLOTTED/REVISED: 4-APR-2018

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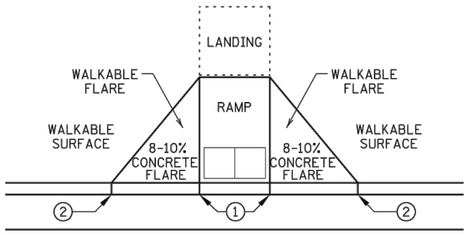
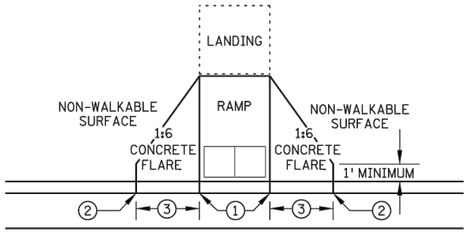
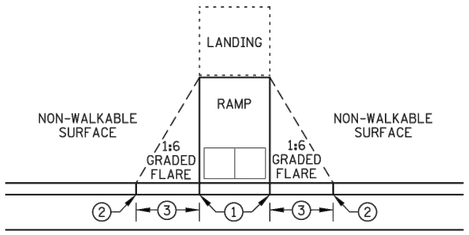


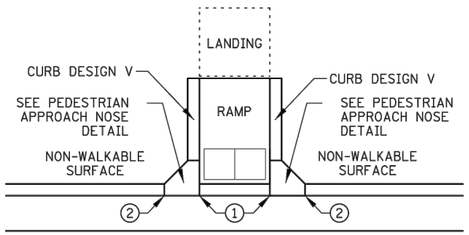
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

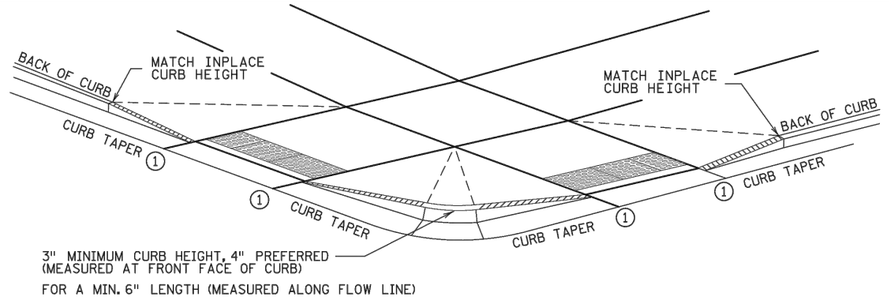


GRADED FLARES

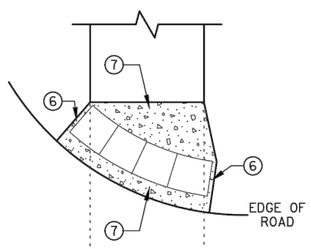


RETURNED CURB ⑤

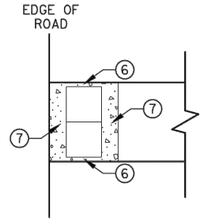
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



DETECTABLE EDGE WITH ⑧ CURB AND GUTTER

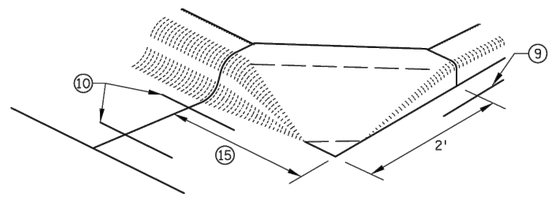


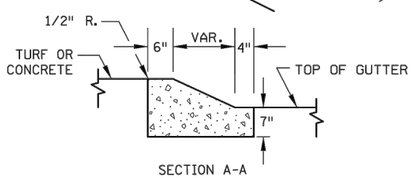
RADIAL DETECTABLE WARNING



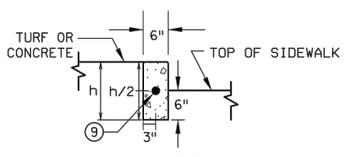
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER





SECTION A-A



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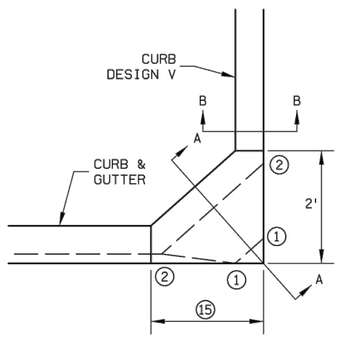
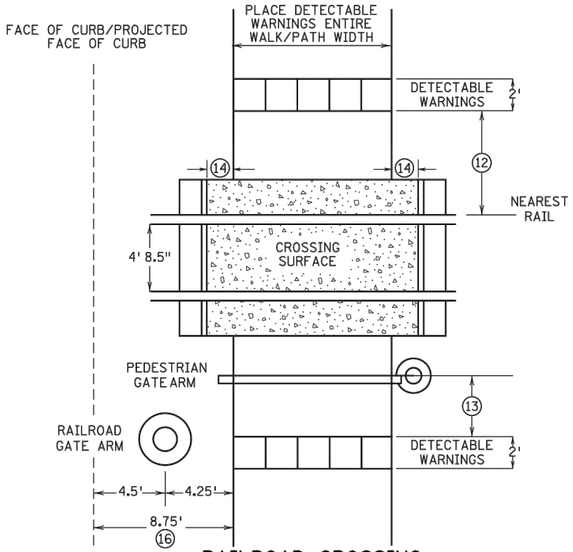


PEDESTRIAN APPROACH NOSE DETAIL
(FOR RETURNED CURB SIDE TREATMENT)



RAILROAD CROSSING PLAN VIEW

NOTES:

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

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

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

① 0" CURB HEIGHT.

② FULL CURB HEIGHT.

③ 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.

④ 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.

⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑥ 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.

⑦ 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.

⑧ 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.

⑨ 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.

⑩ 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.

⑪ 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.

⑫ 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.

⑬ 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 ⑫.

⑭ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

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

⑯ 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.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | 4 OF 6
APPROVED: 1-23-2017
REVISED:

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

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

City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
PEDESTRIAN CURB RAMP DETAILS

SHEET 12 OF 33

PLOTTED/REVISED: 4-APR-2018
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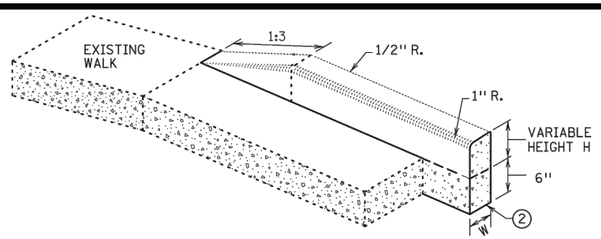
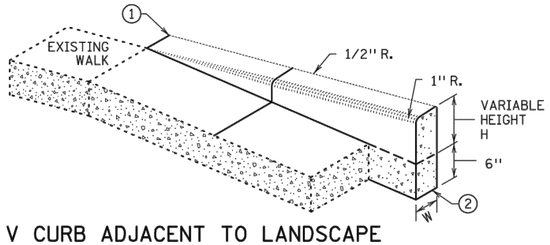


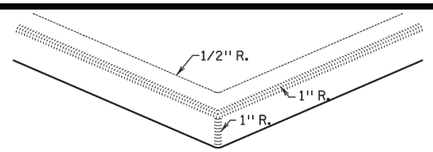
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

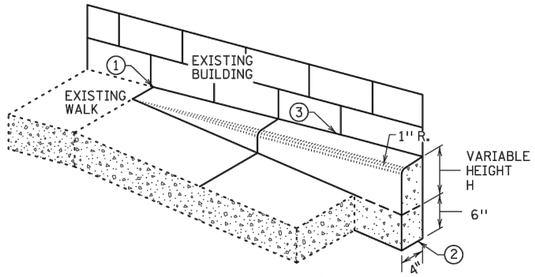


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

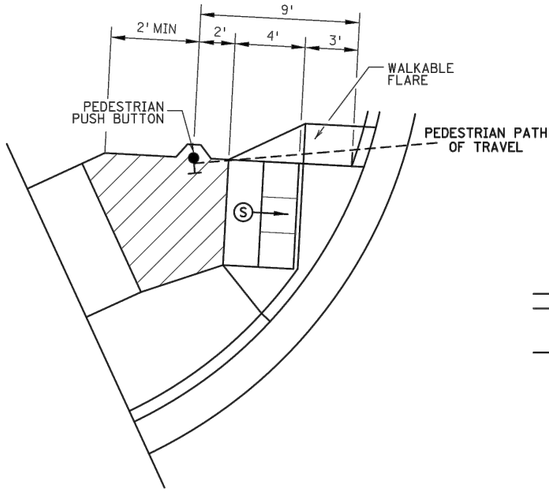


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING OR BARRIER

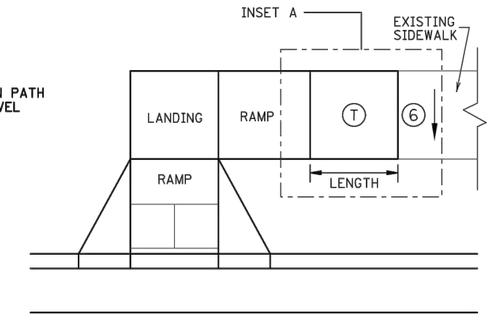
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
<6"	4"
≥6"	6"

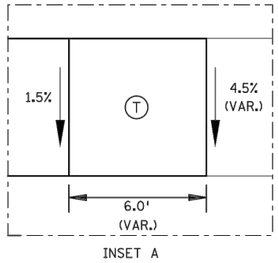


SEMI-DIRECTIONAL RAMP (3,4,9)

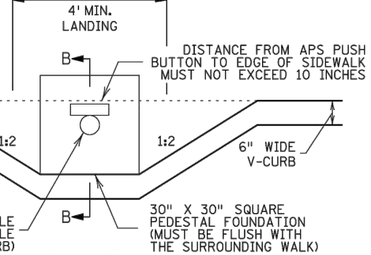
3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

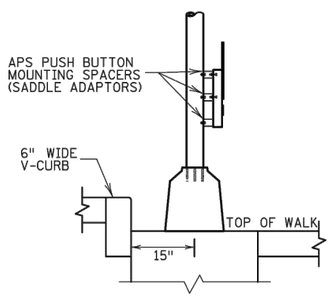




TRANSITION PANEL ④⑤

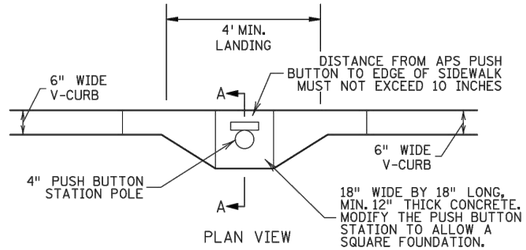


PLAN VIEW

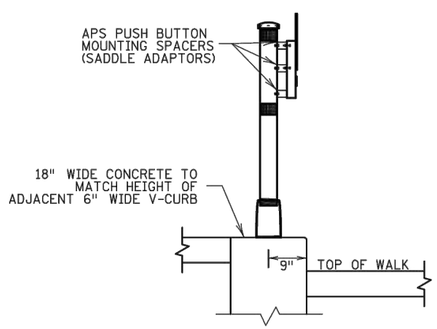


SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



PLAN VIEW



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

1. END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
2. ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
3. EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
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.

- (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%.
- 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.
- (T) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 5 OF 6

APPROVED: 1-23-2017

REVISED:

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

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

City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA

2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

PEDESTRIAN CURB RAMP DETAILS

SHEET 13 OF 33

PLOTTED/REVISED: 4-APR-2018
IPLOT NAME: s250_5.spn
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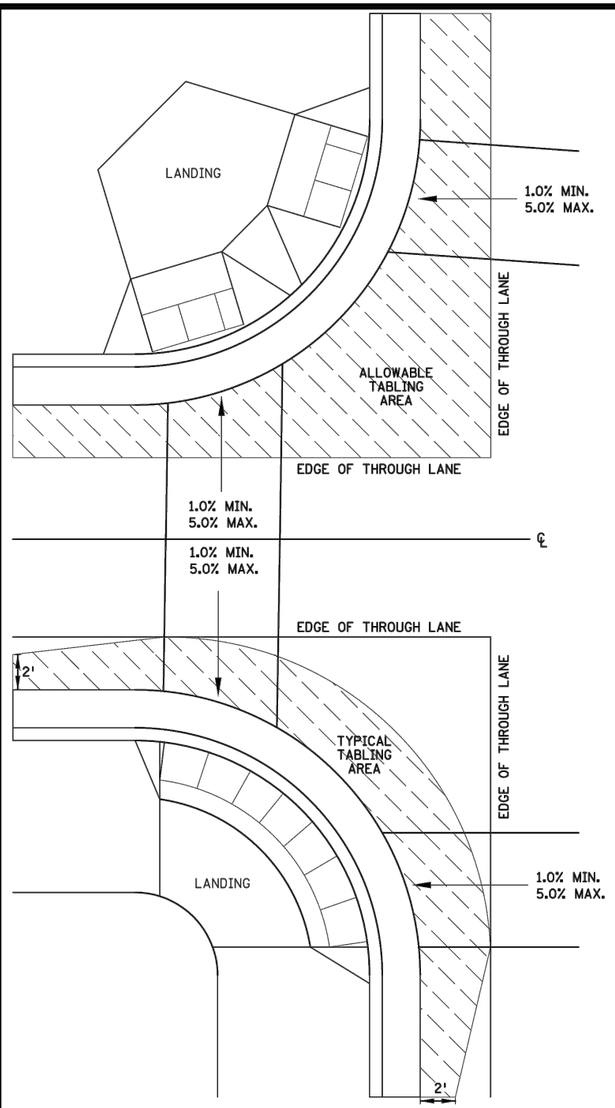
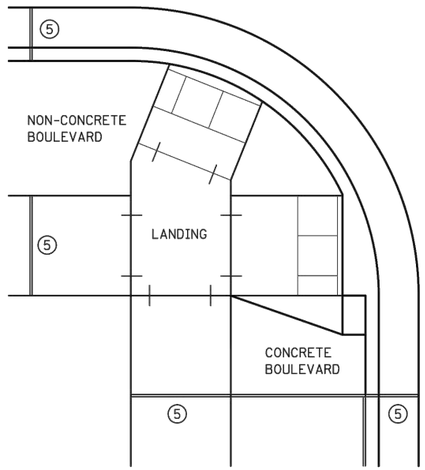
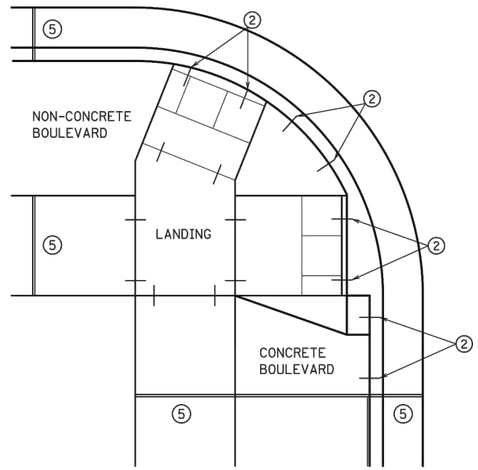


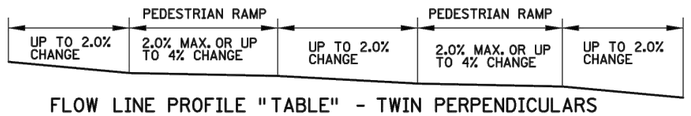
CURB LINE AND ROAD CROSSING ADJUSTMENTS



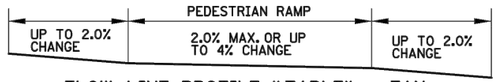
EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS



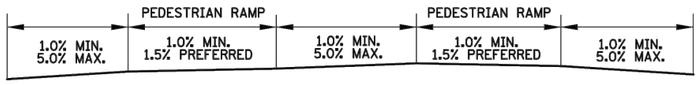
OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS ④



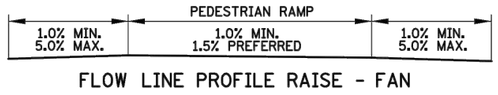
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



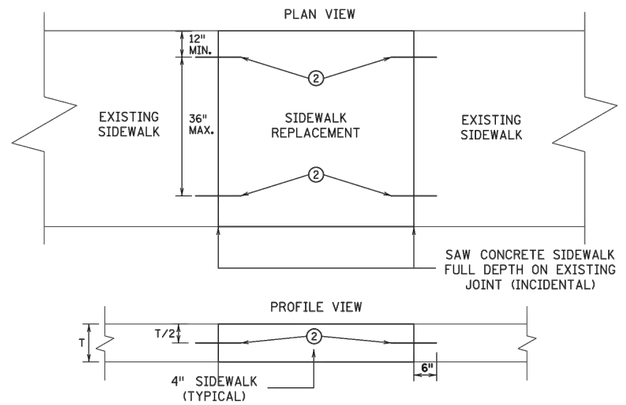
FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

