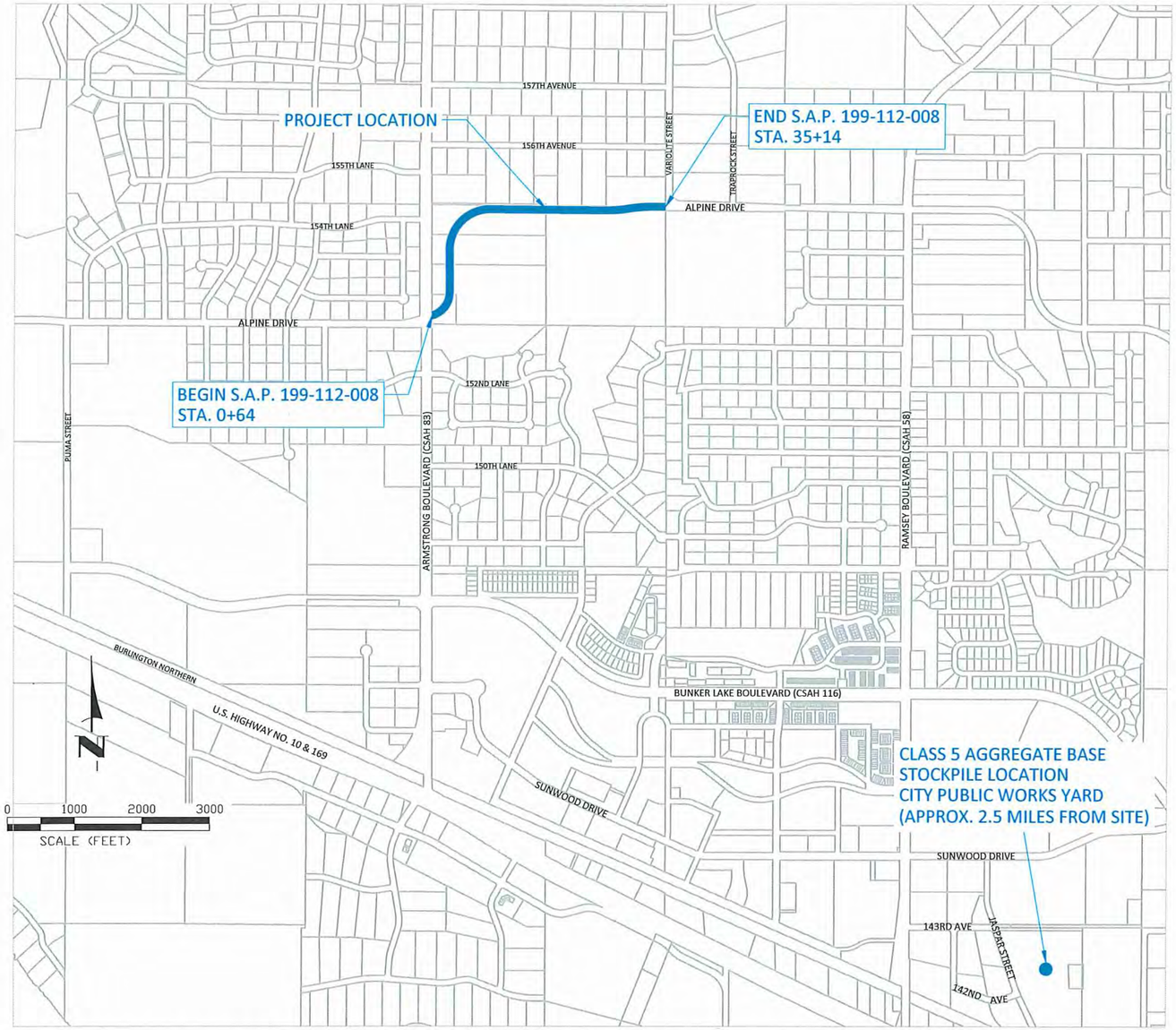
CITY OF RAMSEY

STREET CONSTRUCTION PLANS FOR BITUMINOUS RECLAMATION AND PAVING.
S.A.P. 199-112-008

S.A.P. LOCATED ON ALPINE DRIVE BETWEEN ARMSTRONG BOULEVARD AND VARIOLITE STREET
FROM SW 1/4 OF THE NW 1/4 OF S21, T32, R25 TO NE 1/4 OF THE NW 1/4 OF S21, T32, R25



CITY OF RAMSEY
ANOKA COUNTY, MINNESOTA
DISTRICT: METRO

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

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

GSOC

Call before you dig
811
651 454-0002 Metro
800 252-1166 Outstate
www.gopherstateonecall.org

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

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

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

SHEET INDEX

THIS PLAN CONTAINS 21 SHEETS

LEGEND

MB	MAILBOX	— —	EASEMENT
	LIGHT POLE	———	RIGHT OF WAY
	TREE	—E—	ELECTRIC
	SIGN	—G—	GAS
POLE	POLE	—T—	TELECOMMUNICATIONS
	FLOOD LIGHT	—>>—	STORM SEWER
	VALVE		TREE LINE
ECB	UTILITY PEDESTAL	—XSR—	SPLIT RAIL FENCE
HH	HAND HOLE		LANDSCAPING
	REMOVE CATCH BASIN	—V—	RETAINING WALL
STMH	EXISTING MANHOLE		5' CONTOUR LINE
	EXISTING FLARED END		1' CONTOUR LINE
	REMOVE TREE	—SF—	SILT FENCE
	REMOVE STORM CASTING		PROPOSED B618 C & G
	3'X2' CATCH BASIN		
	CATCH BASIN MANHOLE		
	INLET PROTECTION		
	MILL BITUMINOUS PAVEMENT		
	EDGE MILL		
	REMOVE BITUMINOUS PAVEMENT		
	REMOVE BITUMINOUS DRIVE		
	REMOVE CONCRETE DRIVE		
	REMOVE GRAVEL DRIVE		
	CONCRETE DRIVE		
	BITUMINOUS DRIVE		
	GRAVEL DRIVE		
	RIP RAP		
	HYDRO SEED AREA		
	EROSION CONTROL BLANKET		
	CLEARING AND GRUBBING		

NO.	PROJECT	STA. TO STA.	GROSS LENGTH	BRIDGE LENGTH	NET LENGTH	NET LENGTH (MILES)	ADT (2017)	ADT (2037)	DESIGN ESAL	R VALUE	TON DESIGN	DESIGN SPEED	NUMBER OF LANES	WIDTH OF LANES	NUMBER OF PARKING LANES	WIDTH OF LANES	FUNCTIONAL CLASSIFICATION
①	S.A.P. 199-112-008 ALPINE DRIVE	0+64 TO 35+14	3450 FT	0 FT	3450 FT	0.65 MI.	1,000	1,000	229,000	40	10	40	2	EB - 12'-14' WB - 14'	0 - 1	10'	COLLECTOR

DESIGN SPEED NOT ACHIEVED AT STA. 0+64 to STA. 4+12 DUE TO ENVIRONMENTAL IMPACTS.

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.

BRUCE R WESTBY, P.E.
RAMSEY CITY ENGINEER
40116 LIC. NO.
DATE 4/26/17

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY
DATE 5/2/17

STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING
DATE 5/2/17

City of RAMSEY
CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

STOPPING SIGHT DISTANCE BASED ON:
3.5 FT - HEIGHT OF EYE
2.0 FT - HEIGHT OF OBJECT

DATUM:
VERTICAL: NAVD 88
HORIZONTAL: ANOKA COUNTY COORDINATES (1996 ADJUSTMENT)

S.A.P. 199-112-008

DATE	REVISION

Apr 26, 2017 - 12:21pm
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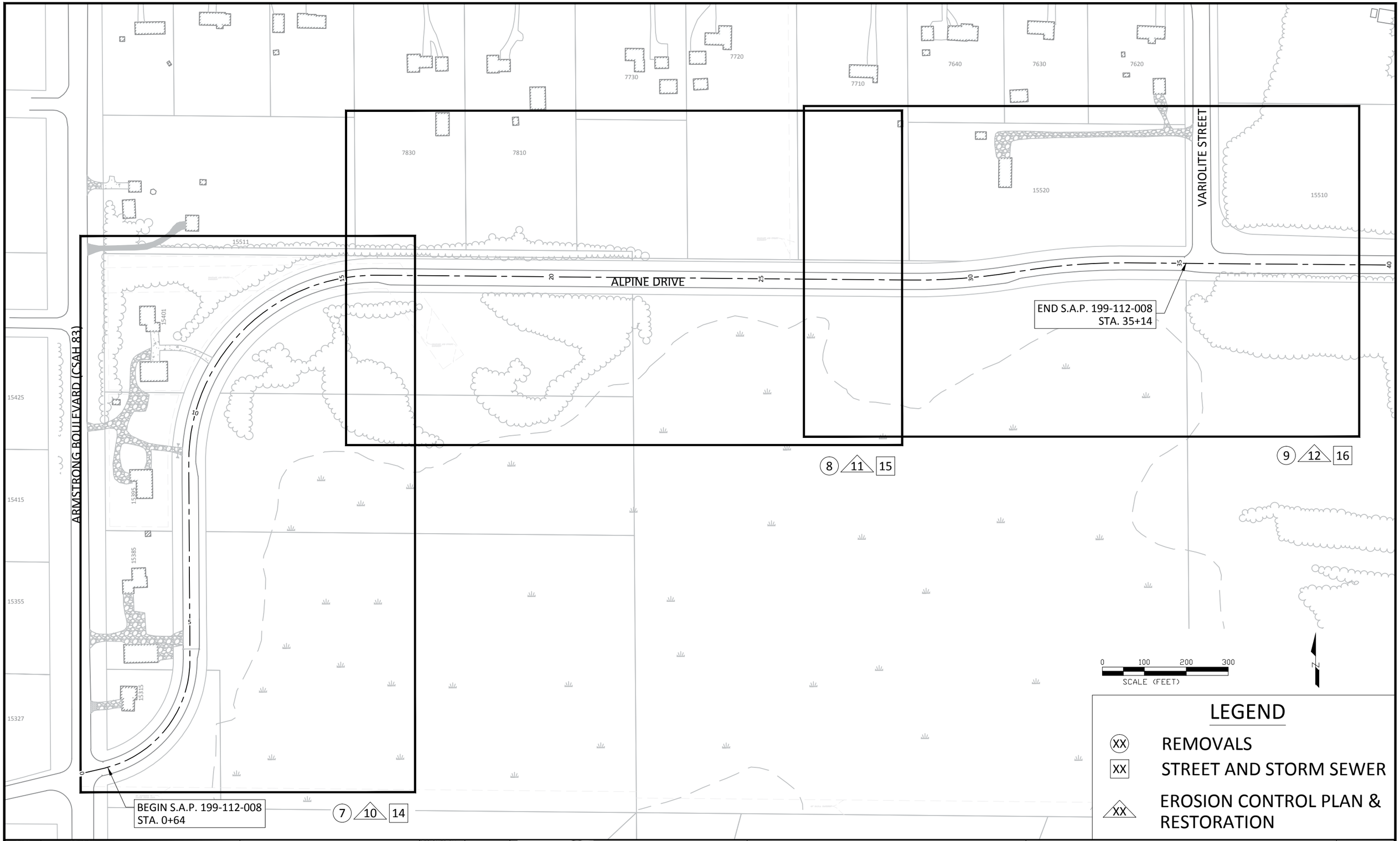

LEGEND

- (XX) REMOVALS
- [XX] STREET AND STORM SEWER
- △XX EROSION CONTROL PLAN & RESTORATION

DATE	REVISION

Apr 26, 2017 - 12:22pm
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

BRUCE R WESTBY
Date 4/26/17 Lic. No. 40116

DESIGNED BY:	JJF		
DRAWN BY:	JJF	DATE:	4/26/17
CHECKED BY:	BRW	FILE No.	17-01

CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

SHEET INDEX
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

ESTIMATED QUANTITIES					NON-PARTICIPATING		
					S.A.P. 199-112-008 ALPINE DRIVE		
					STREET	*STORM SEWER*	
PAGE NO.	**NOTE**	**ITEM NO.**	**ITEM**	**UNIT**	**ESTIMATED QUANTITY**	**ESTIMATED QUANTITY**	**TOTAL ESTIMATED QUANTITY**
		2021.501	MOBILIZATION	LS	1		1
7	4	2104.501	REMOVE CONCRETE CURB AND GUTTER	LF	1100		1100
7		2104.501	REMOVE SEWER PIPE - STORM	LF	10		10
7	4	2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	SF	103		103
7		2104.509	REMOVE MANHOLE OR CATCH BASIN	EA	1		1
7, 8		2104.509	REMOVE CASTING	EA	2		2
7 - 9		2104.511	SAWING CONCRETE PAVEMENT - FULL DEPTH	LF	400		400
7, 9		2104.513	SAWING BITUMINOUS PAVEMENT - FULL DEPTH	LF	62		62
10 - 12, 17	1	2105.501	COMMON EXCAVATION (EV)	CY	200		200
	1	2105.522	SELECT GRANULAR BORROW (CV)	CY	500		500
		2105.601	UTILITY DEWATERING	LS		1	1
13		2112.501	SUBGRADE PREPARATION	RDST	36		36
7 - 9		2130.501	WATER	MGAL	70		70
14 - 16	1, 10	2211.503	AGGREGATE BASE CLASS 5 (CV)	CY	2452		2452
7, 9		2232.501	MILL BITUMINOUS PAVEMENT (2' WIDTH X 1.5" DEPTH)	SY	14		14
7 - 9		2232.501	MILL BITUMINOUS PAVEMENT (9.5" DEPTH)	SY	12261		12261
14 - 16	2	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	859		859
14 - 16	3	2360.501	TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA340C) (1.5")	TON	1215		1215
14 - 16	3	2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (SPNWB330C) (2")	TON	1620		1620
14		2501.511	15" CS PIPE CULVERT	LF	25		25
14		2501.515	15" CS PIPE APRON	EA	2		2
14		2503.541	15" RC PIPE SEWER, DESIGN 3006 CLASS III	LF		121	121
14		2503.602	CONNECT TO EXISTING STORM SEWER	EA		1	1
14		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LF		10	10
14		2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 2X3 CATCH BASIN	EA		1	1
14, 15		2506.516	CASTING ASSEMBLY	EA		5	5
14, 15		2506.521	INSTALL CASTING	EA		5	5
14 - 16		2506.602	GROUT CATCH BASIN	EA		17	17
14, 16		2506.602	ADJUST CATCH BASIN CASTING	EA		5	5
14 - 16		2531.501	CONCRETE CURB & GUTTER DESIGN B618	LF	1100		1100
14		2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SY	11		11
7 - 9	8	2563.601	TRAFFIC CONTROL	LS	1		1
10 - 12	5	2573.503	SILT FENCE	LF	250		250
10 - 12		2573.530	STORM DRAIN INLET PROTECTION	EA	32		32
10 - 12		2574.508	FERTILIZER TYPE 3	LBS	40		40
10 - 12	1	2574.525	COMMON TOPSOIL BORROW (LV)	CY	140		140
10 - 12		2575.501	HYDROSEEDING MNDOT MIXTURE 25-131	ACRE	0.2		0.2
10 - 12	7	2575.502	MNDOT SEED MIXTURE 25-131	LBS	44		44
10 - 12	5	2575.560	HYDRAULIC MATRIX TYPE MULCH	LBS	400		400
18	11	2582.502	4" DOUBLE SOLID LINE - EPOXY	LF	1384		1384
18	11	2582.502	4" BROKEN LINE - EPOXY	LF	410		410
18	11	2582.502	4" SOLID LINE - EPOXY	LF	7127		7127
18	11	2582.503	CROSSWALK MARKINGS - EPOXY	SF	90		90

