ANOKA COUNTY HIGHWAY DEPARTMENT
BLAINE, MINNESOTA
CSAH 52 AT XYLITE STREET, 101ST AVE

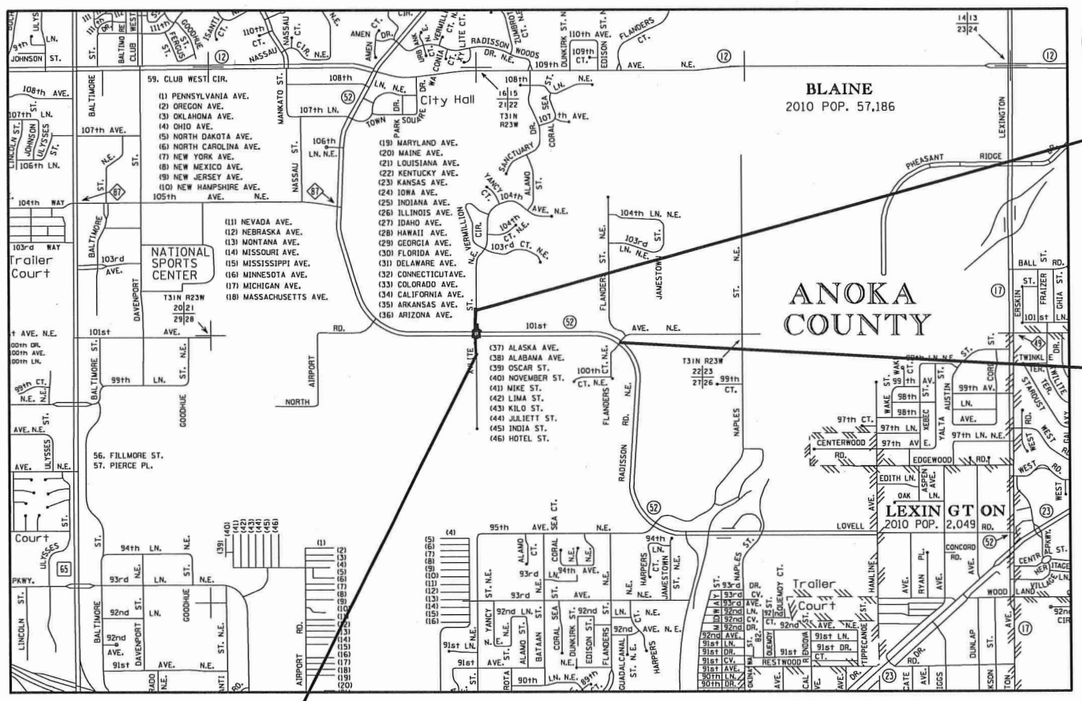
CONSTRUCTION PLAN FOR GRADING, PAVING, DRAINAGE, AND SIGNALS

LOCATED ON XYLITE STREET FROM 390 FEET SOUTH OF CSAH 52 TO 470 FEET NORTH OF CSAH 52

STATE AID PROJ. 002-652-008, 106-020-035
CITY PROJ. 19-09

GROSS LENGTH	890.80	FEET 0.169	MILES
BRIDGES-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH	890.80	FEET 0.169	MILES

LENGTH AND DESCRIPTION BASED UPON ℄ XYLITE STREET



BEGIN
SAP 002-652-008
SAP 106-020-035
CP 19-09
℄ XYLITE STREET
STA 300+09.60

INDEX MAP SCALE 3000'

END
SAP 002-652-008
SAP 106-020-035
CP 19-09
℄ XYLITE STREET
STA 309+00.40

SAP 002-652-007

PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
CONC. RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY LINE
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
MAIL BOX
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
AERIAL TELEPHONE CABLE
SEWER, (SANITARY)
SEWER, (STORM)
SEWER MANHOLE
HANDHOLE

DESIGN DESIGNATION FOR: XYLITE STREET

R-VALUE	50
ADT (Current Year) 2020 =	1,175
ADT (Future Year) 2040 =	1,350
PAVEMENT DESIGN	10 TON
FUNCTIONAL CLASSIFICATION	LOCAL STREET
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0
ESALS (20)	153,00 (20 YRS.)
Design Speed	30 MPH
Based on Sight Distance	STOPPING
Height of eye / Height of Object	3.5' / 2.0'
Design Speed not achieved at:	N/A

PROJECT LOCATION
COUNTY : ANOKA
DISTRICT : METRO
SECTION 21, 22, 27 & 28
T 31 N, R 23 W

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	CHARGE IDENTIFIER

I HEREBY CERTIFY THAT THE FINAL FIELD CHANGES, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE _____
DATE _____ LIC. NO. _____ PRINT NAME _____

FED. PROJ. NO. STATE FUNDS

GOVERNING SPECIFICATIONS

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

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI. "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

INDEX

THIS PLAN CONTAINS 85 SHEETS

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

SRF

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.

SIGNATURE Ben Robeck
DATE 6/30/20 LIC. NO. 53680 PRINT NAME BENJAMIN P ROBECK

APPROVED _____ ANOKA COUNTY ENGINEER 7-30 20 20

APPROVED Daniel Schluender CITY ENGINEER, CITY OF BLAINE 7.30.2020

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY
For 7/30/ 20 20

APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER
For 7/30/ 20 20

THIS PLAN AND/OR SPECIFICATION WAS PREPARED SPECIFICALLY FOR THIS PROJECT, AND ANY RE-USE OF DETAILS OR SPECIFICATIONS ON OTHER PROJECTS IS NOT INTENDED OR AUTHORIZED BY THE DESIGNER. LIABILITY FOR ANY RE-USE ON OTHER PROJECTS IS THE RESPONSIBILITY OF THE PERSON, AGENCY, OR CORPORATION USING PLAN OR SPECIFICATION DATA FROM THIS PROJECT.

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

SAP 002-652-007, 002-652-008, 106-020-035
CP 19-09
SHEET NO. 1 OF 76 SHEETS

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STATEMENT OF ESTIMATED QUANTITIES

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITIES	ANOKA COUNTY SAP 002-652-007	ANOKA COUNTY SAP 002-652-008	CITY OF BLAINE SAP 106-020-035	
									ROAD	STORM
			2021.501	MOBILIZATION	LUMP SUM	1	0.1	0.2	0.7	
	B	5	2101.505	CLEARING	ACRE	0.15			0.15	
	B	5	2101.505	GRUBBING	ACRE	0.15			0.15	
	H	8	2104.502	REMOVE CASTING	EACH	1				1
			2104.502	REMOVE SIGN TYPE C	EACH	8		6	2	
			2104.502	REMOVE SIGN TYPE SPECIAL	EACH	2			2	
	C	5	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	1360		140	1220	
	H	8	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	28				28
	C	5	2104.503	REMOVE CURB & GUTTER	LIN FT	580		90	490	
	C	5	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	350		35	315	
	C	5	2104.518	REMOVE BITUMINOUS WALK	SQ FT	640			640	
	C	5	2104.518	REMOVE CONCRETE WALK	SQ FT	2440			2440	
	C	5	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	200		200		
(1)	A	5	2106.507	EXCAVATION - COMMON (P)	CU YD	678			678	
	A	5	2106.507	COMMON EMBANKMENT (CV) (P)	CU YD	290			290	
	D	5	2118.507	AGGREGATE SURFACING (CV) CLASS 1 (P)	CU YD	5			5	
	D	5	2211.507	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	391		21	370	
	E	6	2302.602	DRILL & GROUT REINF BAR (EPOXY COATED)	EACH	52			52	
	D	5	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	83		7	76	
	D	5	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C)	TON	302		14	288	
	D	5	2360.509	TYPE SP 12.5 NON WEAR COURSE MIX (3,C)	TON	7		7		
	J	38	2501.502	12" RC PIPE APRON	EACH	1				1
	J	38	2501.602	TRASH GUARD FOR 12" PIPE APRON	EACH	1				1
	J	38	2503.503	12" RC PIPE SEWER DES 3006 CL V	LIN FT	44				44
	J	38	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1				1
	J	38	2503.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH	1				1
	I	8	2504.602	RELOCATE HYDRANT & VALVE	EACH	1			1	
	I	8	2504.602	ADJUST VALVE BOX-WATER	EACH	3			3	
	K	38	2506.502	CASTING ASSEMBLY	EACH	3				3
	G	8	2506.502	ADJUST FRAME & RING CASTING	EACH	1			1	
	J	38	2506.503	CONST DRAINAGE STRUCTURE DESIGN SD-48	LIN FT	3				3
	J	38	2506.503	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	LIN FT	3				3
	J	38	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LIN FT	1				1
	E	6	2521.518	4" CONCRETE WALK	SQ FT	2770			2770	
	E	6	2521.518	6" CONCRETE WALK	SQ FT	1140		30	1110	
	E	6	2531.503	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	590			590	
	E	6	2531.503	CONCRETE CURB & GUTTER DESIGN B618 (MOD)	LIN FT	280			280	
	E	6	2531.618	TRUNCATED DOMES	SQ FT	156			156	
	C	5	2540.602	RELOCATE MAIL BOX	EACH	1			1	
	J	38	2554.502	GUIDE POST TYPE B	EACH	1				1
			2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.1	0.2	0.7	
			2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	48		20	28	
	N	50	2564.502	OBJECT MARKER TYPE X4-2	EACH	2		2		
	M	50	2564.518	SIGN PANELS TYPE C	SQ FT	94.5		46	48.5	
	O	52	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1			1	
	O	52	2565.501	TRAFFIC CONTROL INTERCONNECT	LUMP SUM	1		1		
	O	52	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM A	SYSTEM	1		0.25	0.75	
	O	52	2565.616	REVISE SIGNAL SYSTEM B	SYSTEM	1	1			
	F	6	2573.502	STORM DRAIN INLET PROTECTION	EACH	1			1	
	F	6	2573.502	CULVERT END CONTROLS	EACH	1			1	

NOTES
(P) PLAN QUANTITY
(1) EXCAVATED VOLUME

NO	DATE	BY	CKD	APPR	REVISION

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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.

Print Name: BENJAMIN ROBECK

Date 6/19/20 License # 53680

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY S. MARTINS
DESIGNED BY M. HARDEGGER
CHECKED BY B. ROBECK
COMM. NO. 1912330

SRF Consulting Group, Inc.
ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
STATEMENT OF ESTIMATED QUANTITIES
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 2 OF 76

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STATEMENT OF ESTIMATED QUANTITIES

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITIES	ANOKA COUNTY SAP 002-652-007	ANOKA COUNTY SAP 002-652-008	CITY OF BLAINE SAP 106-020-035	
									ROAD	STORM
	F	6	2573.503	SILT FENCE, TYPE MS	LIN FT	720			720	
	F	6	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	470			470	
	F	6	2574.508	FERTILIZER TYPE 3	POUND	83			83	
	F	6	2575.505	SEEDING	ACRE	0.4			0.4	
	F	6	2575.508	SEED MIXTURE 25-121	POUND	15			15	
	F	6	2575.523	RAPID STABILIZATION METHOD 3	M GALLON	3			3	
	F	6	2575.604	ROLLED EROSION PREVENTION CATEGORY 35	SQ YD	1100			1100	
	P	25	2581.503	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	4500		2850	1650	
	P	25	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LIN FT	280		280		
	L	44	2582.503	4" SOLID LINE MULTI COMP	LIN FT	275			275	
	L	44	2582.503	4" DBLE SOLID LINE MULTI COMP	LIN FT	1225			1225	
	L	44	2582.503	24" SOLID LINE PREFORM THERMO	LIN FT	250		110	140	
	L	44	2582.518	PAVT MSSG PREF THERMO	SQ FT	216		124	92	
	L	44	2582.518	CROSSWALK PREF THERMO	SQ FT	903		558	345	

NO	DATE	BY	CKD	APPR	REVISION

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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.

Print Name: BENJAMIN ROBECK

Date 6/19/20 License # 53680

STATE AID PROJECT NO.
002-652-007,
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19-09

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ENGINEERS
PLANNERS
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ANOKA COUNTY

STATEMENT OF ESTIMATED QUANTITIES
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 3 OF 76

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CONSTRUCTION AND SOILS NOTES

GRADING, BASE AND SURFACE

1 GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.

2 AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS OF MNDOT SPEC 3138, CLASS 5.

3 ALL EMBANKMENT FILL MATERIAL (EXCLUDING SLOPE DRESSING) SHALL BE GRANULAR, MEETING THE REQUIREMENTS OF SPEC 3149.2.B.1 AND CONTAINING LESS THAN 5% ORGANIC CONTENT. FILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH SPEC 2106 UNLESS NOTED OTHERWISE. PAID FOR AS COMMON EMBANKMENT.

4 ALL SLOPE DRESSING MATERIAL SHALL MEET THE REQUIREMENTS OF SPEC 3877, AND BE PLACED IN ACCORDANCE WITH SPEC 2106 UNLESS NOTED OTHERWISE. PAID FOR AS COMMON EMBANKMENT.

5 UNSUITABLE SOILS ARE DEFINED AS SOILS WHICH DO NOT MEET OR ARE NOT MANUFACTURED TO MEET ANY OF THE ABOVE DEFINED CATEGORIES. THESE SOILS ARE THEREFORE NOT REUSABLE AS EMBANKMENT. UNSUITABLE SOILS NOT USED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR, REMOVED FROM THE PROJECT AND DISPOSED OF IN ACCORDANCE WITH MNDOT SPECIFICATIONS.

6 IN ANY CASE WHERE GRANULAR EMBANKMENTS OR BACKFILL JOIN NON-GRANULAR SOIL EMBANKMENTS OR BACKFILL, PROVIDE A 1V:2OH TRANSITION BETWEEN THE CHANGE IN MATERIAL TO PREVENT AN ABRUPT SOILS DIFFERENTIAL. CONSTRUCT THE 1V:2OH TRANSITION SUCH THAT THE GRANULAR BACKFILL MATERIAL OVERLAYS THE ADJACENT NON-GRANULAR SOIL BACKFILL.

7 WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER. THEN 1V:2OH TO THE BOTTOM OF THE RECOMMENDED EXCAVATION, UNLESS OTHERWISE NOTED.

8 WHERE CONNECTING NEW SURFACING ADJACENT TO ANY INPLACE PAVEMENTS TO BE WIDENED, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, AND THEN AT A 1:2 TAPER TO THE BOTTOM OF THE RECOMMENED SUBGRADE EXCAVATION.

9 PROVIDE A FULL-DEPTH SAWCUT WHERE PLACING NEW PAVEMENT NEXT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT.

10 STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 6 INCHES. TOPSOIL STRIPPING SHALL BE PAID FOR AS EXCAVATION-COMMON.

11 SUBGRADE SOILS SHALL BE COMPACTED TO AT LEAST 100 PERCENT OF STANDARD PROCTOR DENSITY. AGGREGATE BASE LAYERS SHALL BE COMPACTED PER THE PENETRATION INDEX METHOD. PERMANENT BITUMINOUS MIXTURES SHALL BE COMPACTED USING THE MAXIMUM DENSITY METHOD.

12 DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTIONS SHOWN IN THE TYPICAL SECTIONS AND CROSS SECTIONS. CONSTRUCTION LIMITS SHOWN IN THE PLANS REPRESENT THE POINT OF INTERSECTION BETWEEN THE REQUIRED FILL OR CUT SLOPE WITH THE EXISTING GROUND LINE AS DEPICTED IN THE CROSS SECTIONS.

13 USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON THE EXISTING PAVEMENT. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.04 - 0.06 GAL/SQ YD BETWEEN NEW BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC AND RC LIQUID ASPHALTS. THE ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC 2357.

14 SEE SOIL BORING REPORT IN THE SPECIAL PROVISIONS OF THIS PROJECT FOR ADDITIONAL INPLACE SOIL INFORMATION.

15 ANY DEBRIS WHICH MAY BE ENCOUNTERED DURING GRADING SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF OFF THE PROJECT RIGHT-OF-WAY IN A SUITABLE DISPOSAL AREA AS APPROVED BY THE ENGINEER.

16 NO OVER-EXCAVATION WILL BE ALLOWED INSIDE THE COUNTY'S RIGHT-OF-WAY FOR THIS PROJECT.

17 EXCESS GRANULAR MATERIAL MUST BE DEEMED EXCESS BY THE PROJECT ENGINEER PRIOR TO REMOVING IT FROM THE PROJECT.

CONSTRUCTION AND SOILS NOTES

REMOVALS

18 ASSUMED EXISTING PAVEMENT THICKNESSES ARE LISTED BELOW. THE CONTRACTOR SHALL INVESTIGATE AND MAKE THEIR OWN DETERMINATION.
CSAH 52 - 6 INCHES OF BITUMINOUS
XYLITE STREET (NORTH) - 3 INCHES OF BITUMINOUS
XYLITE STREET (SOUTH) - 4 INCHES OF BITUMINOUS

19 UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BE RECYLCED TO THE EXTENT ALLOWED IN BASE AND SURFACING ITEMS OR DISPOSED OF OUTSIDE THE RIGHT-OF-WAY IN ACCORDANCE WITH SPEC 2104.3C3.

TURF ESTABLISHMENT

20 USE RAPID STABILIZATION METHOD 3 ON ALL LOCATIONS OF DISTURBED SOILS FOR TEMPORARY STABILIZATION.

21 PLACE A MINIMUM OF 4 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT.

22 PERMANENT TURF ESTABLISHMENT REQUIREMENTS ON THIS PROJECT ARE AS FOLLOWS:

A. USE SEED MIXTURE 25-121, FERTILIZER TYPE 3 (SLOW RELEASE) ANALYSIS 22-5-10 AT 350 LBS / ACRE ON ALL AREAS DESIGNATED FOR PERMANENT TURF ESTABLISHMENT.

B. USE ROLLED EROSION PREVENTION CATEGORY 35 PRODUCT ON ALL AREAS DESIGNATED FOR TURF ESTABLISHMENT. DO NOT DISK ANCHOR.

SEE DRAINAGE, SUPERELEVATION, EROSION CONTROL AND TURF ESTABLISHMENT PLANS FOR SEED TYPE LOCATIONS.

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

STANDARD PLATES

PLATE NO.	DESCRIPTION
3000 M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006 H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007 F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3145 G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4010 H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011 E	PRECAST CONCRETE BASE
4020 J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4022 A	MANHOLE OR CATCH BASIN COVER (3 FT. X 2 FT. OPENING)
4024 A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026 A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101 D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110 F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) * CASTING NO. 715 AND 716
7020 K	CONCRETE CURB (DESIGN B, DESIGN V, DESIGN S, DESIGN DR AND DESIGN BR)(2 SHEETS)
7038 A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100 H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7113 A	CONCRETE APPROACH NOSE DETAIL
8000 J	CHANNELIZERS (3 SHEETS)
8120 Q	POLE FOUNDATION (PA85)
8126 L	POLE FOUNDATION (PA90 AND PA100)

NO	DATE	BY	CKD	APPR	REVISION

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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.
Print Name: BENJAMIN ROBECK
Date 6/30/20 License # 53680

STATE AID PROJECT NO.
002-652-007,
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CITY PROJ NO.
19-09

DRAWN BY S. MARTINS
DESIGNED BY M. HARDEGGER
CHECKED BY B. ROBECK
COMM. NO. 1912330

SRF Consulting Group, Inc. ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
CONSTRUCTION AND SOILS NOTES AND STANDARD PLATES
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 4 OF 76

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EARTHWORK TABULATION — A

STATION	EXCAVATION TOTALS (EV)	EMBANKMENT TOTALS (CV)
	COMMON	COMMON
SAP 106-020-035 XYLITE STREET	CU YD	CU YD
300+10.00		
300+50.00	7	6
301+00.00	14	14
301+50.00	19	18
302+00.00	23	22
302+53.55	33	23
303+00.00	34	21
303+35.00	42	14
303+37.00	3	1
303+50.00	20	3
303+71.00	28	
SUBTOTAL (A)	**223**	**122**
304+56.00		
304+60.00	5	
305+00.00	66	47
305+50.00	79	71
305+70.00	26	7
305+85.00	17	4
305+86.00	1	
306+00.00	13	1
306+50.00	53	4
307+00.00	56	5
307+50.00	48	5
308+00.00	38	5
308+50.00	30	7
309+00.00	23	12
SUBTOTAL (B)	**455**	**168**
SAP 106-020-035 TOTAL	**678**	**290**

CLEARING AND GRUBBING — B

ALIGNMENT	STATION TO STATION	CLEARING ACRE	GRUBBING ACRE
SAP 106-020-035			
XYLITE STREET	300+09.60-303+73.78 (LT)	0.05	0.05
XYLITE STREET	300+09.60-303+73.78 (RT)	0.05	0.05
XYLITE STREET	304+55.71-309+00.40 (LT)	0.05	0.05
SAP 106-020-035 TOTAL		**0.15**	**0.15**

AGGREGATE AND BITUMINOUS SUMMARY — D

ALIGNMENT	STATION TO STATION	AGGREGATE SURFACING (CV) CLASS 1 CU YD	AGGREGATE BASE (CV) CLASS 5 CU YD	(D-1) BITUMINOUS MATERIAL FOR TACK COAT GALLON	(D-2)(D-3) TYPE SP 12.5 WEARING COURSE MIX (3,C) TON	(D-2)(D-4) TYPE SP 12.5 NON WEAR COURSE MIX (3,C) TON
SAP 002-652-008						
XYLITE STREET	303+73.78-304+55.71 (LT/RT)		21	7	14	7
SAP 002-652-008 SUBTOTAL			**21**	**7**	**14**	**7**
SAP 106-020-035						
XYLITE STREET	300+09.60-303+73.78 (LT)	5	130	30	115	
XYLITE STREET	300+09.60-303+73.78 (RT)		17	3	12	
XYLITE STREET	304+55.71-309+00.40 (LT)		175	32	120	
XYLITE STREET	304+55.71-309+00.40 (RT)		48	11	41	
SAP 106-020-035 SUBTOTAL		**5**	**370**	**76**	**288**	
TOTAL		**5**	**391**	**83**	**302**	**7**

NOTES:
(D-1) QUANTITY BASED ON 0.06 GAL/SQ YD
(D-2) QUANTITY BASED ON 113 POUND/SY-INCH BITUMINOUS MIX UNIT WEIGHT
(D-3) MIX TYPE SPWEB340C
(D-4) MIX TYPE SPNWB330C

REMOVALS, SAWING AND RELOCATES — C

ALIGNMENT	STATION TO STATION	SAWING BIT PAVEMENT (FULL DEPTH) LIN FT	REMOVE CURB & GUTTER LIN FT	REMOVE BITUMINOUS PAVEMENT SQ YD	REMOVE BITUMINOUS WALK SQ FT	REMOVE CONCRETE WALK SQ FT	REMOVE CONCRETE MEDIAN SQ FT	RELOCATE MAIL BOX EACH
SAP 002-652-008								
XYLITE STREET	303+73.78-304+55.71 (LT/RT)	140	90	35			200	
SAP 002-652-008 SUBTOTAL		**140**	**90**	**35**			**200**	
SAP 106-020-035								
XYLITE STREET	300+09.60-303+73.78 (LT)	430		95	340			
XYLITE STREET	300+09.60-303+73.78 (RT)	80		40	300			
XYLITE STREET	304+55.71-309+00.40 (LT)	520	400	100		2440		
XYLITE STREET	304+55.71-309+00.40 (RT)	190	90	80				1
SAP 106-020-035 SUBTOTAL		**1220**	**490**	**315**	**640**	**2440**		**1**
TOTAL		**1360**	**580**	**350**	**640**	**2440**	**200**	**1**

NO	DATE	BY	CKD	APPR	REVISION

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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.
Print Name: BENJAMIN ROBECK
Date 6/19/20 License # 53680

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY S. MARTINS
DESIGNED BY M. HARDEGGER
CHECKED BY B. ROBECK
COMM. NO. 1912330

SRF Consulting Group, Inc. — Engineers Planners Designers

ANOKA COUNTY
TABULATIONS
CSAH 52 AT XYLITE STREET, 101ST AVE

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CURB & GUTTER AND WALKS — E

ALIGNMENT	STATION TO STATION	(E-1) DRILL & GROUT REINF BAR (EPOXY COATED) EACH	4" CONCRETE WALK SQ FT	6" CONCRETE WALK SQ FT	CONCRETE CURB & GUTTER DESIGN B618 LIN FT	CONCRETE CURB & GUTTER DESIGN B618 (MOD) LIN FT	TRUNCATED DOMES SQ FT
SAP 002-652-008							
XYLITE STREET	303+73.78-304+55.71 (LT/RT)			30			
SAP 002-652-008 SUBTOTAL				**30**			
SAP 106-020-035							
XYLITE STREET	300+09.60-303+73.78 (LT)	14		270	170		38
XYLITE STREET	300+09.60-303+73.78 (RT)	18		420	60		42
XYLITE STREET	304+55.71-309+00.40 (LT)	13	2770	310	200	280	46
XYLITE STREET	304+55.71-309+00.40 (RT)	7		110	160		30
SAP 106-020-035 SUBTOTAL		**52**	**2770**	**1110**	**590**	**280**	**156**
TOTAL		**52**	**2770**	**1140**	**590**	**280**	**156**

NOTES:
(E-1) SEE STANDARD PLAN SHEET 5-297.250 (SHEET 6 OF 6)

EROSION CONTROL AND TURF ESTABLISHMENT — F

ALIGNMENT	STATION TO STATION	STORM DRAIN INLET PROTECTION EACH	CULVERT END CONTROLS EACH	SILT FENCE, TYPE MS LIN FT	SEDIMENT CONTROL LOG TYPE WOOD FIBER LIN FT	(F-1) FERTILIZER TYPE 3 POUND	SEEDING ACRE	SEED MIXTURE 25-121 POUND	RAPID STABILIZATION METHOD 3 M GALLON	ROLLED EROSION PREVENTION CATEGORY 35 SQ YD
SAP 106-020-035										
XYLITE STREET	300+09.60-303+73.78 (LT)			150	260	34	0.1	6	0.75	460
XYLITE STREET	300+09.60-303+73.78 (RT)			55		5	0.1	1	0.75	55
XYLITE STREET	304+55.71-309+00.40 (LT)	1	1	370	210	33	0.1	6	0.75	440
XYLITE STREET	304+55.71-309+00.40 (RT)			145		11	0.1	2	0.75	145
SAP 106-020-035 TOTAL		**1**	**1**	**720**	**470**	**83**	**0.4**	**15**	**3**	**1100**

NOTES:
(F-1) SEE CONSTRUCTION AND SOILS NOTES FOR FERTILIZER ANALYSIS.

NO	DATE	BY	CKD	APPR	REVISION

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Date 6/19/20 License # 53680

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DESIGNED BY M. HARDEGGER
CHECKED BY B. ROBECK
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EXISTING UTILITIES (COMCAST)

ALIGNMENT	LOCATION		INPLACE ITEM	REMARKS			NOTES
	STATION	OFFSET		LEAVE AS IS	ADJUST	RELOCATE	
XYLITE STREET	298+64 TO 303+44	19' RT TO 21' RT	BURIED TV	X			
XYLITE STREET	303+43 TO 303+49	36' RT TO 476' LT	BURIED TV	X			
XYLITE STREET	303+43 TO 304+72	36' RT TO 34' RT	BURIED TV	X			
XYLITE STREET	303+44	41' RT	TV PED			X	
XYLITE STREET	304+68 TO 304+72	460' RT TO 34' RT	BURIED TV	X			
XYLITE STREET	304+71 TO 304+74	460' RT TO 262' LT	TV FIBER	X			

EXISTING UTILITIES (CENTURYLINK)

ALIGNMENT	LOCATION		INPLACE ITEM	REMARKS			NOTES
	STATION	OFFSET		LEAVE AS IS	ADJUST	RELOCATE	
XYLITE STREET	298+64 TO 303+56	24' RT TO 29' RT	BURIED TEL	X			
XYLITE STREET	302+07 TO 302+07	28' RT TO 106' RT	BURIED TEL	X			
XYLITE STREET	303+42	240' LT	TEL HH	X			
XYLITE STREET	303+43	36' RT	TEL PED			X	
XYLITE STREET	303+43 TO 304+78	36' RT TO 50' RT	BURIED FIBER	X			
XYLITE STREET	303+44 TO 304+82	33' RT TO 34' RT	BURIED TEL	X			
XYLITE STREET	303+44 TO 303+61	33' RT TO 55' LT	BURIED TEL	X			
XYLITE STREET	303+44	33' RT	TEL PED			X	
XYLITE STREET	303+44 TO 303+54	33' RT TO 24' RT	BURIED FIBER	X			
XYLITE STREET	303+47	145' LT	TEL HH	X			
XYLITE STREET	303+53 TO 303+54	476' LT TO 24' RT	BURIED FIBER	X			
XYLITE STREET	303+61	55' LT	TEL HH	X			
XYLITE STREET	304+64 TO 304+74	460' RT TO 262' LT	BURIED TEL	X			
XYLITE STREET	304+74	262' LT	TEL PED	X			
XYLITE STREET	304+78 TO 304+82	50' RT TO 34' RT	BURIED TEL	X			
XYLITE STREET	304+78	50' RT	TEL PED			X	
XYLITE STREET	304+82 TO 305+18	34' RT TO 14' RT	BURIED TEL	X			
XYLITE STREET	304+82 TO 309+69	34' RT TO 31' RT	BURIED FIBER	X			
XYLITE STREET	304+82	34' RT	TEL HH			X	
XYLITE STREET	305+18 TO 309+57	14' RT TO 19' RT	BURIED TEL	X			
XYLITE STREET	306+58 TO 306+58	26' RT TO 116' RT	BURIED TEL	X			

EXISTING UTILITIES (CENTERPOINT)

ALIGNMENT	LOCATION		INPLACE ITEM	REMARKS			NOTES
	STATION	OFFSET		LEAVE AS IS	ADJUST	RELOCATE	
XYLITE STREET	294+59 TO 303+29	17' RT TO 20' RT	2" GAS	X			
XYLITE STREET	303+29 TO 303+85	20' RT TO 45' RT	2" GAS	X			
XYLITE STREET	303+51 TO 303+54	461' RT TO 46' LT	6" GAS			X	
XYLITE STREET	303+85 TO 304+57	45' RT	2" GAS	X			
XYLITE STREET	304+53 TO 304+59	477' LT TO 460' RT	6" GAS	X			
XYLITE STREET	304+57 TO 310+21	21' RT TO 23' RT	2" GAS	X			

EXISTING UTILITIES (ANOKA COUNTY)

ALIGNMENT	LOCATION		INPLACE ITEM	REMARKS			NOTES
	STATION	OFFSET		LEAVE AS IS	ADJUST	RELOCATE	
XYLITE STREET	303+59 TO 303+61	476' LT TO 461' RT	BUR SIG WIRE			X	(1)

EXISTING UTILITIES (CONNEXUS)

ALIGNMENT	LOCATION		INPLACE ITEM	REMARKS			NOTES
	STATION	OFFSET		LEAVE AS IS	ADJUST	RELOCATE	
XYLITE STREET	298+65 TO 300+07	34' RT TO 36' RT	OH POWER	X			
XYLITE STREET	300+07 TO 300+68	36' RT TO 35' RT	OH POWER	X			
XYLITE STREET	300+07	36' RT	POWER POLE	X			
XYLITE STREET	300+68 TO 302+45	35' RT TO 33' RT	OH POWER	X			
XYLITE STREET	300+68	35' RT	POWER POLE	X			
XYLITE STREET	302+45 TO 302+46	33' RT TO 104' RT	BURIED POWER	X			
XYLITE STREET	302+45 TO 303+38	33' RT TO 32' RT	OH POWER	X			
XYLITE STREET	302+45	33' RT	POWER POLE	X			
XYLITE STREET	303+38 TO 305+03	32' RT TO 31' RT	OH POWER			X	
XYLITE STREET	303+38	32' RT	POWER POLE			X	
XYLITE STREET	303+61 TO 303+62	476' LT TO 38' RT	BURIED POWER	X			
XYLITE STREET	303+61 TO 304+76	263' LT	BURIED POWER	X			
XYLITE STREET	303+62 TO 304+76	38' RT	BURIED POWER	X			
XYLITE STREET	304+71 TO 304+72	460' RT TO 357' RT	BURIED POWER	X			
XYLITE STREET	304+72 TO 304+82	357' RT	BURIED POWER	X			
XYLITE STREET	304+73 TO 304+76	338' RT TO 38' RT	BURIED POWER	X			
XYLITE STREET	304+73 TO 304+90	338' RT	BURIED POWER	X			
XYLITE STREET	304+76 TO 305+03	42' RT TO 31' RT	BURIED POWER	X			
XYLITE STREET	304+76 TO 306+38	263' LT TO 469' LT	BURIED POWER	X			
XYLITE STREET	304+76 TO 305+32	263' LT TO 225' LT	BURIED POWER	X			
XYLITE STREET	304+77 TO 304+83	335' RT	BURIED POWER	X			
XYLITE STREET	305+03 TO 307+05	31' RT	OH POWER	X			
XYLITE STREET	305+03	31' RT	POWER POLE			X	
XYLITE STREET	306+64 TO 306+64	31' RT TO 113' RT	BURIED POWER	X			
XYLITE STREET	307+05 TO 308+50	31' RT TO 33' RT	OH POWER	X			
XYLITE STREET	307+05	31' RT	POWER POLE	X			
XYLITE STREET	308+50 TO 309+63	33' RT TO 32' RT	OH POWER	X			
XYLITE STREET	308+50	33' RT	POWER POLE	X			

UTILITY OWNERS

THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES INVOLVED ON THIS PROJECT.

ANOKA COUNTY
CENTERPOINT ENERGY MINNESOTA GAS
CENTURYLINK
CITY OF BLAINE
COMCAST CABLE COMMUNICATIONS, INCORPORATED
CONNEXUS ENERGY

GENERAL NOTES:

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

THE "LEAVE AS IS" AND "RELOCATE" NOTES ARE BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES BY CONSTRUCTION. ACTUAL DETERMINATION WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

UTILITY WORK SHOWN ON THESE SHEETS SHALL BE DONE BY OTHERS UNLESS OTHERWISE NOTED.

ALL POWER LINES ARE DISTRIBUTION UNLESS NOTED OTHERWISE.

THE CONTRACTOR IS HEREBY REMINDED OF THEIR RESPONSIBILITY TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE PROJECT AREA.

NOTES:

(1) WORK TO BE COMPLETED BY CONTRACTOR. SEE TRAFFIC SIGNAL PLANS.

NO	DATE	BY	CKD	APPR	REVISION
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SRF Consulting Group, Inc. | ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
INPLACE UTILITY TABULATIONS
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EXISTING SANITARY SEWER — G

ALIGNMENT	LOCATION		EXISTING ITEM	LEAVE AS IS	ADJUST FRAME & RING CASTING	NOTES
	STATION	OFFSET			EACH	
XYLITE STREET	298+62 TO 300+91	25' LT TO 30' LT	8" PVC SAN	X		
XYLITE STREET	300+91 TO 303+29	30' LT TO 28' LT	8" PVC SAN	X		
XYLITE STREET	300+91	30' LT	SAN MH	X		
XYLITE STREET	302+27 TO 303+19	25' RT TO 23' RT	8" PVC SAN	X		
XYLITE STREET	302+27	25' RT	SAN MH	X		
XYLITE STREET	302+27 TO 302+28	25' RT TO 103' RT	6" PVC SAN	X		
XYLITE STREET	303+19 TO 303+42	23' RT TO 0' RT	8" PVC SAN	X		
XYLITE STREET	303+19	23' RT	SAN MH	X		
XYLITE STREET	303+29 TO 303+42	28' LT TO 0' RT	8" PVC SAN	X		
XYLITE STREET	303+29	28' LT	SAN MH		1	(1)
XYLITE STREET	303+42 TO 303+79	0' RT	8" PVC SAN	X		
XYLITE STREET	303+42	0' RT	SAN MH	X		
XYLITE STREET	303+62 TO 303+72	461' RT TO 321' RT	10" PVC SAN	X		
XYLITE STREET	303+72	321' RT	SAN MH	X		
XYLITE STREET	303+72 TO 303+79	321' RT TO 0' RT	10" PVC SAN	X		
XYLITE STREET	303+72 TO 304+81	321' RT TO 320' RT	6" DIP SAN	X		
XYLITE STREET	303+72 TO 304+69	321' RT TO 320' RT	SAN SEWER CASING	X		
XYLITE STREET	303+79 TO 304+74	0' RT	8" PVC SAN	X		
XYLITE STREET	303+79	0' RT	SAN MH	X		
XYLITE STREET	303+79 TO 304+74	0' RT	SAN SEWER CASING	X		
XYLITE STREET	304+73 TO 304+74	43' LT TO 0' RT	8" PVC SAN	X		
XYLITE STREET	304+74 TO 306+20	0' RT	8" PVC SAN	X		
XYLITE STREET	304+74	0' RT	SAN MH	X		
XYLITE STREET	306+18 TO 306+20	120' RT TO 0' RT	6" PVC SAN	X		
XYLITE STREET	306+20	0' RT	SAN MH	X		
XYLITE STREET	308+68	1' LT	SAN MH	X		
SAP 106-020-035, CP 19-09 TOTAL					**1**	

EXISTING DRAINAGE ITEMS — H

ALIGNMENT	LOCATION		EXISTING ITEM	LEAVE AS IS	REMOVE CASTING	REMOVE SEWER PIPE (STORM)	NOTES
	STATION	OFFSET			EACH	LIN FT	
XYLITE STREET	299+14 TO 300+22	28' RT	15"	X			
XYLITE STREET	300+70 TO 301+13	22' RT	15" CSP	X			
XYLITE STREET	303+26 TO 304+69	346' RT TO 347' RT	24"	X			
XYLITE STREET	303+29 TO 303+63	405' RT	18"	X			
XYLITE STREET	303+41 TO 304+68	460' RT TO 459' RT	24" RCP	X			
XYLITE STREET	303+44 TO 303+45	45' LT TO 27' RT	24" RCP	X			
XYLITE STREET	303+63	405' RT	DROP INLET	X			
XYLITE STREET	303+63 TO 304+06	405' RT TO 406' RT	UNKNOWN RCP	X			
XYLITE STREET	304+06	406' RT	CATCH BASIN	X			
XYLITE STREET	304+06 TO 304+13	406' RT	UNKNOWN RCP	X			
XYLITE STREET	304+13	406' RT	CATCH BASIN	X			
XYLITE STREET	304+69 TO 304+70	43' LT TO 51' RT	24" RCP	X			
XYLITE STREET	305+05 TO 305+25	33' LT TO 14' LT	12"			28	(1)(2)
XYLITE STREET	305+25 TO 310+00	14' LT TO 11' LT	12"	X			
XYLITE STREET	305+79 TO 306+30	36' RT TO 25' RT	15"	X			
XYLITE STREET	306+70	13' LT	CATCH BASIN		1		
XYLITE STREET	308+04 TO 308+56	53' RT	12"	X			
SAP 106-020-035 TOTAL					**1**	**28**	

EXISTING WATER MAIN — I

ALIGNMENT	LOCATION		EXISTING ITEM	LEAVE AS IS	ADJUST VALVE BOX - WATER	RELOCATE HYDRANT & VALVE	NOTES
	STATION	OFFSET			EACH	EACH	
XYLITE STREET	298+62 TO 303+47	15' LT	8" PVC WM	X			
XYLITE STREET	302+20 TO 303+29	31' RT TO 30' RT	8" DIP WM	X			
XYLITE STREET	302+22	35' RT	HYDRANT	X			
XYLITE STREET	302+35 TO 302+36	31' RT TO 103' RT	1.5" PVC WM	X			
XYLITE STREET	302+39 TO 302+40	31' RT TO 103' RT	6" DIP WM	X			
XYLITE STREET	303+29 TO 303+47	30' RT TO 11' RT	8" DIP WM	X			
XYLITE STREET	303+47 TO 303+47	15' LT TO 11' RT	8" PVC WM	X			
XYLITE STREET	303+47 TO 304+68	11' RT TO 13' RT	8" DIP WM	X			
XYLITE STREET	303+47	11' RT	WM VALVE	X			
XYLITE STREET	304+60	38' LT	WM VALVE		1		(1)
XYLITE STREET	304+60 TO 304+68	38' LT TO 13' RT	10" DIP WM	X			
XYLITE STREET	304+62 TO 304+63	460' RT TO 331' RT	10" DIP WM	X			
XYLITE STREET	304+63	331' RT	WM VALVE	X			
XYLITE STREET	304+63 TO 304+68	331' RT TO 13' RT	10" DIP WM	X			
XYLITE STREET	304+66	47' LT	IRRIGATION VAULT				(4)
XYLITE STREET	304+65	331' RT	HYDRANT	X			
XYLITE STREET	304+68 TO 304+89	13' RT	8" DIP WM	X			
XYLITE STREET	304+89 TO 305+40	12' RT TO 14' RT	8" DIP WM	X			
XYLITE STREET	304+89	13' RT	WM VALVE		1		(1)
XYLITE STREET	304+93	11' RT	WM VALVE		1		(1)
XYLITE STREET	305+40 TO 306+55	14' RT TO 10' RT	8" DIP WM	X			
XYLITE STREET	305+40	21' RT	HYDRANT			1	(1)
XYLITE STREET	305+40	14' RT	WM VALVE	X			(1)(3)
XYLITE STREET	306+32 TO 306+32	11' RT TO 115' RT	1.5" PVC WM	X			
XYLITE STREET	306+36 TO 306+37	11' RT TO 115' RT	6" DIP WM	X			
XYLITE STREET	306+36	34' RT	WM VALVE	X			
XYLITE STREET	306+55 TO 309+63	10' RT TO 11' RT	8" DIP WM	X			
XYLITE STREET	306+55	10' RT	WM VALVE	X			
XYLITE STREET	309+20	17' LT	HYDRANT	X			
XYLITE STREET	309+21	15' LT	WM VALVE	X			
SAP 106-020-035, CP 19-09 TOTAL					**3**	**1**	

NOTES:

(1) WORK TO BE COMPLETED BY CONTRACTOR.

(2) LENGTH INCLUDES APRONS.

(3) RELOCATION PAID FOR UNDER RELOCATE HYDRANT & VALVE.

(4) TO BE RELOCATED BY OTHERS (CITY OF BLAINE) PRIOR TO CONSTRUCTION.

NO	DATE	BY	CKD	APPR	REVISION
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Print Name: BENJAMIN ROBECK

Date 6/19/20 License # 53680

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SHEET 8 OF 76

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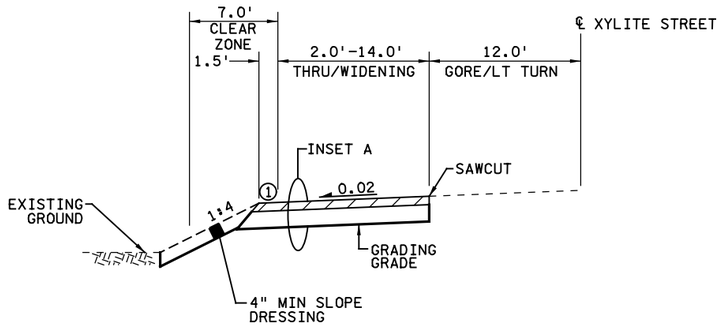
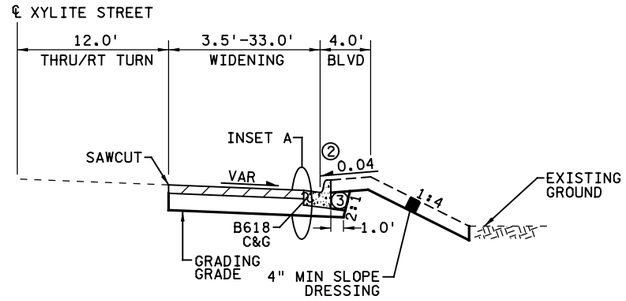


SOUTHBOUND XYLITE STREET WIDENING

XYLITE STREET STA 300+09.60 TO STA 302+30.00



NORTHBOUND XYLITE STREET WIDENING

XYLITE STREET STA 303+36.19 TO STA 303+73.78
XYLITE STREET STA 304+59.52 TO STA 305+85.76

GENERAL NOTES:

ALL CROSS SLOPES ARE FT PER FT.

SEE CROSS SECTIONS FOR SPECIFIC GRADING INFORMATION.

SEE INPLACE TOPOGRAPHY, RIGHT OF WAY, UTILITY AND REMOVAL PLANS FOR RIGHT-OF-WAY AND EASEMENT INFORMATION.

SLOPE DRESSING PAID FOR AS COMMON EMBANKMENT.

SEE DRAINAGE, SUPERELEVATION, EROSION CONTROL AND TURF ESTABLISHMENT PLANS FOR SUPERELEVATION TRANSITIONS.

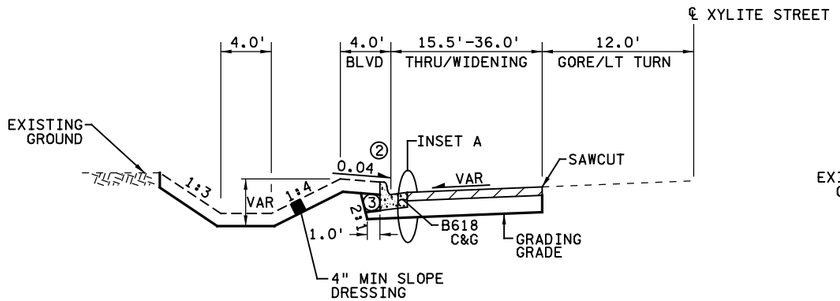
NOTES:

① 4.0" AGGREGATE SURFACING (CV) CLASS 1.

② 2.0' OBSTACLE FREE ZONE BEHIND CURB.

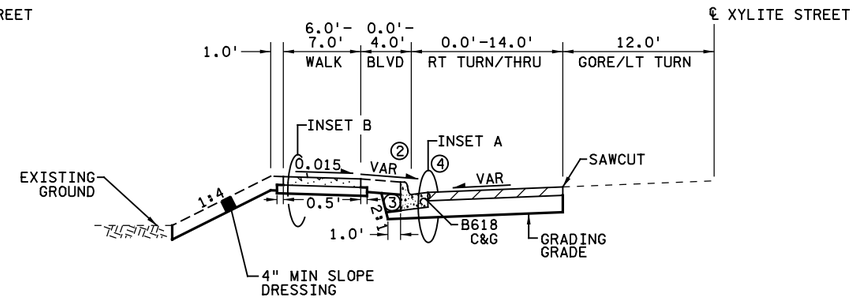
③ COMMON EMBANKMENT

④ SEE B618 MODIFIED DETAIL (THIS SHEET) WHEN C&G IS ADJACENT TO PROPOSED WALK



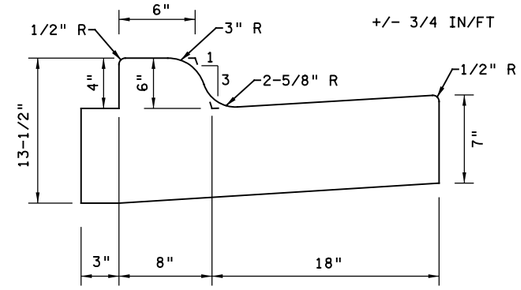
SOUTHBOUND XYLITE STREET WIDENING

XYLITE STREET STA 302+30.00 TO STA 303+71.70



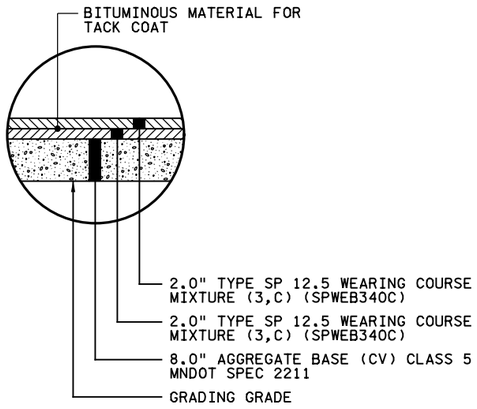
SOUTHBOUND XYLITE STREET WIDENING

XYLITE STREET STA 304+55.71 TO STA 309+00.40



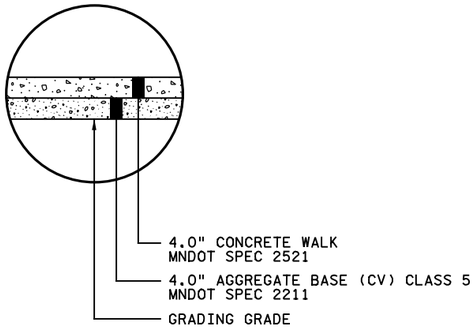
B618 MODIFIED DETAIL (ADJACENT TO WALK)

B6 MODIFIED CURB & GUTTER
(NO VARIANCES ALLOWED)
PAID FOR AS CONCRETE CURB & GUTTER DESIGN B618 (MOD)



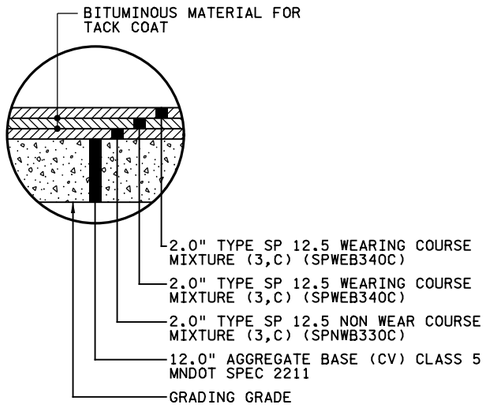
INSET A

XYLITE STREET



INSET B

CONCRETE MEDIAN AND SIDEWALK



INSET C

CSAH 52

NO	DATE	BY	CKD	APPR	REVISION
					...\FinalPlan\12330_ts01.dgn

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.