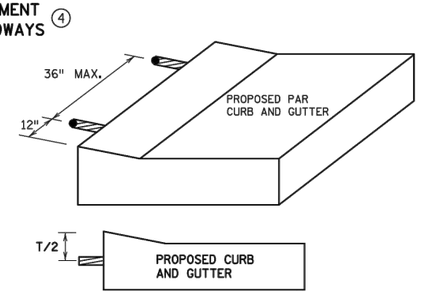


FLOW LINE PROFILE RAISE - FAN

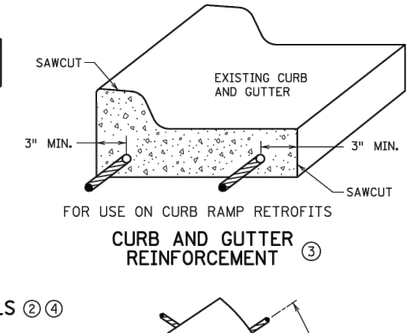


OPTIONAL SIDEWALK REINFORCEMENT

SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

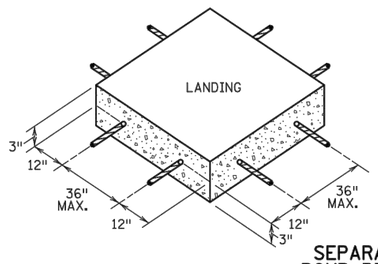


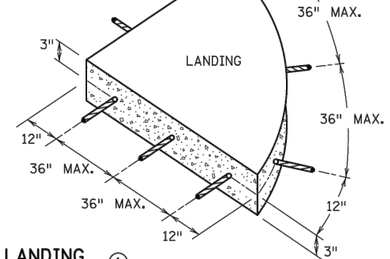
OPTIONAL CURB LINE REINFORCEMENT DETAILS ②④



FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER REINFORCEMENT ③





SEPARATE LANDING POUR REINFORCEMENT ①

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

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

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

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

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

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

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

NOTES:

1. TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
2. DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAXIMUM CENTER TO CENTER (EPOXY COATED). BARS TO BE ADJUSTED TO MATCH RAMP GRADE.
3. DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS WITHIN RADIUS.
4. THIS OPTIONAL CURB LINE REINFORCEMENT DETAIL SHOULD ONLY BE USED ON BITUMINOUS ROADWAYS WHEN SPECIFIED IN THE PLAN.
5. 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MNDOT SPEC. 3702.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 6 OF 6

APPROVED: 1-23-2017

REVISED:

STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

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

City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
PEDESTRIAN CURB RAMP DETAILS

SHEET 14 OF 33

PLOTTED/REVISED: 4-APR-2018

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TRAFFIC CONTROL PHASING PLAN:

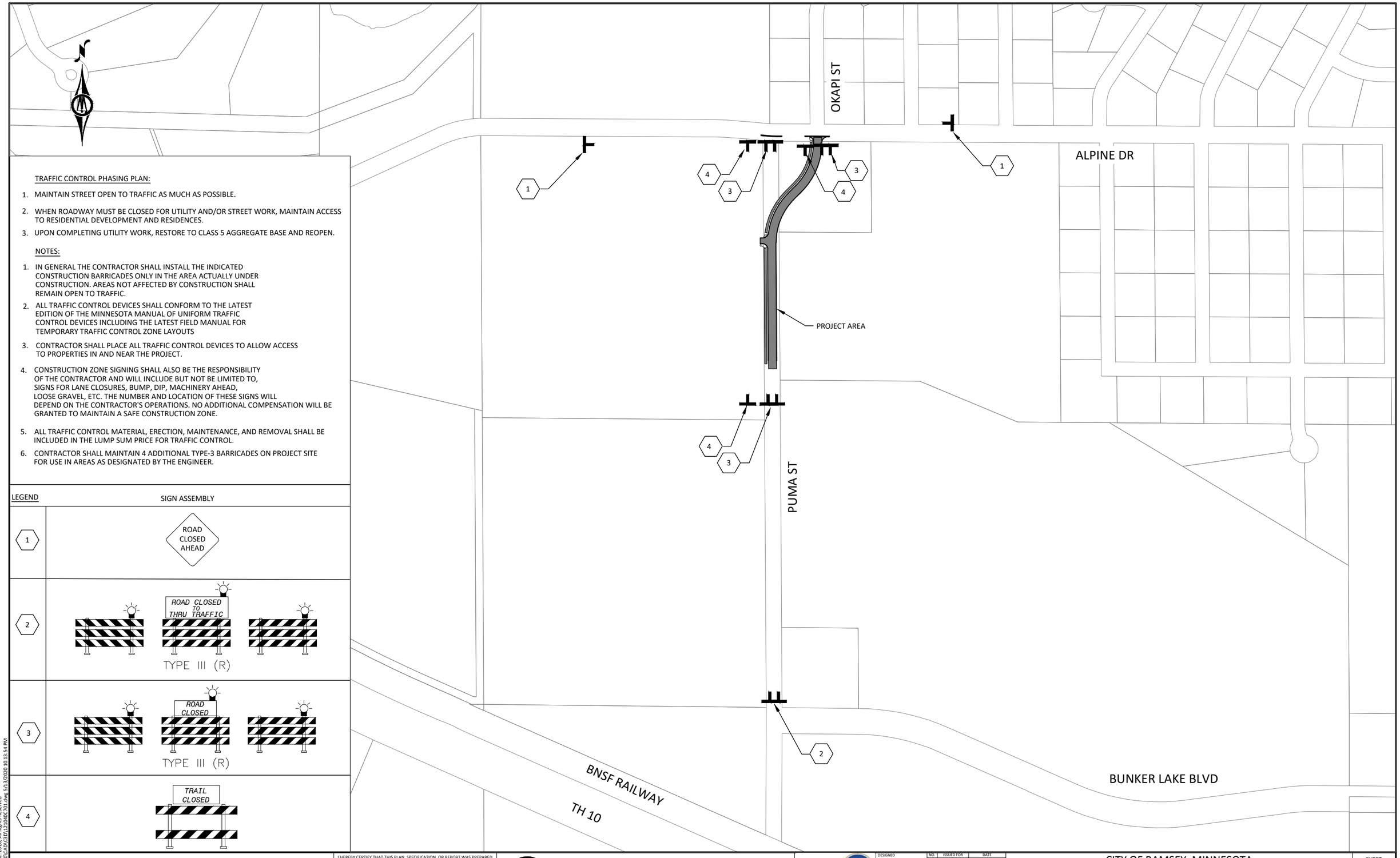
1. MAINTAIN STREET OPEN TO TRAFFIC AS MUCH AS POSSIBLE.
2. WHEN ROADWAY MUST BE CLOSED FOR UTILITY AND/OR STREET WORK, MAINTAIN ACCESS TO RESIDENTIAL DEVELOPMENT AND RESIDENCES.
3. UPON COMPLETING UTILITY WORK, RESTORE TO CLASS 5 AGGREGATE BASE AND REOPEN.

NOTES:

1. IN GENERAL THE CONTRACTOR SHALL INSTALL THE INDICATED CONSTRUCTION BARRICADES ONLY IN THE AREA ACTUALLY UNDER CONSTRUCTION. AREAS NOT AFFECTED BY CONSTRUCTION SHALL REMAIN OPEN TO TRAFFIC.
2. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS
3. CONTRACTOR SHALL PLACE ALL TRAFFIC CONTROL DEVICES TO ALLOW ACCESS TO PROPERTIES IN AND NEAR THE PROJECT.
4. CONSTRUCTION ZONE SIGNING SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL INCLUDE BUT NOT BE LIMITED TO, SIGNS FOR LANE CLOSURES, BUMP, DIP, MACHINERY AHEAD, LOOSE GRAVEL, ETC. THE NUMBER AND LOCATION OF THESE SIGNS WILL DEPEND ON THE CONTRACTOR'S OPERATIONS. NO ADDITIONAL COMPENSATION WILL BE GRANTED TO MAINTAIN A SAFE CONSTRUCTION ZONE.
5. ALL TRAFFIC CONTROL MATERIAL, ERECTION, MAINTENANCE, AND REMOVAL SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR TRAFFIC CONTROL.
6. CONTRACTOR SHALL MAINTAIN 4 ADDITIONAL TYPE-3 BARRICADES ON PROJECT SITE FOR USE IN AREAS AS DESIGNATED BY THE ENGINEER.

LEGEND

	SIGN ASSEMBLY
1	ROAD CLOSED AHEAD
2	ROAD CLOSED TO THRU TRAFFIC — TYPE III (R)
3	ROAD CLOSED — TYPE III (R)
4	TRAIL CLOSED



0 200 400
SCALE FEET

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.

REVIEW PLANS

KEVIN P. KIELB

LIC. NO. 23211 DATE 05/12/2020

BOLTON & MENK

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

City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

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CITY OF RAMSEY, MINNESOTA

2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

TRAFFIC CONTROL PLAN

SHEET 15 OF 33

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BEGIN PROJECT: S.A.P. 199-109-007
STA 0+35.00

SALVAGE NO PARKING SIGN

ESMT

R/W

10'

24'

EX 6" FM

EX 12" SAN

EX 16" DIP

1+00

2+00

3+00

4+00

5+00

6+00

7+00

8+00

PUMA STREET NW

SEE BELOW

REMOVE PAVEMENT MARKINGS

PROTECT GATE VALVE

SALVAGE NO PARKING SIGN

SALVAGE TWO-WAY LEFT-TURN ONLY SIGN & PLAQUE

SALVAGE NO PARKING SIGN

R/W

ESMT

MATCH LINE
8+00

SALVAGE NO PARKING SIGN

SALVAGE SPEED LIMIT SIGN

EX R/W

SALVAGE STREET NAME SIGN

10'

24'

SEE ABOVE

8+00

9+00

PUMA STREET NW

R/W TO BE VACATED

SALVAGE NO PARKING SIGN, MRT SIGN (2 EA)
& DIRECTIONAL PLAQUE

SALVAGE STOP SIGN

10+00

EX R/W

EX ESMT

MATCH LINE
8+00

11+00

CITY OF RAMSEY PARCEL

R/W

12+00

PUMA STREET NW CL

13+00

CITY OF RAMSEY PARCEL

R/W

ESMT

14+00

ALPINE DRIVE NW

SAWCUT PAVEMENT (FULL DEPTH) (TYP)

OKAPI STREET NW

END PROJECT: S.A.P. 199-109-007
STA 14+37.00

NOTES

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING SIGNS THAT INTERFERE WITH CONSTRUCTION SHALL BE SALVAGED BY THE CONTRACTOR.
3. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
4. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO SAWCUTTING, INCLUDING TREE REMOVALS.
5. CONTRACTOR TO SUBMIT TEMPORARY PEDESTRIAN ACCESS PLAN PER SPECIFICATION

LEGEND

- CONSTRUCTION LIMITS
- REMOVE CURB & GUTTER
- SAWCUT PAVEMENT (FULL DEPTH)
- REMOVE PAVEMENT MARKING
- SALVAGE EXISTING SIGN
- REMOVE BIT PAVEMENT
- REMOVE CONCRETE PAVEMENT
- EXISTING CURB & GUTTER
- EXISTING EASEMENT LINE
- EXISTING RIGHT-OF-WAY
- UNDERGROUND GAS
- UNDERGROUND COMM
- OVERHEAD UTILITY
- TREE-CONIFEROUS
- TREE-DECIDUOUS
- EXISTING TRAFFIC SIGN
- WET WELL
- VALVE VAULT
- FIRE HYDRANT
- VALVE
- TRANSFORMER-ELECTRIC
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC
- HANDHOLE
- POLE-UTILITY
- GUY WIRE ANCHOR

0 25 50
SCALE FEET

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.

REVIEW PLANS

KEVIN P. KIELB
LIC. NO. 23211 DATE 05/12/2020

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City of RAMSEY

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CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
EXISTING CONDITIONS & REMOVALS

SHEET 16 OF 33

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

2020 PUMA STREET IMPROVEMENTS

S.A.P. 199-109-007
CITY OF RAMSEY
ANOKA COUNTY, MINNESOTA

RESPONSIBLE PARTIES:
The Contractor and Owner will be joint applicants under the MPCA's General Stormwater Permit for Construction Activity as required by the National Pollutant Discharge Elimination System (NPDES) Phase II program.

The Contractor shall provide one or more trained Construction SWPPP Manager(s) knowledgeable and experienced in the application of erosion prevention and sediment control BMPs that will oversee the implementation of the SWPPP, and the installation, inspection and maintenance of the erosion prevention and sediment control BMPs.

A Construction SWPPP Manager must be available for an on-site inspection within 72 hours upon request by the MPCA.

	COMPANY	CONTACT PERSON	PHONE
OWNER:	City of Ramsey	Bruce Westby, PE	763-433-9825
SWPPP DESIGNER:	Bolton & Menk, Inc.	Zach Lingl, PE	952-890-0509
CONTRACTOR:	TBD	TBD	TBD
CONSTRUCTION SWPPP MANAGER:	TBD	TBD	TBD
PARTY RESPONSIBLE FOR LONG TERM O&M:	City of Ramsey	Bruce Westby, PE	763-433-9825

The SWPPP Designer, Construction SWPPP Manager, and BMP Installer must have appropriate training. Documentation showing training commensurate with the job duties and responsibilities is required to be included in the SWPPP prior to any work beginning on the site. Training documentation for the SWPPP Designer is included on the Narrative sheet. The Contractor shall attach training documentation to this SWPPP for the Construction SWPPP Manager and BMP Installer prior to the start of construction. This information shall be kept up to date until the project NOT is filed.

ADDITIONAL COMPENSATION
Payment for all work associated with Erosion and Sediment Control shall be as described in the Project Manual. Unless otherwise authorized by the Owner no additional payment shall be made for any work required to administer and maintain the site erosion and sediment control in compliance with the Minnesota Pollution Control Agency (MPCA) - General Stormwater Permit for Construction Activity (MN R100001) including but not limited to inspection, maintenance, and removal of BMPs or addition of BMPs to accommodate Contractor phasing.

DOCUMENT RETENTION
Permittees must make the SWPPP, including all inspection reports, maintenance records, training records and other information required by this permit, available to federal, state, and local officials within three (3) days upon request for the duration of the permit and for three (3) years following the NOT.

GENERAL STORMWATER DISCHARGE REQUIREMENTS

Permanent stormwater treatment systems for this project have been designed by others. Residential developments are planned for construction within the same time frame as the 2020 Puma Street Improvements. Stormwater runoff within the project site will discharge into the residential development systems.