PAY ITEM NOTES:

1. EV TO CV CONVERSION FACTOR = 1.2
2. ESTIMATED QUANTITY BASED ON APPLICATION RATE OF 0.07 GAL/SY.
3. ESTIMATED QUANTITY BASED ON APPLICATION RATE OF 110 LB/SY-IN.
4. REMOVAL LIMITS WILL BE MARKED IN THE FIELD BY CITY STAFF.
5. ESTIMATED QUANTITY BASED ON APPLICATION RATE OF 2000 LB/ACRE.
6. ESTIMATED QUANTITY BASED ON APPLICATION RATE OF 200 LB/ACRE.
7. ESTIMATED QUANTITY BASED ON APPLICATION RATE OF 220 LB/ACRE.
8. LUMP SUM QUANTITY SHALL INCLUDE ALL COST REQUIRED FOR MAINTAINING PEDESTRIAN ACCESS ROUTES, ALL FLAGGING AND / OR DETOUR OPERATIONS AS NECESSARY.
9. GROUT CATCH BASIN SHALL OCCUR AFTER BITUMINOUS WEARING COURSE LIFT IS APPLIED.
10. CITY TO FURNISH CLASS 5 AGGREGATE BASE MATERIAL FROM STOCKPILE LOCATED AT CITY PUBLIC WORKS YARD. THE CONTRACTOR SHALL FURNISH A LOADER AND OPERATOR. CONTRACTOR SHALL LOAD AND HAUL FROM THE STOCKPILE AND PLACE, SHAPE AND COMPACT ON-SITE.
11. SEE STRIPING TABULATION SHEET 18.

GENERAL NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. IT IS NOT GUARANTEED ANY OR ALL EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING IRRIGATION SYSTEMS WITHIN THE PROJECT CONSTRUCTION LIMITS BEFORE COMMENCING WORK. THE CONTRACTOR IS RESPONSIBLE FOR AVOIDING DAMAGE TO IRRIGATION SYSTEMS WHERE POSSIBLE.

STORM SEWER CASTING SCHEDULE

PAGE NO.	STRUCTURE	DESIGN	RIM	INVERT	STATION	OFFSET	CASTING
14	EX CBMH 108	48-4020	879.09	(EXISTING) INV. N 873.29	5+17.55	R - 22.8'	R-3246
				(EXISTING) INV. W 873.69			
				(CBMH 202) INV. S 873.39			
14	EX CBMH 109	48-4020	879.23		5+17.83	L - 15.9'	R-3246 (NEW)
14	CBMH 202	48-4020	879.03	(EX CBMH 108) INV. N 873.93	5+07.48	R - 22.8'	R-3246
				(CBMH 203) INV. S 874.03			
14	CBMH 203	48-4020	880.08	(CBMH 202) INV. N 875.33	4+35.39	R - 22.1'	R-3246
				(CB 204) INV. W 875.43			
14	CB 204	2' X 3'	879.97	(CBMH 203) INV. E 875.97	4+35.39	L - 16.0'	R-3246
15	EX MH 132	48-4020	877.50 (PROP.)		25+80.07	L - 26.8'	R-2560 (NEW)

STORM SEWER CASTING RESET SCHEDULE

PAGE NO.	STRUCTURE	STATION	OFFSET
14	EX CBMH 101	16+19.08	R - 22.9
14	EX CB 102	16+18.72	L - 15.9'
14	EX CBMH 107	10+98.53	R - 16.9'
16	EX CBMH 119	31+19.75	R - 16.9'
16	EX CB 120	31+18.99	L - 16.0'

DATE	REVISION

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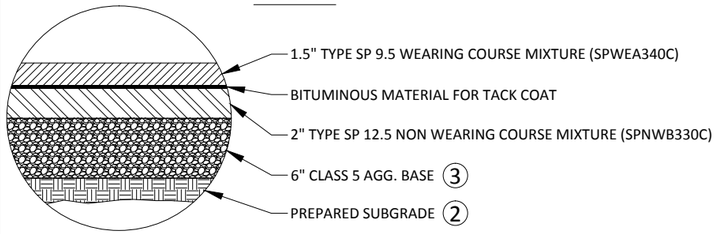
CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

STATEMENT OF ESTIMATED QUANTITIES
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

INSET A:



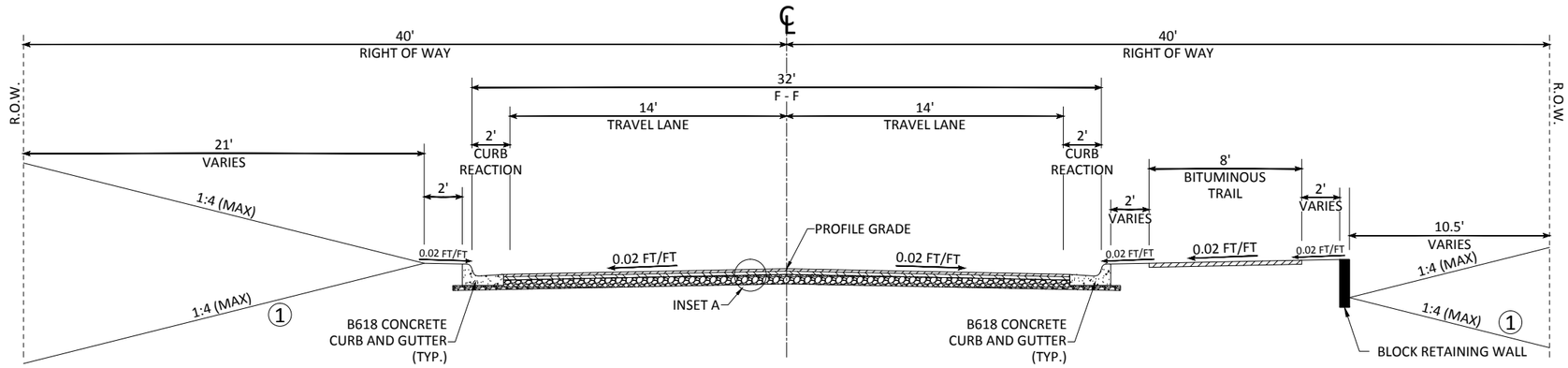
REFERENCE NOTES:

① GRADE TO MATCH EXISTING GROUND. ESTABLISH TURF USING A MINIMUM OF 4" COMMON TOPSOIL BORROW AND HYRDOSEED WITH MIXTURE PER PLAN. SEE CITY PLATE NO. ERO-6 FOR COMMON TOPSOIL BORROW.

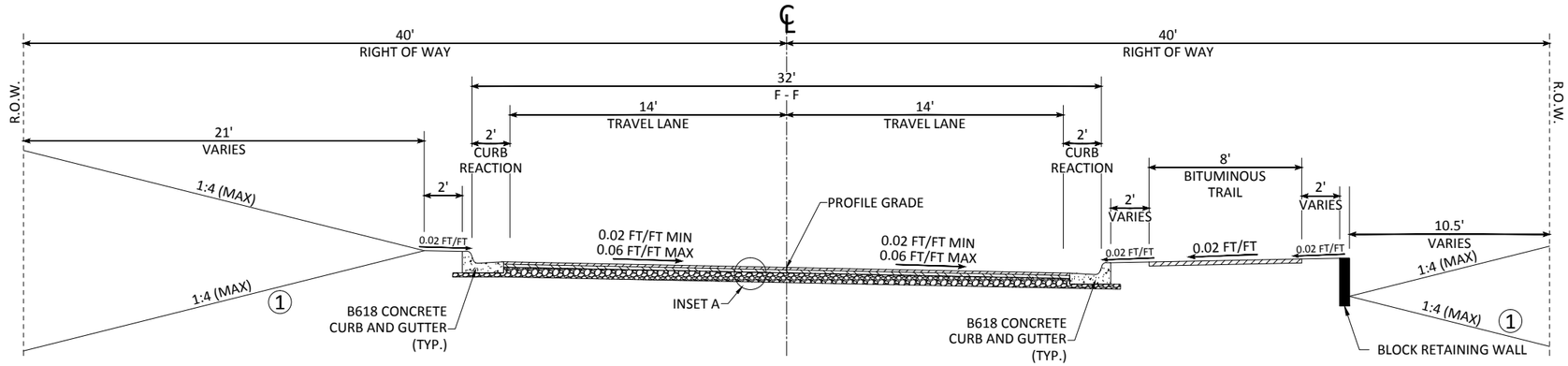
② CONTRACTOR SHALL SCARIFY AND COMPACT, ACCORDING TO THE SPECIFIED DENSITY METHOD, THE TOP 12 INCHES OF MATERIAL PRIOR TO PLACING CLASS 5 AGGREGATE BASE. THIS PROCESS SHALL BE INCIDENTAL TO THE SUBGRADE PREPARATION PAY ITEM.

③ CITY TO FURNISH CLASS 5 AGGREGATE BASE. CONTRACTOR TO LOAD AND HAUL FROM STOCKPILE AND PLACE, SHAPE AND COMPACT ON SITE.

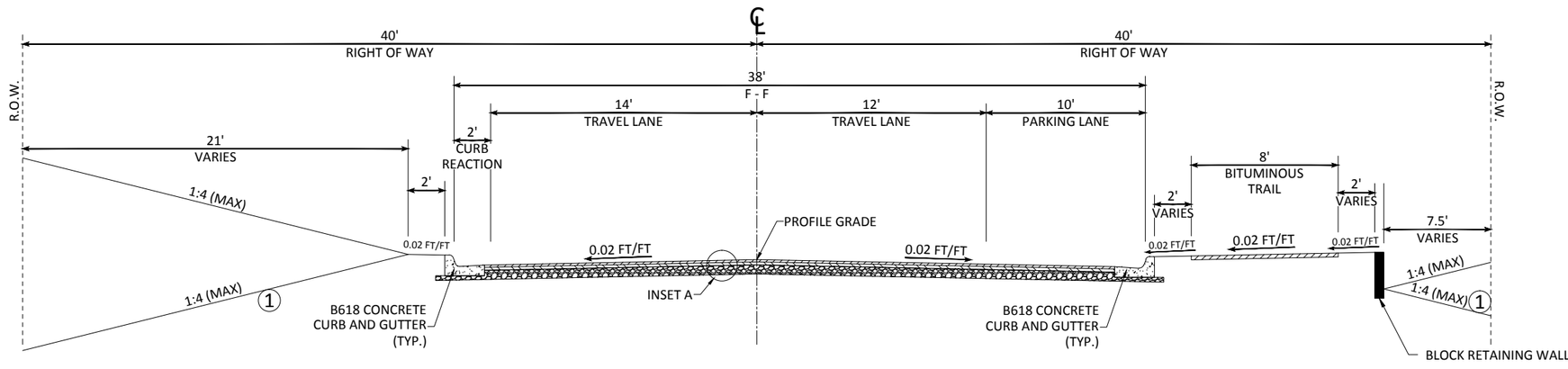
TYPICAL SECTION: NO PARKING STA. 31+20 - 35+14



TYPICAL SECTION: SUPER ELEVATED STA. 0+64 - 4+12, STA. 8+84 - 15+85



TYPICAL SECTION: PARKING ALLOWED STA. 4+12 - 8+84, STA. 15+85 - 31+20



PAVEMENT DESIGN

20 YR DESIGN LANE BESALS:	229,000
DESIGN R-VALUE:	40

MINIMUM REQUIRED

MINIMUM BIT (GE)	7.00
MIN. AGG. BASE (GE)	3.88
TOTAL REQUIRED GE	11.45

PROPOSED DESIGN

WEARING COURSE (1.5")	3.38
NON-WEAR COURSE (2.0")	4.50
CLASS 5 AGG. BASE (6.0")	6.00
TOTAL DESIGN GE	13.88

NOTE: NOT TO SCALE

DATE	REVISION

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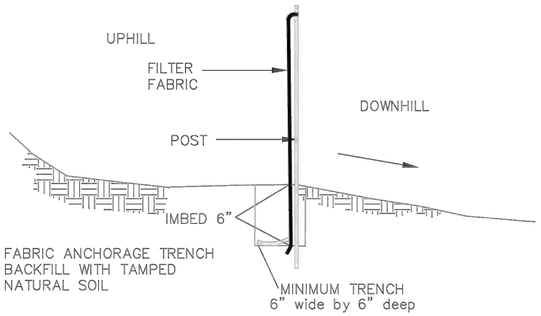
BRUCE R WESTBY
Date 4/26/17 Lic. No. 40116

DESIGNED BY:	JJF		
DRAWN BY:	JJF	DATE:	4/26/17
CHECKED BY:	BRW	FILE No.	17-01

CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

TYPICAL SECTIONS
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

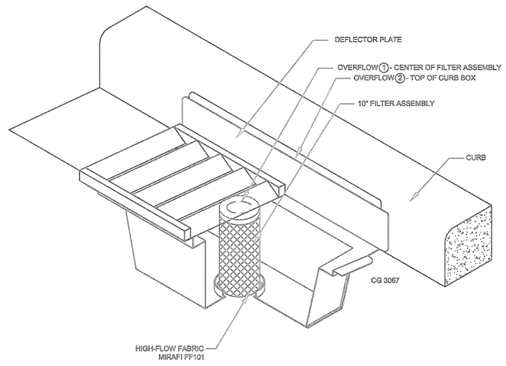


INSTALL AS PER FILTER FABRIC MANUFACTURER'S RECOMMENDATIONS

SILT FENCE DETAIL

NO SCALE

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

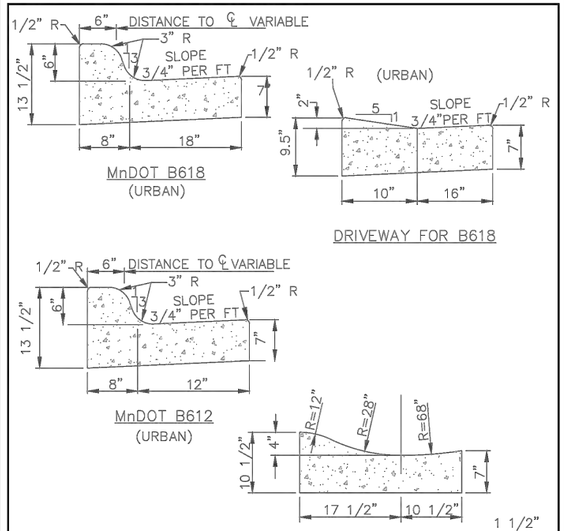


INLET PROTECTION – WIMCO OR EQUAL

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.