Print Name: BENJAMIN ROBECK

Date 6/30/20 License # 53680

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY
S. MARTINS
DESIGNED BY
M. HARDEGGER
CHECKED BY
B. ROBECK
COMM. NO. 1912330

SRF Consulting Group, Inc. ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY

TYPICAL SECTIONS
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 9 OF 76

9:33:26 AM
6/30/2020
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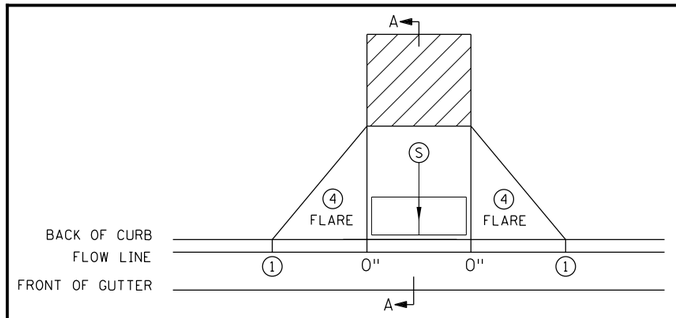
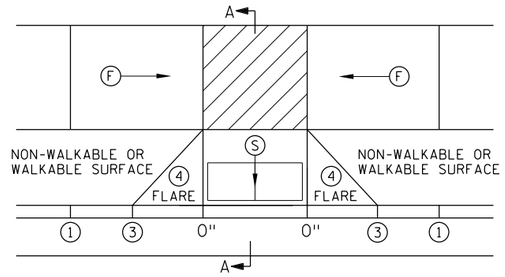
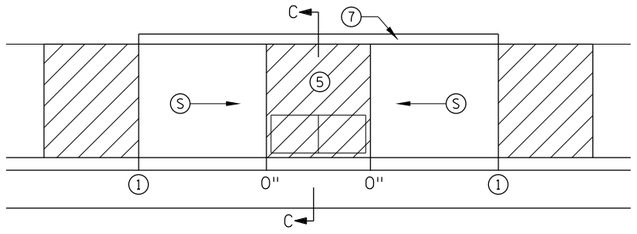


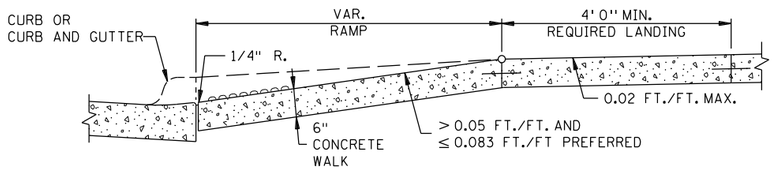
PERPENDICULAR



TIERED PERPENDICULAR

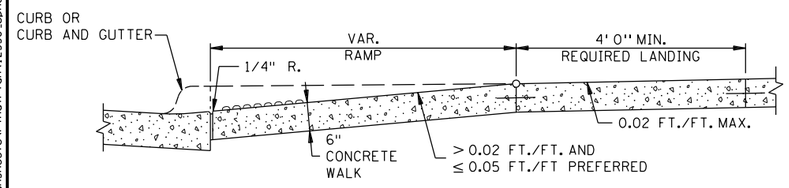


PARALLEL



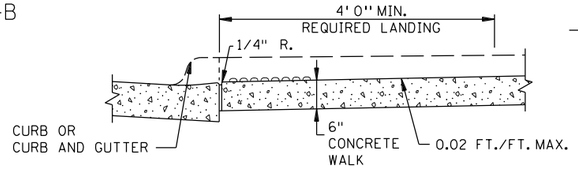
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



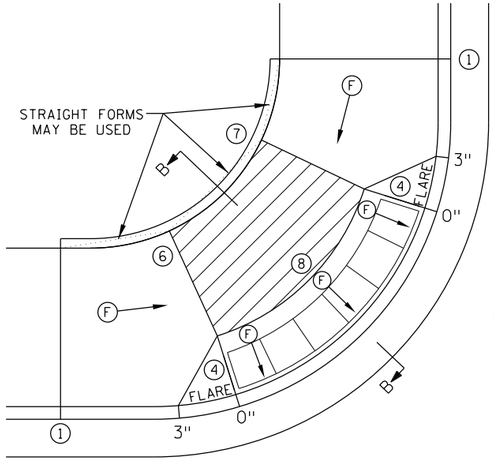
SECTION B-B

FAN

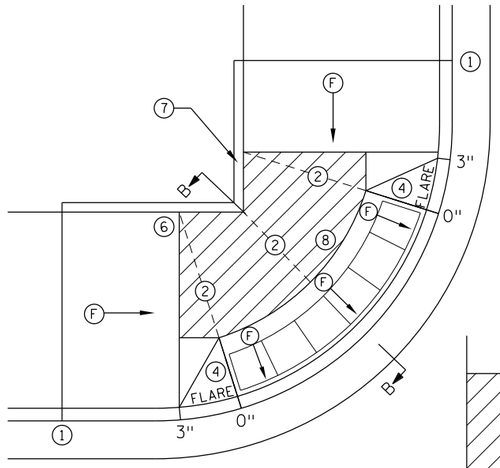


SECTION C-C

PARALLEL/DEPRESSED CORNER

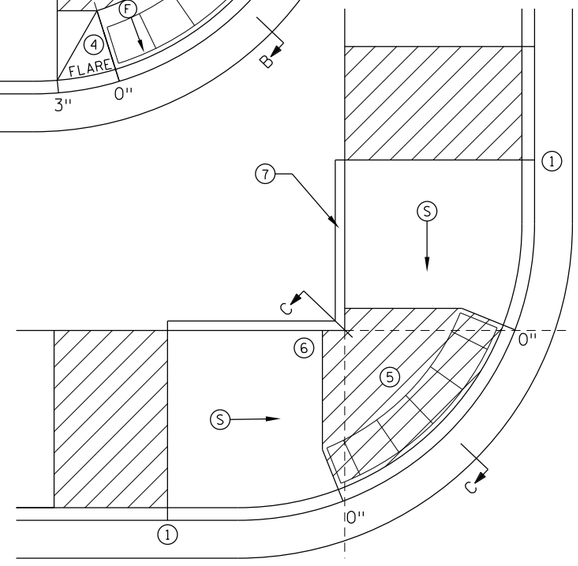


FAN (10)

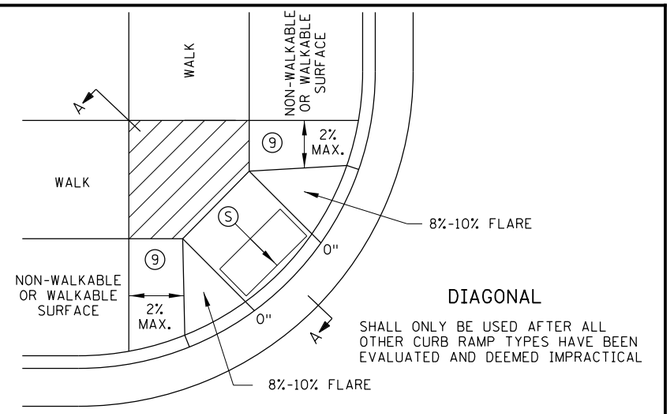


MODIFIED FAN (10)

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

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MINNESOTA DEPARTMENT OF TRANSPORTATION

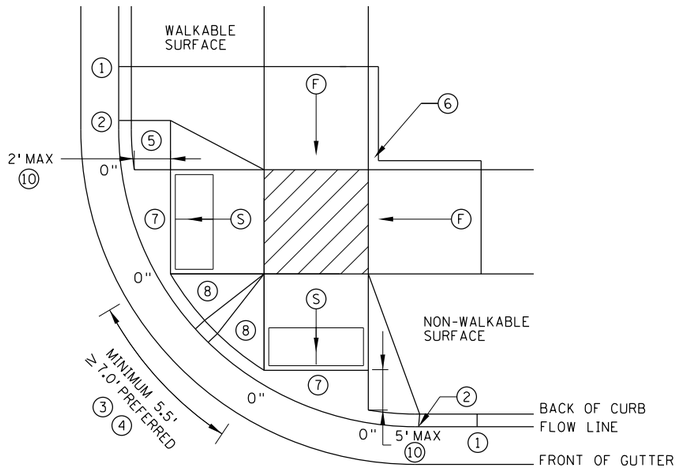
STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 1-23-2017
REVISED:

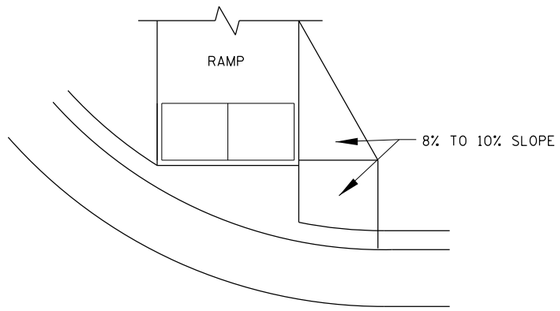
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

SAP 002-652-007,002-652-008,106-020-035
CP 19-09



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.

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.

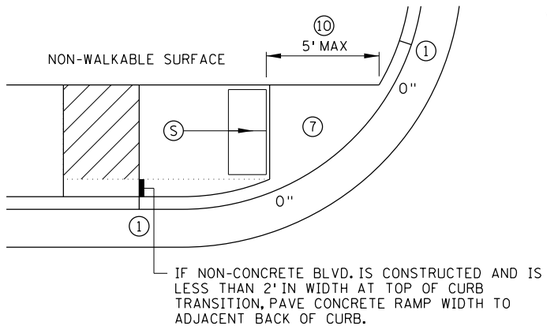
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD 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.

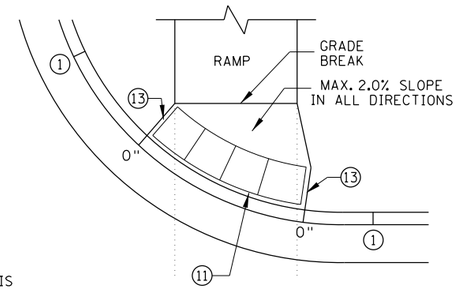
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

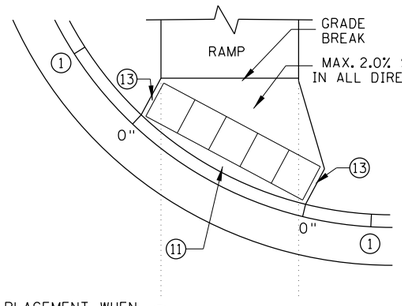
⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.



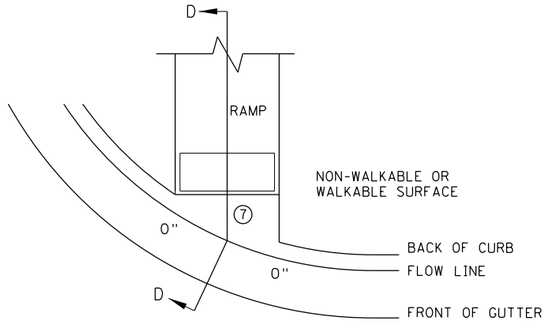
STANDARD ONE-WAY DIRECTIONAL ⑨



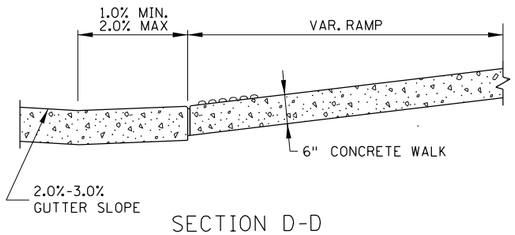


DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

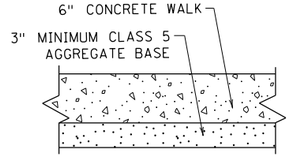
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



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

SAP 002-652-007,002-652-008,106-020-035
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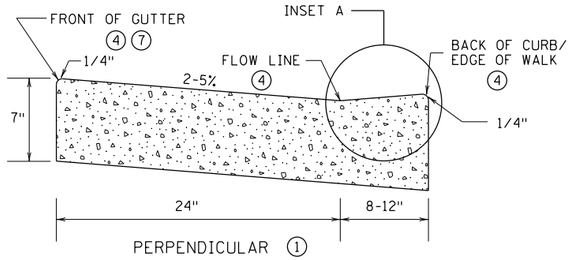
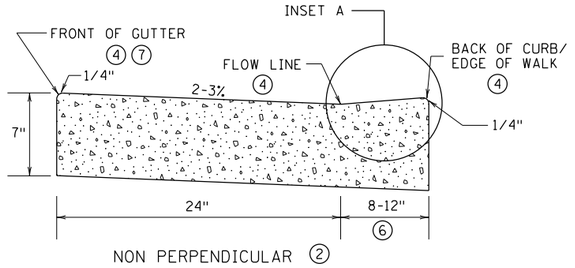
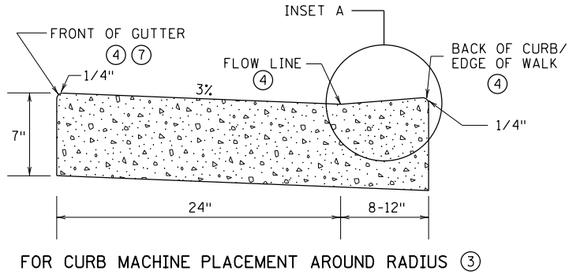


PERPENDICULAR (1)

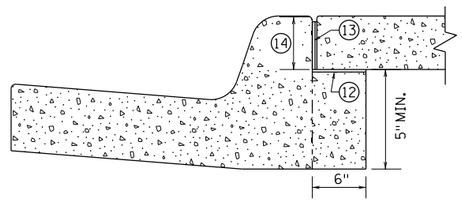


NON PERPENDICULAR (2)

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

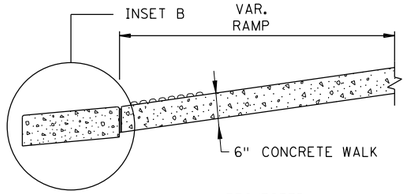


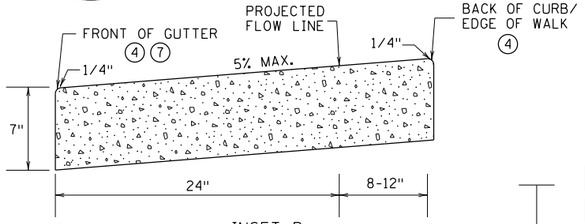
FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)



OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

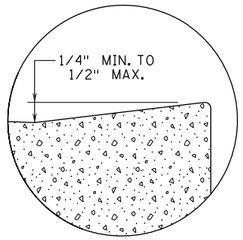
CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



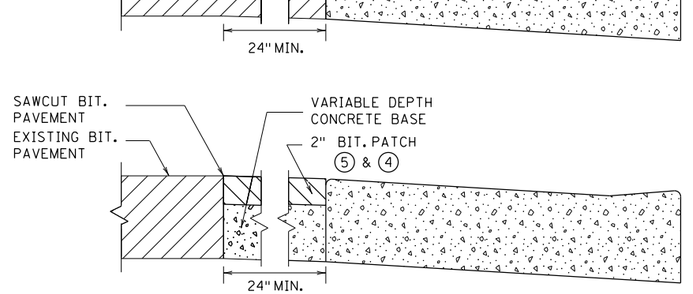


INSET B

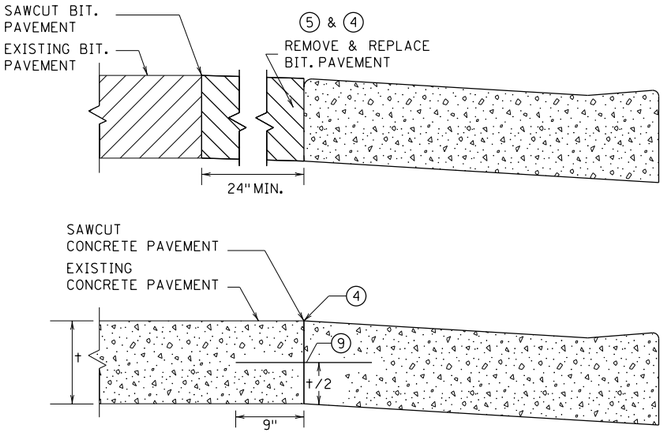
OUTFLOW GUTTER (8)



INSET A

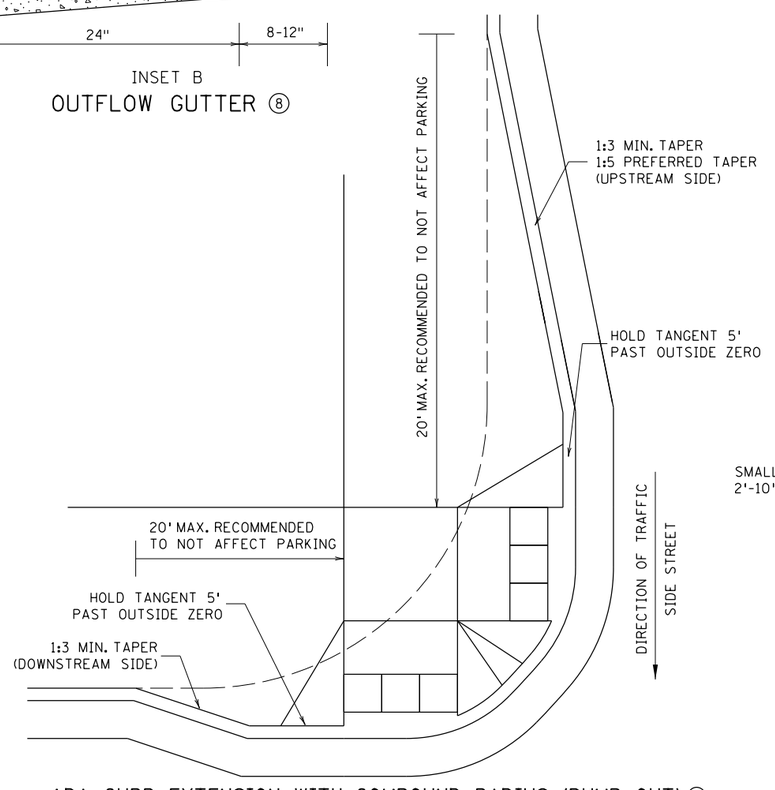


ONLY ALLOWED PER ENGINEER'S APPROVAL



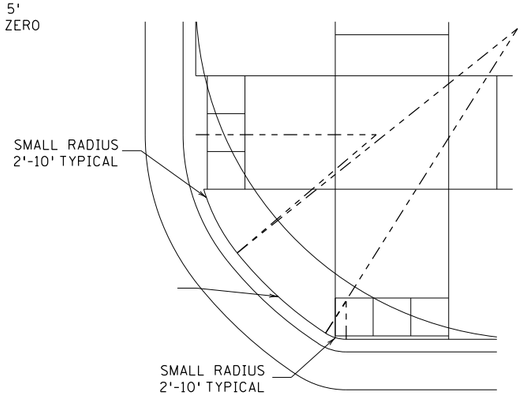
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

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.

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STANDARD PLAN 5-297.250 | 3 OF 6

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PEDESTRIAN CURB RAMP DETAILS

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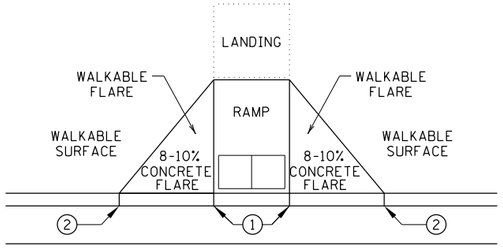
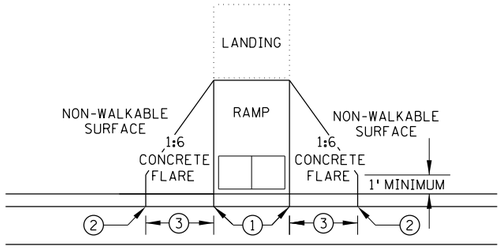
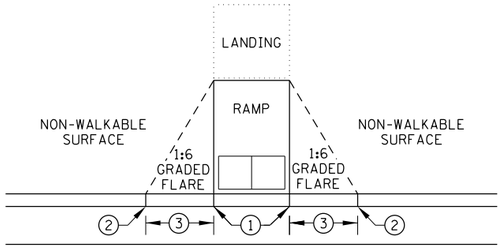


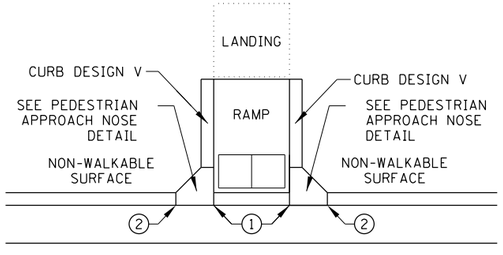
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

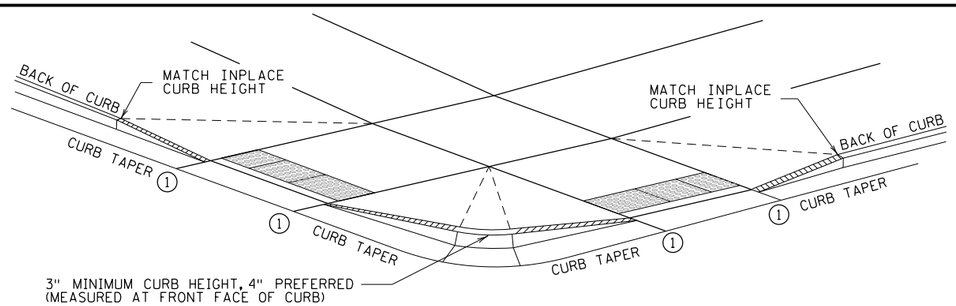


GRADED FLARES

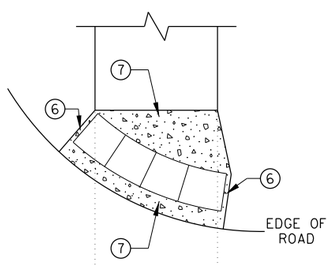


RETURNED CURB ⑤

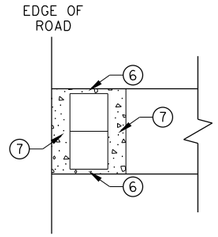
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



DETECTABLE EDGE WITH ⑧
CURB AND GUTTER

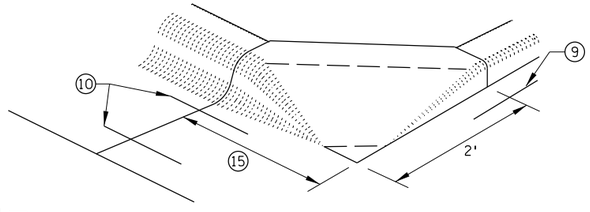


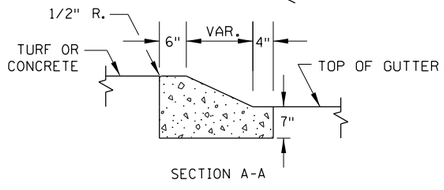
RADIAL DETECTABLE WARNING



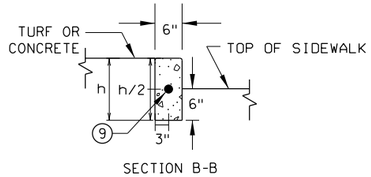
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

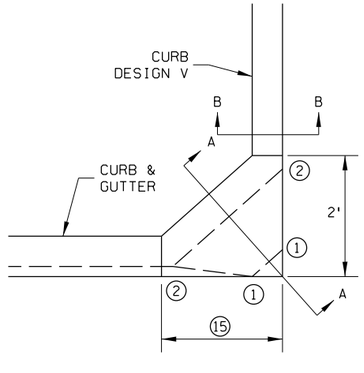




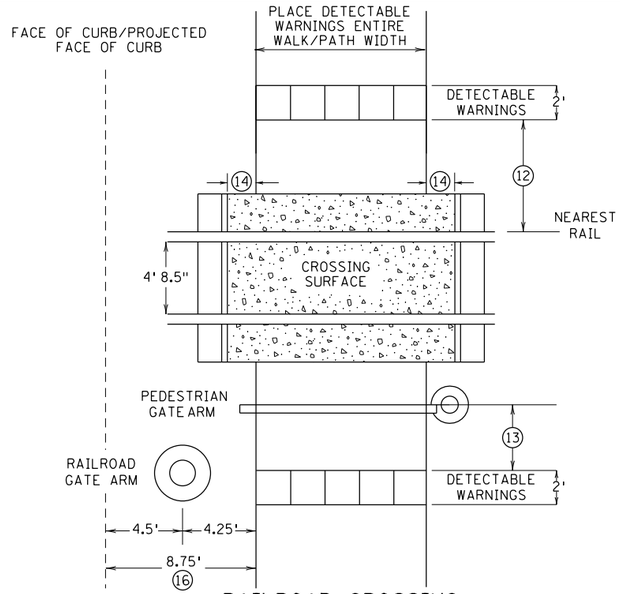
SECTION A-A



SECTION B-B



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.

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STANDARD PLAN 5-297.250 | 4 OF 6

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PEDESTRIAN CURB RAMP DETAILS

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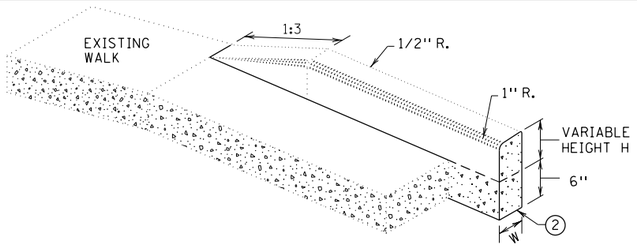
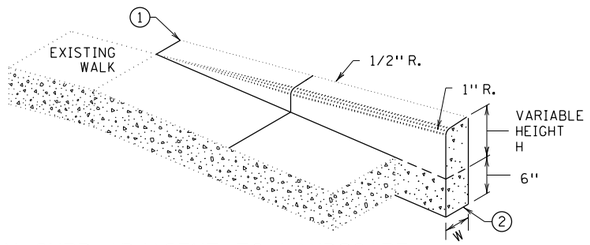


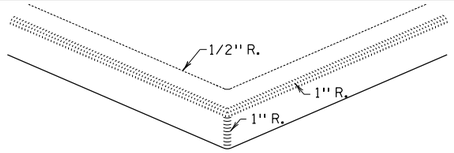
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

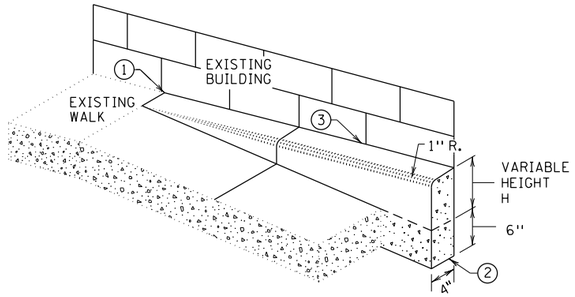


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

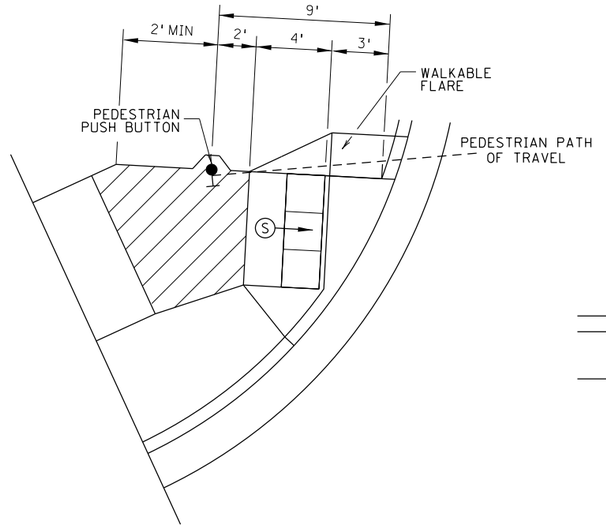


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING OR BARRIER

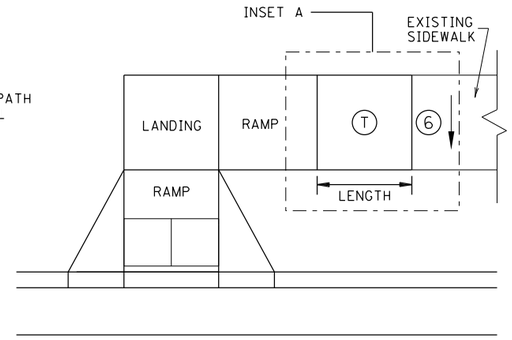
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

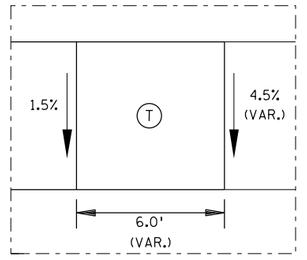


SEMI-DIRECTIONAL RAMP (3,4,9)

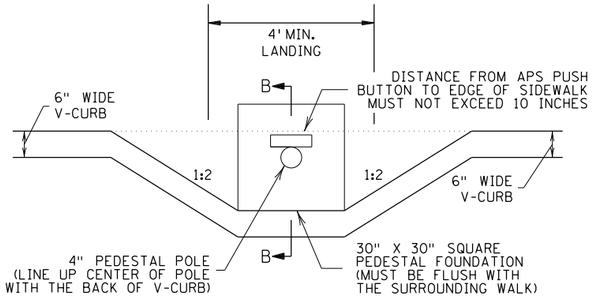
3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

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

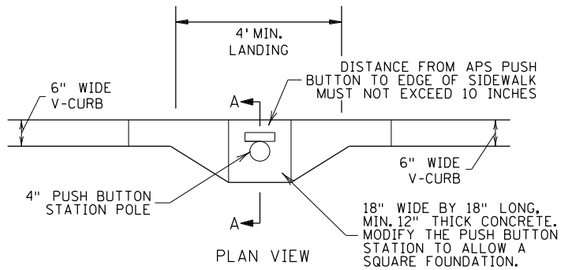




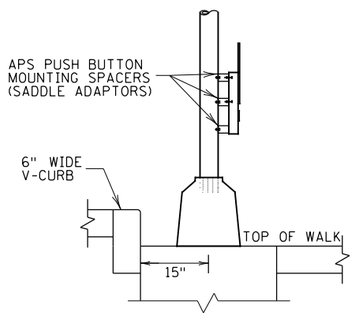
TRANSITION PANEL ④⑤



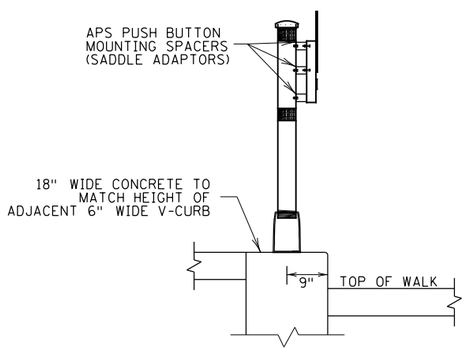
PLAN VIEW



PLAN VIEW



SECTION B-B



SECTION A-A

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

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.

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STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | **5 OF 6**

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PEDESTRIAN CURB RAMP DETAILS

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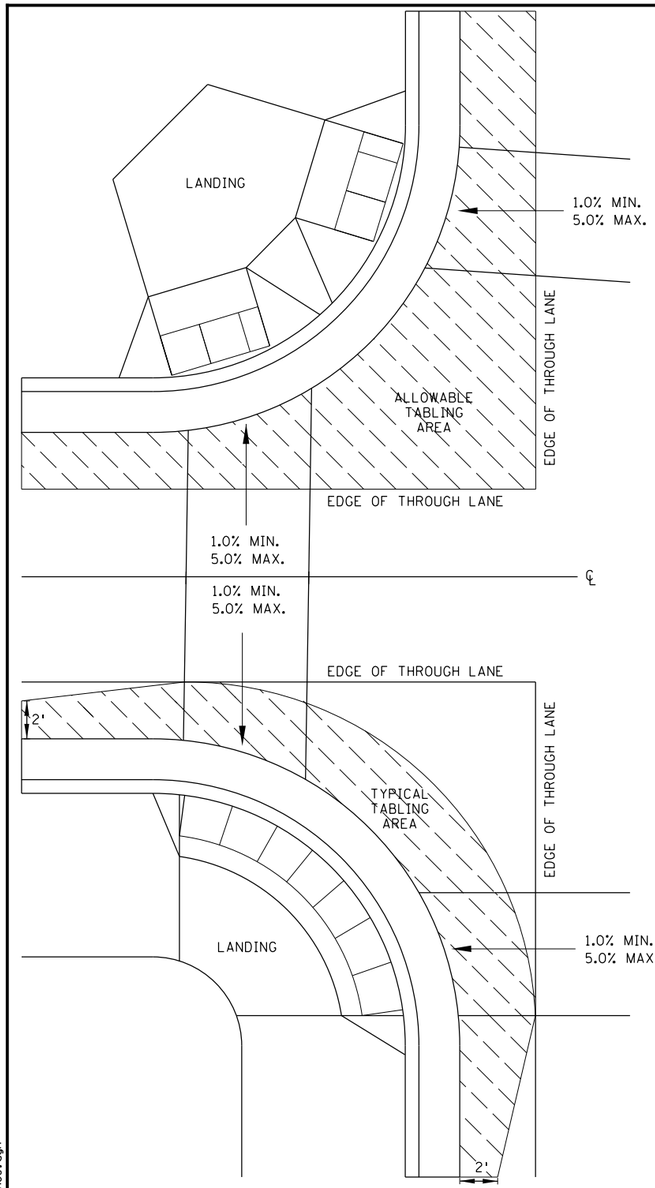
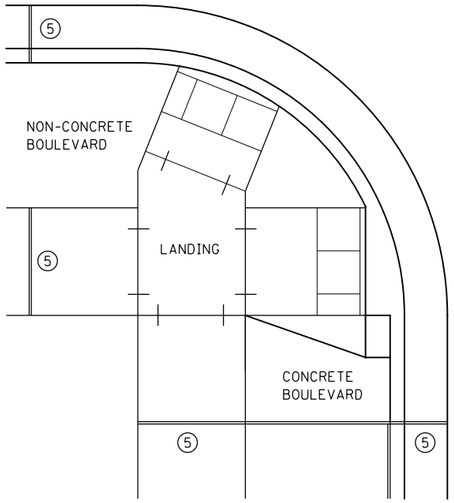
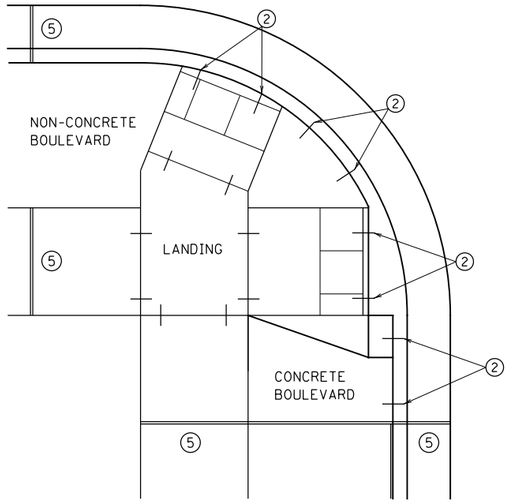


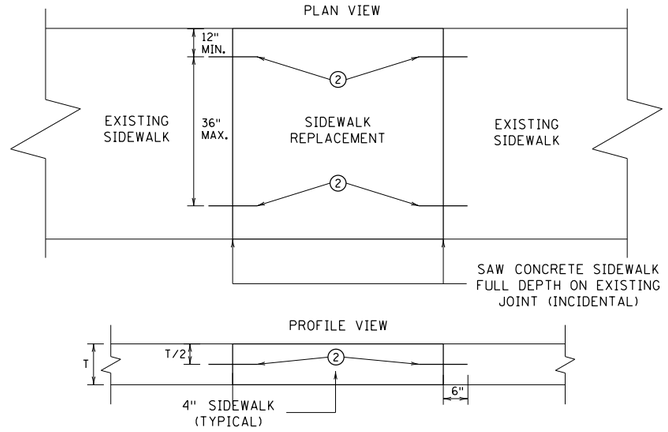
CURB LINE AND ROAD CROSSING ADJUSTMENTS



EXPANSION MATERIAL PLACEMENT FOR
CONCRETE AND BITUMINOUS ROADWAYS

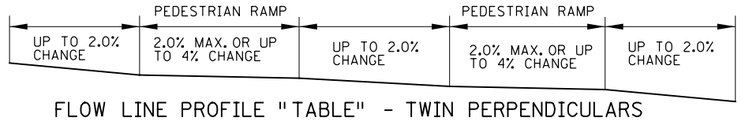


OPTIONAL CURB LINE REINFORCEMENT
PLACEMENT ON BITUMINOUS ROADWAYS ④

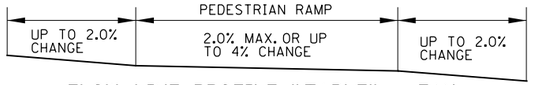


OPTIONAL SIDEWALK REINFORCEMENT

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



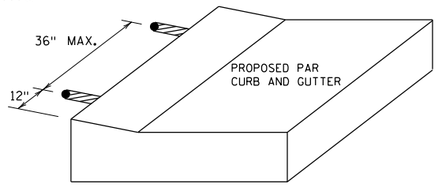
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS

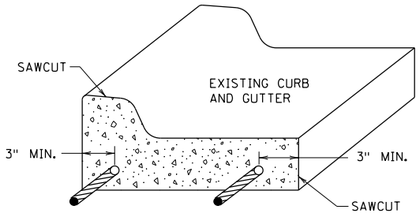


FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

FLOW LINE PROFILE RAISE - FAN

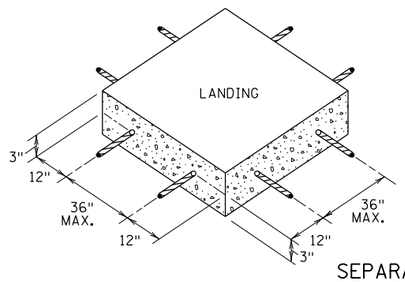


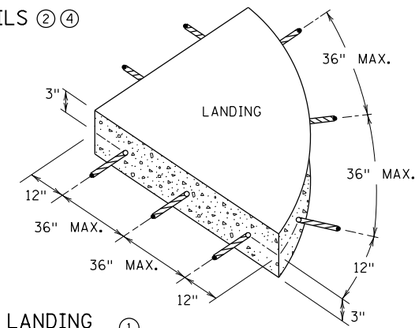


FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER
REINFORCEMENT ③

OPTIONAL CURB LINE REINFORCEMENT DETAILS ②④





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

STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | **6 OF 6**

APPROVED: 1-23-2017
REVISED:

PEDESTRIAN CURB RAMP DETAILS

SAP 002-652-007,002-652-008,106-020-035
CP 19-09

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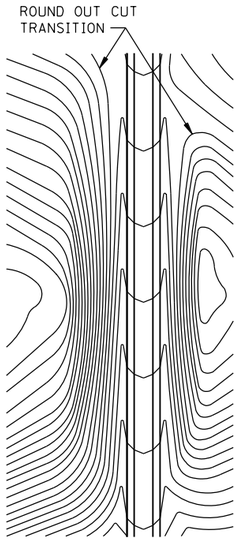
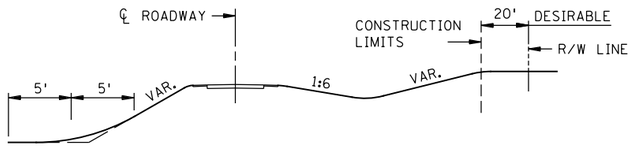
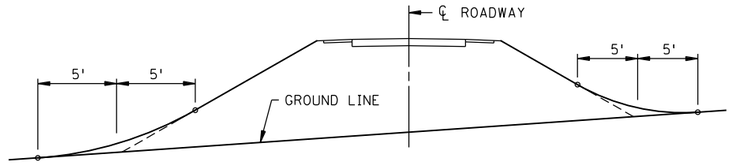


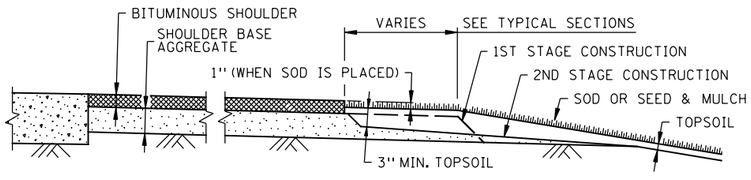
CONTOURING ROAD CUTS



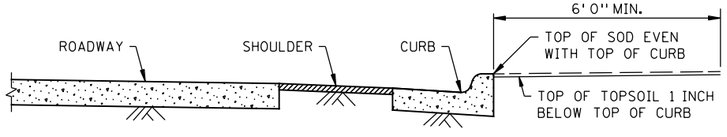
ROUNDING SHOULDERS AND BACKSLOPES



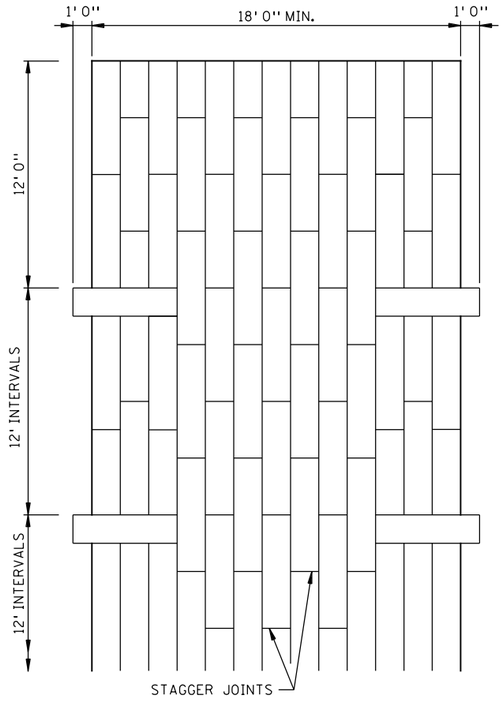
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



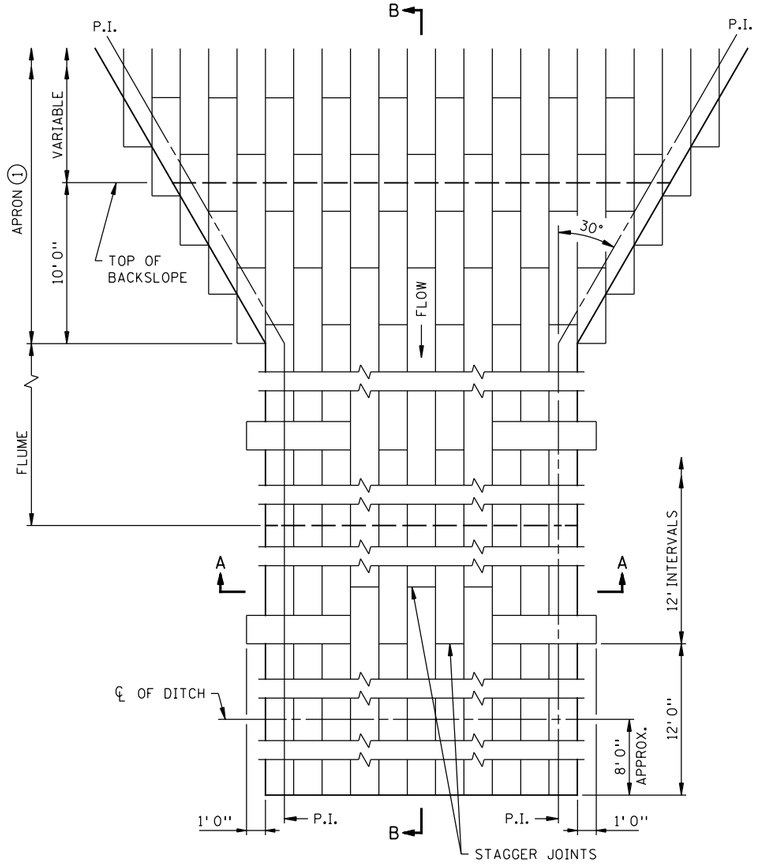
SHAPING AND TOPSOILING INSLOPES



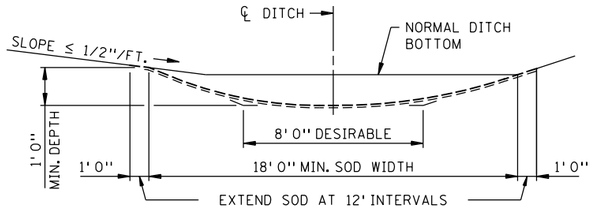
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



PLAN VIEW

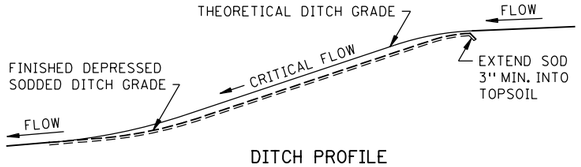


PLAN VIEW



SODDED DITCH CROSS SECTION

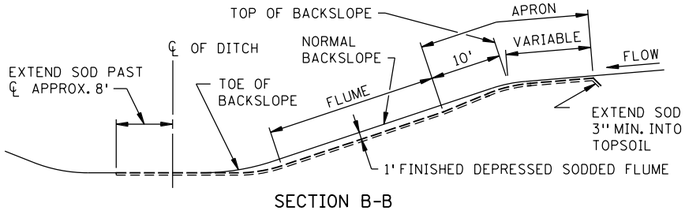
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



DITCH PROFILE

SODDED DITCH DETAILS

SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

(1) CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 1 OF 3

APPROVED: 2-28-2017

REVISED:

STATE DESIGN ENGINEER

SAP 002-652-007,002-652-008,106-020-035

CP 19-09

PERMANENT EROSION CONTROL

ALONG ROADWAYS, DITCHES AND FLUMES

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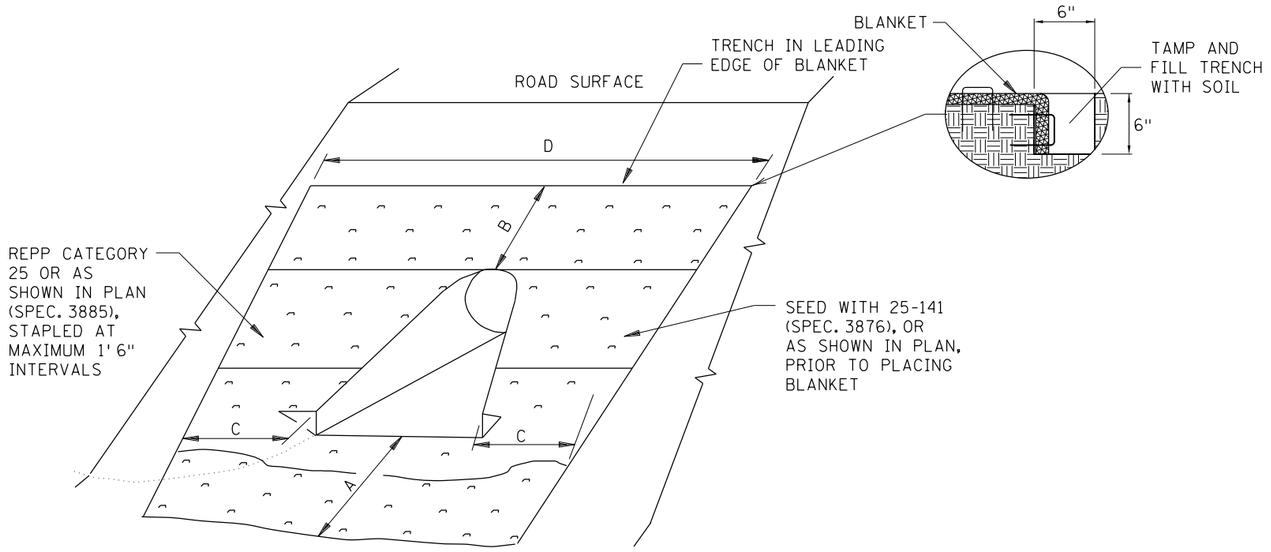
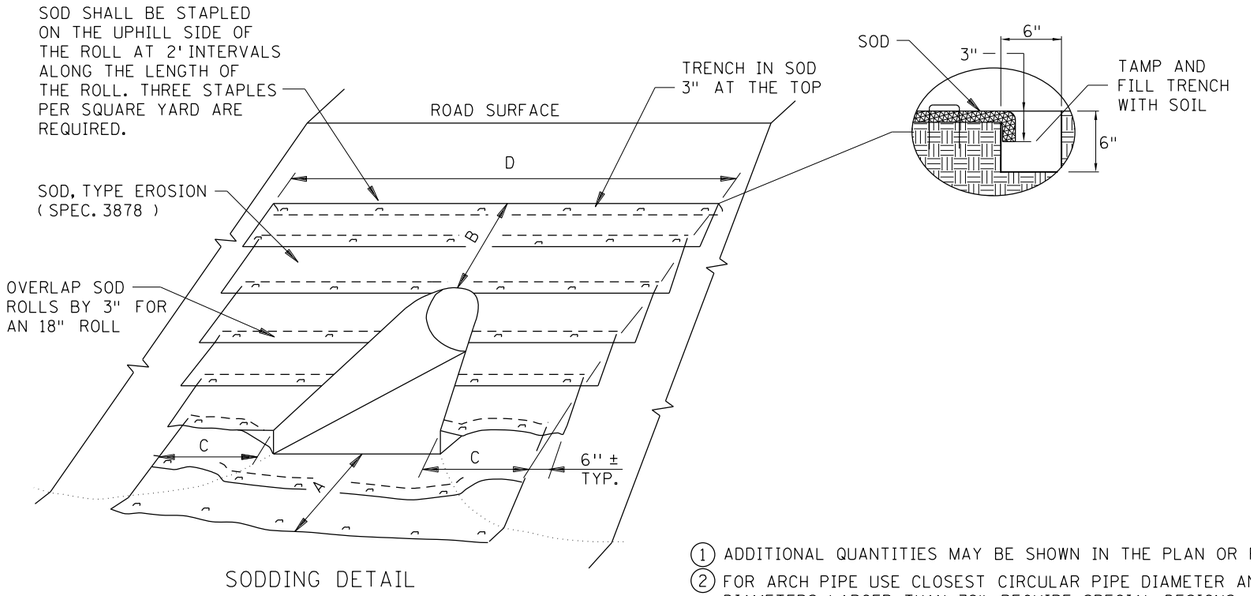


ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



SODDING DETAIL

CULVERT INLET APRON ①										
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'	13'
18"	13	12	12	14	16	N/A	3'	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'	20'
30"	23	22	25	30	32	N/A	3'	4.5'	3'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	4.5'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	4.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	4.5'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	4.5'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	4.5'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	4.5'	41'

CULVERT OUTLET APRON ①										
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	3'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	3'	14'
21"	16	14	16	18	19	15	6'	1.5'	3'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	3'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	3'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	3'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	4.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	4.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	4.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	4.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	6'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	6'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	6'	34'

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.

FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).

AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.

CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.

① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.
② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 2 OF 3

APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

SAP 002-652-007,002-652-008,106-020-035
CP 19-09

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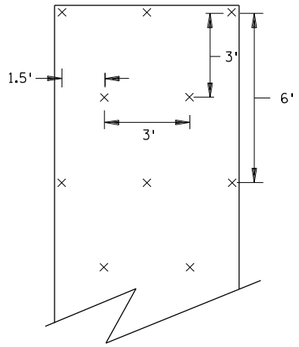
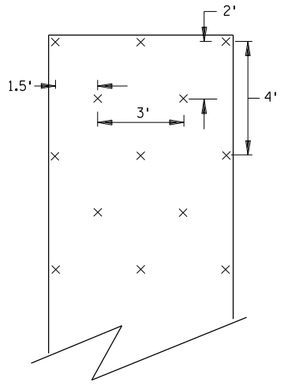
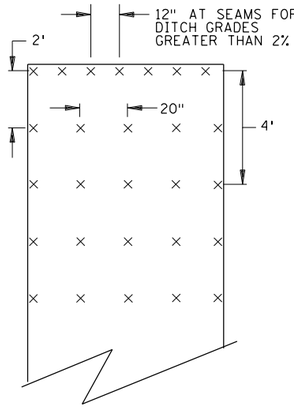


SLOPES FLATTER THAN 1:2
120 STAPLES PER 100 SQ YD

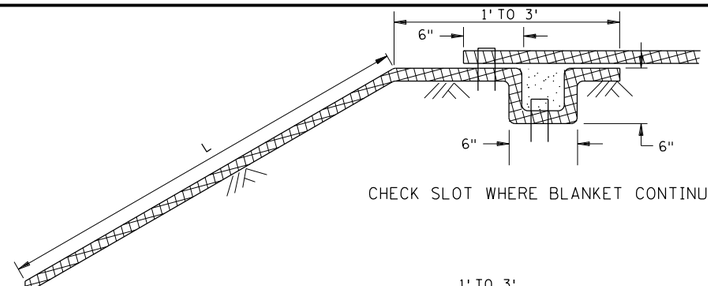


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

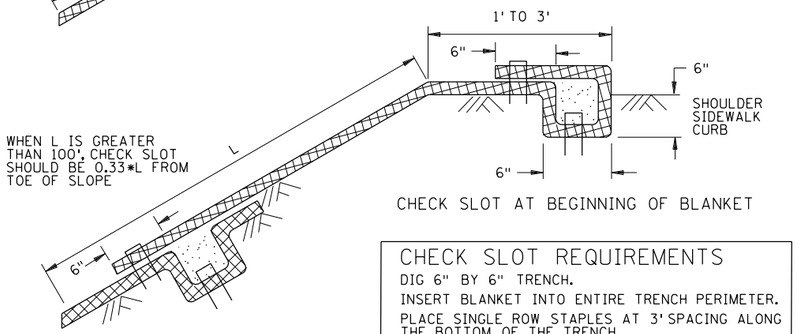


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

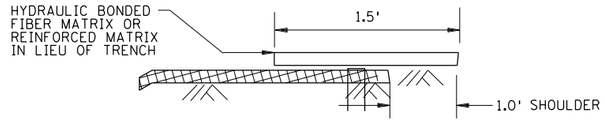
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.

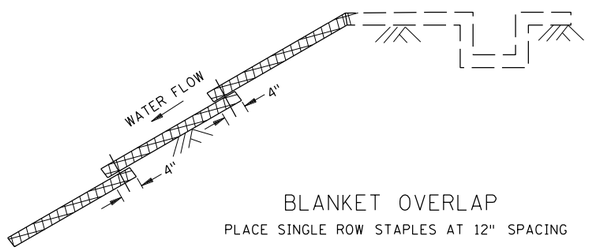
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

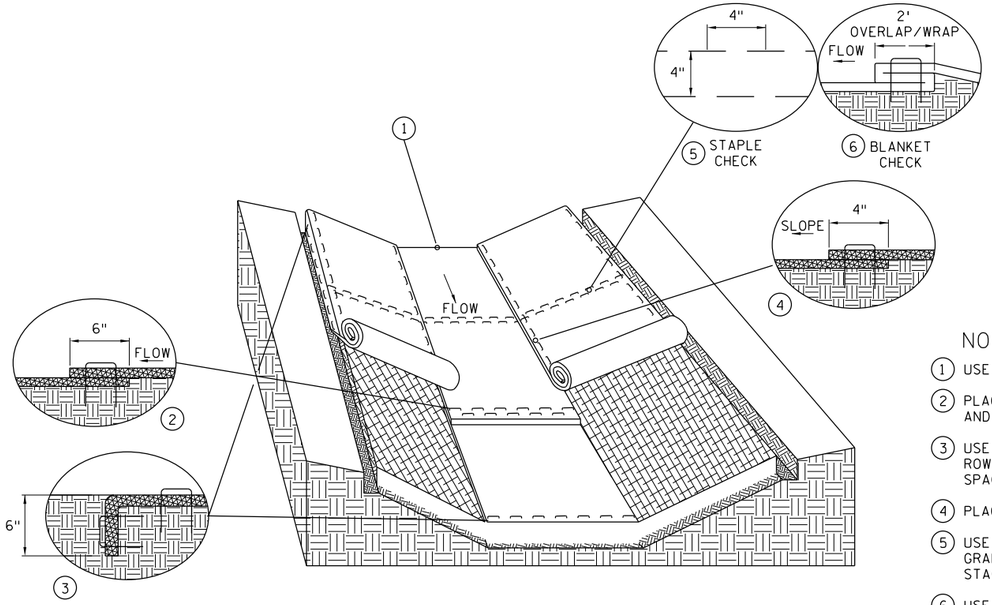


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

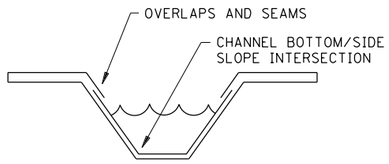
CHECK SLOT DETAILS



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING



DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS (7)

NOTES:

1. USE CHECK SLOT DETAIL (NO ALTERNATES).
2. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.
3. USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.
4. PLACE SINGLE ROW OF STAPLES AT 12" SPACING.
5. USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5% GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.
6. USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
   2.5%-3% 100' INTERVALS
   3%-5% 50' INTERVALS
   5%-7% 25' INTERVALS
7. CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".

OVERLAP BLANKET 6" (MINIMUM) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.

THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT ⅓ FROM THE BOTTOM OF THE SLOPE.