LEGEND

- 1-MILE BOUNDARY
- PROJECT BOUNDARY
- IMPAIRED, SPECIAL OR PROTECTED WATERS
- NATIONAL WETLANDS INVENTORY

PROJECT AREAS:

Total Project Size (disturbed area) =	3.5	ACRES
Existing area of impervious surface =	0.9	ACRES
Post construction area of impervious surface =	1.3	ACRES
Total new impervious surface area created =	0.4	ACRES

Planned Construction Start Date:	JULY 2020
Estimated Construction Completion Date:	NOVEMBER 2020

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

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

PROJECT LOCATION:

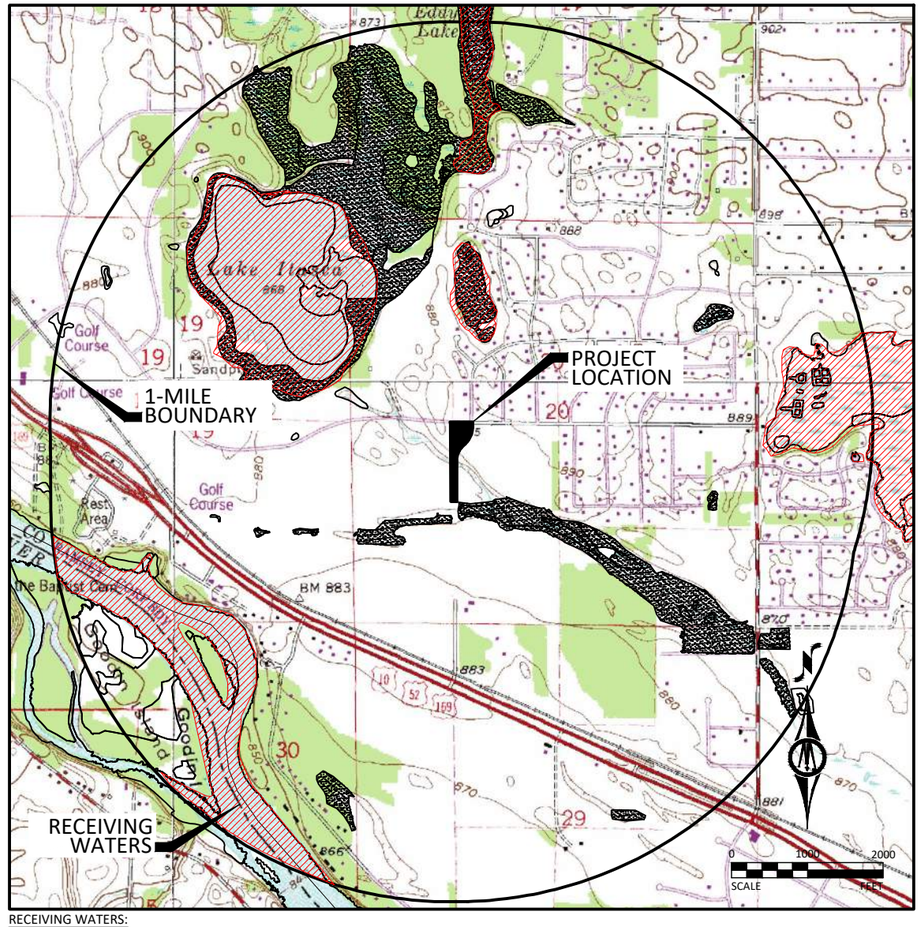
COUNTY	TOWNSHIP	RANGE	SECTION	LATITUDE	LONGITUDE
ANOKA	T32N	R25W	S29	45.23356°	-93.48042°

BMP SUMMARY	QUANTITY	UNIT
HYDRAULIC BONDED FIBER MATRIX	10,000	LBS
SILT FENCE, TYPE MS	1400	LF
SEDIMENT CONTROL LOG TYPE WOOD FIBER	550	LF
STABILIZED CONSTRUCTION EXIT	1	LS
RAPID STABILIZATION METHOD 2	0.5	AC

DESCRIPTION OF CONSTRUCTION ACTIVITIES AND STORMWATER MANAGEMENT:
Construction activities include: Site grading, sanitary sewer, water main, and storm sewer extensions, temporary erosion and sediment control, and permanent stabilization.

Puma Street NW is presently a rural roadway section with ditch ways on either side of the pavement. The ditch ways drain to local wetlands, unassessed streams, and City of Ramsey facilities that ultimately reach the Mississippi River.

After construction is complete stormwater will be conveyed via curb & gutter and storm sewer pipes to permanent stormwater treatment systems. Permanent stormwater treatment systems for this project have been designed by others. Residential developments are planned for construction within the same time frame as the 2020 Puma Street Improvements. Stormwater runoff within the project site will discharge into the residential development systems.



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

NAME OF WATER BODY	TYPE (ditch, pond, wetland, lake, etc.)	Special, Prohibited, Restricted Water [1]	Flows to Impaired Water Within 1-Mile [2]	USEPA Approved Construction Related TMDL [3]
MISSISSIPPI RIVER	RIVER	YES	YES, NOT FOR CONST.	YES, NOT FOR CONST.
IMPAIRMENTS: MERCURY				

[1] Special, prohibited, and restricted waters are listed in Section 23 of the MN Construction Stormwater General Permit (MNR100001).
[2] Identified as impaired under section 303 (d) of the federal Clean Water Act for phosphorus, turbidity, TSS, dissolved oxygen, and/or aquatic biota.
[3] Construction Related TMDLs include those related to: phosphorus, turbidity, TSS, dissolved oxygen, and/or aquatic biota.

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

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

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
REVIEW PLANS
KEVIN P. KIELB
LIC. NO. 23211 DATE 05/12/2020

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City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
STORM WATER POLLUTION PREVENTION PLAN

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 RI0000I (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 less 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 have been identified in the project vicinity?	NO
6)	Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO
7)	Has the MN DNR promulgated "work in water restrictions" for any Public Water this site disharges to during fish spawning?	NO

TYPE OF PERMIT	PERMITTING AGENCY	PERMIT STATUS AND CONDITIONS
Construction Stormwater NPDES	MPCA	To be obtained by Contractor
Dewatering	MnDNR	To be obtained by Contractor
Sanitary Sewer Extension	MPCA	Owner Obtained
Watermain Extension	MN Dept. Health	Owner Obtained
Watershed	LRRWMO	Owner Obtained

SWPPP DESIGNER TRAINING DOCUMENTATION:

UNIVERSITY OF MINNESOTA

Zachary Lingl

Construction Installer (May 31 2020)
Construction Site Management (May 31 2020)
Design of Construction SWPPP (May 31 2021)

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REVIEW PLANS
KEVIN P. KIELB
LIC. NO. 23211 DATE 05/12/2020

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City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
STORM WATER POLLUTION PREVENTION PLAN

LEGEND

- PROJECT BOUNDARY
- SOIL TYPE
- NATIONAL WETLANDS INVENTORY
- STEEP SLOPES (>33.3%)

N

0 100 200
SCALE FEET

SOIL TYPE SUMMARY

Map Unit Symbol	Soil Name	Hyd. Soil Group	Erodibility
MUSYM	MUNAME	HYDGRP	MUHELCL
D67A	Hubbard loamy sand, Mississippi River Valley, 0 to 2 percent slopes	A	NHEL
D67B	Hubbard loamy sand, Mississippi River Valley, 2 to 6 percent slopes	A	NHEL
D67C	Hubbard loamy sand, Mississippi River Valley, 6 to 12 percent slopes	A	NHEL
Dp	Duelm loamy sand, 0 to 2 percent slopes	A/D	NHEL
Is	Isan-Isan, frequently ponded, complex, 0 to 2 percent slopes	A/D	NHEL

NHEL - Not Highly Erodible Land
PHEL - Potentially Highly Erodible Land
HEL - Highly Erodible Land

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	SHEET NO.
SITE MAP	18
DIRECTION OF FLOW	20
FINAL STABILIZATION	20
SOILS	19
DRAINAGE TABULATION	#
STORM SEWER PLAN & PROFILE SHEETS	23 - 24
EROSION & SEDIMENT CONTROL DETAILS	6
EROSION CONTROL TABULATION	#
TURF ESTABLISHMENT TABULATION	#
NARRATIVE & NOTES	17 - 18

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CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
STORM WATER POLLUTION PREVENTION PLAN

SHEET 19 OF 33

BEGIN PROJECT: S.A.P. 199-109-007
STA 0+35.00

SEE BELOW

SEDIMENT CONTROL LOG (TYP)

PUMA STREET NW

R/W

ESMT

SILT FENCE (TYP)

MATCHLINE 8+00

SEE BELOW

VERIFY RIVERSTONE 4TH ADDITION GRADING BEFORE STORM SEWER CONSTRUTION

SEE ABOVE

152ND AVENUE NW

MATCHLINE 8+00

EX R/W

SEDIMENT CONTROL LOG (TYP)

EX R/W

EX ESMT

SOIL STOCKPILE LOCATION

SILT FENCE (TYP)

PUMA STREET NW

R/W

ESMT

SITE GRADING AREA, QUANTITIES INCLUDED IN EARTHWORK CONTRACT ITEMS, AREA SHALL BE USED FOR MATERIAL STORAGE

ALPINE DRIVE NW

OKAPI STREET NW

CITY OF RAMSEY PARCEL

END PROJECT:
S.A.P. 199-109-007
STA 14+37.00

NOTES:

1. INSTALL EROSION CONTROL MEASURES PRIOR TO COMMENCING CONSTRUCTION
2. A STREET SWEEPER MUST BE AVAILABLE WITHIN 3 HOURS UPON NOTICE FROM THE CITY THAT THE STREETS NEED TO BE SWEPT
3. ALL SILT FENCE TO BE REMOVED ONCE SEED IS ESTABLISHED
4. RAPID STABILIZATION METHOD 2 SHALL BE UTILIZED WITHIN 7 DAYS AND INITIATED IMMEDIATELY IF PERMANENT STABILIZATION IS NOT USED
5. STABILIZED CONSTRUCTION EXIT SHALL INCLUDE A ROCK FILTER BERM AT A MINIMUM TWO FEET IN HEIGHT AND SIDE SLOPES OF 4:1 AT THE SITE EXIT
6. ALL SEDIMENT TRACKED ON CITY STREETS SHALL BE SWEPT IMMEDIATELY UPON DISCOVERY
7. INLET PROTECTIONS AT CULVERT APRONS ARE TO BE CONSTRUCTED OF SILT FENCE

LEGEND

- MS — MACHINE SLICED SILT FENCE
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INLET PROTECTION
- RANDOM RIP RAP CL III
- HYDRAULIC BONDED FIBER MATRIX, SEED MIX 25-121, FERTILIZER TYPE 3
- STABILIZED CONSTRUCTION EXIT
- EXISTING/PROPOSED DRAINAGE FLOW
- PROPOSED BIT PAVEMENT
- PROPOSED CURB & GUTTER
- EXISTING CURB & GUTTER
- EXISTING EASEMENT LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- UNDERGROUND GAS
- UNDERGROUND COMM
- OVERHEAD UTILITY
- TREE-CONIFEROUS
- TREE-DECIDUOUS
- EXISTING TRAFFIC SIGN
- WET WELL
- VALVE VAULT
- FIRE HYDRANT
- VALVE
- TRANSFORMER-ELECTRIC
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC
- HANDHOLE
- POLE-UTILITY
- GUY WIRE ANCHOR

0 25 50
SCALE FEET

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CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
EROSION CONTROL & TURF ESTABLISHMENT

SHEET 20 OF 33

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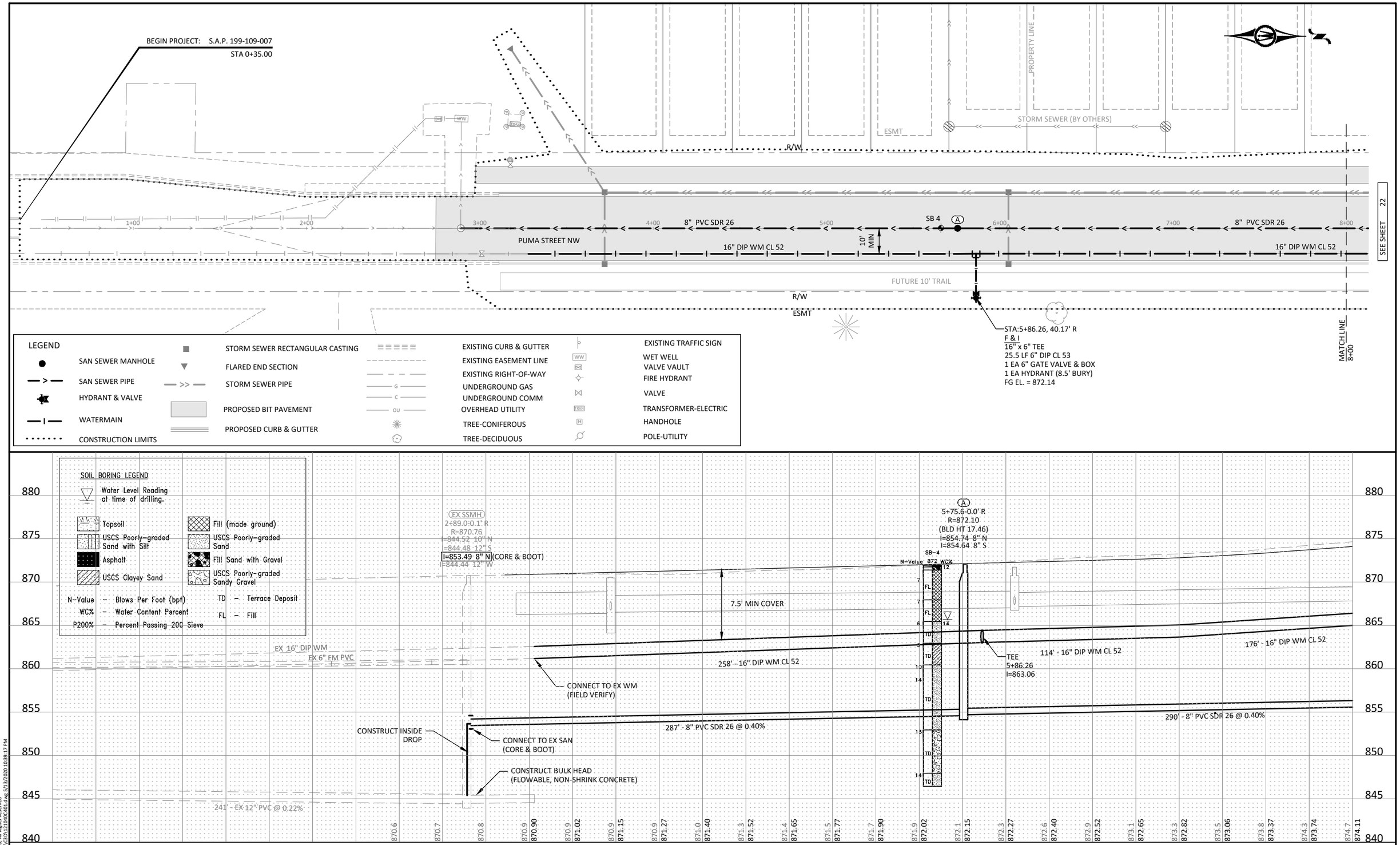

HORZ SCALE 0 25 50 FEET
VERT SCALE 0 5 10 FEET

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CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
SANITARY SEWER & WATERMAIN PLAN & PROFILE

SHEET 21 OF 33

VERIFY 152ND AVENUE UTILITY CONNECTIONS WITH RIVERSTONE 4TH ADDITION CONSTRUCTION PLANS

HYDRANT & WATERMAIN (BY OTHERS)
(FIELD VERIFY OR INSTALL 8" PLUG)
I = 866.94

SANITARY SEWER MANHOLE (BY OTHERS)
(FIELD VERIFY OR INSTALL 8" PLUG)
I = 858.22

152ND AVENUE NW

F & I
8" GATE VALVE & BOX

8" DIP WM CL 52

8" PVC SDR 26

RETAINING WALL (BY OTHERS)

CITY OF RAMSEY PARCEL

STORM SEWER (BY OTHERS)

ALPINE DRIVE NW

END PROJECT: S.A.P. 199-109-007
STA 14+37.00

OKAPI STREET NW

SB 3

SB 2

SB 1

PUMA STREET NW

R/W

16" DIP WM CL 52

F & I
16" - 11.25° BEND

F & I
16" - 22.5° BEND

F & I
16" GATE VALVE & BOX
8" GATE VALVE & BOX
16" x 8" CROSS

F & I
8" PLUG
I = 856.15

F & I
8" PLUG
I = 866.58

SEE SHEET 21

FUTURE 10' TRAIL

MATCH LINE STA 8+00

FUTURE 152ND AVENUE NW

CITY OF RAMSEY PARCEL

R/W

ESMT

F & I
16" - 22.5° BEND

F & I
16" - 11.25° BEND
16" x 12" REDUCER

F & I
12" - 90° BEND

F & I
12" PLUG
I = 876.50

STA:14+01.05, 51.30' R
F & I
12" x 6" TEE
13 LF 6" DIP CL 53
1 EA 6" GATE VALVE & BOX
1 EA HYDRANT (9.0' BURY)
FG EL. = 885.85

LEGEND

- SAN SEWER MANHOLE
- SAN SEWER PIPE
- HYDRANT & VALVE
- WATERMAIN
- CONSTRUCTION LIMITS
- STORM SEWER RECTANGULAR CASTING
- FLARED END SECTION
- STORM SEWER PIPE
- PROPOSED BIT PAVEMENT
- PROPOSED CURB & GUTTER
- EXISTING CURB & GUTTER
- EXISTING EASEMENT LINE
- EXISTING RIGHT-OF-WAY
- UNDERGROUND GAS
- UNDERGROUND COMM
- OVERHEAD UTILITY
- TREE-CONIFEROUS
- TREE-DECIDUOUS
- EXISTING TRAFFIC SIGN
- FIRE HYDRANT
- VALVE
- HANDHOLE
- POLE-UTILITY
- GUY WIRE ANCHOR
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC

SOIL BORING LEGEND

- Water Level Reading at time of drilling.
- Topsoil
- USCS Poorly-graded Sand with Silt
- Asphalt
- USCS Clayey Sand
- Fill (made ground)
- USCS Poorly-graded Sand
- Fill Sand with Gravel
- USCS Poorly-graded Sandy Gravel

N-Value – Blows Per Foot (bpf)
WC% – Water Content Percent
P200% – Percent Passing 200 Sieve
TD – Terrace Deposit
FL – Fill

Ⓑ 8+65.6-0.1' L
R=875.09
(BLD HT 19.19)
I=856.00 8" E
I=857.00 8" W
I=855.90 8" S

SB-3 N-Value 876.5 WC% P200%
SB-2 N-Value 883.5 WC% P200%
SB-1 N-Value 885 WC%

CROSS
8+77.26
I=866.09 16"
I=866.42 8"

176' - 16" DIP WM CL 52

290' - 8" PVC SDR 26 @ 0.40%

94' - 16" DIP WM CL 52

125' - 16" DIP WM CL 52

123' - 16" DIP WM CL 52

7.5' MIN COVER

138' - 16" DIP WM CL 52

90° BEND
13+87.79
I=875.63

13' - 12" DIP WM CL 52

REDUCER
13+74.86
I=875.46 16"
I=875.63 12"

4' - 16" DIP WM CL 52

STA	7+00	7+50	8+00	8+50	9+00	9+50	10+00	10+50	11+00	11+50	12+00	12+50	13+00	13+50	14+00	14+50
EXISTING	873.3	873.5	873.8	874.3	874.7	875.1	875.5	875.9	876.4	876.9	877.3	876.3	878.9	880.7	881.9	882.8	883.2	883.1	883.3	883.4	883.7	884.0	884.3	884.5	884.7	884.7	885.0	885.4	885.6	885.4
PROPOSED	872.82	873.06	873.37	873.74	874.11	874.49	874.88	875.32	875.81	876.35	876.94	877.58	878.28	879.01	879.75	880.48	881.17	881.72	882.12	882.37	882.53	882.68	882.86	883.10	883.39	883.74	884.11	884.50	884.89	

HORZ SCALE 0 25 50 FEET
VERT SCALE 0 5 10 FEET

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.