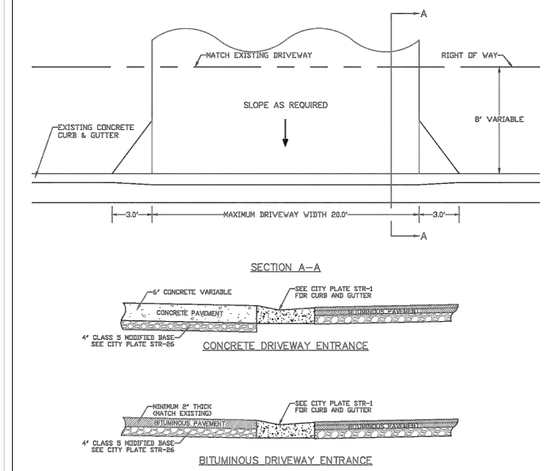
APPROVED: 1 – 2016	City of RAMSEY	STANDARD DETAILS: INLET PROTECTION
		CITY PLATE No. ERO–2



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	City of RAMSEY	STANDARD DETAILS: CURB AND GUTTER
		CITY PLATE No. STR–1



NOTES:
1. PANEL WIDTH SHALL NOT EXCEED 10 FT. WITHOUT A CENTERLINE CONSTRUCTION JOINT.
2. CONCRETE DRIVEWAY TO BE ONE COURSE CONCRETE PAVEMENT. (SEE SPECIAL PROVISIONS FOR CLASS OF CONCRETE.)
3. CONCRETE DRIVEWAYS TO BE 6" THICK.
4. ½" EXPANSION JOINT, ½" PREFORMED JOINT FILLER MATERIAL, AASHTO M 213 (REQUIRED WHEN 2 CONCRETE AREAS ARE POURED SEPERATELY.)
5. BITUMINOUS DRIVEWAYS MINIMUM 2" THICK, MATCH EXISTING BITUMINOUS PAVEMENT THICKNESS.

APPROVED: 1 – 2016	City of RAMSEY	STANDARD DETAILS: RESIDENTIAL DRIVEWAY – NO SIDEWALK
		CITY PLATE No. STR–30

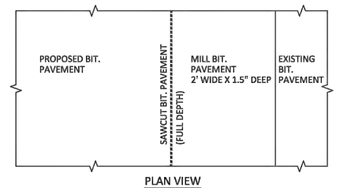
MNDOT 2016 SPEC

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

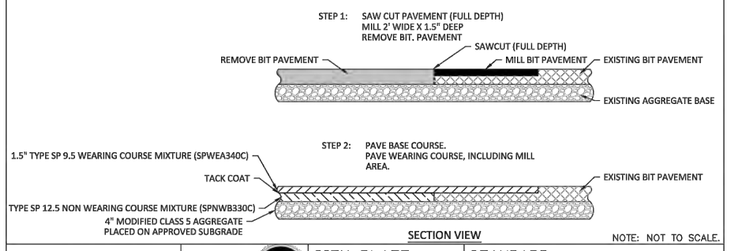
NOTE:
1. INSTALLATION OF 4" OF TOPSOIL MEETING MNDOT SPECIFICATION 3877A COMMON TOPSOIL BORROW, MAY BE REQUIRED ACROSS ALL DISTURBED AREAS.
2. A SOIL CERTIFICATION FROM A GEOTECHNICAL FIRM MUST BE PROVIDED VERIFYING THE TOPSOIL MEETS SPECIFICATION ALONG WITH LOAD TICKETS TO VERIFY THE SOURCE OF MATERIAL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

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

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 of RAMSEY	CITY PLATE No. STR–31	STANDARD DETAILS: STREET TIE–IN

MNDOT STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY

PLATE NO.	DESCRIPTION
3000 L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006 G	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007 E	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3040 F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" X ½" CORRUGATION)
3123 J	METAL APRON FOR C.S. PIPE
3221 C	CORRUGATED STEEL PIPE COUPLING BAND (3 SHEETS)
4011 E	PRECAST CONCRETE BASE
4022 A	MANHOLE OR CATCH BASIN COVER (3FT. X 2FT. OPENING)
4026 A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4108 F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4180 J	MANHOLE OR CATCH BASIN STEP
7100 H	CONCRETE CURB AND GUTTER DESIGN B AND DESIGN V
8000 J	CHANNELIZERS (3 SHEETS)
9102 E	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

DATE	REVISION

Apr 26, 2017 - 12:23pm
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

BRUCE R WESTBY
Date 4/26/17 Lic. No. 40116

DESIGNED BY: JJF	
DRAWN BY: JJF	DATE: 4/26/17
CHECKED BY: BRW	FILE No. 17-01

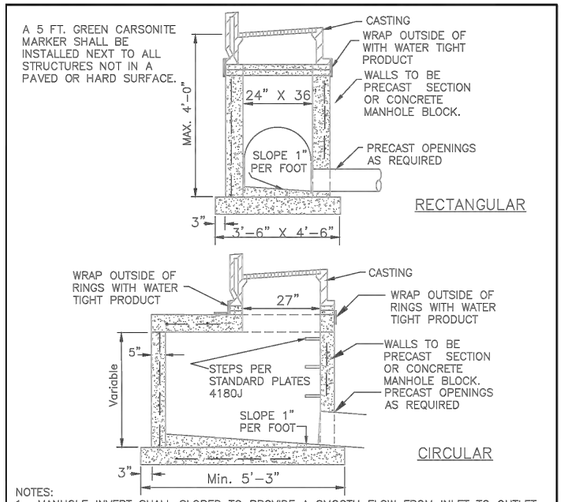
City of RAMSEY

CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

EROSION CONTROL AND STREET DETAILS
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

SHEET 5 OF 21 SHEETS

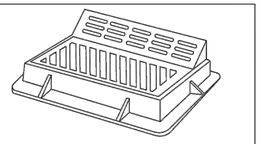


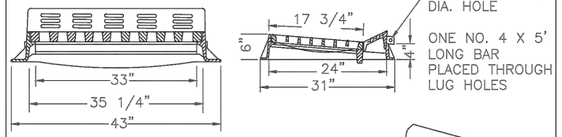
NOTES:
1. MANHOLE INVERT SHALL SLOPED TO PROVIDE A SMOOTH FLOW FROM INLET TO OUTLET
2. CONCRETE BASE SHALL BE 6" POURED IN PLACE OR 5" PRECAST SLAB.
3. CONCRETE ADJUSTING RINGS TO BE INSTALLED MAX.7–2" RINGS, MIN 2–2" RINGS
4. GROUT BETWEEN RINGS,SHIMS SHALL BE METAL, CONCRETE OR PLASTIC
5. INSPECTION 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:		STANDARD DETAILS:
4 – 2007	City of RAMSEY	CATCH BASIN
		CITY PLATE No. STO–1

NOTE: SURMOUNTABLE CURB & GUTTER

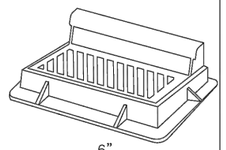
1. CATCH BASIN CASTING SHALL BE NEENAH R–3067 WITH GRATED BACK (BICYLE SAFE) OR APPROVED EQUAL.
2. FOR CATCH BASINS ADJACENT TO RADIUS, USE NEENAH R–3246R OR APPOVED EQUAL.

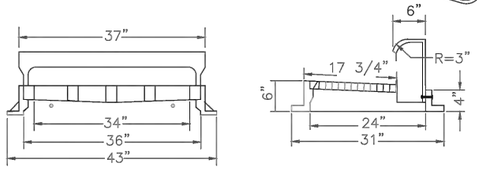




NOTE: B 618 CURB & GUTTER

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



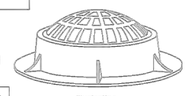


STANDARD CATCHBASIN CASTING

APPROVED:		STANDARD DETAILS:
7 – 2016	City of RAMSEY	STORMWATER CASTING
		CITY PLATE No. STO–4

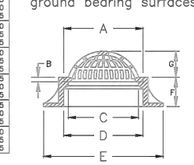
R–2560 Series
Beehive Grates with Frames

SUITABLE FOR DRAINAGE ON CIRCUMSTANCES WHERE CLOGGING OF A FLAT GRATING IS A PROBLEM. EXCELLENT FOR ROADSIDE OR EARTH DITCH CATCH BASINS.


Illustrating R–2560–E

Furnished standard with ground bearing surfaces.

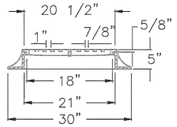
Catalog No.	Dimensions In Inches							Wt. LBS
	A	B	C	D	E	F	G	
R–2560–A	12	1	11	12 1/2	19	4	4	80
R–2560–B	15 1/2	1 1/4	15	15	21	5	3	120
R–2560–C	18	1 1/4	16 1/2	20 1/2	30	8	4	190
R–2560–C1	22	1 1/2	20	23	28	4	4 1/2	195
R–2560–C2	22	1 1/2	20 1/2	24	28 1/4	6	4 1/2	270
R–2560–D	22	1 1/2	20	24 1/2	35	9	4 1/2	315
R–2560–D1	22	1 1/2	20	23	28 1/4	4	7	210
R–2560–D2	22	1 1/2	20 1/2	24	30	6	7	285
R–2560–D3	22	1 1/2	20	24 1/2	36	9	7	345
R–2560–E	23	1 1/2	21	25 1/2	35 1/2	9	7	340
R–2560–EA	25 3/4	7/8	24 1/8	26 1/2	35 1/2	4	9	235
R–2560–EB	25 3/4	7/8	24 1/8	26 1/2	35 1/2	4	9	255
R–2560–E1	25 3/4	7/8	24 1/8	26 1/2	35 1/2	7	6	285
R–2560–E2	25 3/4	7/8	24 1/8	26 1/2	35 1/2	7	9	300
R–2560–E5	25 3/4	7/8	24 1/8	26 1/2	35 1/2	8	6	345
R–2560–E6	25 3/4	7/8	24 1/8	26 1/2	35 1/2	8	9	365
R–2560–E7	25 3/4	7/8	24 1/8	26 1/2	35 1/2	9	6	350
R–2560–E8	25 3/4	7/8	24 1/8	26 1/2	35 1/2	9	9	365
R–2560–E9	25 3/4	7/8	24 1/8	26 1/2	35 1/2	10	6	360
R–2560–E10	25 3/4	7/8	24 1/8	26 1/2	35 1/2	10	9	385
R–2560–G	32	1 1/2	30	36	46	7	4	535



R–2570 Catch Basin Frame, Grate

Light Duty

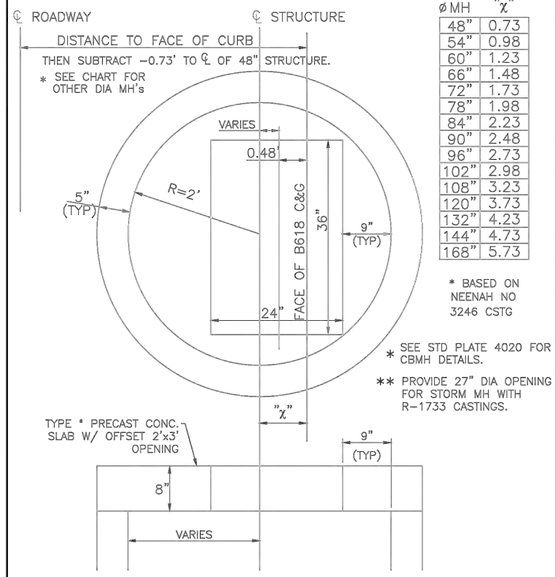
Total Weight 170 Pounds



Furnished standard with ground bearing surfaces.

STORM CASTINGS FOR NON–TRAFFIC AREAS
NTS

APPROVED:		STANDARD DETAILS:
9 – 2011	City of RAMSEY	STORM CASTING – NON TRAFFIC AREAS
		CITY PLATE No. STO–6



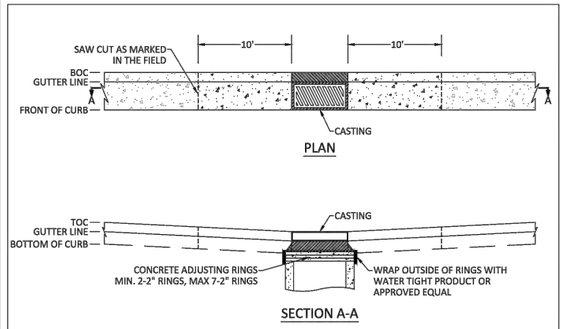
ø MH	"X"
48"	0.73
54"	0.98
60"	1.23
66"	1.48
72"	1.73
78"	1.98
84"	2.23
90"	2.48
96"	2.73
102"	2.98
108"	3.23
120"	3.73
132"	4.23
144"	4.73
168"	5.73

* 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:		STANDARD DETAILS:
4 – 2005	City of RAMSEY	SLAB TOP MANHOLE COVER
		CITY PLATE No. STO–5



NOTE: NOT TO SCALE

NOTE:

1. CONCRETE CURB AND GUTTER TO BE REMOVED 10 FEET TO EITHER SIDE OF CATCH BASIN CASTING. CURB AND GUTTER MUST BE SAW CUT - FULL DEPTH.
2. CASTING SHALL BE BROUGHT UP TO PROPER GRADE. DAMAGED CONCRETE ADJUSTING RINGS MUST BE REPLACED. OUTSIDE OF RINGS MUST BE WRAPPED WITH APPROVED WATER TIGHT PRODUCT. INSIDE OF RINGS MUST BE GROUTED TO A SMOOTH FINISH.
3. CONCRETE CURB AND GUTTER SHALL BE REPLACED AND MATCH INTO THE RESET CASTING AND THE EXISTING CURB AND GUTTER.
4. DAMAGED BITUMINOUS PAVEMENT SHALL BE REPAIRED AND IS INCIDENTAL. FOLLOW CITY STANDARD PLATE STR-25.
5. PROPER TRAFFIC CONTROL DEVICES SHALL BE REQUIRED TO MAINTAIN A SAFE WORK ENVIRONMENT, AND IS INCLUDED IN THE TRAFFIC CONTROL LUMP SUM BIT ITEM.
6. ALL EQUIPMENT, MATERIALS, DISPOSAL, AND LABOR REQUIRED TO RESET CATCH BASIN CASTING AS DESCRIBED BY THIS DETAIL IS INCIDENTAL.
7. BOULEVARD RESTORATION BEHIND CURB IS NOT INCLUDED WITH THE RESET CATCH BASIN CASTING PAY ITEM.