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.404 | **3 OF 3**

APPROVED: 1-8-2020
REVISED:

PERMANENT EROSION CONTROL

REPP (BLANKET) STAPLE PATTERN FOR SLOPES

SAP 002-652-007,002-652-008,106-020-035
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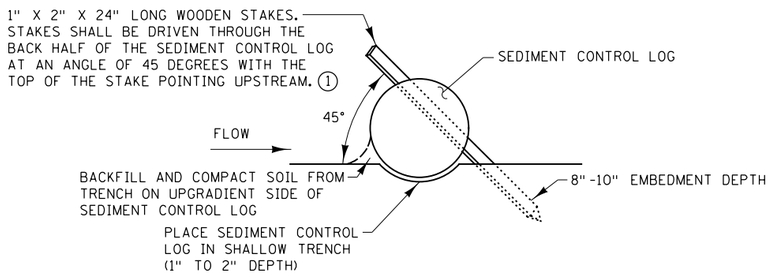
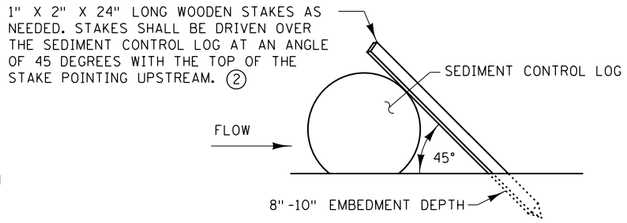
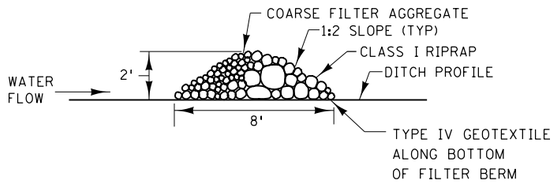


TYPES: STRAW, WOOD FIBER, OR COIR

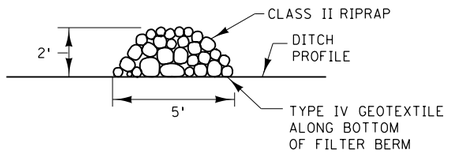


TYPES: WOOD CHIP, COMPOST, OR ROCK

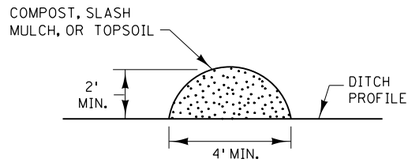
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

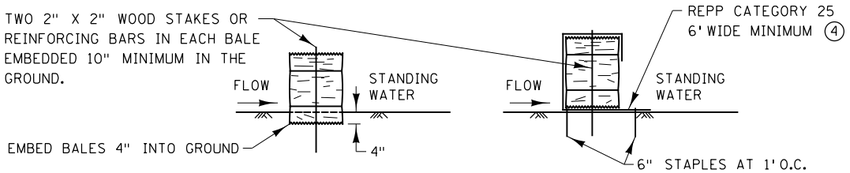


TYPE 5 (ROCK)



TYPE 1 (COMPOST), TYPE 2 (SLASH MULCH), OR TYPE 4 (TOPSOIL)

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS(3)

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

(1) SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.

(2) PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

(3) TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

(4) INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | **2 OF 8**

APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

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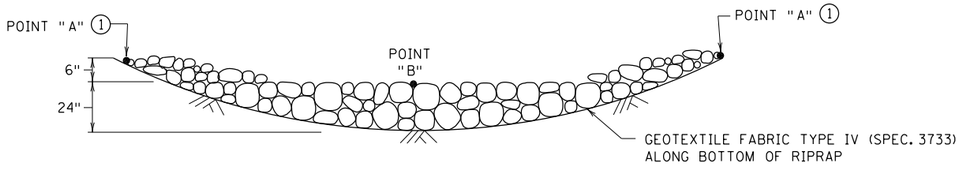
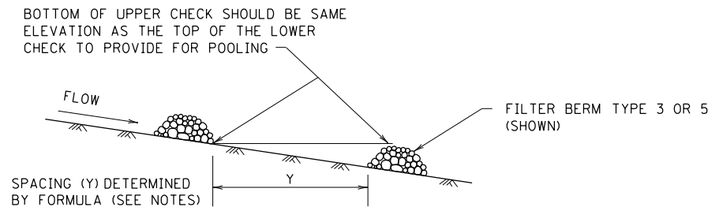
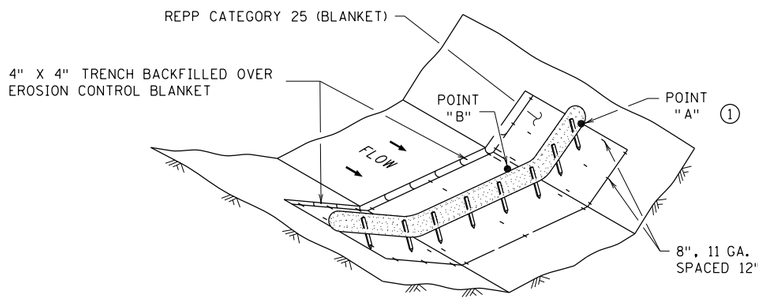
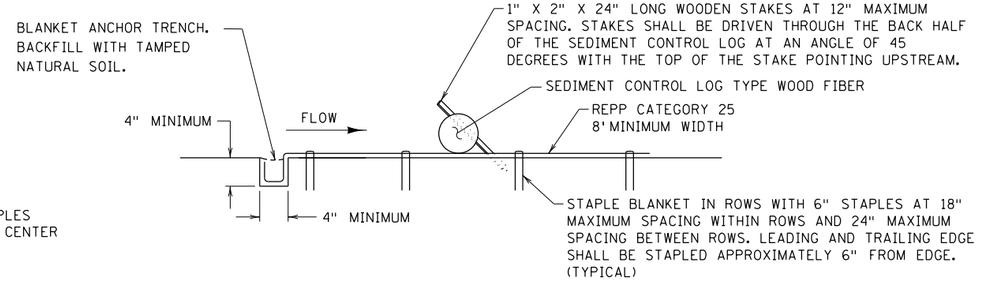


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

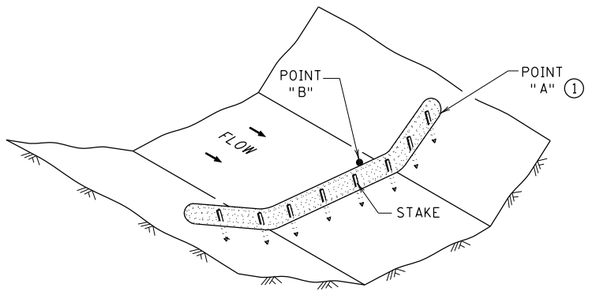


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤
FOR USE ON ROUGH GRADED AREAS

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT.)}}{\text{\% CHANNEL SLOPE}} \times 100$$

① POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.

④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.

⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

REVISION:

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MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

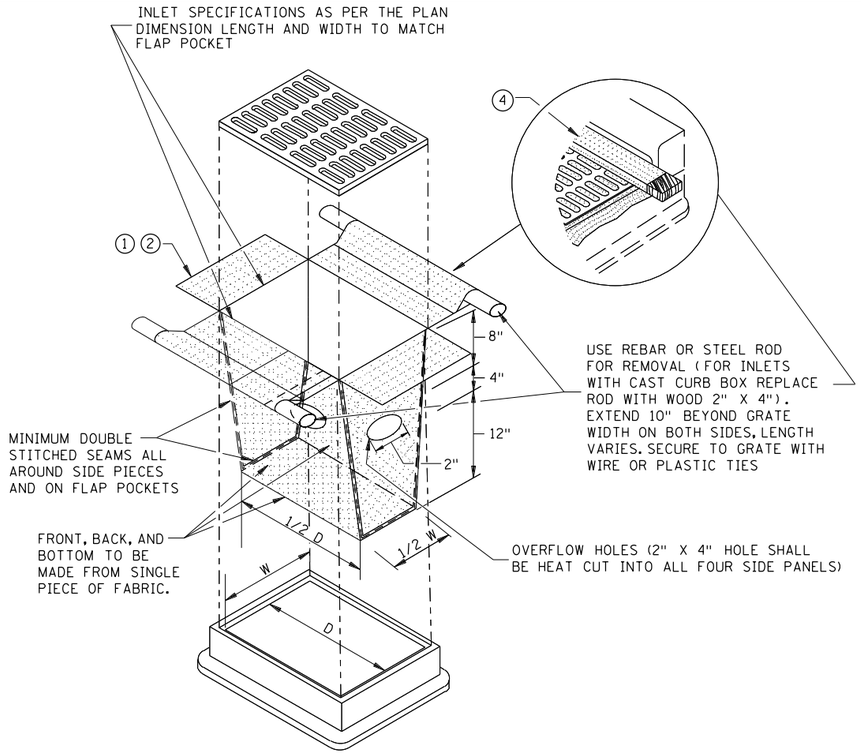
MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.405	3 OF 8
APPROVED: 1-8-2020	
REVISED:	

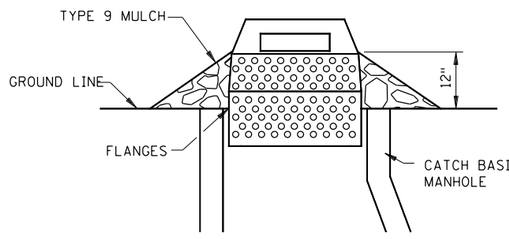
TEMPORARY SEDIMENT CONTROL
DITCH CHECK

SAP 002-652-007,002-652-008,106-020-035
CP 19-09



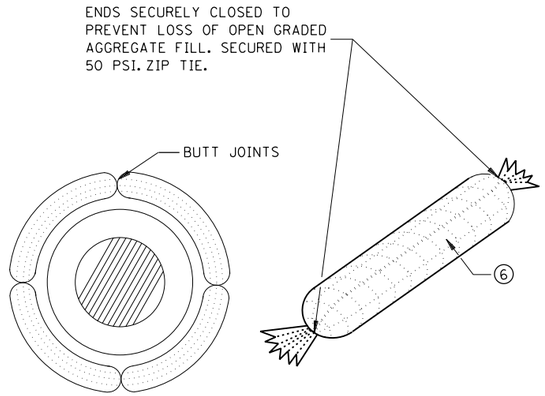
FILTER BAG INSERT ③

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

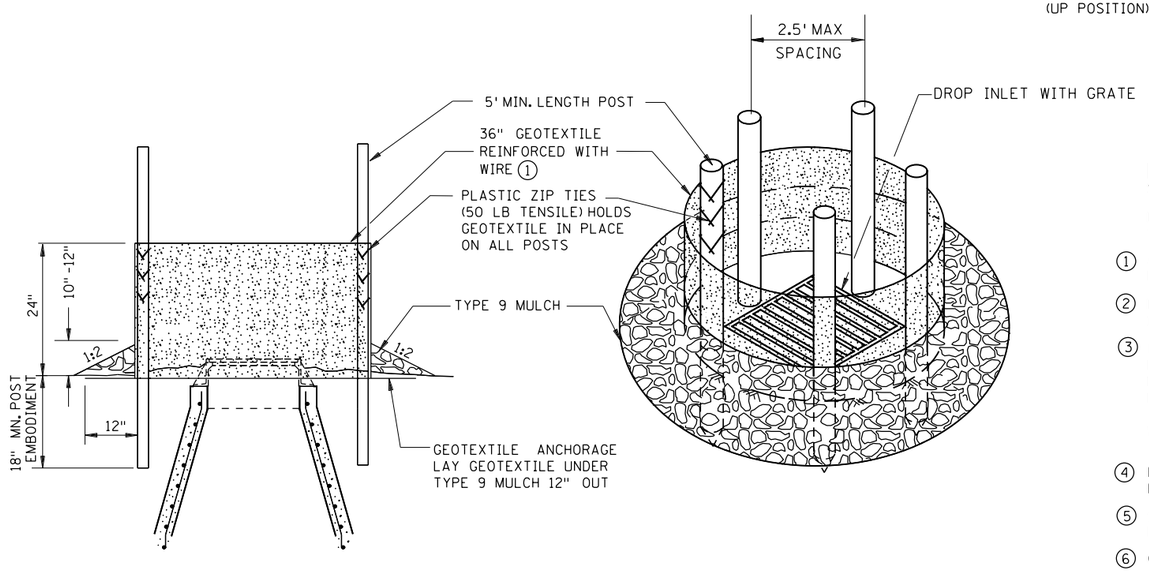


SEDIMENT CONTROL INLET HAT

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

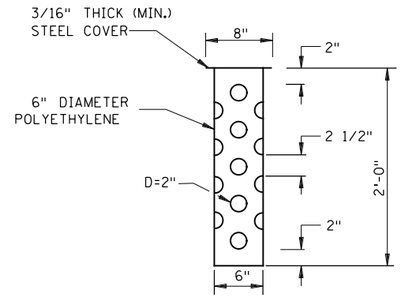


ROCK LOG/COMPOST LOG

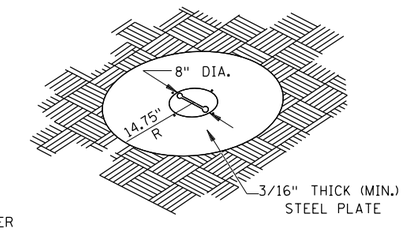


SILT FENCE RING AND ROCK FILTER BERM

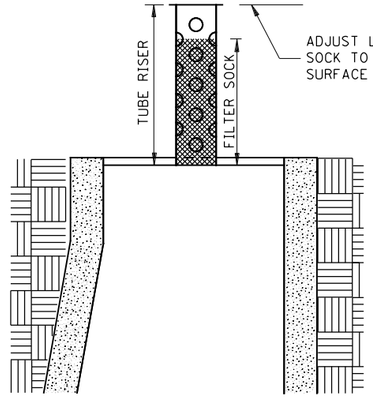
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



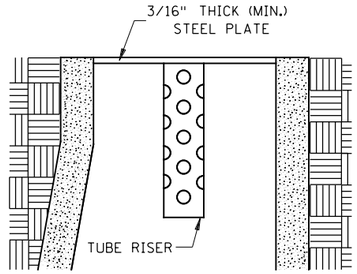
TUBE RISER



PERSPECTIVE VIEW



SECTION
(UP POSITION)



SECTION
(DOWN POSITION)

POP-UP HEAD

NOTES:

SEE SPECS. 2573, 3137, & 3886.

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

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

REVISION:

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 4 OF 8

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REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

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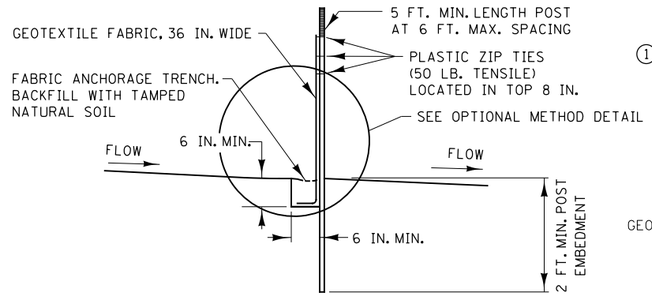
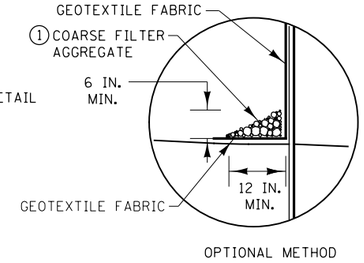
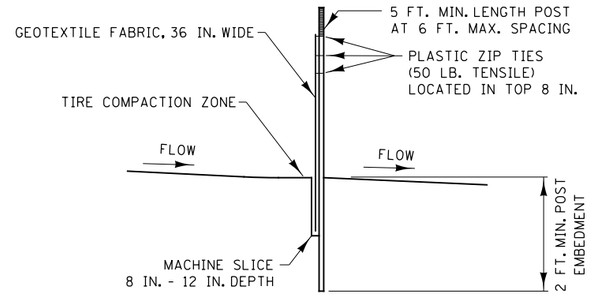
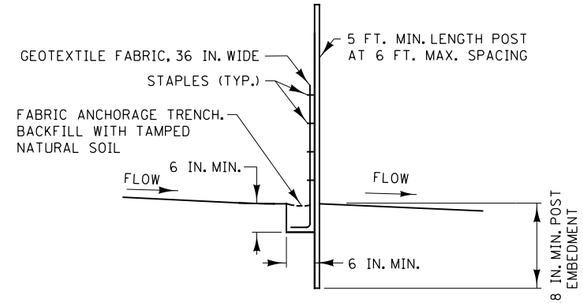




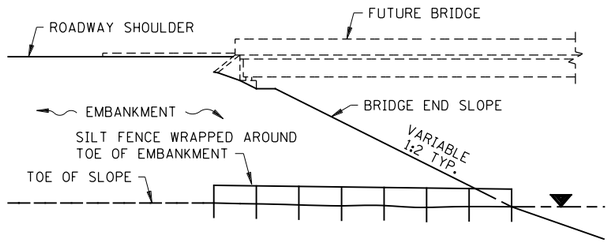
SILT FENCE TYPE HI ② (HAND INSTALLED)



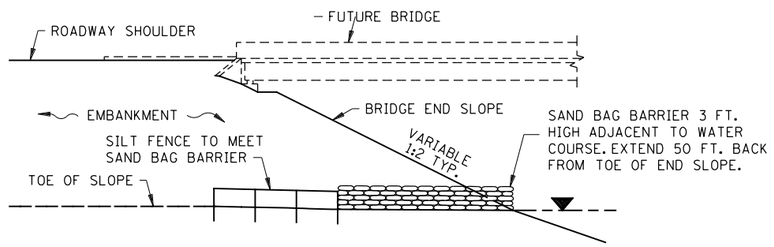
SILT FENCE TYPE MS ② (MACHINE SLICED)



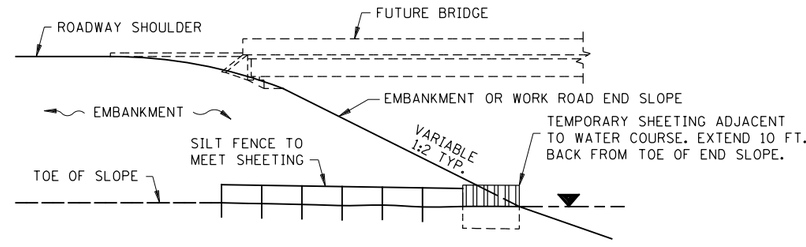
SILT FENCE TYPE PA ③ (PREASSEMBLED)



SILT FENCE ONLY ④



SILT FENCE WITH SAND BAGS ⑤



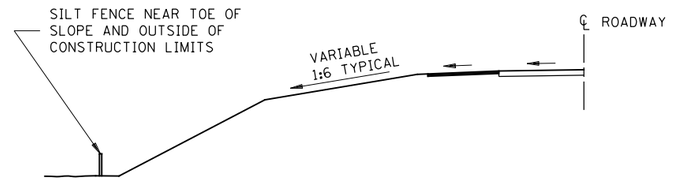
SILT FENCE WITH SHEETING ⑥

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER

PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING.
CONTRIBUTING SLOPE AREA: 1./2 ACRE.

⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1. ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 6 OF 8

APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

SILT FENCE

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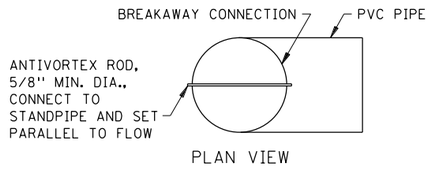
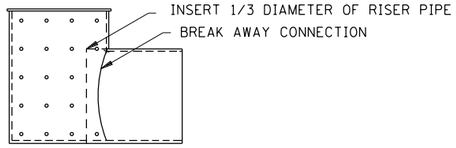
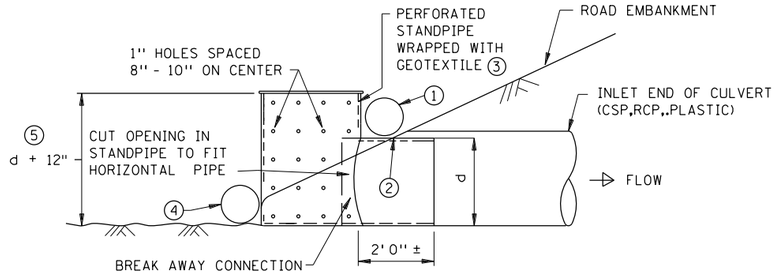


PLAN VIEW



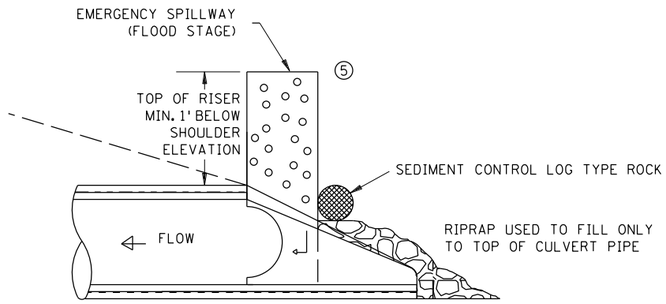
CULVERT STANDPIPE



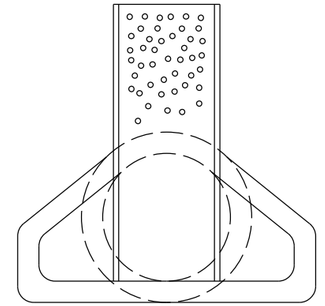
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

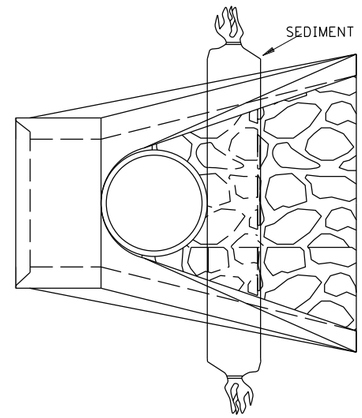
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



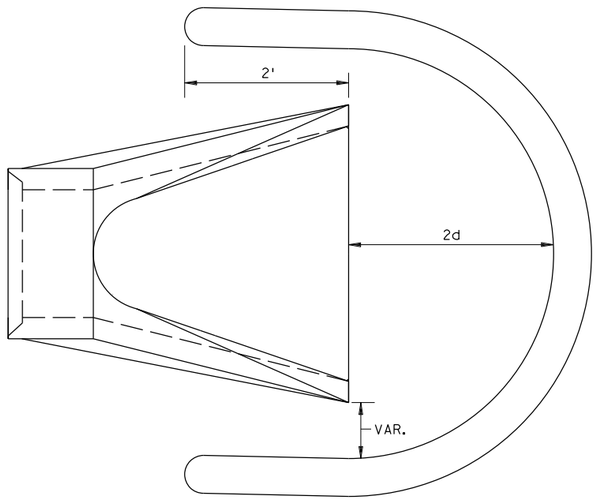
END VIEW



TOP VIEW

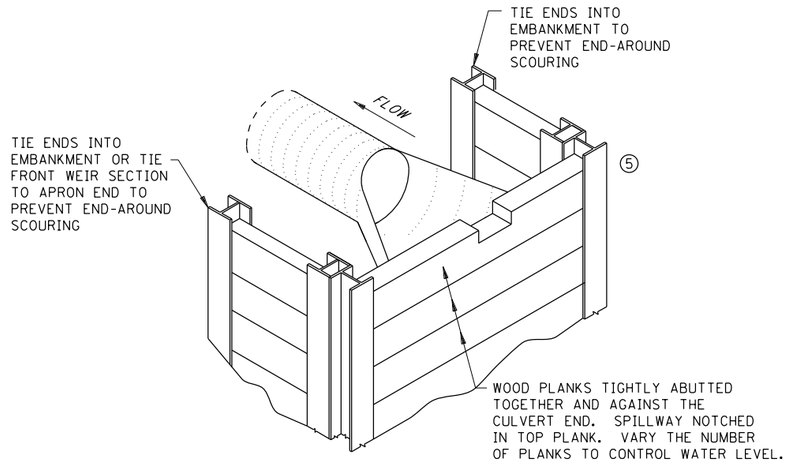
NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER

CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR
(COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12"-36"



WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

(1) ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.

(2) PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.

(3) ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

(4) ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

(5) HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 8 OF 8

APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

CULVERT END CONTROLS

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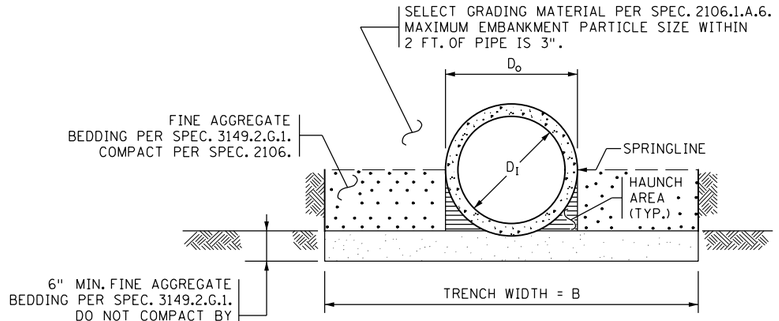
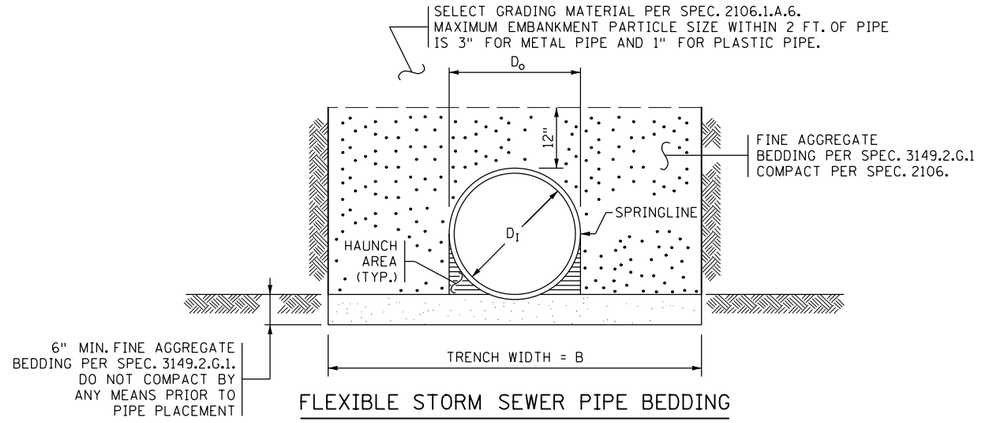


RIGID STORM SEWER PIPE BEDDING

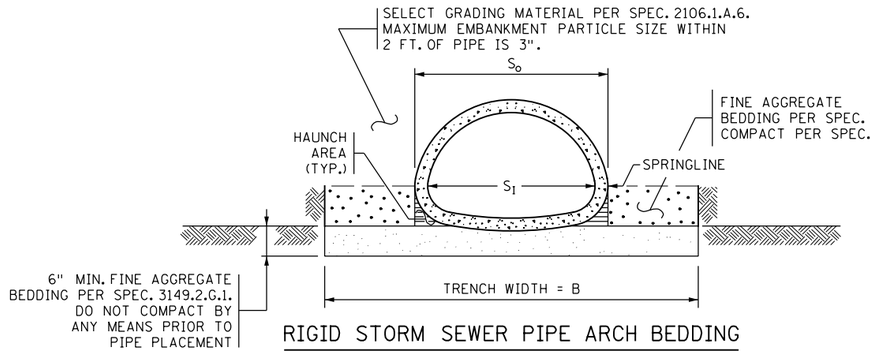
TRENCH BASE WIDTH (1)(2)	
PIPE DIA. D_I OR S_I	TRENCH WIDTH B
< 42"	D_o + 24"
42" TO 54"	1.5 x D_o
> 54"	D_o + 36"

PLASTIC PIPE
WITH H > 10 FT. (1)(2)

PIPE DIA.	TRENCH WIDTH (FEET)
12"	5'-2"
15"	5'-6"
18"	5'-9"
24"	6'-6"
30"	8'-0"
36"	9'-6"
42"	11'-0"
48"	12'-6"



FLEXIBLE STORM SEWER PIPE BEDDING



RIGID STORM SEWER PIPE ARCH BEDDING

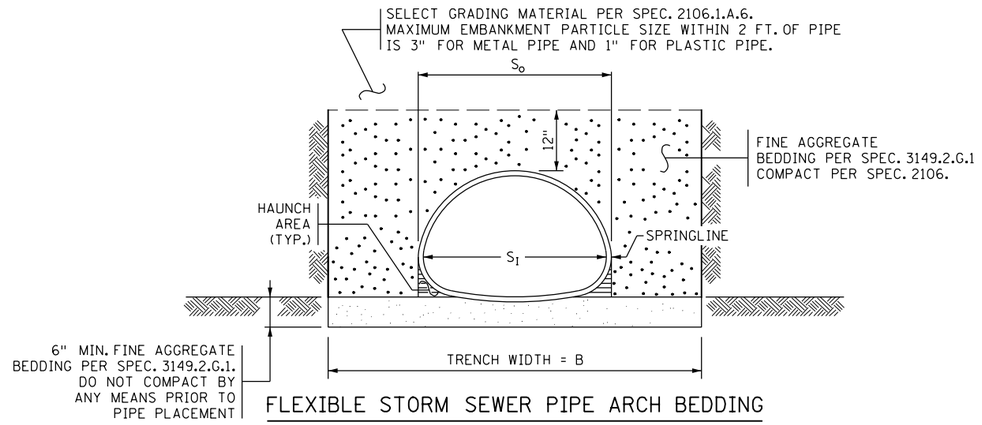
-LEGEND-

D_I = INSIDE DIAMETER OF ROUND PIPE (INCHES).
D_o = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
S_I = INSIDE SPAN OF PIPE-ARCH (INCHES).
S_o = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
H = FILL COVER HEIGHT OVER PIPE (FEET).

= UNDISTURBED SOIL

= COMPACTED BEDDING

= LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT



FLEXIBLE STORM SEWER PIPE ARCH BEDDING

CONSTRUCTION SEQUENCE

1. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
2. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
3. FURNISH AND INSTALL PIPE TO GRADE.
4. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL FINE AGGREGATE BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF HAUNCH UNDER THE PIPE). THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
5. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
6. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE FOR RIGID PIPE AND 12" ABOVE THE TOP OF THE PIPE FOR FLEXIBLE PIPE WHEN COMPACTED.
7. COMPLETE REMAINING BACKFILL.

NOTES

EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.

PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.

PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2503.

WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.

FINE AGGREGATE BEDDING INCLUDING THE COST OF EXCAVATION, PLACEMENT AND COMPACTION IS INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.

EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT STORM SEWER PAY ITEM.

RIGID PIPE INCLUDES CONCRETE. FLEXIBLE PIPE INCLUDES METAL, AND PLASTIC MATERIALS SUCH AS CORRUGATED POLYPROPYLENE (PP), CORRUGATED POLYETHYLENE (CP) AND POLYVINYL CHLORIDE (PVC).

(1) MODIFY TRENCH WIDTH & SLOPE AS NECESSARY TO COMPLY WITH OSHA REQUIREMENTS.

(2) USE PLASTIC PIPE TABLE FOR TRENCH WIDTHS WHEN FILL HEIGHT IS GREATER THAN 10 FT.

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REVISION:

APPROVED: JANUARY 18, 2019
Kevin Western
STATE BRIDGE ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.442 | 1 OF 1

APPROVED: 01-18-2019
REVISED:

STATE DESIGN ENGINEER

STANDARD STORM SEWER BEDDING
FOR RIGID AND FLEXIBLE PIPE

SAP 002-652-007,002-652-008,106-020-035
CP 19-09

SHEET NO. 24 OF 76 SHEETS

NOTES & GUIDELINES

GENERAL INFORMATION:

1. ALL DISTANCES ARE APPROXIMATE.
2. CONTRACTOR SHALL PRESERVE TWO-WAY STOP CONTROL AT THE INTERSECTION OF CSAH 52 AND XYLITE STREET UNTIL TRAFFIC SIGNAL IS MADE OPERATIONAL.

SIGNING:

1. ALL TEMPORARY SIGNS ARE REQUIRED TO BE CRASHWORTHY PER THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE 2016 (MASH-2016). TEMPORARY SIGN STRUCTURES THAT ARE CRASHWORTHY UNDER THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP-350) MAY BE USED PROVIDED THE DEVICES WERE ACQUIRED BY THE CONTRACTOR PRIOR TO DECEMBER 31ST, 2019. THE MINNESOTA TYPE "C" AND "D" BRACED LEG U-CHANNEL (KNEE BRACE) SIGN SUPPORT IS NOT ALLOWED.
2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS PLACED.
3. WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES.
4. WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO ROAD USERS INCLUDING BIKES AND PEDESTRIANS IS REDUCED ENOUGH TO CAUSE A HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.
5. TEMPORARY SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY APPROACHING ROAD USERS. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.
6. TEMPORARY SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO DIRECTION OF AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED.
7. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-aj) THRU (6K-al) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.

CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN WHICH ARE TO BE USED AS FOLLOWS:

   PLACE THE G20-X1 ADVANCE CLOSURE NOTICE SIGN(S) X DAYS PRIOR TO THE PLANNED CLOSURE DATE.

   PLACE G20-X2 ADVANCE NOTICE SIGNS X DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, COVER THE START DATE LEGEND WITH SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SUGGESTED OR IF DIRECTED BY THE ENGINEER, DISPLAY THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON

   IF CONSTRUCTION INFORMATION SIGNING IS NO LONGER VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS, MOVE SAID SIGNING TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS DIRECTED BY THE PLAN OR ENGINEER.

TRAFFIC CONTROL		P
STAGE	(1) REMOVABLE PREFORMED PAVEMENT MARKING MARKING TAPE	REMOVABLE PREFORMED PLASTIC MASK (BLACK)
	LIN FT	LIN FT
SAP 002-652-008		
STAGE 1	2850	280
STAGE 2		
STAGE 3		
SAP 106-020-035		
STAGE 1		
STAGE 2	1650	
STAGE 3		
PROJECT TOTALS	**4500**	**280**

NOTES:
(1) YELLOW COLOR.

STAGING NARRATIVE

STAGE 1

CONSTRUCTION:
1. REMOVE AND RECONSTRUCTION OF CSAH 52 MEDIAN NOSES.
2. BEGIN CONSTRUCTION OF TRAFFIC SIGNALS, INCLUDING HANDHOLES IN MEDIAN.

TRAFFIC:
1. REDUCE CSAH 52 TO ONE THRU LANE AT XYLITE STREET, CLOSING INSIDE LANES AND RESTRICTING XYLITE ST TO RIGHT-IN, RIGHT-OUT OPERATIONS.

STAGE 2

CONSTRUCTION:
1. CONSTRUCT PROPOSED WEST SIDE PAVEMENT AND RADIUS WIDENING FOR BOTH NORTH AND SOUTH LEGS OF XYLITE STREET.
2. COMPLETE ADJACENT SIDEWALK AND ADA IMPROVEMENTS.
3. CONTINUE CONSTRUCTION OF TRAFFIC SIGNALS.

TRAFFIC:
1. CLOSE EASTBOUND RIGHT-TURN LANE ALONG CSAH 52.
2. UTILIZE FLAGGING OPERATIONS AS NECESSARY TO MAINTAIN TRUCK ACCESS DURING PAVEMENT CONSTRUCTION AND LONGITUDINAL DROPOFF REQUIREMENTS.

STAGE 3

CONSTRUCTION:
1. CONSTRUCT PROPOSED EAST SIDE PAVEMENT AND RADIUS WIDENING FOR BOTH NORTH AND SOUTH LEGS OF XYLITE STREET.
2. COMPLETE ADJACENT SIDEWALK AND ADA IMPROVEMENTS.
3. COMPLETE TRAFFIC SIGNAL CONSTRUCTION.
4. COMPLETE ALL OTHER OFFLINE CONSTRUCTION NOT COMPLETED IN PRIOR STAGES.

TRAFFIC:
1. CLOSE WESTBOUND RIGHT-TURN LANE ALONG CSAH 52.
2. UTILIZE FLAGGING OPERATIONS AS NECESSARY TO MAINTAIN TRUCK ACCESS DURING PAVEMENT CONSTRUCTION AND LONGITUDINAL DROPOFF REQUIREMENTS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	AREA CLOSED TO TRAFFIC / WORK AREA
⊢	TRAFFIC CONTROL SIGN
⌊	TYPE III BARRICADE =
○	DRUM-LIKE CHANNELIZER (TYPE B) =
Ⓕ	TYPE A FLASHING WARNING LIGHT
	FLASHING ARROW BOARD TYPE C = (4' X 8' UNLESS OTHERWISE NOTED).
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	PORTABLE PRECAST CONC BARRIER DES 8337 WITH DELINEATORS AT 25' SPACES
	TEMPORARY IMPACT ATTENUATOR

NO	DATE	BY	CKD	APPR	REVISION

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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.
Print Name: NATHAN A. POOLE
Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY K. OLM
DESIGNED BY K. OLM
CHECKED BY N. POOLE
COMM. NO. 1912330

SRF Consulting Group, Inc. | ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
TRAFFIC CONTROL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
TITLE SHEET AND STAGING NARRATIVE

SHEET 25 OF 76

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GENERAL NOTES:

LOCATIONS OF TRAFFIC CONTROL DEVICES ARE APPROXIMATE.

INPLACE SIGNS WHICH CONFLICT WITH THIS PLAN SHALL BE COVERED (INCIDENTAL).

NOTES:

① PCMS TO BE PLACED AT TIME OF SIGNAL ACTIVATION AND LEFT IN SERVICE FOR 14 CALENDAR DAYS.

② PCMS TO BE PLACED 10 DAYS PRIOR TO START OF CONSTRUCTION AND REMOVED WHEN CONSTRUCTION BEGINS.

BLAINE

2010 POP. 57,186

0 500 1000
SCALE IN FEET

ANOKA COUNTY

City Hall

NATIONAL SPORTS CENTER

(11) NEVADA AVE.
(12) NEBRASKA AVE.
(13) MONTANA AVE.
(14) MISSOURI AVE.
(15) MISSISSIPPI AVE.
(16) MINNESOTA AVE.
(17) MICHIGAN AVE.
(18) MASSACHUSETTS AVE.

(19) MARYLAND AVE.
(20) MAINE AVE.
(21) LOUISIANA AVE.
(22) KENTUCKY AVE.
(23) KANSAS AVE.
(24) IOWA AVE.
(25) INDIANA AVE.
(26) ILLINOIS AVE.
(27) IDAHO AVE.
(28) HAWAII AVE.
(29) GEORGIA AVE.
(30) FLORIDA AVE.
(31) DELAWARE AVE.
(32) CONNECTICUTAVE.
(33) COLORADO AVE.
(34) CALIFORNIA AVE.
(35) ARKANSAS AVE.
(36) ARIZONA AVE.

(37) ALASKA AVE.
(38) ALABAMA AVE.
(39) OSCAR ST.
(40) NOVEMBER ST.
(41) MIKE ST.
(42) LIMA ST.
(43) KILO ST.
(44) JULIETT ST.
(45) INDIA ST.
(46) HOTEL ST.

T31N R23W
16 15
21 22

T31N R23W
20 21
29 28

T31N R23W
22 23
27 26

① PCMS - POST SIGNAL ACTIVATION		
TRAFFIC	NEW	DRIVE
CONTROL	SIGNAL	WITH
CHANGE	AHEAD	CARE

① PCMS - POST SIGNAL ACTIVATION		
DRIVE	NEW	TRAFFIC
WITH	SIGNAL	CONTROL
CARE	AHEAD	CHANGE

② PCMS - PRIOR TO START OF CONSTRUCTION		
ROAD	WORK	AHEAD
STREET	XYLITE	AT
DAY	MONTH	BEGINS

② PCMS - PRIOR TO START OF CONSTRUCTION		
BEGINS	MONTH	DAY
AT	XYLITE	STREET
ROAD	WORK	AHEAD

① PCMS - POST SIGNAL ACTIVATION		
TRAFFIC	NEW	DRIVE
CONTROL	SIGNAL	WITH
CHANGE	AHEAD	CARE

① PCMS - POST SIGNAL ACTIVATION		
DRIVE	NEW	TRAFFIC
WITH	SIGNAL	CONTROL
CARE	AHEAD	CHANGE

② PCMS - PRIOR TO START OF CONSTRUCTION		
ROAD	WORK	AHEAD
STREET	XYLITE	AT
DAY	MONTH	BEGINS

① PCMS - POST SIGNAL ACTIVATION		
TRAFFIC	NEW	DRIVE
CONTROL	SIGNAL	WITH
CHANGE	AHEAD	CARE

② PCMS - PRIOR TO START OF CONSTRUCTION		
BEGINS	MONTH	DAY
AT	XYLITE	STREET
ROAD	WORK	AHEAD

PHEASA

LEXIN
2010 POP

NO	DATE	BY	CKD	APPR	REVISION

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Print Name: NATHAN A. POOLE
Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY K. OLM
DESIGNED BY K. OLM
CHECKED BY N. POOLE
COMM. NO. 1912330

SRF Consulting Group, Inc. — ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
TRAFFIC CONTROL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
ADVANCE SIGNING

SHEET 26 OF 76

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LEGEND:

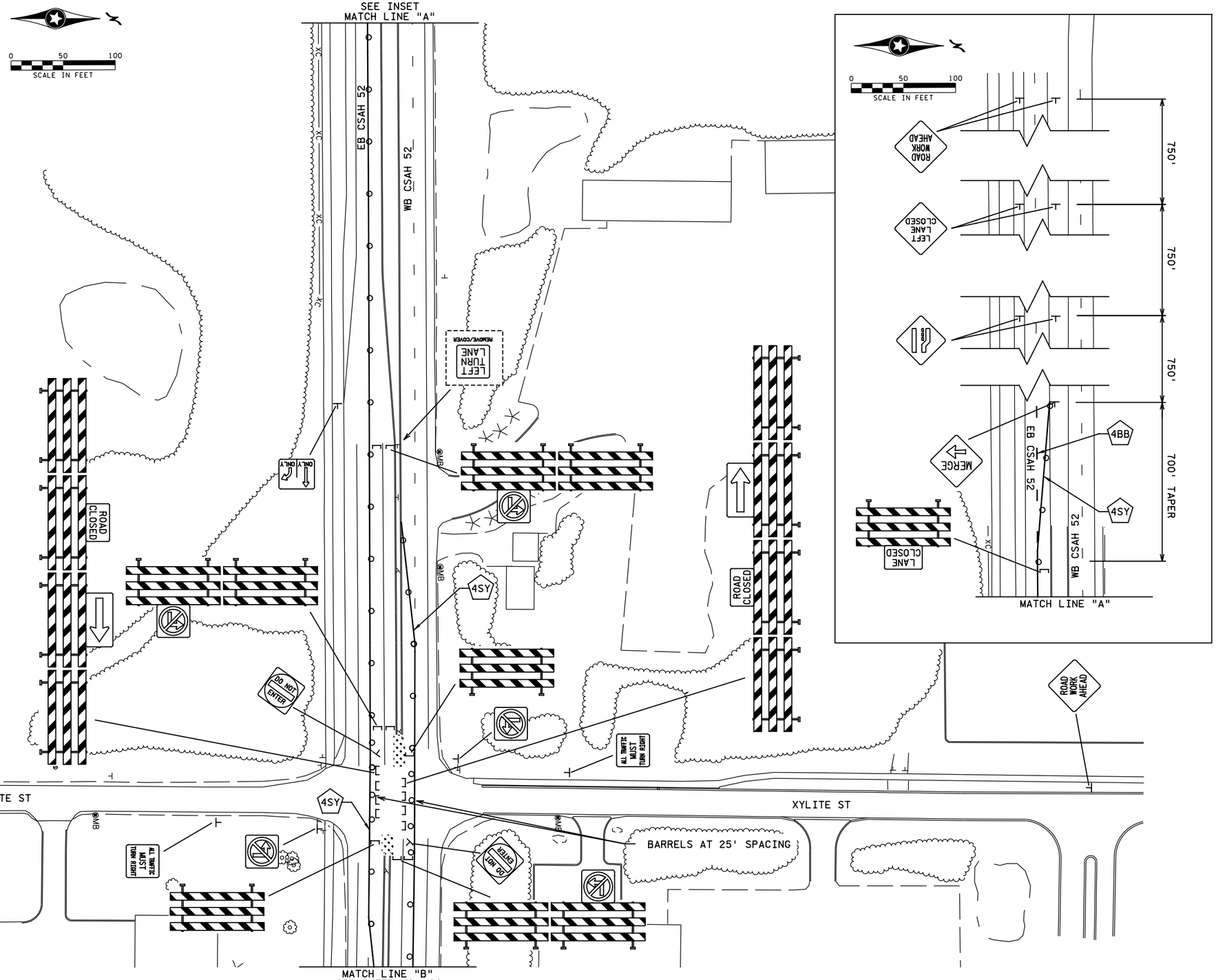
- PERMANENT CONSTRUCTION
- STANDARD SIGN (POST OR STAND MOUNTED)
- TYPE III BARRICADE (REFLECTORIZED ON BOTH SIDES)
- TYPE A LOW INTENSITY WARNING FLASHER
- REFLECTORIZED PLASTIC DRUM

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

ALL BARRELS SHALL BE PLACED AT 50' SPACING UNLESS OTHERWISE NOTED.

SOME DISTANCES NOT DRAWN TO SCALE. REFER TO LABELED DIMENSIONS WHEN APPLICABLE. MAINTAIN ALL ACCESSES ALONG CSAH 52 THROUGH BREAKS IN BARRELS AT MEDIAN OPENINGS.

STAGE 1 SHALL BE CONSTRUCTED AS WEEKEND WORK. CONTRACTOR SHALL COORDINATE AND COMMUNICATE THE STAGE 1 CLOSURE WITH BUSINESSES ALONG XYLITE STREET.



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ANOKA COUNTY
TRAFFIC CONTROL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
STAGE 1

SHEET 27 OF 76

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LEGEND:

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STAGE 1 SHALL BE CONSTRUCTED AS WEEKEND WORK. CONTRACTOR SHALL COORDINATE AND COMMUNICATE THE STAGE 1 CLOSURE WITH BUSINESSES ALONG XYLITE STREET.

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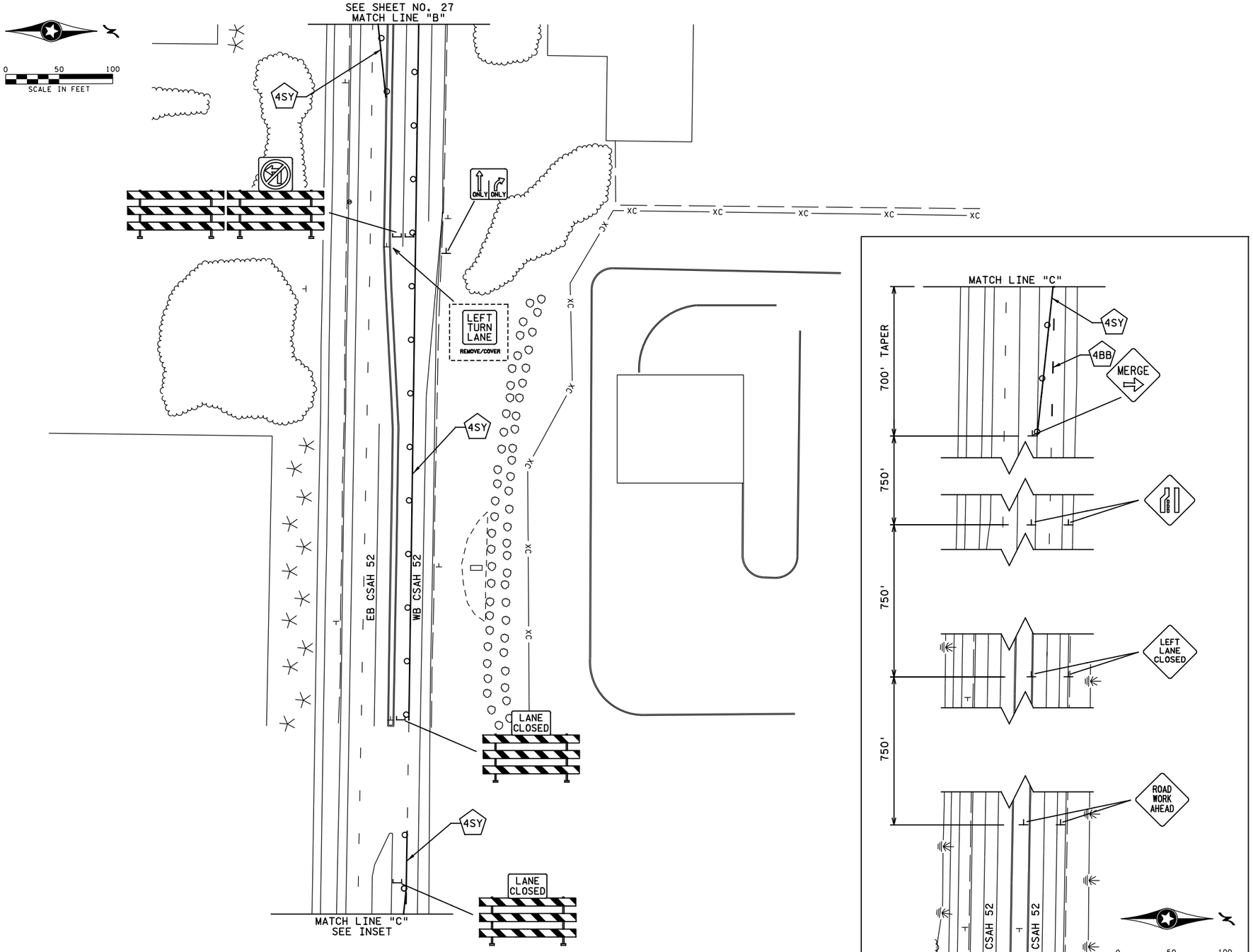

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Print Name: NATHAN A. POOLE

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ANOKA COUNTY
TRAFFIC CONTROL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
STAGE 1

SHEET 28 OF 76

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SEE INSET
MATCH LINE "D"

LEGEND:

- PERMANENT CONSTRUCTION
- STANDARD SIGN (POST OR STAND MOUNTED)
- TYPE III BARRICADE (REFLECTORIZED ON BOTH SIDES)
- TYPE A LOW INTENSITY WARNING FLASHER
- REFLECTORIZED PLASTIC DRUM

0 50 100
SCALE IN FEET

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CONTRACTOR SHALL MAINTAIN A 1:4 OR FLATTER TAPER ON SUBCUTS ADJACENT TO TRAFFIC. IF A 1:4 TAPER CANNOT BE MAINTAINED, THE CONTRACTOR SHALL DIRECT ONE-WAY TRAFFIC ON XYLITE STREET WITH FLAGGERS UNTIL THE TAPER CAN BE RESTORED.