REVIEW PLANS

KEVIN P. KIELB
LIC. NO. 23211 DATE 05/12/2020

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

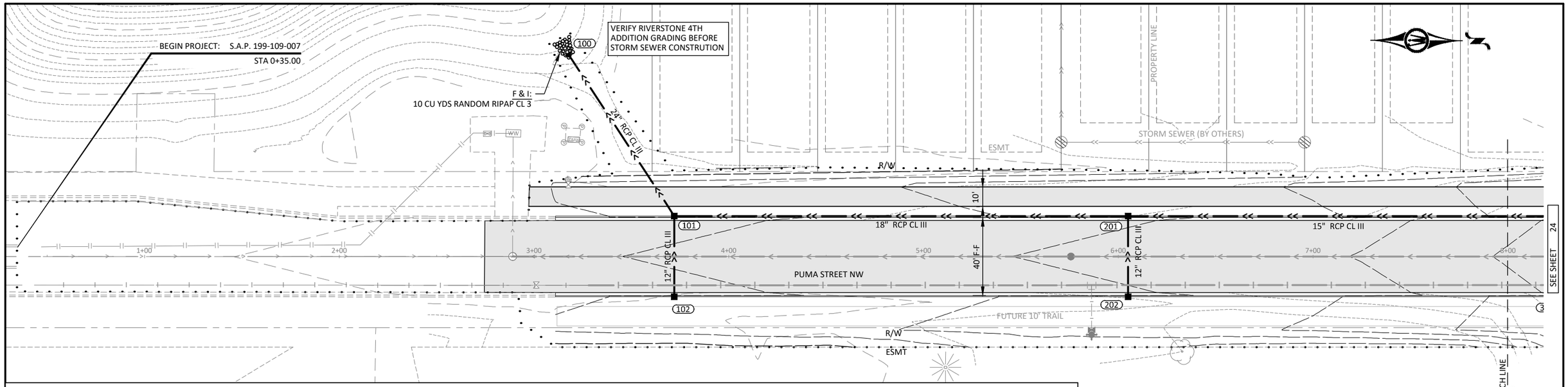
City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

NO.	ISSUED FOR	DATE

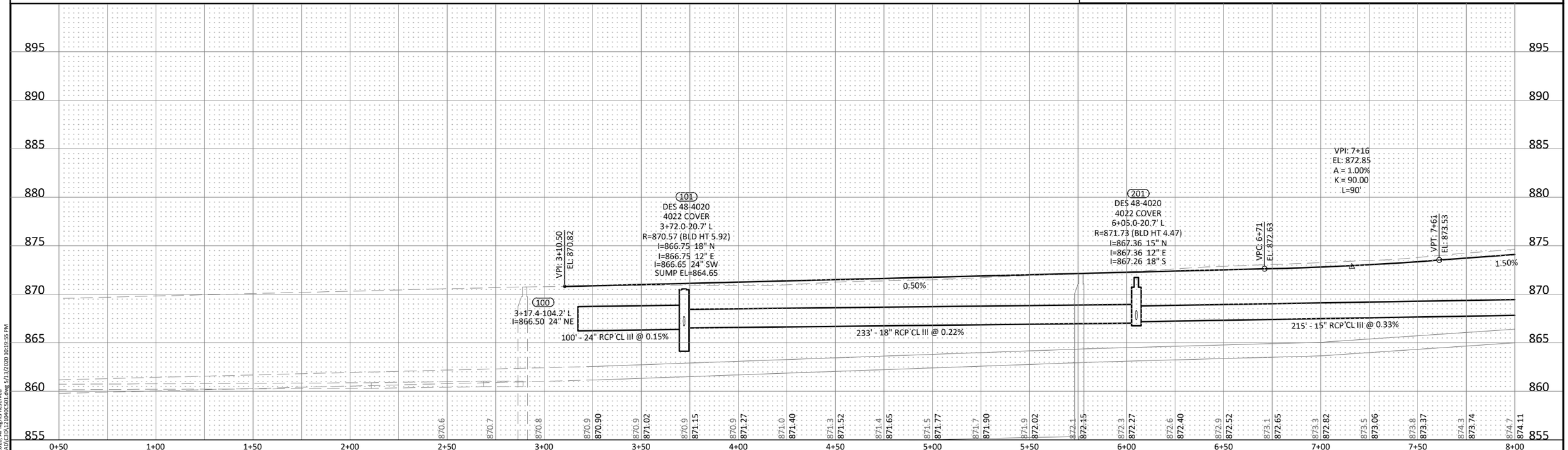
CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
SANITARY SEWER & WATERMAIN PLAN & PROFILE

SHEET 22 OF 33



LEGEND

- CONSTRUCTION LIMITS
- STORM SEWER RECTANGULAR CASTING
- FLARED END SECTION
- STORM SEWER PIPE
- RANDOM RIP RAP CL III
- SAN SEWER PIPE
- WATERMAIN
- PROPOSED CONC WALK
- PROPOSED BIT PAVEMENT
- PROPOSED CURB & GUTTER
- EXISTING CURB & GUTTER
- EXISTING EASEMENT LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- UNDERGROUND GAS
- UNDERGROUND COMM
- OVERHEAD UTILITY
- TREE-CONIFEROUS
- TREE-DECIDUOUS
- EXISTING TRAFFIC SIGN
- WET WELL
- VALVE VAULT
- FIRE HYDRANT
- VALVE
- TRANSFORMER-ELECTRIC
- HANDHOLE
- POLE-UTILITY
- GUY WIRE ANCHOR
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC



HORZ SCALE 0 25 50 FEET
VERT SCALE 0 5 10 FEET

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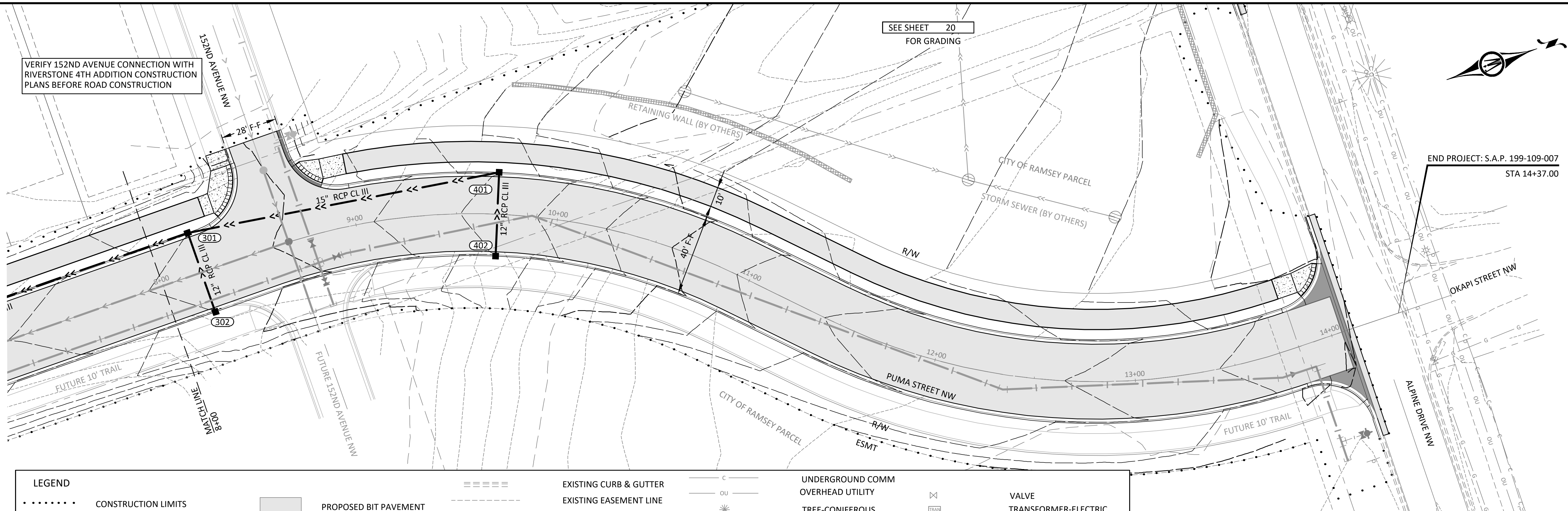
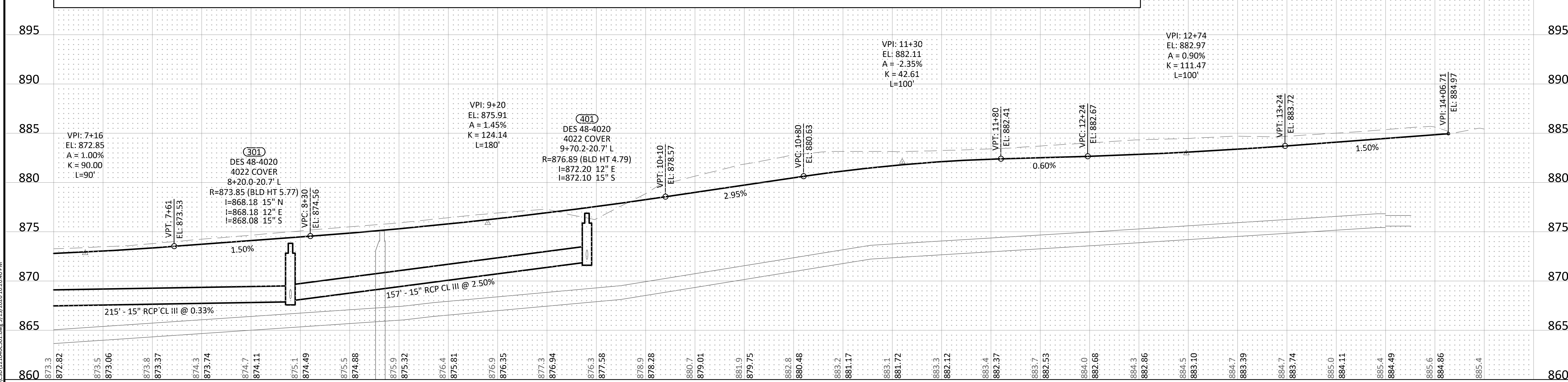
CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
STORM SEWER & STREET PLAN & PROFILE

SHEET 23 OF 33



LEGEND

CONSTRUCTION LIMITS	PROPOSED BIT PAVEMENT	EXISTING CURB & GUTTER
STORM SEWER RECTANGULAR CASTING	PROPOSED CURB & GUTTER	EXISTING EASEMENT LINE
CULVERT / PIPE PROTECTION		EXISTING RIGHT-OF-WAY
STORM SEWER PIPE		EXISTING CONTOUR MINOR
RANDOM RIP RAP CL III		EXISTING CONTOUR MAJOR
		PROPOSED CONTOUR MINOR
		PROPOSED CONTOUR MAJOR
		UNDERGROUND GAS
UNDERGROUND COMM	VALVE	
OVERHEAD UTILITY	TRANSFORMER-ELECTRIC	
TREE-CONIFEROUS	HANDHOLE	
TREE-DECIDUOUS	POLE-UTILITY	
EXISTING TRAFFIC SIGN	GUY WIRE ANCHOR	
WET WELL	PEDESTAL-COMMUNICATION	
VALVE VAULT	PEDESTAL-ELECTRIC	
FIRE HYDRANT		



HORZ 0 25 50 SCALE FEET

VERT 0 5 10 SCALE FEET

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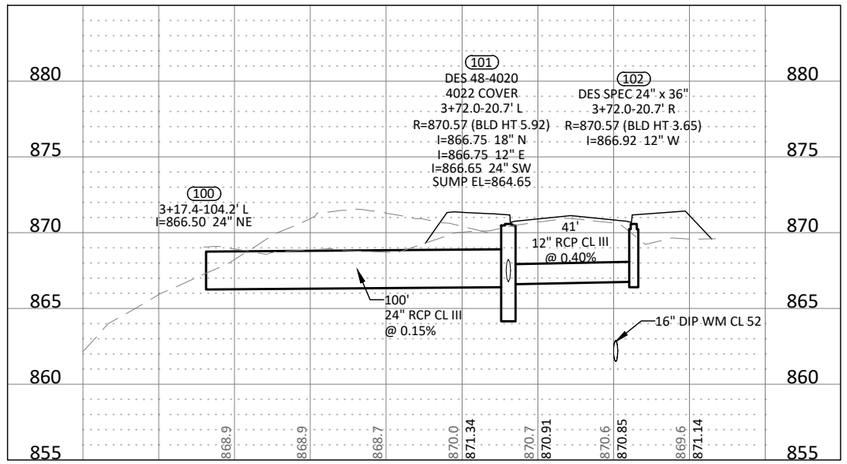
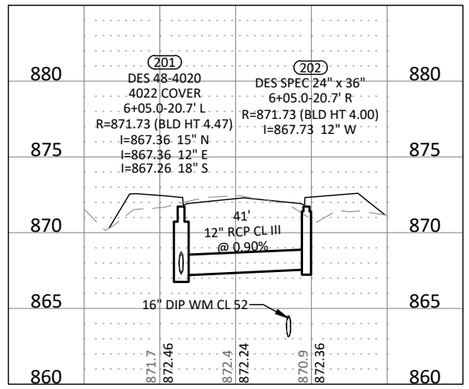
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

STORM SEWER & STREET PLAN & PROFILE

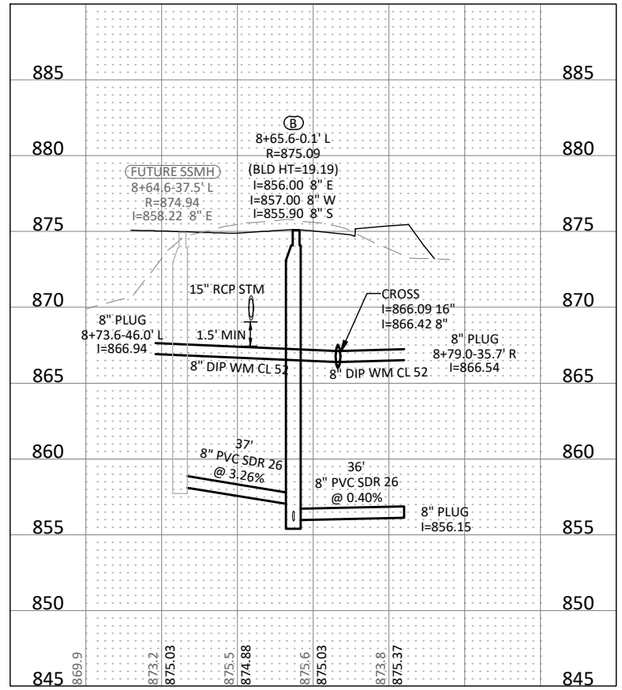
PUMA STREET STORM SEWER OUTLET STA. 3+72