APPROVED:		STANDARD DETAILS:
3 – 2017	City of RAMSEY	RESET CATCH BASIN CASTING
		CITY PLATE No. STO–13

DATE	REVISION

Apr 26, 2017 - 12:23pm
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BRUCE R WESTBY
Date 4/26/17 Lic. No. 40116

DESIGNED BY:	JJF		
DRAWN BY:	JJF	DATE:	4/26/17
CHECKED BY:	BRW	FILE No.	17-01

City of RAMSEY
CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

STORM SEWER DETAILS
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

SHEET 6 OF 21 SHEETS

ARMSTRONG BOULEVARD (CSAH 83)

0 40 80 120
SCALE (FEET)

N

BEGIN S.A.P. 199-112-008
STA. 0+64

SAWCUT BIT. PAVEMENT (FULL DEPTH)
2' EDGE MILL - 1.5" DEEP

15315

15385

15395

15401

15511

REMOVE CATCH BASIN CASTING

ALPINE DRIVE

33' F-F

38' F-F

REMOVE CONCRETE DRIVEWAY
SAWCUT CONCRETE PAVEMENT FULL-DEPTH

REMOVE CONCRETE
CURB & GUTTER (TYP.)

REMOVE CATCH BASIN

REMOVE PIPE - STORM

REMOVE CONCRETE
CURB & GUTTER

MILL BITUMINOUS PAVEMENT
9.5" DEPTH

WETLAND BOUNDARY

MATCH TO SHEET 8 STA 16+50

NOTE:

1. ALL DRIVEWAY AND PAVEMENT REMOVALS MUST BE SAWCUT.
2. CONCRETE CURB AND GUTTER REMOVALS ARE SHOWN IN AN APPROXIMATE WAY ONLY.
3. 4' MINIMUM CURB AND GUTTER REMOVAL LENGTH.
4. CONCRETE CURB AND GUTTER REMOVALS WILL BE MARKED IN THE FIELD BY CITY STAFF. ALL REMOVALS MUST BE SAWCUT.
5. PROTECT STORM SEWER.

LEGEND

	MILL BITUMINOUS PAVEMENT
REMOVE CATCH BASIN	EDGE MILL BITUMINOUS PAVEMENT
REMOVE STORM CASTING	REMOVE BITUMINOUS PAVEMENT
REMOVE PIPE - STORM	REMOVE CONCRETE DRIVE
REMOVE CURB & GUTTER	REMOVE GRAVEL DRIVE

DATE	REVISION

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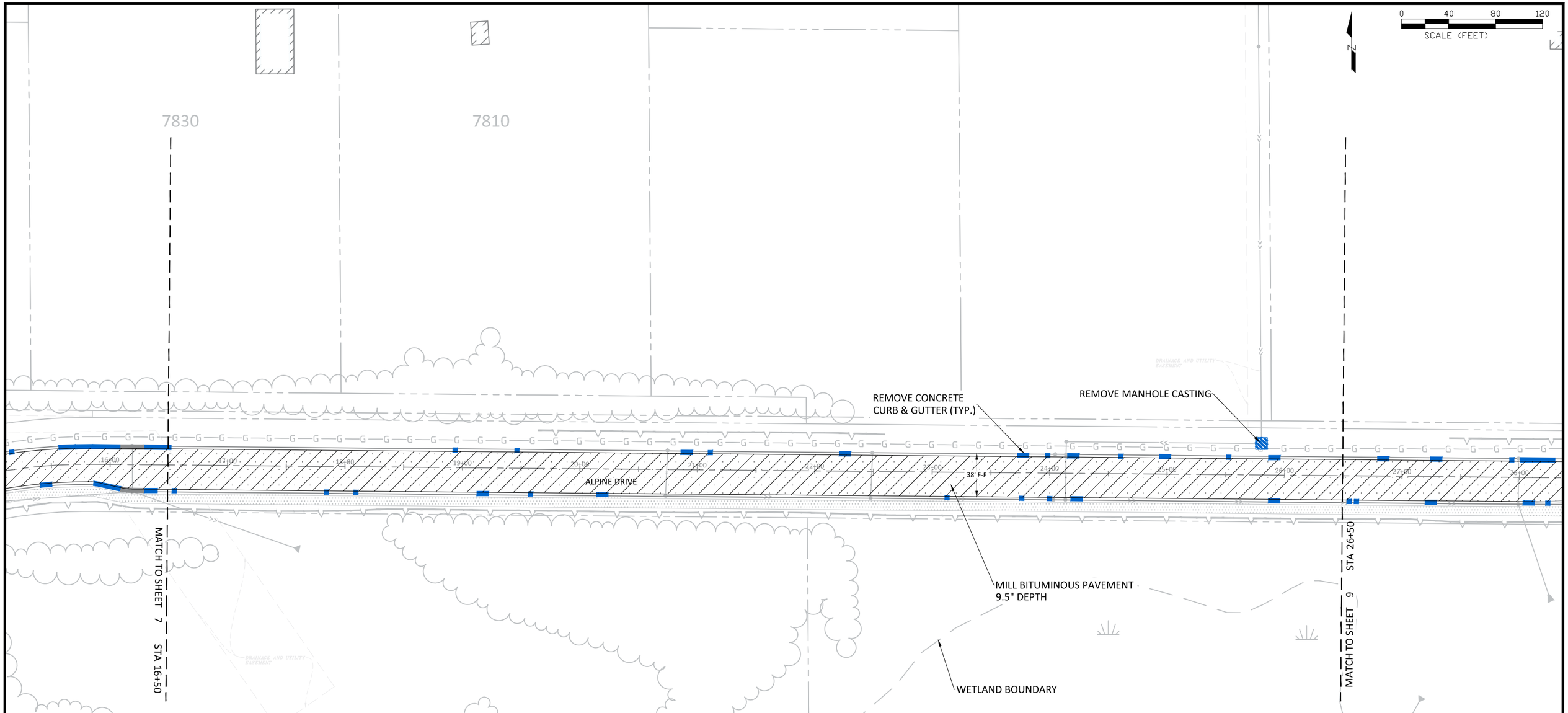
REMOVALS
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

SHEET 7 OF 21 SHEETS



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5. PROTECT STORM SEWER.

LEGEND

	MILL BITUMINOUS PAVEMENT
REMOVE CATCH BASIN	EDGE MILL BITUMINOUS PAVEMENT
REMOVE STORM CASTING	REMOVE BITUMINOUS PAVEMENT
REMOVE PIPE - STORM	REMOVE CONCRETE DRIVE
REMOVE CURB & GUTTER	REMOVE GRAVEL DRIVE

DATE	REVISION

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S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
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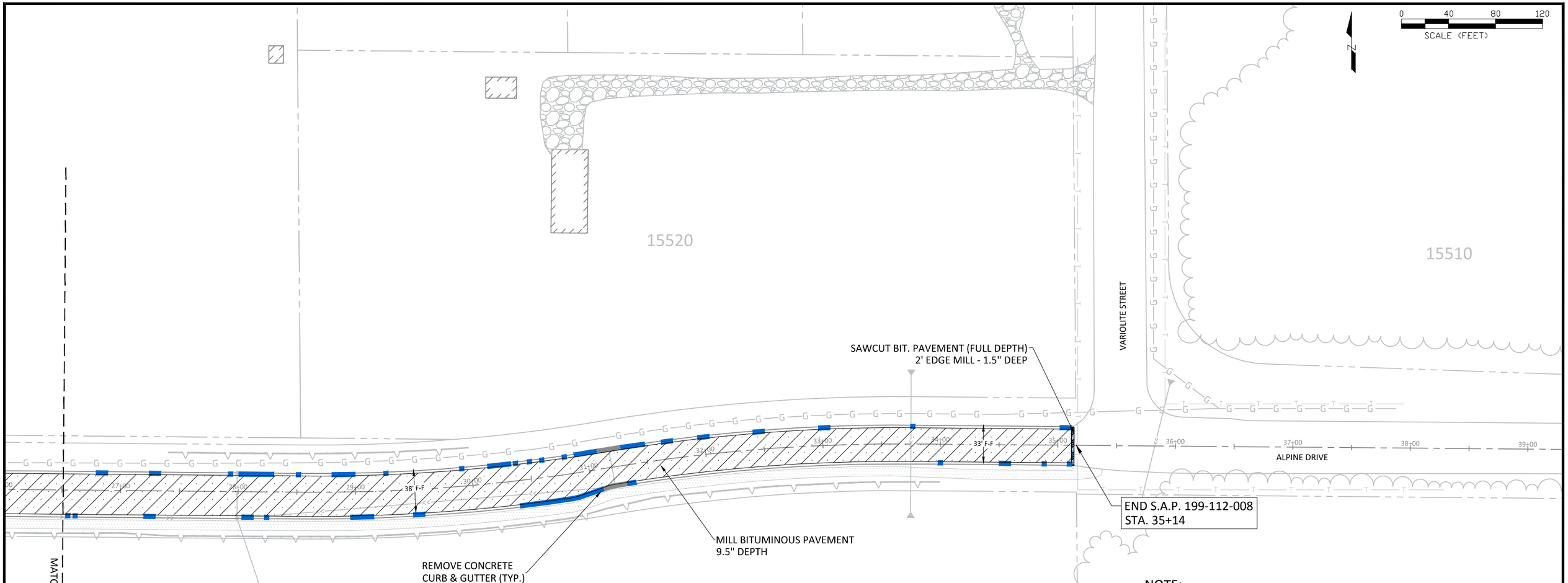
CITY OF RAMSEY, MINNESOTA



NOTE:
PEDESTRIAN ACCESS ROUTE MUST BE MAINTAINED AT ALL TIMES.
SEE PAY ITEM NOTE 8 ON SHEET 3.

WETLAND BOUNDARY

NOTE:

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5. PROTECT STORM SEWER.

LEGEND

	MILL BITUMINOUS PAVEMENT
REMOVE CATCH BASIN	EDGE MILL BITUMINOUS PAVEMENT
REMOVE STORM CASTING	REMOVE BITUMINOUS PAVEMENT
REMOVE PIPE - STORM	REMOVE CONCRETE DRIVE
REMOVE CURB & GUTTER	REMOVE GRAVEL DRIVE

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REMOVALS
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

ARMSTRONG BOULEVARD (CSAH 83)

0 40 80 120
SCALE (FEET)

N

BEGIN S.A.P. 199-112-008
STA. 0+64

15315

15385

15395

15401

15511

SILT FENCE (TYP.)

SILT FENCE (TYP.)

SILT FENCE (TYP.)

SILT FENCE (TYP.)

WETLAND BOUNDARY

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00

33' F-F

38' F-F

33' F-F

SF

MATCH TO SHEET 11 STA 16+50

LEGEND

SF — SILT FENCE

INLET PROTECTION

HYDROSEED RESTORATION AREA

NOTE:
RESTORATION AREAS ARE SHOWN IN A GENERAL MANNER ONLY.
RESTORE ALL DISTURBED AREAS WITH HYDROSEED MATERIAL UNLESS OTHERWISE NOTED.

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Bruce R Westby

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City of RAMSEY

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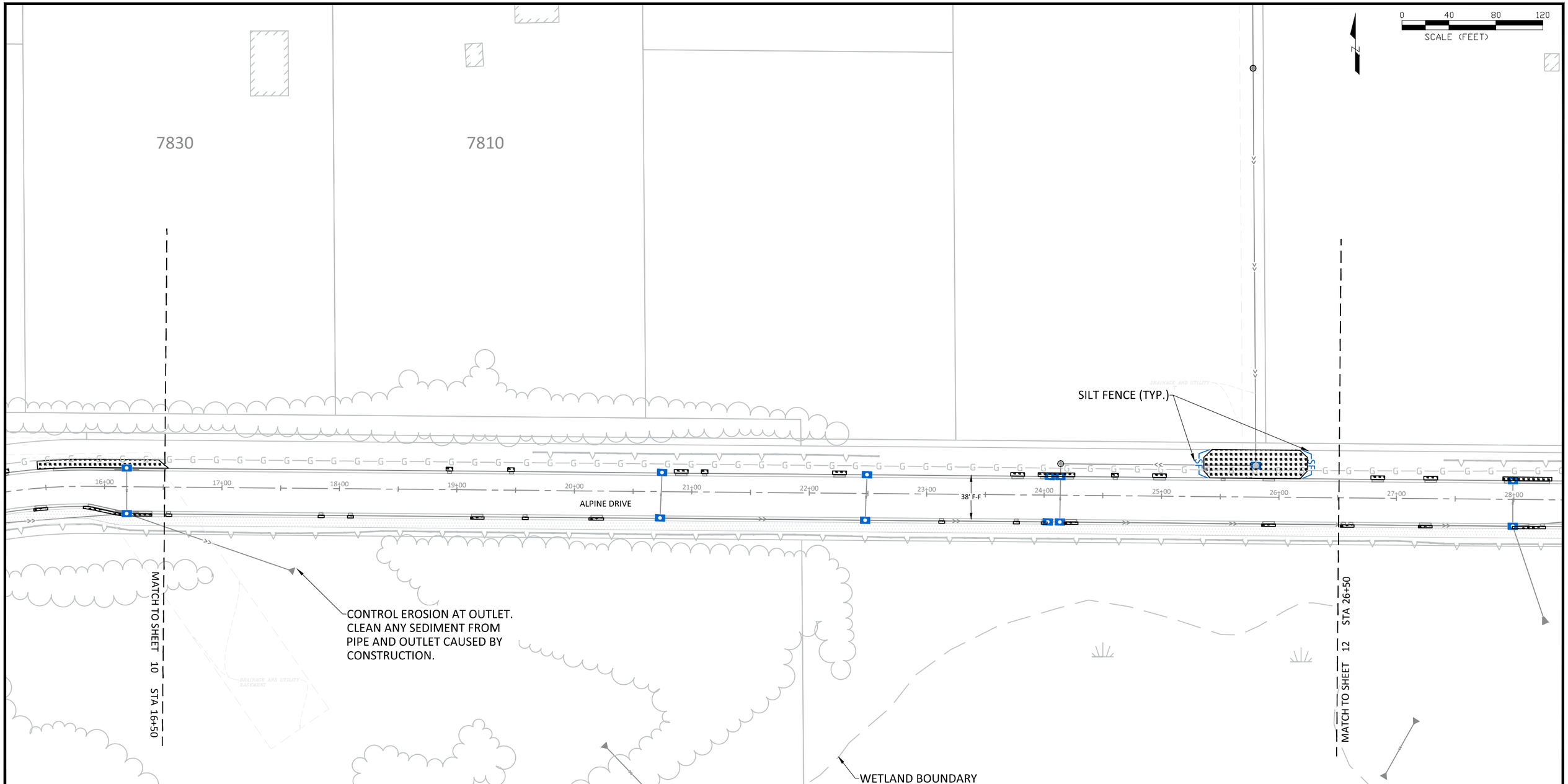
EROSION CONTROL AND RESTORATION
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