REMOVE/COVER
RIGHT TURN LANE
ONLY
ONLY
SIDEWALK CLOSED
EB CSAH 52
WB CSAH 52
UTILIZE FLAGGING OPERATIONS AS NEEDED TO MAINTAIN TRUCK TURNS DURING PAVEMENT CONSTRUCTION.
SIDEWALK CLOSED
ROAD WORK AHEAD
NO SHOULDER
XYLITE ST
XYLITE ST
ROAD WORK AHEAD
4DY
SIDEWALK CLOSED
4DY
ONE WAY
ONE WAY
STOP
750'
750'
NO SHOULDER
ROAD WORK AHEAD
XC
XC XC XC XC XC
XC

750' 750' 750'
WB CSAH 52
EB CSAH 52
MATCH LINE "D"
XC XC XC XC
ROAD WORK AHEAD
TURN LANE CLOSED
NO SHOULDER
0 50 100
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION
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COMM. NO. 1912330

SRF Consulting Group, Inc.
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ANOKA COUNTY
TRAFFIC CONTROL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
STAGE 2

SHEET 29 OF 76

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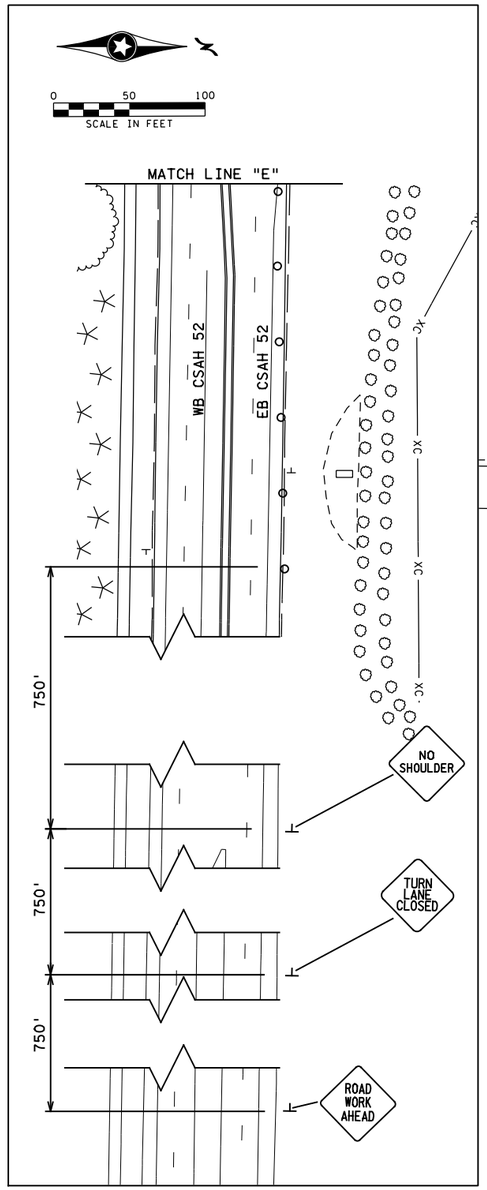

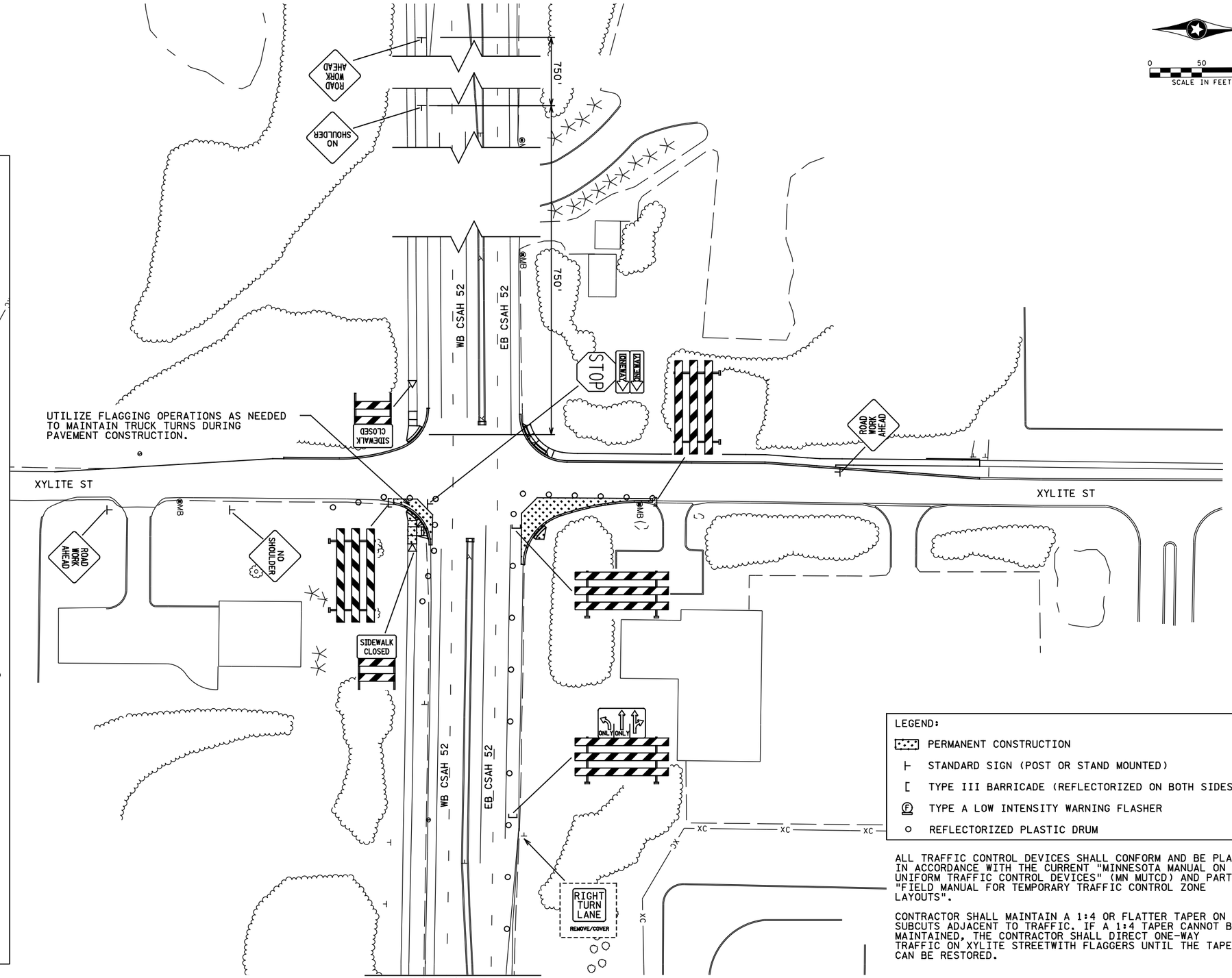

LEGEND:

- PERMANENT CONSTRUCTION
- STANDARD SIGN (POST OR STAND MOUNTED)
- TYPE III BARRICADE (REFLECTORIZED ON BOTH SIDES)
- TYPE A LOW INTENSITY WARNING FLASHER
- REFLECTORIZED PLASTIC DRUM

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CONTRACTOR SHALL MAINTAIN A 1:4 OR FLATTER TAPER ON SUBCUTS ADJACENT TO TRAFFIC. IF A 1:4 TAPER CANNOT BE MAINTAINED, THE CONTRACTOR SHALL DIRECT ONE-WAY TRAFFIC ON XYLITE STREETWITH FLAGGERS UNTIL THE TAPER CAN BE RESTORED.

NO	DATE	BY	CKD	APPR	REVISION
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Date 6/19/20 License # 56071

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DESIGNED BY K. OLM
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COMM. NO. 1912330

SRF Consulting Group, Inc. — Engineers Planners Designers

ANOKA COUNTY

TRAFFIC CONTROL PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

STAGE 3

SHEET 30 OF 76

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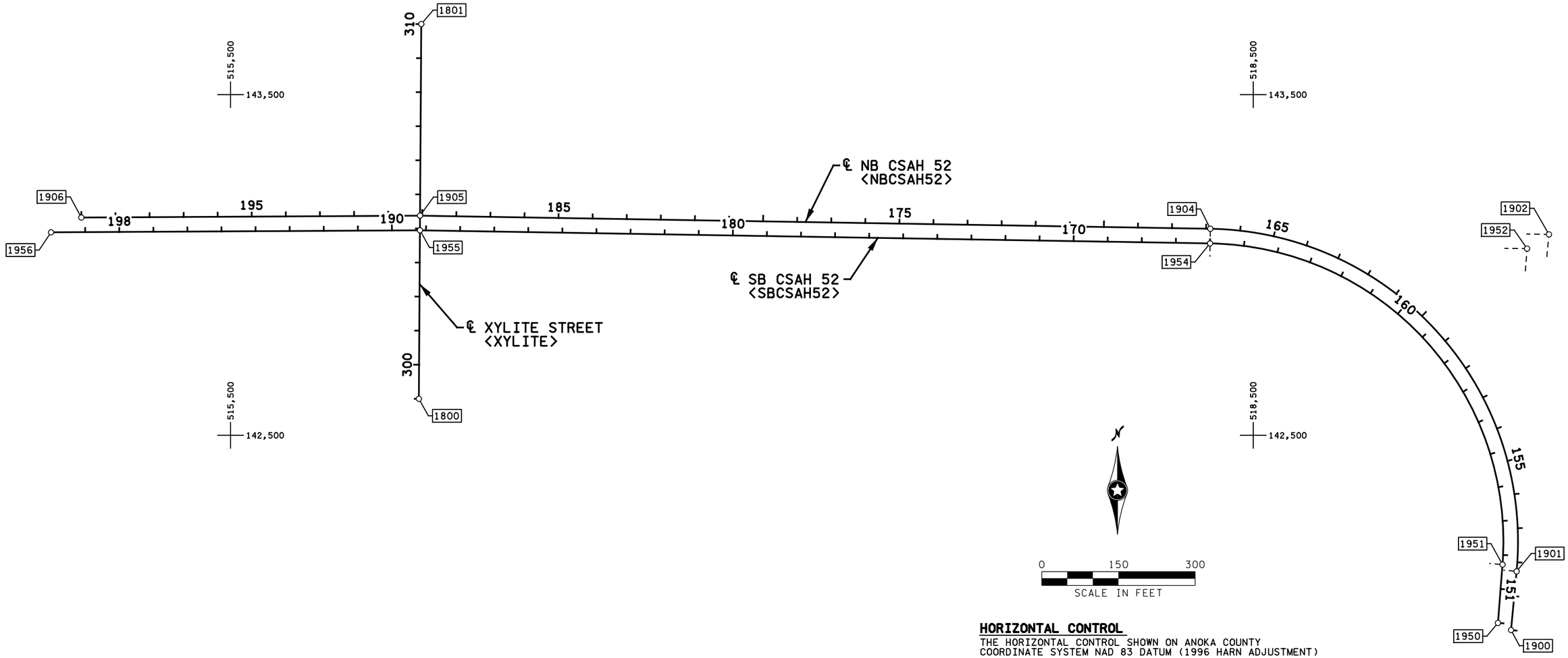

HORIZONTAL CONTROL

THE HORIZONTAL CONTROL SHOWN ON ANOKA COUNTY COORDINATE SYSTEM NAD 83 DATUM (1996 HARN ADJUSTMENT)

HORIZONTAL CONTROL		
POINT NAME	Y	X
NW COR SEC 27, T31, R23	143,126.928	516,055.604
S 1/4 COR SEC 21, T 31, R 23	143,112.220	513,409.090
N 1/4 COR SEC 27, T 31, R 23	143,083.020	518,694.838

NOTES:

<XXXX> INDICATES GEOPAK ALIGNMENT NAME

NO	DATE	BY	CKD	APPR	REVISION

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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.

Print Name: BENJAMIN ROBECK

Date 6/19/20 License # 53680

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY S. MARTINS
DESIGNED BY M. HARDEGGER
CHECKED BY B. ROBECK
COMM. NO. 1912330

SRF Consulting Group, Inc. — Engineers Planners Designers

ANOKA COUNTY

ALIGNMENT PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 31 OF 76

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ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA: DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES: X	Y	AZIMUTH
			SPIRAL CURVE DATA: ANGLE (~~Θs~~)	DEGREE	ST	LT	LS			
℄ XYLITE STREET <XYLITE>										
1800	POT	℄ XYLITE STREET 299+00.000						516,052.3493	142,607.2485	0° 22' 31.72"
1801	POT	℄ XYLITE STREET 310+00.000						516,059.5579	143,707.2248	
℄ NB CSAH 52 <NBCSAH52>										
1900	POT	℄ NB CSAH 52 150+00.000						519,256.2071	141,928.4376	
1901	PC	151+73.135						519,272.7441	142,100.7807	5° 28' 51.55"
1902	PI	161+66.715	94° 31' 42.09" LT	6° 14' 28.93"	918.000'	993.580'	1,514.545'	519,367.6463	143,089.8180	PI
1903	CC	(1)						518,358.9413	142,188.4639	
1904	PT	166+87.680						518,374.2037	143,106.3370	270° 57' 09.46"
1905	POT	190+06.407						516,055.7964	143,144.8876	PI
1906	POT	℄ NB CSAH 52 200+00.000						515,062.2197	143,139.2736	269° 40' 34.57"
℄ SB CSAH 52 <SBCSAH52>										
1950	POT	℄ SB CSAH 52 150+00.000						519,218.0119	141,949.3707	
1951	PC	151+71.880						519,231.3161	142,120.7354	4° 26' 21.70"
1952	PI	161+01.817	93° 29' 12.23" LT	6° 32' 53.12"	875.000'	929.937'	1,427.695'	519,303.2969	143,047.8821	PI
1953	CC	(1)						518,358.9413	142,188.4639	
1954	PT	165+99.575						518,373.4888	143,063.3429	270° 57' 09.46"
1955	POT	189+17.824						516,055.5604	143,101.8855	PI
1956	POT	℄ SB CSAH 52 200+00.000						514,973.4017	143,095.7711	269° 40' 34.57"

NOTES:

(1) ALIGNMENT POINT IS NOT SHOWN ON ALIGNMENT PLAN VIEW.

<XXXX> INDICATES GEOPAK ALIGNMENT NAME.

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

ALIGNMENT TABULATIONS

CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 32 OF 76

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LEGEND

- CLEAR AND GRUB (ACRE)
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE WALK
- REMOVE CONCRETE MEDIAN
- REMOVE STORM SEWER
- REMOVE CURB AND GUTTER
- AREAS OF ENVIRONMENTAL SENSITIVITY

GENERAL NOTES:

EXISTING PAVEMENT THICKNESS VARIES. REMOVAL OF PAVEMENT SHALL CONSIST OF REMOVING ALL LAYERS OF PAVEMENT BASED ON THE AREA OF THE TOP SURFACE, REGARDLESS OF MATERIAL TYPE, THICKNESS, REINFORCING OR REMOVAL METHOD.

PROTECT ALL TREES THAT ARE NOT MARKED FOR REMOVAL (INCIDENTAL).

SHRUB REMOVAL SHALL BE INCIDENTAL.

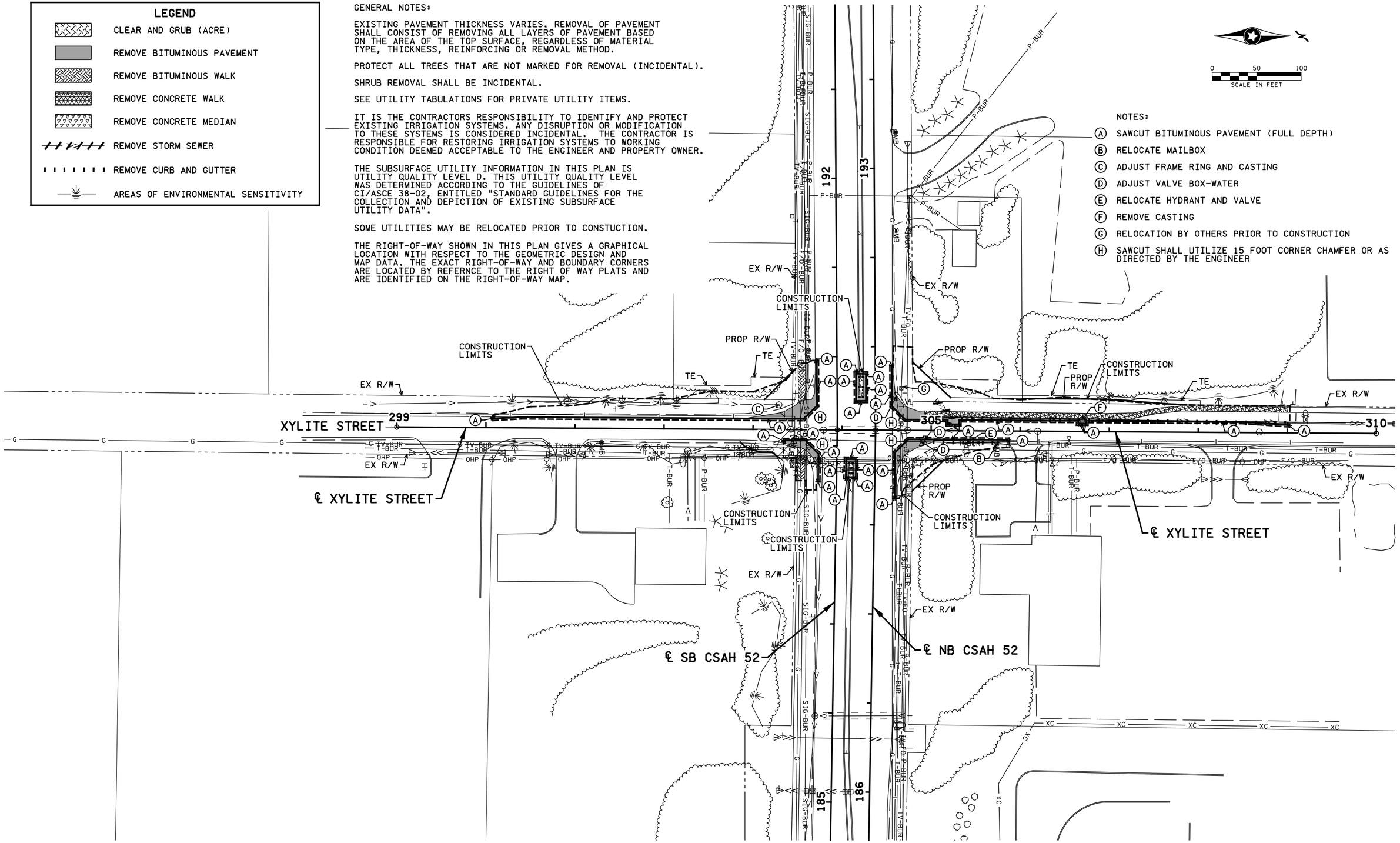
SEE UTILITY TABULATIONS FOR PRIVATE UTILITY ITEMS.

IT IS THE CONTRACTORS RESPONSIBILITY TO IDENTIFY AND PROTECT EXISTING IRRIGATION SYSTEMS. ANY DISRUPTION OR MODIFICATION TO THESE SYSTEMS IS CONSIDERED INCIDENTAL. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING IRRIGATION SYSTEMS TO WORKING CONDITION DEEMED ACCEPTABLE TO THE ENGINEER AND PROPERTY OWNER.

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

SOME UTILITIES MAY BE RELOCATED PRIOR TO CONSTUCTION.

THE RIGHT-OF-WAY SHOWN IN THIS PLAN GIVES A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT-OF-WAY AND BOUNDARY CORNERS ARE LOCATED BY REFERNCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT-OF-WAY MAP.



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ANOKA COUNTY

INPLACE TOPOGRAPHY, RIGHT OF WAY, UTILITY AND REMOVAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 33 OF 76

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LEGEND

- CONCRETE WALK
- EXISTING ROADWAYS
- PROPOSED CONSTRUCTION
- DIRECTION OF TRAFFIC
- AREAS OF ENVIRONMENTAL SENSITIVITY

GENERAL NOTES:.

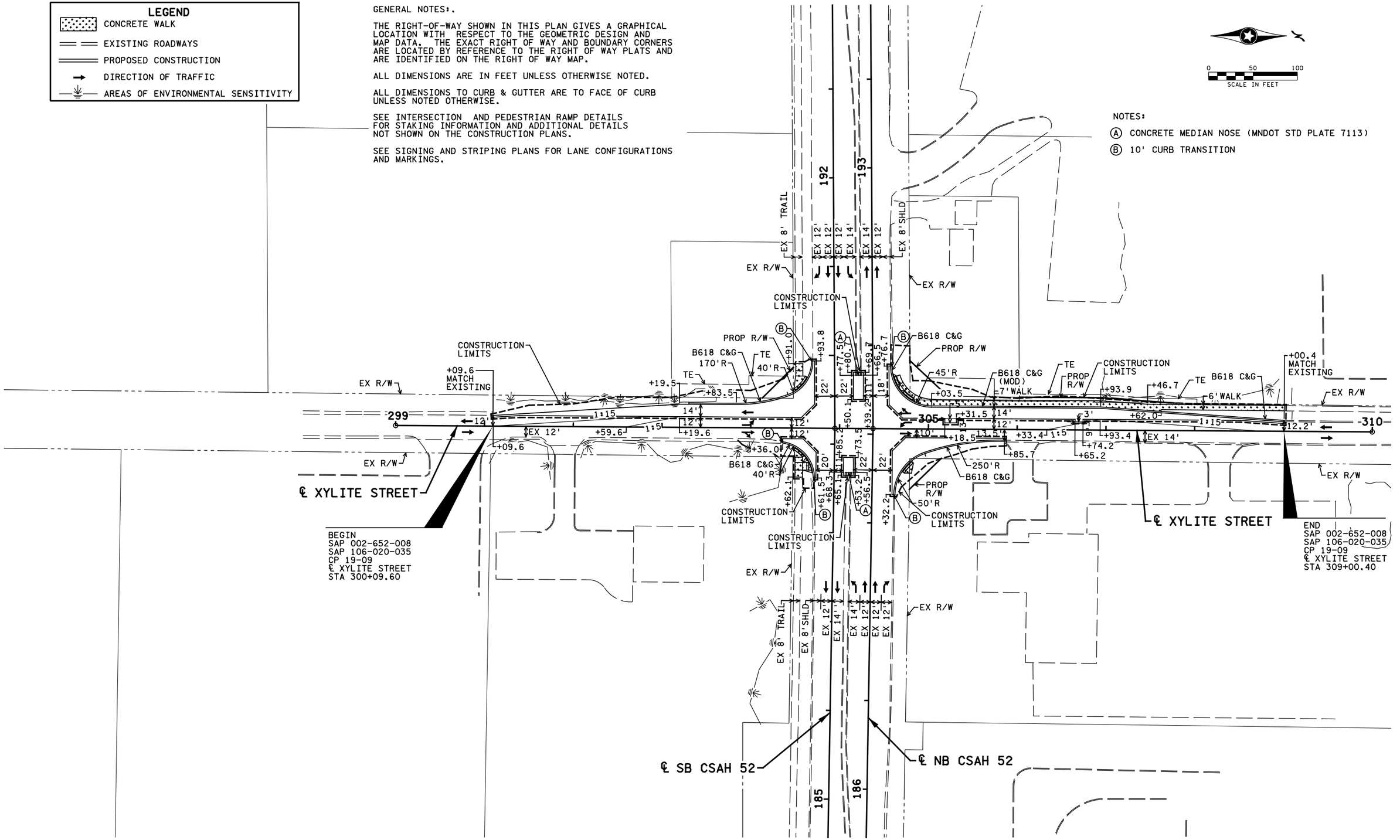
THE RIGHT-OF-WAY SHOWN IN THIS PLAN GIVES A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT OF WAY AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT OF WAY MAP.

ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.

ALL DIMENSIONS TO CURB & GUTTER ARE TO FACE OF CURB UNLESS NOTED OTHERWISE.

SEE INTERSECTION AND PEDESTRIAN RAMP DETAILS FOR STAKING INFORMATION AND ADDITIONAL DETAILS NOT SHOWN ON THE CONSTRUCTION PLANS.

SEE SIGNING AND STRIPING PLANS FOR LANE CONFIGURATIONS AND MARKINGS.



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ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
CONSTRUCTION PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 34 OF 76

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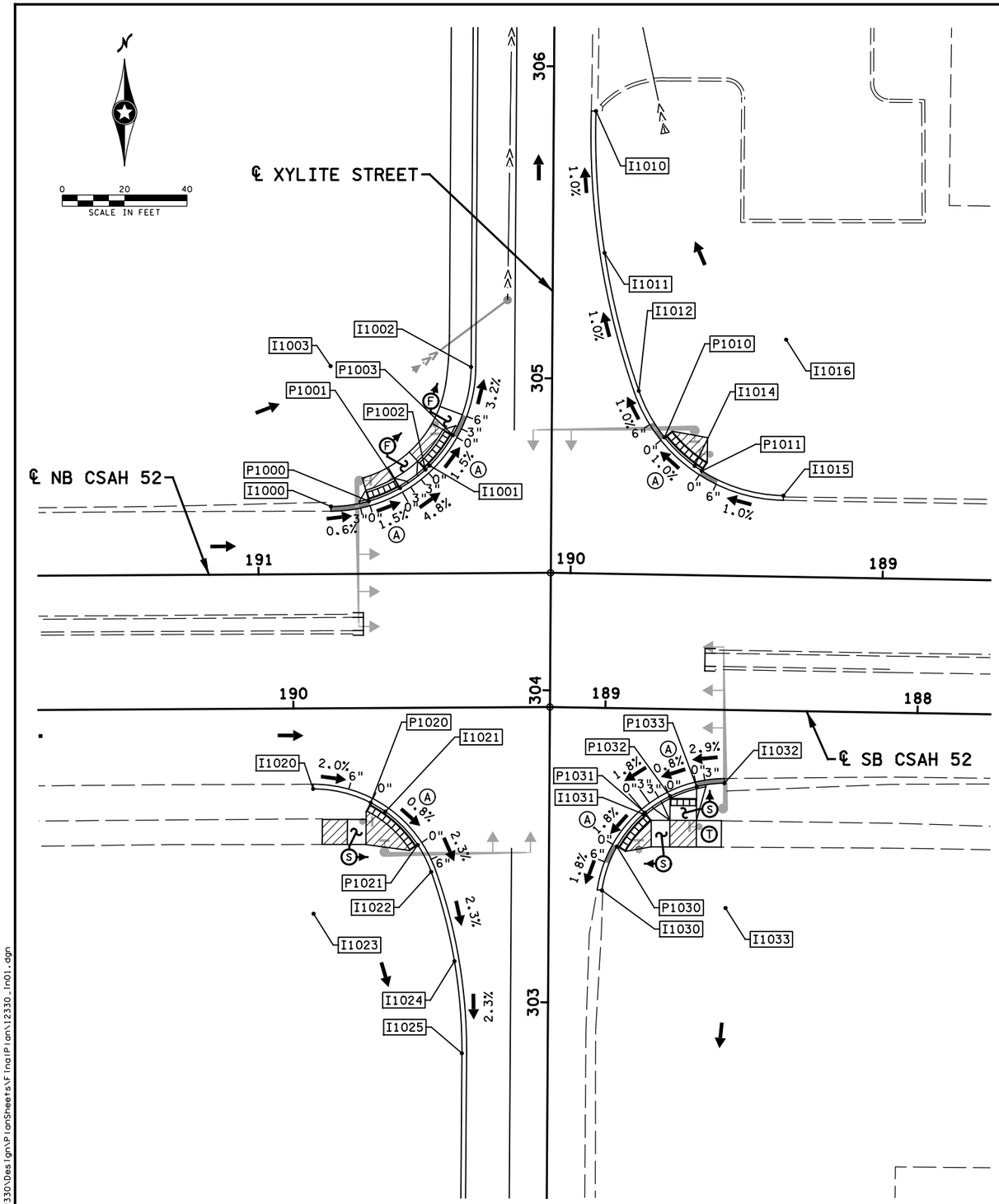

LEGEND

- EXISTING STORM SEWER/CULVERT
- EXISTING STORM SEWER/CULVERT APRON
- PROPOSED STORM SEWER/CULVERT
- PROPOSED STORM SEWER/CULVERT APRON
- PROPOSED MANHOLE (STORM)
- DRAINAGE FLOW ARROW
- IXXXX — INTERSECTION POINT NUMBER
- PROPOSED SIGNAL POLE
- PEDESTRIAN PUSH BUTTON STATION
- PEDESTRIAN PUSH BUTTON
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (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%
- (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 LINEAR FOOT OF WALK.
- (A) — 2% GUTTER SLOPE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- TRANSITION STANDARD GUTTER INSLOPE TO NOTED GUTTER INSLOPE

GENERAL NOTES:

SEE STANDARD PLAN SHEETS FOR PEDESTRIAN CURB RAMP DETAILS.

SEE TRAFFIC SIGNAL PLANS AND DETAILS FOR HORIZONTAL COORDINATES OF SIGNAL POLES.

SEE TRAFFIC SIGNAL PLANS FOR LOCATIONS OF PUSH BUTTONS.

ALL CURB AND GUTTER TO BE B618 UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS.

PEDESTRIAN LANDINGS AND MEDIAN NOSES SHALL BE 6" CONCRETE WALK. SIDEWALK SHALL BE 4" CONCRETE WALK.

OFFSETS, ELEVATIONS AND RADIUS LENGTHS ARE TO FLOWLINE OF GUTTER, WHERE APPLICABLE, AND DO NOT INCLUDE DRAINAGE STRUCTURE SUMPS.

INTERSECTION DETAIL POINTS

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
I1000	515985.408	143166.153	EL. 909.63	XYLITE STREET	304+58.45	70.60' LT.
I1001	516017.057	143179.265	EL. 908.90	XYLITE STREET	304+71.77	39.04' LT.
I1002	516030.304	143210.858	EL. 907.97	XYLITE STREET	305+03.45	26.00' LT.
I1003	515985.305	143211.152	45.0' R.	XYLITE STREET	305+03.45	71.00' LT.
I1010	516070.343	143292.866	EL. 907.29	XYLITE STREET	305+85.72	13.50' RT.
I1011	516073.102	143247.416	EL. 907.76	XYLITE STREET	305+40.29	16.56' RT.
I1012	516084.060	143203.220	EL. 908.24	XYLITE STREET	304+96.17	27.80' RT.
I1013	516320.226	143285.228	250.0' R.	XYLITE STREET	305+79.72	263.43' RT.
I1014	516101.946	143179.140	EL. 908.56	XYLITE STREET	304+72.20	45.85' RT.
I1015	516130.396	143169.630	EL. 908.87	XYLITE STREET	304+62.88	74.36' RT.
I1016	516131.293	143219.622	50.0' R.	XYLITE STREET	305+12.88	74.93' RT.
I1020	515979.703	143075.637	EL. 909.75	XYLITE STREET	303+67.90	75.71' LT.
I1021	516002.848	143068.361	EL. 909.32	XYLITE STREET	303+60.78	52.52' LT.
I1022	516017.530	143049.047	EL. 908.98	XYLITE STREET	303+41.56	37.71' LT.
I1023	515979.844	143035.637	40.0' R.	XYLITE STREET	303+27.90	75.31' LT.
I1024	516024.983	143020.424	EL. 908.29	XYLITE STREET	303+12.99	30.07' LT.
I1025	516027.363	142990.943	EL. 907.60	XYLITE STREET	302+83.52	27.50' LT.
I1026	515857.367	142992.057	170.0' R.	XYLITE STREET	302+83.52	197.50' LT.
I1030	516072.245	143043.118	EL. 908.04	XYLITE STREET	303+35.99	17.04' RT.
I1031	516085.497	143067.570	EL. 908.56	XYLITE STREET	303+60.53	30.13' RT.
I1032	516111.486	143077.472	EL. 909.08	XYLITE STREET	303+70.60	56.05' RT.
I1033	516111.845	143037.474	40.0' R.	XYLITE STREET	303+30.61	56.67' RT.

PEDESTRIAN RAMP CONTROL POINTS

POINT NO.	X COORD.	Y COORD.	ELEV.	ALIGNMENT	STATION	OFFSET
P1000	515997.577	143167.858	909.56	XYLITE STREET	304+60.24	58.45' LT.
P1001	516007.565	143172.044	909.40	XYLITE STREET	304+64.49	48.48' LT.
P1002	516015.678	143177.949	908.92	XYLITE STREET	304+70.45	40.41' LT.
P1003	516024.469	143188.989	908.71	XYLITE STREET	304+81.54	31.69' LT.
P1010	516092.314	143188.307	908.42	XYLITE STREET	304+81.31	36.16' RT.
P1011	516104.270	143177.553	908.58	XYLITE STREET	304+70.63	48.18' RT.
P1020	515998.150	143071.202	909.36	XYLITE STREET	303+63.59	57.24' LT.
P1021	516013.231	143057.667	909.20	XYLITE STREET	303+50.15	42.07' LT.
P1030	516077.037	143057.182	908.31	XYLITE STREET	303+50.09	21.74' RT.
P1031	516086.008	143068.010	908.57	XYLITE STREET	303+60.97	30.64' RT.
P1032	516094.097	143073.322	908.75	XYLITE STREET	303+66.34	38.69' RT.
P1033	516102.615	143076.395	908.82	XYLITE STREET	303+69.47	47.19' RT.

NO	DATE	BY	CKD	APPR	REVISION
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Date 6/19/20 License # 53680

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DRAWN BY S. MARTINS
DESIGNED BY M. HARDEGGER
CHECKED BY B. ROBECK
COMM. NO. 1912330

SRF Consulting Group, Inc.
ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY

INTERSECTION AND PEDESTRIAN CURB RAMP DETAILS
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 35 OF 76

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LEGEND

- XXX — STORM SEWER STRUCTURE NO.
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- EXISTING/PROPOSED CATCH BASIN
- EXISTING/PROPOSED APRON
- EXISTING/PROPOSED MANHOLE
- SURFACE FLOW
- SEED MIX 25-121
- ROLLED EROSION PREVENTION CATEGORY 35
- MS — SILT FENCE, TYPE MS (MACHINE SLICED)
- BR — SEDIMENT CONTROL LOG TYPE WOOD FIBER
- AREAS OF ENVIRONMENTAL SENSITIVITY

GENERAL NOTES:

CROSS SLOPES ARE FT./FT.

SEE CONSTRUCTION PLANS FOR BEGIN AND END TAPER STATIONING, LANE AND SHOULDER DIMENSIONS, AND MISCELLANEOUS INFORMATION.

SEE DRAINAGE DETAILS, DRAINAGE PROFILES, AND DRAINAGE TABULATION SHEETS FOR ADDITIONAL STORM SEWER INFORMATION.

SEE EXISTING UTILITY TABULATION AND REMOVAL PLAN FOR STORM SEWER AND CULVERTS TO BE REMOVED.

FIELD VERIFY ALL EXISTING UTILITY LOCATIONS.

0 50 100
SCALE IN FEET

NOTES:

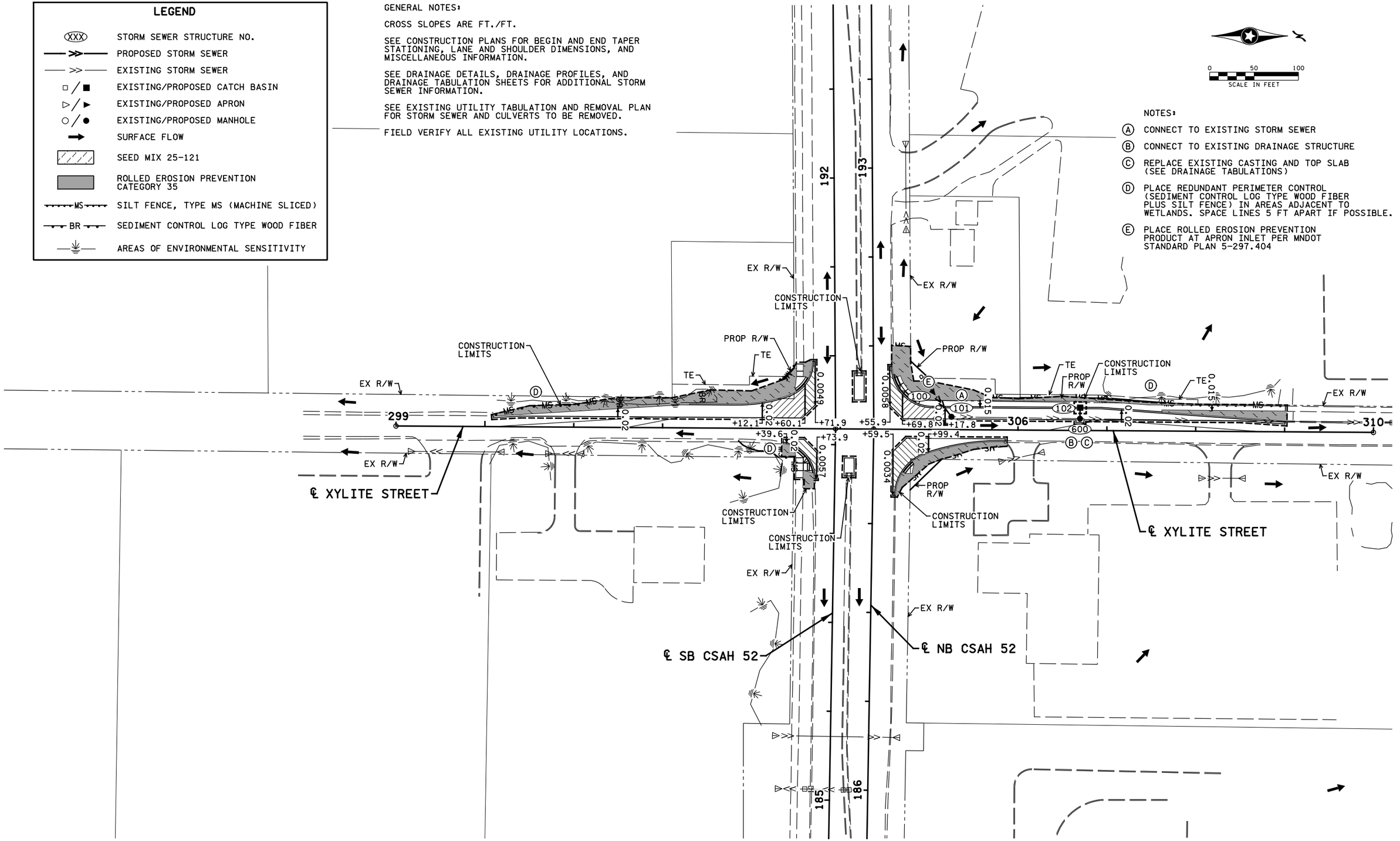
(A) CONNECT TO EXISTING STORM SEWER

(B) CONNECT TO EXISTING DRAINAGE STRUCTURE

(C) REPLACE EXISTING CASTING AND TOP SLAB (SEE DRAINAGE TABULATIONS)

(D) PLACE REDUNDANT PERIMETER CONTROL (SEDIMENT CONTROL LOG TYPE WOOD FIBER PLUS SILT FENCE) IN AREAS ADJACENT TO WETLANDS. SPACE LINES 5 FT APART IF POSSIBLE.

(E) PLACE ROLLED EROSION PREVENTION PRODUCT AT APRON INLET PER MNDOT STANDARD PLAN 5-297.404



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Print Name: ZACHARY J. THELEN

Date 6/19/20 License # 57773

STATE AID PROJECT NO.
002-652-007,
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CITY PROJ NO.
19-09

DRAWN BY S. MARTINS
DESIGNED BY Z. THELEN
CHECKED BY J. NIELSEN
COMM. NO. 1912330

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ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY

DRAINAGE, SUPERELEVATION, EROSION CONTROL AND TURF ESTABLISHMENT PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

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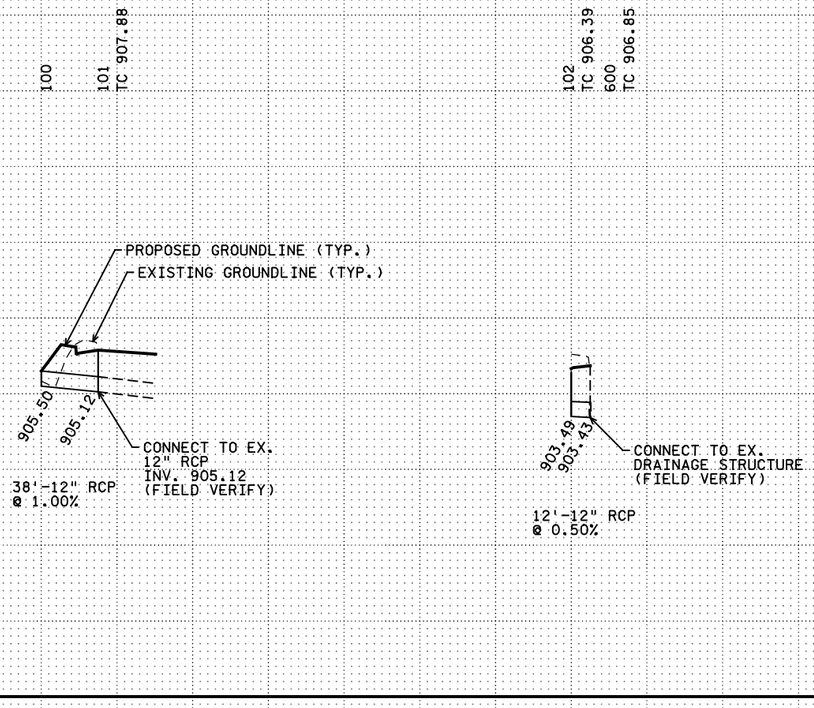

NOTES:

- INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).
- TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.
- APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PAY LENGTH OF PIPE).
- ALL RC PIPES ARE CL V.

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Z. THELEN

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SRF Consulting Group, Inc.

ENGINEERS
PLANNERS
DESIGNERS

ANOKA COUNTY

DRAINAGE PROFILES

CSAH 52 AT XYLITE STREET, 101ST AVE

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DRAINAGE TABULATION — J

FLOWS FROM STR. OR APRON	STRUCTURE LOCATION			FLOWS TO STR. OR APRON	CASTING ASSEMBLY TYPE (A)	NEW STRUCTURE CONSTRUCTION		PIPE						APRON						CONNECT TO EX STORM SEWER (C)	CONNECT INTO EX DRG STRUCT (D)	GUIDE POST TYPE B	NOTES
								RC (DESIGN 3006)						FLARED RC (B)									
								12"						12"									
INLET POINT NO.	ALIGNMENT NAME	STATION	OFFSET FT	OUTLET POINT NO.		SD 48	DES SP 1	CL V															
						LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
100	XYLITE STREET	305+02.32	44.41 L	101				32						1								1	(F)
101	XYLITE STREET	305+24.99	14.44 L	600	A - 7D	2.9														1			
102	XYLITE STREET	306+69.77	25.67 L	600	C - 1		3.0	12															
600	XYLITE STREET	306+69.66	13.20 L		A - 7D																1		(E)
STORM SEWER TOTAL					3	2.9	3.0	44						1						1	1	1	

GENERAL NOTES:
STA., OFFSETS, AND COORDINATES ARE GIVEN TO THE END OF APRON OR CENTER OF CASTING ASSEMBLY
CASTING SUMP = 0.17 FT FOR CATCH BASIN CASTINGS. SUMP HAS BEEN INCLUDED IN TOP OF CASTING ELEVATIONS.
ROTATE STRUCTURES SUCH THAT MAJORITY OF STRUCTURE IS BEHIND CURB LINE UNLESS DIRECTED BY THE ENGINEER OR ALTERNATE ROTATION IS REQUIRED TO AVOID CONFLICTS (SEE DRAINAGE DETAILS).

SEE APPLICABLE MNDOT STANDARD PLATES FOR DETAILS OF DRAINAGE STRUCTURE DESIGN, EXCEPT AS NOTED BELOW.
STRUCTURE DESIGN SD-XX SHALL BE CONSTRUCTED IN ACCORDANCE WITH MNDOT STD. PLATE 4024 WITH THE FOLLOWING EXCEPTIONS: STRUCTURE DIAMETER SHALL BE XX IN. FOR SD-XX AND DEPTH SHALL BE AS REQUIRED IN THE DRAINAGE TABULATION WALL AND BASE SLAB THICKNESS AND ALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH MNDOT STD. PLATE 4020.
DES SP 1 (DESIGN SPECIAL 1) SHALL BE A 2 FT X 3 FT RECTANGULAR CATCH BASIN PER CITY OF BLAINE STANDARD PLATE SD-1.

PIPE BEDDING SHALL BE PER MNDOT STANDARD PLAN 5-297.442 UNLESS OTHERWISE NOTED.

(A) CURB SHAPE AT C - 1 CASTING LOCATIONS MUST BE TRANSITIONED TO TIE INTO CASTINGS. SEE CITY OF BLAINE STANDARD PLATE SD-5.
(B) TIE ALL JOINTS FOR CULVERTS AND LAST 3 JOINTS FOR STORM SEWER RUNS CONTAINING APRONS. TIED JOINTS SHALL BE INCIDENTAL.
(C) BUILD OVER EXISTING PIPE OR CONNECT TO EXISTING PIPE. PIPE TO PIPE CONNECTIONS SHALL BE MADE AT AN EXISTING PIPE JOINT. FIELD VERIFY LOCATION AND ELEVATION.
(D) CONNECT INTO EXISTING DRAINAGE STRUCTURE. FIELD VERIFY LOCATION AND ELEVATION.
(E) REMOVE EXISTING CASTING AND TOP SLAB FROM STRUCTURE AND REPLACE WITH SPECIFIED CASTING ASSEMBLY AND TOP SLAB PER MNDOT STANDARD PLATE 4020. PAID FOR AS 1 LINEAR FT RECONSTRUCT DRAINAGE STRUCTURE AND CASTING ASSEMBLY.
(F) FURNISH AND INSTALL TRASH GUARD WITH APRON PER DRAINAGE DETAILS.

CASTING ASSEMBLIES SUMMARY — K

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING (A)	CURB BOX	STANDARD PLATE NO.	QUANTITY (EACH)	REMARKS
A - 7D	700-7			4101	2	MANHOLE
		715		4110		
			N/A			
C - 1	(F)			(F)	1	CITY OF BLAINE CATCH BASIN
		(F)		(F)		
			(F)	(F)		
PROJECT TOTALS:					3	

NOTES:
(F) CASTING TYPE: NEENAH R-3067-V; EAST JORDAN IRON WORKS PRODUCT NO. 00703050C11; D & L FOUNDRY MODEL NO. I-3518; OR APPROVED EQUAL PER CITY OF BLAINE.

NO	DATE	BY	CKD	APPR	REVISION

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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.
Print Name: ZACHARY J. THELEN
Date 6/19/20 License # 57773

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY S. MARTINS
DESIGNED BY Z. THELEN
CHECKED BY J. NIELSEN
COMM. NO. 1912330

SRF Consulting Group, Inc. | ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
DRAINAGE TABULATIONS
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 38 OF 76

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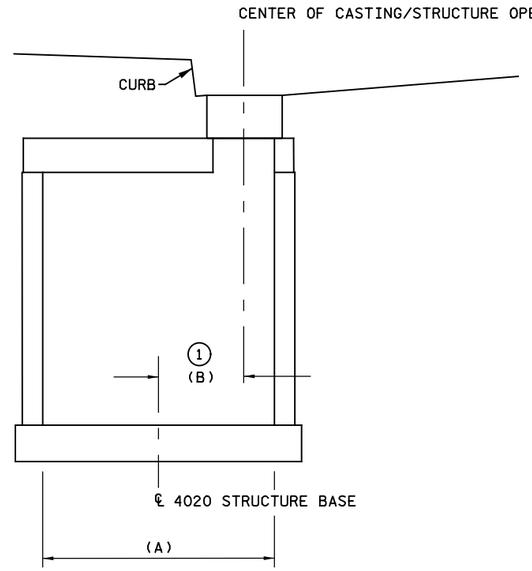
NOTES:

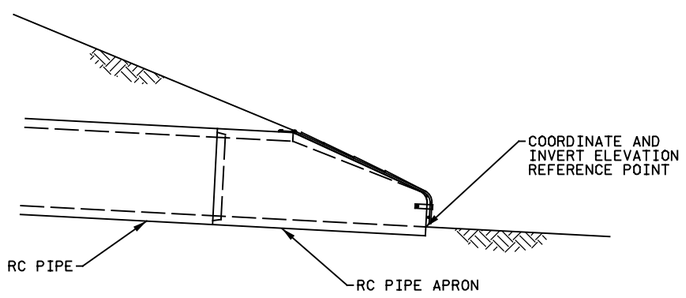
(1) IN TYPICAL LOCATIONS WHERE CASTING IS IN CURB LINE, ROTATE STRUCTURE TO ALLOW AS MUCH AS POSSIBLE TO BE OUTSIDE OF ROADWAY (BEHIND CURB), OR ROTATE AS NECESSARY TO AVOID CONFLICTS.



(A)	(B)
4020 DIAMETER (IN.)	OFFSET FOR 27-IN. OPENING (FT.)
48	0.79
54	1.08
60	1.29
66	1.58
72	1.79
78	2.08
84	2.29
90	2.58
96	2.87
102	3.16
108	3.29
120	3.79

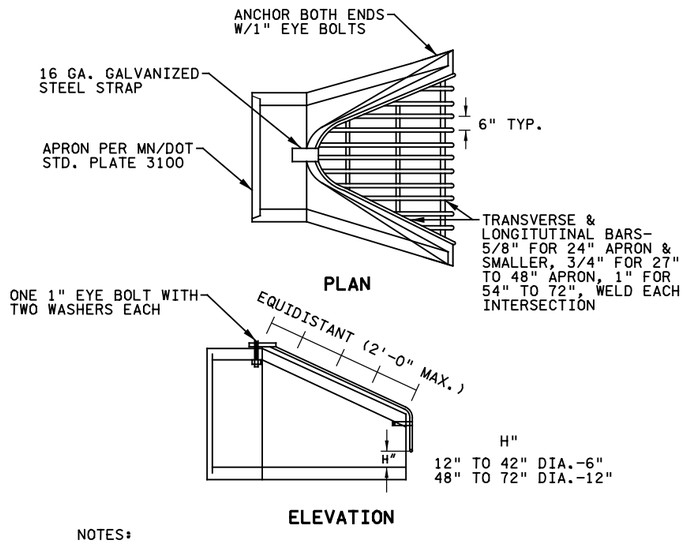
STAKING DETAIL: DESIGN SD-XX STRUCTURE

NOT TO SCALE



STAKING DETAIL: PIPE APRONS

NOT TO SCALE



NOTES:

1. ENTIRE HEAVY DUTY TRASH GUARD ASSEMBLY TO BE HOT-DIP GALVANIZED AFTER FABRICATION.
2. SIZE OF TRASH GUARD VARIABLE DEPENDENT ON SIZE OF FLARED END SECTION.

TRASH GUARD FOR CONCRETE APRON

NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION
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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.

Print Name: ZACHARY J. THELEN

Date 6/19/20 License # 57773

STATE AID PROJECT NO. 002-652-007, 002-652-008, 106-020-035
CITY PROJ NO. 19-09

DRAWN BY S. MARTINS
DESIGNED BY Z. THELEN
CHECKED BY J. NIELSEN
COMM. NO. 1912330

SRF Consulting Group, Inc. — Engineers Planners Designers

ANOKA COUNTY

DRAINAGE DETAILS

CSAH 52 AT XYLITE STREET, 101ST AVE

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STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (SHEET 1 OF 3)

PROJECT DESCRIPTION/LOCATION AND SCOPE
SEE COVER SHEET FOR LOCATION MAP, PROJECT NUMBERS AND DESCRIPTION OF PROJECT SCOPE.
THE PROJECT WILL DISTURB LESS THAN 1 ACRE AND WILL NOT REQUIRE AN NPDES PERMIT. PERMANENT STORMWATER BEST MANAGEMENT PRACTICES (BMPS) ARE NOT REQUIRED BY RICE CREEK WATERSHED DISTRICT OR COON CREEK WATERSHED DISTRICT (LESS THAN 10,000 SF OF INCREASED IMPERVIOUS AREA).

SPECIAL AND IMPAIRED WATERS
THERE ARE NO SPECIAL/IMPAIRED WATERS WITHIN ONE MILE OF THE PROJECT LIMITS WHICH RECEIVE RUNOFF FROM THE PROJECT SITE.

ENVIRONMENTALLY SENSITIVE AREAS
ALL ENVIRONMENTALLY SENSITIVE AREAS, INCLUDING WETLANDS, ARE LABELED AS "ENVIRONMENTALLY SENSITIVE AREAS" IN THE PLANS.

LONG TERM MAINTENANCE AND OPERATION
MAINTENANCE STAFF FROM ANOKA COUNTY AND THE CITY OF BLAINE ARE RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEMS DIVIDED ACCORDING TO THE OWNERSHIP OF THE RIGHT OF WAY. ANOKA COUNTY AND THE CITY OF BLAINE EACH HAVE AN MS4 SWPPP THAT IS AVAILABLE ONLINE OR UPON REQUEST.

SWPPP DEVELOPMENT AND MAINTENANCE
THIS SWPPP WAS PREPARED BY PERSONNEL WHO ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE AVAILABLE UPON REQUEST.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION AND SEDIMENT CONTROL SUPERVISOR WHO SHALL BE RESPONSIBLE FOR FINALIZING, CERTIFYING, AND MAINTAINING THE SWPPP DOCUMENT AND OVERSEEING THE IMPLEMENTATION OF THE SWPPP. SEE PAGE 2 OF THE SWPPP NARRATIVE FOR ADDITIONAL REQUIREMENTS.

IN ADDITION, EACH CONTRACTOR OR SUBCONTRACTOR THAT PLACES EROSION OR SEDIMENT CONTROL DEVICES AS LISTED IN MNDOT SPECIFICATION 2573 SHALL PROVIDE AT LEAST ONE CERTIFIED INSTALLER AS INDICATED IN THE MNDOT SPECIFICATION.

THE SWPPP SHALL BE AMENDED WHEN:
A. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASON HAVING A SIGNIFICANT EFFECT ON DISCHARGE OF POLLUTANTS.
B. INSPECTIONS INDICATE THE SWPPP IS NOT EFFECTIVE.
C. A WATER QUALITY STANDARD CHANGES AND THE MPCA DETERMINES THE SWPPP SHALL BE AMENDED TO COMPLY.
A DESCRIPTION OF ANY CHANGE TO THE SWPPP, ALONG WITH THE DATE AND NAME OF THE REVISION SHALL BE RECORDED AND INCLUDED WITH THE SWPPP AND RETAINED ON SITE. THE OWNER SHALL RETAIN ALL RECORDS AFTER COMPLETION OF THE PROJECT.

SITE PLANS
THE CONTRACTOR SHALL PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, DEWATERING AREAS, AREAS IDENTIFIED AS "SITE MANAGEMENT PLAN AREAS" AND AS REQUESTED BY THE PROJECT ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS IN WRITING AND ALLOW A MINIMUM OF 7 DAYS FOR REVIEW BY THE PROJECT ENGINEER. WORK SHALL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE PROJECT ENGINEER.

ENVIRONMENTAL REVIEW
THE REQUIREMENTS OF RICE CREEK WATERSHED DISTRICT, COON CREEK WATERSHED DISTRICT AND THE CITY OF BLAINE ARE SATISFIED BY THE TEMPORARY MEASURES INCLUDED. THERE ARE NO ADDITIONAL STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHAEOLOGICAL OR AGENCY REVIEW.

DRINKING WATER SOURCE MANAGEMENT AREA (DWSMA), EMERGENCY RESPONSE AREA (ERA) AND KARST REGIONS
THE PROJECT IS NOT LOCATED IN A DWSMA, ERA OR KARST AREA.

SOIL TYPES
SOIL TYPES ENCOUNTERED IMMEDIATELY BENEATH THE TOPSOIL OR ROADWAY SECTIONS CAN PREDOMINANTLY BE CHARACTERIZED AS FINE SAND.

SEE SPECIAL PROVISIONS FOR ADDITIONAL WATER RELATED PERMITS SUCH AS WATERSHED DISTRICT PERMITS, WETLAND PERMITS, ARMY CORPS OF ENGINEERS OR DNR PUBLIC WATERS WORK PERMIT.
FOR PUBLIC WATERS IN WHICH THE DNR HAS PROMULGATED "WORK IN WATER RESTRICTIONS" NO WORK SHALL OCCUR IN LAKES FROM APRIL1 - JUNE 30, IN NON-TROUT STREAMS FROM MARCH 15 - JUNE 15 OR IN TROUT STREAMS FROM SEPTEMBER 1 - APRIL 1. SEE DNR PERMIT FOR ADDITIONAL INFORMATION.