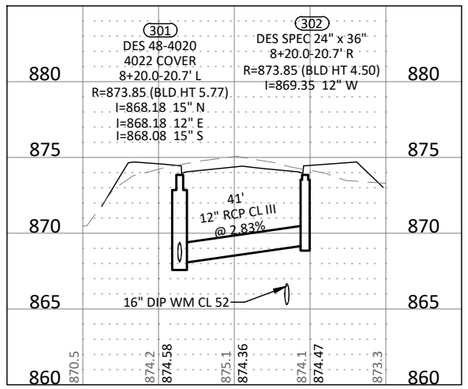
PUMA STREET STA. 6+05



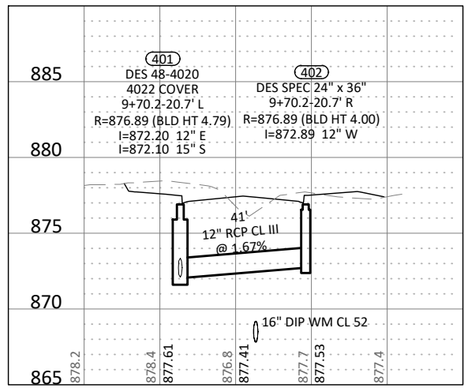
PUMA STREET & 152ND AVENUE



PUMA STREET STA. 8+20



PUMA STREET STA. 9+70



HORZ SCALE 0 25 50 FEET

VERT SCALE 0 5 10 FEET

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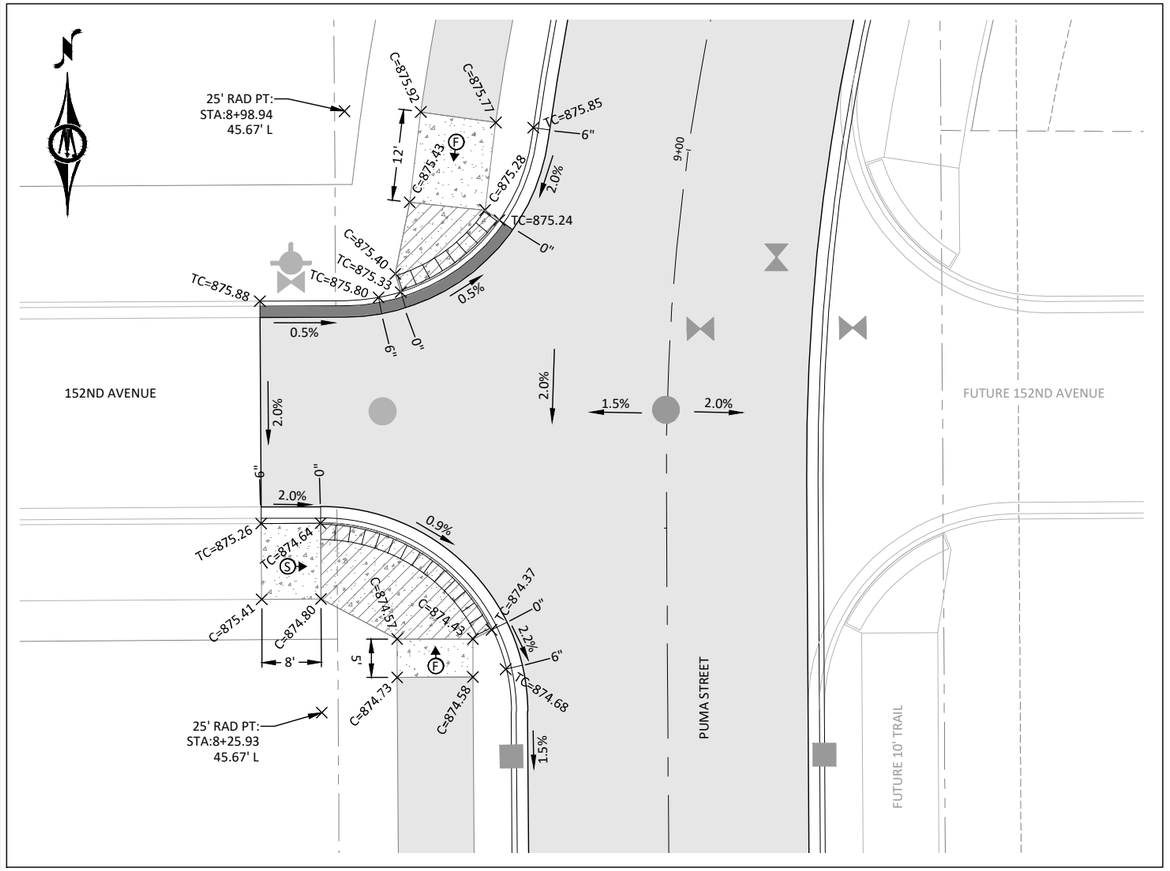
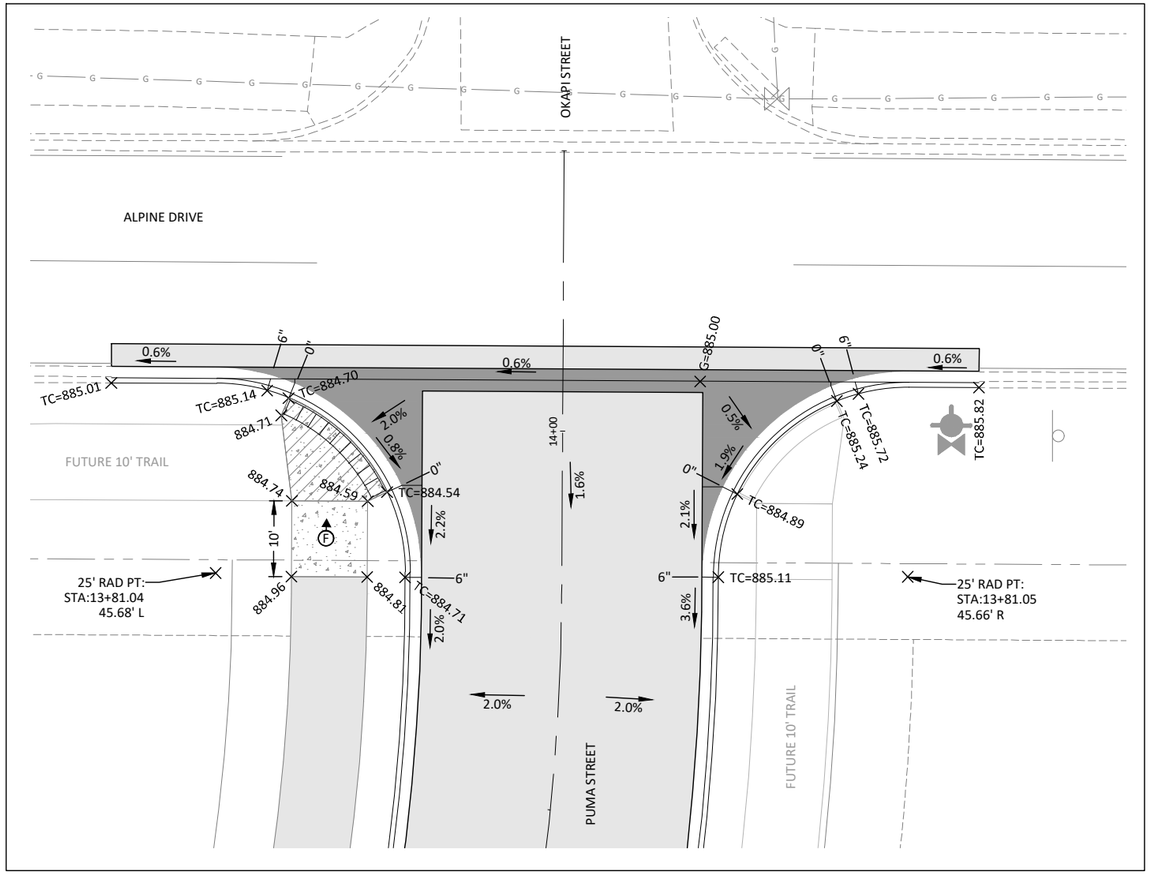
CITY OF RAMSEY, MINNESOTA

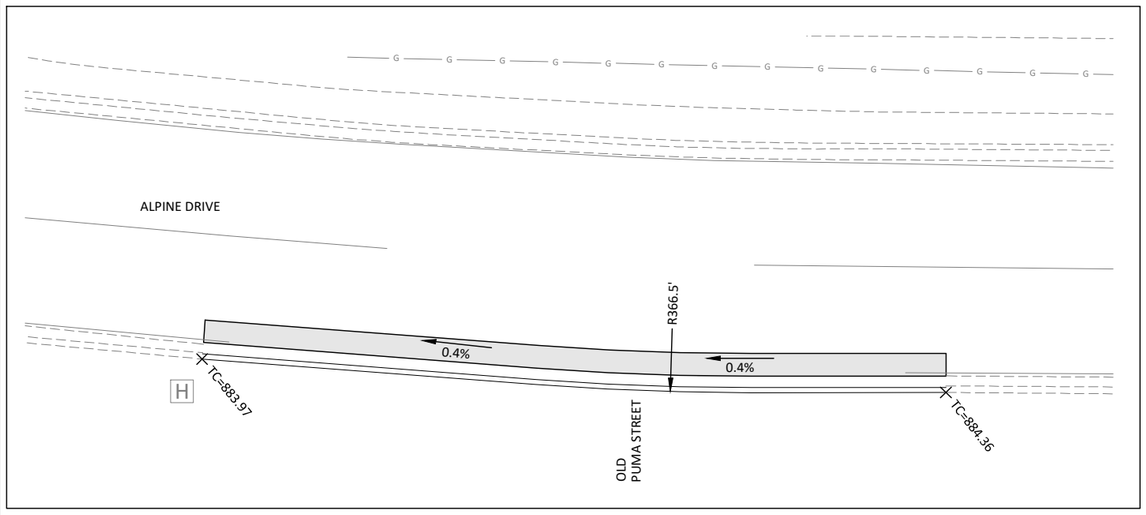
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

UTILITY LEADS

SHEET 25 OF 33







LEGEND

	EXISTING CURB & GUTTER
	B618 CONCRETE CURB & GUTTER
	B618 CONCRETE CURB & GUTTER OUT
	PROPOSED BIT PAVEMENT
	7" CONCRETE VALLEY GUTTER
	6" CONCRETE WALK (2521)
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	LANDING AREA - 4'X4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS

—X"	CURB HEIGHT
Ⓢ▸	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓕ▸	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
2.0% →	SURFACE FLOW DIRECTION
× TC=XXX.XX	PROPOSED TOP OF CURB
× G=XXX.XX	PROPOSED GUTTER
× C=XXX.XX	PROPOSED TOP OF CONCRETE
× B=XXX.XX	PROPOSED TOP OF BITUMINOUS

NOTES:

1. MATCH PROPOSED GUTTER WITH EXISTING GUTTER
2. VERIFY 152ND AVENUE ROAD CONNECTION WITH RIVERSTONE 4TH ADDITION PLANS PRIOR TO CONSTRUCTION
3. STREET RADII AND RADIUS POINTS ARE TO BACK OF CURB

0 10 20
SCALE FEET

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City of RAMSEY

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CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
INTERSECTION DETAILS

SHEET 26 OF 33

BEGIN PROJECT: S.A.P. 199-109-007
STA 0+35.00

PUMA STREET NW

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00

4SW
4SY/4BY
4SY / 4BY
R8-3 (24 X 24)
R/W
ESMT
SEE BELOW
MATCH LINE 8+00

STOP (30 X 30) R1-1
24SW
CROSSWALK BLOCK (TYP)
SEE ABOVE
8+00 9+00 10+00 11+00 12+00 13+00 14+00
W1-7 (48 X 24)
MATCH LINE 8+00
EX R/W
EX ESMT
CITY OF RAMSEY PARCEL
R3-9cP (30 X 12X)
BEGIN
R3-9B (24 X 36)
4DY
FURNISH POST & REINSTALL MRT SIGN (2 EA) & DIRECTIONAL PLAQUE ON SAME POST
SPEED LIMIT 30
W16-7P (24 X 12)
W11-15 (30 X 30)
PUMA ST NW
ALPINE DR NW
ALPINE DRIVE NW
OKAPI STREET NW
END PROJECT: S.A.P. 199-109-007
STA 14+37.00

NOTES:
1. THE CITY OF RAMSEY SHALL FURNISH & INSTALL ALL NEW SIGNS
2. SIGNS SALVAGED BUT NOT REINSTALLED SHALL REMAIN THE PROPERTY OF THE OWNER

LEGEND

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

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

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

SCALE 0 25 50 FEET

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REVIEW PLANS
KEVIN P. KIELB
LIC. NO. 23211 DATE 05/12/2020

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City of RAMSEY

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DRAWN ZFL
CHECKED KPK
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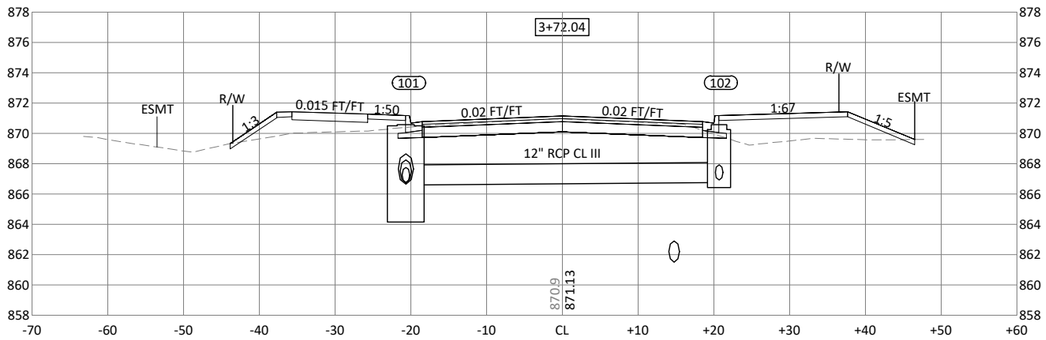
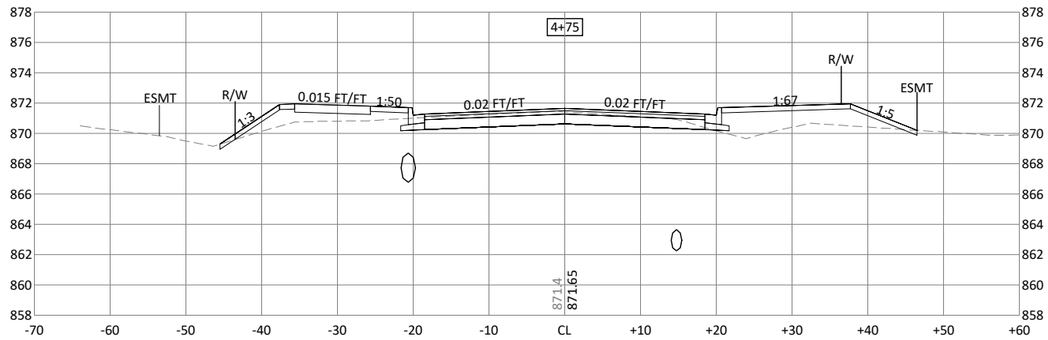
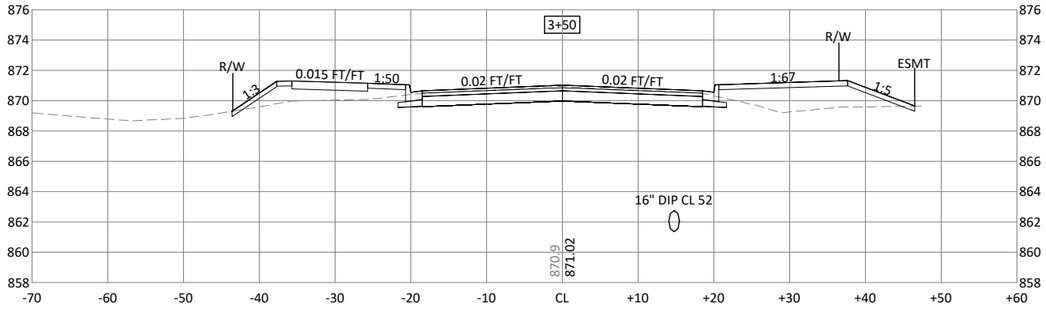
CITY OF RAMSEY, MINNESOTA
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007
SIGNAGE & STRIPING PLAN