SHEET 10 OF 21 SHEETS



LEGEND

- SF — SILT FENCE
- INLET PROTECTION
- HYDROSEED RESTORATION AREA MNDOT SEED MIXTURE 25-131

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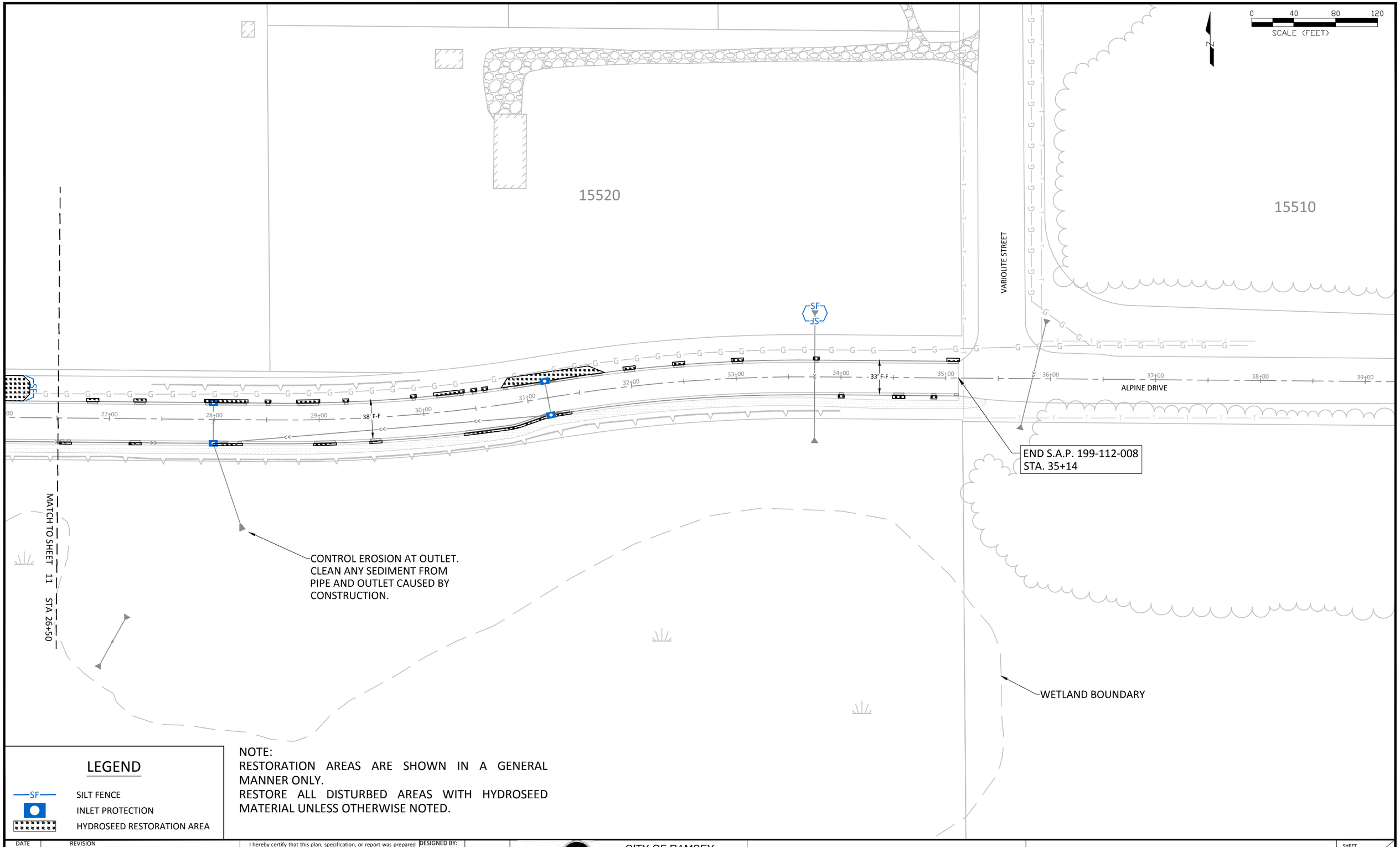

LEGEND

- SF — SILT FENCE
- INLET PROTECTION
- HYDROSEED RESTORATION AREA

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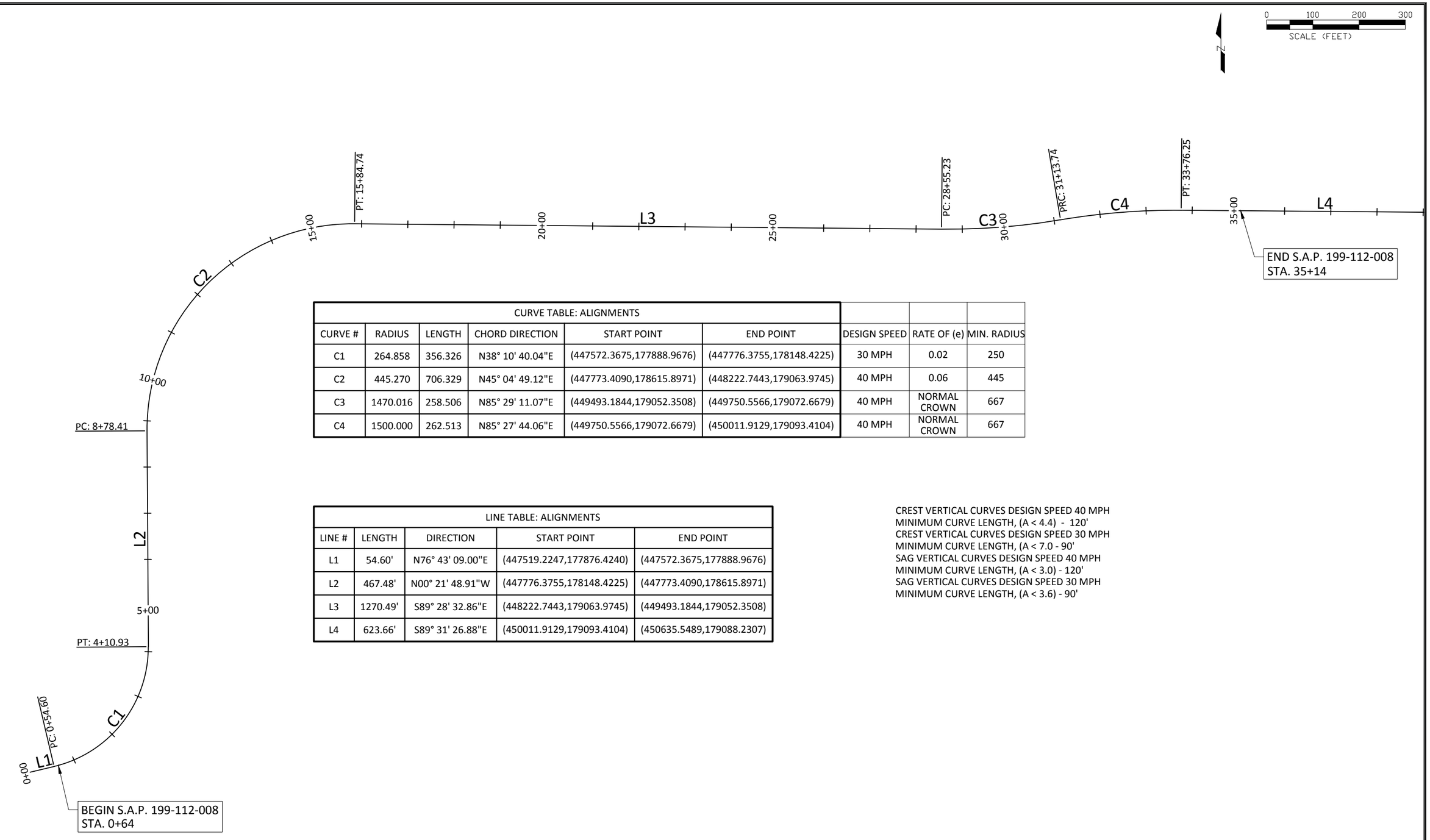
SHEET 12 OF 21 SHEETS



CURVE TABLE: ALIGNMENTS								
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	START POINT	END POINT	DESIGN SPEED	RATE OF (e)	MIN. RADIUS
C1	264.858	356.326	N38° 10' 40.04"E	(447572.3675,177888.9676)	(447776.3755,178148.4225)	30 MPH	0.02	250
C2	445.270	706.329	N45° 04' 49.12"E	(447773.4090,178615.8971)	(448222.7443,179063.9745)	40 MPH	0.06	445
C3	1470.016	258.506	N85° 29' 11.07"E	(449493.1844,179052.3508)	(449750.5566,179072.6679)	40 MPH	NORMAL CROWN	667
C4	1500.000	262.513	N85° 27' 44.06"E	(449750.5566,179072.6679)	(450011.9129,179093.4104)	40 MPH	NORMAL CROWN	667

LINE TABLE: ALIGNMENTS				
LINE #	LENGTH	DIRECTION	START POINT	END POINT
L1	54.60'	N76° 43' 09.00"E	(447519.2247,177876.4240)	(447572.3675,177888.9676)
L2	467.48'	N00° 21' 48.91"W	(447776.3755,178148.4225)	(447773.4090,178615.8971)
L3	1270.49'	S89° 28' 32.86"E	(448222.7443,179063.9745)	(449493.1844,179052.3508)
L4	623.66'	S89° 31' 26.88"E	(450011.9129,179093.4104)	(450635.5489,179088.2307)

CREST VERTICAL CURVES DESIGN SPEED 40 MPH
MINIMUM CURVE LENGTH, (A < 4.4) - 120'
CREST VERTICAL CURVES DESIGN SPEED 30 MPH
MINIMUM CURVE LENGTH, (A < 7.0 - 90'
SAG VERTICAL CURVES DESIGN SPEED 40 MPH
MINIMUM CURVE LENGTH, (A < 3.0) - 120'
SAG VERTICAL CURVES DESIGN SPEED 30 MPH
MINIMUM CURVE LENGTH, (A < 3.6) - 90'

DATE	REVISION

Apr 26, 2017 - 12:26pm
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

BRUCE R WESTBY
Date 4/26/17 Lic. No. 40116

DESIGNED BY:	JJF	
DRAWN BY:	JJF	DATE: 4/26/17
CHECKED BY:	BRW	FILE No. 17-01

CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

ALIGNMENT LAYOUT
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

BEGIN S.A.P. 199-112-008
STA. 0+64

ARMSTRONG BOULEVARD (CSAH 83)

0 40 80 120
SCALE (FEET)

15315
15385
15395
15401
15511

EX CB 109A
GROUT CATCH BASIN

EX CBMH 109
INSTALL R-3246R CASTING
RIM 879.23

CB 204
STA 4+35.39 -16.0L
RIM 879.97
BUILD 4.00
INV. E (CBMH 203) 875.97

15" CS APRON
INV. 878.25
25' - 15" CMP

15" CS APRON
INV. 878.00

CONCRETE DRIVEWAY
APRON (TYP.)
MATCH EXISTING DRIVE

ALPINE DRIVE

39' - 15" RCP @ 1.40%

CBMH 203
STA 4+35.39 22.1R
RIM 880.08
BUILD 4.94
INV. W (CB 204) 875.43
INV. N (CBMH 202) 875.33

72' - 15" RCP @ 1.80%

CBMH 202
STA 5+07.48 22.8R
RIM 879.03
BUILD 5.10
INV. S (CBMH 203) 874.03
INV. N (EX CBMH 108) 873.93

EX CBMH 108
GROUT CATCH BASIN
STA 5+17.55 22.8R
RIM 879.09
BUILD 5.40
INV. S (CBMH 202) 873.69
INV. W (EX CBMH 109) 873.69

10' - 15" RCP @ 2.38%

EX CBMH 107
RESET CATCH BASIN (TYP.)

EX CBMH 106
GROUT CATCH BASIN

EX CB 105
GROUT CATCH BASIN

EX CBMH 104
GROUT CATCH BASIN

EX CBMH 104A
GROUT CATCH BASIN

WETLAND BOUNDARY

CBMH 103

EX CBMH 103
GROUT CATCH BASIN

EX CBMH 101
RESET CASTING (TYP.)

EX CB 102
RESET CASTING (TYP.)

MATCH TO SHEET 15 STA 16+50

LEGEND

- CONCRETE DRIVEWAY
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- CATCH BASIN MANHOLE
- 2 X 3 CATCH BASIN
- FLARED END

THE LOCACTIONS OF EXISTING UNDERGROUND UTILITES ARE SHOWN IN AN APPROXIMATE WAY ONLY. IT IS NOT GUARANTEED ANY OR ALL EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTE: THE FIRST 10' OF CONCRETE CURB AND GUTTER REPLACEMENT ON EACH SIDE OF THE CATCH BASIN IS INCIDENTAL TO THE RESET CATCH BASIN CASTING PAY ITEM.