LAND FEATURE CHANGES
TOTAL DISTURBED AREA: 0.67 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA: 0.22 ACRES
TOTAL PROPOSED IMPERVIOUS SURFACE AREA: 0.39 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA: 0.17 ACRES

PROJECT CONTACTS
THE OWNER AND CONTRACTOR ARE RESPONSIBLE FOR THE IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED.

ORGANIZATION	CONTACT NAME	PHONE
CITY OF BLAINE	DANIEL SCHLUENDER	763-785-6158
ANOKA COUNTY	CHRIS OSTERHUS	763-324-3100
RICE CREEK WATERSHED DISTRICT	PATRICK HUGHES	763-398-3080
COON CREEK WATERSHED DISTRICT	MATTHEW DANZL	763-755-0975
SRF WATER RESOURCES	JEREMY NIELSEN	763-475-0010

MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFICATION: 651-649-5451
800-422-0798

LOCATION OF SWPPP REQUIREMENTS
THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2018 EDITION), CONSTRUCTION DIARIES OR ON FILE WITH THE PROJECT OWNER. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET. IN ADDITION, THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER GENERAL PERMIT (NPDES PERMIT) SHOULD BE REVIEWED AND CONSULTED BY THE EROSION AND SEDIMENT CONTROL SUPERVISOR.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	LOCATION
STAGING	SHEET NOS. 25 TO 30
EROSION AND SEDIMENT CONTROL MEASURES	SHEET NOS. 36
DIRECTION OF FLOW	SHEET NOS. 36
FINAL STABILIZATION	SHEET NOS. 36
SOILS AND CONSTRUCTION NOTES	SHEET NOS. 4
DRAINAGE STRUCTURES	SHEET NOS. 36
DRAINAGE TABULATION	SHEET NOS. 38
STORM SEWER PROFILE SHEETS	SHEET NOS. 37
STORM SEWER TABULATION	SHEET NOS. 38
EROSION AND SEDIMENT CONTROL DETAILS	SHEET NOS. 16 TO 23
EROSION CONTROL TABULATION	SHEET NOS. 6
TURF ESTABLISHMENT TABULATION	SHEET NOS. 6
STATEMENT OF ESTIMATED QUANTITIES	SHEET NOS. 2 TO 3

SITE MAPS AND DESIGN CALCULATIONS
IN ADDITION TO WHAT IS LOCATED WITHIN THIS PLAN, SITE MAPS ARE AVAILABLE UPON REQUEST.
PLEASE CONTACT THE PROJECT ENGINEER WITH ANY QUESTIONS REGARDING THE SITE MAPS.

NO	DATE	BY	CKD	APPR	REVISION
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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.
Print Name: ZACHARY J. THELEN
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DESIGNED BY Z. THELEN
CHECKED BY J. NIELSEN
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SRF Consulting Group, Inc. ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 40 OF 76

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STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (SHEET 2 OF 3)

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION STORMWATER PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA (FORM IS AVAILABLE FROM MPCA WEBSITE). THE CONTRACTOR SHALL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP SHALL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

2. THE CONTRACTOR SHALL PREPARE A WRITTEN, NOT ORAL, WEEKLY SCHEDULE OF PROPOSED EROSION CONTROL ACTIVITIES FOR THE PROJECT ENGINEER'S APPROVAL AS PER MNDOT SPEC. 1717.2.

3. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.

4. THE CONTRACTOR SHALL PLACE STABILIZED CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES AND IN COMPLIANCE WITH THE NPDES PERMIT. STABILIZED CONSTRUCTION EXITS SHALL BE SUFFICIENTLY SIZED AND MAINTAINED TO PREVENT TRACK OUT. STABILIZED CONSTRUCTION EXITS SHALL BE INCIDENTAL.

5. ALL TOPSOIL IN DISTURBED AREAS SHALL BE REMOVED AND STOCKPILED FOR LATER PLACEMENT. AVOID COMPACTION AS MUCH AS IS FEASIBLE IN ALL AREAS WHERE COMPACTION IS NOT REQUIRED FOR CONSTRUCTION. COMPACTION SHALL BE AVOIDED IN ALL AREAS DESIGNATED FOR INFILTRATION.

6. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS OBTAIN WRITTEN PERMISSION PRIOR TO PROCEEDING. PRESERVE ALL BUFFERS (IF ANY) SHOWN ON THE PLANS.

7. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS AND ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER POSSIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION AND NUISANCE CONDITIONS.

8. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.

9. TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED. THEREFORE, IT IS POSSIBLE THAT A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE FROM MNDNR SHALL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THIS PERMIT IF REQUIRED (FORMS ARE AVAILABLE FROM THE MNDNR WEBSITE). ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT SITE MANAGEMENT PLANS TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK ACCORDING TO SPEC 1717.2. TEMPORARY DEWATERING SHALL BE INCIDENTAL.

10. BASIN DRAINING ACTIVITIES OF TURBID OR SEDIMENT LADEN WATER SHALL BE DISCHARGED TO TEMPORARY SEDIMENT BASINS WHENEVER POSSIBLE. IN THE EVENT THAT IT IS NOT POSSIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN THE WATER SHALL BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS.

11. IT IS NOT ANTICIPATED THAT POLYMERS, FLOCCULANTS OR OTHER SEDIMENTATION TREATMENT CHEMICALS SHALL BE USED. HOWEVER, IF THE USE OF SUCH CHEMICALS BECOMES NECESSARY TO COMPLY WITH PERMIT REQUIREMENTS, IT SHALL BE IN ACCORDANCE WITH THE NPDES PERMIT.

POLLUTION PREVENTION NOTES

1. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS REGARDING POLLUTION PREVENTION MANAGEMENT DURING CONSTRUCTION, WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, PROVIDING THE FOLLOWING (ITEMS LISTED ARE INCIDENTAL):
   - A. WASHOUT AREAS FOR CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS FOR USE BY ALL SUBCONTRACTORS AND MATERIAL TESTING PERSONNEL. LOCATION OF WASHOUT AREAS SHALL BE IDENTIFIED BY SIGNAGE AND SHALL BE AT LEAST 200 FT FROM SITE MANAGEMENT PLAN REQUIREMENT AREAS (IF APPLICABLE) OR ENVIRONMENTALLY SENSITIVE AREAS, AND UTILIZE A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. AN ENGINEERED COLLECTION SYSTEM CAN ALSO BE USED IF IT IS APPROVED BY THE PROJECT ENGINEER.
   - B. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE PROJECT ENGINEER FOR A CHEMICAL STORAGE AREA AND SHALL DESIGNATE AN AREA FOR FUELING AND MINOR MAINTENANCE OF CONSTRUCTION VEHICLES (INCLUDING WASHING) WITH MEANS TO CAPTURE ANY FUEL SPILLS. RUNOFF SHALL BE CONTAINED IN A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL AND ALL WASTE GENERATED SHALL BE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.
   - C. SOLID WASTE COLLECTION AND REMOVAL
   - D. SECONDARY CONTAINMENT FOR STORAGE OF HAZARDOUS MATERIALS
   - E. SECURED HAZARDOUS WASTE STORAGE CONTAINERS
   - F. CHEMICAL SPILL KITS (SHALL BE PROVIDED AT EACH LOCATION WHERE CHEMICALS ARE USED OR STORED AND ANY LOCATION WHERE VEHICLES ARE FUELED OR MAINTAINED).
   - G. PORTABLE RESTROOM FACILITIES THAT ARE ANCHORED TO PREVENT TIPPING

2. CHEMICALS SHALL BE KEPT IN A SECURE STORAGE AREA WITH RESTRICTED ACCESS IN SEALED CONTAINERS WHEN NOT IN USE. RETURN ALL CHEMICALS TO THE DESIGNATED STORAGE AREA BY THE END OF THE DAY UNLESS INFEASIBLE. CHEMICAL STORAGE CONTAINERS SHALL HAVE SECONDARY CONTAINMENT WHEN BEING USED OR STORED ON THE PROJECT SITE, AND PRODUCTS OR CHEMICALS THAT MAY LEACH POLLUTANTS SHALL BE UNDER COVER (PLASTIC SHEETING OR TEMPORARY ROOF). CHEMICAL SPILLS OF ANY KIND (OIL, FUEL, FERTILIZER, ETC.) SHALL BE CLEANED UP AND REMOVED FROM THE SITE IMMEDIATELY. THE CONTRACTOR SHALL HAVE A SPILL KIT ON SITE AT ALL TIMES.

POLLUTION PREVENTION NOTES (CONT.)

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CREATING AND FOLLOWING A WRITTEN DISPOSAL PLAN FOR ALL HAZARDOUS WASTE MATERIALS. THE PLAN SHALL INCLUDE HOW THE MATERIAL SHALL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO WORK ON SITE. LEAKS, SPILLS, OR OTHER RELEASES SHALL BE RESPONDED TO IN ACCORDANCE WITH MPCA SPILL CONTAINMENT AND REMEDIAL ACTION PROCEDURES.

4. THE CONTRACTOR SHALL USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS, AND ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.

5. THE CONTRACTOR SHALL USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, SAW CUT SLURRY, PLANING WASTE AND OTHER CONCRETE WASTES FROM LEAVING PUBLIC RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS OR ENTERING STORMWATER CONVEYANCE SYSTEM INCLUDING INLETS AND CURB FLOW LINES. ONSITE RELEASE OF CONCRETE SLURRY IS PERMISSIBLE IF MINNESOTA POLLUTION CONTROL GUIDANCE FOR ROAD CONSTRUCTION CONCRETE SLURRY AND THE REQUIREMENTS OF THE SPECIAL PROVISIONS ARE FOLLOWED.

EROSION CONTROL SUPERVISOR, INSPECTIONS AND MAINTENANCE NOTES

1. IN ACCORDANCE WITH SPEC. 2573.3 A1, THE CONTRACTOR SHALL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS. PROVIDE PROOF OF CERTIFICATION (UNIVERSITY OF MINNESOTA - CONSTRUCTION SITE MANAGEMENT) AT THE PRECONSTRUCTION MEETING. WORK SHALL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED. THE EROSION CONTROL SUPERVISOR IS INCIDENTAL.

2. THE EROSION CONTROL SUPERVISOR SHALL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.

3. THE EROSION CONTROL SUPERVISOR IS RESPONSIBLE FOR COMPLYING WITH ALL THE INSPECTION AND MAINTENANCE REQUIREMENTS STATED IN THE NPDES PERMIT. INSPECTIONS OF THE ENTIRE CONSTRUCTION SITE SHALL OCCUR A MINIMUM OF ONCE EVERY SEVEN DAYS (3 DAYS FOR PROHIBITED WATERS) DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS (IN NO CASE SHALL THE TIME BETWEEN INSPECTIONS EXCEED 7 DAYS; 3 DAYS FOR PROHIBITED WATERS). RAINFALL AMOUNTS SHALL BE OBTAINED USING A PROPERLY MAINTAINED RAIN GAUGE ONSITE OR BY A WEATHER STATION THAT IS WITHIN ONE MILE. THE EROSION CONTROL SUPERVISOR SHALL THOROUGHLY INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS OF EACH BMP.

4. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION SHALL BE RECORDED IN WRITING WITHIN 24 HOURS AND THESE RECORDS SHALL BE RETAINED WITH THE SWPPP. INSPECTION REPORTS SHALL BE SUBMITTED TO THE PROJECT ENGINEER AND SWPPP DESIGNER IN A FORMAT APPROVED BY THE ENGINEER. INSPECTION RECORDS SHALL INCLUDE:
   - A. DATE AND TIME OF INSPECTIONS;
   - B. NAME OF PERSONS CONDUCTING INSPECTIONS;
   - C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
   - D. CORRECTIVE ACTIONS TAKEN INCLUDING DATES, TIMES, AND THE PARTY COMPLETING MAINTENANCE ACTIVITIES;
   - E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS;
   - F. LOCATION, DESCRIPTION AND PHOTO OF ANY DISCHARGES OFF THE PROJECT SITE.
   - G. DOCUMENTS AND CHANGES MADE TO THE SWPPP.

5. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS (INSPECTIONS MAY BE REDUCED UNDER CERTAIN CONDITIONS AS COVER IS ESTABLISHED AND CONDITIONS CHANGE AS DESCRIBED IN THE NPDES PERMIT):
   - A. SILT FENCE SHALL BE REPAIRED, REPLACED OR SUPPLEMENTED WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE SILT FENCE.
   - B. INLET PROTECTION DEVICES SHOULD BE REPAIRED WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
   - C. TEMPORARY SEDIMENT BASINS, IF REQUIRED, SHALL HAVE THE SEDIMENT REMOVED ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME.
   - D. REMOVE ANY SEDIMENT DEPOSITED IN SURFACE WATERS. SEDIMENT SHALL BE REMOVED AND ANY AREA DISTURBED BY THE REMOVAL RESTABILIZED WITHIN 7 DAYS OF DISCOVERY. A SITE MANAGEMENT PLAN IS REQUIRED FOR WORK IN ANY SURFACE WATER AND APPROPRIATE AUTHORITIES SHALL BE CONTACTED PRIOR TO COMMENCING WORK.
   - E. TRACKED SEDIMENT SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OF TRACKING ONTO PAVED SURFACES.
   - F. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY (UNLESS NOTED OTHERWISE ABOVE).
   - G. REINSTALL AS QUICKLY AS POSSIBLE ANY BMP REMOVED TO ACCOMMODATE SHORT TERM ACTIVITIES.
   - H. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MPCA IN ACCORDANCE WITH THE NPDES PERMIT. SEDIMENT REMOVAL AND MAINTENANCE OF BMPS IS INCIDENTAL.

6. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS A TEMPORARY SEDIMENT BASIN OR SEDIMENT TRAP TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.

NO	DATE	BY	CKD	APPR	REVISION

...\FinalPlan\12330_swp02.dgn

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.

Print Name: ZACHARY J. THELEN

Date 6/19/20 License # 57773

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY S. MARTINS
DESIGNED BY Z. THELEN
CHECKED BY J. NIELSEN
COMM. NO. 1912330

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ANOKA COUNTY

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 41 OF 76

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STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (SHEET 3 OF 3)

STABILIZATION AND SEDIMENT CONTROL NOTES

1. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE PLACED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ONSITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES AND SHALL BE MAINTAINED UNTIL THE POTENTIAL FOR EROSION HAS BEEN ELIMINATED. IF SEDIMENT CONTROLS ARE OVERLOADED (BASED ON FREQUENT FAILURE OR EXCESSIVE MAINTENANCE), ADDITIONAL UPGRADIENT OR REDUNDANT BMPS SHALL BE PLACED.

2. SEDIMENT CONTROL DEVICES SHALL BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. SEDIMENT CONTROL DEVICES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
   A. PERIMETER CONTROL SHALL BE LOCATED ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. THE BMP SHALL BE J-HOOKED AT A MAXIMUM OF 100 FOOT INTERVALS AND EACH SECTION SHALL CONTAIN NO MORE THAN 1/4 ACRE OF DRAINAGE AREA.
   B. SEDIMENT DAMAGE FROM STOCKPILES SHALL BE MINIMIZED BY PLACING A ROW OF SUPER DUTY SILT FENCE A MINIMUM 5 FEET FROM THE TOE. IF THERE IS NOT ADEQUATE PROJECT AREA TO PLACE THE SILT FENCE MORE THAN 5 FEET FROM THE TOE OF THE SLOPE, THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE TO THE PROJECT ENGINEER FOR APPROVAL.
   C. DITCH CHECKS (IF REQUIRED) SHALL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.
      1. TEMPORARY DITCH CHECKS (IF REQUIRED) SHALL CONSIST OF USING ROCK DITCH CHECKS, SEDIMENT CONTROL LOGS AND ROCK WEEPERS IN FRONT OF CULVERT INLETS. IN LIEU OF REMOVING TEMPORARY DITCH CHECKS, THE ROCK MAY BE PUSHED INTO THE GROUND.
      2. FILTER LOGS (IF REQUIRED) SHALL BE PLACED DURING PERMANENT TURF ESTABLISHMENT AT THE INTERVALS IDENTIFIED IN THE PLAN.
   D. FLOTATION SILT CURTAIN MAY BE USED AS PERIMETER CONTROL BUT ONLY FOR WORK ON THE SHORELINE OR BELOW THE WATERLINE. IMMEDIATELY AFTER THE CONSTRUCTION IN THE AREA IS COMPLETE, AN UPLAND BMP SHALL BE PLACED IF EXPOSED SOILS CONTINUE TO DRAIN TO THE SURFACE WATER.
   E. TEMPORARY SEDIMENT BASINS ARE REQUIRED WHERE TEN OR MORE ACRES DRAIN TO A COMMON LOCATION (FIVE IF DRAINING TO A SPECIAL OR IMPAIRED WATER).
      1. BASIN VOLUME SHALL BE A MINIMUM OF 1,800 CUBIC FEET PER ACRE OF DRAINAGE AREA TO THE BASIN (3,600 CUBIC FEET PER ACRE IF NO CALCULATIONS ARE PERFORMED)
      2. OUTLET SHALL ALLOW COMPLETE DRAWDOWN FOR MAINTENANCE AND A STABILIZED OVERFLOW. THE OUTLET SHALL WITHDRAW WATER FROM THE SURFACE EXCEPT DURING FROZEN CONDITIONS.
      3. IF A TEMPORARY BASIN OF THE REQUIRED SIZE IS INFEASIBLE THE REASONS SHALL BE DOCUMENTED IN THE SWPPP AND ALTERNATE BMPS SHALL BE PLACED.

3. PRESERVE A NATURAL BUFFER OF AT LEAST 50 FEET (100 FEET IF WITHIN 1 MILE OF AND DRAINS TO A SPECIAL OR IMPAIRED WATER) BETWEEN DISTURBED AREAS AND FLOWS TO A SURFACE WATER (NOT REQUIRED AT DITCHES OR STORMWATER CONVEYANCE CHANNELS, STORM DRAIN INLETS OR SEDIMENT BASINS). IF A BUFFER IS INFEASIBLE, PROVIDE AS LARGE A BUFFER AS POSSIBLE AND REDUNDANT SEDIMENT CONTROLS.

4. STORM SEWER INLETS SHALL BE PROTECTED AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. PROVIDE INLET PROTECTION DEVICES WITH EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS (THIS BMP SHALL BE ACCEPTED ONLY FOR SHORT INTERVALS DURING MILLING OR PAVING OPERATIONS). INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES SHALL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. ALL STORM SEWER INLET PROTECTION DEVICES SHALL BE KEPT IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES IT SHALL BE REPLACED WITH A SUITABLE ALTERNATIVE AT NO COST TO THE OWNER.

STABILIZATION AND SEDIMENT CONTROL NOTES (CONT.)

5. PAVEMENT SURFACES SHALL BE SWEPT WITHIN 24 HOURS OF DISCOVERY OF SEDIMENT OR TRACKING ONTO PAVEMENT THAT DRAINS TO CURB, INLETS, DITCHES OR PONDS. PAVEMENT SHALL BE LIGHTLY WETTED PRIOR TO SWEEPING. THIS WORK IS INCIDENTAL.

6. OUTLETS INTO SURFACE WATERS SHALL BE STABILIZED WITH ENERGY DISSIPATION WITHIN 24 HOURS OF BEING CONSTRUCTED.

7. DITCHES AND EXPOSED SOILS SHALL BE KEPT IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES AND BLANKETS.

8. INITIATE STABILIZATION OF ALL EXPOSED SOIL AND STOCKPILE AREAS IMMEDIATELY AFTER CONSTRUCTION ACTIVITY ON THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY OR PERMANENT STABILIZATION SHALL BE COMPLETED WITHIN NO MORE THAN 7 DAYS. ALL EXPOSED SOIL WITHIN 200 LINEAL FEET OF AND DRAINING TO A PUBLIC WATER WITH "WORK IN WATER RESTRICTIONS" AND DURING SPECIFIED FISH SPAWNING TIME FRAMES, SHALL BE STABILIZED WITHIN 24 HOURS. IN MANY INSTANCES, THIS SHALL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING ROUGH GRADING. RAPID STABILIZATION METHOD 3 SHALL BE USED TO PROVIDE TEMPORARY COVER IN THESE AREAS AS APPROPRIATE. SUBSTITUTE SEED MIXTURE 21-112 OR 21-111 FOR THE SPECIFIED SEED MIXTURE AS APPROPRIATE FOR THE SEASON. SEE NPDES PERMIT FOR EXCEPTIONS.

9. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE CONSTRUCTION SITE, SHALL BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE OR POINT OF DISCHARGE TO ANY SURFACE WATER. STABILIZATION SHALL OCCUR WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER, EXISTING GUTTER, STORM SEWER INLET, DRAINAGE DITCH, OR OTHER STORMWATER CONVEYANCE SYSTEM ACCORDING TO SPEC 1717.2. RAPID STABILIZATION METHOD 4 SHALL BE USED TO STABILIZE THESE AREAS (SUBSTITUTE SEED MIXTURE 21-112 OR 21-111 FOR THE SPECIFIED SEED MIXTURE AS APPROPRIATE FOR THE SEASON). THE REMAINDER OF THE DITCH SHALL BE STABILIZED WITHIN 7 DAYS OF CONNECTING TO THE SURFACE WATER. PERMANENT EROSION CONTROL BLANKET OR RAPID STABILIZATION METHOD 4 (SUBSTITUTE SEED MIXTURE 21-112 OR 21-111 FOR THE SPECIFIED SEED MIXTURE AS APPROPRIATE FOR THE SEASON) SHALL BE USED TO STABILIZE THESE AREAS AS INDICATED IN THE PLANS. IN LOCATIONS WHERE THE DITCH SLOPE IS LESS THAN 2 PERCENT, DISC ANCHORED MULCH AND HYDRAULIC SOIL STABILIZERS MAY BE USED FOR DITCH BOTTOM STABILIZATION AS INDICATED IN THE PLANS OR WITH THE APPROVAL OF THE ENGINEER.

10. ALL EXPOSED SOIL AREAS SHALL BE STABILIZED PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED SHALL BE SNOW MULCHED, SEEDED, OR BLANKETED WITHIN THE TIME FRAMES LISTED IN THE NPDES PERMIT.

11. ALL TOPSOIL BERMS SHALL BE STABILIZED AS FOLLOWS:
    A. BETWEEN APRIL 1 - AUGUST 31, SEED WITH SEED MIXTURE 21-111
    B. BETWEEN SEPTEMBER 1 AND MARCH 31, SEED WITH SEED MIXTURE 21-112 AND TOP WITH RAPID STABILIZATION 2.

12. TILLING FOR BEDS OR TREE HOLES SHALL BE PLANTED AND MULCHED WITH WOODCHIP WITHIN 7 DAYS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED. FILTER LOGS SHALL BE PLACED, AS NEEDED, TO TRAP SEDIMENT ON THE LOWER EDGE OF BEDS OR TREE HOLES. FILTER LOGS SHALL BE LEFT TO PHOTO DEGRADE.

NO	DATE	BY	CKD	APPR	REVISION
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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.

Print Name: ZACHARY J. THELEN

Date 6/19/20 License # 57773

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY S. MARTINS
DESIGNED BY Z. THELEN
CHECKED BY J. NIELSEN
COMM. NO. 1912330

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ANOKA COUNTY
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 42 OF 76

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NOTES:

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(4) REMOVE

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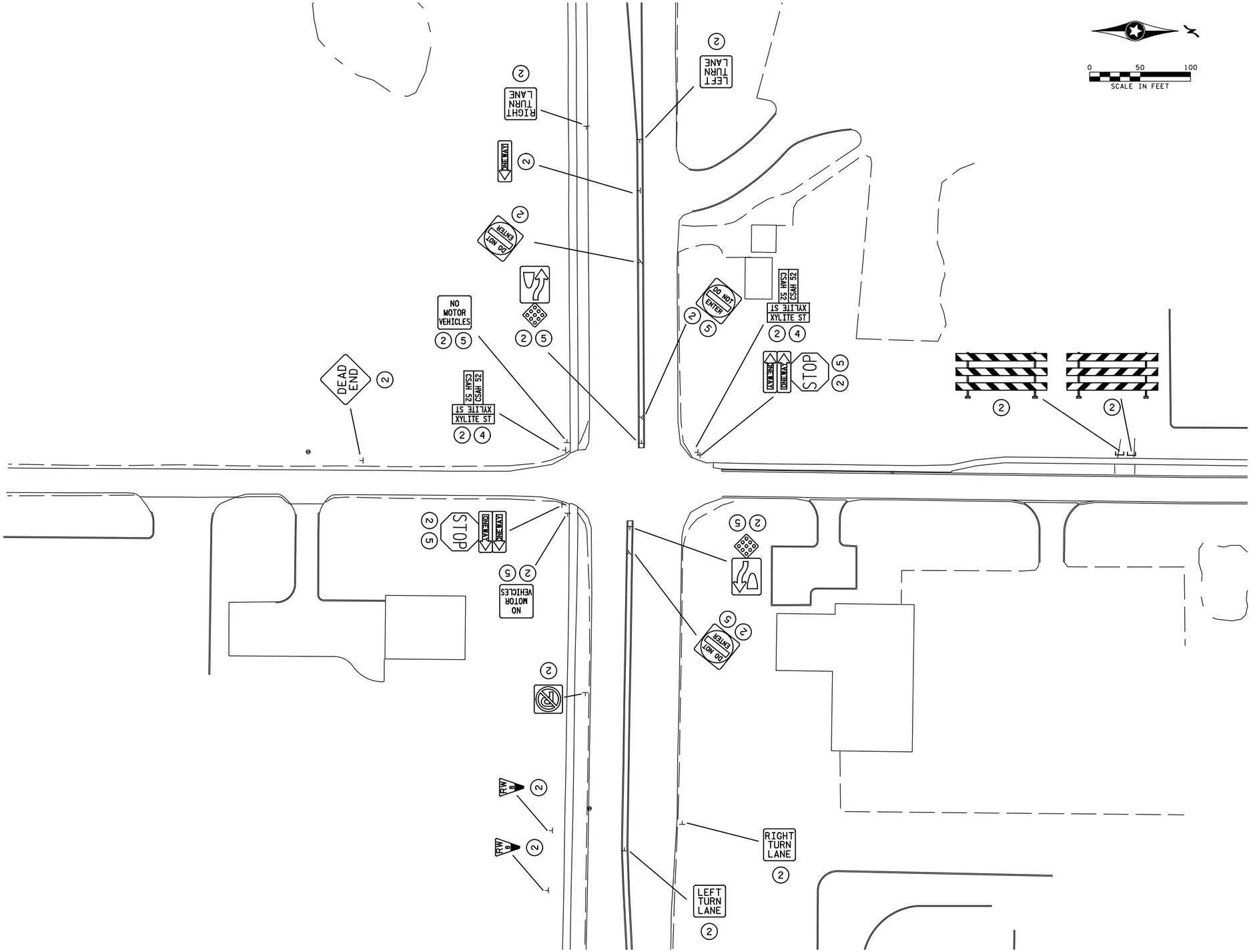

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Print Name: NATHAN A. POOLE

Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY K. OLM
DESIGNED BY K. OLM
CHECKED BY N. POOLE
COMM. NO. 1912330

SRF Consulting Group, Inc.

ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY

SIGNING AND PAVEMENT MARKING PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

SIGNING REMOVAL PLANS

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PERMANENT PAVEMENT MARKING PLAN
NOTES & GUIDELINES

GENERAL INFORMATION:

THE FIELD ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FORSTRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

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.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARENCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE HSALL 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 CLOSLY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

MULTI COMPONENT (MULTI COMP):

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. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL MULTI COMP PAVEMENT MARKINS.

THE MULTI COMP MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI COMP LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

A MULTI COMP LINE SHALL BE APPLIED WITH A MINIMUM THICKNESS OF 20 MILS (WET) AND 4" WIDE. GLASS BEADS SHALL BE APPLIED AT A MINIMUM RATE OF 25LBS POUNDS PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKINGS SPECIFICATIONS.

SYMBOLS & MATERIALS LEGEND

BROKEN LINE-50' CYCLE (10' LINE, 40' GAP)

DOTTED LINE-15' CYCLE (3' LINE, 12' GAP), UNLESS SHOWN OTHER WISE IN THE PLAN

CROSSWALK BLOCK

PAVEMENT MESSAGE (LEFT ARROW)

STRIPING KEY

CIRCLE-MULTI COMP (---)

OCTAGON-PREF THERMO (---)

REMOVEABLE PREFORM TAPE (---)

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

G=GROUND IN W=WET REFLECTIVE
C=CONTRAST E=ENHANCED SKID RESISTANCE

EXAMPLE: (4SW / GCW) = 4" SOLID LINE WHITE PREF THERMO GROUND IN, CONTRAST, WET REFLECTIVE

	4" SOLID LINE MULTI COMP	4" DOUBLE SOLID LINE MULTI COMP	24" SOLID LINE PREFORM THERMO	PAVEMENT MESSAGE PREFORM THERMO	CROSSWALK PREFORM THERMO
	LIN FT WHITE	LIN FT YELLOW	LIN FT WHITE	SQ FT	SQ FT
SAP 002-652-008			110	124	558
SAP 106-020-035	275	1225	140	92	345
PROJECT TOTALS	275	1225	250	216	903

NO	DATE	BY	CKD	APPR	REVISION
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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.
Print Name: NATHAN A. POOLE
Date 6/19/20 License # 56071

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DRAWN BY K. OLM
DESIGNED BY K. OLM
CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY
SIGNING AND PAVEMENT MARKING PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
PAVEMENT MARKING DETAILS

SHEET 44 OF 76

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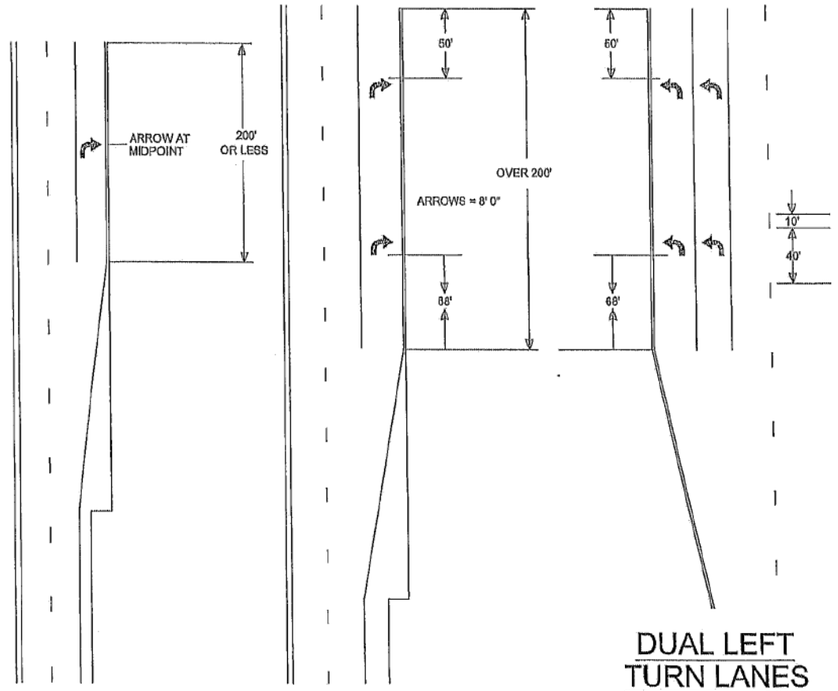
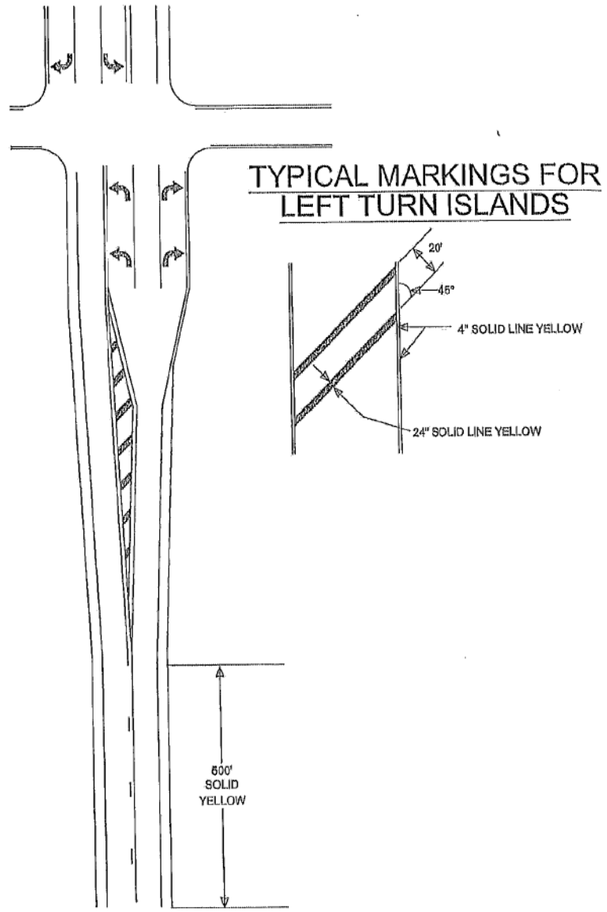
TYPICAL MESSAGE PLACEMENT FOR TURN LANES



DUAL LEFT TURN LANES

TYPICAL MARKINGS FOR LEFT TURN ISLANDS



4 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-014-011\Base\TRAFFIC\Signing and Striping Details.dwg

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.
PRINT NAME: JOSEPH J. MACPHERSON, P.E.
SIGNATURE:
DATE: 12-27-19 LICENSE NO. 46732

DRAWN BY FL DATE 10/21/19
DESIGN BY FL DATE 10/21/19
CHECKED BY JP DATE 10/25/19

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-614-041
SAP 106-020-036
CP 18-10

SIGNING & STRIPING DETAILS

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STATE AID PROJECT NO.
002-652-007,
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ANOKA COUNTY
SIGNING AND PAVEMENT MARKING PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
PAVEMENT MARKING DETAILS

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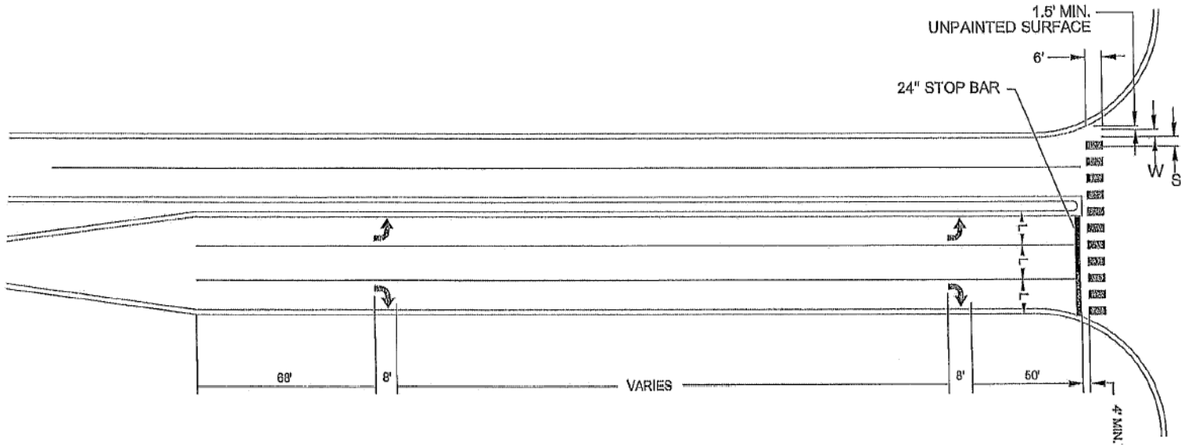
MARKINGS FOR PEDESTRIAN CROSSWALKS



(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREAS	(S) WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

NOTES: CROSSWALKS:

1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.

2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERFIED DURING CONSTRUCTION BY THE FIELD ENGR.

3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.

4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.

5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

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PRINT NAME: JOSEPH J. MACPHERSON, P.E.
SIGNATURE:
DATE: 10-22-19 LICENSE NO. 46732

DRAWN BY FL DATE 10/21/19
DESIGN BY FL DATE 10/21/19
CHECKED BY JJM DATE 10/21/19

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-614-041
SAP 106-020-036
CP 18-10

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Sheet 144 of 200 Sheets

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SHEET 46 OF 76

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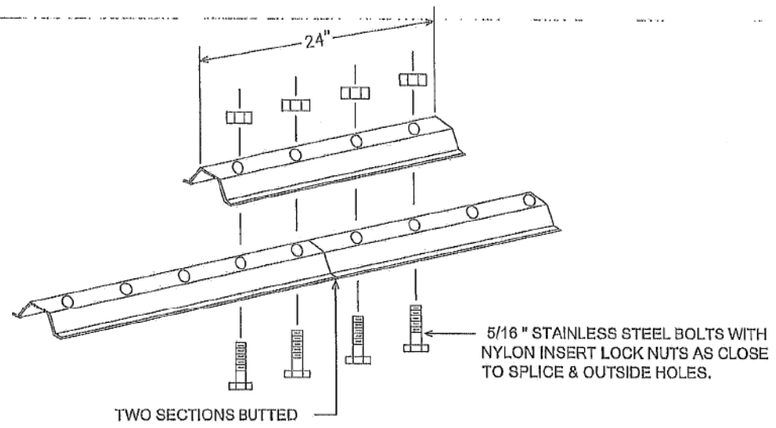
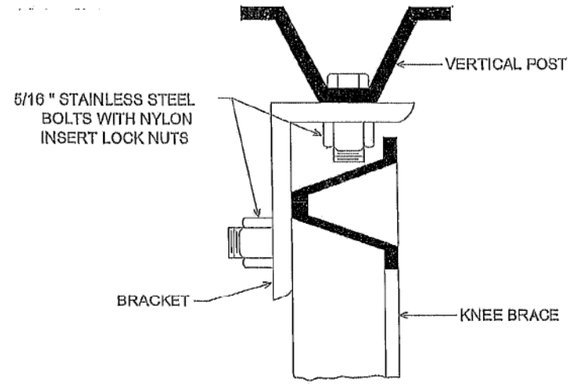
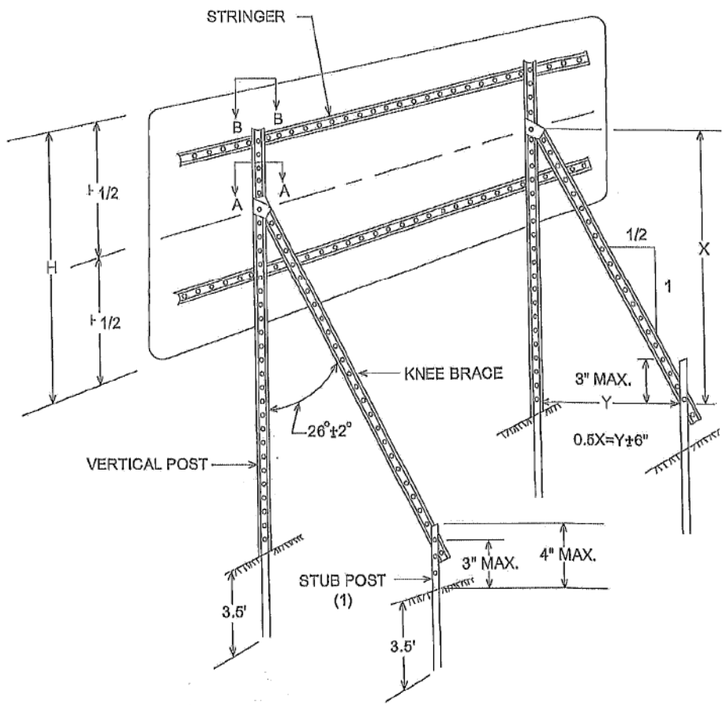


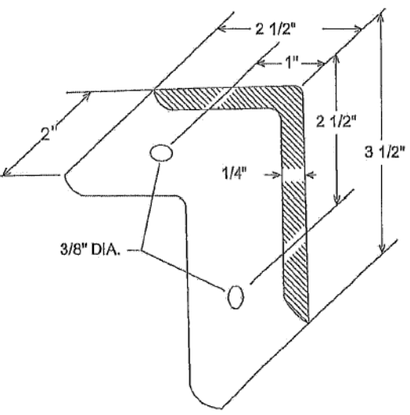
LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

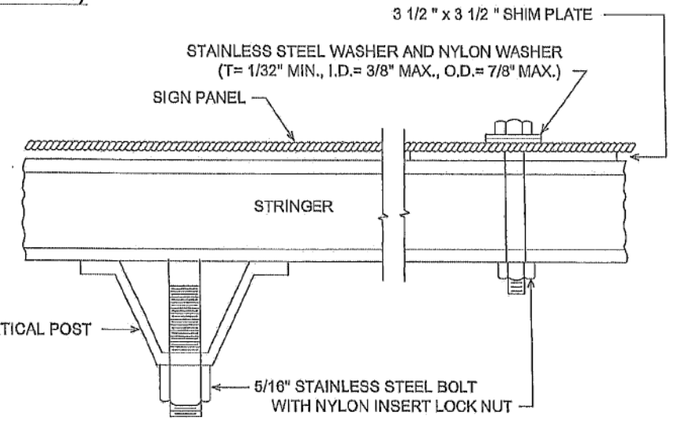


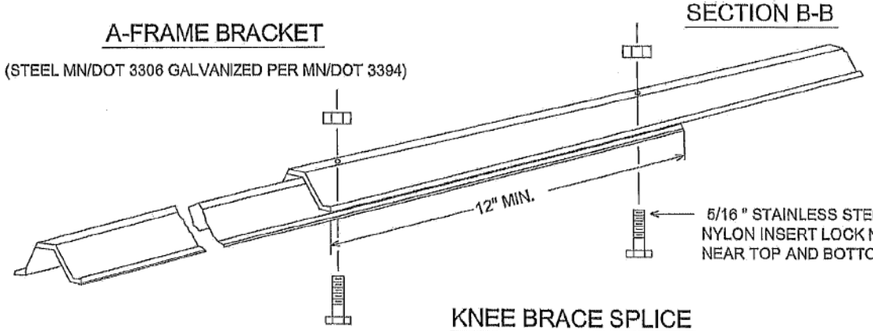
TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



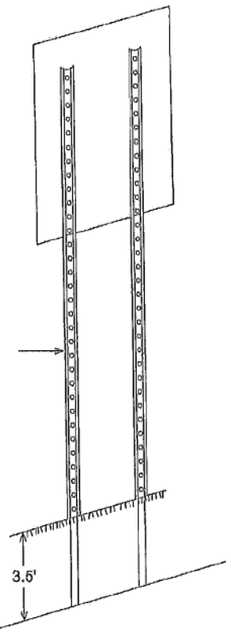
A-FRAME BRACKET

(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)

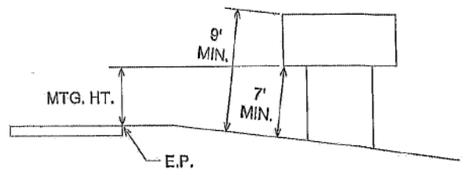




KNEE BRACE SPLICE



TYPICAL INSTALLATION 36" AND LARGER
TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

TYPE C & D SIGN STRUCTURAL DETAILS

1 OF 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-614-041\Base\TRAFFIC\Signing and Striping Details.dwg

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.
PRINT NAME: JOSEPH J. MACPHERSON, P.E.
SIGNATURE:
DATE: 12-27-19 LICENSE NO. 46732

DRAWN BY FL DATE 10/21/19
DESIGN BY FL DATE 10/21/19
CHECKED BY JR DATE 10/25/19

ANOKA COUNTY HIGHWAY DEPT.

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SAP 106-020-036
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Sheet 140 of 200 Sheets

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STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY K. OLM
DESIGNED BY K. OLM
CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY
SIGNING AND PAVEMENT MARKING PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
SIGNING DETAILS

SHEET 47 OF 76

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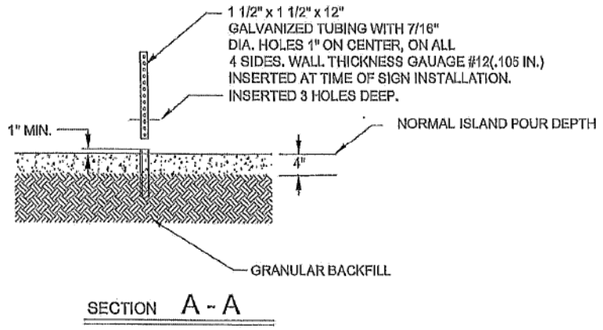
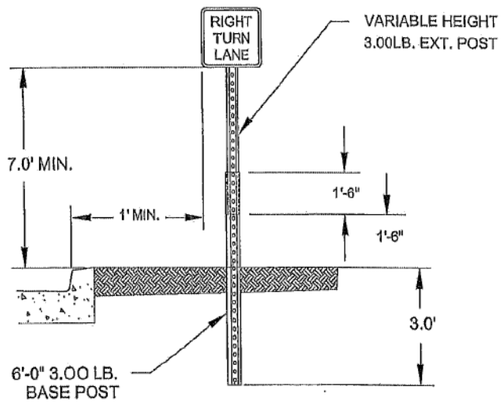
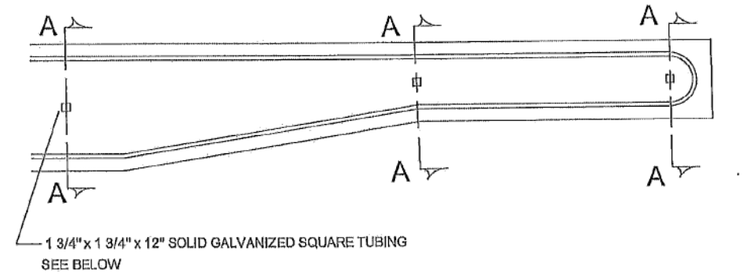
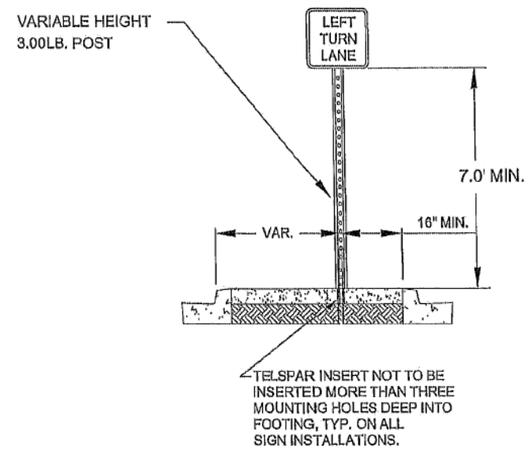


GROUND POST MOUNT SIGN
INSTALLATION TYPICAL

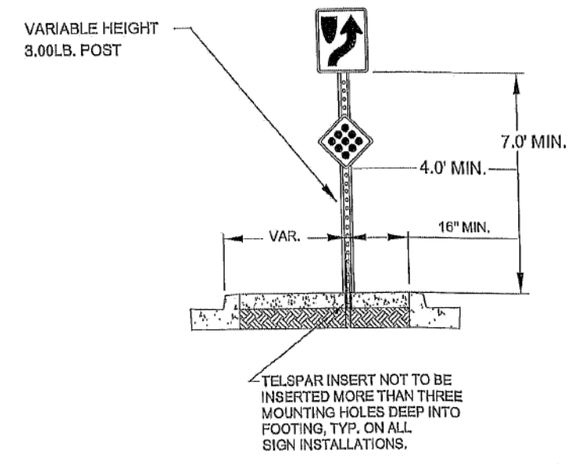




ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
SIGN INSTALLATION TYPICAL
KEEP RIGHT/CLUSTER



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PRINT NAME: JOSEPH J. MACPHERSON, P.E.
SIGNATURE:
DATE: 12-27-19 LICENSE NO. 48732

DRAWN BY FL DATE 10/21/19
DESIGN BY FL DATE 10/21/19
CHECKED BY JP DATE 10/25/19

ANOKA COUNTY
HIGHWAY DEPT.

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SAP 106-020-036
CP 18-10

SIGNING & STRIPING DETAILS

Sheet 141 of 200 Sheets

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STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY K. OLM
DESIGNED BY K. OLM
CHECKED BY N. POOLE
COMM. NO. 1912330

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CSAH 52 AT XYLITE STREET, 101ST AVE
SIGNING DETAILS

SHEET 48 OF 76

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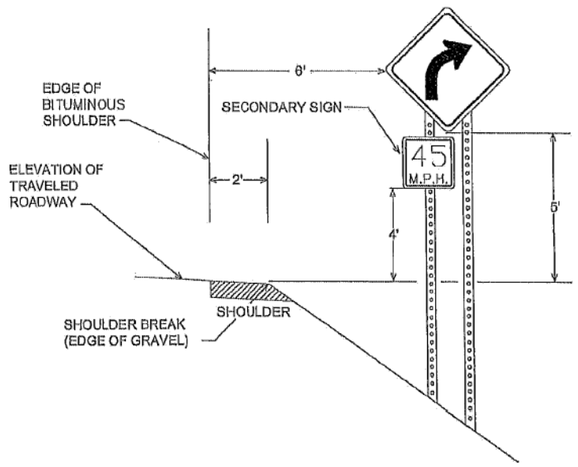
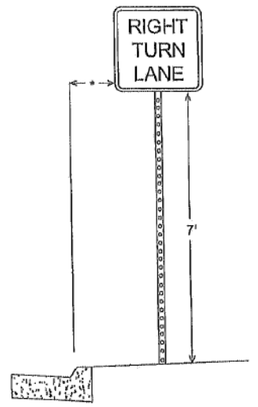
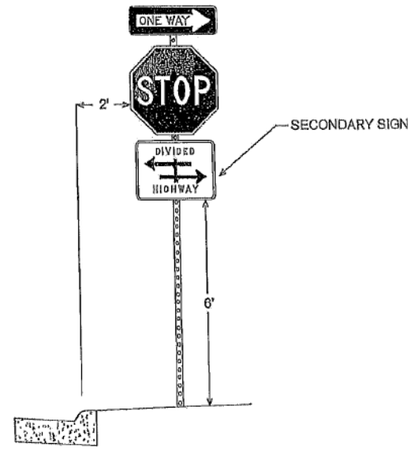
TYPICAL SIGN PLACEMENT
(RURAL)

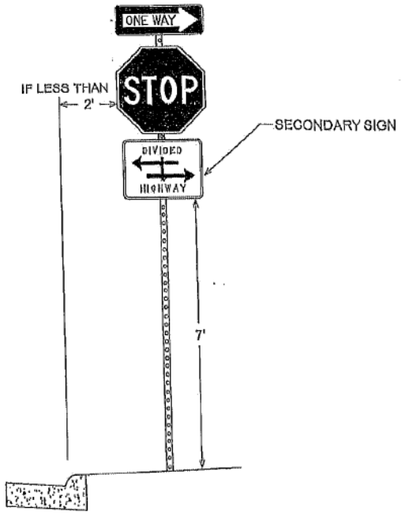


TYPICAL SIGN PLACEMENT
(URBAN)



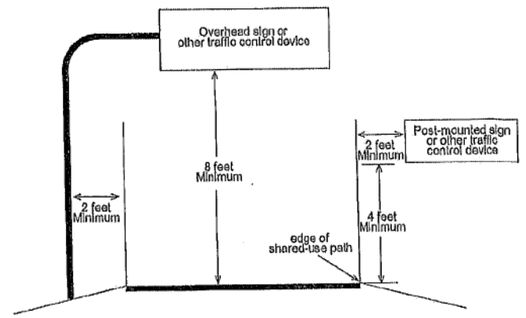
* 2' - NARROW BOULEVARD (< 6' WIDE)
6' - WIDE BOULEVARD





NOTES:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN A CLEAR DISTANCE OF 2' BETWEEN SIGNS AND BITUMINOUS TRAIL
- 7' SIGN CLEARANCE IF A CLEAR DISTANCE OF 2' BETWEEN SIGNS AND BITUMINOUS TRAIL CANNOT BE MAINTAINED



TYPICAL SIGN PLACEMENT
SHARED-USE PATH

3 OF 5

NO	DATE	BY	CKD	APPR	REVISION

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SIGNATURE:
DATE: 12.27.19 LICENSE NO. 46732

DRAWN BY FL DATE 10/21/19
DESIGN BY FL DATE 10/21/19
CHECKED BY JJM DATE 10/25/19

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HIGHWAY DEPT.

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SAP 106-020-036
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002-652-007,
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106-020-035
CITY PROJ NO.
19-09

DRAWN BY K. OLM
DESIGNED BY K. OLM
CHECKED BY N. POOLE
COMM. NO. 1912330

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CSAH 52 AT XYLITE STREET, 101ST AVE
SIGNING DETAILS

SHEET 49 OF 76

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M — SIGN PANELS TYPE C

	SIGN NO	SIGNS QTY		POSTS			MTG HT (1)	PANEL				CODE NO	PANEL LEGEND
				NO & TYPE	KNEE BRACES QTY	LEN		SIZE	AREA	TOTAL AREA			
		SAP 002-652-008	SAP 106-020-035							SAP 002-652-008	SAP 106-020-035		
						FEET	FEET	INCH	SQ FT	SQ FT	SQ FT		
	C-1		2	2-U		13	7	30 x 30	6.25		12.50	W3-3	SIGNAL AHEAD
	C-2	2		2-U		14	7	36 x 36	9.00	18.00		W3-3	SIGNAL AHEAD
(2)	C-3	2		1-U		14	7	36 x 36	9.00	18.00		R5-1	DO NOT ENTER
(2)	C-4	2		1-U		15	7	24 x 30	5.00	10.00		R4-7	KEEP RIGHT
								18 x 18	(3)			X4-2	TYPE 1 OBJECT MARKER
	C-5		2	2-U		15	7	54 x 48	18.00		36.00	R3-8AD	LEFT & THRU/RIGHT
									TOTAL	**46.00**	**48.50**		

NOTES:
(1) MOUNTING HEIGHT MINIMUM. SEE SHEET NO. 47 FOR TYPICAL MOUNTING.
(2) MOUNT IN CONCRETE. SEE SHEET NO. 48.
(3) SEE DELINEATORS & MARKERS TABULATION

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE
2. ADDITIONAL LENGTH REQUIRED FOR SPLICE.
3. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPC C SIGN PANELS.