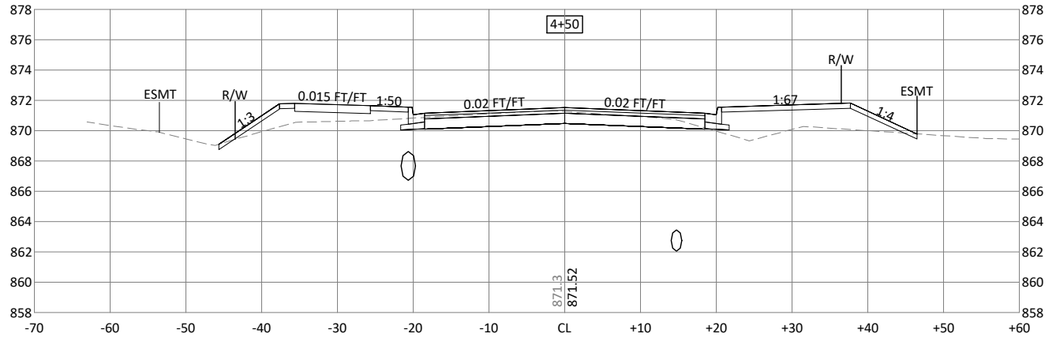
SHEET 27 OF 33

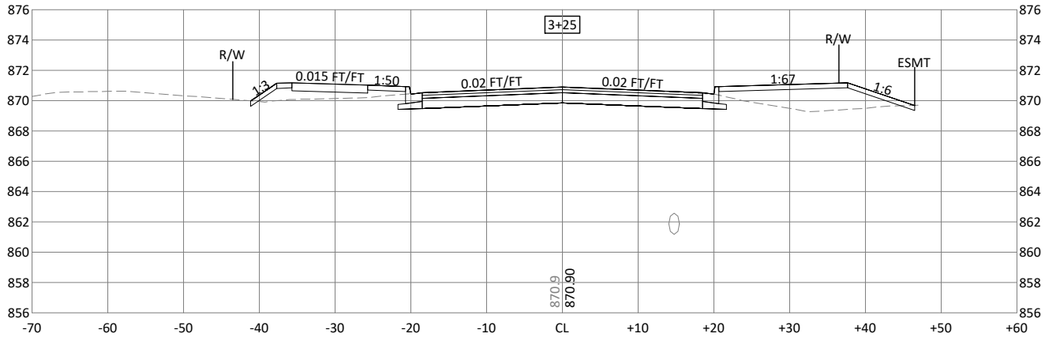
H:\RAMS\R12121040\CAD\C3D\121040C702.dwg, 5/13/2020 10:40:55 PM

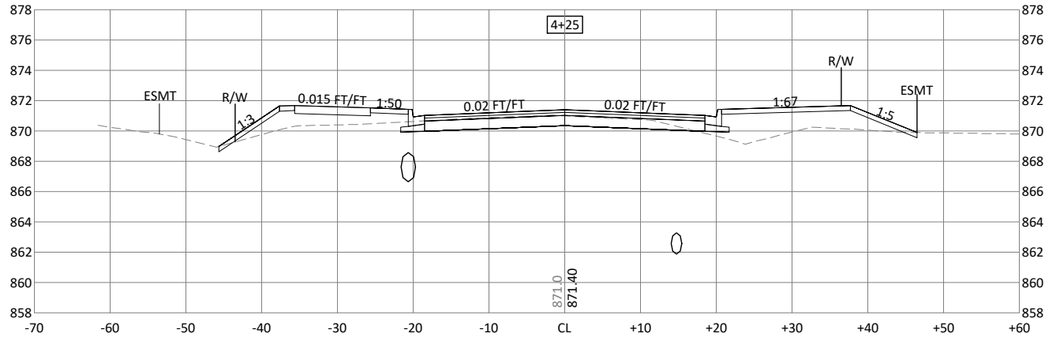


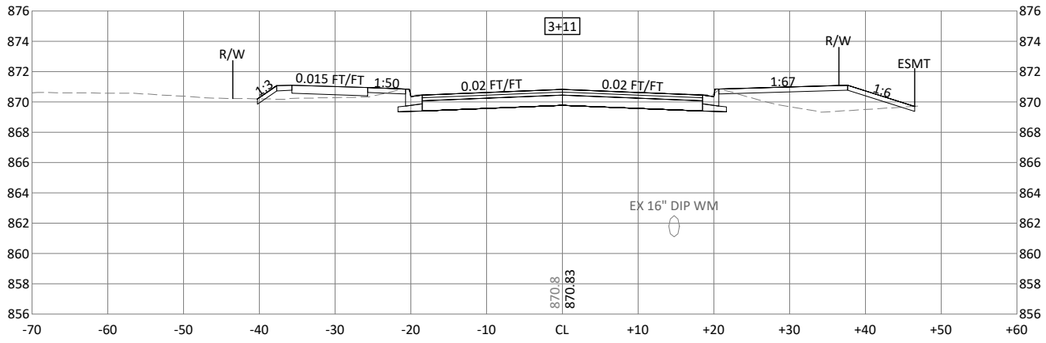


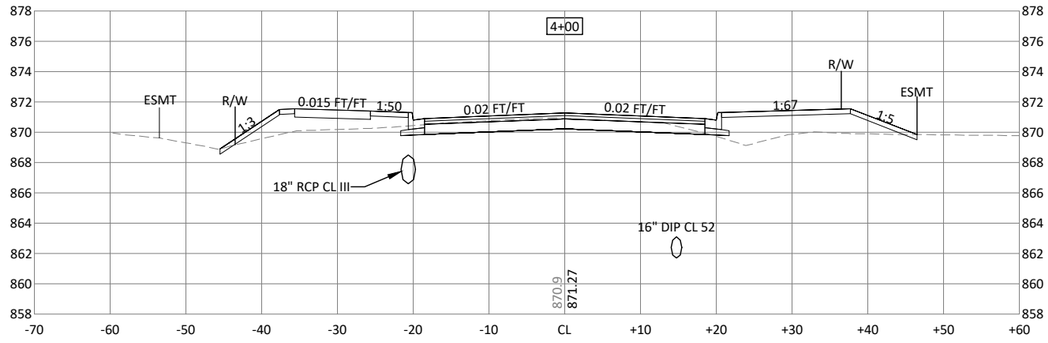












HORZ SCALE 0 10 20 FEET

VERT SCALE 0 5 10 FEET

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REVIEW PLANS

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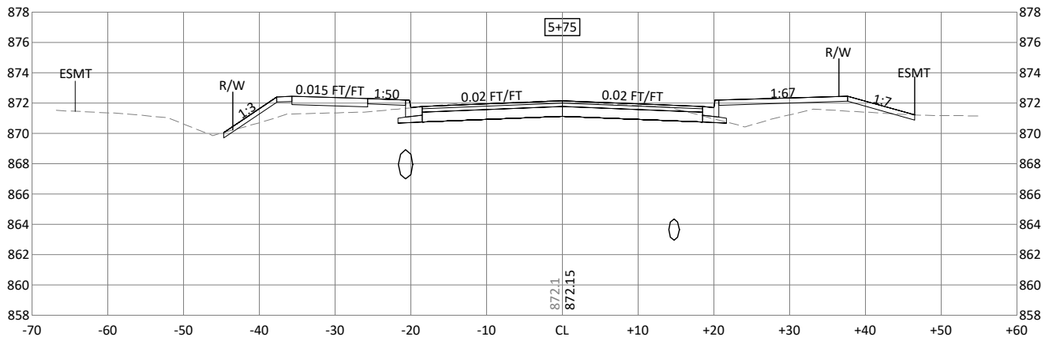
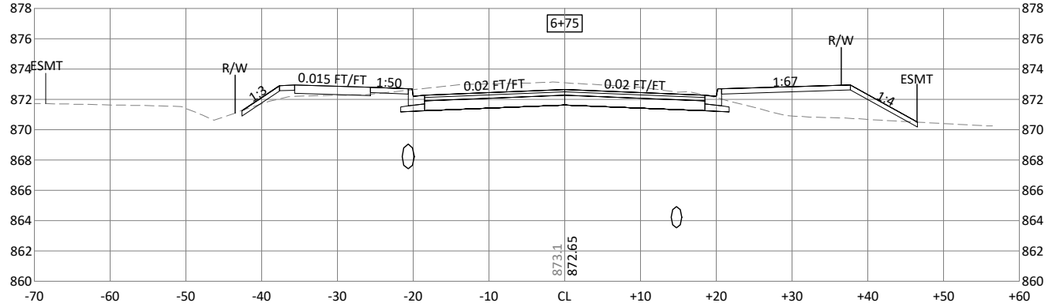
CITY OF RAMSEY, MINNESOTA

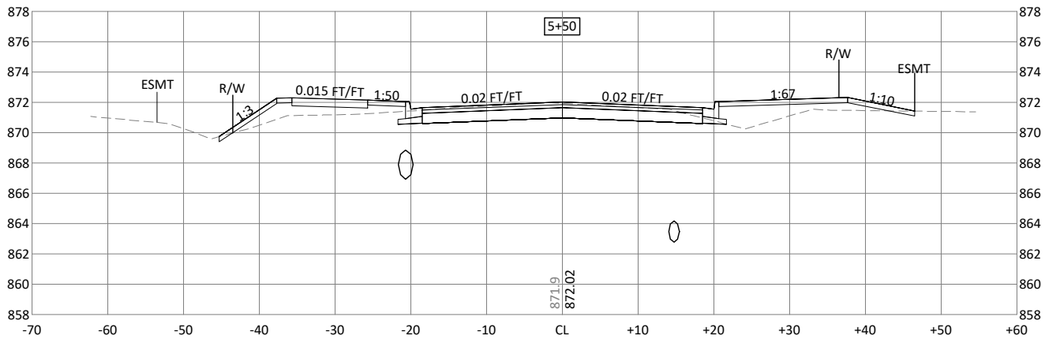
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

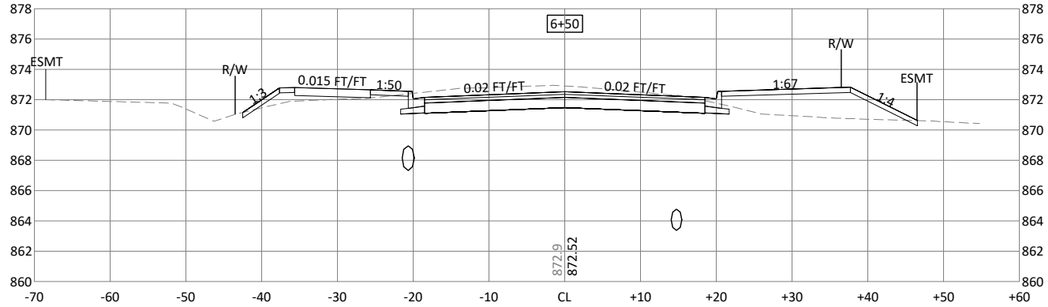
CROSS SECTIONS

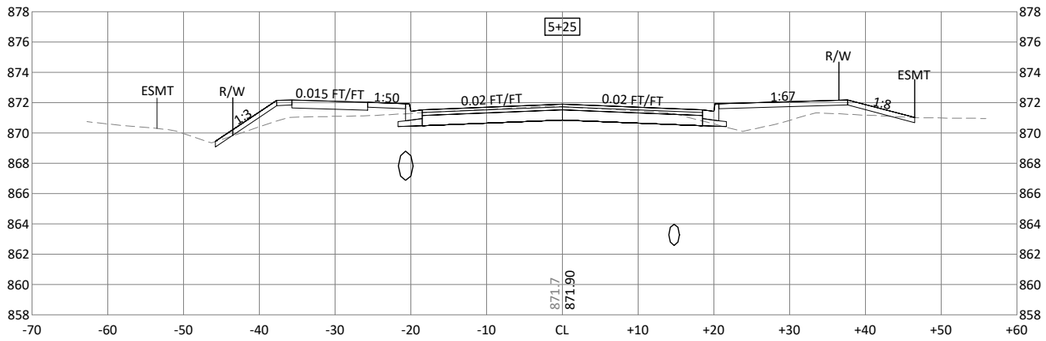
SHEET 28 OF 33

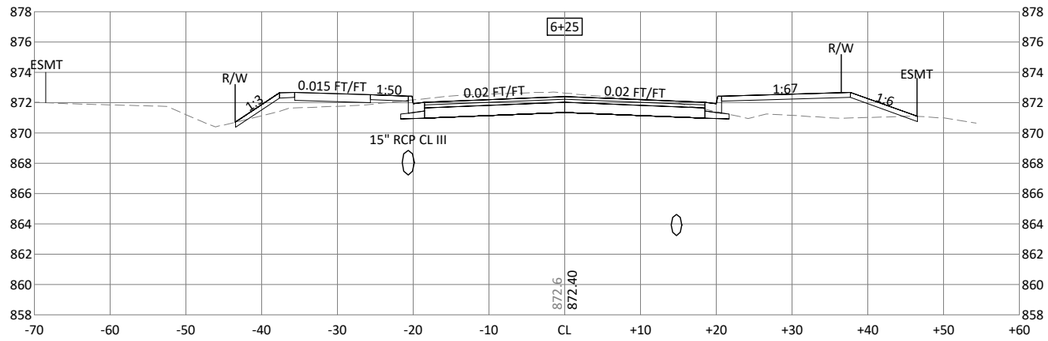


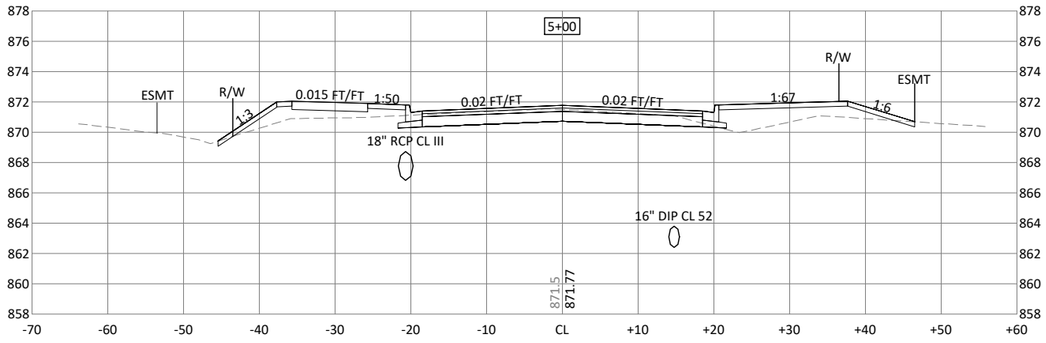


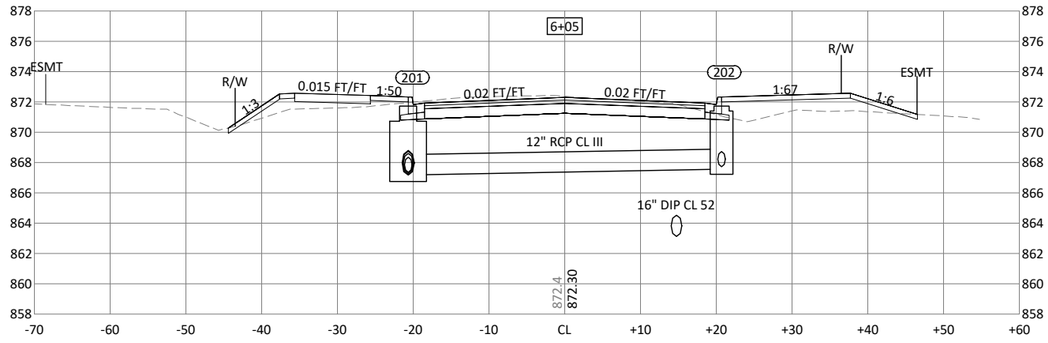












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KEVIN P. KIELB

LIC. NO. 23211 DATE 05/12/2020

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City of RAMSEY

DESIGNED	ZFL
DRAWN	ZFL
CHECKED	KPK
CLIENT PROJ. NO.	R12.121040

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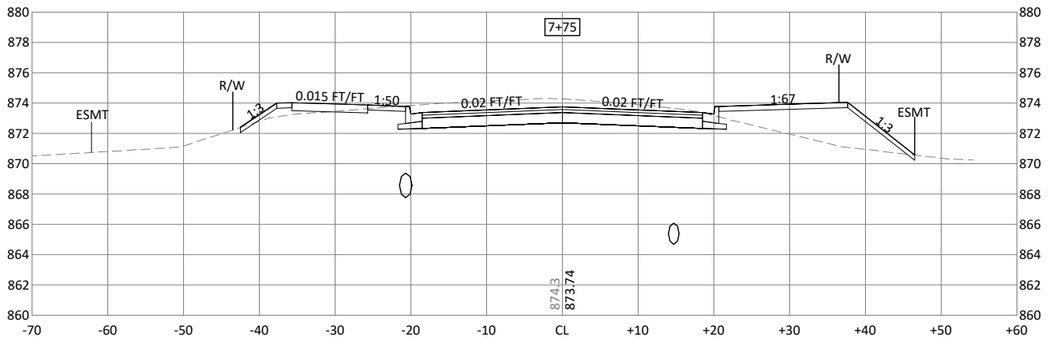
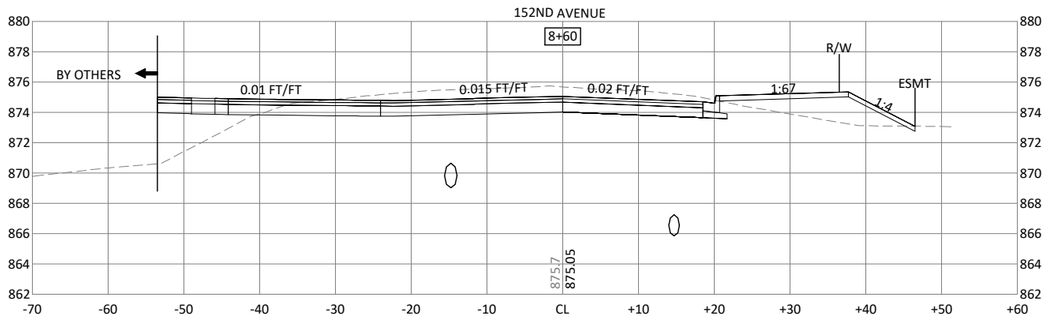
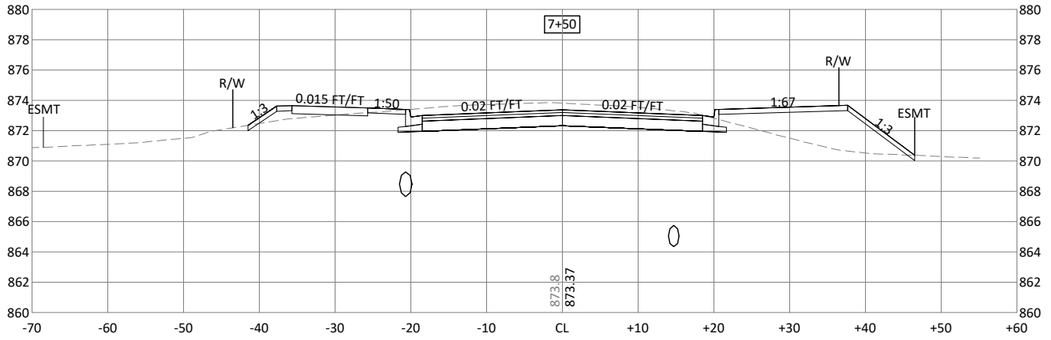
2020 PUMA STREET IMPROVEMENTS, S.A.P. 199-109-007