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STREET AND STORM SEWER
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ALPINE DRIVE RECONSTRUCTION
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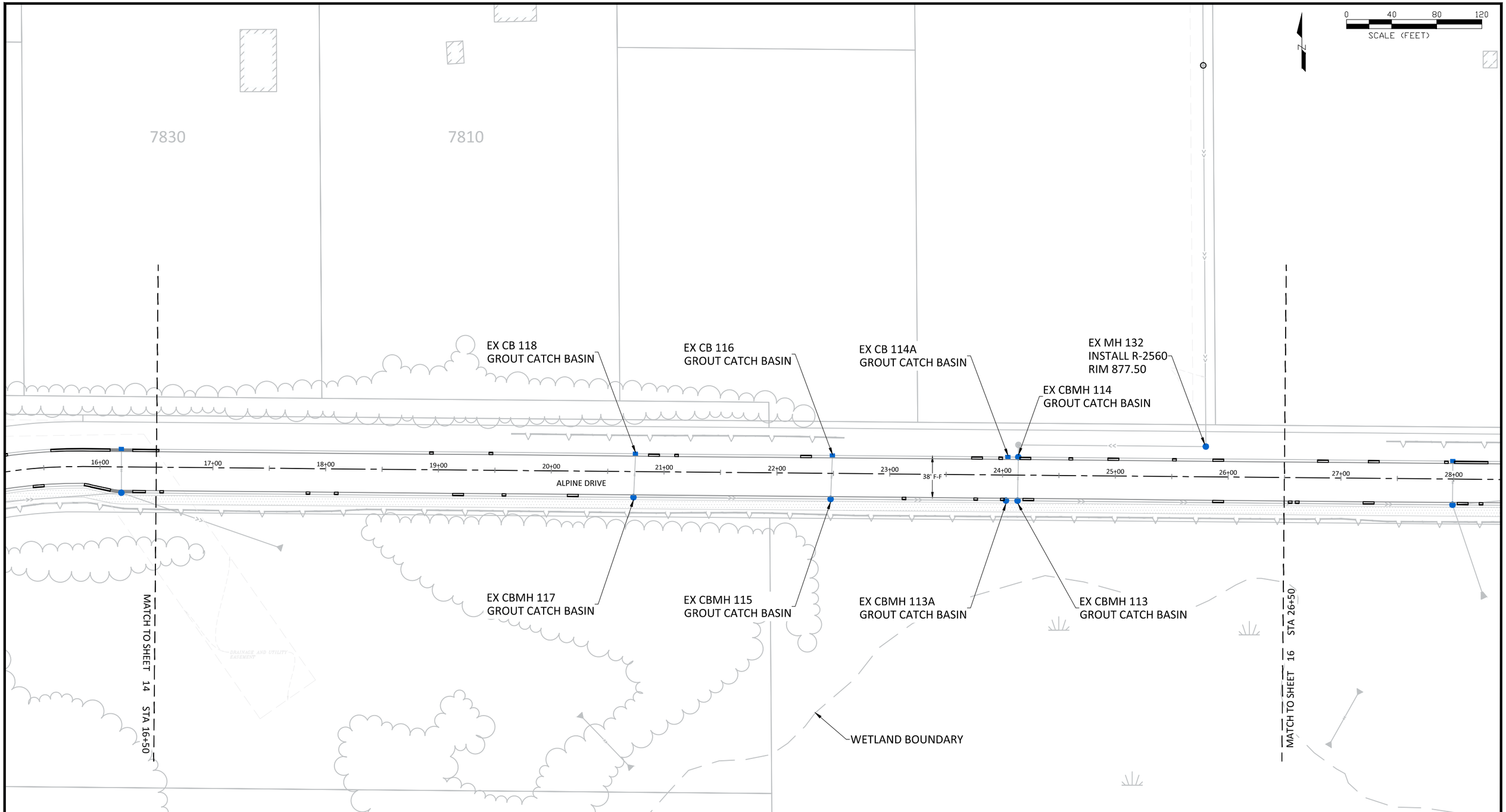

LEGEND

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- PROPOSED STORM SEWER
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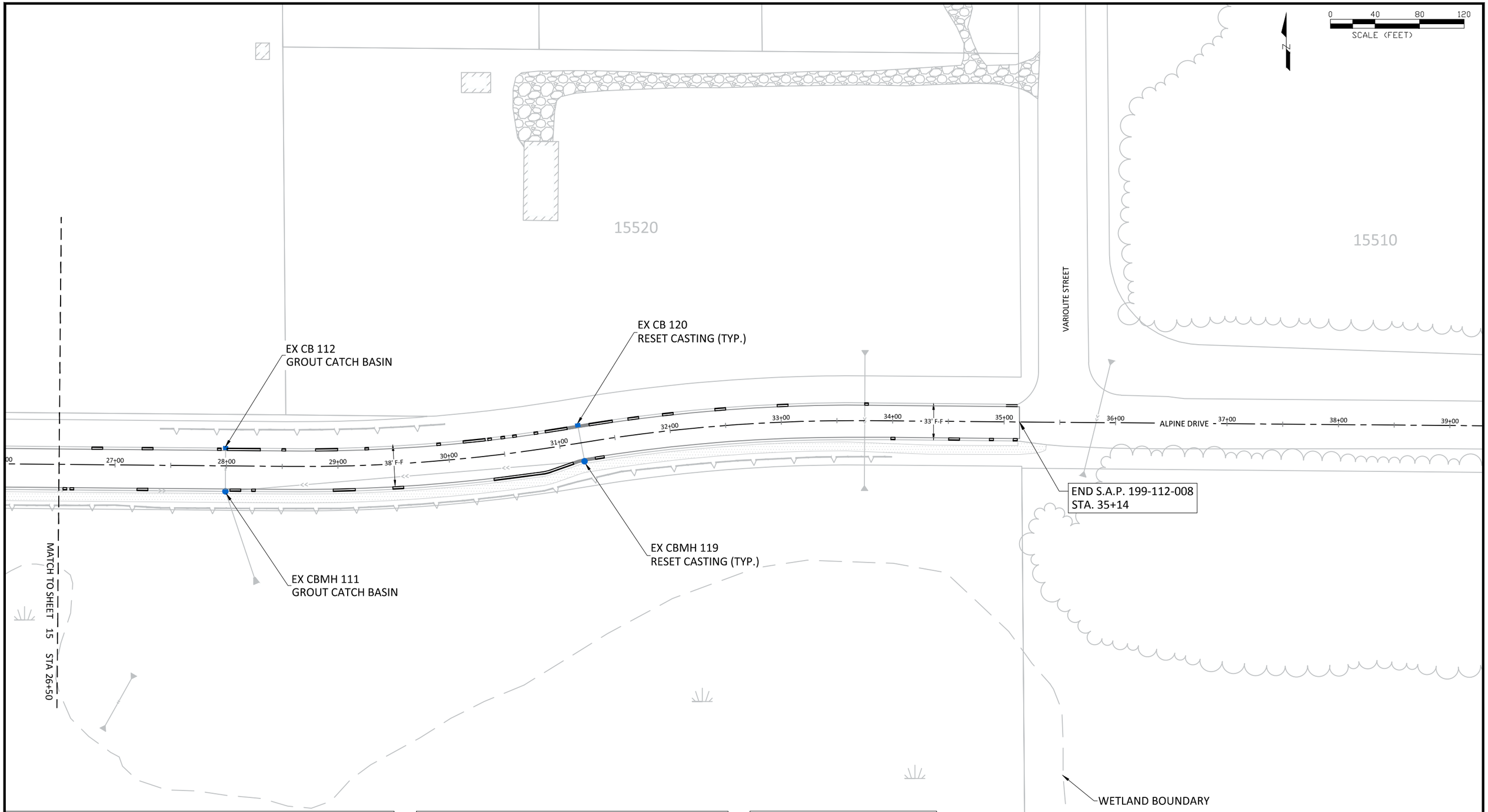
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA



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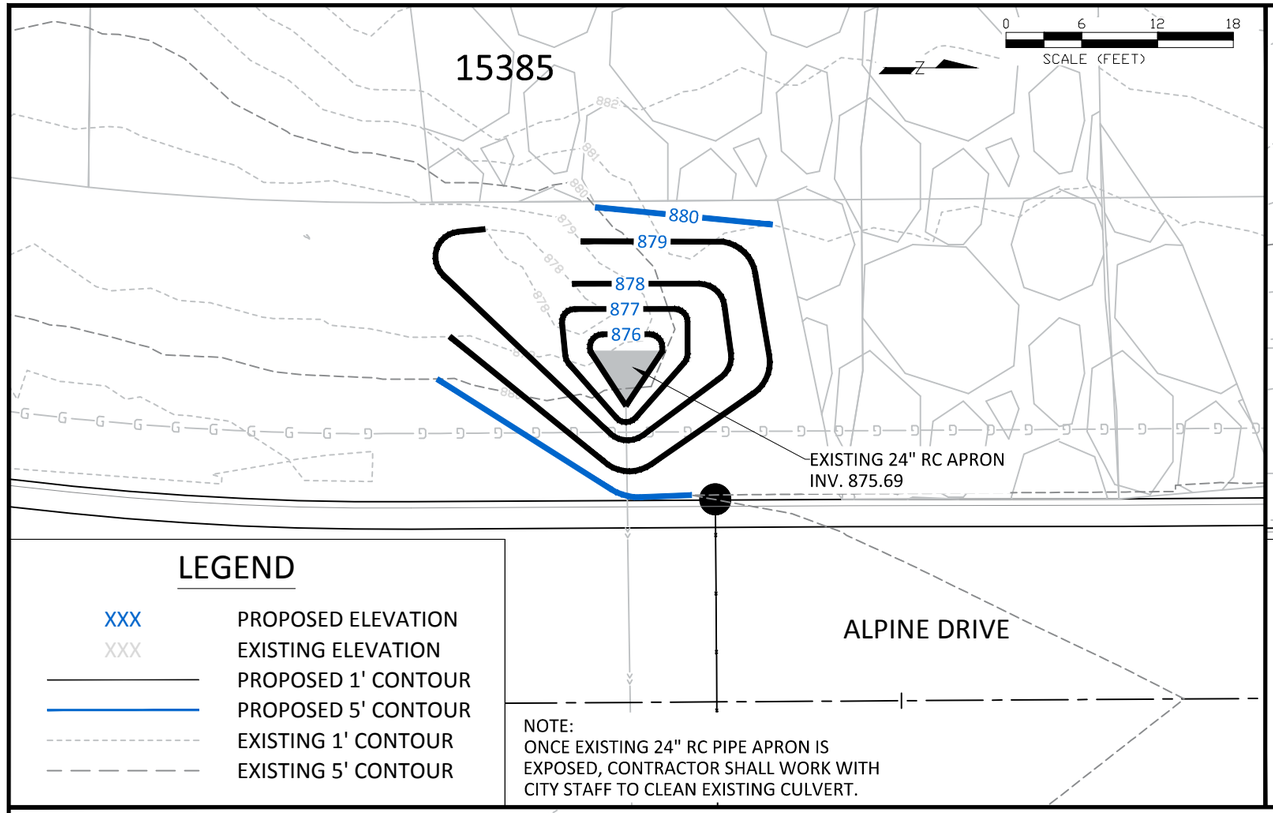
STREET AND STORM SEWER
S.A.P. 199-112-008

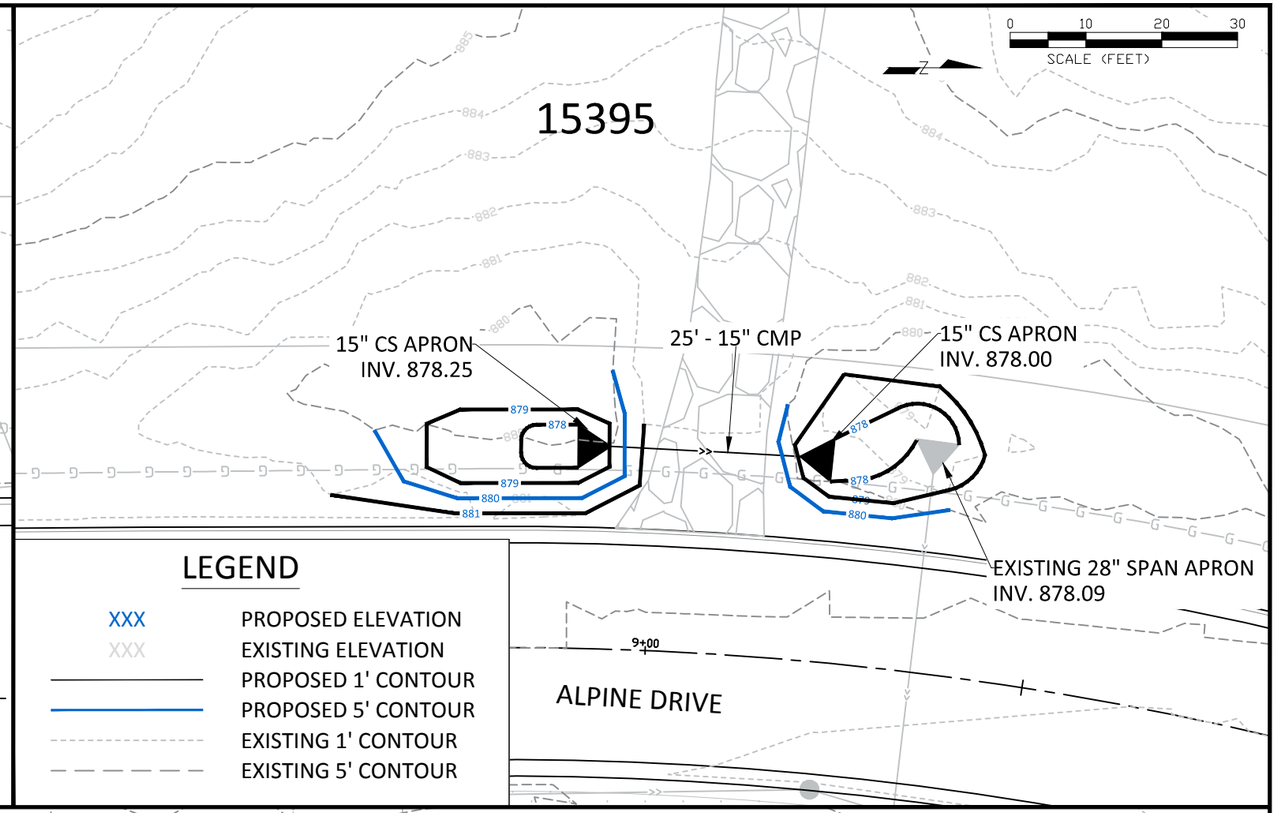
ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