N — DELINEATORS & MARKERS

CODE NO	QTY		LOCATION
	SAP 002-652-008	SAP 106-020-035	
X4-2	2		MOUNT ON C-4
TOTAL	**2**		

NO	DATE	BY	CKD	APPR	REVISION

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002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

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CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY
SIGNING AND PAVEMENT MARKING PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
SIGNING TABULATIONS

SHEET 50 OF 76

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GENERAL NOTE:

ALIGNMENT LINE NOT SHOWN FOR CLARITY

SIGNING NOTES:

(1) F & I

(2) INPLACE TO REMAIN

(3) INSTALL APPROXIMATELY 990' BACK FROM INTERSECTION

PAVEMENT MARKING NOTES:

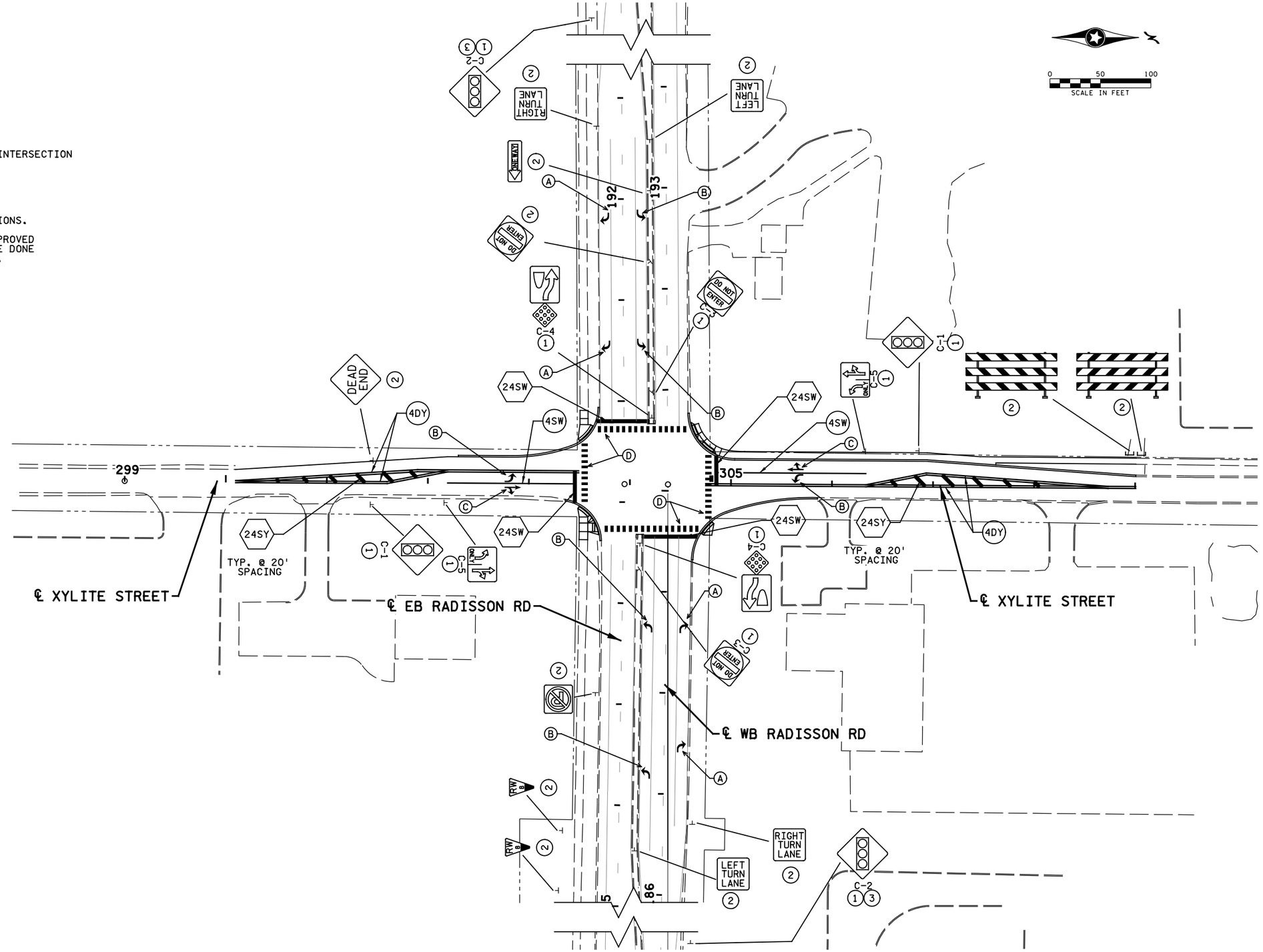
CONTRACTOR SHALL REMOVE ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED STOP BAR AND CROSSWALK LOCATIONS. PAVEMENT MARKING REMOVAL ON PERMANENT PAVEMENT SHALL BE DONE IN A MANNER APPROVED BY THE FIELD ENGINEER AND SHALL NOT BE DONE VIA GRINDING. THIS WORK IS INCIDENTAL.

(A) PAVEMENT MESSAGE - RIGHT ARROW [WHITE] PREFORM THERMOPLASTIC

(B) PAVEMENT MESSAGE - LEFT ARROW [WHITE] PREFORM THERMOPLASTIC

(C) PAVEMENT MESSAGE - THRU/RIGHT ARROW [WHITE] PREFORM THERMOPLASTIC

(D) CROSSWALK MARKING - 3' X 6' [WHITE] PREFORM THERMOPLASTIC



NO	DATE	BY	CKD	APPR	REVISION
...\FinalPlan\12330_stp01.dgn					

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.

Print Name: NATHAN A. POOLE

Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY K. OLM
DESIGNED BY K. OLM
CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY

SIGNING AND STRIPING PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

SHEET 51 OF 76

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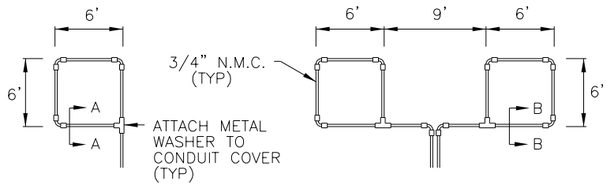
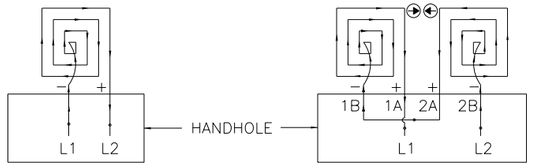


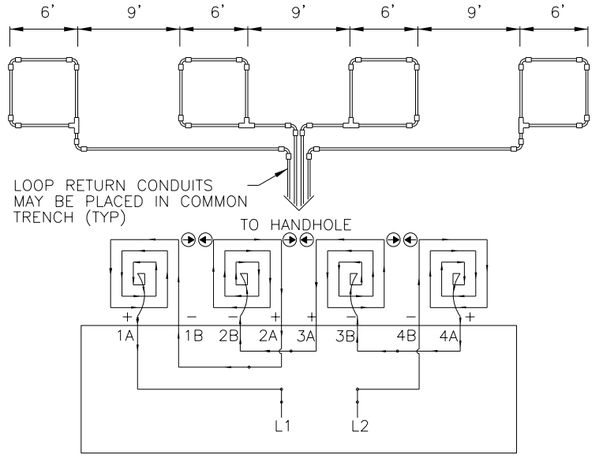


LOOP DETECTOR DETAIL 'A'
(LOOP PHASING FOR SINGLE CONNECTION)

LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

L1 TO 1A
1B TO 2A
2B TO L2

LOOP DETECTOR DETAIL 'B'
(LOOP PHASING FOR SERIES CONNECTION)

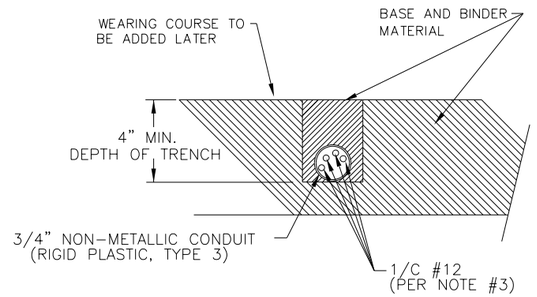


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

L1 TO 1A
1B TO 2A
2B TO 3A
3B TO 4A
4B TO L2

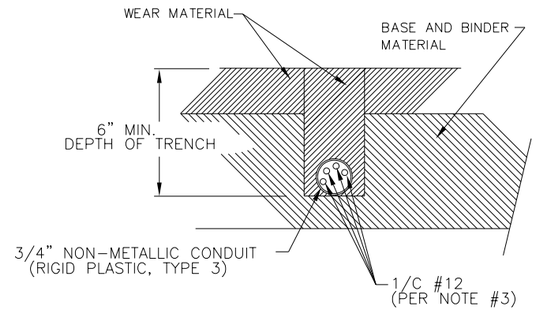
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

LOOP DETECTOR DETAIL 'C'
(LOOP PHASING FOR SERIES CONNECTION)



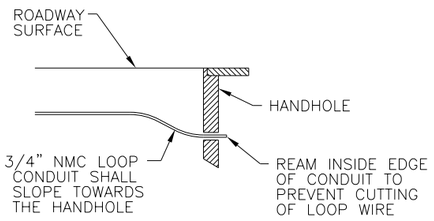
SECTION A-A

DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



SECTION B-B

DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's
SIGNAL BASE NO.
SIGNAL FACE NO.
LUMINAIRE NO.
CONTROLLER AND CABINET
CONTROLLER AND CABINET – IN PLACE
HANDHOLE
HANDHOLE – IN PLACE
RIGID STEEL CONDUIT (RSC)
RIGID STEEL CONDUIT (RSC) – IN PLACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE W/O BACKGROUND SHIELD
SIGNAL FACE – IN PLACE
PEDESTRIAN INDICATORS
PEDESTRIAN INDICATORS – IN PLACE
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE
PEDESTRIAN PUSH BUTTON STATION
TRAFFIC SIGNAL PEDESTAL
TRAFFIC SIGNAL PEDESTAL – INPLACE
TRAFFIC SIGNAL POLE AND MAST ARM
TRAFFIC SIGNAL POLE AND MAST ARM – IN PLACE
STREET LIGHT POLE AND LUMINAIRE
STREET LIGHT POLE AND LUMINAIRE – IN PLACE
MAST ARM AND LUMINAIRE
MAST ARM AND LUMINAIRE – INPLACE
WOOD POLE
WOOD POLE – IN PLACE
SOURCE OF POWER
RAILROAD SIGNAL – IN PLACE
RIGHT OF WAY LINE
CENTERLINE
EDGE OF ROADWAY
SHOULDERLINE
CURB LINE
STOP BAR
EMERGENCY VEHICLE PREEMPTION DETECTOR

ABBREVIATIONS

3-1(EG)	SIGNAL HEAD PHASE "3" – NO "1"
BR. GR.	BARE GROUND
CH. SW.	CHECK SWITCH
CLR	CLEAR
D2-1(EG)	DETECTOR PHASE "2" – NO. "1"
DWK	DON'T WALK
EQG	EQUIPMENT GROUND
EVP	EMERGENCY VEHICLE PRE-EMPTION
F&I	FURNISH AND INSTALL
FL	FLASH/FLASHING
G	GREEN
GLTA	GREEN LEFT TURN ARROW
GRN	GREEN
GR. R	GROUND ROD
GRTA	GREEN RIGHT TURN ARROW
GTHA	GREEN THRU ARROW
HH	HANDHOLE
HPS	HIGH PRESSURE SODIUM
JB	JUNCTION BOX
LUM	LUMINAIRE
NEU	NEUTRAL
NMC	NONMETALLIC CONDUIT
P2-1(EG)	PED INDICATION PHASE "2" – NO. "1"
PB	PUSH BUTTON
PB2-1(EG)	PUSH BUTTON PHASE "2" – NO. "1"
PEC	PHOTOELECTRIC CELL
PED	PEDESTRIAN
R	RED
R&S	REMOVE AND SALVAGE
RLTA	RED LEFT TURN ARROW
RRTA	RED RIGHT TURN ARROW
RSC	RIGID STEEL CONDUIT
SOP	SOURCE OF POWER
SPR	SPARE
ST. LHT	STREET LIGHT
STA	STATION
SW	SWITCH
SWD	SWITCHED
S&R	SALVAGE AND REINSTALL
TDW	TELEPHONE DROP WIRE
WLK	WALK
YEL	YELLOW
YLTA	YELLOW LEFT TURN ARROW
YRTA	YELLOW RIGHT TURN ARROW
YTHA	YELLOW THRU ARROW

CONDUCTOR COLOR CODE

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

TABULATION OF SIGNAL QUANTITIES

[O]

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATION		
				SAP 002-652-007	SAP 002-652-008	SAP 106-020-035
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM A	LS	1			1
2565	TRAFFIC CONTROL SIGNAL SYSTEM A	SYSTEM	1		.25	.75
2565	REVISE SIGNAL SYSTEM B	SYSTEM	1	1		
2565	TRAFFIC CONTROL INTERCONNECT	LS	1		1	

NO	DATE	BY	CKD	APPR	REVISION

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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.
Print Name: NATHAN A. POOLE
Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

SRF Consulting Group, Inc.
ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
LEGENDS, ABBREVIATIONS AND LOOP DETAILS

SHEET 52 OF 76

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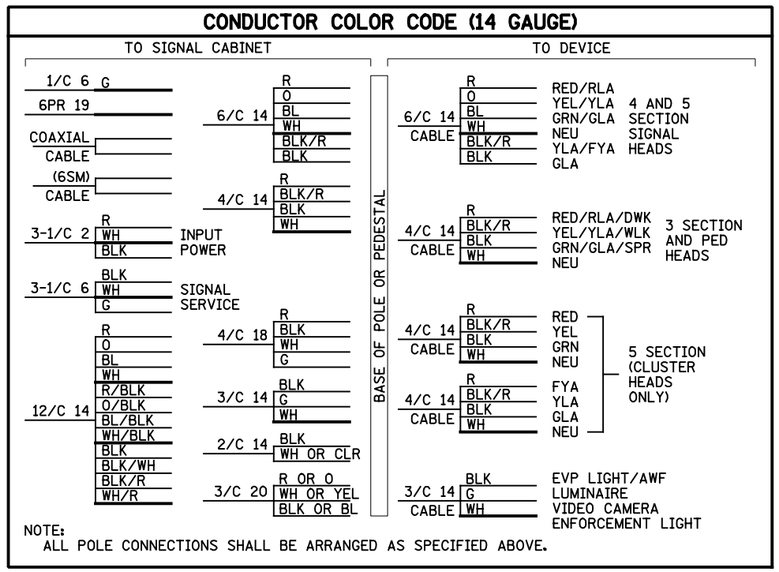
WIRE SPECIFICATION CHART

Type	Name	Specification Number
1/C 2	Power Conductors	3815.2B.1
1/C 6	Power Conductors	3815.2B.1
1/C 6 INS.GR.	Grounding Conductors	3815.2B.5
2/C 14	Loop Detector Lead-In Cable	3815.2C.4
3/C 14	Signal Control Cable	3815.2C.3
4/C 14	Signal Control Cable	3815.2C.3
6/C 14	Signal Control Cable	3815.2C.3
12/C 14	Signal Control Cable	3815.2C.3
6PR 19	Telephone Cables Outdoor	3815.2C.6.b
3/C 20	EVP Detector Cable	3815.2C.5

WIRE COLOR CODE KEY

R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

CONDUCTOR COLOR CODE (14 GAUGE)



NOTE:
ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

NOTES:

1. LEAVE 24 INCHES OF SLACK ON EACH CABLE IN EACH POLE BASE/JUNCTION BOX.
2. STRIP 5 IN TO 6 IN OF THE OUTER JACKET OF EACH SIGNAL CABLE IN POLE BASES.
3. STRIP 1/4 IN OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR IN EACH POLE BASE.
4. LABEL EACH CABLE WITH THE DEVICE DESIGNATION AS SHOWN ON THE WIRING DIAGRAM USING A PERMANENT BLACK MARKER.

NO	DATE	BY	CKD	APPR	REVISION

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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.

Print Name: NATHAN A. POOLE

Date 6/19/20 License # 56071

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002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL

SHEET 53 OF 76

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6/19/2020
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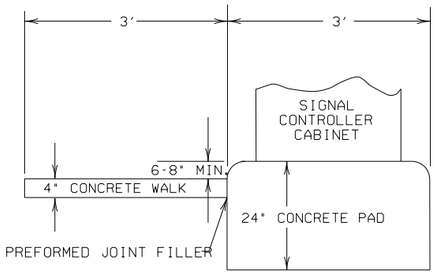
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

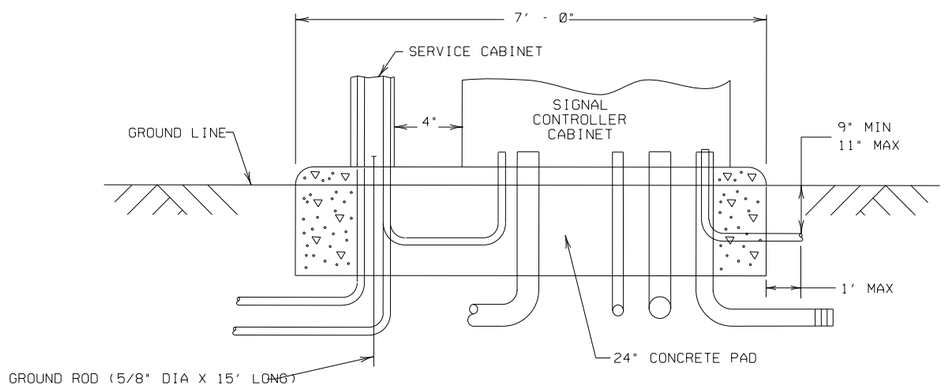
NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLER AND CABINET SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF THE NEW EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE CONCRETE AND SHALL BE LOCATED INSIDE OF THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3F52 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
9. CONTRACTOR SHALL PROVIDE MINIMUM 4-INCH CLEARANCE BETWEEN CONTROLLER AND SERVICE CABINETS ON THE EQUIPMENT PAD FOUNDATION AS SHOWN.

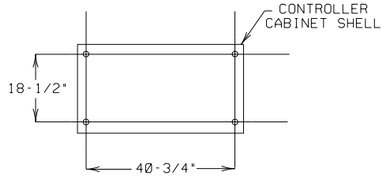
SIDE VIEW



FRONT VIEW

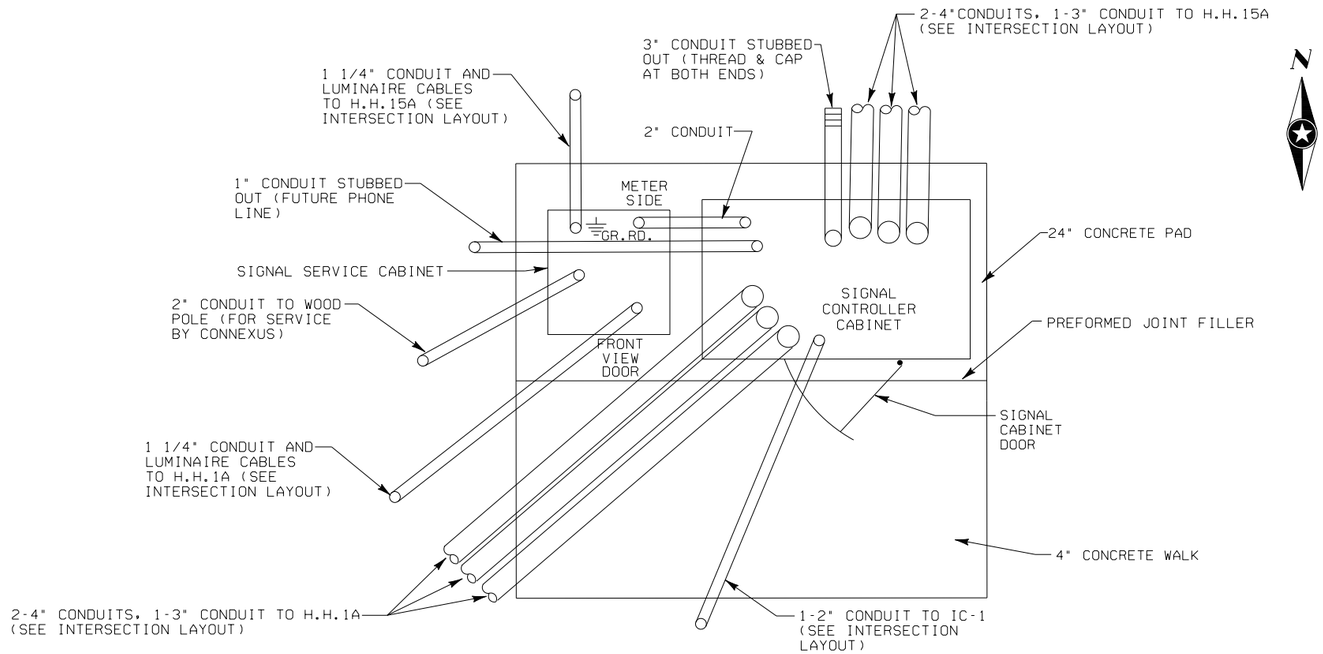


CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN



PLAN VIEW

LOCATION



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Print Name: NATHAN A. POOLE

Date 6/19/20 License # 56071

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CITY PROJ NO.
19-09

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CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY

TRAFFIC SIGNAL PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

EQUIPMENT PAD FOUNDATION (SYSTEM "A")

RADISSON RD (CSAH 52) AT XYLITE ST

SHEET 54 OF 76

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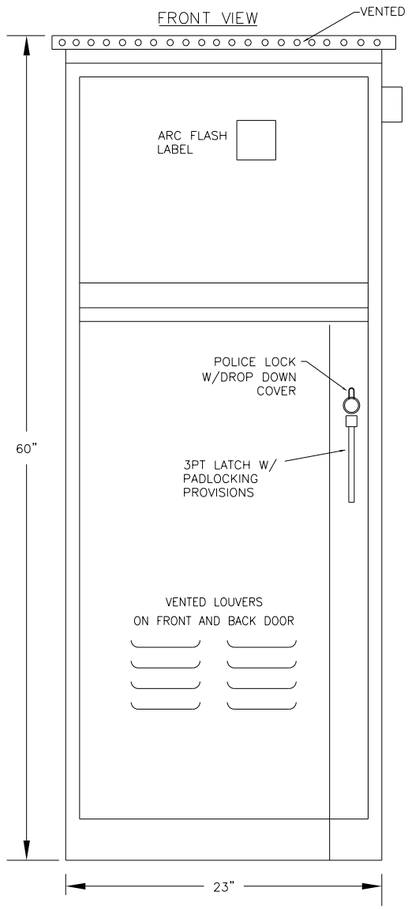
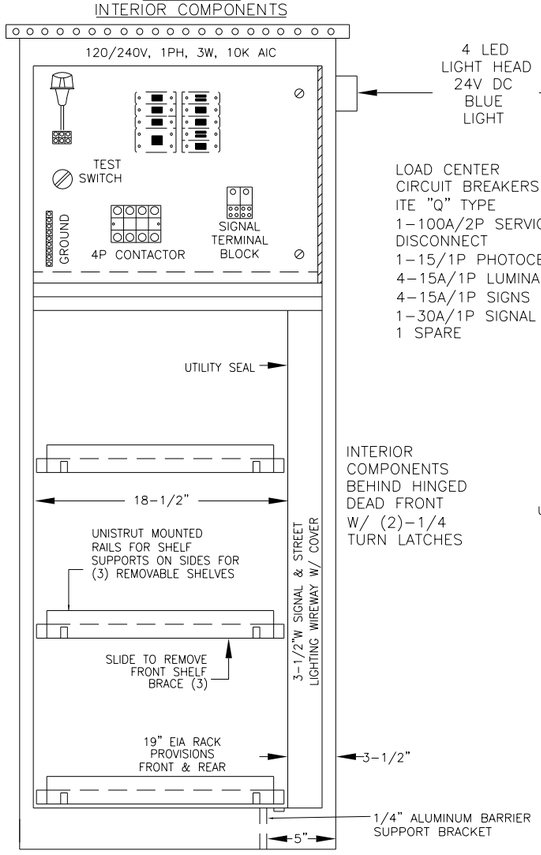
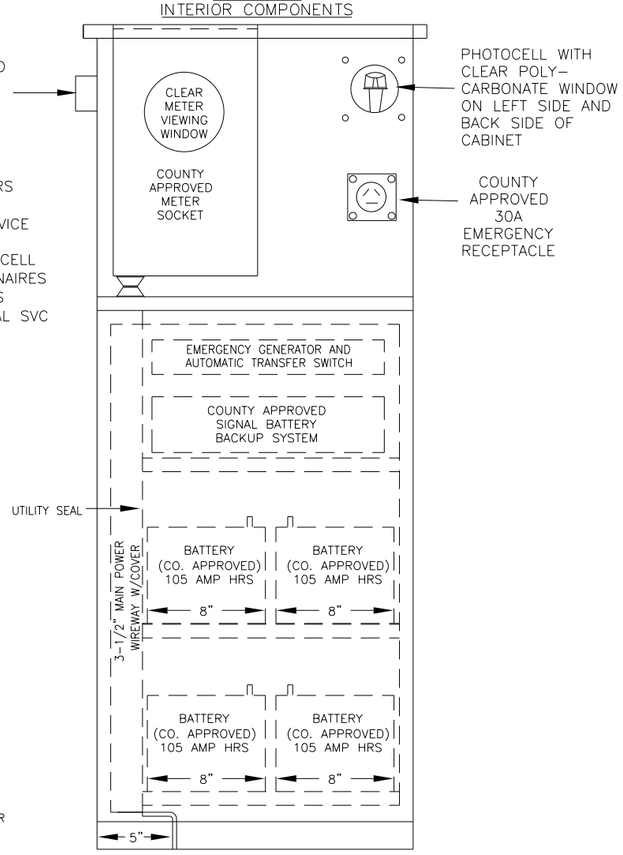


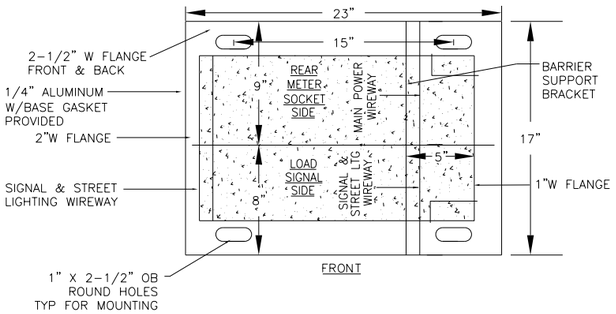


4 LED LIGHT HEAD 24V DC BLUE LIGHT

LOAD CENTER CIRCUIT BREAKERS ITE "Q" TYPE
1-100A/2P SERVICE DISCONNECT
1-15/1P PHOTOCELL
4-15A/1P LUMINAIRES
4-15A/1P SIGNS
1-30A/1P SIGNAL SVC
1 SPARE

INTERIOR COMPONENTS BEHIND HINGED DEAD FRONT W/ (2)-1/4 TURN LATCHES

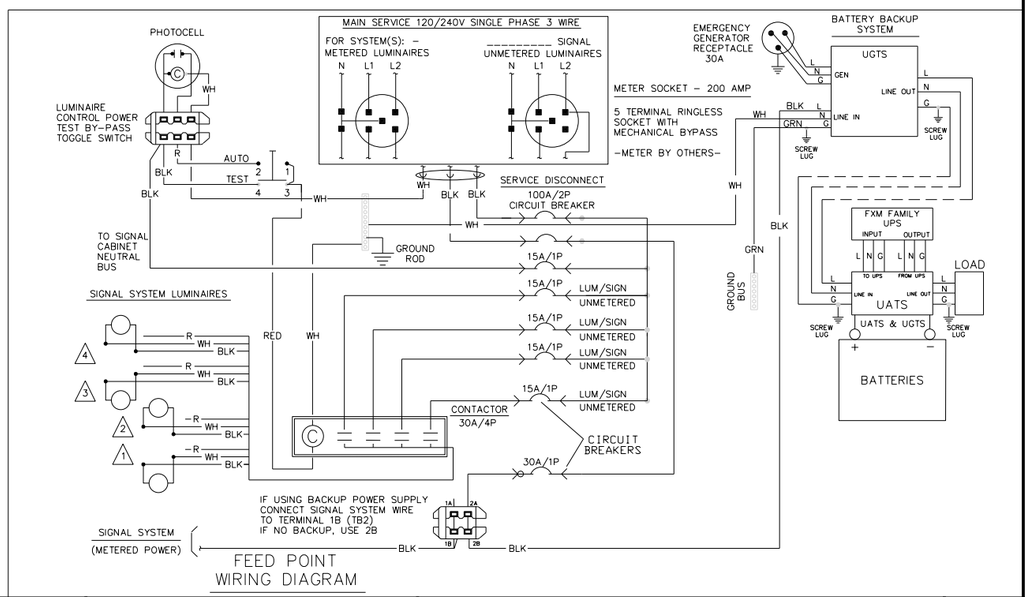




CABINET CONSTRUCTION

-NEMA 3R
-1/8" ALUMINUM 5052-H32
-ANODIZED 30 MINUTE CLEAR
-NEOPRENE GASKETED DOORS
-NON-CORRODING HARDWARE
-ETL LISTED IN ACCORDANCE W/UL508A

SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES REGARDING SEPARATE PAY ITEM FOR FURNISHING & INSTALLING NEW BATTERY BACK-UP SIGNAL SERVICE CABINET.



FEED POINT WIRING DIAGRAM

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
SERVICE CABINET DETAILS (SYSTEM "A")
RADISSON RD (CSAH 52) AT XYLITE ST

SHEET 55 OF 76

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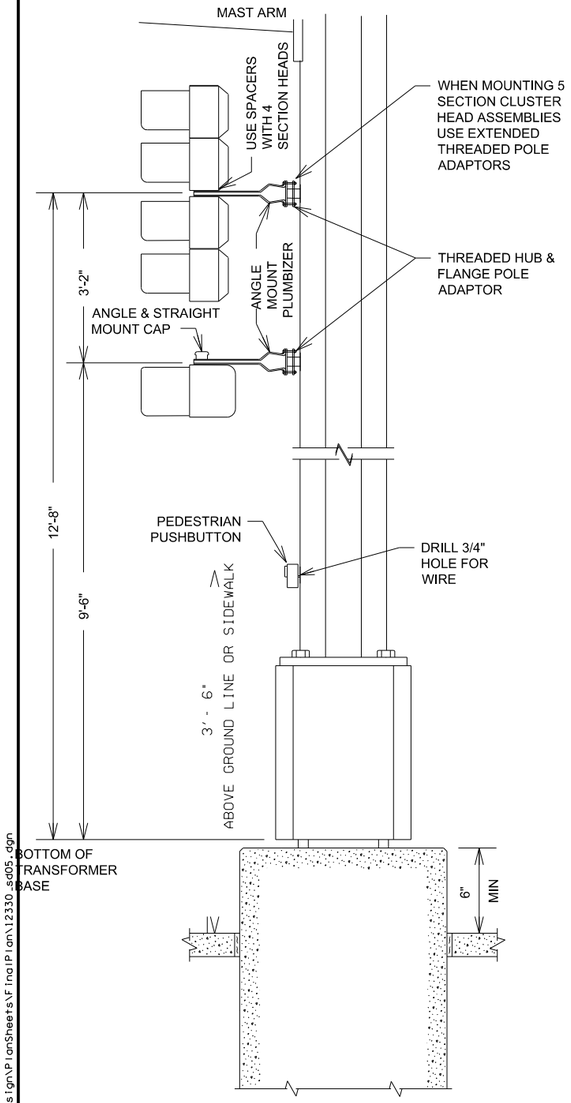
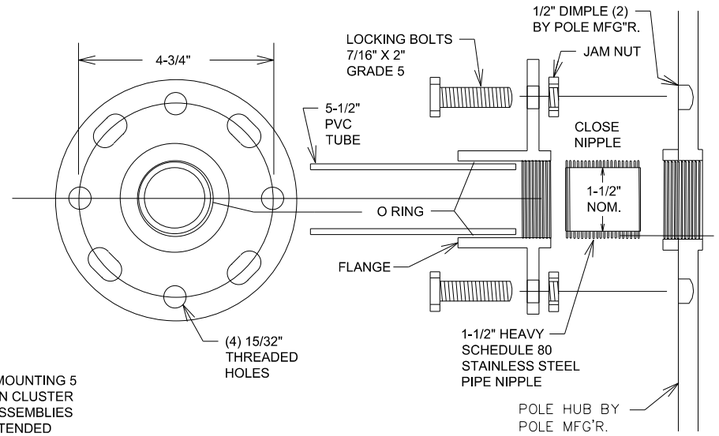
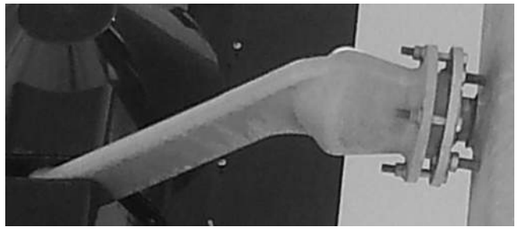


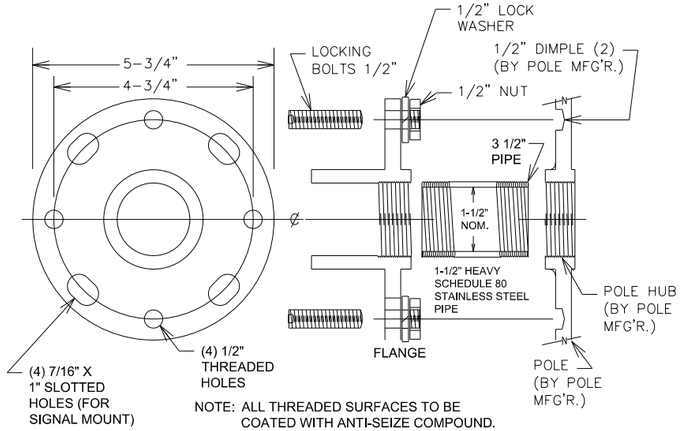
TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE



THREADED HUB AND FLANGE POLE ADAPTOR



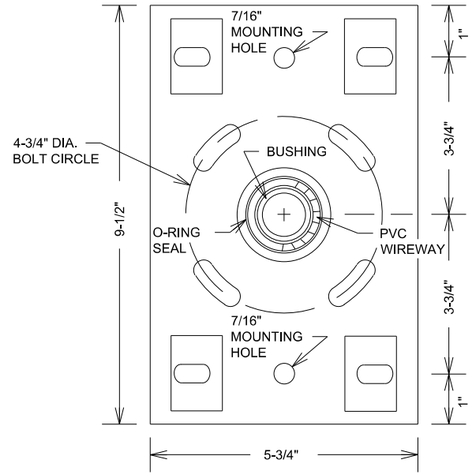


NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

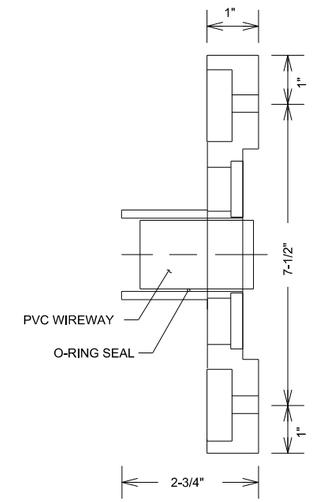
EXTENDED THREADED POLE ADAPTER

NOTES:

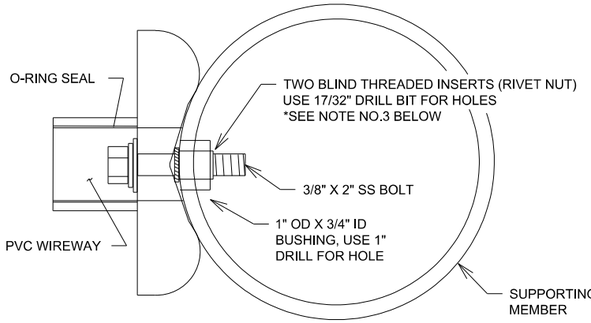
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



BOLT ON HUB & FLANGE



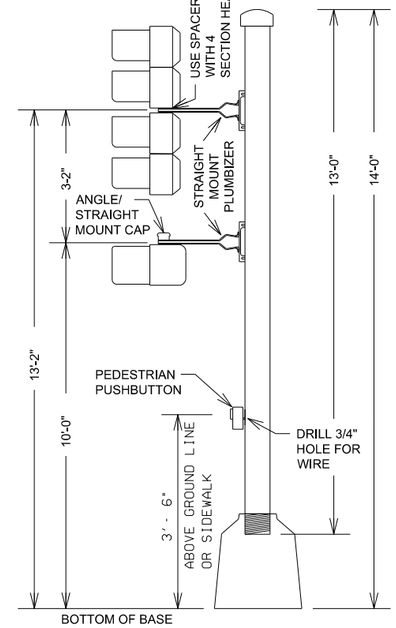
SIDE VIEW



TOP VIEW

NOTES:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSERTION TOOL. NO OTHER METHOD IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

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Date 6/19/20 License # 56071

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19-09

DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY

TRAFFIC SIGNAL PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

POLE MOUNT DETAILS

SHEET 56 OF 76

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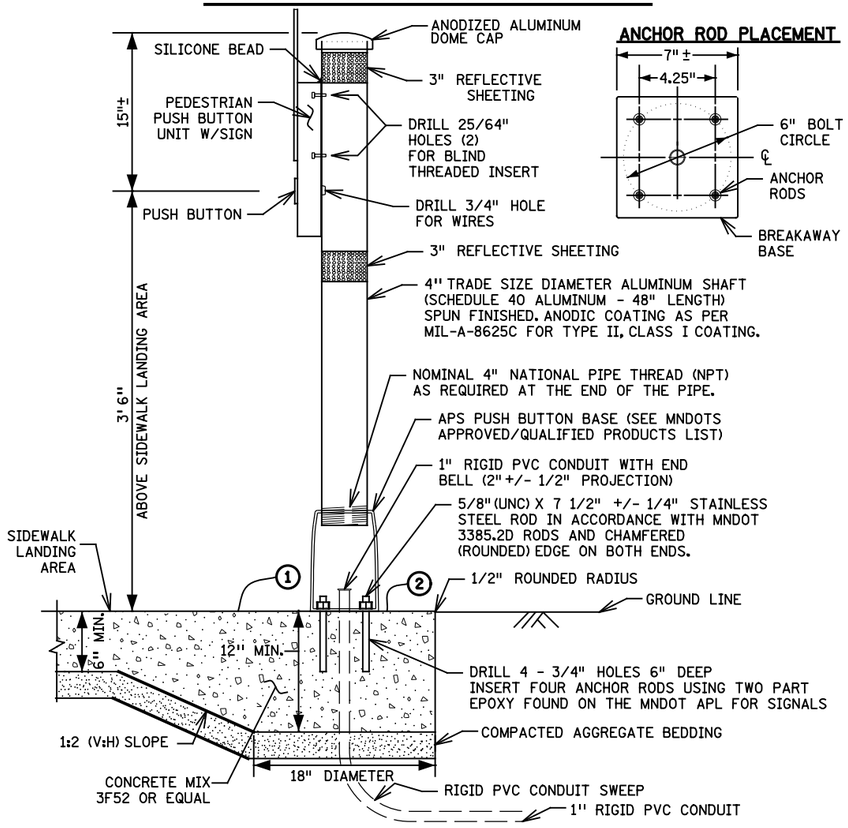
PEDESTRIAN PUSH BUTTON STATION



ANCHOR ROD PLACEMENT

NOTES:

PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE SHAFT.

ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.

PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.

INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL.

USE ZINC PLATED STEEL 1/4 - 20 UNC BLIND THREADED INSERTS SUITABLE FOR MOUNTING ON SURFACE WALL THICKNESS OF .337. APPROVED BLIND INSERTS ARE LISTED ON MNDOT'S APPROVED/QUALITY PRODUCTS LIST WEBSITE FOR TRAFFIC SIGNALS.

USE APS 1/4 - 20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.

APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" SHAFT.

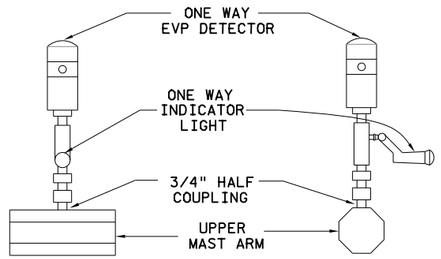
USE WHITE REFLECTIVE SHEETING AT INTERSECTION CORNERS AND YELLOW REFLECTIVE SHEETING IN CENTER MEDIANS. APPROVED TUBE DELINEATOR SHEETING IS LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST WEBSITE FOR SIGNING.

AN 18" X 6" FIBER FORMING TUBE MAY BE USED FOR THE LOWER HALF OF THE FOUNDATION WHEN CONDITIONS DO NOT ALLOW FOR THE 18" X 6" HOLE TO STAND OPEN.

(1) THE PUSH BUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1:2 (V:H) SLOPE GRADE WHERE THE 6" MIN SIDEWALK DEPTH TRANSITIONS TO THE 12" MIN FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING. PROVIDE 1:2 (V:H) SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.

(2) ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.

EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
MISCELLANEOUS DETAILS

SHEET 57 OF 76

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SIGNAL HEAD CHART

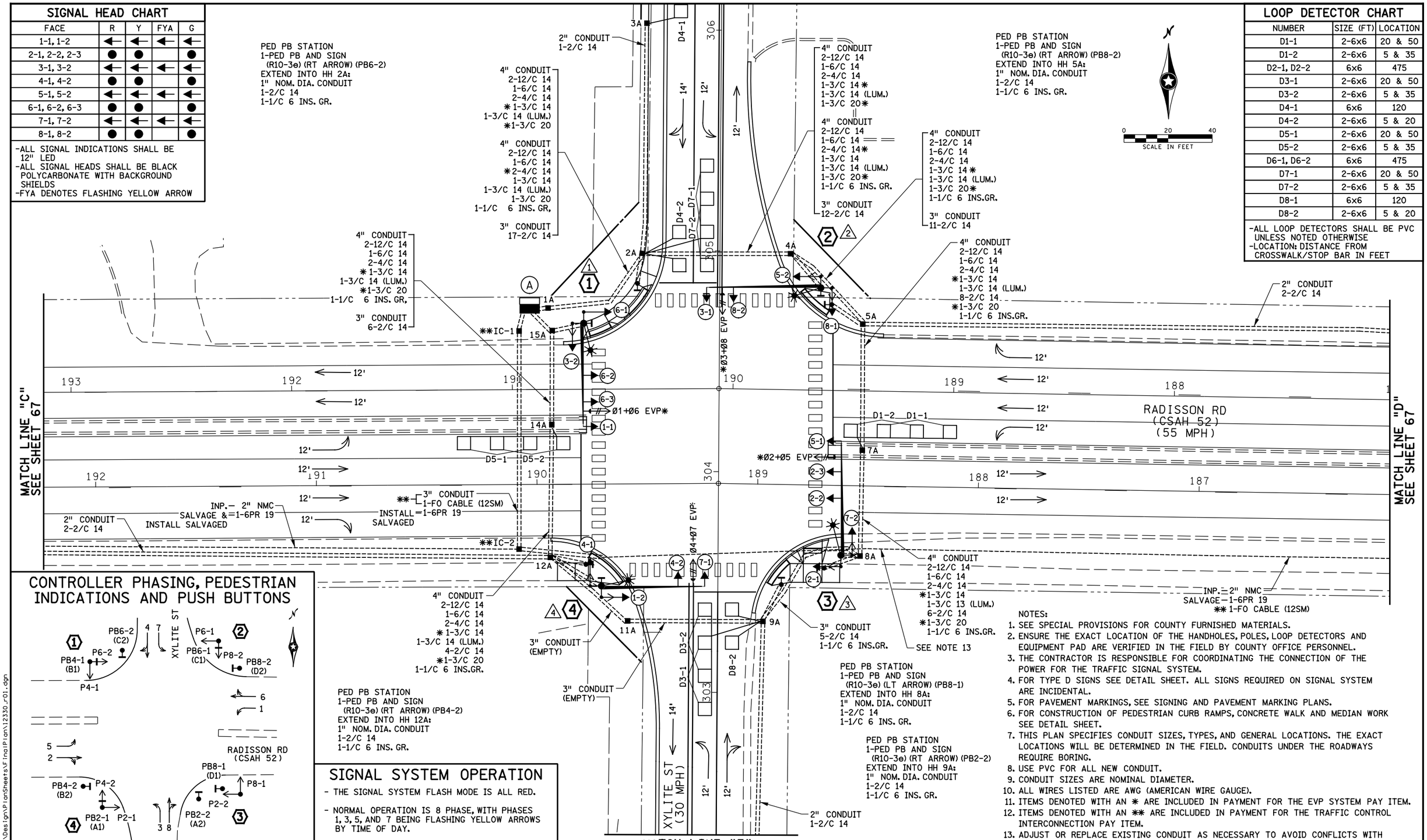
FACE	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2, 2-3	●	●		●
3-1, 3-2	←	←	←	←
4-1, 4-2	●	●		●
5-1, 5-2	←	←	←	←
6-1, 6-2, 6-3	●	●		●
7-1, 7-2	←	←	←	←
8-1, 8-2	●	●		●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION
D1-1	2-6x6	20 & 50
D1-2	2-6x6	5 & 35
D2-1, D2-2	6x6	475
D3-1	2-6x6	20 & 50
D3-2	2-6x6	5 & 35
D4-1	6x6	120
D4-2	2-6x6	5 & 20
D5-1	2-6x6	20 & 50
D5-2	2-6x6	5 & 35
D6-1, D6-2	6x6	475
D7-1	2-6x6	20 & 50
D7-2	2-6x6	5 & 35
D8-1	6x6	120
D8-2	2-6x6	5 & 20

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

NOTES:
1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY COUNTY OFFICE PERSONNEL.
3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
4. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ON SIGNAL SYSTEM ARE INCIDENTAL.
5. FOR PAVEMENT MARKINGS, SEE SIGNING AND PAVEMENT MARKING PLANS.
6. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
8. USE PVC FOR ALL NEW CONDUIT.
9. CONDUIT SIZES ARE NOMINAL DIAMETER.
10. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
11. ITEMS DENOTED WITH AN ✱ ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
12. ITEMS DENOTED WITH AN ✱✱ ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.
13. ADJUST OR REPLACE EXISTING CONDUIT AS NECESSARY TO AVOID CONFLICTS WITH SIGNAL POLE FOUNDATION.
14. SEE SHEET 59 FOR INTERSECTION NOTES.

NO	DATE	BY	CKD	APPR	REVISION
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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
INTERSECTION LAYOUT (SYSTEM "A")
RADISSON RD (CSAH 52) AT XYLITE ST

SHEET 58 OF 76

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INTERSECTION NOTES

(1) PA100 POLE FOUNDATION
INSTALL—TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 10' AND 22'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D.PED HEADS AT 90 AND 180 DEG
INSTALL—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1+6)
LUMINAIRE-LED (FOR 30' MOUNTING HEIGHT)
1-PED PB AND SIGN (R10-3e) (LT ARROW) (PB4-1)
1-R10-X12 SIGN ADJACENT TO HEAD (1-1)
1-TYPE D SIGN (D-2) (SEE SIGN DETAILS)
2-R6-1 SIGNS POLE MOUNTED
3" CONDUIT TO HH 15A:
2-12/C 14
1-6/C 14
2-4/C 14
* 1-3/C 14
1-3/C 14 (LUM)
1-2/C 14
* 1-3/C 20
1-1/C 6 INS. GR.

(2) PA100 POLE FOUNDATION
INSTALL—TYPE PA100-A-50-D25-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D.PED HEADS AT 90 AND 180 DEG
INSTALL—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3+8)
LUMINIRIE-LED (FOR 25' MOUNTING HEIGHT)
1-PED PB AND SIGN (R10-3e) (LT ARROW) (PB6-1)
1-R10-X12 SIGN ADJACENT TO HEAD (3-1)
1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
3" CONDUIT TO HH 4A:
2-12/C 14
1-6/C 14
2-4/C 14
* 1-3/C 14
1-3/C 14 (LUM.)
1-2/C 14
* 1-3/C 20
1-1/C 6 INS. GR.

(3) PA100 POLE FOUNDATION
INSTALL—TYPE PA100-A-50-D25-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D.PED HEADS AT 90 AND 180 DEG
INSTALL—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2+5)
LUMINIRIE-LED (FOR 25' MOUNTING HEIGHT)
1-R10-X12 SIGN ADJACENT TO HEAD (5-1)
1-TYPE D SIGN (D-2) (SEE SIGN DETAILS)
2-R6-1 SIGNS POLE MOUNTED
3" CONDUIT TO HH 8A:
2-12/C 14
1-6/C 14
2-4/C 14
* 1-3/C 14
1-3/C 14 (LUM.)
* 1-3/C 20
1-1/C 6 INS. GR.

(4) PA100 POLE FOUNDATION
INSTALL—TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D.PED HEADS AT 90 AND 180 DEG
INSTALL—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4+7)
LUMINIRIE-LED (FOR 30' MOUNTING HEIGHT)
1-PED PB AND SIGN (R10-3e) (LT ARROW) (PB2-1)
1-R10-X12 SIGN ADJACENT TO HEAD (7-1)
1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
3" CONDUIT TO HH 12A:
2-12/C 14
1-6/C 14
2-4/C 14
* 1-3/C 14
1-3/C 14 (LUM.)
1-2/C 14
* 1-3/C 20
1-1/C 6 INS. GR.