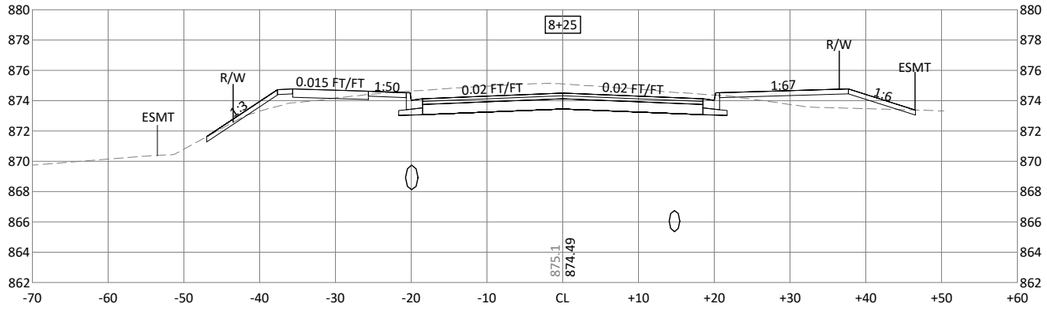
CROSS SECTIONS

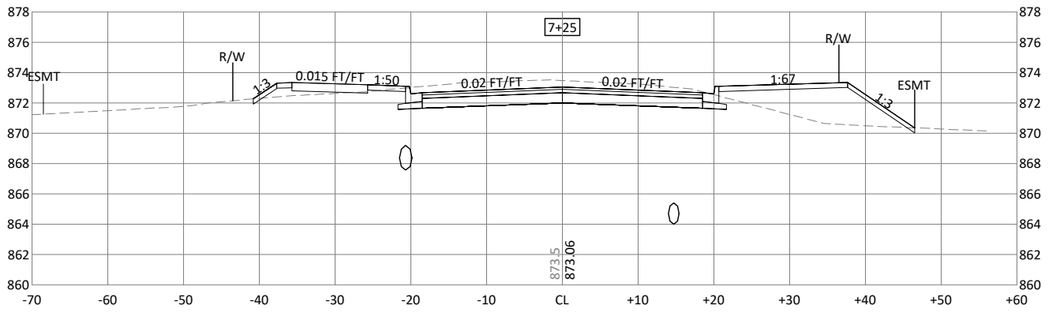
SHEET 29 OF 33

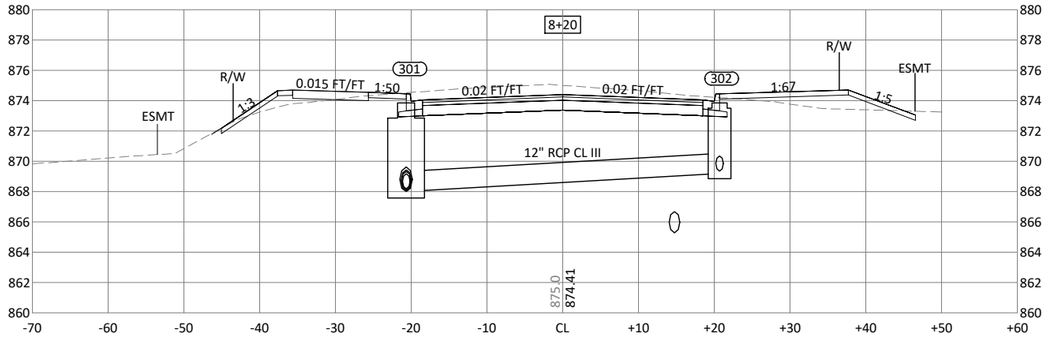


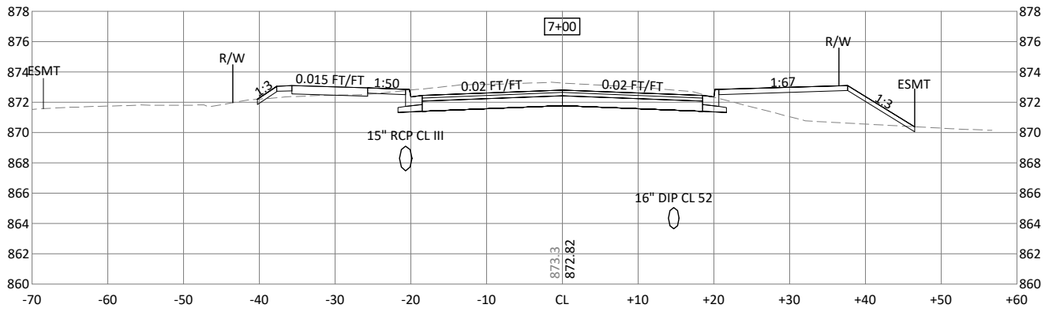


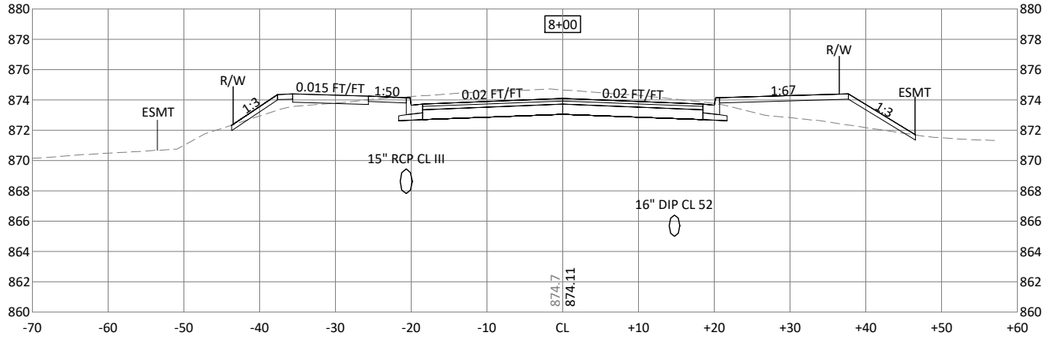












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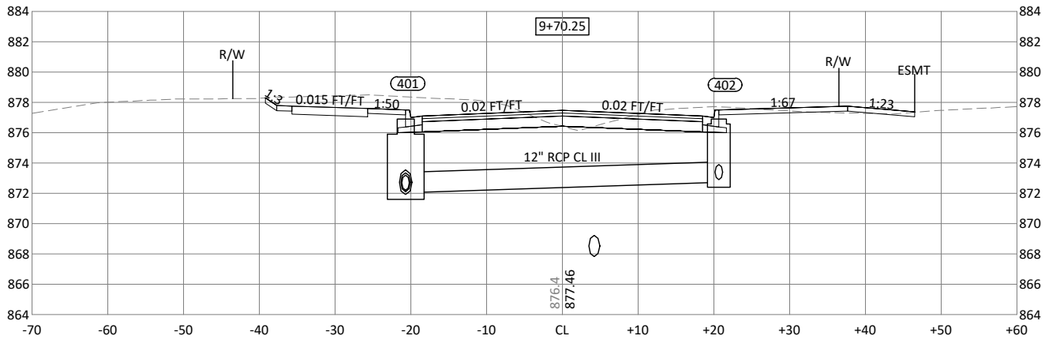
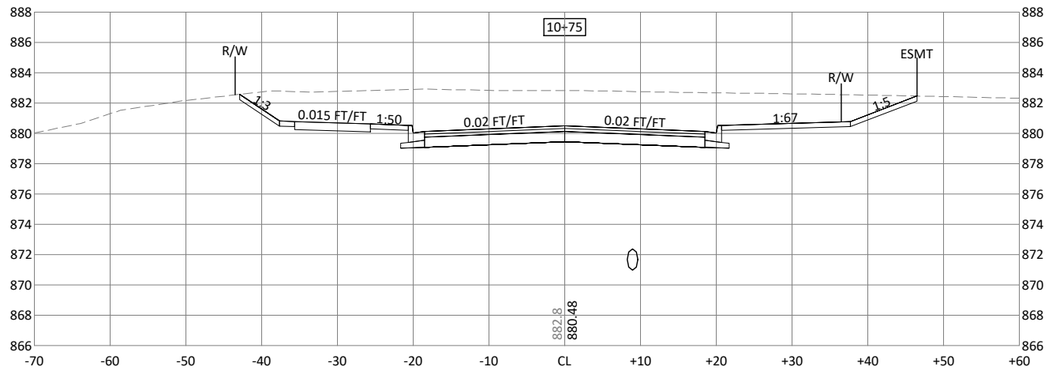
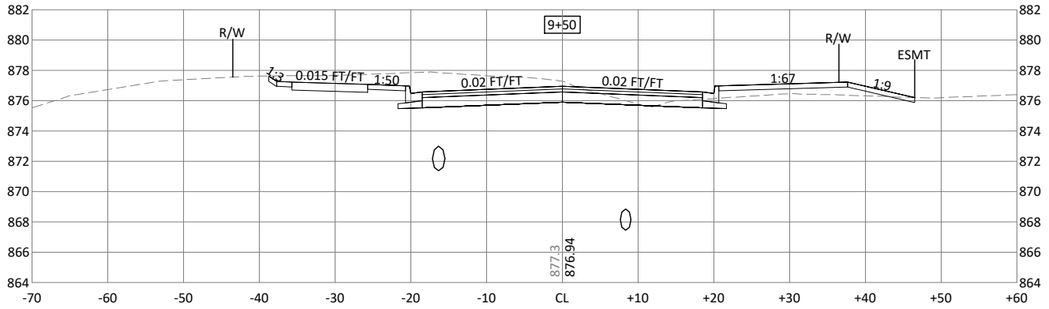
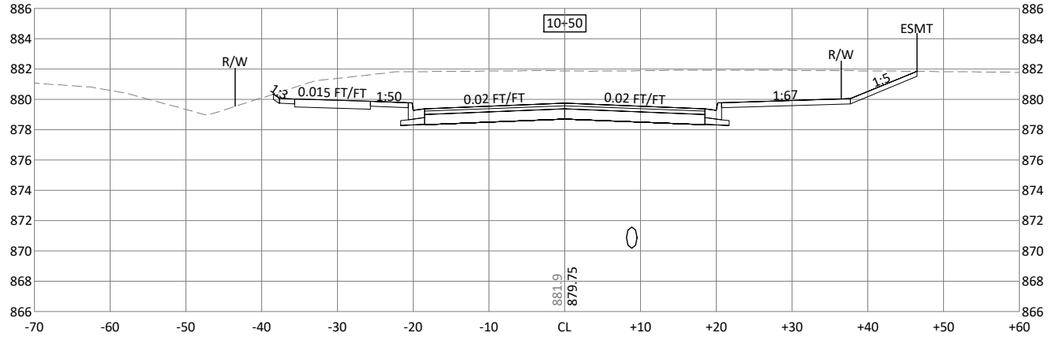
CROSS SECTIONS