SHEET 16 OF 21 SHEETS



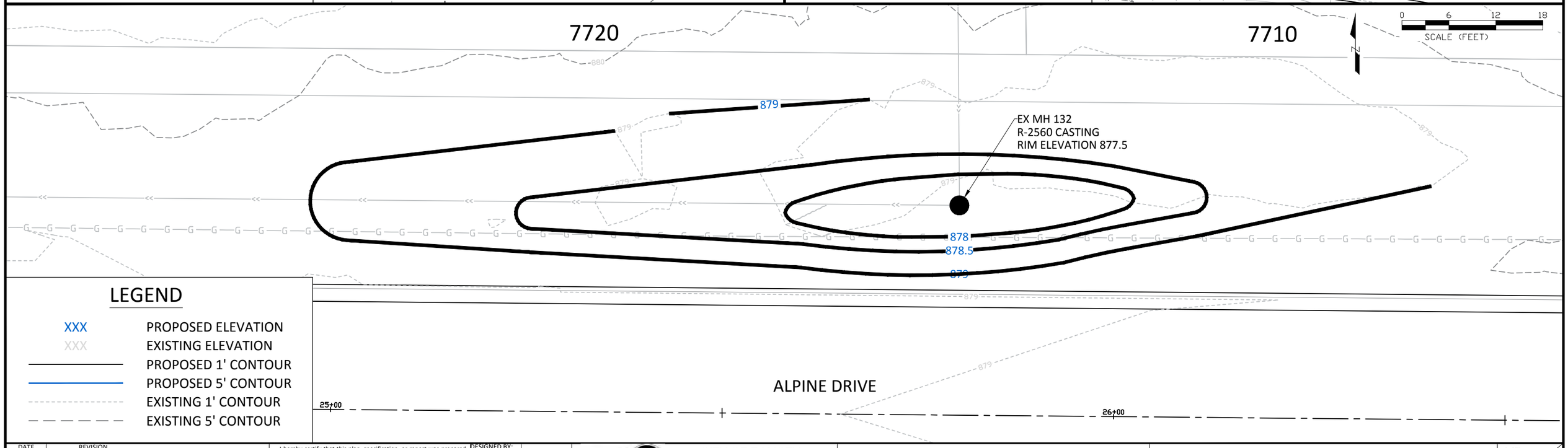
LEGEND

XXX	PROPOSED ELEVATION
XXX	EXISTING ELEVATION
	PROPOSED 1' CONTOUR
	PROPOSED 5' CONTOUR
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR



LEGEND

XXX	PROPOSED ELEVATION
XXX	EXISTING ELEVATION
	PROPOSED 1' CONTOUR
	PROPOSED 5' CONTOUR
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR



LEGEND

XXX	PROPOSED ELEVATION
XXX	EXISTING ELEVATION
	PROPOSED 1' CONTOUR
	PROPOSED 5' CONTOUR
	EXISTING 1' CONTOUR
	EXISTING 5' CONTOUR

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City of RAMSEY

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7550 SUNWOOD DRIVE
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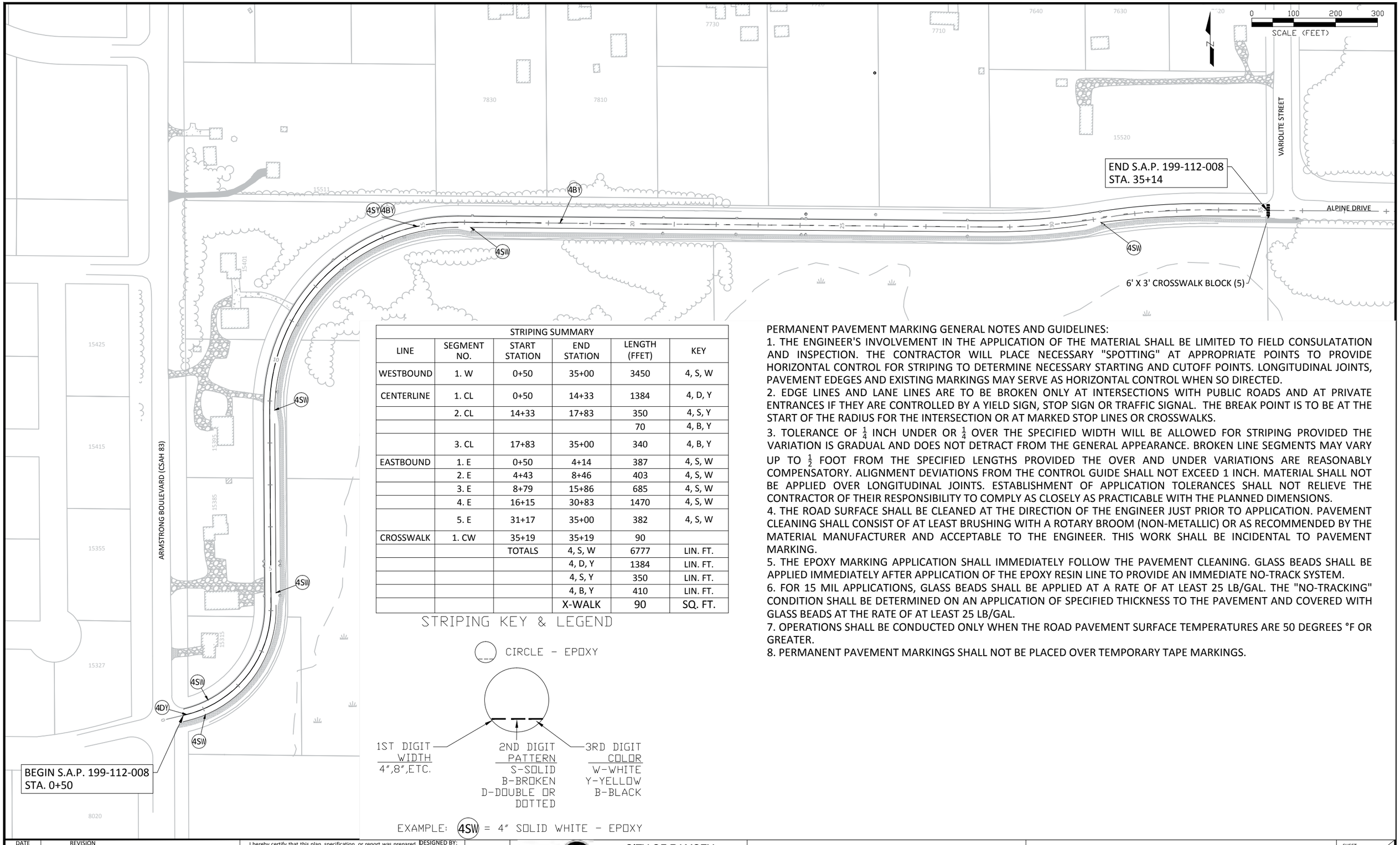
(763) 427-1410 FAX (763) 433-9898

GRADING
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA



STRIPING SUMMARY					
LINE	SEGMENT NO.	START STATION	END STATION	LENGTH (FFET)	KEY
WESTBOUND	1. W	0+50	35+00	3450	4, S, W
CENTERLINE	1. CL	0+50	14+33	1384	4, D, Y
	2. CL	14+33	17+83	350	4, S, Y
				70	4, B, Y
	3. CL	17+83	35+00	340	4, B, Y
EASTBOUND	1. E	0+50	4+14	387	4, S, W
	2. E	4+43	8+46	403	4, S, W
	3. E	8+79	15+86	685	4, S, W
	4. E	16+15	30+83	1470	4, S, W
	5. E	31+17	35+00	382	4, S, W
CROSSWALK	1. CW	35+19	35+19	90	
		TOTALS	4, S, W	6777	LIN. FT.
			4, D, Y	1384	LIN. FT.
			4, S, Y	350	LIN. FT.
			4, B, Y	410	LIN. FT.
			X-WALK	90	SQ. FT.

STRIPING KEY & LEGEND

EXAMPLE: 4SW = 4" SOLID WHITE - EPOXY

PERMANENT PAVEMENT MARKING GENERAL NOTES AND GUIDELINES:

1. THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULATATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDEGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.
2. EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.
3. TOLERANCE OF $\frac{1}{4}$ INCH UNDER OR $\frac{1}{4}$ OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO $\frac{1}{2}$ FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.
4. THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. THIS WORK SHALL BE INCIDENTAL TO PAVEMENT MARKING.
5. THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.
6. FOR 15 MIL APPLICATIONS, GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 25 LB/GAL. THE "NO-TRACKING" CONDITION SHALL BE DETERMINED ON AN APPLICATION OF SPECIFIED THICKNESS TO THE PAVEMENT AND COVERED WITH GLASS BEADS AT THE RATE OF AT LEAST 25 LB/GAL.
7. OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES °F OR GREATER.
8. PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

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CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

STRIPING PLAN
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

ALPINE DRIVE RECONSTRUCTION

CITY OF RAMSEY
ANOKA COUNTY, MINNESOTA

LEGEND

PROJECT LIMITS
SPECIAL WATER

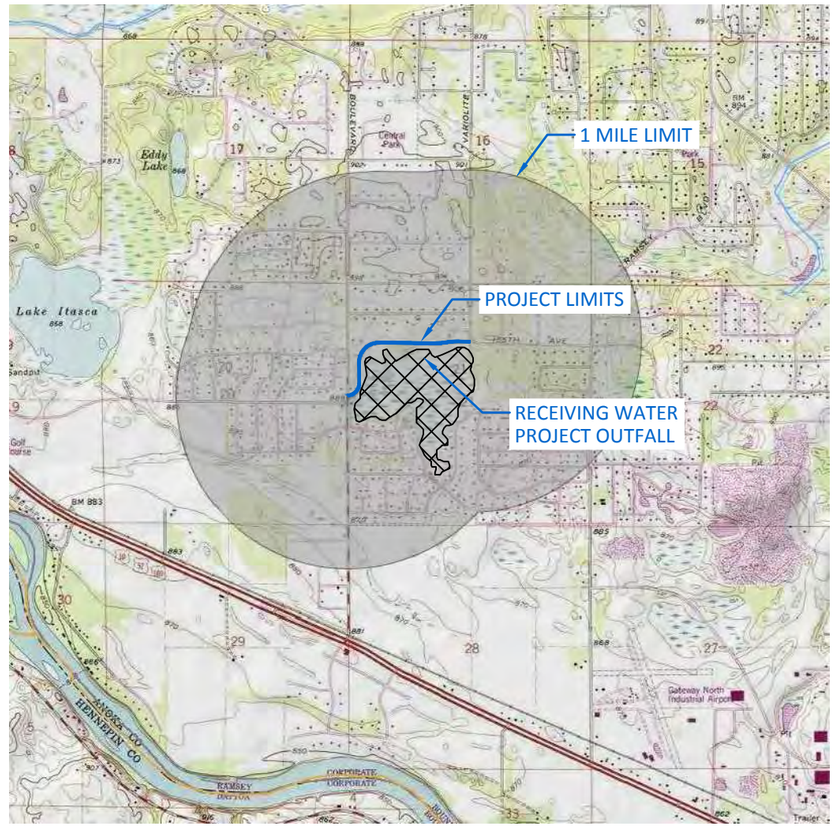
PROJECT AREAS
Total Project Size (disturbed area) = 3.18 acres
Existing area of impervious surfce = 2.98 acres
Post construction area of Impervious surface = 2.98 acres
New impervious surface area created = 0.00 acres

Planned Construction Start Date: June, 2017
Estimated Construction Completion Date: Oct, 2017

PERMANENT STORMWATER MANAGEMENT SYSTEM
Type of storm water management used if more than 1 acre of new impervious surface is created:
Wet Sedimentation Pond
Infiltration/ Filtration
Regional Pond
Permanent Stormwater Management Not Required

PROJECT LOCATION

County: ANOKA Township: 32 Range: 25 Section: 21 Latitude: 45.1507 Longitude: 93.2802



RESPONSIBLE PARTIES
The Contractor and Owner must apply for coverage under the MPCA's General Storm Water Permit for Construction Activity as required by the National Pollution Discharge Elimination System (NPDES) Phase II program. Coverage under the permit will begin automatically 7 calendar days after the electronic submittal date or after the postmarked date of a complete application. (Longer time frames will apply to areas that disturb 50 acres or discharge within 1 mile of a special water)

	COMPANY	CONTACT PERSON	PHONE
OWNER:	CITY OF RAMSEY	BRUCE WESTBY, PE	763-433-9825
SWPPP DESIGNER:	CITY OF RAMSEY	LEONARD LINTON, PE	763-433-9834
CONTRACTOR:			
SITE MANAGER:			
PARTY RESPONSIBLE FOR LONG TERM O&M:	CITY OF RAMSEY	BRUCE WESTBY, PE	763-433-9825

Individuals listed above, including the SWPPP preparer, individual overseeing implementation of, revising and amending the SWPPP, individuals performing or supervising the installation, maintenance and repair of BMP's must be trained. At least one individual present on the permitted project, or available within 72 hours shall be trained in the applicable job duties. 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. Copies of the SWPPP preparer information is included in the Project Manual. The contractor shall provide information for the individual(s) overseeing implementation, supervising installation, maintenance, and repair of BMP's to included in the Project Manual prior to the start of construction. This information shall be kept up to date until the project NOT is filed.

Documentation shall include:
a. Names of trained personnel associated with this project.
b. Dates of training, names of instructor(s) and entity providing training.
c. Content of training course or workshop including the number of hours trained.
d. As an alternative to a, b, and c listed above, a photocopy of the a current Erosion and Stormwater Management card issued by the University of Minnesota can be attached to the SWPPP as suitable documentation of training.

SPECIAL ENVIRONMENTAL CONSIDERATIONS:

Was an environmental review required for this project or any parr of a common plan of development or sale that includes all or any portion of this project?	NO
Does any portion of the site have the potential to affect threatened or endangered species?	NO
Does any portion of this site discharge to a Calcareous fen and the letter of approval from the DNR is located in the Project Manual?	NO
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
Have any Karst features been identified in the project vicinity?	NO
Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO

GENERAL STORMWATER DISCHARGE REQUIREMENTS
All requirements listed in Part III of the permit for the design of permanent stormwater management system and discharge have been included in the preparation of this SWPPP. These include but are not limited to:
1. The expected amount, frequency, intensity and duration of precipitation.
2. The nature of stormwater runoff and run-on at the site.
3. Peak flow rates and stormwater volumes to minimize erosion at outlets and downstream channel and stream bank erosion.
4. The range of soil particle sizes expected to be present on the site.