(A) EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB)
INSTALL—CONTROLLER AND CABINET (COUNTY FURNISHED)

4" CONDUIT TO HH 1A:	4" CONDUIT TO HH 15A:
2-12/C 14	2-12/C 14
1-6/C 14	1-6/C 14
2-4/C 14	2-4/C 14
* 1-3/C 14	* 1-3/C 14
* 1-3/C 20	* 1-3/C 20
4" CONDUIT TO HH 1A:	4" CONDUIT TO HH 15A:
2-12/C 14	2-12/C 14
1-6/C 14	1-6/C 14
2-4/C 14	2-4/C 14
* 1-3/C 14	* 1-3/C 14
* 1-3/C 20	* 1-3/C 20
1-1/C 6 INS. GR.	1-1/C 6 INS. GR.
3" CONDUIT TO HH 1A:	3" CONDUIT TO HH 15A:
17-2/C 14	7-2/C 14

** —2" CONDUIT TO IC-1:
1-FO CABLE (12SM)
INSTALL SALVAGED—1-6PR 19

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD
2-3" AND 1-1" CONDUIT STUBBED OUT (CAPPED BOTH ENDS
CONTROLLER CABINET TO SERVICE CABINET:
2" CONDUIT
3-1/C 6
CONTROLLER CABINET TO SERVICE CABINET (COMMS):
2" CONDUIT
1-4/C 14
1-6PR 19
SERVICE CABINET TO HH 16A TO POLE MOUNTED TRANSFORMER:
2" CONDUIT
3-1/C 2

SERVICE CABINET TO HH 1A:
1 1/4" CONDUIT
2-3/C 14 (LUM)
SERVICE CABINET TO HH 15A:
1 1/4" CONDUIT
2-3/C 14 (LUM)
SERVICE CABINET TO EXTERNAL GR. RD.:
1" CONDUIT
1-1/C 6 INS. GR.
(SEE EQUIPMENT PAD LAYOUT)

(B) SOP-WOOD POLE MOUNTED
TRANSFORMER (LOCATION TO BE DETERMINED)
2" CONDUIT TO HH 16A TO SERVICE CABINET:
3-1/C 2

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Print Name: NATHAN A. POOLE
Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

SRF Consulting Group, Inc.
ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
INTERSECTION NOTES (SYSTEM "A")
RADISSON RD (CSAH 52) AT XYLITE ST

SHEET 59 OF 76

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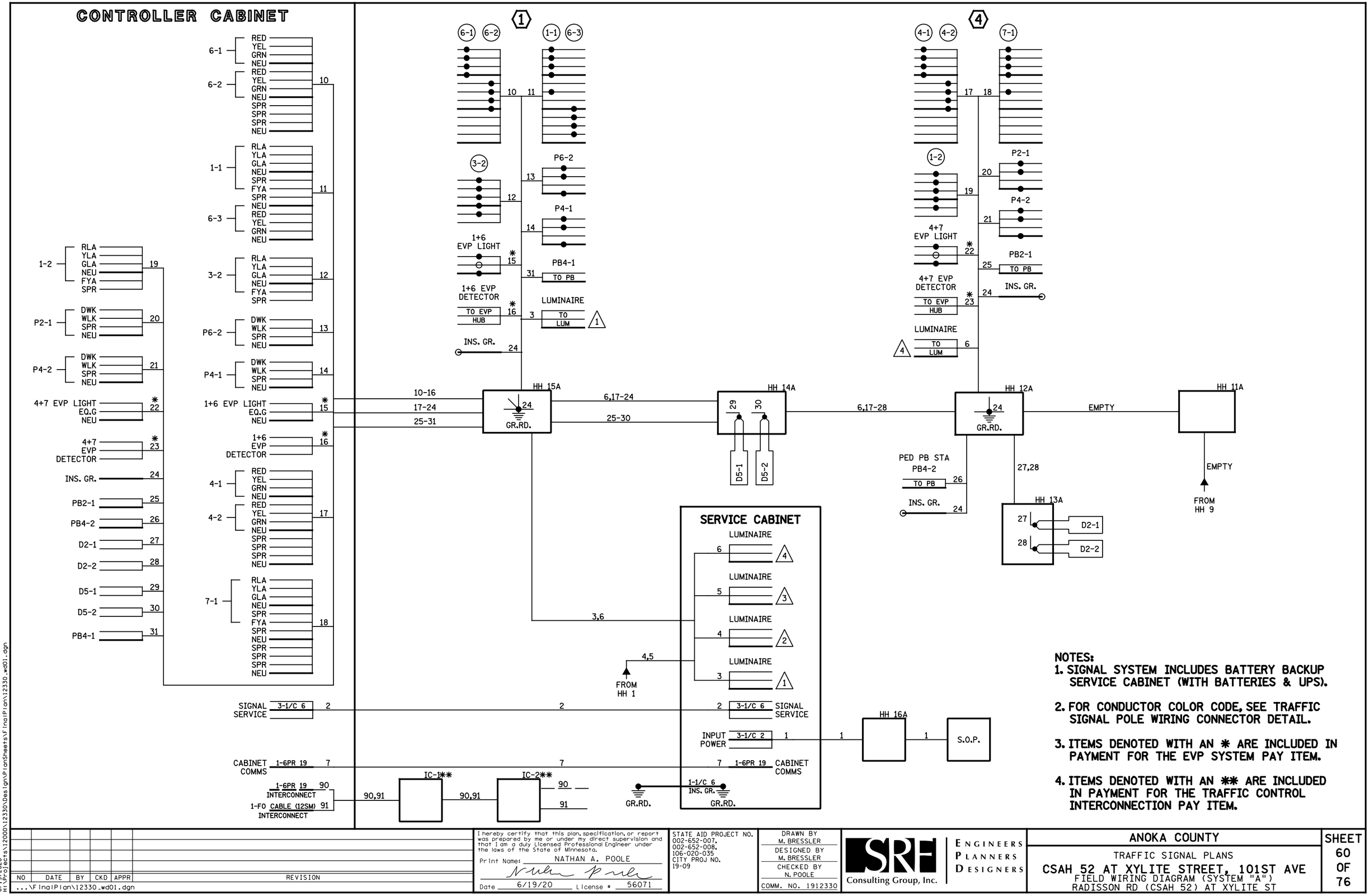

NOTES:
1. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (WITH BATTERIES & UPS).
2. FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
3. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
4. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
FIELD WIRING DIAGRAM (SYSTEM "A")
RADISSON RD (CSAH 52) AT XYLITE ST

SHEET 60 OF 76

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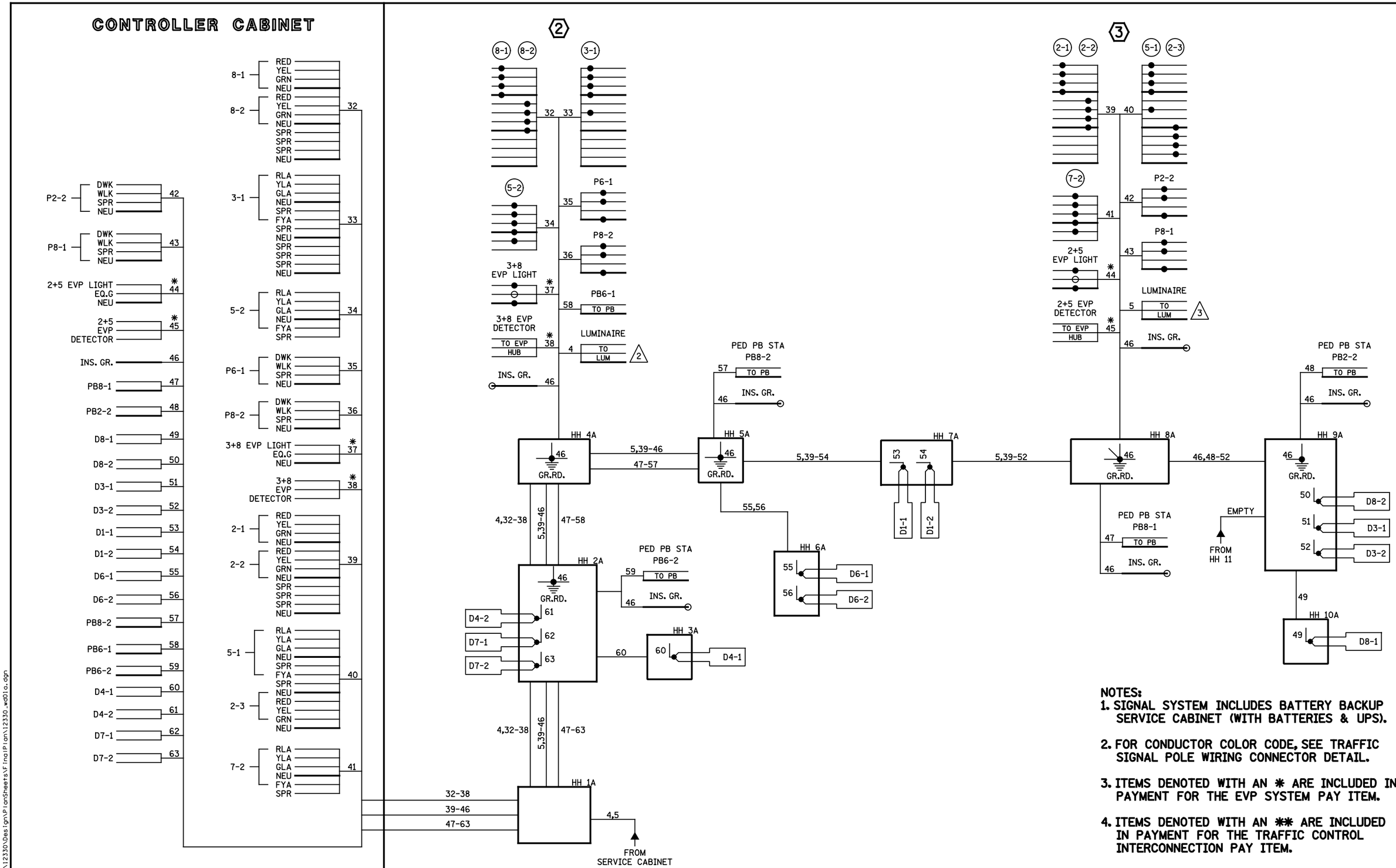

NOTES:

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2. FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
3. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
4. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

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ANOKA COUNTY

TRAFFIC SIGNAL PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

FIELD WIRING DIAGRAM (SYSTEM "A")

RADISSON RD (CSAH 52) AT XYLITE ST

SHEET 61 OF 76

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SIGNAL HEAD CHART

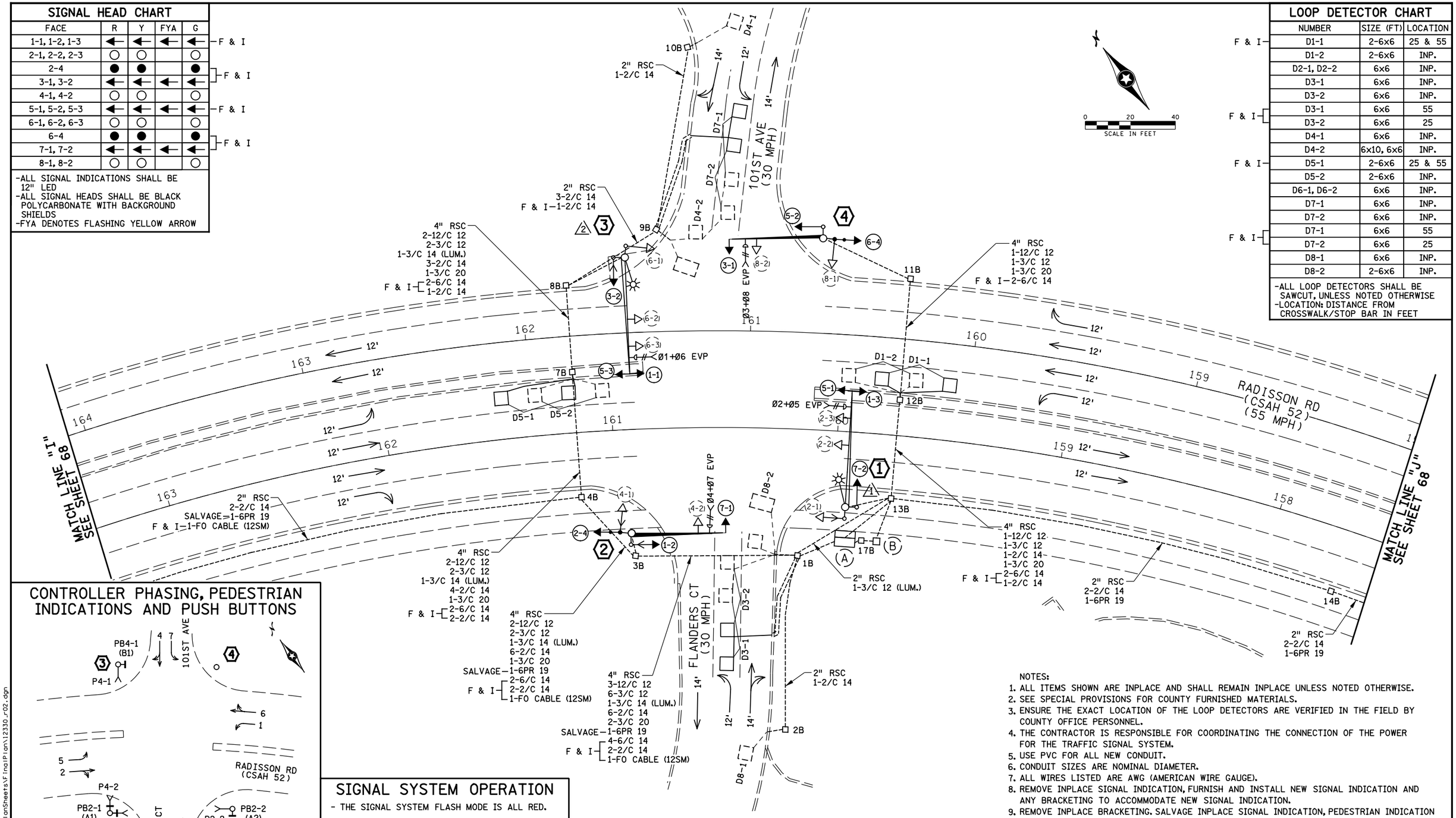
FACE	R	Y	FYA	G	
1-1, 1-2, 1-3	◀	◀	◀	◀	F & I
2-1, 2-2, 2-3	○	○		○	
2-4	●	●		●	F & I
3-1, 3-2	◀	◀	◀	◀	
4-1, 4-2	○	○		○	
5-1, 5-2, 5-3	◀	◀	◀	◀	F & I
6-1, 6-2, 6-3	○	○		○	
6-4	●	●		●	F & I
7-1, 7-2	◀	◀	◀	◀	
8-1, 8-2	○	○		○	

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW

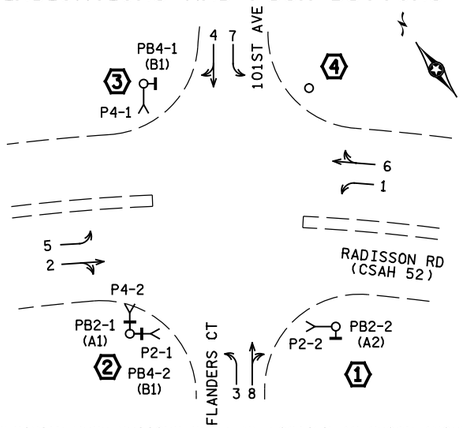
LOOP DETECTOR CHART

	NUMBER	SIZE (FT)	LOCATION
F & I	D1-1	2-6x6	25 & 55
	D1-2	2-6x6	INP.
	D2-1, D2-2	6x6	INP.
	D3-1	6x6	INP.
	D3-2	6x6	INP.
F & I	D3-1	6x6	55
	D3-2	6x6	25
	D4-1	6x6	INP.
	D4-2	6x10, 6x6	INP.
F & I	D5-1	2-6x6	25 & 55
	D5-2	2-6x6	INP.
	D6-1, D6-2	6x6	INP.
	D7-1	6x6	INP.
	D7-2	6x6	INP.
F & I	D7-1	6x6	55
	D7-2	6x6	25
	D8-1	6x6	INP.
	D8-2	2-6x6	INP.

-ALL LOOP DETECTORS SHALL BE SAWCUT, UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

NOTES:

1. ALL ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE.
2. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3. ENSURE THE EXACT LOCATION OF THE LOOP DETECTORS ARE VERIFIED IN THE FIELD BY COUNTY OFFICE PERSONNEL.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
5. USE PVC FOR ALL NEW CONDUIT.
6. CONDUIT SIZES ARE NOMINAL DIAMETER.
7. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
8. REMOVE INPLACE SIGNAL INDICATION, FURNISH AND INSTALL NEW SIGNAL INDICATION AND ANY BRACKETING TO ACCOMMODATE NEW SIGNAL INDICATION.
9. REMOVE INPLACE BRACKETING. SALVAGE INPLACE SIGNAL INDICATION, PEDESTRIAN INDICATION AND INSERT ON FURNISHED TYPE 20B WITH FURNISHED SIGNAL INDICATION.
10. REMOVE INPLACE BRACKETING. SALVAGE INPLACE SIGNAL INDICATION AND INSERT ON FURNISHED TYPE 20A WITH FURNISHED SIGNAL INDICATION.
11. ADJUST LEVELING NUTS FOR EXISTING SIGNAL POLES AS DIRECTED BY THE ENGINEER.
12. SEE SHEET 63 FOR REVISED INTERSECTION NOTES.

NO	DATE	BY	CKD	APPR	REVISION
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Date 6/19/20 License # 56071

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19-09

DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
REVISED INTERSECTION LAYOUT (SYSTEM "B")
RADISSON RD (CSAH 52) AT 101ST AVE\FLANDERS CT

SHEET 62 OF 76

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REVISED INTERSECTION NOTES

(1) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)
REMOVE—1-ONE WAY SIGNAL OVERHEAD AT 0'
F & I—2-ONE WAY SIGNALS OVERHEAD AT 0'
2-ONE WAY SIGNALS OVERHEAD AT
11' AND 23' FROM END OF MAST ARM
(SEE NOTE 8)—TYPE 10A POLE MOUNTED AT 90 DEG
TYPE 10B POLE MOUNTED AT 180 DEG
1-PEDESTRIAN PUSH BUTTON (PB2-2)
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 2+5)
LUMINAIRE-200 WATT H.P.S. WITH PEC
AND CHECK SWITCH
F & I—1-R10-X12 SIGN ADJACENT TO HEAD (5-1)
1-TYPE D SIGN
2-R6-1 SIGNS POLE MOUNTED
R9-3a SIGN FACING POLE 4
3" RSC TO HH 13B:
2-12/C 12
2-3/C 12
1-3/C 12 (LUM)
1-3/C 20
F & I—2-6/C 14

(2) PA90 POLE FOUNDATION
TYPE PA90-A
REMOVE—35' MAST ARM
INSTALL—40' MAST ARM
SALVAGE—1-ONE WAY SIGNAL OVERHEAD AT 0'
F & I—1-ONE WAY SIGNAL OVERHEAD AT 0°
INSTALL SALVAGED—1-ONE WAY SIGNAL OVERHEAD AT 11'
(SEE NOTE 8)—TYPE 10B POLE MOUNTED AT 90 DEG
(SEE NOTE 9)—TYPE 10B POLE MOUNTED AT 180 DEG
2-PEDESTRIAN PUSH BUTTONS (PB2-1) (PB4-2)
SALVAGE AND INSTALLED SALVAGED—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4+7)
F & I—1-R10-X12 SIGN ADJACENT TO HEAD (7-1)
SALVAGE AND INSTALLED SALVAGED—1-TYPE D SIGN
1-R6-1 SIGN POLE MOUNTED
R9-3a SIGN FACING POLE 3
3" RSC TO HH 3B:
1-12/C 12
4-3/C 12
F & I—1-3/C 20
2-6/C 14

(3) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)
REMOVE—1-ONE WAY SIGNAL OVERHEAD AT 0'
F & I—2-ONE WAY SIGNALS OVERHEAD AT 0'
2-ONE WAY SIGNALS OVERHEAD AT
11' AND 23' FROM END OF MAST ARM
(SEE NOTE 8)—TYPE 10B POLE MOUNTED AT 90 DEG
TYPE 10A POLE MOUNTED AT 180 DEG
1-PEDSTRIAN PUSH BUTTON (PB4-1)
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 1+6)
LUMINAIRE-200 WATT H.P.S. WITH PEC
AND CHECK SWITCH
F & I—1-R10-X12 SIGN ADJACENT TO HEAD (1-1)
RELOCATE—1-TYPE D SIGN
2-R6-1 SIGNS POLE MOUNTED
2-R9-3a SIGN FACING POLES 2 AND 4
3" RSC TO HH 8B:
2-12/C 12
2-3/C 12
1-3/C 12 (LUM)
1-3/C 20
F & I—2-6/C 14

(4) PA90 POLE FOUNDATION
TYPE PA90-A
REMOVE—35' MAST ARM
INSTALL—40' MAST ARM
SALVAGE—1-ONE WAY SIGNAL OVERHEAD AT 0'
F & I—1-ONE WAY SIGNAL OVERHEAD AT 0°
INSTALL SALVAGED—1-ONE WAY SIGNAL OVERHEAD AT 11'
(SEE NOTE 8)—TYPE 10A POLE MOUNTED AT 90 DEG
(SEE NOTE 10)—TYPE 10A POLE MOUNTED AT 180 DEG
1-PEDESTRIAN PUSH BUTTON (PB2-1)
SALVAGE AND INSTALLED SALVAGED—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3+8)
F & I—1-R10-X12 SIGN ADJACENT TO HEAD (3-1)
SALVAGE AND INSTALLED SALVAGED—1-TYPE D SIGN
1-R6-1 SIGN POLE MOUNTED
2-R9-3a SIGNS FACING POLES 1 AND 3
3" RSC TO HH 11B:
1-12/C 12
1-3/C 12
1-3/C 20
F & I—2-6/C 14

(A) EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB)
CONTROLLER AND CABINET (COUNTY FURNISHED)
4" RSC TO HH 1B:
3-12/C 12
6-3/C 12
2-3/C 20
9-2/C 14
SALVAGE—1-6PR 19
F & I—4-6/C 14
3-2/C 14
1-FO CABLE (12SM)
4" RSC TO HH 13B:
3-12/C 12
3-3/C 12
2-3/C 20
3-2/C 14
1-6PR 19
STUB OUT 2-3" RSC
(THREAD AND CAP BOTH
ENDS-FOR FUTURE USE)
F & I—4-6/C 14
1-2/C 14

(B) SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO HH 13B:
UNMETERED STREET LIGHT SERVICE
1 1/4" RSC
2-3/C 14 (LUM)
EXTEND INTO HH 17B:
METERED SIGNAL SERVICE
1 1/4" RSC
3-1/C 6
STUBOUT 2" RSC (FOR
SERVICE BY CONNEXUS)

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DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
REVISED INTERSECTION NOTES (SYSTEM "B")
RADISSON RD (CSAH 52) AT 101ST AVE\FLANDERS CT

SHEET 63 OF 76

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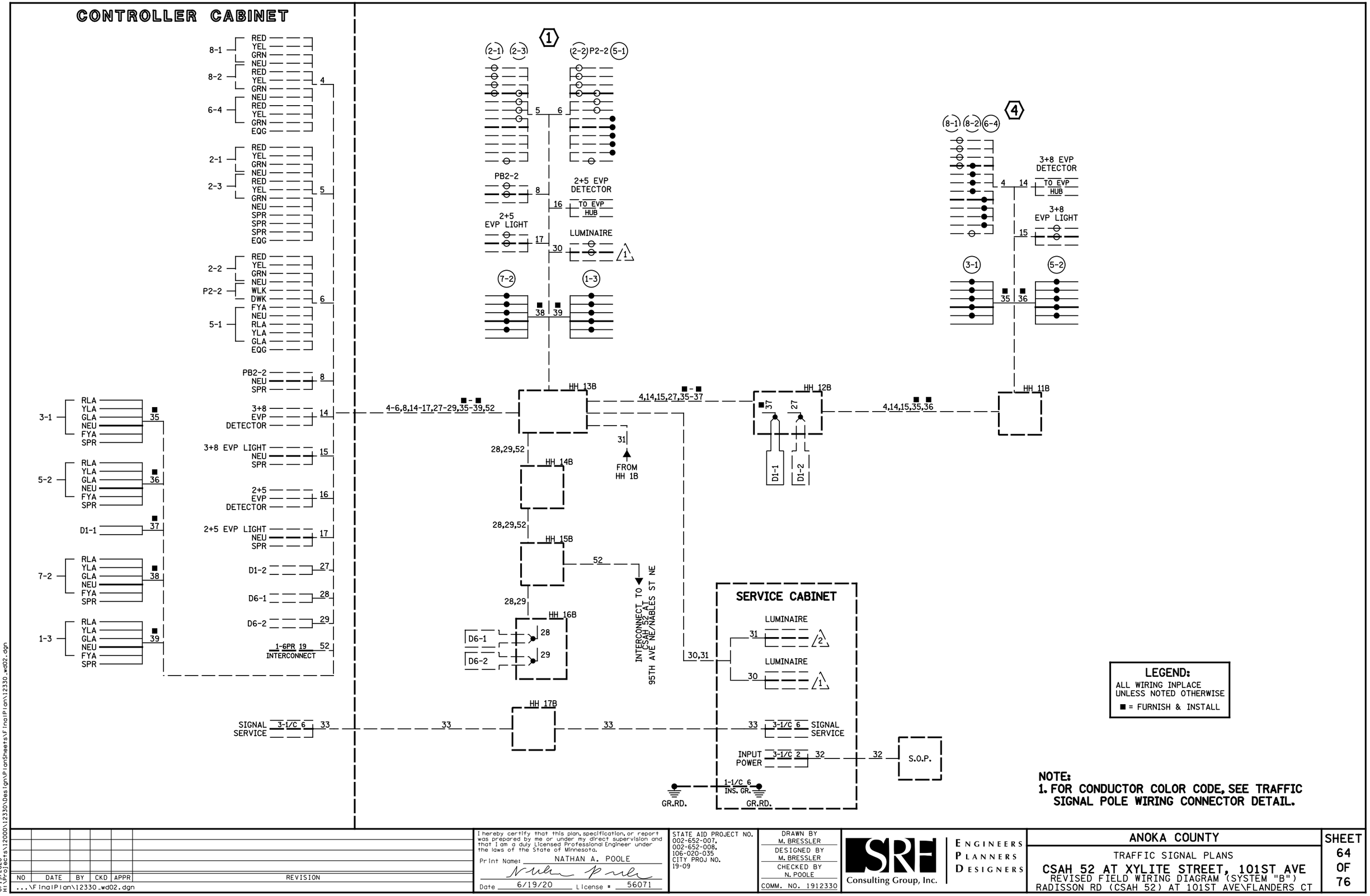

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
REVISED FIELD WIRING DIAGRAM (SYSTEM "B")
RADISSON RD (CSAH 52) AT 101ST AVE\FLANDERS CT

SHEET 64 OF 76

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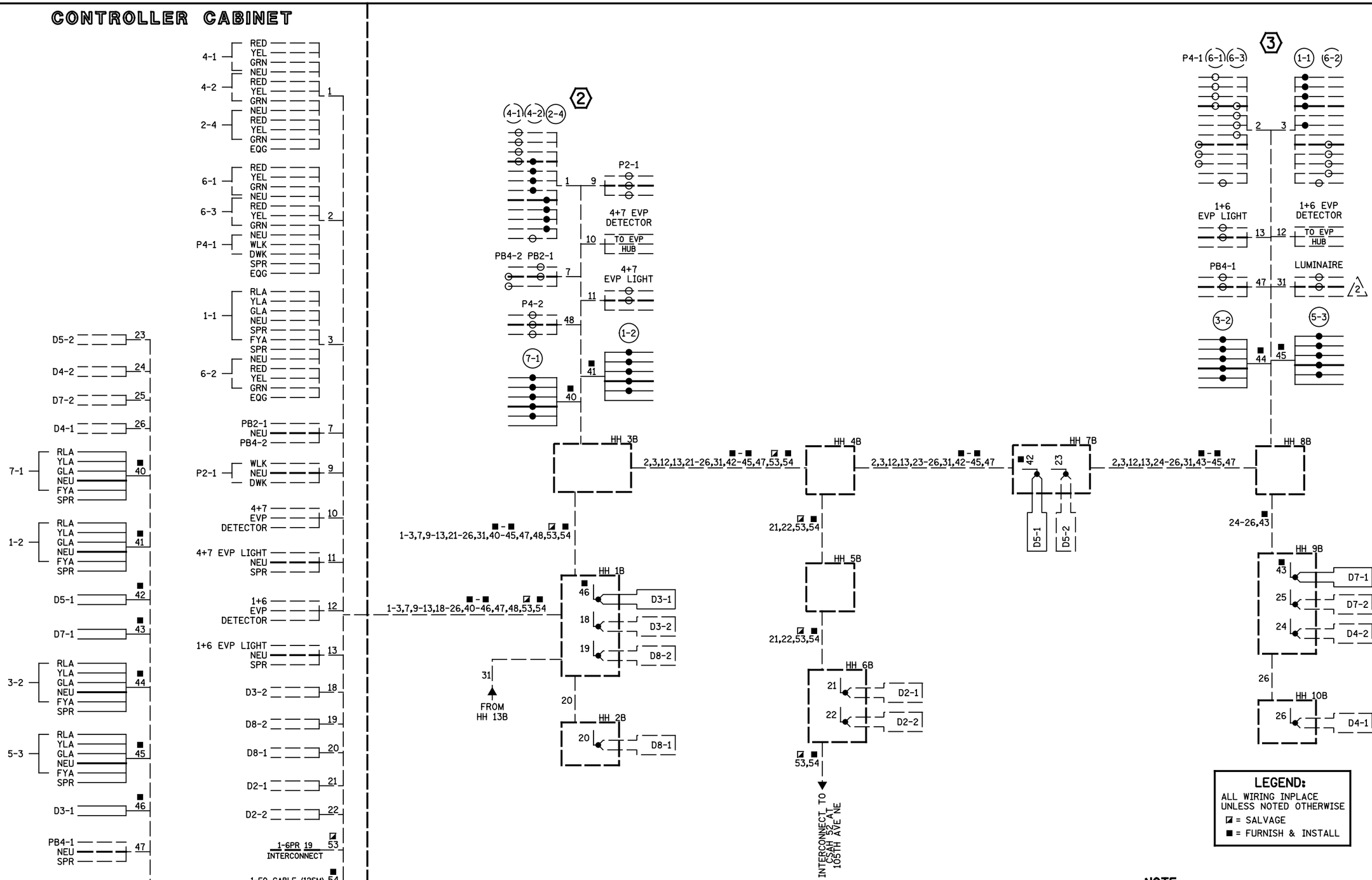

NOTE:
1. FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.

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RADISSON RD (CSAH 52) AT 101ST AVE\FLANDERS CT

SHEET 65 OF 76

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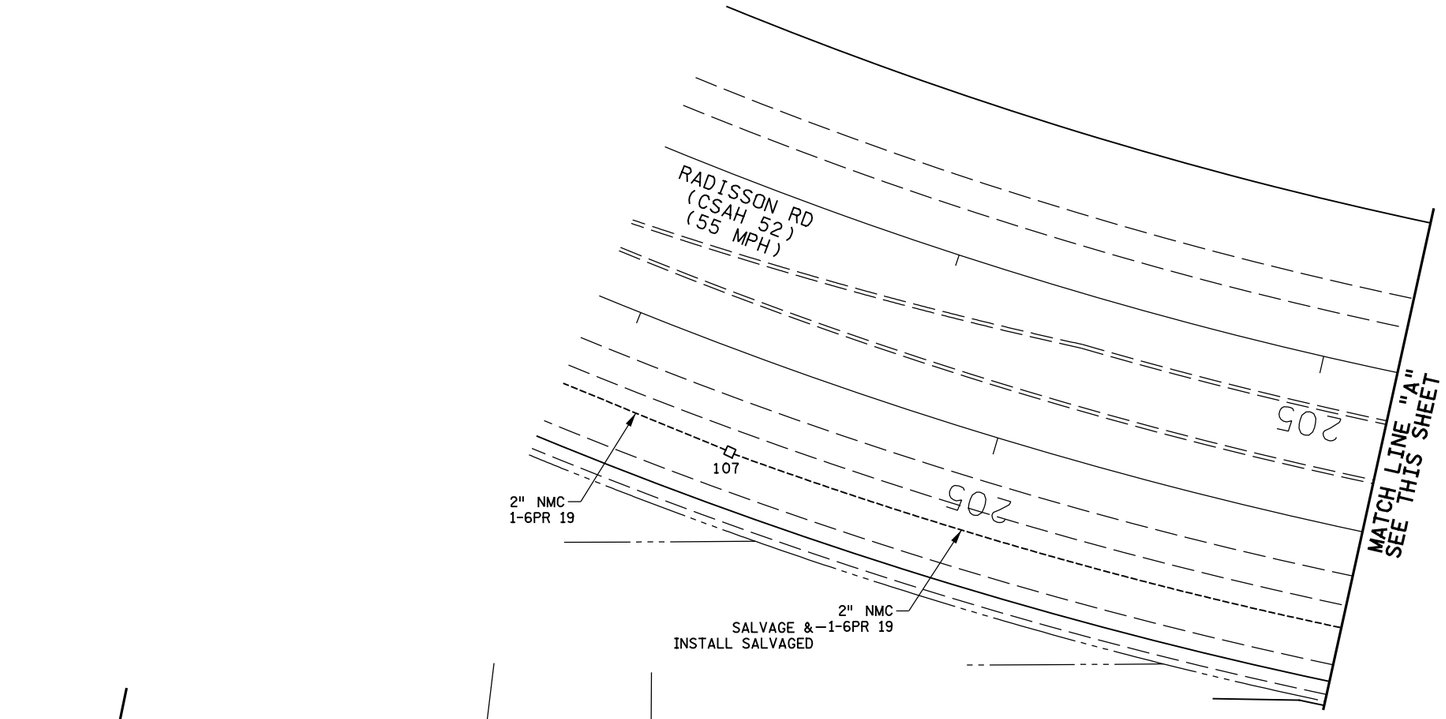

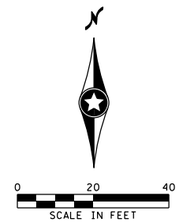

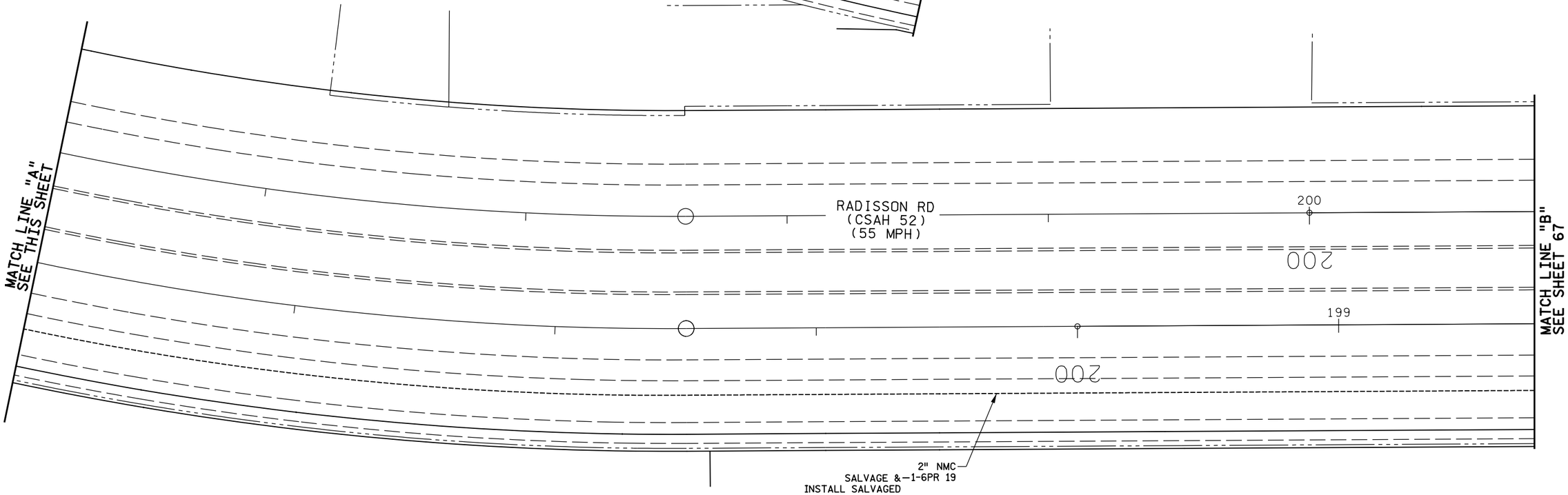

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M. BRESSLER

CHECKED BY
N. POOLE

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TRAFFIC SIGNAL PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

INTERCONNECT LAYOUT

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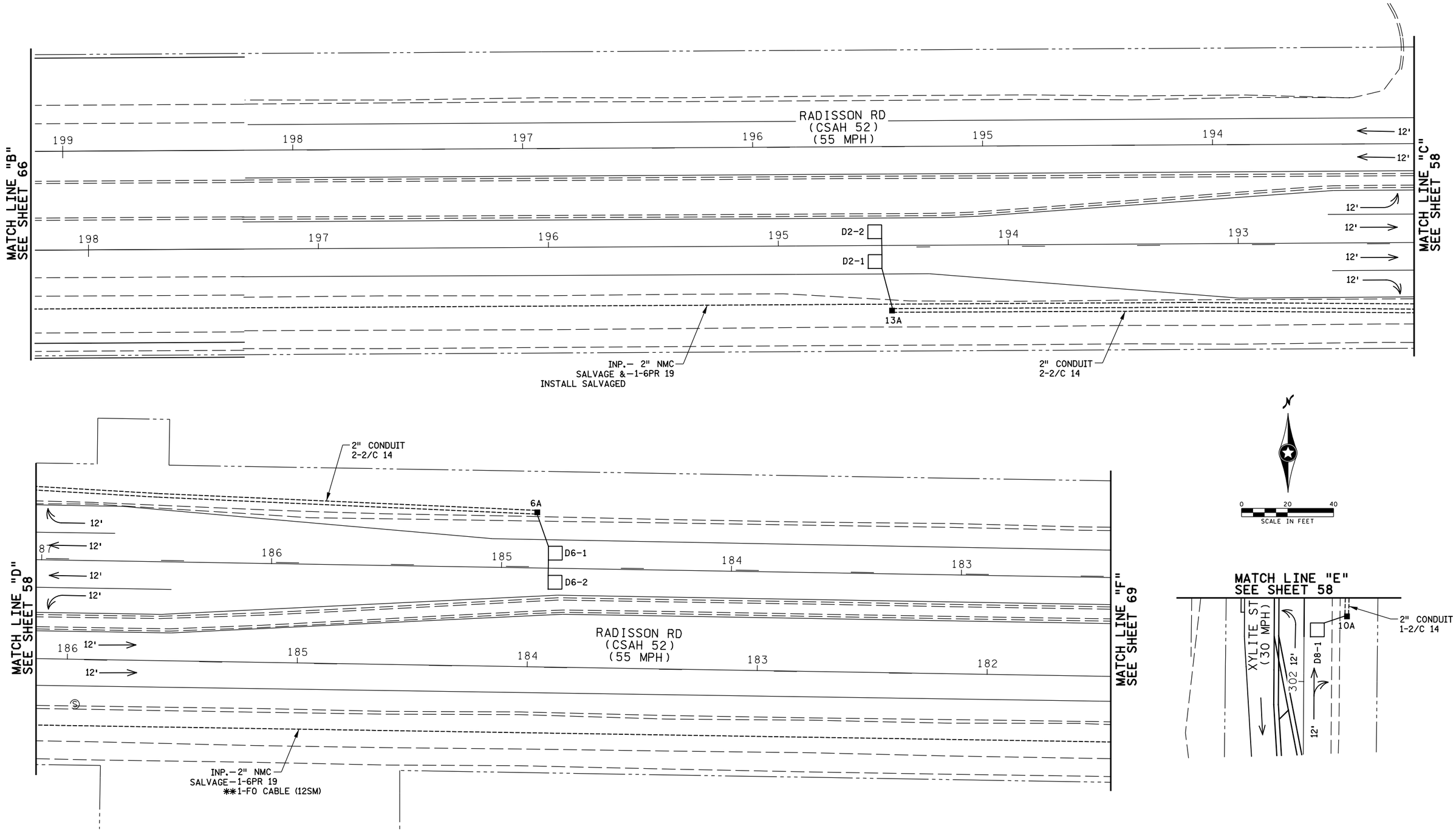

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N. POOLE

COMM. NO. 1912330

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PLANNERS
DESIGNERS

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

MATCH LINE/INTERCONNECT LAYOUT (SYSTEM "A")

RADISSON RD (CSAH 52) AT XYLITE ST

SHEET 67 OF 76

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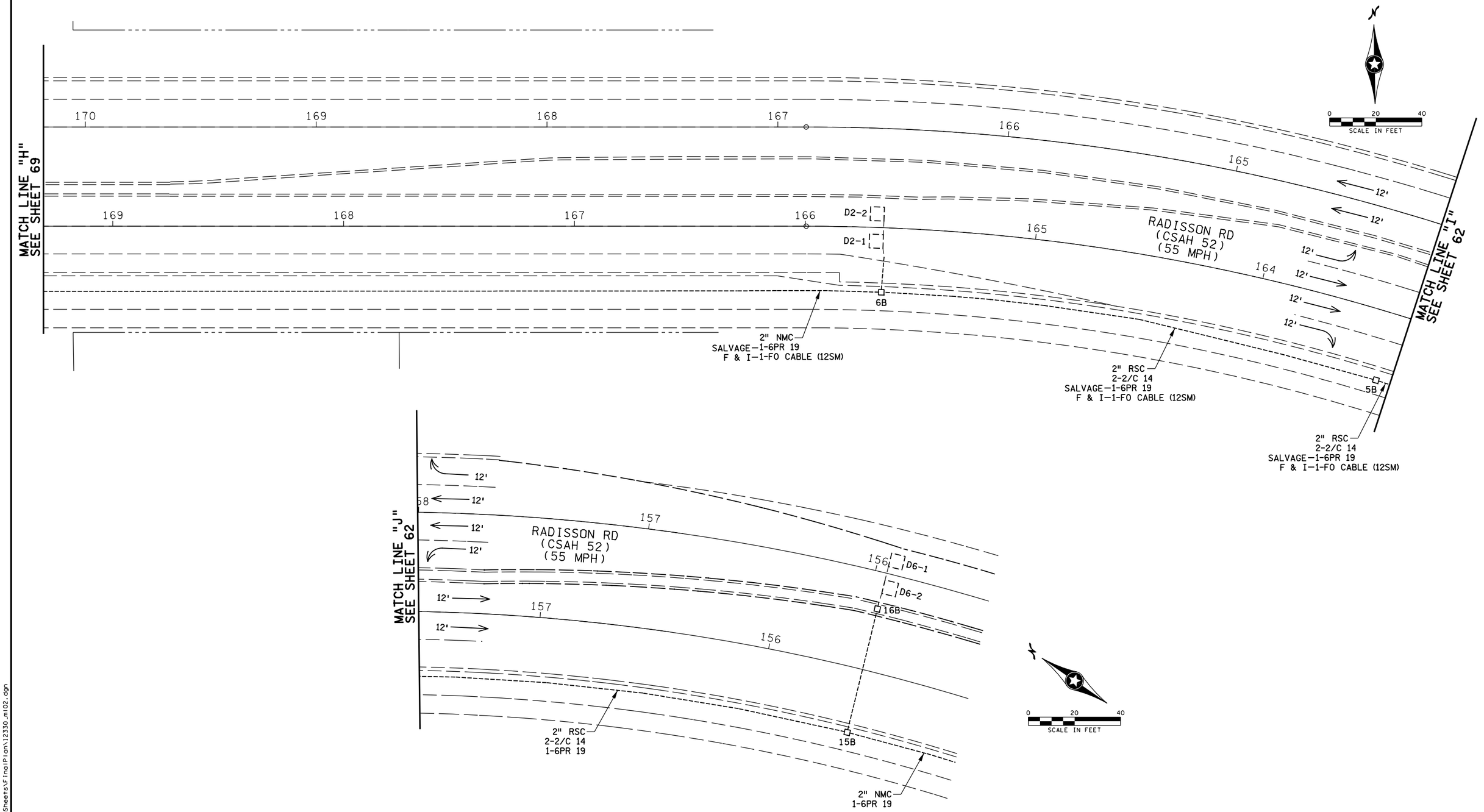

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...\FinalPlan\12330_m102.dgn					

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.

Print Name: NATHAN A. POOLE

Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

SRF Consulting Group, Inc. — Engineers Planners Designers

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

REVISED MATCH LINE/INTERCONNECT LAYOUT (SYS "B")
RADISSON RD (CSAH 52) AT 101ST AVE N\FLANDERS CT

SHEET 68 OF 76

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MATCH LINE "F"
SEE SHEET 67

182 181 180 179 RADISSON RD (CSAH 52) (55 MPH) 178 177

181 180 179 178 177 176

105

2" NMC
SALVAGE–1–6PR 19
F & I–1–FO CABLE (12SM)

2" NMC
SALVAGE–1–6PR 19
F & I–1–FO CABLE (12SM)

MATCH LINE "G"
SEE THIS SHEET

N

0 20 40
SCALE IN FEET

MATCH LINE "G"
SEE THIS SHEET

176 175 174 173 172 171

RADISSON RD
(CSAH 52)
(55 MPH)

175 174 173 172 171 170

104

2" NMC
SALVAGE–1–6PR 19
F & I–1–FO CABLE (12SM)

2" NMC
SALVAGE–1–6PR 19
F & I–1–FO CABLE (12SM)

MATCH LINE "H"
SEE SHEET 68

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Print Name: NATHAN A. POOLE

Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY
M. BRESSLER

DESIGNED BY
M. BRESSLER

CHECKED BY
N. POOLE

COMM. NO. 1912330

SRF Consulting Group, Inc.

ENGINEERS
PLANNERS
DESIGNERS

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

CSAH 52 AT XYLITE STREET, 101ST AVE

INTERCONNECT LAYOUT

SHEET 69 OF 76

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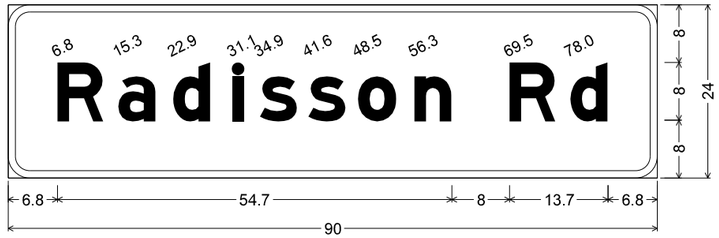
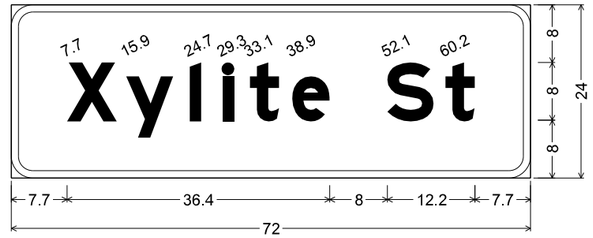


D-1;
3.0" Radius, 1.0" Border, White on, Green;
"Radisson Rd", E Mod;

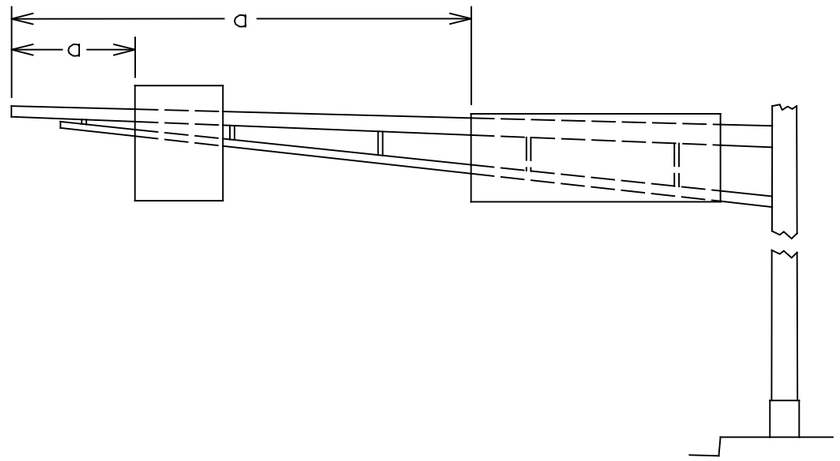


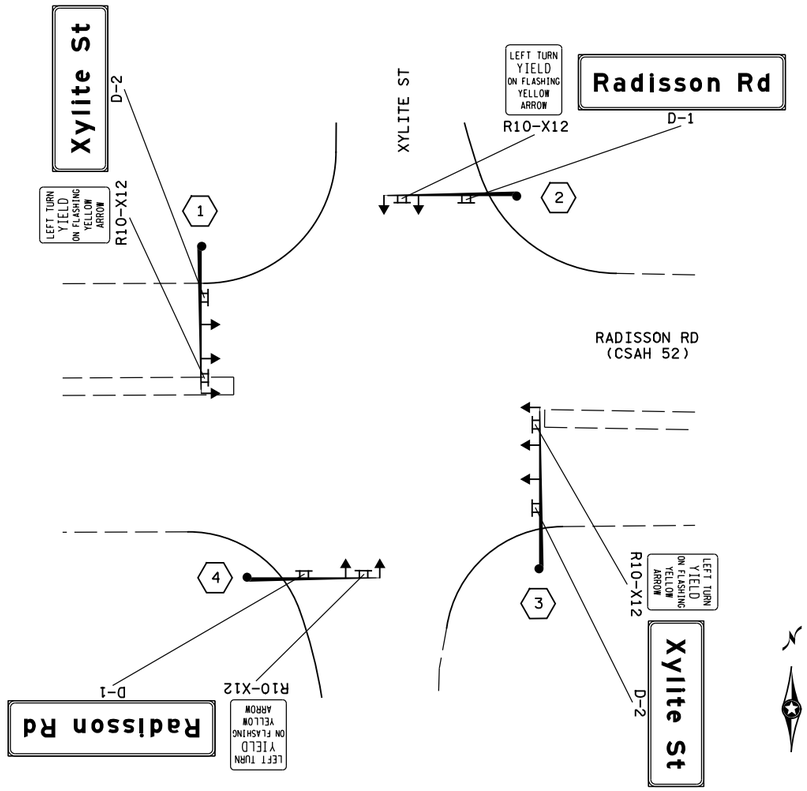
D-2;
3.0" Radius, 1.0" Border, White on, Green;
"Xylite St", E Mod;

ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.

SIGN DETAILS

MAST ARM SIGN LOCATION





RADISSON RD (CSAH 52) AT XYLITE ST
(SYSTEM "A")
SIGN LAYOUT

MAST ARM MOUNTED SIGNS

SIGN/CODE	PANEL LEGEND	QUANTITY	PANEL SIZE (INCH)	PANEL AREA (SQ FT)	PANEL TOTAL AREA (SQ FT)	MOUNTING STIFFENERS NUMBER	MOUNTING STIFFENERS SPACING (1)	POLE	a (FEET)
R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	4	36 x 42	10.50	42.00	2	24	1	1
								2	1
								3	1
								4	1
D-1	RADISSON RD	2	90 x 24	15.00	30.00	4	24	2	26
								4	22
D-2	XYLITE ST	2	72 x 24	12.00	24.00	3	24	1	32
								3	32

SPECIFIC NOTE:
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED.
SEE MNDOT STANDARD SIGNS AND MARKING MANUAL, PAGE 105A FOR STIFFENER SPACING REQUIREMENTS.

GENERAL NOTES:
1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. CORNERS OF TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL, PAGE 105A.
4. FOR TYPE D STRINGER AND PANEL JOINT DETAILS SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL, PAGE 105.
5. THE MAST ARM MOUNTED SIGNS ARE INCLUDED IN THE TRAFFIC CONTROL SIGNAL SYSTEM PAY ITEM.
6. ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING HP SHEETING. SEE SPECIAL PROVISIONS.

NO	DATE	BY	CKD	APPR	REVISION
					...\FinalPlan\12330_sd07.dgn

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.
Print Name: NATHAN A. POOLE
Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

SRF Consulting Group, Inc. — Engineers Planners Designers

ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
MAST ARM SIGN DETAILS (SYSTEM "A")
RADISSON RD (CSAH 52) AT XYLITE ST

SHEET 70 OF 76

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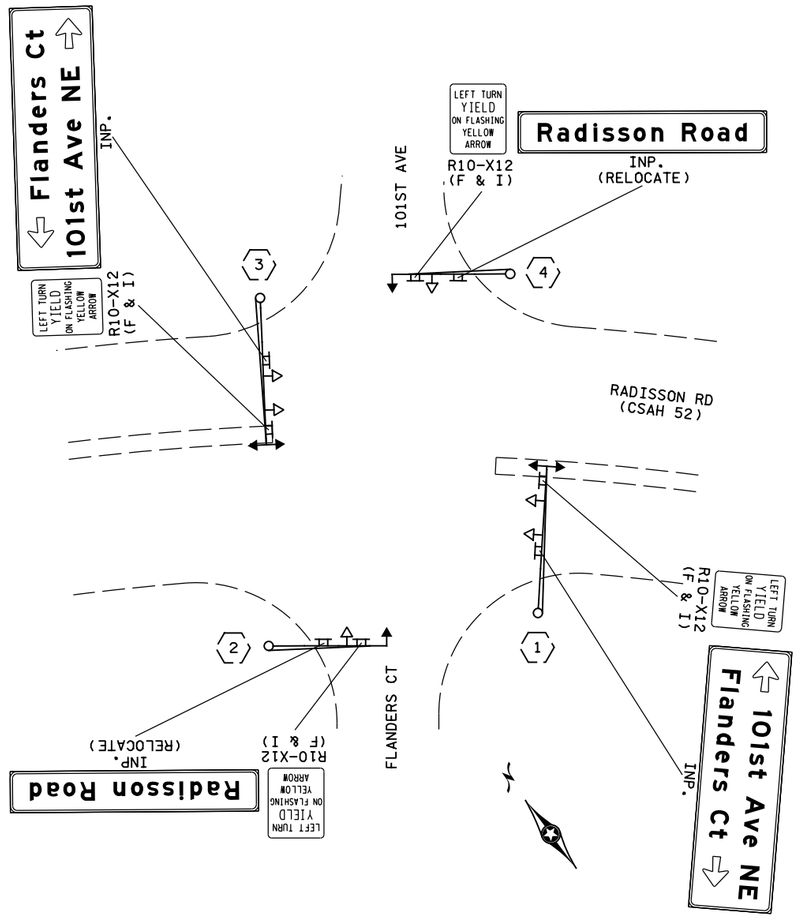
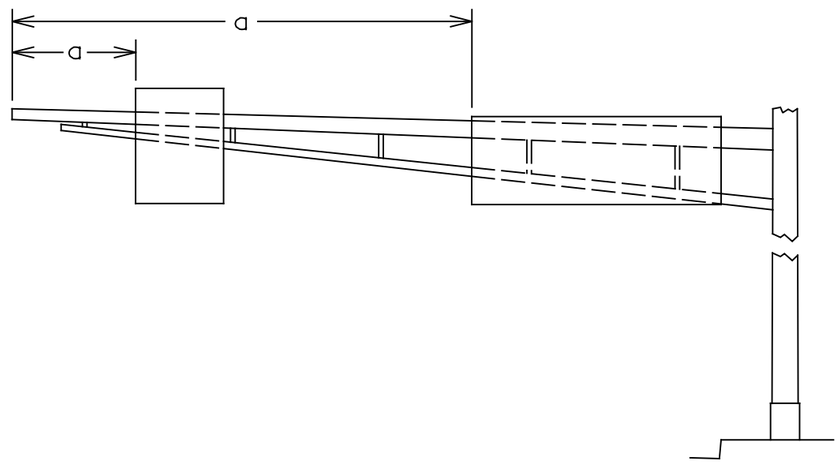


RADISSON RD (CSAH 52) AT 101ST AVE/FLANDERS CT
(SYSTEM "B")
REVISED SIGN LAYOUT

SIGN DETAILS

MAST ARM SIGN LOCATION



MAST ARM MOUNTED SIGNS

SIGN/CODE	PANEL LEGEND	QUANTITY	PANEL SIZE (INCH)	PANEL AREA (SQ FT)	PANEL TOTAL AREA (SQ FT)	MOUNTING STIFFENERS NUMBER	MOUNTING STIFFENERS SPACING (1)	POLE	a (FEET)
R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	4	36 x 42	10.50	42.00	2	24	1	1
								2	1
								3	1
								4	1
	RADISSON RD	INP.	INP.	INP.	INP.	INP.	INP.	2	14
								4	14

SPECIFIC NOTE:
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMILY SPACED. SEE MNDOT STANDARD SIGNS AND MARKING MANUAL, PAGE 105A FOR STIFFENER SPACING REQUIREMENTS.