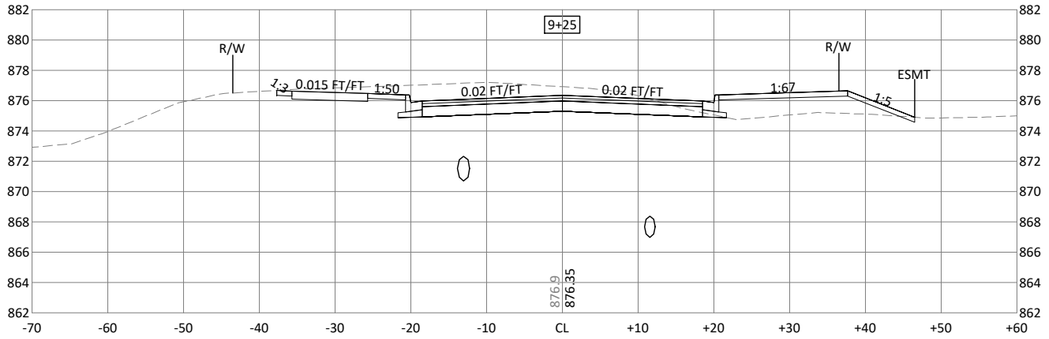
SHEET 30 OF 33

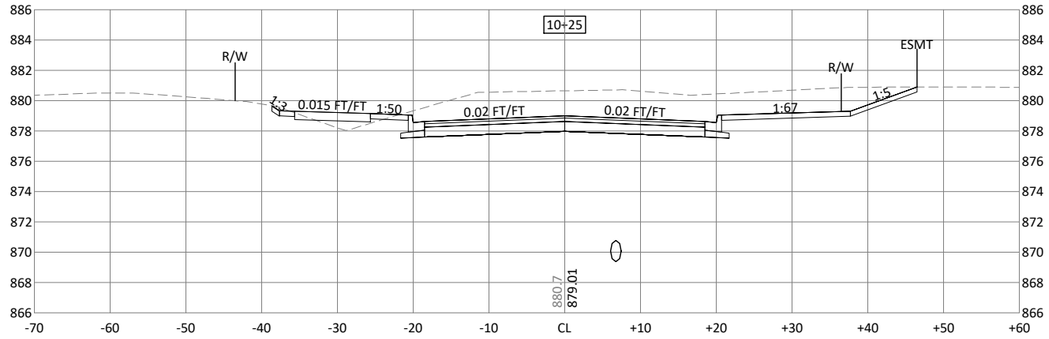


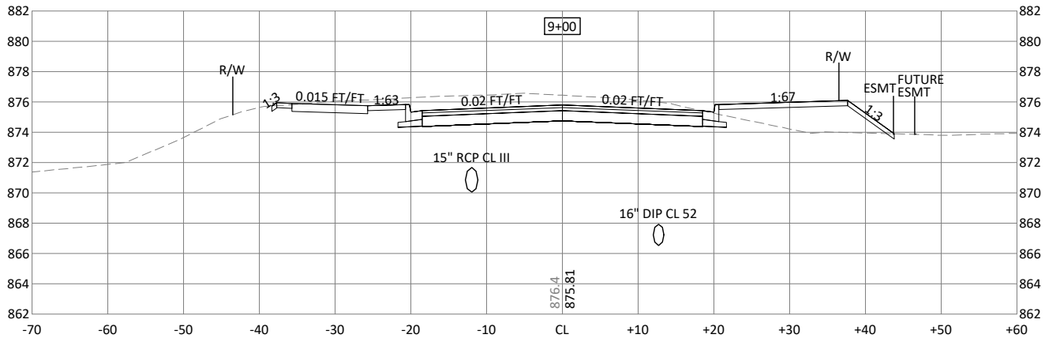


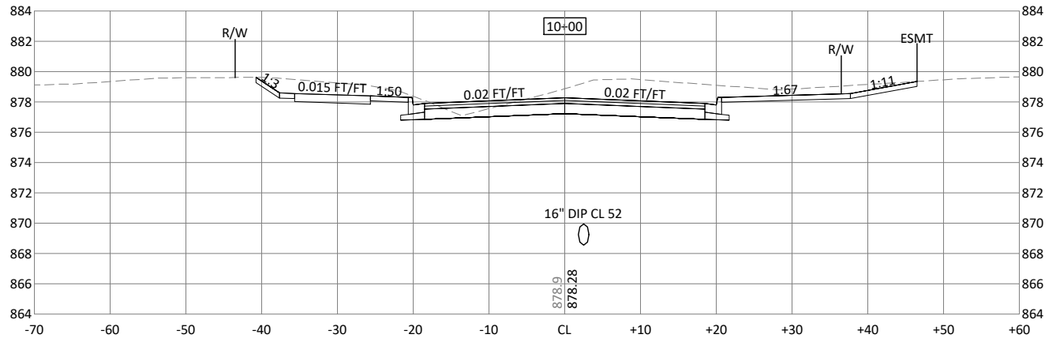












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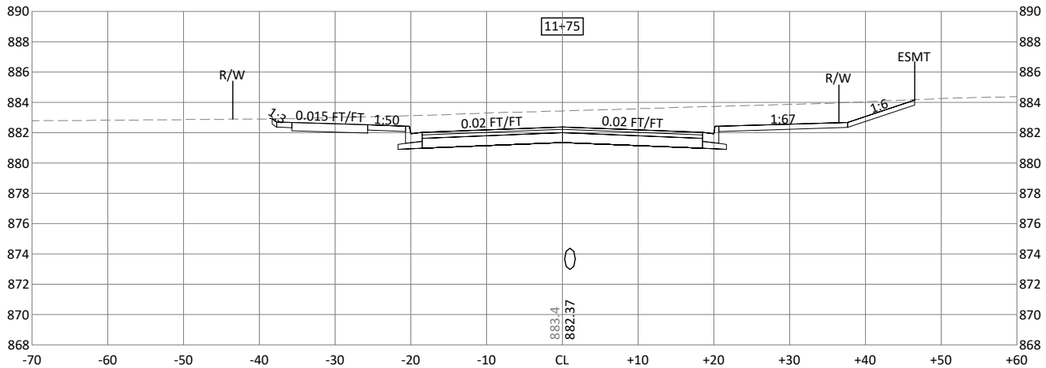
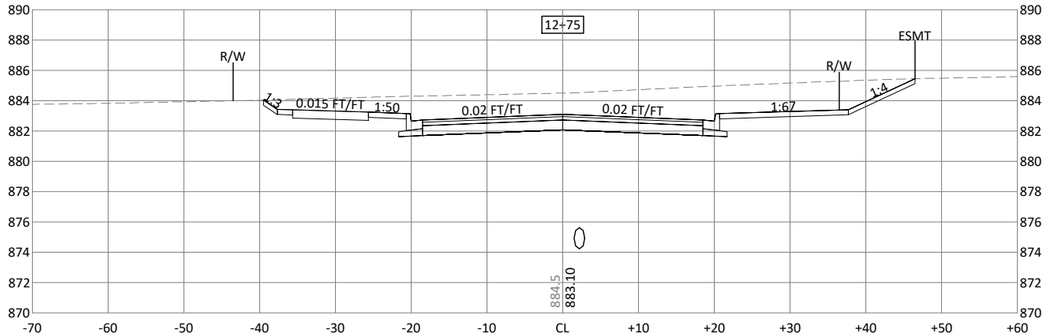
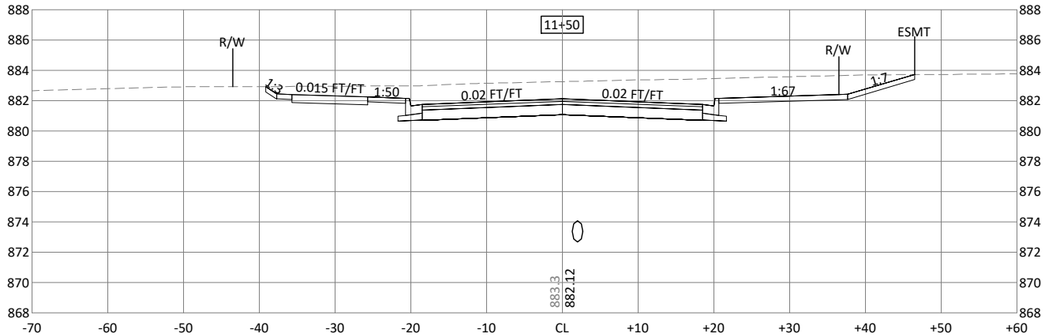
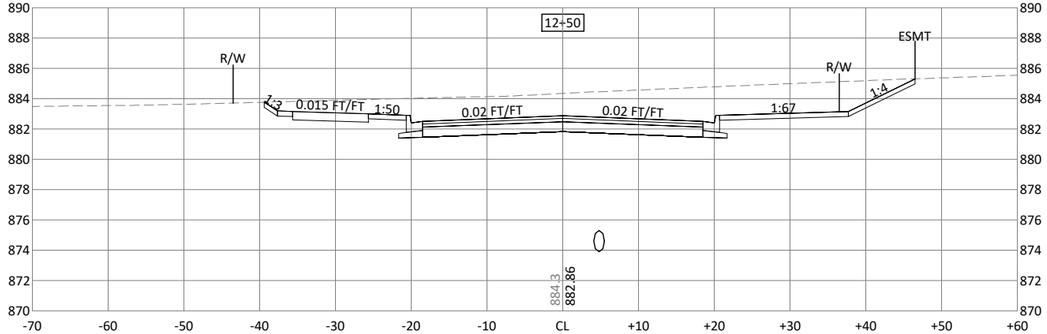
CROSS SECTIONS

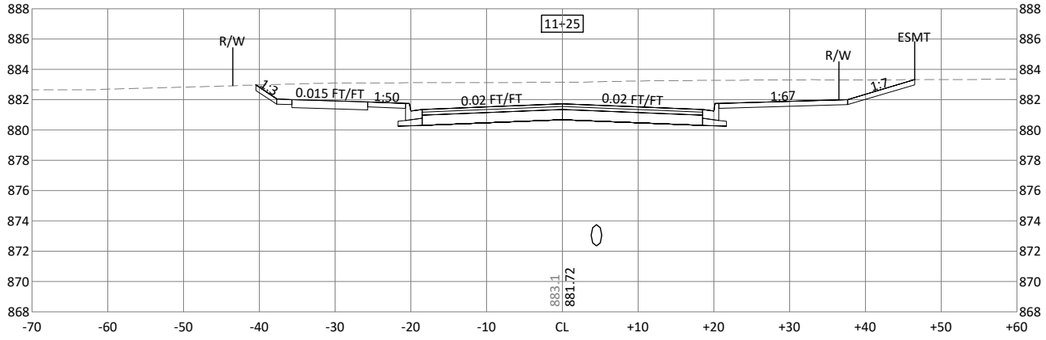
SHEET 31 OF 33

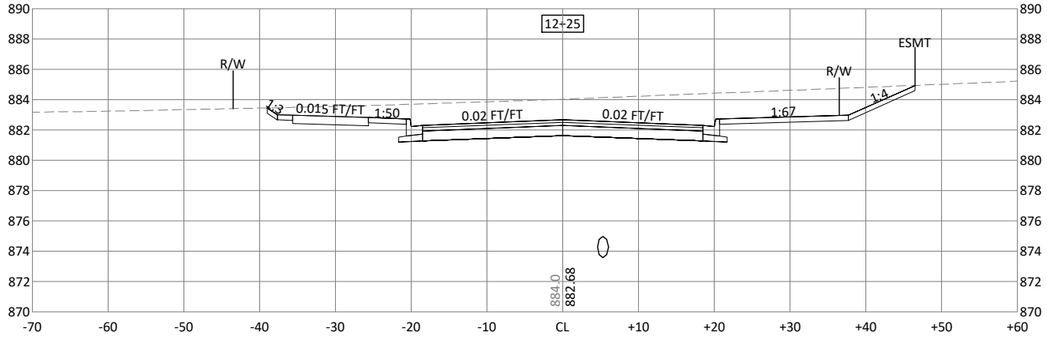


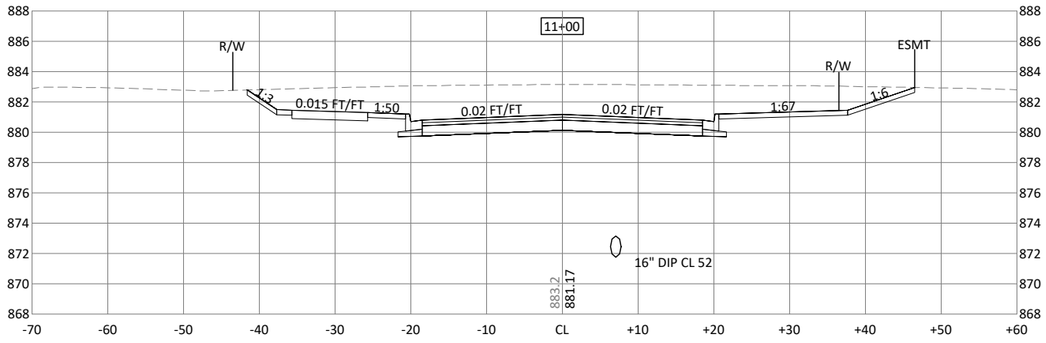


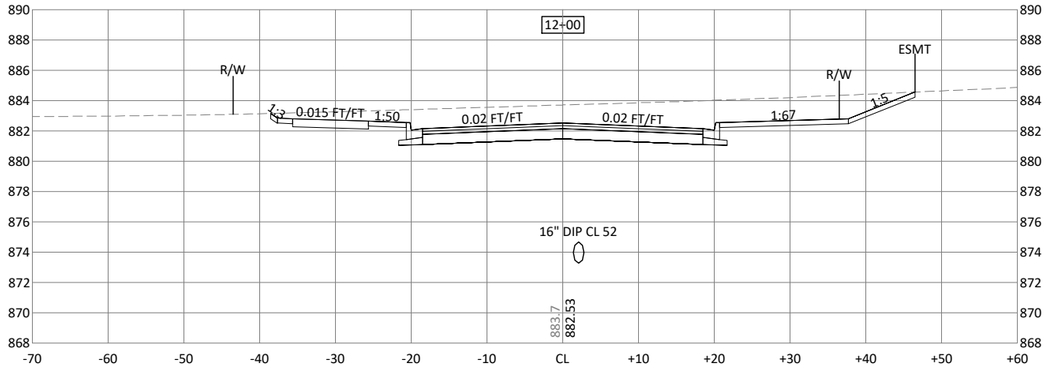












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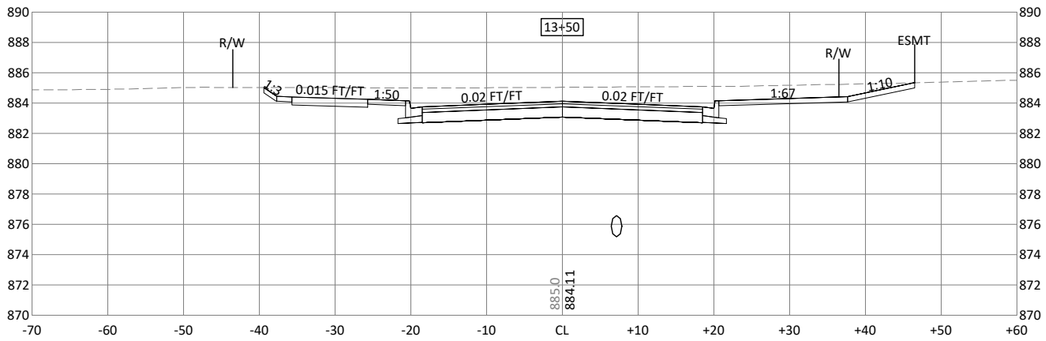
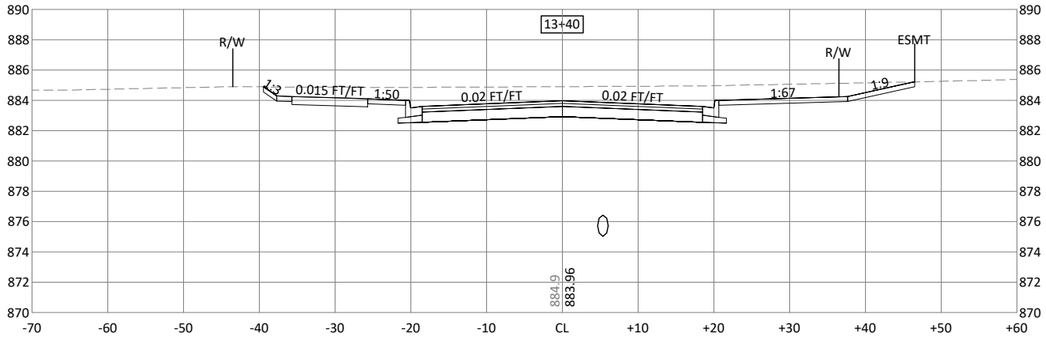
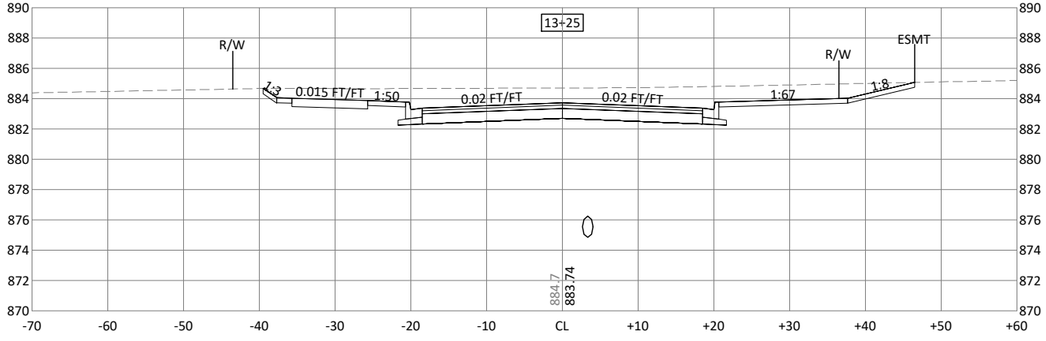
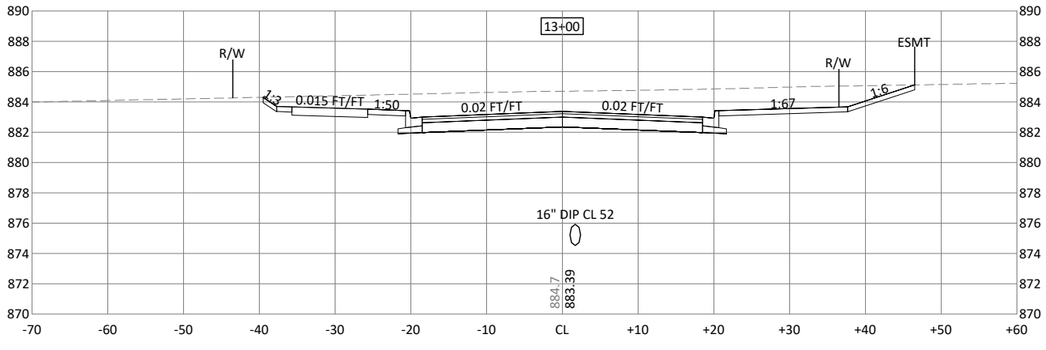
CROSS SECTIONS

SHEET 32 OF 33

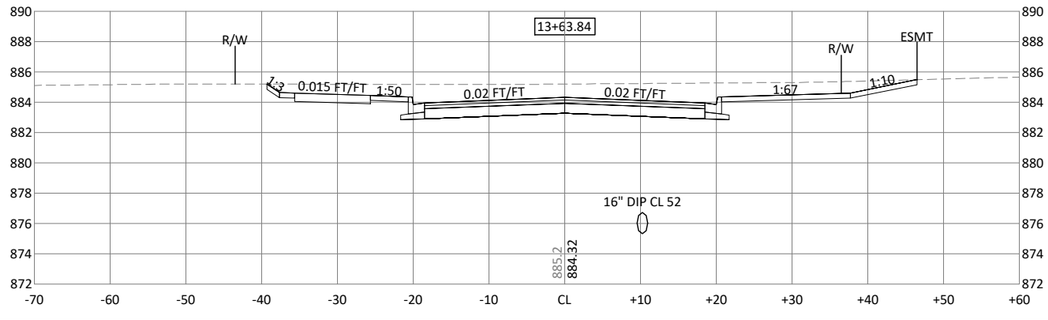








END NORMAL CROWN
SEE SHEET 26



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