LOCATION OF SWPPP REQUIRMENETS IN PROJECT PLAN

DESCRIPTION	LOCATION
TEMPORARY EROSION CONTROL MEASURES	SHEETS NO. 10 - 12
FINAL STABILIZATION	SHEETS NO. 10 - 12
STORM SEWER PROFILE SHEETS	SHEETS NO. 14 - 16
STORM SEWER TABULATION	SHEETS NO. 3
EROSION AND SEDIMENT CONTROL DETAILS	SHEETS NO. 5

CERTIFICATION:
LEONARD LINTON: DESIGN OF CONSTRUCTION SWPPP EXPIRES MAY 31, 2019
INSTRUCTOR UNIVERSITY MN EROSION & STORMWATER MANAGEMENT CERTIFICATION PROGRAM.

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

Project description:
The project consists of rehabilitation of 0.67 miles of existing bituminous street, with the existing concrete curb and gutter remaining in-place. The drainage for the existing street flows to 2 separate infiltration basins located relatively in the center of the project, which then flow to the wetland south of the project. There will be minor repairs and addition of 3 catch basins to the existing storm sewer system, with no change to the outfalls. The system is designed to handle the 2.5 inch rainfall and rate control.

DOCUMENT RETENTION
The following documentation will be retained for a period of not less than 3-years from the date of submittal of the NOT in compliance with Part III.E of the permit.
1. The final SWPPP
2. Copies of all stormwater related permits required for the project
3. Records of all inspection and maintenance conducted during construction
4. Copies of all permanent operation and maintenance agreements; including all right-of-way, contracts, covenants and other binding requirements regarding perpetual maintenance, and
5. All required calculations for design of temporary and permanent BMPs.

RECEIVING WATERS
Receiving waters, including surface water, wetlands, Public Waters, and stormwater ponds, are identified on the USGS 7.5min quad map within 1 mile of the project boundary. Receiving waters that are impaired, the impairment and WLA are listed as follows. All specific BMPs relative to construction activities listed in this permit for special and impaired waters 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.)	APPENDIX A SPECIAL WATER?	FLOWS TO IMPAIRED WATER WITHIN 1 MILE?	USEPA APPROVED TMDL?
NONE	N/A	NO	NO	NO
N/A				

IMPLEMENTATION SCHEDULE AND PHASING
1. Furnish & install perimeter sediment control, and inlet protection.
2. Remove existing bituminous pavement and spot concrete curb and gutter.
3. Rough grade site
4. Furnish & install storm structures
5. Furnish & install concrete curb, bituminous pavement.
6. Add additional temporary BMPs as necessary during construction based on inspection reports
7. Submit Notice of Termination NOT to MPCA within 30 days of final stabilization.

EROSION PREVENTION PRACTICES

1. The permittee(s) must plan for and implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion, so that the inspection and maintenance requirements are complied with. The location of areas not to be disturbed must be delineated (e.G. With flags, stakes, signs, silt fence, etc.) on the development site before work begins.

2. All exposed soil areas must be stabilized as soon as possible, but in no case later than 14 days after the construction area has temorarily or permanently ceased.

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SWPPP
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

SHEET 19 OF 21 SHEETS

These areas include constructed storm water management pond side slopes, and any exposed soil areas with a positive slope to a storm water conveyance system, such as a curb and gutter system, storm sewer inlet, temporary or permanent drainage ditch or other natural or man made systems that discharge to a surface water.

3. The normal wetted perimeter of any temporary or permanent drainage ditch that drains water from a construction site, or diverts water around a site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge to any surface water. Stabilization must be completed within 24 hours of connecting to a surface water.

4. Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours of connection to a surface water.

5. All disturbed areas, except roadways, building areas, parking areas, islands and sidewalk, shall be restored with minimum 6 inches topsoil, seeded and mulched within 7 days of completion of site grading. Seeding shall be in accordance with mn/dot specification 2575 (c)100 lbs/acre (or approved equal). Dormant seeding areas shall be seeded and mulched in accordance with mn/dot specifications. Straw mulching quantity shall be two tons per acre. Where slopes exceed or equal 1:3, a polypropylene netting or wood fiber blanket shall be provided and staked over the mulched area. Fertilizer (15–0–10) shall be applied at a rate of 400 pounds per acre (can be omitted in landscaped areas if landscaped seeding is done concurrently).

6. Refer to landscape plan for areas to be seeded or sodded for erosion control.

SEDIMENT CONTROL PRACTICES

1. Sediment control practices must minimize sediment from entering surface waters, including curb and gutter systems and storm sewer inlets.

A. Temporary or permanent drainage ditches and sediment basins that are designed as part of a treatment system (e.G., ditches with rock check dams) require sediment control practices only as appropriate for site conditions.

B. If the down gradient treatment system is overloaded, additional upgradient sediment control practices must be installed to eliminate the overloading, and the swppp must be amended to identify these additional practices.

C. In order to maintain sheet flow and minimize rills and/or gullies, there shall be no unbroken slope length of greater than 75 feet for slopes with a grade of 1:3 or steeper.

2. Sediment control practices must be established on all down gradient perimeters before any upgradient land disturbing activities begin. These practices shall remain in place until final stabilization has been established.

3. The timing of the installation of sediment control practices may be adjusted to accommodate short–term activities such as clearing or grubbing, or passage of vehicles. Any short–term activity must be completed as quickly as possible and the sediment control practices must be installed immediately after the activity is completed. However, sediment control practices must be installed before the next precipitation event even if the activity is not complete.

4. All storm drain inlets must be protected by appropriate bmps during construction until all sources with potential for discharging to the inlet have been stabilized.

5. Temporary soil stockpiles must have silt fence or other effective sediment controls, and cannot be placed in surface waters, including storm water conveyances such as curb and gutter systems, or conduits and ditches.

6. Stockpile areas which remain on the site for more than seven days shall be seeded, mulched, and surrounded by silt fence.

7. Vehicle tracking of sediment from the construction site must be minimized by bmps such as stone pads, concrete or steel wash racks, or equivalent systems. Street sweeping must be used if such bmps are not adequate to prevent sediment from being tracked onto the street.

8. The permittee must install temporary sedimentation basins as required.

DEWATERING AND BASIN DRAINING

1. Dewatering or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) related to the construction activity that may have turbid or sediment laden discharge water must be discharged to a temporary or permanent sedimentation basin on the project site whenever possible. If the water cannot be discharged to a sedimentation basin prior to entering the surface water, it must be treated with the appropriate bmps, such that the discharge does not adversely affect the receiving water or downstream landowners. The permittee(s) must ensure that discharge points are adequately protected from erosion and scour. The discharge must be dispersed over natural rock riprap, sand bags, plastic sheeting or other accepted energy dissipation measures. Adequate sedimentation control measures are required for discharge water that contains suspended solids.

2. All water from dewatering or basin draining activities must be discharged in a manner that does not cause nuisance conditions, erosion in receiving channels or on downslope properties, or inundation in wetlands causing significant adverse impact to the wetland.

INSPECTIONS AND MAINTENANCE

1. The permittee(s) (either the owner or operator, whoever is identified in the swppp) must routinely inspect the construction site once every seven (7) days during active construction and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24–hours after a rainfall event, the next inspection must be conducted within 7 days.

2. All inspections and maintenance conducted during construction must be recorded in writing and these records must be retained with the SWPPP. Records of each inspection and maintenance activity shall include:

a. Date and time of inspections;

b. Name of person(s) conducting inspections;

c. Findings of inspections, including recommendations for corrective actions;

d. Corrective actions taken (including dates, times, and party completing maintenance activities);

e. Date and amount of all rainfall events greater than 1/2 inch (0.5 inches) in 24 hours; and

f. Documentation of changes made to the SWPPP as required in part iii.A.4.

3. Where parts of the construction site have undergone final stabilization, but work remains on other parts of the site, inspections of the stabilized areas may be reduced to once per month. Where work has been suspended due to frozen ground conditions, the required inspections and maintenance must take place within 24 hours after runoff occurs at the site or 24 hours prior to resuming construction, whichever comes first.

4. All erosion prevention and sediment control BMP's must be inspected to ensure integrity and effectiveness. All nonfunctional BMP's must be repaired, replaced, or supplemented with functional bmps. The permittee(s) must investigate and comply with the following inspection and maintenance requirements:

a. All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/3 of the height of the fence. These repairs must be made within 24 hours of discovery, or as soon as field conditions allow access.

B. Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 1/2 the storage volume. Drainage and removal must be completed within 72 hours of discovery, or as soon as field conditions allow access.

C. Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of sediment being deposited by erosion. The permittee(s) must remove all deltas and sediment deposited in surface waters, including drainage ways, catch basins, and other drainage systems, and restabilize the areas where sediment removal results in exposed soil. The removal and stabilization must take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access constraints. The permittee shall use all reasonable efforts to obtain access. If precluded, removal and stabilization must take place within seven (7) calendar days of obtaining access. The permittee is responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work.

D. Construction site vehicle exit locations must be inspected for evidence of off–site sediment tracking onto paved surfaces. Tracked sediment must be removed from all off–site paved surfaces, within 24 hours of discovery, or if applicable, within a shorter time.

E. The permittee(s) are responsible for the operation and maintenance of temporary and permanent water quality management BMP's, as well as all erosion prevention and sediment control BMP's, for the duration of the construction work at the site. The permittee(s) are responsible until another permittee has assumed control over all areas of the site that have not been finally stabilized or the site has undergone final stabilization, and a not has been submitted to the MPCA.

F. If sediment escapes the construction site, off–site accumulations of sediment must be removed in a manner and at a frequency sufficient to minimize off–site impacts (e.G., fugitive sediment in streets could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).

5. All infiltration areas must be inspected to ensure that no sediment from ongoing construction activities is reaching the infiltration area and these areas are protected from compaction due to construction equipment driving across the infiltration area.

6. Storm sewer pipes and structures to be inspected and cleaned out.

POLLUTION PREVENTION MANAGEMENT MEASURES

The permittee(s) shall implement the following pollution prevention management measures on the site:

1. Solid waste: collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of properly and must comply with mpca disposal requirements.

2. Hazardous materials: oil, gasoline, paint and any hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks or other discharge. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with mpca regulations.

3. External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site.

FINAL STABILIZATION

The permittee(s) must ensure final stabilization of the site. The permittee(s) must submit a not within 30 days after final stabilization is complete, or another owner/operator (permittee) has assumed control over all areas of the site that have not undergone final stabilization. Final stabilization can be achieved in one of the following ways:

1. All soil disturbing activities at the site have been completed and all soils must be stabilized by a uniform perennial vegetative cover with a density of 70 percent over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions and;

a. All drainage ditches, constructed to drain water from the site after construction is complete, must be stabilized to preclude erosion;

b. All temporary synthetic, and structural erosion prevention and sediment control bmps (such as silt fence) must be removed as part of the site final stabilization; and

c. The permittee(s) must clean out all sediment from conveyances and from temporary sedimentation basins that are to be used as permanent water quality management basins. Sediment must be stabilized to prevent it from being washed back into the basin, conveyances or drainageways discharging off–site or to surface waters. The cleanout of permanent basins must be sufficient to return the basin to design capacity.

2. Final vegetation cover shall be in Project Specifications.

3. For residential construction only, final stabilization has been achieved when temporary erosion protection and down gradient perimeter control for individual lots has been completed and the residence has been transferred to the homeowner. Additionally, the permittee must distribute the MPCA "Homeowner fact sheet" to the homeowner to inform the homeowner of the need for, and benefits of, final stabilization.

SEQUENCE OF CONSTRUCTION

Construction shall proceed in the following sequence:

1. Contractor shall schedule and conduct a pre–construction meeting with the City.
2. Contractor shall secure all necessary permits and licenses.
3. Furnish & install erosion control measures.
4. Maintain erosion control measures, i.e. silt fence, temporary rock construction entrance.
5. Construct storm sewer.
6. Remove existing bituminous pavement and base, and remove damaged curb and gutter.
7. Prepare subgrade.
8. Place and compact aggregate base material.
9. Furnish & install concrete curb, base course of bituminous pavement.
10. Furnish & install wear course of bituminous pavement.
11. Grout catch basins
12. Remove erosion control after vegetation is established.

ADDITIONAL STORMWATER POLLUTION PREVENTION, GRADING PLAN ANS SCHEDULE NOTES

1. All slopes to be 1:4 unless approved by the city engineer.
2. Below grade structures shall be protected and meet drainage requirements per the city engineer.
3. Construction operation hours are from 7:00am–10:00pm Mon.–Sat.
4. Call Gopher State One Call for utility locations prior to any work at 1–800–252–1166.
5. Permittee may need to modify SWPPP if the general objectives of controlling pollutants is not being met.
6. Operator shall implement these and any other bmp's that may be required to meet the general permit requirements.
7. Site is not in karst area or pollution or remediation site.
8. Silt fence to be installed downhill from any grading activity.
9. If tracking onto adjacent streets occurs a street sweeper shall be used to clean streets within 8 hours or as directed by the engineer.
10. Dust control may be necessary during rough grading. No grading can take place if wind speed exceeds 25 mph.
11. Solid waste shall be collected and disposed of properly and must comply with MPCA disposal requirements.
12. Hazardous materials shall be stored properly to prevent spills and vandalism
13. No engine degreasing is allowed on site. External washing of vehicles shall be limited to a defined area (bone yard) on site.
14. Permitee(s) shall adhere to all SWPPP specifications on this plan and other mpca permit requirements.

DATE	REVISION

Apr 26, 2017 - 12:28pm
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

BRUCE R WESTBY
Date 4/26/17 Lic. No. 40116

DESIGNED BY:	JJF	
DRAWN BY:	JJF	DATE: 4/26/17
CHECKED BY:	BRW	FILE No. 17-01

CITY OF RAMSEY
7550 SUNWOOD DRIVE
RAMSEY, MN 55303
(763) 427-1410 FAX (763) 433-9898

SWPPP
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

ALPINE DRIVE CLOSED
ARMSTRONG BLVD (CSAH 83) TO VARIOLITE STREET
PROJECTED CLOSURE: 8 WEEKS

PROPOSED DETOUR ROUTE

PROPOSED DETOUR ROUTE

SIGN LAYOUT NOTE:
FOLLOW MNDOT TEMPORARY TRAFFIC CONTROL PLAN, TYPICAL SIGNING FOR ROAD CLOSURES TEMPLATE

0 400 800 1200
SCALE (FEET)

DATE	REVISION

Apr 26, 2017 - 12:29pm
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

BRUCE R WESTBY
Date 4/26/17 Lic. No. 40116

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RAMSEY, MN 55303
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DETOUR PLAN
S.A.P. 199-112-008

ALPINE DRIVE RECONSTRUCTION
CITY PROJECT NO. 17-01
CITY OF RAMSEY, MINNESOTA

SHEET 21 OF 21 SHEETS