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4. FOR TYPE D STRINGER AND PANEL JOINT DETAILS SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL, PAGE 105.
5. THE MAST ARM MOUNTED SIGNS ARE INCLUDED IN THE TRAFFIC CONTROL SIGNAL SYSTEM PAY ITEM.
6. ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING HP SHEETING. SEE SPECIAL PROVISIONS.

NO	DATE	BY	CKD	APPR	REVISION
					...\FinalPlan\12330_sd08.dgn

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Print Name: NATHAN A. POOLE
Date 6/19/20 License # 56071

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY N. POOLE
COMM. NO. 1912330

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
REVISED MAST ARM SIGN DETAILS (SYSTEM "B")
RADISSON RD (CSAH 52) AT 101ST AVE\FLANDERS CT

SHEET 71 OF 76

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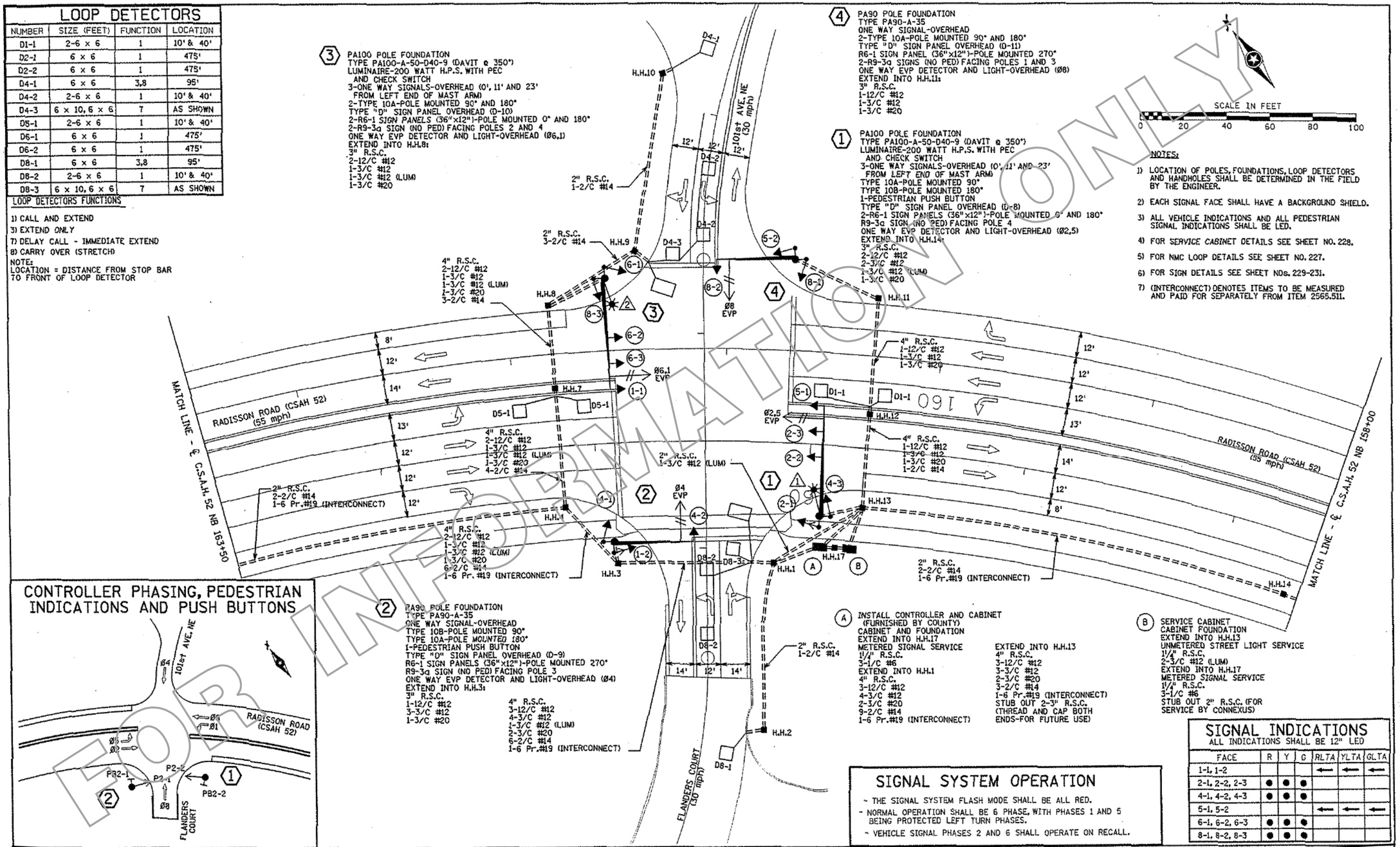
LOOP DETECTORS

NUMBER	SIZE (FEET)	FUNCTION	LOCATION
D1-1	2-6 x 6	1	10' & 40'
D2-1	6 x 6	1	475'
D2-2	6 x 6	1	475'
D4-1	6 x 6	3,8	95'
D4-2	2-6 x 6	1	10' & 40'
D4-3	6 x 10, 6 x 6	7	AS SHOWN
D5-1	2-6 x 6	1	10' & 40'
D6-1	6 x 6	1	475'
D6-2	6 x 6	1	475'
D8-1	6 x 6	3,8	95'
D8-2	2-6 x 6	1	10' & 40'
D8-3	6 x 10, 6 x 6	7	AS SHOWN

LOOP DETECTORS FUNCTIONS

1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAY CALL - IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)

NOTE:
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

2 PA90 POLE FOUNDATION
TYPE PA90-A-35
ONE WAY SIGNAL-OVERHEAD
TYPE 10B-POLE MOUNTED 90°
TYPE 10A-POLE MOUNTED 180°
1-PEDESTRIAN PUSH BUTTON
TYPE "D" SIGN PANEL OVERHEAD (D-9)
R6-1 SIGN PANELS (36"x12")-POLE MOUNTED 270°
R9-3a SIGN (NO PED) FACING POLE 3
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø4)
EXTEND INTO H.H.3:
3" R.S.C.
1-12/C #12
3-3/C #12
1-3/C #20
4" R.S.C.
3-12/C #12
4-3/C #12
1-3/C #12 (LUM)
2-3/C #20
6-2/C #14
1-6 Pr.#19 (INTERCONNECT)

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SIGNAL INDICATIONS

ALL INDICATIONS SHALL BE 12" LED

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1, 1-2				←	←	←
2-1, 2-2, 2-3	●	●	●			
4-1, 4-2, 4-3	●	●	●			
5-1, 5-2				←	←	←
6-1, 6-2, 6-3	●	●	●			
8-1, 8-2, 8-3	●	●	●			

NO	DATE	BY	CKD	APPR	REVISION
NAME: H:\Projects\12000\12330\Design\PlanSheets\FinalPlan\12330_1f01.dgn					

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Grant O. Parker
DATE 11-20-01 LIC. NO. 26880

DRAWN BY ____ DATE ____
DESIGN BY ____ DATE ____
CHECKED BY ____ DATE ____

S.P.	0280-50 (TH 35W)
S.P.	90-080-11
S.A.P.	02-652-02
S.A.P.	02-652-03
S.A.P.	02-652-04
S.A.P.	106-020-021, 106-020-022

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~~ANOKA COUNTY~~
INTERSECTION LAYOUT - SYSTEM "D"
C.S.A.H. 52 RECONSTRUCTION
C.S.A.H. 52 AT 101ST AVE. NE/FLANDERS COURT

SHEET 270 OF 559

NO	DATE	BY	CKD	APPR	REVISION
...\FinalPlan\12330_1f01.dgn					

STATE AID PROJECT NO.
002-652-007,
002-652-008,
106-020-035
CITY PROJ NO.
19-09

DRAWN BY
DESIGNED BY
CHECKED BY
COMM. NO. 1912330

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
FOR INFORMATION ONLY

SHEET 72 OF 76

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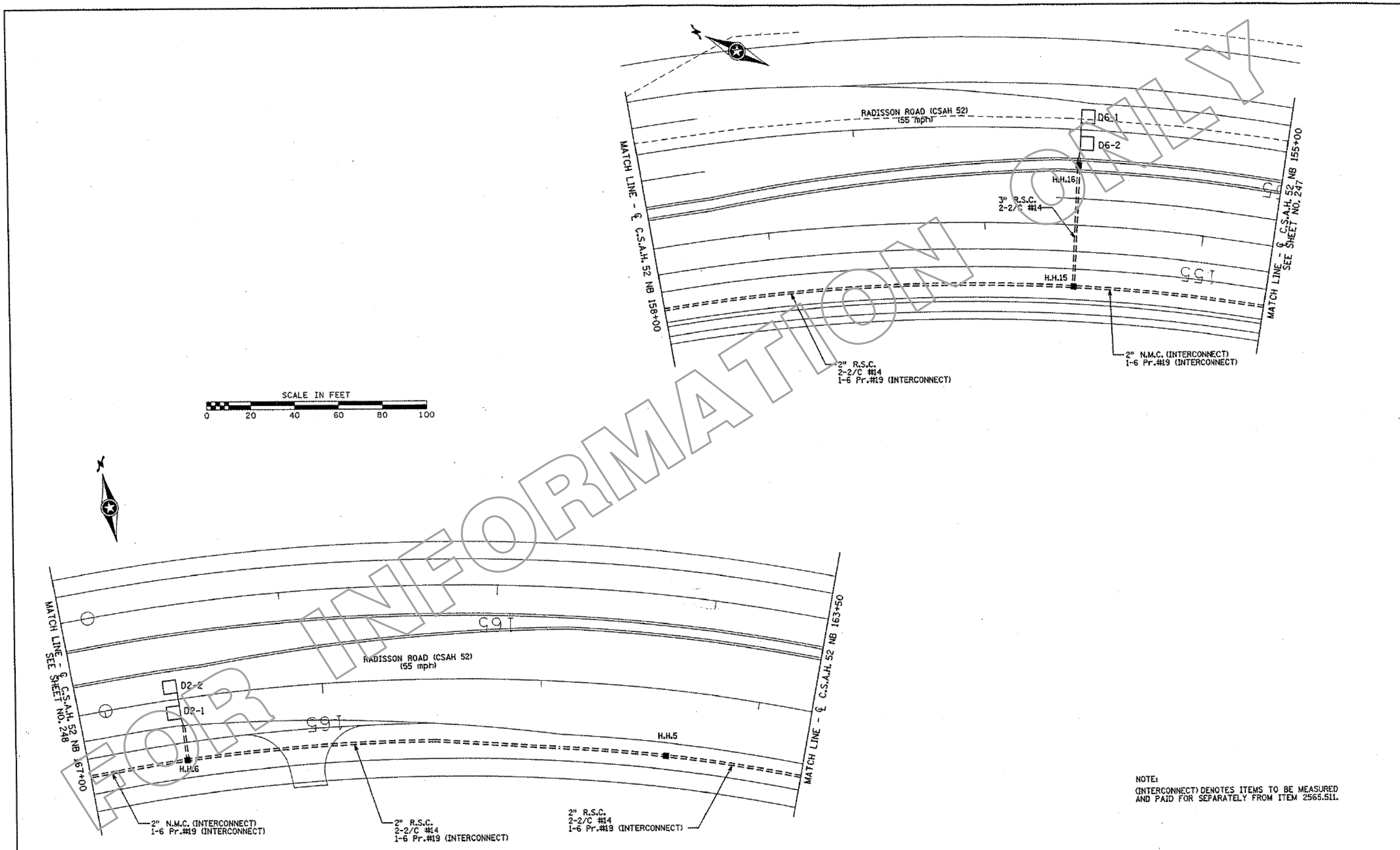

NOTE:
(INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM 2565.511.

NO	DATE	BY	CKD	APPR	REVISION

NAME: k:\sitsa\proj\c1149\part4\roadway3\drawings\signals\101st\int04.dgn 28-NOV 2001

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DATE 11-30-01 LIC. NO. 26880

DRAWN BY ______ DATE ______
DESIGN BY ______ DATE ______
CHECKED BY ______ DATE ______

S.P.	0280-50 (TH 35W)
S.P.	90-080-11
S.A.P.	02-652-02
S.A.P.	02-652-03
S.A.P.	02-652-04
S.A.P.	106-020-021, 106-020-022

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ANOKA COUNTY
MATCH LINES - SYSTEM "D"
C.S.A.H. 52 RECONSTRUCTION
C.S.A.H. 52 AT 101st ST. NE

SHEET 271 OF 559

NO	DATE	BY	CKD	APPR	REVISION

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STATE AID PROJECT NO.
002-652-007,
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106-020-035
CITY PROJ NO.
19-09

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DESIGNED BY
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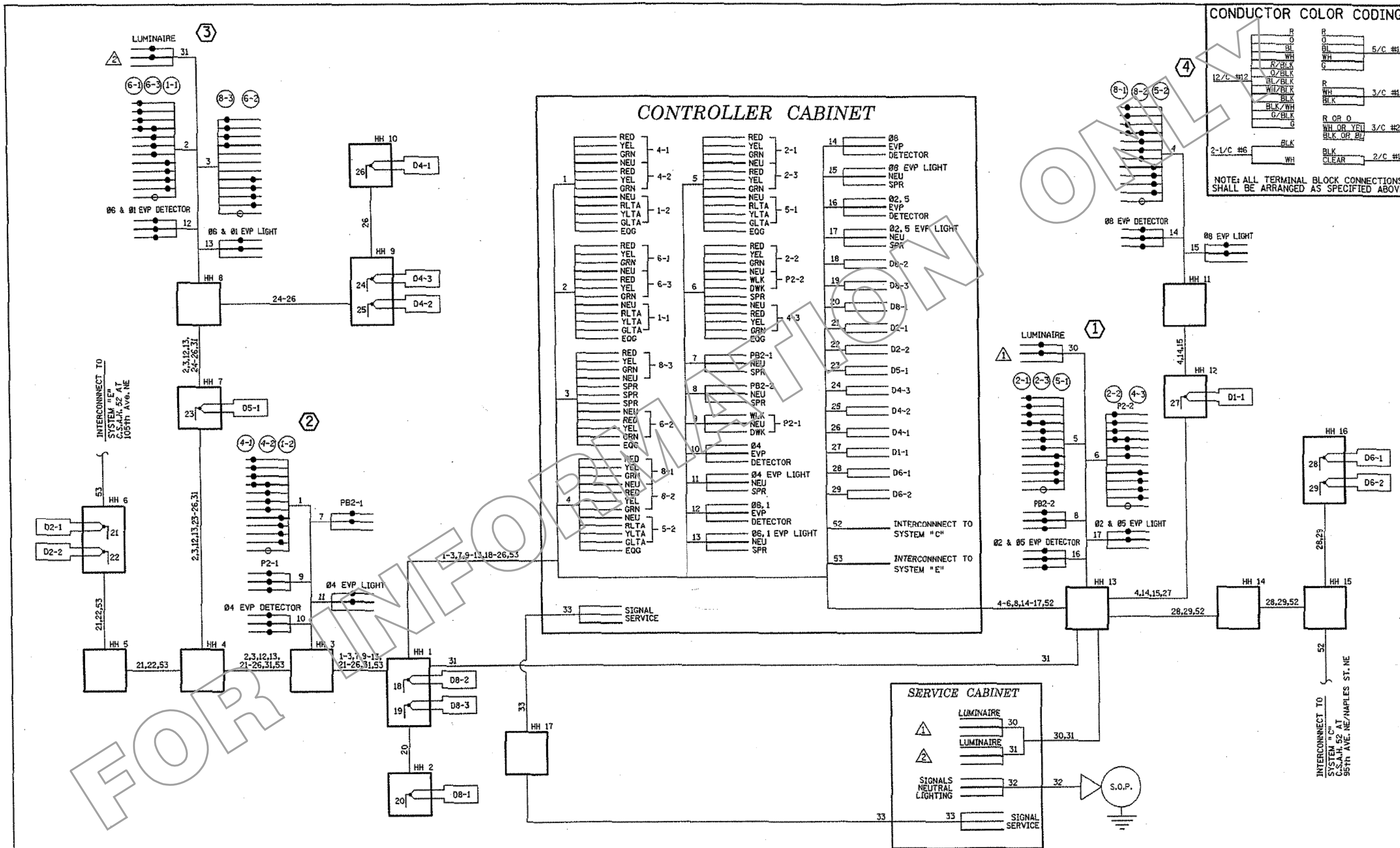
ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
FOR INFORMATION ONLY



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DATE 11-20-01 LIC. NO. 26880

DRAWN BY SFH DATE 11-8-00
DESIGN BY BDP DATE 11-8-00
CHECKED BY TAC DATE 11-8-00

S.P. 0280-50 (TH 35W)
S.P. 90-080-11
S.A.P. 02-652-02
S.A.P. 02-652-03
S.A.P. 02-652-04
S.A.P. 106-020-021, 106-020-022

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ANOKA COUNTY
WIRING DIAGRAM - SYSTEM "D"
C.S.A.H. 52 RECONSTRUCTION
C.S.A.H. 52 AT 101st AVE. NE/FLANDERS COURT

SHEET 272 OF 559

NO	DATE	BY	CKD	APPR	REVISION

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STATE AID PROJECT NO. 002-652-007, 002-652-008, 106-020-035
CITY PROJ NO. 19-09

DRAWN BY
DESIGNED BY
CHECKED BY
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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
FOR INFORMATION ONLY

SHEET 74 OF 76

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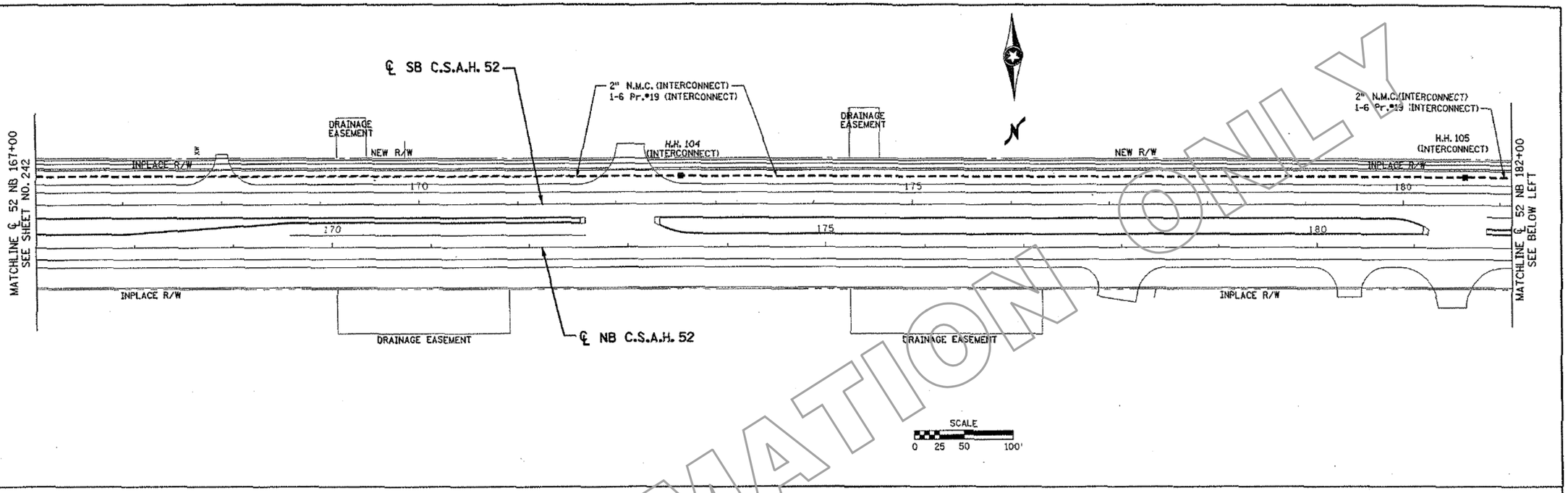

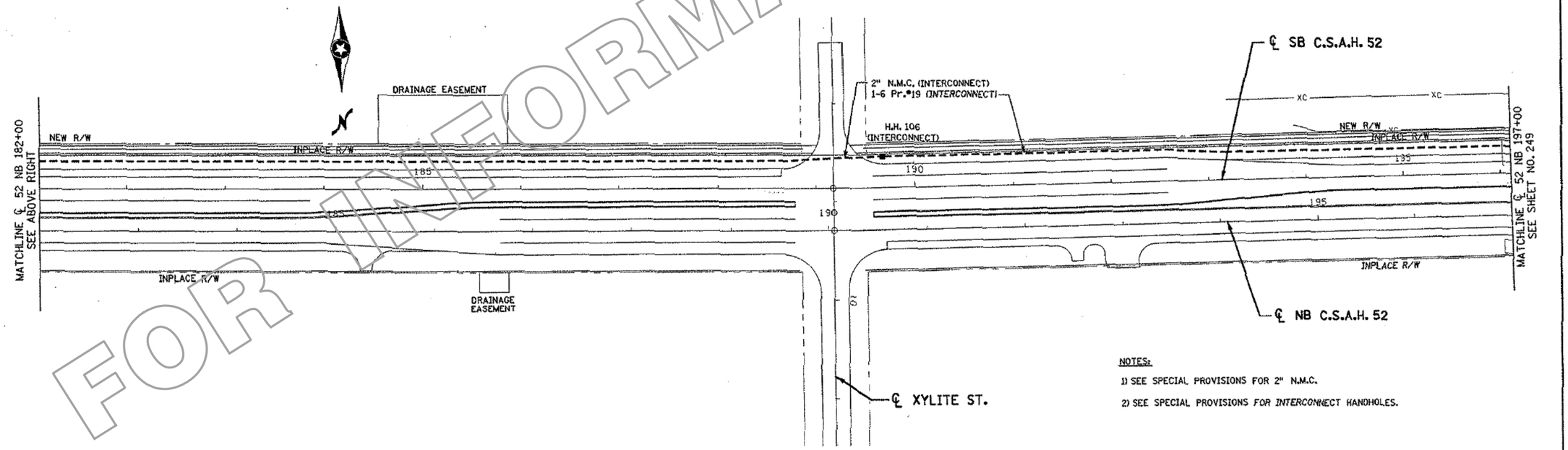

NOTES:

1) SEE SPECIAL PROVISIONS FOR 2" N.M.C.

2) SEE SPECIAL PROVISIONS FOR INTERCONNECT HANDHOLES.

NO	DATE	BY	CKD	APPR	REVISION

NAME: H:\Projects\12000\12330\Design\PlanSheets\FinalPlan\12330_1f04.dgn 09 NOV 2001

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Brent D. Pankow

DATE 11-20-01 LIC. NO. 26880

DRAWN BY _____ DATE _____

DESIGN BY _____ DATE _____

CHECKED BY _____ DATE _____

S.P.	0280-50 (TH 35W)
S.P.	90-080-11
S.A.P.	02-652-02
S.A.P.	02-652-03
S.A.P.	02-652-04
S.A.P.	106-020-021, 106-020-022

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ANOKA COUNTY

TRAFFIC SIGNAL INTERCONNECT
C.S.A.H. 52 RECONSTRUCTION
C.S.A.H. 52 NB STA. 167+00 TO 197+00

SHEET 277 OF 559

NO	DATE	BY	CKD	APPR	REVISION

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STATE AID PROJECT NO.
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DESIGNED BY
CHECKED BY
COMM. NO. 1912330

SRF Consulting Group, Inc.
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ANOKA COUNTY

TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
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SHEET 75 OF 76

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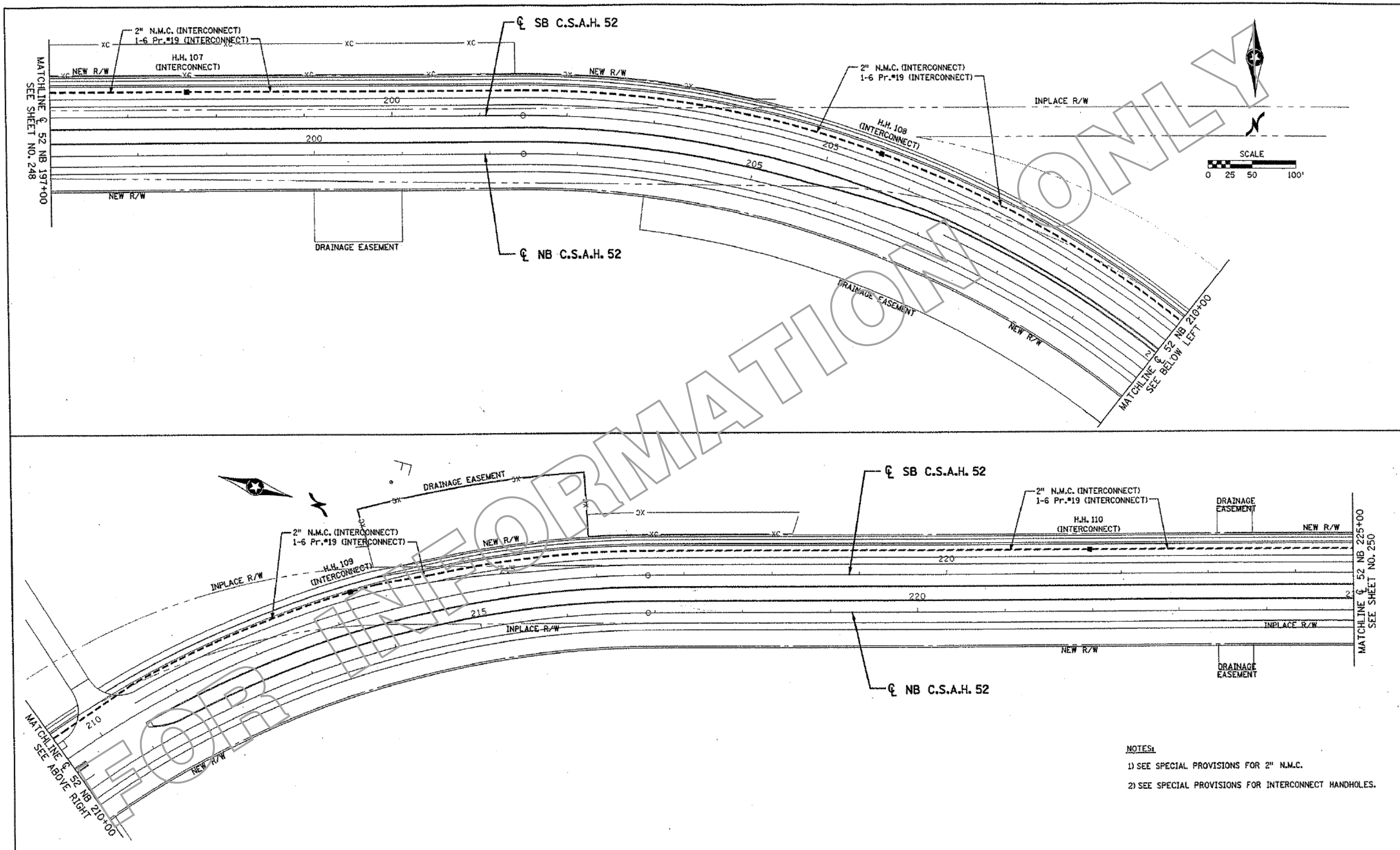

NOTES:

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2) SEE SPECIAL PROVISIONS FOR INTERCONNECT HANDHOLES.

NO	DATE	BY	CKD	APPR	REVISION

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DATE 11-20-01 LIC. NO. 26880

DRAWN BY ____ DATE ____
DESIGN BY ____ DATE ____
CHECKED BY ____ DATE ____

S.P.	0280-50 (TH 35W)
S.P.	90-080-11
S.A.P.	02-652-02
S.A.P.	02-652-03
S.A.P.	02-652-04
S.A.P.	106-020-021, 106-020-022

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ANOKA COUNTY
TRAFFIC SIGNAL INTERCONNECT
C.S.A.H. 52 RECONSTRUCTION
C.S.A.H. 52 NB STA. 197+00 TO 225+00

SHEET 278 OF 559

NO	DATE	BY	CKD	APPR	REVISION

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106-020-035
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DRAWN BY
DESIGNED BY
CHECKED BY
COMM. NO. 1912330

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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 52 AT XYLITE STREET, 101ST AVE
FOR INFORMATION ONLY

SHEET 76 OF 76

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6/19/2020
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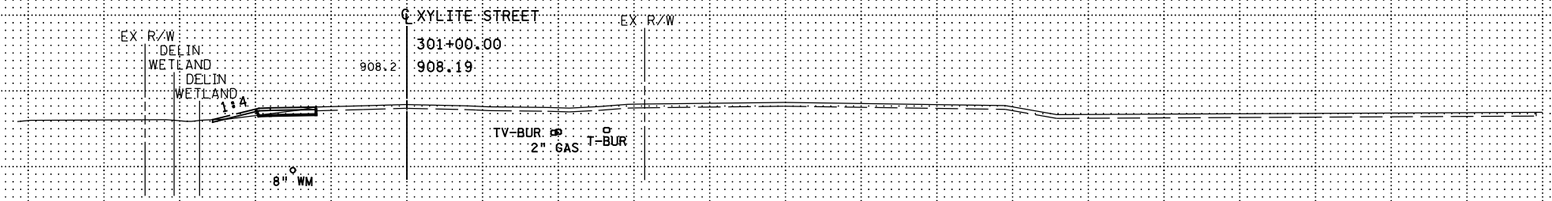
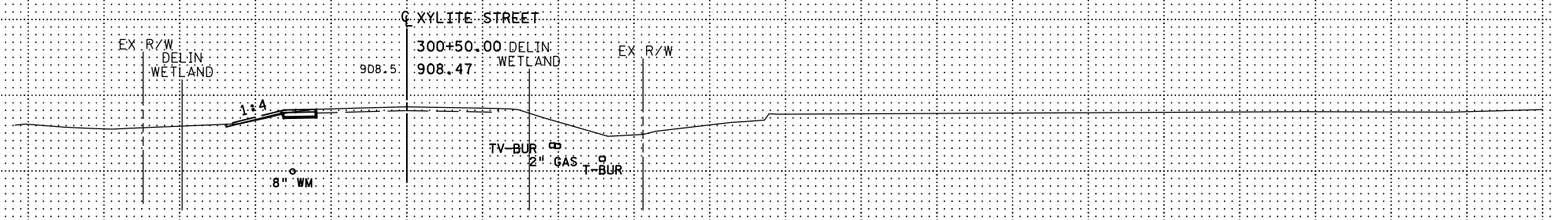
GENERAL NOTES:

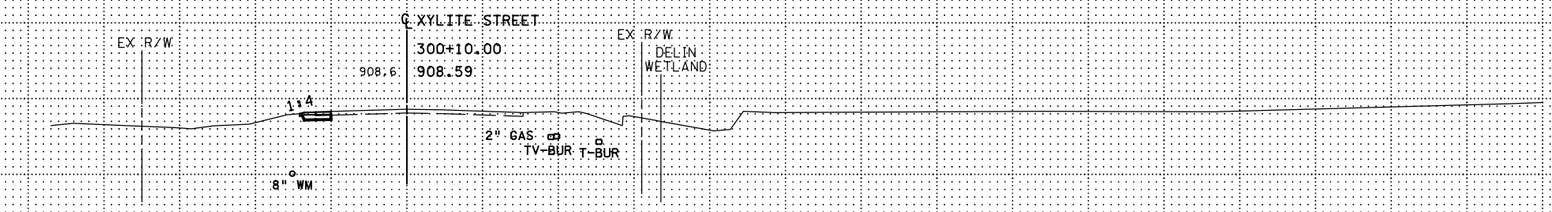
UTILITIES SHOWN ON THE CROSS SECTIONS ARE IN PLACE UNLESS NOTED OTHERWISE.

UTILITIES SHOWN MAY HAVE BEEN REMOVED, RELOCATED, OR ABANDONED.

SEE INPLACE TOPOGRAPHY, RIGHT OF WAY, UTILITY AND REMOVAL PLANS FOR LOCATIONS OF ABOVE GROUND UTILITIES.







BEGIN SAP 002-652-008, 106-020-035, CP 19-09

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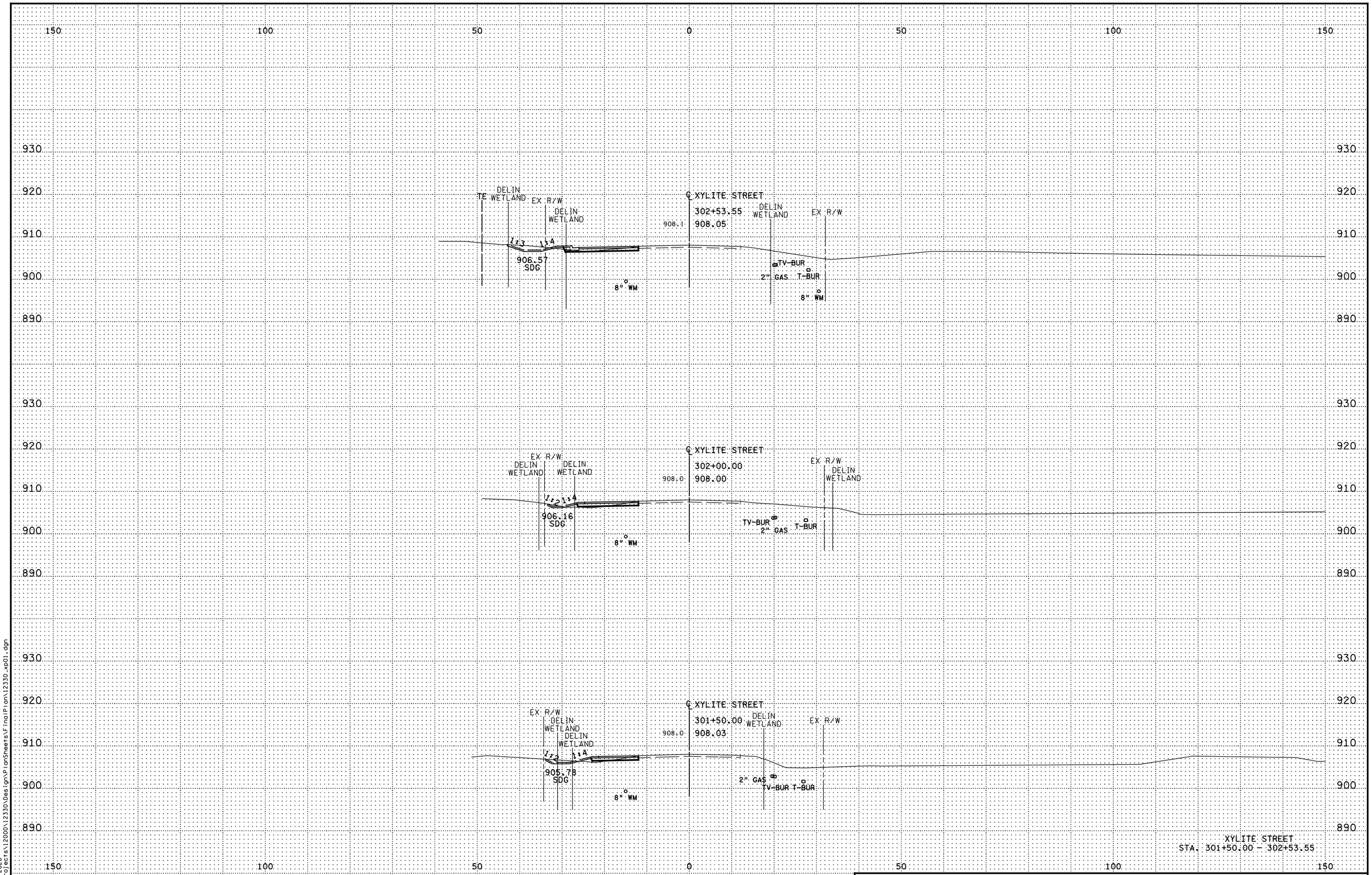
State Proj. No. **002-652-008, 106-020-035, CP 19-09** Sheet No. **X1** of **X9** Sheets



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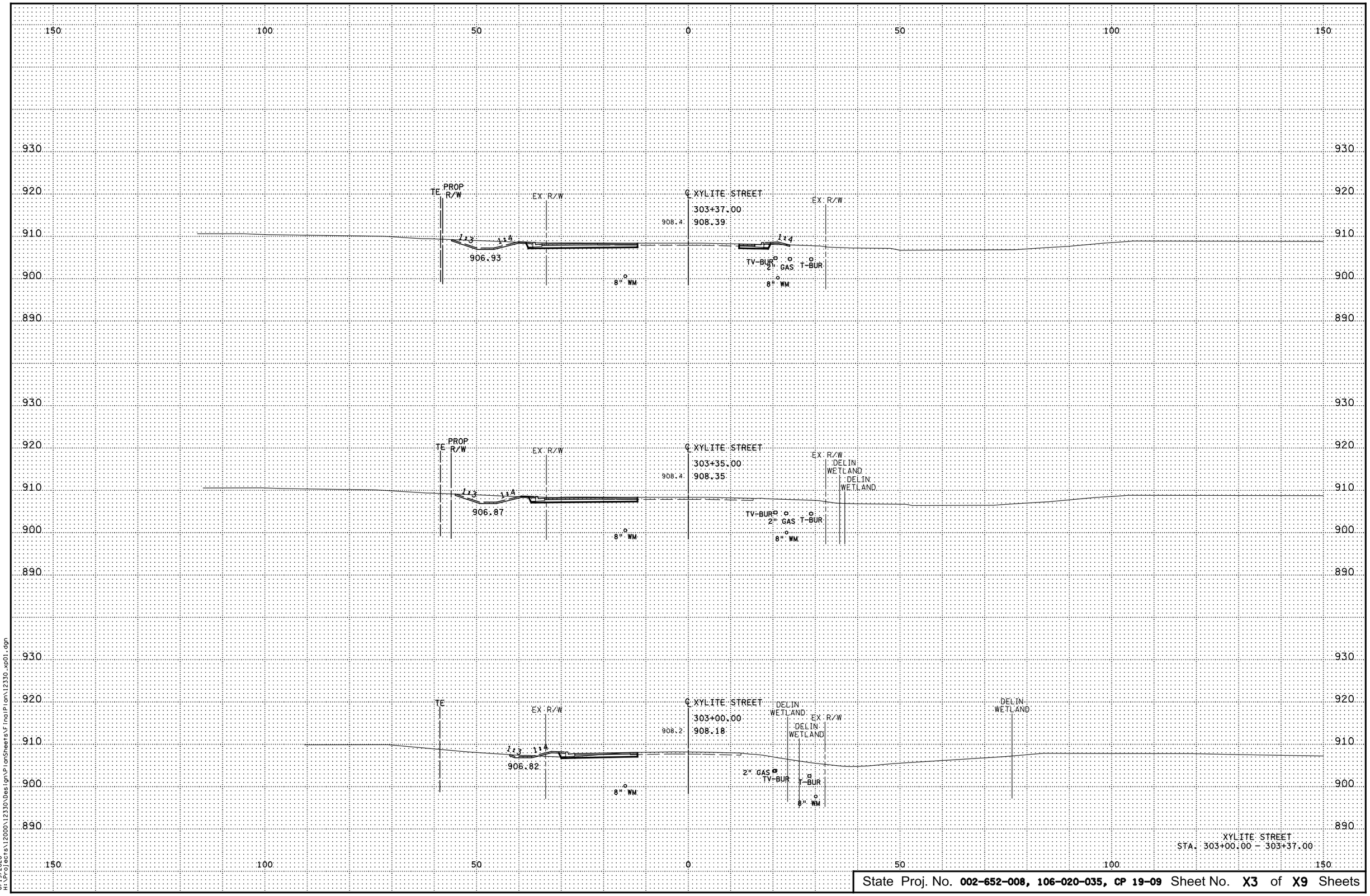

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930 920 910 900 890

M/L

℄ XYLITE STREET

304+56.00

909.6 909.56

6" GAS

T-BUR
TV-BUR P-BUR 2" GAS F/O

8" WM

930 920 910 900 890

M/L

℄ XYLITE STREET

303+71.00

909.4 909.45

M/L

T-BUR 2" GAS
TV-BUR
P-BUR F/O

8" WM

930 920 910 900 890

M/L

℄ XYLITE STREET

303+50.00

908.7 908.65

M/L

T-BUR

F/O T-BUR TV-BUR
T-BUR F/O
2" GAS

8" WM

930 920 910 900 890

XYLITE STREET
STA. 303+50.00 – 304+56.00

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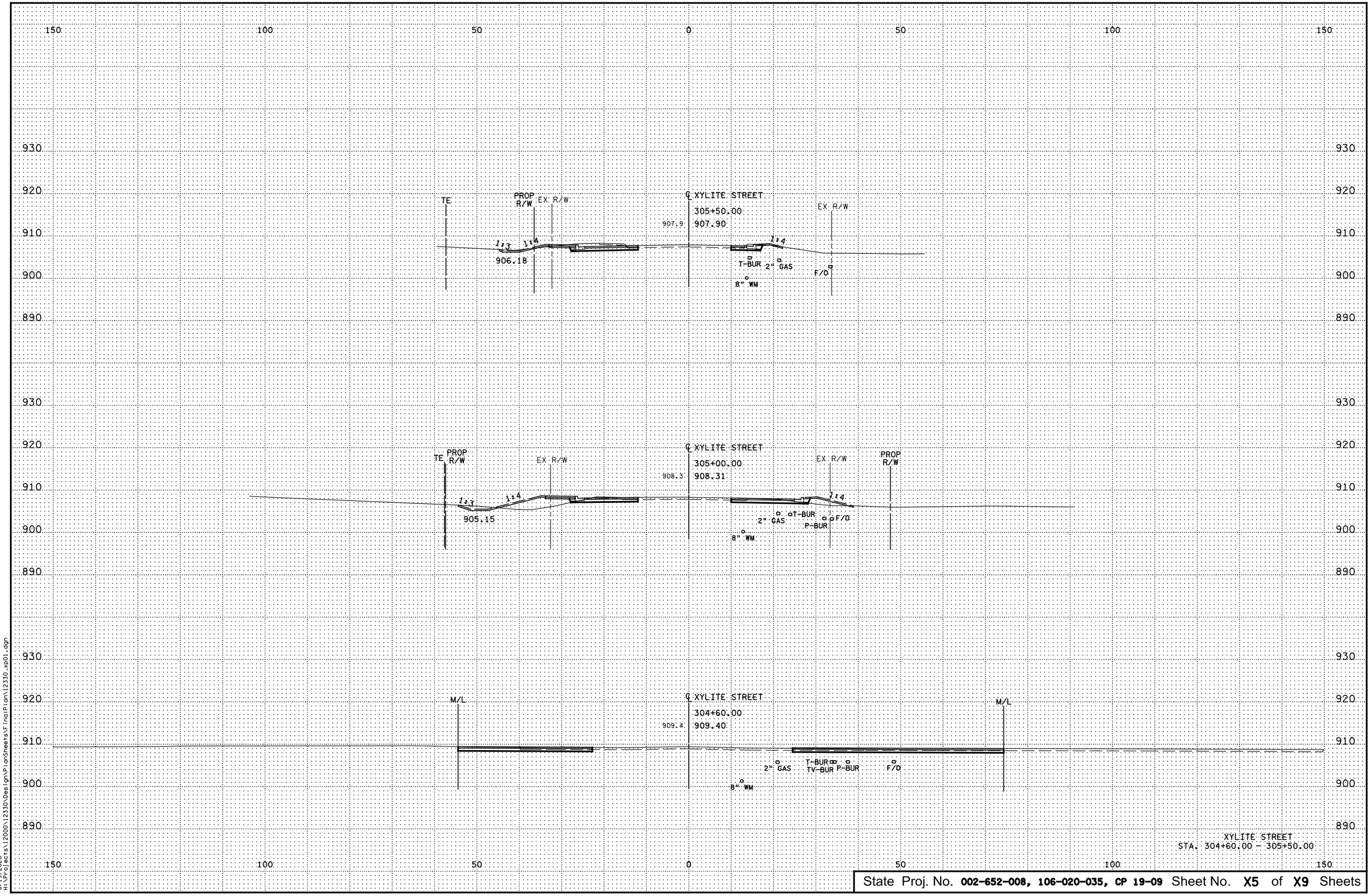

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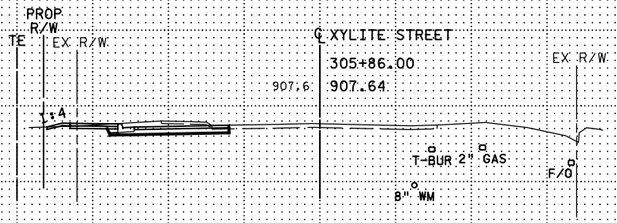

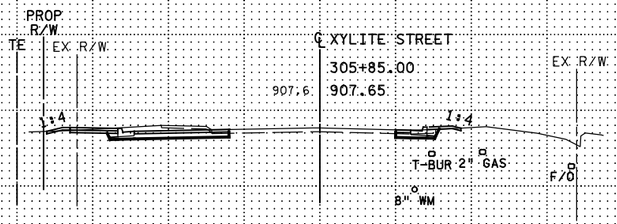

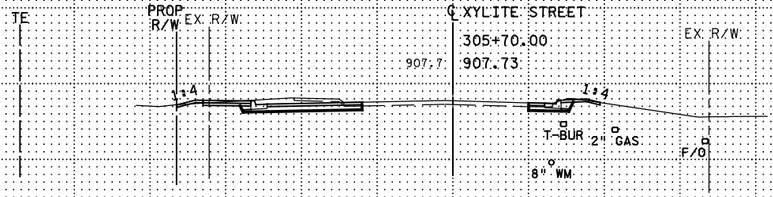

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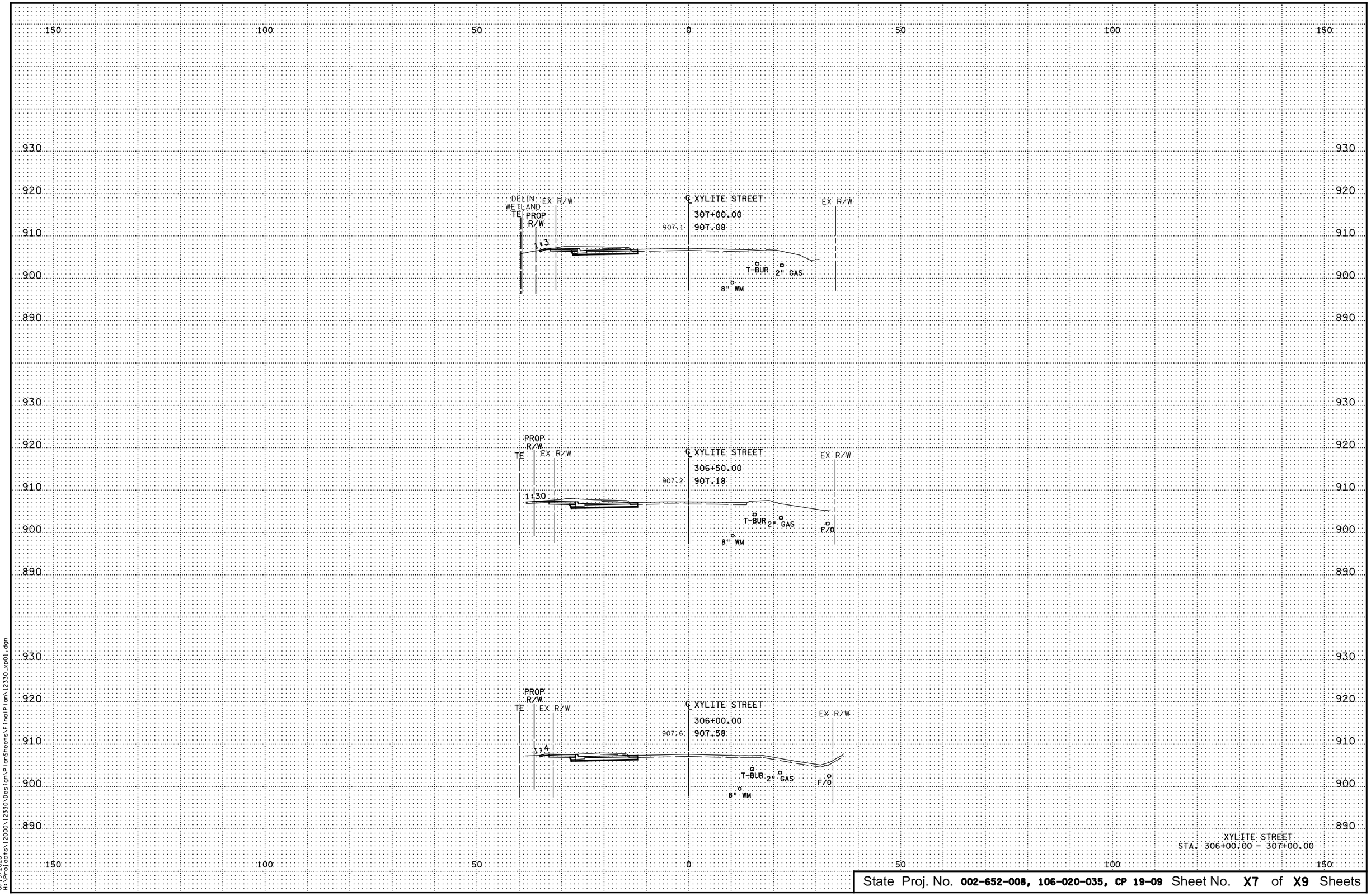

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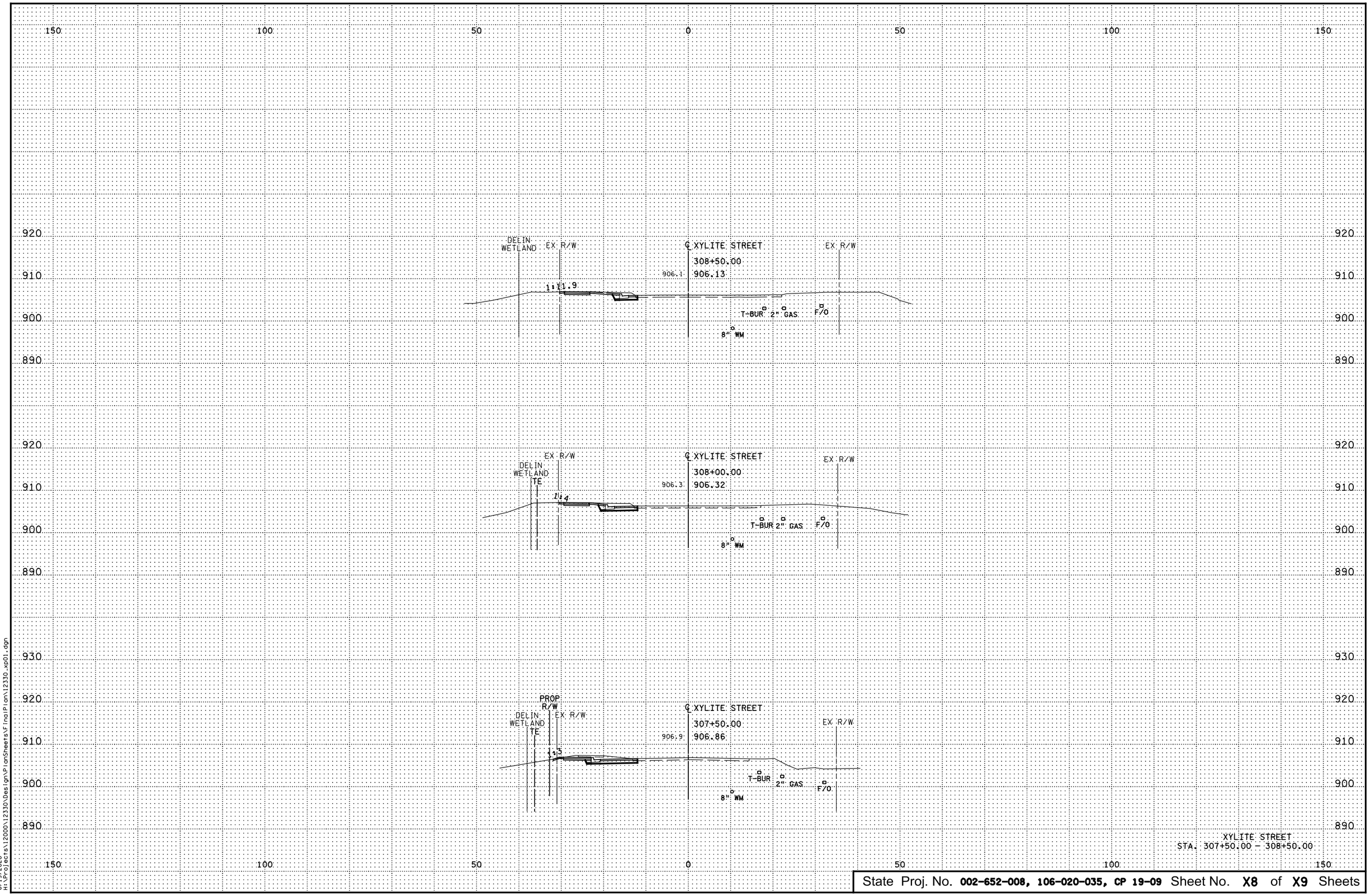

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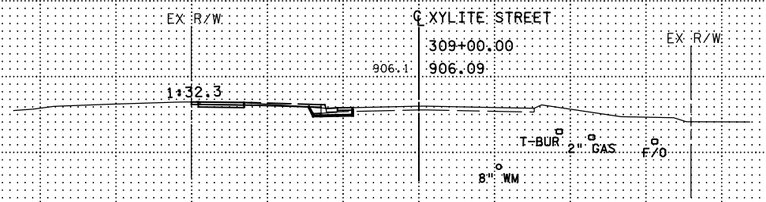
State Proj. No. **002-652-008, 106-020-035, CP 19-09** Sheet No. **X8** of **X9** Sheets

END SAP 002-652-008, 106-020-035, CP 19-09



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